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## Technical Report for

**AECOM, INC.**

**N6274223F0104 RH Fire Suppression System**

**60697810**

**SGS Job Number: FC11222**

**Sampling Date: 11/10/23**



### Report to:

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**Total number of pages in report: 725**



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

**Norm Farmer**  
**Technical Director**

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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),  
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Test results relate only to samples analyzed.

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## Sample Summary

AECOM, INC.

Job No: FC11222

N6274223F0104 RH Fire Suppression System  
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC11222-1	11/10/23	10:15 JVMV	11/14/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2311
FC11222-2	11/10/23	11:25 MG	11/14/23	AQ	Ground Water	AF-RHMW10-WGN01LF-2311

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** AECOM, INC.

**Job No:** FC11222

**Site:** N6274223F0104 RH Fire Suppression System

**Report Date** 11/21/2023 5:02:57 P

On 11/14/2023, 2 Sample(s), 0 Trip Blank(s), 0 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 3.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC11222 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

<b>Matrix:</b> AQ	<b>Batch ID:</b> OP162
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- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) FC11200-1MS were used as the QC samples indicated.

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



## Summary of Hits

**Job Number:** FC11222  
**Account:** AECOM, INC.  
**Project:** N6274223F0104 RH Fire Suppression System  
**Collected:** 11/10/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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**FC11222-1**      **AF-RHMW03-WGN01LF-2311**

Perfluoroheptanoic acid	0.92 J	3.8	1.9	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	7.2 J	19	7.5	ng/l	EPA DRAFT 1633

**FC11222-2**      **AF-RHMW10-WGN01LF-2311**

No hits reported in this sample.

**Sample Results**

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**Report of Analysis**

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SGS North America Inc.

## Report of Analysis

Page 1 of 3

Client Sample ID:	AF-RHMW03-WGN01LF-2311		
Lab Sample ID:	FC11222-1	Date Sampled:	11/10/23
Matrix:	AQ - Ground Water	Date Received:	11/14/23
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	6Q28595.D	1	11/20/23 12:45	NG	11/17/23 08:30	OP162	S6Q396
Run #2							

Run #	Initial Volume	Final Volume
Run #1	530 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
<b>PERFLUOROALKYL CARBOXYLIC ACIDS</b>							
375-22-4	Perfluorobutanoic acid	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.5	1.9	0.89	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
375-85-9	Perfluoroheptanoic acid	0.92	3.8	1.9	0.47	ng/l	J
335-67-1	Perfluorooctanoic acid	0.94 U	3.8	0.94	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
<b>PERFLUOROALKYL SULFONIC ACIDS</b>							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.7	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.7	3.8	1.1	ng/l	
<b>FLUOROTELOMER SULFONIC ACIDS</b>							
757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.2	19	7.5	3.3	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.9	ng/l	
<b>PERFLUOROOCCTANE SULFONAMIDES</b>							
754-91-6	PFOSA	1.9 U	3.8	1.9	0.63	ng/l	
31506-32-8	MeFOSA	3.8 U	7.5	3.8	0.94	ng/l	
4151-50-2	EtFOSA	3.8 U	7.5	3.8	0.94	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-2311		Date Sampled:	11/10/23
Lab Sample ID:	FC11222-1		Date Received:	11/14/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
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	3.8 U	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	19 U	38	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.0	ng/l	

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.94	ng/l	
919005-14-4	ADONA	3.8 U	7.5	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.5	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	7.5	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.5	3.8	1.1	ng/l	

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.5	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.5	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.5	1.9	0.74	ng/l	

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	9.4 U	19	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	94	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	94	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	100%		20-150%
	13C5-PFPeA	109%		20-150%
	13C5-PFHxA	107%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	103%		20-150%
	13C9-PFNA	104%		20-150%
	13C6-PFDA	94%		20-150%
	13C7-PFUnDA	76%		20-150%
	13C2-PFDoDA	77%		20-150%
	13C2-PFTeDA	76%		20-150%
	13C3-PFBS	102%		20-150%
	13C3-PFHxS	110%		20-150%

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 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

<b>Client Sample ID:</b>	AF-RHMW03-WGN01LF-2311	
<b>Lab Sample ID:</b>	FC11222-1	<b>Date Sampled:</b> 11/10/23
<b>Matrix:</b>	AQ - Ground Water	<b>Date Received:</b> 11/14/23
<b>Method:</b>	EPA DRAFT 1633 EPA 1633 DRAFT	<b>Percent Solids:</b> n/a
<b>Project:</b>	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	92%		20-150%
	13C8-FOSA	75%		20-150%
	d3-MeFOSA	72%		20-150%
	d5-EtFOSA	77%		20-150%
	d3-MeFOSAA	91%		20-150%
	d5-EtFOSAA	86%		20-150%
	d7-MeFOSE	76%		20-150%
	d9-EtFOSE	83%		20-150%
	13C2-4:2FTS	112%		20-180%
	13C2-6:2FTS	104%		20-180%
	13C2-8:2FTS	96%		20-180%
	13C3-HFPO-DA	109%		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

SGS North America Inc.

## Report of Analysis

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Client Sample ID:	AF-RHMW10-WGN01LF-2311		
Lab Sample ID:	FC11222-2	Date Sampled:	11/10/23
Matrix:	AQ - Ground Water	Date Received:	11/14/23
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	6Q28596.D	1	11/20/23 12:59	NG	11/17/23 08:30	OP162	S6Q396
Run #2							

Run #	Initial Volume	Final Volume
Run #1	560 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
<b>PERFLUOROALKYL CARBOXYLIC ACIDS</b>							
375-22-4	Perfluorobutanoic acid	3.6 U	14	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.1	1.8	0.84	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	3.6	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
<b>PERFLUOROALKYL SULFONIC ACIDS</b>							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
<b>FLUOROTELOMER SULFONIC ACIDS</b>							
757124-72-4	4:2 Fluorotelomer sulfonate	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	
<b>PERFLUOROOCCTANE SULFONAMIDES</b>							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.60	ng/l	
31506-32-8	MeFOSA	3.6 U	7.1	3.6	0.89	ng/l	
4151-50-2	EtFOSA	3.6 U	7.1	3.6	0.89	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-RHMW10-WGN01LF-2311		Date Sampled:	11/10/23
Lab Sample ID:	FC11222-2		Date Received:	11/14/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
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	0.89	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	18 U	36	18	3.9	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.6	ng/l	

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.89	ng/l	
919005-14-4	ADONA	3.6 U	7.1	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.1	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	7.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.1	3.6	1.1	ng/l	

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.1	3.6	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.1	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.1	1.8	0.70	ng/l	

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	18	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	89	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	89	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	109%		20-150%
	13C5-PFPeA	113%		20-150%
	13C5-PFHxA	113%		20-150%
	13C4-PFHpA	115%		20-150%
	13C8-PFOA	99%		20-150%
	13C9-PFNA	106%		20-150%
	13C6-PFDA	108%		20-150%
	13C7-PFUnDA	102%		20-150%
	13C2-PFDoDA	102%		20-150%
	13C2-PFTeDA	98%		20-150%
	13C3-PFBS	107%		20-150%
	13C3-PFHxS	114%		20-150%

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

## Report of Analysis

<b>Client Sample ID:</b>	AF-RHMW10-WGN01LF-2311	
<b>Lab Sample ID:</b>	FC11222-2	<b>Date Sampled:</b> 11/10/23
<b>Matrix:</b>	AQ - Ground Water	<b>Date Received:</b> 11/14/23
<b>Method:</b>	EPA DRAFT 1633 EPA 1633 DRAFT	<b>Percent Solids:</b> n/a
<b>Project:</b>	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	105%		20-150%
	13C8-FOSA	83%		20-150%
	d3-MeFOSA	76%		20-150%
	d5-EtFOSA	83%		20-150%
	d3-MeFOSAA	104%		20-150%
	d5-EtFOSAA	107%		20-150%
	d7-MeFOSE	87%		20-150%
	d9-EtFOSE	95%		20-150%
	13C2-4:2FTS	115%		20-180%
	13C2-6:2FTS	118%		20-180%
	13C2-8:2FTS	110%		20-180%
	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**

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**Includes the following where applicable:**

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



SGS North America Inc - Orlando  
Chain of Custody

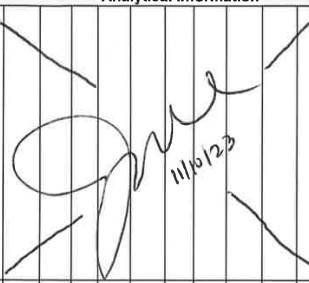
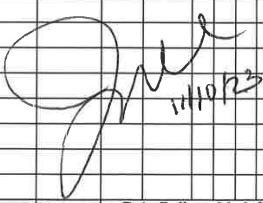
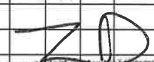

4405 Vineland Road, Suite C-15 Orlando, FL 32811  
TEL: 407-425-6700 FAX: 407-425-0707  
www.sgs.com

FC11222

COC #: 2311AFSG02

SGS - ORLANDO JOB # :

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Client / Reporting Information			Project Information			SGS - ORLANDO Quote #		SKIFF #												
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System			Analytical Information 		Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe												
Address: 1001 Bishop St. ste 1600			Street																	
City: Honolulu State: HI Zip: 96813			City Honolulu State Hawaii																	
Project Contact: Katie Abbott Email: katie.abbott@aecom.com			Project # 23F0104 - 60697810																	
Project Manager: Watson Tanji Email: watson.tanji@aecom.com			Fax #																	
Sampler(s) Name(s) (Printed) Sampler 1: <i>WJ</i> Sampler 2: <i>MV</i>			Client Purchase Order # 151253			PFAS EPA Draft 1633 		LAB USE ONLY INITIAL ASSESSMENT  LABEL VERIFICATION  3.4 ERI												
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX					TOTAL # OF BOTTLES	OTHER	NONE	PC	NH3	PH03	PH04	MAOH-ZNAC	D WATER	RESH	
1	AF-RHMW03-WGN01LF-2311	11/02/23	1015	WJ	MY					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 United ANB : 010-29029301										
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								
1 Jackson V. / AECOM	11/10/23 1250	2 Ellie Shimatsu	3 Ellie Shimatsu AECOM	11/10/23 1510	4 <i>386</i>					5		11/14/23 1700								
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation					Relinquished By/Affiliation	Date Time:	Received By/Affiliation								
5		6	7		8															

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FC11222: Chain of Custody

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5



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

FC11222

COC #: 2311AFSG03

SGS - ORLANDO JOB # :

PAGE 1 OF 1

Client / Reporting Information		Project Information		Analytical Information												Matrix Codes
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">PFAS EPA Draft: 1633</div> <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg);">             Max Gamm 11/16/23           </div> </div>												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe
Address: 1001 Bishop St. ste 1600		Street														
City: Honolulu State: HI Zip: 96813		City Honolulu State Hawaii														
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 23F0104 - 60697810														
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #														
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order # 151253														LAB USE ONLY
Sampler(s) Name(s) (Printed)		Sampler 1: <i>Max Gamm</i> Sampler 2:														
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	HNO3	H2SO4	NACH/ZNAC	DIWATER	MEDIH		
2	AF-RHMW10-WGN01LF-2311	11/16/23	11:25	EG BS MG	GW	3		X								
Turnaround Time ( Business days)		Data Deliverable Information		Comments / Remarks												
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		Approved By: / Date:		<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 United ANB-014-29V29371											
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	1700										
1	11/16/23 12:55	2 Ellie Shimatsu AECOM	3 Ellie Shimatsu AECOM	11/13/23 1510	4	28/6 11/14/23										
5		6	7		8											

PFAS\_COCs\_ALL\_10022023.xls Rev 031316

FC11222: Chain of Custody

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## SGS Sample Receipt Summary

Job Number: fc11222

Client: AECOM

Project: N6274223F0104 RH Fire Suppression Syst

Date / Time Received: 11/14/2023 5:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-29629331

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (3.8);

**Cooler Informatio**

	<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
4. Cooler temp verification:			IR Gun
5. Cooler media:			Ice (Bag)

**Trip Blank Information**

	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<u>W</u>	<u>or</u>	<u>S</u>	<u>N/A</u>
3. Type of TB Received	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Sample Information**

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

**Misc Information**

Number of Encores: 25 Gram	5 Gram	Number of Lab Filtered Metals
Test Strip Lot #: pH 0-3: <u>226422</u>	pH 10-12: _____	Other: (Specify) pH 1.0 - 12.0 <u>222221</u>
Residual Chlorine Test Strip Lot: _____		

Comments

SM001

Rev. Date 05/04/17

Technician: ZANEB

Date: 11/14/2023 5:00:00 PM

Reviewer: ZD

Date: 11/14/2023

**FC11222: Chain of Custody**

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# QC Evaluation: DOD QSM5.x Limits

**Job Number:** FC11222  
**Account:** AECOM, INC.  
**Project:** N6274223F0104 RH Fire Suppression System  
**Collected:** 11/10/23

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

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

---

\* Sample used for QC is not from job FC11222

5.2  
5

## MS Semi-volatiles

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## QC Data Summaries

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### 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: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q396-IBLK	6Q28589.D	1	11/20/23	NG	n/a	n/a	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

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

# Instrument Blank

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q396-IBLK	6Q28589.D	1	11/20/23	NG	n/a	n/a	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	102% 20-150%
	13C5-PFHxA	100% 20-150%
	13C4-PFHpA	100% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	98% 20-150%
	13C6-PFDA	95% 20-150%
	13C7-PFUnDA	91% 20-150%
	13C2-PFDoDA	96% 20-150%
	13C2-PFTeDA	111% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	98% 20-150%
	13C8-PFOS	100% 20-150%
	13C8-FOSA	105% 20-150%
	d3-MeFOSA	98% 20-150%
	d5-EtFOSA	101% 20-150%
	d3-MeFOSAA	84% 20-150%
	d5-EtFOSAA	92% 20-150%
	d7-MeFOSE	125% 20-150%
	d9-EtFOSE	125% 20-150%
	13C2-4:2FTS	103% 20-180%
	13C2-6:2FTS	88% 20-180%
	13C2-8:2FTS	81% 20-180%
	13C3-HFPO-DA	105% 20-150%

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**Instrument Blank**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q396-IBLK	6Q28684.D	1	11/21/23	NG	n/a	n/a	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

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

# Instrument Blank

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q396-IBLK	6Q28684.D	1	11/21/23	NG	n/a	n/a	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 20-150%
	13C5-PFPeA	102% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	100% 20-150%
	13C8-PFOA	101% 20-150%
	13C9-PFNA	104% 20-150%
	13C6-PFDA	103% 20-150%
	13C7-PFUnDA	94% 20-150%
	13C2-PFDoDA	103% 20-150%
	13C2-PFTeDA	105% 20-150%
	13C3-PFBS	99% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	103% 20-150%
	13C8-FOSA	104% 20-150%
	d3-MeFOSA	95% 20-150%
	d5-EtFOSA	103% 20-150%
	d3-MeFOSAA	105% 20-150%
	d5-EtFOSAA	107% 20-150%
	d7-MeFOSE	100% 20-150%
	d9-EtFOSE	96% 20-150%
	13C2-4:2FTS	116% 20-180%
	13C2-6:2FTS	107% 20-180%
	13C2-8:2FTS	103% 20-180%
	13C3-HFPO-DA	106% 20-150%

6.1.2  
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## Method Blank Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-MB	6Q28594.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

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

# Method Blank Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-MB	6Q28594.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	118% 20-150%
	13C5-PFPeA	112% 20-150%
	13C5-PFHxA	112% 20-150%
	13C4-PFHpA	117% 20-150%
	13C8-PFOA	110% 20-150%
	13C9-PFNA	112% 20-150%
	13C6-PFDA	126% 20-150%
	13C7-PFUnDA	118% 20-150%
	13C2-PFDoDA	118% 20-150%
	13C2-PFTeDA	117% 20-150%
	13C3-PFBS	106% 20-150%
	13C3-PFHxS	107% 20-150%
	13C8-PFOS	114% 20-150%
	13C8-FOSA	67% 20-150%
	d3-MeFOSA	65% 20-150%
	d5-EtFOSA	81% 20-150%
	d3-MeFOSAA	112% 20-150%
	d5-EtFOSAA	106% 20-150%
	d7-MeFOSE	71% 20-150%
	d9-EtFOSE	86% 20-150%
	13C2-4:2FTS	112% 20-180%
	13C2-6:2FTS	118% 20-180%
	13C2-8:2FTS	115% 20-180%
	13C3-HFPO-DA	118% 20-150%

6.1.3  
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## Continuing Calibration Blank

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q396-ICCB	6Q28680.D	1	11/21/23	NG	n/a	n/a	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q396-IBLK

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

# Continuing Calibration Blank

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q396-ICCB	6Q28680.D	1	11/21/23	NG	n/a	n/a	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q396-IBLK

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	103% 20-150%
	13C5-PFPeA	99% 20-150%
	13C5-PFHxA	103% 20-150%
	13C4-PFHpA	104% 20-150%
	13C8-PFOA	99% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	100% 20-150%
	13C7-PFUnDA	96% 20-150%
	13C2-PFDoDA	95% 20-150%
	13C2-PFTeDA	103% 20-150%
	13C3-PFBS	97% 20-150%
	13C3-PFHxS	103% 20-150%
	13C8-PFOS	97% 20-150%
	13C8-FOSA	100% 20-150%
	d3-MeFOSA	92% 20-150%
	d5-EtFOSA	94% 20-150%
	d3-MeFOSAA	99% 20-150%
	d5-EtFOSAA	104% 20-150%
	d7-MeFOSE	97% 20-150%
	d9-EtFOSE	93% 20-150%
	13C2-4:2FTS	121% 20-180%
	13C2-6:2FTS	120% 20-180%
	13C2-8:2FTS	109% 20-180%
	13C3-HFPO-DA	103% 20-150%

## Continuing Calibration Blank

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q396-ICCB	6Q28695.D	1	11/21/23	NG	n/a	n/a	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q396-IBLK

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

# Continuing Calibration Blank

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q396-ICCB	6Q28695.D	1	11/21/23	NG	n/a	n/a	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q396-IBLK

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	102% 20-150%
	13C5-PFPeA	97% 20-150%
	13C5-PFHxA	101% 20-150%
	13C4-PFHpA	103% 20-150%
	13C8-PFOA	98% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	98% 20-150%
	13C7-PFUnDA	95% 20-150%
	13C2-PFDoDA	96% 20-150%
	13C2-PFTeDA	102% 20-150%
	13C3-PFBS	93% 20-150%
	13C3-PFHxS	97% 20-150%
	13C8-PFOS	87% 20-150%
	13C8-FOSA	96% 20-150%
	d3-MeFOSA	91% 20-150%
	d5-EtFOSA	95% 20-150%
	d3-MeFOSAA	97% 20-150%
	d5-EtFOSAA	104% 20-150%
	d7-MeFOSE	90% 20-150%
	d9-EtFOSE	88% 20-150%
	13C2-4:2FTS	116% 20-180%
	13C2-6:2FTS	112% 20-180%
	13C2-8:2FTS	114% 20-180%
	13C3-HFPO-DA	101% 20-150%



**Blank Spike Summary**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-LLBS	6Q28593.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0334	111	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0170	113	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0079	105	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0077	103	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0084	112	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0081	108	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0078	104	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0085	113	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0087	116	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0073	97	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0088	117	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0071	107	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0081	115	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0082	120	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0082	115	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0079	114	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0073	101	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0073	101	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0073	100	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0323	115	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0329	115	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0366	127	40-150
754-91-6	PFOSA	0.0075	0.0095	127	40-150
31506-32-8	MeFOSA	0.015	0.0176	117	40-150
4151-50-2	EtFOSA	0.015	0.0171	114	40-150
2355-31-9	MeFOSAA	0.0075	0.0092	123	40-150
2991-50-6	EtFOSAA	0.0075	0.0083	111	40-150
24448-09-7	MeFOSE	0.0375	0.0410	109	40-150
1691-99-2	EtFOSE	0.0375	0.0406	108	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0170	113	40-150
919005-14-4	ADONA	0.0142	0.0151	107	40-150
377-73-1	PFMPA	0.015	0.0181	121	40-150
863090-89-5	PFMBA	0.015	0.0173	115	40-150
151772-58-6	NFDHA	0.015	0.0156	104	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0135	96	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0117	83	40-150

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-LLBS	6Q28593.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0150	112	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0299	80	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.192	102	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.206	110	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	111%	20-150%
	13C5-PFPeA	110%	20-150%
	13C5-PFHxA	113%	20-150%
	13C4-PFHpA	116%	20-150%
	13C8-PFOA	107%	20-150%
	13C9-PFNA	110%	20-150%
	13C6-PFDA	103%	20-150%
	13C7-PFUnDA	88%	20-150%
	13C2-PFDoDA	90%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	100%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	99%	20-150%
	13C8-FOSA	71%	20-150%
	d3-MeFOSA	71%	20-150%
	d5-EtFOSA	78%	20-150%
	d3-MeFOSAA	91%	20-150%
	d5-EtFOSAA	92%	20-150%
	d7-MeFOSE	72%	20-150%
	d9-EtFOSE	86%	20-150%
	13C2-4:2FTS	115%	20-180%
	13C2-6:2FTS	105%	20-180%
	13C2-8:2FTS	95%	20-180%
	13C3-HFPO-DA	115%	20-150%

\* = Outside of Control Limits.

**Blank Spike Summary**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-BS	6Q28592.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0942	94	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0503	101	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0228	91	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0233	93	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0248	99	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0243	97	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0239	96	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0261	104	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0279	112	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0275	110	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0229	92	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0234	106	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0220	94	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0233	102	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0259	109	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0244	105	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0249	104	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0248	103	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0229	94	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0885	94	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0884	93	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.100	104	40-150
754-91-6	PFOSA	0.025	0.0250	100	40-150
31506-32-8	MeFOSA	0.05	0.0540	108	40-150
4151-50-2	EtFOSA	0.05	0.0473	95	40-150
2355-31-9	MeFOSAA	0.025	0.0264	106	40-150
2991-50-6	EtFOSAA	0.025	0.0239	96	40-150
24448-09-7	MeFOSE	0.125	0.112	90	40-150
1691-99-2	EtFOSE	0.125	0.113	90	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0479	96	40-150
919005-14-4	ADONA	0.0473	0.0446	94	40-150
377-73-1	PFMPA	0.05	0.0298	60	40-150
863090-89-5	PFMBA	0.05	0.0517	103	40-150
151772-58-6	NFDHA	0.05	0.0422	84	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0467	100	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0415	88	40-150

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-BS	6Q28592.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0445	100	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.164	131	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.531	85	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.536	86	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	36%	20-150%
	13C5-PFPeA	108%	20-150%
	13C5-PFHxA	117%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	103%	20-150%
	13C9-PFNA	104%	20-150%
	13C6-PFDA	109%	20-150%
	13C7-PFUnDA	103%	20-150%
	13C2-PFDoDA	100%	20-150%
	13C2-PFTeDA	117%	20-150%
	13C3-PFBS	101%	20-150%
	13C3-PFHxS	106%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	78%	20-150%
	d3-MeFOSA	76%	20-150%
	d5-EtFOSA	83%	20-150%
	d3-MeFOSAA	93%	20-150%
	d5-EtFOSAA	100%	20-150%
	d7-MeFOSE	83%	20-150%
	d9-EtFOSE	94%	20-150%
	13C2-4:2FTS	128%	20-180%
	13C2-6:2FTS	116%	20-180%
	13C2-8:2FTS	101%	20-180%
	13C3-HFPO-DA	119%	20-150%

\* = Outside of Control Limits.

## Matrix Spike Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-MS	6Q28598.D	1	11/20/23	NG	11/17/23	OP162	S6Q396
FC11200-1	6Q28597.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

CAS No.	Compound	FC11200-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0536		0.0926	0.149	103	40-150
2706-90-3	Perfluoropentanoic acid	0.0636		0.0463	0.114	109	40-150
307-24-4	Perfluorohexanoic acid	0.0036	J	0.0231	0.0281	106	40-150
375-85-9	Perfluoroheptanoic acid	0.0038	U	0.0231	0.0221	95	40-150
335-67-1	Perfluorooctanoic acid	0.0038	U	0.0231	0.0251	108	40-150
375-95-1	Perfluorononanoic acid	0.0038	U	0.0231	0.0255	110	40-150
335-76-2	Perfluorodecanoic acid	0.0038	U	0.0231	0.0246	106	40-150
2058-94-8	Perfluoroundecanoic acid	0.0038	U	0.0231	0.0262	113	40-150
307-55-1	Perfluorododecanoic acid	0.0038	U	0.0231	0.0279	121	40-150
72629-94-8	Perfluorotridecanoic acid	0.0038	U	0.0231	0.0261	113	40-150
376-06-7	Perfluorotetradecanoic acid	0.0038	U	0.0231	0.0236	102	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0038	U	0.0205	0.0209	102	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0047	U	0.0218	0.0236	108	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0038	U	0.0212	0.0220	104	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0038	U	0.0221	0.0247	112	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0038	U	0.0215	0.0224	104	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0038	U	0.0223	0.0224	101	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0038	U	0.0223	0.0200	90	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0047	U	0.0225	0.0202	90	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.019	U	0.0868	0.0937	108	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019	U	0.088	0.0877	100	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019	U	0.0889	0.0918	103	40-150
754-91-6	PFOSA	0.0038	U	0.0231	0.0257	111	40-150
31506-32-8	MeFOSA	0.0075	U	0.0463	0.0489	106	40-150
4151-50-2	EtFOSA	0.0075	U	0.0463	0.0503	109	40-150
2355-31-9	MeFOSAA	0.0047	U	0.0231	0.0249	108	40-150
2991-50-6	EtFOSAA	0.0047	U	0.0231	0.0263	114	40-150
24448-09-7	MeFOSE	0.038	U	0.116	0.115	99	40-150
1691-99-2	EtFOSE	0.038	U	0.116	0.118	102	40-150
13252-13-6	HFPO-DA (GenX)	0.0038	U	0.0463	0.0446	96	40-150
919005-14-4	ADONA	0.0075	U	0.0438	0.0414	95	40-150
377-73-1	PFMPA	0.0075	U	0.0463	0.0509	110	40-150
863090-89-5	PFMBA	0.0075	U	0.0463	0.0502	108	40-150
151772-58-6	NFDHA	0.0075	U	0.0463	0.0491	106	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0075	U	0.0433	0.0365	84	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0075	U	0.0438	0.0326	75	40-150

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-MS	6Q28598.D	1	11/20/23	NG	11/17/23	OP162	S6Q396
FC11200-1	6Q28597.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

CAS No.	Compound	FC11200-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0075 U	0.0412	0.0446	108	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	0.116	0.0945	82	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.094 U	0.579	0.548	95	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.094 U	0.579	0.574	99	40-150

CAS No.	ID Standard Recoveries	MS	FC11200-1	Limits
	13C4-PFBA	96%	95%	20-150%
	13C5-PFPeA	100%	93%	20-150%
	13C5-PFHxA	101%	93%	20-150%
	13C4-PFHpA	106%	95%	20-150%
	13C8-PFOA	97%	91%	20-150%
	13C9-PFNA	95%	94%	20-150%
	13C6-PFDA	89%	87%	20-150%
	13C7-PFUnDA	76%	76%	20-150%
	13C2-PFDoDA	74%	74%	20-150%
	13C2-PFTeDA	77%	74%	20-150%
	13C3-PFBS	103%	94%	20-150%
	13C3-PFHxS	105%	96%	20-150%
	13C8-PFOS	89%	80%	20-150%
	13C8-FOSA	66%	63%	20-150%
	d3-MeFOSA	67%	64%	20-150%
	d5-EtFOSA	72%	67%	20-150%
	d3-MeFOSAA	83%	84%	20-150%
	d5-EtFOSAA	81%	79%	20-150%
	d7-MeFOSE	66%	64%	20-150%
	d9-EtFOSE	74%	71%	20-150%
	13C2-4:2FTS	112%	114%	20-180%
	13C2-6:2FTS	115%	104%	20-180%
	13C2-8:2FTS	102%	90%	20-180%
	13C3-HFPO-DA	109%	99%	20-150%

\* = Outside of Control Limits.

**Duplicate Summary**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-DUP	6Q28601.D	1	11/20/23	NG	11/17/23	OP162	S6Q396
FC11200-3	6Q28600.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

CAS No.	Compound	FC11200-3 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.0505		0.0490		3	30
2706-90-3	Perfluoropentanoic acid	0.124		0.119		4	30
307-24-4	Perfluorohexanoic acid	0.186		0.174		7	30
375-85-9	Perfluoroheptanoic acid	0.0372		0.0346		7	30
335-67-1	Perfluorooctanoic acid	0.0828		0.0832		0	30
375-95-1	Perfluorononanoic acid	0.00095 J		0.00089 J		7	30
335-76-2	Perfluorodecanoic acid	0.0037 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0037 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0037 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0037 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0037 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.101		0.0981		3	30
2706-91-4	Perfluoropentanesulfonic acid	0.137		0.143		4	30
355-46-4	Perfluorohexanesulfonic acid	0.538 E		0.578 E		7	30
375-92-8	Perfluoroheptanesulfonic acid	0.0118		0.0114		3	30
1763-23-1	Perfluorooctanesulfonic acid	0.140		0.114		20	30
68259-12-1	Perfluorononanesulfonic acid	0.0037 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0037 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0046 U		ND		nc	30
757124-72-44:2	Fluorotelomer sulfonate	0.019 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
754-91-6	PFOSA	0.0037 U		ND		nc	30
31506-32-8	MeFOSA	0.0074 U		ND		nc	30
4151-50-2	EtFOSA	0.0074 U		ND		nc	30
2355-31-9	MeFOSAA	0.0046 U		ND		nc	30
2991-50-6	EtFOSAA	0.0046 U		ND		nc	30
24448-09-7	MeFOSE	0.037 U		ND		nc	30
1691-99-2	EtFOSE	0.037 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0037 U		ND		nc	30
919005-14-4	ADONA	0.0074 U		ND		nc	30
377-73-1	PFMPA	0.0074 U		ND		nc	30
863090-89-5	PFMBA	0.0074 U		ND		nc	30
151772-58-6	NFDHA	0.0074 U		ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0074 U		ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0074 U		ND		nc	30

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP162-DUP	6Q28601.D	1	11/20/23	NG	11/17/23	OP162	S6Q396
FC11200-3	6Q28600.D	1	11/20/23	NG	11/17/23	OP162	S6Q396

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11222-1, FC11222-2

CAS No.	Compound	FC11200-3 ug/l	DUP Q ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0074 U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.093 U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.093 U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC11200-3	Limits
	13C4-PFBA	100%	99%	20-150%
	13C5-PFPeA	101%	102%	20-150%
	13C5-PFHxA	104%	100%	20-150%
	13C4-PFHpA	101%	102%	20-150%
	13C8-PFOA	93%	99%	20-150%
	13C9-PFNA	97%	94%	20-150%
	13C6-PFDA	89%	78%	20-150%
	13C7-PFUnDA	76%	76%	20-150%
	13C2-PFDoDA	75%	68%	20-150%
	13C2-PFTeDA	76%	76%	20-150%
	13C3-PFBS	100%	95%	20-150%
	13C3-PFHxS	95%	96%	20-150%
	13C8-PFOS	95%	81%	20-150%
	13C8-FOSA	66%	72%	20-150%
	d3-MeFOSA	62%	66%	20-150%
	d5-EtFOSA	69%	78%	20-150%
	d3-MeFOSAA	89%	81%	20-150%
	d5-EtFOSAA	86%	76%	20-150%
	d7-MeFOSE	66%	66%	20-150%
	d9-EtFOSE	74%	76%	20-150%
	13C2-4:2FTS	112%	115%	20-180%
	13C2-6:2FTS	111%	112%	20-180%
	13C2-8:2FTS	91%	90%	20-180%
	13C3-HFPO-DA	106%	106%	20-150%

\* = Outside of Control Limits.



# Injection Standard Area Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q396-CC391	Injection Date:	11/20/23
Lab File ID:	6Q28590.D	Injection Time:	11:24
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 <sup>b</sup>	51036	2.86	43578	5.49	79264	7.06	26173	7.57	28281	8.05
Check Std <sup>c</sup>	56524	2.89	45992	5.48	86934	7.06	25516	7.58	29219	8.05
Upper Limit <sup>d</sup>	102072	3.29	87156	5.88	158528	7.46	52346	7.98	56562	8.45
Lower Limit <sup>e</sup>	20414	2.49	17431	5.08	31706	6.66	10469	7.18	11312	7.65

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF <sup>a</sup>
OP162-BS	48978	2.93	37630	5.49	74208	7.06	21643	7.59	25349	8.05	1
OP162-LLBS	50806	2.90	40264	5.48	74879	7.06	25659	7.58	27835	8.05	1
OP162-MB	41844	2.89	34526	5.48	64736	7.06	21437	7.58	20222	8.05	1
FC11222-1	42618	2.90	33725	5.48	63527	7.06	20964	7.58	23730	8.05	1
FC11222-2	48436	2.90	38244	5.48	75519	7.06	25570	7.58	25441	8.05	1
FC11200-1	48689	2.90	40942	5.48	73938	7.06	24494	7.58	26909	8.05	1
OP162-MS	48701	2.90	39090	5.48	72566	7.06	24356	7.58	25714	8.05	1
ZZZZZZ	49031	2.90	38372	5.48	73693	7.06	24708	7.58	27360	8.05	1
FC11200-3	49177	2.90	39324	5.48	72187	7.06	24170	7.58	26362	8.05	1
OP162-DUP	48273	2.90	40059	5.48	73308	7.06	24665	7.58	26502	8.05	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: S6Q391-ICC391 6Q28202.D 11/12/23 14:03. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -60 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -60% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.1  
6

# Injection Standard Area Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q396-CC391	Injection Date:	11/20/23
Lab File ID:	6Q28590.D	Injection Time:	11:24
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal <sup>b</sup>	7891	7.15	11369	8.19
Check Std <sup>c</sup>	8099	7.15	12384	8.19
Upper Limit <sup>d</sup>	15782	7.55	22738	8.59
Lower Limit <sup>e</sup>	3156	6.75	4548	7.79

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF <sup>a</sup>
OP162-BS	7134	7.16	10734	8.19	1
OP162-LLBS	7431	7.15	11028	8.19	1
OP162-MB	6170	7.15	8771	8.19	1
FC11222-1	6080	7.15	9083	8.19	1
FC11222-2	6910	7.15	10304	8.19	1
FC11200-1	6943	7.15	10778	8.20	1
OP162-MS	6593	7.15	10461	8.19	1
<b>ZZZZZZ</b>	7251	7.15	11262	8.19	1
FC11200-3	7073	7.15	10686	8.19	1
OP162-DUP	6892	7.15	10084	8.20	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q391-ICC391 6Q28202.D 11/12/23 14:03. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -60 to + 100% of initial cal area.
- (d) Upper Limit = + 100% of initial standard area; Retention time + 0.4 minutes of check standard.
- (e) Lower Limit = -60% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.1  
6

**TDCA Retention Time Check**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q391-RT	Injection Date:	11/12/23
Lab File ID:	6Q28196.D	Injection Time:	12:37
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.186	--	--
TDCA	6.785	1.401	1.000
TCDCA	6.649	1.537	1.000
TUDCA	5.821	2.365	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
S6Q391-IC391	6Q28198.D	11/12/23	13:05	00:28	Mass Calibration Verification
S6Q391-IC391	6Q28199.D	11/12/23	13:20	00:43	Initial cal 1
S6Q391-IC391	6Q28200.D	11/12/23	13:34	00:57	Initial cal 2
S6Q391-IC391	6Q28201.D	11/12/23	13:48	01:11	Initial cal 3
S6Q391-ICC391	6Q28202.D	11/12/23	14:03	01:26	Initial cal 4
S6Q391-IC391	6Q28203.D	11/12/23	14:17	01:40	Initial cal 5
S6Q391-IC391	6Q28204.D	11/12/23	14:31	01:54	Initial cal 6
S6Q391-IC391	6Q28205.D	11/12/23	14:46	02:09	Initial cal 7
S6Q391-IC391	6Q28206.D	11/12/23	15:00	02:23	Initial cal 8
S6Q391-IBLK	6Q28207.D	11/12/23	15:14	02:37	Instrument Blank
S6Q391-IBLK	6Q28207.D	11/12/23	15:14	02:37	Instrument Blank
S6Q391-ICV391	6Q28208.D	11/12/23	15:28	02:51	Initial cal verification 4
S6Q391-ICV391	6Q28209.D	11/12/23	15:43	03:06	Initial cal verification 20
S6Q391-CC391	6Q28210.D	11/12/23	15:57	03:20	Continuing cal 4
S6Q391-CC391	6Q28211.D	11/12/23	16:11	03:34	Continuing cal 1.0LL
OP99894-BS	6Q28212.D	11/12/23	16:26	03:49	Blank Spike
OP99894-LLBS	6Q28213.D	11/12/23	16:40	04:03	Blank Spike
OP99894-MB	6Q28214.D	11/12/23	16:54	04:17	Method Blank
ZZZZZZ	6Q28215.D	11/12/23	17:09	04:32	(unrelated sample)
ZZZZZZ	6Q28216.D	11/12/23	17:23	04:46	(unrelated sample)
ZZZZZZ	6Q28217.D	11/12/23	17:37	05:00	(unrelated sample)
ZZZZZZ	6Q28218.D	11/12/23	17:52	05:15	(unrelated sample)
ZZZZZZ	6Q28219.D	11/12/23	18:06	05:29	(unrelated sample)
ZZZZZZ	6Q28220.D	11/12/23	18:20	05:43	(unrelated sample)
S6Q391-CC391	6Q28221.D	11/12/23	18:34	05:57	Continuing cal 4
S6Q391-ICCB	6Q28222.D	11/12/23	18:49	06:12	Continuing Calibration Blank
S6Q391-ICCB	6Q28222.D	11/12/23	18:49	06:12	Continuing Calibration Blank
ZZZZZZ	6Q28223.D	11/12/23	19:03	06:26	(unrelated sample)
ZZZZZZ	6Q28224.D	11/12/23	19:17	06:40	(unrelated sample)
ZZZZZZ	6Q28225.D	11/12/23	19:32	06:55	(unrelated sample)
ZZZZZZ	6Q28226.D	11/12/23	19:46	07:09	(unrelated sample)
ZZZZZZ	6Q28227.D	11/12/23	20:00	07:23	(unrelated sample)
ZZZZZZ	6Q28228.D	11/12/23	20:15	07:38	(unrelated sample)
ZZZZZZ	6Q28229.D	11/12/23	20:29	07:52	(unrelated sample)

# TDCA Retention Time Check

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q391-RT	Injection Date:	11/12/23
Lab File ID:	6Q28196.D	Injection Time:	12:37
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q28230.D	11/12/23	20:43	08:06	(unrelated sample)
ZZZZZZ	6Q28231.D	11/12/23	20:58	08:21	(unrelated sample)
ZZZZZZ	6Q28232.D	11/12/23	21:12	08:35	(unrelated sample)
S6Q391-CC391	6Q28233.D	11/12/23	21:26	08:49	Continuing cal 4
S6Q391-ICCB	6Q28234.D	11/12/23	21:41	09:04	Continuing Calibration Blank
S6Q391-ICCB	6Q28234.D	11/12/23	21:41	09:04	Continuing Calibration Blank
ZZZZZZ	6Q28235.D	11/12/23	21:55	09:18	(unrelated sample)
ZZZZZZ	6Q28236.D	11/12/23	22:09	09:32	(unrelated sample)
FC10636-40	6Q28237.D	11/12/23	22:23	09:46	(used for QC only; not part of job FC11222)
OP99894-MS	6Q28238.D	11/12/23	22:38	10:01	Matrix Spike
OP99894-MSD	6Q28239.D	11/12/23	22:52	10:15	Matrix Spike Duplicate
ZZZZZZ	6Q28240.D	11/12/23	23:06	10:29	(unrelated sample)
ZZZZZZ	6Q28241.D	11/12/23	23:21	10:44	(unrelated sample)
S6Q391-CC391	6Q28242.D	11/12/23	23:35	10:58	Continuing cal 4
S6Q391-ICCB	6Q28243.D	11/12/23	23:49	11:12	Continuing Calibration Blank
S6Q391-ICCB	6Q28243.D	11/12/23	23:49	11:12	Continuing Calibration Blank
OP99888-BS	6Q28244.D	11/13/23	00:04	11:27	Blank Spike
OP99888-LLBS	6Q28245.D	11/13/23	00:18	11:41	Blank Spike
OP99888-MB	6Q28246.D	11/13/23	00:32	11:55	Method Blank
ZZZZZZ	6Q28247.D	11/13/23	00:47	12:10	(unrelated sample)
FC10658-2	6Q28248.D	11/13/23	01:01	12:24	(used for QC only; not part of job FC11222)
OP99888-MS	6Q28249.D	11/13/23	01:15	12:38	Matrix Spike
FC10658-3	6Q28250.D	11/13/23	01:30	12:53	(used for QC only; not part of job FC11222)
OP99888-DUP	6Q28251.D	11/13/23	01:44	13:07	Duplicate
ZZZZZZ	6Q28252.D	11/13/23	01:58	13:21	(unrelated sample)
ZZZZZZ	6Q28253.D	11/13/23	02:12	13:35	(unrelated sample)
S6Q391-CC391	6Q28254.D	11/13/23	02:27	13:50	Continuing cal 4
S6Q391-ICCB	6Q28255.D	11/13/23	02:41	14:04	Continuing Calibration Blank
ZZZZZZ	6Q28256.D	11/13/23	02:55	14:18	(unrelated sample)
ZZZZZZ	6Q28257.D	11/13/23	03:10	14:33	(unrelated sample)
ZZZZZZ	6Q28258.D	11/13/23	03:24	14:47	(unrelated sample)
ZZZZZZ	6Q28259.D	11/13/23	03:38	15:01	(unrelated sample)
ZZZZZZ	6Q28260.D	11/13/23	03:53	15:16	(unrelated sample)
ZZZZZZ	6Q28261.D	11/13/23	04:07	15:30	(unrelated sample)
ZZZZZZ	6Q28262.D	11/13/23	04:21	15:44	(unrelated sample)
ZZZZZZ	6Q28263.D	11/13/23	04:36	15:59	(unrelated sample)
ZZZZZZ	6Q28264.D	11/13/23	04:50	16:13	(unrelated sample)
ZZZZZZ	6Q28265.D	11/13/23	05:04	16:27	(unrelated sample)
S6Q391-CC391	6Q28266.D	11/13/23	05:18	16:41	Continuing cal 4
S6Q391-ICCB	6Q28267.D	11/13/23	05:33	16:56	Continuing Calibration Blank
ZZZZZZ	6Q28268.D	11/13/23	05:47	17:10	(unrelated sample)
ZZZZZZ	6Q28269.D	11/13/23	06:01	17:24	(unrelated sample)
ZZZZZZ	6Q28270.D	11/13/23	06:16	17:39	(unrelated sample)
S6Q391-ECC391	6Q28271.D	11/13/23	06:30	17:53	Ending cal 4

6.6.1

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# TDCA Retention Time Check

**Job Number:** FC11222  
**Account:** AECOMCOD AECOM, INC.  
**Project:** N6274223F0104 RH Fire Suppression System

<b>Sample:</b> S6Q391-RT	<b>Injection Date:</b> 11/12/23
<b>Lab File ID:</b> 6Q28196.D	<b>Injection Time:</b> 12:37
<b>Instrument ID:</b> GCMS6Q	

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q391-ICCB	6Q28272.D	11/13/23	06:44	18:07	Continuing Calibration Blank

6.6.1

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## TDCA Retention Time Check

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q396-RT	Injection Date:	11/20/23
Lab File ID:	6Q28586.D	Injection Time:	10:23
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.186	--	--
TDCA	6.797	1.389	1.000
TCDCA	6.649	1.537	1.000
TUDCA	5.809	2.377	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
S6Q396-IBLK	6Q28589.D	11/20/23	11:06	00:43	Instrument Blank
S6Q396-IBLK	6Q28589.D	11/20/23	11:06	00:43	Instrument Blank
S6Q396-CC391	6Q28590.D	11/20/23	11:24	01:01	Continuing cal 4
S6Q396-CC391	6Q28591.D	11/20/23	11:38	01:15	Continuing cal 1.0LL
OP162-BS	6Q28592.D	11/20/23	12:02	01:39	Blank Spike
OP162-LLBS	6Q28593.D	11/20/23	12:16	01:53	Blank Spike
OP162-MB	6Q28594.D	11/20/23	12:30	02:07	Method Blank
FC11222-1	6Q28595.D	11/20/23	12:45	02:22	AF-RHMW03-WGN01LF-2311
FC11222-2	6Q28596.D	11/20/23	12:59	02:36	AF-RHMW10-WGN01LF-2311
FC11200-1	6Q28597.D	11/20/23	13:13	02:50	(used for QC only; not part of job FC11222)
OP162-MS	6Q28598.D	11/20/23	13:28	03:05	Matrix Spike
ZZZZZZ	6Q28599.D	11/20/23	13:42	03:19	(unrelated sample)
FC11200-3	6Q28600.D	11/20/23	13:56	03:33	(used for QC only; not part of job FC11222)
OP162-DUP	6Q28601.D	11/20/23	14:11	03:48	Duplicate
S6Q396-CC391	6Q28602.D	11/20/23	14:25	04:02	Continuing cal 4
S6Q396-ICCB	6Q28603.D	11/20/23	14:39	04:16	Continuing Calibration Blank
ZZZZZZ	6Q28604.D	11/20/23	14:54	04:31	(unrelated sample)
ZZZZZZ	6Q28605.D	11/20/23	15:08	04:45	(unrelated sample)
ZZZZZZ	6Q28606.D	11/20/23	15:22	04:59	(unrelated sample)
ZZZZZZ	6Q28607.D	11/20/23	16:08	05:45	(unrelated sample)
ZZZZZZ	6Q28608.D	11/20/23	16:22	05:59	(unrelated sample)
ZZZZZZ	6Q28609.D	11/20/23	16:36	06:13	(unrelated sample)
ZZZZZZ	6Q28610.D	11/20/23	16:51	06:28	(unrelated sample)
ZZZZZZ	6Q28611.D	11/20/23	17:05	06:42	(unrelated sample)
ZZZZZZ	6Q28612.D	11/20/23	17:19	06:56	(unrelated sample)
S6Q396-CC391	6Q28613.D	11/20/23	17:34	07:11	Continuing cal 4
S6Q396-ICCB	6Q28614.D	11/20/23	17:48	07:25	Continuing Calibration Blank
OP82-BS	6Q28615.D	11/20/23	18:02	07:39	Blank Spike
OP82-LLBS	6Q28616.D	11/20/23	18:17	07:54	Blank Spike
OP82-MB	6Q28617.D	11/20/23	18:31	08:08	Method Blank
ZZZZZZ	6Q28618.D	11/20/23	18:45	08:22	(unrelated sample)
ZZZZZZ	6Q28619.D	11/20/23	18:59	08:36	(unrelated sample)
ZZZZZZ	6Q28620.D	11/20/23	19:14	08:51	(unrelated sample)
ZZZZZZ	6Q28621.D	11/20/23	19:28	09:05	(unrelated sample)

# TDCA Retention Time Check

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q396-RT	Injection Date:	11/20/23
Lab File ID:	6Q28586.D	Injection Time:	10:23
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q396-CC391	6Q28622.D	11/20/23	19:42	09:19	Continuing cal 4
S6Q396-ICCB	6Q28623.D	11/20/23	19:57	09:34	Continuing Calibration Blank
S6Q396-ICCB	6Q28623.D	11/20/23	19:57	09:34	Continuing Calibration Blank
OP85-BS	6Q28624.D	11/20/23	20:11	09:48	Blank Spike
OP85-LLBS	6Q28625.D	11/20/23	20:25	10:02	Blank Spike
OP85-MB	6Q28626.D	11/20/23	20:40	10:17	Method Blank
FC10683-1	6Q28627.D	11/20/23	20:54	10:31	(used for QC only; not part of job FC11222)
OP85-MS	6Q28628.D	11/20/23	21:08	10:45	Matrix Spike
OP85-MSD	6Q28629.D	11/20/23	21:23	11:00	Matrix Spike Duplicate
ZZZZZZ	6Q28630.D	11/20/23	21:37	11:14	(unrelated sample)
S6Q396-CC391	6Q28631.D	11/20/23	21:51	11:28	Continuing cal 4
S6Q396-ICCB	6Q28632.D	11/20/23	22:06	11:43	Continuing Calibration Blank
S6Q396-ICCB	6Q28632.D	11/20/23	22:06	11:43	Continuing Calibration Blank
OP4-BS	6Q28633.D	11/20/23	22:20	11:57	Blank Spike
OP4-LLBS	6Q28634.D	11/20/23	22:34	12:11	Blank Spike
OP4-MB	6Q28635.D	11/20/23	22:49	12:26	Method Blank
ZZZZZZ	6Q28636.D	11/20/23	23:03	12:40	(unrelated sample)
ZZZZZZ	6Q28637.D	11/20/23	23:17	12:54	(unrelated sample)
ZZZZZZ	6Q28638.D	11/20/23	23:31	13:08	(unrelated sample)
ZZZZZZ	6Q28639.D	11/20/23	23:46	13:23	(unrelated sample)
ZZZZZZ	6Q28640.D	11/21/23	00:00	13:37	(unrelated sample)
ZZZZZZ	6Q28641.D	11/21/23	00:14	13:51	(unrelated sample)
ZZZZZZ	6Q28642.D	11/21/23	00:29	14:06	(unrelated sample)
S6Q396-CC391	6Q28643.D	11/21/23	00:43	14:20	Continuing cal 4
S6Q396-ICCB	6Q28644.D	11/21/23	00:57	14:34	Continuing Calibration Blank
S6Q396-ICCB	6Q28644.D	11/21/23	00:57	14:34	Continuing Calibration Blank
ZZZZZZ	6Q28645.D	11/21/23	01:12	14:49	(unrelated sample)
FC10842-10	6Q28646.D	11/21/23	01:26	15:03	(used for QC only; not part of job FC11222)
OP4-MS	6Q28647.D	11/21/23	01:40	15:17	Matrix Spike
OP4-MSD	6Q28648.D	11/21/23	01:55	15:32	Matrix Spike Duplicate
ZZZZZZ	6Q28649.D	11/21/23	02:09	15:46	(unrelated sample)
ZZZZZZ	6Q28650.D	11/21/23	02:23	16:00	(unrelated sample)
ZZZZZZ	6Q28651.D	11/21/23	02:38	16:15	(unrelated sample)
ZZZZZZ	6Q28652.D	11/21/23	02:52	16:29	(unrelated sample)
ZZZZZZ	6Q28653.D	11/21/23	03:06	16:43	(unrelated sample)
ZZZZZZ	6Q28654.D	11/21/23	03:20	16:57	(unrelated sample)
S6Q396-CC391	6Q28655.D	11/21/23	03:35	17:12	Continuing cal 4
S6Q396-ICCB	6Q28656.D	11/21/23	03:49	17:26	Continuing Calibration Blank
S6Q396-ICCB	6Q28656.D	11/21/23	03:49	17:26	Continuing Calibration Blank
ZZZZZZ	6Q28657.D	11/21/23	04:03	17:40	(unrelated sample)
ZZZZZZ	6Q28658.D	11/21/23	04:18	17:55	(unrelated sample)
ZZZZZZ	6Q28659.D	11/21/23	04:32	18:09	(unrelated sample)
ZZZZZZ	6Q28660.D	11/21/23	04:46	18:23	(unrelated sample)
OP5-BS	6Q28661.D	11/21/23	05:01	18:38	Blank Spike

6.6.2

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# TDCA Retention Time Check

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q396-RT	Injection Date:	11/20/23
Lab File ID:	6Q28586.D	Injection Time:	10:23
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP5-LLBS	6Q28662.D	11/21/23	05:15	18:52	Blank Spike
OP5-MB	6Q28663.D	11/21/23	05:29	19:06	Method Blank
FC10842-21	6Q28664.D	11/21/23	05:44	19:21	(used for QC only; not part of job FC11222)
OP5-MS	6Q28665.D	11/21/23	05:58	19:35	Matrix Spike
OP5-MSD	6Q28666.D	11/21/23	06:12	19:49	Matrix Spike Duplicate
S6Q396-CC391	6Q28667.D	11/21/23	06:26	20:03	Continuing cal 4
S6Q396-ICCB	6Q28668.D	11/21/23	06:41	20:18	Continuing Calibration Blank
S6Q396-ICCB	6Q28668.D	11/21/23	06:41	20:18	Continuing Calibration Blank
ZZZZZZ	6Q28669.D	11/21/23	06:55	20:32	(unrelated sample)
ZZZZZZ	6Q28670.D	11/21/23	07:09	20:46	(unrelated sample)
ZZZZZZ	6Q28671.D	11/21/23	07:24	21:01	(unrelated sample)
ZZZZZZ	6Q28672.D	11/21/23	07:38	21:15	(unrelated sample)
ZZZZZZ	6Q28673.D	11/21/23	07:52	21:29	(unrelated sample)
ZZZZZZ	6Q28674.D	11/21/23	08:07	21:44	(unrelated sample)
ZZZZZZ	6Q28675.D	11/21/23	08:21	21:58	(unrelated sample)
ZZZZZZ	6Q28676.D	11/21/23	08:35	22:12	(unrelated sample)
ZZZZZZ	6Q28677.D	11/21/23	08:50	22:27	(unrelated sample)
ZZZZZZ	6Q28678.D	11/21/23	09:04	22:41	(unrelated sample)
S6Q396-CC391	6Q28679.D	11/21/23	09:18	22:55	Continuing cal 4
S6Q396-ICCB	6Q28680.D	11/21/23	09:33	23:10	Continuing Calibration Blank
S6Q396-ICCB	6Q28680.D	11/21/23	09:33	23:10	Continuing Calibration Blank

6.6.2

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**TDCA Retention Time Check**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q396-RT	Injection Date:	11/21/23
Lab File ID:	6Q28681.D	Injection Time:	09:47
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.186	--	--
TDCA	6.797	1.389	1.000
TCDCA	6.649	1.537	1.000
TUDCA	5.809	2.377	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
S6Q396-IBLK	6Q28684.D	11/21/23	10:30	00:43	Instrument Blank
S6Q396-IBLK	6Q28684.D	11/21/23	10:30	00:43	Instrument Blank
S6Q396-CC391	6Q28685.D	11/21/23	10:44	00:57	Continuing cal 1.0LL
ZZZZZZ	6Q28686.D	11/21/23	10:58	01:11	(unrelated sample)
ZZZZZZ	6Q28687.D	11/21/23	11:13	01:26	(unrelated sample)
ZZZZZZ	6Q28688.D	11/21/23	11:27	01:40	(unrelated sample)
ZZZZZZ	6Q28689.D	11/21/23	11:41	01:54	(unrelated sample)
ZZZZZZ	6Q28690.D	11/21/23	11:56	02:09	(unrelated sample)
ZZZZZZ	6Q28691.D	11/21/23	12:10	02:23	(unrelated sample)
ZZZZZZ	6Q28692.D	11/21/23	12:24	02:37	(unrelated sample)
ZZZZZZ	6Q28693.D	11/21/23	12:39	02:52	(unrelated sample)
S6Q396-ECC391	6Q28694.D	11/21/23	12:53	03:06	Ending cal 4
S6Q396-ICCB	6Q28695.D	11/21/23	13:07	03:20	Continuing Calibration Blank
S6Q396-ICCB	6Q28695.D	11/21/23	13:07	03:20	Continuing Calibration Blank

# Ion Ratio Summary

Job Number: FC11222  
Account: AECOMCOD AECOM, INC.  
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q396	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios	
		PFHpA	6:2FTS
S6Q391-ICC391	6Q28202.D	14.9	36
FC11222-1	6Q28595.D	9.5	37.6
FC11222-2	6Q28596.D		

# Isotope Dilution Standard Recovery Summary

Job Number: FC11222  
 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
FC11222-1	6Q28595.D	100	109	107	111	103	104	94	76
FC11222-2	6Q28596.D	109	113	113	115	99	106	108	102
OP162-BS	6Q28592.D	36	108	117	115	103	104	109	103
OP162-DUP	6Q28601.D	100	101	104	101	93	97	89	76
OP162-LLBS	6Q28593.D	111	110	113	116	107	110	103	88
OP162-MB	6Q28594.D	118	112	112	117	110	112	126	118
OP162-MS	6Q28598.D	96	100	101	106	97	95	89	76
S6Q396-IBLK	6Q28589.D	99	102	100	100	100	98	95	91
S6Q396-IBLK	6Q28684.D	101	102	102	100	101	104	103	94
S6Q396-ICCB	6Q28680.D	103	99	103	104	99	102	100	96
S6Q396-ICCB	6Q28695.D	102	97	101	103	98	102	98	95

<b>Isotope Dilution Standards</b>	<b>Recovery Limits</b>
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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%

6.8.1

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# Isotope Dilution Standard Recovery Summary

Job Number: FC11222  
 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
FC11222-1	6Q28595.D	77	76	102	110	92	75	72	77
FC11222-2	6Q28596.D	102	98	107	114	105	83	76	83
OP162-BS	6Q28592.D	100	117	101	106	98	78	76	83
OP162-DUP	6Q28601.D	75	76	100	95	95	66	62	69
OP162-LLBS	6Q28593.D	90	90	100	103	99	71	71	78
OP162-MB	6Q28594.D	118	117	106	107	114	67	65	81
OP162-MS	6Q28598.D	74	77	103	105	89	66	67	72
S6Q396-IBLK	6Q28589.D	96	111	103	98	100	105	98	101
S6Q396-IBLK	6Q28684.D	103	105	99	102	103	104	95	103
S6Q396-ICCB	6Q28680.D	95	103	97	103	97	100	92	94
S6Q396-ICCB	6Q28695.D	96	102	93	97	87	96	91	95

**Isotope Dilution Standards**

**Recovery Limits**

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

6.8.1

6

# Isotope Dilution Standard Recovery Summary

Job Number: FC11222  
 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
FC11222-1	6Q28595.D	91	86	76	83	112	104	96	109
FC11222-2	6Q28596.D	104	107	87	95	115	118	110	117
OP162-BS	6Q28592.D	93	100	83	94	128	116	101	119
OP162-DUP	6Q28601.D	89	86	66	74	112	111	91	106
OP162-LLBS	6Q28593.D	91	92	72	86	115	105	95	115
OP162-MB	6Q28594.D	112	106	71	86	112	118	115	118
OP162-MS	6Q28598.D	83	81	66	74	112	115	102	109
S6Q396-IBLK	6Q28589.D	84	92	125	125	103	88	81	105
S6Q396-IBLK	6Q28684.D	105	107	100	96	116	107	103	106
S6Q396-ICCB	6Q28680.D	99	104	97	93	121	120	109	103
S6Q396-ICCB	6Q28695.D	97	104	90	88	116	112	114	101

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

6.8.1

6

# Initial Calibration Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q391-ICC391  
 Lab FileID: 6Q28202.D

## Initial Calibration Report

Method Path	Method File	Batch Name	Last Calib Update	Calibration Files	Level Name	1	2	3	4	5	6	7	8	Avg RF	%RSD
D:\MassHunter\Methods	1633_111323_S6Q391.quantmethod.xml	D:\MassHunter\Data\111223_1633_S6Q391	11/13/2023 9:49:39 AM	D:\MassHunter\Data\111223_1633_S6Q391\QuantResults\S6Q391.batch.bin	1										
D:\MassHunter\Data\111223_1633_S6Q391	1633_S6Q391\6Q28199.d				2										
D:\MassHunter\Data\111223_1633_S6Q391	1633_S6Q391\6Q28200.d				3										
D:\MassHunter\Data\111223_1633_S6Q391	1633_S6Q391\6Q28201.d				4										
D:\MassHunter\Data\111223_1633_S6Q391	1633_S6Q391\6Q28202.d				5										
D:\MassHunter\Data\111223_1633_S6Q391	1633_S6Q391\6Q28203.d				6										
D:\MassHunter\Data\111223_1633_S6Q391	1633_S6Q391\6Q28204.d				7										
D:\MassHunter\Data\111223_1633_S6Q391	1633_S6Q391\6Q28205.d				8										
D:\MassHunter\Data\111223_1633_S6Q391	1633_S6Q391\6Q28206.d														
<b>Compound</b>	<b>Curve Fit</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>Avg RF</b>	<b>%RSD</b>				
I M4-PFBA	Avg RF	0.3165	0.3295	0.3243	0.3309	0.3430	0.3304	0.3279	2.542						
T PFBA	Avg RF	0.0557	0.0575	0.0568	0.0581	0.0609	0.0622	0.0578	4.356						
T 3:3FTCA															
I M5-PFPeA	Avg RF	0.6462	0.6700	0.6442	0.6556	0.6830	0.6776	0.6555	3.186						
T PFMPA	Avg RF	1.2595	1.3098	1.2520	1.2826	1.3239	1.2839	1.2684	3.610						
T PFPeA	Avg RF	0.8532	0.8910	0.8551	0.8810	0.9046	0.8798	0.8742	2.405						
T PFMB A															
I M5-PFHxA	Avg RF	0.1066	0.1143	0.1045	0.1100	0.1102	0.0998	0.1083	4.162						
T NFDHA	Avg RF	0.8883	0.9616	0.9304	0.9436	1.0133	0.9341	0.9352	6.089						
T PFHxA	Avg RF	1.1126	1.1880	1.1659	1.2034	1.2421	1.1198	1.1565	5.514						
T PFEEA	Avg RF	0.1576	0.1746	0.1691	0.1798	0.1814	0.1635	0.1710	4.908						
T 5:3FTCA	Avg RF	0.1096	0.1163	0.1079	0.1118	0.1111	0.0982	0.1083	5.087						
T 7:3FTCA															
I M4-PFHpA	Avg RF	1.2193	1.3487	1.2523	1.3010	1.2439	1.3579	1.2858	3.851						
T PFHpA															
I M8-PFOA	Avg RF	1.0343	1.0002	0.9711	1.0070	0.9824	0.9352	0.9901	2.916						
T PFOA															
I M9-PFNA	Avg RF	0.7443	0.8299	0.7867	0.7956	0.8357	0.7793	0.7781	5.988						
T PFNA															
I M6-PFDA	Avg RF	1.1246	1.2111	1.1815	1.1523	1.3092	1.1973	1.1616	8.481						
T PFDA															
I M7-PFUnDA	Avg RF	0.9560	1.0226	0.9276	0.9366	1.0140	1.0514	0.9723	5.176						
T PFUnDA															
I M2-PFDODA															



# Initial Calibration Summary

Job Number: FC11222  
 Account: AECOM AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q391-ICC391  
 Lab FileID: 6Q28202.D

## Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.8515	0.8679	0.9720	0.9521	0.9412	0.9578	0.9149	0.9697	0.9284	4.977
T PFTfDA	Avg RF	0.9040	0.8643	0.9927	0.9282	0.9028	0.9122	0.8835	0.8867	0.9093	4.278
I M2-PFTeDA	Avg RF	1.4745	1.5574	1.4799	1.5252	1.5969	1.5404	1.5969	1.4118	1.5229	4.225
I M8-FOSA	Avg RF	0.9288	0.9492	0.9377	0.9659	0.9609	0.9431	1.0416	0.9571	0.9605	3.645
I M3-PFBS	Avg RF	0.9826	1.0262	0.8825	0.9390	0.9214	0.9476	0.9893	0.9343	0.9529	4.709
I M3-PFHxS	Avg RF	1.2157	1.2675	1.2269	1.1822	1.1670	1.2512	1.2912	1.2973	1.2374	3.881
T PFHxS	Avg RF	1.2371	1.2113	1.1990	1.1641	1.1142	1.0928	1.1682	1.0920	1.1598	4.770
I M8-PFOS	Avg RF	0.9820	1.0582	1.0954	1.1248	1.0700	1.0383	1.0486	1.0847	1.0627	4.022
T PFHpS	Avg RF	1.1532	1.1539	1.1989	1.1477	0.8879	1.0921	1.1541	1.1126	1.1126	8.640
T PFOS	Avg RF	0.7499	0.8579	0.9482	0.9364	0.9464	0.8470	0.9216	0.8719	0.8849	7.682
T PFNS	Avg RF	0.5581	0.7053	0.6397	0.7022	0.6599	0.6123	0.6677	0.6592	0.6506	7.409
T PFDoDS	Avg RF	0.3825	0.4270	0.4345	0.4410	0.4141	0.3951	0.4310	0.4250	0.4188	4.858
I M2-4:2FTS	Avg RF	8.2377	8.2925	7.6677	8.3532	7.9654	8.6634	8.0170	7.9473	8.1430	3.765
T 4:2FTS	Avg RF	5.4404	5.6070	5.2772	5.6053	5.6426	5.6701	5.3397	4.9746	5.4446	4.403
I M2-8:2FTS	Avg RF	3.7783	4.1569	3.4557	4.2532	4.0726	4.0372	3.4735	3.0764	3.7880	10.983
T 8:2FTS	Avg RF	0.8782	0.9400	0.7841	0.9730	0.9948	0.9946	1.0331	0.9443	0.9428	8.393
I M3-MeFOSAA	Avg RF	1.0196	0.9326	1.0031	1.0169	0.9371	1.0184	1.0234	1.0533	1.0005	4.292
T HFPO-DA	Avg RF	16.53	16.49	17.29	18.90	17.45	17.78	17.64	17.53	17.45	4.360
T ADONA	Avg RF	6.0385	5.9063	6.0190	6.2706	5.9811	6.2955	5.8315	5.6557	5.9988	3.555
T 9Cl-PF3ONS	Avg RF	4.0717	4.1165	4.3922	4.5989	4.2171	4.5868	4.4137	4.4546	4.3564	4.625
T 11Cl-PF3OUds	Avg RF	0.8687	0.7865	0.8009	0.7766	0.7953	0.7869	0.8478	0.8032	0.8083	4.019
I M5-EFOSAA	Avg RF	1.0033	1.0144	1.0191	0.9907	0.9975	0.9831	1.1012	1.0516	1.0201	3.820
T EFOSAA	Avg RF	0.9787	1.0582	1.0077	1.0724	0.9822	1.0293	1.0210	0.9978	1.0184	3.330

Generated at 9:50 AM on 11/13/2023

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# Initial Calibration Summary

Job Number: FC11222  
 Account: AECOM AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q391-ICC391  
 Lab FileID: 6Q28202.D

## Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA											
T EtFOSA	Avg RF	1.1131	1.1327	1.1099	1.1391	1.1140	1.1088	1.1416	1.1224	1.1227	1.191
I M3-MeFOSA											
T MeFOSA	Avg RF	1.1718	1.1262	1.1393	1.1340	1.1159	1.0939	1.1352	1.0187	1.1169	4.061
I 13C4-PFOS											
S d3-MeFOSAA	Avg RF	1.3147	1.3725	1.2787	1.2795	1.2415	1.2714	1.2420	1.3693	1.2962	3.981
S 13C8-PFOS	Avg RF	1.0483	1.1114	0.9517	1.0069	1.0322	1.1249	1.0726	1.0949	1.0554	5.492
S d5-EFOSAA	Avg RF	1.0345	1.1310	1.0830	1.0863	1.1046	1.1094	1.0704	1.1656	1.0981	3.609
S 13C8-FOSA	Avg RF	2.3397	2.5225	2.3730	2.4071	2.4351	2.5256	2.3545	2.5728	2.4413	3.621
S d7-MeFOSE	Avg RF	0.9715	1.0607	0.9297	1.0320	0.9898	1.0364	0.9786	1.0078	1.0008	4.206
S d3-MeFOSA	Avg RF	0.7744	0.8538	0.7682	0.8276	0.8201	0.8630	0.8580	0.9758	0.8426	7.696
S d9-EFOSE	Avg RF	1.3522	1.4230	1.2748	1.2973	1.3329	1.3345	1.3445	1.3289	1.3352	3.245
S d5-EFOSA	Avg RF	0.9198	0.9917	0.9093	0.9541	0.9708	1.0076	0.9958	1.0075	0.9696	3.978
I 13C3-PFBA											
S 13C4-PFBA	Avg RF	1.1460	1.1699	1.1676	1.1521	1.1573	1.1626	1.1433	1.1590	1.1572	0.831
I 1802-PFHxS											
S 13C2-4:2FTS	Avg RF	0.1564	0.1690	0.1659	0.1632	0.1675	0.1553	0.1644	0.1441	0.1607	5.181
S 13C3-PFBS	Avg RF	2.2804	2.3278	2.3327	2.3296	2.3319	2.3059	2.3706	2.3421	2.3333	1.315
S 13C2-6:2FTS	Avg RF	0.2455	0.2642	0.2696	0.2709	0.2642	0.2526	0.2687	0.2484	0.2605	3.893
S 13C3-PFHxS	Avg RF	1.4718	1.5201	1.5083	1.5454	1.5929	1.5341	1.5519	1.5243	1.5308	2.304
S 13C2-8:2FTS	Avg RF	0.2867	0.2803	0.3040	0.2770	0.2923	0.2935	0.3091	0.3108	0.2942	4.348
I 13C4-PFOA											
S 13C8-PFOA	Avg RF	0.9815	0.9865	0.9010	0.9482	0.9901	0.9405	1.0116	0.9636	0.9654	3.612
I 13C2-PFDA											
S 13C6-PFDA	Avg RF	0.9570	1.0422	1.0531	0.9474	0.9122	0.9870	0.9545	0.8853	0.9673	6.026
S 13C7-PFUnDA	Avg RF	1.2091	1.1826	1.2179	1.1661	1.1508	1.2134	1.1024	1.0386	1.1601	5.384
S 13C2-PFDODA	Avg RF	1.4231	1.4508	1.3283	1.3678	1.3206	1.3991	1.4558	1.3307	1.3845	4.011
S 13C2-PFTeDA	Avg RF	0.7493	0.7739	0.7880	0.7684	0.7084	0.7745	0.7351	0.7721	0.7587	3.449
I 13C5-PFNA											
S 13C9-PFNA	Avg RF	1.0342	1.0745	1.0459	0.9807	1.0604	1.0252	1.0810	1.0772	1.0474	3.235
I 13C2-PFHxA											
S 13C5-PPFA	Avg RF	0.5087	0.5113	0.4895	0.4840	0.5188	0.5059	0.5105	0.4879	0.5021	2.581
S 13C5-PFHxA	Avg RF	1.0850	1.0505	1.0047	0.9898	1.0611	1.0226	1.0424	1.0626	1.0398	3.076
S 13C3-HFPO-DA	Avg RF	0.1548	0.1639	0.1496	0.1479	0.1609	0.1537	0.1588	0.1523	0.1552	3.578
S 13C4-PFHpA	Avg RF	1.1304	1.1635	1.1423	1.0853	1.1689	1.1402	1.1831	1.1003	1.1392	2.949

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



**Initial Calibration Verification**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q391-ICV391  
 Lab FileID: 6Q28208.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\111223\_1633\_S6Q391\s6q391.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28199.d  
 2:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28200.d  
 3:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28201.d  
 4:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28202.d  
 5:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28203.d  
 6:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28204.d  
 7:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28205.d  
 8:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28206.d

Data File: 6Q28208  
 Type : QC  
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.138	2.8	102.8
13C2-6:2FTS	5.000	5.390	7.8	107.8
13C2-8:2FTS	5.000	5.672	13.4	113.4
13C2-PFDoDA	1.250	1.393	11.5	111.5
13C2-PFTeDA	1.250	1.452	16.2	116.2
13C3-PFBS	2.500	2.514	0.6	100.6
13C3-PFHxS	2.500	2.536	1.4	101.4
13C4-PFBA	10.000	10.071	0.7	100.7
13C4-PFHpA	2.500	2.479	-0.8	99.2
13C5-PFHxA	2.500	2.419	-3.2	96.8
13C5-PFPeA	5.000	4.841	-3.2	96.8
13C6-PFDA	1.250	1.395	11.6	111.6
13C7-PFUnDA	1.250	1.454	16.3	116.3
13C8-FOSA	2.500	2.321	-7.2	92.8
13C8-PFOA	2.500	2.518	0.7	100.7
13C8-PFOS	2.500	2.281	-8.8	91.2
13C9-PFNA	1.250	1.306	4.5	104.5
4:2FTS	9.375	9.765	4.2	104.2
6:2FTS	9.500	9.551	0.5	100.5
8:2FTS	9.600	8.918	-7.1	92.9
d3-MeFOSAA	5.000	4.723	-5.5	94.5
EtFOSAA	2.500	2.206	-11.8	88.2
FOSA	2.500	2.389	-4.5	95.5
MeFOSAA	2.500	2.520	0.8	100.8
PFBA	10.000	9.739	-2.6	97.4
PFBS	2.218	2.146	-3.2	96.8
PFDA	2.500	2.341	-6.4	93.6
PFDoDA	2.500	2.551	2.0	102.0
PFDS	2.413	2.401	-0.5	99.5
PFHpA	2.500	2.347	-6.1	93.9
PFHpS	2.383	2.339	-1.8	98.2
PFHxA	2.500	2.489	-0.4	99.6
PFHxS	2.285	2.276	-0.4	99.6
PFNA	2.500	2.544	1.8	101.8
PFNS	2.405	2.486	3.4	103.4
PFOA	2.500	2.561	2.4	102.4
PFOS	2.320	2.249	-3.1	96.9

# Initial Calibration Verification

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q391-ICV391  
 Lab FileID: 6Q28208.D

PFPeA	5.000	5.043	0.9	100.9
PFPeS	2.353	2.408	2.3	102.3
PFTeDA	2.500	2.396	-4.1	95.9
PFTTrDA	2.500	2.451	-2.0	98.0
PFUnDA	2.500	2.345	-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	4.725	5.030	6.5	106.5
13C3-HFPO-DA	10.000	9.330	-6.7	93.3
9C1-PF3ONS	4.675	4.936	5.6	105.6
ADONA	4.725	4.861	2.9	102.9
HFPO-DA	5.000	4.912	-1.8	98.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.112	-3.0	97.0
5:3FTCA	62.400	62.076	-0.5	99.5
7:3FTCA	62.400	67.344	7.9	107.9
d3-MeFOSA	2.500	2.214	-11.4	88.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.607	-7.9	92.1
EtFOSE	12.500	12.362	-1.1	98.9
MeFOSA	5.000	5.047	0.9	100.9
MeFOSE	12.500	12.274	-1.8	98.2
PFDoDS	2.425	2.535	4.5	104.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.898	-2.0	98.0
d7-MeFOSE	25.000	22.942	-8.2	91.8
d9-EtFOSE	25.000	23.854	-4.6	95.4
d5-EtFOSA	2.500	2.399	-4.1	95.9
NFDHA	5.000	4.785	-4.3	95.7
PFMBA	5.000	4.963	-0.7	99.3
PFMPA	5.000	5.091	1.8	101.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.428	-0.5	99.5

CC Criteria: +/- 30%

**Initial Calibration Verification**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q391-ICV391  
 Lab FileID: 6Q28209.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\111223\_1633\_S6Q391\s6q391.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28199.d  
 2:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28200.d  
 3:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28201.d  
 4:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28202.d  
 5:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28203.d  
 6:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28204.d  
 7:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28205.d  
 8:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28206.d

Data File: 6Q28209  
 Type : QC  
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.206	4.1	104.1
13C2-6:2FTS	5.000	5.587	11.7	111.7
13C2-8:2FTS	5.000	5.633	12.7	112.7
13C2-PFDoDA	1.250	1.189	-4.9	95.1
13C2-PFTeDA	1.250	1.227	-1.9	98.1
13C3-PFBS	2.500	2.470	-1.2	98.8
13C3-PFHxS	2.500	2.646	5.8	105.8
13C4-PFBA	10.000	9.890	-1.1	98.9
13C4-PFHpA	2.500	2.469	-1.2	98.8
13C5-PFHxA	2.500	2.405	-3.8	96.2
13C5-PFPeA	5.000	5.005	0.1	100.1
13C6-PFDA	1.250	1.203	-3.8	96.2
13C7-PFUnDA	1.250	1.269	1.5	101.5
13C8-FOSA	2.500	2.442	-2.3	97.7
13C8-PFOA	2.500	2.484	-0.7	99.3
13C8-PFOS	2.500	2.524	0.9	100.9
13C9-PFNA	1.250	1.379	10.3	110.3
4:2FTS	20.000	21.288	6.4	106.4
6:2FTS	20.000	19.380	-3.1	96.9
8:2FTS	20.000	17.328	-13.4	86.6
d3-MeFOSAA	5.000	5.448	9.0	109.0
EtFOSAA	20.000	16.399	-18.0	82.0
FOSA	20.000	18.949	-5.3	94.7
MeFOSAA	20.000	19.288	-3.6	96.4
PFBA	20.000	18.154	-9.2	90.8
PFBS	20.000	19.391	-3.0	97.0
PFDA	20.000	20.786	3.9	103.9
PFDoDA	20.000	18.238	-8.8	91.2
PFDS	20.000	20.073	0.4	100.4
PFHpA	20.000	18.502	-7.5	92.5
PFHpS	20.000	19.710	-1.4	98.6
PFHxA	20.000	21.107	5.5	105.5
PFHxS	20.000	20.200	1.0	101.0
PFNA	20.000	18.642	-6.8	93.2
PFNS	20.000	18.913	-5.4	94.6
PFOA	20.000	19.247	-3.8	96.2
PFOS	20.000	17.753	-11.2	88.8

# Initial Calibration Verification

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q391-ICV391  
 Lab FileID: 6Q28209.D

PFPeA	20.000	18.846	-5.8	94.2
PFPeS	20.000	19.238	-3.8	96.2
PFTeDA	20.000	20.392	2.0	102.0
PFTTrDA	20.000	17.525	-12.4	87.6
PFUnDA	20.000	17.746	-11.3	88.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	20.976	4.9	104.9
13C3-HFPO-DA	10.000	9.497	-5.0	95.0
9C1-PF3ONS	20.000	20.203	1.0	101.0
ADONA	20.000	19.667	-1.7	98.3
HFPO-DA	20.000	19.231	-3.8	96.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	18.140	-9.3	90.7
5:3FTCA	20.000	21.101	5.5	105.5
7:3FTCA	20.000	19.736	-1.3	98.7
d3-MeFOSA	2.500	2.497	-0.1	99.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	16.886	-15.6	84.4
EtFOSE	100.000	95.973	-4.0	96.0
MeFOSA	20.000	19.031	-4.8	95.2
MeFOSE	100.000	95.902	-4.1	95.9
PFDoDS	20.000	18.095	-9.5	90.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.206	4.1	104.1
d7-MeFOSE	25.000	24.791	-0.8	99.2
d9-EtFOSE	25.000	24.628	-1.5	98.5
d5-EtFOSA	2.500	2.554	2.1	102.1
NFDHA	20.000	18.615	-6.9	93.1
PFMBA	20.000	18.928	-5.4	94.6
PFMPA	20.000	19.207	-4.0	96.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	17.915	-10.4	89.6

CC Criteria: +/- 30%

**Continuing Calibration Summary**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28590.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\112023\_1633\_S6Q396\s6q396.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28199.d  
 2:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28200.d  
 3:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28201.d  
 4:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28202.d  
 5:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28203.d  
 6:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28204.d  
 7:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28205.d  
 8:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28206.d

Data File: 6Q28590  
 Type : QC  
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.798	16.0	116.0
13C2-6:2FTS	5.000	4.729	-5.4	94.6
13C2-8:2FTS	5.000	4.620	-7.6	92.4
13C2-PFDoDA	1.250	1.398	11.9	111.9
13C2-PFTeDA	1.250	1.485	18.8	118.8
13C3-PFBS	2.500	2.579	3.2	103.2
13C3-PFHxS	2.500	2.518	0.7	100.7
13C4-PFBA	10.000	10.162	1.6	101.6
13C4-PFHpA	2.500	2.618	4.7	104.7
13C5-PFHxA	2.500	2.504	0.2	100.2
13C5-PFPeA	5.000	4.942	-1.2	98.8
13C6-PFDA	1.250	1.274	1.9	101.9
13C7-PFUnDA	1.250	1.224	-2.1	97.9
13C8-FOSA	2.500	2.698	7.9	107.9
13C8-PFOA	2.500	2.424	-3.0	97.0
13C8-PFOS	2.500	2.424	-3.1	96.9
13C9-PFNA	1.250	1.319	5.5	105.5
4:2FTS	9.375	9.163	-2.3	97.7
6:2FTS	9.500	9.519	0.2	100.2
8:2FTS	9.600	9.596	0.0	100.0
d3-MeFOSAA	5.000	4.297	-14.1	85.9
EtFOSAA	2.500	2.454	-1.8	98.2
FOSA	2.500	2.458	-1.7	98.3
MeFOSAA	2.500	2.736	9.4	109.4
PFBA	10.000	10.318	3.2	103.2
PFBS	2.218	2.153	-2.9	97.1
PFDA	2.500	2.660	6.4	106.4
PFDoDA	2.500	2.525	1.0	101.0
PFDS	2.413	2.288	-5.2	94.8
PFHpA	2.500	2.412	-3.5	96.5
PFHpS	2.383	2.458	3.1	103.1
PFHxA	2.500	2.544	1.8	101.8
PFHxS	2.285	2.467	8.0	108.0
PFNA	2.500	2.570	2.8	102.8
PFNS	2.405	2.504	4.1	104.1
PFOA	2.500	2.662	6.5	106.5
PFOS	2.320	2.299	-0.9	99.1

# Continuing Calibration Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28590.D

PFPeA	5.000	5.241	4.8	104.8
PFPeS	2.353	2.623	11.5	111.5
PFTeDA	2.500	2.509	0.3	100.3
PFTTrDA	2.500	2.555	2.2	102.2
PFUnDA	2.500	2.635	5.4	105.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.434	-6.1	93.9
13C3-HFPO-DA	10.000	10.827	8.3	108.3
9C1-PF3ONS	4.675	4.663	-0.2	99.8
ADONA	4.725	4.347	-8.0	92.0
HFPO-DA	5.000	4.738	-5.2	94.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.827	-5.2	94.8
5:3FTCA	62.400	62.591	0.3	100.3
7:3FTCA	62.400	56.889	-8.8	91.2
d3-MeFOSA	2.500	2.379	-4.8	95.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.016	0.3	100.3
EtFOSE	12.500	12.289	-1.7	98.3
MeFOSA	5.000	5.326	6.5	106.5
MeFOSE	12.500	12.046	-3.6	96.4
PFDoDS	2.425	2.562	5.7	105.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.560	-8.8	91.2
d7-MeFOSE	25.000	32.034	28.1	128.1
d9-EtFOSE	25.000	31.461	25.8	125.8
d5-EtFOSA	2.500	2.430	-2.8	97.2
NFDHA	5.000	4.811	-3.8	96.2
PFMBA	5.000	5.167	3.3	103.3
PFMPA	5.000	5.263	5.3	105.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.613	3.7	103.7

CC Criteria: +/- 30%

**Continuing Calibration Summary**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28591.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\112023\_1633\_S6Q396\s6q396.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28199.d  
 2:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28200.d  
 3:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28201.d  
 4:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28202.d  
 5:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28203.d  
 6:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28204.d  
 7:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28205.d  
 8:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28206.d

Data File: 6Q28591  
 Type : QC  
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.891	-2.2	97.8
13C2-6:2FTS	5.000	4.745	-5.1	94.9
13C2-8:2FTS	5.000	4.512	-9.8	90.2
13C2-PFDoDA	1.250	1.276	2.0	102.0
13C2-PFTeDA	1.250	1.393	11.5	111.5
13C3-PFBS	2.500	2.510	0.4	100.4
13C3-PFHxS	2.500	2.431	-2.8	97.2
13C4-PFBA	10.000	10.011	0.1	100.1
13C4-PFHpA	2.500	2.606	4.2	104.2
13C5-PFHxA	2.500	2.573	2.9	102.9
13C5-PFPeA	5.000	5.153	3.1	103.1
13C6-PFDA	1.250	1.303	4.3	104.3
13C7-PFUnDA	1.250	1.235	-1.2	98.8
13C8-FOSA	2.500	2.799	12.0	112.0
13C8-PFOA	2.500	2.531	1.2	101.2
13C8-PFOS	2.500	2.533	1.3	101.3
13C9-PFNA	1.250	1.292	3.3	103.3
4:2FTS	0.750	0.765	2.0	102.0
6:2FTS	0.760	0.710	-6.6	93.4
8:2FTS	0.768	0.765	-0.4	99.6
d3-MeFOSAA	5.000	4.917	-1.7	98.3
EtFOSAA	0.200	0.149	-25.3	74.7
FOSA	0.200	0.190	-5.1	94.9
MeFOSAA	0.200	0.200	-0.1	99.9
PFBA	0.800	0.786	-1.7	98.3
PFBS	0.177	0.159	-10.0	90.0
PFDA	0.200	0.179	-10.3	89.7
PFDoDA	0.200	0.193	-3.7	96.3
PFDS	0.193	0.177	-8.5	91.5
PFHpA	0.200	0.190	-5.1	94.9
PFHpS	0.191	0.164	-14.3	85.7
PFHxA	0.200	0.177	-11.7	88.3
PFHxS	0.183	0.183	-0.2	99.8
PFNA	0.200	0.193	-3.6	96.4
PFNS	0.192	0.199	3.7	103.7
PFOA	0.200	0.181	-9.6	90.4
PFOS	0.186	0.179	-3.8	96.2

# Continuing Calibration Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28591.D

PFPeA	0.400	0.403	0.8	100.8
PFPeS	0.188	0.189	0.3	100.3
PFTeDA	0.200	0.174	-12.9	87.1
PFTrDA	0.200	0.199	-0.7	99.3
PFUnDA	0.200	0.202	1.0	101.0
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	0.378	0.336	-11.1	88.9
13C3-HFPO-DA	10.000	10.683	6.8	106.8
9C1-PF3ONS	0.374	0.359	-3.9	96.1
ADONA	0.378	0.343	-9.3	90.7
HFPO-DA	0.400	0.349	-12.8	87.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.890	-10.9	89.1
5:3FTCA	4.992	4.689	-6.1	93.9
7:3FTCA	4.992	4.938	-1.1	98.9
d3-MeFOSA	2.500	2.397	-4.1	95.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.401	0.2	100.2
EtFOSE	1.000	0.931	-6.9	93.1
MeFOSA	0.400	0.388	-2.9	97.1
MeFOSE	1.000	0.869	-13.1	86.9
PFDoDS	0.194	0.187	-3.8	96.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.811	-3.8	96.2
d7-MeFOSE	25.000	31.460	25.8	125.8
d9-EtFOSE	25.000	32.466	29.9	129.9
d5-EtFOSA	2.500	2.434	-2.7	97.3
NFDHA	0.400	0.458	14.5	114.5
PFMBA	0.400	0.378	-5.4	94.6
PFMPA	0.400	0.384	-4.0	96.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.349	-2.0	98.0

CC Criteria: +/- 30%



**Continuing Calibration Summary**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28602.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\112023\_1633\_S6Q396\s6q396.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28199.d  
 2:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28200.d  
 3:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28201.d  
 4:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28202.d  
 5:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28203.d  
 6:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28204.d  
 7:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28205.d  
 8:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28206.d

Data File: 6Q28602  
 Type : QC  
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.376	7.5	107.5
13C2-6:2FTS	5.000	5.391	7.8	107.8
13C2-8:2FTS	5.000	5.627	12.5	112.5
13C2-PFDoDA	1.250	1.301	4.1	104.1
13C2-PFTeDA	1.250	1.312	5.0	105.0
13C3-PFBS	2.500	2.666	6.6	106.6
13C3-PFHxS	2.500	2.534	1.3	101.3
13C4-PFBA	10.000	10.115	1.1	101.1
13C4-PFHpA	2.500	2.519	0.7	100.7
13C5-PFHxA	2.500	2.329	-6.9	93.1
13C5-PFPeA	5.000	4.791	-4.2	95.8
13C6-PFDA	1.250	1.254	0.3	100.3
13C7-PFUnDA	1.250	1.196	-4.3	95.7
13C8-FOSA	2.500	2.628	5.1	105.1
13C8-PFOA	2.500	2.493	-0.3	99.7
13C8-PFOS	2.500	2.453	-1.9	98.1
13C9-PFNA	1.250	1.195	-4.4	95.6
4:2FTS	9.375	10.040	7.1	107.1
6:2FTS	9.500	9.793	3.1	103.1
8:2FTS	9.600	8.895	-7.3	92.7
d3-MeFOSAA	5.000	5.194	3.9	103.9
EtFOSAA	2.500	2.477	-0.9	99.1
FOSA	2.500	2.424	-3.0	97.0
MeFOSAA	2.500	2.547	1.9	101.9
PFBA	10.000	10.428	4.3	104.3
PFBS	2.218	2.125	-4.2	95.8
PFDA	2.500	2.536	1.5	101.5
PFDoDA	2.500	2.553	2.1	102.1
PFDS	2.413	2.691	11.5	111.5
PFHpA	2.500	2.355	-5.8	94.2
PFHpS	2.383	2.573	8.0	108.0
PFHxA	2.500	2.682	7.3	107.3
PFHxS	2.285	2.402	5.1	105.1
PFNA	2.500	2.621	4.9	104.9
PFNS	2.405	2.726	13.3	113.3
PFOA	2.500	2.398	-4.1	95.9
PFOS	2.320	2.468	6.4	106.4

# Continuing Calibration Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28602.D

PFPeA	5.000	5.270	5.4	105.4
PFPeS	2.353	2.381	1.2	101.2
PFTeDA	2.500	2.569	2.8	102.8
PFTTrDA	2.500	2.552	2.1	102.1
PFUnDA	2.500	2.733	9.3	109.3
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	4.725	4.576	-3.2	96.8
13C3-HFPO-DA	10.000	10.318	3.2	103.2
9C1-PF3ONS	4.675	4.700	0.5	100.5
ADONA	4.725	4.678	-1.0	99.0
HFPO-DA	5.000	4.821	-3.6	96.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.677	-6.4	93.6
5:3FTCA	62.400	65.385	4.8	104.8
7:3FTCA	62.400	66.524	6.6	106.6
d3-MeFOSA	2.500	2.494	-0.2	99.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.172	3.4	103.4
EtFOSE	12.500	12.891	3.1	103.1
MeFOSA	5.000	5.216	4.3	104.3
MeFOSE	12.500	12.139	-2.9	97.1
PFDoDS	2.425	2.652	9.3	109.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.477	9.5	109.5
d7-MeFOSE	25.000	25.707	2.8	102.8
d9-EtFOSE	25.000	25.271	1.1	101.1
d5-EtFOSA	2.500	2.588	3.5	103.5
NFDHA	5.000	5.113	2.3	102.3
PFMBA	5.000	5.097	1.9	101.9
PFMPA	5.000	5.197	3.9	103.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.871	9.5	109.5

CC Criteria: +/- 30%

**Continuing Calibration Summary**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28679.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\112023\_1633\_S6Q396\s6q396.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28199.d  
 2:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28200.d  
 3:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28201.d  
 4:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28202.d  
 5:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28203.d  
 6:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28204.d  
 7:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28205.d  
 8:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28206.d

Data File: 6Q28679  
 Type : QC  
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.278	25.6	125.6
13C2-6:2FTS	5.000	5.685	13.7	113.7
13C2-8:2FTS	5.000	6.066	21.3	121.3
13C2-PFDoDA	1.250	1.157	-7.4	92.6
13C2-PFTeDA	1.250	1.188	-5.0	95.0
13C3-PFBS	2.500	2.644	5.8	105.8
13C3-PFHxS	2.500	2.592	3.7	103.7
13C4-PFBA	10.000	10.246	2.5	102.5
13C4-PFHpA	2.500	2.574	3.0	103.0
13C5-PFHxA	2.500	2.631	5.2	105.2
13C5-PFPeA	5.000	4.919	-1.6	98.4
13C6-PFDA	1.250	1.162	-7.1	92.9
13C7-PFUnDA	1.250	1.116	-10.7	89.3
13C8-FOSA	2.500	2.608	4.3	104.3
13C8-PFOA	2.500	2.381	-4.8	95.2
13C8-PFOS	2.500	2.567	2.7	102.7
13C9-PFNA	1.250	1.380	10.4	110.4
4:2FTS	9.375	9.045	-3.5	96.5
6:2FTS	9.500	9.570	0.7	100.7
8:2FTS	9.600	8.592	-10.5	89.5
d3-MeFOSAA	5.000	5.116	2.3	102.3
EtFOSAA	2.500	2.655	6.2	106.2
FOSA	2.500	2.458	-1.7	98.3
MeFOSAA	2.500	2.519	0.7	100.7
PFBA	10.000	10.339	3.4	103.4
PFBS	2.218	2.088	-5.9	94.1
PFDA	2.500	2.447	-2.1	97.9
PFDoDA	2.500	2.545	1.8	101.8
PFDS	2.413	2.436	1.0	101.0
PFHpA	2.500	2.322	-7.1	92.9
PFHpS	2.383	2.328	-2.3	97.7
PFHxA	2.500	2.348	-6.1	93.9
PFHxS	2.285	2.414	5.6	105.6
PFNA	2.500	2.203	-11.9	88.1
PFNS	2.405	2.406	0.0	100.0
PFOA	2.500	2.404	-3.8	96.2
PFOS	2.320	2.106	-9.2	90.8

# Continuing Calibration Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28679.D

PFPeA	5.000	5.241	4.8	104.8
PFPeS	2.353	2.426	3.1	103.1
PFTeDA	2.500	2.428	-2.9	97.1
PFTTrDA	2.500	2.521	0.9	100.9
PFUnDA	2.500	2.543	1.7	101.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.416	-6.5	93.5
13C3-HFPO-DA	10.000	10.612	6.1	106.1
9C1-PF3ONS	4.675	4.866	4.1	104.1
ADONA	4.725	4.672	-1.1	98.9
HFPO-DA	5.000	4.600	-8.0	92.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.604	-7.0	93.0
5:3FTCA	62.400	61.012	-2.2	97.8
7:3FTCA	62.400	59.983	-3.9	96.1
d3-MeFOSA	2.500	2.323	-7.1	92.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.914	-1.7	98.3
EtFOSE	12.500	12.715	1.7	101.7
MeFOSA	5.000	5.467	9.3	109.3
MeFOSE	12.500	12.360	-1.1	98.9
PFDoDS	2.425	2.410	-0.6	99.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.337	6.7	106.7
d7-MeFOSE	25.000	24.219	-3.1	96.9
d9-EtFOSE	25.000	24.140	-3.4	96.6
d5-EtFOSA	2.500	2.596	3.9	103.9
NFDHA	5.000	4.679	-6.4	93.6
PFMBA	5.000	5.153	3.1	103.1
PFMPA	5.000	5.183	3.7	103.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.255	-4.4	95.6

CC Criteria: +/- 30%

**Continuing Calibration Summary**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28685.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\112023\_1633\_S6Q396\s6q396.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28199.d  
 2:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28200.d  
 3:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28201.d  
 4:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28202.d  
 5:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28203.d  
 6:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28204.d  
 7:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28205.d  
 8:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28206.d

Data File: 6Q28685  
 Type : QC  
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.892	17.8	117.8
13C2-6:2FTS	5.000	6.150	23.0	123.0
13C2-8:2FTS	5.000	5.530	10.6	110.6
13C2-PFDoDA	1.250	1.261	0.8	100.8
13C2-PFTeDA	1.250	1.290	3.2	103.2
13C3-PFBS	2.500	2.580	3.2	103.2
13C3-PFHxS	2.500	2.469	-1.3	98.7
13C4-PFBA	10.000	10.048	0.5	100.5
13C4-PFHpA	2.500	2.465	-1.4	98.6
13C5-PFHxA	2.500	2.516	0.6	100.6
13C5-PFPeA	5.000	5.041	0.8	100.8
13C6-PFDA	1.250	1.246	-0.3	99.7
13C7-PFUnDA	1.250	1.224	-2.1	97.9
13C8-FOSA	2.500	2.522	0.9	100.9
13C8-PFOA	2.500	2.457	-1.7	98.3
13C8-PFOS	2.500	2.476	-1.0	99.0
13C9-PFNA	1.250	1.305	4.4	104.4
4:2FTS	0.750	0.765	2.0	102.0
6:2FTS	0.760	0.692	-9.0	91.0
8:2FTS	0.768	0.761	-0.9	99.1
d3-MeFOSAA	5.000	5.415	8.3	108.3
EtFOSAA	0.200	0.180	-10.0	90.0
FOSA	0.200	0.198	-0.8	99.2
MeFOSAA	0.200	0.205	2.3	102.3
PFBA	0.800	0.787	-1.6	98.4
PFBS	0.177	0.149	-16.1	83.9
PFDA	0.200	0.221	10.6	110.6
PFDoDA	0.200	0.189	-5.7	94.3
PFDS	0.193	0.189	-1.9	98.1
PFHpA	0.200	0.184	-7.8	92.2
PFHpS	0.191	0.163	-14.6	85.4
PFHxA	0.200	0.193	-3.5	96.5
PFHxS	0.183	0.185	0.8	100.8
PFNA	0.200	0.195	-2.6	97.4
PFNS	0.192	0.189	-1.5	98.5
PFOA	0.200	0.231	15.4	115.4
PFOS	0.186	0.220	18.2	118.2

# Continuing Calibration Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-CC391  
 Lab FileID: 6Q28685.D

PFPeA	0.400	0.393	-1.7	98.3
PFPeS	0.188	0.183	-2.6	97.4
PFTeDA	0.200	0.171	-14.4	85.6
PFTTrDA	0.200	0.201	0.5	100.5
PFUnDA	0.200	0.171	-14.7	85.3
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	0.378	0.323	-14.4	85.6
13C3-HFPO-DA	10.000	10.160	1.6	101.6
9C1-PF3ONS	0.374	0.375	0.4	100.4
ADONA	0.378	0.364	-3.8	96.2
HFPO-DA	0.400	0.344	-14.1	85.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.899	-9.9	90.1
5:3FTCA	4.992	4.658	-6.7	93.3
7:3FTCA	4.992	4.777	-4.3	95.7
d3-MeFOSA	2.500	2.308	-7.7	92.3
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.407	1.7	101.7
EtFOSE	1.000	0.984	-1.6	98.4
MeFOSA	0.400	0.382	-4.5	95.5
MeFOSE	1.000	0.905	-9.5	90.5
PFDoDS	0.194	0.226	16.6	116.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.435	8.7	108.7
d7-MeFOSE	25.000	25.444	1.8	101.8
d9-EtFOSE	25.000	25.318	1.3	101.3
d5-EtFOSA	2.500	2.532	1.3	101.3
NFDHA	0.400	0.389	-2.7	97.3
PFMBA	0.400	0.401	0.4	100.4
PFMPA	0.400	0.380	-5.1	94.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.337	-5.3	94.7

CC Criteria: +/- 30%

**Continuing Calibration Summary**

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-ECC391  
 Lab FileID: 6Q28694.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\112023\_1633\_S6Q396\s6q396.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28199.d  
 2:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28200.d  
 3:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28201.d  
 4:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28202.d  
 5:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28203.d  
 6:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28204.d  
 7:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28205.d  
 8:D:\MassHunter\Data\111223\_1633\_S6Q391\6Q28206.d

Data File: 6Q28694  
 Type : QC  
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.327	26.5	126.5
13C2-6:2FTS	5.000	6.056	21.1	121.1
13C2-8:2FTS	5.000	5.801	16.0	116.0
13C2-PFDoDA	1.250	1.222	-2.3	97.7
13C2-PFTeDA	1.250	1.288	3.0	103.0
13C3-PFBS	2.500	2.506	0.2	100.2
13C3-PFHxS	2.500	2.532	1.3	101.3
13C4-PFBA	10.000	10.241	2.4	102.4
13C4-PFHpA	2.500	2.504	0.2	100.2
13C5-PFHxA	2.500	2.429	-2.8	97.2
13C5-PFPeA	5.000	4.804	-3.9	96.1
13C6-PFDA	1.250	1.270	1.6	101.6
13C7-PFUnDA	1.250	1.254	0.4	100.4
13C8-FOSA	2.500	2.267	-9.3	90.7
13C8-PFOA	2.500	2.351	-6.0	94.0
13C8-PFOS	2.500	2.407	-3.7	96.3
13C9-PFNA	1.250	1.210	-3.2	96.8
4:2FTS	9.375	9.216	-1.7	98.3
6:2FTS	9.500	8.974	-5.5	94.5
8:2FTS	9.600	9.390	-2.2	97.8
d3-MeFOSAA	5.000	4.568	-8.6	91.4
EtFOSAA	2.500	2.531	1.2	101.2
FOSA	2.500	2.649	6.0	106.0
MeFOSAA	2.500	3.030	21.2	121.2
PFBA	10.000	10.399	4.0	104.0
PFBS	2.218	2.330	5.0	105.0
PFDA	2.500	2.438	-2.5	97.5
PFDoDA	2.500	2.568	2.7	102.7
PFDS	2.413	2.444	1.3	101.3
PFHpA	2.500	2.301	-7.9	92.1
PFHpS	2.383	2.536	6.4	106.4
PFHxA	2.500	2.554	2.1	102.1
PFHxS	2.285	2.396	4.8	104.8
PFNA	2.500	2.558	2.3	102.3
PFNS	2.405	2.538	5.5	105.5
PFOA	2.500	2.582	3.3	103.3
PFOS	2.320	2.320	0.0	100.0

# Continuing Calibration Summary

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q396-ECC391  
 Lab FileID: 6Q28694.D

PFPeA	5.000	5.249	5.0	105.0
PFPeS	2.353	2.528	7.4	107.4
PFTeDA	2.500	2.522	0.9	100.9
PFTTrDA	2.500	2.677	7.1	107.1
PFUnDA	2.500	2.420	-3.2	96.8
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	4.725	4.510	-4.5	95.5
13C3-HFPO-DA	10.000	10.176	1.8	101.8
9C1-PF3ONS	4.675	4.761	1.8	101.8
ADONA	4.725	4.625	-2.1	97.9
HFPO-DA	5.000	5.008	0.2	100.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.702	-6.2	93.8
5:3FTCA	62.400	65.428	4.9	104.9
7:3FTCA	62.400	63.531	1.8	101.8
d3-MeFOSA	2.500	2.230	-10.8	89.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.861	-2.8	97.2
EtFOSE	12.500	12.713	1.7	101.7
MeFOSA	5.000	5.267	5.3	105.3
MeFOSE	12.500	12.391	-0.9	99.1
PFDODS	2.425	2.521	4.0	104.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.034	0.7	100.7
d7-MeFOSE	25.000	23.628	-5.5	94.5
d9-EtFOSE	25.000	23.040	-7.8	92.2
d5-EtFOSA	2.500	2.456	-1.8	98.2
NFDHA	5.000	4.933	-1.3	98.7
PFMBA	5.000	5.056	1.1	101.1
PFMPA	5.000	5.166	3.3	103.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.599	3.4	103.4

CC Criteria: +/- 30%



## Run Sequence Report

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q391	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
S6Q391-RT	6Q28196.D	11/12/23 12:37	n/a	Retention Time Marker
S6Q391-RT	6Q28197.D	11/12/23 12:51	n/a	Retention Time Marker
S6Q391-IC391	6Q28198.D	11/12/23 13:05	n/a	Mass Calibration Verification
S6Q391-IC391	6Q28199.D	11/12/23 13:20	n/a	Initial cal 1
S6Q391-IC391	6Q28200.D	11/12/23 13:34	n/a	Initial cal 2
S6Q391-IC391	6Q28201.D	11/12/23 13:48	n/a	Initial cal 3
S6Q391-ICC391	6Q28202.D	11/12/23 14:03	n/a	Initial cal 4
S6Q391-IC391	6Q28203.D	11/12/23 14:17	n/a	Initial cal 5
S6Q391-IC391	6Q28204.D	11/12/23 14:31	n/a	Initial cal 6
S6Q391-IC391	6Q28205.D	11/12/23 14:46	n/a	Initial cal 7
S6Q391-IC391	6Q28206.D	11/12/23 15:00	n/a	Initial cal 8
S6Q391-IBLK	6Q28207.D	11/12/23 15:14	n/a	Instrument Blank
S6Q391-IBLK	6Q28207.D	11/12/23 15:14	n/a	Instrument Blank
S6Q391-ICV391	6Q28208.D	11/12/23 15:28	n/a	Initial cal verification 4
S6Q391-ICV391	6Q28209.D	11/12/23 15:43	n/a	Initial cal verification 20
S6Q391-CC391	6Q28210.D	11/12/23 15:57	n/a	Continuing cal 4
S6Q391-CC391	6Q28211.D	11/12/23 16:11	n/a	Continuing cal 1.0LL
OP99894-BS	6Q28212.D	11/12/23 16:26	OP99894	Blank Spike
OP99894-LLBS	6Q28213.D	11/12/23 16:40	OP99894	Blank Spike
OP99894-MB	6Q28214.D	11/12/23 16:54	OP99894	Method Blank
ZZZZZZ	6Q28215.D	11/12/23 17:09	OP99894	(unrelated sample)
ZZZZZZ	6Q28216.D	11/12/23 17:23	OP99894	(unrelated sample)
ZZZZZZ	6Q28217.D	11/12/23 17:37	OP99894	(unrelated sample)
ZZZZZZ	6Q28218.D	11/12/23 17:52	OP99894	(unrelated sample)
ZZZZZZ	6Q28219.D	11/12/23 18:06	OP99894	(unrelated sample)
ZZZZZZ	6Q28220.D	11/12/23 18:20	OP99894	(unrelated sample)
S6Q391-CC391	6Q28221.D	11/12/23 18:34	n/a	Continuing cal 4
S6Q391-ICCB	6Q28222.D	11/12/23 18:49	n/a	Continuing Calibration Blank
S6Q391-ICCB	6Q28222.D	11/12/23 18:49	n/a	Continuing Calibration Blank
ZZZZZZ	6Q28223.D	11/12/23 19:03	OP99894	(unrelated sample)
ZZZZZZ	6Q28224.D	11/12/23 19:17	OP99894	(unrelated sample)
ZZZZZZ	6Q28225.D	11/12/23 19:32	OP99894	(unrelated sample)
ZZZZZZ	6Q28226.D	11/12/23 19:46	OP99894	(unrelated sample)
ZZZZZZ	6Q28227.D	11/12/23 20:00	OP99894	(unrelated sample)
ZZZZZZ	6Q28228.D	11/12/23 20:15	OP99894	(unrelated sample)
ZZZZZZ	6Q28229.D	11/12/23 20:29	OP99894	(unrelated sample)
ZZZZZZ	6Q28230.D	11/12/23 20:43	OP99894	(unrelated sample)
ZZZZZZ	6Q28231.D	11/12/23 20:58	OP99894	(unrelated sample)
ZZZZZZ	6Q28232.D	11/12/23 21:12	OP99894	(unrelated sample)
S6Q391-CC391	6Q28233.D	11/12/23 21:26	n/a	Continuing cal 4
S6Q391-ICCB	6Q28234.D	11/12/23 21:41	n/a	Continuing Calibration Blank
S6Q391-ICCB	6Q28234.D	11/12/23 21:41	n/a	Continuing Calibration Blank
ZZZZZZ	6Q28235.D	11/12/23 21:55	OP99894	(unrelated sample)
ZZZZZZ	6Q28236.D	11/12/23 22:09	OP99894	(unrelated sample)
FC10636-40	6Q28237.D	11/12/23 22:23	OP99894	(used for QC only; not part of job FC11222)
OP99894-MS	6Q28238.D	11/12/23 22:38	OP99894	Matrix Spike

# Run Sequence Report

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q391	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
OP99894-MSD	6Q28239.D	11/12/23 22:52	OP99894	Matrix Spike Duplicate
ZZZZZZ	6Q28240.D	11/12/23 23:06	OP99890	(unrelated sample)
ZZZZZZ	6Q28241.D	11/12/23 23:21	OP99890	(unrelated sample)
S6Q391-CC391	6Q28242.D	11/12/23 23:35	n/a	Continuing cal 4
S6Q391-ICCB	6Q28243.D	11/12/23 23:49	n/a	Continuing Calibration Blank
S6Q391-ICCB	6Q28243.D	11/12/23 23:49	n/a	Continuing Calibration Blank
OP99888-BS	6Q28244.D	11/13/23 00:04	OP99888	Blank Spike
OP99888-LLBS	6Q28245.D	11/13/23 00:18	OP99888	Blank Spike
OP99888-MB	6Q28246.D	11/13/23 00:32	OP99888	Method Blank
ZZZZZZ	6Q28247.D	11/13/23 00:47	OP99888	(unrelated sample)
FC10658-2	6Q28248.D	11/13/23 01:01	OP99888	(used for QC only; not part of job FC11222)
OP99888-MS	6Q28249.D	11/13/23 01:15	OP99888	Matrix Spike
FC10658-3	6Q28250.D	11/13/23 01:30	OP99888	(used for QC only; not part of job FC11222)
OP99888-DUP	6Q28251.D	11/13/23 01:44	OP99888	Duplicate
ZZZZZZ	6Q28252.D	11/13/23 01:58	OP99888	(unrelated sample)
ZZZZZZ	6Q28253.D	11/13/23 02:12	OP99888	(unrelated sample)
S6Q391-CC391	6Q28254.D	11/13/23 02:27	n/a	Continuing cal 4
S6Q391-ICCB	6Q28255.D	11/13/23 02:41	n/a	Continuing Calibration Blank
ZZZZZZ	6Q28256.D	11/13/23 02:55	OP99888	(unrelated sample)
ZZZZZZ	6Q28257.D	11/13/23 03:10	OP99888	(unrelated sample)
ZZZZZZ	6Q28258.D	11/13/23 03:24	OP99888	(unrelated sample)
ZZZZZZ	6Q28259.D	11/13/23 03:38	OP99888	(unrelated sample)
ZZZZZZ	6Q28260.D	11/13/23 03:53	OP99888	(unrelated sample)
ZZZZZZ	6Q28261.D	11/13/23 04:07	OP99888	(unrelated sample)
ZZZZZZ	6Q28262.D	11/13/23 04:21	OP99888	(unrelated sample)
ZZZZZZ	6Q28263.D	11/13/23 04:36	OP99888	(unrelated sample)
ZZZZZZ	6Q28264.D	11/13/23 04:50	OP99888	(unrelated sample)
ZZZZZZ	6Q28265.D	11/13/23 05:04	OP99888	(unrelated sample)
S6Q391-CC391	6Q28266.D	11/13/23 05:18	n/a	Continuing cal 4
S6Q391-ICCB	6Q28267.D	11/13/23 05:33	n/a	Continuing Calibration Blank
ZZZZZZ	6Q28268.D	11/13/23 05:47	OP99888	(unrelated sample)
ZZZZZZ	6Q28269.D	11/13/23 06:01	OP99888	(unrelated sample)
ZZZZZZ	6Q28270.D	11/13/23 06:16	OP99888	(unrelated sample)
S6Q391-ECC391	6Q28271.D	11/13/23 06:30	n/a	Ending cal 4
S6Q391-ICCB	6Q28272.D	11/13/23 06:44	n/a	Continuing Calibration Blank

6.10.1  
6

## Run Sequence Report

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q396	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q396-RT	6Q28586.D	11/20/23 10:23	n/a	Retention Time Marker
S6Q396-RT	6Q28587.D	11/20/23 10:37	n/a	Retention Time Marker
S6Q396-IBLK	6Q28589.D	11/20/23 11:06	n/a	Instrument Blank
S6Q396-IBLK	6Q28589.D	11/20/23 11:06	n/a	Instrument Blank
S6Q396-CC391	6Q28590.D	11/20/23 11:24	n/a	Continuing cal 4
S6Q396-CC391	6Q28591.D	11/20/23 11:38	n/a	Continuing cal 1.0LL
OP162-BS	6Q28592.D	11/20/23 12:02	OP162	Blank Spike
OP162-LLBS	6Q28593.D	11/20/23 12:16	OP162	Blank Spike
OP162-MB	6Q28594.D	11/20/23 12:30	OP162	Method Blank
FC11222-1	6Q28595.D	11/20/23 12:45	OP162	AF-RHMW03-WGN01LF-2311
FC11222-2	6Q28596.D	11/20/23 12:59	OP162	AF-RHMW10-WGN01LF-2311
FC11200-1	6Q28597.D	11/20/23 13:13	OP162	(used for QC only; not part of job FC11222)
OP162-MS	6Q28598.D	11/20/23 13:28	OP162	Matrix Spike
ZZZZZZ	6Q28599.D	11/20/23 13:42	OP162	(unrelated sample)
FC11200-3	6Q28600.D	11/20/23 13:56	OP162	(used for QC only; not part of job FC11222)
OP162-DUP	6Q28601.D	11/20/23 14:11	OP162	Duplicate
S6Q396-CC391	6Q28602.D	11/20/23 14:25	n/a	Continuing cal 4
S6Q396-ICCB	6Q28603.D	11/20/23 14:39	n/a	Continuing Calibration Blank
ZZZZZZ	6Q28604.D	11/20/23 14:54	OP162	(unrelated sample)
ZZZZZZ	6Q28605.D	11/20/23 15:08	OP162	(unrelated sample)
ZZZZZZ	6Q28606.D	11/20/23 15:22	OP162	(unrelated sample)
ZZZZZZ	6Q28607.D	11/20/23 16:08	OP162	(unrelated sample)
ZZZZZZ	6Q28608.D	11/20/23 16:22	OP162	(unrelated sample)
ZZZZZZ	6Q28609.D	11/20/23 16:36	OP162	(unrelated sample)
ZZZZZZ	6Q28610.D	11/20/23 16:51	OP162	(unrelated sample)
ZZZZZZ	6Q28611.D	11/20/23 17:05	OP162	(unrelated sample)
ZZZZZZ	6Q28612.D	11/20/23 17:19	OP162	(unrelated sample)
S6Q396-CC391	6Q28613.D	11/20/23 17:34	n/a	Continuing cal 4
S6Q396-ICCB	6Q28614.D	11/20/23 17:48	n/a	Continuing Calibration Blank
OP82-BS	6Q28615.D	11/20/23 18:02	OP82	Blank Spike
OP82-LLBS	6Q28616.D	11/20/23 18:17	OP82	Blank Spike
OP82-MB	6Q28617.D	11/20/23 18:31	OP82	Method Blank
ZZZZZZ	6Q28618.D	11/20/23 18:45	OP82	(unrelated sample)
ZZZZZZ	6Q28619.D	11/20/23 18:59	OP82	(unrelated sample)
ZZZZZZ	6Q28620.D	11/20/23 19:14	OP82	(unrelated sample)
ZZZZZZ	6Q28621.D	11/20/23 19:28	OP82	(unrelated sample)
S6Q396-CC391	6Q28622.D	11/20/23 19:42	n/a	Continuing cal 4
S6Q396-ICCB	6Q28623.D	11/20/23 19:57	n/a	Continuing Calibration Blank
S6Q396-ICCB	6Q28623.D	11/20/23 19:57	n/a	Continuing Calibration Blank
OP85-BS	6Q28624.D	11/20/23 20:11	OP85	Blank Spike
OP85-LLBS	6Q28625.D	11/20/23 20:25	OP85	Blank Spike
OP85-MB	6Q28626.D	11/20/23 20:40	OP85	Method Blank
FC10683-1	6Q28627.D	11/20/23 20:54	OP85	(used for QC only; not part of job FC11222)
OP85-MS	6Q28628.D	11/20/23 21:08	OP85	Matrix Spike
OP85-MSD	6Q28629.D	11/20/23 21:23	OP85	Matrix Spike Duplicate
ZZZZZZ	6Q28630.D	11/20/23 21:37	OP85	(unrelated sample)

# Run Sequence Report

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q396	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
S6Q396-CC391	6Q28631.D	11/20/23 21:51	n/a	Continuing cal 4
S6Q396-ICCB	6Q28632.D	11/20/23 22:06	n/a	Continuing Calibration Blank
S6Q396-ICCB	6Q28632.D	11/20/23 22:06	n/a	Continuing Calibration Blank
OP4-BS	6Q28633.D	11/20/23 22:20	OP4	Blank Spike
OP4-LLBS	6Q28634.D	11/20/23 22:34	OP4	Blank Spike
OP4-MB	6Q28635.D	11/20/23 22:49	OP4	Method Blank
ZZZZZZ	6Q28636.D	11/20/23 23:03	OP4	(unrelated sample)
ZZZZZZ	6Q28637.D	11/20/23 23:17	OP4	(unrelated sample)
ZZZZZZ	6Q28638.D	11/20/23 23:31	OP4	(unrelated sample)
ZZZZZZ	6Q28639.D	11/20/23 23:46	OP4	(unrelated sample)
ZZZZZZ	6Q28640.D	11/21/23 00:00	OP4	(unrelated sample)
ZZZZZZ	6Q28641.D	11/21/23 00:14	OP4	(unrelated sample)
ZZZZZZ	6Q28642.D	11/21/23 00:29	OP4	(unrelated sample)
S6Q396-CC391	6Q28643.D	11/21/23 00:43	n/a	Continuing cal 4
S6Q396-ICCB	6Q28644.D	11/21/23 00:57	n/a	Continuing Calibration Blank
S6Q396-ICCB	6Q28644.D	11/21/23 00:57	n/a	Continuing Calibration Blank
ZZZZZZ	6Q28645.D	11/21/23 01:12	OP4	(unrelated sample)
FC10842-10	6Q28646.D	11/21/23 01:26	OP4	(used for QC only; not part of job FC11222)
OP4-MS	6Q28647.D	11/21/23 01:40	OP4	Matrix Spike
OP4-MSD	6Q28648.D	11/21/23 01:55	OP4	Matrix Spike Duplicate
ZZZZZZ	6Q28649.D	11/21/23 02:09	OP4	(unrelated sample)
ZZZZZZ	6Q28650.D	11/21/23 02:23	OP4	(unrelated sample)
ZZZZZZ	6Q28651.D	11/21/23 02:38	OP4	(unrelated sample)
ZZZZZZ	6Q28652.D	11/21/23 02:52	OP4	(unrelated sample)
ZZZZZZ	6Q28653.D	11/21/23 03:06	OP4	(unrelated sample)
ZZZZZZ	6Q28654.D	11/21/23 03:20	OP4	(unrelated sample)
S6Q396-CC391	6Q28655.D	11/21/23 03:35	n/a	Continuing cal 4
S6Q396-ICCB	6Q28656.D	11/21/23 03:49	n/a	Continuing Calibration Blank
S6Q396-ICCB	6Q28656.D	11/21/23 03:49	n/a	Continuing Calibration Blank
ZZZZZZ	6Q28657.D	11/21/23 04:03	OP4	(unrelated sample)
ZZZZZZ	6Q28658.D	11/21/23 04:18	OP4	(unrelated sample)
ZZZZZZ	6Q28659.D	11/21/23 04:32	OP4	(unrelated sample)
ZZZZZZ	6Q28660.D	11/21/23 04:46	OP4	(unrelated sample)
OP5-BS	6Q28661.D	11/21/23 05:01	OP5	Blank Spike
OP5-LLBS	6Q28662.D	11/21/23 05:15	OP5	Blank Spike
OP5-MB	6Q28663.D	11/21/23 05:29	OP5	Method Blank
FC10842-21	6Q28664.D	11/21/23 05:44	OP5	(used for QC only; not part of job FC11222)
OP5-MS	6Q28665.D	11/21/23 05:58	OP5	Matrix Spike
OP5-MSD	6Q28666.D	11/21/23 06:12	OP5	Matrix Spike Duplicate
S6Q396-CC391	6Q28667.D	11/21/23 06:26	n/a	Continuing cal 4
S6Q396-ICCB	6Q28668.D	11/21/23 06:41	n/a	Continuing Calibration Blank
S6Q396-ICCB	6Q28668.D	11/21/23 06:41	n/a	Continuing Calibration Blank
ZZZZZZ	6Q28669.D	11/21/23 06:55	OP5	(unrelated sample)
ZZZZZZ	6Q28670.D	11/21/23 07:09	OP5	(unrelated sample)
ZZZZZZ	6Q28671.D	11/21/23 07:24	OP5	(unrelated sample)
ZZZZZZ	6Q28672.D	11/21/23 07:38	OP5	(unrelated sample)

6:10.2  
6

# Run Sequence Report

Job Number: FC11222  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q396	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	6Q28673.D	11/21/23 07:52	OP5	(unrelated sample)
ZZZZZZ	6Q28674.D	11/21/23 08:07	OP5	(unrelated sample)
ZZZZZZ	6Q28675.D	11/21/23 08:21	OP5	(unrelated sample)
ZZZZZZ	6Q28676.D	11/21/23 08:35	OP5	(unrelated sample)
ZZZZZZ	6Q28677.D	11/21/23 08:50	OP5	(unrelated sample)
ZZZZZZ	6Q28678.D	11/21/23 09:04	OP5	(unrelated sample)
S6Q396-CC391	6Q28679.D	11/21/23 09:18	n/a	Continuing cal 4
S6Q396-ICCB	6Q28680.D	11/21/23 09:33	n/a	Continuing Calibration Blank
S6Q396-ICCB	6Q28680.D	11/21/23 09:33	n/a	Continuing Calibration Blank
S6Q396-RT	6Q28681.D	11/21/23 09:47	n/a	Retention Time Marker
S6Q396-RT	6Q28682.D	11/21/23 10:01	n/a	Retention Time Marker
S6Q396-IBLK	6Q28684.D	11/21/23 10:30	n/a	Instrument Blank
S6Q396-IBLK	6Q28684.D	11/21/23 10:30	n/a	Instrument Blank
S6Q396-CC391	6Q28685.D	11/21/23 10:44	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q28686.D	11/21/23 10:58	OP5	(unrelated sample)
ZZZZZZ	6Q28687.D	11/21/23 11:13	OP5	(unrelated sample)
ZZZZZZ	6Q28688.D	11/21/23 11:27	OP5	(unrelated sample)
ZZZZZZ	6Q28689.D	11/21/23 11:41	OP5	(unrelated sample)
ZZZZZZ	6Q28690.D	11/21/23 11:56	OP5	(unrelated sample)
ZZZZZZ	6Q28691.D	11/21/23 12:10	OP5	(unrelated sample)
ZZZZZZ	6Q28692.D	11/21/23 12:24	OP5	(unrelated sample)
ZZZZZZ	6Q28693.D	11/21/23 12:39	OP5	(unrelated sample)
S6Q396-ECC391	6Q28694.D	11/21/23 12:53	n/a	Ending cal 4
S6Q396-ICCB	6Q28695.D	11/21/23 13:07	n/a	Continuing Calibration Blank
S6Q396-ICCB	6Q28695.D	11/21/23 13:07	n/a	Continuing Calibration Blank

6.10.2

6

**MS Semi-volatiles**

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**Raw Data**

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Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)  
 Natasha Gumtje  
 11/21/23 17:30

### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28595.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 12:45:17 PM  
 Sample Name : fc11222-1  
 Vial : P2-A4  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP162,S6Q396,530,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.901	216.8 -> 171.9	98430	10.00 µg/L	0.041
M5-PFPeA	4.284	268.3 -> 223.0	37020	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	37424	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	42801	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	63380	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	22737	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	21633	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	20962	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	25423	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	13710	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	16572	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	14472	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	10230	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	8839	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	2192	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	3310	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	3448	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	21535	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	22814	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	17170	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	68799	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	100447	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	6744	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	5505	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	9083	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	42618	5.00 µg/L	0.040
18O2-PFHxS	7.151	403.0 -> 83.9	6080	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	63527	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	23730	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	20964	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	33725	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	2192	5.61 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.2%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3310	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C2-8:2FTS	7.848	529.1 -> 80.9	3448	4.82 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C2-PFDoDA	8.906	615.1 -> 570.0	25423	0.97 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 77.4%		
13C2-PFTeDA	9.621	715.2 -> 670.0	13710	0.95 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 76.2%		
13C3-PFBS	5.384	302.1 -> 79.9	14472	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C3-PFHxS	7.152	402.1 -> 79.9	10230	2.75 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 = 109.9%	
13C4-PFBA	2.901	216.8 -> 171.9	98430	9.98 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFHpA	6.419	367.1 -> 322.0	42801	2.78 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C5-PFHxA	5.478	318.0 -> 273.0	37424	2.67 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C5-PFPeA	4.284	268.3 -> 223.0	37020	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C6-PFDA	8.048	519.1 -> 474.1	21633	1.18 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C7-PFUnDA	8.489	570.0 -> 525.1	20962	0.95 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 76.1%	
13C8-FOSA	9.605	506.1 -> 77.8	16572	1.87 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.7%	
13C8-PFOA	7.062	421.1 -> 376.0	63380	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C8-PFOS	8.185	507.1 -> 79.9	8839	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.2%	
13C9-PFNA	7.580	472.1 -> 427.0	22737	1.29 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.6%	
d3-MeFOSAA	8.105	573.2 -> 419.0	21535	4.57 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	22814	10.89 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.9%	
d3-MeFOSA	10.720	515.0 -> 219.0	5505	1.80 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 71.9%	
d5-EtFOSAA	8.300	589.2 -> 419.0	17170	4.30 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 86.1%	
d7-MeFOSE	10.640	623.2 -> 58.9	68799	18.92 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.7%	
d9-EtFOSE	10.875	639.2 -> 58.9	100447	20.71 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 82.8%	
d5-EtFOSA	10.940	531.1 -> 219.0	6744	1.91 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 76.6%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.836	427.1 -> 407.0	2734	0.76 µg/L	97
		427.1 -> 80.9	1029		
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	5.200	298.7 -> 79.9	0	µg/L m	1
		298.7 -> 98.8	0		
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	6.419	599.0 -> 98.8					
		363.1 -> 319.0	2157	0.10	µg/L	m	87
PFHpS	-	363.1 -> 169.0	204				
		449.0 -> 79.9	-	N.D.			
PFHxA	5.481	449.0 -> 98.9					
		313.0 -> 269.0	0		µg/L	m	1
PFHxS	-	313.0 -> 118.9	0				
		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	7.063	548.8 -> 98.9					
		413.0 -> 369.0	0		µg/L	m	1
PFOS	-	413.0 -> 169.0	0				
		498.9 -> 79.9	-	N.D.			
PFPeA	-	498.9 -> 98.8					
		263.0 -> 219.0	-	N.D.			
PFPeS	6.470	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					

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

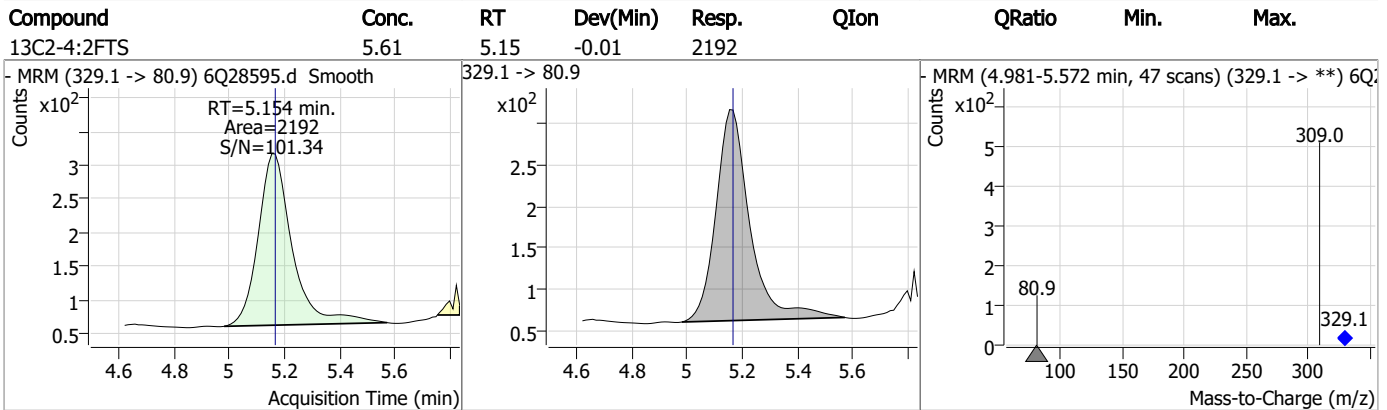
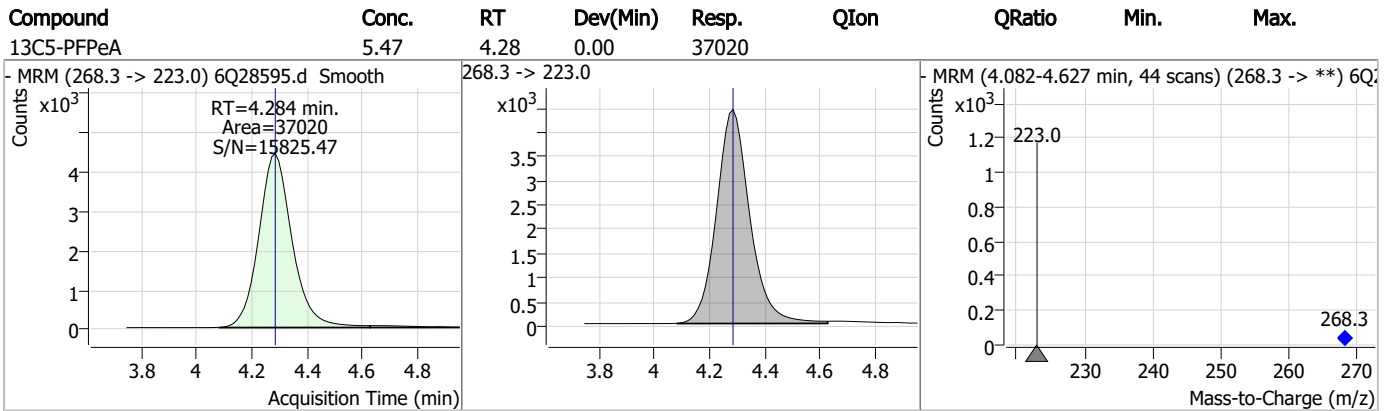
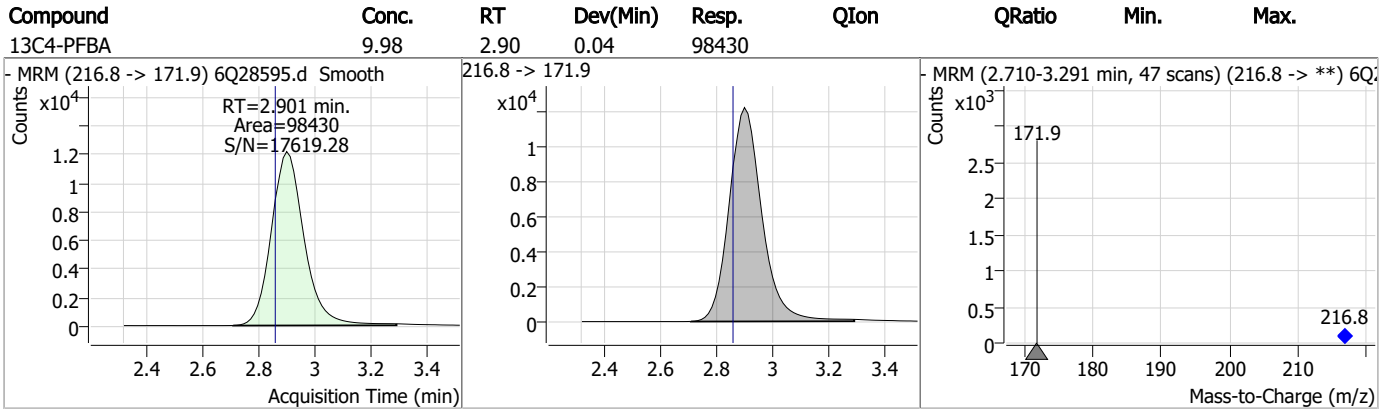
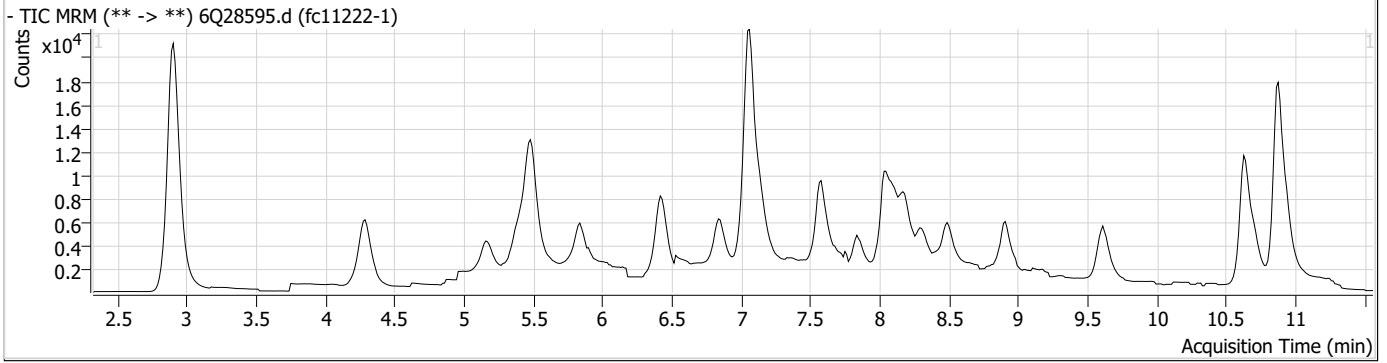
### Perfluorinated Compounds by LC/MS/MS

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

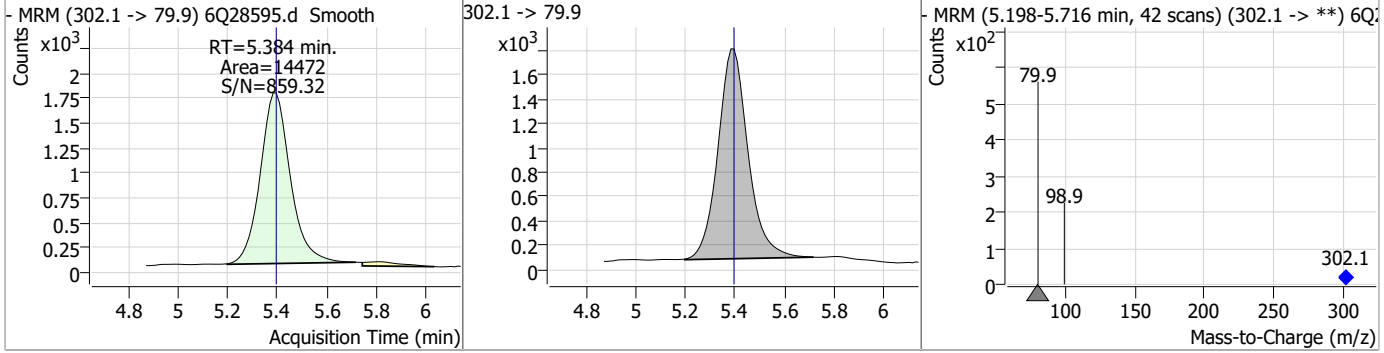


### Perfluorinated Compounds by LC/MS/MS

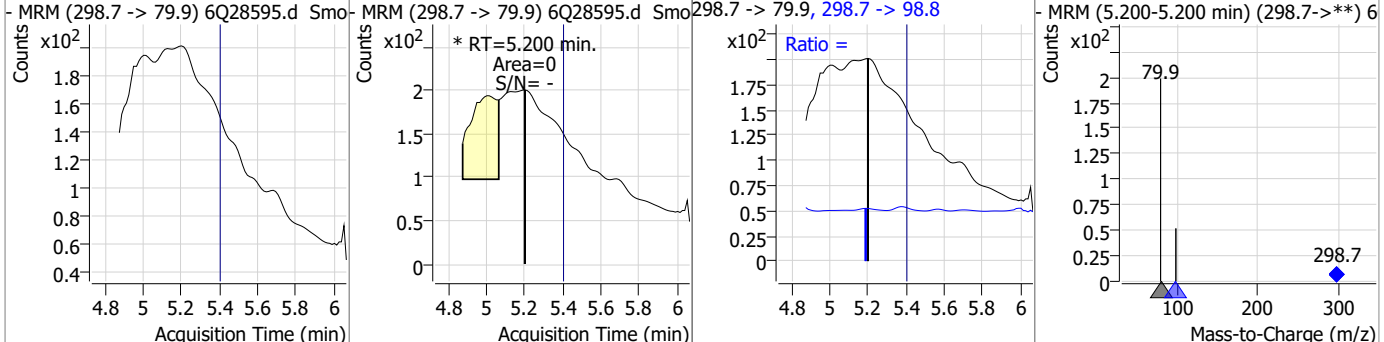


### Perfluorinated Compounds by LC/MS/MS

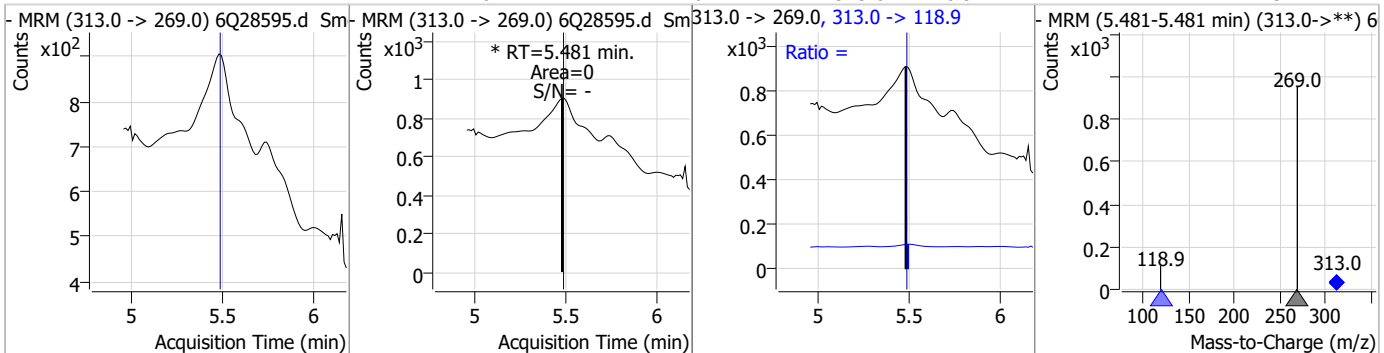
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.55	5.38	-0.01	14472				



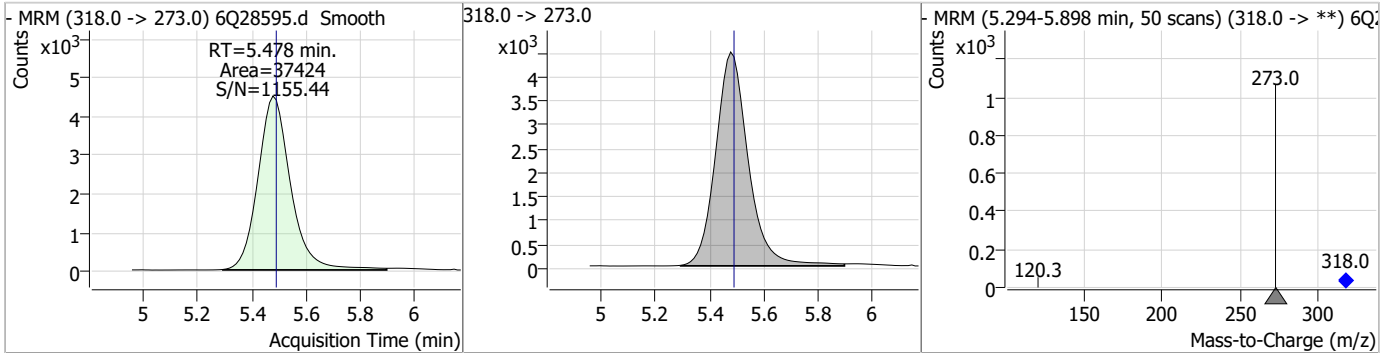
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0	0		0	298.7 -> 98.8		18.8	56.4



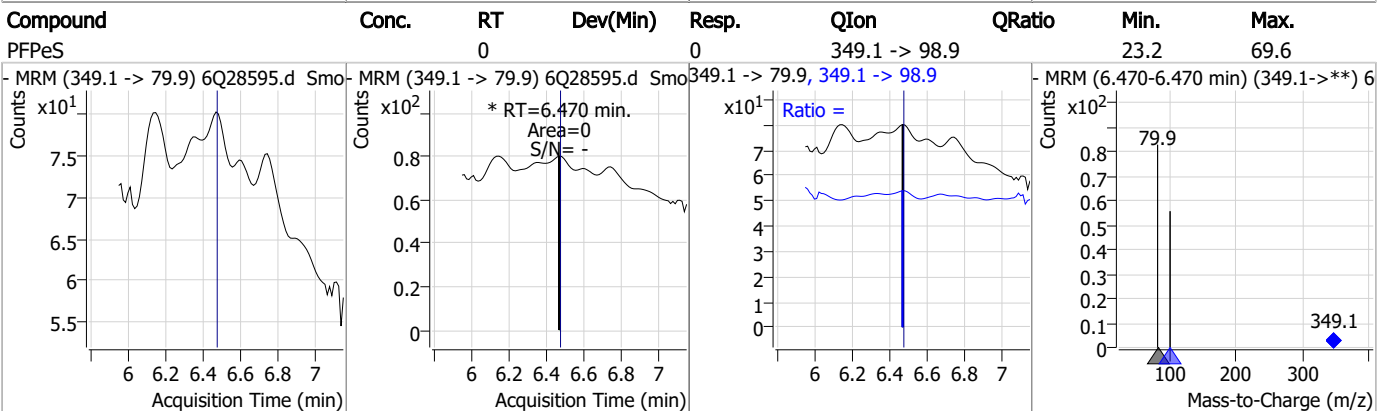
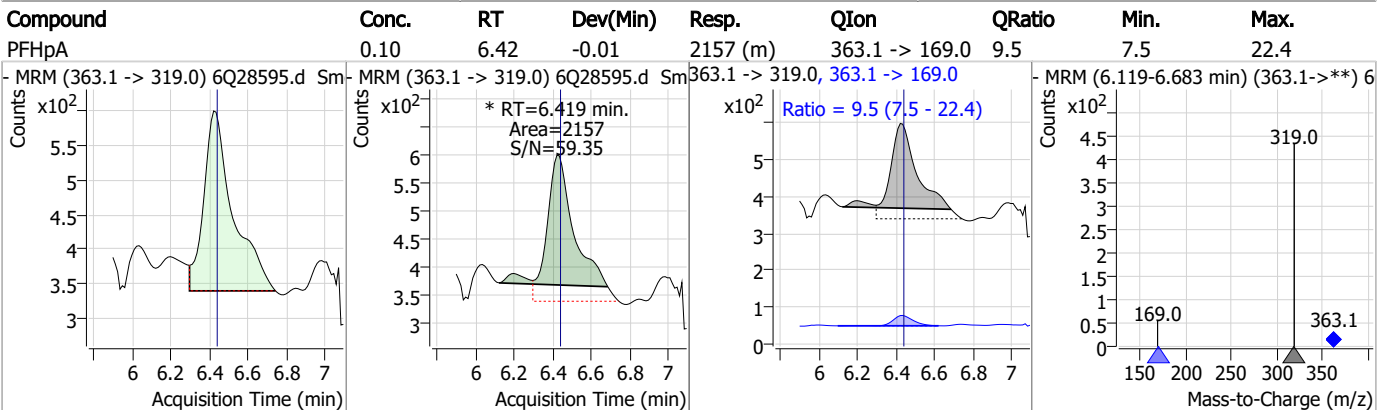
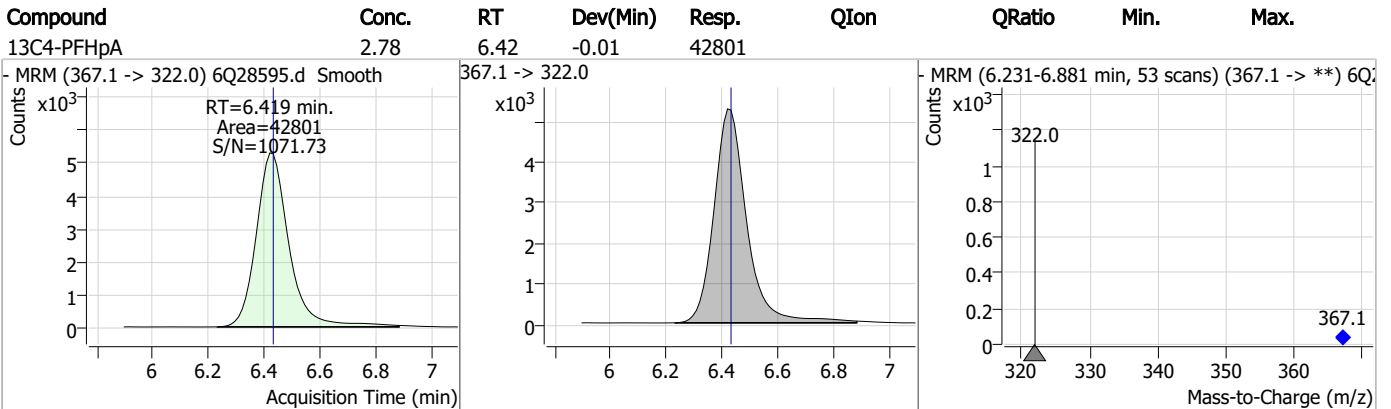
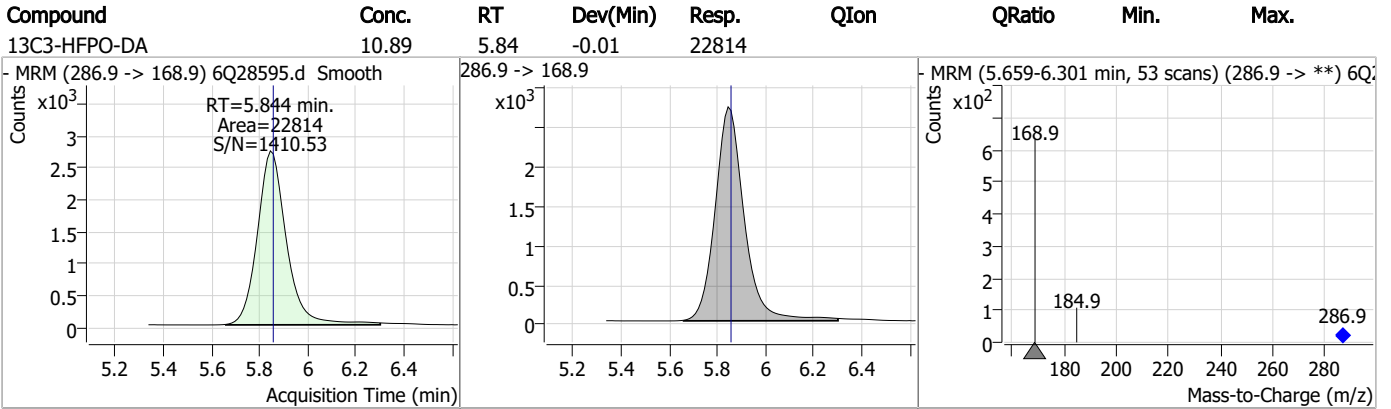
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0	0		0	313.0 -> 118.9		2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.67	5.48	-0.01	37424				

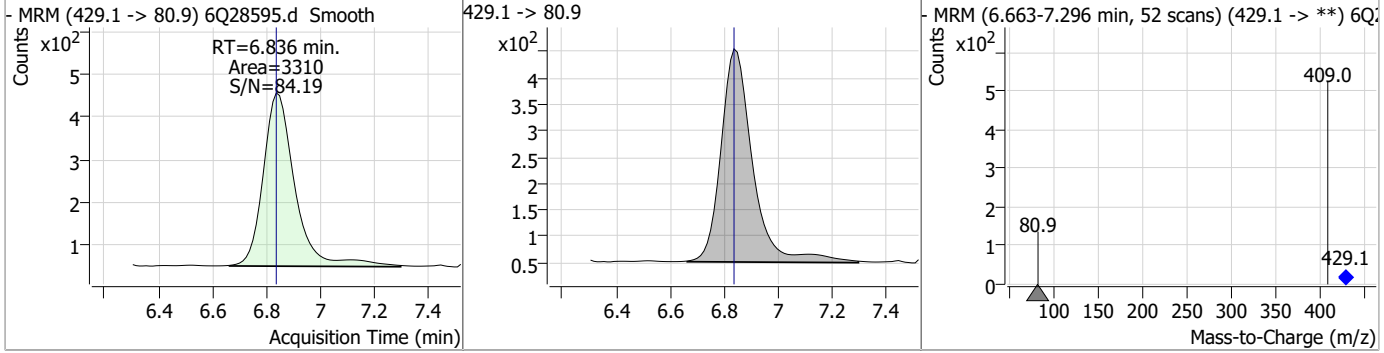


### Perfluorinated Compounds by LC/MS/MS

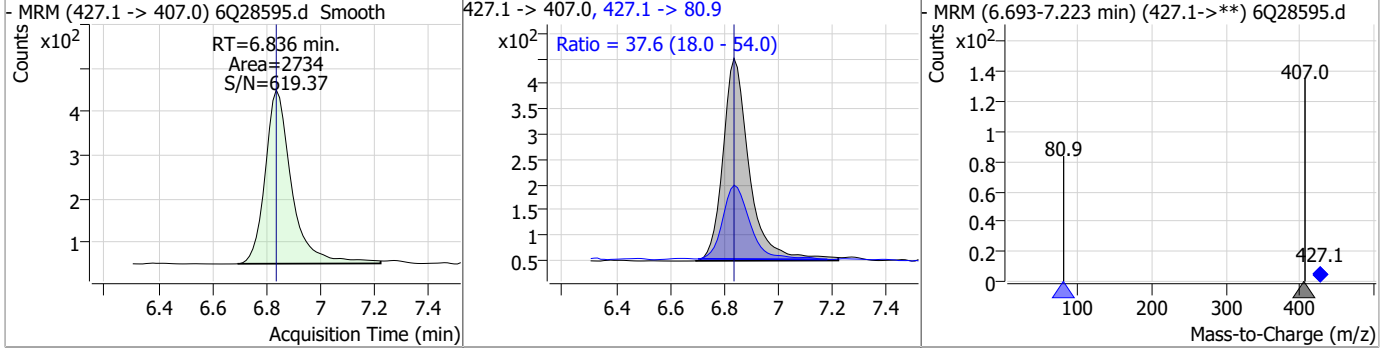


### Perfluorinated Compounds by LC/MS/MS

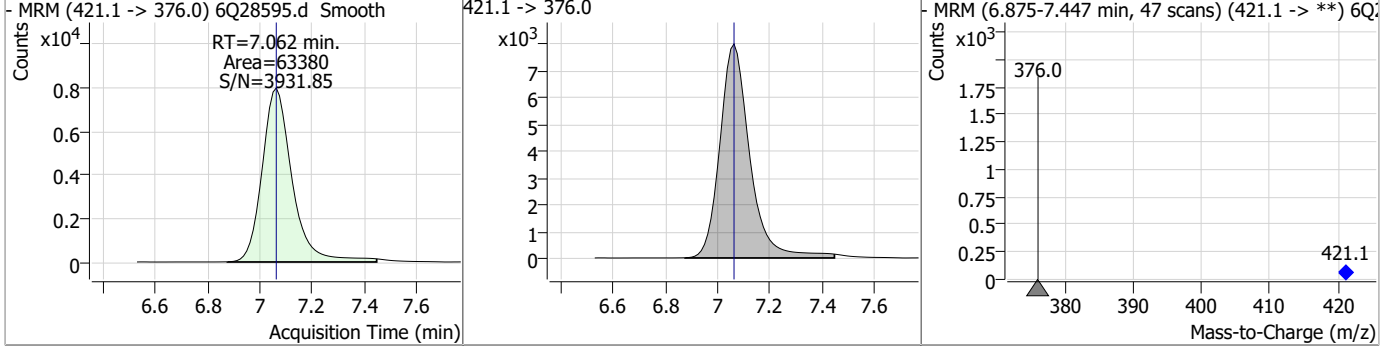
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.22	6.84	0.00	3310				



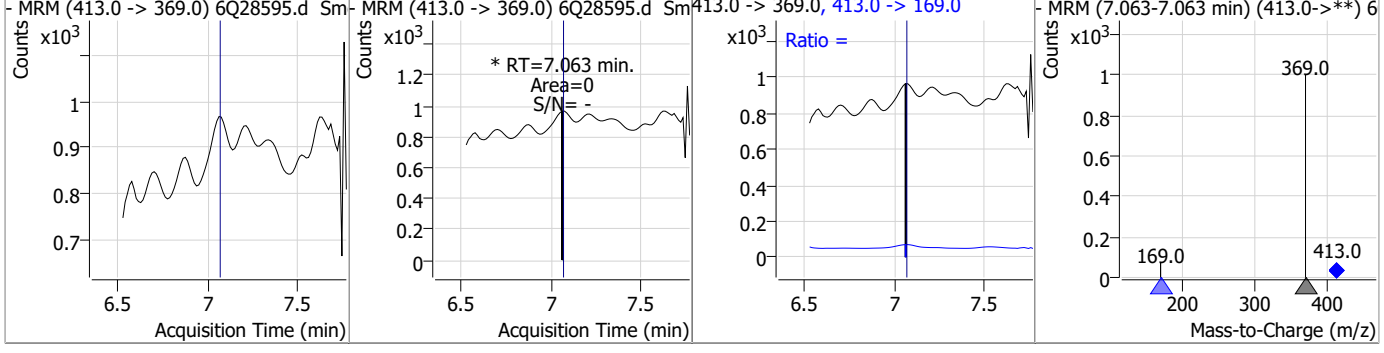
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.76	6.84	0.00	2734	427.1 -> 80.9	37.6	18.0	54.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.58	7.06	0.00	63380				



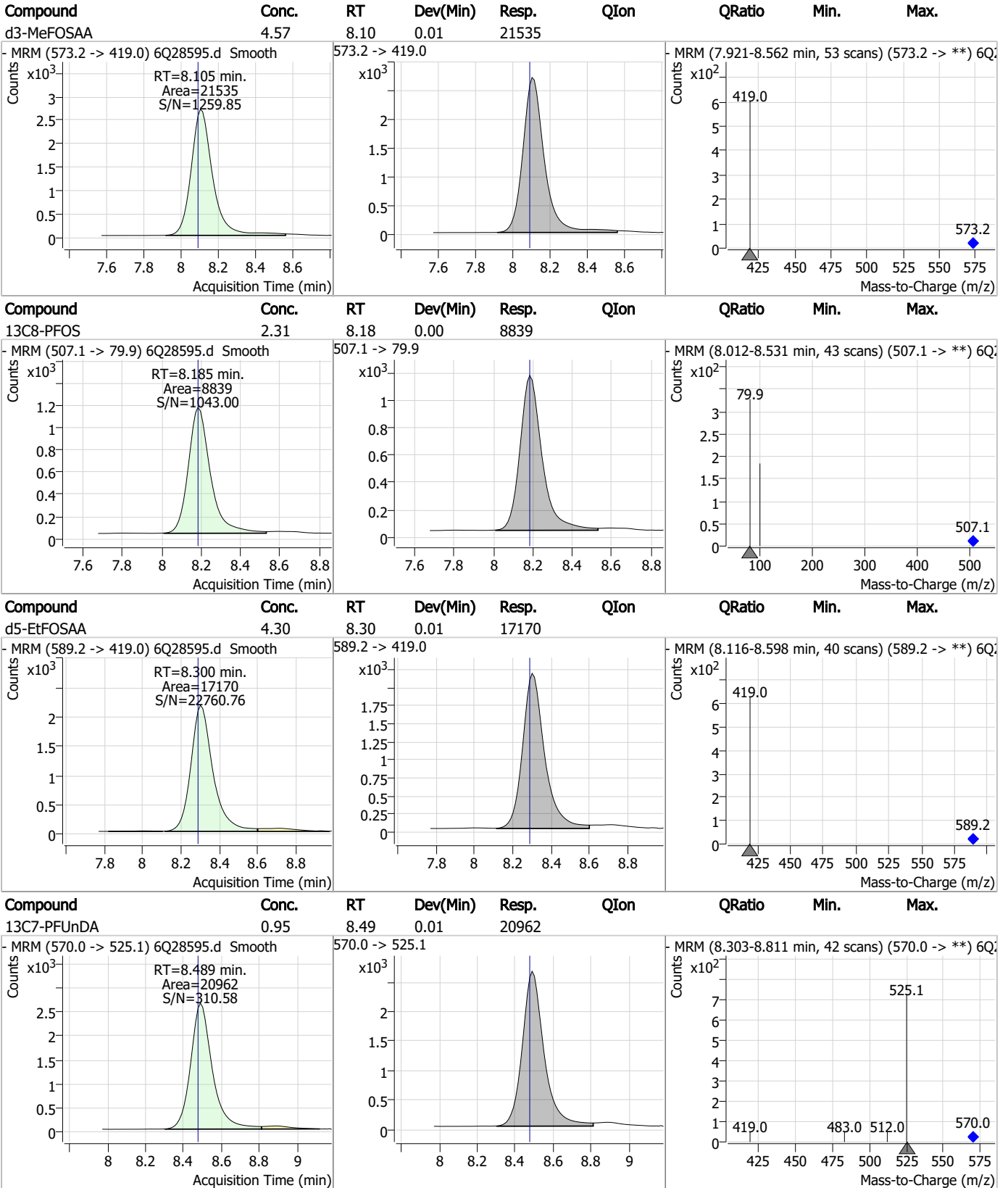
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0	0	0	0	413.0 -> 169.0		9.2	27.7



### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.75	7.15	0.00	10230				
13C9-PFNA	1.29	7.58	0.01	22737				
13C2-8:2FTS	4.82	7.85	0.01	3448				
13C6-PFDA	1.18	8.05	0.01	21633				

### Perfluorinated Compounds by LC/MS/MS





### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	0.97	8.91	0.00	25423				
13C8-FOSA	1.87	9.61	0.01	16572				
13C2-PFTeDA	0.95	9.62	0.00	13710				
d7-MeFOSE	18.92	10.64	0.01	68799				

7.1.1  
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.80	10.72	0.01	5505				
- MRM (515.0 -> 219.0) 6Q28595.d Smooth			515.0 -> 219.0		- MRM (10.546-11.105 min, 46 scans) (515.0 -> **) €			
d9-EtFOSE	20.71	10.87	0.01	100447				
- MRM (639.2 -> 58.9) 6Q28595.d Smooth			639.2 -> 58.9		- MRM (10.713-11.260 min, 45 scans) (639.2 -> **) €			
d5-EtFOSA	1.91	10.94	0.00	6744				
- MRM (531.1 -> 219.0) 6Q28595.d Smooth			531.1 -> 219.0		- MRM (10.791-11.401 min, 50 scans) (531.1 -> **) €			

7.1.1

7

# Manual Integration Approval Summary

Sample Number: FC11222-1                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28595.D                      Analyst approved: 11/21/23 15:34 Anna Ludwig  
Injection Time: 11/20/23 12:45                      Supervisor approved: 11/21/23 17:30 Natasha Guntie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.42	Split peak

7.1.1.1  
7

### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28596.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 12:59:35 PM  
 Sample Name : fc11222-2  
 Vial : P2-A5  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP162,S6Q396,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.901	216.8 -> 171.9	121894	10.00 µg/L	0.041
M5-PFPeA	4.284	268.3 -> 223.0	43244	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	44824	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	50062	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	72082	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	28289	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	26579	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	30002	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	35979	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	18919	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	20890	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	17220	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	12033	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	11410	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2551	5.00 µg/L	0.000
M2-6:2FTS	6.848	429.1 -> 80.9	4257	5.00 µg/L	0.012
M2-8:2FTS	7.848	529.1 -> 80.9	4466	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	27658	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	27761	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	24222	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	89512	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	131303	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	8286	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	6589	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	10304	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	48436	5.00 µg/L	0.040
18O2-PFHxS	7.151	403.0 -> 83.9	6910	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	75519	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	25441	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	25570	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	38244	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2551	5.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.8%		
13C2-6:2FTS	6.848	429.1 -> 80.9	4257	5.91 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.2%		
13C2-8:2FTS	7.848	529.1 -> 80.9	4466	5.49 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.8%		
13C2-PFDoDA	8.906	615.1 -> 570.0	35979	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-PFTeDA	9.621	715.2 -> 670.0	18919	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFBS	5.396	302.1 -> 79.9	17220	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C3-PFHxS	7.152	402.1 -> 79.9	12033	2.84 µg/L	0.000

7.12  
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 = 113.7%	
13C4-PFBA	2.901	216.8 -> 171.9	121894	10.87 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C4-PFHpA	6.419	367.1 -> 322.0	50062	2.87 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.9%	
13C5-PFHxA	5.478	318.0 -> 273.0	44824	2.82 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.7%	
13C5-PFPeA	4.284	268.3 -> 223.0	43244	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C6-PFDA	8.048	519.1 -> 474.1	26579	1.35 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C7-PFUnDA	8.489	570.0 -> 525.1	30002	1.27 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-FOSA	9.605	506.1 -> 77.8	20890	2.08 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 83.0%	
13C8-PFOA	7.062	421.1 -> 376.0	72082	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C8-PFOS	8.185	507.1 -> 79.9	11410	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C9-PFNA	7.580	472.1 -> 427.0	28289	1.32 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.6%	
d3-MeFOSAA	8.105	573.2 -> 419.0	27658	5.18 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	27761	11.69 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.9%	
d3-MeFOSA	10.720	515.0 -> 219.0	6589	1.90 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.9%	
d5-EtFOSAA	8.300	589.2 -> 419.0	24222	5.35 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
d7-MeFOSE	10.640	623.2 -> 58.9	89512	21.70 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.8%	
d9-EtFOSE	10.875	639.2 -> 58.9	131303	23.86 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
d5-EtFOSA	10.940	531.1 -> 219.0	8286	2.07 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 82.9%	

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	8.585	599.0 -> 79.9	0	µg/L m	1



7.12

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	0			
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	7.833	398.7 -> 79.9	0	µg/L	m	1
		398.7 -> 98.9	0			
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	7.646	413.0 -> 369.0	0	µg/L	m	1
		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	8.229	563.1 -> 519.0	0	µg/L	m	1
		563.1 -> 269.1	0			
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.1.2  
7

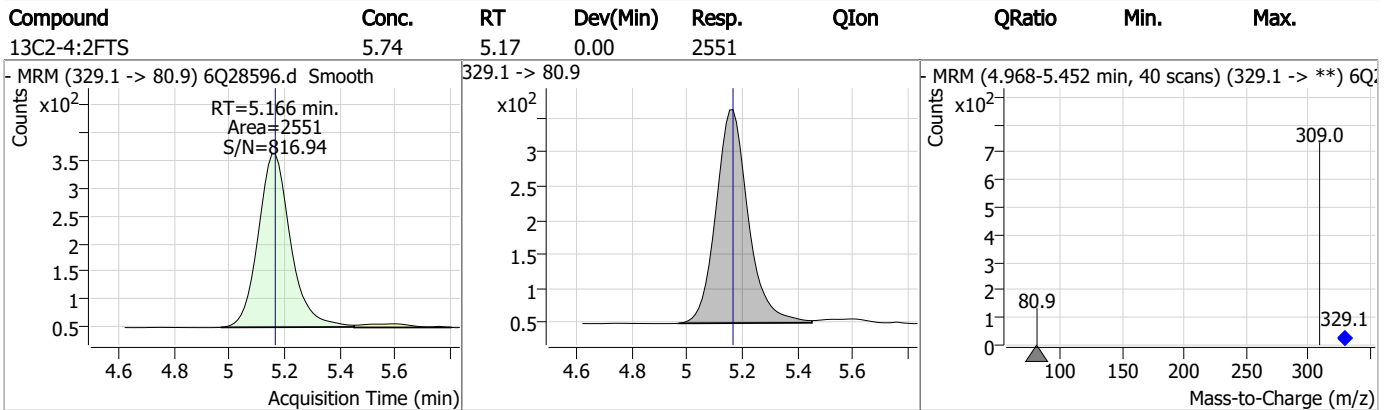
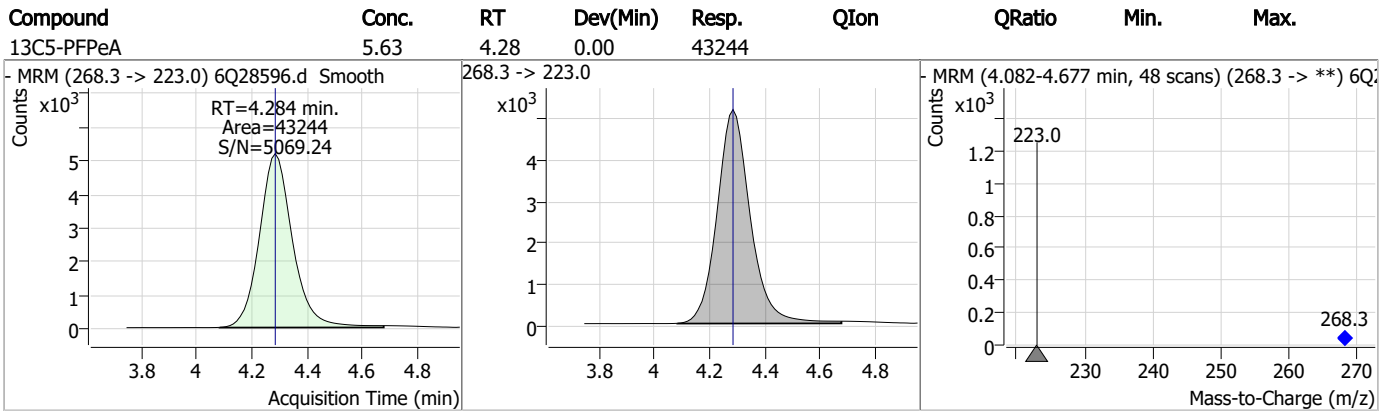
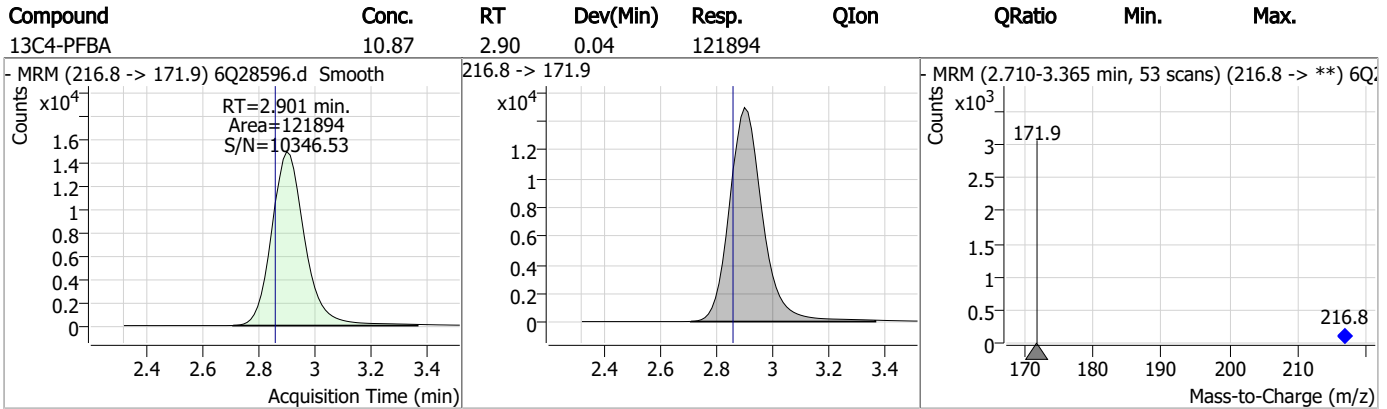
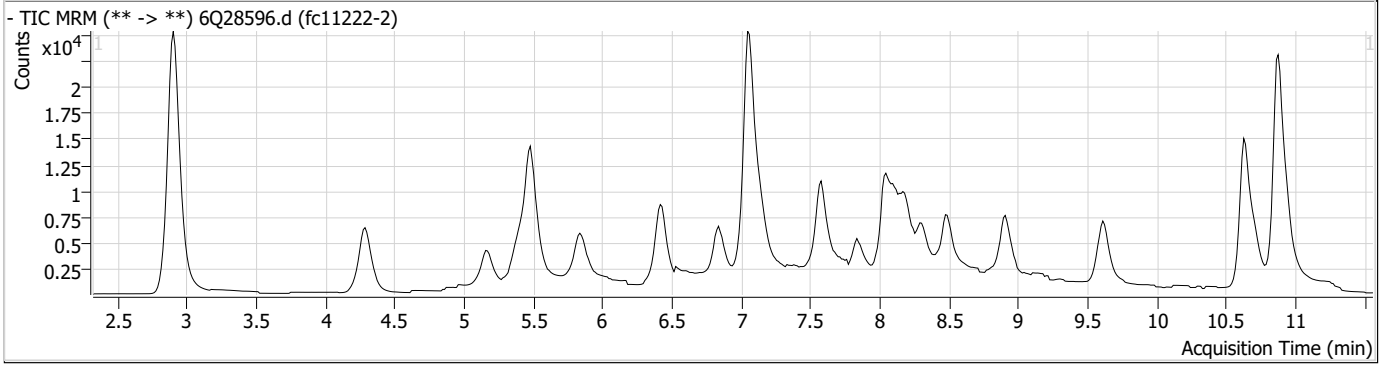
### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.1.2  
7



### Perfluorinated Compounds by LC/MS/MS

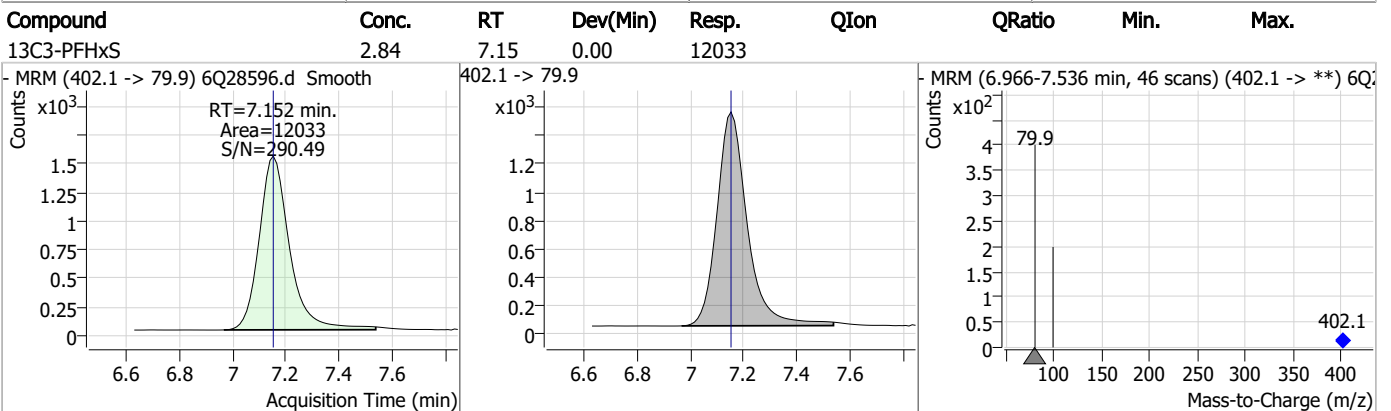
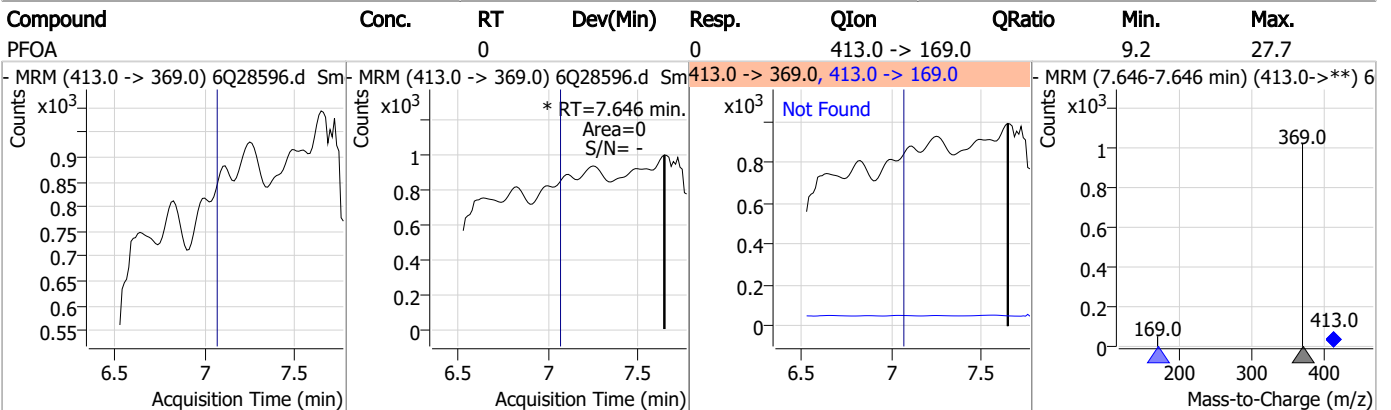
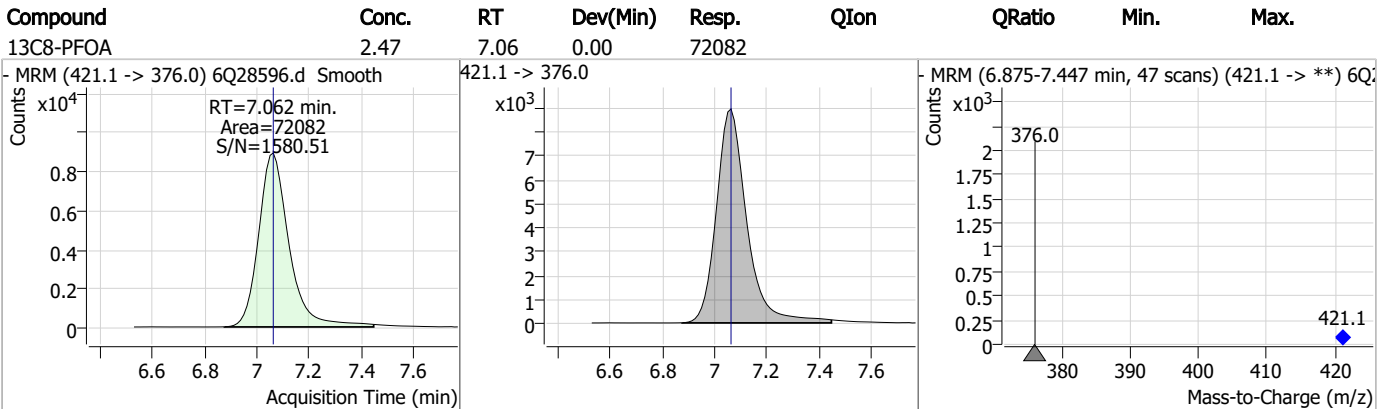
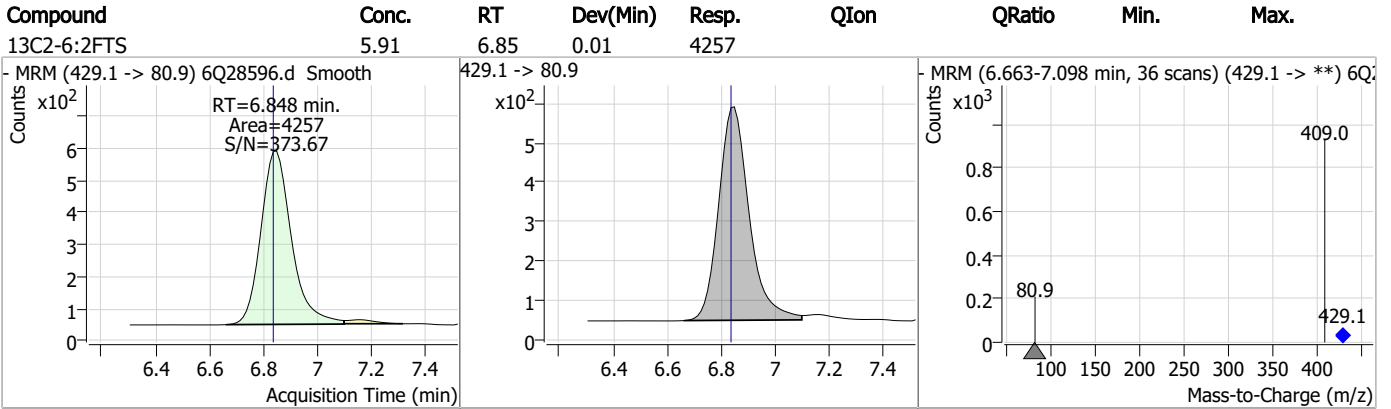




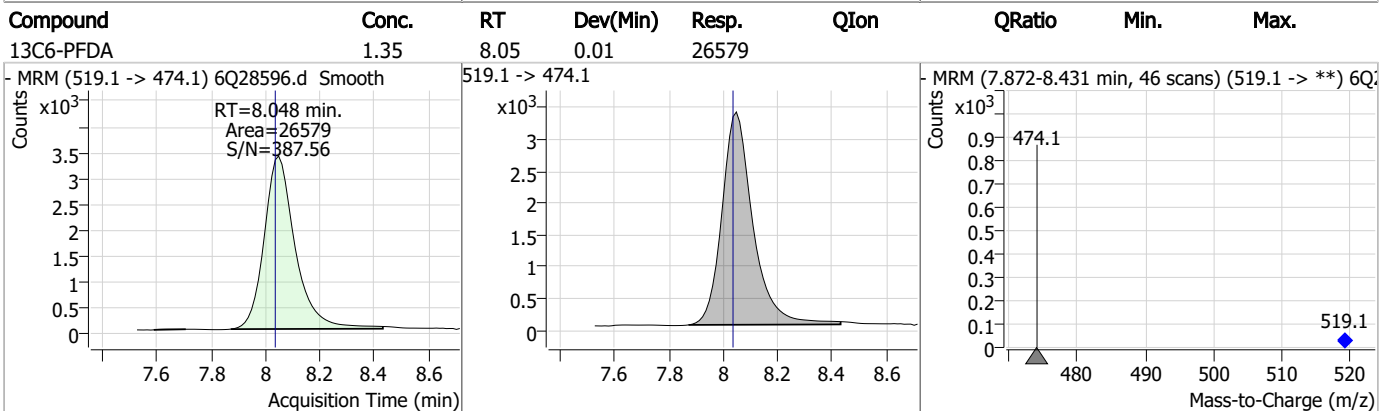
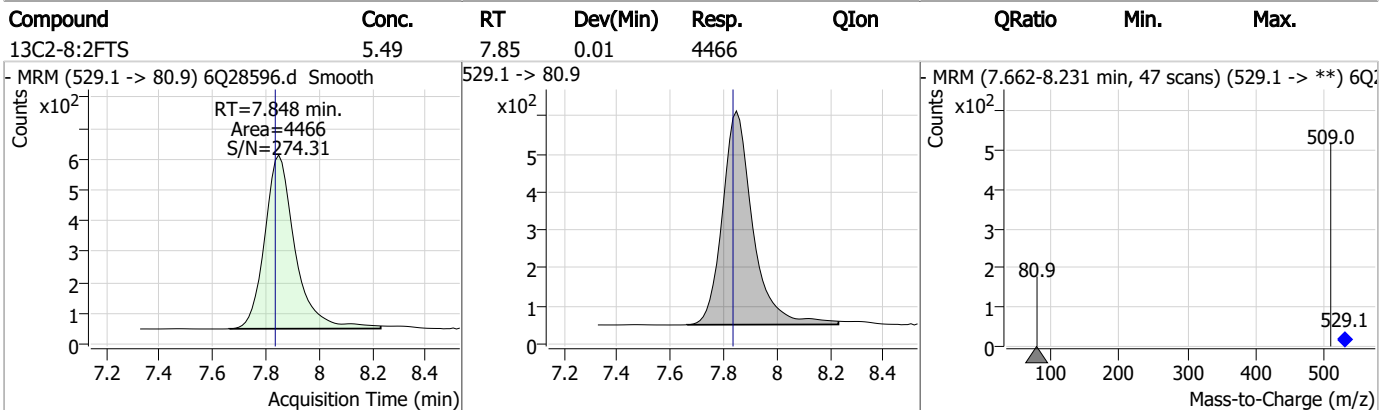
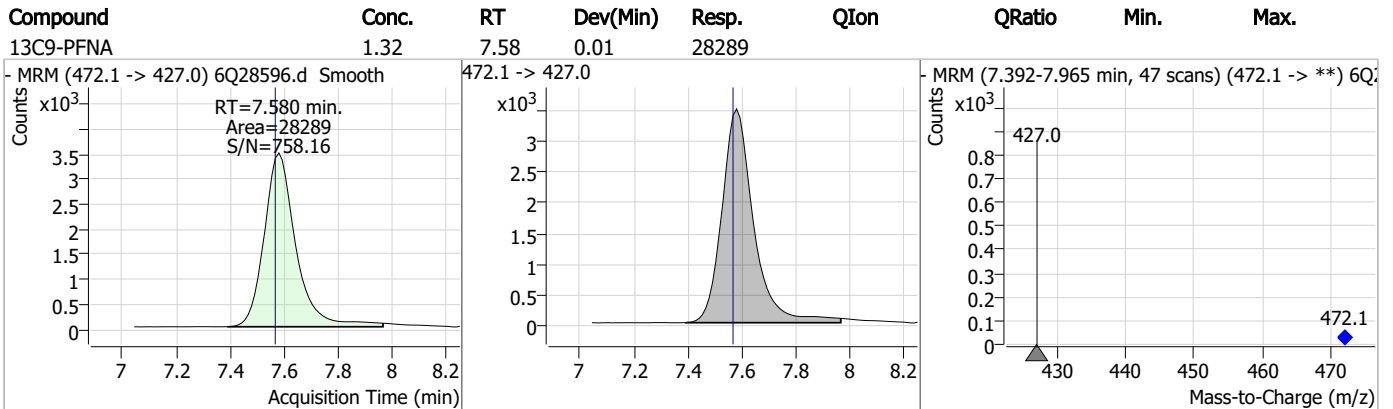
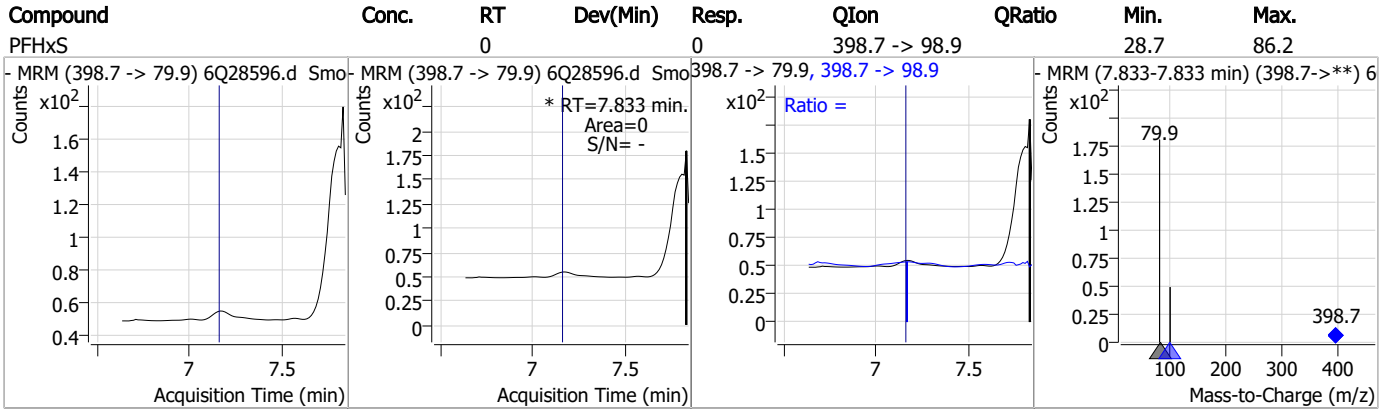
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.67	5.40	0.00	17220				
13C5-PFHxA	2.82	5.48	-0.01	44824				
13C3-HFPO-DA	11.69	5.84	-0.01	27761				
13C4-PFHpA	2.87	6.42	-0.01	50062				

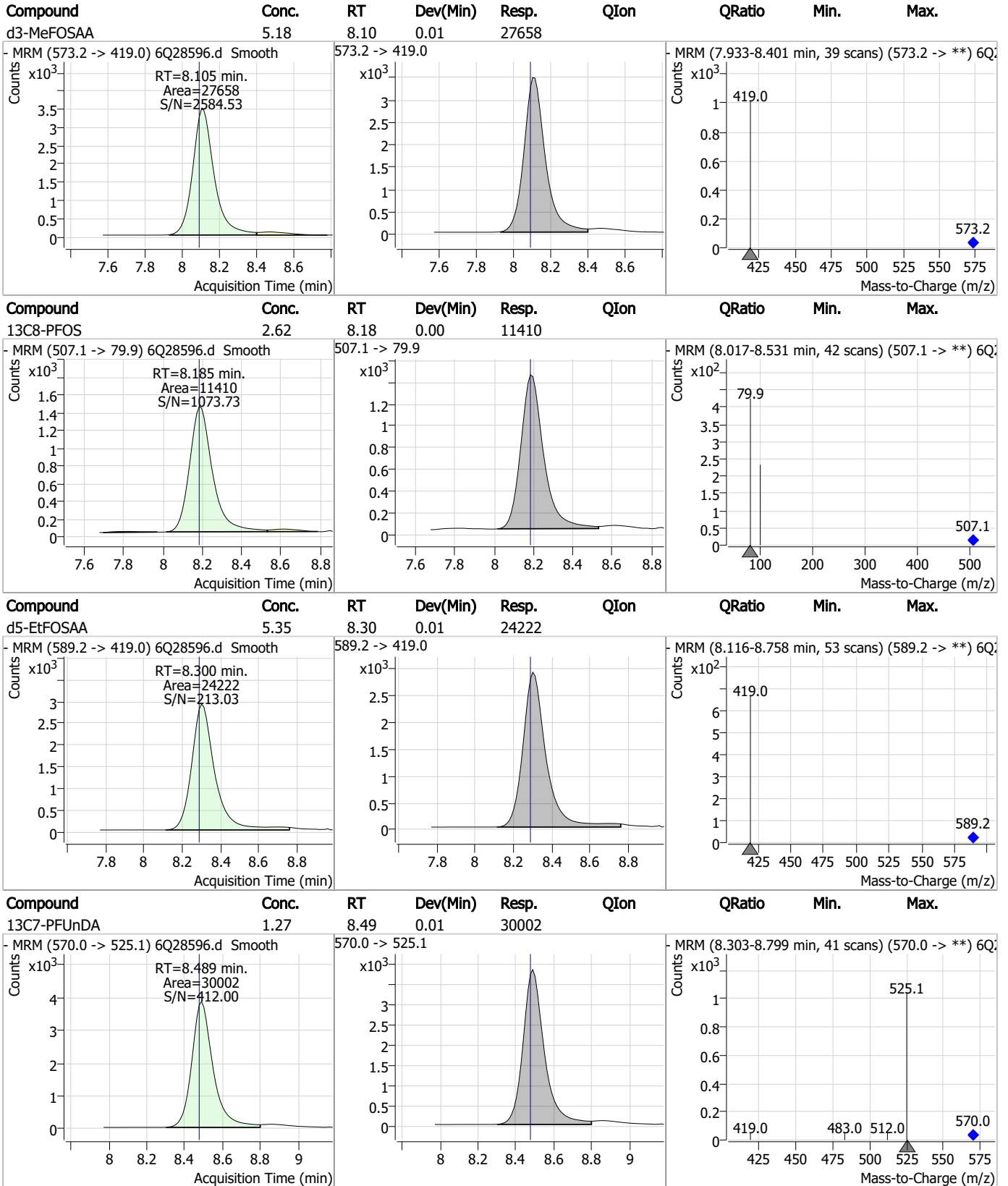
### Perfluorinated Compounds by LC/MS/MS



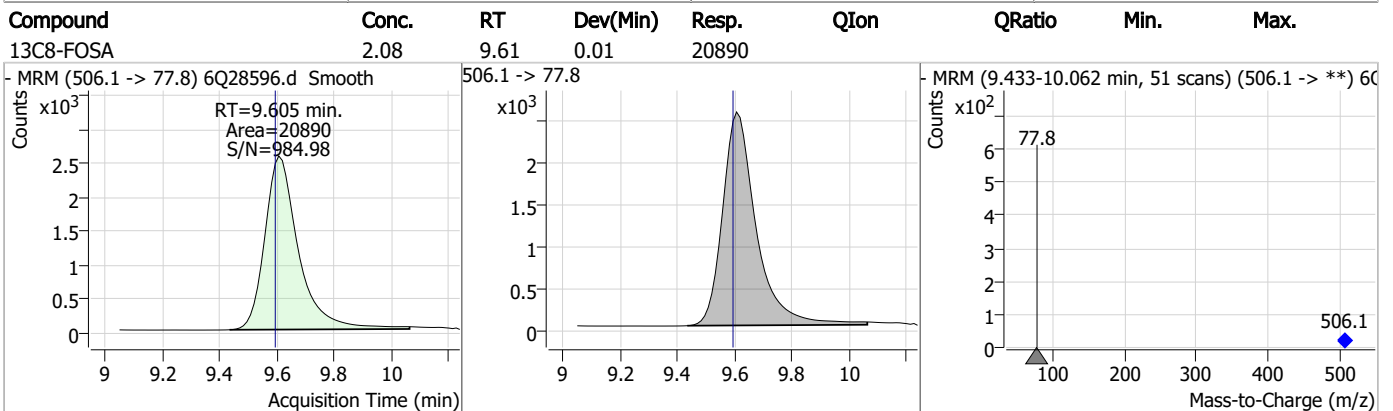
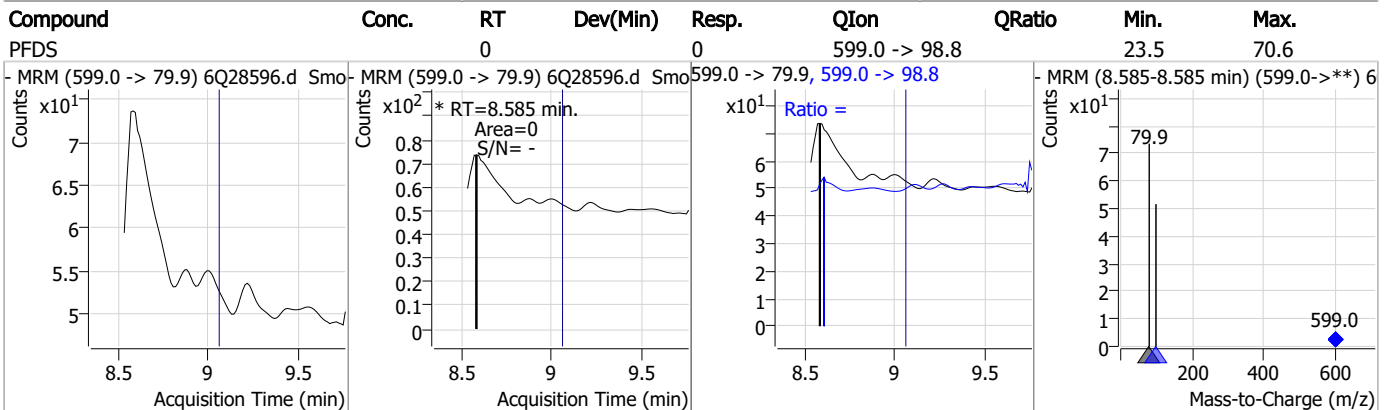
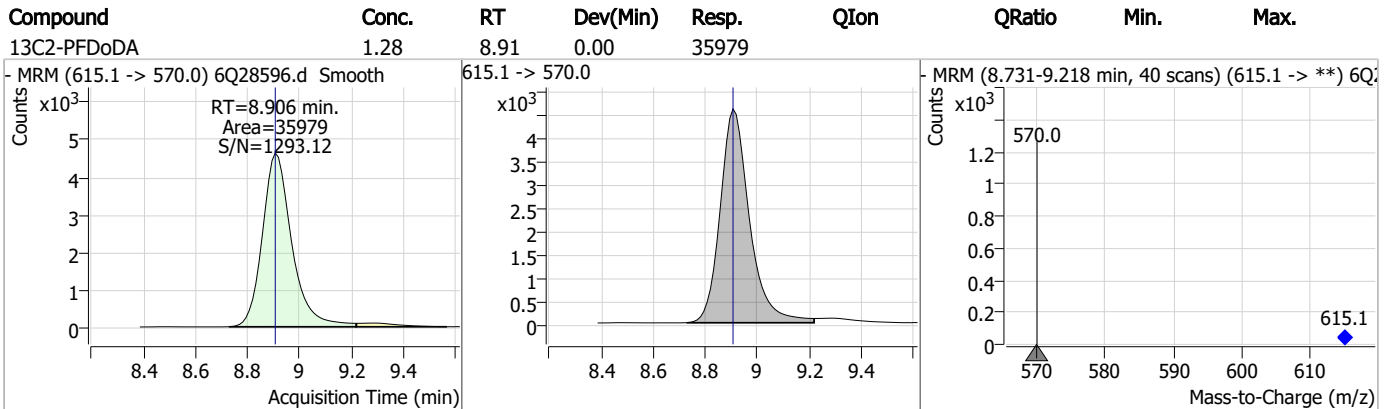
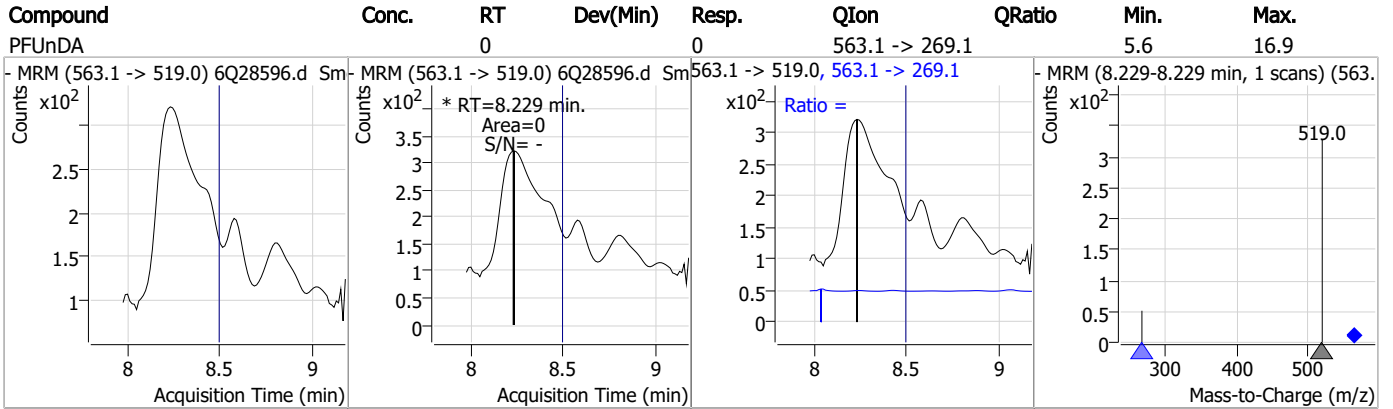
### Perfluorinated Compounds by LC/MS/MS



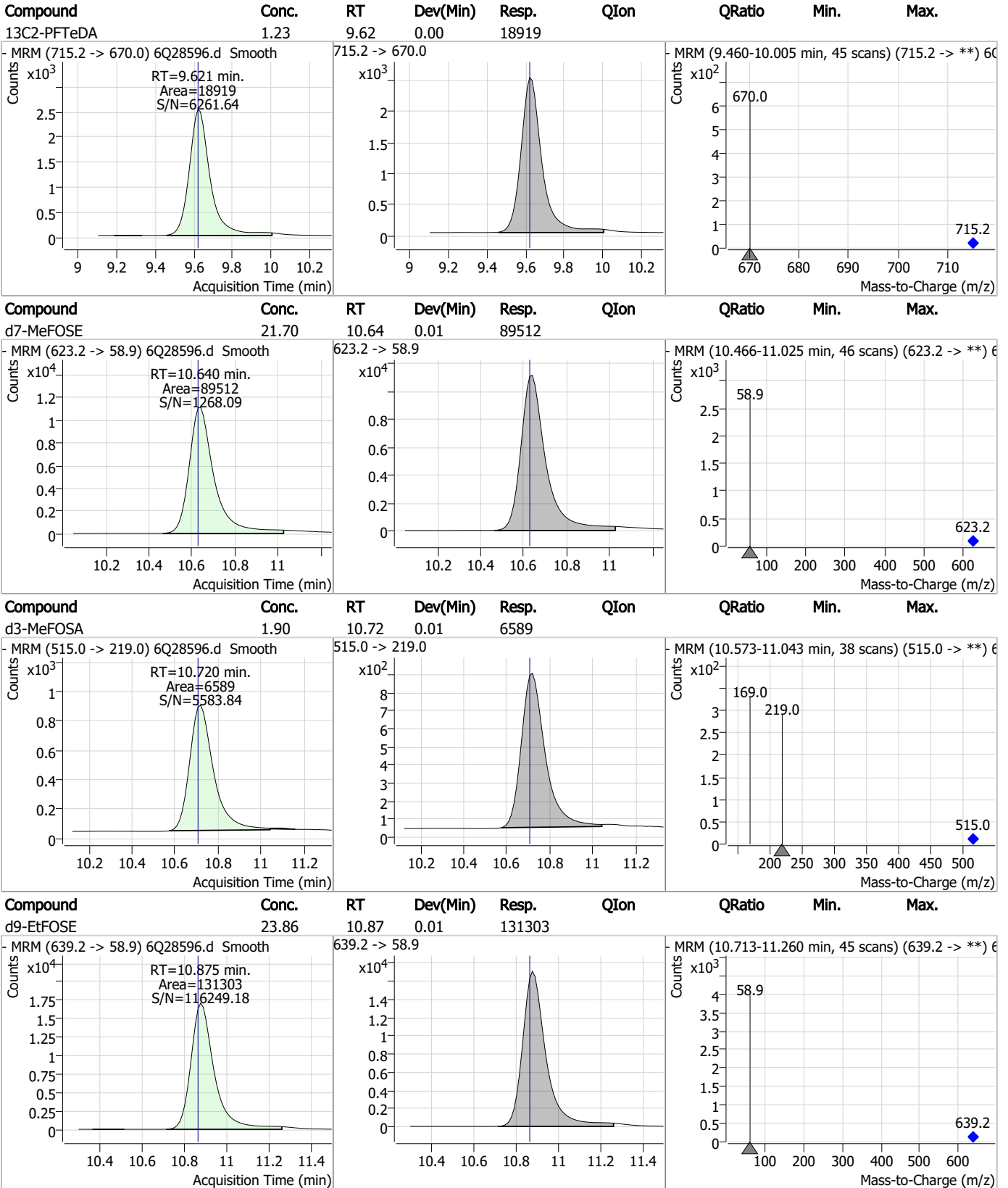
### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS

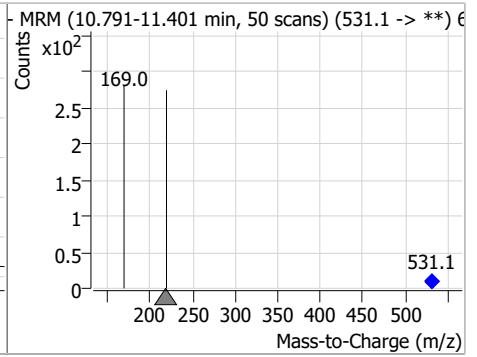
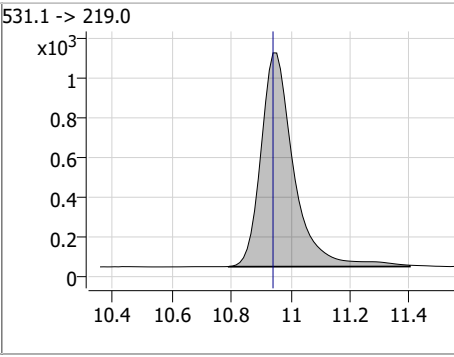
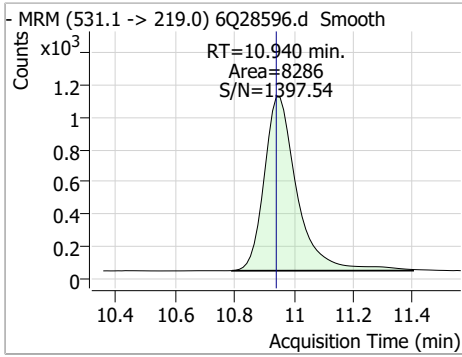


### Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.07	10.94	0.00	8286				



7.1.2  
7



## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28594.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 12:30:59 PM  
 Sample Name : op162-mb  
 Vial : P2-A3  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP162,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.901	216.8 -> 171.9	114365	10.00 µg/L	0.041
M5-PFPeA	4.284	268.3 -> 223.0	38856	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	40273	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	46137	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	68980	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	25233	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	24661	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	27613	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	33042	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	17930	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	14439	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	15228	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	10115	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	10562	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2214	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	3791	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	4159	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	25363	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	25261	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	20360	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	62076	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	101054	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	6926	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	4812	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	8771	2.50 µg/L	0.000
13C3-PFBA	2.891	216.0 -> 172.0	41844	5.00 µg/L	0.027
18O2-PFHxS	7.151	403.0 -> 83.9	6170	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	64736	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	20222	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	21437	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	34526	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2214	5.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.6%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3791	5.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.9%		
13C2-8:2FTS	7.848	529.1 -> 80.9	4159	5.73 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.5%		
13C2-PFDoDA	8.906	615.1 -> 570.0	33042	1.48 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 118.0%		
13C2-PFTeDA	9.621	715.2 -> 670.0	17930	1.46 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 116.9%		
13C3-PFBS	5.396	302.1 -> 79.9	15228	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C3-PFHxS	7.152	402.1 -> 79.9	10115	2.68 µg/L	0.000

7.2.1  
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 = 107.1%	
13C4-PFBA	2.901	216.8 -> 171.9	114365	11.81 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.1%	
13C4-PFHpA	6.419	367.1 -> 322.0	46137	2.93 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.3%	
13C5-PFHxA	5.478	318.0 -> 273.0	40273	2.80 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.2%	
13C5-PFPeA	4.284	268.3 -> 223.0	38856	5.60 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.1%	
13C6-PFDA	8.048	519.1 -> 474.1	24661	1.58 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 126.1%	
13C7-PFUnDA	8.489	570.0 -> 525.1	27613	1.47 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.7%	
13C8-FOSA	9.605	506.1 -> 77.8	14439	1.69 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 67.4%	
13C8-PFOA	7.062	421.1 -> 376.0	68980	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.4%	
13C8-PFOS	8.185	507.1 -> 79.9	10562	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.1%	
13C9-PFNA	7.580	472.1 -> 427.0	25233	1.40 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.4%	
d3-MeFOSAA	8.105	573.2 -> 419.0	25363	5.58 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.5%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	25261	11.78 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.8%	
d3-MeFOSA	10.720	515.0 -> 219.0	4812	1.63 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 65.1%	
d5-EtFOSAA	8.300	589.2 -> 419.0	20360	5.28 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
d7-MeFOSE	10.640	623.2 -> 58.9	62076	17.68 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 70.7%	
d9-EtFOSE	10.875	639.2 -> 58.9	101054	21.57 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.3%	
d5-EtFOSA	10.940	531.1 -> 219.0	6926	2.04 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 81.4%	

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.	



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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	7.435	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	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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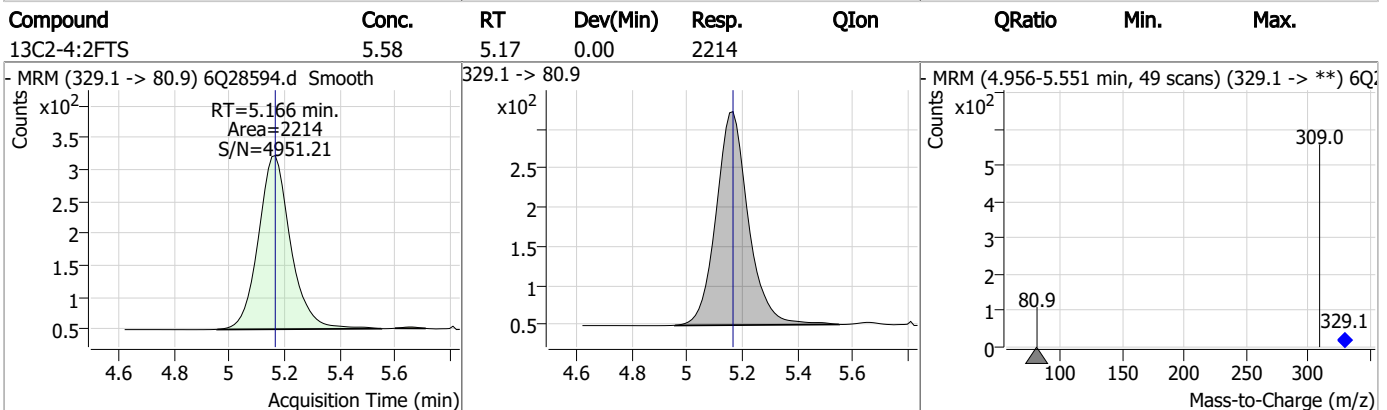
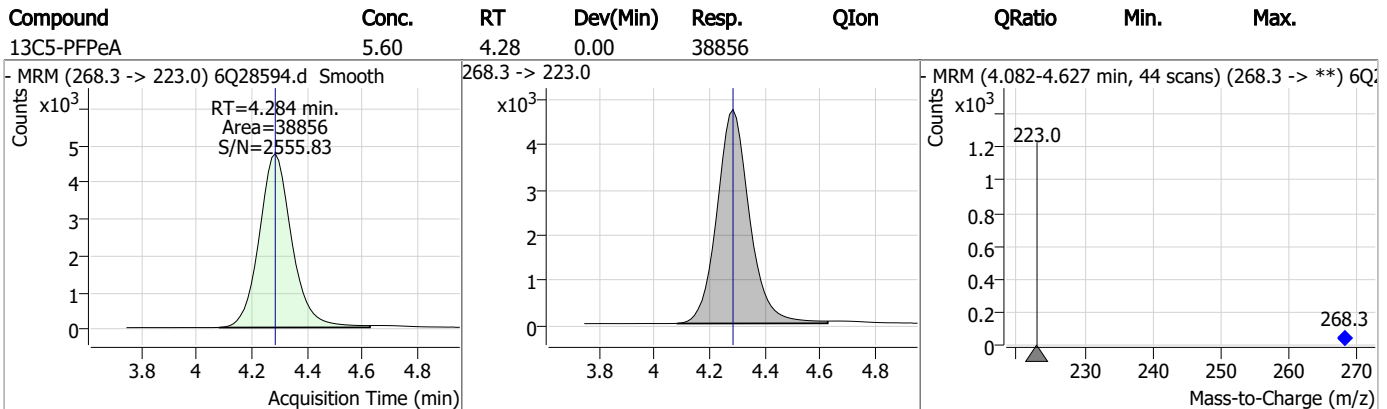
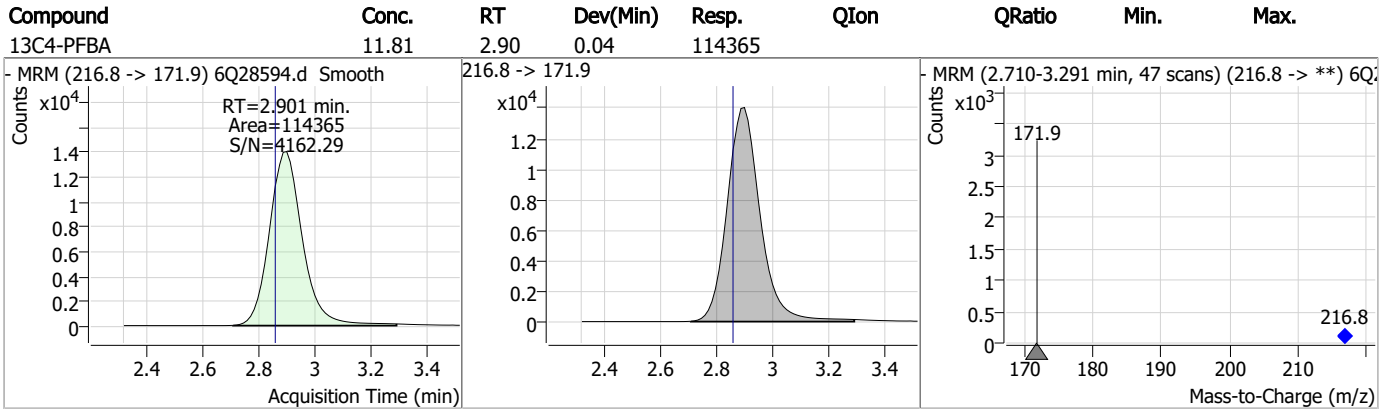
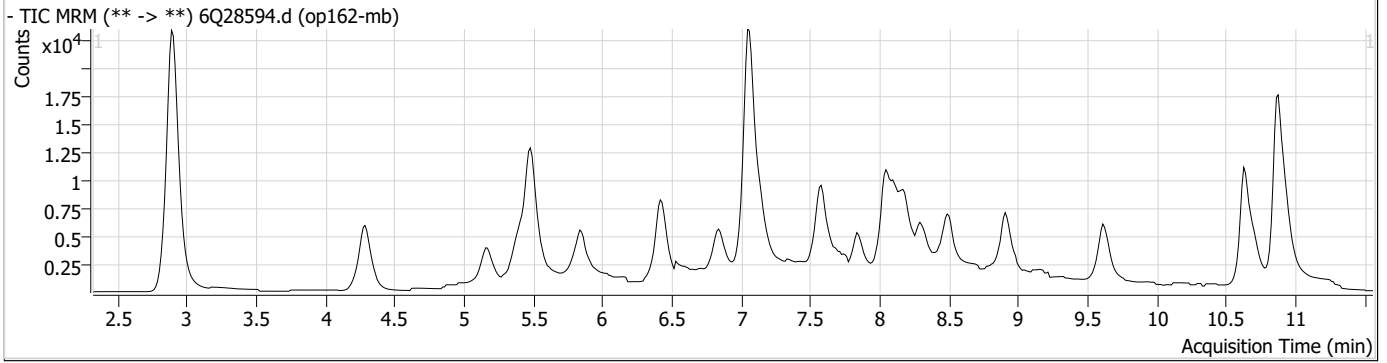
### Perfluorinated Compounds by LC/MS/MS

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

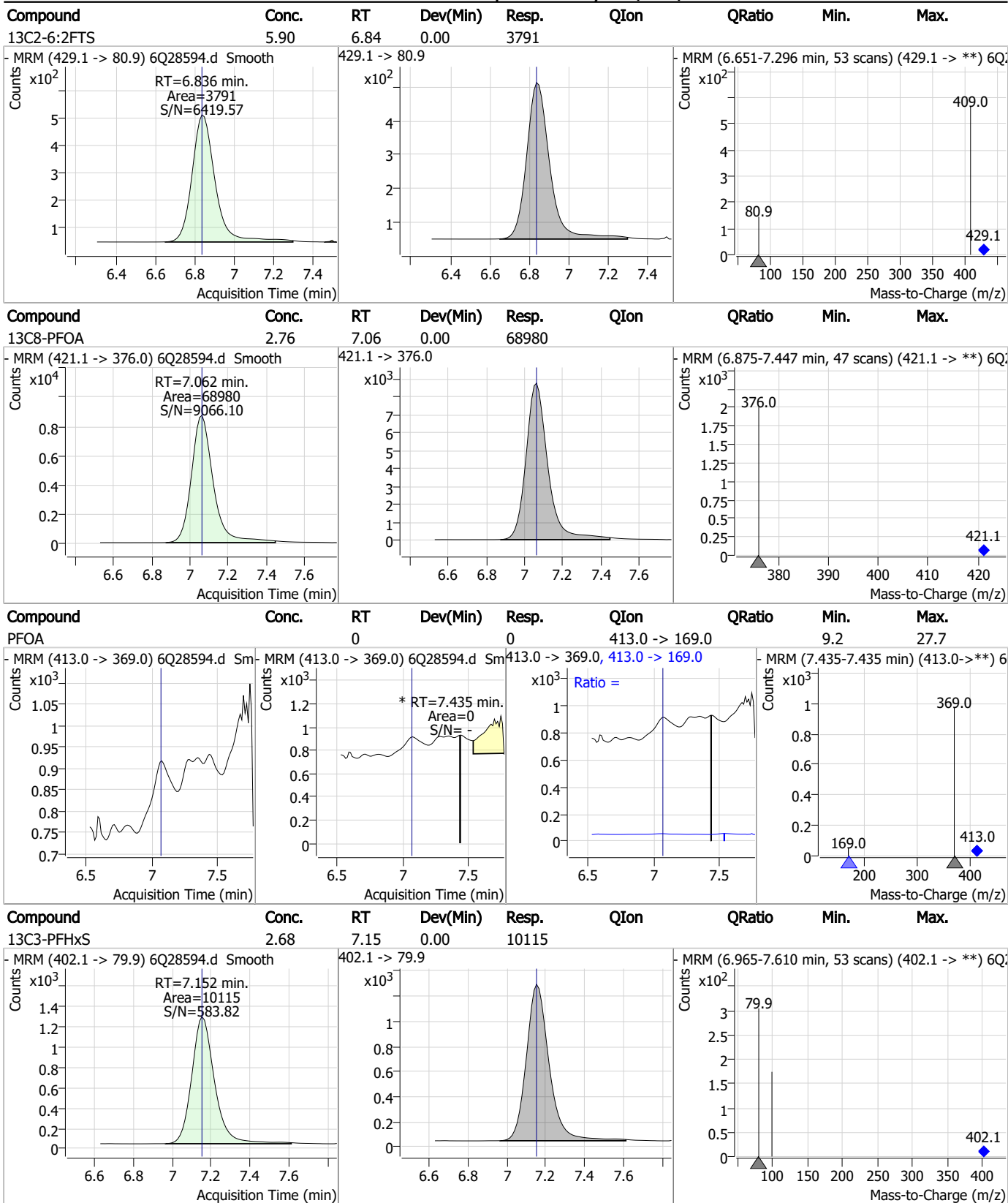


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.64	5.40	0.00	15228				
13C5-PFHxA	2.80	5.48	-0.01	40273				
13C3-HFPO-DA	11.78	5.84	-0.01	25261				
13C4-PFHpA	2.93	6.42	-0.01	46137				

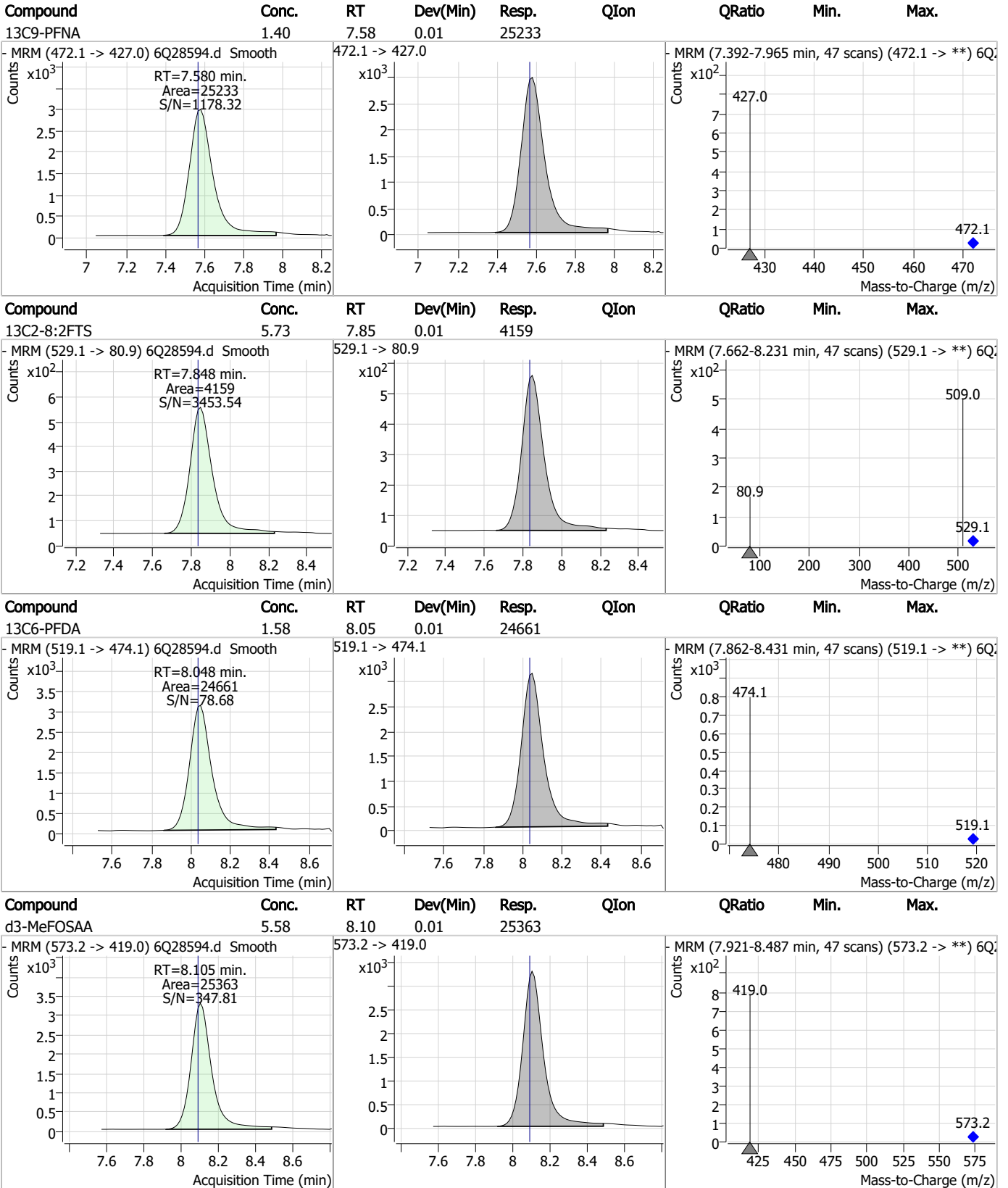
7.2.1  
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### Perfluorinated Compounds by LC/MS/MS



7.2.1  
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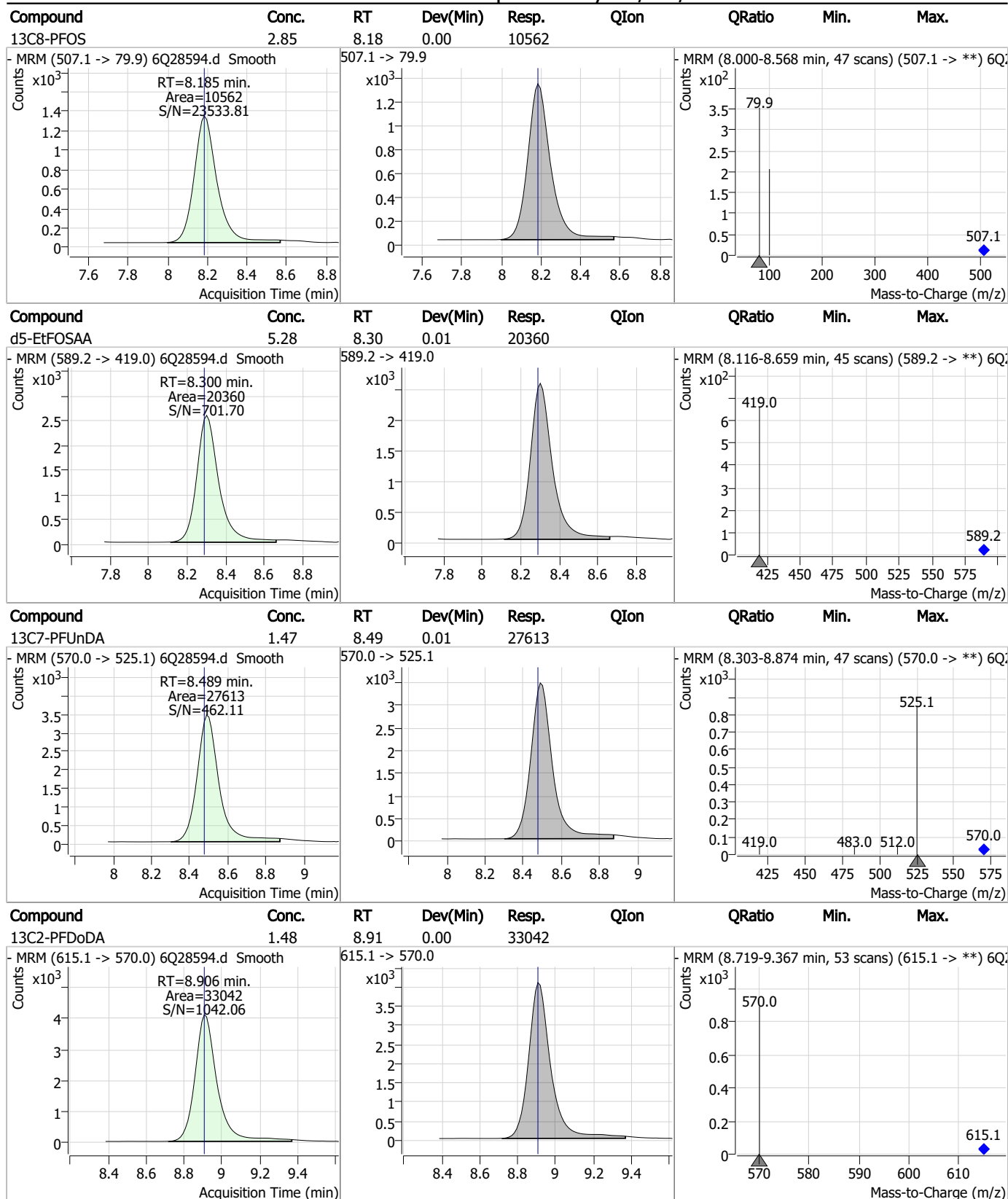
### Perfluorinated Compounds by LC/MS/MS



7.2.1

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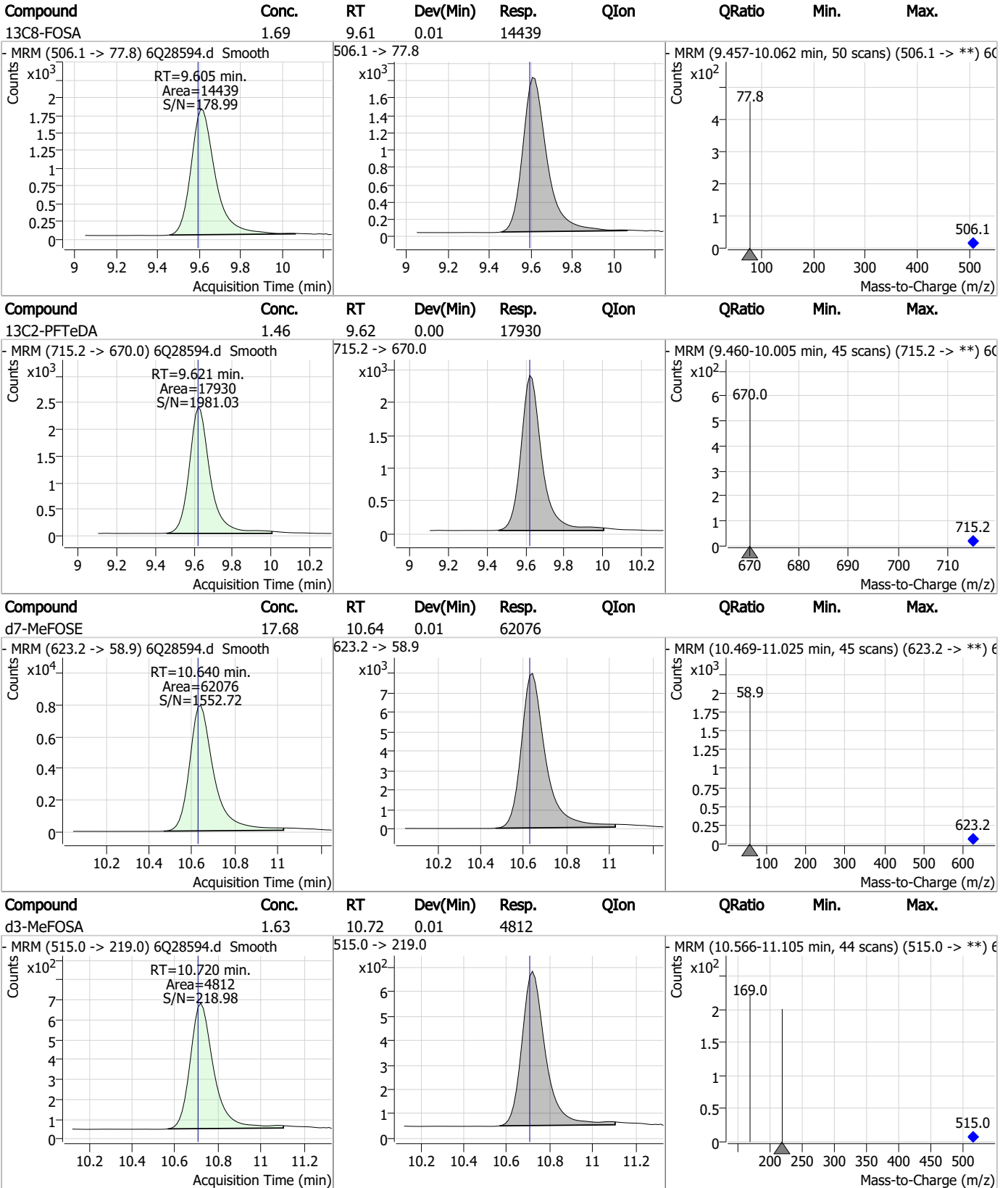
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS



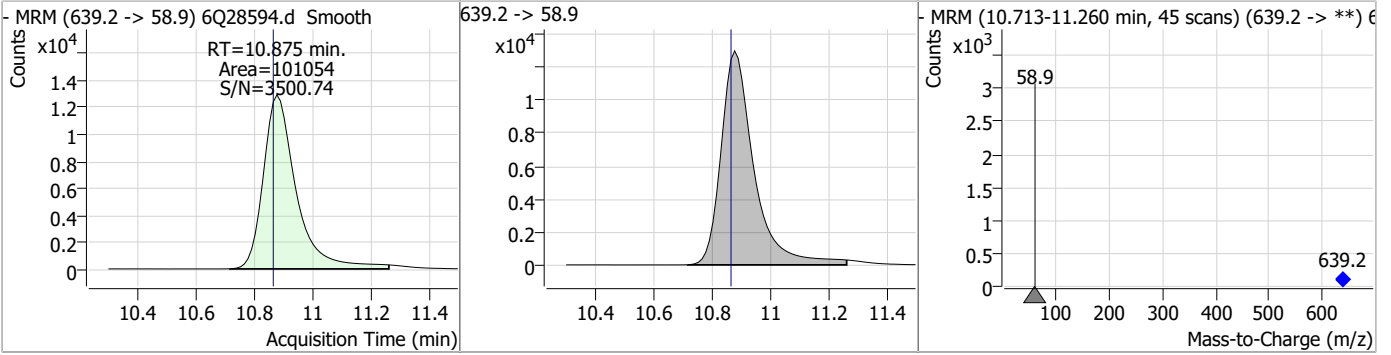
7.2.1

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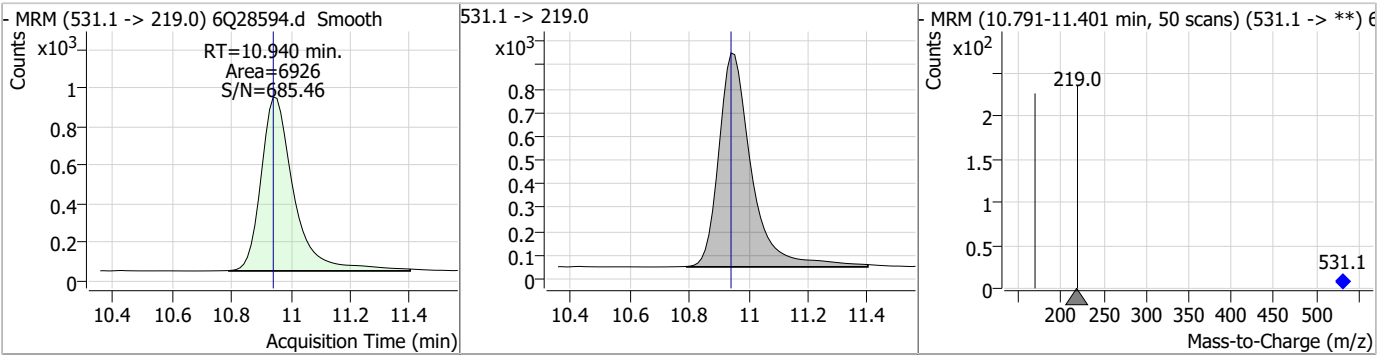


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.57	10.87	0.01	101054				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.04	10.94	0.00	6926				



7.2.1

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## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28589.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 11:06:20 AM  
 Sample Name : IBLK  
 Vial : P1-A1  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.876	216.8 -> 171.9	130310	10.00 µg/L	0.016
M5-PFPeA	4.272	268.3 -> 223.0	49521	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	50302	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	55207	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	84495	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	30083	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	30576	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	35316	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	44074	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	27943	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	31725	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	20685	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	13000	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	12989	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	2849	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	3949	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	4113	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	26788	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	31376	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	24822	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	154769	25.00 µg/L	0.000
M9-EtFOSE	10.875	639.2 -> 58.9	205329	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	12062	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	10201	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	12337	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	56587	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8638	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	87537	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	33314	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	29169	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	48227	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	2849	5.13 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3949	4.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.7%		
13C2-8:2FTS	7.848	529.1 -> 80.9	4113	4.05 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 80.9%		
13C2-PFDoDA	8.906	615.1 -> 570.0	44074	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C2-PFTeDA	9.621	715.2 -> 670.0	27943	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.6%		
13C3-PFBS	5.384	302.1 -> 79.9	20685	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C3-PFHxS	7.152	402.1 -> 79.9	13000	2.46 µg/L	0.000

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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C4-PFBA	2.876	216.8 -> 171.9	130310	9.95 µg/L	0.016
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.419	367.1 -> 322.0	55207	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFHxA	5.478	318.0 -> 273.0	50302	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C5-PFPeA	4.272	268.3 -> 223.0	49521	5.11 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C6-PFDA	8.048	519.1 -> 474.1	30576	1.19 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C7-PFUnDA	8.489	570.0 -> 525.1	35316	1.14 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.4%	
13C8-FOSA	9.605	506.1 -> 77.8	31725	2.63 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C8-PFOA	7.062	421.1 -> 376.0	84495	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-PFOS	8.185	507.1 -> 79.9	12989	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C9-PFNA	7.580	472.1 -> 427.0	30083	1.23 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSAA	8.105	573.2 -> 419.0	26788	4.19 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 83.8%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	31376	10.48 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
d3-MeFOSA	10.720	515.0 -> 219.0	10201	2.45 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
d5-EtFOSAA	8.300	589.2 -> 419.0	24822	4.58 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.6%	
d7-MeFOSE	10.628	623.2 -> 58.9	154769	31.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 125.4%	
d9-EtFOSE	10.875	639.2 -> 58.9	205329	31.16 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 124.7%	
d5-EtFOSA	10.940	531.1 -> 219.0	12062	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	

7.2.2  
7

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



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8			
PFHpA	-	363.1 -> 319.0	-	N.D.	
		363.1 -> 169.0			
PFHpS	-	449.0 -> 79.9	-	N.D.	
		449.0 -> 98.9			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 118.9			
PFHxS	-	398.7 -> 79.9	-	N.D.	
		398.7 -> 98.9			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	548.8 -> 79.9	-	N.D.	
		548.8 -> 98.9			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	498.9 -> 79.9	-	N.D.	
		498.9 -> 98.8			
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.1 -> 79.9	-	N.D.	
		349.1 -> 98.9			
PFTeDA	-	713.1 -> 669.0	-	N.D.	
		713.1 -> 168.9			
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



7.2.2  
7

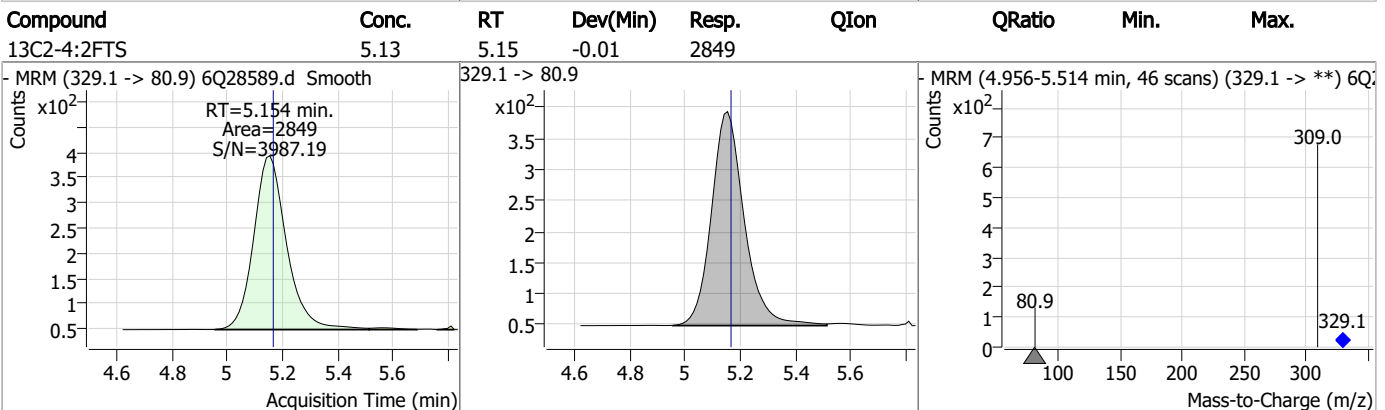
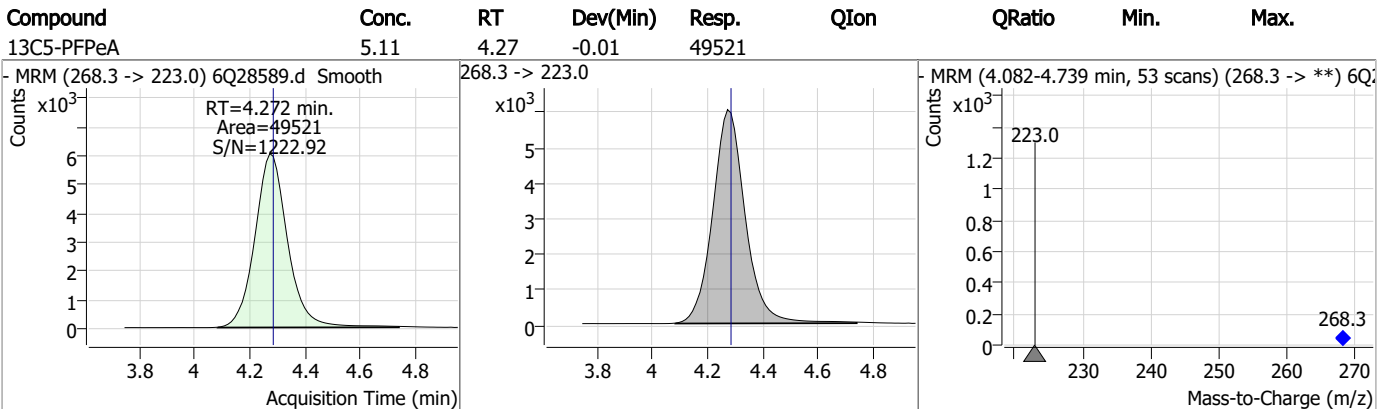
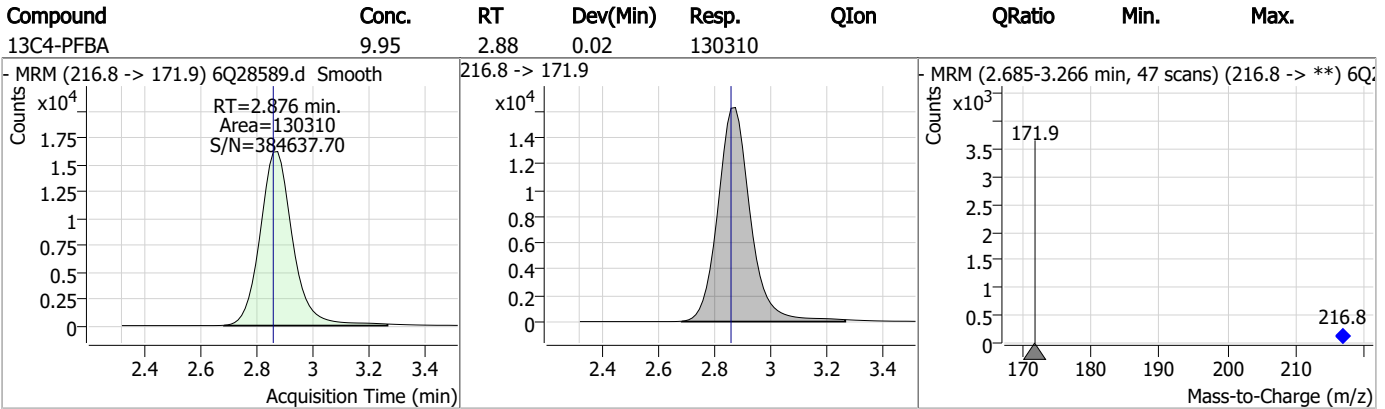
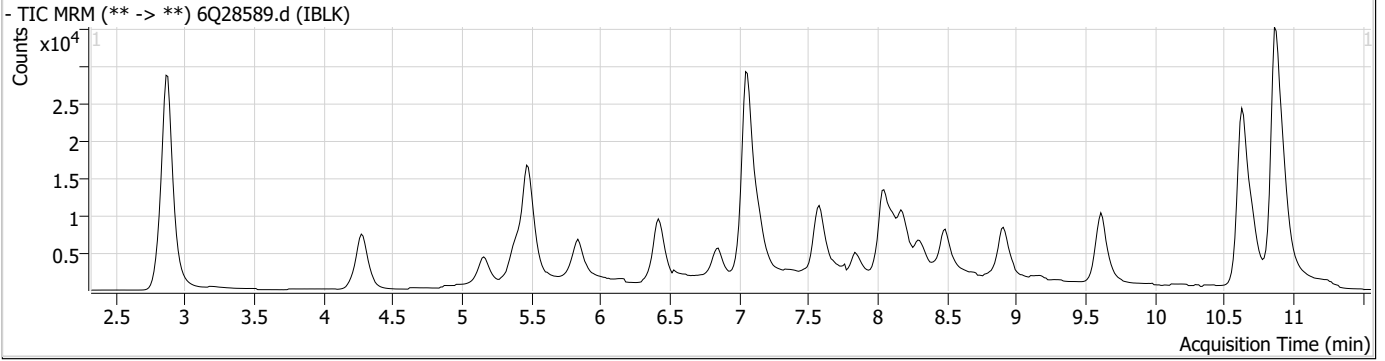
### Perfluorinated Compounds by LC/MS/MS

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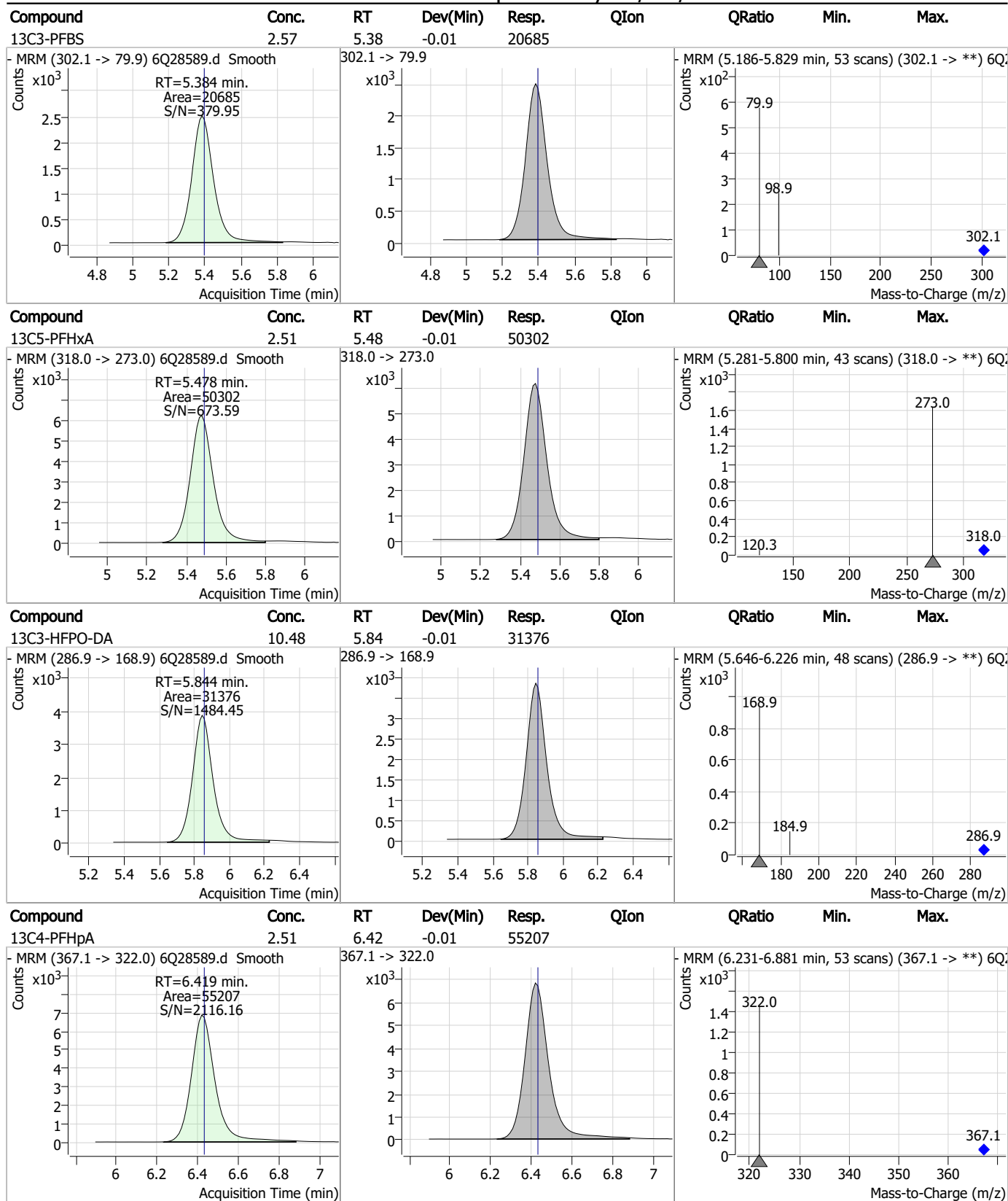
7.2.2

7

### Perfluorinated Compounds by LC/MS/MS



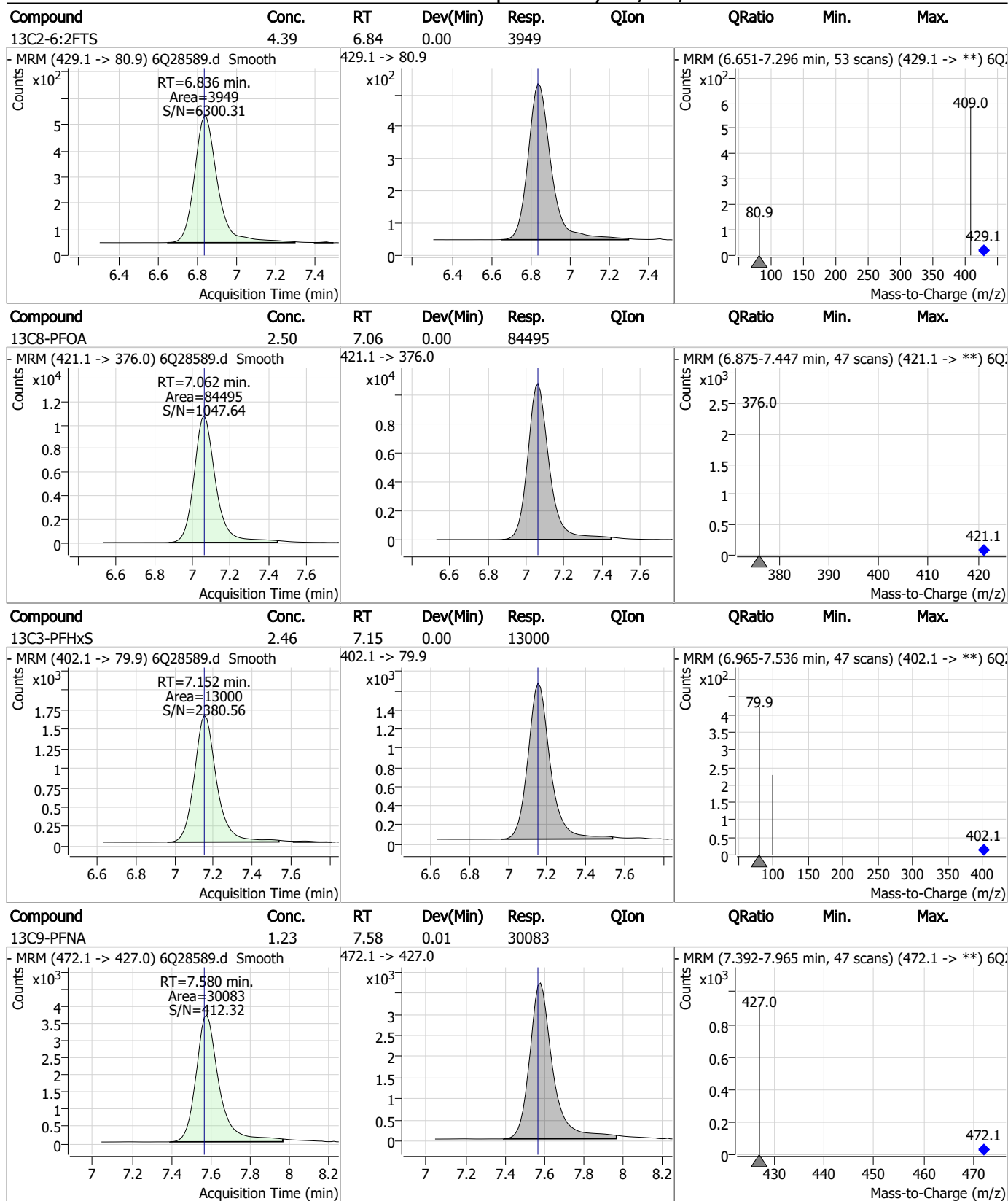
### Perfluorinated Compounds by LC/MS/MS



7.22  
7

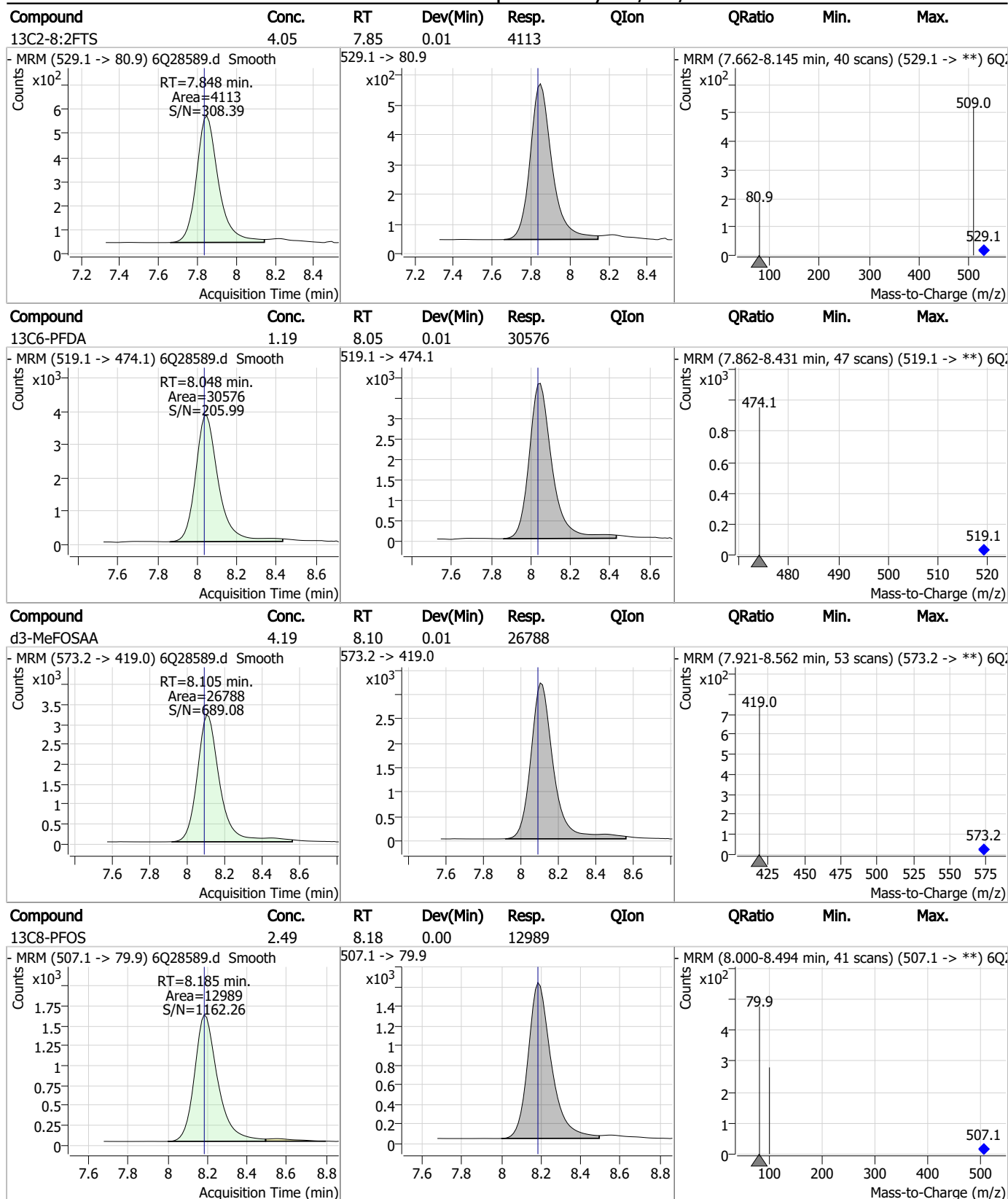


### Perfluorinated Compounds by LC/MS/MS



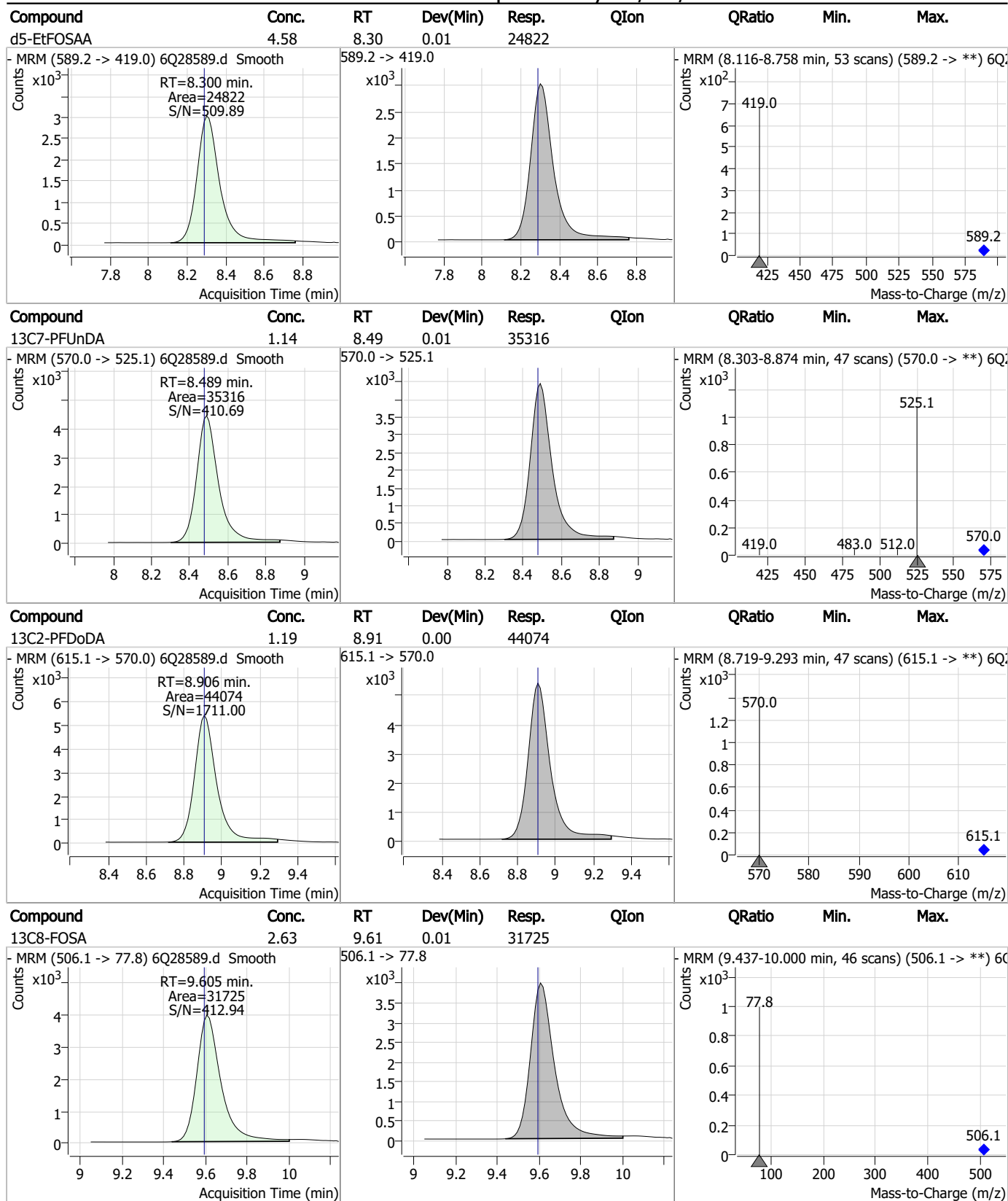
7.2.2  
7

### Perfluorinated Compounds by LC/MS/MS



7.2.2  
7

### Perfluorinated Compounds by LC/MS/MS



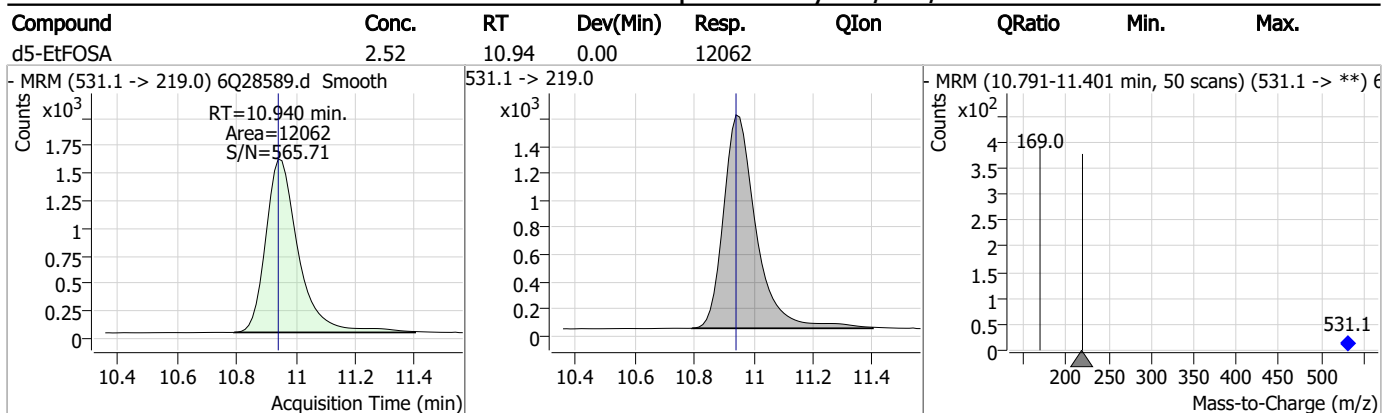
7.2.2  
7

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.38	9.62	0.00	27943				
d7-MeFOSE	31.34	10.63	0.00	154769				
d3-MeFOSA	2.45	10.72	0.01	10201				
d9-EtFOSE	31.16	10.87	0.01	205329				

7.2.2  
7

### Perfluorinated Compounds by LC/MS/MS



7.2.2  
7

## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28684.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/21/2023 10:30:23 AM  
 Sample Name : IBLK  
 Vial : P1-A1  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	139509	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	51400	5.00 µg/L	-0.012
M5-PFHxA	5.466	318.0 -> 273.0	53111	2.50 µg/L	-0.025
M4-PFHpA	6.419	367.1 -> 322.0	57436	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	90607	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	33680	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	32894	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	35986	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	47054	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	26179	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	32775	2.50 µg/L	0.012
M3-PFBS	5.371	302.1 -> 79.9	21273	2.50 µg/L	-0.025
M3-PFHxS	7.152	402.1 -> 79.9	14341	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	14100	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	3448	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	5161	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	5618	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	35161	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	33230	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	30386	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	129246	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	165882	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	12951	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	10385	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	12942	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	59668	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	9229	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	93150	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	32965	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	30906	1.25 µg/L	0.013
13C2-PFHxA	5.467	315.1 -> 270.0	50279	2.50 µg/L	-0.025
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	3448	5.81 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.2%		
13C2-6:2FTS	6.836	429.1 -> 80.9	5161	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.3%		
13C2-8:2FTS	7.848	529.1 -> 80.9	5618	5.17 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C2-PFDoDA	8.906	615.1 -> 570.0	47054	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C2-PFTeDA	9.621	715.2 -> 670.0	26179	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFBS	5.371	302.1 -> 79.9	21273	2.47 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFHxS	7.152	402.1 -> 79.9	14341	2.54 µg/L	0.000

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 = 101.5%	
13C4-PFBA	2.860	216.8 -> 171.9	139509	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFHpA	6.419	367.1 -> 322.0	57436	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C5-PFHxA	5.466	318.0 -> 273.0	53111	2.54 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFPeA	4.272	268.3 -> 223.0	51400	5.09 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C6-PFDA	8.048	519.1 -> 474.1	32894	1.29 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C7-PFUnDA	8.489	570.0 -> 525.1	35986	1.18 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.1%	
13C8-FOSA	9.605	506.1 -> 77.8	32775	2.59 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C8-PFOA	7.062	421.1 -> 376.0	90607	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-PFOS	8.185	507.1 -> 79.9	14100	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C9-PFNA	7.580	472.1 -> 427.0	33680	1.30 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%	
d3-MeFOSAA	8.105	573.2 -> 419.0	35161	5.24 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	33230	10.64 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
d3-MeFOSA	10.720	515.0 -> 219.0	10385	2.38 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
d5-EtFOSAA	8.300	589.2 -> 419.0	30386	5.35 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
d7-MeFOSE	10.640	623.2 -> 58.9	129246	24.95 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d9-EtFOSE	10.875	639.2 -> 58.9	165882	24.00 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
d5-EtFOSA	10.940	531.1 -> 219.0	12951	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	

**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)
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	7.732	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	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



7.2.3  
7



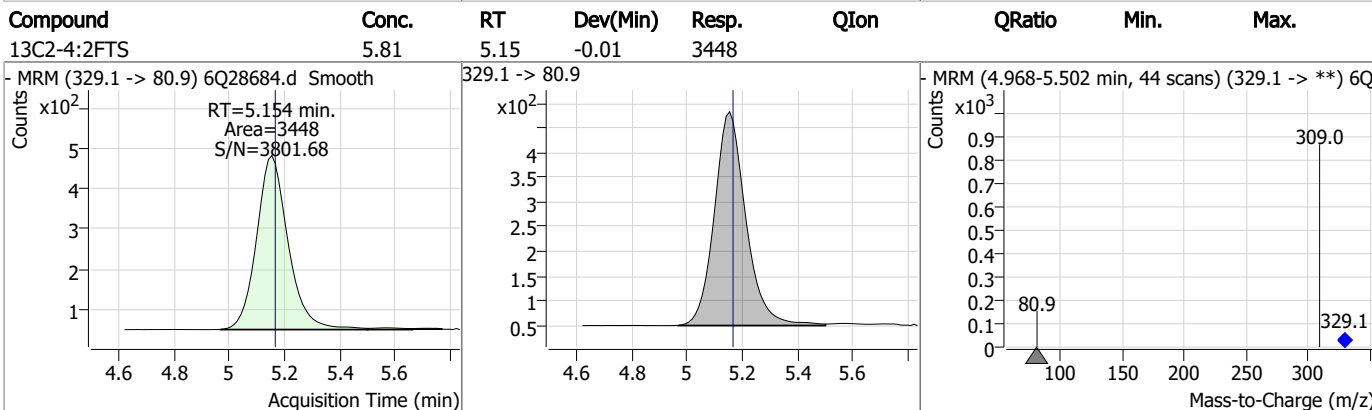
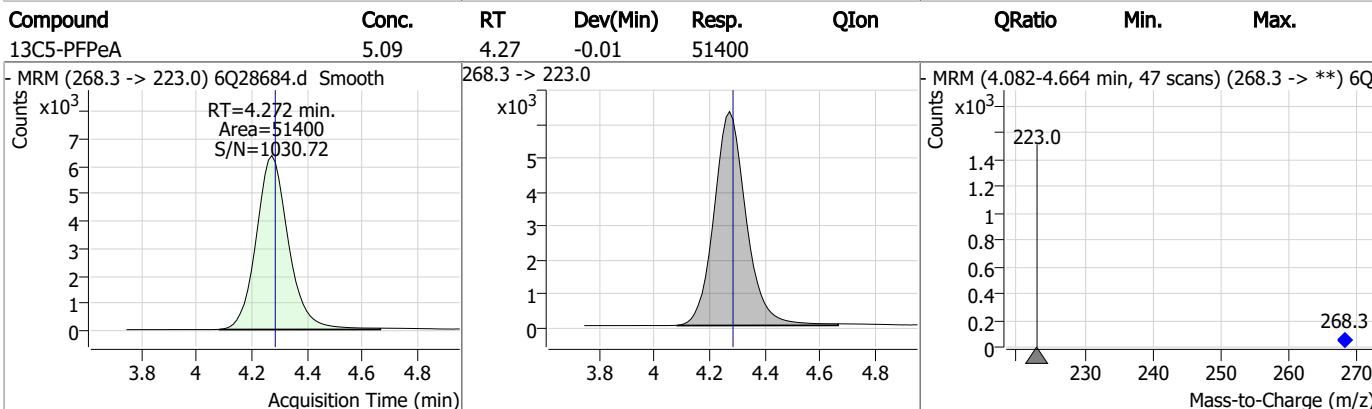
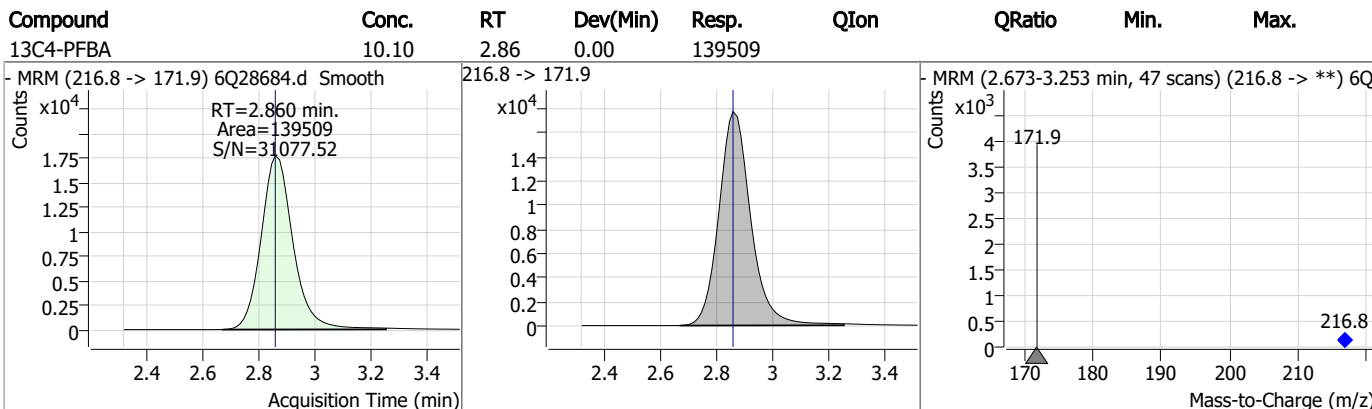
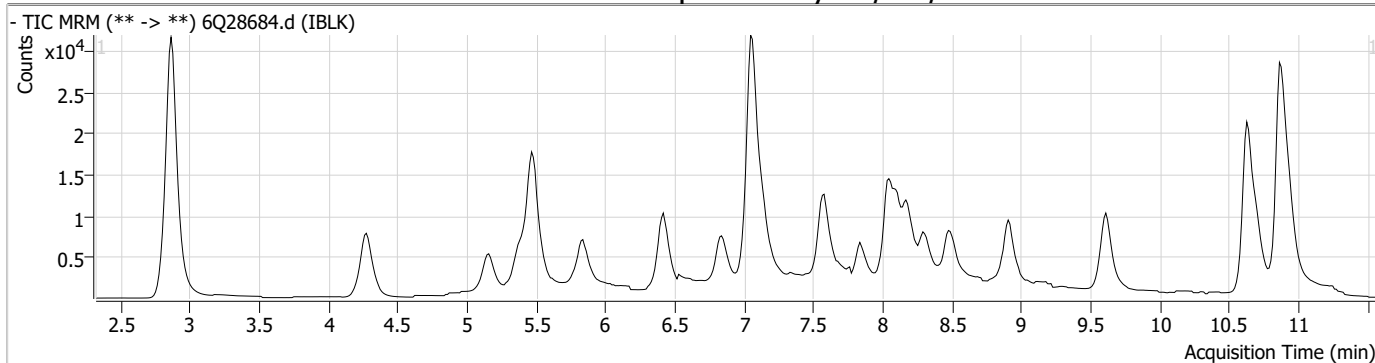
### Perfluorinated Compounds by LC/MS/MS

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

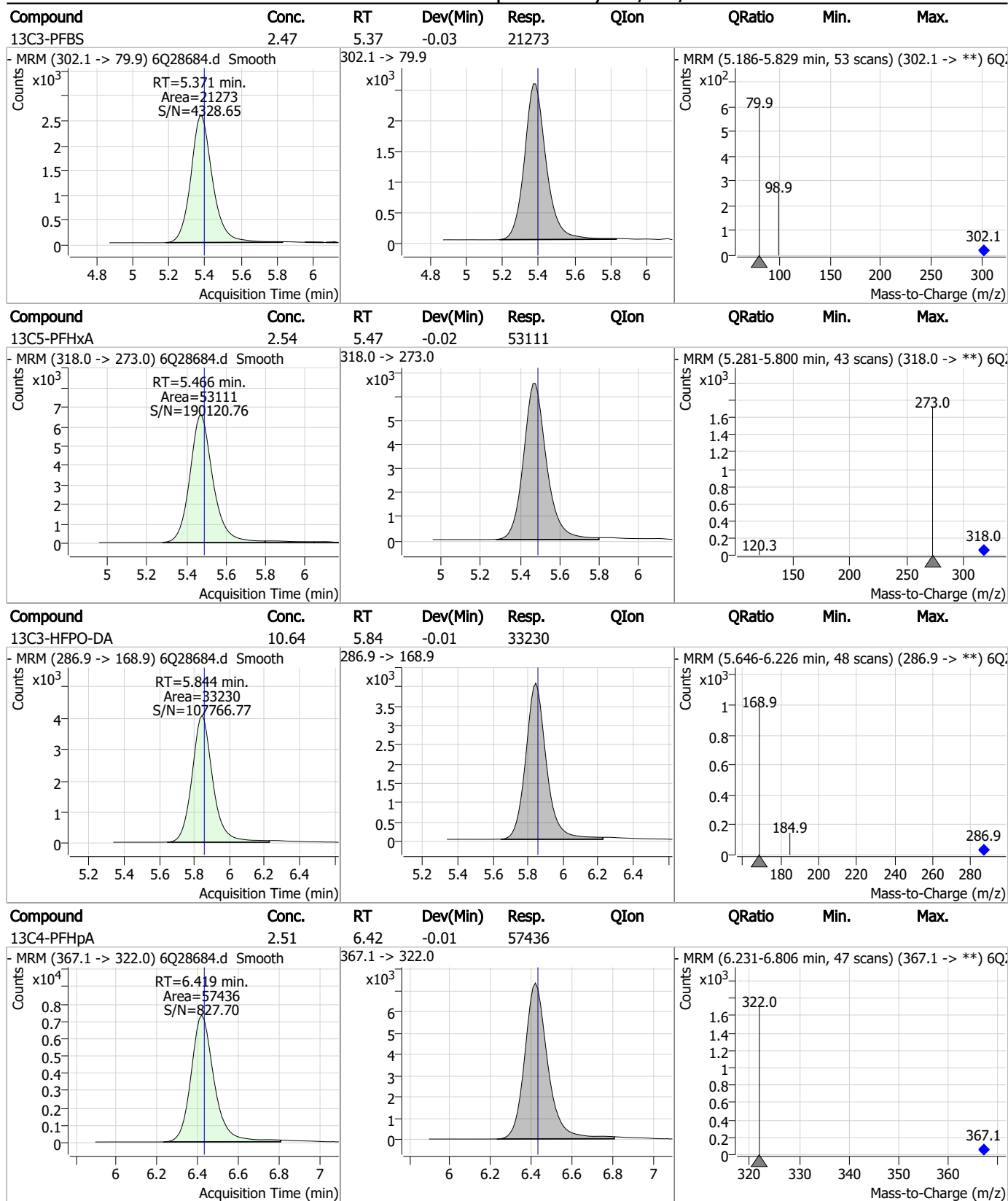
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### Perfluorinated Compounds by LC/MS/MS



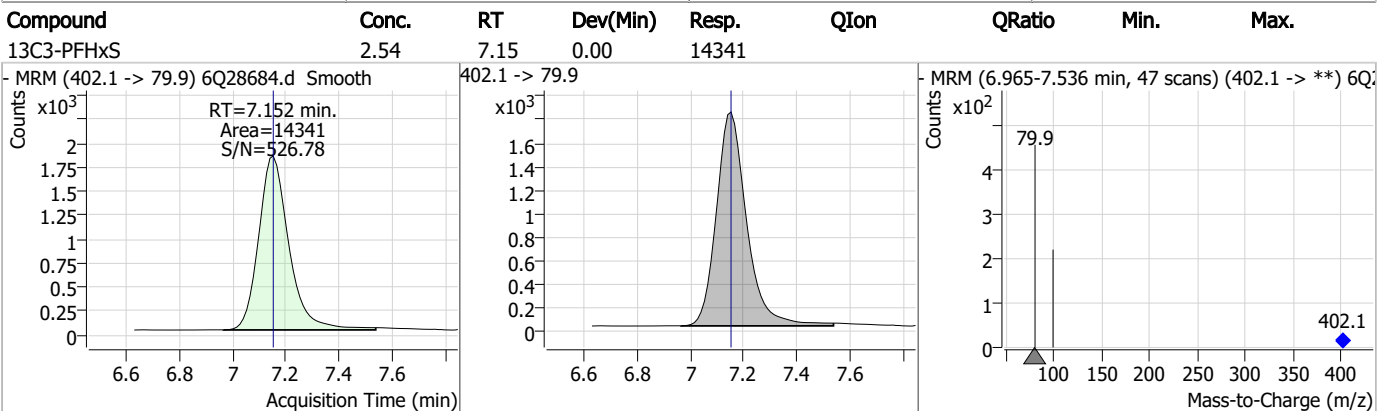
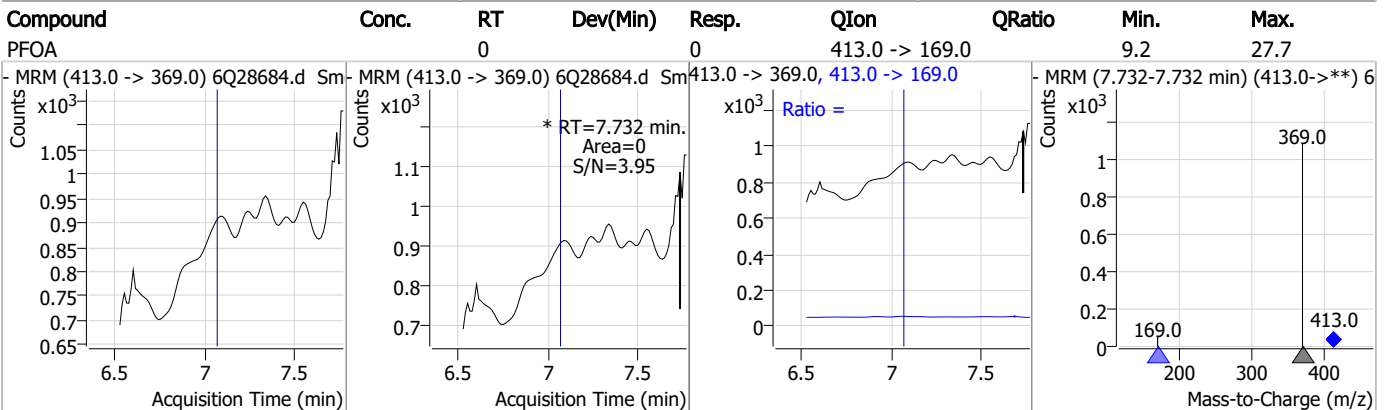
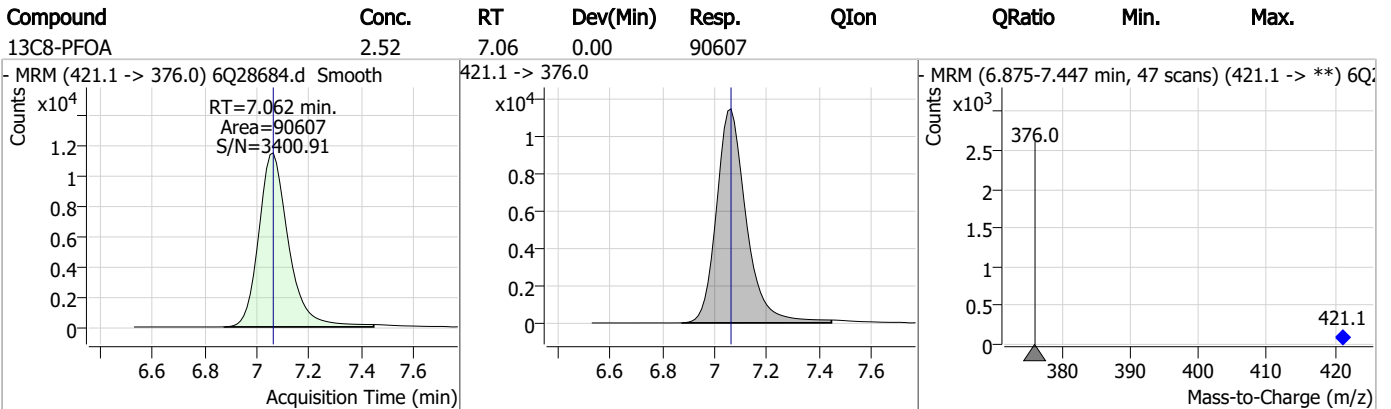
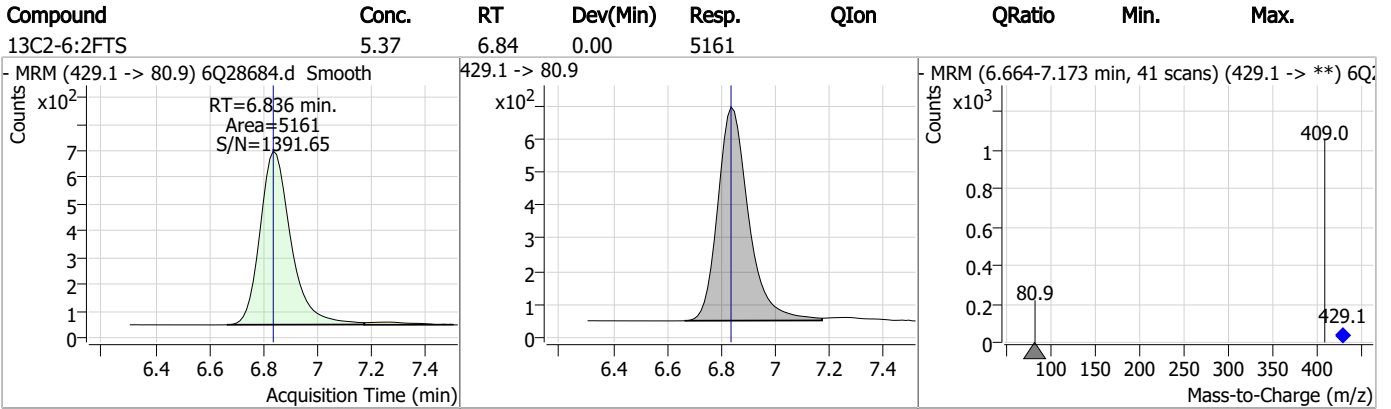
7.2.3  
7

### Perfluorinated Compounds by LC/MS/MS



7.2.3  
7

### Perfluorinated Compounds by LC/MS/MS



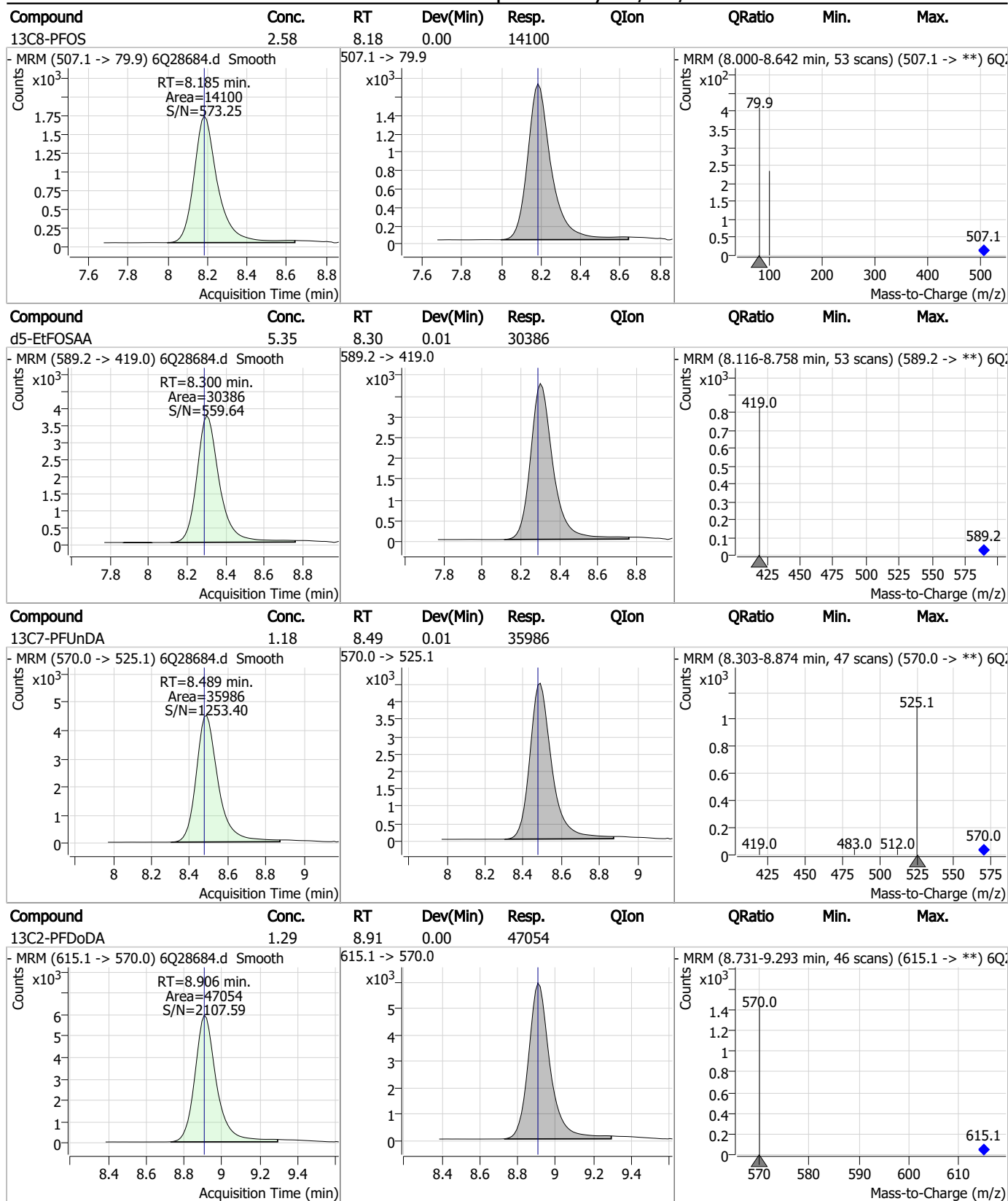
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.30	7.58	0.01	33680				
13C2-8:2FTS	5.17	7.85	0.01	5618				
13C6-PFDA	1.29	8.05	0.01	32894				
d3-MeFOSAA	5.24	8.10	0.01	35161				

7.2.3

7

### Perfluorinated Compounds by LC/MS/MS



7.2.3

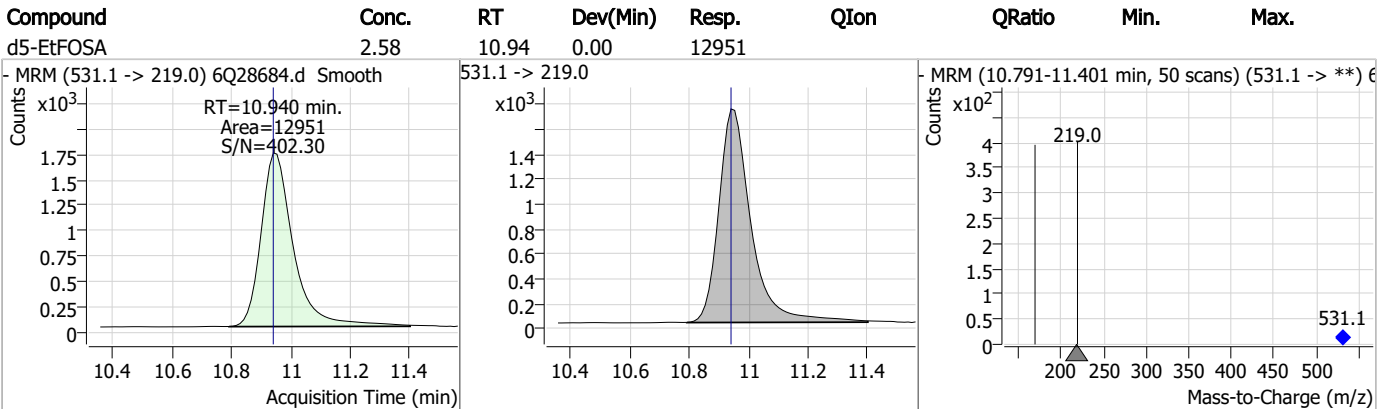
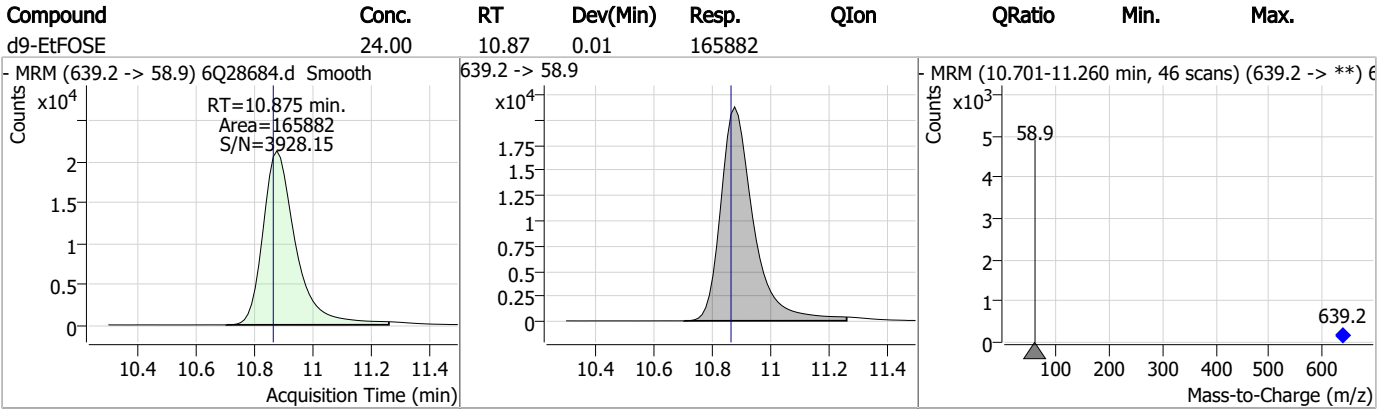
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### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.59	9.61	0.01	32775				
13C2-PFTeDA	1.31	9.62	0.00	26179				
d7-MeFOSE	24.95	10.64	0.01	129246				
d3-MeFOSA	2.38	10.72	0.01	10385				

7.2.3  
7

### Perfluorinated Compounds by LC/MS/MS



7.2.3

7



## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28680.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/21/2023 9:33:08 AM  
 Sample Name : iccb  
 Vial : P1-A1  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	145336	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	51364	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	55687	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	61052	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	93346	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	35015	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	32740	1.25 µg/L	0.012
M7-PFUnDA	8.476	570.0 -> 525.1	37744	1.25 µg/L	0.000
M2-PFDoDA	8.906	615.1 -> 570.0	44364	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	26451	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	33744	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	20741	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	14332	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	14140	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	3546	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	5694	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	5855	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	35433	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	33193	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	31552	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	134186	25.00 µg/L	0.000
M9-EtFOSE	10.875	639.2 -> 58.9	171703	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	12629	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	10686	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	13824	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	61227	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	9121	2.50 µg/L	0.000
13C4-PFOA	7.050	417.1 -> 372.0	97234	2.50 µg/L	-0.012
13C2-PFDA	8.048	515.1 -> 470.1	33754	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	32746	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	51768	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	3546	6.05 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.9%		
13C2-6:2FTS	6.836	429.1 -> 80.9	5694	5.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.8%		
13C2-8:2FTS	7.848	529.1 -> 80.9	5855	5.45 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-PFDoDA	8.906	615.1 -> 570.0	44364	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.9%		
13C2-PFTeDA	9.621	715.2 -> 670.0	26451	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFBS	5.384	302.1 -> 79.9	20741	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C3-PFHxS	7.152	402.1 -> 79.9	14332	2.57 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 = 102.6%	
13C4-PFBA	2.860	216.8 -> 171.9	145336	10.26 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C4-PFHpA	6.419	367.1 -> 322.0	61052	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFHxA	5.478	318.0 -> 273.0	55687	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C5-PFPeA	4.272	268.3 -> 223.0	51364	4.94 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C6-PFDA	8.048	519.1 -> 474.1	32740	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C7-PFUnDA	8.476	570.0 -> 525.1	37744	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C8-FOSA	9.605	506.1 -> 77.8	33744	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-PFOA	7.062	421.1 -> 376.0	93346	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C8-PFOS	8.185	507.1 -> 79.9	14140	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C9-PFNA	7.580	472.1 -> 427.0	35015	1.28 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	8.105	573.2 -> 419.0	35433	4.94 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	33193	10.33 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d3-MeFOSA	10.720	515.0 -> 219.0	10686	2.29 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.7%	
d5-EtFOSAA	8.300	589.2 -> 419.0	31552	5.20 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
d7-MeFOSE	10.628	623.2 -> 58.9	134186	24.25 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
d9-EtFOSE	10.875	639.2 -> 58.9	171703	23.26 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.0%	
d5-EtFOSA	10.940	531.1 -> 219.0	12629	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%	

**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.	



7.2.4  
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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	8.065	463.0 -> 419.0	0	µg/L	m	1
		463.0 -> 219.0	0			
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	-	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



7.2.4  
7

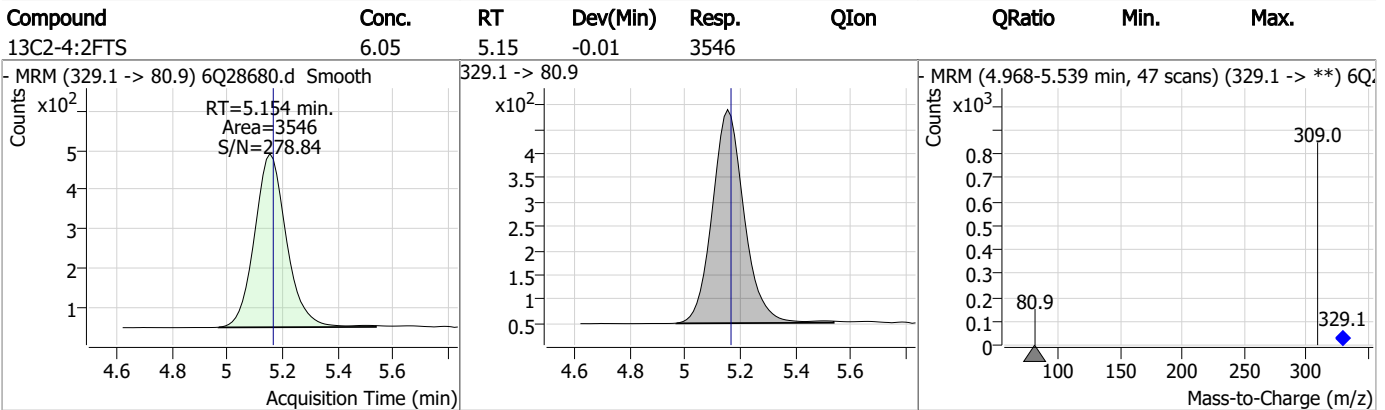
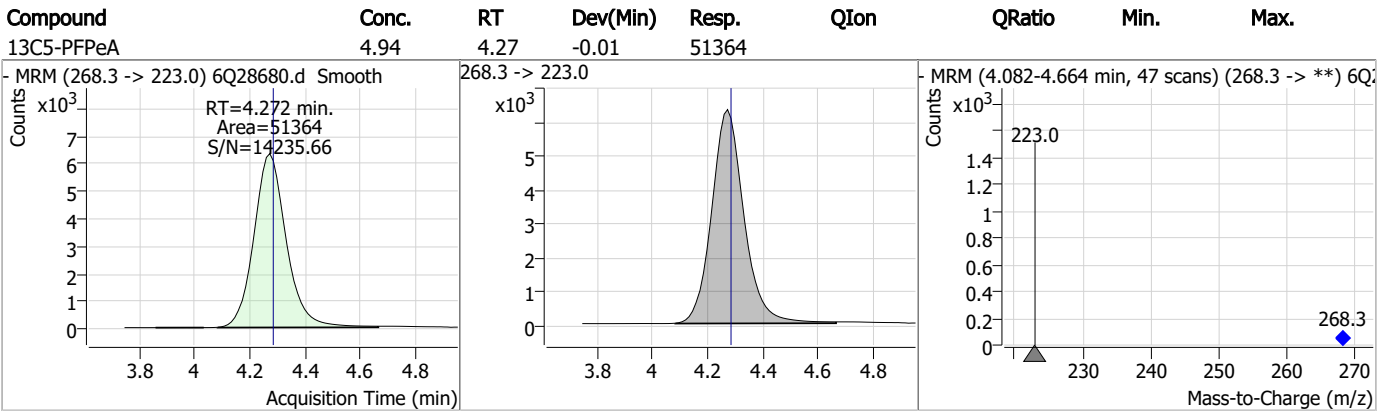
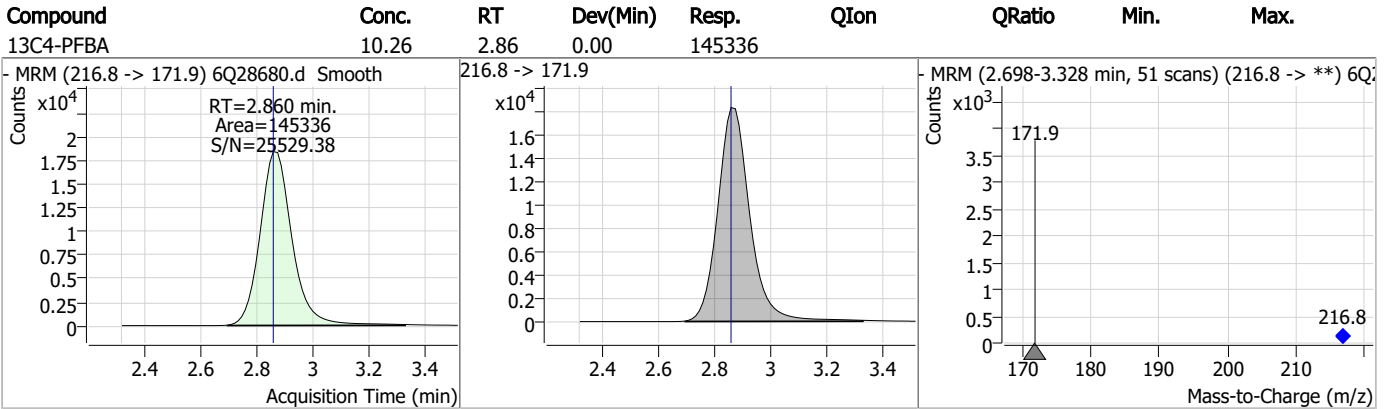
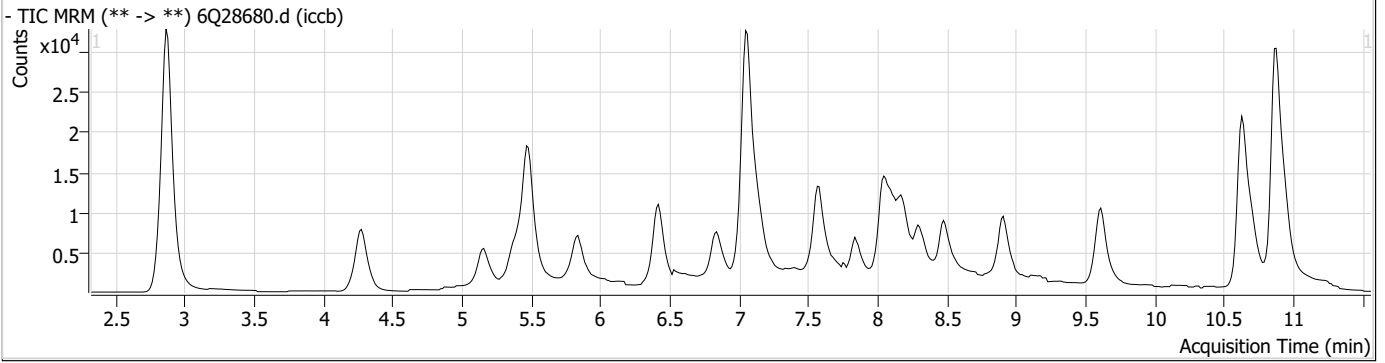
### Perfluorinated Compounds by LC/MS/MS

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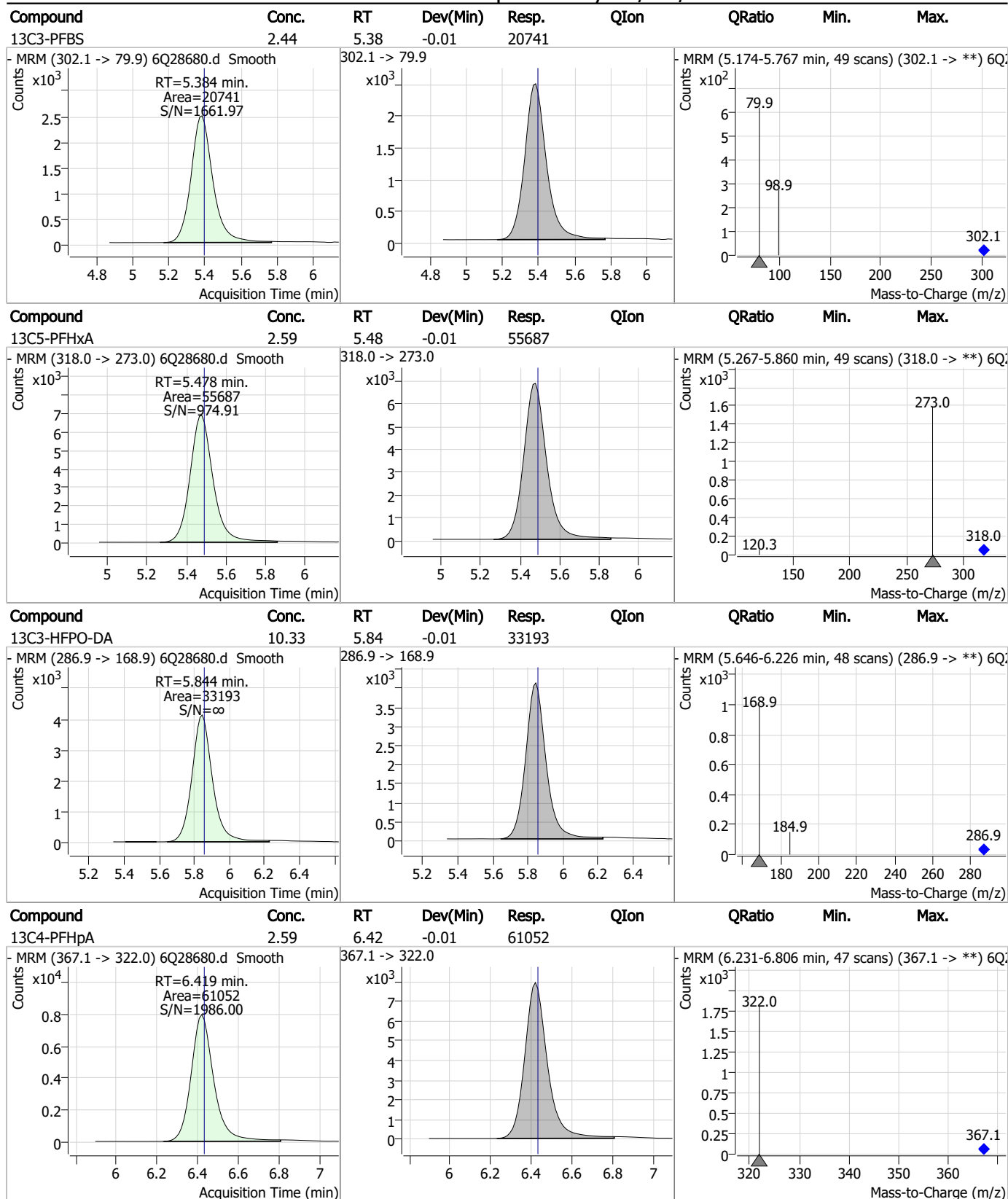
7.2.4

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### Perfluorinated Compounds by LC/MS/MS

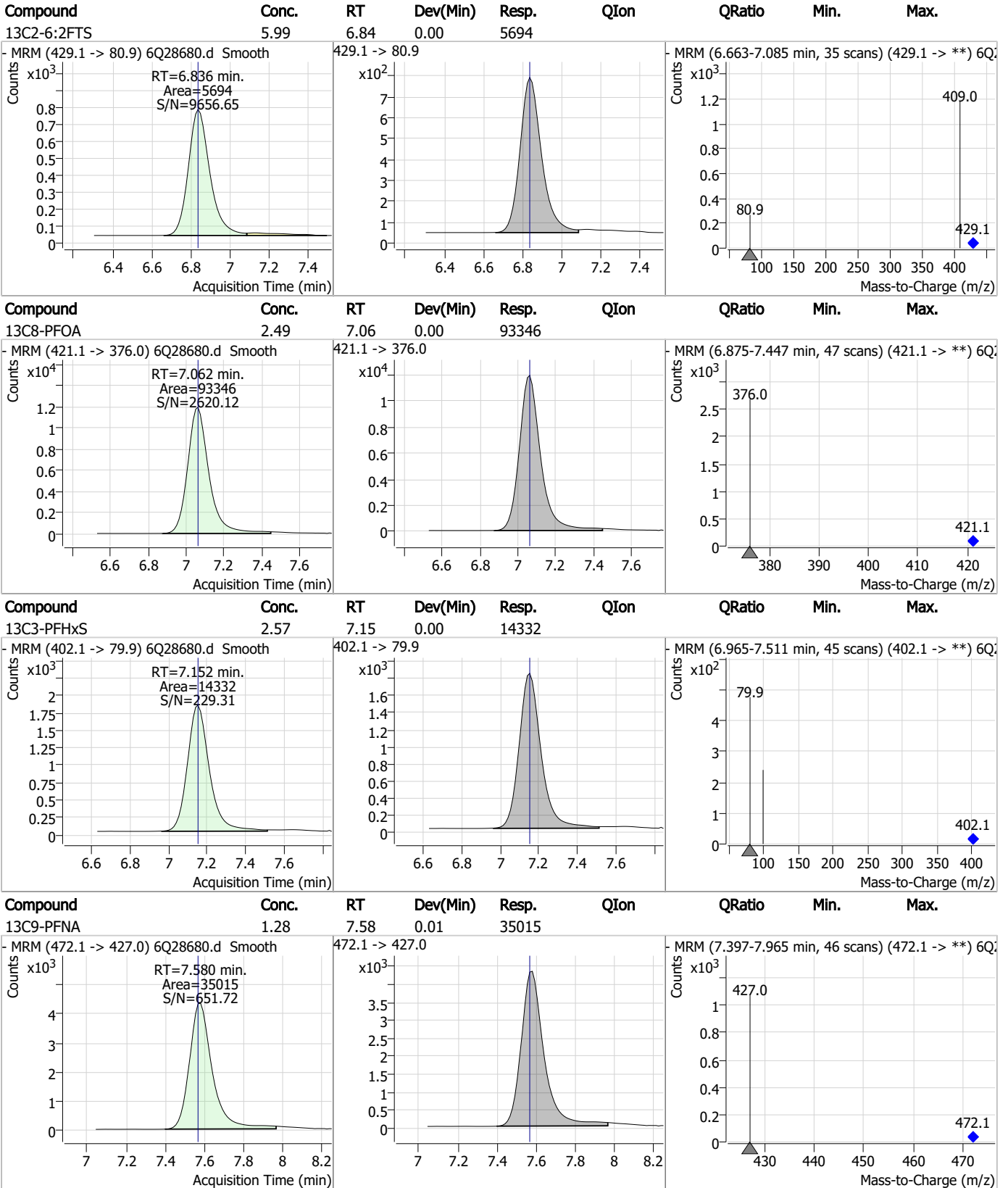


### Perfluorinated Compounds by LC/MS/MS



7.2.4  
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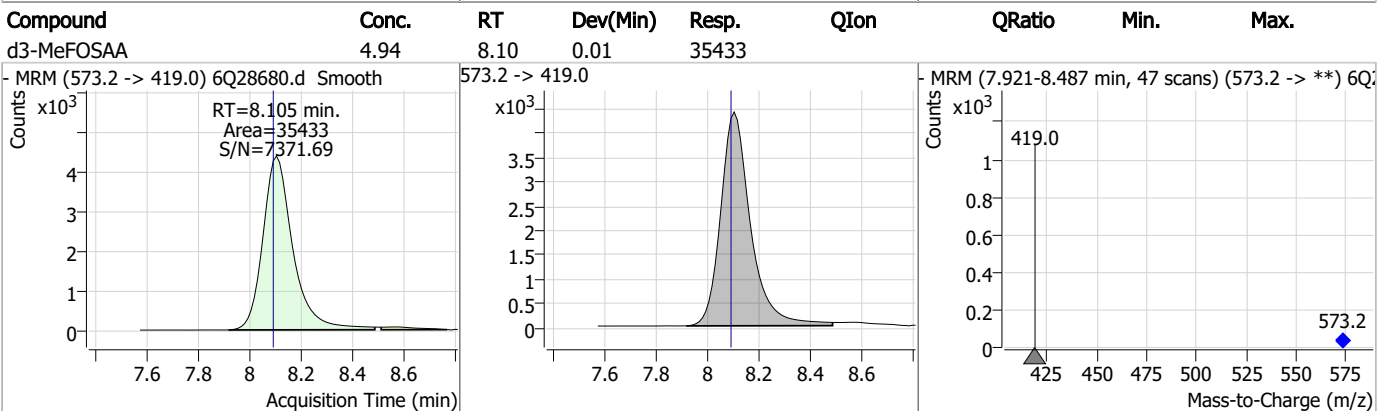
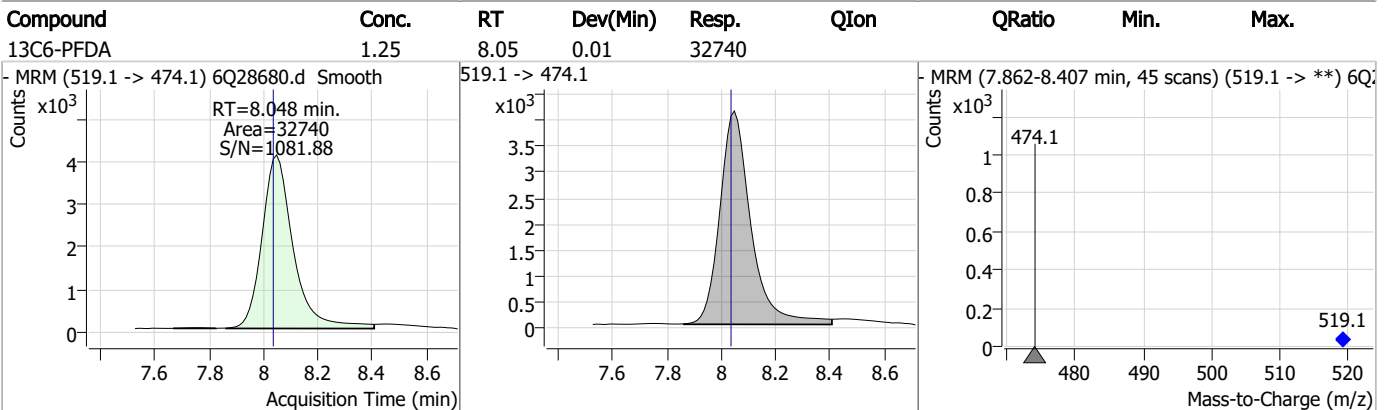
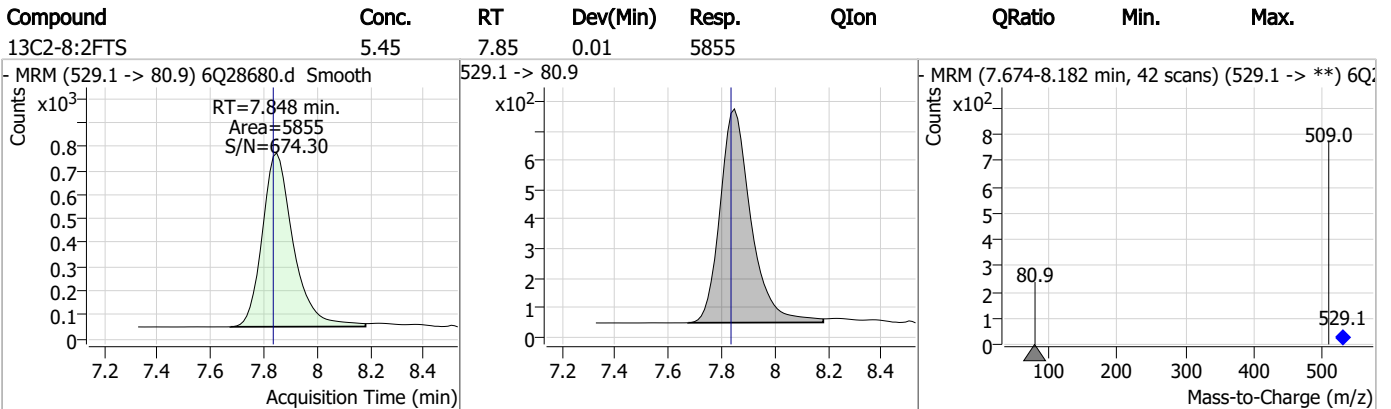
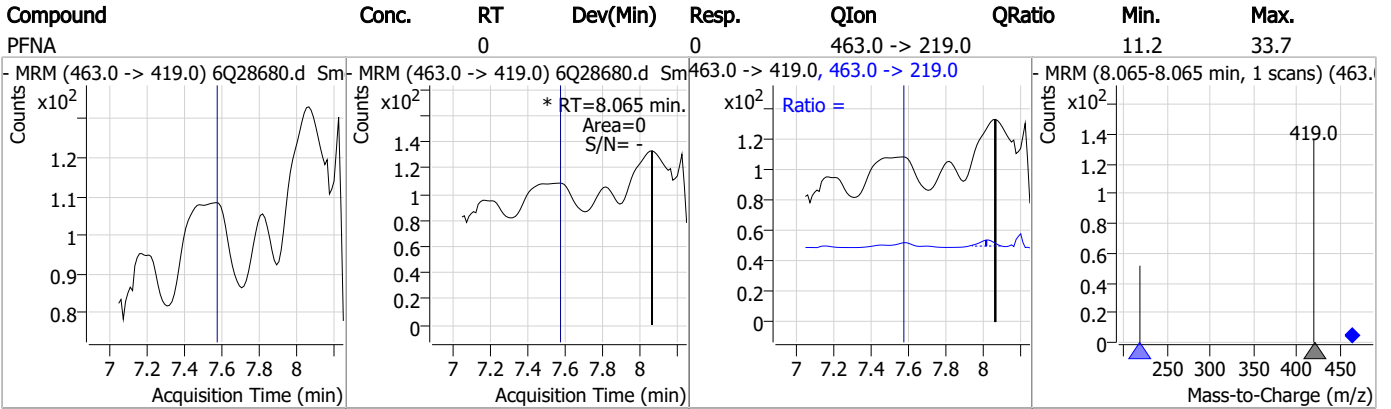
Perfluorinated Compounds by LC/MS/MS



7.2.4

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### Perfluorinated Compounds by LC/MS/MS



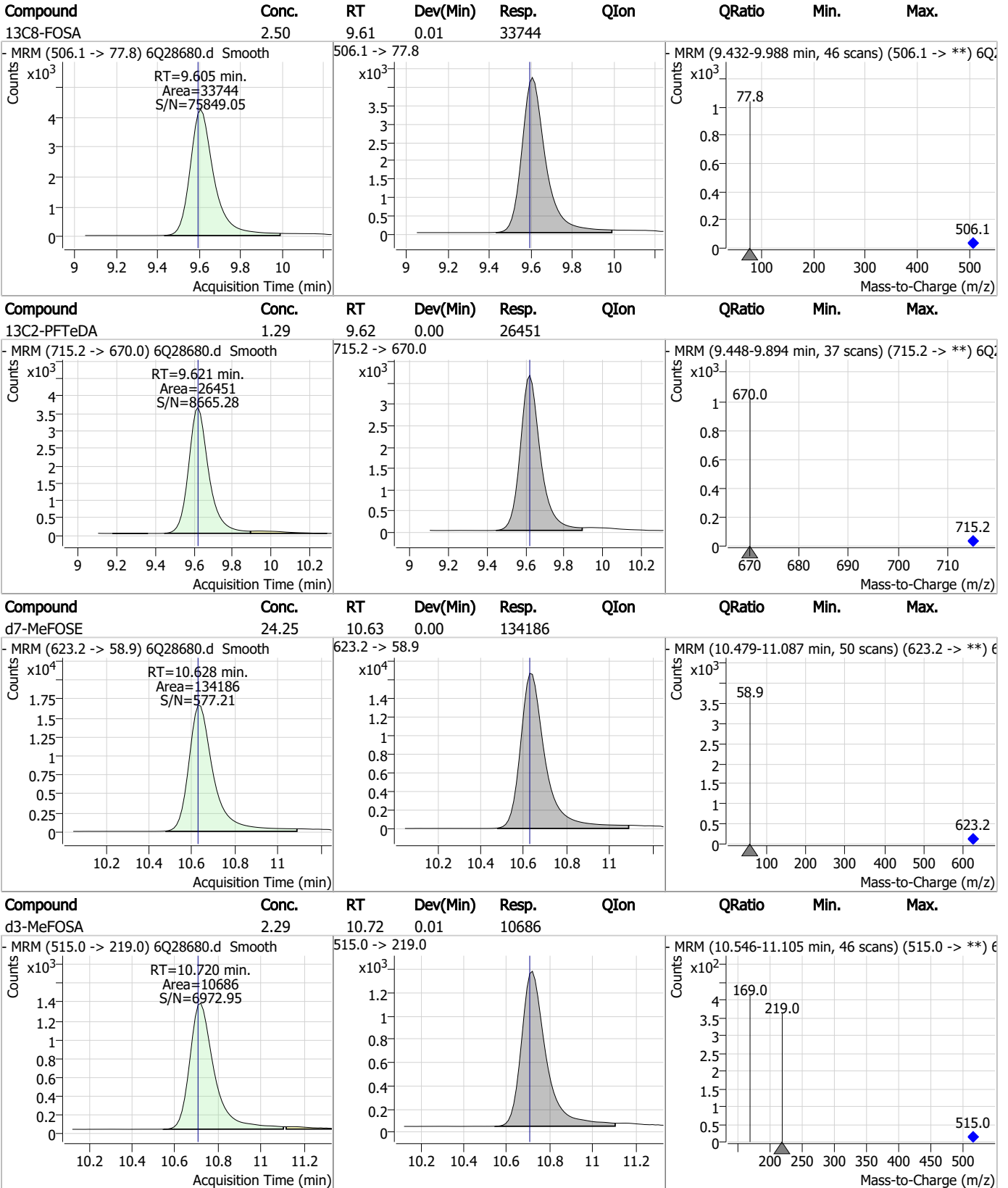


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.42	8.18	0.00	14140				
- MRM (507.1 -> 79.9) 6Q28680.d Smooth Counts x10 <sup>3</sup> RT=8.185 min. Area=14140 S/N=48101.44 Acquisition Time (min)			507.1 -> 79.9 Counts x10 <sup>3</sup> Acquisition Time (min)			- MRM (8.000-8.458 min, 38 scans) (507.1 -> **) 6Q28680.d Smooth Counts x10 <sup>2</sup> 79.9 507.1 Mass-to-Charge (m/z)		
d5-EtFOSAA	5.20	8.30	0.01	31552				
- MRM (589.2 -> 419.0) 6Q28680.d Smooth Counts x10 <sup>3</sup> RT=8.300 min. Area=31552 S/N=448.64 Acquisition Time (min)			589.2 -> 419.0 Counts x10 <sup>3</sup> Acquisition Time (min)			- MRM (8.116-8.635 min, 43 scans) (589.2 -> **) 6Q28680.d Smooth Counts x10 <sup>3</sup> 419.0 589.2 Mass-to-Charge (m/z)		
13C7-PFUnDA	1.20	8.48	0.00	37744				
- MRM (570.0 -> 525.1) 6Q28680.d Smooth Counts x10 <sup>3</sup> RT=8.476 min. Area=37744 S/N=189.20 Acquisition Time (min)			570.0 -> 525.1 Counts x10 <sup>3</sup> Acquisition Time (min)			- MRM (8.315-8.935 min, 51 scans) (570.0 -> **) 6Q28680.d Smooth Counts x10 <sup>3</sup> 525.1 570.0 Mass-to-Charge (m/z)		
13C2-PFDoDA	1.19	8.91	0.00	44364				
- MRM (615.1 -> 570.0) 6Q28680.d Smooth Counts x10 <sup>3</sup> RT=8.906 min. Area=44364 S/N=1048.19 Acquisition Time (min)			615.1 -> 570.0 Counts x10 <sup>3</sup> Acquisition Time (min)			- MRM (8.751-9.217 min, 37 scans) (615.1 -> **) 6Q28680.d Smooth Counts x10 <sup>3</sup> 570.0 615.1 Mass-to-Charge (m/z)		

7.2.4  
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### Perfluorinated Compounds by LC/MS/MS

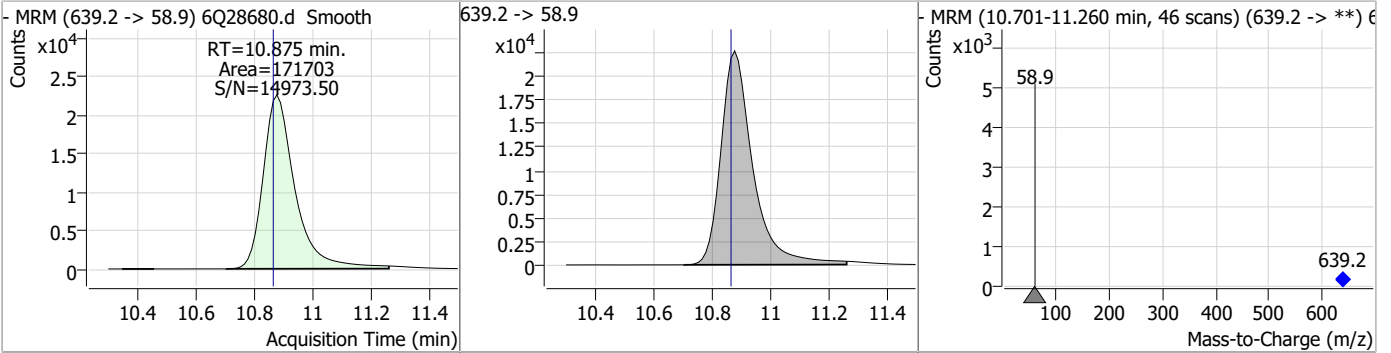


7.2.4

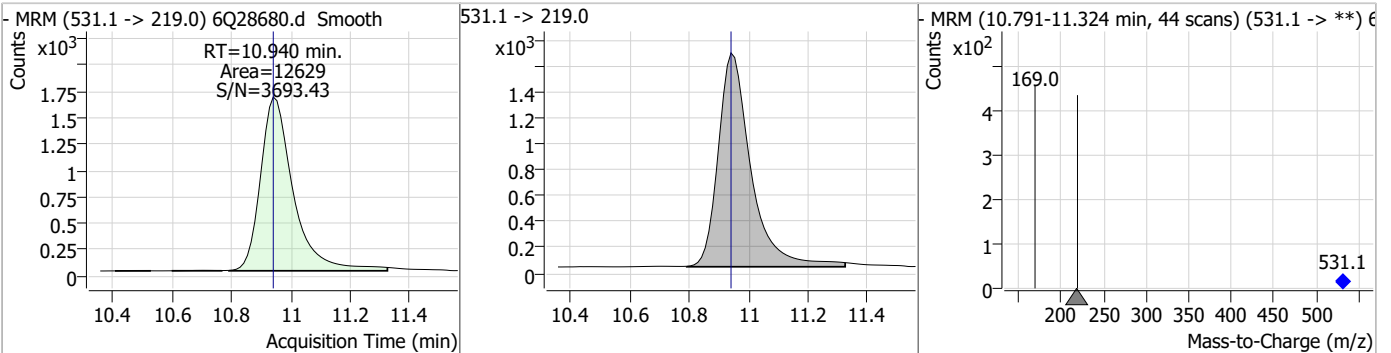
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### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.26	10.87	0.01	171703				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.36	10.94	0.00	12629				



7.2.4

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### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28695.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/21/2023 1:07:45 PM  
 Sample Name : iccb  
 Vial : P1-A1  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	144102	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	51866	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	55980	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	63050	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	91543	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	34396	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	33117	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	38214	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	46421	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	26788	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	32711	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	20396	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	14057	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	12826	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	3531	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	5488	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	6314	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	35128	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	33715	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	31795	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	125898	25.00 µg/L	0.000
M9-EtFOSE	10.875	639.2 -> 58.9	164388	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	12781	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	10686	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	13919	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	61248	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	9445	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	96430	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	34783	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	32327	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	53519	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	3531	5.82 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.3%		
13C2-6:2FTS	6.836	429.1 -> 80.9	5488	5.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-8:2FTS	7.848	529.1 -> 80.9	6314	5.68 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.6%		
13C2-PFDoDA	8.906	615.1 -> 570.0	46421	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C2-PFTeDA	9.621	715.2 -> 670.0	26788	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFBS	5.384	302.1 -> 79.9	20396	2.31 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.5%		
13C3-PFHxS	7.152	402.1 -> 79.9	14057	2.43 µg/L	0.000

7.2.5  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C4-PFBA	2.860	216.8 -> 171.9	144102	10.17 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C4-PFHpA	6.419	367.1 -> 322.0	63050	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C5-PFHxA	5.478	318.0 -> 273.0	55980	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C5-PFPeA	4.272	268.3 -> 223.0	51866	4.83 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C6-PFDA	8.048	519.1 -> 474.1	33117	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C7-PFUnDA	8.489	570.0 -> 525.1	38214	1.18 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C8-FOSA	9.605	506.1 -> 77.8	32711	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C8-PFOA	7.062	421.1 -> 376.0	91543	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-PFOS	8.185	507.1 -> 79.9	12826	2.18 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.3%	
13C9-PFNA	7.580	472.1 -> 427.0	34396	1.27 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
d3-MeFOSAA	8.105	573.2 -> 419.0	35128	4.87 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	33715	10.15 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d3-MeFOSA	10.720	515.0 -> 219.0	10686	2.28 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.1%	
d5-EtFOSAA	8.300	589.2 -> 419.0	31795	5.20 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
d7-MeFOSE	10.628	623.2 -> 58.9	125898	22.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.4%	
d9-EtFOSE	10.875	639.2 -> 58.9	164388	22.11 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.5%	
d5-EtFOSA	10.940	531.1 -> 219.0	12781	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	

7.25  
7

Target Compounds

QValue

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



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	7.497	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				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.5  
7

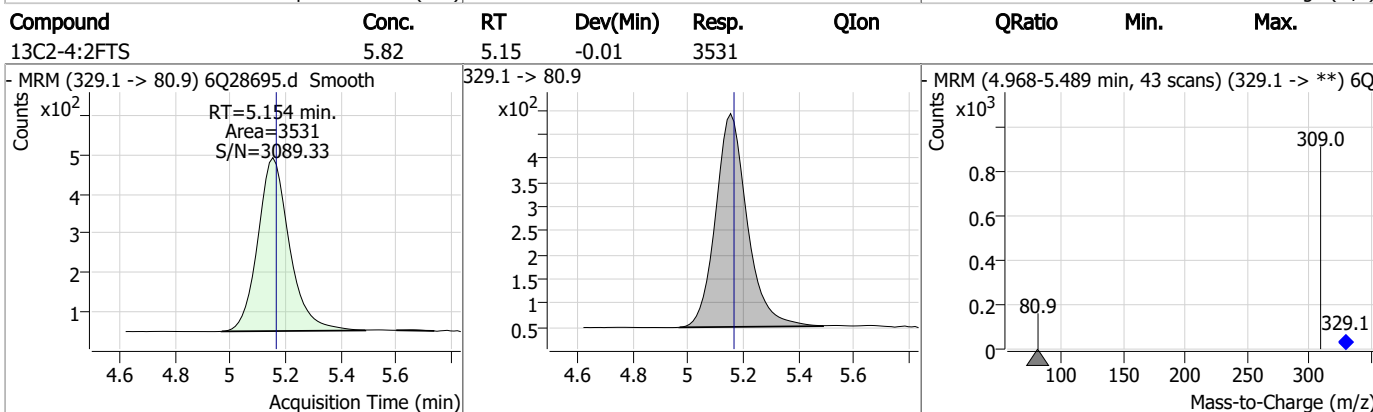
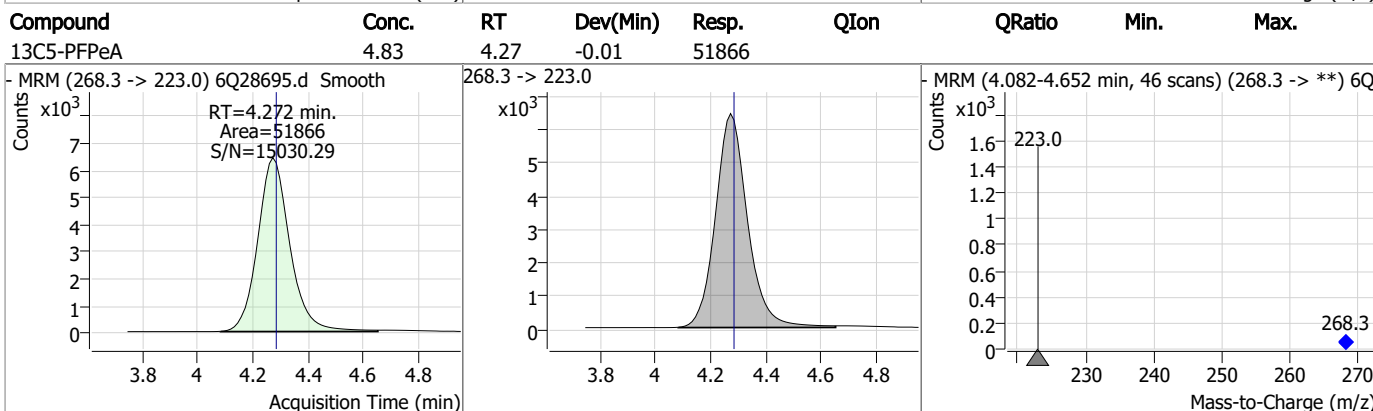
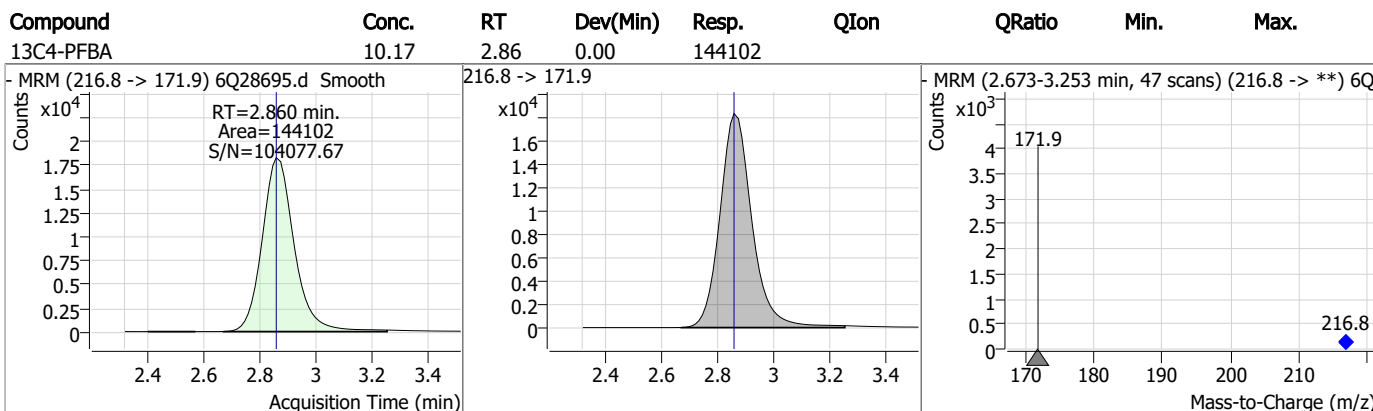
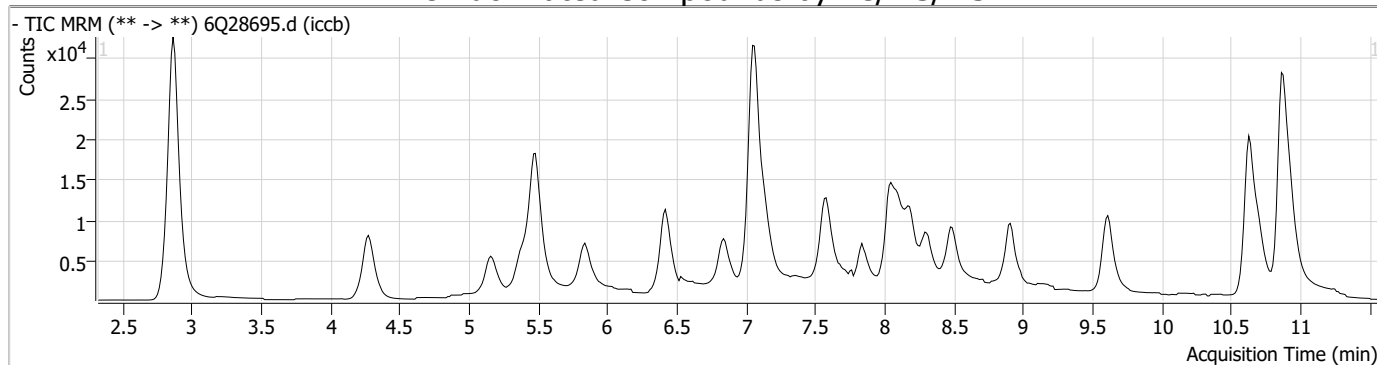
### Perfluorinated Compounds by LC/MS/MS

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

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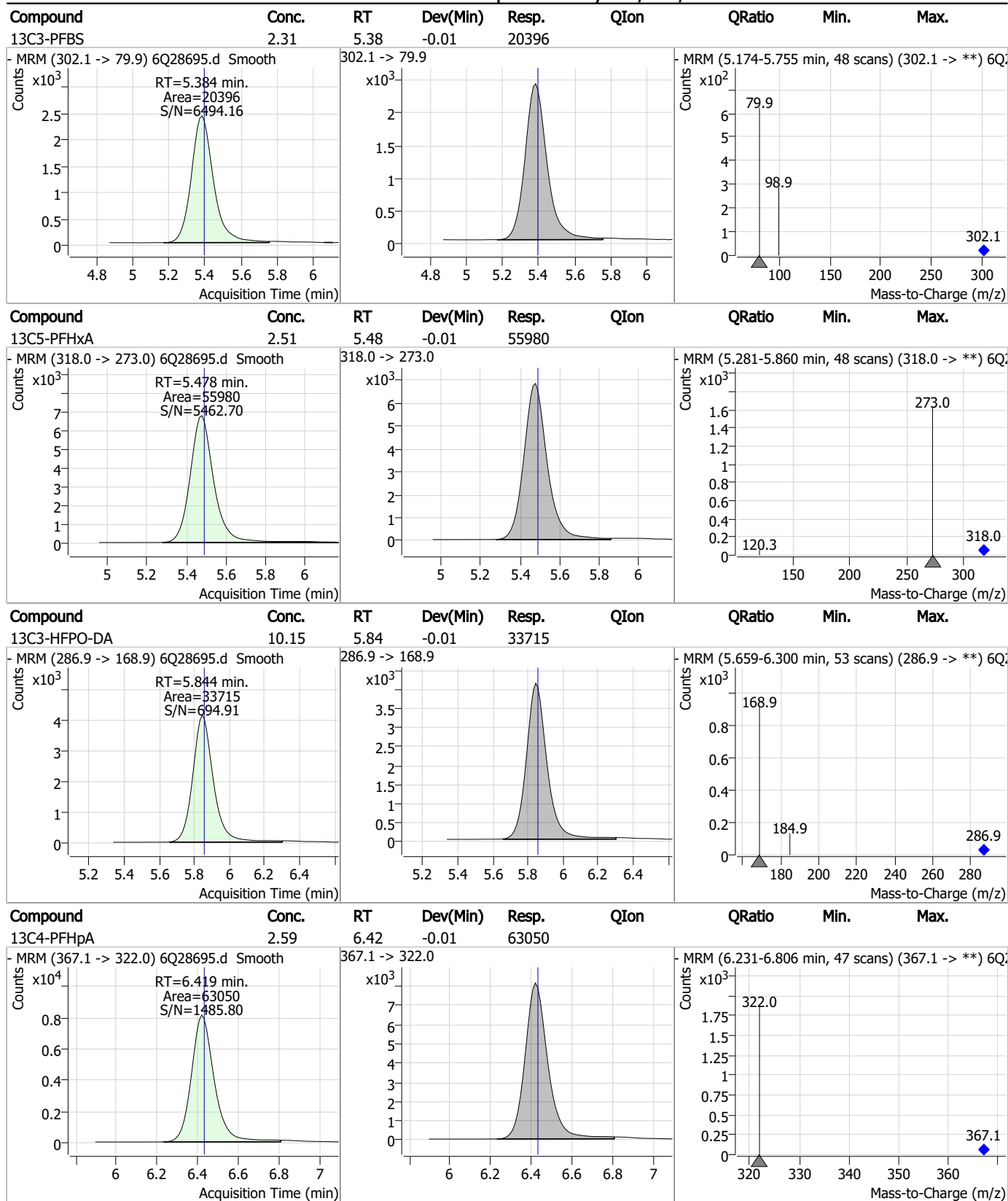
### Perfluorinated Compounds by LC/MS/MS



7.2.5  
7

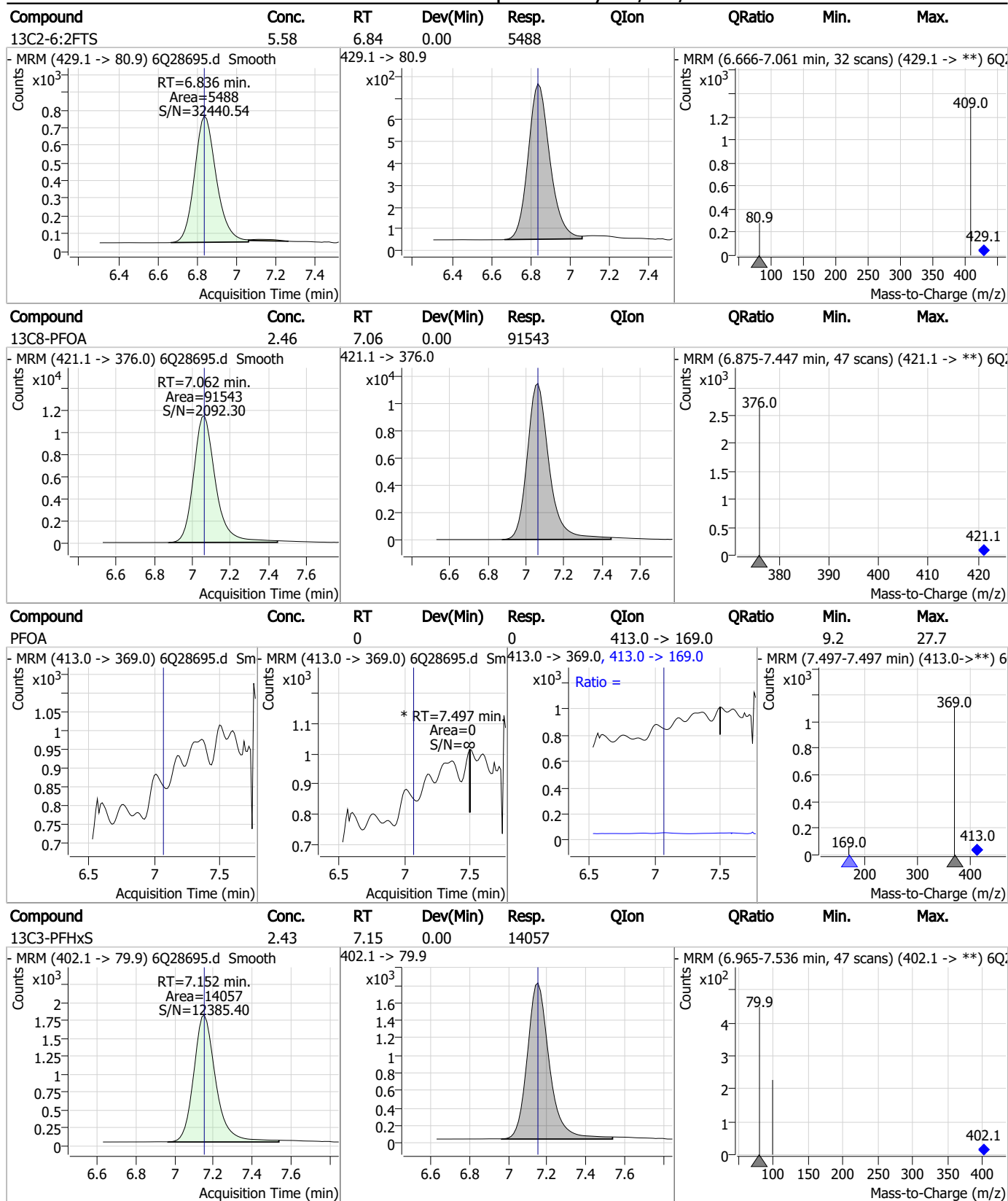


### Perfluorinated Compounds by LC/MS/MS



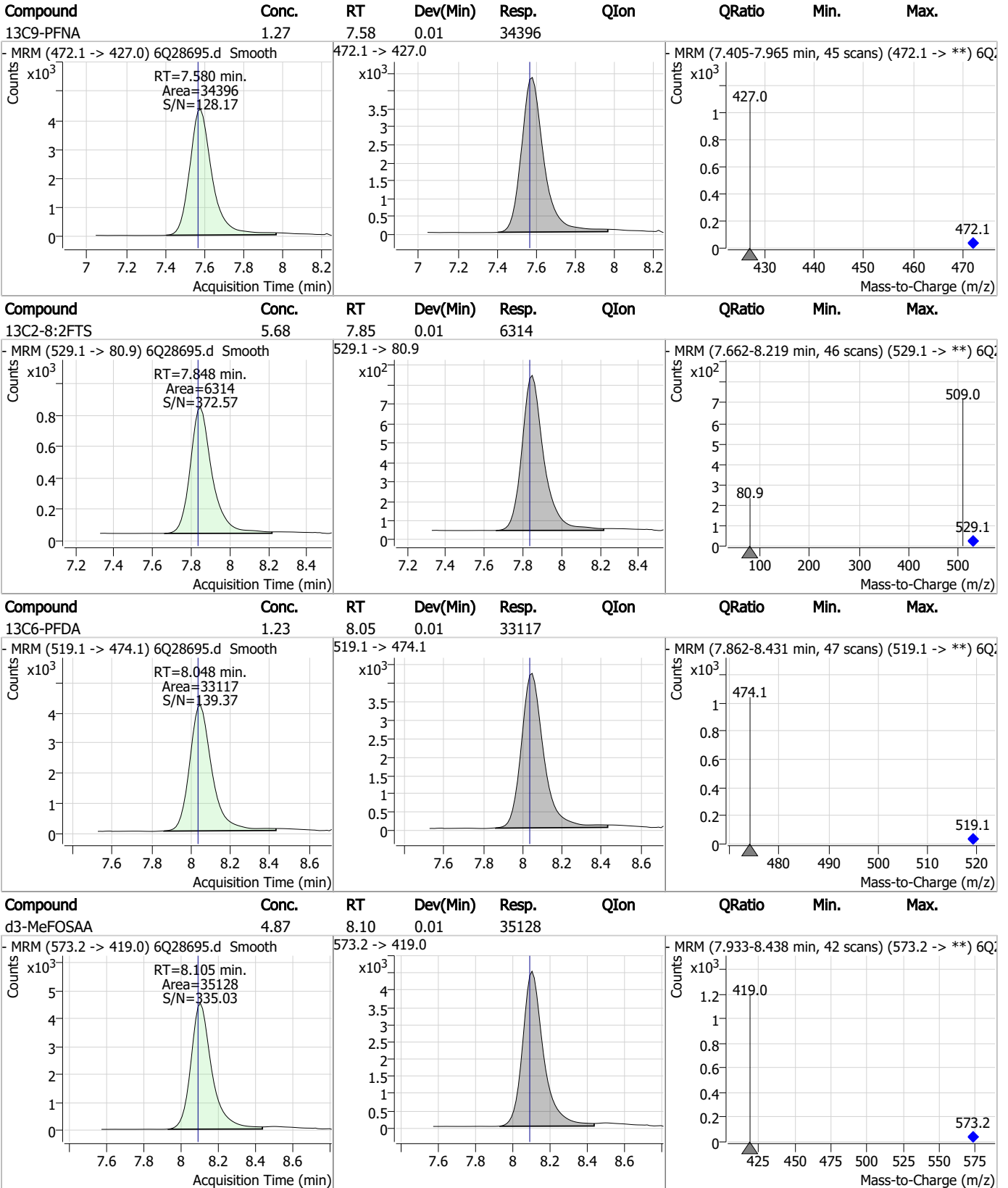
7.2.5  
7

### Perfluorinated Compounds by LC/MS/MS



7.25  
7

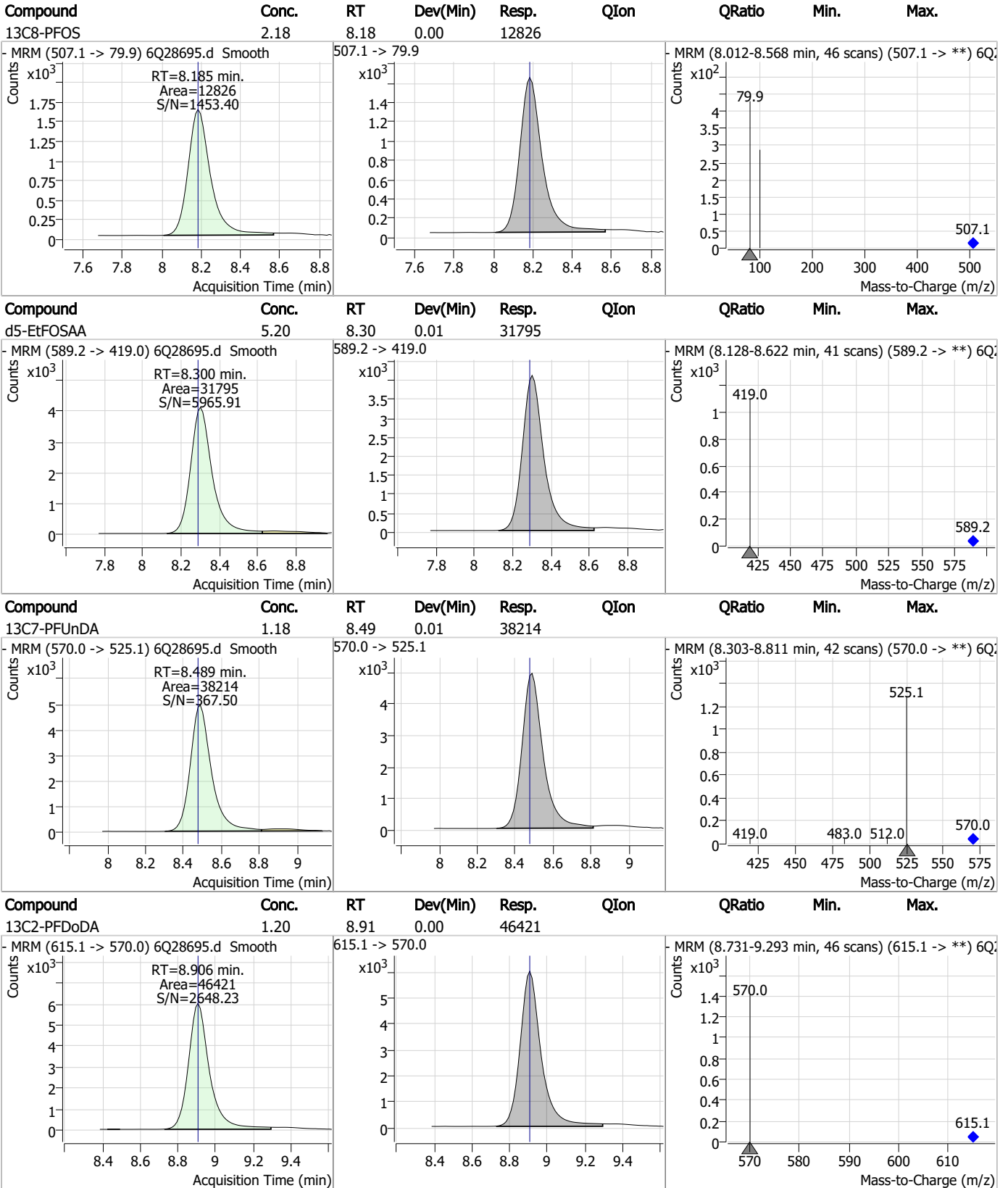
### Perfluorinated Compounds by LC/MS/MS



7.25

7

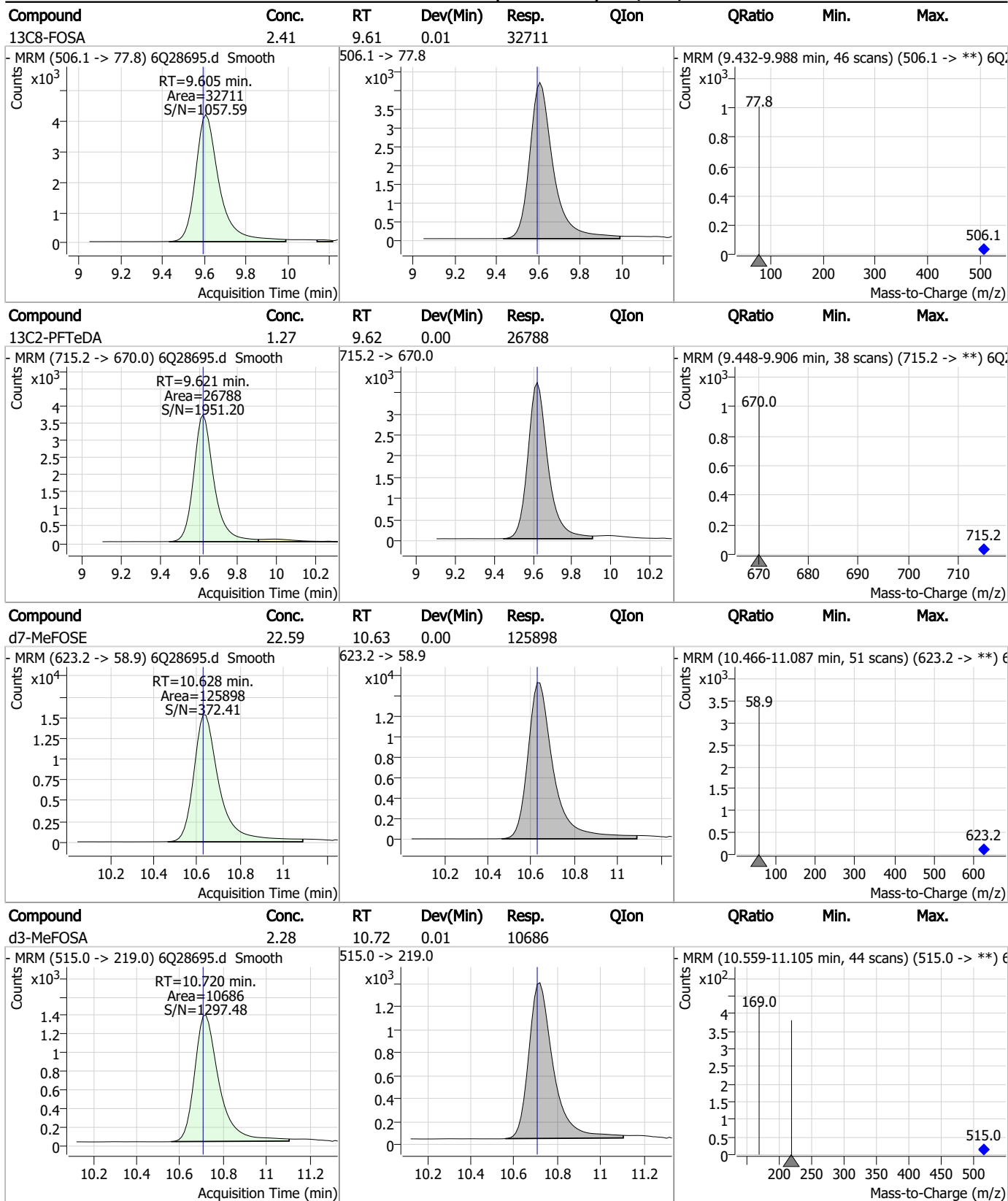
### Perfluorinated Compounds by LC/MS/MS



7.2.5

7

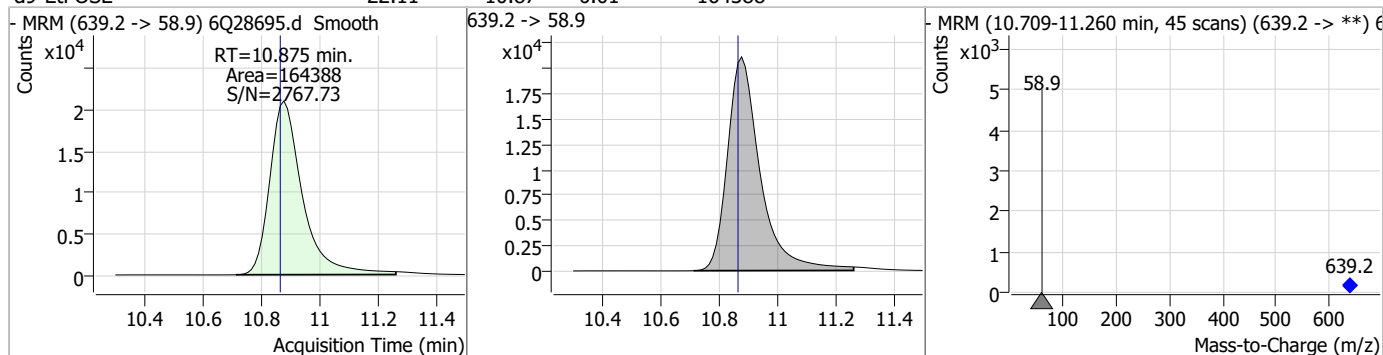
### Perfluorinated Compounds by LC/MS/MS



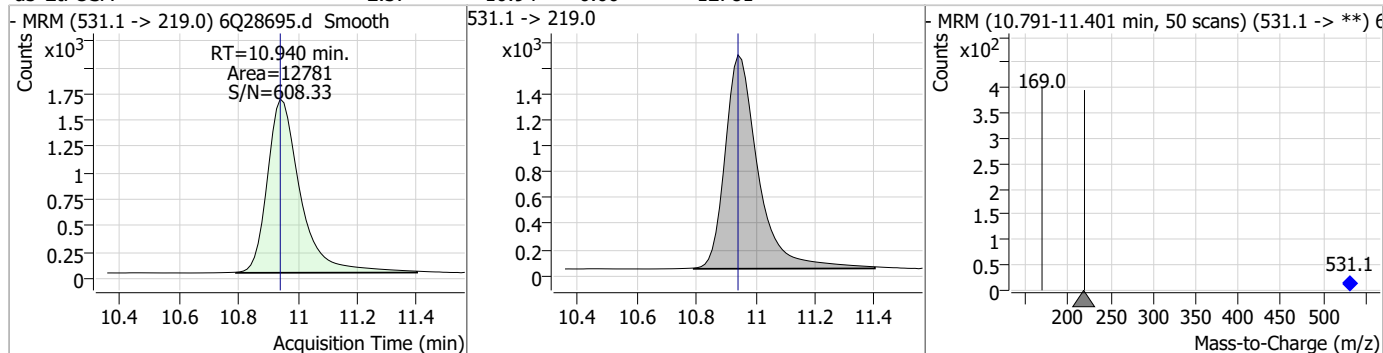
7.25  
7

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.11	10.87	0.01	164388				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.37	10.94	0.00	12781				



7.2.5  
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28592.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 12:02:22 PM  
 Sample Name : op162-bs  
 Vial : P2-A1  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP162,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.926	216.8 -> 171.9	40366	10.00 µg/L	0.066
M5-PFPeA	4.297	268.3 -> 223.0	40693	5.00 µg/L	0.012
M5-PFHxA	5.491	318.0 -> 273.0	45645	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	49139	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	73506	2.50 µg/L	0.000
M9-PFNA	7.593	472.1 -> 427.0	23636	1.25 µg/L	0.026
M6-PFDA	8.048	519.1 -> 474.1	26695	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	30376	1.25 µg/L	0.012
M2-PFDoDA	8.919	615.1 -> 570.0	34964	1.25 µg/L	0.012
M2-PFTeDA	9.633	715.2 -> 670.0	22525	1.25 µg/L	0.012
M8-FOSA	9.618	506.1 -> 77.8	20465	2.50 µg/L	0.025
M3-PFBS	5.409	302.1 -> 79.9	16786	2.50 µg/L	0.013
M3-PFHxS	7.152	402.1 -> 79.9	11540	2.50 µg/L	0.000
M8-PFOS	8.197	507.1 -> 79.9	11152	2.50 µg/L	0.012
M2-4:2FTS	5.166	329.1 -> 80.9	2932	5.00 µg/L	0.000
M2-6:2FTS	6.848	429.1 -> 80.9	4299	5.00 µg/L	0.012
M2-8:2FTS	7.861	529.1 -> 80.9	4226	5.00 µg/L	0.025
M3-MeFOSAA	8.117	573.2 -> 419.0	25799	5.00 µg/L	0.025
M3-HFPO-DA	5.856	286.9 -> 168.9	27805	10.00 µg/L	0.000
M5-EtFOSAA	8.313	589.2 -> 419.0	23628	5.00 µg/L	0.025
M7-MeFOSE	10.640	623.2 -> 58.9	89341	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	134446	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	8634	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	6843	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	10734	2.50 µg/L	0.000
13C3-PFBA	2.929	216.0 -> 172.0	48978	5.00 µg/L	0.065
18O2-PFHxS	7.164	403.0 -> 83.9	7134	2.50 µg/L	0.013
13C4-PFOA	7.062	417.1 -> 372.0	74208	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	25349	1.25 µg/L	0.000
13C5-PFNA	7.593	468.0 -> 423.0	21643	1.25 µg/L	0.026
13C2-PFHxA	5.491	315.1 -> 270.0	37630	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2932	6.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 127.8%		
13C2-6:2FTS	6.848	429.1 -> 80.9	4299	5.78 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.7%		
13C2-8:2FTS	7.861	529.1 -> 80.9	4226	5.03 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFDoDA	8.919	615.1 -> 570.0	34964	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-PFTeDA	9.633	715.2 -> 670.0	22525	1.46 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 117.1%		
13C3-PFBS	5.409	302.1 -> 79.9	16786	2.52 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFHxS	7.152	402.1 -> 79.9	11540	2.64 µg/L	0.000

7.31  
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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 = 105.7%		
13C4-PFBA	2.926	216.8 -> 171.9	40366	3.56 µg/L	0.066
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 35.6%		
13C4-PFHpA	6.431	367.1 -> 322.0	49139	2.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 114.6%		
13C5-PFHxA	5.491	318.0 -> 273.0	45645	2.92 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 116.7%		
13C5-PFPeA	4.297	268.3 -> 223.0	40693	5.38 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C6-PFDA	8.048	519.1 -> 474.1	26695	1.36 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C7-PFUnDA	8.489	570.0 -> 525.1	30376	1.29 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C8-FOSA	9.618	506.1 -> 77.8	20465	1.95 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 78.1%		
13C8-PFOA	7.062	421.1 -> 376.0	73506	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C8-PFOS	8.197	507.1 -> 79.9	11152	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C9-PFNA	7.593	472.1 -> 427.0	23636	1.30 µg/L	0.026
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.3%		
d3-MeFOSAA	8.117	573.2 -> 419.0	25799	4.64 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.7%		
13C3-HFPO-DA	5.856	286.9 -> 168.9	27805	11.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 119.0%		
d3-MeFOSA	10.720	515.0 -> 219.0	6843	1.89 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 75.7%		
d5-EtFOSAA	8.313	589.2 -> 419.0	23628	5.01 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
d7-MeFOSE	10.640	623.2 -> 58.9	89341	20.79 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 83.2%		
d9-EtFOSE	10.875	639.2 -> 58.9	134446	23.45 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 93.8%		
d5-EtFOSA	10.940	531.1 -> 219.0	8634	2.07 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 83.0%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	42243	8.85 µg/L	96
		327.1 -> 80.9	18069		
6:2FTS	6.836	427.1 -> 407.0	41392	8.84 µg/L	100
		427.1 -> 80.9	15012		
8:2FTS	7.849	527.1 -> 507.0	32029	10.00 µg/L	99
		527.1 -> 80.8	11454		
EtFOSAA	8.314	584.2 -> 419.1	9117	2.39 µg/L	m 92
		584.2 -> 526.0	5537		
FOSA	9.608	498.1 -> 77.9	19635	2.50 µg/L	100
		498.1 -> 478.0	561		
MeFOSAA	8.118	570.1 -> 419.0	12856	2.64 µg/L	100
		570.1 -> 483.0	3068		
PFBA	2.932	212.8 -> 168.9	12462	9.42 µg/L	100
PFBS	5.397	298.7 -> 79.9	14968	2.34 µg/L	97
		298.7 -> 98.8	5367		
PFDA	8.048	512.9 -> 469.0	59241	2.39 µg/L	99
		512.9 -> 219.0	8943		
PFDoDA	8.919	613.1 -> 569.0	72322	2.79 µg/L	96
		613.1 -> 319.0	7260		
PFDS	9.057	599.0 -> 79.9	7209	2.48 µg/L	94

7.31  
7





Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3110			
PFHpA	6.432	363.1 -> 319.0	58929	2.33	µg/L	100
		363.1 -> 169.0	8816			
PFHpS	7.706	449.0 -> 79.9	12278	2.59	µg/L	98
		449.0 -> 98.9	5736			
PFHxA	5.494	313.0 -> 269.0	38899	2.28	µg/L	99
		313.0 -> 118.9	1995			
PFHxS	7.153	398.7 -> 79.9	12449	2.33	µg/L	m 88
		398.7 -> 98.9	6011			
PFNA	7.593	463.0 -> 419.0	35709	2.43	µg/L	98
		463.0 -> 219.0	7609			
PFNS	8.639	548.8 -> 79.9	9844	2.49	µg/L	95
		548.8 -> 98.9	5159			
PFOA	7.075	413.0 -> 369.0	72281	2.48	µg/L	97
		413.0 -> 169.0	12445			
PFOS	8.198	498.9 -> 79.9	12106	2.44	µg/L	m 75
		498.9 -> 98.8	5317			
PFPeA	4.299	263.0 -> 219.0	51913	5.03	µg/L	100
PFPeS	6.470	349.1 -> 79.9	12571	2.20	µg/L	96
		349.1 -> 98.9	6155			
PFTeDA	9.622	713.1 -> 669.0	62842	2.29	µg/L	100
		713.1 -> 168.9	3909			
PFTrDA	9.290	663.0 -> 619.0	69867	2.75	µg/L	99
		663.0 -> 168.9	4738			
PFUnDA	8.489	563.1 -> 519.0	61732	2.61	µg/L	94
		563.1 -> 269.1	8416			
11Cl-PF3OUdS	9.329	630.9 -> 450.9	50285	4.15	µg/L	98
		632.9 -> 452.9	15320			
9Cl-PF3ONS	8.516	530.8 -> 351.0	77988	4.67	µg/L	94
		532.8 -> 353.0	21962			
ADONA	6.681	376.9 -> 250.9	216353	4.46	µg/L	99
		376.9 -> 84.8	55562			
HFPO-DA	5.857	284.9 -> 168.9	13336	4.79	µg/L	99
		284.9 -> 184.9	1412			
3:3FTCA	3.814	241.0 -> 177.0	3817	16.36	µg/L	97
		241.0 -> 117.0	496			
5:3FTCA	6.171	341.0 -> 237.1	165843	53.12	µg/L	94
		341.0 -> 217.0	125837			
7:3FTCA	7.570	441.0 -> 316.9	105957	53.59	µg/L	97
		441.0 -> 336.9	223092			
EtFOSA	10.942	526.0 -> 219.0	18323	4.73	µg/L	97
		526.0 -> 169.0	24517			
EtFOSE	10.888	630.0 -> 58.9	61809	11.29	µg/L	100
MeFOSA	10.721	511.9 -> 219.0	16519	5.40	µg/L	93
		511.9 -> 169.0	21532			
MeFOSE	10.653	616.1 -> 58.9	40966	11.24	µg/L	100
PFDoDS	9.748	699.1 -> 79.9	4278	2.29	µg/L	95
		699.1 -> 98.8	2489			
NFDHA	5.373	295.0 -> 201.0	8343	4.22	µg/L	94
		295.0 -> 84.9	2349			
PFMBA	4.712	279.0 -> 85.1	36817	5.17	µg/L	100
PFMPA	3.463	229.0 -> 84.9	15895	2.98	µg/L	100
PFEESA	5.937	314.8 -> 134.9	93913	4.45	µg/L	99
		314.8 -> 82.9	3839			

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

7.3.1  
7

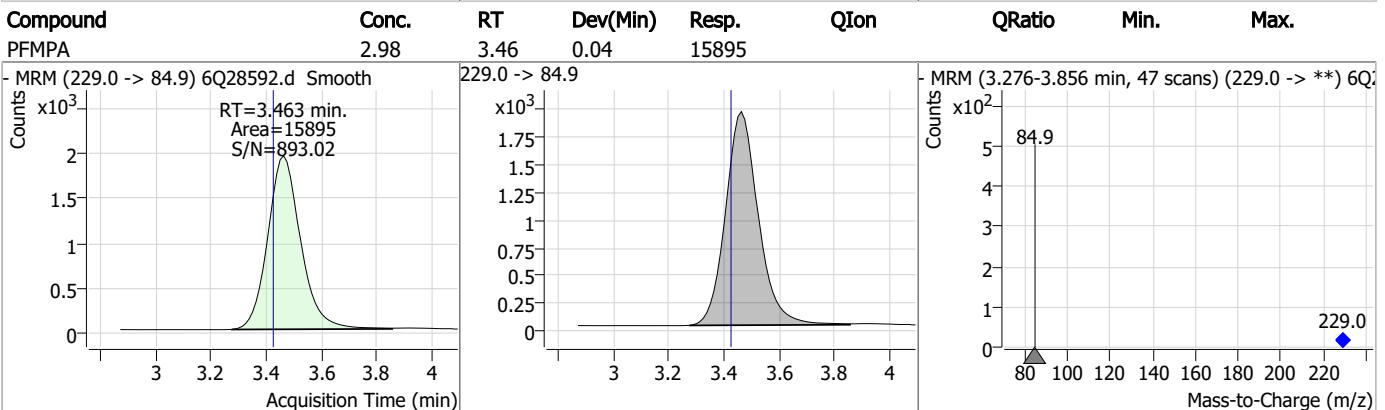
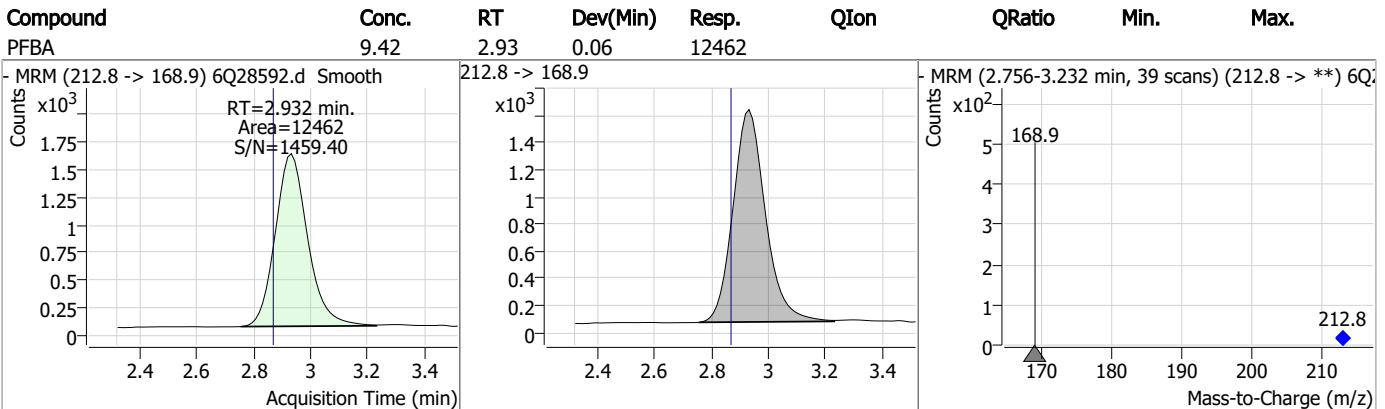
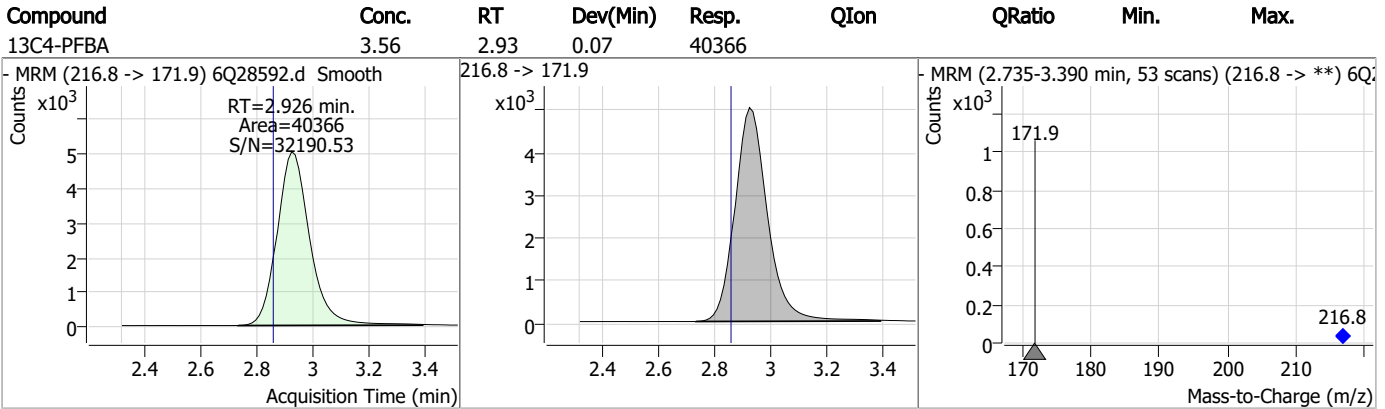
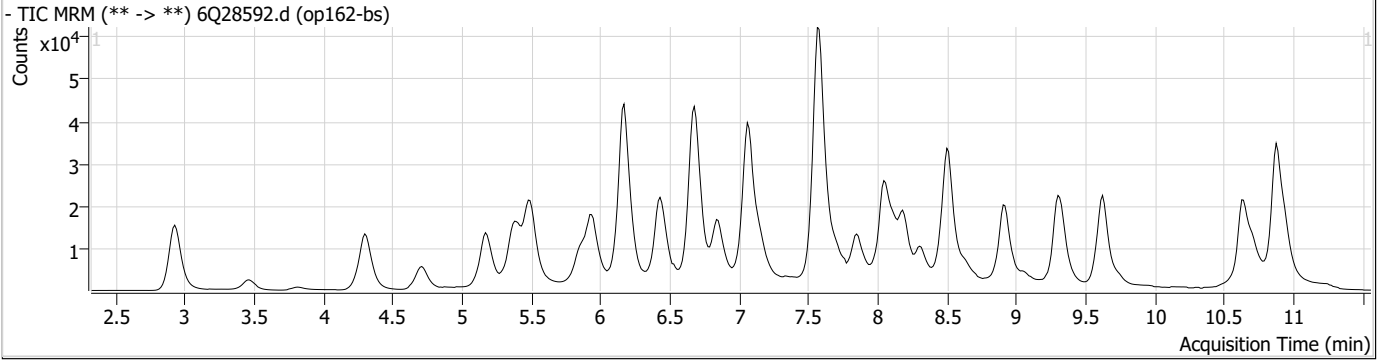
### Perfluorinated Compounds by LC/MS/MS

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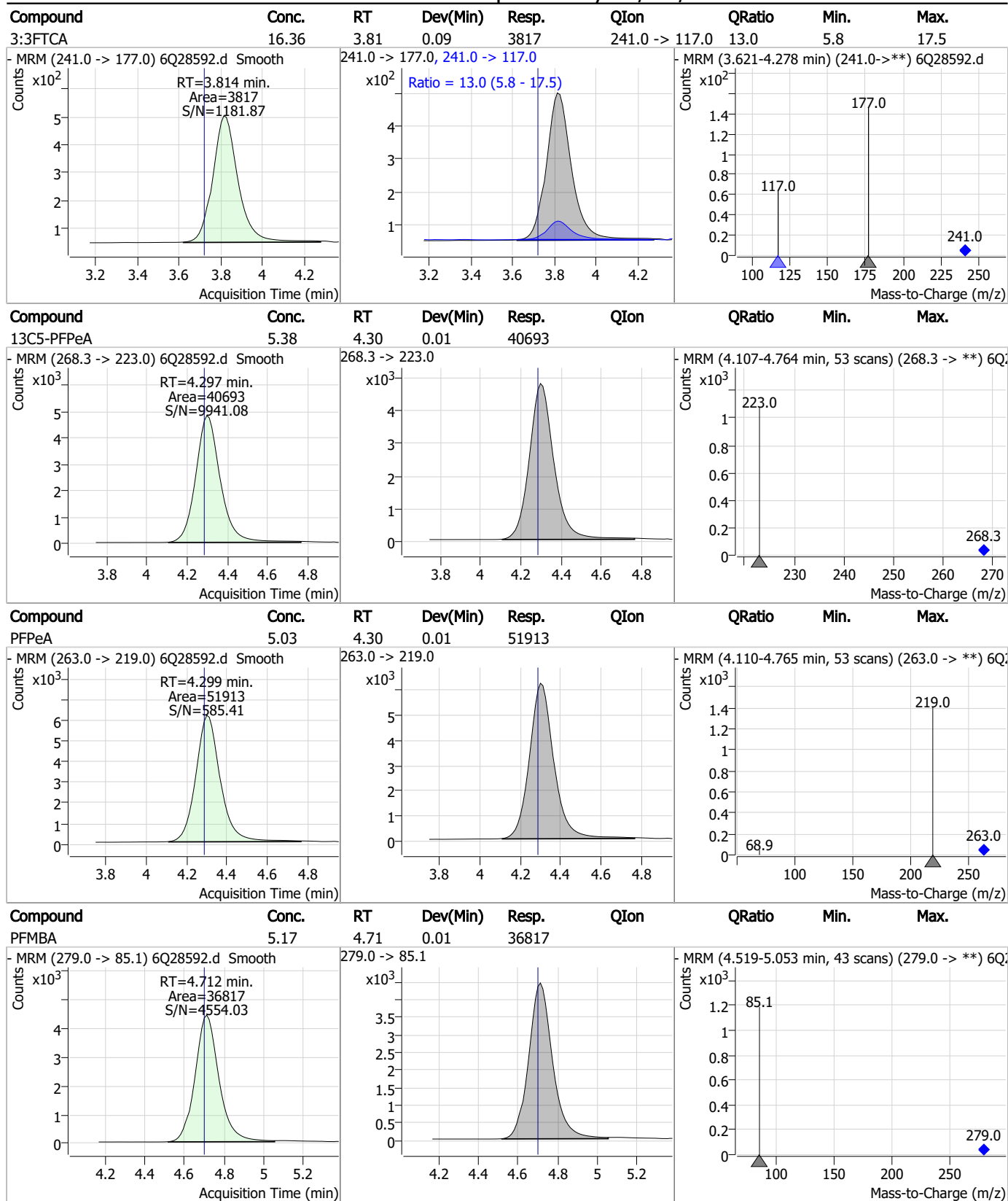
7.3.1

7

### Perfluorinated Compounds by LC/MS/MS

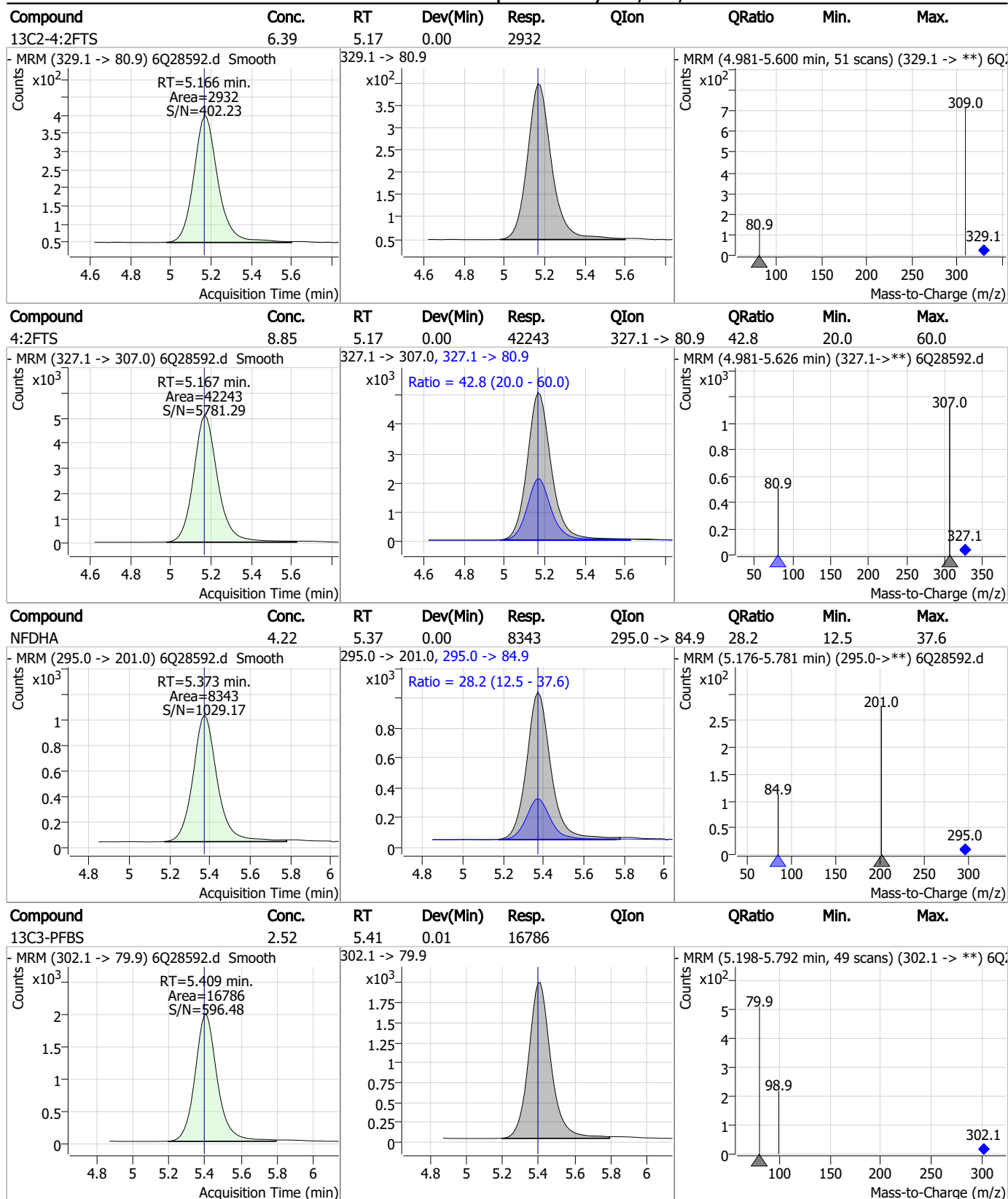


### Perfluorinated Compounds by LC/MS/MS



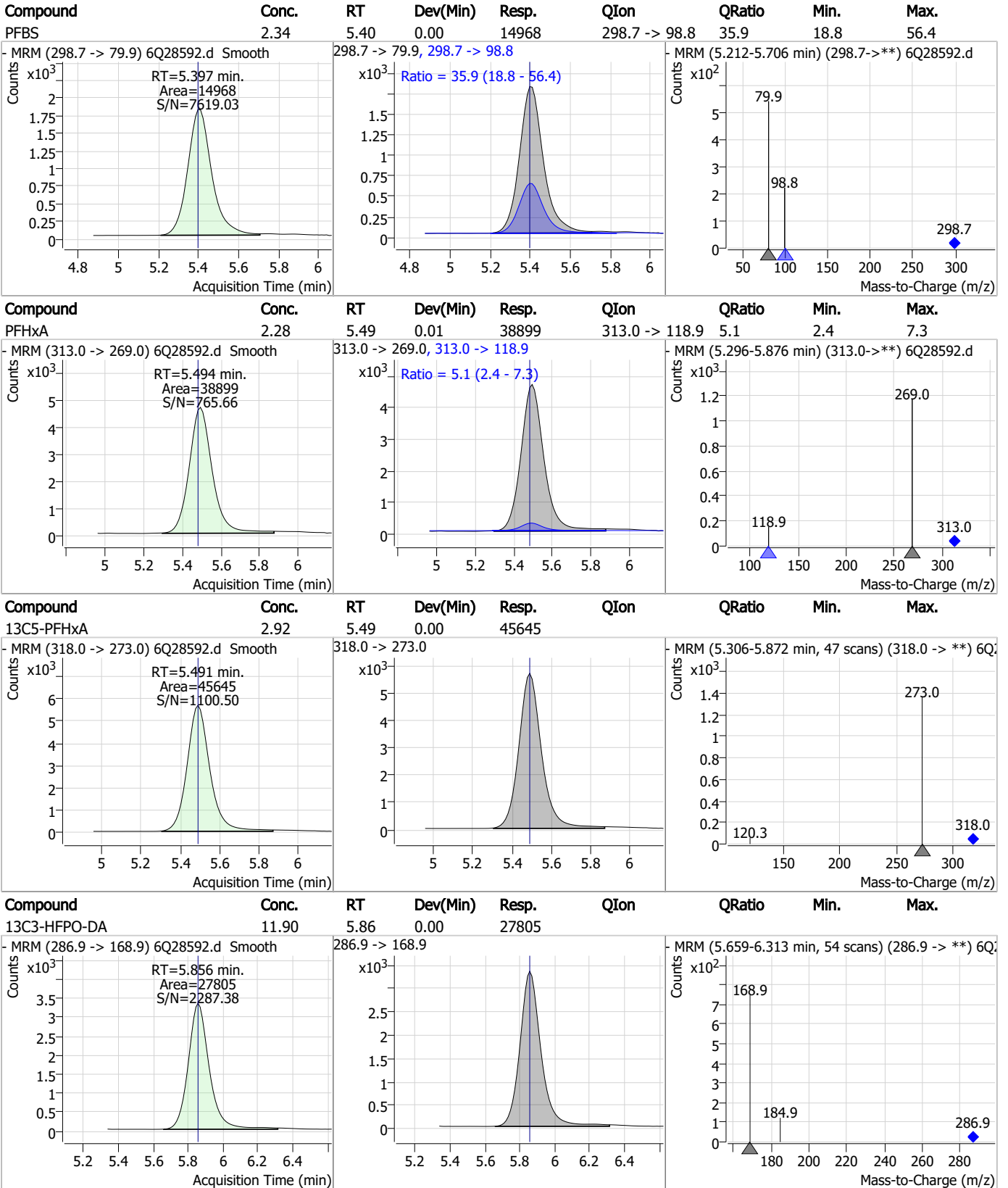
7.3.1  
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### Perfluorinated Compounds by LC/MS/MS



7.3.1  
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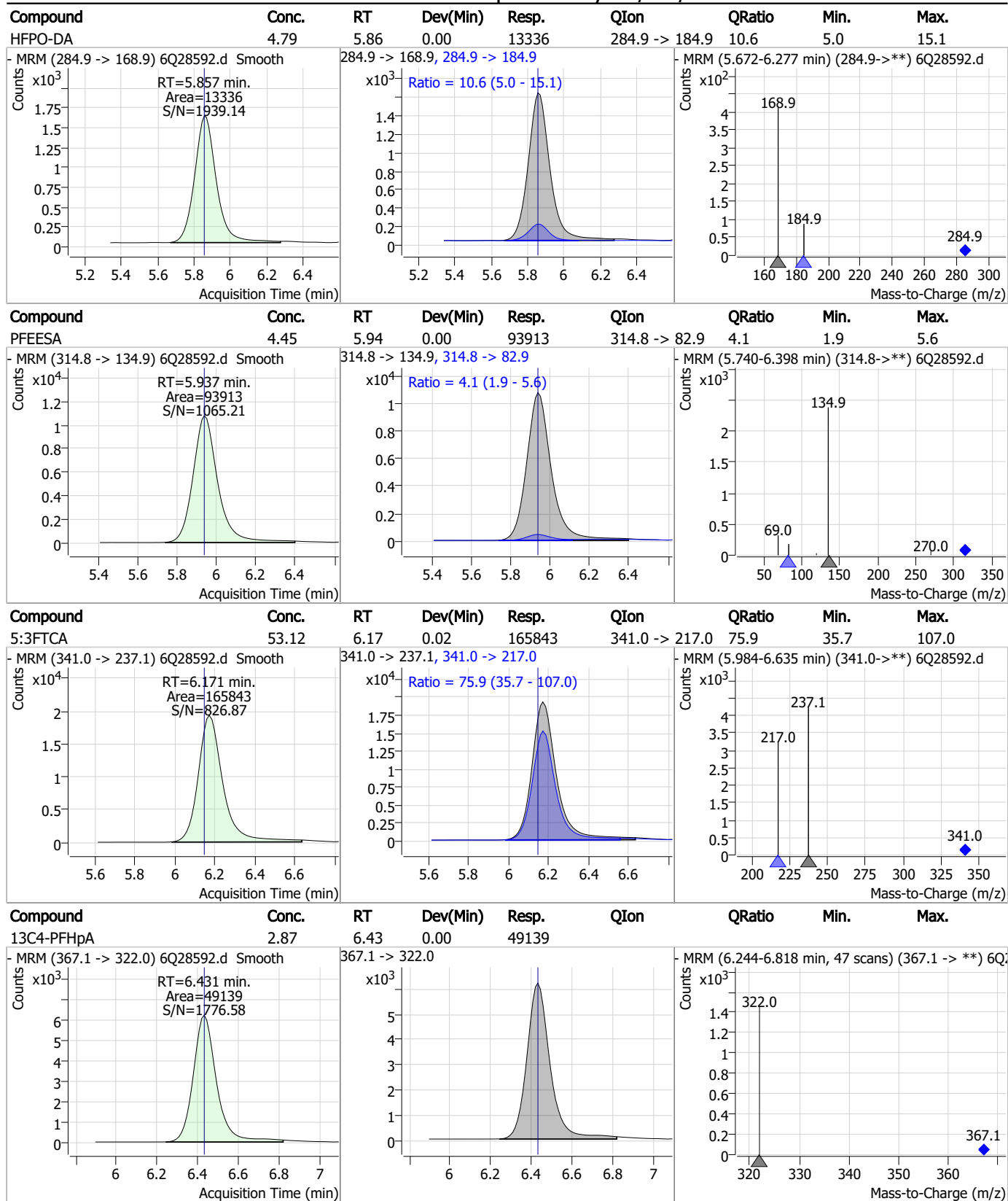
### Perfluorinated Compounds by LC/MS/MS



7.3.1

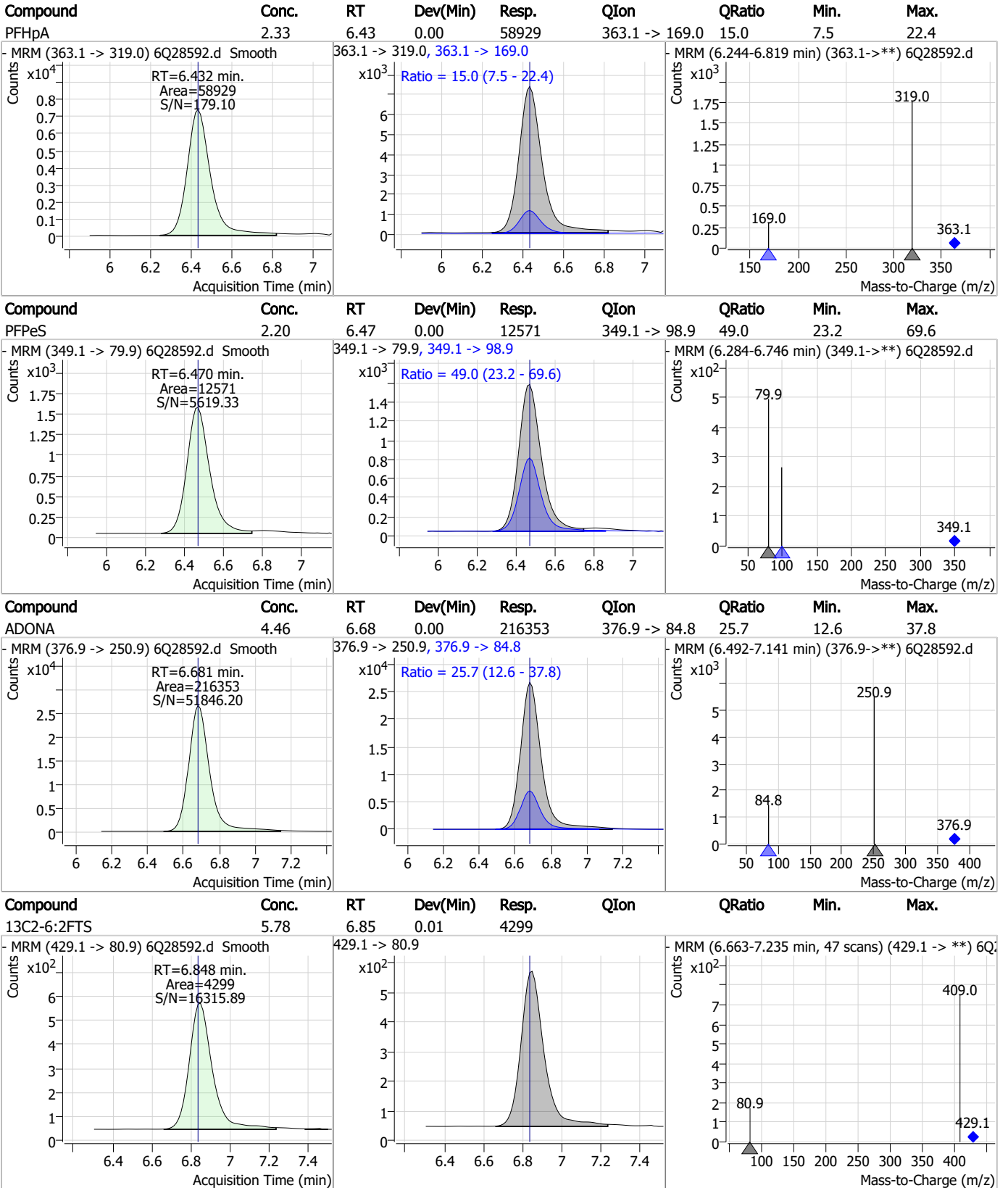
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### Perfluorinated Compounds by LC/MS/MS



7.3.1  
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### Perfluorinated Compounds by LC/MS/MS

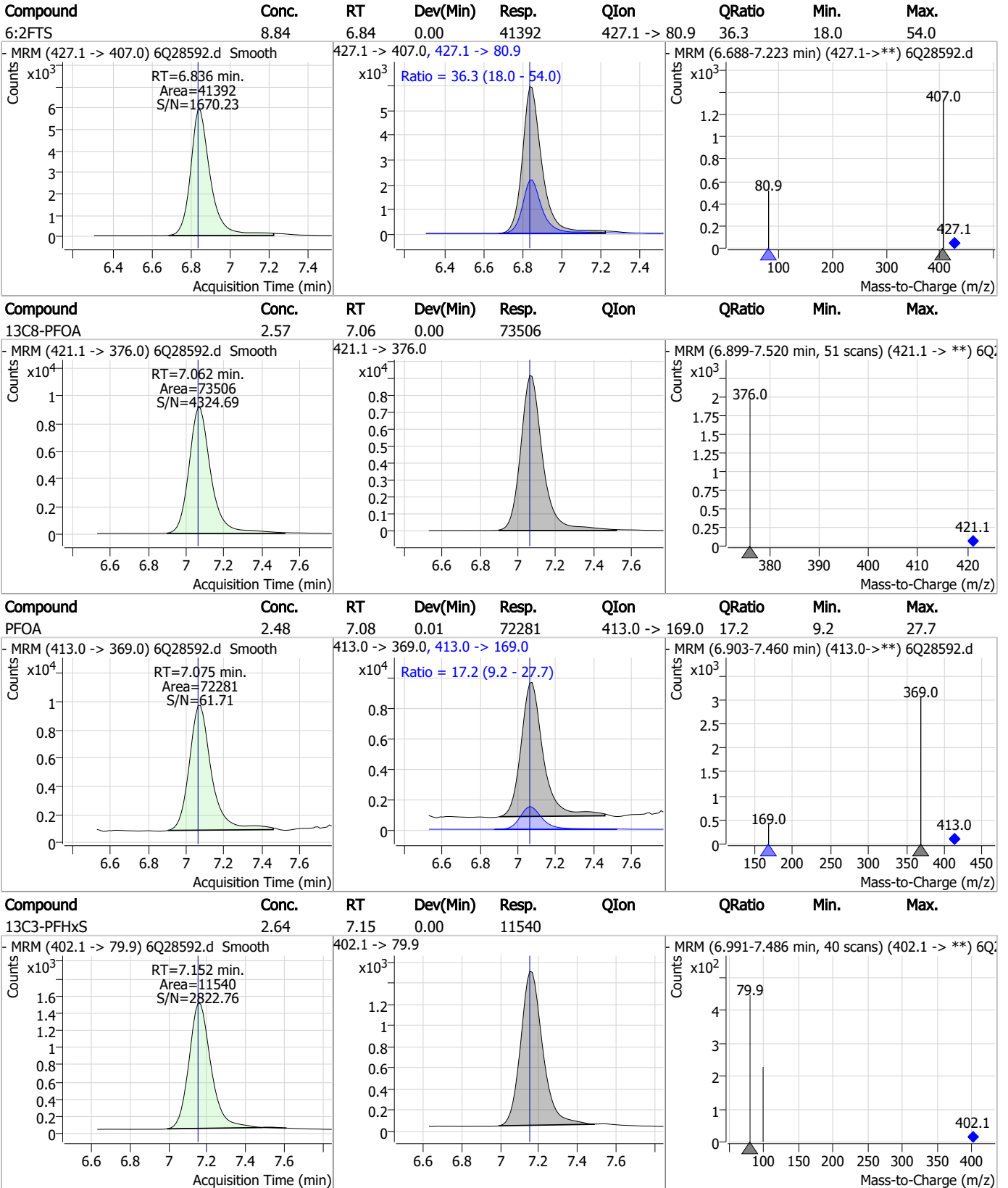


7.3.1

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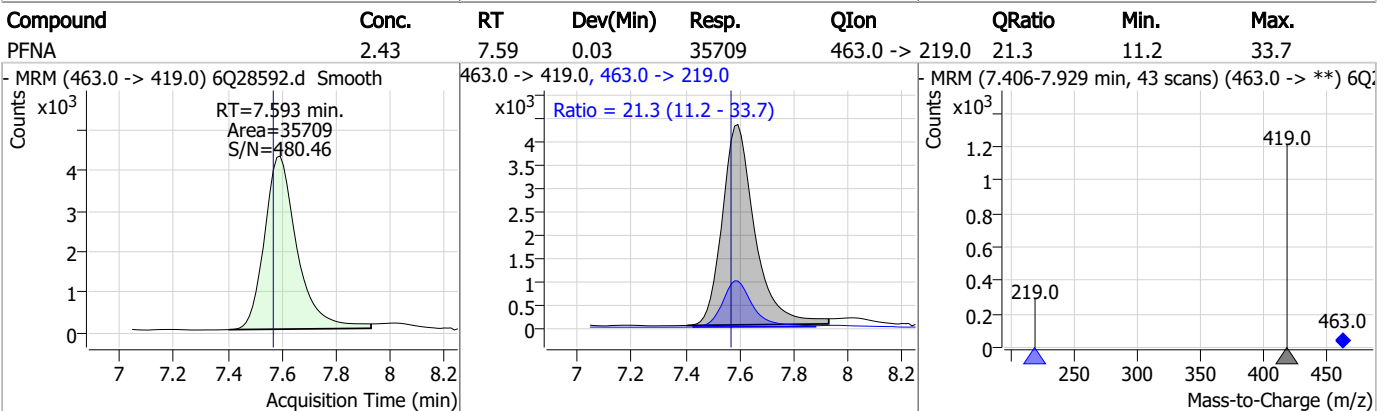
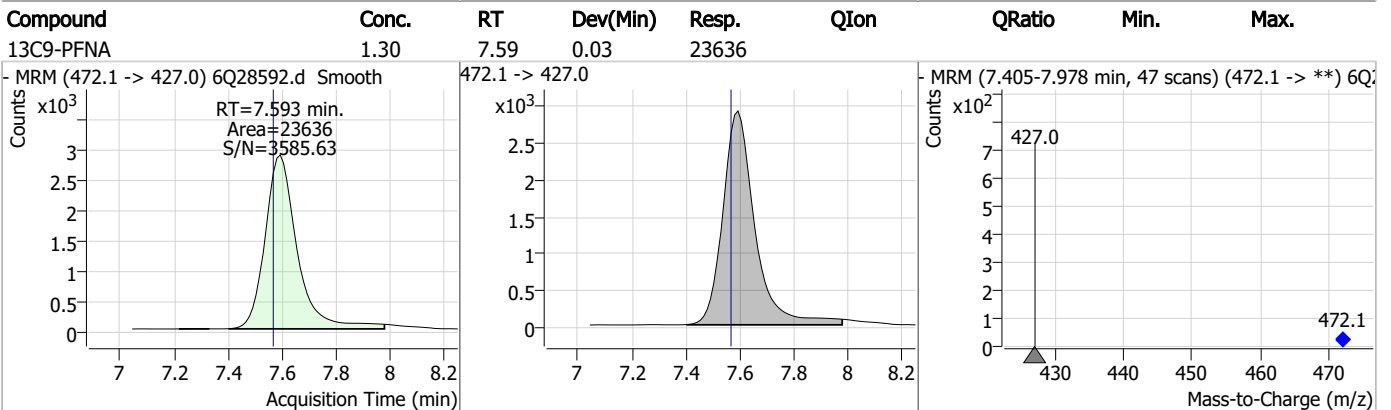
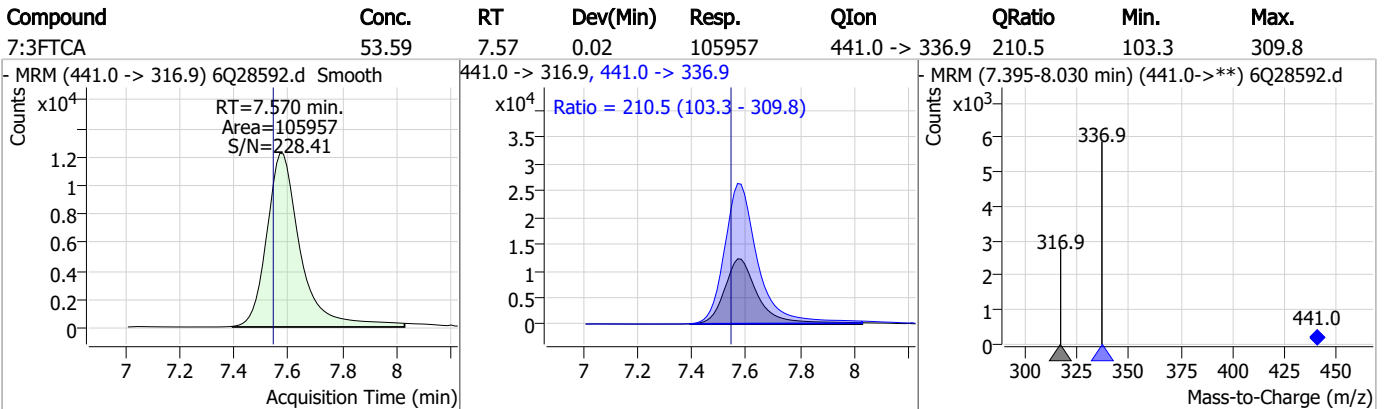
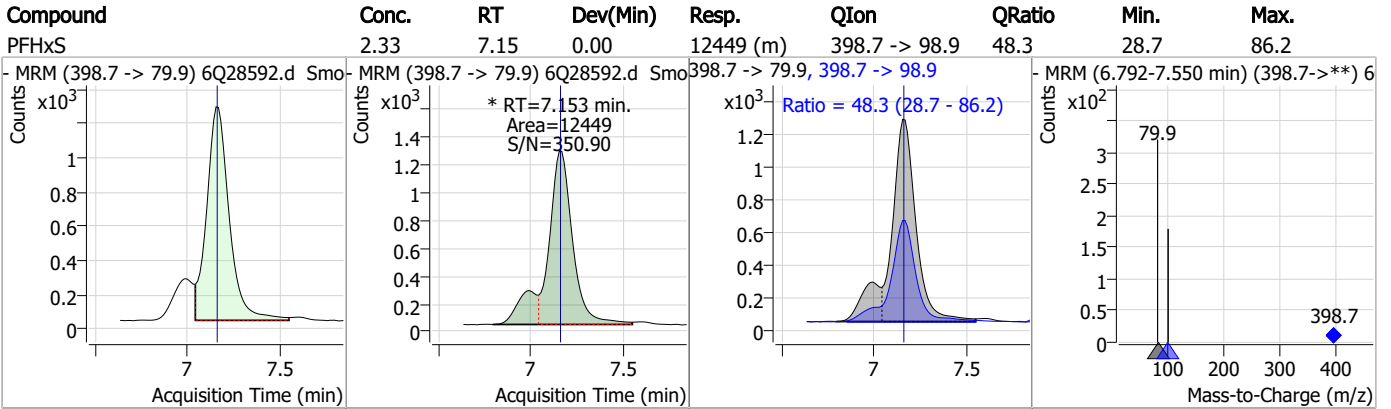
### Perfluorinated Compounds by LC/MS/MS



7.3.1

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### Perfluorinated Compounds by LC/MS/MS



7.3.1

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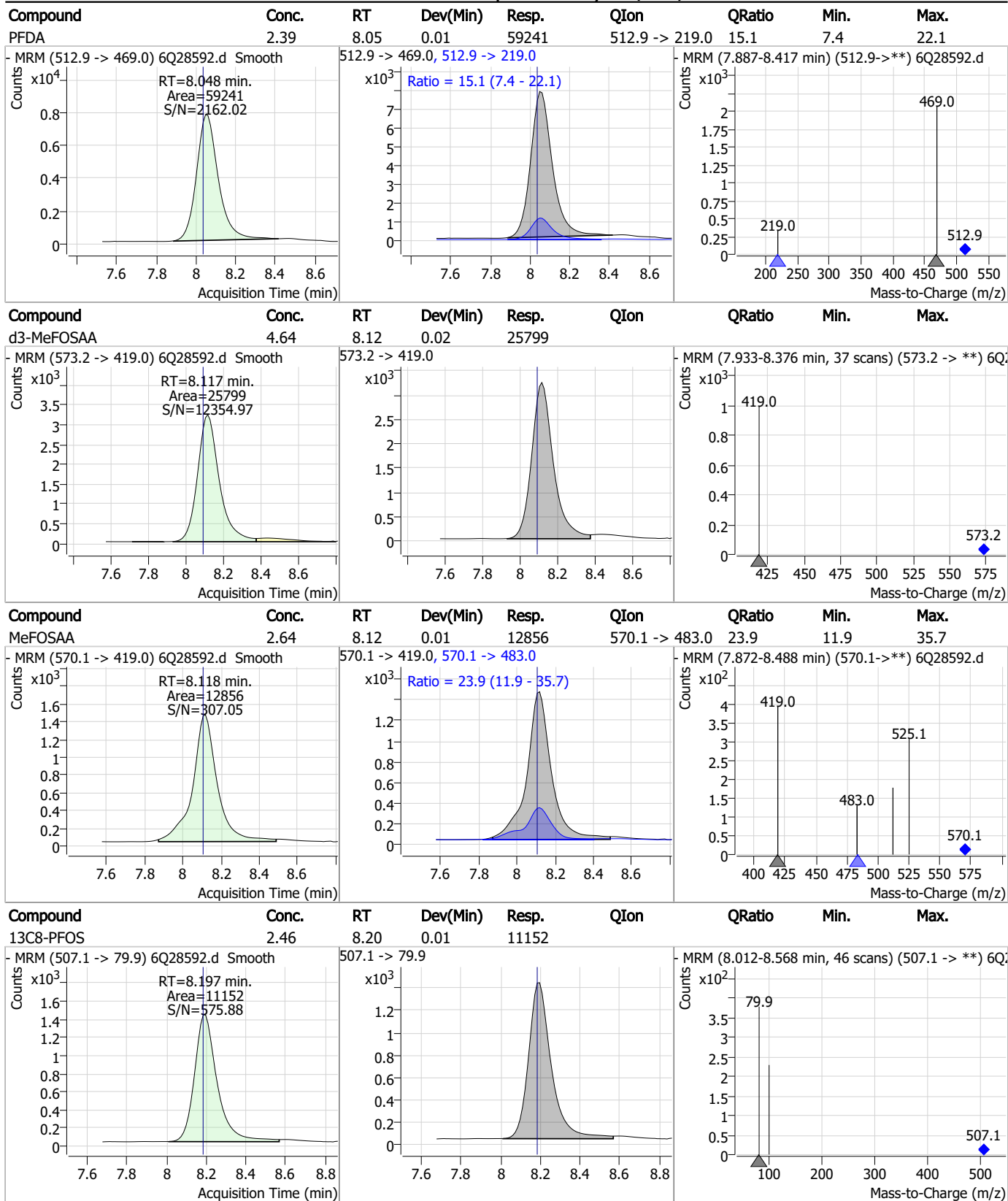
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.59	7.71	0.00	12278	449.0 -> 98.9	46.7	23.9	71.7
13C2-8:2FTS	5.03	7.86	0.03	4226	529.1 -> 80.9			
8:2FTS	10.00	7.85	0.01	32029	527.1 -> 80.8	35.8	18.1	54.3
13C6-PFDA	1.36	8.05	0.01	26695	519.1 -> 474.1			

7.3.1

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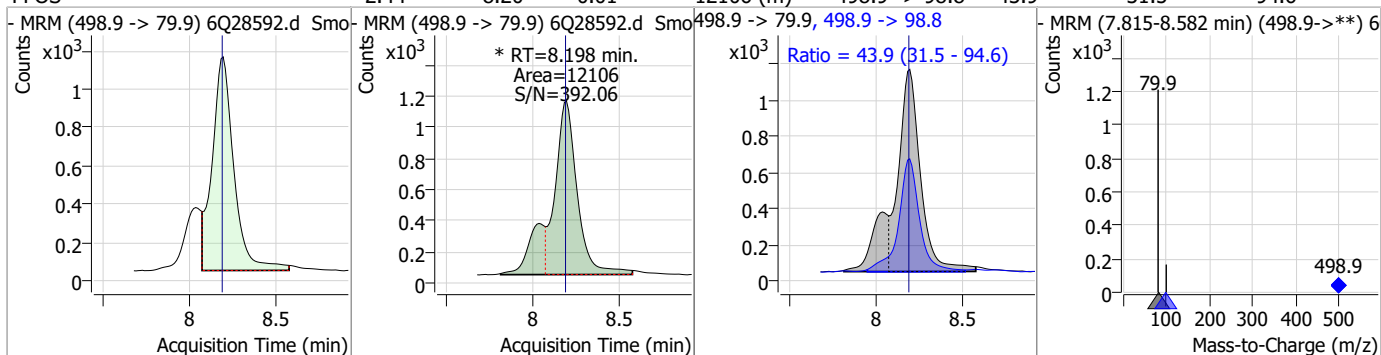
### Perfluorinated Compounds by LC/MS/MS



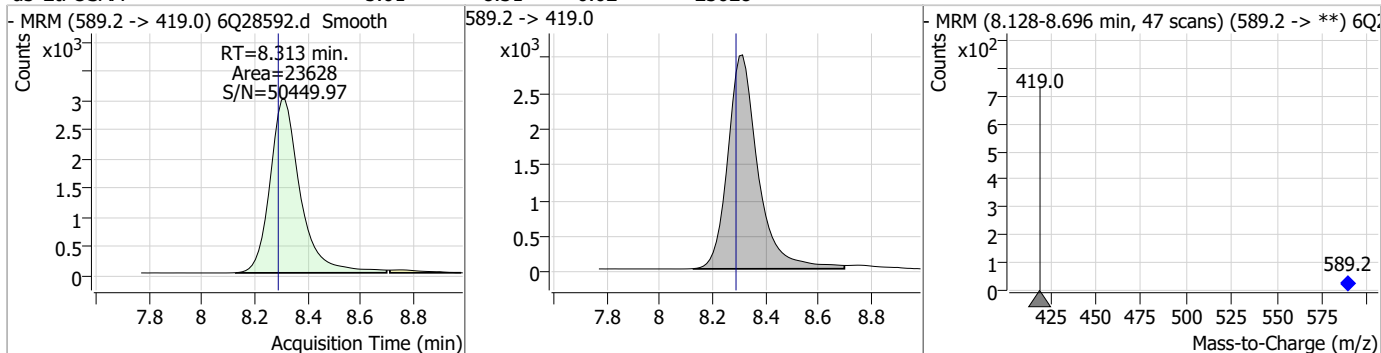
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### Perfluorinated Compounds by LC/MS/MS

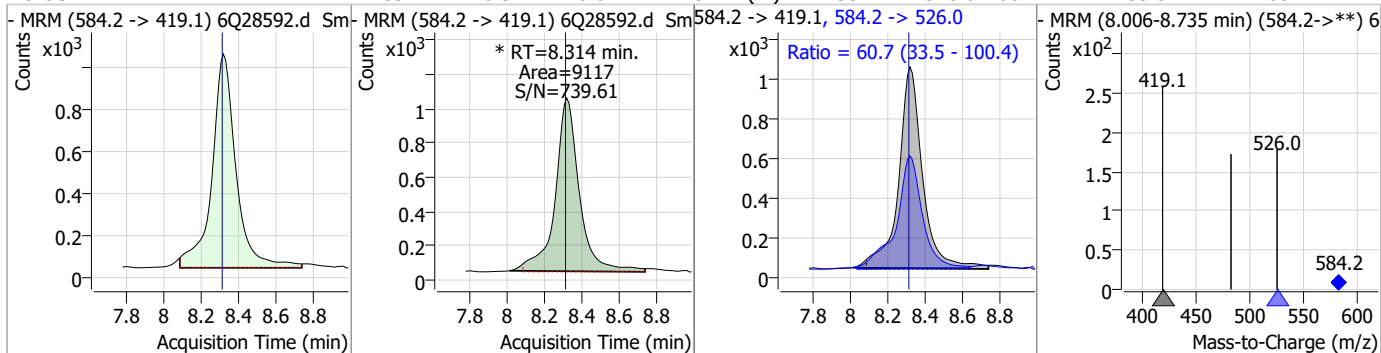
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.44	8.20	0.01	12106 (m)	498.9 -> 98.8	43.9	31.5	94.6



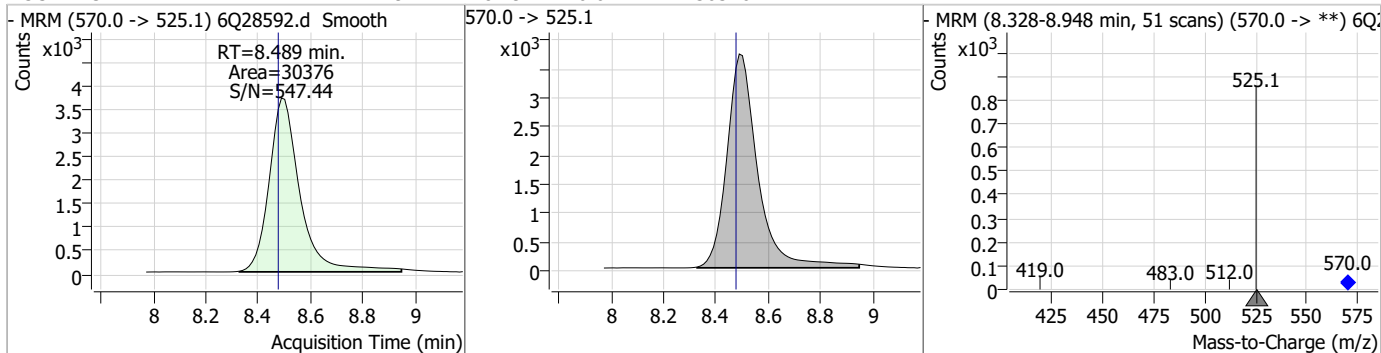
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.01	8.31	0.02	23628				



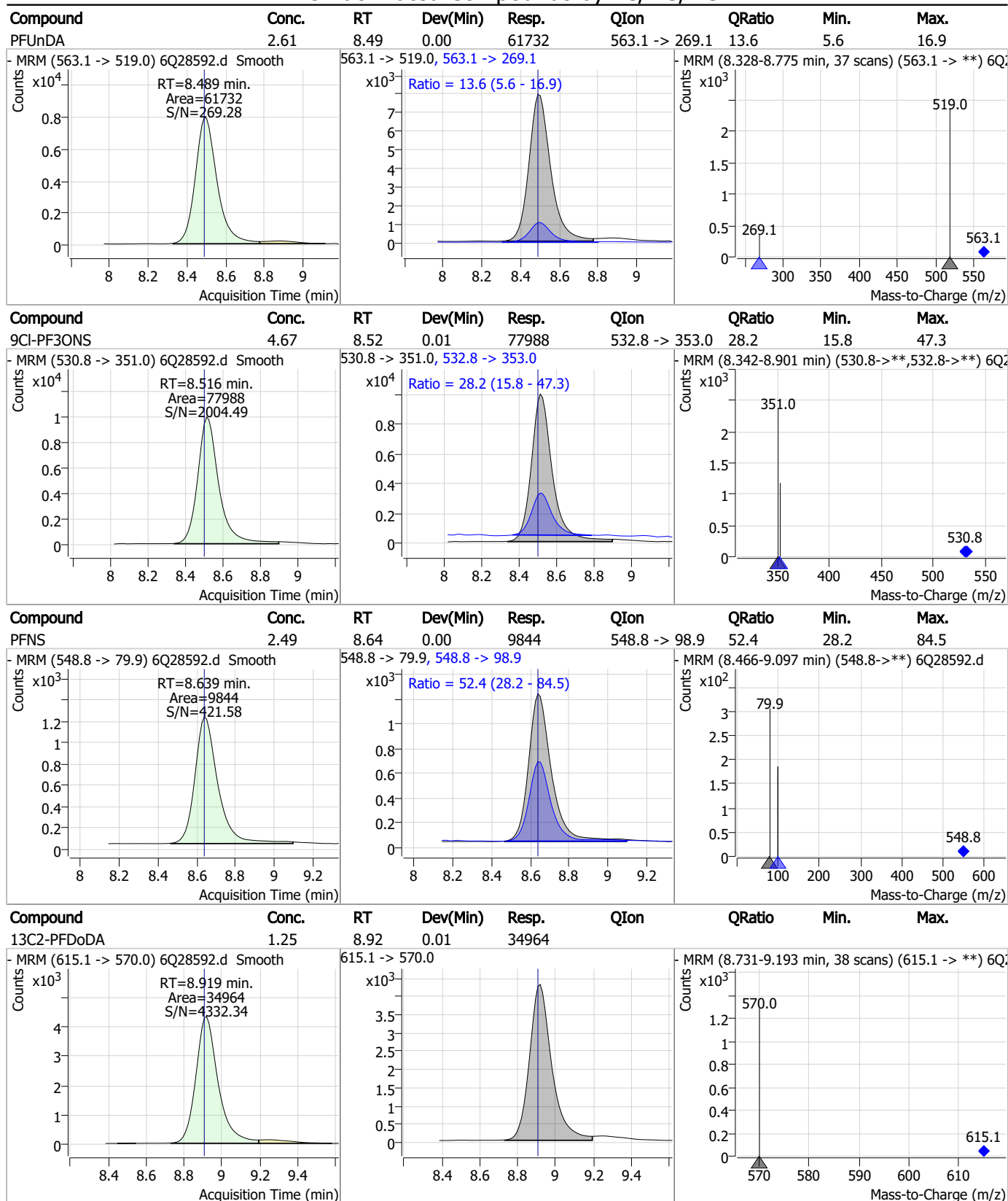
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.39	8.31	0.01	9117 (m)	584.2 -> 526.0	60.7	33.5	100.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.49	0.01	30376				

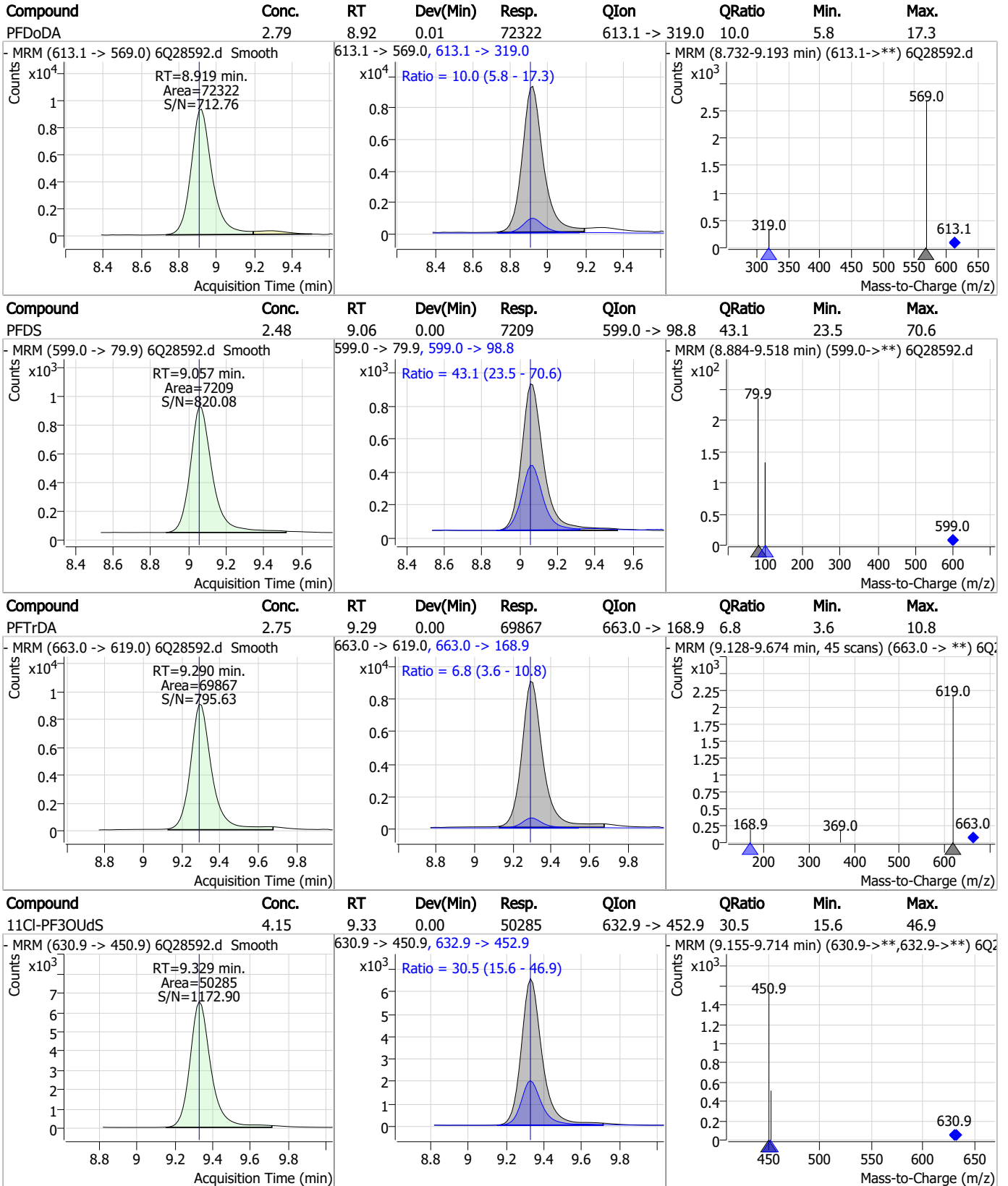


### Perfluorinated Compounds by LC/MS/MS



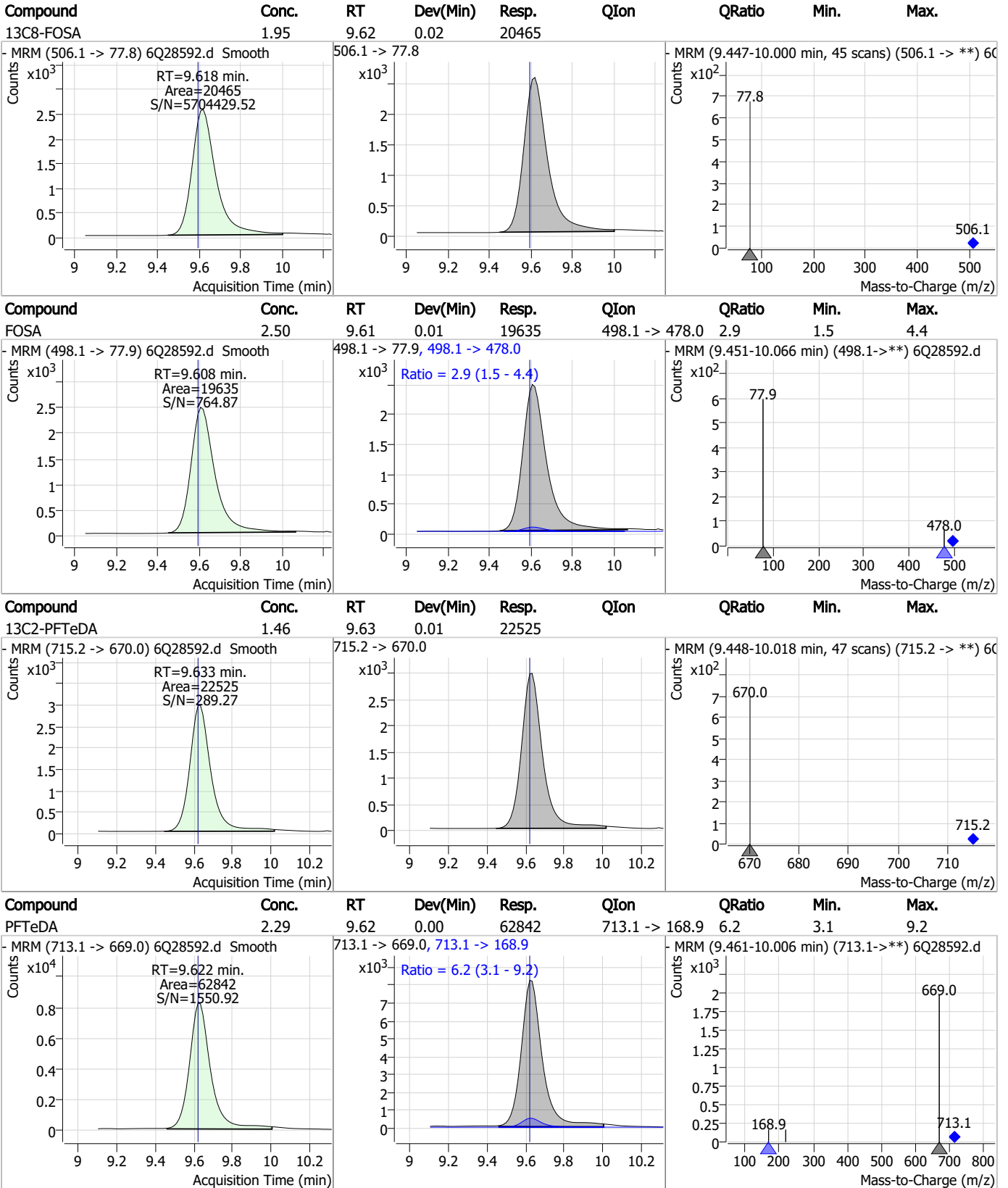
7.3.1  
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### Perfluorinated Compounds by LC/MS/MS



7.3.1  
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### Perfluorinated Compounds by LC/MS/MS



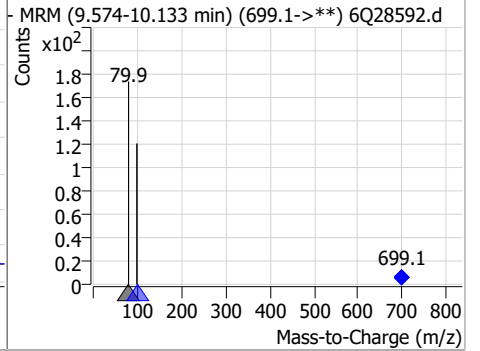
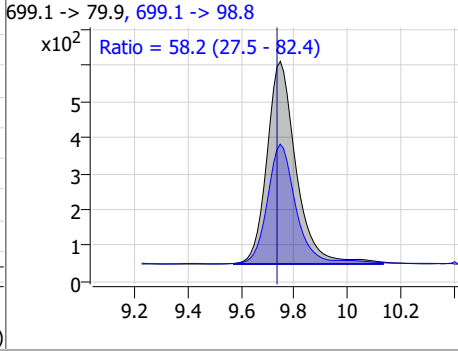
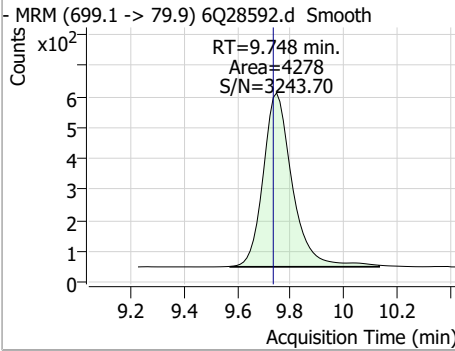
7.3.1

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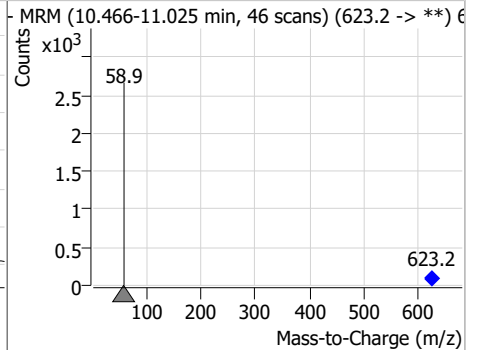
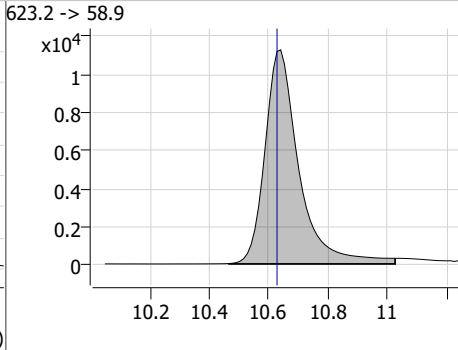
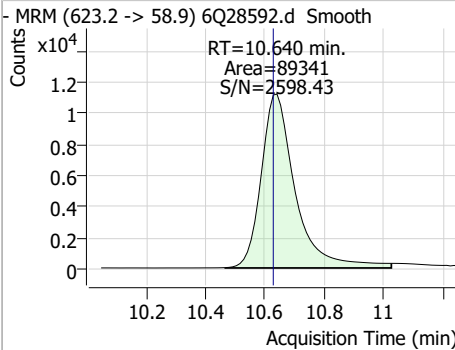


### Perfluorinated Compounds by LC/MS/MS

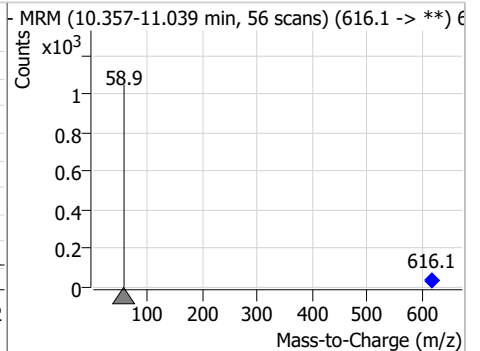
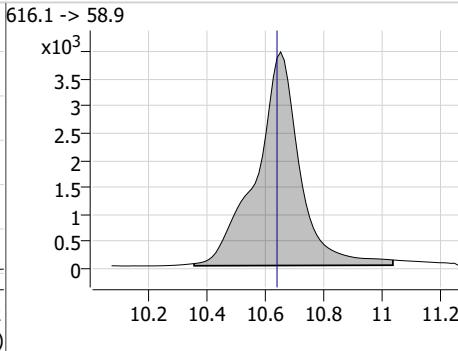
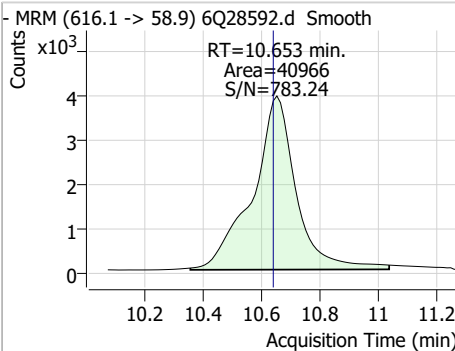
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.29	9.75	0.01	4278	699.1 -> 98.8	58.2	27.5	82.4



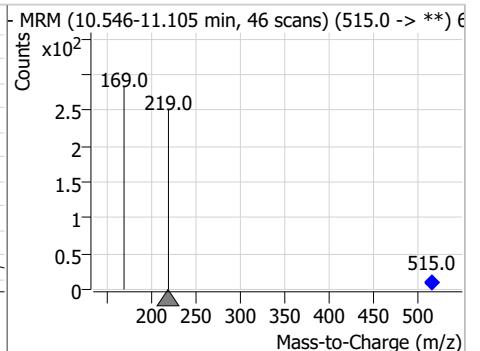
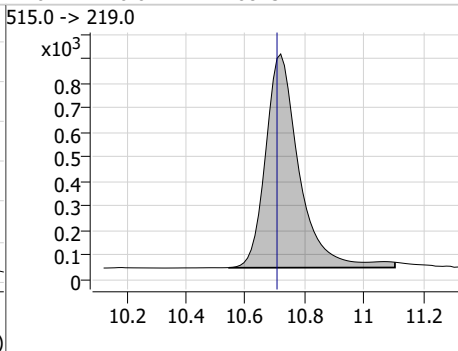
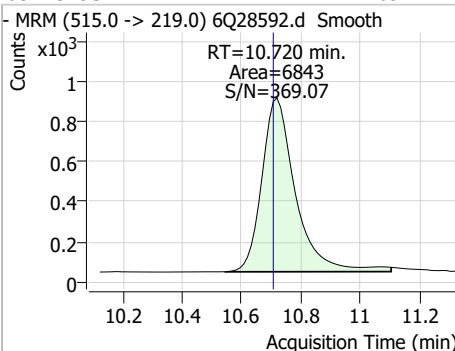
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	20.79	10.64	0.01	89341				



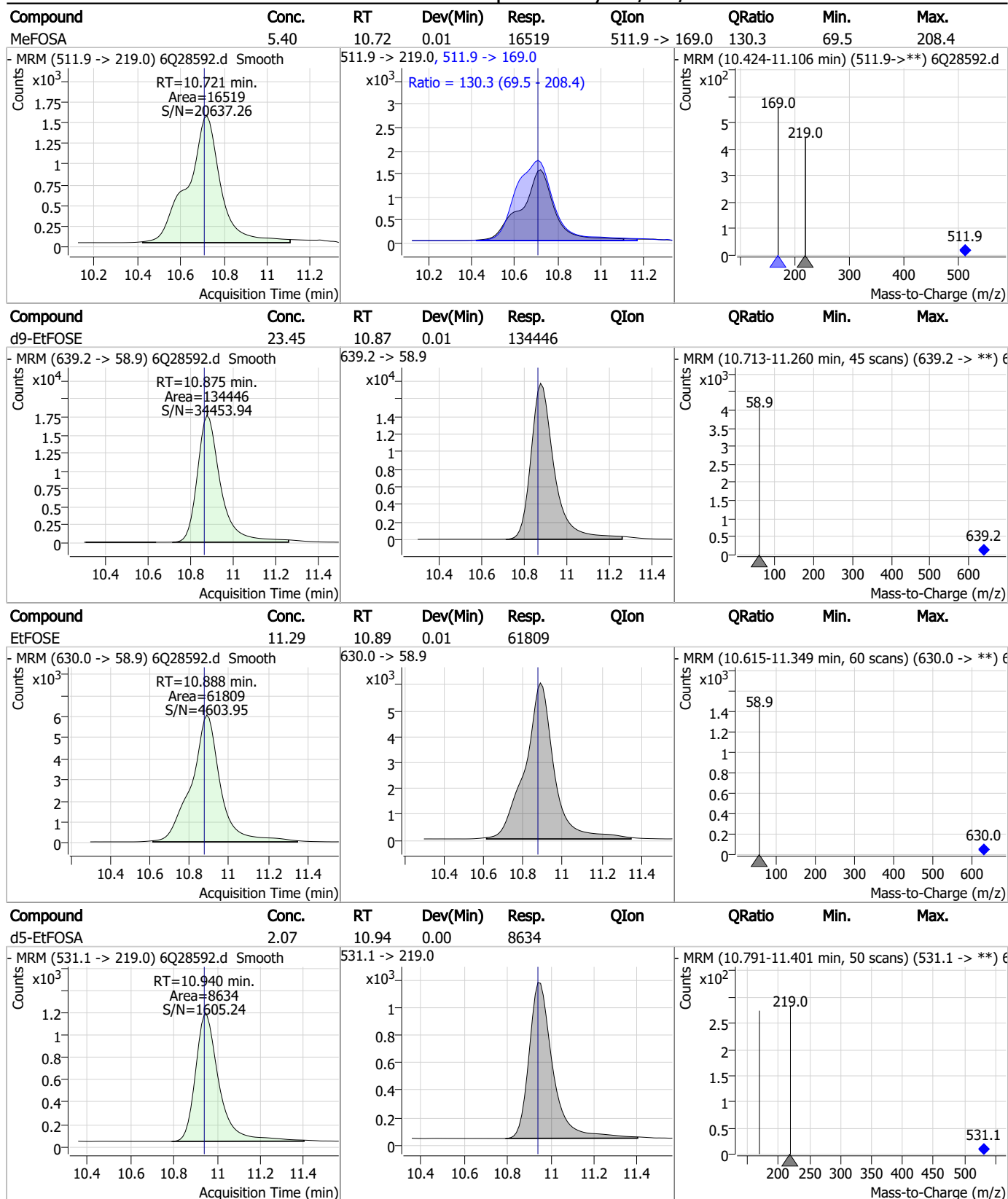
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.24	10.65	0.01	40966				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.89	10.72	0.01	6843				

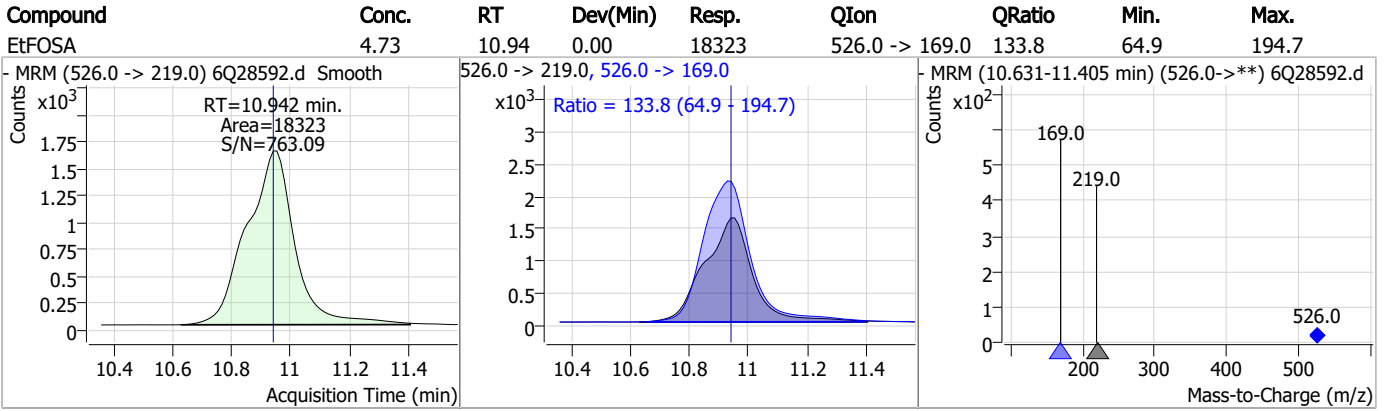


### Perfluorinated Compounds by LC/MS/MS



7.3.1  
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### Perfluorinated Compounds by LC/MS/MS



7.3.1

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# Manual Integration Approval Summary

Sample Number: OP162-BS                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28592.D                      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/20/23 12:02                      Supervisor approved: 11/21/23 17:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.20	Split peak
EtFOSAA	2991-50-6		8.31	Split peak

7.3.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28593.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 12:16:40 PM  
 Sample Name : op162-llbs:3  
 Vial : P2-A2  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP162,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.901	216.8 -> 171.9	130782	10.00 µg/L	0.041
M5-PFPeA	4.284	268.3 -> 223.0	44508	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	47274	2.50 µg/L	-0.012
M4-PFHpA	6.431	367.1 -> 322.0	53423	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	77458	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	29485	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	27612	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	28547	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	34517	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	19066	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	19191	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	17351	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	11700	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	11501	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2754	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	4084	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	4169	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	26015	5.00 µg/L	0.012
M3-HFPO-DA	5.856	286.9 -> 168.9	28838	10.00 µg/L	0.000
M5-EtFOSAA	8.300	589.2 -> 419.0	22166	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	79914	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	127166	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	8343	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	6593	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	11028	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	50806	5.00 µg/L	0.040
18O2-PFHxS	7.151	403.0 -> 83.9	7431	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	74879	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	27835	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	25659	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	40264	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2754	5.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.3%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4084	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-8:2FTS	7.848	529.1 -> 80.9	4169	4.77 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-PFDoDA	8.906	615.1 -> 570.0	34517	1.12 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.6%		
13C2-PFTeDA	9.621	715.2 -> 670.0	19066	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.3%		
13C3-PFBS	5.384	302.1 -> 79.9	17351	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C3-PFHxS	7.152	402.1 -> 79.9	11700	2.57 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 = 102.8%	
13C4-PFBA	2.901	216.8 -> 171.9	130782	11.12 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.2%	
13C4-PFHpA	6.431	367.1 -> 322.0	53423	2.91 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.5%	
13C5-PFHxA	5.478	318.0 -> 273.0	47274	2.82 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.9%	
13C5-PFPeA	4.284	268.3 -> 223.0	44508	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.1%	
13C6-PFDA	8.048	519.1 -> 474.1	27612	1.28 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C7-PFUnDA	8.489	570.0 -> 525.1	28547	1.11 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.4%	
13C8-FOSA	9.605	506.1 -> 77.8	19191	1.78 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 71.3%	
13C8-PFOA	7.062	421.1 -> 376.0	77458	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C8-PFOS	8.185	507.1 -> 79.9	11501	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C9-PFNA	7.580	472.1 -> 427.0	29485	1.37 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.7%	
d3-MeFOSAA	8.105	573.2 -> 419.0	26015	4.55 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.0%	
13C3-HFPO-DA	5.856	286.9 -> 168.9	28838	11.53 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.3%	
d3-MeFOSA	10.720	515.0 -> 219.0	6593	1.77 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 71.0%	
d5-EtFOSAA	8.300	589.2 -> 419.0	22166	4.58 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
d7-MeFOSE	10.640	623.2 -> 58.9	79914	18.10 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 72.4%	
d9-EtFOSE	10.875	639.2 -> 58.9	127166	21.59 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.4%	
d5-EtFOSA	10.940	531.1 -> 219.0	8343	1.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 78.0%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	14506	3.23 µg/L	98
		327.1 -> 80.9	6017		
6:2FTS	6.836	427.1 -> 407.0	14646	3.29 µg/L	99
		427.1 -> 80.9	5347		
8:2FTS	7.849	527.1 -> 507.0	11556	3.66 µg/L	95
		527.1 -> 80.8	3820		
EtFOSAA	8.314	584.2 -> 419.1	2967	0.83 µg/L	97
		584.2 -> 526.0	1914		
FOSA	9.608	498.1 -> 77.9	7015	0.95 µg/L	99
		498.1 -> 478.0	174		
MeFOSAA	8.106	570.1 -> 419.0	4530	0.92 µg/L	92
		570.1 -> 483.0	910		
PFBA	2.907	212.8 -> 168.9	14320	3.34 µg/L	100
PFBS	5.397	298.7 -> 79.9	4727	0.71 µg/L	97
		298.7 -> 98.8	1860		
PFDA	8.048	512.9 -> 469.0	20092	0.78 µg/L	99
		512.9 -> 219.0	2866		
PFDoDA	8.907	613.1 -> 569.0	22408	0.87 µg/L	98
		613.1 -> 319.0	2392		
PFDS	9.057	599.0 -> 79.9	2174	0.73 µg/L	98

7.3.2  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1053			
PFHpA	6.419	363.1 -> 319.0	21159	0.77	µg/L	100
		363.1 -> 169.0	3170			
PFHpS	7.706	449.0 -> 79.9	4012	0.82	µg/L	99
		449.0 -> 98.9	1950			
PFHxA	5.481	313.0 -> 269.0	13924	0.79	µg/L	100
		313.0 -> 118.9	679			
PFHxS	7.153	398.7 -> 79.9	4436	0.82	µg/L	m 84
		398.7 -> 98.9	2034			
PFNA	7.581	463.0 -> 419.0	14885	0.81	µg/L	95
		463.0 -> 219.0	3016			
PFNS	8.639	548.8 -> 79.9	2972	0.73	µg/L	97
		548.8 -> 98.9	1746			
PFOA	7.063	413.0 -> 369.0	25866	0.84	µg/L	99
		413.0 -> 169.0	4610			
PFOS	8.186	498.9 -> 79.9	4038	0.79	µg/L	m 88
		498.9 -> 98.8	2173			
PFPeA	4.286	263.0 -> 219.0	19177	1.70	µg/L	100
PFPeS	6.458	349.1 -> 79.9	4717	0.81	µg/L	98
		349.1 -> 98.9	2123			
PFTeDA	9.622	713.1 -> 669.0	20470	0.88	µg/L	100
		713.1 -> 168.9	1226			
PFTrDA	9.290	663.0 -> 619.0	18444	0.73	µg/L	96
		663.0 -> 168.9	1582			
PFUnDA	8.489	563.1 -> 519.0	18977	0.85	µg/L	97
		563.1 -> 269.1	2347			
11Cl-PF3OUdS	9.329	630.9 -> 450.9	14652	1.17	µg/L	98
		632.9 -> 452.9	4763			
9Cl-PF3ONS	8.516	530.8 -> 351.0	23387	1.35	µg/L	97
		532.8 -> 353.0	6926			
ADONA	6.681	376.9 -> 250.9	75845	1.51	µg/L	97
		376.9 -> 84.8	20278			
HFPO-DA	5.844	284.9 -> 168.9	4905	1.70	µg/L	98
		284.9 -> 184.9	535			
3:3FTCA	3.777	241.0 -> 177.0	2262	2.99	µg/L	99
		241.0 -> 117.0	274			
5:3FTCA	6.159	341.0 -> 237.1	62074	19.20	µg/L	99
		341.0 -> 217.0	44797			
7:3FTCA	7.558	441.0 -> 316.9	42139	20.58	µg/L	96
		441.0 -> 336.9	89988			
EtFOSA	10.942	526.0 -> 219.0	6419	1.71	µg/L	99
		526.0 -> 169.0	8257			
EtFOSE	10.888	630.0 -> 58.9	21026	4.06	µg/L	100
MeFOSA	10.721	511.9 -> 219.0	5184	1.76	µg/L	99
		511.9 -> 169.0	7125			
MeFOSE	10.653	616.1 -> 58.9	13375	4.10	µg/L	100
PFDoDS	9.748	699.1 -> 79.9	1413	0.73	µg/L	93
		699.1 -> 98.8	701			
NFDHA	5.360	295.0 -> 201.0	3188	1.56	µg/L	94
		295.0 -> 84.9	891			
PFMBA	4.700	279.0 -> 85.1	13489	1.73	µg/L	100
PFMPA	3.438	229.0 -> 84.9	10555	1.81	µg/L	100
PFEESA	5.925	314.8 -> 134.9	32772	1.50	µg/L	99
		314.8 -> 82.9	1310			

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

7.3.2  
7

### Perfluorinated Compounds by LC/MS/MS

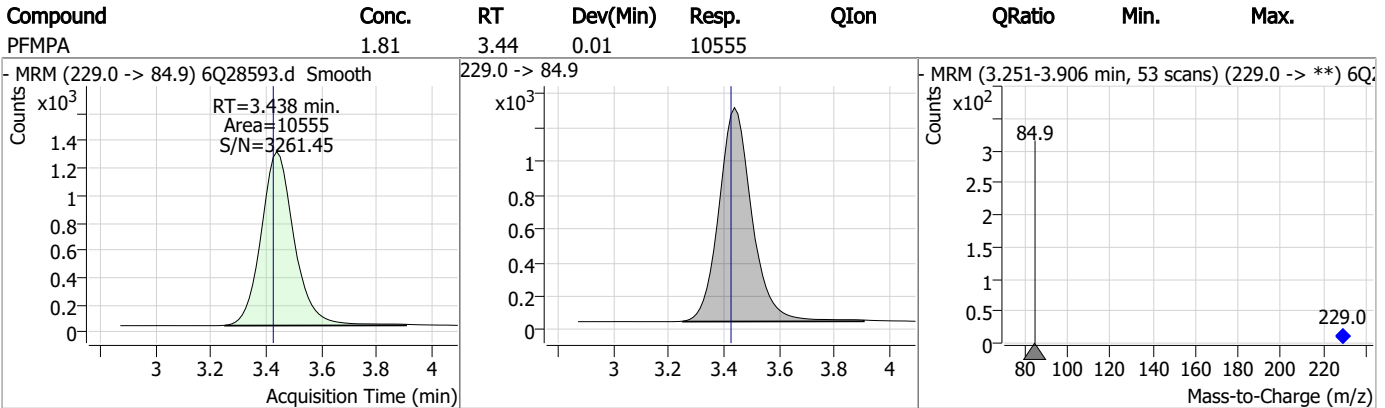
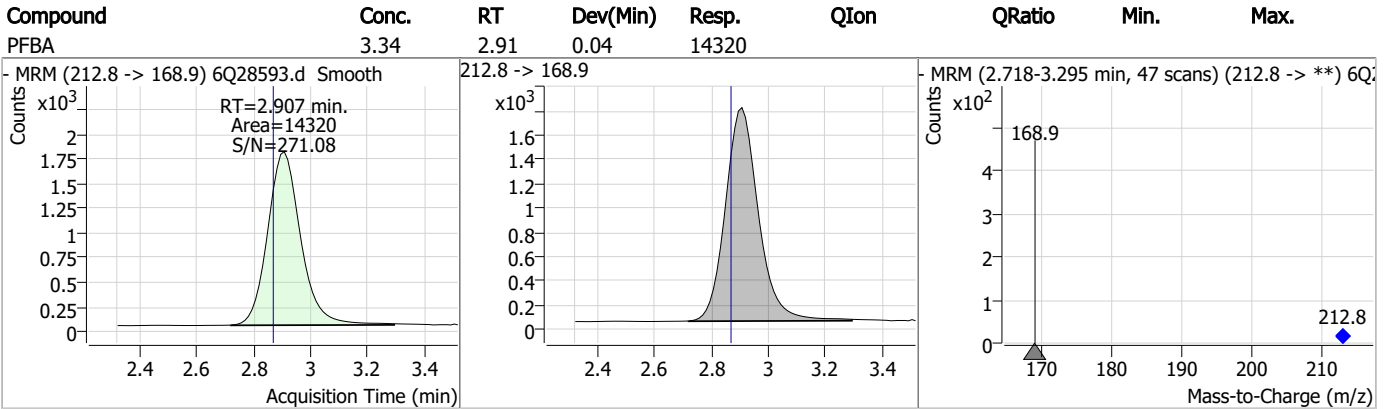
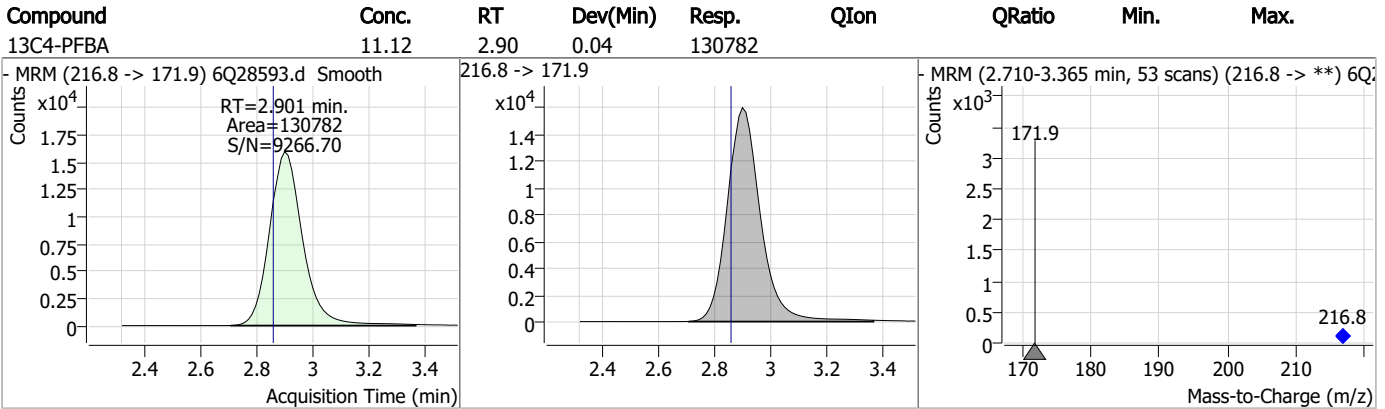
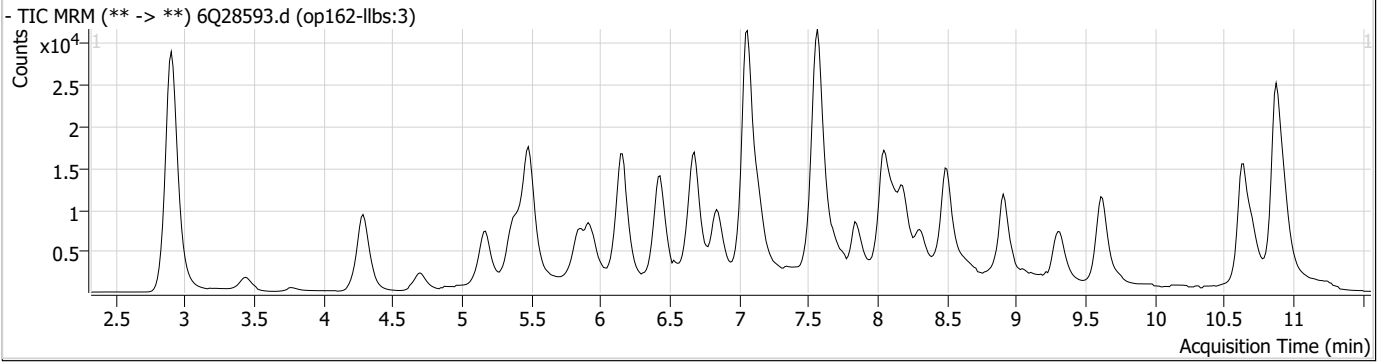
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.3.2

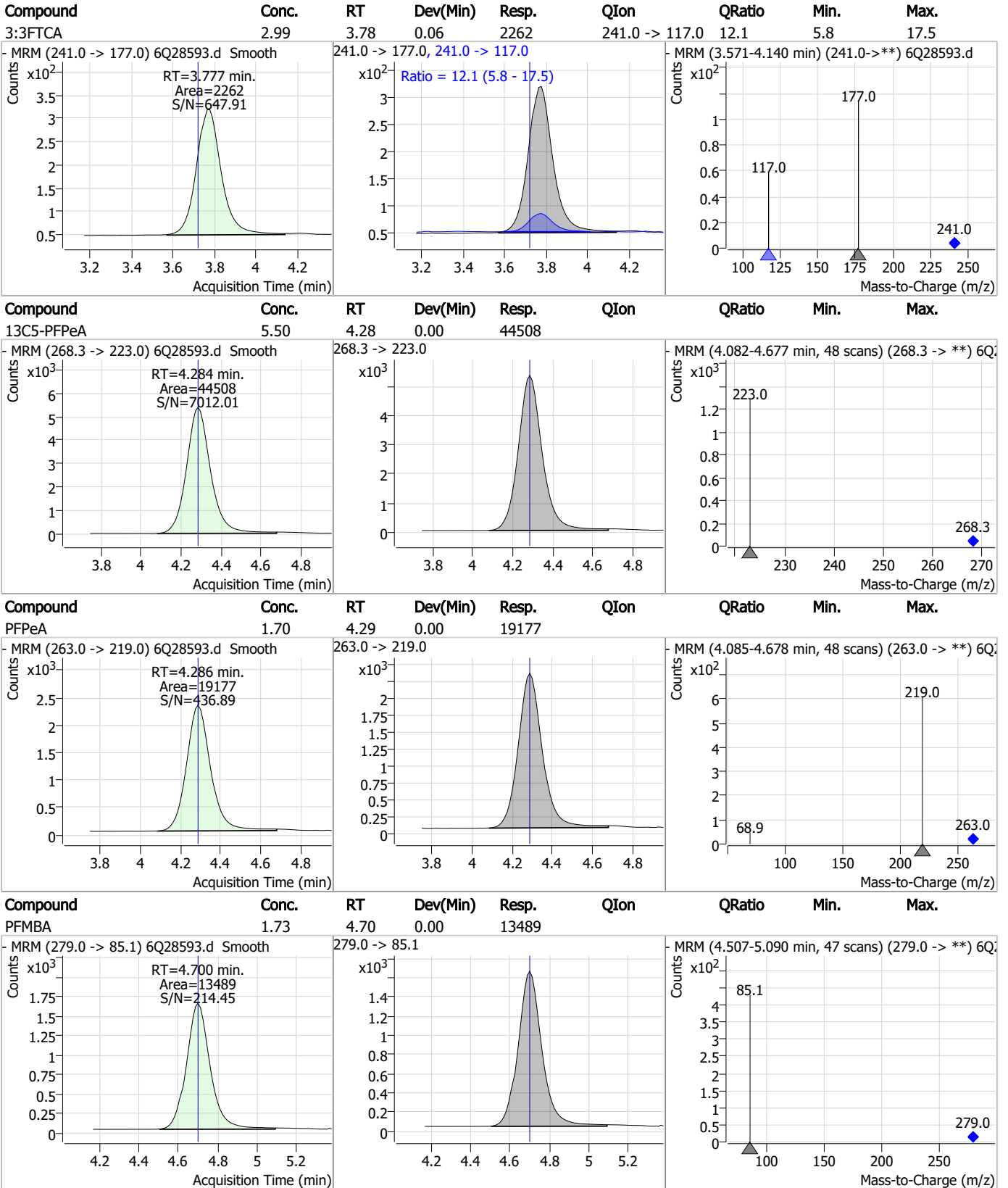
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### Perfluorinated Compounds by LC/MS/MS

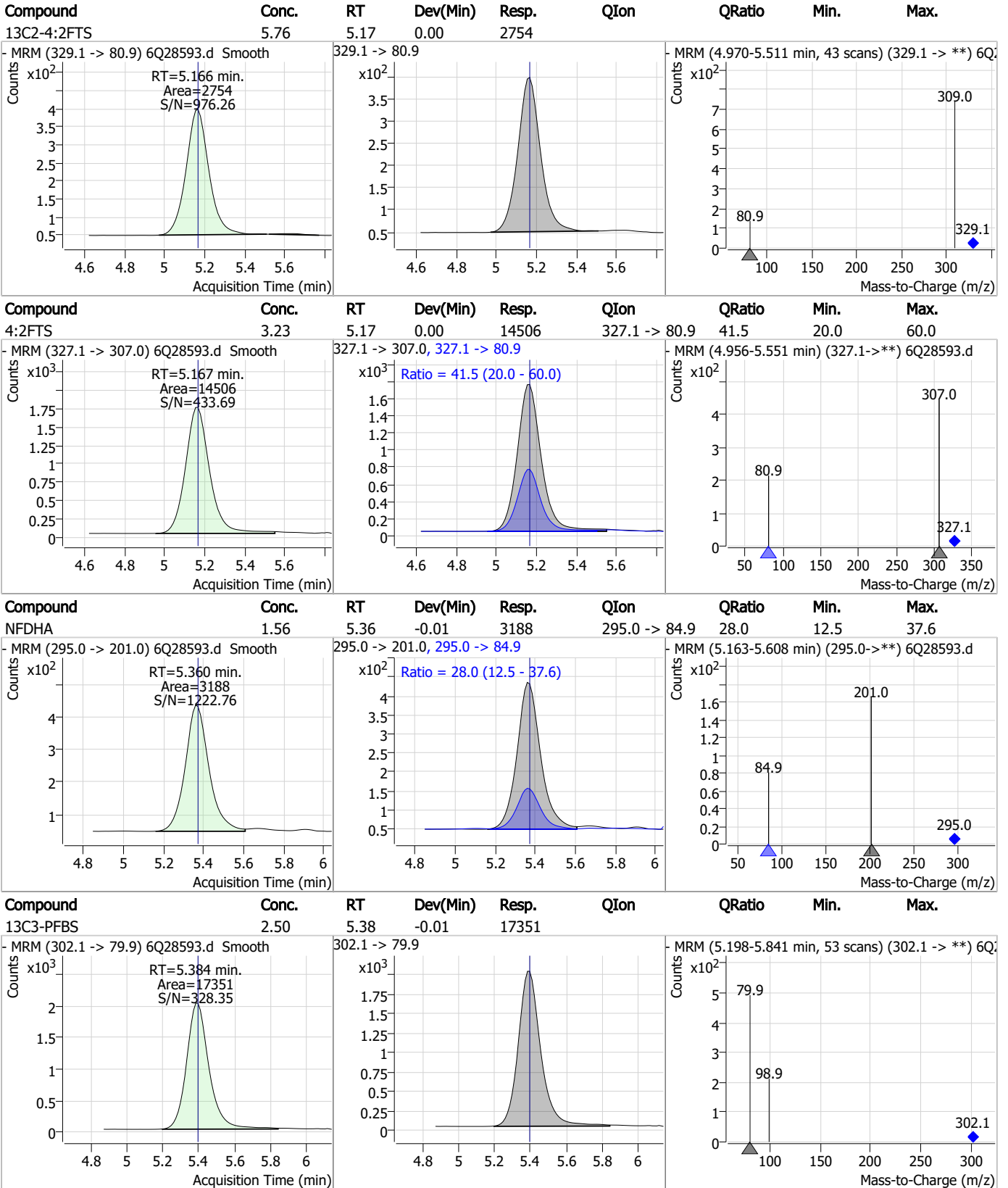


### Perfluorinated Compounds by LC/MS/MS



7.3.2  
7

### Perfluorinated Compounds by LC/MS/MS

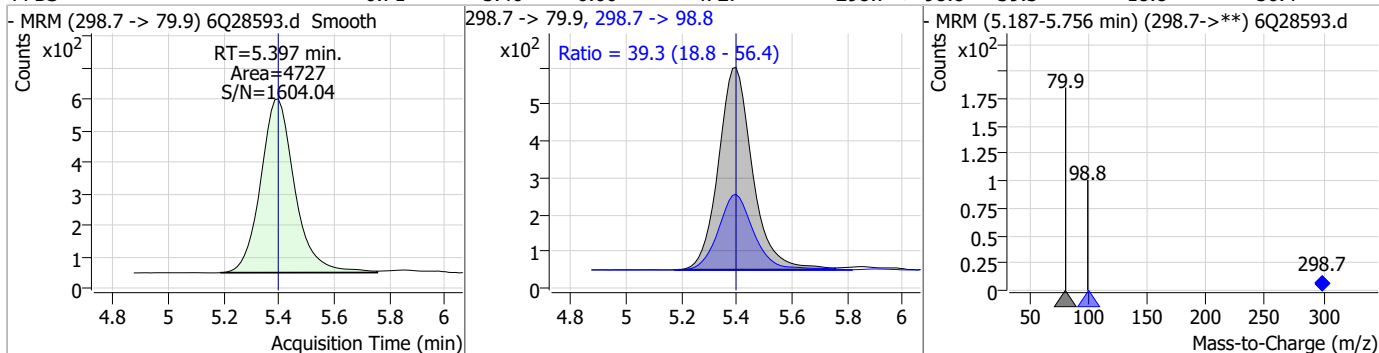


7.3.2

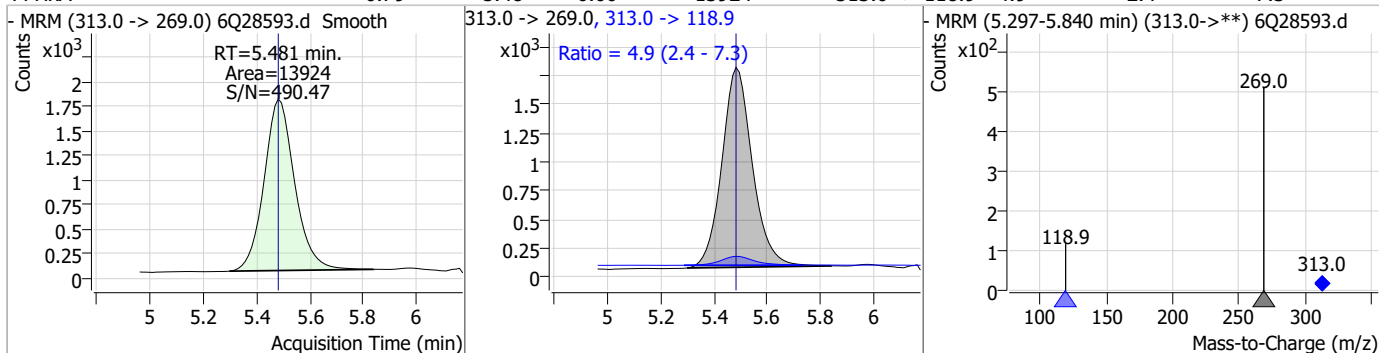
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### Perfluorinated Compounds by LC/MS/MS

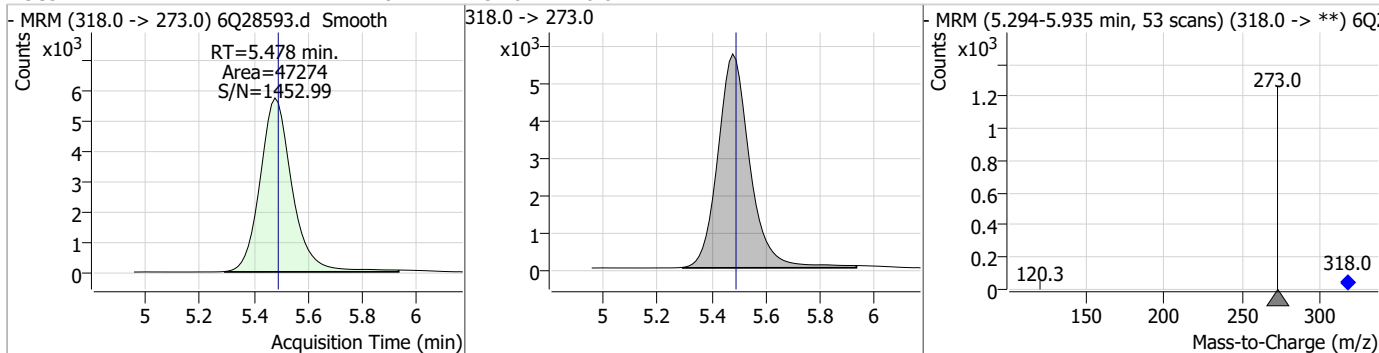
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.71	5.40	0.00	4727	298.7 -> 98.8	39.3	18.8	56.4



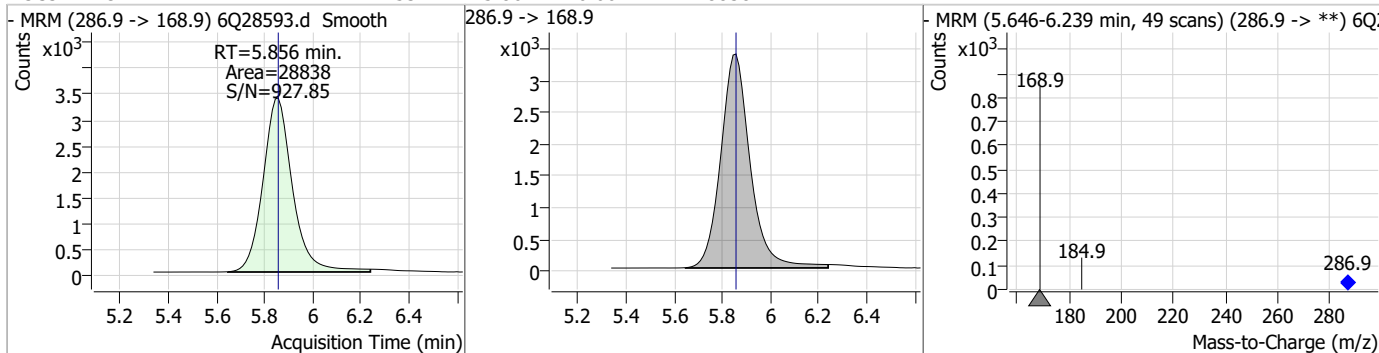
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.79	5.48	0.00	13924	313.0 -> 118.9	4.9	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.82	5.48	-0.01	47274				

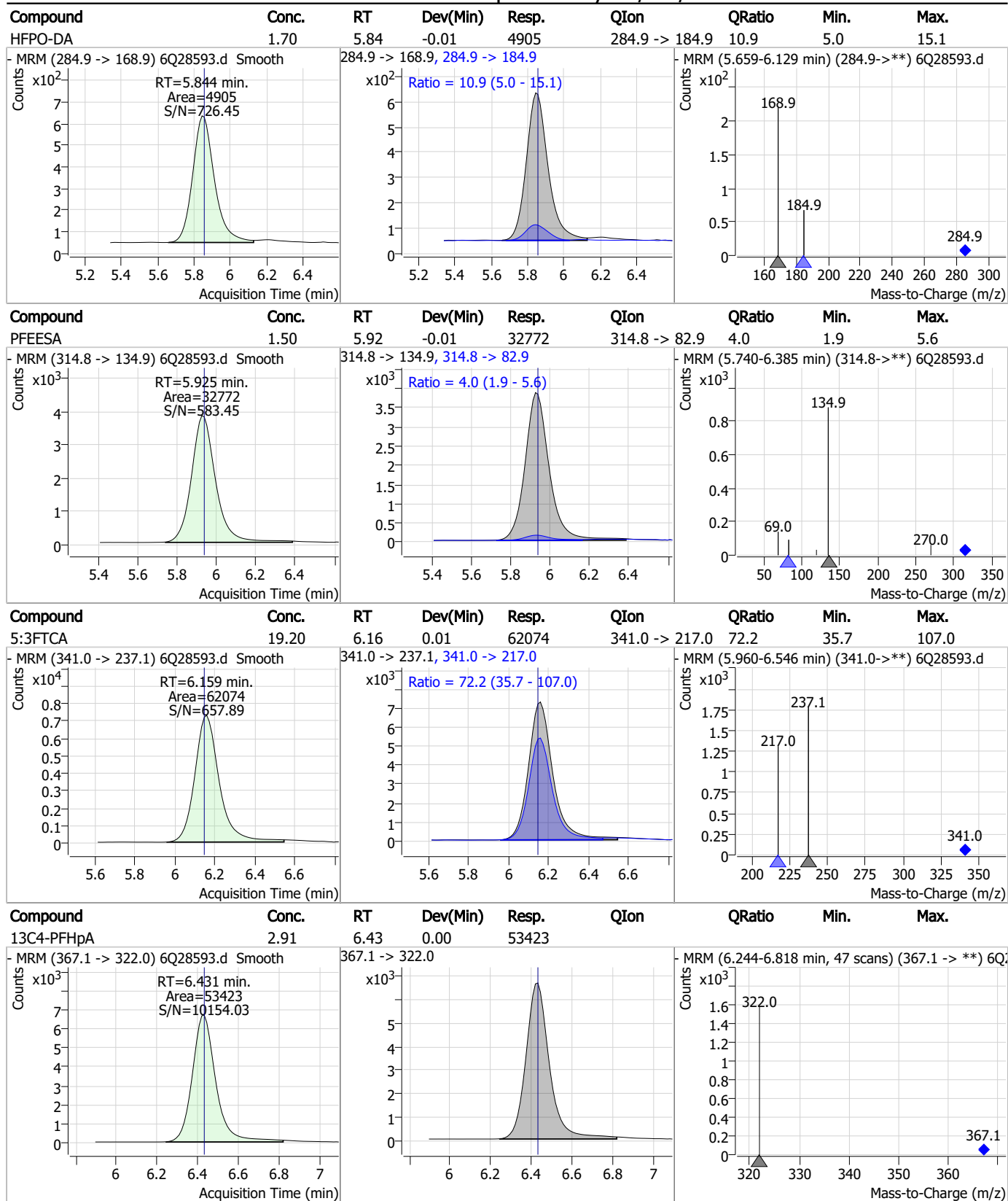


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.53	5.86	0.00	28838				



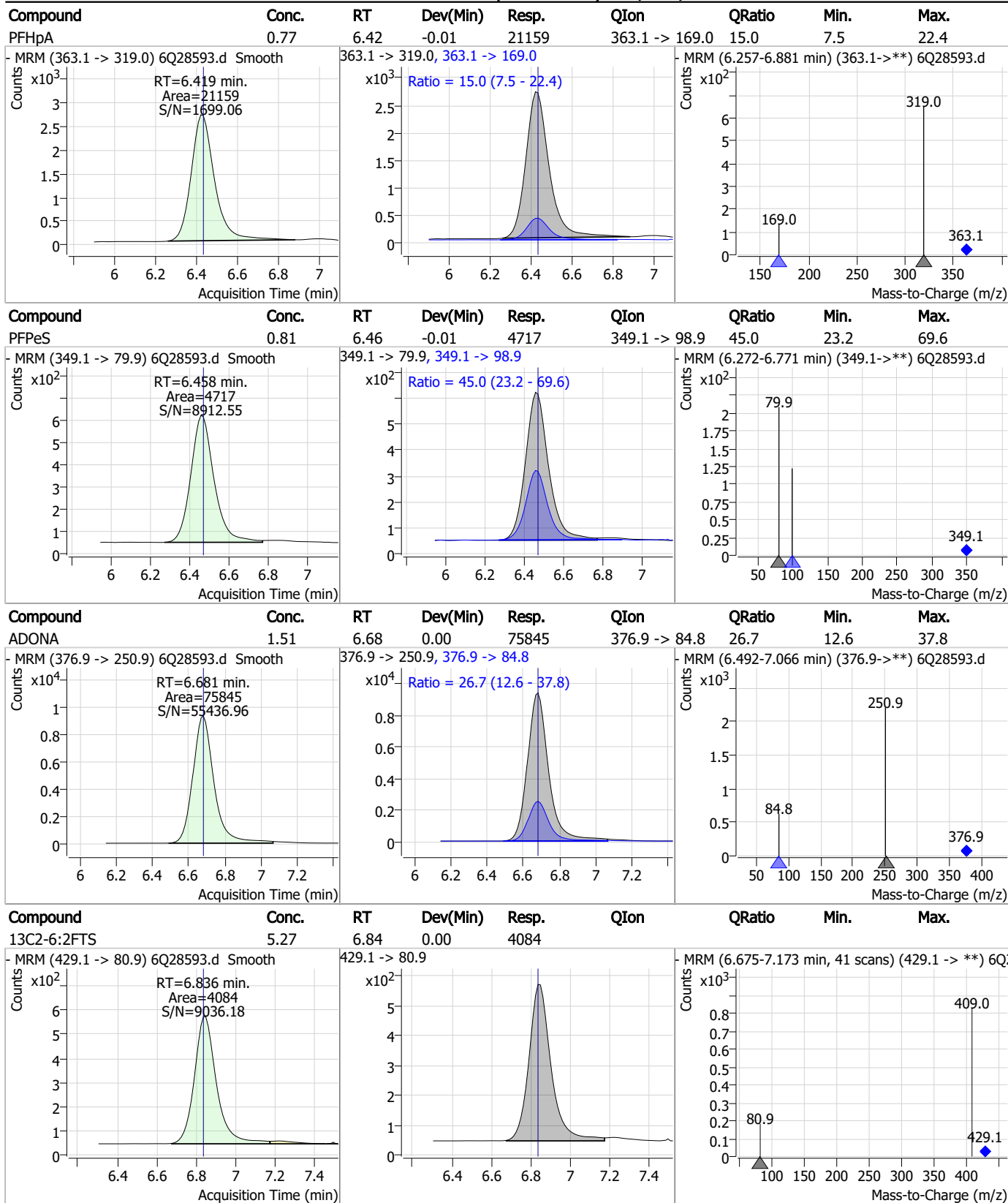
7.3.2  
7

### Perfluorinated Compounds by LC/MS/MS



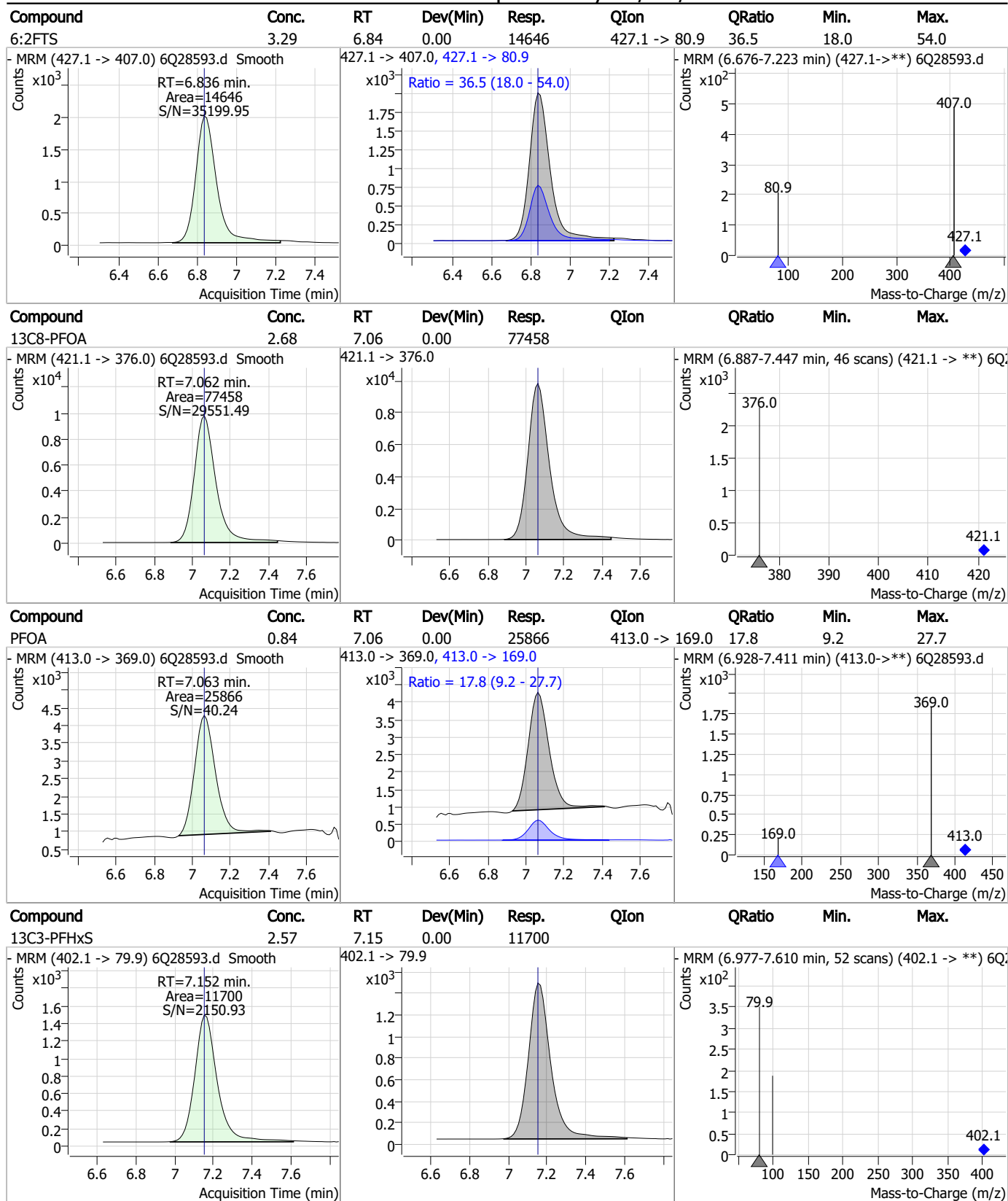
7.3.2  
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### Perfluorinated Compounds by LC/MS/MS



7.3.2  
7

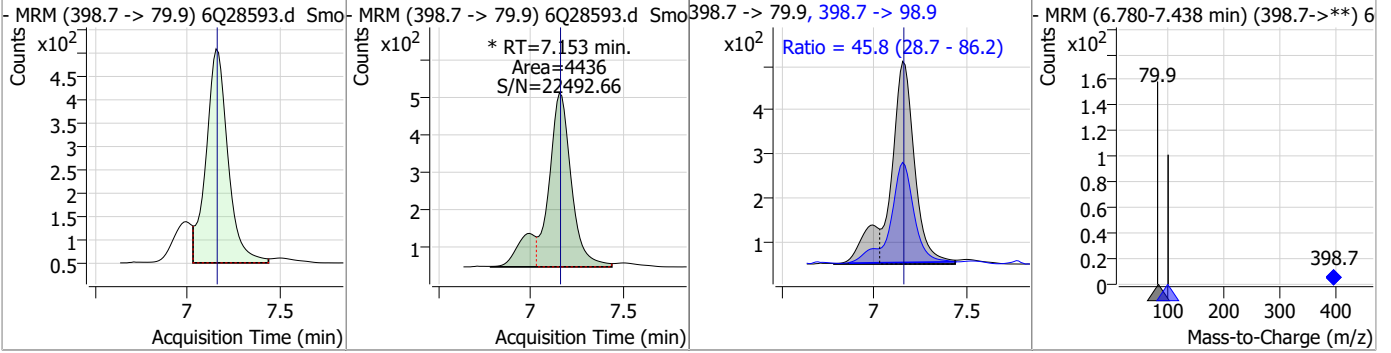
### Perfluorinated Compounds by LC/MS/MS



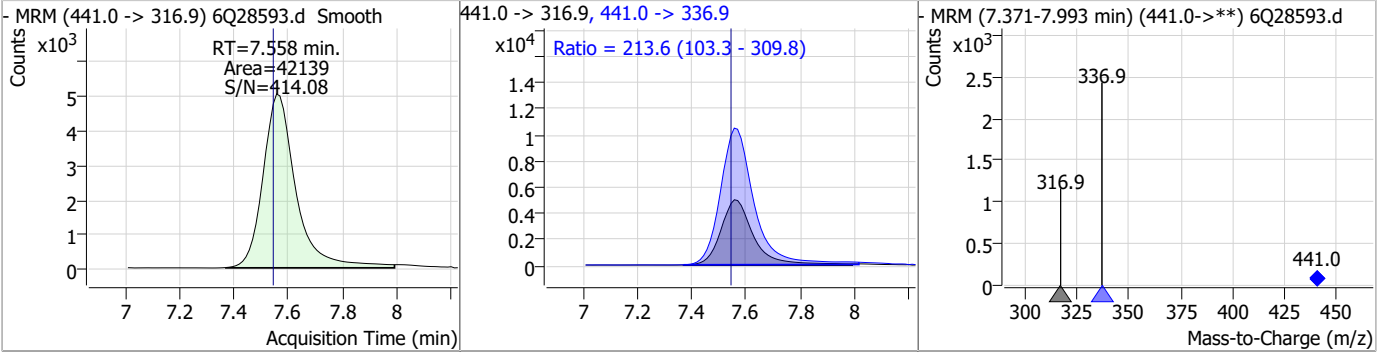
7.3.2  
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### Perfluorinated Compounds by LC/MS/MS

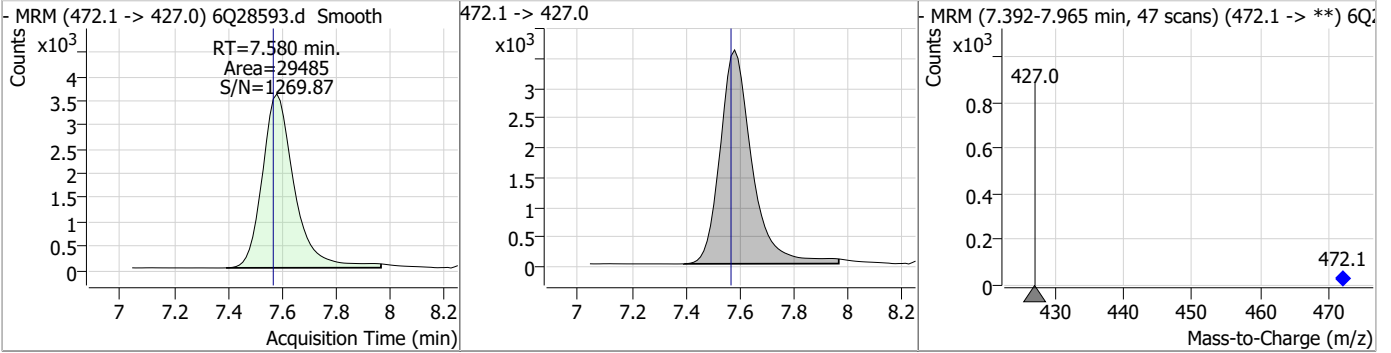
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.82	7.15	0.00	4436 (m)	398.7 -> 98.9	45.8	28.7	86.2



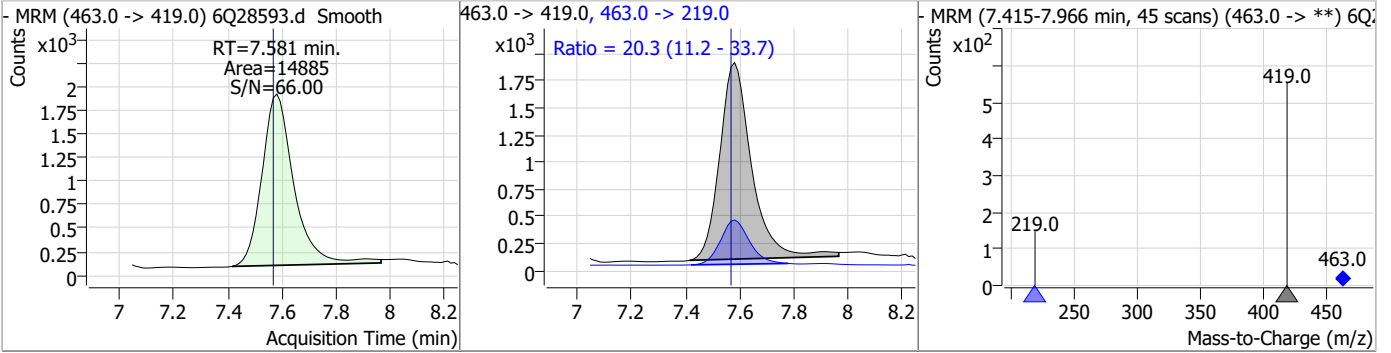
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	20.58	7.56	0.01	42139	441.0 -> 336.9	213.6	103.3	309.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.37	7.58	0.01	29485	472.1 -> 427.0			

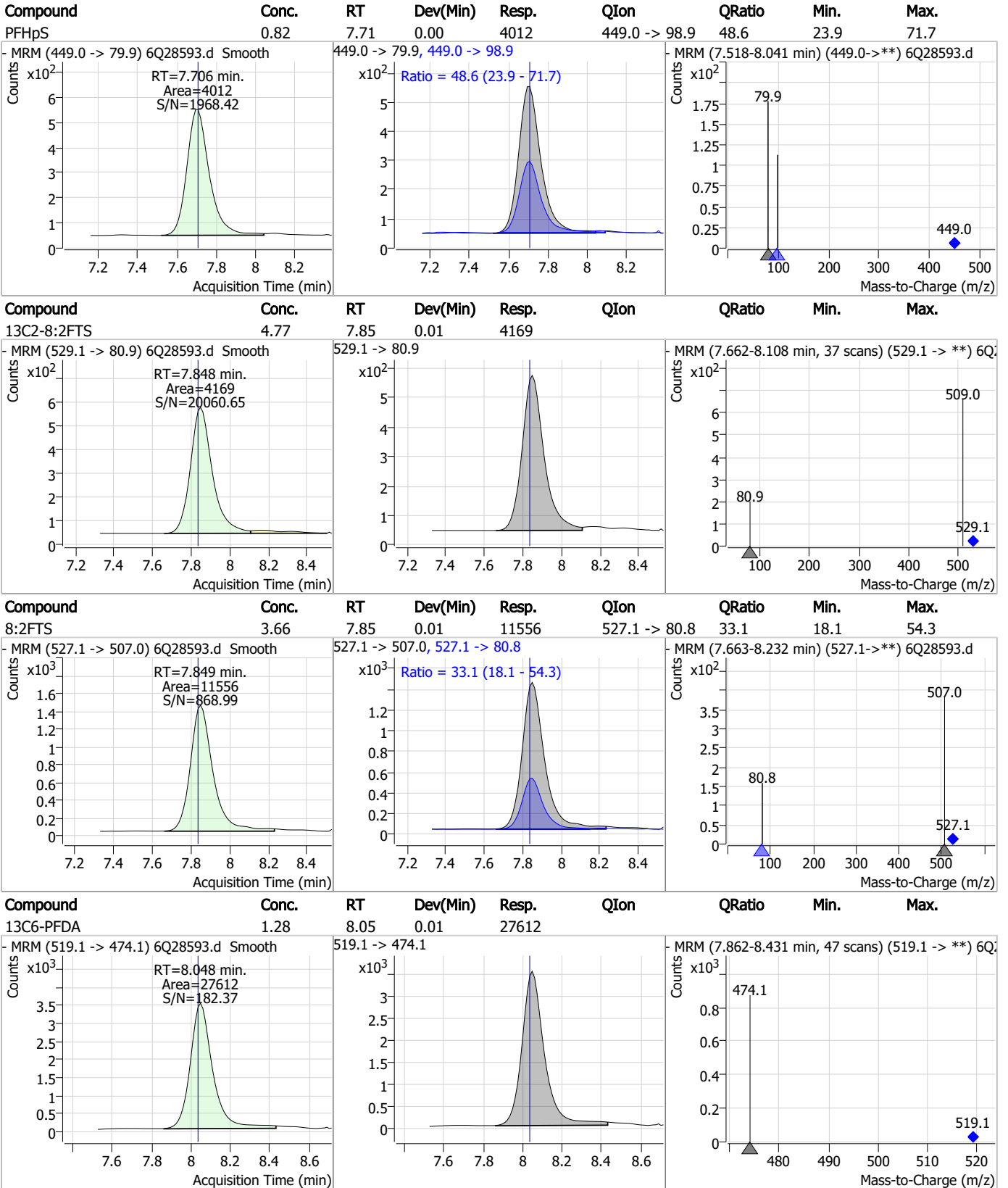


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.81	7.58	0.01	14885	463.0 -> 219.0	20.3	11.2	33.7



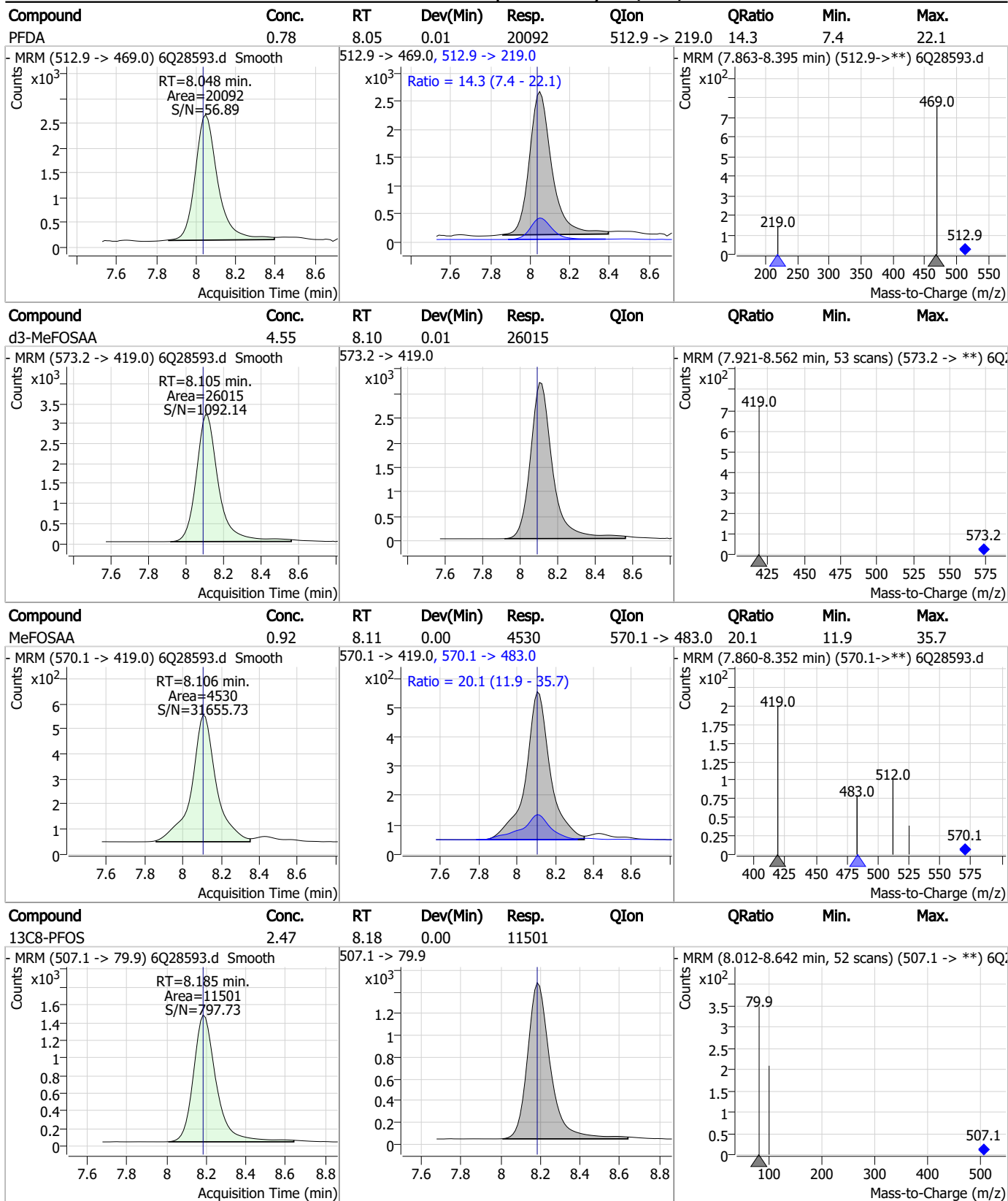


### Perfluorinated Compounds by LC/MS/MS



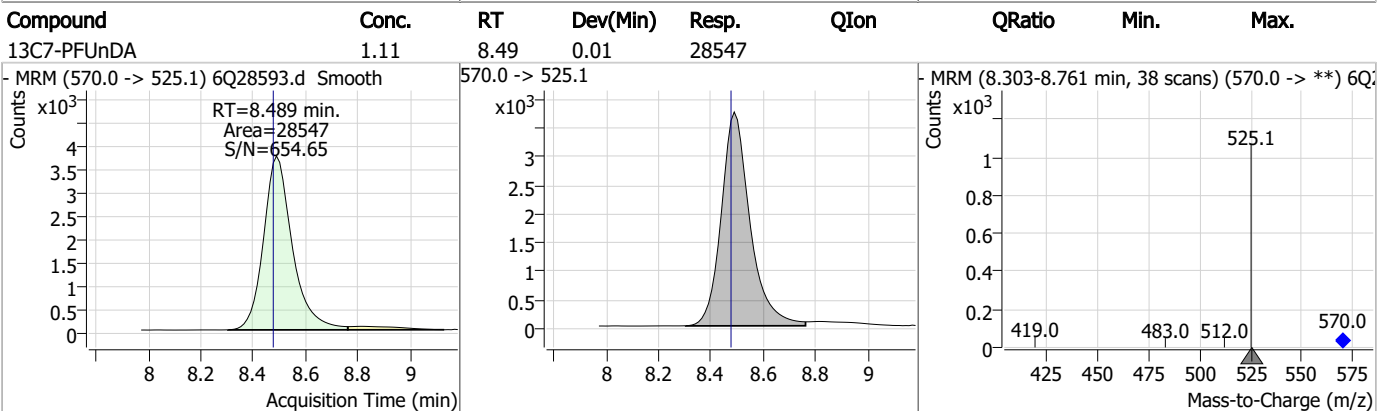
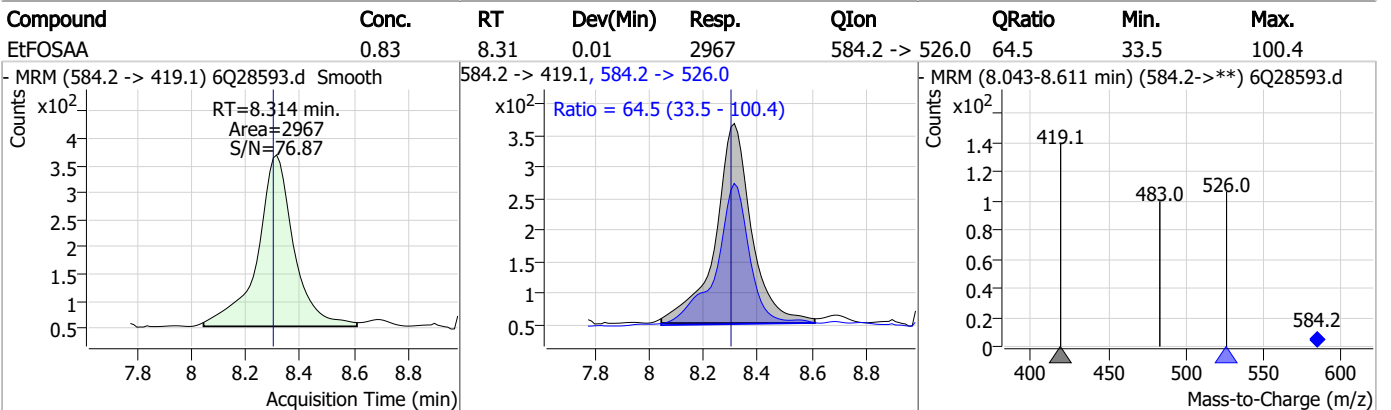
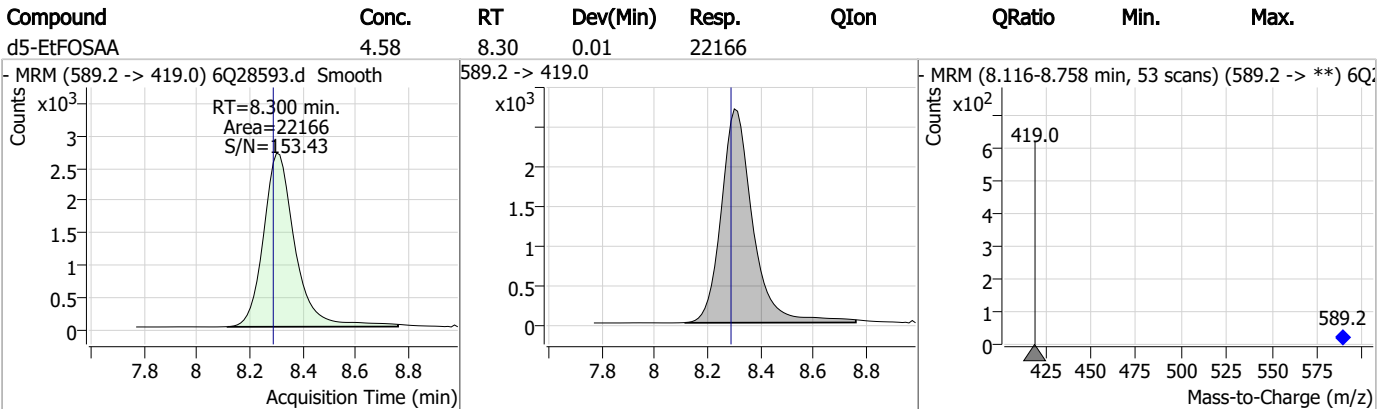
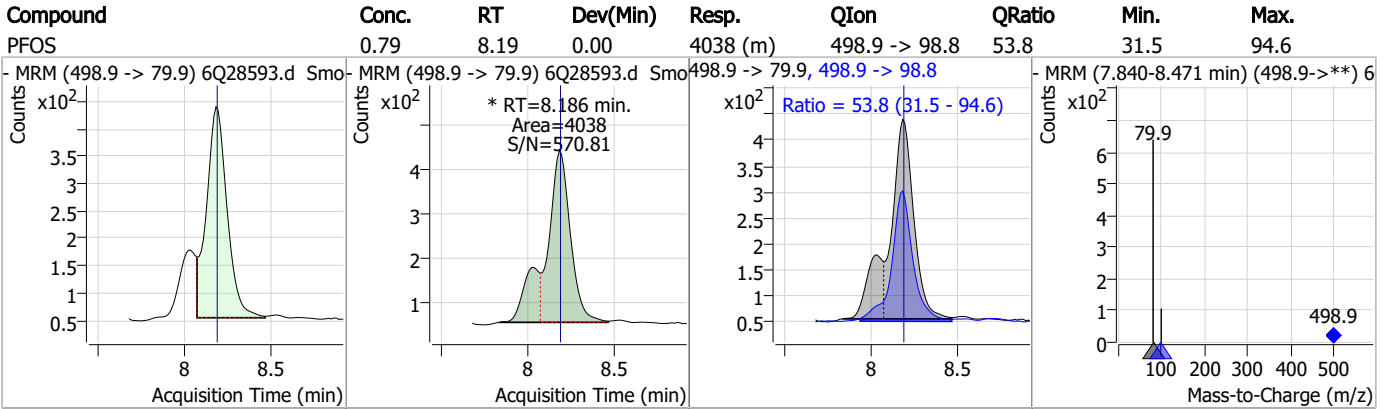
7.3.2  
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### Perfluorinated Compounds by LC/MS/MS



7.3.2  
7

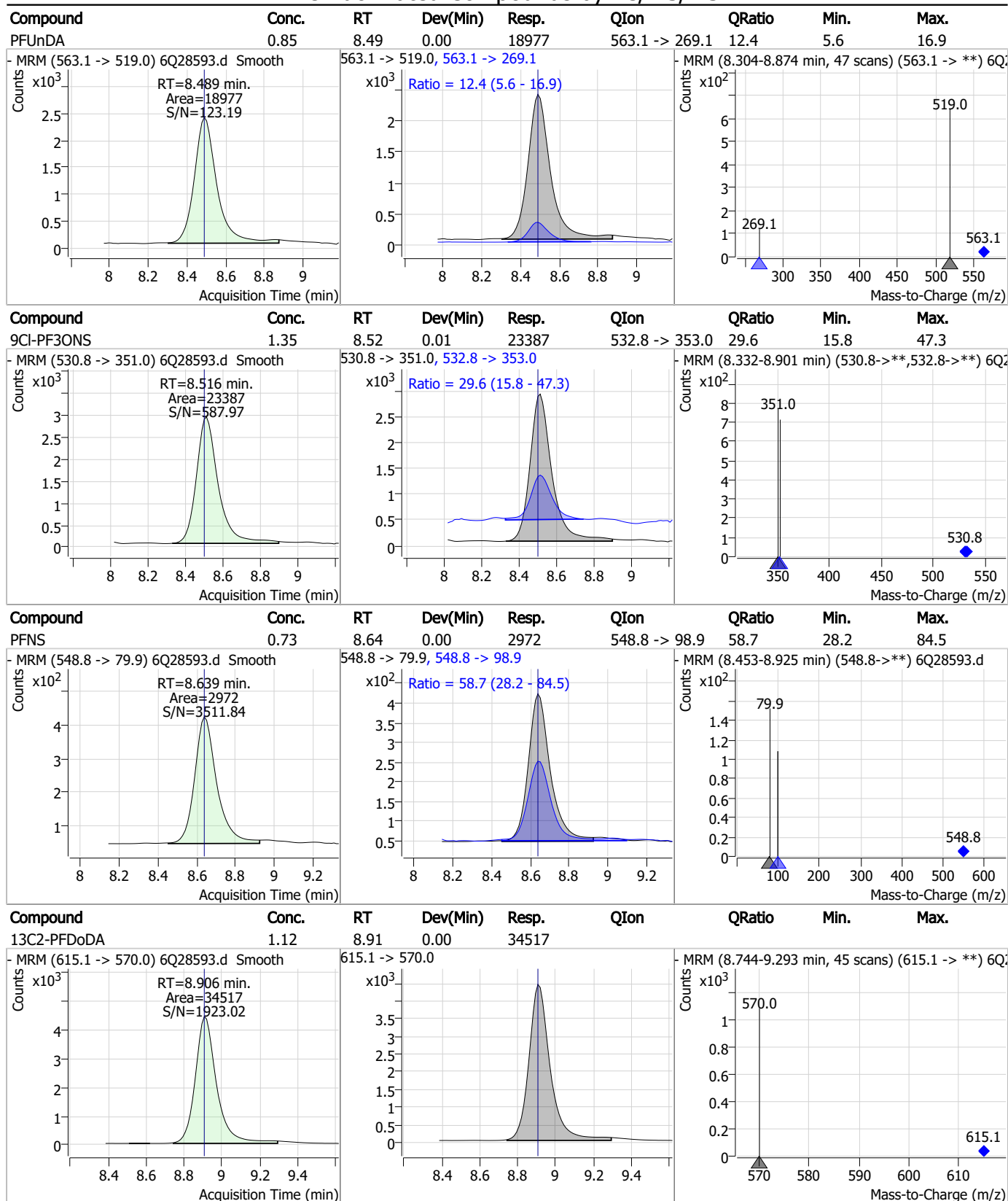
### Perfluorinated Compounds by LC/MS/MS



7.3.2

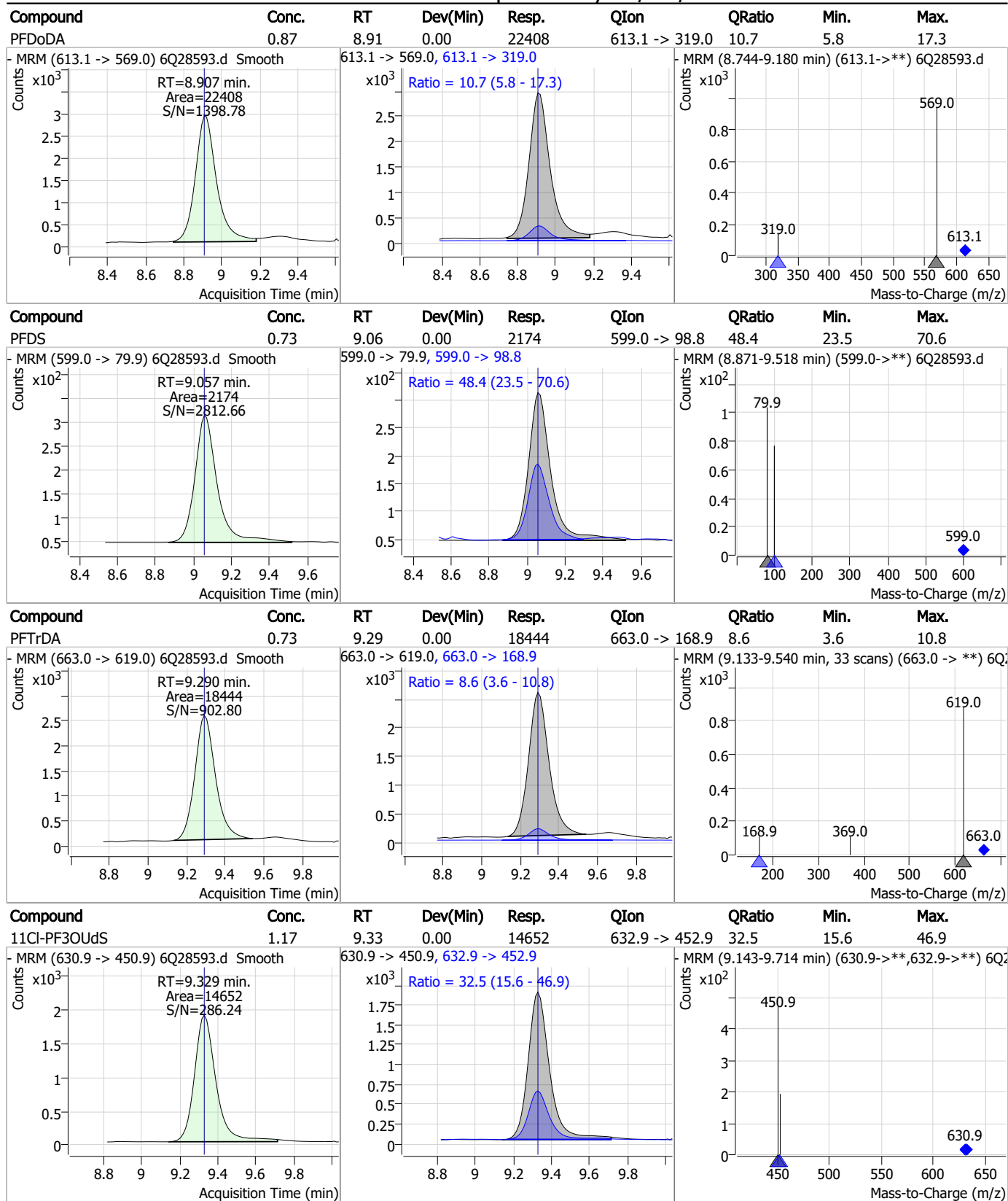
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### Perfluorinated Compounds by LC/MS/MS



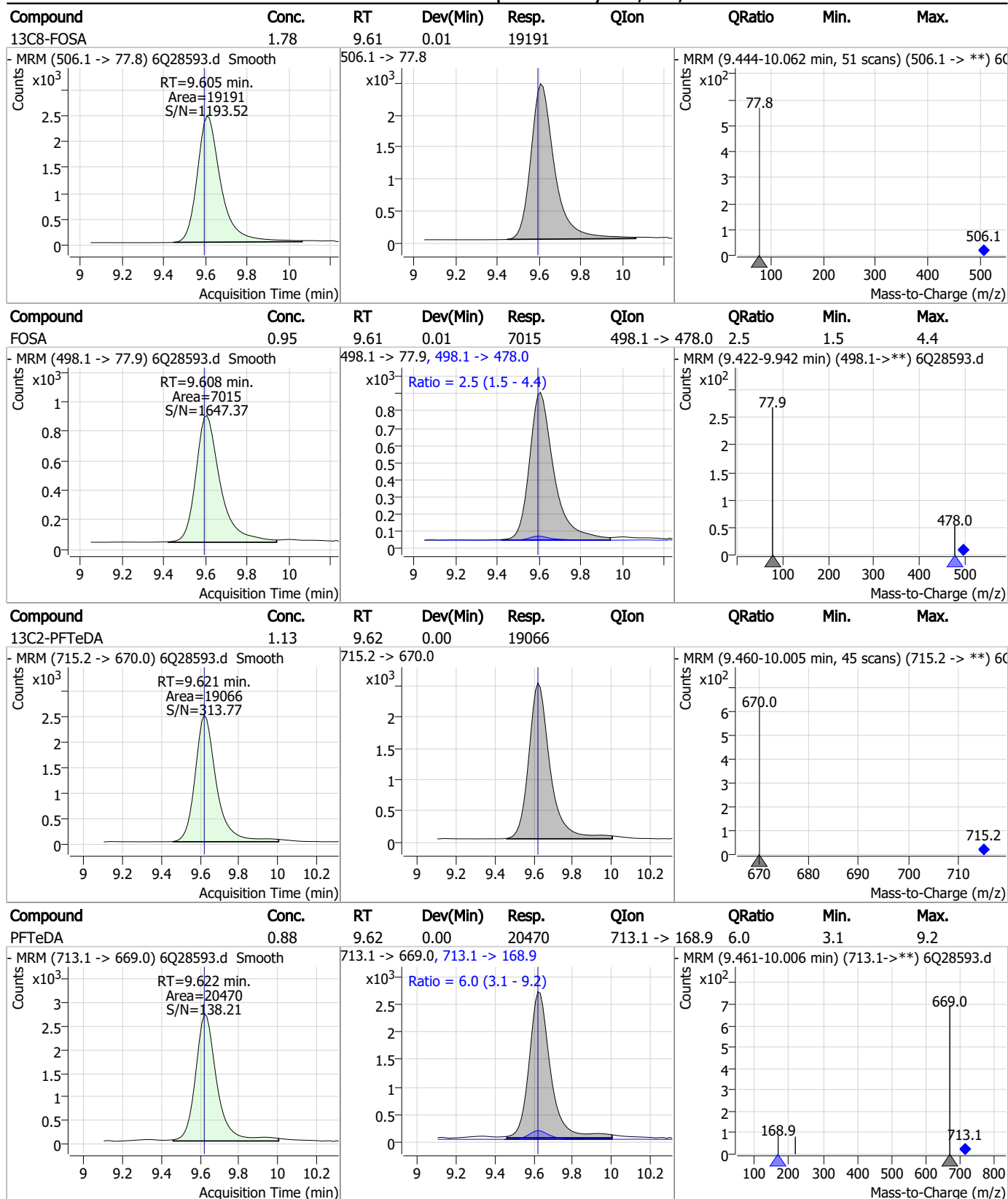
7.3.2  
7

### Perfluorinated Compounds by LC/MS/MS



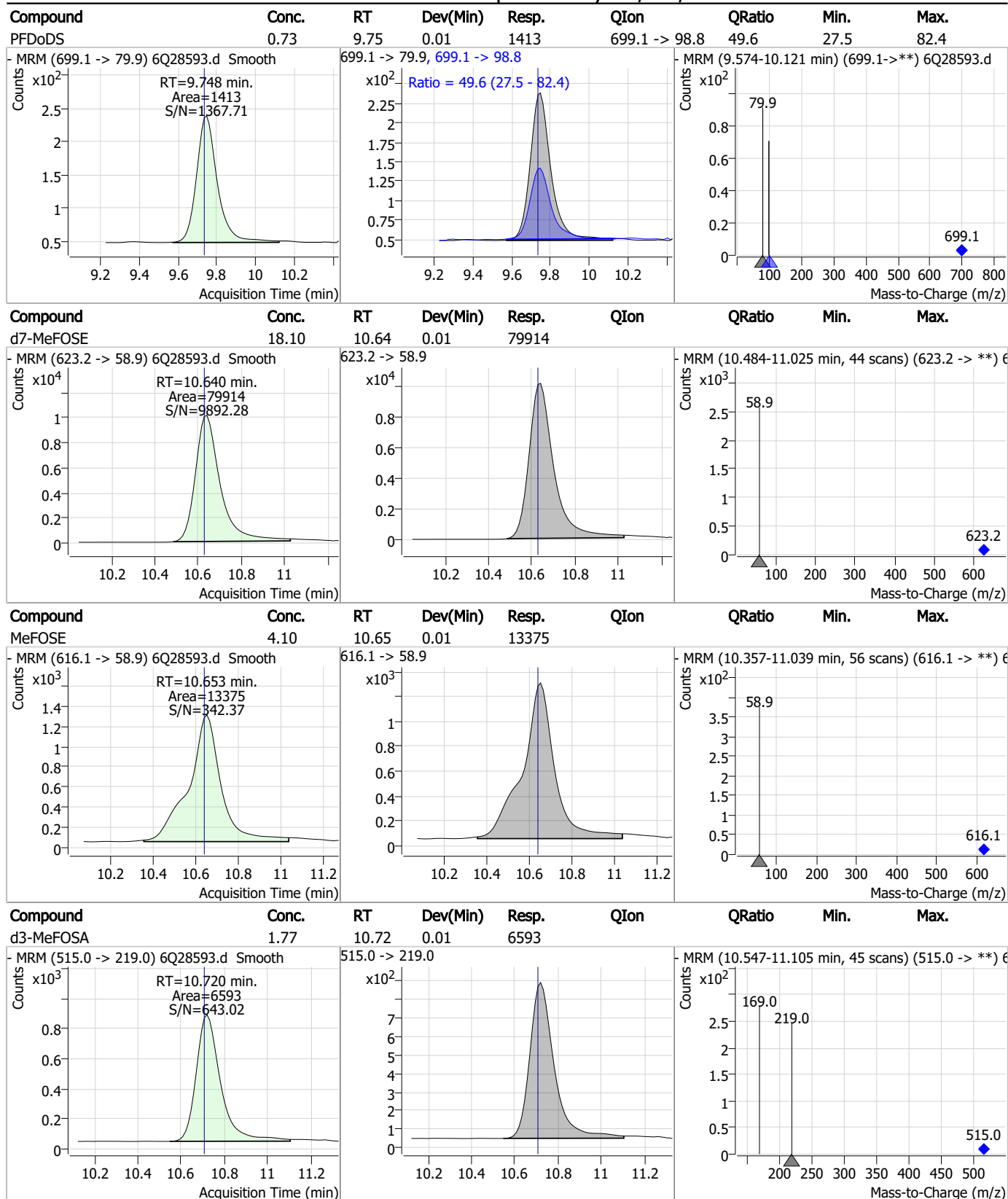
7.3.2  
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### Perfluorinated Compounds by LC/MS/MS



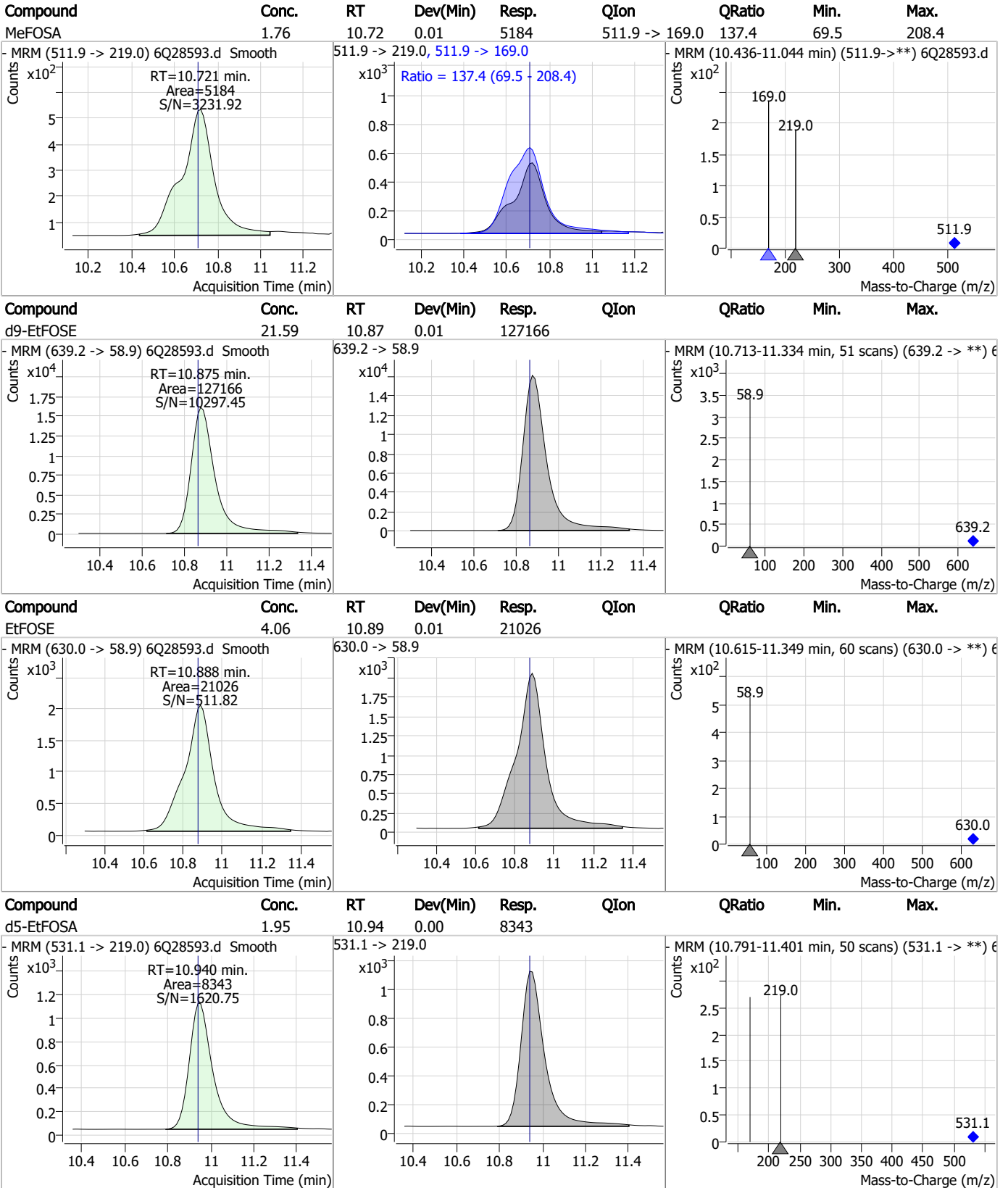
7.3.2  
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### Perfluorinated Compounds by LC/MS/MS



7.3.2  
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### Perfluorinated Compounds by LC/MS/MS

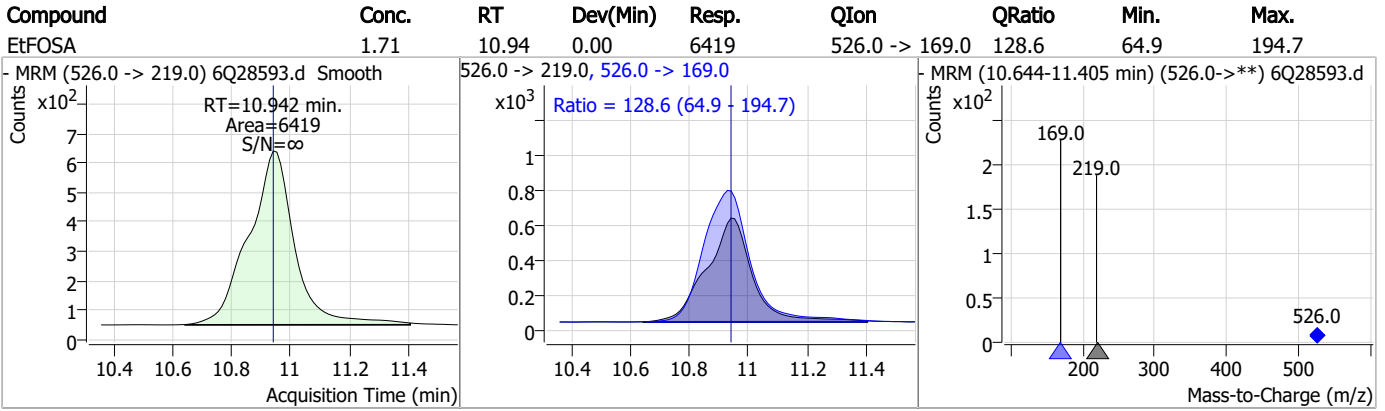


7.3.2

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### Perfluorinated Compounds by LC/MS/MS



7.3.2

7

# Manual Integration Approval Summary

Sample Number: OP162-LLBS                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28593.D                      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/20/23 12:16                      Supervisor approved: 11/21/23 17:30 Natasha Guntie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

7.3.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28598.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 1:28:13 PM  
 Sample Name : op162-ms  
 Vial : P2-A7  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP162,S6Q396,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.901	216.8 -> 171.9	107780	10.00 µg/L	0.041
M5-PFPeA	4.284	268.3 -> 223.0	39193	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	41158	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	47222	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	67615	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	24147	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	22088	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	22690	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	26304	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	15107	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	16835	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	15896	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	10585	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	9827	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2374	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	3962	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	3938	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	22467	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	26493	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	18543	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	68873	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	103502	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	7282	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	5885	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	10461	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	48701	5.00 µg/L	0.040
18O2-PFHxS	7.151	403.0 -> 83.9	6593	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	72566	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	25714	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	24356	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	39090	2.50 µg/L	-0.012

**System Monitoring Compounds**

13C2-4:2FTS	5.166	329.1 -> 80.9	2374	5.60 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.0%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3962	5.77 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.3%		
13C2-8:2FTS	7.848	529.1 -> 80.9	3938	5.08 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C2-PFDoDA	8.906	615.1 -> 570.0	26304	0.92 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 73.9%		
13C2-PFTeDA	9.621	715.2 -> 670.0	15107	0.97 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 77.4%		
13C3-PFBS	5.384	302.1 -> 79.9	15896	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFHxS	7.152	402.1 -> 79.9	10585	2.62 µg/L	0.000

7.4.1  
7

### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C4-PFBA	2.901	216.8 -> 171.9	107780	9.56 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C4-PFHpA	6.419	367.1 -> 322.0	47222	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C5-PFHxA	5.478	318.0 -> 273.0	41158	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C5-PFPeA	4.284	268.3 -> 223.0	39193	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C6-PFDA	8.048	519.1 -> 474.1	22088	1.11 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.8%	
13C7-PFUnDA	8.489	570.0 -> 525.1	22690	0.95 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 76.1%	
13C8-FOSA	9.605	506.1 -> 77.8	16835	1.65 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 65.9%	
13C8-PFOA	7.062	421.1 -> 376.0	67615	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C8-PFOS	8.185	507.1 -> 79.9	9827	2.23 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.0%	
13C9-PFNA	7.580	472.1 -> 427.0	24147	1.18 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.7%	
d3-MeFOSAA	8.105	573.2 -> 419.0	22467	4.14 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 82.8%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	26493	10.91 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
d3-MeFOSA	10.720	515.0 -> 219.0	5885	1.67 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 66.8%	
d5-EtFOSAA	8.300	589.2 -> 419.0	18543	4.04 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 80.7%	
d7-MeFOSE	10.640	623.2 -> 58.9	68873	16.45 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 65.8%	
d9-EtFOSE	10.875	639.2 -> 58.9	103502	18.53 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 74.1%	
d5-EtFOSA	10.940	531.1 -> 219.0	7282	1.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 71.8%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.155	327.1 -> 307.0	39136	10.12 µg/L	100
		327.1 -> 80.9	15598		
6:2FTS	6.836	427.1 -> 407.0	40865	9.47 µg/L	100
		427.1 -> 80.9	14650		
8:2FTS	7.849	527.1 -> 507.0	29578	9.91 µg/L	99
		527.1 -> 80.8	10873		
EtFOSAA	8.314	584.2 -> 419.1	8509	2.84 µg/L	99
		584.2 -> 526.0	5637		
FOSA	9.608	498.1 -> 77.9	17967	2.78 µg/L	99
		498.1 -> 478.0	593		
MeFOSAA	8.118	570.1 -> 419.0	11381	2.69 µg/L	99
		570.1 -> 483.0	2627		
PFBA	2.907	212.8 -> 168.9	56687	16.04 µg/L	100
PFBS	5.397	298.7 -> 79.9	13705	2.26 µg/L	97
		298.7 -> 98.8	5438		
PFDA	8.048	512.9 -> 469.0	54640	2.66 µg/L	100
		512.9 -> 219.0	8002		
PFDoDA	8.907	613.1 -> 569.0	58798	3.01 µg/L	98
		613.1 -> 319.0	6277		
PFDS	9.057	599.0 -> 79.9	5537	2.17 µg/L	97

7.4.1  
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2728			
PFHpA	6.432	363.1 -> 319.0	58015	2.39	µg/L	98
		363.1 -> 169.0	9175			
PFHpS	7.706	449.0 -> 79.9	11126	2.66	µg/L	96
		449.0 -> 98.9	5633			
PFHxA	5.481	313.0 -> 269.0	46677	3.03	µg/L	100
		313.0 -> 118.9	2255			
PFHxS	7.153	398.7 -> 79.9	11643	2.37	µg/L	m 88
		398.7 -> 98.9	5703			
PFNA	7.581	463.0 -> 419.0	41343	2.75	µg/L	99
		463.0 -> 219.0	9077			
PFNS	8.639	548.8 -> 79.9	8405	2.42	µg/L	91
		548.8 -> 98.9	4207			
PFOA	7.063	413.0 -> 369.0	72495	2.71	µg/L	98
		413.0 -> 169.0	12698			
PFOS	8.186	498.9 -> 79.9	10595	2.42	µg/L	82
		498.9 -> 98.8	5200			
PFPeA	4.286	263.0 -> 219.0	121990	12.27	µg/L	100
PFPeS	6.458	349.1 -> 79.9	13372	2.55	µg/L	99
		349.1 -> 98.9	6155			
PFTeDA	9.622	713.1 -> 669.0	46915	2.55	µg/L	98
		713.1 -> 168.9	3165			
PFTrDA	9.290	663.0 -> 619.0	53976	2.82	µg/L	99
		663.0 -> 168.9	4027			
PFUnDA	8.489	563.1 -> 519.0	49873	2.83	µg/L	93
		563.1 -> 269.1	6923			
11CI-PF3OUdS	9.329	630.9 -> 450.9	40611	3.52	µg/L	99
		632.9 -> 452.9	12401			
9CI-PF3ONS	8.516	530.8 -> 351.0	62730	3.95	µg/L	95
		532.8 -> 353.0	21345			
ADONA	6.681	376.9 -> 250.9	206722	4.47	µg/L	97
		376.9 -> 84.8	55434			
HFPO-DA	5.844	284.9 -> 168.9	12760	4.81	µg/L	98
		284.9 -> 184.9	1392			
3:3FTCA	3.777	241.0 -> 177.0	6358	10.20	µg/L	99
		241.0 -> 117.0	757			
5:3FTCA	6.159	341.0 -> 237.1	166505	59.15	µg/L	99
		341.0 -> 217.0	119984			
7:3FTCA	7.558	441.0 -> 316.9	110482	61.97	µg/L	96
		441.0 -> 336.9	235822			
EtFOSA	10.942	526.0 -> 219.0	17770	5.43	µg/L	97
		526.0 -> 169.0	22493			
EtFOSE	10.888	630.0 -> 58.9	53578	12.71	µg/L	100
MeFOSA	10.721	511.9 -> 219.0	13878	5.28	µg/L	97
		511.9 -> 169.0	19719			
MeFOSE	10.653	616.1 -> 58.9	34811	12.39	µg/L	100
PFDoDS	9.748	699.1 -> 79.9	3582	2.18	µg/L	100
		699.1 -> 98.8	1964			
NFDHA	5.360	295.0 -> 201.0	9456	5.30	µg/L	100
		295.0 -> 84.9	2388			
PFMBA	4.700	279.0 -> 85.1	37145	5.42	µg/L	100
PFMPA	3.438	229.0 -> 84.9	28226	5.49	µg/L	100
PFEESA	5.925	314.8 -> 134.9	91782	4.82	µg/L	99
		314.8 -> 82.9	3025			

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



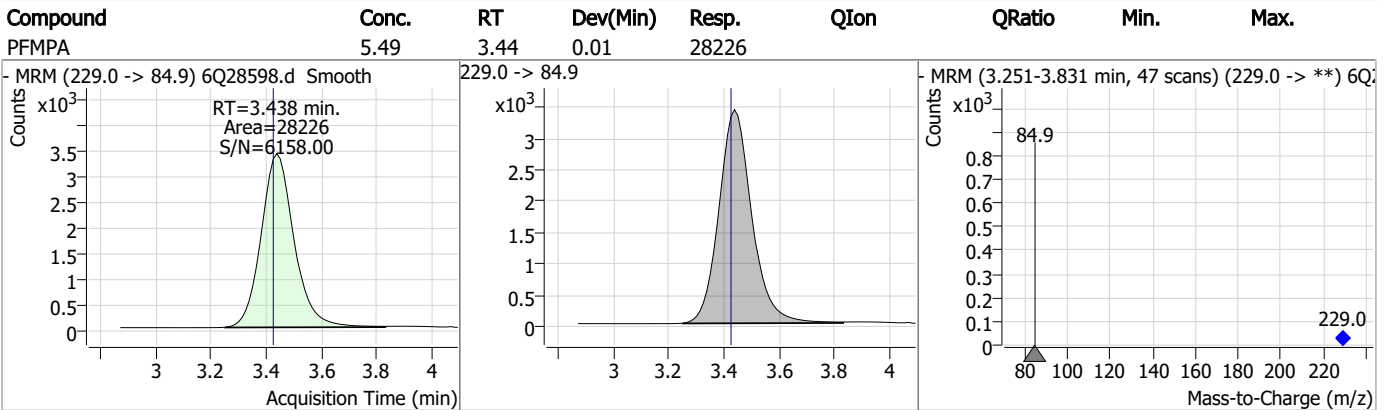
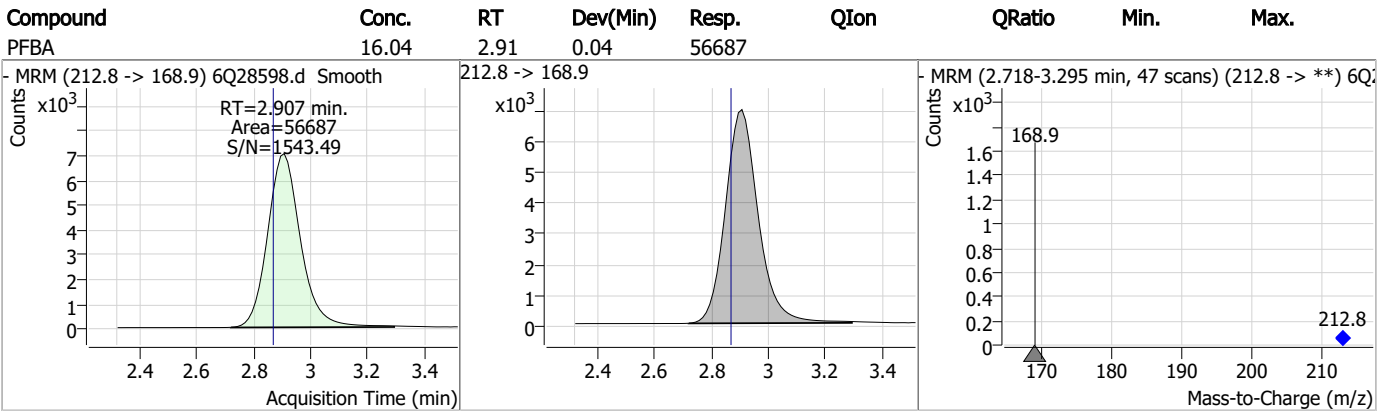
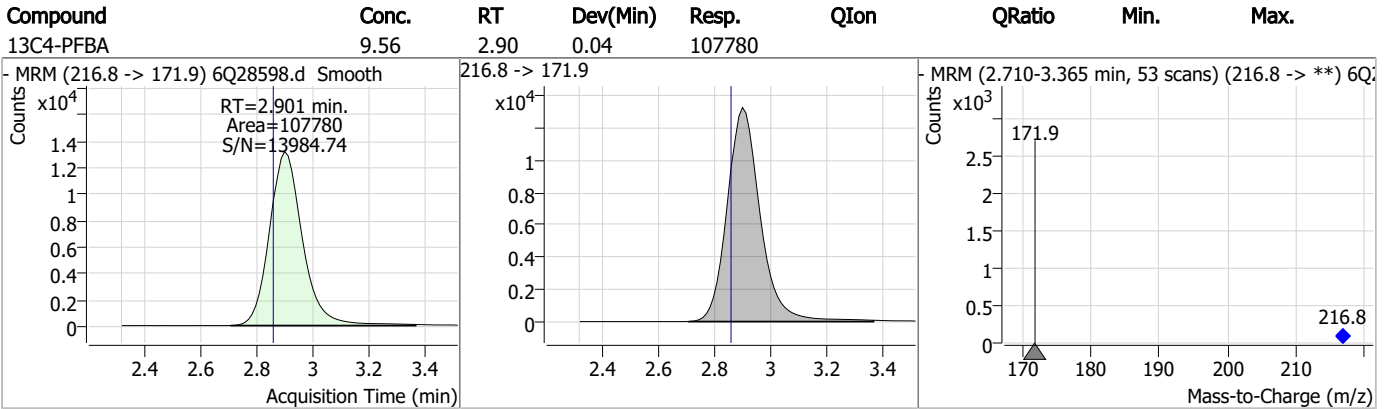
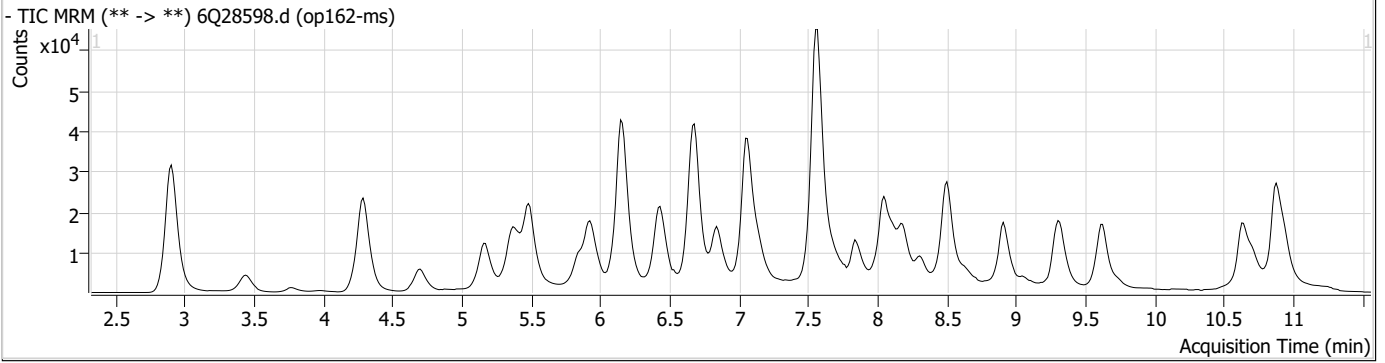
### Perfluorinated Compounds by LC/MS/MS

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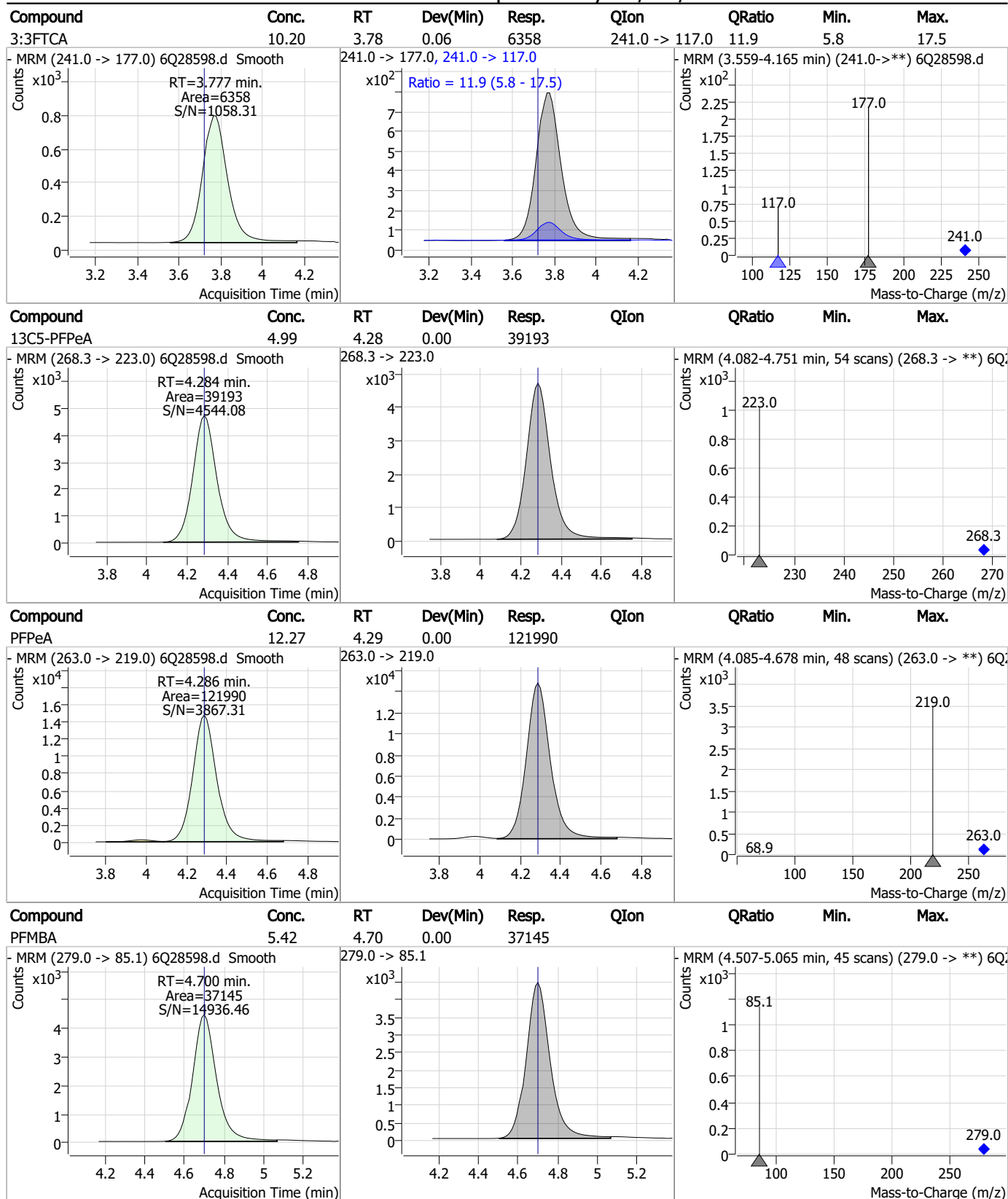
7.4.1

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### Perfluorinated Compounds by LC/MS/MS



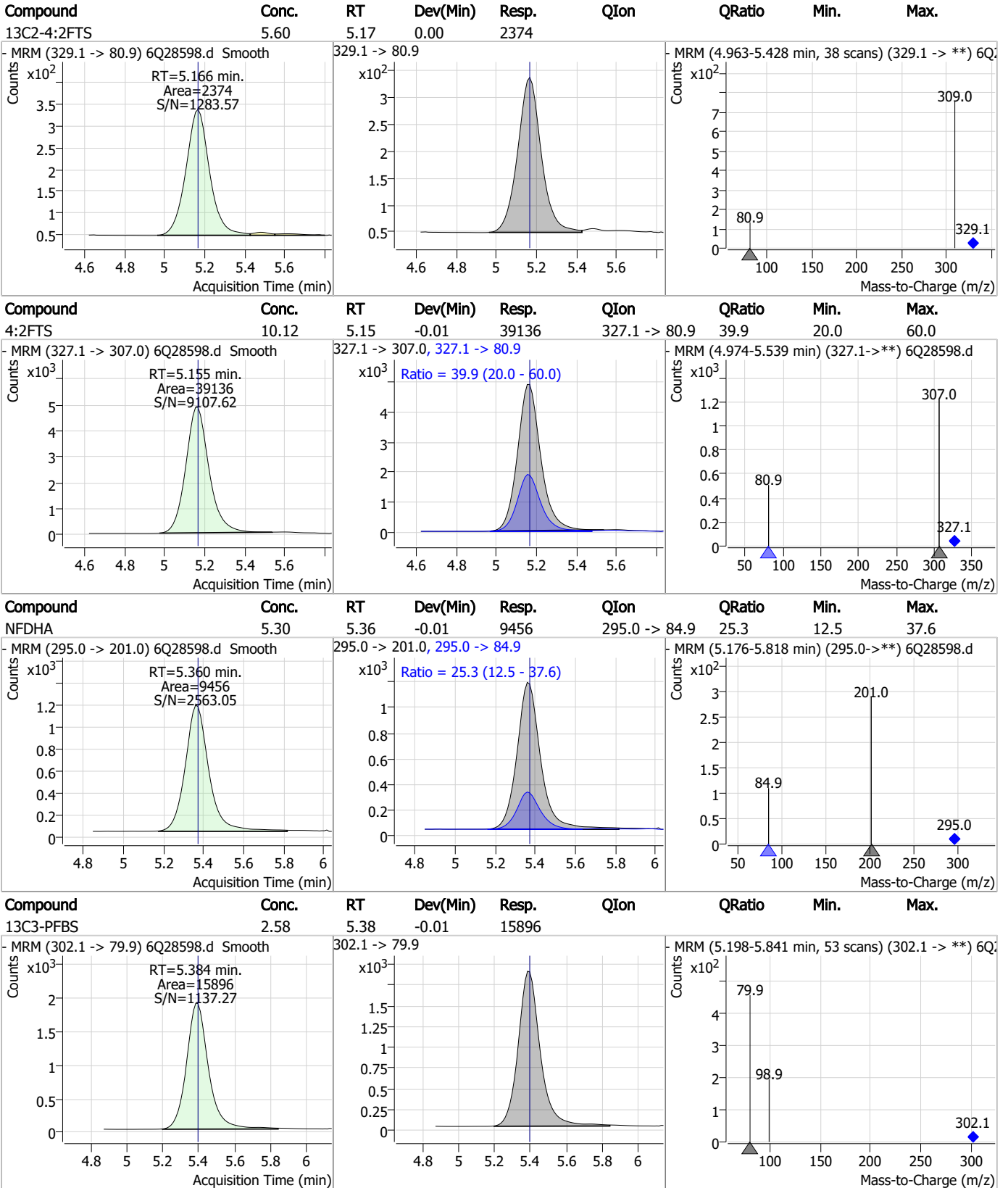
### Perfluorinated Compounds by LC/MS/MS



7.4.1  
7



### Perfluorinated Compounds by LC/MS/MS

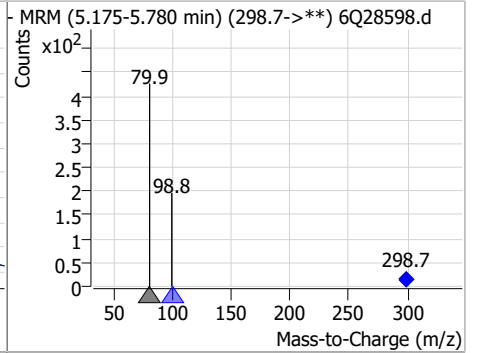
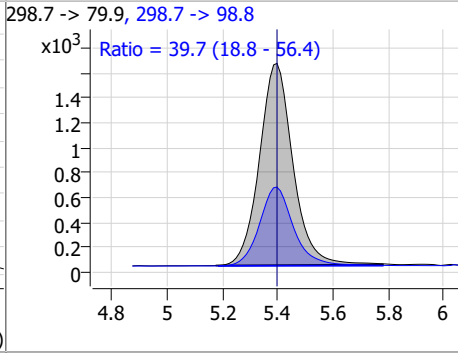
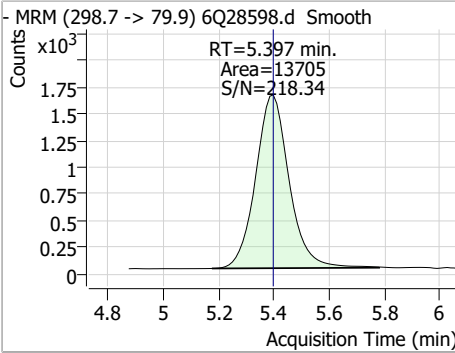


7.4.1

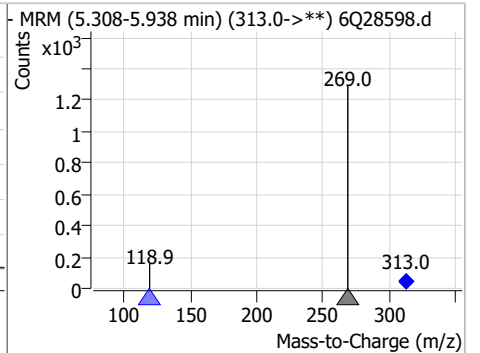
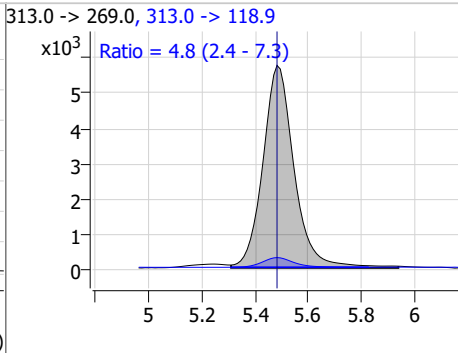
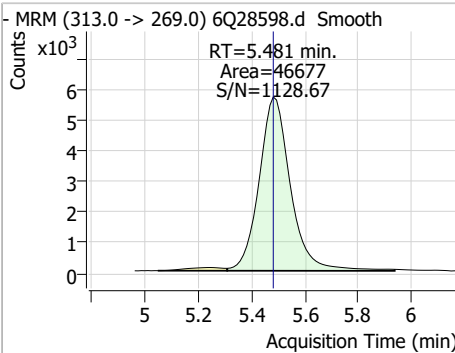
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### Perfluorinated Compounds by LC/MS/MS

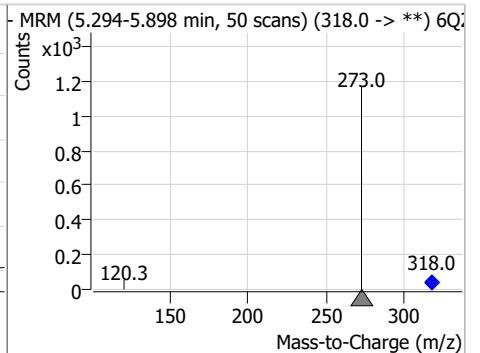
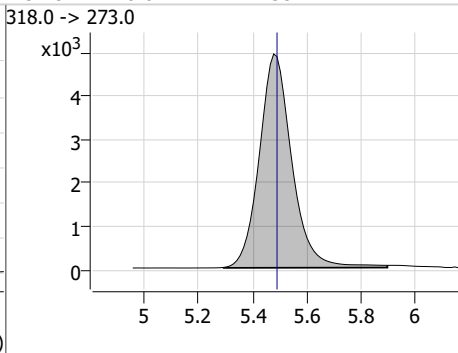
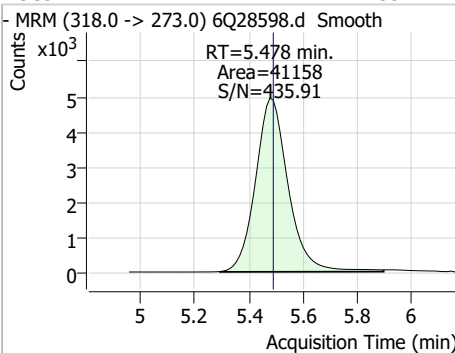
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.26	5.40	0.00	13705	298.7 -> 98.8	39.7	18.8	56.4



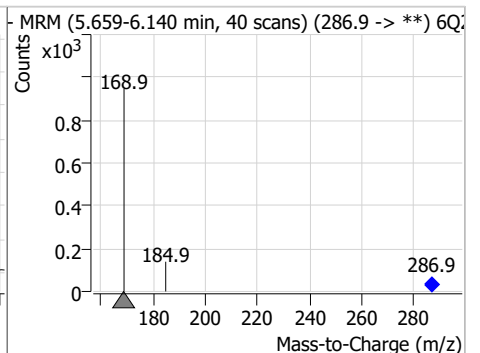
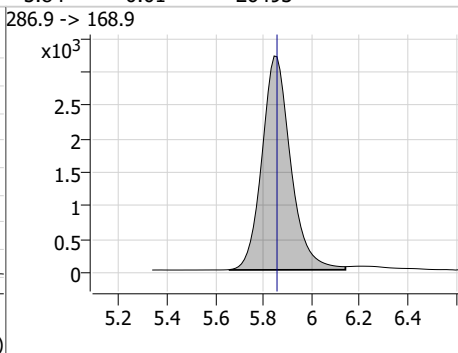
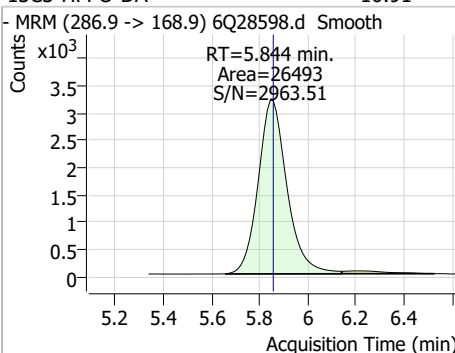
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	3.03	5.48	0.00	46677	313.0 -> 118.9	4.8	2.4	7.3



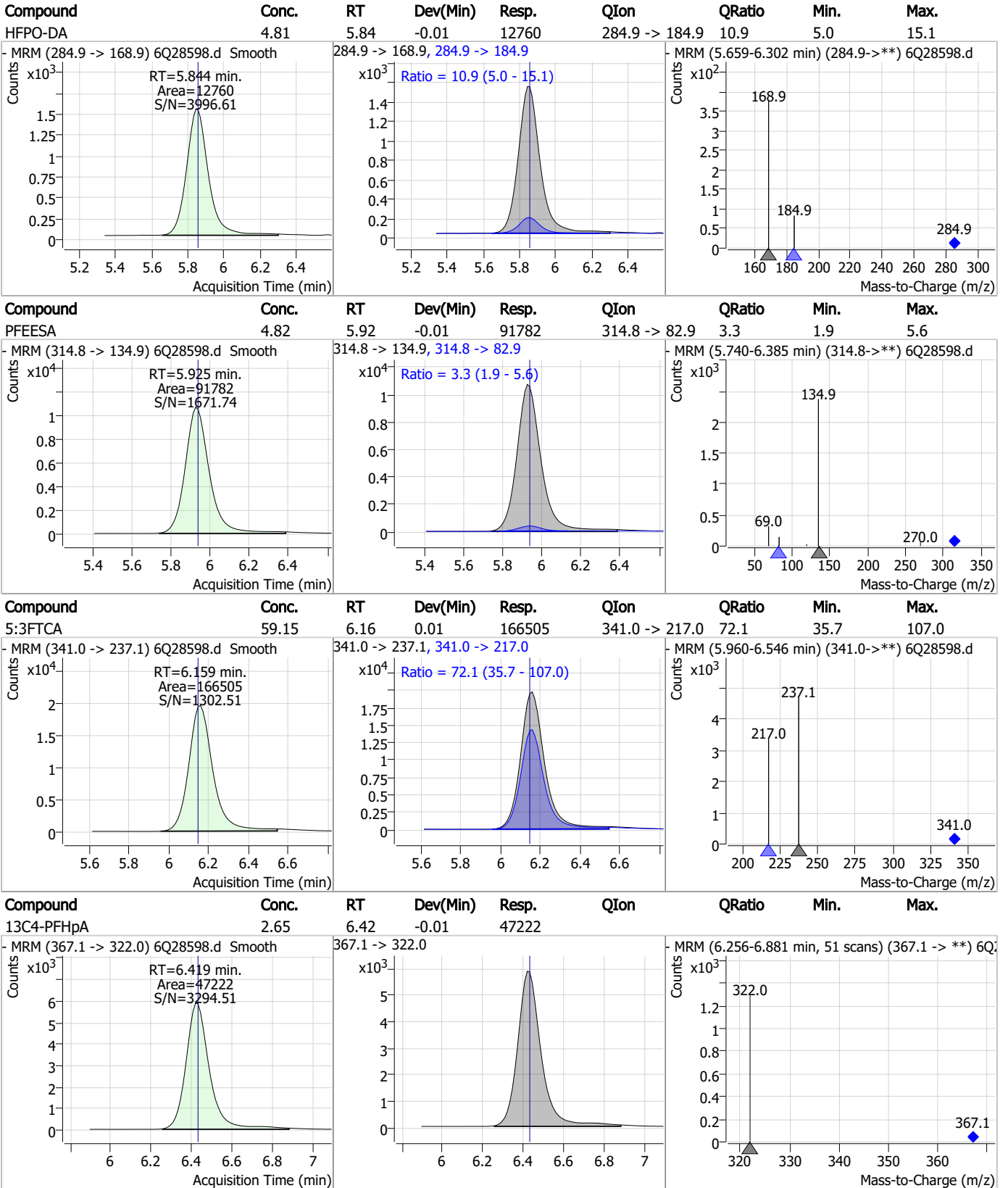
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.48	-0.01	41158	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.91	5.84	-0.01	26493	286.9 -> 168.9			



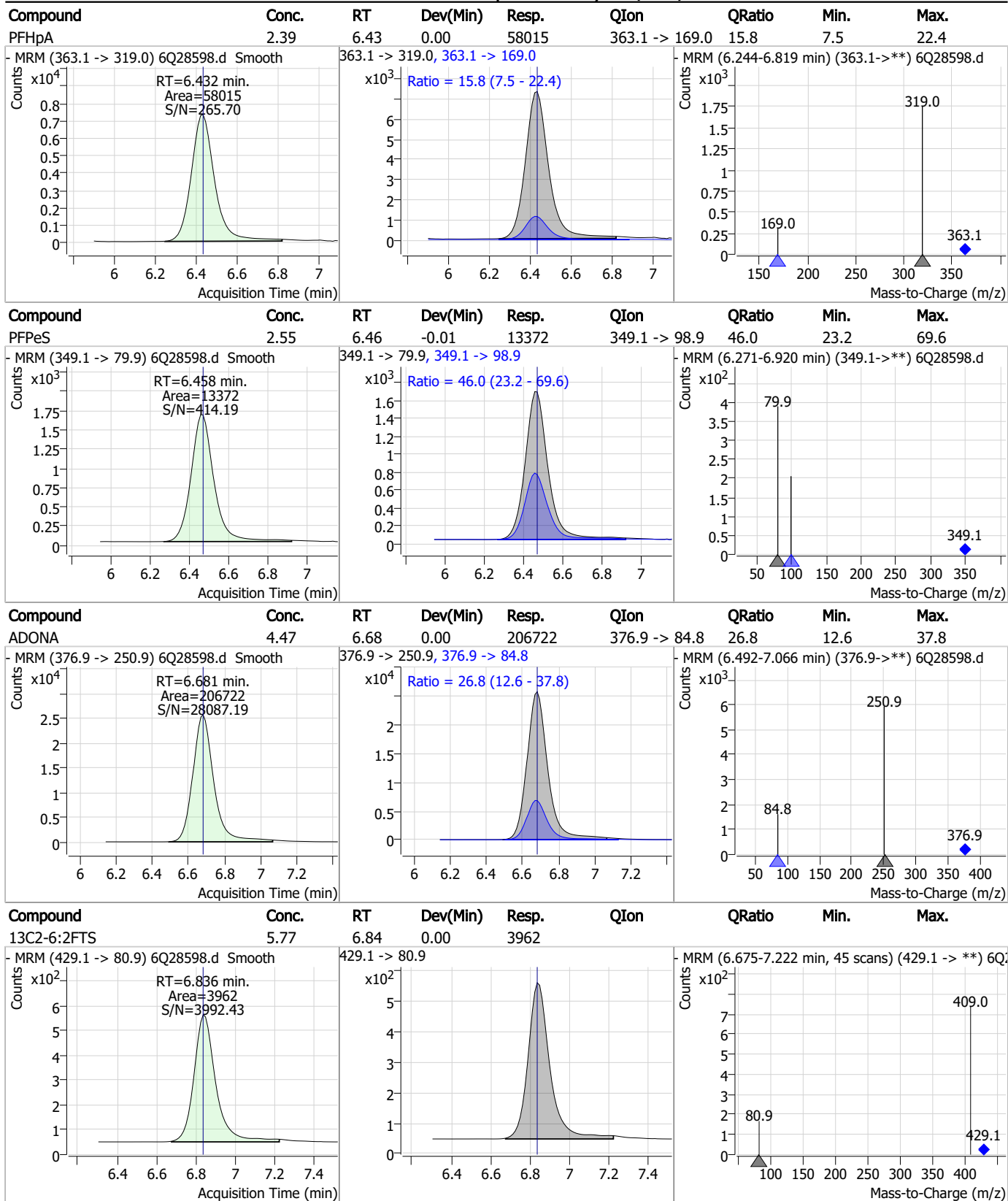
### Perfluorinated Compounds by LC/MS/MS



7.4.1

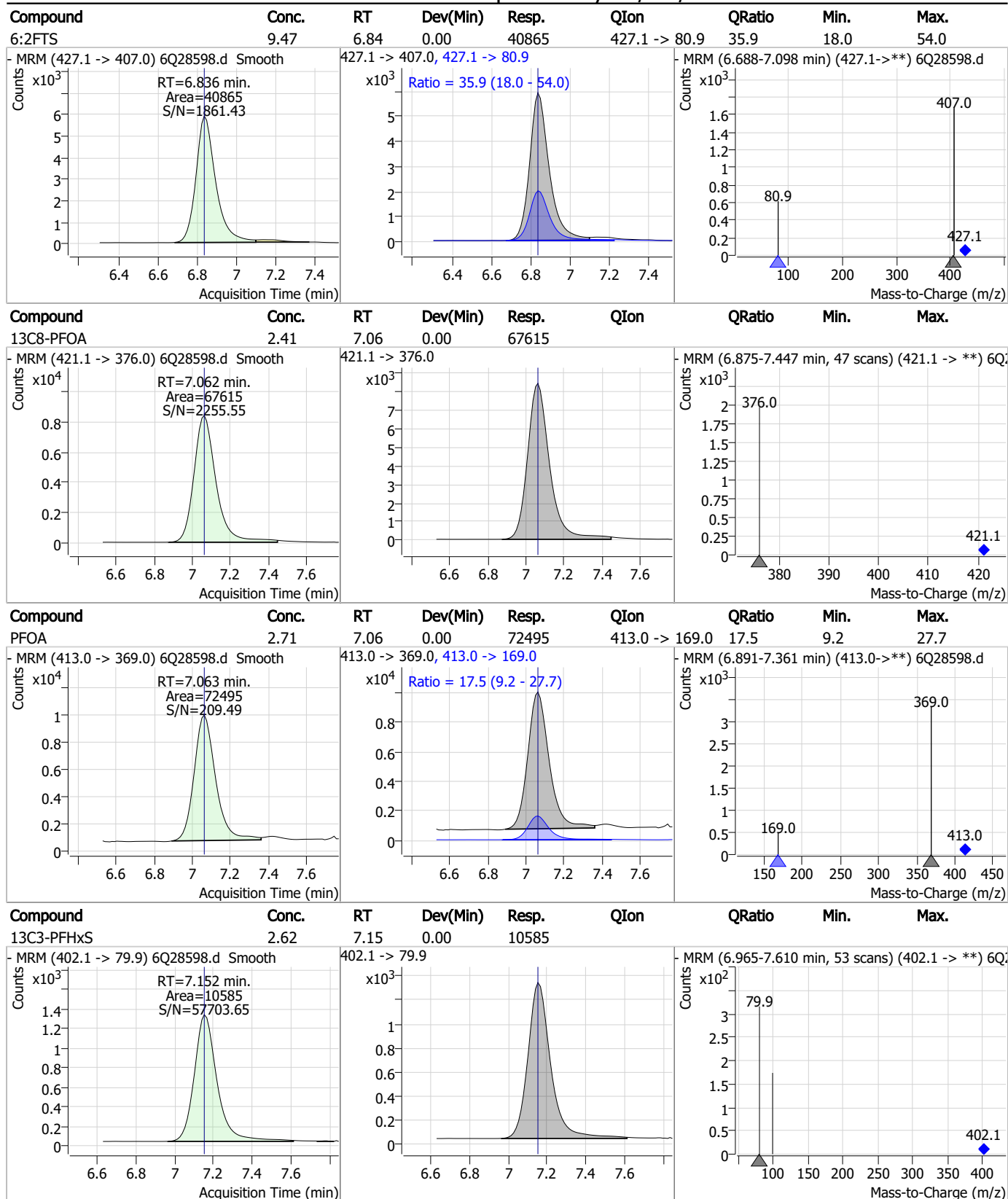
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### Perfluorinated Compounds by LC/MS/MS



7.4.1  
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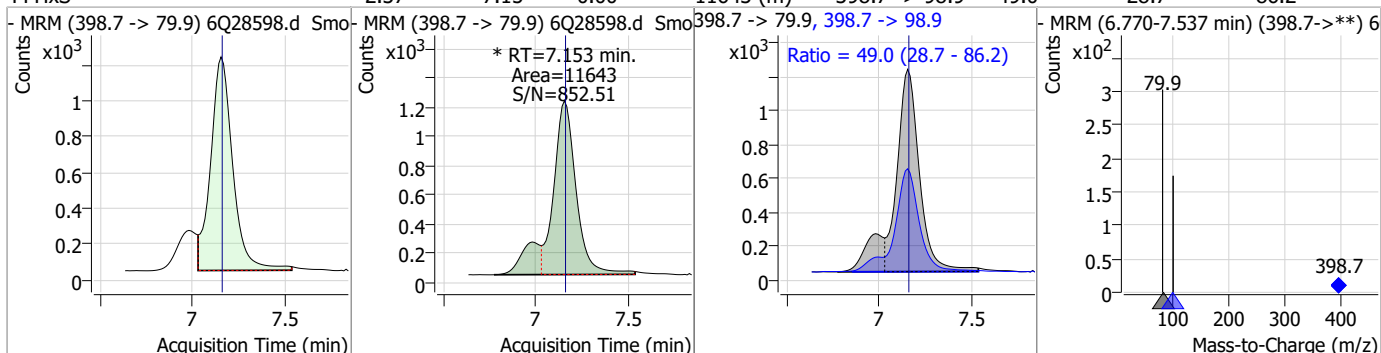
### Perfluorinated Compounds by LC/MS/MS



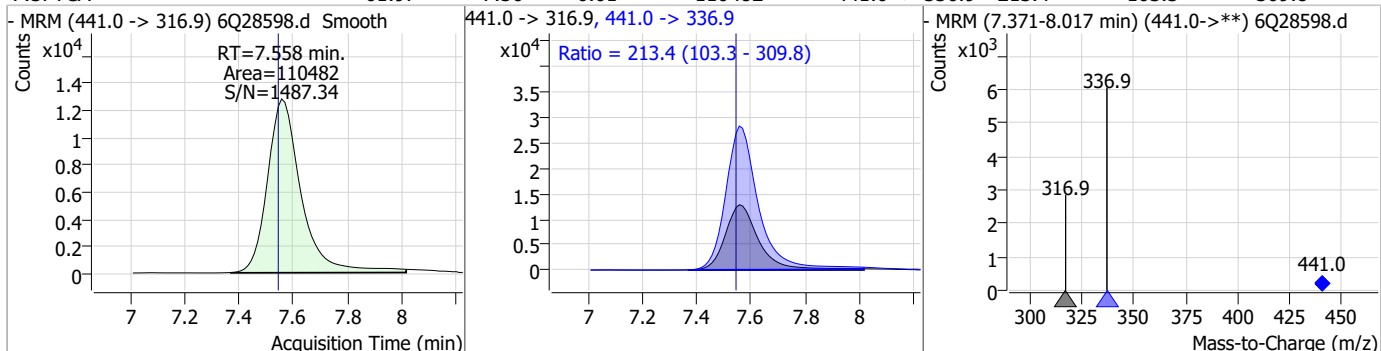
7.4.1  
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### Perfluorinated Compounds by LC/MS/MS

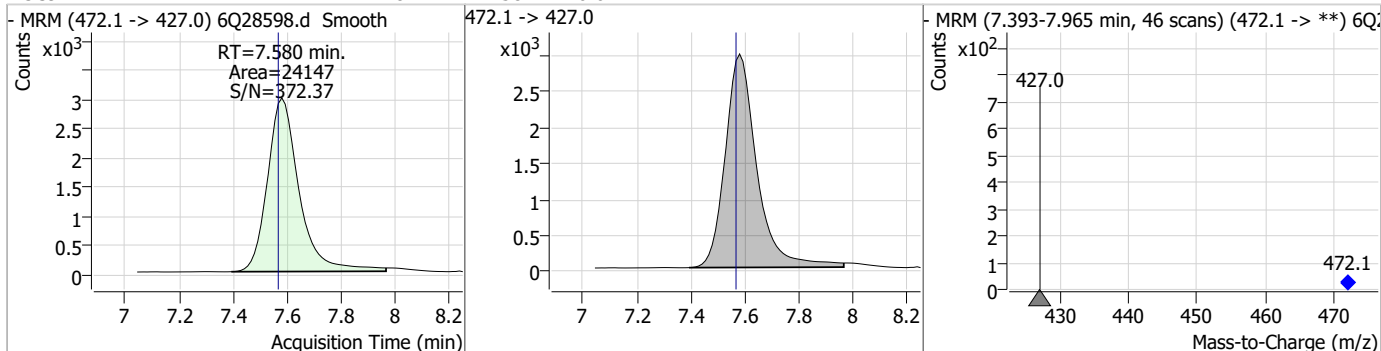
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.37	7.15	0.00	11643 (m)	398.7 -> 98.9	49.0	28.7	86.2



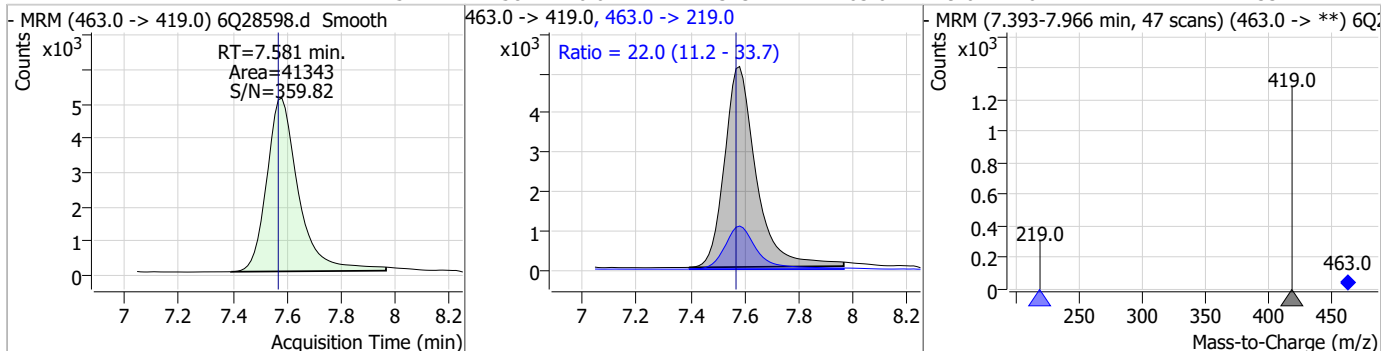
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	61.97	7.56	0.01	110482	441.0 -> 336.9	213.4	103.3	309.8



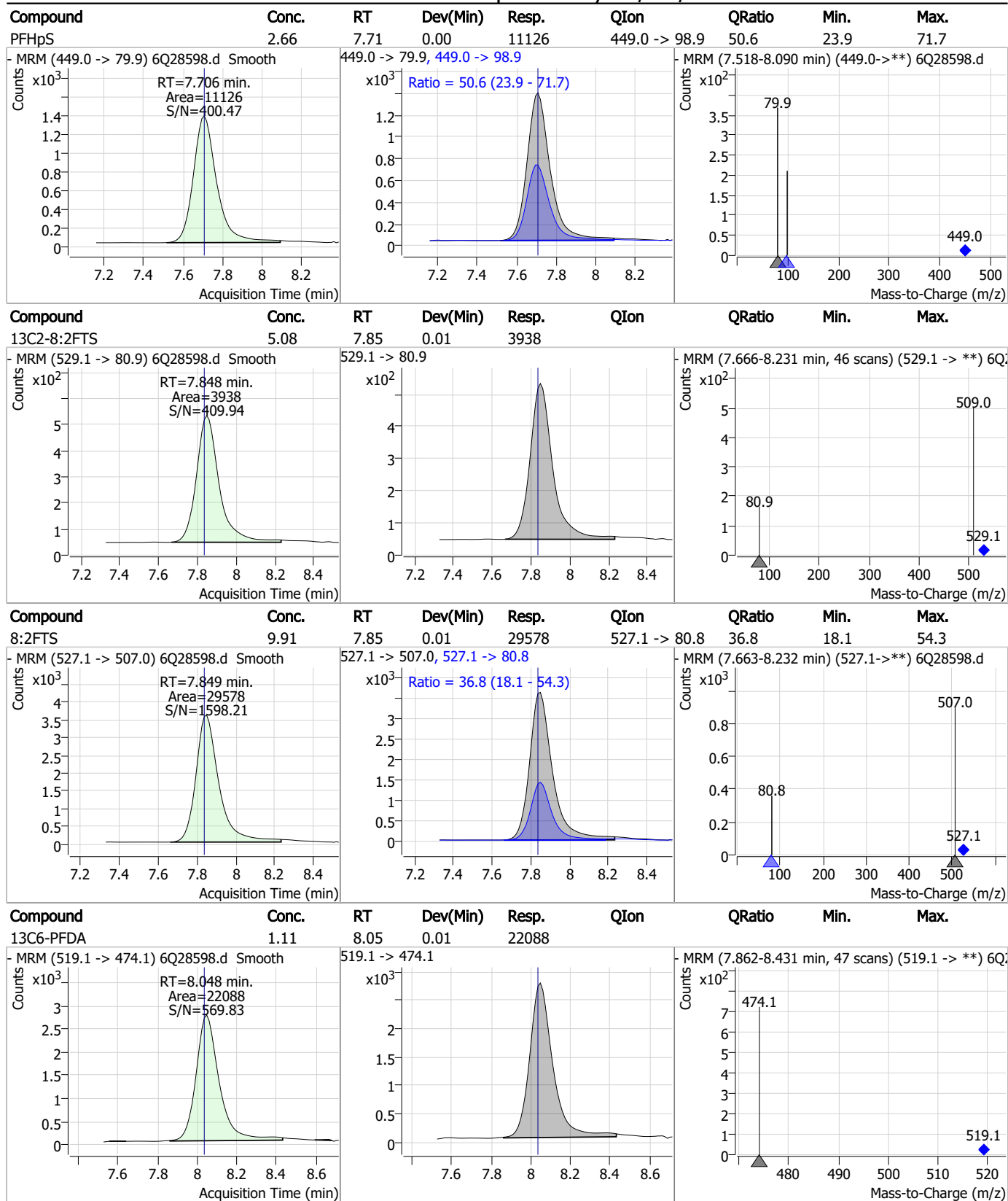
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.18	7.58	0.01	24147				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.75	7.58	0.01	41343	463.0 -> 219.0	22.0	11.2	33.7



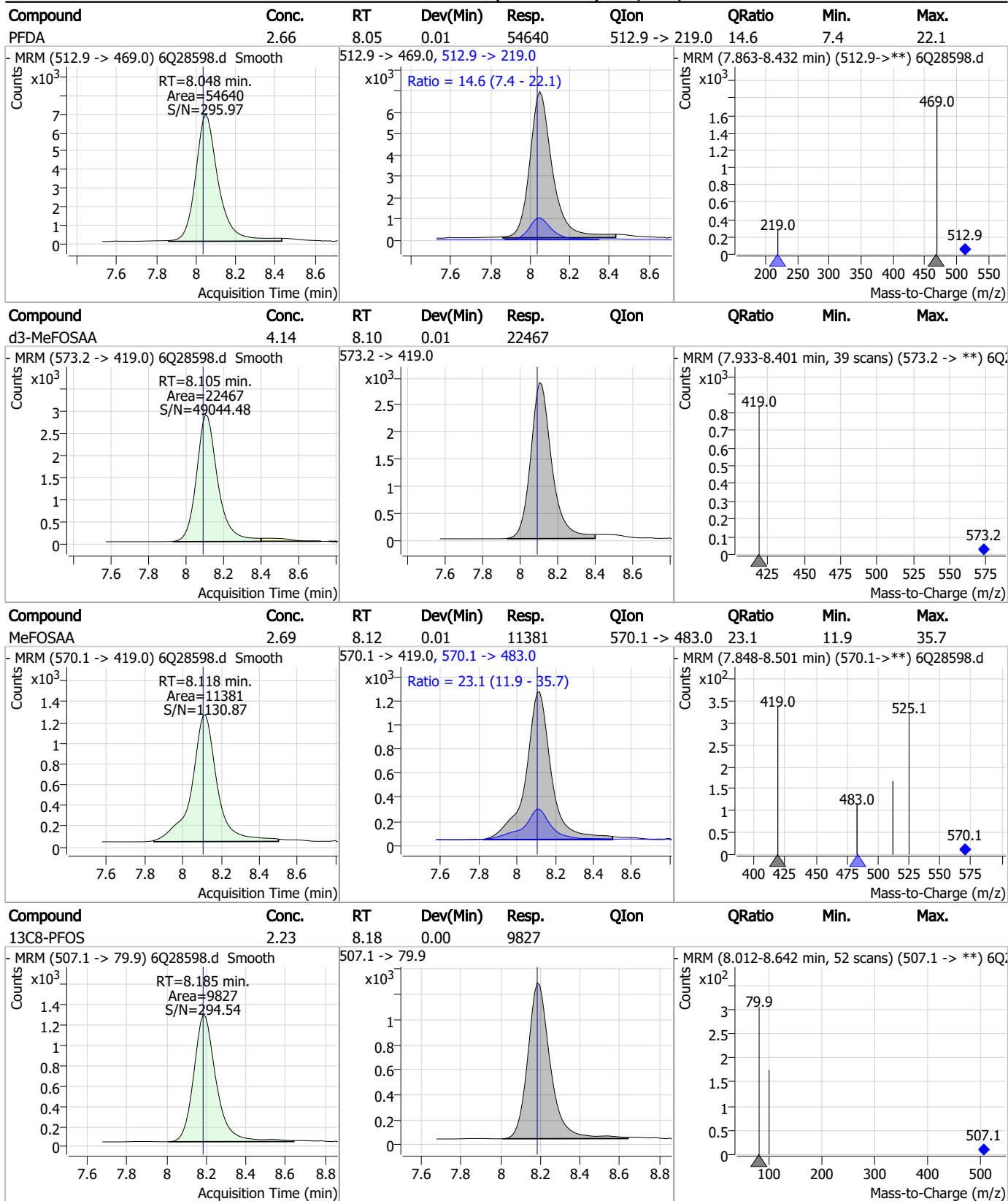
### Perfluorinated Compounds by LC/MS/MS



7.4.1

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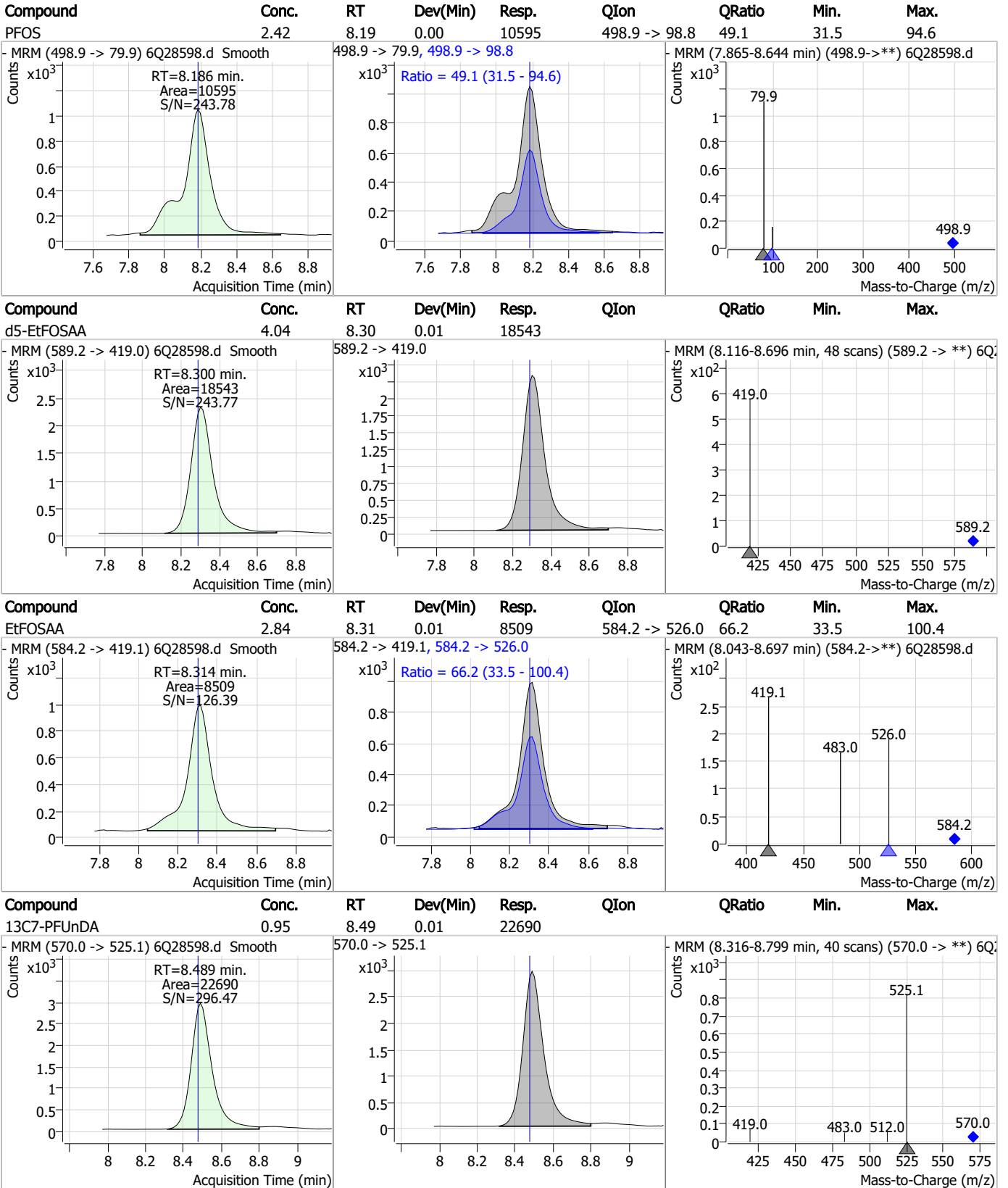
### Perfluorinated Compounds by LC/MS/MS



7.4.1  
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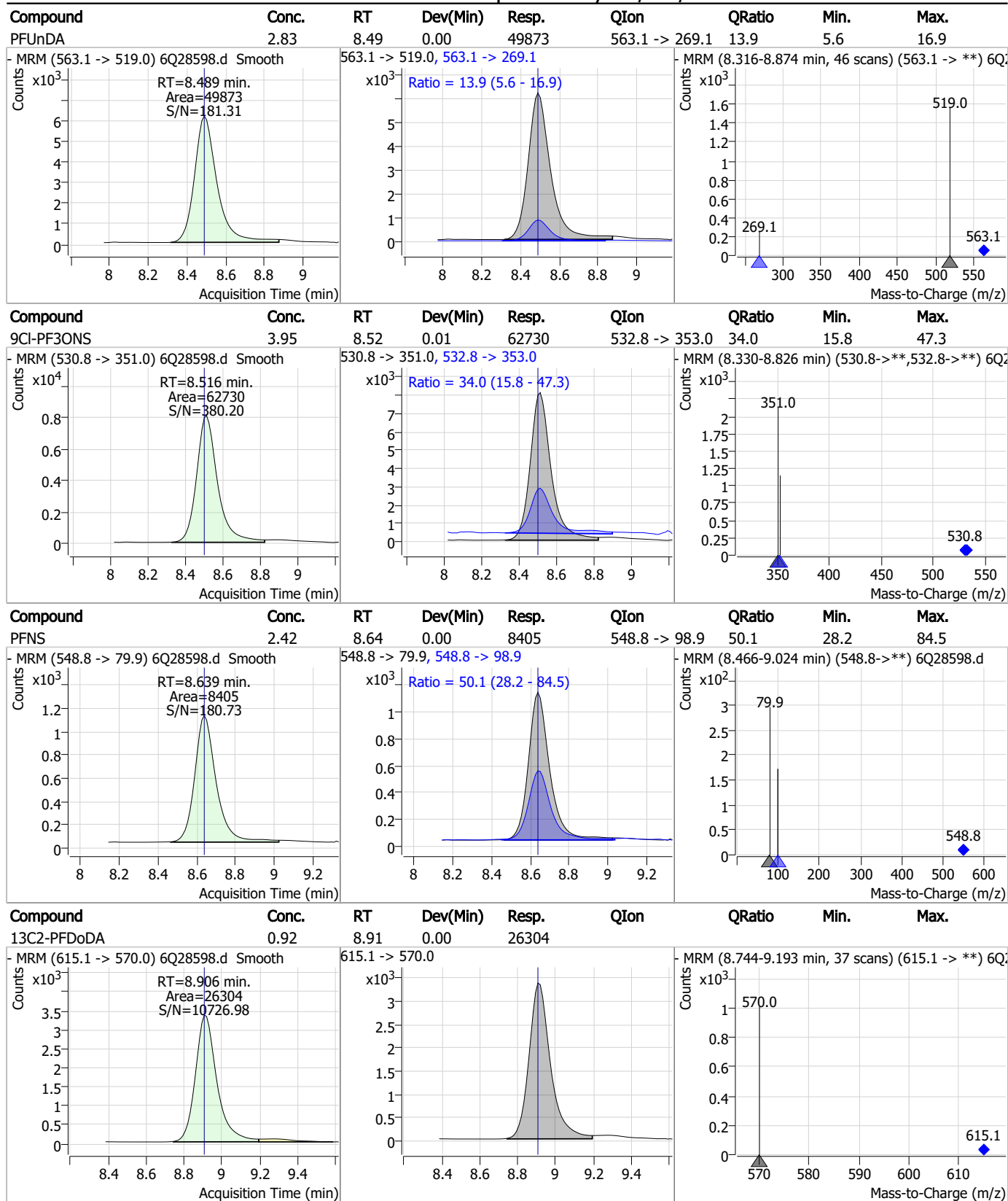
### Perfluorinated Compounds by LC/MS/MS



7.4.1

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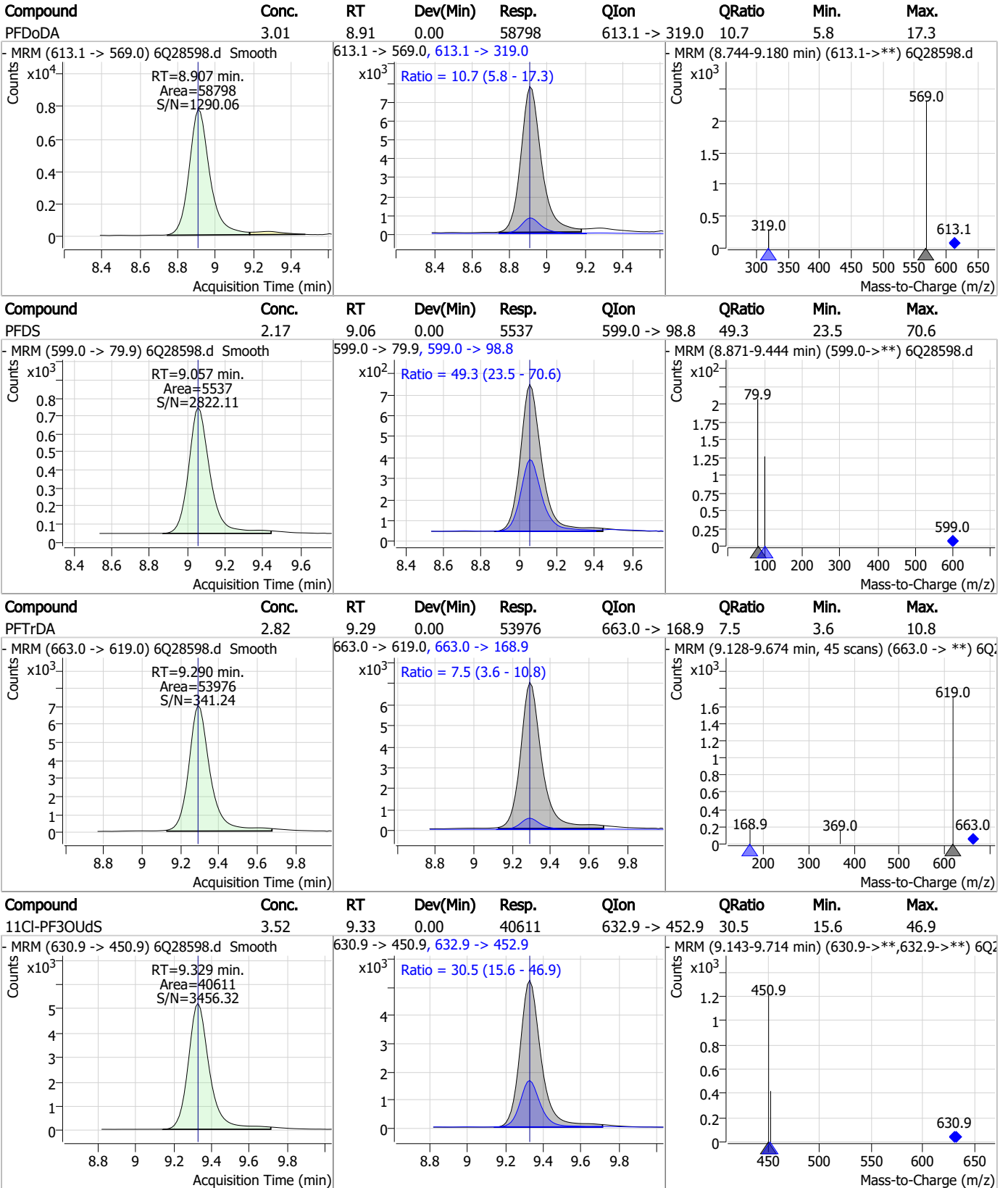
### Perfluorinated Compounds by LC/MS/MS



7.4.1

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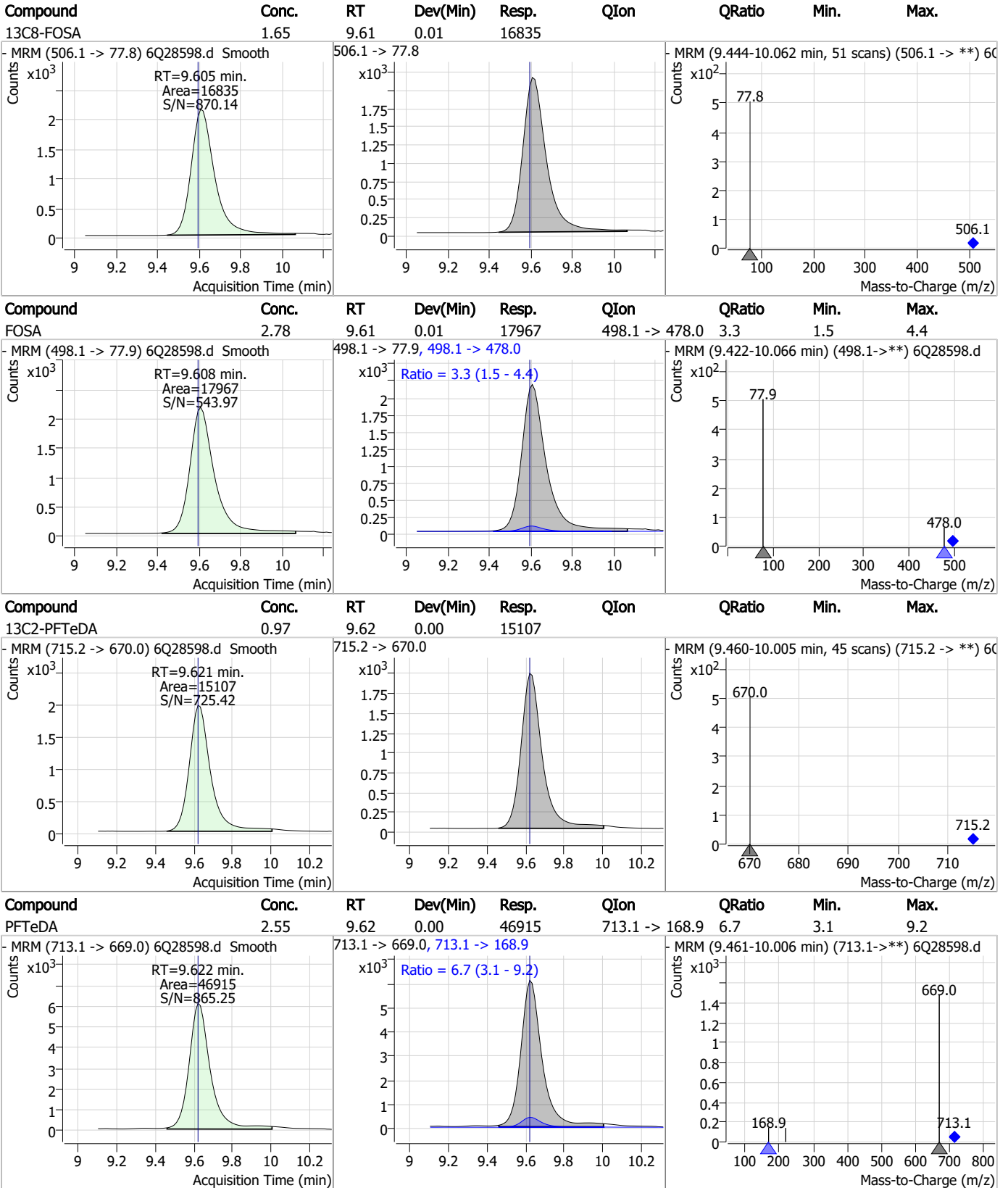
### Perfluorinated Compounds by LC/MS/MS



7.4.1

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### Perfluorinated Compounds by LC/MS/MS



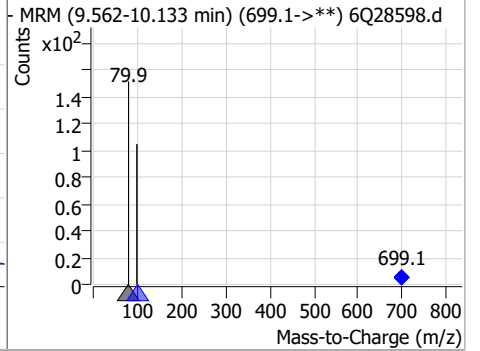
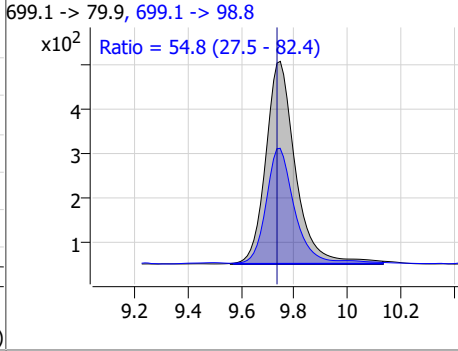
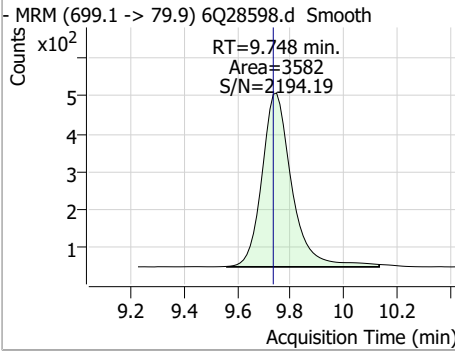
7.4.1

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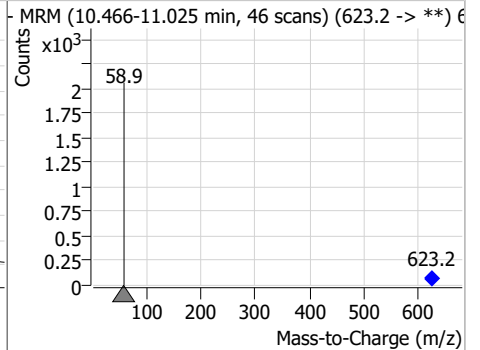
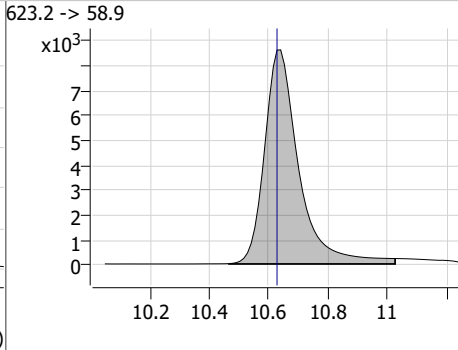
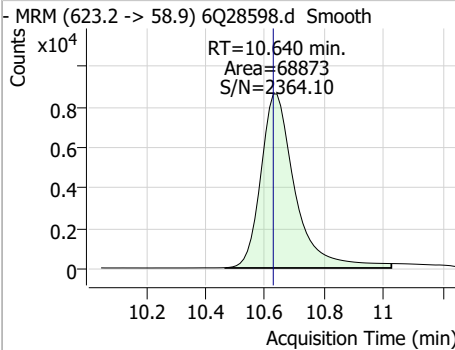


### Perfluorinated Compounds by LC/MS/MS

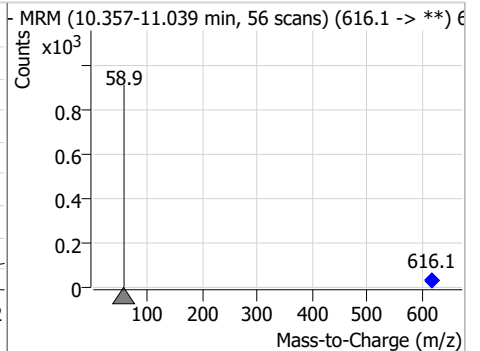
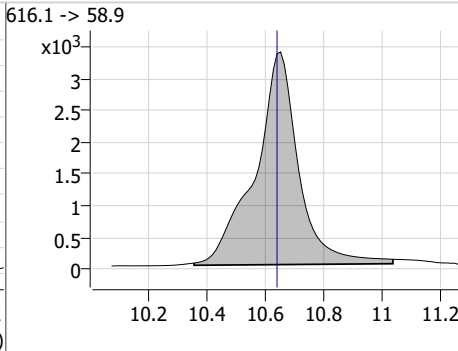
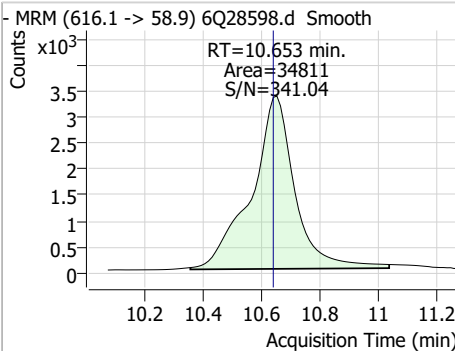
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.18	9.75	0.01	3582	699.1 -> 98.8	54.8	27.5	82.4



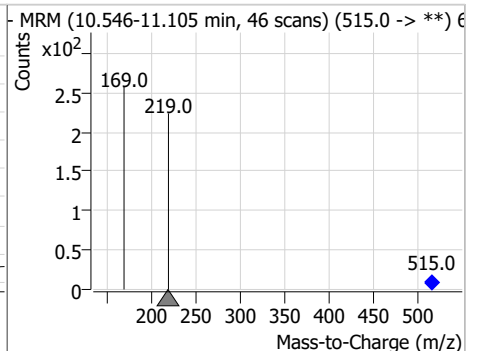
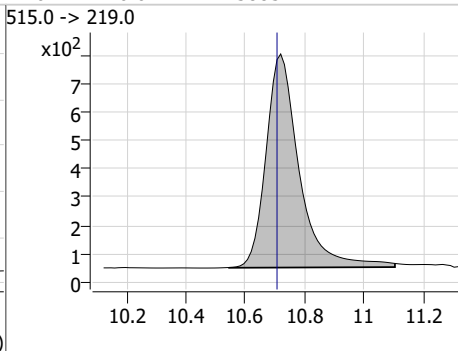
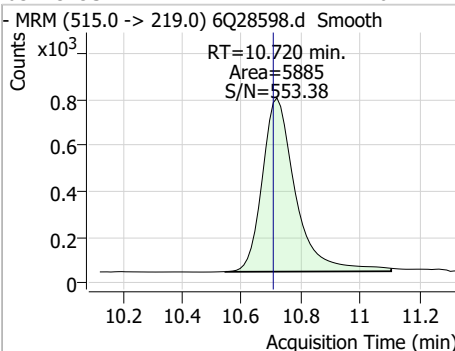
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	16.45	10.64	0.01	68873				



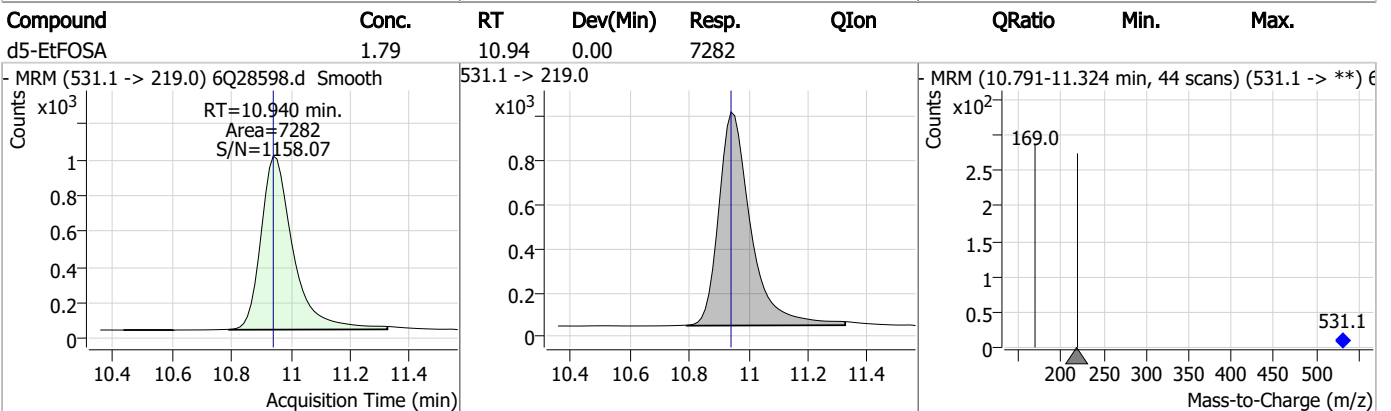
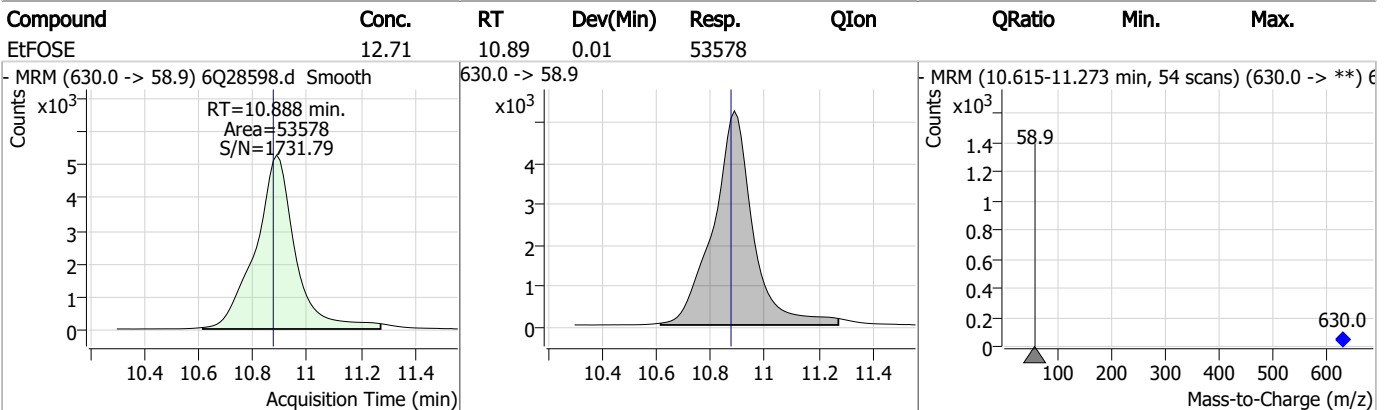
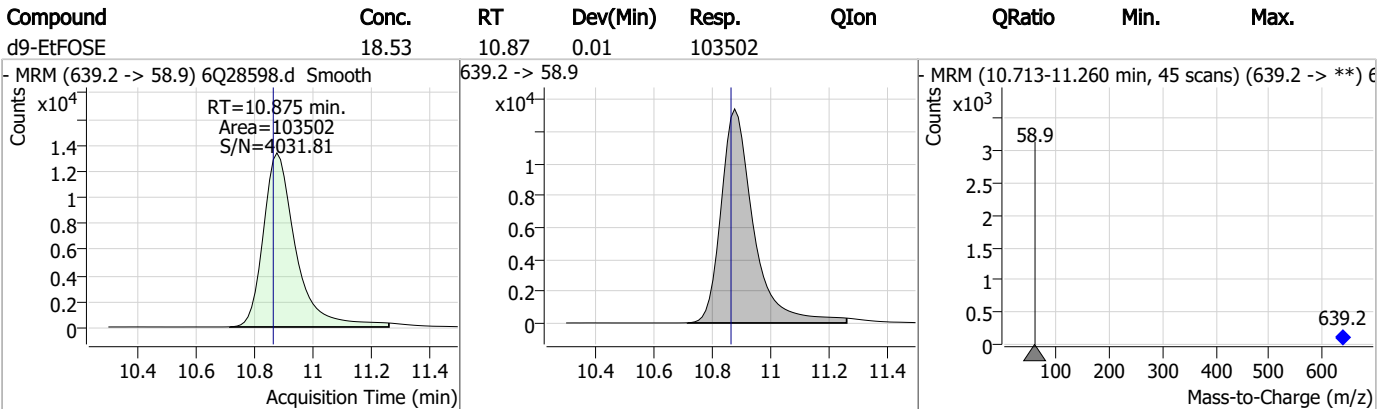
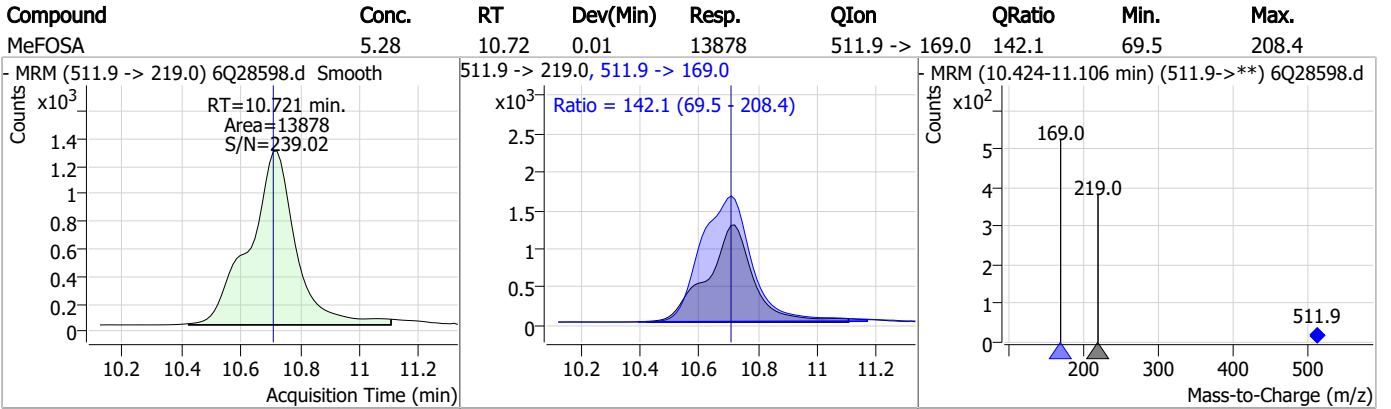
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.39	10.65	0.01	34811				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.67	10.72	0.01	5885				



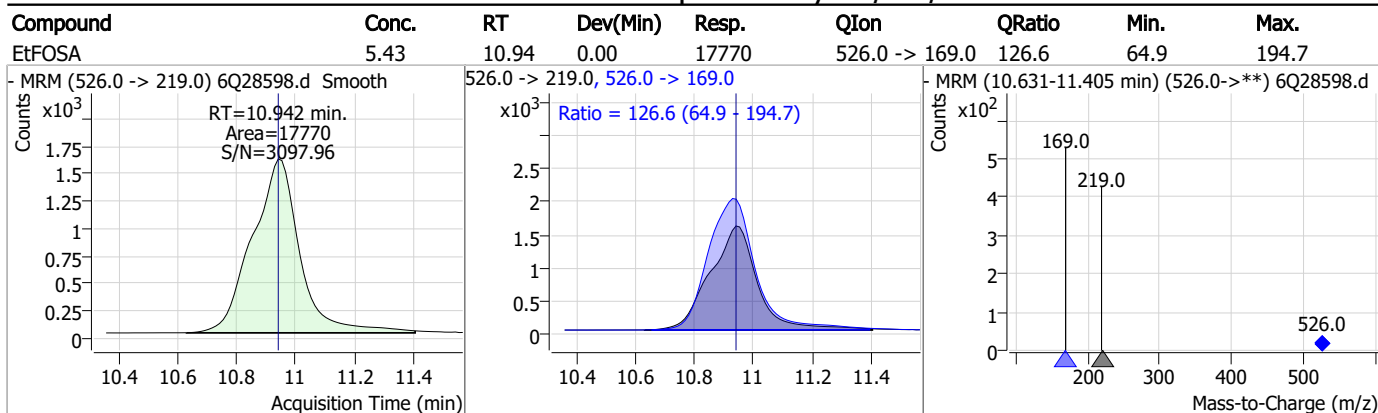
### Perfluorinated Compounds by LC/MS/MS



7.4.1

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### Perfluorinated Compounds by LC/MS/MS



7.4.1

7

# Manual Integration Approval Summary

Sample Number: OP162-MS                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28598.D                      Analyst approved: 11/21/23 15:34 Anna Ludwig  
Injection Time: 11/20/23 13:28                      Supervisor approved: 11/21/23 17:30 Natasha Guntie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak

7.4.1.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28601.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 2:11:13 PM  
 Sample Name : op162-dup  
 Vial : P2-B1  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP162,S6Q396,530,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.901	216.8 -> 171.9	111642	10.00 µg/L	0.041
M5-PFPeA	4.284	268.3 -> 223.0	40582	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	43377	2.50 µg/L	-0.012
M4-PFHpA	6.431	367.1 -> 322.0	46075	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	65735	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	24985	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	22728	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	23291	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	27441	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	15248	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	16205	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	16029	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	10047	2.50 µg/L	0.000
M8-PFOS	8.197	507.1 -> 79.9	10078	2.50 µg/L	0.012
M2-4:2FTS	5.154	329.1 -> 80.9	2481	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	3997	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	3691	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	23330	5.00 µg/L	0.012
M3-HFPO-DA	5.856	286.9 -> 168.9	26295	10.00 µg/L	0.000
M5-EtFOSAA	8.300	589.2 -> 419.0	19089	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	66709	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	99704	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	6757	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	5295	2.50 µg/L	0.012
13C4-PFOS	8.198	502.8 -> 79.9	10084	2.50 µg/L	0.012
13C3-PFBA	2.904	216.0 -> 172.0	48273	5.00 µg/L	0.040
18O2-PFHxS	7.151	403.0 -> 83.9	6892	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	73308	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	26502	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	24665	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	40059	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	2481	5.60 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.0%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3997	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.3%		
13C2-8:2FTS	7.848	529.1 -> 80.9	3691	4.55 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.0%		
13C2-PFDoDA	8.906	615.1 -> 570.0	27441	0.93 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 74.8%		
13C2-PFTeDA	9.621	715.2 -> 670.0	15248	0.95 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 75.8%		
13C3-PFBS	5.396	302.1 -> 79.9	16029	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C3-PFHxS	7.152	402.1 -> 79.9	10047	2.38 µg/L	0.000

7.5.1  
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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C4-PFBA	2.901	216.8 -> 171.9	111642	9.99 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.431	367.1 -> 322.0	46075	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C5-PFHxA	5.478	318.0 -> 273.0	43377	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C5-PFPeA	4.284	268.3 -> 223.0	40582	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C6-PFDA	8.048	519.1 -> 474.1	22728	1.11 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.7%	
13C7-PFUnDA	8.489	570.0 -> 525.1	23291	0.95 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 75.8%	
13C8-FOSA	9.605	506.1 -> 77.8	16205	1.65 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 65.8%	
13C8-PFOA	7.062	421.1 -> 376.0	65735	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C8-PFOS	8.197	507.1 -> 79.9	10078	2.37 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C9-PFNA	7.580	472.1 -> 427.0	24985	1.21 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.7%	
d3-MeFOSAA	8.105	573.2 -> 419.0	23330	4.46 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.2%	
13C3-HFPO-DA	5.856	286.9 -> 168.9	26295	10.57 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
d3-MeFOSA	10.720	515.0 -> 219.0	5295	1.56 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 62.3%	
d5-EtFOSAA	8.300	589.2 -> 419.0	19089	4.31 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 86.2%	
d7-MeFOSE	10.640	623.2 -> 58.9	66709	16.52 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 66.1%	
d9-EtFOSE	10.875	639.2 -> 58.9	99704	18.51 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 74.1%	
d5-EtFOSA	10.940	531.1 -> 219.0	6757	1.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 69.1%	

7.5.1  
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Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	-	427.1 -> 407.0 427.1 -> 80.9	-	N.D.	
8:2FTS	-	527.1 -> 507.0 527.1 -> 80.8	-	N.D.	
EtFOSAA	-	584.2 -> 419.1 584.2 -> 526.0	-	N.D.	
FOSA	-	498.1 -> 77.9 498.1 -> 478.0	-	N.D.	
MeFOSAA	-	570.1 -> 419.0 570.1 -> 483.0	-	N.D.	
PFBA	2.907	212.8 -> 168.9	19016	5.20 µg/L	100
PFBS	5.385	298.7 -> 79.9 298.7 -> 98.8	63510 23605	10.40 µg/L	m 99
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDODA	-	613.1 -> 569.0 613.1 -> 319.0	-	N.D.	
PFDS	-	599.0 -> 79.9	-	N.D.	



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.432	599.0 -> 98.8				
		363.1 -> 319.0	86973	3.67 µg/L	m	97
PFHpS	7.706	363.1 -> 169.0	14099			
		449.0 -> 79.9	5192	1.21 µg/L	m	92
PFHxA	5.481	449.0 -> 98.9	2207			
		313.0 -> 269.0	300052	18.49 µg/L		99
PFHxS	7.153	313.0 -> 118.9	13302			
		398.7 -> 79.9	285508	61.25 µg/L	m	85
PFNA	7.581	398.7 -> 98.9	131557			
		463.0 -> 419.0	1467	0.09 µg/L	m	96
PFNS	-	463.0 -> 219.0	302			
		548.8 -> 79.9	-	N.D.		
PFOA	7.063	548.8 -> 98.9				
		413.0 -> 369.0	229528	8.82 µg/L		97
PFOS	8.026	413.0 -> 169.0	45609			
		498.9 -> 79.9	54391	12.13 µg/L	m	69
PFPeA	4.286	498.9 -> 98.8	21027			
		263.0 -> 219.0	129520	12.58 µg/L		100
PFPeS	6.458	349.1 -> 79.9	75310	15.14 µg/L	m	98
		349.1 -> 98.9	34091			
PFTeDA	-	713.1 -> 669.0	-	N.D.		
PFTrDA	-	713.1 -> 168.9				
		663.0 -> 619.0	-	N.D.		
PFUnDA	-	663.0 -> 168.9				
		563.1 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	563.1 -> 269.1				
		630.9 -> 450.9	-	N.D.		
9Cl-PF3ONS	-	632.9 -> 452.9				
		530.8 -> 351.0	-	N.D.		
ADONA	-	532.8 -> 353.0				
		376.9 -> 250.9	-	N.D.		
HFPO-DA	-	376.9 -> 84.8				
		284.9 -> 168.9	-	N.D.		
3:3FTCA	-	284.9 -> 184.9				
		241.0 -> 177.0	-	N.D.		
5:3FTCA	-	241.0 -> 117.0				
		341.0 -> 237.1	-	N.D.		
7:3FTCA	-	341.0 -> 217.0				
		441.0 -> 316.9	-	N.D.		
EtFOSA	-	441.0 -> 336.9				
		526.0 -> 219.0	-	N.D.		
EtFOSE	-	526.0 -> 169.0				
		630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
		699.1 -> 79.9	-	N.D.		
PFDoDS	-	699.1 -> 98.8				
		295.0 -> 201.0	-	N.D.		
NFDHA	-	295.0 -> 84.9				
		279.0 -> 85.1	-	N.D.		
PFMBA	-	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



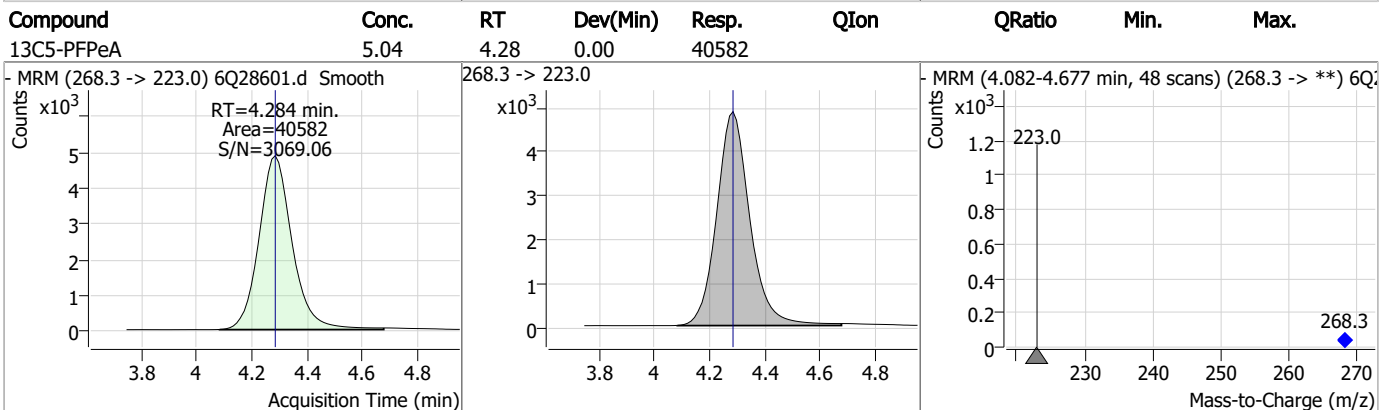
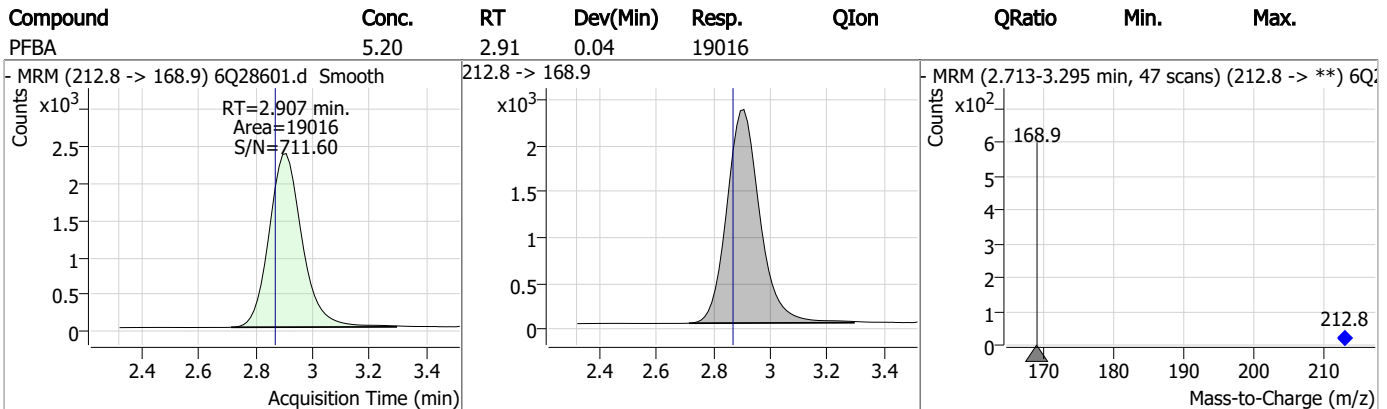
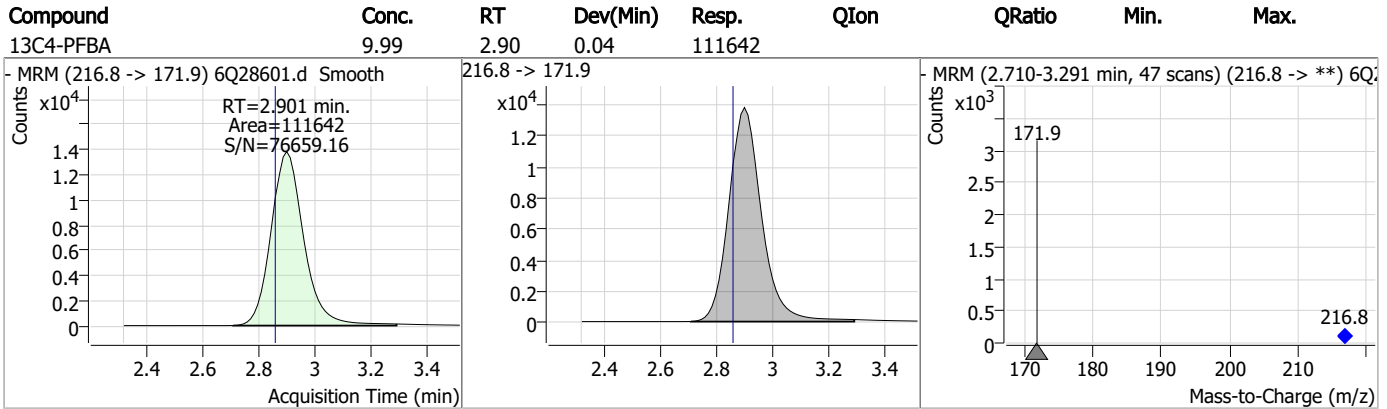
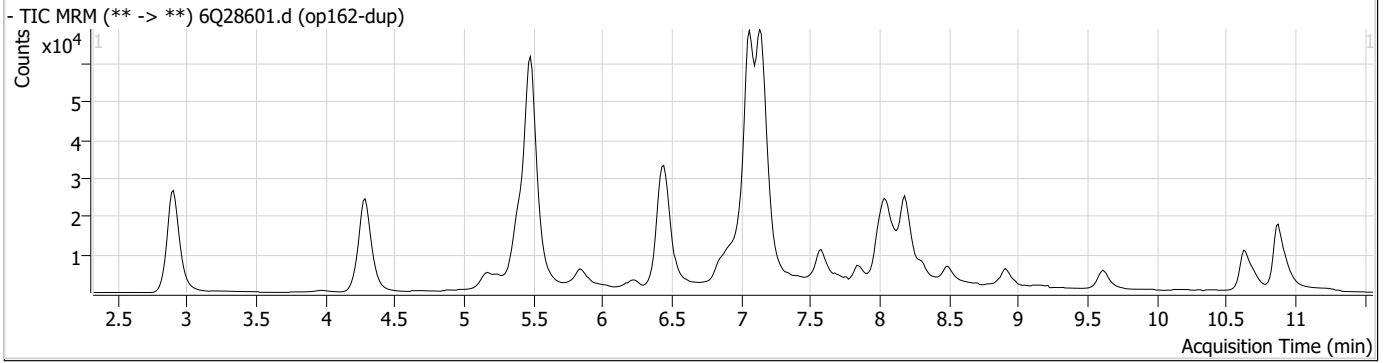
### Perfluorinated Compounds by LC/MS/MS

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

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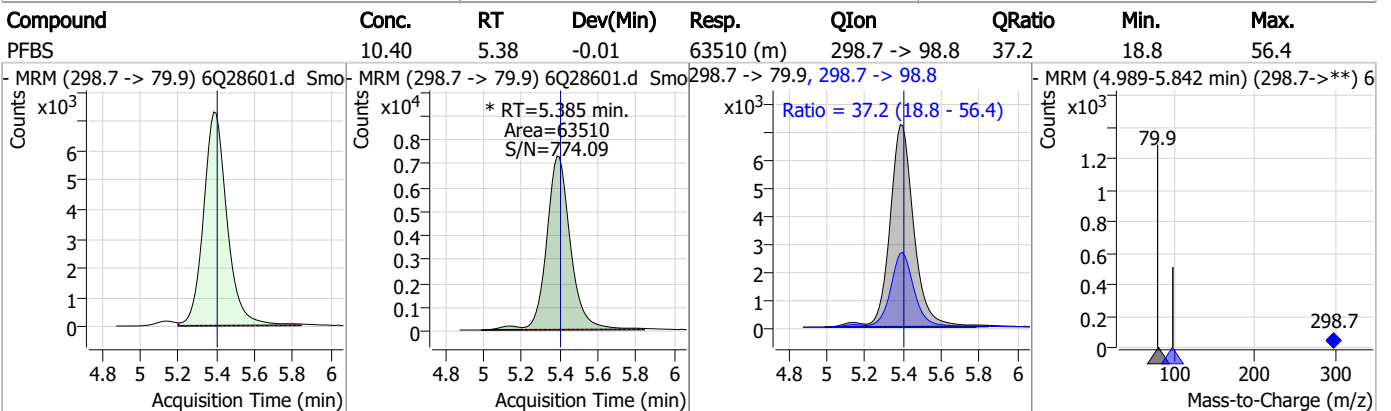
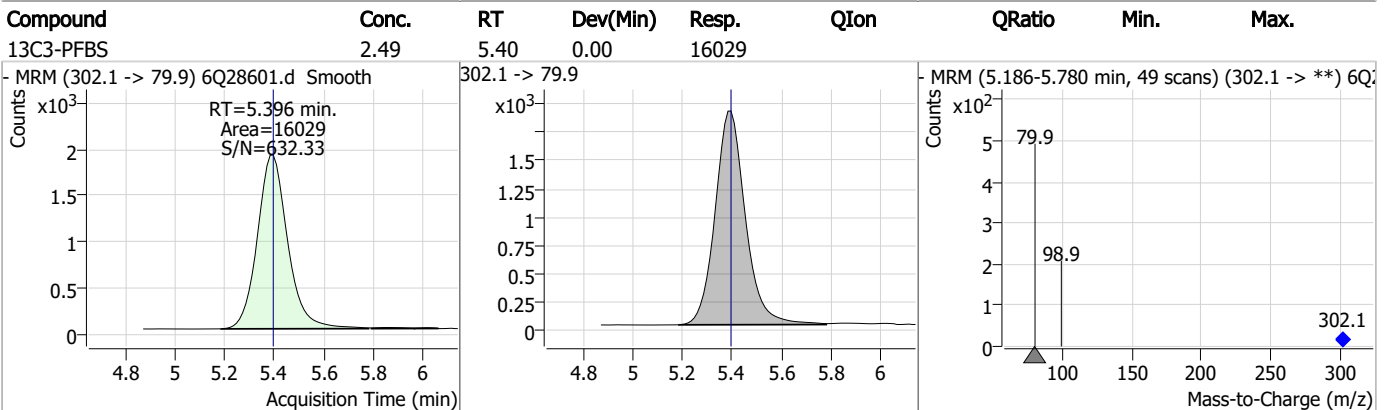
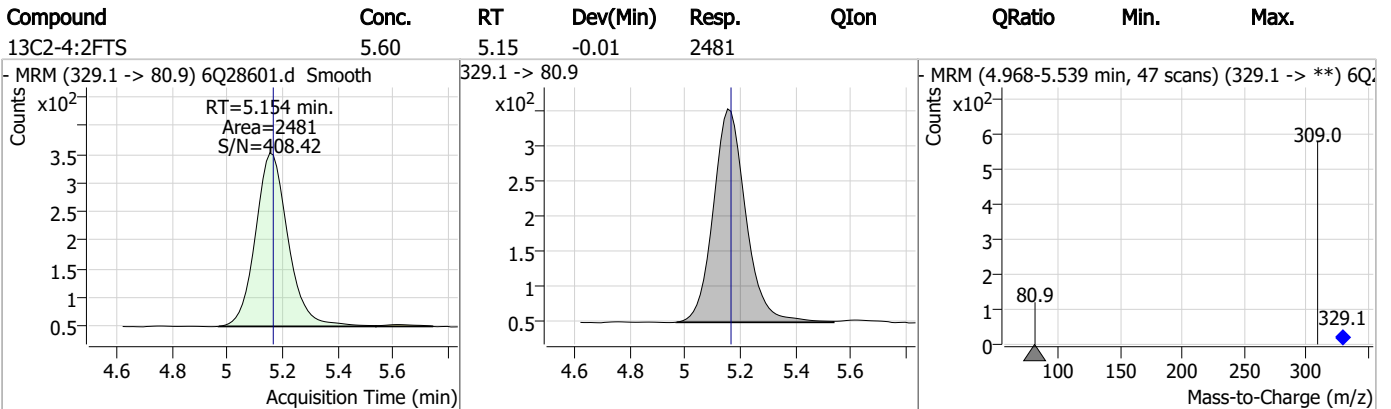
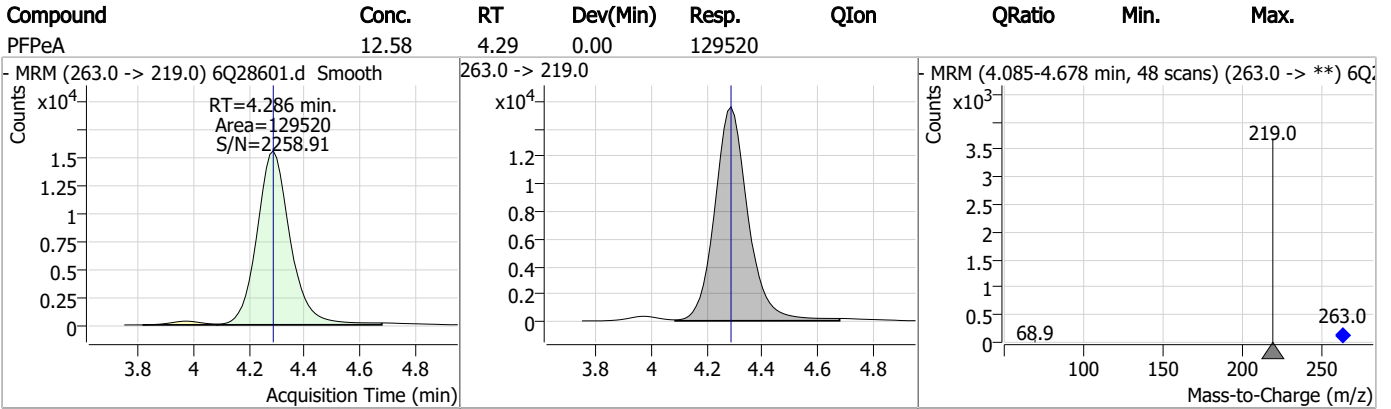
### Perfluorinated Compounds by LC/MS/MS



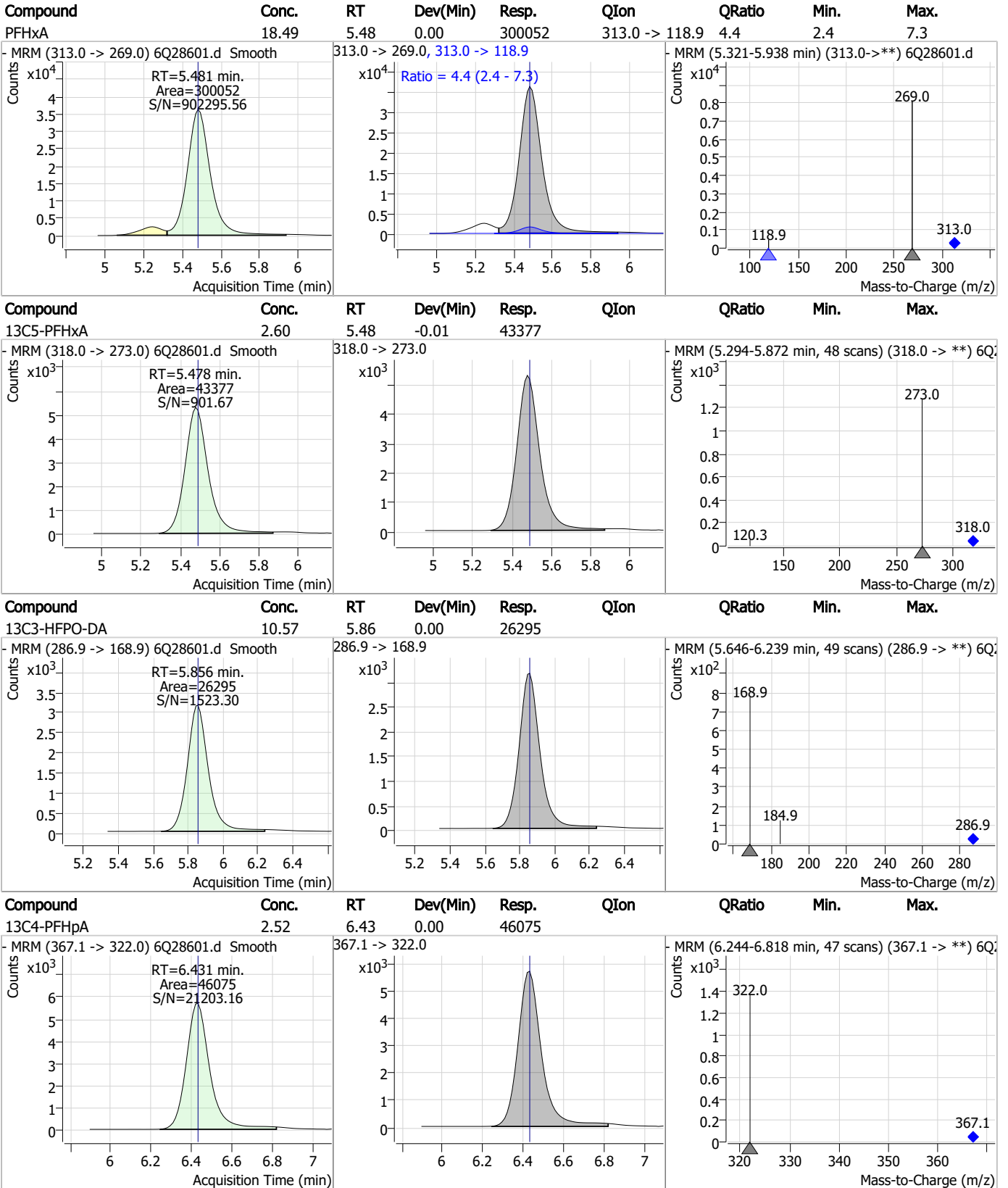
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### Perfluorinated Compounds by LC/MS/MS



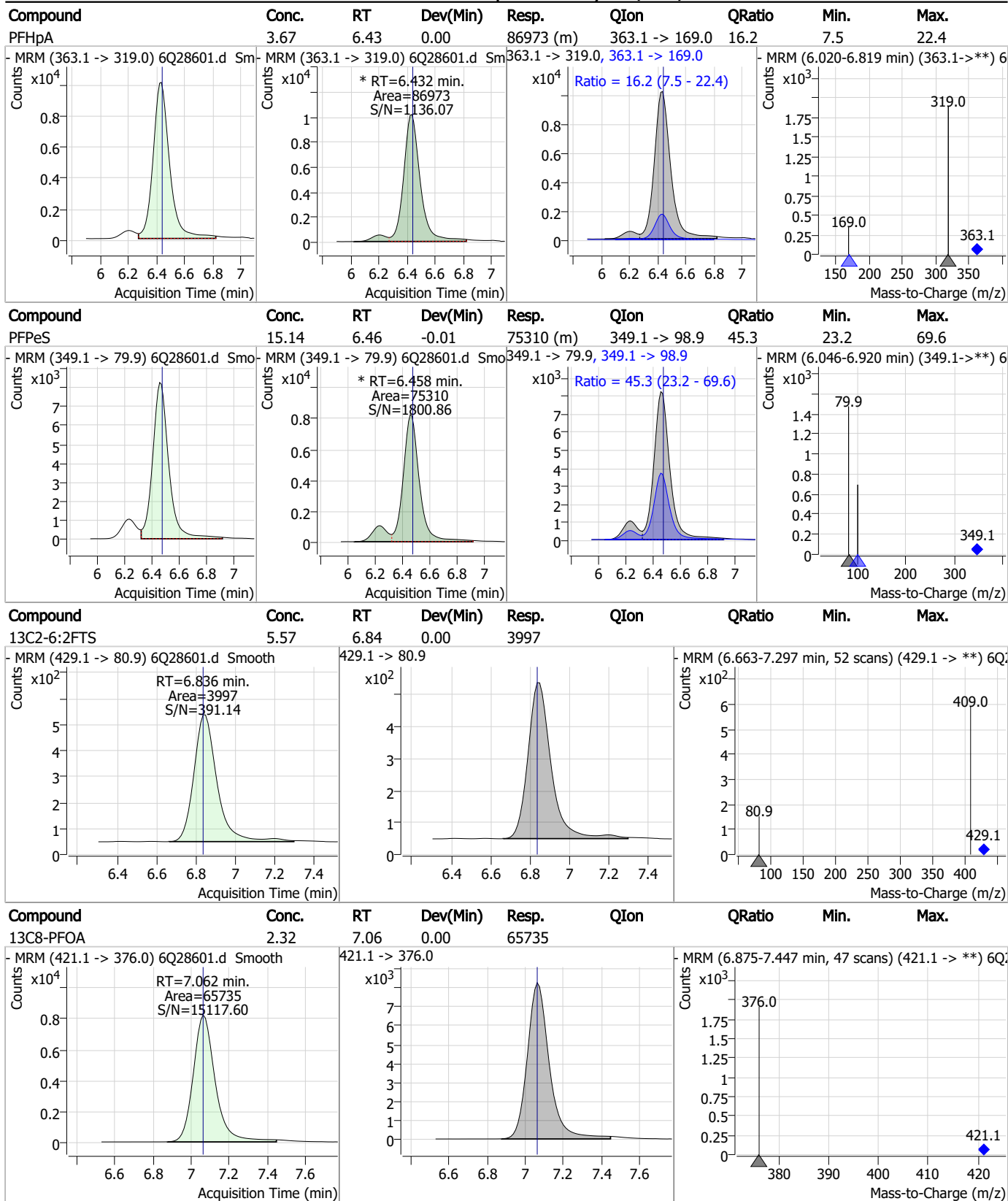
### Perfluorinated Compounds by LC/MS/MS



7.5.1

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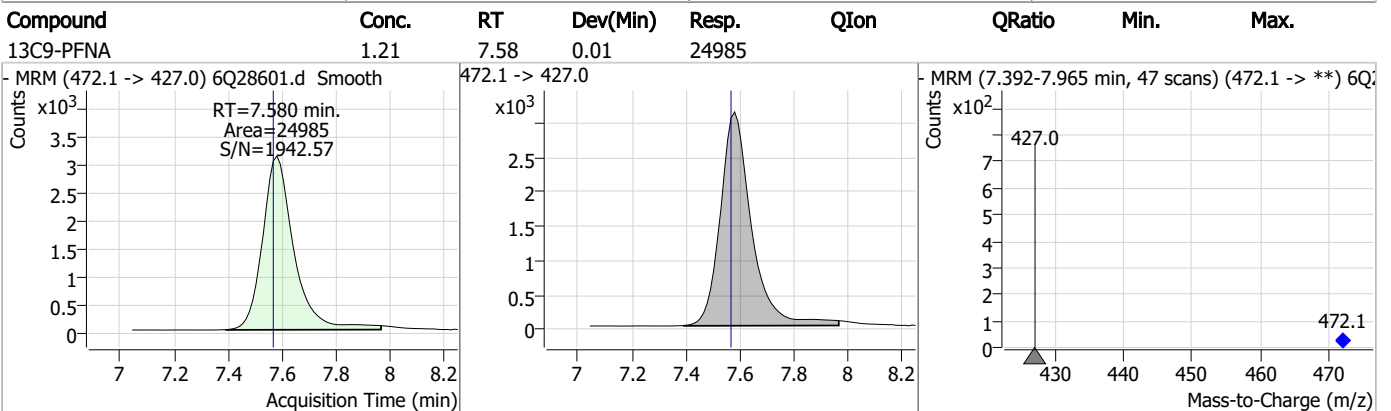
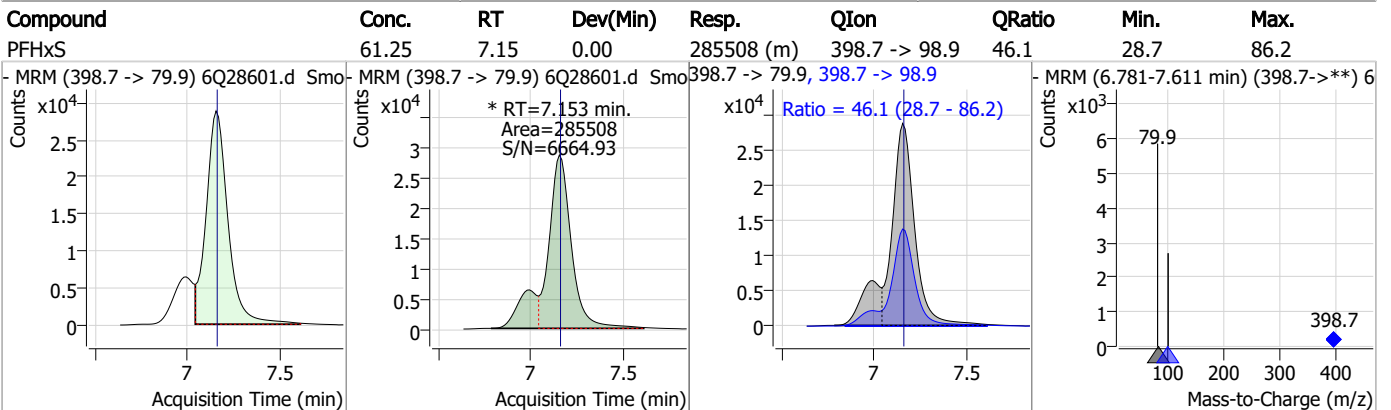
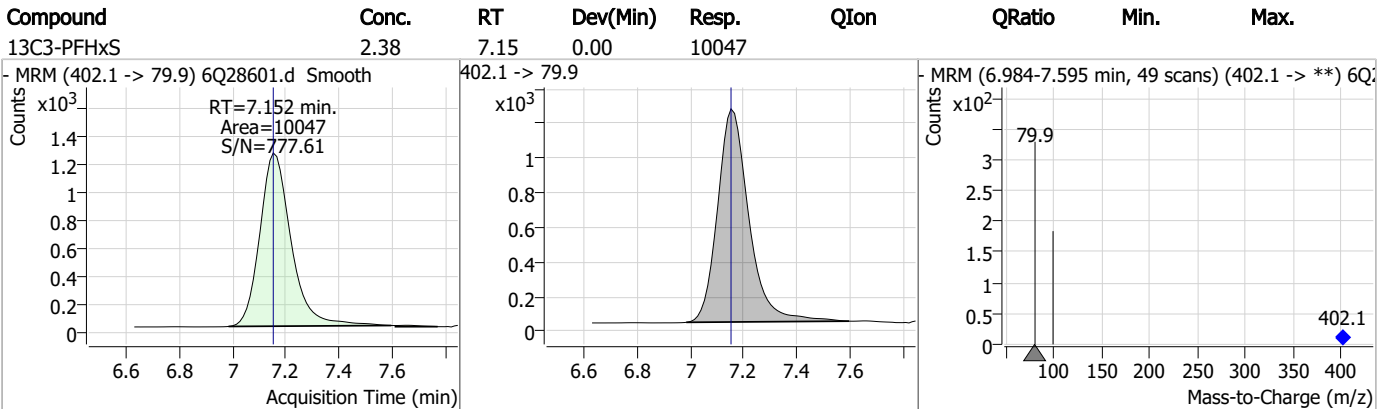
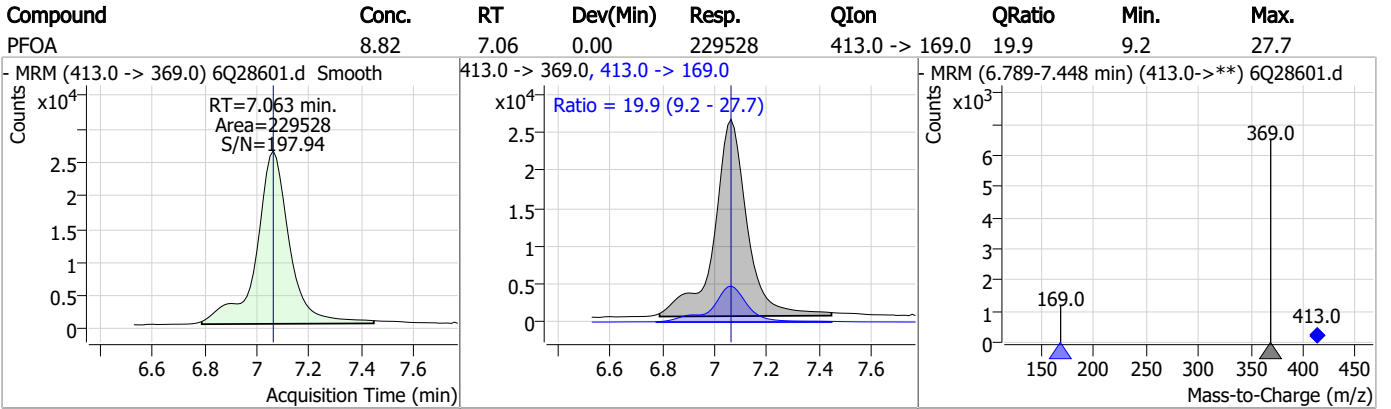
### Perfluorinated Compounds by LC/MS/MS



7.5.1  
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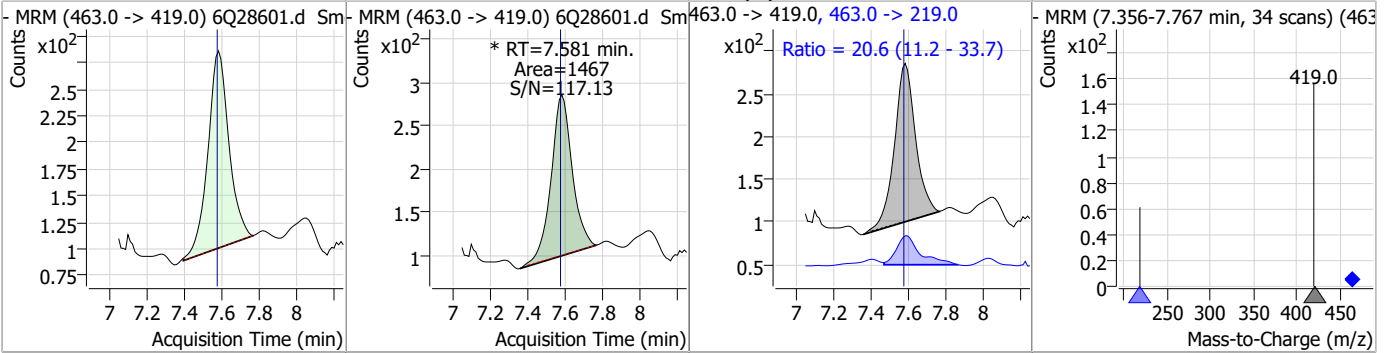


### Perfluorinated Compounds by LC/MS/MS

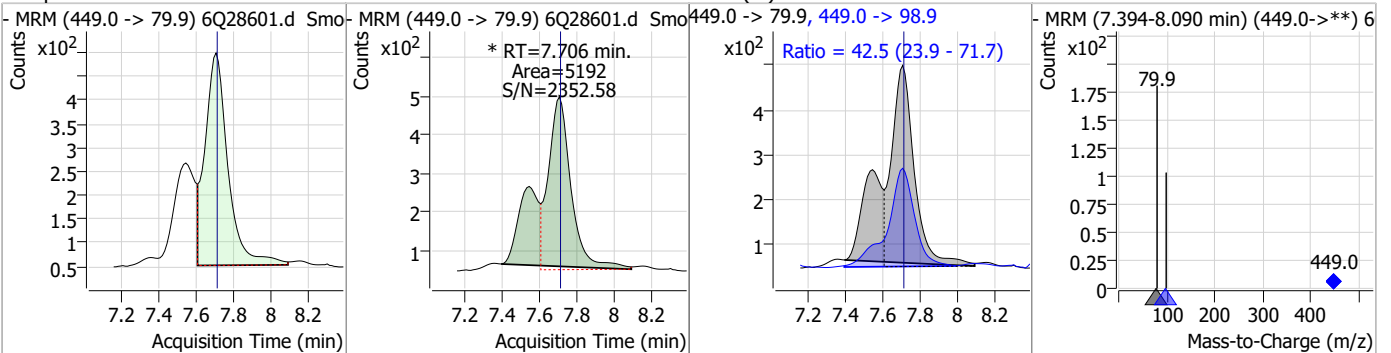


### Perfluorinated Compounds by LC/MS/MS

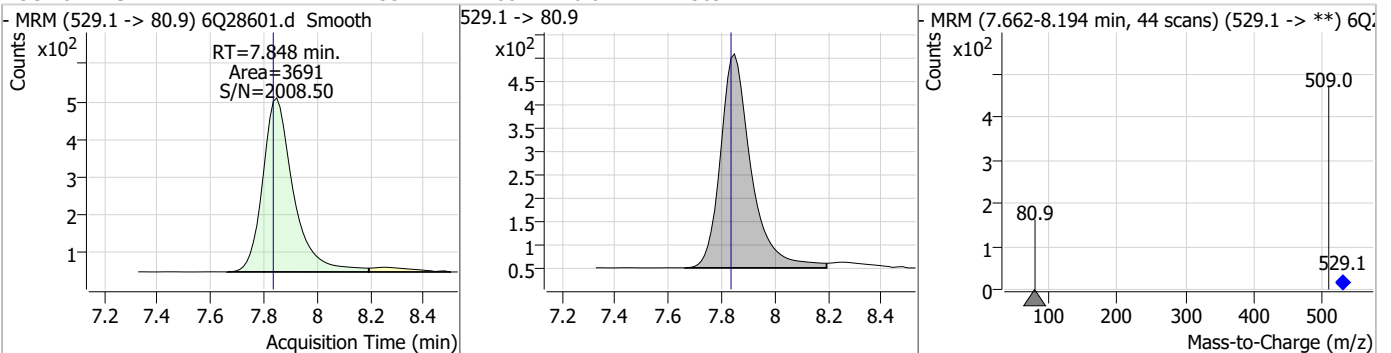
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.09	7.58	0.01	1467 (m)	463.0 -> 219.0	20.6	11.2	33.7



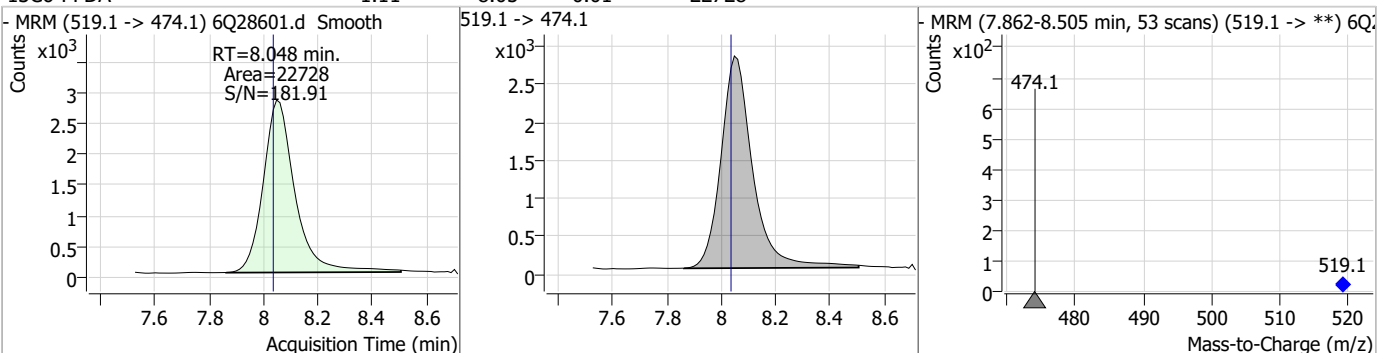
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.21	7.71	0.00	5192 (m)	449.0 -> 98.9	42.5	23.9	71.7



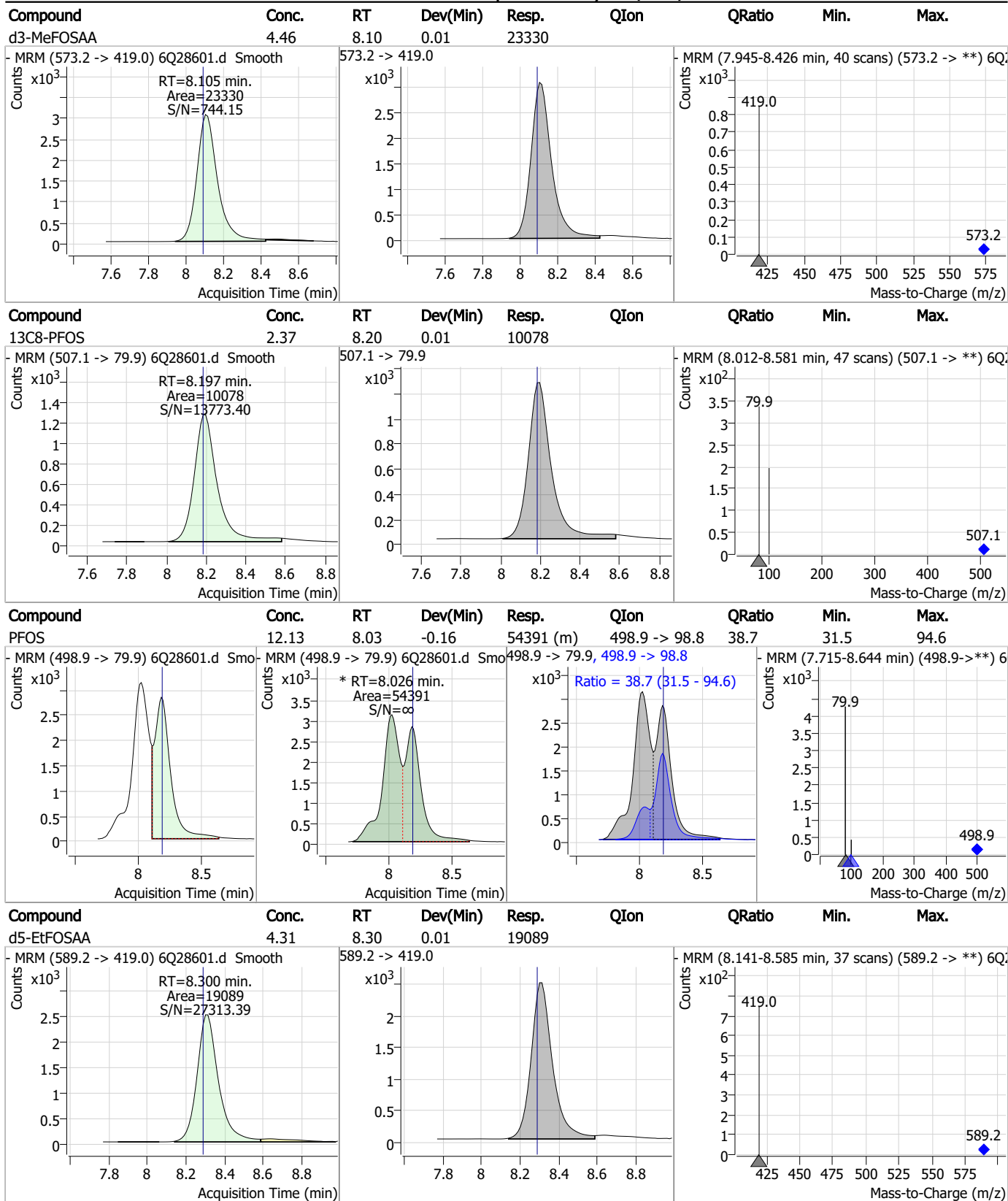
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.55	7.85	0.01	3691				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.11	8.05	0.01	22728				

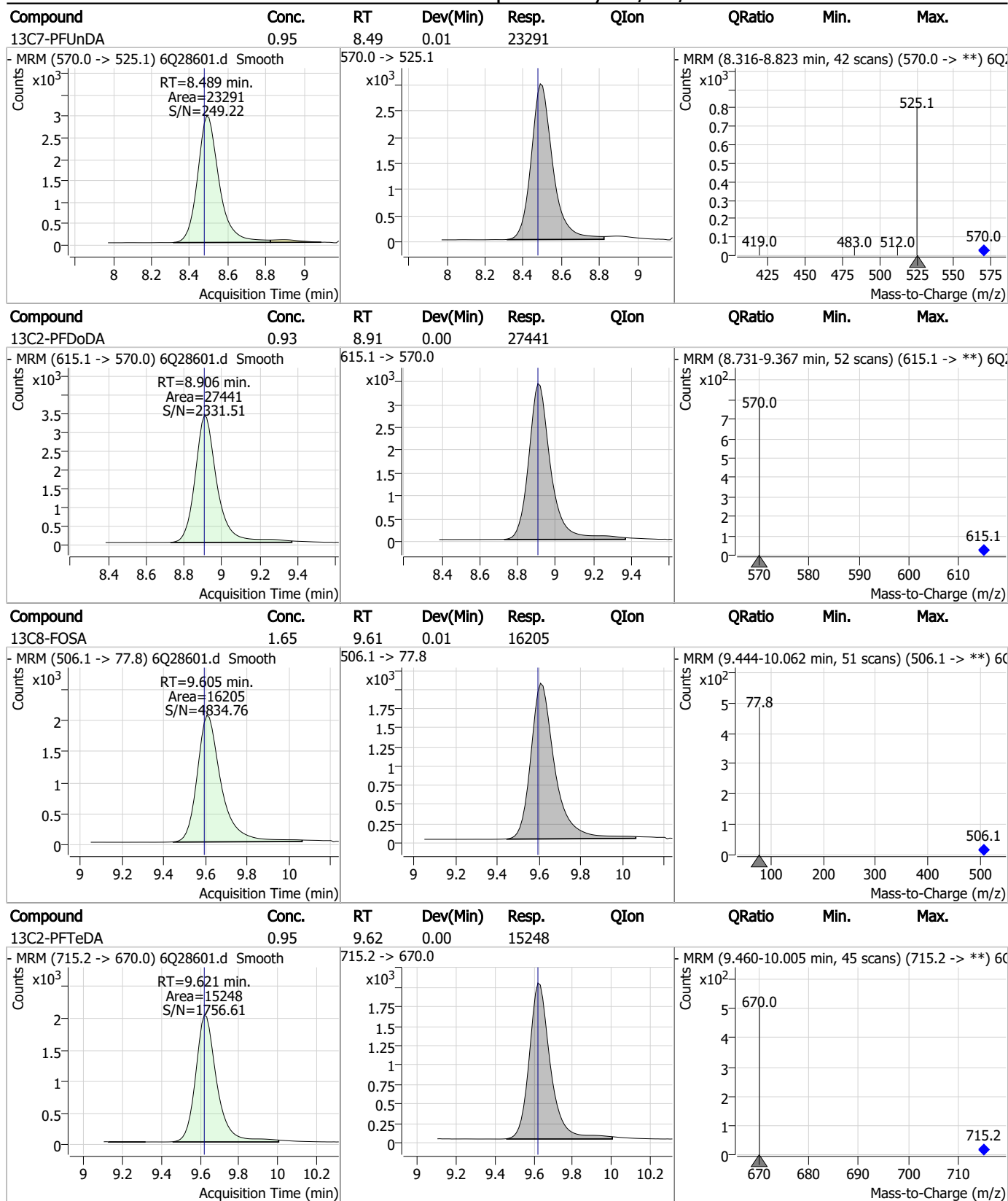


### Perfluorinated Compounds by LC/MS/MS



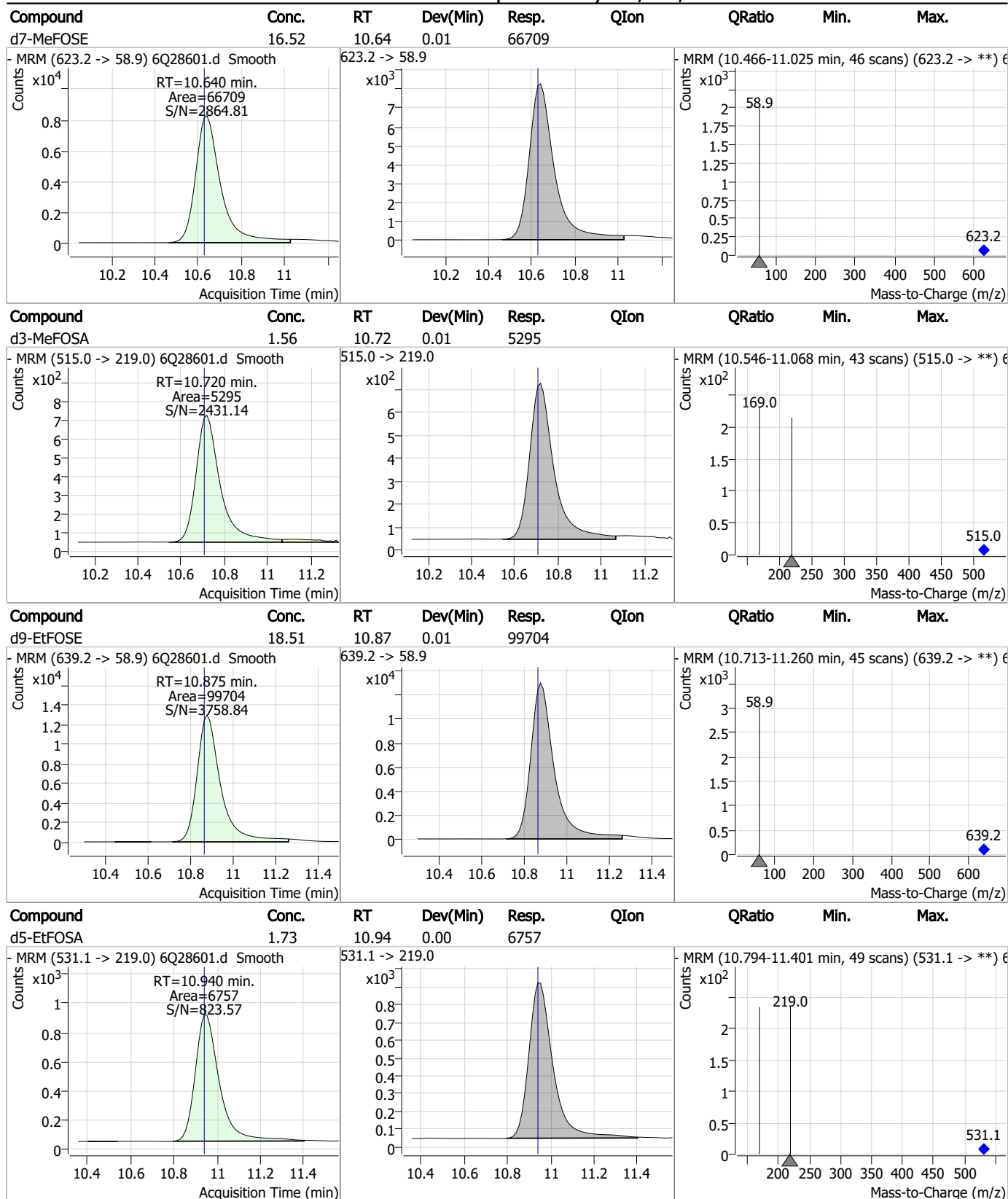
7.5.1  
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### Perfluorinated Compounds by LC/MS/MS



7.5.1  
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### Perfluorinated Compounds by LC/MS/MS



7.5.1  
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# Manual Integration Approval Summary

Sample Number: OP162-DUP                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28601.D                      Analyst approved: 11/21/23 18:39 Natasha Gumtie  
Injection Time: 11/20/23 14:11                      Supervisor approved: 11/21/23 18:41 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		5.38	Split peak
Perfluoroheptanoic acid	375-85-9		6.43	Split peak
Perfluoropentanesulfonic acid	2706-91-4		6.46	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorononanoic acid	375-95-1		7.58	Split peak
Perfluoroheptanesulfonic acid	375-92-8		7.71	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.03	Split peak

7.5.1.1  
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Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

Natasha Gumtie  
 11/13/23 15:02

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28196.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 12:37:13 PM  
 Sample Name : RT TDCA  
 Vial : P1-B3  
 DA Method File : TDCA.quantmethod.xml  
 Batch Name : s6q391 TDCA.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

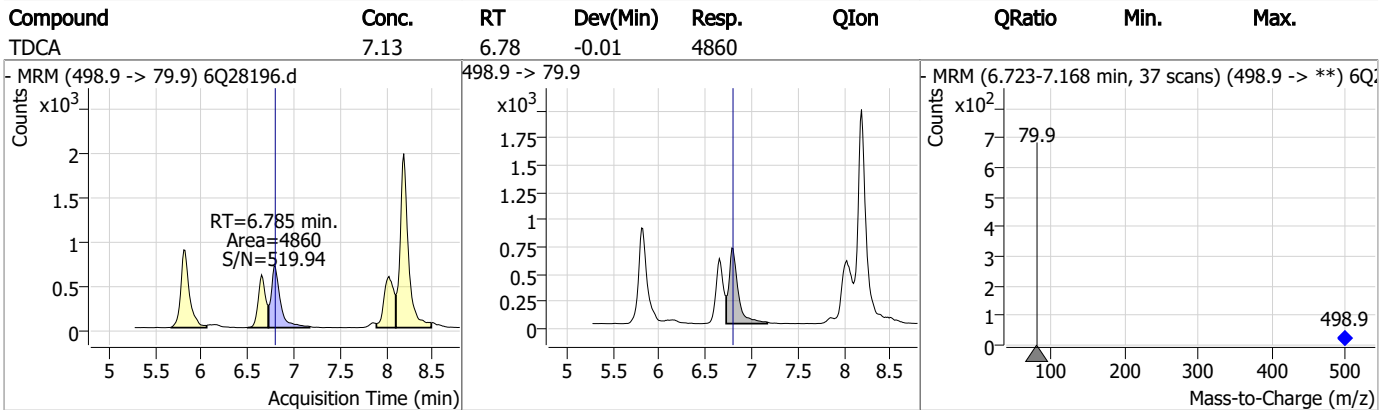
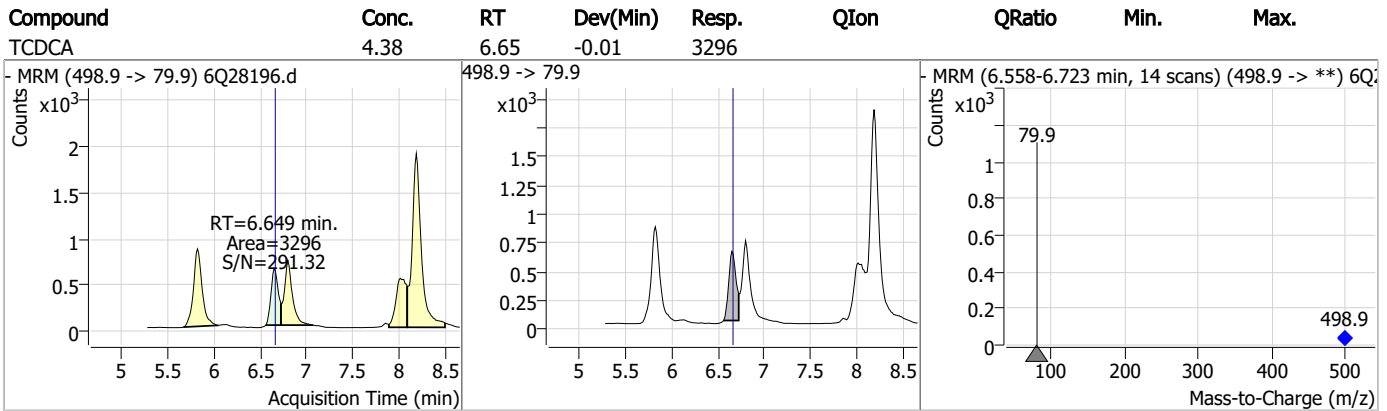
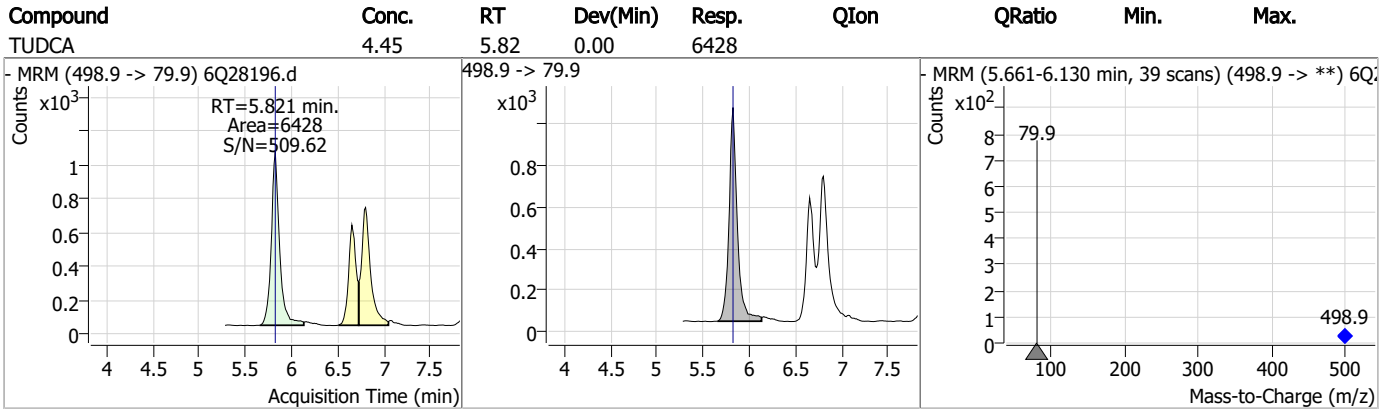
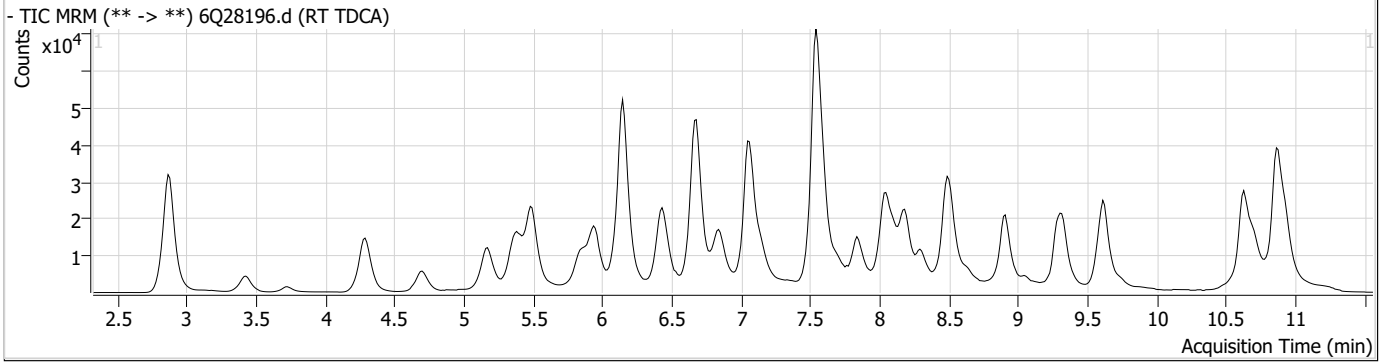
Compound	RT	Transition	Response	Conc. Units	Dev(Min)	QValue
<b>Internal Standards</b>						
M8-PFOS	8.185	507.1 -> 79.9	16306	2.50 µg/L	-0.012	
13C4-PFOS	8.185	502.8 -> 79.9	15665	2.50 µg/L	-0.012	
<b>System Monitoring Compounds</b>						
13C8-PFOS	8.185	507.1 -> 79.9	16306	2.64 µg/L	-0.012	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.6%			
<b>Target Compounds</b>						
PFOS	8.186	498.9 -> 79.9 498.9 -> 98.8	16835 7606	3.02 µg/L	#m	70
TCDCa	6.649	498.9 -> 79.9	3296	4.38 ng/ml		100
TDCA	6.785	498.9 -> 79.9	4860	7.13 ng/ml		100
TUDCA	5.821	498.9 -> 79.9	6428	4.45 ng/ml		100

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

7.6.1  
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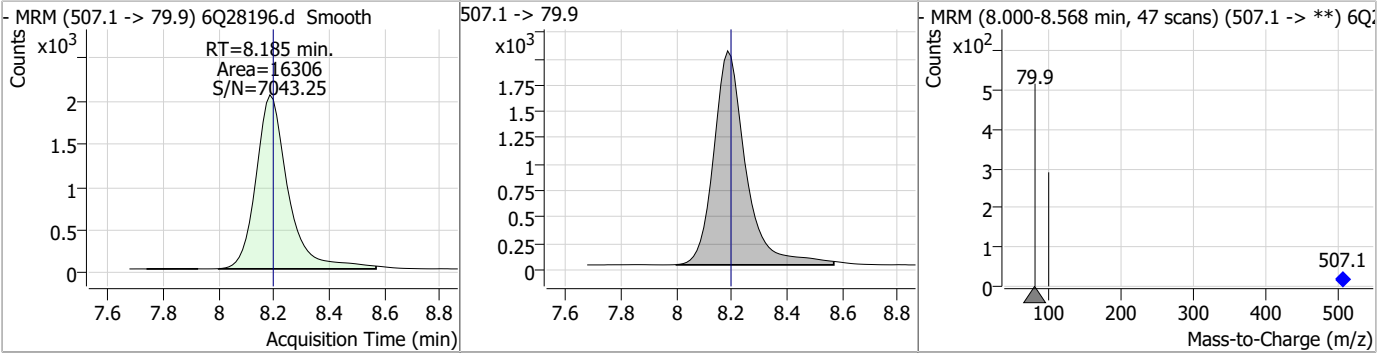
### Perfluorinated Compounds by LC/MS/MS



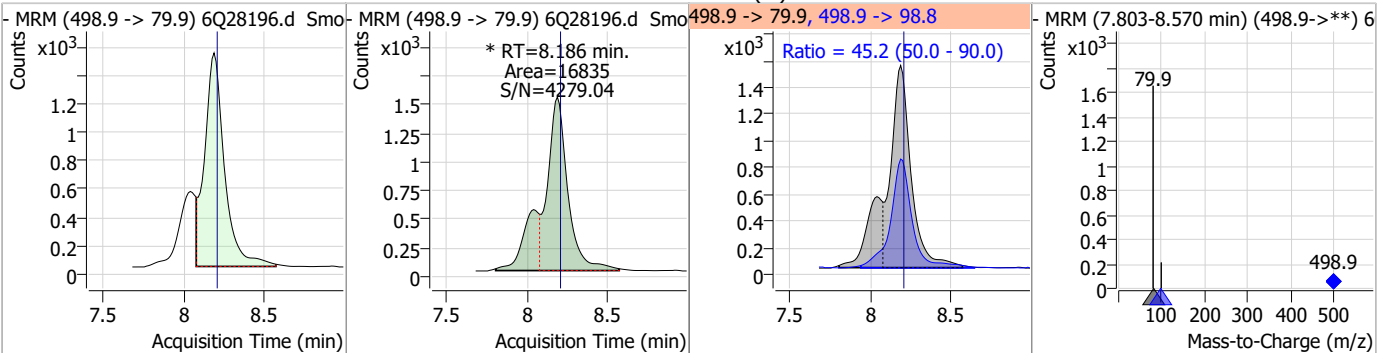


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.64	8.18	-0.01	16306				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.02	8.19	-0.01	16835 (m)	498.9 -> 98.8	45.2	50.0	90.0



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# Manual Integration Approval Summary

Sample Number: S6Q391-RT                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28196.D                      Analyst approved: 11/13/23 13:26 Martha Valls  
Injection Time: 11/12/23 12:37                      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

7.6.1.1

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## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28197.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 12:51:31 PM  
 Sample Name : RT BR-LN  
 Vial : P1-B4  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	116372	10.00 µg/L	0.000
M5-PFPeA	4.284	268.3 -> 223.0	42054	5.00 µg/L	0.000
M5-PFHxA	5.491	318.0 -> 273.0	44188	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	47520	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	72785	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	26155	1.25 µg/L	0.013
M6-PFDA	8.035	519.1 -> 474.1	25374	1.25 µg/L	0.000
M7-PFUnDA	8.489	570.0 -> 525.1	30737	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	38930	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	20581	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	25952	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	18262	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	11322	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	11753	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2424	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	3769	5.00 µg/L	0.000
M2-8:2FTS	7.835	529.1 -> 80.9	4150	5.00 µg/L	0.000
M3-MeFOSAA	8.093	573.2 -> 419.0	28295	5.00 µg/L	0.000
M3-HFPO-DA	5.856	286.9 -> 168.9	28106	10.00 µg/L	0.000
M5-EtFOSAA	8.300	589.2 -> 419.0	24095	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	112998	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	149762	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	10507	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9484	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	10890	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	49426	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	7592	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	75428	2.50 µg/L	0.000
13C2-PFDA	8.036	515.1 -> 470.1	27516	1.25 µg/L	-0.012
13C5-PFNA	7.581	468.0 -> 423.0	25291	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	43079	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2424	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3769	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-8:2FTS	7.835	529.1 -> 80.9	4150	4.64 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C2-PFDoDA	8.906	615.1 -> 570.0	38930	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C2-PFTeDA	9.621	715.2 -> 670.0	20581	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C3-PFBS	5.396	302.1 -> 79.9	18262	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFHxS	7.152	402.1 -> 79.9	11322	2.44 µg/L	0.000

7.6.2  
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## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C4-PFBA	2.860	216.8 -> 171.9	116372	10.17 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C4-PFHpA	6.431	367.1 -> 322.0	47520	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C5-PFHxA	5.491	318.0 -> 273.0	44188	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFPeA	4.284	268.3 -> 223.0	42054	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C6-PFDA	8.035	519.1 -> 474.1	25374	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C7-PFUnDA	8.489	570.0 -> 525.1	30737	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C8-FOSA	9.605	506.1 -> 77.8	25952	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOA	7.062	421.1 -> 376.0	72785	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-PFOS	8.185	507.1 -> 79.9	11753	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C9-PFNA	7.580	472.1 -> 427.0	26155	1.23 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%	
d3-MeFOSAA	8.093	573.2 -> 419.0	28295	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C3-HFPO-DA	5.856	286.9 -> 168.9	28106	10.51 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
d3-MeFOSA	10.707	515.0 -> 219.0	9484	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
d5-EtFOSAA	8.300	589.2 -> 419.0	24095	5.04 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d7-MeFOSE	10.628	623.2 -> 58.9	112998	25.92 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d9-EtFOSE	10.862	639.2 -> 58.9	149762	25.75 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d5-EtFOSA	10.940	531.1 -> 219.0	10507	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	198613	50.31 µg/L	99
		327.1 -> 80.9	80503		
6:2FTS	6.836	427.1 -> 407.0	215987	52.63 µg/L	99
		427.1 -> 80.9	76434		
8:2FTS	7.836	527.1 -> 507.0	165776	52.73 µg/L	100
		527.1 -> 80.8	59834		
EtFOSAA	8.301	584.2 -> 419.1	55701	14.30 µg/L	96
		584.2 -> 526.0	35467		
FOSA	9.596	498.1 -> 77.9	339285	34.03 µg/L	100
		498.1 -> 478.0	9937		
MeFOSAA	8.106	570.1 -> 419.0	73599	13.79 µg/L	99
		570.1 -> 483.0	17044		
PFBA	2.868	212.8 -> 168.9	206211	54.05 µg/L	100
PFBS	5.397	298.7 -> 79.9	84319	12.11 µg/L	99
		298.7 -> 98.8	31014		
PFDA	8.048	512.9 -> 469.0	335427	14.23 µg/L	97
		512.9 -> 219.0	52784		
PFDoDA	8.907	613.1 -> 569.0	389949	13.49 µg/L	98
		613.1 -> 319.0	42104		
PFDS	9.057	599.0 -> 79.9	39232	12.83 µg/L	100

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	18443			
PFHpA	6.432	363.1 -> 319.0	330498	13.52	µg/L	98
		363.1 -> 169.0	51377			
PFHpS	7.706	449.0 -> 79.9	61643	12.34	µg/L	96
		449.0 -> 98.9	31164			
PFHxA	5.481	313.0 -> 269.0	227228	13.75	µg/L	100
		313.0 -> 118.9	11171			
PFHxS	7.153	398.7 -> 79.9	65727	12.51	µg/L	m 86
		398.7 -> 98.9	30867			
PFNA	7.442	463.0 -> 419.0	538535	33.08	µg/L	m 98
		463.0 -> 219.0	127373			
PFNS	8.639	548.8 -> 79.9	53508	12.86	µg/L	98
		548.8 -> 98.9	29191			
PFOA	7.063	413.0 -> 369.0	938063	32.54	µg/L	m 98
		413.0 -> 169.0	162656			
PFOS	8.186	498.9 -> 79.9	65712	12.56	µg/L	m 80
		498.9 -> 98.8	31152			
PFPeA	4.286	263.0 -> 219.0	297280	27.87	µg/L	100
PFPeS	6.470	349.1 -> 79.9	72125	12.87	µg/L	99
		349.1 -> 98.9	33752			
PFTeDA	9.622	713.1 -> 669.0	362556	14.46	µg/L	100
		713.1 -> 168.9	21678			
PFTrDA	9.290	663.0 -> 619.0	397822	14.05	µg/L	99
		663.0 -> 168.9	26883			
PFUnDA	8.489	563.1 -> 519.0	334799	14.00	µg/L	95
		563.1 -> 269.1	44510			
11CI-PF3OUdS	9.329	630.9 -> 450.9	293158	23.94	µg/L	99
		632.9 -> 452.9	93292			
9CI-PF3ONS	8.503	530.8 -> 351.0	388981	23.07	µg/L	97
		532.8 -> 353.0	129965			
ADONA	6.681	376.9 -> 250.9	1134357	23.13	µg/L	95
		376.9 -> 84.8	314807			
HFPO-DA	5.857	284.9 -> 168.9	69624	24.76	µg/L	99
		284.9 -> 184.9	7288			
3:3FTCA	3.721	241.0 -> 177.0	44669	66.39	µg/L	100
		241.0 -> 117.0	5143			
5:3FTCA	6.146	341.0 -> 237.1	1029704	340.70	µg/L	99
		341.0 -> 217.0	725062			
7:3FTCA	7.545	441.0 -> 316.9	629423	328.84	µg/L	98
		441.0 -> 336.9	1318738			
EtFOSA	10.942	526.0 -> 219.0	231832	49.13	µg/L	98
		526.0 -> 169.0	305662			
EtFOSE	10.875	630.0 -> 58.9	532752	87.33	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	198445	46.84	µg/L	100
		511.9 -> 169.0	276802			
MeFOSE	10.641	616.1 -> 58.9	413788	89.74	µg/L	100
PFDoS	9.736	699.1 -> 79.9	25468	12.94	µg/L	99
		699.1 -> 98.8	14190			
NFDHA	5.373	295.0 -> 201.0	49525	25.87	µg/L	94
		295.0 -> 84.9	13849			
PFMBA	4.700	279.0 -> 85.1	204311	27.79	µg/L	100
PFMPA	3.426	229.0 -> 84.9	154431	28.01	µg/L	100
PFEESA	5.937	314.8 -> 134.9	489987	23.97	µg/L	100
		314.8 -> 82.9	17820			

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

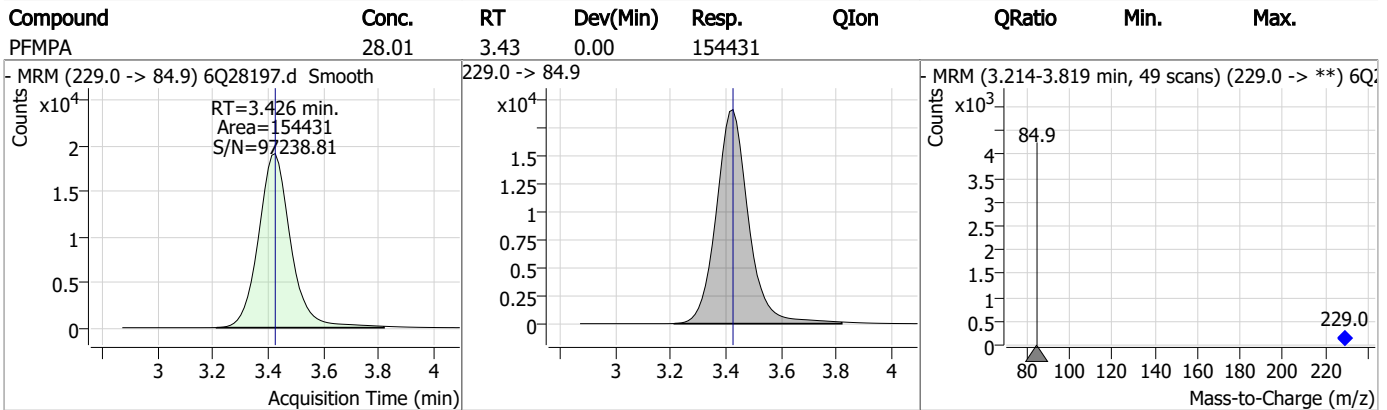
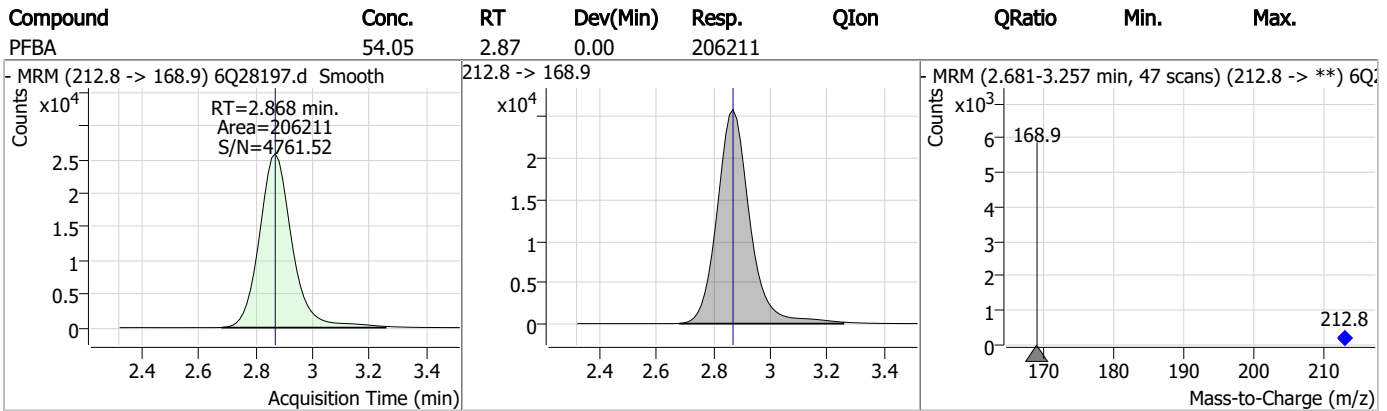
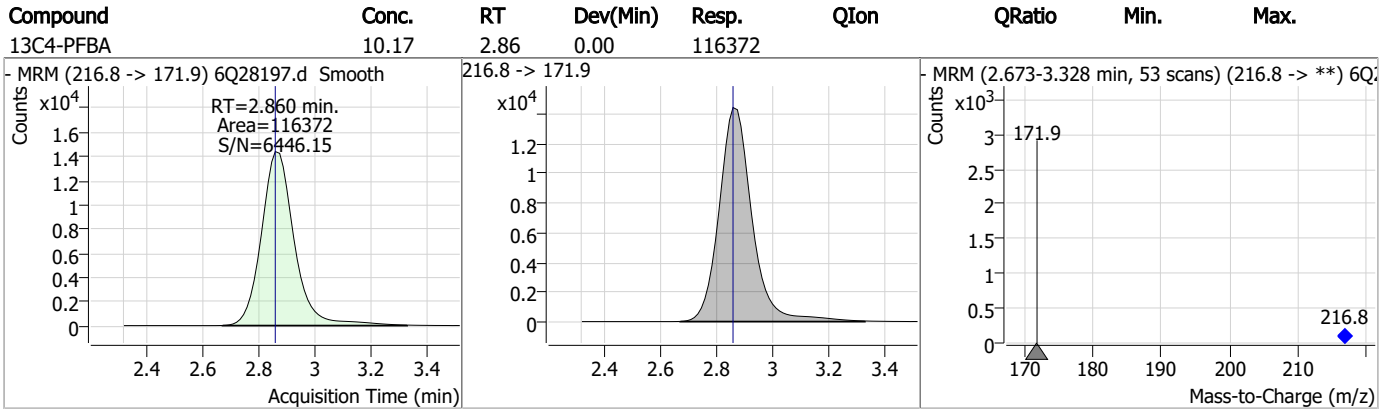
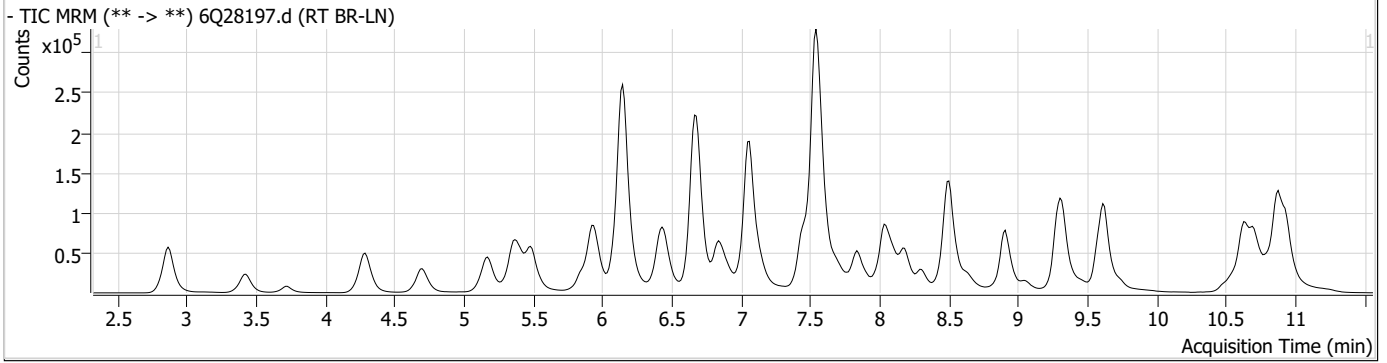
# Perfluorinated Compounds by LC/MS/MS

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

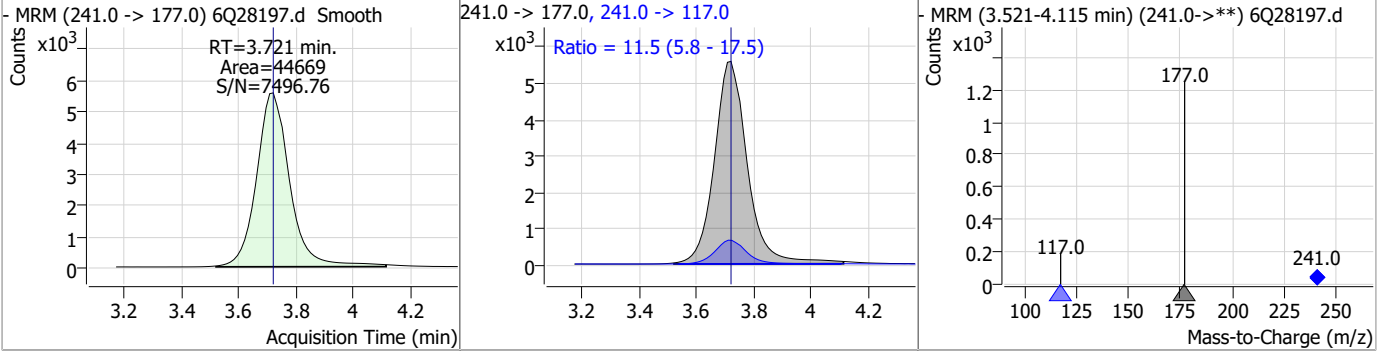
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# Perfluorinated Compounds by LC/MS/MS

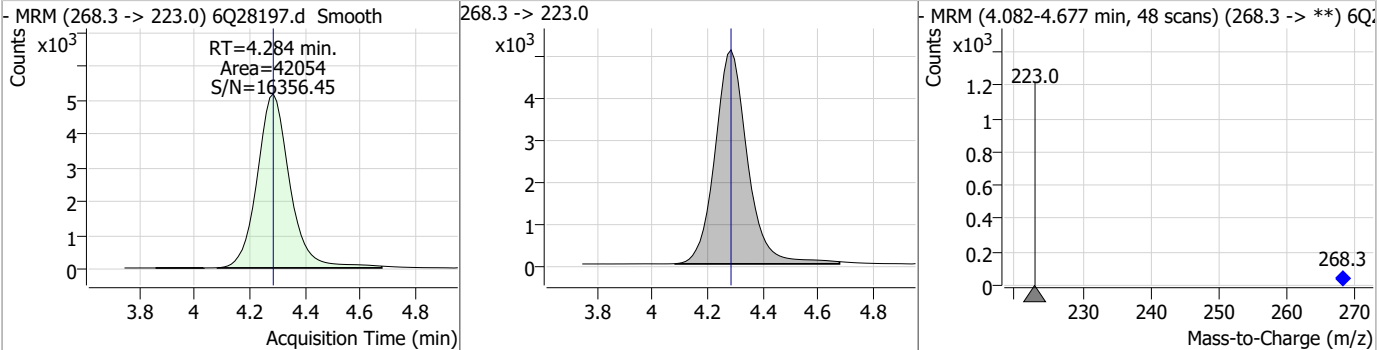


# Perfluorinated Compounds by LC/MS/MS

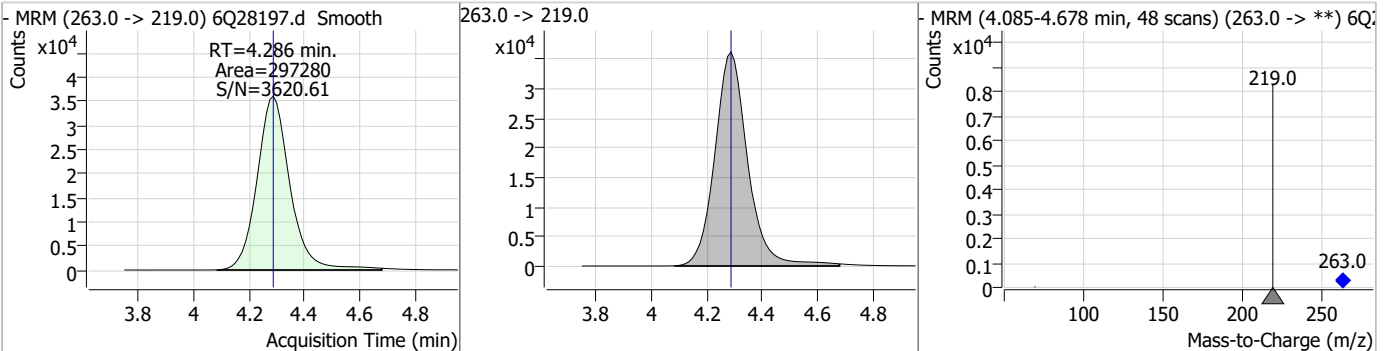
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	66.39	3.72	0.00	44669	241.0 -> 117.0	11.5	5.8	17.5



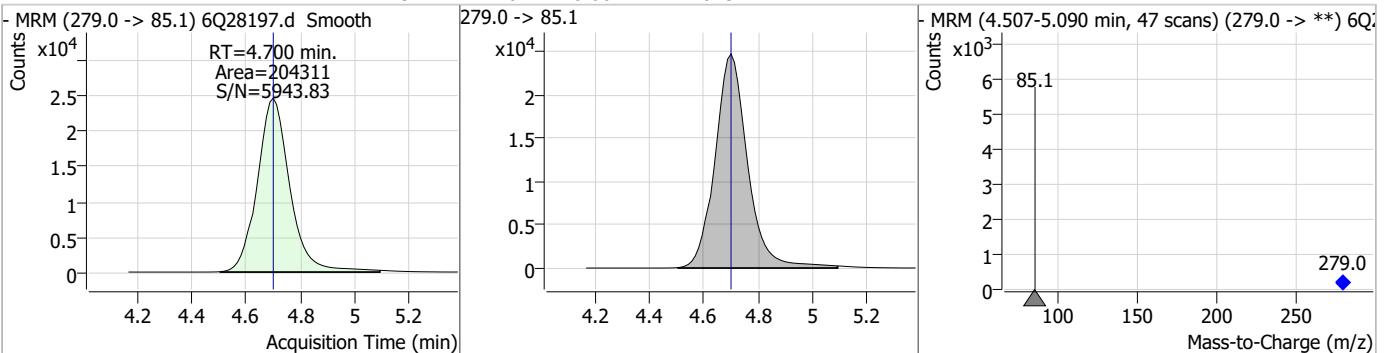
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.86	4.28	0.00	42054				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	27.87	4.29	0.00	297280				

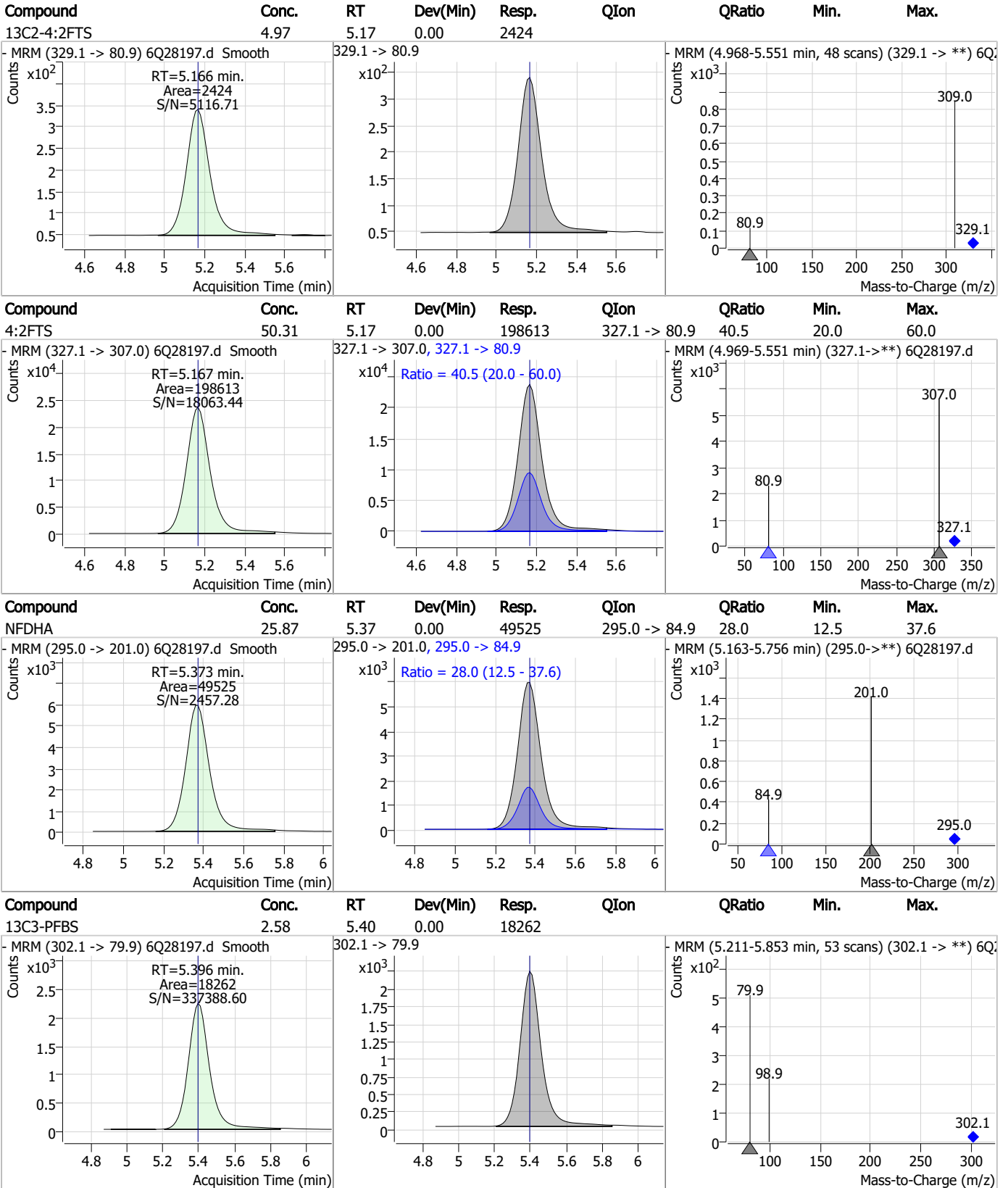


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	27.79	4.70	0.00	204311				



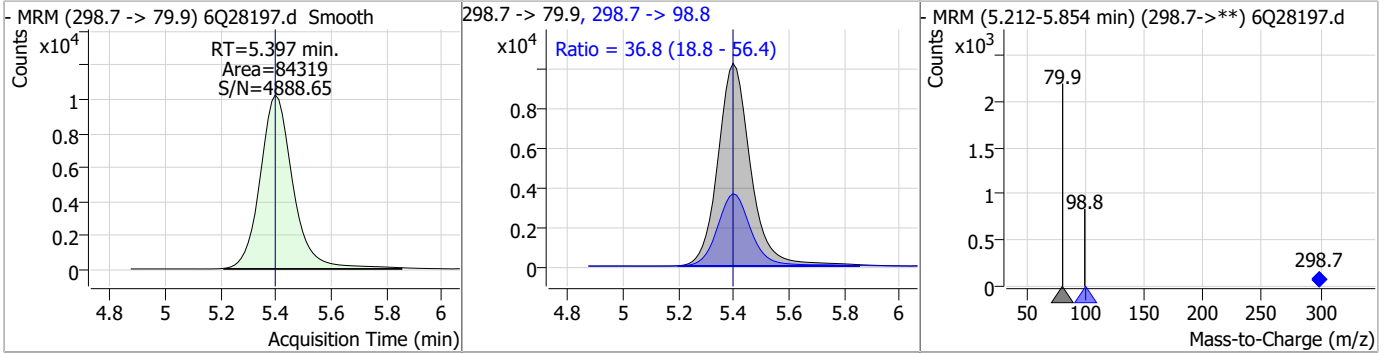


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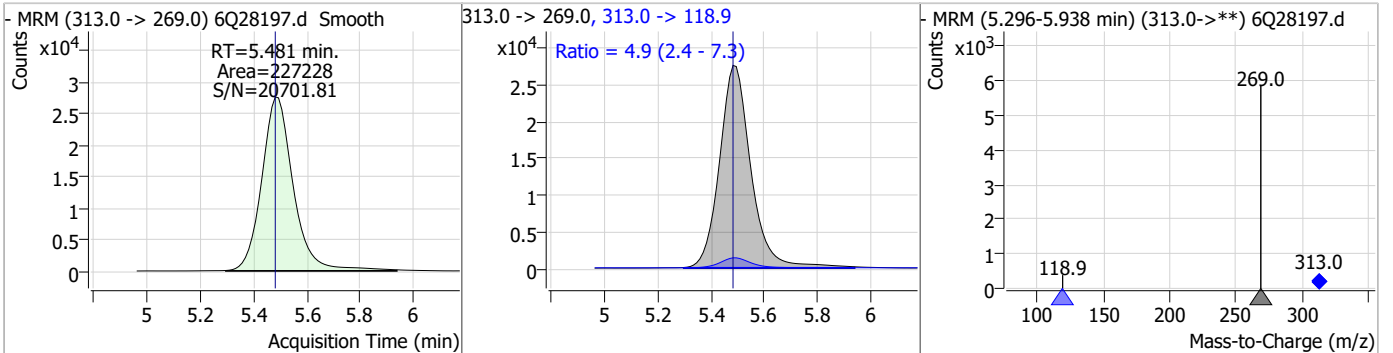


# Perfluorinated Compounds by LC/MS/MS

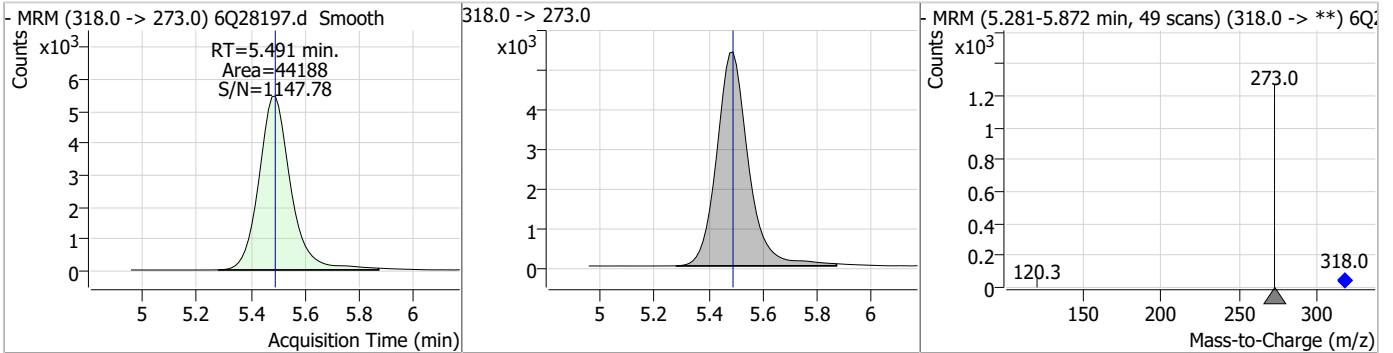
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	12.11	5.40	0.00	84319	298.7 -> 98.8	36.8	18.8	56.4



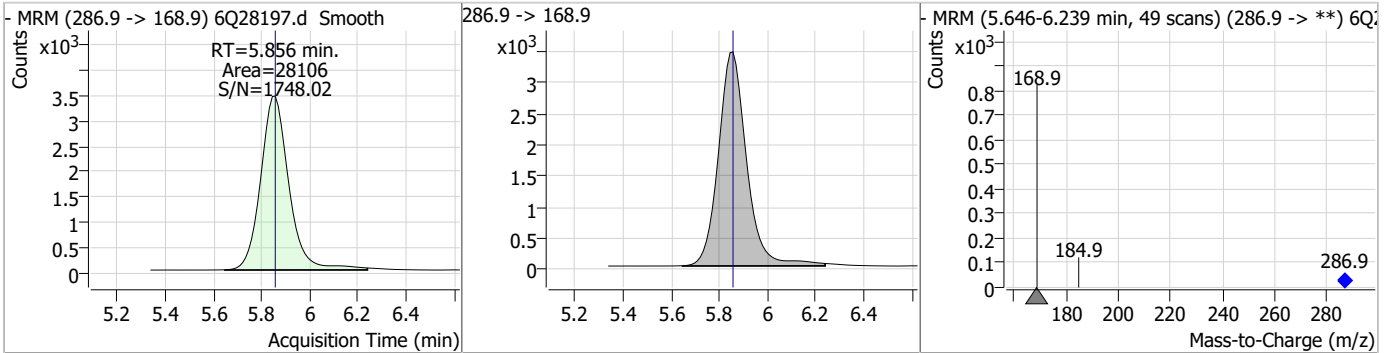
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.75	5.48	0.00	227228	313.0 -> 118.9	4.9	2.4	7.3



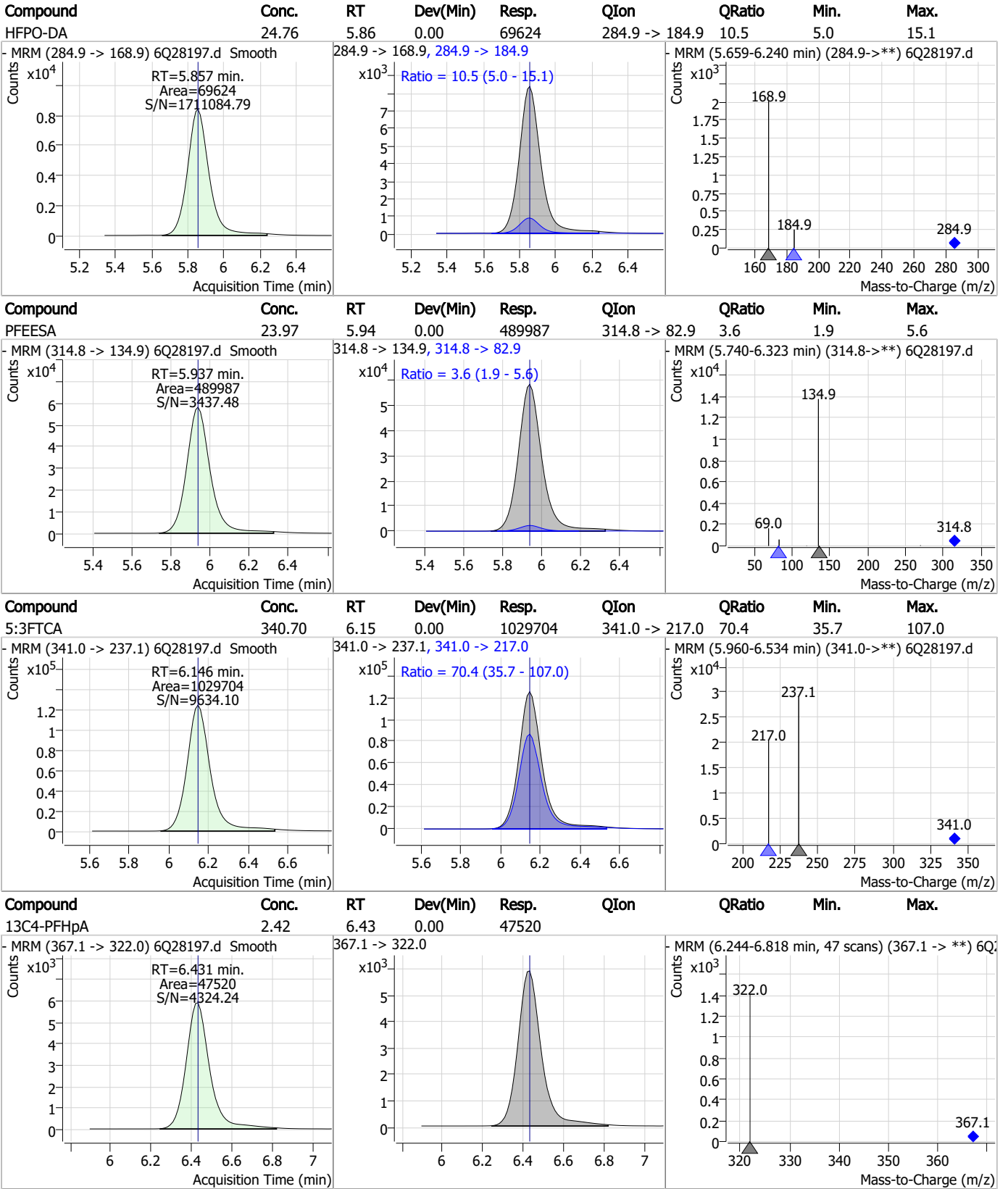
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.47	5.49	0.00	44188	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.51	5.86	0.00	28106	286.9 -> 168.9			



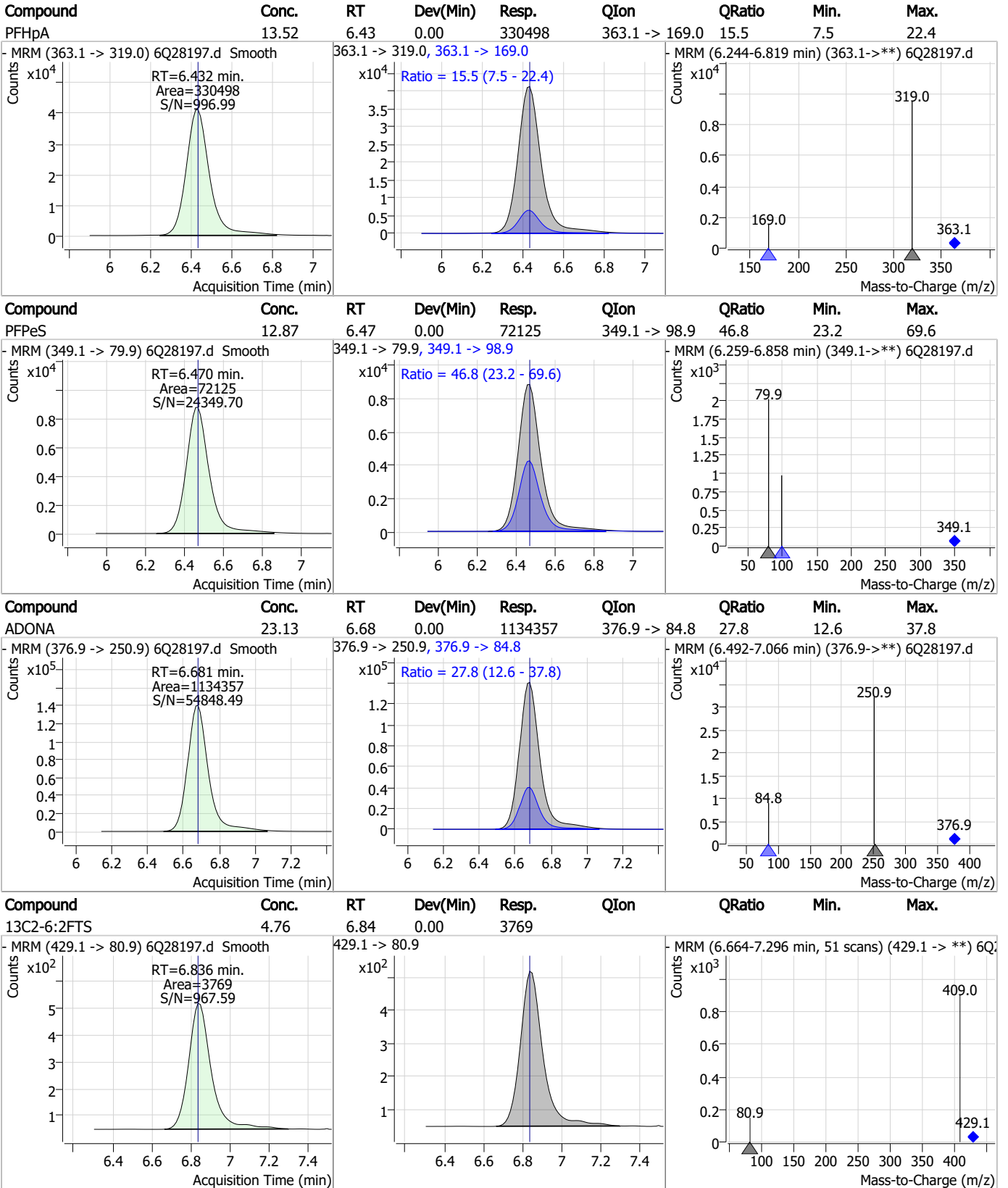
# Perfluorinated Compounds by LC/MS/MS



7.6.2

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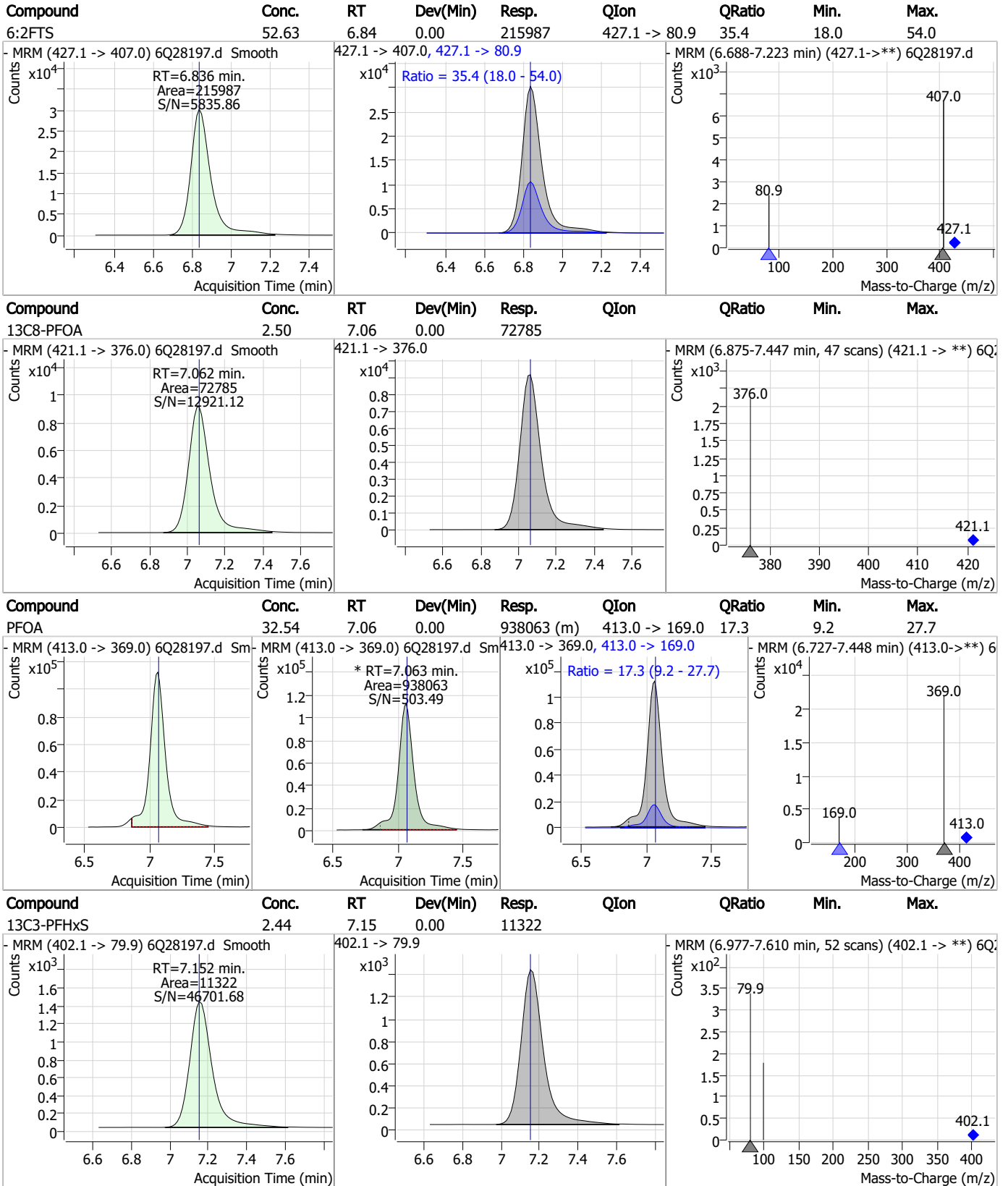
# Perfluorinated Compounds by LC/MS/MS



7.6.2

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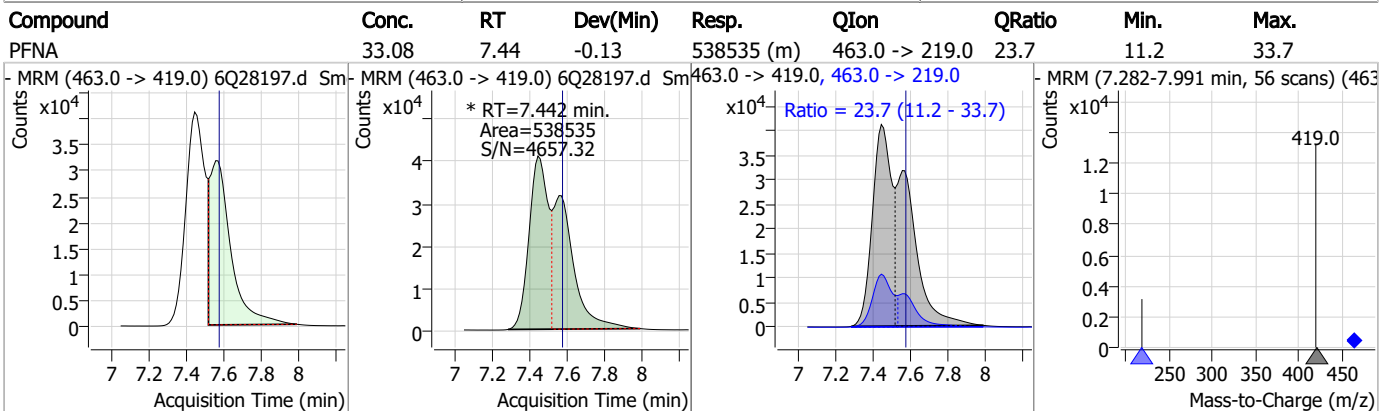
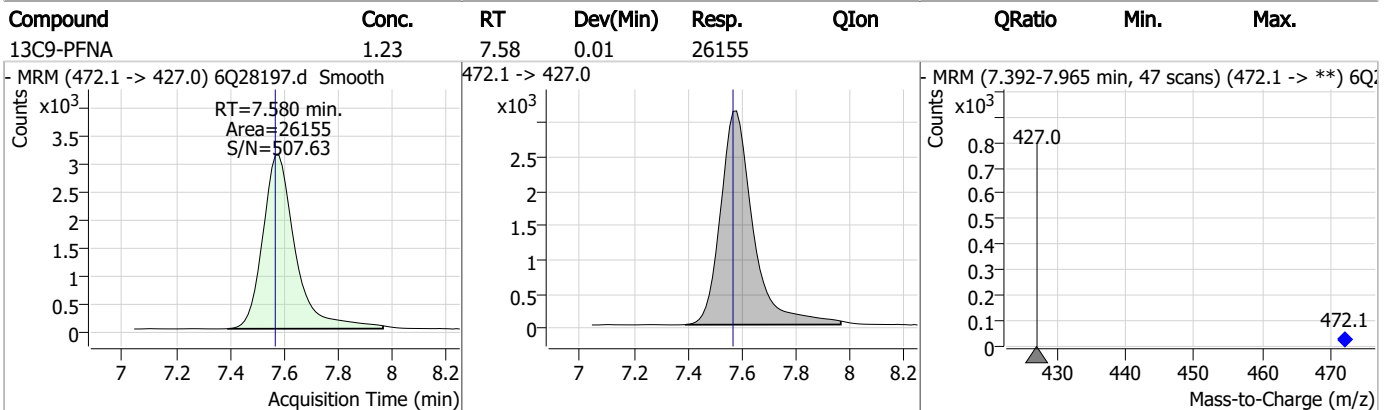
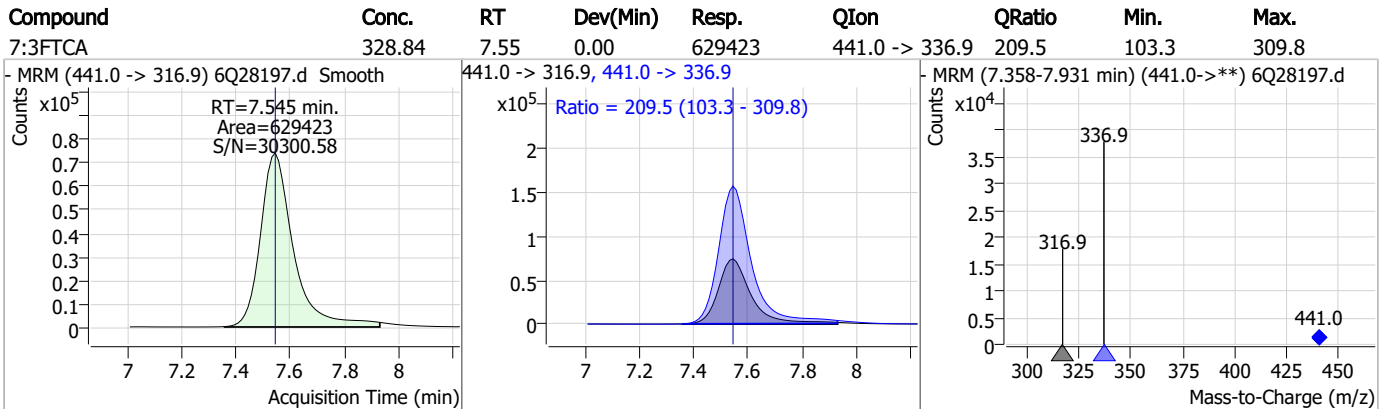
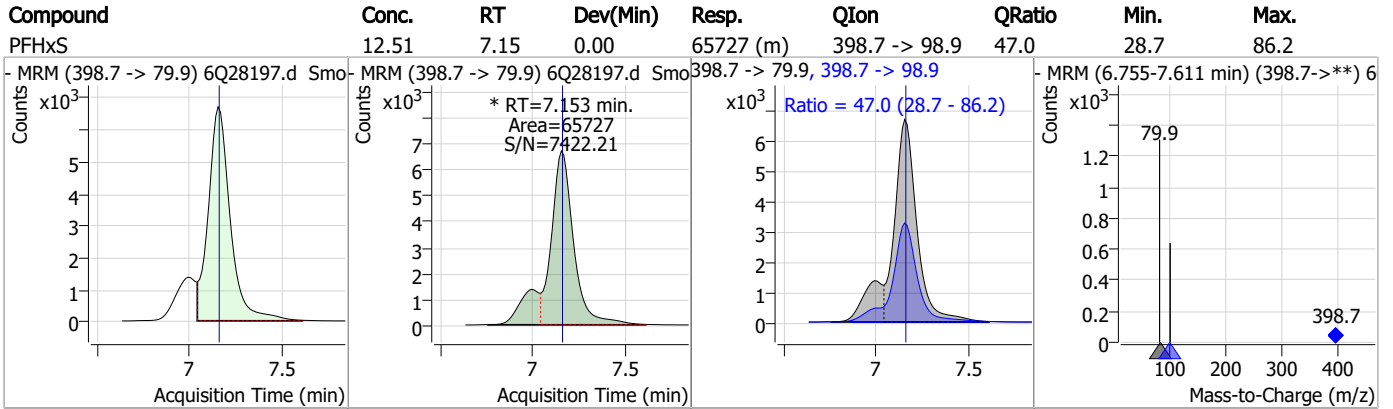
# Perfluorinated Compounds by LC/MS/MS



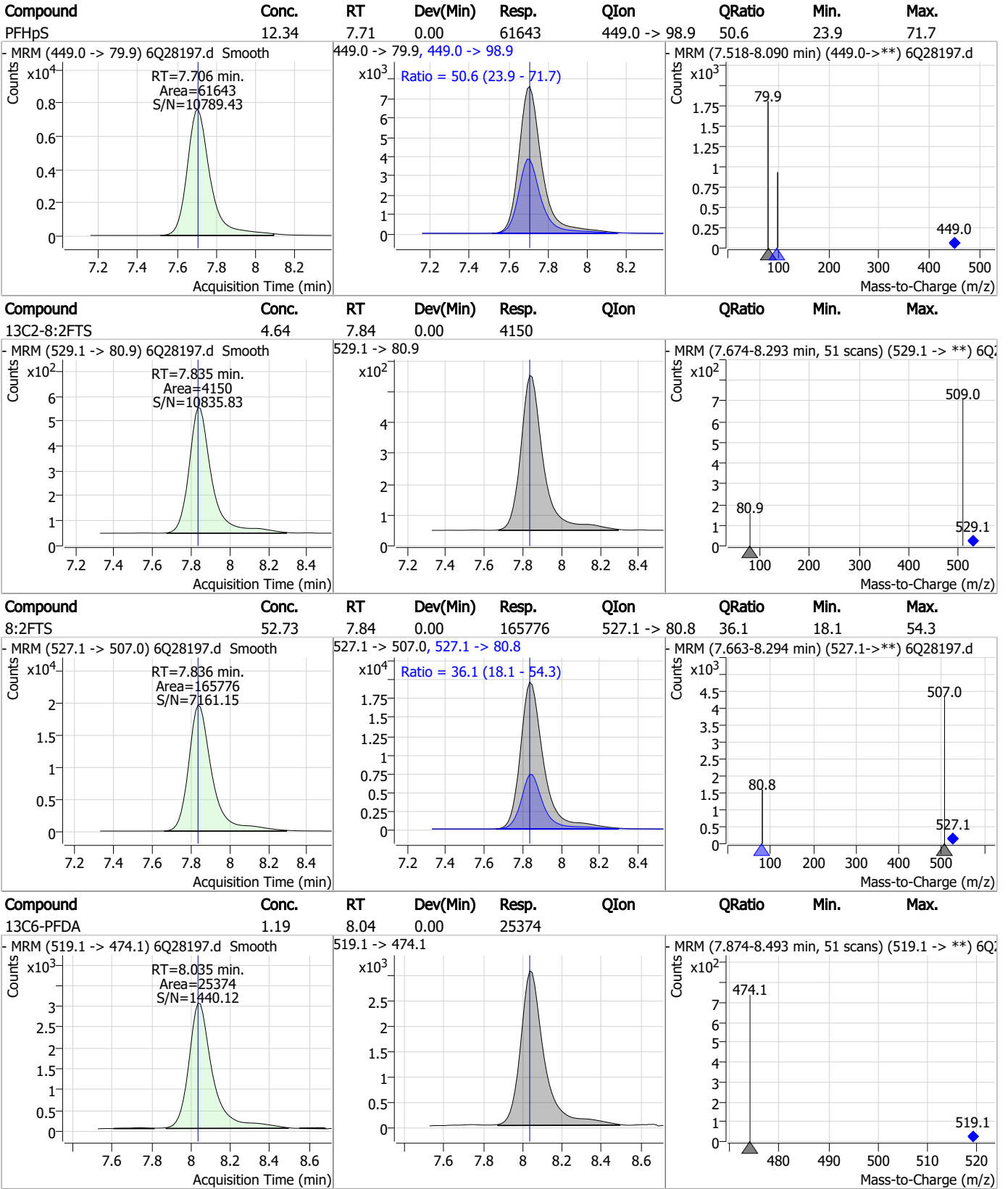
7.6.2

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# Perfluorinated Compounds by LC/MS/MS



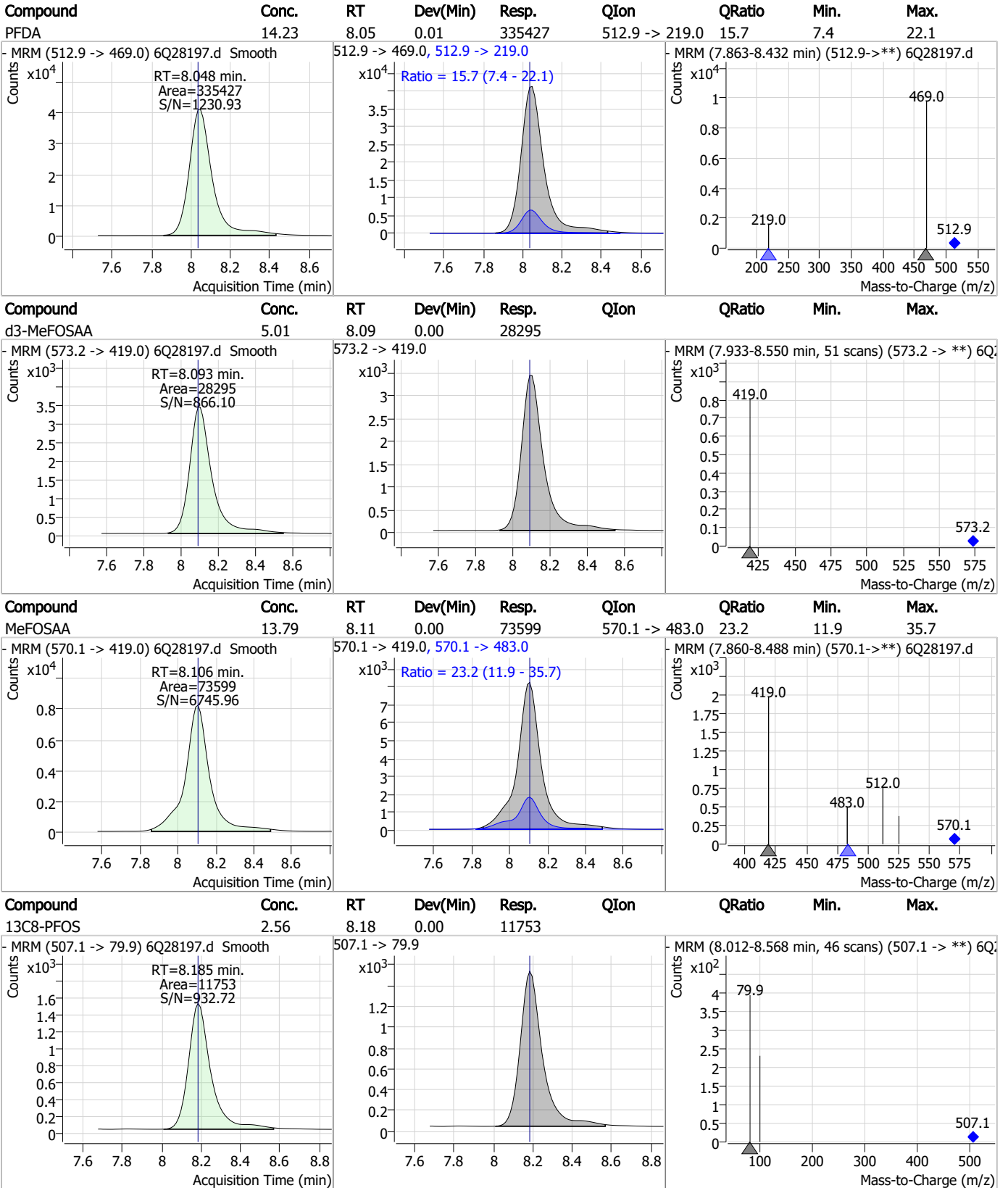
# Perfluorinated Compounds by LC/MS/MS



7.6.2

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# Perfluorinated Compounds by LC/MS/MS

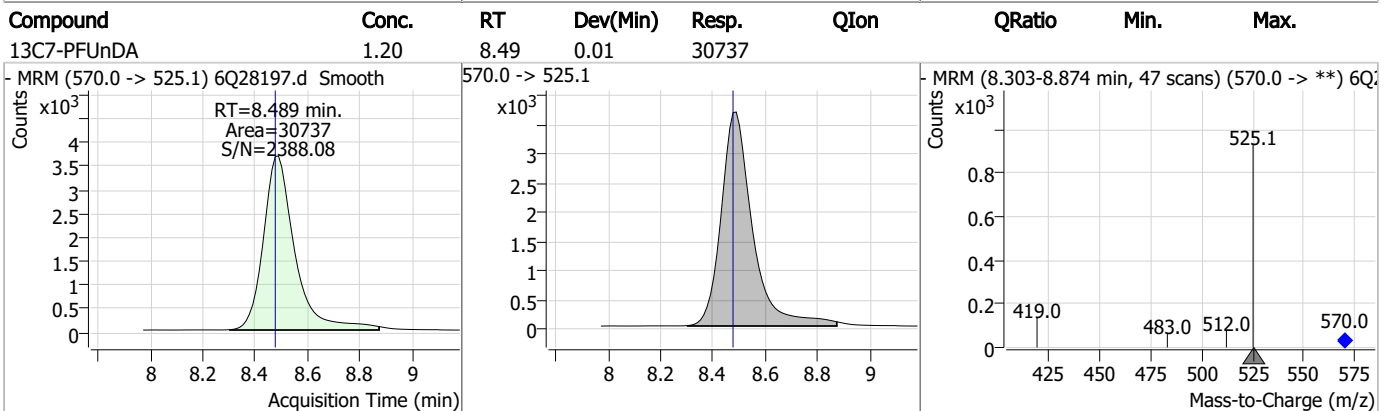
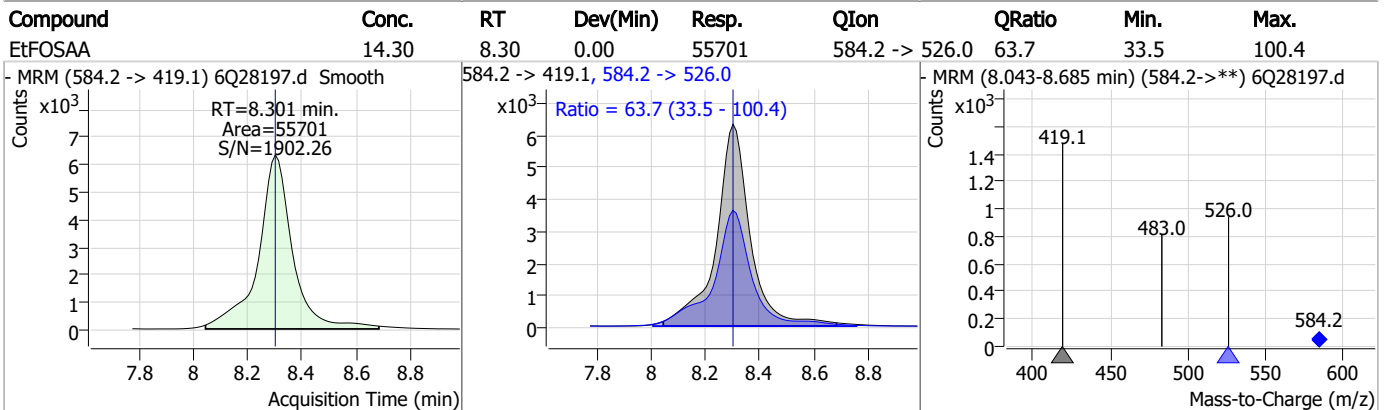
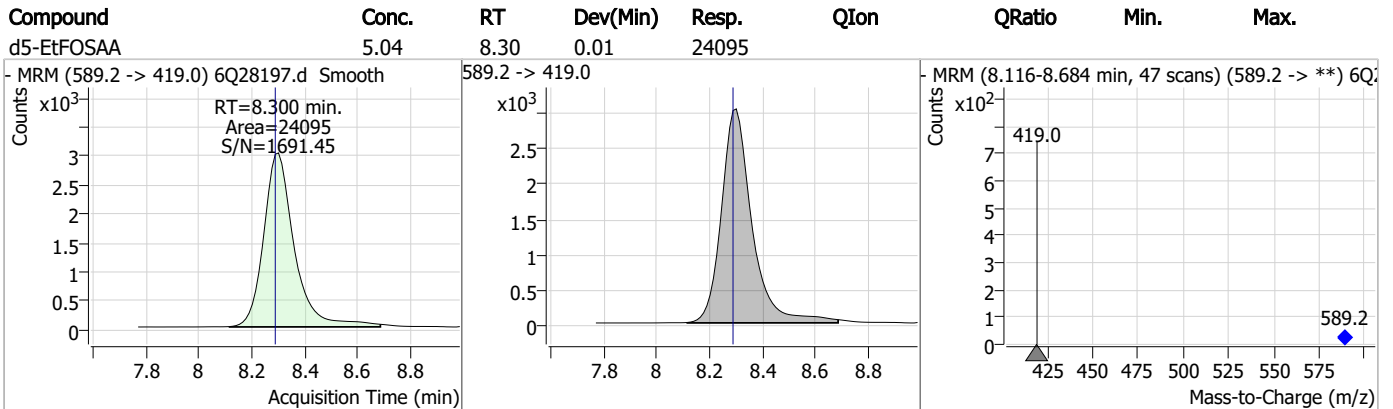
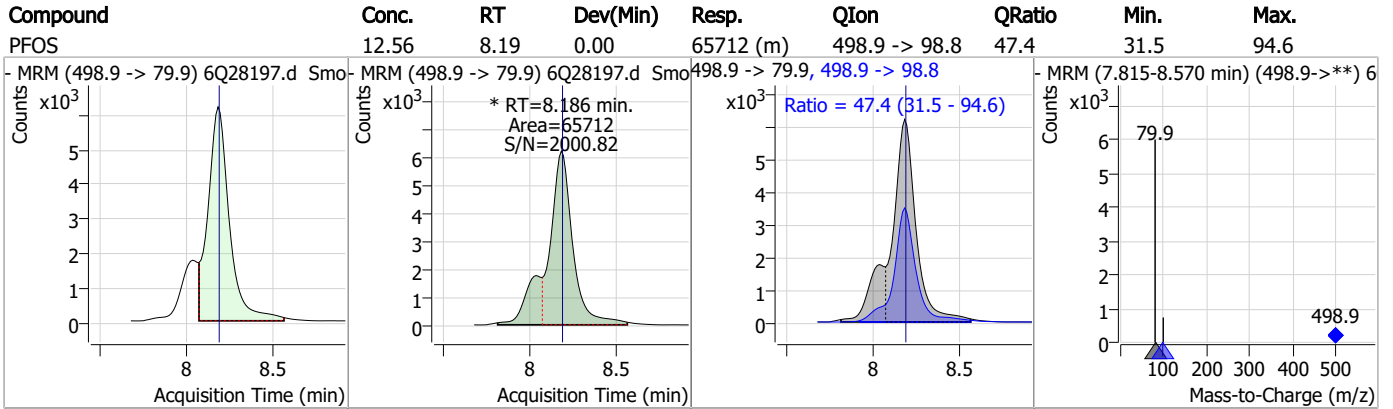


7.6.2

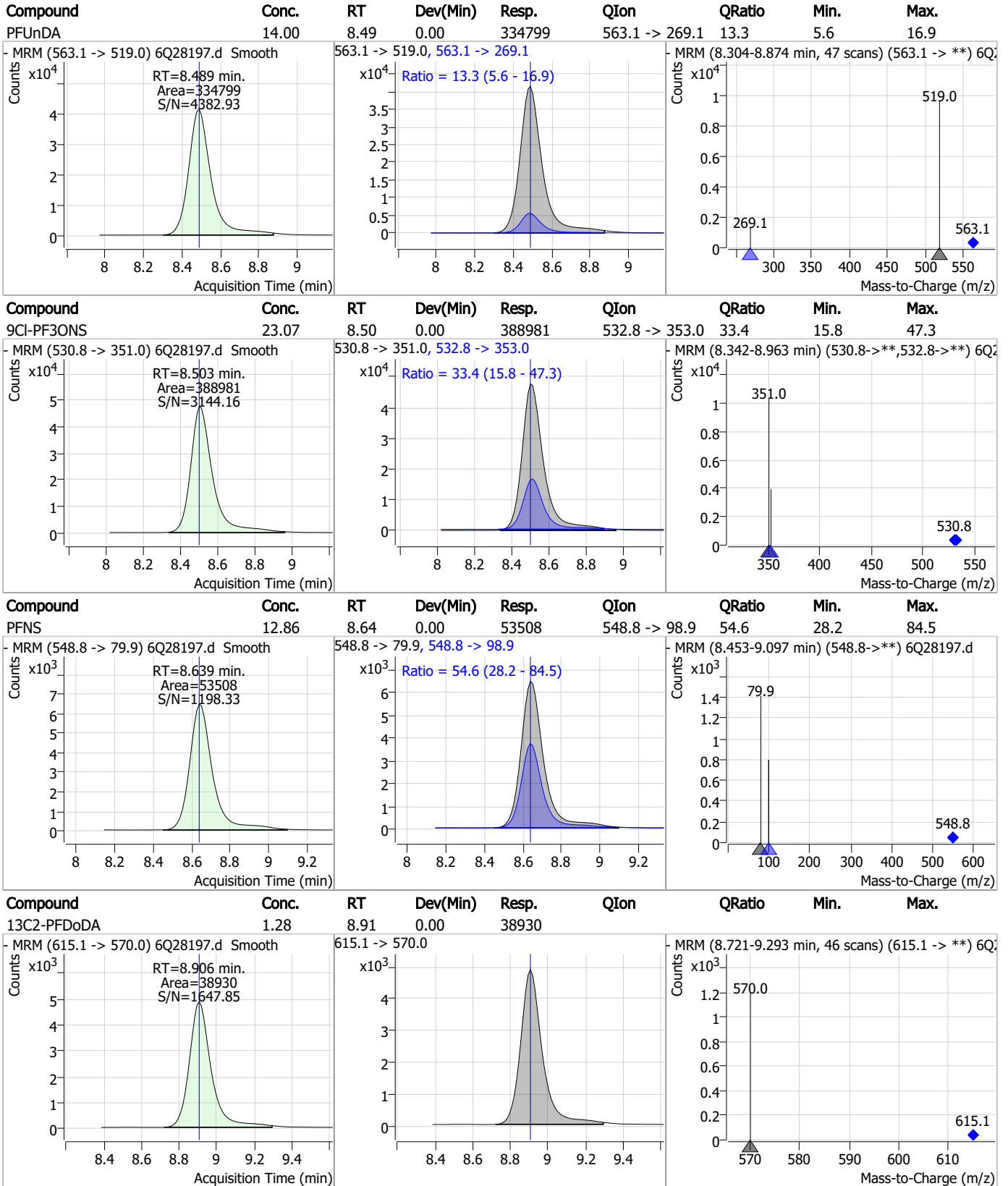
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# Perfluorinated Compounds by LC/MS/MS



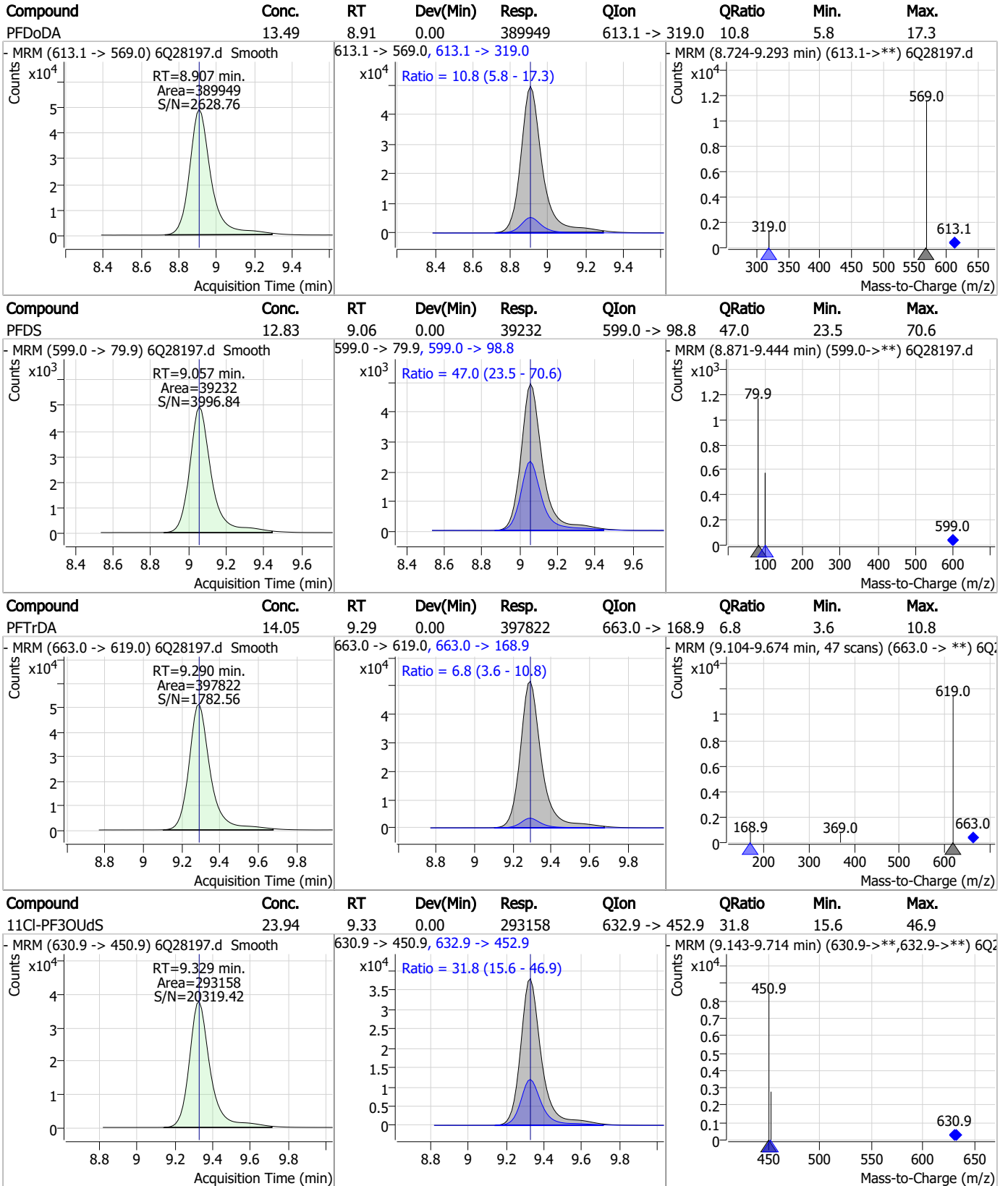
# Perfluorinated Compounds by LC/MS/MS



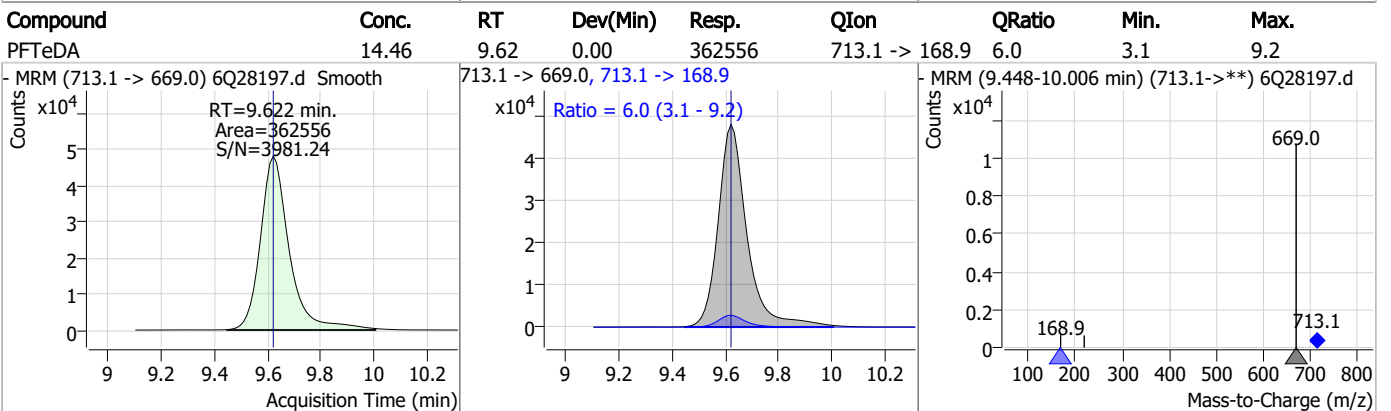
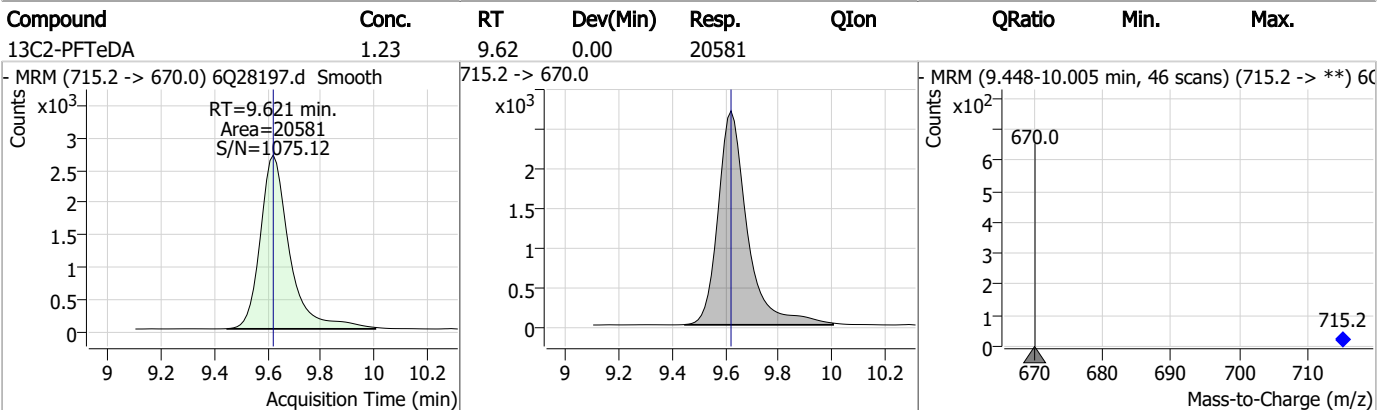
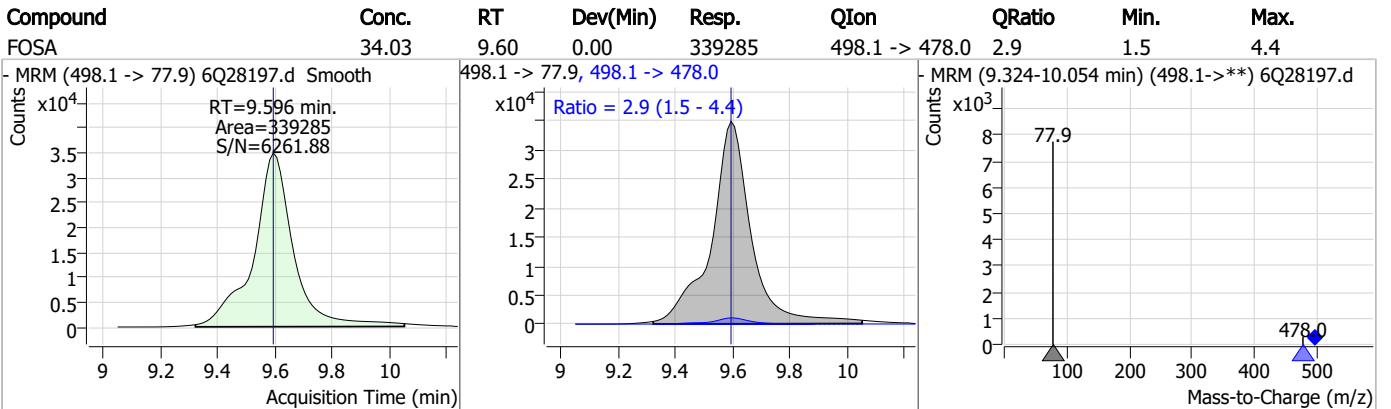
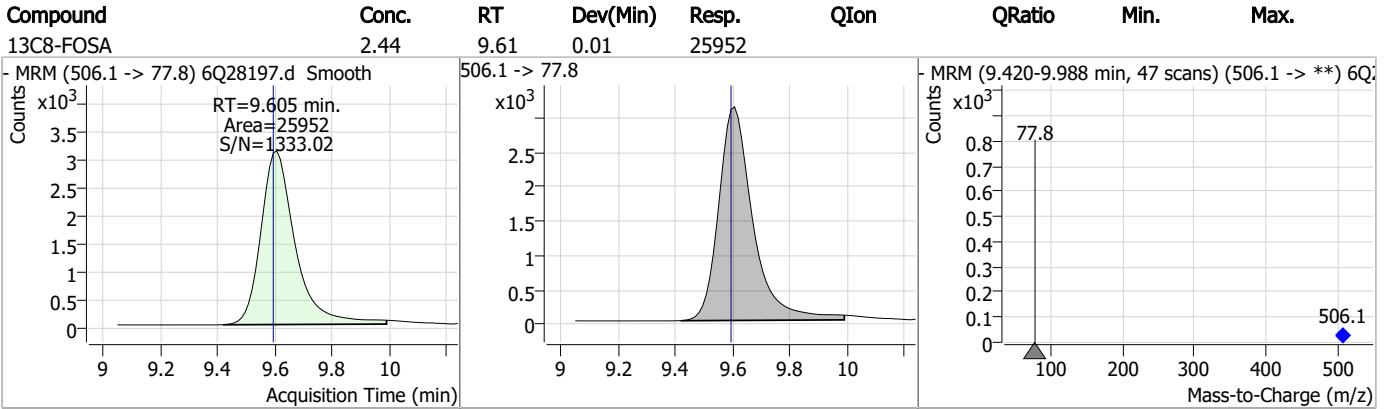
7.6.2

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# Perfluorinated Compounds by LC/MS/MS

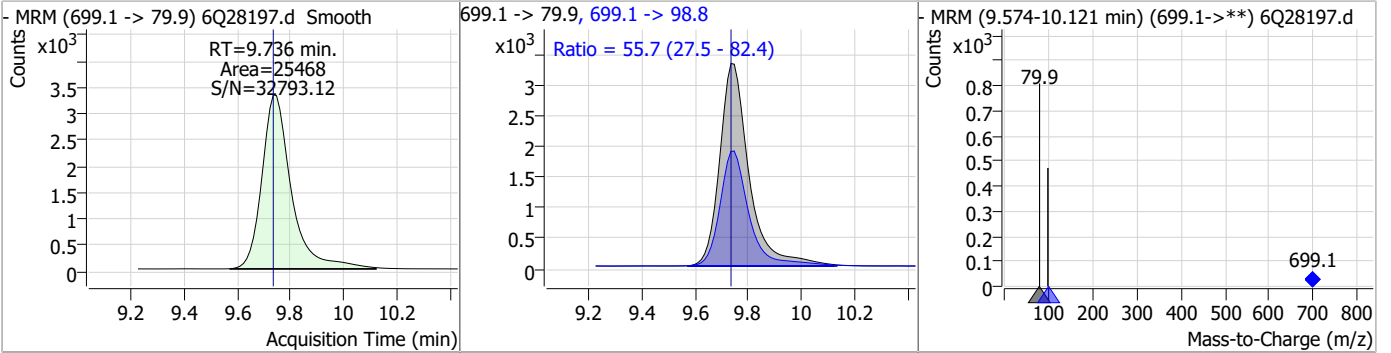


# Perfluorinated Compounds by LC/MS/MS

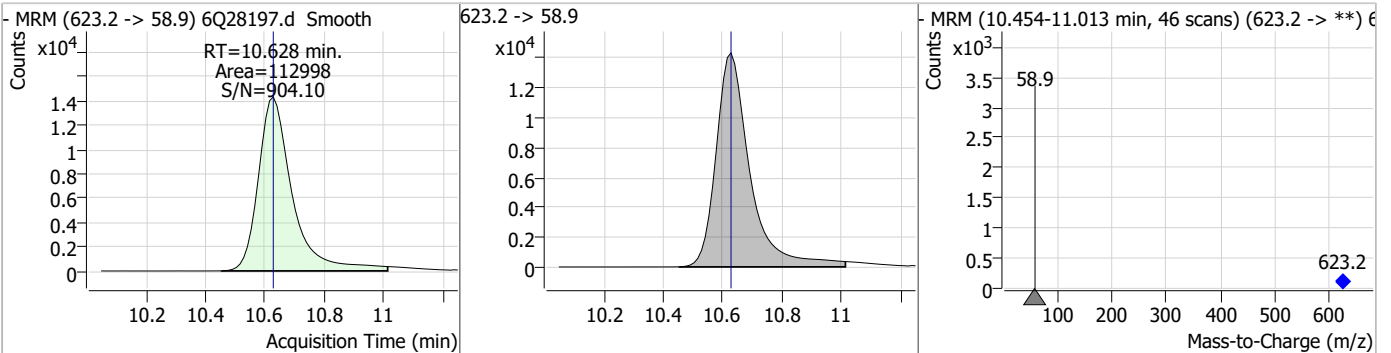


# Perfluorinated Compounds by LC/MS/MS

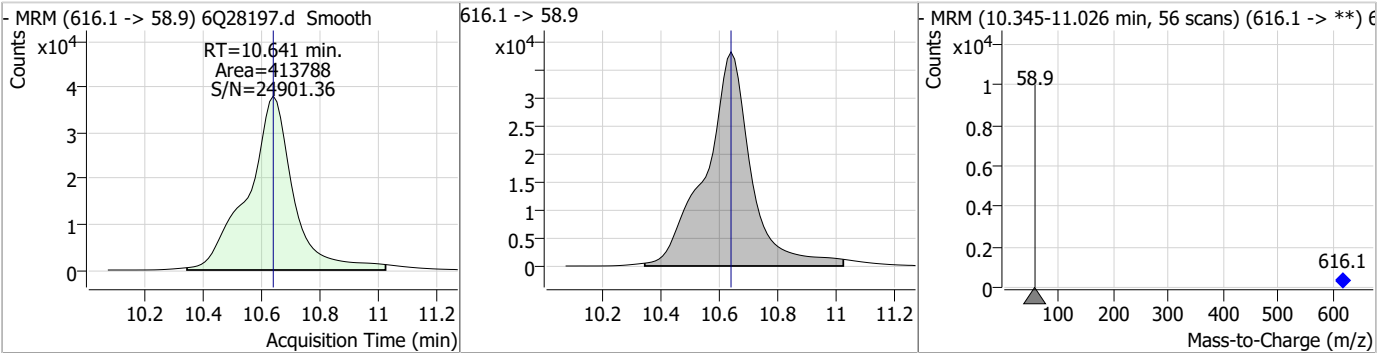
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD <sub>o</sub> DS	12.94	9.74	0.00	25468	699.1 -> 98.8	55.7	27.5	82.4



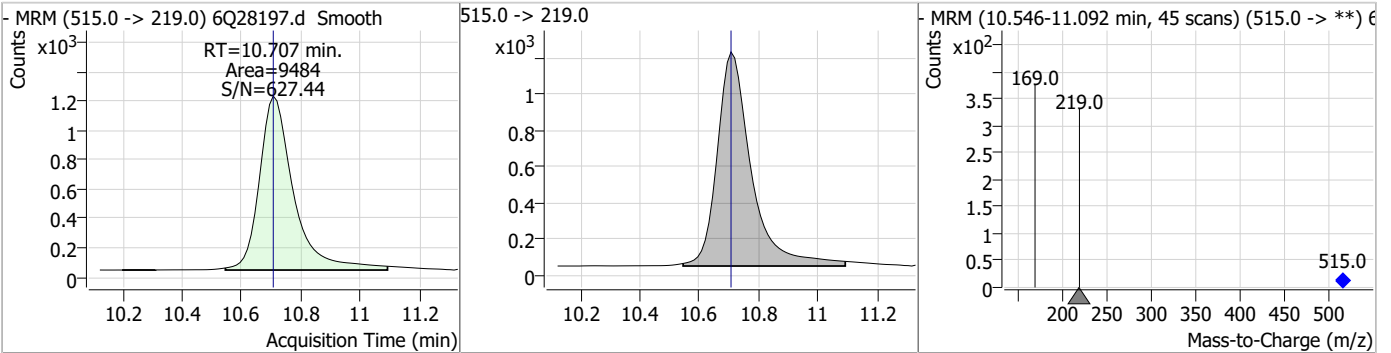
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.92	10.63	0.00	112998				



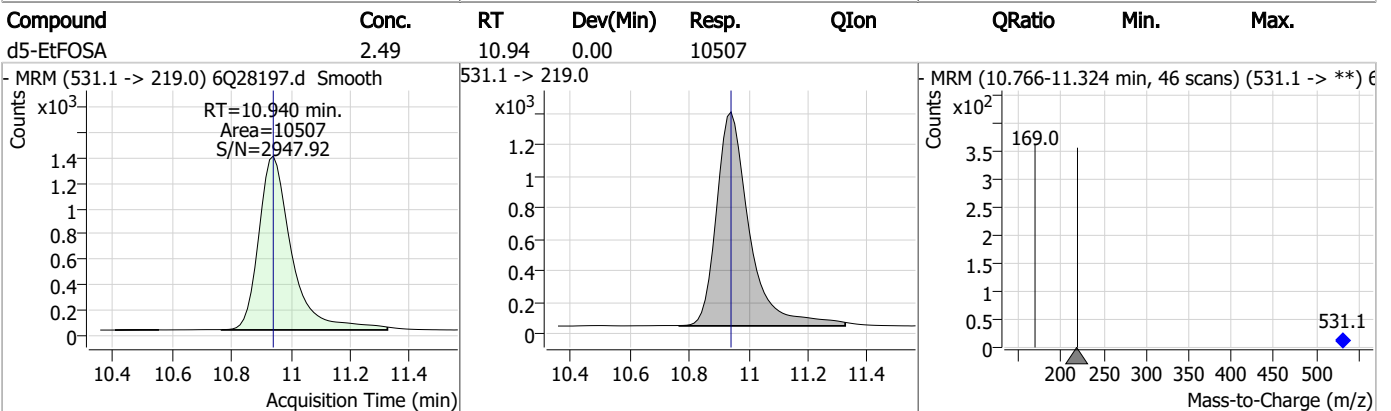
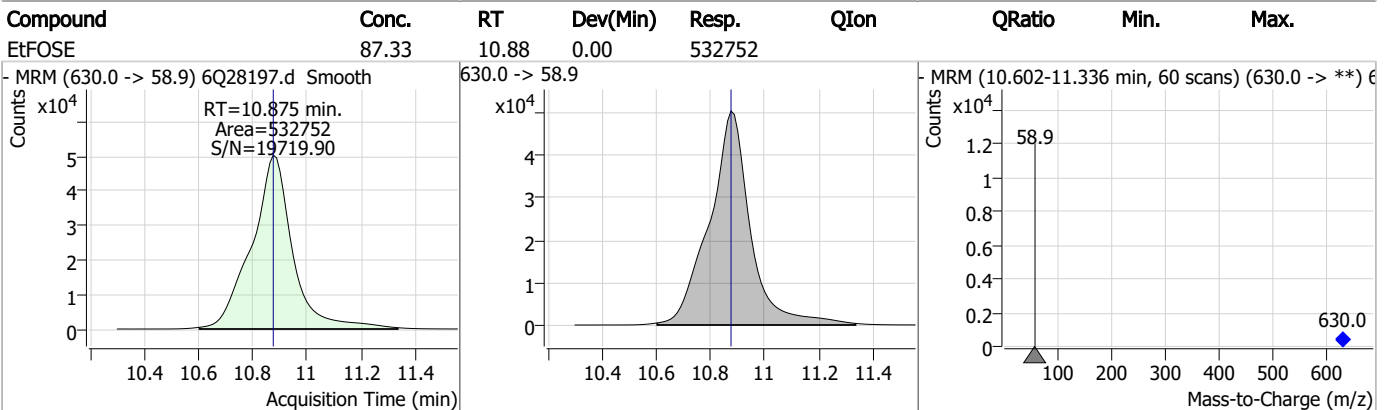
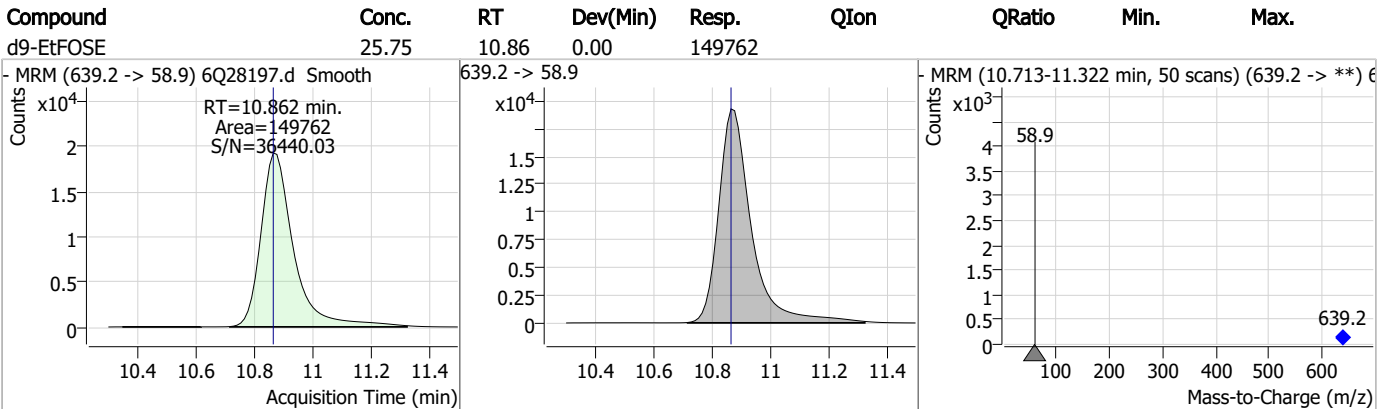
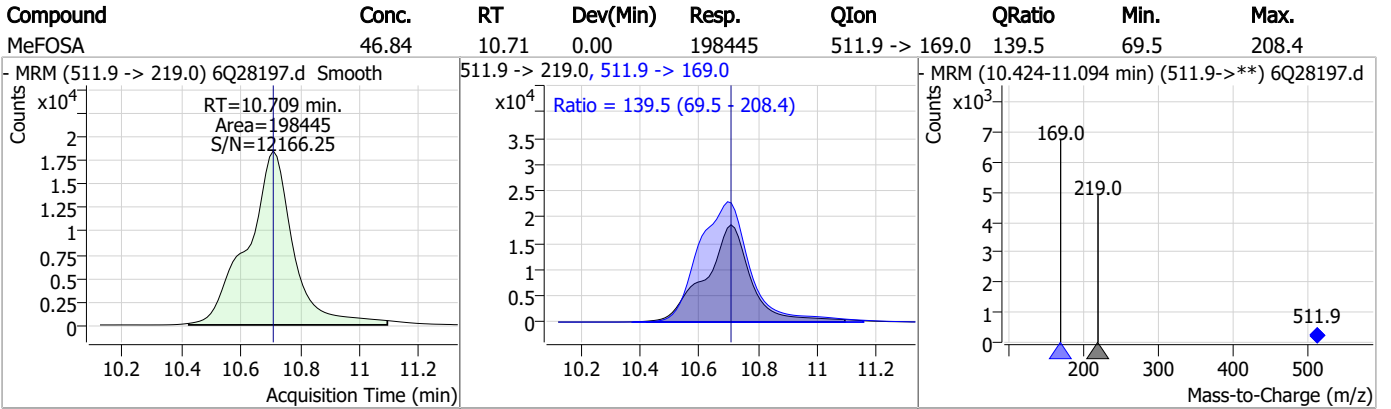
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	89.74	10.64	0.00	413788				



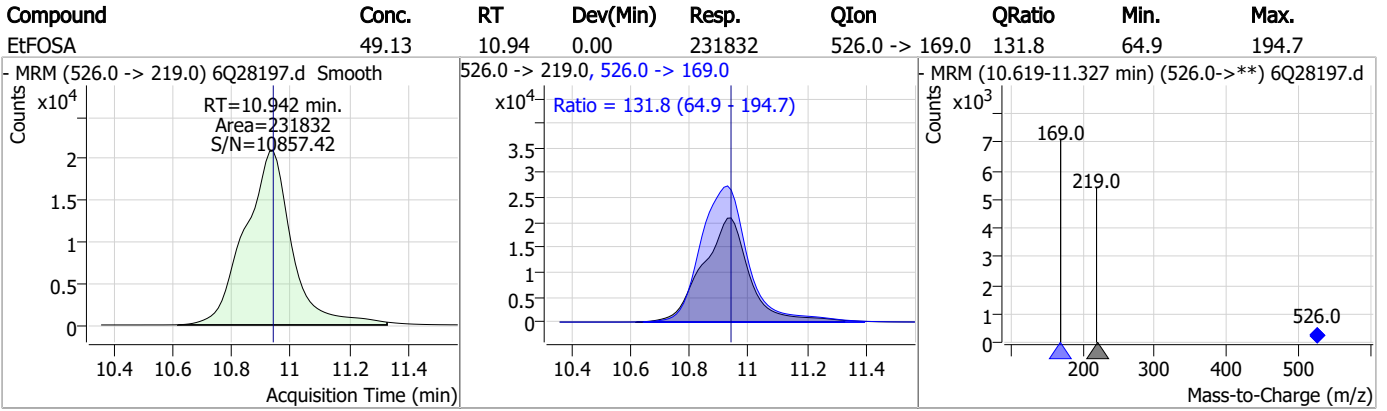
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.58	10.71	0.00	9484				



# Perfluorinated Compounds by LC/MS/MS



# Perfluorinated Compounds by LC/MS/MS



7.6.2

7

# Manual Integration Approval Summary

Sample Number: S6Q391-RT                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28197.D                      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 12:51                      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.06	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorononanoic acid	375-95-1		7.44	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

7.6.2.1

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Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)  
 Natasha Gumtie  
 11/21/23 17:27

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28586.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 10:23:25 AM  
 Sample Name : RT TDCA  
 Vial : P1-B3  
 DA Method File : TDCA.quantmethod.xml  
 Batch Name : s6q396\_TDCA.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)	
<b>Internal Standards</b>						
M8-PFOS	8.185	507.1 -> 79.9	18309	2.50 µg/L	-0.012	
13C4-PFOS	8.185	502.8 -> 79.9	17411	2.50 µg/L	-0.012	
<b>System Monitoring Compounds</b>						
13C8-PFOS	8.185	507.1 -> 79.9	18309	2.67 µg/L	-0.012	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.7%			
<b>Target Compounds</b>						
PFOS	8.186	498.9 -> 79.9	19317	3.09 µg/L	#m	QValue 73
		498.9 -> 98.8	9178			
TCDCa	6.649	498.9 -> 79.9	3697	4.38 ng/ml		100
TDCA	6.797	498.9 -> 79.9	4847	6.34 ng/ml		100
TUDCA	5.809	498.9 -> 79.9	5746	3.54 ng/ml		100

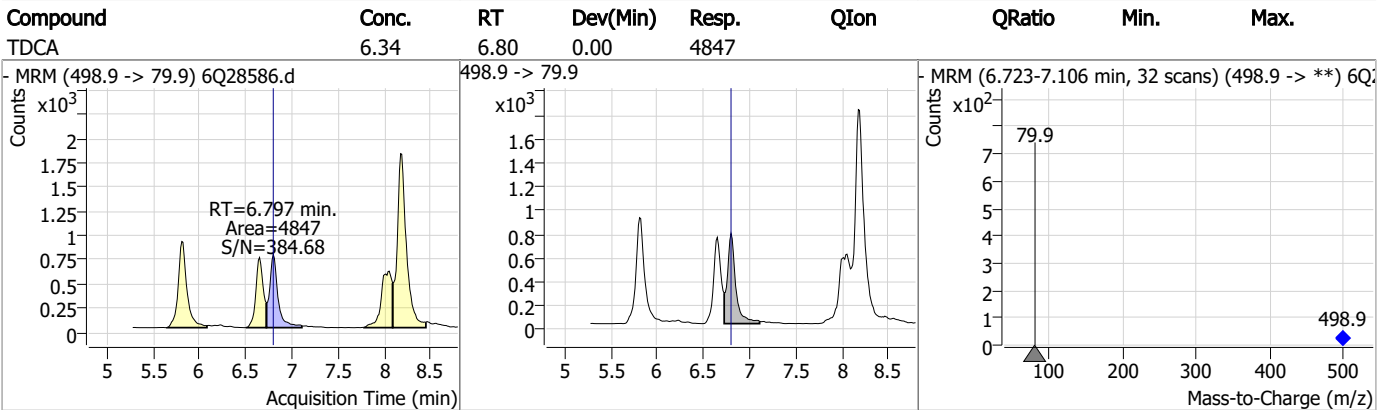
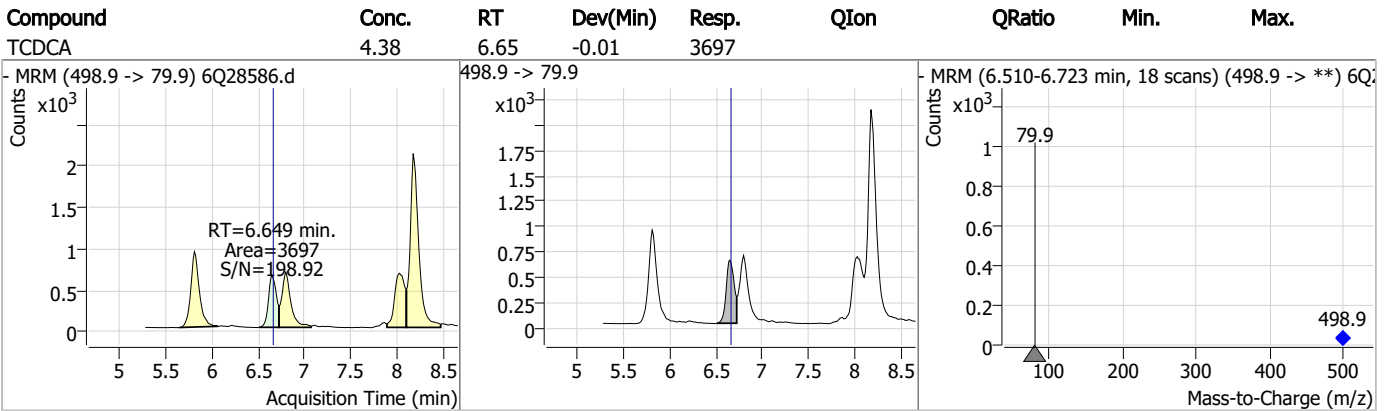
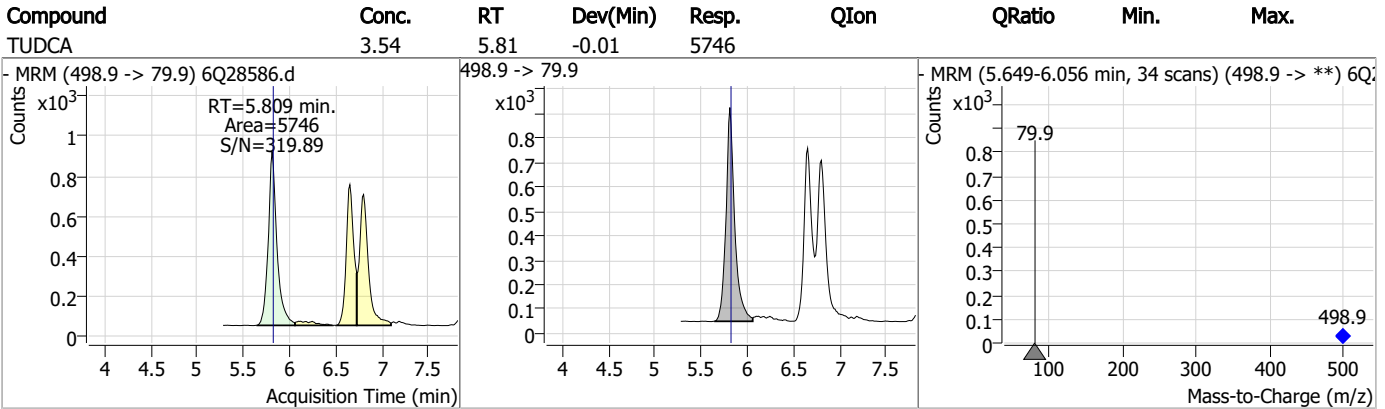
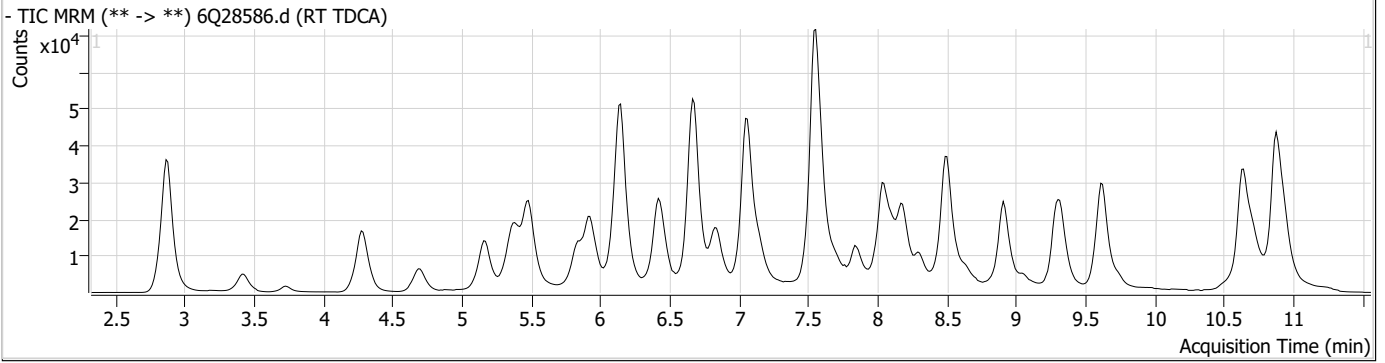
# = Qualifier out of range, m = manually integrated, + = Area summed

7.6.3

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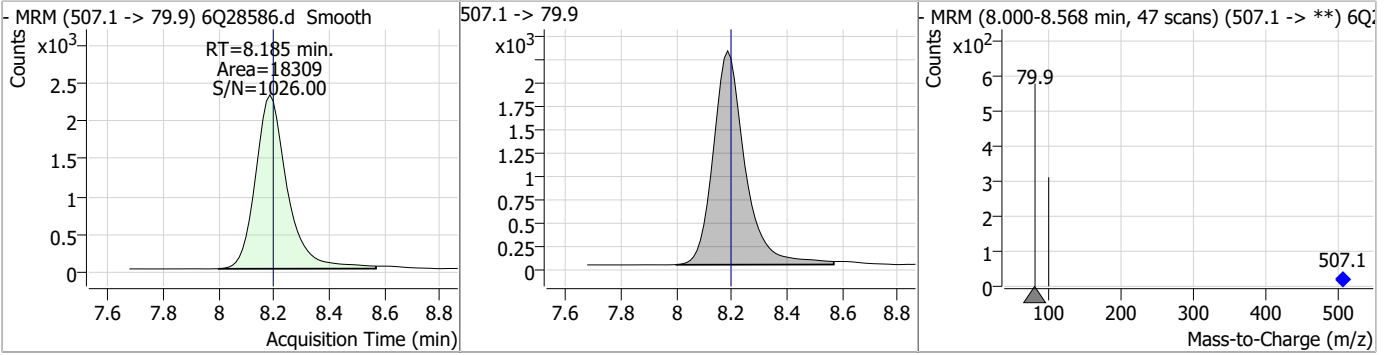


### Perfluorinated Compounds by LC/MS/MS

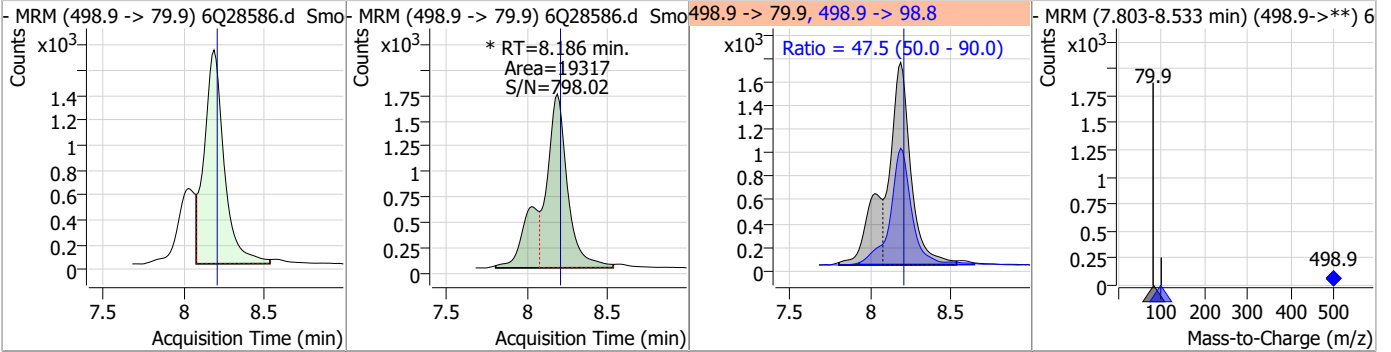


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.67	8.18	-0.01	18309				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.09	8.19	-0.01	19317 (m)	498.9 -> 98.8	47.5	50.0	90.0



7.6.3  
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# Manual Integration Approval Summary

Sample Number: S6Q396-RT                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28586.D                      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/20/23 10:23                      Supervisor approved: 11/21/23 17:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

7.6.3.1

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## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28587.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 10:37:43 AM  
 Sample Name : RT BR-LN  
 Vial : P1-B4  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	133806	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	51287	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	52195	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	53929	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	82213	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	29539	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	30678	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	34086	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	45765	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	26055	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	32315	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	20731	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	12780	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	13767	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	2925	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	3701	5.00 µg/L	0.000
M2-8:2FTS	7.835	529.1 -> 80.9	4004	5.00 µg/L	0.000
M3-MeFOSAA	8.105	573.2 -> 419.0	28060	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	33015	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	24443	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	144584	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	180204	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	11417	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	10384	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	12224	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	57809	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8402	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	92429	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	31718	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	26707	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	48006	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	2925	5.41 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3701	4.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 84.5%		
13C2-8:2FTS	7.835	529.1 -> 80.9	4004	4.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 81.0%		
13C2-PFDoDA	8.906	615.1 -> 570.0	45765	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C2-PFTeDA	9.621	715.2 -> 670.0	26055	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C3-PFBS	5.384	302.1 -> 79.9	20731	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C3-PFHxS	7.152	402.1 -> 79.9	12780	2.48 µg/L	0.000

7.6.4  
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## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFBA	2.860	216.8 -> 171.9	133806	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.419	367.1 -> 322.0	53929	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFHxA	5.478	318.0 -> 273.0	52195	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C5-PFPeA	4.272	268.3 -> 223.0	51287	5.32 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C6-PFDA	8.048	519.1 -> 474.1	30678	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C7-PFUnDA	8.489	570.0 -> 525.1	34086	1.16 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C8-FOSA	9.605	506.1 -> 77.8	32315	2.71 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C8-PFOA	7.062	421.1 -> 376.0	82213	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.1%	
13C8-PFOS	8.185	507.1 -> 79.9	13767	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C9-PFNA	7.580	472.1 -> 427.0	29539	1.32 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.6%	
d3-MeFOSAA	8.105	573.2 -> 419.0	28060	4.43 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.5%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	33015	11.08 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.8%	
d3-MeFOSA	10.720	515.0 -> 219.0	10384	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
d5-EtFOSAA	8.300	589.2 -> 419.0	24443	4.55 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.0%	
d7-MeFOSE	10.640	623.2 -> 58.9	144584	29.55 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 118.2%	
d9-EtFOSE	10.875	639.2 -> 58.9	180204	27.60 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.4%	
d5-EtFOSA	10.940	531.1 -> 219.0	11417	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.155	327.1 -> 307.0	235304	49.40 µg/L	99
		327.1 -> 80.9	93000		
6:2FTS	6.836	427.1 -> 407.0	218145	54.12 µg/L	99
		427.1 -> 80.9	79550		
8:2FTS	7.836	527.1 -> 507.0	160071	52.77 µg/L	94
		527.1 -> 80.8	52345		
EtFOSAA	8.301	584.2 -> 419.1	51679	13.08 µg/L	m 97
		584.2 -> 526.0	33330		
FOSA	9.608	498.1 -> 77.9	396954	31.97 µg/L	100
		498.1 -> 478.0	11432		
MeFOSAA	8.106	570.1 -> 419.0	72154	13.64 µg/L	95
		570.1 -> 483.0	15561		
PFBA	2.868	212.8 -> 168.9	247099	56.33 µg/L	100
PFBS	5.385	298.7 -> 79.9	90501	11.45 µg/L	99
		298.7 -> 98.8	34523		
PFDA	8.048	512.9 -> 469.0	373769	13.11 µg/L	99
		512.9 -> 219.0	56670		
PFDoDA	8.907	613.1 -> 569.0	470040	13.83 µg/L	98
		613.1 -> 319.0	50870		
PFDS	9.057	599.0 -> 79.9	47428	13.24 µg/L	100

7.6.4  
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## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.419	599.0 -> 98.8	22240	13.98	µg/L	99
		363.1 -> 319.0	387634			
PFHpS	7.706	363.1 -> 169.0	59695	12.63	µg/L	99
		449.0 -> 79.9	73931			
PFHxA	5.481	449.0 -> 98.9	35800	13.91	µg/L	99
		313.0 -> 269.0	271633			
PFHxS	7.153	313.0 -> 118.9	12413	12.40	µg/L	m
		398.7 -> 79.9	73508			
PFNA	7.442	398.7 -> 98.9	35943	33.52	µg/L	m
		463.0 -> 419.0	616328			
PFNS	8.639	463.0 -> 219.0	137097	12.38	µg/L	89
		548.8 -> 79.9	60325			
PFOA	7.063	548.8 -> 98.9	29328	32.94	µg/L	m
		413.0 -> 369.0	1072434			
PFOS	8.186	413.0 -> 169.0	196058	11.83	µg/L	82
		498.9 -> 79.9	72501			
PFPeA	4.274	498.9 -> 98.8	35846	26.94	µg/L	100
		263.0 -> 219.0	350452			
PFPeS	6.458	349.1 -> 79.9	87896	13.90	µg/L	98
		349.1 -> 98.9	39634			
PFTeDA	9.622	713.1 -> 669.0	423385	13.34	µg/L	99
		713.1 -> 168.9	26873			
PFTrDA	9.290	663.0 -> 619.0	455183	13.67	µg/L	99
		663.0 -> 168.9	31775			
PFUnDA	8.489	563.1 -> 519.0	399978	15.09	µg/L	96
		563.1 -> 269.1	51621			
11CI-PF3OUdS	9.329	630.9 -> 450.9	342677	23.83	µg/L	100
		632.9 -> 452.9	107453			
9CI-PF3ONS	8.503	530.8 -> 351.0	472604	23.86	µg/L	99
		532.8 -> 353.0	147042			
ADONA	6.681	376.9 -> 250.9	1359412	23.59	µg/L	99
		376.9 -> 84.8	347693			
HFPO-DA	5.844	284.9 -> 168.9	90069	27.27	µg/L	99
		284.9 -> 184.9	9579			
3:3FTCA	3.721	241.0 -> 177.0	50489	65.26	µg/L	100
		241.0 -> 117.0	5834			
5:3FTCA	6.146	341.0 -> 237.1	1175951	329.40	µg/L	97
		341.0 -> 217.0	811735			
7:3FTCA	7.558	441.0 -> 316.9	688958	304.73	µg/L	98
		441.0 -> 336.9	1441619			
EtFOSA	10.942	526.0 -> 219.0	249308	48.62	µg/L	98
		526.0 -> 169.0	317930			
EtFOSE	10.888	630.0 -> 58.9	626001	85.28	µg/L	100
		511.9 -> 219.0	220427			
MeFOSA	10.721	511.9 -> 169.0	311964	47.51	µg/L	98
		616.1 -> 58.9	534862			
MeFOSE	10.653	699.1 -> 79.9	31304	90.66	µg/L	100
		699.1 -> 98.8	15677			
PFDoDS	9.748	295.0 -> 201.0	58225	13.57	µg/L	93
		295.0 -> 84.9	15878			
NFDHA	5.360	279.0 -> 85.1	239058	25.74	µg/L	96
		229.0 -> 84.9	177757			
PFMBA	4.687	314.8 -> 134.9	574813	26.66	µg/L	100
PFMPA	3.413	314.8 -> 82.9	22000	26.44	µg/L	100
PFEESA	5.925			23.81	µg/L	100

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

# Perfluorinated Compounds by LC/MS/MS

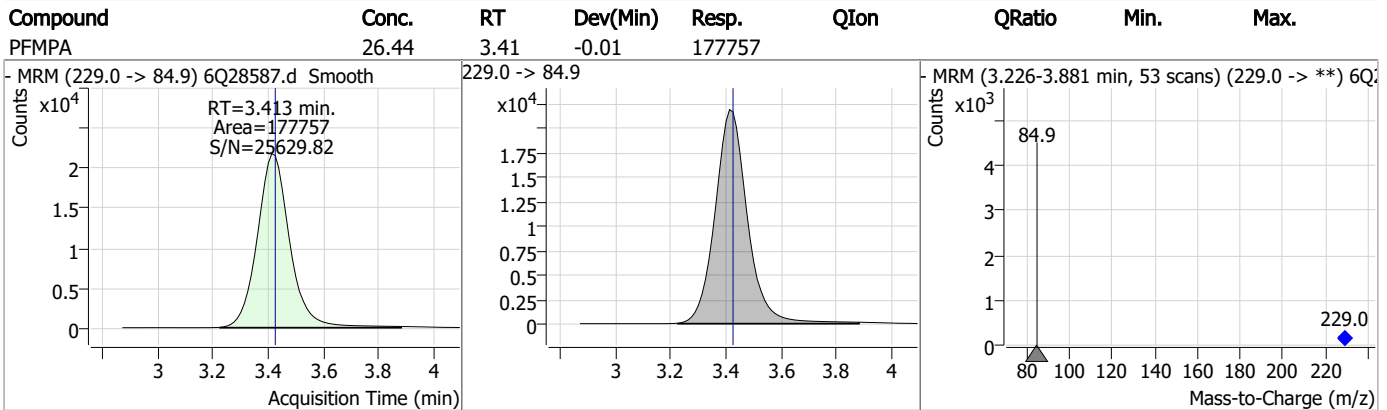
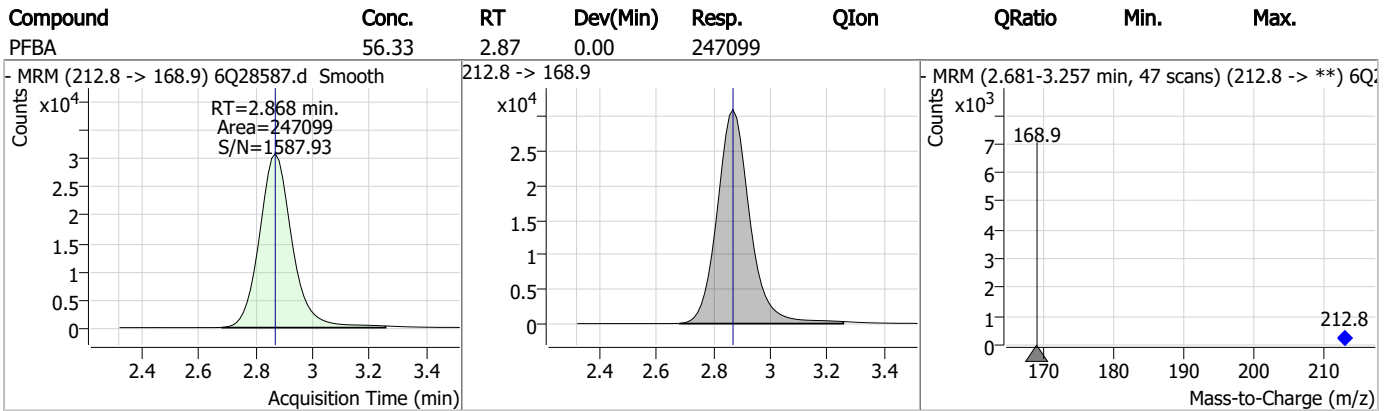
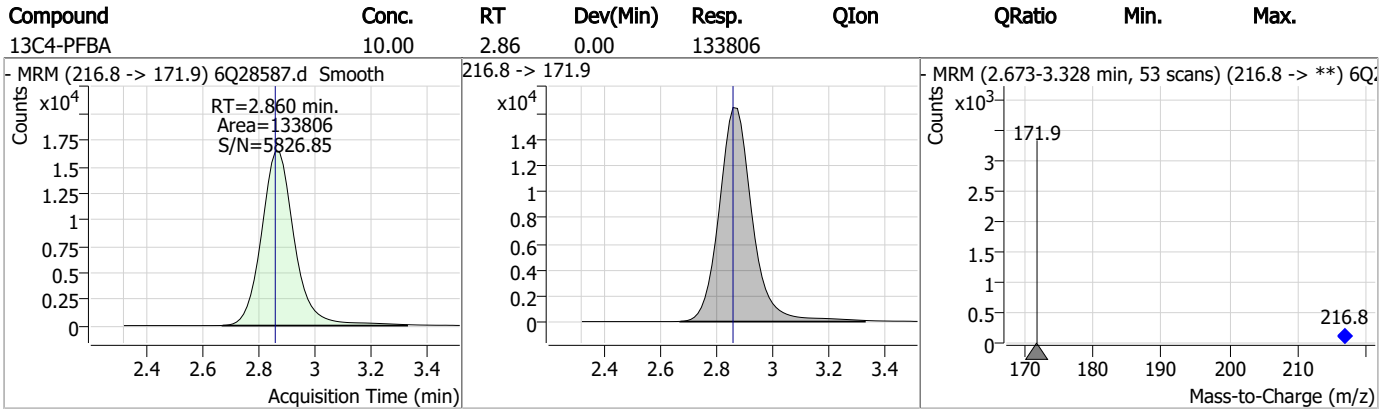
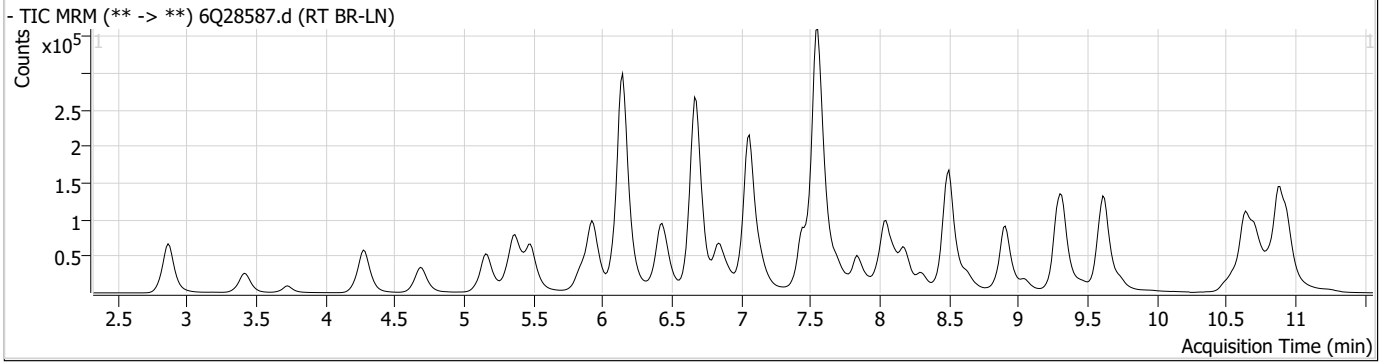
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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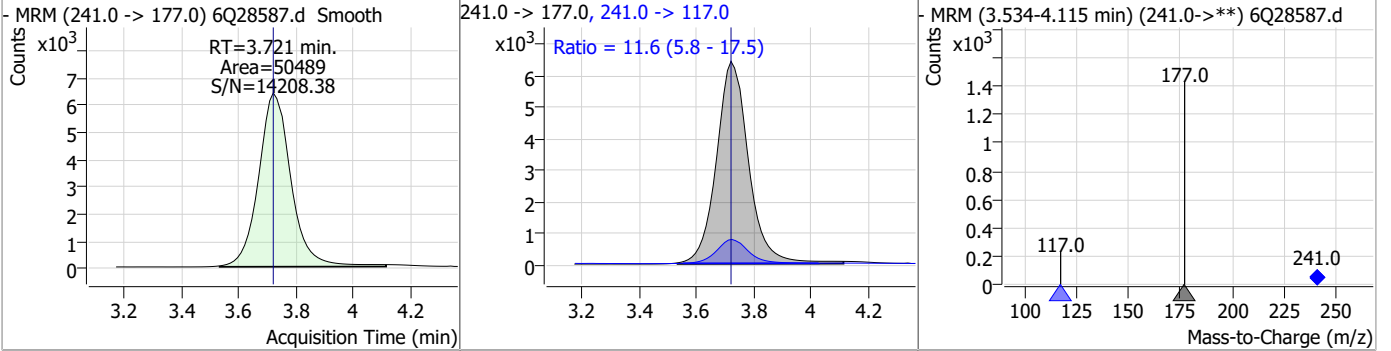


# Perfluorinated Compounds by LC/MS/MS

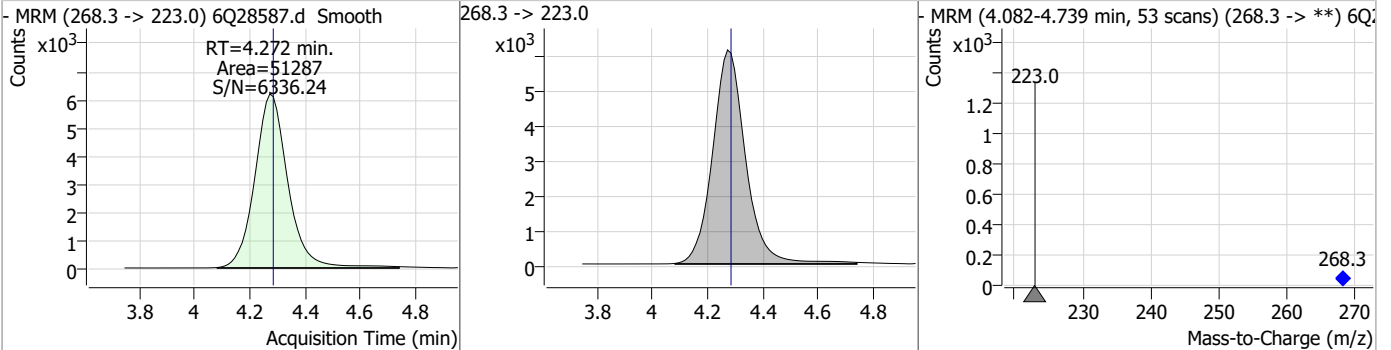


# Perfluorinated Compounds by LC/MS/MS

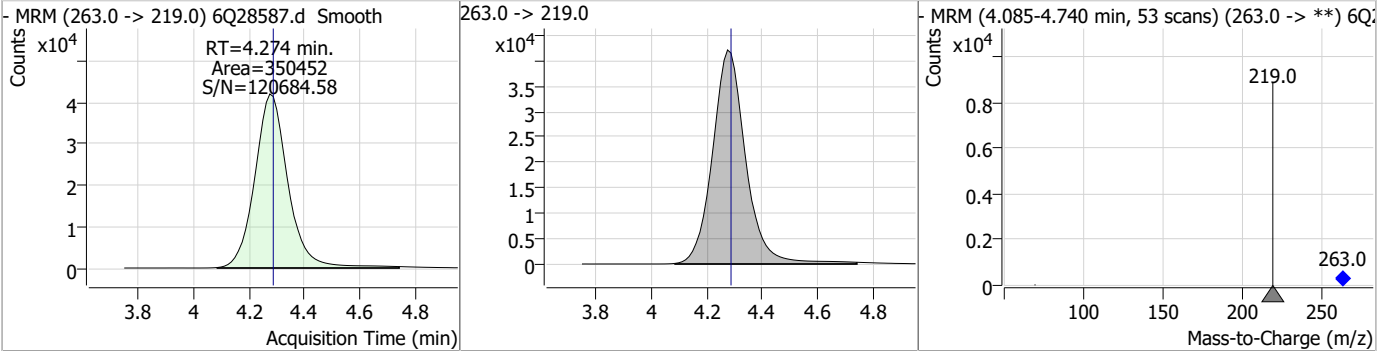
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	65.26	3.72	0.00	50489	241.0 -> 117.0	11.6	5.8	17.5



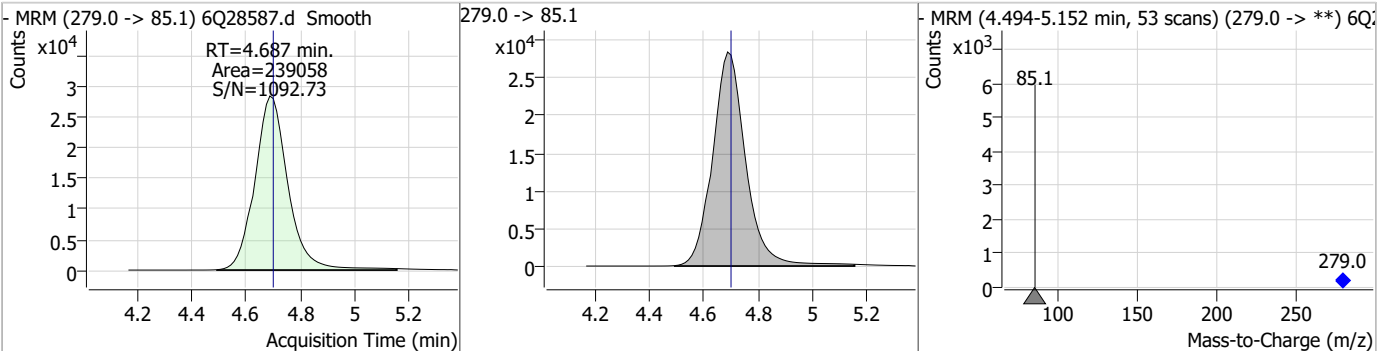
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.32	4.27	-0.01	51287				



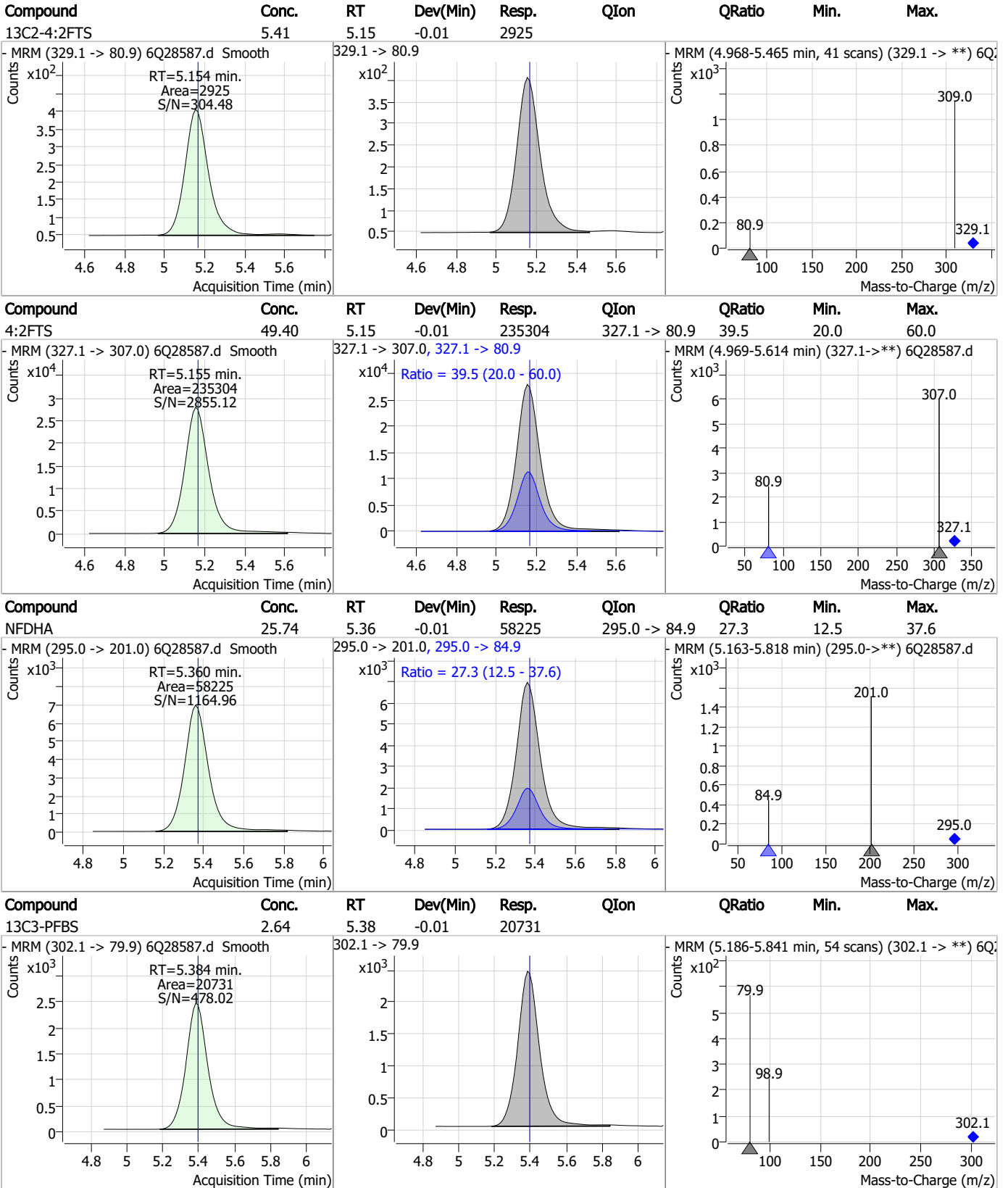
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	26.94	4.27	-0.01	350452				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	26.66	4.69	-0.01	239058				



# Perfluorinated Compounds by LC/MS/MS

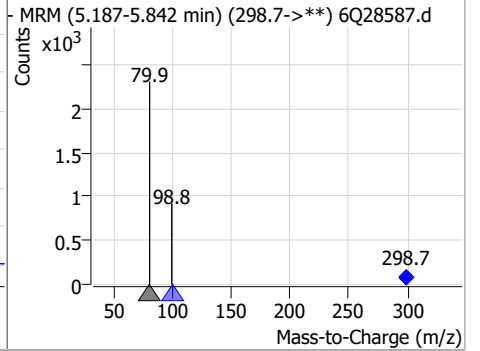
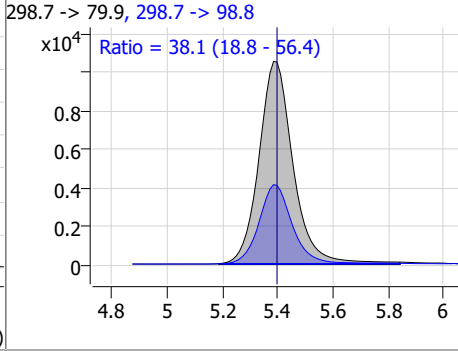
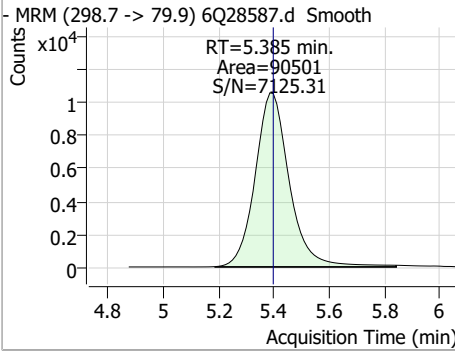


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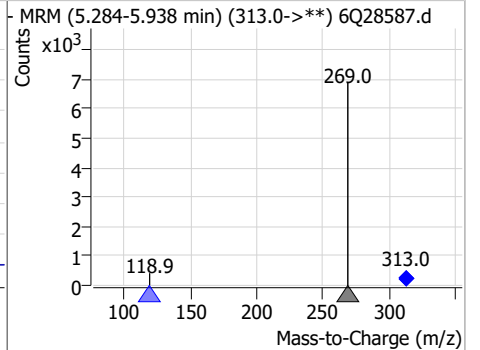
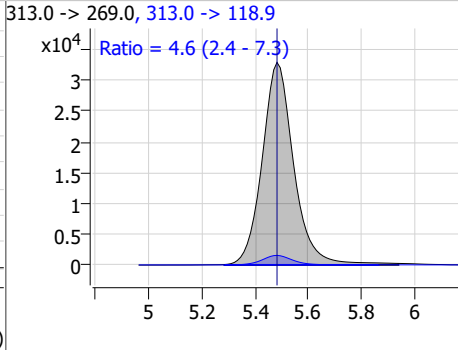
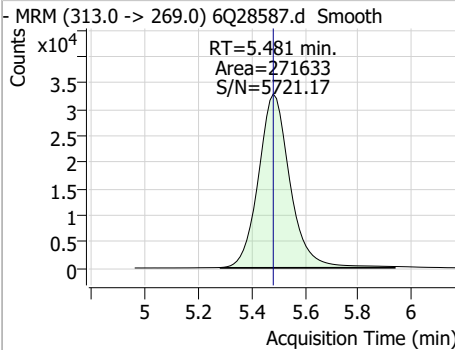
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# Perfluorinated Compounds by LC/MS/MS

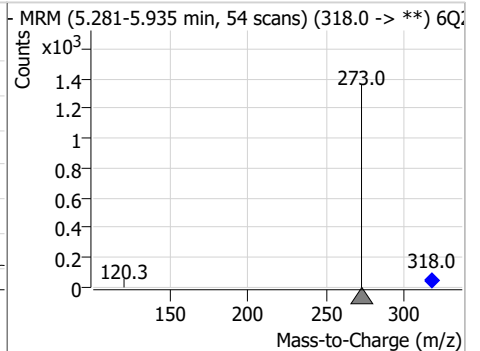
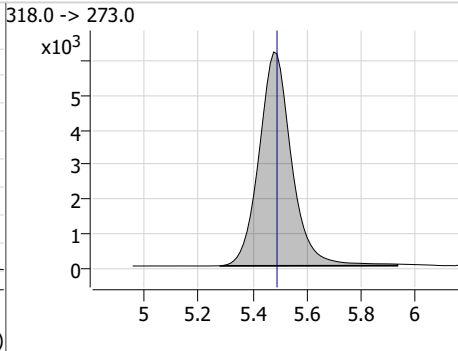
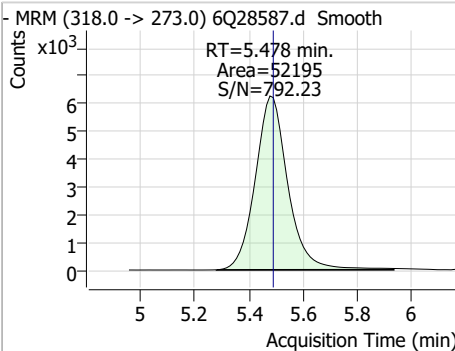
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.45	5.38	-0.01	90501	298.7 -> 98.8	38.1	18.8	56.4



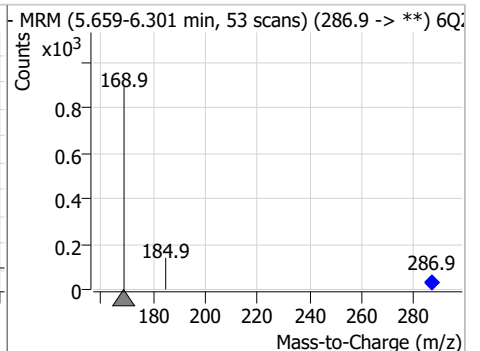
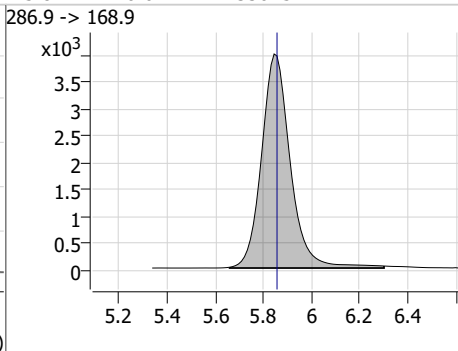
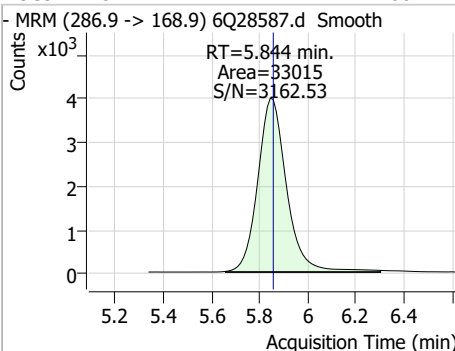
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.91	5.48	0.00	271633	313.0 -> 118.9	4.6	2.4	7.3



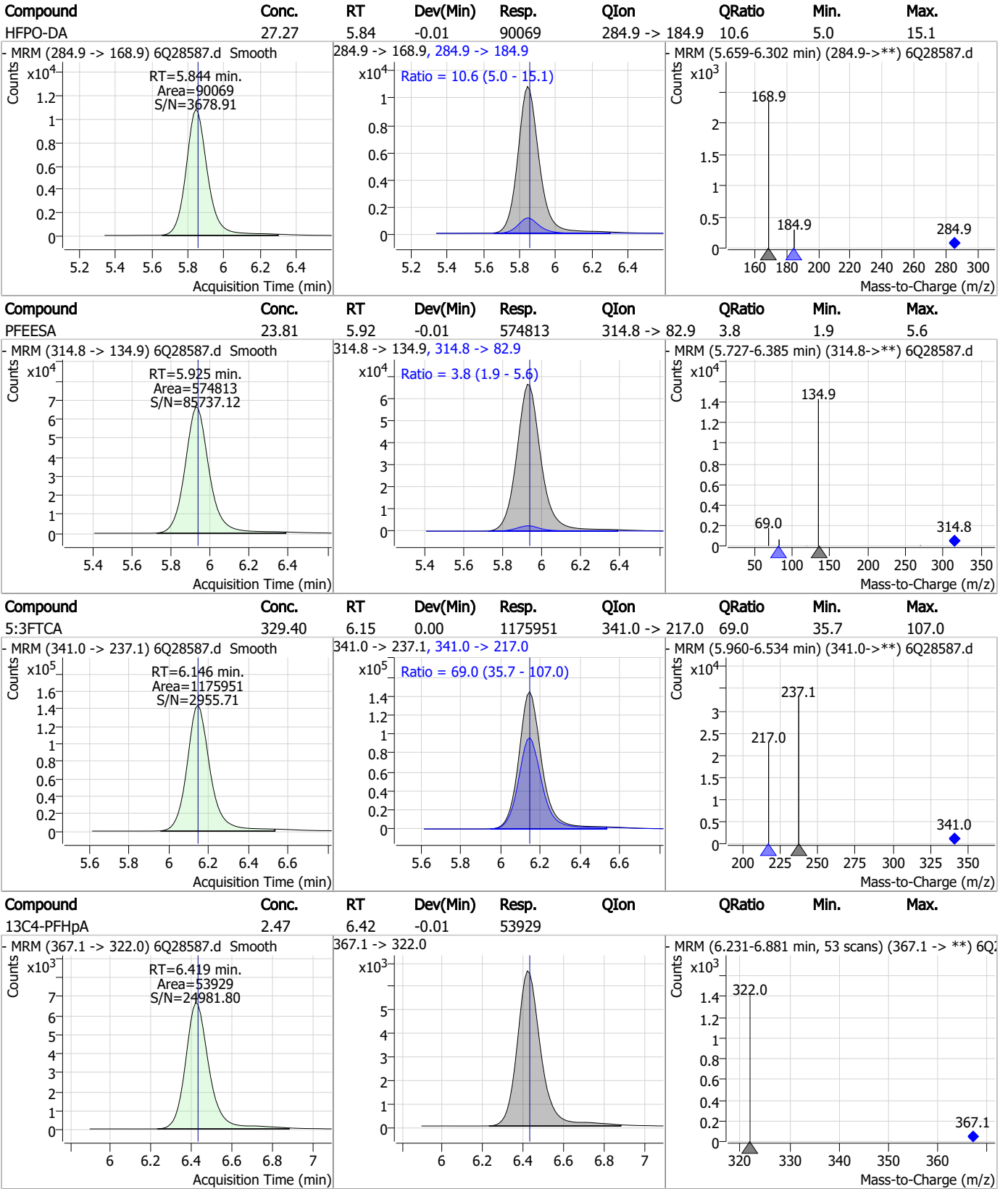
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.61	5.48	-0.01	52195	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.08	5.84	-0.01	33015	286.9 -> 168.9			



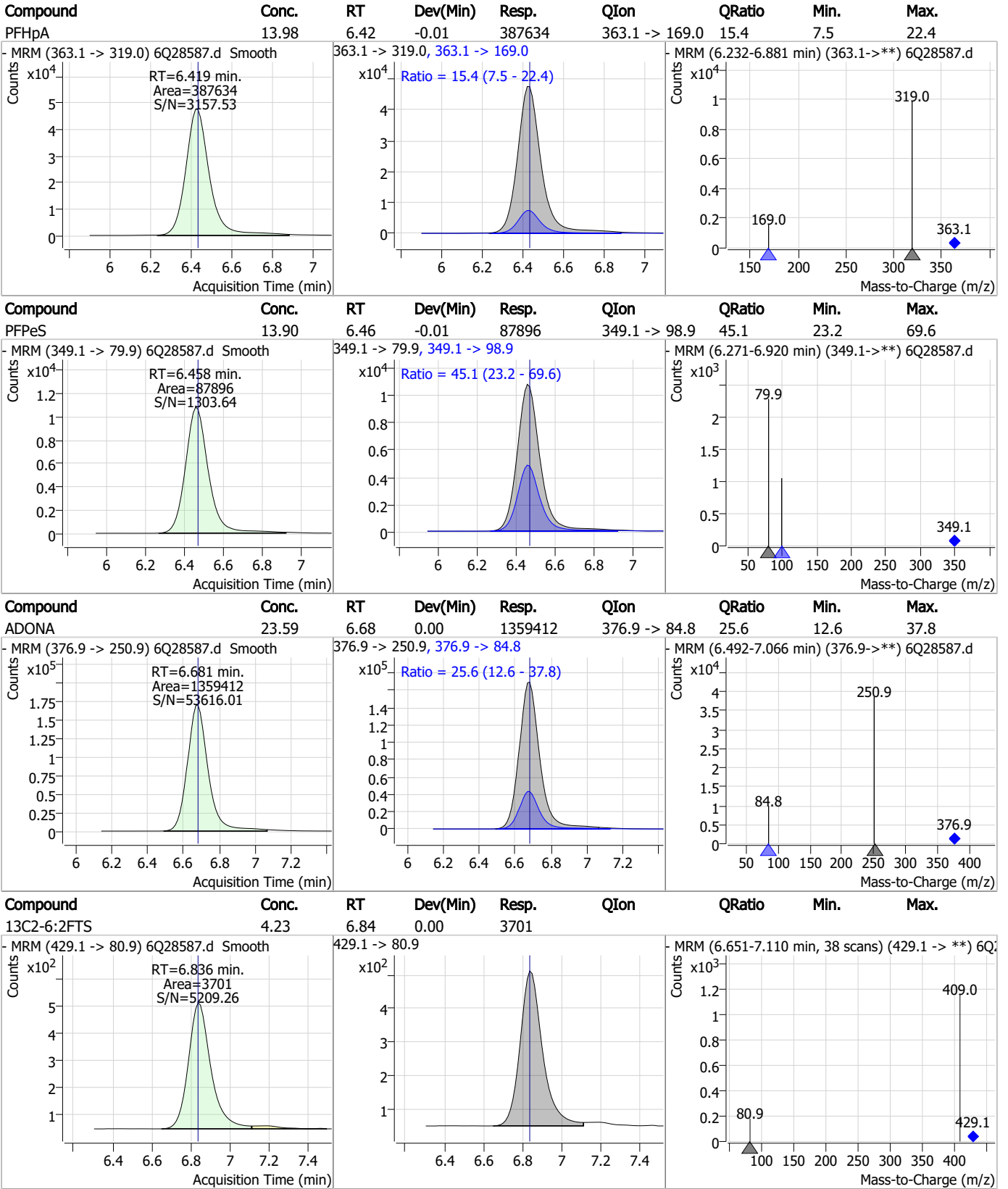
# Perfluorinated Compounds by LC/MS/MS



7.6.4

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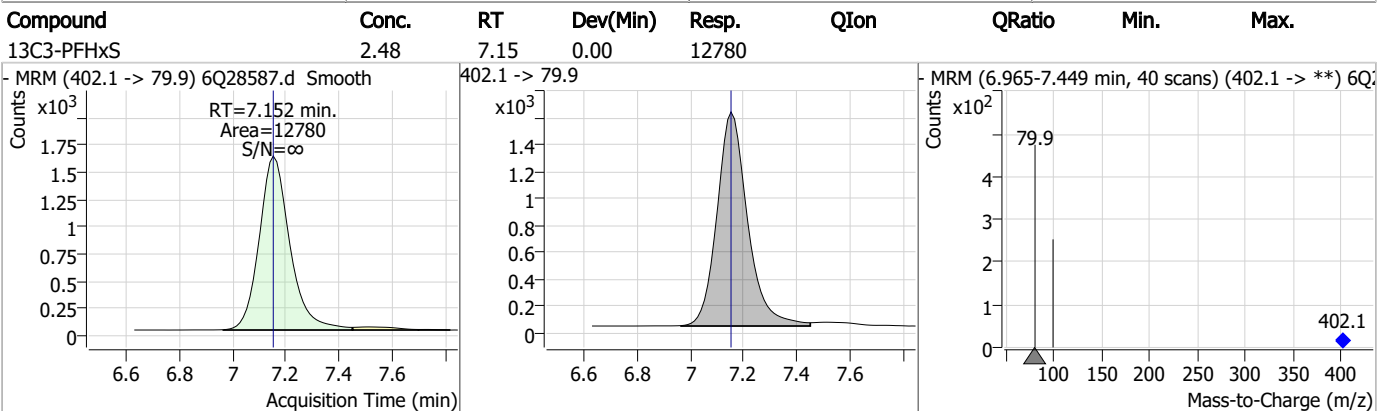
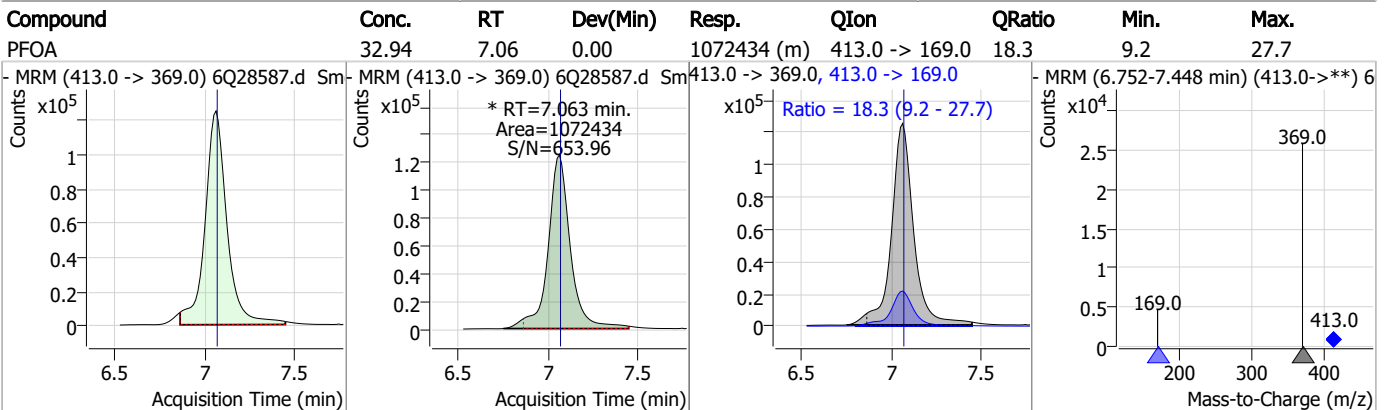
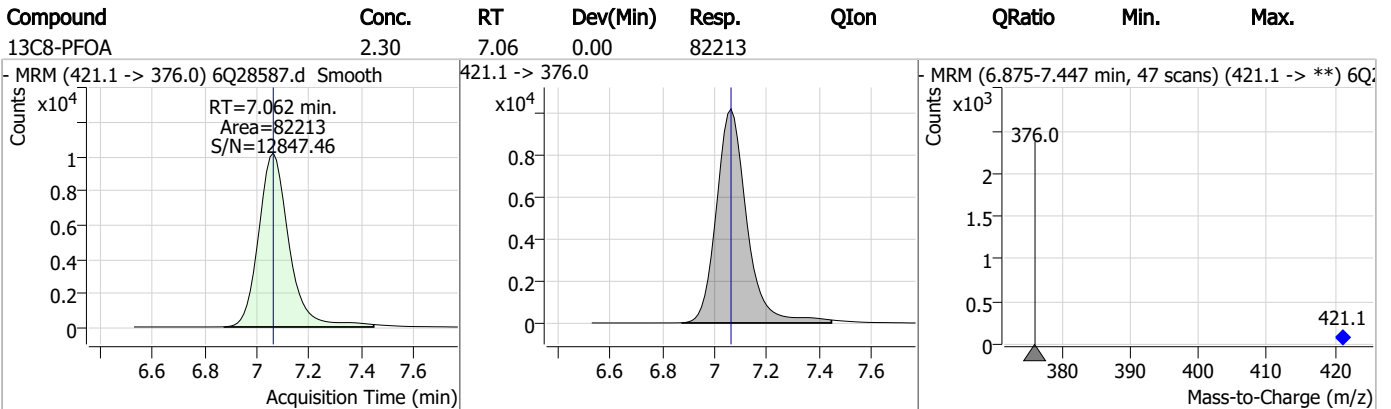
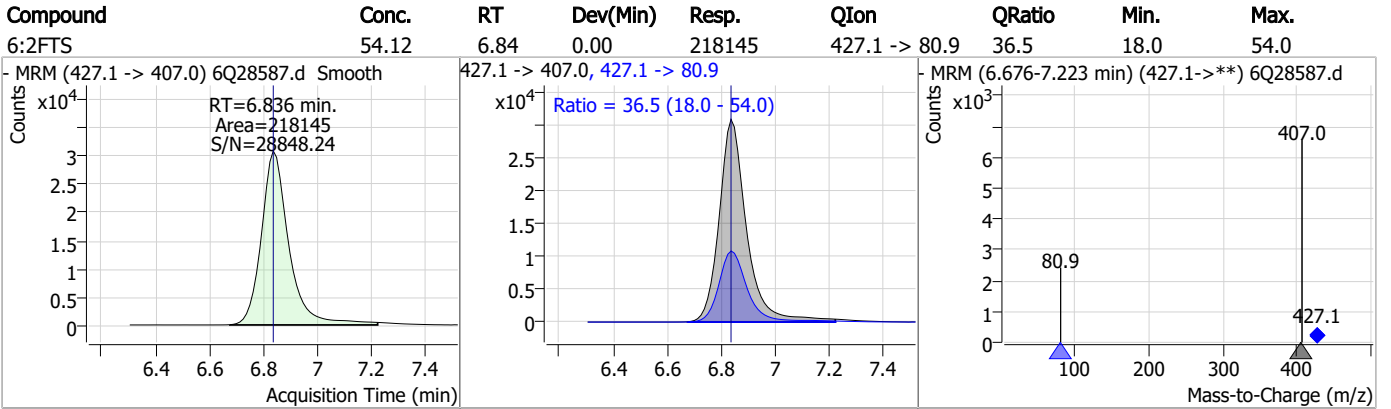
# Perfluorinated Compounds by LC/MS/MS



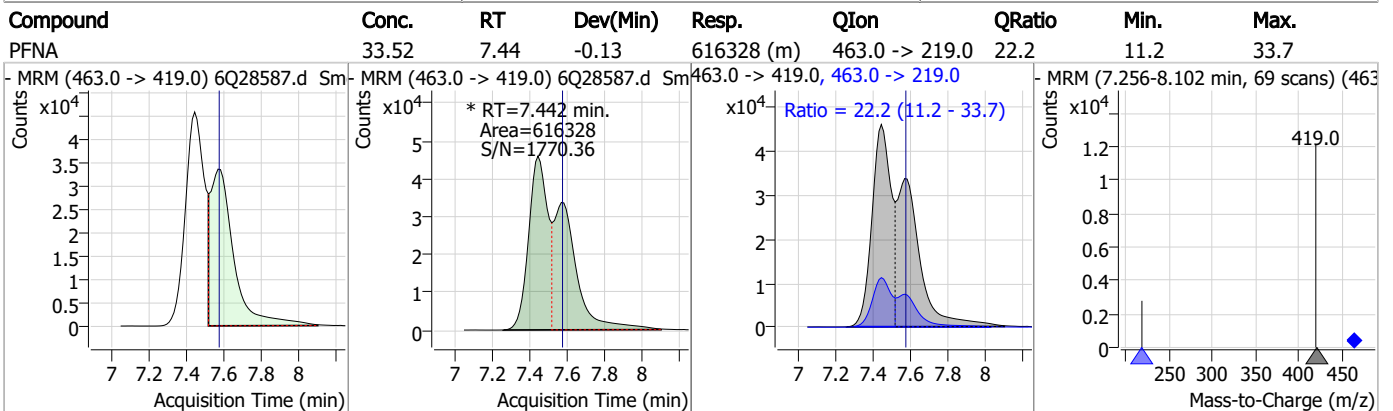
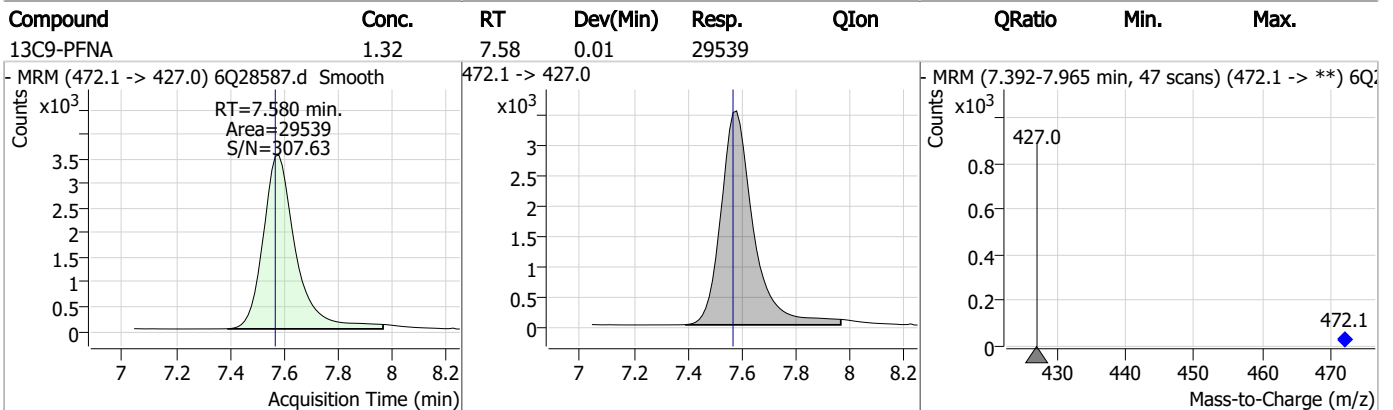
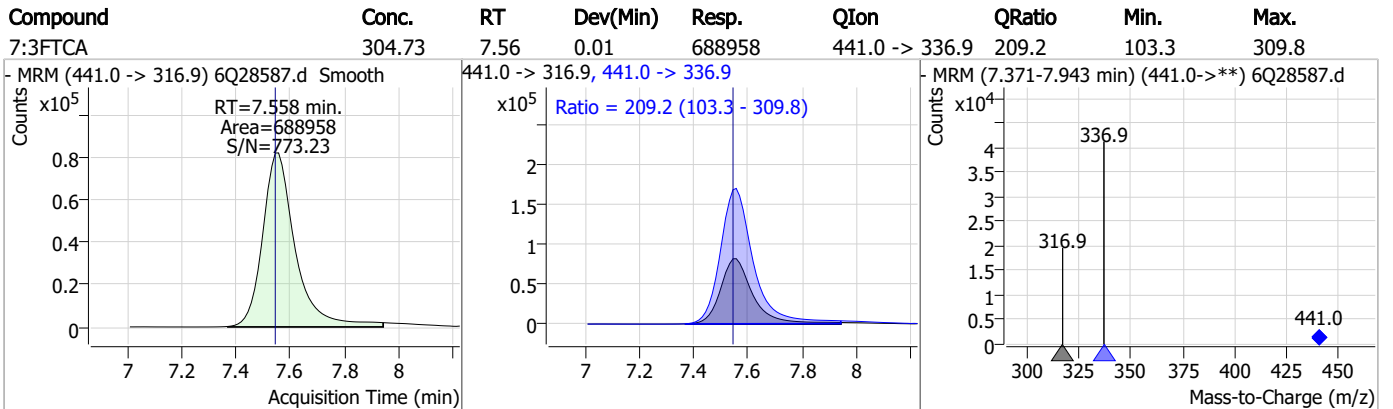
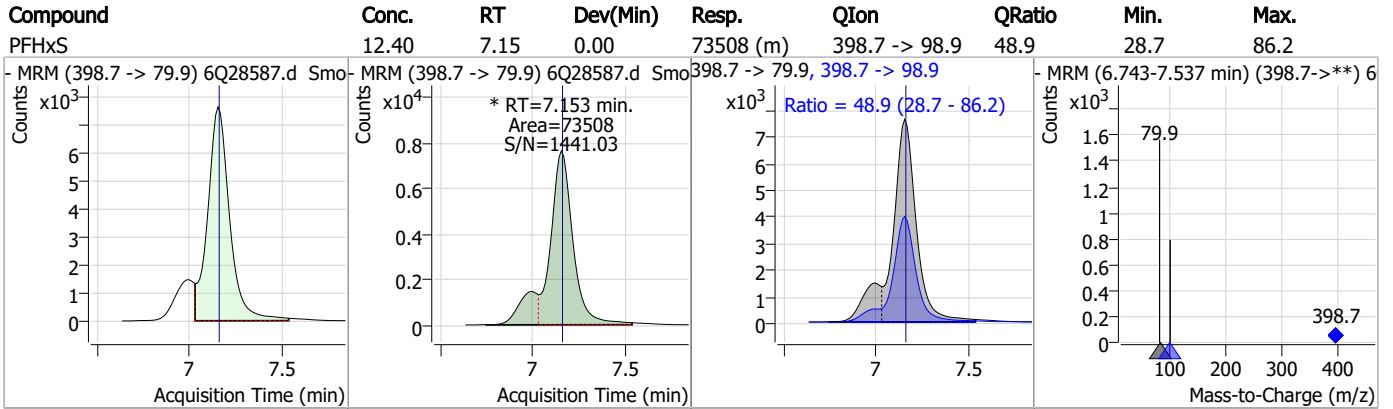
7.6.4

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# Perfluorinated Compounds by LC/MS/MS

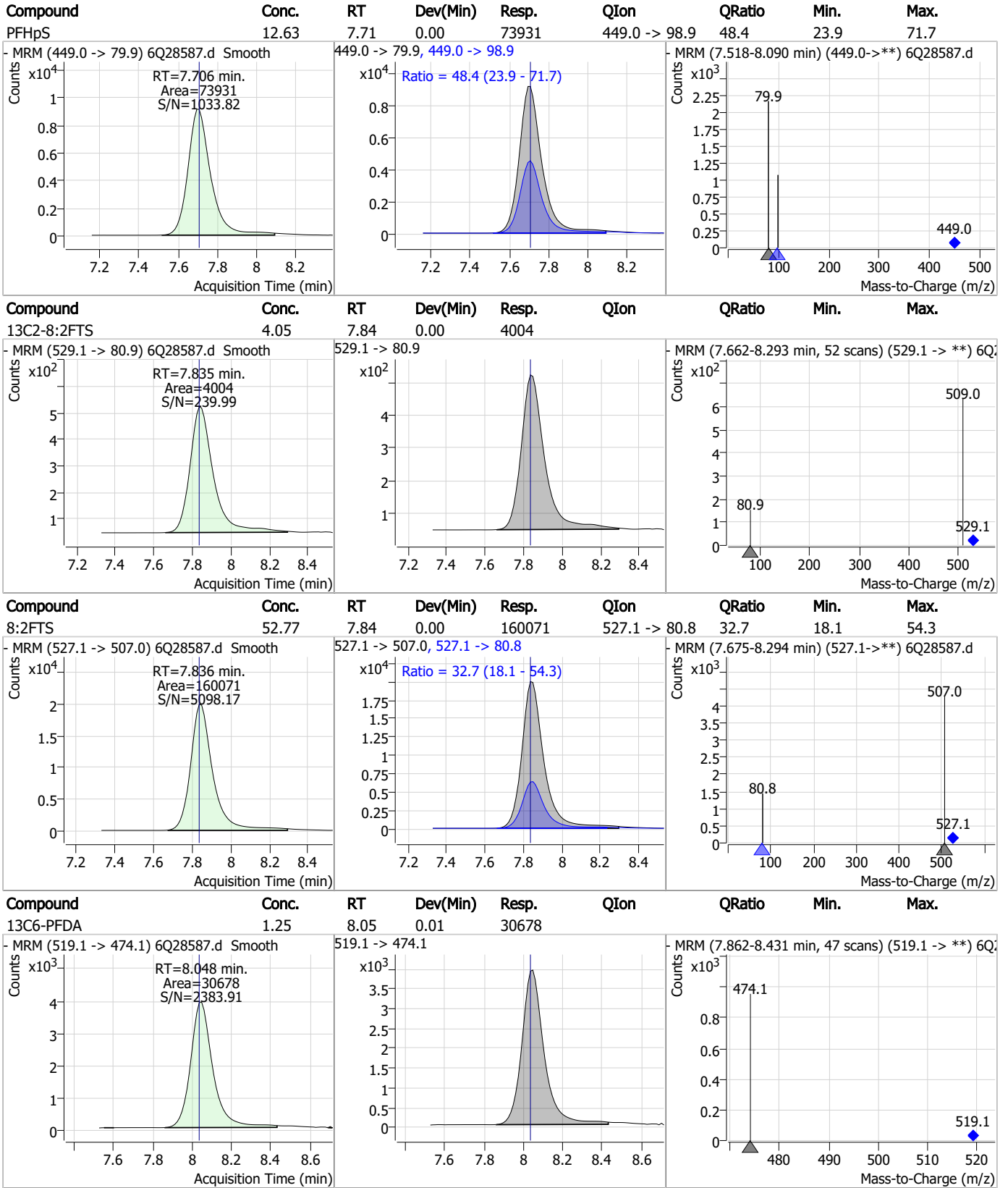


# Perfluorinated Compounds by LC/MS/MS





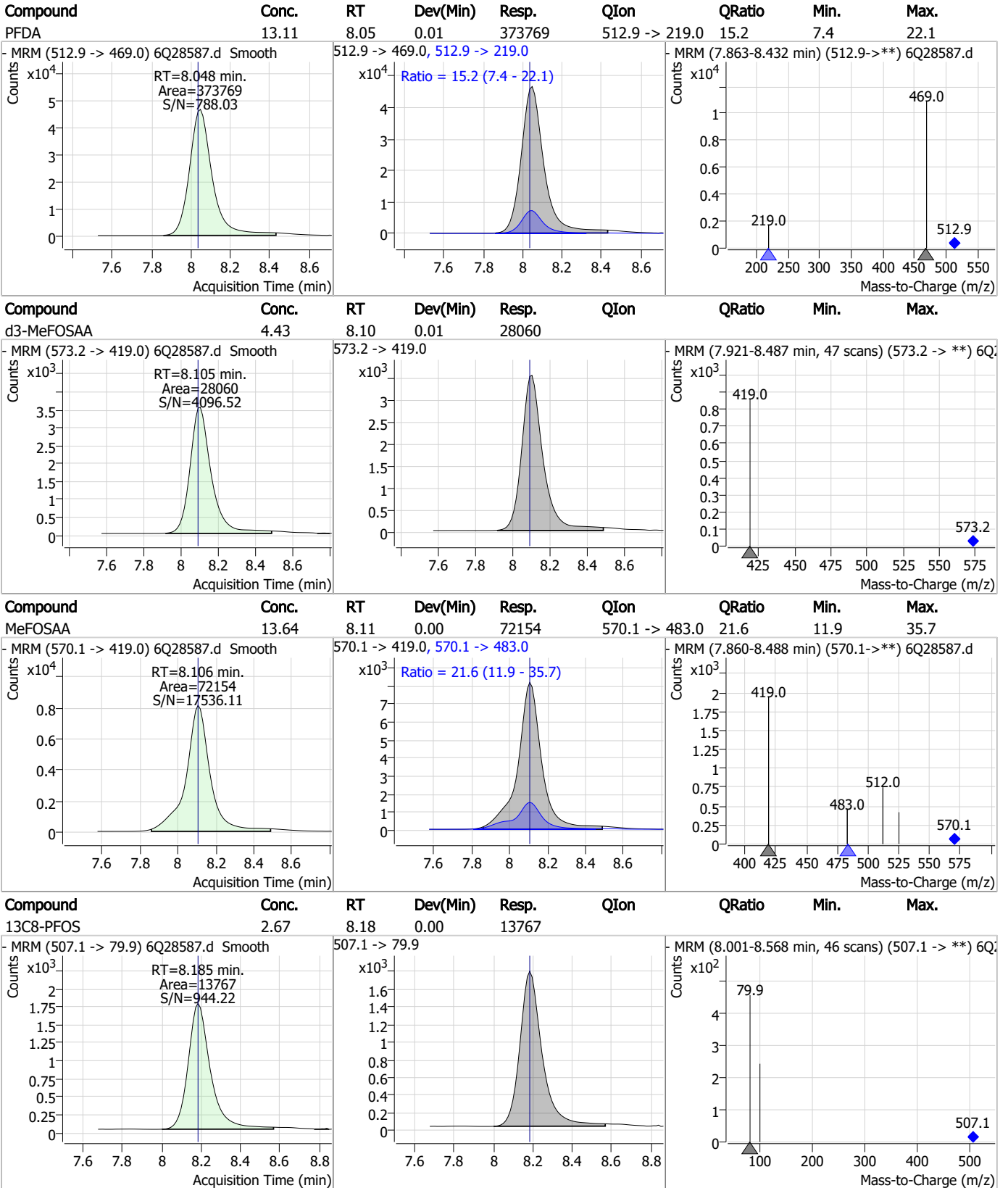
# Perfluorinated Compounds by LC/MS/MS



7.6.4

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# Perfluorinated Compounds by LC/MS/MS

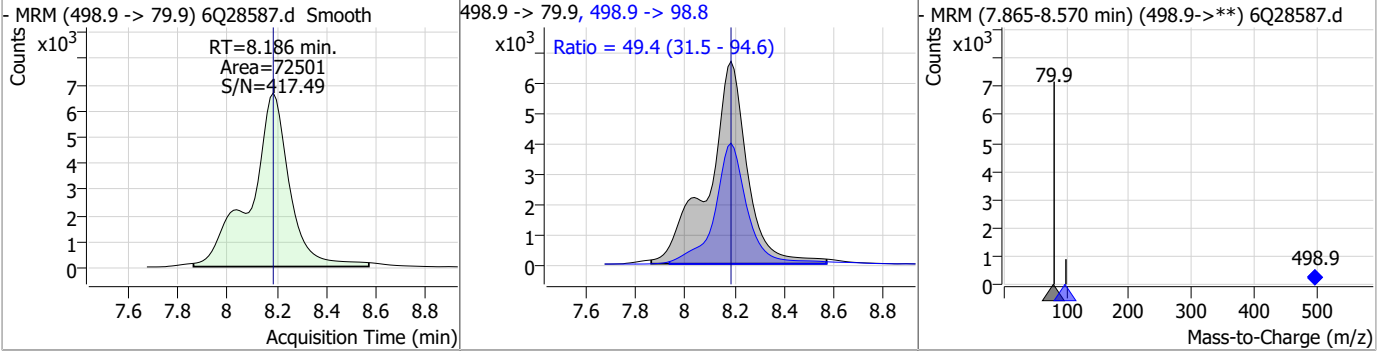


7.6.4

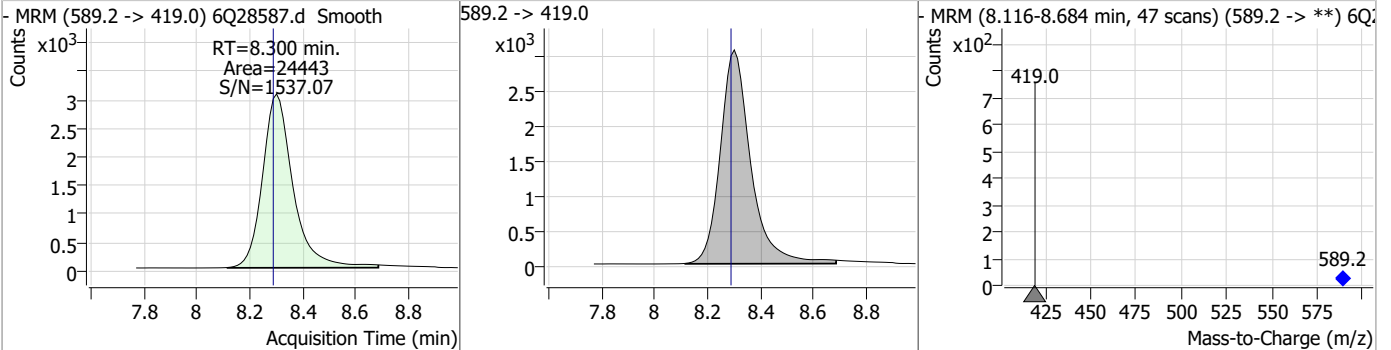
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# Perfluorinated Compounds by LC/MS/MS

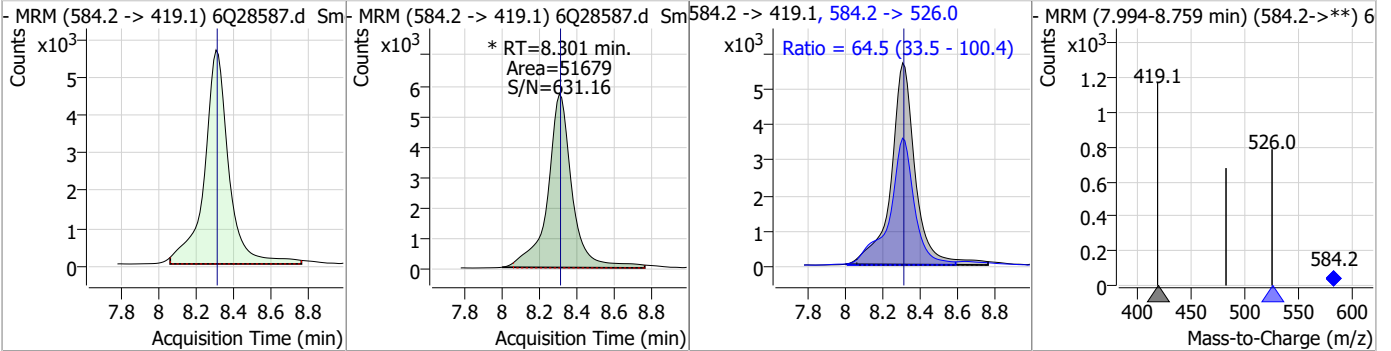
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	11.83	8.19	0.00	72501	498.9 -> 98.8	49.4	31.5	94.6



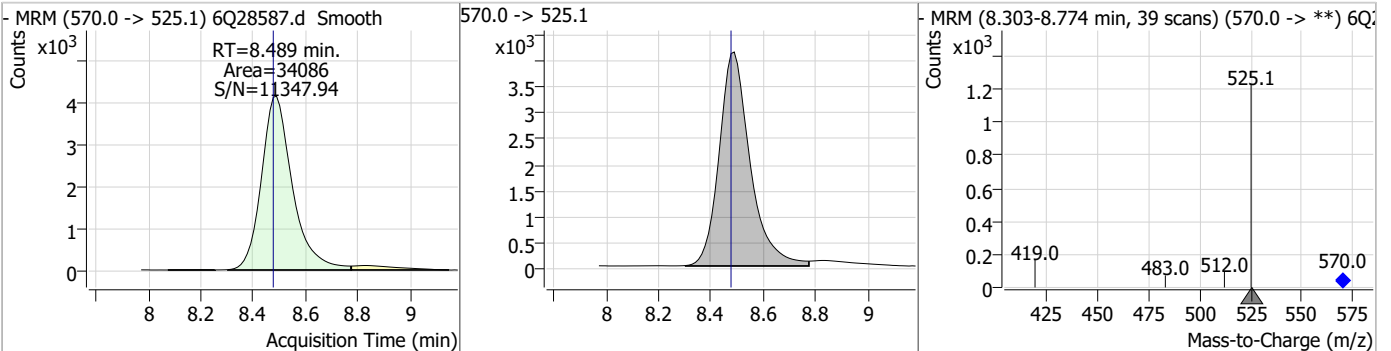
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.55	8.30	0.01	24443				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	13.08	8.30	0.00	51679 (m)	584.2 -> 526.0	64.5	33.5	100.4

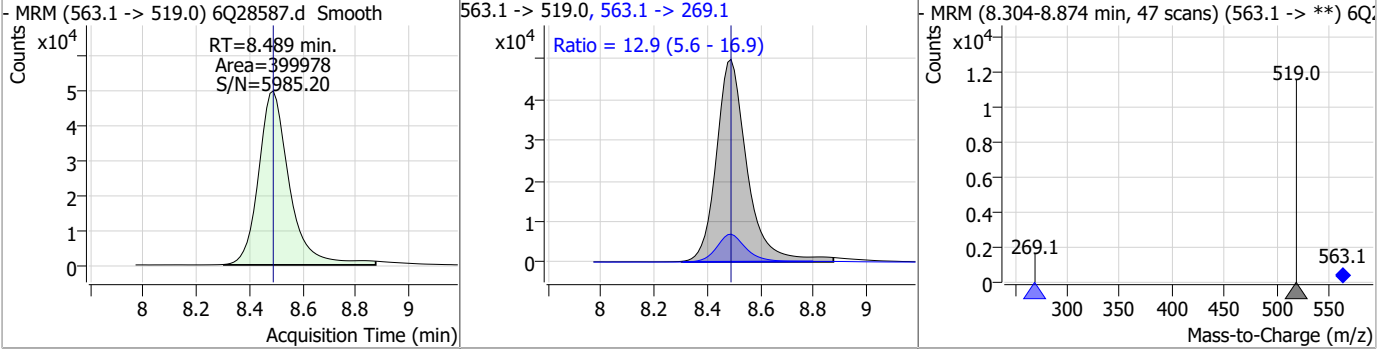


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.16	8.49	0.01	34086				

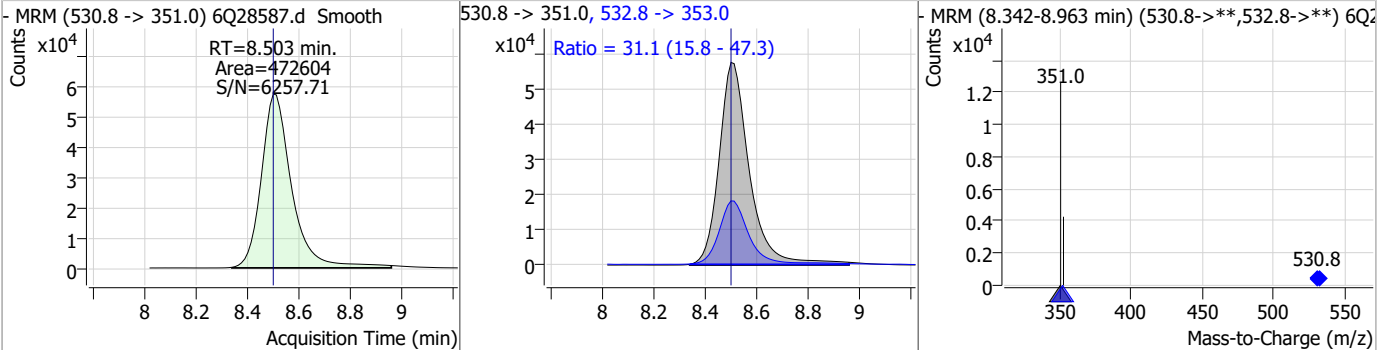


# Perfluorinated Compounds by LC/MS/MS

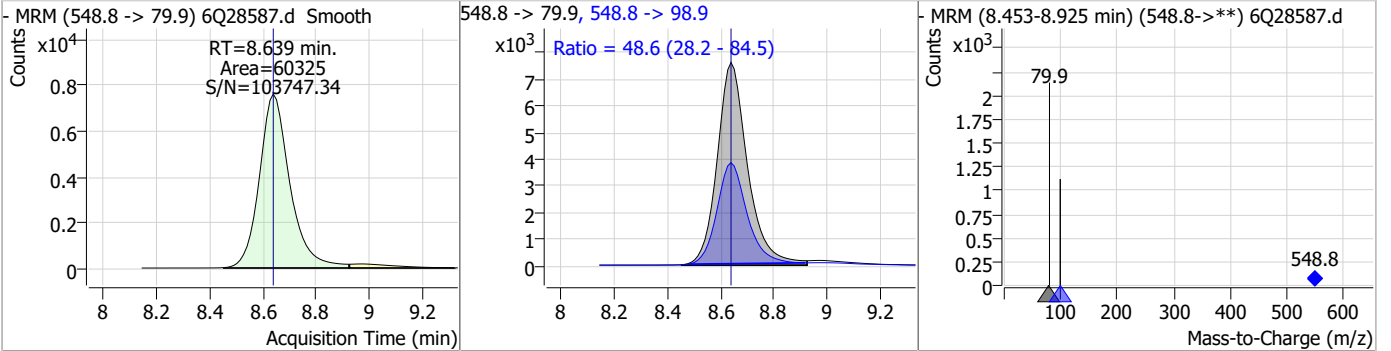
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	15.09	8.49	0.00	399978	563.1 -> 269.1	12.9	5.6	16.9



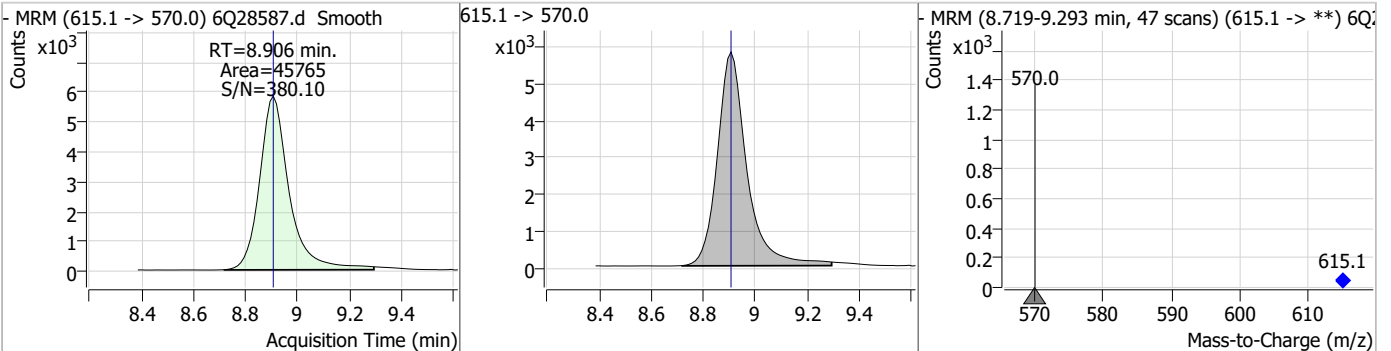
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	23.86	8.50	0.00	472604	532.8 -> 353.0	31.1	15.8	47.3



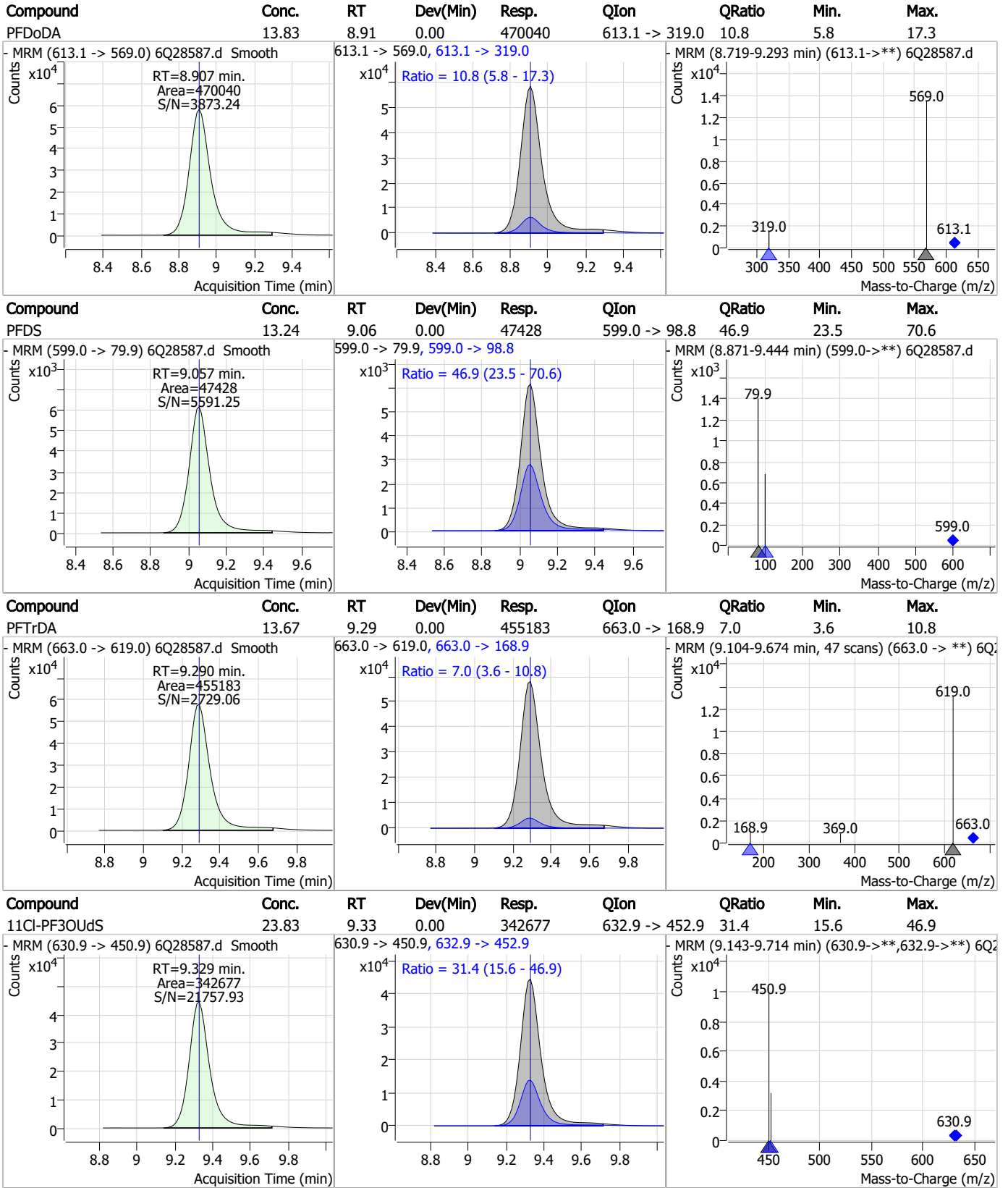
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.38	8.64	0.00	60325	548.8 -> 98.9	48.6	28.2	84.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.30	8.91	0.00	45765	615.1 -> 570.0			



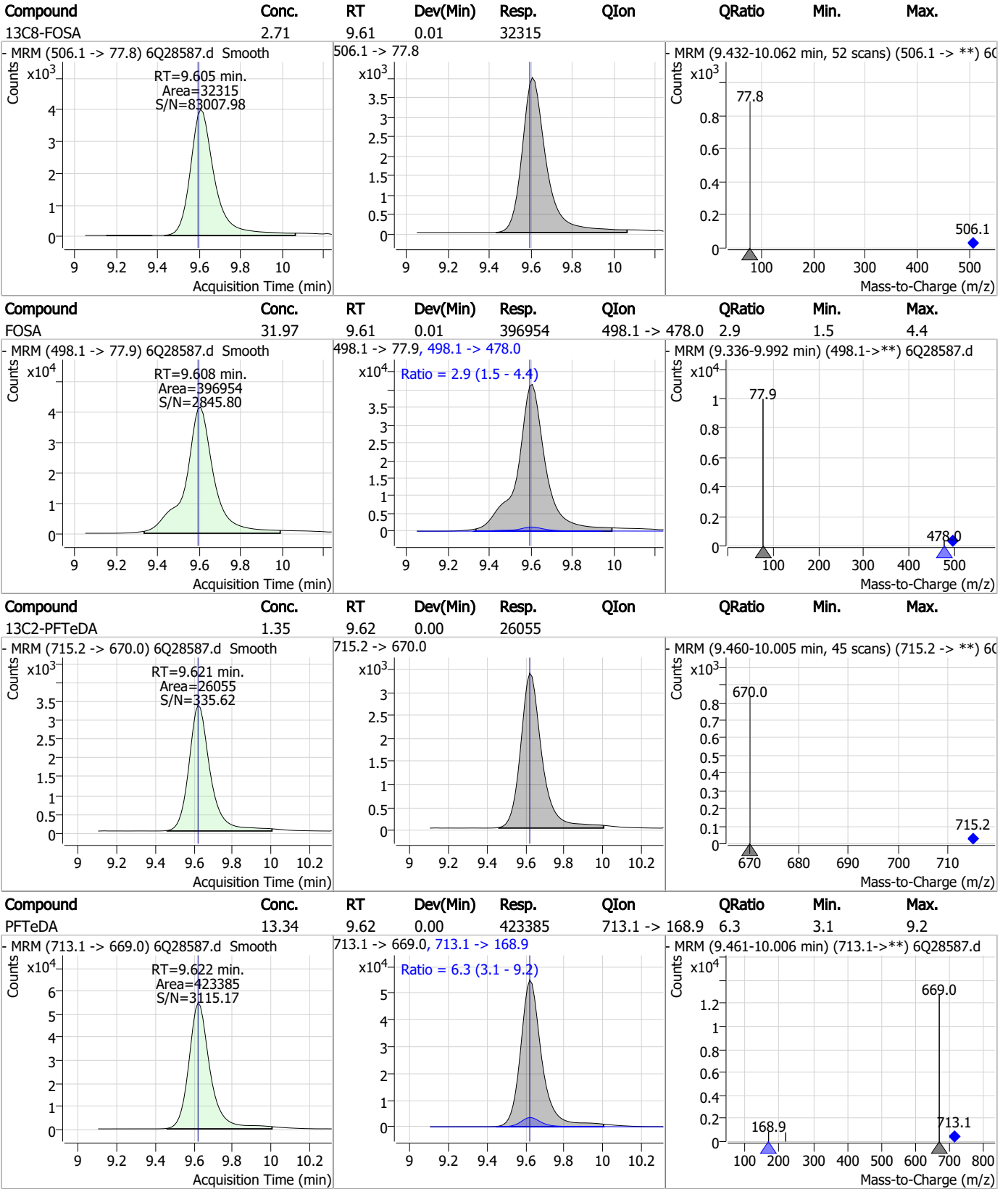
# Perfluorinated Compounds by LC/MS/MS



7.6.4

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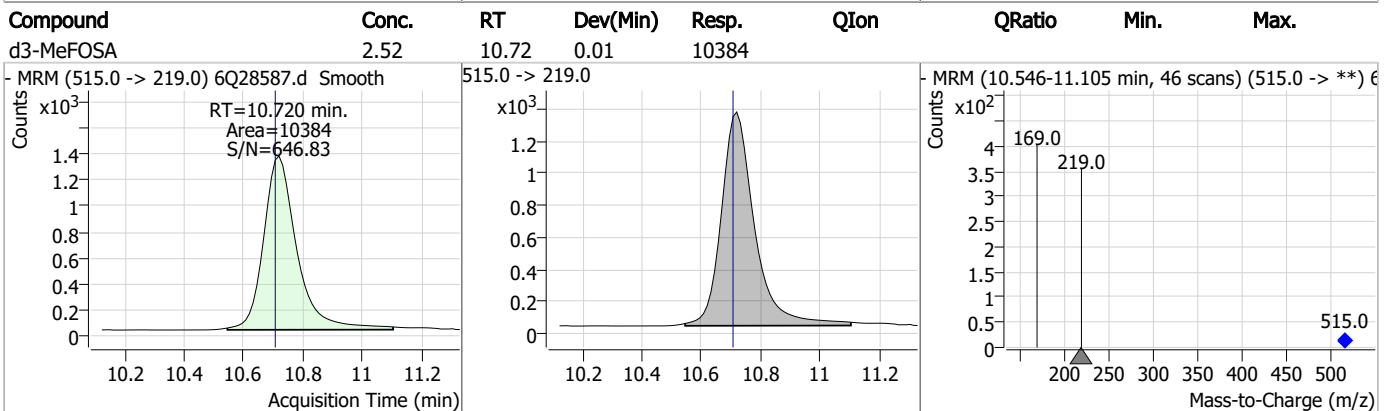
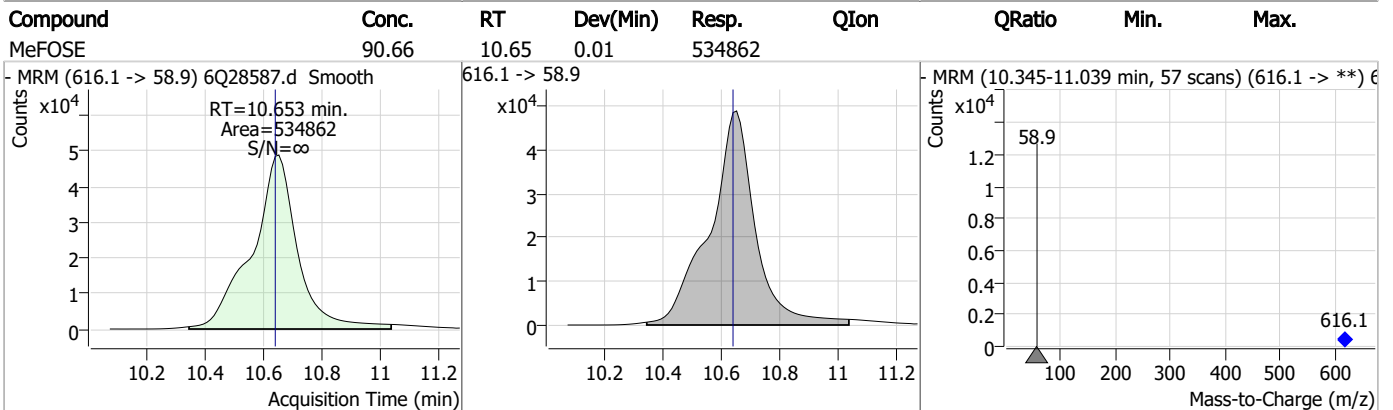
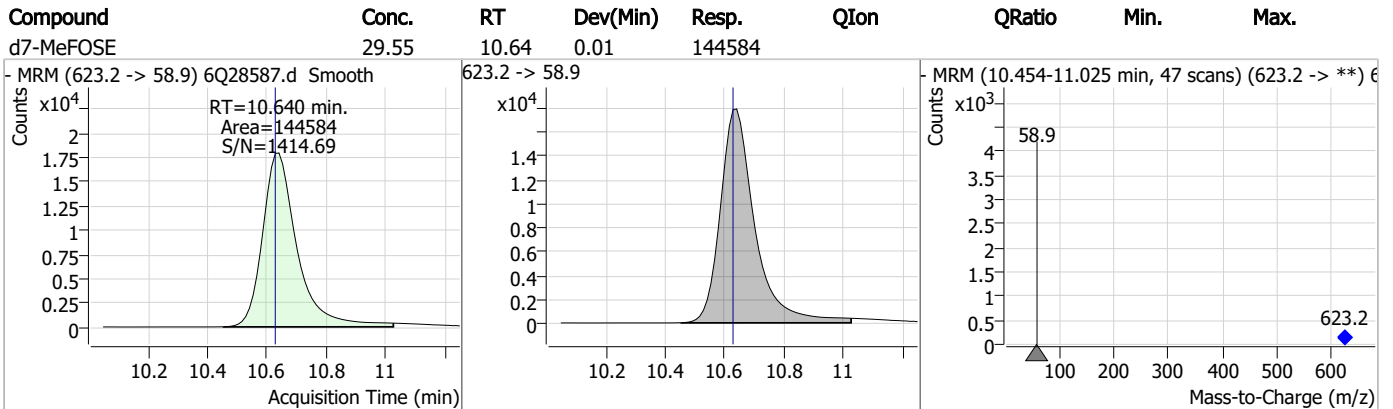
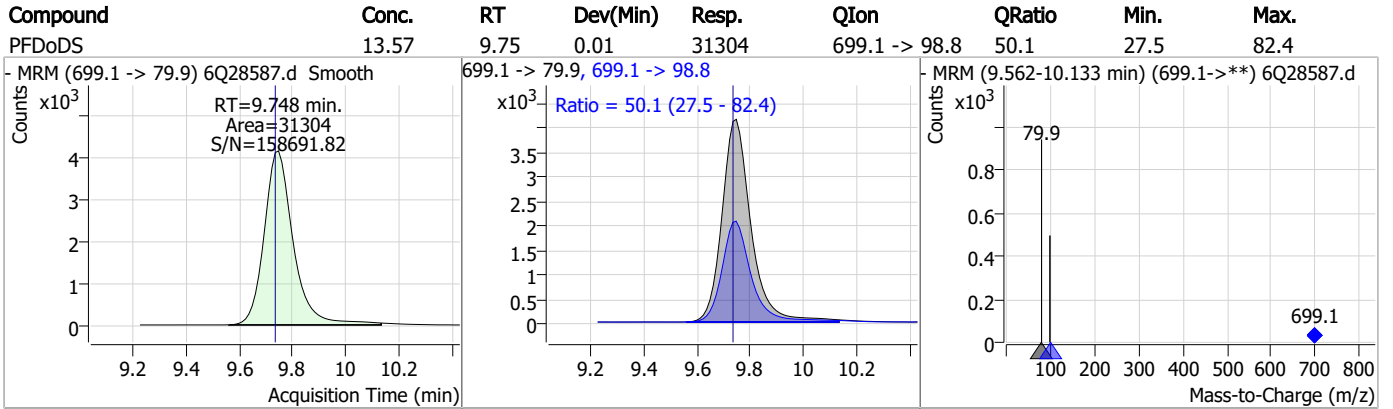
# Perfluorinated Compounds by LC/MS/MS



7.6.4

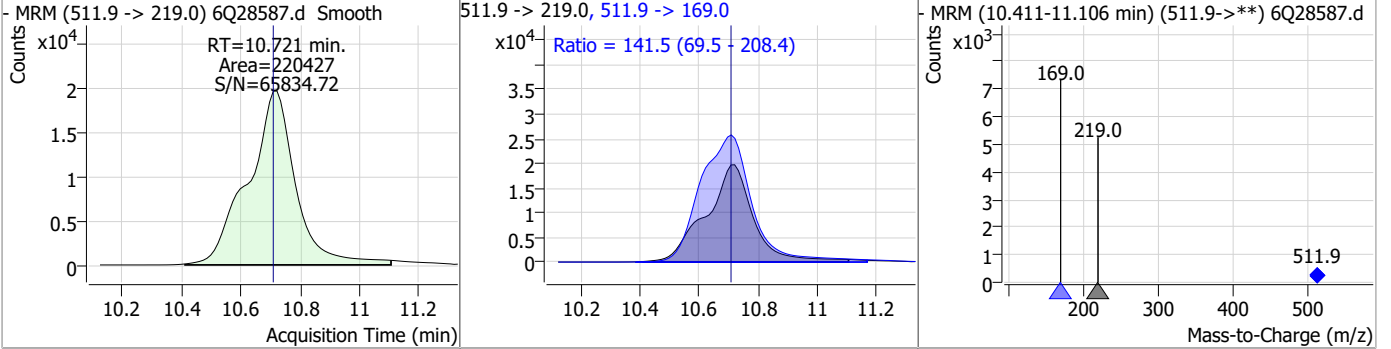
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# Perfluorinated Compounds by LC/MS/MS

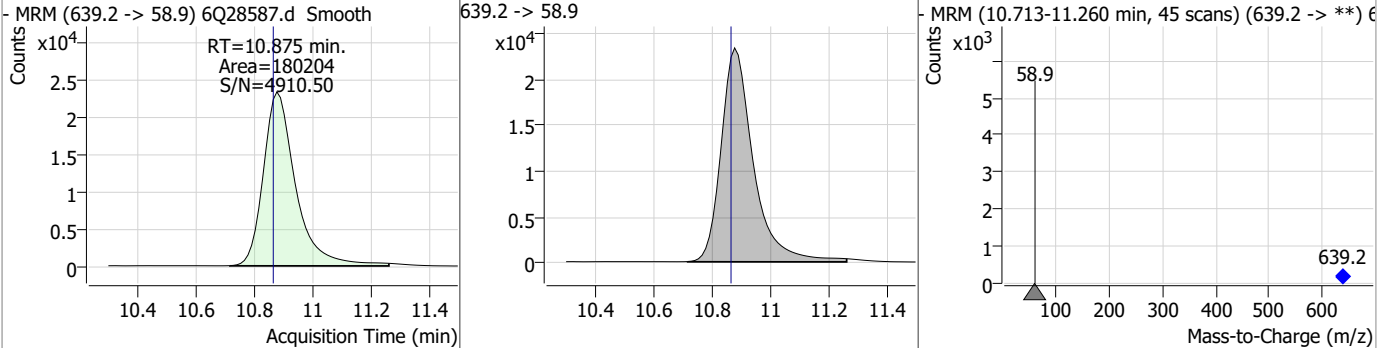


# Perfluorinated Compounds by LC/MS/MS

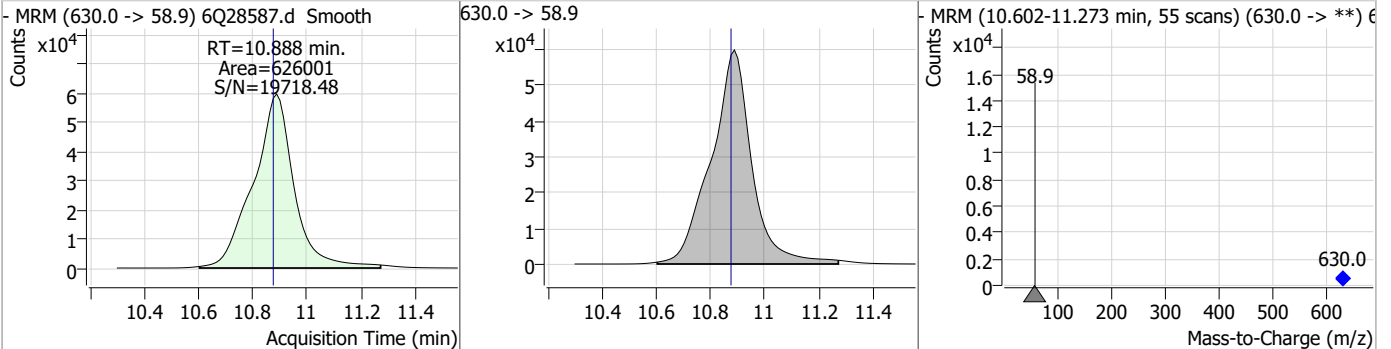
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	47.51	10.72	0.01	220427	511.9 -> 169.0	141.5	69.5	208.4



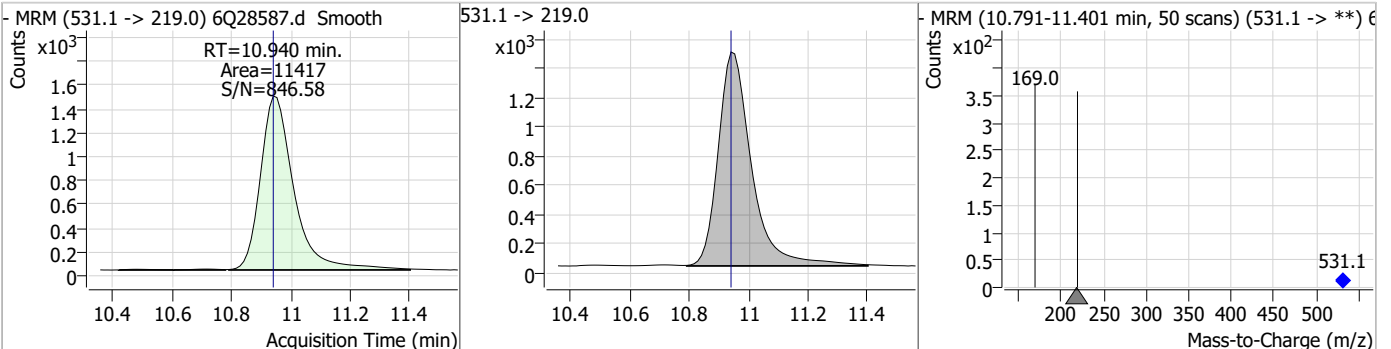
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.60	10.87	0.01	180204				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	85.28	10.89	0.01	626001				

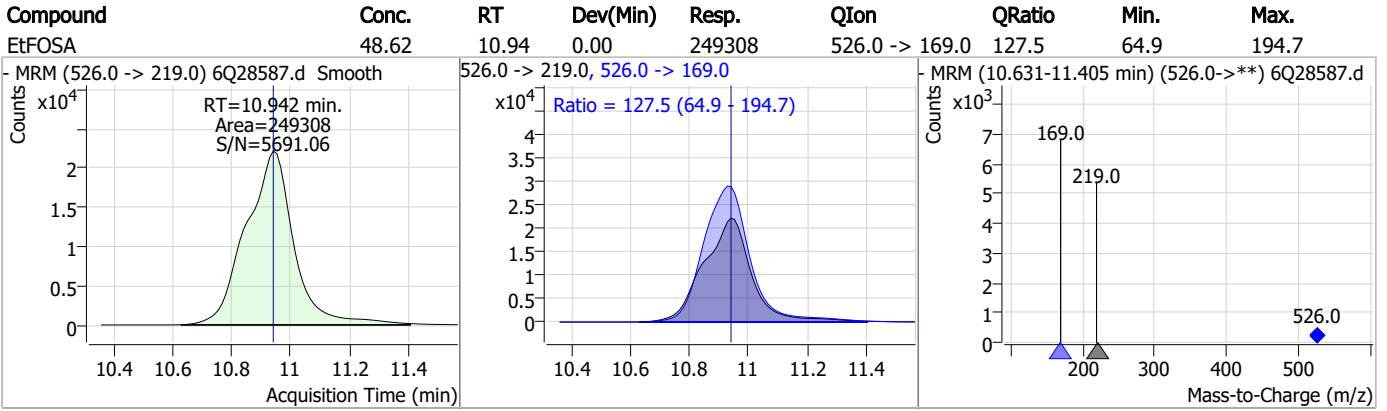


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.41	10.94	0.00	11417				





# Perfluorinated Compounds by LC/MS/MS



7.6.4

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# Manual Integration Approval Summary

Sample Number: S6Q396-RT                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28587.D                      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/20/23 10:37                      Supervisor approved: 11/21/23 17:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.06	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorononanoic acid	375-95-1		7.44	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

7.6.4.1

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Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

Natasha Gumtie  
 11/21/23 17:27

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28681.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/21/2023 9:47:27 AM  
 Sample Name : RT TDCA  
 Vial : P1-B3  
 DA Method File : TDCA.quantmethod.xml  
 Batch Name : s6q396\_TDCA.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)	QValue
<b>Internal Standards</b>						
M8-PFOS	8.185	507.1 -> 79.9	17599	2.50 µg/L	-0.012	
13C4-PFOS	8.185	502.8 -> 79.9	18604	2.50 µg/L	-0.012	
<b>System Monitoring Compounds</b>						
13C8-PFOS	8.185	507.1 -> 79.9	17599	2.40 µg/L	-0.012	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.0%			
<b>Target Compounds</b>						
PFOS	8.186	498.9 -> 79.9 498.9 -> 98.8	19089 9367	3.17 µg/L	#m	74
TCDCa	6.649	498.9 -> 79.9	4195	5.17 ng/ml		100
TDCA	6.797	498.9 -> 79.9	5858	7.97 ng/ml		100
TUDCA	5.809	498.9 -> 79.9	7139	4.57 ng/ml		100

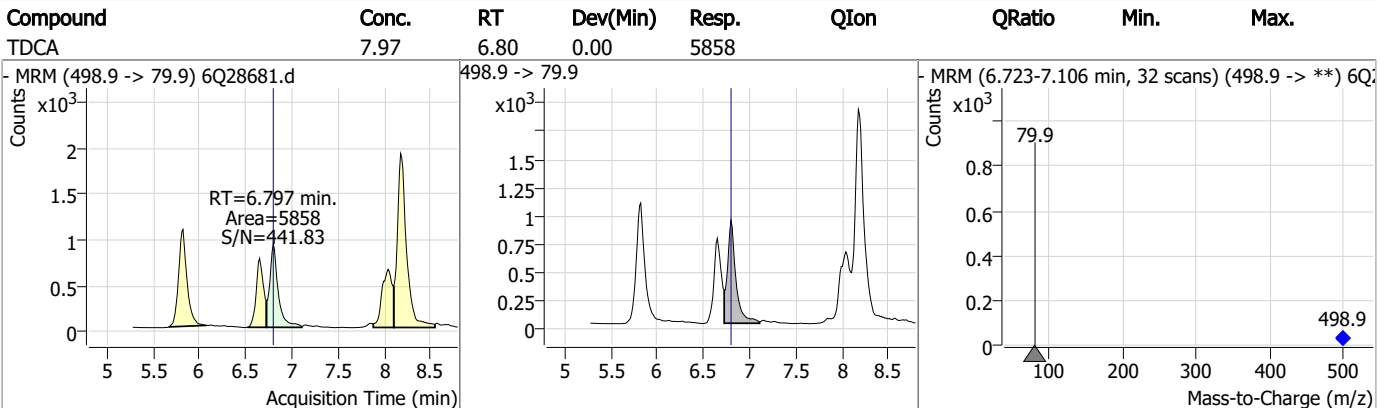
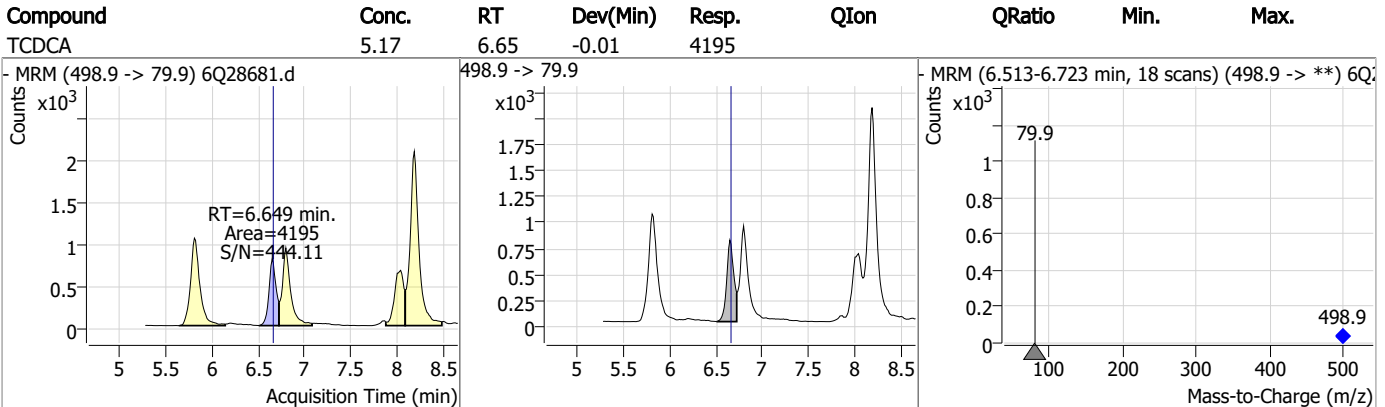
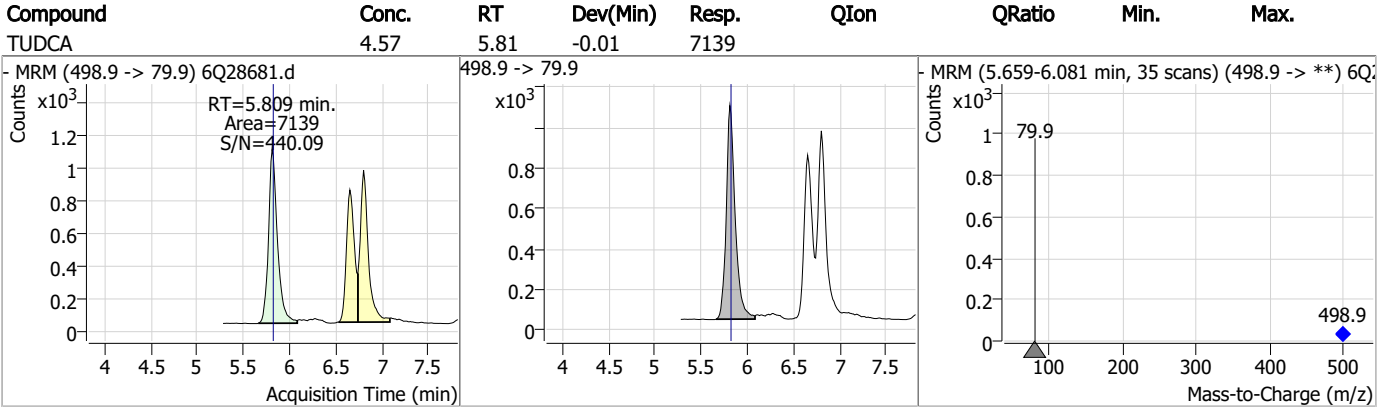
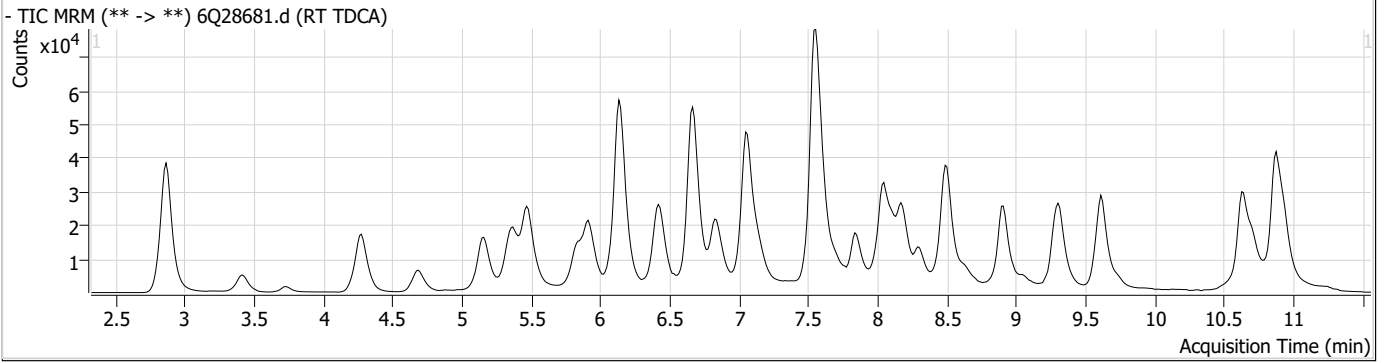
# = Qualifier out of range, m = manually integrated, + = Area summed

7.6.5

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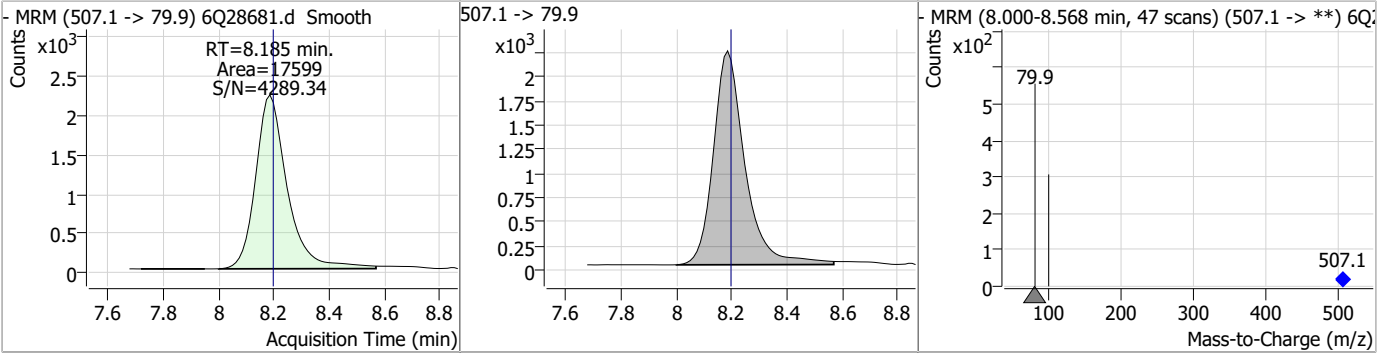


### Perfluorinated Compounds by LC/MS/MS

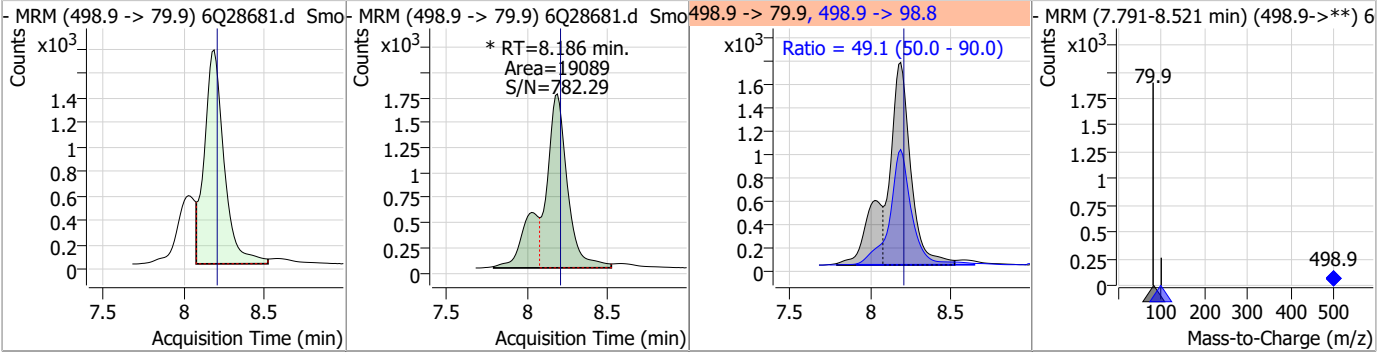


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.40	8.18	-0.01	17599				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.17	8.19	-0.01	19089 (m)	498.9 -> 98.8	49.1	50.0	90.0



7.6.5

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# Manual Integration Approval Summary

Sample Number: S6Q396-RT                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28681.D                      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/21/23 09:47                      Supervisor approved: 11/21/23 17:27 Natasha Guntie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

7.6.5.1

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## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28682.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/21/2023 10:01:45 AM  
 Sample Name : RT BR-LN  
 Vial : P1-B4  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	139395	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	50455	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	51361	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	58350	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	86479	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	32474	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	32836	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	39974	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	48814	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	26496	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	30747	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	21017	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	13191	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	15050	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	3205	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	4942	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	5474	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	34847	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	33195	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	28883	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	119698	25.00 µg/L	0.000
M9-EtFOSE	10.875	639.2 -> 58.9	162434	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	12018	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	10466	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	13251	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	58784	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8789	2.50 µg/L	0.000
13C4-PFOA	7.050	417.1 -> 372.0	95498	2.50 µg/L	-0.012
13C2-PFDA	8.048	515.1 -> 470.1	33664	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	30666	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	47215	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	3205	5.67 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.4%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4942	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C2-8:2FTS	7.848	529.1 -> 80.9	5474	5.29 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C2-PFDoDA	8.906	615.1 -> 570.0	48814	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-PFTeDA	9.621	715.2 -> 670.0	26496	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C3-PFBS	5.384	302.1 -> 79.9	21017	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C3-PFHxS	7.152	402.1 -> 79.9	13191	2.45 µg/L	0.000

7.6.6  
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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 = 98.0%	
13C4-PFBA	2.860	216.8 -> 171.9	139395	10.25 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C4-PFHpA	6.419	367.1 -> 322.0	58350	2.71 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C5-PFHxA	5.478	318.0 -> 273.0	51361	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C5-PFPeA	4.272	268.3 -> 223.0	50455	5.32 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C6-PFDA	8.048	519.1 -> 474.1	32836	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C7-PFUnDA	8.489	570.0 -> 525.1	39974	1.28 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-FOSA	9.605	506.1 -> 77.8	30747	2.38 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C8-PFOA	7.062	421.1 -> 376.0	86479	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.8%	
13C8-PFOS	8.185	507.1 -> 79.9	15050	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C9-PFNA	7.580	472.1 -> 427.0	32474	1.26 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.1%	
d3-MeFOSAA	8.105	573.2 -> 419.0	34847	5.07 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	33195	11.32 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.2%	
d3-MeFOSA	10.720	515.0 -> 219.0	10466	2.34 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
d5-EtFOSAA	8.300	589.2 -> 419.0	28883	4.96 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
d7-MeFOSE	10.628	623.2 -> 58.9	119698	22.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.3%	
d9-EtFOSE	10.875	639.2 -> 58.9	162434	22.95 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d5-EtFOSA	10.940	531.1 -> 219.0	12018	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.155	327.1 -> 307.0	270606	51.85 µg/L	99
		327.1 -> 80.9	106301		
6:2FTS	6.836	427.1 -> 407.0	281701	52.35 µg/L	100
		427.1 -> 80.9	101318		
8:2FTS	7.849	527.1 -> 507.0	205317	49.51 µg/L	98
		527.1 -> 80.8	76396		
EtFOSAA	8.314	584.2 -> 419.1	66939	14.34 µg/L	m 94
		584.2 -> 526.0	41781		
FOSA	9.608	498.1 -> 77.9	395336	33.46 µg/L	100
		498.1 -> 478.0	11131		
MeFOSAA	8.106	570.1 -> 419.0	93479	14.23 µg/L	m 96
		570.1 -> 483.0	20387		
PFBA	2.868	212.8 -> 168.9	255390	55.88 µg/L	100
PFBS	5.385	298.7 -> 79.9	90107	11.25 µg/L	97
		298.7 -> 98.8	35613		
PFDA	8.048	512.9 -> 469.0	390023	12.78 µg/L	98
		512.9 -> 219.0	59921		
PFDoDA	8.907	613.1 -> 569.0	479481	13.23 µg/L	99
		613.1 -> 319.0	52718		
PFDS	9.057	599.0 -> 79.9	49237	12.57 µg/L	99

7.6.6  
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## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	22718			
PFHpA	6.419	363.1 -> 319.0	411195	13.70	µg/L	99
		363.1 -> 169.0	59620			
PFHpS	7.706	449.0 -> 79.9	74114	11.58	µg/L	98
		449.0 -> 98.9	36516			
PFHxA	5.481	313.0 -> 269.0	261885	13.63	µg/L	100
		313.0 -> 118.9	12766			
PFHxS	7.153	398.7 -> 79.9	78454	12.82	µg/L	m 87
		398.7 -> 98.9	37714			
PFNA	7.443	463.0 -> 419.0	618558	30.60	µg/L	m 96
		463.0 -> 219.0	151073			
PFNS	8.639	548.8 -> 79.9	65427	12.28	µg/L	90
		548.8 -> 98.9	31940			
PFOA	7.063	413.0 -> 369.0	1048456	30.61	µg/L	m 98
		413.0 -> 169.0	200301			
PFOS	8.186	498.9 -> 79.9	73424	10.96	µg/L	m 82
		498.9 -> 98.8	36132			
PFPeA	4.274	263.0 -> 219.0	359493	28.09	µg/L	100
PFPeS	6.458	349.1 -> 79.9	87796	13.45	µg/L	98
		349.1 -> 98.9	39414			
PFTeDA	9.622	713.1 -> 669.0	409917	12.70	µg/L	100
		713.1 -> 168.9	25603			
PFTrDA	9.290	663.0 -> 619.0	438200	12.34	µg/L	100
		663.0 -> 168.9	31655			
PFUnDA	8.489	563.1 -> 519.0	385202	12.39	µg/L	94
		563.1 -> 269.1	51721			
11CI-PF3OUdS	9.317	630.9 -> 450.9	335141	23.18	µg/L	98
		632.9 -> 452.9	108538			
9CI-PF3ONS	8.503	530.8 -> 351.0	502908	25.25	µg/L	95
		532.8 -> 353.0	145118			
ADONA	6.669	376.9 -> 250.9	1404966	24.25	µg/L	98
		376.9 -> 84.8	367979			
HFPO-DA	5.844	284.9 -> 168.9	84254	25.37	µg/L	96
		284.9 -> 184.9	9772			
3:3FTCA	3.721	241.0 -> 177.0	51440	63.83	µg/L	99
		241.0 -> 117.0	6230			
5:3FTCA	6.146	341.0 -> 237.1	1189907	338.72	µg/L	99
		341.0 -> 217.0	855289			
7:3FTCA	7.558	441.0 -> 316.9	737595	331.54	µg/L	89
		441.0 -> 336.9	1645507			
EtFOSA	10.942	526.0 -> 219.0	268599	49.77	µg/L	98
		526.0 -> 169.0	342393			
EtFOSE	10.888	630.0 -> 58.9	574882	86.88	µg/L	100
MeFOSA	10.721	511.9 -> 219.0	232112	49.64	µg/L	98
		511.9 -> 169.0	317666			
MeFOSE	10.641	616.1 -> 58.9	460863	94.36	µg/L	100
PFDoS	9.736	699.1 -> 79.9	29573	11.73	µg/L	100
		699.1 -> 98.8	16221			
NFDHA	5.360	295.0 -> 201.0	59082	26.55	µg/L	96
		295.0 -> 84.9	15992			
PFMBA	4.687	279.0 -> 85.1	239571	27.16	µg/L	100
PFMPA	3.413	229.0 -> 84.9	181458	27.43	µg/L	100
PFEESA	5.925	314.8 -> 134.9	580784	24.44	µg/L	100
		314.8 -> 82.9	20793			

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

7.6.6  
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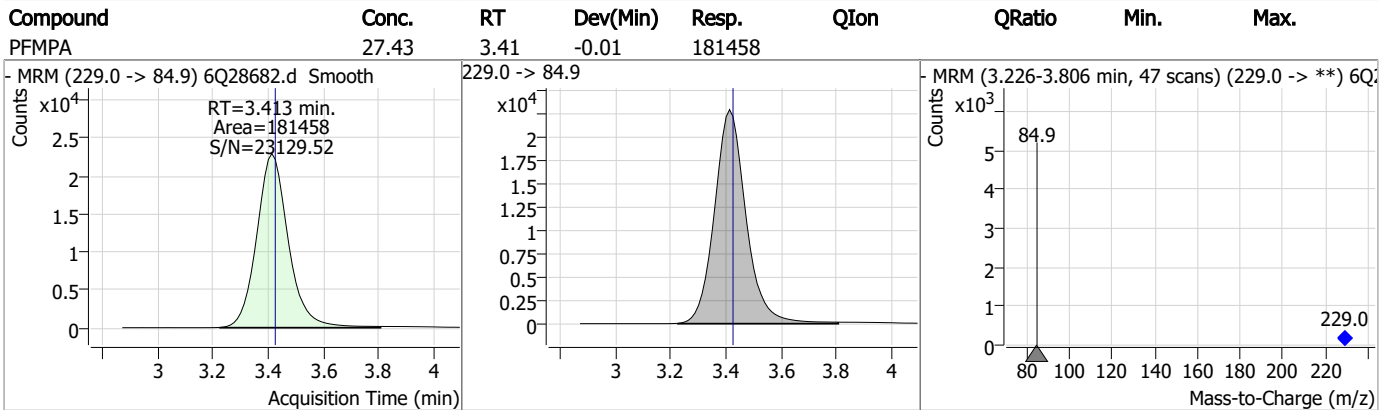
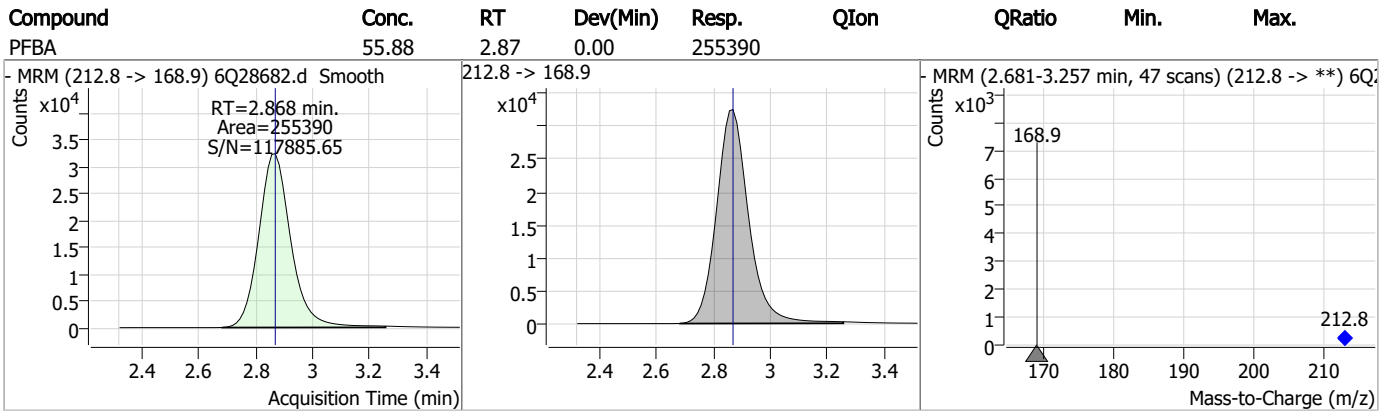
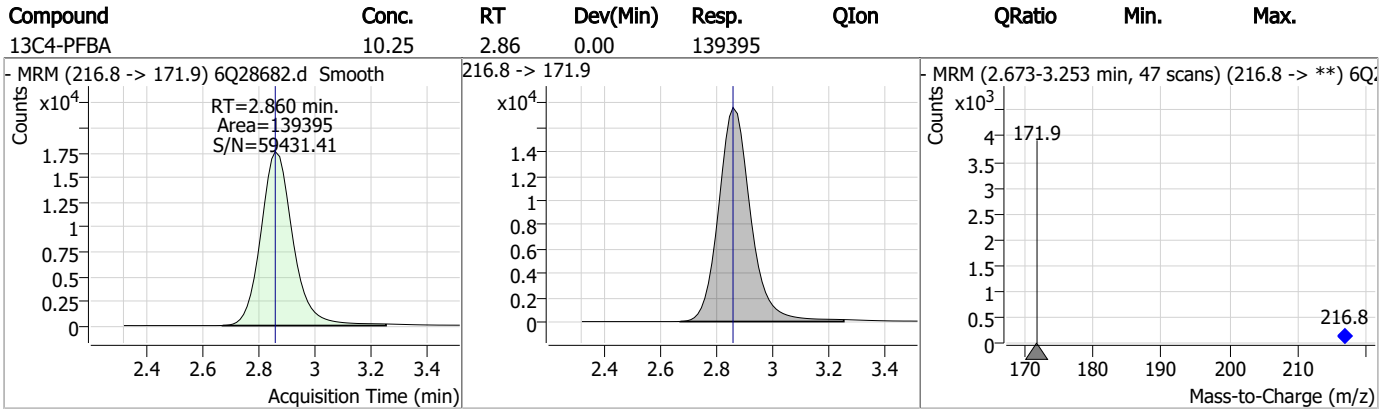
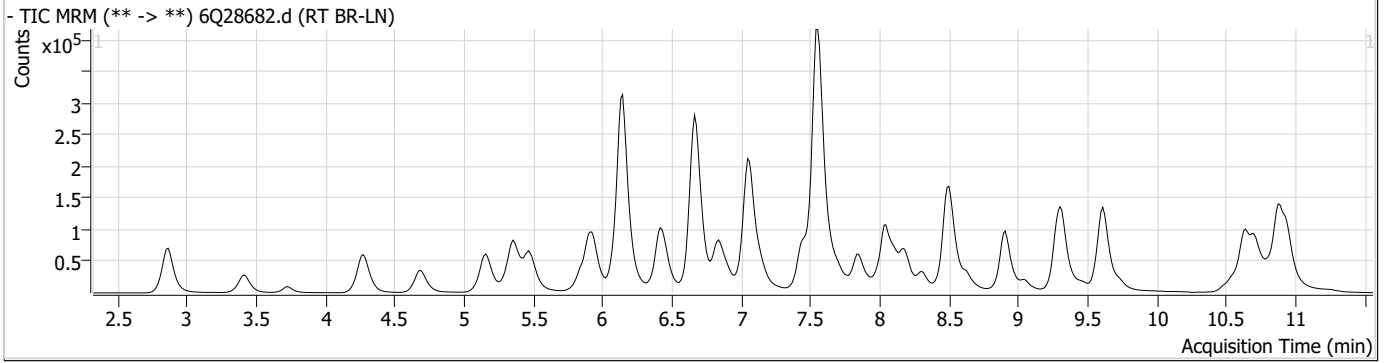
# Perfluorinated Compounds by LC/MS/MS

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

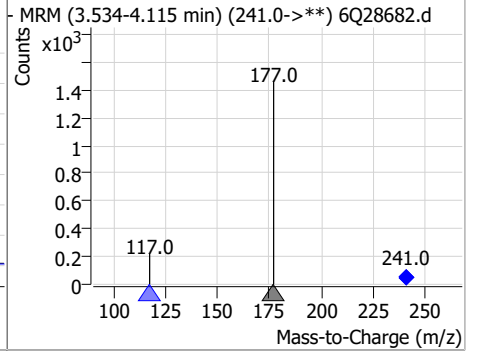
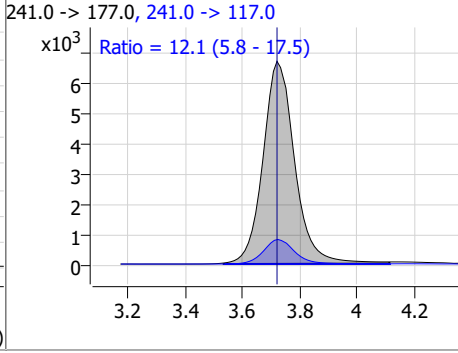
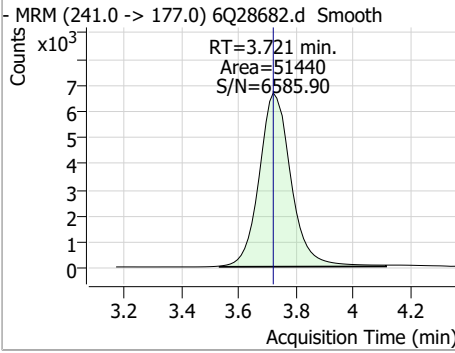
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# Perfluorinated Compounds by LC/MS/MS

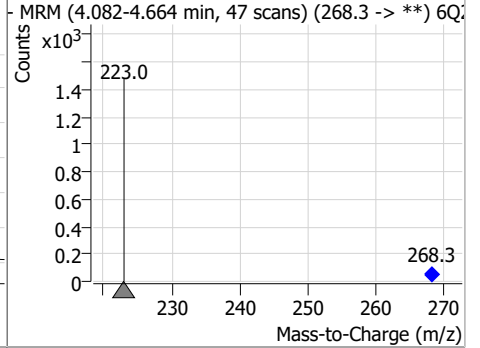
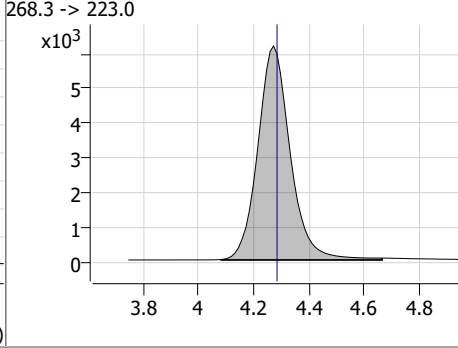
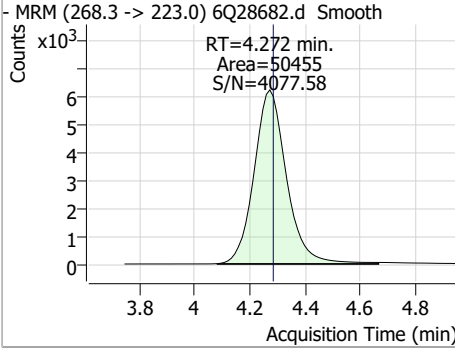


# Perfluorinated Compounds by LC/MS/MS

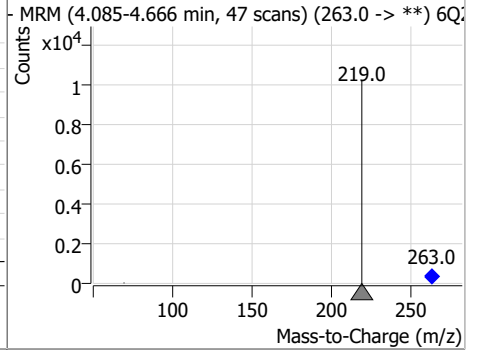
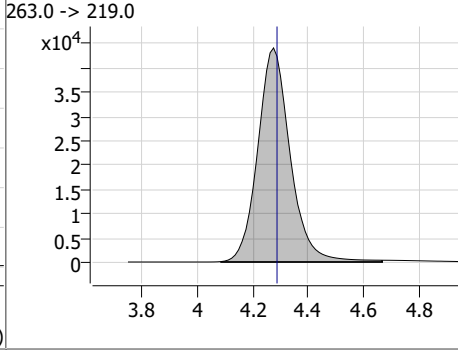
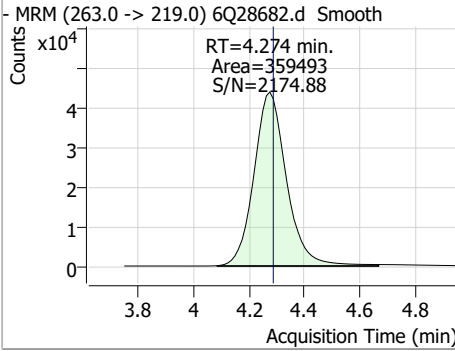
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	63.83	3.72	0.00	51440	241.0 -> 117.0	12.1	5.8	17.5



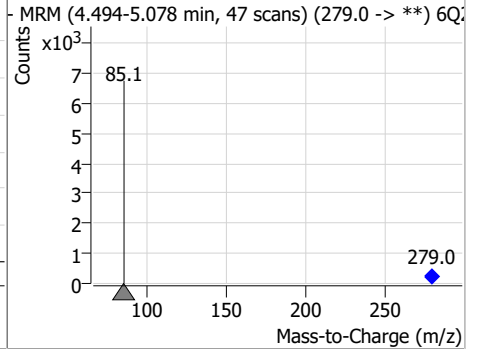
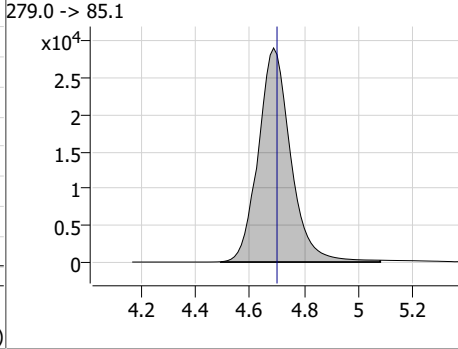
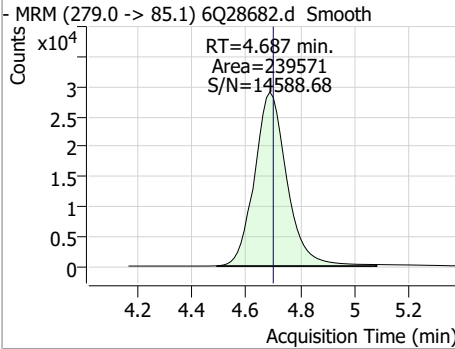
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.32	4.27	-0.01	50455				



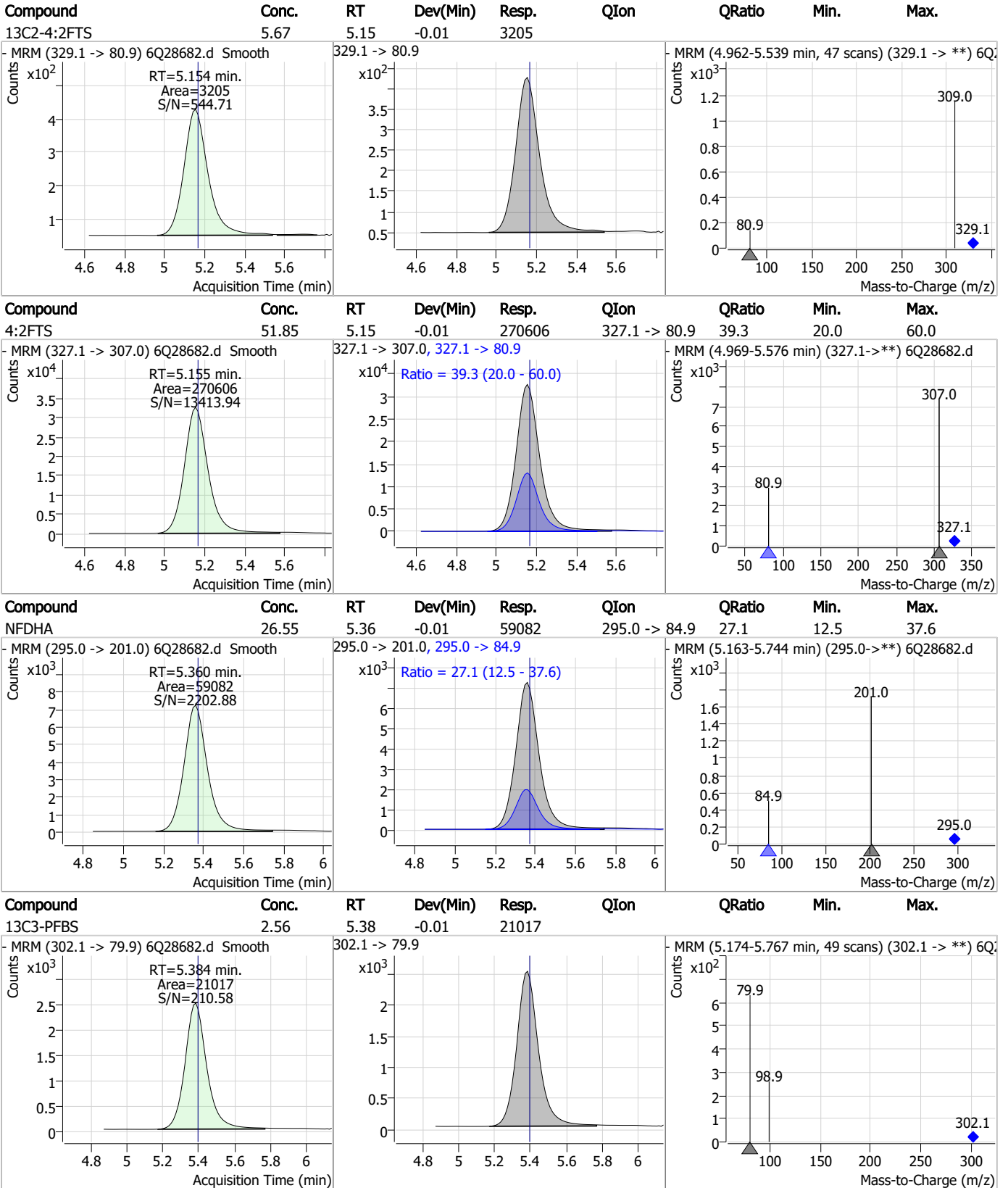
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	28.09	4.27	-0.01	359493				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	27.16	4.69	-0.01	239571				



# Perfluorinated Compounds by LC/MS/MS

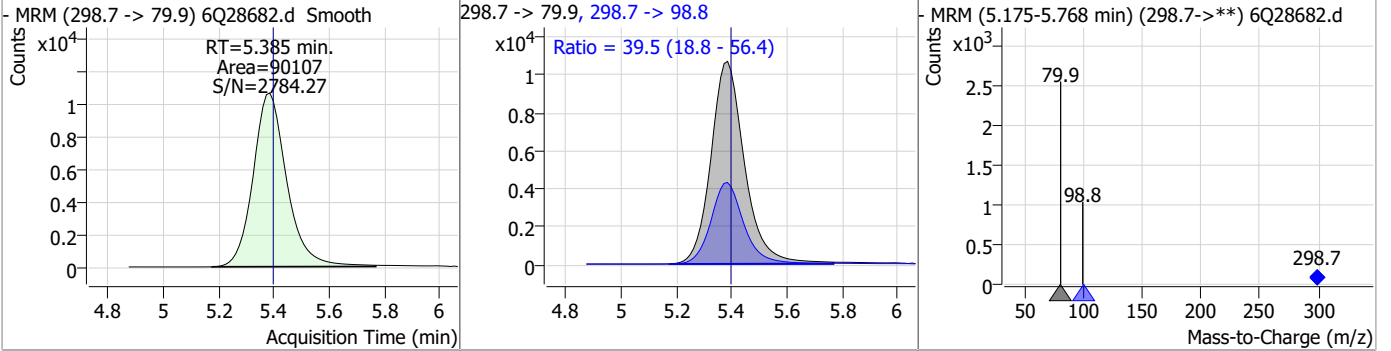


7.6.6

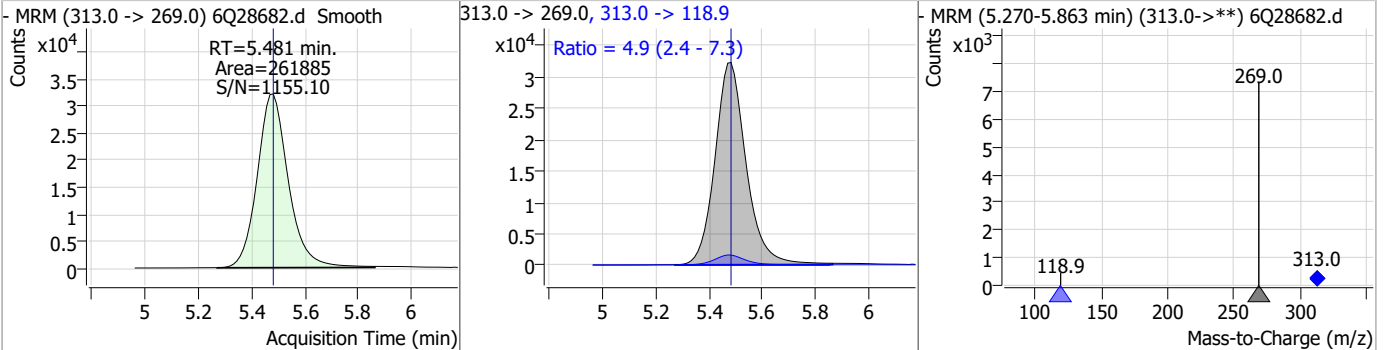
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# Perfluorinated Compounds by LC/MS/MS

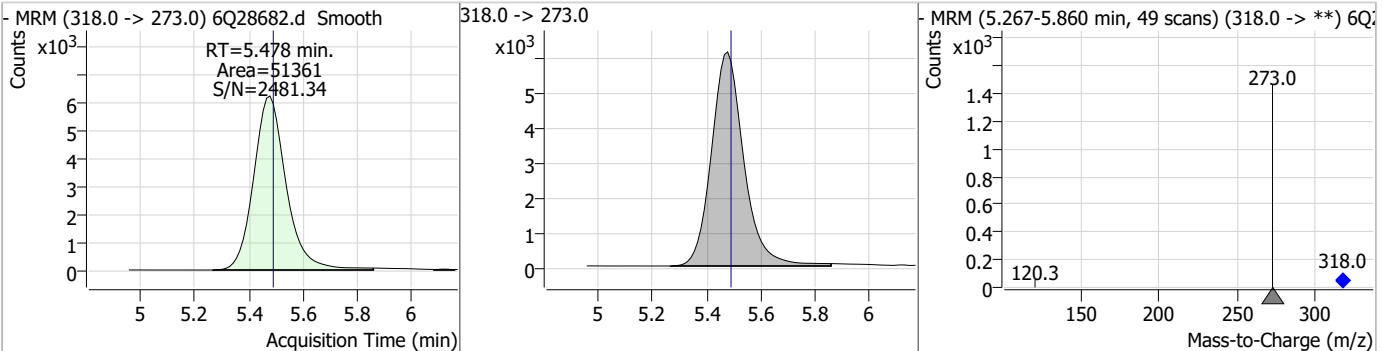
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.25	5.38	-0.01	90107	298.7 -> 98.8	39.5	18.8	56.4



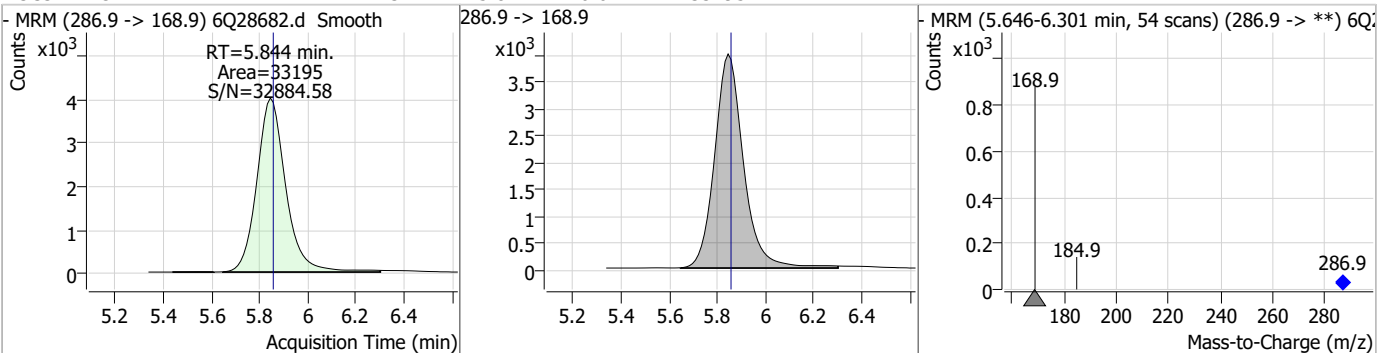
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.63	5.48	0.00	261885	313.0 -> 118.9	4.9	2.4	7.3



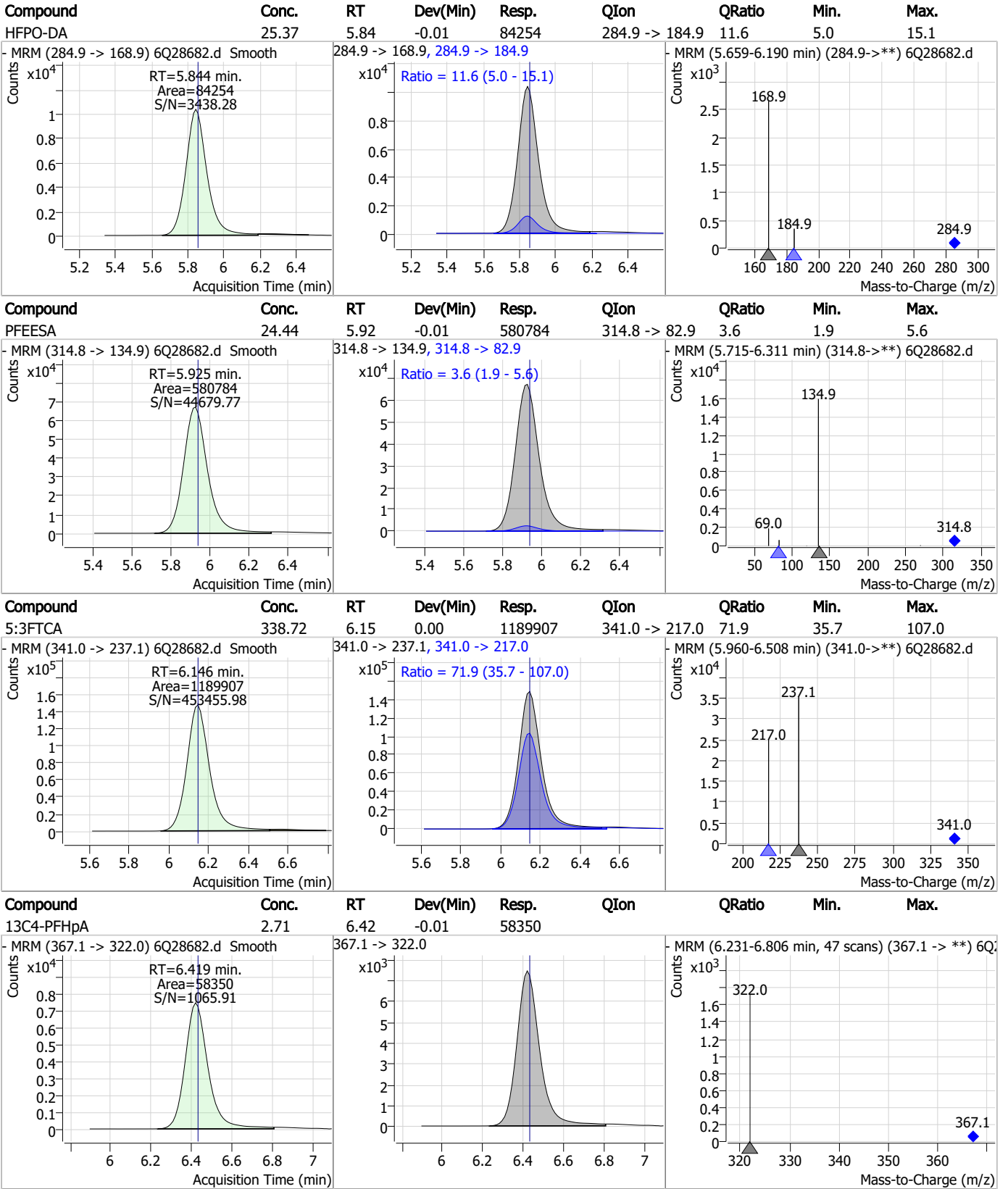
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.62	5.48	-0.01	51361	318.0 -> 273.0	4.9	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.32	5.84	-0.01	33195	286.9 -> 168.9	4.9	2.4	7.3



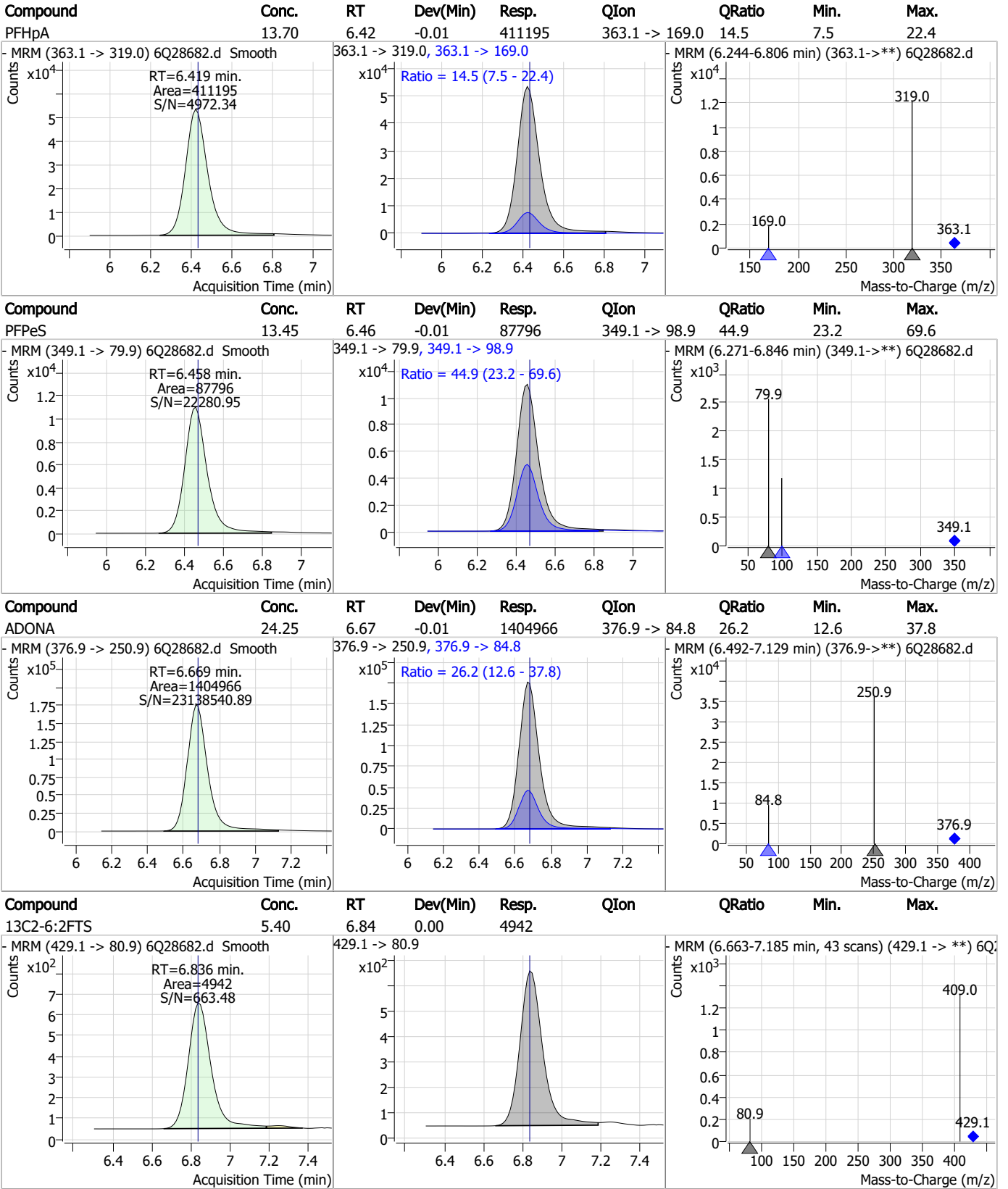
# Perfluorinated Compounds by LC/MS/MS



7.6.6

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# Perfluorinated Compounds by LC/MS/MS

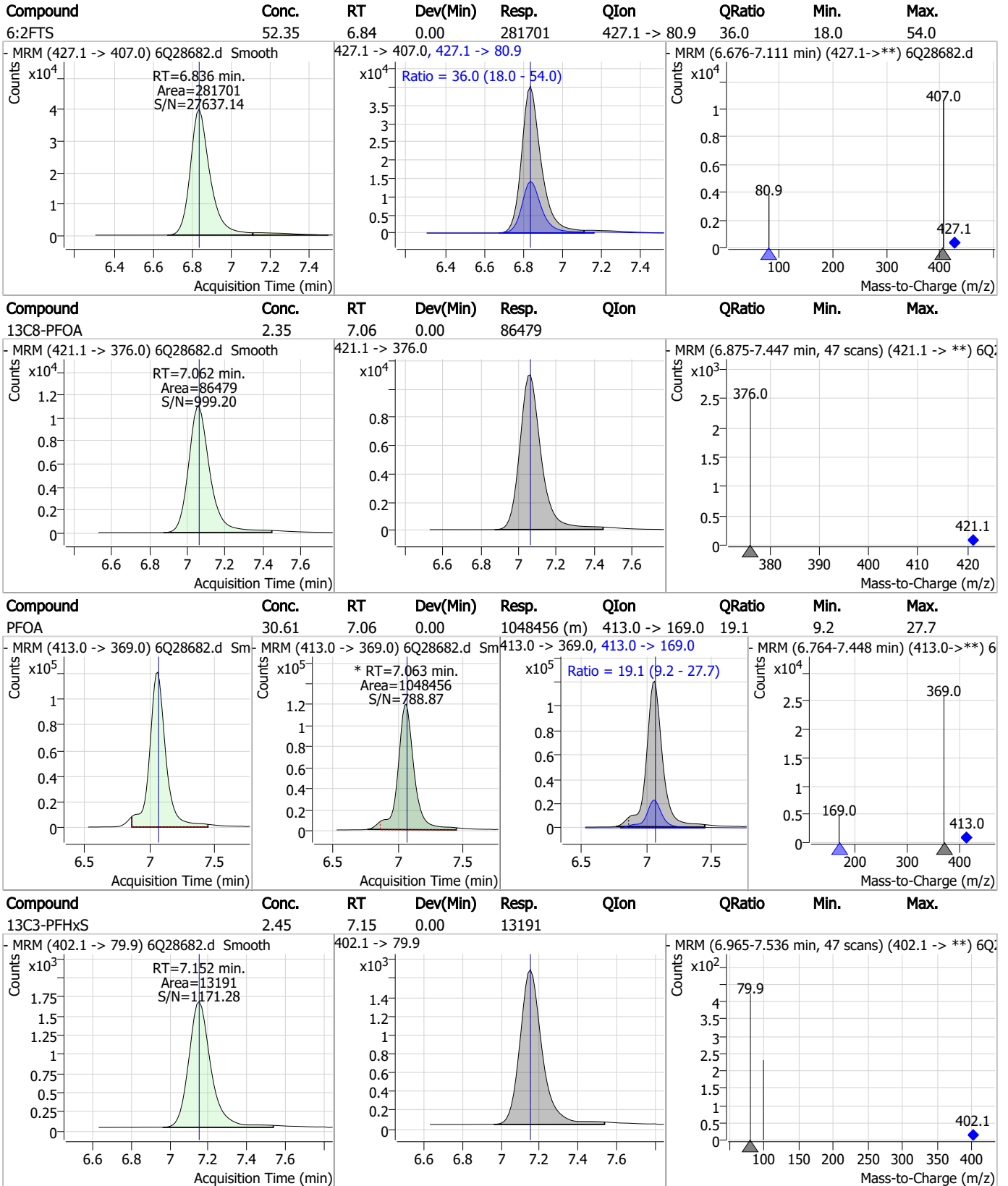


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# Perfluorinated Compounds by LC/MS/MS

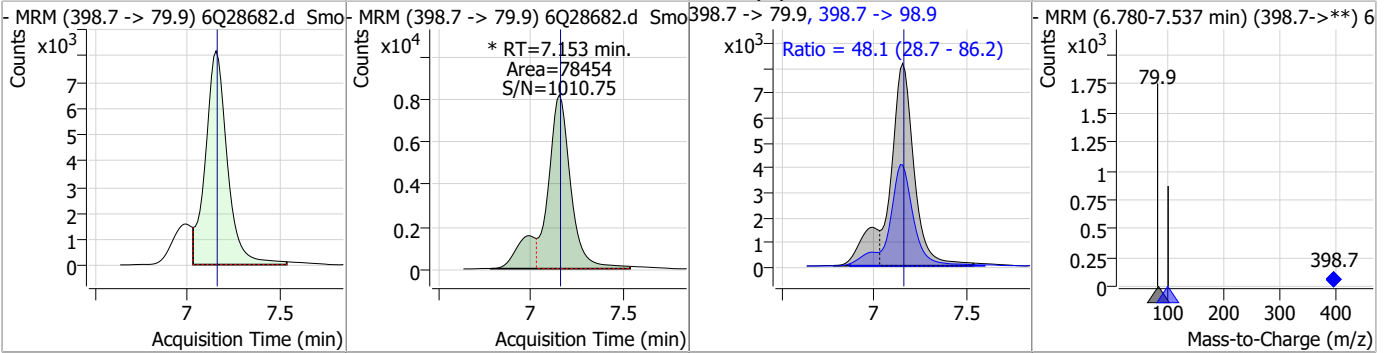


7.6.6

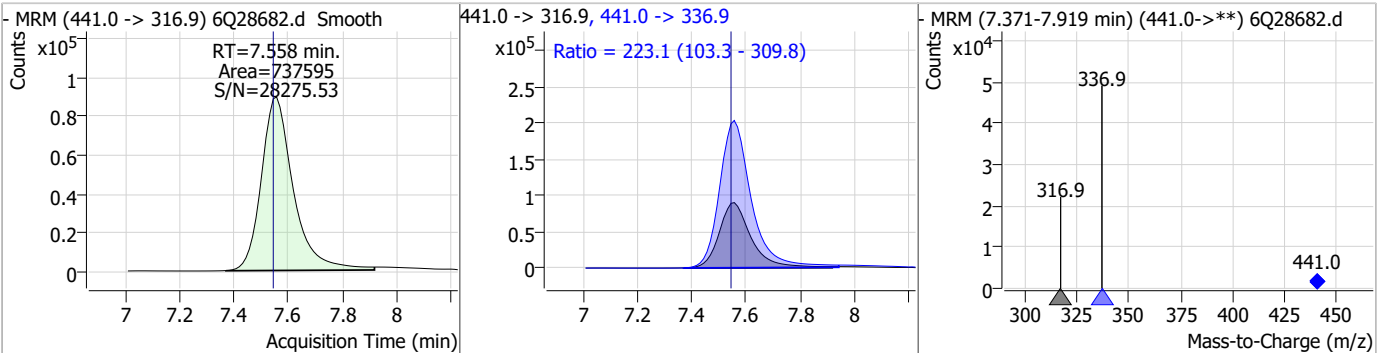
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# Perfluorinated Compounds by LC/MS/MS

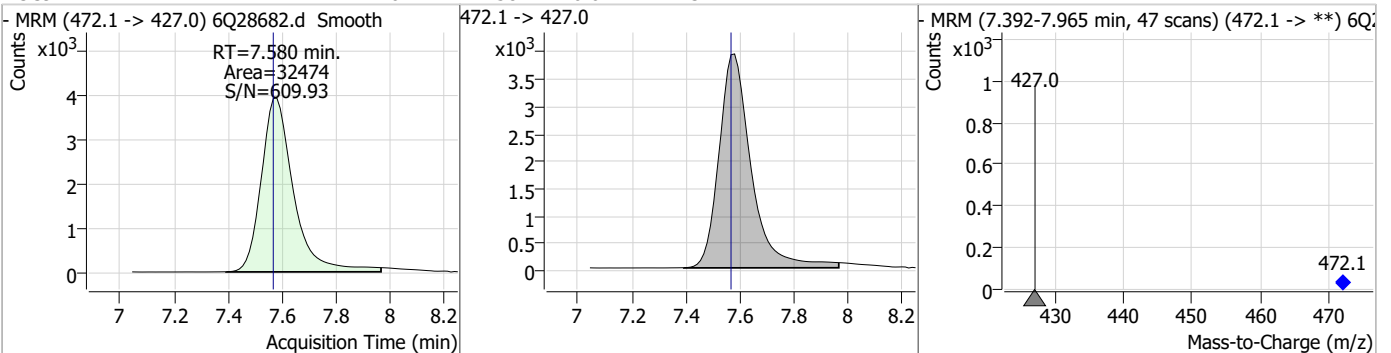
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	12.82	7.15	0.00	78454 (m)	398.7 -> 98.9	48.1	28.7	86.2



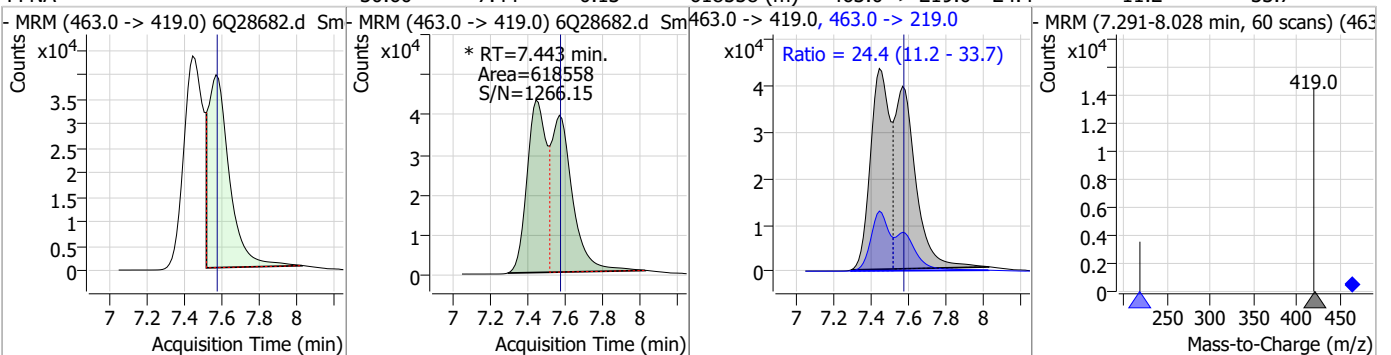
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	331.54	7.56	0.01	737595	441.0 -> 336.9	223.1	103.3	309.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.58	0.01	32474				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	30.60	7.44	-0.13	618558 (m)	463.0 -> 219.0	24.4	11.2	33.7



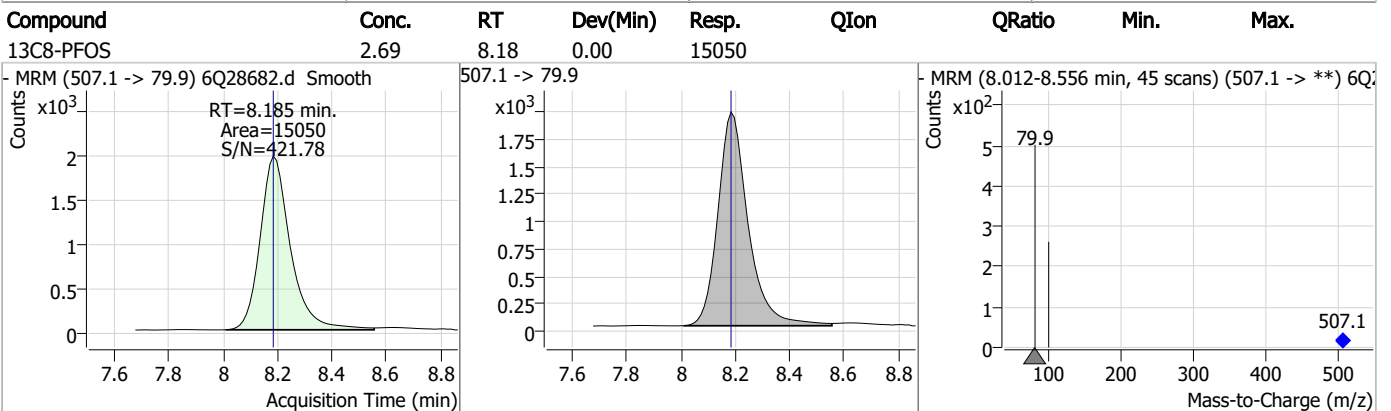
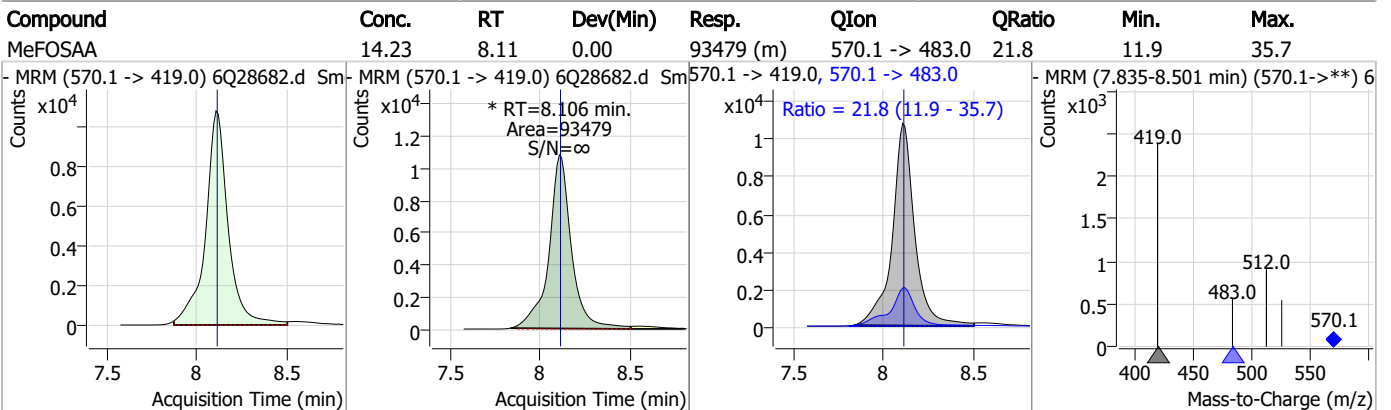
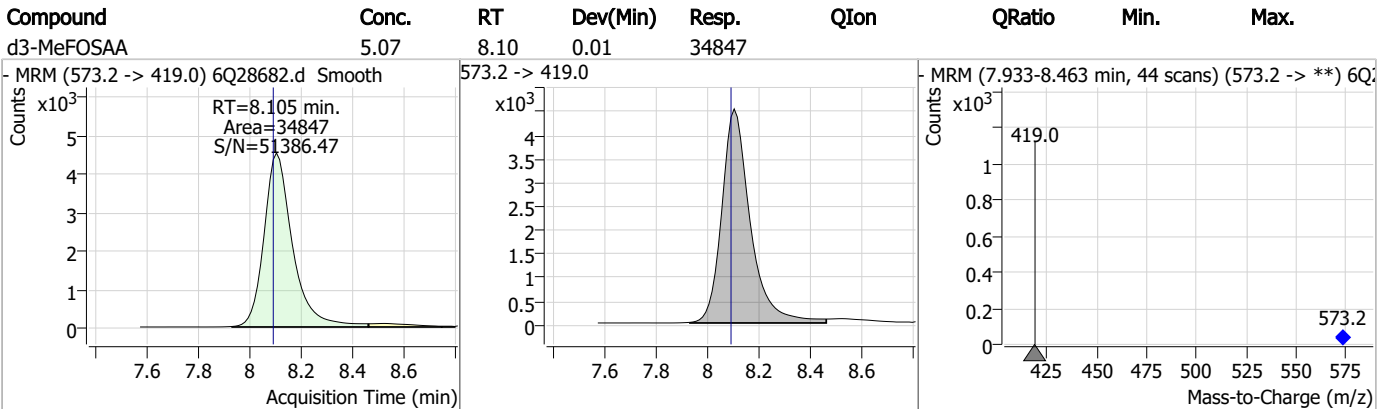
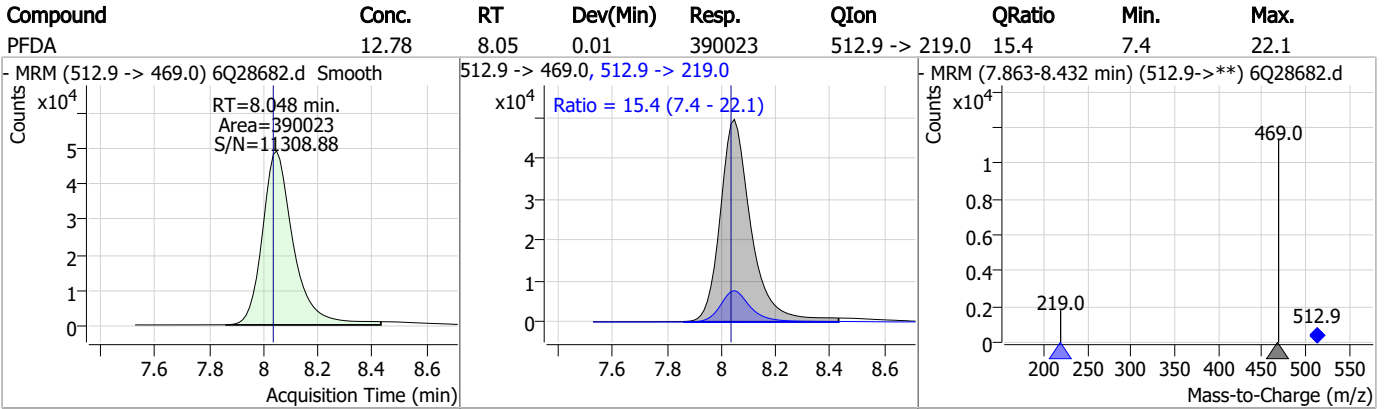
# Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	11.58	7.71	0.00	74114	449.0 -> 98.9	49.3	23.9	71.7
13C2-8:2FTS	5.29	7.85	0.01	5474	529.1 -> 80.9			
8:2FTS	49.51	7.85	0.01	205317	527.1 -> 80.8	37.2	18.1	54.3
13C6-PFDA	1.26	8.05	0.01	32836	519.1 -> 474.1			

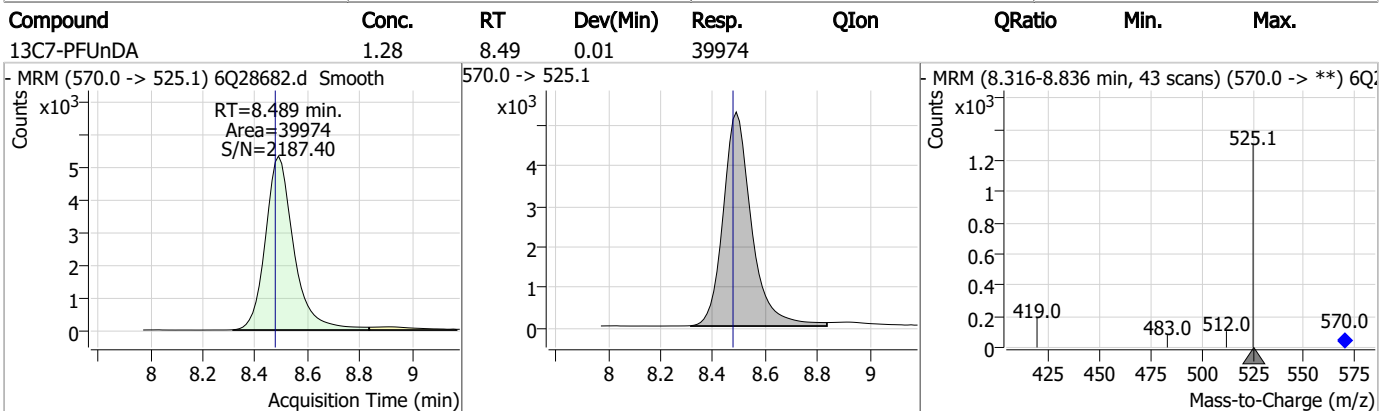
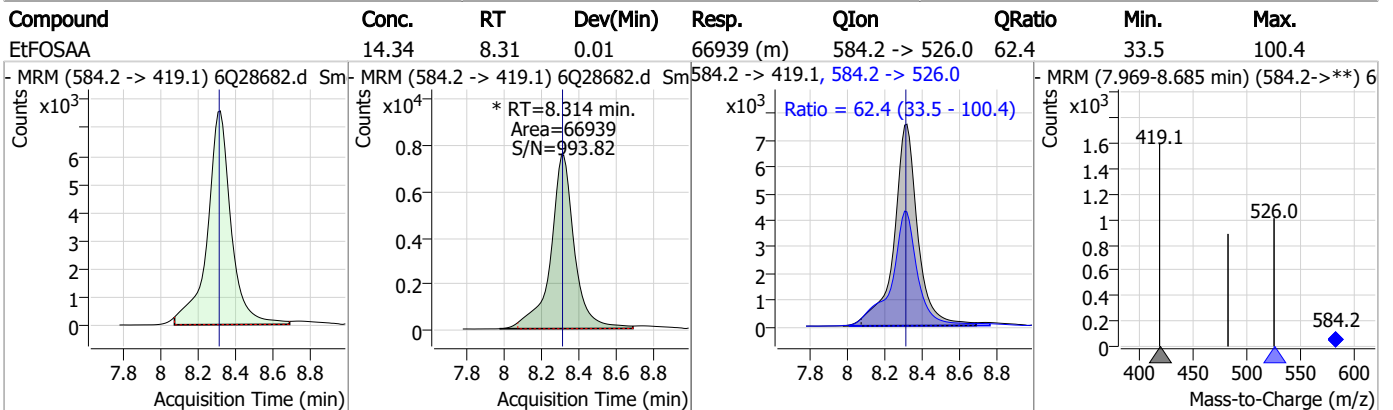
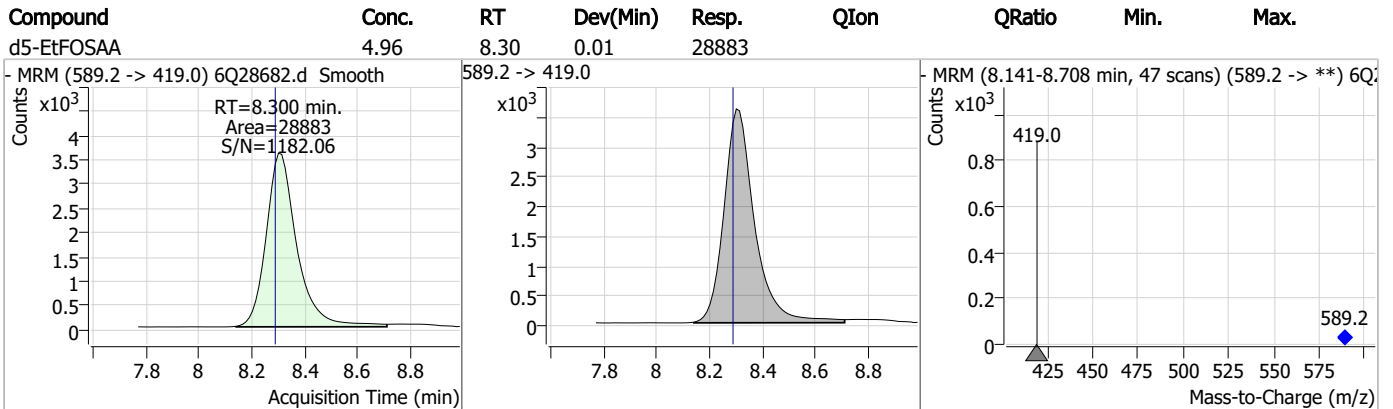
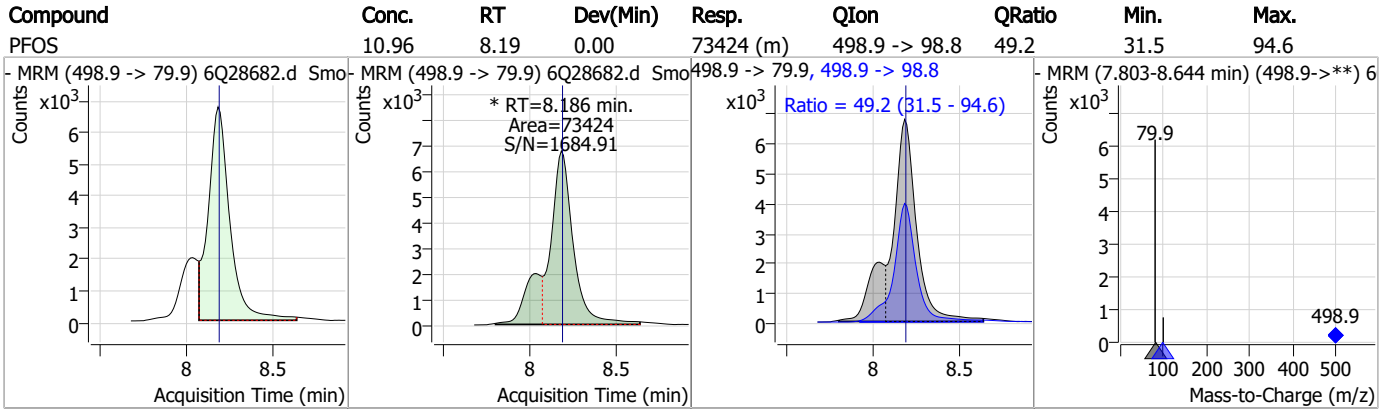
7.6.6

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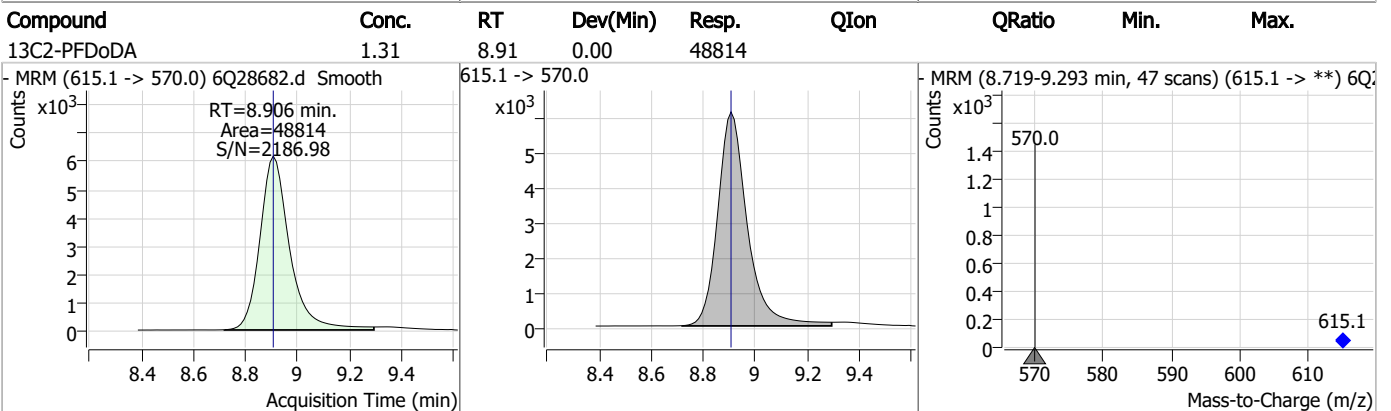
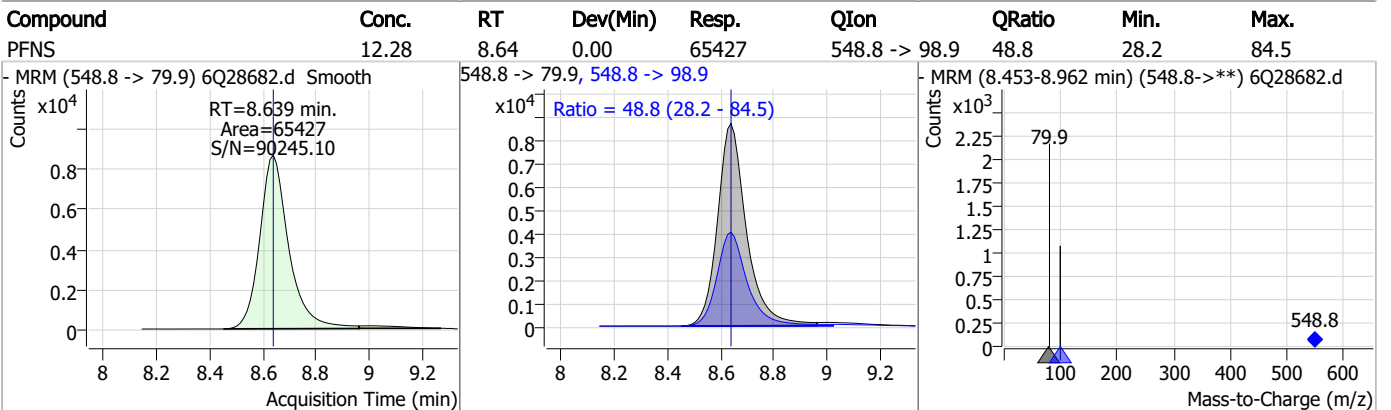
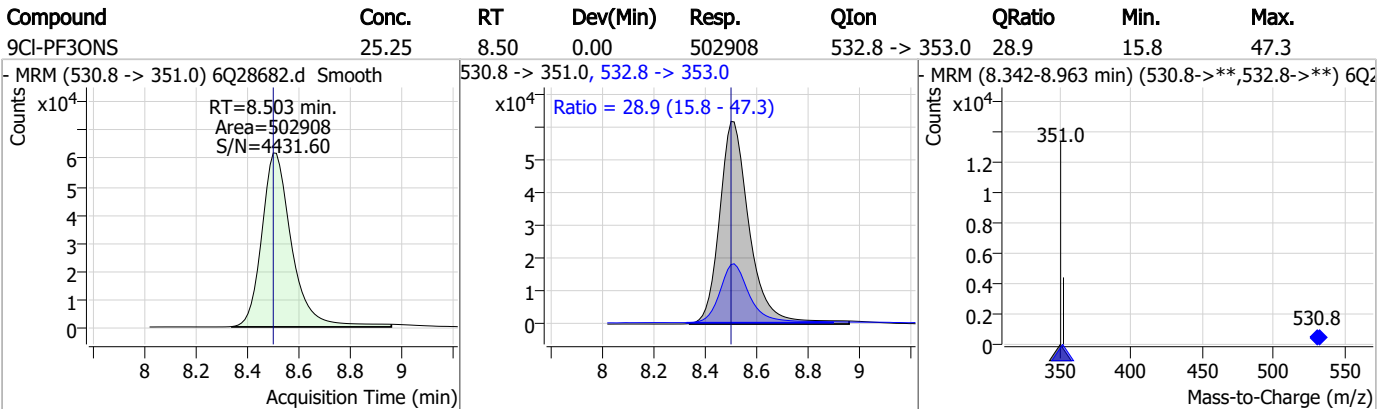
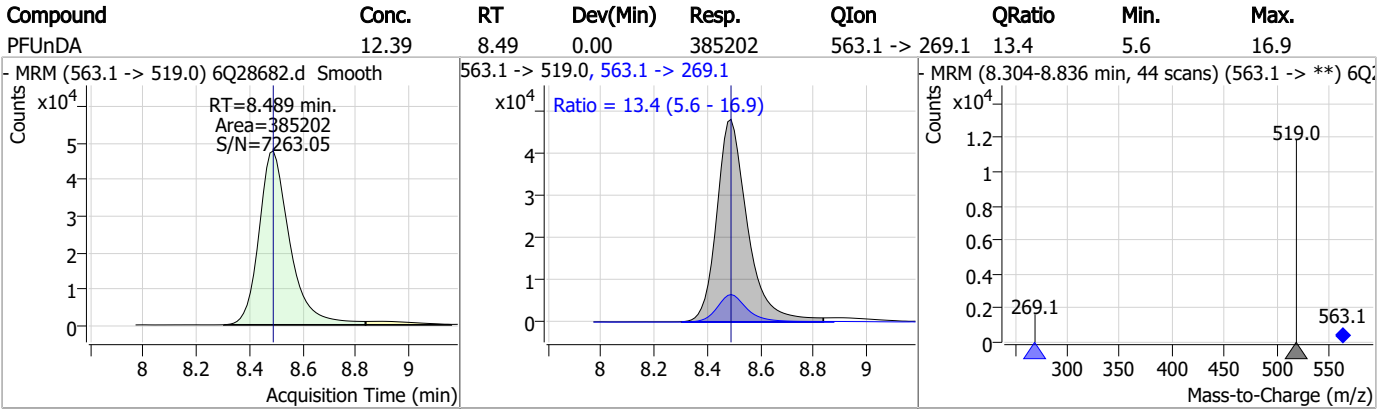
# Perfluorinated Compounds by LC/MS/MS



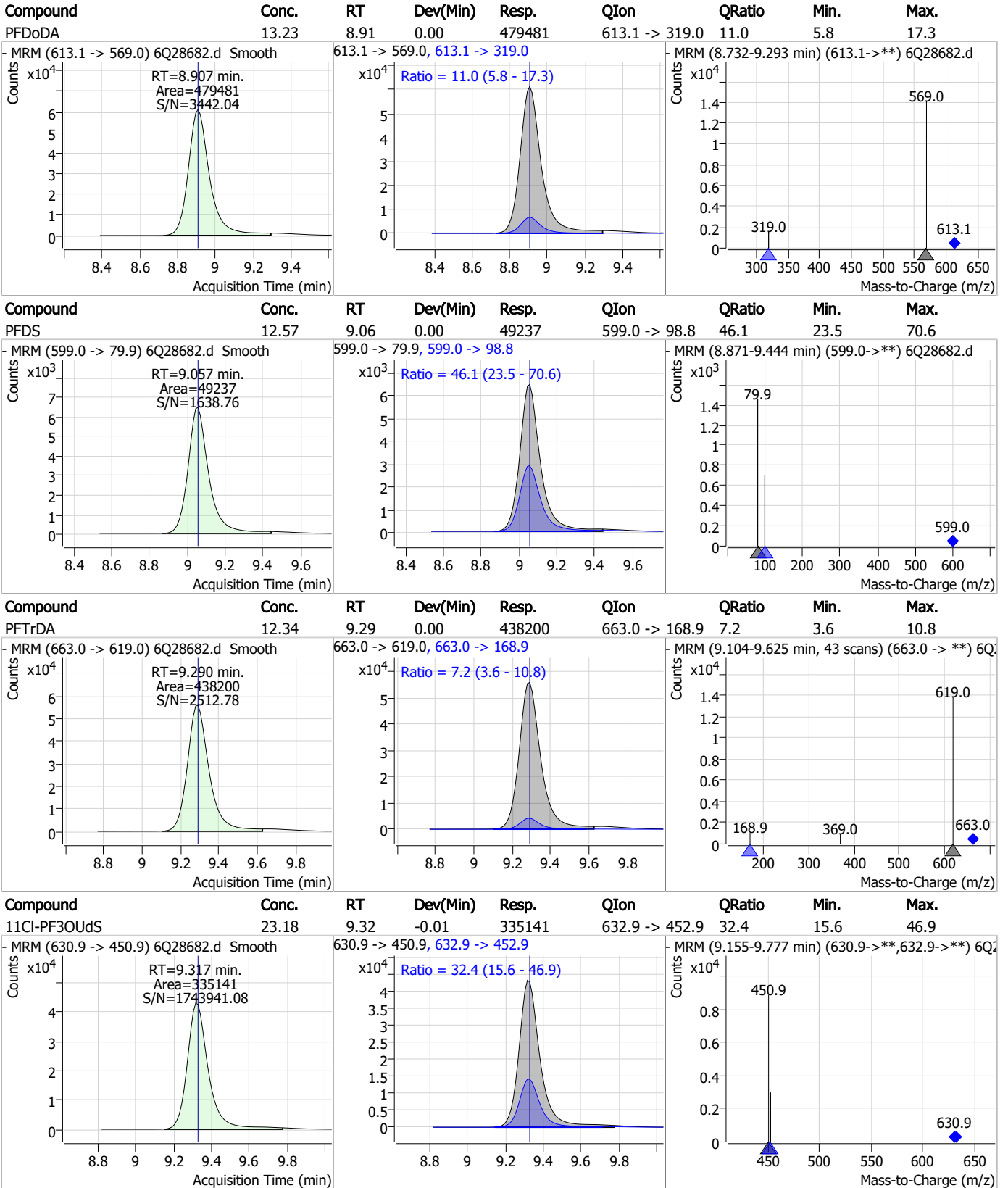
# Perfluorinated Compounds by LC/MS/MS



# Perfluorinated Compounds by LC/MS/MS



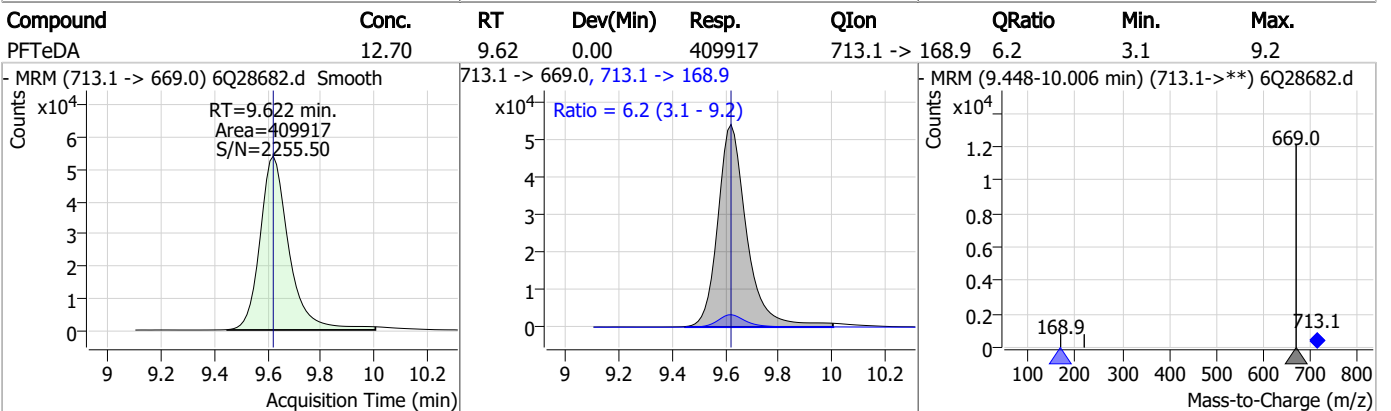
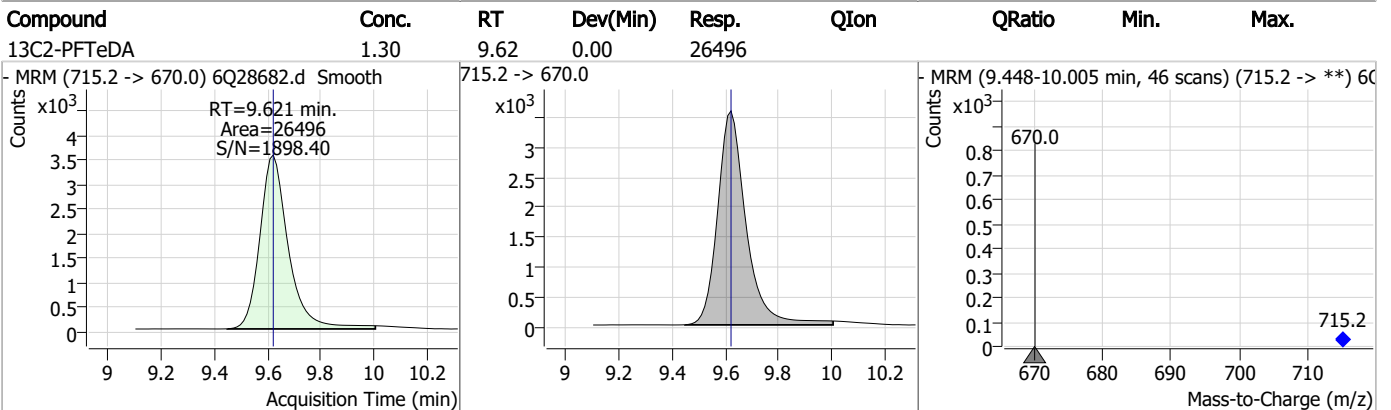
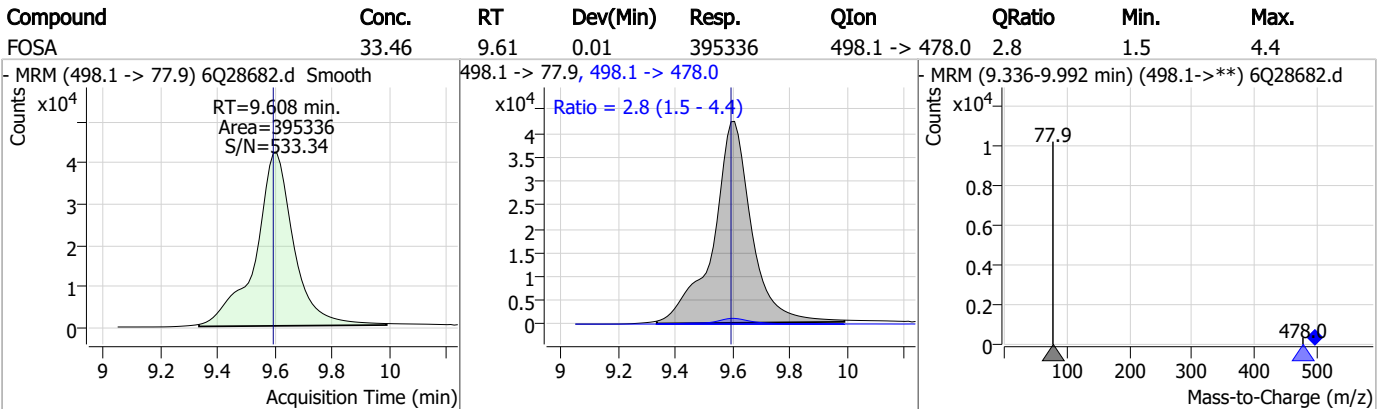
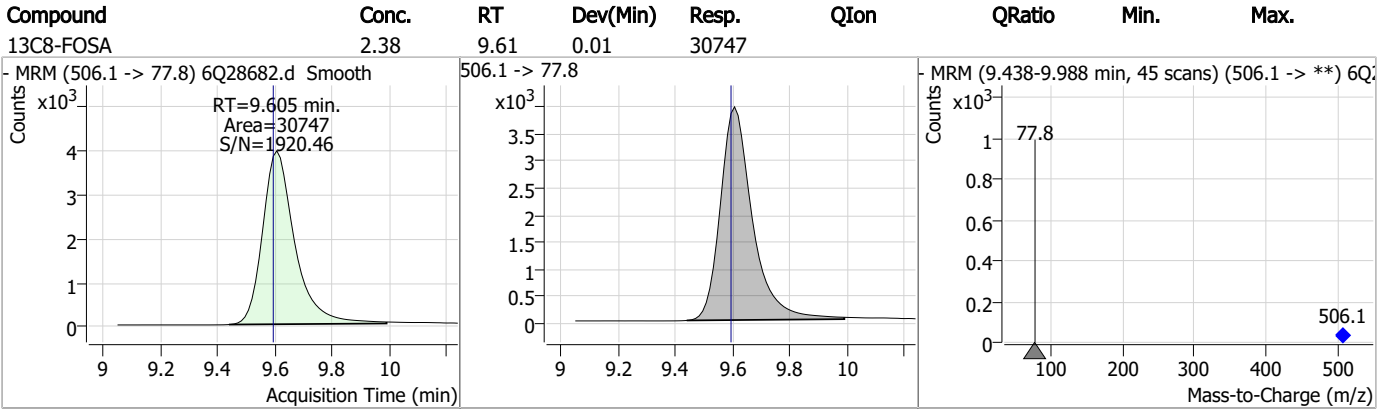
# Perfluorinated Compounds by LC/MS/MS



7.6.6

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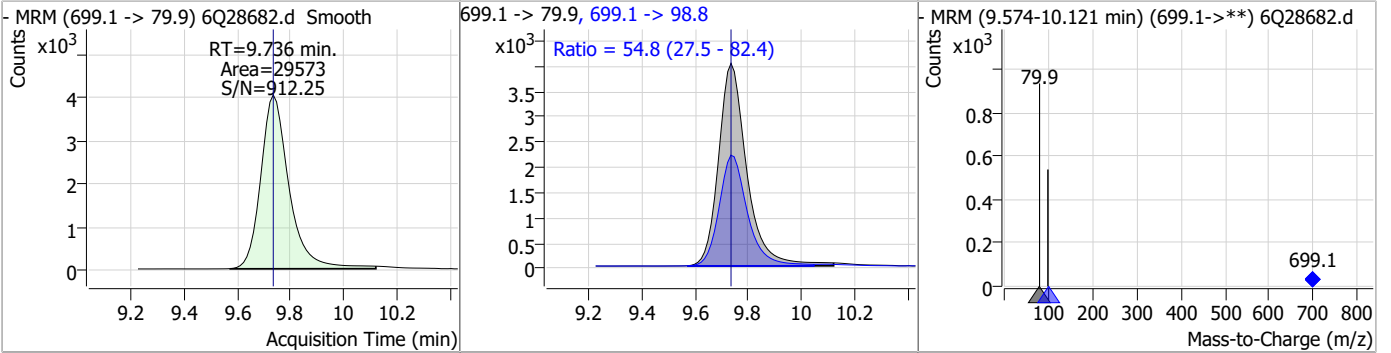
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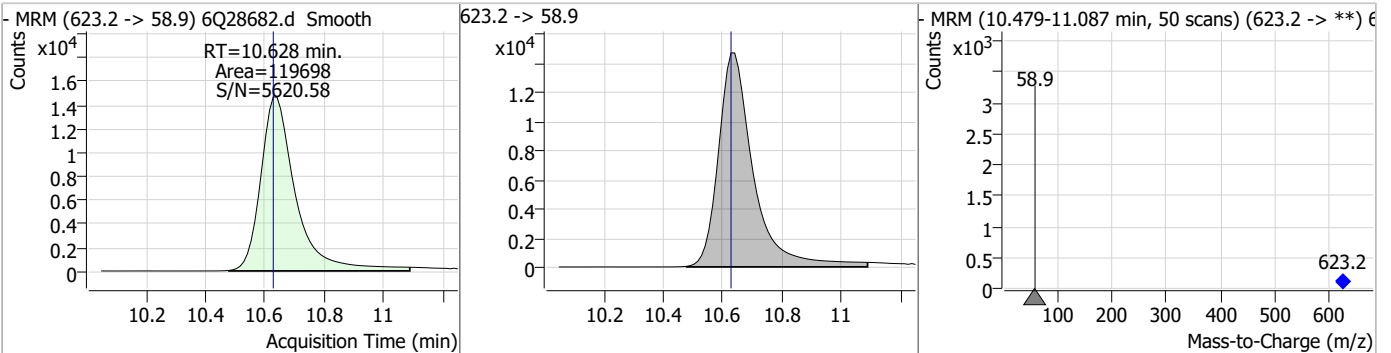


# Perfluorinated Compounds by LC/MS/MS

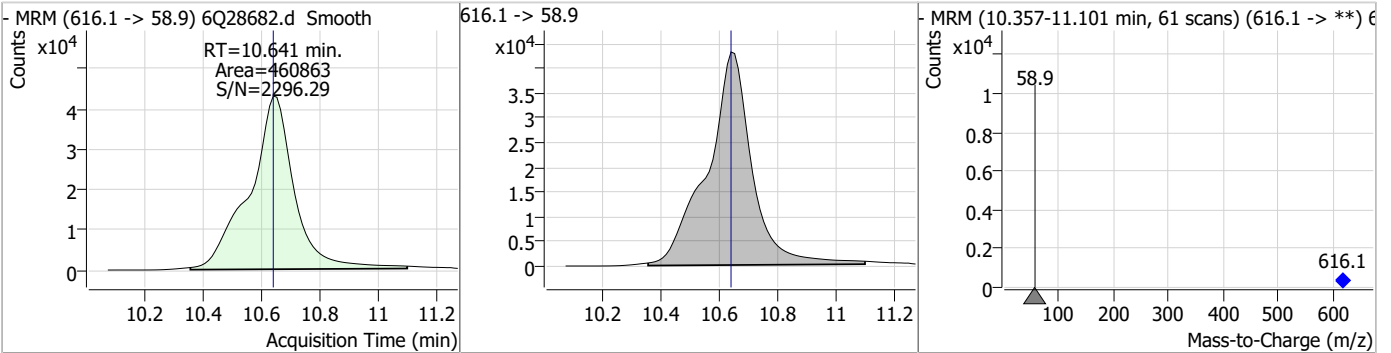
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	11.73	9.74	0.00	29573	699.1 -> 98.8	54.8	27.5	82.4



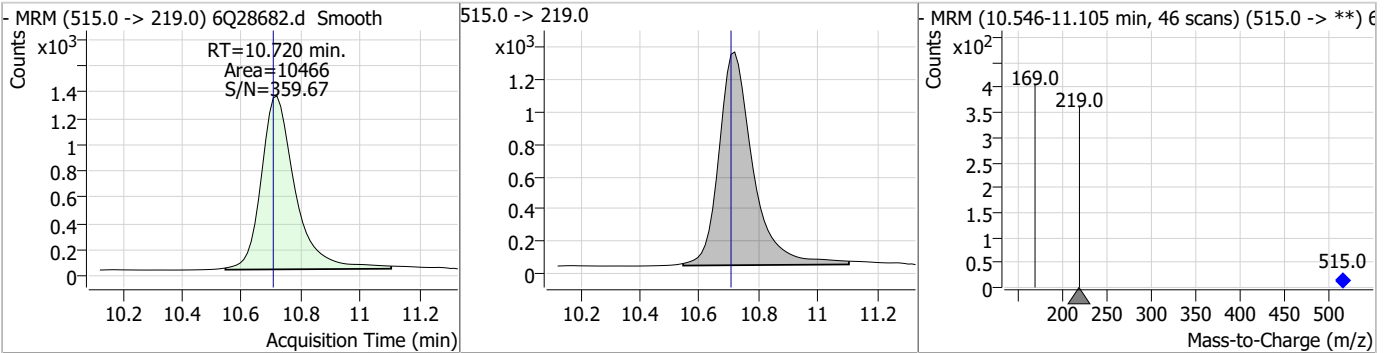
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.56	10.63	0.00	119698				



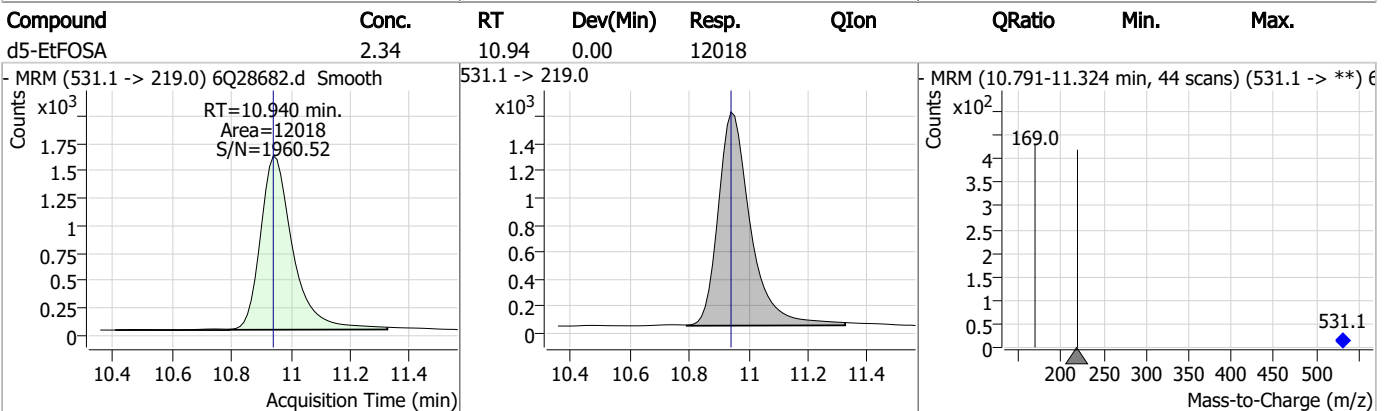
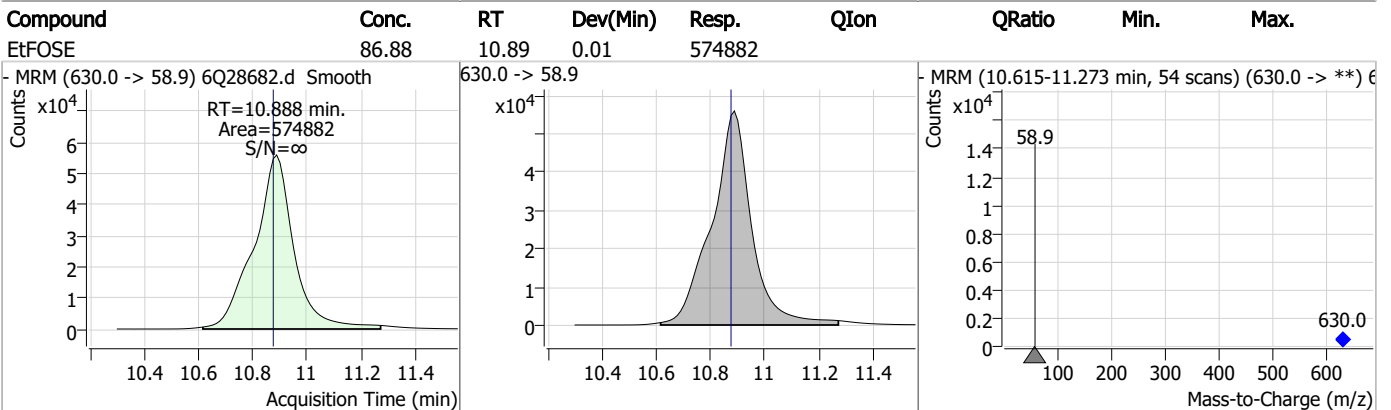
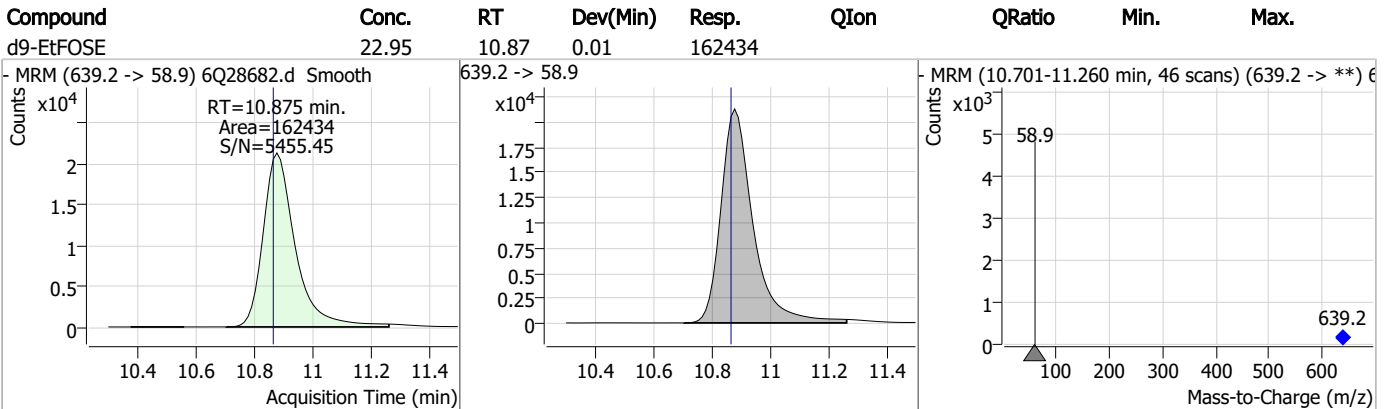
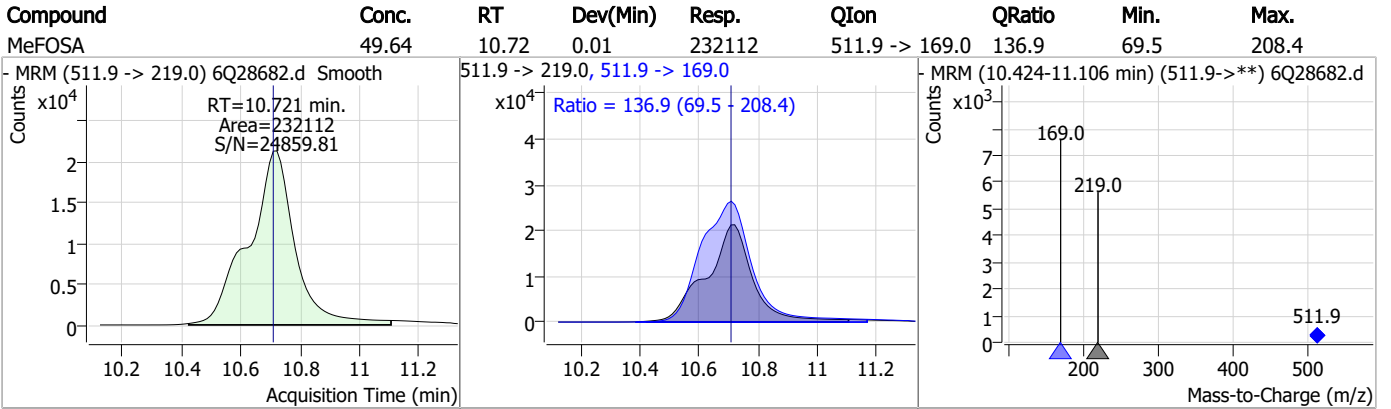
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	94.36	10.64	0.00	460863				



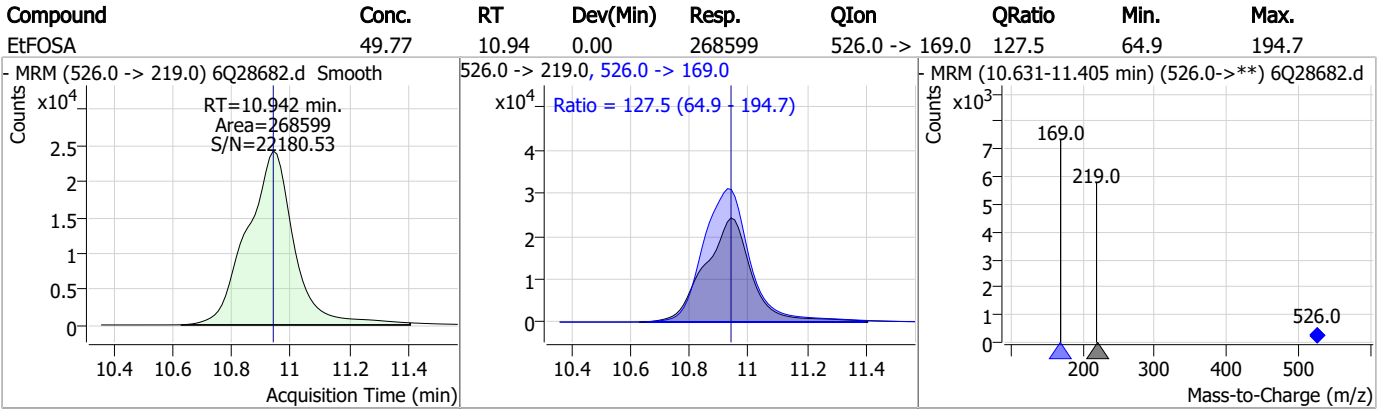
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.34	10.72	0.01	10466				



# Perfluorinated Compounds by LC/MS/MS



# Perfluorinated Compounds by LC/MS/MS



7.6.6

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# Manual Integration Approval Summary

Sample Number: S6Q396-RT                      Method: EPA DRAFT 1633  
Lab FileID: 6Q28682.D                      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/21/23 10:01                      Supervisor approved: 11/21/23 17:27 Natasha Guntie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.06	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorononanoic acid	375-95-1		7.44	Split peak
MeFOSAA	2355-31-9		8.11	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak
EtFOSAA	2991-50-6		8.31	Split peak

7.6.6.1  
7

## QQQ Check Tune Report



**Instrument Name** LCMS Q6  
**MS Model** G6495B  
**MS Instrument Serial** SG1752D103  
**Software\_Firmware Version** 10.1.67, FW: A.00.08.112  
**Tune Date & Time** 12 November 2023 09:33:01  
**File Path** D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML  
**Ion Source** AJS ESI  
**Ionization Mode** AJS ESI  
**Tuned Resolution** All  
**Vacuum Pressure** 1.79E+0 [R] (Torr); 2.89E-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	112.98	-0.01	Pass	0.70	0.72	0.02	Pass	631930
302.00	301.97	-0.03	Pass	0.70	0.71	0.01	Pass	2187386
601.98	601.98	0.00	Pass	0.70	0.67	-0.03	Pass	3411072
1033.99	1033.96	-0.03	Pass	0.70	0.65	-0.05	Pass	1888149
1633.95	1633.92	-0.03	Pass	0.70	0.67	-0.03	Pass	1203741
2233.91	2233.84	-0.07	Pass	0.70	0.61	-0.09	Pass	380022

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.06	0.06	Pass	0.70	0.63	-0.07	Pass	202490
112.99	112.95	-0.04	Pass	0.70	0.75	0.05	Pass	646973
302.00	301.87	-0.13	Pass	0.70	0.75	0.05	Pass	1625036
601.98	601.86	-0.12	Pass	0.70	0.79	0.09	Pass	3000925
1033.99	1033.80	-0.19	Pass	0.70	0.81	0.11	Pass	1735564
1633.95	1633.76	-0.19	Pass	0.70	0.83	0.13	Pass	1197007
2233.91	2233.75	-0.16	Pass	0.70	0.73	0.03	Pass	386297

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	1.20	1.26	0.06	Pass	754955
302.00	302.02	0.02	Pass	1.20	1.66	0.46	Pass	2314377
601.98	601.93	-0.05	Pass	1.20	1.73	0.53	Pass	4119391
1033.99	1034.07	0.08	Pass	1.20	1.59	0.39	Pass	3472163
1633.95	1633.89	-0.06	Pass	1.20	1.54	0.34	Pass	2532940
2233.91	2233.78	-0.13	Pass	1.20	1.33	0.13	Pass	1204407

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.04	0.04	Pass	1.20	1.12	-0.08	Pass	256839
112.99	112.98	-0.01	Pass	1.20	1.21	0.01	Pass	905564
302.00	301.94	-0.06	Pass	1.20	1.32	0.12	Pass	2029850
601.98	601.80	-0.18	Pass	1.20	1.40	0.20	Pass	3838096
1033.99	1033.85	-0.14	Pass	1.20	1.51	0.31	Pass	2649060
1633.95	1633.78	-0.17	Pass	1.20	1.39	0.19	Pass	2447060
2233.91	2233.67	-0.24	Pass	1.20	1.40	0.20	Pass	1148249

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.94	-0.05	Pass	2.50	2.63	0.13	Pass	721416
302.00	301.89	-0.11	Pass	2.50	2.88	0.38	Pass	2441223
601.98	601.94	-0.04	Pass	2.50	3.11	0.61	Pass	4572440
1033.99	1034.01	0.02	Pass	2.50	2.97	0.47	Pass	4309866
1633.95	1634.00	0.05	Pass	2.50	2.55	0.05	Pass	4229049
2233.91	2233.77	-0.14	Pass	2.50	2.50	0.00	Pass	2514054

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	2.50	2.47	-0.03	Pass	285666
112.99	112.95	-0.04	Pass	2.50	2.55	0.05	Pass	1091543
302.00	302.03	0.03	Pass	2.50	2.47	-0.03	Pass	3118245
601.98	601.95	-0.03	Pass	2.50	2.83	0.33	Pass	4850732
1033.99	1033.82	-0.17	Pass	2.50	2.95	0.45	Pass	4597250
1633.95	1633.82	-0.13	Pass	2.50	2.73	0.23	Pass	4729189
2233.91	2233.74	-0.17	Pass	2.50	2.73	0.23	Pass	2781935

7.7.1  
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28199.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 1:20:11 PM  
 Sample Name : ic391-1  
 Vial : P1-A2  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.876	216.8 -> 171.9	123450	10.00 µg/L	0.016
M5-PFPeA	4.284	268.3 -> 223.0	45620	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	48648	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	50684	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	80829	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	28840	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	27974	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	35344	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	41599	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	21903	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	28453	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	19142	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	12354	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	12749	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2626	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	4121	5.00 µg/L	0.000
M2-8:2FTS	7.835	529.1 -> 80.9	4814	5.00 µg/L	0.000
M3-MeFOSAA	8.105	573.2 -> 419.0	31976	5.00 µg/L	0.012
M3-HFPO-DA	5.856	286.9 -> 168.9	27767	10.00 µg/L	0.000
M5-EtFOSAA	8.300	589.2 -> 419.0	25160	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	118142	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	164444	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	11186	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9417	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	12161	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	53860	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8394	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	82353	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	29232	1.25 µg/L	0.000
13C5-PFNA	7.567	468.0 -> 423.0	27887	1.25 µg/L	0.000
13C2-PFHxA	5.479	315.1 -> 270.0	44837	2.50 µg/L	-0.012

**System Monitoring Compounds**

13C2-4:2FTS	5.166	329.1 -> 80.9	2626	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4121	4.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.2%		
13C2-8:2FTS	7.835	529.1 -> 80.9	4814	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C2-PFDoDA	8.906	615.1 -> 570.0	41599	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C2-PFTeDA	9.621	715.2 -> 670.0	21903	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFBS	5.396	302.1 -> 79.9	19142	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C3-PFHxS	7.152	402.1 -> 79.9	12354	2.40 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 = 96.1%	
13C4-PFBA	2.876	216.8 -> 171.9	123450	9.90 µg/L	0.016
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.419	367.1 -> 322.0	50684	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFHxA	5.478	318.0 -> 273.0	48648	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C5-PFPeA	4.284	268.3 -> 223.0	45620	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C6-PFDA	8.048	519.1 -> 474.1	27974	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C7-PFUnDA	8.489	570.0 -> 525.1	35344	1.30 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C8-FOSA	9.605	506.1 -> 77.8	28453	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C8-PFOA	7.062	421.1 -> 376.0	80829	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.185	507.1 -> 79.9	12749	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C9-PFNA	7.580	472.1 -> 427.0	28840	1.23 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%	
d3-MeFOSAA	8.105	573.2 -> 419.0	31976	5.07 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C3-HFPO-DA	5.856	286.9 -> 168.9	27767	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d3-MeFOSA	10.707	515.0 -> 219.0	9417	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
d5-EtFOSAA	8.300	589.2 -> 419.0	25160	4.71 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
d7-MeFOSE	10.628	623.2 -> 58.9	118142	24.27 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d9-EtFOSE	10.862	639.2 -> 58.9	164444	25.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d5-EtFOSA	10.940	531.1 -> 219.0	11186	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	3245	0.76 µg/L	97
		327.1 -> 80.9	1243		
6:2FTS	6.836	427.1 -> 407.0	3408	0.76 µg/L	90
		427.1 -> 80.9	1427		
8:2FTS	7.836	527.1 -> 507.0	2794	0.77 µg/L	91
		527.1 -> 80.8	869		
EtFOSAA	8.301	584.2 -> 419.1	874	0.21 µg/L	87
		584.2 -> 526.0	495		
FOSA	9.596	498.1 -> 77.9	2114	0.19 µg/L	98
		498.1 -> 478.0	76		
MeFOSAA	8.106	570.1 -> 419.0	1123	0.19 µg/L	92
		570.1 -> 483.0	221		
PFBA	2.868	212.8 -> 168.9	3142	0.78 µg/L	100
PFBS	5.397	298.7 -> 79.9	1332	0.18 µg/L	95
		298.7 -> 98.8	463		
PFDA	8.036	512.9 -> 469.0	4298	0.17 µg/L	90
		512.9 -> 219.0	816		
PFDODA	8.907	613.1 -> 569.0	5668	0.18 µg/L	98
		613.1 -> 319.0	600		
PFDS	9.057	599.0 -> 79.9	549	0.17 µg/L	99



## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	260			
PFHpA	6.419	363.1 -> 319.0	5257	0.20	µg/L	95
		363.1 -> 169.0	667			
PFHpS	7.706	449.0 -> 79.9	956	0.18	µg/L	99
		449.0 -> 98.9	453			
PFHxA	5.481	313.0 -> 269.0	3224	0.18	µg/L	100
		313.0 -> 118.9	157			
PFHxS	7.153	398.7 -> 79.9	1119	0.20	µg/L	m 81
		398.7 -> 98.9	487			
PFNA	7.581	463.0 -> 419.0	3194	0.18	µg/L	98
		463.0 -> 219.0	682			
PFNS	8.651	548.8 -> 79.9	734	0.16	µg/L	98
		548.8 -> 98.9	423			
PFOA	7.063	413.0 -> 369.0	6443	0.20	µg/L	97
		413.0 -> 169.0	1100			
PFOS	8.186	498.9 -> 79.9	1094	0.19	µg/L	83
		498.9 -> 98.8	543			
PFPeA	4.286	263.0 -> 219.0	4282	0.37	µg/L	100
PFPeS	6.458	349.1 -> 79.9	1129	0.18	µg/L	97
		349.1 -> 98.9	505			
PFTeDA	9.622	713.1 -> 669.0	5167	0.19	µg/L	97
		713.1 -> 168.9	375			
PFTrDA	9.290	663.0 -> 619.0	6017	0.20	µg/L	98
		663.0 -> 168.9	400			
PFUnDA	8.489	563.1 -> 519.0	5169	0.19	µg/L	97
		563.1 -> 269.1	637			
11CI-PF3OUdS	9.329	630.9 -> 450.9	4274	0.35	µg/L	m 94
		632.9 -> 452.9	1488			
9CI-PF3ONS	8.516	530.8 -> 351.0	6271	0.38	µg/L	97
		532.8 -> 353.0	2096			
ADONA	6.681	376.9 -> 250.9	17345	0.36	µg/L	96
		376.9 -> 84.8	4762			
HFPO-DA	5.857	284.9 -> 168.9	1132	0.41	µg/L	95
		284.9 -> 184.9	91			
3:3FTCA	3.721	241.0 -> 177.0	693	0.97	µg/L	96
		241.0 -> 117.0	71			
5:3FTCA	6.146	341.0 -> 237.1	15313	4.60	µg/L	96
		341.0 -> 217.0	11456			
7:3FTCA	7.545	441.0 -> 316.9	10047	4.77	µg/L	98
		441.0 -> 336.9	21038			
EtFOSA	10.942	526.0 -> 219.0	1992	0.40	µg/L	98
		526.0 -> 169.0	2631			
EtFOSE	10.875	630.0 -> 58.9	6438	0.96	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	1766	0.42	µg/L	97
		511.9 -> 169.0	2397			
MeFOSE	10.641	616.1 -> 58.9	4741	0.98	µg/L	100
PFDoDS	9.736	699.1 -> 79.9	378	0.18	µg/L	96
		699.1 -> 98.8	218			
NFDHA	5.373	295.0 -> 201.0	860	0.41	µg/L	99
		295.0 -> 84.9	218			
PFMBA	4.700	279.0 -> 85.1	3081	0.39	µg/L	100
PFMPA	3.426	229.0 -> 84.9	2259	0.38	µg/L	100
PFEESA	5.937	314.8 -> 134.9	7194	0.32	µg/L	100
		314.8 -> 82.9	272			

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

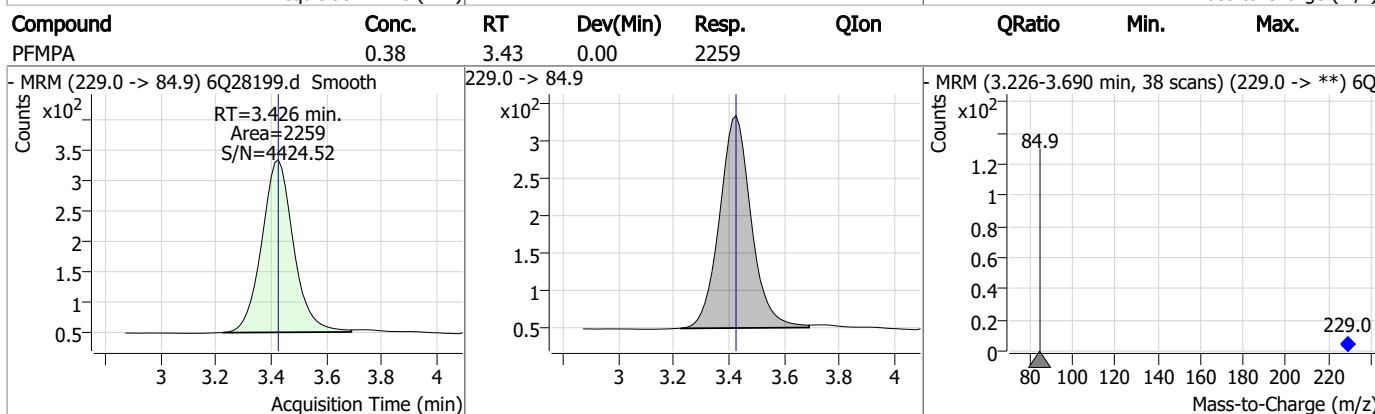
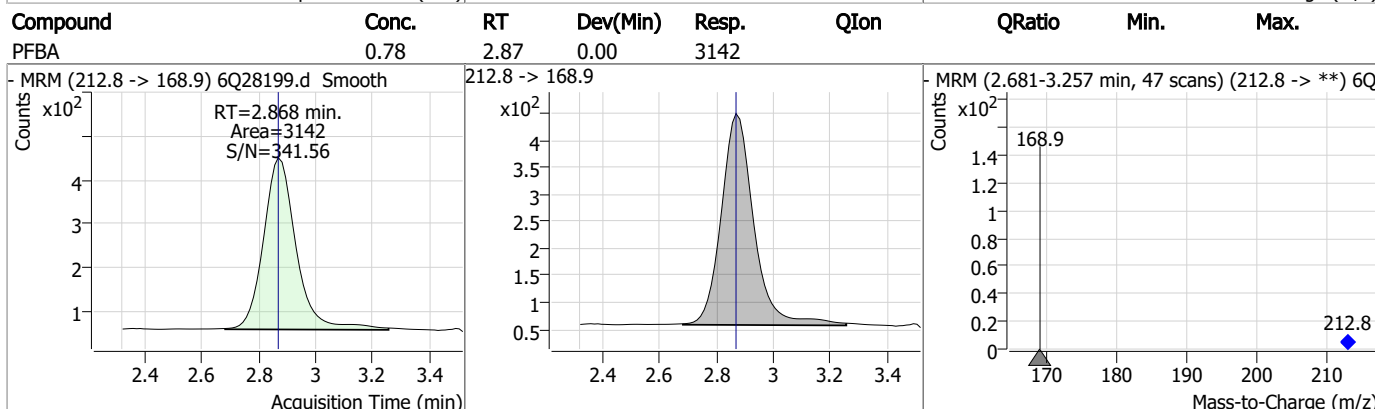
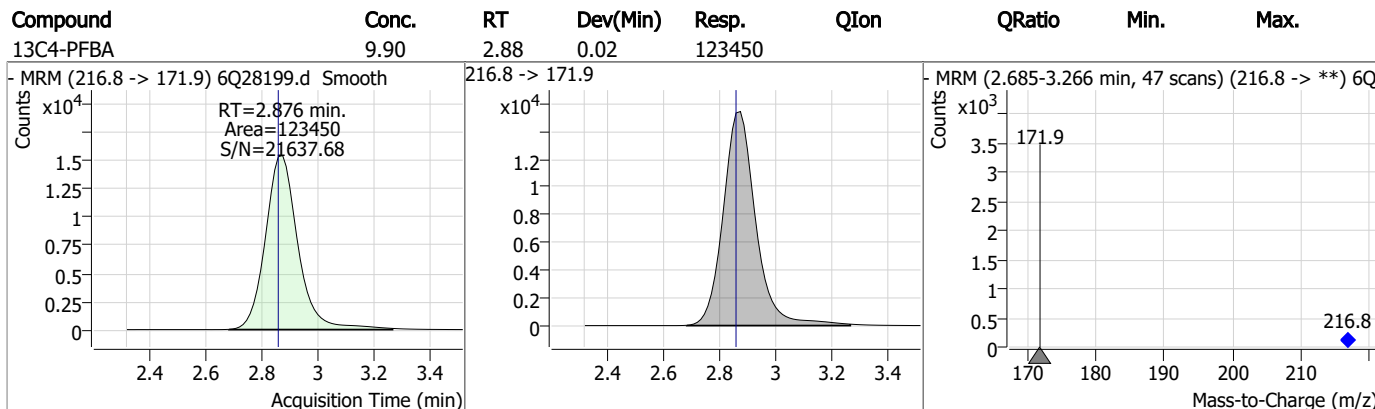
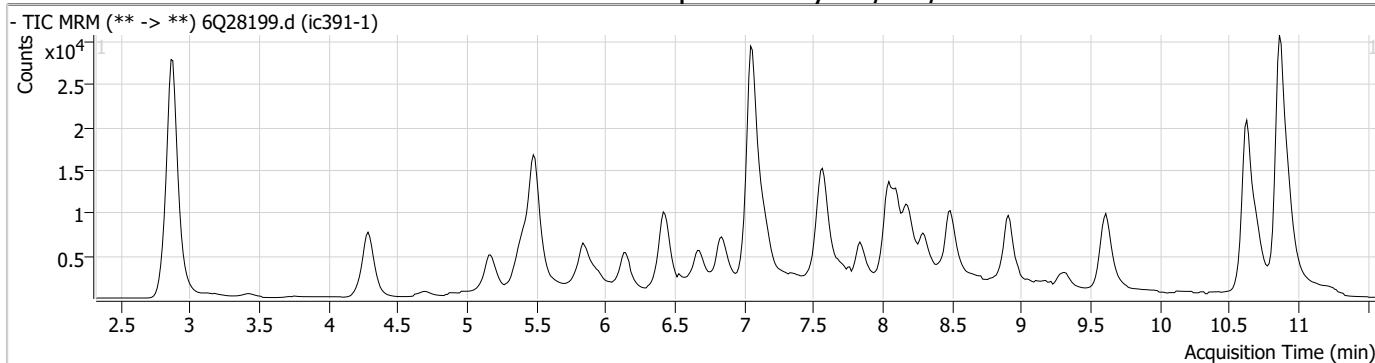
### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.2  
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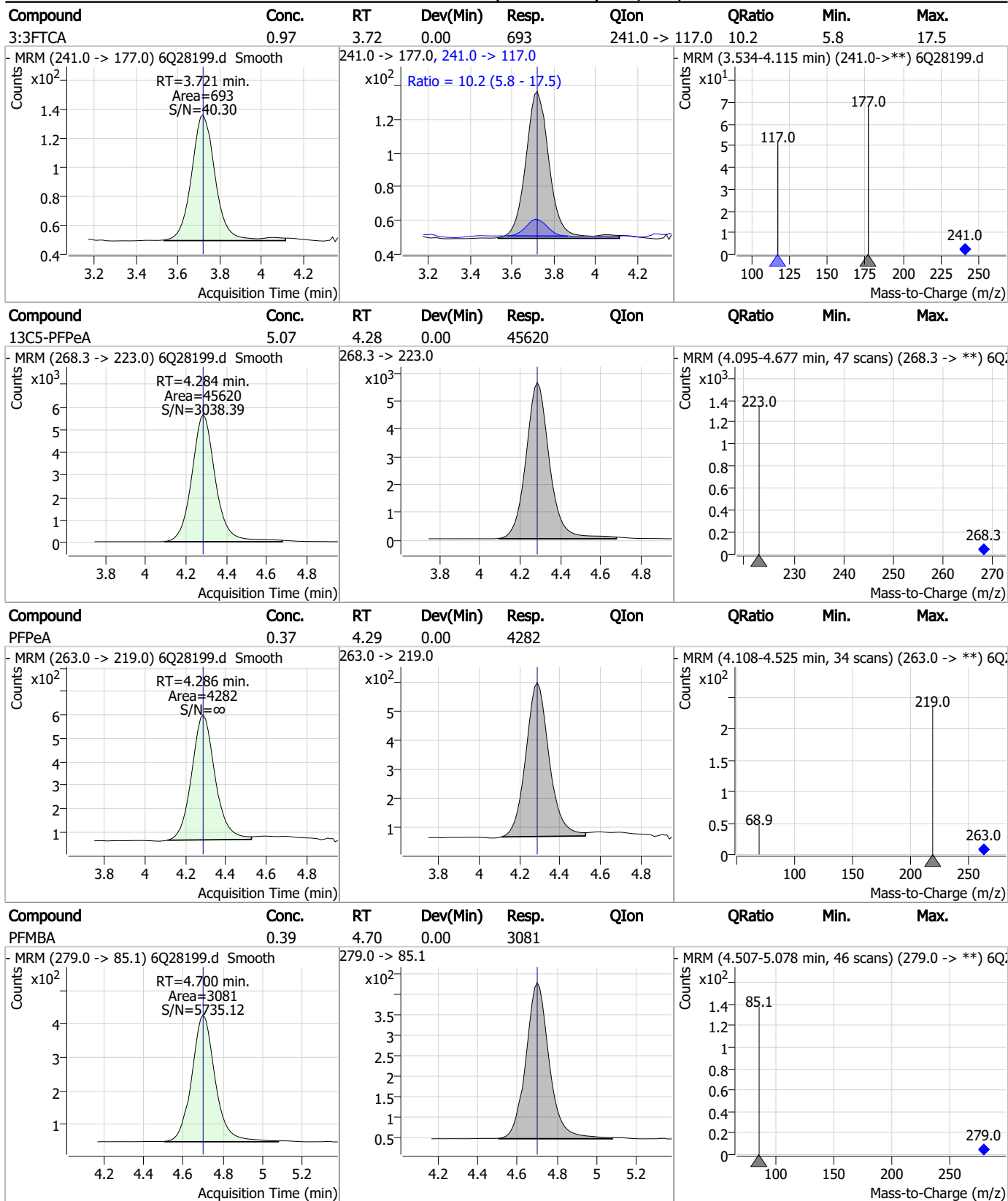


### Perfluorinated Compounds by LC/MS/MS



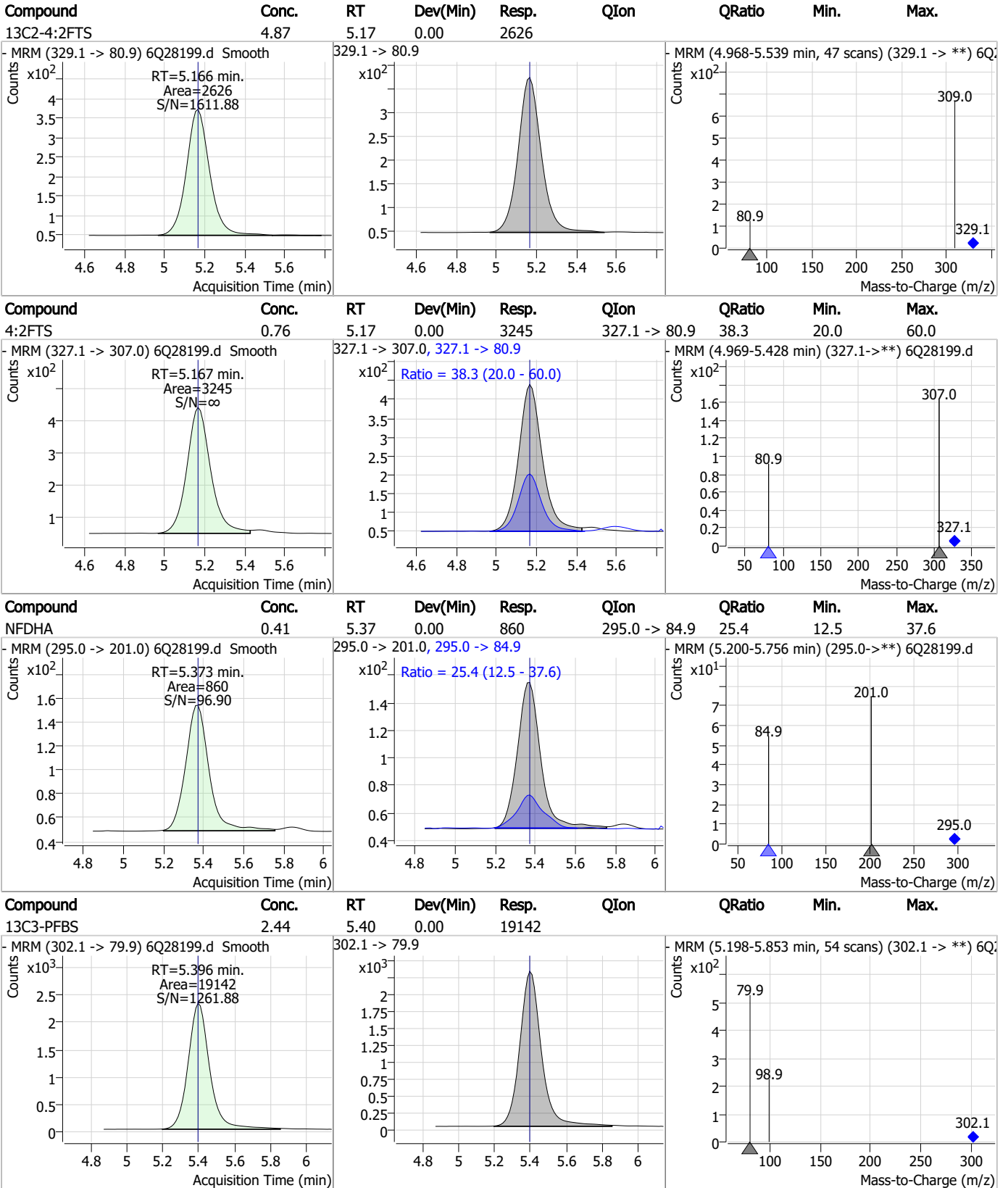
7.7.2  
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### Perfluorinated Compounds by LC/MS/MS



7.7.2  
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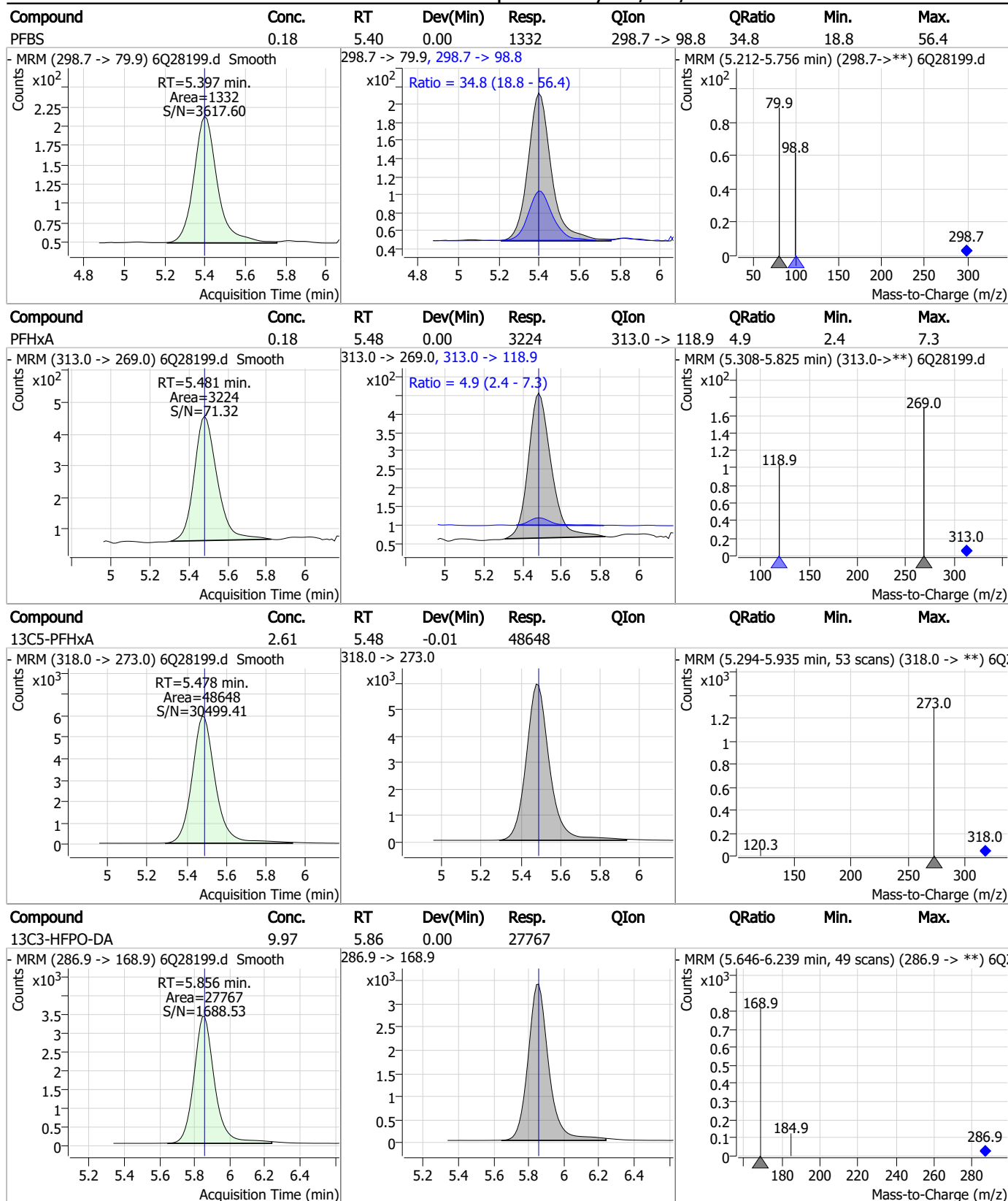
### Perfluorinated Compounds by LC/MS/MS



7.7.2

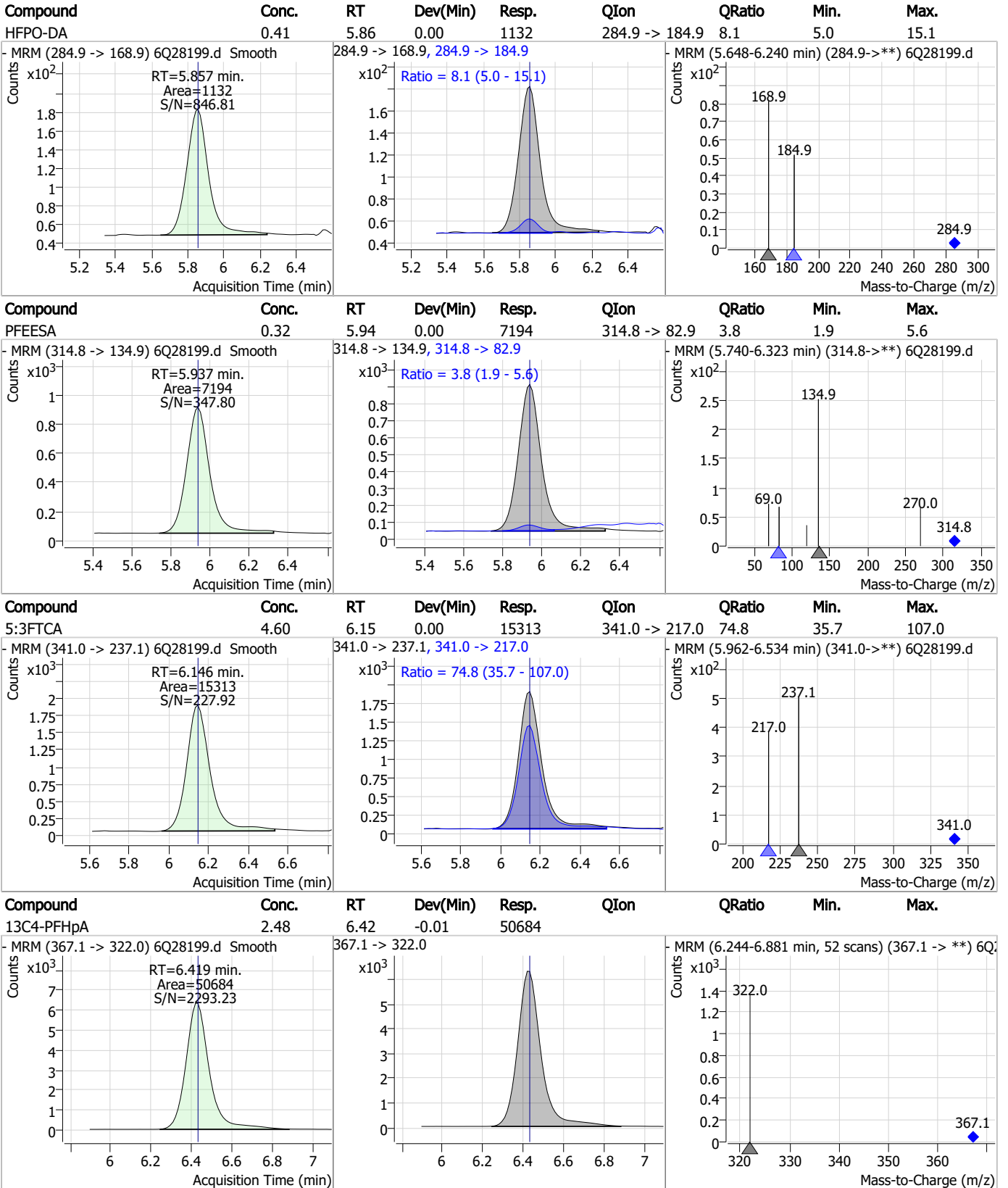
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### Perfluorinated Compounds by LC/MS/MS



7.7.2  
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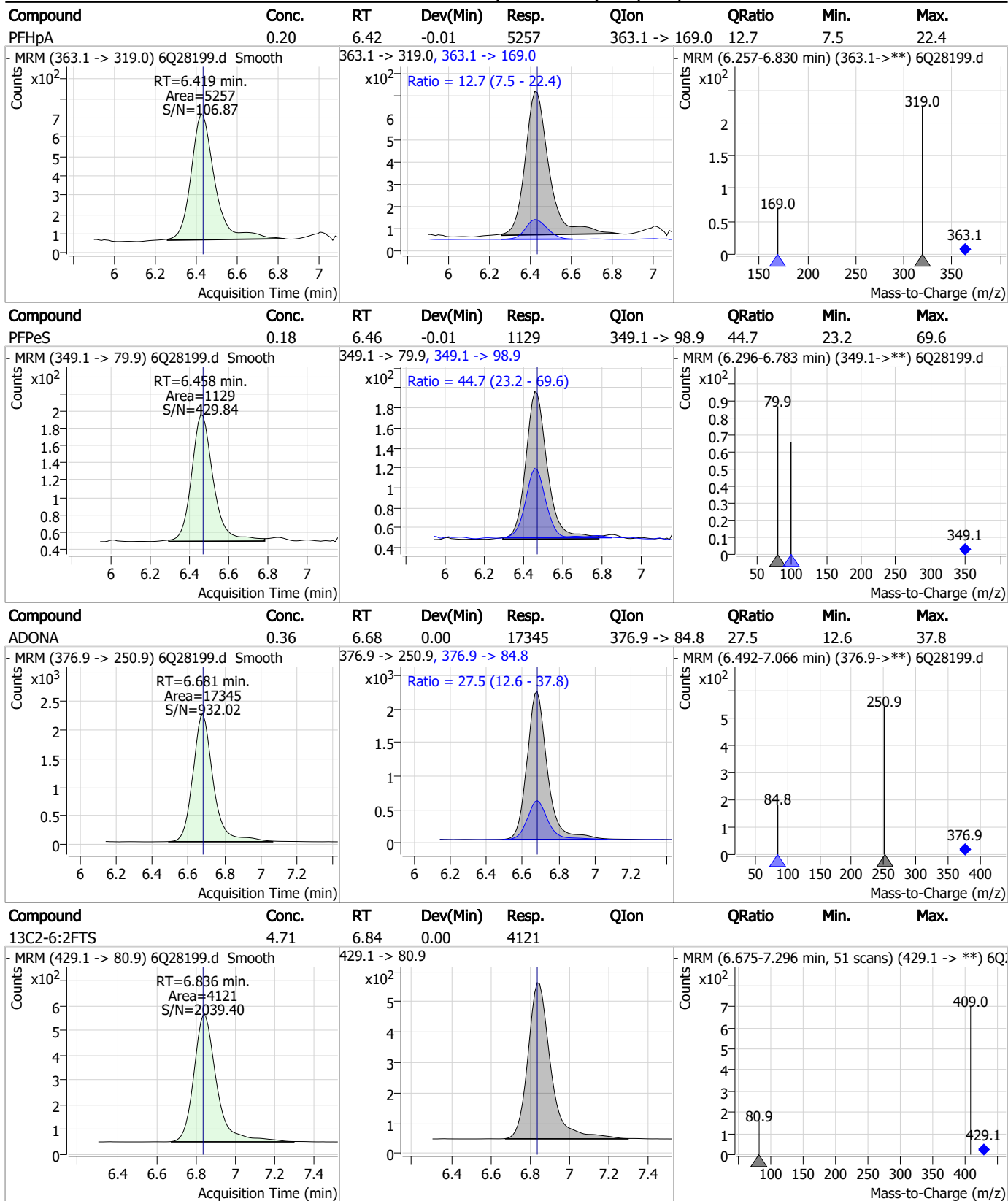
### Perfluorinated Compounds by LC/MS/MS



7.7.2

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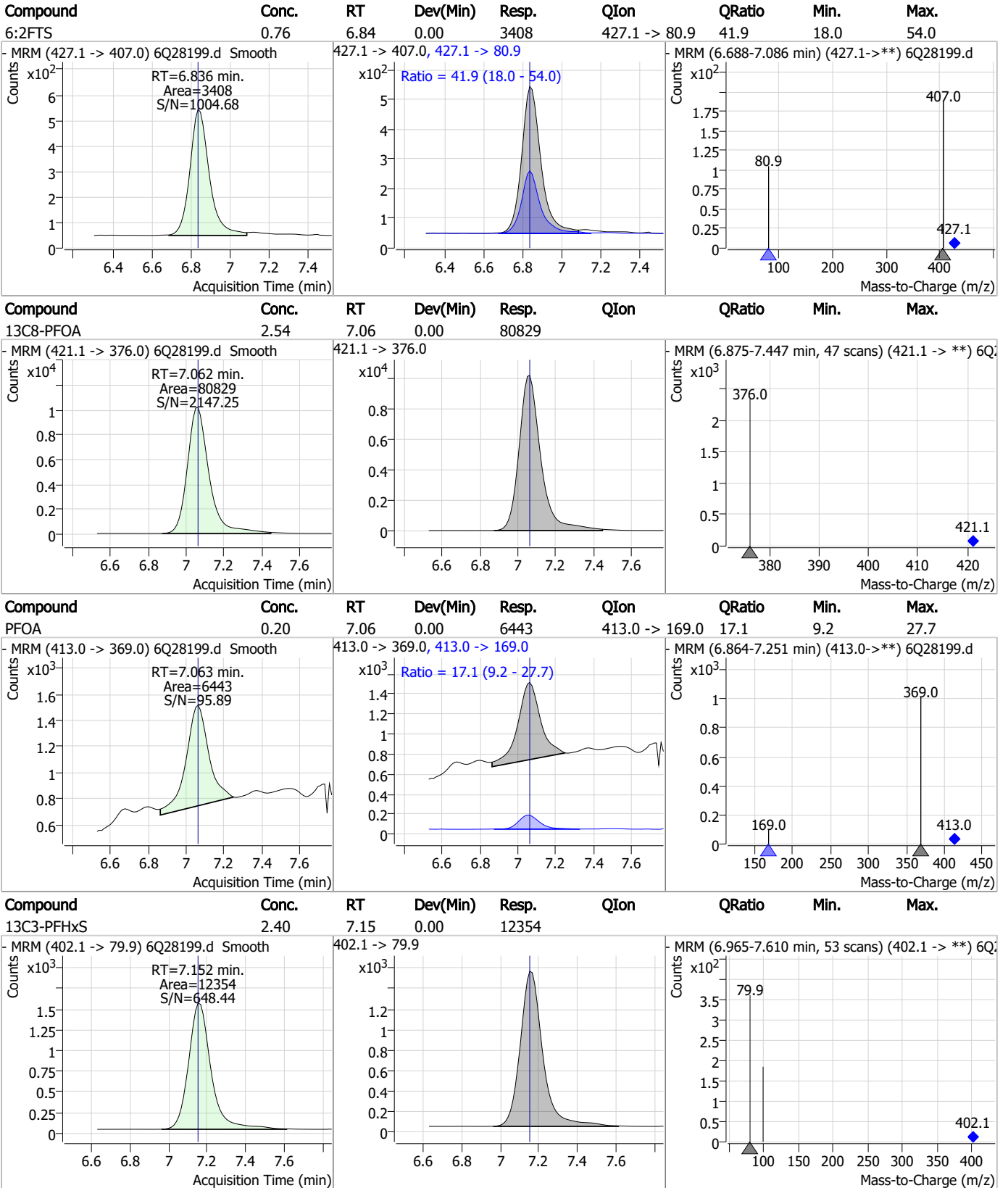
### Perfluorinated Compounds by LC/MS/MS



7.7.2  
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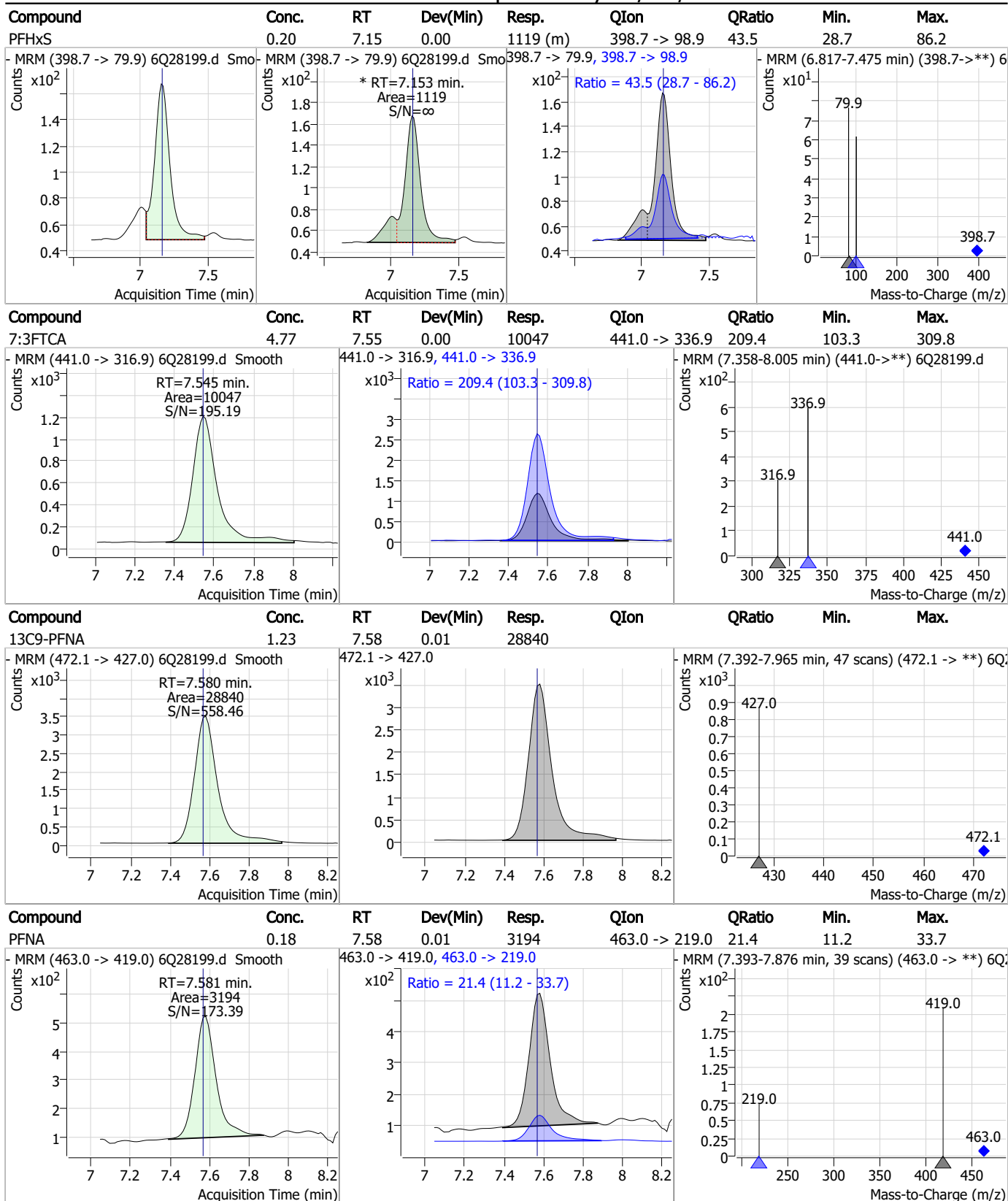
### Perfluorinated Compounds by LC/MS/MS



7.7.2

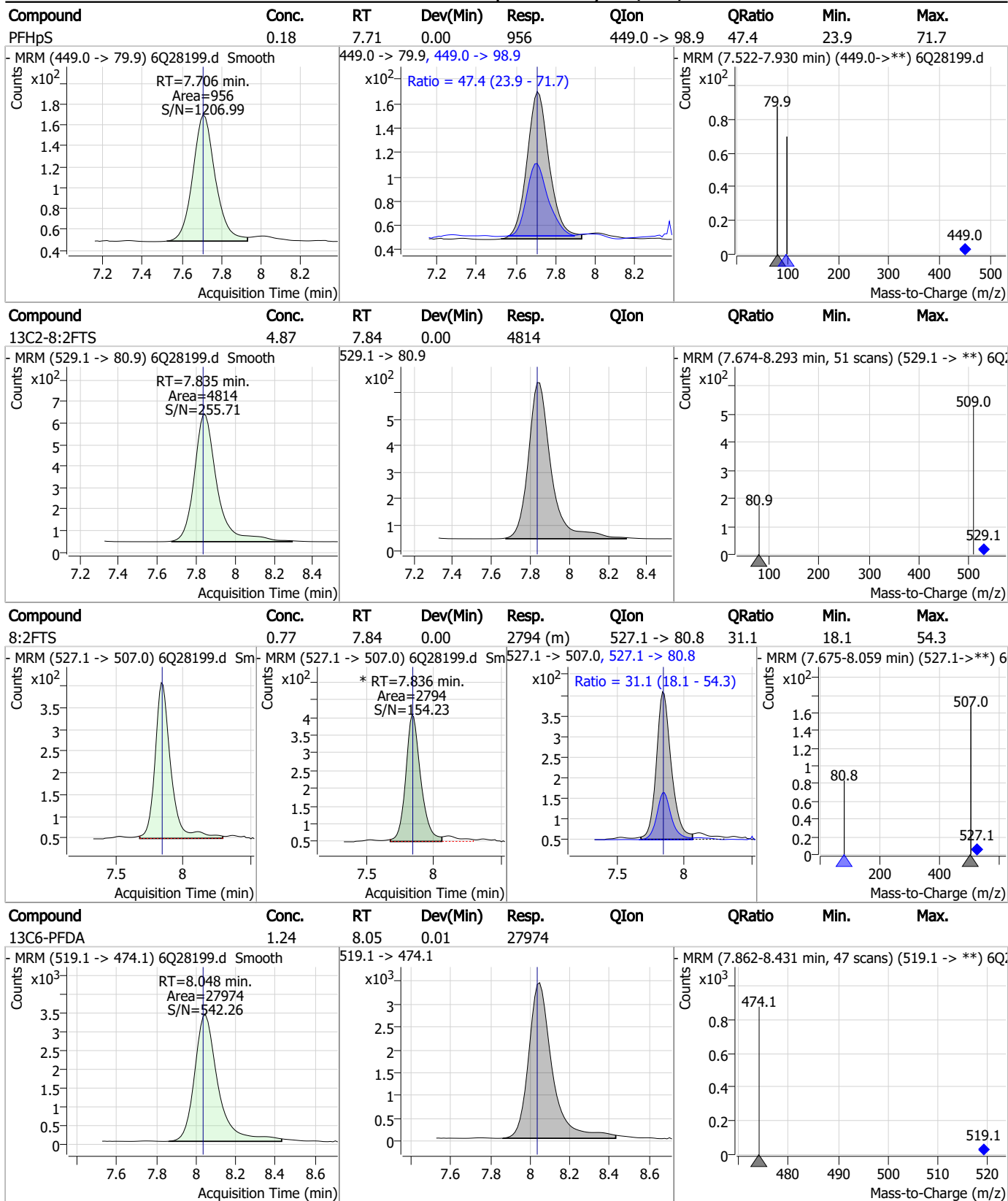
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### Perfluorinated Compounds by LC/MS/MS



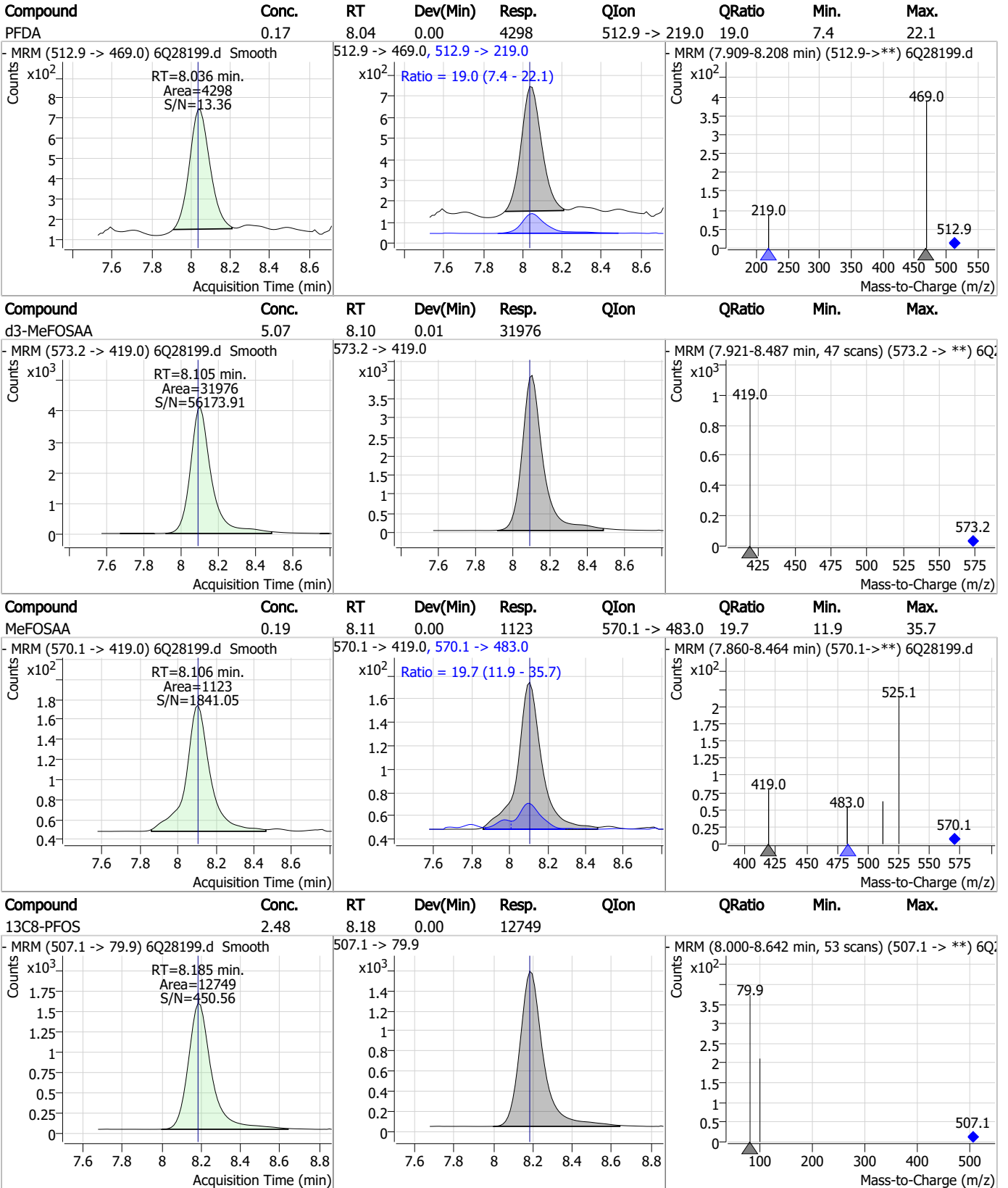
7.7.2  
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### Perfluorinated Compounds by LC/MS/MS

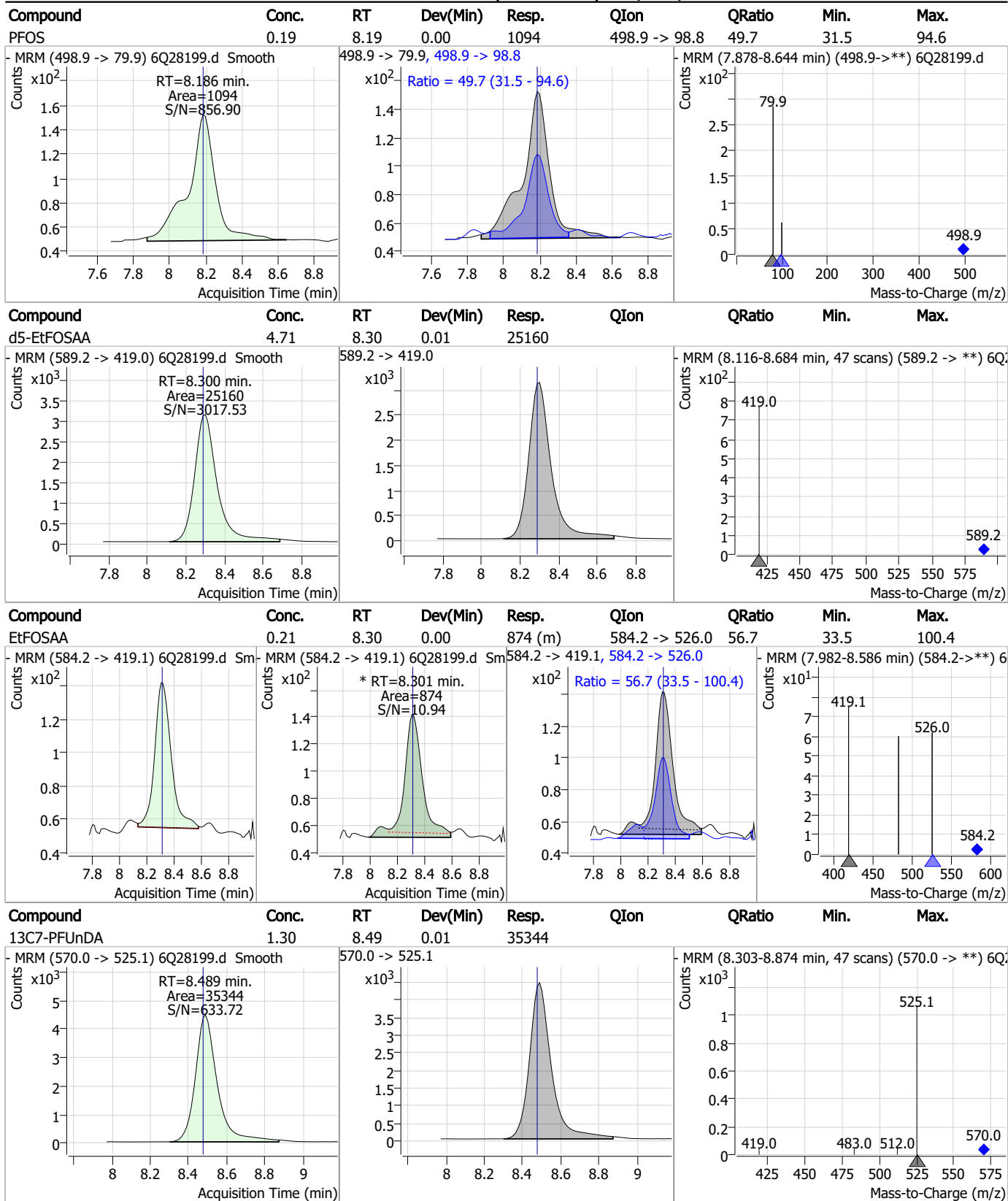


7.7.2  
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### Perfluorinated Compounds by LC/MS/MS



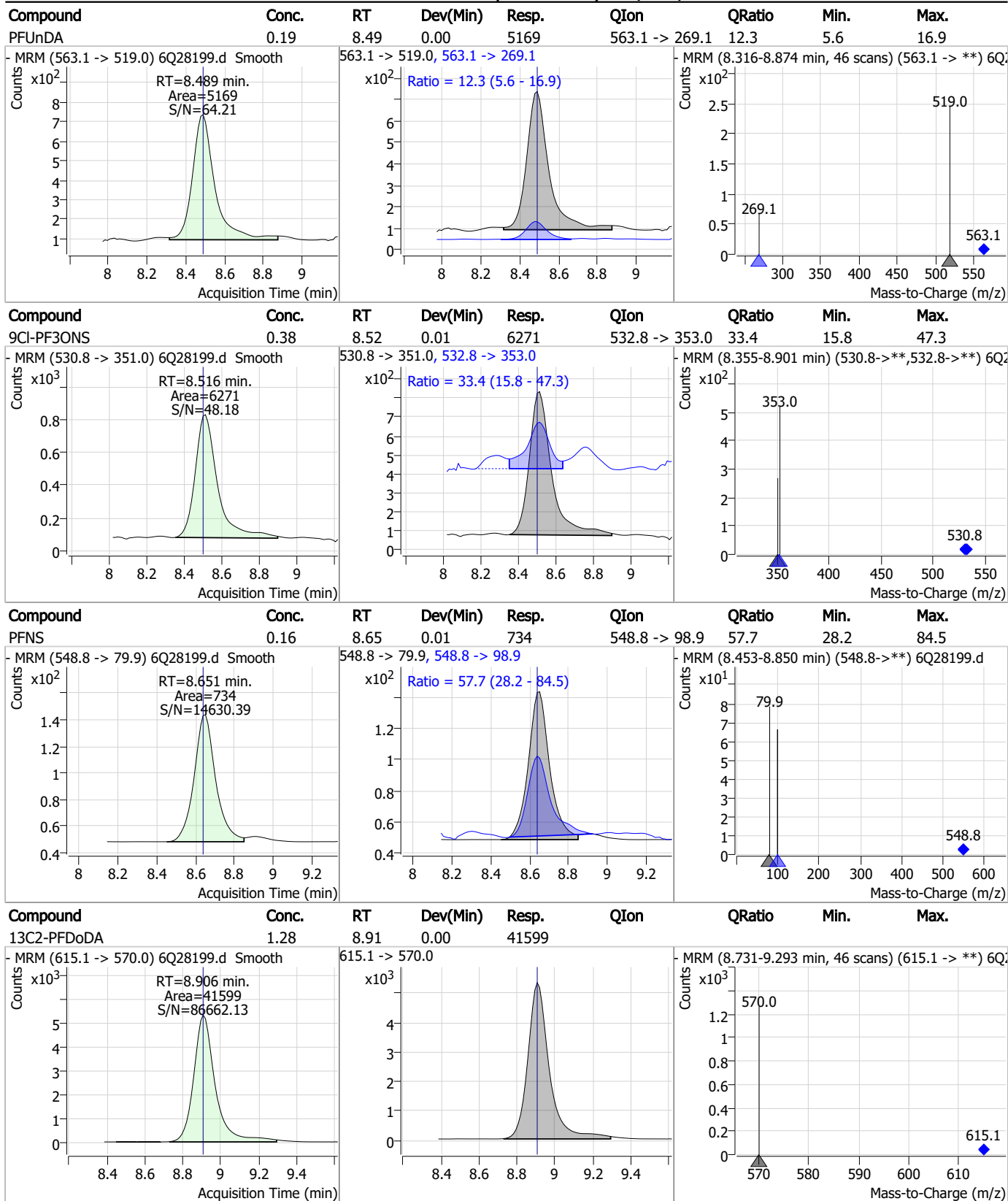
### Perfluorinated Compounds by LC/MS/MS



7.7.2  
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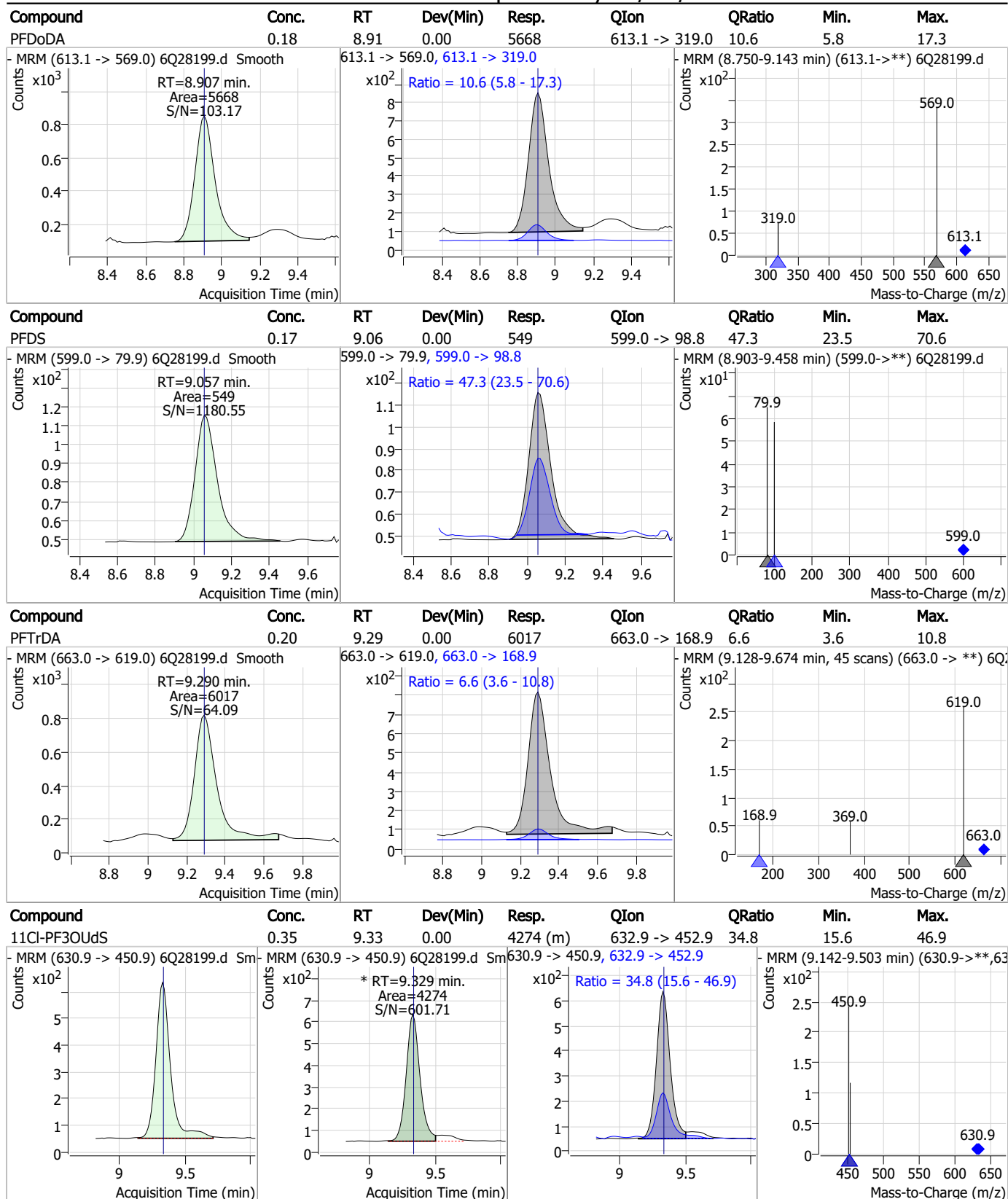


### Perfluorinated Compounds by LC/MS/MS



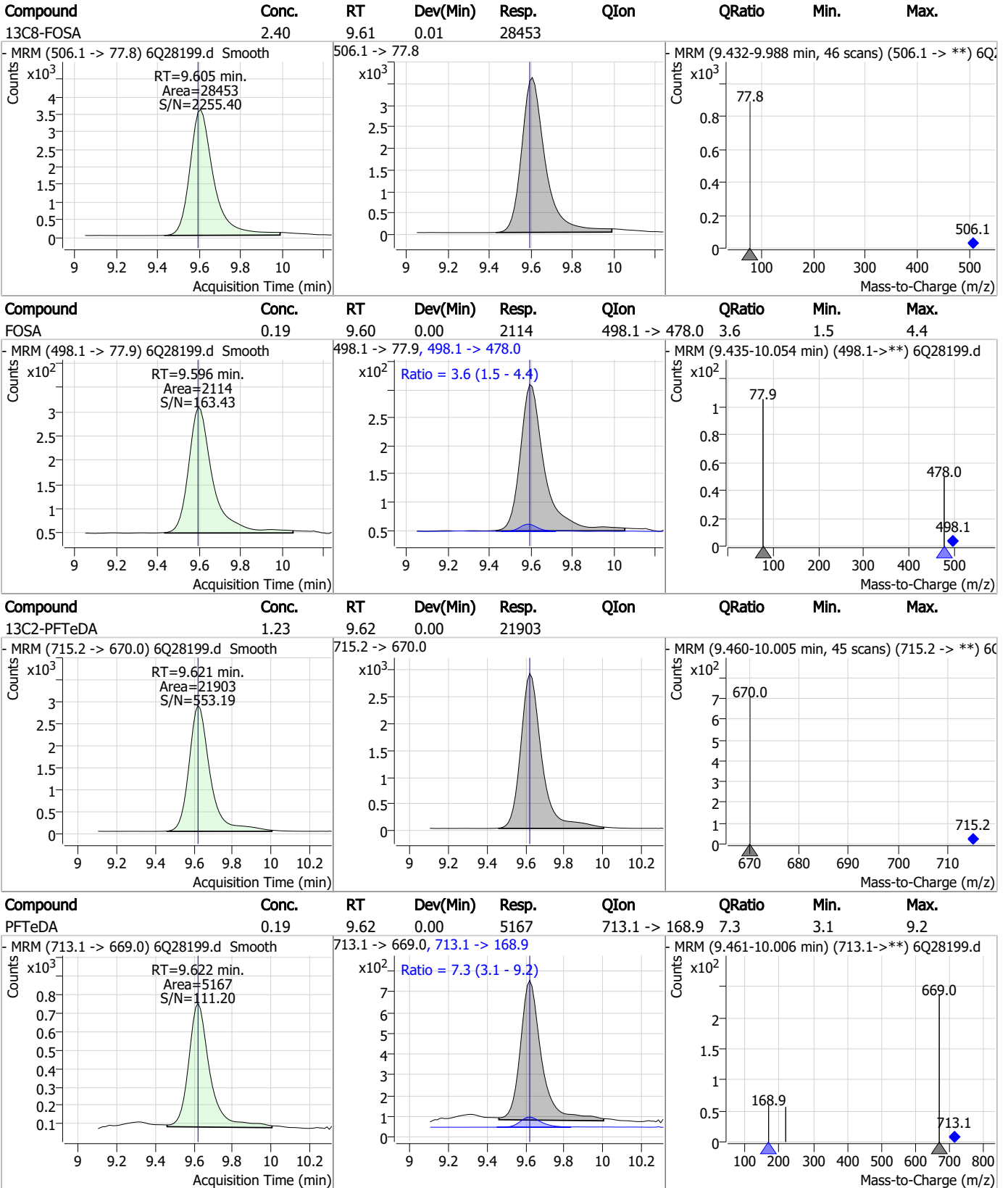
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### Perfluorinated Compounds by LC/MS/MS



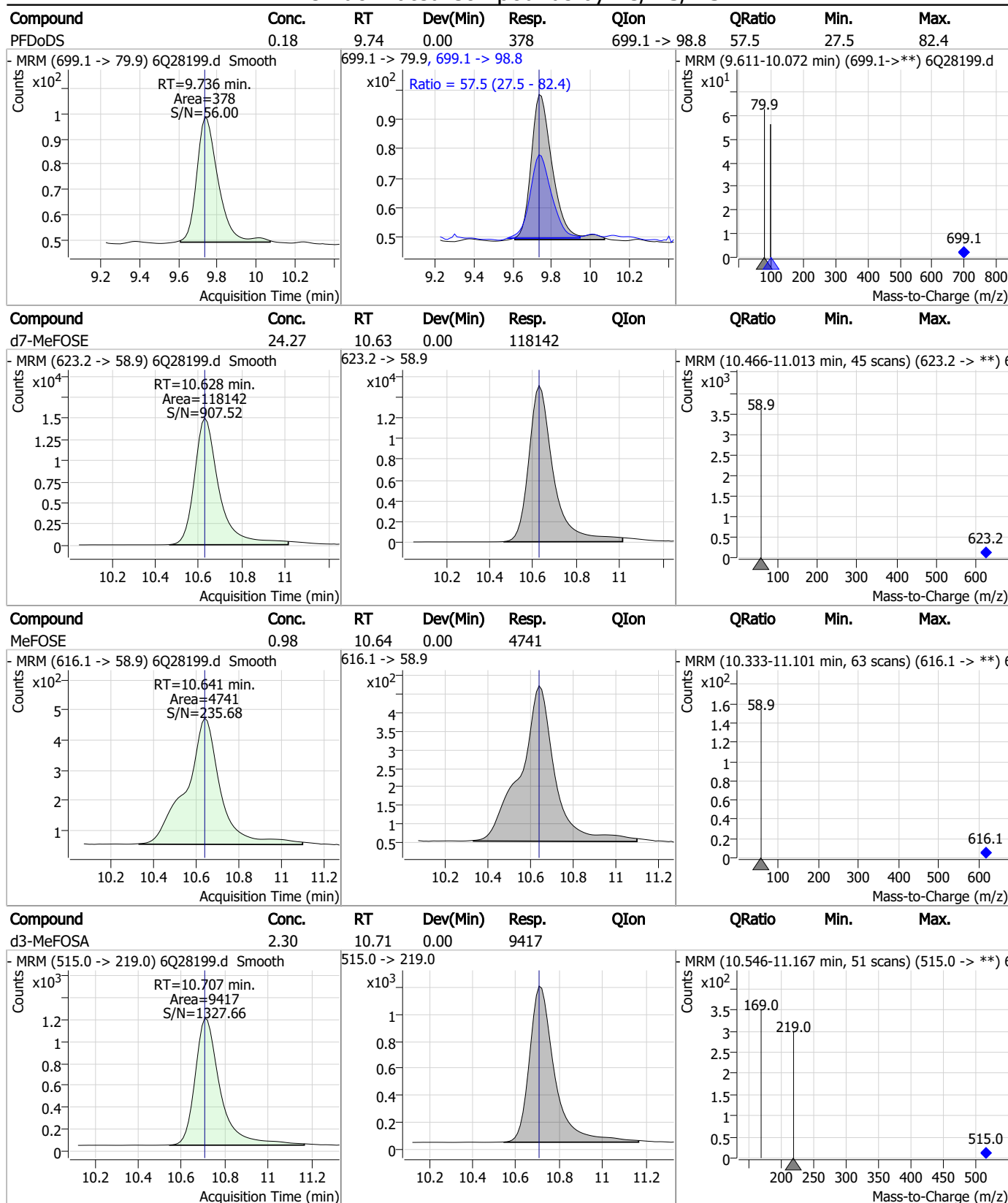
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### Perfluorinated Compounds by LC/MS/MS



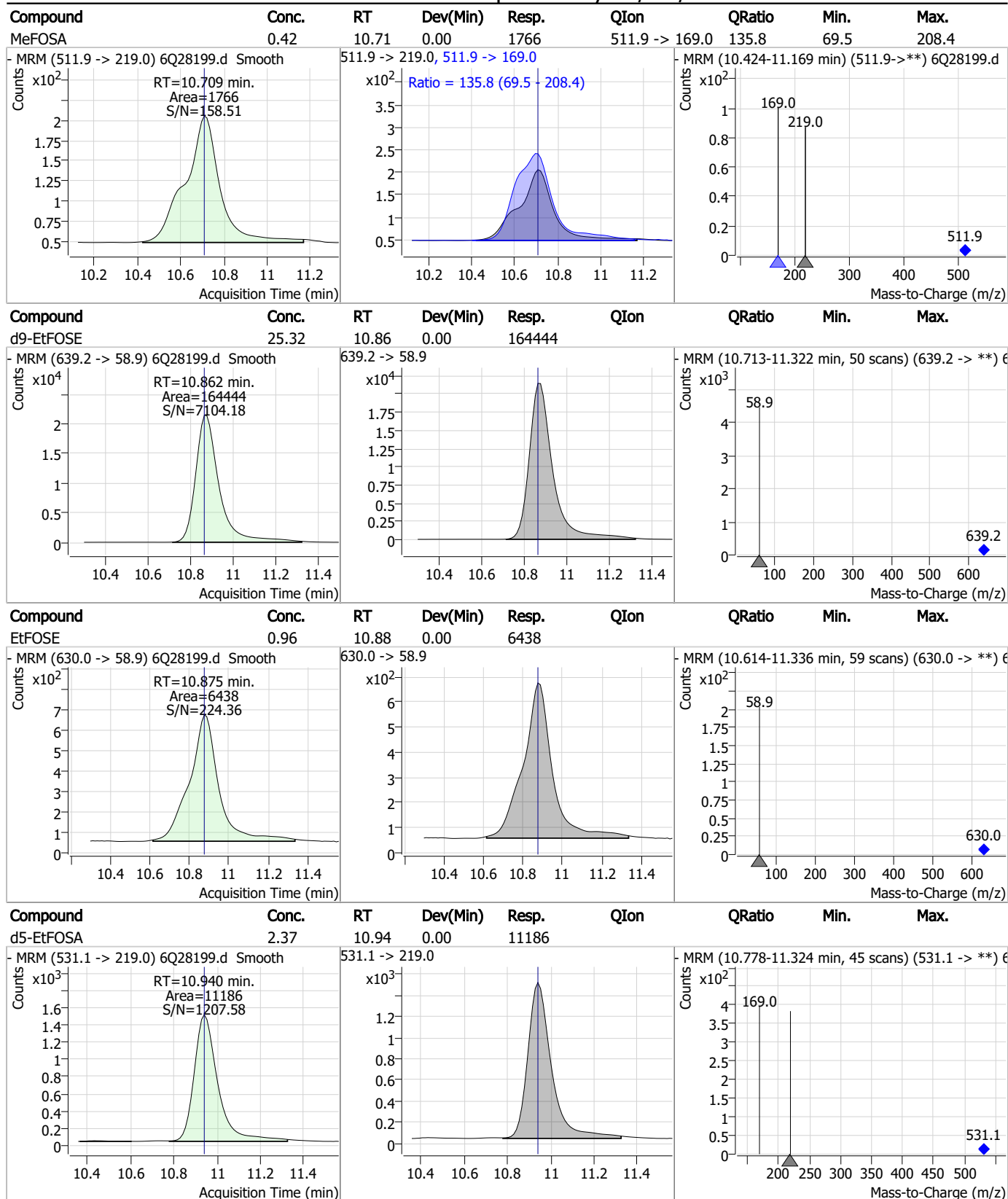


### Perfluorinated Compounds by LC/MS/MS



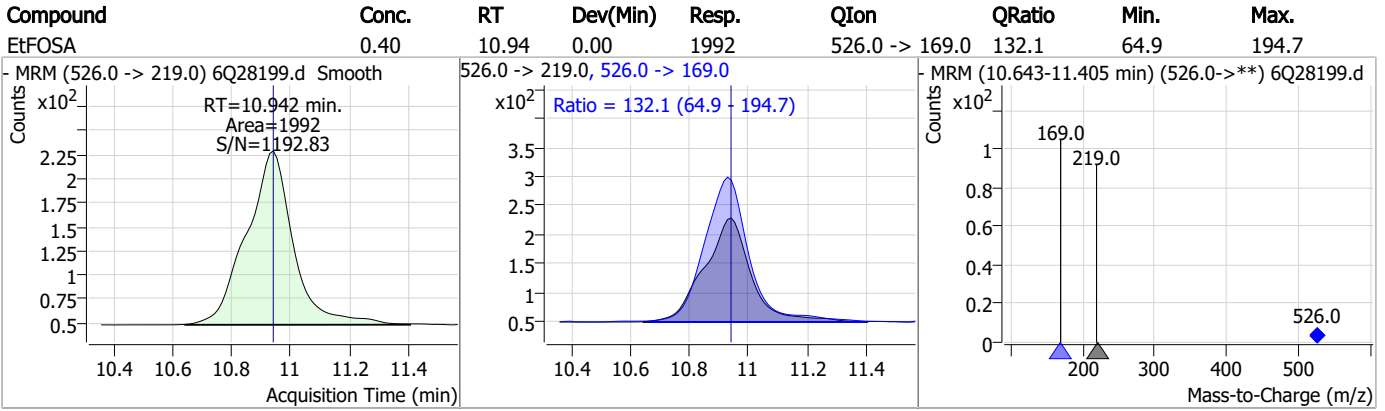
7.7.2  
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### Perfluorinated Compounds by LC/MS/MS



7.7.2  
7

### Perfluorinated Compounds by LC/MS/MS



7.7.2

7

# Manual Integration Approval Summary

Sample Number: S6Q391-IC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28199.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 13:20      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
8:2 Fluorotelomer sulfonate	39108-34-4		7.84	Split peak
EtFOSAA	2991-50-6		8.30	Split peak
11Cl-PF3OUdS (F-53B Minor)	763051-92-9		9.33	Poor instrument integration

7.7.2.1  
7

## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28200.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 1:34:29 PM  
 Sample Name : ic391-2  
 Vial : P1-A3  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	122536	10.00 µg/L	0.000
M5-PFPeA	4.284	268.3 -> 223.0	45189	5.00 µg/L	0.000
M5-PFHxA	5.491	318.0 -> 273.0	46425	2.50 µg/L	0.000
M4-PFHpA	6.419	367.1 -> 322.0	51419	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	77303	2.50 µg/L	0.000
M9-PFNA	7.567	472.1 -> 427.0	29348	1.25 µg/L	0.000
M6-PFDA	8.035	519.1 -> 474.1	29425	1.25 µg/L	0.000
M7-PFUnDA	8.476	570.0 -> 525.1	33390	1.25 µg/L	0.000
M2-PFDoDA	8.906	615.1 -> 570.0	40962	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	21850	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	28346	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	18998	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	12171	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	12489	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2707	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	4230	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	4488	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	30846	5.00 µg/L	0.012
M3-HFPO-DA	5.856	286.9 -> 168.9	28970	10.00 µg/L	0.000
M5-EtFOSAA	8.300	589.2 -> 419.0	25420	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	119190	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	159912	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	11144	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9594	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	11237	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	52370	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8007	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	78363	2.50 µg/L	0.000
13C2-PFDA	8.036	515.1 -> 470.1	28235	1.25 µg/L	-0.012
13C5-PFNA	7.581	468.0 -> 423.0	27313	1.25 µg/L	0.013
13C2-PFHxA	5.491	315.1 -> 270.0	44195	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2707	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4230	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-8:2FTS	7.848	529.1 -> 80.9	4488	4.76 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-PFDoDA	8.906	615.1 -> 570.0	40962	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C2-PFTeDA	9.621	715.2 -> 670.0	21850	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C3-PFBS	5.396	302.1 -> 79.9	18998	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C3-PFHxS	7.152	402.1 -> 79.9	12171	2.48 µg/L	0.000

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C4-PFBA	2.860	216.8 -> 171.9	122536	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C4-PFHpA	6.419	367.1 -> 322.0	51419	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C5-PFHxA	5.491	318.0 -> 273.0	46425	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C5-PFPeA	4.284	268.3 -> 223.0	45189	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C6-PFDA	8.035	519.1 -> 474.1	29425	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.7%	
13C7-PFUnDA	8.476	570.0 -> 525.1	33390	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C8-FOSA	9.605	506.1 -> 77.8	28346	2.58 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C8-PFOA	7.062	421.1 -> 376.0	77303	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C8-PFOS	8.185	507.1 -> 79.9	12489	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C9-PFNA	7.567	472.1 -> 427.0	29348	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
d3-MeFOSAA	8.105	573.2 -> 419.0	30846	5.29 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C3-HFPO-DA	5.856	286.9 -> 168.9	28970	10.56 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
d3-MeFOSA	10.707	515.0 -> 219.0	9594	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
d5-EtFOSAA	8.300	589.2 -> 419.0	25420	5.15 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d7-MeFOSE	10.628	623.2 -> 58.9	119190	26.50 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d9-EtFOSE	10.862	639.2 -> 58.9	159912	26.64 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.6%	
d5-EtFOSA	10.940	531.1 -> 219.0	11144	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	6733	1.53 µg/L	98
		327.1 -> 80.9	2610		
6:2FTS	6.836	427.1 -> 407.0	7211	1.57 µg/L	98
		427.1 -> 80.9	2686		
8:2FTS	7.836	527.1 -> 507.0	5731	1.69 µg/L	95
		527.1 -> 80.8	2235		
EtFOSAA	8.301	584.2 -> 419.1	1599	0.39 µg/L	m 97
		584.2 -> 526.0	1034		
FOSA	9.596	498.1 -> 77.9	4305	0.40 µg/L	99
		498.1 -> 478.0	133		
MeFOSAA	8.106	570.1 -> 419.0	2320	0.40 µg/L	99
		570.1 -> 483.0	538		
PFBA	2.868	212.8 -> 168.9	6473	1.61 µg/L	100
PFBS	5.397	298.7 -> 79.9	2768	0.38 µg/L	90
		298.7 -> 98.8	882		
PFDA	8.048	512.9 -> 469.0	10888	0.40 µg/L	99
		512.9 -> 219.0	1668		
PFDODA	8.907	613.1 -> 569.0	11376	0.37 µg/L	95
		613.1 -> 319.0	1507		
PFDS	9.057	599.0 -> 79.9	1360	0.42 µg/L	93

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	572			
PFHpA	6.432	363.1 -> 319.0	10424	0.39	µg/L	97
		363.1 -> 169.0	1672			
PFHpS	7.706	449.0 -> 79.9	2014	0.38	µg/L	98
		449.0 -> 98.9	995			
PFHxA	5.481	313.0 -> 269.0	7294	0.42	µg/L	97
		313.0 -> 118.9	291			
PFHxS	7.153	398.7 -> 79.9	2158	0.38	µg/L	m 86
		398.7 -> 98.9	1023			
PFNA	7.568	463.0 -> 419.0	7151	0.39	µg/L	96
		463.0 -> 219.0	1476			
PFNS	8.639	548.8 -> 79.9	1650	0.37	µg/L	89
		548.8 -> 98.9	800			
PFOA	7.063	413.0 -> 369.0	12292	0.40	µg/L	99
		413.0 -> 169.0	2230			
PFOS	8.186	498.9 -> 79.9	2139	0.38	µg/L	m 79
		498.9 -> 98.8	1009			
PFPeA	4.286	263.0 -> 219.0	9125	0.80	µg/L	100
PFPeS	6.470	349.1 -> 79.9	2320	0.39	µg/L	94
		349.1 -> 98.9	1172			
PFTeDA	9.622	713.1 -> 669.0	10890	0.41	µg/L	99
		713.1 -> 168.9	702			
PFTrDA	9.290	663.0 -> 619.0	11329	0.38	µg/L	99
		663.0 -> 168.9	844			
PFUnDA	8.489	563.1 -> 519.0	10211	0.39	µg/L	91
		563.1 -> 269.1	1522			
11Cl-PF3OUdS	9.329	630.9 -> 450.9	9016	0.71	µg/L	99
		632.9 -> 452.9	2885			
9Cl-PF3ONS	8.516	530.8 -> 351.0	12799	0.74	µg/L	96
		532.8 -> 353.0	4307			
ADONA	6.669	376.9 -> 250.9	36118	0.71	µg/L	97
		376.9 -> 84.8	9662			
HFPO-DA	5.844	284.9 -> 168.9	2161	0.75	µg/L	96
		284.9 -> 184.9	248			
3:3FTCA	3.721	241.0 -> 177.0	1349	1.90	µg/L	100
		241.0 -> 117.0	156			
5:3FTCA	6.146	341.0 -> 237.1	32164	10.13	µg/L	98
		341.0 -> 217.0	23365			
7:3FTCA	7.545	441.0 -> 316.9	19895	9.89	µg/L	96
		441.0 -> 336.9	42425			
EtFOSA	10.942	526.0 -> 219.0	4039	0.81	µg/L	97
		526.0 -> 169.0	5102			
EtFOSE	10.875	630.0 -> 58.9	13537	2.08	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	3458	0.81	µg/L	97
		511.9 -> 169.0	4909			
MeFOSE	10.641	616.1 -> 58.9	9673	1.99	µg/L	100
PFDoDS	9.748	699.1 -> 79.9	828	0.40	µg/L	99
		699.1 -> 98.8	460			
NFDHA	5.360	295.0 -> 201.0	1644	0.82	µg/L	99
		295.0 -> 84.9	417			
PFMBA	4.700	279.0 -> 85.1	6396	0.81	µg/L	100
PFMPA	3.426	229.0 -> 84.9	4686	0.79	µg/L	100
PFEESA	5.937	314.8 -> 134.9	15629	0.73	µg/L	100
		314.8 -> 82.9	598			

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

### Perfluorinated Compounds by LC/MS/MS

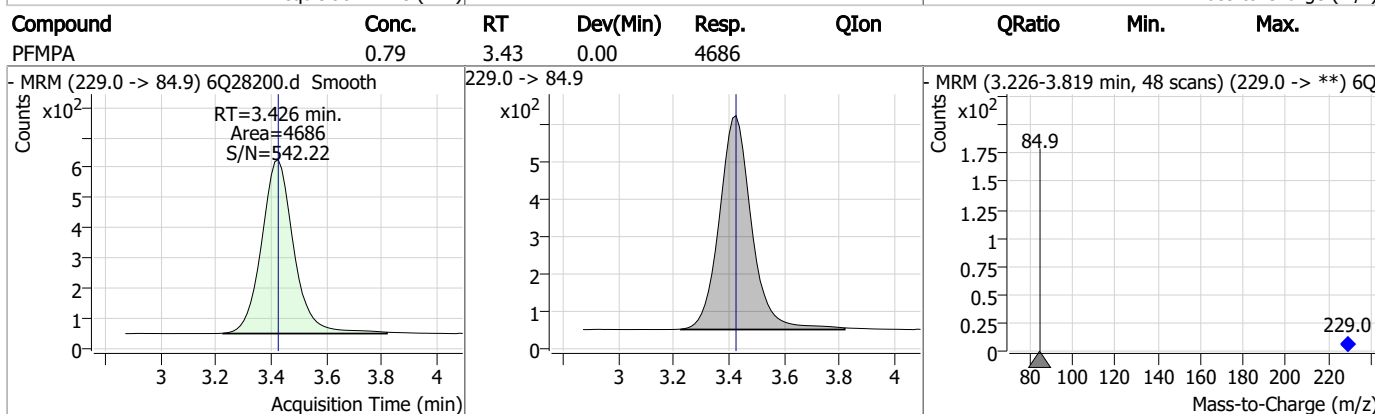
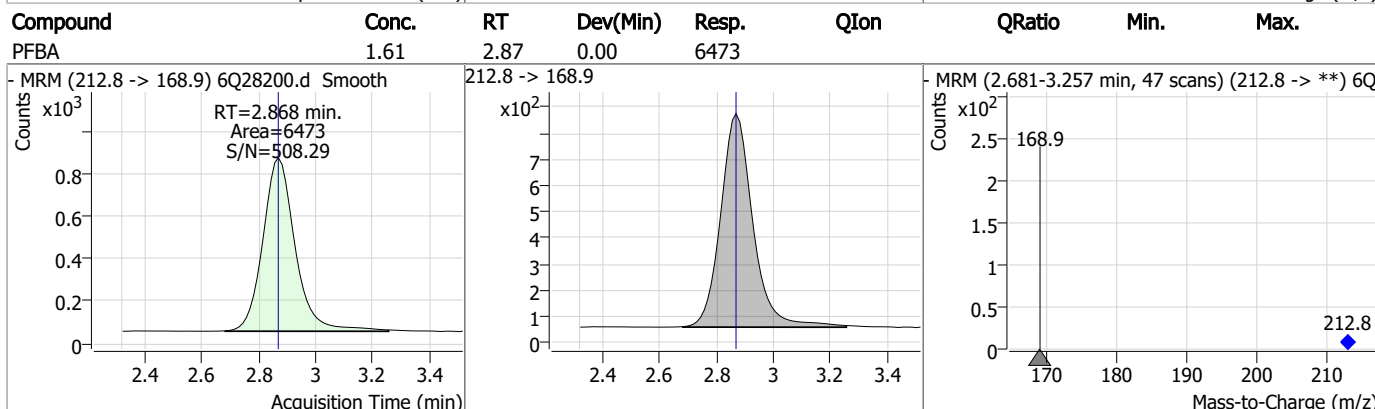
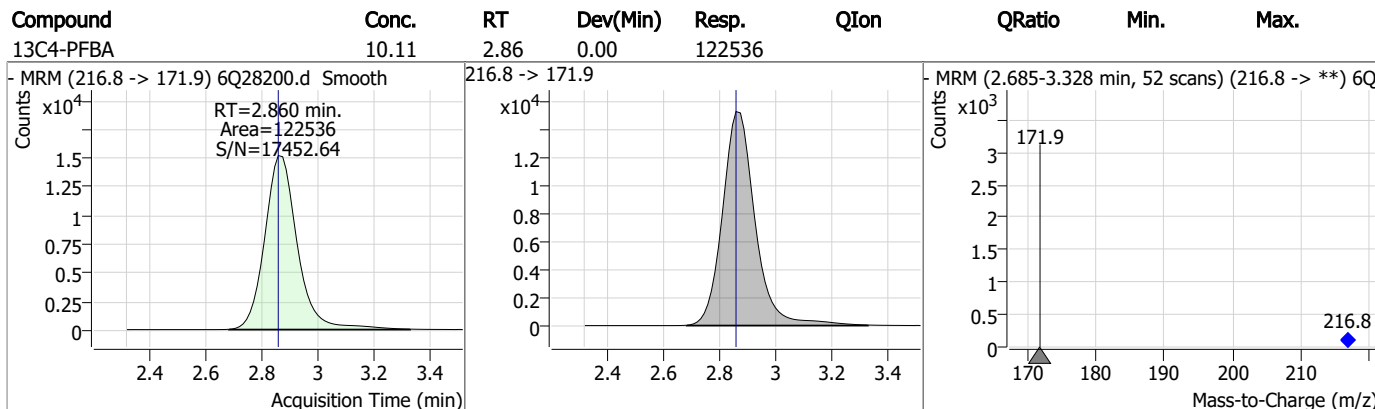
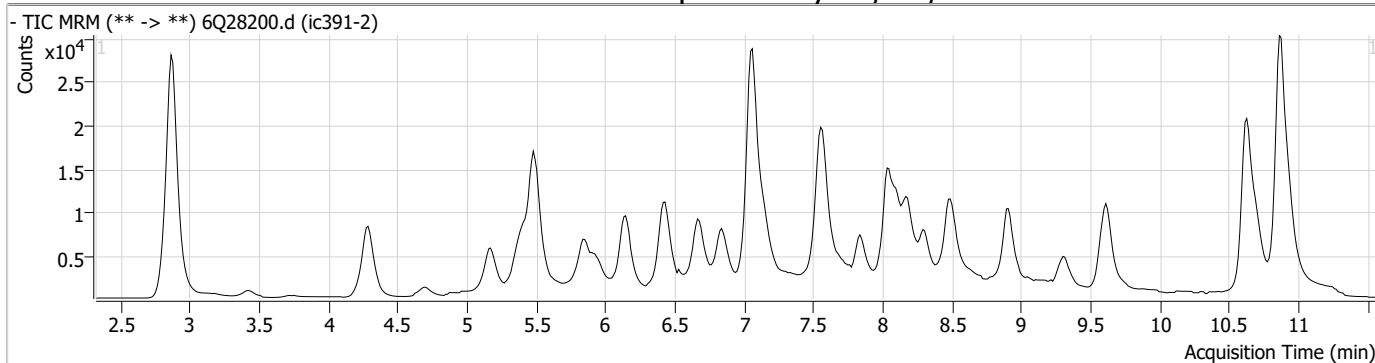
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.3

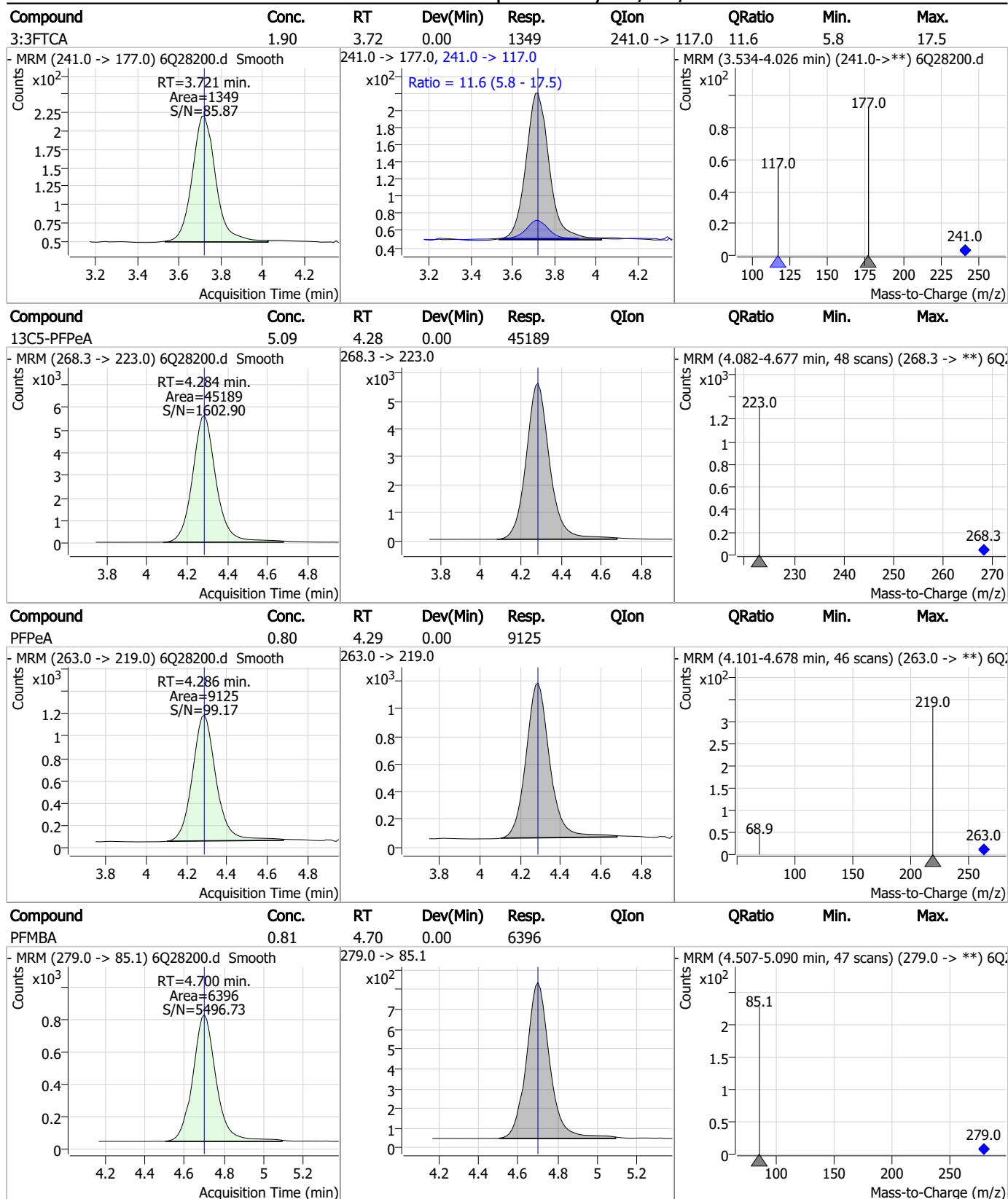
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### Perfluorinated Compounds by LC/MS/MS

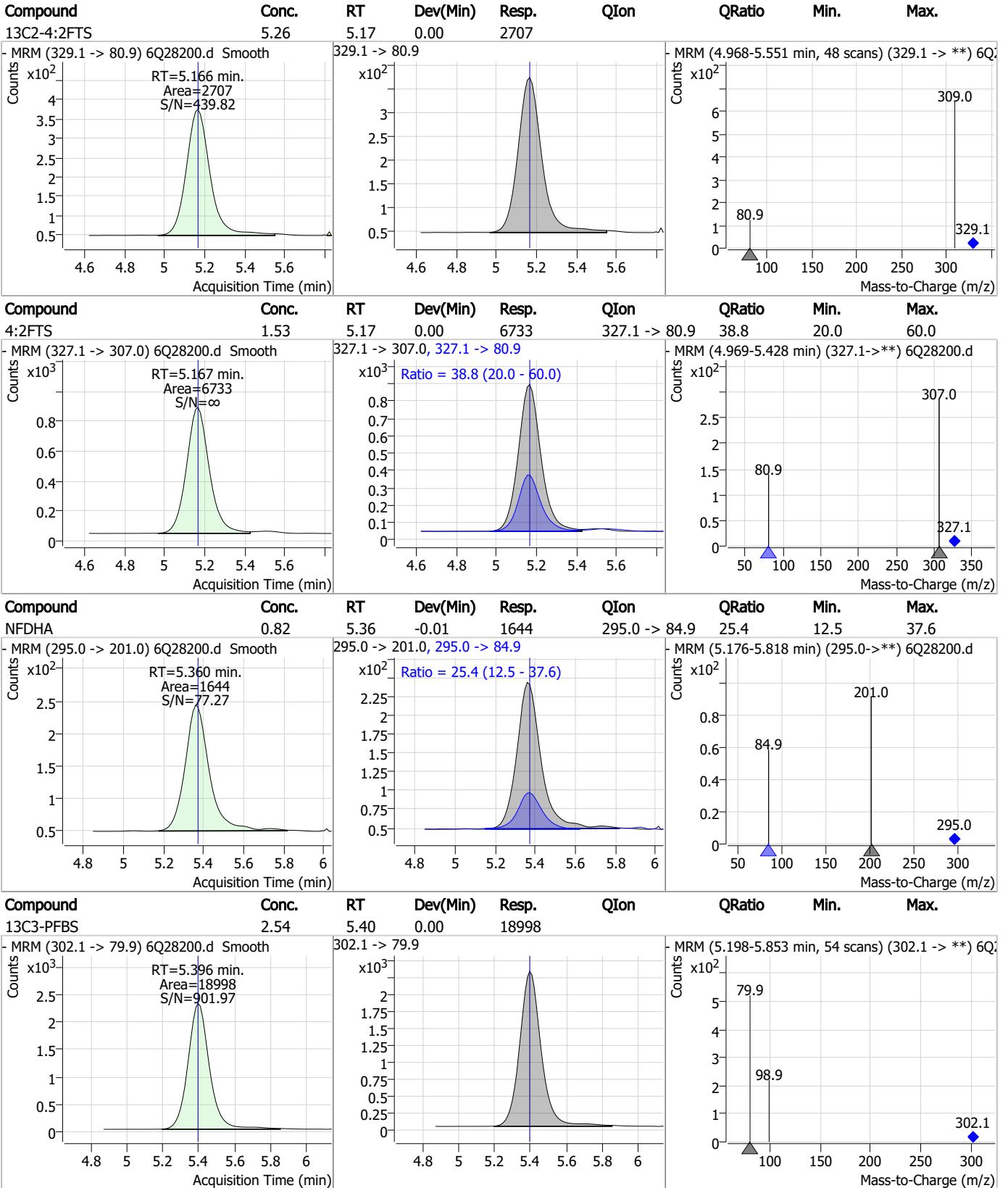


### Perfluorinated Compounds by LC/MS/MS



7.7.3  
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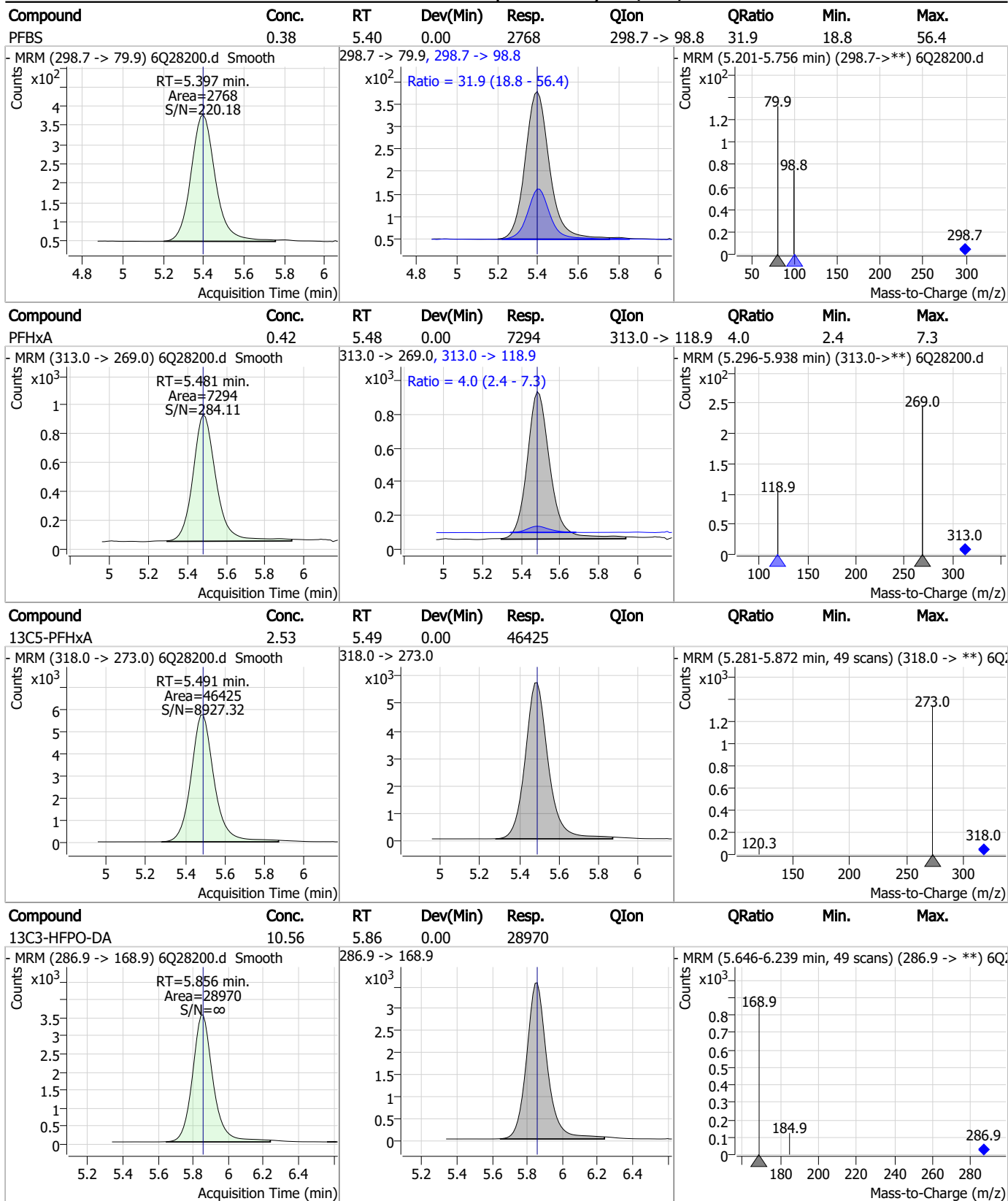
### Perfluorinated Compounds by LC/MS/MS



7.7.3

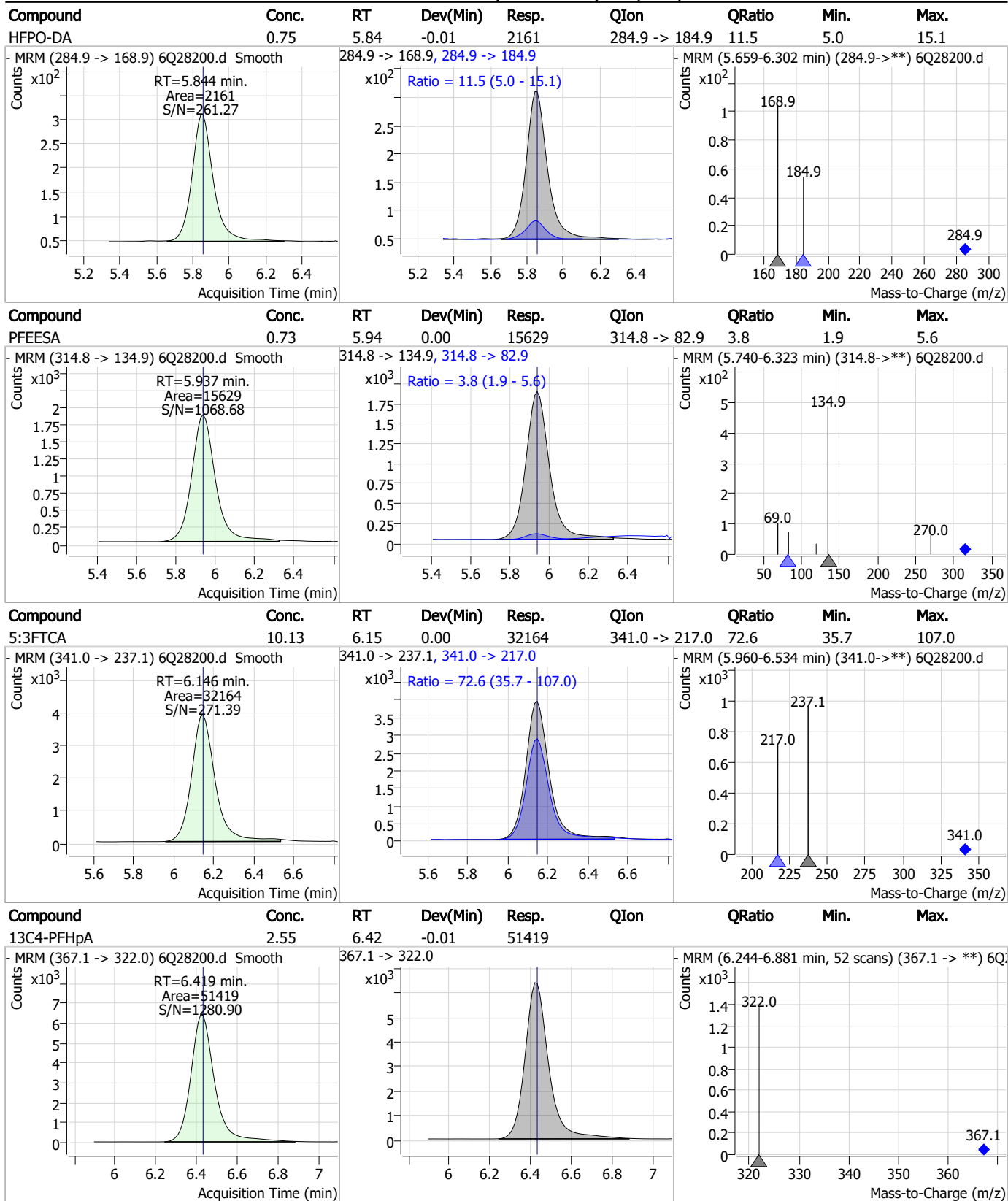
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### Perfluorinated Compounds by LC/MS/MS



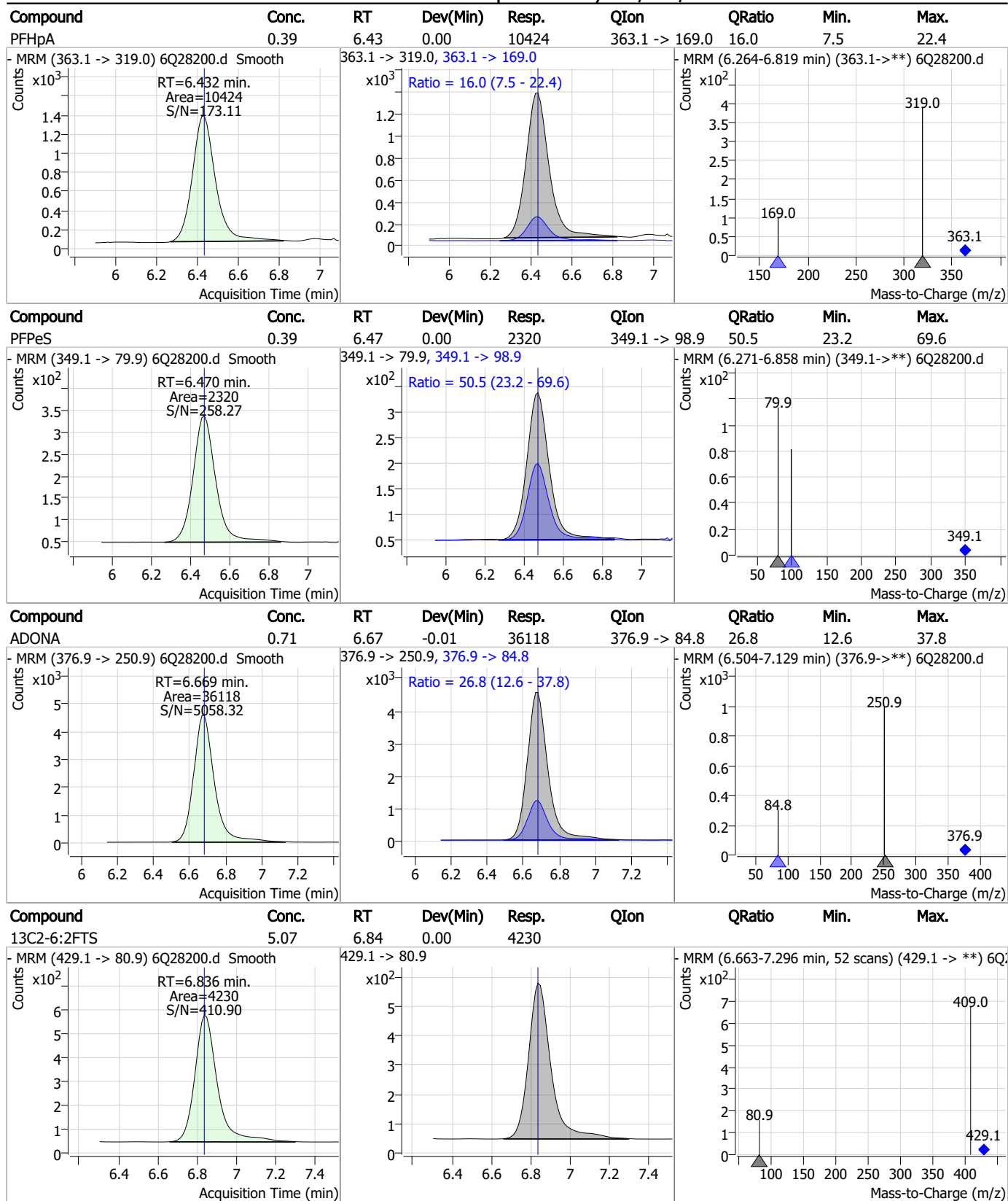
7.7.3  
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### Perfluorinated Compounds by LC/MS/MS



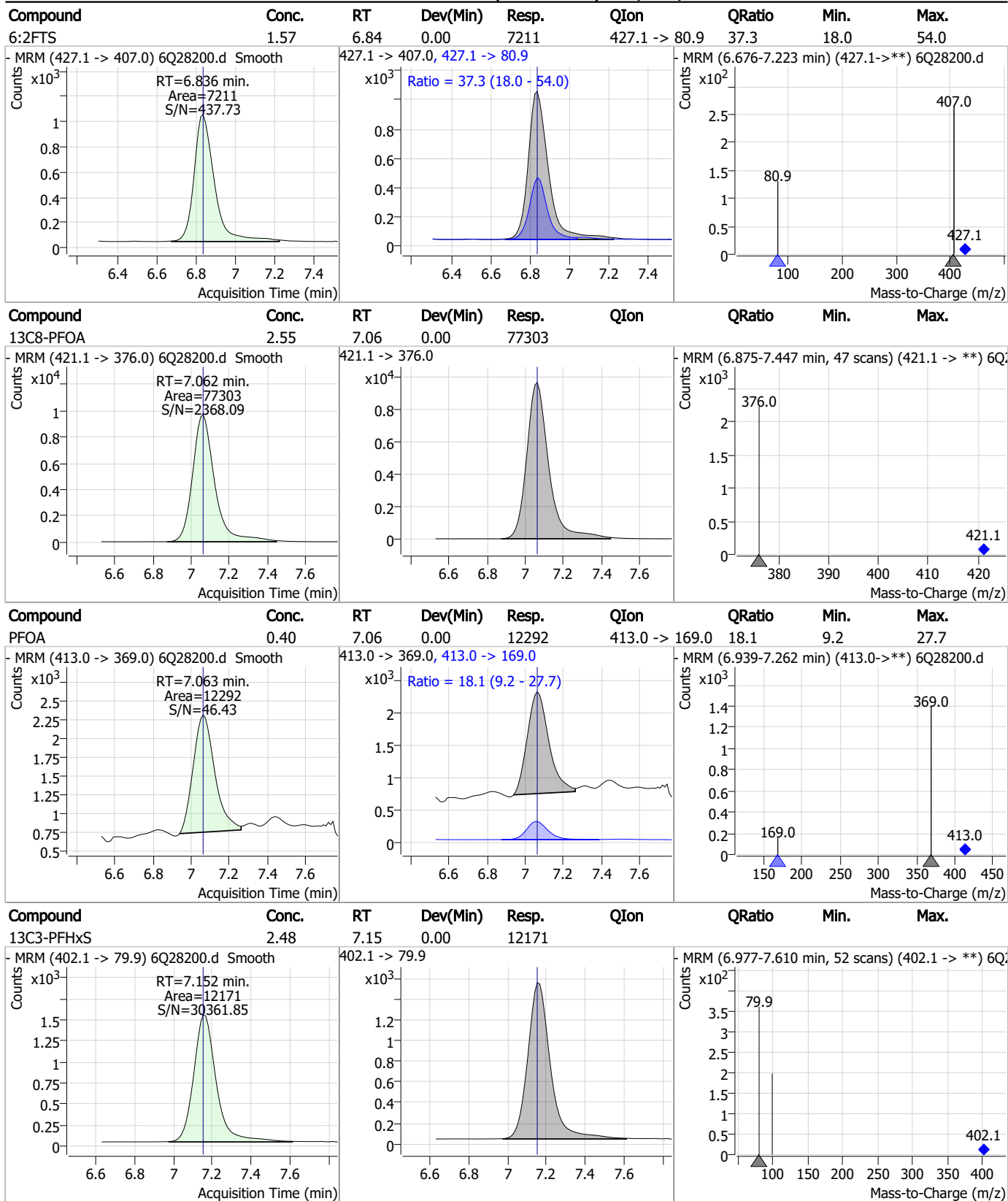
7.7.3  
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### Perfluorinated Compounds by LC/MS/MS



7.7.3  
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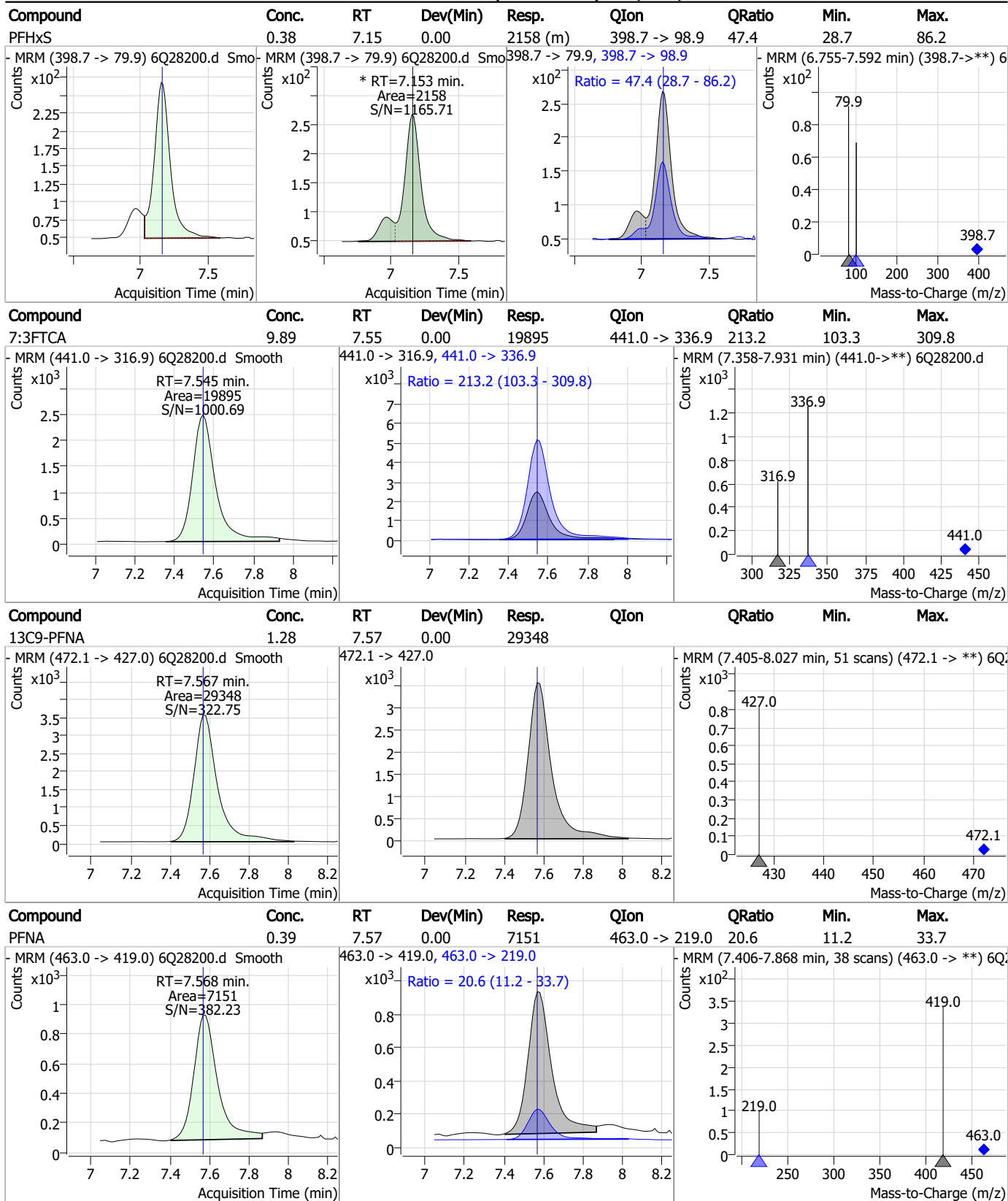
### Perfluorinated Compounds by LC/MS/MS



7.7.3

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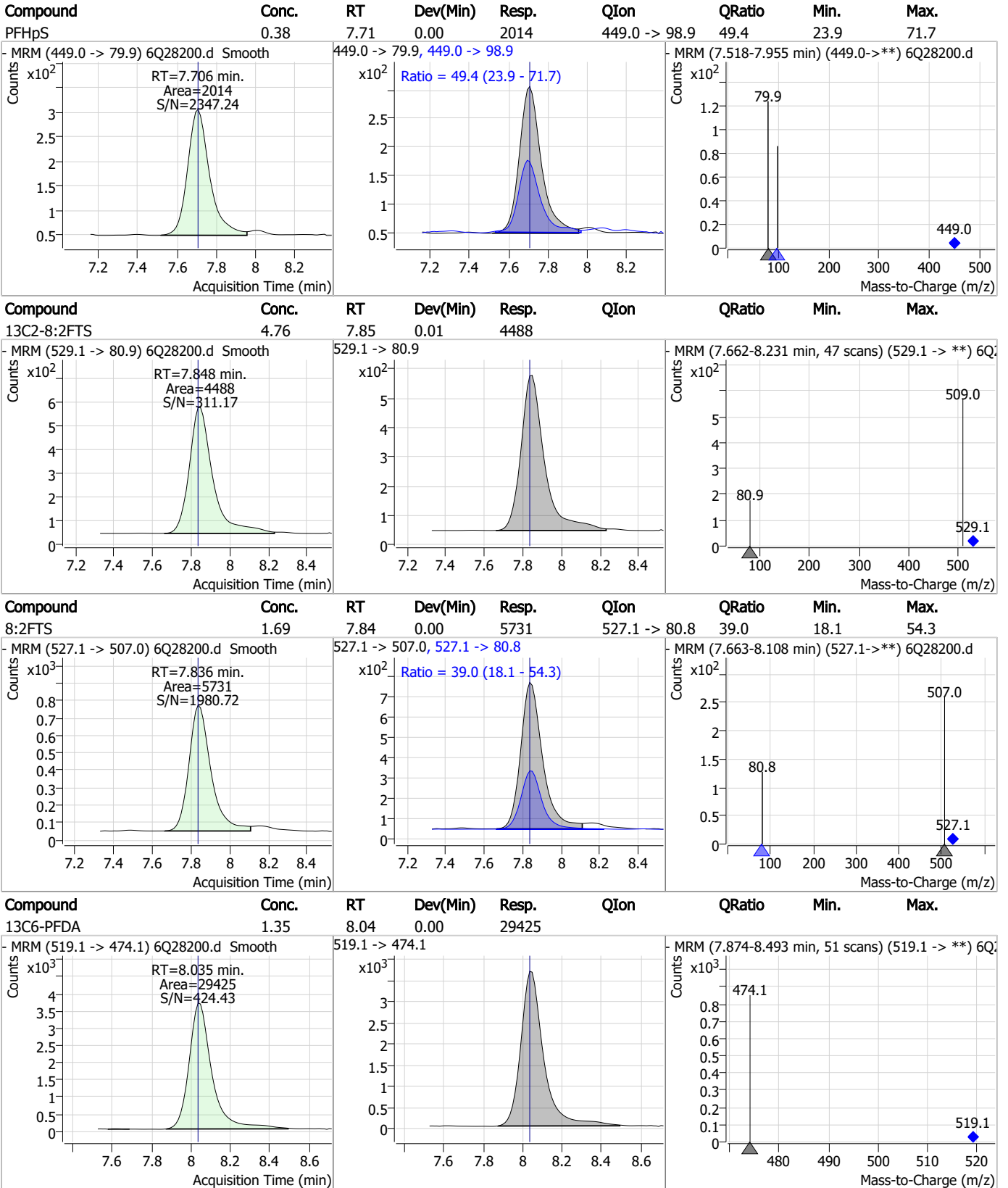
### Perfluorinated Compounds by LC/MS/MS



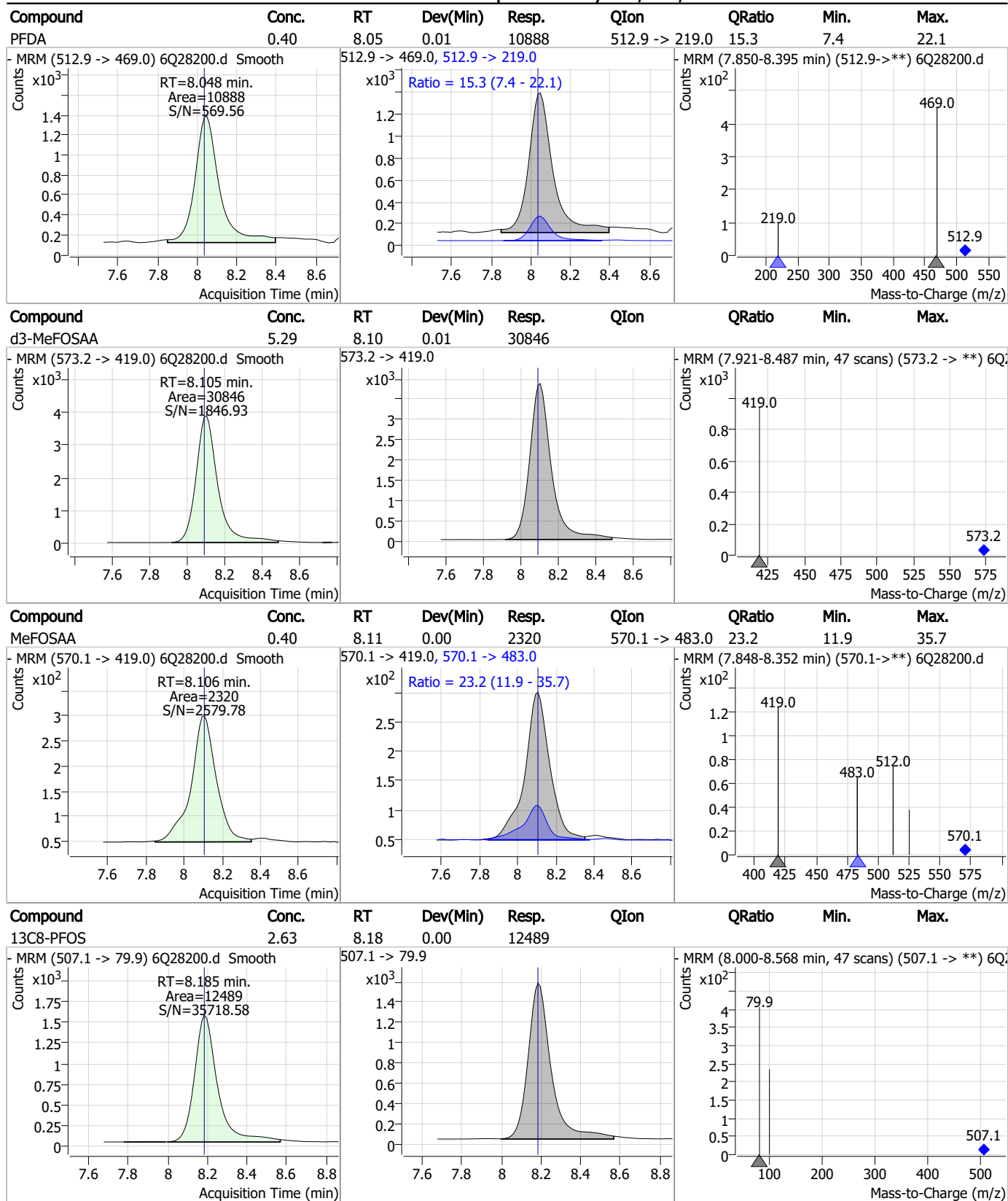
7.7.3  
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### Perfluorinated Compounds by LC/MS/MS



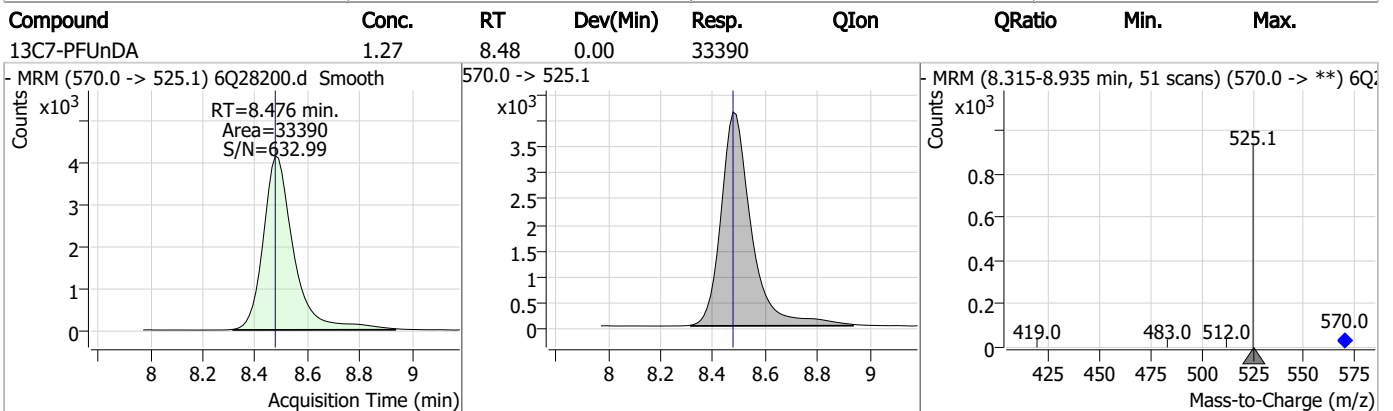
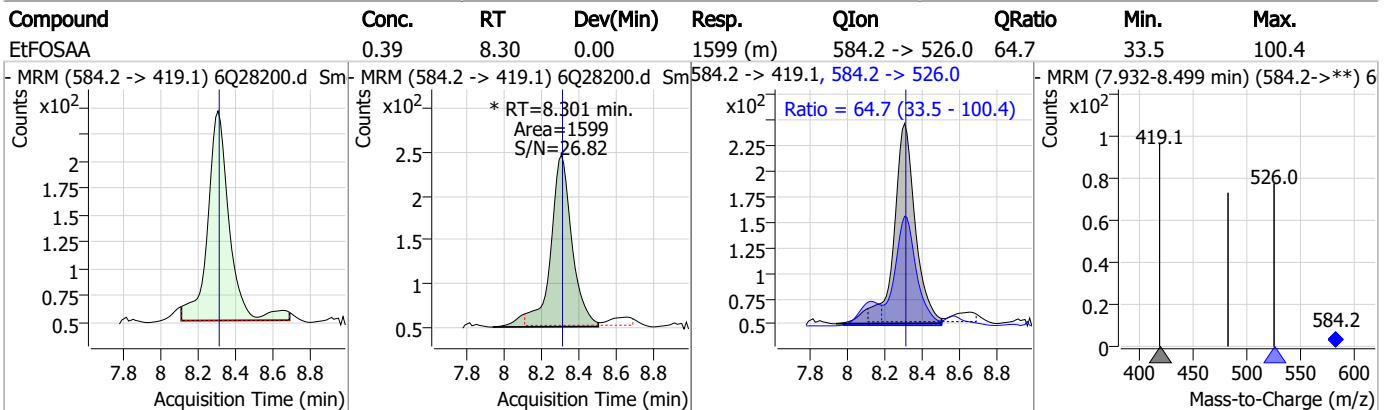
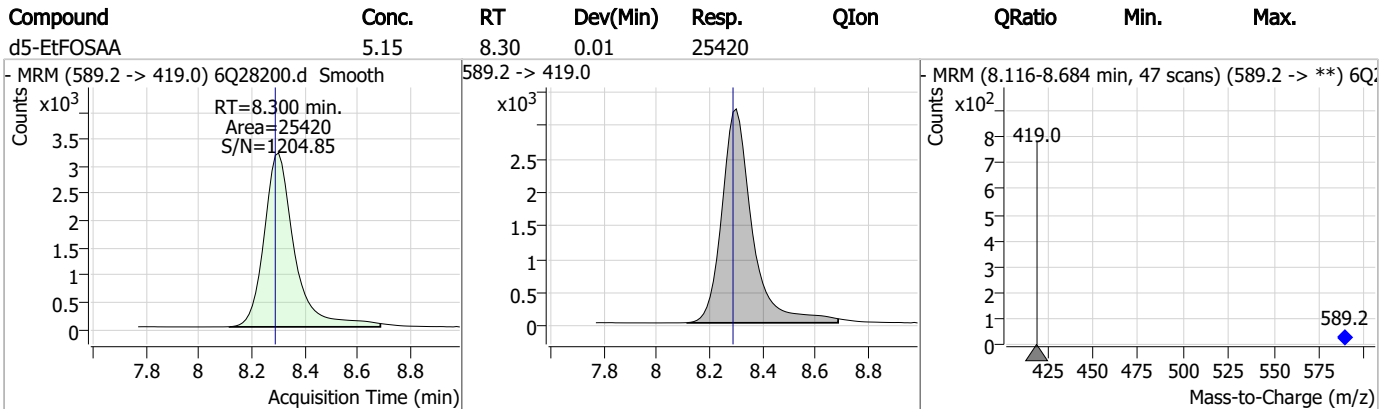
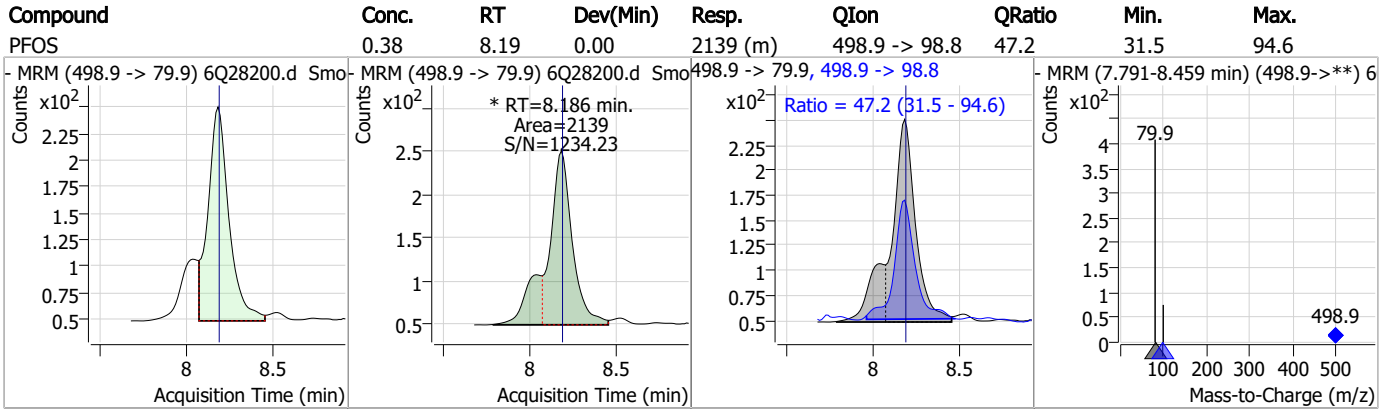
### Perfluorinated Compounds by LC/MS/MS



7.7.3

7

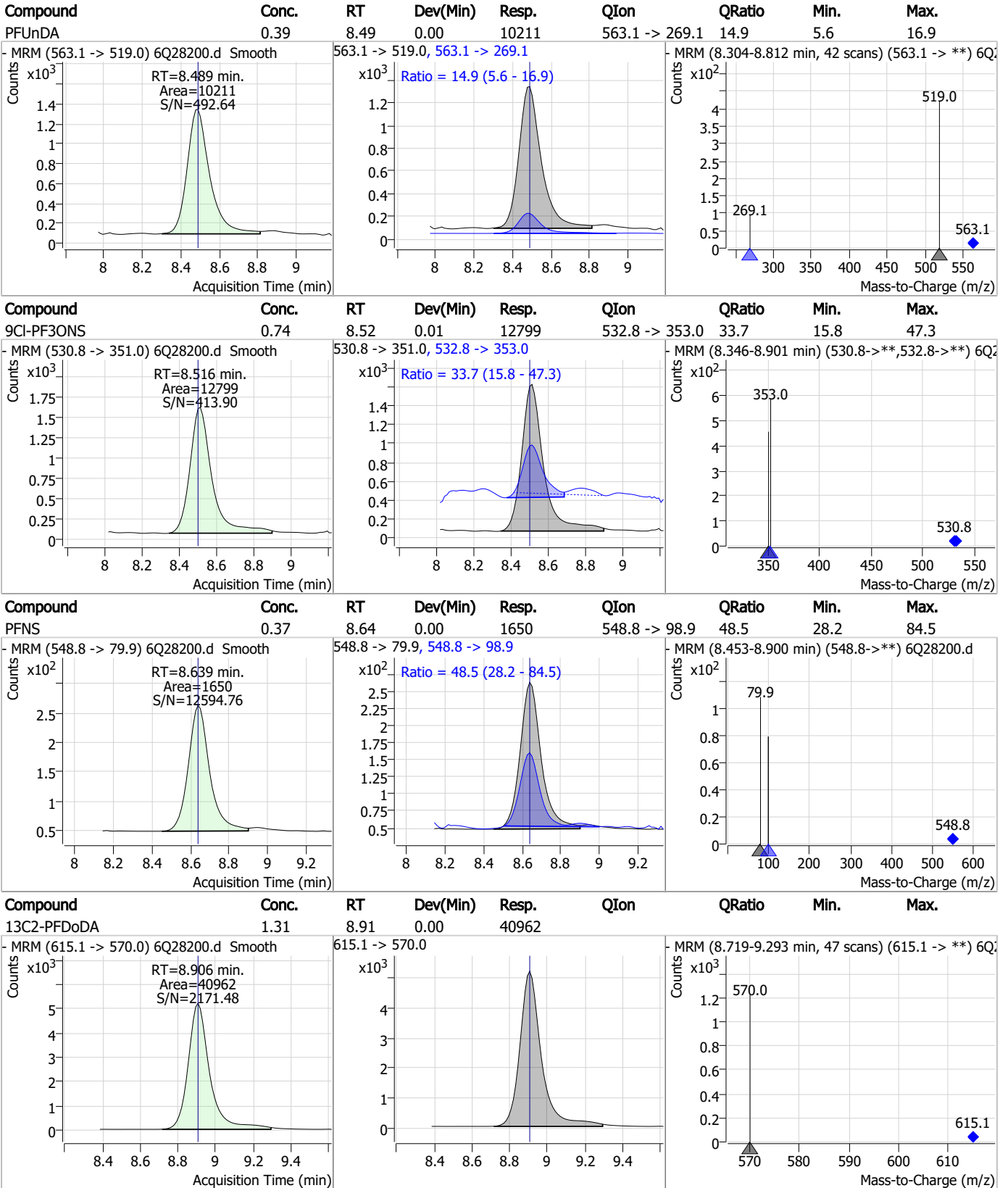
### Perfluorinated Compounds by LC/MS/MS



7.7.3

7

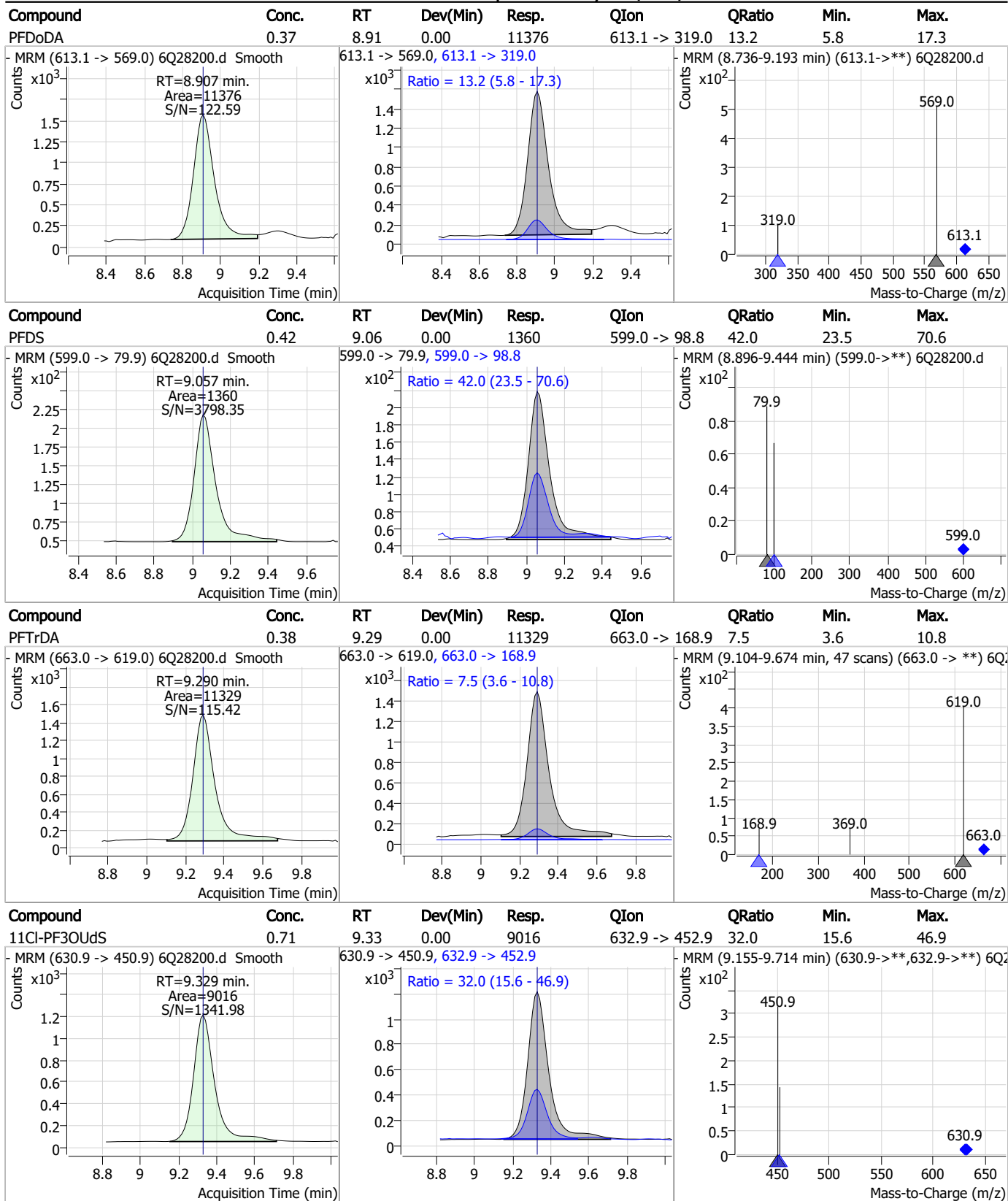
### Perfluorinated Compounds by LC/MS/MS



7.7.3

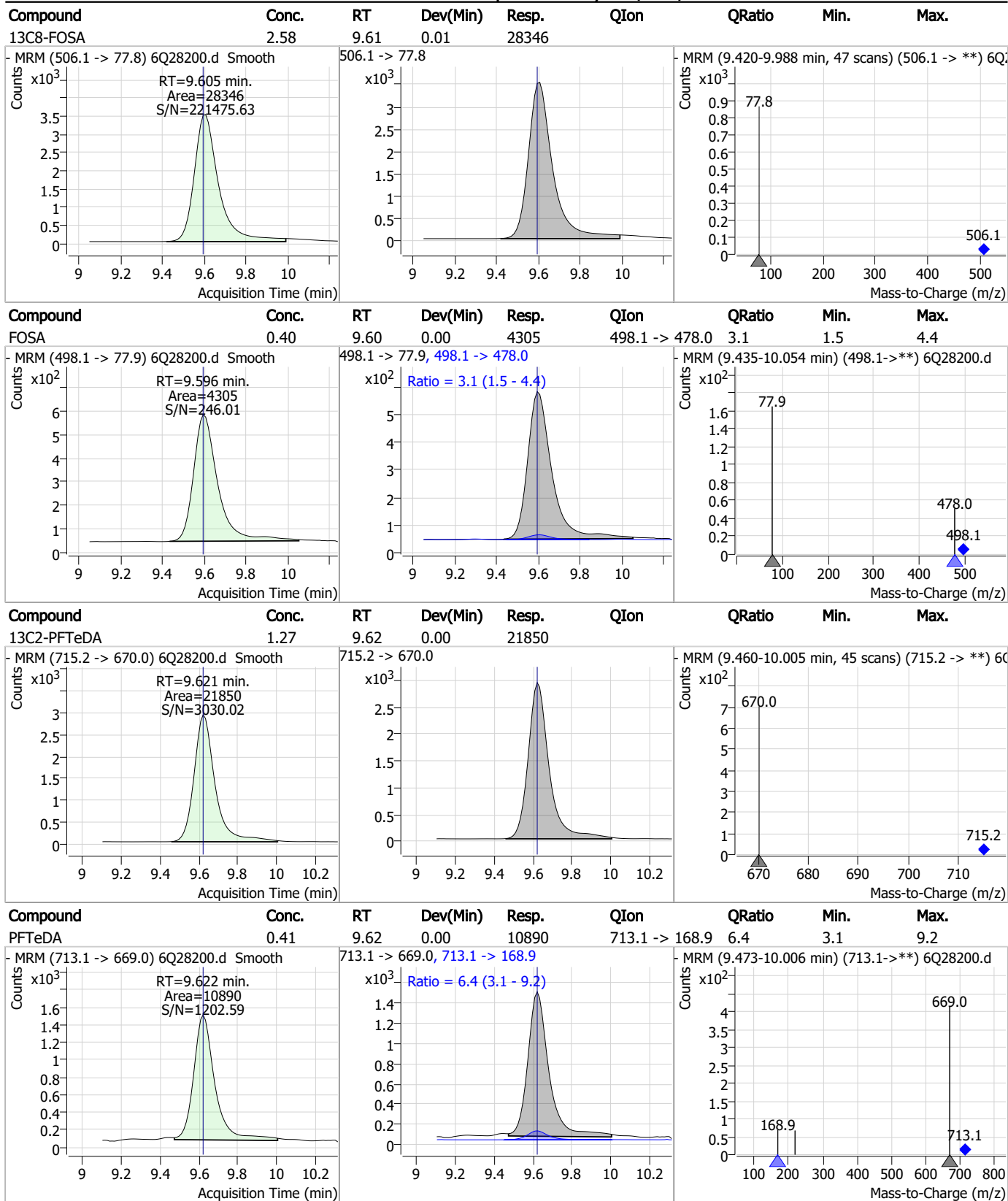
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### Perfluorinated Compounds by LC/MS/MS



7.7.3  
7

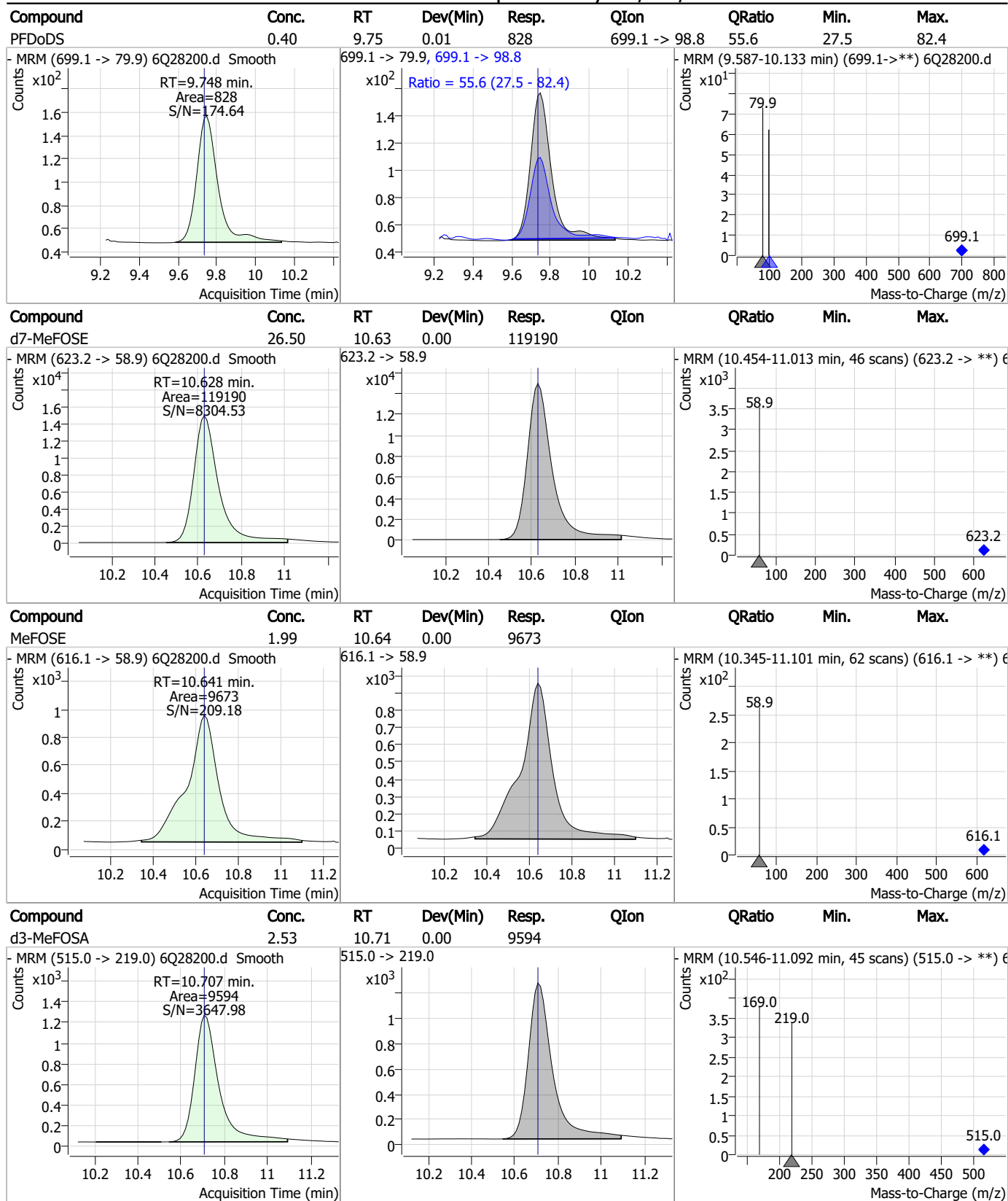
### Perfluorinated Compounds by LC/MS/MS



7.7.3

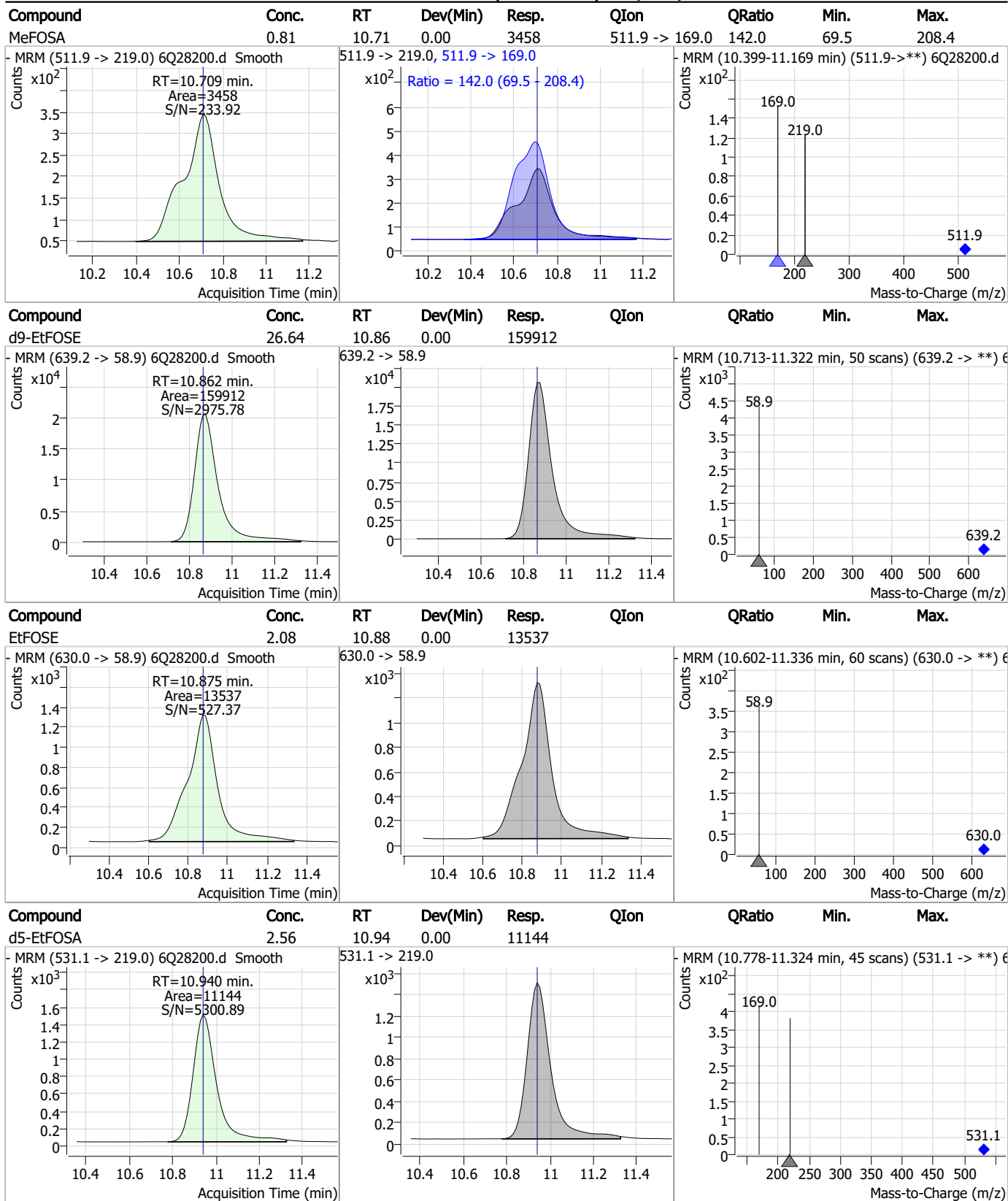
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### Perfluorinated Compounds by LC/MS/MS



7.7.3  
7

### Perfluorinated Compounds by LC/MS/MS



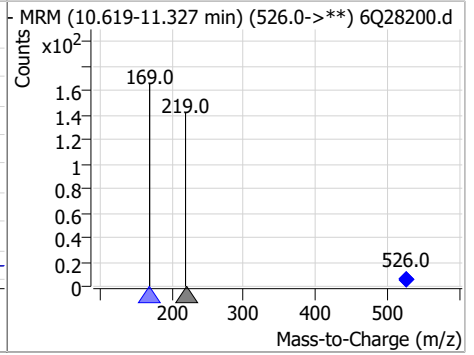
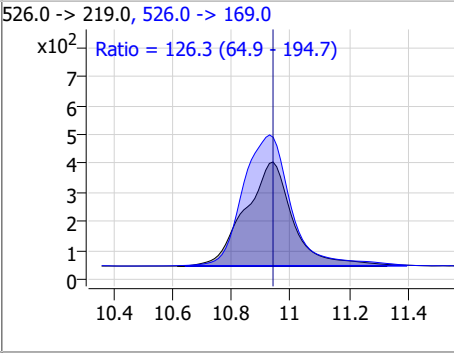
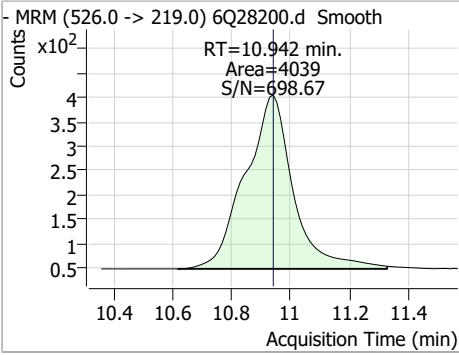
7.7.3

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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.81	10.94	0.00	4039	526.0 -> 169.0	126.3	64.9	194.7



7.7.3

7

# Manual Integration Approval Summary

Sample Number: S6Q391-IC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28200.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 13:34      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

7.7.3.1

7

## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28201.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 1:48:48 PM  
 Sample Name : ic391-3  
 Vial : P1-A4  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	123157	10.00 µg/L	0.000
M5-PFPeA	4.284	268.3 -> 223.0	44882	5.00 µg/L	0.000
M5-PFHxA	5.491	318.0 -> 273.0	46062	2.50 µg/L	0.000
M4-PFHpA	6.419	367.1 -> 322.0	52369	2.50 µg/L	-0.012
M8-PFOA	7.049	421.1 -> 376.0	76701	2.50 µg/L	-0.012
M9-PFNA	7.567	472.1 -> 427.0	27957	1.25 µg/L	0.000
M6-PFDA	8.035	519.1 -> 474.1	29684	1.25 µg/L	0.000
M7-PFUnDA	8.476	570.0 -> 525.1	34330	1.25 µg/L	0.000
M2-PFDoDA	8.906	615.1 -> 570.0	37443	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	22213	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	29058	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	19369	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	12523	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	11654	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2755	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	4477	5.00 µg/L	0.000
M2-8:2FTS	7.835	529.1 -> 80.9	5049	5.00 µg/L	0.000
M3-MeFOSAA	8.105	573.2 -> 419.0	31317	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	27435	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	26524	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	113844	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	156102	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	11135	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9407	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	12245	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	52741	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8303	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	85126	2.50 µg/L	0.000
13C2-PFDA	8.036	515.1 -> 470.1	28188	1.25 µg/L	-0.012
13C5-PFNA	7.567	468.0 -> 423.0	26731	1.25 µg/L	0.000
13C2-PFHxA	5.479	315.1 -> 270.0	45846	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2755	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4477	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C2-8:2FTS	7.835	529.1 -> 80.9	5049	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C2-PFDoDA	8.906	615.1 -> 570.0	37443	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C2-PFTeDA	9.621	715.2 -> 670.0	22213	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C3-PFBS	5.396	302.1 -> 79.9	19369	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C3-PFHxS	7.152	402.1 -> 79.9	12523	2.46 µg/L	0.000

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C4-PFBA	2.860	216.8 -> 171.9	123157	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C4-PFHpA	6.419	367.1 -> 322.0	52369	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C5-PFHxA	5.491	318.0 -> 273.0	46062	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C5-PFPeA	4.284	268.3 -> 223.0	44882	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C6-PFDA	8.035	519.1 -> 474.1	29684	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C7-PFUnDA	8.476	570.0 -> 525.1	34330	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C8-FOSA	9.605	506.1 -> 77.8	29058	2.43 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.2%		
13C8-PFOA	7.049	421.1 -> 376.0	76701	2.33 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.3%		
13C8-PFOS	8.185	507.1 -> 79.9	11654	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 90.2%		
13C9-PFNA	7.567	472.1 -> 427.0	27957	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.9%		
d3-MeFOSAA	8.105	573.2 -> 419.0	31317	4.93 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-HFPO-DA	5.844	286.9 -> 168.9	27435	9.64 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 96.4%		
d3-MeFOSA	10.707	515.0 -> 219.0	9407	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.2%		
d5-EtFOSAA	8.300	589.2 -> 419.0	26524	4.93 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
d7-MeFOSE	10.628	623.2 -> 58.9	113844	23.22 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 92.9%		
d9-EtFOSE	10.862	639.2 -> 58.9	156102	23.87 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 95.5%		
d5-EtFOSA	10.940	531.1 -> 219.0	11135	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.8%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	19806	4.41 µg/L	95
		327.1 -> 80.9	8570		
6:2FTS	6.836	427.1 -> 407.0	22443	4.60 µg/L	100
		427.1 -> 80.9	8018		
8:2FTS	7.836	527.1 -> 507.0	16748	4.38 µg/L	99
		527.1 -> 80.8	6132		
EtFOSAA	8.301	584.2 -> 419.1	5311	1.24 µg/L	m 99
		584.2 -> 526.0	3589		
FOSA	9.596	498.1 -> 77.9	13624	1.22 µg/L	100
		498.1 -> 478.0	405		
MeFOSAA	8.106	570.1 -> 419.0	6139	1.04 µg/L	88
		570.1 -> 483.0	1815		
PFBA	2.868	212.8 -> 168.9	19491	4.83 µg/L	100
PFBS	5.397	298.7 -> 79.9	7583	1.03 µg/L	96
		298.7 -> 98.8	2685		
PFDA	8.036	512.9 -> 469.0	33383	1.21 µg/L	96
		512.9 -> 219.0	4392		
PFDoDA	8.907	613.1 -> 569.0	36393	1.31 µg/L	99
		613.1 -> 319.0	4043		
PFDS	9.057	599.0 -> 79.9	3596	1.19 µg/L	96

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1783			
PFHpA	6.419	363.1 -> 319.0	31926	1.19	µg/L	98
		363.1 -> 169.0	5035			
PFHpS	7.706	449.0 -> 79.9	6082	1.23	µg/L	96
		449.0 -> 98.9	3059			
PFHxA	5.481	313.0 -> 269.0	20459	1.19	µg/L	100
		313.0 -> 118.9	1001			
PFHxS	7.153	398.7 -> 79.9	6865	1.18	µg/L	m 81
		398.7 -> 98.9	2987			
PFNA	7.568	463.0 -> 419.0	20809	1.20	µg/L	100
		463.0 -> 219.0	4700			
PFNS	8.639	548.8 -> 79.9	5317	1.29	µg/L	94
		548.8 -> 98.9	2774			
PFOA	7.063	413.0 -> 369.0	39666	1.31	µg/L	96
		413.0 -> 169.0	6578			
PFOS	8.186	498.9 -> 79.9	6483	1.25	µg/L	m 80
		498.9 -> 98.8	3067			
PFPeA	4.286	263.0 -> 219.0	28266	2.48	µg/L	100
PFPeS	6.470	349.1 -> 79.9	7228	1.17	µg/L	94
		349.1 -> 98.9	3072			
PFTeDA	9.622	713.1 -> 669.0	32873	1.21	µg/L	99
		713.1 -> 168.9	2135			
PFTrDA	9.290	663.0 -> 619.0	37168	1.36	µg/L	98
		663.0 -> 168.9	2420			
PFUnDA	8.489	563.1 -> 519.0	32819	1.23	µg/L	95
		563.1 -> 269.1	4392			
11CI-PF3OUdS	9.329	630.9 -> 450.9	28468	2.38	µg/L	98
		632.9 -> 452.9	8595			
9CI-PF3ONS	8.503	530.8 -> 351.0	38600	2.34	µg/L	96
		532.8 -> 353.0	11223			
ADONA	6.669	376.9 -> 250.9	112093	2.34	µg/L	98
		376.9 -> 84.8	29496			
HFPO-DA	5.844	284.9 -> 168.9	6880	2.51	µg/L	98
		284.9 -> 184.9	745			
3:3FTCA	3.721	241.0 -> 177.0	4281	6.01	µg/L	98
		241.0 -> 117.0	464			
5:3FTCA	6.146	341.0 -> 237.1	95189	30.21	µg/L	94
		341.0 -> 217.0	72860			
7:3FTCA	7.545	441.0 -> 316.9	62982	31.57	µg/L	99
		441.0 -> 336.9	129139			
EtFOSA	10.942	526.0 -> 219.0	12359	2.47	µg/L	99
		526.0 -> 169.0	15911			
EtFOSE	10.875	630.0 -> 58.9	39328	6.18	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	10718	2.55	µg/L	100
		511.9 -> 169.0	14935			
MeFOSE	10.641	616.1 -> 58.9	29005	6.24	µg/L	100
PFDoDS	9.736	699.1 -> 79.9	2457	1.26	µg/L	100
		699.1 -> 98.8	1342			
NFDHA	5.360	295.0 -> 201.0	4911	2.46	µg/L	100
		295.0 -> 84.9	1225			
PFMBA	4.700	279.0 -> 85.1	19147	2.44	µg/L	100
PFMPA	3.426	229.0 -> 84.9	14501	2.46	µg/L	100
PFEESA	5.937	314.8 -> 134.9	45610	2.14	µg/L	99
		314.8 -> 82.9	1540			

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

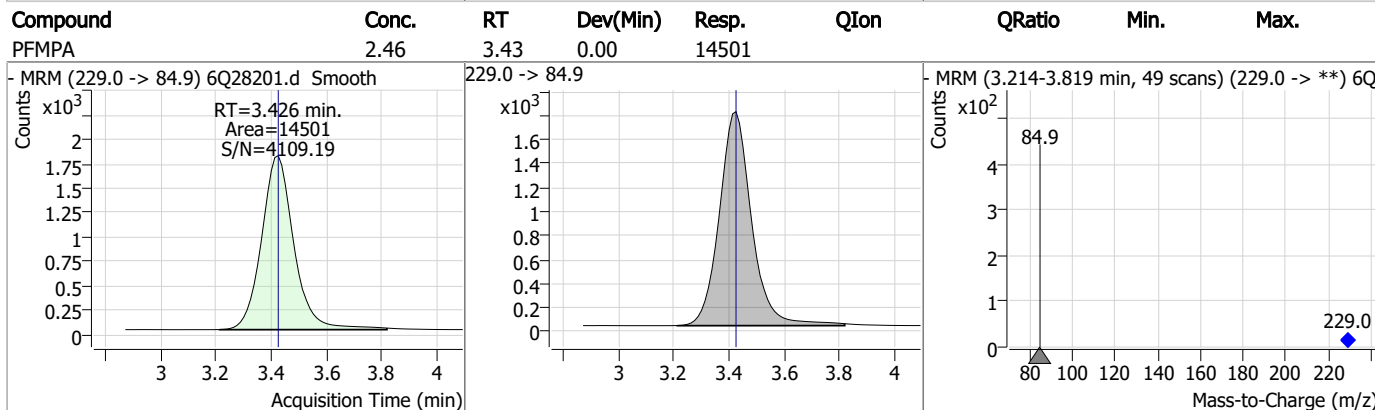
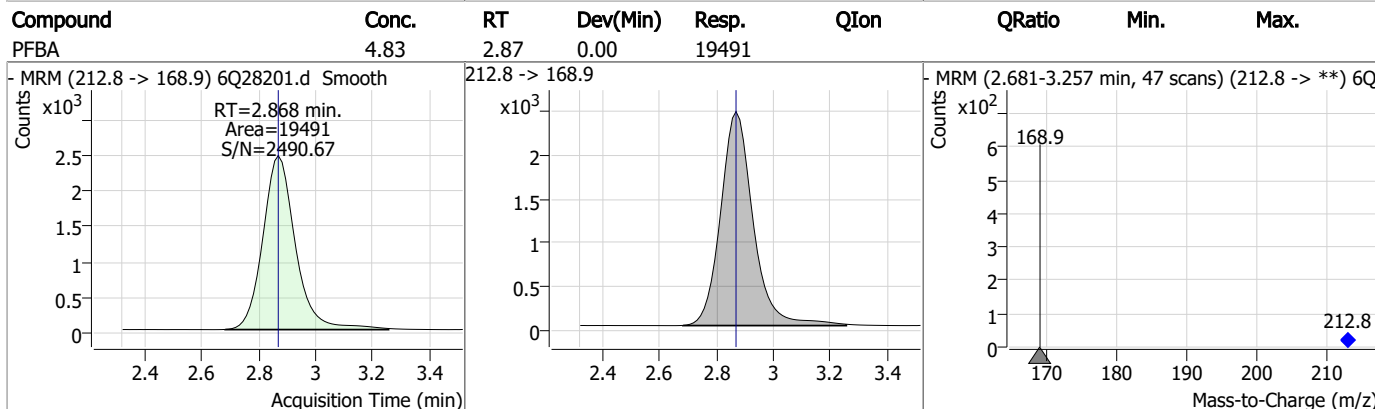
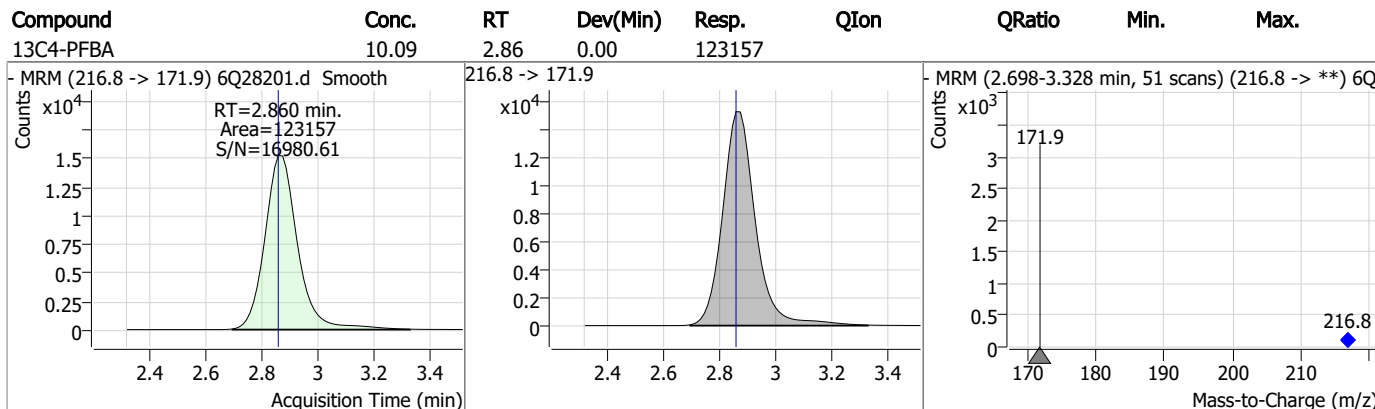
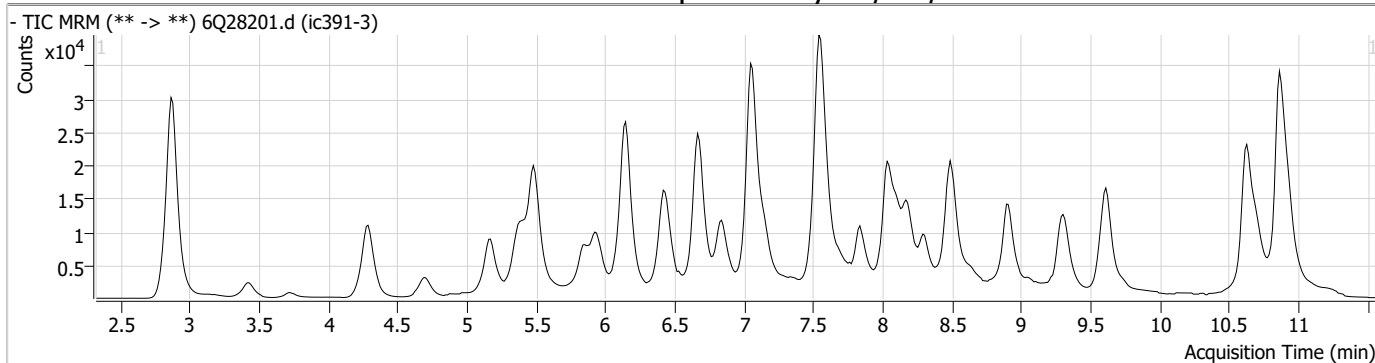
### Perfluorinated Compounds by LC/MS/MS

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

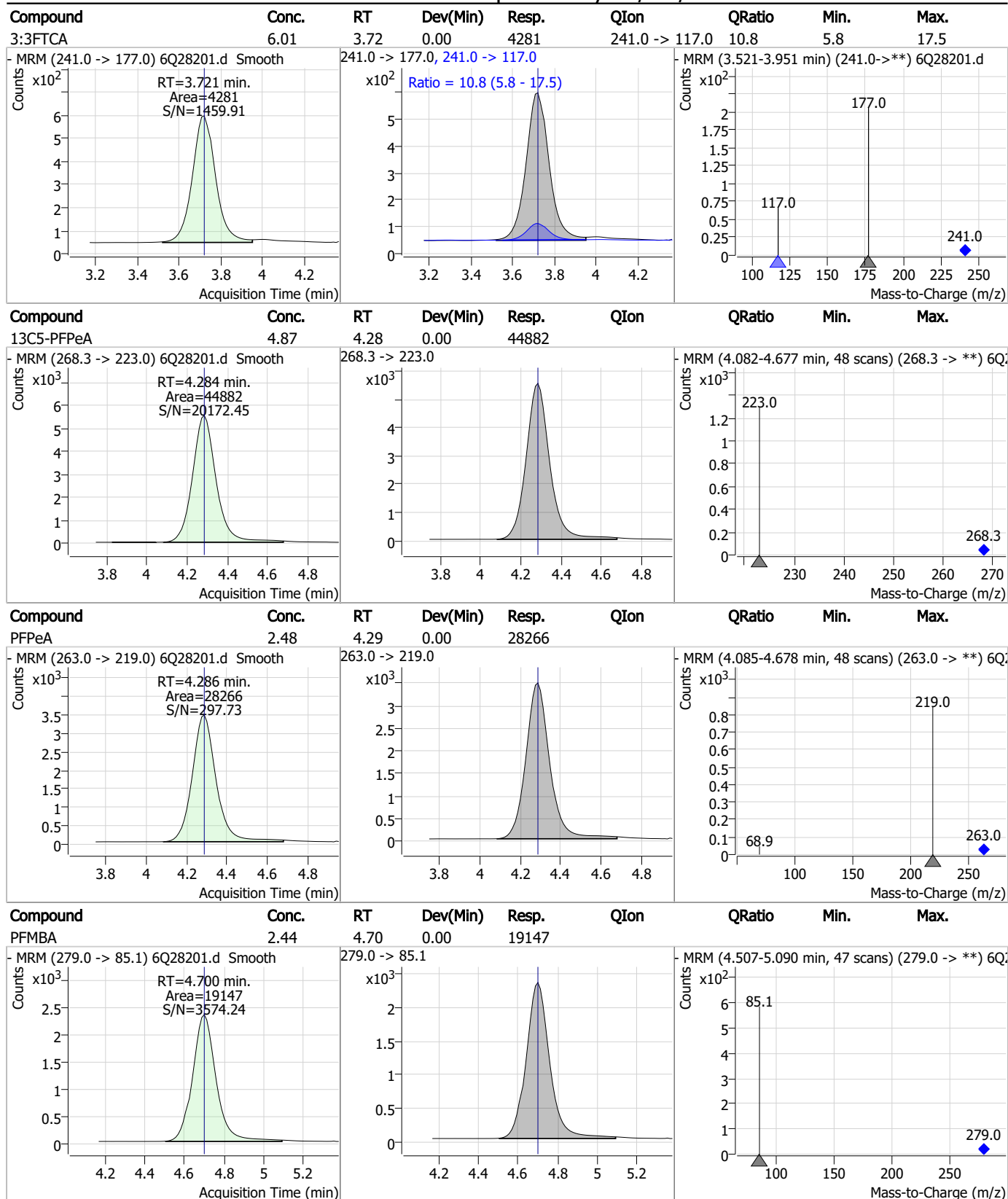
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### Perfluorinated Compounds by LC/MS/MS



7.7.4  
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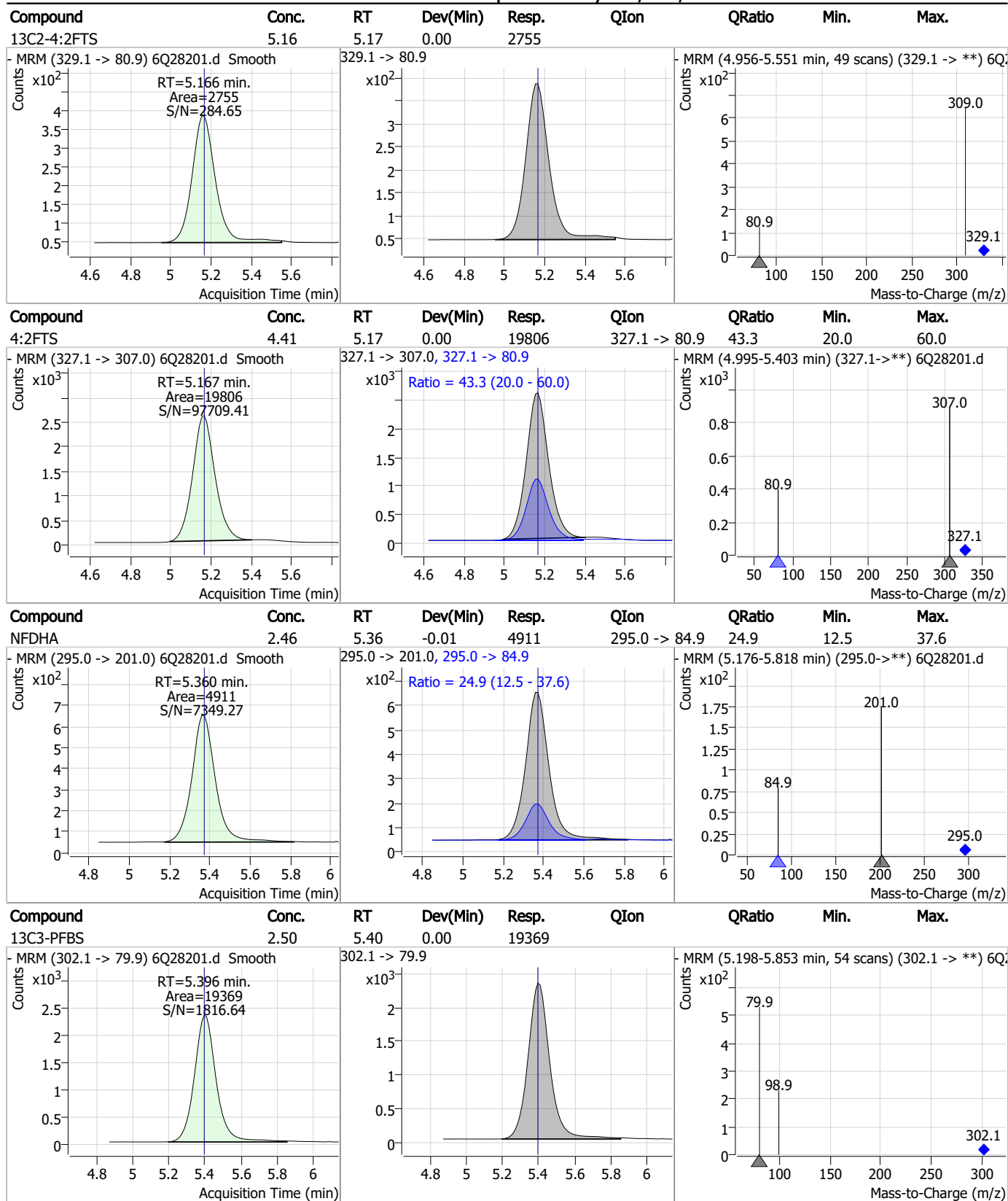
### Perfluorinated Compounds by LC/MS/MS



7.7.4  
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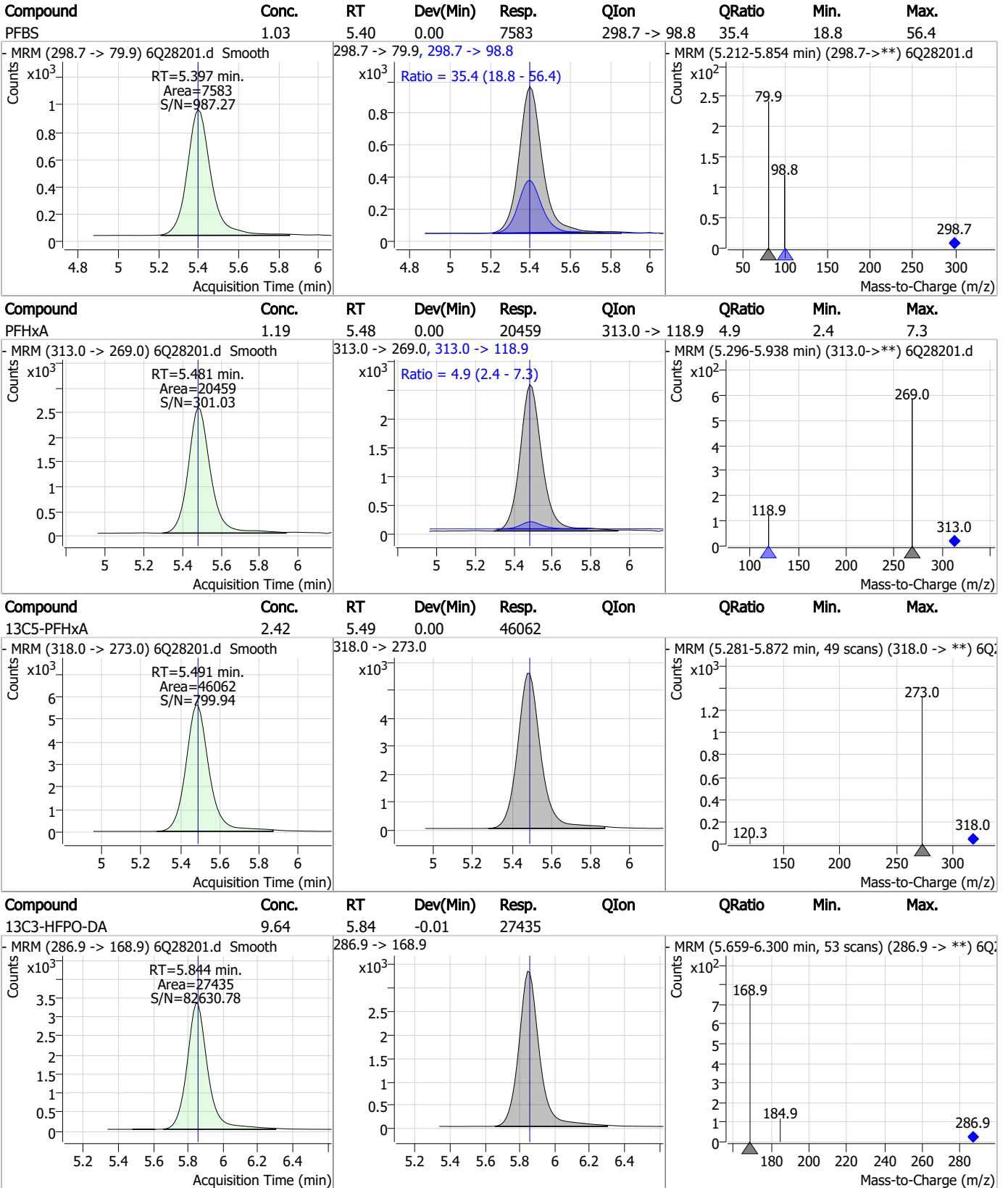


### Perfluorinated Compounds by LC/MS/MS



7.7.4  
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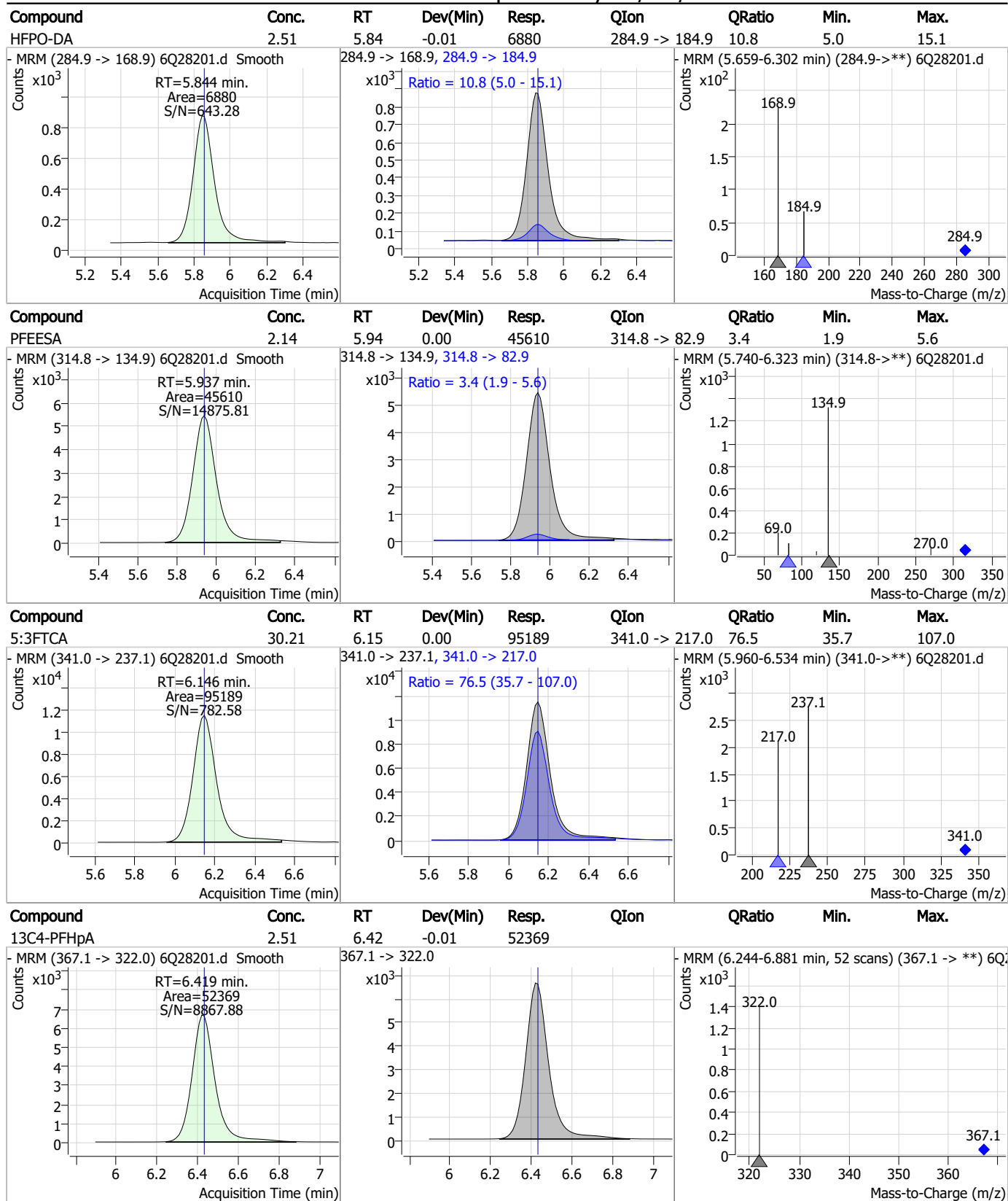
### Perfluorinated Compounds by LC/MS/MS



7.7.4

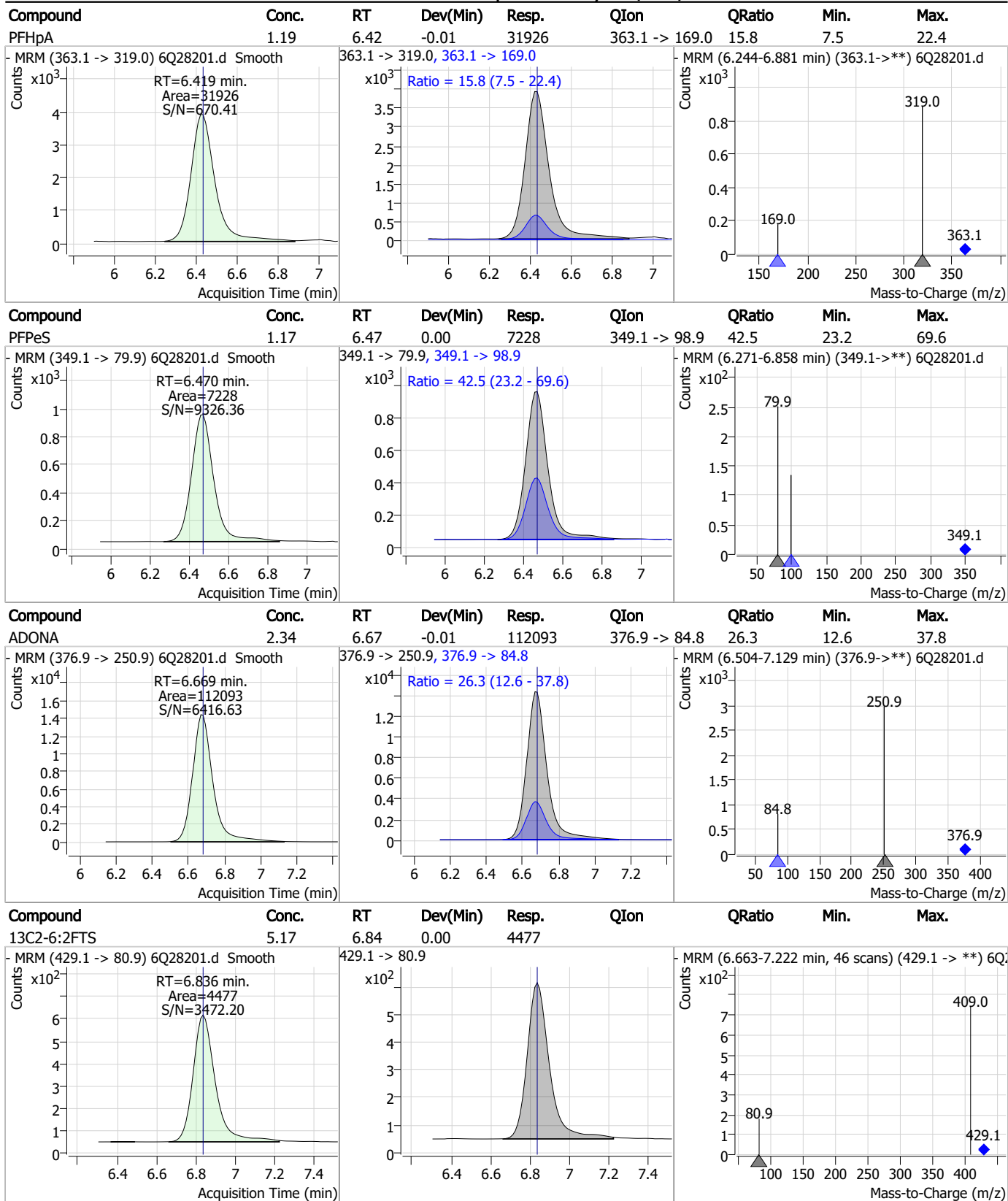
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### Perfluorinated Compounds by LC/MS/MS



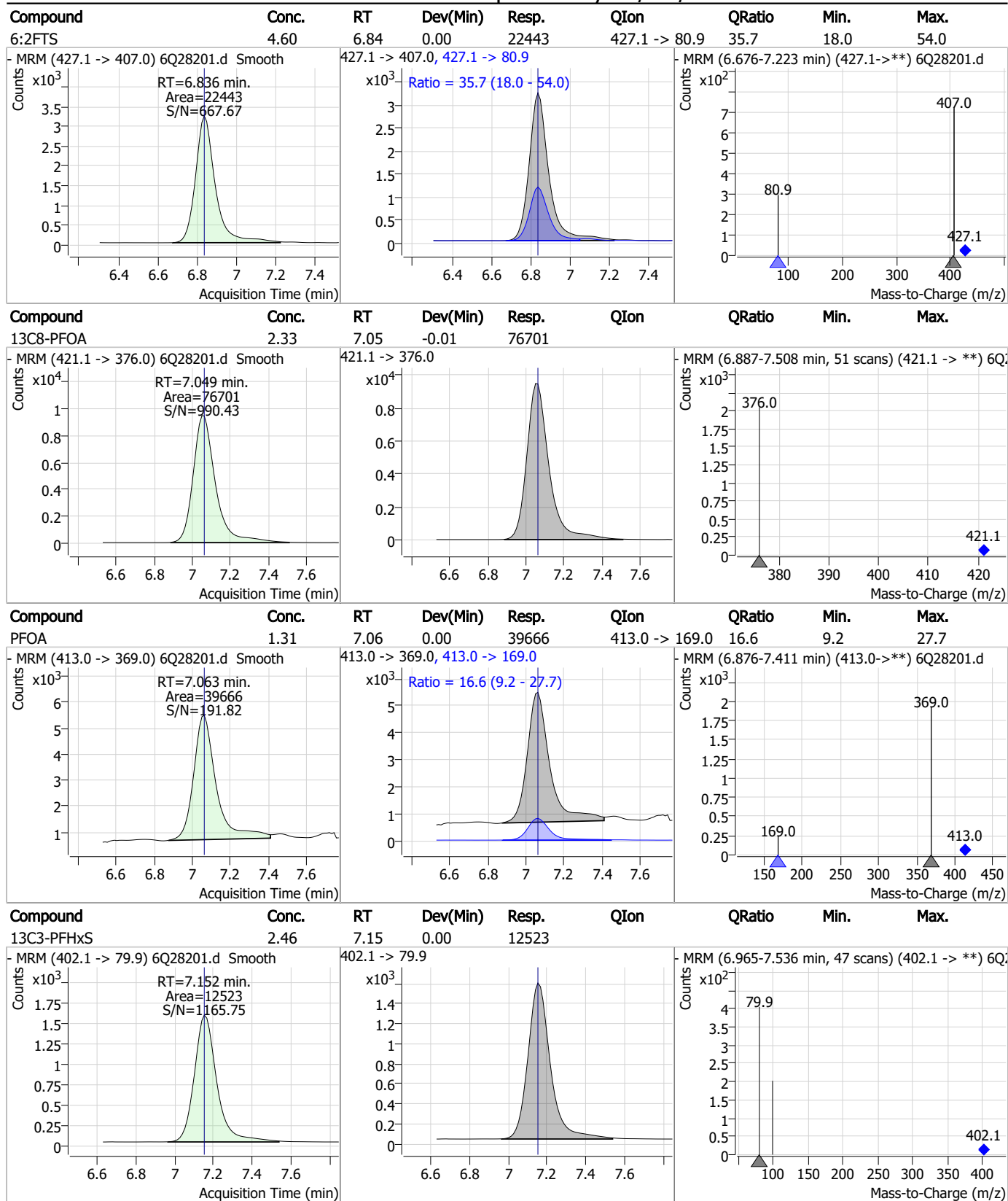
7.7.4  
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### Perfluorinated Compounds by LC/MS/MS



7.7.4  
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### Perfluorinated Compounds by LC/MS/MS

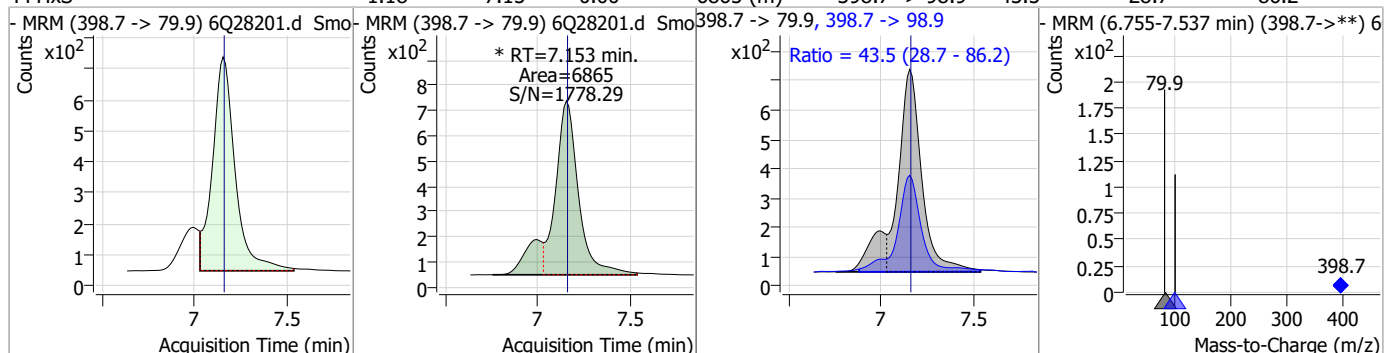


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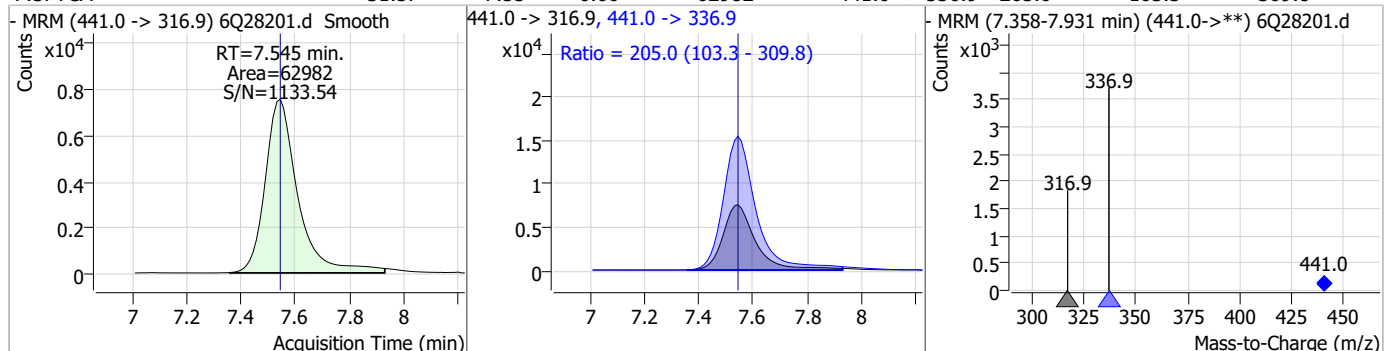
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### Perfluorinated Compounds by LC/MS/MS

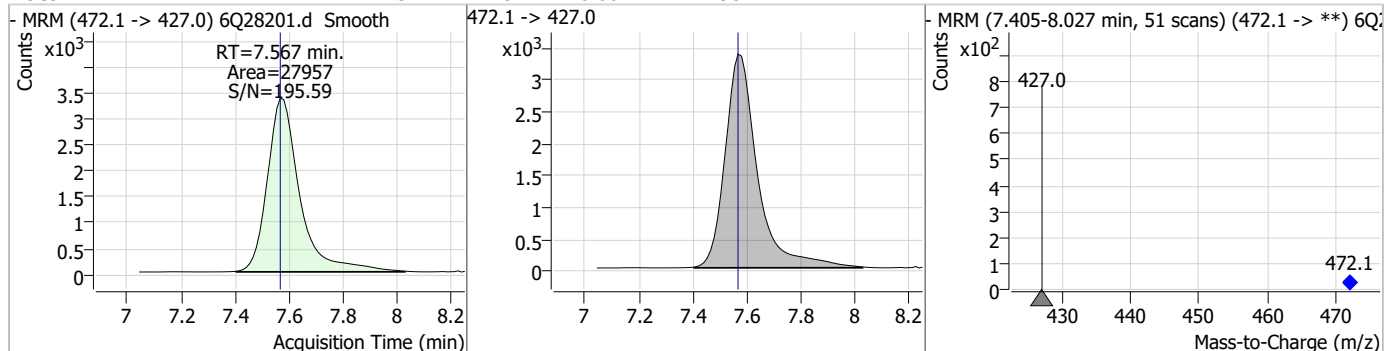
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.18	7.15	0.00	6865 (m)	398.7 -> 98.9	43.5	28.7	86.2



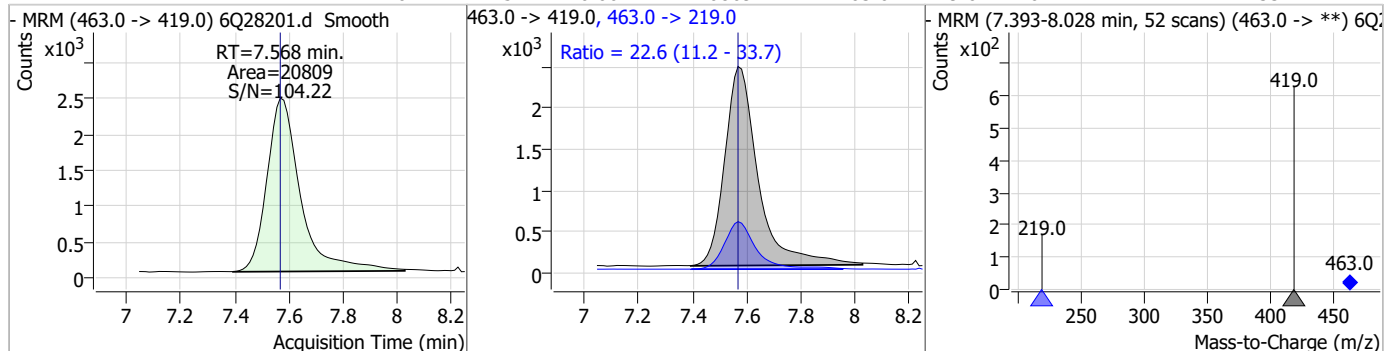
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	31.57	7.55	0.00	62982	441.0 -> 336.9	205.0	103.3	309.8



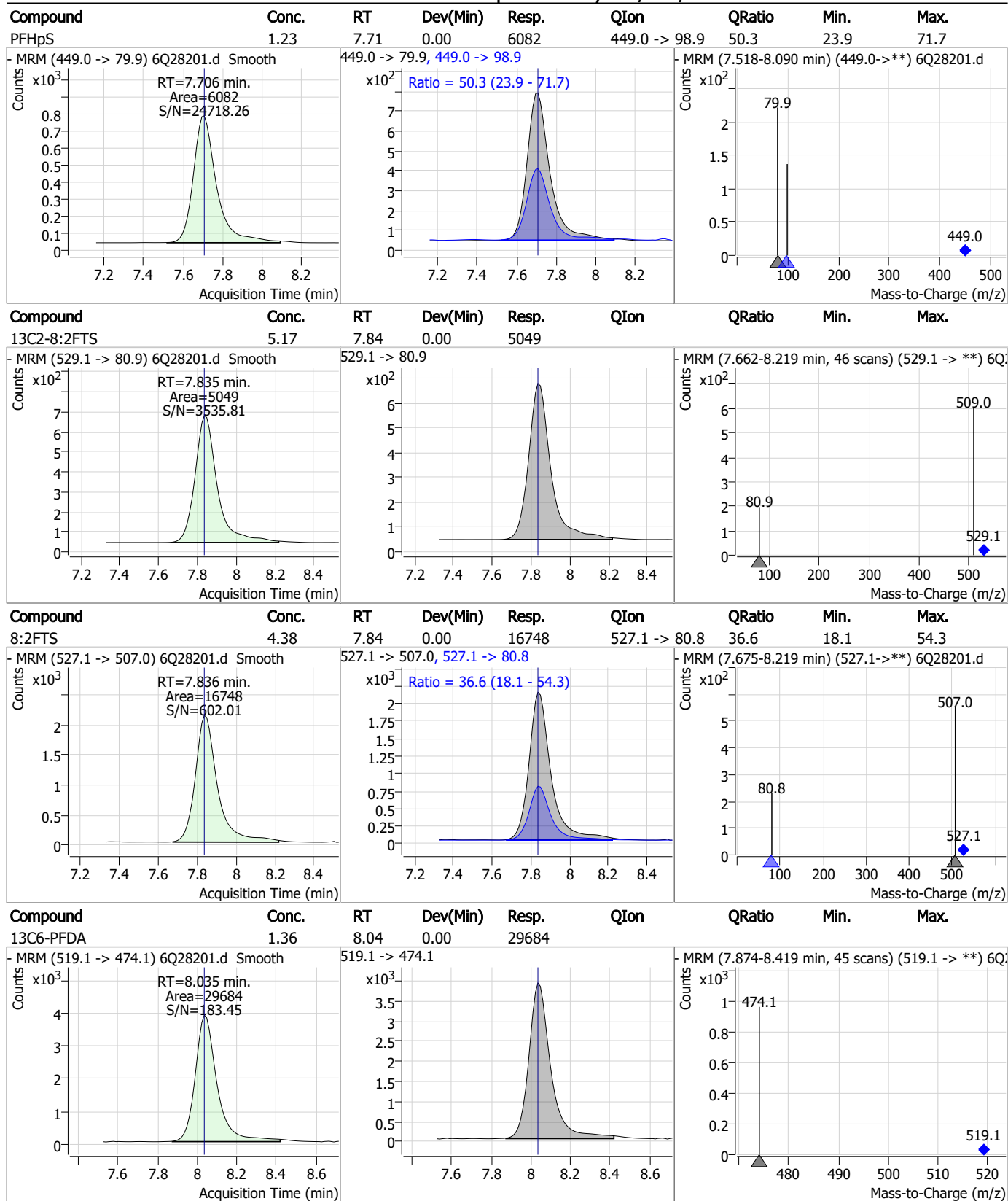
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.25	7.57	0.00	27957	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.20	7.57	0.00	20809	463.0 -> 219.0	22.6	11.2	33.7

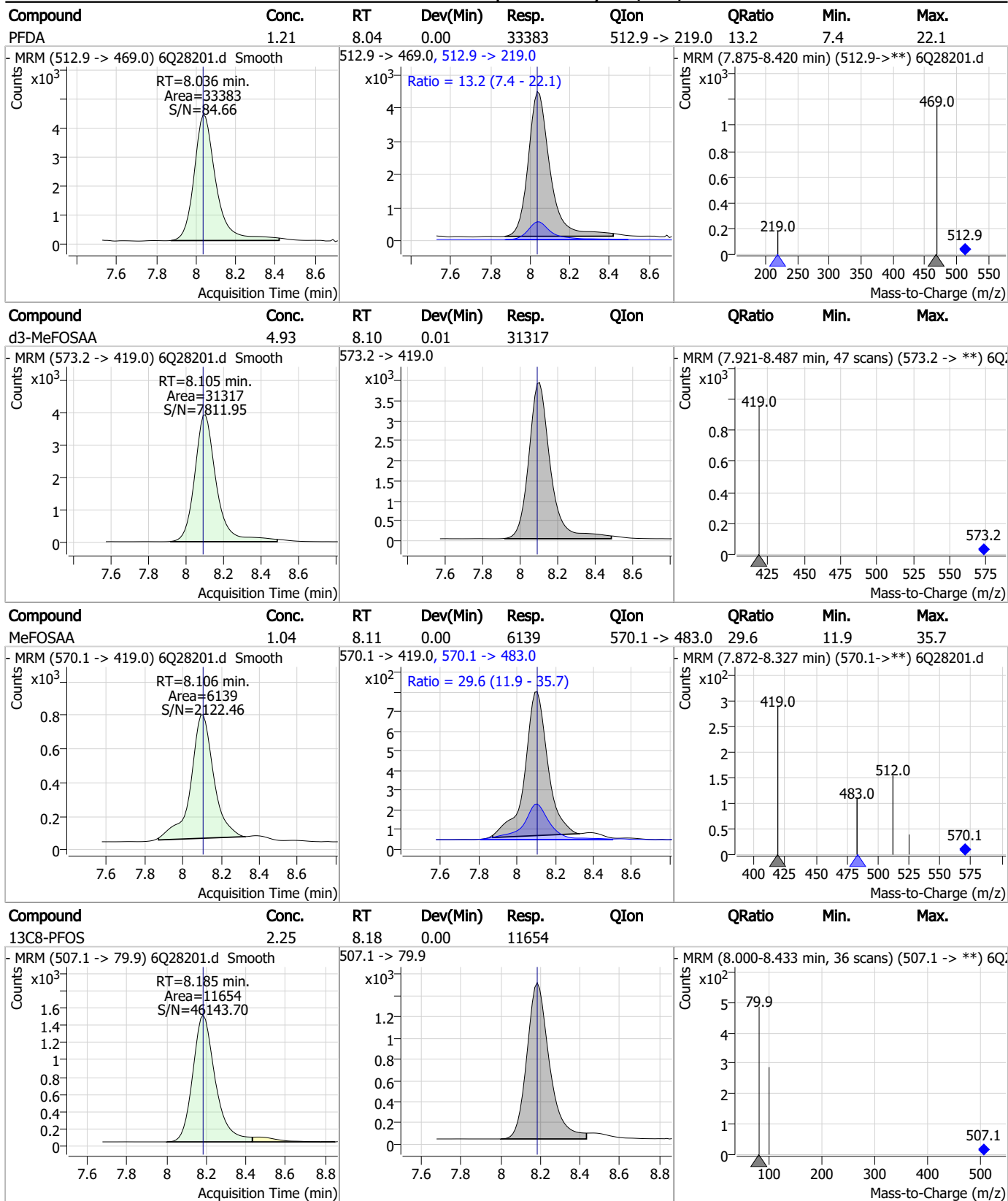


### Perfluorinated Compounds by LC/MS/MS



7.7.4  
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### Perfluorinated Compounds by LC/MS/MS

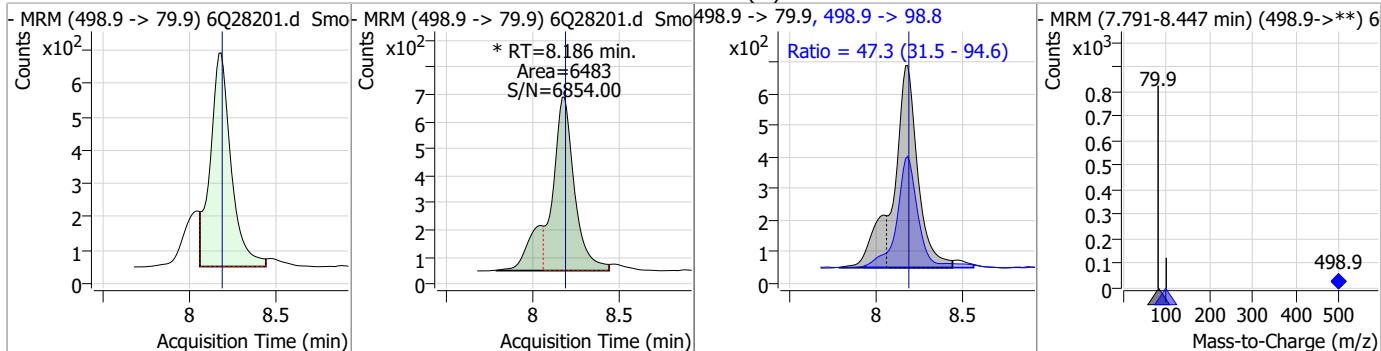


7.7.4  
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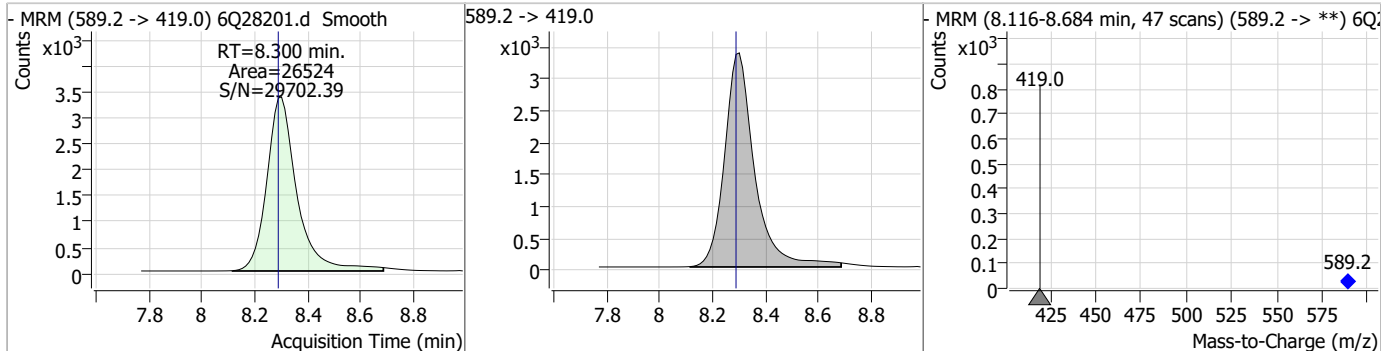


### Perfluorinated Compounds by LC/MS/MS

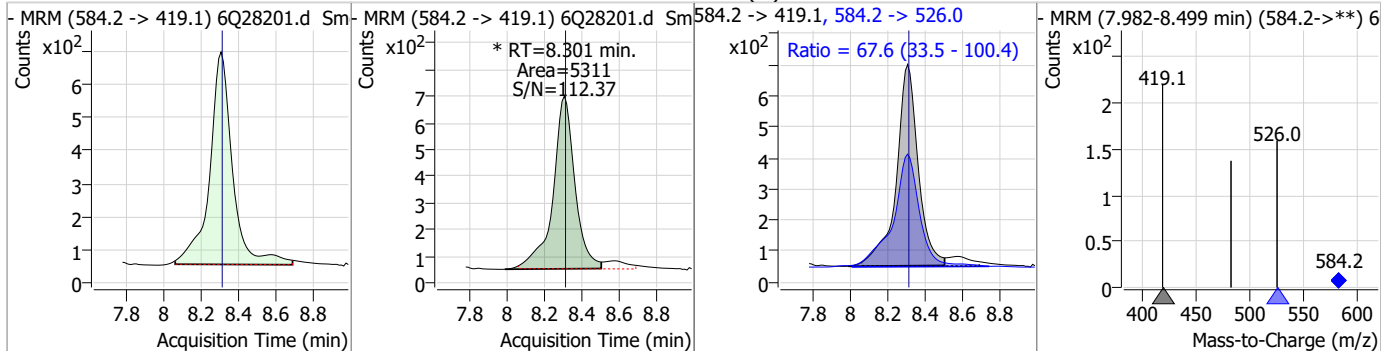
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.25	8.19	0.00	6483 (m)	498.9 -> 98.8	47.3	31.5	94.6



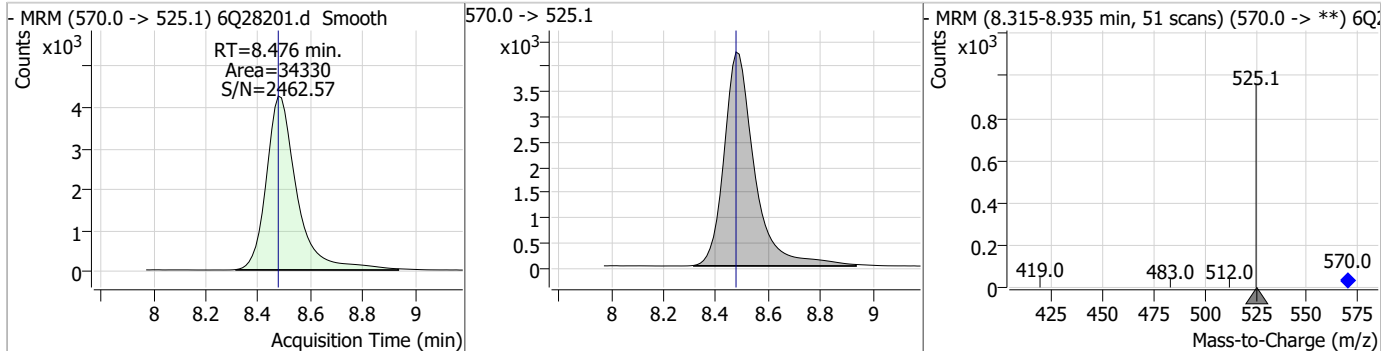
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.93	8.30	0.01	26524				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.24	8.30	0.00	5311 (m)	584.2 -> 526.0	67.6	33.5	100.4

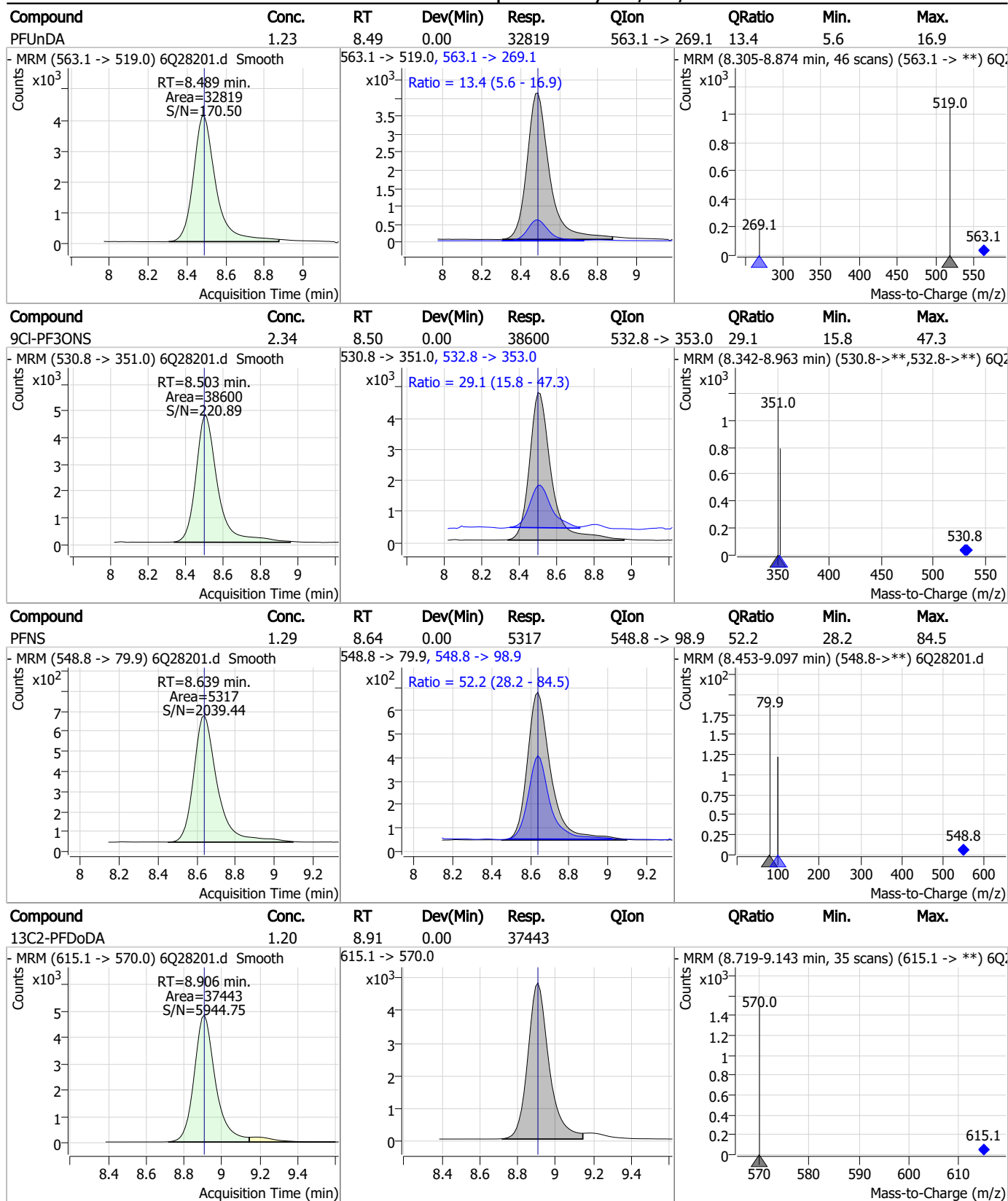


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.48	0.00	34330				



7.7.4  
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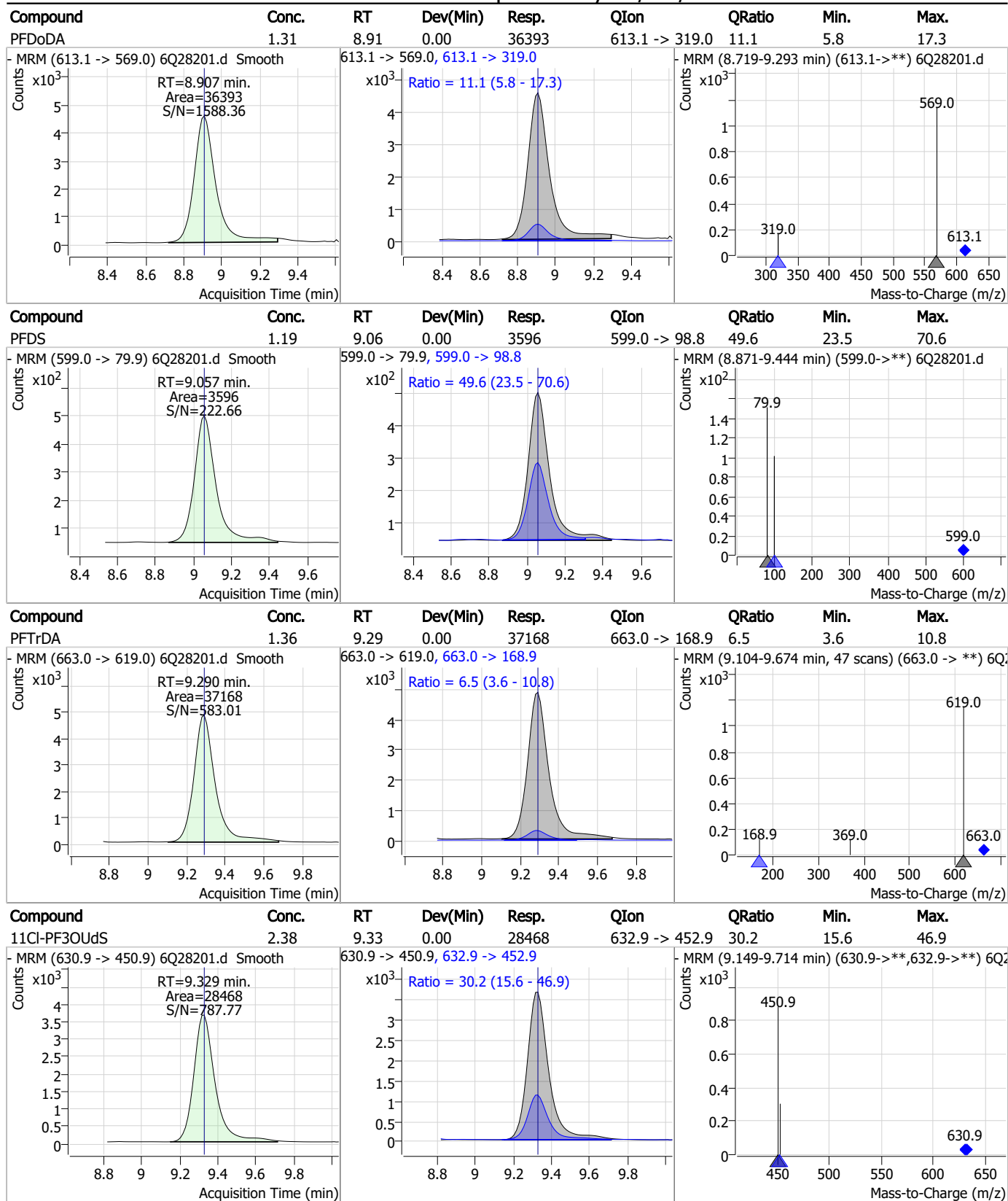
### Perfluorinated Compounds by LC/MS/MS



7.7.4

7

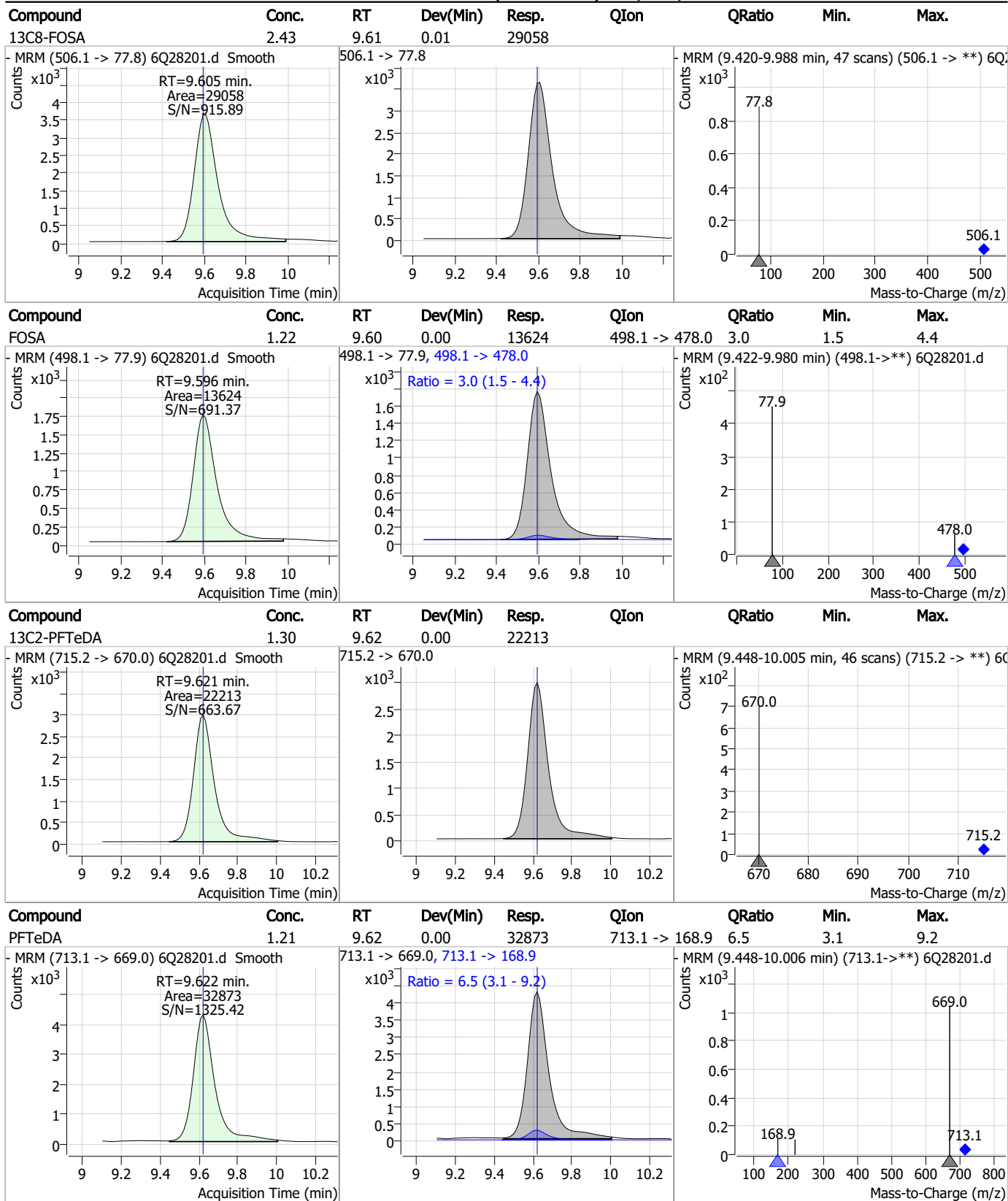
### Perfluorinated Compounds by LC/MS/MS



7.7.4

7

### Perfluorinated Compounds by LC/MS/MS

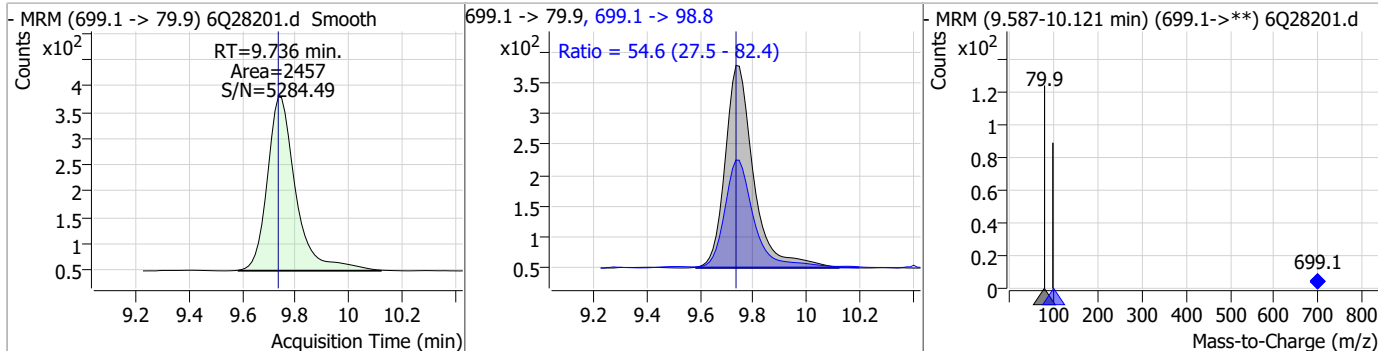


7.7.4

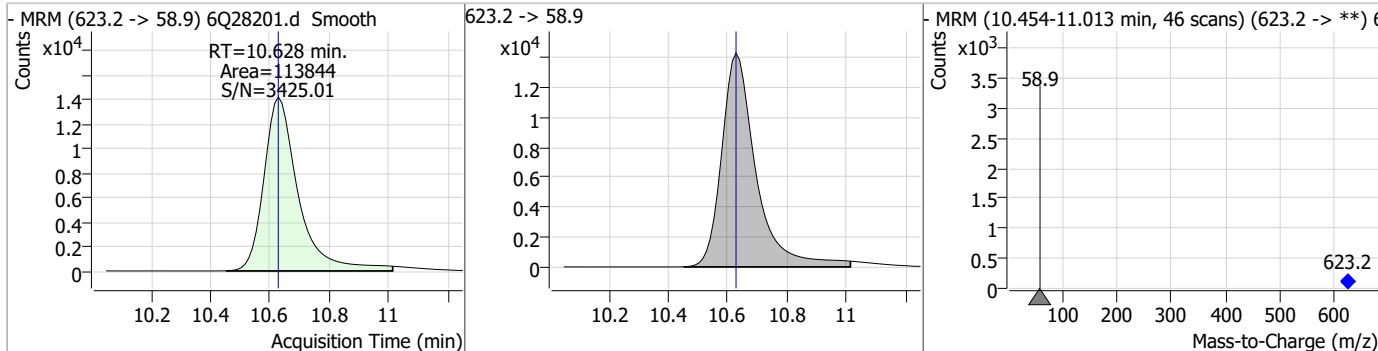
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### Perfluorinated Compounds by LC/MS/MS

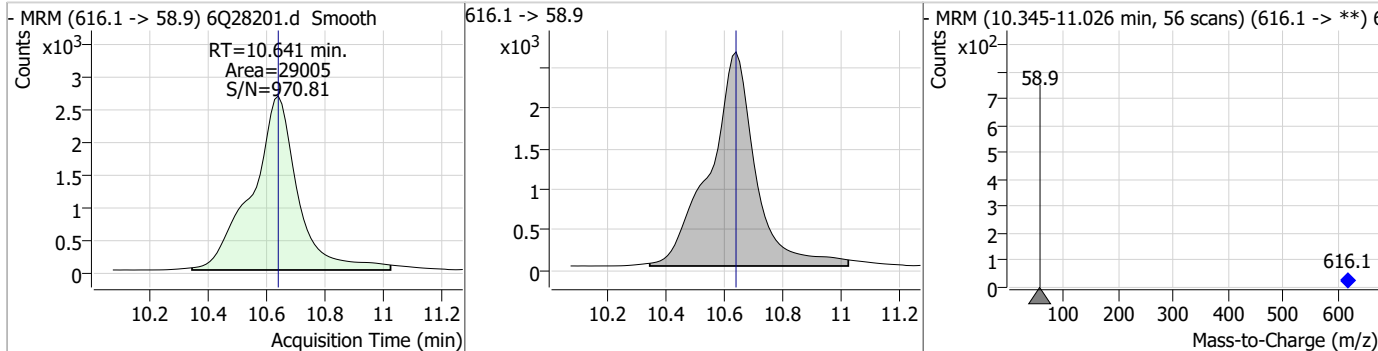
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	1.26	9.74	0.00	2457	699.1 -> 98.8	54.6	27.5	82.4



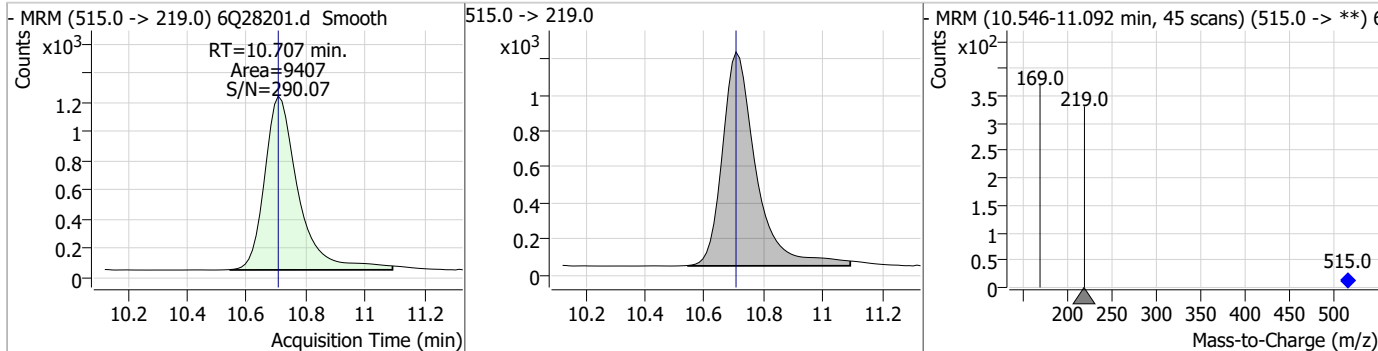
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.22	10.63	0.00	113844				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	6.24	10.64	0.00	29005				

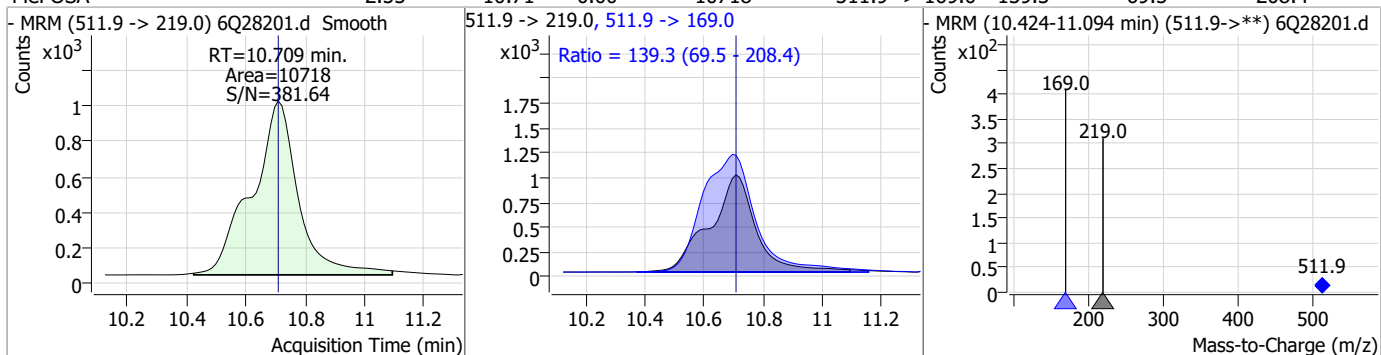


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.28	10.71	0.00	9407				

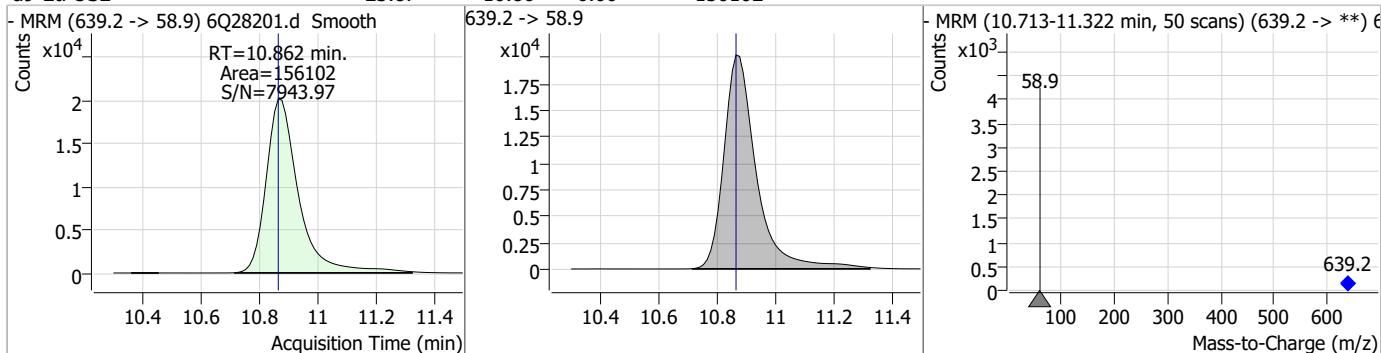


### Perfluorinated Compounds by LC/MS/MS

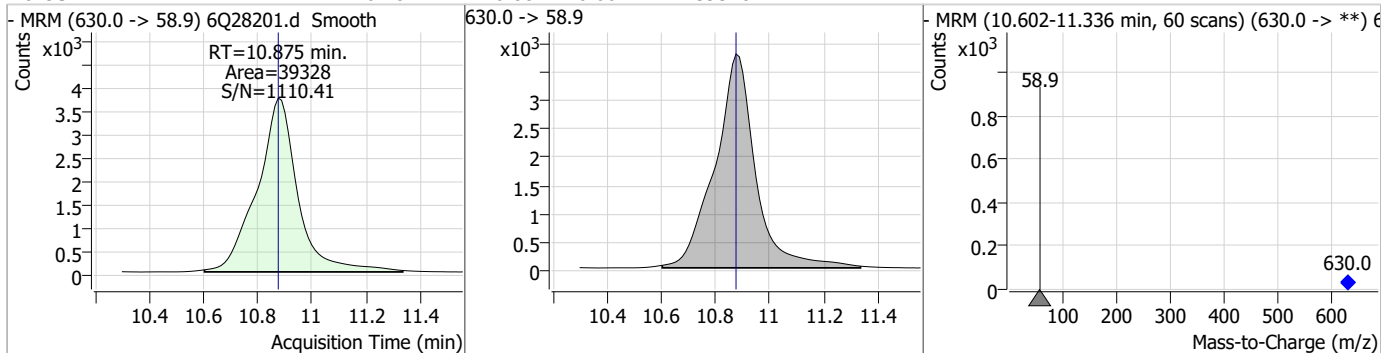
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.55	10.71	0.00	10718	511.9 -> 169.0	139.3	69.5	208.4



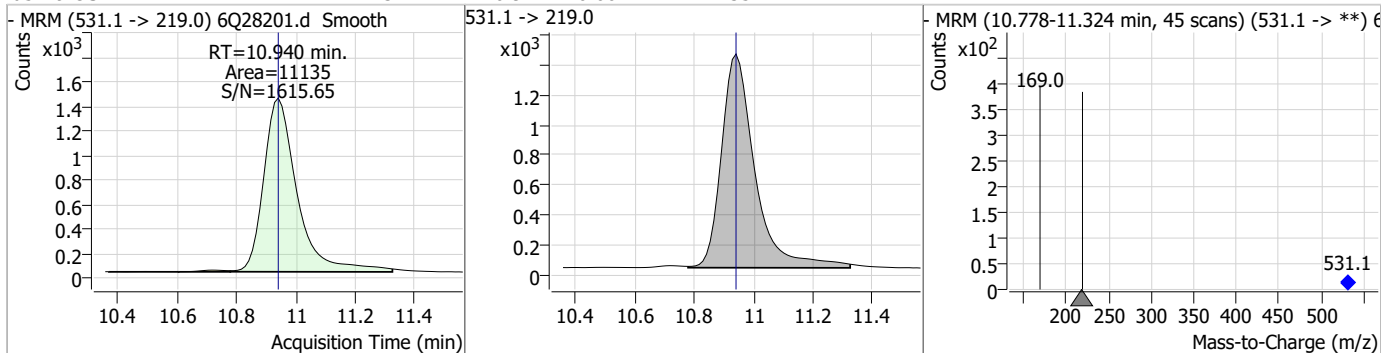
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.87	10.86	0.00	156102				



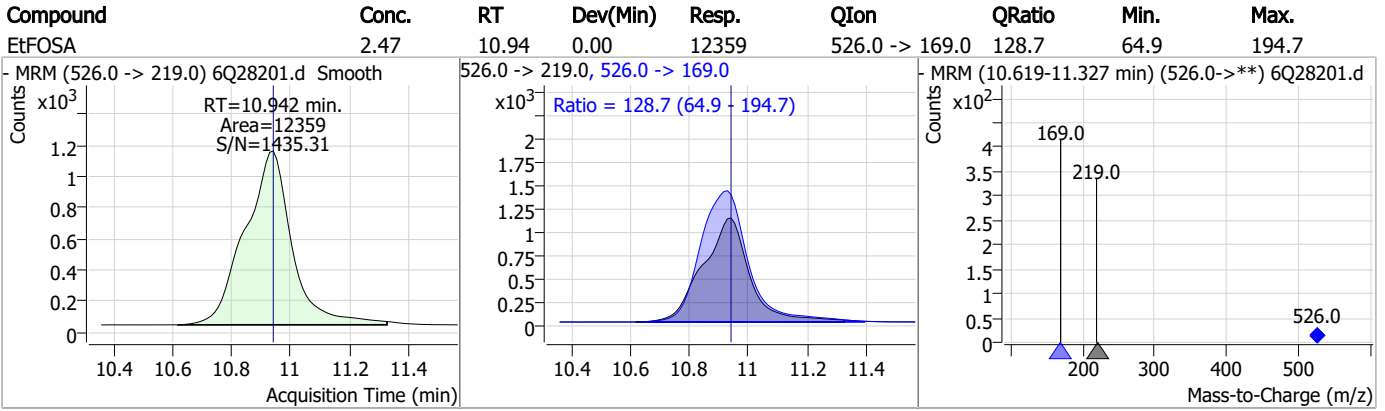
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	6.18	10.88	0.00	39328				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.34	10.94	0.00	11135				



Perfluorinated Compounds by LC/MS/MS



7.7.4

7

# Manual Integration Approval Summary

Sample Number: S6Q391-IC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28201.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 13:48      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

7.7.4.1

7



## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28202.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 2:03:05 PM  
 Sample Name : icc391-4  
 Vial : P1-A5  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	114964	10.00 µg/L	0.000
M5-PFPeA	4.284	268.3 -> 223.0	41743	5.00 µg/L	0.000
M5-PFHxA	5.491	318.0 -> 273.0	42679	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	46796	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	73466	2.50 µg/L	0.000
M9-PFNA	7.567	472.1 -> 427.0	25625	1.25 µg/L	0.000
M6-PFDA	8.035	519.1 -> 474.1	26078	1.25 µg/L	0.000
M7-PFUnDA	8.476	570.0 -> 525.1	32097	1.25 µg/L	0.000
M2-PFDoDA	8.906	615.1 -> 570.0	37648	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	21150	1.25 µg/L	0.000
M8-FOSA	9.593	506.1 -> 77.8	26677	2.50 µg/L	0.000
M3-PFBS	5.396	302.1 -> 79.9	17786	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	11799	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	11159	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2492	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	4136	5.00 µg/L	0.000
M2-8:2FTS	7.835	529.1 -> 80.9	4229	5.00 µg/L	0.000
M3-MeFOSAA	8.093	573.2 -> 419.0	28361	5.00 µg/L	0.000
M3-HFPO-DA	5.856	286.9 -> 168.9	25511	10.00 µg/L	0.000
M5-EtFOSAA	8.288	589.2 -> 419.0	24079	5.00 µg/L	0.000
M7-MeFOSE	10.628	623.2 -> 58.9	114371	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	143776	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	10574	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9171	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	11083	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	49894	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	7635	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	77478	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	27525	1.25 µg/L	0.000
13C5-PFNA	7.567	468.0 -> 423.0	26130	1.25 µg/L	0.000
13C2-PFHxA	5.491	315.1 -> 270.0	43118	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2492	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4136	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C2-8:2FTS	7.835	529.1 -> 80.9	4229	4.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C2-PFDoDA	8.906	615.1 -> 570.0	37648	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C2-PFTeDA	9.621	715.2 -> 670.0	21150	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C3-PFBS	5.396	302.1 -> 79.9	17786	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFHxS	7.152	402.1 -> 79.9	11799	2.52 µg/L	0.000

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFBA	2.860	216.8 -> 171.9	114964	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.431	367.1 -> 322.0	46796	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C5-PFHxA	5.491	318.0 -> 273.0	42679	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C5-PFPeA	4.284	268.3 -> 223.0	41743	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C6-PFDA	8.035	519.1 -> 474.1	26078	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C7-PFUnDA	8.476	570.0 -> 525.1	32097	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-FOSA	9.593	506.1 -> 77.8	26677	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C8-PFOA	7.062	421.1 -> 376.0	73466	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C8-PFOS	8.185	507.1 -> 79.9	11159	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C9-PFNA	7.567	472.1 -> 427.0	25625	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.6%	
d3-MeFOSAA	8.093	573.2 -> 419.0	28361	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C3-HFPO-DA	5.856	286.9 -> 168.9	25511	9.53 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.3%	
d3-MeFOSA	10.707	515.0 -> 219.0	9171	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
d5-EtFOSAA	8.288	589.2 -> 419.0	24079	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
d7-MeFOSE	10.628	623.2 -> 58.9	114371	25.78 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
d9-EtFOSE	10.862	639.2 -> 58.9	143776	24.29 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d5-EtFOSA	10.940	531.1 -> 219.0	10574	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	39026	9.62 µg/L	100
		327.1 -> 80.9	15617		
6:2FTS	6.836	427.1 -> 407.0	44053	9.78 µg/L	100
		427.1 -> 80.9	15864		
8:2FTS	7.836	527.1 -> 507.0	34538	10.78 µg/L	100
		527.1 -> 80.8	12513		
EtFOSAA	8.301	584.2 -> 419.1	9350	2.40 µg/L	m 96
		584.2 -> 526.0	6528		
FOSA	9.596	498.1 -> 77.9	25766	2.51 µg/L	100
		498.1 -> 478.0	751		
MeFOSAA	8.106	570.1 -> 419.0	13798	2.58 µg/L	100
		570.1 -> 483.0	3282		
PFBA	2.868	212.8 -> 168.9	37877	10.05 µg/L	100
PFBS	5.397	298.7 -> 79.9	14818	2.19 µg/L	100
		298.7 -> 98.8	5568		
PFDA	8.036	512.9 -> 469.0	63164	2.61 µg/L	100
		512.9 -> 219.0	9297		
PFDODA	8.907	613.1 -> 569.0	71687	2.56 µg/L	100
		613.1 -> 319.0	8247		
PFDS	9.057	599.0 -> 79.9	7563	2.60 µg/L	100

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3558			
PFHpA	6.432	363.1 -> 319.0	63115	2.62	µg/L	100
		363.1 -> 169.0	9419			
PFHpS	7.706	449.0 -> 79.9	11964	2.52	µg/L	100
		449.0 -> 98.9	5721			
PFHxA	5.481	313.0 -> 269.0	41041	2.57	µg/L	100
		313.0 -> 118.9	1998			
PFHxS	7.153	398.7 -> 79.9	12554	2.29	µg/L	m 89
		398.7 -> 98.9	6193			
PFNA	7.568	463.0 -> 419.0	42534	2.67	µg/L	100
		463.0 -> 219.0	9569			
PFNS	8.639	548.8 -> 79.9	10052	2.54	µg/L	100
		548.8 -> 98.9	5662			
PFOA	7.063	413.0 -> 369.0	73483	2.53	µg/L	100
		413.0 -> 169.0	13556			
PFOS	8.186	498.9 -> 79.9	11886	2.39	µg/L	m 83
		498.9 -> 98.8	5969			
PFPeA	4.286	263.0 -> 219.0	54673	5.16	µg/L	100
PFPeS	6.470	349.1 -> 79.9	13129	2.25	µg/L	100
		349.1 -> 98.9	6089			
PFTeDA	9.622	713.1 -> 669.0	64513	2.50	µg/L	100
		713.1 -> 168.9	3957			
PFTrDA	9.290	663.0 -> 619.0	69889	2.55	µg/L	100
		663.0 -> 168.9	5024			
PFUnDA	8.489	563.1 -> 519.0	65645	2.63	µg/L	100
		563.1 -> 269.1	7388			
11Cl-PF3OUdS	9.329	630.9 -> 450.9	55434	4.99	µg/L	100
		632.9 -> 452.9	17335			
9Cl-PF3ONS	8.503	530.8 -> 351.0	74785	4.89	µg/L	100
		532.8 -> 353.0	23575			
ADONA	6.681	376.9 -> 250.9	227818	5.12	µg/L	100
		376.9 -> 84.8	57357			
HFPO-DA	5.857	284.9 -> 168.9	12971	5.08	µg/L	100
		284.9 -> 184.9	1304			
3:3FTCA	3.721	241.0 -> 177.0	8245	12.40	µg/L	100
		241.0 -> 117.0	964			
5:3FTCA	6.146	341.0 -> 237.1	187781	64.33	µg/L	100
		341.0 -> 217.0	133909			
7:3FTCA	7.545	441.0 -> 316.9	123901	67.02	µg/L	100
		441.0 -> 336.9	255925			
EtFOSA	10.942	526.0 -> 219.0	24091	5.07	µg/L	100
		526.0 -> 169.0	31263			
EtFOSE	10.875	630.0 -> 58.9	77093	13.16	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	20801	5.08	µg/L	100
		511.9 -> 169.0	28897			
MeFOSE	10.641	616.1 -> 58.9	56651	12.14	µg/L	100
PFDoDS	9.736	699.1 -> 79.9	4773	2.55	µg/L	100
		699.1 -> 98.8	2621			
NFDHA	5.373	295.0 -> 201.0	9759	5.28	µg/L	100
		295.0 -> 84.9	2447			
PFMBA	4.700	279.0 -> 85.1	37193	5.10	µg/L	100
PFMPA	3.426	229.0 -> 84.9	27966	5.11	µg/L	100
PFEESA	5.937	314.8 -> 134.9	90251	4.57	µg/L	100
		314.8 -> 82.9	3376			

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

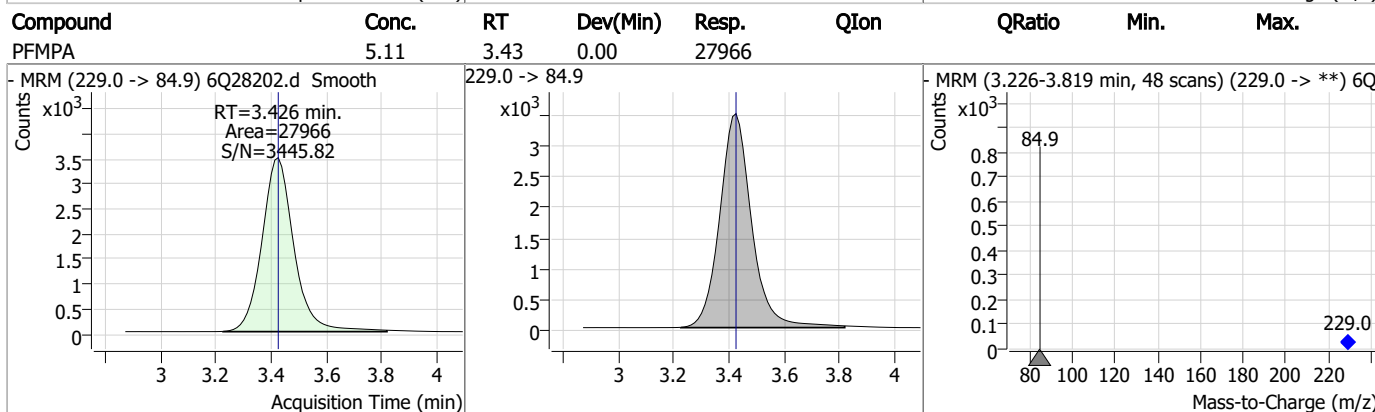
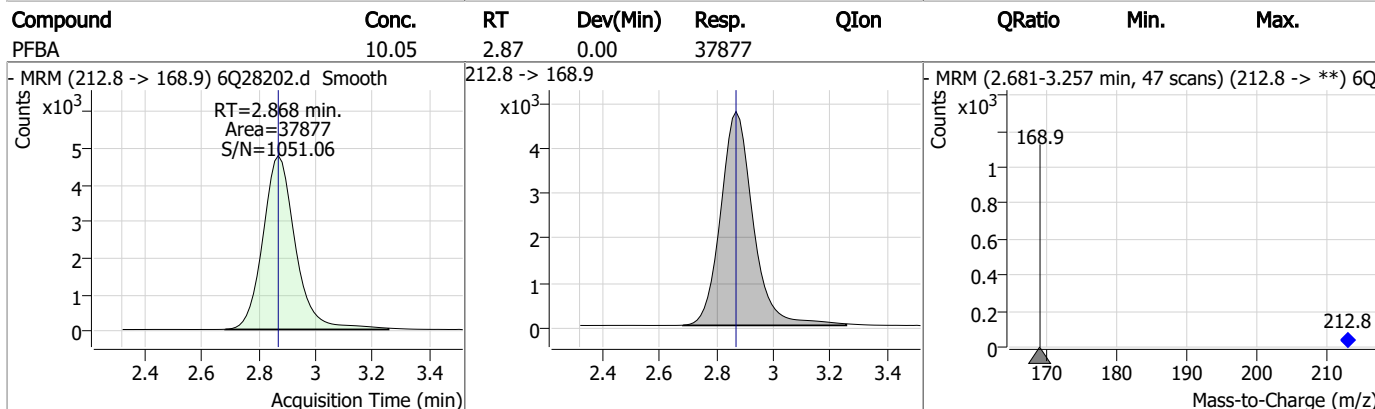
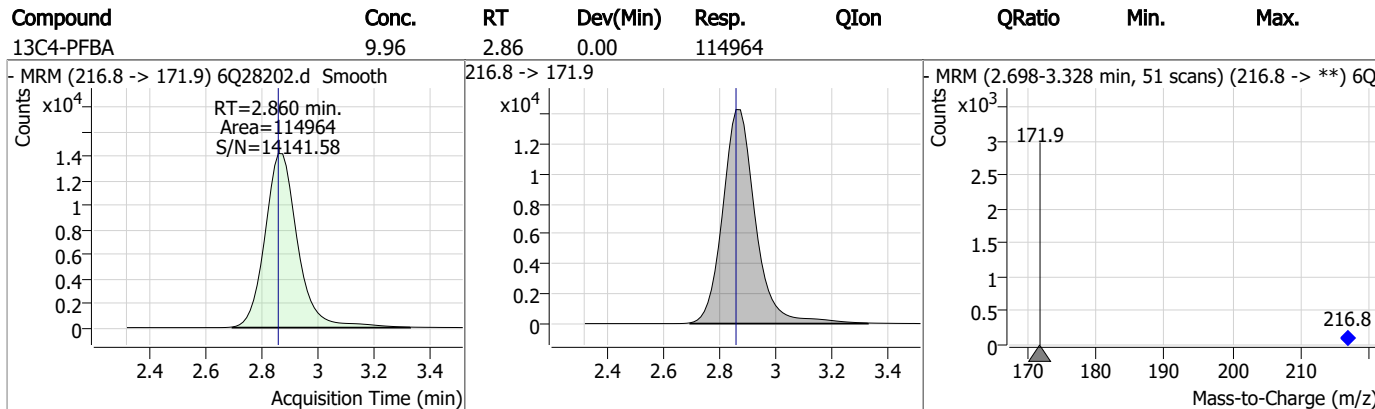
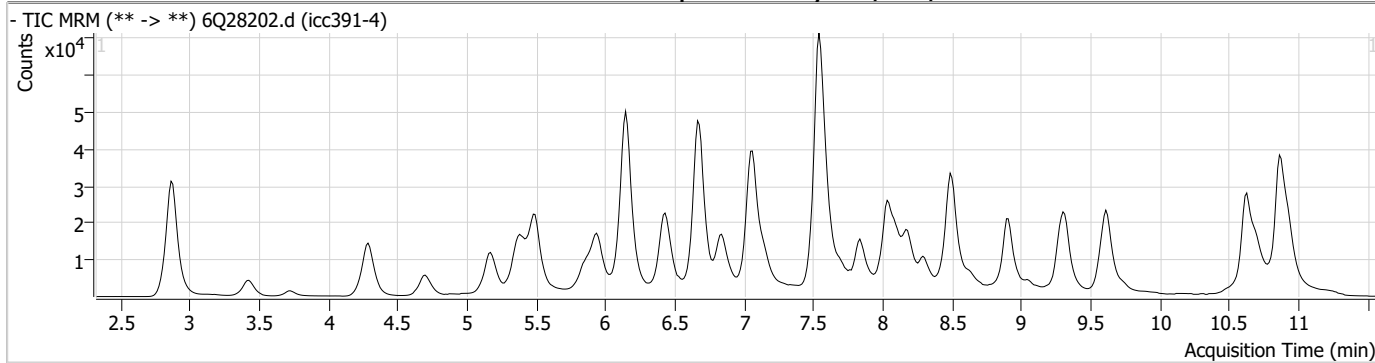
### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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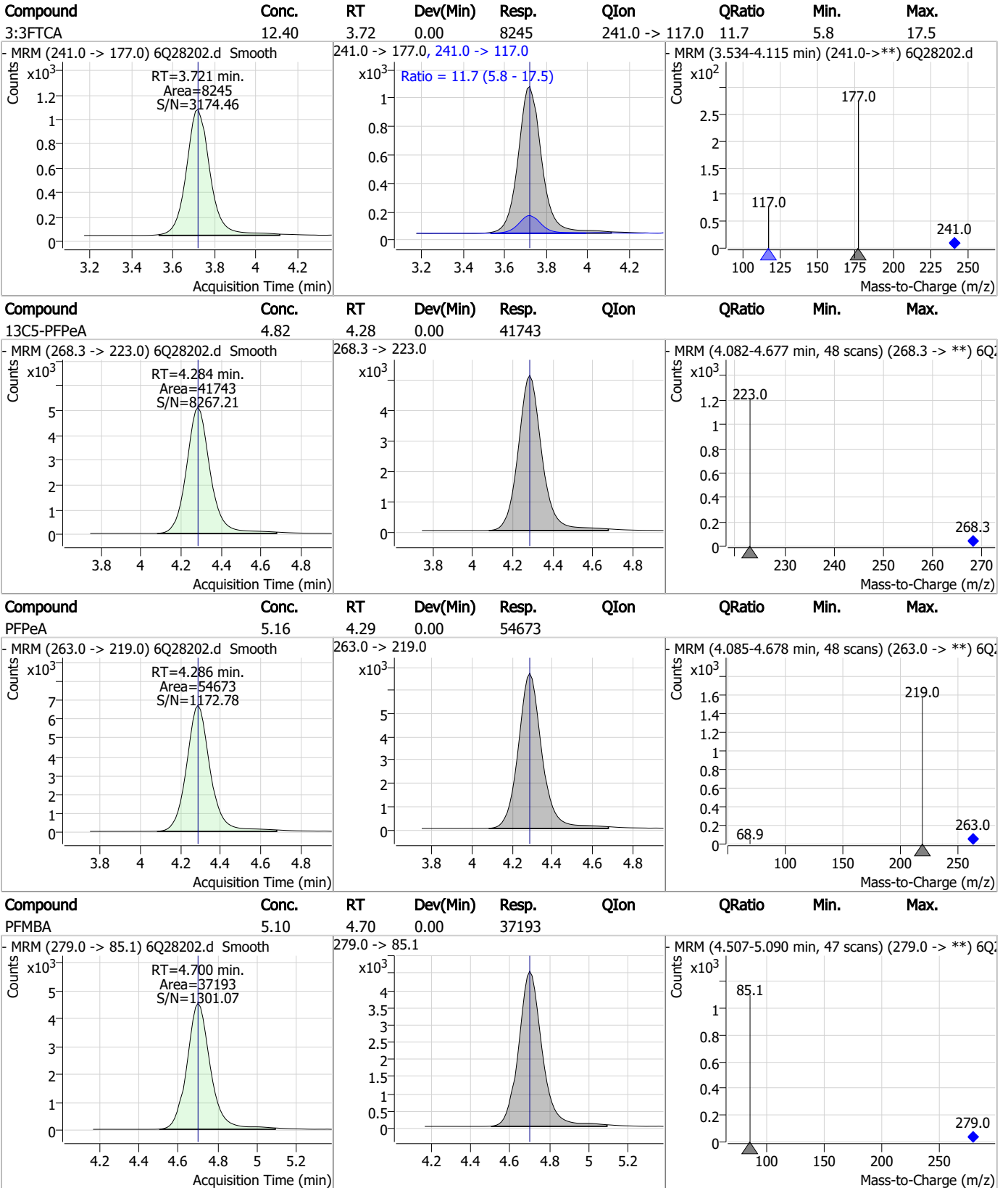
7.7.5

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### Perfluorinated Compounds by LC/MS/MS



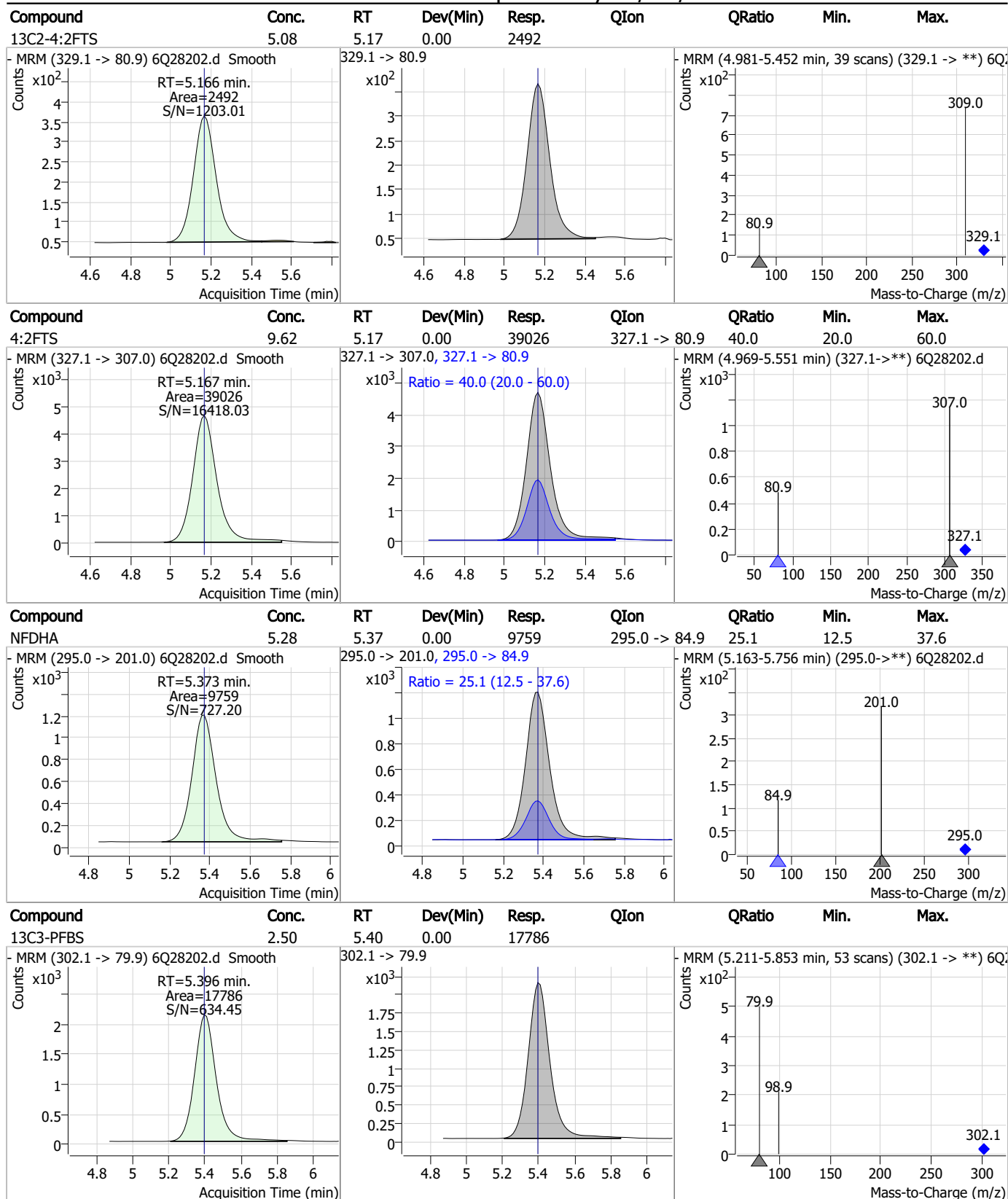
### Perfluorinated Compounds by LC/MS/MS



7.7.5

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### Perfluorinated Compounds by LC/MS/MS

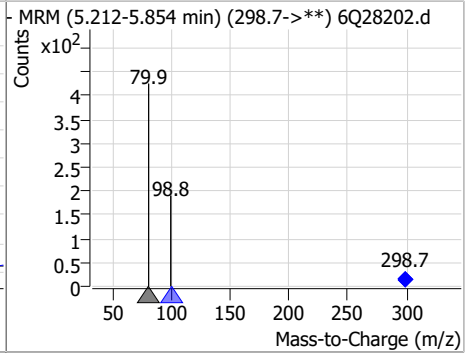
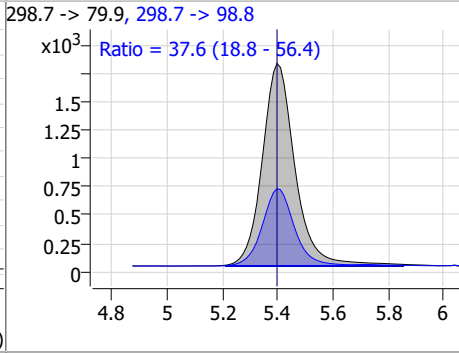
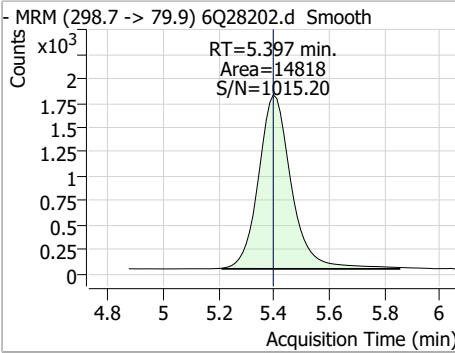


7.7.5

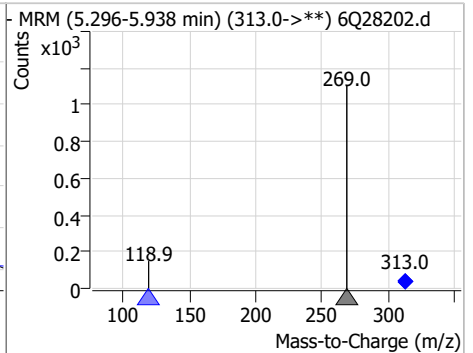
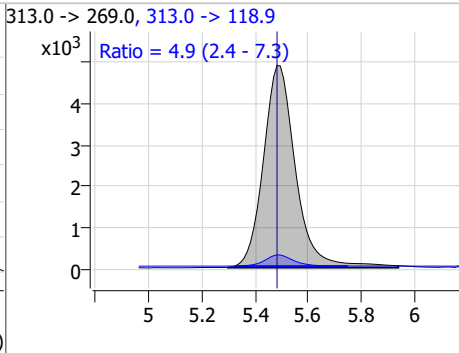
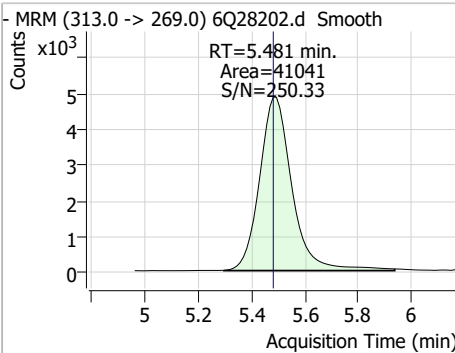
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### Perfluorinated Compounds by LC/MS/MS

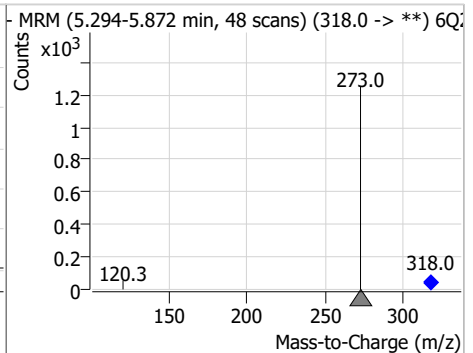
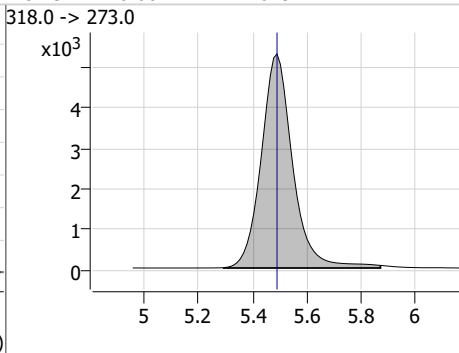
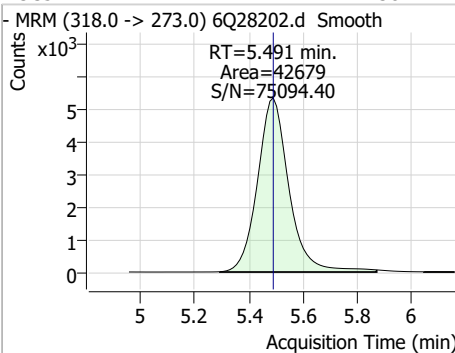
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.19	5.40	0.00	14818	298.7 -> 98.8	37.6	18.8	56.4



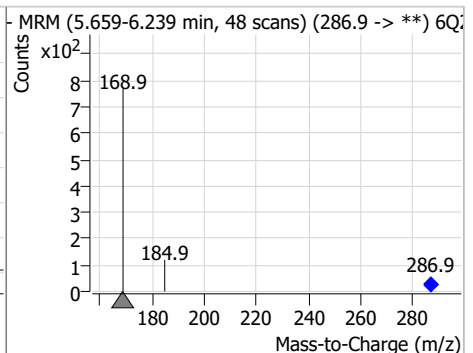
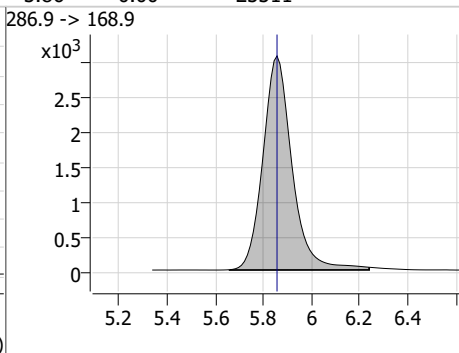
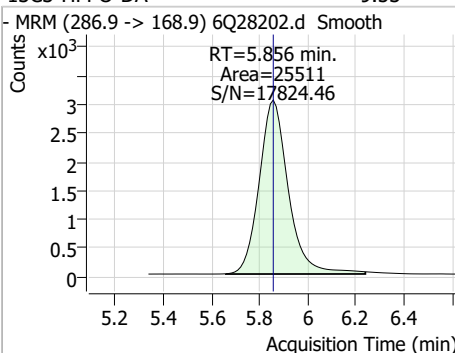
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.57	5.48	0.00	41041	313.0 -> 118.9	4.9	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.38	5.49	0.00	42679	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.53	5.86	0.00	25511	286.9 -> 168.9			

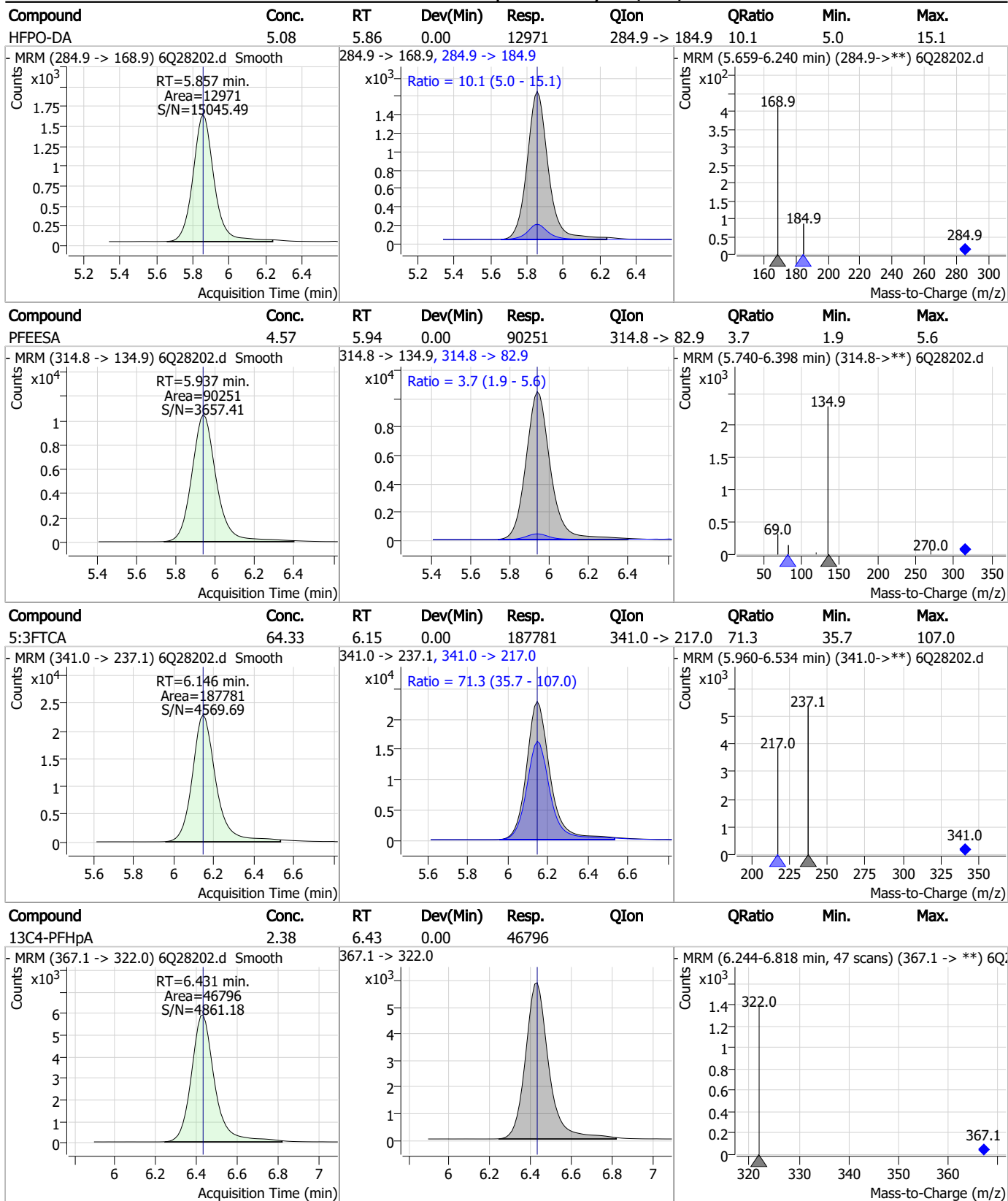


7.7.5

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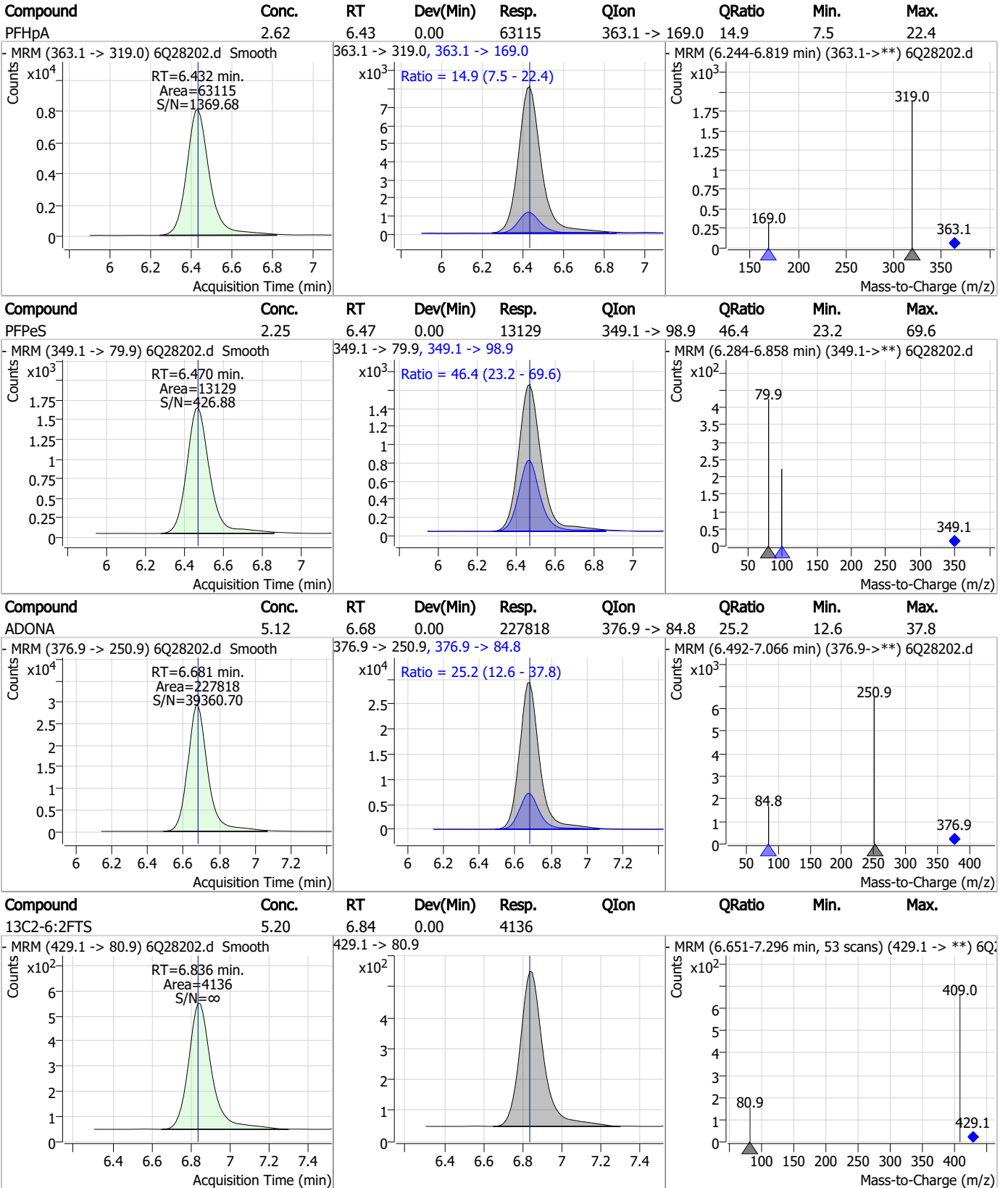


### Perfluorinated Compounds by LC/MS/MS



7.7.5  
7

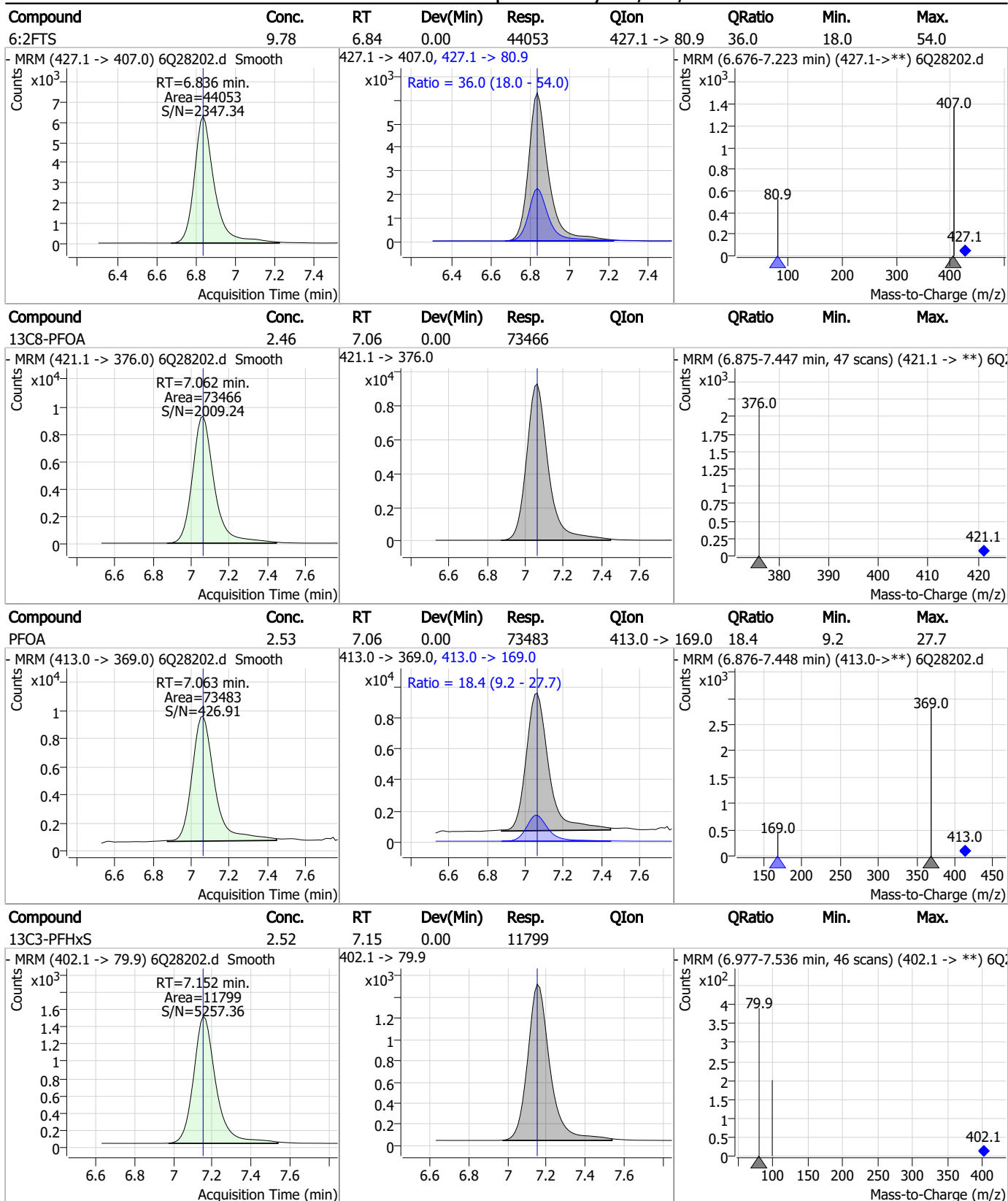
### Perfluorinated Compounds by LC/MS/MS



7.7.5

7

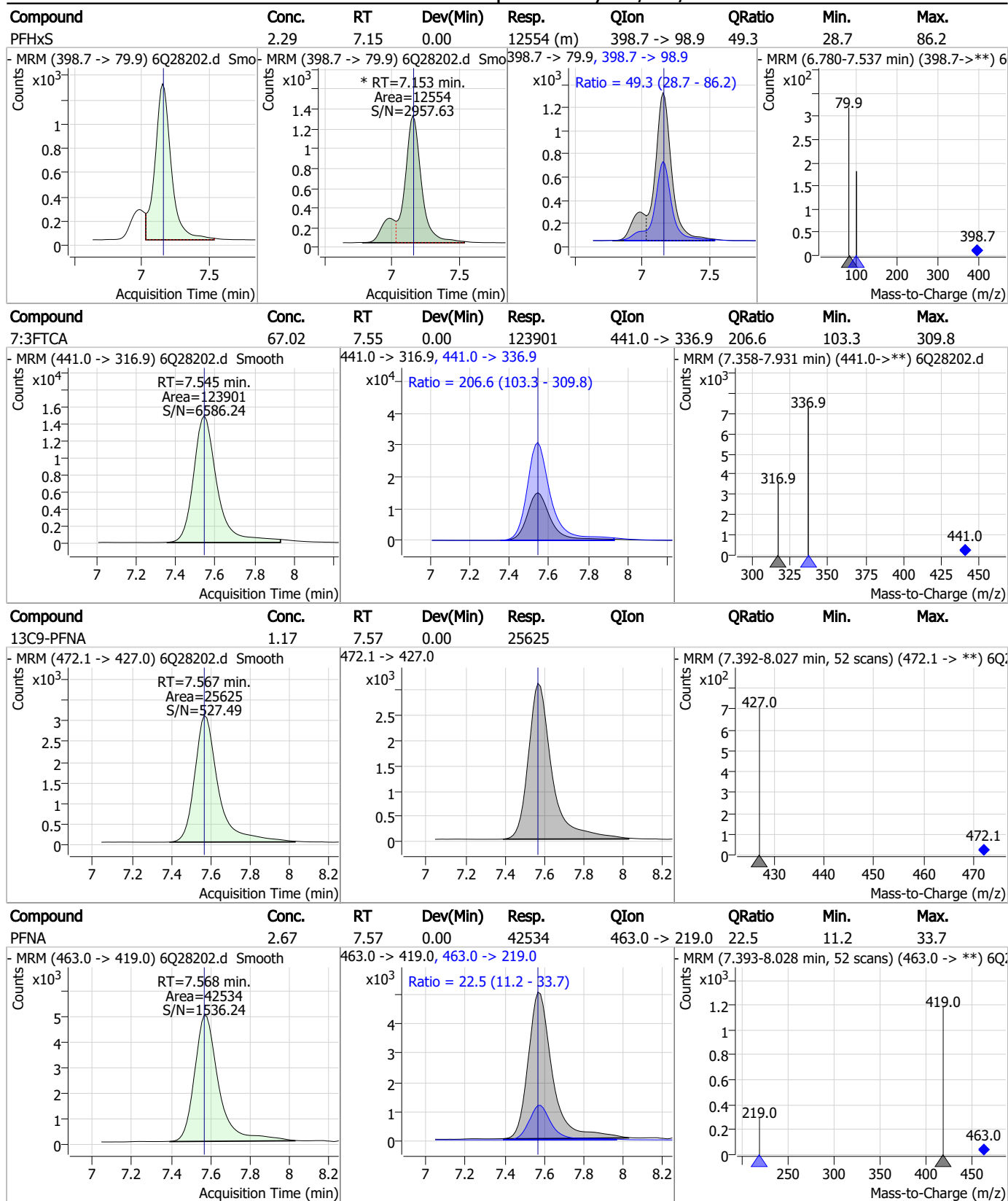
### Perfluorinated Compounds by LC/MS/MS



7.7.5

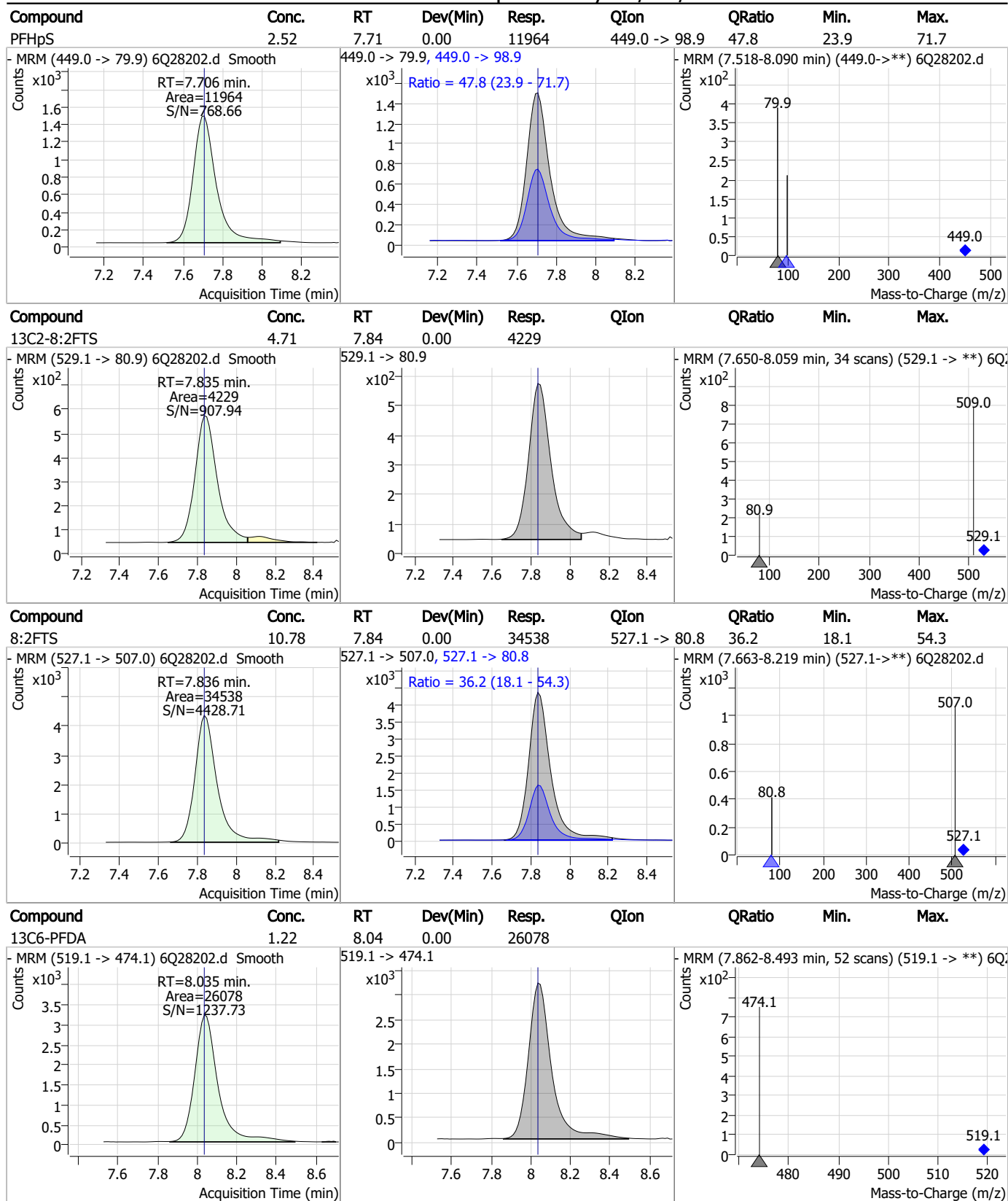
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### Perfluorinated Compounds by LC/MS/MS



7.7.5  
7

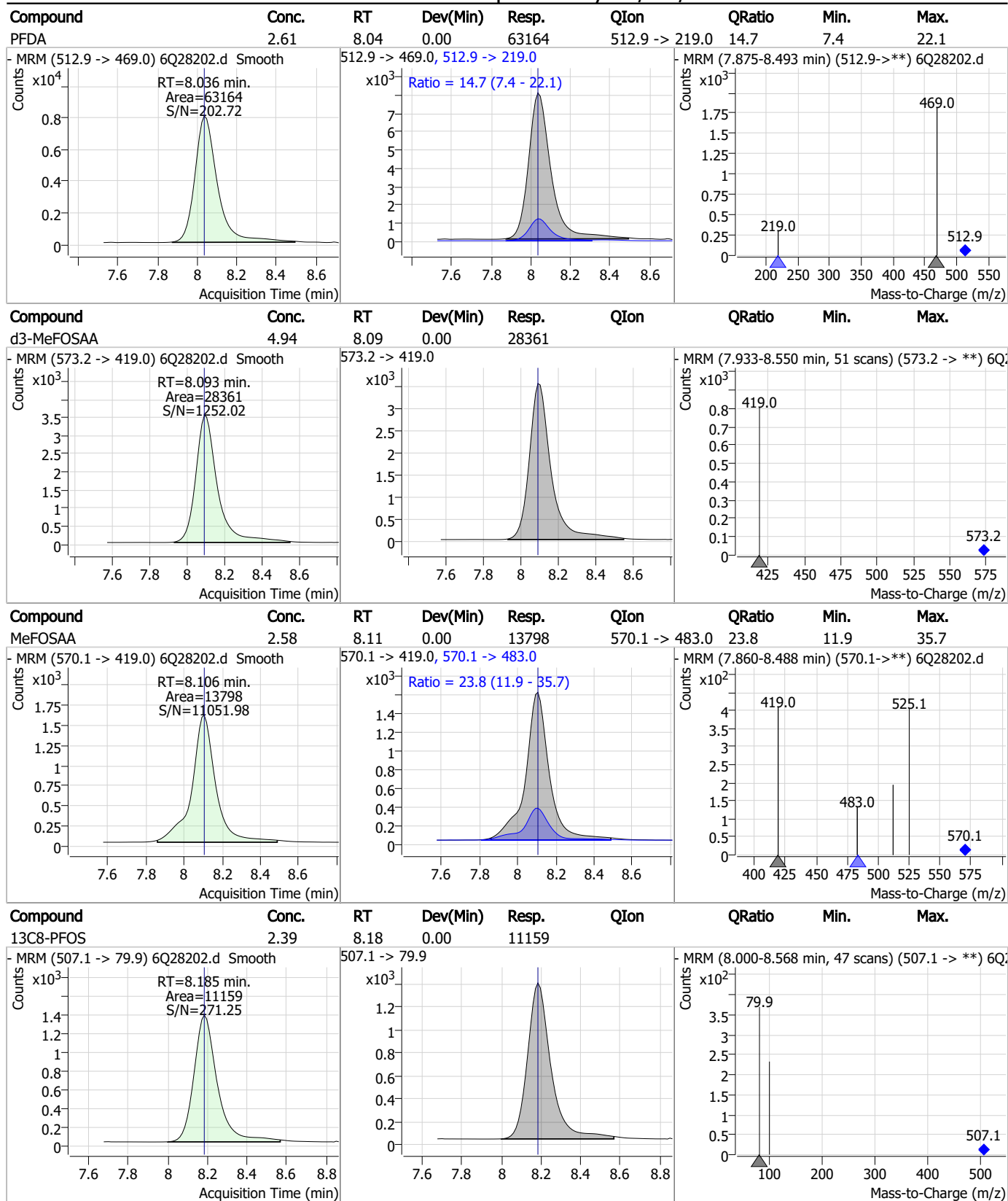
### Perfluorinated Compounds by LC/MS/MS



7.7.5

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### Perfluorinated Compounds by LC/MS/MS

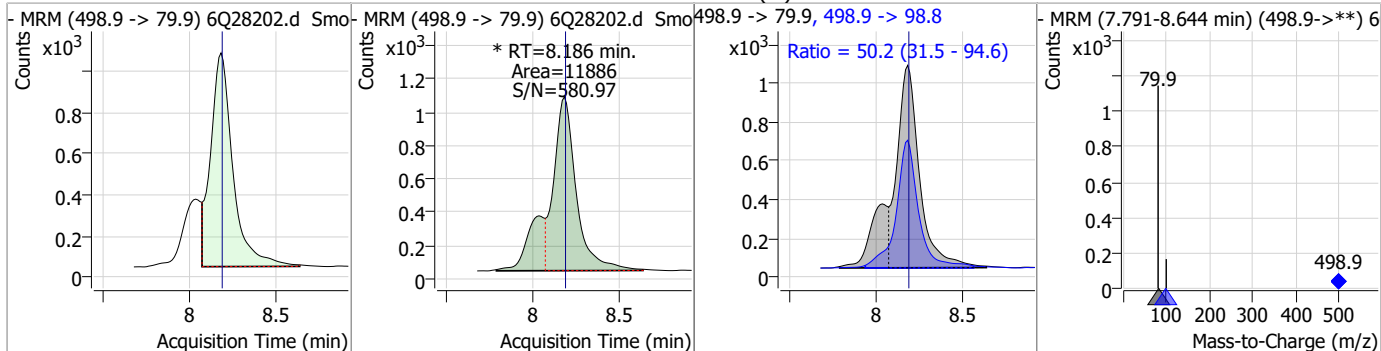


7.7.5

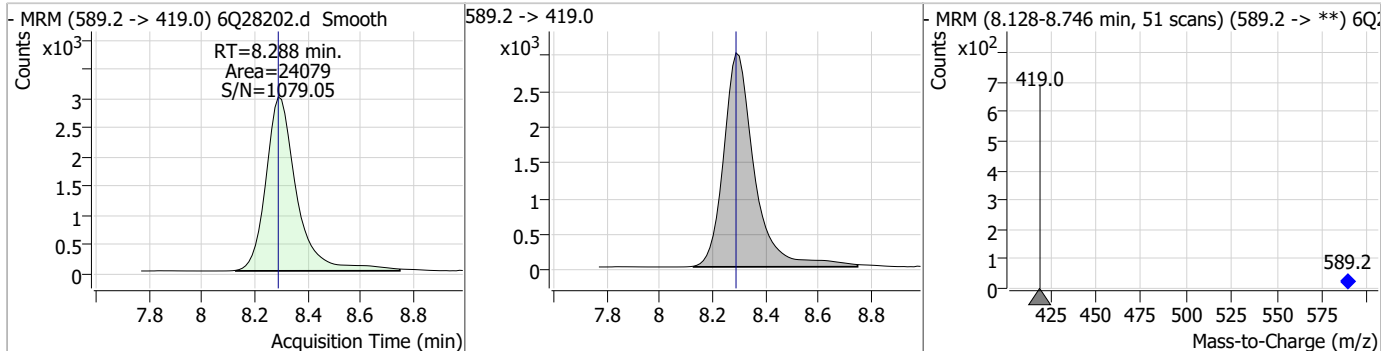
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### Perfluorinated Compounds by LC/MS/MS

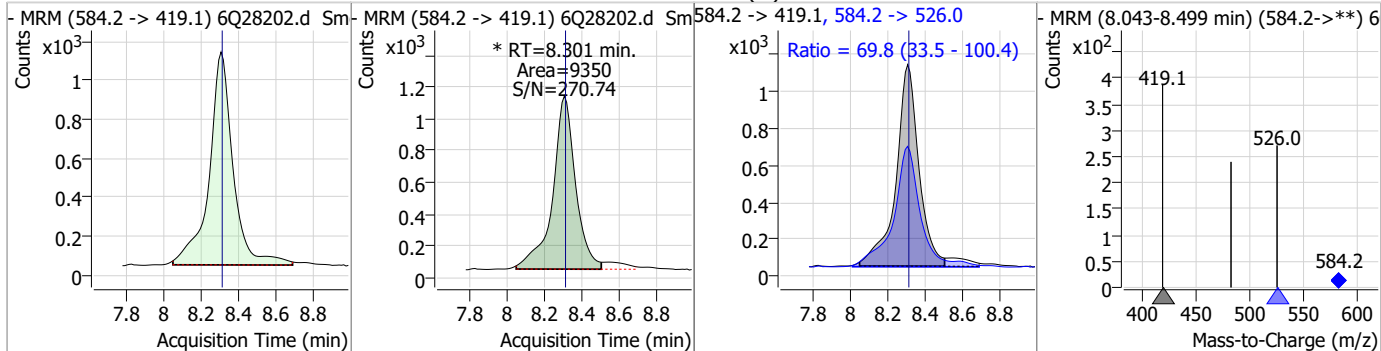
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.39	8.19	0.00	11886 (m)	498.9 -> 98.8	50.2	31.5	94.6



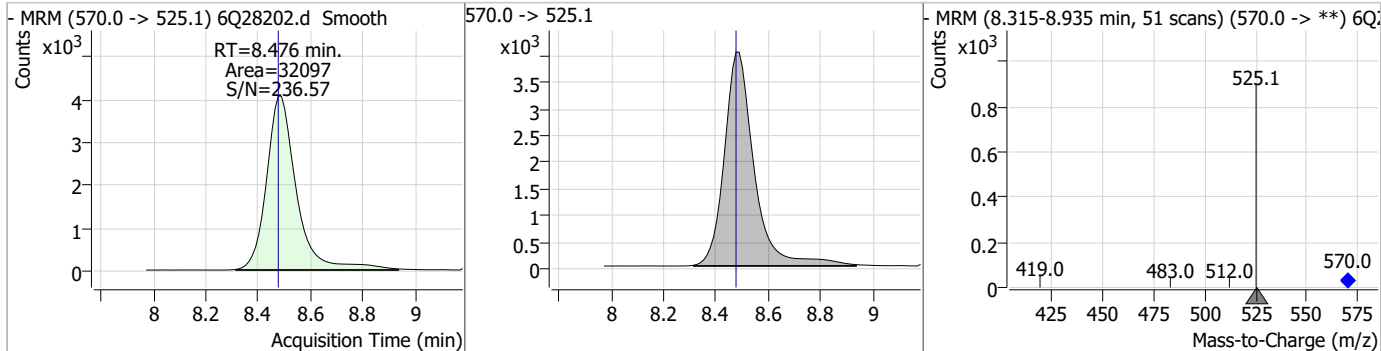
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.95	8.29	0.00	24079				



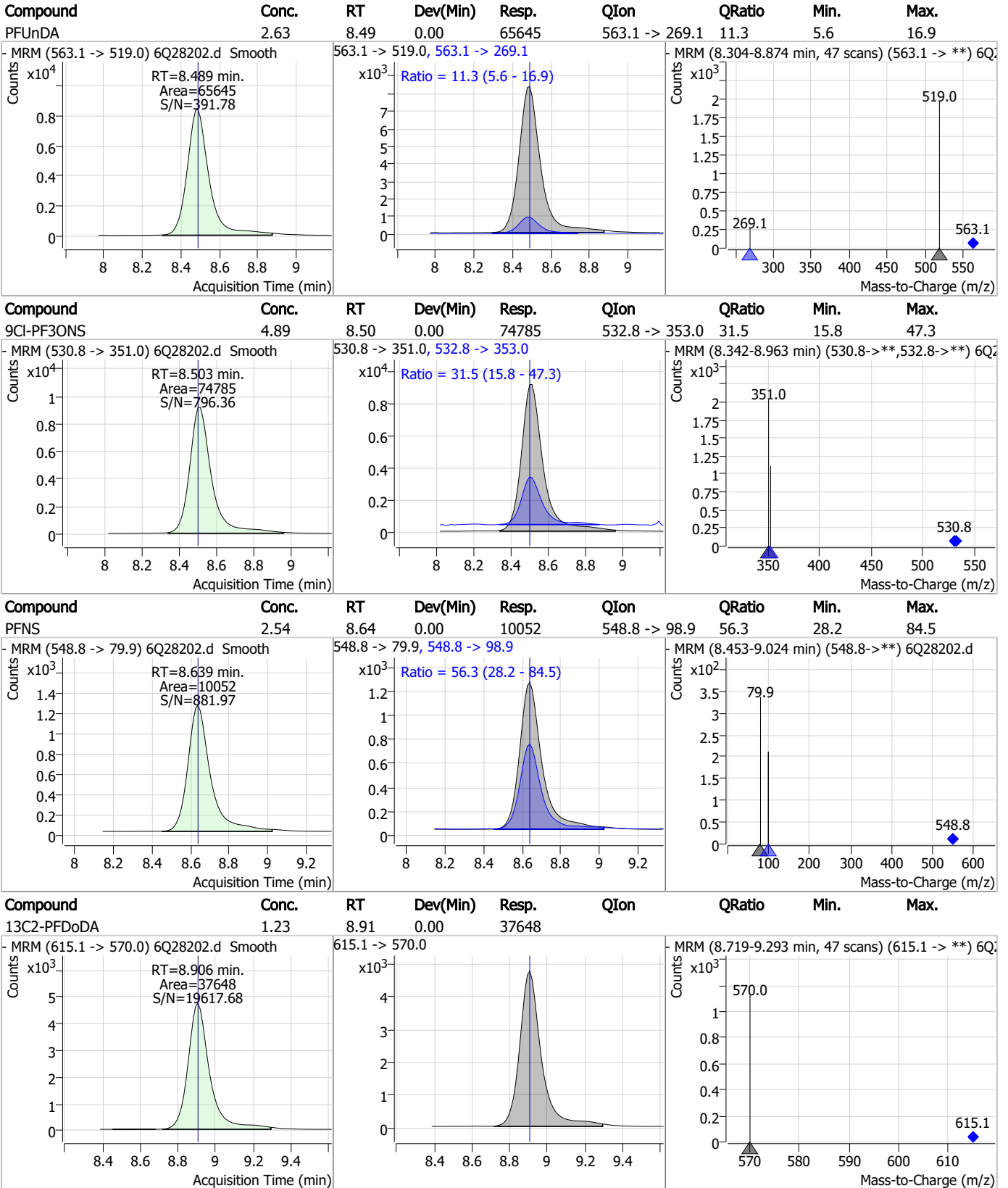
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.40	8.30	0.00	9350 (m)	584.2 -> 526.0	69.8	33.5	100.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.48	0.00	32097				



### Perfluorinated Compounds by LC/MS/MS

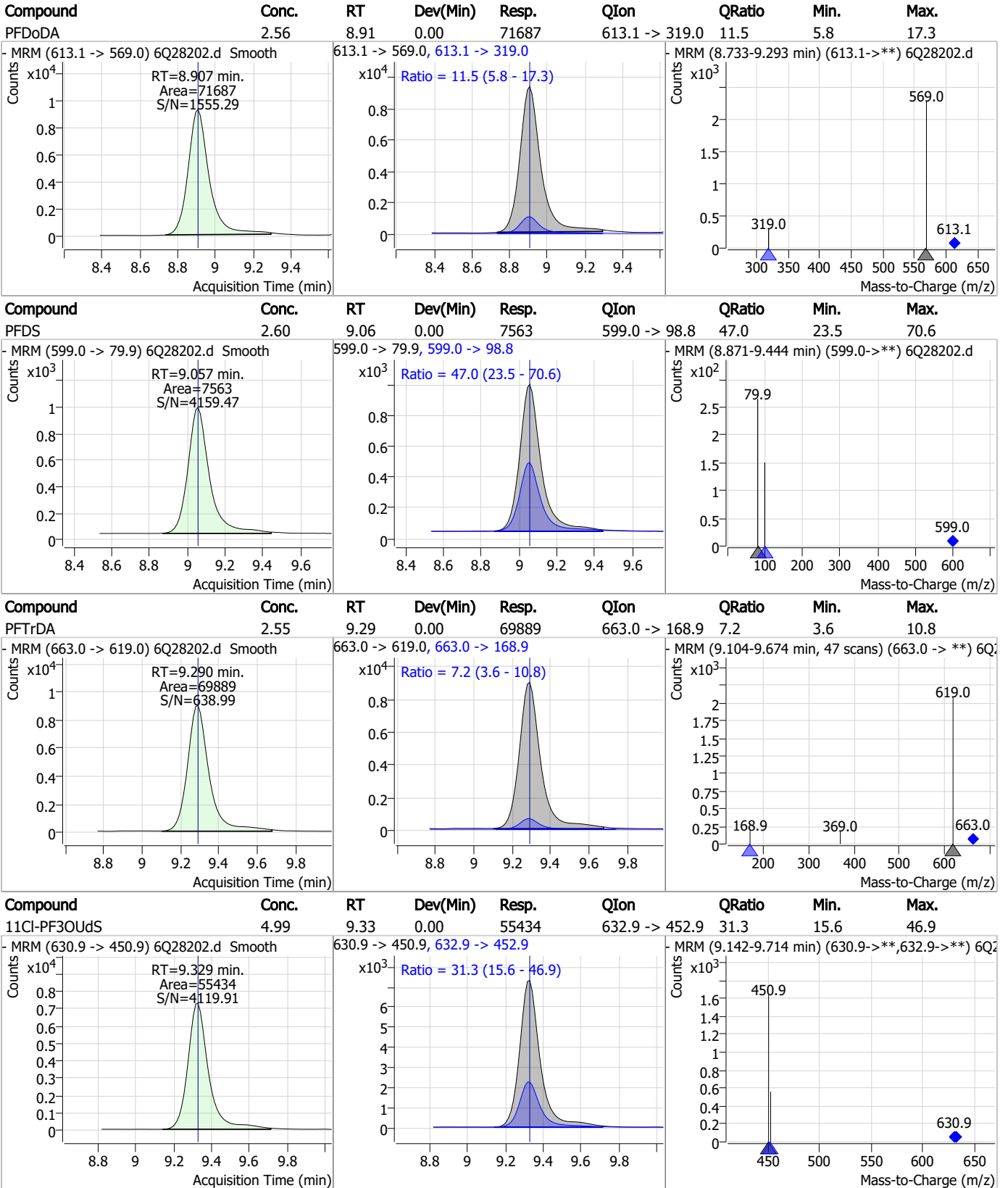


7.7.5

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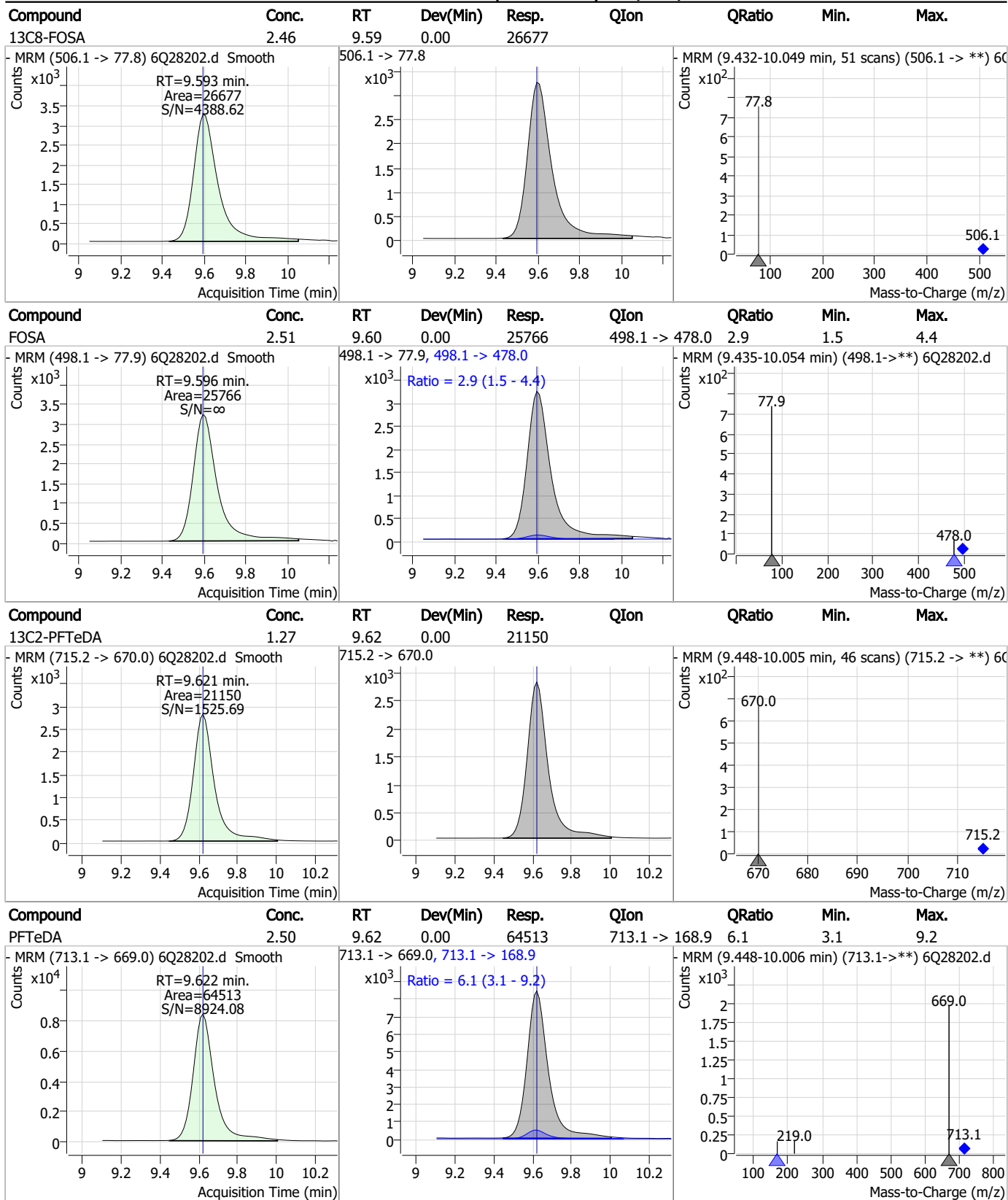
### Perfluorinated Compounds by LC/MS/MS



7.7.5

7

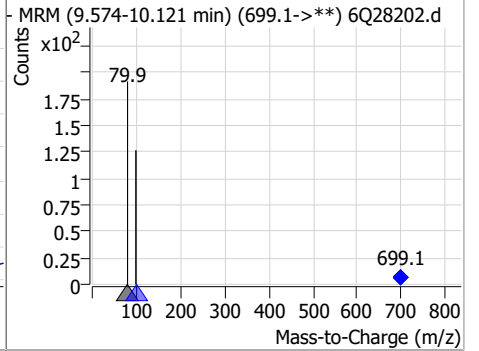
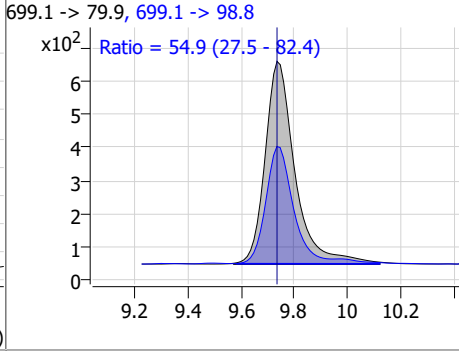
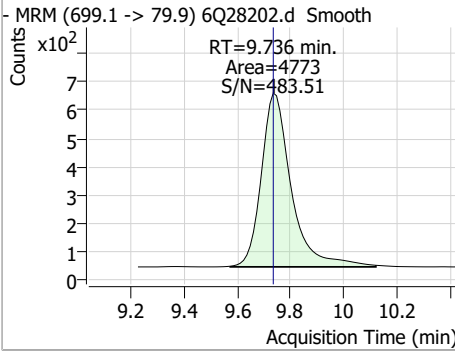
### Perfluorinated Compounds by LC/MS/MS



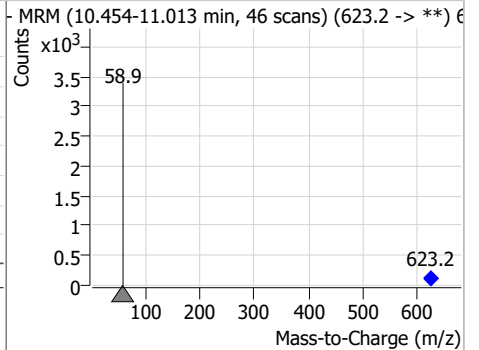
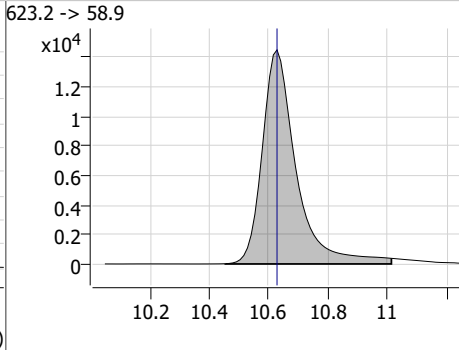
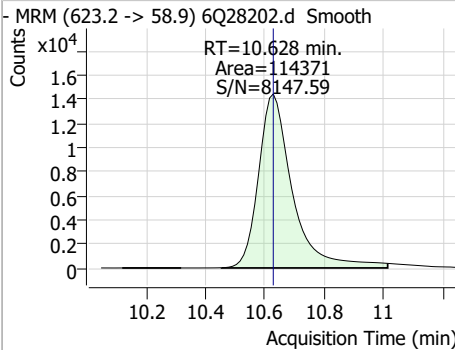
7.7.5  
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### Perfluorinated Compounds by LC/MS/MS

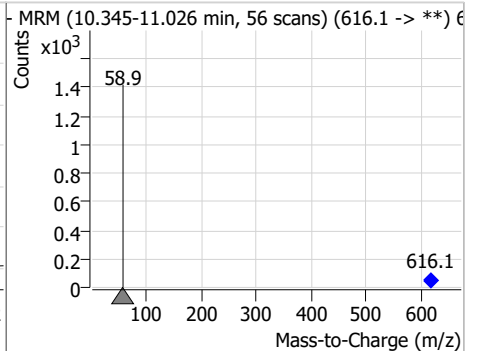
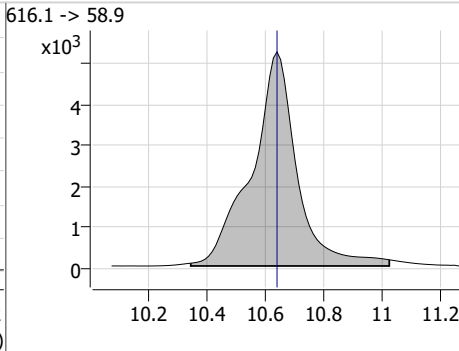
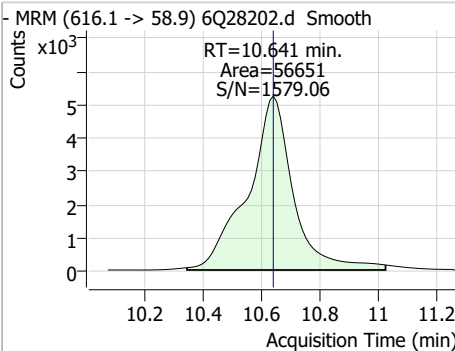
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.55	9.74	0.00	4773	699.1 -> 98.8	54.9	27.5	82.4



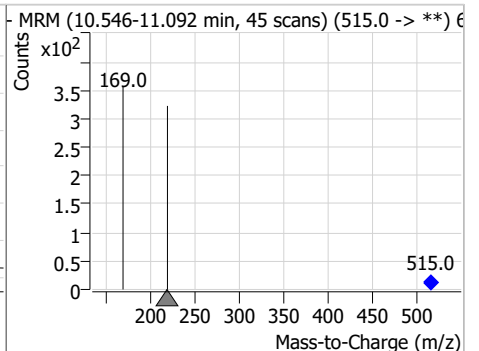
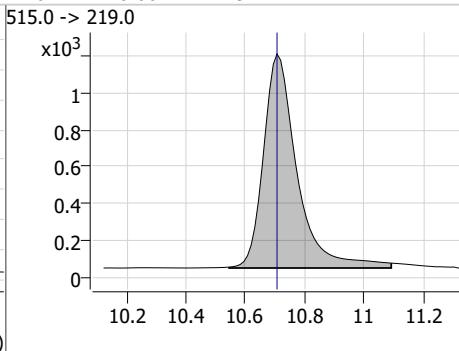
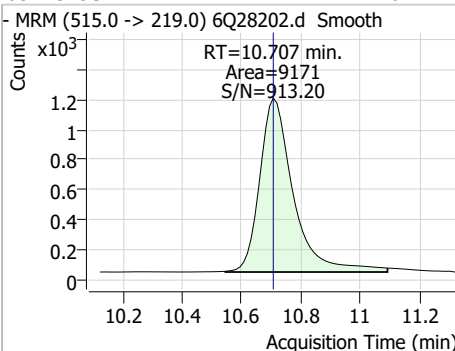
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.78	10.63	0.00	114371				



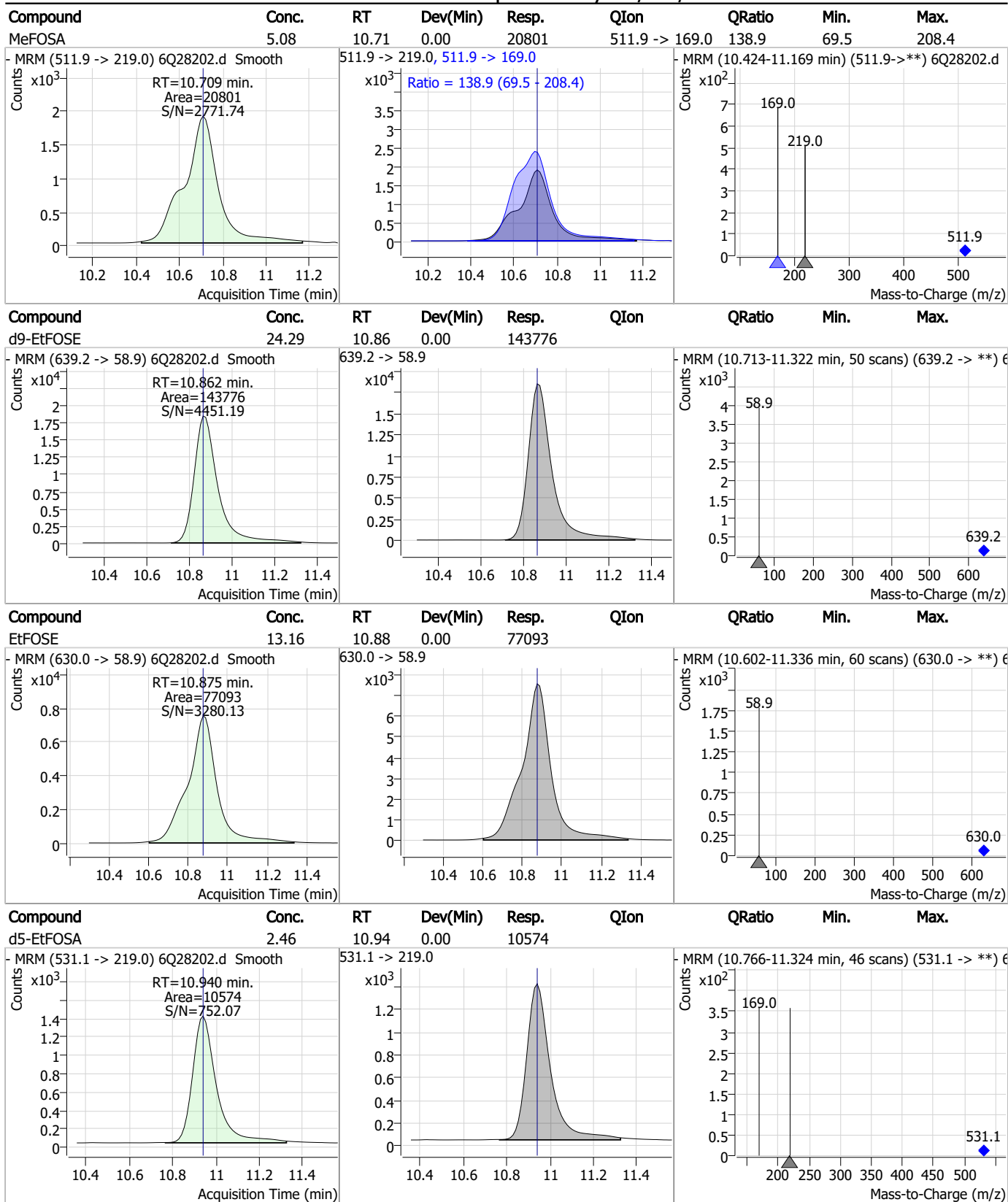
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.14	10.64	0.00	56651				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	10.71	0.00	9171				



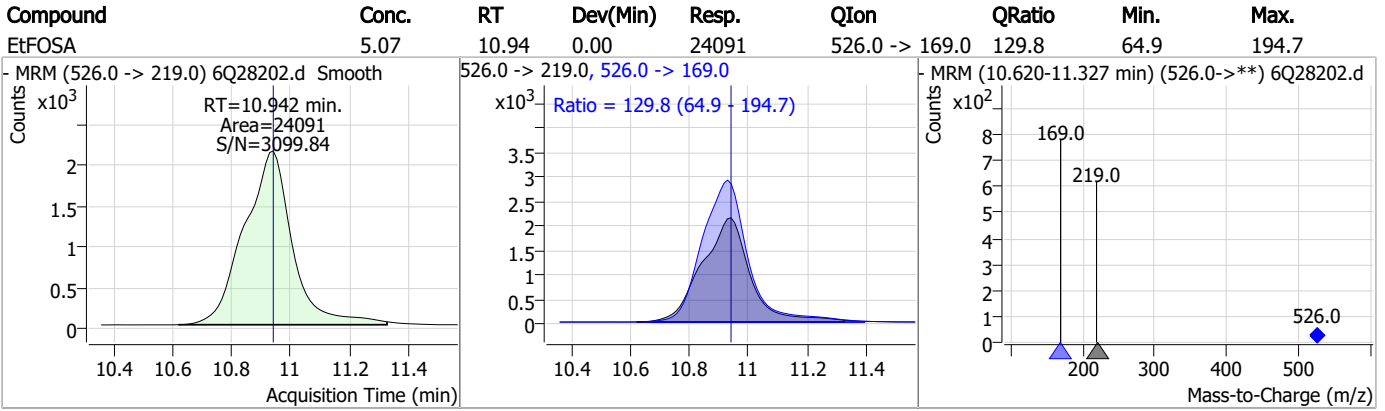
### Perfluorinated Compounds by LC/MS/MS



7.7.5

7

### Perfluorinated Compounds by LC/MS/MS



7.7.5

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# Manual Integration Approval Summary

Sample Number: S6Q391-ICC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28202.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 14:03      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

7.7.5.1

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## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28203.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 2:17:24 PM  
 Sample Name : ic391-5  
 Vial : P1-A6  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	119548	10.00 µg/L	0.000
M5-PFPeA	4.284	268.3 -> 223.0	44308	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	45315	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	49917	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	78254	2.50 µg/L	0.000
M9-PFNA	7.567	472.1 -> 427.0	27255	1.25 µg/L	0.000
M6-PFDA	8.048	519.1 -> 474.1	26805	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	33817	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	38807	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	20817	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	28156	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	18347	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	12533	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	11935	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2636	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	4158	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	4599	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	28710	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	27483	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	25543	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	114442	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	154117	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	11225	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9482	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	11562	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	51647	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	7868	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	79034	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	29386	1.25 µg/L	0.000
13C5-PFNA	7.567	468.0 -> 423.0	25704	1.25 µg/L	0.000
13C2-PFHxA	5.479	315.1 -> 270.0	42706	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2636	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4158	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-8:2FTS	7.848	529.1 -> 80.9	4599	4.97 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C2-PFDoDA	8.906	615.1 -> 570.0	38807	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C2-PFTeDA	9.621	715.2 -> 670.0	20817	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C3-PFBS	5.396	302.1 -> 79.9	18347	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C3-PFHxS	7.152	402.1 -> 79.9	12533	2.60 µg/L	0.000

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C4-PFBA	2.860	216.8 -> 171.9	119548	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.419	367.1 -> 322.0	49917	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFHxA	5.478	318.0 -> 273.0	45315	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFPeA	4.284	268.3 -> 223.0	44308	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C6-PFDA	8.048	519.1 -> 474.1	26805	1.18 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C7-PFUnDA	8.489	570.0 -> 525.1	33817	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-FOSA	9.605	506.1 -> 77.8	28156	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C8-PFOA	7.062	421.1 -> 376.0	78254	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-PFOS	8.185	507.1 -> 79.9	11935	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C9-PFNA	7.567	472.1 -> 427.0	27255	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%	
d3-MeFOSAA	8.105	573.2 -> 419.0	28710	4.79 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	27483	10.36 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
d3-MeFOSA	10.707	515.0 -> 219.0	9482	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
d5-EtFOSAA	8.300	589.2 -> 419.0	25543	5.03 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d7-MeFOSE	10.628	623.2 -> 58.9	114442	24.72 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
d9-EtFOSE	10.862	639.2 -> 58.9	154117	24.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSA	10.940	531.1 -> 219.0	11225	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	78750	18.34 µg/L	98
		327.1 -> 80.9	32368		
6:2FTS	6.836	427.1 -> 407.0	89152	19.69 µg/L	98
		427.1 -> 80.9	30826		
8:2FTS	7.836	527.1 -> 507.0	71928	20.64 µg/L	94
		527.1 -> 80.8	23643		
EtFOSAA	8.301	584.2 -> 419.1	20315	4.92 µg/L	m 97
		584.2 -> 526.0	14023		
FOSA	9.596	498.1 -> 77.9	54110	5.00 µg/L	99
		498.1 -> 478.0	1444		
MeFOSAA	8.106	570.1 -> 419.0	28561	5.28 µg/L	98
		570.1 -> 483.0	6495		
PFBA	2.868	212.8 -> 168.9	77531	19.78 µg/L	100
PFBS	5.397	298.7 -> 79.9	29988	4.29 µg/L	99
		298.7 -> 98.8	11545		
PFDA	8.048	512.9 -> 469.0	126686	5.09 µg/L	98
		512.9 -> 219.0	19839		
PFDoDA	8.907	613.1 -> 569.0	146107	5.07 µg/L	99
		613.1 -> 319.0	16178		
PFDS	9.057	599.0 -> 79.9	15201	4.89 µg/L	97



## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	6806			
PFHpA	6.432	363.1 -> 319.0	125022	4.87	µg/L	99
		363.1 -> 169.0	18911			
PFHpS	7.706	449.0 -> 79.9	24339	4.80	µg/L	100
		449.0 -> 98.9	11575			
PFHxA	5.481	313.0 -> 269.0	84320	4.97	µg/L	100
		313.0 -> 118.9	4098			
PFHxS	7.153	398.7 -> 79.9	25525	4.39	µg/L	m 82
		398.7 -> 98.9	11237			
PFNA	7.581	463.0 -> 419.0	85767	5.06	µg/L	98
		463.0 -> 219.0	18503			
PFNS	8.639	548.8 -> 79.9	21731	5.14	µg/L	88
		548.8 -> 98.9	10259			
PFOA	7.063	413.0 -> 369.0	151984	4.90	µg/L	98
		413.0 -> 169.0	26692			
PFOS	8.186	498.9 -> 79.9	19667	3.70	µg/L	97
		498.9 -> 98.8	11929			
PFPeA	4.286	263.0 -> 219.0	110943	9.87	µg/L	100
PFPeS	6.470	349.1 -> 79.9	27526	4.44	µg/L	98
		349.1 -> 98.9	12417			
PFTeDA	9.622	713.1 -> 669.0	132966	5.24	µg/L	100
		713.1 -> 168.9	8252			
PFTrDA	9.290	663.0 -> 619.0	140137	4.96	µg/L	100
		663.0 -> 168.9	10012			
PFUnDA	8.489	563.1 -> 519.0	125475	4.77	µg/L	95
		563.1 -> 269.1	16460			
11Cl-PF3OUdS	9.329	630.9 -> 450.9	109523	9.15	µg/L	99
		632.9 -> 452.9	33894			
9Cl-PF3ONS	8.516	530.8 -> 351.0	153694	9.32	µg/L	99
		532.8 -> 353.0	49044			
ADONA	6.681	376.9 -> 250.9	453177	9.45	µg/L	99
		376.9 -> 84.8	117042			
HFPO-DA	5.857	284.9 -> 168.9	25754	9.37	µg/L	99
		284.9 -> 184.9	2711			
3:3FTCA	3.721	241.0 -> 177.0	16962	24.54	µg/L	100
		241.0 -> 117.0	1976			
5:3FTCA	6.146	341.0 -> 237.1	382617	123.45	µg/L	100
		341.0 -> 217.0	271930			
7:3FTCA	7.545	441.0 -> 316.9	244158	124.39	µg/L	95
		441.0 -> 336.9	523462			
EtFOSA	10.942	526.0 -> 219.0	50018	9.92	µg/L	98
		526.0 -> 169.0	63765			
EtFOSE	10.875	630.0 -> 58.9	151370	24.11	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	42325	9.99	µg/L	100
		511.9 -> 169.0	58811			
MeFOSE	10.641	616.1 -> 58.9	114151	24.44	µg/L	100
PFDoDS	9.736	699.1 -> 79.9	9588	4.80	µg/L	100
		699.1 -> 98.8	5236			
NFDHA	5.360	295.0 -> 201.0	18939	9.65	µg/L	97
		295.0 -> 84.9	5083			
PFMBA	4.700	279.0 -> 85.1	75778	9.78	µg/L	100
PFMPA	3.426	229.0 -> 84.9	57089	9.83	µg/L	100
PFEESA	5.937	314.8 -> 134.9	188077	8.97	µg/L	99
		314.8 -> 82.9	6310			

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

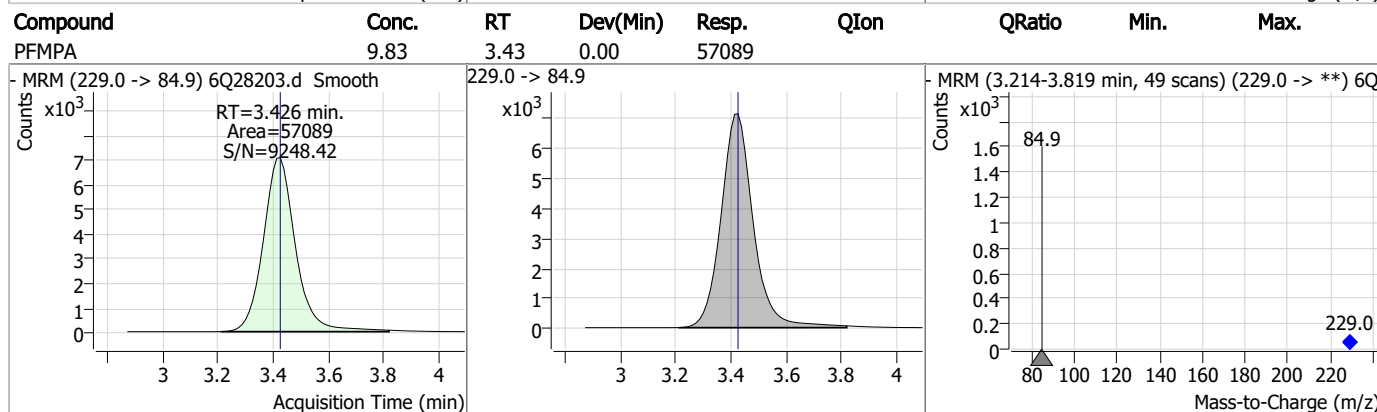
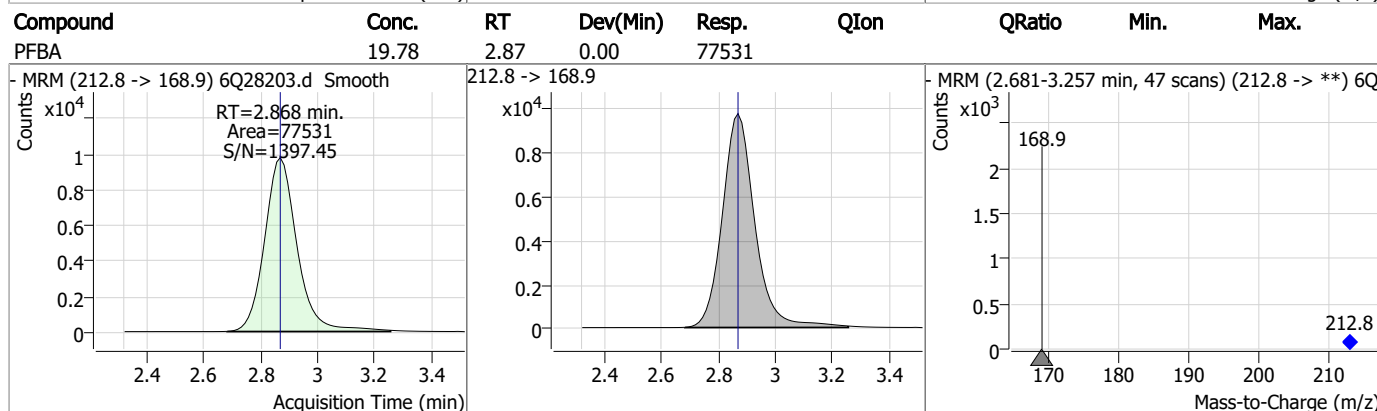
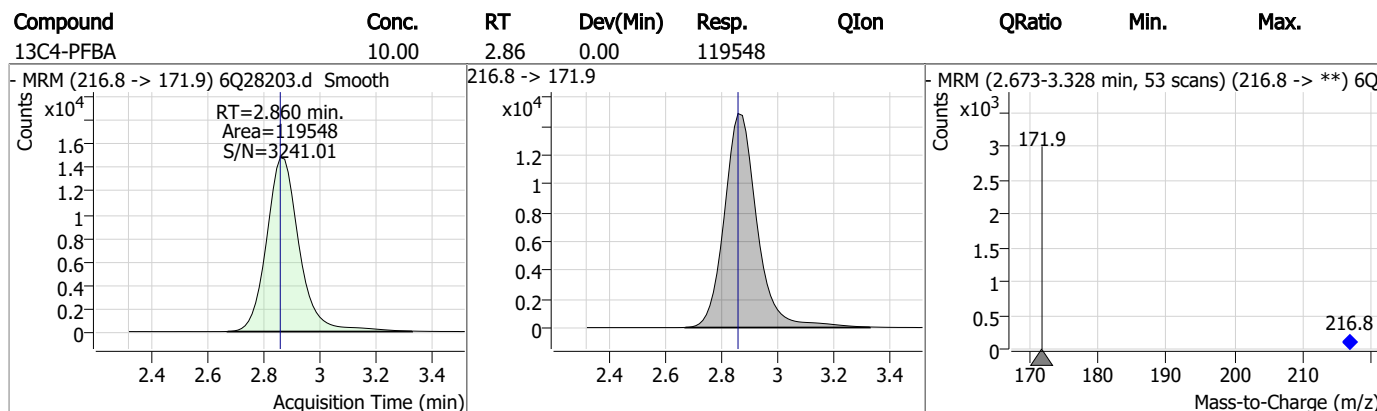
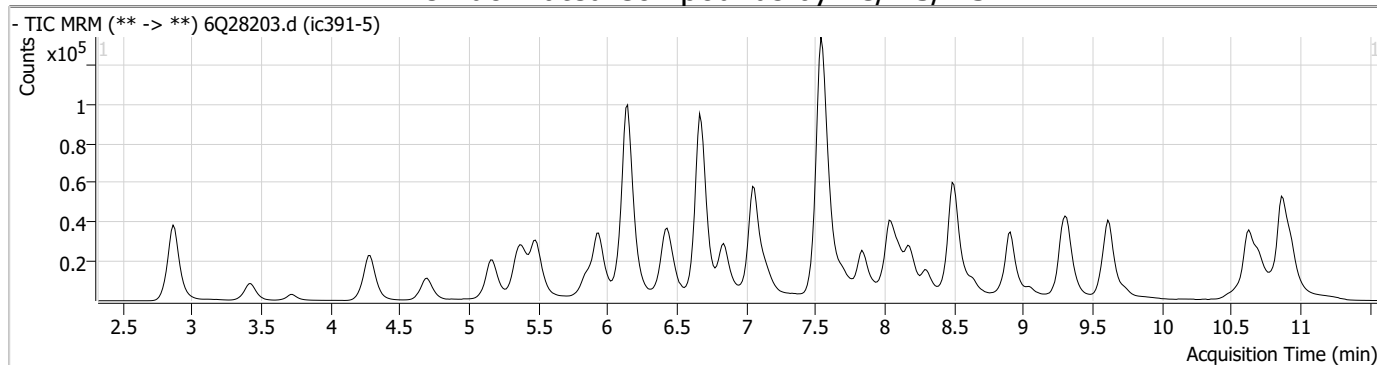
### Perfluorinated Compounds by LC/MS/MS

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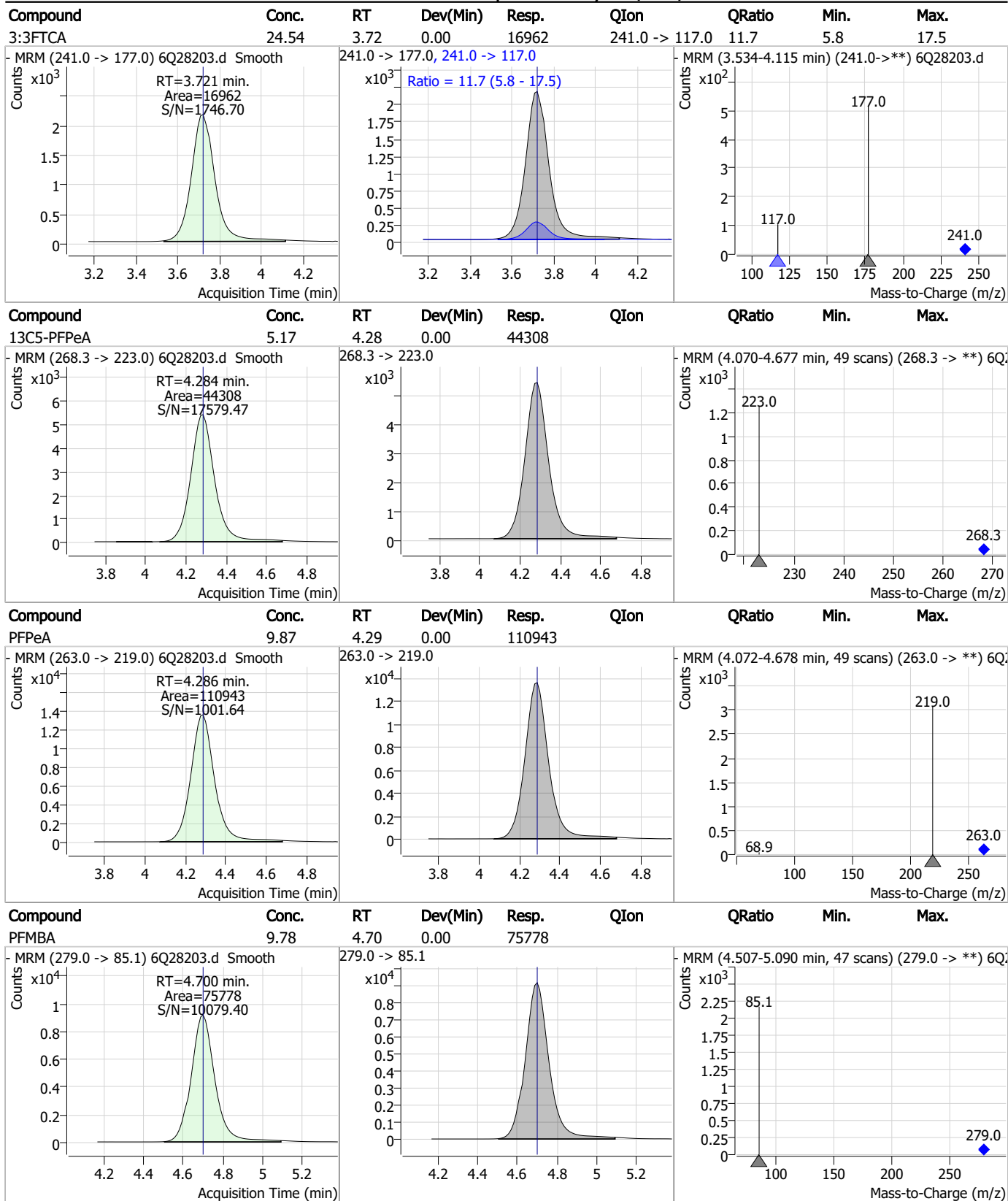
7.7.6

7

### Perfluorinated Compounds by LC/MS/MS

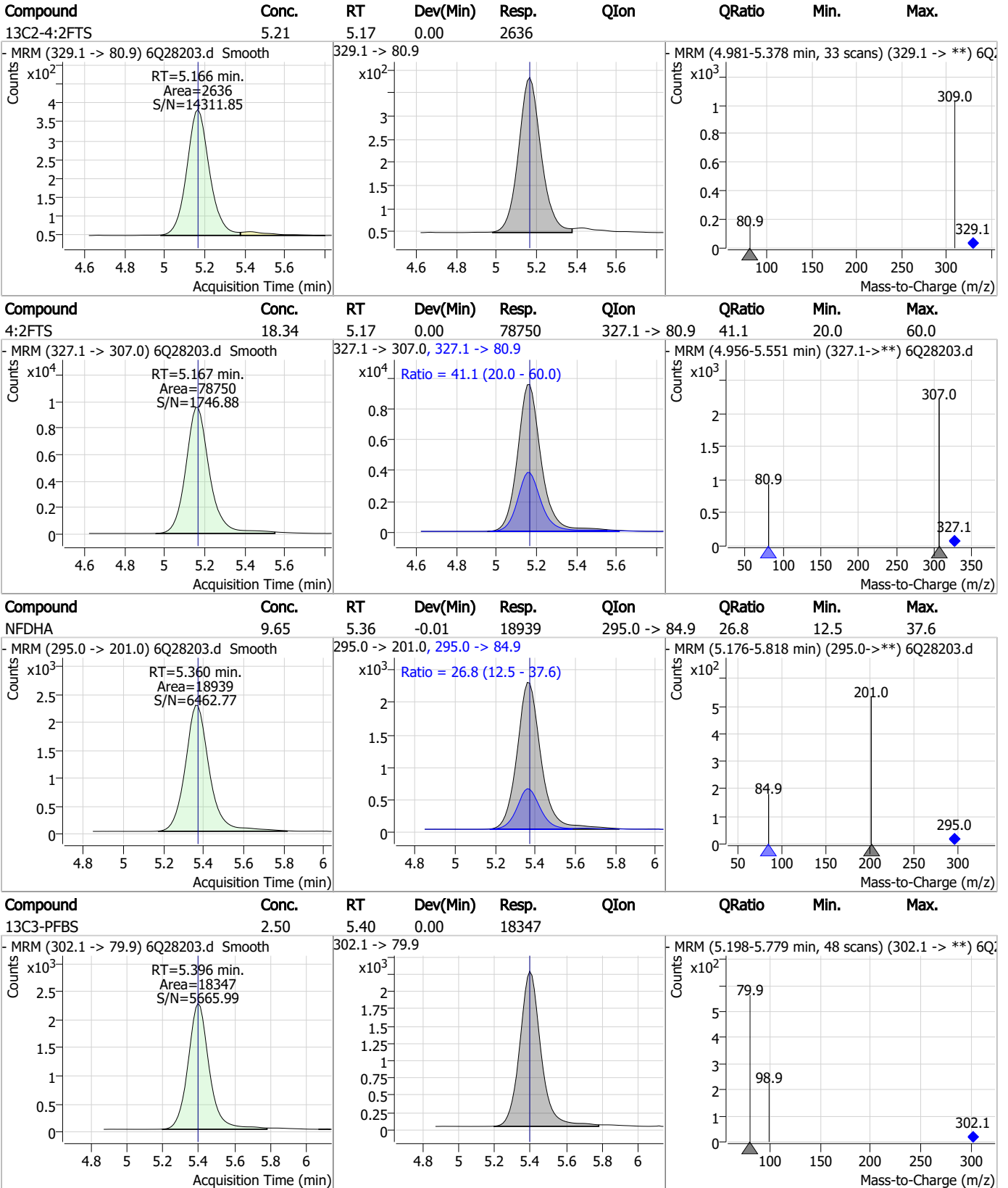


### Perfluorinated Compounds by LC/MS/MS

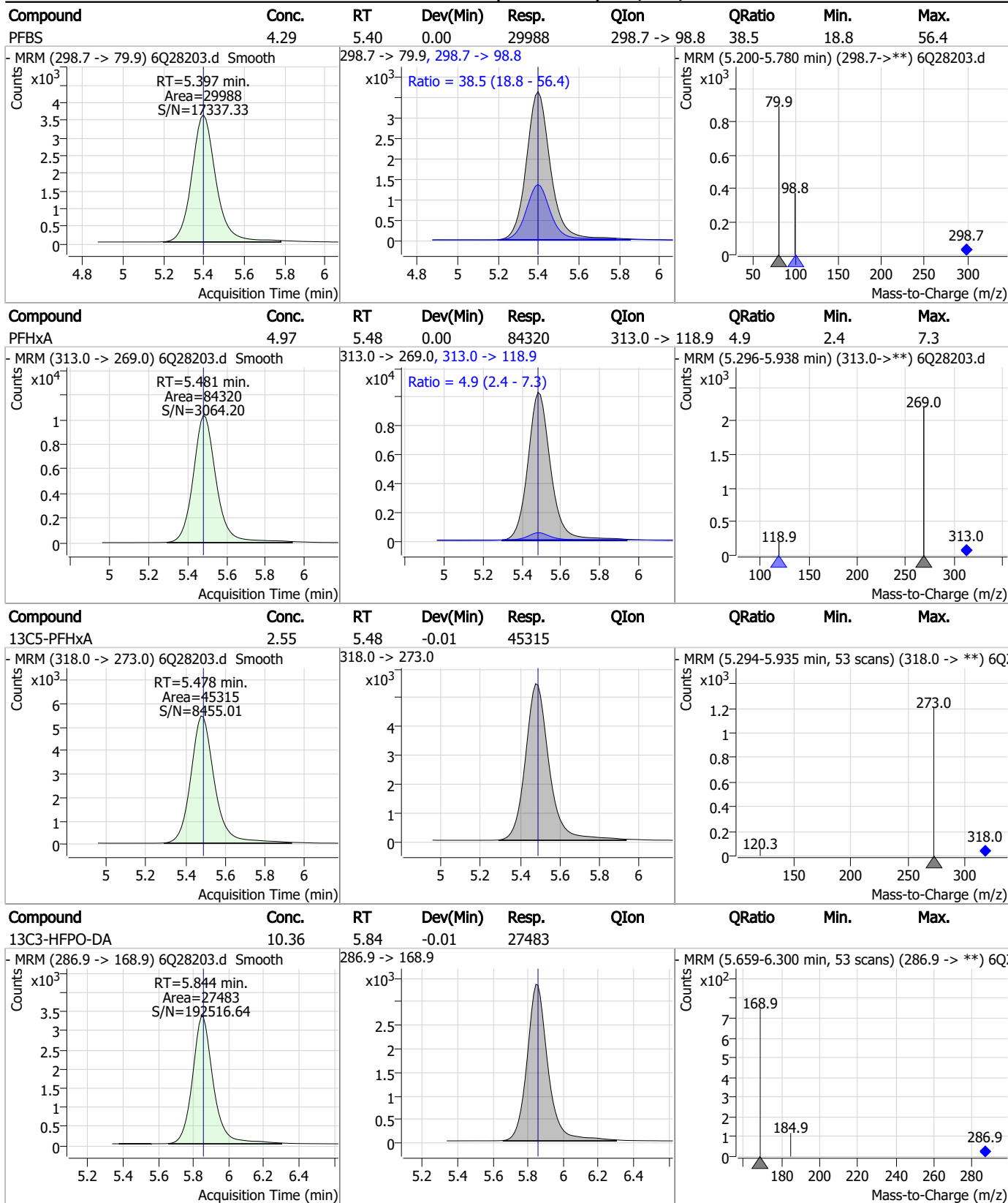


7.7.6  
7

### Perfluorinated Compounds by LC/MS/MS

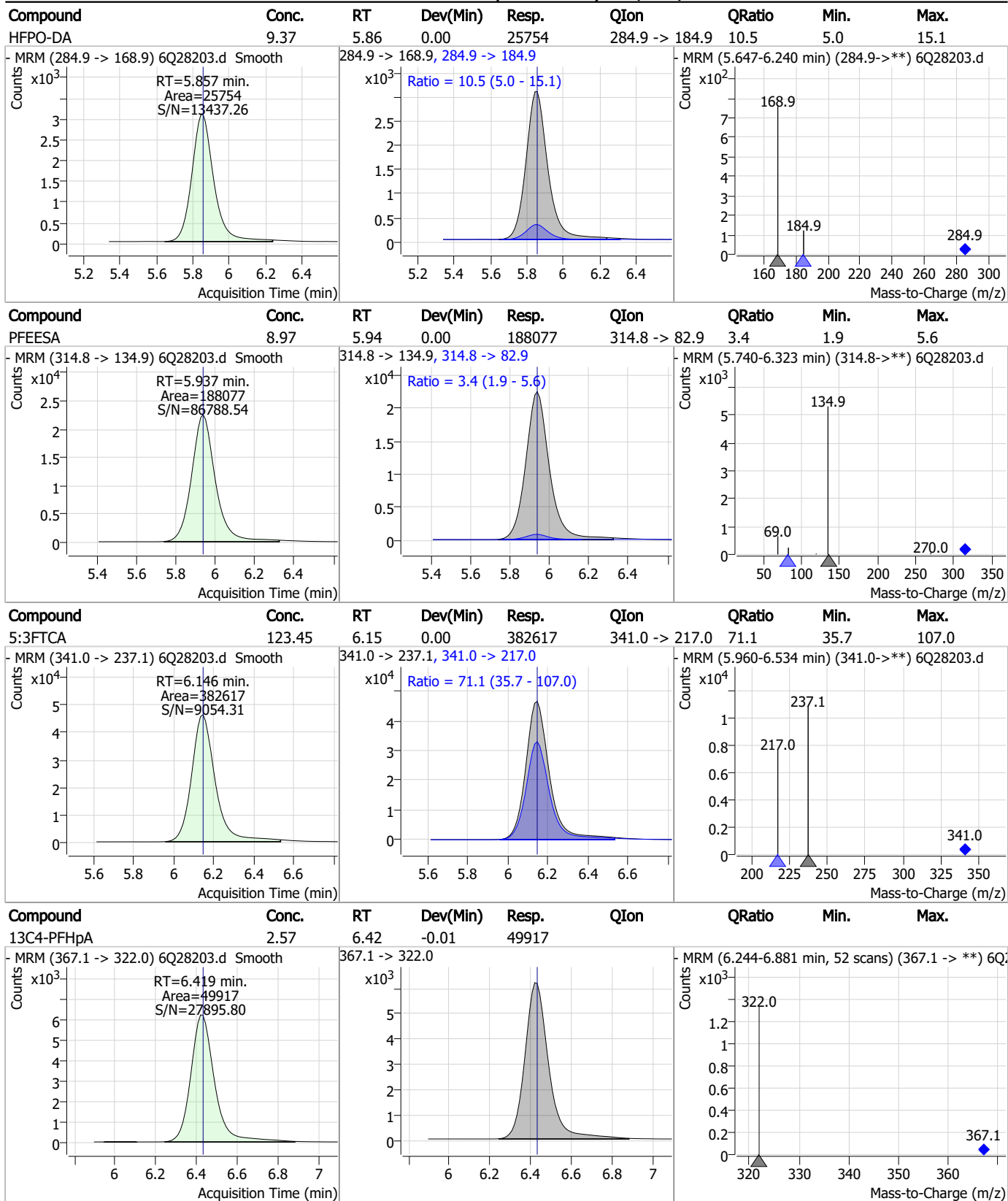


### Perfluorinated Compounds by LC/MS/MS



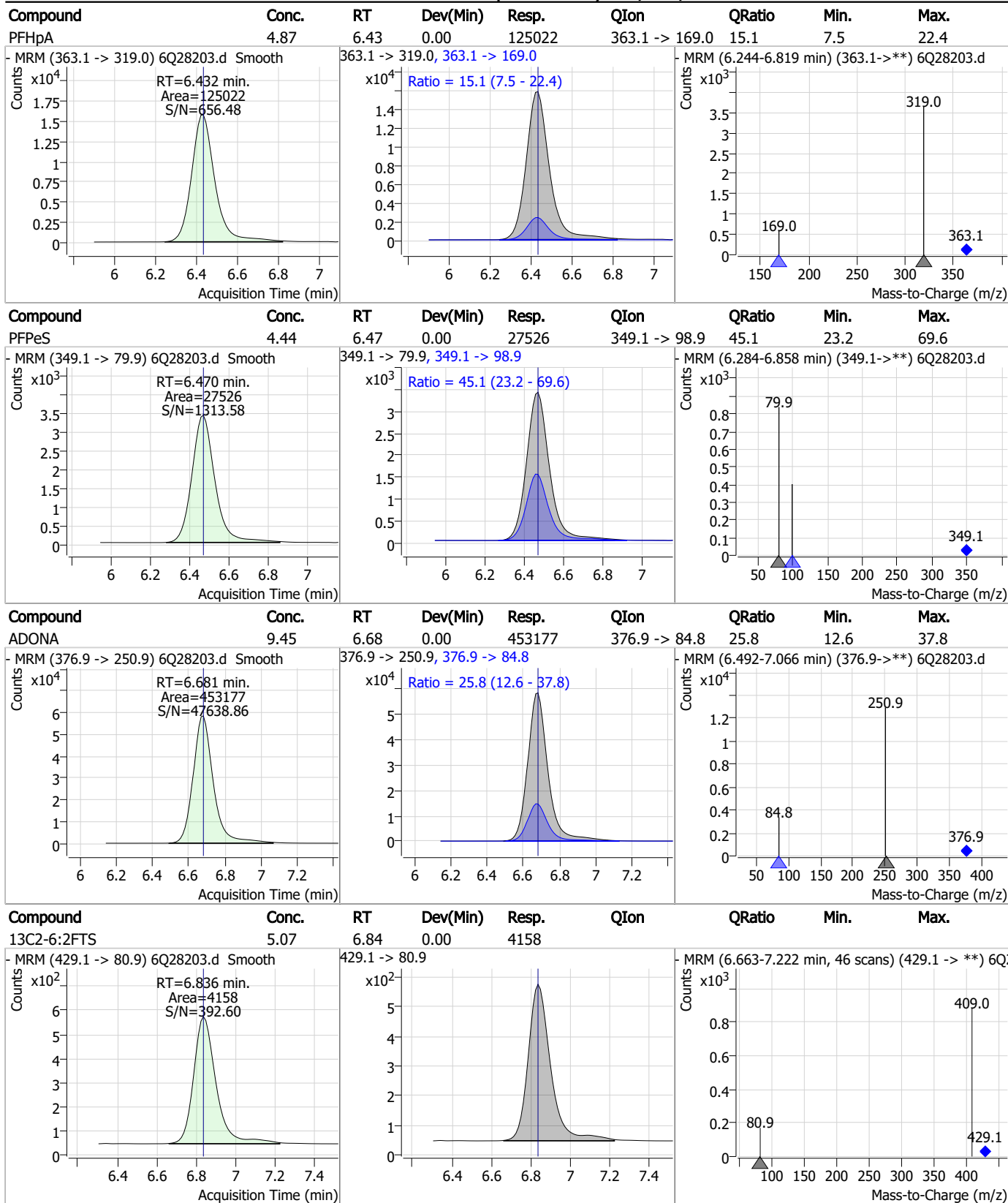
7.7.6  
7

### Perfluorinated Compounds by LC/MS/MS



7.7.6  
7

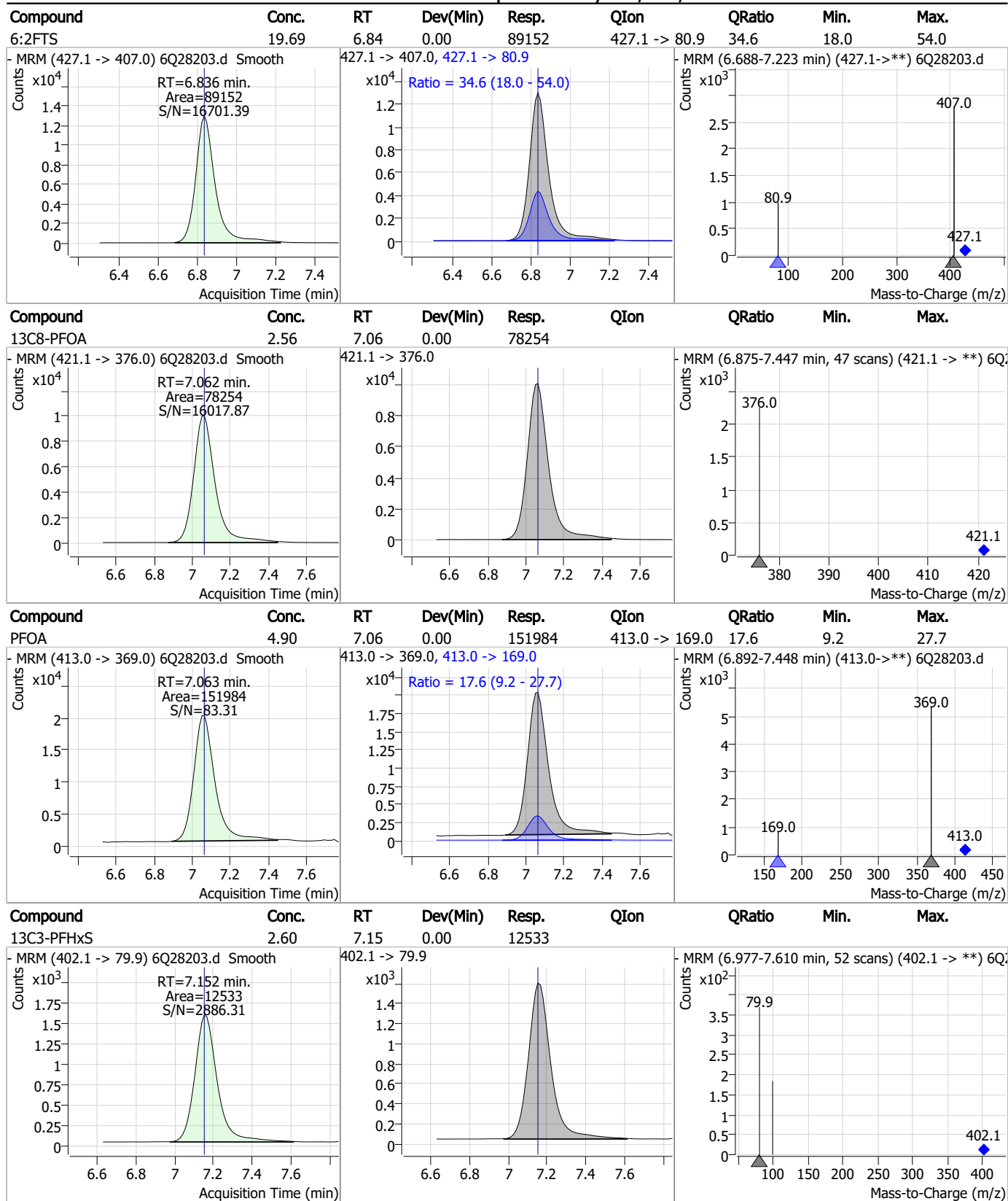
### Perfluorinated Compounds by LC/MS/MS



7.7.6  
7



### Perfluorinated Compounds by LC/MS/MS

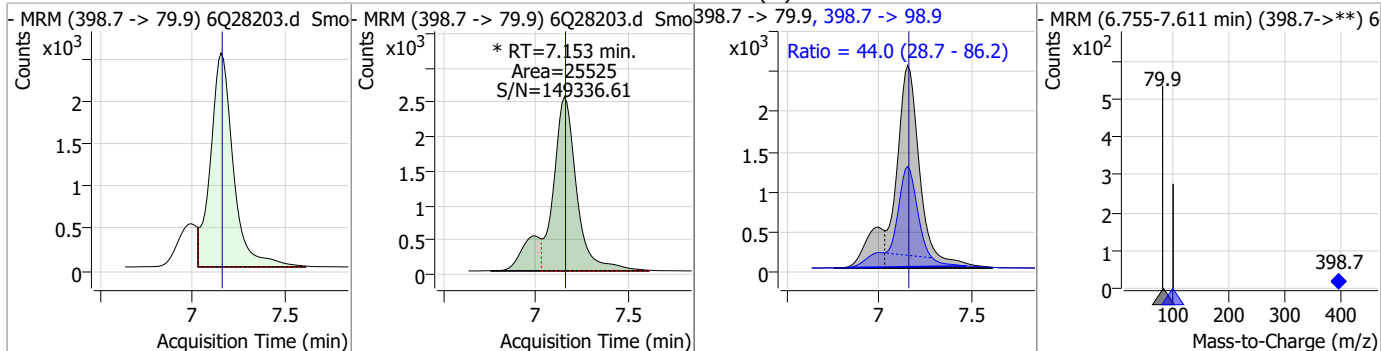


7.7.6

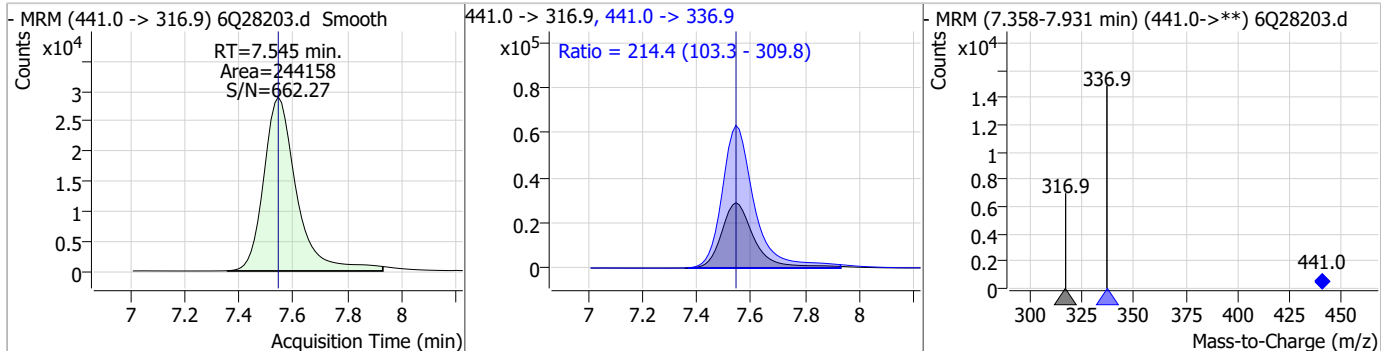
7

### Perfluorinated Compounds by LC/MS/MS

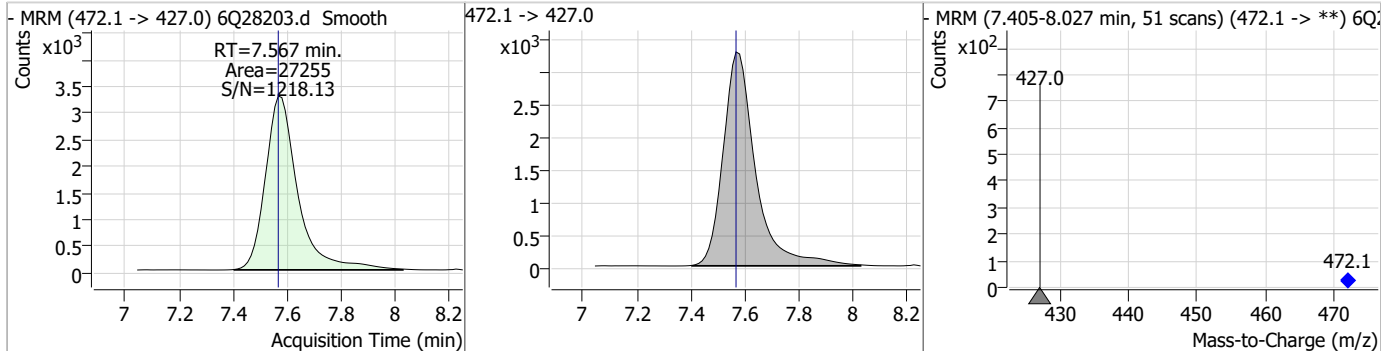
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.39	7.15	0.00	25525 (m)	398.7 -> 98.9	44.0	28.7	86.2



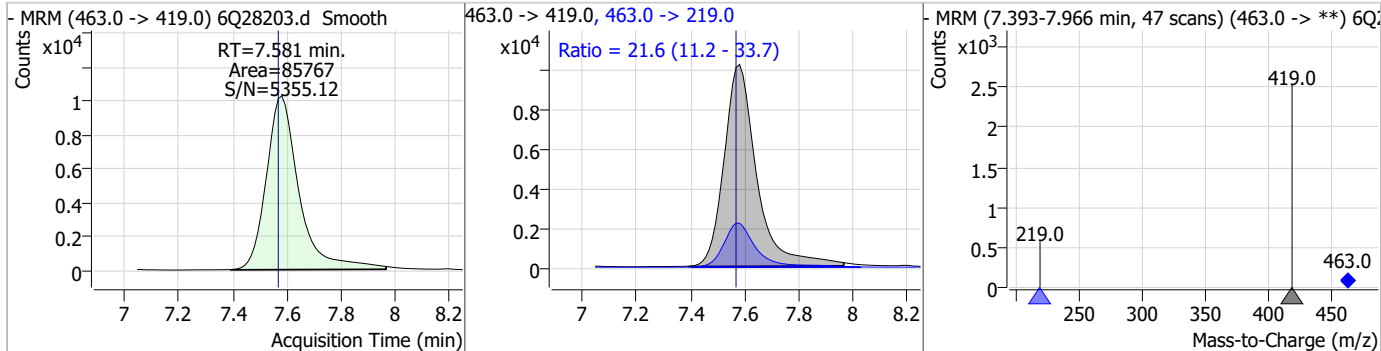
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	124.39	7.55	0.00	244158	441.0 -> 336.9	214.4	103.3	309.8



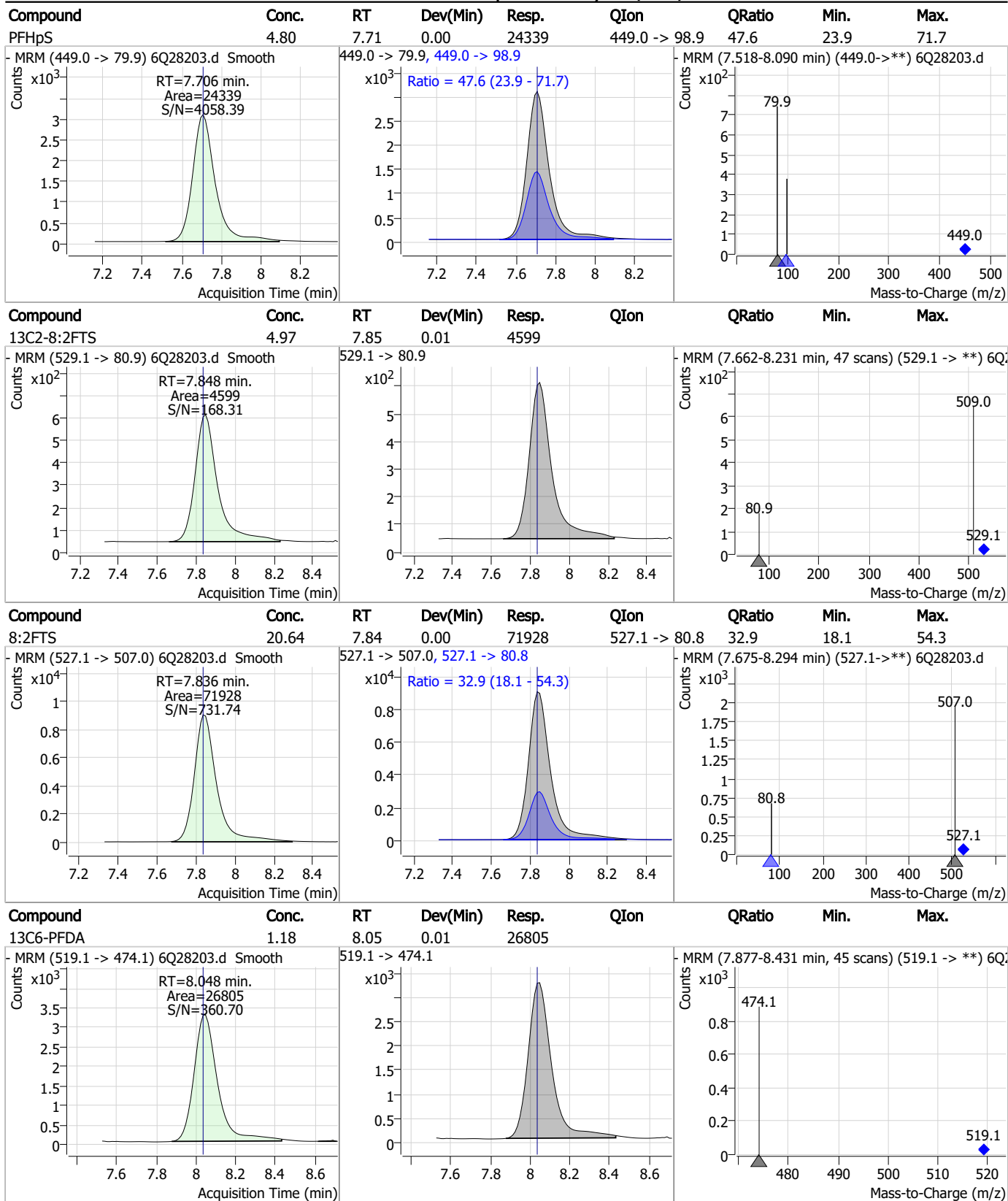
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	7.57	0.00	27255				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.06	7.58	0.01	85767	463.0 -> 219.0	21.6	11.2	33.7

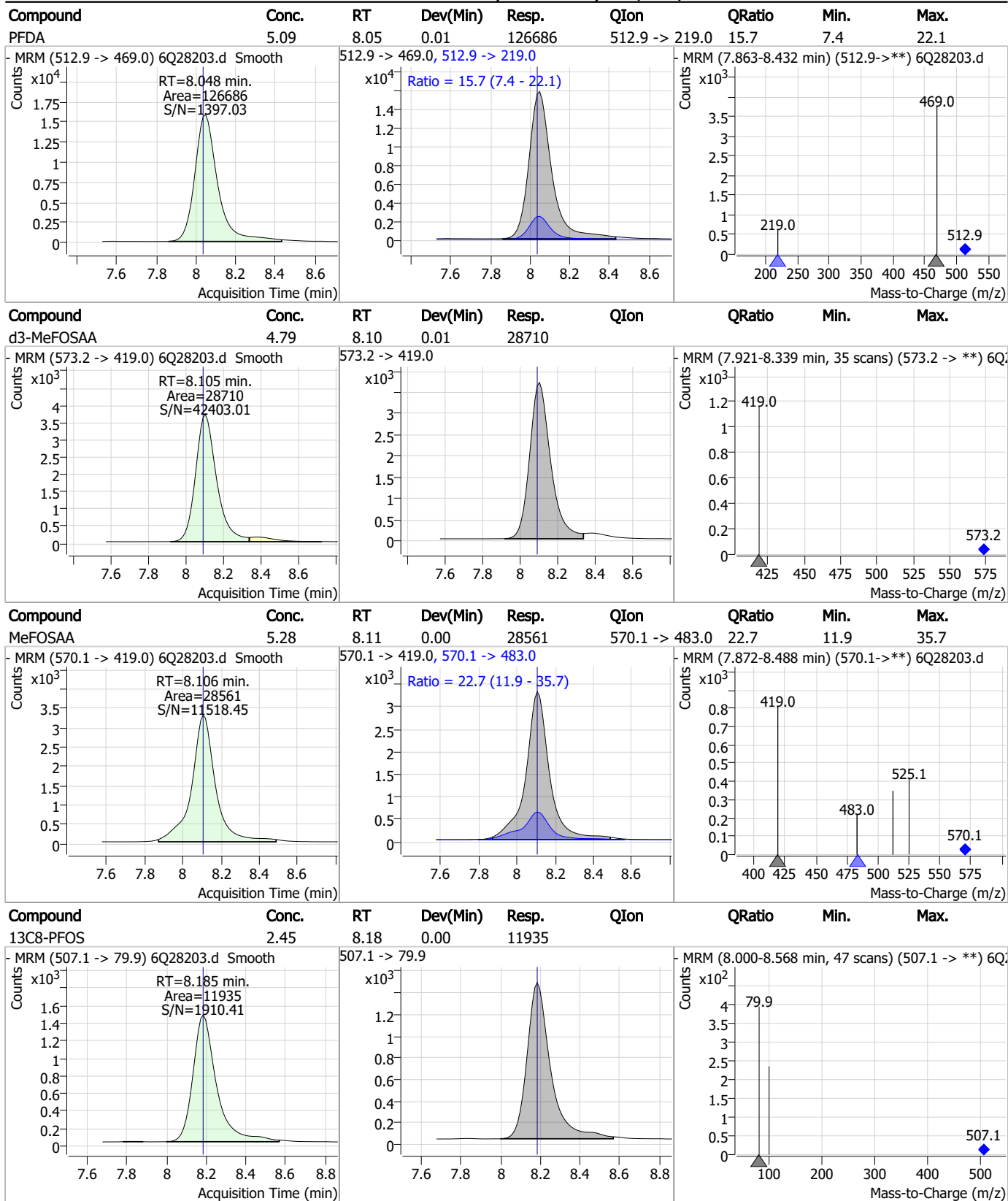


### Perfluorinated Compounds by LC/MS/MS



7.7.6  
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### Perfluorinated Compounds by LC/MS/MS



7.7.6

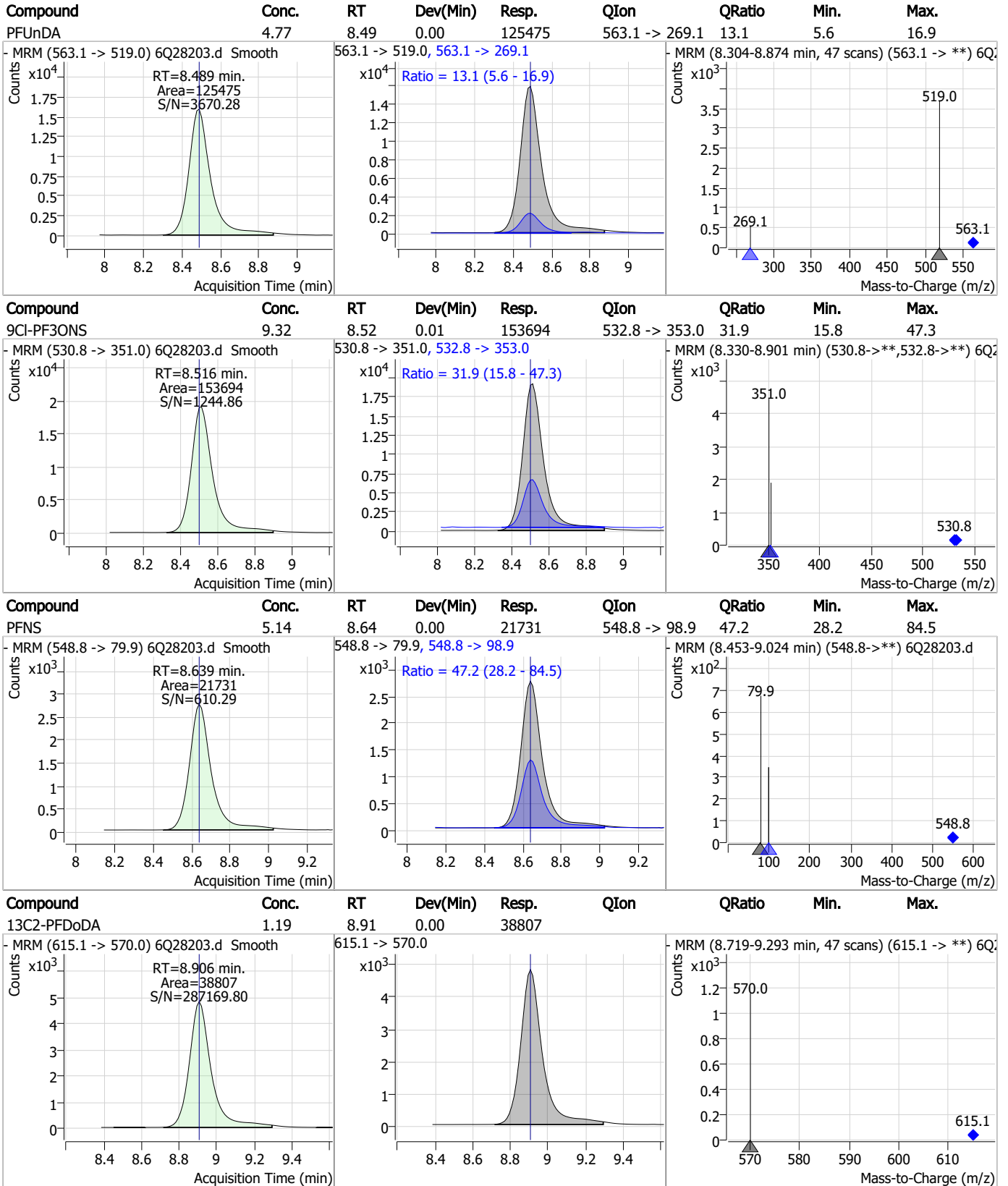
7

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.70	8.19	0.00	19667	498.9 -> 98.8	60.7	31.5	94.6
d5-EtFOSAA	5.03	8.30	0.01	25543				
EtFOSAA	4.92	8.30	0.00	20315 (m)	584.2 -> 526.0	69.0	33.5	100.4
13C7-PFUnDA	1.24	8.49	0.01	33817				

7.7.6  
7

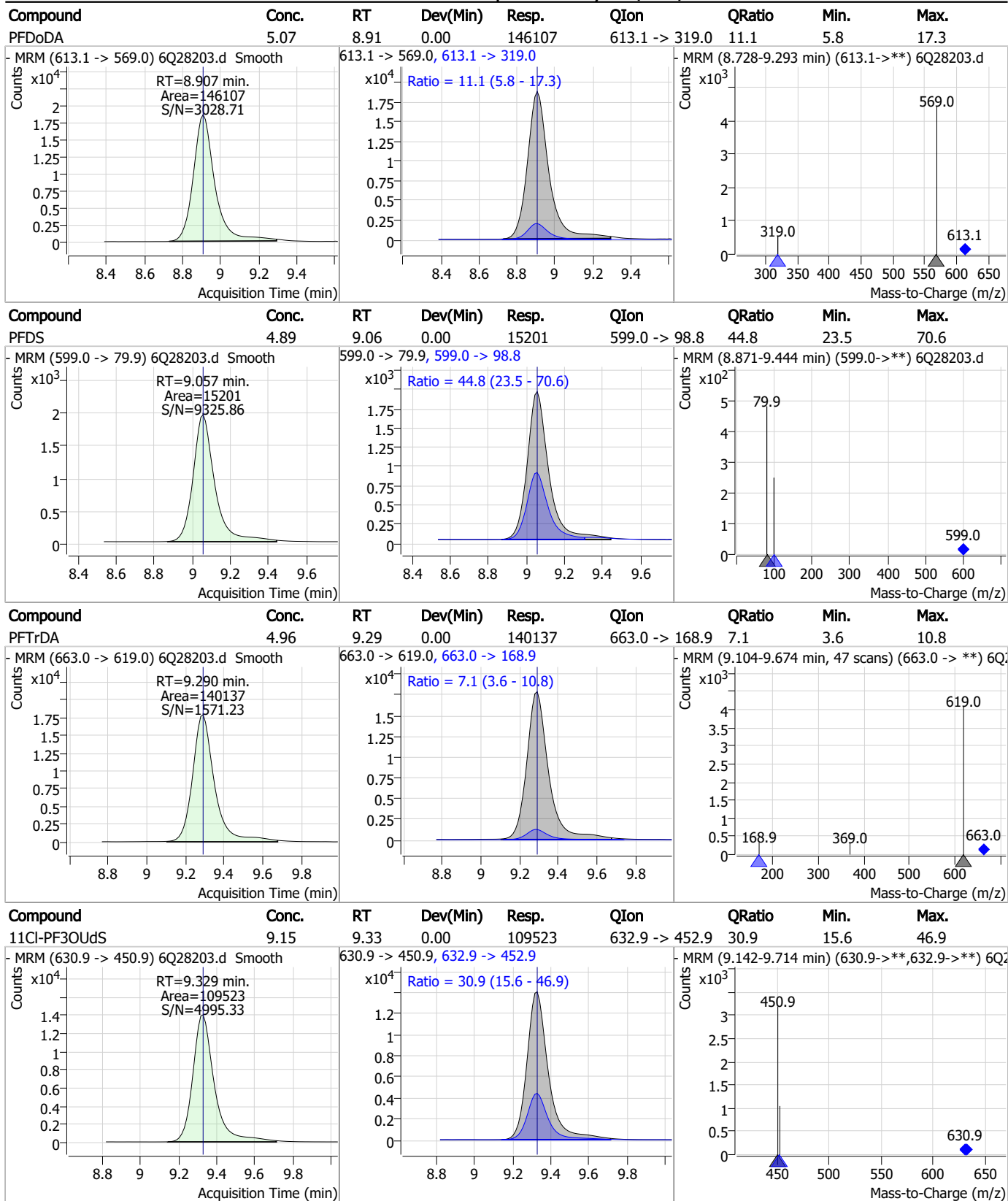
### Perfluorinated Compounds by LC/MS/MS



7.7.6

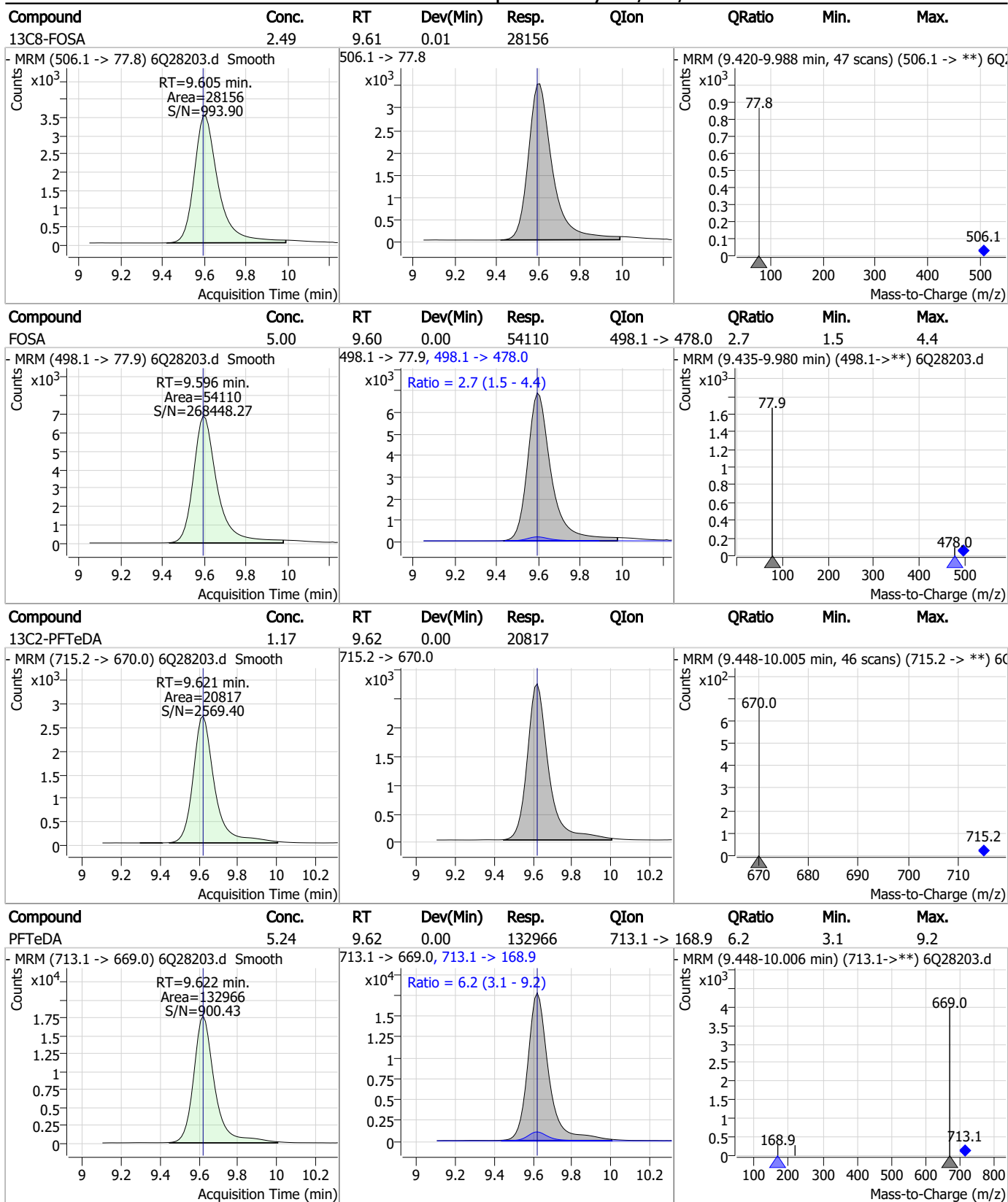
7

### Perfluorinated Compounds by LC/MS/MS



7.7.6  
7

### Perfluorinated Compounds by LC/MS/MS



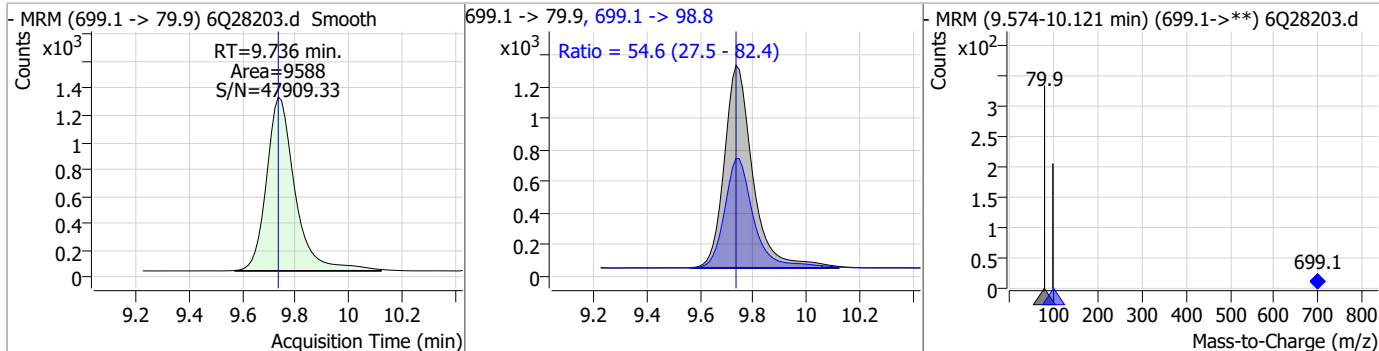
7.7.6

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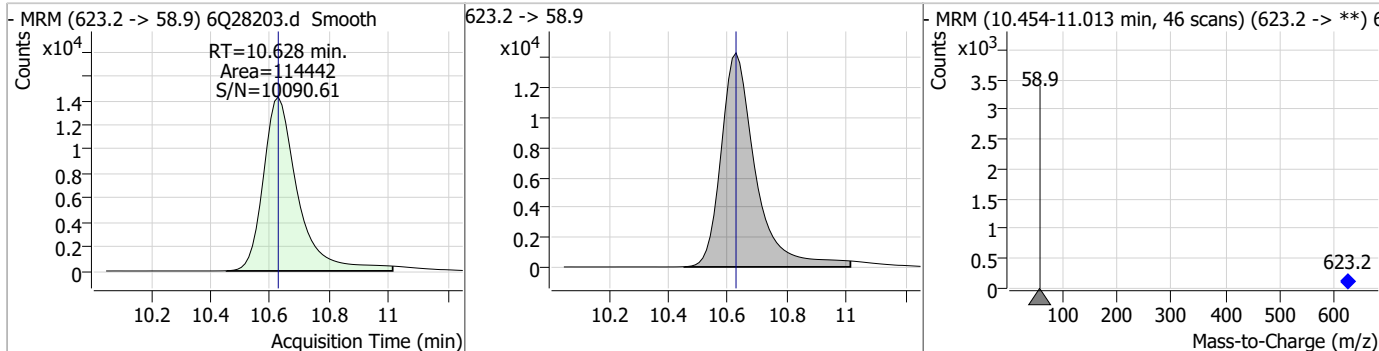


### Perfluorinated Compounds by LC/MS/MS

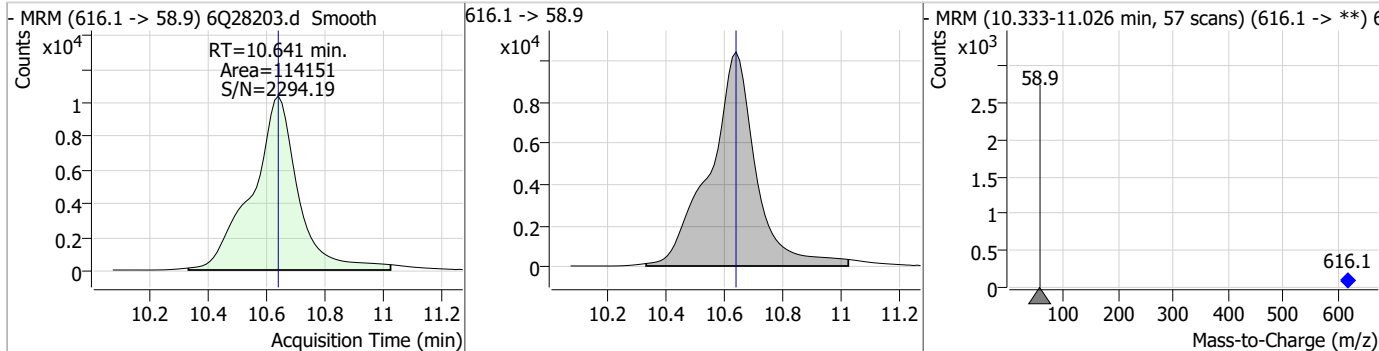
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	4.80	9.74	0.00	9588	699.1 -> 98.8	54.6	27.5	82.4



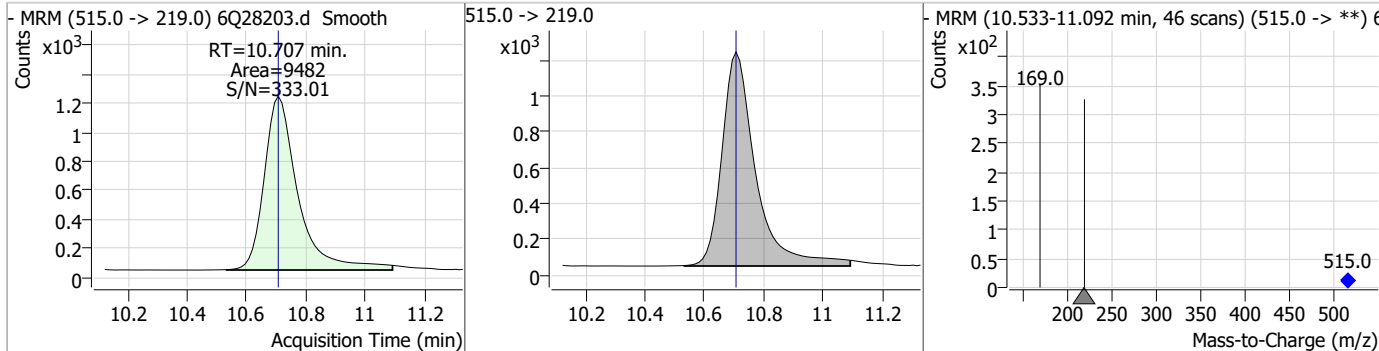
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.72	10.63	0.00	114442				



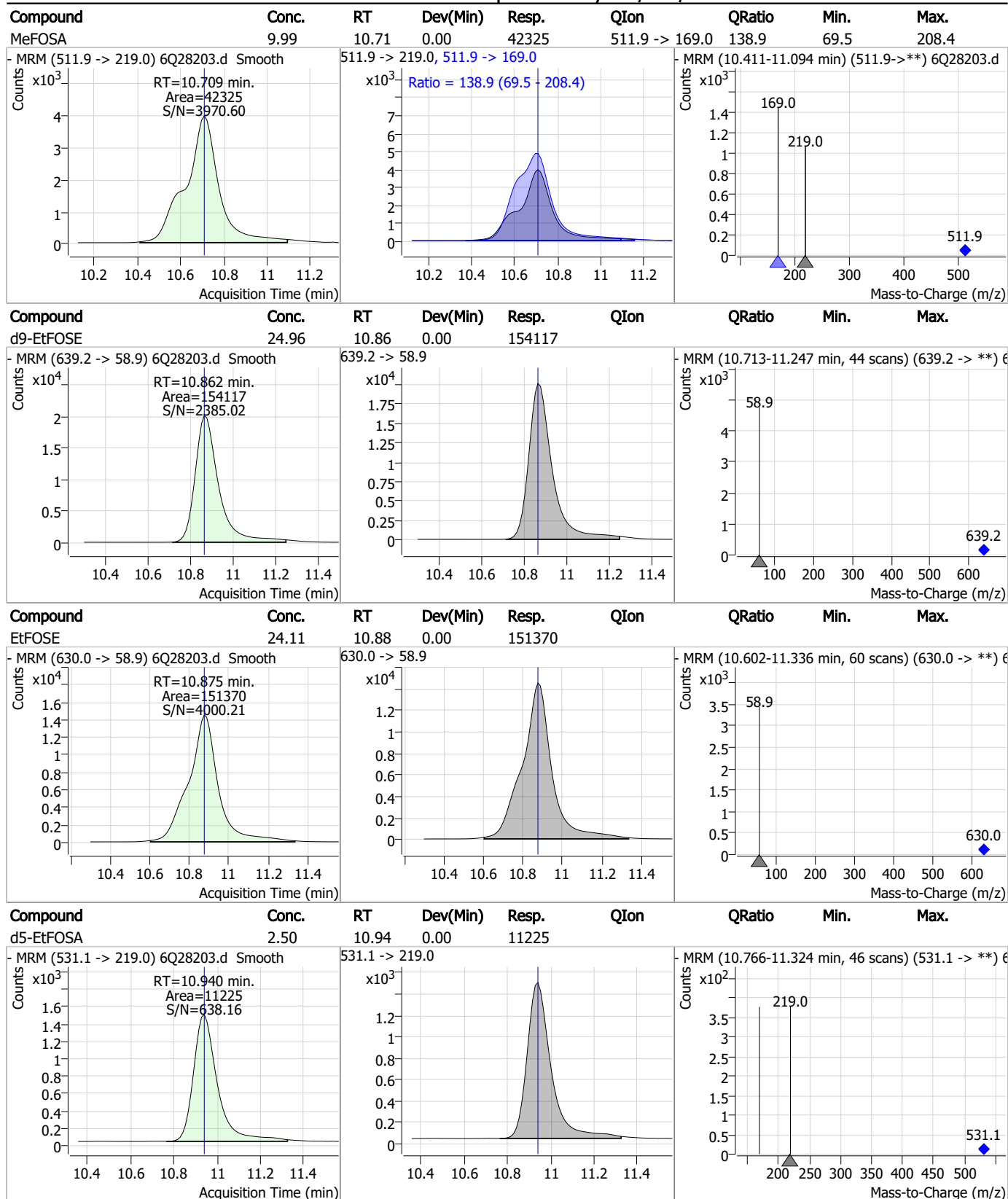
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.44	10.64	0.00	114151				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.43	10.71	0.00	9482				



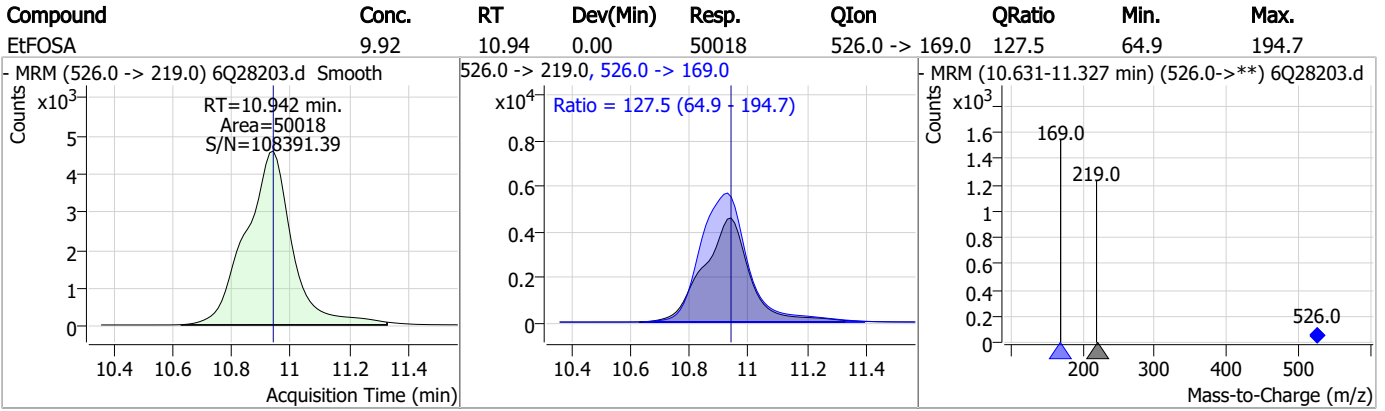
### Perfluorinated Compounds by LC/MS/MS



7.7.6

7

Perfluorinated Compounds by LC/MS/MS



7.7.6

7

# Manual Integration Approval Summary

Sample Number: S6Q391-IC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28203.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 14:17      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

7.7.6.1

7

Manual Integrations  
APPROVED  
(compounds with "m" flag)

Natasha Gumtje  
11/13/23 15:02

## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28204.d  
Operator : marthav  
Acq. Method : 1633full.m  
Acq. Date-Time : 11/12/2023 2:31:42 PM  
Sample Name : ic391-6  
Vial : P1-A7  
DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
Batch Name : s6q391.batch.bin  
Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	126138	10.00 µg/L	0.000
M5-PFPeA	4.284	268.3 -> 223.0	46793	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	47287	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	52725	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	80692	2.50 µg/L	0.000
M9-PFNA	7.567	472.1 -> 427.0	27953	1.25 µg/L	0.000
M6-PFDA	8.048	519.1 -> 474.1	29622	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	36419	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	41991	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	23246	1.25 µg/L	0.000
M8-FOSA	9.593	506.1 -> 77.8	30194	2.50 µg/L	0.000
M3-PFBS	5.396	302.1 -> 79.9	19244	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	12803	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	13449	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2591	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	4216	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	4899	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	30400	5.00 µg/L	0.012
M3-HFPO-DA	5.856	286.9 -> 168.9	28434	10.00 µg/L	0.000
M5-EtFOSAA	8.300	589.2 -> 419.0	26526	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	123908	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	159947	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	12046	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	10318	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	11955	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	54248	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8346	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	85793	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	30014	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	27265	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	46243	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2591	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4216	4.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C2-8:2FTS	7.848	529.1 -> 80.9	4899	4.99 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C2-PFDoDA	8.906	615.1 -> 570.0	41991	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C2-PFTeDA	9.621	715.2 -> 670.0	23246	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C3-PFBS	5.396	302.1 -> 79.9	19244	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFHxS	7.152	402.1 -> 79.9	12803	2.51 µg/L	0.000

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFBA	2.860	216.8 -> 171.9	126138	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.419	367.1 -> 322.0	52725	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFHxA	5.478	318.0 -> 273.0	47287	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C5-PFPeA	4.284	268.3 -> 223.0	46793	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C6-PFDA	8.048	519.1 -> 474.1	29622	1.28 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C7-PFUnDA	8.489	570.0 -> 525.1	36419	1.31 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C8-FOSA	9.593	506.1 -> 77.8	30194	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C8-PFOA	7.062	421.1 -> 376.0	80692	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOS	8.185	507.1 -> 79.9	13449	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.6%	
13C9-PFNA	7.567	472.1 -> 427.0	27953	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%	
d3-MeFOSAA	8.105	573.2 -> 419.0	30400	4.90 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C3-HFPO-DA	5.856	286.9 -> 168.9	28434	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSA	10.707	515.0 -> 219.0	10318	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
d5-EtFOSAA	8.300	589.2 -> 419.0	26526	5.05 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d7-MeFOSE	10.628	623.2 -> 58.9	123908	25.89 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
d9-EtFOSE	10.862	639.2 -> 58.9	159947	25.05 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
d5-EtFOSA	10.940	531.1 -> 219.0	12046	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	210470	49.87 µg/L	99
		327.1 -> 80.9	82405		
6:2FTS	6.836	427.1 -> 407.0	227109	49.47 µg/L	98
		427.1 -> 80.9	79302		
8:2FTS	7.849	527.1 -> 507.0	189855	51.16 µg/L	95
		527.1 -> 80.8	62959		
EtFOSAA	8.301	584.2 -> 419.1	52185	12.17 µg/L	m 96
		584.2 -> 526.0	36536		
FOSA	9.596	498.1 -> 77.9	142379	12.27 µg/L	100
		498.1 -> 478.0	4318		
MeFOSAA	8.106	570.1 -> 419.0	75590	13.19 µg/L	99
		570.1 -> 483.0	17593		
PFBA	2.868	212.8 -> 168.9	208675	50.46 µg/L	100
PFBS	5.397	298.7 -> 79.9	80879	11.03 µg/L	100
		298.7 -> 98.8	30518		
PFDA	8.048	512.9 -> 469.0	341349	12.40 µg/L	99
		512.9 -> 219.0	52132		
PFDoDA	8.907	613.1 -> 569.0	402181	12.90 µg/L	99
		613.1 -> 319.0	44111		
PFDS	9.057	599.0 -> 79.9	39735	11.35 µg/L	99

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	18911			
PFHpA	6.432	363.1 -> 319.0	342971	12.65	µg/L	100
		363.1 -> 169.0	51478			
PFHpS	7.706	449.0 -> 79.9	66542	11.64	µg/L	98
		449.0 -> 98.9	30708			
PFHxA	5.481	313.0 -> 269.0	223101	12.61	µg/L	100
		313.0 -> 118.9	10842			
PFHxS	7.153	398.7 -> 79.9	63938	10.76	µg/L	m 91
		398.7 -> 98.9	32285			
PFNA	7.581	463.0 -> 419.0	222388	12.78	µg/L	99
		463.0 -> 219.0	50902			
PFNS	8.639	548.8 -> 79.9	54795	11.51	µg/L	91
		548.8 -> 98.9	27043			
PFOA	7.063	413.0 -> 369.0	406268	12.71	µg/L	97
		413.0 -> 169.0	69806			
PFOS	8.186	498.9 -> 79.9	68151	11.39	µg/L	m 78
		498.9 -> 98.8	31145			
PFPeA	4.286	263.0 -> 219.0	300093	25.28	µg/L	100
PFPeS	6.470	349.1 -> 79.9	75369	11.89	µg/L	99
		349.1 -> 98.9	34297			
PFTeDA	9.622	713.1 -> 669.0	358091	12.64	µg/L	100
		713.1 -> 168.9	22163			
PFTrDA	9.290	663.0 -> 619.0	383054	12.54	µg/L	99
		663.0 -> 168.9	26048			
PFUnDA	8.489	563.1 -> 519.0	341119	12.04	µg/L	94
		563.1 -> 269.1	46166			
11Cl-PF3OUdS	9.329	630.9 -> 450.9	308118	24.87	µg/L	96
		632.9 -> 452.9	90180			
9Cl-PF3ONS	8.516	530.8 -> 351.0	418422	24.53	µg/L	96
		532.8 -> 353.0	123559			
ADONA	6.681	376.9 -> 250.9	1194461	24.07	µg/L	97
		376.9 -> 84.8	321669			
HFPO-DA	5.857	284.9 -> 168.9	72391	25.45	µg/L	99
		284.9 -> 184.9	7543			
3:3FTCA	3.721	241.0 -> 177.0	45710	62.68	µg/L	100
		241.0 -> 117.0	5350			
5:3FTCA	6.146	341.0 -> 237.1	1061067	328.07	µg/L	98
		341.0 -> 217.0	740486			
7:3FTCA	7.545	441.0 -> 316.9	659655	322.05	µg/L	92
		441.0 -> 336.9	1442357			
EtFOSA	10.942	526.0 -> 219.0	133568	24.69	µg/L	98
		526.0 -> 169.0	170553			
EtFOSE	10.875	630.0 -> 58.9	411568	63.17	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	112863	24.49	µg/L	98
		511.9 -> 169.0	159146			
MeFOSE	10.641	616.1 -> 58.9	304547	60.23	µg/L	100
PFDoS	9.748	699.1 -> 79.9	25770	11.44	µg/L	100
		699.1 -> 98.8	14112			
NFDHA	5.360	295.0 -> 201.0	52015	25.39	µg/L	98
		295.0 -> 84.9	13610			
PFMBA	4.700	279.0 -> 85.1	206125	25.19	µg/L	100
PFMPA	3.426	229.0 -> 84.9	153385	25.00	µg/L	100
PFEESA	5.937	314.8 -> 134.9	506458	23.15	µg/L	99
		314.8 -> 82.9	17307			

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

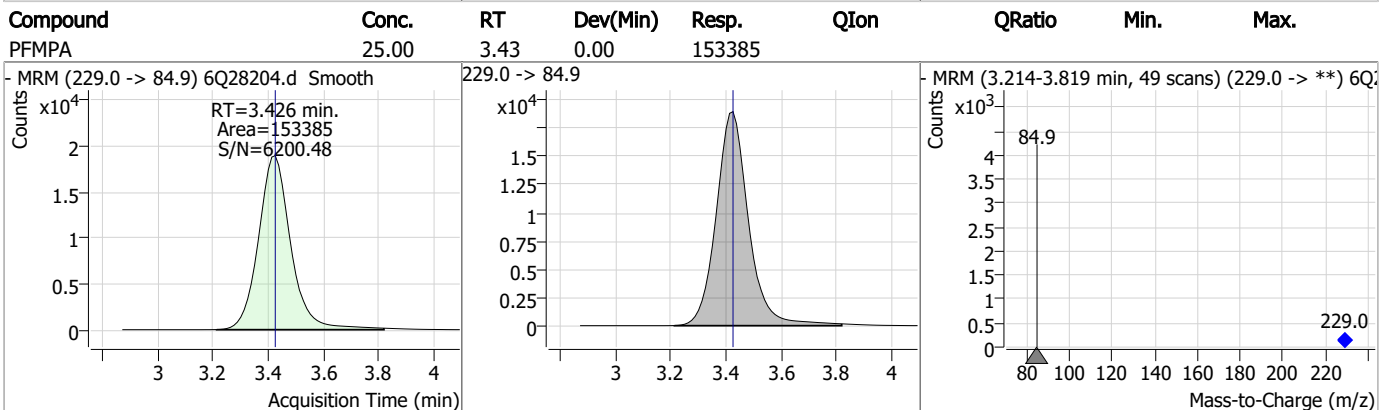
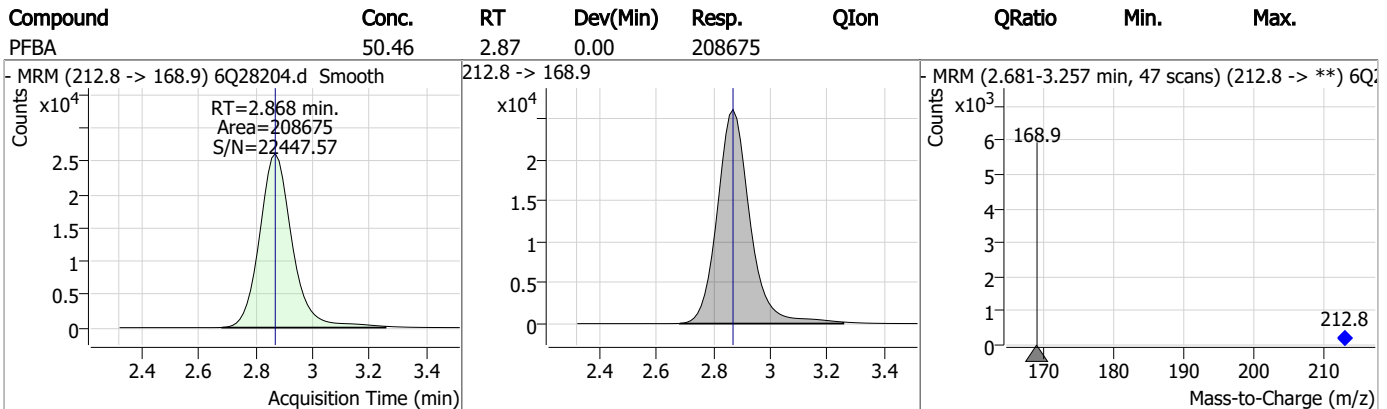
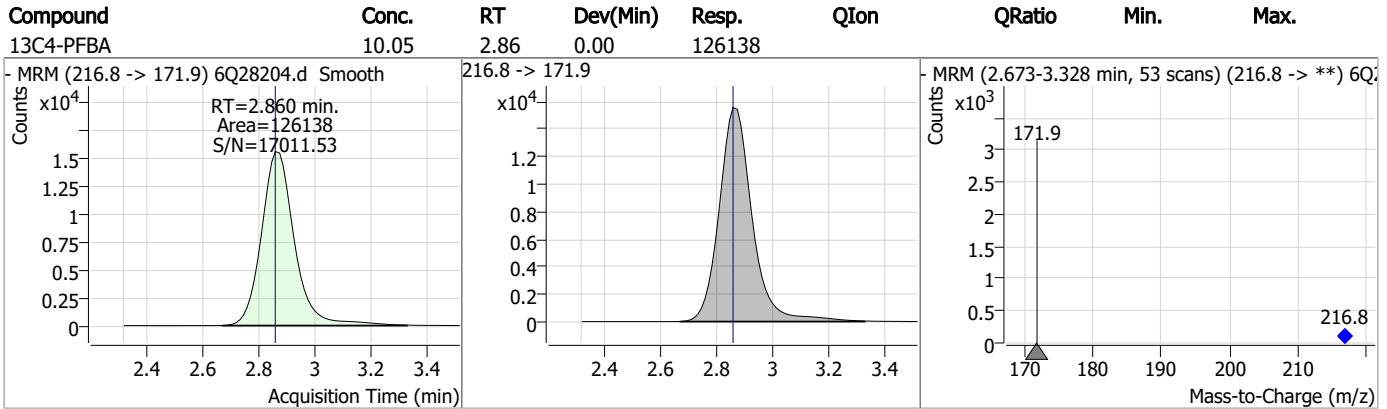
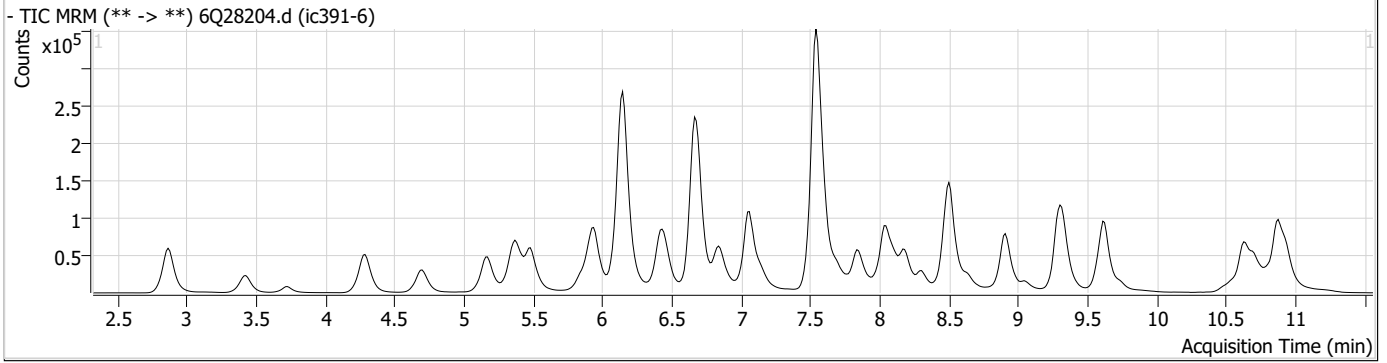
### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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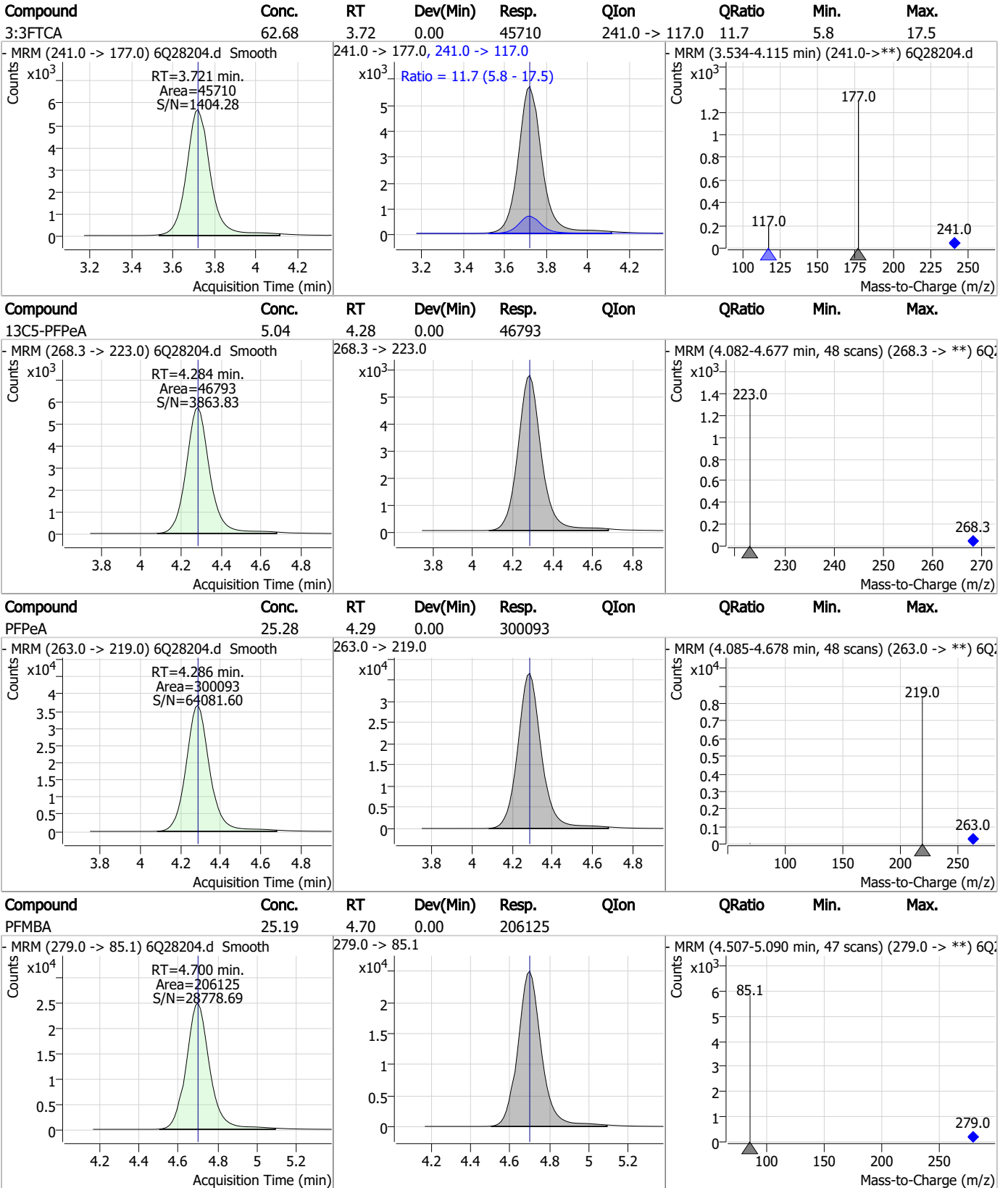
7.7.7  
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### Perfluorinated Compounds by LC/MS/MS



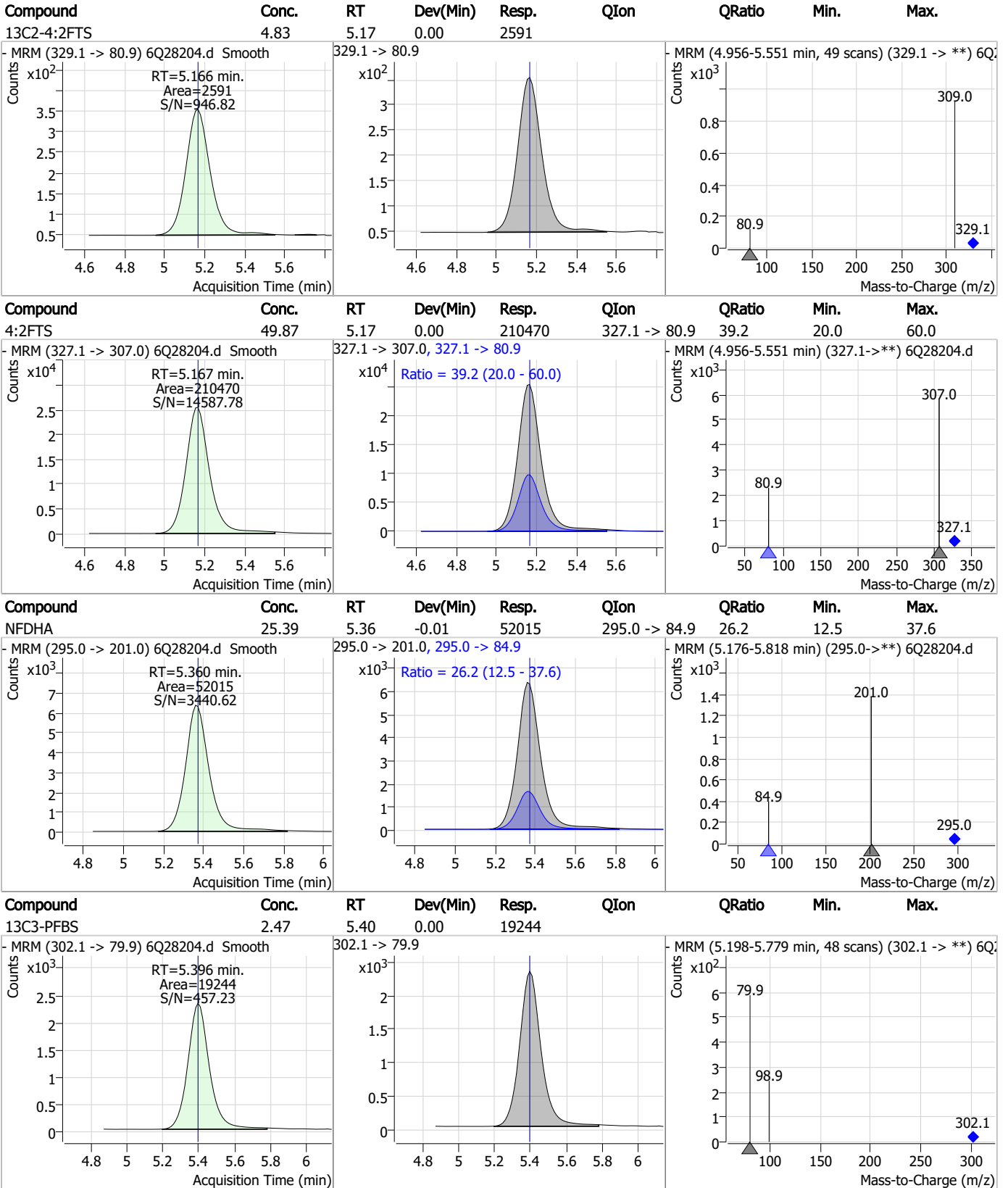
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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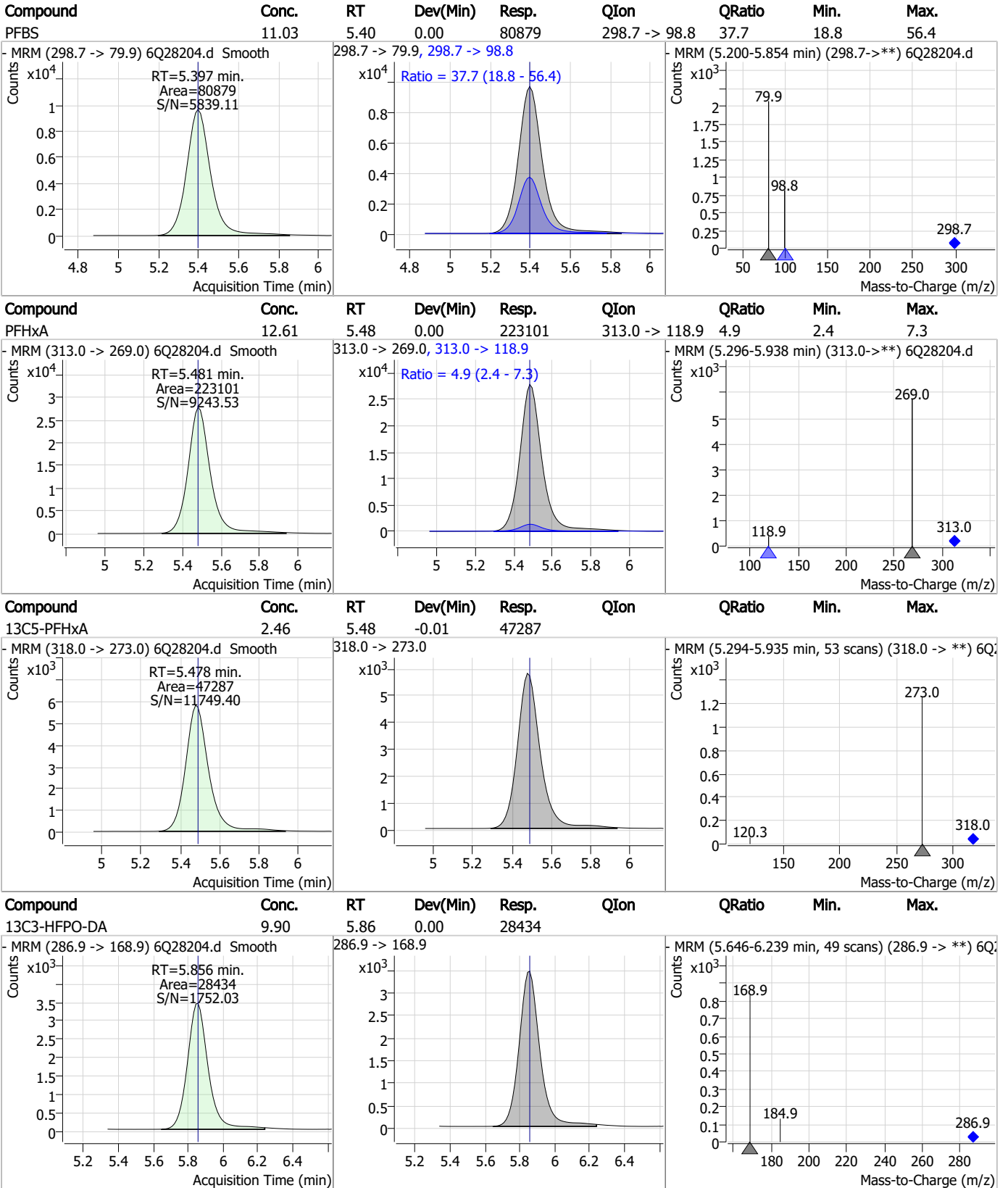
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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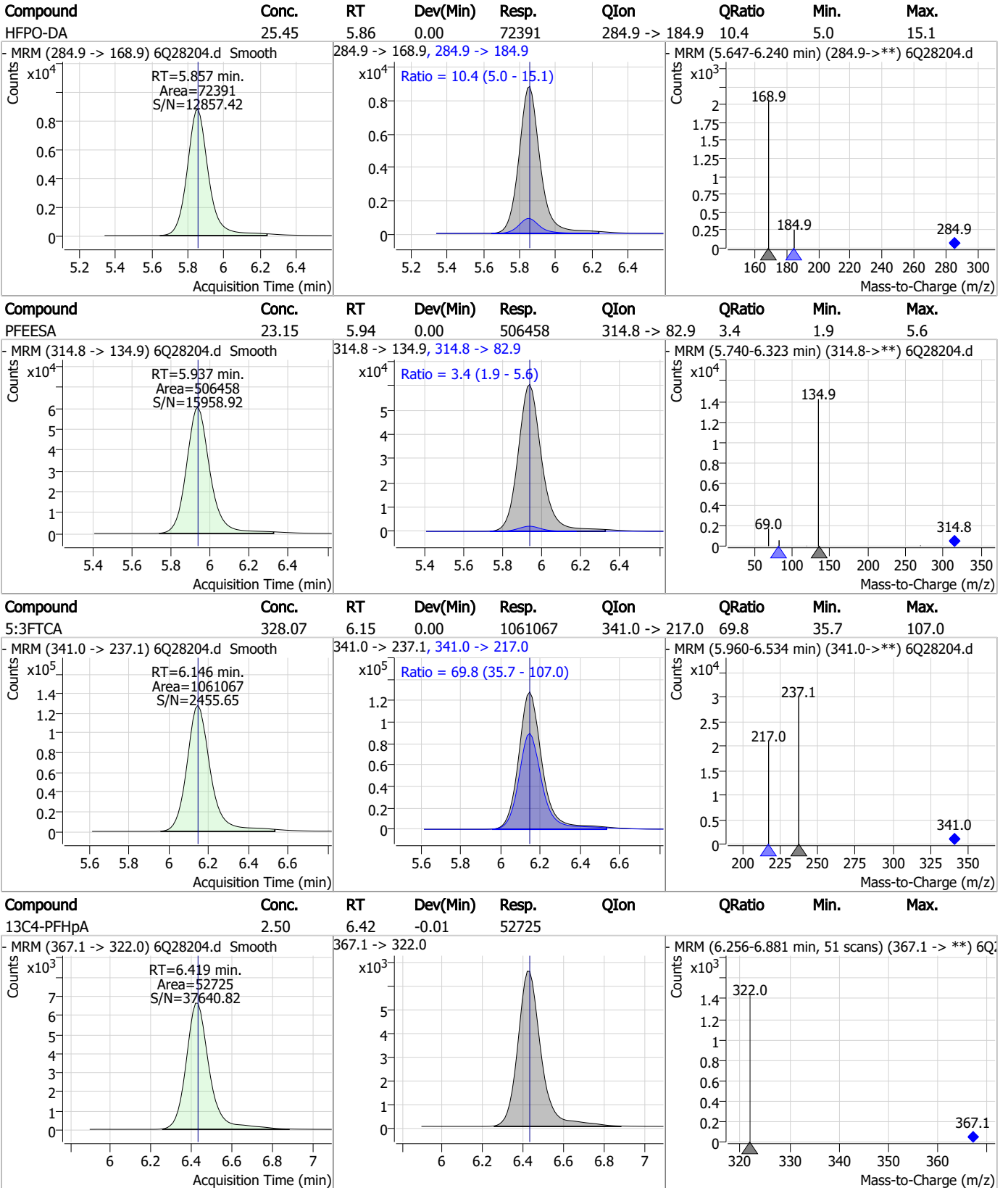
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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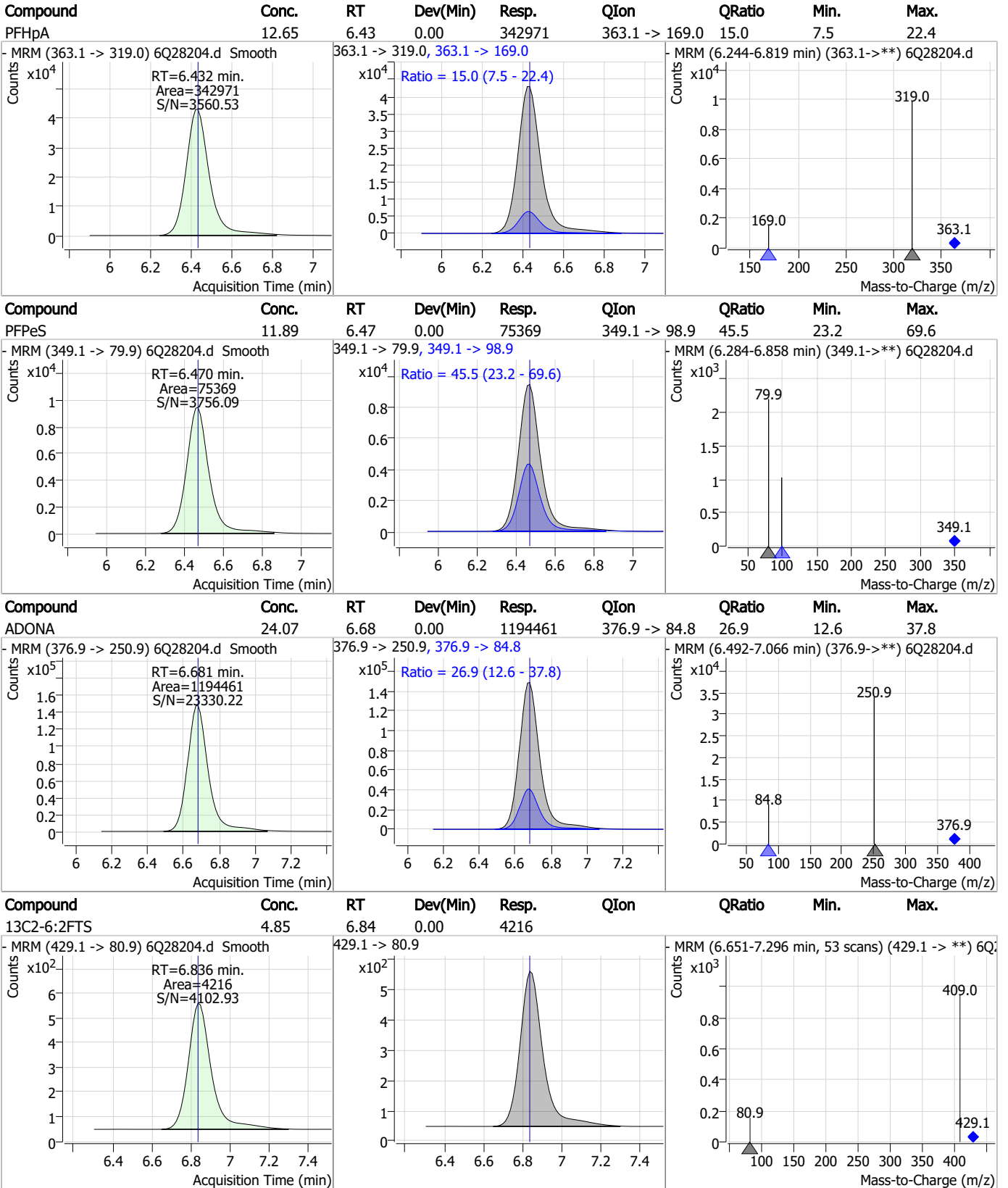
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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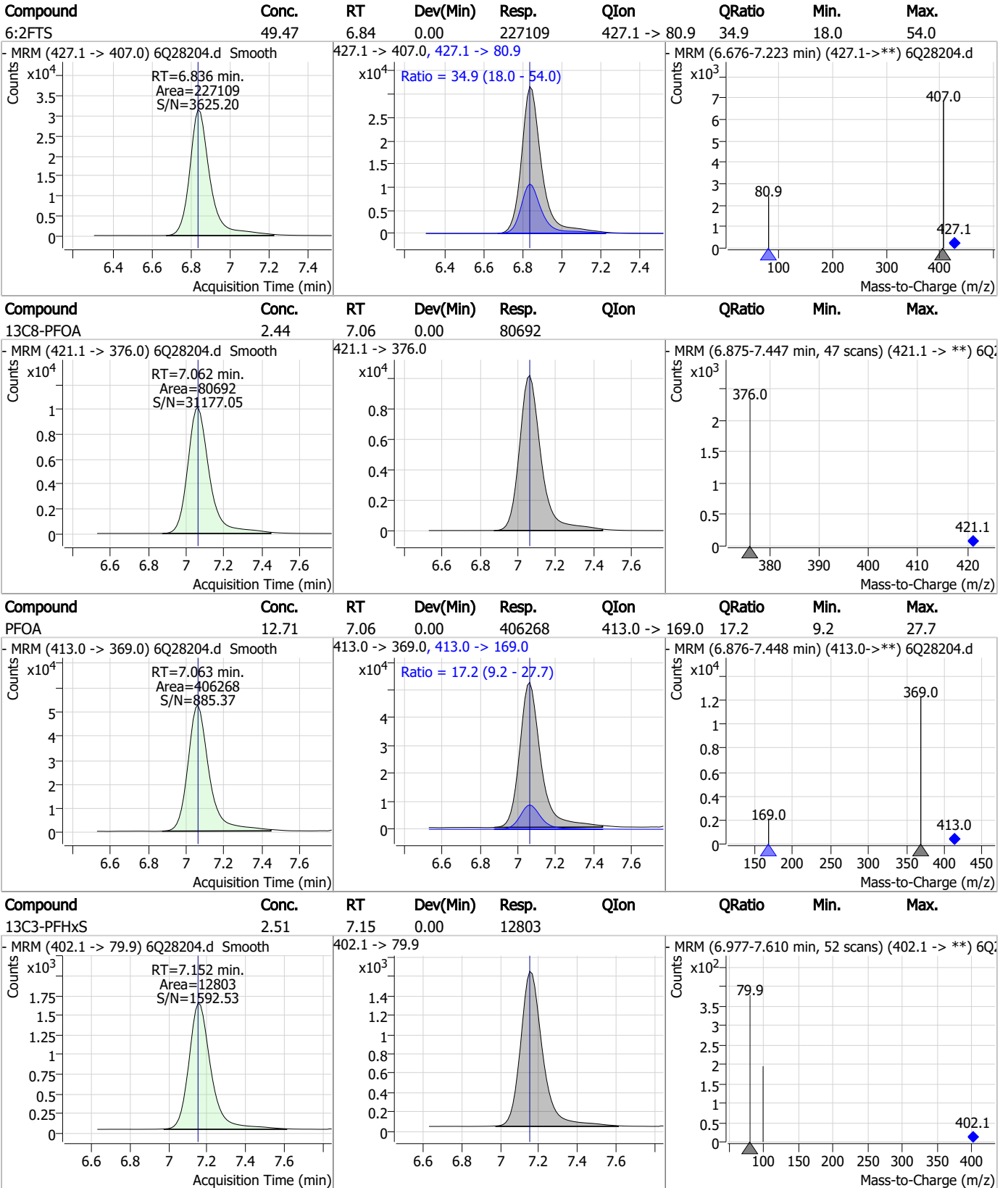
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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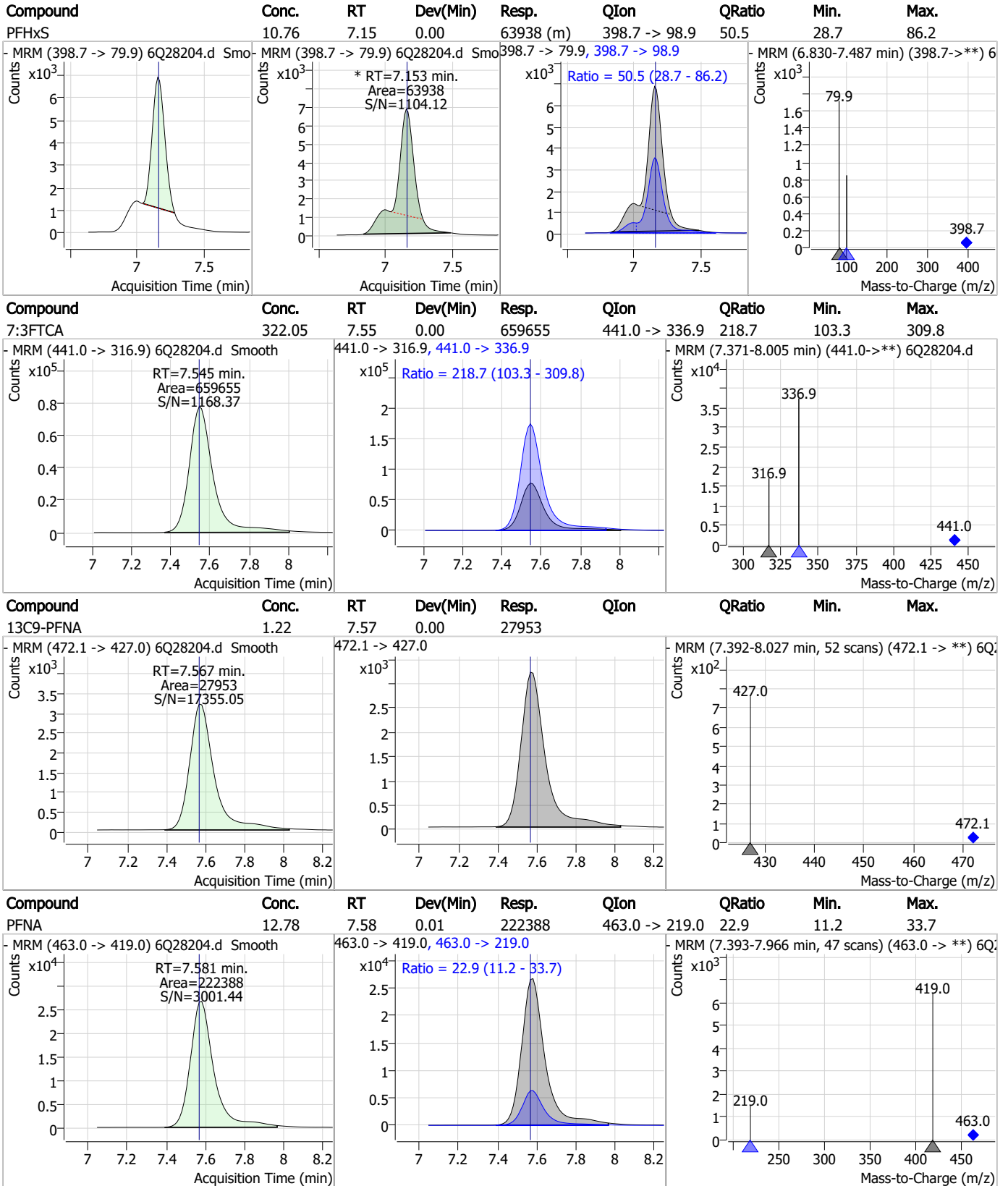
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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### Perfluorinated Compounds by LC/MS/MS

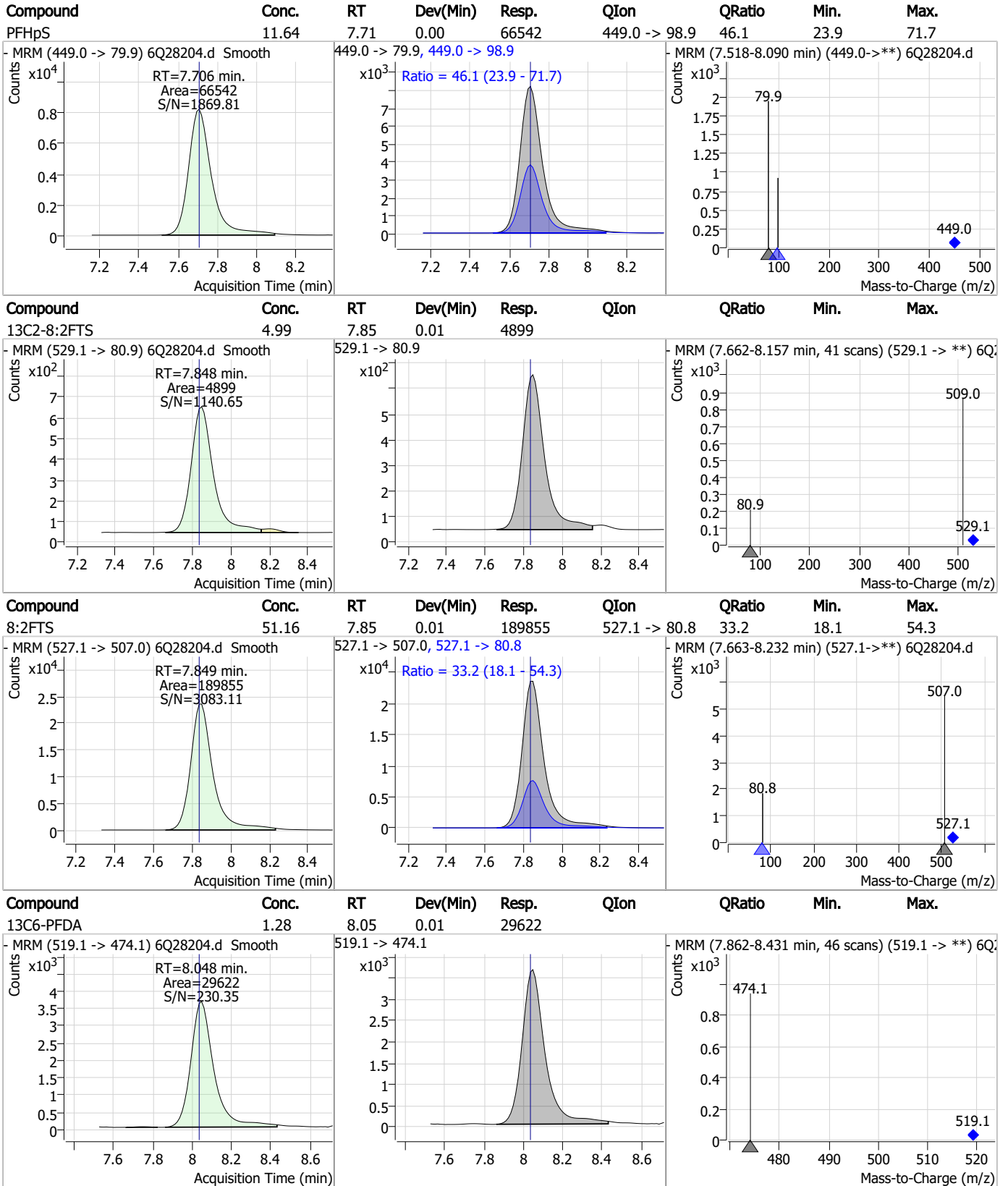


7.7.7

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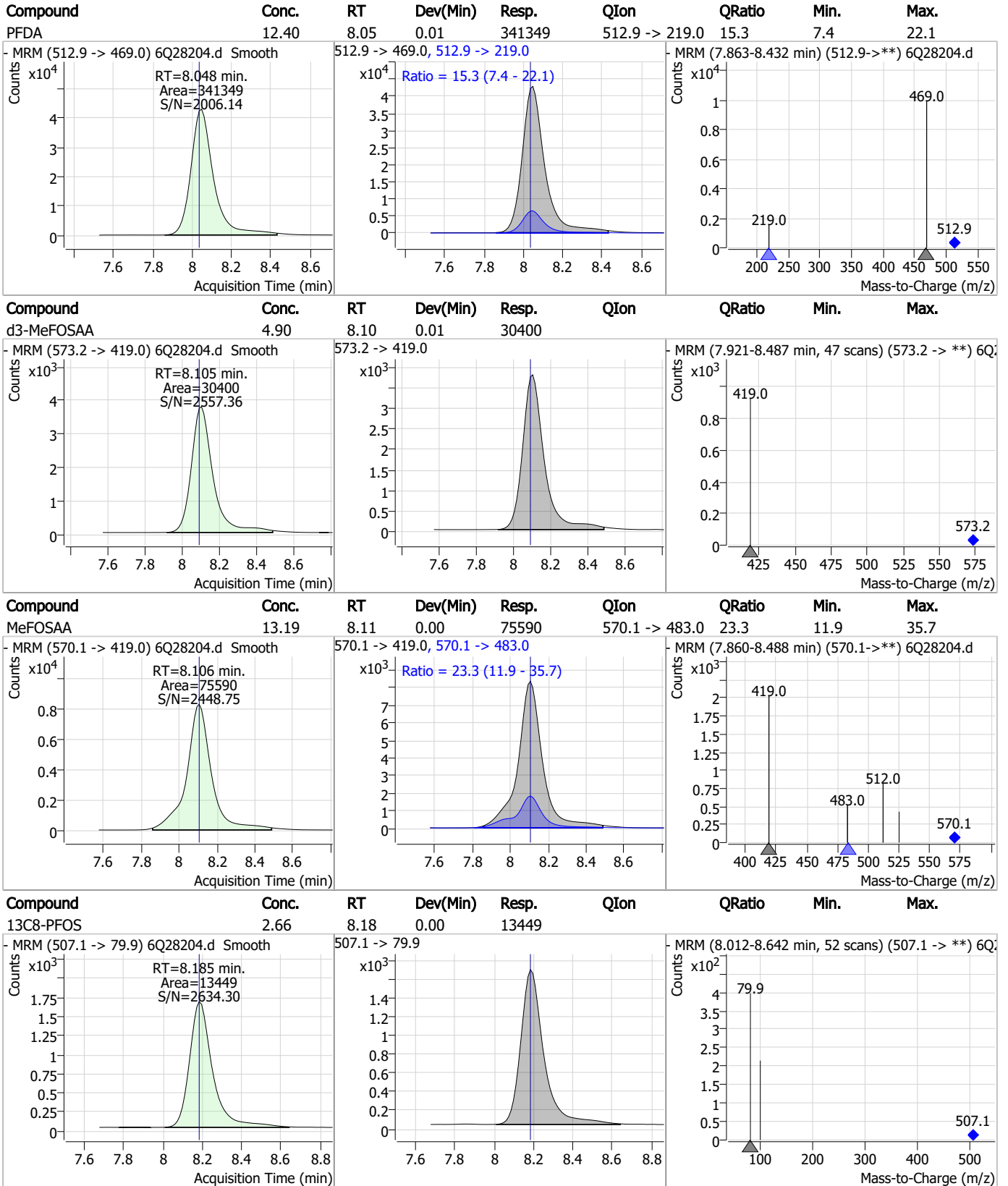
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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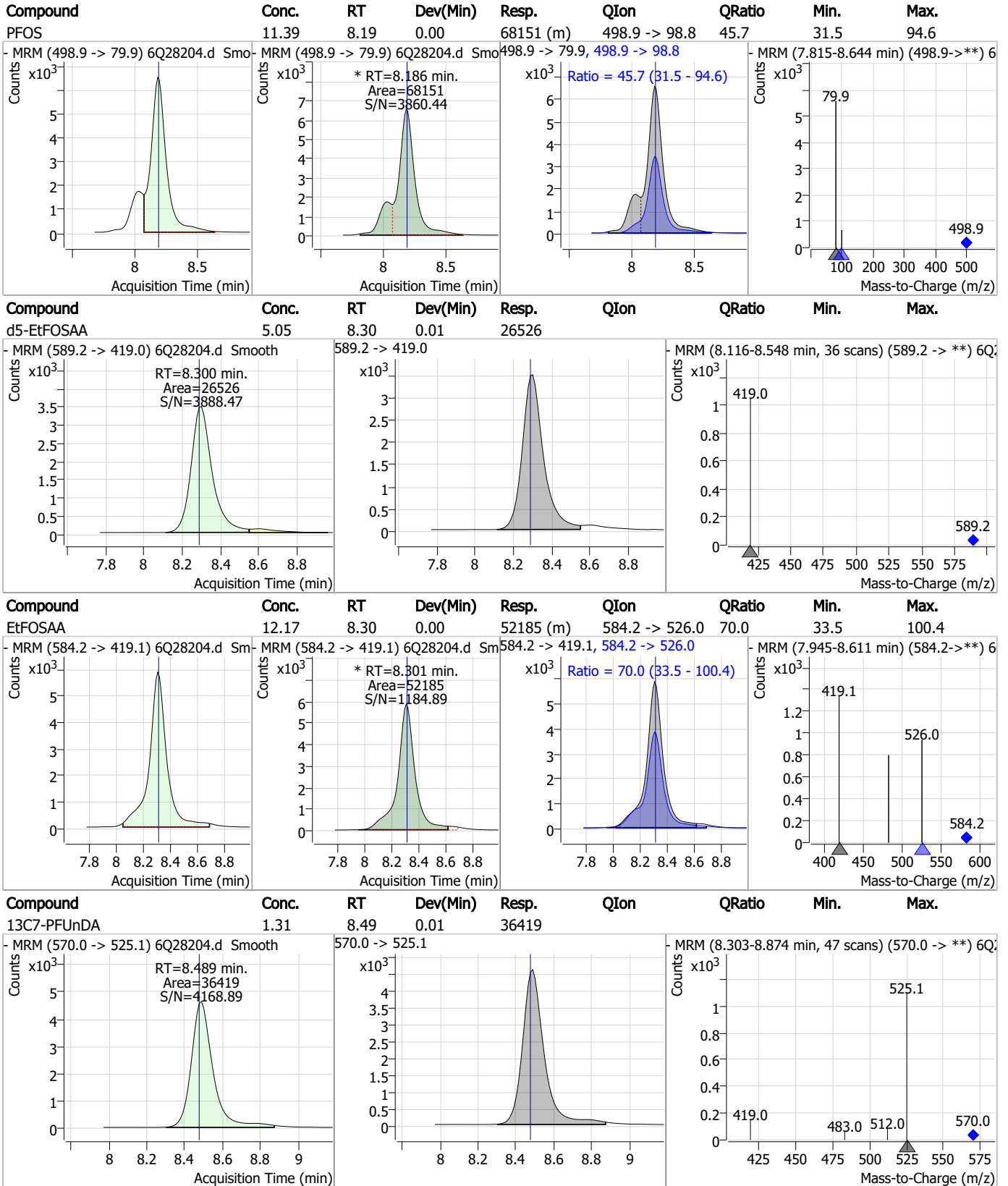
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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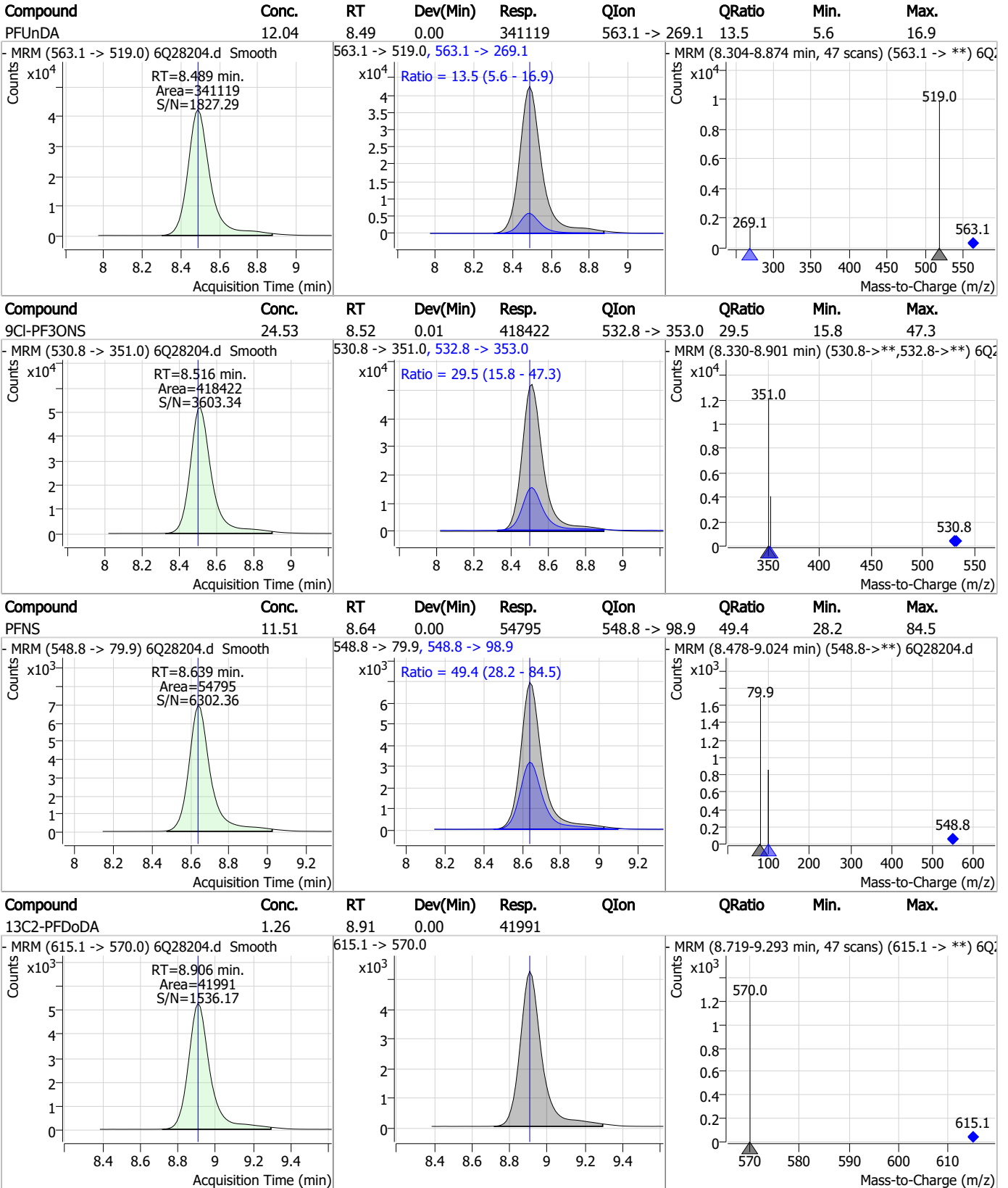
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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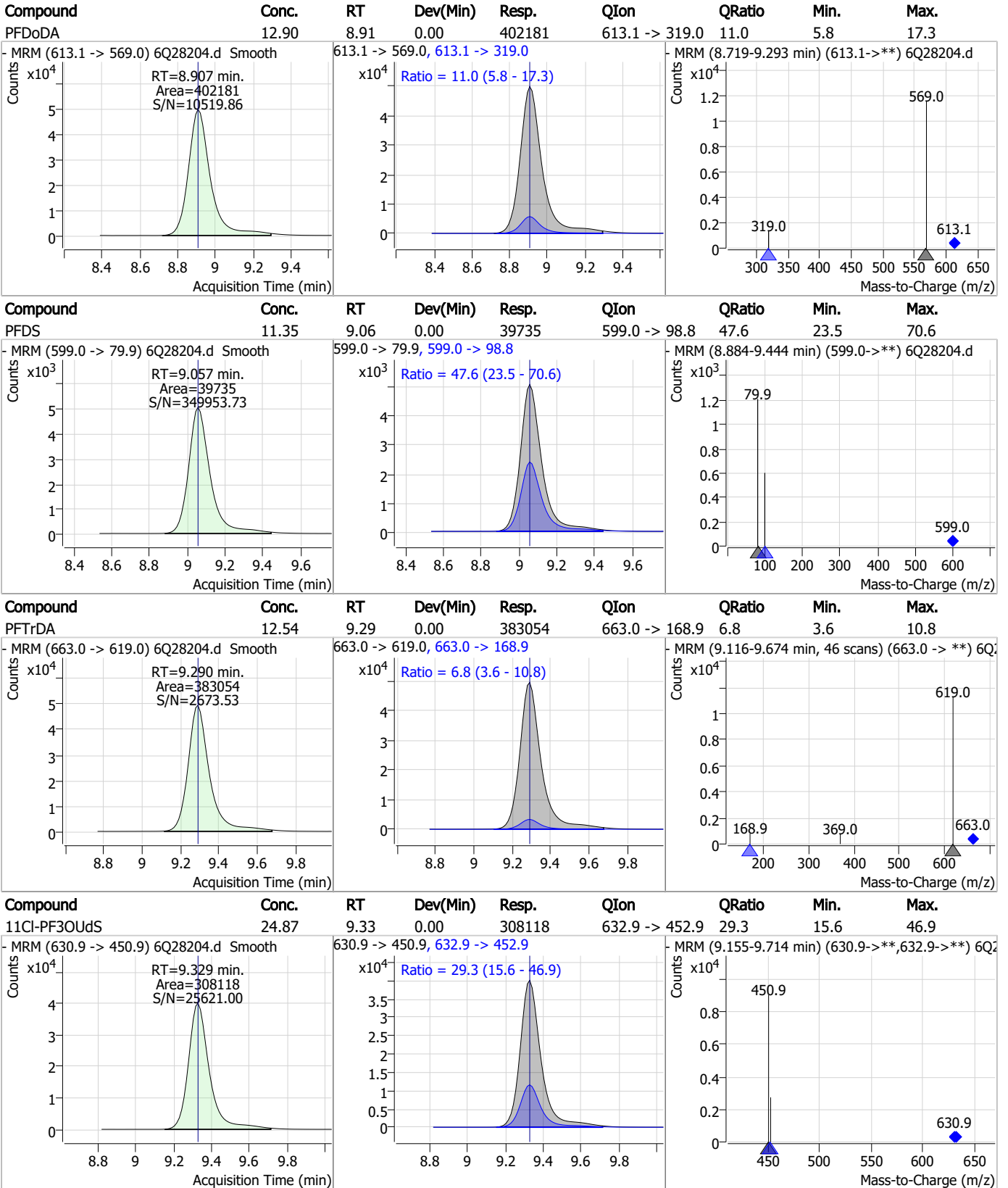
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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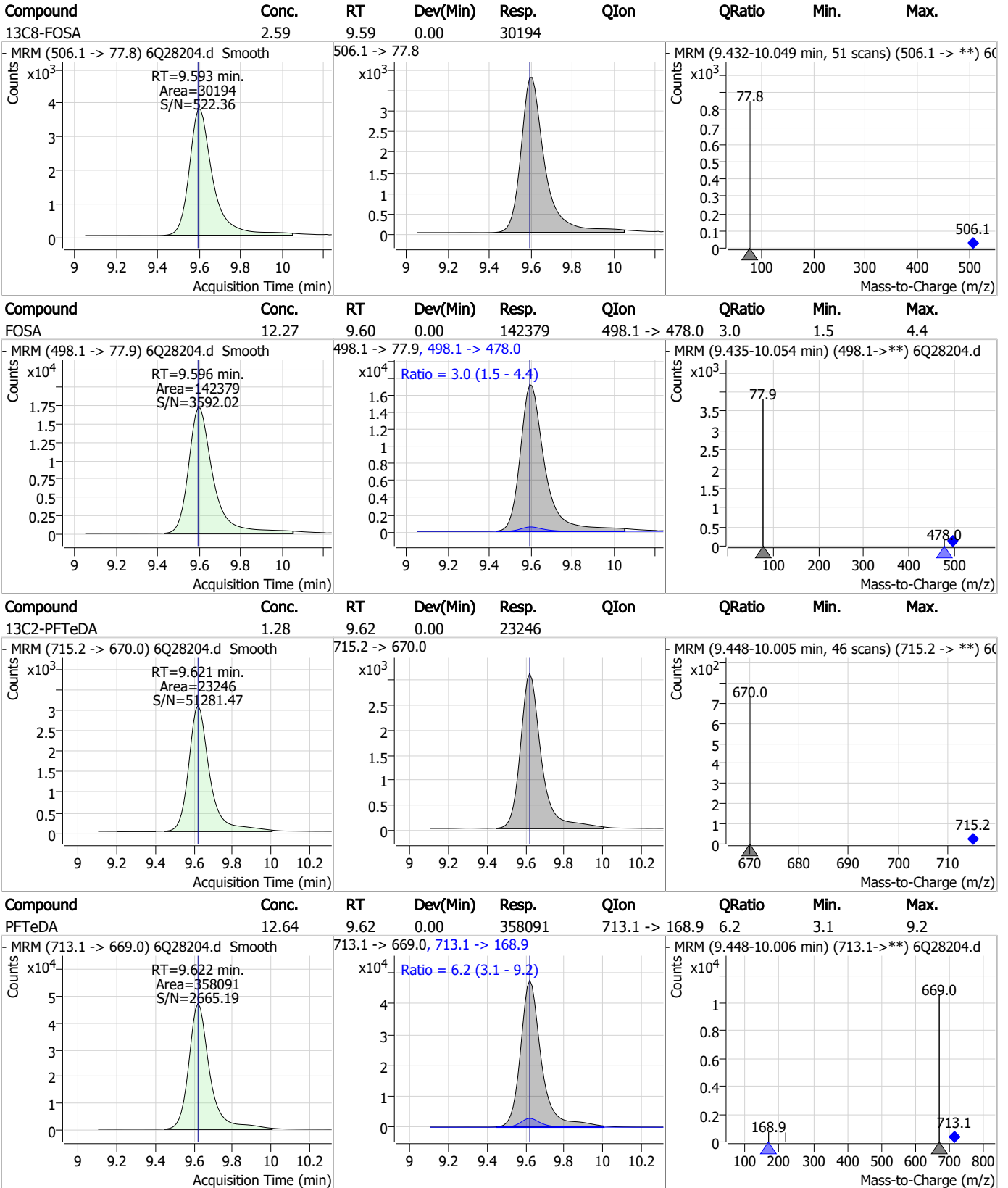
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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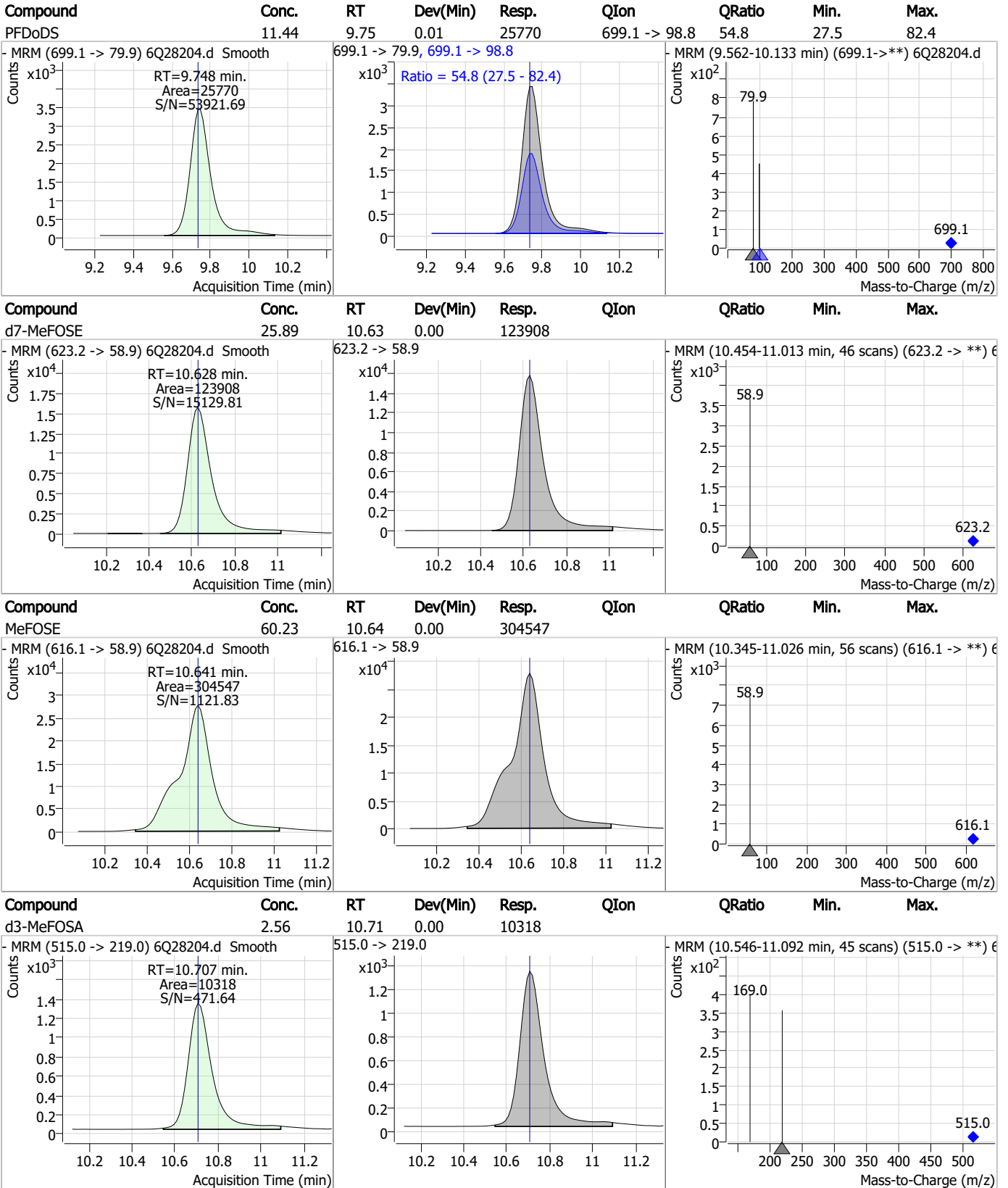
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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### Perfluorinated Compounds by LC/MS/MS

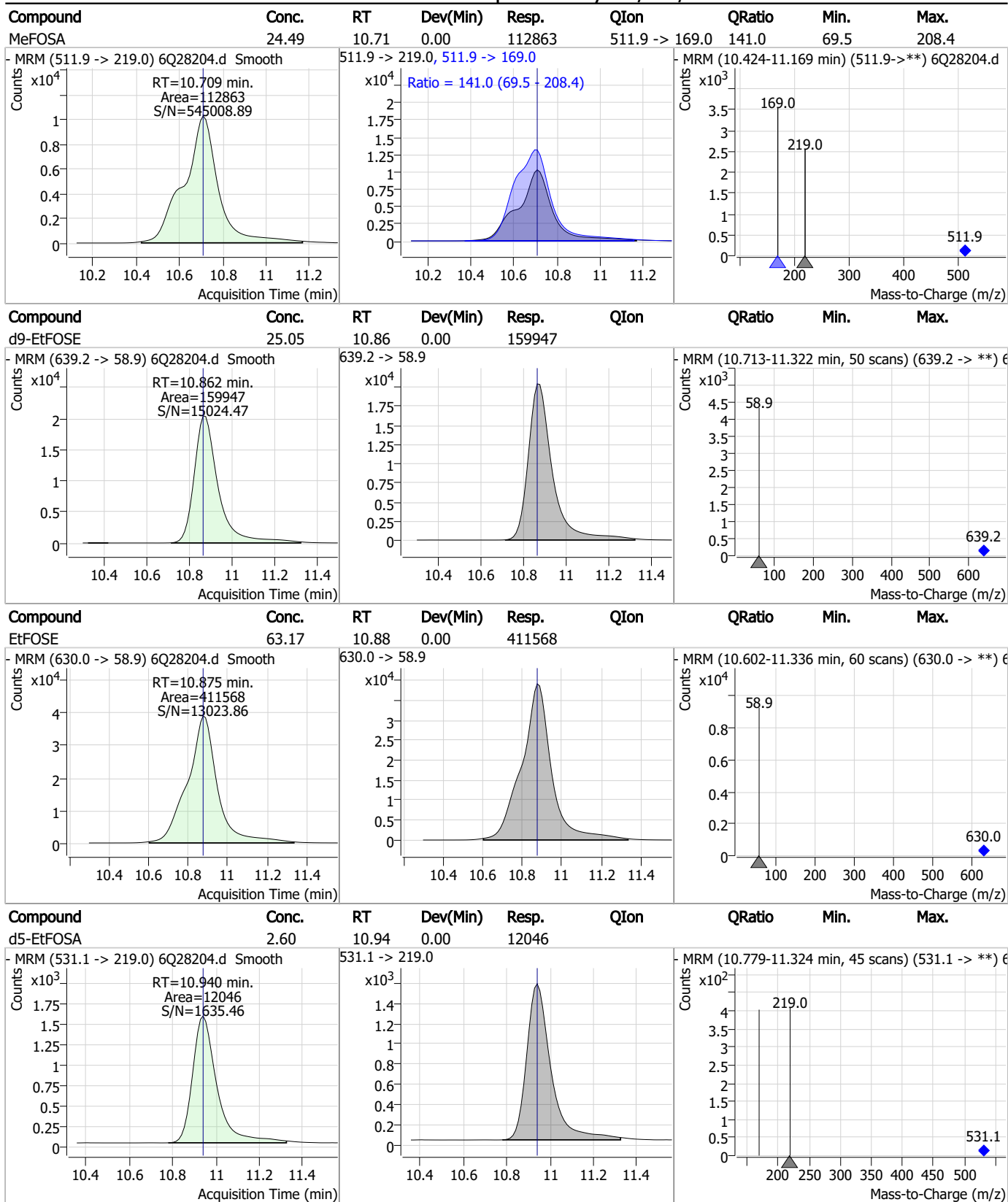


7.7.7

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### Perfluorinated Compounds by LC/MS/MS

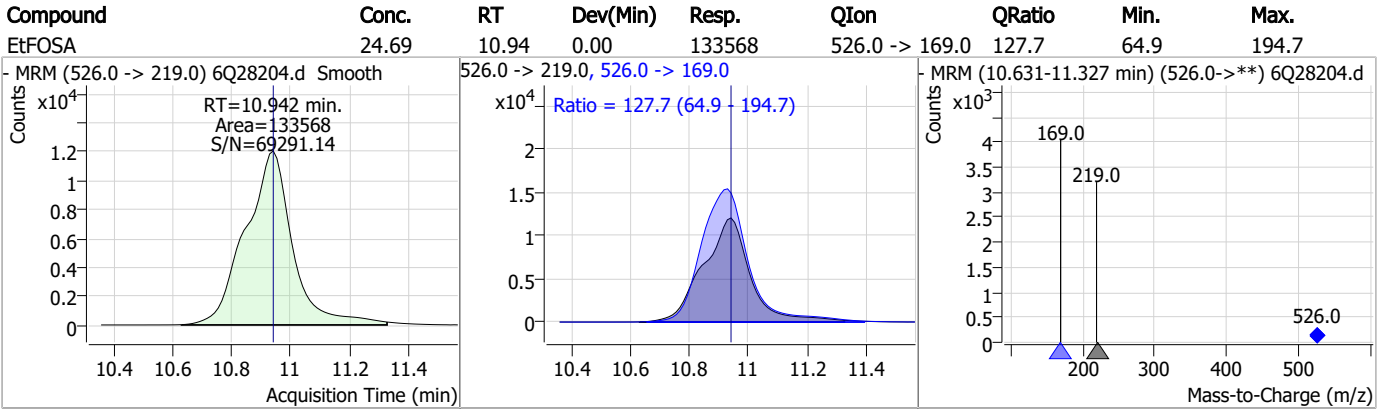


7.7.7

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Perfluorinated Compounds by LC/MS/MS



7.7.7  
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# Manual Integration Approval Summary

Sample Number: S6Q391-IC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28204.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 14:31      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

7.7.7.1

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Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

Natasha Gumtje  
 11/13/23 15:02

### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28205.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 2:46:00 PM  
 Sample Name : ic391-7  
 Vial : P1-A8  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	110772	10.00 µg/L	0.000
M5-PFPeA	4.284	268.3 -> 223.0	41682	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	42555	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	48299	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	74160	2.50 µg/L	0.000
M9-PFNA	7.567	472.1 -> 427.0	26548	1.25 µg/L	0.000
M6-PFDA	8.035	519.1 -> 474.1	25881	1.25 µg/L	0.000
M7-PFUnDA	8.489	570.0 -> 525.1	29892	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	39475	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	19933	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	25370	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	17409	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	11397	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	11557	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2414	5.00 µg/L	0.000
M2-6:2FTS	6.836	429.1 -> 80.9	3947	5.00 µg/L	0.000
M2-8:2FTS	7.835	529.1 -> 80.9	4540	5.00 µg/L	0.000
M3-MeFOSAA	8.105	573.2 -> 419.0	26765	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	25932	10.00 µg/L	-0.012
M5-EtFOSAA	8.288	589.2 -> 419.0	23068	5.00 µg/L	0.000
M7-MeFOSE	10.628	623.2 -> 58.9	105444	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	143794	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	10730	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9245	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	10775	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	48446	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	7344	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	73307	2.50 µg/L	0.000
13C2-PFDA	8.036	515.1 -> 470.1	27116	1.25 µg/L	-0.012
13C5-PFNA	7.567	468.0 -> 423.0	24558	1.25 µg/L	0.000
13C2-PFHxA	5.479	315.1 -> 270.0	40826	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2414	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3947	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C2-8:2FTS	7.835	529.1 -> 80.9	4540	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C2-PFDoDA	8.906	615.1 -> 570.0	39475	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C2-PFTeDA	9.621	715.2 -> 670.0	19933	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFBS	5.396	302.1 -> 79.9	17409	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C3-PFHxS	7.152	402.1 -> 79.9	11397	2.53 µg/L	0.000

7.7.8  
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## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C4-PFBA	2.860	216.8 -> 171.9	110772	9.88 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C4-PFHpA	6.419	367.1 -> 322.0	48299	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C5-PFHxA	5.478	318.0 -> 273.0	42555	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFPeA	4.284	268.3 -> 223.0	41682	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	8.035	519.1 -> 474.1	25881	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C7-PFUnDA	8.489	570.0 -> 525.1	29892	1.19 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C8-FOSA	9.605	506.1 -> 77.8	25370	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C8-PFOA	7.062	421.1 -> 376.0	74160	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C8-PFOS	8.185	507.1 -> 79.9	11557	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C9-PFNA	7.567	472.1 -> 427.0	26548	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%	
d3-MeFOSAA	8.105	573.2 -> 419.0	26765	4.79 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	25932	10.23 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
d3-MeFOSA	10.707	515.0 -> 219.0	9245	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
d5-EtFOSAA	8.288	589.2 -> 419.0	23068	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
d7-MeFOSE	10.628	623.2 -> 58.9	105444	24.45 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
d9-EtFOSE	10.862	639.2 -> 58.9	143794	24.99 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d5-EtFOSA	10.940	531.1 -> 219.0	10730	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.155	327.1 -> 307.0	362910	92.30 µg/L	99
		327.1 -> 80.9	147409		
6:2FTS	6.836	427.1 -> 407.0	400440	93.17 µg/L	99
		427.1 -> 80.9	146008		
8:2FTS	7.836	527.1 -> 507.0	302773	88.03 µg/L	99
		527.1 -> 80.8	111514		
EtFOSAA	8.301	584.2 -> 419.1	97779	26.22 µg/L	m 94
		584.2 -> 526.0	70376		
FOSA	9.596	498.1 -> 77.9	264269	27.11 µg/L	100
		498.1 -> 478.0	7779		
MeFOSAA	8.106	570.1 -> 419.0	138263	27.40 µg/L	97
		570.1 -> 483.0	30899		
PFBA	2.868	212.8 -> 168.9	379898	104.61 µg/L	100
PFBS	5.397	298.7 -> 79.9	152768	23.02 µg/L	98
		298.7 -> 98.8	55373		
PFDA	8.036	512.9 -> 469.0	677650	28.18 µg/L	98
		512.9 -> 219.0	94820		
PFDoDA	8.907	613.1 -> 569.0	722319	24.64 µg/L	100
		613.1 -> 319.0	82870		
PFDS	9.057	599.0 -> 79.9	74468	24.76 µg/L	99

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	34357			
PFHpA	6.419	363.1 -> 319.0	600810	24.19	µg/L	97
		363.1 -> 169.0	96446			
PFHpS	7.694	449.0 -> 79.9	115488	23.51	µg/L	99
		449.0 -> 98.9	56113			
PFHxA	5.481	313.0 -> 269.0	431234	27.09	µg/L	99
		313.0 -> 118.9	19395			
PFHxS	7.153	398.7 -> 79.9	121691	23.01	µg/L	m 89
		398.7 -> 98.9	60408			
PFNA	7.568	463.0 -> 419.0	443713	26.85	µg/L	95
		463.0 -> 219.0	88207			
PFNS	8.639	548.8 -> 79.9	102461	25.05	µg/L	94
		548.8 -> 98.9	53287			
PFOA	7.063	413.0 -> 369.0	728574	24.81	µg/L	100
		413.0 -> 169.0	134159			
PFOS	8.186	498.9 -> 79.9	123778	24.07	µg/L	m 81
		498.9 -> 98.8	59952			
PFPeA	4.286	263.0 -> 219.0	551817	52.19	µg/L	100
PFPeS	6.458	349.1 -> 79.9	138473	24.55	µg/L	99
		349.1 -> 98.9	62965			
PFTeDA	9.622	713.1 -> 669.0	636622	26.21	µg/L	99
		713.1 -> 168.9	39935			
PFTrDA	9.290	663.0 -> 619.0	697528	24.29	µg/L	99
		663.0 -> 168.9	48842			
PFUnDA	8.477	563.1 -> 519.0	606201	26.07	µg/L	93
		563.1 -> 269.1	84742			
11CI-PF3OUdS	9.329	630.9 -> 450.9	540797	47.87	µg/L	99
		632.9 -> 452.9	172650			
9CI-PF3ONS	8.516	530.8 -> 351.0	706960	45.44	µg/L	98
		532.8 -> 353.0	228894			
ADONA	6.669	376.9 -> 250.9	2161272	47.76	µg/L	99
		376.9 -> 84.8	557903			
HFPO-DA	5.844	284.9 -> 168.9	132686	51.14	µg/L	99
		284.9 -> 184.9	14081			
3:3FTCA	3.721	241.0 -> 177.0	84174	131.43	µg/L	100
		241.0 -> 117.0	9707			
5:3FTCA	6.146	341.0 -> 237.1	1926601	661.91	µg/L	98
		341.0 -> 217.0	1405471			
7:3FTCA	7.545	441.0 -> 316.9	1180457	640.39	µg/L	94
		441.0 -> 336.9	2544821			
EtFOSA	10.942	526.0 -> 219.0	244977	50.84	µg/L	99
		526.0 -> 169.0	315604			
EtFOSE	10.875	630.0 -> 58.9	734048	125.32	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	209892	50.82	µg/L	97
		511.9 -> 169.0	283604			
MeFOSE	10.641	616.1 -> 58.9	580585	134.94	µg/L	100
PFDoDS	9.748	699.1 -> 79.9	48319	24.96	µg/L	98
		699.1 -> 98.8	25689			
NFDHA	5.360	295.0 -> 201.0	93802	50.87	µg/L	95
		295.0 -> 84.9	26065			
PFMBA	4.700	279.0 -> 85.1	377048	51.74	µg/L	100
PFMPA	3.413	229.0 -> 84.9	284679	52.10	µg/L	100
PFEESA	5.937	314.8 -> 134.9	940904	47.79	µg/L	100
		314.8 -> 82.9	34350			

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

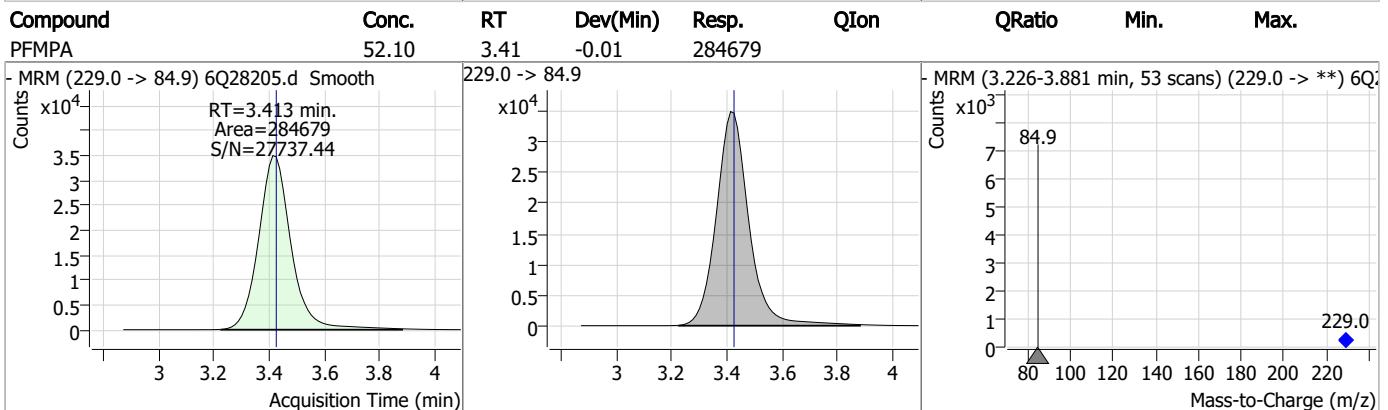
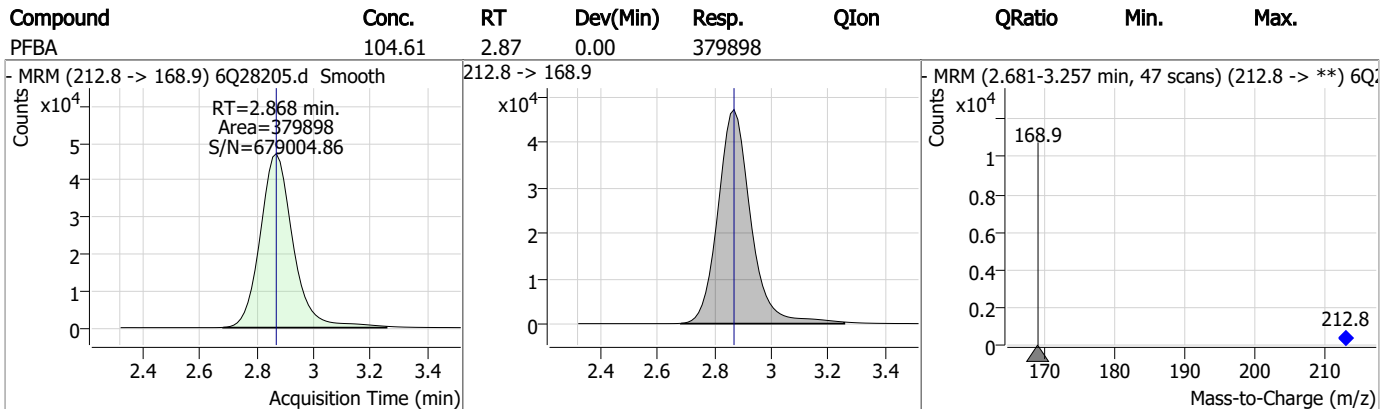
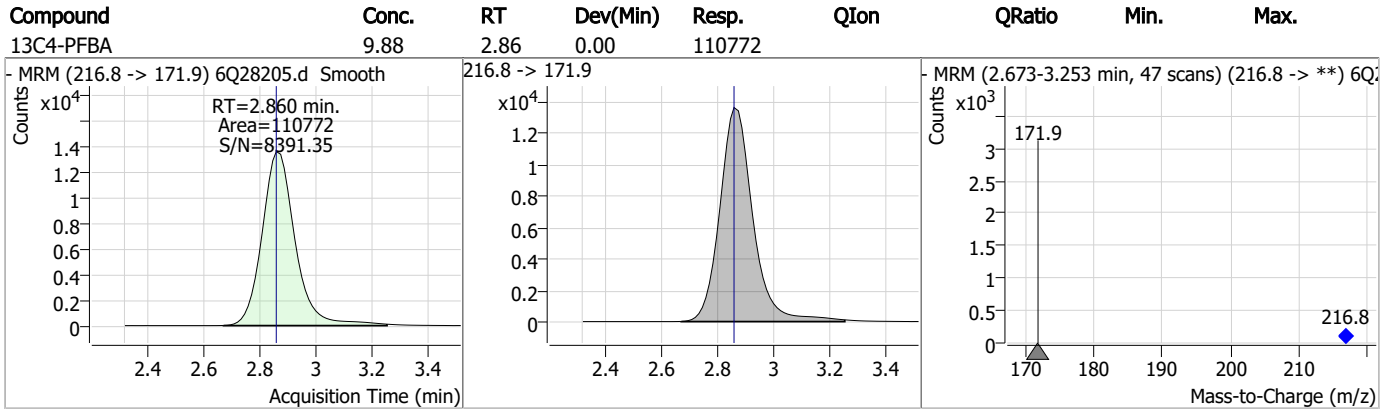
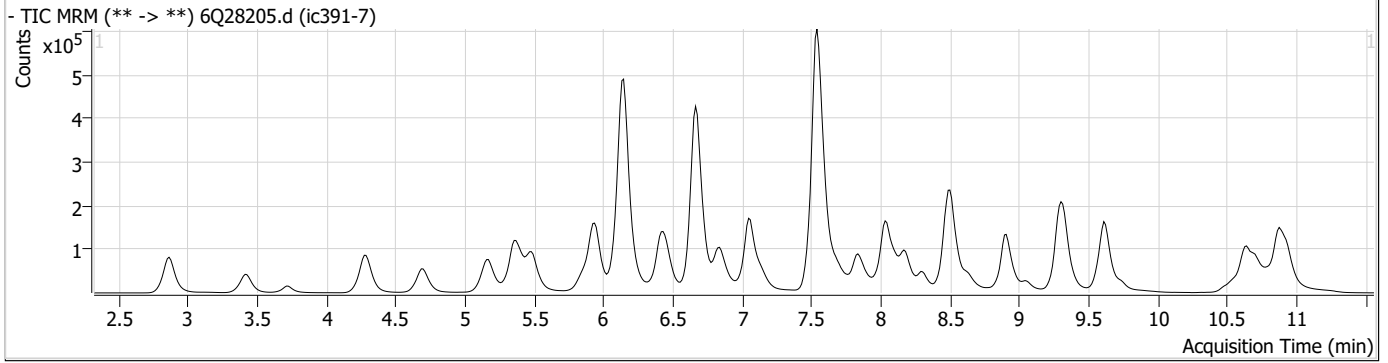
### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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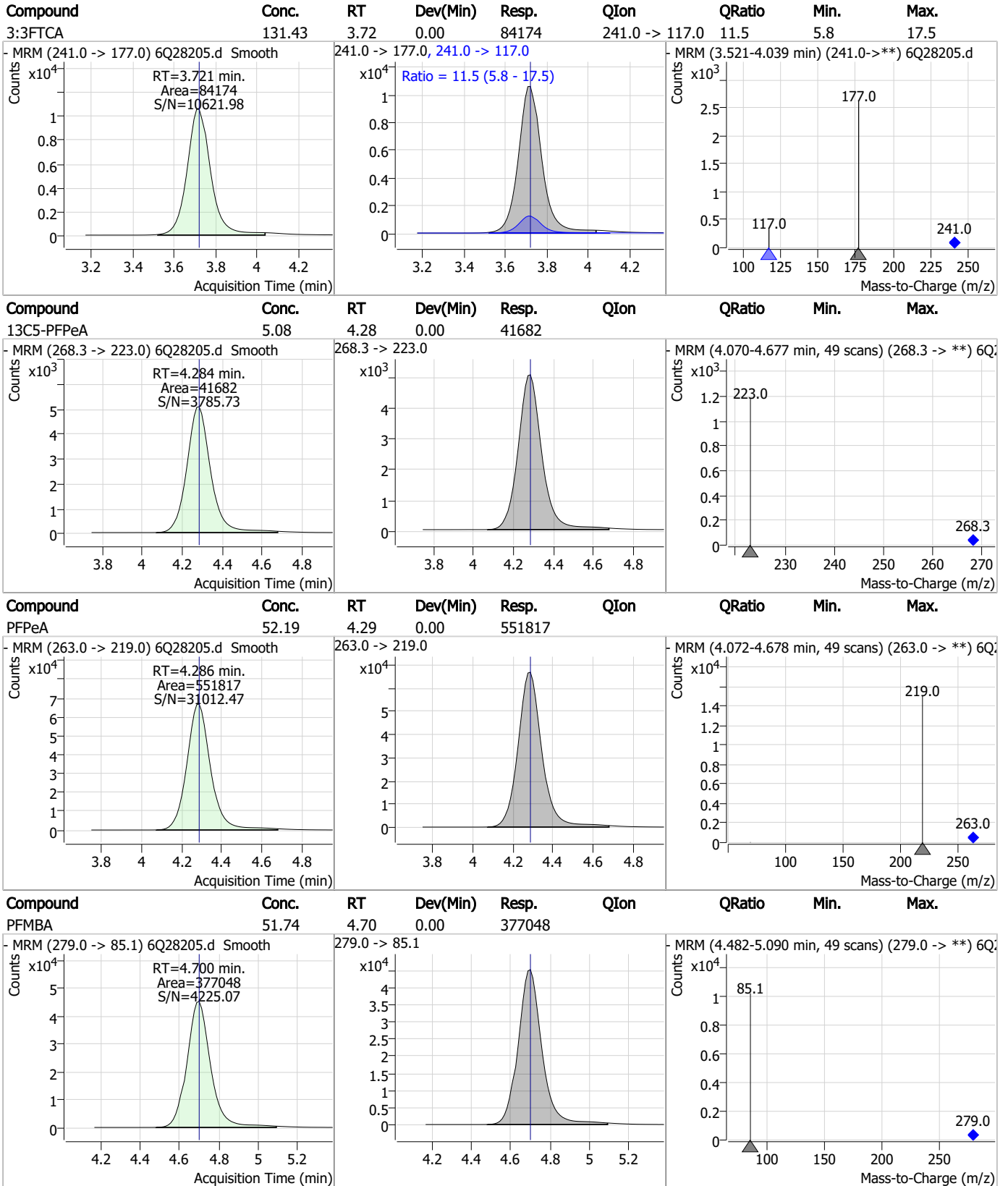
7.7.8  
7



### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS

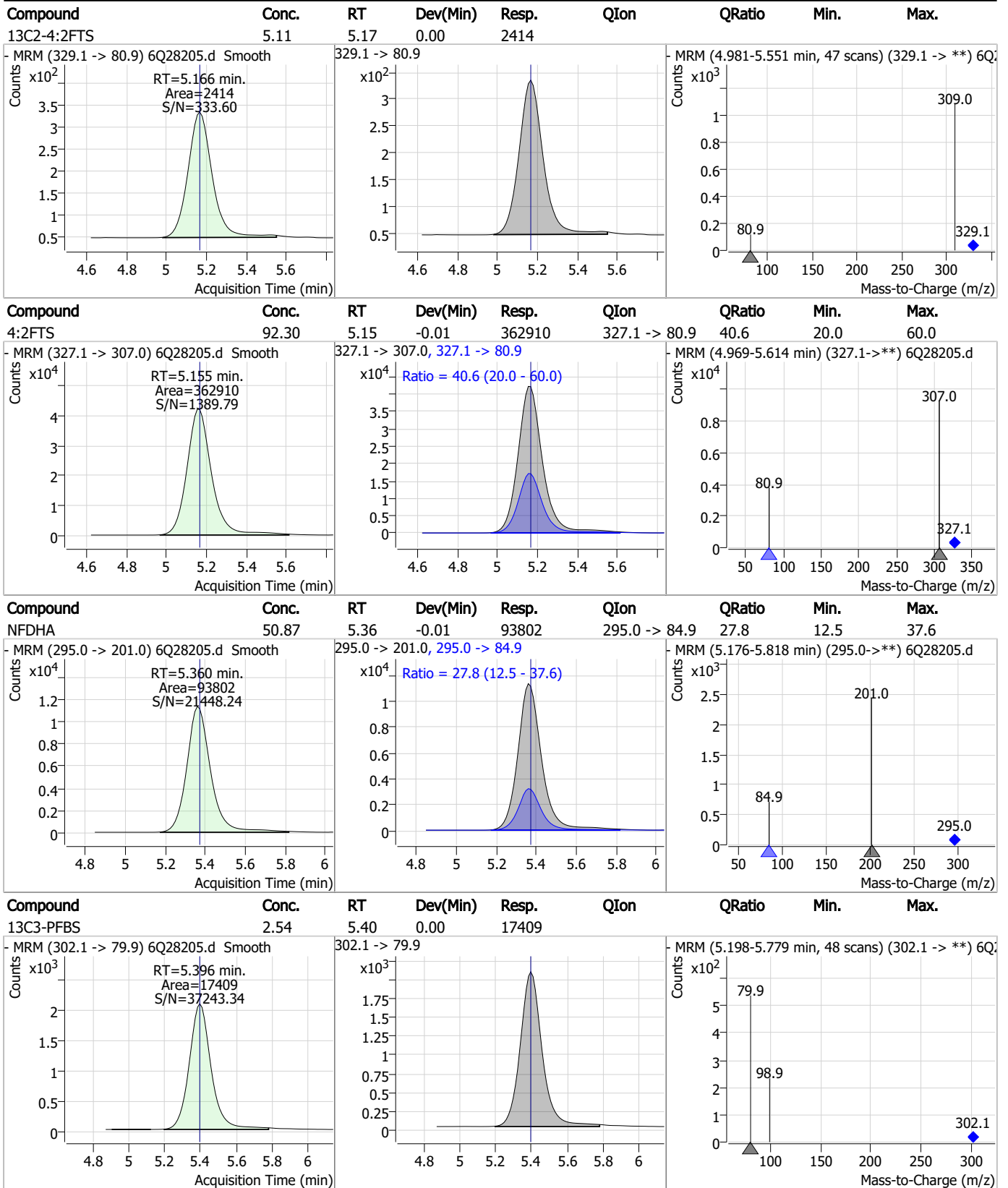


7.7.8

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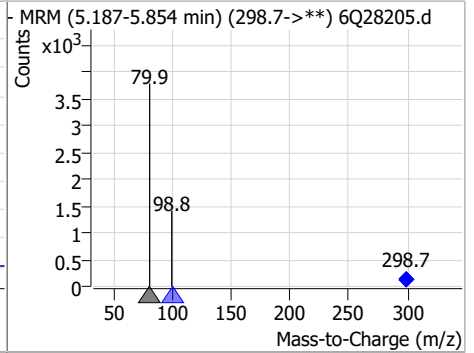
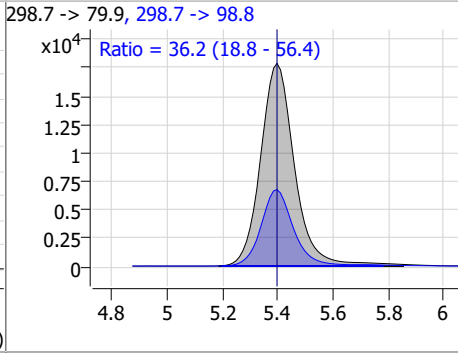
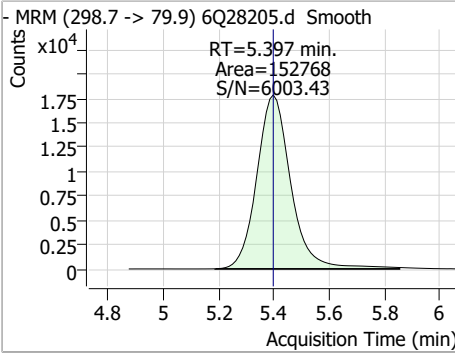
### Perfluorinated Compounds by LC/MS/MS



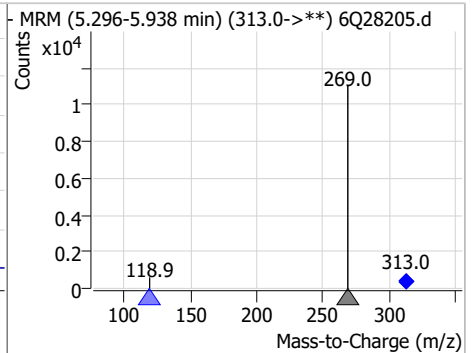
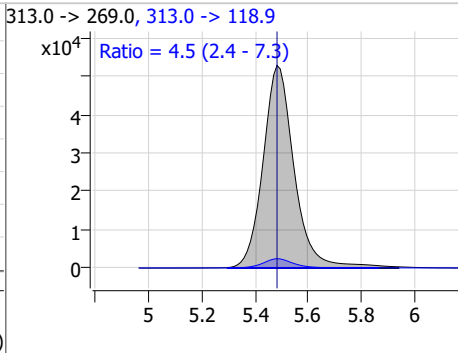
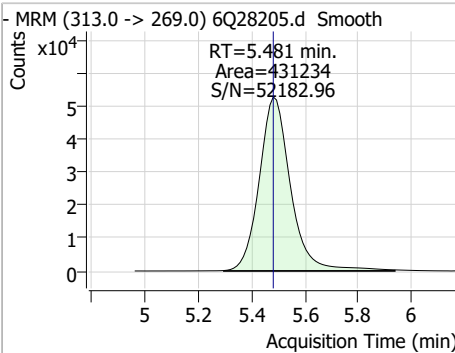
7.7.8  
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### Perfluorinated Compounds by LC/MS/MS

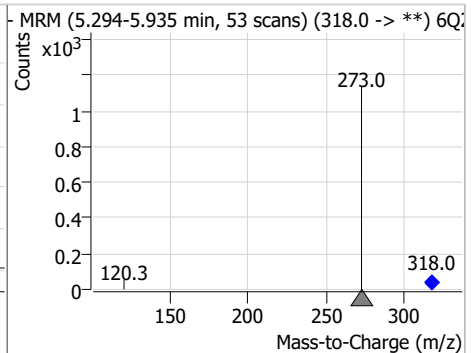
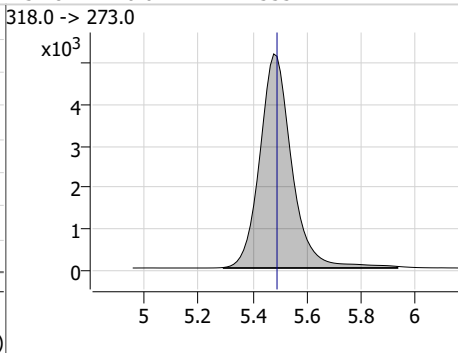
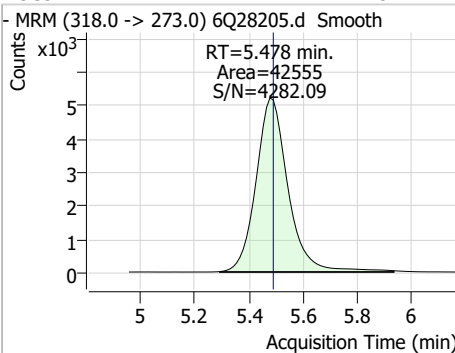
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	23.02	5.40	0.00	152768	298.7 -> 98.8	36.2	18.8	56.4



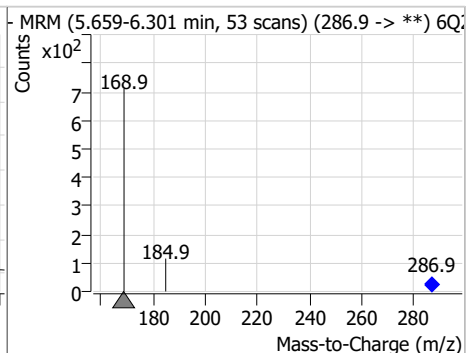
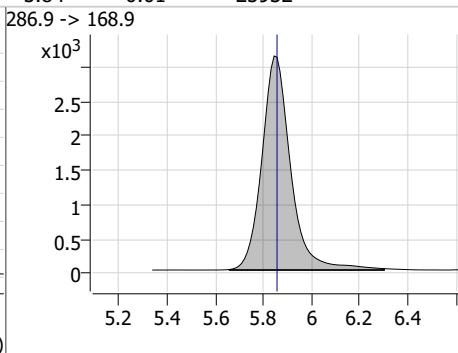
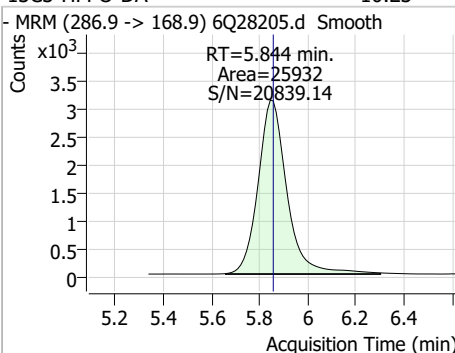
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	27.09	5.48	0.00	431234	313.0 -> 118.9	4.5	2.4	7.3



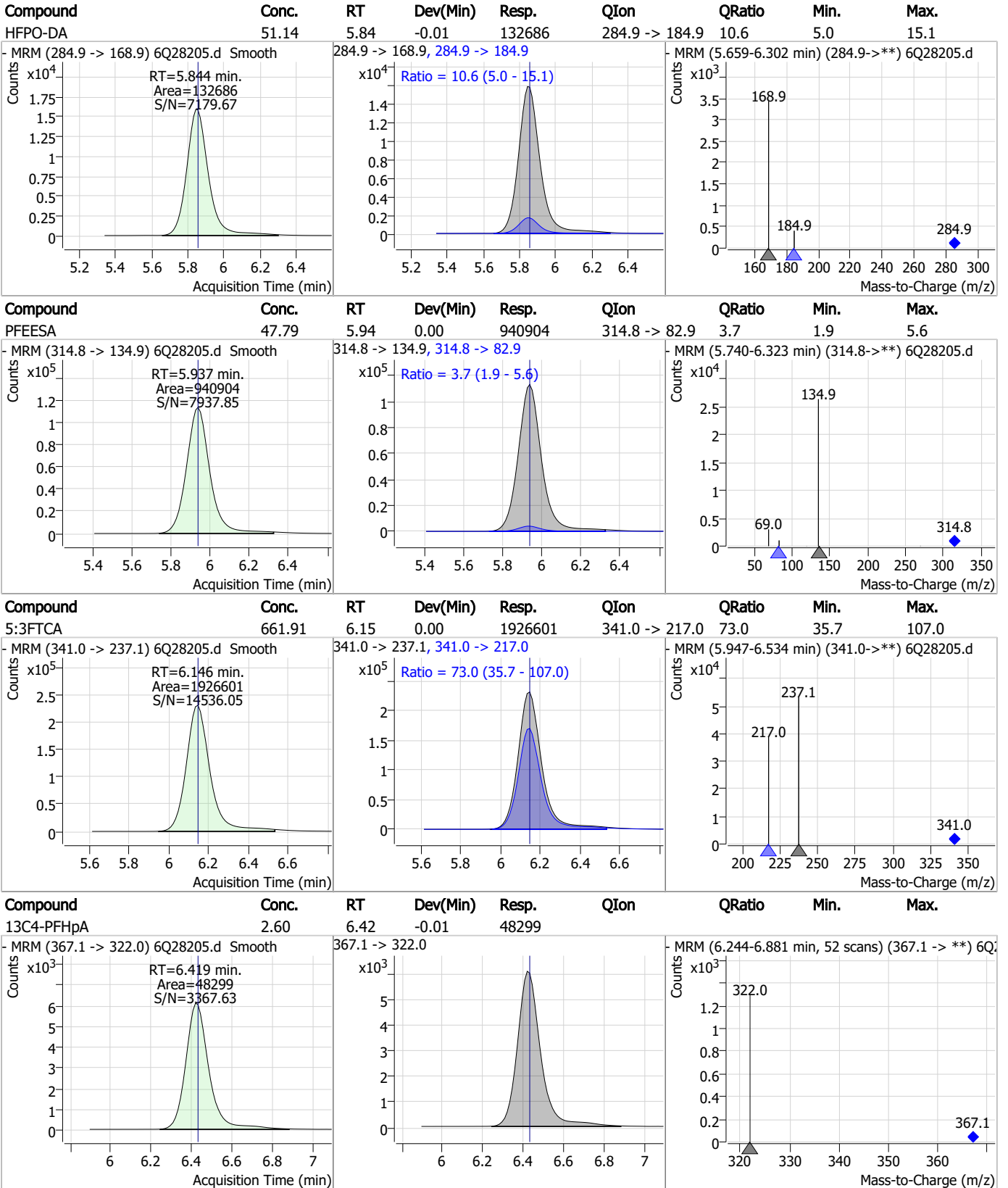
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.51	5.48	-0.01	42555	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.23	5.84	-0.01	25932	286.9 -> 168.9			



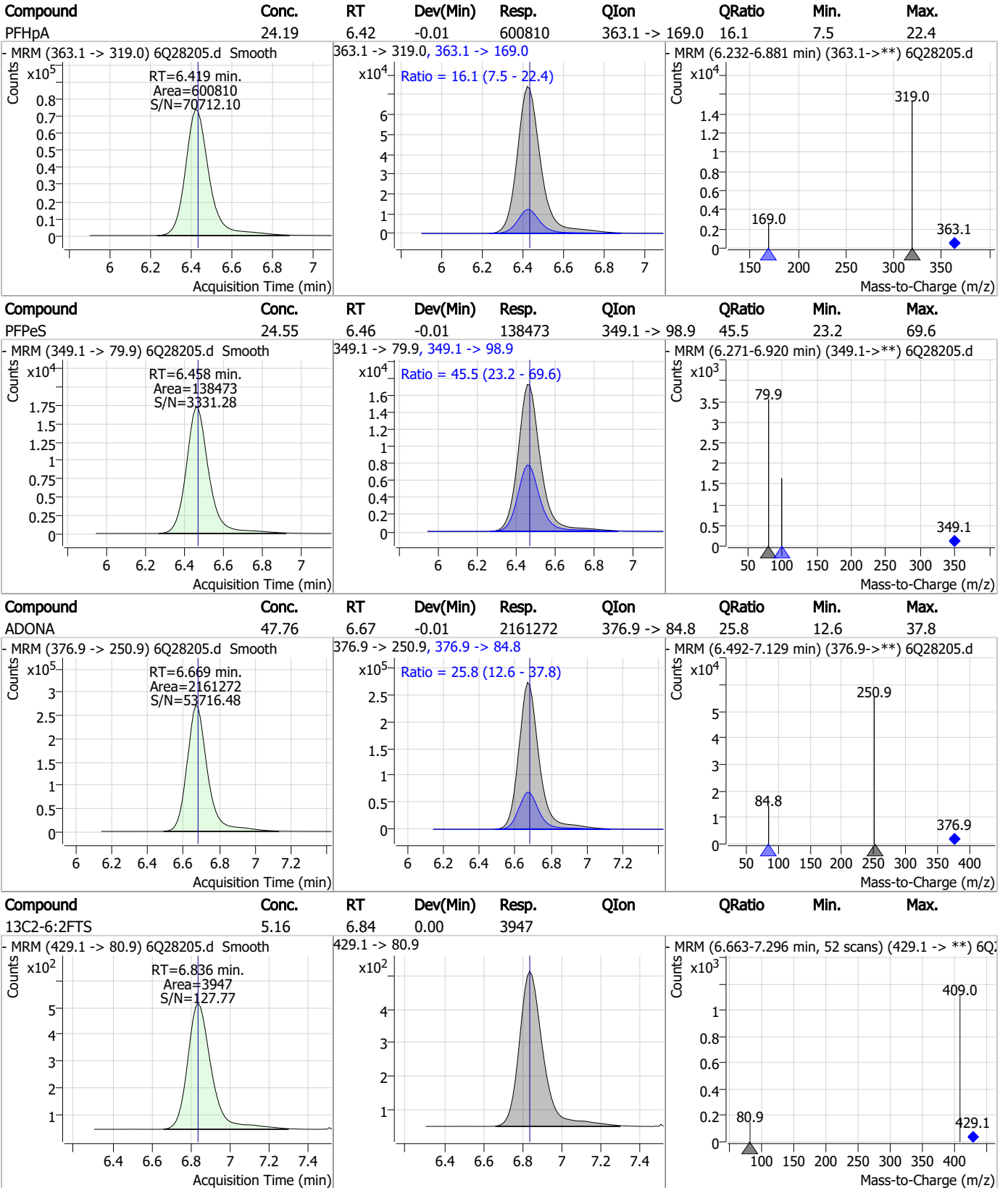
### Perfluorinated Compounds by LC/MS/MS



7.7.8

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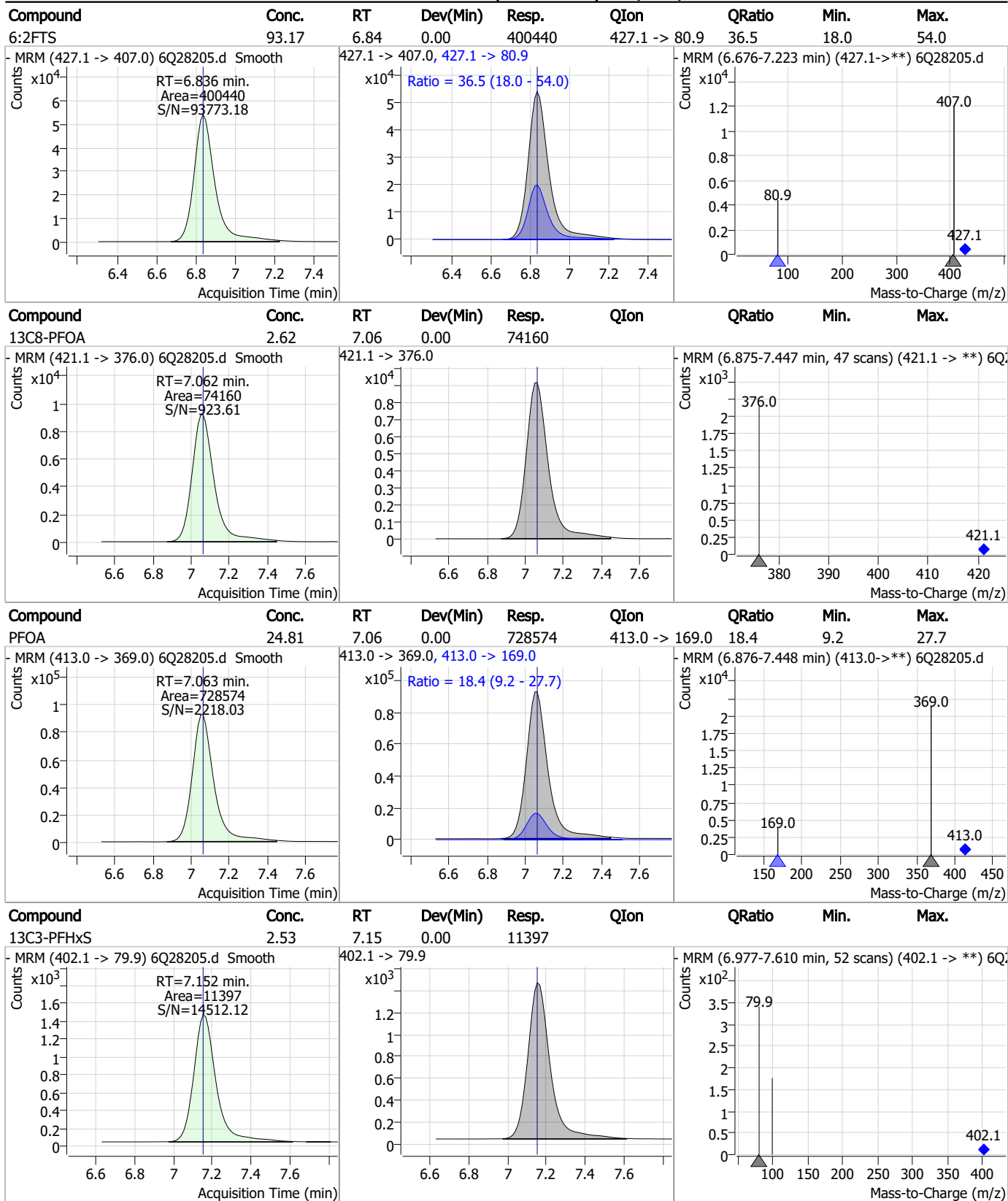
### Perfluorinated Compounds by LC/MS/MS



7.7.8

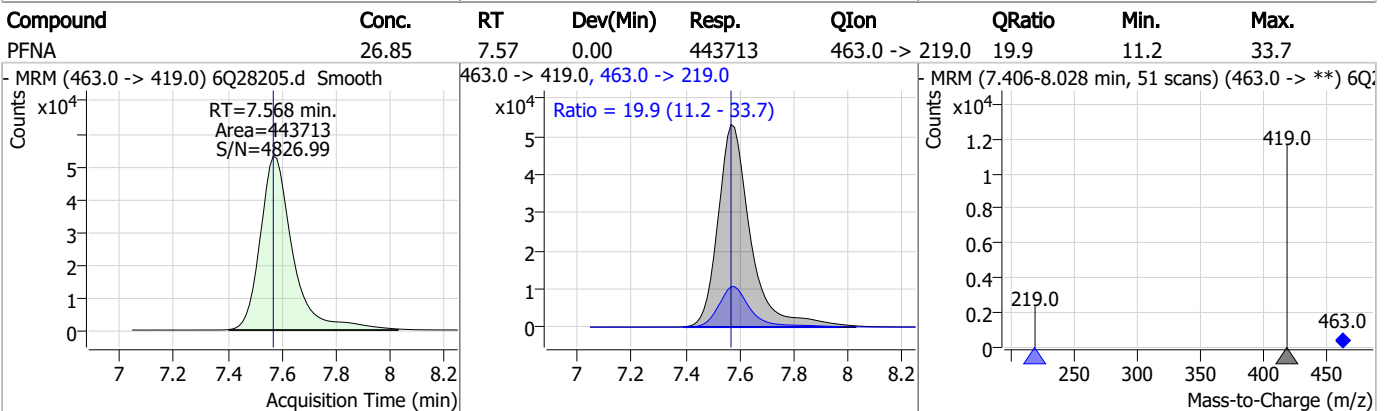
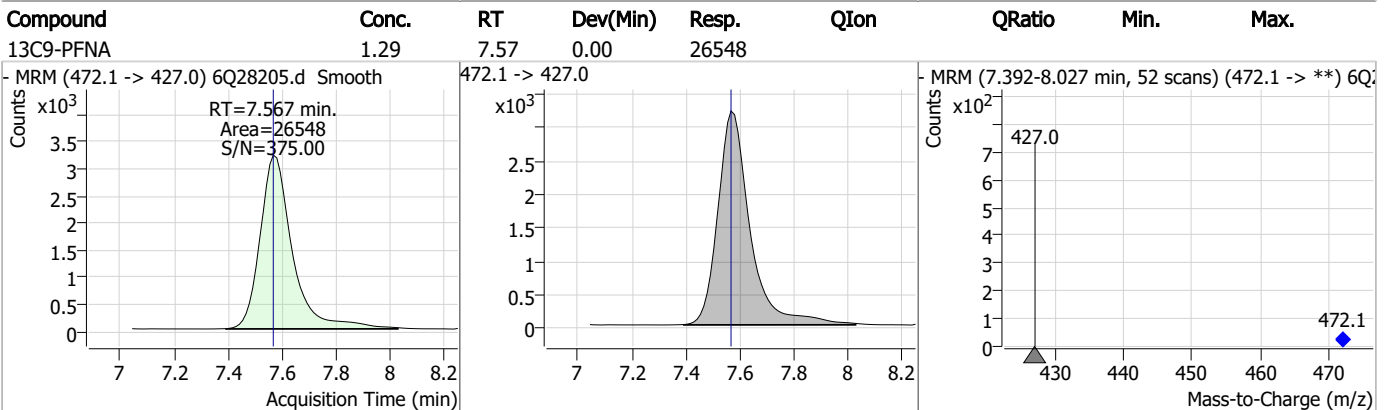
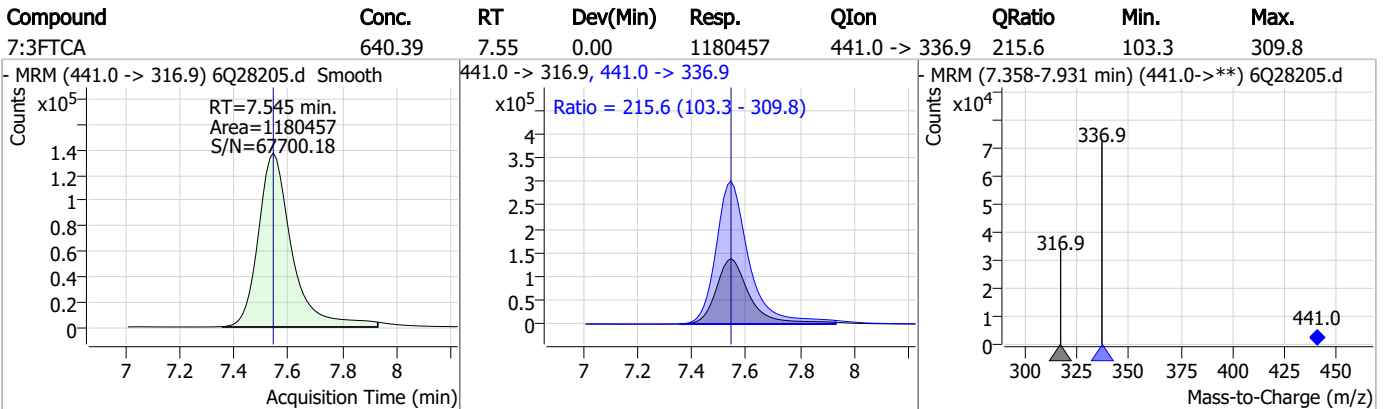
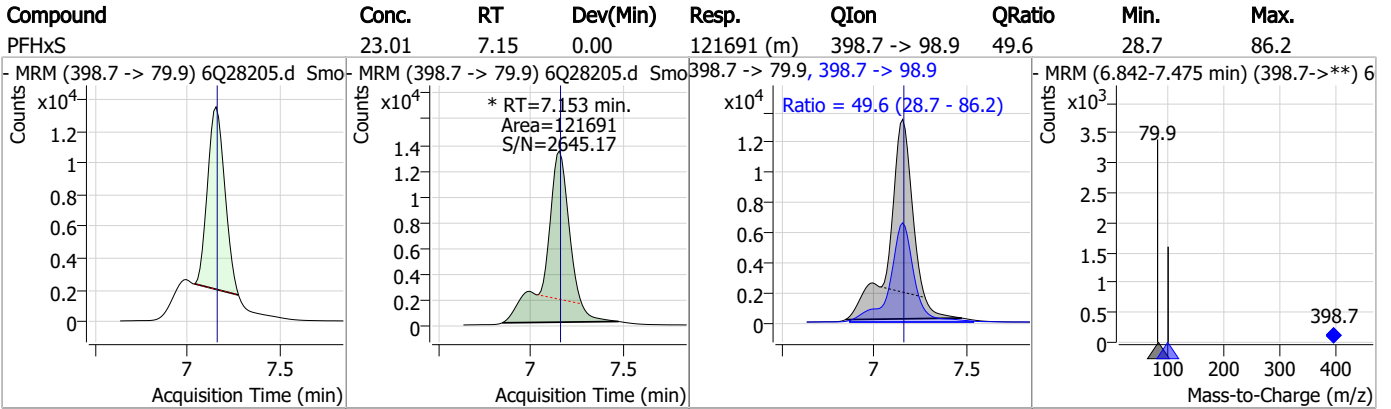
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### Perfluorinated Compounds by LC/MS/MS



7.7.8  
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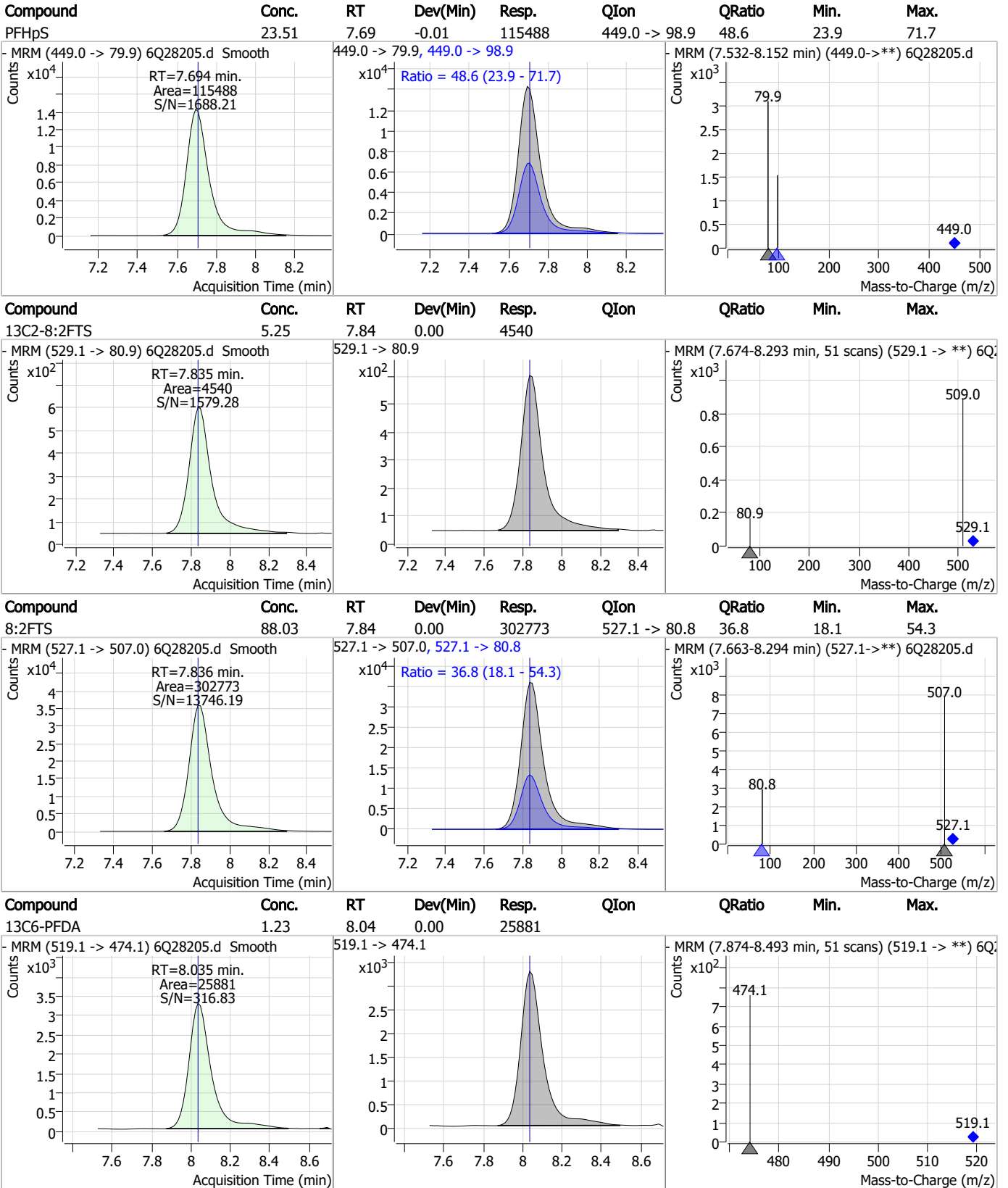
### Perfluorinated Compounds by LC/MS/MS



7.7.8

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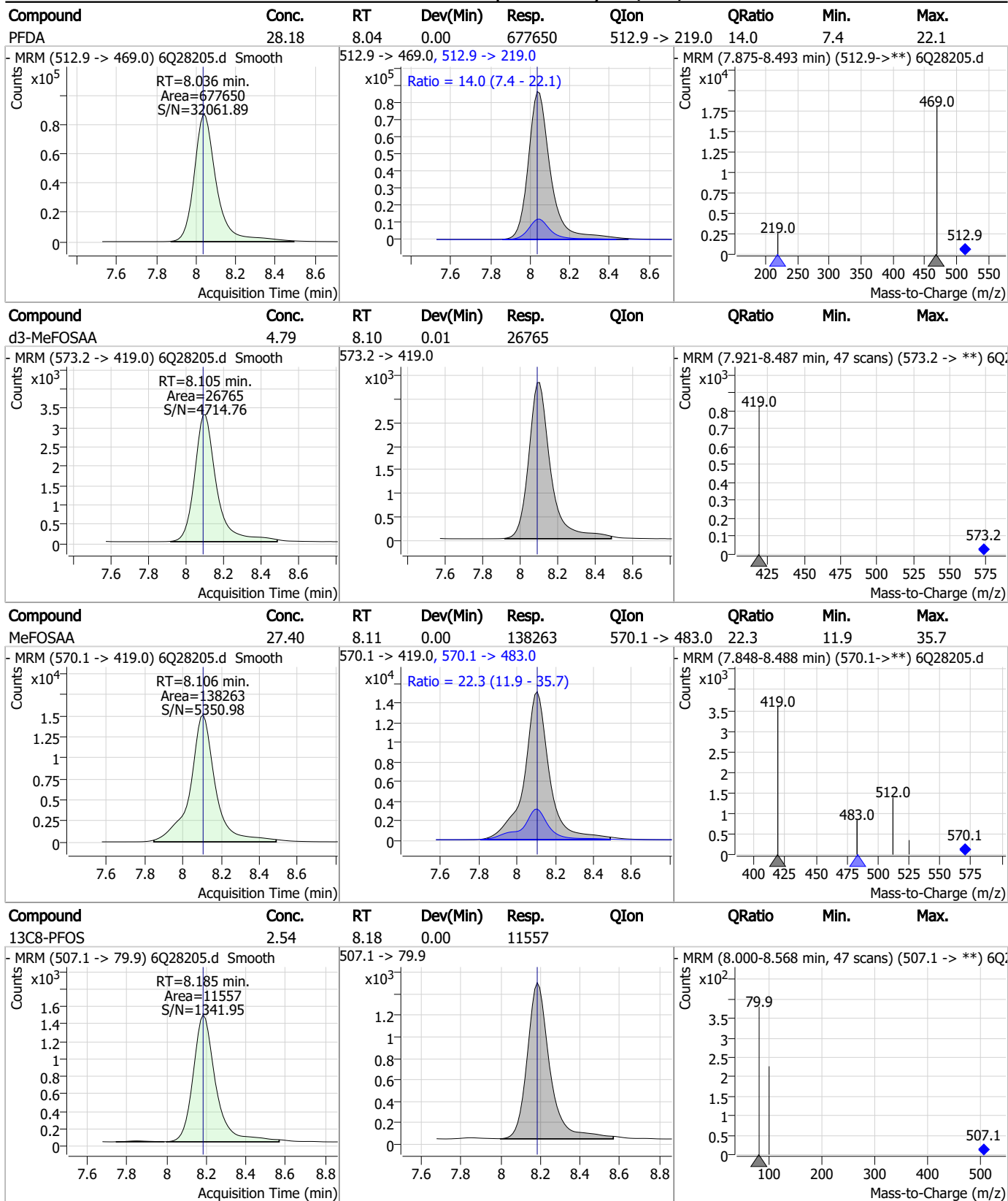
### Perfluorinated Compounds by LC/MS/MS



7.7.8

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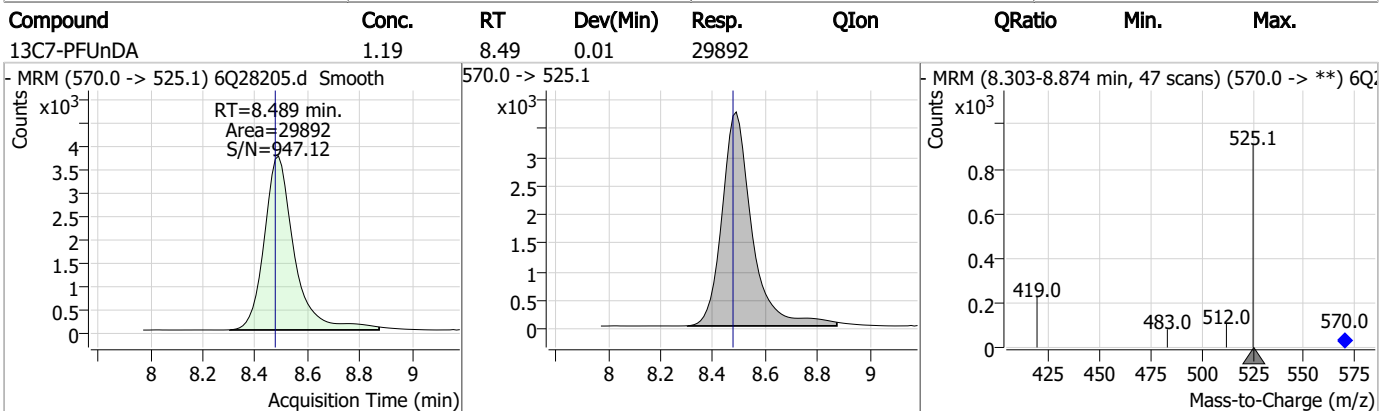
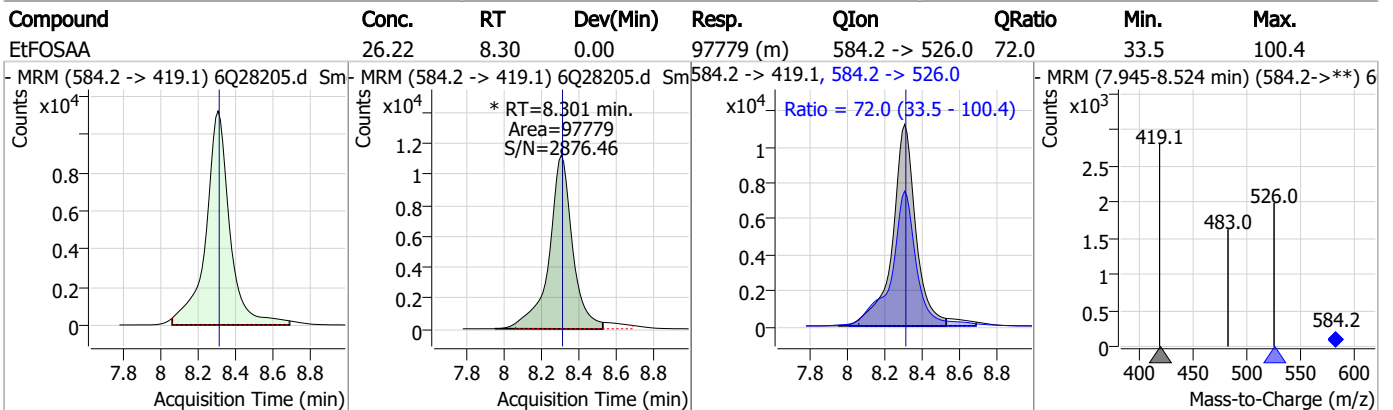
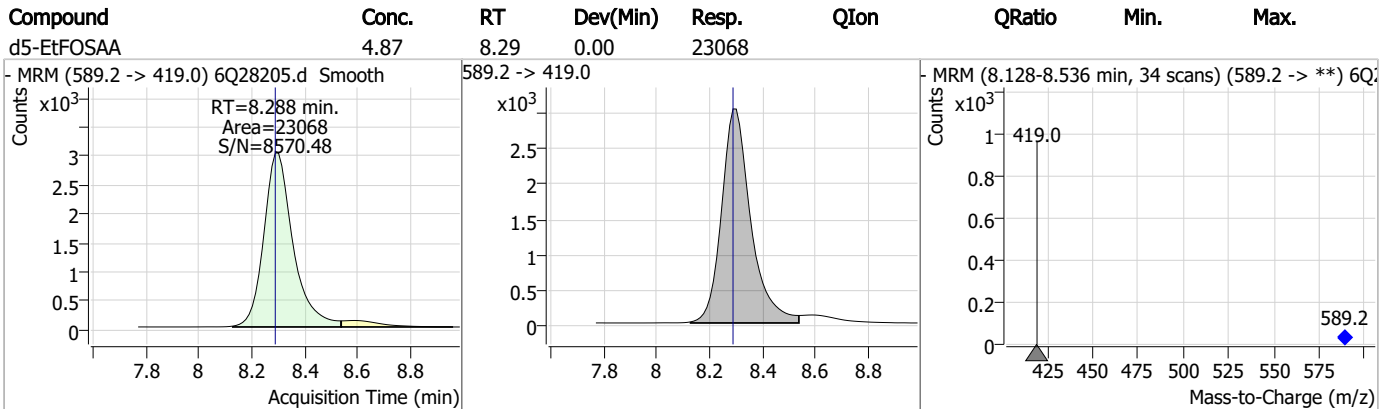
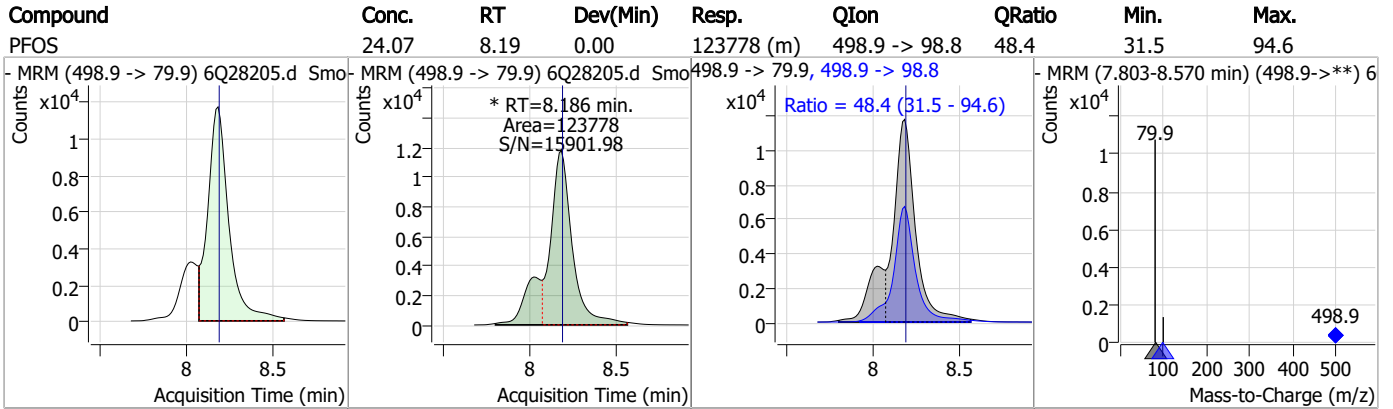
### Perfluorinated Compounds by LC/MS/MS



7.7.8  
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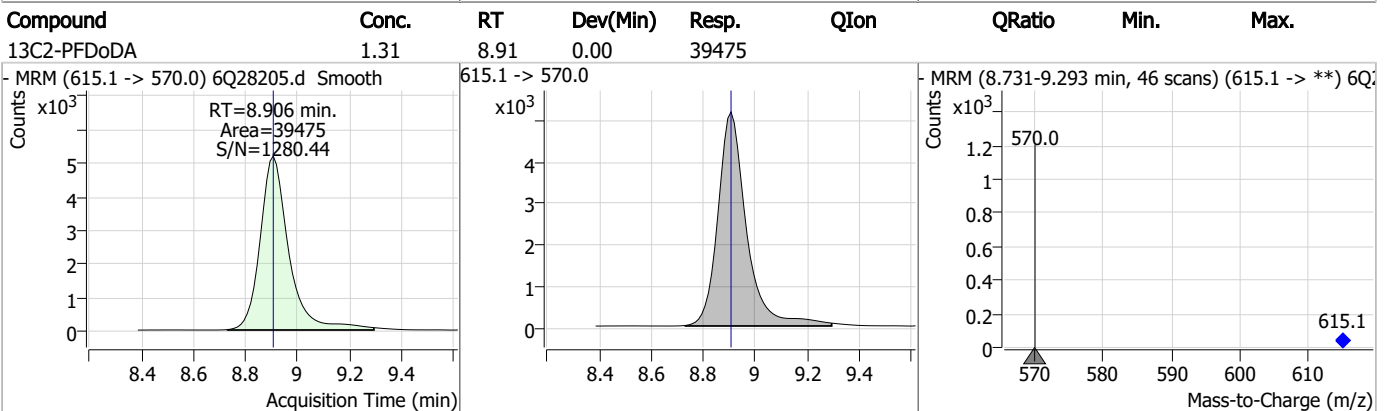
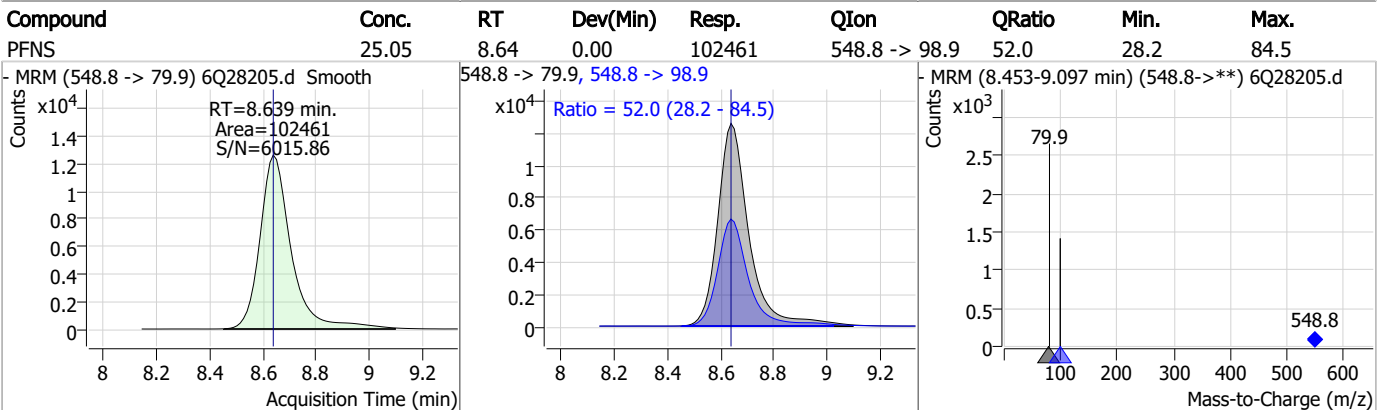
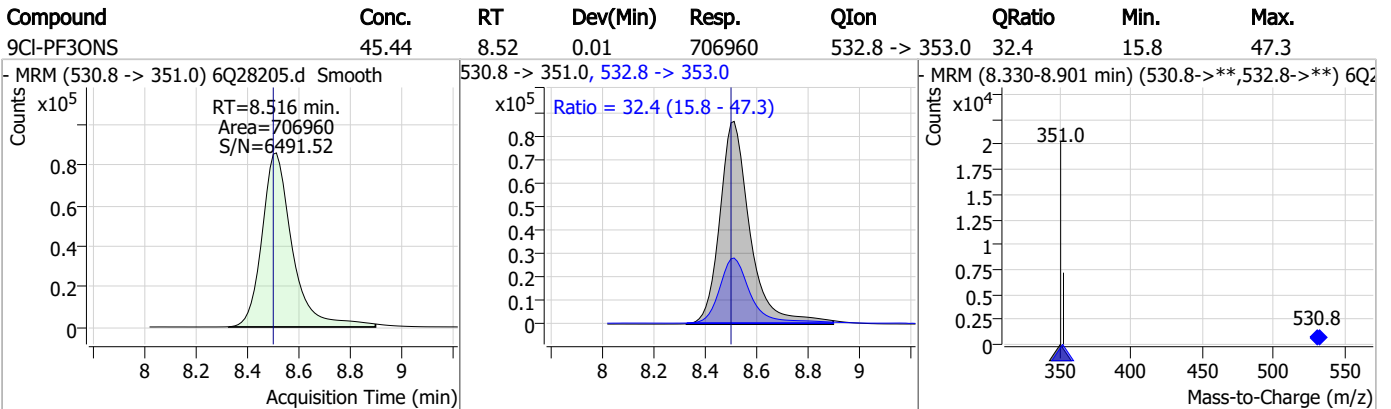
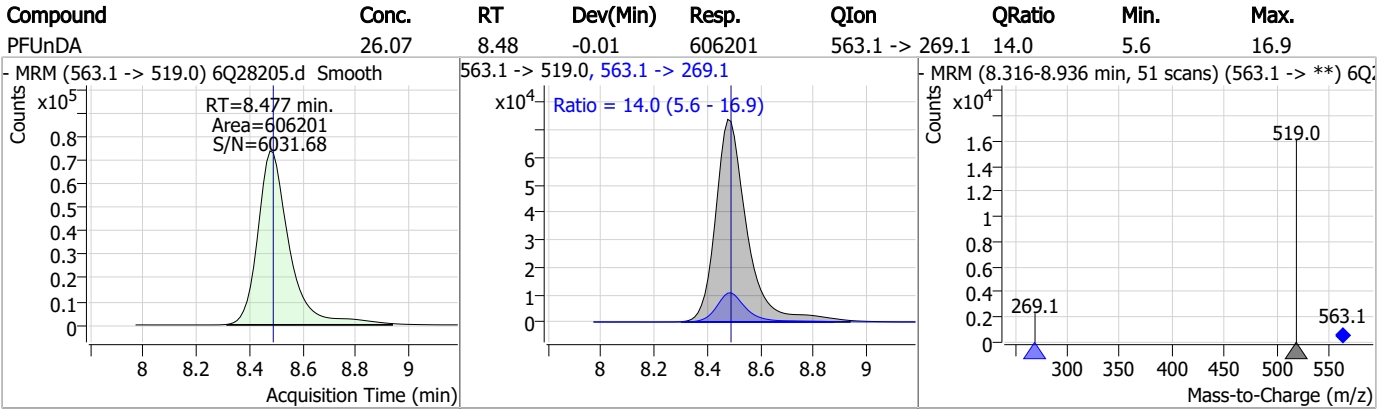
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

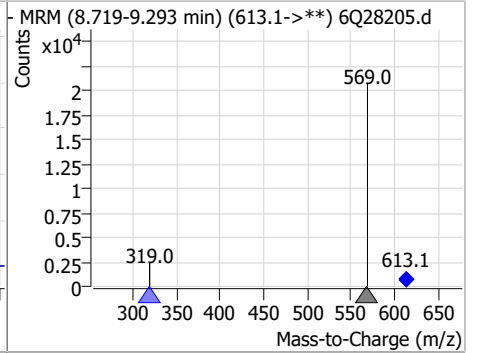
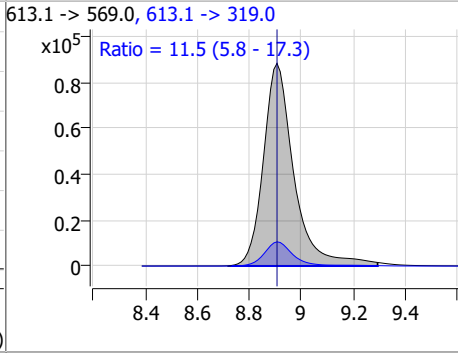
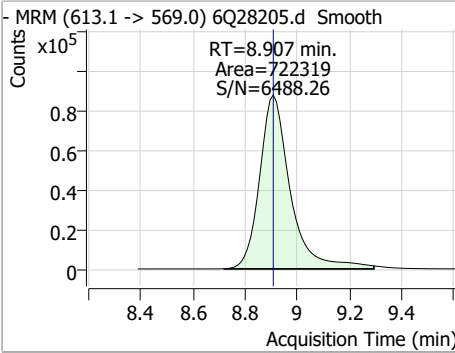


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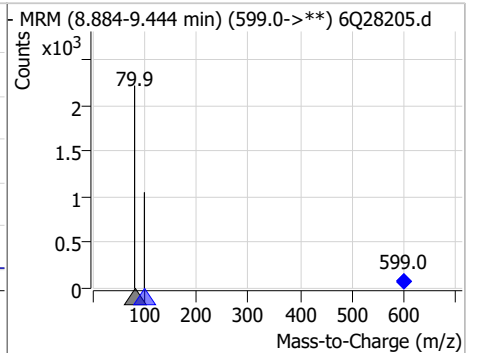
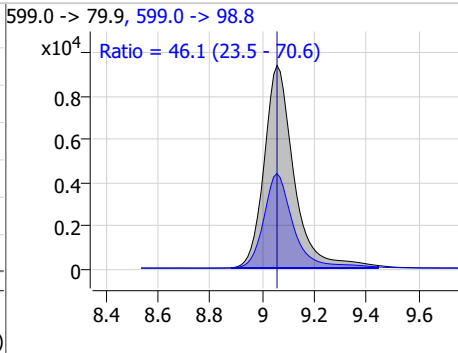
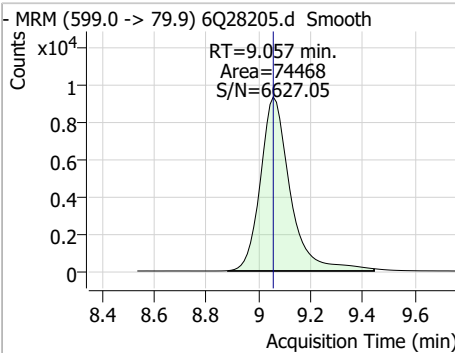
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### Perfluorinated Compounds by LC/MS/MS

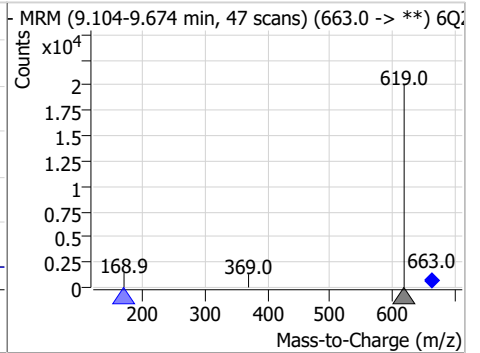
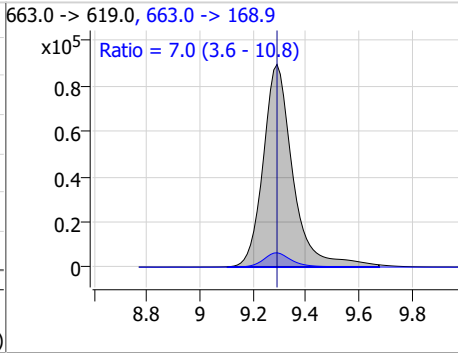
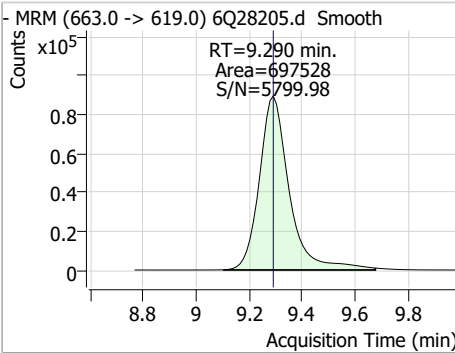
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	24.64	8.91	0.00	722319	613.1 -> 319.0	11.5	5.8	17.3



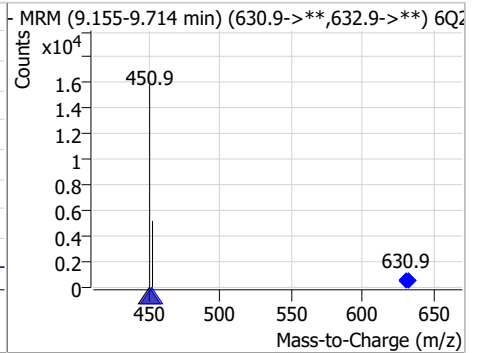
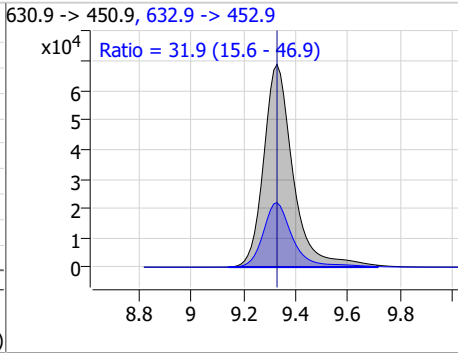
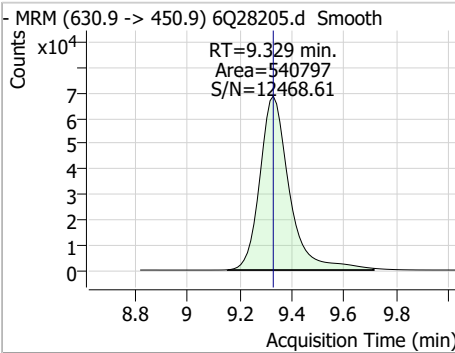
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	24.76	9.06	0.00	74468	599.0 -> 98.8	46.1	23.5	70.6



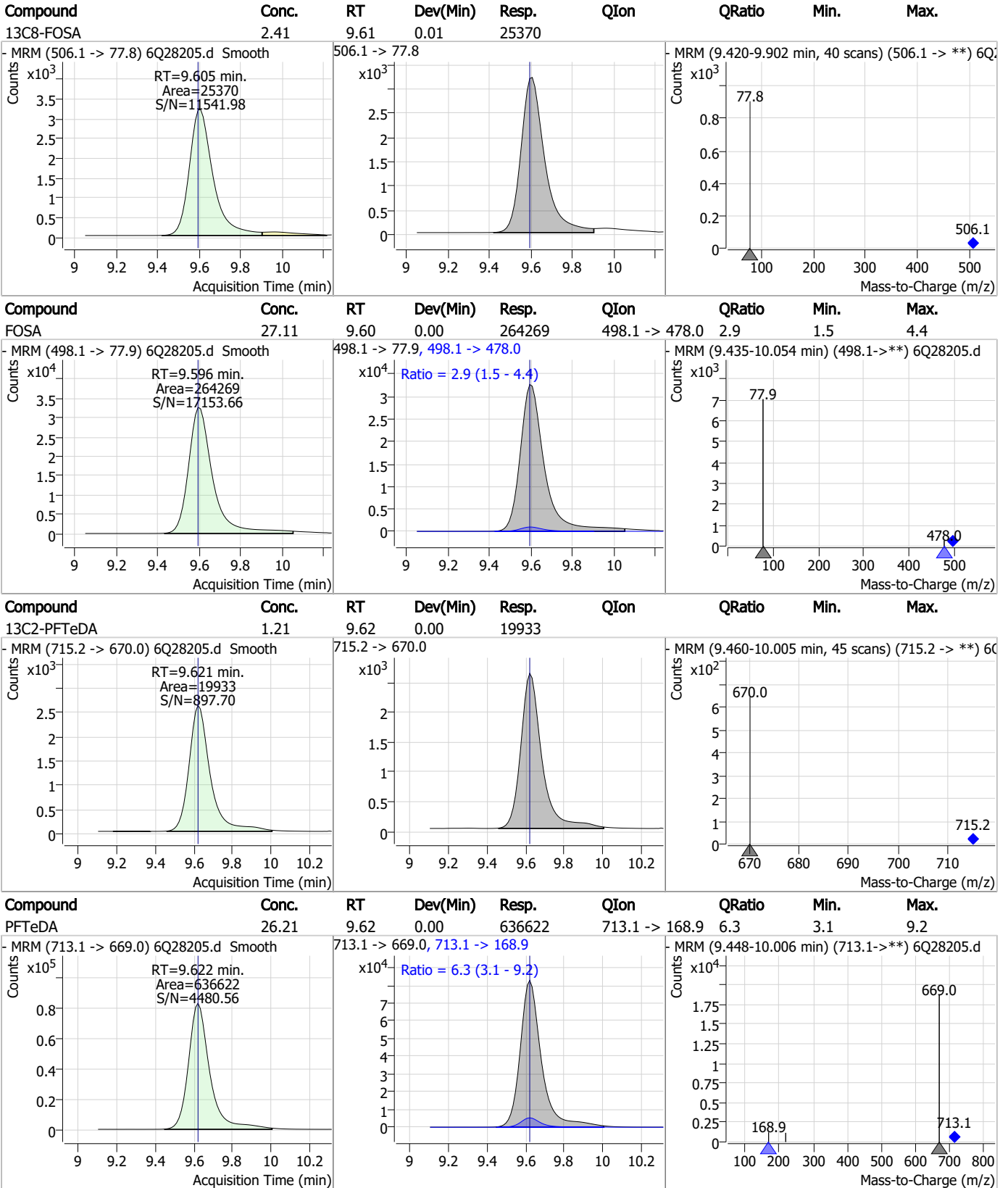
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	24.29	9.29	0.00	697528	663.0 -> 168.9	7.0	3.6	10.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	47.87	9.33	0.00	540797	632.9 -> 452.9	31.9	15.6	46.9



### Perfluorinated Compounds by LC/MS/MS

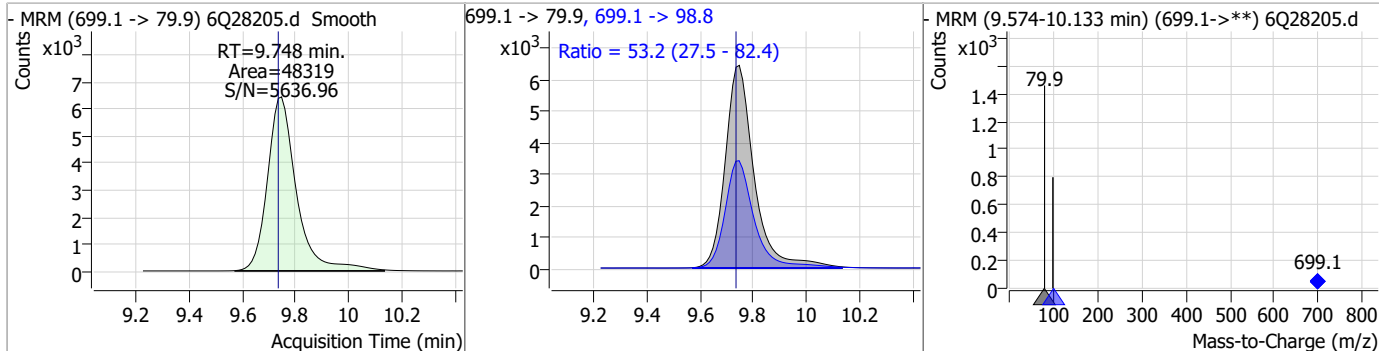


7.7.8

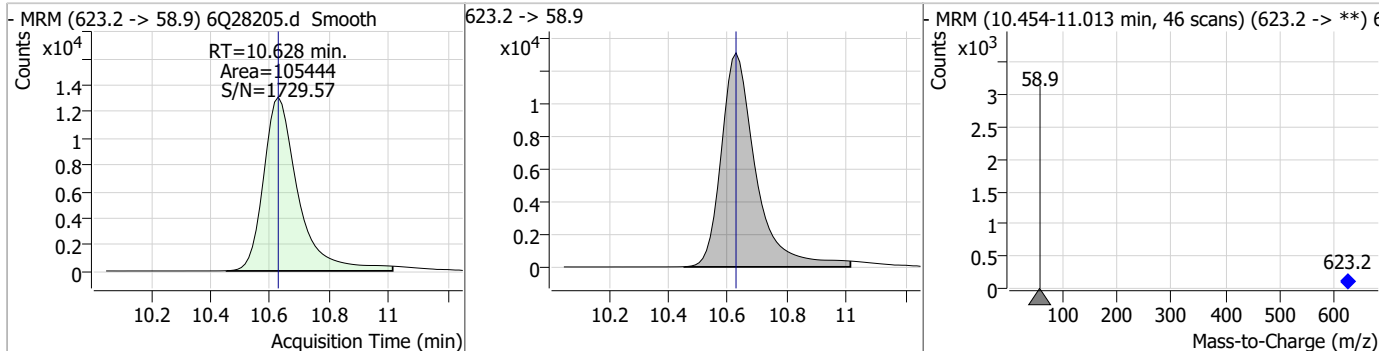
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### Perfluorinated Compounds by LC/MS/MS

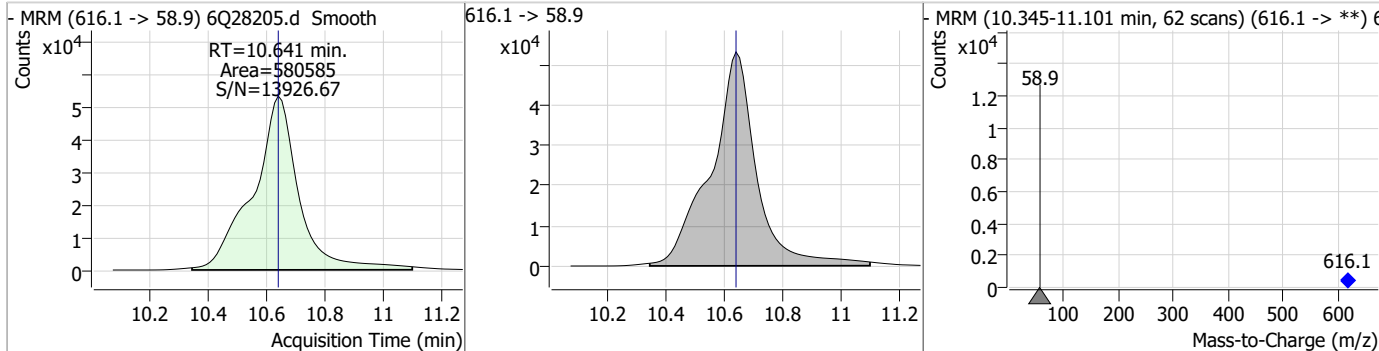
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	24.96	9.75	0.01	48319	699.1 -> 98.8	53.2	27.5	82.4



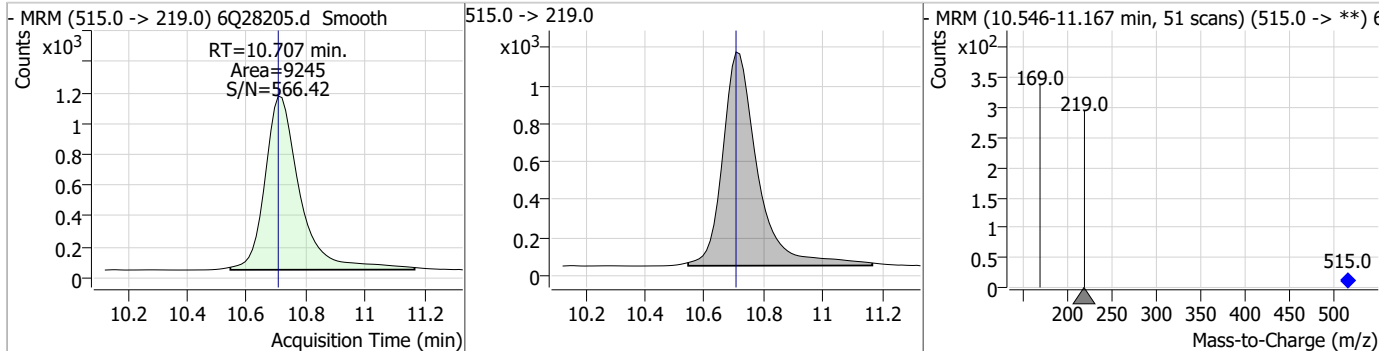
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.45	10.63	0.00	105444				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	134.94	10.64	0.00	580585				



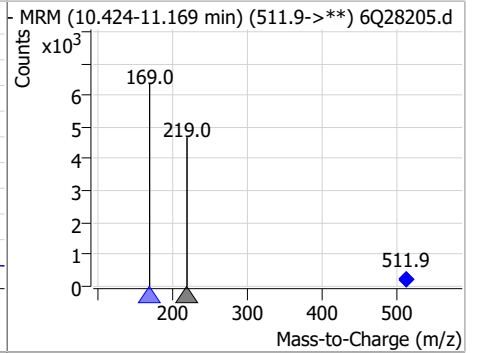
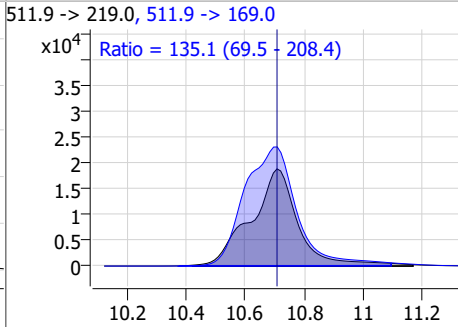
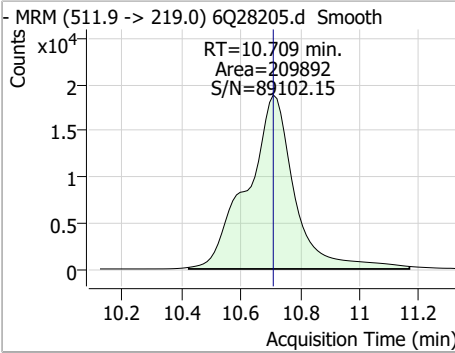
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.55	10.71	0.00	9245				



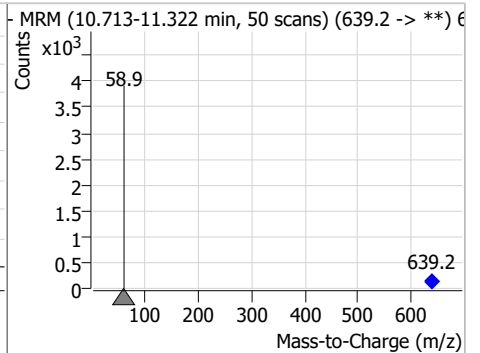
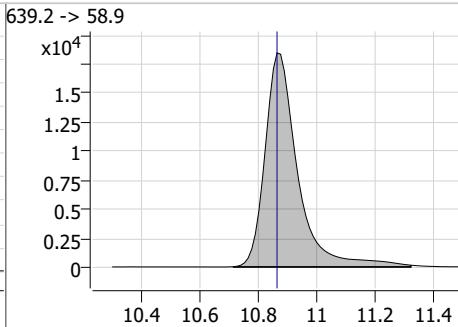
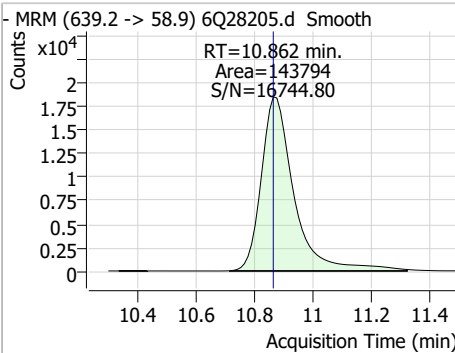
7.7.8  
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### Perfluorinated Compounds by LC/MS/MS

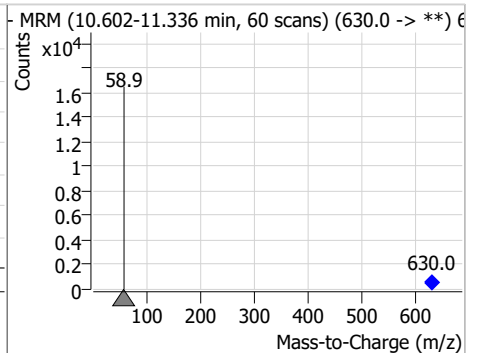
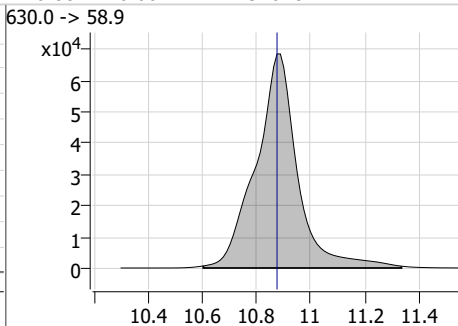
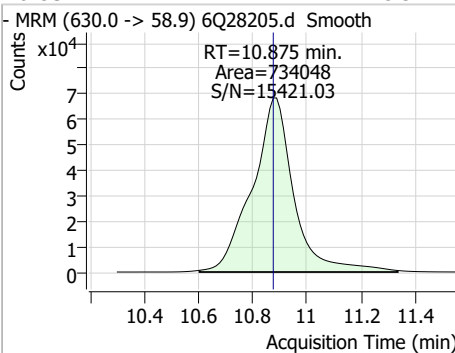
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	50.82	10.71	0.00	209892	511.9 -> 169.0	135.1	69.5	208.4



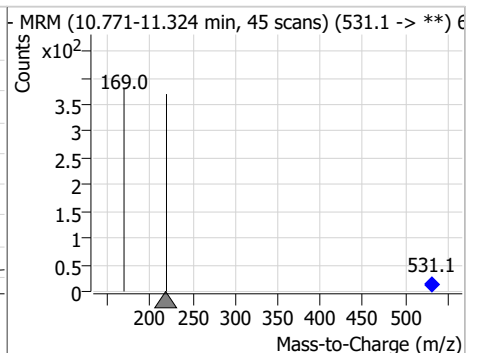
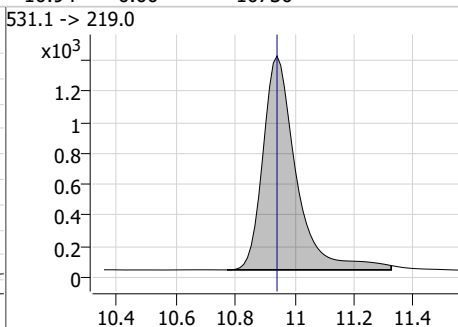
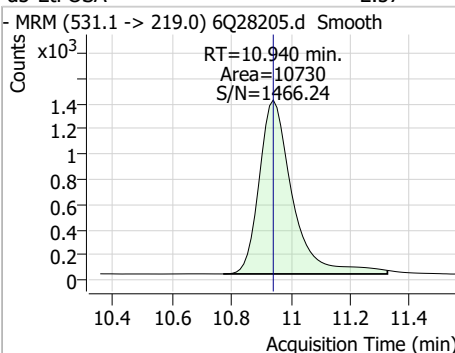
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.99	10.86	0.00	143794				



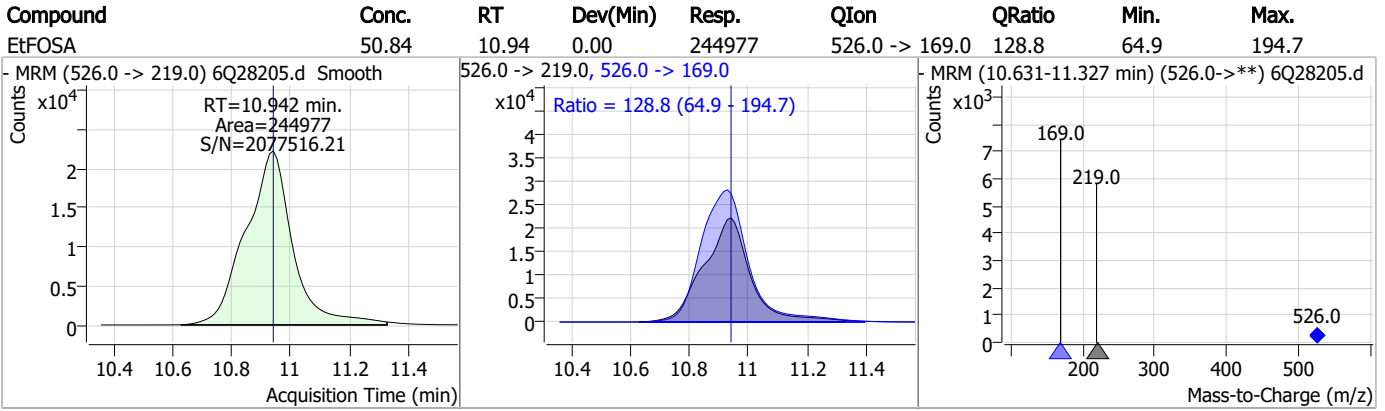
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	125.32	10.88	0.00	734048				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.57	10.94	0.00	10730				



Perfluorinated Compounds by LC/MS/MS



7.7.8

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# Manual Integration Approval Summary

Sample Number: S6Q391-IC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28205.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 14:46      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

7.7.8.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28206.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 3:00:18 PM  
 Sample Name : ic391-8  
 Vial : P1-A9  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	104492	10.00 µg/L	0.000
M5-PFPeA	4.284	268.3 -> 223.0	39870	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	43414	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	44952	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	70014	2.50 µg/L	0.000
M9-PFNA	7.567	472.1 -> 427.0	25629	1.25 µg/L	0.000
M6-PFDA	8.048	519.1 -> 474.1	23507	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	27578	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	35334	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	20503	1.25 µg/L	0.000
M8-FOSA	9.593	506.1 -> 77.8	25559	2.50 µg/L	0.000
M3-PFBS	5.396	302.1 -> 79.9	16931	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	11005	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	10877	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	2084	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	3592	5.00 µg/L	0.000
M2-8:2FTS	7.835	529.1 -> 80.9	4494	5.00 µg/L	0.000
M3-MeFOSAA	8.105	573.2 -> 419.0	27208	5.00 µg/L	0.012
M3-HFPO-DA	5.856	286.9 -> 168.9	24882	10.00 µg/L	0.000
M5-EtFOSAA	8.300	589.2 -> 419.0	23160	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	100125	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	132024	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	10009	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9694	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	9935	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	45078	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	7229	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	72657	2.50 µg/L	0.000
13C2-PFDA	8.036	515.1 -> 470.1	26553	1.25 µg/L	-0.012
13C5-PFNA	7.581	468.0 -> 423.0	23793	1.25 µg/L	0.013
13C2-PFHxA	5.491	315.1 -> 270.0	40855	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	2084	4.48 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.7%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3592	4.77 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C2-8:2FTS	7.835	529.1 -> 80.9	4494	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C2-PFDoDA	8.906	615.1 -> 570.0	35334	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C2-PFTeDA	9.621	715.2 -> 670.0	20503	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C3-PFBS	5.396	302.1 -> 79.9	16931	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFHxS	7.152	402.1 -> 79.9	11005	2.49 µg/L	0.000

7.7.9  
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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 = 99.4%	
13C4-PFBA	2.860	216.8 -> 171.9	104492	10.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.419	367.1 -> 322.0	44952	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C5-PFHxA	5.478	318.0 -> 273.0	43414	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFPeA	4.284	268.3 -> 223.0	39870	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C6-PFDA	8.048	519.1 -> 474.1	23507	1.14 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.5%	
13C7-PFUnDA	8.489	570.0 -> 525.1	27578	1.12 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.5%	
13C8-FOSA	9.593	506.1 -> 77.8	25559	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-PFOA	7.062	421.1 -> 376.0	70014	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOS	8.185	507.1 -> 79.9	10877	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C9-PFNA	7.567	472.1 -> 427.0	25629	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%	
d3-MeFOSAA	8.105	573.2 -> 419.0	27208	5.28 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C3-HFPO-DA	5.856	286.9 -> 168.9	24882	9.81 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
d3-MeFOSA	10.707	515.0 -> 219.0	9694	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.8%	
d5-EtFOSAA	8.300	589.2 -> 419.0	23160	5.31 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
d7-MeFOSE	10.628	623.2 -> 58.9	100125	25.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d9-EtFOSE	10.862	639.2 -> 58.9	132024	24.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
d5-EtFOSA	10.940	531.1 -> 219.0	10009	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	776321	228.74 µg/L	99
		327.1 -> 80.9	314604		
6:2FTS	6.836	427.1 -> 407.0	848690	217.00 µg/L	99
		427.1 -> 80.9	302777		
8:2FTS	7.849	527.1 -> 507.0	663644	194.91 µg/L	98
		527.1 -> 80.8	232292		
EtFOSAA	8.301	584.2 -> 419.1	232538	62.11 µg/L	m 99
		584.2 -> 526.0	153558		
FOSA	9.596	498.1 -> 77.9	611587	62.28 µg/L	100
		498.1 -> 478.0	18151		
MeFOSAA	8.106	570.1 -> 419.0	321156	62.60 µg/L	96
		570.1 -> 483.0	70352		
PFBA	2.868	212.8 -> 168.9	863127	251.95 µg/L	100
PFBS	5.397	298.7 -> 79.9	350764	54.36 µg/L	99
		298.7 -> 98.8	130662		
PFDA	8.036	512.9 -> 469.0	1407290	64.42 µg/L	100
		512.9 -> 219.0	209009		
PFDoDA	8.907	613.1 -> 569.0	1713183	65.28 µg/L	99
		613.1 -> 319.0	193245		
PFDS	9.057	599.0 -> 79.9	172994	61.12 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	85213			
PFHpA	6.419	363.1 -> 319.0	1526033	66.00	µg/L	99
		363.1 -> 169.0	221615			
PFHpS	7.706	449.0 -> 79.9	281092	60.79	µg/L	98
		449.0 -> 98.9	130177			
PFHxA	5.481	313.0 -> 269.0	1013801	62.43	µg/L	99
		313.0 -> 118.9	46886			
PFHxS	7.153	398.7 -> 79.9	274591	53.78	µg/L	m 87
		398.7 -> 98.9	132031			
PFNA	7.568	463.0 -> 419.0	998661	62.60	µg/L	96
		463.0 -> 219.0	204814			
PFNS	8.639	548.8 -> 79.9	228073	59.24	µg/L	92
		548.8 -> 98.9	115181			
PFOA	7.063	413.0 -> 369.0	1636855	59.03	µg/L	100
		413.0 -> 169.0	302489			
PFOS	8.186	498.9 -> 79.9	280765	58.00	µg/L	m 80
		498.9 -> 98.8	134516			
PFPeA	4.286	263.0 -> 219.0	1279671	126.53	µg/L	100
PFPeS	6.470	349.1 -> 79.9	335841	61.66	µg/L	95
		349.1 -> 98.9	145513			
PFTeDA	9.622	713.1 -> 669.0	1447317	57.94	µg/L	100
		713.1 -> 168.9	90225			
PFTrDA	9.290	663.0 -> 619.0	1566499	60.95	µg/L	99
		663.0 -> 168.9	109171			
PFUnDA	8.477	563.1 -> 519.0	1449830	67.59	µg/L	94
		563.1 -> 269.1	198841			
11CI-PF3OUdS	9.329	630.9 -> 450.9	1309272	120.79	µg/L	99
		632.9 -> 452.9	402328			
9CI-PF3ONS	8.516	530.8 -> 351.0	1644708	110.17	µg/L	99
		532.8 -> 353.0	525470			
ADONA	6.669	376.9 -> 250.9	5151229	118.63	µg/L	100
		376.9 -> 84.8	1294392			
HFPO-DA	5.857	284.9 -> 168.9	327605	131.59	µg/L	100
		284.9 -> 184.9	33264			
3:3FTCA	3.721	241.0 -> 177.0	202882	335.82	µg/L	99
		241.0 -> 117.0	22883			
5:3FTCA	6.146	341.0 -> 237.1	4429759	1491.82	µg/L	99
		341.0 -> 217.0	3196853			
7:3FTCA	7.545	441.0 -> 316.9	2659562	1414.29	µg/L	90
		441.0 -> 336.9	5890262			
EtFOSA	10.942	526.0 -> 219.0	561739	124.97	µg/L	100
		526.0 -> 169.0	729274			
EtFOSE	10.875	630.0 -> 58.9	1646615	306.17	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	493755	114.01	µg/L	96
		511.9 -> 169.0	663209			
MeFOSE	10.641	616.1 -> 58.9	1316121	322.14	µg/L	100
PFDoS	9.748	699.1 -> 79.9	112107	61.53	µg/L	98
		699.1 -> 98.8	62843			
NFDHA	5.360	295.0 -> 201.0	216713	115.20	µg/L	96
		295.0 -> 84.9	58614			
PFMBA	4.700	279.0 -> 85.1	876925	125.80	µg/L	100
PFMPA	3.413	229.0 -> 84.9	675379	129.22	µg/L	100
PFEESA	5.937	314.8 -> 134.9	2163311	107.71	µg/L	100
		314.8 -> 82.9	77807			

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



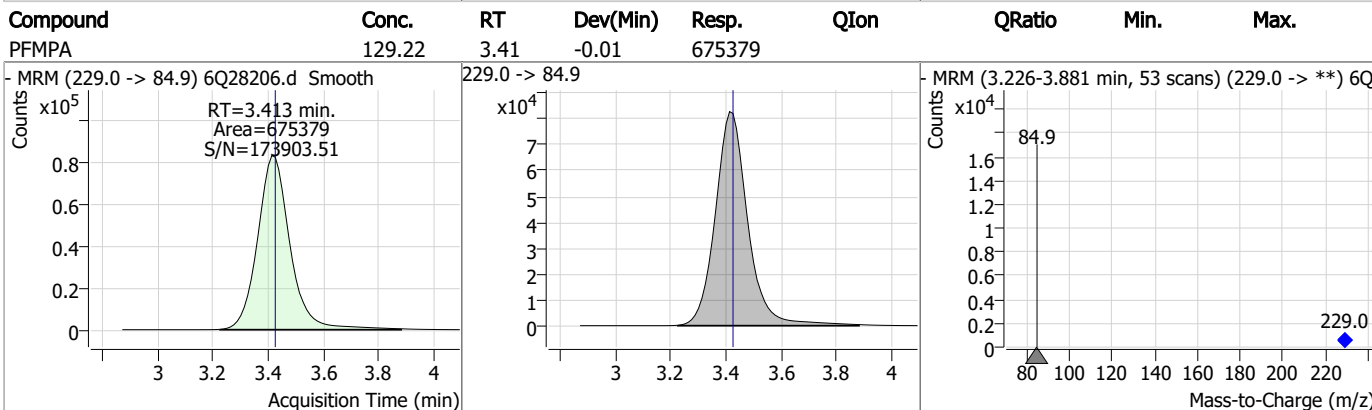
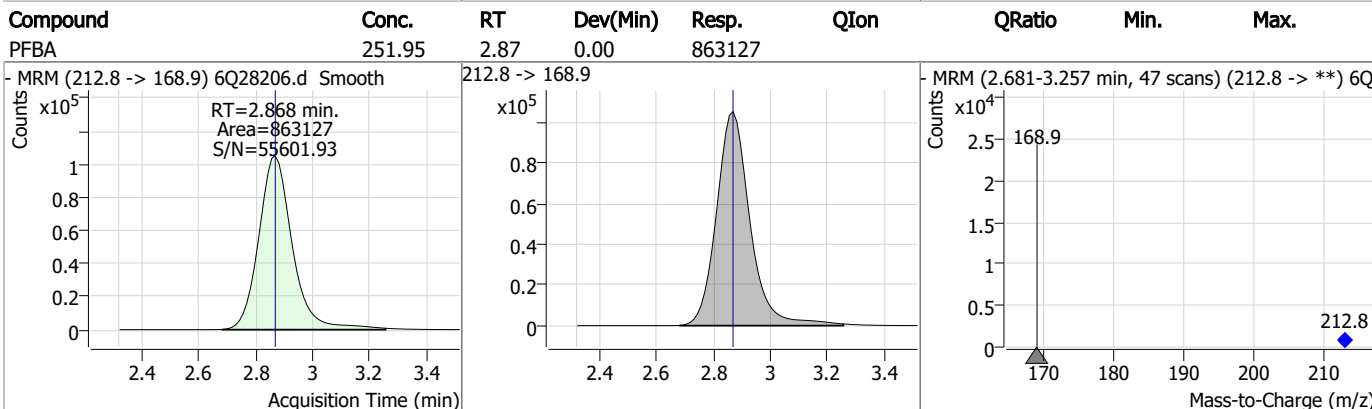
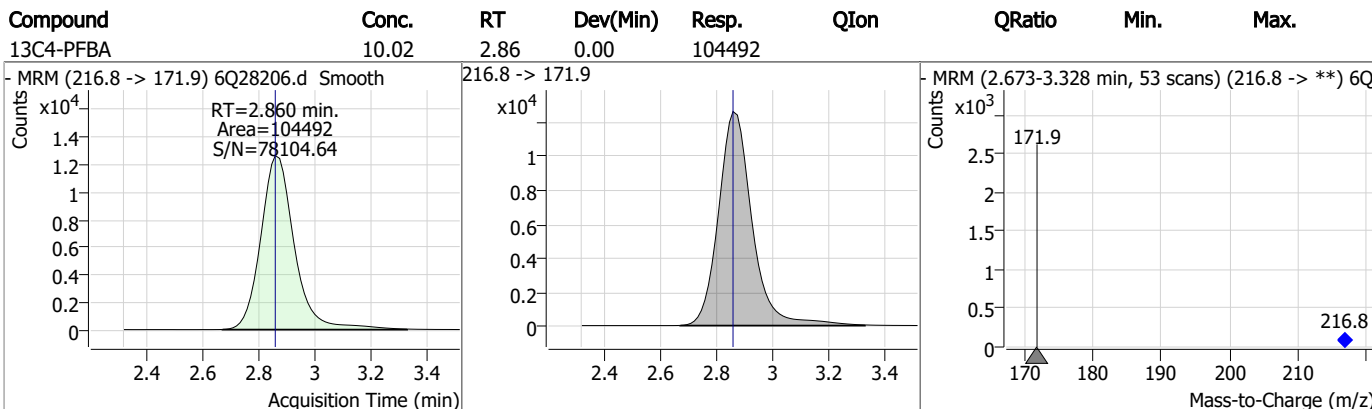
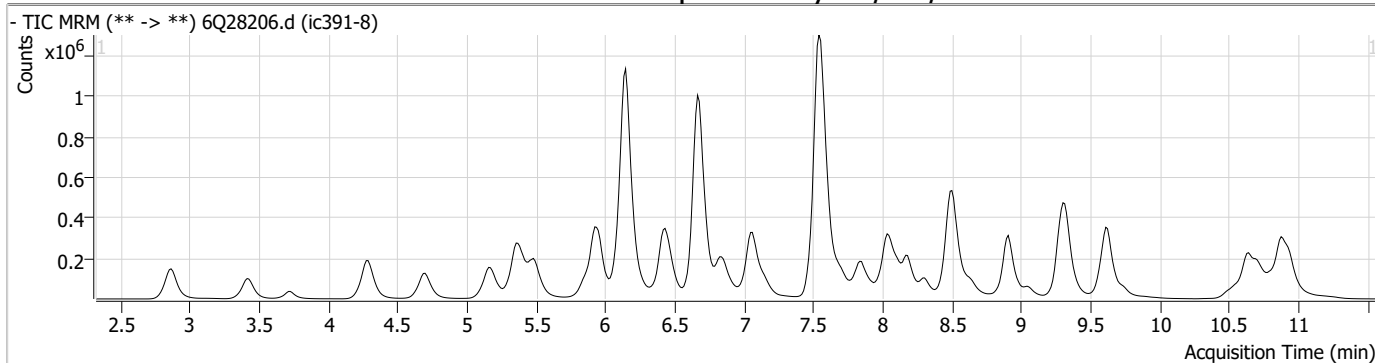
### Perfluorinated Compounds by LC/MS/MS

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

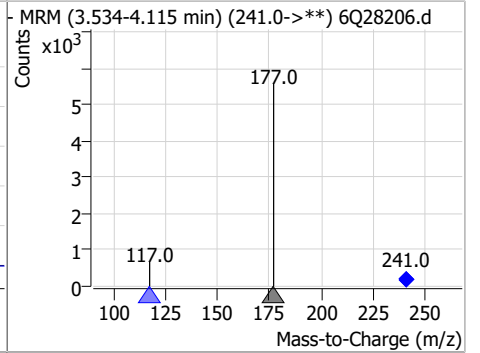
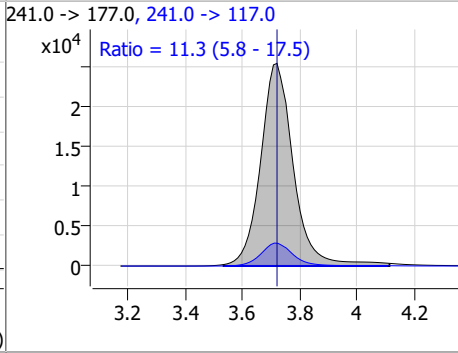
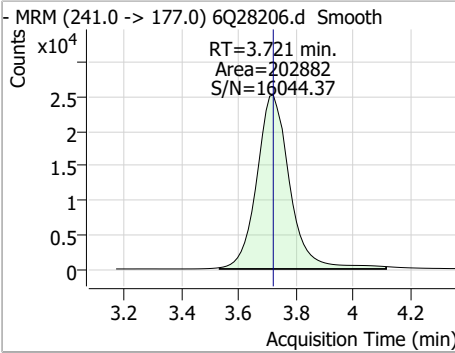
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### Perfluorinated Compounds by LC/MS/MS

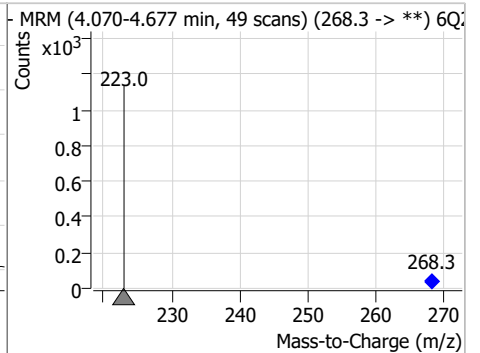
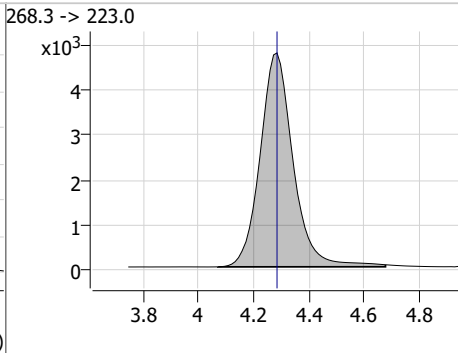
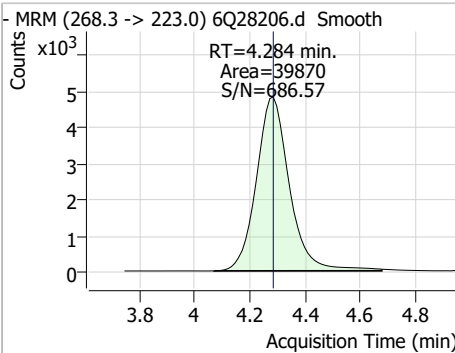


### Perfluorinated Compounds by LC/MS/MS

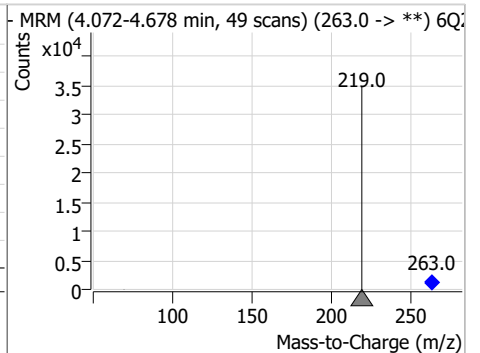
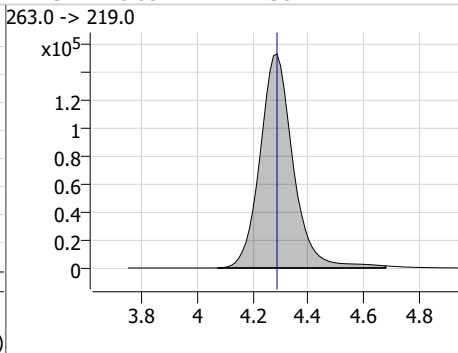
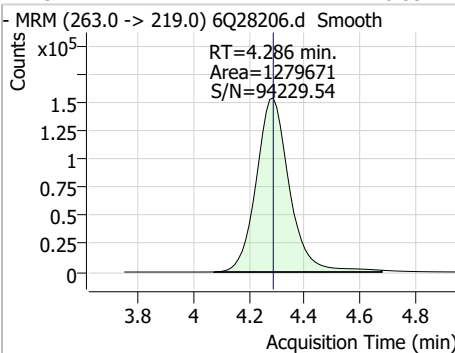
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	335.82	3.72	0.00	202882	241.0 -> 117.0	11.3	5.8	17.5



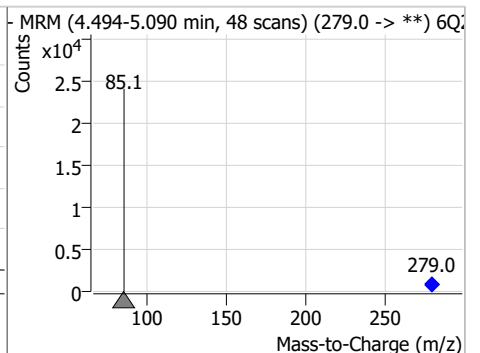
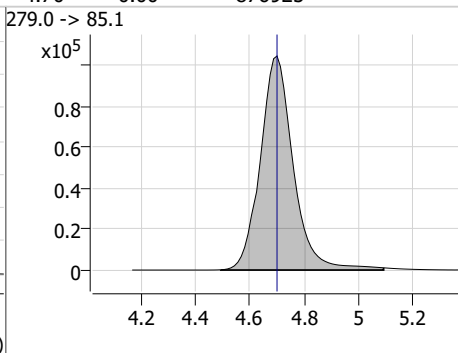
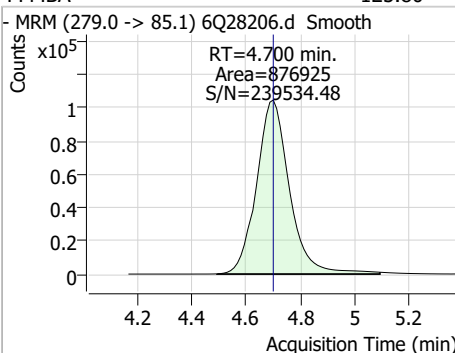
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.86	4.28	0.00	39870				



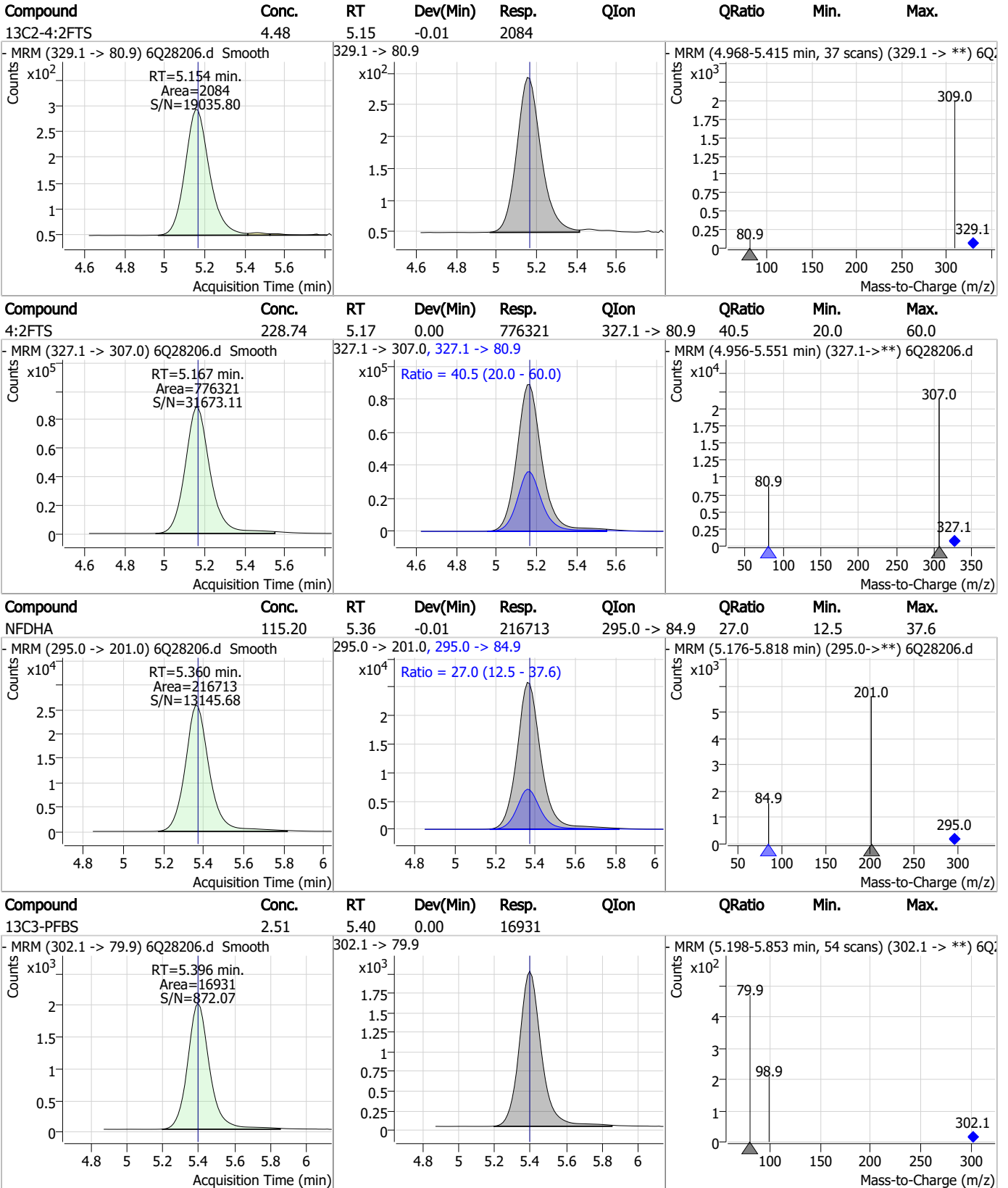
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	126.53	4.29	0.00	1279671				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	125.80	4.70	0.00	876925				



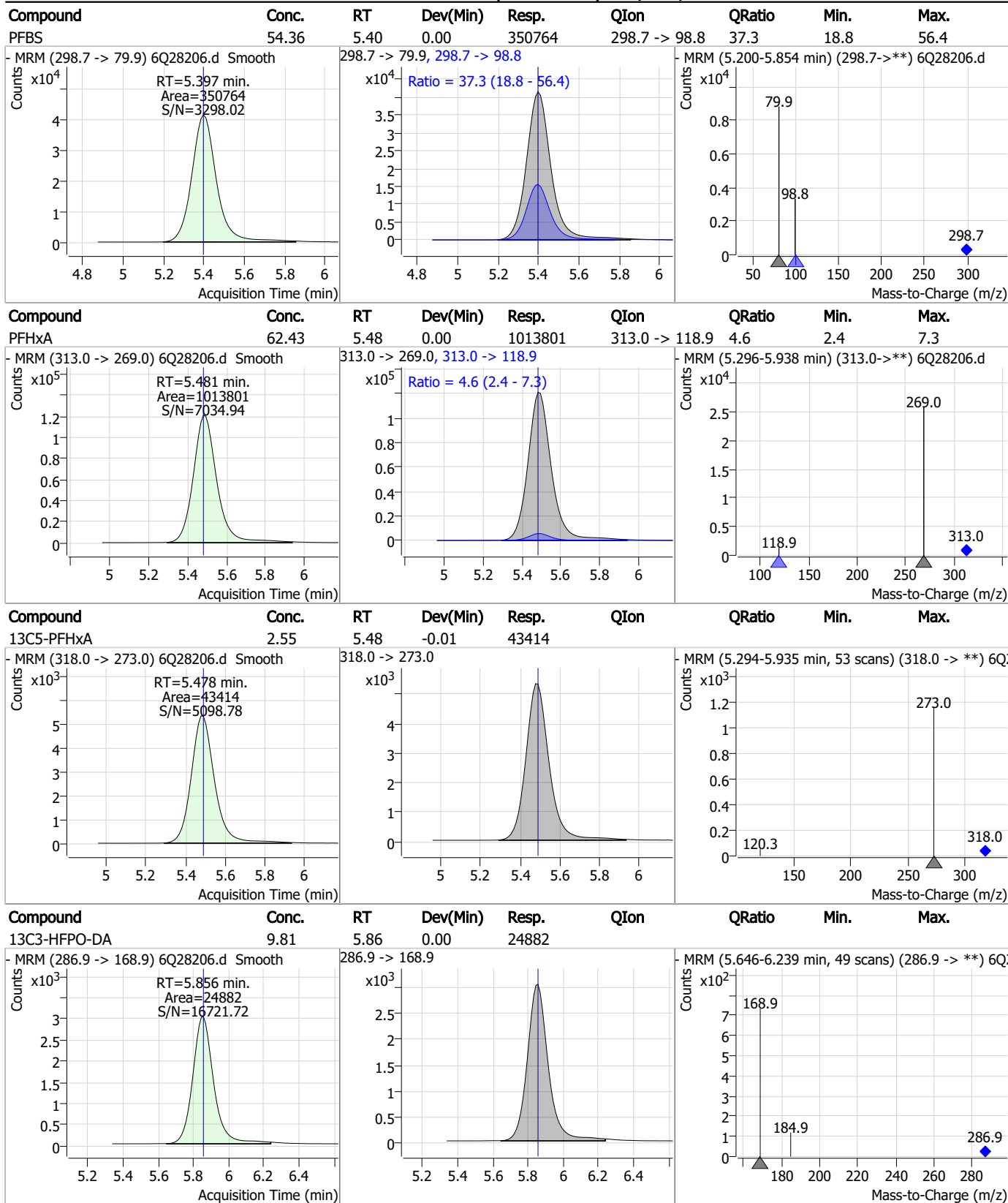
### Perfluorinated Compounds by LC/MS/MS



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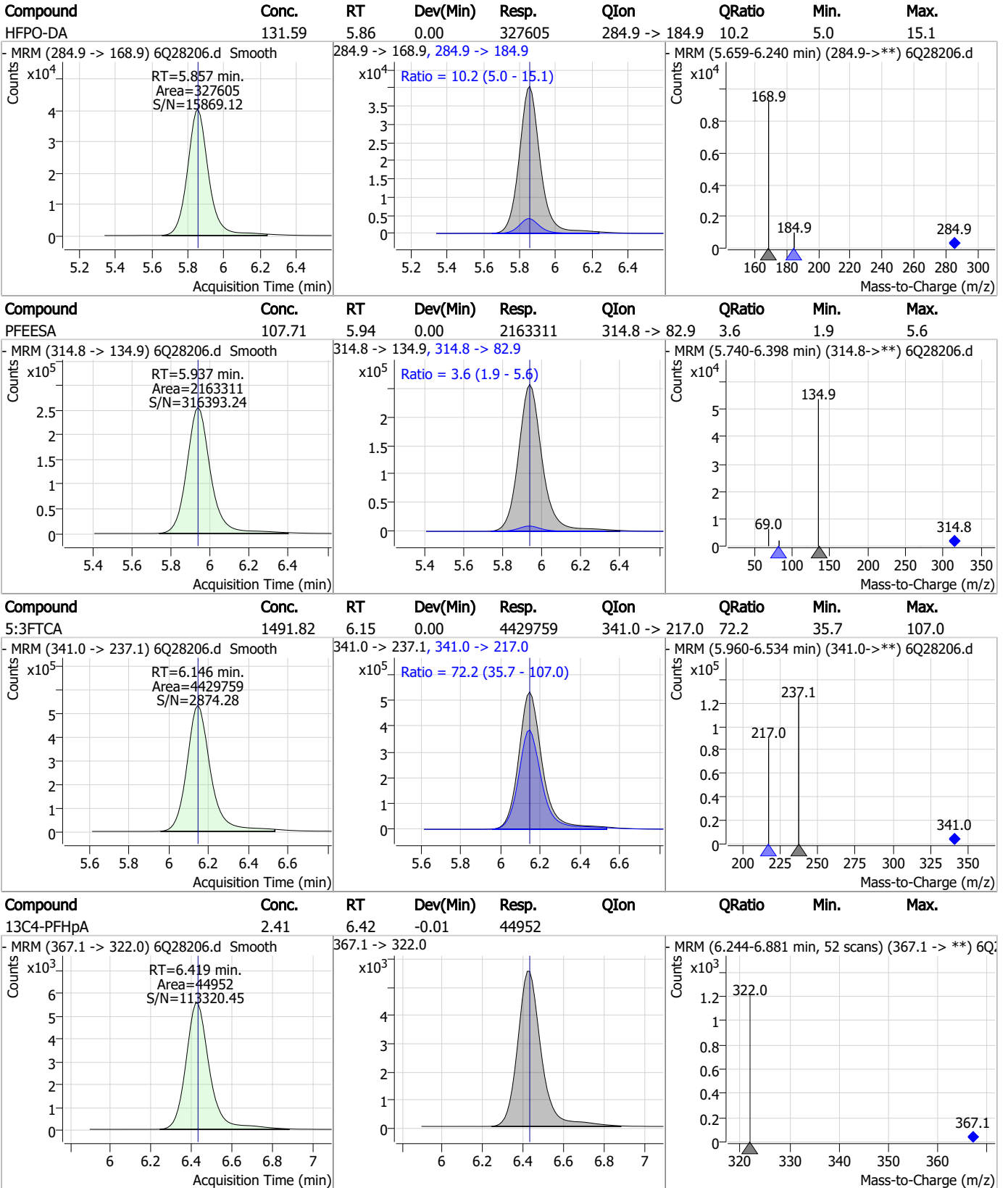
### Perfluorinated Compounds by LC/MS/MS



7.7.9  
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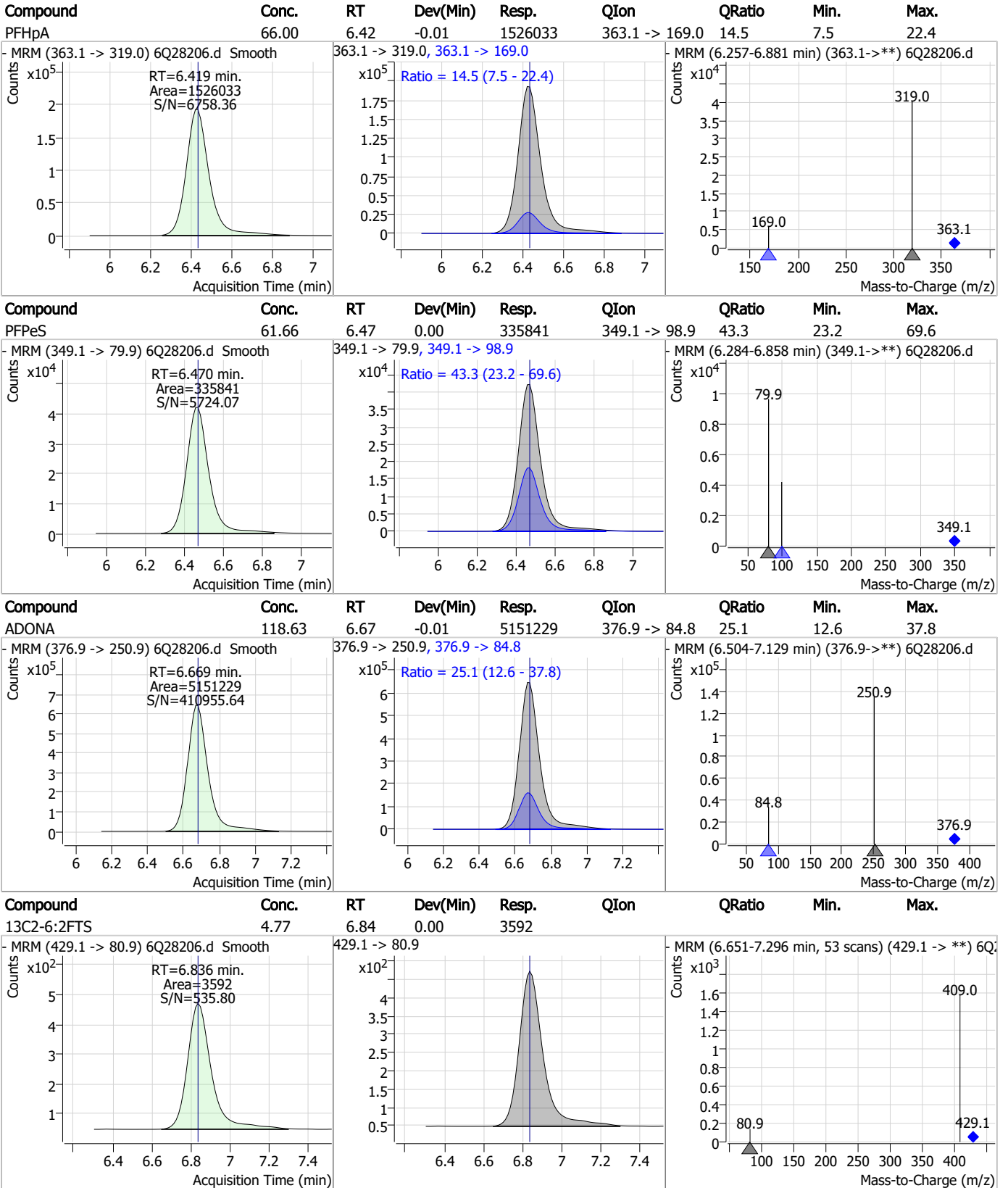
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

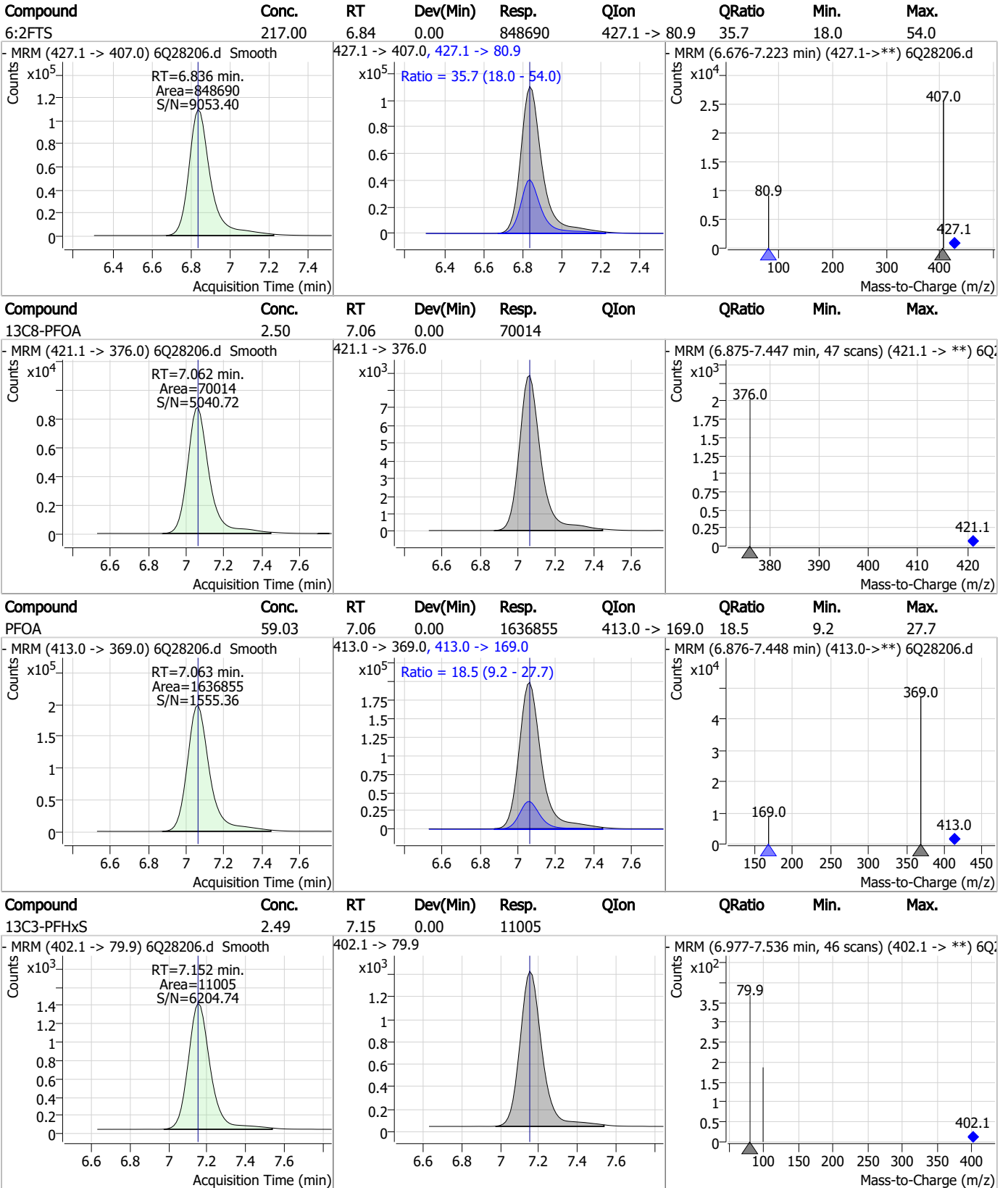


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### Perfluorinated Compounds by LC/MS/MS

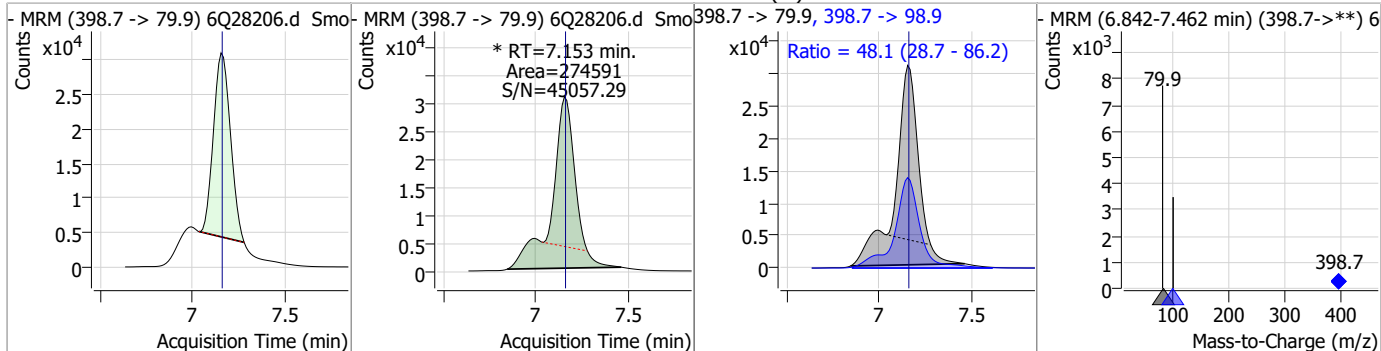


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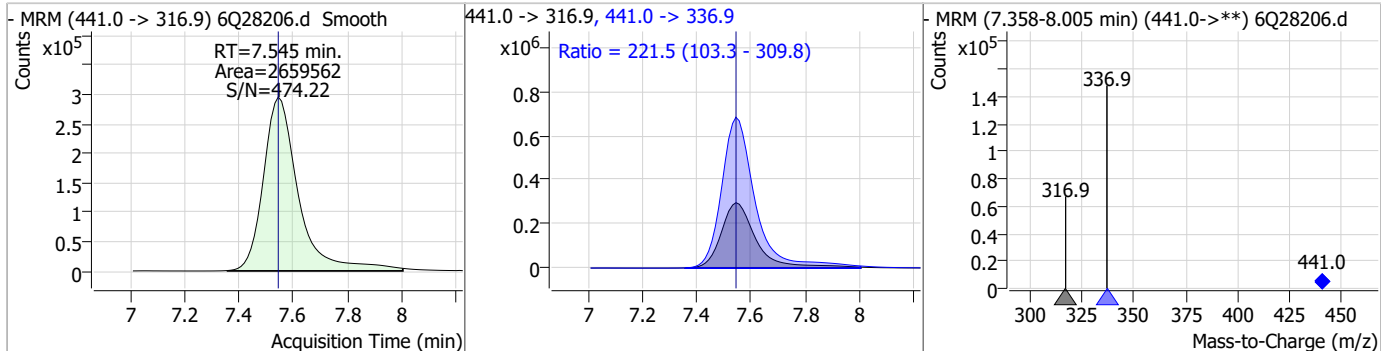
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### Perfluorinated Compounds by LC/MS/MS

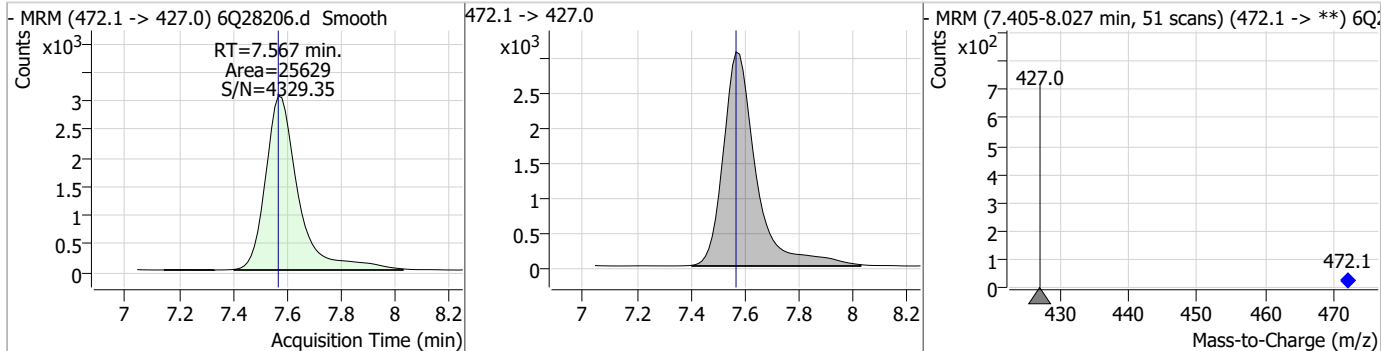
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	53.78	7.15	0.00	274591 (m)	398.7 -> 98.9	48.1	28.7	86.2



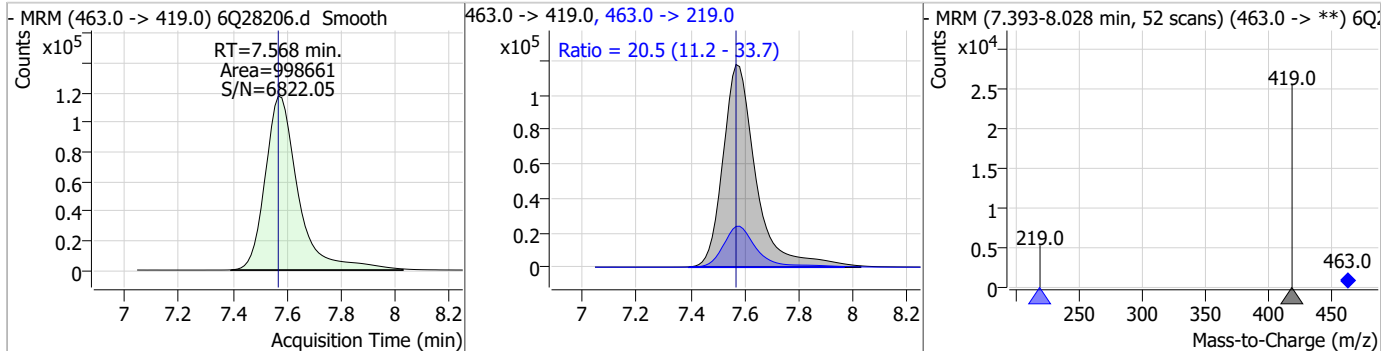
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1414.29	7.55	0.00	2659562	441.0 -> 336.9	221.5	103.3	309.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.29	7.57	0.00	25629	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	62.60	7.57	0.00	998661	463.0 -> 219.0	20.5	11.2	33.7



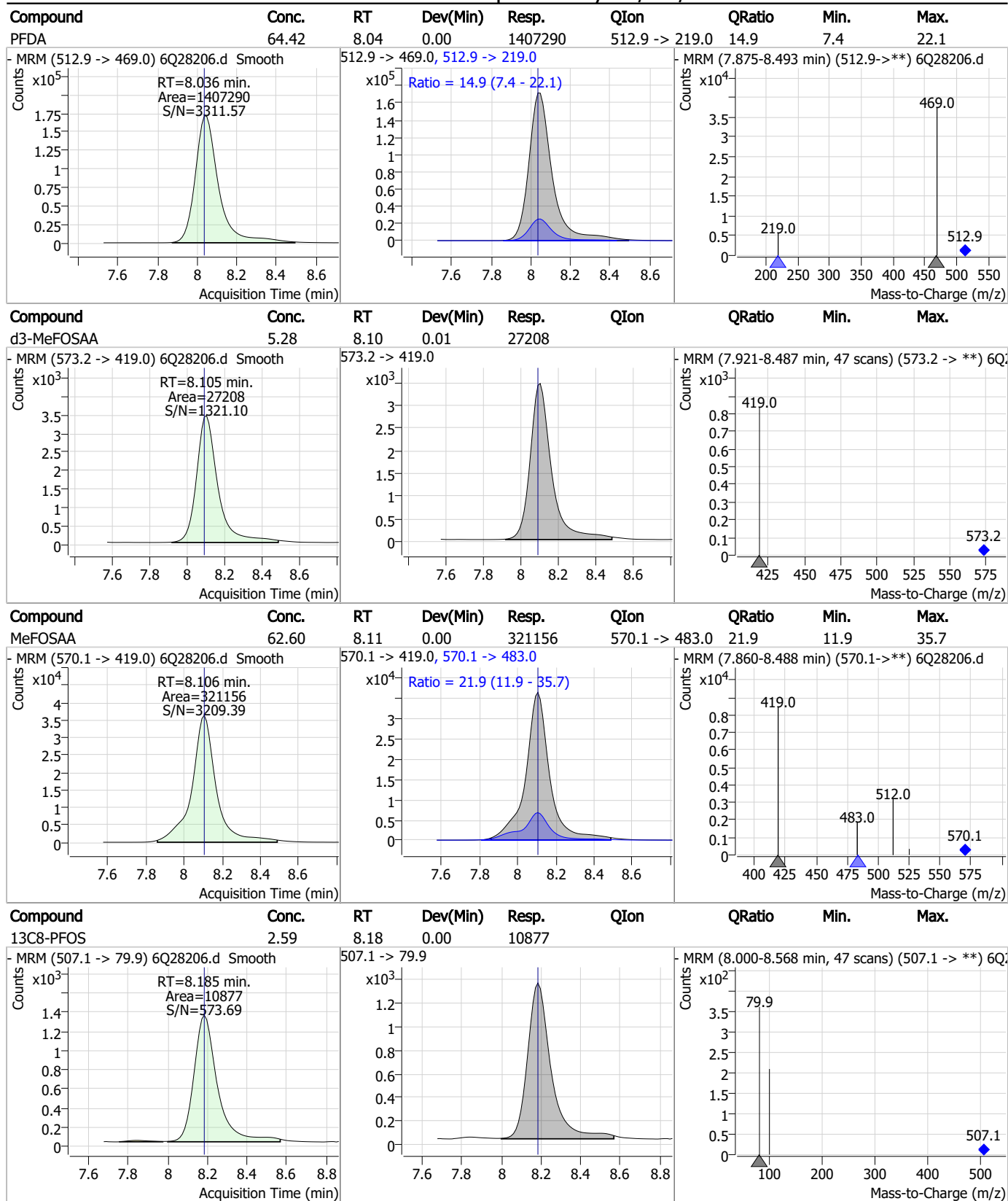
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	60.79	7.71	0.00	281092	449.0 -> 98.9	46.3	23.9	71.7
13C2-8:2FTS	5.28	7.84	0.00	4494				
8:2FTS	194.91	7.85	0.01	663644	527.1 -> 80.8	35.0	18.1	54.3
13C6-PFDA	1.14	8.05	0.01	23507				

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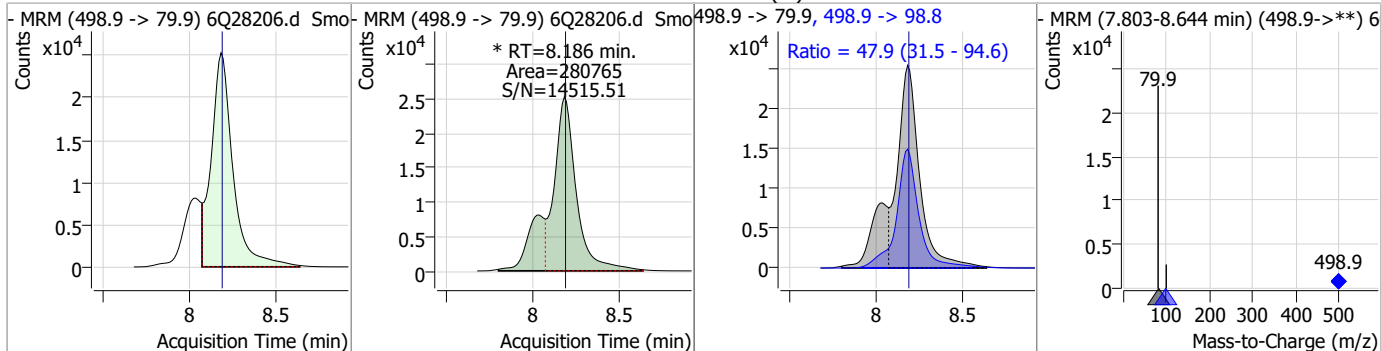
### Perfluorinated Compounds by LC/MS/MS



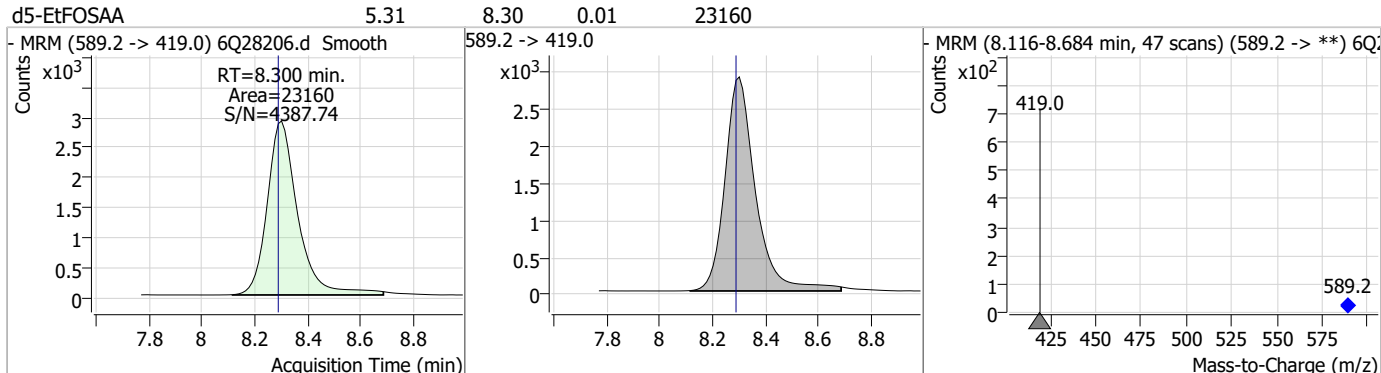
7.7.9  
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### Perfluorinated Compounds by LC/MS/MS

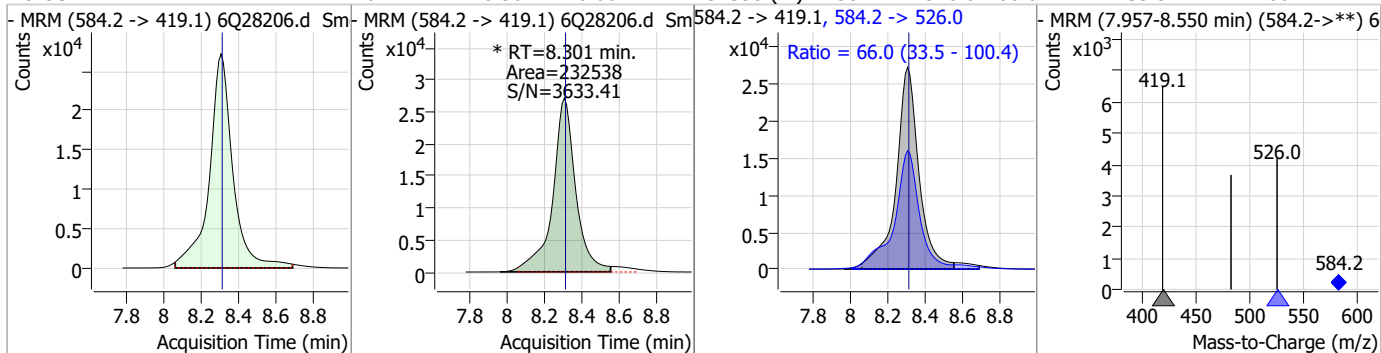
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	58.00	8.19	0.00	280765 (m)	498.9 -> 98.8	47.9	31.5	94.6



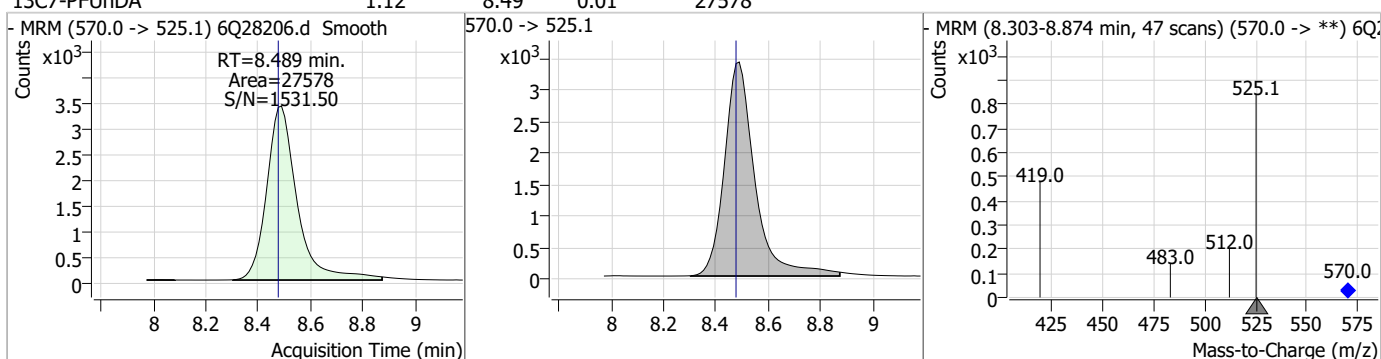
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.31	8.30	0.01	23160				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	62.11	8.30	0.00	232538 (m)	584.2 -> 526.0	66.0	33.5	100.4

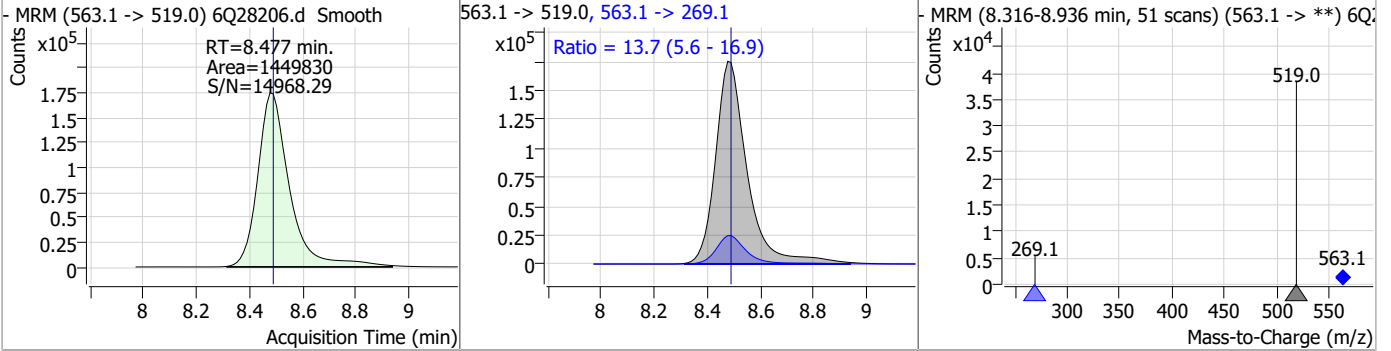


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.12	8.49	0.01	27578				

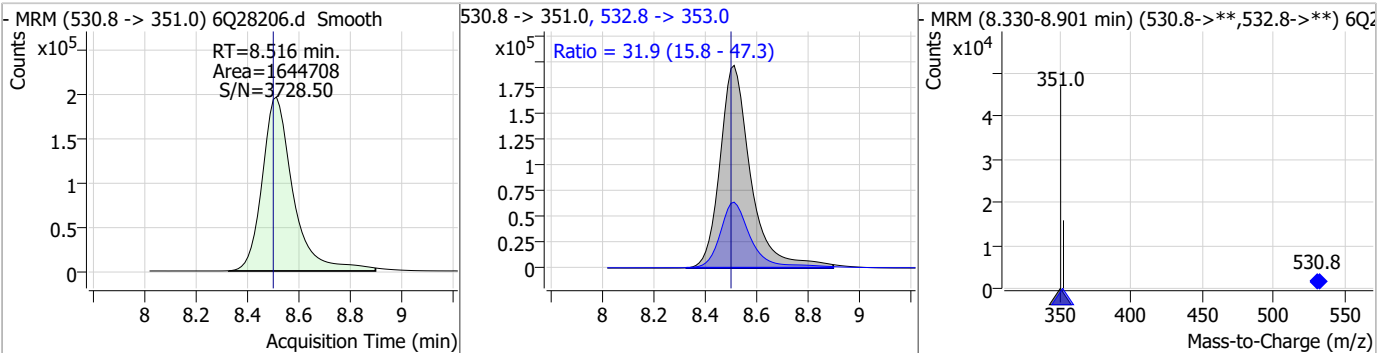


### Perfluorinated Compounds by LC/MS/MS

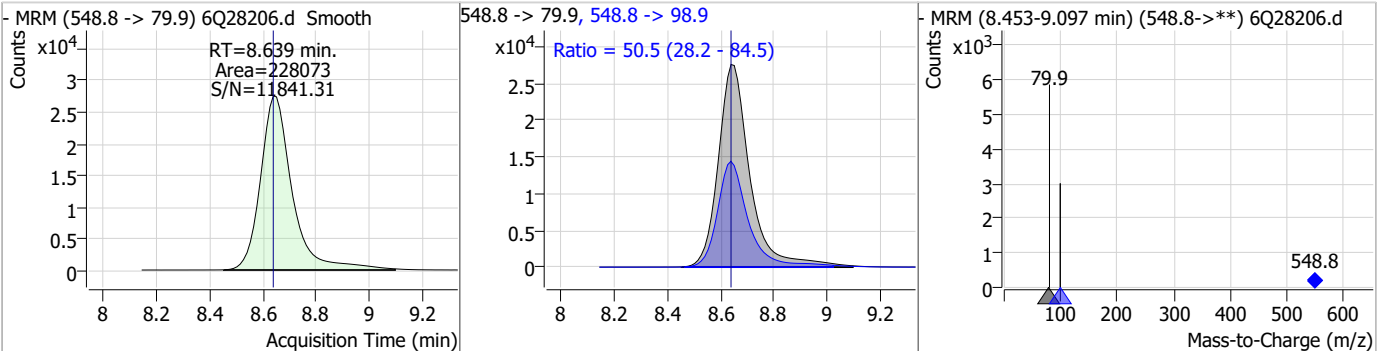
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	67.59	8.48	-0.01	1449830	563.1 -> 269.1	13.7	5.6	16.9



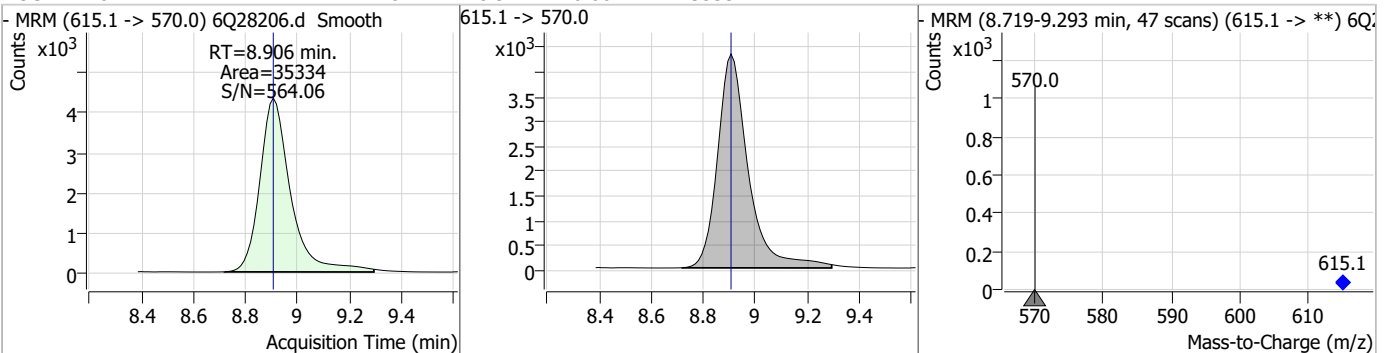
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	110.17	8.52	0.01	1644708	532.8 -> 353.0	31.9	15.8	47.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	59.24	8.64	0.00	228073	548.8 -> 98.9	50.5	28.2	84.5

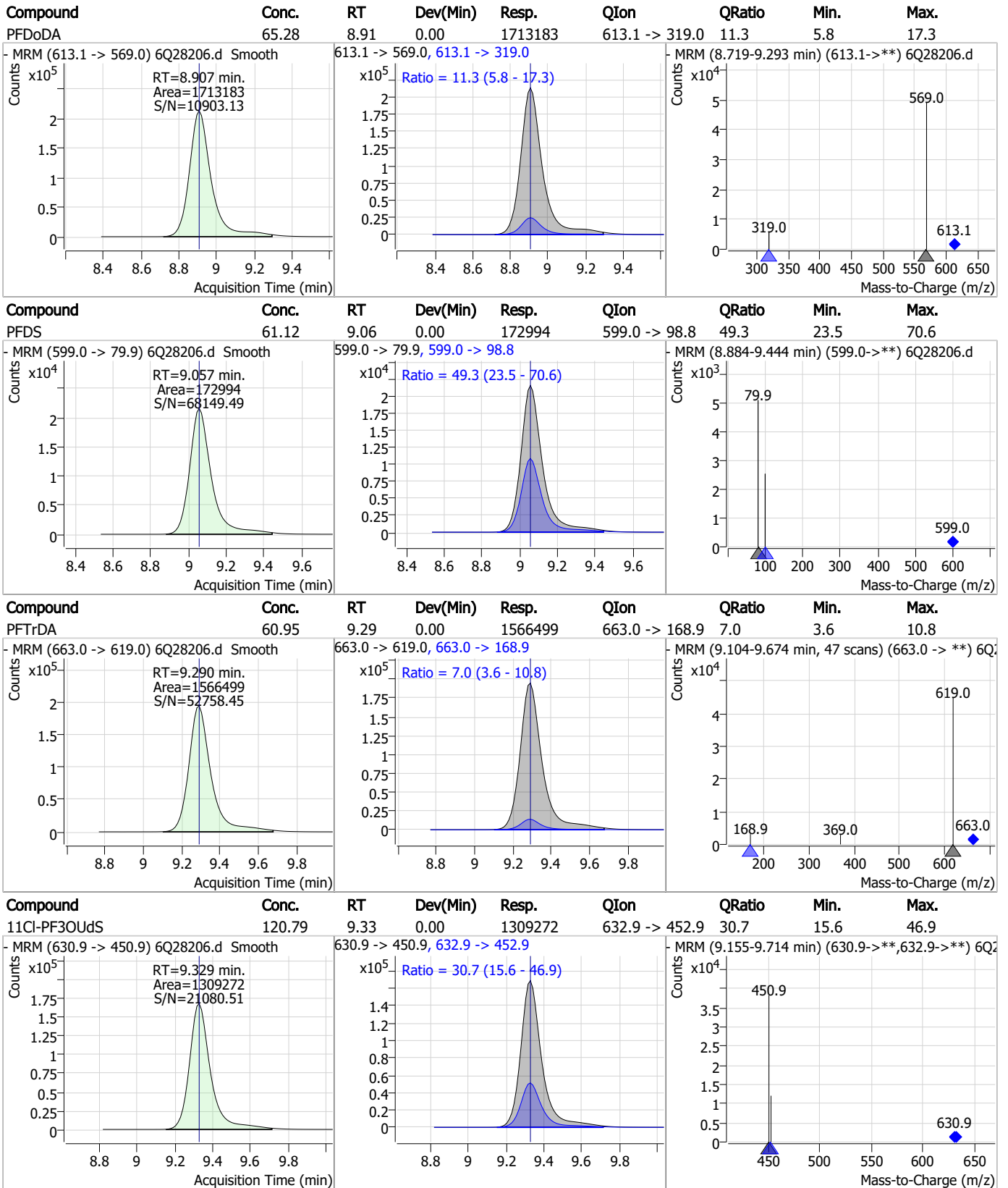


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	8.91	0.00	35334	615.1 -> 570.0	-	-	-





### Perfluorinated Compounds by LC/MS/MS

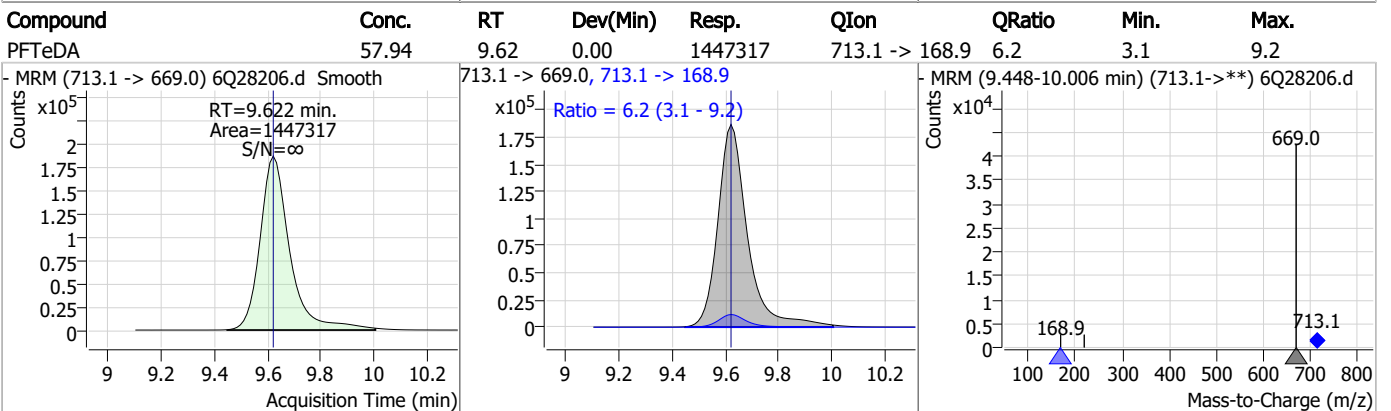
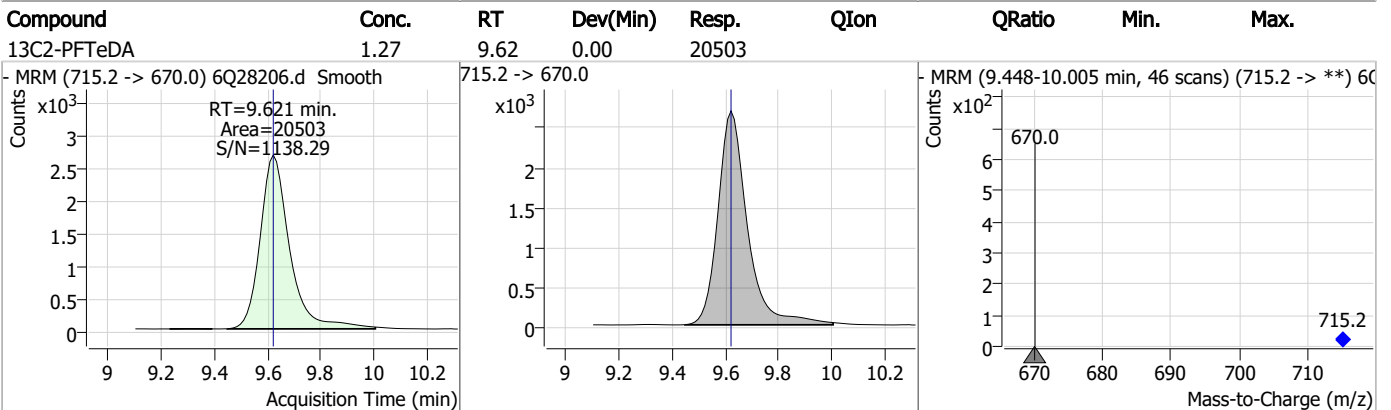
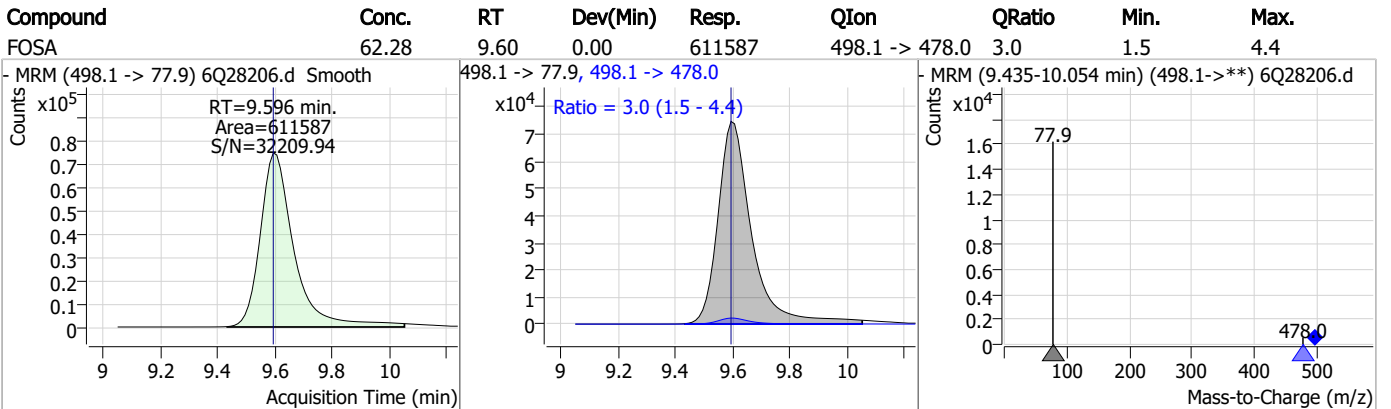
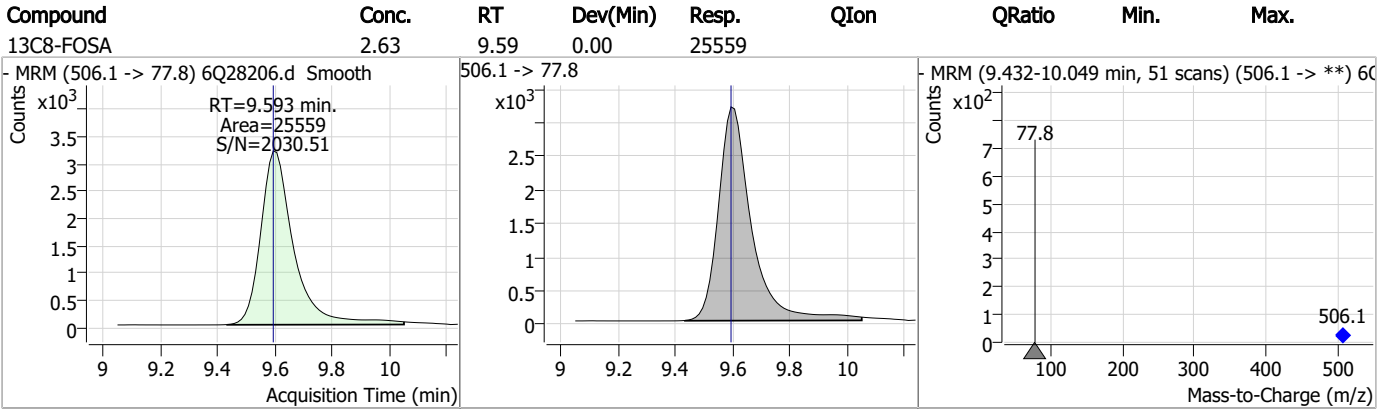


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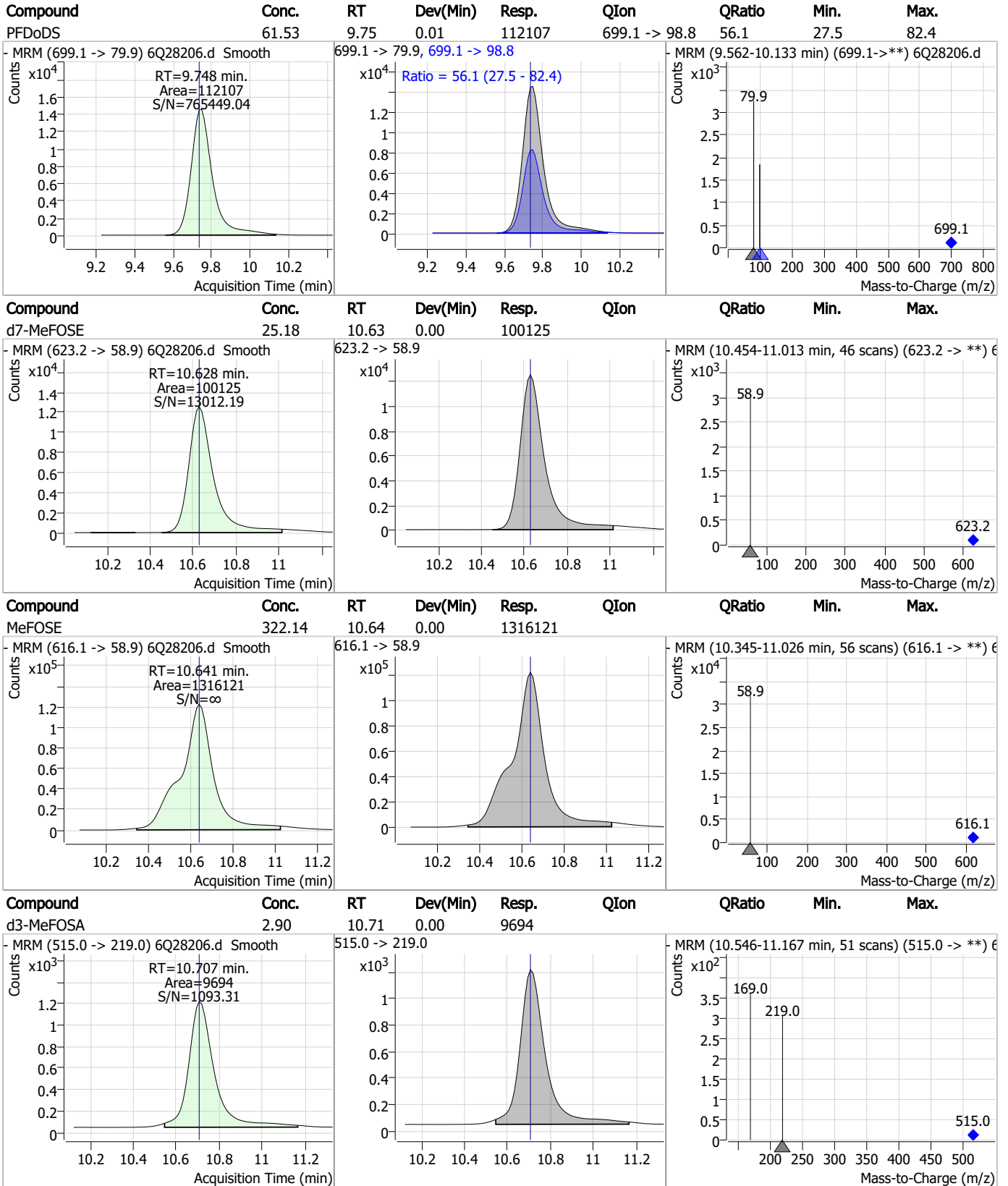
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### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS

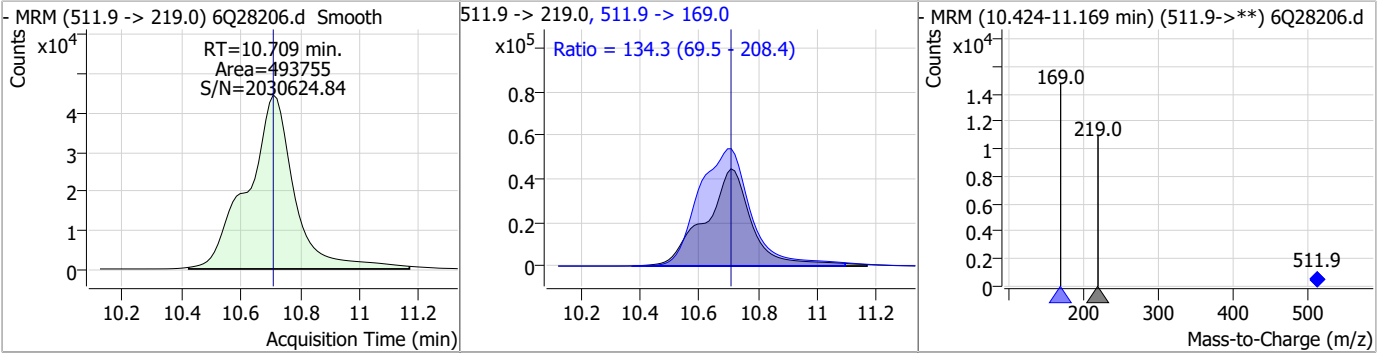


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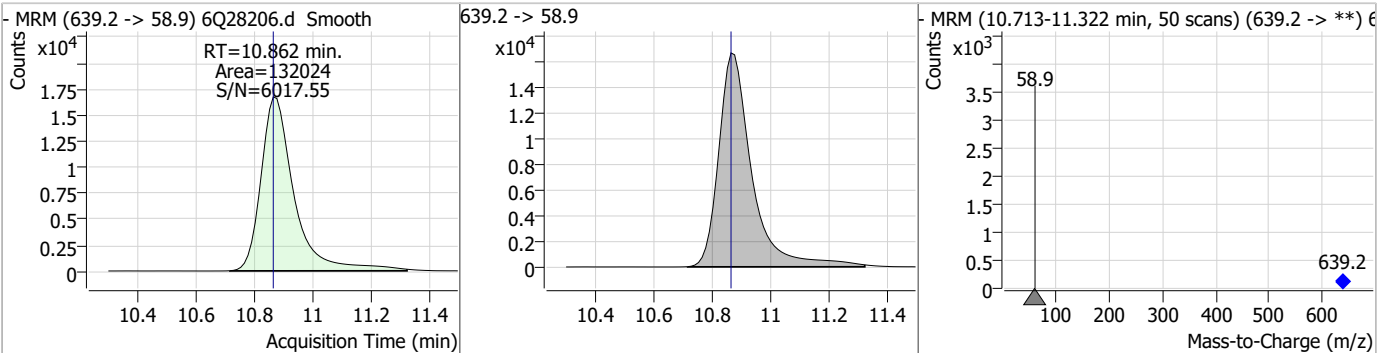
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### Perfluorinated Compounds by LC/MS/MS

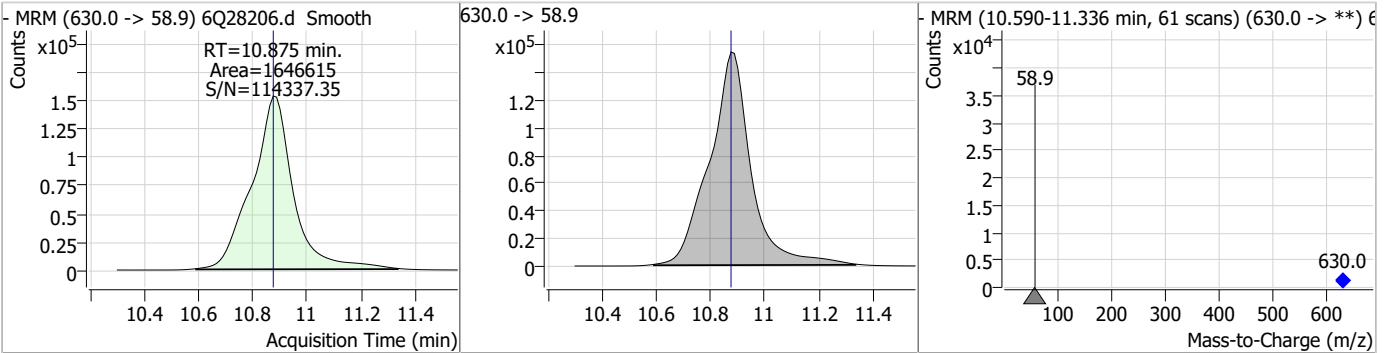
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	114.01	10.71	0.00	493755	511.9 -> 169.0	134.3	69.5	208.4



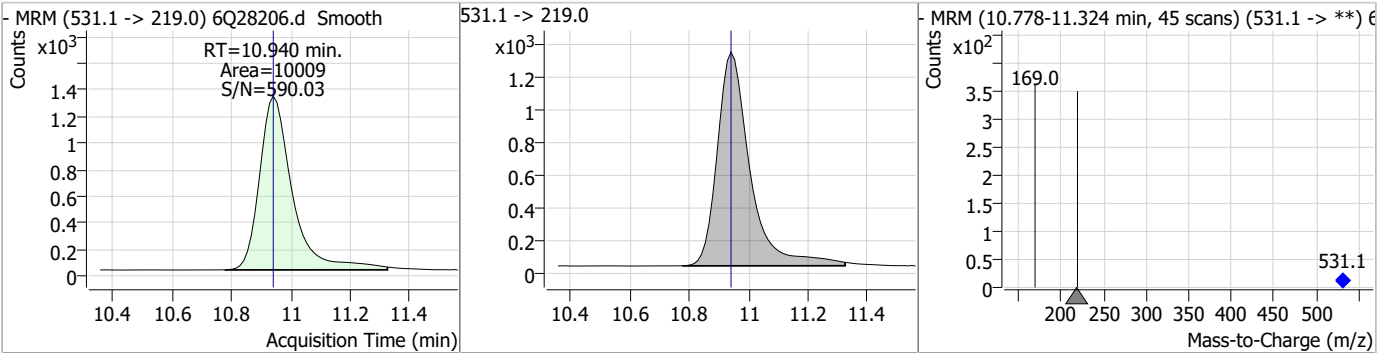
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.88	10.86	0.00	132024				



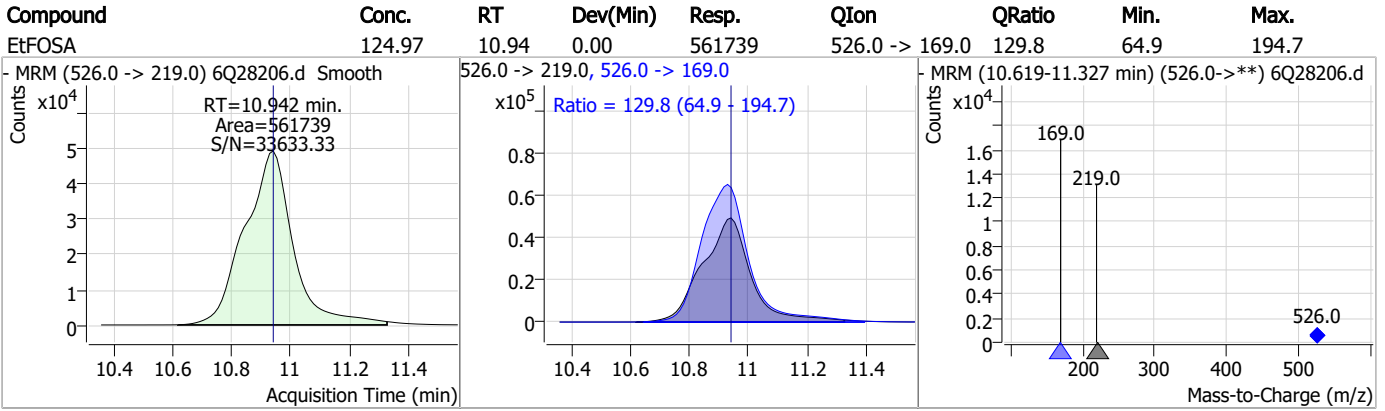
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	306.17	10.88	0.00	1646615				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.60	10.94	0.00	10009				



Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q391-IC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28206.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 15:00      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28208.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 3:28:57 PM  
 Sample Name : icv391-4  
 Vial : P1-B1  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.901	216.8 -> 171.9	123441	10.00 µg/L	0.041
M5-PFPeA	4.297	268.3 -> 223.0	43170	5.00 µg/L	0.012
M5-PFHxA	5.491	318.0 -> 273.0	44669	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	50164	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	78999	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	27545	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	27520	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	34416	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	39354	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	22481	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	28149	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	18348	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	12142	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	11960	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2583	5.00 µg/L	0.000
M2-6:2FTS	6.848	429.1 -> 80.9	4392	5.00 µg/L	0.012
M2-8:2FTS	7.835	529.1 -> 80.9	5219	5.00 µg/L	0.000
M3-MeFOSAA	8.105	573.2 -> 419.0	30419	5.00 µg/L	0.012
M3-HFPO-DA	5.856	286.9 -> 168.9	25722	10.00 µg/L	0.000
M5-EtFOSAA	8.300	589.2 -> 419.0	26721	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	114081	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	158247	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	11555	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9269	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	12421	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	52960	5.00 µg/L	0.040
18O2-PFHxS	7.164	403.0 -> 83.9	7819	2.50 µg/L	0.013
13C4-PFOA	7.062	417.1 -> 372.0	81249	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	25499	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	25166	1.25 µg/L	0.013
13C2-PFHxA	5.491	315.1 -> 270.0	44399	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.166	329.1 -> 80.9	2583	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C2-6:2FTS	6.848	429.1 -> 80.9	4392	5.39 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-8:2FTS	7.835	529.1 -> 80.9	5219	5.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.4%		
13C2-PFDoDA	8.906	615.1 -> 570.0	39354	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-PFTeDA	9.621	715.2 -> 670.0	22481	1.45 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 116.2%		
13C3-PFBS	5.396	302.1 -> 79.9	18348	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C3-PFHxS	7.152	402.1 -> 79.9	12142	2.54 µg/L	0.000

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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C4-PFBA	2.901	216.8 -> 171.9	123441	10.07 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFHpA	6.431	367.1 -> 322.0	50164	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFHxA	5.491	318.0 -> 273.0	44669	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C5-PFPeA	4.297	268.3 -> 223.0	43170	4.84 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C6-PFDA	8.048	519.1 -> 474.1	27520	1.39 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.6%	
13C7-PFUnDA	8.489	570.0 -> 525.1	34416	1.45 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.3%	
13C8-FOSA	9.605	506.1 -> 77.8	28149	2.32 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%	
13C8-PFOA	7.062	421.1 -> 376.0	78999	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C8-PFOS	8.185	507.1 -> 79.9	11960	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.2%	
13C9-PFNA	7.580	472.1 -> 427.0	27545	1.31 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.5%	
d3-MeFOSAA	8.105	573.2 -> 419.0	30419	4.72 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C3-HFPO-DA	5.856	286.9 -> 168.9	25722	9.33 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d3-MeFOSA	10.707	515.0 -> 219.0	9269	2.21 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.6%	
d5-EtFOSAA	8.300	589.2 -> 419.0	26721	4.90 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d7-MeFOSE	10.628	623.2 -> 58.9	114081	22.94 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d9-EtFOSE	10.862	639.2 -> 58.9	158247	23.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
d5-EtFOSA	10.940	531.1 -> 219.0	11555	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	41079	9.77 µg/L	99
		327.1 -> 80.9	16061		
6:2FTS	6.836	427.1 -> 407.0	45675	9.55 µg/L	98
		427.1 -> 80.9	16945		
8:2FTS	7.849	527.1 -> 507.0	35262	8.92 µg/L	98
		527.1 -> 80.8	12395		
EtFOSAA	8.301	584.2 -> 419.1	9529	2.21 µg/L	97
		584.2 -> 526.0	6645		
FOSA	9.596	498.1 -> 77.9	25835	2.39 µg/L	100
		498.1 -> 478.0	738		
MeFOSAA	8.106	570.1 -> 419.0	14455	2.52 µg/L	96
		570.1 -> 483.0	3162		
PFBA	2.907	212.8 -> 168.9	39416	9.74 µg/L	100
PFBS	5.397	298.7 -> 79.9	15009	2.15 µg/L	99
		298.7 -> 98.8	5587		
PFDA	8.048	512.9 -> 469.0	59866	2.34 µg/L	98
		512.9 -> 219.0	9225		
PFDODA	8.907	613.1 -> 569.0	74561	2.55 µg/L	99
		613.1 -> 319.0	8168		
PFDS	9.057	599.0 -> 79.9	7473	2.40 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3538			
PFHpA	6.432	363.1 -> 319.0	60568	2.35	µg/L	97
		363.1 -> 169.0	9669			
PFHpS	7.706	449.0 -> 79.9	11893	2.34	µg/L	94
		449.0 -> 98.9	6126			
PFHxA	5.494	313.0 -> 269.0	41599	2.49	µg/L	99
		313.0 -> 118.9	1870			
PFHxS	7.166	398.7 -> 79.9	12818	2.28	µg/L	m 86
		398.7 -> 98.9	6000			
PFNA	7.581	463.0 -> 419.0	43628	2.54	µg/L	96
		463.0 -> 219.0	8889			
PFNS	8.639	548.8 -> 79.9	10522	2.49	µg/L	92
		548.8 -> 98.9	5322			
PFOA	7.063	413.0 -> 369.0	80119	2.56	µg/L	97
		413.0 -> 169.0	13733			
PFOS	8.186	498.9 -> 79.9	11971	2.25	µg/L	m 84
		498.9 -> 98.8	6104			
PFPeA	4.286	263.0 -> 219.0	55221	5.04	µg/L	100
PFPeS	6.470	349.1 -> 79.9	14472	2.41	µg/L	98
		349.1 -> 98.9	6494			
PFTeDA	9.622	713.1 -> 669.0	65633	2.40	µg/L	100
		713.1 -> 168.9	4069			
PFTrDA	9.290	663.0 -> 619.0	70166	2.45	µg/L	100
		663.0 -> 168.9	4936			
PFUnDA	8.489	563.1 -> 519.0	62769	2.34	µg/L	92
		563.1 -> 269.1	9017			
11CI-PF3OUdS	9.329	630.9 -> 450.9	56367	5.03	µg/L	97
		632.9 -> 452.9	16858			
9CI-PF3ONS	8.516	530.8 -> 351.0	76172	4.94	µg/L	98
		532.8 -> 353.0	24892			
ADONA	6.681	376.9 -> 250.9	218196	4.86	µg/L	95
		376.9 -> 84.8	59944			
HFPO-DA	5.857	284.9 -> 168.9	12641	4.91	µg/L	100
		284.9 -> 184.9	1291			
3:3FTCA	3.764	241.0 -> 177.0	8644	12.11	µg/L	98
		241.0 -> 117.0	961			
5:3FTCA	6.159	341.0 -> 237.1	189658	62.08	µg/L	96
		341.0 -> 217.0	141142			
7:3FTCA	7.558	441.0 -> 316.9	130304	67.34	µg/L	97
		441.0 -> 336.9	275076			
EtFOSA	10.942	526.0 -> 219.0	23904	4.61	µg/L	96
		526.0 -> 169.0	32119			
EtFOSE	10.875	630.0 -> 58.9	79689	12.36	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	20898	5.05	µg/L	99
		511.9 -> 169.0	29306			
MeFOSE	10.641	616.1 -> 58.9	57134	12.27	µg/L	100
PFDoDS	9.736	699.1 -> 79.9	5079	2.54	µg/L	95
		699.1 -> 98.8	2621			
NFDHA	5.373	295.0 -> 201.0	9262	4.78	µg/L	95
		295.0 -> 84.9	2567			
PFMBA	4.700	279.0 -> 85.1	37460	4.96	µg/L	100
PFMPA	3.438	229.0 -> 84.9	28813	5.09	µg/L	100
PFEESA	5.937	314.8 -> 134.9	91505	4.43	µg/L	99
		314.8 -> 82.9	3127			

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



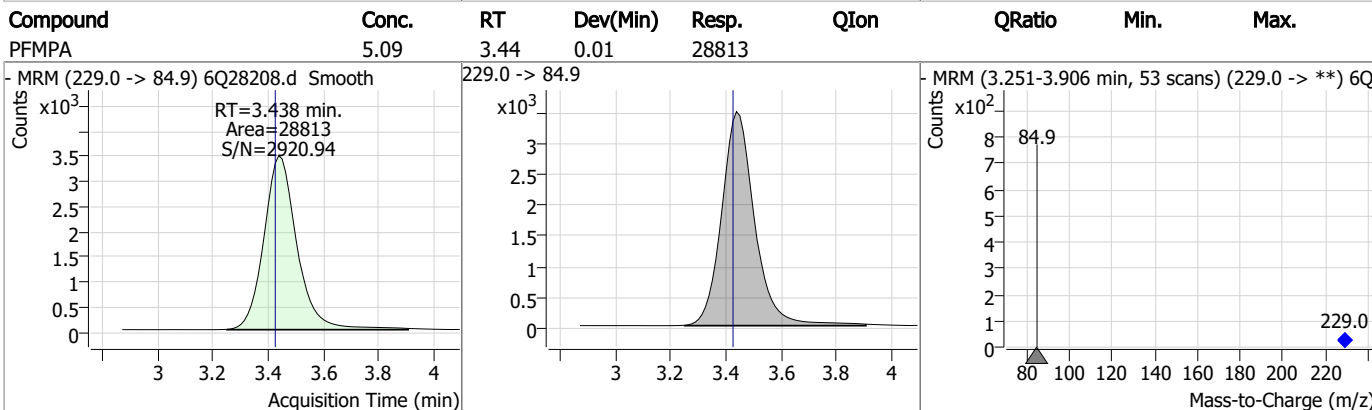
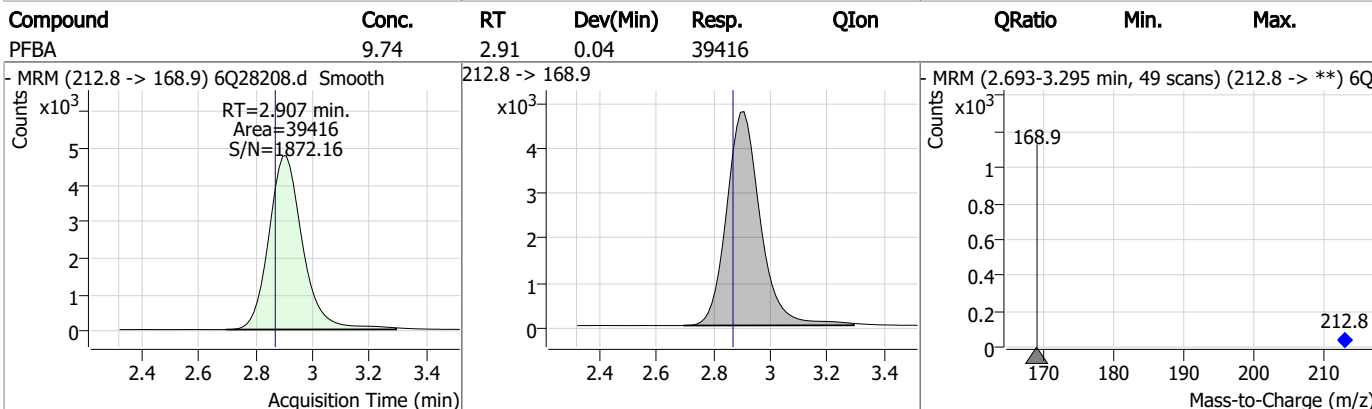
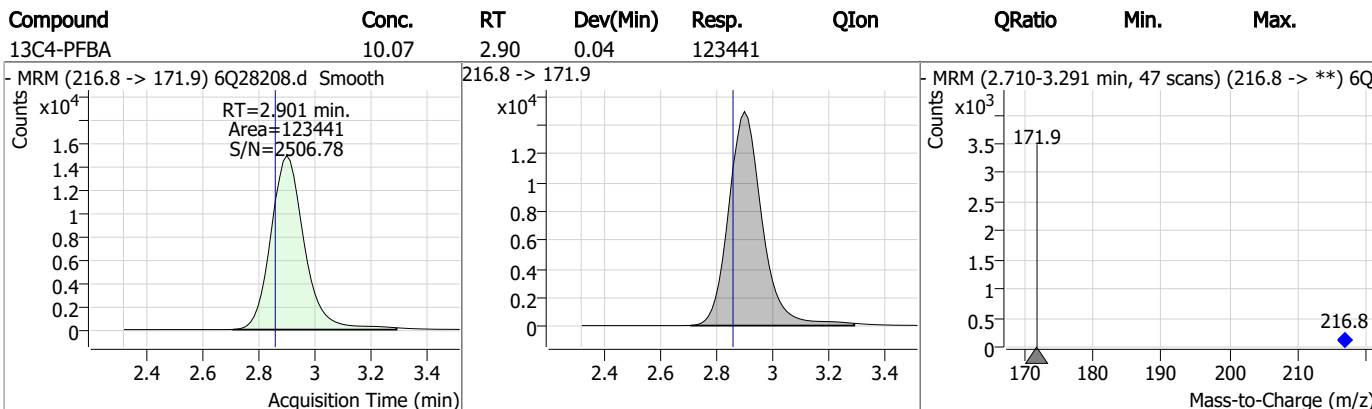
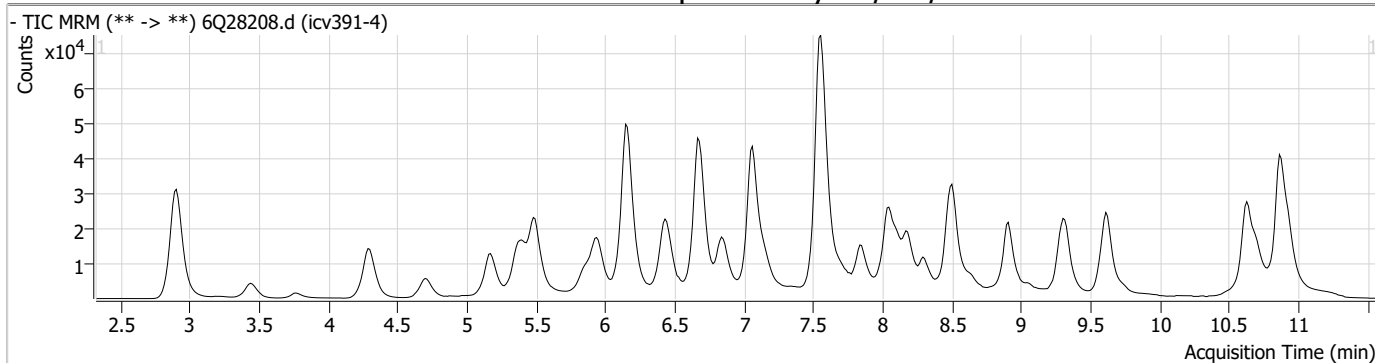
### Perfluorinated Compounds by LC/MS/MS

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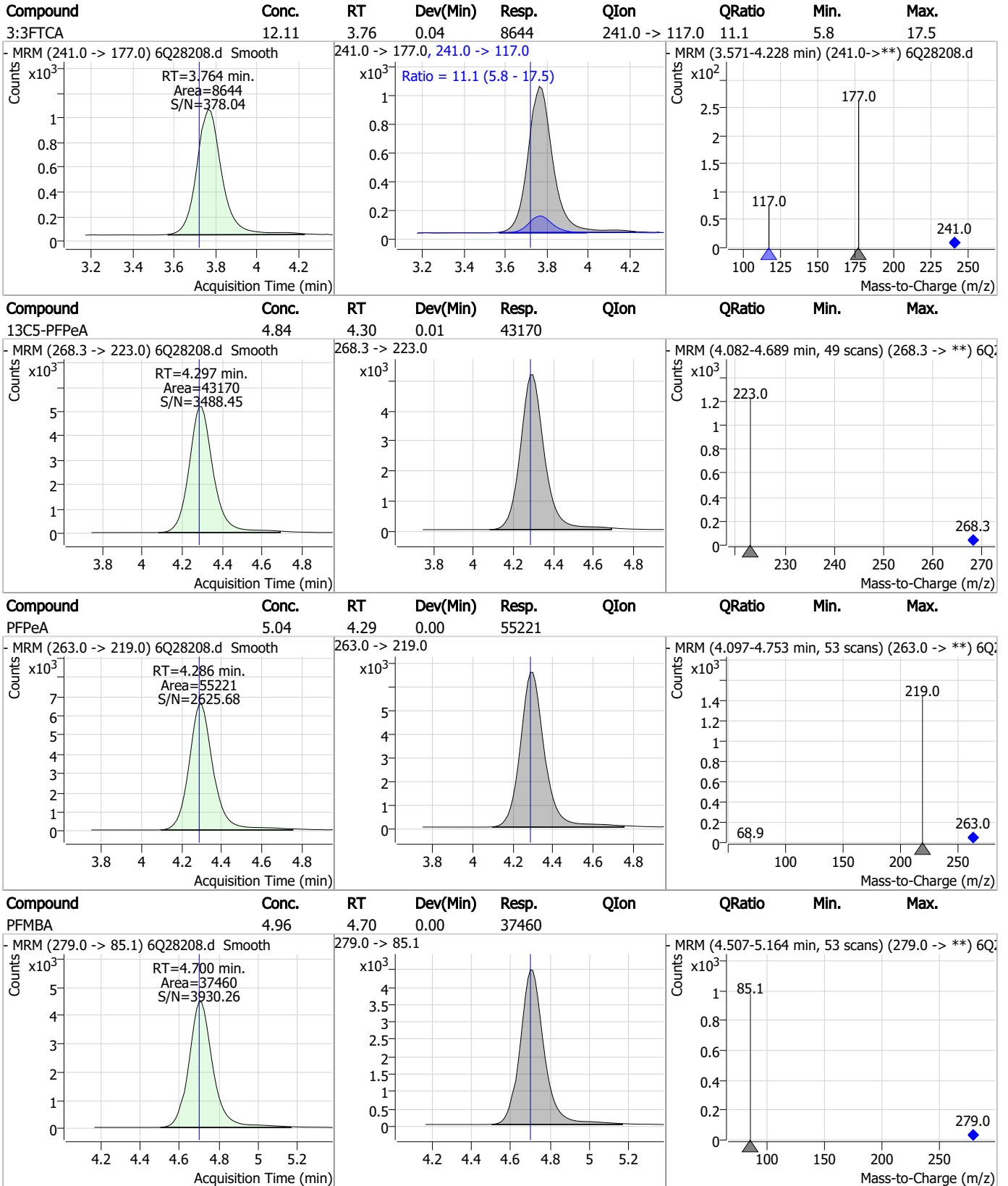
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### Perfluorinated Compounds by LC/MS/MS



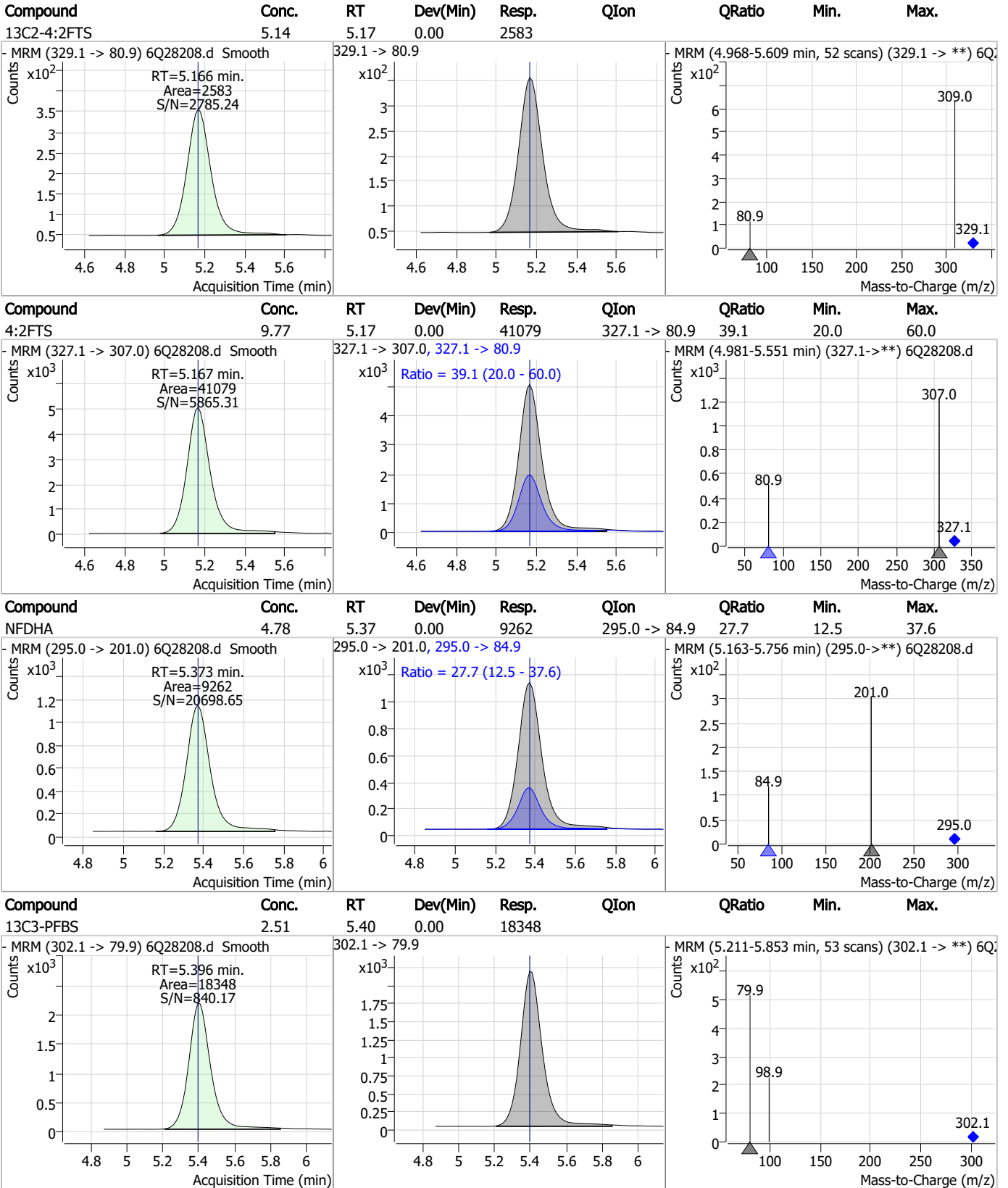
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### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

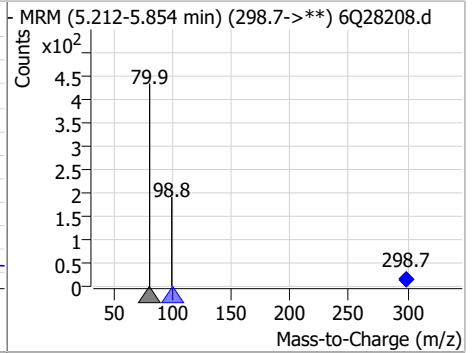
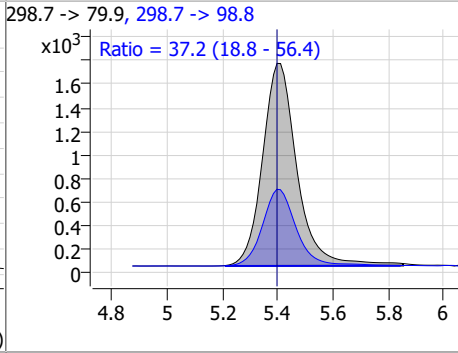
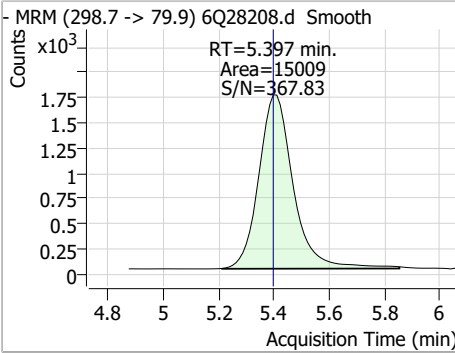


7.7.10 7

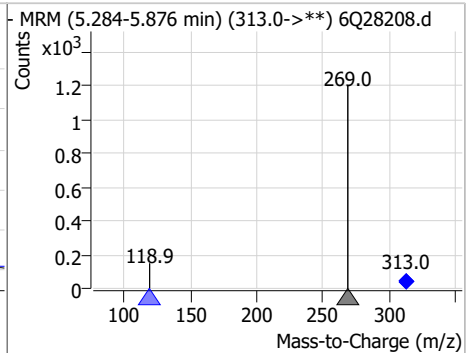
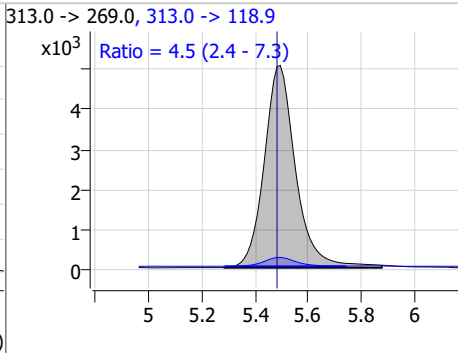
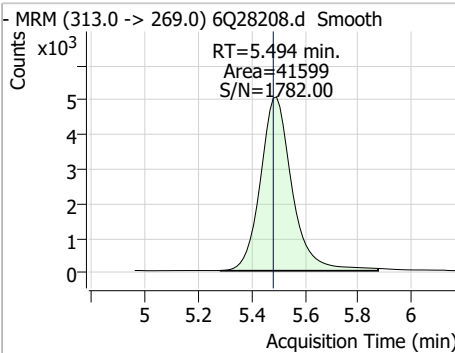


### Perfluorinated Compounds by LC/MS/MS

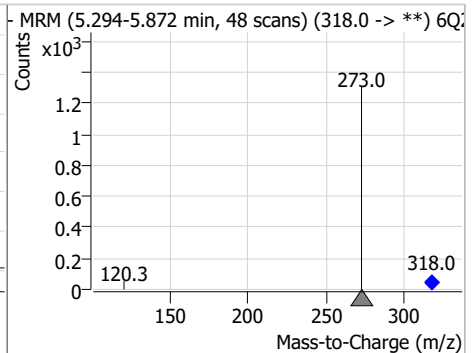
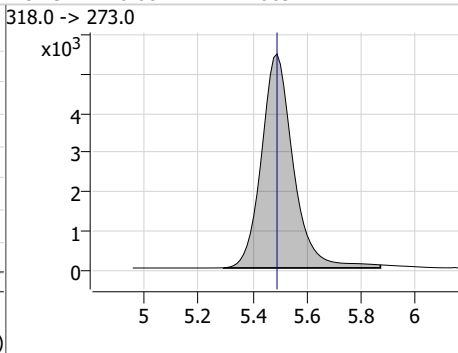
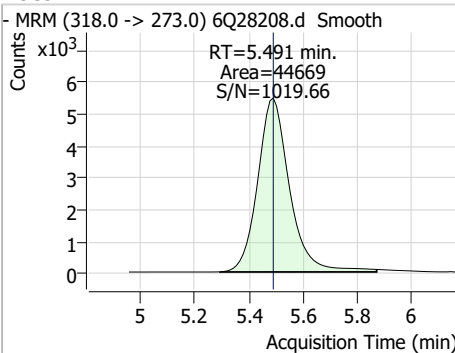
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.15	5.40	0.00	15009	298.7 -> 98.8	37.2	18.8	56.4



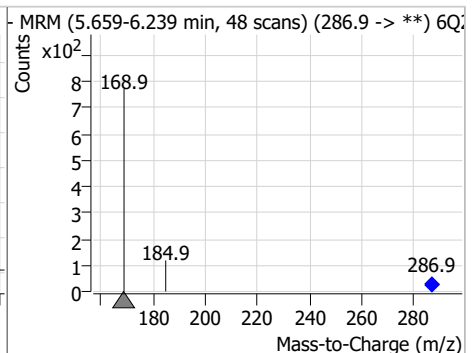
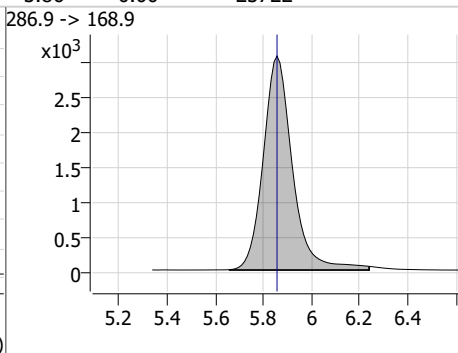
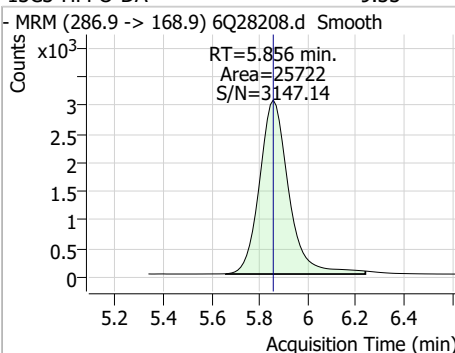
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.49	5.49	0.01	41599	313.0 -> 118.9	4.5	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.42	5.49	0.00	44669	318.0 -> 273.0			

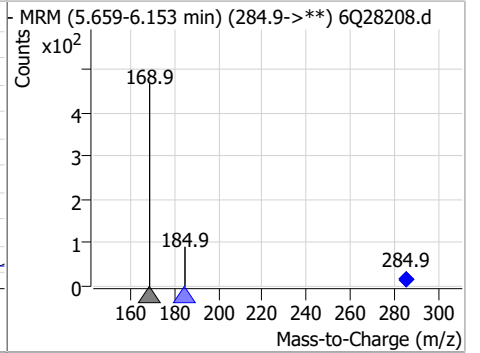
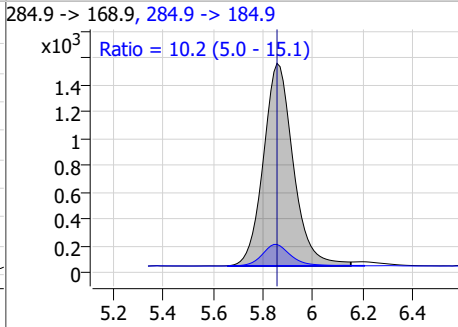
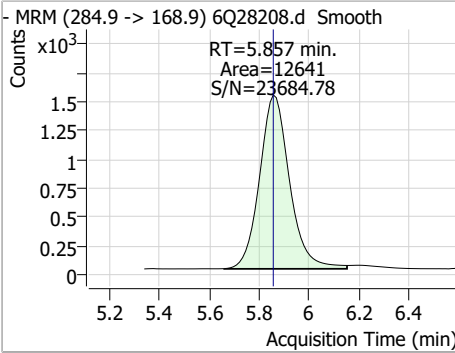


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.33	5.86	0.00	25722	286.9 -> 168.9			

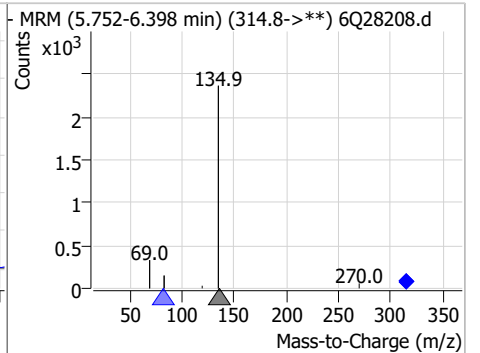
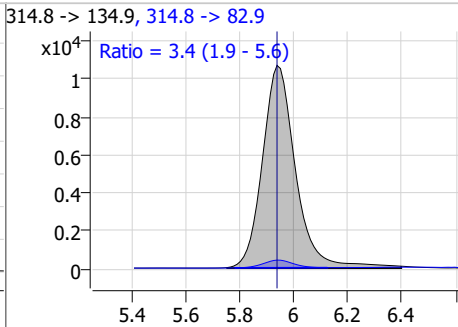
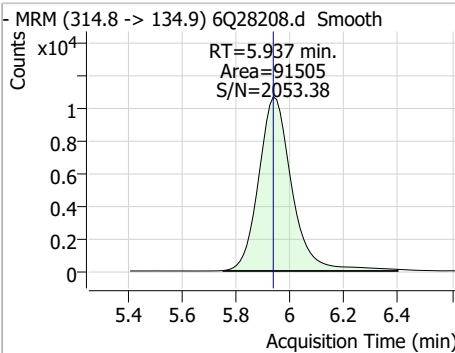


### Perfluorinated Compounds by LC/MS/MS

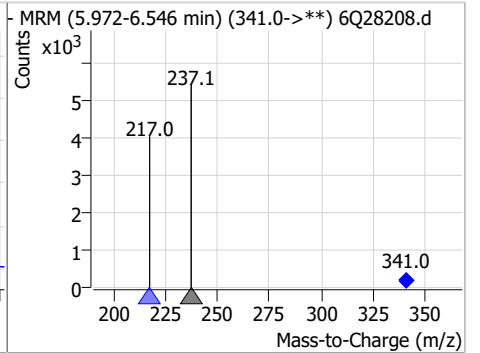
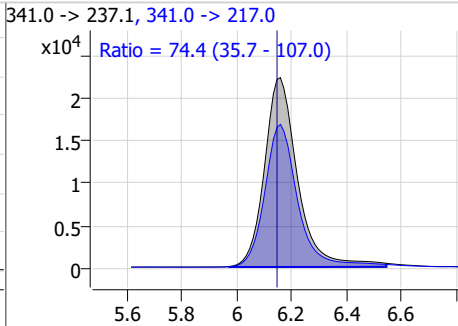
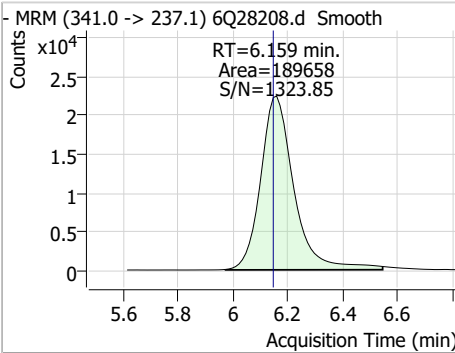
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.91	5.86	0.00	12641	284.9 -> 184.9	10.2	5.0	15.1



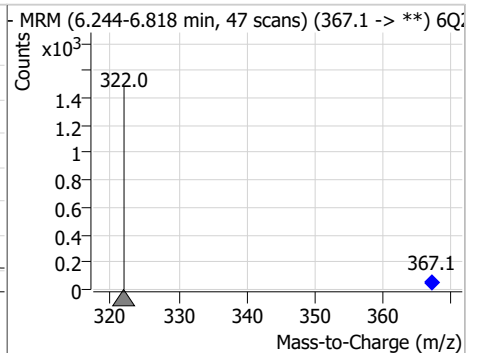
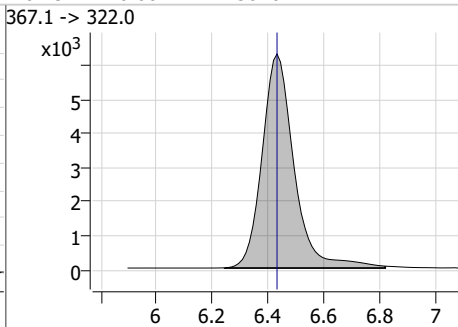
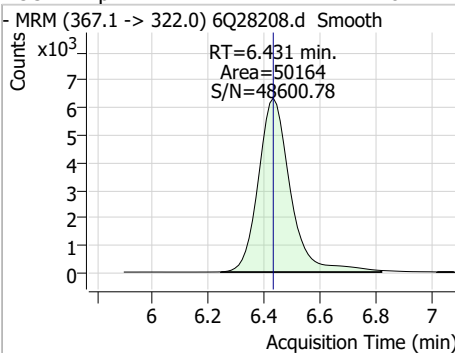
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.43	5.94	0.00	91505	314.8 -> 82.9	3.4	1.9	5.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	62.08	6.16	0.01	189658	341.0 -> 217.0	74.4	35.7	107.0

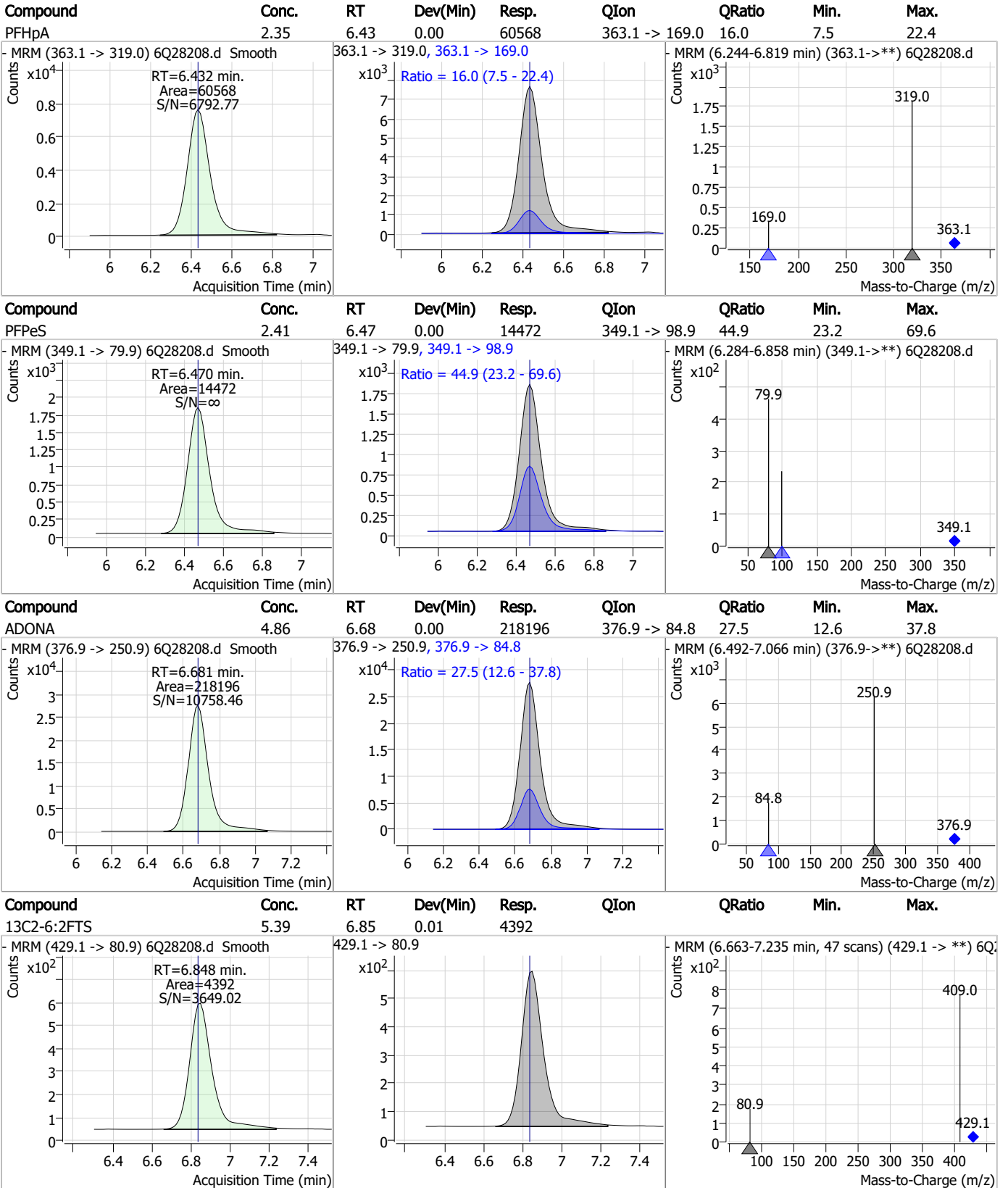


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.48	6.43	0.00	50164	367.1 -> 322.0			



7.7.10 7

### Perfluorinated Compounds by LC/MS/MS

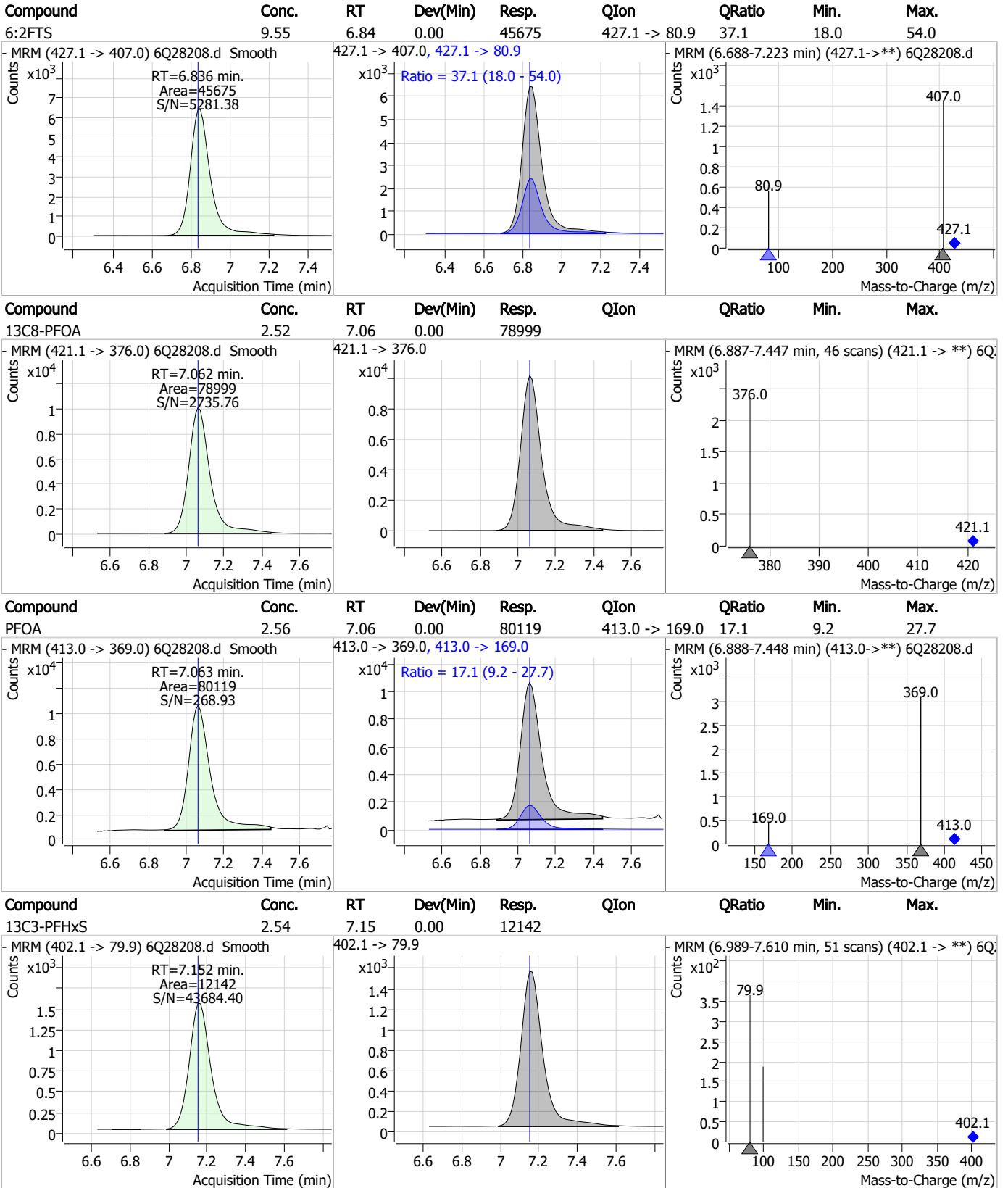


7.7.10 7





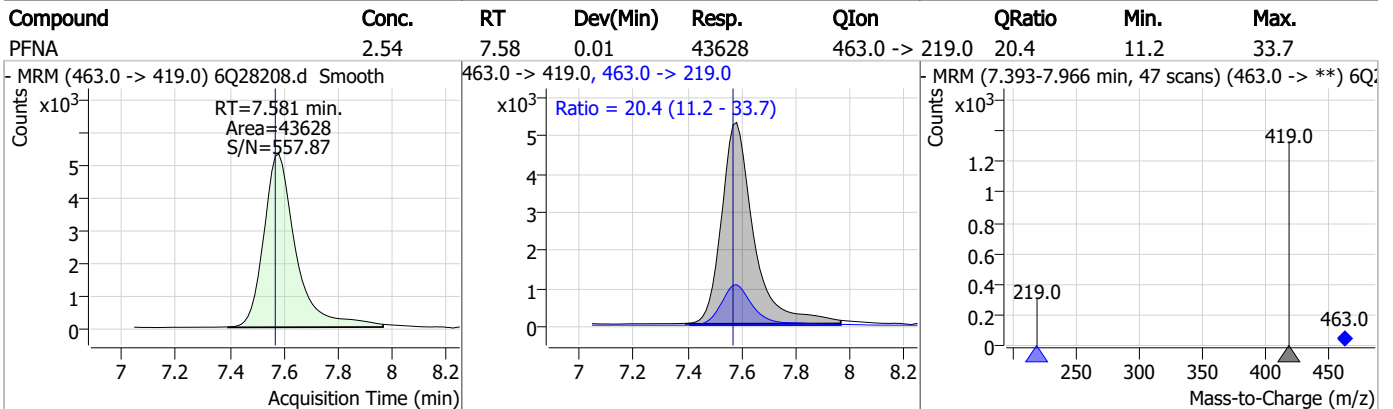
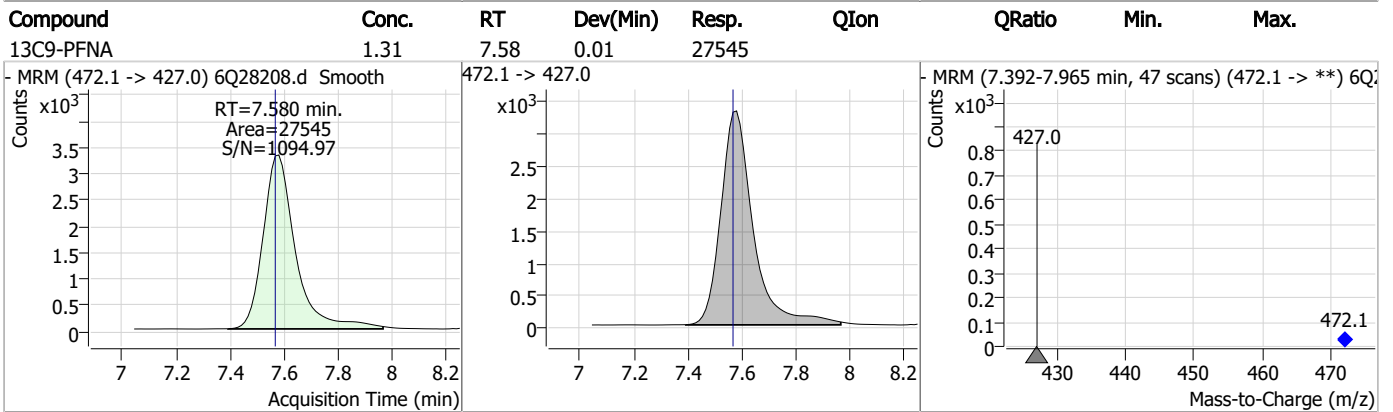
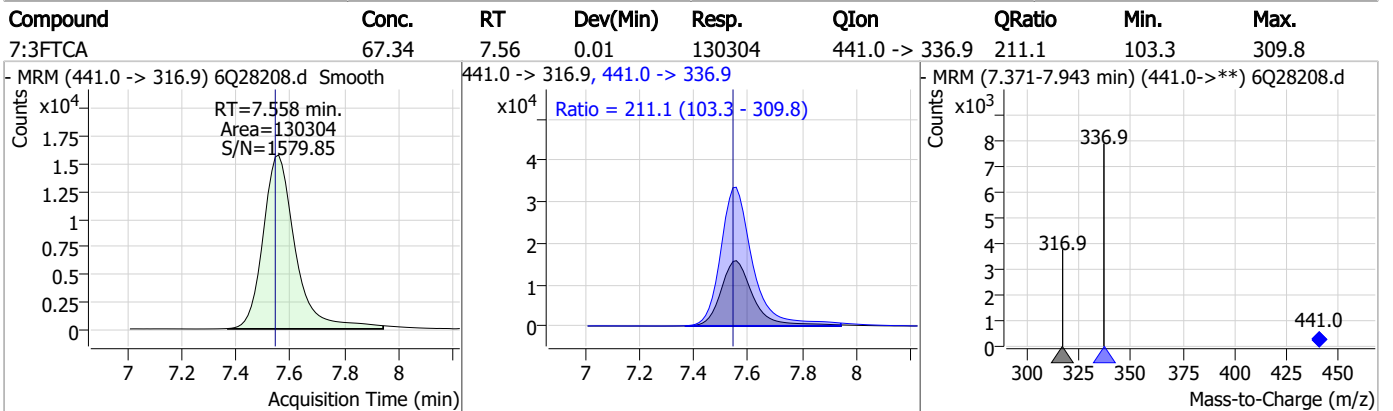
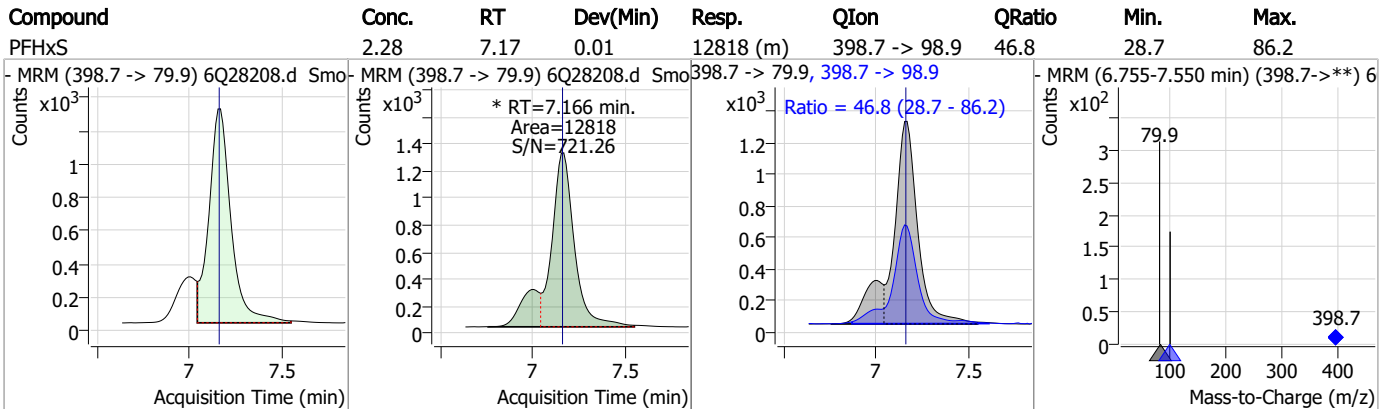
### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

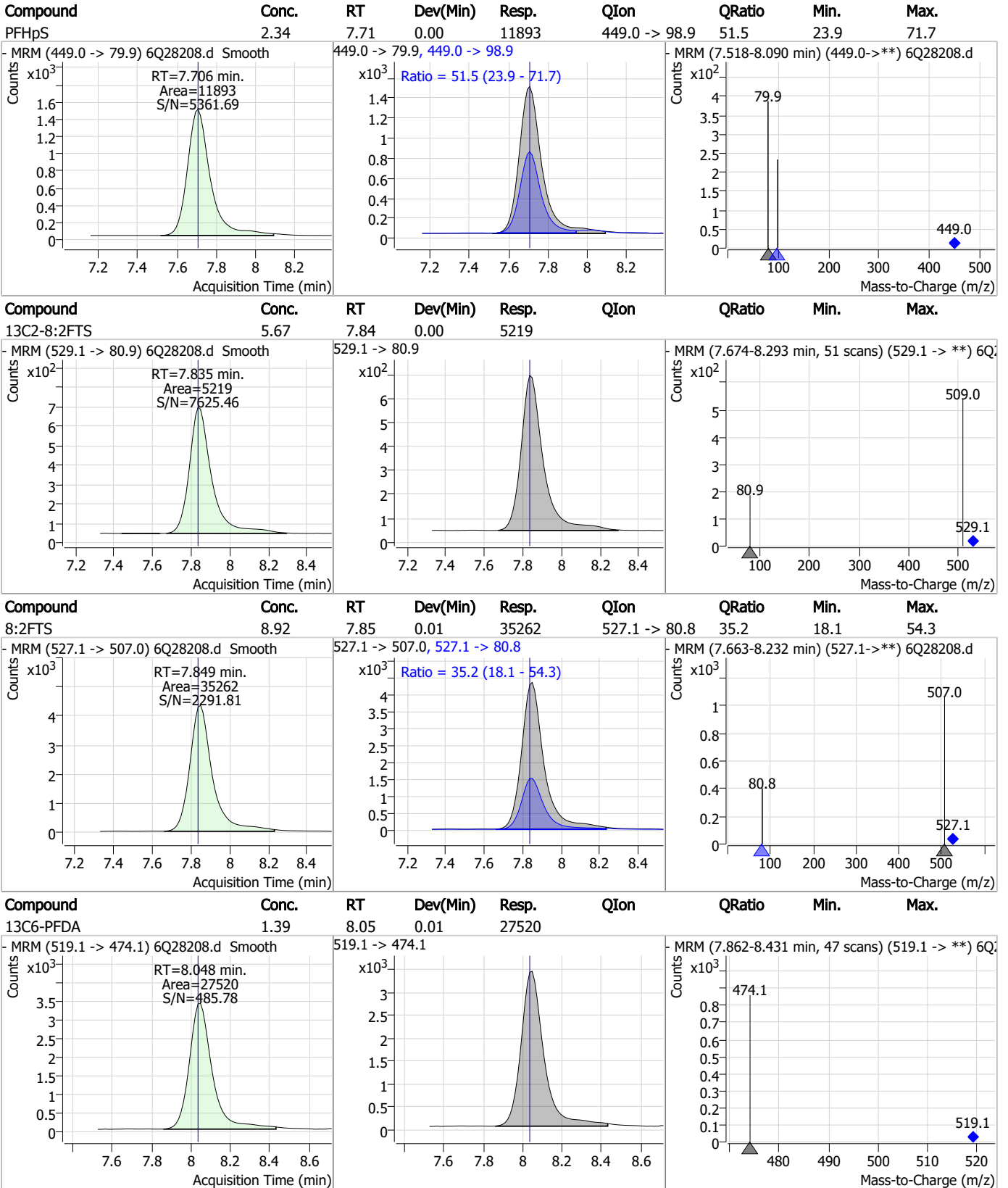


### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

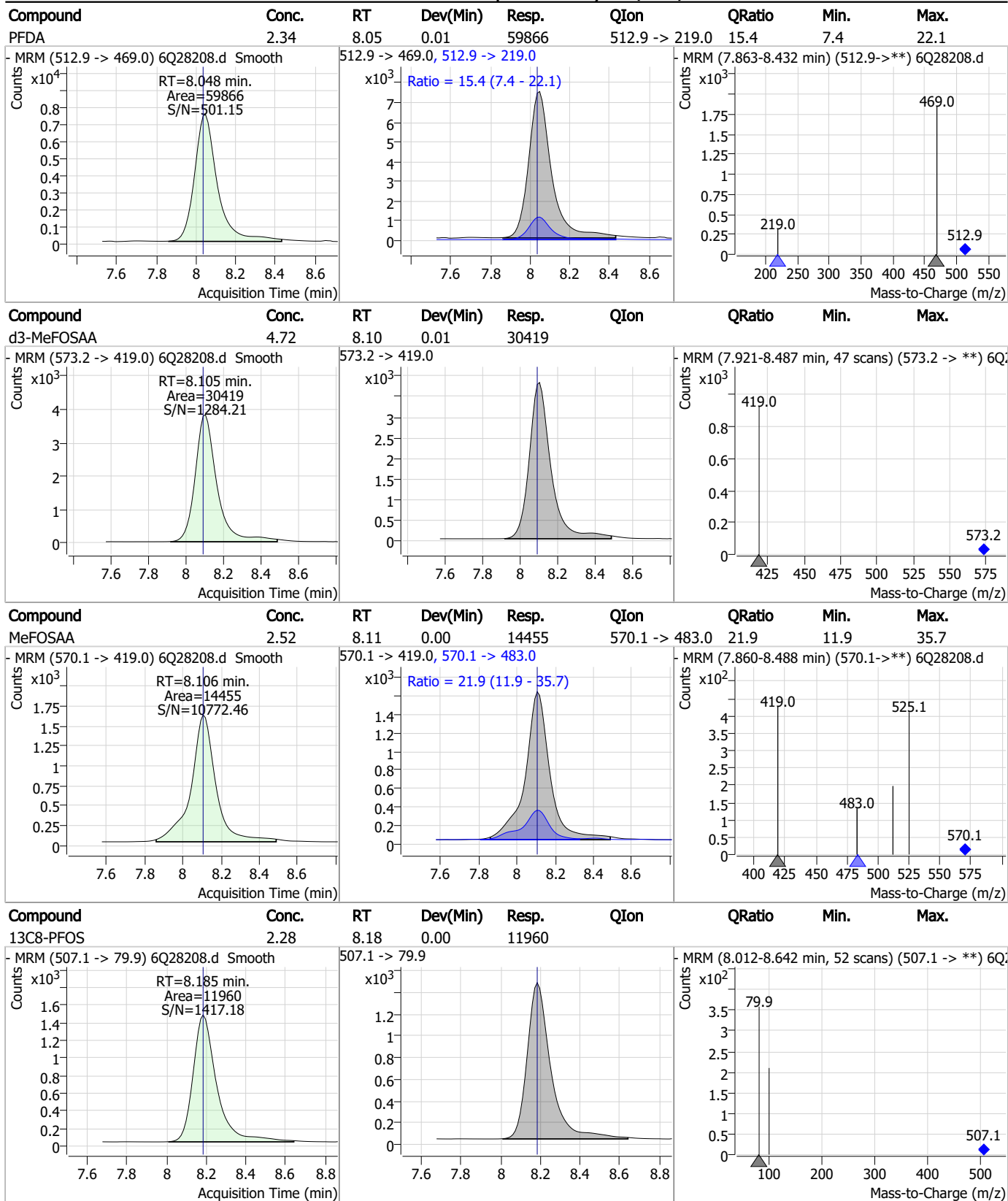
### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

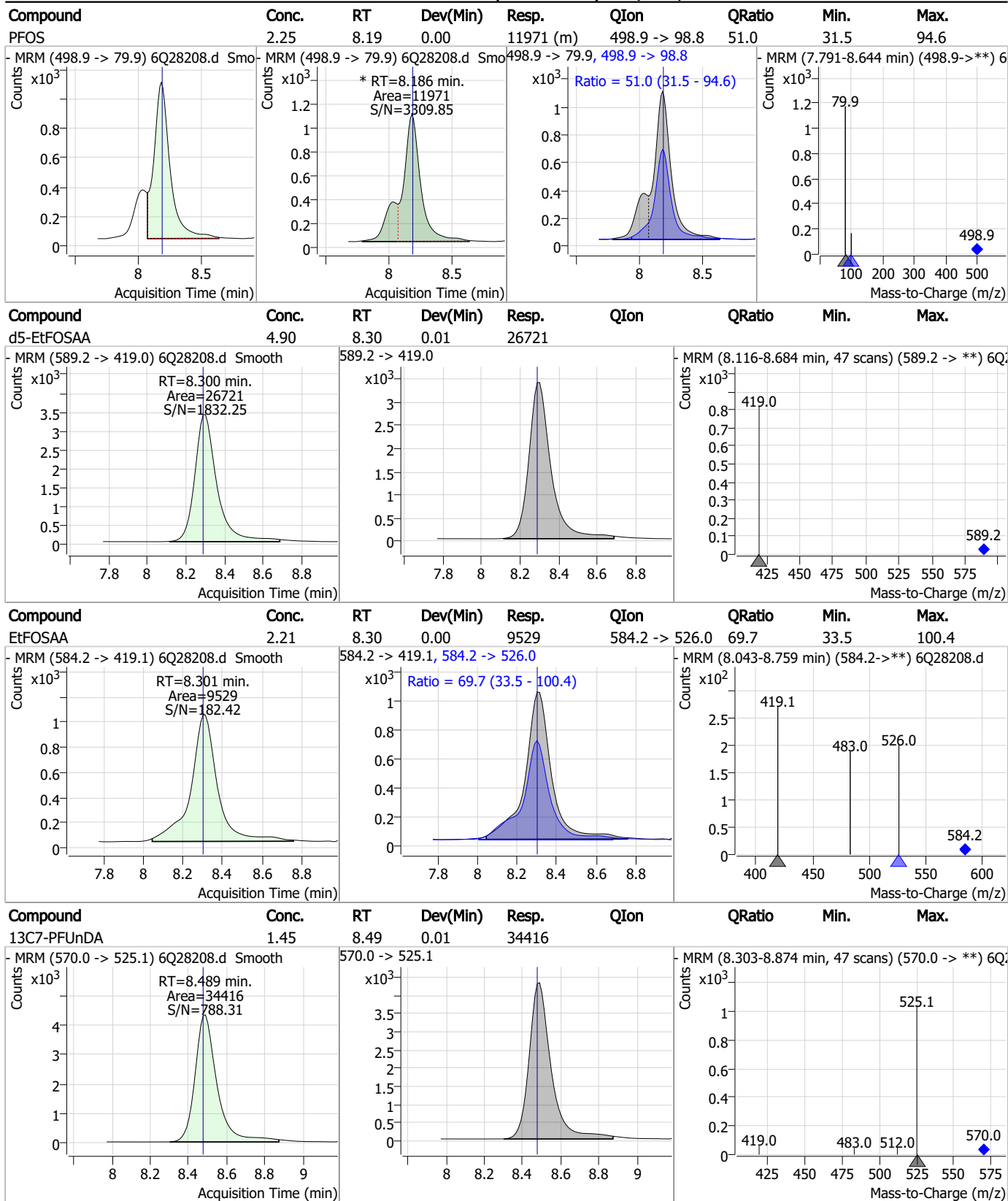


### Perfluorinated Compounds by LC/MS/MS



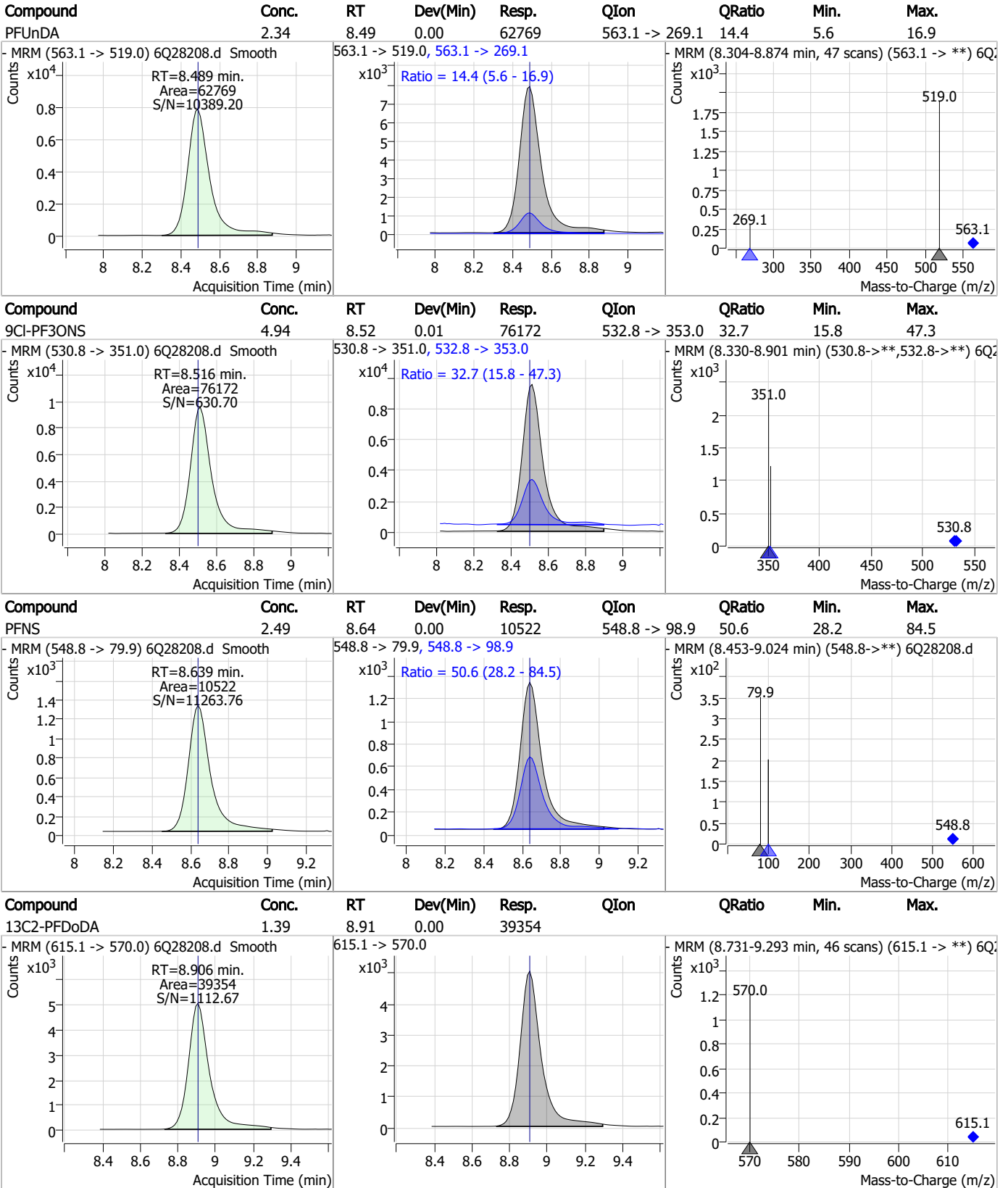
7.7.10  
7

### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

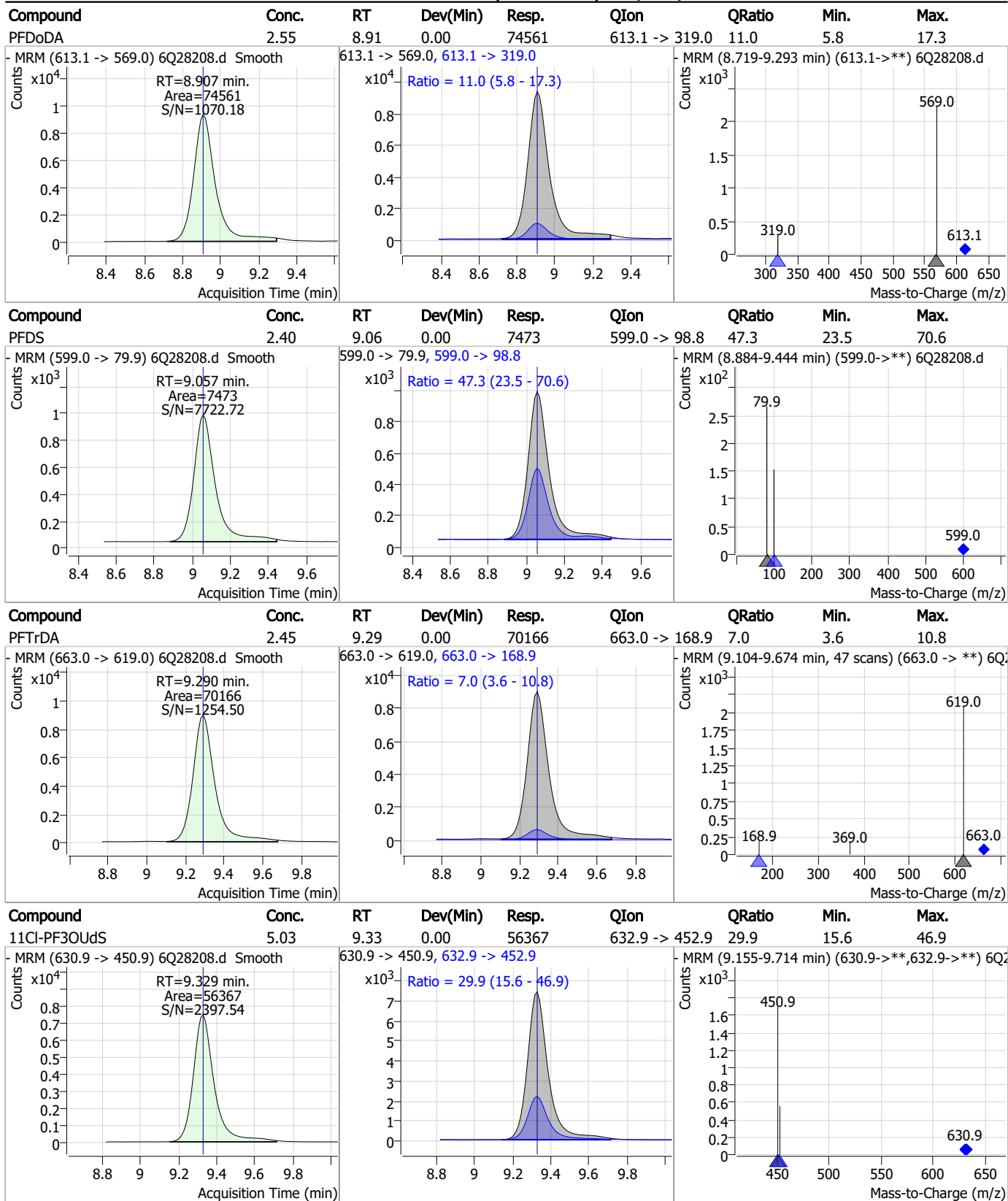
### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

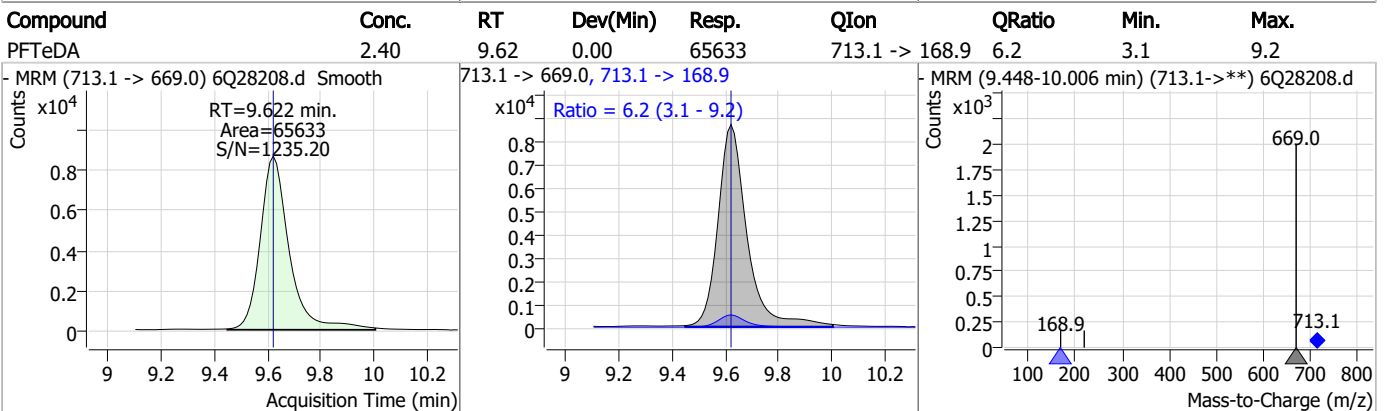
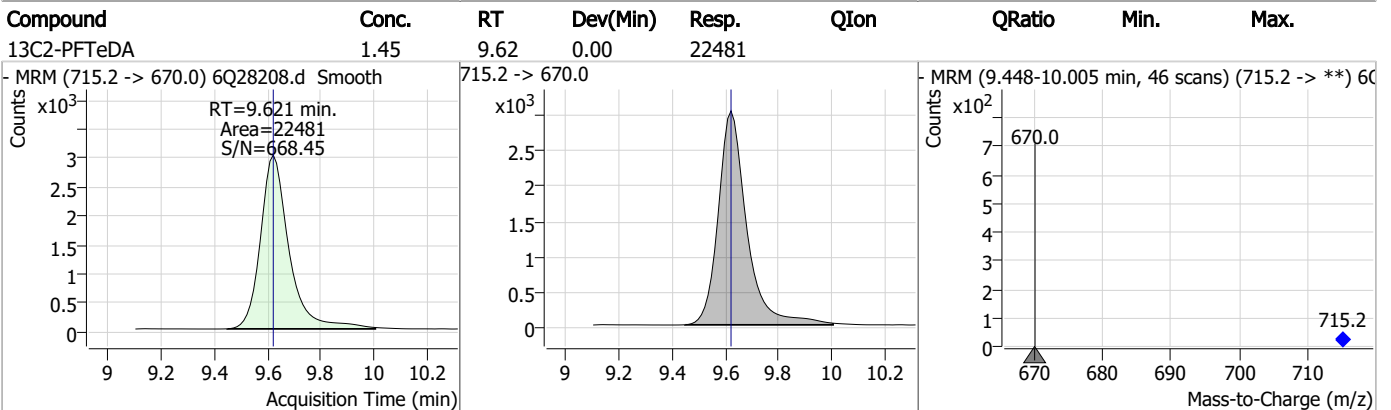
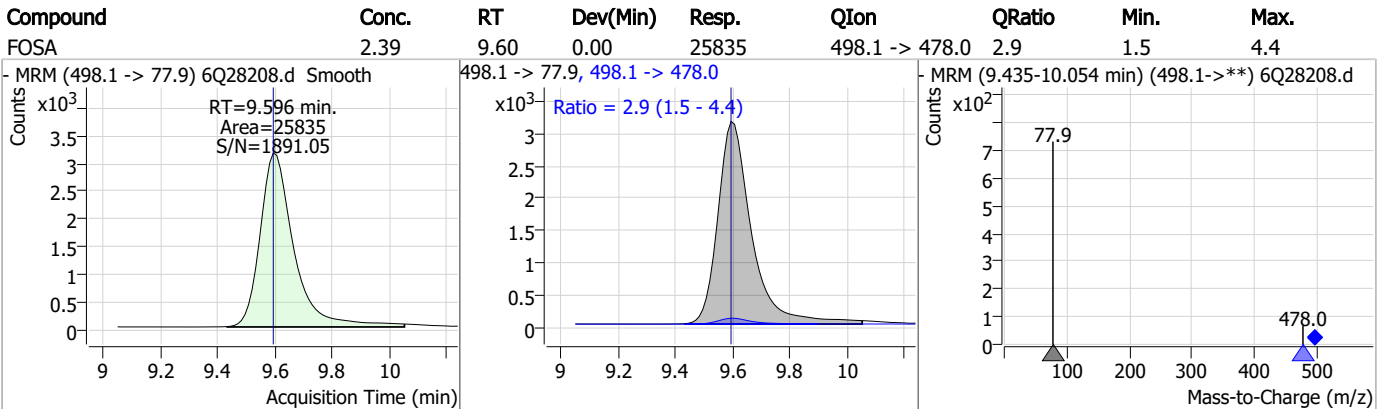
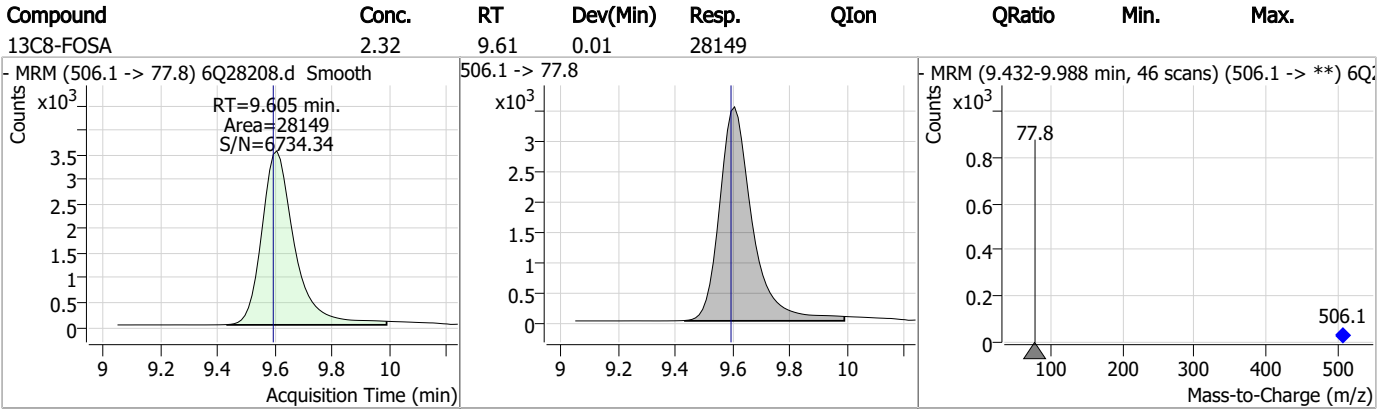


### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

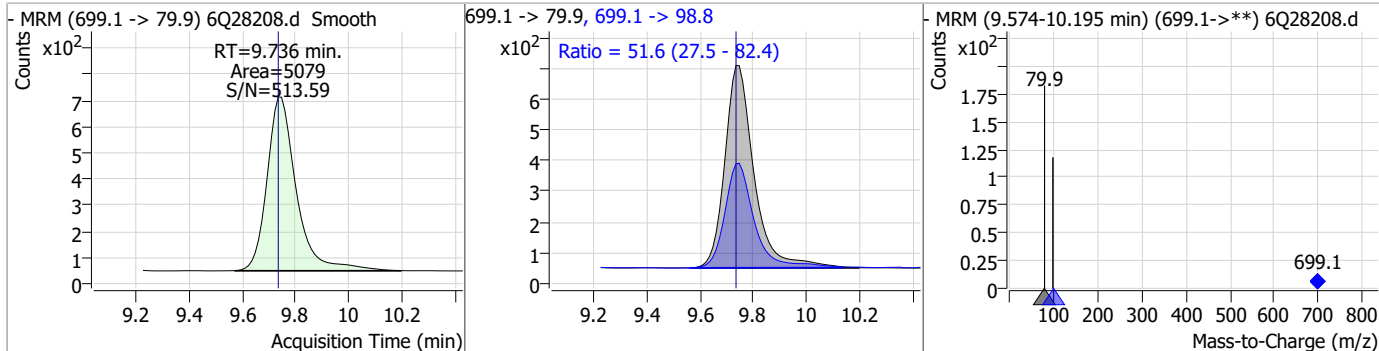
### Perfluorinated Compounds by LC/MS/MS



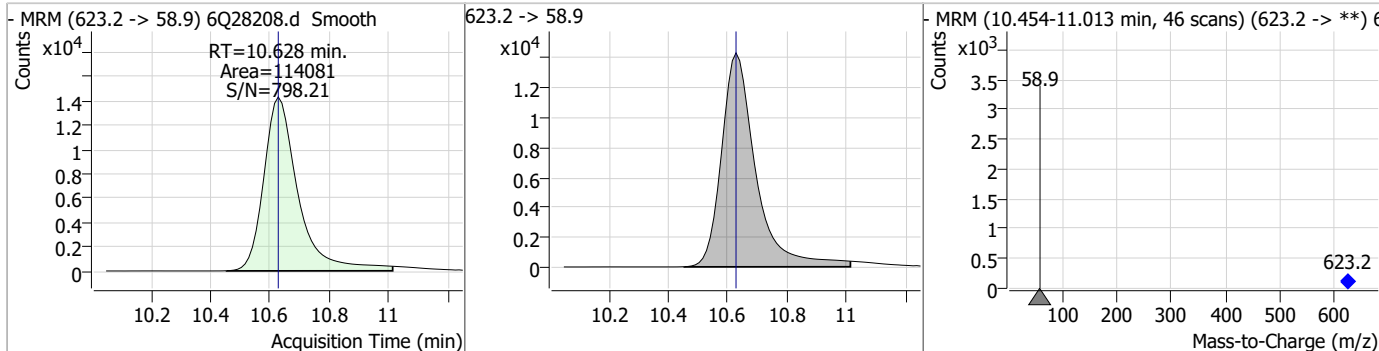


### Perfluorinated Compounds by LC/MS/MS

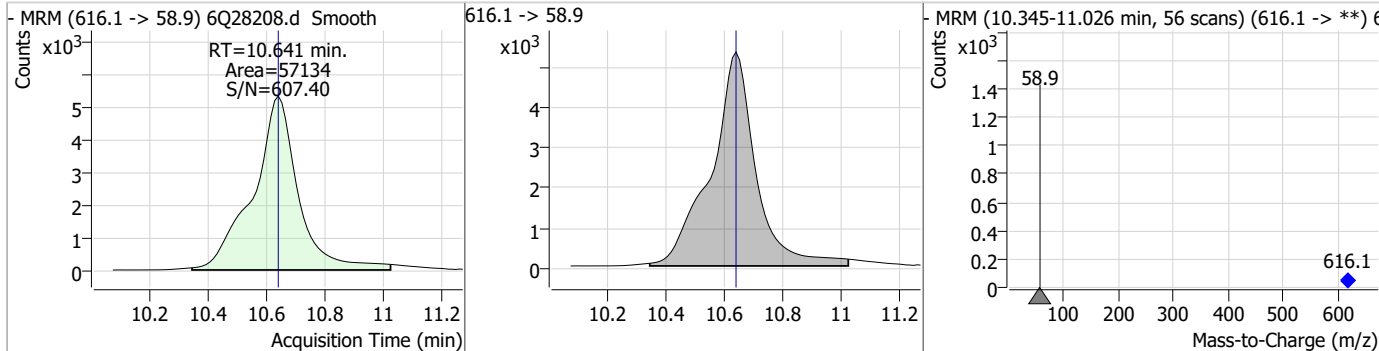
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.54	9.74	0.00	5079	699.1 -> 98.8	51.6	27.5	82.4



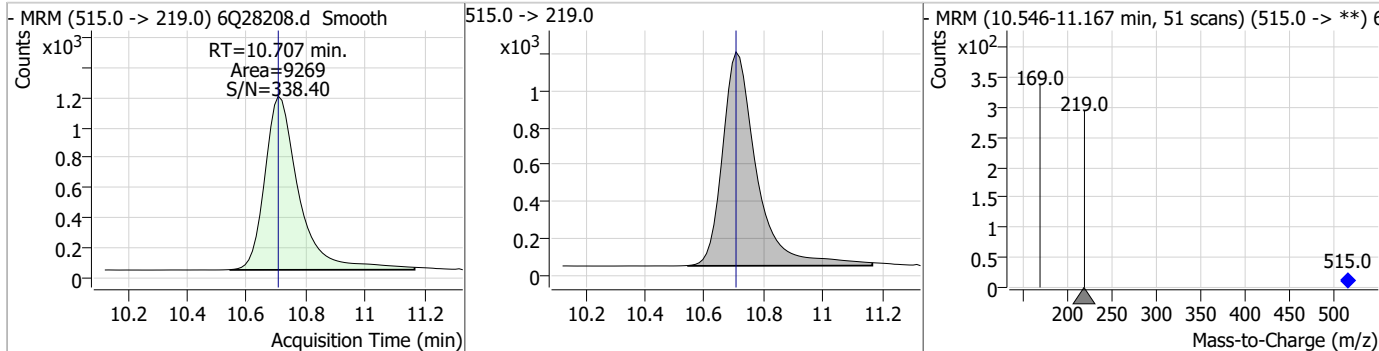
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.94	10.63	0.00	114081				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.27	10.64	0.00	57134				



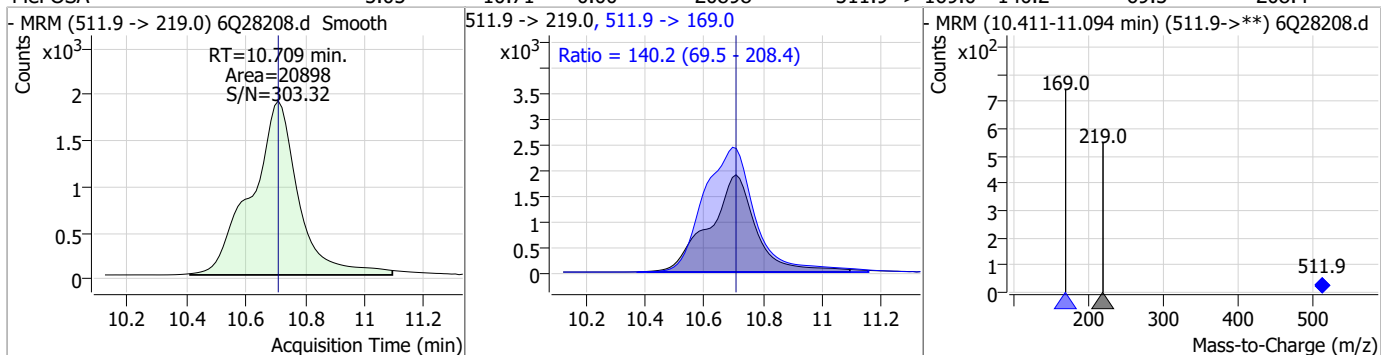
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.21	10.71	0.00	9269				



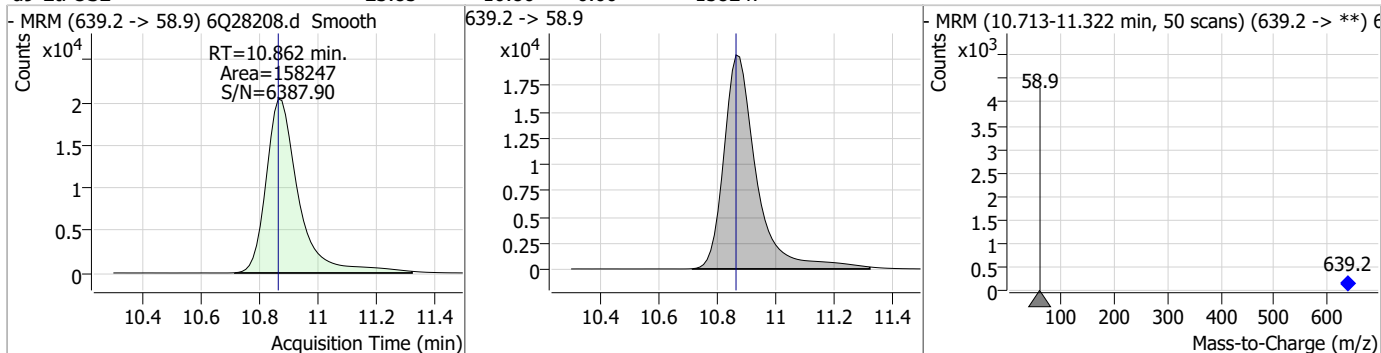
7.7.10  
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### Perfluorinated Compounds by LC/MS/MS

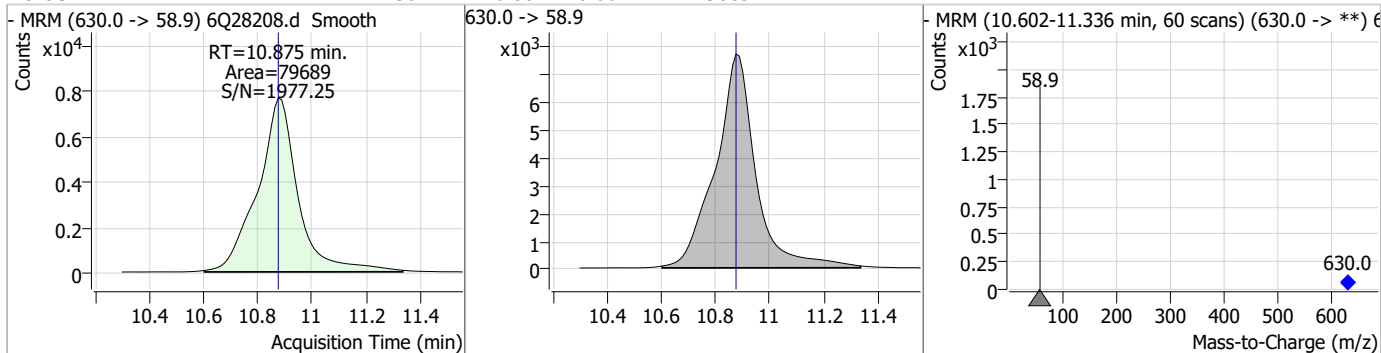
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.05	10.71	0.00	20898	511.9 -> 169.0	140.2	69.5	208.4



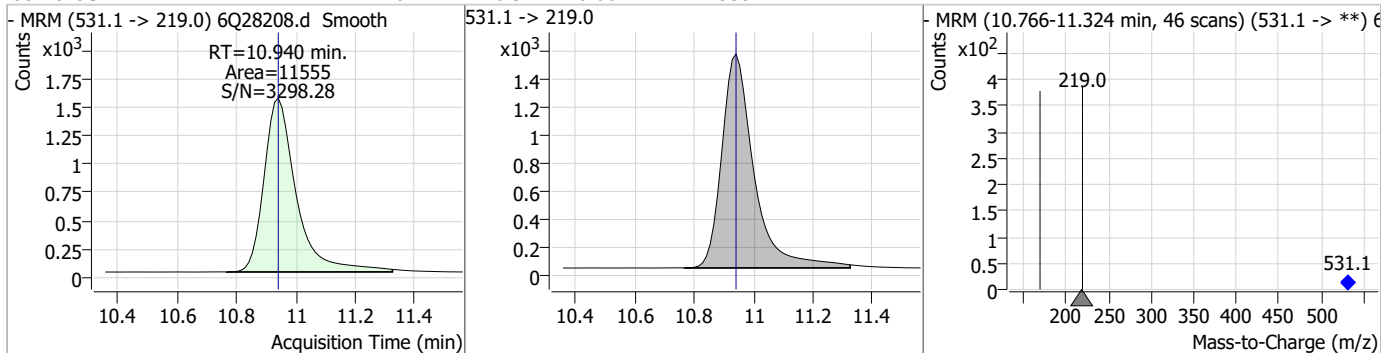
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.85	10.86	0.00	158247				



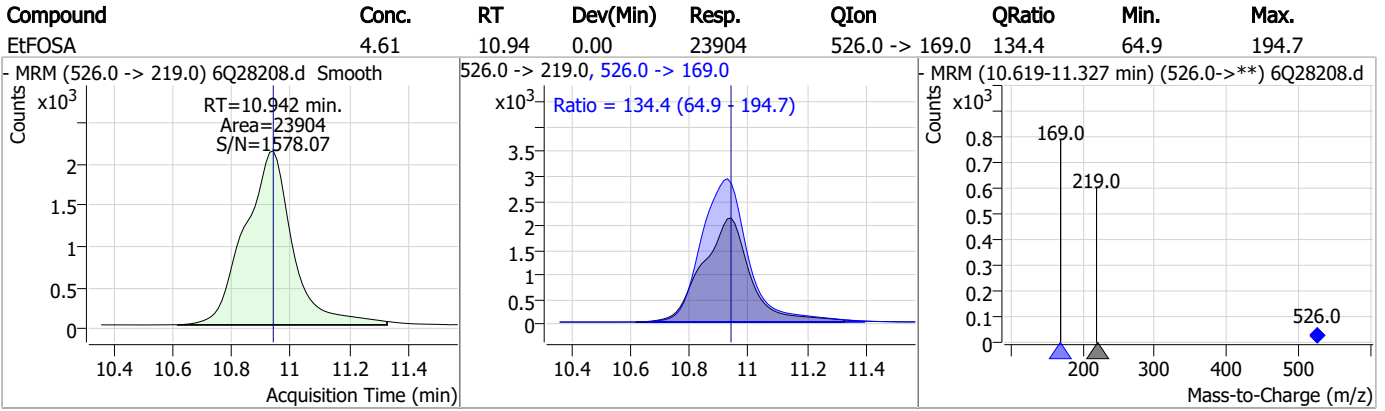
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.36	10.88	0.00	79689				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.40	10.94	0.00	11555				



### Perfluorinated Compounds by LC/MS/MS



7.7.10  
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# Manual Integration Approval Summary

Sample Number: S6Q391-ICV391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28208.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 15:28      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.17	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

7.7.10.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28209.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/12/2023 3:43:17 PM  
 Sample Name : icv391-20  
 Vial : P1-B2  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q391.batch.bin  
 Sample Information : OP99704,S6Q391,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.876	216.8 -> 171.9	118145	10.00 µg/L	0.016
M5-PFPeA	4.284	268.3 -> 223.0	43142	5.00 µg/L	0.000
M5-PFHxA	5.491	318.0 -> 273.0	42935	2.50 µg/L	0.000
M4-PFHpA	6.431	367.1 -> 322.0	48293	2.50 µg/L	0.000
M8-PFOA	7.062	421.1 -> 376.0	73794	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	28757	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	25985	1.25 µg/L	0.012
M7-PFUnDA	8.476	570.0 -> 525.1	32875	1.25 µg/L	0.000
M2-PFDoDA	8.906	615.1 -> 570.0	36764	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	20783	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	26163	2.50 µg/L	0.012
M3-PFBS	5.396	302.1 -> 79.9	17186	2.50 µg/L	0.000
M3-PFHxS	7.152	402.1 -> 79.9	12078	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	11687	2.50 µg/L	0.000
M2-4:2FTS	5.166	329.1 -> 80.9	2495	5.00 µg/L	0.000
M2-6:2FTS	6.848	429.1 -> 80.9	4339	5.00 µg/L	0.012
M2-8:2FTS	7.835	529.1 -> 80.9	4941	5.00 µg/L	0.000
M3-MeFOSAA	8.105	573.2 -> 419.0	30988	5.00 µg/L	0.012
M3-HFPO-DA	5.856	286.9 -> 168.9	25311	10.00 µg/L	0.000
M5-EtFOSAA	8.288	589.2 -> 419.0	25087	5.00 µg/L	0.000
M7-MeFOSE	10.628	623.2 -> 58.9	108878	25.00 µg/L	0.000
M9-EtFOSE	10.862	639.2 -> 58.9	144299	25.00 µg/L	0.000
M5-EtFOSA	10.940	531.1 -> 219.0	10865	2.50 µg/L	0.000
M3-MeFOSA	10.707	515.0 -> 219.0	9234	2.50 µg/L	0.000
13C4-PFOS	8.185	502.8 -> 79.9	10971	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	51612	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	7454	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	76946	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	27914	1.25 µg/L	0.000
13C5-PFNA	7.567	468.0 -> 423.0	24885	1.25 µg/L	0.000
13C2-PFHxA	5.491	315.1 -> 270.0	42921	2.50 µg/L	0.000

**System Monitoring Compounds**

13C2-4:2FTS	5.166	329.1 -> 80.9	2495	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C2-6:2FTS	6.848	429.1 -> 80.9	4339	5.59 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.7%		
13C2-8:2FTS	7.835	529.1 -> 80.9	4941	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.7%		
13C2-PFDoDA	8.906	615.1 -> 570.0	36764	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C2-PFTeDA	9.621	715.2 -> 670.0	20783	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C3-PFBS	5.396	302.1 -> 79.9	17186	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFHxS	7.152	402.1 -> 79.9	12078	2.65 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C4-PFBA	2.876	216.8 -> 171.9	118145	9.89 µg/L	0.016
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C4-PFHpA	6.431	367.1 -> 322.0	48293	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C5-PFHxA	5.491	318.0 -> 273.0	42935	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C5-PFPeA	4.284	268.3 -> 223.0	43142	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C6-PFDA	8.048	519.1 -> 474.1	25985	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C7-PFUnDA	8.476	570.0 -> 525.1	32875	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C8-FOSA	9.605	506.1 -> 77.8	26163	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C8-PFOA	7.062	421.1 -> 376.0	73794	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C8-PFOS	8.185	507.1 -> 79.9	11687	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C9-PFNA	7.580	472.1 -> 427.0	28757	1.38 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.3%		
d3-MeFOSAA	8.105	573.2 -> 419.0	30988	5.45 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C3-HFPO-DA	5.856	286.9 -> 168.9	25311	9.50 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 95.0%		
d3-MeFOSA	10.707	515.0 -> 219.0	9234	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.9%		
d5-EtFOSAA	8.288	589.2 -> 419.0	25087	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.1%		
d7-MeFOSE	10.628	623.2 -> 58.9	108878	24.79 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.2%		
d9-EtFOSE	10.862	639.2 -> 58.9	144299	24.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
d5-EtFOSA	10.940	531.1 -> 219.0	10865	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.1%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	86502	21.29 µg/L	100
		327.1 -> 80.9	34735		
6:2FTS	6.836	427.1 -> 407.0	91574	19.38 µg/L	100
		427.1 -> 80.9	32870		
8:2FTS	7.836	527.1 -> 507.0	64869	17.33 µg/L	99
		527.1 -> 80.8	23804		
EtFOSAA	8.301	584.2 -> 419.1	66501	16.40 µg/L	89
		584.2 -> 526.0	50477		
FOSA	9.596	498.1 -> 77.9	190481	18.95 µg/L	100
		498.1 -> 478.0	5818		
MeFOSAA	8.094	570.1 -> 419.0	112697	19.29 µg/L	97
		570.1 -> 483.0	25106		
PFBA	2.868	212.8 -> 168.9	70316	18.15 µg/L	100
PFBS	5.397	298.7 -> 79.9	127012	19.39 µg/L	98
		298.7 -> 98.8	49156		
PFDA	8.036	512.9 -> 469.0	501916	20.79 µg/L	100
		512.9 -> 219.0	74638		
PFDoDA	8.907	613.1 -> 569.0	497991	18.24 µg/L	98
		613.1 -> 319.0	53803		
PFDS	9.057	599.0 -> 79.9	61048	20.07 µg/L	95

7.7.11  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.432	599.0 -> 98.8	26808	18.50 µg/L	98
		363.1 -> 319.0	459573		
PFHpS	7.706	363.1 -> 169.0	71957	19.71 µg/L	96
		449.0 -> 79.9	97925		
PFHxA	5.494	449.0 -> 98.9	44200	21.11 µg/L	99
		313.0 -> 269.0	339005		
PFHxS	7.153	313.0 -> 118.9	15729	20.20 µg/L	83
		398.7 -> 79.9	113183		
PFNA	7.581	398.7 -> 98.9	50618	18.64 µg/L	98
		463.0 -> 419.0	333719		
PFNS	8.639	463.0 -> 219.0	71589	18.91 µg/L	88
		548.8 -> 79.9	78238		
PFOA	7.063	548.8 -> 98.9	37307	19.25 µg/L	97
		413.0 -> 369.0	562464		
PFOS	8.186	413.0 -> 169.0	97177	17.75 µg/L	76
		498.9 -> 79.9	92332		
PFPeA	4.286	498.9 -> 98.8	40838	18.85 µg/L	100
		263.0 -> 219.0	206253		
PFPeS	6.470	349.1 -> 79.9	114998	19.24 µg/L	99
		349.1 -> 98.9	52973		
PFTeDA	9.622	713.1 -> 669.0	516327	20.39 µg/L	100
		713.1 -> 168.9	31675		
PFTrDA	9.290	663.0 -> 619.0	468679	17.53 µg/L	100
		663.0 -> 168.9	33327		
PFUnDA	8.477	563.1 -> 519.0	453772	17.75 µg/L	96
		563.1 -> 269.1	59022		
11CI-PF3OUdS	9.329	630.9 -> 450.9	231292	20.98 µg/L	96
		632.9 -> 452.9	66845		
9CI-PF3ONS	8.516	530.8 -> 351.0	306798	20.20 µg/L	97
		532.8 -> 353.0	91475		
ADONA	6.681	376.9 -> 250.9	868667	19.67 µg/L	97
		376.9 -> 84.8	233545		
HFPO-DA	5.857	284.9 -> 168.9	48702	19.23 µg/L	98
		284.9 -> 184.9	5214		
3:3FTCA	3.721	241.0 -> 177.0	12391	18.14 µg/L	98
		241.0 -> 117.0	1530		
5:3FTCA	6.146	341.0 -> 237.1	61968	21.10 µg/L	99
		341.0 -> 217.0	44814		
7:3FTCA	7.545	441.0 -> 316.9	36705	19.74 µg/L	96
		441.0 -> 336.9	77891		
EtFOSA	10.942	526.0 -> 219.0	82392	16.89 µg/L	80
		526.0 -> 169.0	88020		
EtFOSE	10.888	630.0 -> 58.9	564150	95.97 µg/L	100
		511.9 -> 219.0	78508		
MeFOSA	10.709	511.9 -> 169.0	83830	19.03 µg/L	73
		616.1 -> 58.9	426061		
MeFOSE	10.641	699.1 -> 79.9	35425	95.90 µg/L	100
		699.1 -> 98.8	19126		
PFDoDS	9.736	295.0 -> 201.0	34633	18.09 µg/L	99
		295.0 -> 84.9	9367		
NFDHA	5.360	279.0 -> 85.1	142770	18.62 µg/L	96
		229.0 -> 84.9	108625		
PFMBA	4.700	314.8 -> 134.9	355839	17.92 µg/L	99
		314.8 -> 82.9	11645		

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



### Perfluorinated Compounds by LC/MS/MS

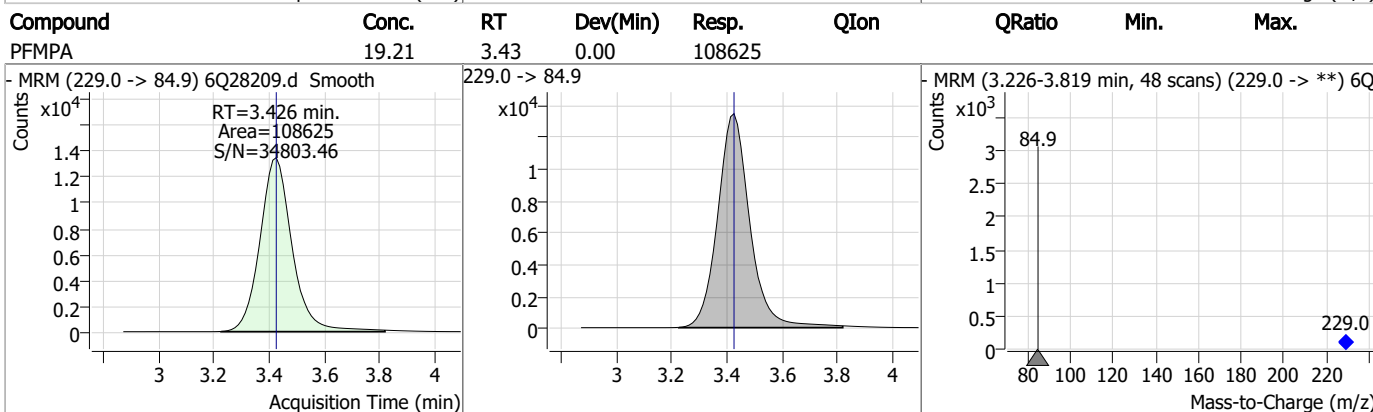
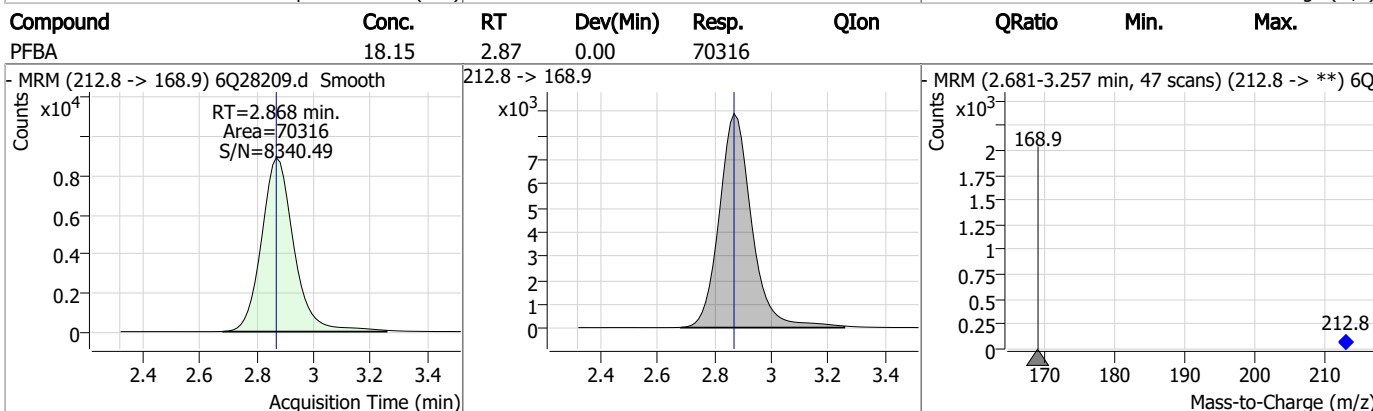
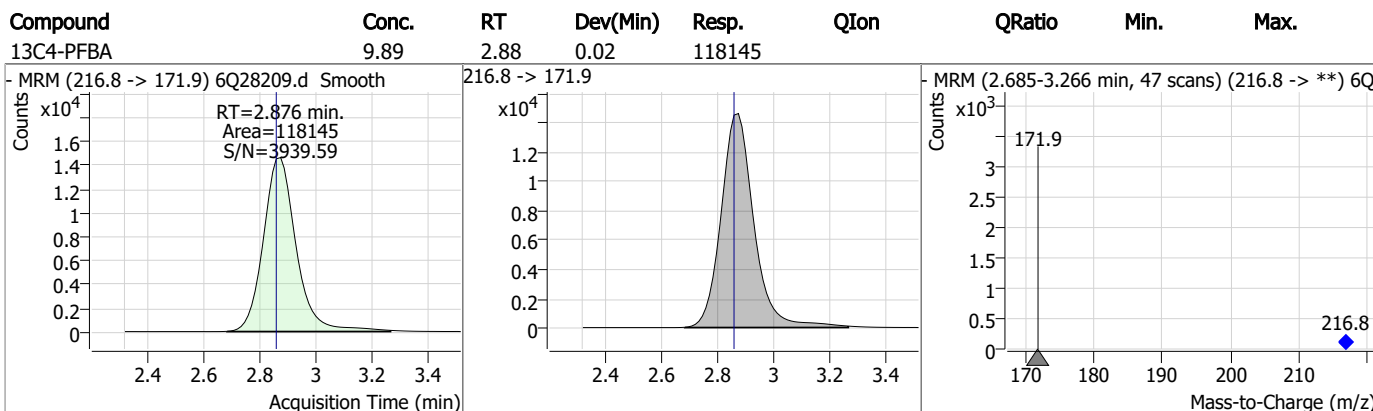
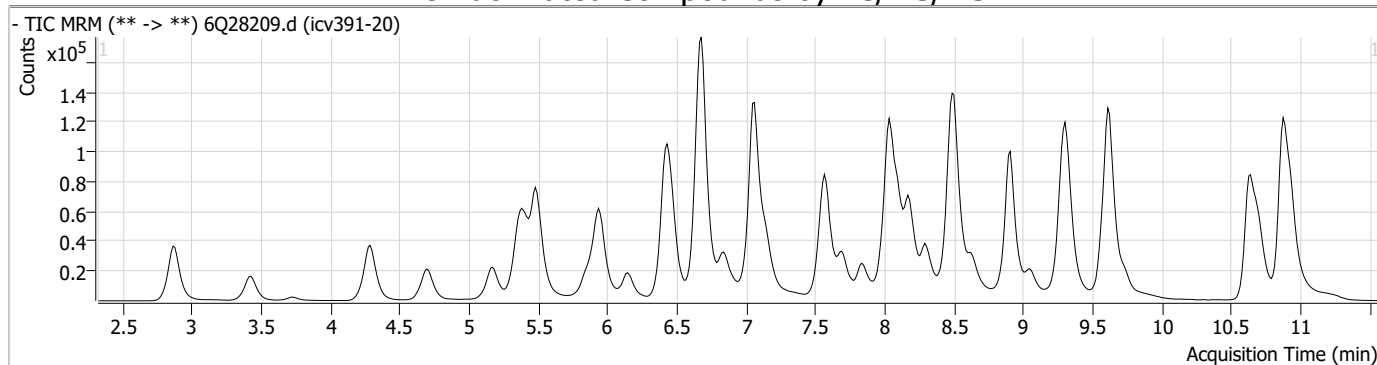
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.11

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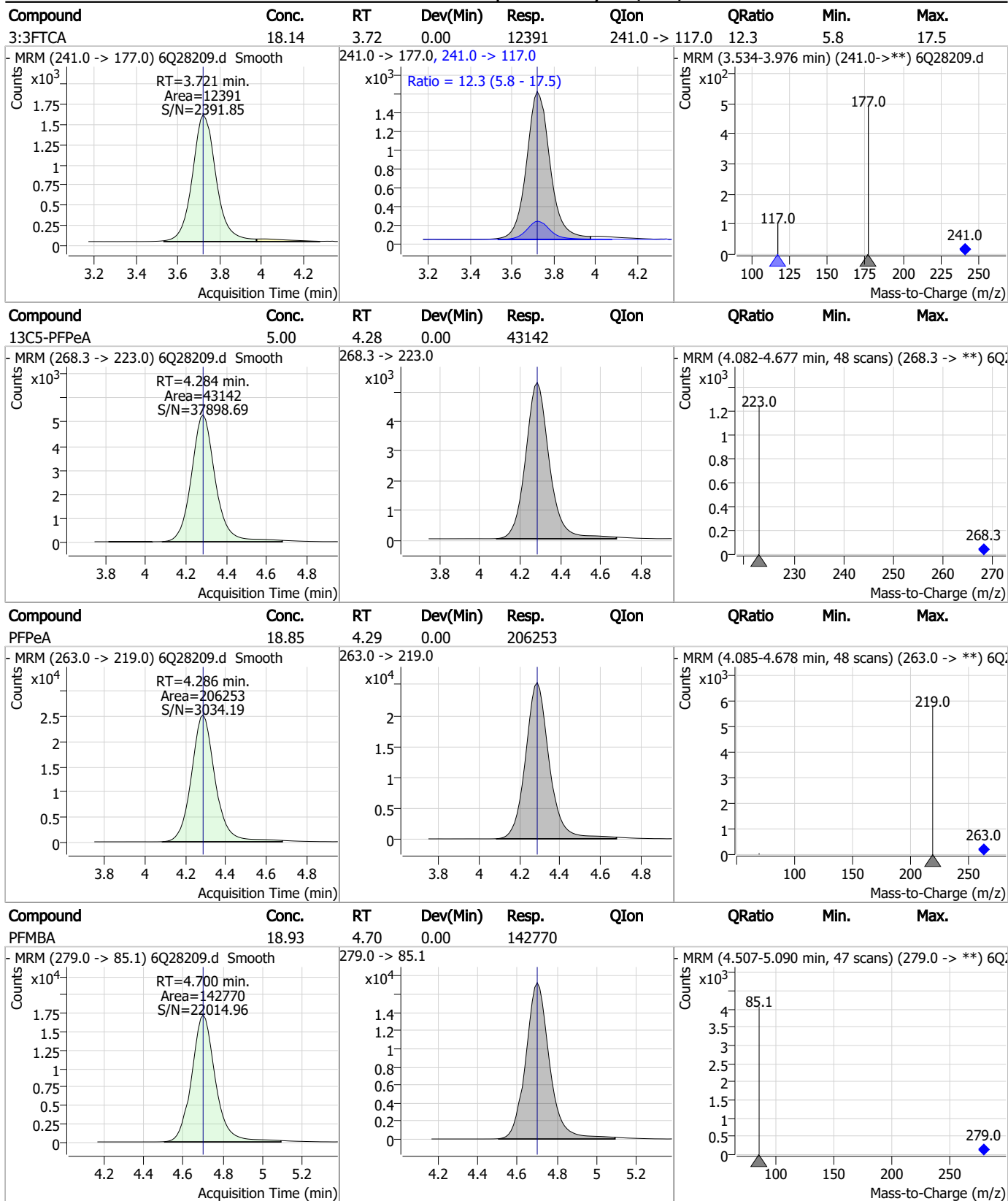


### Perfluorinated Compounds by LC/MS/MS



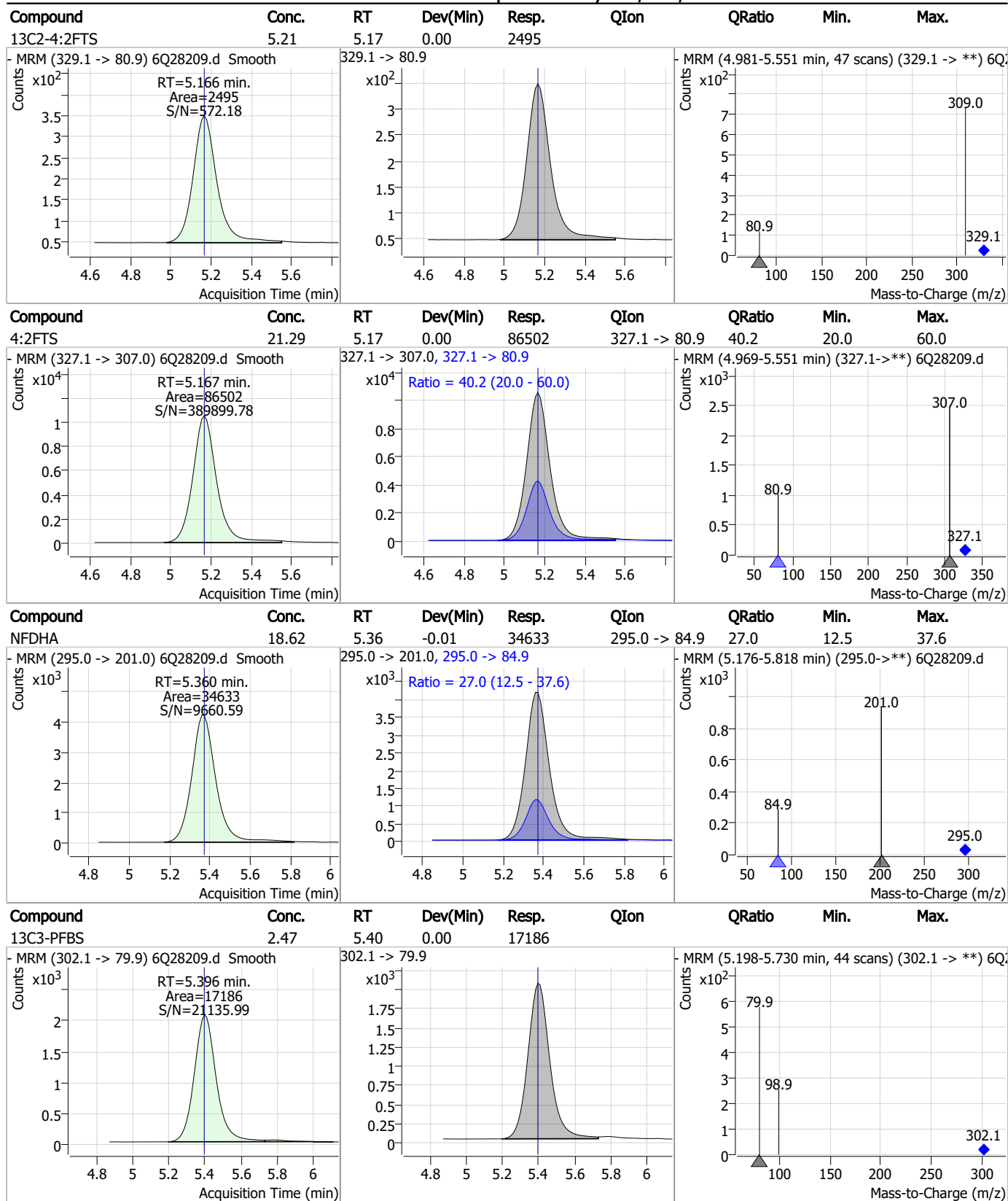
7.7.11  
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### Perfluorinated Compounds by LC/MS/MS



7.7.11

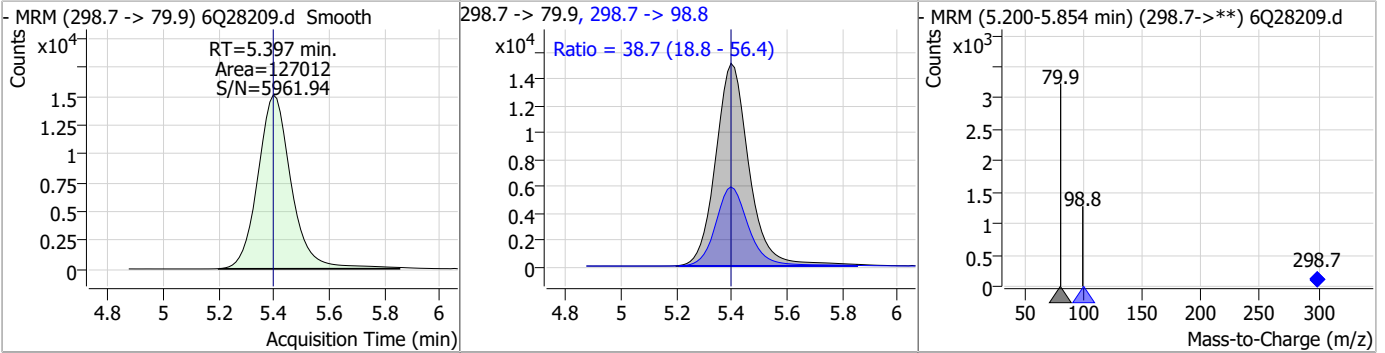
### Perfluorinated Compounds by LC/MS/MS



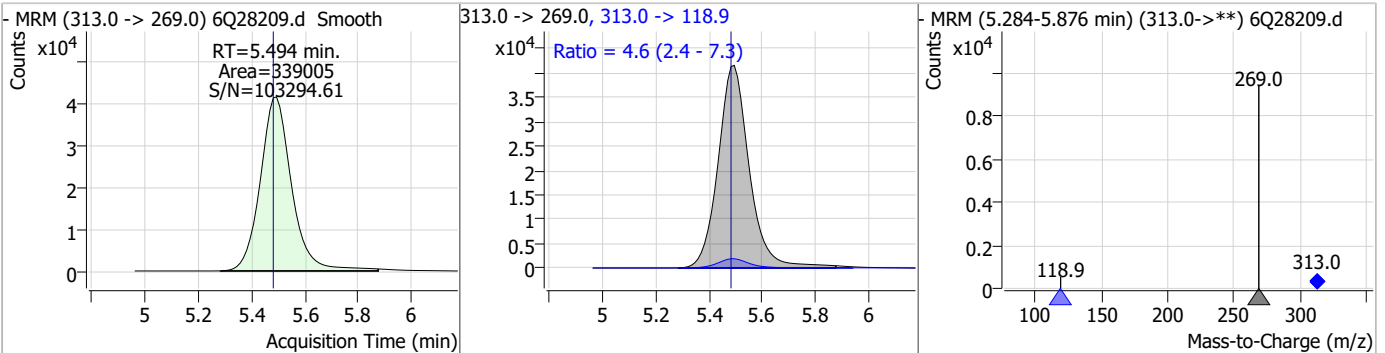
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### Perfluorinated Compounds by LC/MS/MS

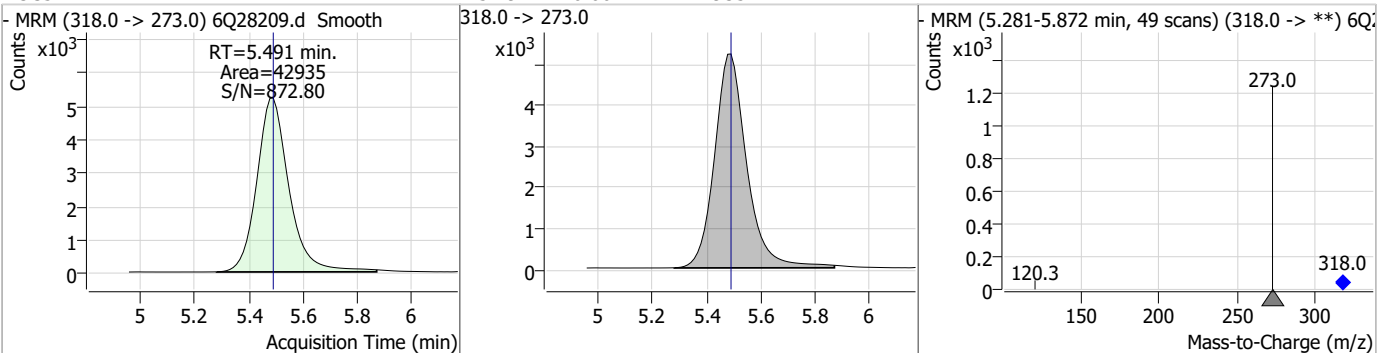
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.39	5.40	0.00	127012	298.7 -> 98.8	38.7	18.8	56.4



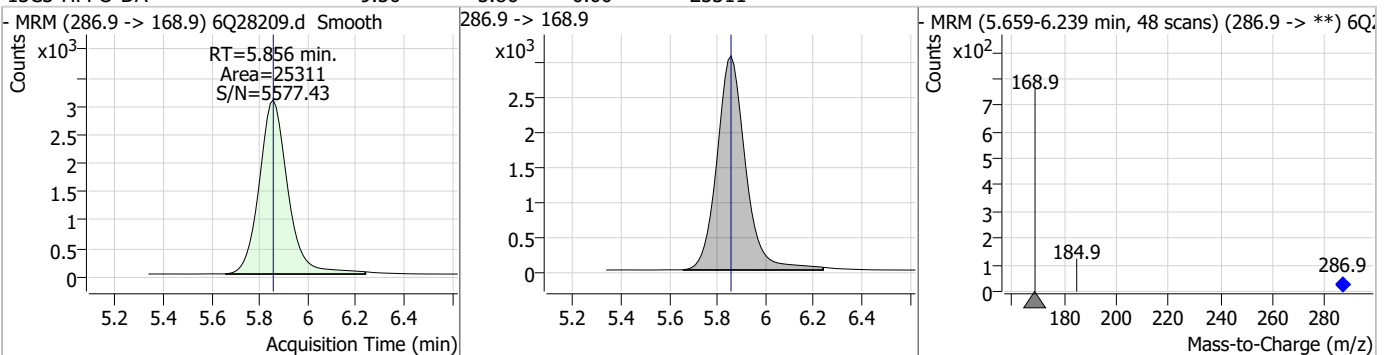
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.11	5.49	0.01	339005	313.0 -> 118.9	4.6	2.4	7.3



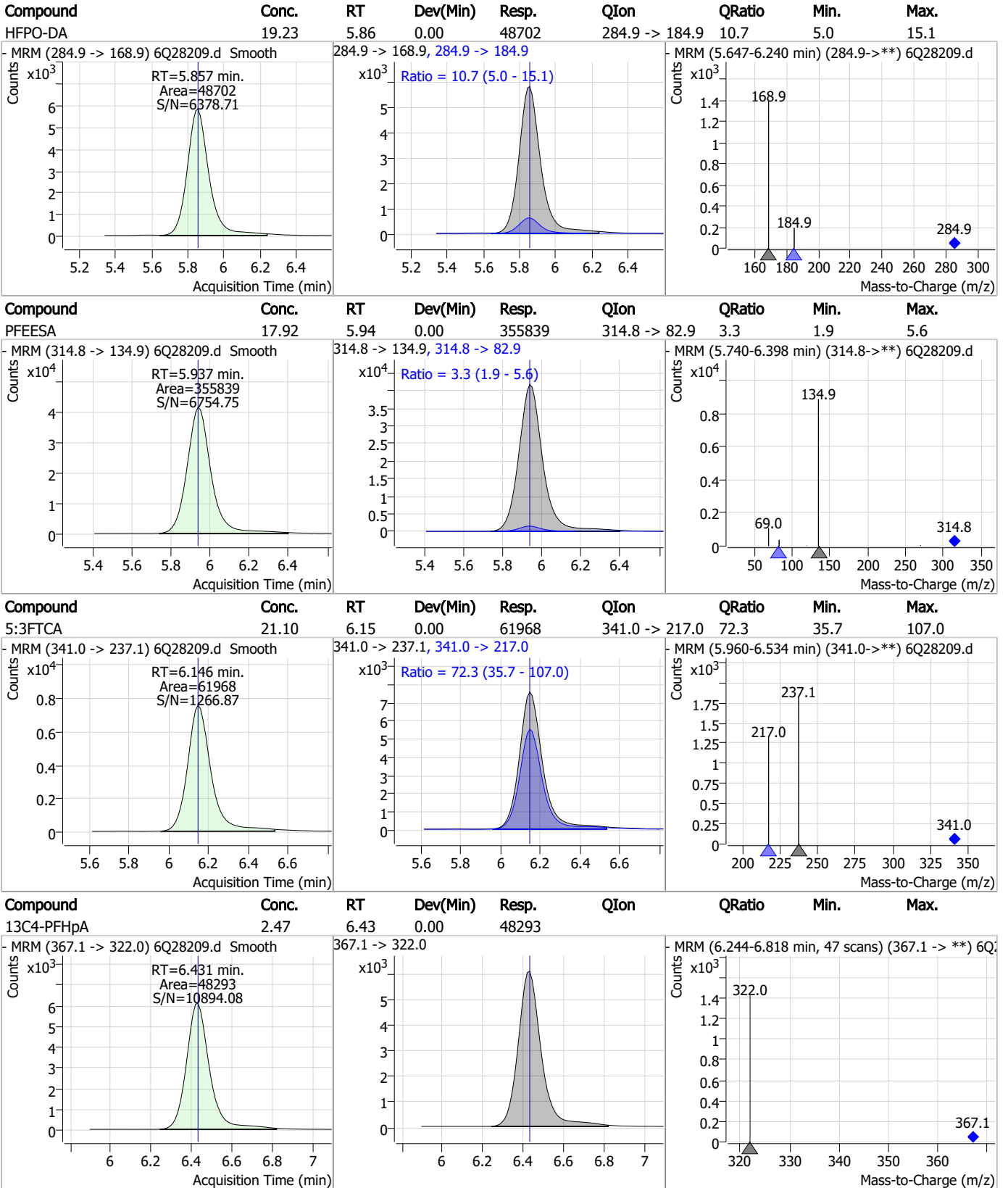
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.41	5.49	0.00	42935	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.50	5.86	0.00	25311	286.9 -> 168.9			



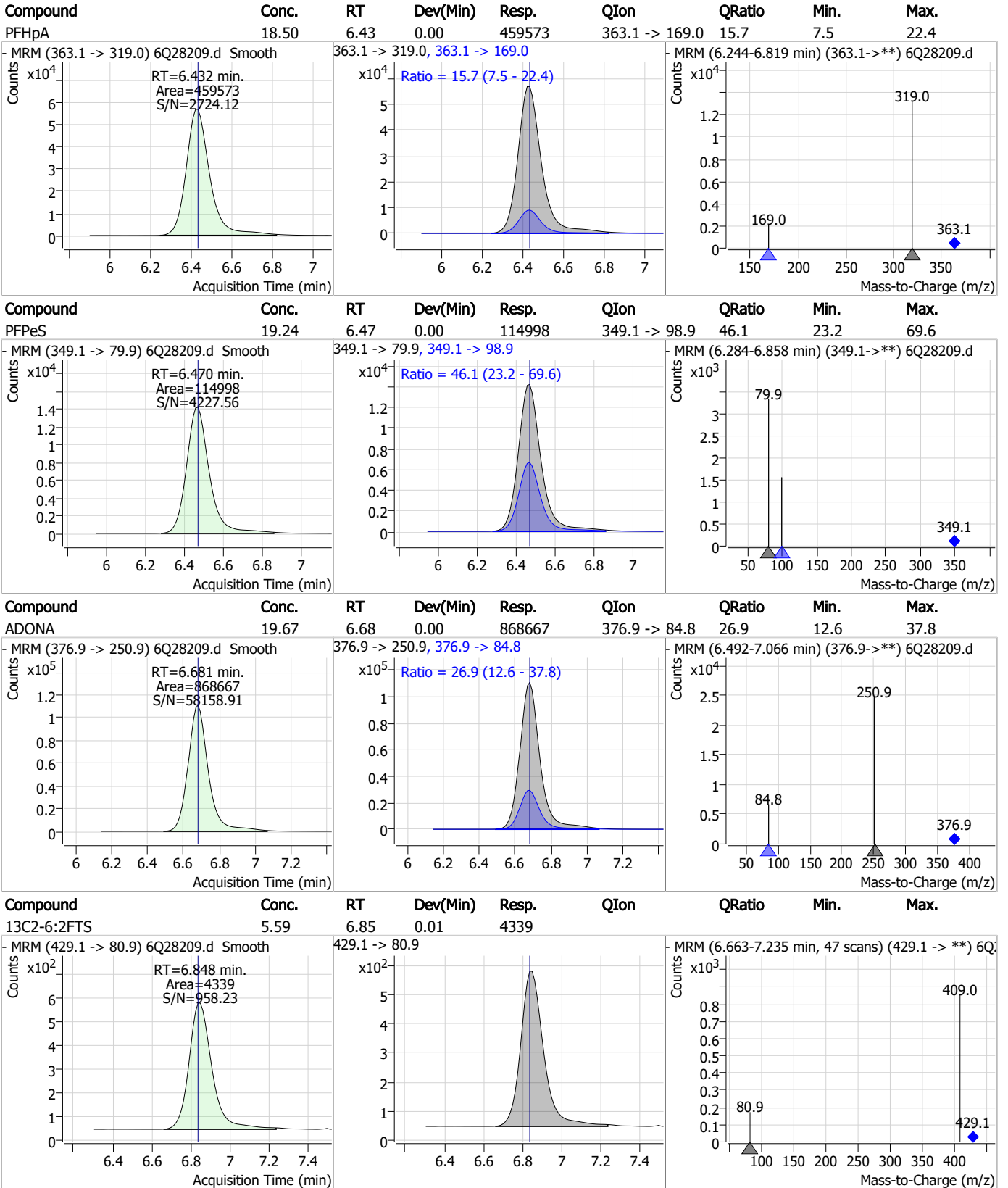
### Perfluorinated Compounds by LC/MS/MS



7.7.11

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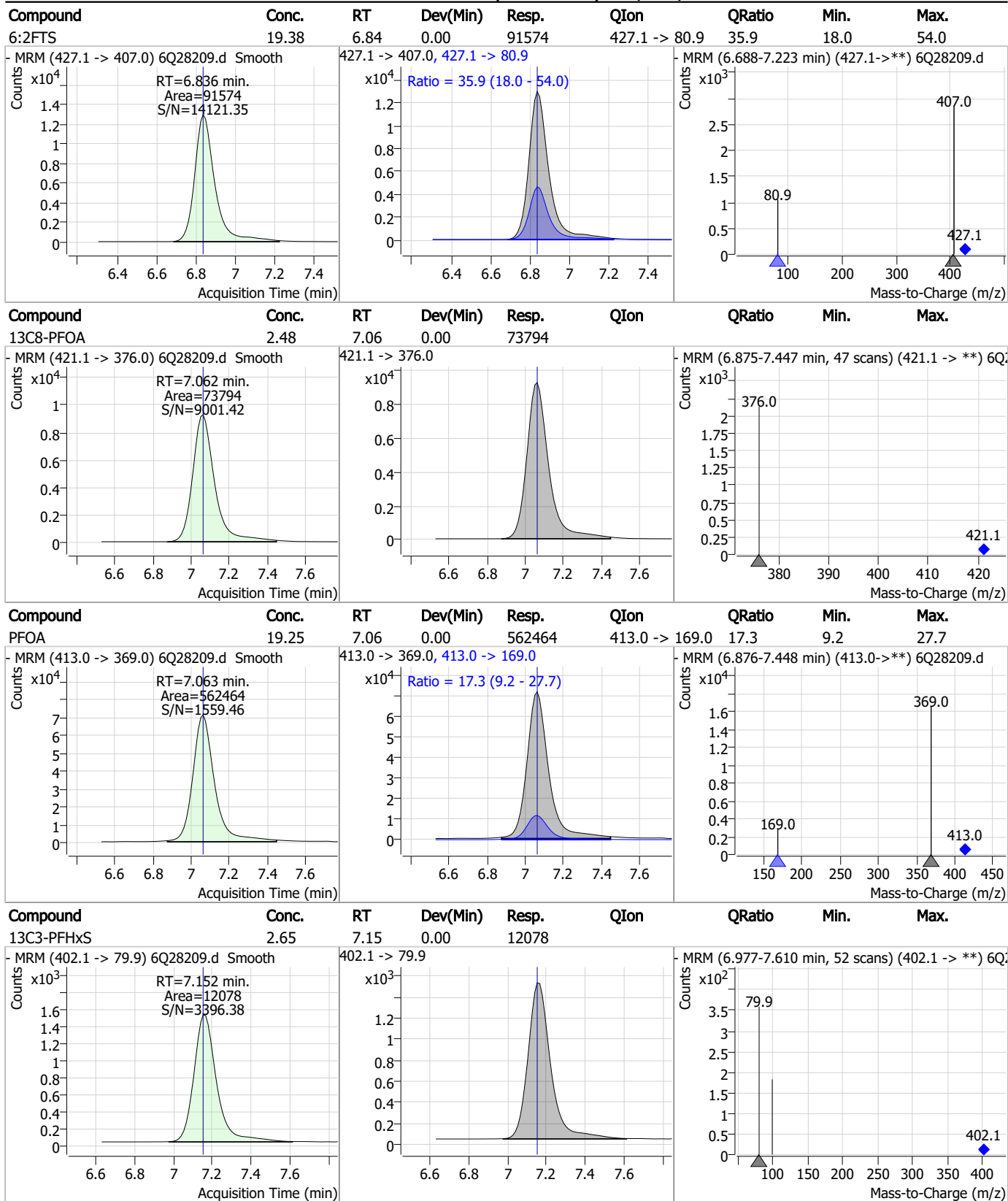
### Perfluorinated Compounds by LC/MS/MS



7.7.11  
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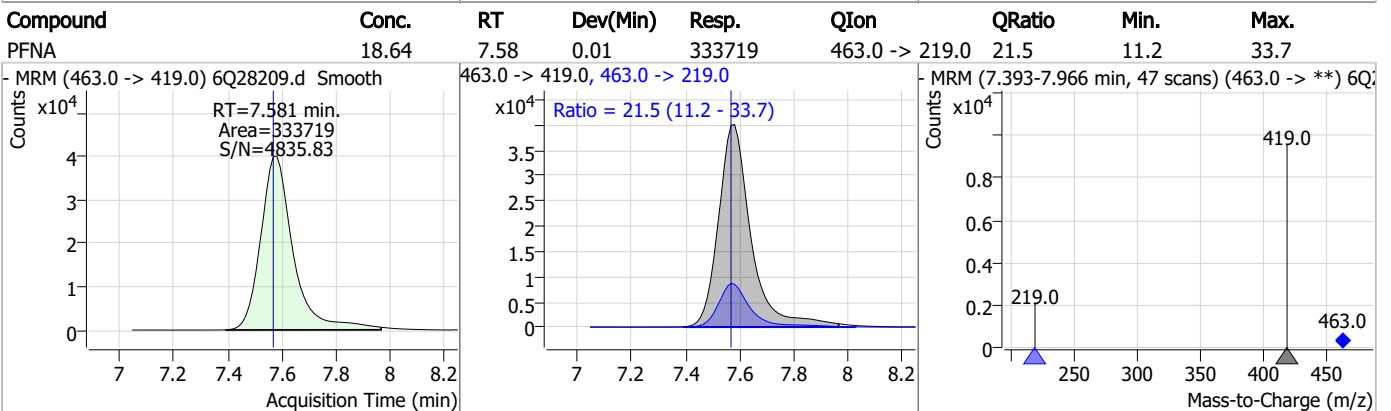
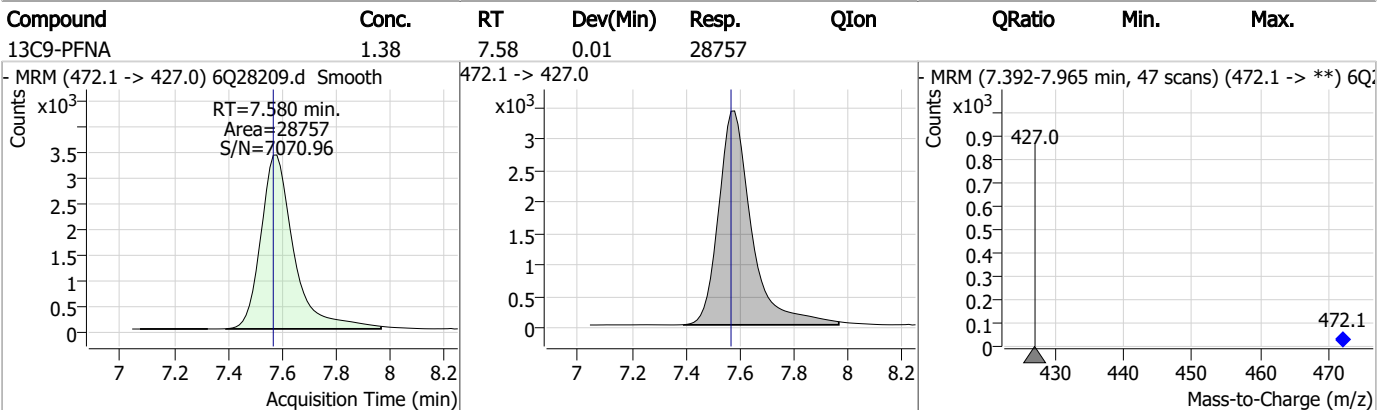
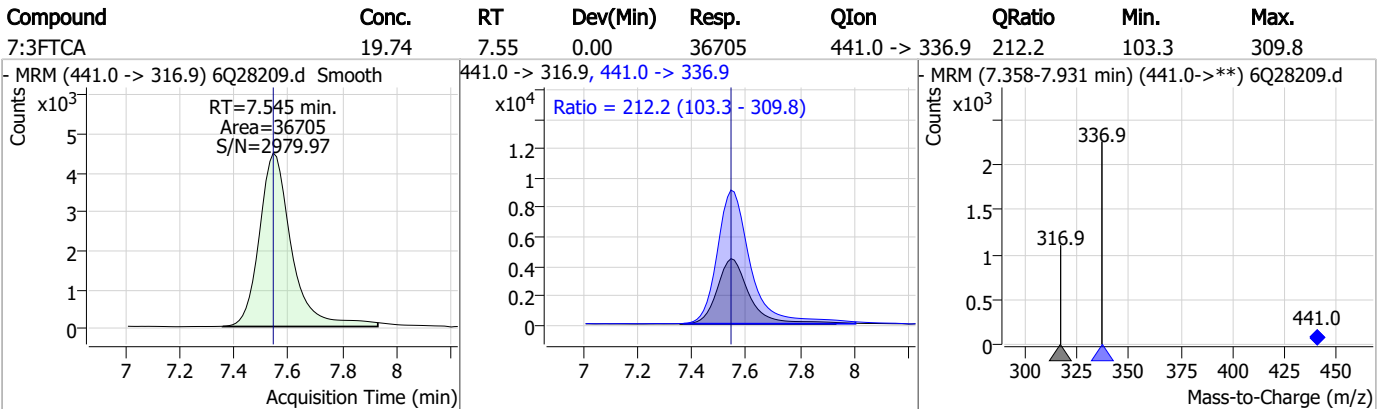
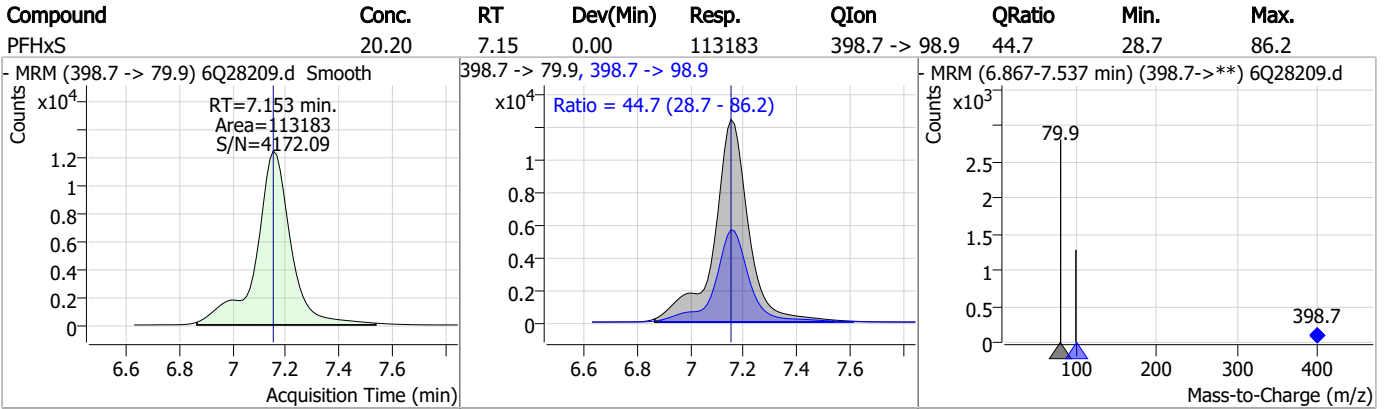
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

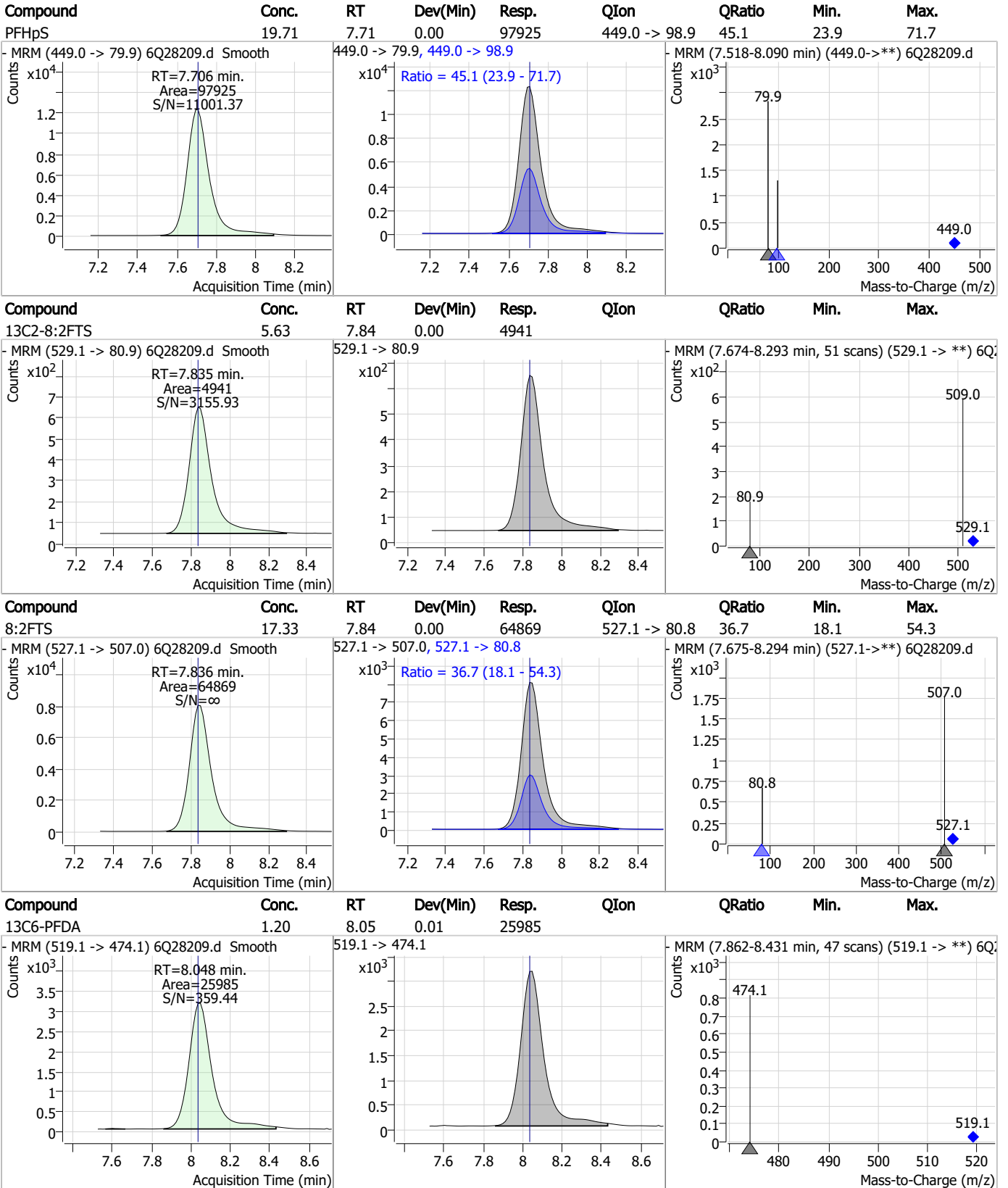


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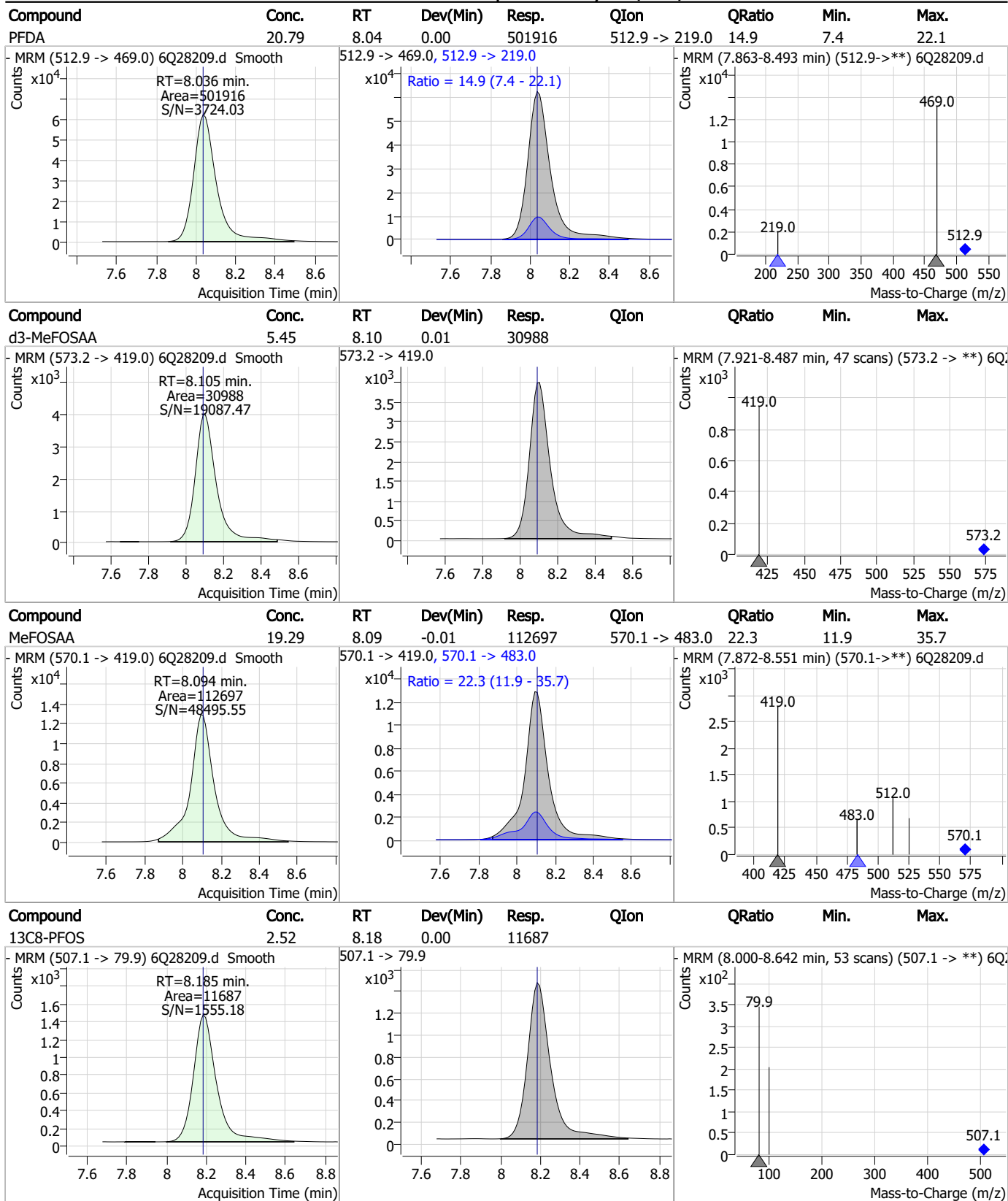
### Perfluorinated Compounds by LC/MS/MS



7.7.11



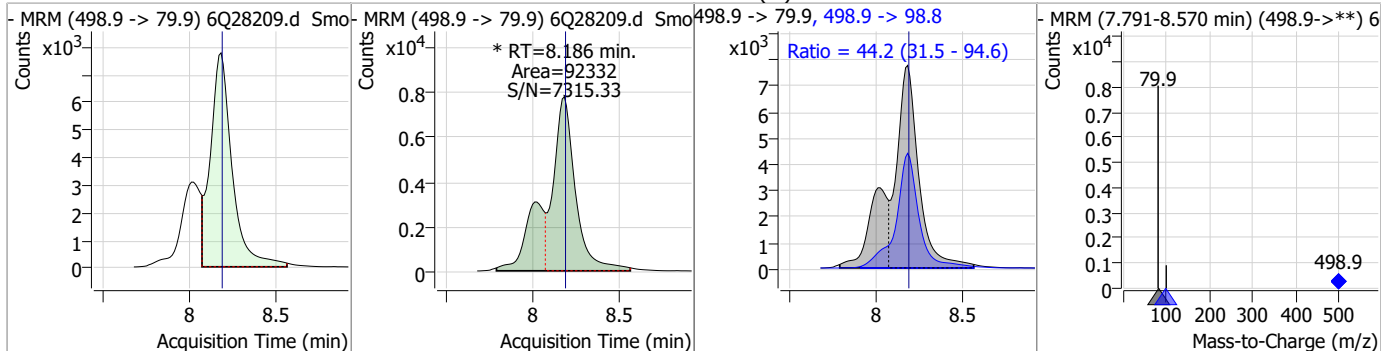
### Perfluorinated Compounds by LC/MS/MS



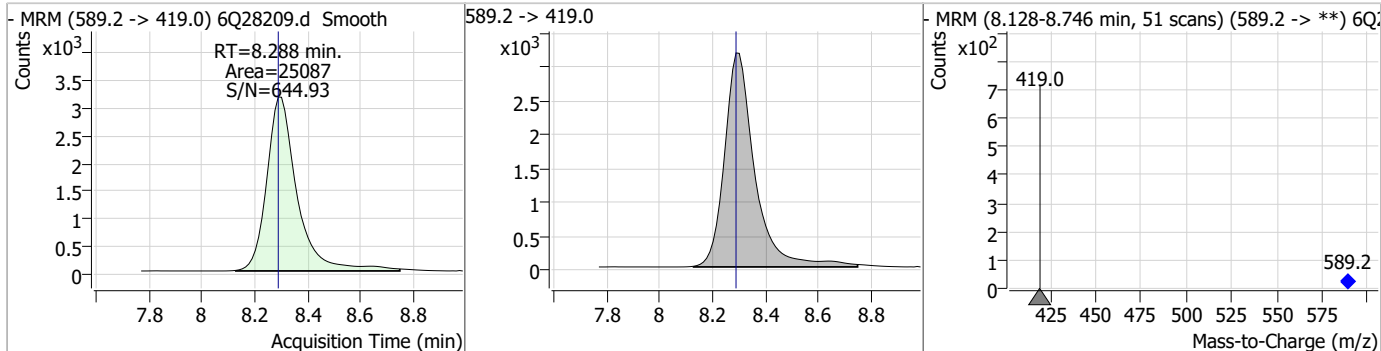
7.7.11  
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### Perfluorinated Compounds by LC/MS/MS

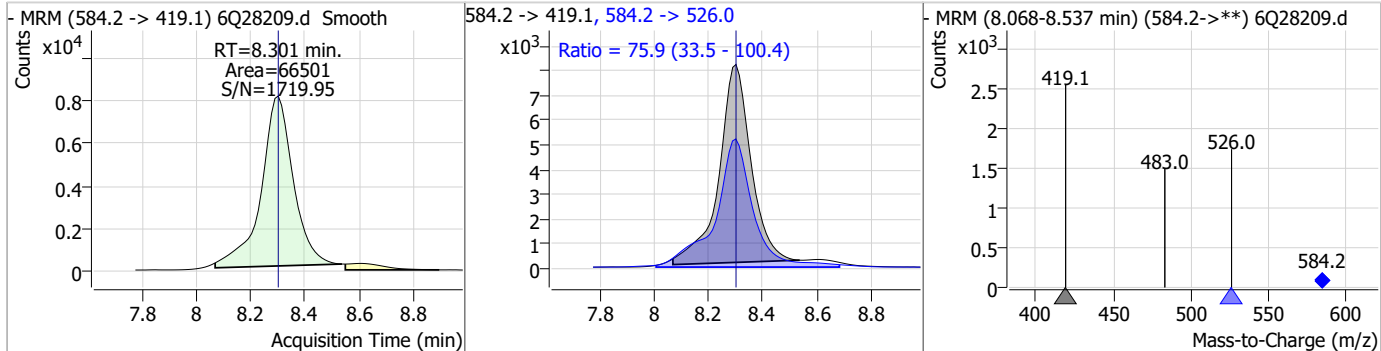
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.75	8.19	0.00	92332 (m)	498.9 -> 98.8	44.2	31.5	94.6



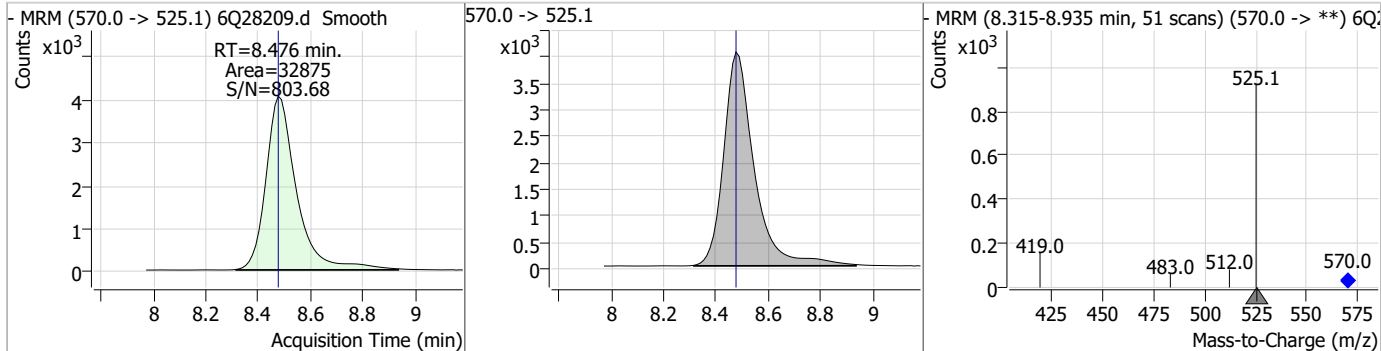
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.21	8.29	0.00	25087				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	16.40	8.30	0.00	66501	584.2 -> 526.0	75.9	33.5	100.4

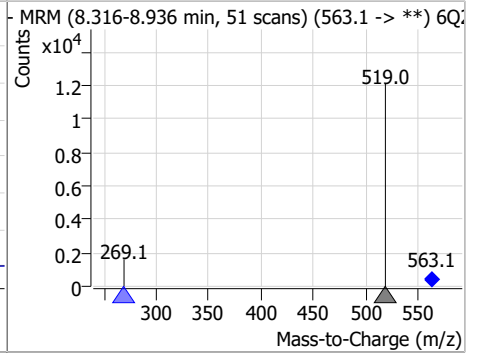
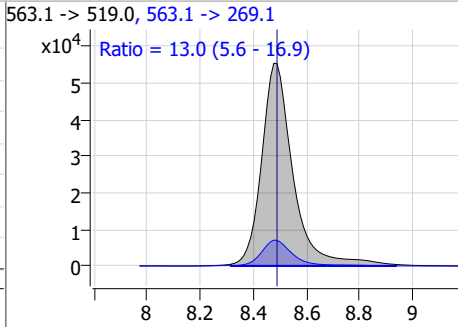
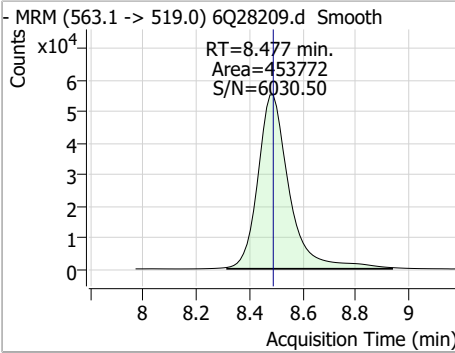


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	8.48	0.00	32875				

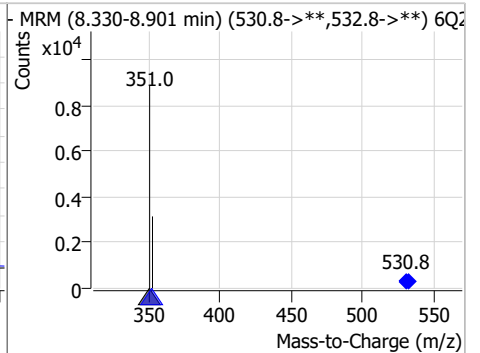
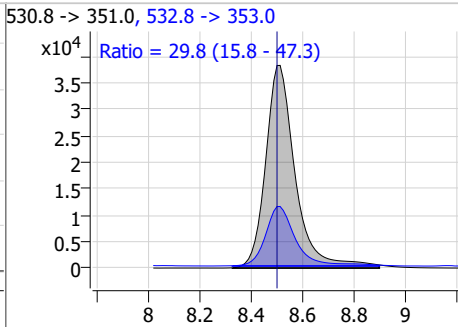
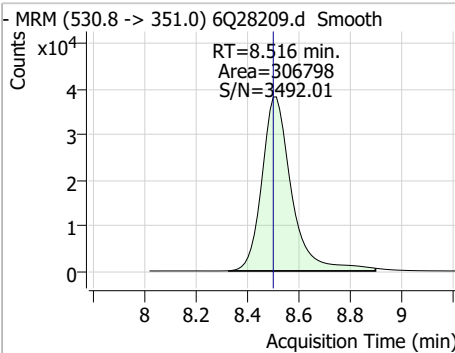


### Perfluorinated Compounds by LC/MS/MS

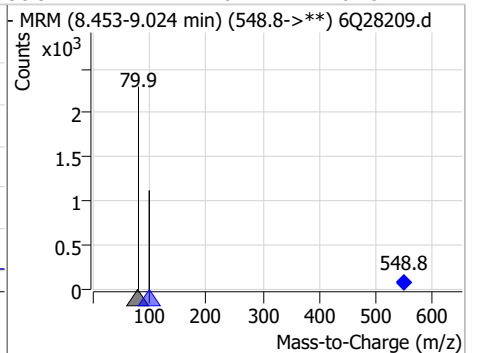
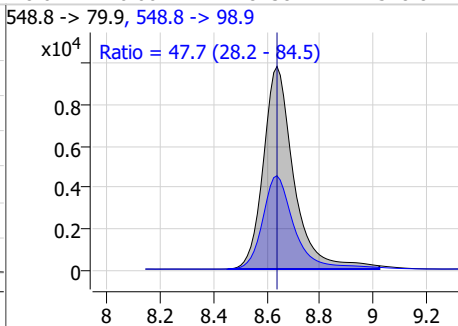
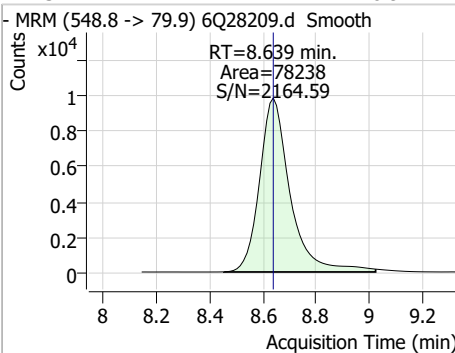
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	17.75	8.48	-0.01	453772	563.1 -> 269.1	13.0	5.6	16.9



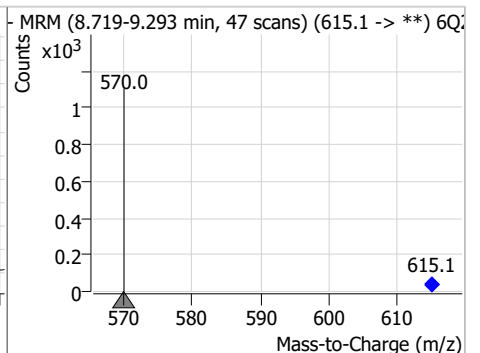
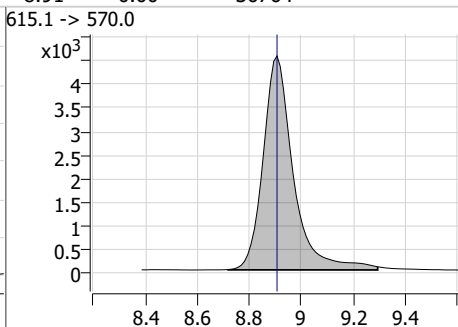
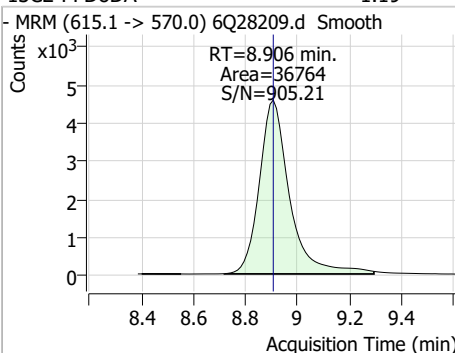
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	20.20	8.52	0.01	306798	532.8 -> 353.0	29.8	15.8	47.3



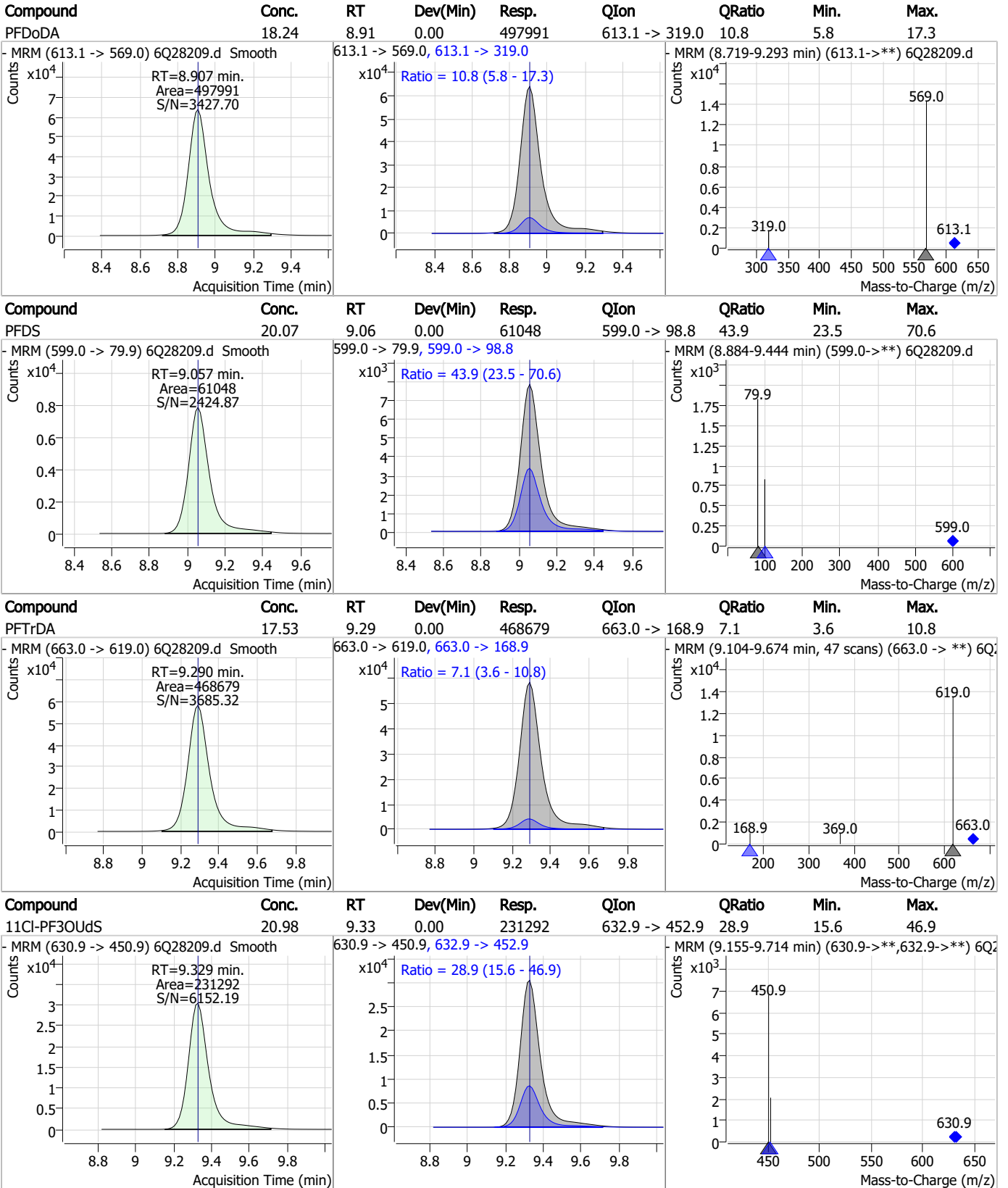
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.91	8.64	0.00	78238	548.8 -> 98.9	47.7	28.2	84.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	8.91	0.00	36764	615.1 -> 570.0			



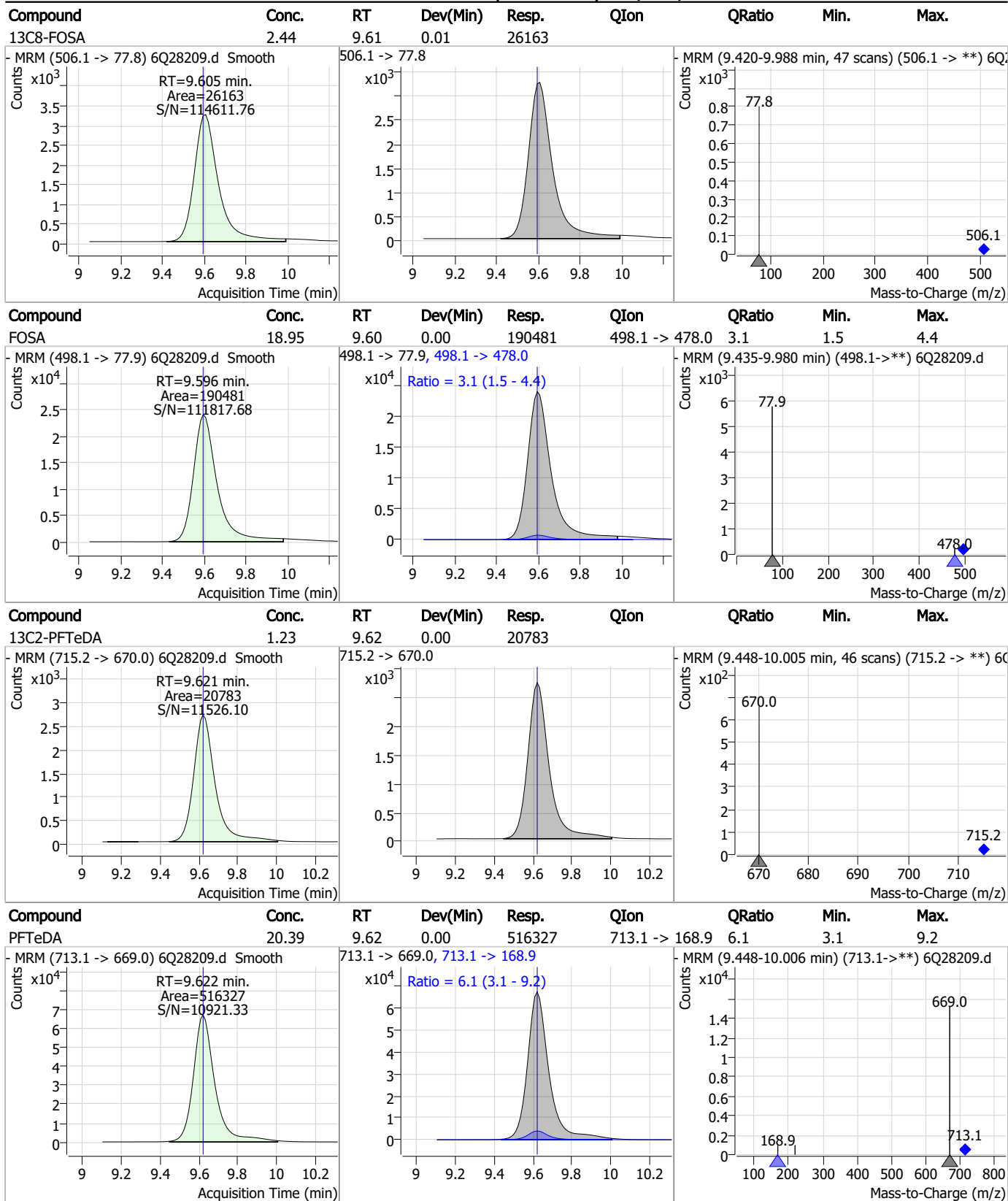
### Perfluorinated Compounds by LC/MS/MS



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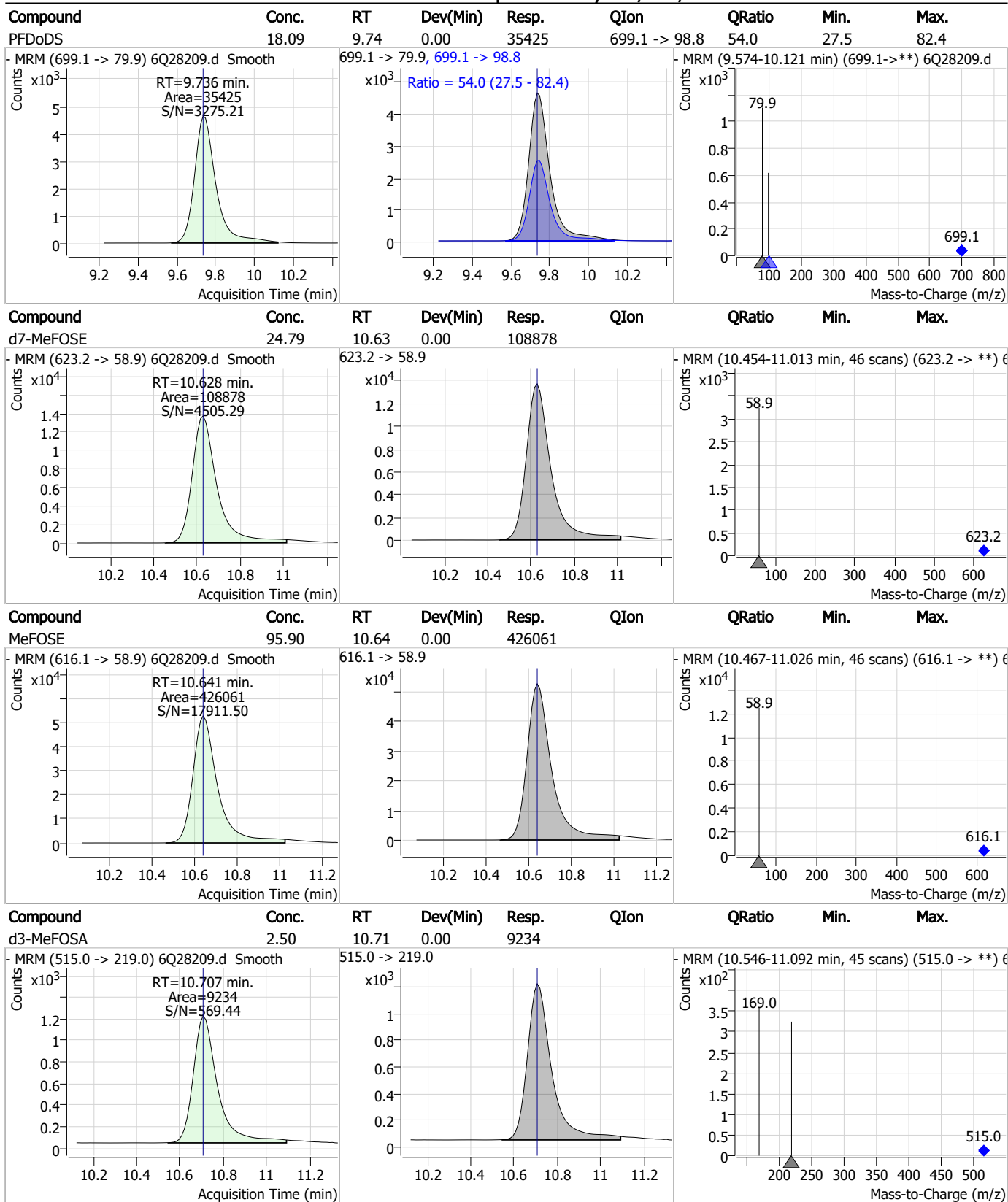
### Perfluorinated Compounds by LC/MS/MS



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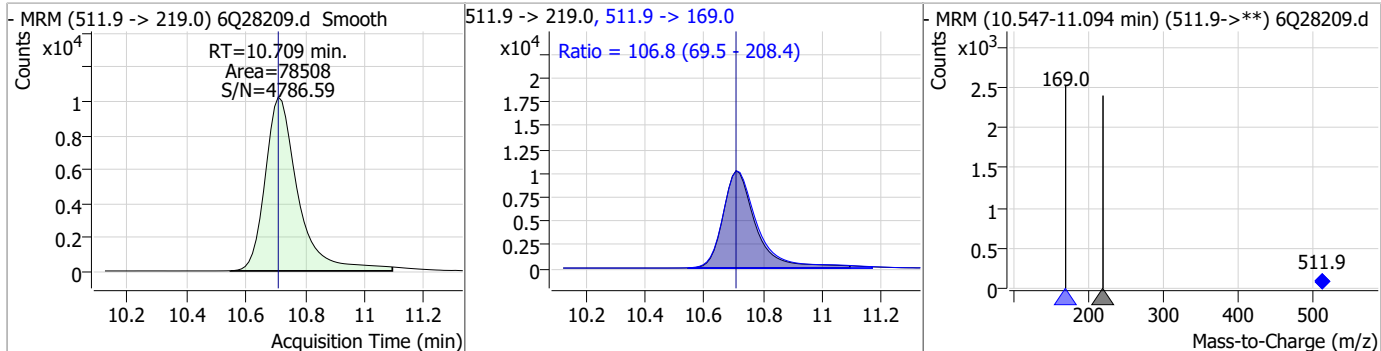
### Perfluorinated Compounds by LC/MS/MS



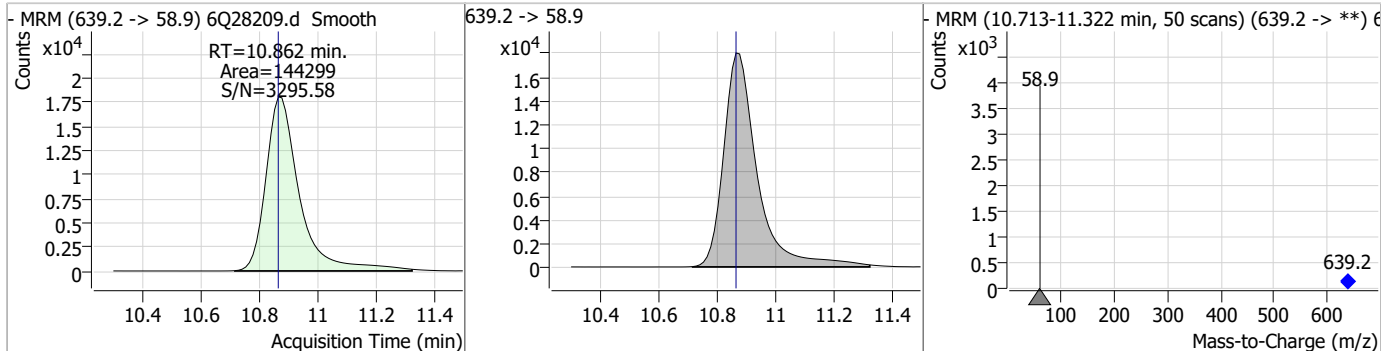
7.7.11  
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### Perfluorinated Compounds by LC/MS/MS

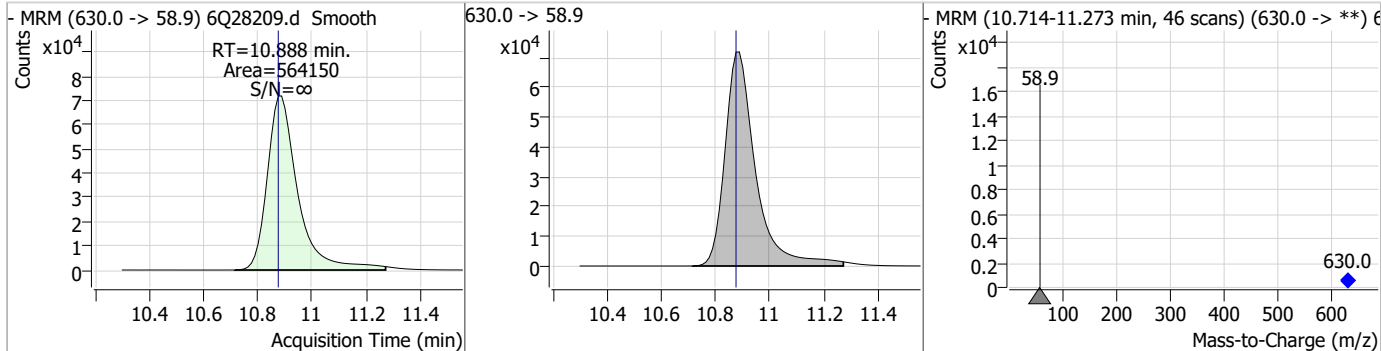
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.03	10.71	0.00	78508	511.9 -> 169.0	106.8	69.5	208.4



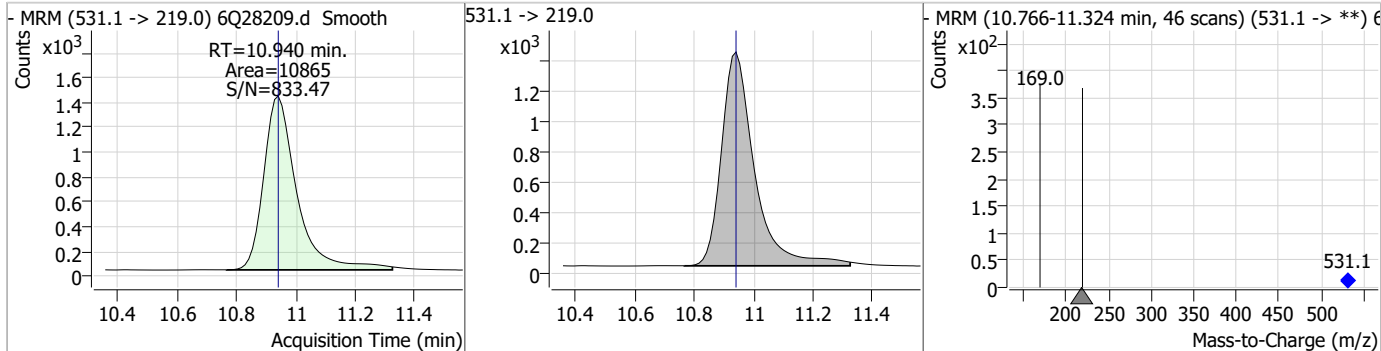
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.63	10.86	0.00	144299				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	95.97	10.89	0.01	564150				



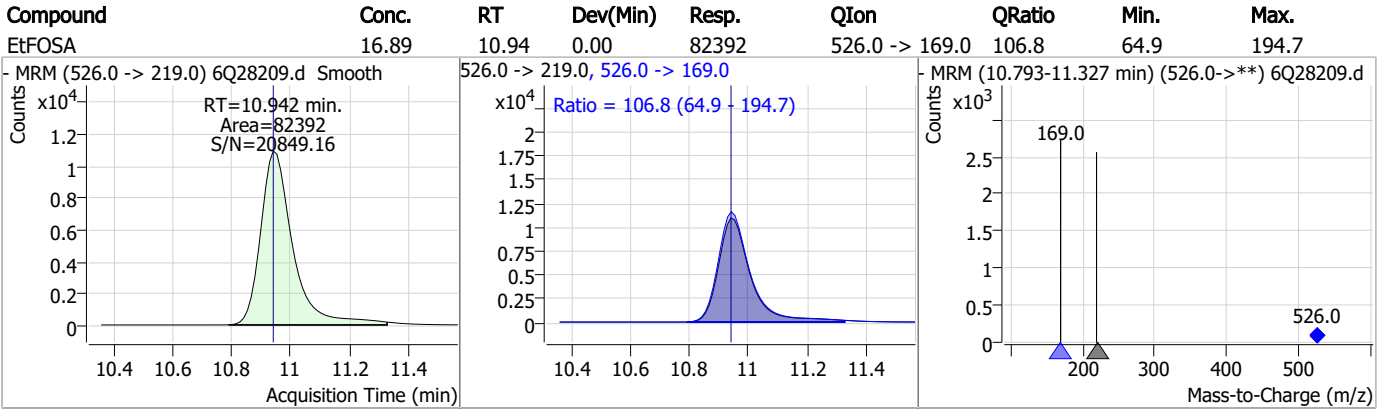
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.55	10.94	0.00	10865				



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### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q391-ICV391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28209.D      Analyst approved: 11/13/23 13:09 Martha Valls  
Injection Time: 11/12/23 15:43      Supervisor approved: 11/13/23 15:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28590.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 11:24:23 AM  
 Sample Name : cc391-4  
 Vial : P1-A5  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.888	216.8 -> 171.9	132941	10.00 µg/L	0.028
M5-PFPeA	4.284	268.3 -> 223.0	45647	5.00 µg/L	0.000
M5-PFHxA	5.478	318.0 -> 273.0	47898	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	54876	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	81375	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	28196	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	28807	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	33201	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	45249	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	26340	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	32631	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	19496	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	12489	2.50 µg/L	0.000
M8-PFOS	8.197	507.1 -> 79.9	12670	2.50 µg/L	0.012
M2-4:2FTS	5.154	329.1 -> 80.9	3019	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	3991	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	4404	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	27592	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	30919	10.00 µg/L	-0.012
M5-EtFOSAA	8.313	589.2 -> 419.0	24801	5.00 µg/L	0.025
M7-MeFOSE	10.640	623.2 -> 58.9	158804	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	208076	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	11668	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	9930	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	12384	2.50 µg/L	0.000
13C3-PFBA	2.891	216.0 -> 172.0	56524	5.00 µg/L	0.027
18O2-PFHxS	7.151	403.0 -> 83.9	8099	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	86934	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	29219	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	25516	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	45992	2.50 µg/L	-0.012

**System Monitoring Compounds**

13C2-4:2FTS	5.154	329.1 -> 80.9	3019	5.80 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.0%		
13C2-6:2FTS	6.836	429.1 -> 80.9	3991	4.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C2-8:2FTS	7.848	529.1 -> 80.9	4404	4.62 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.4%		
13C2-PFDoDA	8.906	615.1 -> 570.0	45249	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.9%		
13C2-PFTeDA	9.621	715.2 -> 670.0	26340	1.49 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 118.8%		
13C3-PFBS	5.384	302.1 -> 79.9	19496	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-PFHxS	7.152	402.1 -> 79.9	12489	2.52 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C4-PFBA	2.888	216.8 -> 171.9	132941	10.16 µg/L	0.028
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C4-PFHpA	6.419	367.1 -> 322.0	54876	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C5-PFHxA	5.478	318.0 -> 273.0	47898	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C5-PFPeA	4.284	268.3 -> 223.0	45647	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C6-PFDA	8.048	519.1 -> 474.1	28807	1.27 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C7-PFUnDA	8.489	570.0 -> 525.1	33201	1.22 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C8-FOSA	9.605	506.1 -> 77.8	32631	2.70 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C8-PFOA	7.062	421.1 -> 376.0	81375	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C8-PFOS	8.197	507.1 -> 79.9	12670	2.42 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C9-PFNA	7.580	472.1 -> 427.0	28196	1.32 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.5%		
d3-MeFOSAA	8.105	573.2 -> 419.0	27592	4.30 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.9%		
13C3-HFPO-DA	5.844	286.9 -> 168.9	30919	10.83 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
d3-MeFOSA	10.720	515.0 -> 219.0	9930	2.38 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.2%		
d5-EtFOSAA	8.313	589.2 -> 419.0	24801	4.56 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.2%		
d7-MeFOSE	10.640	623.2 -> 58.9	158804	32.03 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 128.1%		
d9-EtFOSE	10.875	639.2 -> 58.9	208076	31.46 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 125.8%		
d5-EtFOSA	10.940	531.1 -> 219.0	11668	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.2%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.167	327.1 -> 307.0	45053	9.16 µg/L	99
		327.1 -> 80.9	18373		
6:2FTS	6.836	427.1 -> 407.0	41372	9.52 µg/L	96
		427.1 -> 80.9	15921		
8:2FTS	7.849	527.1 -> 507.0	32016	9.60 µg/L	97
		527.1 -> 80.8	12095		
EtFOSAA	8.301	584.2 -> 419.1	9838	2.45 µg/L	m 91
		584.2 -> 526.0	5920		
FOSA	9.608	498.1 -> 77.9	30811	2.46 µg/L	100
		498.1 -> 478.0	847		
MeFOSAA	8.118	570.1 -> 419.0	14235	2.74 µg/L	m 98
		570.1 -> 483.0	3223		
PFBA	2.894	212.8 -> 168.9	44973	10.32 µg/L	100
PFBS	5.385	298.7 -> 79.9	15997	2.15 µg/L	99
		298.7 -> 98.8	6106		
PFDA	8.048	512.9 -> 469.0	71200	2.66 µg/L	100
		512.9 -> 219.0	10493		
PFDODA	8.907	613.1 -> 569.0	84872	2.53 µg/L	97
		613.1 -> 319.0	8751		
PFDS	9.057	599.0 -> 79.9	7545	2.29 µg/L	92

7.7.12  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3936		
PFHpA	6.419	363.1 -> 319.0	68064	2.41 µg/L	99
		363.1 -> 169.0	10431		
PFHpS	7.706	449.0 -> 79.9	13237	2.46 µg/L	95
		449.0 -> 98.9	6760		
PFHxA	5.481	313.0 -> 269.0	45579	2.54 µg/L	100
		313.0 -> 118.9	2240		
PFHxS	7.153	398.7 -> 79.9	14293	2.47 µg/L	m 82
		398.7 -> 98.9	6299		
PFNA	7.581	463.0 -> 419.0	45115	2.57 µg/L	94
		463.0 -> 219.0	8942		
PFNS	8.639	548.8 -> 79.9	11228	2.50 µg/L	96
		548.8 -> 98.9	6025		
PFOA	7.063	413.0 -> 369.0	85801	2.66 µg/L	96
		413.0 -> 169.0	14234		
PFOS	8.186	498.9 -> 79.9	12963	2.30 µg/L	86
		498.9 -> 98.8	6737		
PFPeA	4.286	263.0 -> 219.0	60692	5.24 µg/L	100
PFPeS	6.458	349.1 -> 79.9	16212	2.62 µg/L	95
		349.1 -> 98.9	6992		
PFTeDA	9.622	713.1 -> 669.0	80504	2.51 µg/L	100
		713.1 -> 168.9	5035		
PFTrDA	9.290	663.0 -> 619.0	84084	2.55 µg/L	99
		663.0 -> 168.9	5817		
PFUnDA	8.489	563.1 -> 519.0	68053	2.64 µg/L	92
		563.1 -> 269.1	9877		
11CI-PF3OUdS	9.329	630.9 -> 450.9	59730	4.43 µg/L	100
		632.9 -> 452.9	18646		
9CI-PF3ONS	8.516	530.8 -> 351.0	86508	4.66 µg/L	99
		532.8 -> 353.0	27884		
ADONA	6.681	376.9 -> 250.9	234555	4.35 µg/L	96
		376.9 -> 84.8	64030		
HFPO-DA	5.844	284.9 -> 168.9	14659	4.74 µg/L	96
		284.9 -> 184.9	1724		
3:3FTCA	3.764	241.0 -> 177.0	9091	11.83 µg/L	99
		241.0 -> 117.0	1021		
5:3FTCA	6.159	341.0 -> 237.1	205052	62.59 µg/L	99
		341.0 -> 217.0	147607		
7:3FTCA	7.558	441.0 -> 316.9	118029	56.89 µg/L	96
		441.0 -> 336.9	236993		
EtFOSA	10.942	526.0 -> 219.0	26283	5.02 µg/L	97
		526.0 -> 169.0	33225		
EtFOSE	10.888	630.0 -> 58.9	104162	12.29 µg/L	100
MeFOSA	10.721	511.9 -> 219.0	23628	5.33 µg/L	94
		511.9 -> 169.0	31131		
MeFOSE	10.653	616.1 -> 58.9	78059	12.05 µg/L	100
PFDoDS	9.736	699.1 -> 79.9	5438	2.56 µg/L	96
		699.1 -> 98.8	2847		
NFDHA	5.360	295.0 -> 201.0	9985	4.81 µg/L	94
		295.0 -> 84.9	2814		
PFMBA	4.700	279.0 -> 85.1	41235	5.17 µg/L	100
PFMPA	3.438	229.0 -> 84.9	31493	5.26 µg/L	100
PFEESA	5.925	314.8 -> 134.9	102212	4.61 µg/L	99
		314.8 -> 82.9	3547		

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



7.7.12  
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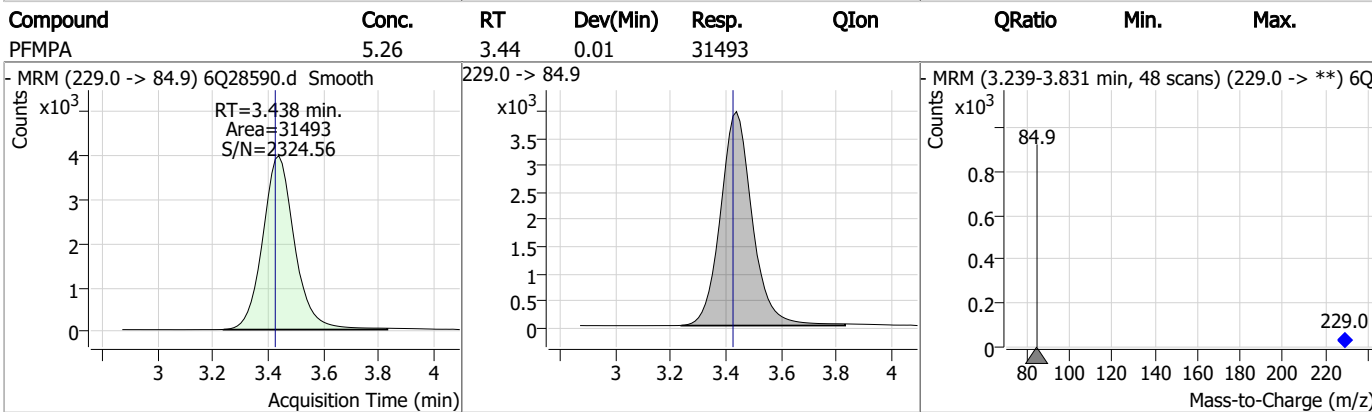
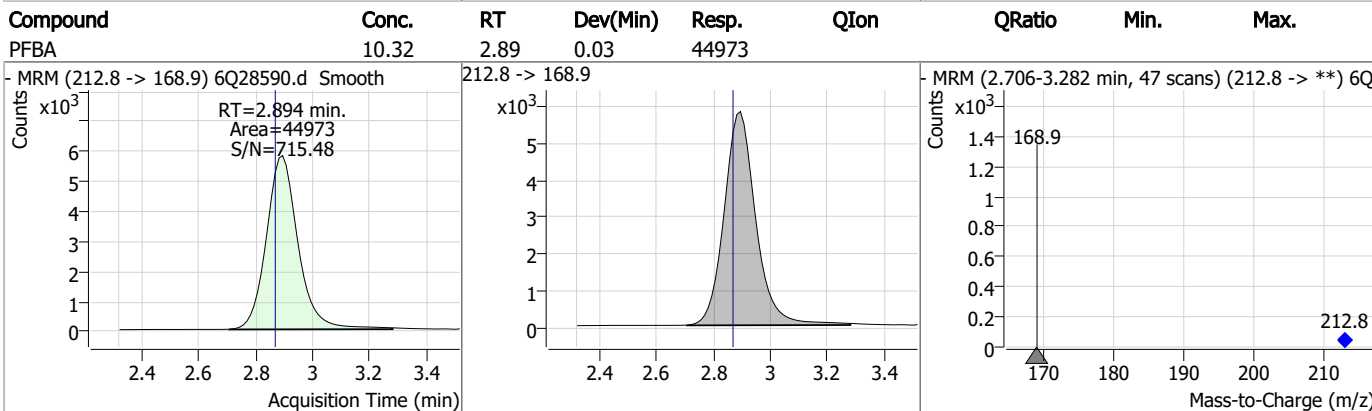
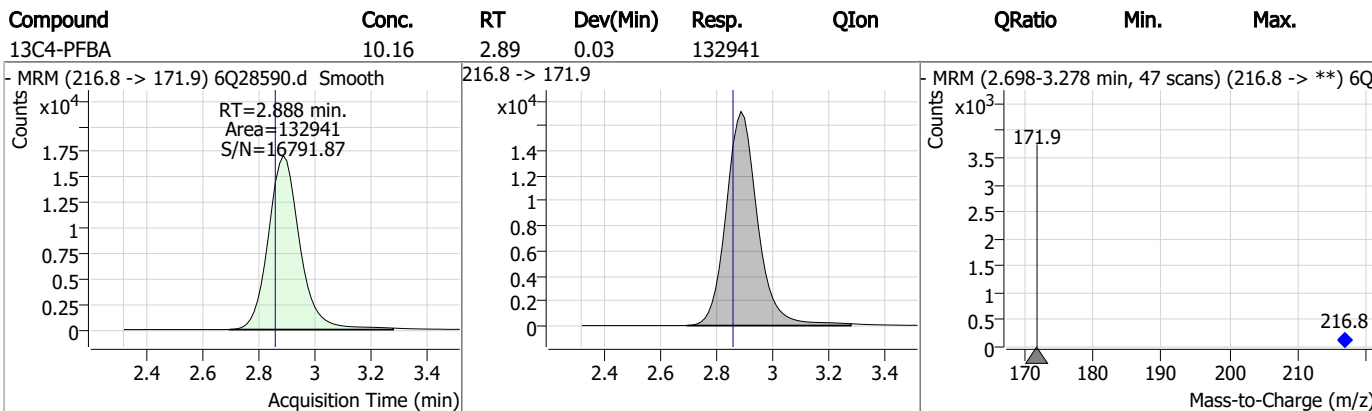
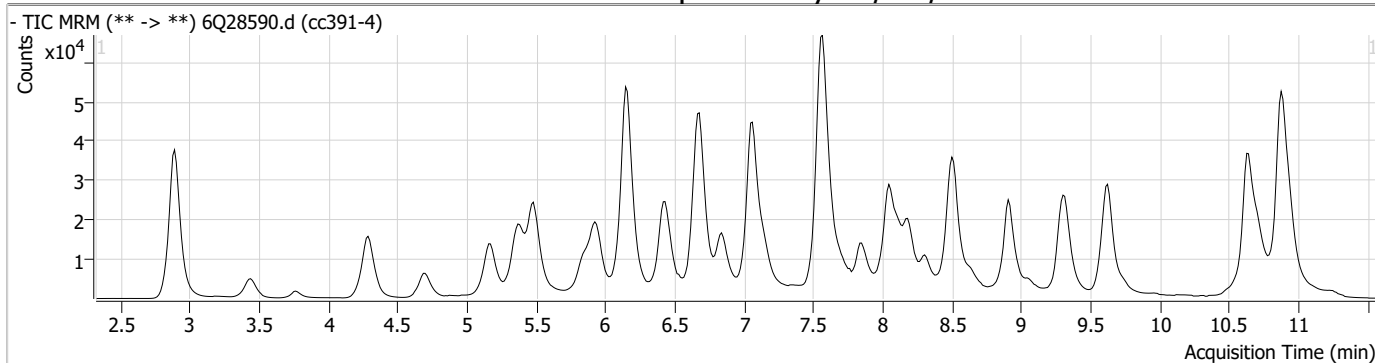
### Perfluorinated Compounds by LC/MS/MS

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

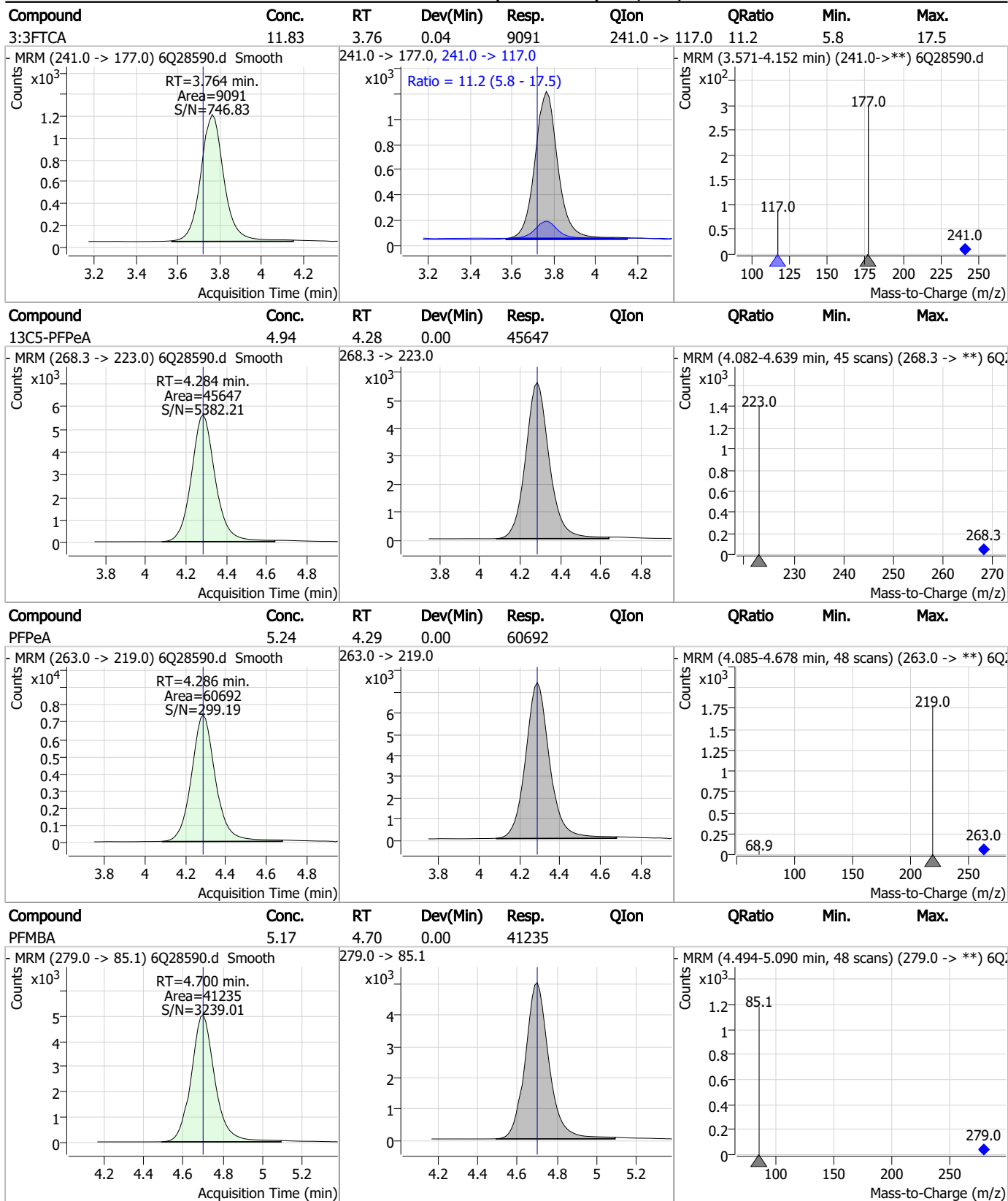
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### Perfluorinated Compounds by LC/MS/MS



7.7.12  
7

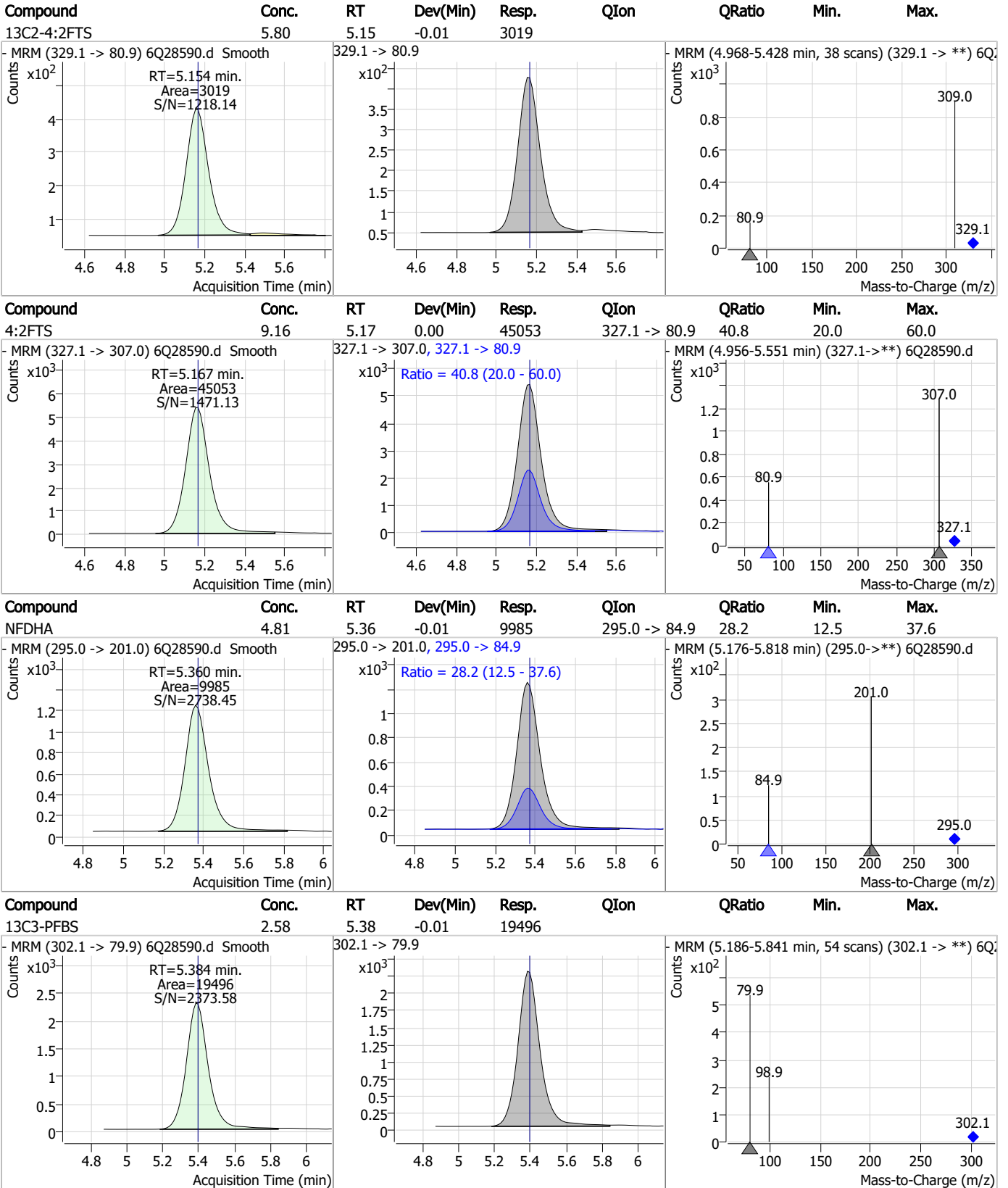
### Perfluorinated Compounds by LC/MS/MS



7.7.12



### Perfluorinated Compounds by LC/MS/MS

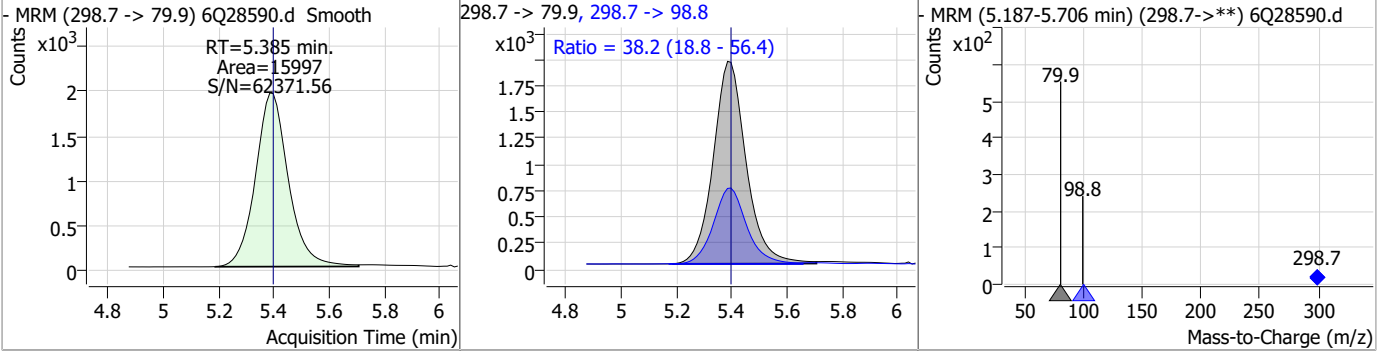


7.7.12 7

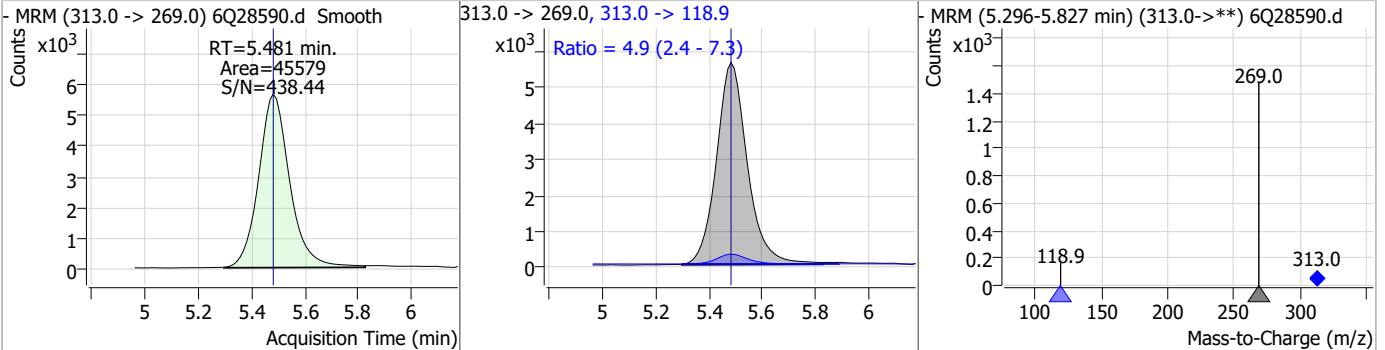


### Perfluorinated Compounds by LC/MS/MS

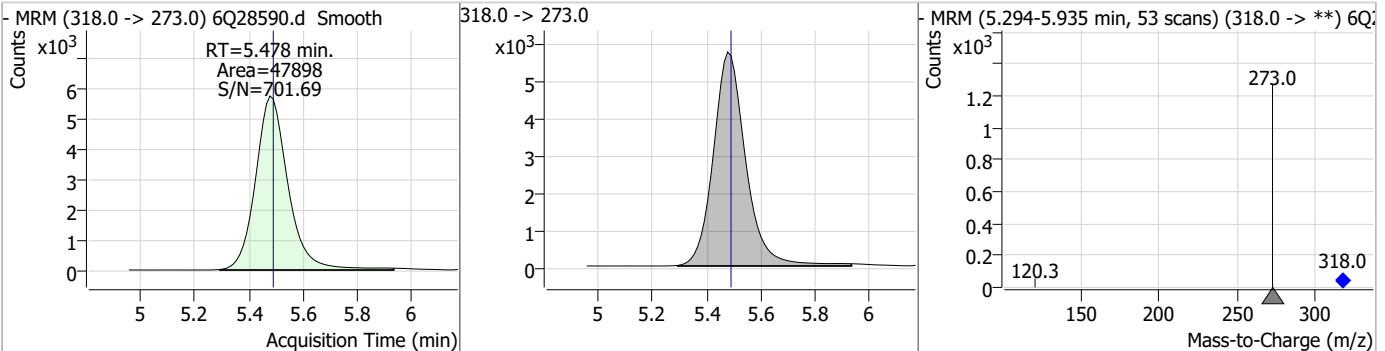
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.15	5.38	-0.01	15997	298.7 -> 98.8	38.2	18.8	56.4



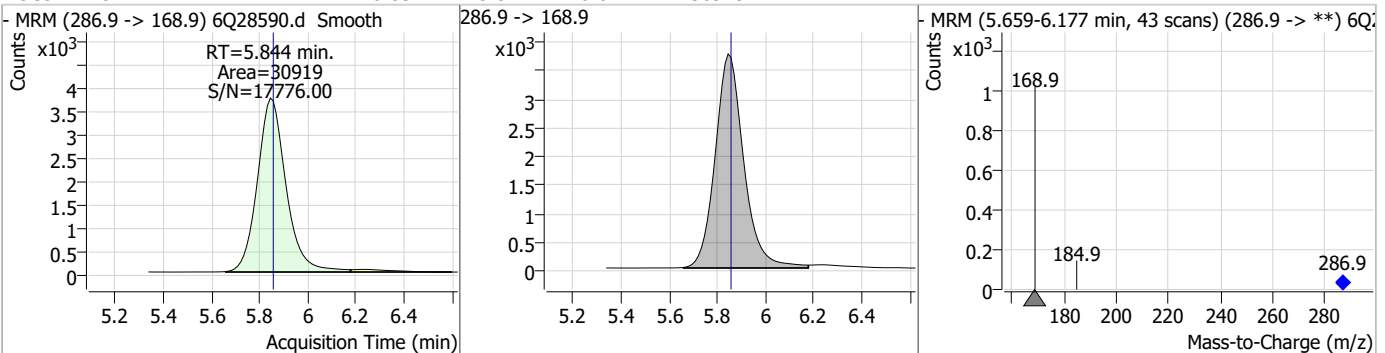
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.54	5.48	0.00	45579	313.0 -> 118.9	4.9	2.4	7.3



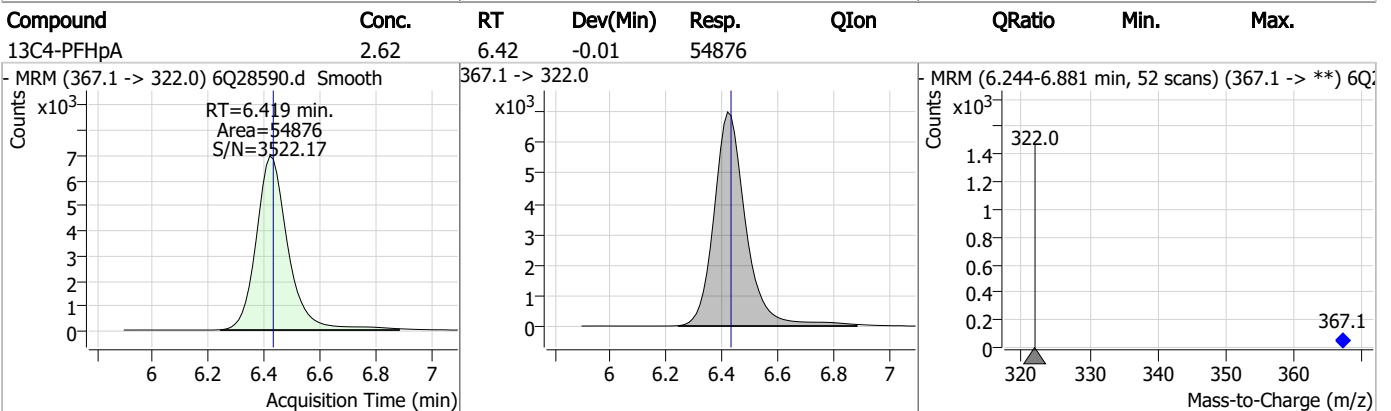
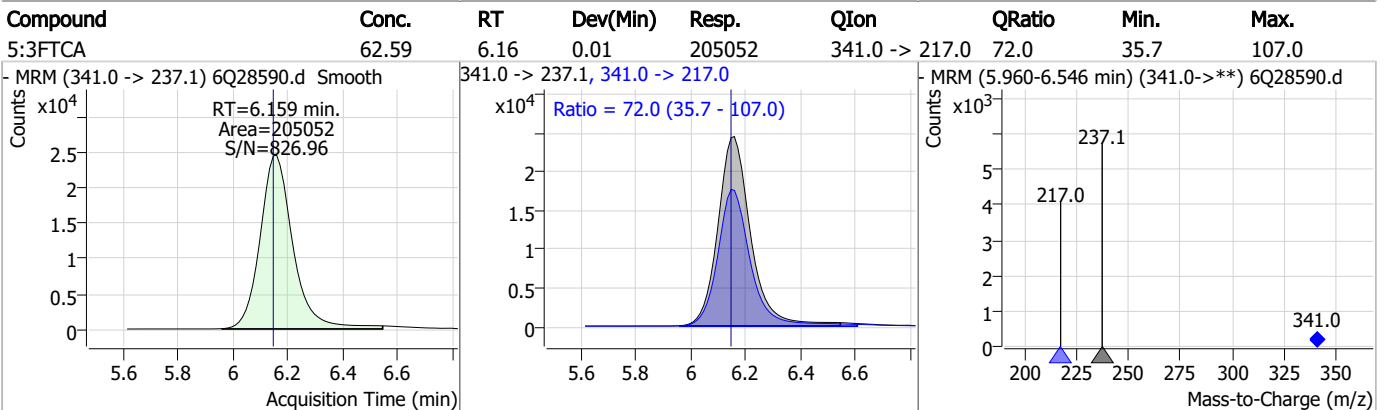
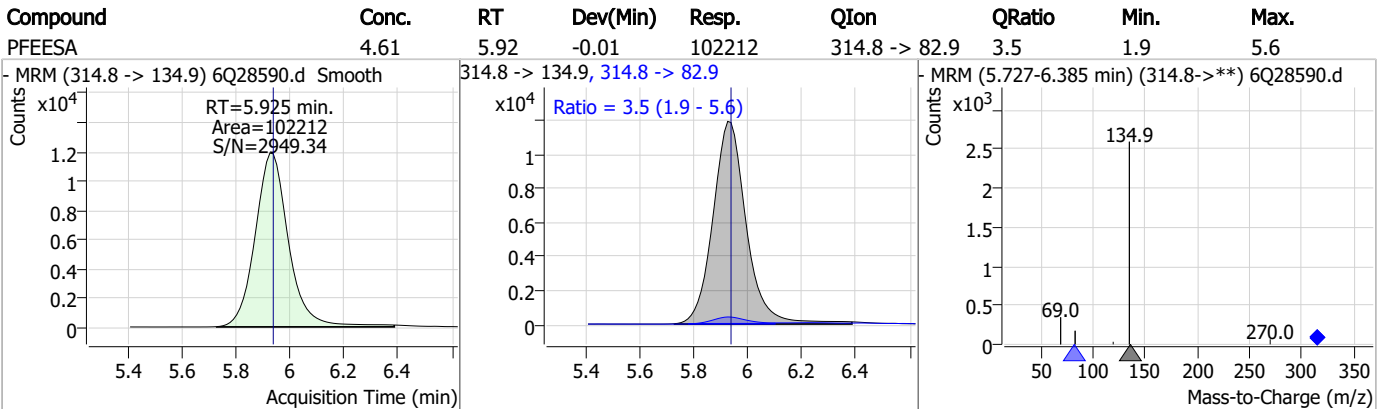
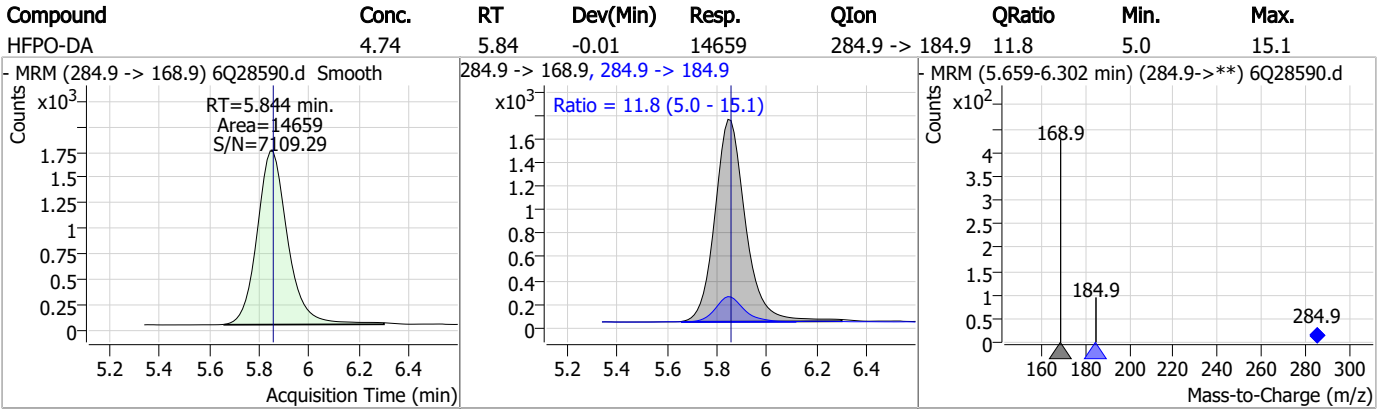
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.48	-0.01	47898	318.0 -> 273.0	4.9	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.83	5.84	-0.01	30919	286.9 -> 168.9	4.9	2.4	7.3



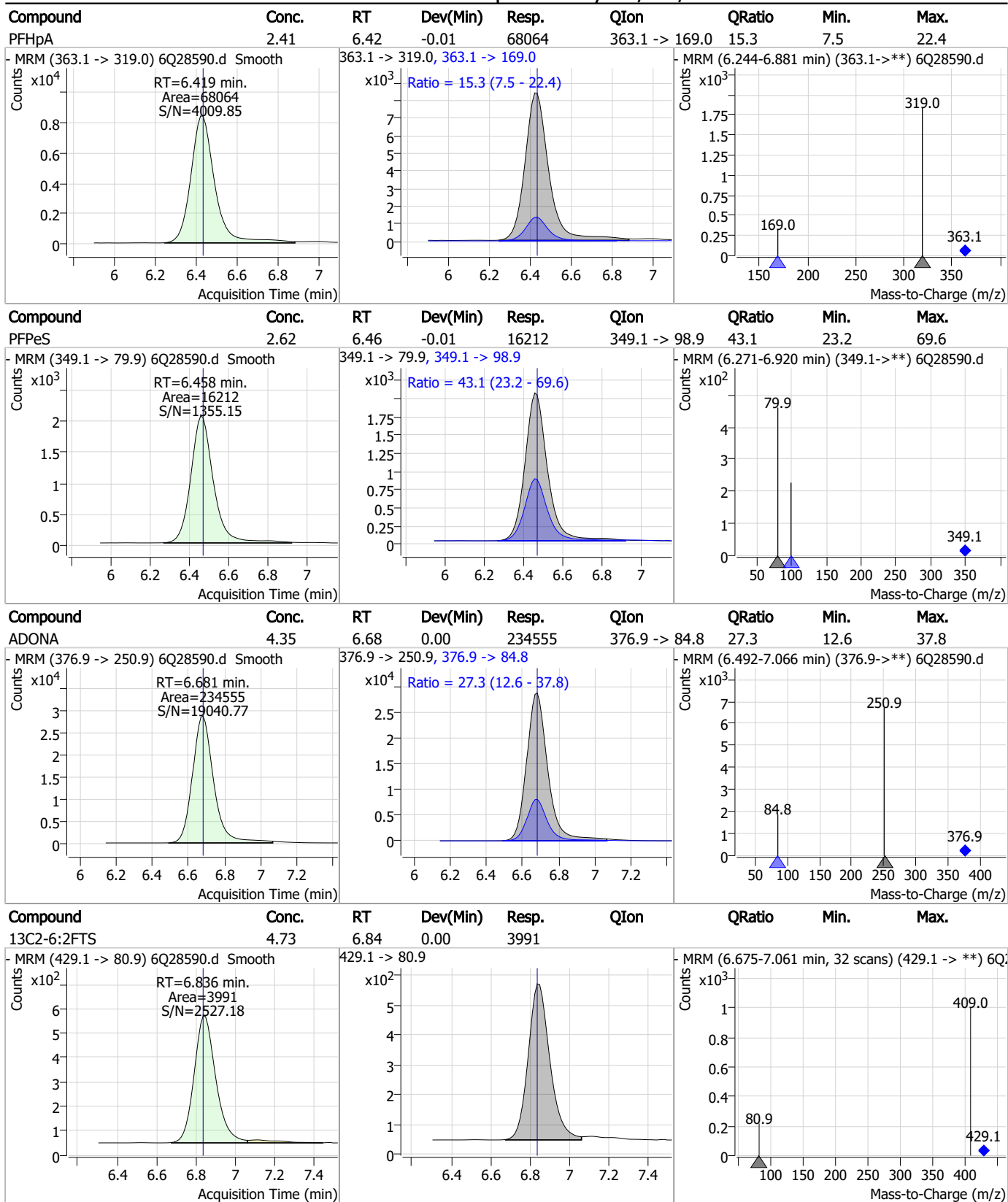
### Perfluorinated Compounds by LC/MS/MS



7.7.12  
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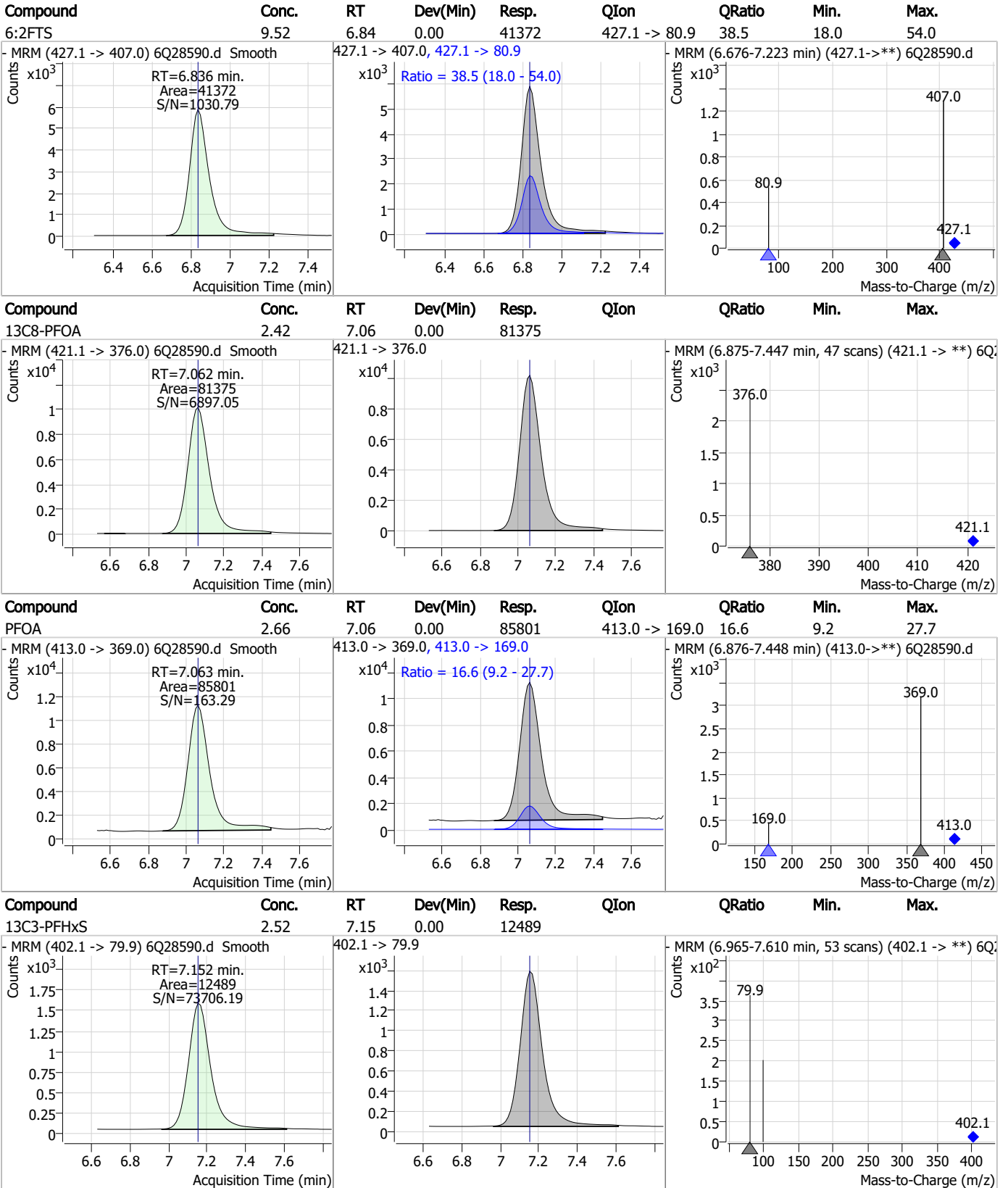


### Perfluorinated Compounds by LC/MS/MS



7.7.12

### Perfluorinated Compounds by LC/MS/MS

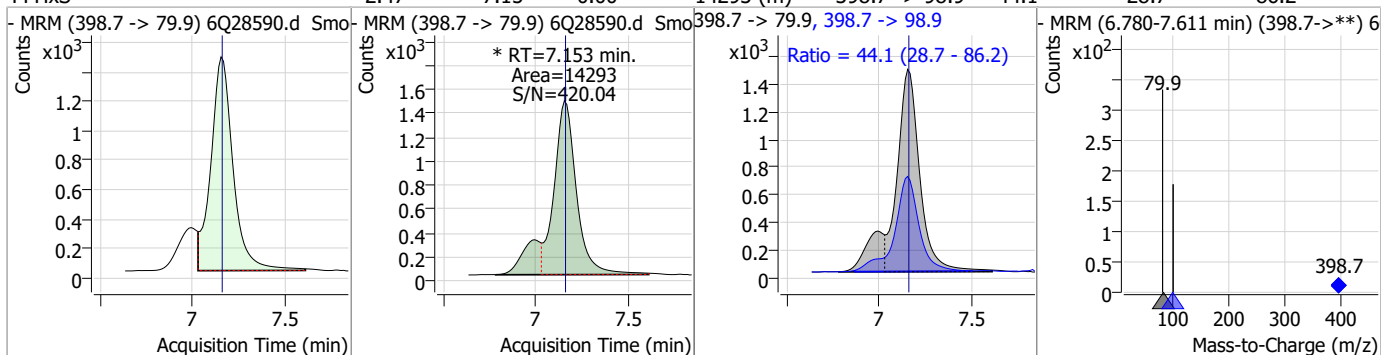


7.7.12 7

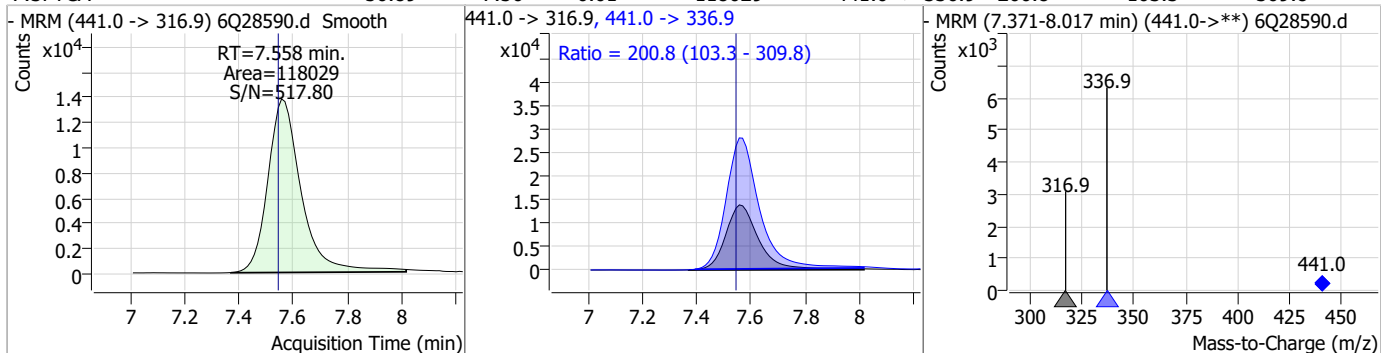


### Perfluorinated Compounds by LC/MS/MS

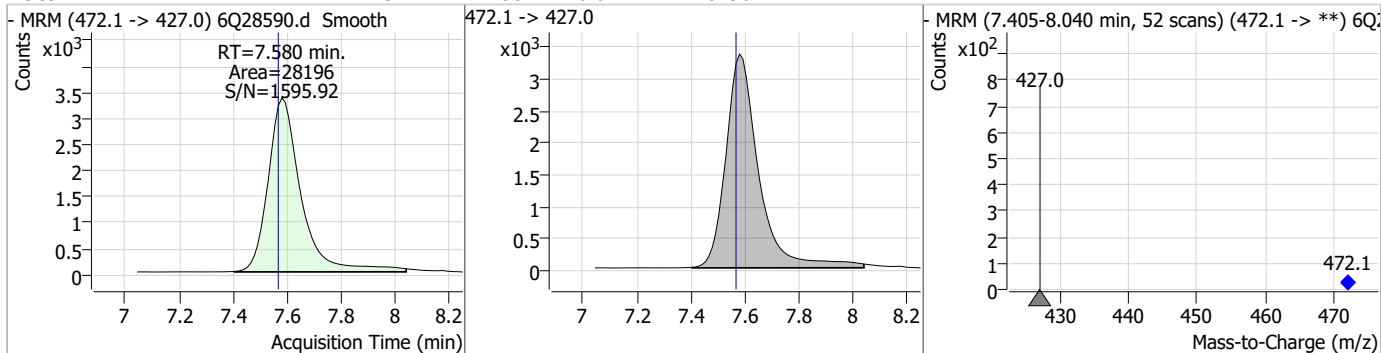
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.47	7.15	0.00	14293 (m)	398.7 -> 98.9	44.1	28.7	86.2



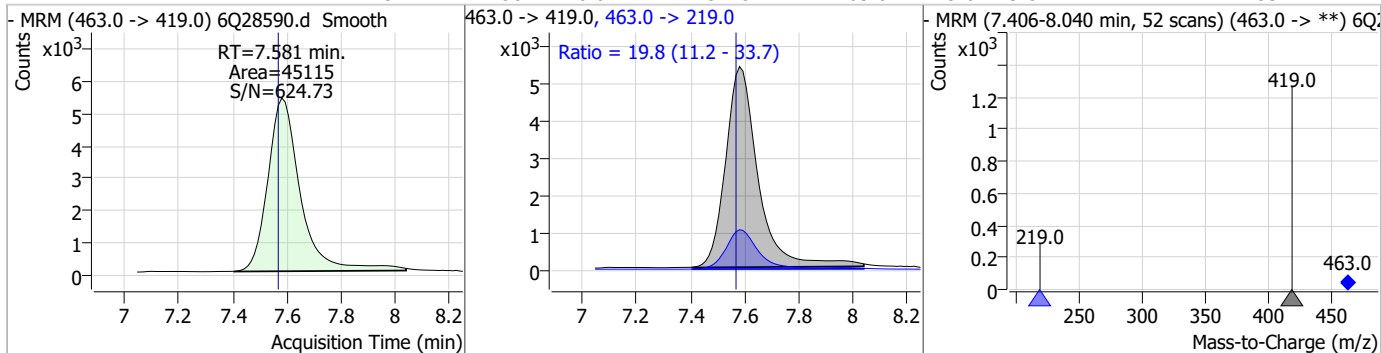
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	56.89	7.56	0.01	118029	441.0 -> 336.9	200.8	103.3	309.8



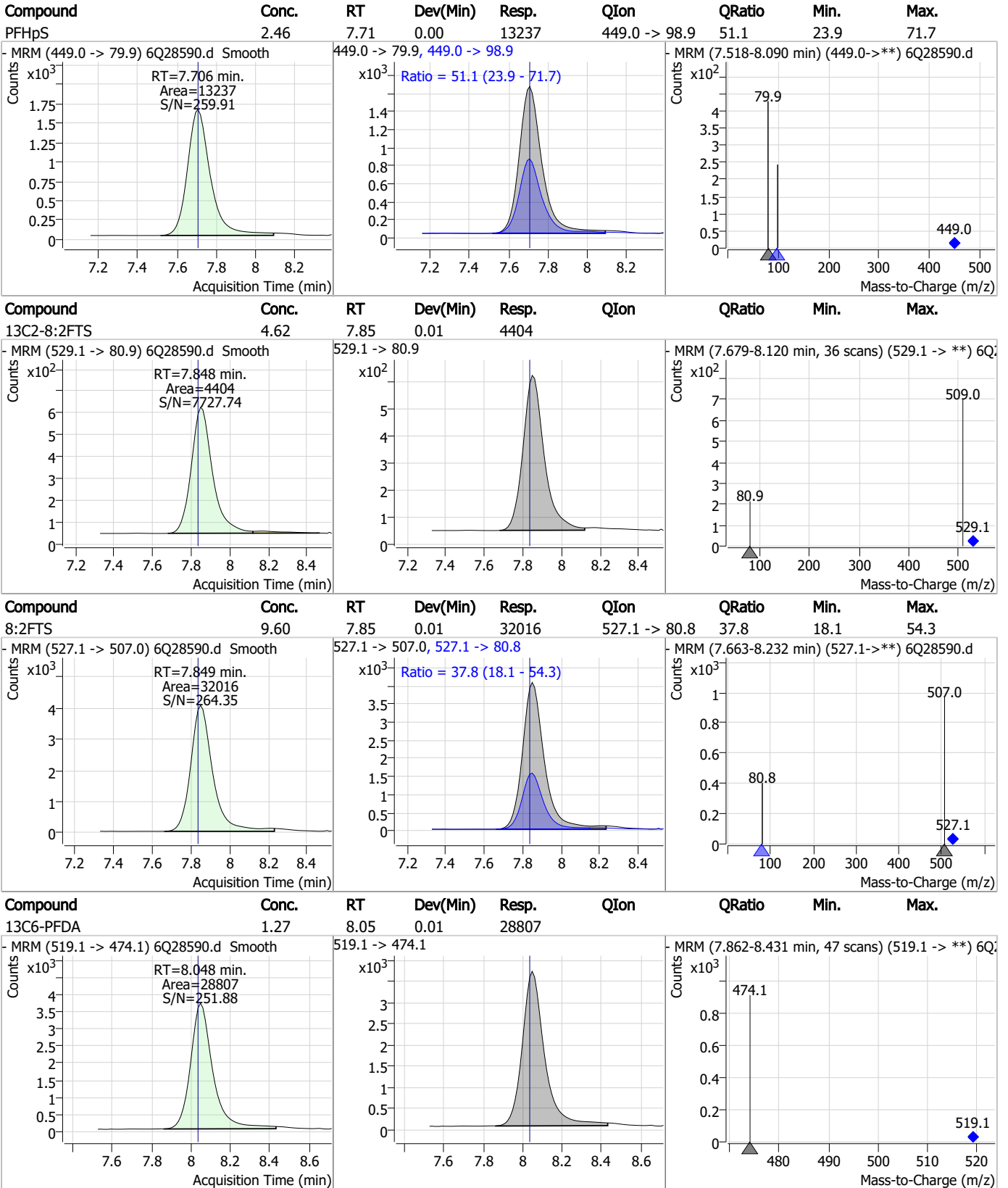
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.32	7.58	0.01	28196	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.57	7.58	0.01	45115	463.0 -> 219.0	19.8	11.2	33.7



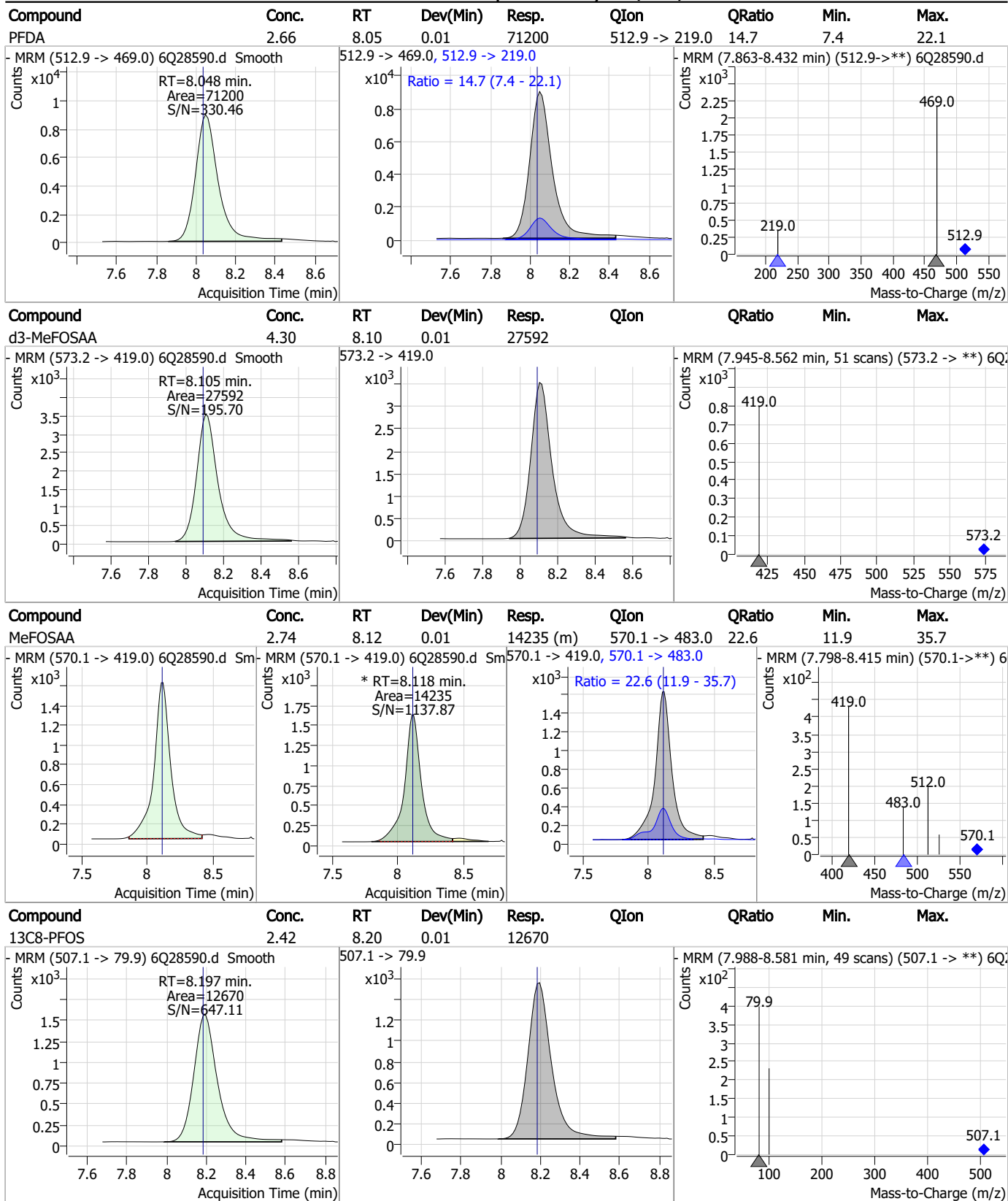
### Perfluorinated Compounds by LC/MS/MS



7.7.12



### Perfluorinated Compounds by LC/MS/MS

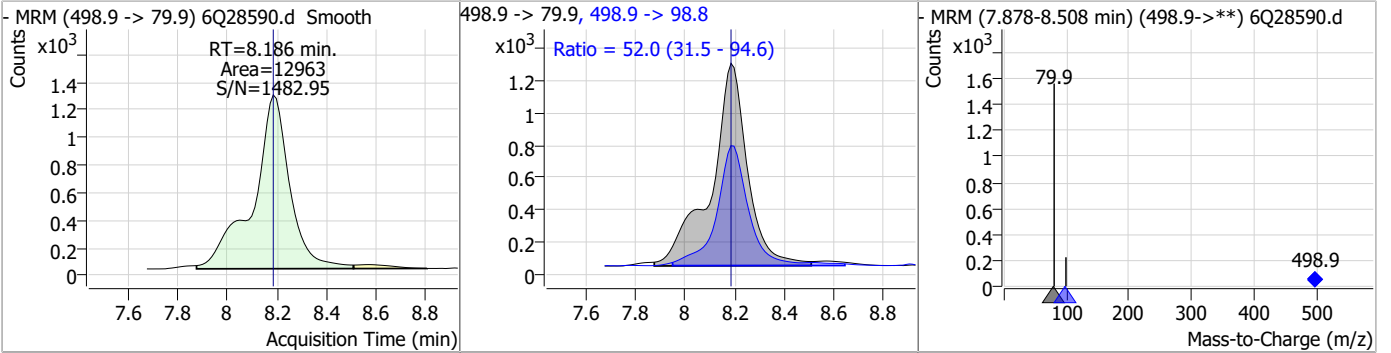


7.7.12  
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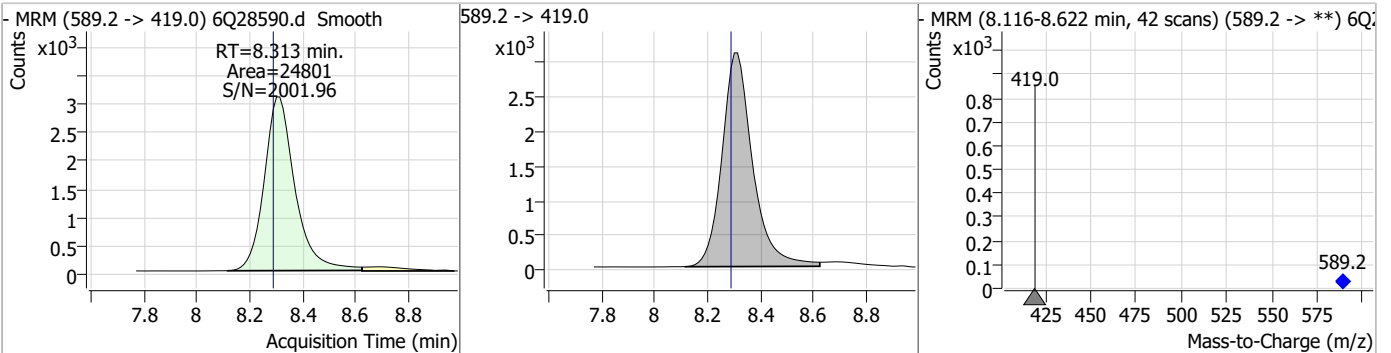


### Perfluorinated Compounds by LC/MS/MS

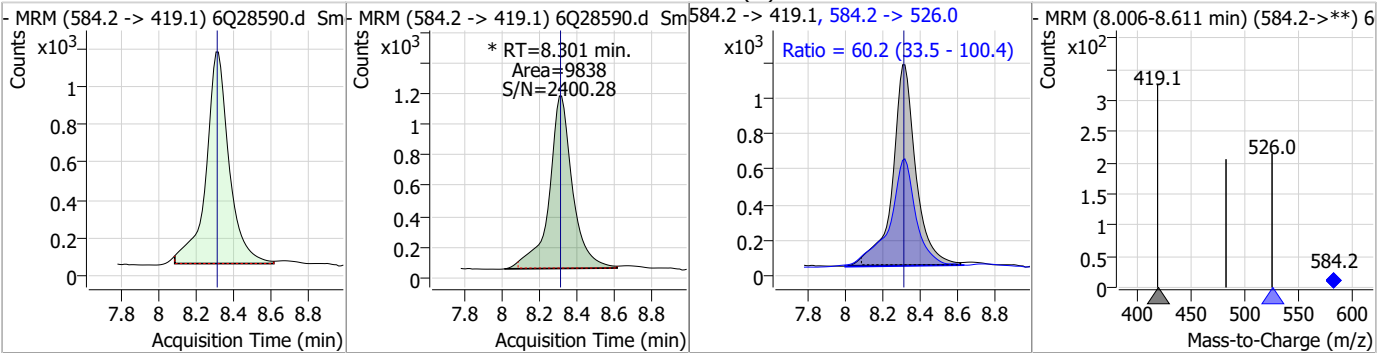
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.30	8.19	0.00	12963	498.9 -> 98.8	52.0	31.5	94.6



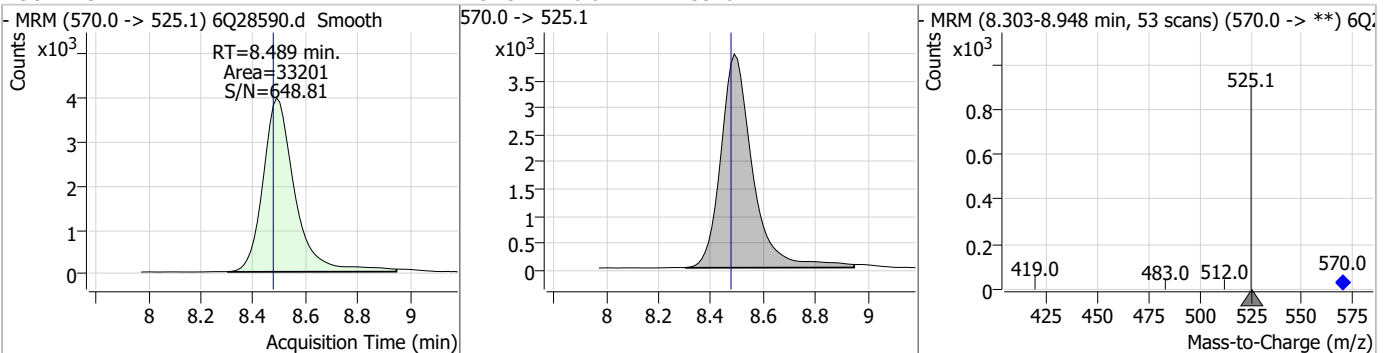
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.56	8.31	0.02	24801				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.45	8.30	0.00	9838 (m)	584.2 -> 526.0	60.2	33.5	100.4

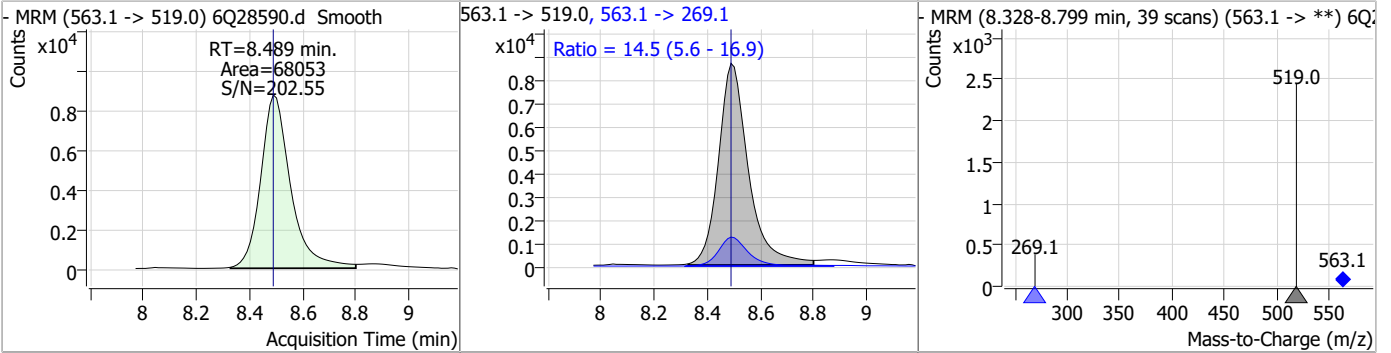


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.49	0.01	33201				

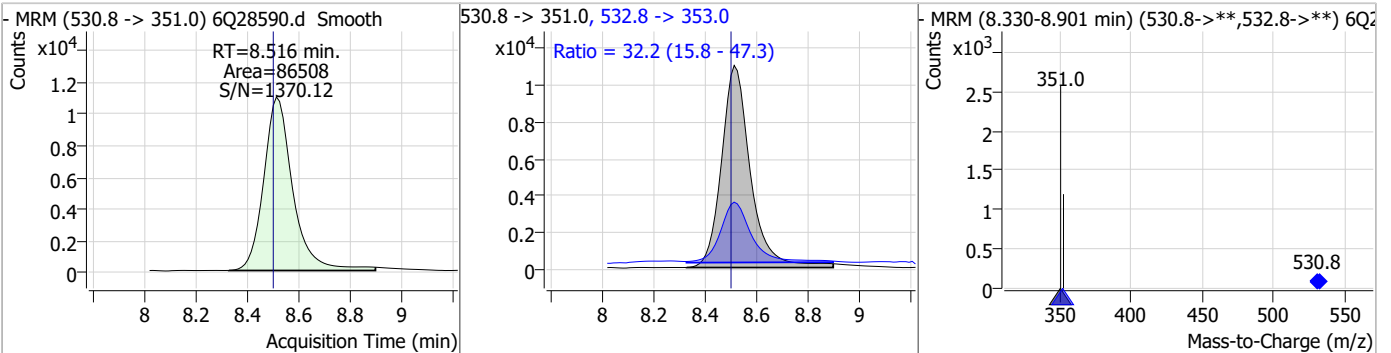


### Perfluorinated Compounds by LC/MS/MS

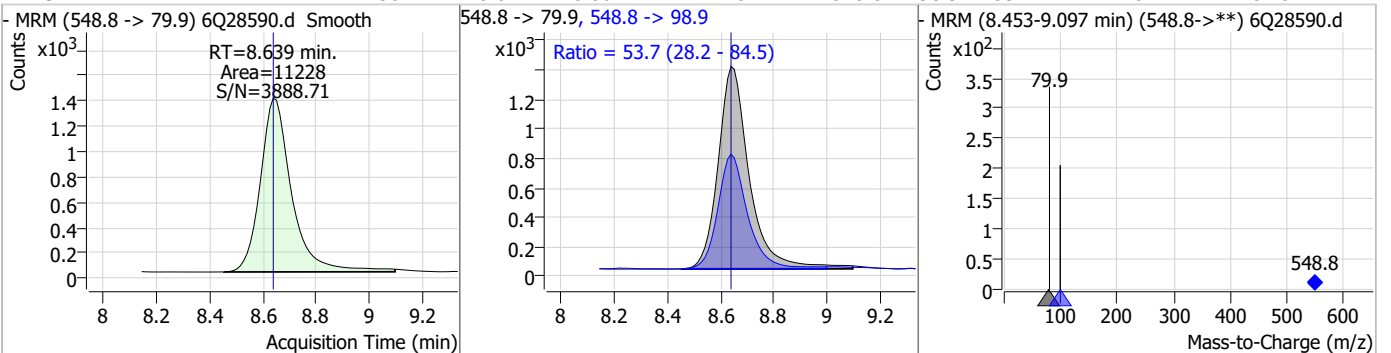
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.64	8.49	0.00	68053	563.1 -> 269.1	14.5	5.6	16.9



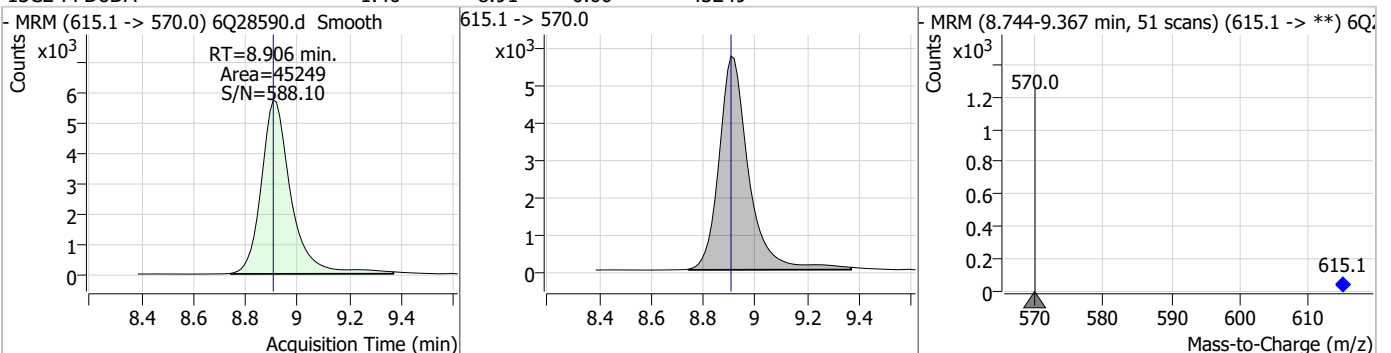
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.66	8.52	0.01	86508	532.8 -> 353.0	32.2	15.8	47.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.50	8.64	0.00	11228	548.8 -> 98.9	53.7	28.2	84.5

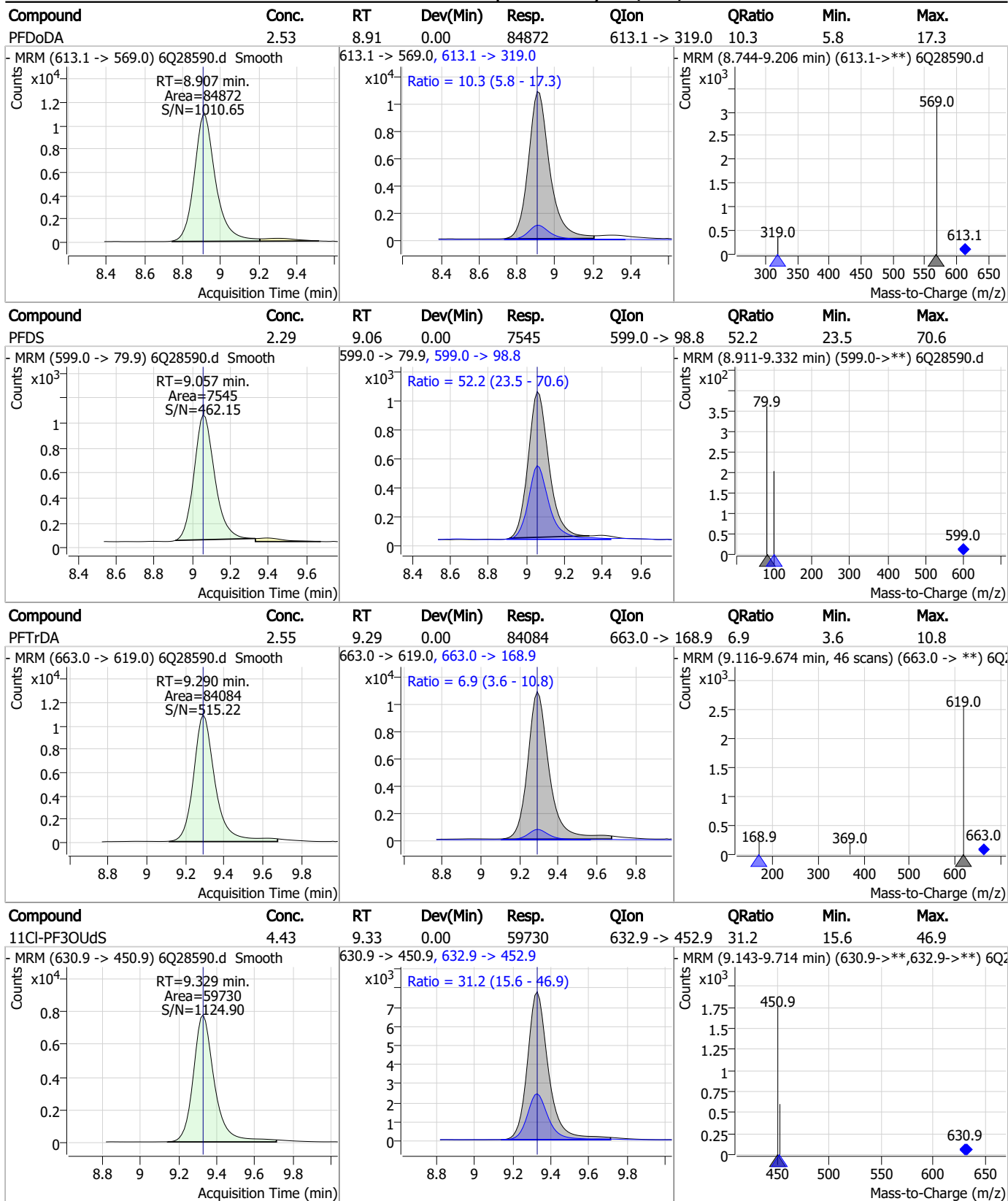


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.40	8.91	0.00	45249	615.1 -> 570.0			



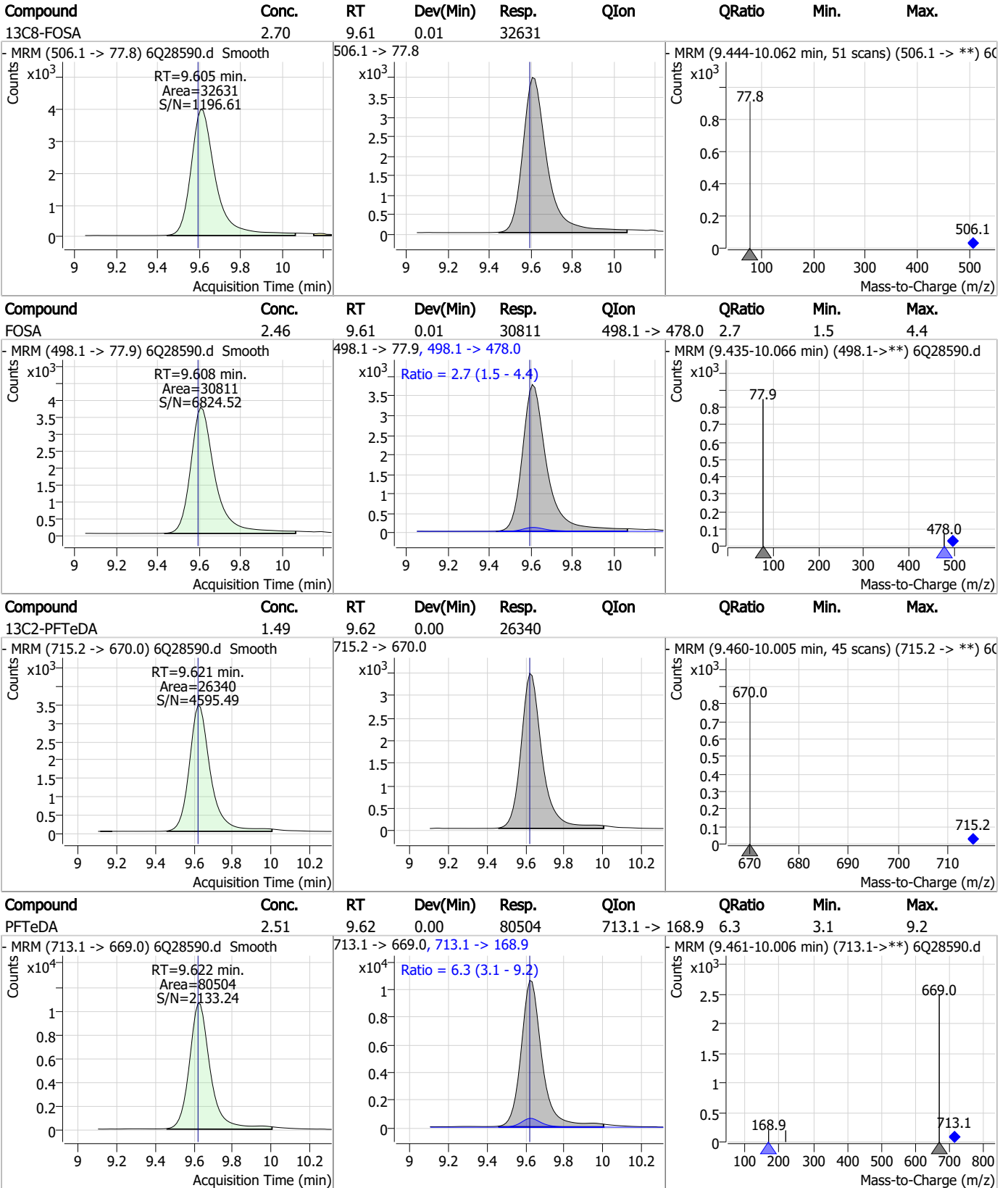
7.7.12  
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### Perfluorinated Compounds by LC/MS/MS



7.7.12  
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### Perfluorinated Compounds by LC/MS/MS

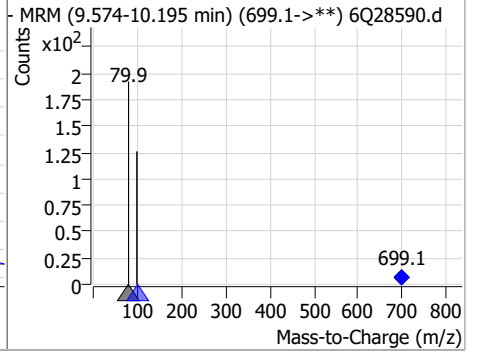
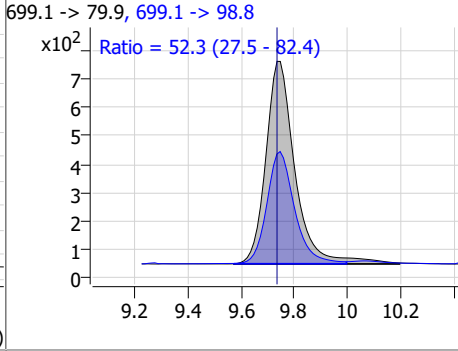
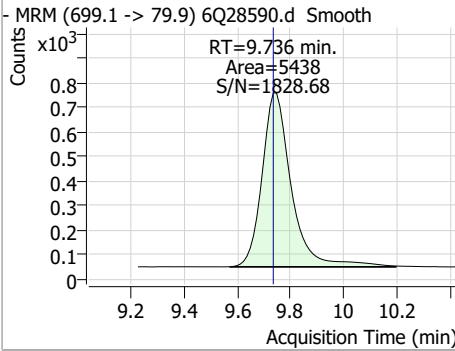


7.7.12 7

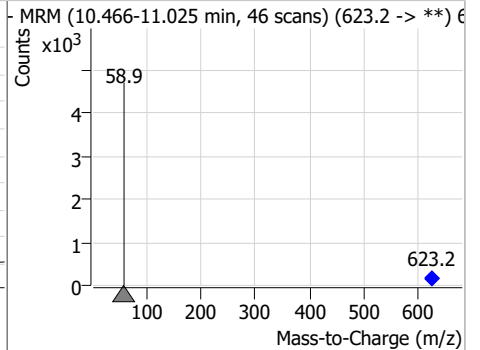
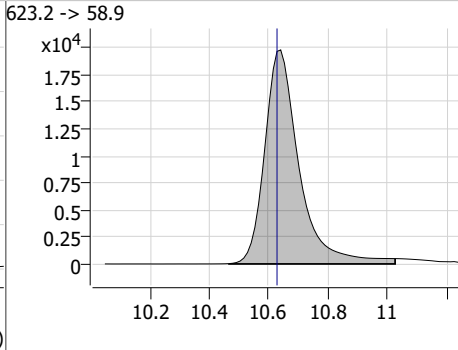
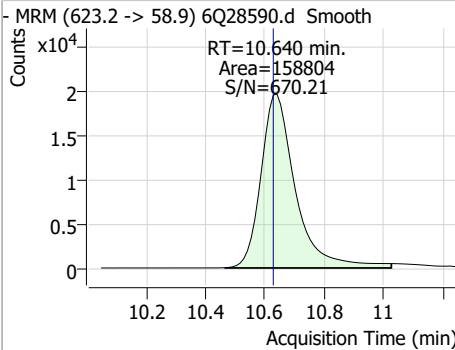


### Perfluorinated Compounds by LC/MS/MS

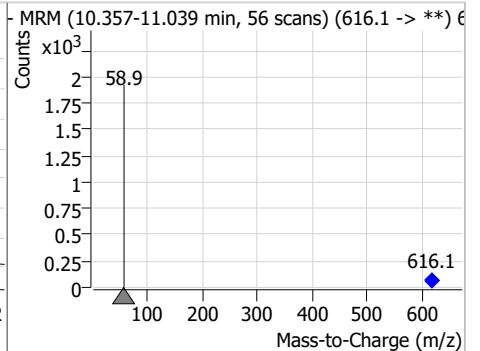
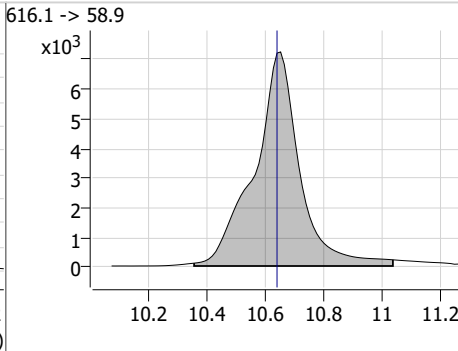
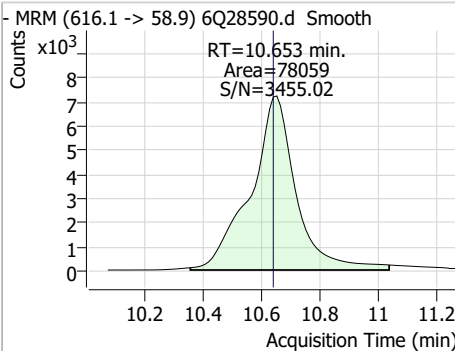
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.56	9.74	0.00	5438	699.1 -> 98.8	52.3	27.5	82.4



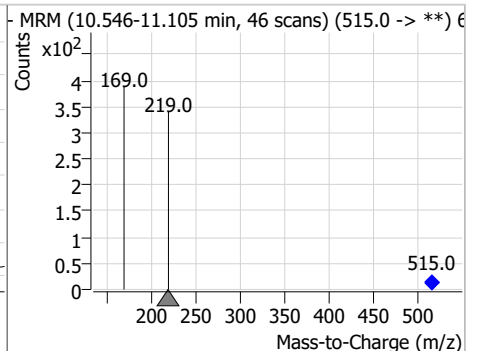
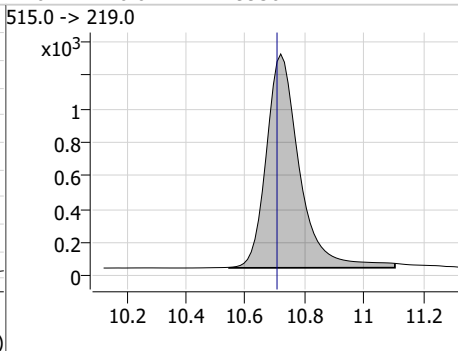
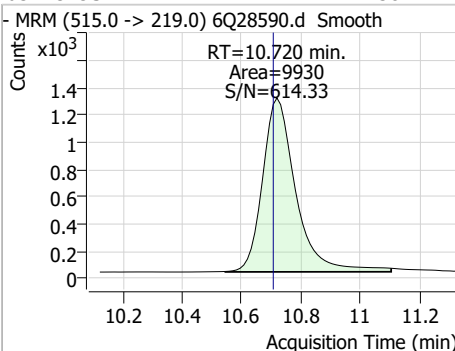
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	32.03	10.64	0.01	158804				



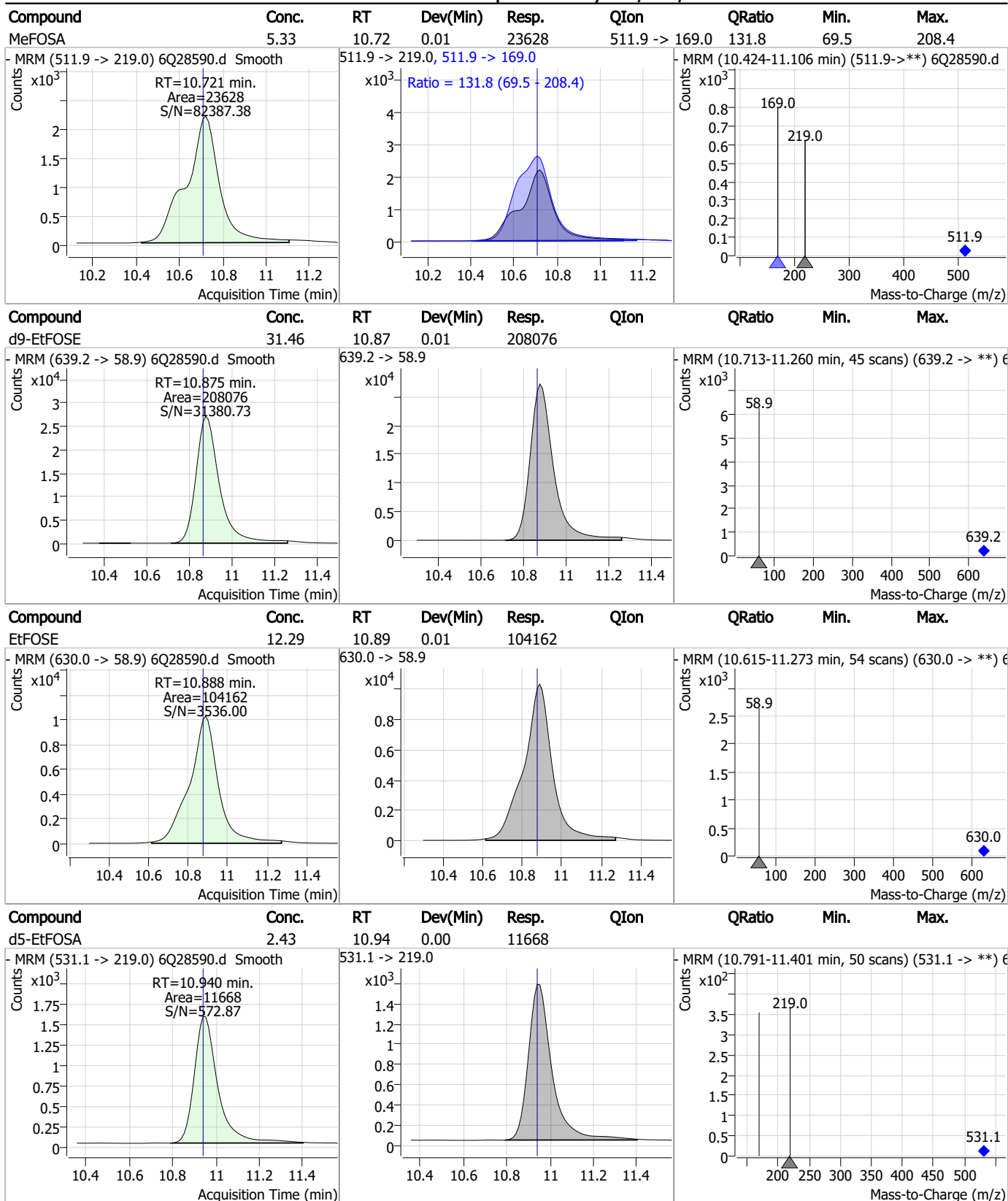
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.05	10.65	0.01	78059				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.38	10.72	0.01	9930				



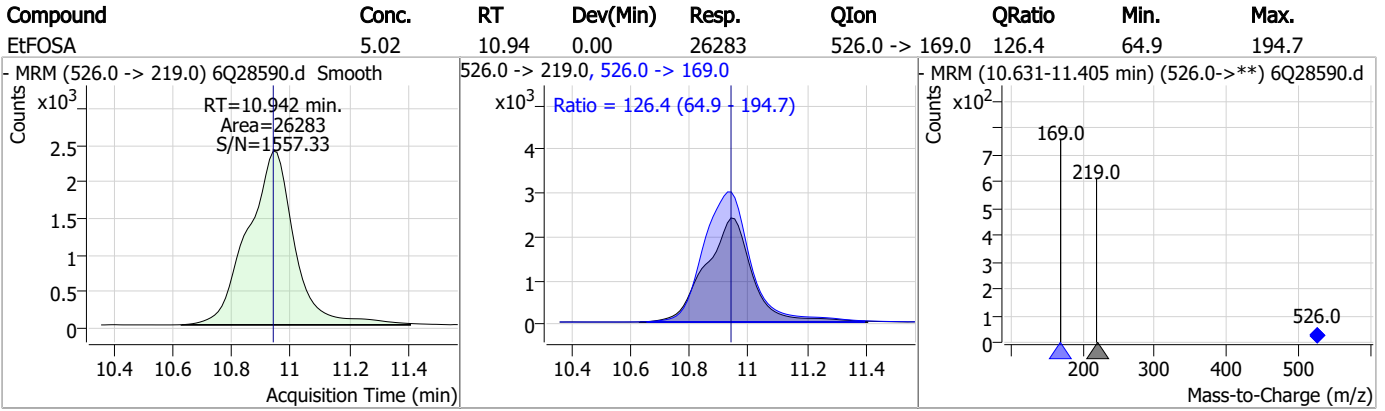
### Perfluorinated Compounds by LC/MS/MS



7.7.12

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### Perfluorinated Compounds by LC/MS/MS



7.7.12

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# Manual Integration Approval Summary

Sample Number: S6Q396-CC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28590.D      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/20/23 11:24      Supervisor approved: 11/21/23 17:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
MeFOSAA	2355-31-9		8.12	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

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### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28591.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 11:38:45 AM  
 Sample Name : cc391-1.0LL  
 Vial : P1-A2  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	137964	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	50150	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	51856	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	57540	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	89478	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	32394	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	33407	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	37969	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	46789	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	28011	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	35244	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	21408	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	13600	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	13789	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	2873	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	4518	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	4852	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	32870	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	32143	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	27246	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	171458	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	223571	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	12170	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	10418	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	12894	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	59545	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	9137	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	91560	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	33119	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	29929	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	48456	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	2873	4.89 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4518	4.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.9%		
13C2-8:2FTS	7.848	529.1 -> 80.9	4852	4.51 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.2%		
13C2-PFDoDA	8.906	615.1 -> 570.0	46789	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-PFTeDA	9.621	715.2 -> 670.0	28011	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C3-PFBS	5.384	302.1 -> 79.9	21408	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFHxS	7.152	402.1 -> 79.9	13600	2.43 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 = 97.2%	
13C4-PFBA	2.860	216.8 -> 171.9	137964	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.419	367.1 -> 322.0	57540	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C5-PFHxA	5.478	318.0 -> 273.0	51856	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C5-PFPeA	4.272	268.3 -> 223.0	50150	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C6-PFDA	8.048	519.1 -> 474.1	33407	1.30 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C7-PFUnDA	8.489	570.0 -> 525.1	37969	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C8-FOSA	9.605	506.1 -> 77.8	35244	2.80 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C8-PFOA	7.062	421.1 -> 376.0	89478	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.185	507.1 -> 79.9	13789	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C9-PFNA	7.580	472.1 -> 427.0	32394	1.29 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%	
d3-MeFOSAA	8.105	573.2 -> 419.0	32870	4.92 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	32143	10.68 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
d3-MeFOSA	10.720	515.0 -> 219.0	10418	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
d5-EtFOSAA	8.300	589.2 -> 419.0	27246	4.81 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d7-MeFOSE	10.640	623.2 -> 58.9	162388	31.46 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 125.8%	
d9-EtFOSE	10.875	639.2 -> 58.9	223571	32.47 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 129.9%	
d5-EtFOSA	10.940	531.1 -> 219.0	12170	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.155	327.1 -> 307.0	3581	0.77 µg/L	98
		327.1 -> 80.9	1469		
6:2FTS	6.836	427.1 -> 407.0	3491	0.71 µg/L	96
		427.1 -> 80.9	1345		
8:2FTS	7.836	527.1 -> 507.0	2812	0.77 µg/L	97
		527.1 -> 80.8	967		
EtFOSAA	8.301	584.2 -> 419.1	658	0.15 µg/L	91
		584.2 -> 526.0	487		
FOSA	9.608	498.1 -> 77.9	2570	0.19 µg/L	99
		498.1 -> 478.0	64		
MeFOSAA	8.118	570.1 -> 419.0	1239	0.20 µg/L	87
		570.1 -> 483.0	215		
PFBA	2.868	212.8 -> 168.9	3556	0.79 µg/L	100
PFBS	5.385	298.7 -> 79.9	1300	0.16 µg/L	97
		298.7 -> 98.8	466		
PFDA	8.048	512.9 -> 469.0	5570	0.18 µg/L	96
		512.9 -> 219.0	726		
PFDODA	8.907	613.1 -> 569.0	6692	0.19 µg/L	96
		613.1 -> 319.0	656		
PFDS	9.057	599.0 -> 79.9	634	0.18 µg/L	88

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	349			
PFHpA	6.419	363.1 -> 319.0	5615	0.19	µg/L	97
		363.1 -> 169.0	761			
PFHpS	7.694	449.0 -> 79.9	959	0.16	µg/L	96
		449.0 -> 98.9	482			
PFHxA	5.481	313.0 -> 269.0	3424	0.18	µg/L	98
		313.0 -> 118.9	192			
PFHxS	7.153	398.7 -> 79.9	1152	0.18	µg/L	m 91
		398.7 -> 98.9	588			
PFNA	7.581	463.0 -> 419.0	3888	0.19	µg/L	94
		463.0 -> 219.0	770			
PFNS	8.639	548.8 -> 79.9	972	0.20	µg/L	83
		548.8 -> 98.9	426			
PFOA	7.063	413.0 -> 369.0	6406	0.18	µg/L	97
		413.0 -> 169.0	1268			
PFOS	8.186	498.9 -> 79.9	1098	0.18	µg/L	79
		498.9 -> 98.8	512			
PFPeA	4.274	263.0 -> 219.0	5131	0.40	µg/L	100
PFPeS	6.458	349.1 -> 79.9	1269	0.19	µg/L	99
		349.1 -> 98.9	597			
PFTeDA	9.622	713.1 -> 669.0	5941	0.17	µg/L	96
		713.1 -> 168.9	449			
PFTrDA	9.290	663.0 -> 619.0	6763	0.20	µg/L	98
		663.0 -> 168.9	446			
PFUnDA	8.489	563.1 -> 519.0	5967	0.20	µg/L	97
		563.1 -> 269.1	750			
11CI-PF3OUdS	9.329	630.9 -> 450.9	4703	0.34	µg/L	90
		632.9 -> 452.9	1732			
9CI-PF3ONS	8.503	530.8 -> 351.0	6930	0.36	µg/L	87
		532.8 -> 353.0	2666			
ADONA	6.669	376.9 -> 250.9	19236	0.34	µg/L	97
		376.9 -> 84.8	5143			
HFPO-DA	5.844	284.9 -> 168.9	1122	0.35	µg/L	100
		284.9 -> 184.9	113			
3:3FTCA	3.721	241.0 -> 177.0	710	0.89	µg/L	98
		241.0 -> 117.0	89			
5:3FTCA	6.146	341.0 -> 237.1	16633	4.69	µg/L	100
		341.0 -> 217.0	11927			
7:3FTCA	7.558	441.0 -> 316.9	11092	4.94	µg/L	92
		441.0 -> 336.9	21483			
EtFOSA	10.942	526.0 -> 219.0	2190	0.40	µg/L	99
		526.0 -> 169.0	2858			
EtFOSE	10.888	630.0 -> 58.9	8482	0.93	µg/L	100
MeFOSA	10.721	511.9 -> 219.0	1807	0.39	µg/L	m 94
		511.9 -> 169.0	2639			
MeFOSE	10.653	616.1 -> 58.9	6082	0.87	µg/L	m 100
PFDoDS	9.748	699.1 -> 79.9	431	0.19	µg/L	87
		699.1 -> 98.8	278			
NFDHA	5.360	295.0 -> 201.0	1029	0.46	µg/L	99
		295.0 -> 84.9	265			
PFMBA	4.687	279.0 -> 85.1	3319	0.38	µg/L	100
PFMPA	3.413	229.0 -> 84.9	2524	0.38	µg/L	100
PFEESA	5.925	314.8 -> 134.9	8365	0.35	µg/L	97
		314.8 -> 82.9	395			

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



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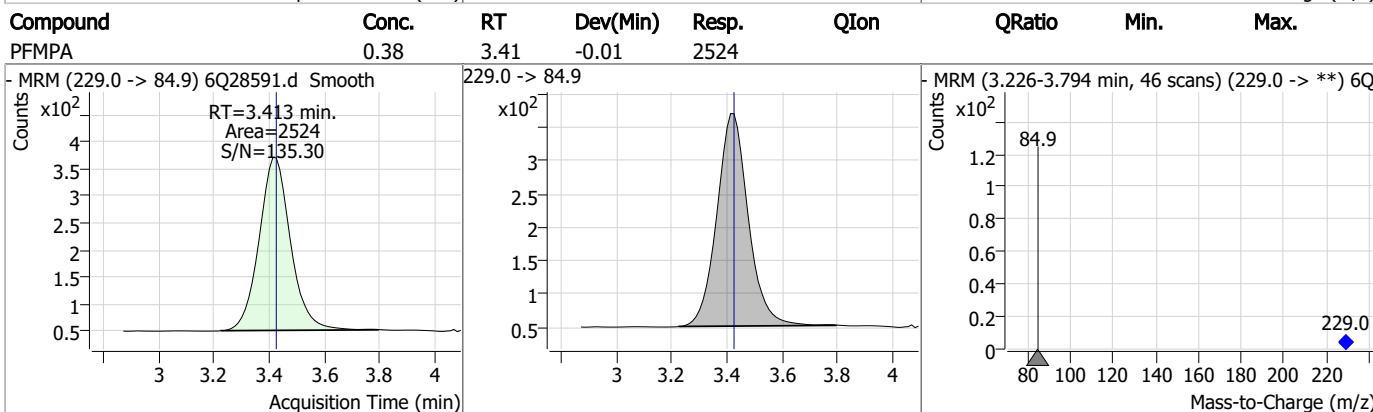
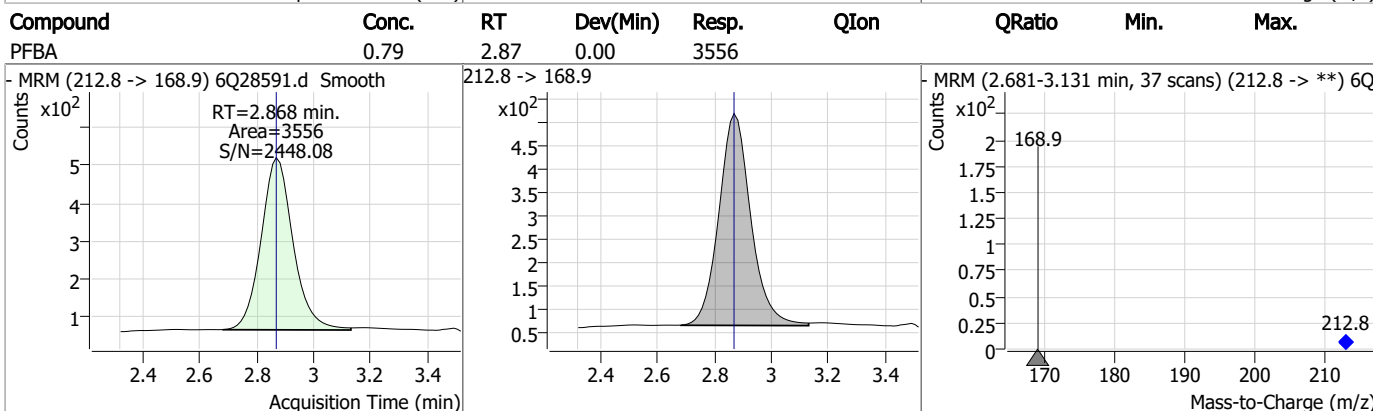
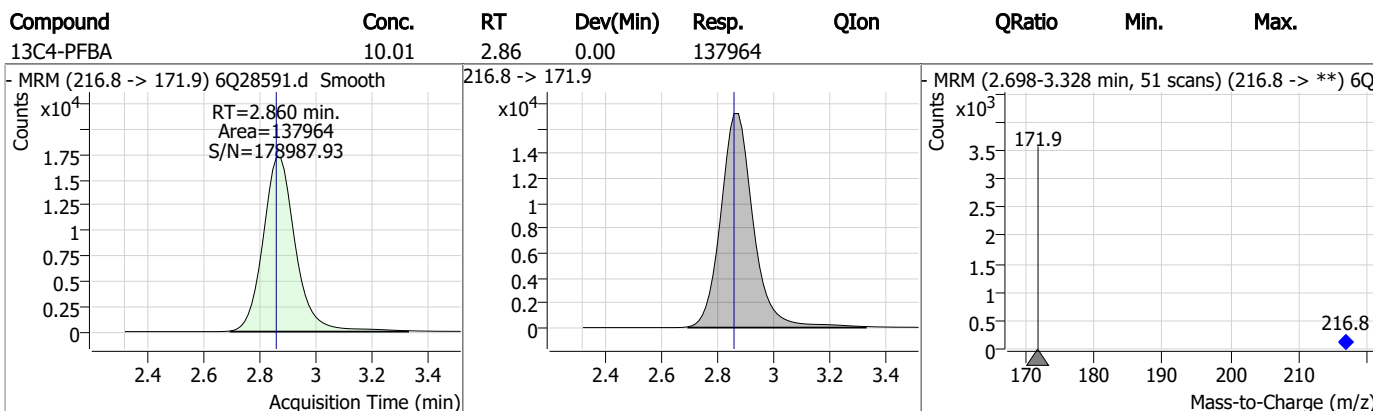
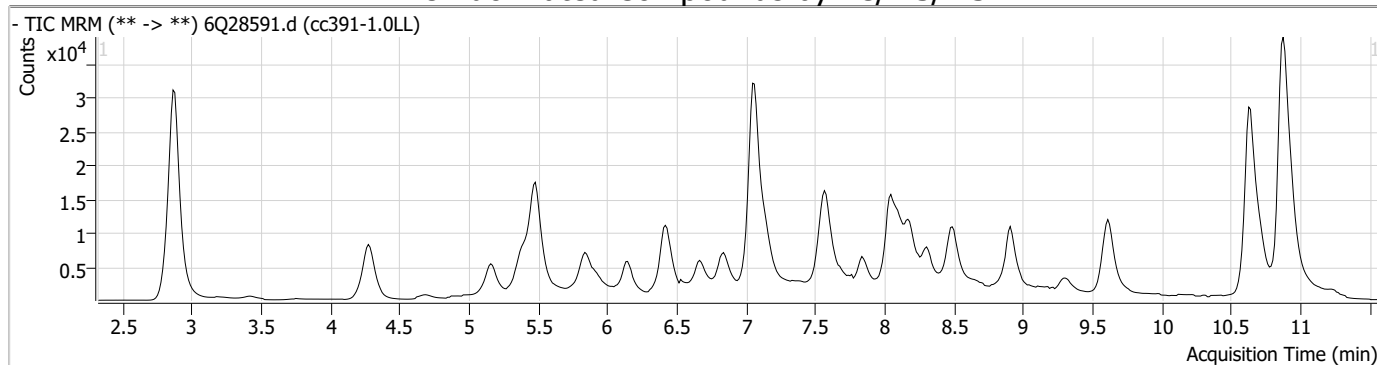
### Perfluorinated Compounds by LC/MS/MS

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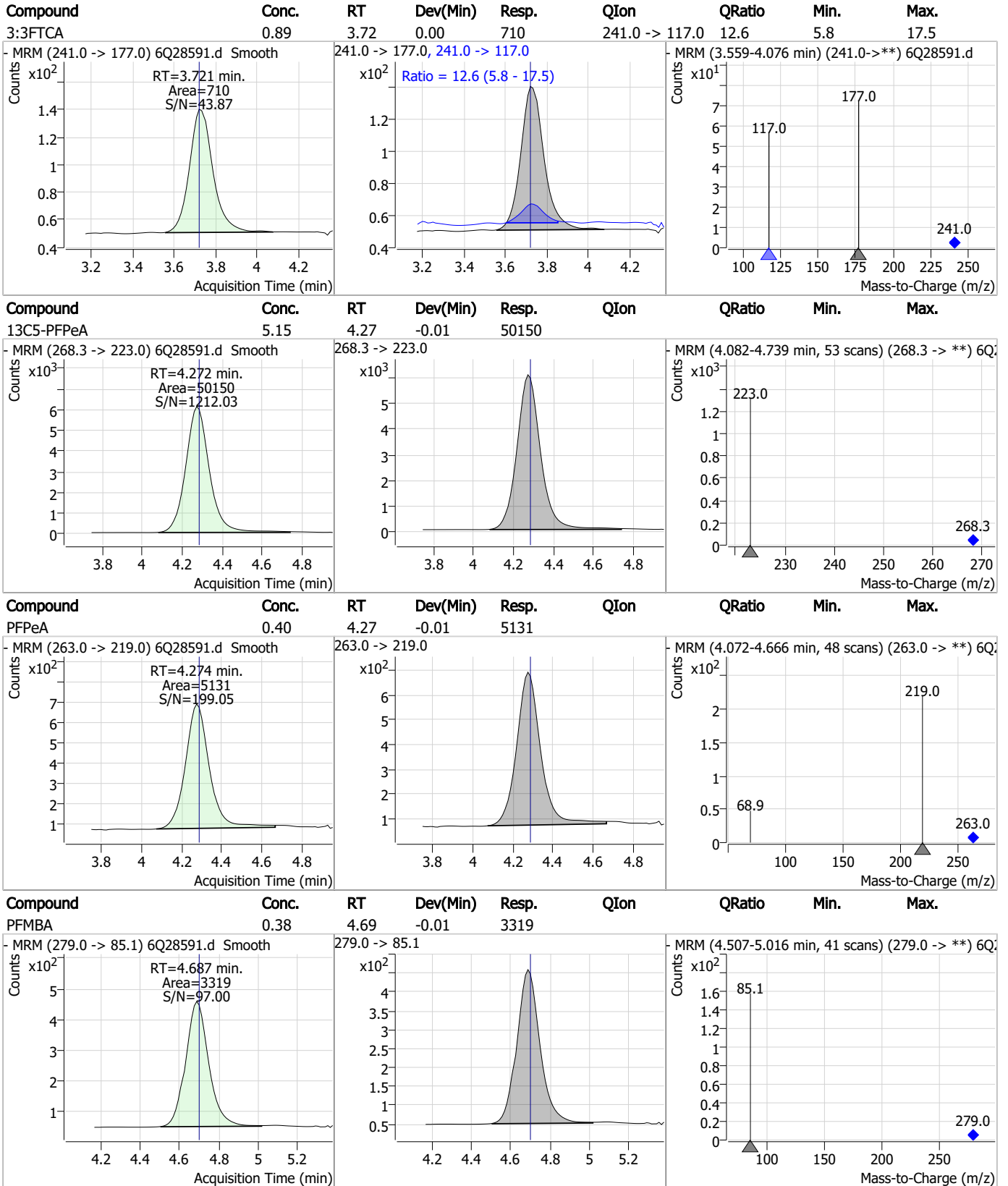
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### Perfluorinated Compounds by LC/MS/MS



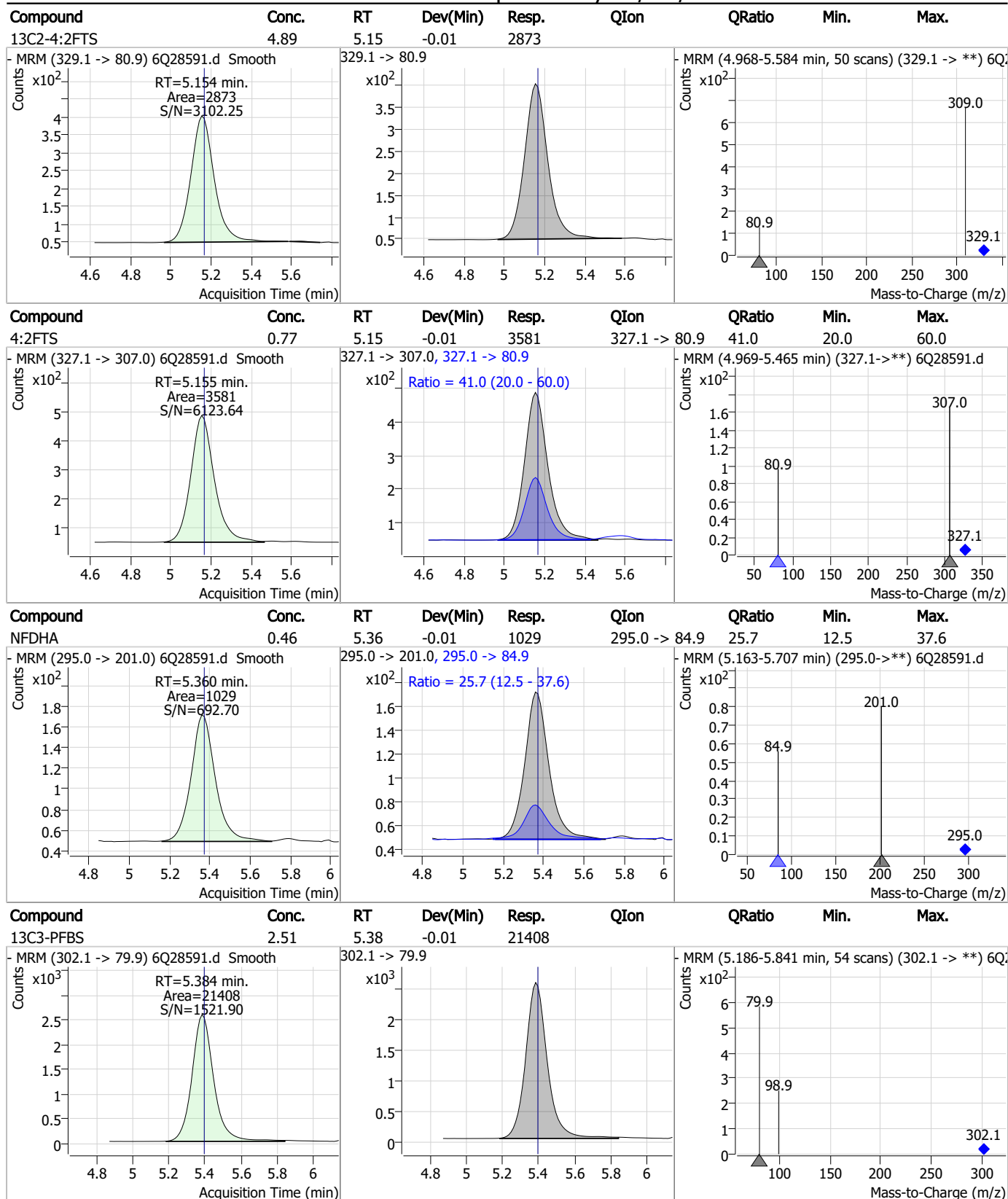
### Perfluorinated Compounds by LC/MS/MS



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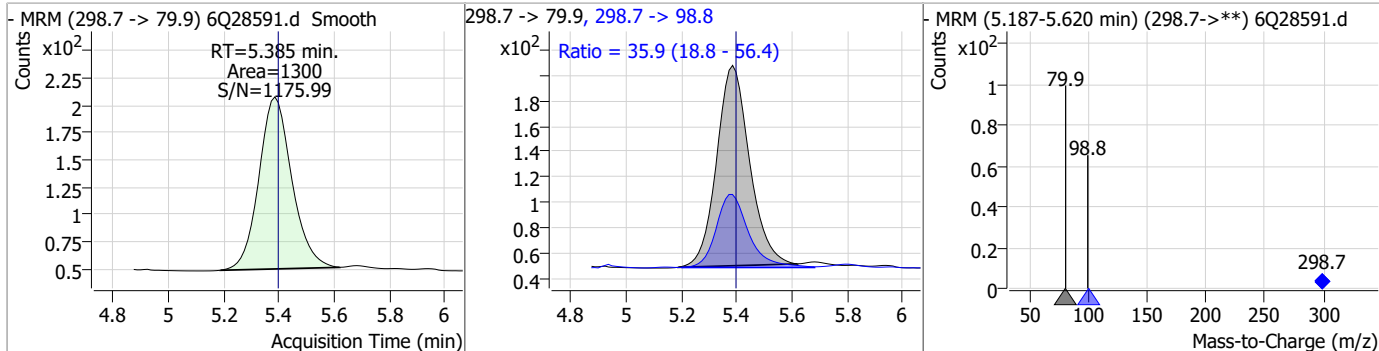
### Perfluorinated Compounds by LC/MS/MS



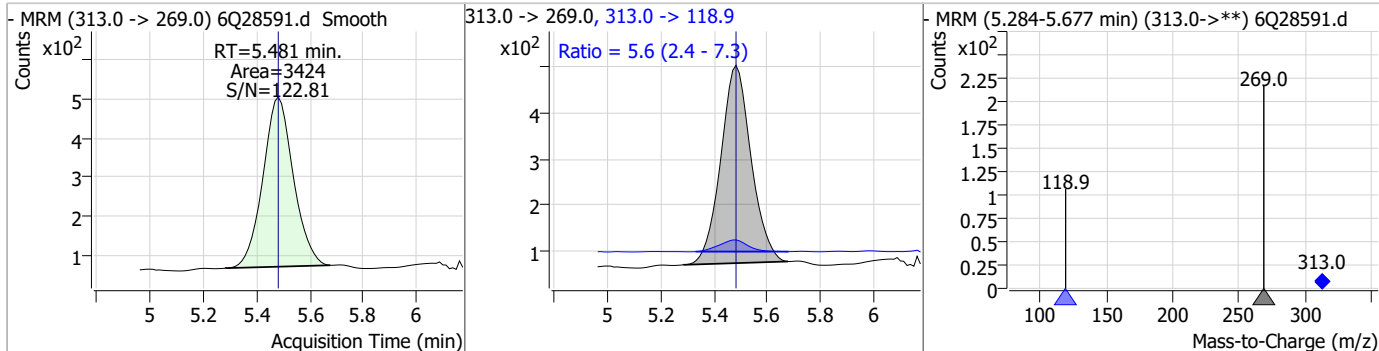
7.7.13  
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### Perfluorinated Compounds by LC/MS/MS

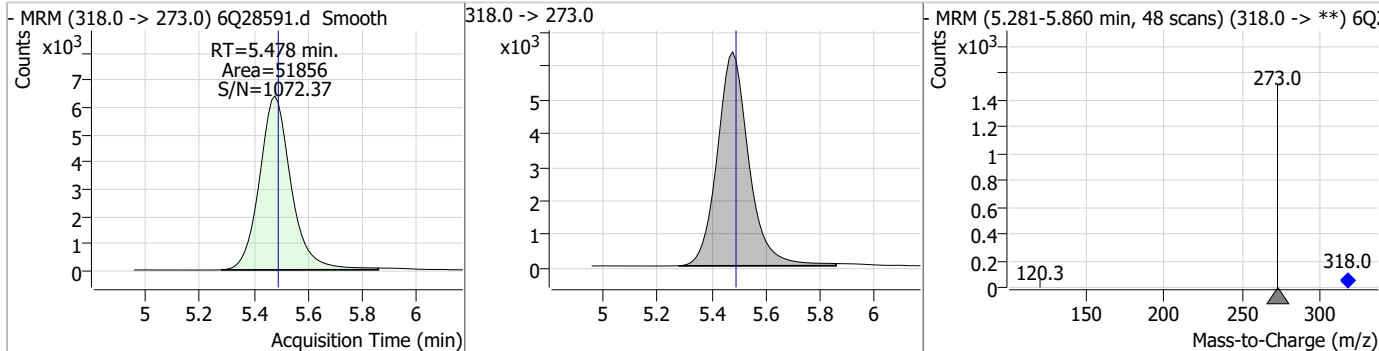
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.16	5.38	-0.01	1300	298.7 -> 98.8	35.9	18.8	56.4



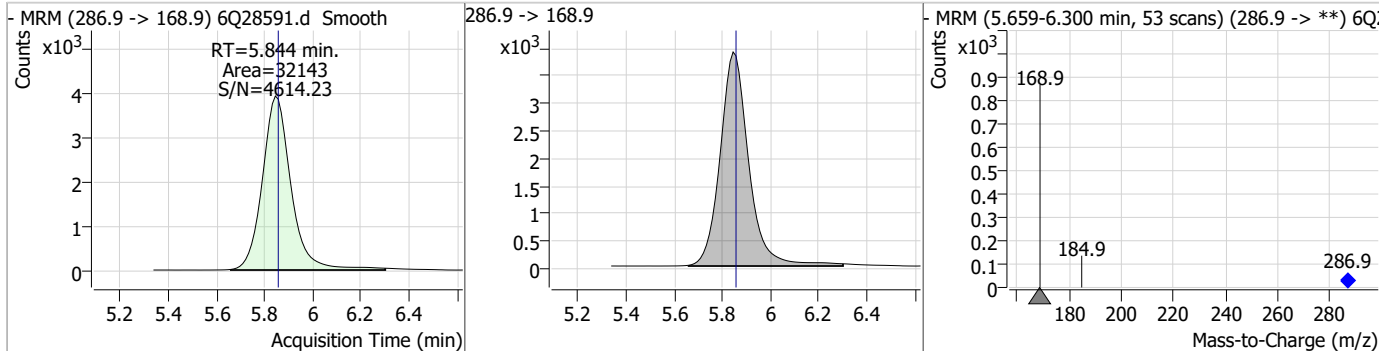
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.18	5.48	0.00	3424	313.0 -> 118.9	5.6	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	5.48	-0.01	51856				



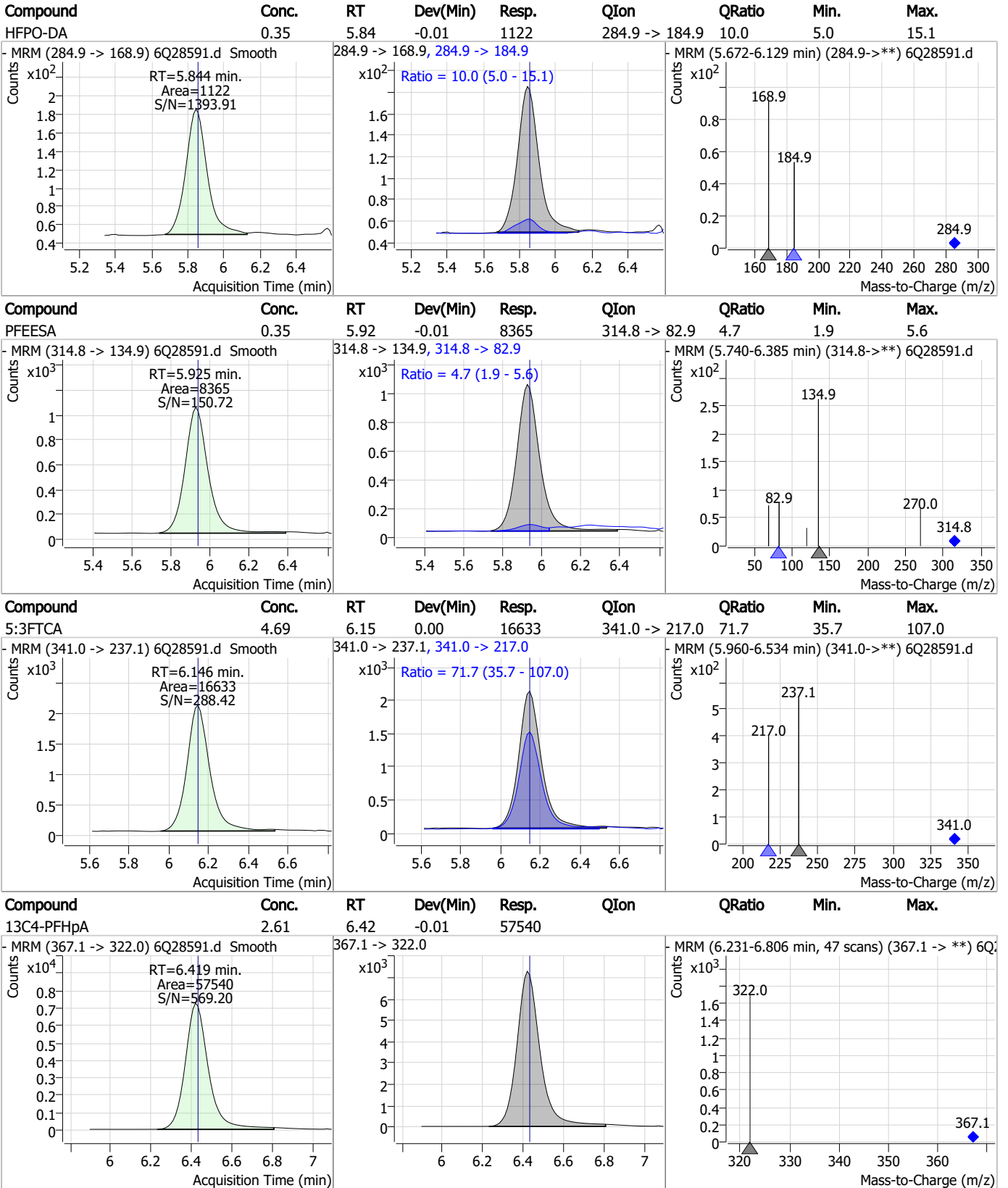
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.68	5.84	-0.01	32143				



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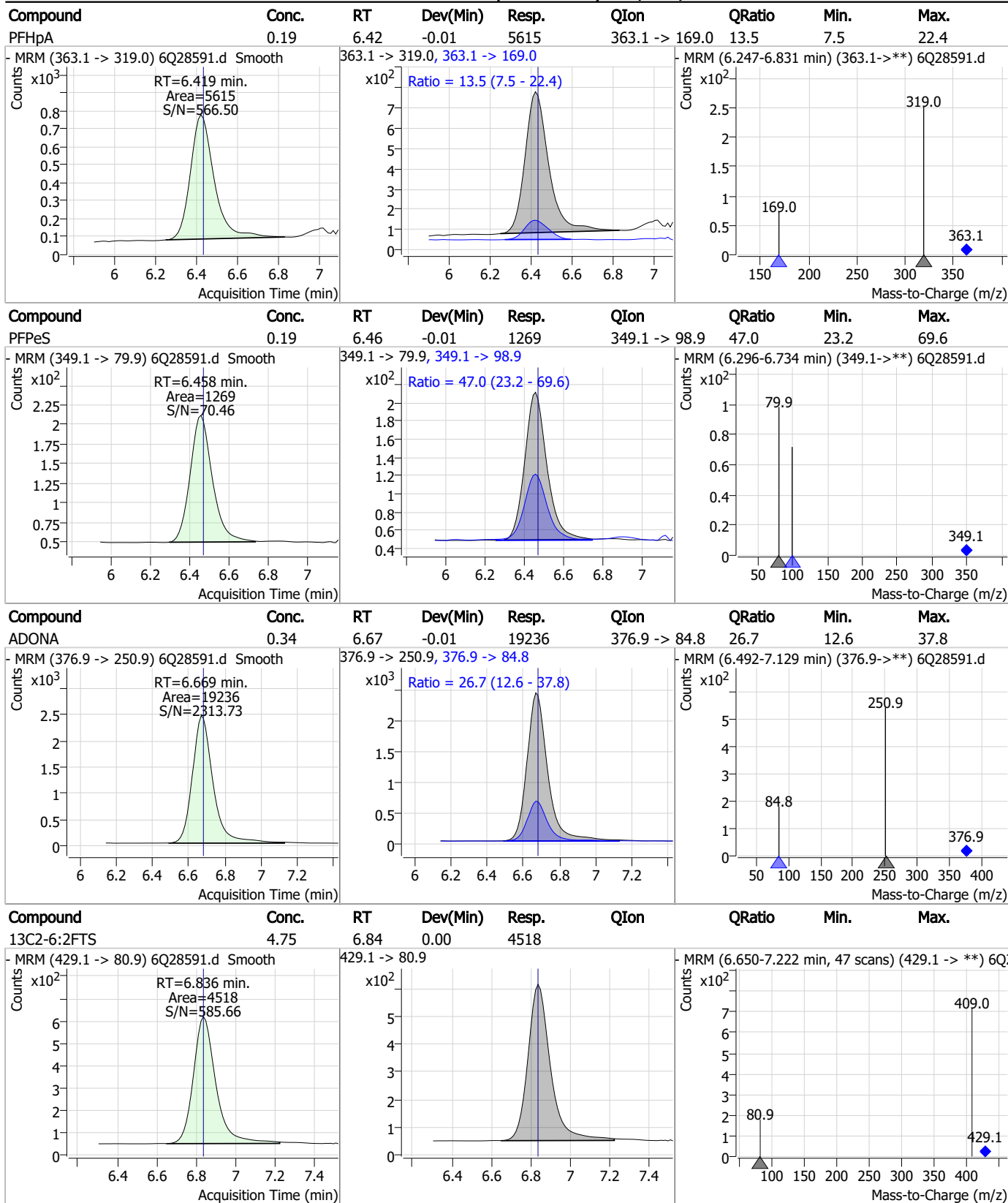
### Perfluorinated Compounds by LC/MS/MS



7.7.13

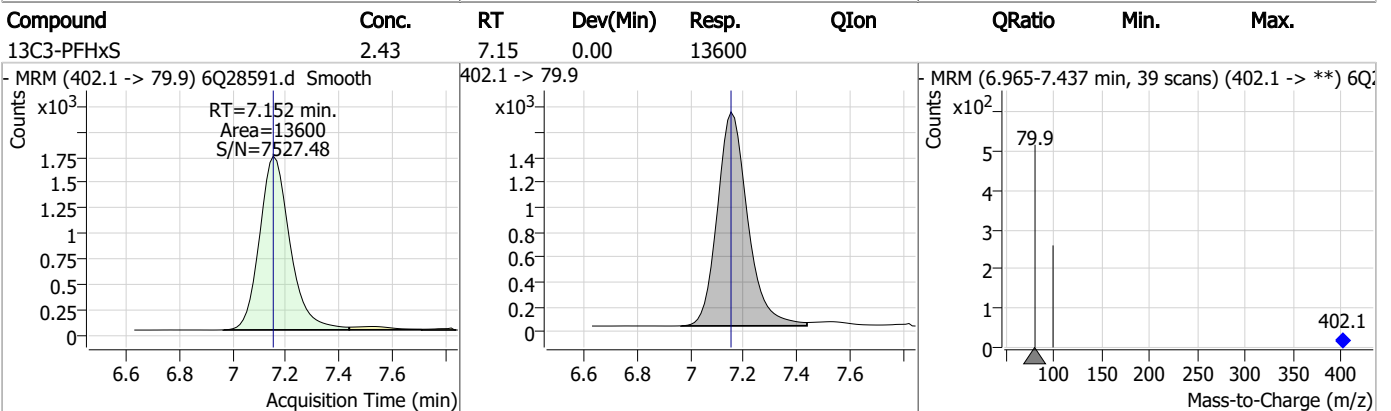
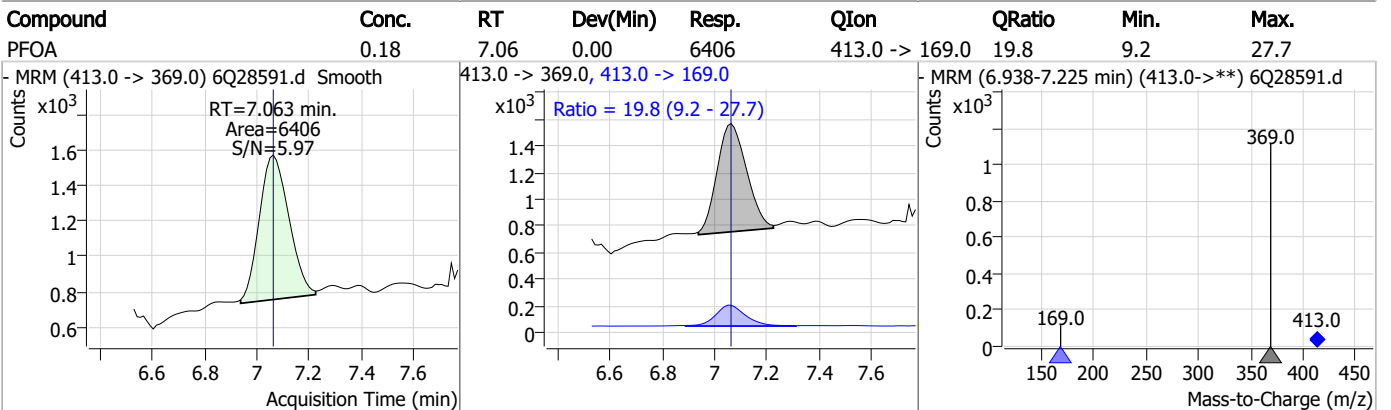
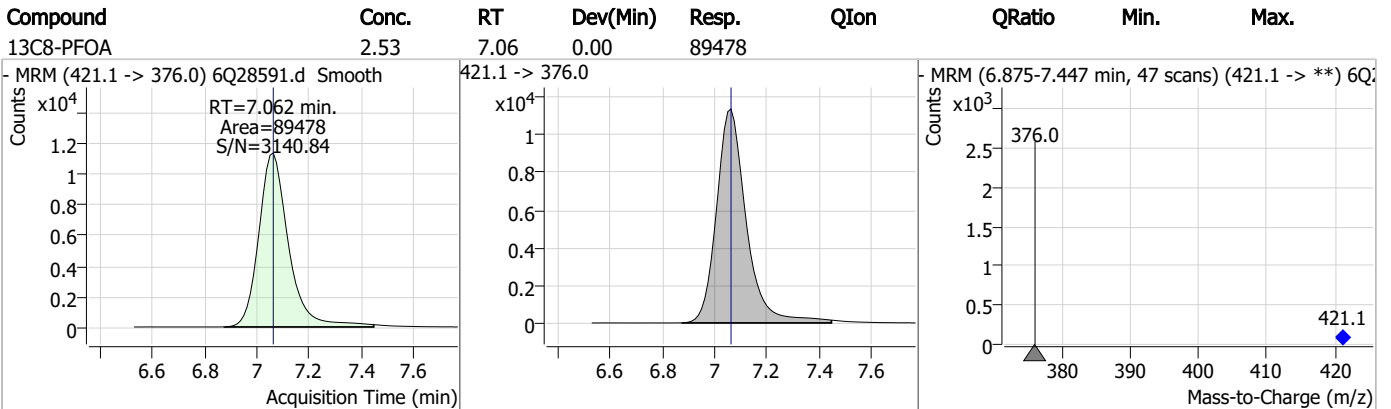
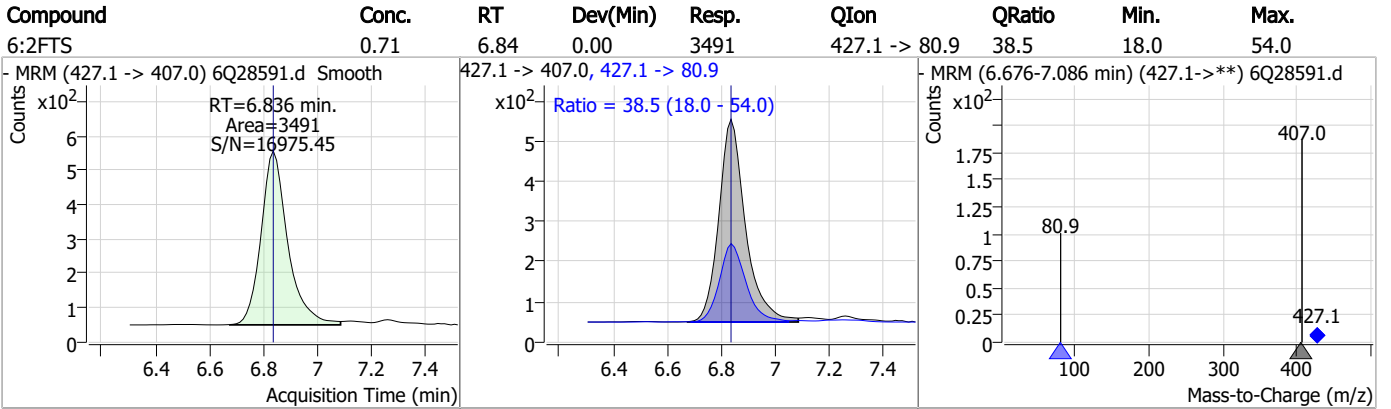
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### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

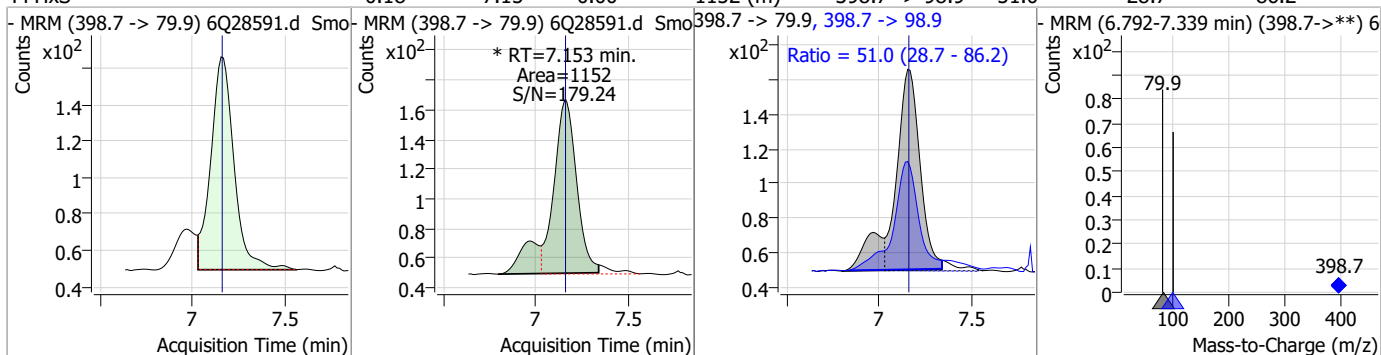


7.7.13  
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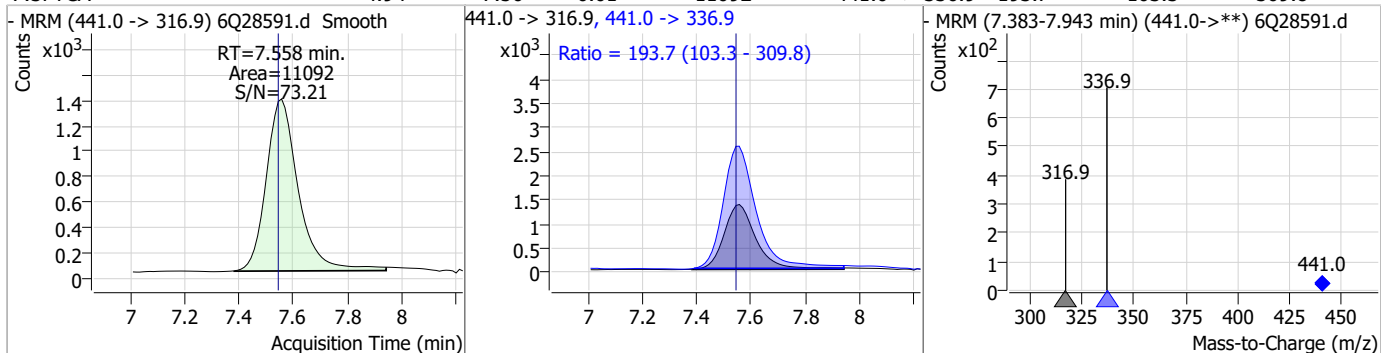


### Perfluorinated Compounds by LC/MS/MS

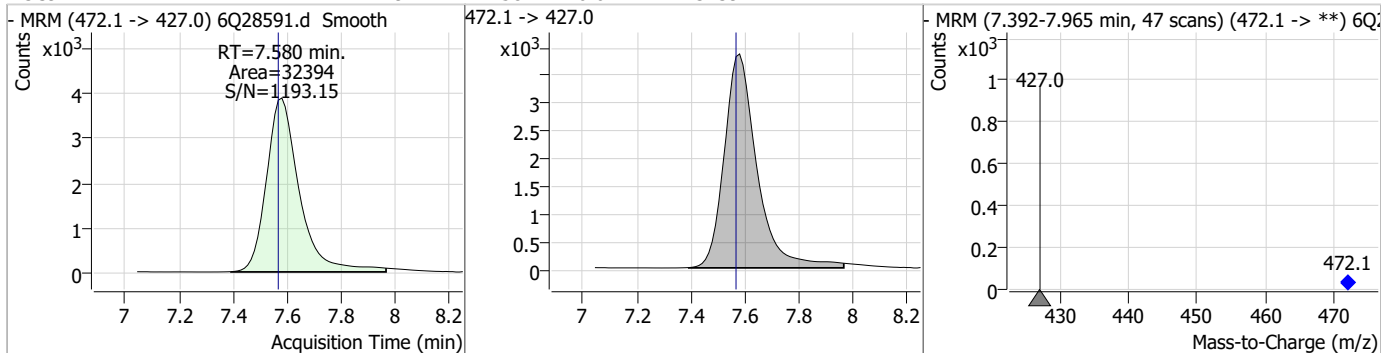
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.18	7.15	0.00	1152 (m)	398.7 -> 98.9	51.0	28.7	86.2



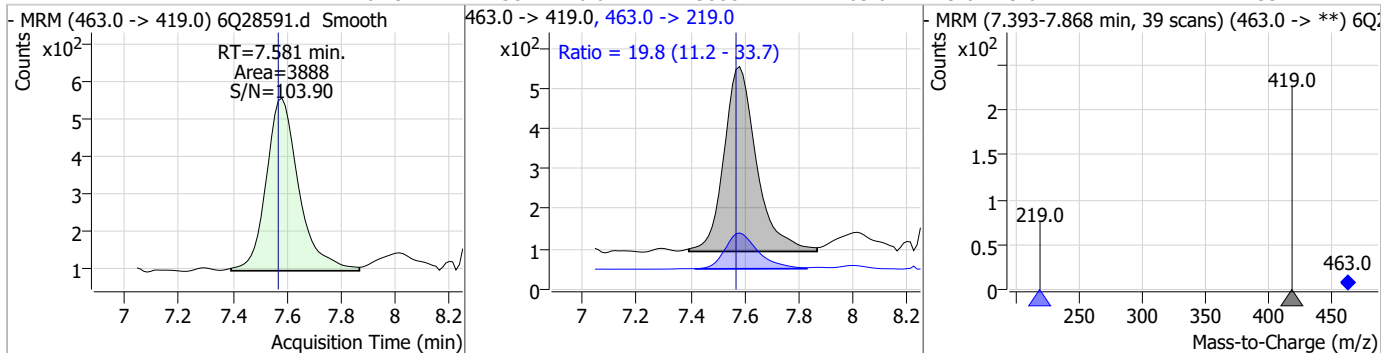
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	4.94	7.56	0.01	11092	441.0 -> 336.9	193.7	103.3	309.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.29	7.58	0.01	32394				

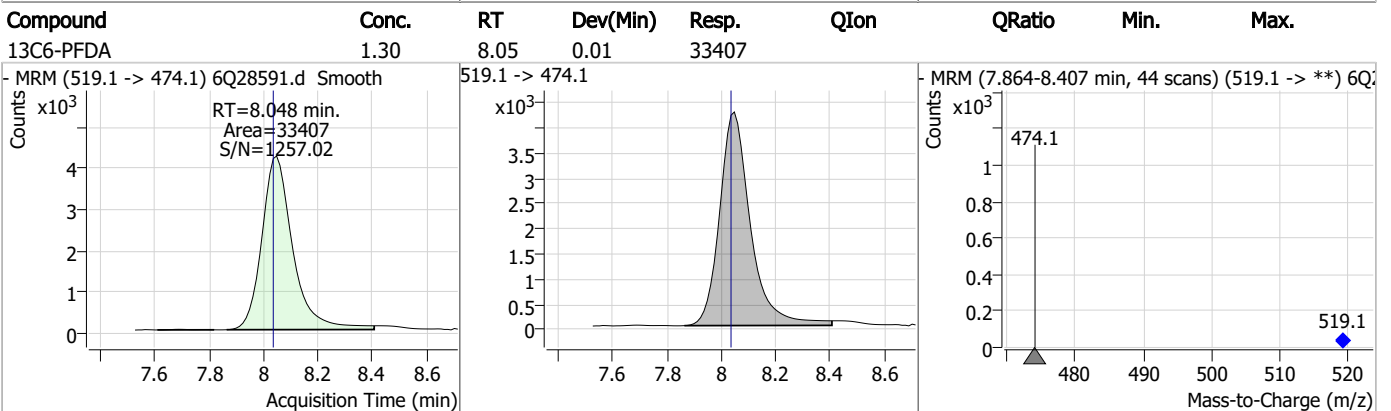
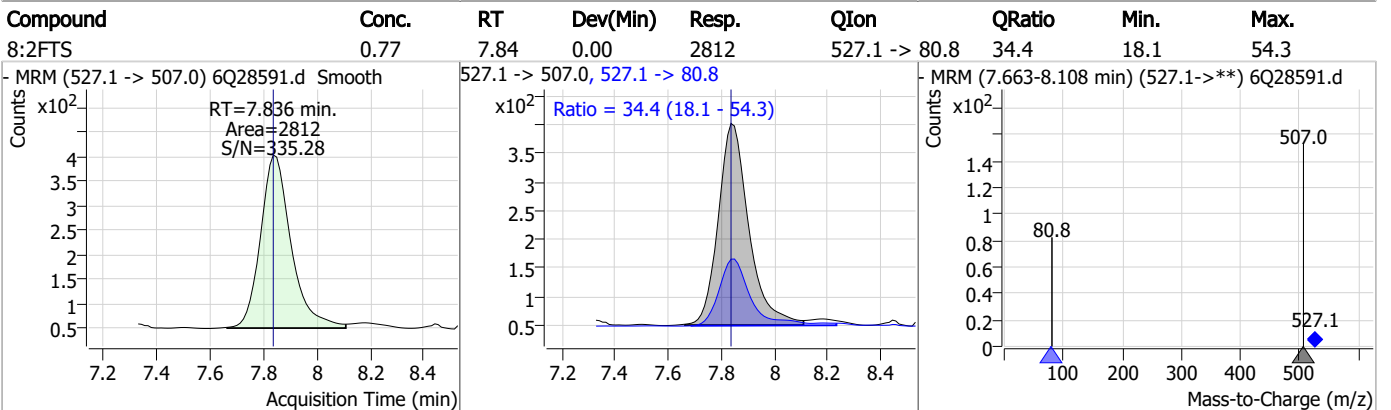
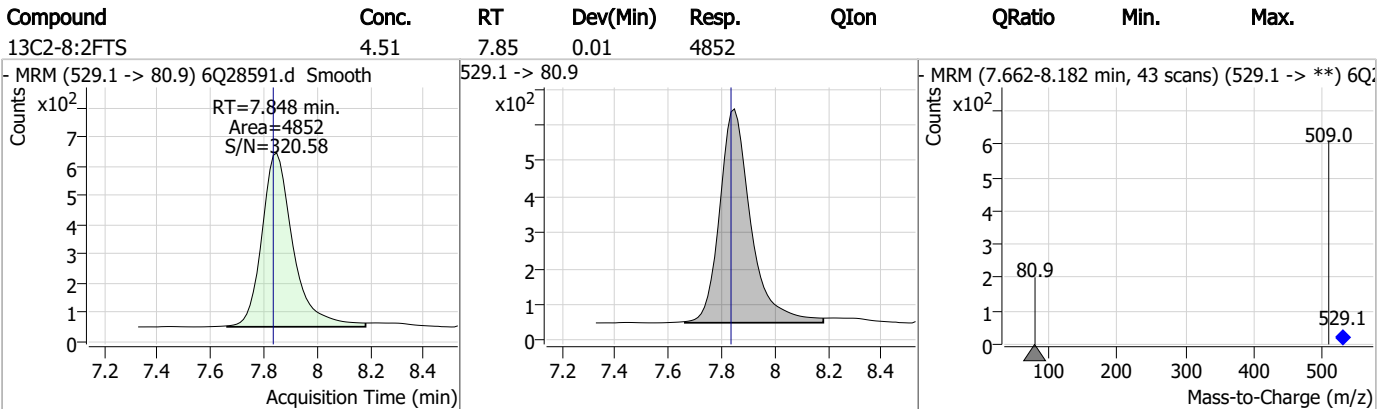
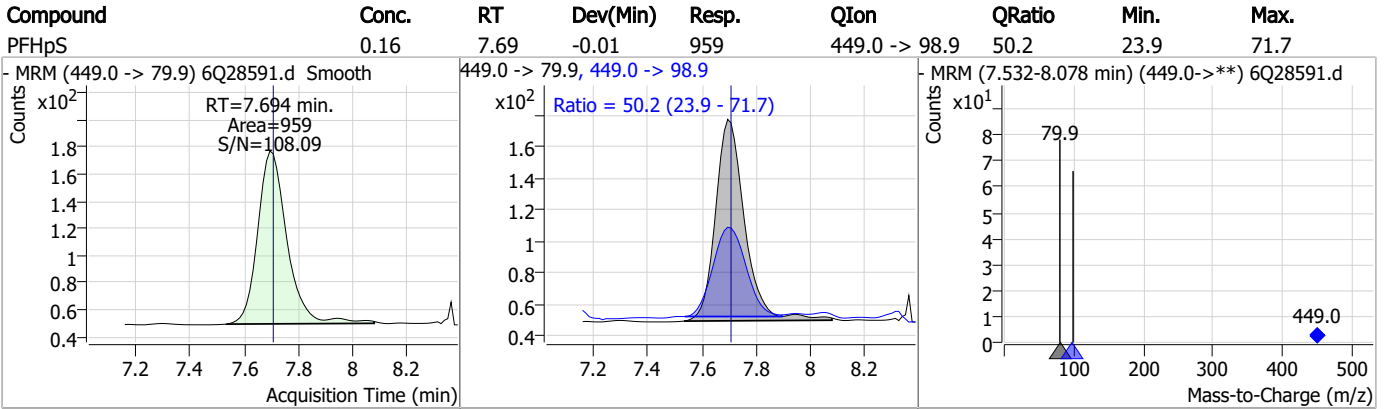


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.19	7.58	0.01	3888	463.0 -> 219.0	19.8	11.2	33.7



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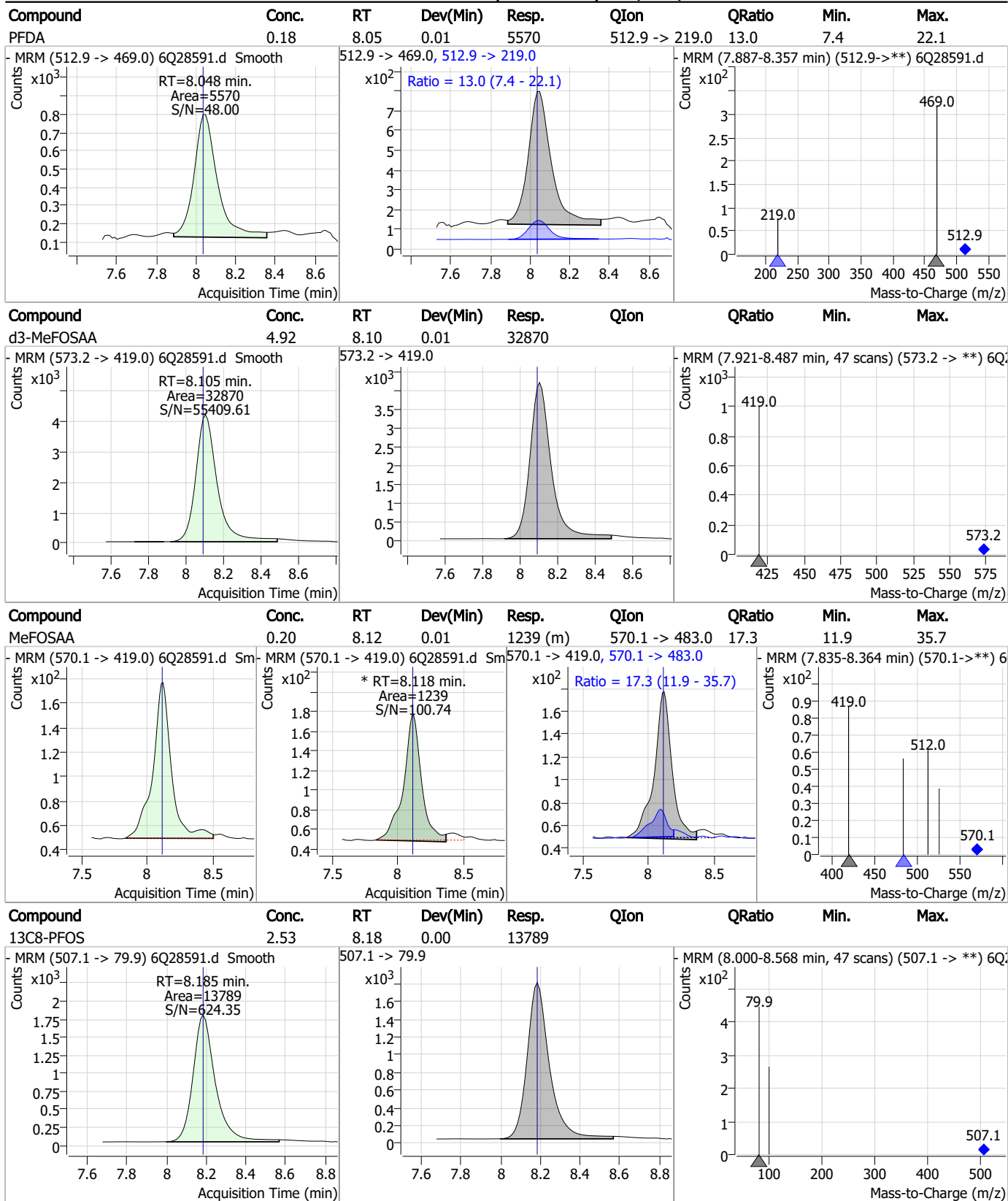
### Perfluorinated Compounds by LC/MS/MS



7.7.13  
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### Perfluorinated Compounds by LC/MS/MS

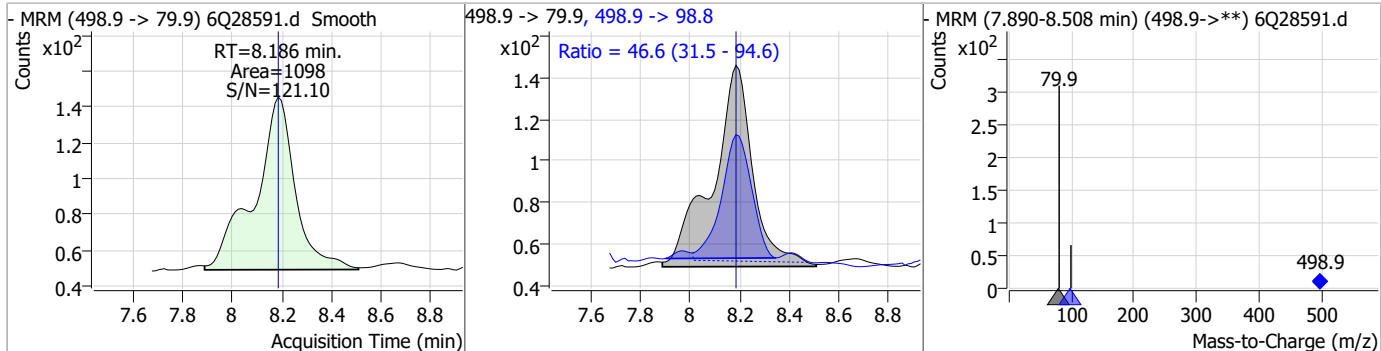


7.7.13

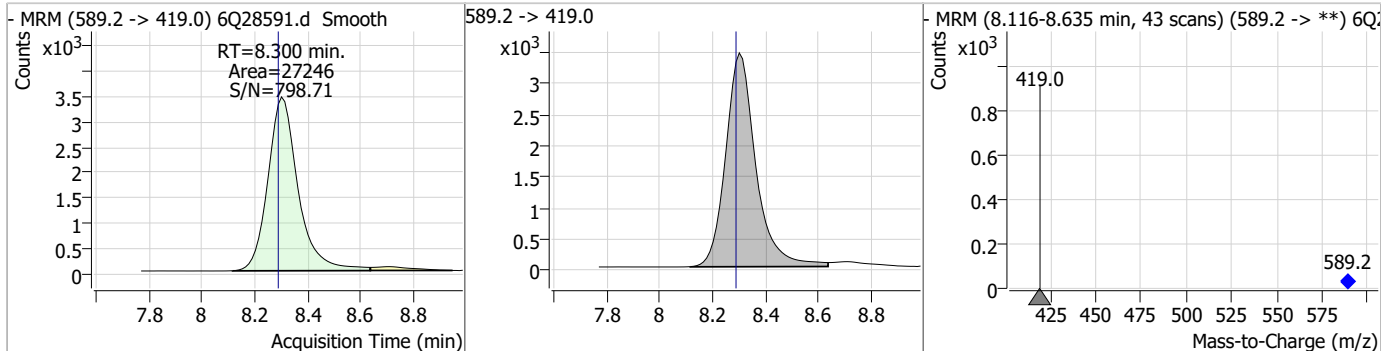
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### Perfluorinated Compounds by LC/MS/MS

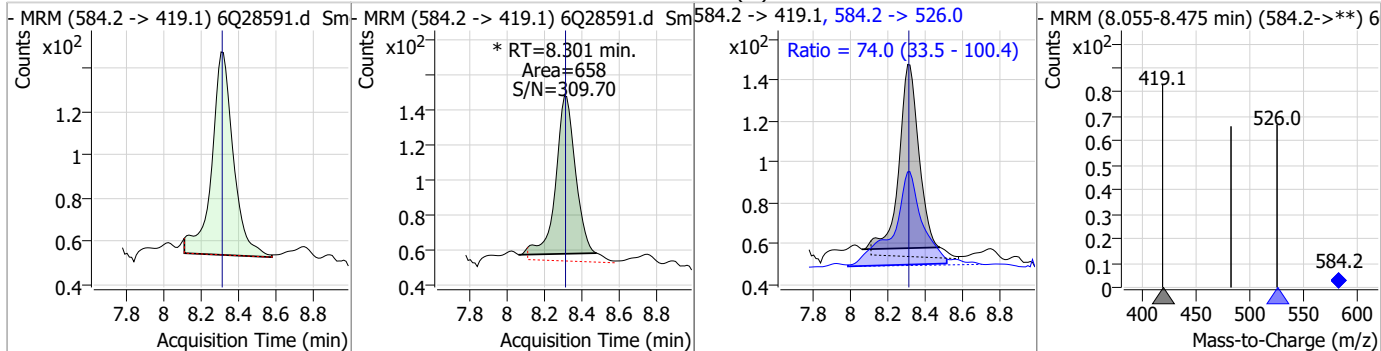
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.18	8.19	0.00	1098	498.9 -> 98.8	46.6	31.5	94.6



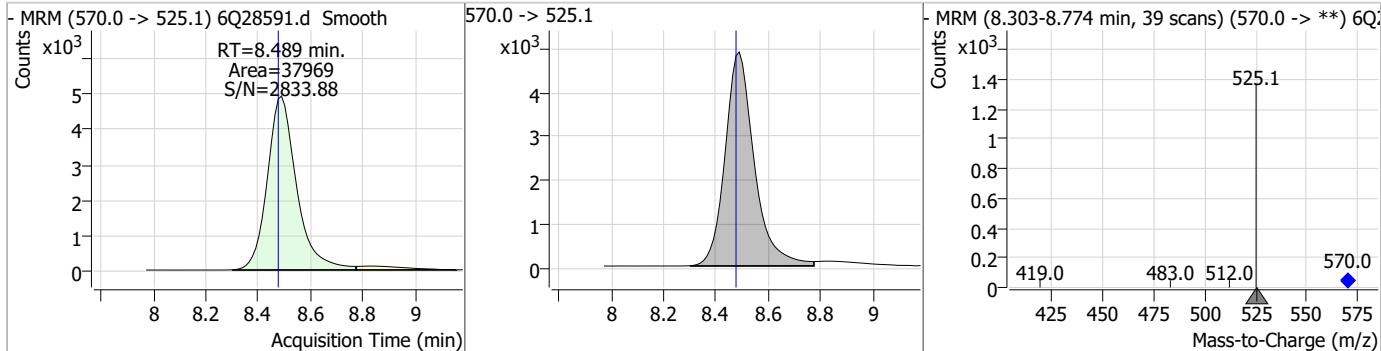
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.81	8.30	0.01	27246				



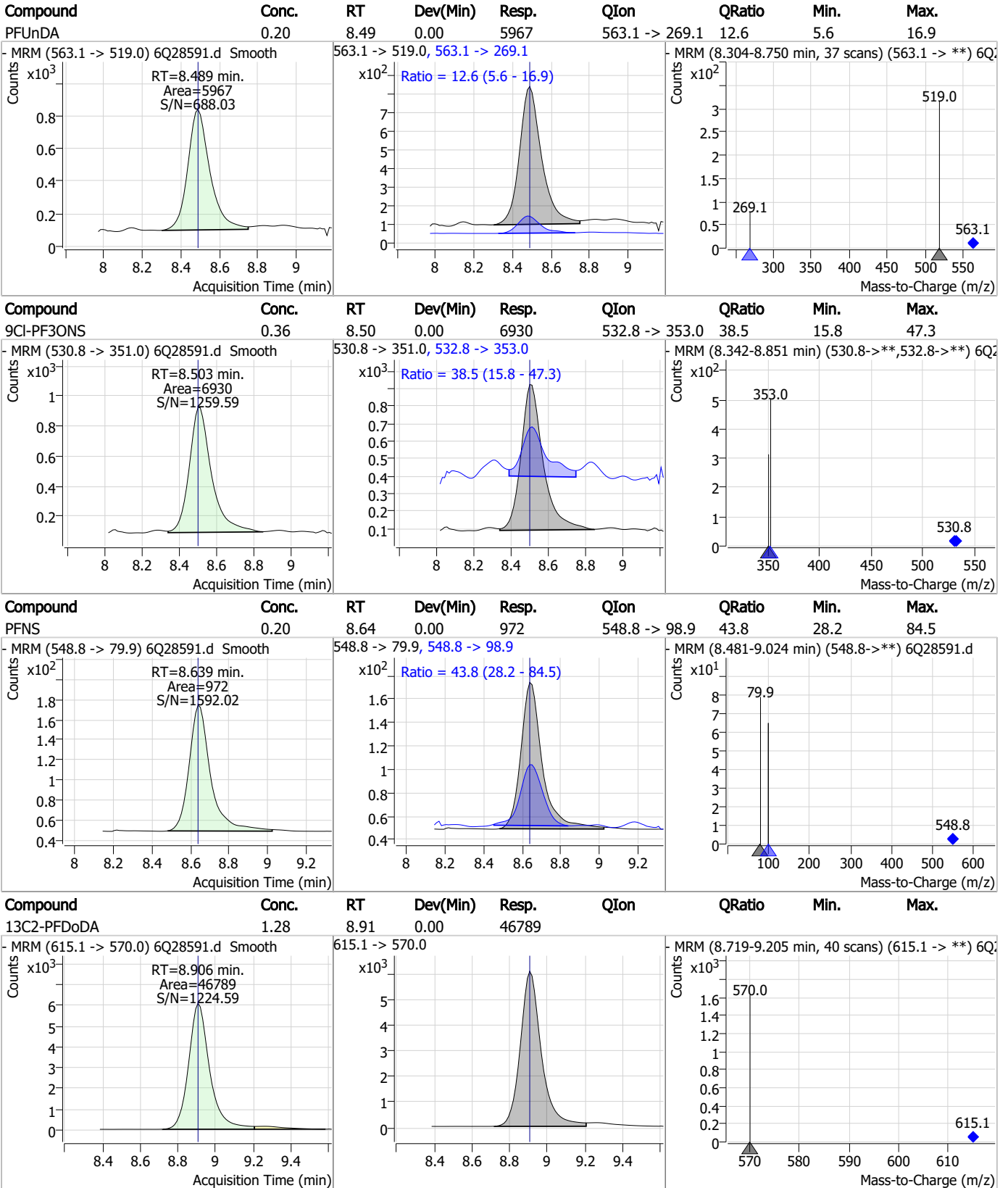
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.15	8.30	0.00	658 (m)	584.2 -> 526.0	74.0	33.5	100.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.49	0.01	37969				



### Perfluorinated Compounds by LC/MS/MS

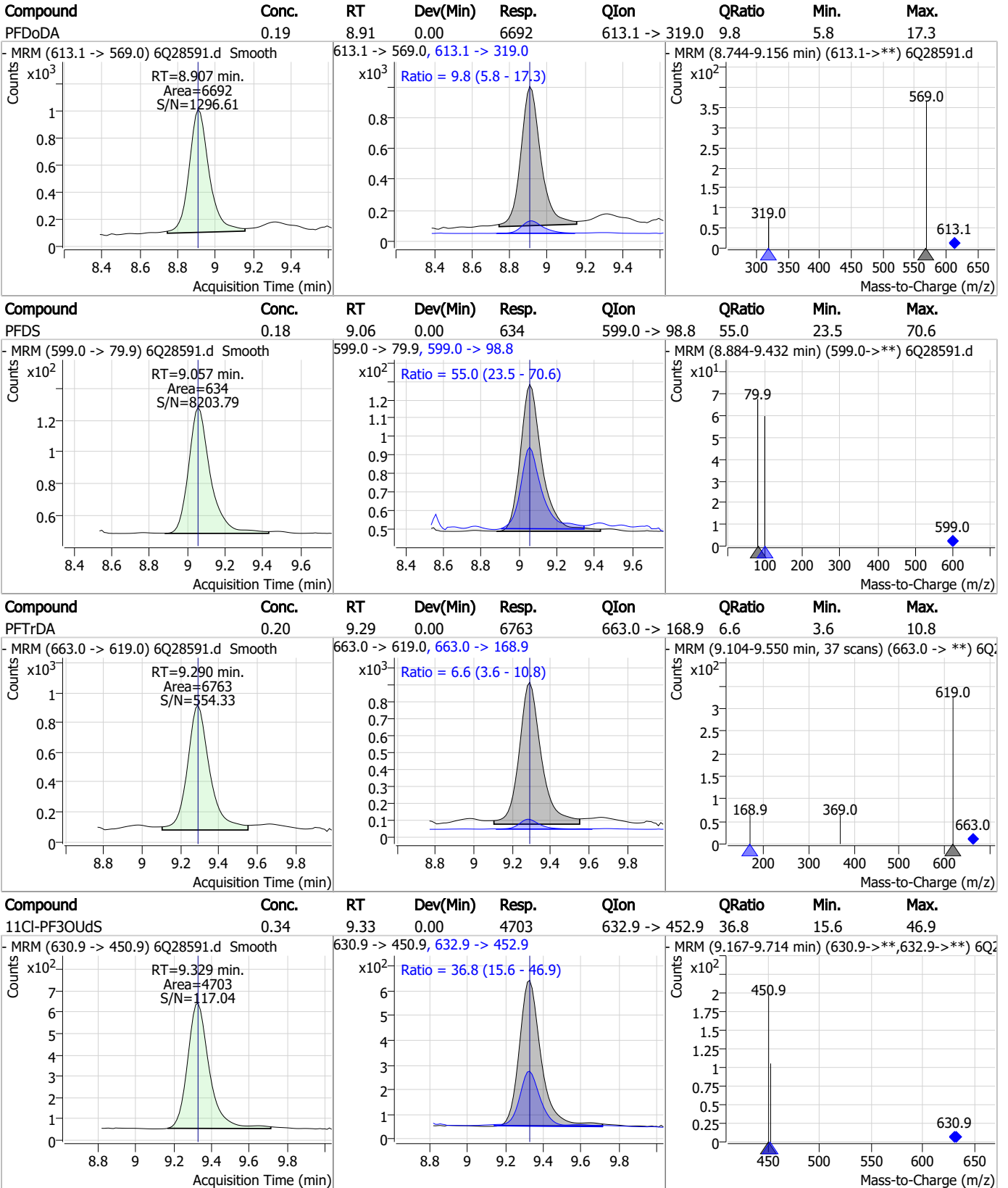


7.7.13 7



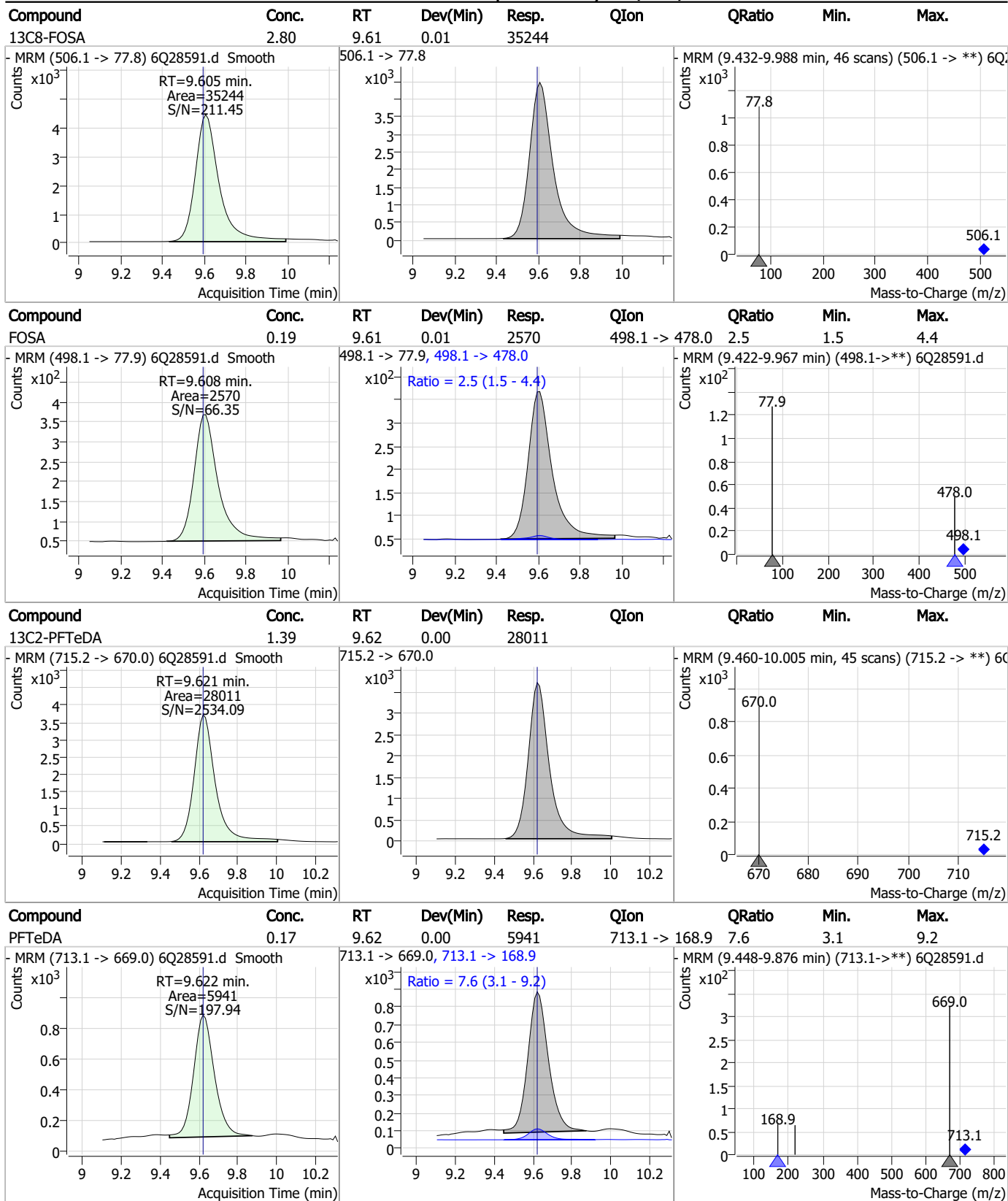


### Perfluorinated Compounds by LC/MS/MS



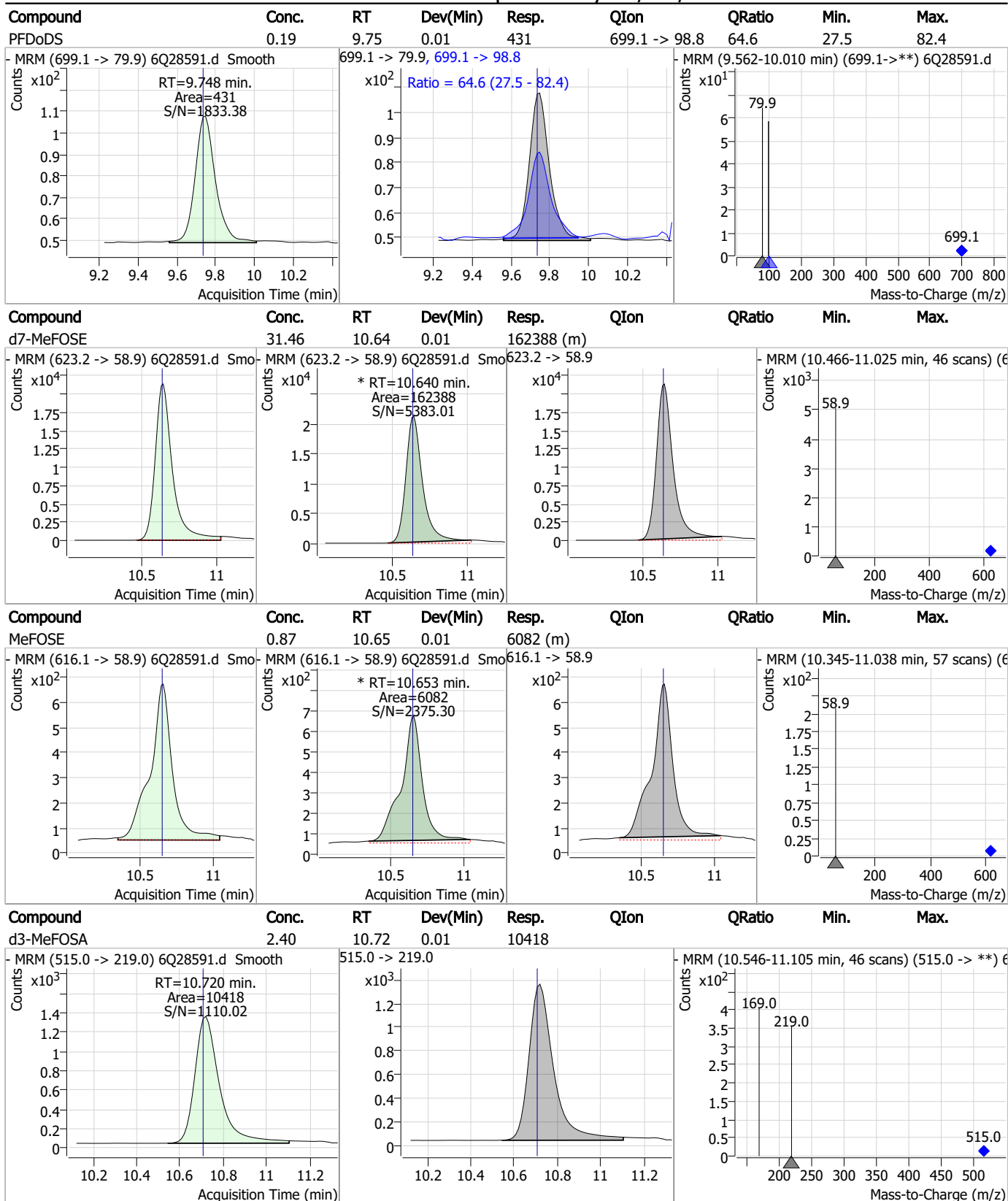
7.7.13  
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### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

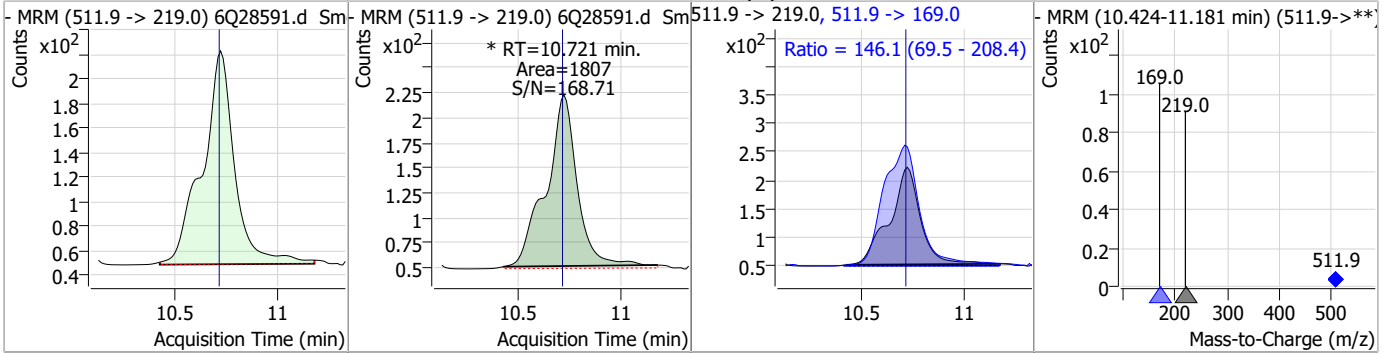


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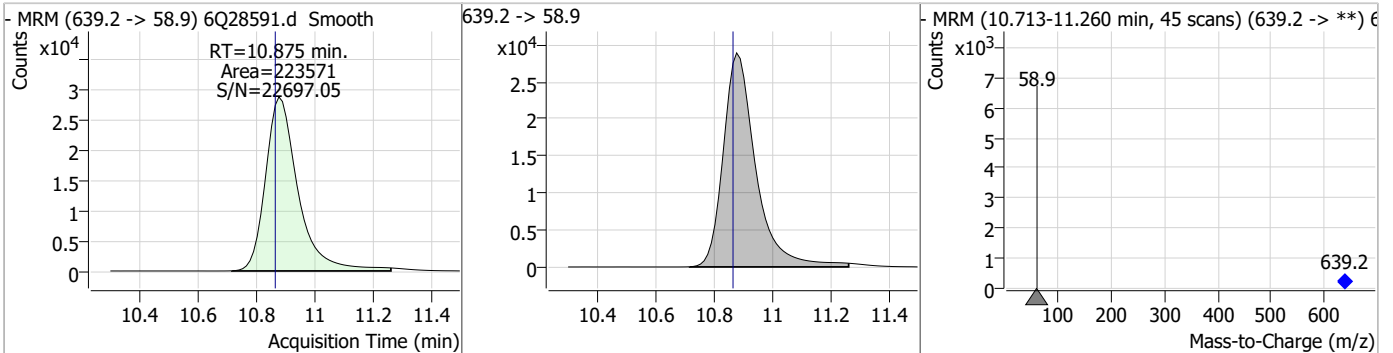
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### Perfluorinated Compounds by LC/MS/MS

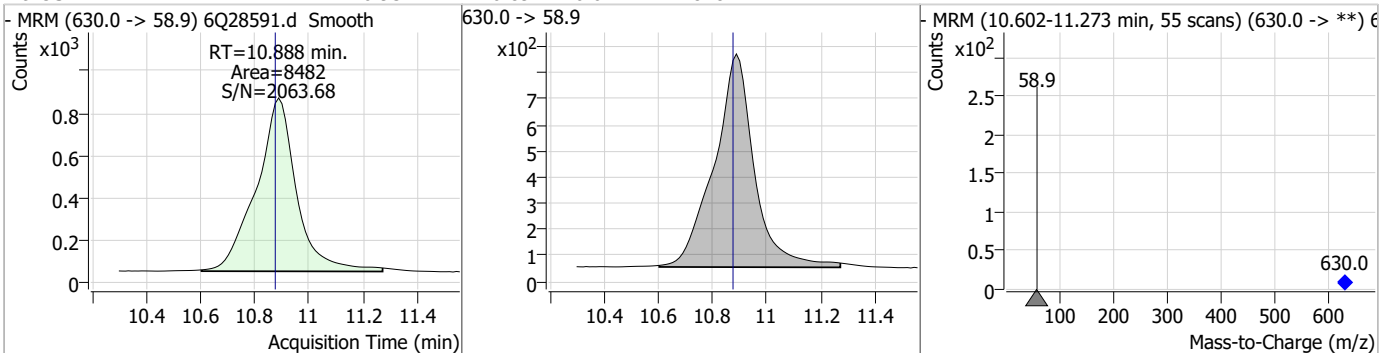
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.39	10.72	0.01	1807 (m)	511.9 -> 169.0	146.1	69.5	208.4



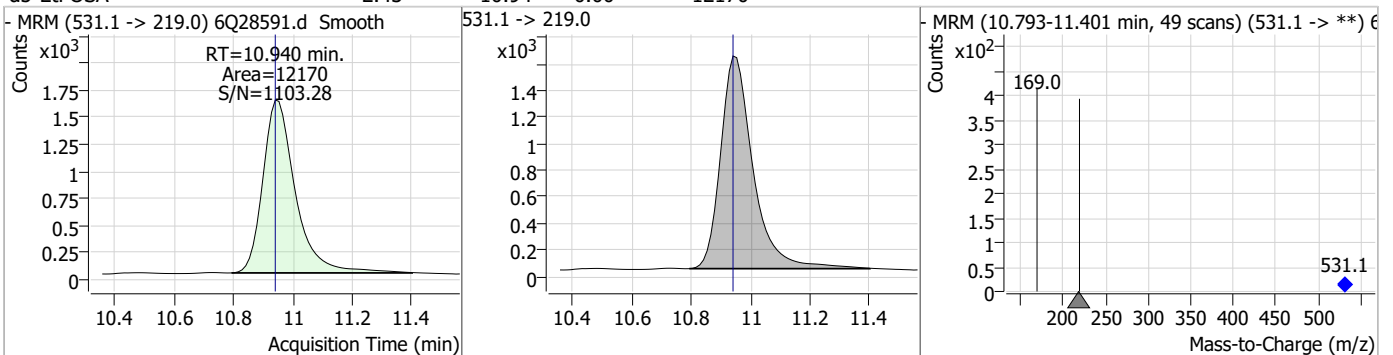
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	32.47	10.87	0.01	223571				



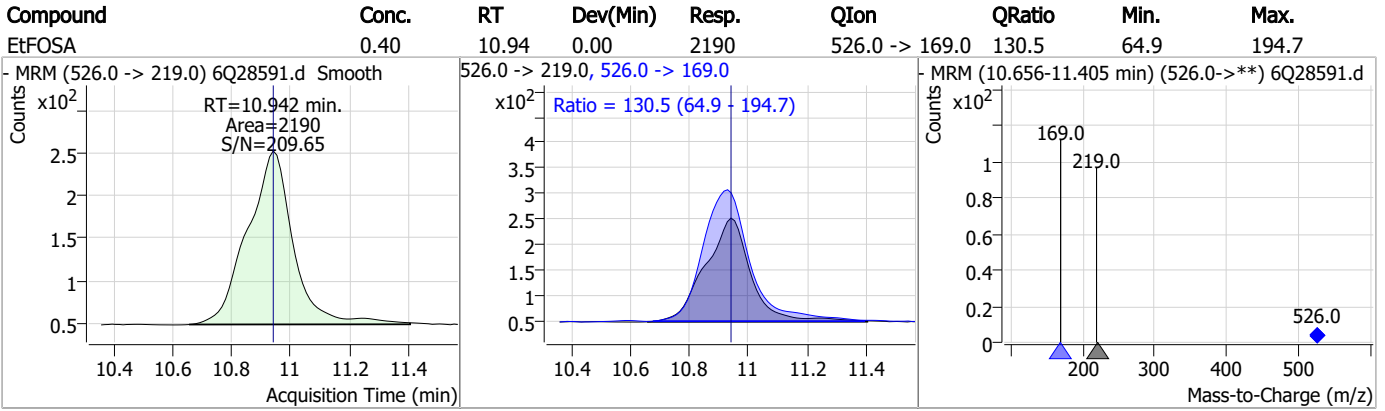
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	0.93	10.89	0.01	8482				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.43	10.94	0.00	12170				



### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q396-CC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28591.D      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/20/23 11:38      Supervisor approved: 11/21/23 17:27 Natasha Guntie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
MeFOSAA	2355-31-9		8.12	Split peak
EtFOSAA	2991-50-6		8.30	Split peak
d7-MeFOSE			10.64	Poorly defined baseline
MeFOSE	24448-09-7		10.65	Split peak
MeFOSA	31506-32-8		10.72	Split peak

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### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28602.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/20/2023 2:25:31 PM  
 Sample Name : cc391-4  
 Vial : P1-A5  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	130876	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	46453	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	46758	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	55407	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	85043	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	30748	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	29597	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	33855	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	43961	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	24287	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	29767	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	20334	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	12680	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	12011	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	2825	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	4592	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	5413	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	31236	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	30929	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	27907	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	119370	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	156550	25.00 µg/L	0.012
M5-EtFOSA	10.952	531.1 -> 219.0	11644	2.50 µg/L	0.012
M3-MeFOSA	10.720	515.0 -> 219.0	9752	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	11599	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	55906	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8173	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	88324	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	30497	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	30712	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	48274	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	2825	5.38 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4592	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-8:2FTS	7.848	529.1 -> 80.9	5413	5.63 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.5%		
13C2-PFDoDA	8.906	615.1 -> 570.0	43961	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C2-PFTeDA	9.621	715.2 -> 670.0	24287	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C3-PFBS	5.384	302.1 -> 79.9	20334	2.67 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.6%		
13C3-PFHxS	7.152	402.1 -> 79.9	12680	2.53 µg/L	0.000

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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C4-PFBA	2.860	216.8 -> 171.9	130876	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C4-PFHpA	6.419	367.1 -> 322.0	55407	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C5-PFHxA	5.478	318.0 -> 273.0	46758	2.33 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C5-PFPeA	4.272	268.3 -> 223.0	46453	4.79 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C6-PFDA	8.048	519.1 -> 474.1	29597	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C7-PFUnDA	8.489	570.0 -> 525.1	33855	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C8-FOSA	9.605	506.1 -> 77.8	29767	2.63 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C8-PFOA	7.062	421.1 -> 376.0	85043	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C8-PFOS	8.185	507.1 -> 79.9	12011	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C9-PFNA	7.580	472.1 -> 427.0	30748	1.19 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.6%	
d3-MeFOSAA	8.105	573.2 -> 419.0	31236	5.19 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	30929	10.32 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
d3-MeFOSA	10.720	515.0 -> 219.0	9752	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSAA	8.300	589.2 -> 419.0	27907	5.48 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
d7-MeFOSE	10.640	623.2 -> 58.9	119370	25.71 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
d9-EtFOSE	10.875	639.2 -> 58.9	156550	25.27 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d5-EtFOSA	10.952	531.1 -> 219.0	11644	2.59 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.155	327.1 -> 307.0	46193	10.04 µg/L	100
		327.1 -> 80.9	18385		
6:2FTS	6.836	427.1 -> 407.0	48964	9.79 µg/L	98
		427.1 -> 80.9	18284		
8:2FTS	7.849	527.1 -> 507.0	36478	8.90 µg/L	99
		527.1 -> 80.8	12927		
EtFOSAA	8.314	584.2 -> 419.1	11173	2.48 µg/L	94
		584.2 -> 526.0	6934		
FOSA	9.608	498.1 -> 77.9	27722	2.42 µg/L	100
		498.1 -> 478.0	828		
MeFOSAA	8.106	570.1 -> 419.0	15004	2.55 µg/L	96
		570.1 -> 483.0	3251		
PFBA	2.868	212.8 -> 168.9	44743	10.43 µg/L	100
PFBS	5.385	298.7 -> 79.9	16468	2.12 µg/L	100
		298.7 -> 98.8	6166		
PFDA	8.048	512.9 -> 469.0	69757	2.54 µg/L	99
		512.9 -> 219.0	10026		
PFDODA	8.907	613.1 -> 569.0	83358	2.55 µg/L	98
		613.1 -> 319.0	8904		
PFDS	9.057	599.0 -> 79.9	8409	2.69 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	4065			
PFHpA	6.419	363.1 -> 319.0	67116	2.36	µg/L	98
		363.1 -> 169.0	10574			
PFHpS	7.706	449.0 -> 79.9	13135	2.57	µg/L	100
		449.0 -> 98.9	6253			
PFHxA	5.481	313.0 -> 269.0	46911	2.68	µg/L	100
		313.0 -> 118.9	2229			
PFHxS	7.153	398.7 -> 79.9	14132	2.40	µg/L	m 86
		398.7 -> 98.9	6675			
PFNA	7.581	463.0 -> 419.0	50176	2.62	µg/L	96
		463.0 -> 219.0	10354			
PFNS	8.639	548.8 -> 79.9	11587	2.73	µg/L	92
		548.8 -> 98.9	5817			
PFOA	7.063	413.0 -> 369.0	80762	2.40	µg/L	98
		413.0 -> 169.0	15497			
PFOS	8.186	498.9 -> 79.9	13192	2.47	µg/L	m 83
		498.9 -> 98.8	6549			
PFPeA	4.274	263.0 -> 219.0	62105	5.27	µg/L	100
PFPeS	6.458	349.1 -> 79.9	14943	2.38	µg/L	99
		349.1 -> 98.9	6848			
PFTeDA	9.622	713.1 -> 669.0	76007	2.57	µg/L	99
		713.1 -> 168.9	4353			
PFTrDA	9.290	663.0 -> 619.0	81610	2.55	µg/L	99
		663.0 -> 168.9	5491			
PFUnDA	8.489	563.1 -> 519.0	71963	2.73	µg/L	97
		563.1 -> 269.1	8943			
11CI-PF3OUdS	9.329	630.9 -> 450.9	61651	4.58	µg/L	99
		632.9 -> 452.9	18884			
9CI-PF3ONS	8.516	530.8 -> 351.0	87219	4.70	µg/L	97
		532.8 -> 353.0	28724			
ADONA	6.669	376.9 -> 250.9	252465	4.68	µg/L	98
		376.9 -> 84.8	65895			
HFPO-DA	5.844	284.9 -> 168.9	14921	4.82	µg/L	96
		284.9 -> 184.9	1709			
3:3FTCA	3.721	241.0 -> 177.0	8836	11.68	µg/L	99
		241.0 -> 117.0	1012			
5:3FTCA	6.146	341.0 -> 237.1	209110	65.38	µg/L	99
		341.0 -> 217.0	150363			
7:3FTCA	7.558	441.0 -> 316.9	134737	66.52	µg/L	99
		441.0 -> 336.9	280634			
EtFOSA	10.942	526.0 -> 219.0	27044	5.17	µg/L	97
		526.0 -> 169.0	34153			
EtFOSE	10.888	630.0 -> 58.9	82207	12.89	µg/L	100
MeFOSA	10.721	511.9 -> 219.0	22725	5.22	µg/L	99
		511.9 -> 169.0	31383			
MeFOSE	10.653	616.1 -> 58.9	59129	12.14	µg/L	100
PFDoDS	9.748	699.1 -> 79.9	5335	2.65	µg/L	99
		699.1 -> 98.8	2879			
NFDHA	5.360	295.0 -> 201.0	10359	5.11	µg/L	96
		295.0 -> 84.9	2794			
PFMBA	4.687	279.0 -> 85.1	41394	5.10	µg/L	100
PFMPA	3.413	229.0 -> 84.9	31649	5.20	µg/L	100
PFEESA	5.925	314.8 -> 134.9	105372	4.87	µg/L	99
		314.8 -> 82.9	3672			

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



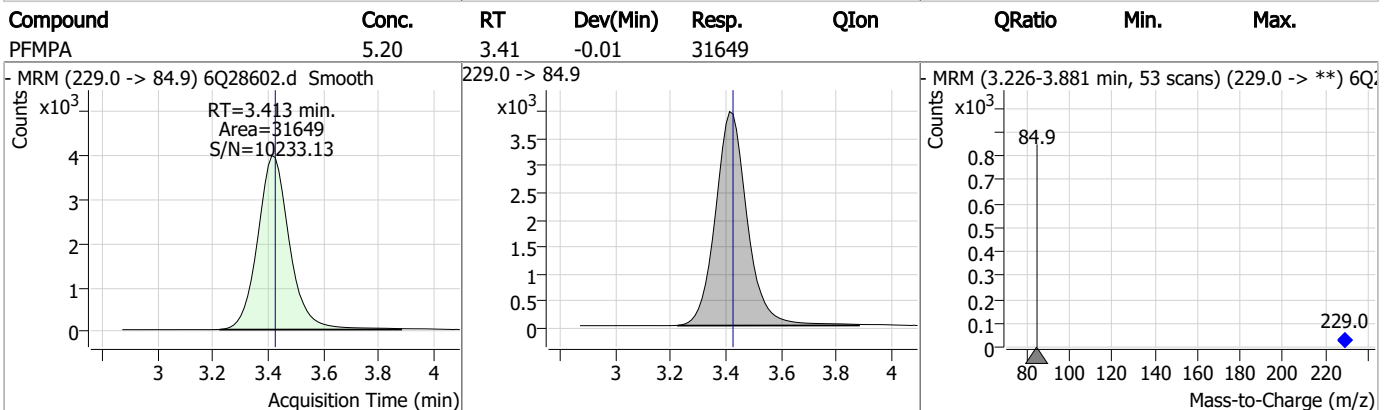
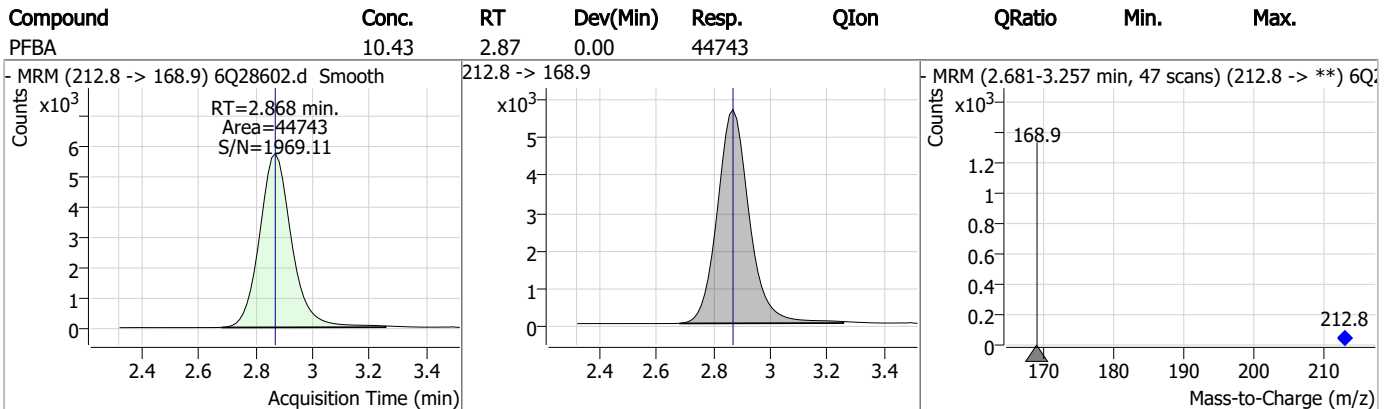
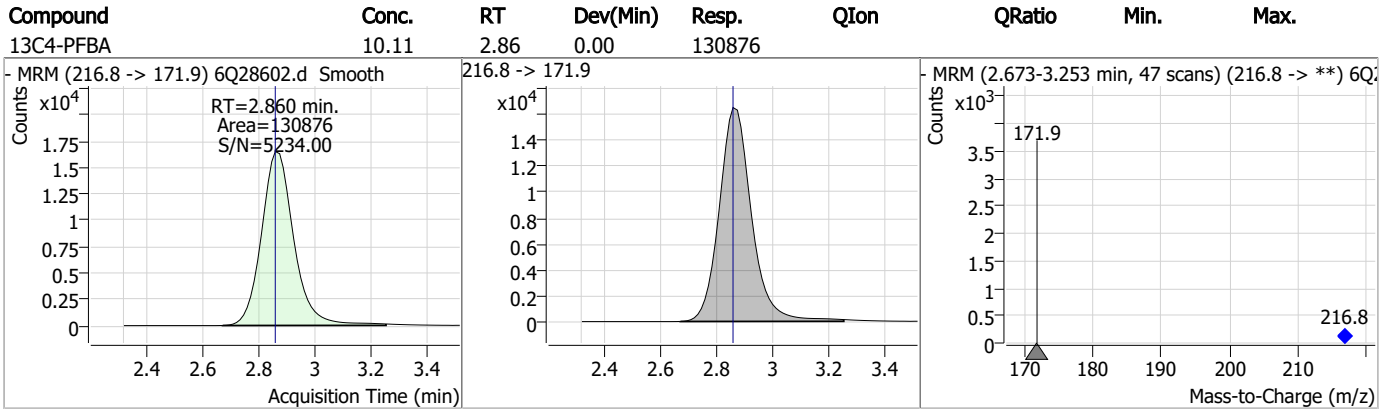
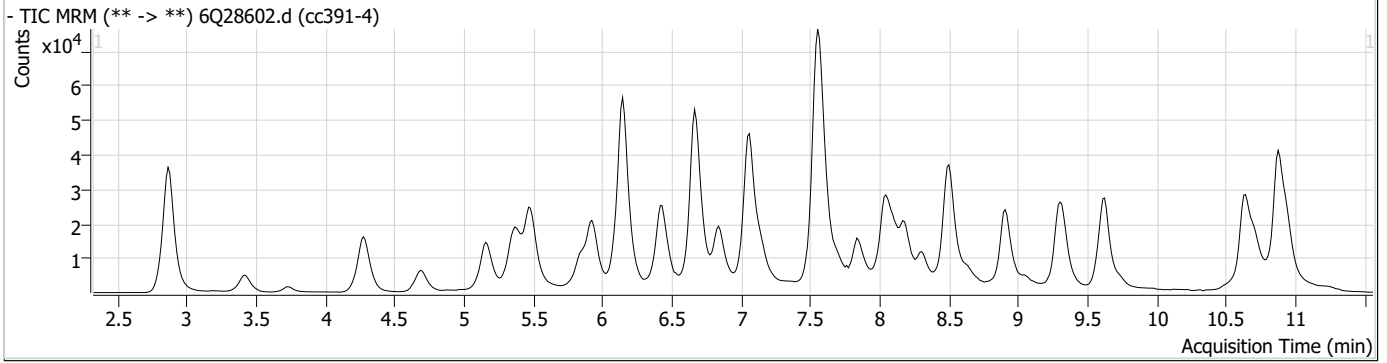
### Perfluorinated Compounds by LC/MS/MS

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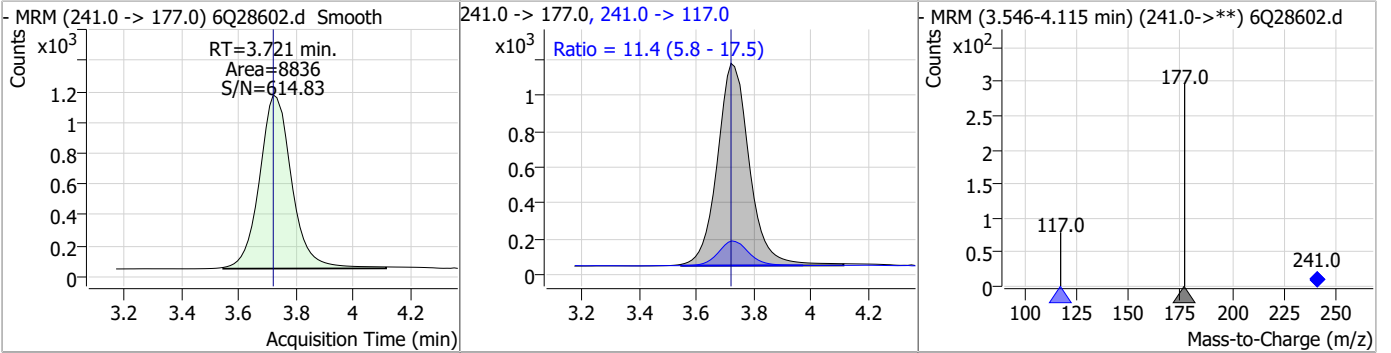
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### Perfluorinated Compounds by LC/MS/MS

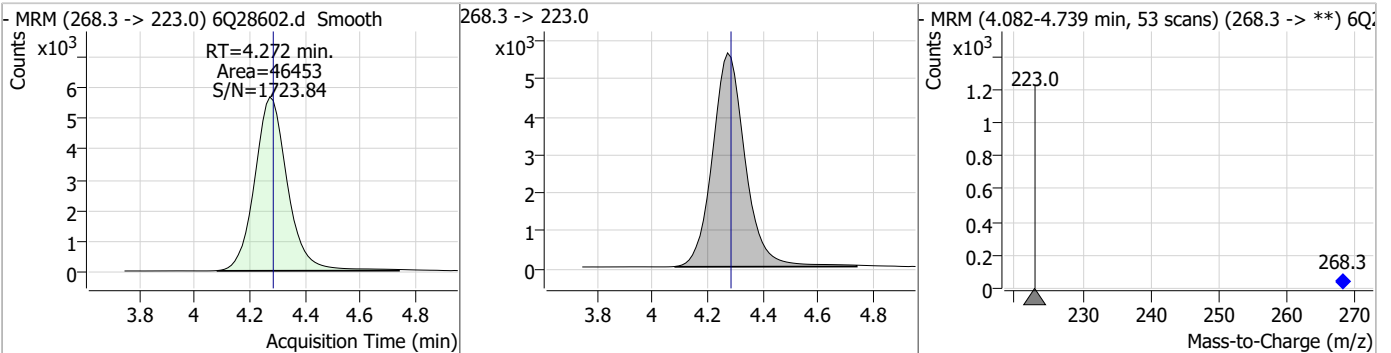


### Perfluorinated Compounds by LC/MS/MS

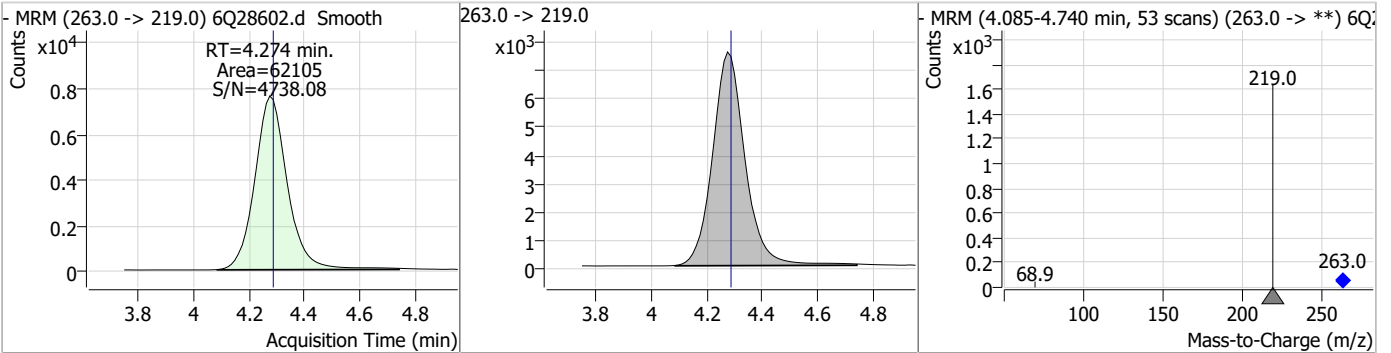
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.68	3.72	0.00	8836	241.0 -> 117.0	11.4	5.8	17.5



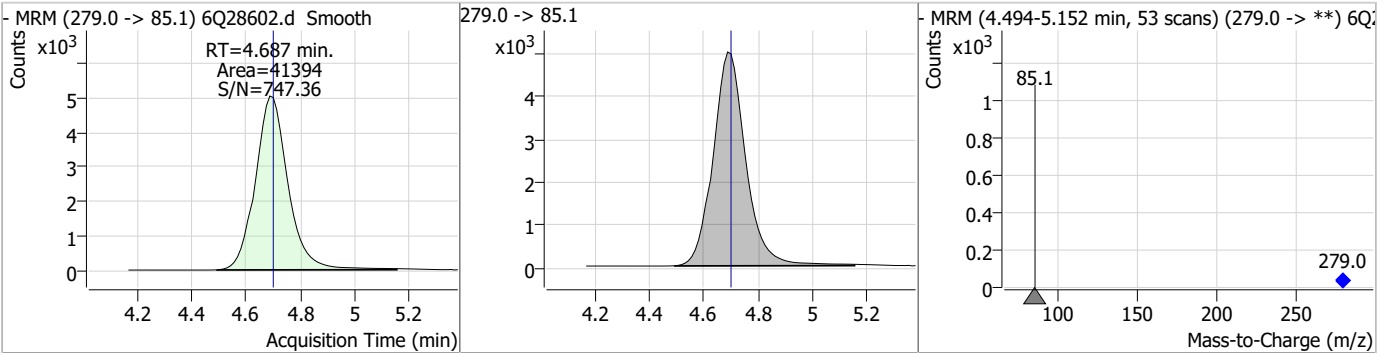
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.79	4.27	-0.01	46453				



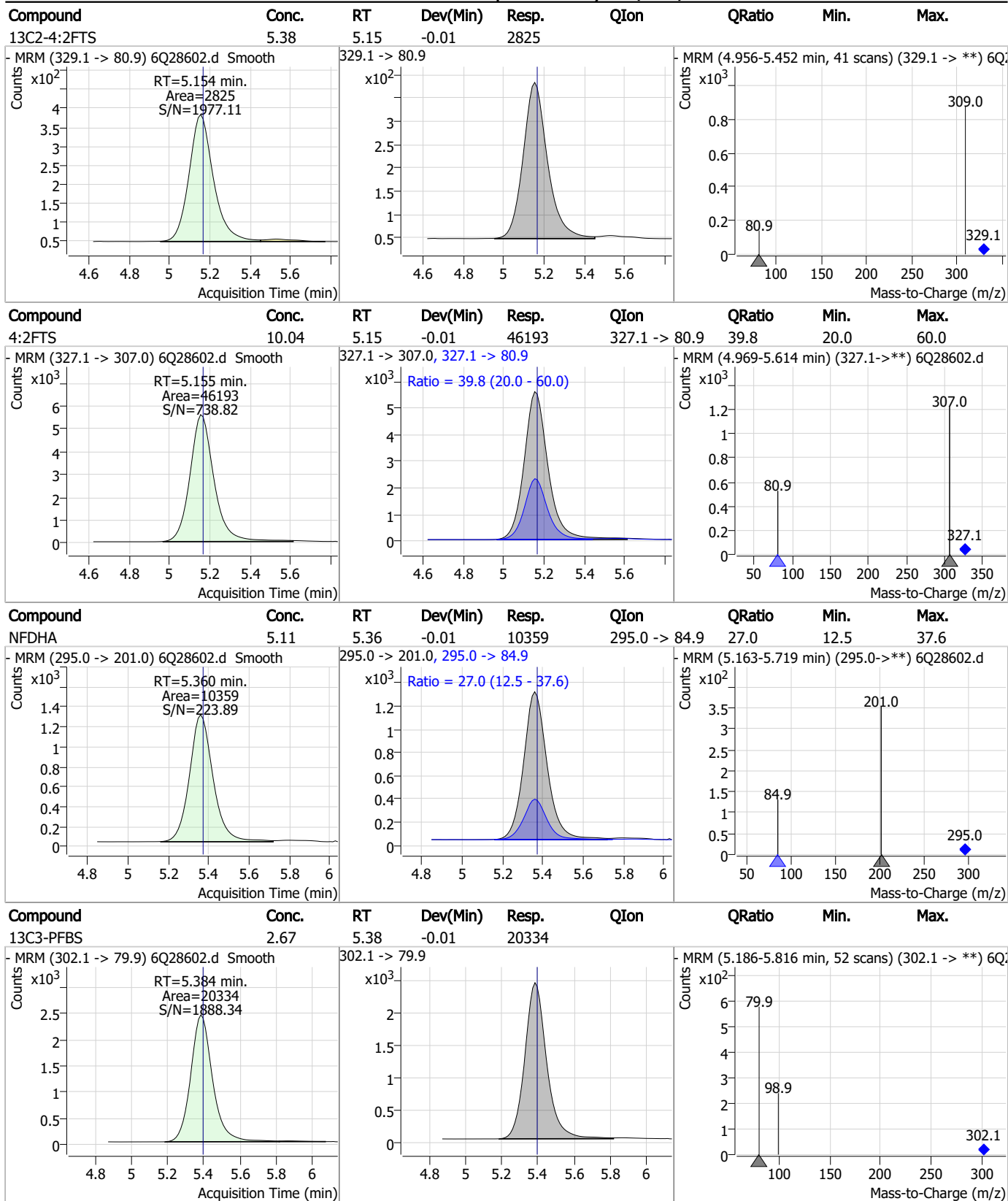
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.27	4.27	-0.01	62105				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.10	4.69	-0.01	41394				

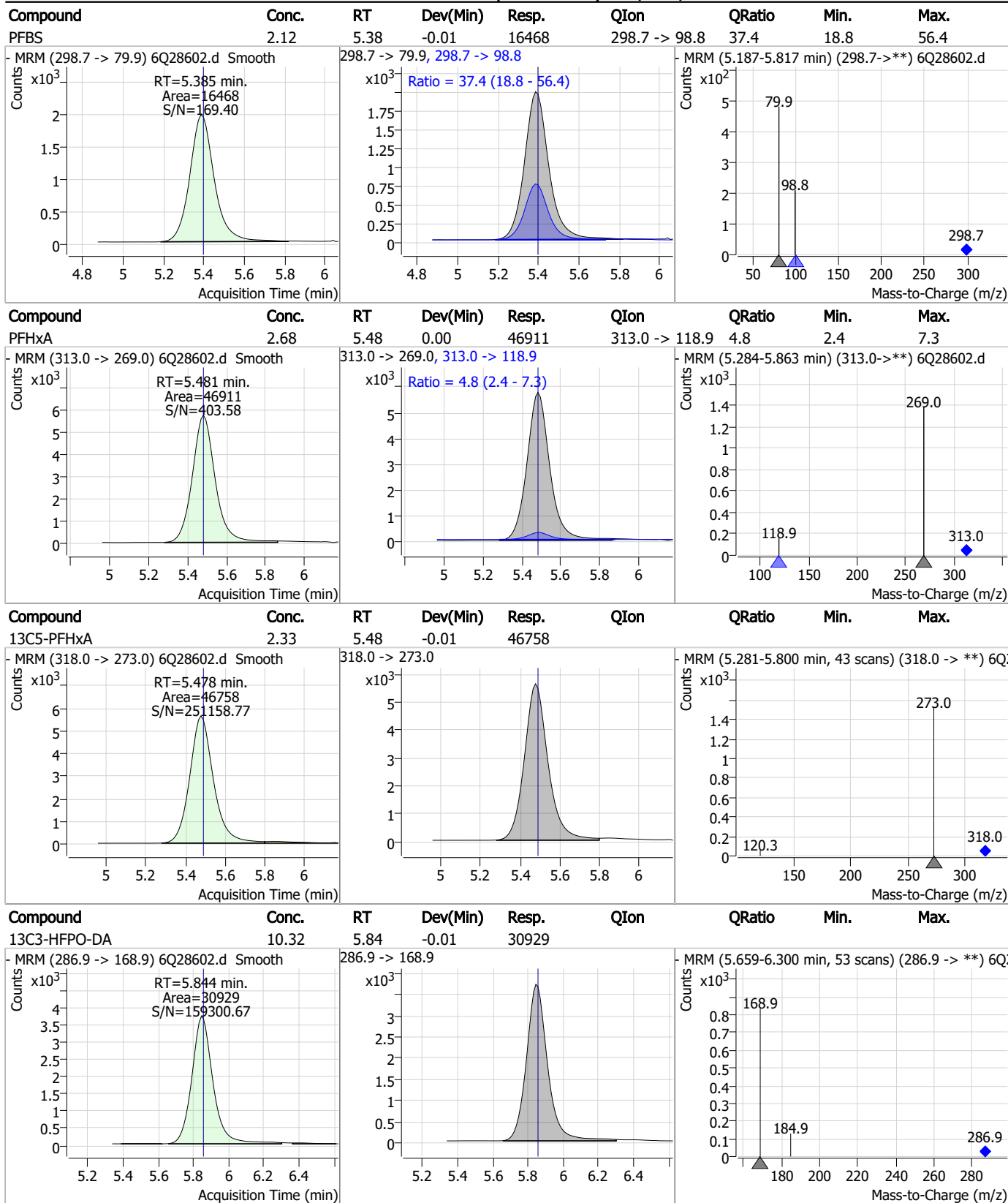


### Perfluorinated Compounds by LC/MS/MS



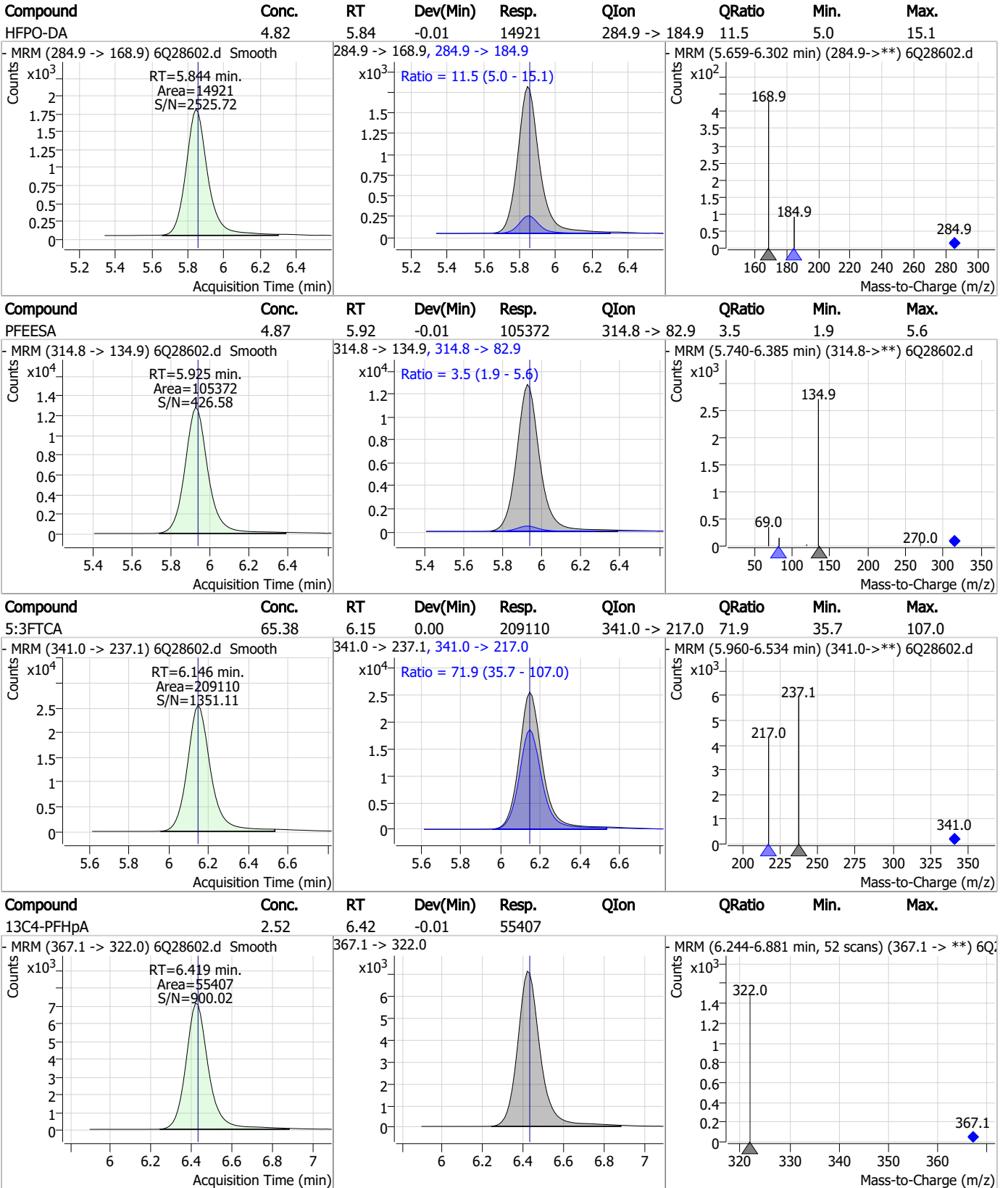
7.7.14  
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### Perfluorinated Compounds by LC/MS/MS



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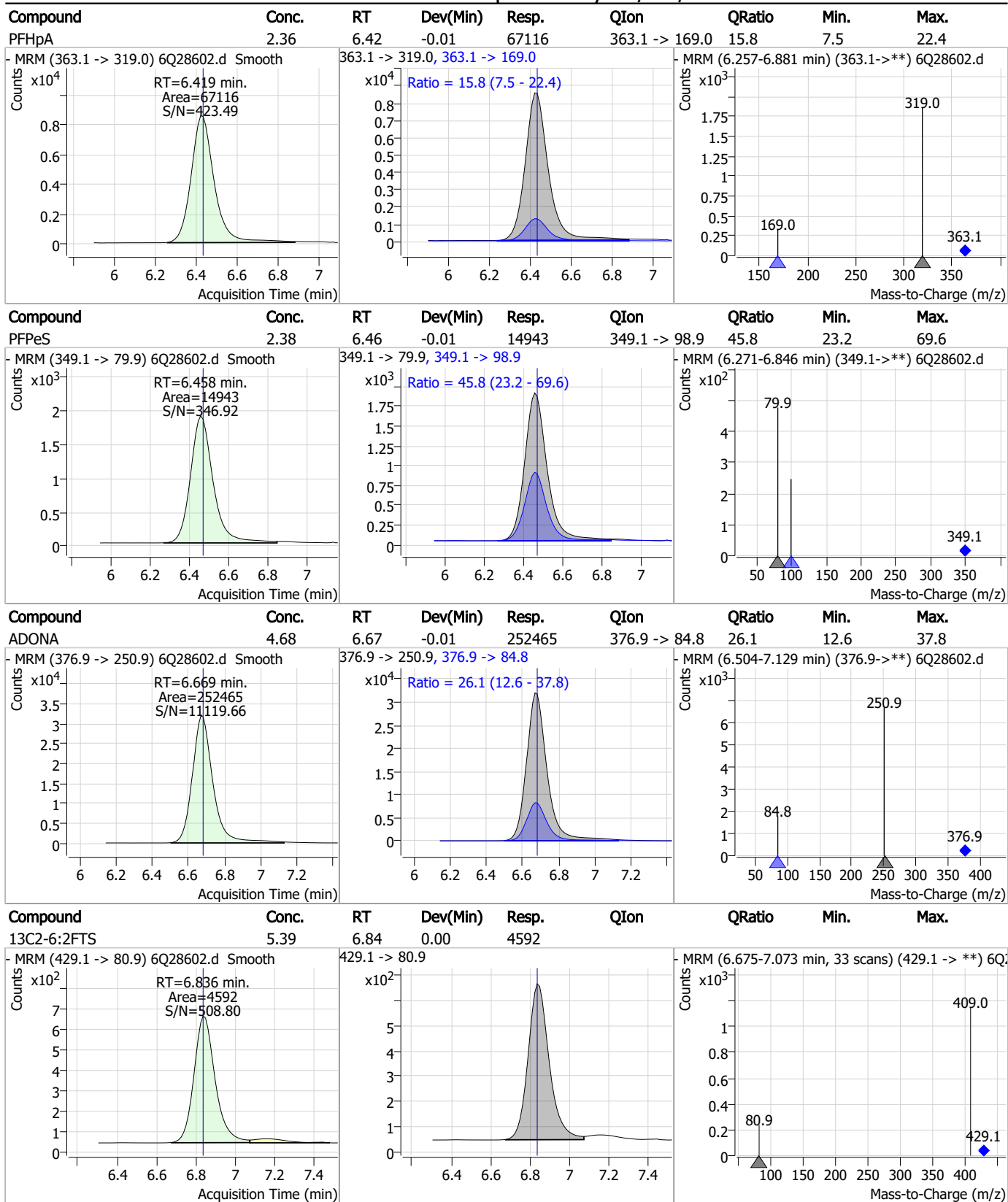
### Perfluorinated Compounds by LC/MS/MS



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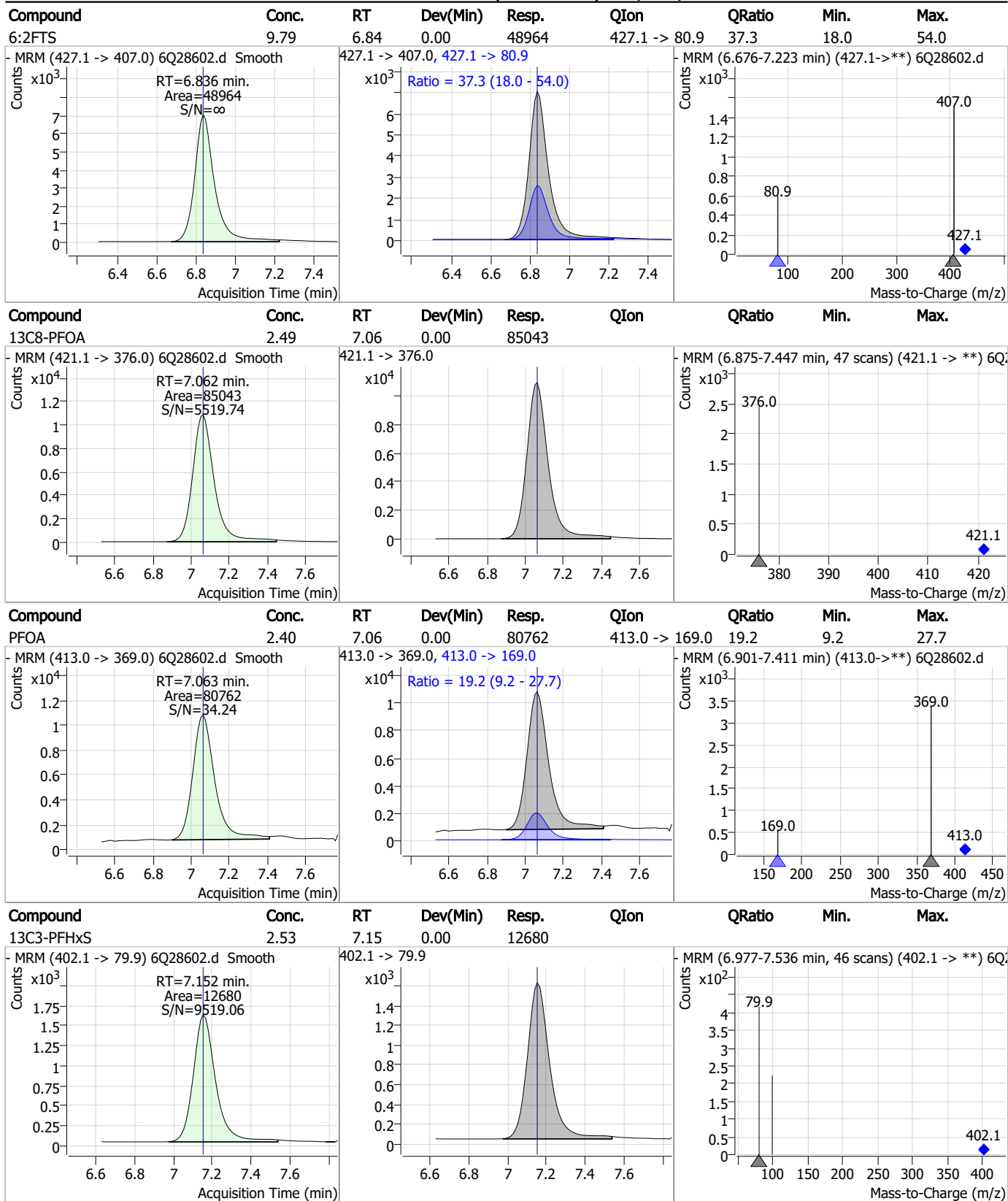
### Perfluorinated Compounds by LC/MS/MS



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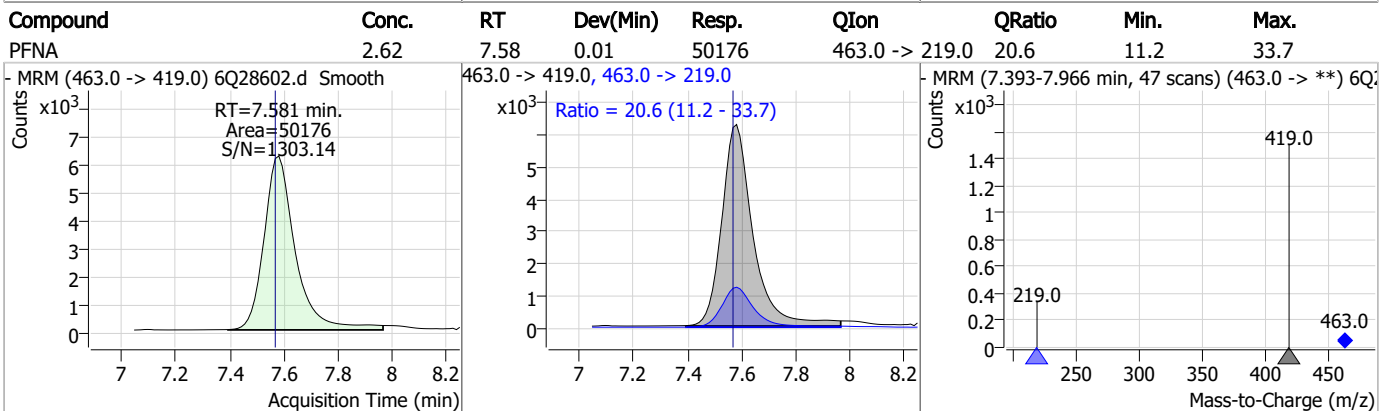
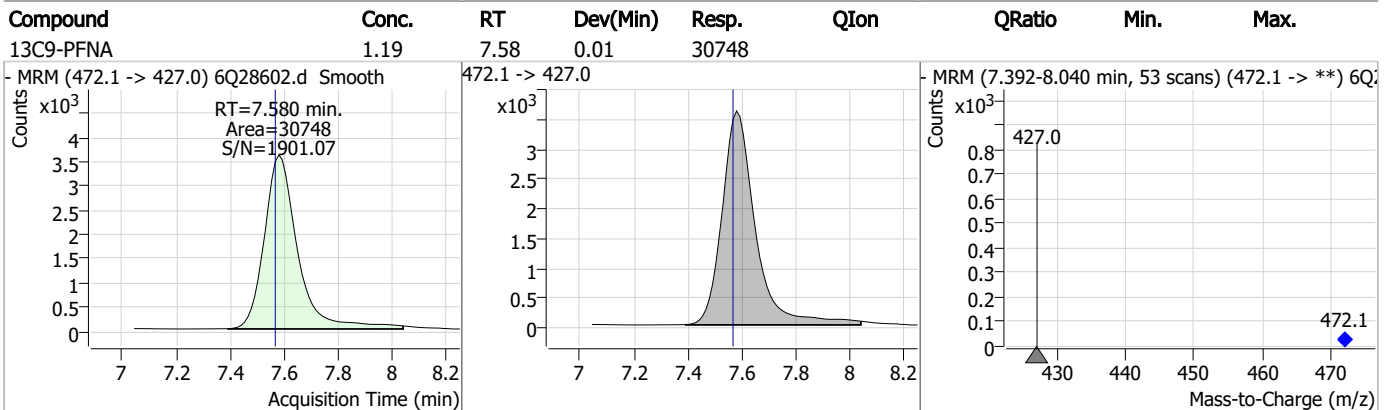
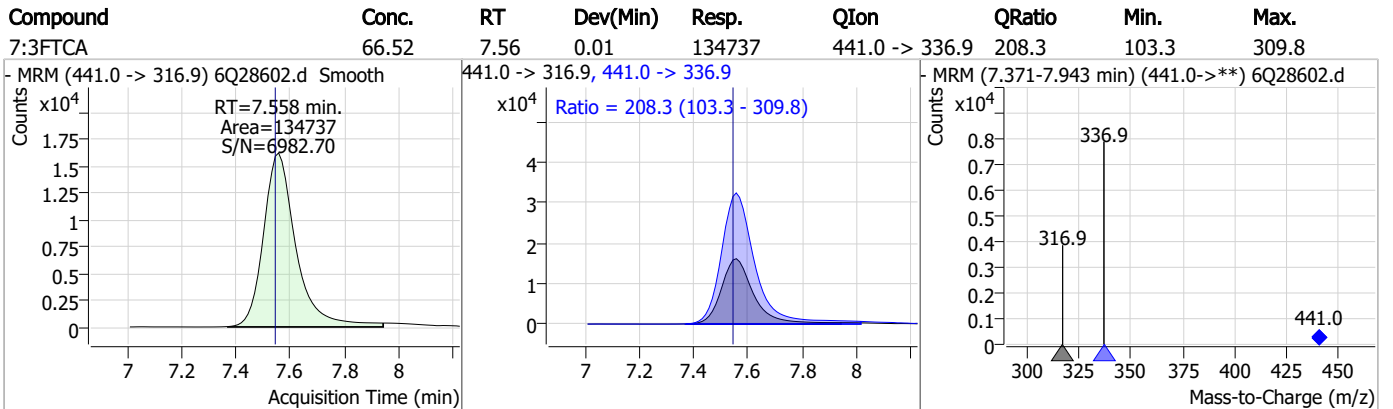
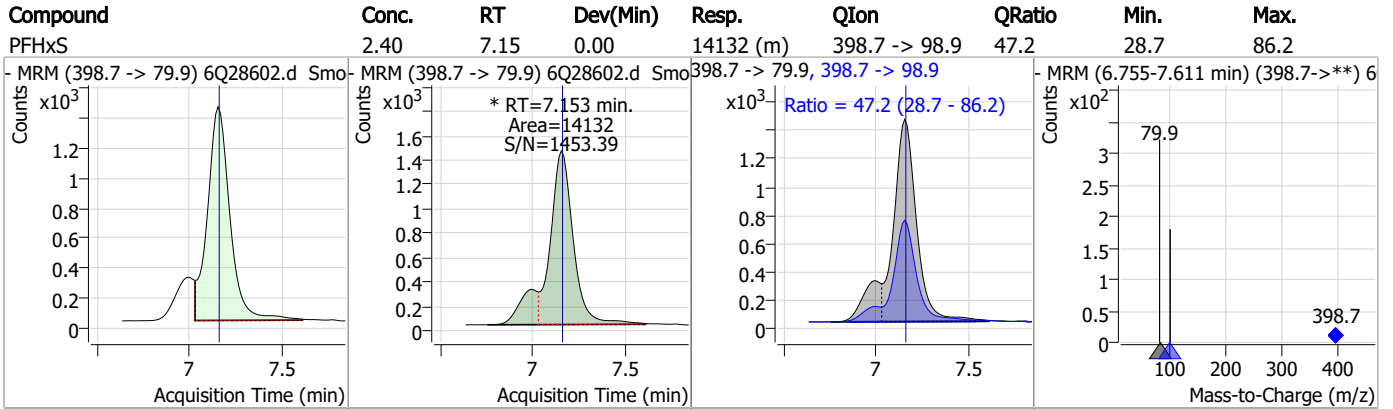


### Perfluorinated Compounds by LC/MS/MS

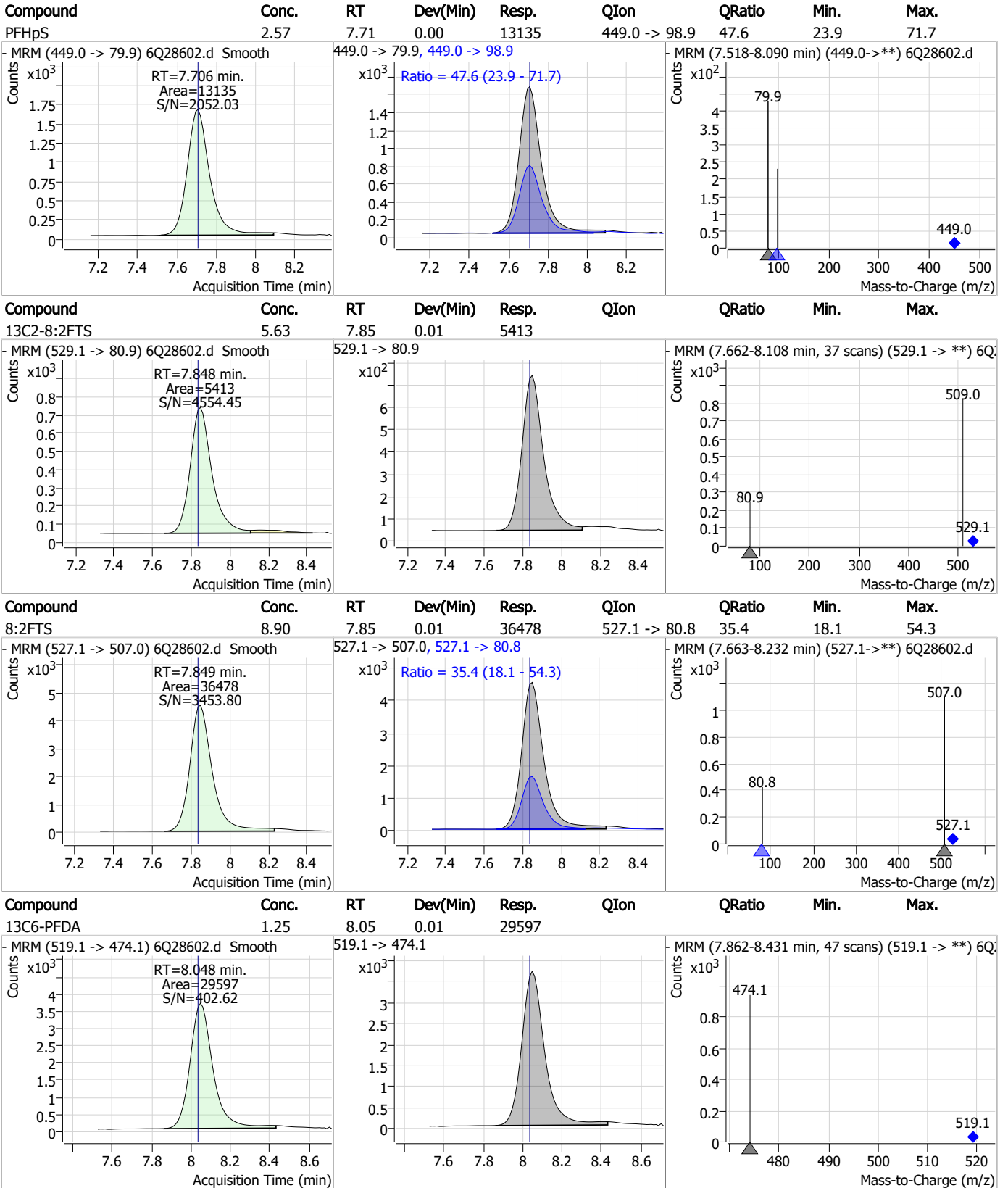


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### Perfluorinated Compounds by LC/MS/MS



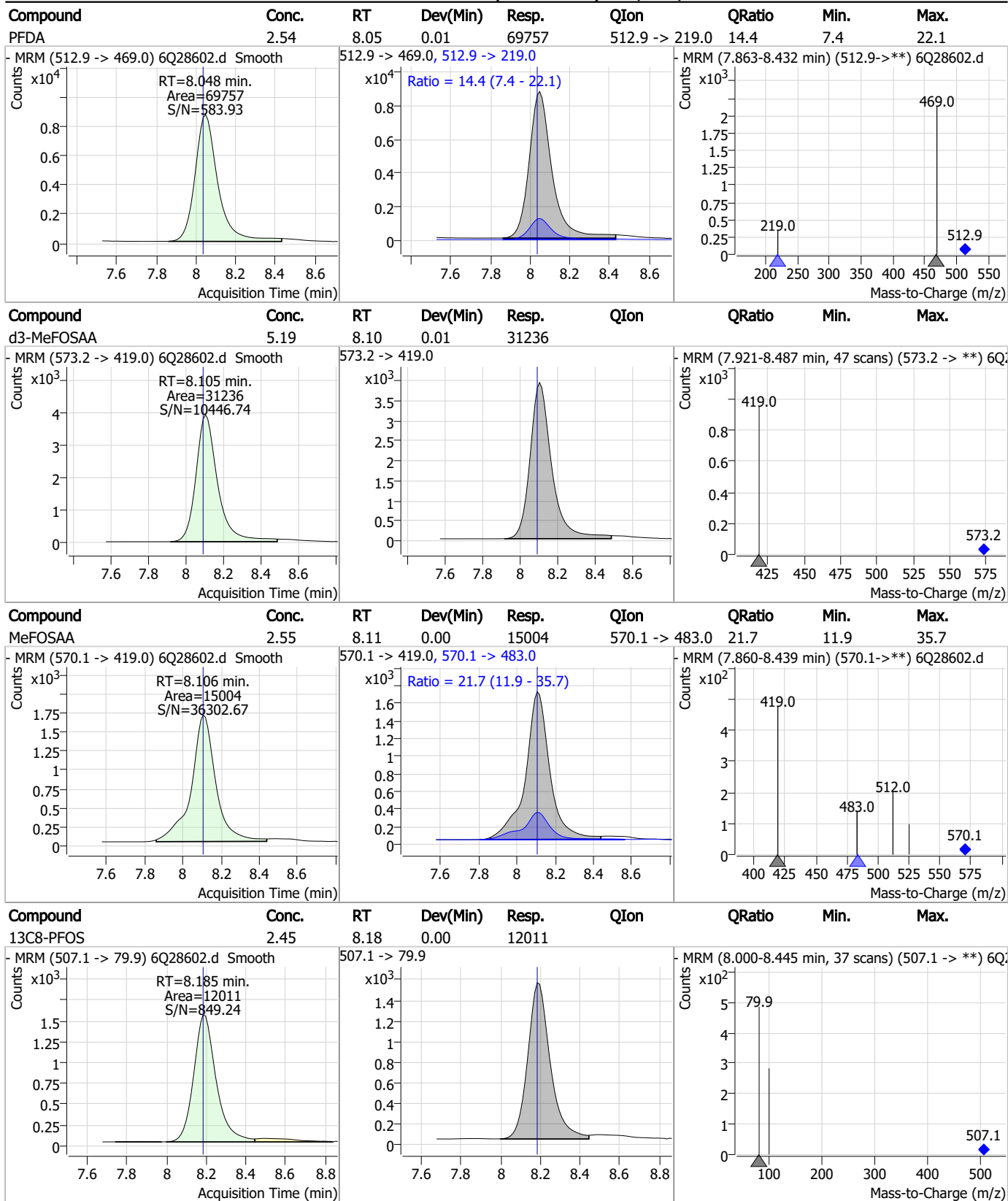
### Perfluorinated Compounds by LC/MS/MS



7.7.14



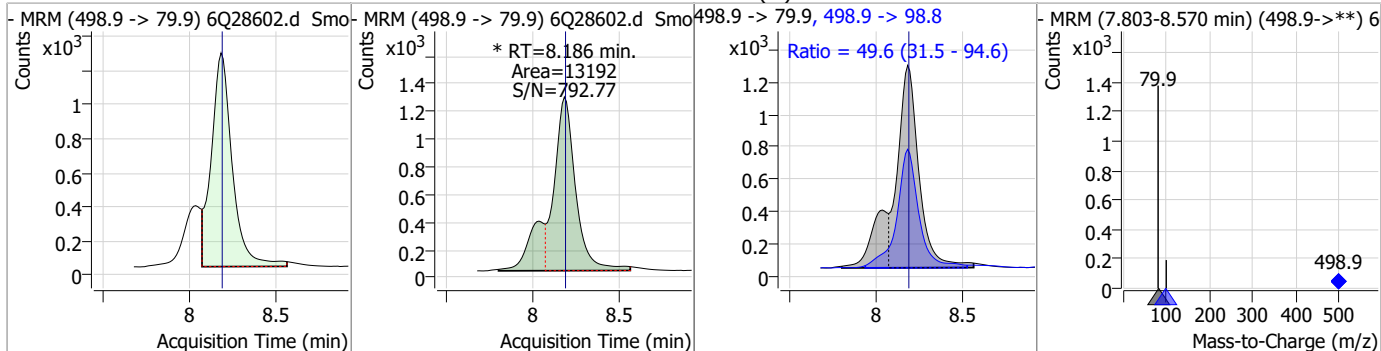
### Perfluorinated Compounds by LC/MS/MS



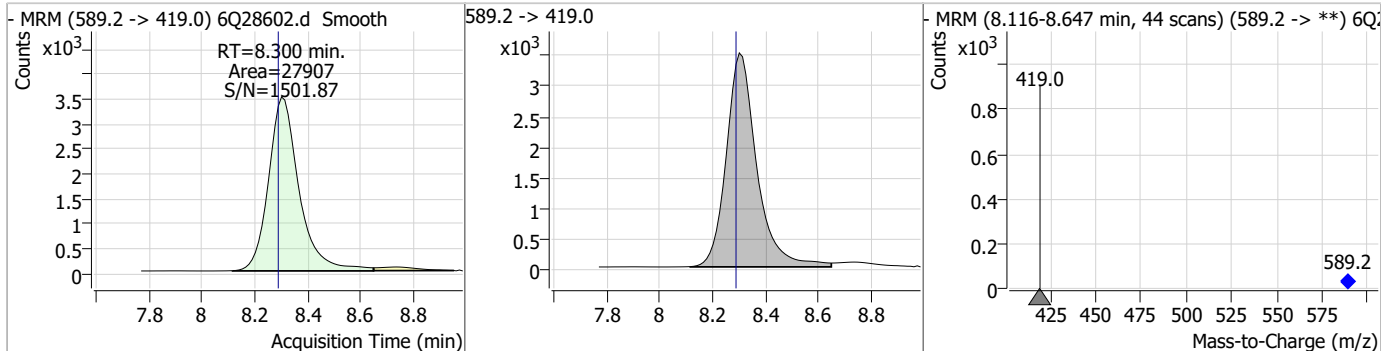
7.7.14  
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### Perfluorinated Compounds by LC/MS/MS

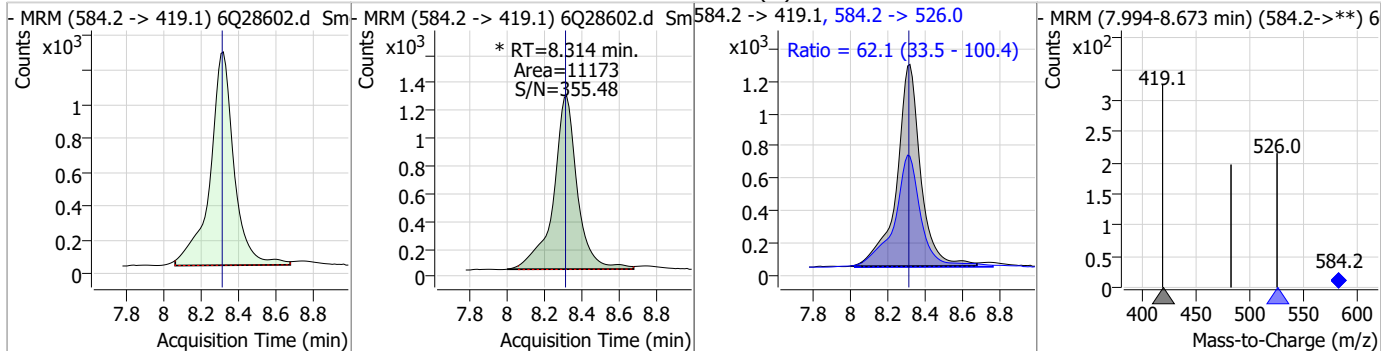
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.47	8.19	0.00	13192 (m)	498.9 -> 98.8	49.6	31.5	94.6



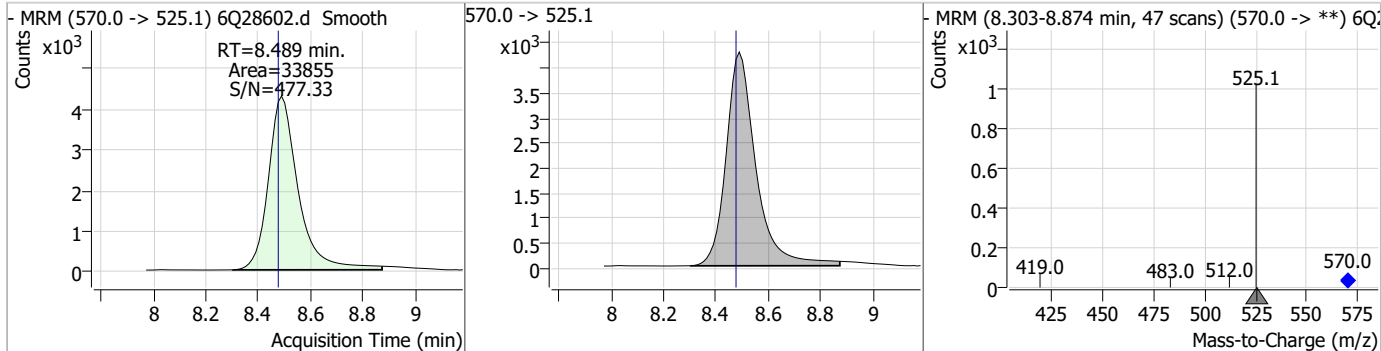
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.48	8.30	0.01	27907				



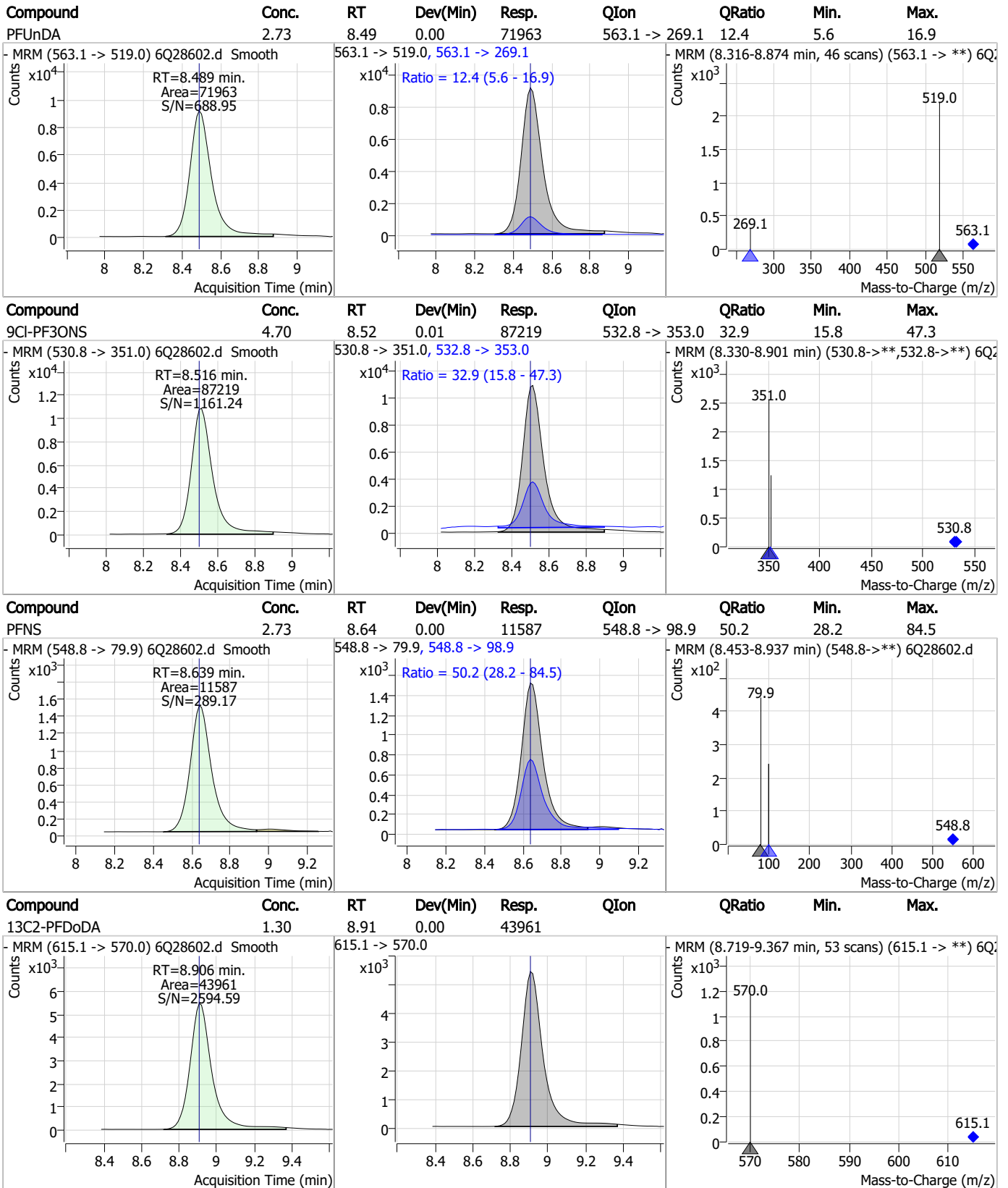
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.48	8.31	0.01	11173 (m)	584.2 -> 526.0	62.1	33.5	100.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.20	8.49	0.01	33855				



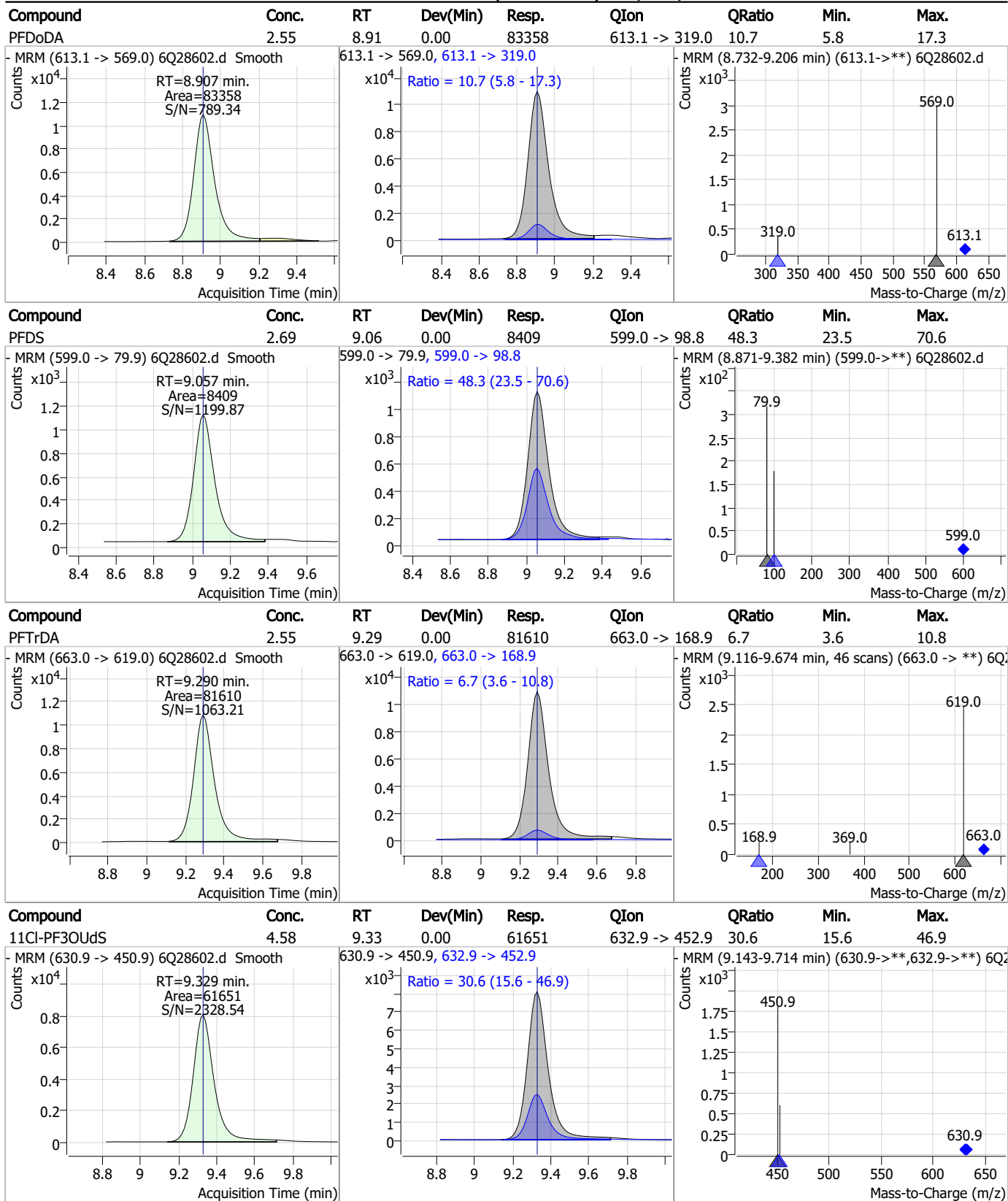
### Perfluorinated Compounds by LC/MS/MS



7.7.14

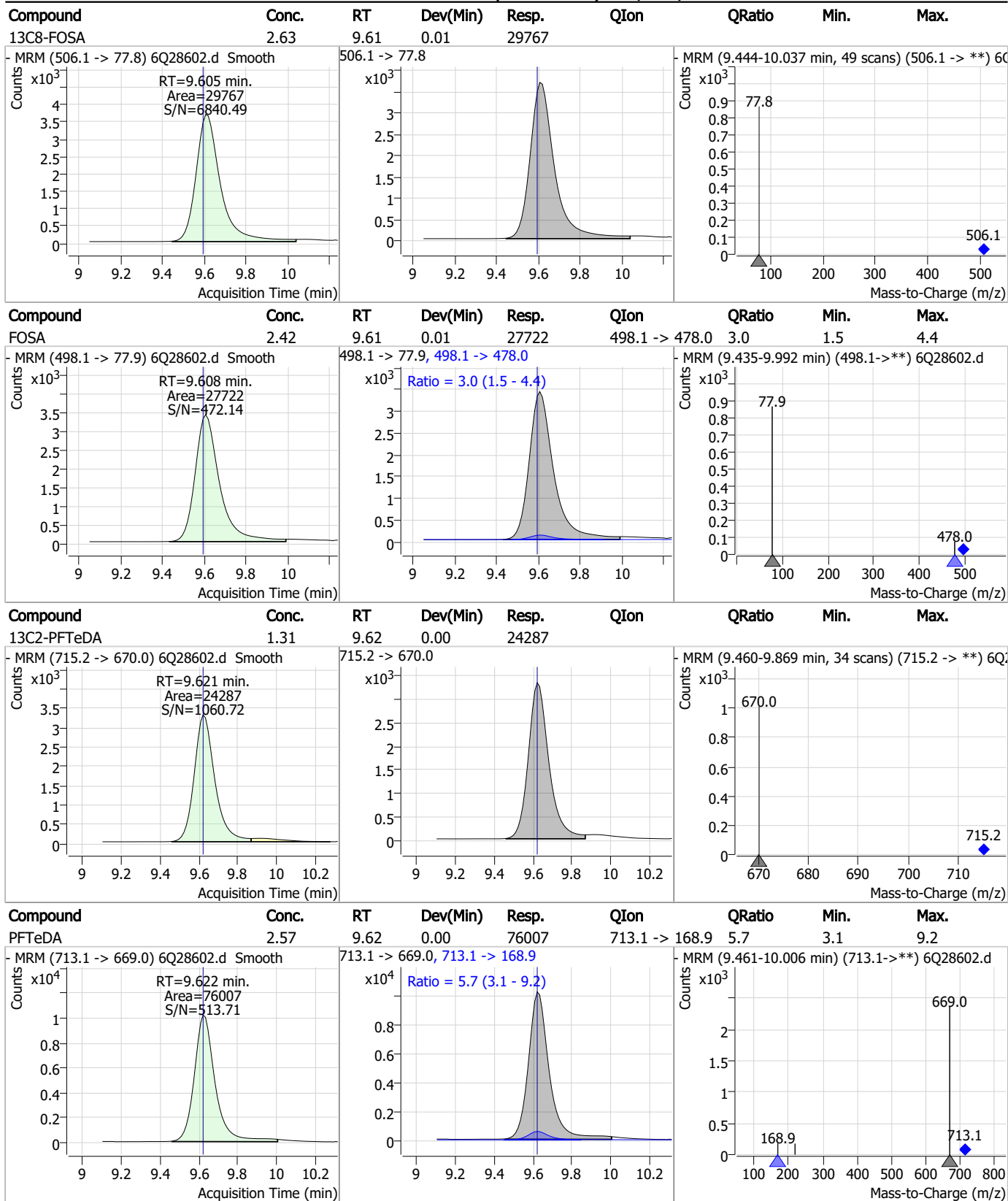
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### Perfluorinated Compounds by LC/MS/MS



7.7.14

### Perfluorinated Compounds by LC/MS/MS

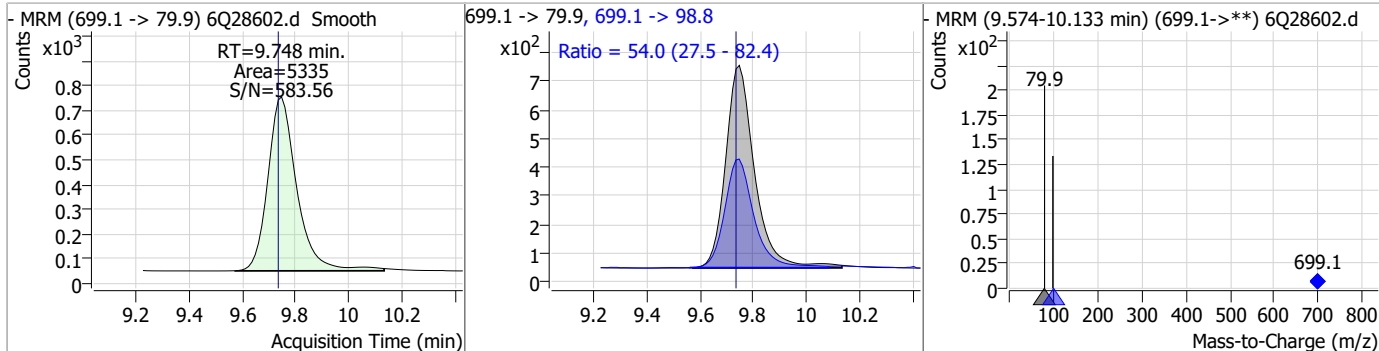


7.7.14

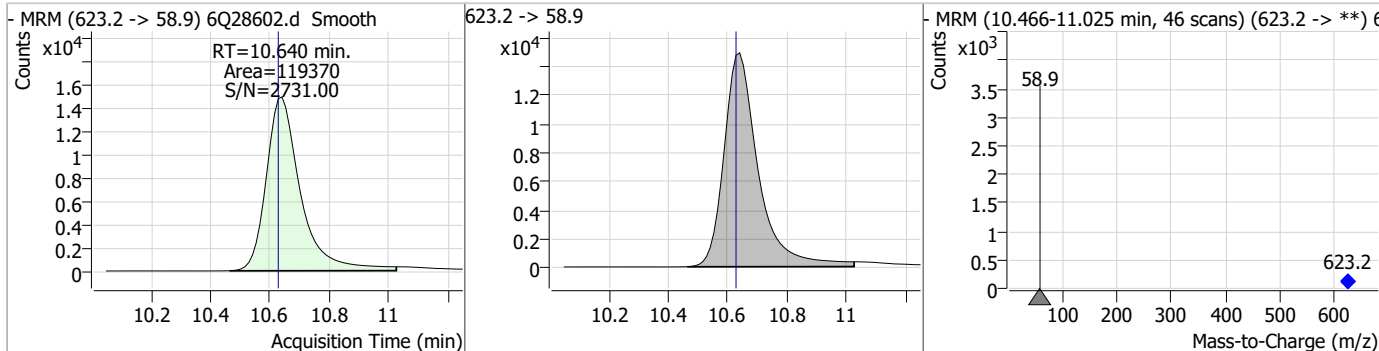


### Perfluorinated Compounds by LC/MS/MS

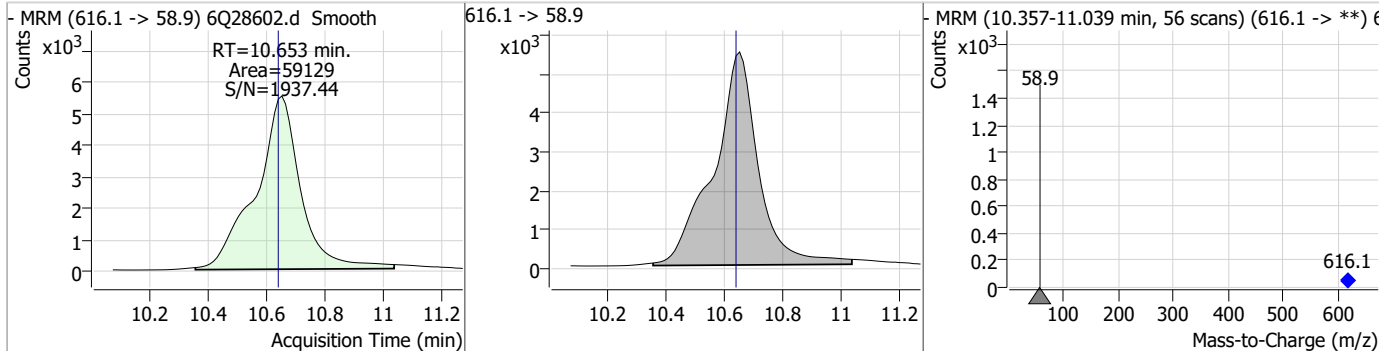
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.65	9.75	0.01	5335	699.1 -> 98.8	54.0	27.5	82.4



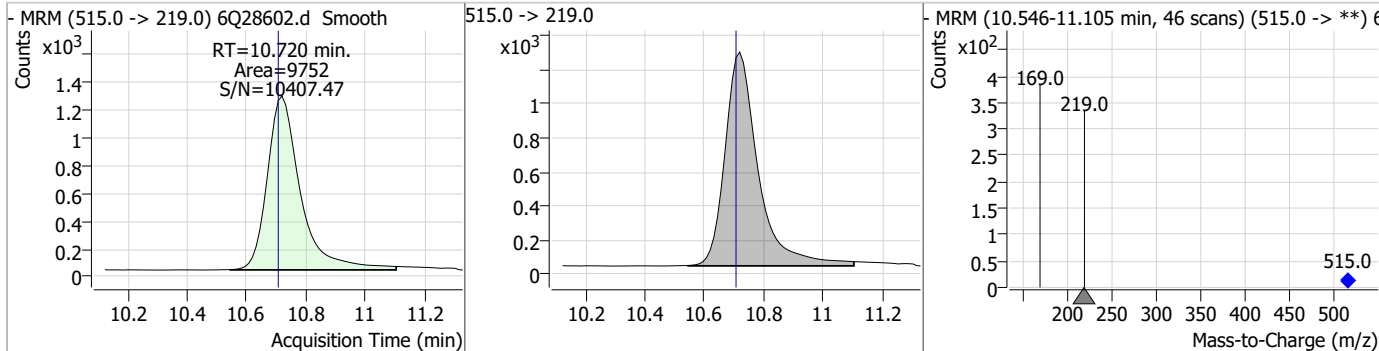
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.71	10.64	0.01	119370				



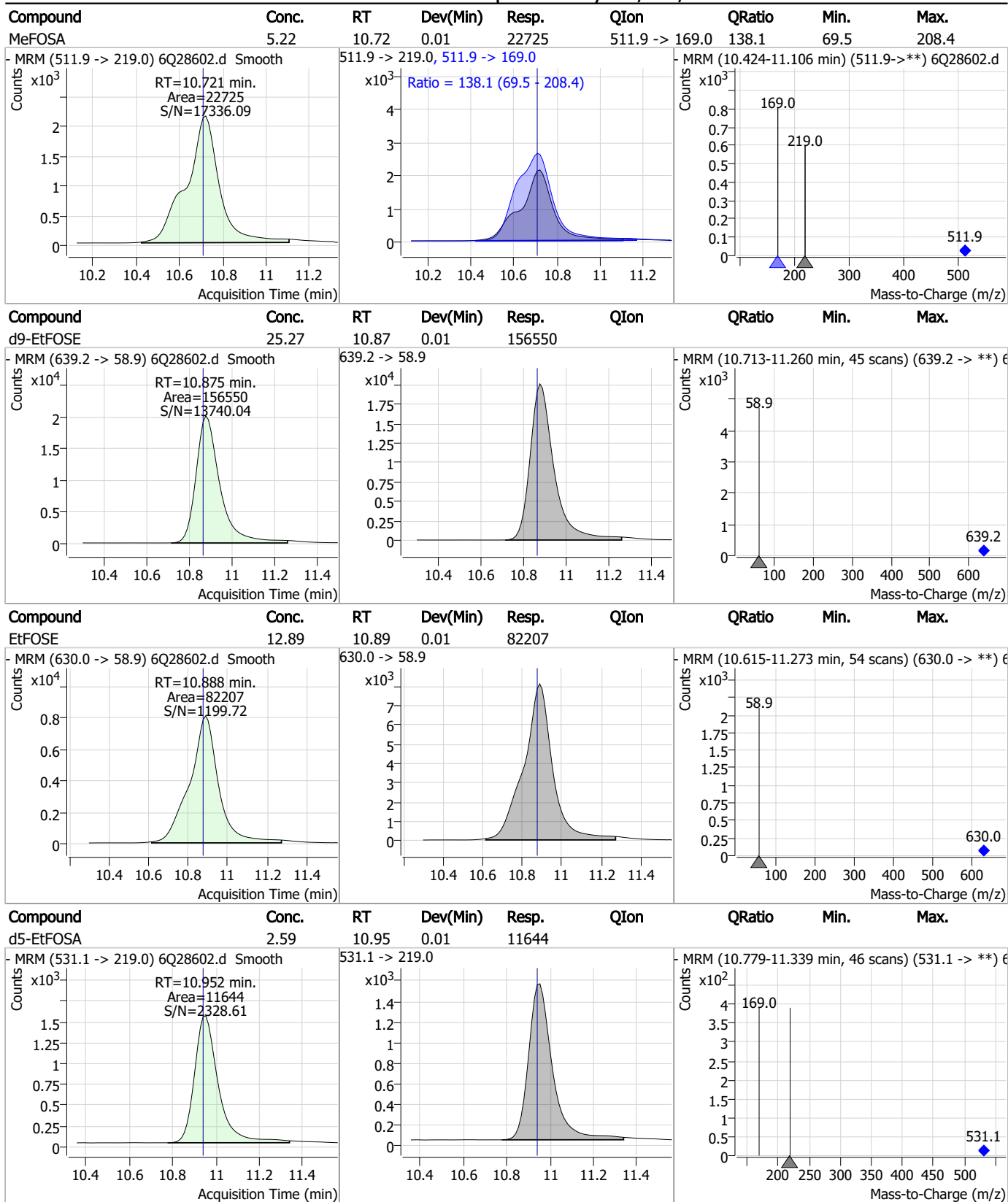
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.14	10.65	0.01	59129				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.49	10.72	0.01	9752				



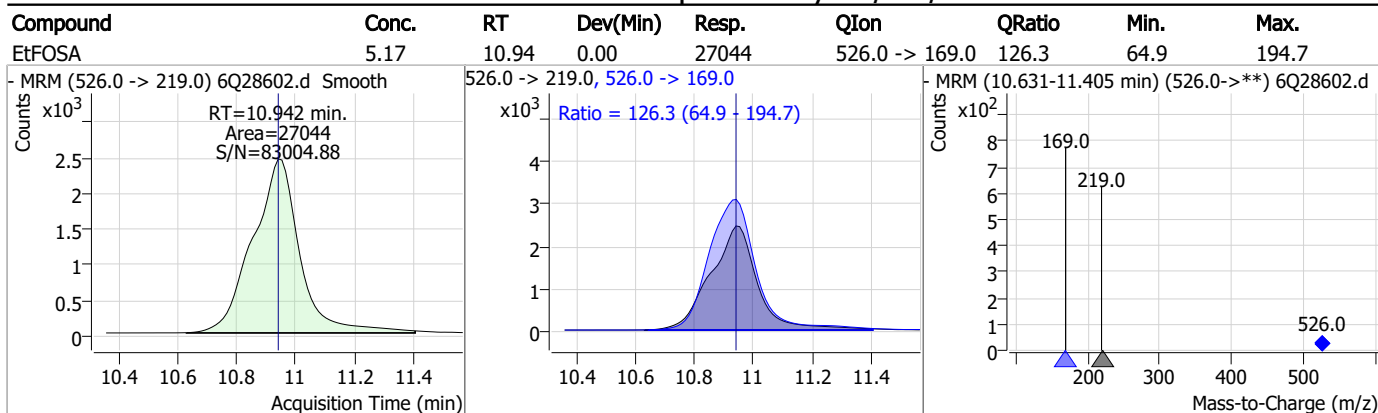
### Perfluorinated Compounds by LC/MS/MS



7.7.14

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### Perfluorinated Compounds by LC/MS/MS



7.7.14  
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# Manual Integration Approval Summary

Sample Number: S6Q396-CC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28602.D      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/20/23 14:25      Supervisor approved: 11/21/23 17:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak
EtFOSAA	2991-50-6		8.31	Split peak

7.7.14.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28679.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/21/2023 9:18:46 AM  
 Sample Name : cc391-4  
 Vial : P1-A5  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	134663	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	47138	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	52225	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	55971	2.50 µg/L	-0.012
M8-PFOA	7.049	421.1 -> 376.0	84317	2.50 µg/L	-0.012
M9-PFNA	7.580	472.1 -> 427.0	32797	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	30591	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	35256	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	43615	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	24543	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	30878	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	20356	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	13090	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	13141	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	3329	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	4887	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	5888	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	32164	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	31445	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	28424	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	117567	25.00 µg/L	0.000
M9-EtFOSE	10.875	639.2 -> 58.9	156335	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	12210	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	9493	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	12126	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	56785	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8248	2.50 µg/L	0.000
13C4-PFOA	7.050	417.1 -> 372.0	91709	2.50 µg/L	-0.012
13C2-PFDA	8.036	515.1 -> 470.1	34033	1.25 µg/L	-0.012
13C5-PFNA	7.581	468.0 -> 423.0	28358	1.25 µg/L	0.013
13C2-PFHxA	5.467	315.1 -> 270.0	47720	2.50 µg/L	-0.025
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	3329	6.28 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.6%		
13C2-6:2FTS	6.836	429.1 -> 80.9	4887	5.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C2-8:2FTS	7.848	529.1 -> 80.9	5888	6.07 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.3%		
13C2-PFDoDA	8.906	615.1 -> 570.0	43615	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.6%		
13C2-PFTeDA	9.621	715.2 -> 670.0	24543	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.0%		
13C3-PFBS	5.384	302.1 -> 79.9	20356	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C3-PFHxS	7.152	402.1 -> 79.9	13090	2.59 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 = 103.7%	
13C4-PFBA	2.860	216.8 -> 171.9	134663	10.25 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C4-PFHpA	6.419	367.1 -> 322.0	55971	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C5-PFHxA	5.478	318.0 -> 273.0	52225	2.63 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C5-PFPeA	4.272	268.3 -> 223.0	47138	4.92 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C6-PFDA	8.048	519.1 -> 474.1	30591	1.16 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C7-PFUnDA	8.489	570.0 -> 525.1	35256	1.12 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.3%	
13C8-FOSA	9.605	506.1 -> 77.8	30878	2.61 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C8-PFOA	7.049	421.1 -> 376.0	84317	2.38 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C8-PFOS	8.185	507.1 -> 79.9	13141	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C9-PFNA	7.580	472.1 -> 427.0	32797	1.38 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.4%	
d3-MeFOSAA	8.105	573.2 -> 419.0	32164	5.12 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	31445	10.61 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
d3-MeFOSA	10.720	515.0 -> 219.0	9493	2.32 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%	
d5-EtFOSAA	8.300	589.2 -> 419.0	28424	5.34 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
d7-MeFOSE	10.628	623.2 -> 58.9	117567	24.22 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
d9-EtFOSE	10.875	639.2 -> 58.9	156335	24.14 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
d5-EtFOSA	10.940	531.1 -> 219.0	12210	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.155	327.1 -> 307.0	49042	9.05 µg/L	99
		327.1 -> 80.9	19956		
6:2FTS	6.836	427.1 -> 407.0	50923	9.57 µg/L	99
		427.1 -> 80.9	18720		
8:2FTS	7.836	527.1 -> 507.0	38327	8.59 µg/L	94
		527.1 -> 80.8	15230		
EtFOSAA	8.301	584.2 -> 419.1	12197	2.65 µg/L	88
		584.2 -> 526.0	7021		
FOSA	9.608	498.1 -> 77.9	29167	2.46 µg/L	99
		498.1 -> 478.0	748		
MeFOSAA	8.106	570.1 -> 419.0	15275	2.52 µg/L	99
		570.1 -> 483.0	3578		
PFBA	2.868	212.8 -> 168.9	45646	10.34 µg/L	100
PFBS	5.385	298.7 -> 79.9	16201	2.09 µg/L	95
		298.7 -> 98.8	6531		
PFDA	8.048	512.9 -> 469.0	69563	2.45 µg/L	99
		512.9 -> 219.0	10619		
PFDODA	8.907	613.1 -> 569.0	82451	2.55 µg/L	99
		613.1 -> 319.0	9207		
PFDS	9.057	599.0 -> 79.9	8332	2.44 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	4094			
PFHpA	6.419	363.1 -> 319.0	66855	2.32	µg/L	100
		363.1 -> 169.0	10000			
PFHpS	7.694	449.0 -> 79.9	13007	2.33	µg/L	91
		449.0 -> 98.9	6987			
PFHxA	5.481	313.0 -> 269.0	45867	2.35	µg/L	99
		313.0 -> 118.9	2349			
PFHxS	7.153	398.7 -> 79.9	14660	2.41	µg/L	m 84
		398.7 -> 98.9	6734			
PFNA	7.568	463.0 -> 419.0	44977	2.20	µg/L	100
		463.0 -> 219.0	10188			
PFNS	8.639	548.8 -> 79.9	11191	2.41	µg/L	96
		548.8 -> 98.9	6014			
PFOA	7.051	413.0 -> 369.0	80288	2.40	µg/L	100
		413.0 -> 169.0	14655			
PFOS	8.186	498.9 -> 79.9	12317	2.11	µg/L	m 90
		498.9 -> 98.8	6855			
PFPeA	4.274	263.0 -> 219.0	62671	5.24	µg/L	100
PFPeS	6.458	349.1 -> 79.9	15716	2.43	µg/L	97
		349.1 -> 98.9	7024			
PFTeDA	9.622	713.1 -> 669.0	72612	2.43	µg/L	99
		713.1 -> 168.9	4743			
PFTrDA	9.290	663.0 -> 619.0	79993	2.52	µg/L	99
		663.0 -> 168.9	5613			
PFUnDA	8.489	563.1 -> 519.0	69733	2.54	µg/L	94
		563.1 -> 269.1	9375			
11CI-PF3OUdS	9.317	630.9 -> 450.9	60491	4.42	µg/L	99
		632.9 -> 452.9	19215			
9CI-PF3ONS	8.503	530.8 -> 351.0	91808	4.87	µg/L	90
		532.8 -> 353.0	23966			
ADONA	6.669	376.9 -> 250.9	256359	4.67	µg/L	98
		376.9 -> 84.8	67024			
HFPO-DA	5.844	284.9 -> 168.9	14472	4.60	µg/L	96
		284.9 -> 184.9	1694			
3:3FTCA	3.721	241.0 -> 177.0	9035	11.60	µg/L	100
		241.0 -> 117.0	1063			
5:3FTCA	6.146	341.0 -> 237.1	217940	61.01	µg/L	98
		341.0 -> 217.0	150984			
7:3FTCA	7.545	441.0 -> 316.9	135693	59.98	µg/L	93
		441.0 -> 336.9	295974			
EtFOSA	10.942	526.0 -> 219.0	26947	4.91	µg/L	98
		526.0 -> 169.0	34407			
EtFOSE	10.888	630.0 -> 58.9	80978	12.72	µg/L	100
MeFOSA	10.709	511.9 -> 219.0	23186	5.47	µg/L	98
		511.9 -> 169.0	31598			
MeFOSE	10.653	616.1 -> 58.9	59292	12.36	µg/L	100
PFDoDS	9.736	699.1 -> 79.9	5306	2.41	µg/L	94
		699.1 -> 98.8	2680			
NFDHA	5.360	295.0 -> 201.0	10588	4.68	µg/L	97
		295.0 -> 84.9	2833			
PFMBA	4.687	279.0 -> 85.1	42471	5.15	µg/L	100
PFMPA	3.413	229.0 -> 84.9	32027	5.18	µg/L	100
PFEESA	5.925	314.8 -> 134.9	102813	4.26	µg/L	100
		314.8 -> 82.9	3669			

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



7.7.15  
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### Perfluorinated Compounds by LC/MS/MS

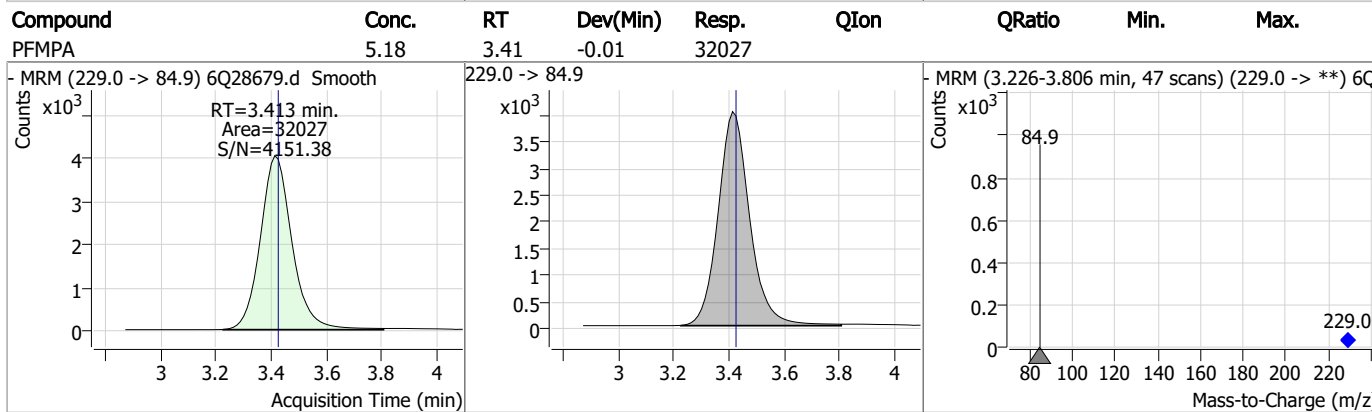
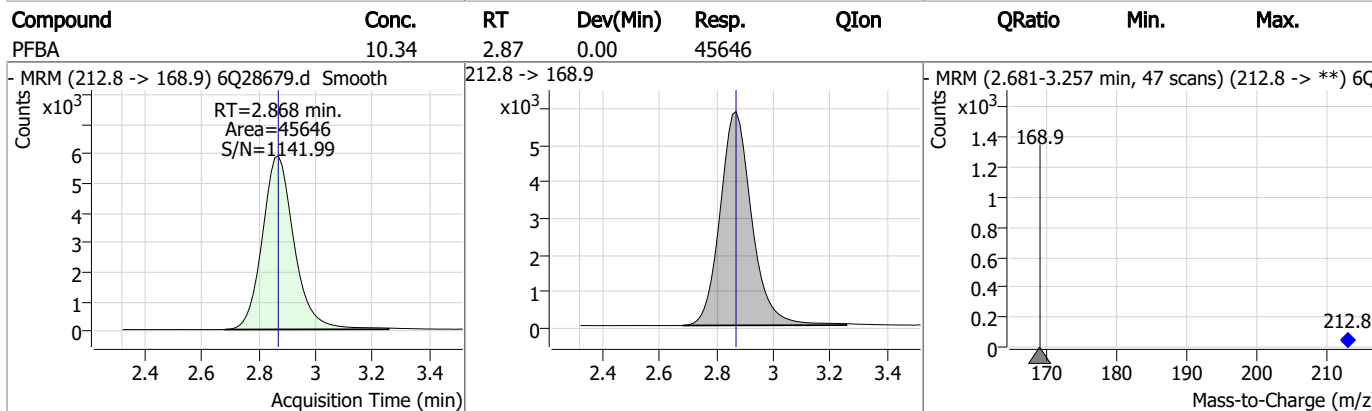
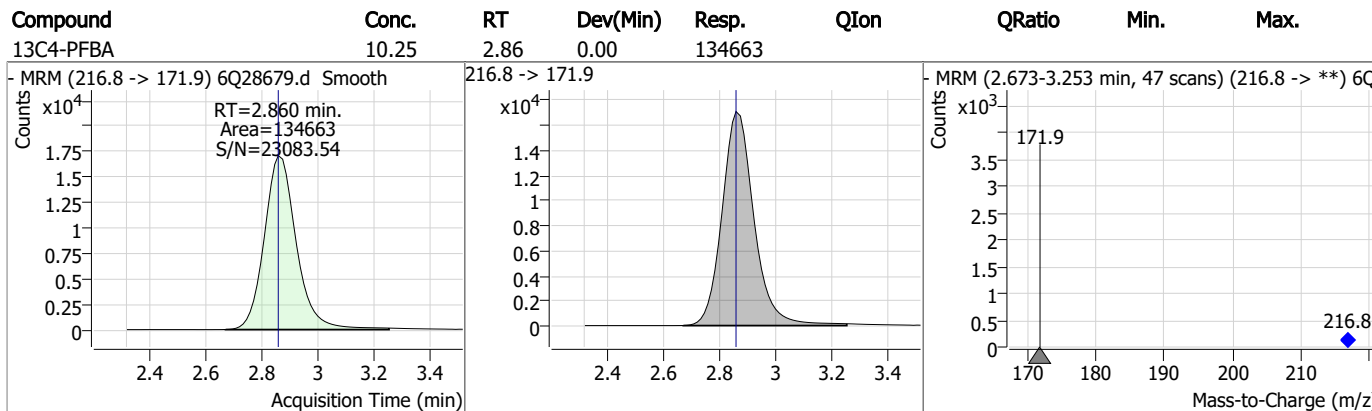
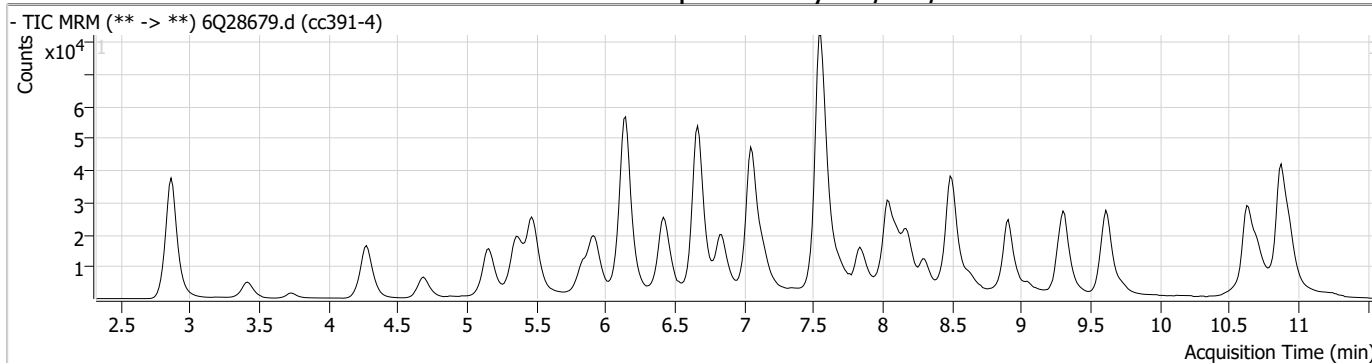
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.15

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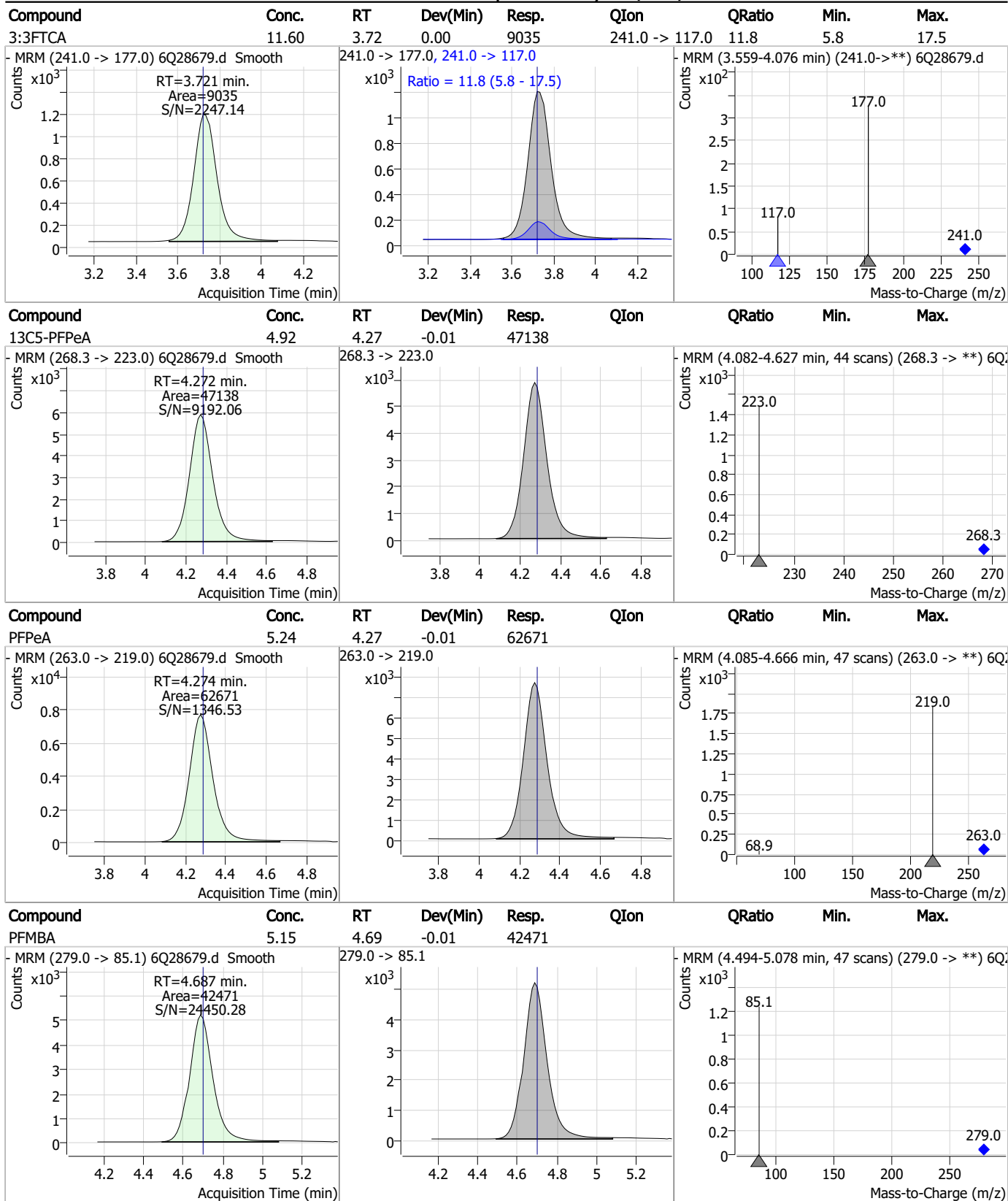


### Perfluorinated Compounds by LC/MS/MS



7.7.15  
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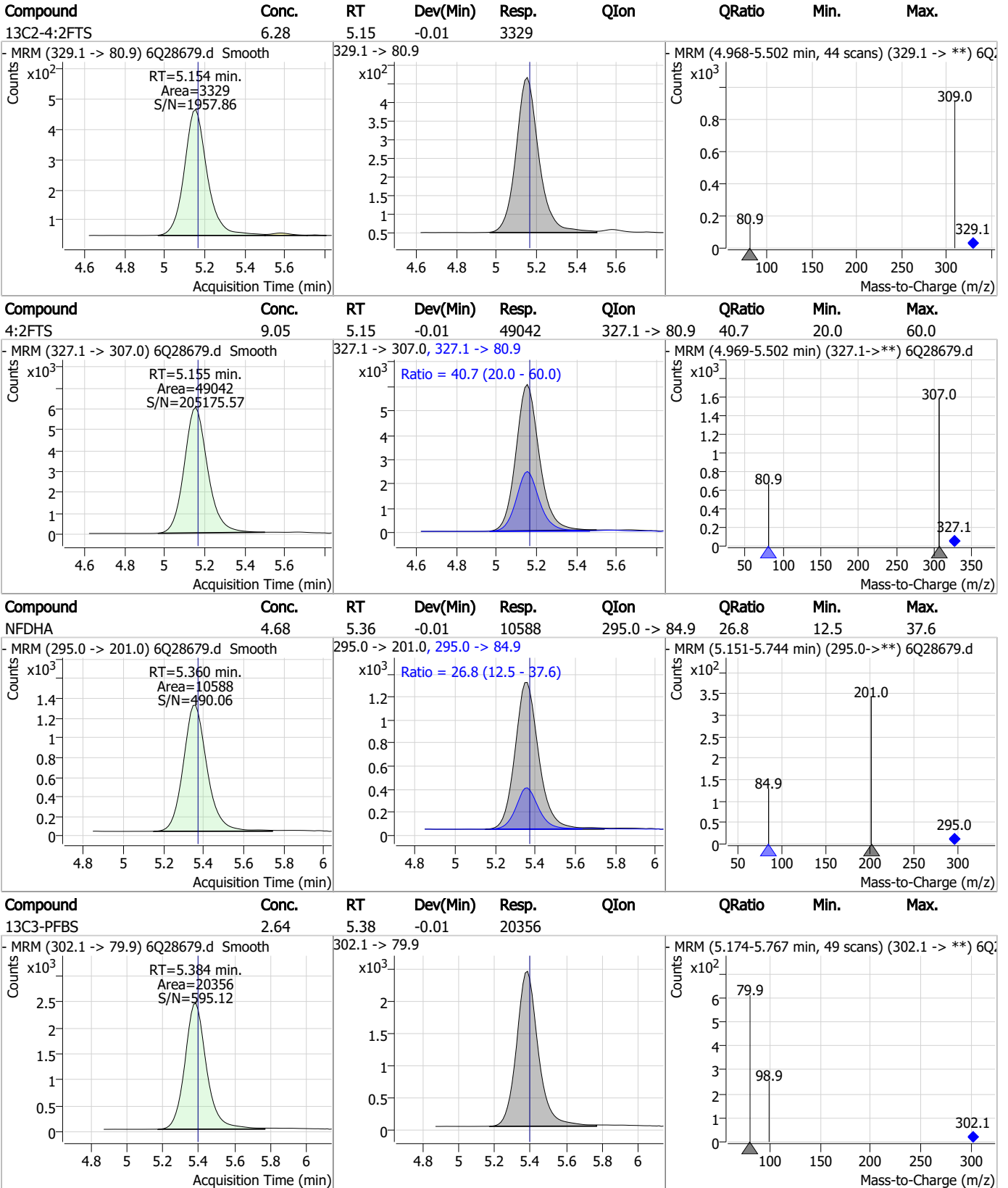
### Perfluorinated Compounds by LC/MS/MS



7.7.15

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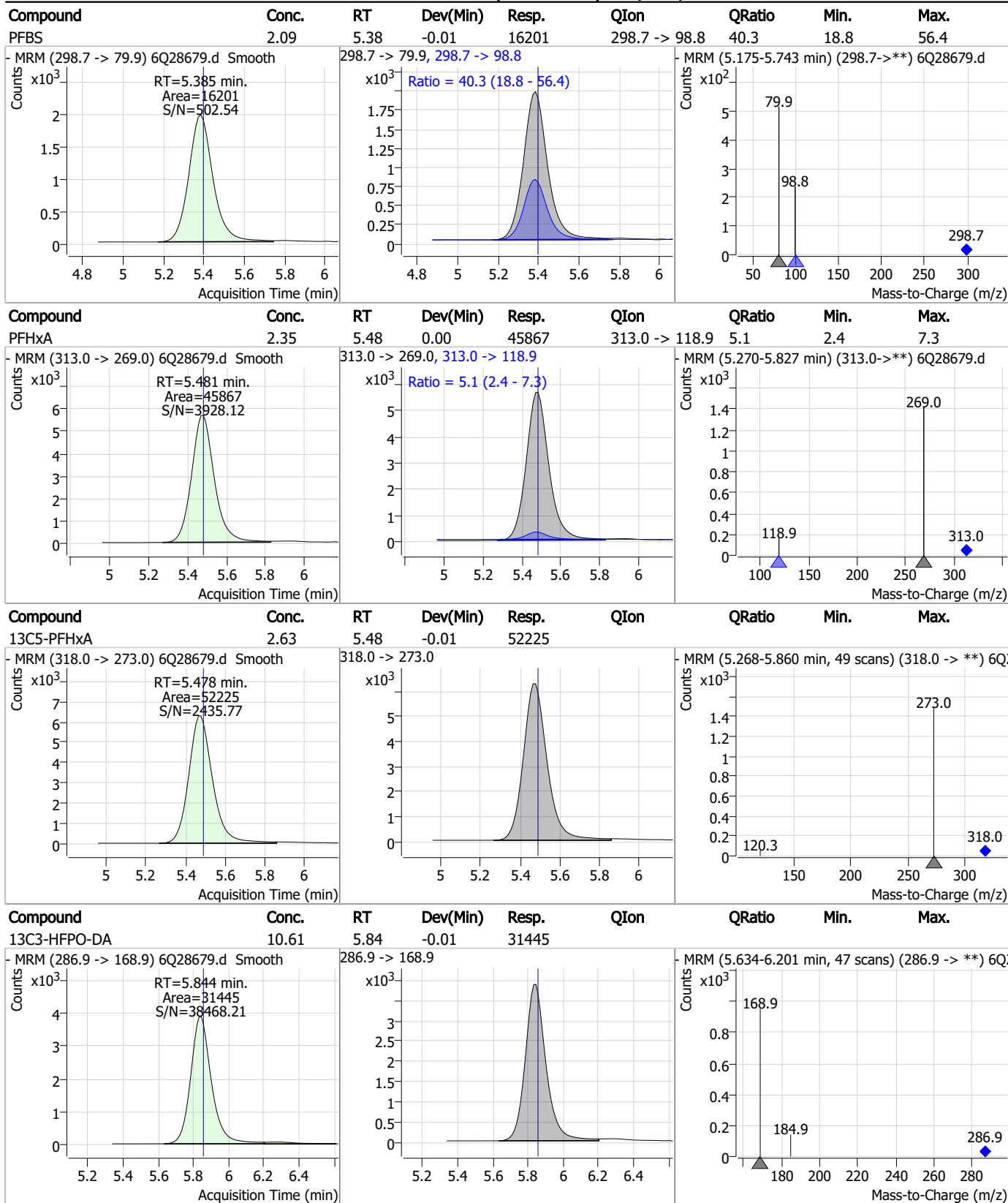
### Perfluorinated Compounds by LC/MS/MS



7.7.15 7



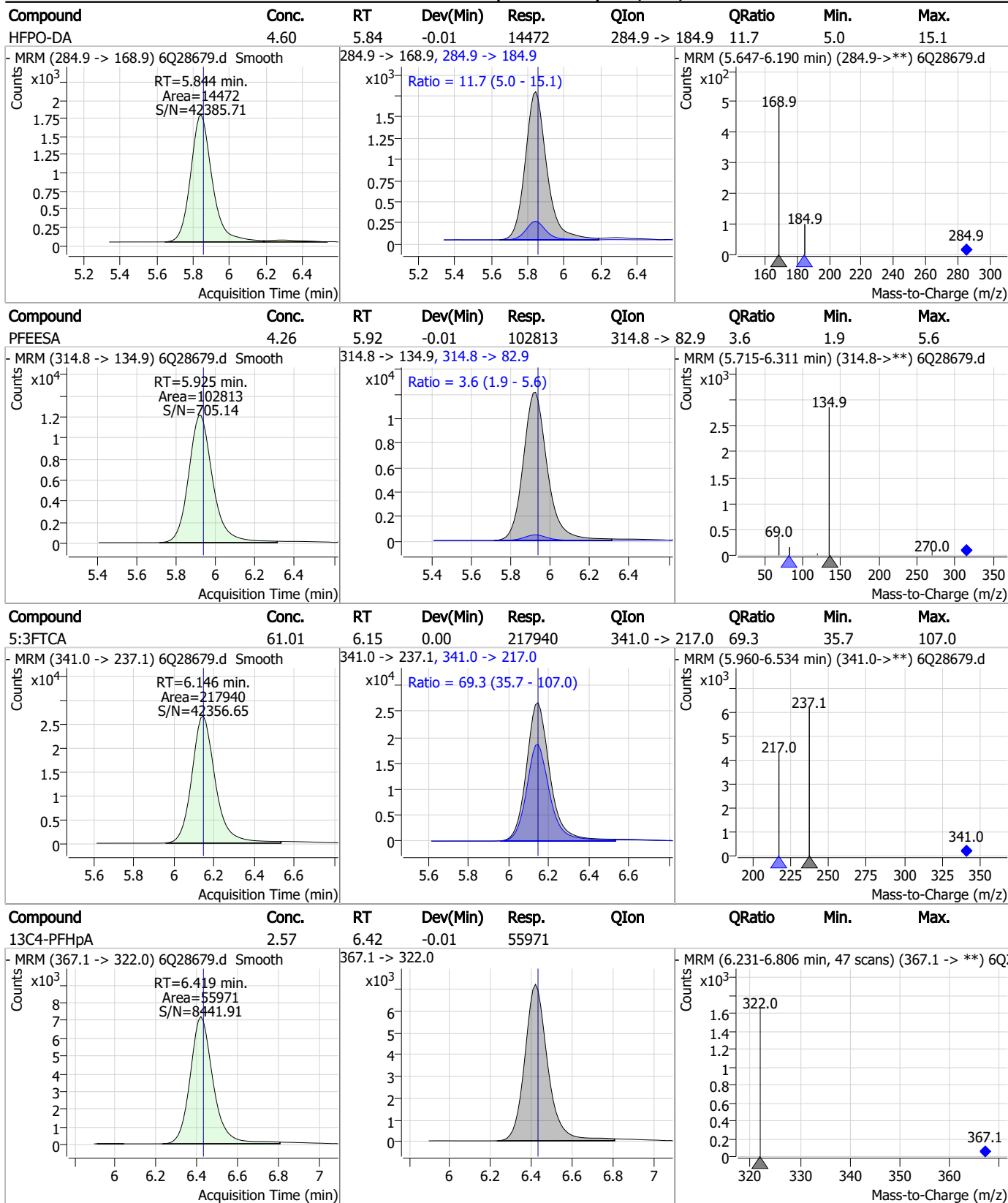
### Perfluorinated Compounds by LC/MS/MS



7.7.15

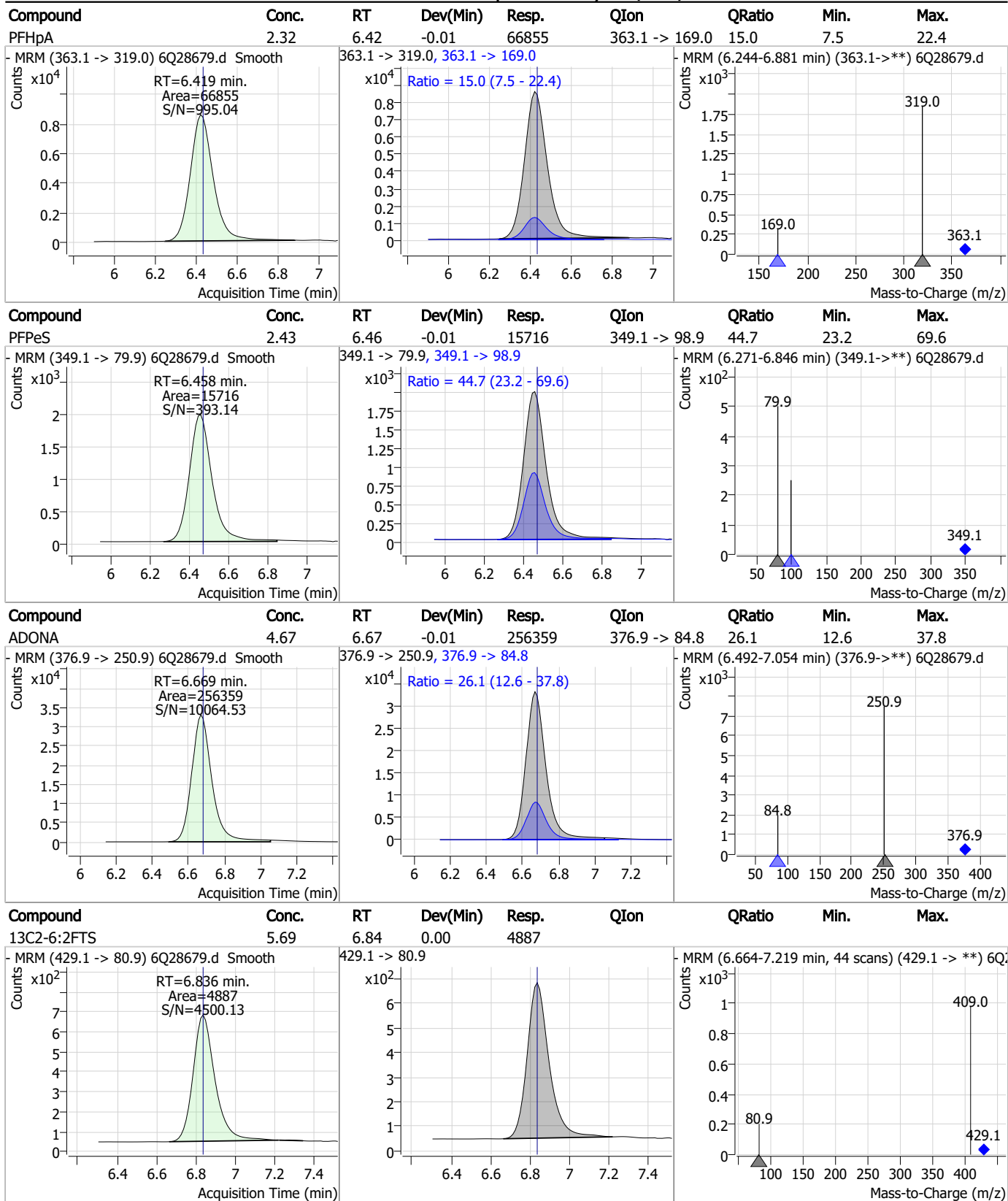
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### Perfluorinated Compounds by LC/MS/MS



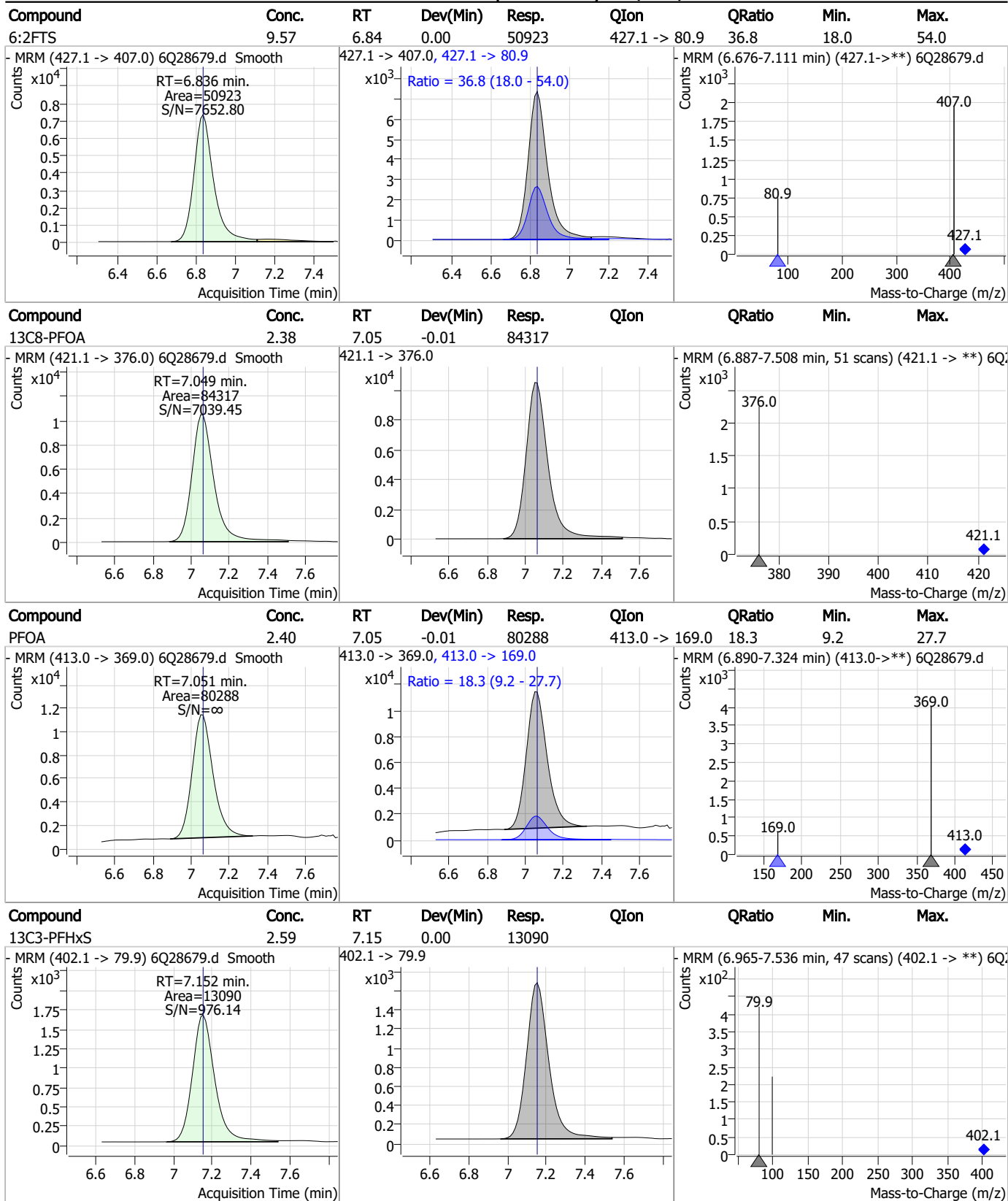
7.7.15  
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### Perfluorinated Compounds by LC/MS/MS



7.7.15  
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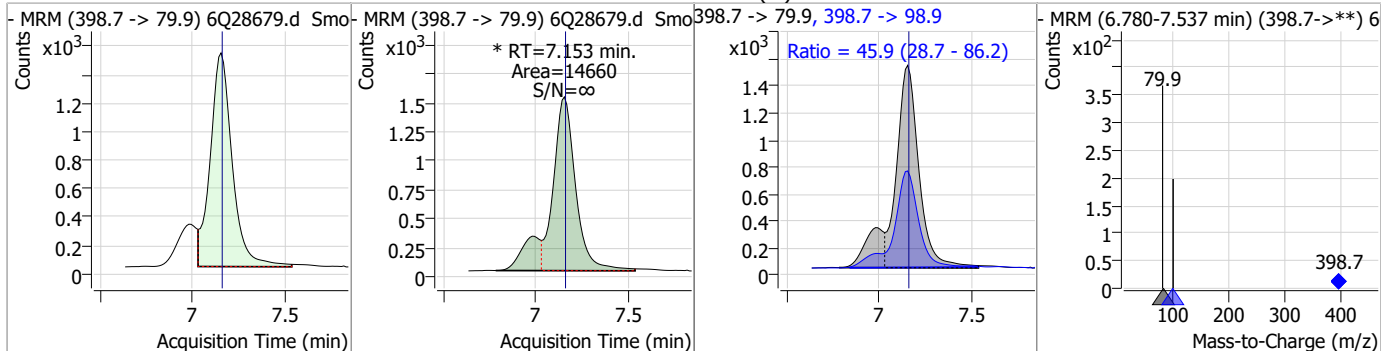
### Perfluorinated Compounds by LC/MS/MS



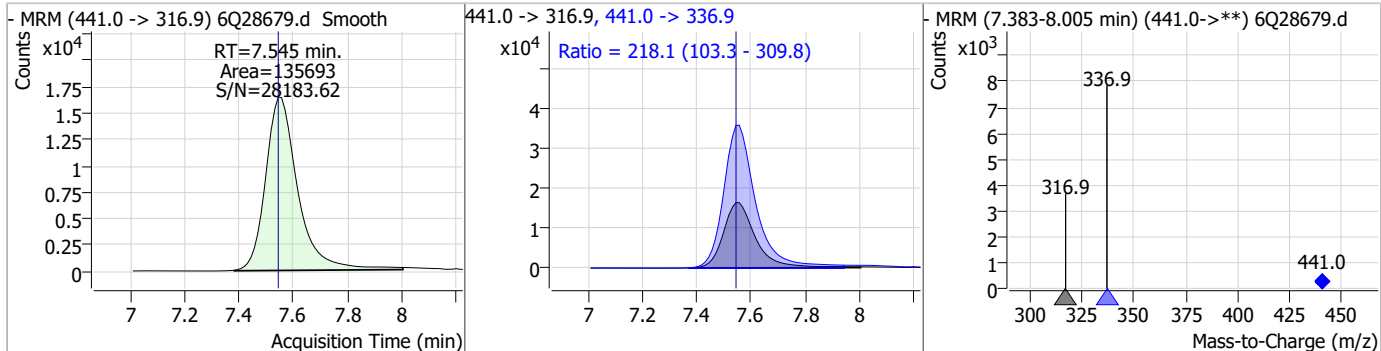
7.7.15  
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### Perfluorinated Compounds by LC/MS/MS

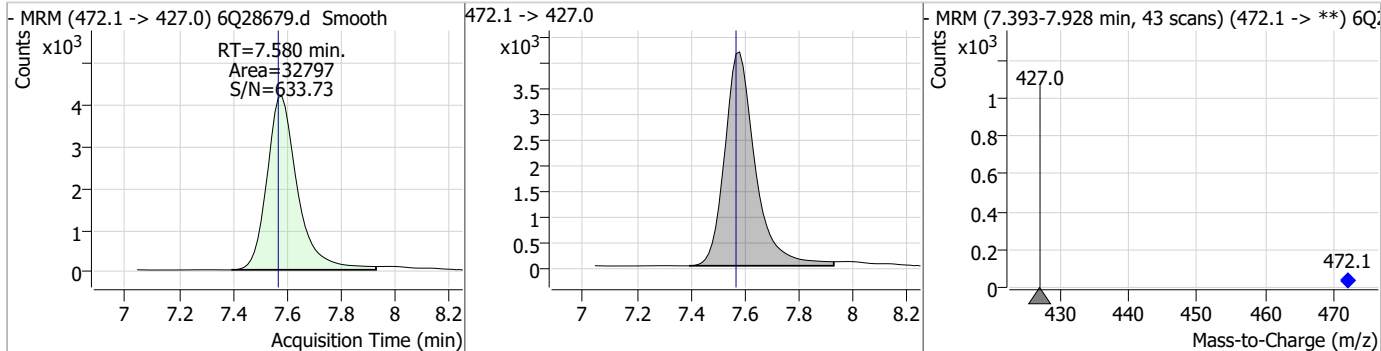
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.41	7.15	0.00	14660 (m)	398.7 -> 98.9	45.9	28.7	86.2



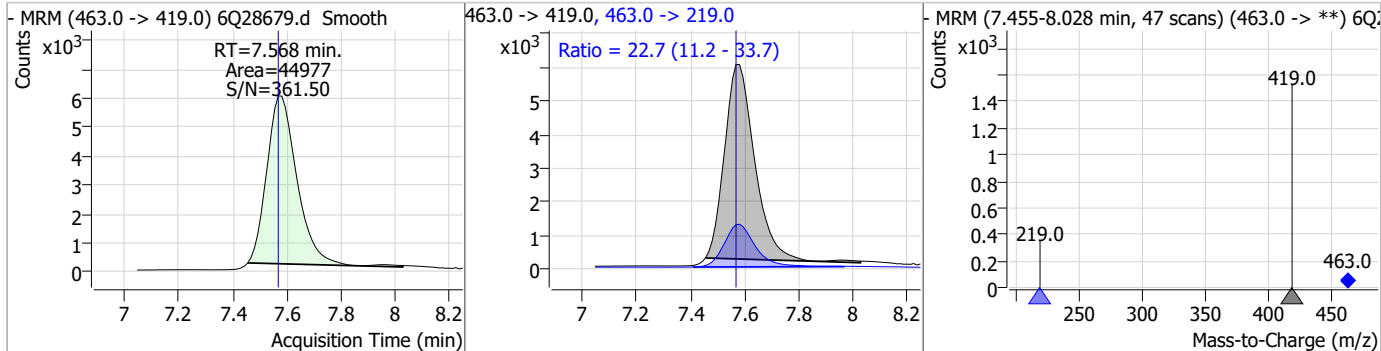
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	59.98	7.55	0.00	135693	441.0 -> 336.9	218.1	103.3	309.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.38	7.58	0.01	32797	472.1 -> 427.0			

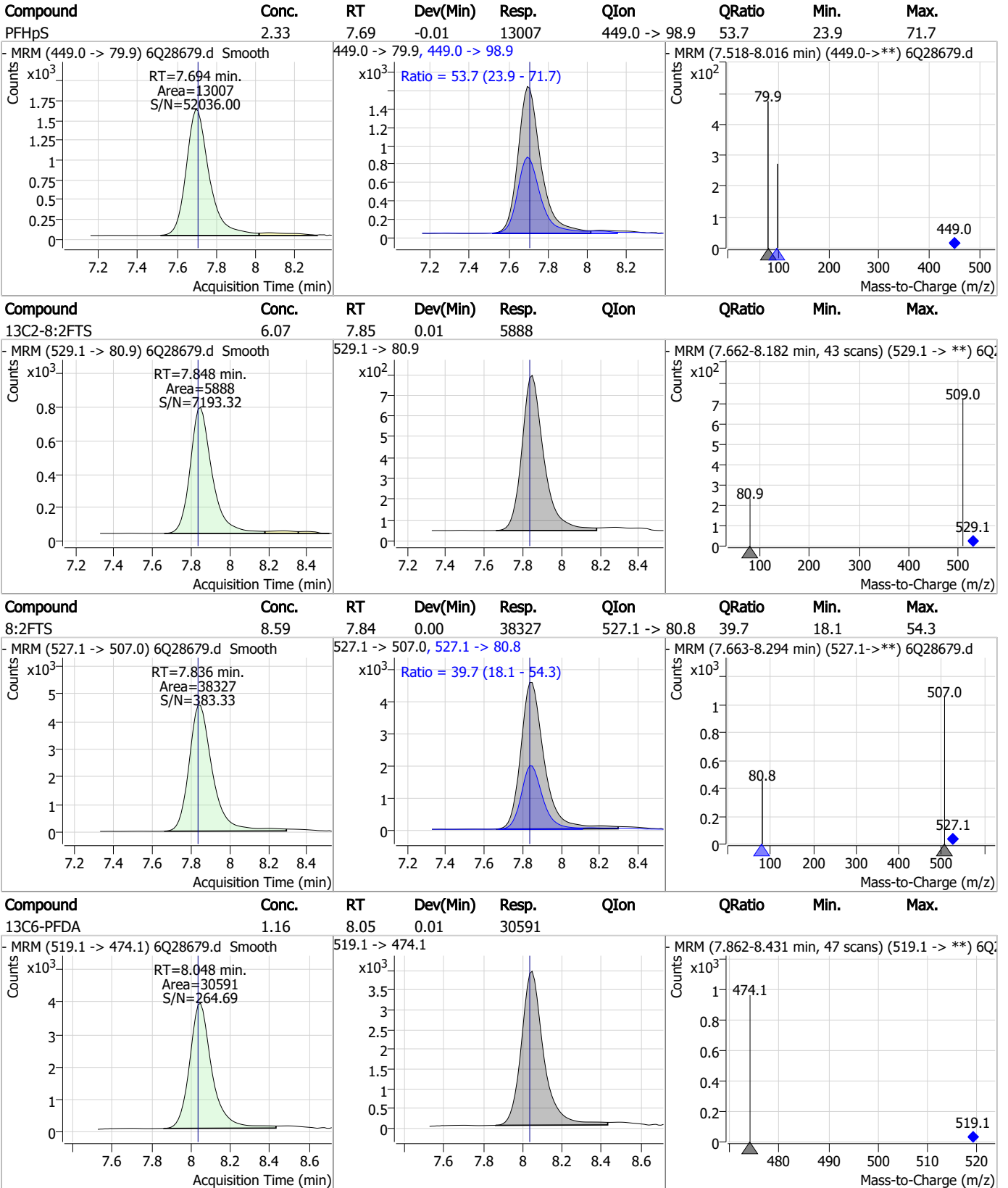


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.20	7.57	0.00	44977	463.0 -> 219.0	22.7	11.2	33.7





### Perfluorinated Compounds by LC/MS/MS

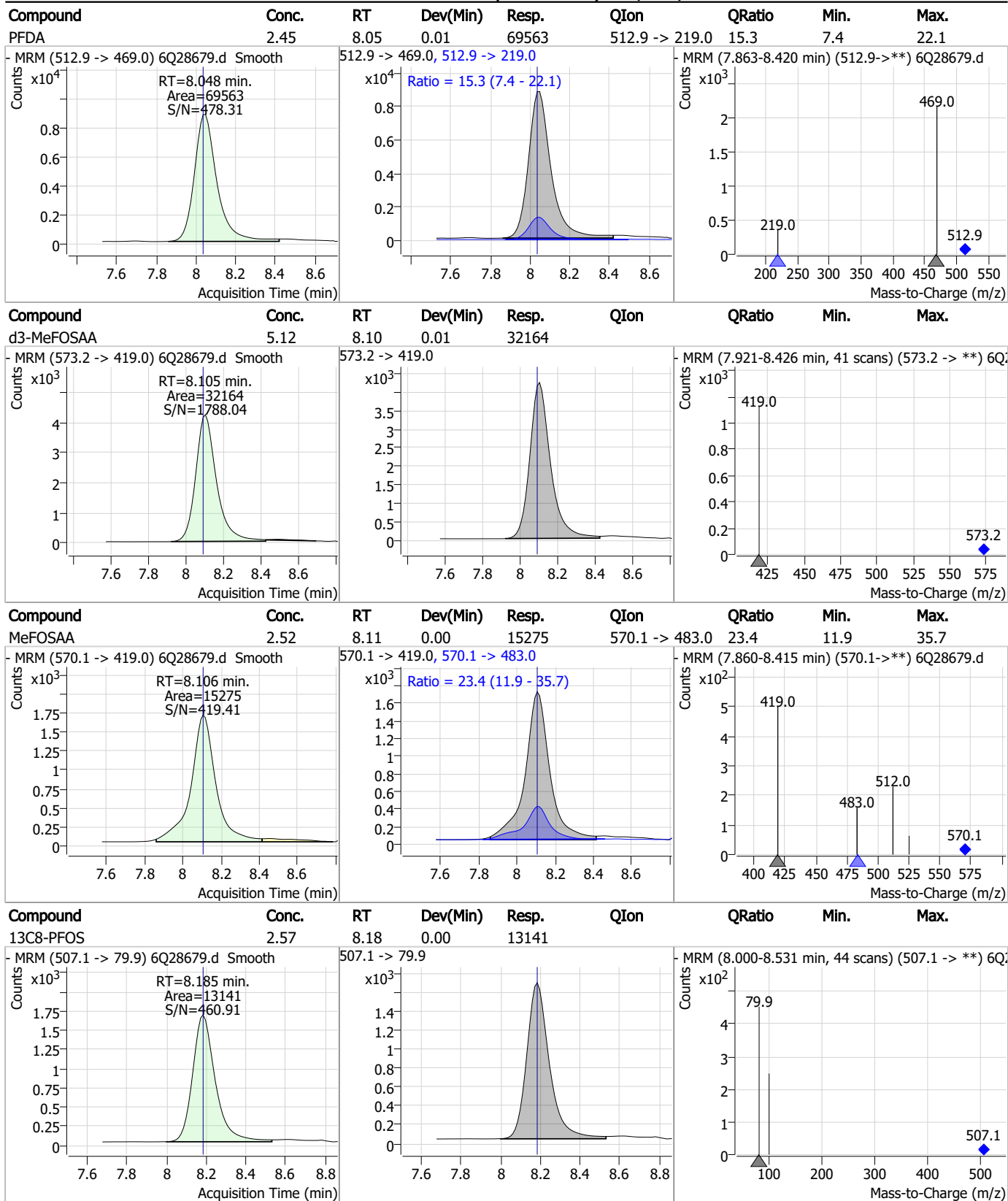


7.7.15

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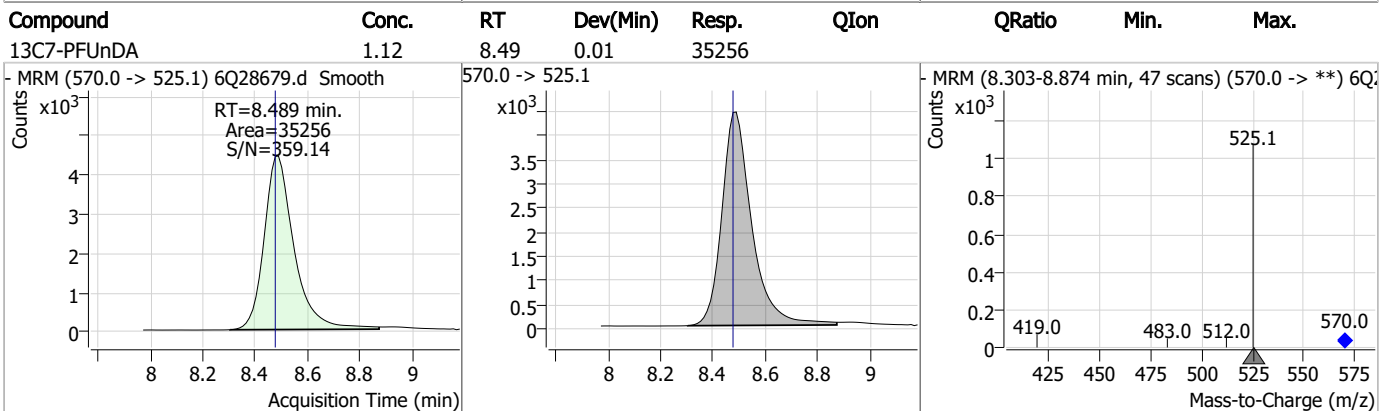
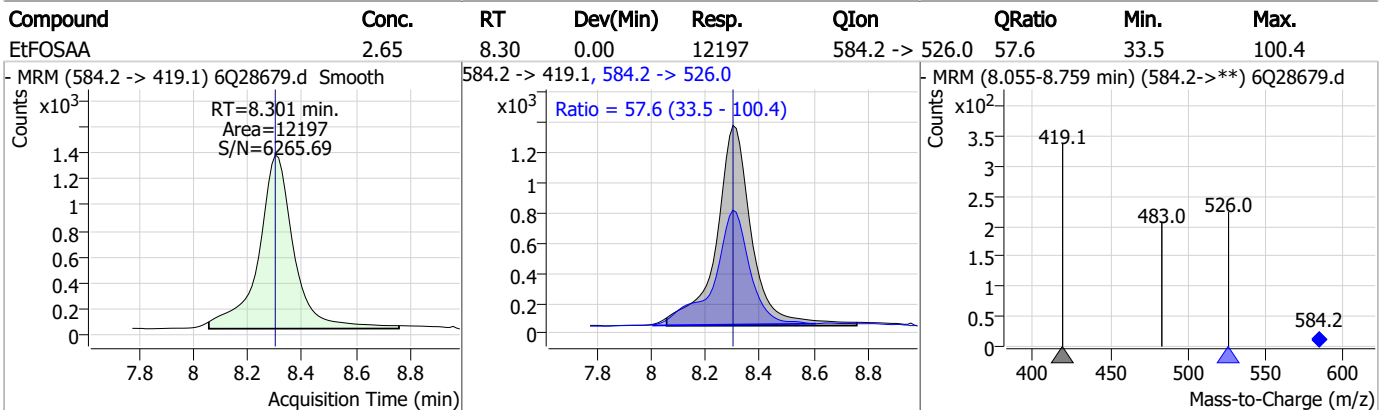
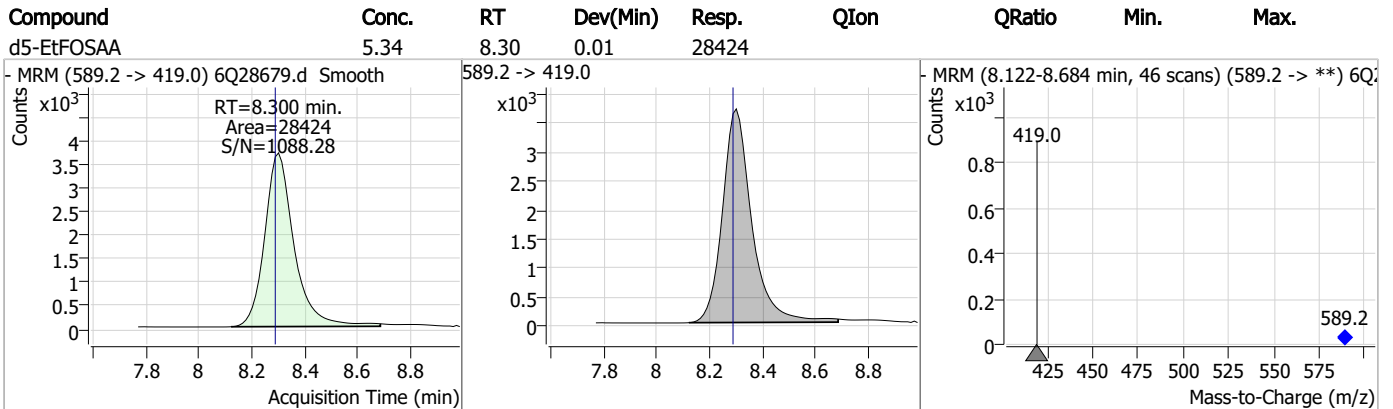
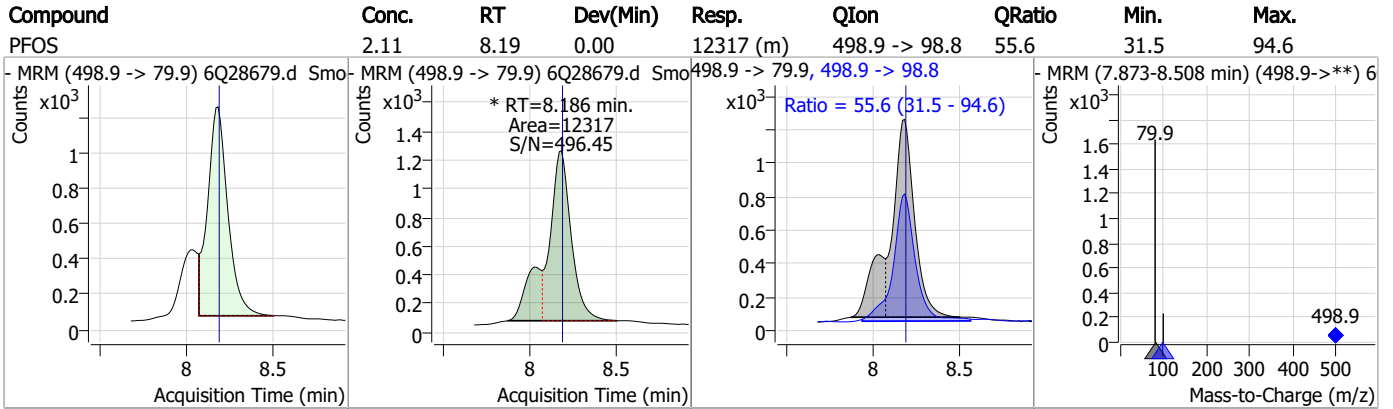


### Perfluorinated Compounds by LC/MS/MS



7.7.15  
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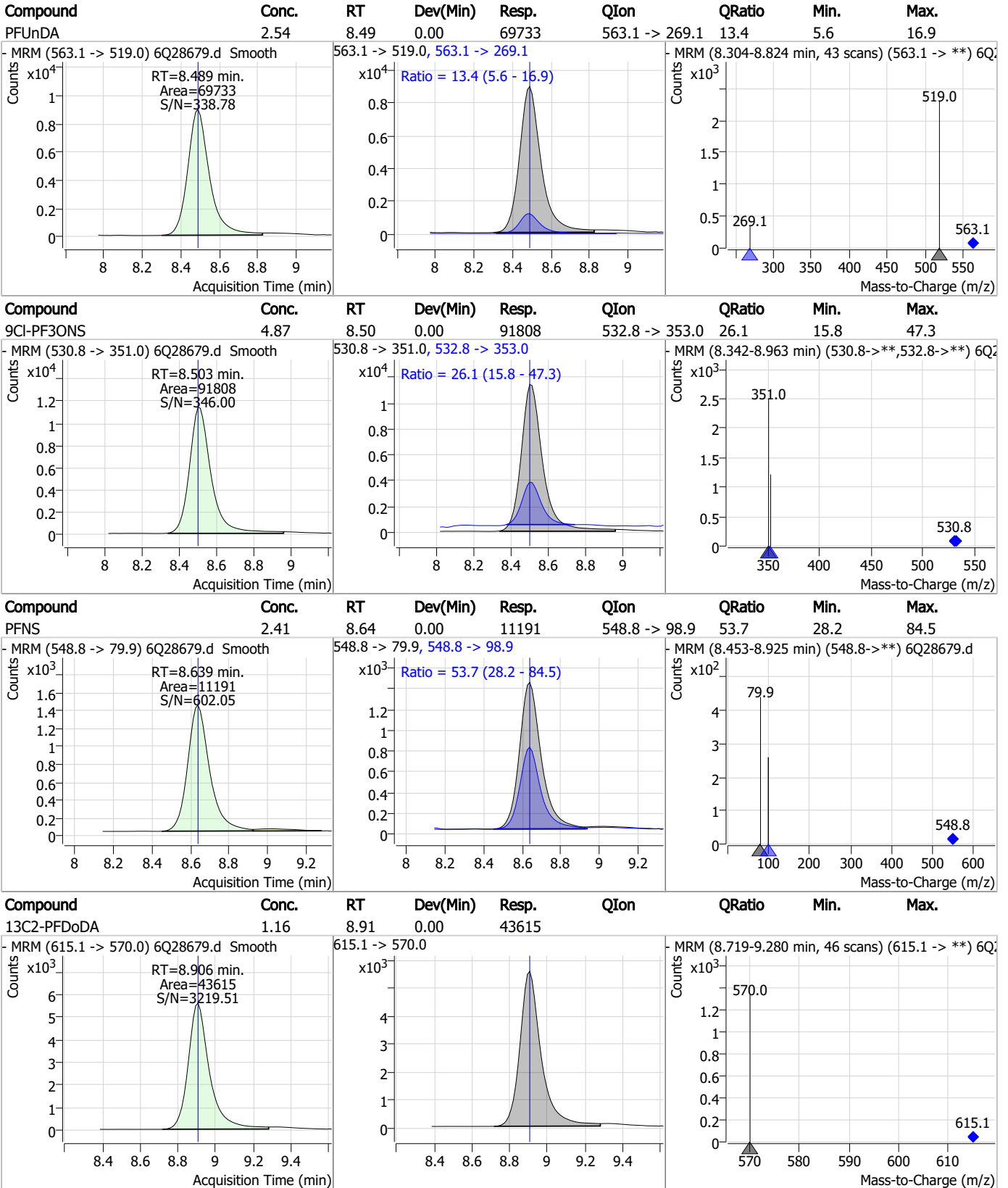
### Perfluorinated Compounds by LC/MS/MS



7.7.15  
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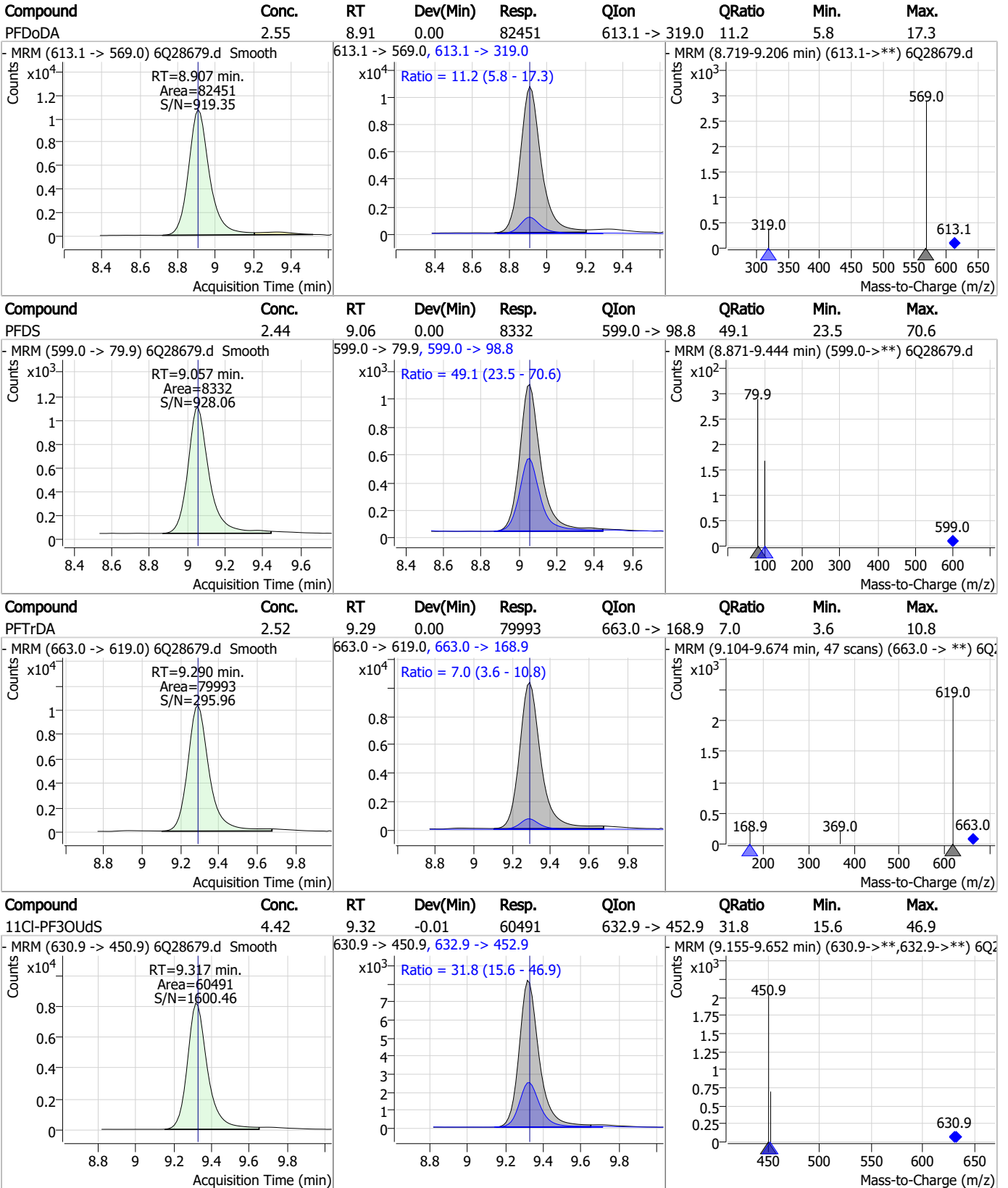
### Perfluorinated Compounds by LC/MS/MS



7.7.15 7



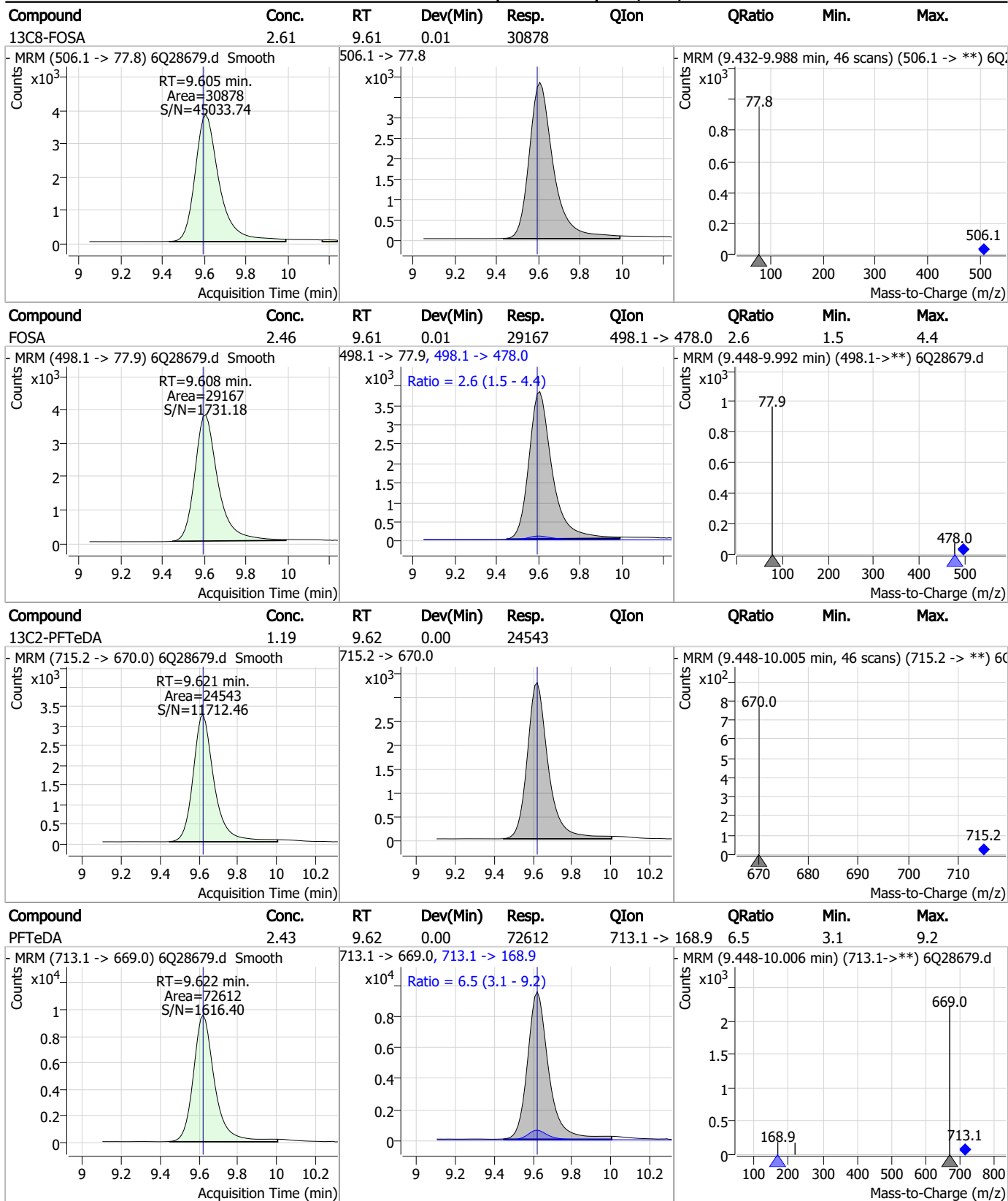
### Perfluorinated Compounds by LC/MS/MS



7.7.15 7

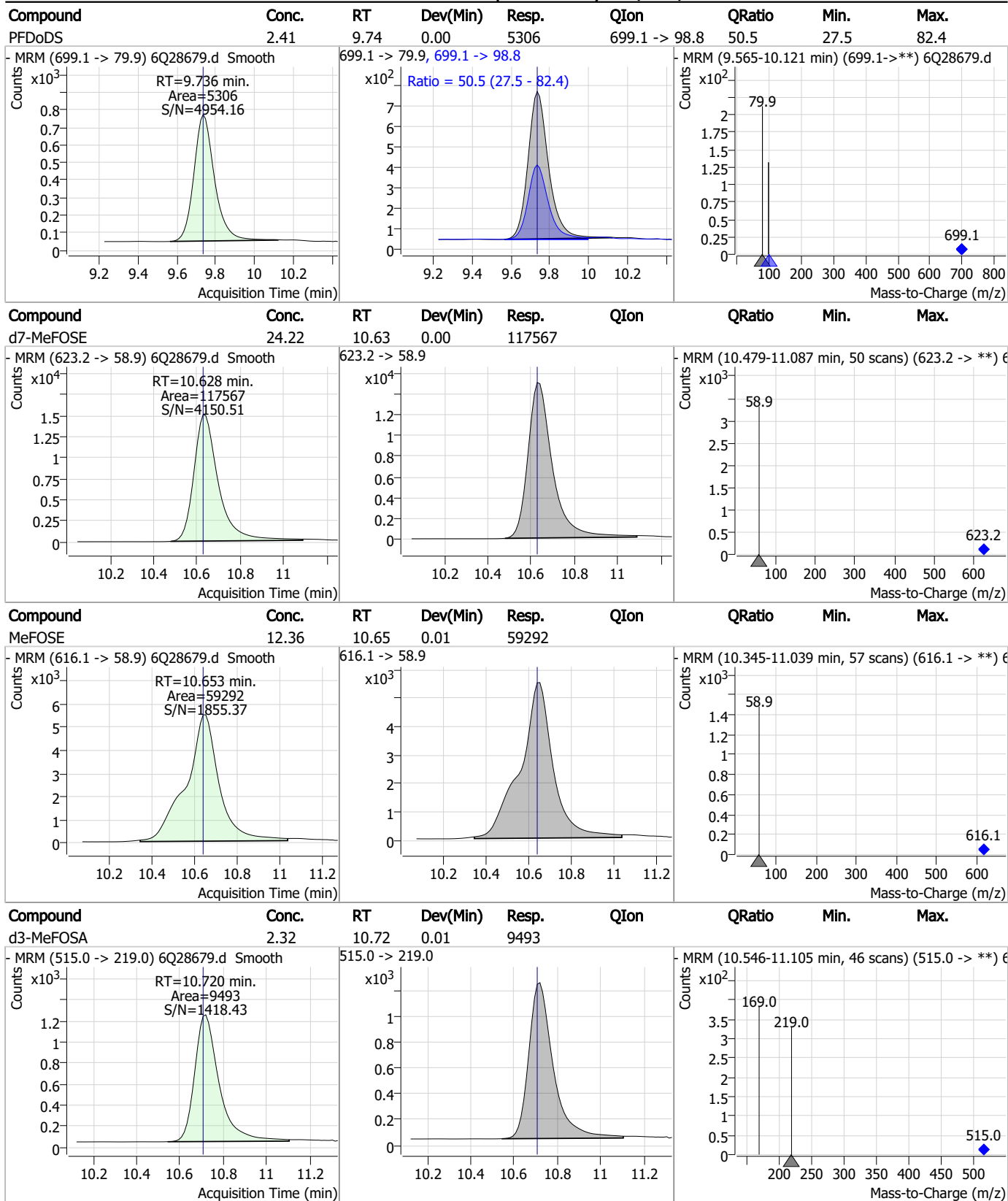


### Perfluorinated Compounds by LC/MS/MS



7.7.15  
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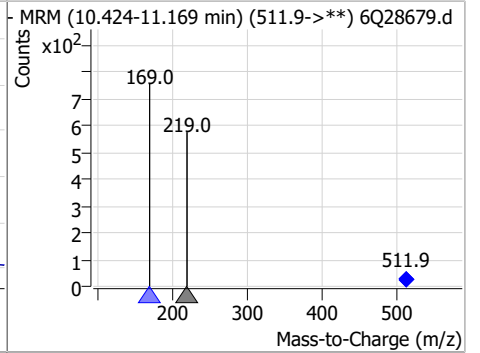
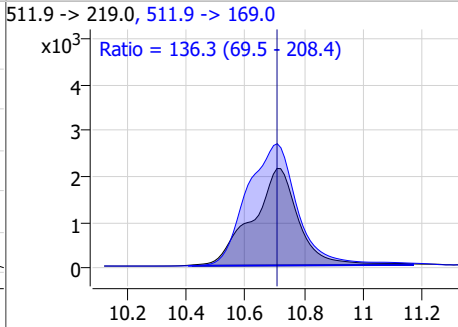
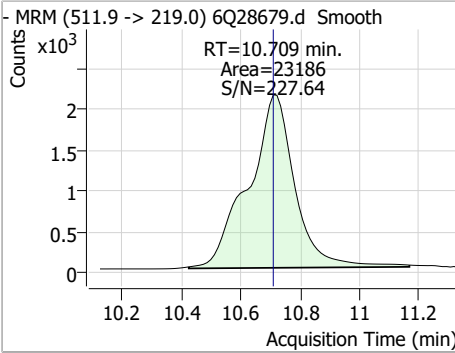
### Perfluorinated Compounds by LC/MS/MS



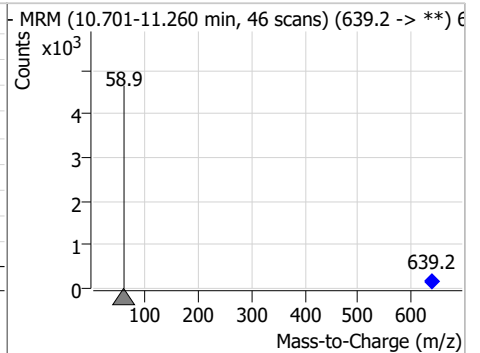
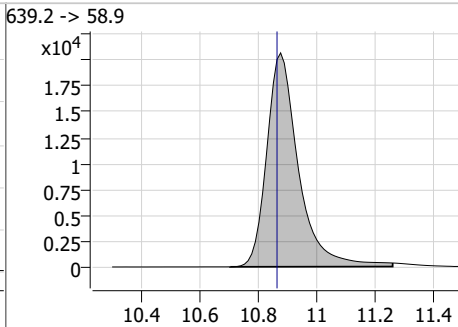
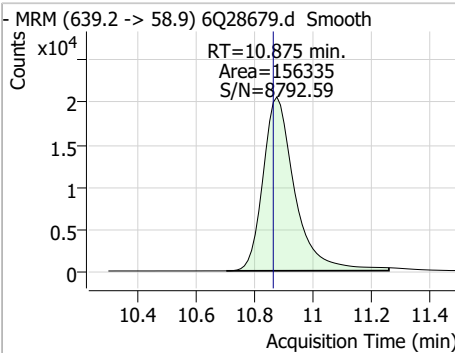
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### Perfluorinated Compounds by LC/MS/MS

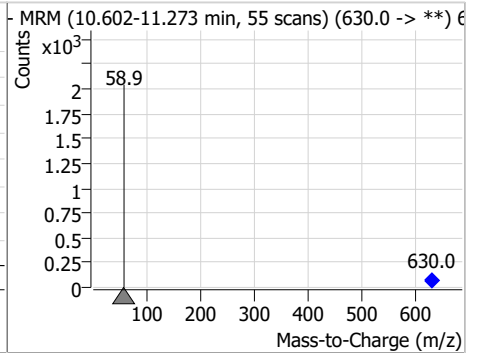
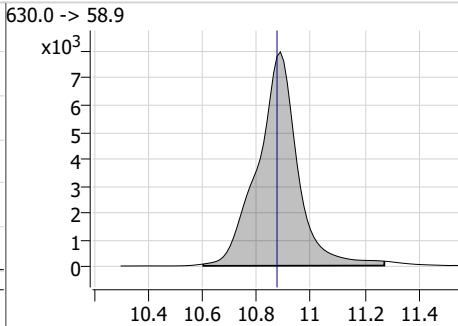
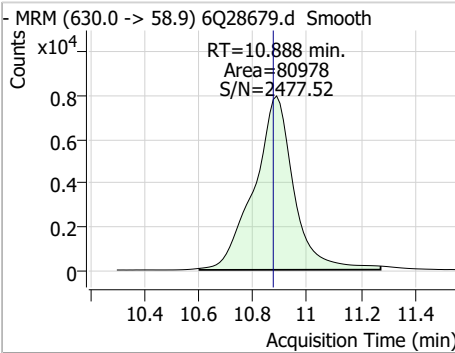
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.47	10.71	0.00	23186	511.9 -> 169.0	136.3	69.5	208.4



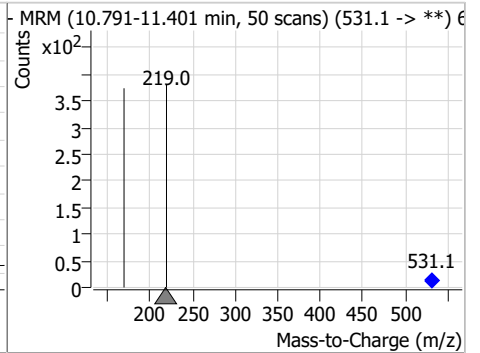
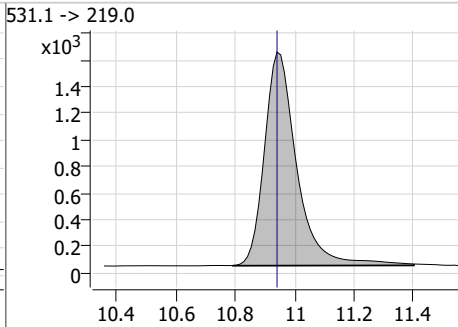
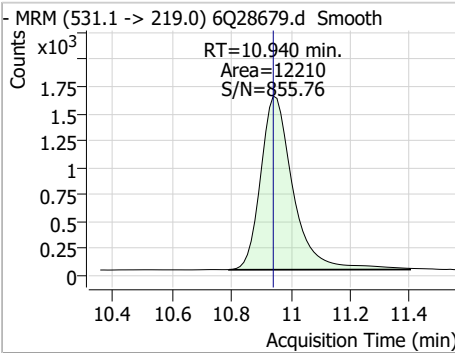
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.14	10.87	0.01	156335				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.72	10.89	0.01	80978				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.60	10.94	0.00	12210				

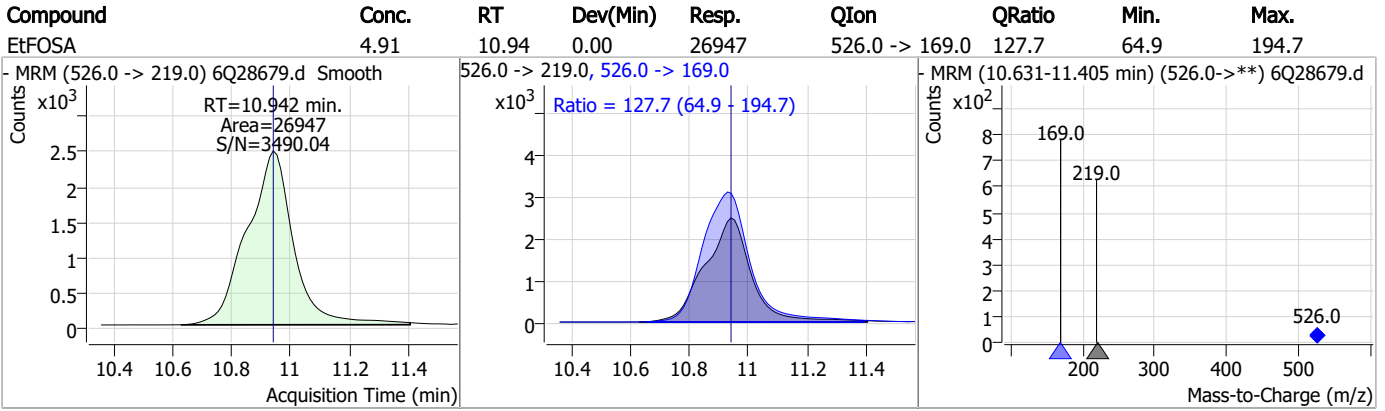


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### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q396-CC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28679.D      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/21/23 09:18      Supervisor approved: 11/21/23 17:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

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### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28685.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/21/2023 10:44:41 AM  
 Sample Name : cc391-1.0LL  
 Vial : P1-A2  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	142223	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	51874	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	53611	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	57553	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	89426	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	33573	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	32500	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	38288	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	47055	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	26380	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	32114	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	21690	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	13615	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	13630	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	3412	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	5772	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	5862	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	36609	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	32324	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	31131	5.00 µg/L	0.012
M7-MeFOSE	10.640	623.2 -> 58.9	132819	25.00 µg/L	0.012
M9-EtFOSE	10.875	639.2 -> 58.9	176322	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	12807	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	10143	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	13040	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	61159	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	9007	2.50 µg/L	0.000
13C4-PFOA	7.062	417.1 -> 372.0	94247	2.50 µg/L	0.000
13C2-PFDA	8.048	515.1 -> 470.1	33702	1.25 µg/L	0.000
13C5-PFNA	7.581	468.0 -> 423.0	30697	1.25 µg/L	0.013
13C2-PFHxA	5.479	315.1 -> 270.0	51235	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	3412	5.89 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.8%		
13C2-6:2FTS	6.836	429.1 -> 80.9	5772	6.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.0%		
13C2-8:2FTS	7.848	529.1 -> 80.9	5862	5.53 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.6%		
13C2-PFDoDA	8.906	615.1 -> 570.0	47055	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C2-PFTeDA	9.621	715.2 -> 670.0	26380	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-PFBS	5.384	302.1 -> 79.9	21690	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-PFHxS	7.152	402.1 -> 79.9	13615	2.47 µg/L	0.000

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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C4-PFBA	2.860	216.8 -> 171.9	142223	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.419	367.1 -> 322.0	57553	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFHxA	5.478	318.0 -> 273.0	53611	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C5-PFPeA	4.272	268.3 -> 223.0	51874	5.04 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C6-PFDA	8.048	519.1 -> 474.1	32500	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C7-PFUnDA	8.489	570.0 -> 525.1	38288	1.22 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-FOSA	9.605	506.1 -> 77.8	32114	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-PFOA	7.062	421.1 -> 376.0	89426	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-PFOS	8.185	507.1 -> 79.9	13630	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C9-PFNA	7.580	472.1 -> 427.0	33573	1.31 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%	
d3-MeFOSAA	8.105	573.2 -> 419.0	36609	5.41 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	32324	10.16 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
d3-MeFOSA	10.720	515.0 -> 219.0	10143	2.31 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
d5-EtFOSAA	8.300	589.2 -> 419.0	31131	5.44 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
d7-MeFOSE	10.640	623.2 -> 58.9	132819	25.44 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d9-EtFOSE	10.875	639.2 -> 58.9	176322	25.32 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d5-EtFOSA	10.940	531.1 -> 219.0	12807	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.155	327.1 -> 307.0	4250	0.76 µg/L	100
		327.1 -> 80.9	1697		
6:2FTS	6.836	427.1 -> 407.0	4348	0.69 µg/L	90
		427.1 -> 80.9	1822		
8:2FTS	7.849	527.1 -> 507.0	3379	0.76 µg/L	96
		527.1 -> 80.8	1136		
EtFOSAA	8.301	584.2 -> 419.1	906	0.18 µg/L	95
		584.2 -> 526.0	572		
FOSA	9.608	498.1 -> 77.9	2449	0.20 µg/L	96
		498.1 -> 478.0	107		
MeFOSAA	8.106	570.1 -> 419.0	1412	0.20 µg/L	87
		570.1 -> 483.0	245		
PFBA	2.868	212.8 -> 168.9	3671	0.79 µg/L	100
PFBS	5.372	298.7 -> 79.9	1228	0.15 µg/L	90
		298.7 -> 98.8	538		
PFDA	8.036	512.9 -> 469.0	6678	0.22 µg/L	93
		512.9 -> 219.0	798		
PFDODA	8.907	613.1 -> 569.0	6590	0.19 µg/L	98
		613.1 -> 319.0	696		
PFDS	9.057	599.0 -> 79.9	671	0.19 µg/L	84

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.419	599.0 -> 98.8	246	0.18 µg/L	100
		363.1 -> 319.0	5458		
PFHpS	7.694	363.1 -> 169.0	814	0.16 µg/L	86
		449.0 -> 79.9	945		
PFHxA	5.481	449.0 -> 98.9	541	0.19 µg/L	100
		313.0 -> 269.0	3871		
PFHxS	7.153	313.0 -> 118.9	186	0.18 µg/L	81
		398.7 -> 79.9	1166		
PFNA	7.581	398.7 -> 98.9	511	0.19 µg/L	99
		463.0 -> 419.0	4073		
PFNS	8.639	463.0 -> 219.0	902	0.19 µg/L	98
		548.8 -> 79.9	913		
PFOA	7.063	548.8 -> 98.9	524	0.23 µg/L	97
		413.0 -> 369.0	8173		
PFOS	8.174	413.0 -> 169.0	1387	0.22 µg/L	72
		498.9 -> 79.9	1333		
PFPeA	4.274	498.9 -> 98.8	554	0.39 µg/L	100
		263.0 -> 219.0	5174		
PFPeS	6.458	349.1 -> 79.9	1234	0.18 µg/L	95
		349.1 -> 98.9	609		
PFTeDA	9.622	713.1 -> 669.0	5500	0.17 µg/L	99
		713.1 -> 168.9	363		
PFTrDA	9.290	663.0 -> 619.0	6878	0.20 µg/L	99
		663.0 -> 168.9	460		
PFUnDA	8.489	563.1 -> 519.0	5083	0.17 µg/L	89
		563.1 -> 269.1	788		
11Cl-PF3OUdS	9.329	630.9 -> 450.9	4554	0.32 µg/L	86
		632.9 -> 452.9	1786		
9Cl-PF3ONS	8.503	530.8 -> 351.0	7279	0.38 µg/L #	19
		532.8 -> 353.0	5569		
ADONA	6.669	376.9 -> 250.9	20512	0.36 µg/L	99
		376.9 -> 84.8	5282		
HFPO-DA	5.844	284.9 -> 168.9	1112	0.34 µg/L	88
		284.9 -> 184.9	163		
3:3FTCA	3.721	241.0 -> 177.0	739	0.90 µg/L	96
		241.0 -> 117.0	74		
5:3FTCA	6.146	341.0 -> 237.1	17082	4.66 µg/L	99
		341.0 -> 217.0	12375		
7:3FTCA	7.558	441.0 -> 316.9	11094	4.78 µg/L	91
		441.0 -> 336.9	24466		
EtFOSA	10.954	526.0 -> 219.0	2340	0.41 µg/L	100
		526.0 -> 169.0	3043		
EtFOSE	10.888	630.0 -> 58.9	7067	0.98 µg/L	100
		511.9 -> 219.0	1731		
MeFOSA	10.721	511.9 -> 169.0	2596	0.38 µg/L	91
		616.1 -> 58.9	4905		
MeFOSE	10.641	699.1 -> 79.9	516	0.91 µg/L	100
		699.1 -> 98.8	235		
PFDoDS	9.736	295.0 -> 201.0	904	0.23 µg/L	87
		295.0 -> 84.9	227		
NFDHA	5.360	279.0 -> 85.1	3641	0.39 µg/L	100
		229.0 -> 84.9	2583		
PFMBA	4.687	314.8 -> 134.9	8364	0.40 µg/L	100
		314.8 -> 82.9	186		
PFMPA	3.413			0.38 µg/L	100
PFEESA	5.925			0.34 µg/L	96

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



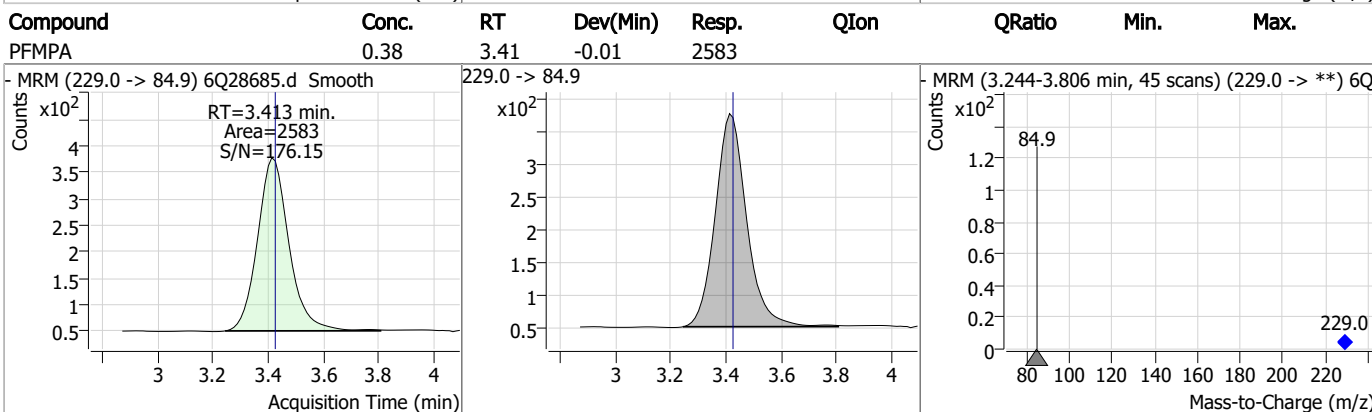
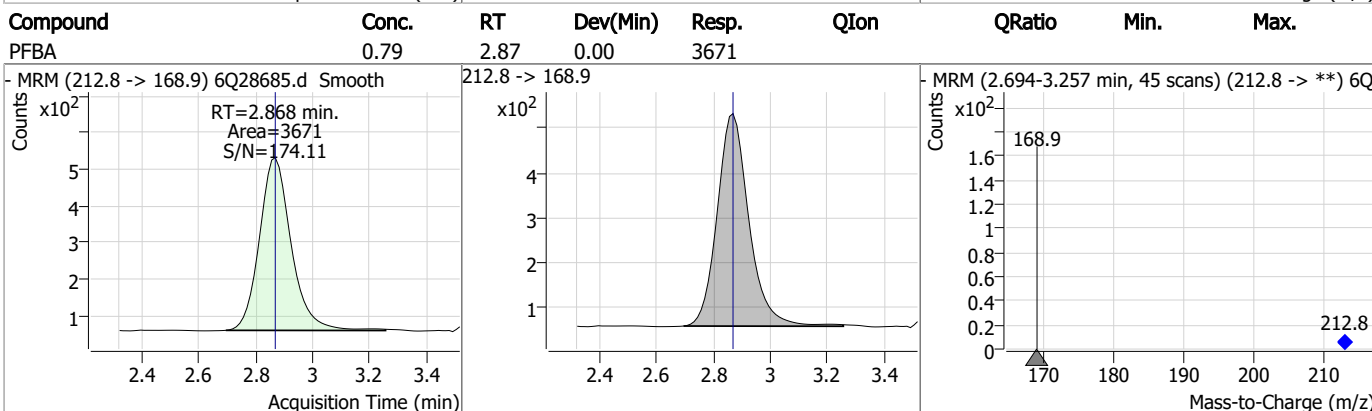
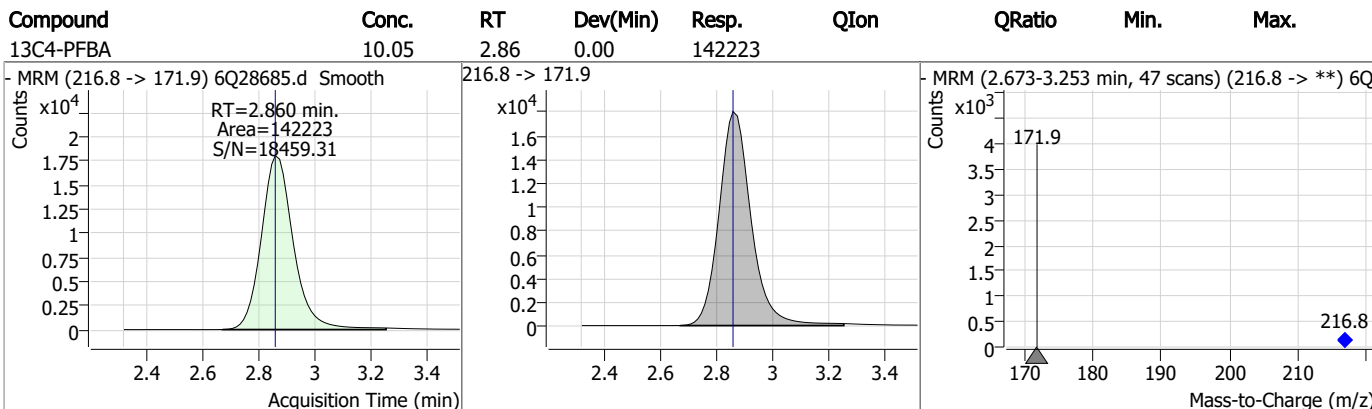
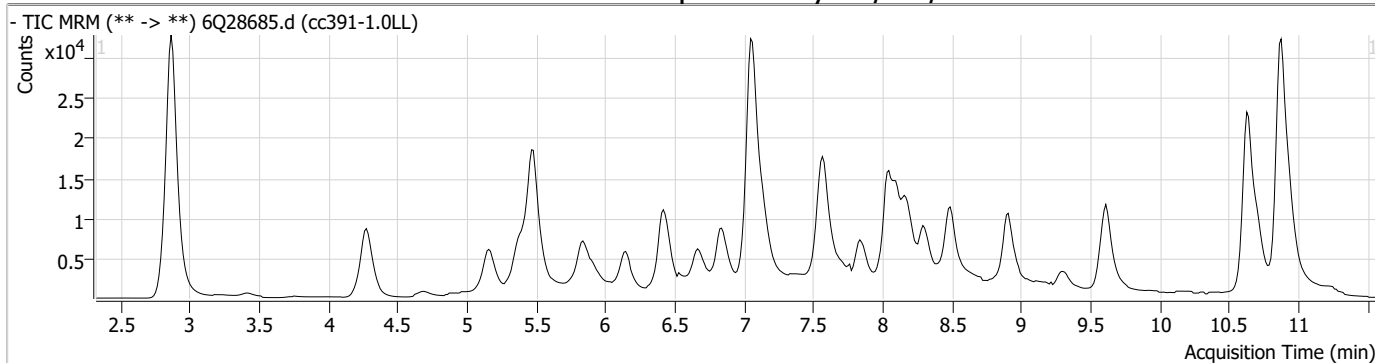
### Perfluorinated Compounds by LC/MS/MS

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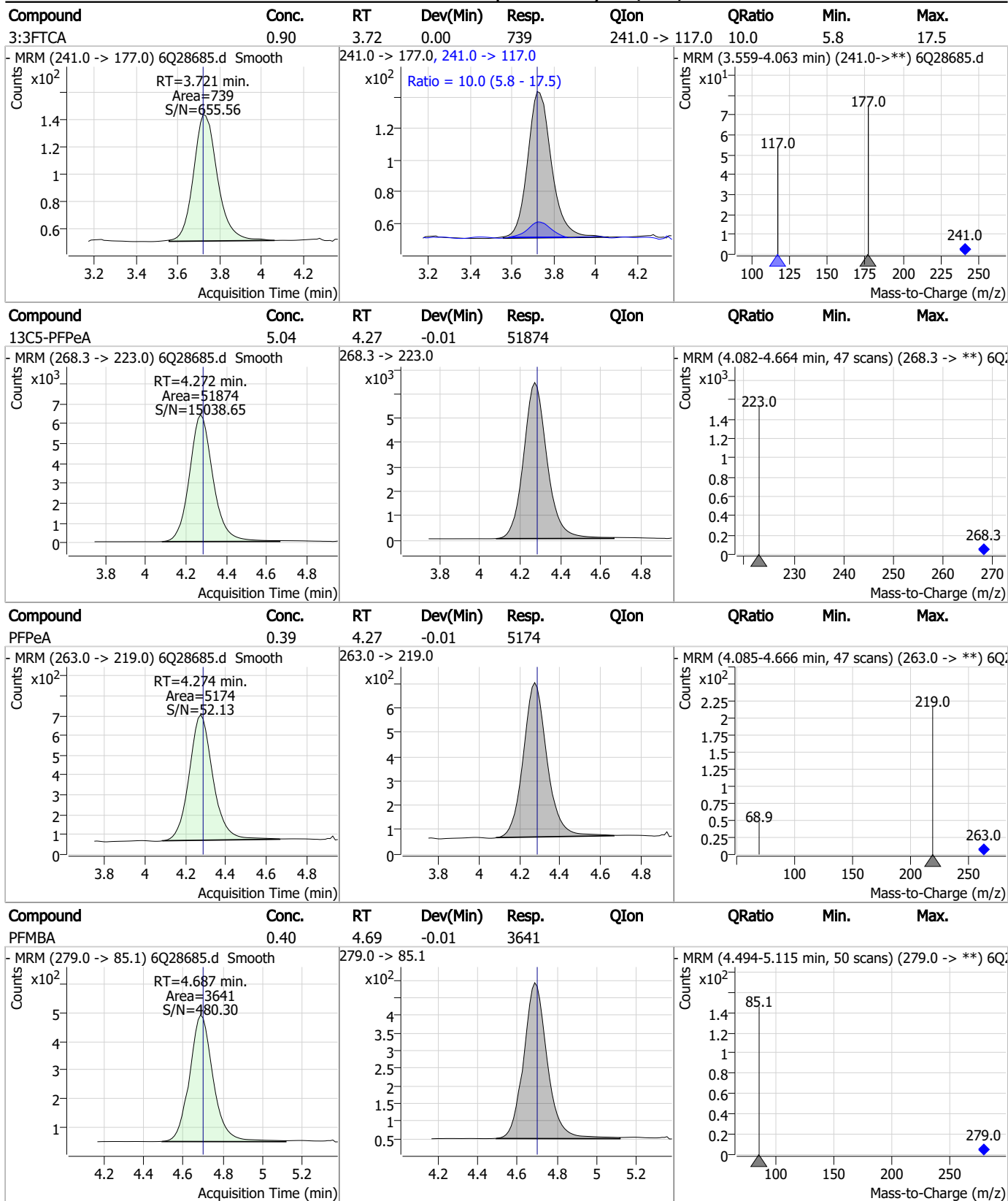
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### Perfluorinated Compounds by LC/MS/MS



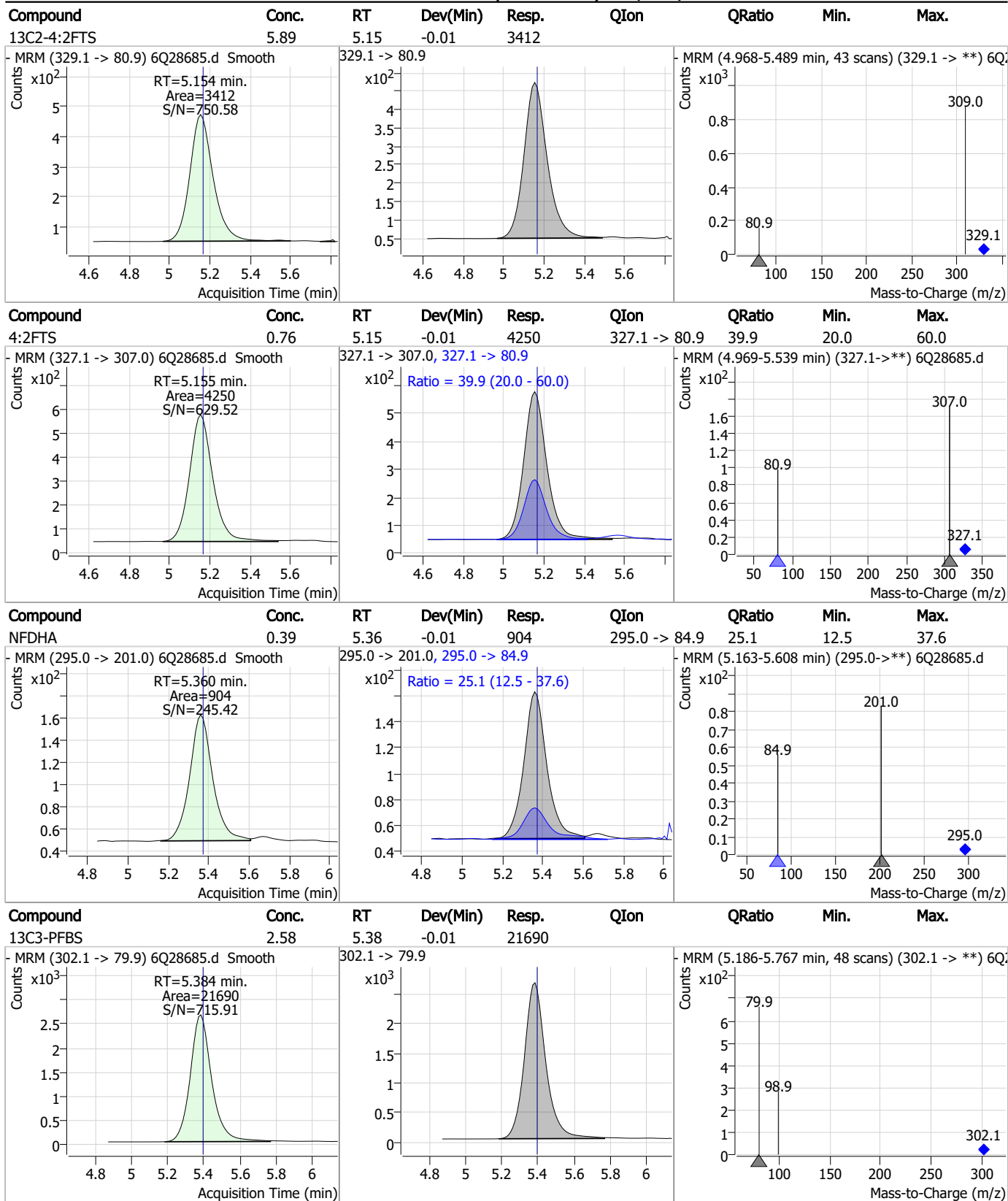
### Perfluorinated Compounds by LC/MS/MS



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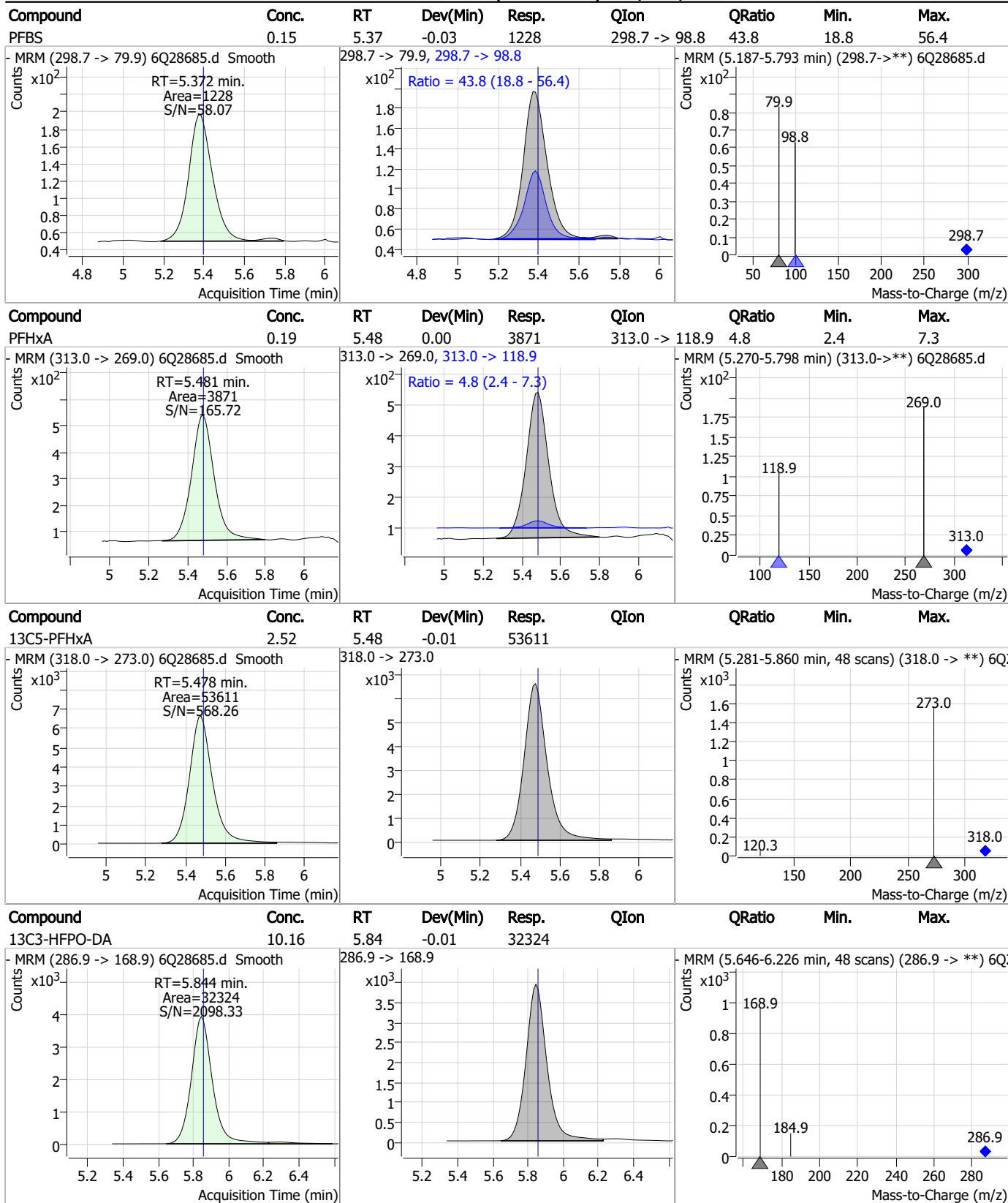


### Perfluorinated Compounds by LC/MS/MS



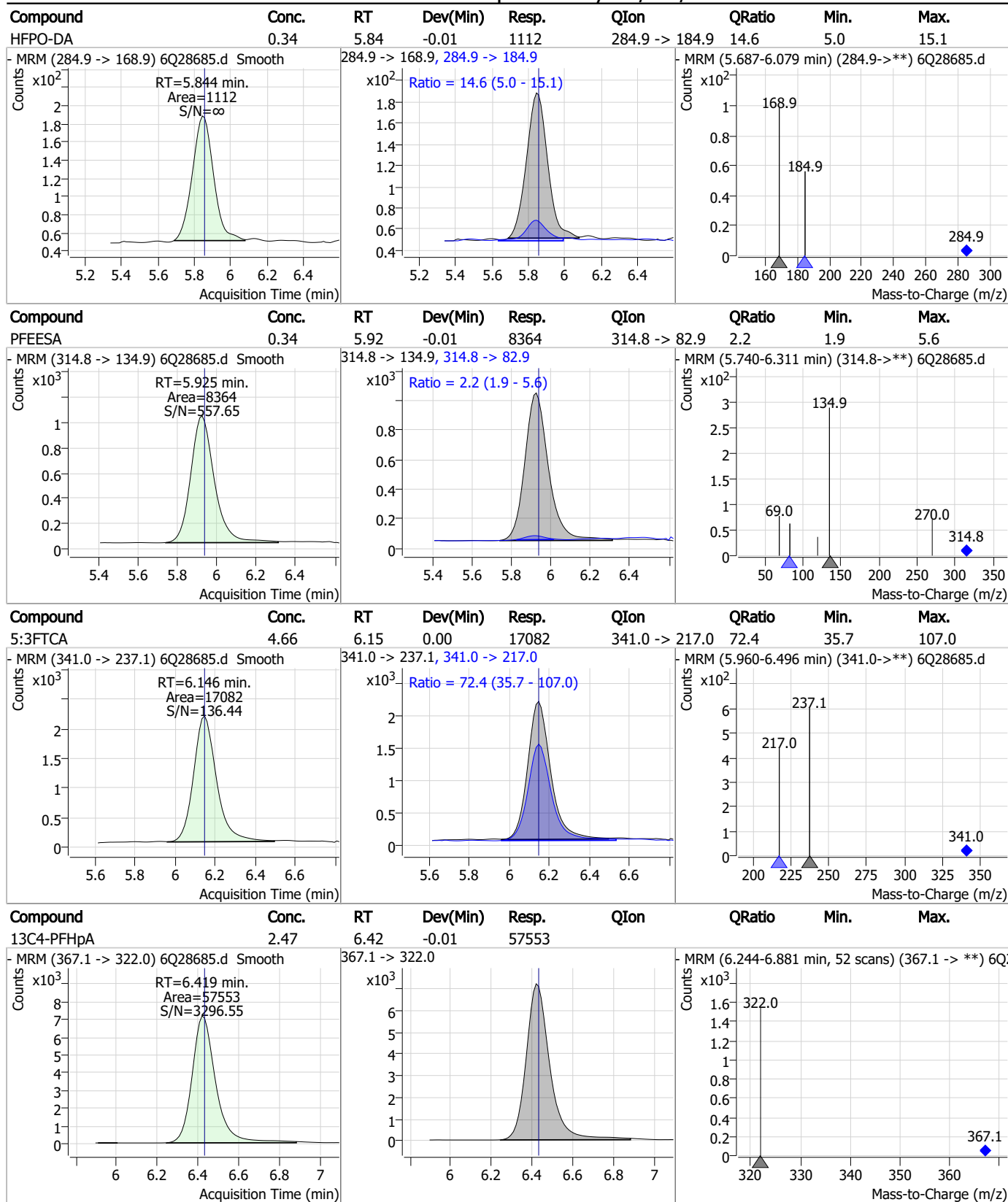
7.7.16  
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### Perfluorinated Compounds by LC/MS/MS



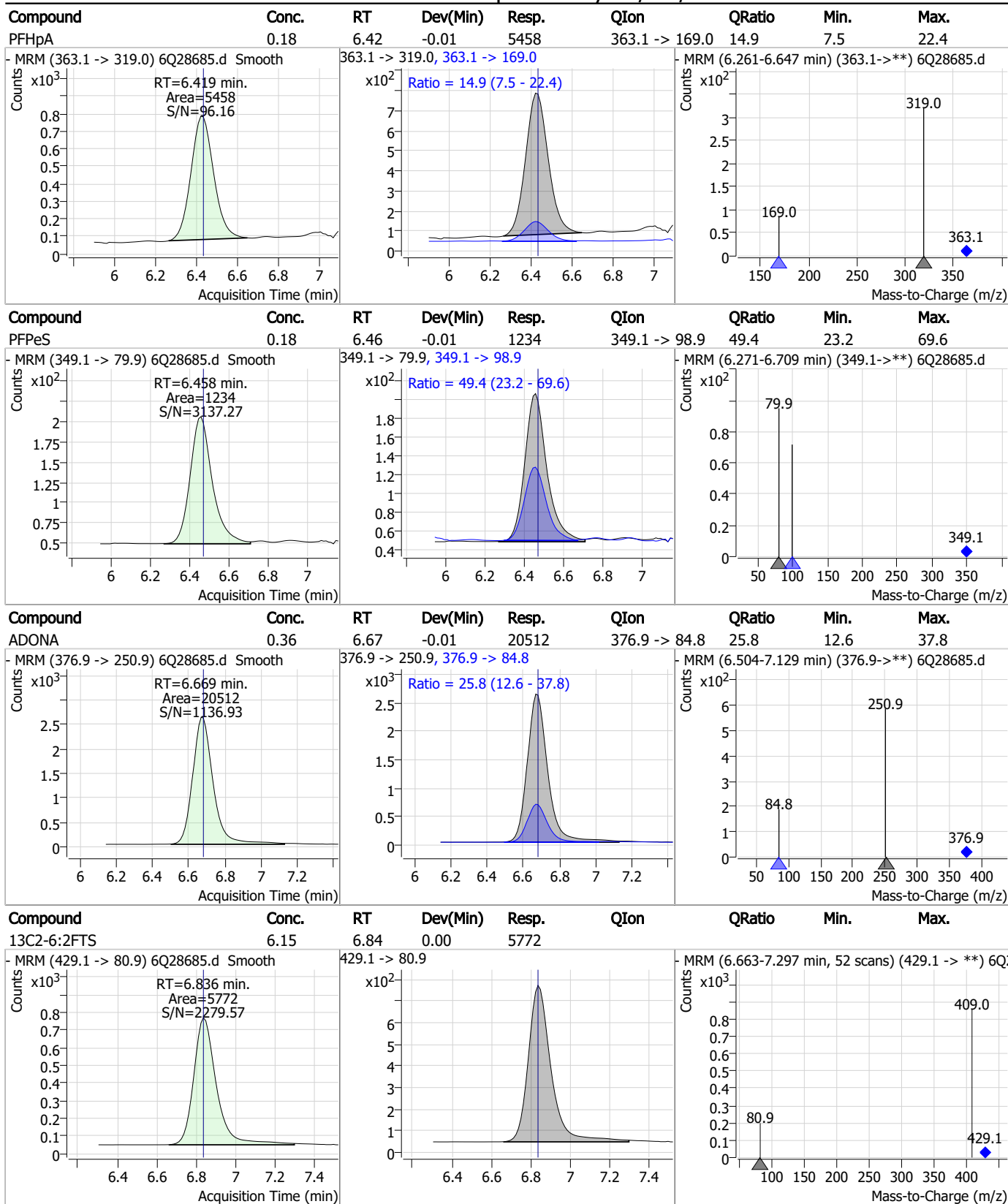
7.7.16

### Perfluorinated Compounds by LC/MS/MS



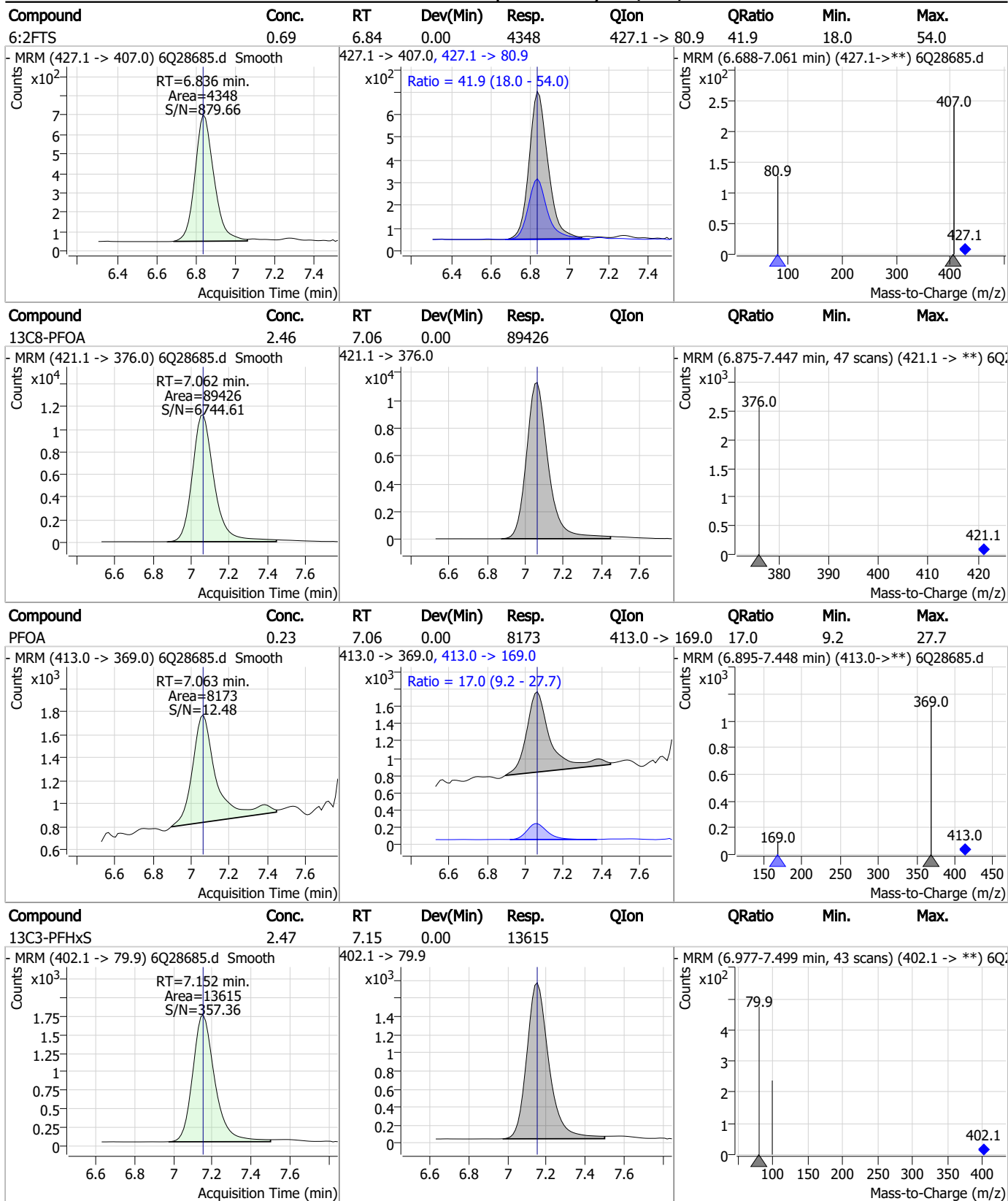
7.7.16  
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### Perfluorinated Compounds by LC/MS/MS



7.7.16  
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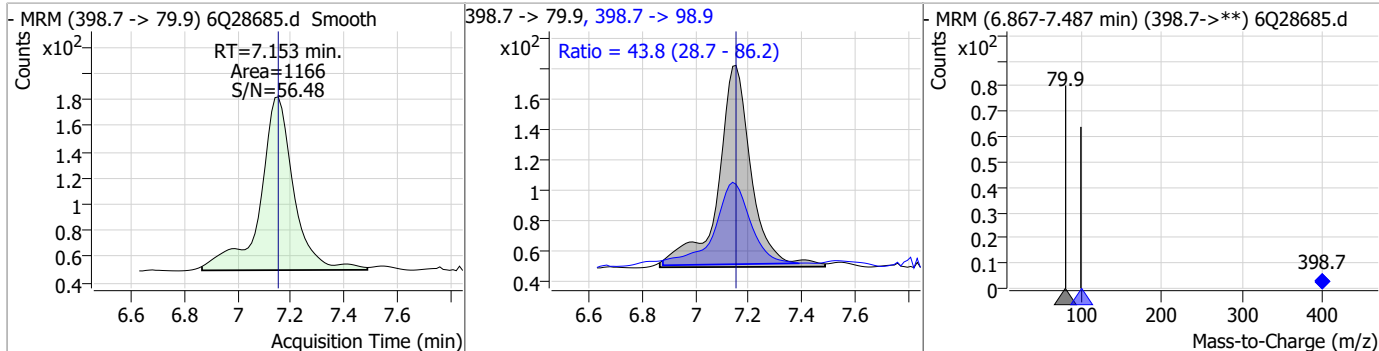
### Perfluorinated Compounds by LC/MS/MS



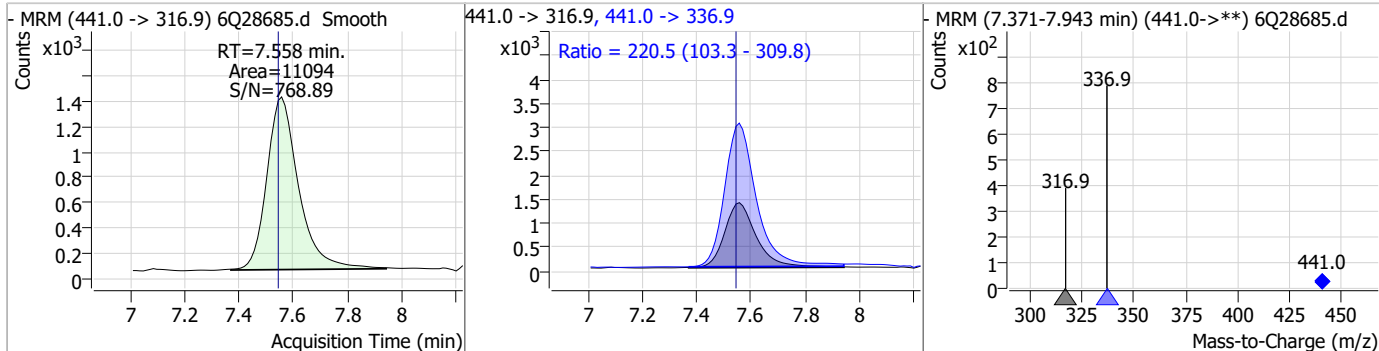
7.7.16  
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### Perfluorinated Compounds by LC/MS/MS

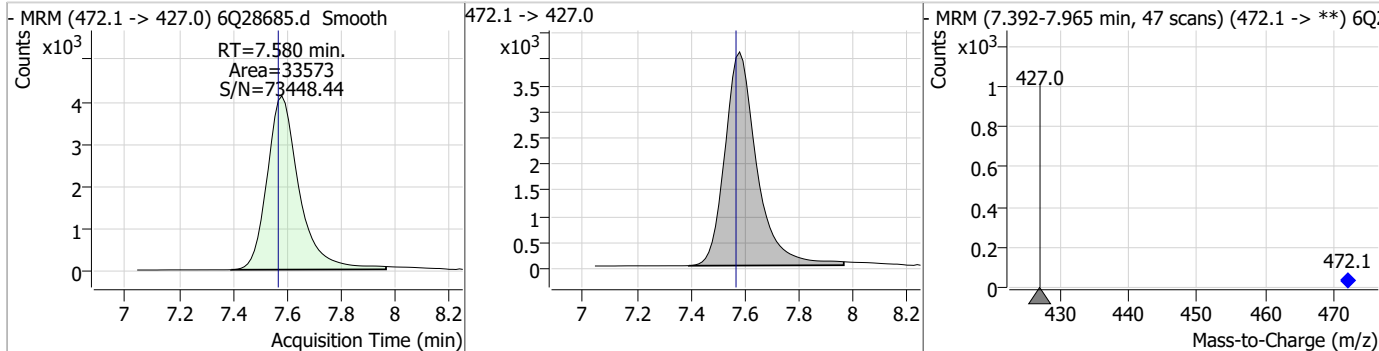
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.18	7.15	0.00	1166	398.7 -> 98.9	43.8	28.7	86.2



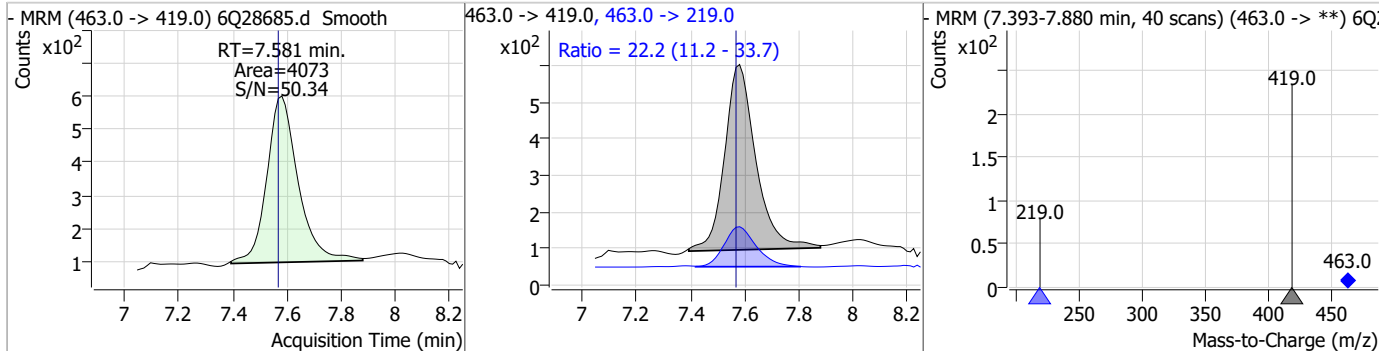
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	4.78	7.56	0.01	11094	441.0 -> 336.9	220.5	103.3	309.8



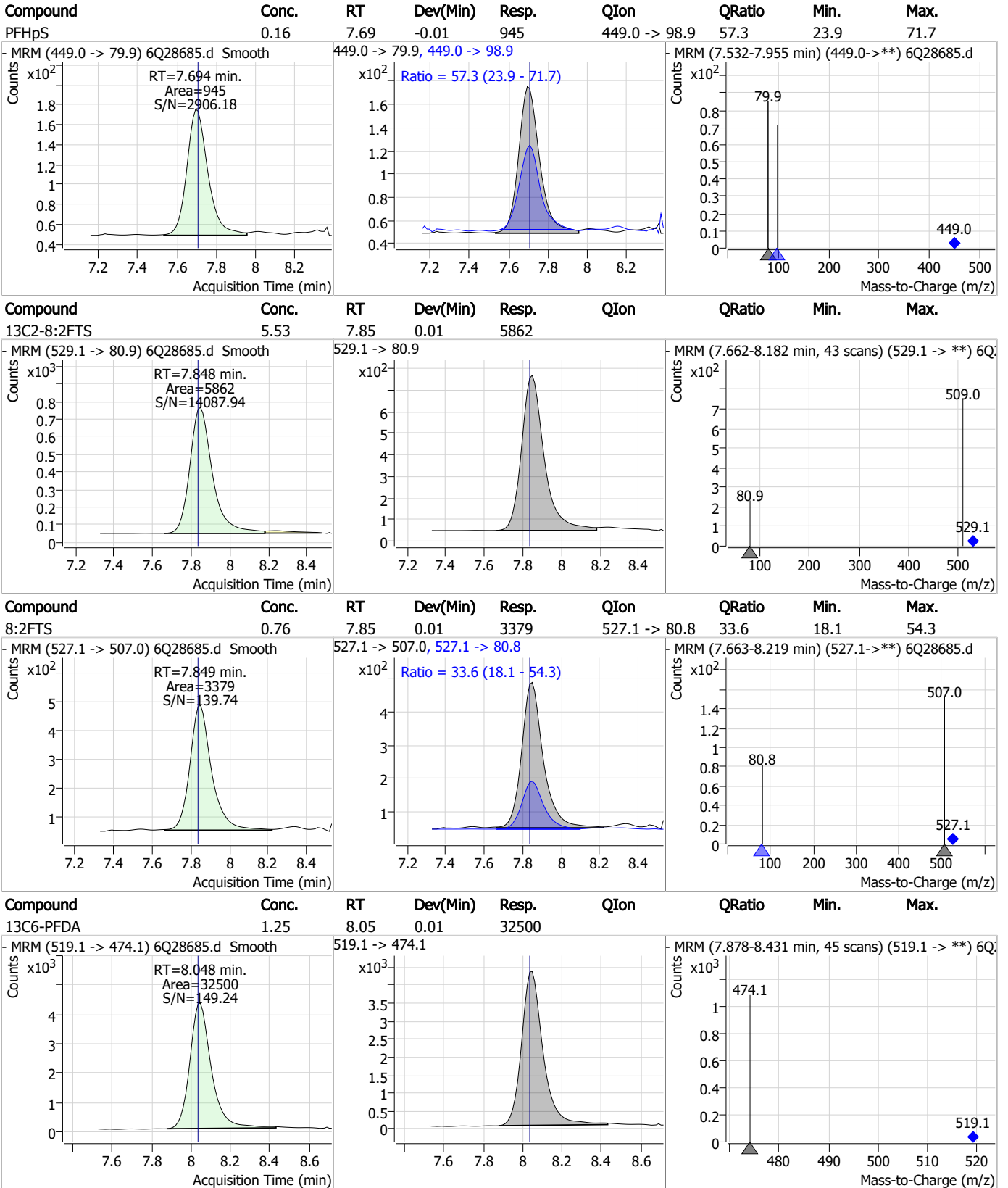
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.31	7.58	0.01	33573				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.19	7.58	0.01	4073	463.0 -> 219.0	22.2	11.2	33.7



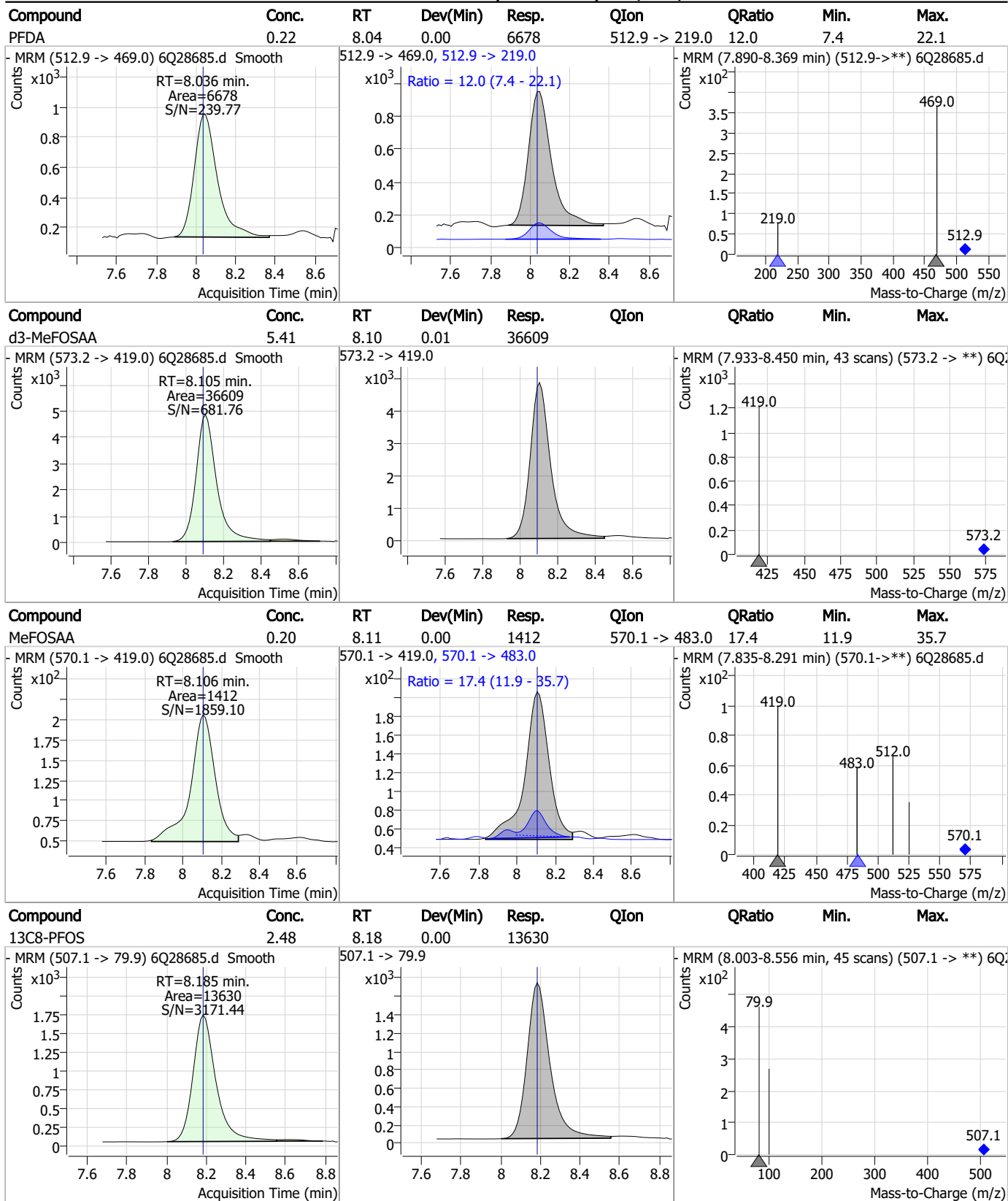
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

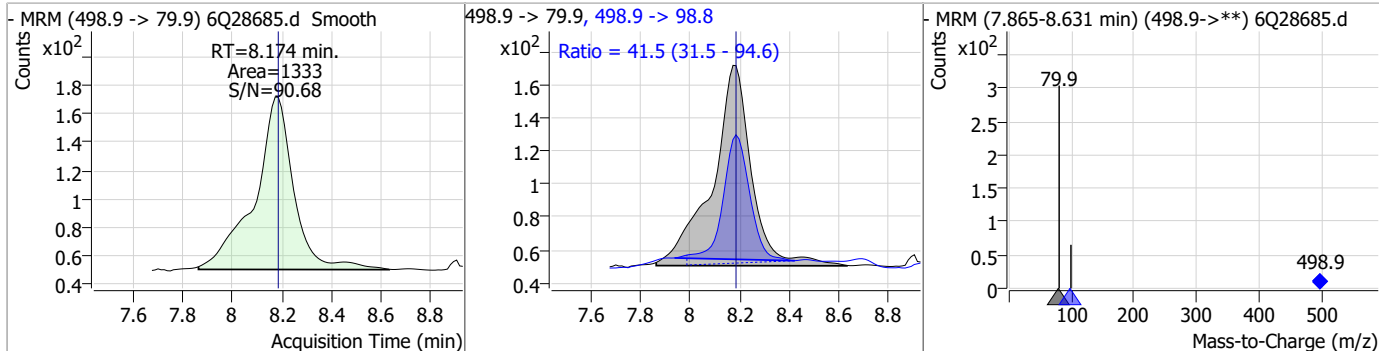


7.7.16  
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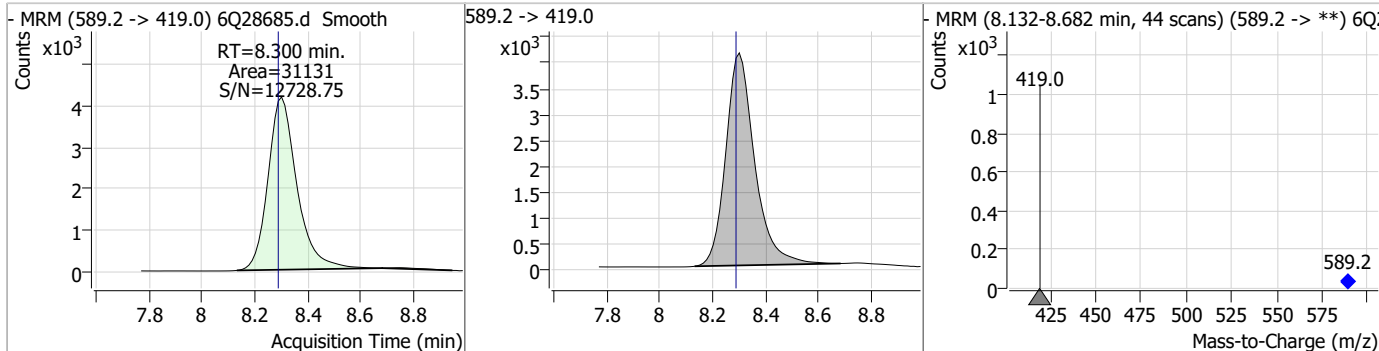


### Perfluorinated Compounds by LC/MS/MS

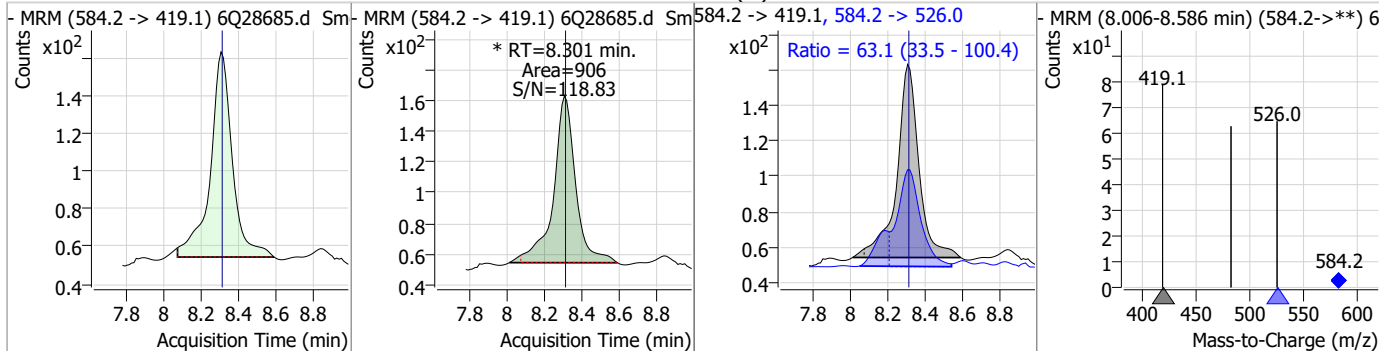
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.22	8.17	-0.01	1333	498.9 -> 98.8	41.5	31.5	94.6



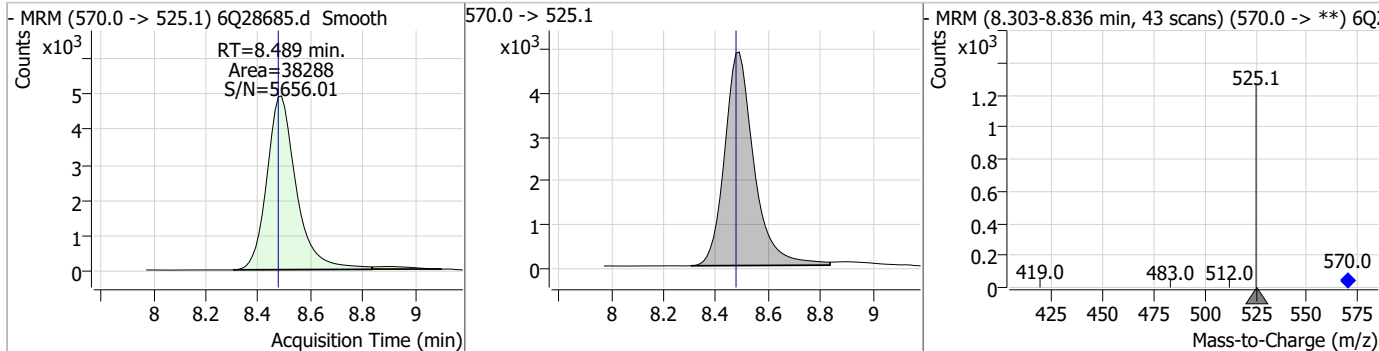
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.44	8.30	0.01	31131				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.18	8.30	0.00	906 (m)	584.2 -> 526.0	63.1	33.5	100.4

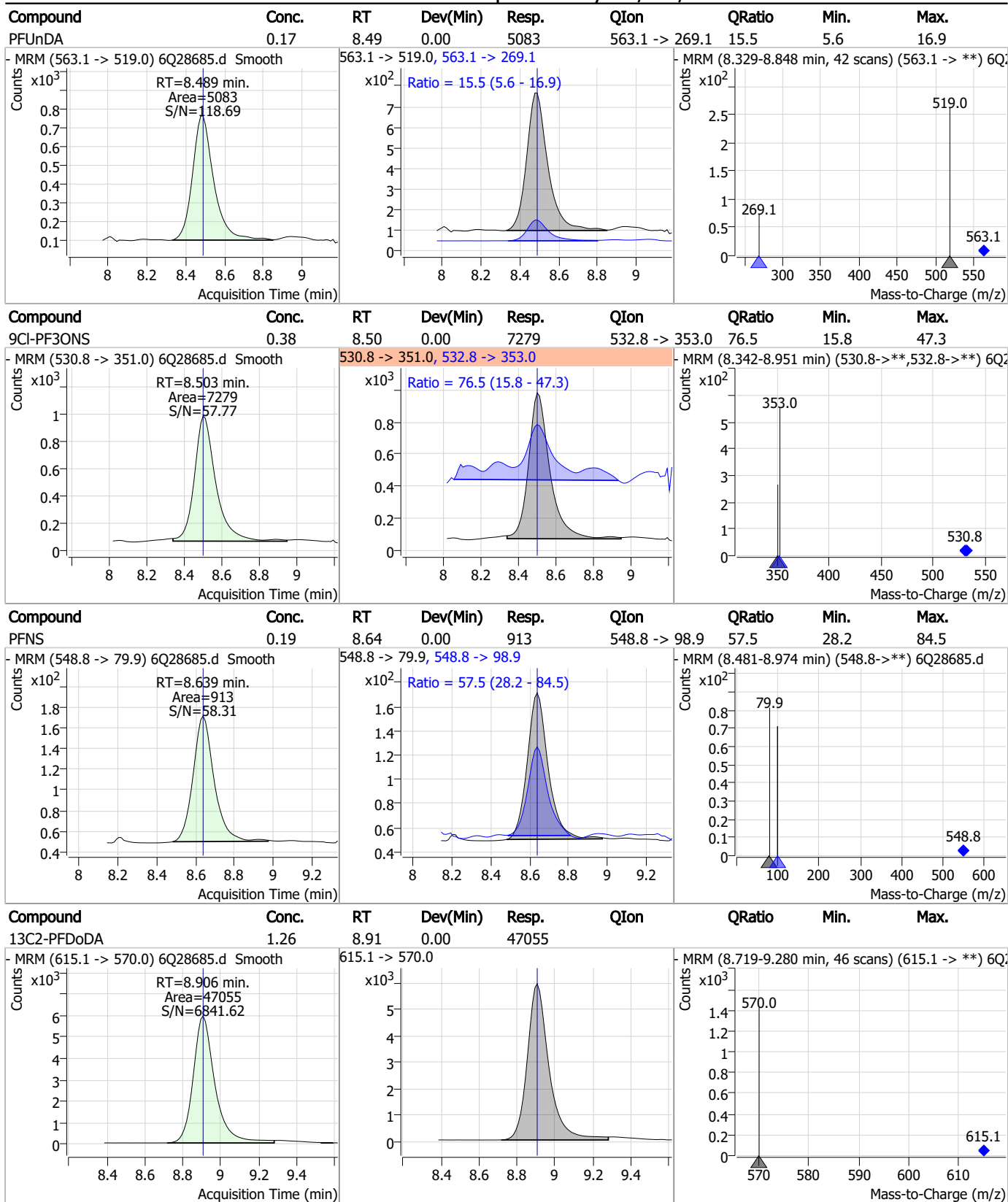


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.49	0.01	38288				



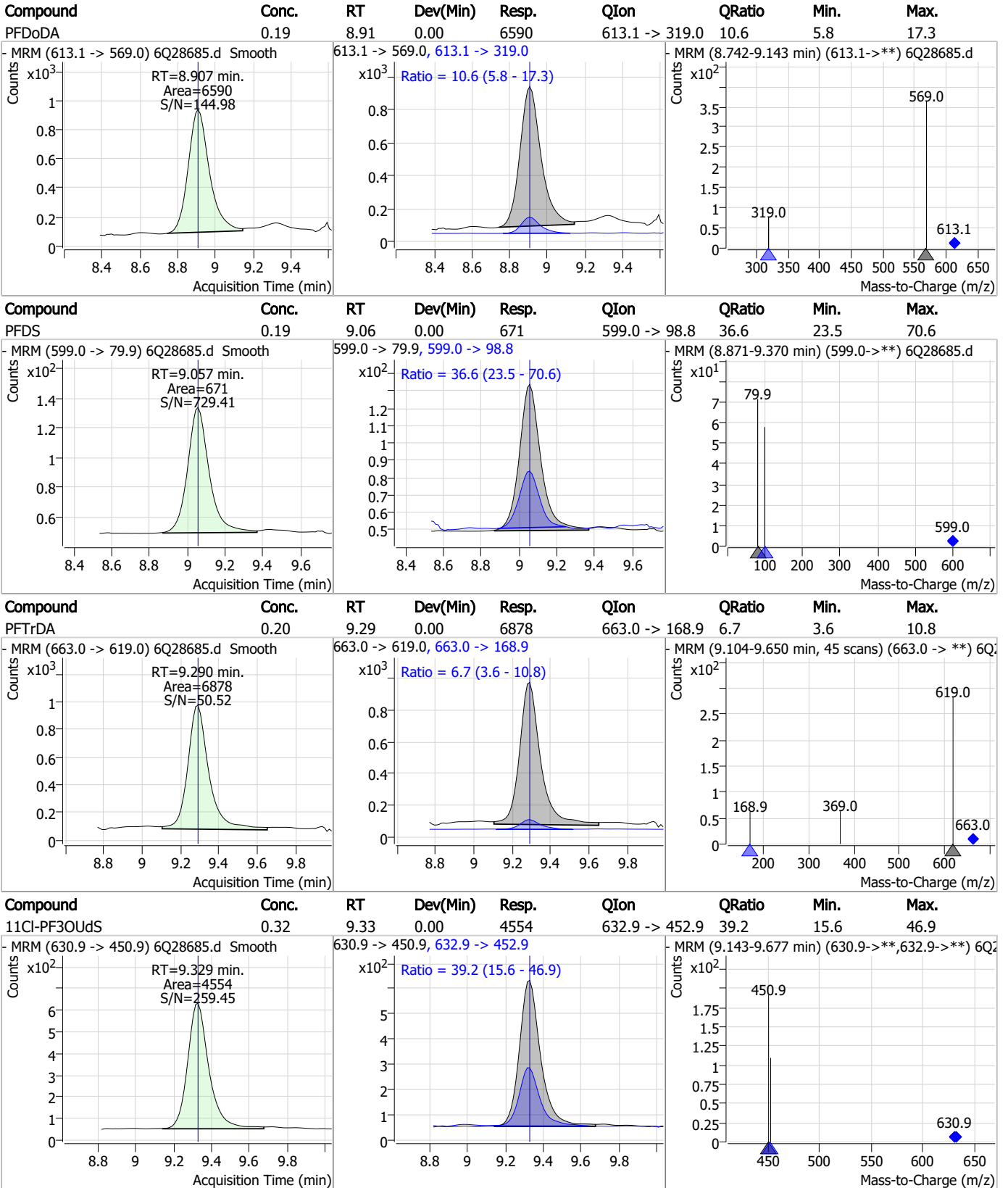
7.7.16  
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### Perfluorinated Compounds by LC/MS/MS



7.7.16  
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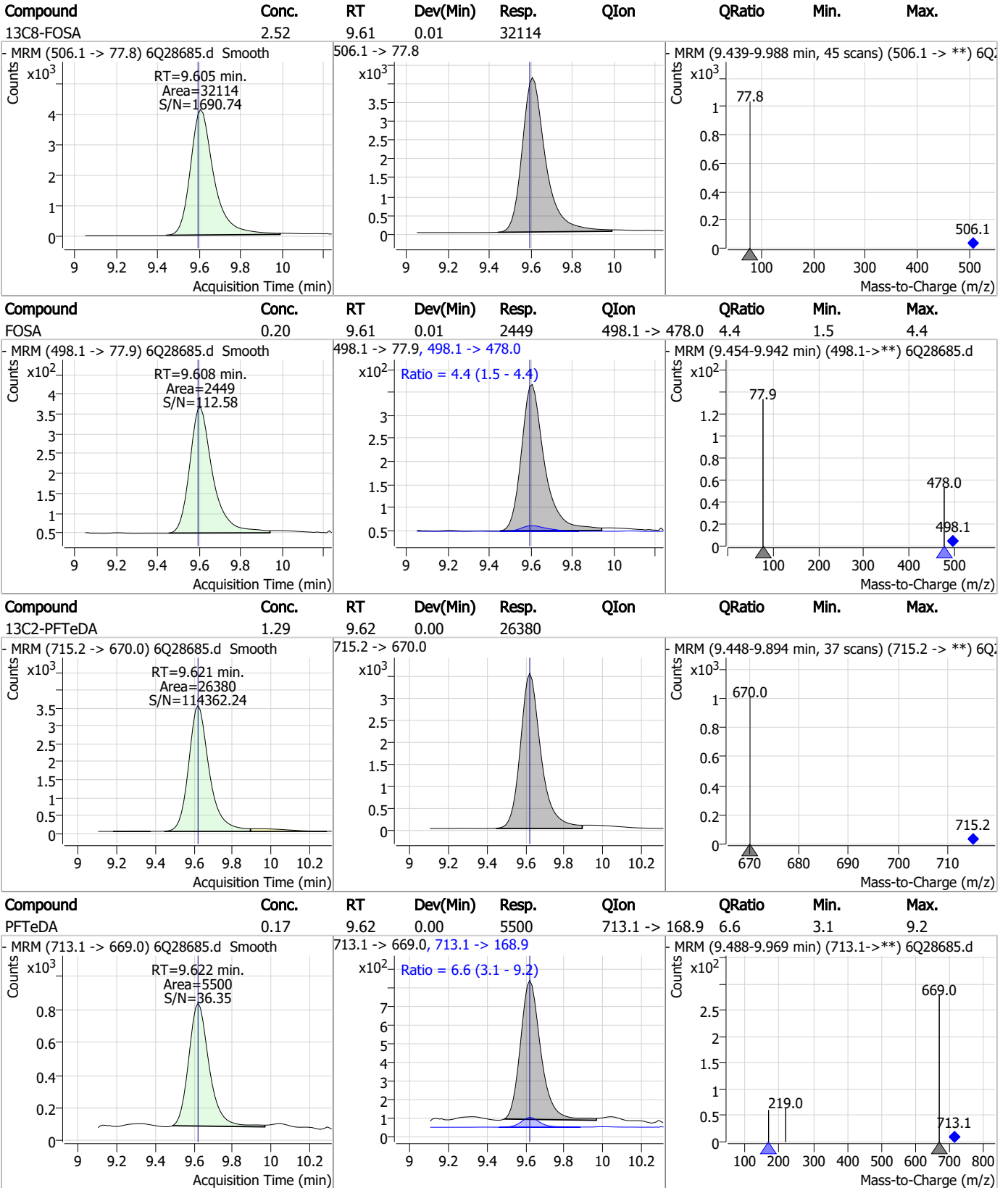
### Perfluorinated Compounds by LC/MS/MS



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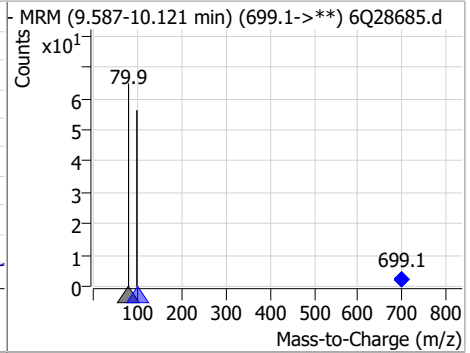
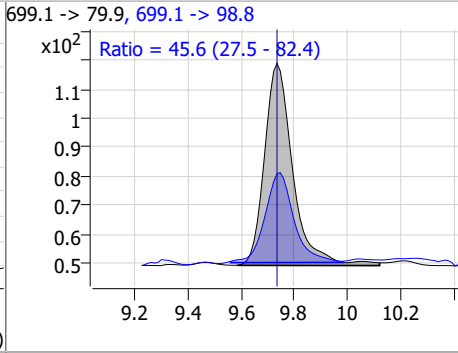
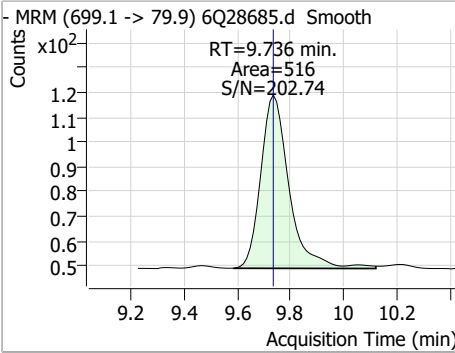
### Perfluorinated Compounds by LC/MS/MS



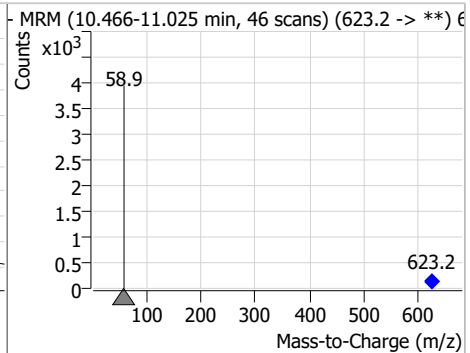
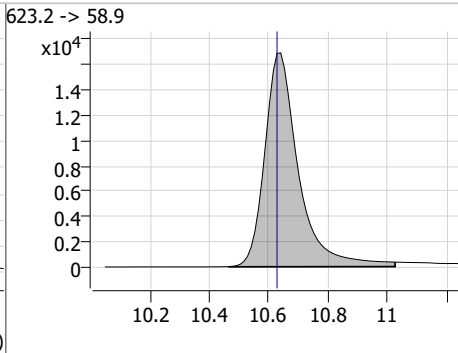
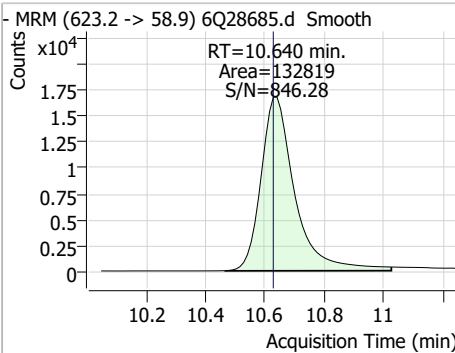
7.7.16 7

### Perfluorinated Compounds by LC/MS/MS

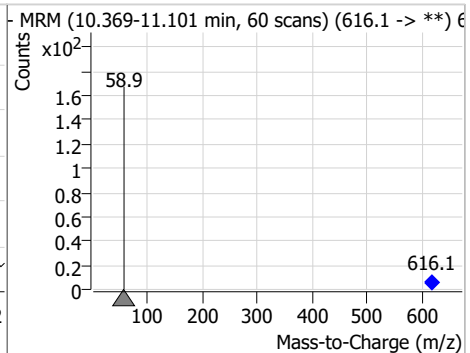
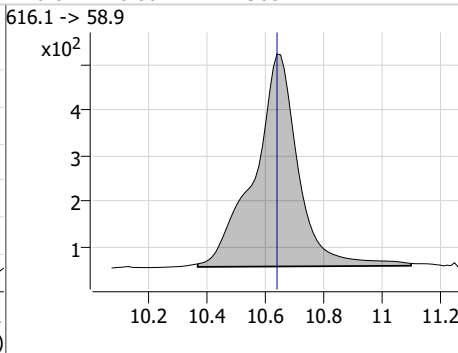
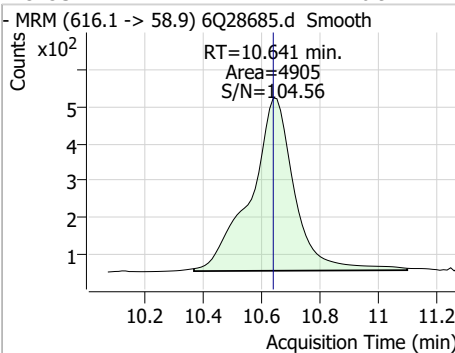
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD <sub>o</sub> DS	0.23	9.74	0.00	516	699.1 -> 98.8	45.6	27.5	82.4



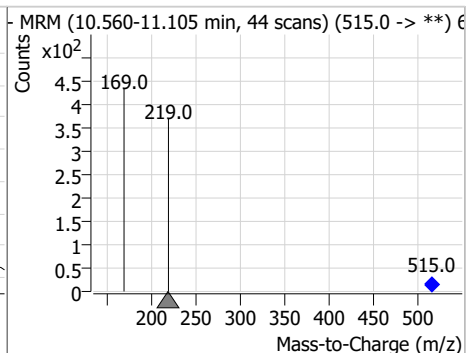
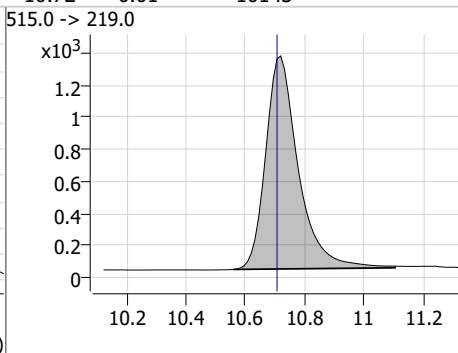
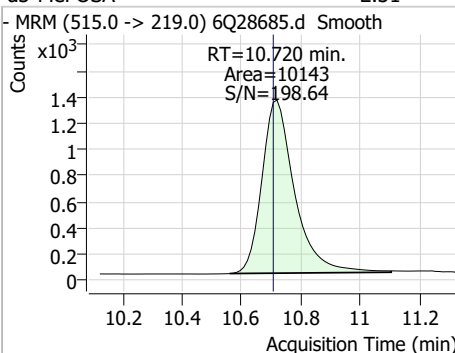
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.44	10.64	0.01	132819				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	0.91	10.64	0.00	4905				

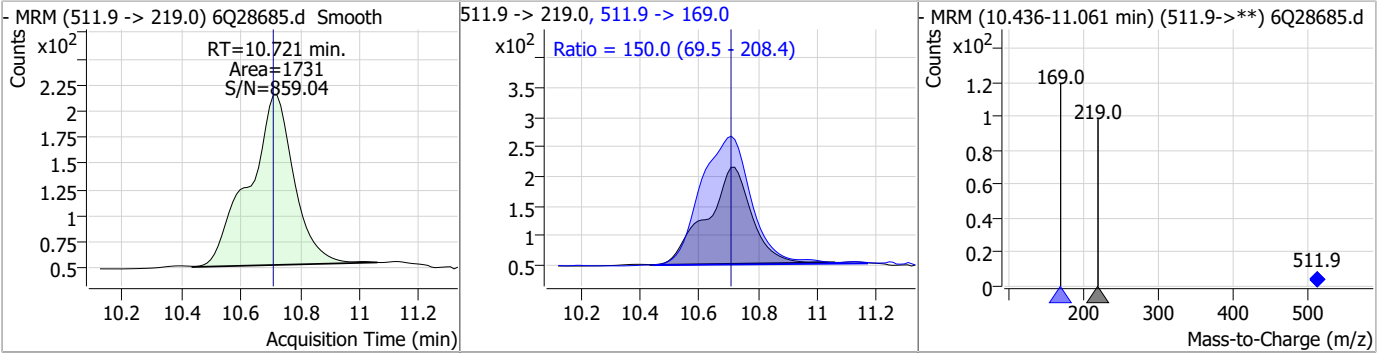


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.31	10.72	0.01	10143				

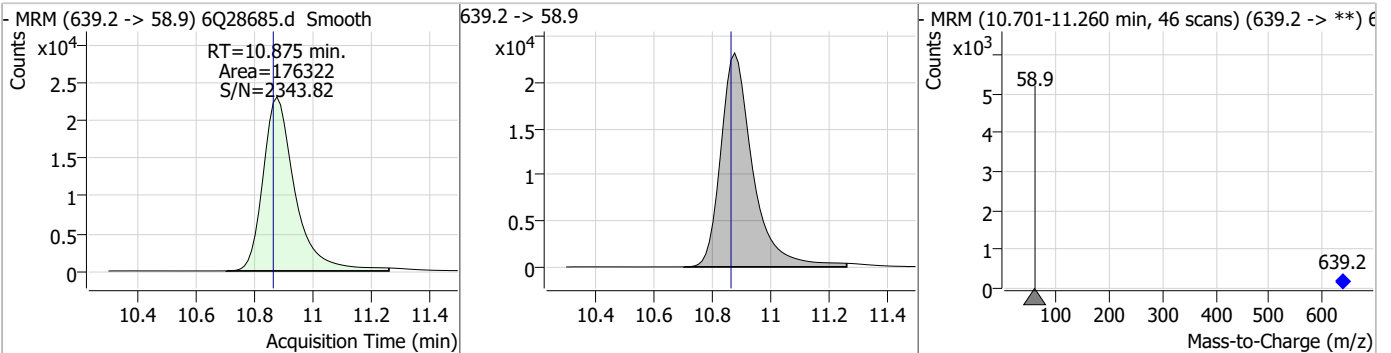


### Perfluorinated Compounds by LC/MS/MS

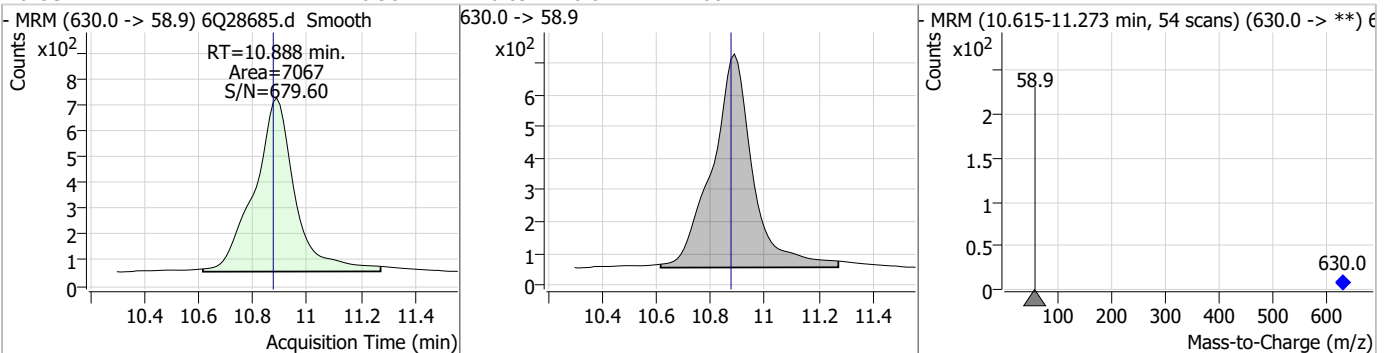
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.38	10.72	0.01	1731	511.9 -> 169.0	150.0	69.5	208.4



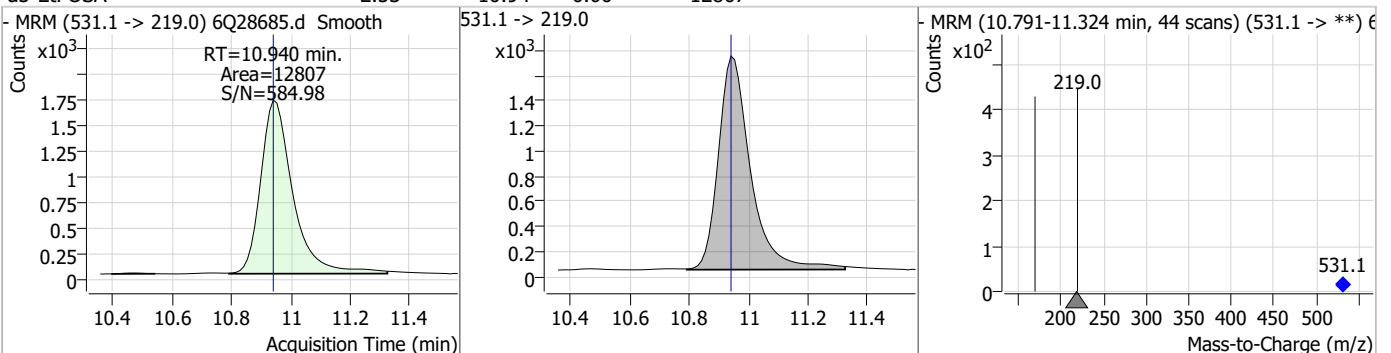
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.32	10.87	0.01	176322				



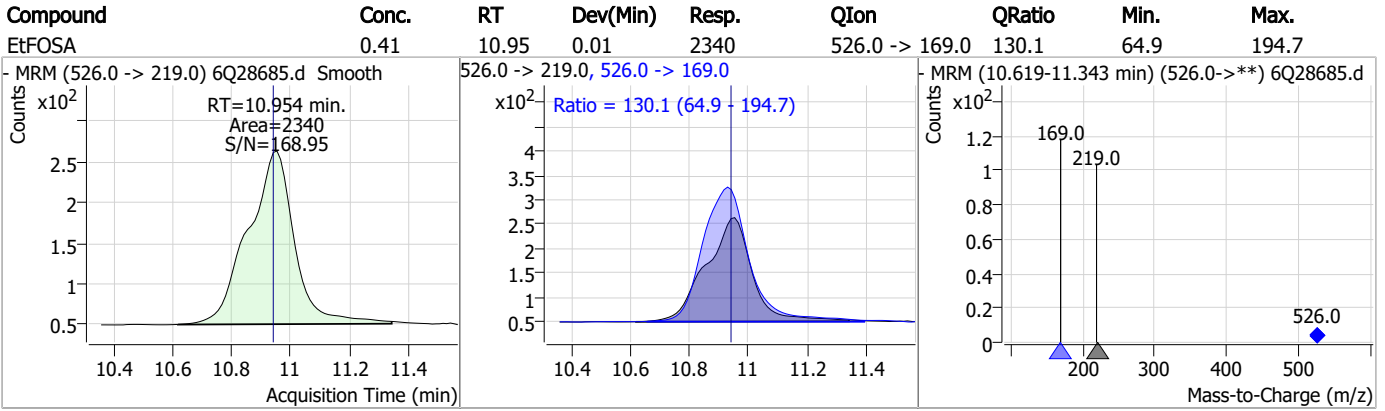
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	0.98	10.89	0.01	7067				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.53	10.94	0.00	12807				



### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q396-CC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28685.D      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/21/23 10:44      Supervisor approved: 11/21/23 17:27 Natasha Guntie

Parameter	CAS	Sig#	R.T. (min.)	Reason
EiFOSAA	2991-50-6		8.30	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q28694.d  
 Operator : natashag  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 11/21/2023 12:53:27 PM  
 Sample Name : ecc391-4  
 Vial : P1-A5  
 DA Method File : 1633\_111323\_S6Q391.quantmethod.xml  
 Batch Name : s6q396.batch.bin  
 Sample Information : OP99845,S6Q396,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.860	216.8 -> 171.9	133153	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	47265	5.00 µg/L	-0.012
M5-PFHxA	5.478	318.0 -> 273.0	49500	2.50 µg/L	-0.012
M4-PFHpA	6.419	367.1 -> 322.0	55894	2.50 µg/L	-0.012
M8-PFOA	7.062	421.1 -> 376.0	83534	2.50 µg/L	0.000
M9-PFNA	7.580	472.1 -> 427.0	30046	1.25 µg/L	0.013
M6-PFDA	8.048	519.1 -> 474.1	30082	1.25 µg/L	0.012
M7-PFUnDA	8.489	570.0 -> 525.1	35650	1.25 µg/L	0.012
M2-PFDoDA	8.906	615.1 -> 570.0	41433	1.25 µg/L	0.000
M2-PFTeDA	9.621	715.2 -> 670.0	23930	1.25 µg/L	0.000
M8-FOSA	9.605	506.1 -> 77.8	27813	2.50 µg/L	0.012
M3-PFBS	5.384	302.1 -> 79.9	19203	2.50 µg/L	-0.012
M3-PFHxS	7.152	402.1 -> 79.9	12730	2.50 µg/L	0.000
M8-PFOS	8.185	507.1 -> 79.9	12768	2.50 µg/L	0.000
M2-4:2FTS	5.154	329.1 -> 80.9	3340	5.00 µg/L	-0.012
M2-6:2FTS	6.836	429.1 -> 80.9	5182	5.00 µg/L	0.000
M2-8:2FTS	7.848	529.1 -> 80.9	5605	5.00 µg/L	0.013
M3-MeFOSAA	8.105	573.2 -> 419.0	29755	5.00 µg/L	0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	30954	10.00 µg/L	-0.012
M5-EtFOSAA	8.300	589.2 -> 419.0	27782	5.00 µg/L	0.012
M7-MeFOSE	10.628	623.2 -> 58.9	118840	25.00 µg/L	0.000
M9-EtFOSE	10.875	639.2 -> 58.9	154601	25.00 µg/L	0.012
M5-EtFOSA	10.940	531.1 -> 219.0	11966	2.50 µg/L	0.000
M3-MeFOSA	10.720	515.0 -> 219.0	9443	2.50 µg/L	0.012
13C4-PFOS	8.185	502.8 -> 79.9	12564	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	56178	5.00 µg/L	0.000
18O2-PFHxS	7.151	403.0 -> 83.9	8211	2.50 µg/L	0.000
13C4-PFOA	7.050	417.1 -> 372.0	92008	2.50 µg/L	-0.012
13C2-PFDA	8.048	515.1 -> 470.1	30621	1.25 µg/L	0.000
13C5-PFNA	7.567	468.0 -> 423.0	29641	1.25 µg/L	0.000
13C2-PFHxA	5.479	315.1 -> 270.0	48986	2.50 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.154	329.1 -> 80.9	3340	6.33 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 126.5%		
13C2-6:2FTS	6.836	429.1 -> 80.9	5182	6.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.1%		
13C2-8:2FTS	7.848	529.1 -> 80.9	5605	5.80 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.0%		
13C2-PFDoDA	8.906	615.1 -> 570.0	41433	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C2-PFTeDA	9.621	715.2 -> 670.0	23930	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C3-PFBS	5.384	302.1 -> 79.9	19203	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C3-PFHxS	7.152	402.1 -> 79.9	12730	2.53 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C4-PFBA	2.860	216.8 -> 171.9	133153	10.24 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C4-PFHpA	6.419	367.1 -> 322.0	55894	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFHxA	5.478	318.0 -> 273.0	49500	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C5-PFPeA	4.272	268.3 -> 223.0	47265	4.80 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C6-PFDA	8.048	519.1 -> 474.1	30082	1.27 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C7-PFUnDA	8.489	570.0 -> 525.1	35650	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-FOSA	9.605	506.1 -> 77.8	27813	2.27 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C8-PFOA	7.062	421.1 -> 376.0	83534	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C8-PFOS	8.185	507.1 -> 79.9	12768	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C9-PFNA	7.580	472.1 -> 427.0	30046	1.21 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%	
d3-MeFOSAA	8.105	573.2 -> 419.0	29755	4.57 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.4%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	30954	10.18 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d3-MeFOSA	10.720	515.0 -> 219.0	9443	2.23 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.2%	
d5-EtFOSAA	8.300	589.2 -> 419.0	27782	5.03 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d7-MeFOSE	10.628	623.2 -> 58.9	118840	23.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
d9-EtFOSE	10.875	639.2 -> 58.9	154601	23.04 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.2%	
d5-EtFOSA	10.940	531.1 -> 219.0	11966	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.155	327.1 -> 307.0	50128	9.22 µg/L	99
		327.1 -> 80.9	19673		
6:2FTS	6.836	427.1 -> 407.0	50640	8.97 µg/L	97
		427.1 -> 80.9	19261		
8:2FTS	7.849	527.1 -> 507.0	39875	9.39 µg/L	100
		527.1 -> 80.8	14317		
EtFOSAA	8.301	584.2 -> 419.1	11367	2.53 µg/L	100
		584.2 -> 526.0	7634		
FOSA	9.608	498.1 -> 77.9	28309	2.65 µg/L	99
		498.1 -> 478.0	901		
MeFOSAA	8.106	570.1 -> 419.0	17002	3.03 µg/L	94
		570.1 -> 483.0	3558		
PFBA	2.868	212.8 -> 168.9	45394	10.40 µg/L	100
PFBS	5.385	298.7 -> 79.9	17053	2.33 µg/L	98
		298.7 -> 98.8	6182		
PFDA	8.048	512.9 -> 469.0	68158	2.44 µg/L	100
		512.9 -> 219.0	10068		
PFDoDA	8.907	613.1 -> 569.0	79028	2.57 µg/L	99
		613.1 -> 319.0	8848		
PFDS	9.057	599.0 -> 79.9	8122	2.44 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3771			
PFHpA	6.419	363.1 -> 319.0	66161	2.30	µg/L	97
		363.1 -> 169.0	10628			
PFHpS	7.694	449.0 -> 79.9	13766	2.54	µg/L	99
		449.0 -> 98.9	6665			
PFHxA	5.469	313.0 -> 269.0	47284	2.55	µg/L	99
		313.0 -> 118.9	2189			
PFHxS	7.153	398.7 -> 79.9	14148	2.40	µg/L	m 94
		398.7 -> 98.9	7460			
PFNA	7.581	463.0 -> 419.0	47853	2.56	µg/L	97
		463.0 -> 219.0	10076			
PFNS	8.639	548.8 -> 79.9	11469	2.54	µg/L	99
		548.8 -> 98.9	6353			
PFOA	7.051	413.0 -> 369.0	85417	2.58	µg/L	97
		413.0 -> 169.0	14458			
PFOS	8.186	498.9 -> 79.9	13181	2.32	µg/L	m 82
		498.9 -> 98.8	6518			
PFPeA	4.274	263.0 -> 219.0	62938	5.25	µg/L	100
PFPeS	6.458	349.1 -> 79.9	15927	2.53	µg/L	98
		349.1 -> 98.9	7229			
PFTeDA	9.622	713.1 -> 669.0	73526	2.52	µg/L	100
		713.1 -> 168.9	4585			
PFTrDA	9.290	663.0 -> 619.0	80690	2.68	µg/L	99
		663.0 -> 168.9	5668			
PFUnDA	8.489	563.1 -> 519.0	67091	2.42	µg/L	93
		563.1 -> 269.1	9323			
11CI-PF3OUdS	9.317	630.9 -> 450.9	60817	4.51	µg/L	99
		632.9 -> 452.9	19360			
9CI-PF3ONS	8.503	530.8 -> 351.0	88426	4.76	µg/L	99
		532.8 -> 353.0	28402			
ADONA	6.669	376.9 -> 250.9	249817	4.62	µg/L	98
		376.9 -> 84.8	65546			
HFPO-DA	5.844	284.9 -> 168.9	15511	5.01	µg/L	98
		284.9 -> 184.9	1655			
3:3FTCA	3.721	241.0 -> 177.0	9009	11.70	µg/L	99
		241.0 -> 117.0	1094			
5:3FTCA	6.146	341.0 -> 237.1	221518	65.43	µg/L	95
		341.0 -> 217.0	148763			
7:3FTCA	7.558	441.0 -> 316.9	136218	63.53	µg/L	91
		441.0 -> 336.9	299640			
EtFOSA	10.942	526.0 -> 219.0	26120	4.86	µg/L	99
		526.0 -> 169.0	34264			
EtFOSE	10.888	630.0 -> 58.9	80066	12.71	µg/L	100
MeFOSA	10.721	511.9 -> 219.0	22219	5.27	µg/L	95
		511.9 -> 169.0	32267			
MeFOSE	10.653	616.1 -> 58.9	60087	12.39	µg/L	100
PFDoDS	9.736	699.1 -> 79.9	5393	2.52	µg/L	97
		699.1 -> 98.8	2827			
NFDHA	5.360	295.0 -> 201.0	10581	4.93	µg/L	98
		295.0 -> 84.9	2789			
PFMBA	4.687	279.0 -> 85.1	41783	5.06	µg/L	100
PFMPA	3.413	229.0 -> 84.9	32012	5.17	µg/L	100
PFEESA	5.925	314.8 -> 134.9	105321	4.60	µg/L	99
		314.8 -> 82.9	3468			

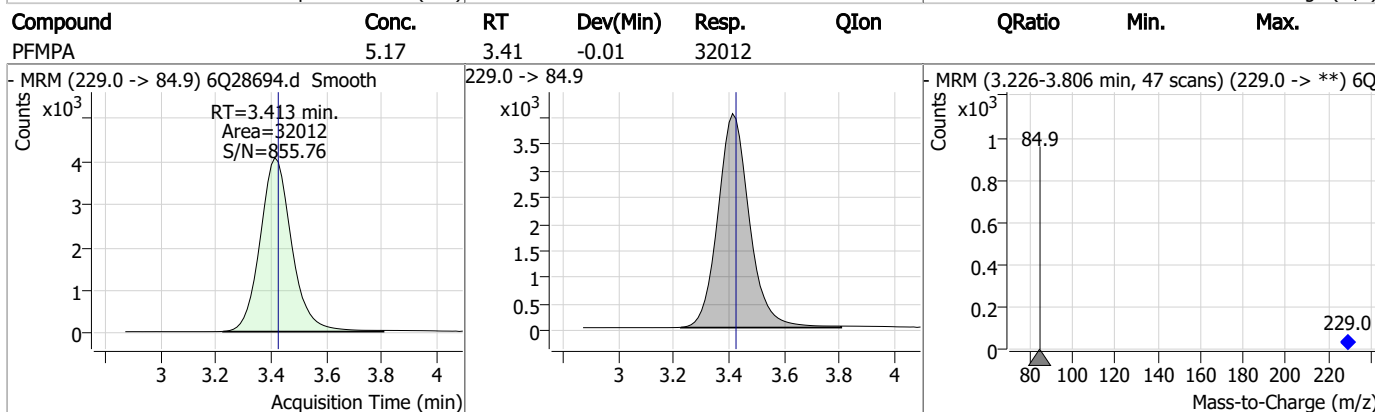
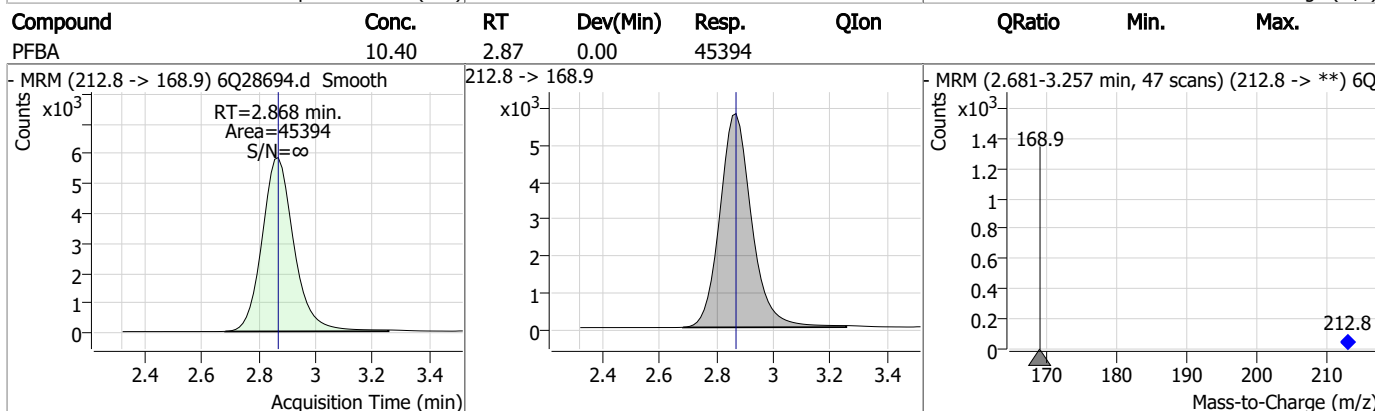
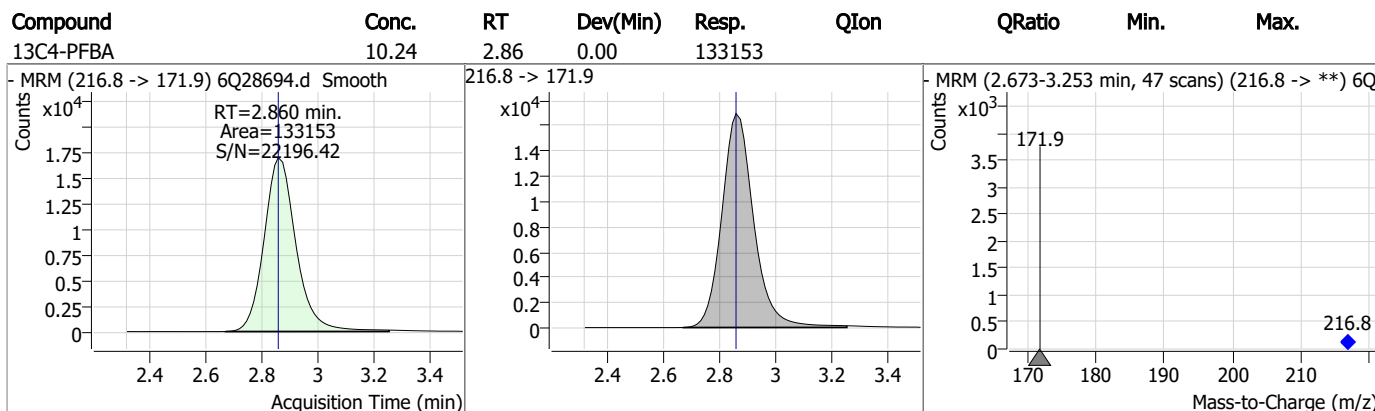
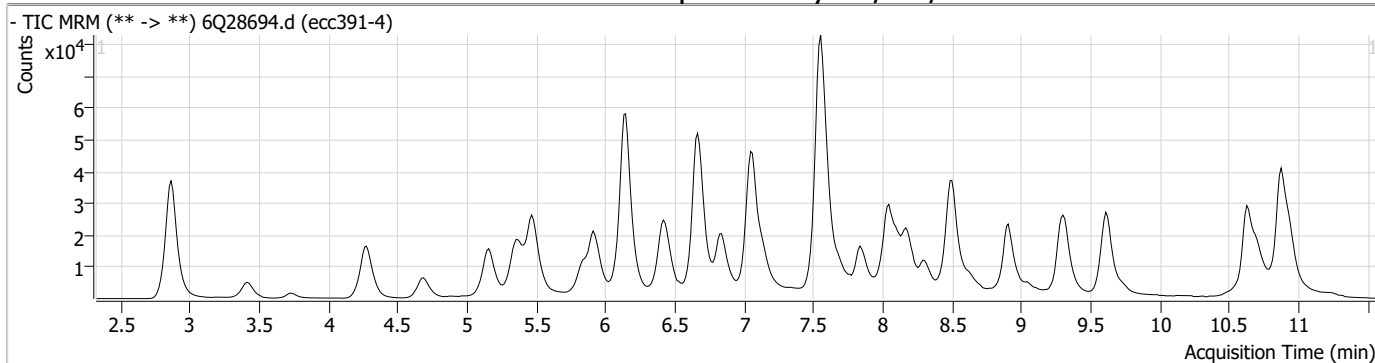
# = Qualifier out of range, m = manually integrated, + = Area summed

### Perfluorinated Compounds by LC/MS/MS

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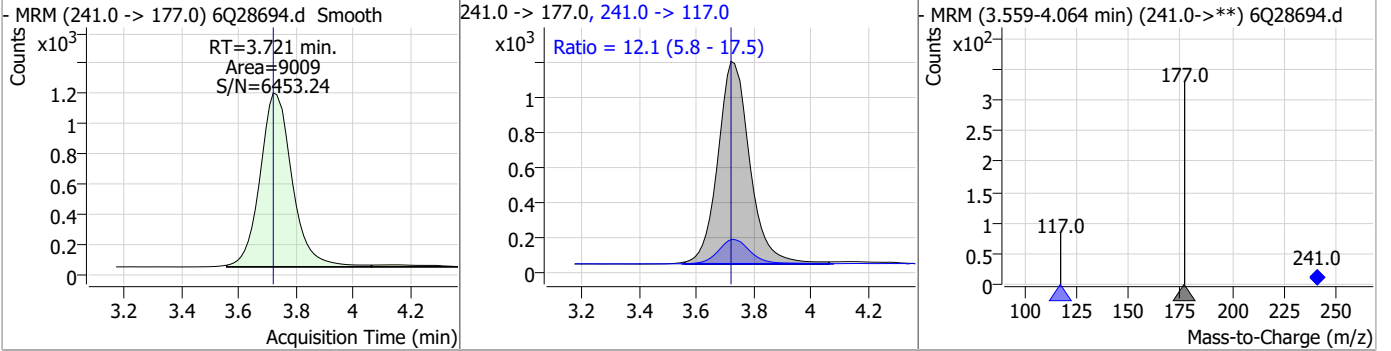
### Perfluorinated Compounds by LC/MS/MS



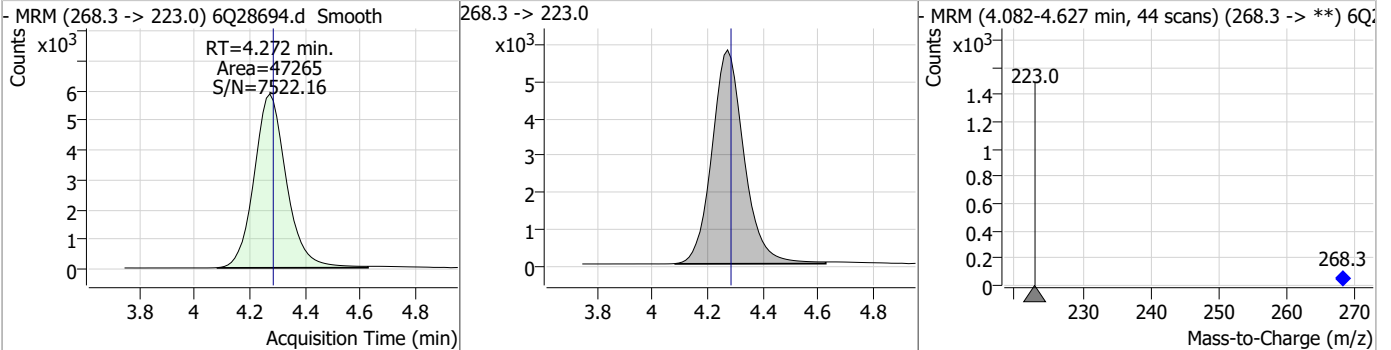
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### Perfluorinated Compounds by LC/MS/MS

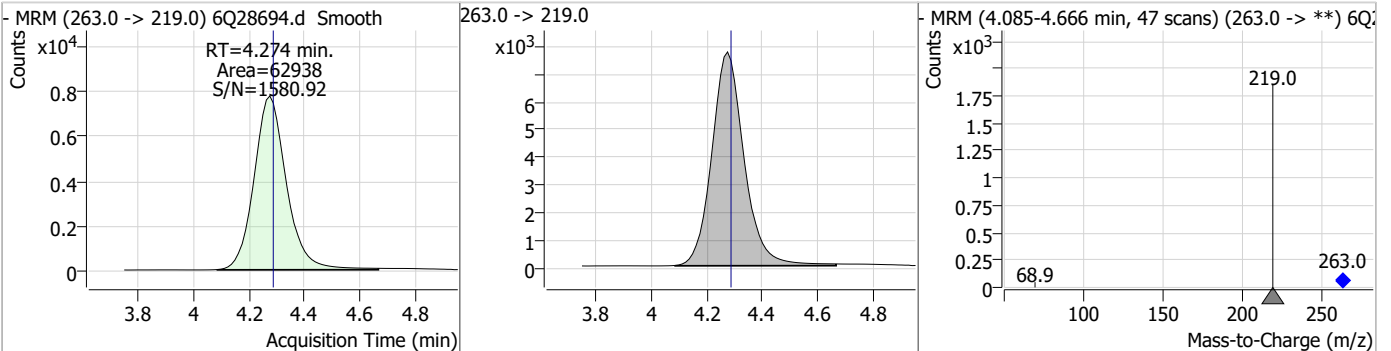
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.70	3.72	0.00	9009	241.0 -> 117.0	12.1	5.8	17.5



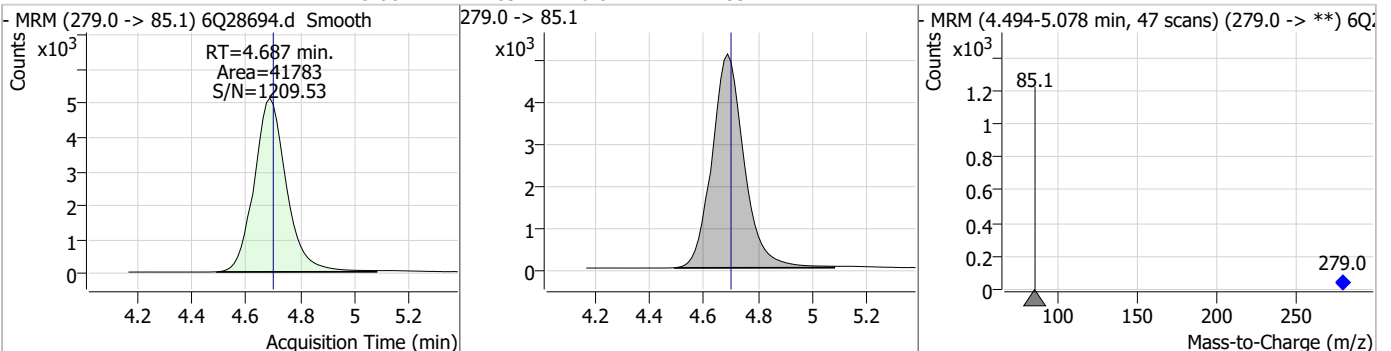
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.80	4.27	-0.01	47265				



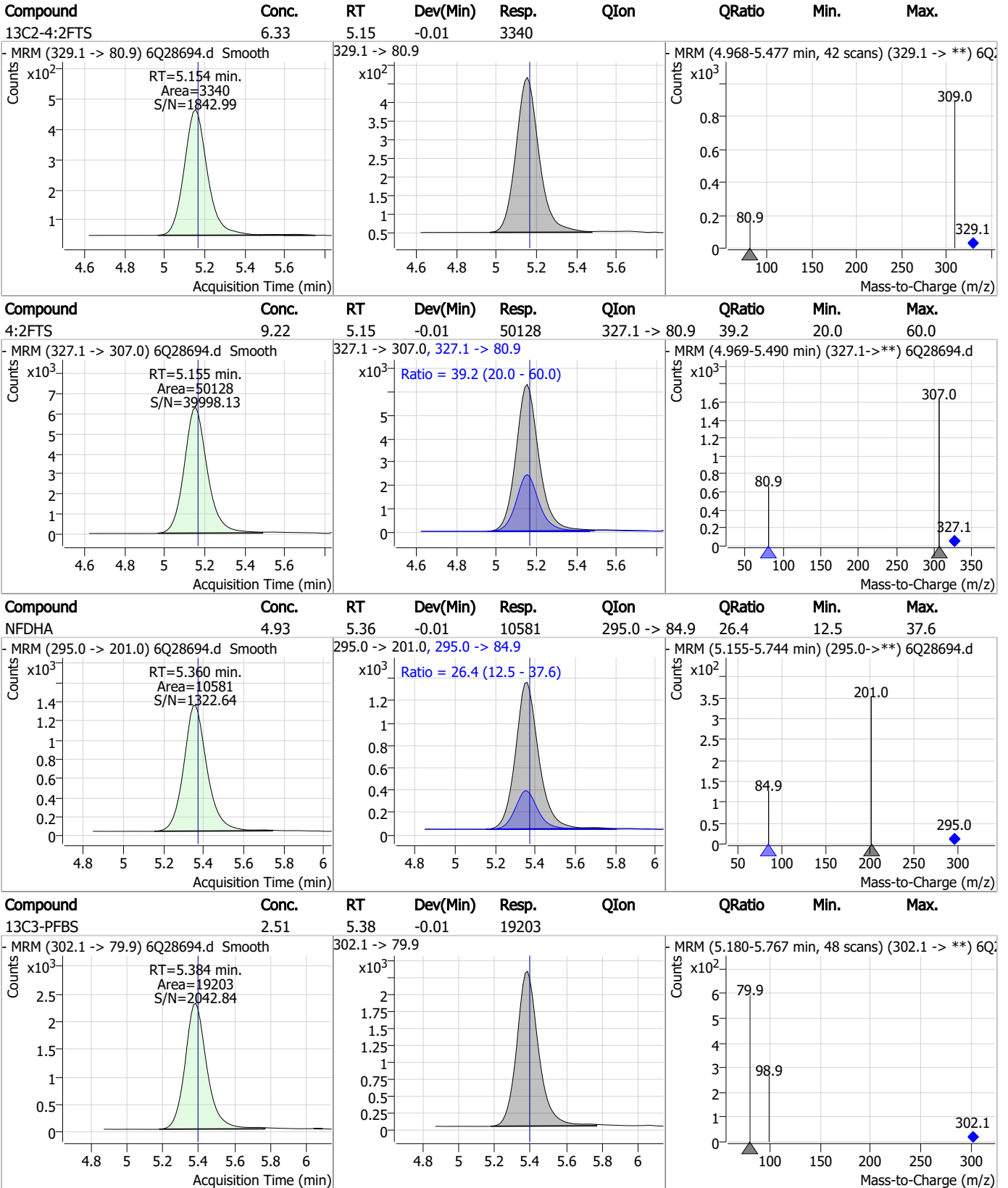
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.25	4.27	-0.01	62938				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.06	4.69	-0.01	41783				



### Perfluorinated Compounds by LC/MS/MS

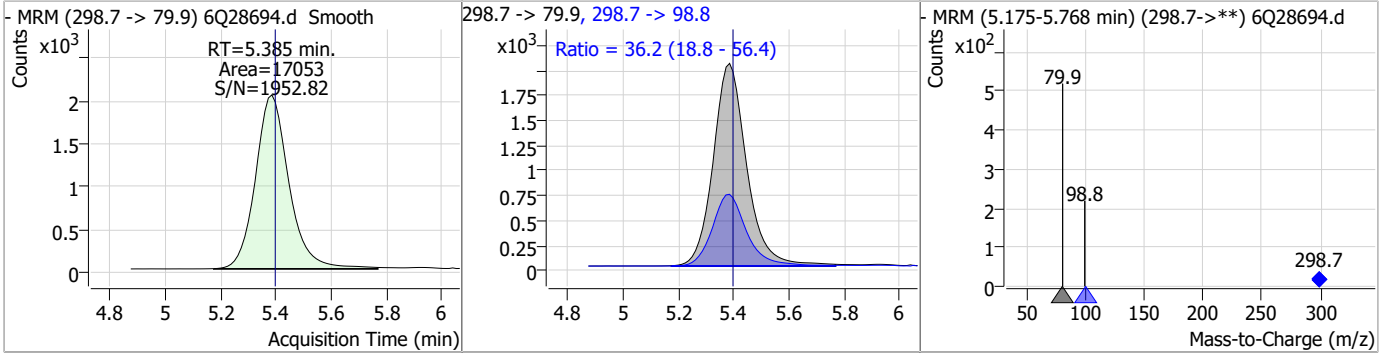


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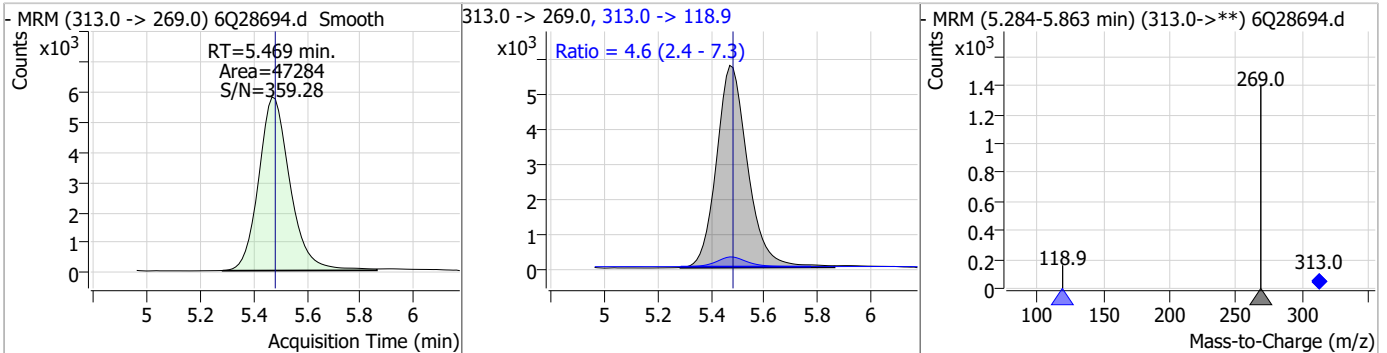


### Perfluorinated Compounds by LC/MS/MS

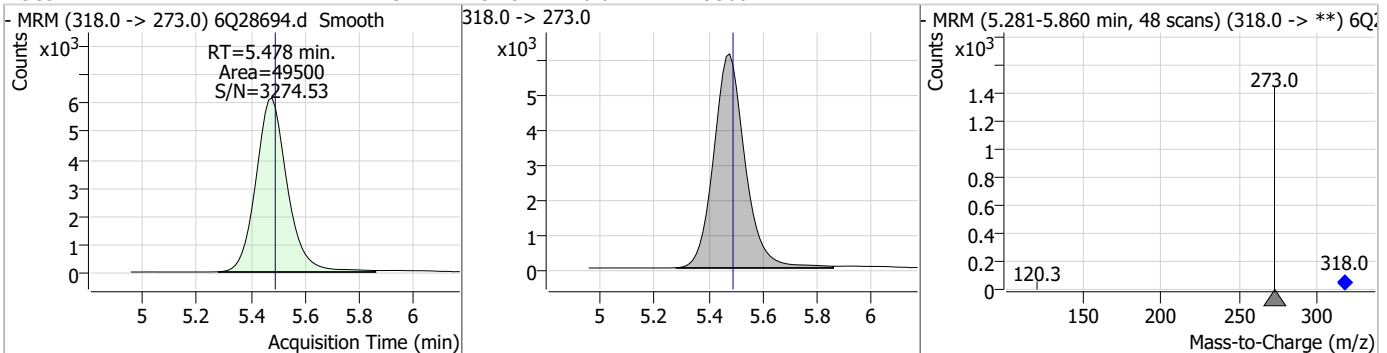
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.33	5.38	-0.01	17053	298.7 -> 98.8	36.2	18.8	56.4



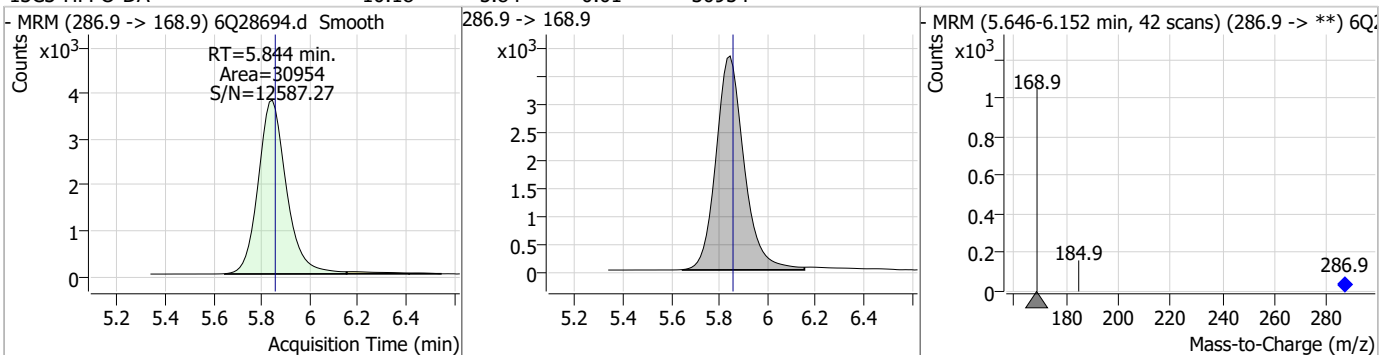
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.55	5.47	-0.01	47284	313.0 -> 118.9	4.6	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.43	5.48	-0.01	49500	318.0 -> 273.0	4.6	2.4	7.3



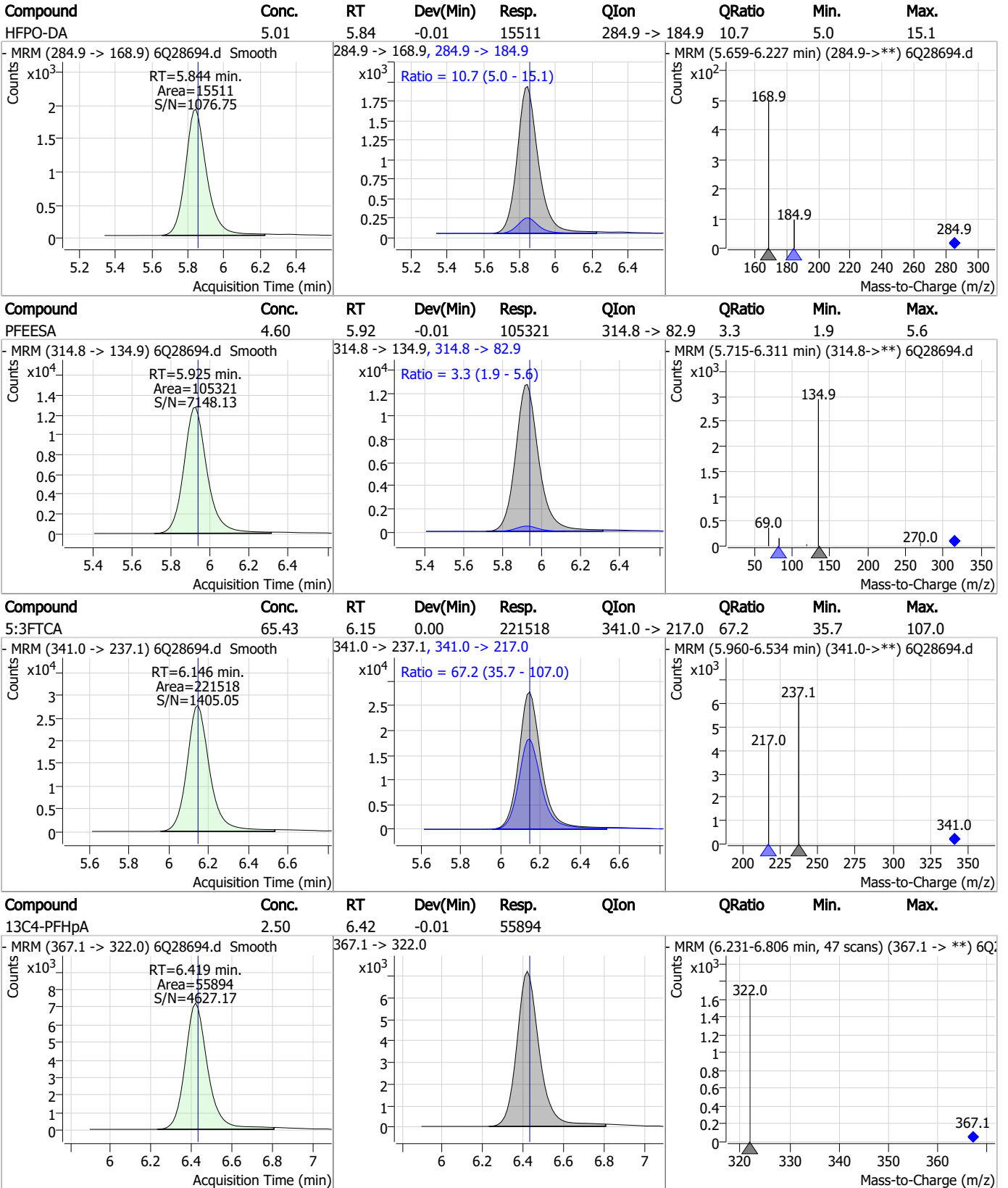
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.18	5.84	-0.01	30954	286.9 -> 168.9	4.6	2.4	7.3



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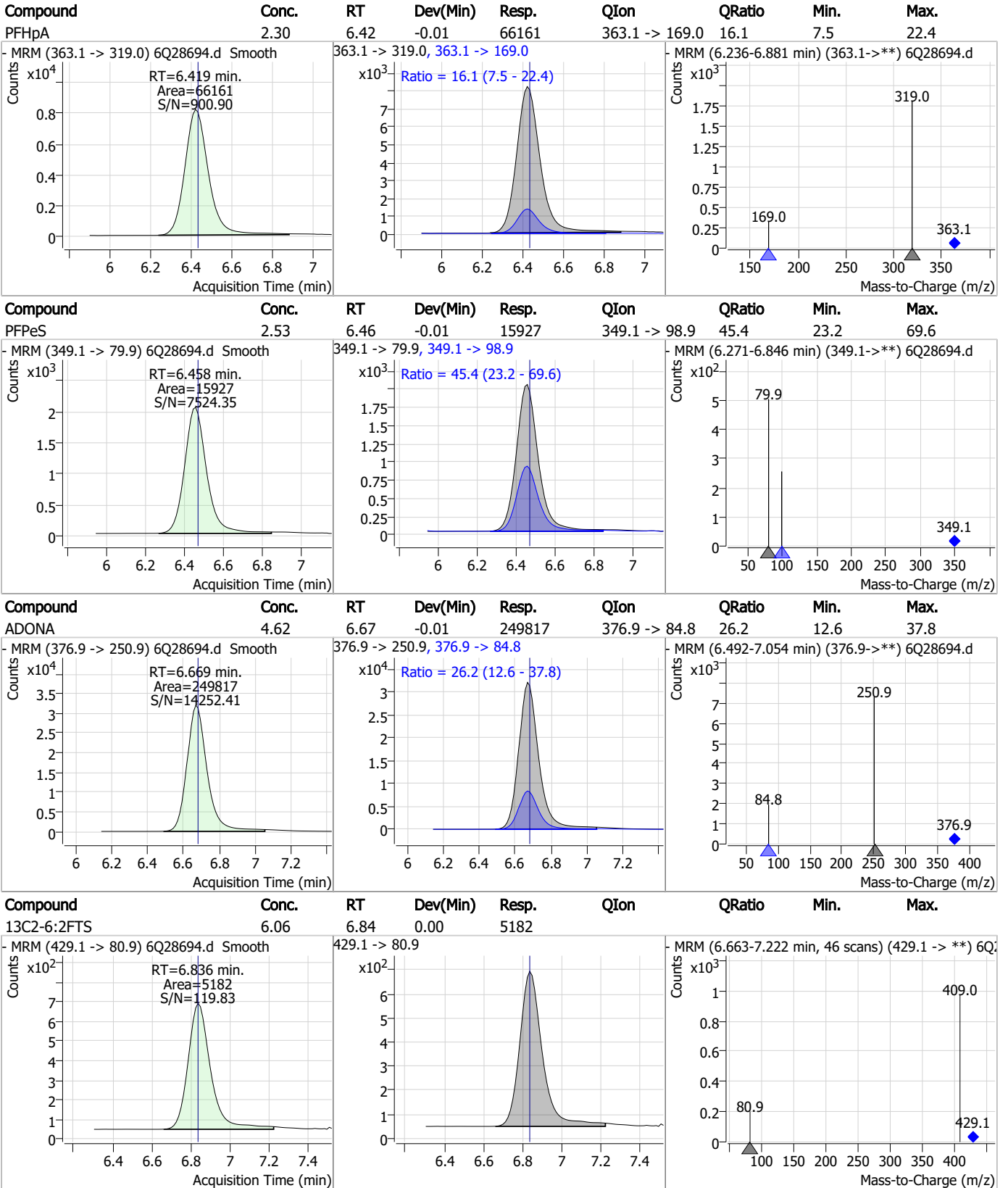
### Perfluorinated Compounds by LC/MS/MS



7.7.17



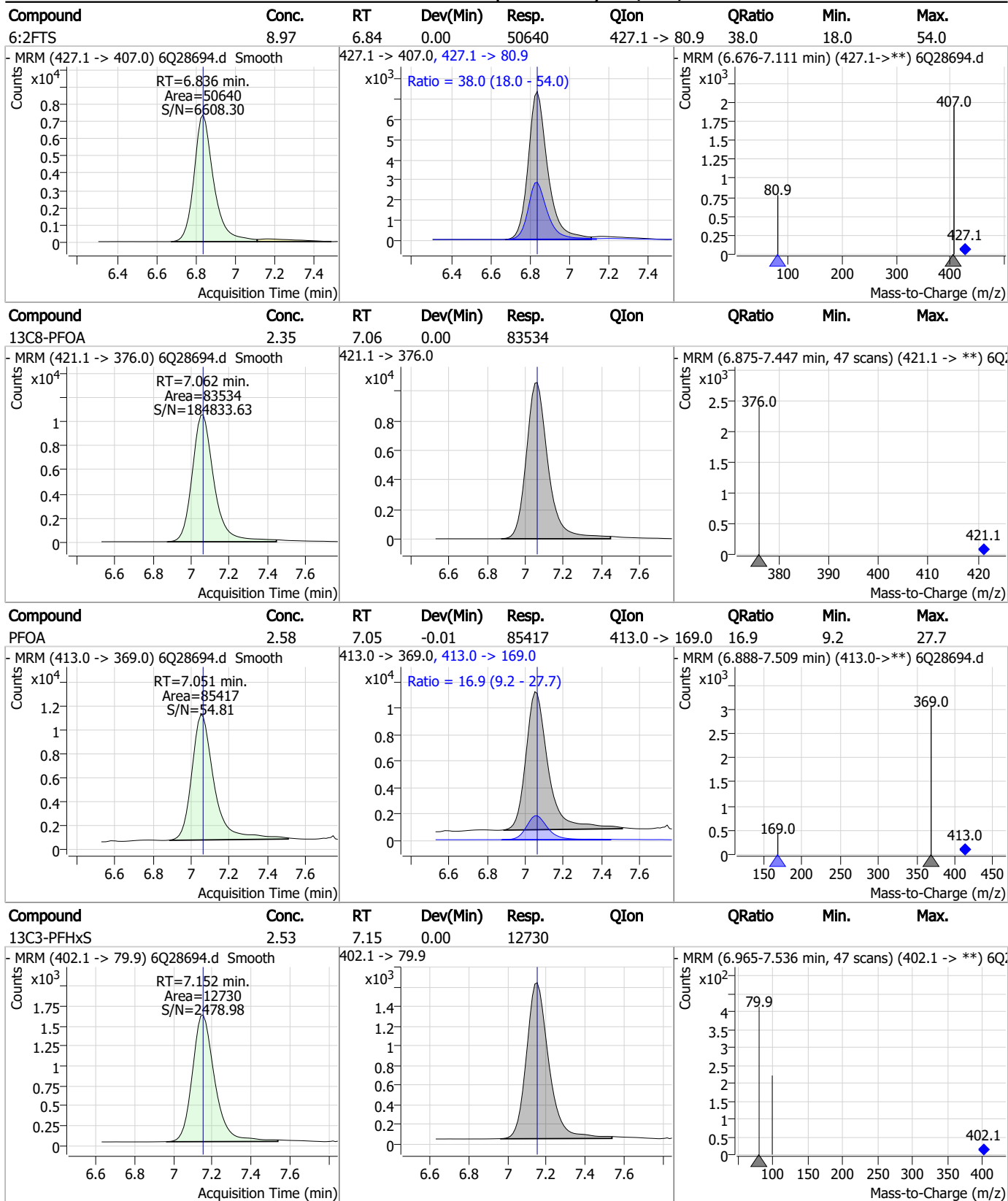
### Perfluorinated Compounds by LC/MS/MS



7.7.17



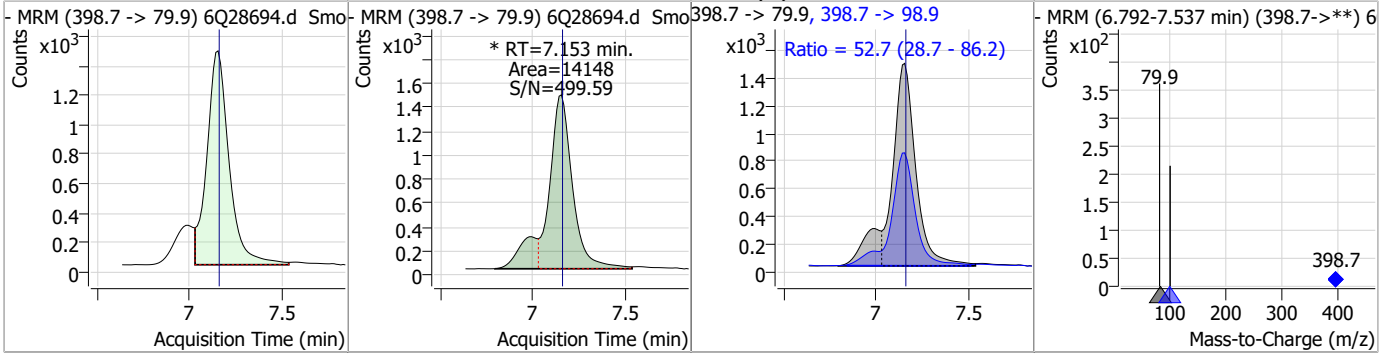
### Perfluorinated Compounds by LC/MS/MS



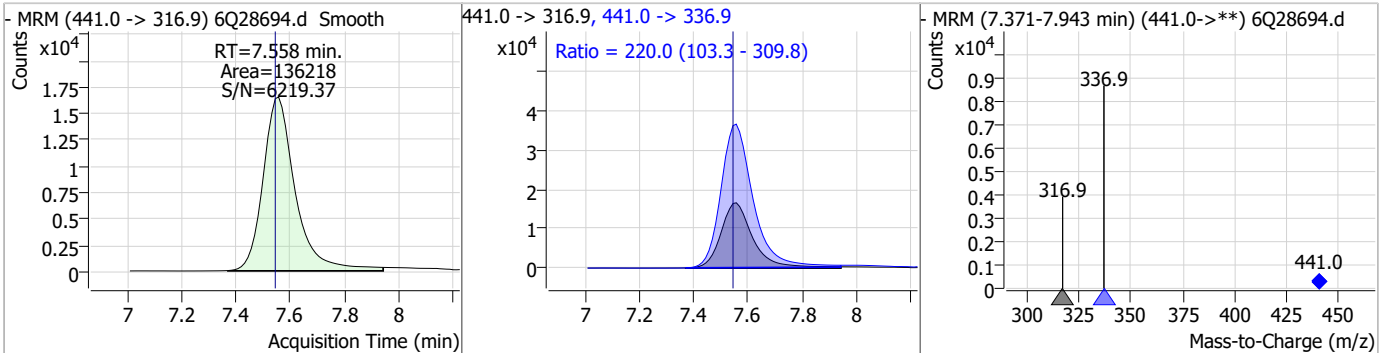
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### Perfluorinated Compounds by LC/MS/MS

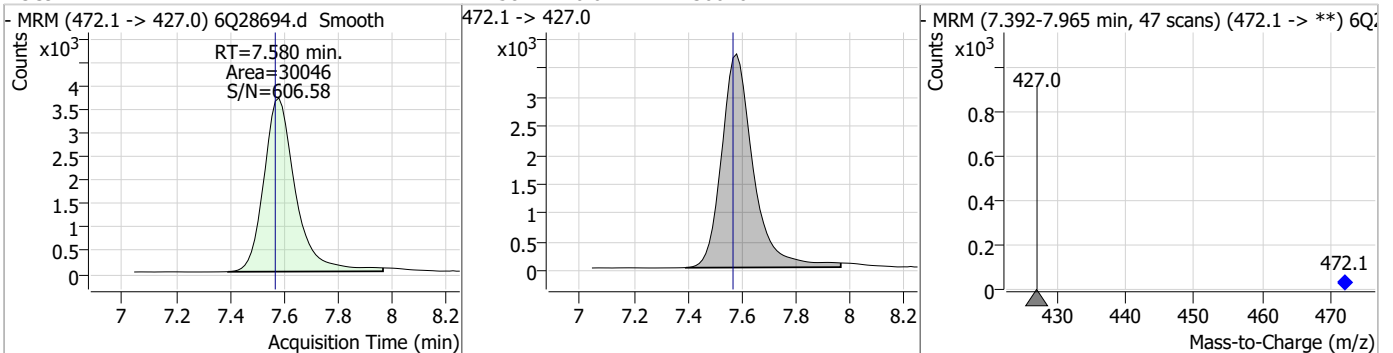
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.40	7.15	0.00	14148 (m)	398.7 -> 98.9	52.7	28.7	86.2



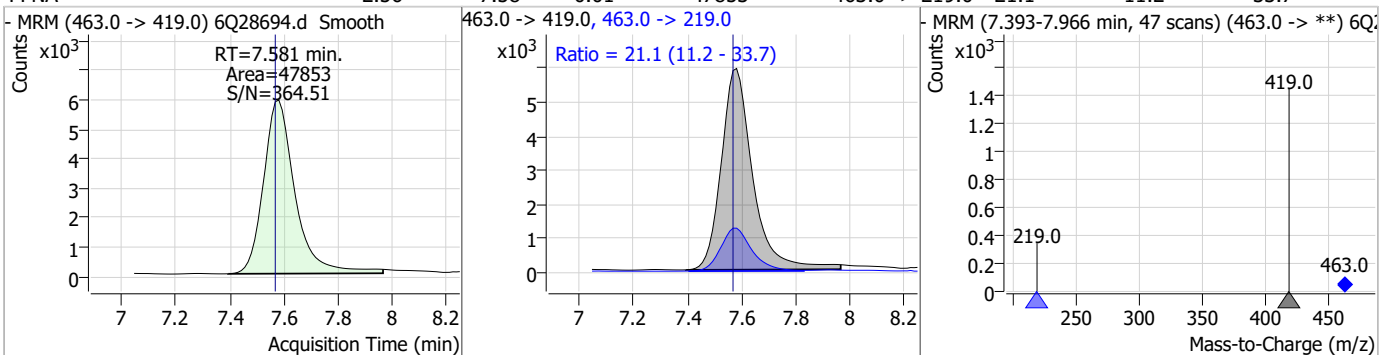
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	63.53	7.56	0.01	136218	441.0 -> 336.9	220.0	103.3	309.8



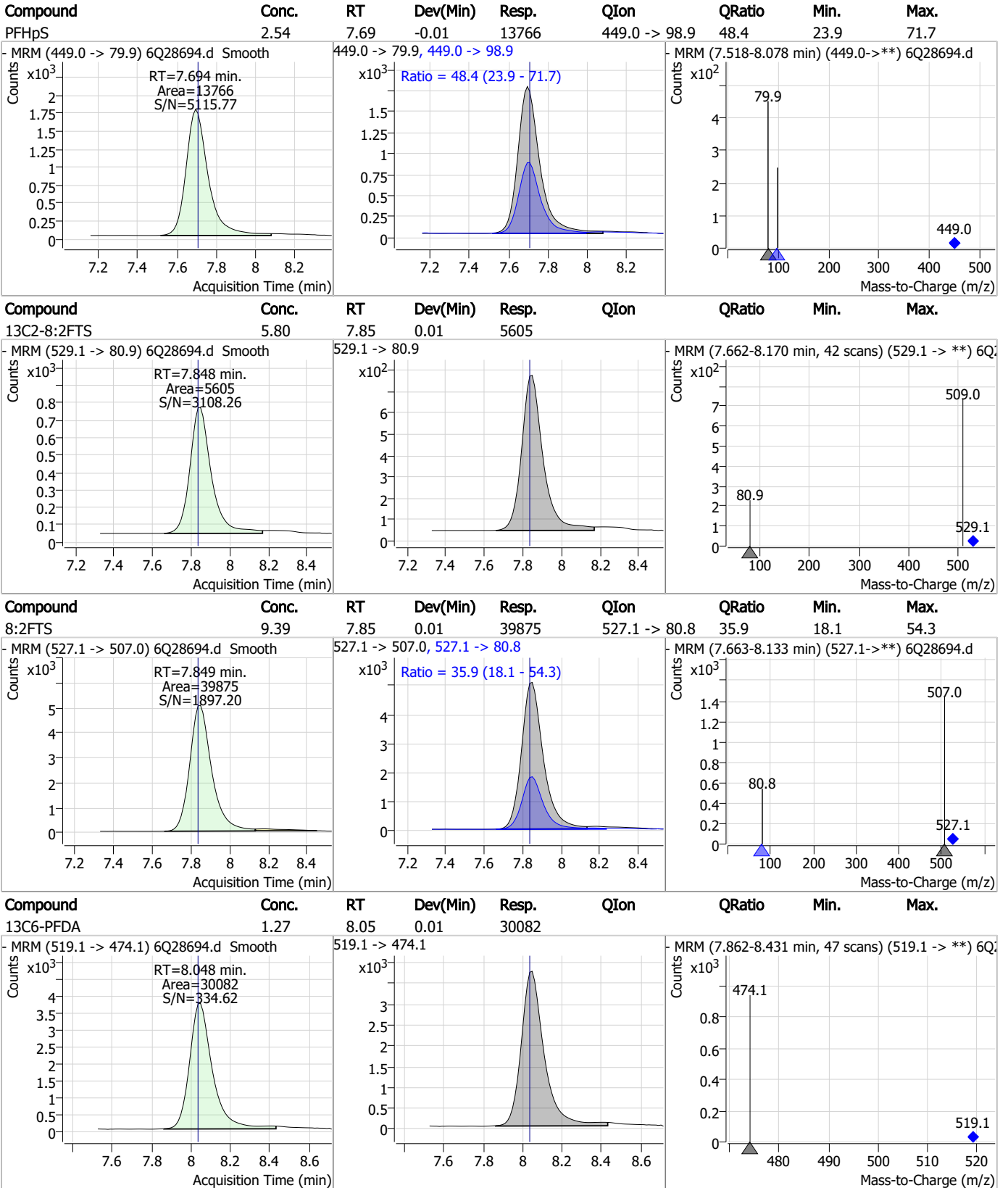
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.21	7.58	0.01	30046	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.56	7.58	0.01	47853	463.0 -> 219.0	21.1	11.2	33.7



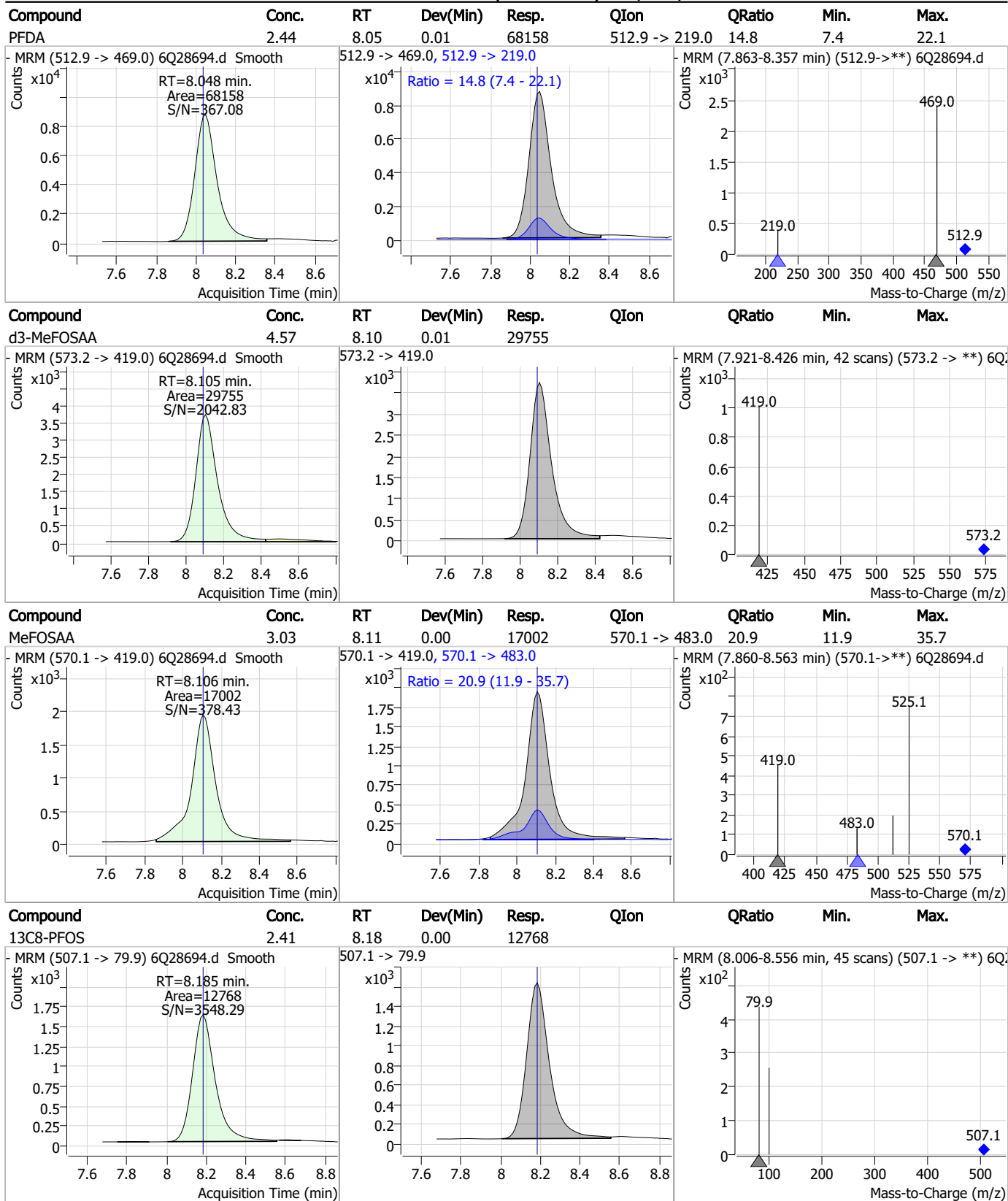
### Perfluorinated Compounds by LC/MS/MS



7.7.17



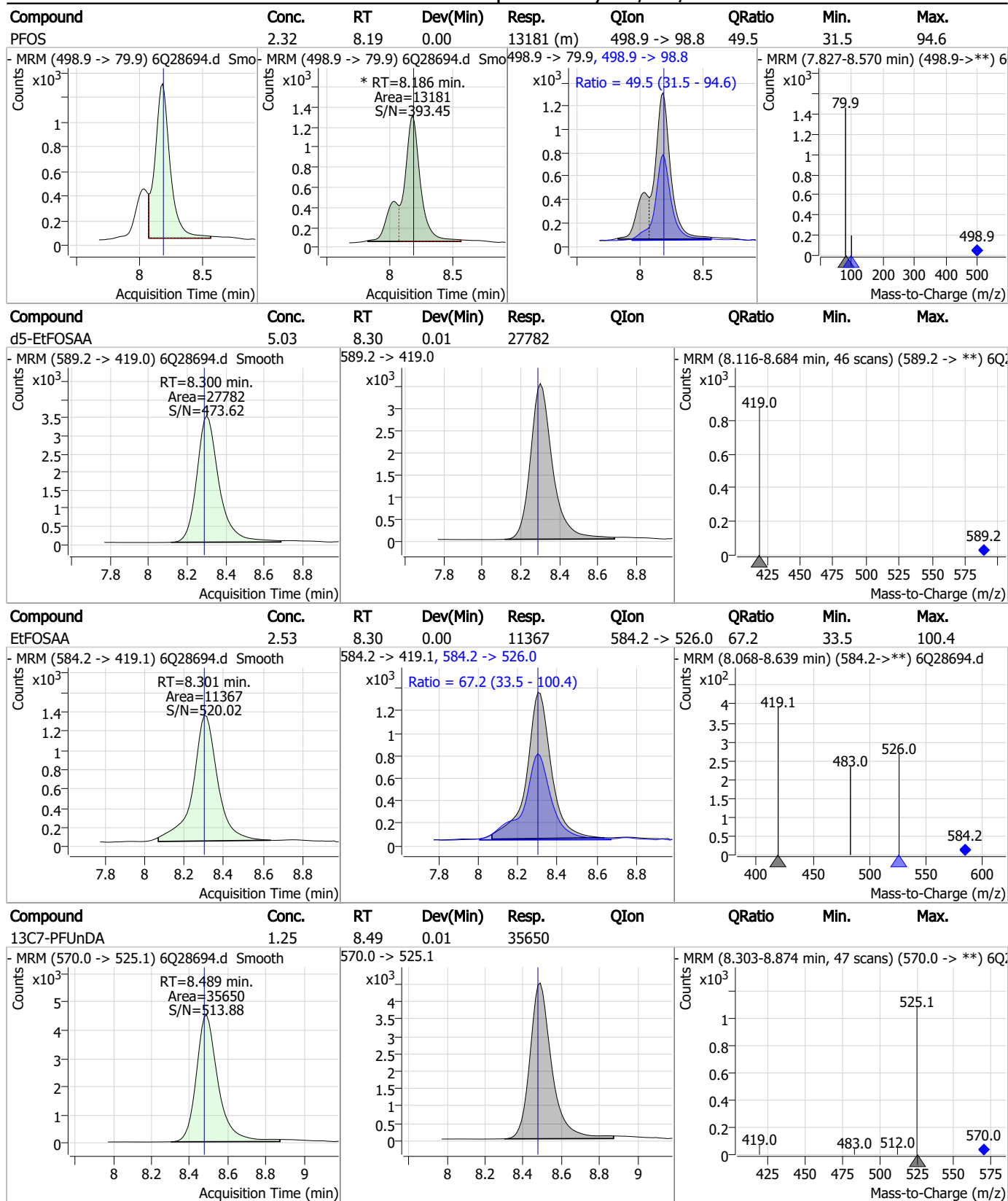
### Perfluorinated Compounds by LC/MS/MS



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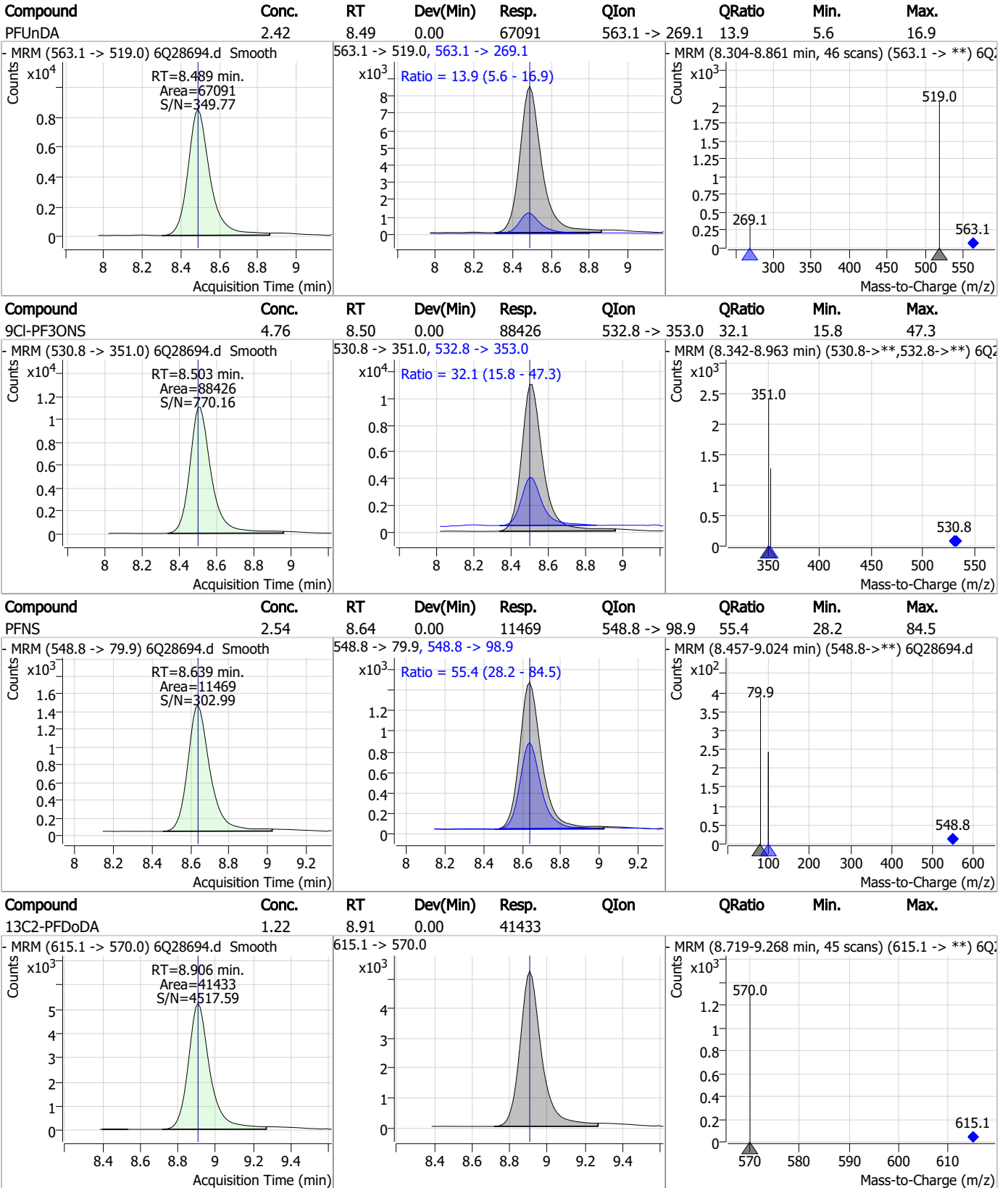
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS



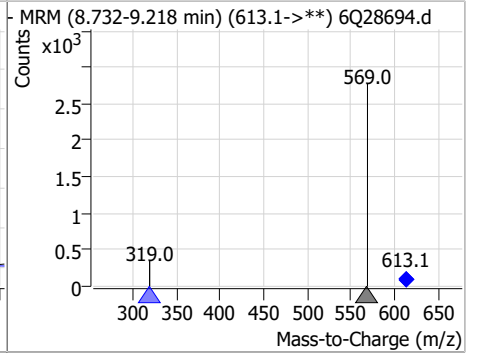
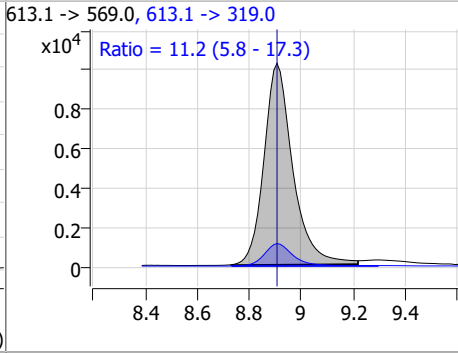
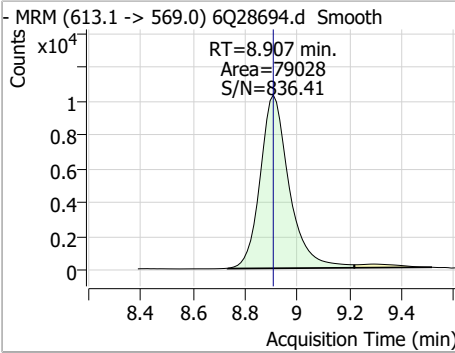
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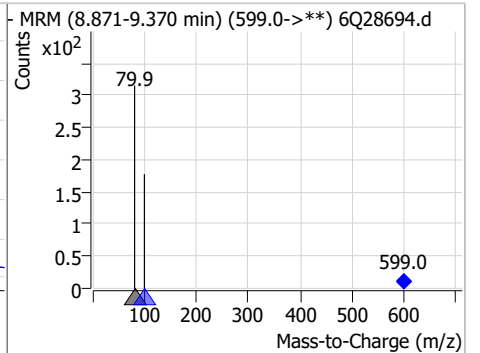
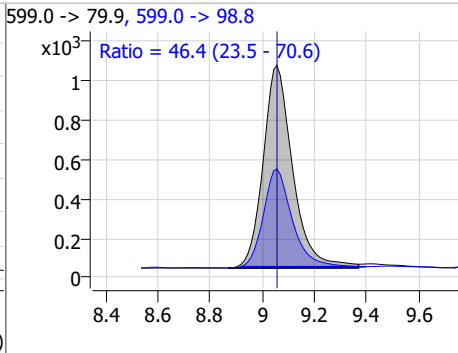
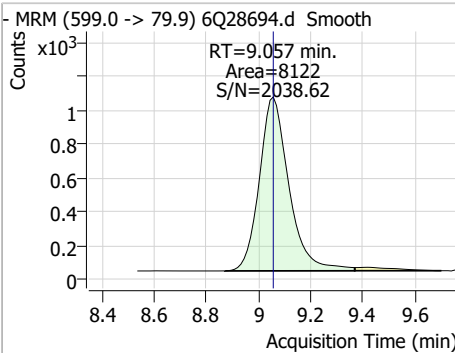


### Perfluorinated Compounds by LC/MS/MS

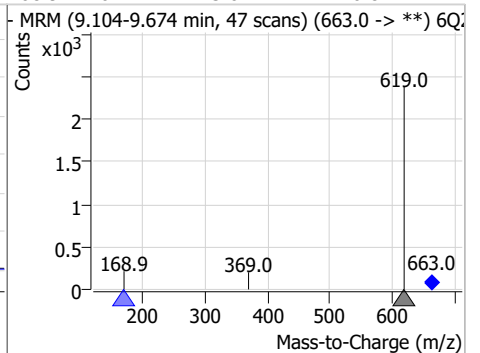
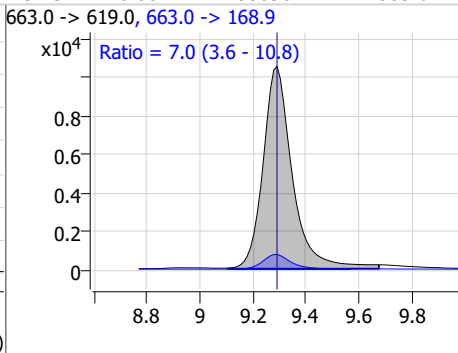
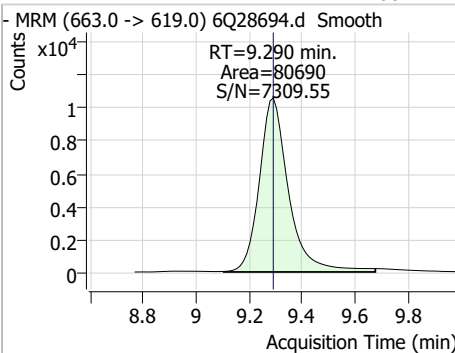
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	2.57	8.91	0.00	79028	613.1 -> 319.0	11.2	5.8	17.3



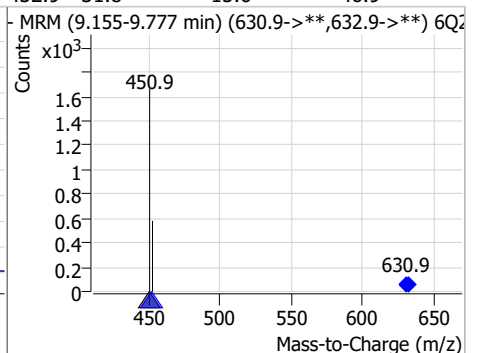
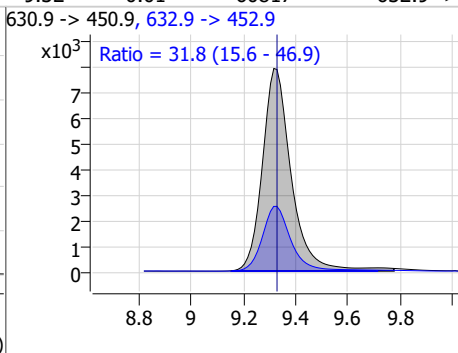
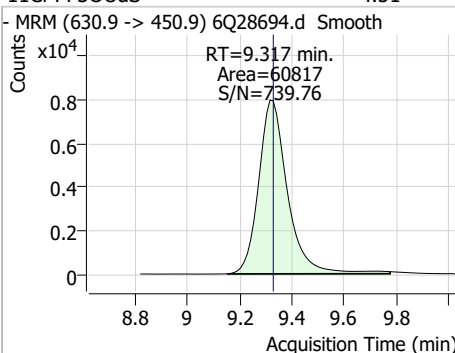
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.44	9.06	0.00	8122	599.0 -> 98.8	46.4	23.5	70.6



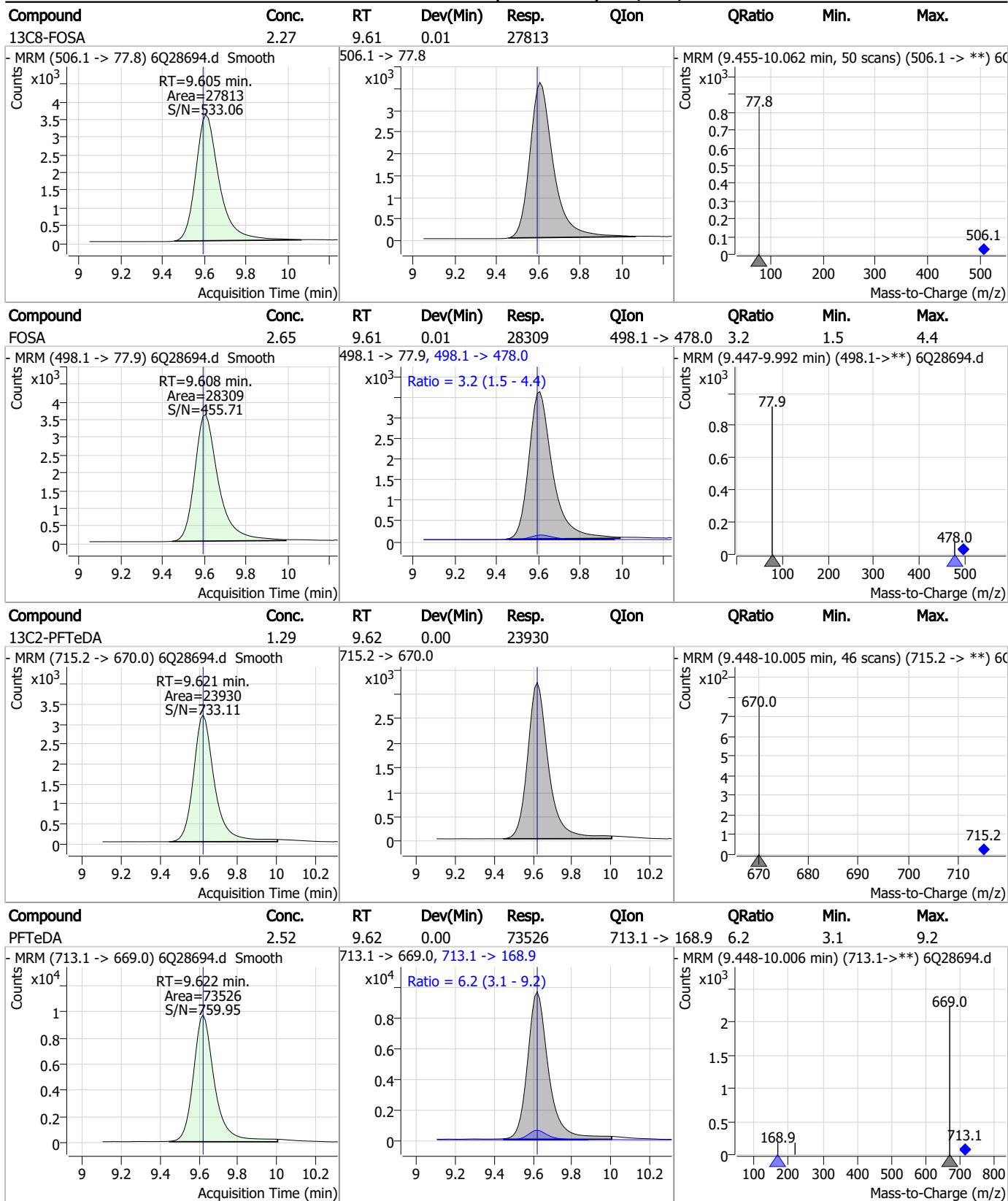
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.68	9.29	0.00	80690	663.0 -> 168.9	7.0	3.6	10.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	4.51	9.32	-0.01	60817	632.9 -> 452.9	31.8	15.6	46.9



### Perfluorinated Compounds by LC/MS/MS

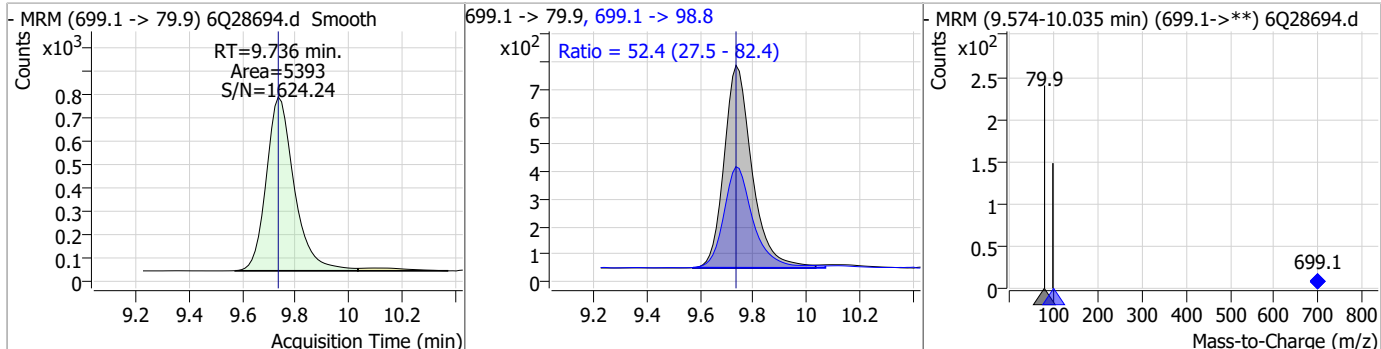


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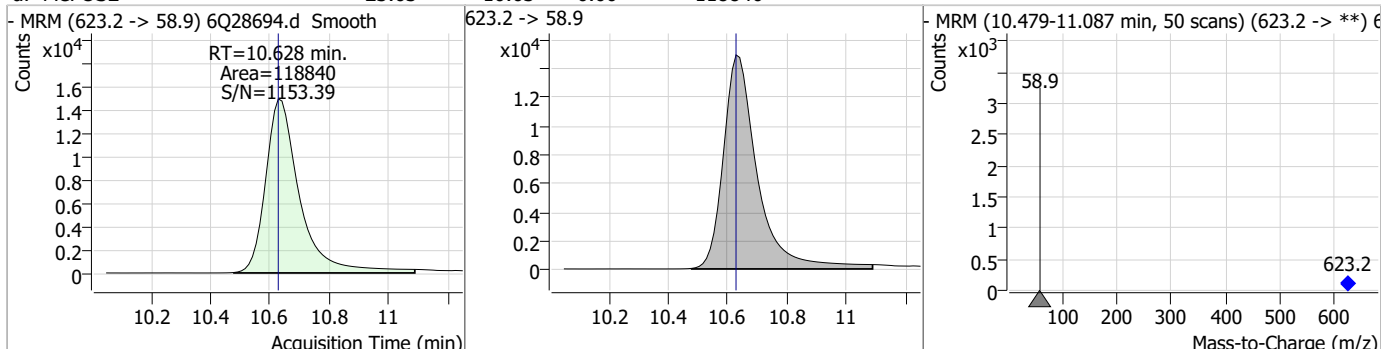


### Perfluorinated Compounds by LC/MS/MS

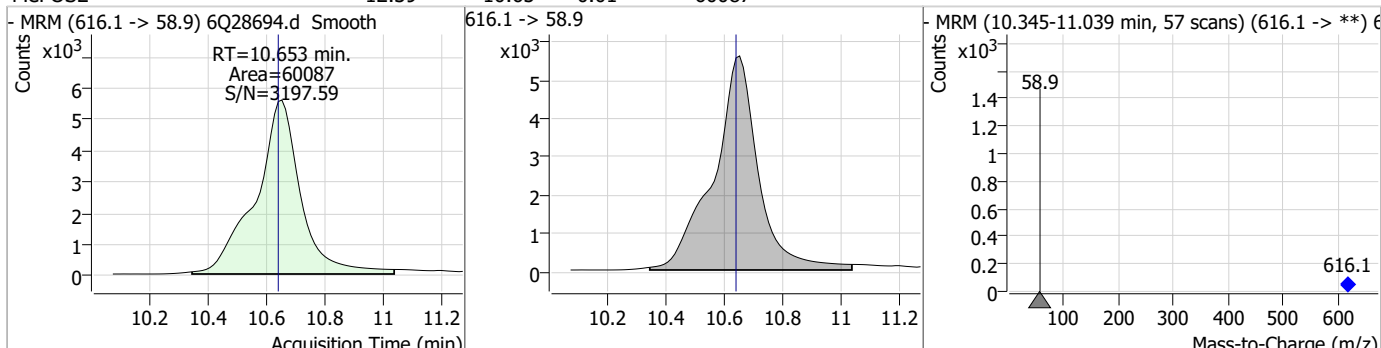
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.52	9.74	0.00	5393	699.1 -> 98.8	52.4	27.5	82.4



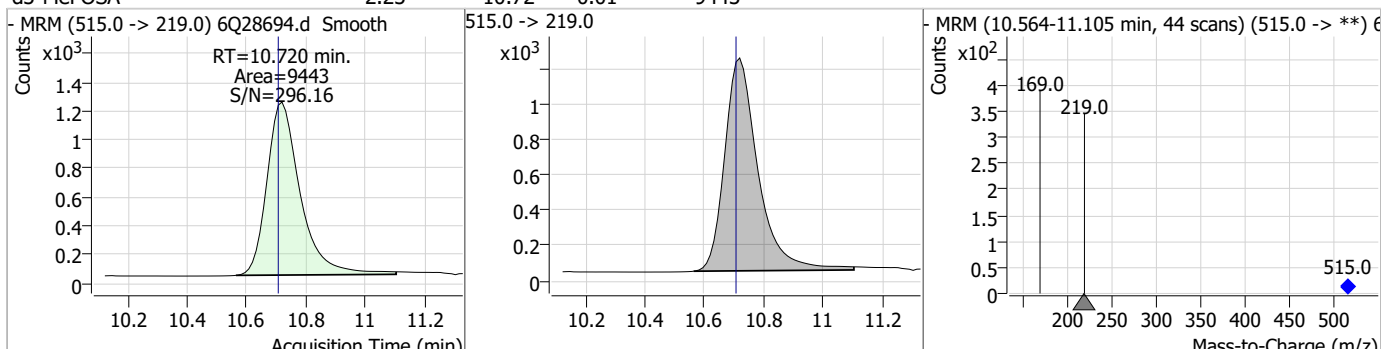
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.63	10.63	0.00	118840				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.39	10.65	0.01	60087				

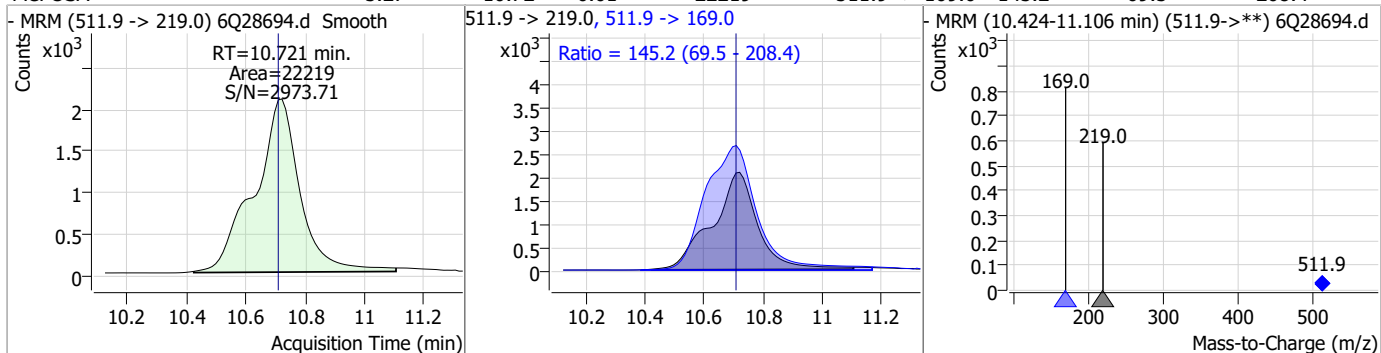


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.23	10.72	0.01	9443				

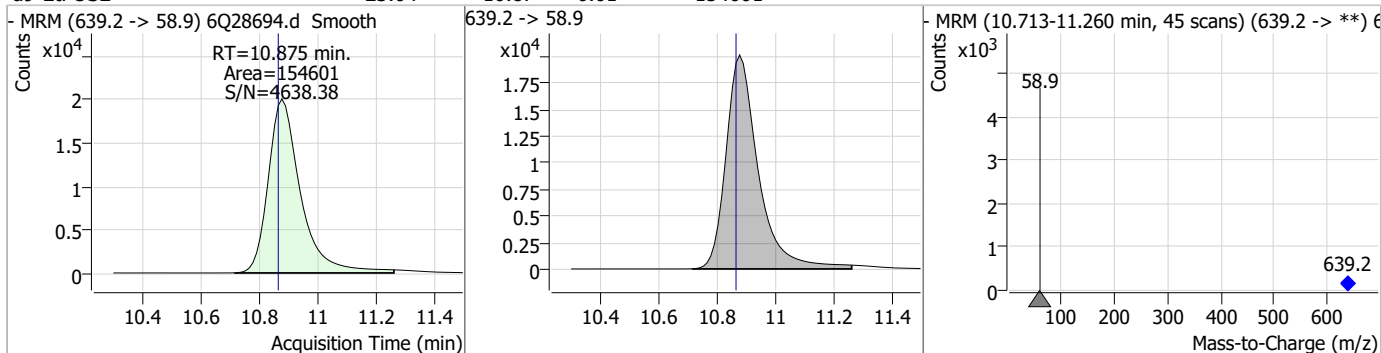


### Perfluorinated Compounds by LC/MS/MS

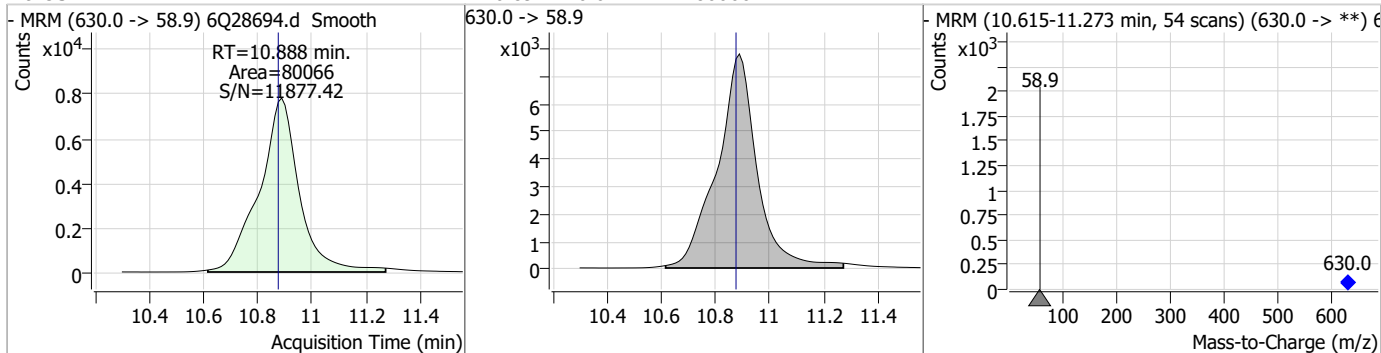
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	5.27	10.72	0.01	22219	511.9 -> 169.0	145.2	69.5	208.4



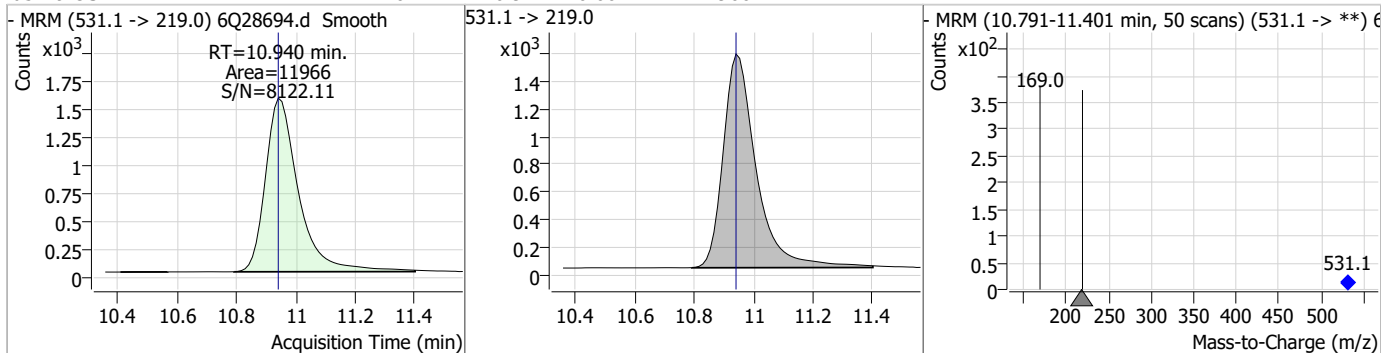
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.04	10.87	0.01	154601				



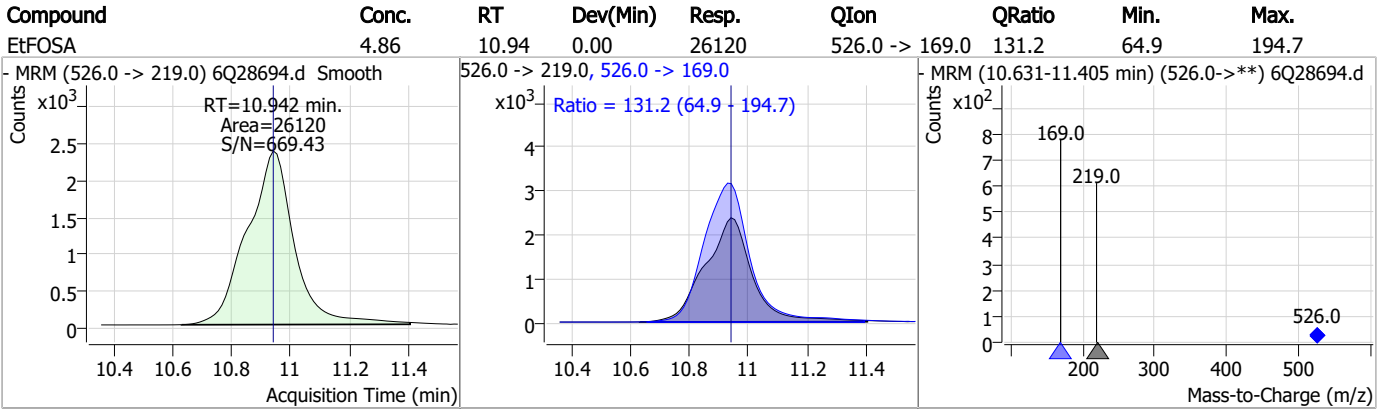
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.71	10.89	0.01	80066				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.46	10.94	0.00	11966				



### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q396-ECC391      Method: EPA DRAFT 1633  
Lab FileID: 6Q28694.D      Analyst approved: 11/21/23 15:17 Anna Ludwig  
Injection Time: 11/21/23 12:53      Supervisor approved: 11/21/23 17:27 Natasha Guntie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

7.7.17.1

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SGS ORLANDO

DATE:	11/12/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	2.5 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_111223_S6Q391
CAL DATE:	11/12/23
ANALYST:	M. Valls
RUN BATCH:	S6Q391

ELUENT A LOT #:	ACN 226166
ELUENT B LOT #:	HPLC WATER: 232305 W5% Acetonitrile: 232980 2mM AMAC.
IC/CC STD LOT #:	LCMS 2212-G
ICV STD LOT #:	LCMS 2212G/2211
ISTD/ID STD LOT #:	12030/12087D

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q28185.d	P1-B9	CCB	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	✓
2	6Q28186.d	P1-A1	CCB	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	✓
3	6Q28187.d	P1-B3	RT TDCA	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	✓
4	6Q28188.d	P1-B4	RT BR-LN	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	Response high.
5	6Q28189.d	P1-A9	High Std	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	↓
6	6Q28190.d	P1-A1	IBLK	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	↓
7	6Q28191.d	P1-A5	cc387-4	1633full.m	QC	20/500	OP99704.S6Q391.500,,,5.0,1,water	Recalibrate
8	6Q28192.d	P1-A2	cc387-1.0LL	1633full.m	QC	1.6/500	OP99704.S6Q391.500,,,5.0,1,water	↓
9	6Q28193.d	P1-B9	CCB	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	✓
10	6Q28194.d	P1-A1	CCB	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	✓
11	6Q28195.d	P1-B9	CCB	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	✓
12	6Q28196.d	P1-B3	RT TDCA	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	✓
13	6Q28197.d	P1-B4	RT BR-LN	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	✓
14	6Q28198.d	P1-A1	ic391-0	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	Tune file
15	6Q28199.d	P1-A2	ic391-1	1633full.m	Calibration	1.6/500	OP99704.S6Q391.500,,,5.0,1,water	Curve Pass
16	6Q28200.d	P1-A3	ic391-2	1633full.m	Calibration	3.2/500	OP99704.S6Q391.500,,,5.0,1,water	✓
17	6Q28201.d	P1-A4	ic391-3	1633full.m	Calibration	10/500	OP99704.S6Q391.500,,,5.0,1,water	✓
18	6Q28202.d	P1-A5	ic391-4	1633full.m	Calibration	20/500	OP99704.S6Q391.500,,,5.0,1,water	✓
19	6Q28203.d	P1-A6	ic391-5	1633full.m	Calibration	40/500	OP99704.S6Q391.500,,,5.0,1,water	✓
20	6Q28204.d	P1-A7	ic391-6	1633full.m	Calibration	100/500	OP99704.S6Q391.500,,,5.0,1,water	✓
21	6Q28205.d	P1-A8	ic391-7	1633full.m	Calibration	200/500	OP99704.S6Q391.500,,,5.0,1,water	✓
22	6Q28206.d	P1-A9	ic391-8	1633full.m	Calibration	1x	OP99704.S6Q391.500,,,5.0,1,water	✓
23	6Q28207.d	P1-A1	IBLK	1633full.m	Sample		OP99704.S6Q391.500,,,5.0,1,water	ND
24	6Q28208.d	P1-B1	icv391-4	1633full.m	QC	20/500	OP99704.S6Q391.500,,,5.0,1,water	Pass
25	6Q28209.d	P1-B2	icv391-20	1633full.m	QC	100/500	OP99704.S6Q391.500,,,5.0,1,water	Pass
26	6Q28210.d	P1-A5	cc391-4	1633full.m	QC	20/500	OP99704.S6Q391.500,,,5.0,1,water	Pass
27	6Q28211.d	P1-A2	cc391-1.0LL	1633full.m	QC	1.6/500	OP99704.S6Q391.500,,,5.0,1,water	Pass
28	6Q28212.d	P5-A1	OP99894-BS	1633full.m	Sample		OP99894.S6Q391.500,,,5.0,1,soil	✓
29	6Q28213.d	P5-A2	OP99894-LLBS:3	1633full.m	Sample		OP99894.S6Q391.500,,,5.0,1,soil	✓
30	6Q28214.d	P5-A3	OP99894-MB	1633full.m	Sample		OP99894.S6Q391.500,,,5.0,1,soil	✓
31	6Q28215.d	P5-A4	FC10631-8	1633full.m	Sample		OP99894.S6Q391.4.95,,,5.0,1,soil	✓
32	6Q28216.d	P5-A5	FC10631-9	1633full.m	Sample		OP99894.S6Q391.4.95,,,5.0,1,soil	✓
33	6Q28217.d	P5-A6	FC10631-10	1633full.m	Sample		OP99894.S6Q391.5.05,,,5.0,1,soil	✓
34	6Q28218.d	P5-A7	FC10631-11	1633full.m	Sample		OP99894.S6Q391.5.04,,,5.0,1,soil	✓
35	6Q28219.d	P5-A8	FC10631-12	1633full.m	Sample		OP99894.S6Q391.4.95,,,5.0,1,soil	✓



LCMS6-6Q ANALYSIS LOG

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36	6Q28220.d	P5-A9	FC10631-14	1633full.m	Sample	OP99894,S6Q391,5.05,,5.0,1,soil	✓
37	6Q28221.d	P1-A5	cc391-4	1633full.m	QC	OP99704,S6Q391,5.00,,,5.0,1,water	Pass
38	6Q28222.d	P1-A1	iccb	1633full.m	Sample	OP99704,S6Q391,5.00,,,5.0,1,water	ND
39	6Q28223.d	P5-B1	FC10631-15	1633full.m	Sample	OP99894,S6Q391,4.96,,5.0,1,soil	✓
40	6Q28224.d	P5-B2	FC10631-16	1633full.m	Sample	OP99894,S6Q391,4.98,,5.0,1,soil	✓
41	6Q28225.d	P5-B3	FC10631-17	1633full.m	Sample	OP99894,S6Q391,4.98,,5.0,1,soil	✓
42	6Q28226.d	P5-B4	FC10636-1	1633full.m	Sample	OP99894,S6Q391,4.98,,5.0,1,soil	✓
43	6Q28227.d	P5-B5	FC10636-6	1633full.m	Sample	OP99894,S6Q391,4.98,,5.0,1,soil	✓
44	6Q28228.d	P5-B6	FC10636-9	1633full.m	Sample	OP99894,S6Q391,4.95,,5.0,1,soil	✓
45	6Q28229.d	P5-B7	FC10636-11	1633full.m	Sample	OP99894,S6Q391,4.95,,5.0,1,soil	✓
46	6Q28230.d	P5-B8	FC10636-15	1633full.m	Sample	OP99894,S6Q391,4.95,,5.0,1,soil	✓
47	6Q28231.d	P5-B9	FC10636-18	1633full.m	Sample	OP99894,S6Q391,5.03,,5.0,1,soil	✓
48	6Q28232.d	P5-C1	FC10636-19	1633full.m	Sample	OP99894,S6Q391,4.96,,5.0,1,soil	✓
49	6Q28233.d	P1-A5	cc391-4	1633full.m	QC	OP99704,S6Q391,5.00,,,5.0,1,water	Pass
50	6Q28234.d	P1-A1	iccb	1633full.m	Sample	OP99704,S6Q391,5.00,,,5.0,1,water	ND
51	6Q28235.d	P5-C2	FC10636-21	1633full.m	Sample	OP99894,S6Q391,4.98,,5.0,1,soil	✓
52	6Q28236.d	P5-C3	FC10636-22	1633full.m	Sample	OP99894,S6Q391,5.02,,5.0,1,soil	✓
53	6Q28237.d	P5-C4	FC10636-40	1633full.m	Sample	OP99894,S6Q391,5.04,,5.0,1,soil	✓
54	6Q28238.d	P5-C5	OP99894-MSD	1633full.m	Sample	OP99894,S6Q391,4.98,,5.0,1,soil	✓
55	6Q28239.d	P5-C6	OP99894-MSD	1633full.m	Sample	OP99894,S6Q391,5.05,,5.0,1,soil	✓
56	6Q28240.d	P5-C7	FC10666-12	1633full.m	Sample	OP99890,S6Q391,5.50,,,5.0,5,water	✓
57	6Q28241.d	P5-C8	FC10666-13	1633full.m	Sample	OP99890,S6Q391,5.50,,,5.0,5,water	✓
58	6Q28242.d	P1-A5	cc391-4	1633full.m	QC	OP99704,S6Q391,5.00,,,5.0,1,water	Pass
59	6Q28243.d	P1-A1	iccb	1633full.m	Sample	OP99704,S6Q391,5.00,,,5.0,1,water	ND
60	6Q28244.d	P5-C9	OP99888-BS	1633full.m	Sample	OP99888,S6Q391,5.00,,,5.0,1,water	✓
61	6Q28245.d	P5-D1	OP99888-L.LBS:3	1633full.m	Sample	OP99888,S6Q391,5.00,,,5.0,1,water	✓
62	6Q28246.d	P5-D2	OP99888-MB	1633full.m	Sample	OP99888,S6Q391,5.00,,,5.0,1,water	✓
63	6Q28247.d	P5-D3	FC10658-1	1633full.m	Sample	OP99888,S6Q391,5.30,,,5.0,1,water	✓
64	6Q28248.d	P5-D4	FC10658-2	1633full.m	Sample	OP99888,S6Q391,5.40,,,5.0,1,water	✓
65	6Q28249.d	P5-D5	OP99888-MS	1633full.m	Sample	OP99888,S6Q391,5.40,,,5.0,1,water	✓
66	6Q28250.d	P5-D6	FC10658-3	1633full.m	Sample	OP99888,S6Q391,5.40,,,5.0,1,water	✓
67	6Q28251.d	P5-D7	OP99888-DUP	1633full.m	Sample	OP99888,S6Q391,5.20,,,5.0,1,water	✓
68	6Q28252.d	P5-D8	FC10658-4	1633full.m	Sample	OP99888,S6Q391,5.40,,,5.0,1,water	✓
69	6Q28253.d	P5-D9	FC10658-5	1633full.m	Sample	OP99888,S6Q391,5.20,,,5.0,1,water	✓
70	6Q28254.d	P1-A5	cc391-4	1633full.m	QC	OP99704,S6Q391,5.00,,,5.0,1,water	Pass
71	6Q28255.d	P1-A1	iccb	1633full.m	Sample	OP99704,S6Q391,5.00,,,5.0,1,water	ND
72	6Q28256.d	P5-E1	FC10658-6	1633full.m	Sample	OP99888,S6Q391,5.40,,,5.0,1,water	✓
73	6Q28257.d	P5-E2	FC10658-7	1633full.m	Sample	OP99888,S6Q391,5.40,,,5.0,1,water	✓
74	6Q28258.d	P5-E3	FC10658-8	1633full.m	Sample	OP99888,S6Q391,5.30,,,5.0,1,water	✓
75	6Q28259.d	P5-E4	FC10658-9	1633full.m	Sample	OP99888,S6Q391,5.10,,,5.0,1,water	✓
76	6Q28260.d	P5-E5	FC10658-10	1633full.m	Sample	OP99888,S6Q391,5.40,,,5.0,1,water	✓
77	6Q28261.d	P5-E6	FC10658-11	1633full.m	Sample	OP99888,S6Q391,5.30,,,5.0,1,water	✓
78	6Q28262.d	P5-E7	FC10658-12	1633full.m	Sample	OP99888,S6Q391,5.20,,,5.0,1,water	✓



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79	6Q28263.d	P5-E8	FC10658-13	1633full.m	Sample	OP99888.S6Q391.510,,,5.0,1,water	✓
80	6Q28264.d	P5-E9	FC10658-14	1633full.m	Sample	OP99888.S6Q391.540,,,5.0,1,water	✓
81	6Q28265.d	P5-F1	FC10658-15	1633full.m	Sample	OP99888.S6Q391.540,,,5.0,1,water	✓
82	6Q28266.d	P1-A5	cc391-4	1633full.m	QC	20/500	Pass
83	6Q28267.d	P1-A1	iccb	1633full.m	Sample	OP99704.S6Q391.500,,,5.0,1,water	ND
84	6Q28268.d	P5-F2	FC10658-16	1633full.m	Sample	OP99888.S6Q391.540,,,5.0,1,water	✓
85	6Q28269.d	P5-F3	FC10658-17	1633full.m	Sample	OP99888.S6Q391.540,,,5.0,1,water	✓
86	6Q28270.d	P5-F4	FC10658-18	1633full.m	Sample	OP99888.S6Q391.540,,,5.0,1,water	✓
87	6Q28271.d	P1-A5	Ecc391-4	1633full.m	QC	20/500	Pass
88	6Q28272.d	P1-A1	iccb	1633full.m	Sample	OP99704.S6Q391.500,,,5.0,1,water	ND

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DATE:	11/20/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	2.5 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_111223_S6Q391
CAL DATE:	11/12/23
ANALYST:	AL
RUN BATCH:	S6Q396

ELUENT A LOT #:	ACN 226166
ELUENT B LOT #:	HPLC WATER:232305, W5% Acetonitrile: 232980 2mM AMAC.
IC/CC STD LOT #:	LCMS 2212-G
ICV STD LOT #:	LCMS 2212G/2211
ISTD/ID STD LOT #:	12030I/12087D

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q28584.d	P1-B9	CCB	1633full.m	Sample		OP99845,S6Q396,500,,,5.0,1,water	nd
2	6Q28585.d	P1-A1	CCB	1633full.m	Sample		OP99845,S6Q396,500,,,5.0,1,water	nd
3	6Q28586.d	P1-B3	RT TDCA	1633full.m	Sample		OP99845,S6Q396,500,,,5.0,1,water	pass
4	6Q28587.d	P1-B4	RT BR-LN	1633full.m	Sample		OP99845,S6Q396,500,,,5.0,1,water	pass
5	6Q28588.d	P1-A9	High Std	1633full.m	Sample		OP99845,S6Q396,500,,,5.0,1,water	pass
6	6Q28589.d	P1-A1	IBLK	1633full.m	Sample		OP99845,S6Q396,500,,,5.0,1,water	nd
7	6Q28590.d	P1-A5	cc391-4	1633full.m	QC	20/500	OP99845,S6Q396,500,,,5.0,1,water	pass
8	6Q28591.d	P1-A2	cc391-1,0LL	1633full.m	QC	1.6/500	OP99845,S6Q396,500,,,5.0,1,water	pass
9	6Q28592.d	P2-A1	op162-bs	1633full.m	Sample		OP162,S6Q396,500,,,5.0,1,water	✓
10	6Q28593.d	P2-A2	op162-lbs:3	1633full.m	Sample		OP162,S6Q396,500,,,5.0,1,water	✓
11	6Q28594.d	P2-A3	op162-mb	1633full.m	Sample		OP162,S6Q396,500,,,5.0,1,water	✓
12	6Q28595.d	P2-A4	fc11222-1	1633full.m	Sample		OP162,S6Q396,530,,,5.0,1,water	✓
13	6Q28596.d	P2-A5	fc11222-2	1633full.m	Sample		OP162,S6Q396,560,,,5.0,1,water	✓
14	6Q28597.d	P2-A6	fc11200-1	1633full.m	Sample		OP162,S6Q396,530,,,5.0,1,water	✓
15	6Q28598.d	P2-A7	op162-ms	1633full.m	Sample		OP162,S6Q396,540,,,5.0,1,water	✓
16	6Q28599.d	P2-A8	fc11200-2	1633full.m	Sample		OP162,S6Q396,540,,,5.0,1,water	✓
17	6Q28600.d	P2-A9	fc11200-3	1633full.m	Sample		OP162,S6Q396,540,,,5.0,1,water	rr 2x e flag
18	6Q28601.d	P2-B1	op162-dup	1633full.m	Sample		OP162,S6Q396,530,,,5.0,1,water	rr 2x e flag
19	6Q28602.d	P1-A5	cc391-4	1633full.m	QC	20/500	OP99845,S6Q396,500,,,5.0,1,water	pass
20	6Q28603.d	P1-A1	iccb	1633full.m	Sample		OP99845,S6Q396,500,,,5.0,1,water	nd
21	6Q28604.d	P2-B2	fc11200-4	1633full.m	Sample		OP162,S6Q396,540,,,5.0,1,water	✓
22	6Q28605.d	P2-B3	fc11200-5	1633full.m	Sample		OP162,S6Q396,550,,,5.0,1,water	✓
23	6Q28606.d	P2-B4	fc11200-6	1633full.m	Sample		OP162,S6Q396,530,,,5.0,1,water	✓
24	6Q28607.d	P2-B5	fc11200-7	1633full.m	Sample		OP162,S6Q396,510,,,5.0,1,water	rr 2x e flag
25	6Q28608.d	P2-B6	fc11200-8	1633full.m	Sample		OP162,S6Q396,520,,,5.0,1,water	rr 1x co
26	6Q28609.d	P2-B7	fc10961-1	1633full.m	Sample		OP162,S6Q396,54,,,5.0,1,water	add listd
27	6Q28610.d	P2-B8	fc10961-2	1633full.m	Sample		OP162,S6Q396,60,,,5.0,1,water	add listd
28	6Q28611.d	P2-B9	fc10961-3	1633full.m	Sample		OP162,S6Q396,56,,,5.0,1,water	add listd
29	6Q28612.d	P2-C1	fc10961-4	1633full.m	Sample		OP162,S6Q396,64,,,5.0,1,water	add listd
30	6Q28613.d	P1-A5	cc391-4	1633full.m	QC	20/500	OP99845,S6Q396,500,,,5.0,1,water	pass
31	6Q28614.d	P1-A1	iccb	1633full.m	Sample		OP99845,S6Q396,500,,,5.0,1,water	nd
32	6Q28615.d	P2-C2	op82-bs	1633full.m	Sample		OP82,S6Q396,125,,,5.0,1,water	✓
33	6Q28616.d	P2-C3	op82-lbs:2	1633full.m	Sample		OP82,S6Q396,125,,,5.0,1,water	✓
34	6Q28617.d	P2-C4	op82-mb	1633full.m	Sample		OP82,S6Q396,125,,,5.0,1,water	✓
35	6Q28618.d	P2-C5	la95244-1	1633full.m	Sample		OP82,S6Q396,25,,,5.0,1,water	redo

LCMS6-6Q ANALYSIS LOG

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36	6Q28619.d	P2-C6	la95244-1	1633full.m	Sample	50/500	OP82,S6Q396.25,,5.0,10,water	redo
37	6Q28620.d	P2-C7	la95244-2	1633full.m	Sample		OP82,S6Q396.25,,5.0,1,water	redo
38	6Q28621.d	P2-C8	la95244-2	1633full.m	Sample	50/500	OP82,S6Q396.25,,5.0,10,water	redo
39	6Q28622.d	P1-A5	cc391-4	1633full.m	QC	20/500	OP99845,S6Q396.500,,5.0,1,water	pass
40	6Q28623.d	P1-A1	iccb	1633full.m	Sample		OP99845,S6Q396.500,,5.0,1,water	nd
41	6Q28624.d	P2-C9	op85-bs	1633full.m	Sample		OP85,S6Q396.5.00,,5.0,1,soil	✓
42	6Q28625.d	P2-D1	op85-llbs:3	1633full.m	Sample		OP85,S6Q396.5.00,,5.0,1,soil	✓
43	6Q28626.d	P2-D2	op85-mb	1633full.m	Sample		OP85,S6Q396.5.00,,5.0,1,soil	✓
44	6Q28627.d	P2-D3	fc10683-1	1633full.m	Sample		OP85,S6Q396.5.00,,5.0,1,soil	✓
45	6Q28628.d	P2-D4	op85-ms	1633full.m	Sample		OP85,S6Q396.4.96,,5.0,1,soil	✓
46	6Q28629.d	P2-D5	op85-msd	1633full.m	Sample		OP85,S6Q396.5.05,,5.0,1,soil	✓
47	6Q28630.d	P2-D6	fc10683-2	1633full.m	Sample		OP85,S6Q396.4.98,,5.0,1,soil	✓
48	6Q28631.d	P1-A5	cc391-4	1633full.m	QC	20/500	OP99845,S6Q396.500,,5.0,1,water	pass
49	6Q28632.d	P1-A1	iccb	1633full.m	Sample		OP99845,S6Q396.500,,5.0,1,water	nd
50	6Q28633.d	P2-D7	op4-bs	1633full.m	Sample		OP4,S6Q396.5.00,,5.0,1,soil	✓
51	6Q28634.d	P2-D8	op4-llbs:3	1633full.m	Sample		OP4,S6Q396.5.00,,5.0,1,soil	✓
52	6Q28635.d	P2-D9	op4-mb	1633full.m	Sample		OP4,S6Q396.5.00,,5.0,1,soil	✓
53	6Q28636.d	P2-E1	fc10842-1	1633full.m	Sample		OP4,S6Q396.4.95,,5.0,1,soil	rr 10x e flag
54	6Q28637.d	P2-E2	fc10842-2	1633full.m	Sample		OP4,S6Q396.4.96,,5.0,1,soil	rr 10x e flag
55	6Q28638.d	P2-E3	fc10842-3	1633full.m	Sample		OP4,S6Q396.4.99,,5.0,1,soil	rr 10x e flag
56	6Q28639.d	P2-E4	fc10842-4	1633full.m	Sample		OP4,S6Q396.5.05,,5.0,1,soil	rr 10x e flag
57	6Q28640.d	P2-E5	fc10842-5	1633full.m	Sample		OP4,S6Q396.4.99,,5.0,1,soil	rr 10x e flag
58	6Q28641.d	P2-E6	fc10842-7	1633full.m	Sample		OP4,S6Q396.4.97,,5.0,1,soil	rr 1x co
59	6Q28642.d	P2-E7	fc10842-8	1633full.m	Sample		OP4,S6Q396.5.02,,5.0,1,soil	✓
60	6Q28643.d	P1-A5	cc391-4	1633full.m	QC	20/500	OP99845,S6Q396.500,,5.0,1,water	pass
61	6Q28644.d	P1-A1	iccb	1633full.m	Sample		OP99845,S6Q396.500,,5.0,1,water	nd
62	6Q28645.d	P2-E8	fc10842-9	1633full.m	Sample		OP4,S6Q396.4.97,,5.0,1,soil	✓
63	6Q28646.d	P2-E9	fc10842-10	1633full.m	Sample		OP4,S6Q396.5.02,,5.0,1,soil	rr 5x e flag
64	6Q28647.d	P2-F1	op4-ms	1633full.m	Sample		OP4,S6Q396.4.98,,5.0,1,soil	rr 5x e flag
65	6Q28648.d	P2-F2	op4-msd	1633full.m	Sample		OP4,S6Q396.5.00,,5.0,1,soil	rr 5x e flag
66	6Q28649.d	P2-F3	fc10842-11	1633full.m	Sample		OP4,S6Q396.5.03,,5.0,1,soil	rr 2x e flag
67	6Q28650.d	P2-F4	fc10842-12	1633full.m	Sample		OP4,S6Q396.4.95,,5.0,1,soil	rr 1x co
68	6Q28651.d	P2-F5	fc10842-13	1633full.m	Sample		OP4,S6Q396.4.97,,5.0,1,soil	✓
69	6Q28652.d	P2-F6	fc10842-14	1633full.m	Sample		OP4,S6Q396.4.98,,5.0,1,soil	rr 2x e flag
70	6Q28653.d	P2-F7	fc10842-16	1633full.m	Sample		OP4,S6Q396.5.02,,5.0,1,soil	rr 10x e flag
71	6Q28654.d	P2-F8	fc10842-17	1633full.m	Sample		OP4,S6Q396.4.95,,5.0,1,soil	rr 5x e flag
72	6Q28655.d	P1-A5	cc391-4	1633full.m	QC	20/500	OP99845,S6Q396.500,,5.0,1,water	pass
73	6Q28656.d	P1-A1	iccb	1633full.m	Sample		OP99845,S6Q396.500,,5.0,1,water	nd
74	6Q28657.d	P2-F9	fc10842-18	1633full.m	Sample		OP4,S6Q396.5.00,,5.0,1,soil	rr 10x e flag
75	6Q28658.d	P1-D1	fc10842-19	1633full.m	Sample		OP4,S6Q396.4.97,,5.0,1,soil	rr 1x co
76	6Q28659.d	P1-D2	fc10842-20	1633full.m	Sample		OP4,S6Q396.4.99,,5.0,1,soil	rr 2x e flag
77	6Q28660.d	P1-D3	fc10842-22	1633full.m	Sample		OP4,S6Q396.4.98,,5.0,1,soil	rr 1x co
78	6Q28661.d	P1-D4	op5-bs	1633full.m	Sample		OP5,S6Q396.5.00,,5.0,1,soil	✓

LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

79	6Q28662.d	P1-D5	op5-llbs:3	1633full.m	Sample	OP5,S6Q396.5.00,,,5.0.1,soil	✓
80	6Q28663.d	P1-D6	op5-mb	1633full.m	Sample	OP5,S6Q396.5.00,,,5.0.1,soil	✓
81	6Q28664.d	P1-D7	fc10842-21	1633full.m	Sample	OP5,S6Q396.5.01,,,5.0.1,soil	rr 2x e flag
82	6Q28665.d	P1-D8	op5-rms	1633full.m	Sample	OP5,S6Q396.4.96,,,5.0.1,soil	wait
83	6Q28666.d	P1-D9	op5-msd	1633full.m	Sample	OP5,S6Q396.4.99,,,5.0.1,soil	wait
84	6Q28667.d	P1-A5	cc391-4	1633full.m	QC	20/500	pass
85	6Q28668.d	P1-A1	iccb	1633full.m	Sample	OP99845,S6Q396.500,,,5.0.1,water	nd
86	6Q28669.d	P1-E1	fc10842-24	1633full.m	Sample	OP5,S6Q396.4.97,,,5.0.1,soil	rr 2x e flag
87	6Q28670.d	P1-E2	fc10842-25	1633full.m	Sample	OP5,S6Q396.5.04,,,5.0.1,soil	rr 1x co
88	6Q28671.d	P1-E3	fc10842-26	1633full.m	Sample	OP5,S6Q396.5.05,,,5.0.1,soil	✓
89	6Q28672.d	P1-E4	fc10842-27	1633full.m	Sample	OP5,S6Q396.5.05,,,5.0.1,soil	✓
90	6Q28673.d	P1-E5	fc10842-28	1633full.m	Sample	OP5,S6Q396.4.97,,,5.0.1,soil	✓
91	6Q28674.d	P1-E6	fc10842-30	1633full.m	Sample	OP5,S6Q396.4.98,,,5.0.1,soil	✓
92	6Q28675.d	P1-E7	fc10842-31	1633full.m	Sample	OP5,S6Q396.4.98,,,5.0.1,soil	✓
93	6Q28676.d	P1-E8	fc10842-32	1633full.m	Sample	OP5,S6Q396.4.98,,,5.0.1,soil	✓
94	6Q28677.d	P1-E9	fc10842-33	1633full.m	Sample	OP5,S6Q396.5.02,,,5.0.1,soil	rr 2x e flag
95	6Q28678.d	P1-F1	fc10842-34	1633full.m	Sample	OP5,S6Q396.5.02,,,5.0.1,soil	rr 1x co
96	6Q28679.d	P1-A5	cc391-4	1633full.m	QC	20/500	pass
97	6Q28680.d	P1-A1	iccb	1633full.m	Sample	OP99845,S6Q396.500,,,5.0.1,water	nd
98	6Q28681.d	P1-B3	RT TDCA	1633full.m	Sample	OP99845,S6Q396.500,,,5.0.1,water	pass
99	6Q28682.d	P1-B4	RT BR-LN	1633full.m	Sample	OP99845,S6Q396.500,,,5.0.1,water	pass
100	6Q28683.d	P1-A9	High Std	1633full.m	Sample	OP99845,S6Q396.500,,,5.0.1,water	pass
101	6Q28684.d	P1-A1	IBLK	1633full.m	Sample	OP99845,S6Q396.500,,,5.0.1,water	nd
102	6Q28685.d	P1-A2	cc391-1,0LL	1633full.m	QC	1.6/500	pass
103	6Q28686.d	P1-F2	fc10842-35	1633full.m	Sample	OP5,S6Q396.5.02,,,5.0.1,soil	rr 5x e flag
104	6Q28687.d	P1-F3	fc10842-36	1633full.m	Sample	OP5,S6Q396.4.97,,,5.0.1,soil	rr 1x co
105	6Q28688.d	P1-F4	fc10842-37	1633full.m	Sample	OP5,S6Q396.5.04,,,5.0.1,soil	rr 2x e flag
106	6Q28689.d	P1-F5	fc10842-38	1633full.m	Sample	OP5,S6Q396.4.98,,,5.0.1,soil	rr 5x e flag
107	6Q28690.d	P1-F6	fc10842-40	1633full.m	Sample	OP5,S6Q396.4.95,,,5.0.1,soil	rr 1x co
108	6Q28691.d	P1-F7	fc10842-41	1633full.m	Sample	OP5,S6Q396.4.99,,,5.0.1,soil	rr 5x e flag
109	6Q28692.d	P1-F8	fc10842-42	1633full.m	Sample	OP5,S6Q396.5.00,,,5.0.1,soil	rr 1x co
110	6Q28693.d	P1-F9	fc10842-43	1633full.m	Sample	OP5,S6Q396.5.02,,,5.0.1,soil	rr 2x e flag
111	6Q28694.d	P1-A5	ecc391-4	1633full.m	QC	20/500	pass
112	6Q28695.d	P1-A1	iccb	1633full.m	Sample	OP99845,S6Q396.500,,,5.0.1,water	nd

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2211	Full List + 40 Spike (Cal mix)	12006 / 12047A	PFOR-DOD (28 comp)	Absolute	04/20/28	09/19/24	1.0 ppm	400 µL	4.0 mL	100 ppb	8% MeOH 5% H <sub>2</sub> O	10/18/23	02/07/24	JR
LCMS 2210	↓	LCMS 2210	40 List Add-meth	-	-	02/08/24	↓	↓	↓	↓	↓	↓	↓	↓
LCMS 2193	↓	LCMS 2193	40 List Add-meth	-	-	02/07/24	↓	↓	↓	↓	↓	↓	↓	↓
LCMS 2198	1633 Cal std. Spike	LCMS 2198	F056 Std.	-	-	03/25/24	5.0 ppm	↓	↓	* 500 ppb	↓	↓	↓	↓
LCMS 2212 A-6	1633 Cal std. Spike	LCMS 2198	Br-LN Et-Me	S99 Labo	9/10	4/4/24	2 ppm	250 µL	4 mL	125 212.5 ppb	1033 MIX	10/22/23	4/4/24	MJ
LCMS 2213	↓	12019B	PFAC	Wellington	4/19/28	10/15/24	1-4 ppm	↓	↓	62.5 (268 µL) 250 ppb	↓	↓	↓	↓
LCMS 2214	↓	12032	MXH	Wellington	3/24/26	10/22/24	2 ppm	↓	↓	125 ppb	↓	↓	↓	↓
LCMS 2215	↓	12033	PFAC	Wellington	7/27/28	10/15/24	2 ppm	↓	↓	125 ppb	↓	↓	↓	↓
LCMS 2215	↓	12065	MXF	Wellington	3/28/28	10/22/24	2 ppm	↓	↓	125 ppb	↓	↓	↓	↓
LCMS 2215	↓	12015A/B	PFAC	Wellington	7/27/28	10/22/24	2 ppm	↓	↓	125 ppb	↓	↓	↓	↓
LCMS 2215	↓	12034	MXG	Wellington	3/28/28	10/15/24	4-20 ppm	312 µL	↓	312	↓	↓	↓	↓
LCMS 2215	↓	12091	PFAC	Wellington	3/28/28	10/22/24	4-20 ppm	312 µL	↓	1100 ppb	↓	↓	↓	↓
LCMS 2215	↓	12120	MXJ	Wellington	3/28/28	10/22/24	4-20 ppm	312 µL	↓	1100 ppb	↓	↓	↓	↓
LCMS 2213	PTC MDL Spike	LCMS 2208	PFAC Spike	-	-	03/13/24	400 ppb	100 µL	1.0 mL	400 ppb	95% MeOH 5% H <sub>2</sub> O	10/18/23	03/13/24	NG
LCMS 2214	16850 STD	11755	perchlorate	Absolute	07/10/24	07/10/24	100 ppm	50 µL	50 ml	100 ppb	10% MeOH 23% G75	10/24/23	04/24/24	AL
LCMS 2215	1633 Br-LN Me/EtFosA:metFosE	11797	br-N MeFOSA	Wellington	8/23/27	10/14/24	50 ppm	200 µL	5 mL	2 ppm	1633 MIX (5 µL/0.02 µL)	10/25/23	4/4/24	MJ
LCMS 2215	↓	11798	br-N EtFOSA	Wellington	10/4/27	10/14/24	↓	↓	↓	2 ppm	↓	↓	↓	↓
LCMS 2215	↓	12070A	br-N MeFOSE	Wellington	10/7/27	10/14/24	↓	500 µL	↓	5 ppm	↓	↓	↓	↓
LCMS 2215	↓	12071A	br-N EtFOSE	Wellington	10/7/27	10/14/24	↓	↓	↓	5 ppm	↓	↓	↓	↓
LCMS 2215	↓	LCMS 2215	LCMS 2215	-	-	10/30/23	10/30/23	↓	↓	↓	↓	↓	↓	↓

\* based on date opened as specified in each SGS - Orlando SOP.





Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2194	PFC 10 Std	12006	PFCA-28 (28 amp)	Absolute	01/20/28	09/19/24	1.0 ppm	400 µL	4.0 mL	100 ppb	95/1001 (95/1001) 5/15/20	03/28/23	03/13/24	JR
↓	↓	11432	N-Me FOXA-M	Wellington Labs	02/28/27	03/13/24	50 ppm	8 µL	↓	↓	↓	↓	↓	↓
↓	↓	11793	FBSA-1	↓	02/01/28	08/08/24	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	11792	FHSA-1	↓	12/01/27	09/05/24	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	11332	PECHS	↓	03/28/27	04/18/24	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2197AD	1633 CAT std. (copy)	SGS LABO	NA	12/28/23	2ppm	250 µL	4 mL	125 312.5 ppb	1633 (1633) (1633)	10/11/23	12/28/23	MV
↓	↓	11908	PFAC MxH	Wellington	4-19-28	9-24-24	1-4 ppm	250 µL	↓	0.25 250 ppb	↓	↓	↓	↓
↓	↓	11990	PFAC Mx F	↓	3-24-26	9/24/24	2ppm	250 µL	↓	125 ppb	↓	↓	↓	↓
↓	↓	11948B	PFAC Mx G	↓	12/1/27	9/24/24	2ppm	250 µL	↓	125 ppb	↓	↓	↓	↓
↓	↓	12010A	PFAC Mx J	↓	3/28/28	10/11/24	4-20 ppm	312 µL	↓	312 1100 ppb	↓	↓	↓	↓
↓	↓	LCMS 2198	1633 ME/ET/FOXA/ME/FOSE	Wellington	8/23/27	10/9/24	50 ppm	200 µL	5 mL	2 ppm	1633 mix (1633) (3600 ml)	10/14/23	4/4/24	MW
↓	↓	11798	br-N ETFOSA	↓	10/7/27	10/4/24	↓	200 µL	↓	2 ppm	↓	↓	↓	↓
↓	↓	12070A	br-N MEFOSE	↓	10/7/27	10/4/24	↓	500 µL	↓	5 ppm	↓	↓	↓	↓
↓	↓	12071A	br-N EFFOSE	↓	10/7/27	10/4/24	↓	500 µL	↓	5 ppm	↓	↓	↓	↓

\* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-lcms std prep log.xls 030819

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2210	40 List Std Add-on #1	11449	FTS	Wellington Labs	12/01/27	08/07/24	50 ppm	80 uL	4.0 mL	1.0 ppm	75% MeOH 5% H <sub>2</sub> O	10/18/23	02/05/24	JR
		<del>11461</del> 10849	L- PFOS		07/08/27 04/20/27	10/18/24								
		11710	N-Me FOSA-M		11/11/27	08/07/24								
		12122	N-Et FOSA-M		09/19/28	10/18/24								
		11481	PFHxDA		02/23/27	10/18/24								
		11462	PFODA		07/05/27	10/18/24								
		1116B	3:3 FTCA FP-PA		02/03/27	02/08/24								
		11994	5:3 FTCA MSPPPA		08/02/27	09/05/24								
		1116A	3:3 FTCA FHPA		11/12/25	02/08/24								
		11794	PFECHS		03/14/28	08/07/24								
		11464	PFEESA		11/22/27	10/18/24								
		11465	PFMDA PF50HA		08/02/27	08/07/24								
		11648	PFHPA PF40PA		08/02/27	09/07/24								
		11467	NEHDA 5:0 OFHA		06/08/27	10/18/24								
						JR								
						10/18/23								

add on  
28  
01/18

\*JR 10/18/23 \* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-Icms std prep log.xls 030819



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2156	L157 40 ADD ON #2	11513	FBSA-1	Wellington	11/10/26	4/18/24	50 ppm	800ul	4.0ml	1ppm	95% meth 5% H2O	8/7/23	2/7/24	MUJ
		11514	FHXSA1		12/29/26	4/18/24					(3700)			
		11140B	I-PFAS		7/12/26	5/9/24								
LCMS 2157	1033 RT BR-LN	11496	br-Fosa	Wellington	10/7/27	12/28/23	50 ppm	10NL 50ul	5ml	100ppb	1033 mix	8/7/23	12/28/23	MUJ
		11497	br-N mFosa		8/23/27			10NL			(4930)			
		11498	br-N EHFosa		10/7/27									
		11494	br-N mcfosa		10/7/27									
		11495	br-N EHFosa		10/7/27									
		11502	T-PFOA		01/27/27									
		11527	IPPFNA		01/10/27									
LCMS 2158 AE	1033 Cul std. Spike	LCMS 2159 (2140)	Br-LN E+me	SGS LABO	N/A	12/28/23	2ppm 5ppm	250ul	4ml	125 312.5ppb	1033 mix 2088ul	8/7/23	12/28/23	MUJ
		11930	PFAC MXH	Wellington	4/19/28	7/31/24 8/7/24	1-4 ppm			62.5 125 250ppb				
		11931A	PFAC MXF		3/24/26	7-31-24 8-7-24	2ppm			125ppb				
		11907	PFAC MXG		12/1/27	7-31-24 8-7-24	2ppm			125ppb				
		11933A	PFAC MXJ		3-28-28	7-31-24 8-7-24	4-20 ppm	312ul		312 1160ppb				
						na	Continue next page 8/7/23							

\* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-lcms std prep log.xls 030819



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2192A	1033 Cal std. (SPIKE)	LCMS 2191	PFAC	Sys Labs	n/a	12/28/23	2ppm	250uL	4mL	125	1633 (2688uL)	9/24/23	12/28/23	mw
		11940	PFAC	Washington	4-19-28	9/24/23	1-4 ppm	250uL		62.5				
		11947B	PFAC		3-24-26	9/15/24	2ppm	250uL		125ppb				
		11947C	PFAC		12-1-27	9/15/24	2ppm	250uL		125ppb				
		11948A	PFAC		3-28-28	9/24/24	4-20 ppm	312 uL		312				
		11948B	PFAC		05/13/27	09/25/24	50ppm	200 uL	2.0 mL	5ppb	95% MeOH 5% H <sub>2</sub> O	09/25/23	03/25/24	LR
LCMS 2193	FOSE Std	11409	N-ET-FOSE	Washington Labs	05/13/27	09/25/24	↓	↓	↓	↓				↓
		11410	N-Me-FOSE		03/13/28	09/11/24	1.0 ppm	400 uL	4.0 mL	100ppb	95% MeOH 5% H <sub>2</sub> O	09/25/23	10/18/23	LR
LCMS 2194	Full List 40 Spike (cal std)	12006	FOA-28comp	Absolute		10/18/23	↓	↓	↓	↓				↓
		LCMS 2179	40List Add-m#1	506 Std		02/07/24	↓	↓	↓	↓				↓
		LCMS 2156	40List Add-m#2			03/25/24	5.0 ppm	↓	↓	500ppb				↓
LCMS 2195	PFC Spike	12006	FOA-28comp	Absolute	04/26/28	09/19/24	1.0 ppm	2 mL	5.0 mL	400ppb	95% MeOH 5% H <sub>2</sub> O	09/28/23	03/13/24	LR
		11432	N-Me-FOA-M	Washington Labs	02/28/27	03/13/24	50ppm	40 uL	↓	↓				↓
		11793	FBSA-1		02/01/28	08/08/24	↓	↓	↓	↓				↓
		11792	FHSA-1		12/01/27	08/08/24	↓	↓	↓	↓				↓
		11332	PFECHS		03/28/27	04/18/24	↓	↓	↓	↓				↓

tested 9/25  
9/25

\* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-icms std prep log.xls 030819



11797  
rec'd: 05/15/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### br-NMeFOSA

**N-Methylperfluorooctanesulfonamide  
Isomeric Mix**

**PRODUCT CODE:** br-NMeFOSA  
**LOT NUMBER:** brNMeFOSA0822  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL  
**SOLVENT(S):** Methanol  
**DATE PREPARED:** (mm/dd/yyyy) 08/18/2022  
**LAST TESTED:** (mm/dd/yyyy) 08/23/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 08/23/2027  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

### DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
Figure 2: LC/MS Data (SIR)  
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

brNMeFOSA0822 (1 of 6)  
rev1

7.9.1  
7



117a8  
rec'd: 05/15/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### br-NEtFOSA

**N-Ethylperfluorooctanesulfonamide  
Isomeric Mix**

<b><u>PRODUCT CODE:</u></b>	br-NEtFOSA
<b><u>LOT NUMBER:</u></b>	brNEtFOSA0922
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	08/23/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/07/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/07/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

### DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

### DOCUMENTATION/ DATA ATTACHED:

- Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR
- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (SIR)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

Form#:13, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

brNEtFOSA0922 (1 of 6)  
rev1

7.9.1  
7



**Certified Reference Material CRM**

**CERTIFIED WEIGHT REPORT**

Part Number: 64029  
Lot Number: 040729  
Description: PFOA-DOD  
26 components  
Prepaz (p°C)  
D  
BUTB

Substrate(s):  
Methanol (1 mL (MOL))  
2-Prepared

Lot #  
040729 (95%)  
39500 (2%)

Formulated By: *[Signature]*  
Prepared By: *[Signature]*  
Date: 06/26/23

Volume(s) shown below were combined and diluted to (mL):  
Note: All assigned values are mean concentrations.

Component	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Final Conc. (µg/mL)	Final Conc. (µg/mL)	Uncertainty (µg/mL)	Solvent Safety Info. On Attached PG	OSHA PEL (TWA)	LOD
1. Perfluoro-n-butanoic acid (PFBA)	95242	110422	0.02	2.00	0.017	50.1	1.00	0.02	375-29-4	N/A	N/A
2. Perfluoro-pentanoic acid (PFPA)	95243	011722	0.02	2.00	0.017	50.3	1.01	0.02	2782-95-3	N/A	N/A
3. Perfluoro-hexanoic acid (PFHA)	91197	071023	0.02	2.00	0.017	50.2	1.00	0.02	3072-24-4	N/A	N/A
4. Perfluoro-heptanoic acid (PFHPA)	91199	110622	0.02	2.00	0.017	50.1	1.00	0.02	3745-24-3	N/A	N/A
5. Perfluoro-octanoic acid (PFOPA)	95202	09522	0.02	2.00	0.017	50.2	1.00	0.02	282-87-1 (L)	N/A	Insect Repellent
6. Perfluoro-nonoic acid (PFNA)	95203	110622	0.02	2.00	0.017	50.1	1.00	0.02	3745-24-3	N/A	N/A
7. Perfluoro-decanoic acid (PFDA)	91195	110622	0.02	2.00	0.017	50.0	1.00	0.02	335-92-1	N/A	Central Sterilizing
8. Perfluoro-undecanoic acid (PFUA)	95205	092423	0.02	2.00	0.017	50.2	1.00	0.02	2069-64-9	N/A	N/A
9. Perfluoro-dodecanoic acid (PFDA)	91198	052423	0.02	2.00	0.017	50.1	1.00	0.02	2726-34-8	N/A	N/A
10. Perfluoro-tridecanoic acid (PFDDA)	95204	110622	0.02	2.00	0.017	50.1	1.00	0.02	2726-34-8	N/A	N/A
11. Perfluoro-tetradecanoic acid (PFDDA)	95203	030222	0.02	2.00	0.017	50.0	1.00	0.02	2744-9-4	N/A	N/A
12. Perfluoro-1-iodooctadecanoic acid (PFDDA)	3677	PFDA1221	0.02	2.00	0.017	50.0	1.00	0.02	2553-31-9 (L)	N/A	N/A
13. Methylperfluorooctadecanoic acid (PFDDA)	4162	PERFDDA0429	0.02	2.00	0.017	50.0	1.00	0.02	2911-59-4 (L)	N/A	N/A
14. Methylperfluorodecanoic acid (PFDDA)	4163	PERFDDA1029	0.02	2.00	0.017	50.0	1.00	0.02	2732-24-4	N/A	N/A
15. Perfluorobutanesulfonic acid (PFBS)	91194	060522	0.02	2.00	0.017	50.2	1.00	0.02	3752-24-4	N/A	N/A
16. Perfluoropentanesulfonic acid (PFPS)	95244	091522	0.02	2.00	0.017	50.1	1.00	0.02	355-44-1 (L)	N/A	N/A
17. Perfluorohexanesulfonic acid (PFHPS)	91196	060923	0.02	2.00	0.017	50.0	1.00	0.02	3752-24-4	N/A	N/A
18. Perfluoroheptanesulfonic acid (PFHPS)	3672	LFPHS0422	0.02	2.00	0.017	49.8	1.00	0.02	1782-26-1 (L)	N/A	N/A
19. Heptafluoroisobutanesulfonic acid (PFOS)	95201	050923	0.02	2.00	0.017	50.1	1.00	0.02	4829-21-2	N/A	N/A
20. Perfluoro-1-nonanesulfonic acid (PFNS)	3957	LFPS1122	0.02	2.00	0.017	48.0	1.01	0.02	335-77-2	N/A	N/A
21. Perfluoro-1-decanesulfonic acid (PFDS)	3671	LPDS1122	0.02	2.00	0.017	48.2	1.01	0.02	2711-71-4	N/A	N/A
22. 1H,1H,2H,2H-Perfluorooctane sulfonic acid (4:2 FTB)	6571	060522	0.02	2.00	0.017	50.2	1.00	0.02	3711-71-4	N/A	N/A
23. 1H,1H,2H,2H-Perfluorodecane sulfonic acid (6:2 FTB)	6572	051023	0.02	2.00	0.017	50.2	1.00	0.02	3019-24-2	N/A	N/A
24. 1H,1H,2H,2H-Perfluorododecane sulfonic acid (8:2 FTB)	3682	PF12D423	0.02	2.00	0.017	49.3	1.01	0.02	1333-13-8	N/A	N/A
25. 2-Hydroxyperfluorooctyl-2,2,3,3-tetrafluoropropyl sulfonic acid (PFPO-SA)	95206	050523	0.02	2.00	0.017	49.2	1.00	0.02	2726-34-8	N/A	N/A
26. 1-Chloro-2-hydroxyperfluorooctyl-2,2,3,3-tetrafluoropropyl sulfonic acid (1D-HPFO-S)	4166	1DHPFO0519	0.02	2.14	0.017	47.1	1.00	0.02	2726-34-8	N/A	N/A
27. 9-Chloro-2-hydroxyperfluorodecyl-2,2,3,3-tetrafluoropropyl sulfonic acid (9D-HPFDS)	4164	9DHPFDS0529	0.02	2.14	0.017	48.8	1.00	0.02	2726-34-8	N/A	N/A
28. Dodecafluoro-3H,4,β-dioxanone sulfonic acid (ADONA)	4165	PERFDDA0129	0.02	2.12	0.017	47.1	1.00	0.02	918005-14-4	N/A	N/A
Perfluorooctanoic acid (linear)*	95202	060522	0.02	2.00	0.004	49.6	0.99	0.010	335-67-1 (L)	N/A	Local laboratory
Perfluorodecanoic acid (branched isomer)*	95202	060522	0.02	2.00	0.004	0.5	0.01	0.001	335-67-1 (L)	N/A	Local laboratory
Perfluorohexanesulfonic acid (branched isomer)*	91196	030923	0.02	2.00	0.017	44.0	0.98	0.02	355-44-1 (L)	N/A	N/A
Perfluorooctanesulfonic acid (branched isomer)*	91196	030923	0.02	2.00	0.017	0.0	0.12	0.000	355-44-1 (L)	N/A	N/A
Heptafluoroisobutanesulfonic acid (linear)*	95201	030923	0.02	2.00	0.017	38.1	0.76	0.02	1782-26-1 (L)	N/A	N/A
Heptafluorodecanesulfonic acid (branched isomer)*	95201	030923	0.02	2.00	0.017	7.5	0.15	0.003	1782-26-1 (L)	N/A	N/A
Heptafluorododecanesulfonic acid (branched isomer)*	95201	030923	0.02	2.00	0.017	4.0	0.08	0.002	1782-26-1 (L)	N/A	N/A
Heptafluorotetradecanesulfonic acid (branched isomer)*	95201	030923	0.02	2.00	0.017	0.5	0.010	0.0002	1782-26-1 (L)	N/A	N/A
M-Methylperfluoro-1-octadecanecarboxylic acid (linear)*	4162	PERFDDA0429	0.02	2.00	0.017	38.0	0.72	0.04	2553-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-decanecarboxylic acid (branched)*	4162	PERFDDA0429	0.02	2.00	0.017	36.5	0.13	0.011	2553-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-tetradecanecarboxylic acid (branched)*	4162	PERFDDA0429	0.02	2.00	0.017	5.0	0.10	0.005	2553-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octadecanecarboxylic acid (branched)*	4162	PERFDDA0429	0.02	2.00	0.017	2.5	0.05	0.0009	2553-31-9 (L)	N/A	N/A
N-Ethylperfluoro-1-octadecanecarboxylic acid (linear)*	4163	PERFDDA0429	0.02	2.00	0.017	36.8	0.73	0.04	2553-31-9 (L)	N/A	N/A
N-Ethylperfluoro-1-decanecarboxylic acid (branched)*	4163	PERFDDA0429	0.02	2.00	0.017	7.7	0.15	0.009	2553-31-9 (L)	N/A	N/A
N-Ethylperfluoro-1-tetradecanecarboxylic acid (branched)*	4163	PERFDDA0429	0.02	2.00	0.017	5.3	0.11	0.005	2553-31-9 (L)	N/A	N/A
M-Ethylperfluoro-1-octadecanecarboxylic acid (branched)*	4163	PERFDDA0429	0.02	2.00	0.017	0.4	0.007	0.0006	2553-31-9 (L)	N/A	N/A

\*Qualitative standard (Sect. 3.13) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers. The PFOA standard must be used for quantitation (Sect. 12.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.

\*Concentrations for branched and linear isomers are based on LC/MS chromatographic analysis only.

\*The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise noted.  
\*Standard deviations are given in parentheses with the certified value.  
\*All standards, after opening amples, should be stored with caps tight and under nitrogen atmosphere.  
\*Certification is based on the following methods: Perfluorocarboxylic acids: HPLC with UV detection; Perfluoropolyethers: HPLC with UV detection; Perfluoropolyethers: HPLC with UV detection; Perfluoropolyethers: HPLC with UV detection.  
\*Certification is based on the following methods: Perfluorocarboxylic acids: HPLC with UV detection; Perfluoropolyethers: HPLC with UV detection; Perfluoropolyethers: HPLC with UV detection; Perfluoropolyethers: HPLC with UV detection.  
\*Certification is based on the following methods: Perfluorocarboxylic acids: HPLC with UV detection; Perfluoropolyethers: HPLC with UV detection; Perfluoropolyethers: HPLC with UV detection; Perfluoropolyethers: HPLC with UV detection.

12006  
Rec'd: 09/07/23



12013 A-B  
rec'd: 09/11/23

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXH

Native PFAS  
Solution/Mixture

<b><u>PRODUCT CODE:</u></b>	PFAC-MXH
<b><u>LOT NUMBER:</u></b>	PFACMXH0423
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (2%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	04/06/2023
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	04/19/2023
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	04/19/2028
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

### DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C<sub>4</sub>-C<sub>14</sub>), eight native perfluoroalkanesulfonates (C<sub>4</sub>, C<sub>5</sub>, C<sub>7</sub>, C<sub>9</sub>, C<sub>10</sub> and C<sub>12</sub> linear; C<sub>6</sub> and C<sub>8</sub> linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

### DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Table B: Isomeric Components and Percent Composition of N-MeFOSAA
- Table C: Isomeric Components and Percent Composition of N-EtFOSAA
- Table D: Isomeric Components and Percent Composition of PFHxSK
- Table E: Isomeric Components and Percent Composition of PFOSK
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

PFACMXH0423 (1 of 11)  
rev1

7.9.1  
7

⊃ A:

**PFAC-MXH; Components and Concentrations**  
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUdA	1000		23
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		24
N-Methylperfluorooctanesulfonamidoacetic acid <sup>a</sup>	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-Ethylperfluorooctanesulfonamidoacetic acid <sup>b</sup>	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate <sup>c</sup>	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate <sup>d</sup>	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

<sup>a</sup> See Table B for percent composition of linear and branched N-MeFOSAA isomers.  
<sup>b</sup> See Table C for percent composition of linear and branched N-EtFOSAA isomers.  
<sup>c</sup> See Table D for percent composition of linear and branched PFHxSK isomers.  
<sup>d</sup> 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: 05/11/2023  
(mm/dd/yyyy)

12015A-B  
rec'd: 09/11/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic  
Acids and Sulfonate Solution/Mixture

**PRODUCT CODE:** PFAC-MXG  
**LOT NUMBER:** PFACMXG0723  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 07/27/2023  
**LAST TESTED:** (mm/dd/yyyy) 07/27/2023  
**EXPIRY DATE:** (mm/dd/yyyy) 07/27/2028  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

### DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

PFACMXG0723 (1 of 5)  
rev0

7.9.1

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-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 08/11/2023  
(mm/dd/yyyy)

7.9.1

7



12032  
rec'd: 09/18/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXH

Native PFAS  
Solution/Mixture

**PRODUCT CODE:** PFAC-MXH  
**LOT NUMBER:** PFACMXH0423  
**SOLVENT(S):** Methanol/Isopropanol (2%)/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 04/06/2023  
**LAST TESTED:** (mm/dd/yyyy) 04/19/2023  
**EXPIRY DATE:** (mm/dd/yyyy) 04/19/2028  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C<sub>4</sub>-C<sub>14</sub>), eight native perfluoroalkanesulfonates (C<sub>4</sub>, C<sub>5</sub>, C<sub>7</sub>, C<sub>9</sub>, C<sub>10</sub> and C<sub>12</sub> linear; C<sub>6</sub> and C<sub>8</sub> linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

- Table A: Components and Concentrations of the Solution/Mixture
- Table B: Isomeric Components and Percent Composition of N-MeFOSAA
- Table C: Isomeric Components and Percent Composition of N-EtFOSAA
- Table D: Isomeric Components and Percent Composition of PFHxSK
- Table E: Isomeric Components and Percent Composition of PFOSK
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

PFACMXH0423 (1 of 11)  
rev1

7.9.1  
7



**Table A: PFAC-MXH; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUdA	1000		23
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		24
N-Methylperfluorooctanesulfonamidoacetic acid <sup>a</sup>	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-Ethylperfluorooctanesulfonamidoacetic acid <sup>b</sup>	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate <sup>c</sup>	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate <sup>d</sup>	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

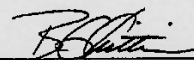
<sup>a</sup> See Table B for percent composition of linear and branched N-MeFOSAA isomers.

<sup>b</sup> See Table C for percent composition of linear and branched N-EtFOSAA isomers.

<sup>c</sup> See Table D for percent composition of linear and branched PFHxSK isomers.

<sup>d</sup> 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: 05/11/2023  
(mm/dd/yyyy)

12033  
rec'd: 09/18/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXF

#### Native Replacement PFAS Solution/Mixture

**PRODUCT CODE:** PFAC-MXF  
**LOT NUMBER:** PFACMXF0323  
**SOLVENT(S):** Methanol / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 03/23/2023  
**LAST TESTED:** (mm/dd/yyyy) 03/24/2023  
**EXPIRY DATE:** (mm/dd/yyyy) 03/24/2026  
**RECOMMENDED STORAGE:** Refrigerate ampoule

#### DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9CI-PF3ONS and 11CI-PF3OUDs), and hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

#### DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

#### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

PFACMXF0323 (1 of 5)  
rev0

7.9.1  
7

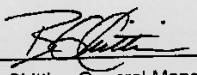


**Table A:** PFAC-MXF; Components and Concentrations (ng/mL;  $\pm$  5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

\* Concentrations have been rounded to three significant figures.

Certified By:

  
B.G. Chittim, General Manager

Date: 03/29/2023  
(mm/dd/yyyy)

12034  
rec'd: 09/18/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXG

**Native Perfluoroalkyl Ether Carboxylic  
Acids and Sulfonate Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	PFAC-MXG
<b><u>LOT NUMBER:</u></b>	PFACMXG0723
<b><u>SOLVENT(S):</u></b>	Methanol/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	07/27/2023
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	07/27/2023
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	07/27/2028
<b><u>RECOMMENDED STORAGE:</u></b>	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  
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PFACMXG0723 (1 of 5)  
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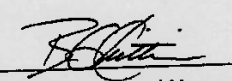
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**PFAS-XRG Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))**

**Table A**

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

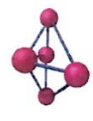
\* Concentrations have been rounded to three significant figures.

Certified By:   
 B.G. Chittim, General Manager

Date: 08/11/2023  
(mm/dd/yyyy)

7.9.1  
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**CERTIFIED WEIGHT REPORT**

Part Number: 64026  
Lot Number: 06323  
Description: PFDA-DOD 28 components  
Expiration Date: 06/328  
Recommended Storage: Freezer (0 °C)  
Nominal Concentration (µg/mL): 1.0  
NET Test ID#: 6UTB

Solvent(s): Methane (1 mM KOH) 2-Propanol (98%)  
LW# 040723 (98%) 32500 (9%)  
Formulated By: Prashant Chauhan  
Reviewed By: Pedro L. Ramos

Formulated By:	DATE:
Prashant Chauhan	06323
Reviewed By:	DATE:
Pedro L. Ramos	06323

Volume(s) shown below were combined and diluted to (mL):  
flask; All assigned values are molar concentrations.

Compound	Part Number	Lot Number	Molar Fraction	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Initial Uncertainty (µg/mL)	Final Uncertainty (µg/mL)	SIDS Information		
								OSHA PEL (TWA)	OSHA PEL (TWA)	
1. Perfluoro-n-butanoic acid (PFBA)	99542	110422	0.02	2.00	0.017	50.1	1.00	0.02	375-22-4	N/A
2. Perfluoro-pentanoic acid (PFPA)	99543	011723	0.02	2.00	0.017	50.3	1.01	0.02	2706-90-3	N/A
3. Perfluoro-hexanoic acid (PFHA)	99199	051023	0.02	2.00	0.017	50.2	1.00	0.02	307-24-4	N/A
4. Perfluoroheptanoic acid (PFHeA)	99177	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-85-8	N/A
5. Perfluorooctanoic acid (PFODA)	99202	090522	0.02	2.00	0.017	50.2	1.00	0.02	335-97-1 (L)	Irregular Packaging
6. Perfluorononoic acid (PFNA)	99200	110922	0.02	2.00	0.017	50.1	1.00	0.02	379-85-1	N/A
7. Perfluorodecanoic acid (PFDA)	99205	052423	0.02	2.00	0.017	50.0	1.00	0.02	385-79-2	N/A
8. Perfluoroundecanoic acid (PFUDA)	99196	052423	0.02	2.00	0.017	50.2	1.00	0.02	2059-94-3	N/A
9. Perfluorododecanoic acid (PFDDA)	99204	110922	0.02	2.00	0.017	50.1	1.00	0.02	307-55-1	N/A
10. Perfluorotridecanoic acid (PFTrDA)	99203	053422	0.02	2.00	0.017	50.1	1.00	0.02	7829-94-9	N/A
11. Perfluorotetradecanoic acid (PFTeDA)	99177	053422	0.02	2.00	0.017	50.1	1.00	0.02	379-06-7	N/A
12. Perfluoropentadecanoic acid (PFPeDA)	4182	091023	0.02	2.00	0.017	50.0	1.00	0.05	784-81-8	N/A
13. Perfluorohexadecanoic acid (PFHexDA)	4183	091023	0.02	2.00	0.017	50.0	1.00	0.05	2355-31-8 (L)	N/A
14. Perfluorooctadecanoic acid (PF18FOA)	4184	091023	0.02	2.00	0.017	50.0	1.00	0.05	2981-80-4 (L)	N/A
15. Perfluorooctadecanoic acid (PF18FOA)	99194	091023	0.02	2.00	0.017	50.0	1.00	0.05	375-73-5	N/A
16. Perfluorooctadecanoic acid (PF18FOA)	99194	091023	0.02	2.00	0.017	50.1	1.00	0.02	2706-81-4	N/A
17. Perfluoro-1-hexadecanoic acid (PF16A)	99198	050923	0.02	2.00	0.017	50.0	1.00	0.02	379-84-6 (L)	N/A
18. Perfluoro-1-hexadecanoic acid (PF16A)	3672	091023	0.02	2.00	0.017	50.0	1.00	0.05	1783-25-1 (L)	N/A
19. Perfluoro-1-nonadecanoic acid (PF19A)	3657	091023	0.02	2.00	0.017	50.1	1.00	0.05	4829-6-13	N/A
20. Perfluoro-1-decacosanoic acid (PF20A)	3671	091023	0.02	2.00	0.017	49.3	1.01	0.05	295-77-3	N/A
21. Perfluoro-1-decacosanoic acid (PF20A)	65271	091023	0.02	2.00	0.017	50.2	1.00	0.05	257134-72-4	N/A
22. 1H,1H,2H,2H-Perfluorooctanoic sulfonic acid (4:2 FT3)	66372	031023	0.02	2.00	0.017	50.2	1.00	0.06	271819-97-2	N/A
23. 1H,1H,2H,2H-Perfluorooctanoic sulfonic acid (8:2 FT3)	3682	82FT3A23	0.02	2.00	0.017	47.9	1.01	0.05	30108-34-4	N/A
24. 1H,1H,2H,2H-Perfluorooctanoic sulfonic acid (PF20-DA)	99006	040523	0.02	2.00	0.017	50.2	1.00	0.02	18255-15-8	N/A
25. 2-Hydroxyoctadecanoic acid (PF20-OH)	4185	11CF20A0518	0.02	2.12	0.017	47.1	1.00	0.05	753051-82-8	N/A
26. 2-Hydroxyoctadecanoic acid (PF20-OH)	4184	82CF20A0523	0.02	2.14	0.017	48.6	1.00	0.05	258248-56-1	N/A
27. 2-Chlorooctadecanoic acid (PF20-Cl)	4183	82CF20A0523	0.02	2.12	0.017	47.1	1.00	0.05	819025-14-4	N/A
28. Dodecafluoro-3H,4-E-Isobutanoic acid (ADONA)	99202	090522	0.02	2.00	0.004	48.6	0.99	0.010	335-67-1 (L)	N/A
Perfluorooctanoic acid (PF8O)	99202	090522	0.02	2.00	0.004	0.6	0.01	0.001	335-67-1 (L)	N/A
Perfluorooctanoic acid (PF8O)	99198	090923	0.02	2.00	0.017	44.0	0.88	0.02	385-48-4 (L)	N/A
Perfluorooctanoic acid (PF8O)	99198	090923	0.02	2.00	0.017	6.0	0.12	0.0020	385-48-4 (L)	N/A
Heptafluorooctanoic acid (PF7O)	99201	050923	0.02	2.00	0.017	36.1	0.76	0.02	1765-23-1 (L)	N/A
Heptafluorooctanoic acid (PF7O)	99201	050923	0.02	2.00	0.017	7.5	0.15	0.003	1765-23-1 (L)	N/A
Heptafluorooctanoic acid (PF7O)	99201	050923	0.02	2.00	0.017	4.0	0.08	0.002	1765-23-1 (L)	N/A
Heptafluorooctanoic acid (PF7O)	99201	050923	0.02	2.00	0.017	0.5	0.010	0.0002	1765-23-1 (L)	N/A
N-Methylperfluoro-1-octadecanamide acid (PF18A)	4182	091023	0.02	2.00	0.017	36.0	0.72	0.04	2355-31-8 (L)	N/A
N-Ethylperfluoro-1-octadecanamide acid (PF18A)	4183	091023	0.02	2.00	0.017	6.5	0.13	0.011	2355-31-8 (L)	N/A
N-Propylperfluoro-1-octadecanamide acid (PF18A)	4182	091023	0.02	2.00	0.017	5.0	0.10	0.005	2355-31-8 (L)	N/A
N-Butylperfluoro-1-octadecanamide acid (PF18A)	4183	091023	0.02	2.00	0.017	2.5	0.05	0.0009	2355-31-8 (L)	N/A
N-Pentylperfluoro-1-octadecanamide acid (PF18A)	4183	091023	0.02	2.00	0.017	36.5	0.73	0.04	2961-50-4 (L)	N/A
N-Hexylperfluoro-1-octadecanamide acid (PF18A)	4183	091023	0.02	2.00	0.017	7.7	0.15	0.009	2961-50-4 (L)	N/A
N-Heptylperfluoro-1-octadecanamide acid (PF18A)	4183	091023	0.02	2.00	0.017	6.3	0.11	0.006	2961-50-4 (L)	N/A
N-Octylperfluoro-1-octadecanamide acid (PF18A)	4183	091023	0.02	2.00	0.017	0.8	0.017	0.0006	2961-50-4 (L)	N/A

A qualitative standard (Sect. 3.19) is available for PFDA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-9204) or the linear and branched isomers (PerkinElmer, Cat. No. 4460000). The PFDA standard must be used for identification (Sect. 12.2) until a quantitative PFDA standard containing the branched and linear isomers becomes commercially available.

\*The certified value is the concentration calculated from gravimetric and volumetric measurements under conditions stated.  
 †Standards are certified gravimetrically and analyzed as a certified NIST weight (available in NIST form only).  
 ‡Standards are certified gravimetrically and analyzed as a certified NIST weight, unless otherwise stated.  
 §Standards are certified gravimetrically and analyzed as a certified NIST weight, unless otherwise stated.  
 ¶Uncertainty values are given in parentheses following the certified value. The uncertainty values are based on the NIST measurement process.  
 ††Uncertainty values are given in parentheses following the certified value. The uncertainty values are based on the NIST measurement process.  
 †††Uncertainty values are given in parentheses following the certified value. The uncertainty values are based on the NIST measurement process.  
 ††††Uncertainty values are given in parentheses following the certified value. The uncertainty values are based on the NIST measurement process.  
 †††††Uncertainty values are given in parentheses following the certified value. The uncertainty values are based on the NIST measurement process.

\*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

12047A-B  
rec'd: 09/21/23

12065 rec'd: 01/28/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXF

#### Native Replacement PFAS Solution/Mixture

**PRODUCT CODE:** PFAC-MXF  
**LOT NUMBER:** PFACMXF0323  
**SOLVENT(S):** Methanol / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 03/23/2023  
**LAST TESTED:** (mm/dd/yyyy) 03/24/2023  
**EXPIRY DATE:** (mm/dd/yyyy) 03/24/2026  
**RECOMMENDED STORAGE:** Refrigerate ampoule

#### DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

#### DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture  
 Figure 1: LC/MS Data (SIR)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

#### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Revision#:9, Revised 2020-12-23

PFACMXF0323 (1 of 5)  
rev0

7.9.1  
7



**Tab. 1A:** PFAC-MXF; Components and Concentrations (ng/mL;  $\pm$  5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroicosadecafluoro-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: 03/29/2023  
(mm/dd/yyyy)

12070 A-B  
rec'd: 10/02/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### br-NMeFOSE

2-(N-Methylperfluorooctanesulfonamido)ethanol  
Isomeric Mix

<b>PRODUCT CODE:</b>	br-NMeFOSE
<b>LOT NUMBER:</b>	brNMeFOSE0922
<b>CONCENTRATION:</b>	50.0 ± 2.5 µg/mL
<b>SOLVENT(S):</b>	Methanol
<b>DATE PREPARED:</b> (mm/dd/yyyy)	09/02/2022
<b>LAST TESTED:</b> (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	10/07/2027
<b>RECOMMENDED STORAGE:</b>	Store ampoule in a cool, dark place

### DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

### DOCUMENTATION/ DATA ATTACHED:

- Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR
- Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 3: LC/MS Data (SIR)
- Figure 4: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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brNMeFOSE0922 (1 of 7)  
rev 1

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12071 A-B  
rec'd 10/02/22



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### br-NEtFOSE

2-(N-Ethylperfluorooctanesulfonamido)ethanol  
Isomeric Mix

<b>PRODUCT CODE:</b>	br-NEtFOSE
<b>LOT NUMBER:</b>	brNEtFOSE1022
<b>CONCENTRATION:</b>	50.0 ± 2.5 µg/mL
<b>SOLVENT(S):</b>	Methanol
<b>DATE PREPARED:</b> (mm/dd/yyyy)	09/12/2022
<b>LAST TESTED:</b> (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	10/07/2027
<b>RECOMMENDED STORAGE:</b>	Store ampoule in a cool, dark place

### DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

### DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)  
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)  
Figure 3: LC/MS Data (SIR)  
Figure 4: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

brNEtFOSE1022 (1 of 7)  
rev1

7.9.1

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12091  
rec'd: 10/11/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic  
Acid Solution/Mixture

<b><u>PRODUCT CODE:</u></b>	PFAC-MXJ
<b><u>LOT NUMBER:</u></b>	PFACMXJ0323
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	03/27/2023
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	03/28/2023
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	03/28/2028
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

### DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

### DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.

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Revision#: 9, Revised 2020-12-23

PFACMXJ0323 (1 of 5)  
rev0

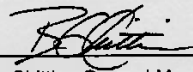
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**Table 1: PFAC-MXJ; Components and Concentrations ( $\mu\text{g/mL}$ ;  $\pm 5\%$  in methanol)**

Compound	Acronym	Concentration ( $\mu\text{g/mL}$ )
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By:   
B.G. Chittim, General Manager

Date: 04/12/2023  
(mm/dd/yyyy)



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic  
Acid Solution/Mixture

12/20  
rec'd: 10/18/23

<b><u>PRODUCT CODE:</u></b>	PFAC-MXJ
<b><u>LOT NUMBER:</u></b>	PFACMXJ0323
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	03/27/2023
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	03/28/2023
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	03/28/2028
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

### DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

### DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.

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Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23


PFACMXJ0323 (1 of 5)  
rev0

7.9.1

7

**Table A: PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)**

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By:   
B.G. Chittim, General Manager

Date: 04/12/2023  
(mm/dd/yyyy)



1116 A/B NW

1116B on the back NW



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

FHpPA

**LOT NUMBER:**

FHpPA1020

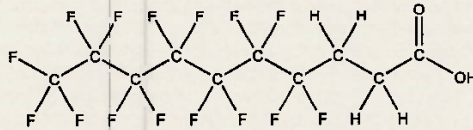
**COMPOUND:**

3-Perfluoroheptyl propanoic acid

**STRUCTURE:**

**CAS #:**

812-70-4



**MOLECULAR FORMULA:**

C<sub>10</sub>H<sub>5</sub>F<sub>15</sub>O<sub>2</sub>

**MOLECULAR WEIGHT:**

442.12

**CONCENTRATION:**

50.0 ± 2.5 µg/mL

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

11/12/2020

**EXPIRY DATE:** (mm/dd/yyyy)

11/12/2025

**RECOMMENDED STORAGE:**

Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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**Certified By:**

B.G. Chittim, General Manager

**Date:** 11/27/2020

(mm/dd/yyyy)

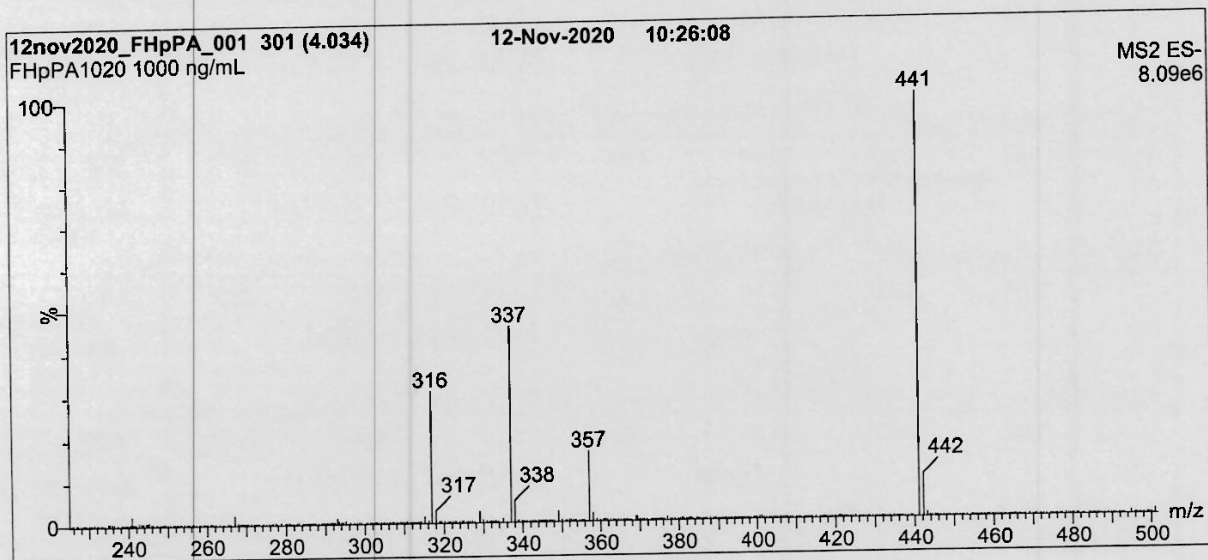
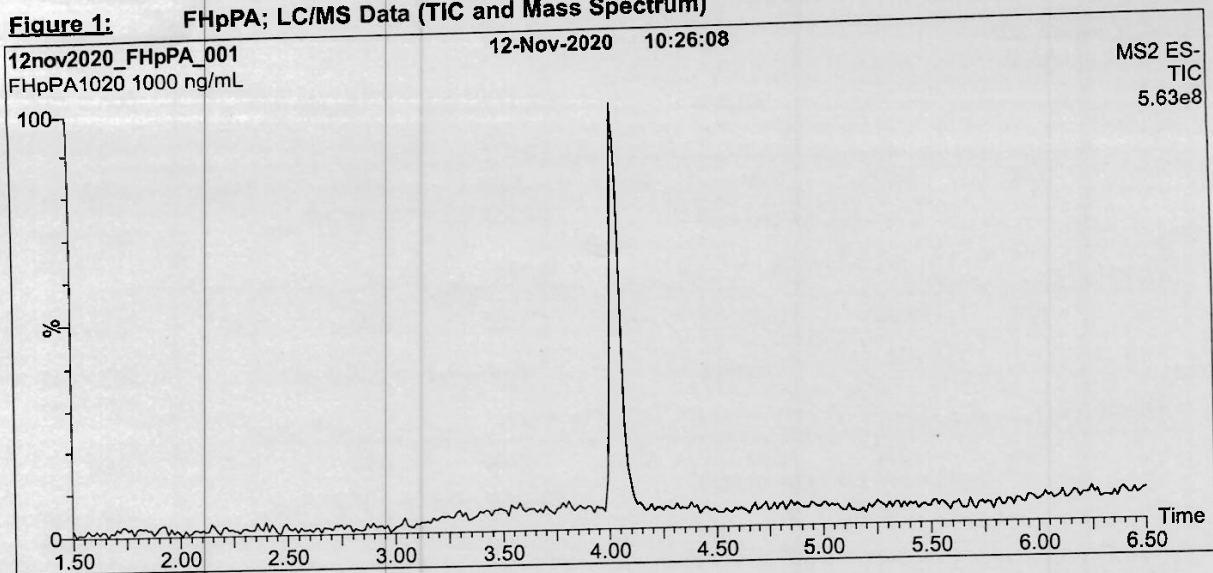
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Revision#: 8, Revised 2020-09-10

FHpPA1020 (1 of 4)  
rev0



**Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 0.50  
Cone Voltage (V) = 28.50  
Desolvation Temperature ( $^{\circ}$ C) = 500  
Desolvation Gas Flow (L/hr) = 1000

FPrPA(3:3FTEA) 1116 B



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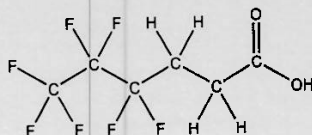
CERTIFICATE OF ANALYSIS  
DOCUMENTATION

**PRODUCT CODE:** FPrPA  
**COMPOUND:** 3-Perfluoropropyl propanoic acid

**LOT NUMBER:** FPrPA0122

**STRUCTURE:**

**CAS #:** 356-02-5



**MOLECULAR FORMULA:** C<sub>6</sub>H<sub>5</sub>F<sub>7</sub>O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 02/03/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 02/03/2027  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**MOLECULAR WEIGHT:** 242.09  
**SOLVENT(S):** Methanol

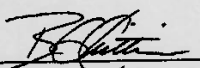
**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid (C<sub>6</sub>H<sub>3</sub>F<sub>7</sub>O<sub>2</sub>) as an impurity determined by <sup>19</sup>F NMR.

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Date: 02/04/2022  
(mm/dd/yyyy)

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11140



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

L-PFPrS

**LOT NUMBER:**

LPFPrS0721

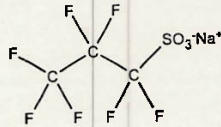
**COMPOUND:**

Sodium perfluoro-1-propanesulfonate

**STRUCTURE:**

**CAS #:**

Not available



**MOLECULAR FORMULA:**

C<sub>3</sub>F<sub>7</sub>SO<sub>3</sub>Na

**MOLECULAR WEIGHT:**

272.07

**CONCENTRATION:**

50.0 ± 2.5 µg/mL (Na salt)  
 46.0 ± 2.3 µg/mL (PFPrS acid)  
 45.8 ± 2.3 µg/mL (PFPrS anion)

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

07/12/2021

**EXPIRY DATE:** (mm/dd/yyyy)

07/12/2026

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 08/04/2021

(mm/dd/yyyy)

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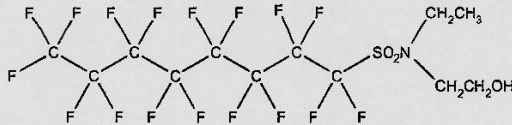
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

n, 09/27/2

**PRODUCT CODE:** N-EtFOSE-M **LOT NUMBER:** NEtFOSE0622M  
**COMPOUND:** 2-(N-ethylperfluoro-1-octanesulfonamido)ethanol

**STRUCTURE:** **CAS #:** 1691-99-2



11409

**MOLECULAR FORMULA:** C<sub>12</sub>H<sub>16</sub>F<sub>17</sub>NO<sub>3</sub>S **MOLECULAR WEIGHT:** 571.25  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/13/2022 (HRGC/LRMS)  
05/13/2022 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 05/13/2027  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

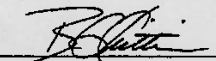
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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**Certified By:**  **Date:** 07/13/2022  
B.G. Chittim, General Manager (mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

NEtFOSE0622M (1 of 5)  
rev0

7.9.1  
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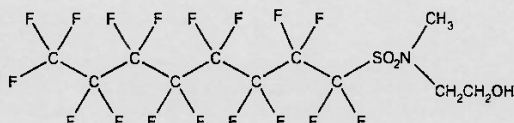
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

*12 = 9/2/22*

**PRODUCT CODE:** N-MeFOSE-M **LOT NUMBER:** NMeFOSE0522M  
**COMPOUND:** 2-(N-methylperfluoro-1-octanesulfonamido)ethanol

**STRUCTURE:** **CAS #:** 24448-09-7



*11410*

**MOLECULAR FORMULA:** C<sub>11</sub>H<sub>8</sub>F<sub>17</sub>NO<sub>3</sub>S **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* **Date:** 06/14/2022  
 B.G. Chittim, General Manager (mm/dd/yyyy)

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 Revision#: 9, Revised 2020-12-23

NMeFOSE0522M (1 of 5)  
 rev0

7.9.1

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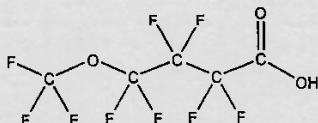
11465



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PF5OHxA **LOT NUMBER:** PF5OHxA0722  
**COMPOUND:** Perfluoro-5-oxahexanoic acid  
**SYNONYM:** Perfluoro-4-methoxybutanoic acid (PFMBA)  
**STRUCTURE:** **CAS #:** 863090-89-5



**MOLECULAR FORMULA:**  $C_6HF_9O_3$  **MOLECULAR WEIGHT:** 280.05  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$  **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 08/02/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 08/02/2027  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

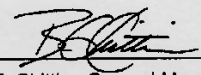
### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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**Certified By:**   
 B.G. Chittim, General Manager

**Date:** 08/26/2022  
 (mm/dd/yyyy)

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11514 rec'd 11/14/22

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

FHxSA-1

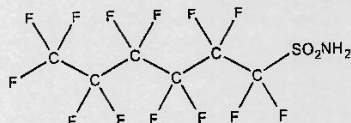
**LOT NUMBER:** FHxSA1221I

**COMPOUND:**

Perfluoro-1-hexanesulfonamide

**CAS #:** 41997-13-1

**STRUCTURE:**



**MOLECULAR FORMULA:**

C<sub>6</sub>H<sub>2</sub>F<sub>13</sub>NO<sub>2</sub>S

**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:

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Date: 01/10/2022  
(mm/dd/yyyy)

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FHxSA1221I (1 of 4)



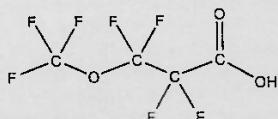
11648 Rec. 02/13/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PF4OPeA **LOT NUMBER:** PF4OPeA0722  
**COMPOUND:** Perfluoro-4-oxapentanoic acid  
**SYNONYM:** Perfluoro-3-methoxypropanoic acid (PFMPA) **CAS #:** 377-73-1  
**STRUCTURE:**



**MOLECULAR FORMULA:** C<sub>4</sub>HF<sub>7</sub>O<sub>3</sub> **MOLECULAR WEIGHT:** 230.04  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 08/02/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 08/02/2027  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

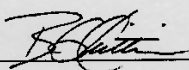
### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By:   
B.G. Chittim, General Manager Date: 08/15/2022  
(mm/dd/yyyy)

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11649 Rec. 02/13/23

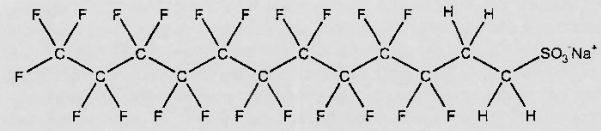


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 10:2FTS **LOT NUMBER:** 102FTS1122  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

**STRUCTURE:** **CAS #:** 108026-35-3



**MOLECULAR FORMULA:** C<sub>12</sub>H<sub>4</sub>F<sub>21</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 650.18  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol  
 48.3 ± 2.4 µg/mL (10:2FTS acid)  
 48.2 ± 2.4 µg/mL (10:2FTS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/01/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 12/01/2027  
**RECOMMENDED STORAGE:** Refrigerate ampoule

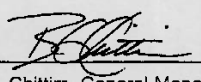
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By:  Date: 12/09/2022  
 B.G. Chittim, General Manager (mm/dd/yyyy)

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Revision# 9, Revised 2020-12-23

102FTS1122 (1 of 4)  
rev0

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7

11710  
rec'd: 03/17/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

N-MeFOSA-M

**LOT NUMBER:**

NMeFOSA1122M

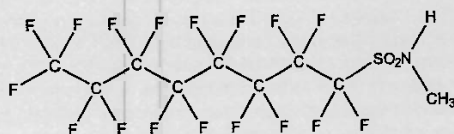
**COMPOUND:**

N-Methylperfluoro-1-octanesulfonamide

**STRUCTURE:**

**CAS #:**

31506-32-8



**MOLECULAR FORMULA:**

C<sub>9</sub>H<sub>4</sub>F<sub>17</sub>NO<sub>2</sub>S

**MOLECULAR WEIGHT:**

513.17

**CONCENTRATION:**

50.0 ± 2.5 µg/mL

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

11/11/2022

**EXPIRY DATE:** (mm/dd/yyyy)

11/11/2027

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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**Certified By:**

B.G. Chittim, General Manager

**Date:** 11/25/2022

(mm/dd/yyyy)

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7.9.1  
7



11794  
rec'd: 05/15/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

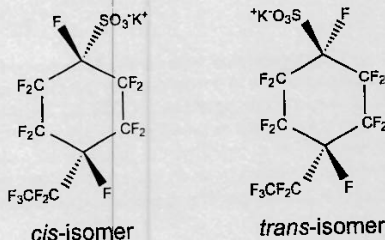
PFECHS

**LOT NUMBER:** PFECHS0223

**COMPOUND:**

Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

**STRUCTURE:**



**CAS #:** 335-24-0

**MOLECULAR FORMULA:**

C<sub>9</sub>F<sub>15</sub>SO<sub>3</sub>K

**MOLECULAR WEIGHT:** 500.22

**CONCENTRATION:**

50.0 ± 2.5 µg/mL (K salt)  
46.2 ± 2.3 µg/mL (PFECHS acid)  
46.1 ± 2.3 µg/mL (PFECHS anion)

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

03/14/2023

**EXPIRY DATE:** (mm/dd/yyyy)

03/14/2028

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*, by <sup>19</sup>F NMR).

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Certified By:

B.G. Chittim, General Manager

Date: 03/16/2023  
(mm/dd/yyyy)

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11944 A-0  
rec'd: 08/09/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### MPFAC-HIF-IS

Mass-Labelled PFAS Injection  
Standard Solution/Mixture

**PRODUCT CODE:** MPFAC-HIF-IS  
**LOT NUMBER:** MPFACHIFIS0723  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 07/05/2023  
**LAST TESTED:** (mm/dd/yyyy) 07/05/2023  
**EXPIRY DATE:** (mm/dd/yyyy) 07/05/2028  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

#### **DESCRIPTION:**

MPFAC-HIF-IS is a solution/mixture of five mass-labelled ( $^{13}\text{C}$ ) perfluoroalkylcarboxylic acids ( $\text{C}_4$ ,  $\text{C}_6$ ,  $\text{C}_8$ - $\text{C}_{10}$ ) and two mass-labelled ( $^{18}\text{O}$  and  $^{13}\text{C}$ ) perfluoroalkanesulfonates ( $\text{C}_6$  and  $\text{C}_8$ ). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of  $\geq 99\%$  per  $^{13}\text{C}$  or >94% per  $^{18}\text{O}$ .

#### **DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

#### **ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

MPFACHIFIS0723 (1 of 5)  
rev0

**Table A:** MPFAC-HIF-IS; Components and Concentrations (ng/mL,  $\pm$  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- <sup>13</sup> C <sub>3</sub> )butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- <sup>13</sup> C <sub>5</sub> )nonanoic acid	MPFNA	250		5
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )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( <sup>18</sup> O <sub>2</sub> )sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )octanesulfonate	MPFOS	500	479	6

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 07/07/2023  
(mm/dd/yyyy)



12030 A-5  
rec'd: 09/18/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### MPFAC-HIF-IS

**Mass-Labelled PFAS Injection  
Standard Solution/Mixture**

**PRODUCT CODE:** MPFAC-HIF-IS  
**LOT NUMBER:** MPFACHIFIS0723  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 07/05/2023  
**LAST TESTED:** (mm/dd/yyyy) 07/05/2023  
**EXPIRY DATE:** (mm/dd/yyyy) 07/05/2028  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

#### **DESCRIPTION:**

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (<sup>13</sup>C) perfluoroalkylcarboxylic acids (C<sub>4</sub>, C<sub>6</sub>, C<sub>8</sub>-C<sub>10</sub>) and two mass-labelled (<sup>18</sup>O and <sup>13</sup>C) perfluoroalkanesulfonates (C<sub>8</sub> and C<sub>9</sub>). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per <sup>13</sup>C or >94% per <sup>18</sup>O.

#### **DOCUMENTATION/ DATA ATTACHED:**

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

#### **ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

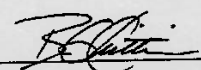
MPFACHIFIS0723 (1 of 5)  
rev0

7.9.1  
7

**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- <sup>13</sup> C <sub>3</sub> )butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- <sup>13</sup> C <sub>5</sub> )nonanoic acid	MPFNA	250		5
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )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( <sup>18</sup> O <sub>2</sub> )sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )octanesulfonate	MPFOS	500	479	6

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 07/07/2023  
(mm/dd/yyyy)



12087 A-J  
rec'd: 10/11/23

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### MPFAC-HIF-ES

#### Mass-Labelled PFAS Extraction Standard Solution/Mixture

**PRODUCT CODE:** MPFAC-HIF-ES  
**LOT NUMBER:** MPFACHIFES0623  
**SOLVENT(S):** Methanol/Isopropanol (1%)/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 06/19/2023  
**LAST TESTED:** (mm/dd/yyyy) 06/20/2023  
**EXPIRY DATE:** (mm/dd/yyyy) 06/20/2026  
**RECOMMENDED STORAGE:** Refrigerate ampoule

#### DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (<sup>13</sup>C) perfluoroalkylcarboxylic acids (C<sub>4</sub>-C<sub>12</sub>, C<sub>14</sub>), three mass-labelled (<sup>13</sup>C) perfluoroalkanesulfonates (C<sub>4</sub>, C<sub>6</sub>, and C<sub>8</sub>), three mass-labelled (one <sup>13</sup>C and two <sup>2</sup>H) perfluoro-1-octanesulfonamides, three mass-labelled (<sup>13</sup>C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (<sup>2</sup>H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (<sup>2</sup>H) perfluorooctanesulfonamidoethanols, and mass-labelled (<sup>13</sup>C) hexafluoropropylene oxide dimer acid (<sup>13</sup>C<sub>5</sub>-GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual <sup>13</sup>C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual <sup>2</sup>H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

#### DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture  
 Figure 1: LC/MS Data (SIR)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

#### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

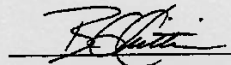
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**Tab. 1: MPFAC-HIF-ES; Components and Concentrations**  
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-( <sup>13</sup> C <sub>4</sub> )butanoic acid	MPFBA	2000		1
Perfluoro-n-( <sup>13</sup> C <sub>5</sub> )pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- <sup>13</sup> C <sub>6</sub> )hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )heptanoic acid	M4PFHpA	500		7
Perfluoro-n-( <sup>13</sup> C <sub>8</sub> )octanoic acid	M8PFOA	500		10
Perfluoro-n-( <sup>13</sup> C <sub>9</sub> )nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- <sup>13</sup> C <sub>6</sub> )decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- <sup>13</sup> C <sub>7</sub> )undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )tetradecanoic acid	M2PFTeDA	250		24
Perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonamide	M8FOSA	500		16
N-Methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-Ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		23
N-Methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-Ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		17
2-(N-Methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d7-N-MeFOSE	5000		20
2-(N-Ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d9-N-EtFOSE	5000		22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)( <sup>13</sup> C <sub>3</sub> )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- <sup>13</sup> C <sub>3</sub> )butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- <sup>13</sup> C <sub>3</sub> )hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )decanesulfonate	M2-8:2FTS	1000	960	13

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 06/22/2023  
(mm/dd/yyyy)





# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

12122  
rec'd: 10/18/23  
NEIFOSA0923M

**PRODUCT CODE:**

N-EtFOSA-M

**LOT NUMBER:**

NEIFOSA0923M

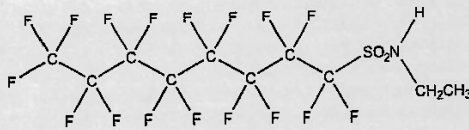
**COMPOUND:**

N-Ethylperfluoro-1-octanesulfonamide

**STRUCTURE:**

**CAS #:**

4151-50-2



**MOLECULAR FORMULA:**

C<sub>10</sub>H<sub>6</sub>F<sub>17</sub>NO<sub>2</sub>S

**MOLECULAR WEIGHT:**

527.20

**CONCENTRATION:**

50.0 ± 2.5 µg/mL

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

09/19/2023

**EXPIRY DATE:** (mm/dd/yyyy)

09/19/2028

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 10/04/2023  
(mm/dd/yyyy)

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7.9.1  
7

11467



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**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PRODUCT CODE:**

3,6-OPFHpA

**LOT NUMBER:**

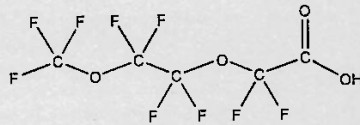
36OPFHpA0522

**COMPOUND:**

Perfluoro-3,6-dioxaheptanoic acid

**STRUCTURE:****CAS #:**

151772-58-6

**MOLECULAR FORMULA:** $C_7HF_8O_4$ **MOLECULAR WEIGHT:**

296.04

**CONCENTRATION:**

50.0 ± 2.5 µg/mL

**SOLVENT(S):**Methanol  
Water (<1%)**CHEMICAL PURITY:**

&gt;98%

**LAST TESTED:** (mm/dd/yyyy)

06/08/2022

**EXPIRY DATE:** (mm/dd/yyyy)

06/08/2027

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim, General Manager

Date: 06/27/2022

(mm/dd/yyyy)

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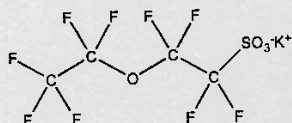
**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PRODUCT CODE:**

PFEESA

**LOT NUMBER:** PFEESA1121**COMPOUND:**

Potassium perfluoro(2-ethoxyethane)sulfonate

**STRUCTURE:****CAS #:** 117205-07-9**MOLECULAR FORMULA:** $C_4F_9SO_4K$ **MOLECULAR WEIGHT:** 354.19**CONCENTRATION:**

50.0 ± 2.5 µg/mL (K salt)  
44.6 ± 2.2 µg/mL (PFEESA acid)  
44.5 ± 2.2 µg/mL (PFEESA anion)

**SOLVENT(S):** Methanol**CHEMICAL PURITY:**

&gt;98%

**LAST TESTED:** (mm/dd/yyyy)

11/22/2021

**EXPIRY DATE:** (mm/dd/yyyy)

11/22/2026

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-octanoic acid (PFOA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim, General Manager

Date: 11/29/2021  
(mm/dd/yyyy)

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11462



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

PFODA

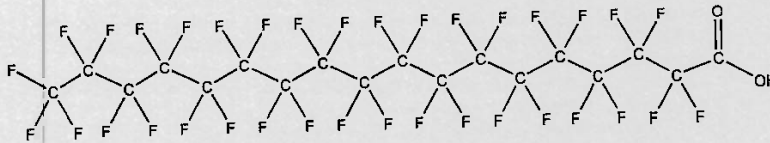
**LOT NUMBER:** PFODA0622

**COMPOUND:**

Perfluoro-n-octadecanoic acid

**STRUCTURE:**

**CAS #:** 16517-11-6



**MOLECULAR FORMULA:**

C<sub>18</sub>H<sub>35</sub>O<sub>2</sub>

**MOLECULAR WEIGHT:** 914.14

**CONCENTRATION:**

50.0 ± 2.5 µg/mL

**SOLVENT(S):**

Methanol

Water (<1%)

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

07/05/2022

**EXPIRY DATE:** (mm/dd/yyyy)

07/05/2027

**RECOMMENDED STORAGE:**

Store ampoule at ambient temperature in a dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim, General Manager

Date: 07/05/2022 (mm/dd/yyyy)

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11481 rec'd 10/21/22

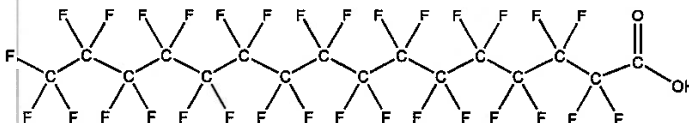


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHxDA      **LOT NUMBER:** PFHxDA0222  
**COMPOUND:** Perfluoro-n-hexadecanoic acid

**STRUCTURE:**      **CAS #:** 67905-19-5



**MOLECULAR FORMULA:** C<sub>16</sub>H<sub>31</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 814.13  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 02/23/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 02/23/2027  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**       **Date:** 03/08/2022  
B.G. Chittim, General Manager      (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

PFHxDA0222 (1 of 4)  
rev0

7.9.1  
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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

7.9.1  
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**PRODUCT CODE:**

L-PFDoS

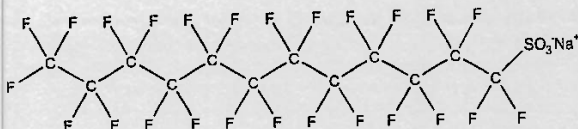
**LOT NUMBER:** LPFDoS0422

**COMPOUND:**

Sodium perfluoro-1-dodecanesulfonate

**STRUCTURE:**

**CAS #:** 1260224-54-1



**MOLECULAR FORMULA:**

$C_{12}F_{25}SO_3Na$

**MOLECULAR WEIGHT:** 722.14

**CONCENTRATION:**

50.0 ± 2.5 µg/mL (Na salt)  
48.5 ± 2.4 µg/mL (PFDoS acid)  
48.4 ± 2.4 µg/mL (PFDoS anion)

**SOLVENT(S):** Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

04/20/2022

**EXPIRY DATE:** (mm/dd/yyyy)

04/20/2027

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

B.G. Chittim, General Manager

**Date:** 05/16/2022

(mm/dd/yyyy)

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SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 11/17/23 08:30  
Started (mm/dd/yy 24:00)

Method: EPA 1633 Draft (QSM) List 40

Date/Time: 11/20/23 11:30  
Finished (mm/dd/yy 24:00)

Balance ID: \_\_\_\_\_

Batch#: OP162 Ext. By: GH

Conc. By: - Viald By: NG

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP 162 MB		500	6	N/A	25		5	E	
OP 162 BS		500	6	N/A					
OP 162 LLBS		500	6	N/A		200			
FC10961-1	1	54	6	N/A		60			
	2	60	5	6					
	3	56	6	N/A					
	4	64	5	6					
FC11222-1	2	530	6	N/A					
	2	560							
FC11200-1	2	530							V
	2	540							E
	3	540							F
	4	540							
	5	550							
	6	530							
	7	510	V						
	8	520	6	N/A	25		5		F
GH 11/17/23									
OPFC11200-1MS	3	540	6	N/A	25	200	5	E	
OP MSD									
OPFC11200-3DUP	3	530	6	N/A	25		5	E	

Comments:

EIS (SURR) ID: 12150A-C Conc: 250-5000 ng/ml Exp. Date: 11/12/24 Inj. By: GH Ver. By: AG  
 SPIKE.1 ID: LCMS2222E Conc: VARIED Exp. Date: 04/14/24 Inj. By: GH Ver. By: AG  
 SPIKE.2 ID: \_\_\_\_\_ Conc: \_\_\_\_\_ Exp. Date: \_\_\_\_\_ Inj. By: \_\_\_\_\_ Ver. By: \_\_\_\_\_  
 NIS (ISTD) ID: 121325-L Conc: 250-1000 ng/ml Exp. Date: 11/08/24 Inj. By: NG Ver. By: RP

TurboVap Temp (Therm ID): \_\_\_\_\_ N-Evap Temp (Therm ID): \_\_\_\_\_  
 Observed Temp °C: \_\_\_\_\_ Corr. Temp °C: \_\_\_\_\_ Observed Temp °C: \_\_\_\_\_ Corr. Temp °C: \_\_\_\_\_

Methanol Lot # 232489 1% NH4OH MeOH PF 726 SPE Lot # 6752454-01  
 Water Lot# OP1 0.3M Formic Acid PF 720 Syringe filter Lot # \_\_\_\_\_  
 Acetic Acid# 144003 3% NH4OH Sol PF 200 pH paper Lot# 205423  
 0.1M Formic PF 721 5% Formic Acid \_\_\_\_\_ Carbon Lot# 99687

Relinquished By: *[Signature]*  
 Accepted By: *[Signature]*

Date: 11/17/23  
 Date: 11/20/23

1633 AQ extraction 042222.xls NF

7.10.1 7