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## Technical Report for

**AECOM, INC.**

**N6274223F0104 RH Fire Suppression System**

**60697810**

**SGS Job Number: FC2356**

**Sampling Date: 02/01/23**



### Report to:

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

**Total number of pages in report: 644**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

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

**Client Service contact: Elvin Kumar 407-425-6700**

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)  
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),  
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### Sample Summary

AECOM, INC.

Job No: FC2356

N6274223F0104 RH Fire Suppression System  
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC2356-1	02/01/23	09:50	MDNT02/02/23	AQ	Ground Water	AF-RHMW10-WGN01LF-2301W5
FC2356-2	02/01/23	10:10	MDNT02/02/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2301W5
FC2356-3	02/01/23	12:20	MDNT02/02/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2301W5
FC2356-4	02/01/23	11:50	MDNT02/02/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2301W5

# SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** AECOM, INC.

**Job No:** FC2356

**Site:** N6274223F0104 RH Fire Suppression System

**Report Date:** 2/10/2023 6:59:32 PM

On 02/02/2023, 3 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 1.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2356 was assigned to the project.

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

## MS Semi-volatiles By Method EPA DRAFT 1633

**Matrix:** AQ

**Batch ID:** OP95329

Sample(s) FC2356-1MS, FC2356-2DUP were used as the QC samples indicated.

Sample(s) FC2356-3 have surrogates outside control limits.

FC2356-3 for EtFOSAA: Associated ID Standard outside control limits.

FC2356-3 for d5-EtFOSAA: Outside control limits.

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

Narrative prepared by:

\_\_\_\_\_  
Kim Benham, Client Services (Signature on File)



## Summary of Hits

Job Number: FC2356  
Account: AECOM, INC.  
Project: N6274223F0104 RH Fire Suppression System  
Collected: 02/01/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC2356-1 AF-RHMW10-WGN01LF-2301W5

No hits reported in this sample.

FC2356-2 AF-RHMW17-WGN01LF-2301W5

Perfluoropentanoic acid	4.5 J	9.3	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	2.0 J	4.6	0.93	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	5.4 J	19	7.4	ng/l	EPA DRAFT 1633

FC2356-3 AF-RHMW17D-WGN01LF-2301W5

6:2 Fluorotelomer sulfonate	25.6	19	7.4	ng/l	EPA DRAFT 1633
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FC2356-4 AF-RHMW17D-WQFB01-2301W5

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

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Client Sample ID:	AF-RHMW10-WGN01LF-2301W5		
Lab Sample ID:	FC2356-1	Date Sampled:	02/01/23
Matrix:	AQ - Ground Water	Date Received:	02/02/23
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	6Q13330.D	1	02/09/23 20:31	MV	02/06/23 09:00	OP95329	S6Q203
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
<b>PERFLUOROALKYL CARBOXYLIC ACIDS</b>							
375-22-4	Perfluorobutanoic acid	3.5 U	18	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.8	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.4	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.4	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
<b>PERFLUOROALKYL SULFONIC ACIDS</b>							
375-73-5	Perfluorobutanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.4	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.4	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.4	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.4	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	
<b>FLUOROTELOMER SULFONIC ACIDS</b>							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
<b>PERFLUOROOCCTANE SULFONAMIDES</b>							
754-91-6	PFOSA	1.8 U	4.4	1.8	0.59	ng/l	
31506-32-8	MeFOSA	1.8 U	4.4	1.8	0.88	ng/l	
4151-50-2	EtFOSA	1.8 U	4.4	1.8	0.88	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

# Report of Analysis

Client Sample ID:	AF-RHMW10-WGN01LF-2301W5		
Lab Sample ID:	FC2356-1	Date Sampled:	02/01/23
Matrix:	AQ - Ground Water	Date Received:	02/02/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

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

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	8.8 U	44	8.8	3.8	ng/l	
1691-99-2	EtFOSE	18 U	44	18	6.5	ng/l	

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	3.5 U	18	3.5	0.88	ng/l	
919005-14-4	ADONA	3.5 U	18	3.5	1.6	ng/l	
377-73-1	PFMPA	1.8 U	8.8	1.8	0.88	ng/l	
863090-89-5	PFMBA	3.5 U	8.8	3.5	1.0	ng/l	
151772-58-6	NFDHA	3.5 U	8.8	3.5	1.1	ng/l	

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	18	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	18	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	8.8	1.8	0.68	ng/l	

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	22	8.8	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	6.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	109%		20-150%
	13C5-PFPeA	109%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	108%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	101%		20-150%
	13C6-PFDA	103%		20-150%
	13C7-PFUnDA	89%		20-150%
	13C2-PFDoDA	84%		20-150%
	13C2-PFTeDA	80%		20-150%
	13C3-PFBS	107%		20-150%
	13C3-PFHxS	105%		20-150%

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

# Report of Analysis

<b>Client Sample ID:</b>	AF-RHMW10-WGN01LF-2301W5		<b>Date Sampled:</b>	02/01/23
<b>Lab Sample ID:</b>	FC2356-1		<b>Date Received:</b>	02/02/23
<b>Matrix:</b>	AQ - Ground Water		<b>Percent Solids:</b>	n/a
<b>Method:</b>	EPA DRAFT 1633 EPA 1633 DRAFT			
<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	107%		20-150%
	d3-MeFOSA	101%		20-150%
	d5-EtFOSA	101%		20-150%
	d3-MeFOSAA	106%		20-150%
	d5-EtFOSAA	100%		20-150%
	d7-MeFOSE	98%		20-150%
	d9-EtFOSE	99%		20-150%
	13C2-4:2FTS	116%		20-150%
	13C2-6:2FTS	121%		20-150%
	13C2-8:2FTS	112%		20-150%
	13C3-HFPO-DA	110%		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-RHMW17-WGN01LF-2301W5		
Lab Sample ID:	FC2356-2	Date Sampled:	02/01/23
Matrix:	AQ - Ground Water	Date Received:	02/02/23
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	6Q13332.D	1	02/09/23 20:59	MV	02/06/23 09:00	OP95329	S6Q203
Run #2							

Run #	Initial Volume	Final Volume
Run #1	540 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	3.7 U	19	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	4.5	9.3	1.9	0.87	ng/l	J
307-24-4	Perfluorohexanoic acid	2.0	4.6	0.93	0.46	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.6	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
<b>PERFLUOROALKYL SULFONIC ACIDS</b>							
375-73-5	Perfluorobutanesulfonic acid	0.93 U	4.6	0.93	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.6	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.93 U	4.6	0.93	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.6	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.6	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.6	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	
<b>FLUOROTELOMER SULFONIC ACIDS</b>							
757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	5.4	19	7.4	3.2	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	
<b>PERFLUOROOCCTANE SULFONAMIDES</b>							
754-91-6	PFOSA	1.9 U	4.6	1.9	0.62	ng/l	
31506-32-8	MeFOSA	1.9 U	4.6	1.9	0.93	ng/l	
4151-50-2	EtFOSA	1.9 U	4.6	1.9	0.93	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-RHMW17-WGN01LF-2301W5		
Lab Sample ID:	FC2356-2	Date Sampled:	02/01/23
Matrix:	AQ - Ground Water	Date Received:	02/02/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

2355-31-9	MeFOSAA	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	9.3 U	46	9.3	4.1	ng/l	
1691-99-2	EtFOSE	19 U	46	19	6.9	ng/l	

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	3.7 U	19	3.7	0.93	ng/l	
919005-14-4	ADONA	3.7 U	19	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	9.3	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	9.3	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	9.3	3.7	1.1	ng/l	

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	19	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	19	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	9.3	1.9	0.72	ng/l	

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	23	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	107%		20-150%
	13C5-PFPeA	114%		20-150%
	13C5-PFHxA	115%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	104%		20-150%
	13C9-PFNA	98%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	87%		20-150%
	13C2-PFTeDA	81%		20-150%
	13C3-PFBS	109%		20-150%
	13C3-PFHxS	105%		20-150%

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

4.2  
4

## Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2301W5		Date Sampled:	02/01/23
Lab Sample ID:	FC2356-2		Date Received:	02/02/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	103%		20-150%
	13C8-FOSA	100%		20-150%
	d3-MeFOSA	99%		20-150%
	d5-EtFOSA	107%		20-150%
	d3-MeFOSAA	98%		20-150%
	d5-EtFOSAA	102%		20-150%
	d7-MeFOSE	97%		20-150%
	d9-EtFOSE	102%		20-150%
	13C2-4:2FTS	131%		20-150%
	13C2-6:2FTS	110%		20-150%
	13C2-8:2FTS	122%		20-150%
	13C3-HFPO-DA	118%		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

Page 1 of 3

Client Sample ID:	AF-RHMW17D-WGN01LF-2301W5		
Lab Sample ID:	FC2356-3	Date Sampled:	02/01/23
Matrix:	AQ - Ground Water	Date Received:	02/02/23
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	6Q13334.D	1	02/09/23 21:27	MV	02/06/23 09:00	OP95329	S6Q203
Run #2							

Run #	Initial Volume	Final Volume
Run #1	540 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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## PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.7 U	19	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	9.3	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.6	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	

## PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.93 U	4.6	0.93	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.6	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.93 U	4.6	0.93	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.6	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.6	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.6	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	

## FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	25.6	19	7.4	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	

## PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	4.6	1.9	0.62	ng/l	
31506-32-8	MeFOSA	1.9 U	4.6	1.9	0.93	ng/l	
4151-50-2	EtFOSA	1.9 U	4.6	1.9	0.93	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-RHMW17D-WGN01LF-2301W5		
Lab Sample ID:	FC2356-3	Date Sampled:	02/01/23
Matrix:	AQ - Ground Water	Date Received:	02/02/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

2355-31-9	MeFOSAA	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA <sup>a</sup>	3.7 U	4.6	3.7	1.2	ng/l	

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	9.3 U	46	9.3	4.1	ng/l	
1691-99-2	EtFOSE	19 U	46	19	6.9	ng/l	

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	3.7 U	19	3.7	0.93	ng/l	
919005-14-4	ADONA	3.7 U	19	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	9.3	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	9.3	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	9.3	3.7	1.1	ng/l	

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	19	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	19	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	9.3	1.9	0.72	ng/l	

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	23	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	113%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	108%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	111%		20-150%
	13C9-PFNA	104%		20-150%
	13C6-PFDA	111%		20-150%
	13C7-PFUnDA	107%		20-150%
	13C2-PFDoDA	100%		20-150%
	13C2-PFTeDA	81%		20-150%
	13C3-PFBS	109%		20-150%
	13C3-PFHxS	106%		20-150%

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

## Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2301W5		Date Sampled:	02/01/23
Lab Sample ID:	FC2356-3		Date Received:	02/02/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	107%		20-150%
	13C8-FOSA	124%		20-150%
	d3-MeFOSA	112%		20-150%
	d5-EtFOSA	106%		20-150%
	d3-MeFOSAA	142%		20-150%
	d5-EtFOSAA	159% <sup>b</sup>		20-150%
	d7-MeFOSE	116%		20-150%
	d9-EtFOSE	120%		20-150%
	13C2-4:2FTS	112%		20-150%
	13C2-6:2FTS	93%		20-150%
	13C2-8:2FTS	97%		20-150%
	13C3-HFPO-DA	116%		20-150%

(a) Associated ID Standard outside control limits.

(b) Outside control limits.

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

Page 1 of 3

Client Sample ID:	AF-RHMW17D-WQFB01-2301W5		
Lab Sample ID:	FC2356-4	Date Sampled:	02/01/23
Matrix:	AQ - Field Blank Water	Date Received:	02/02/23
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	6Q13335.D	1	02/09/23 21:41	MV	02/06/23 09:00	OP95329	S6Q203
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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## PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.6 U	18	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	9.1	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	

## PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.91 U	4.5	0.91	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.5	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.91 U	4.5	0.91	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	

## FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	

## PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	4.5	1.8	0.61	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.91	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.91	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

# Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2301W5		
Lab Sample ID:	FC2356-4	Date Sampled:	02/01/23
Matrix:	AQ - Field Blank Water	Date Received:	02/02/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

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

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

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

**PER and POLYFLUOROETHER SULFONIC ACIDS**

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

**FLUOROTELOMER CARBOXYLIC ACIDS**

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

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	111%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	111%		20-150%
	13C4-PFHpA	110%		20-150%
	13C8-PFOA	109%		20-150%
	13C9-PFNA	110%		20-150%
	13C6-PFDA	116%		20-150%
	13C7-PFUnDA	104%		20-150%
	13C2-PFDoDA	94%		20-150%
	13C2-PFTeDA	99%		20-150%
	13C3-PFBS	115%		20-150%
	13C3-PFHxS	116%		20-150%

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

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## Report of Analysis

<b>Client Sample ID:</b>	AF-RHMW17D-WQFB01-2301W5		
<b>Lab Sample ID:</b>	FC2356-4	<b>Date Sampled:</b>	02/01/23
<b>Matrix:</b>	AQ - Field Blank Water	<b>Date Received:</b>	02/02/23
<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	107%		20-150%
	13C8-FOSA	96%		20-150%
	d3-MeFOSA	95%		20-150%
	d5-EtFOSA	98%		20-150%
	d3-MeFOSAA	101%		20-150%
	d5-EtFOSAA	98%		20-150%
	d7-MeFOSE	99%		20-150%
	d9-EtFOSE	99%		20-150%
	13C2-4:2FTS	121%		20-150%
	13C2-6:2FTS	114%		20-150%
	13C2-8:2FTS	106%		20-150%
	13C3-HFPO-DA	118%		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

# FC2356

DGC #: 2301W5AFSG03

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

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;"> <span>SGS - ORLANDO Quote #</span> <span>SKIFF #</span> </div> <div style="text-align: center; font-size: 24px; opacity: 0.5;">             m.d. 02/10/23           </div>										DW - Drinking Water										GW - Ground Water										WW - Water																																																											
Address: 1001 Bishop St. ste 1600					Street															SW - Surface Water										SO - Soil										SL - Sludge										OI - Oil										LIQ - Other Liquid										AIR - Air										SOL - Other Solid										WP - Wipe									
City: Honolulu		State: HI			Zip: 96813			City: Honolulu												State: Hawaii			Project # 60697810																																																																												
Project Contact: Katie Abbott Email: katie.abbott@aecom.com					Project Manager: Watson Tanji Email: watson.tanji@aecom.com															Project # 60697810					Fax #					Client Purchase Order #																																																																					
Sampler(s) Name(s) (Printed)										Sampler 1: M. Ganig										Sampler 2:										Lab Use Only																																																																					
Turnaround Time (Business days)										Data Deliverable Information										Comments / Remarks																																																																															
10 Day (Business) 7 Day <input checked="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="checked" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="checked" type="checkbox"/> EDD'S					EDMS upload database: JBPHE					EDMS Coverage: AFFF Assessment Sampling GW					United 026-23340940																																																																										
Rush T/A Data Available VIA Email or Lablink					Sample Custody must be documented below each time samples change possession, including courier delivery.																																																																																														
1 Relinquished by Sampler/Affiliation					2 Received By/Affiliation					3 Relinquished By/Affiliation					4 Received By/Affiliation					5 Relinquished by/Affiliation					6 Received By/Affiliation					7 Relinquished By/Affiliation					8 Received By/Affiliation																																																																
Date Time: 2.1.23 13:00					Date Time: 2/1/23 13:00					Date Time: 2/1/23					Date Time: 2/2/23																																																																																				
Signature: M. Ganig					Signature: Watson Tanji					Signature: Watson Tanji					Signature: Watson Tanji																																																																																				

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 1.47/1

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

PFAS\_COCs\_ALL.xls Rev 031316



5.1  
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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

FC2356

CDC #: 2301W5AFSG10

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; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small;">PFAS EPA Draft: 1633</div> <div style="margin-left: 20px; text-align: center;"> <p><i>N/T</i></p> <p>2/1/23</p> </div> </div>										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe				
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 Manager: Watson Tanji Email: watson.tanji@aecom.com		Project # 60697810																
Sampler(s) Name(s) (Printed) Sampler 1: <i>NGHH TORNER</i> Sampler 2: <i>ANDY YOUNG</i>		Client Purchase Order #																
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION										LAB USE ONLY			
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	IC	NUCH	INCS	PSB04	NAOH/2NAAC	P/WATER		MECH		
2	AF-RHMW17-WGN01LF-2301W5	2/1/23	1010	<i>W. Young</i>	GW	3		X										
				<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small;">PFAS EPA Draft: 1633</div> <div style="margin-left: 20px; text-align: center;"> <p><i>N/T</i></p> <p>2/1/23</p> </div> </div>														
Turnaround Time ( Business days)				Data Deliverable Information				Comments / Remarks										
10 Day (Business) _____ 7 Day _____ <input checked="" type="checkbox"/> 5 Day _____ 3 Day <i>RUSH</i> _____ 2 Day <i>RUSH</i> _____ 1 Day <i>RUSH</i> _____ 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  <i>Unifera AWB 016-23340940</i>										
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: 1100		Received By/Affiliation				Relinquished By/Affiliation				Date Time: 1130		Received By/Affiliation 1400				
1 <i>Watson Tanji</i> AECOM		2/1/23		2 <i>W. Young</i> AECOM				3 <i>W. Young</i> AECOM				2/1/23		4 <i>W. Young</i> 2/2/23				
Relinquished by/Affiliation		Date Time:		Received By/Affiliation				Relinquished By/Affiliation				Date Time:		Received By/Affiliation				
5		6		7				8				8						
Lab Use Only : Cooler Temperature (s) Celsius (corrected): <i>1.9 IPI</i>													<a href="http://www.sgs.com/en/terms-and-conditions">http://www.sgs.com/en/terms-and-conditions</a>					

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FC2356: Chain of Custody

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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

**FC 2356**

COC #: 2301W5AFSG11

SGS - ORLANDO JOB #:

PAGE 1 OF 1

Client / Reporting Information				Project Information				SGS - ORLANDO Quote #												SKIFF #			
Company Name: AECOM				Project Name: N6274223F0104 RH Fire Suppression System				Analytical Information												Matrix Codes			
Address: 1001 Bishop St. ste 1600				Street				<div style="text-align: center; font-size: 2em; font-weight: bold;"> <del>           [Handwritten Signature]            2/1/23         </del> </div>												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe			
City: Honolulu		State: HI		Zip: 96813		City: Honolulu																State: Hawaii	
Project Contact: Katie Abbott		Email: katie.abbott@aecom.com		Project # 60697810																			
Project Manager: Watson Tanji		Email: watson.tanji@aecom.com		Fax #																			
Phone #: 303-796-4624 / 808-954-4512				Client Purchase Order #																			
Sampler(s) Name(s) (Printed) Sampler 1: <i>Kellan Wilde</i> Sampler 2: <i>Andy Young</i>																							
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	CONTAINER INFORMATION													PFAS EPA Draft 1633	LAB USE ONLY					
				SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	NO	NH	NH3	HNH3	HSO4	NH4H2NAC	DI WATER	MESH							
3	AF-RHMW17D-WGN01LF-2301W5	2/1/23	1220	<i>KW, NTA</i>	GW	3		X										X					
4	AF-RHMW17D-WQFB01-2301W5	2/1/23	1156	<i>KW, NTA</i>	GW	3		X										X					
				<del>           [Handwritten Signature]            2/1/23         </del>																			
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  <i>United AWR 016-23340940</i>															
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: 1:35		Received By/Affiliation				Relinquished By/Affiliation		Date Time: 1:43		Received By/Affiliation				1400							
1 <i>Andy Young AECOM</i>		2/1/23		2 <i>[Signature] AECOM</i>				3 <i>[Signature] AECOM</i>		2/1/23		4 <i>[Signature]</i>				7/2/23							
5				6				7				8											
Lab Use Only : Cooler Temperature (s) Celsius (corrected): <i>1.4 FBI</i>																<a href="http://www.sgs.com/en/terms-and-conditions">http://www.sgs.com/en/terms-and-conditions</a>							

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FC2356: Chain of Custody

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## SGS Sample Receipt Summary

Job Number: FC2356

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 2/2/2023 2:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #s: United Cargo AWB #: 016-23340940

Therm ID: IR 1;

Therm CF: 0.2;

# of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (1.4);

Cooler Temps (Corrected) °C: Cooler 1: (1.6);

**Cooler Information**

Y or N

- |                             |                                     |                          |
|-----------------------------|-------------------------------------|--------------------------|
| 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)                           |                          |

**Sample Information**

Y or N N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Sample labels present on bottles                 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Samples preserved properly                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 3. Sufficient volume/containers recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Condition of sample                              | Intact                              |                                     |                                     |
| 5. Sample recvd within HT                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 6. Dates/Times/IDs on COC match Sample Label        | <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"/> |

**Trip Blank Information**

Y or N N/A

- |                                |                          |                          |                                     |
|--------------------------------|--------------------------|--------------------------|-------------------------------------|
| 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"/> |

W or S N/A

- |                        |                          |                          |                                     |
|------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Type Of TB Received | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|------------------------|--------------------------|--------------------------|-------------------------------------|

**Misc. Information**

Number of Encores: 25-Gram \_\_\_\_\_ 5-Gram \_\_\_\_\_ Number of 5035 Field Kits: \_\_\_\_\_ Number of Lab Filtered Metals: \_\_\_\_\_  
 Test Strip Lot #s: pH 0-3 \_\_\_\_\_ 230315 \_\_\_\_\_ pH 10-12 \_\_\_\_\_ 219813A \_\_\_\_\_ Other: (Specify) \_\_\_\_\_  
 Residual Chlorine Test Strip Lot #: \_\_\_\_\_

Comments

SM001  
Rev. Date 05/24/17

Technician: ZANEB

Date: 2/2/2023 2:00:00 PM

Reviewer: NS

Date: 2/9/2023

FC2356: Chain of Custody

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5.1  
5

# QC Evaluation: DOD QSM5.x Limits

**Job Number:** FC2356  
**Account:** AECOM, INC.  
**Project:** N6274223F0104 RH Fire Suppression System  
**Collected:** 02/01/23

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

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

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\* Sample used for QC is not from job FC2356

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: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q203-IBLK	6Q13305.D	1	02/09/23	MV	n/a	n/a	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	0.0018	0.0050	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0034	0.0050	0.0010	ug/l	J
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	0.0174	0.050	0.0044	ug/l	J
1691-99-2	EtFOSE	0.0300	0.050	0.0074	ug/l	J
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

# Instrument Blank

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q203-IBLK	6Q13305.D	1	02/09/23	MV	n/a	n/a	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	98% 20-150%
	13C5-PFHxA	97% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	99% 20-150%
	13C9-PFNA	96% 20-150%
	13C6-PFDA	103% 20-150%
	13C7-PFUnDA	107% 20-150%
	13C2-PFDoDA	102% 20-150%
	13C2-PFTeDA	103% 20-150%
	13C3-PFBS	110% 20-150%
	13C3-PFHxS	107% 20-150%
	13C8-PFOS	103% 20-150%
	13C8-FOSA	106% 20-150%
	d3-MeFOSA	101% 20-150%
	d5-EtFOSA	108% 20-150%
	d3-MeFOSAA	98% 20-150%
	d5-EtFOSAA	102% 20-150%
	d7-MeFOSE	95% 20-150%
	d9-EtFOSE	102% 20-150%
	13C2-4:2FTS	124% 20-150%
	13C2-6:2FTS	116% 20-150%
	13C2-8:2FTS	119% 20-150%
	13C3-HFPO-DA	103% 20-150%

6.1.1  
6

## Continuing Calibration Blank

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q203-ICCB	6Q13326.D	1	02/09/23	MV	n/a	n/a	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	



# Continuing Calibration Blank

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q203-ICCB	6Q13326.D	1	02/09/23	MV	n/a	n/a	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	104% 20-150%
	13C5-PFHxA	106% 20-150%
	13C4-PFHpA	107% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	98% 20-150%
	13C6-PFDA	105% 20-150%
	13C7-PFUnDA	111% 20-150%
	13C2-PFDoDA	103% 20-150%
	13C2-PFTeDA	104% 20-150%
	13C3-PFBS	105% 20-150%
	13C3-PFHxS	103% 20-150%
	13C8-PFOS	104% 20-150%
	13C8-FOSA	111% 20-150%
	d3-MeFOSAA	109% 20-150%
	d5-EtFOSAA	106% 20-150%
	13C2-4:2FTS	117% 20-150%
	13C2-6:2FTS	116% 20-150%
	13C2-8:2FTS	105% 20-150%

6.1.2

6

## Method Blank Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-MB	6Q13329.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

# Method Blank Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-MB	6Q13329.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	108% 20-150%
	13C5-PFPeA	106% 20-150%
	13C5-PFHxA	105% 20-150%
	13C4-PFHpA	106% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	107% 20-150%
	13C6-PFDA	117% 20-150%
	13C7-PFUnDA	105% 20-150%
	13C2-PFDoDA	94% 20-150%
	13C2-PFTeDA	83% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	102% 20-150%
	13C8-FOSA	90% 20-150%
	d3-MeFOSA	79% 20-150%
	d5-EtFOSA	80% 20-150%
	d3-MeFOSAA	101% 20-150%
	d5-EtFOSAA	85% 20-150%
	d7-MeFOSE	84% 20-150%
	d9-EtFOSE	88% 20-150%
	13C2-4:2FTS	124% 20-150%
	13C2-6:2FTS	123% 20-150%
	13C2-8:2FTS	114% 20-150%
	13C3-HFPO-DA	109% 20-150%

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**Blank Spike Summary**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-LLBS	6Q13328.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0366	92	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0190	95	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0095	95	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0092	92	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0101	101	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0081	81	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0085	85	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0097	97	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0085	85	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0091	91	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0097	97	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0093	105	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0085	90	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0078	85	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0096	101	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0085	92	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0088	91	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0086	89	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0080	82	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0375	0.0326	87	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0376	99	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0382	99	40-150
754-91-6	PFOSA	0.01	0.0086	86	40-150
31506-32-8	MeFOSA	0.01	0.0086	86	40-150
4151-50-2	EtFOSA	0.01	0.0083	83	40-150
2355-31-9	MeFOSAA	0.01	0.010	100	40-150
2991-50-6	EtFOSAA	0.01	0.0086	86	40-150
24448-09-7	MeFOSE	0.1	0.0943	94	40-150
1691-99-2	EtFOSE	0.1	0.0905	91	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0369	92	40-150
919005-14-4	ADONA	0.0378	0.0364	96	40-150
377-73-1	PFMPA	0.02	0.0193	97	40-150
863090-89-5	PFMBA	0.02	0.0197	99	40-150
151772-58-6	NFDHA	0.02	0.0201	101	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0374	0.0349	93	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0378	0.0355	94	40-150

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-LLBS	6Q13328.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0169	95	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0349	70	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.25	0.218	87	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.234	94	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	117%	20-150%
	13C5-PFPeA	114%	20-150%
	13C5-PFHxA	117%	20-150%
	13C4-PFHpA	116%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	112%	20-150%
	13C6-PFDA	118%	20-150%
	13C7-PFUnDA	108%	20-150%
	13C2-PFDoDA	108%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	104%	20-150%
	13C3-PFHxS	110%	20-150%
	13C8-PFOS	114%	20-150%
	13C8-FOSA	115%	20-150%
	d3-MeFOSA	102%	20-150%
	d5-EtFOSA	102%	20-150%
	d3-MeFOSAA	116%	20-150%
	d5-EtFOSAA	118%	20-150%
	d7-MeFOSE	95%	20-150%
	d9-EtFOSE	98%	20-150%
	13C2-4:2FTS	132%	20-150%
	13C2-6:2FTS	116%	20-150%
	13C2-8:2FTS	113%	20-150%
	13C3-HFPO-DA	117%	20-150%

\* = Outside of Control Limits.

**Blank Spike Summary**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-BS	6Q13327.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0957	96	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0483	97	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0246	98	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0243	97	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0240	96	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0250	100	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0235	94	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0253	101	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0243	97	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0244	98	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0235	94	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0232	105	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0211	90	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0219	96	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0223	94	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0228	98	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0238	99	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0224	93	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0216	89	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0862	92	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0904	95	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0931	97	40-150
754-91-6	PFOSA	0.025	0.0209	84	40-150
31506-32-8	MeFOSA	0.025	0.0217	87	40-150
4151-50-2	EtFOSA	0.025	0.0222	89	40-150
2355-31-9	MeFOSAA	0.025	0.0247	99	40-150
2991-50-6	EtFOSAA	0.025	0.0234	94	40-150
24448-09-7	MeFOSE	0.25	0.229	92	40-150
1691-99-2	EtFOSE	0.25	0.214	86	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.0985	99	40-150
919005-14-4	ADONA	0.0945	0.0951	101	40-150
377-73-1	PFMPA	0.05	0.0268	54	40-150
863090-89-5	PFMBA	0.05	0.0488	98	40-150
151772-58-6	NFDHA	0.05	0.0506	101	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0935	0.0892	95	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0945	0.0929	98	40-150

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-BS	6Q13327.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0455	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0758	61	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.614	98	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.604	97	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	29%	20-150%
	13C5-PFPeA	114%	20-150%
	13C5-PFHxA	114%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	122%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	128%	20-150%
	13C7-PFUnDA	115%	20-150%
	13C2-PFDoDA	112%	20-150%
	13C2-PFTeDA	114%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	122%	20-150%
	13C8-PFOS	112%	20-150%
	13C8-FOSA	119%	20-150%
	d3-MeFOSA	109%	20-150%
	d5-EtFOSA	105%	20-150%
	d3-MeFOSAA	113%	20-150%
	d5-EtFOSAA	113%	20-150%
	d7-MeFOSE	106%	20-150%
	d9-EtFOSE	109%	20-150%
	13C2-4:2FTS	136%	20-150%
	13C2-6:2FTS	135%	20-150%
	13C2-8:2FTS	124%	20-150%
	13C3-HFPO-DA	116%	20-150%

\* = Outside of Control Limits.

## Matrix Spike Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-MS	6Q13331.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203
FC2356-1	6Q13330.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	FC2356-1 ug/l	Spike Q	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.018 U	0.0877	0.0871	99	40-150
2706-90-3	Perfluoropentanoic acid	0.0088 U	0.0439	0.0445	101	40-150
307-24-4	Perfluorohexanoic acid	0.0044 U	0.0219	0.0215	98	40-150
375-85-9	Perfluoroheptanoic acid	0.0044 U	0.0219	0.0217	99	40-150
335-67-1	Perfluorooctanoic acid	0.0044 U	0.0219	0.0226	103	40-150
375-95-1	Perfluorononanoic acid	0.0044 U	0.0219	0.0213	97	40-150
335-76-2	Perfluorodecanoic acid	0.0044 U	0.0219	0.0213	97	40-150
2058-94-8	Perfluoroundecanoic acid	0.0044 U	0.0219	0.0231	105	40-150
307-55-1	Perfluorododecanoic acid	0.0044 U	0.0219	0.0203	93	40-150
72629-94-8	Perfluorotridecanoic acid	0.0044 U	0.0219	0.0212	97	40-150
376-06-7	Perfluorotetradecanoic acid	0.0044 U	0.0219	0.0228	104	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0044 U	0.0195	0.0186	96	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0044 U	0.0206	0.0207	100	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0044 U	0.02	0.0203	101	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0044 U	0.0209	0.0231	111	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0044 U	0.0204	0.0209	103	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0044 U	0.0211	0.0209	99	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0044 U	0.0212	0.0184	87	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0044 U	0.0213	0.0189	89	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U	0.0822	0.0794	97	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U	0.0833	0.0777	93	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U	0.0842	0.0856	102	40-150
754-91-6	PFOSA	0.0044 U	0.0219	0.0206	94	40-150
31506-32-8	MeFOSA	0.0044 U	0.0219	0.0199	91	40-150
4151-50-2	EtFOSA	0.0044 U	0.0219	0.0193	88	40-150
2355-31-9	MeFOSAA	0.0044 U	0.0219	0.0223	102	40-150
2991-50-6	EtFOSAA	0.0044 U	0.0219	0.0213	97	40-150
24448-09-7	MeFOSE	0.044 U	0.219	0.217	99	40-150
1691-99-2	EtFOSE	0.044 U	0.219	0.202	92	40-150
13252-13-6	HFPO-DA (GenX)	0.018 U	0.0877	0.0881	100	40-150
919005-14-4	ADONA	0.018 U	0.0829	0.0809	98	40-150
377-73-1	PFMPA	0.0088 U	0.0439	0.0453	103	40-150
863090-89-5	PFMBA	0.0088 U	0.0439	0.0448	102	40-150
151772-58-6	NFDHA	0.0088 U	0.0439	0.0433	99	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.018 U	0.082	0.0761	93	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.018 U	0.0829	0.0691	83	40-150

\* = Outside of Control Limits.



# Matrix Spike Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-MS	6Q13331.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203
FC2356-1	6Q13330.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	FC2356-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0088 U	0.039	0.0388	99	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.022 U	0.11	0.0828	76	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.11 U	0.548	0.543	99	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.11 U	0.548	0.530	97	40-150

CAS No.	ID Standard Recoveries	MS	FC2356-1	Limits
	13C4-PFBA	104%	109%	20-150%
	13C5-PFPeA	113%	109%	20-150%
	13C5-PFHxA	115%	110%	20-150%
	13C4-PFHpA	111%	108%	20-150%
	13C8-PFOA	102%	106%	20-150%
	13C9-PFNA	109%	101%	20-150%
	13C6-PFDA	95%	103%	20-150%
	13C7-PFUnDA	89%	89%	20-150%
	13C2-PFDoDA	86%	84%	20-150%
	13C2-PFTeDA	79%	80%	20-150%
	13C3-PFBS	110%	107%	20-150%
	13C3-PFHxS	106%	105%	20-150%
	13C8-PFOS	98%	92%	20-150%
	13C8-FOSA	112%	107%	20-150%
	d3-MeFOSA	99%	101%	20-150%
	d5-EtFOSA	102%	101%	20-150%
	d3-MeFOSAA	105%	106%	20-150%
	d5-EtFOSAA	99%	100%	20-150%
	d7-MeFOSE	91%	98%	20-150%
	d9-EtFOSE	93%	99%	20-150%
	13C2-4:2FTS	120%	116%	20-150%
	13C2-6:2FTS	118%	121%	20-150%
	13C2-8:2FTS	105%	112%	20-150%
	13C3-HFPO-DA	115%	110%	20-150%

\* = Outside of Control Limits.

## Duplicate Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-DUP	6Q13333.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203
FC2356-2	6Q13332.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	FC2356-2 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.019 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0045 J		0.0045 J		0	30
307-24-4	Perfluorohexanoic acid	0.0020 J		0.0021 J		5	30
375-85-9	Perfluoroheptanoic acid	0.0046 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0046 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0046 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0046 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0046 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0046 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0046 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0046 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0046 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0046 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0046 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0046 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0046 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0046 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0046 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	0.0054 J		0.0050 J		8	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
754-91-6	PFOSA	0.0046 U		ND		nc	30
31506-32-8	MeFOSA	0.0046 U		ND		nc	30
4151-50-2	EtFOSA	0.0046 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	0.046 U		ND		nc	30
1691-99-2	EtFOSE	0.046 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.019 U		ND		nc	30
919005-14-4	ADONA	0.019 U		ND		nc	30
377-73-1	PFMPA	0.0093 U		ND		nc	30
863090-89-5	PFMBA	0.0093 U		ND		nc	30
151772-58-6	NFDHA	0.0093 U		ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.019 U		ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.019 U		ND		nc	30

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-DUP	6Q13333.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203
FC2356-2	6Q13332.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	FC2356-2 ug/l	DUP Q ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0093 U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.023 U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.12 U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.12 U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC2356-2	Limits
	13C4-PFBA	105%	107%	20-150%
	13C5-PFPeA	115%	114%	20-150%
	13C5-PFHxA	119%	115%	20-150%
	13C4-PFHpA	113%	111%	20-150%
	13C8-PFOA	110%	104%	20-150%
	13C9-PFNA	107%	98%	20-150%
	13C6-PFDA	105%	102%	20-150%
	13C7-PFUnDA	95%	99%	20-150%
	13C2-PFDoDA	94%	87%	20-150%
	13C2-PFTeDA	87%	81%	20-150%
	13C3-PFBS	108%	109%	20-150%
	13C3-PFHxS	112%	105%	20-150%
	13C8-PFOS	103%	103%	20-150%
	13C8-FOSA	112%	100%	20-150%
	d3-MeFOSA	108%	99%	20-150%
	d5-EtFOSA	106%	107%	20-150%
	d3-MeFOSAA	113%	98%	20-150%
	d5-EtFOSAA	106%	102%	20-150%
	d7-MeFOSE	106%	97%	20-150%
	d9-EtFOSE	108%	102%	20-150%
	13C2-4:2FTS	114%	131%	20-150%
	13C2-6:2FTS	119%	110%	20-150%
	13C2-8:2FTS	104%	122%	20-150%
	13C3-HFPO-DA	118%	118%	20-150%

\* = Outside of Control Limits.

# Injection Standard Area Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q203-CC203	Injection Date:	02/09/23
Lab File ID:	6Q13325.D	Injection Time:	19:22
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>	39269	2.99	38803	5.56	85619	7.13	27940	7.67	26732	8.14
Check Std <sup>c</sup>	42852	2.98	41688	5.56	92843	7.13	28894	7.67	25872	8.14
Upper Limit <sup>d</sup>	78538	3.38	77606	5.96	171238	7.53	55880	8.07	53464	8.54
Lower Limit <sup>e</sup>	11781	2.58	11641	5.16	25686	6.73	8382	7.27	8020	7.74

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>
S6Q203-ICCB	37053	2.97	34665	5.56	80388	7.13	26162	7.67	23528	8.14	1
OP95329-BS	30453	3.00	29597	5.56	61400	7.13	21573	7.67	19504	8.14	1
OP95329-LLBS	31357	3.00	29921	5.56	67701	7.15	22243	7.67	21523	8.14	1
OP95329-MB	33103	3.00	31878	5.56	72444	7.13	22481	7.67	20954	8.14	1
FC2356-1	32544	3.00	31039	5.58	67683	7.13	22983	7.67	20903	8.14	1
OP95329-MS	31624	3.00	29494	5.56	69473	7.13	21321	7.67	21527	8.16	1
FC2356-2	31071	3.00	28277	5.56	64682	7.13	22789	7.67	21491	8.14	1
OP95329-DUP	31385	3.00	28953	5.56	65415	7.13	21602	7.67	22506	8.14	1
FC2356-3	31529	3.00	30858	5.56	67888	7.15	21770	7.67	21957	8.14	1
FC2356-4	30403	3.00	29001	5.56	63985	7.13	20816	7.67	18899	8.14	1
ZZZZZZ	31172	3.00	30398	5.56	66132	7.13	21176	7.67	18864	8.14	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: S6Q203-ICC203 6Q13300.D 02/09/23 13:26. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.1  
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# Injection Standard Area Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q203-CC203	Injection Date:	02/09/23
Lab File ID:	6Q13325.D	Injection Time:	19:22
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal <sup>b</sup>	7392	7.26	11011	8.32
Check Std <sup>c</sup>	7685	7.26	11417	8.32
Upper Limit <sup>d</sup>	14784	7.66	22022	8.72
Lower Limit <sup>e</sup>	2218	6.86	3303	7.92

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF <sup>a</sup>
S6Q203-ICCB	6533	7.26	9811	8.32	1
OP95329-BS	5524	7.26	8722	8.31	1
OP95329-LLBS	6210	7.27	8754	8.32	1
OP95329-MB	6122	7.26	9965	8.32	1
FC2356-1	5966	7.26	8513	8.32	1
OP95329-MS	5960	7.26	8777	8.32	1
FC2356-2	5690	7.27	8641	8.32	1
OP95329-DUP	6011	7.26	8614	8.32	1
FC2356-3	6205	7.27	7822	8.31	1
FC2356-4	5321	7.26	8343	8.32	1
ZZZZZZ	5728	7.26	8834	8.32	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q203-ICC203 6Q13300.D 02/09/23 13:26. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to + 100% of initial cal area.
- (d) Upper Limit = + 100% of initial standard area; Retention time + 0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.1  
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**TDCA Retention Time Check**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q203-RT	Injection Date:	02/09/23
Lab File ID:	6Q13294.D	Injection Time:	12:01
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.321	--	--
TDCA	6.820	1.501	1.000
TCDCA	6.658	1.663	1.000
TUDCA	5.806	2.515	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
S6Q203-IC203	6Q13296.D	02/09/23	12:29	00:28	Mass Calibration Verification
S6Q203-IC203	6Q13297.D	02/09/23	12:43	00:42	Initial cal 1
S6Q203-IC203	6Q13298.D	02/09/23	12:57	00:56	Initial cal 2
S6Q203-IC203	6Q13299.D	02/09/23	13:11	01:10	Initial cal 3
S6Q203-ICC203	6Q13300.D	02/09/23	13:26	01:25	Initial cal 4
S6Q203-IC203	6Q13301.D	02/09/23	13:40	01:39	Initial cal 5
S6Q203-IC203	6Q13302.D	02/09/23	13:55	01:54	Initial cal 6
S6Q203-IC203	6Q13303.D	02/09/23	14:09	02:08	Initial cal 7
S6Q203-IC203	6Q13304.D	02/09/23	14:23	02:22	Initial cal 8
S6Q203-IBLK	6Q13305.D	02/09/23	14:37	02:36	Instrument Blank
S6Q203-IBLK	6Q13305.D	02/09/23	14:37	02:36	Instrument Blank
S6Q203-ICV203	6Q13306.D	02/09/23	14:51	02:50	Initial cal verification 4
S6Q203-ICV203	6Q13307.D	02/09/23	15:05	03:04	Initial cal verification 4
S6Q203-CC203	6Q13308.D	02/09/23	15:24	03:23	Continuing cal 4
S6Q203-CC203	6Q13309.D	02/09/23	15:38	03:37	Continuing cal 1.0LL
ZZZZZ	6Q13316.D	02/09/23	17:16	05:15	(unrelated sample)
OP95350-BS	6Q13317.D	02/09/23	17:30	05:29	Blank Spike
OP95350-LLBS	6Q13318.D	02/09/23	17:44	05:43	Blank Spike
OP95350-MB	6Q13319.D	02/09/23	17:58	05:57	Method Blank
ZZZZZ	6Q13320.D	02/09/23	18:12	06:11	(unrelated sample)
OP95377-BS	6Q13321.D	02/09/23	18:26	06:25	Blank Spike
OP95377-LLBS	6Q13322.D	02/09/23	18:40	06:39	Blank Spike
OP95377-MB	6Q13323.D	02/09/23	18:54	06:53	Method Blank
ZZZZZ	6Q13324.D	02/09/23	19:08	07:07	(unrelated sample)
S6Q203-CC203	6Q13325.D	02/09/23	19:22	07:21	Continuing cal 4
S6Q203-ICCB	6Q13326.D	02/09/23	19:36	07:35	Continuing Calibration Blank
OP95329-BS	6Q13327.D	02/09/23	19:50	07:49	Blank Spike
OP95329-LLBS	6Q13328.D	02/09/23	20:04	08:03	Blank Spike
OP95329-MB	6Q13329.D	02/09/23	20:17	08:16	Method Blank
FC2356-1	6Q13330.D	02/09/23	20:31	08:30	AF-RHMW10-WGN01LF-2301W5
OP95329-MS	6Q13331.D	02/09/23	20:45	08:44	Matrix Spike
FC2356-2	6Q13332.D	02/09/23	20:59	08:58	AF-RHMW17-WGN01LF-2301W5
OP95329-DUP	6Q13333.D	02/09/23	21:13	09:12	Duplicate
FC2356-3	6Q13334.D	02/09/23	21:27	09:26	AF-RHMW17D-WGN01LF-2301W5

# TDCA Retention Time Check

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q203-RT	Injection Date:	02/09/23
Lab File ID:	6Q13294.D	Injection Time:	12:01
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC2356-4	6Q13335.D	02/09/23	21:41	09:40	AF-RHMW17D-WQFB01-2301W5
ZZZZZZ	6Q13336.D	02/09/23	21:55	09:54	(unrelated sample)
S6Q203-CC203	6Q13337.D	02/09/23	22:09	10:08	Continuing cal 4
S6Q203-CC203	6Q13338.D	02/09/23	22:23	10:22	Continuing cal 1.0LL
S6Q203-ICCB	6Q13339.D	02/09/23	22:37	10:36	Continuing Calibration Blank
OP95124-BS	6Q13340.D	02/09/23	22:51	10:50	Blank Spike
OP95124-LLBS	6Q13341.D	02/09/23	23:05	11:04	Blank Spike
OP95124-MB	6Q13342.D	02/09/23	23:19	11:18	Method Blank
ZZZZZZ	6Q13343.D	02/09/23	23:33	11:32	(unrelated sample)
ZZZZZZ	6Q13344.D	02/09/23	23:47	11:46	(unrelated sample)
OP95124-MS	6Q13345.D	02/10/23	00:01	12:00	Matrix Spike
OP95124-MSD	6Q13346.D	02/10/23	00:15	12:14	Matrix Spike Duplicate
ZZZZZZ	6Q13347.D	02/10/23	00:29	12:28	(unrelated sample)
ZZZZZZ	6Q13348.D	02/10/23	00:43	12:42	(unrelated sample)
ZZZZZZ	6Q13349.D	02/10/23	00:57	12:56	(unrelated sample)
S6Q203-CC203	6Q13350.D	02/10/23	01:11	13:10	Continuing cal 4
S6Q203-ICCB	6Q13351.D	02/10/23	01:25	13:24	Continuing Calibration Blank
ZZZZZZ	6Q13352.D	02/10/23	01:39	13:38	(unrelated sample)
ZZZZZZ	6Q13353.D	02/10/23	01:53	13:52	(unrelated sample)
ZZZZZZ	6Q13354.D	02/10/23	02:07	14:06	(unrelated sample)
ZZZZZZ	6Q13355.D	02/10/23	02:21	14:20	(unrelated sample)
FC1912-10	6Q13356.D	02/10/23	02:35	14:34	(used for QC only; not part of job FC2356)
ZZZZZZ	6Q13357.D	02/10/23	02:49	14:48	(unrelated sample)
ZZZZZZ	6Q13358.D	02/10/23	03:03	15:02	(unrelated sample)
ZZZZZZ	6Q13359.D	02/10/23	03:17	15:16	(unrelated sample)
ZZZZZZ	6Q13360.D	02/10/23	03:31	15:30	(unrelated sample)
ZZZZZZ	6Q13361.D	02/10/23	03:45	15:44	(unrelated sample)
S6Q203-CC203	6Q13362.D	02/10/23	03:59	15:58	Continuing cal 4
S6Q203-ICCB	6Q13363.D	02/10/23	04:13	16:12	Continuing Calibration Blank
ZZZZZZ	6Q13364.D	02/10/23	04:27	16:26	(unrelated sample)
ZZZZZZ	6Q13365.D	02/10/23	04:41	16:40	(unrelated sample)
OP95142-BS	6Q13366.D	02/10/23	04:55	16:54	Blank Spike
OP95142-LLBS	6Q13367.D	02/10/23	05:09	17:08	Blank Spike
OP95142-MB	6Q13368.D	02/10/23	05:23	17:22	Method Blank
ZZZZZZ	6Q13369.D	02/10/23	05:37	17:36	(unrelated sample)
ZZZZZZ	6Q13370.D	02/10/23	05:51	17:50	(unrelated sample)
ZZZZZZ	6Q13371.D	02/10/23	06:05	18:04	(unrelated sample)
ZZZZZZ	6Q13372.D	02/10/23	06:19	18:18	(unrelated sample)
ZZZZZZ	6Q13373.D	02/10/23	06:33	18:32	(unrelated sample)
S6Q203-CC203	6Q13374.D	02/10/23	06:47	18:46	Continuing cal 4
S6Q203-ICCB	6Q13375.D	02/10/23	07:01	19:00	Continuing Calibration Blank
ZZZZZZ	6Q13376.D	02/10/23	07:15	19:14	(unrelated sample)
ZZZZZZ	6Q13377.D	02/10/23	07:29	19:28	(unrelated sample)
ZZZZZZ	6Q13378.D	02/10/23	07:43	19:42	(unrelated sample)

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# TDCA Retention Time Check

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q203-RT	Injection Date:	02/09/23
Lab File ID:	6Q13294.D	Injection Time:	12:01
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q13379.D	02/10/23	07:57	19:56	(unrelated sample)
ZZZZZZ	6Q13380.D	02/10/23	08:11	20:10	(unrelated sample)
ZZZZZZ	6Q13381.D	02/10/23	08:25	20:24	(unrelated sample)
ZZZZZZ	6Q13382.D	02/10/23	08:39	20:38	(unrelated sample)
ZZZZZZ	6Q13383.D	02/10/23	08:53	20:52	(unrelated sample)
ZZZZZZ	6Q13384.D	02/10/23	09:07	21:06	(unrelated sample)
ZZZZZZ	6Q13385.D	02/10/23	09:21	21:20	(unrelated sample)
S6Q203-CC203	6Q13386.D	02/10/23	09:35	21:34	Continuing cal 4
S6Q203-CC203	6Q13387.D	02/10/23	09:49	21:48	Continuing cal 1.0LL
S6Q203-ICCB	6Q13388.D	02/10/23	10:03	22:02	Continuing Calibration Blank
FC1916-16	6Q13389.D	02/10/23	10:17	22:16	(used for QC only; not part of job FC2356)
OP95142-MS	6Q13390.D	02/10/23	10:31	22:30	Matrix Spike
OP95142-MSD	6Q13391.D	02/10/23	10:45	22:44	Matrix Spike Duplicate
ZZZZZZ	6Q13392.D	02/10/23	10:59	22:58	(unrelated sample)
ZZZZZZ	6Q13393.D	02/10/23	11:13	23:12	(unrelated sample)
ZZZZZZ	6Q13394.D	02/10/23	11:27	23:26	(unrelated sample)
ZZZZZZ	6Q13395.D	02/10/23	11:41	23:40	(unrelated sample)
S6Q203-ECC203	6Q13396.D	02/10/23	11:55	23:54	Ending cal 4
S6Q203-ICCB	6Q13397.D	02/10/23	12:09	24:08	Continuing Calibration Blank

6.6.1  
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# Ion Ratio Summary

Job Number: FC2356  
Account: AECOMCOD AECOM, INC.  
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q203	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios		
		PFPeA	PFHxA	6:2FTS
S6Q203-ICC203	6Q13300.D	0	3.9	18.6
FC2356-1	6Q13330.D			
FC2356-2	6Q13332.D	0	4.1	16.5
FC2356-3	6Q13334.D			20.1
FC2356-4	6Q13335.D			

6.7.1

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# Isotope Dilution Standard Recovery Summary

Job Number: FC2356  
 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
FC2356-1	6Q13330.D	109	109	110	108	106	101	103	89
FC2356-2	6Q13332.D	107	114	115	111	104	98	102	99
FC2356-3	6Q13334.D	113	110	108	111	111	104	111	107
FC2356-4	6Q13335.D	111	110	111	110	109	110	116	104
OP95329-BS	6Q13327.D	29	114	114	115	122	109	128	115
OP95329-DUP	6Q13333.D	105	115	119	113	110	107	105	95
OP95329-LLBS	6Q13328.D	117	114	117	116	110	112	118	108
OP95329-MB	6Q13329.D	108	106	105	106	102	107	117	105
OP95329-MS	6Q13331.D	104	113	115	111	102	109	95	89
S6Q203-IBLK	6Q13305.D	100	98	97	101	99	96	103	107
S6Q203-ICCB	6Q13326.D	100	104	106	107	100	98	105	111

**Isotope Dilution Standards**

**Recovery Limits**

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

6.8.1  
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# Isotope Dilution Standard Recovery Summary

Job Number: FC2356  
 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
FC2356-1	6Q13330.D	84	80	107	105	92	107	101	101
FC2356-2	6Q13332.D	87	81	109	105	103	100	99	107
FC2356-3	6Q13334.D	100	81	109	106	107	124	112	106
FC2356-4	6Q13335.D	94	99	115	116	107	96	95	98
OP95329-BS	6Q13327.D	112	114	112	122	112	119	109	105
OP95329-DUP	6Q13333.D	94	87	108	112	103	112	108	106
OP95329-LLBS	6Q13328.D	108	97	104	110	114	115	102	102
OP95329-MB	6Q13329.D	94	83	101	102	102	90	79	80
OP95329-MS	6Q13331.D	86	79	110	106	98	112	99	102
S6Q203-IBLK	6Q13305.D	102	103	110	107	103	106	101	108
S6Q203-ICCB	6Q13326.D	103	104	105	103	104	111		

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

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: FC2356  
 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
FC2356-1	6Q13330.D	106	100	98	99	116	121	112	110
FC2356-2	6Q13332.D	98	102	97	102	131	110	122	118
FC2356-3	6Q13334.D	142	159* a	116	120	112	93	97	116
FC2356-4	6Q13335.D	101	98	99	99	121	114	106	118
OP95329-BS	6Q13327.D	113	113	106	109	136	135	124	116
OP95329-DUP	6Q13333.D	113	106	106	108	114	119	104	118
OP95329-LLBS	6Q13328.D	116	118	95	98	132	116	113	117
OP95329-MB	6Q13329.D	101	85	84	88	124	123	114	109
OP95329-MS	6Q13331.D	105	99	91	93	120	118	105	115
S6Q203-IBLK	6Q13305.D	98	102	95	102	124	116	119	103
S6Q203-ICCB	6Q13326.D	109	106			117	116	105	

**Isotope Dilution Standards**                      **Recovery Limits**

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

(a) Outside control limits.

# Initial Calibration Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-ICC203  
 Lab FileID: 6Q13300.D

## Initial Calibration Report

Method Path	Method File	Batch Name	Last Calib Update	Calibration Files	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD	Level Last Update Time
D:\MassHunter\Methods	1633_020923_S6Q203.quantmethod.xml	D:\MassHunter\Data\020923_1633_S6Q203\QuantResults\6q203.batch.bin	2/9/2023 3:34:04 PM	D:\MassHunter\Data\020923_1633_S6Q203\6Q13297.d	Avg RF	0.2267	0.2189	0.2067	0.2051	0.2223	0.2303	0.2471	0.2434	0.2251	6.788	2/9/2023 3:34:04 PM
D:\MassHunter\Data\020923_1633_S6Q203\6Q13298.d	Avg RF	0.2856	0.2828	0.2648	0.2591	0.2779	0.2788	0.3035	0.2980	0.2813	5.332	2/9/2023 3:34:04 PM				
D:\MassHunter\Data\020923_1633_S6Q203\6Q13299.d	Avg RF	0.0521	0.0504	0.0490	0.0476	0.0518	0.0522	0.0564	0.0581	0.0522	6.767	2/9/2023 3:34:04 PM				
D:\MassHunter\Data\020923_1633_S6Q203\6Q13300.d	Avg RF	1.1202	1.0605	1.0139	0.9677	1.0179	1.0530	1.1246	1.0804	1.0548	5.127	2/9/2023 3:34:04 PM				
D:\MassHunter\Data\020923_1633_S6Q203\6Q13301.d	Avg RF	0.2986	0.2964	0.2856	0.2868	0.2927	0.3054	0.3337	0.3178	0.3021	5.443	2/9/2023 3:34:04 PM				
D:\MassHunter\Data\020923_1633_S6Q203\6Q13302.d	Avg RF	0.0544	0.0521	0.0577	0.0571	0.0550	0.0573	0.0579	0.0602	0.0565	4.453	2/9/2023 3:34:04 PM				
D:\MassHunter\Data\020923_1633_S6Q203\6Q13303.d	Avg RF	1.0214	0.9606	0.8832	0.9483	0.9527	0.9510	0.9939	1.0234	0.9668	4.746	2/9/2023 3:34:04 PM				
D:\MassHunter\Data\020923_1633_S6Q203\6Q13304.d	Avg RF	1.4731	1.3095	1.3114	1.2904	1.3194	1.3237	1.4176	1.4684	1.3642	5.573	2/9/2023 3:34:04 PM				
I M5-PFHXA	Avg RF	0.2107	0.1973	0.1930	0.2006	0.1966	0.2058	0.2137	0.2221	0.2050	4.853	2/9/2023 3:34:04 PM				
I M4-PFHpA	Avg RF	0.1058	0.1076	0.1011	0.1030	0.0976	0.1012	0.1099	0.1172	0.1054	5.866	2/9/2023 3:34:04 PM				
I M8-PFOA	Avg RF	1.4569	1.4480	1.3292	1.4015	1.5042	1.4309	1.5785	1.4948	1.4555	5.099	2/9/2023 3:34:04 PM				
I M9-PFNA	Avg RF	1.0564	1.1041	0.9857	0.9959	1.1012	1.0562	1.1302	1.1321	1.0702	5.309	2/9/2023 3:34:04 PM				
I M6-PFDA	Avg RF	1.0068	0.8310	0.7930	0.7559	0.8139	0.8094	0.8511	0.7662	0.8284	9.496	2/9/2023 3:34:04 PM				
I M7-PFUnDA	Avg RF	1.5698	1.4518	1.4080	1.3590	1.3794	1.4202	1.5066	1.5351	1.4537	5.239	2/9/2023 3:34:04 PM				
I M2-PFDdA	Avg RF	1.0565	0.9559	0.9778	0.8362	1.0087	0.9645	0.9849	1.0537	0.9798	7.074	2/9/2023 3:34:04 PM				

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# Initial Calibration Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-ICC203  
 Lab FileID: 6Q13300.D

## Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	1.0262	0.9295	0.9327	0.8327	0.9423	0.9201	0.9790	0.9454	0.9385	5.842
T PFTfDA	Avg RF	0.8291	0.9109	0.8857	0.7719	0.8822	0.8684	0.8874	0.8284	0.8580	5.261
I M2-PFTeDA	Avg RF	1.4720	1.4208	1.3271	1.3265	1.3078	1.4055	1.4457	1.2881	1.3742	5.082
I M8-FOSA	Avg RF	1.0153	1.0083	0.9591	0.8887	1.0126	1.0286	1.0644	1.0053	0.9978	5.287
I M3-PFBS	Avg RF	1.0538	0.9655	0.8662	0.8515	0.9787	0.9485	1.0085	0.9897	0.9578	7.179
I M3-PFHxS	Avg RF	1.3285	1.3836	1.1661	1.1588	1.2992	1.3385	1.3108	1.3089	1.2868	6.296
T PFHxS	Avg RF	1.1028	1.2059	0.9860	1.0146	1.0931	1.1166	1.0703	1.0934	1.0853	6.138
I M8-PFOS	Avg RF	1.1771	1.0244	0.9247	1.0091	1.0070	1.0016	1.1342	0.9755	1.0317	8.053
T PFHpS	Avg RF	1.0622	1.2516	1.0359	1.1165	1.0650	1.1012	1.2853	1.0375	1.1194	8.625
T PFOS	Avg RF	1.0448	1.1302	1.0160	1.0186	1.0703	1.0559	1.1774	0.9934	1.0633	5.847
T PFDS	Avg RF	0.6724	0.9050	0.7362	0.7290	0.7631	0.7444	0.9030	0.7737	0.7784	10.686
T PFDoDS	Avg RF	0.5117	0.5405	0.4254	0.4345	0.4468	0.4430	0.5371	0.4295	0.4711	10.576
I M2-4:2FTS	Avg RF	11.90	11.65	10.38	10.00	12.41	12.20	11.26	9.7791	11.20	9.109
T 4:2FTS	Avg RF	7.8258	8.1128	7.2604	7.0221	6.9223	7.8831	7.8717	6.7050	7.4504	7.172
I M2-8:2FTS	Avg RF	4.1677	3.4811	4.1789	3.9806	3.9182	4.3868	4.6818	3.4251	4.0275	10.599
T 8:2FTS	Avg RF	1.0110	1.0076	0.8049	0.8476	0.8634	0.8738	0.9259	1.0072	0.9177	8.965
I M3-MeFOSAA	Avg RF	1.0561	0.9422	0.8683	0.8743	0.9597	0.9184	1.0027	0.9597	0.9477	6.631
T HFPO-DA	Avg RF	23.61	22.55	19.97	21.09	22.85	22.57	23.04	21.64	22.17	5.364
T ADONA	Avg RF	12.21	12.32	11.13	10.76	12.15	12.89	12.54	11.53	11.94	6.139
T 9Cl-PF3ONS	Avg RF	6.7125	6.7049	6.1108	6.3075	7.2035	6.6792	7.2581	6.8654	6.7302	5.855
T 11Cl-PF3OUds	Avg RF	0.8345	0.8120	0.7943	0.6615	0.7857	0.7403	0.7851	0.8622	0.7845	7.842
I M5-EFOSAA	Avg RF	0.9575	0.9416	0.8969	0.9230	0.9616	1.0120	1.0582	1.0243	0.9719	5.642
T EFOSAA	Avg RF	1.0123	1.0952	0.9318	0.9653	1.0469	1.0976	1.1705	1.2102	1.0662	9.035
I M9-EFOSE	Avg RF	1.0123	1.0952	0.9318	0.9653	1.0469	1.0976	1.1705	1.2102	1.0662	9.035
T EFOSE	Avg RF	1.0123	1.0952	0.9318	0.9653	1.0469	1.0976	1.1705	1.2102	1.0662	9.035

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# Initial Calibration Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-ICC203  
 Lab FileID: 6Q13300.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	1.2637	1.1731	1.1422	1.1224	1.2802	1.2028	1.2931	1.2583	1.2170	5.411
I M3-MeFOSA											
T MeFOSA	Avg RF	1.3448	1.1308	1.0758	1.0051	1.0376	1.1489	1.0647	1.0776	1.1107	9.479
I 13C4-PFOS											
S d3-MeFOSAA	Linear	1.3700	1.4331	1.4578	1.5807	1.5793	1.4651	1.3596	1.2682	1.4392	7.476
S 13C8-PFOS	Linear	0.8066	0.8037	0.8200	0.8713	0.8858	0.8315	0.7396	0.8669	0.8282	5.711
S d5-EFOSAA	Linear	1.1698	1.2508	1.1695	1.3931	1.2678	1.2139	1.1513	1.0769	1.2116	7.825
S 13C8-FOSA	Linear	1.5385	1.6303	1.5573	1.7732	1.6768	1.5406	1.4707	1.5073	1.5868	6.295
S d7-MeFOSE	Linear	0.2539	0.2620	0.2484	0.2646	0.2685	0.2448	0.2405	0.2335	0.2520	4.915
S d3-MeFOSA	Linear	0.6064	0.6329	0.6037	0.6862	0.7032	0.6223	0.6322	0.6632	0.6438	5.697
S d9-EFOSE	Linear	0.1673	0.1716	0.1684	0.1827	0.1794	0.1659	0.1627	0.1502	0.1685	5.969
S d5-EFOSA	Linear	0.6751	0.7075	0.6848	0.7216	0.6862	0.6808	0.6352	0.6463	0.6797	4.206
I 13C3-PFBA											
S 13C4-PFBA	Linear	1.1201	1.1225	1.1218	1.0963	1.1241	1.1156	1.1237	1.1046	1.1161	0.919
I 1802-PFHxS											
S 13C2-4:2FTS	Linear	0.1737	0.1785	0.1800	0.1808	0.1601	0.1565	0.1518	0.1453	0.1658	8.478
S 13C3-PFBS	Linear	1.9376	1.9882	2.0461	2.1235	2.0271	2.1137	1.9696	2.0150	2.0276	3.237
S 13C2-6:2FTS	Linear	0.2221	0.2236	0.2257	0.2346	0.2375	0.2004	0.1835	0.1810	0.2135	10.436
S 13C3-PFHxS	Linear	1.2887	1.3074	1.3523	1.4017	1.3395	1.3270	1.3693	1.3727	1.3448	2.748
S 13C2-8:2FTS	Linear	0.2244	0.2406	0.2110	0.2164	0.2173	0.1947	0.1740	0.1889	0.2084	10.244
I 13C4-PFOA											
S 13C8-PFOA	Linear	0.8184	0.8169	0.8208	0.8104	0.8282	0.8767	0.9262	0.7882	0.8357	5.292
I 13C2-PFDA											
S 13C6-PFDA	Linear	0.7914	0.6727	0.6932	0.6899	0.6979	0.6939	0.6974	0.7259	0.7078	5.199
S 13C7-PFUDA	Linear	0.9350	0.9037	0.8528	0.8868	0.8657	0.8694	0.8505	0.8056	0.8712	4.440
S 13C2-PFDODA	Linear	0.9953	0.9776	0.9421	0.9920	0.9782	1.0065	0.9824	1.0308	0.9881	2.592
S 13C2-PFTeDA	Linear	0.5643	0.5476	0.5433	0.5428	0.5432	0.5497	0.5417	0.5976	0.5538	3.462
I 13C5-PFNA											
S 13C9-PFNA	Linear	0.8652	0.9313	0.8721	0.9176	0.9481	0.8878	0.9724	0.8982	0.9116	4.128
I 13C2-PFHxA											
S 13C5-PPeA	Linear	0.5658	0.5482	0.5787	0.5560	0.5857	0.5765	0.5534	0.6052	0.5712	3.345
S 13C5-PFHxA	Linear	0.9965	0.9860	1.0404	0.9497	1.0477	1.0270	1.0238	1.0210	1.0115	3.198
S 13C3-HPOD-A	Linear	0.0967	0.0952	0.1052	0.0958	0.0981	0.1003	0.0997	0.1075	0.0998	4.446
S 13C4-PFHpA	Linear	1.0928	0.9955	1.1119	0.9692	1.0278	1.0593	1.0292	1.0977	1.0479	4.894

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

# Initial Calibration Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-ICC203  
 Lab FileID: 6Q13300.D

## Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PBBA	Linear	$y = 1.116094 * x$	
S 13C5-PPEa	Linear	$y = 0.571181 * x$	
S 13C2-4:2FTS	Linear	$y = 0.165834 * x$	
S 13C3-PFBS	Linear	$y = 2.027609 * x$	
S 13C5-PPhXA	Linear	$y = 1.011501 * x$	
S 13C3-HFPO-DA	Linear	$y = 0.099821 * x$	
S 13C4-PPhpA	Linear	$y = 1.047931 * x$	
S 13C2-6:2FTS	Linear	$y = 0.213546 * x$	
S 13C8-PFOA	Linear	$y = 0.835708 * x$	
S 13C3-PPhXS	Linear	$y = 1.344835 * x$	
S 13C9-PFNA	Linear	$y = 0.911590 * x$	
S 13C2-8:2FTS	Linear	$y = 0.208418 * x$	
S 13C6-PEDA	Linear	$y = 0.707772 * x$	
S d3-MeFOSAA	Linear	$y = 1.439212 * x$	
S 13C8-PFOS	Linear	$y = 0.828166 * x$	
S d5-EFOSAA	Linear	$y = 1.211626 * x$	
S 13C7-PFUridA	Linear	$y = 0.871204 * x$	
S 13C2-PFDODA	Linear	$y = 0.988099 * x$	
S 13C8-FOSA	Linear	$y = 1.586836 * x$	
S 13C2-PFTeDA	Linear	$y = 0.553776 * x$	
S d7-MeFOSE	Linear	$y = 0.252017 * x$	
S d3-MeFOSA	Linear	$y = 0.643789 * x$	
S d9-EFOSE	Linear	$y = 0.168536 * x$	
S d5-EFOSA	Linear	$y = 0.679695 * x$	

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



**Initial Calibration Verification**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-ICV203  
 Lab FileID: 6Q13306.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\020923\_1633\_S6Q203\s6q203.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13297.d  
 2:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13298.d  
 3:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13299.d  
 4:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13300.d  
 5:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13301.d  
 6:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13302.d  
 7:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13303.d  
 8:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13304.d

Data File: 6Q13306  
 Type : QC  
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.525	10.5	110.5
13C2-6:2FTS	5.000	5.360	7.2	107.2
13C2-8:2FTS	5.000	5.380	7.6	107.6
13C2-PFDoDA	1.250	1.192	-4.6	95.4
13C2-PFTeDA	1.250	1.211	-3.1	96.9
13C3-PFBS	2.500	2.548	1.9	101.9
13C3-PFHxS	2.500	2.527	1.1	101.1
13C4-PFBA	10.000	10.109	1.1	101.1
13C4-PFHpA	2.500	2.585	3.4	103.4
13C5-PFHxA	2.500	2.296	-8.2	91.8
13C5-PFPeA	5.000	5.101	2.0	102.0
13C6-PFDA	1.250	1.320	5.6	105.6
13C7-PFUnDA	1.250	1.279	2.3	102.3
13C8-FOSA	2.500	2.641	5.6	105.6
13C8-PFOA	2.500	2.457	-1.7	98.3
13C8-PFOS	2.500	2.653	6.1	106.1
13C9-PFNA	1.250	1.185	-5.2	94.8
4:2FTS	9.375	9.320	-0.6	99.4
6:2FTS	9.500	9.510	0.1	100.1
8:2FTS	9.600	10.164	5.9	105.9
d3-MeFOSAA	5.000	5.178	3.6	103.6
EtFOSAA	2.500	2.386	-4.6	95.4
FOSA	2.500	2.347	-6.1	93.9
MeFOSAA	2.500	2.462	-1.5	98.5
PFBA	10.000	9.885	-1.1	98.9
PFBS	2.218	2.221	0.2	100.2
PFDA	2.500	2.343	-6.3	93.7
PFDoDA	2.500	2.535	1.4	101.4
PFDS	2.413	2.323	-3.7	96.3
PFHpA	2.500	2.448	-2.1	97.9
PFHpS	2.383	2.312	-3.0	97.0
PFHxA	2.500	2.713	8.5	108.5
PFHxS	2.285	2.425	6.1	106.1
PFNA	2.500	2.476	-1.0	99.0
PFNS	2.405	2.497	3.8	103.8
PFOA	2.500	2.516	0.6	100.6
PFOS	2.320	2.340	0.8	100.8

# Initial Calibration Verification

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-ICV203  
 Lab FileID: 6Q13306.D

PFPeA	5.000	4.863	-2.7	97.3
PFPeS	2.353	2.368	0.6	100.6
PFTeDA	2.500	2.590	3.6	103.6
PFTrDA	2.500	2.612	4.5	104.5
PFUnDA	2.500	2.484	-0.6	99.4
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	9.450	9.556	1.1	101.1
13C3-HFPO-DA	10.000	10.142	1.4	101.4
9C1-PF3ONS	9.350	8.726	-6.7	93.3
ADONA	9.450	9.952	5.3	105.3
HFPO-DA	10.000	9.544	-4.6	95.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.629	1.2	101.2
5:3FTCA	62.400	65.730	5.3	105.3
7:3FTCA	62.400	67.546	8.2	108.2
d3-MeFOSA	2.500	2.475	-1.0	99.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.374	-5.0	95.0
EtFOSE	25.000	23.240	-7.0	93.0
MeFOSA	2.500	2.611	4.4	104.4
MeFOSE	25.000	25.694	2.8	102.8
PFDoDS	2.425	2.344	-3.3	96.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.535	10.7	110.7
d7-MeFOSE	25.000	24.810	-0.8	99.2
d9-EtFOSE	25.000	26.682	6.7	106.7
d5-EtFOSA	2.500	2.706	8.3	108.3
NFDHA	5.000	5.661	13.2	113.2
PFMBA	5.000	5.017	0.3	100.3
PFMPA	5.000	4.962	-0.8	99.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.988	12.1	112.1

CC Criteria: +/- 30%

**Initial Calibration Verification**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-ICV203  
 Lab FileID: 6Q13307.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\020923\_1633\_S6Q203\s6q203.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13297.d  
 2:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13298.d  
 3:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13299.d  
 4:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13300.d  
 5:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13301.d  
 6:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13302.d  
 7:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13303.d  
 8:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13304.d

Data File: 6Q13307  
 Type : QC  
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.227	4.5	104.5
13C2-6:2FTS	5.000	5.321	6.4	106.4
13C2-8:2FTS	5.000	5.149	3.0	103.0
13C2-PFDoDA	1.250	1.102	-11.8	88.2
13C2-PFTeDA	1.250	1.186	-5.1	94.9
13C3-PFBS	2.500	2.537	1.5	101.5
13C3-PFHxS	2.500	2.411	-3.6	96.4
13C4-PFBA	10.000	10.032	0.3	100.3
13C4-PFHpA	2.500	2.480	-0.8	99.2
13C5-PFHxA	2.500	2.538	1.5	101.5
13C5-PFPeA	5.000	5.167	3.3	103.3
13C6-PFDA	1.250	1.224	-2.1	97.9
13C7-PFUnDA	1.250	1.163	-7.0	93.0
13C8-FOSA	2.500	2.668	6.7	106.7
13C8-PFOA	2.500	2.616	4.6	104.6
13C8-PFOS	2.500	2.663	6.5	106.5
13C9-PFNA	1.250	1.173	-6.1	93.9
4:2FTS	20.000	18.840	-5.8	94.2
6:2FTS	20.000	18.626	-6.9	93.1
8:2FTS	20.000	20.076	0.4	100.4
d3-MeFOSAA	5.000	5.346	6.9	106.9
EtFOSAA	20.000	20.377	1.9	101.9
FOSA	20.000	19.956	-0.2	99.8
MeFOSAA	20.000	18.807	-6.0	94.0
PFBA	20.000	18.175	-9.1	90.9
PFBS	20.000	20.194	1.0	101.0
PFDA	20.000	18.781	-6.1	93.9
PFDoDA	20.000	18.376	-8.1	91.9
PFDS	20.000	18.493	-7.5	92.5
PFHpA	20.000	19.322	-3.4	96.6
PFHpS	20.000	20.045	0.2	100.2
PFHxA	20.000	19.968	-0.2	99.8
PFHxS	20.000	20.535	2.7	102.7
PFNA	20.000	21.386	6.9	106.9
PFNS	20.000	19.287	-3.6	96.4
PFOA	20.000	19.477	-2.6	97.4
PFOS	20.000	16.842	-15.8	84.2

# Initial Calibration Verification

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-ICV203  
 Lab FileID: 6Q13307.D

PFPeA	20.000	20.229	1.1	101.1
PFPeS	20.000	20.172	0.9	100.9
PFTeDA	20.000	20.034	0.2	100.2
PFTTrDA	20.000	18.905	-5.5	94.5
PFUnDA	20.000	19.370	-3.1	96.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	19.751	-1.2	98.8
13C3-HFPO-DA	10.000	10.477	4.8	104.8
9C1-PF3ONS	20.000	18.889	-5.6	94.4
ADONA	20.000	18.553	-7.2	92.8
HFPO-DA	20.000	18.256	-8.7	91.3
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	19.271	-3.6	96.4
5:3FTCA	20.000	19.339	-3.3	96.7
7:3FTCA	20.000	19.488	-2.6	97.4
d3-MeFOSA	2.500	2.652	6.1	106.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	17.980	-10.1	89.9
EtFOSE	100.000	97.345	-2.7	97.3
MeFOSA	20.000	18.653	-6.7	93.3
MeFOSE	100.000	90.012	-10.0	90.0
PFDoDS	20.000	18.438	-7.8	92.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.108	2.2	102.2
d7-MeFOSE	25.000	26.637	6.5	106.5
d9-EtFOSE	25.000	26.861	7.4	107.4
d5-EtFOSA	2.500	2.735	9.4	109.4
NFDHA	20.000	19.151	-4.2	95.8
PFMBA	20.000	19.171	-4.1	95.9
PFMPA	20.000	19.386	-3.1	96.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	17.292	-13.5	86.5

CC Criteria: +/- 30%

**Continuing Calibration Summary**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13308.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\020923\_1633\_S6Q203\s6q203.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13297.d  
 2:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13298.d  
 3:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13299.d  
 4:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13300.d  
 5:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13301.d  
 6:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13302.d  
 7:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13303.d  
 8:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13304.d

Data File: 6Q13308  
 Type : QC  
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.034	20.7	120.7
13C2-6:2FTS	5.000	5.391	7.8	107.8
13C2-8:2FTS	5.000	5.415	8.3	108.3
13C2-PFDoDA	1.250	1.332	6.6	106.6
13C2-PFTeDA	1.250	1.314	5.2	105.2
13C3-PFBS	2.500	2.691	7.6	107.6
13C3-PFHxS	2.500	2.637	5.5	105.5
13C4-PFBA	10.000	9.933	-0.7	99.3
13C4-PFHpA	2.500	2.393	-4.3	95.7
13C5-PFHxA	2.500	2.416	-3.3	96.7
13C5-PFPeA	5.000	4.954	-0.9	99.1
13C6-PFDA	1.250	1.352	8.2	108.2
13C7-PFUnDA	1.250	1.319	5.6	105.6
13C8-FOSA	2.500	2.670	6.8	106.8
13C8-PFOA	2.500	2.475	-1.0	99.0
13C8-PFOS	2.500	2.482	-0.7	99.3
13C9-PFNA	1.250	1.265	1.2	101.2
4:2FTS	9.375	8.752	-6.6	93.4
6:2FTS	9.500	9.121	-4.0	96.0
8:2FTS	9.600	8.951	-6.8	93.2
d3-MeFOSAA	5.000	4.995	-0.1	99.9
EtFOSAA	2.500	2.341	-6.3	93.7
FOSA	2.500	2.233	-10.7	89.3
MeFOSAA	2.500	2.249	-10.1	89.9
PFBA	10.000	9.200	-8.0	92.0
PFBS	2.218	2.103	-5.2	94.8
PFDA	2.500	2.187	-12.5	87.5
PFDoDA	2.500	2.138	-14.5	85.5
PFDS	2.413	2.208	-8.5	91.5
PFHpA	2.500	2.336	-6.6	93.4
PFHpS	2.383	2.249	-5.6	94.4
PFHxA	2.500	2.392	-4.3	95.7
PFHxS	2.285	2.122	-7.2	92.8
PFNA	2.500	2.127	-14.9	85.1
PFNS	2.405	2.363	-1.7	98.3
PFOA	2.500	2.291	-8.4	91.6
PFOS	2.320	2.214	-4.6	95.4

# Continuing Calibration Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13308.D

PFPeA	5.000	4.575	-8.5	91.5
PFPeS	2.353	2.285	-2.9	97.1
PFTeDA	2.500	2.290	-8.4	91.6
PFTTrDA	2.500	2.345	-6.2	93.8
PFUnDA	2.500	2.311	-7.6	92.4
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	9.450	8.807	-6.8	93.2
13C3-HFPO-DA	10.000	9.721	-2.8	97.2
9C1-PF3ONS	9.350	8.257	-11.7	88.3
ADONA	9.450	8.730	-7.6	92.4
HFPO-DA	10.000	8.981	-10.2	89.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.912	-4.6	95.4
5:3FTCA	62.400	58.825	-5.7	94.3
7:3FTCA	62.400	61.247	-1.8	98.2
d3-MeFOSA	2.500	2.394	-4.2	95.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.187	-12.5	87.5
EtFOSE	25.000	22.651	-9.4	90.6
MeFOSA	2.500	2.484	-0.7	99.3
MeFOSE	25.000	22.107	-11.6	88.4
PFDoDS	2.425	2.165	-10.7	89.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.020	0.4	100.4
d7-MeFOSE	25.000	25.134	0.5	100.5
d9-EtFOSE	25.000	25.216	0.9	100.9
d5-EtFOSA	2.500	2.600	4.0	104.0
NFDHA	5.000	4.787	-4.3	95.7
PFMBA	5.000	4.701	-6.0	94.0
PFMPA	5.000	4.670	-6.6	93.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.355	-2.1	97.9

CC Criteria: +/- 30%

**Continuing Calibration Summary**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13309.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\020923\_1633\_S6Q203\s6q203.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13297.d  
 2:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13298.d  
 3:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13299.d  
 4:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13300.d  
 5:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13301.d  
 6:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13302.d  
 7:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13303.d  
 8:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13304.d

Data File: 6Q13309  
 Type : QC  
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.613	12.3	112.3
13C2-6:2FTS	5.000	5.467	9.3	109.3
13C2-8:2FTS	5.000	5.173	3.5	103.5
13C2-PFDoDA	1.250	1.226	-1.9	98.1
13C2-PFTeDA	1.250	1.251	0.1	100.1
13C3-PFBS	2.500	2.714	8.6	108.6
13C3-PFHxS	2.500	2.497	-0.1	99.9
13C4-PFBA	10.000	9.973	-0.3	99.7
13C4-PFHpA	2.500	2.486	-0.6	99.4
13C5-PFHxA	2.500	2.469	-1.2	98.8
13C5-PFPeA	5.000	5.005	0.1	100.1
13C6-PFDA	1.250	1.300	4.0	104.0
13C7-PFUnDA	1.250	1.310	4.8	104.8
13C8-FOSA	2.500	2.750	10.0	110.0
13C8-PFOA	2.500	2.638	5.5	105.5
13C8-PFOS	2.500	2.511	0.4	100.4
13C9-PFNA	1.250	1.274	1.9	101.9
4:2FTS	0.750	0.821	9.5	109.5
6:2FTS	0.760	0.874	15.0	115.0
8:2FTS	0.768	0.917	19.4	119.4
d3-MeFOSAA	5.000	5.373	7.5	107.5
EtFOSAA	0.200	0.175	-12.4	87.6
FOSA	0.200	0.194	-3.2	96.8
MeFOSAA	0.200	0.215	7.6	107.6
PFBA	0.800	0.821	2.6	102.6
PFBS	0.177	0.174	-1.7	98.3
PFDA	0.200	0.237	18.5	118.5
PFDoDA	0.200	0.219	9.7	109.7
PFDS	0.193	0.188	-2.6	97.4
PFHpA	0.200	0.212	6.2	106.2
PFHpS	0.191	0.197	3.0	103.0
PFHxA	0.200	0.217	8.7	108.7
PFHxS	0.183	0.229	25.3	125.3
PFNA	0.200	0.188	-6.0	94.0
PFNS	0.192	0.235	22.2	122.2
PFOA	0.200	0.259	29.5	129.5
PFOS	0.186	0.182	-2.4	97.6

# Continuing Calibration Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13309.D

PFPeA	0.400	0.419	4.8	104.8
PFPeS	0.188	0.193	2.7	102.7
PFTeDA	0.200	0.221	10.6	110.6
PFTTrDA	0.200	0.242	21.0	121.0
PFUnDA	0.200	0.206	3.1	103.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.756	0.794	5.0	105.0
13C3-HFPO-DA	10.000	10.315	3.1	103.1
9C1-PF3ONS	0.748	0.739	-1.2	98.8
ADONA	0.756	0.766	1.3	101.3
HFPO-DA	0.800	0.762	-4.8	95.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.115	11.6	111.6
5:3FTCA	4.992	5.039	0.9	100.9
7:3FTCA	4.992	5.038	0.9	100.9
d3-MeFOSA	2.500	2.558	2.3	102.3
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.211	5.4	105.4
EtFOSE	2.000	2.208	10.4	110.4
MeFOSA	0.200	0.212	5.9	105.9
MeFOSE	2.000	2.124	6.2	106.2
PFDoDS	0.194	0.226	16.4	116.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.355	7.1	107.1
d7-MeFOSE	25.000	25.331	1.3	101.3
d9-EtFOSE	25.000	25.695	2.8	102.8
d5-EtFOSA	2.500	2.630	5.2	105.2
NFDHA	0.400	0.408	2.1	102.1
PFMBA	0.400	0.424	6.0	106.0
PFMPA	0.400	0.399	-0.2	99.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.364	2.1	102.1

CC Criteria: +/- 30%



**Continuing Calibration Summary**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13325.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\020923\_1633\_S6Q203\s6q203.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13297.d  
 2:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13298.d  
 3:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13299.d  
 4:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13300.d  
 5:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13301.d  
 6:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13302.d  
 7:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13303.d  
 8:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13304.d

Data File: 6Q13325  
 Type : QC  
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.582	11.6	111.6
13C2-6:2FTS	5.000	5.418	8.4	108.4
13C2-8:2FTS	5.000	5.388	7.8	107.8
13C2-PFDoDA	1.250	1.380	10.4	110.4
13C2-PFTeDA	1.250	1.373	9.9	109.9
13C3-PFBS	2.500	2.637	5.5	105.5
13C3-PFHxS	2.500	2.529	1.1	101.1
13C4-PFBA	10.000	10.102	1.0	101.0
13C4-PFHpA	2.500	2.488	-0.5	99.5
13C5-PFHxA	2.500	2.586	3.4	103.4
13C5-PFPeA	5.000	5.034	0.7	100.7
13C6-PFDA	1.250	1.403	12.2	112.2
13C7-PFUnDA	1.250	1.317	5.4	105.4
13C8-FOSA	2.500	2.481	-0.8	99.2
13C8-PFOA	2.500	2.499	0.0	100.0
13C8-PFOS	2.500	2.584	3.4	103.4
13C9-PFNA	1.250	1.295	3.6	103.6
4:2FTS	9.375	8.683	-7.4	92.6
6:2FTS	9.500	8.819	-7.2	92.8
8:2FTS	9.600	8.920	-7.1	92.9
d3-MeFOSAA	5.000	5.740	14.8	114.8
EtFOSAA	2.500	2.265	-9.4	90.6
FOSA	2.500	2.406	-3.8	96.2
MeFOSAA	2.500	2.137	-14.5	85.5
PFBA	10.000	9.038	-9.6	90.4
PFBS	2.218	2.013	-9.2	90.8
PFDA	2.500	2.255	-9.8	90.2
PFDoDA	2.500	2.206	-11.8	88.2
PFDS	2.413	2.218	-8.1	91.9
PFHpA	2.500	2.321	-7.2	92.8
PFHpS	2.383	2.104	-11.7	88.3
PFHxA	2.500	2.305	-7.8	92.2
PFHxS	2.285	2.147	-6.0	94.0
PFNA	2.500	2.202	-11.9	88.1
PFNS	2.405	2.270	-5.6	94.4
PFOA	2.500	2.386	-4.5	95.5
PFOS	2.320	2.136	-7.9	92.1

# Continuing Calibration Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13325.D

PFPeA	5.000	4.516	-9.7	90.3
PFPeS	2.353	2.256	-4.1	95.9
PFTeDA	2.500	2.444	-2.2	97.8
PFTTrDA	2.500	2.454	-1.8	98.2
PFUnDA	2.500	2.388	-4.5	95.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	9.450	9.593	1.5	101.5
13C3-HFPO-DA	10.000	9.519	-4.8	95.2
9C1-PF3ONS	9.350	8.851	-5.3	94.7
ADONA	9.450	9.313	-1.4	98.6
HFPO-DA	10.000	9.771	-2.3	97.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.277	-9.6	90.4
5:3FTCA	62.400	56.444	-9.5	90.5
7:3FTCA	62.400	57.542	-7.8	92.2
d3-MeFOSA	2.500	2.467	-1.3	98.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.214	-11.4	88.6
EtFOSE	25.000	21.648	-13.4	86.6
MeFOSA	2.500	2.274	-9.0	91.0
MeFOSE	25.000	22.752	-9.0	91.0
PFDoDS	2.425	2.240	-7.6	92.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.281	5.6	105.6
d7-MeFOSE	25.000	25.383	1.5	101.5
d9-EtFOSE	25.000	25.549	2.2	102.2
d5-EtFOSA	2.500	2.631	5.2	105.2
NFDHA	5.000	4.602	-8.0	92.0
PFMBA	5.000	4.751	-5.0	95.0
PFMPA	5.000	4.607	-7.9	92.1
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	3.914	-12.0	88.0

CC Criteria: +/- 30%

**Continuing Calibration Summary**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13337.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\020923\_1633\_S6Q203\s6q203.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13297.d  
 2:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13298.d  
 3:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13299.d  
 4:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13300.d  
 5:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13301.d  
 6:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13302.d  
 7:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13303.d  
 8:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13304.d

Data File: 6Q13337  
 Type : QC  
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.229	4.6	104.6
13C2-6:2FTS	5.000	5.545	10.9	110.9
13C2-8:2FTS	5.000	5.086	1.7	101.7
13C2-PFDoDA	1.250	1.197	-4.2	95.8
13C2-PFTeDA	1.250	1.187	-5.0	95.0
13C3-PFBS	2.500	2.383	-4.7	95.3
13C3-PFHxS	2.500	2.574	2.9	102.9
13C4-PFBA	10.000	10.091	0.9	100.9
13C4-PFHpA	2.500	2.428	-2.9	97.1
13C5-PFHxA	2.500	2.509	0.4	100.4
13C5-PFPeA	5.000	4.772	-4.6	95.4
13C6-PFDA	1.250	1.311	4.8	104.8
13C7-PFUnDA	1.250	1.209	-3.3	96.7
13C8-FOSA	2.500	2.823	12.9	112.9
13C8-PFOA	2.500	2.405	-3.8	96.2
13C8-PFOS	2.500	2.642	5.7	105.7
13C9-PFNA	1.250	1.209	-3.3	96.7
4:2FTS	9.375	8.948	-4.6	95.4
6:2FTS	9.500	8.482	-10.7	89.3
8:2FTS	9.600	8.975	-6.5	93.5
d3-MeFOSAA	5.000	5.219	4.4	104.4
EtFOSAA	2.500	2.240	-10.4	89.6
FOSA	2.500	2.120	-15.2	84.8
MeFOSAA	2.500	2.407	-3.7	96.3
PFBA	10.000	9.045	-9.6	90.4
PFBS	2.218	2.114	-4.7	95.3
PFDA	2.500	2.288	-8.5	91.5
PFDoDA	2.500	2.260	-9.6	90.4
PFDS	2.413	2.306	-4.4	95.6
PFHpA	2.500	2.236	-10.6	89.4
PFHpS	2.383	2.159	-9.4	90.6
PFHxA	2.500	2.261	-9.6	90.4
PFHxS	2.285	2.062	-9.8	90.2
PFNA	2.500	2.358	-5.7	94.3
PFNS	2.405	2.314	-3.8	96.2
PFOA	2.500	2.248	-10.1	89.9
PFOS	2.320	2.137	-7.9	92.1

# Continuing Calibration Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13337.D

PFPeA	5.000	4.680	-6.4	93.6
PFPeS	2.353	2.054	-12.7	87.3
PFTeDA	2.500	2.586	3.4	103.4
PFTTrDA	2.500	2.445	-2.2	97.8
PFUnDA	2.500	2.395	-4.2	95.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	9.450	8.333	-11.8	88.2
13C3-HFPO-DA	10.000	10.114	1.1	101.1
9C1-PF3ONS	9.350	8.359	-10.6	89.4
ADONA	9.450	8.493	-10.1	89.9
HFPO-DA	10.000	8.670	-13.3	86.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.699	-6.3	93.7
5:3FTCA	62.400	53.700	-13.9	86.1
7:3FTCA	62.400	55.892	-10.4	89.6
d3-MeFOSA	2.500	2.648	5.9	105.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.154	-13.8	86.2
EtFOSE	25.000	21.530	-13.9	86.1
MeFOSA	2.500	2.141	-14.4	85.6
MeFOSE	25.000	22.853	-8.6	91.4
PFDoDS	2.425	2.140	-11.8	88.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.416	8.3	108.3
d7-MeFOSE	25.000	25.992	4.0	104.0
d9-EtFOSE	25.000	26.105	4.4	104.4
d5-EtFOSA	2.500	2.683	7.3	107.3
NFDHA	5.000	4.364	-12.7	87.3
PFMBA	5.000	4.695	-6.1	93.9
PFMPA	5.000	4.669	-6.6	93.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	3.966	-10.9	89.1

CC Criteria: +/- 30%

**Continuing Calibration Summary**

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13338.D

## Continuing Calibration Report

Batch: D:\MassHunter\Data\020923\_1633\_S6Q203\s6q203.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13297.d  
 2:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13298.d  
 3:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13299.d  
 4:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13300.d  
 5:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13301.d  
 6:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13302.d  
 7:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13303.d  
 8:D:\MassHunter\Data\020923\_1633\_S6Q203\6Q13304.d

Data File: 6Q13338  
 Type : QC  
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.267	5.3	105.3
13C2-6:2FTS	5.000	5.266	5.3	105.3
13C2-8:2FTS	5.000	5.423	8.5	108.5
13C2-PFDoDA	1.250	1.110	-11.2	88.8
13C2-PFTeDA	1.250	1.168	-6.5	93.5
13C3-PFBS	2.500	2.592	3.7	103.7
13C3-PFHxS	2.500	2.582	3.3	103.3
13C4-PFBA	10.000	9.985	-0.2	99.8
13C4-PFHpA	2.500	2.534	1.4	101.4
13C5-PFHxA	2.500	2.544	1.8	101.8
13C5-PFPeA	5.000	5.055	1.1	101.1
13C6-PFDA	1.250	1.166	-6.8	93.2
13C7-PFUnDA	1.250	1.245	-0.4	99.6
13C8-FOSA	2.500	2.497	-0.1	99.9
13C8-PFOA	2.500	2.482	-0.7	99.3
13C8-PFOS	2.500	2.547	1.9	101.9
13C9-PFNA	1.250	1.172	-6.2	93.8
4:2FTS	0.750	0.874	16.6	116.6
6:2FTS	0.760	0.817	7.5	107.5
8:2FTS	0.768	0.774	0.7	100.7
d3-MeFOSAA	5.000	5.411	8.2	108.2
EtFOSAA	0.200	0.225	12.4	112.4
FOSA	0.200	0.222	11.2	111.2
MeFOSAA	0.200	0.218	9.0	109.0
PFBA	0.800	0.816	2.1	102.1
PFBS	0.177	0.162	-8.3	91.7
PFDA	0.200	0.219	9.5	109.5
PFDoDA	0.200	0.231	15.3	115.3
PFDS	0.193	0.214	11.1	111.1
PFHpA	0.200	0.203	1.6	101.6
PFHpS	0.191	0.197	3.1	103.1
PFHxA	0.200	0.209	4.6	104.6
PFHxS	0.183	0.223	22.0	122.0
PFNA	0.200	0.192	-3.8	96.2
PFNS	0.192	0.210	9.5	109.5
PFOA	0.200	0.234	16.9	116.9
PFOS	0.186	0.168	-9.7	90.3

# Continuing Calibration Summary

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q203-CC203  
 Lab FileID: 6Q13338.D

PFPeA	0.400	0.420	4.9	104.9
PFPeS	0.188	0.171	-9.0	91.0
PFTeDA	0.200	0.222	10.8	110.8
PFTTrDA	0.200	0.243	21.6	121.6
PFUnDA	0.200	0.193	-3.6	96.4
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	0.756	0.823	8.8	108.8
13C3-HFPO-DA	10.000	9.463	-5.4	94.6
9C1-PF3ONS	0.748	0.775	3.6	103.6
ADONA	0.756	0.828	9.5	109.5
HFPO-DA	0.800	0.917	14.7	114.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.034	3.6	103.6
5:3FTCA	4.992	4.958	-0.7	99.3
7:3FTCA	4.992	4.959	-0.7	99.3
d3-MeFOSA	2.500	2.431	-2.8	97.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.210	5.0	105.0
EtFOSE	2.000	2.073	3.7	103.7
MeFOSA	0.200	0.221	10.5	110.5
MeFOSE	2.000	2.134	6.7	106.7
PFDoDS	0.194	0.223	15.2	115.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.265	5.3	105.3
d7-MeFOSE	25.000	24.247	-3.0	97.0
d9-EtFOSE	25.000	24.959	-0.2	99.8
d5-EtFOSA	2.500	2.623	4.9	104.9
NFDHA	0.400	0.345	-13.8	86.2
PFMBA	0.400	0.383	-4.2	95.8
PFMPA	0.400	0.424	6.0	106.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.366	2.9	102.9

CC Criteria: +/- 30%

## Run Sequence Report

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q203	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q203-RT	6Q13294.D	02/09/23 12:01	n/a	Retention Time Marker
S6Q203-RT	6Q13295.D	02/09/23 12:15	n/a	Retention Time Marker
S6Q203-IC203	6Q13296.D	02/09/23 12:29	n/a	Mass Calibration Verification
S6Q203-IC203	6Q13297.D	02/09/23 12:43	n/a	Initial cal 1
S6Q203-IC203	6Q13298.D	02/09/23 12:57	n/a	Initial cal 2
S6Q203-IC203	6Q13299.D	02/09/23 13:11	n/a	Initial cal 3
S6Q203-ICC203	6Q13300.D	02/09/23 13:26	n/a	Initial cal 4
S6Q203-IC203	6Q13301.D	02/09/23 13:40	n/a	Initial cal 5
S6Q203-IC203	6Q13302.D	02/09/23 13:55	n/a	Initial cal 6
S6Q203-IC203	6Q13303.D	02/09/23 14:09	n/a	Initial cal 7
S6Q203-IC203	6Q13304.D	02/09/23 14:23	n/a	Initial cal 8
S6Q203-IBLK	6Q13305.D	02/09/23 14:37	n/a	Instrument Blank
S6Q203-IBLK	6Q13305.D	02/09/23 14:37	n/a	Instrument Blank
S6Q203-ICV203	6Q13306.D	02/09/23 14:51	n/a	Initial cal verification 4
S6Q203-ICV203	6Q13307.D	02/09/23 15:05	n/a	Initial cal verification 4
S6Q203-CC203	6Q13308.D	02/09/23 15:24	n/a	Continuing cal 4
S6Q203-CC203	6Q13309.D	02/09/23 15:38	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q13316.D	02/09/23 17:16	OP95255	(unrelated sample)
OP95350-BS	6Q13317.D	02/09/23 17:30	OP95350	Blank Spike
OP95350-LLBS	6Q13318.D	02/09/23 17:44	OP95350	Blank Spike
OP95350-MB	6Q13319.D	02/09/23 17:58	OP95350	Method Blank
ZZZZZZ	6Q13320.D	02/09/23 18:12	OP95350	(unrelated sample)
OP95377-BS	6Q13321.D	02/09/23 18:26	OP95377	Blank Spike
OP95377-LLBS	6Q13322.D	02/09/23 18:40	OP95377	Blank Spike
OP95377-MB	6Q13323.D	02/09/23 18:54	OP95377	Method Blank
ZZZZZZ	6Q13324.D	02/09/23 19:08	OP95377	(unrelated sample)
S6Q203-CC203	6Q13325.D	02/09/23 19:22	n/a	Continuing cal 4
S6Q203-ICCB	6Q13326.D	02/09/23 19:36	n/a	Continuing Calibration Blank
OP95329-BS	6Q13327.D	02/09/23 19:50	OP95329	Blank Spike
OP95329-LLBS	6Q13328.D	02/09/23 20:04	OP95329	Blank Spike
OP95329-MB	6Q13329.D	02/09/23 20:17	OP95329	Method Blank
FC2356-1	6Q13330.D	02/09/23 20:31	OP95329	AF-RHMW10-WGN01LF-2301W5
OP95329-MS	6Q13331.D	02/09/23 20:45	OP95329	Matrix Spike
FC2356-2	6Q13332.D	02/09/23 20:59	OP95329	AF-RHMW17-WGN01LF-2301W5
OP95329-DUP	6Q13333.D	02/09/23 21:13	OP95329	Duplicate
FC2356-3	6Q13334.D	02/09/23 21:27	OP95329	AF-RHMW17D-WGN01LF-2301W5
FC2356-4	6Q13335.D	02/09/23 21:41	OP95329	AF-RHMW17D-WQFB01-2301W5
ZZZZZZ	6Q13336.D	02/09/23 21:55	OP95329	(unrelated sample)
S6Q203-CC203	6Q13337.D	02/09/23 22:09	n/a	Continuing cal 4
S6Q203-CC203	6Q13338.D	02/09/23 22:23	n/a	Continuing cal 1.0LL
S6Q203-ICCB	6Q13339.D	02/09/23 22:37	n/a	Continuing Calibration Blank
OP95124-BS	6Q13340.D	02/09/23 22:51	OP95124	Blank Spike
OP95124-LLBS	6Q13341.D	02/09/23 23:05	OP95124	Blank Spike
OP95124-MB	6Q13342.D	02/09/23 23:19	OP95124	Method Blank
ZZZZZZ	6Q13343.D	02/09/23 23:33	OP95124	(unrelated sample)
ZZZZZZ	6Q13344.D	02/09/23 23:47	OP95124	(unrelated sample)



# Run Sequence Report

Job Number: FC2356  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q203	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
OP95124-MS	6Q13345.D	02/10/23 00:01	OP95124	Matrix Spike
OP95124-MSD	6Q13346.D	02/10/23 00:15	OP95124	Matrix Spike Duplicate
ZZZZZZ	6Q13347.D	02/10/23 00:29	OP95124	(unrelated sample)
ZZZZZZ	6Q13348.D	02/10/23 00:43	OP95124	(unrelated sample)
ZZZZZZ	6Q13349.D	02/10/23 00:57	OP95124	(unrelated sample)
S6Q203-CC203	6Q13350.D	02/10/23 01:11	n/a	Continuing cal 4
S6Q203-ICCB	6Q13351.D	02/10/23 01:25	n/a	Continuing Calibration Blank
ZZZZZZ	6Q13352.D	02/10/23 01:39	OP95124	(unrelated sample)
ZZZZZZ	6Q13353.D	02/10/23 01:53	OP95124	(unrelated sample)
ZZZZZZ	6Q13354.D	02/10/23 02:07	OP95124	(unrelated sample)
ZZZZZZ	6Q13355.D	02/10/23 02:21	OP95124	(unrelated sample)
FC1912-10	6Q13356.D	02/10/23 02:35	OP95124	(used for QC only; not part of job FC2356)
ZZZZZZ	6Q13357.D	02/10/23 02:49	OP95124	(unrelated sample)
ZZZZZZ	6Q13358.D	02/10/23 03:03	OP95124	(unrelated sample)
ZZZZZZ	6Q13359.D	02/10/23 03:17	OP95124	(unrelated sample)
ZZZZZZ	6Q13360.D	02/10/23 03:31	OP95124	(unrelated sample)
ZZZZZZ	6Q13361.D	02/10/23 03:45	OP95124	(unrelated sample)
S6Q203-CC203	6Q13362.D	02/10/23 03:59	n/a	Continuing cal 4
S6Q203-ICCB	6Q13363.D	02/10/23 04:13	n/a	Continuing Calibration Blank
ZZZZZZ	6Q13364.D	02/10/23 04:27	OP95124	(unrelated sample)
ZZZZZZ	6Q13365.D	02/10/23 04:41	OP95124	(unrelated sample)
OP95142-BS	6Q13366.D	02/10/23 04:55	OP95142	Blank Spike
OP95142-LLBS	6Q13367.D	02/10/23 05:09	OP95142	Blank Spike
OP95142-MB	6Q13368.D	02/10/23 05:23	OP95142	Method Blank
ZZZZZZ	6Q13369.D	02/10/23 05:37	OP95142	(unrelated sample)
ZZZZZZ	6Q13370.D	02/10/23 05:51	OP95142	(unrelated sample)
ZZZZZZ	6Q13371.D	02/10/23 06:05	OP95142	(unrelated sample)
ZZZZZZ	6Q13372.D	02/10/23 06:19	OP95142	(unrelated sample)
ZZZZZZ	6Q13373.D	02/10/23 06:33	OP95142	(unrelated sample)
S6Q203-CC203	6Q13374.D	02/10/23 06:47	n/a	Continuing cal 4
S6Q203-ICCB	6Q13375.D	02/10/23 07:01	n/a	Continuing Calibration Blank
ZZZZZZ	6Q13376.D	02/10/23 07:15	OP95142	(unrelated sample)
ZZZZZZ	6Q13377.D	02/10/23 07:29	OP95142	(unrelated sample)
ZZZZZZ	6Q13378.D	02/10/23 07:43	OP95142	(unrelated sample)
ZZZZZZ	6Q13379.D	02/10/23 07:57	OP95142	(unrelated sample)
ZZZZZZ	6Q13380.D	02/10/23 08:11	OP95142	(unrelated sample)
ZZZZZZ	6Q13381.D	02/10/23 08:25	OP95142	(unrelated sample)
ZZZZZZ	6Q13382.D	02/10/23 08:39	OP95142	(unrelated sample)
ZZZZZZ	6Q13383.D	02/10/23 08:53	OP95142	(unrelated sample)
ZZZZZZ	6Q13384.D	02/10/23 09:07	OP95142	(unrelated sample)
ZZZZZZ	6Q13385.D	02/10/23 09:21	OP95142	(unrelated sample)
S6Q203-CC203	6Q13386.D	02/10/23 09:35	n/a	Continuing cal 4
S6Q203-CC203	6Q13387.D	02/10/23 09:49	n/a	Continuing cal 1.0LL
S6Q203-ICCB	6Q13388.D	02/10/23 10:03	n/a	Continuing Calibration Blank
FC1916-16	6Q13389.D	02/10/23 10:17	OP95142	(used for QC only; not part of job FC2356)
OP95142-MS	6Q13390.D	02/10/23 10:31	OP95142	Matrix Spike

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# Run Sequence Report

Job Number: FC2356  
Account: AECOMCOD AECOM, INC.  
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q203	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
OP95142-MSD	6Q13391.D	02/10/23 10:45	OP95142	Matrix Spike Duplicate
ZZZZZZ	6Q13392.D	02/10/23 10:59	OP95142	(unrelated sample)
ZZZZZZ	6Q13393.D	02/10/23 11:13	OP95142	(unrelated sample)
ZZZZZZ	6Q13394.D	02/10/23 11:27	OP95123	(unrelated sample)
ZZZZZZ	6Q13395.D	02/10/23 11:41	OP95123	(unrelated sample)
S6Q203-ECC203	6Q13396.D	02/10/23 11:55	n/a	Ending cal 4
S6Q203-ICCB	6Q13397.D	02/10/23 12:09	n/a	Continuing Calibration Blank

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**MS Semi-volatiles**

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**Raw Data**

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13330.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 8:31:58 PM  
 Sample Name : FC2356-1  
 Vial : P1-D4  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95329,S6Q203,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.013	216.8 -> 171.9	78907	10.00 µg/L	0.012
M5-PFPeA	4.386	268.3 -> 223.0	38478	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	34460	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	35245	2.50 µg/L	0.012
M8-PFOA	7.146	421.1 -> 376.0	59774	2.50 µg/L	0.012
M9-PFNA	7.664	472.1 -> 427.0	21165	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	15218	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	16233	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	17382	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	9266	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	14505	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	12956	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	8419	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	6485	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2291	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	3076	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2777	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	25930	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	13692	10.00 µg/L	0.000
M5-EtFOSAA	8.386	589.2 -> 419.0	20668	5.00 µg/L	0.000
M7-MeFOSE	10.577	623.2 -> 58.9	21078	25.00 µg/L	-0.012
M9-EtFOSE	10.835	639.2 -> 58.9	14255	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	5870	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	5508	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	8513	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	32544	5.00 µg/L	0.012
18O2-PFHxS	7.261	403.0 -> 83.9	5966	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	67683	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	20903	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	22983	1.25 µg/L	0.000
13C2-PFHxA	5.576	315.1 -> 270.0	31039	2.50 µg/L	0.012
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2291	5.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.8%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3076	6.04 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.7%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2777	5.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.7%		
13C2-PFDoDA	9.041	615.1 -> 570.0	17382	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 84.2%		
13C2-PFTeDA	9.768	715.2 -> 670.0	9266	1.00 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 80.1%		
13C3-PFBS	5.518	302.1 -> 79.9	12956	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C3-PFHxS	7.262	402.1 -> 79.9	8419	2.62 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C4-PFBA	3.013	216.8 -> 171.9	78907	10.86 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C4-PFHpA	6.502	367.1 -> 322.0	35245	2.71 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C5-PFHxA	5.563	318.0 -> 273.0	34460	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C5-PFPeA	4.386	268.3 -> 223.0	38478	5.43 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C6-PFDA	8.145	519.1 -> 474.1	15218	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C7-PFUnDA	8.599	570.0 -> 525.1	16233	1.11 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.1%	
13C8-FOSA	9.555	506.1 -> 77.8	14505	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C8-PFOA	7.146	421.1 -> 376.0	59774	2.64 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C8-PFOS	8.319	507.1 -> 79.9	6485	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.0%	
13C9-PFNA	7.664	472.1 -> 427.0	21165	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSAA	8.190	573.2 -> 419.0	25930	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C3-HFPO-DA	5.940	286.9 -> 168.9	13692	11.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.5%	
d3-MeFOSA	10.680	515.0 -> 219.0	5508	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
d5-EtFOSAA	8.386	589.2 -> 419.0	20668	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
d7-MeFOSE	10.577	623.2 -> 58.9	21078	24.56 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d9-EtFOSE	10.835	639.2 -> 58.9	14255	24.84 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d5-EtFOSA	10.913	531.1 -> 219.0	5870	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	

Target Compounds

QValue

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

## Perfluorinated Compounds by LC/MS/MS

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

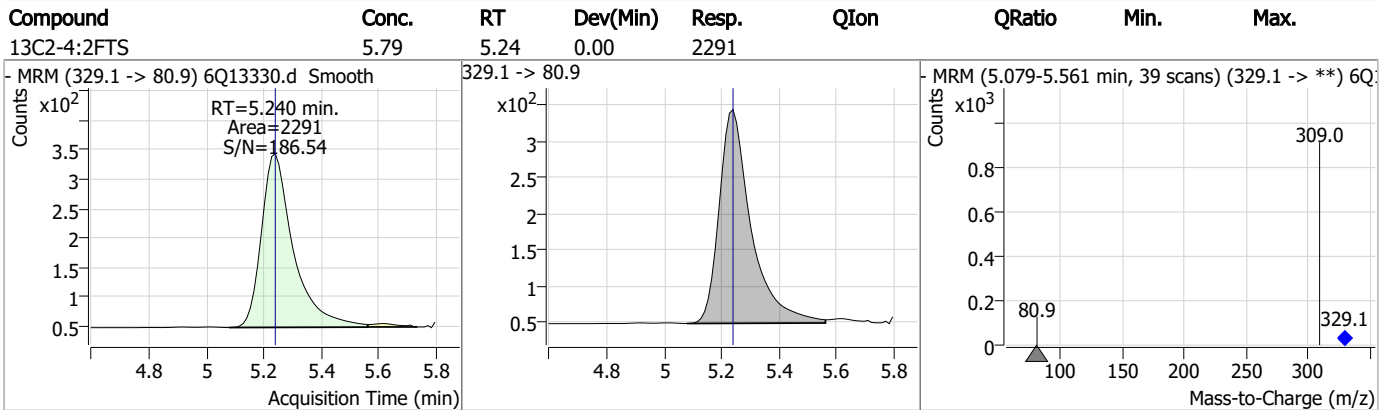
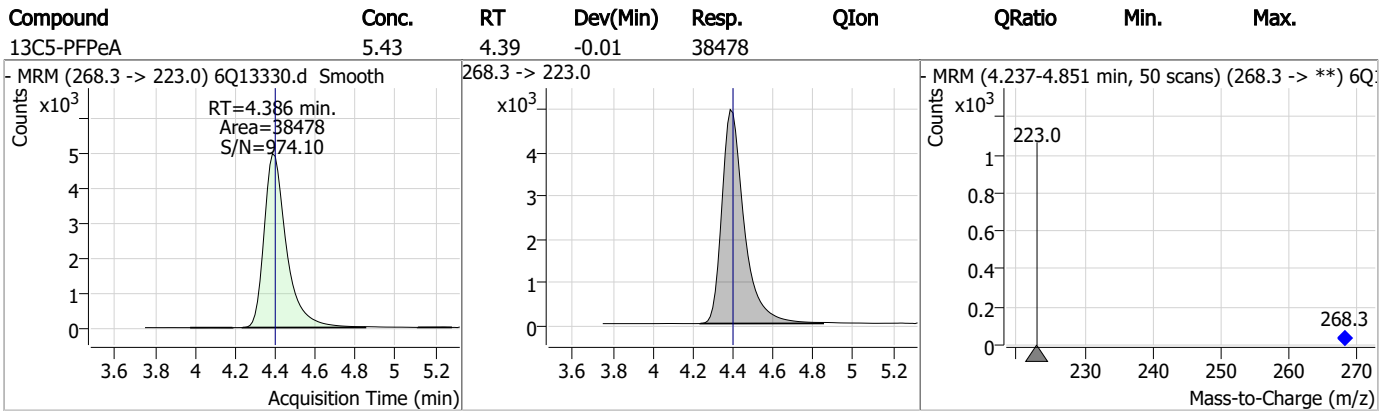
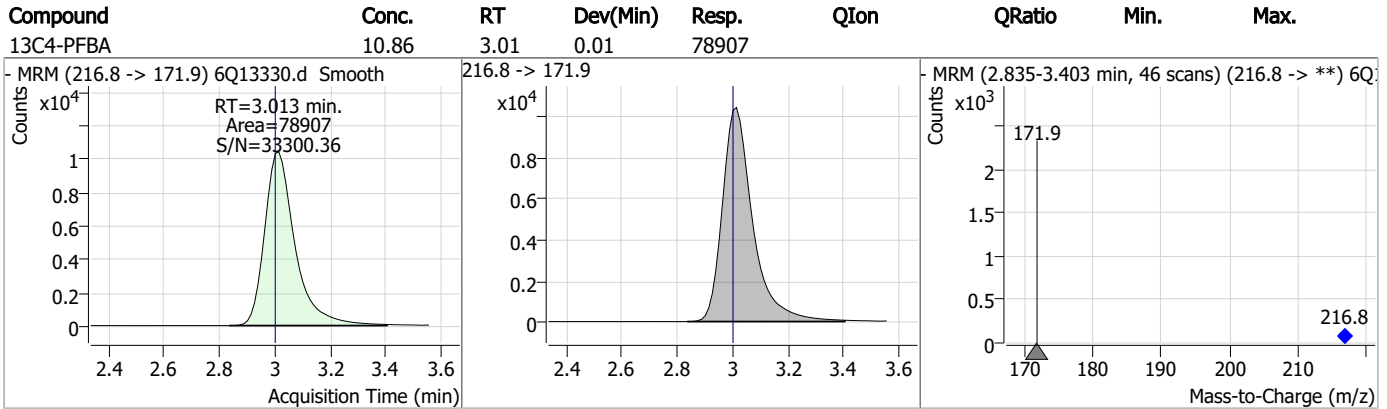
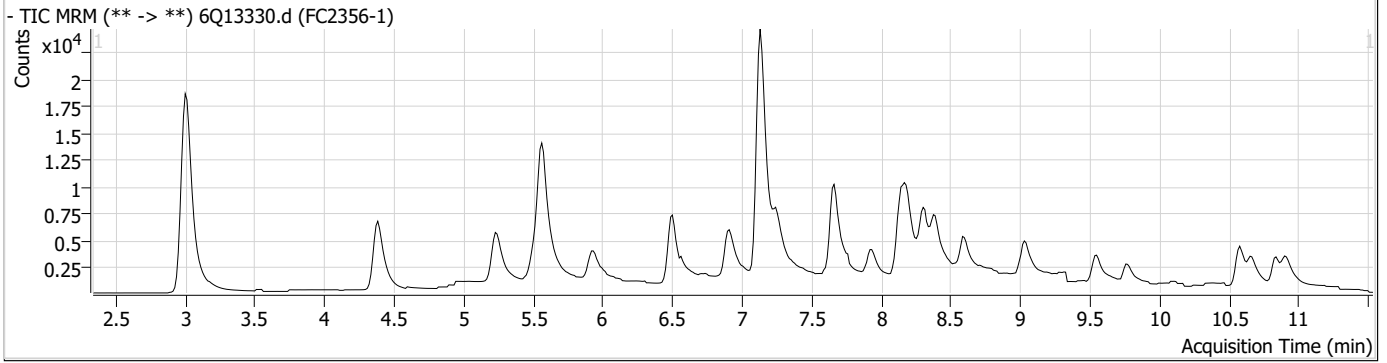
# = Qualifier out of range, m = manually integrated, + = Area summed

### Perfluorinated Compounds by LC/MS/MS

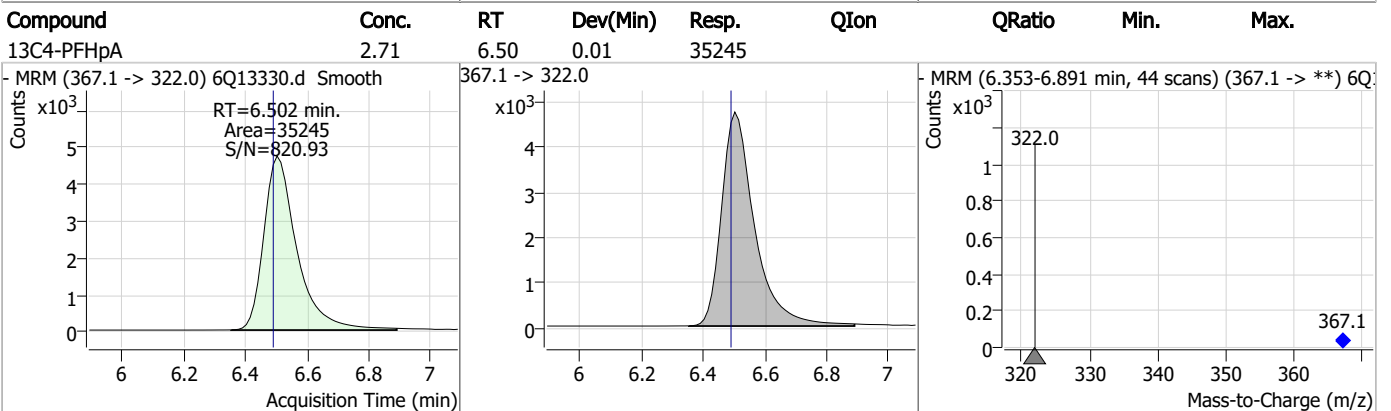
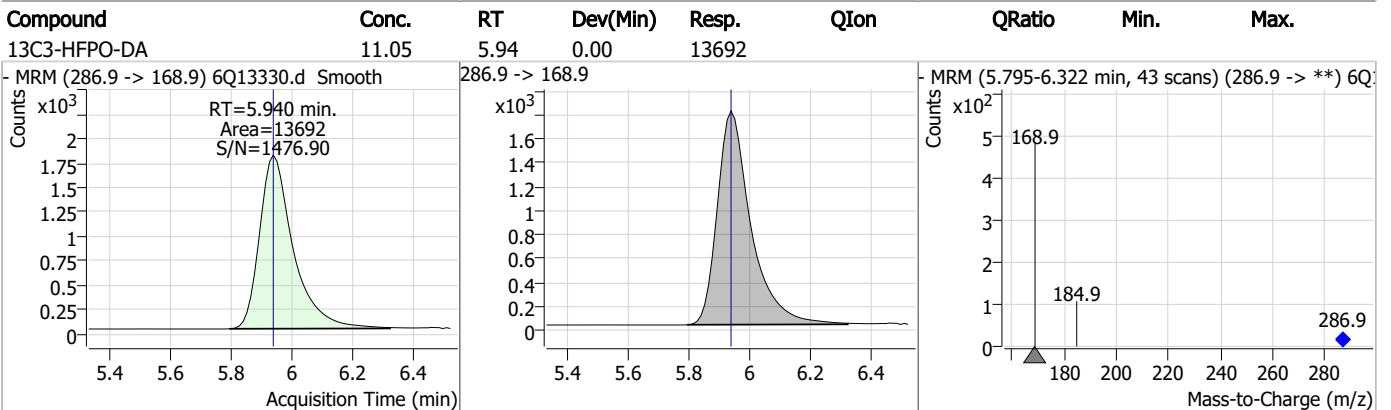
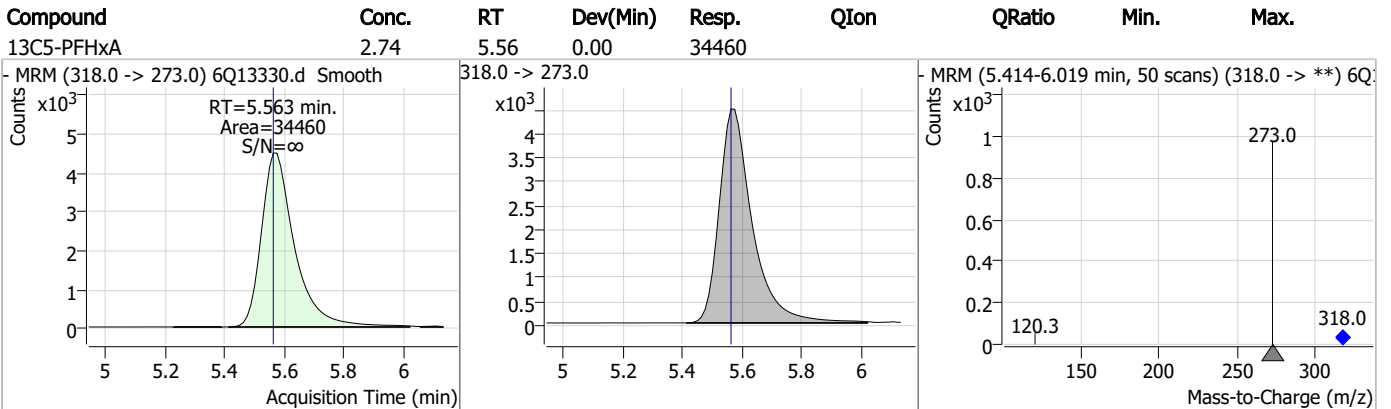
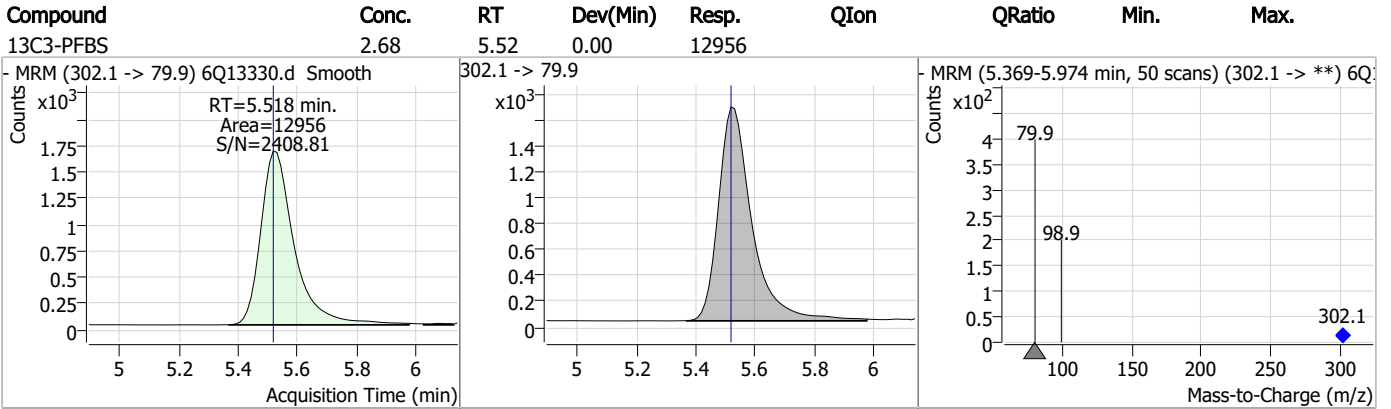
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.1.1  
7

### Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS





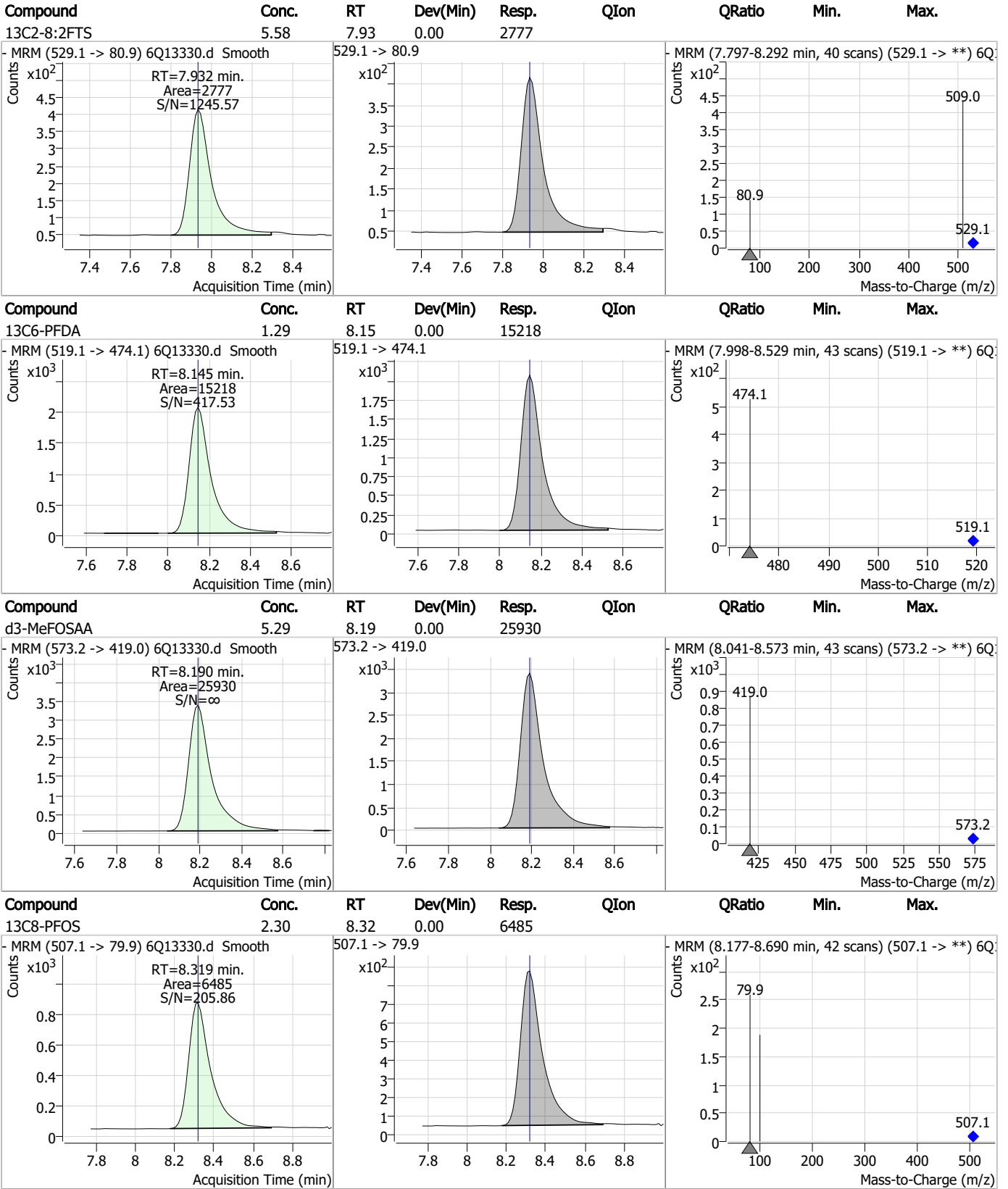
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.04	6.91	0.01	3076				
13C8-PFOA	2.64	7.15	0.01	59774				
13C3-PFHxS	2.62	7.26	0.01	8419				
13C9-PFNA	1.26	7.66	0.00	21165				

7.1.1  
7



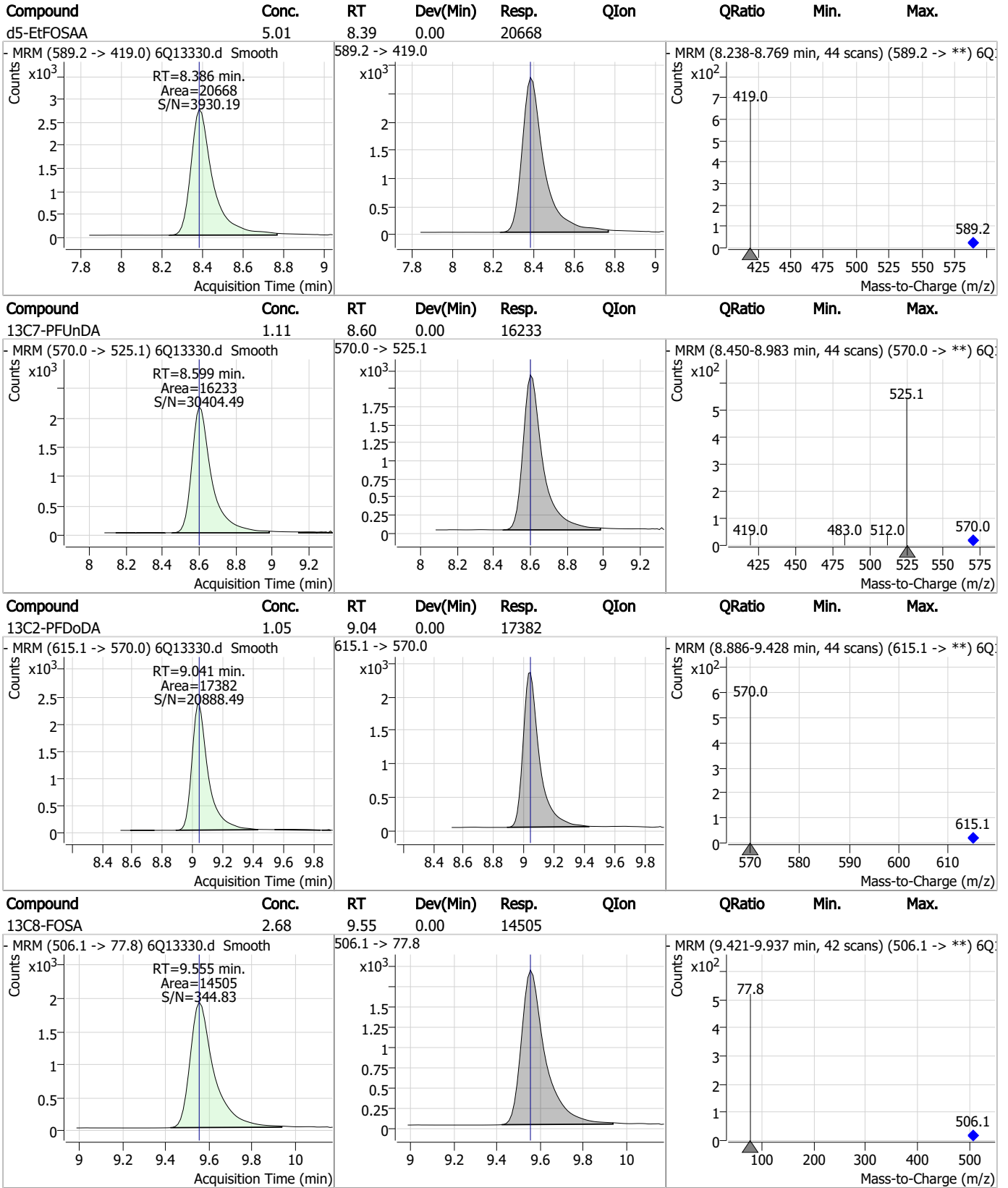
### Perfluorinated Compounds by LC/MS/MS



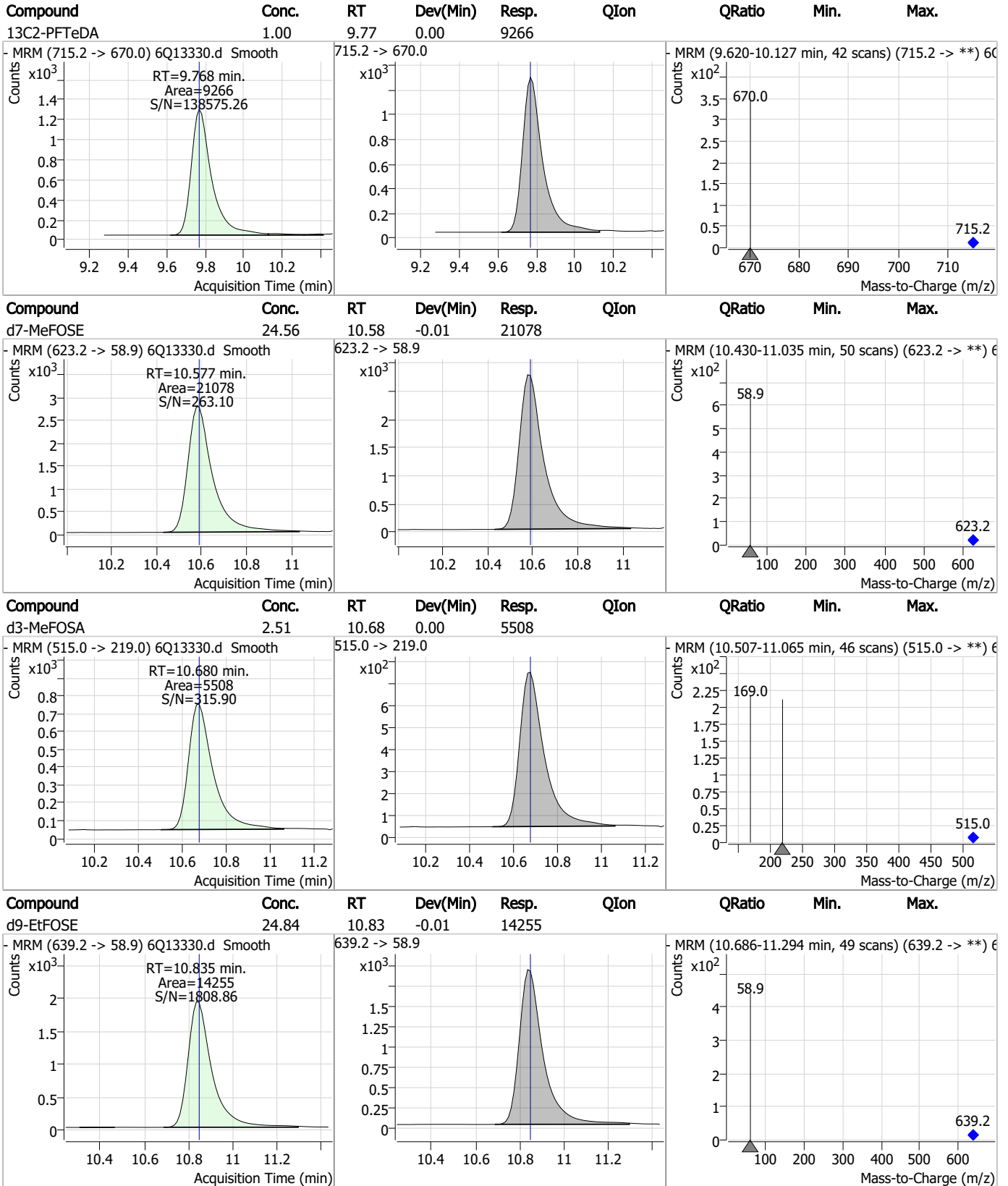
7.1.1  
7



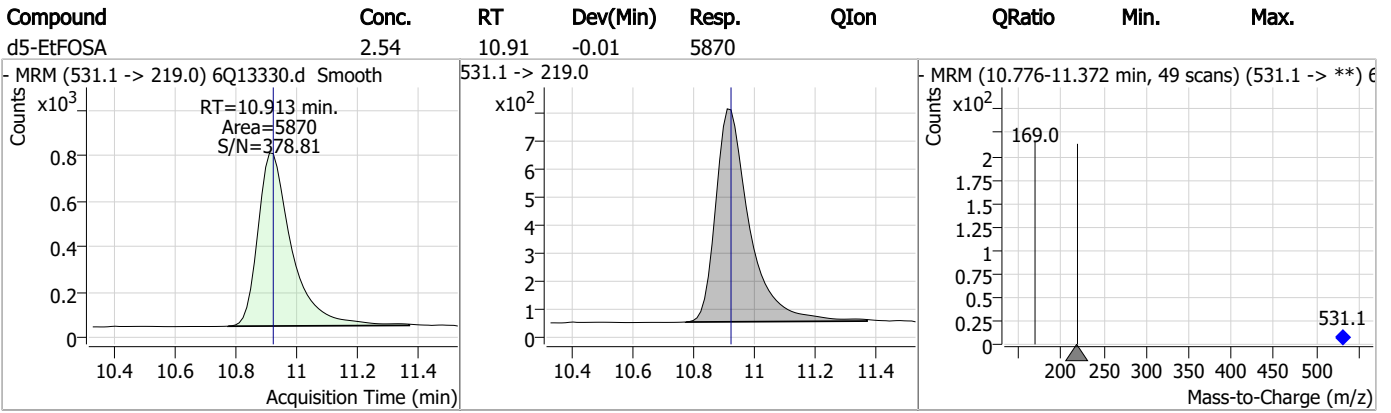
Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.1  
7

### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13332.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 8:59:57 PM  
 Sample Name : FC2356-2  
 Vial : P1-D6  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95329,S6Q203,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.000	216.8 -> 171.9	74099	10.00 µg/L	0.000
M5-PFPeA	4.386	268.3 -> 223.0	36749	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	32785	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	32985	2.50 µg/L	0.012
M8-PFOA	7.146	421.1 -> 376.0	56230	2.50 µg/L	0.012
M9-PFNA	7.664	472.1 -> 427.0	20345	1.25 µg/L	0.000
M6-PFDA	8.157	519.1 -> 474.1	15545	1.25 µg/L	0.012
M7-PFUnDA	8.612	570.0 -> 525.1	18487	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	18455	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	9679	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	13703	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	12543	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	8057	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	7389	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2470	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	2685	5.00 µg/L	0.012
M2-8:2FTS	7.944	529.1 -> 80.9	2897	5.00 µg/L	0.012
M3-MeFOSAA	8.190	573.2 -> 419.0	24409	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	13292	10.00 µg/L	-0.012
M5-EtFOSAA	8.398	589.2 -> 419.0	21279	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	21185	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	14874	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	6268	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	5529	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	8641	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	31071	5.00 µg/L	0.012
18O2-PFHxS	7.273	403.0 -> 83.9	5690	2.50 µg/L	0.012
13C4-PFOA	7.135	417.1 -> 372.0	64682	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	21491	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	22789	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	28277	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2470	6.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 130.8%		
13C2-6:2FTS	6.908	429.1 -> 80.9	2685	5.52 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C2-8:2FTS	7.944	529.1 -> 80.9	2897	6.11 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.1%		
13C2-PFDoDA	9.041	615.1 -> 570.0	18455	1.09 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 86.9%		
13C2-PFTeDA	9.768	715.2 -> 670.0	9679	1.02 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 81.3%		
13C3-PFBS	5.518	302.1 -> 79.9	12543	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.7%		
13C3-PFHxS	7.262	402.1 -> 79.9	8057	2.63 µg/L	0.012

7.12  
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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 = 105.3%	
13C4-PFBA	3.000	216.8 -> 171.9	74099	10.68 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C4-PFHpA	6.502	367.1 -> 322.0	32985	2.78 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.3%	
13C5-PFHxA	5.563	318.0 -> 273.0	32785	2.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.6%	
13C5-PFPeA	4.386	268.3 -> 223.0	36749	5.69 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C6-PFDA	8.157	519.1 -> 474.1	15545	1.28 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C7-PFUnDA	8.612	570.0 -> 525.1	18487	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-FOSA	9.555	506.1 -> 77.8	13703	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-PFOA	7.146	421.1 -> 376.0	56230	2.60 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-PFOS	8.319	507.1 -> 79.9	7389	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C9-PFNA	7.664	472.1 -> 427.0	20345	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%	
d3-MeFOSAA	8.190	573.2 -> 419.0	24409	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	13292	11.77 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.7%	
d3-MeFOSA	10.680	515.0 -> 219.0	5529	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
d5-EtFOSAA	8.398	589.2 -> 419.0	21279	5.08 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
d7-MeFOSE	10.589	623.2 -> 58.9	21185	24.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d9-EtFOSE	10.835	639.2 -> 58.9	14874	25.53 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
d5-EtFOSA	10.913	531.1 -> 219.0	6268	2.67 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.7%	

7.12  
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Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.908	427.1 -> 407.0	2341	0.59 µg/L	95
		427.1 -> 80.9	385		
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.	
		363.1 -> 319.0			
PFHpS	-	363.1 -> 169.0	-	N.D.	
		449.0 -> 79.9			
PFHxA	5.566	449.0 -> 98.9	2719	0.21 µg/L	99
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	113	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	4.388	498.9 -> 98.8	3796	0.49 µg/L	100
		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



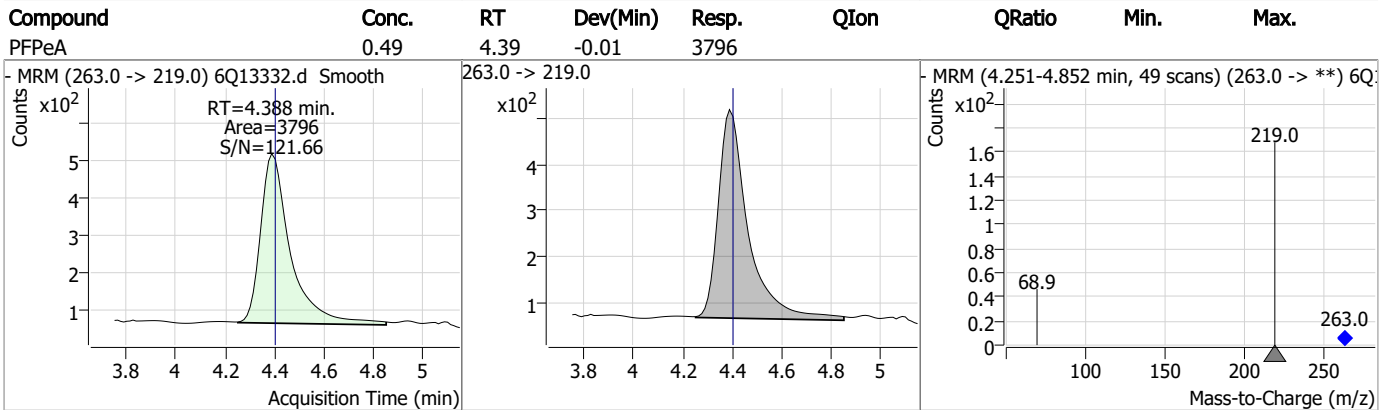
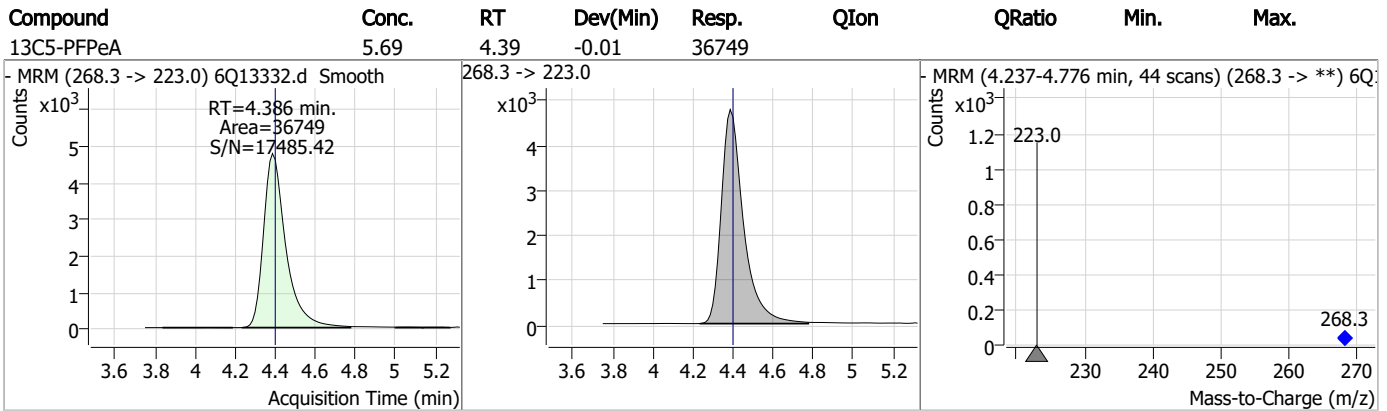
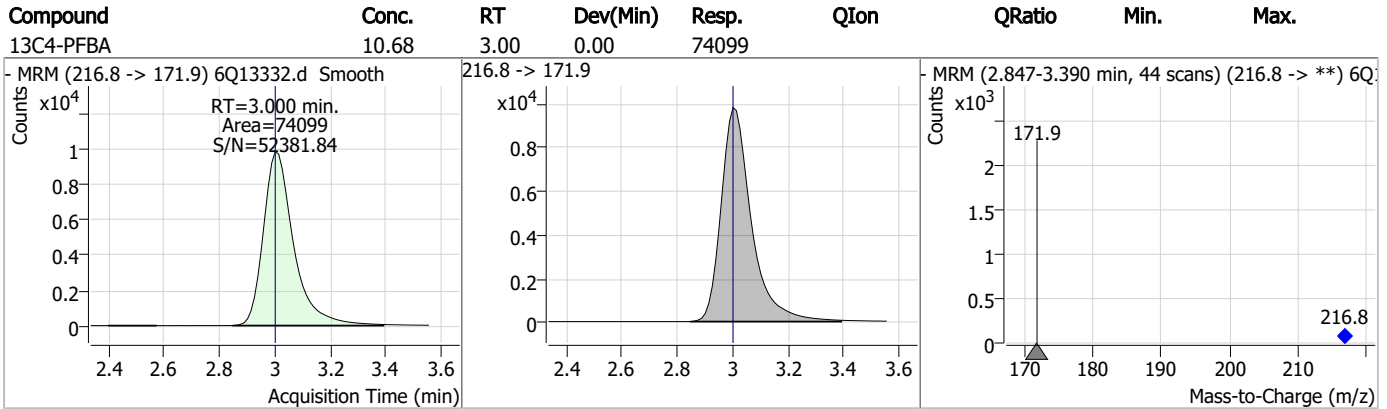
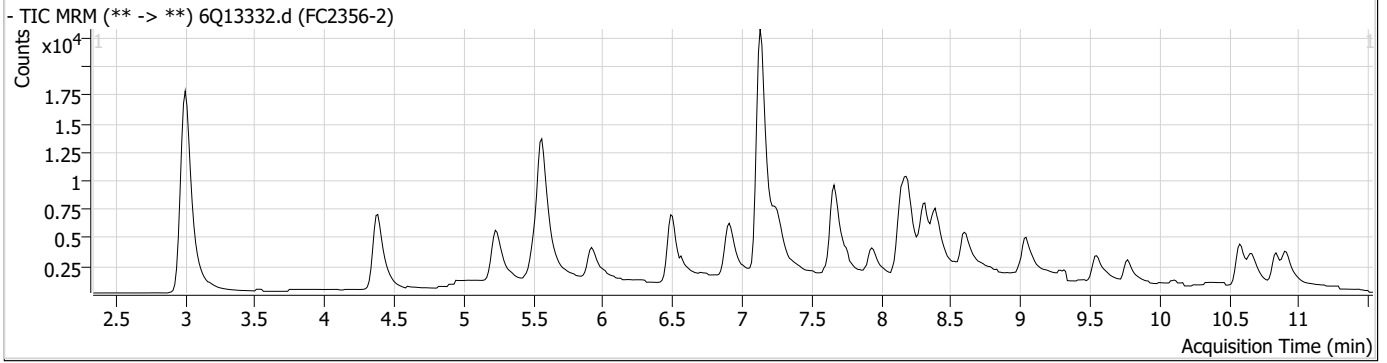
### Perfluorinated Compounds by LC/MS/MS

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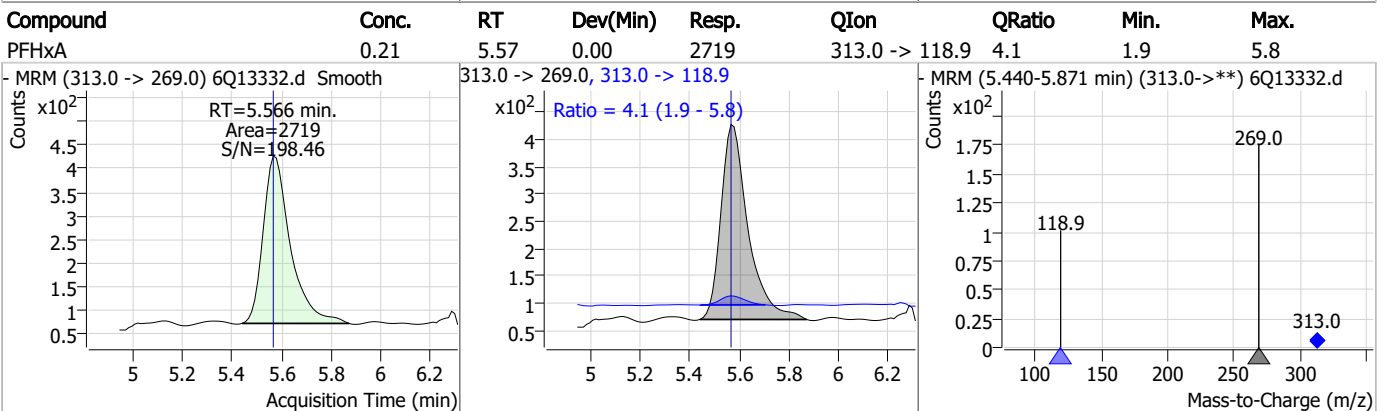
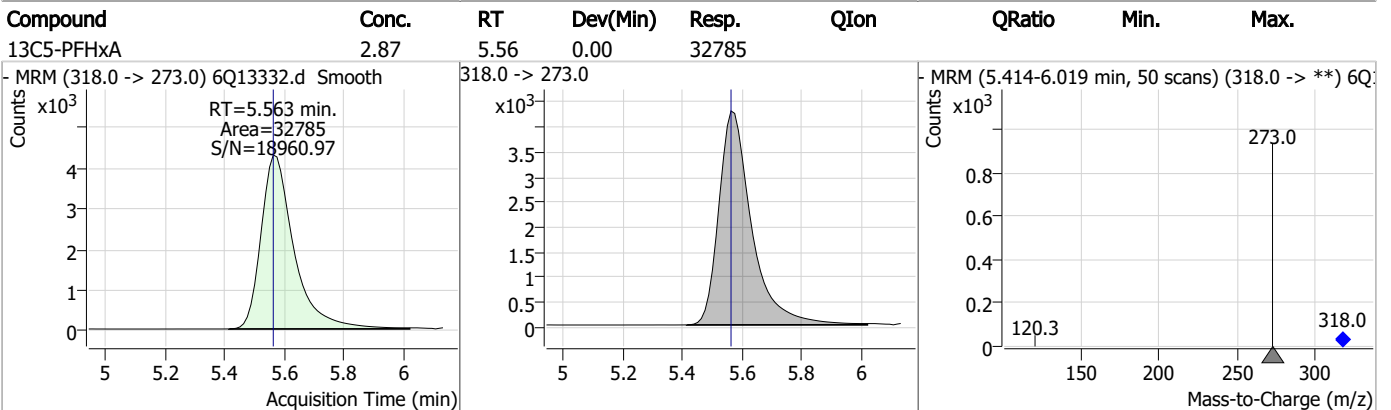
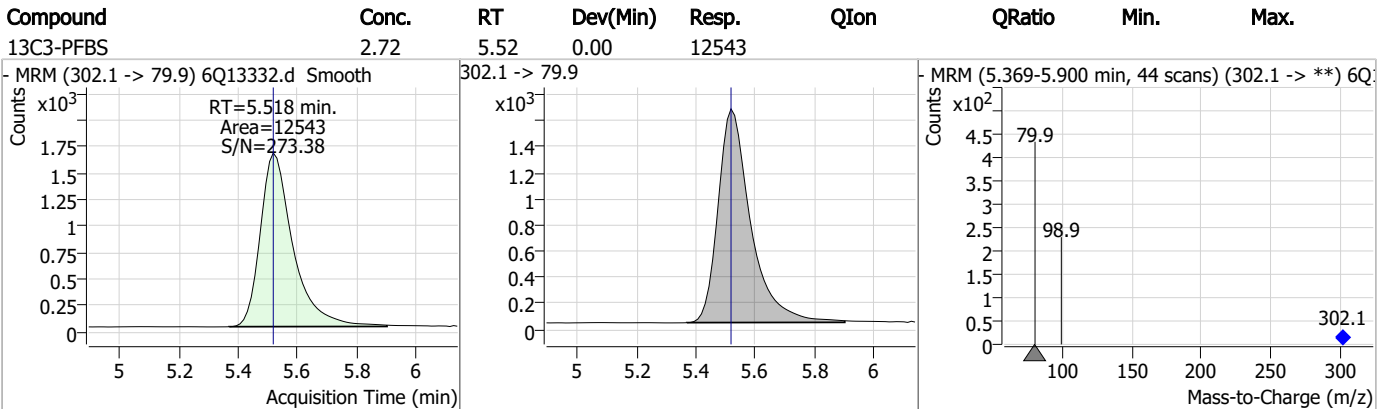
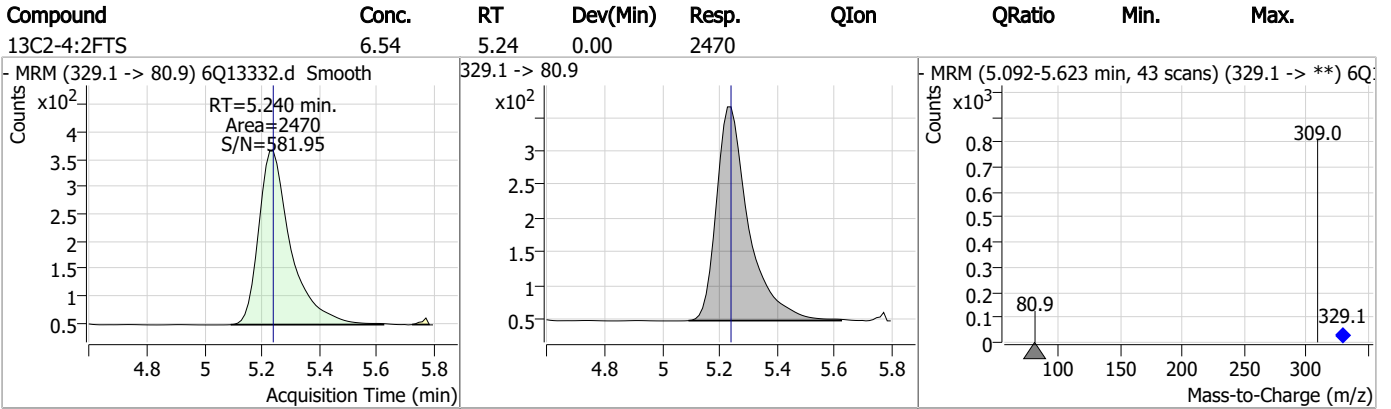
7.1.2  
7



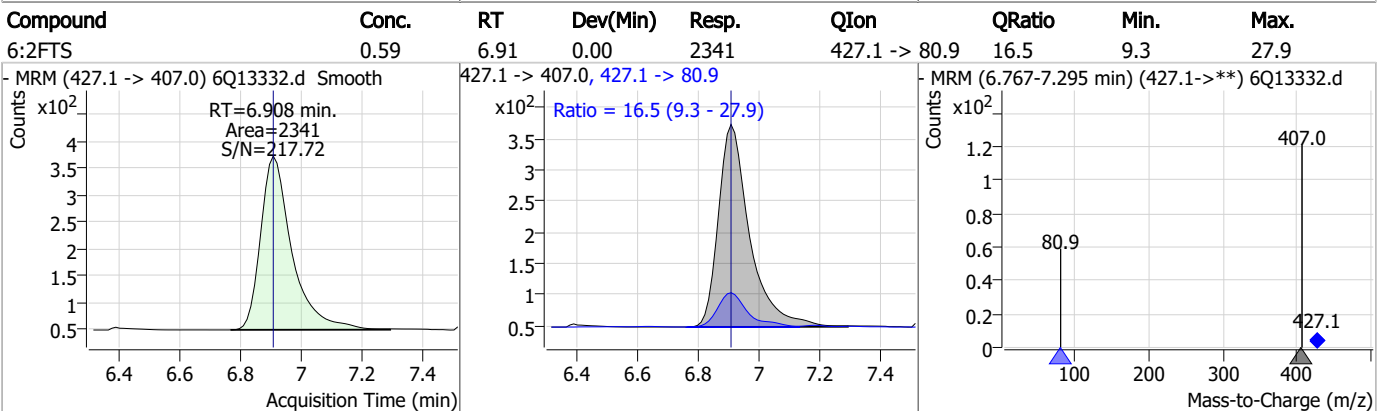
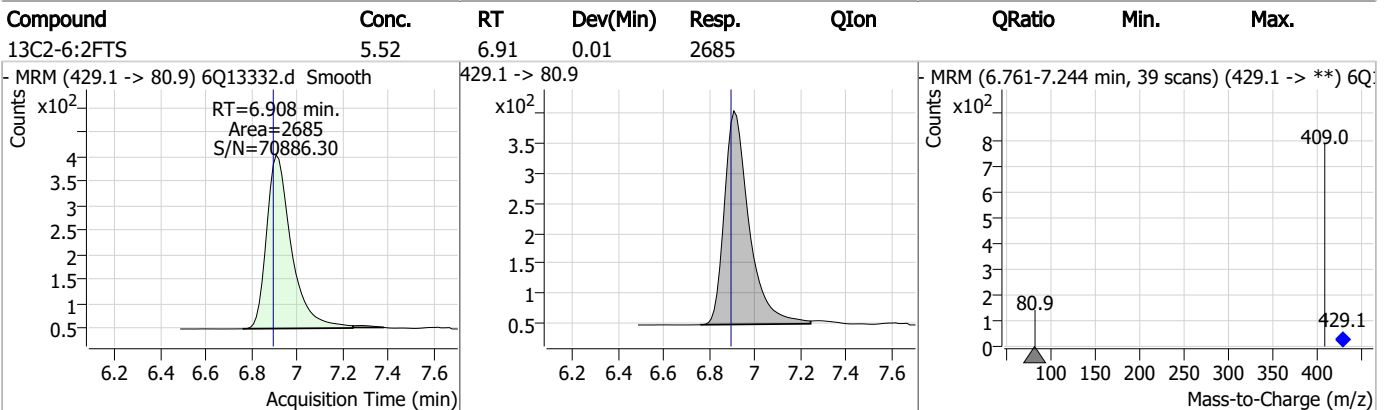
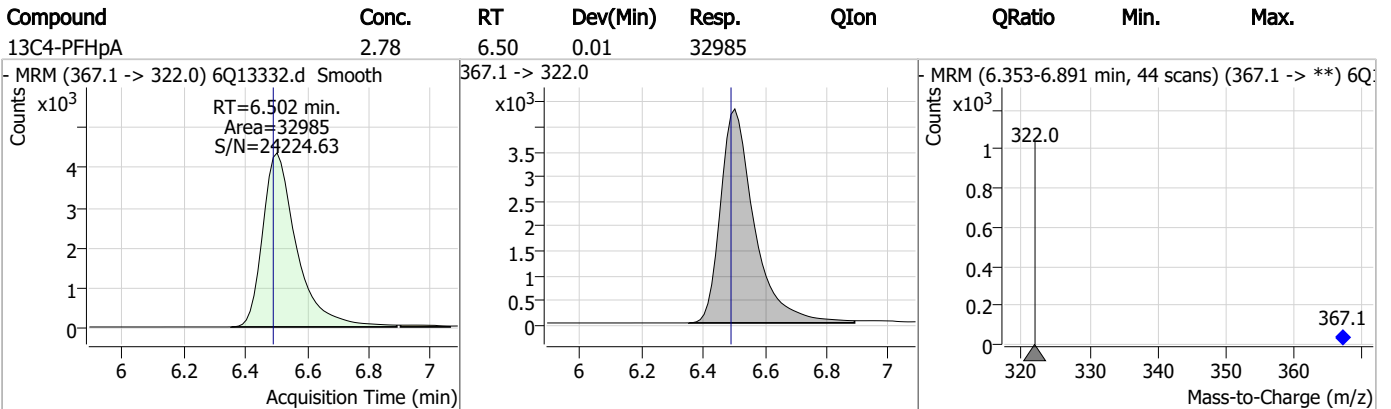
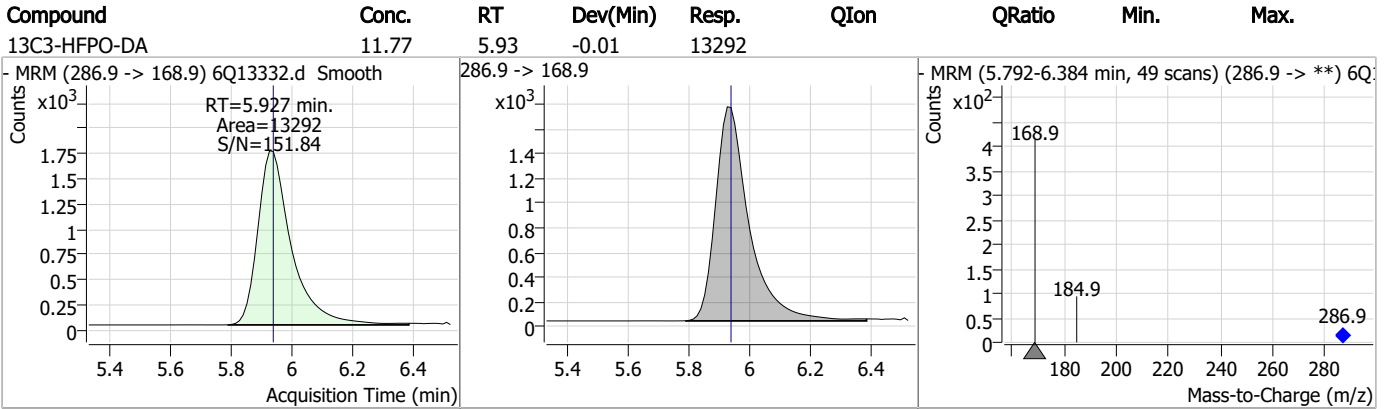
### Perfluorinated Compounds by LC/MS/MS



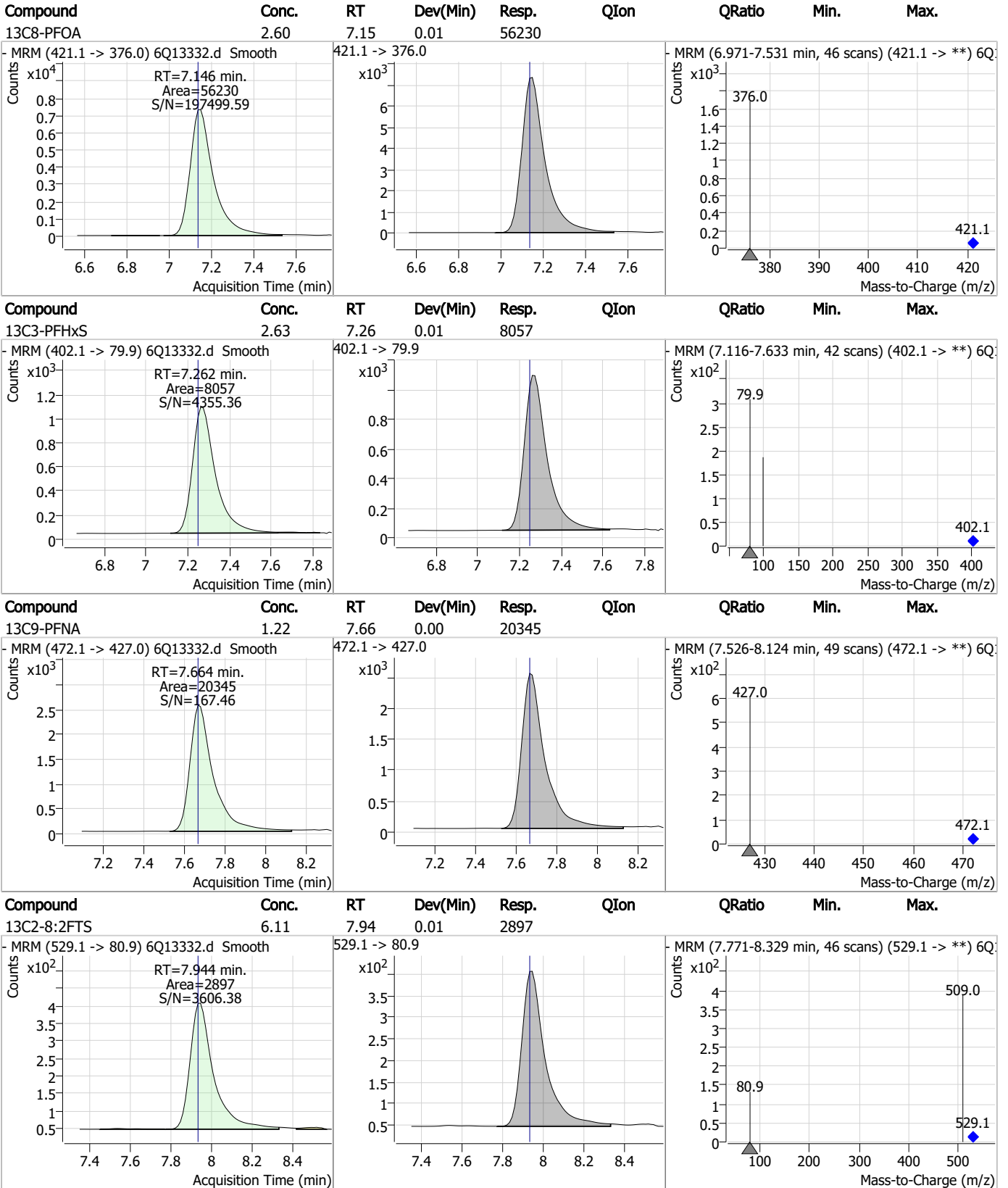
### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS



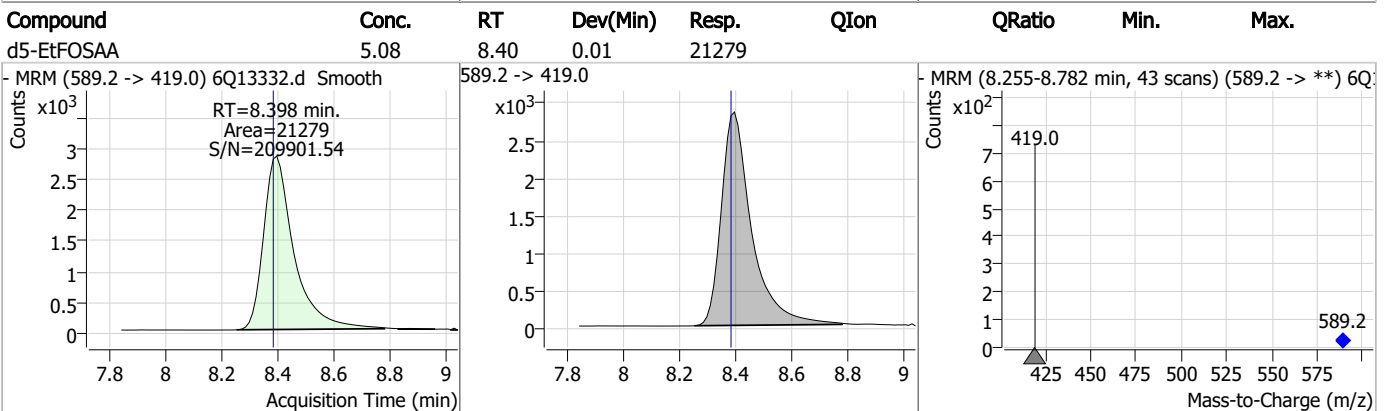
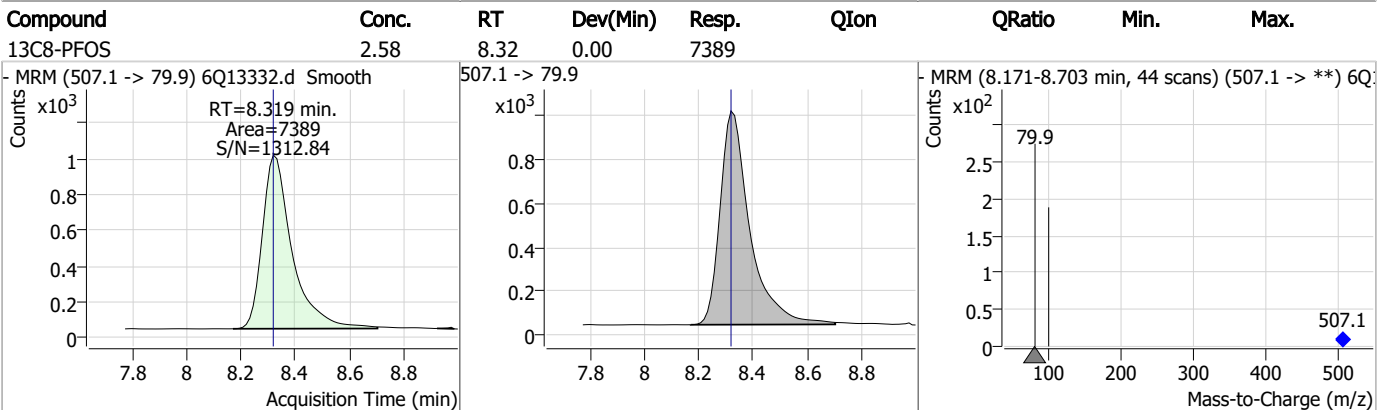
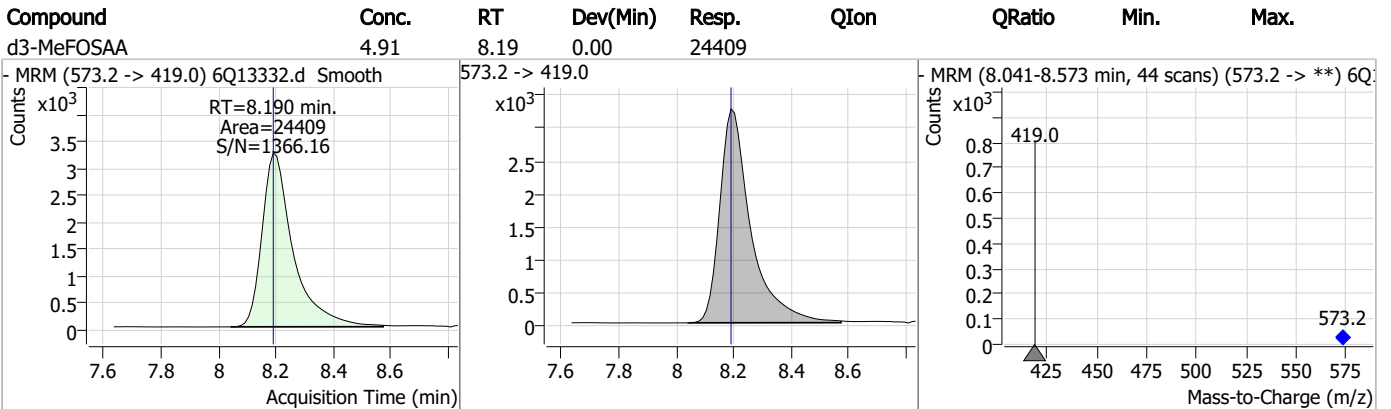
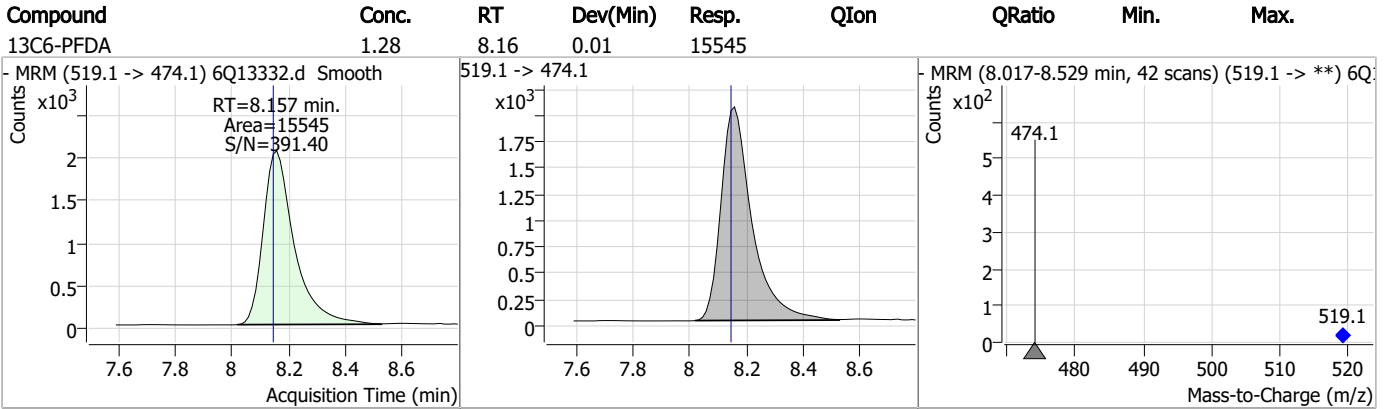
Perfluorinated Compounds by LC/MS/MS



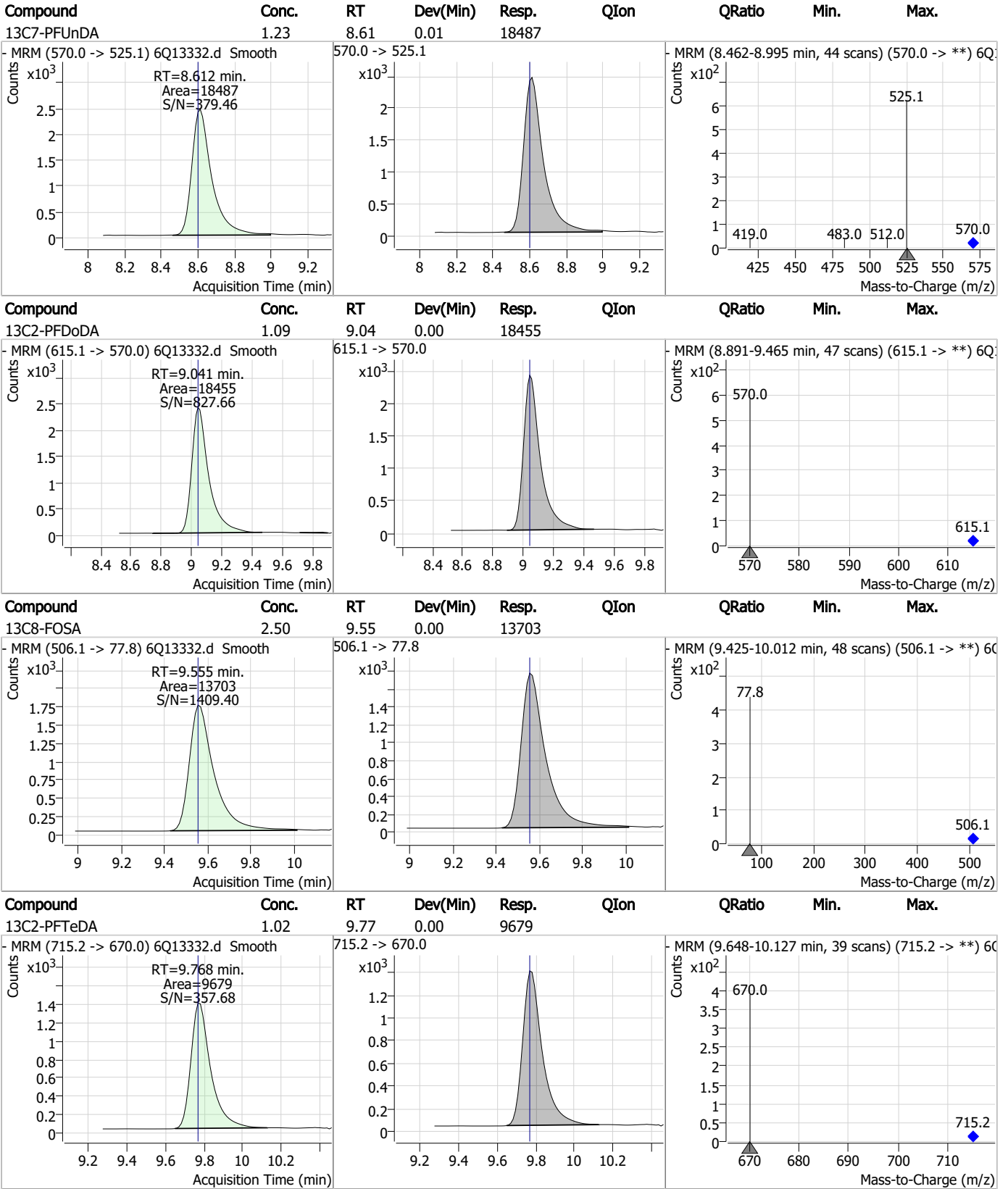
7.1.2

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Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS

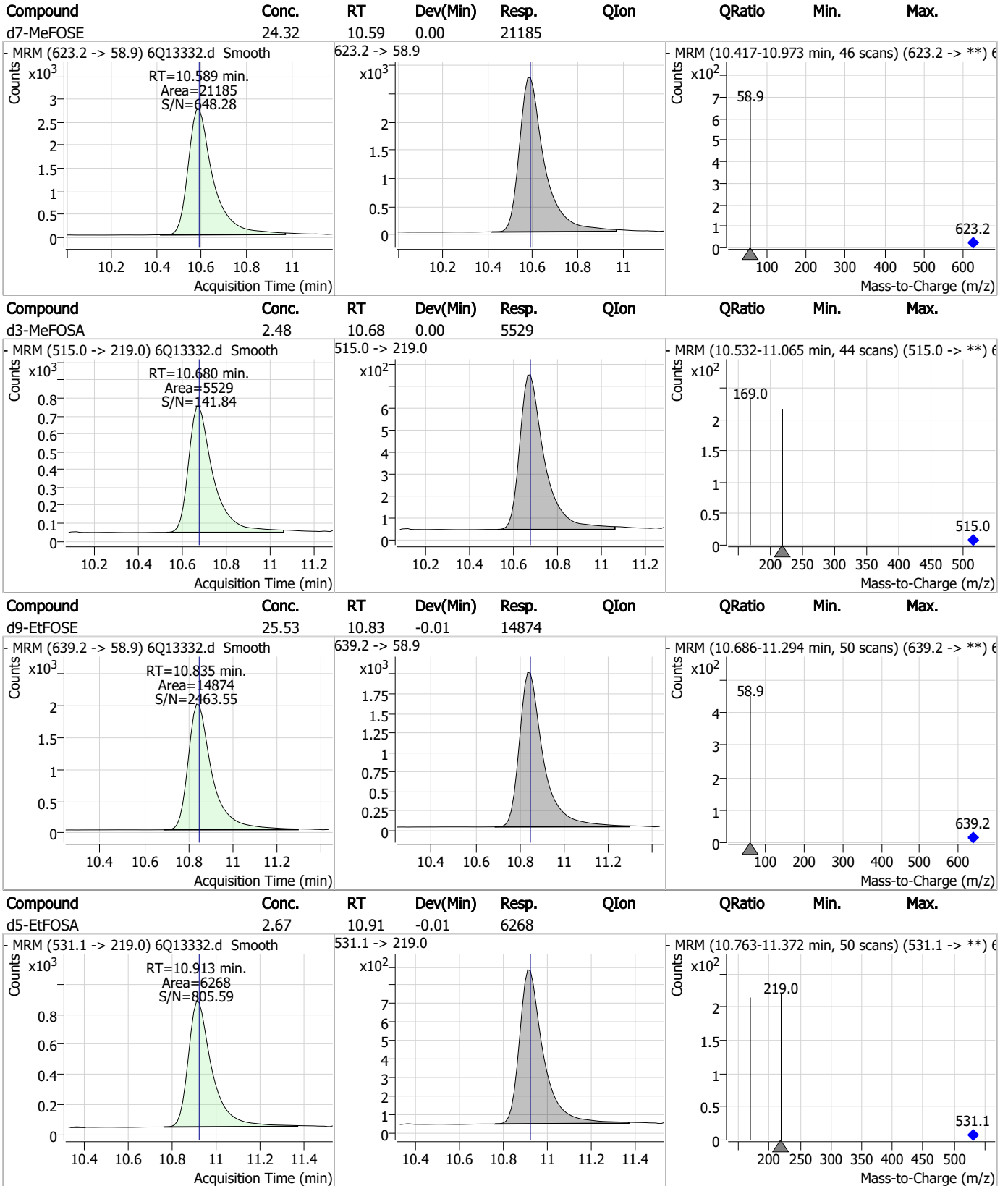


7.1.2

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### Perfluorinated Compounds by LC/MS/MS





Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13334.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 9:27:56 PM  
 Sample Name : FC2356-3  
 Vial : P1-D8  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95329,S6Q203,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.013	216.8 -> 171.9	79459	10.00 µg/L	0.012
M5-PFPeA	4.386	268.3 -> 223.0	38663	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	33796	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	35862	2.50 µg/L	0.012
M8-PFOA	7.146	421.1 -> 376.0	63034	2.50 µg/L	0.012
M9-PFNA	7.664	472.1 -> 427.0	20649	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	17185	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	20560	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	21617	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	9879	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	15448	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	13704	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	8844	2.50 µg/L	0.012
M8-PFOS	8.307	507.1 -> 79.9	6924	2.50 µg/L	-0.012
M2-4:2FTS	5.240	329.1 -> 80.9	2308	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	2472	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2514	5.00 µg/L	0.000
M3-MeFOSAA	8.178	573.2 -> 419.0	31964	5.00 µg/L	-0.012
M3-HFPO-DA	5.940	286.9 -> 168.9	14336	10.00 µg/L	0.000
M5-EtFOSAA	8.386	589.2 -> 419.0	30099	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	22872	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	15877	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	5644	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	5622	2.50 µg/L	0.000
13C4-PFOS	8.308	502.8 -> 79.9	7822	2.50 µg/L	-0.012
13C3-PFBA	3.004	216.0 -> 172.0	31529	5.00 µg/L	0.012
18O2-PFHxS	7.273	403.0 -> 83.9	6205	2.50 µg/L	0.012
13C4-PFOA	7.147	417.1 -> 372.0	67888	2.50 µg/L	0.012
13C2-PFDA	8.145	515.1 -> 470.1	21957	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	21770	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	30858	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2308	5.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.1%		
13C2-6:2FTS	6.908	429.1 -> 80.9	2472	4.66 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.3%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2514	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.2%		
13C2-PFDoDA	9.041	615.1 -> 570.0	21617	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-PFTeDA	9.768	715.2 -> 670.0	9879	1.02 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 81.2%		
13C3-PFBS	5.518	302.1 -> 79.9	13704	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C3-PFHxS	7.262	402.1 -> 79.9	8844	2.65 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C4-PFBA	3.013	216.8 -> 171.9	79459	11.29 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 112.9%		
13C4-PFHpA	6.502	367.1 -> 322.0	35862	2.77 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.9%		
13C5-PFHxA	5.563	318.0 -> 273.0	33796	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C5-PFPeA	4.386	268.3 -> 223.0	38663	5.48 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C6-PFDA	8.145	519.1 -> 474.1	17185	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.6%		
13C7-PFUnDA	8.612	570.0 -> 525.1	20560	1.34 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C8-FOSA	9.555	506.1 -> 77.8	15448	3.11 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 124.4%		
13C8-PFOA	7.146	421.1 -> 376.0	63034	2.78 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.1%		
13C8-PFOS	8.307	507.1 -> 79.9	6924	2.67 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.9%		
13C9-PFNA	7.664	472.1 -> 427.0	20649	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
d3-MeFOSAA	8.178	573.2 -> 419.0	31964	7.10 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 142.0%		
13C3-HFPO-DA	5.940	286.9 -> 168.9	14336	11.64 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 116.4%		
d3-MeFOSA	10.680	515.0 -> 219.0	5622	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.6%		
d5-EtFOSAA	8.386	589.2 -> 419.0	30099	7.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 158.8%		
d7-MeFOSE	10.589	623.2 -> 58.9	22872	29.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 116.0%		
d9-EtFOSE	10.835	639.2 -> 58.9	15877	30.11 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 120.4%		
d5-EtFOSA	10.913	531.1 -> 219.0	5644	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.1%		

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Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.908	427.1 -> 407.0	10171	2.76 µg/L	97
		427.1 -> 80.9	2040		
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	7.779	449.0 -> 79.9	0	µg/L	m	1
		449.0 -> 98.9	0			
PFHxA	5.578	313.0 -> 269.0	0	µg/L	m	1
		313.0 -> 118.9	0			
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	9.146	548.8 -> 79.9	0	µg/L	m	1
		548.8 -> 98.9	0			
PFOA	7.135	413.0 -> 369.0	0	µg/L	m	1
		413.0 -> 169.0	0			
PFOS	8.048	498.9 -> 79.9	0	µg/L	m	1
		498.9 -> 98.8	0			
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	9.311	713.1 -> 669.0	0	µg/L	m	1
		713.1 -> 168.9	0			
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

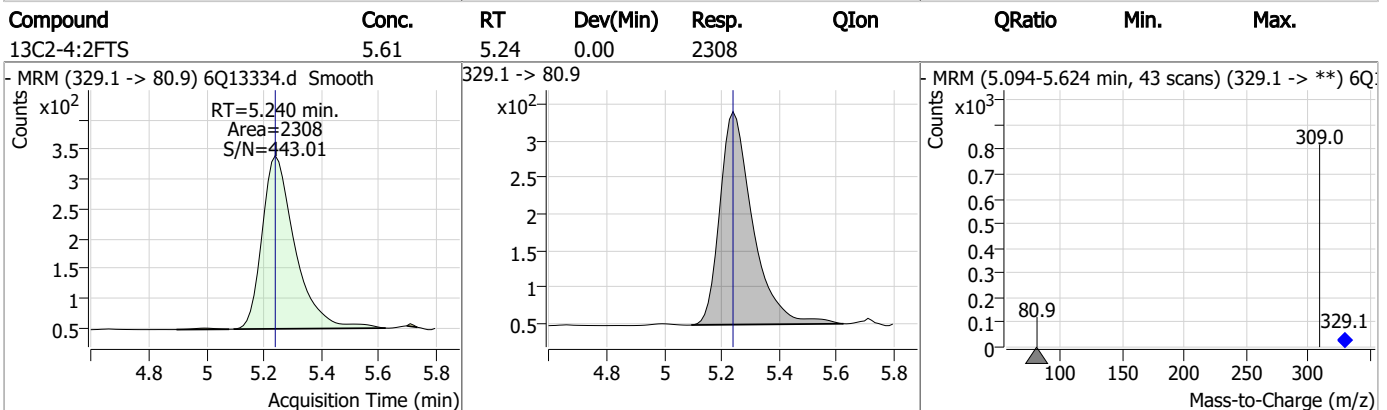
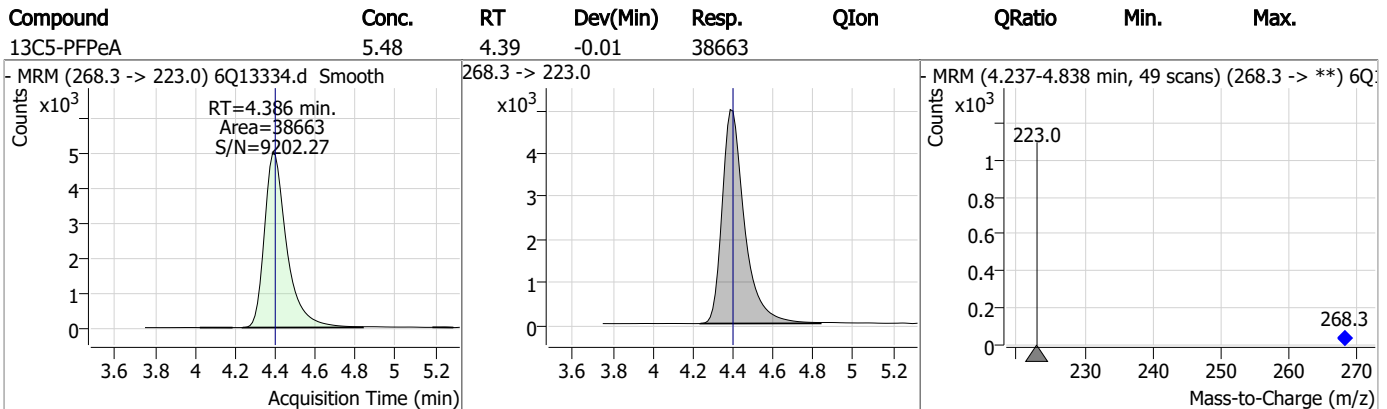
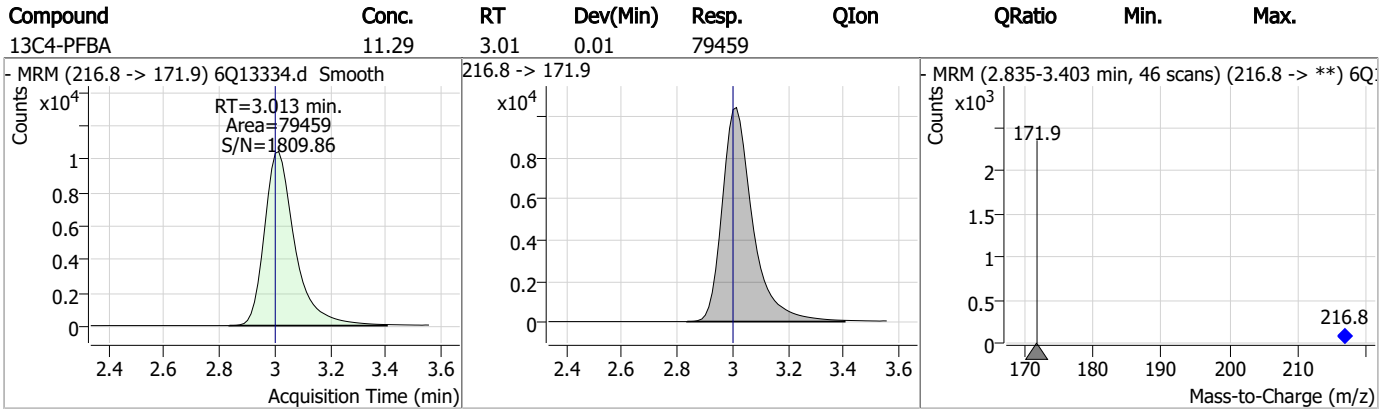
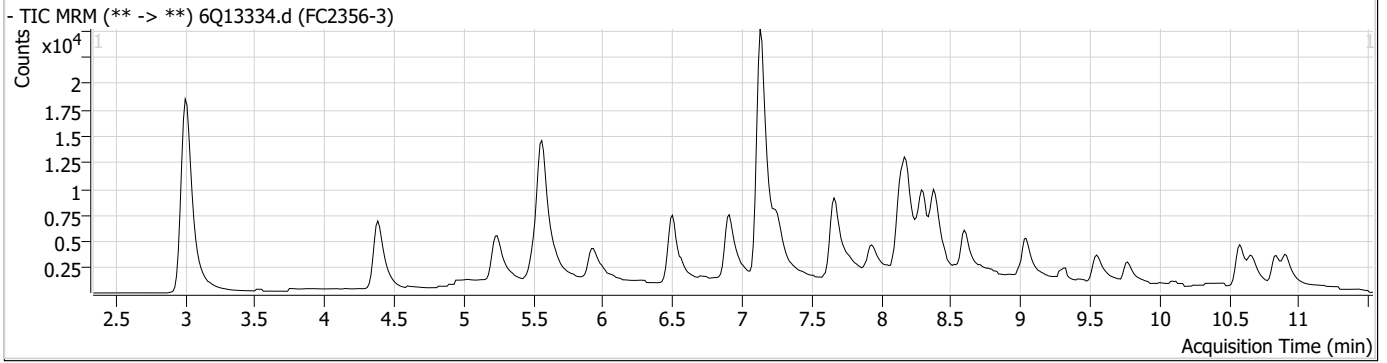
### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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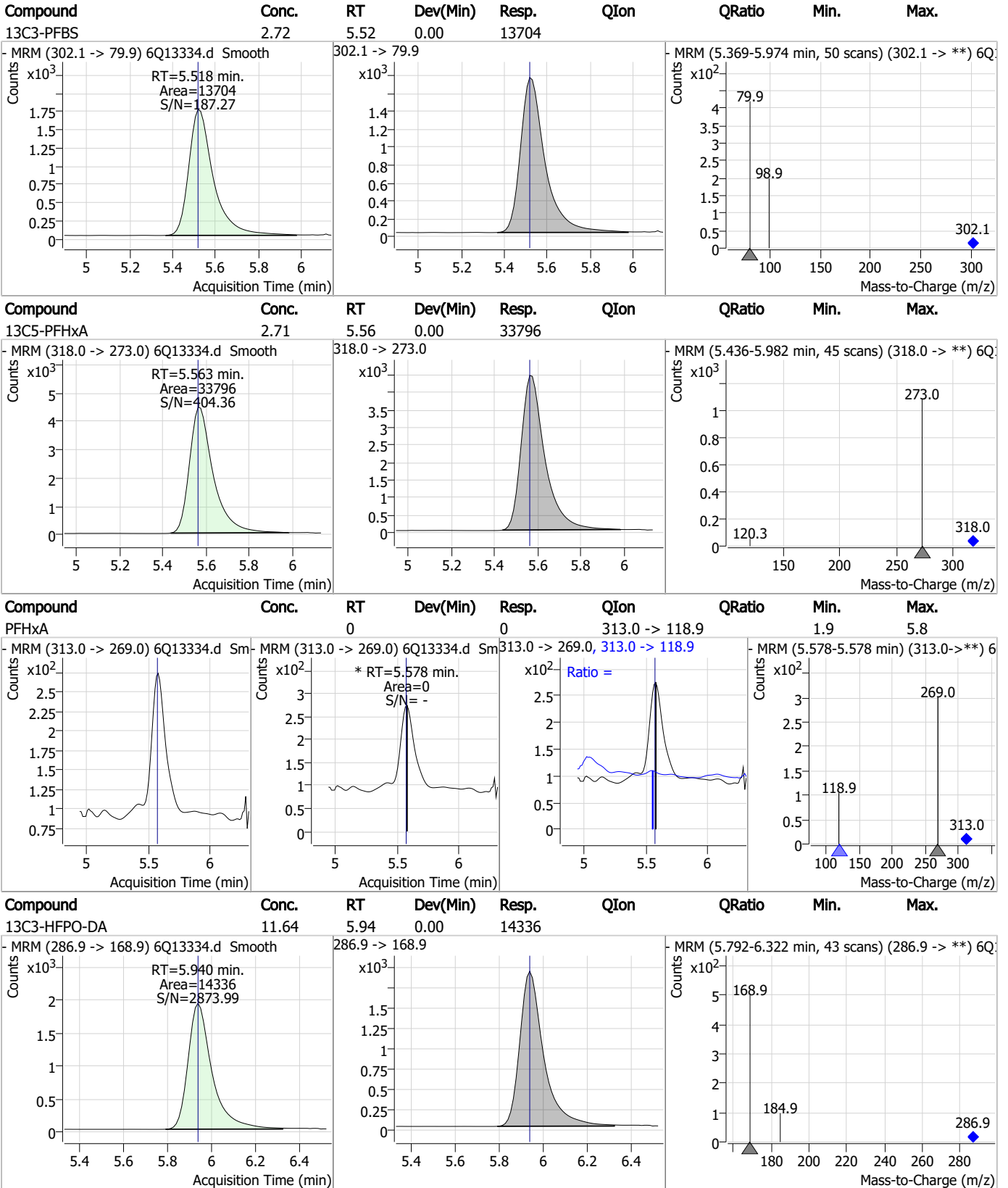
7.1.3  
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### Perfluorinated Compounds by LC/MS/MS



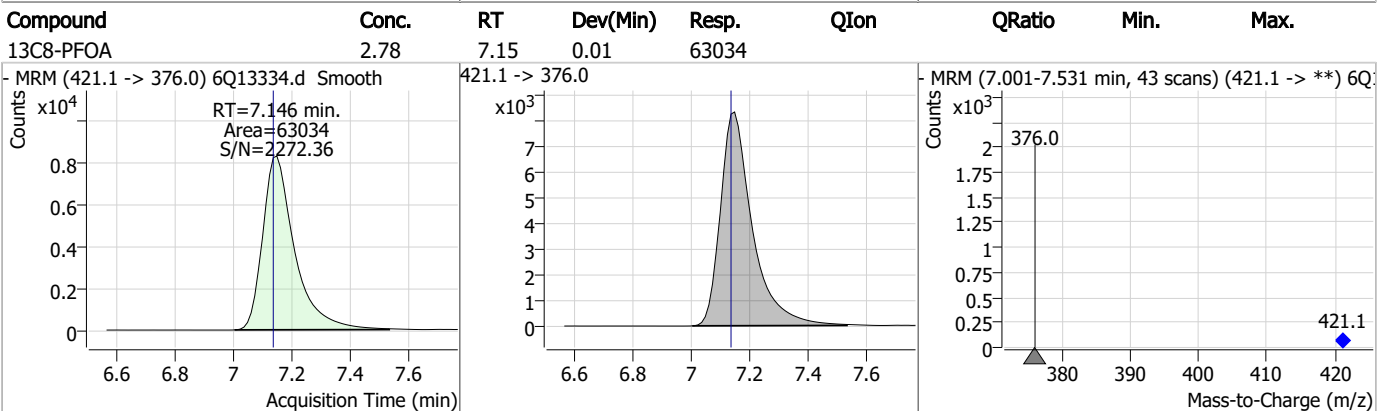
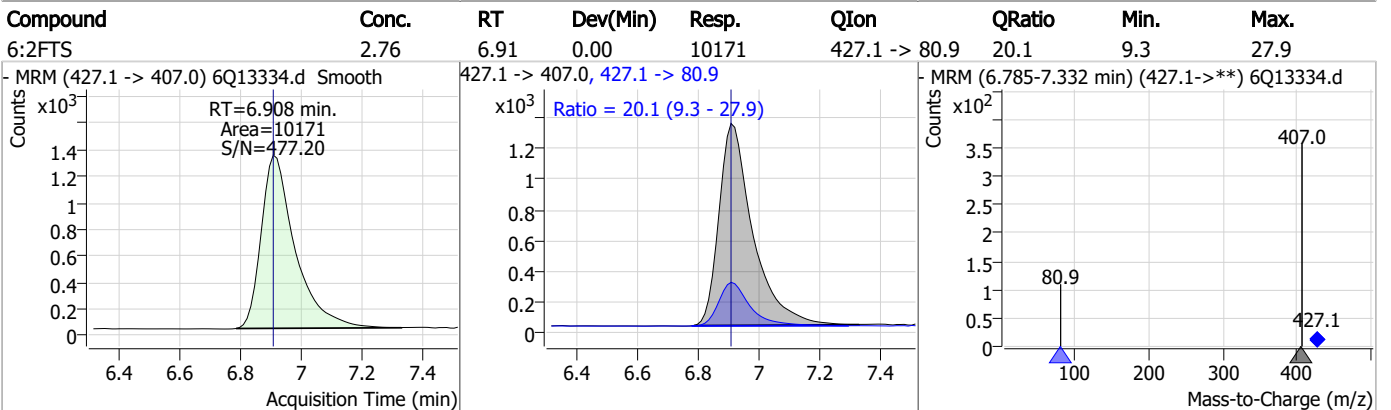
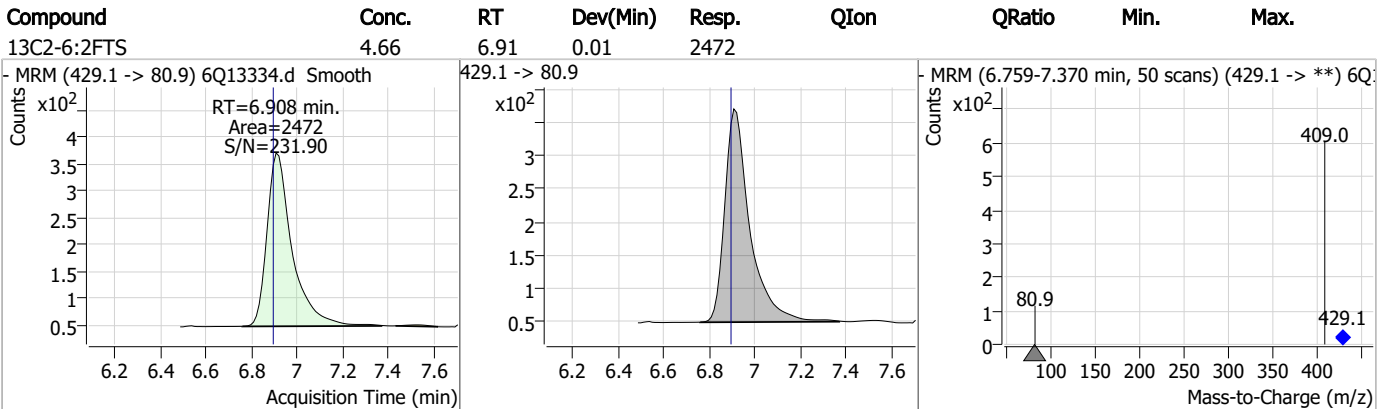
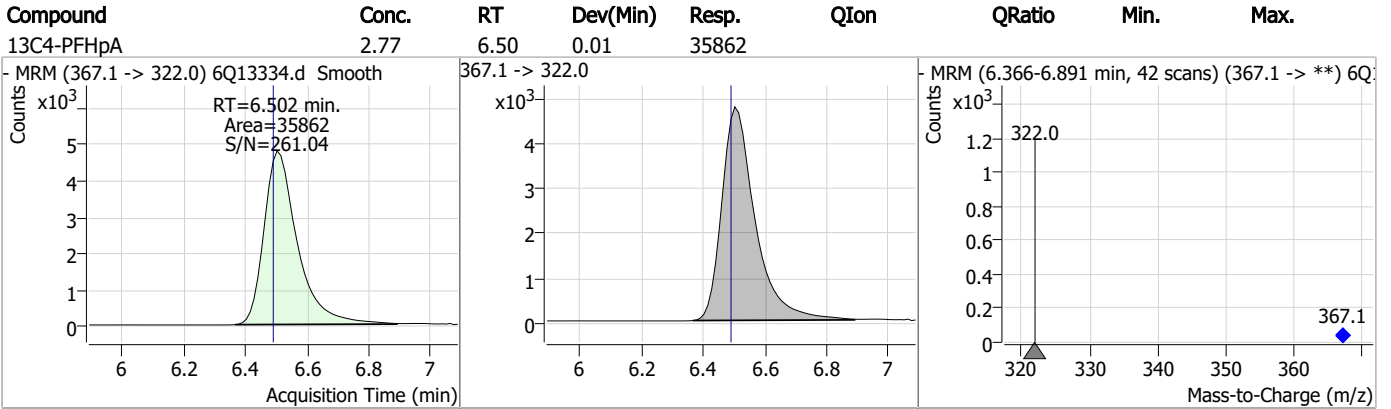
### Perfluorinated Compounds by LC/MS/MS



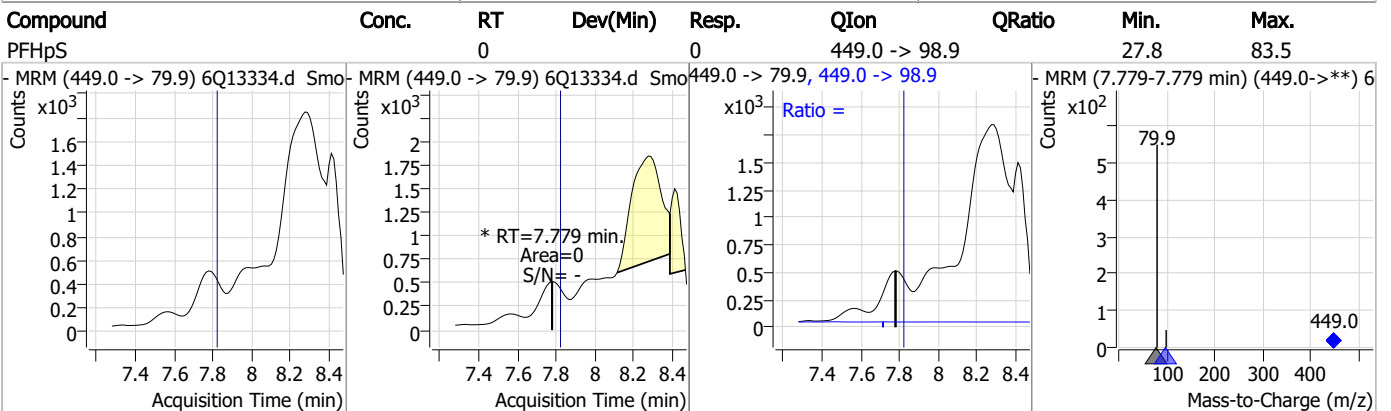
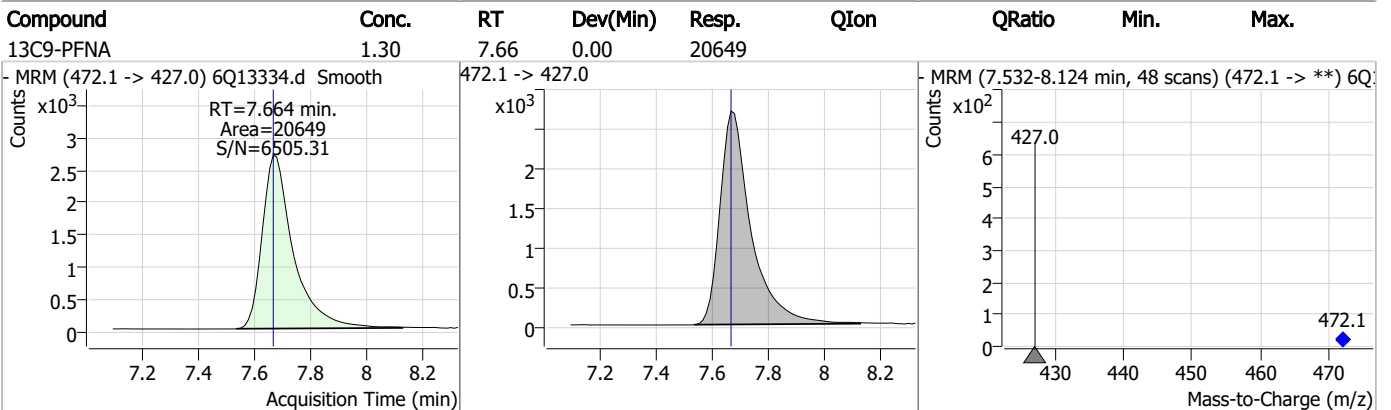
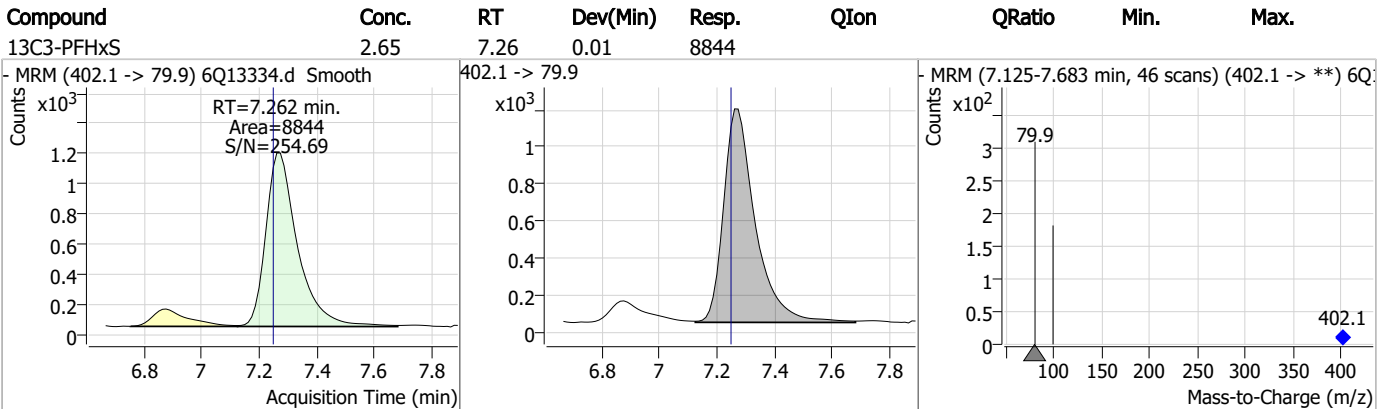
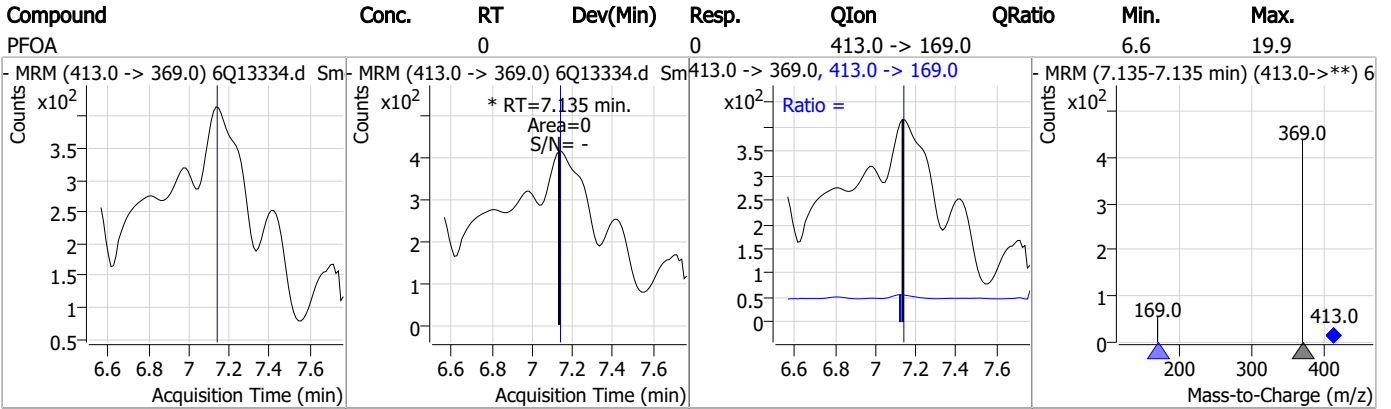
7.1.3

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### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS





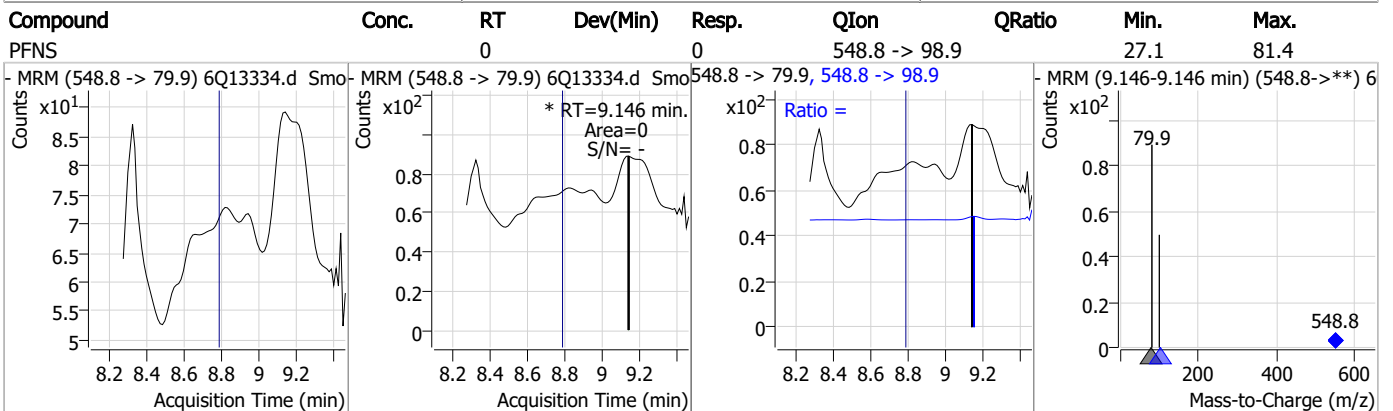
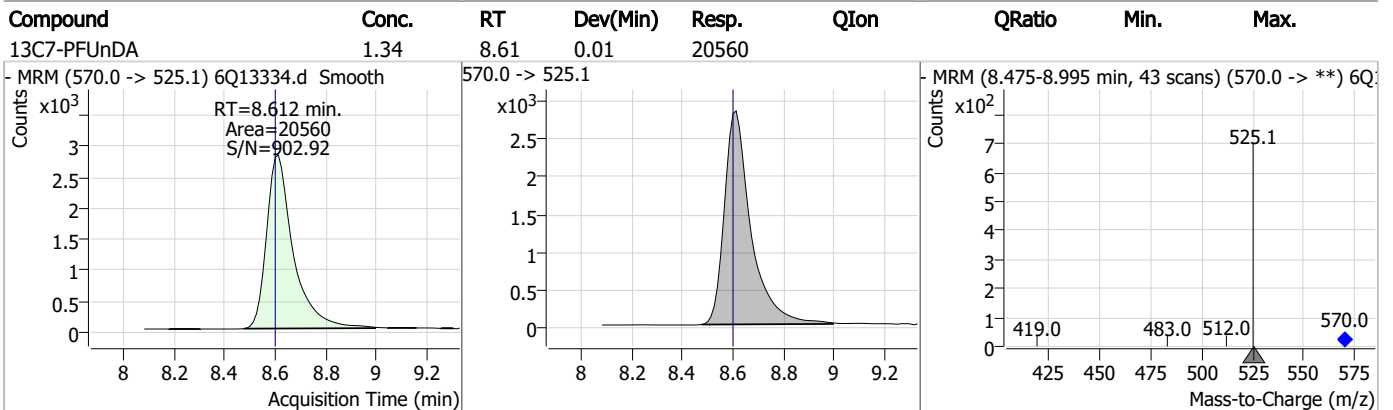
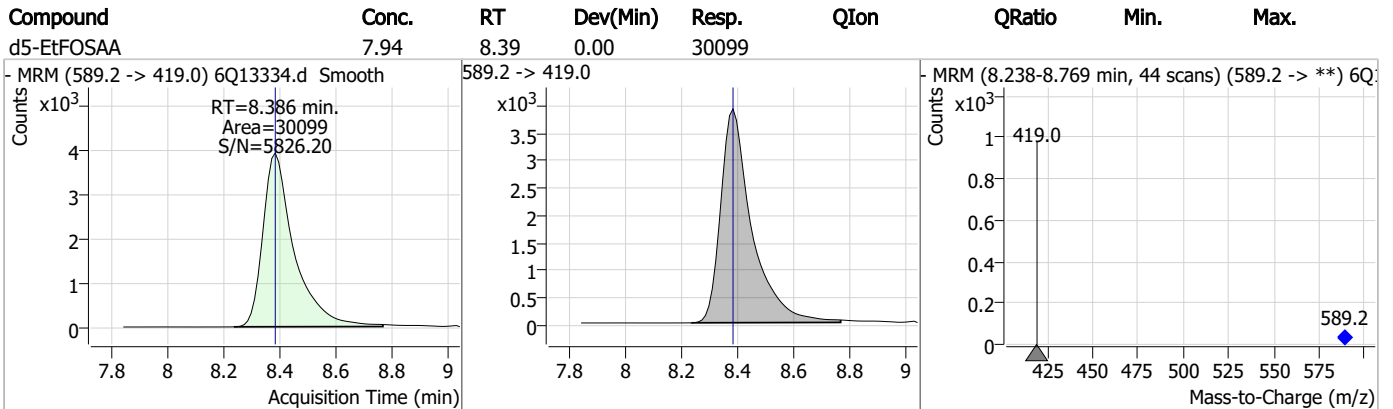
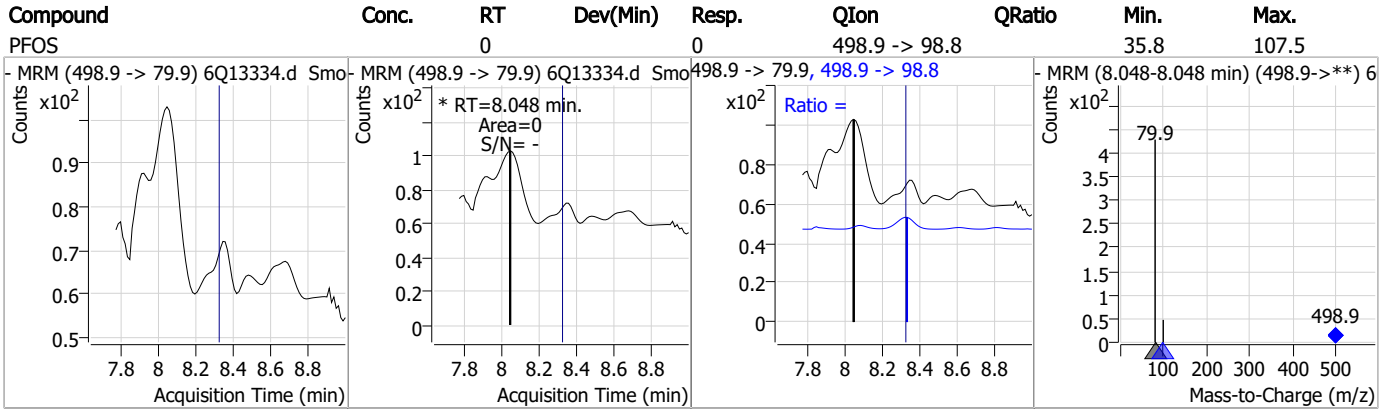
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.86	7.93	0.00	2514				
13C6-PFDA	1.38	8.15	0.00	17185				
d3-MeFOSAA	7.10	8.18	-0.01	31964				
13C8-PFOS	2.67	8.31	-0.01	6924				

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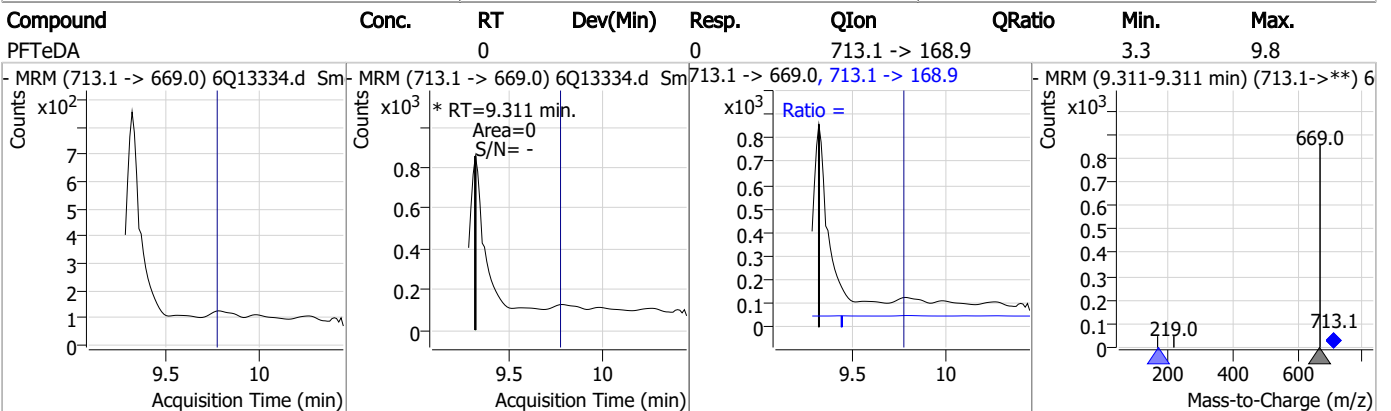
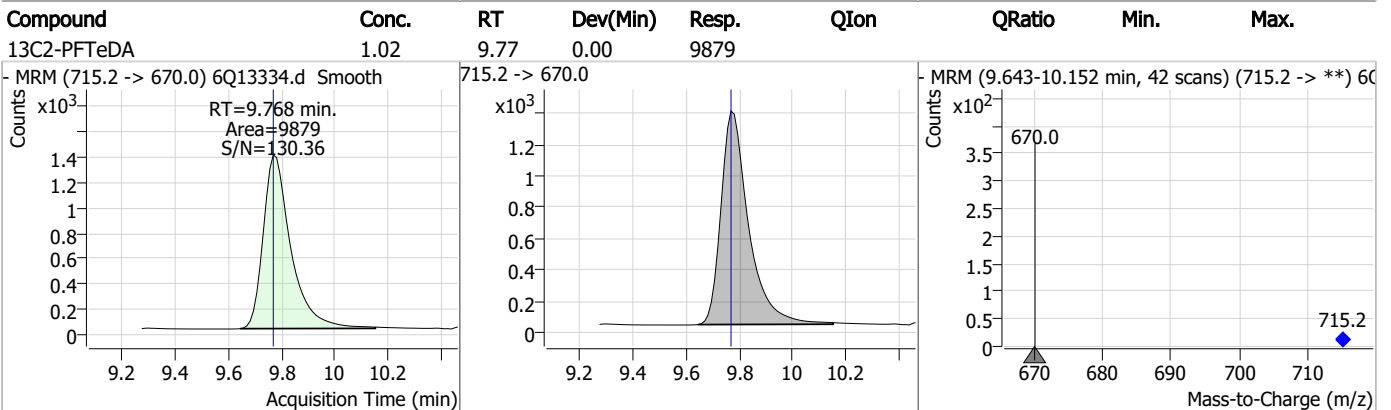
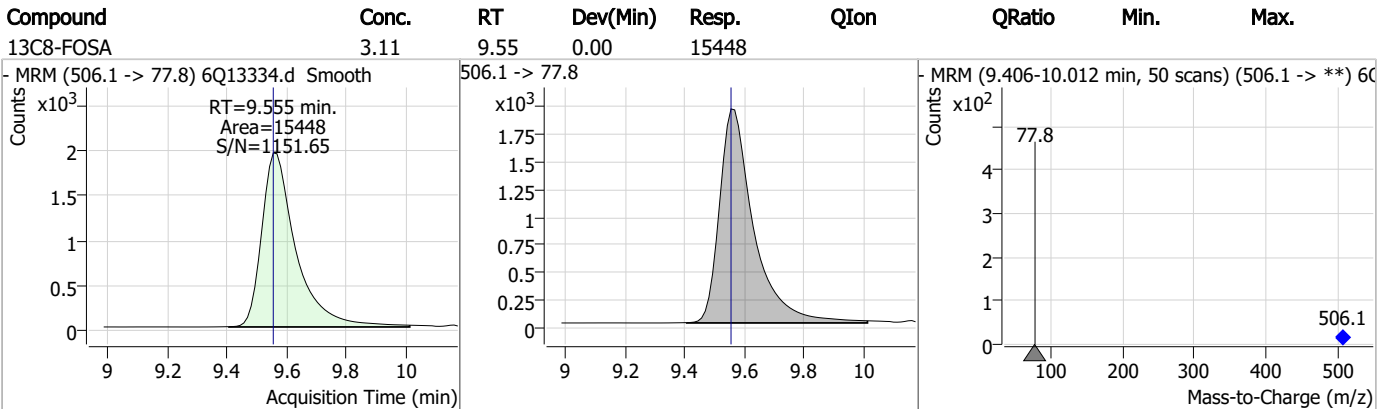
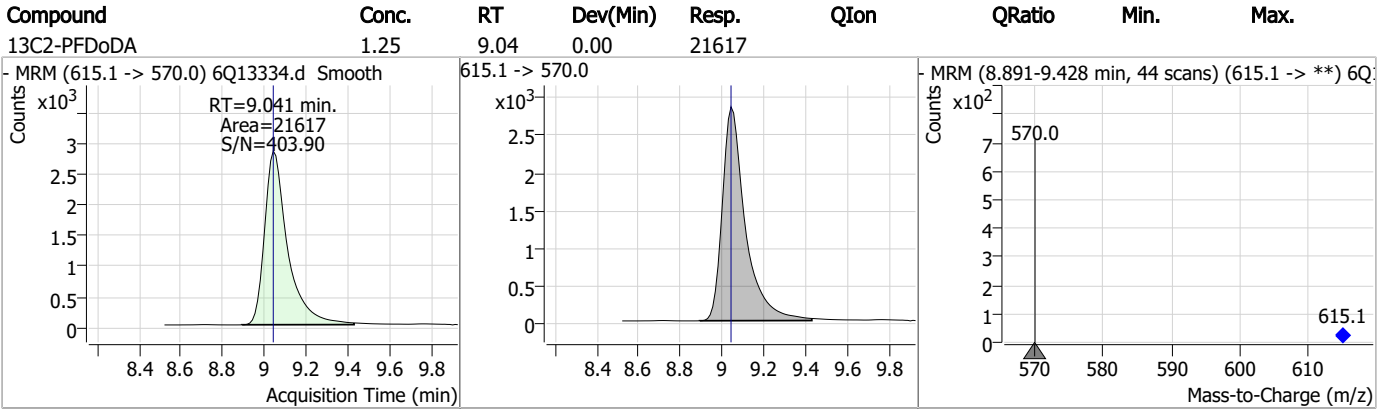
### Perfluorinated Compounds by LC/MS/MS



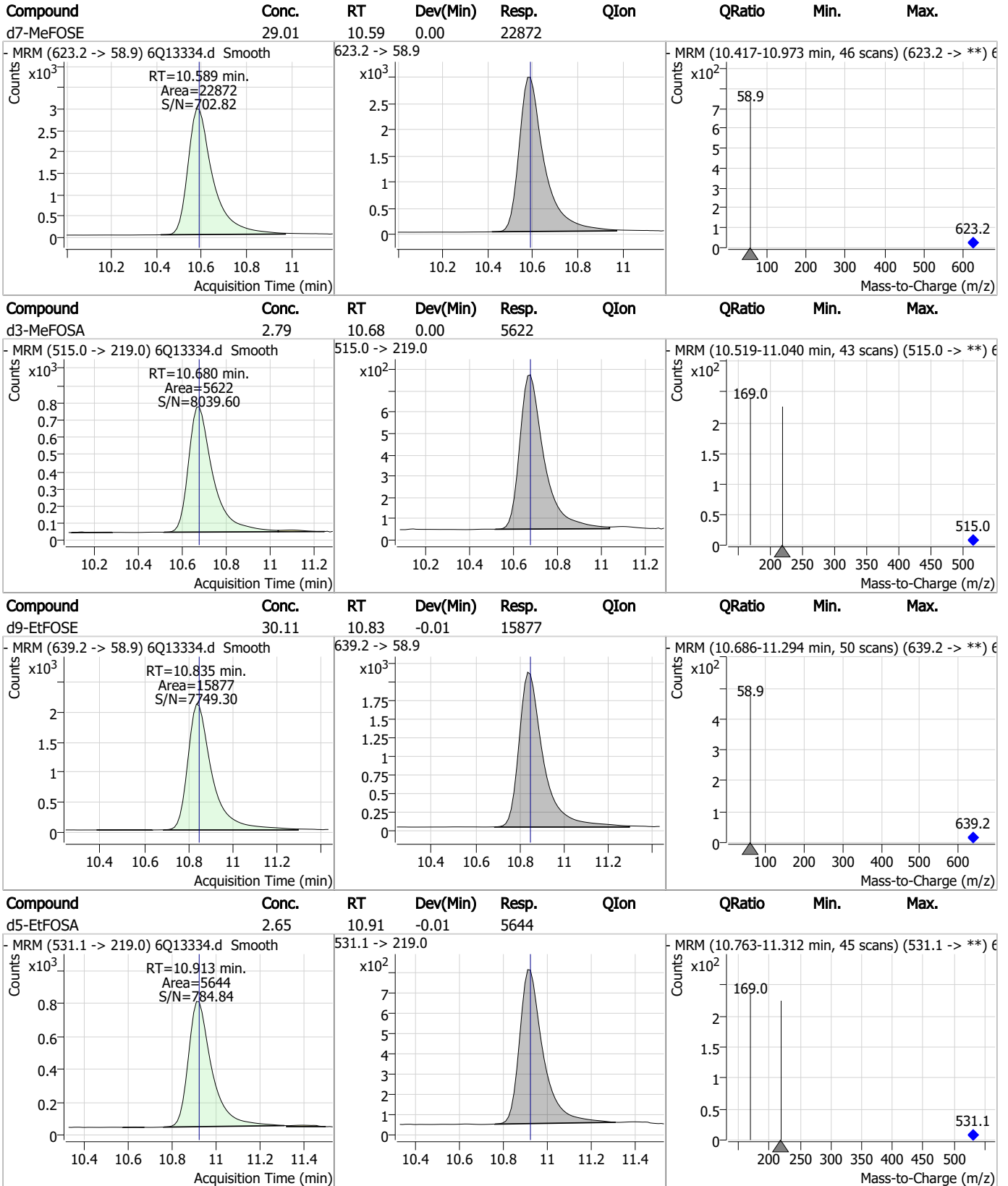
7.1.3

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### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13335.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 9:41:54 PM  
 Sample Name : FC2356-4  
 Vial : P1-D9  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95329,S6Q203,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.000	216.8 -> 171.9	75628	10.00 µg/L	0.000
M5-PFPeA	4.386	268.3 -> 223.0	36395	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	32566	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	33288	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	58472	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	20860	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	15531	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	17150	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	17480	1.25 µg/L	0.000
M2-PFTeDA	9.781	715.2 -> 670.0	10405	1.25 µg/L	0.012
M8-FOSA	9.567	506.1 -> 77.8	12710	2.50 µg/L	0.012
M3-PFBS	5.518	302.1 -> 79.9	12449	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	8313	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	7384	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2140	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	2584	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2348	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	24317	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	13706	10.00 µg/L	-0.012
M5-EtFOSAA	8.386	589.2 -> 419.0	19847	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	20909	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	13940	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	5567	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	5086	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	8343	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	30403	5.00 µg/L	0.012
18O2-PFHxS	7.261	403.0 -> 83.9	5321	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	63985	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	18899	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	20816	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	29001	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2140	6.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.3%		
13C2-6:2FTS	6.908	429.1 -> 80.9	2584	5.68 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2348	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C2-PFDoDA	9.041	615.1 -> 570.0	17480	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.6%		
13C2-PFTeDA	9.781	715.2 -> 670.0	10405	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C3-PFBS	5.518	302.1 -> 79.9	12449	2.88 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 115.4%		
13C3-PFHxS	7.262	402.1 -> 79.9	8313	2.90 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.2%	
13C4-PFBA	3.000	216.8 -> 171.9	75628	11.14 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C4-PFHpA	6.502	367.1 -> 322.0	33288	2.74 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C5-PFHxA	5.563	318.0 -> 273.0	32566	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.0%	
13C5-PFPeA	4.386	268.3 -> 223.0	36395	5.49 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C6-PFDA	8.145	519.1 -> 474.1	15531	1.45 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.1%	
13C7-PFUnDA	8.612	570.0 -> 525.1	17150	1.30 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C8-FOSA	9.567	506.1 -> 77.8	12710	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-PFOA	7.134	421.1 -> 376.0	58472	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C8-PFOS	8.319	507.1 -> 79.9	7384	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C9-PFNA	7.664	472.1 -> 427.0	20860	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.9%	
d3-MeFOSAA	8.190	573.2 -> 419.0	24317	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	13706	11.84 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.4%	
d3-MeFOSA	10.680	515.0 -> 219.0	5086	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
d5-EtFOSAA	8.386	589.2 -> 419.0	19847	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d7-MeFOSE	10.589	623.2 -> 58.9	20909	24.86 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d9-EtFOSE	10.835	639.2 -> 58.9	13940	24.78 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
d5-EtFOSA	10.925	531.1 -> 219.0	5567	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	

7.14  
7

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



Perfluorinated Compounds by LC/MS/MS

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

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

7.1.4  
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### Perfluorinated Compounds by LC/MS/MS

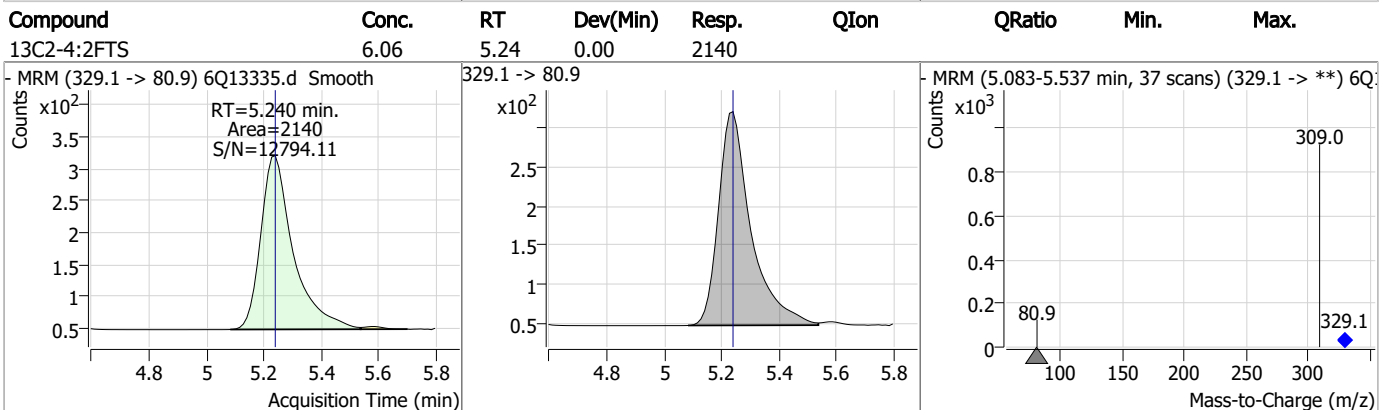
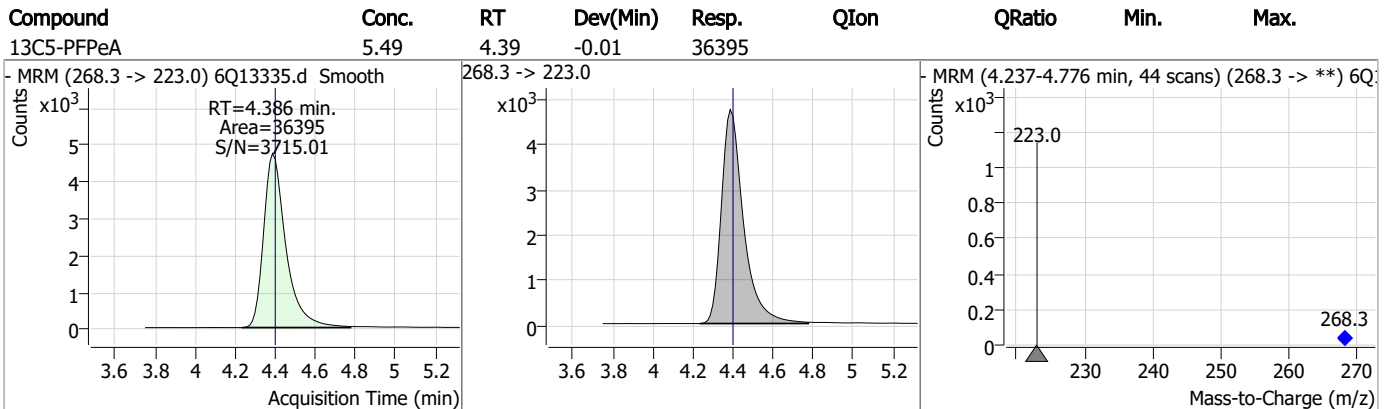
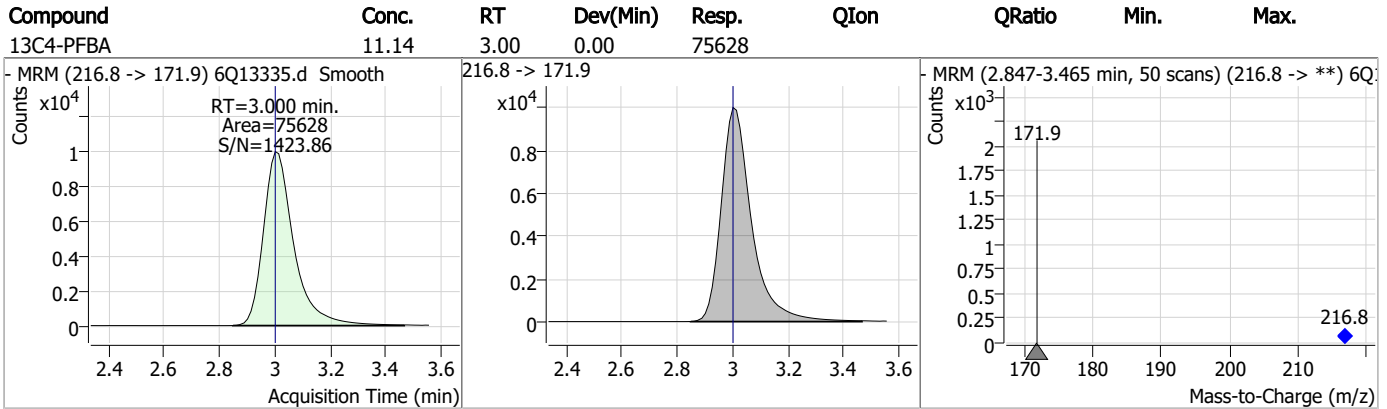
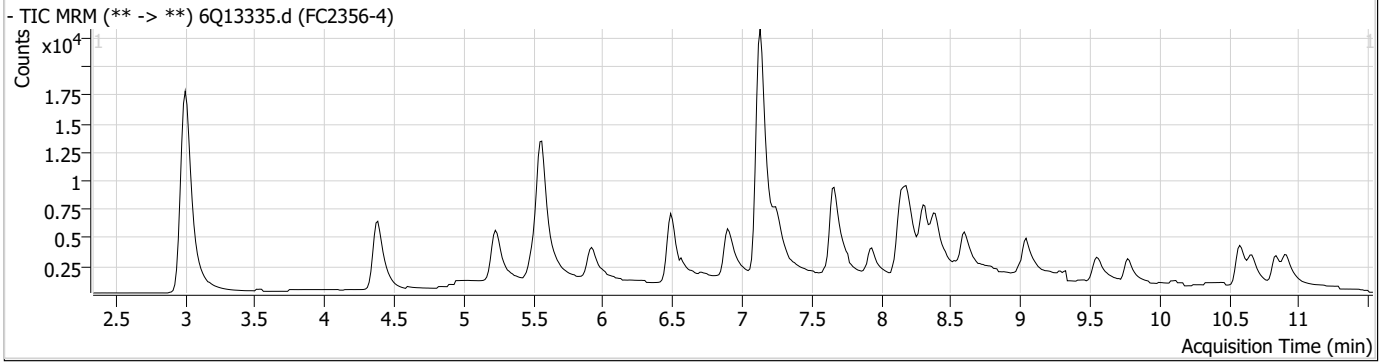
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.1.4  
7





### Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.88	5.52	0.00	12449				
13C5-PFHxA	2.78	5.56	0.00	32566				
13C3-HFPO-DA	11.84	5.93	-0.01	13706				
13C4-PFHpA	2.74	6.50	0.01	33288				

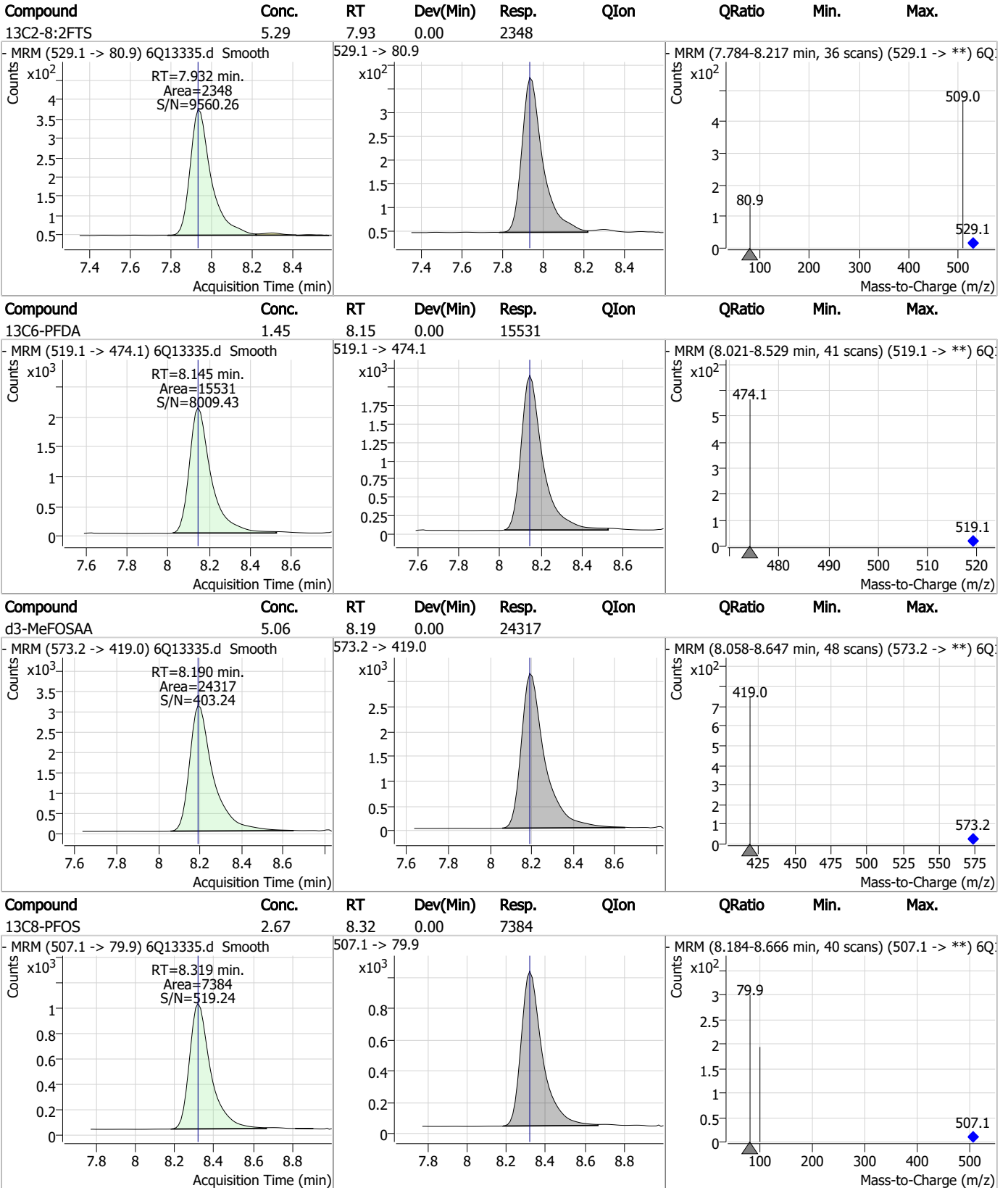
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.68	6.91	0.01	2584				
13C8-PFOA	2.73	7.13	0.00	58472				
13C3-PFHxS	2.90	7.26	0.01	8313				
13C9-PFNA	1.37	7.66	0.00	20860				

7.1.4

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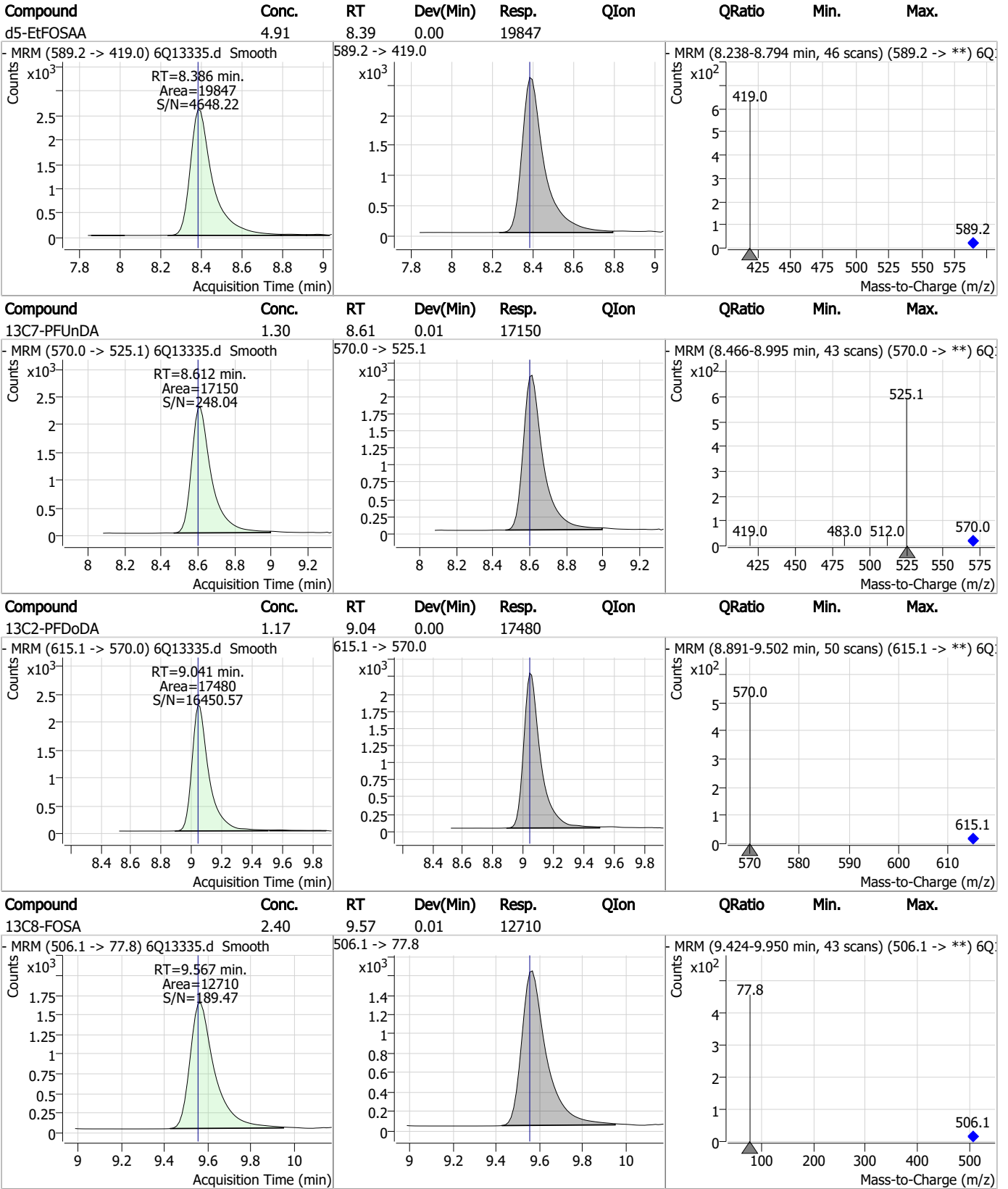
Perfluorinated Compounds by LC/MS/MS



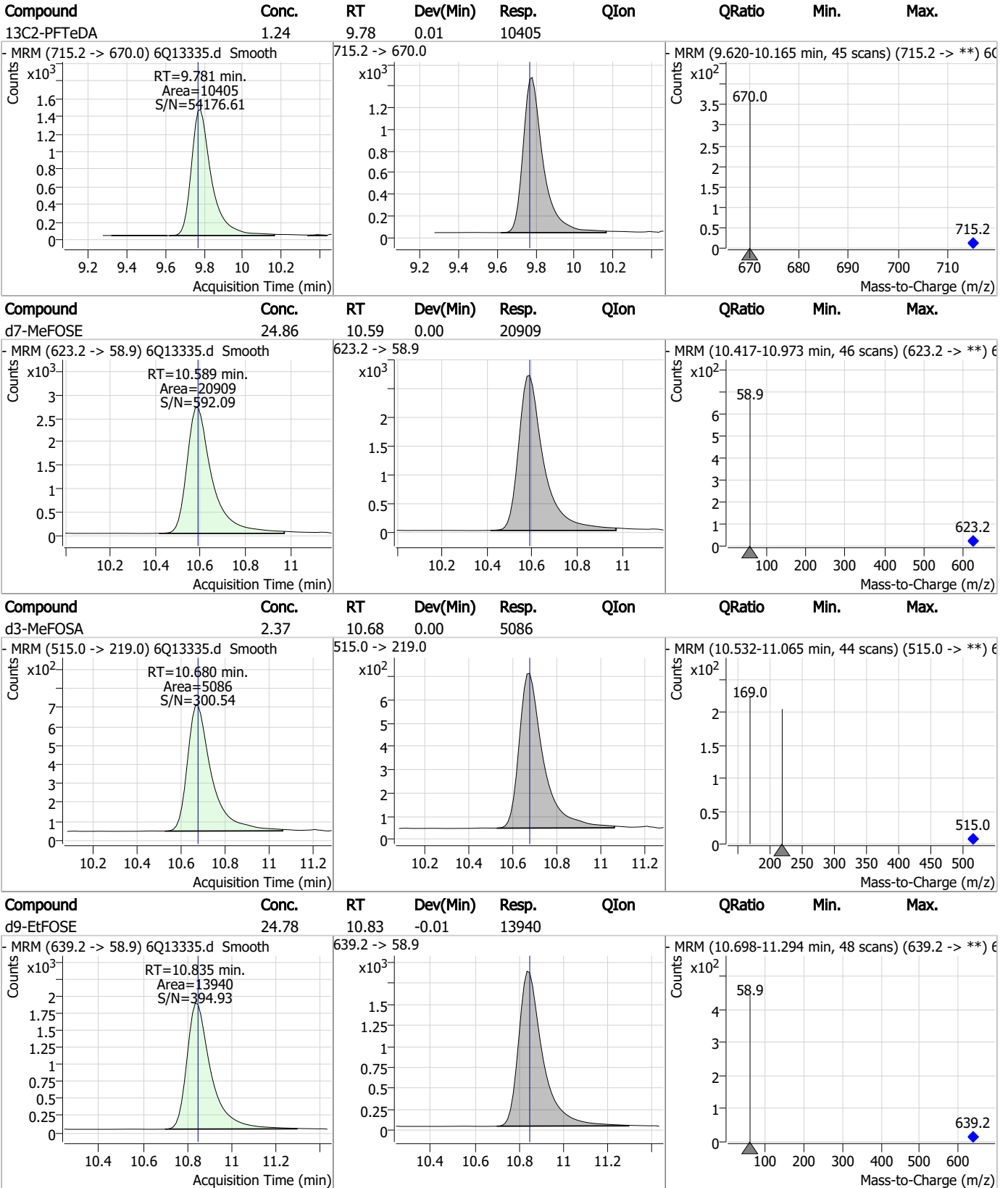
7.1.4

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### Perfluorinated Compounds by LC/MS/MS



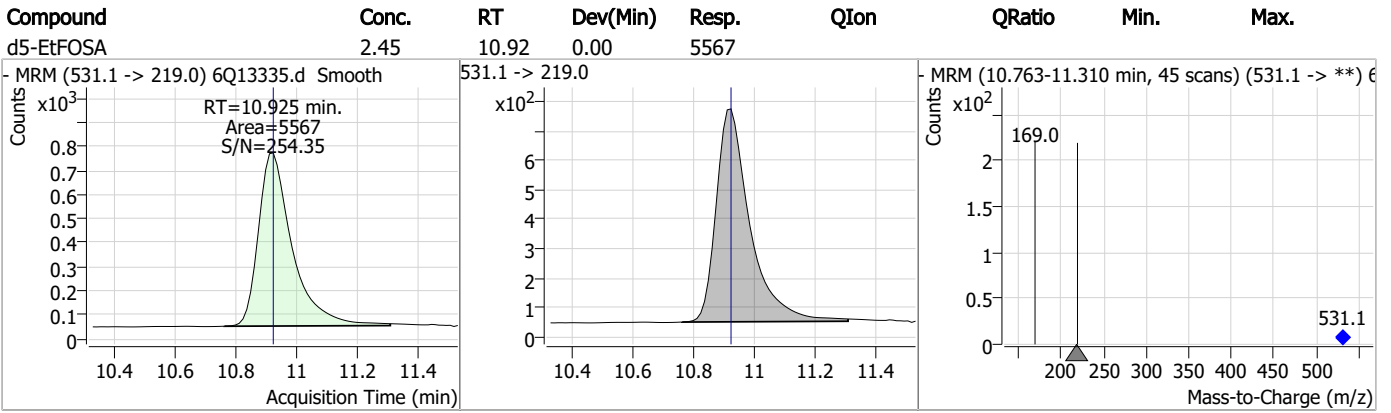
Perfluorinated Compounds by LC/MS/MS



7.1.4

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### Perfluorinated Compounds by LC/MS/MS



7.1.4

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### Perfluorinated Compounds by LC/MS/MS

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 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 8:17:59 PM  
 Sample Name : op95329-mb  
 Vial : P1-D3  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95329,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.000	216.8 -> 171.9	79548	10.00 µg/L	0.000
M5-PFPeA	4.386	268.3 -> 223.0	38653	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	33904	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	35534	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	61933	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	22016	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	17369	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	19106	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	19510	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	9659	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	14220	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	12509	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	8420	2.50 µg/L	0.012
M8-PFOS	8.320	507.1 -> 79.9	8381	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2521	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	3221	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2907	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	29006	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	13871	10.00 µg/L	0.000
M5-EtFOSAA	8.398	589.2 -> 419.0	20613	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	21106	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	14771	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	5422	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	5058	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	9965	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	33103	5.00 µg/L	0.012
18O2-PFHxS	7.261	403.0 -> 83.9	6122	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	72444	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	20954	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	22481	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	31878	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2521	6.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.1%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3221	6.16 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.2%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2907	5.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.9%		
13C2-PFDoDA	9.041	615.1 -> 570.0	19510	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.2%		
13C2-PFTeDA	9.768	715.2 -> 670.0	9659	1.04 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 83.2%		
13C3-PFBS	5.518	302.1 -> 79.9	12509	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFHxS	7.262	402.1 -> 79.9	8420	2.56 µg/L	0.012

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

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C4-PFBA	3.000	216.8 -> 171.9	79548	10.77 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
13C4-PFHpA	6.502	367.1 -> 322.0	35534	2.66 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C5-PFHxA	5.563	318.0 -> 273.0	33904	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C5-PFPeA	4.386	268.3 -> 223.0	38653	5.31 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C6-PFDA	8.145	519.1 -> 474.1	17369	1.46 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C7-PFUnDA	8.612	570.0 -> 525.1	19106	1.31 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C8-FOSA	9.555	506.1 -> 77.8	14220	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.9%	
13C8-PFOA	7.134	421.1 -> 376.0	61933	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C8-PFOS	8.320	507.1 -> 79.9	8381	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C9-PFNA	7.664	472.1 -> 427.0	22016	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.4%	
d3-MeFOSAA	8.190	573.2 -> 419.0	29006	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C3-HFPO-DA	5.940	286.9 -> 168.9	13871	10.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.0%	
d3-MeFOSA	10.680	515.0 -> 219.0	5058	1.97 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 78.8%	
d5-EtFOSAA	8.398	589.2 -> 419.0	20613	4.27 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 85.4%	
d7-MeFOSE	10.589	623.2 -> 58.9	21106	21.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.0%	
d9-EtFOSE	10.835	639.2 -> 58.9	14771	21.99 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.9%	
d5-EtFOSA	10.925	531.1 -> 219.0	5422	2.00 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.1%	

**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.	



7.2.1  
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Perfluorinated Compounds by LC/MS/MS

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

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

7.2.1  
7

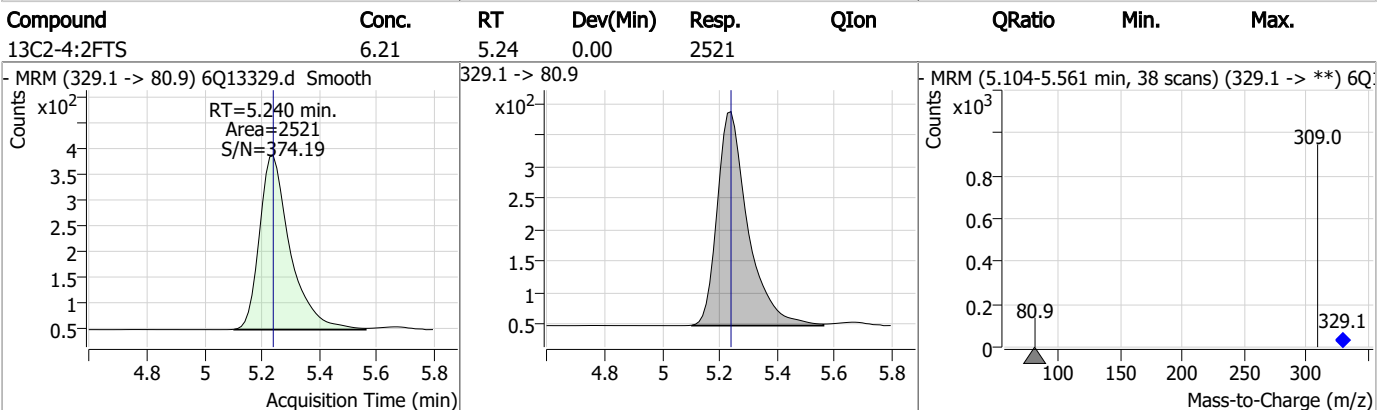
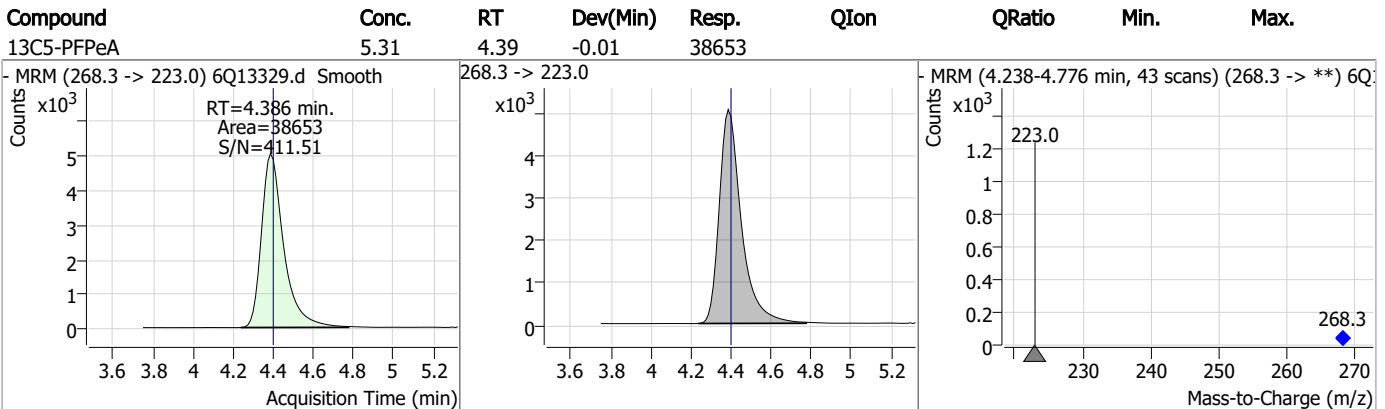
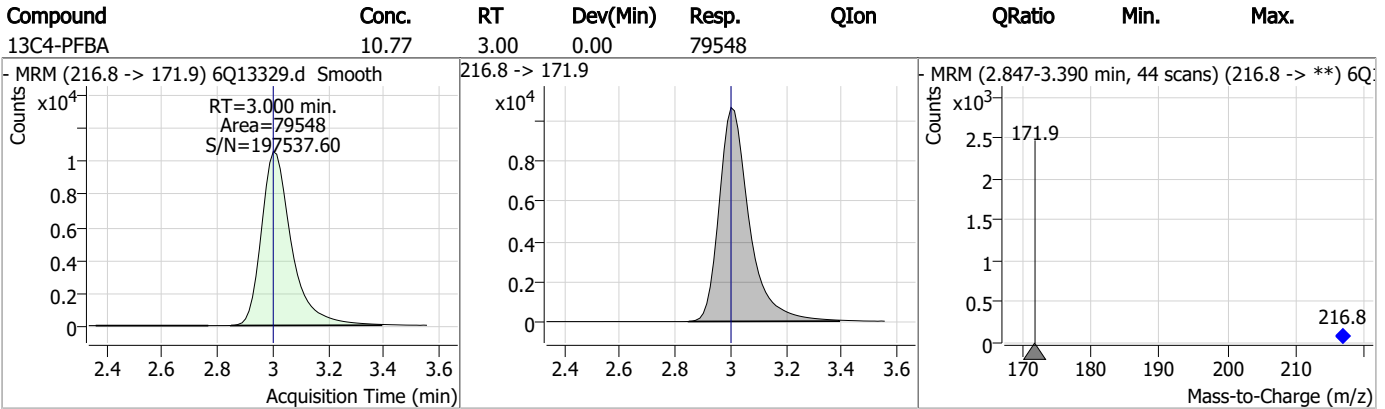
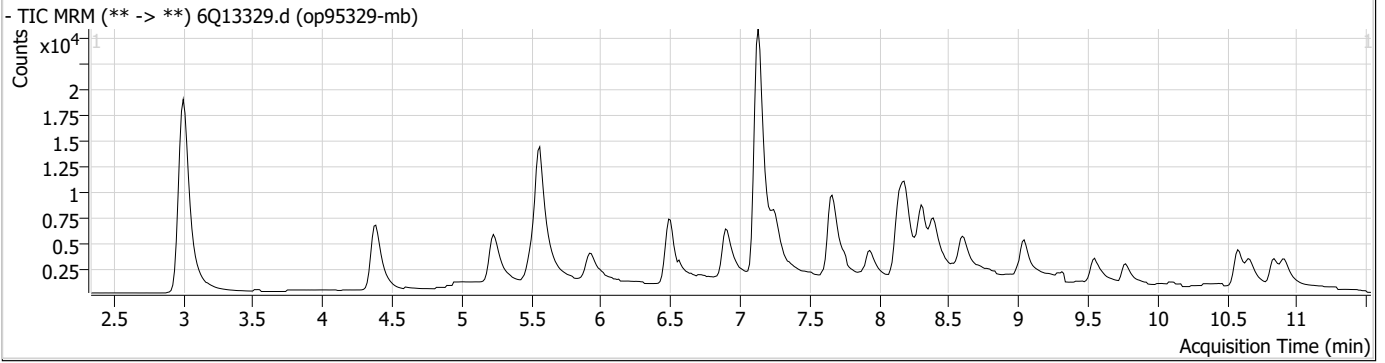
### Perfluorinated Compounds by LC/MS/MS

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

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### Perfluorinated Compounds by LC/MS/MS

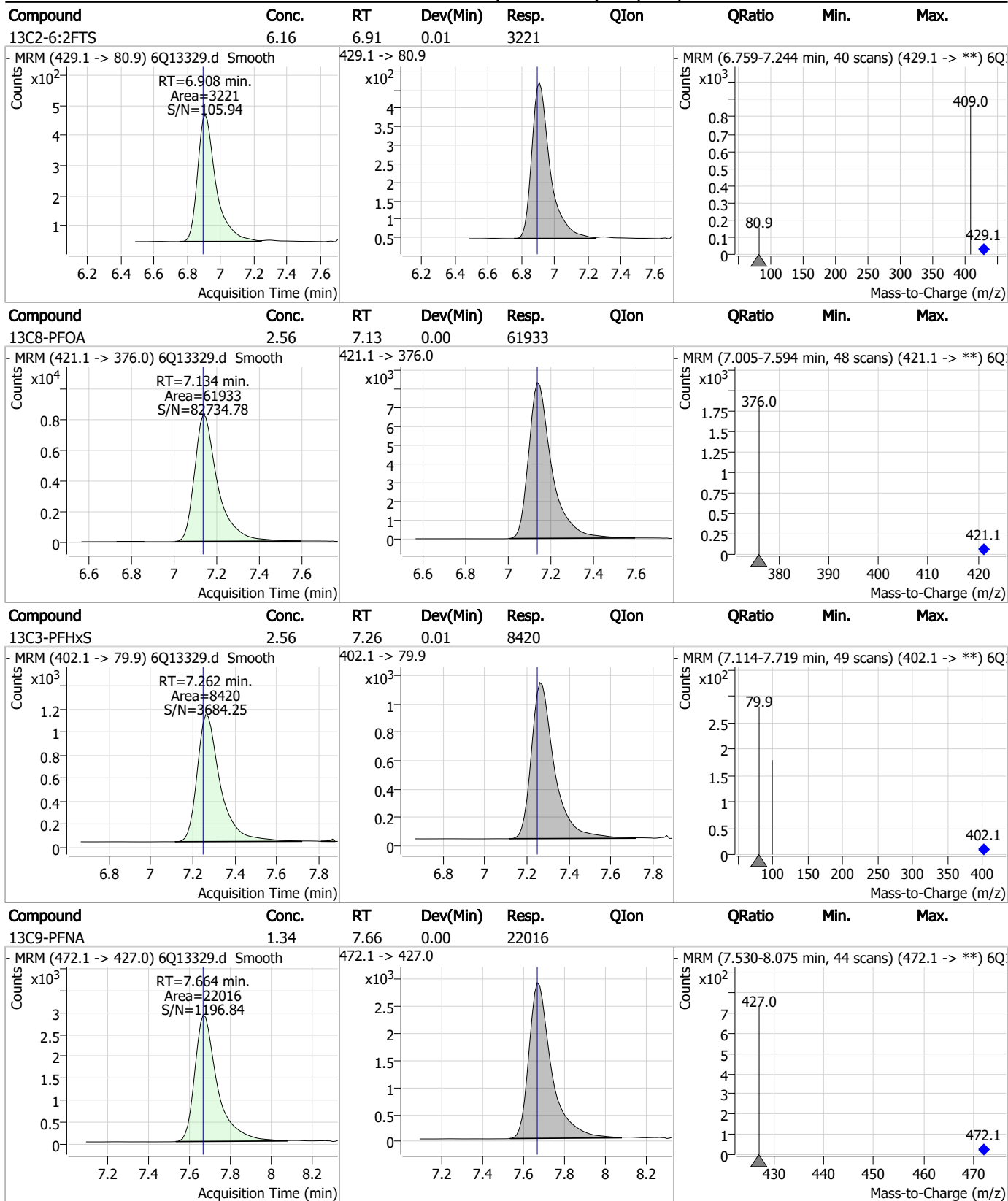


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.52	5.52	0.00	12509				
13C5-PFHxA	2.63	5.56	0.00	33904				
13C3-HFPO-DA	10.90	5.94	0.00	13871				
13C4-PFHpA	2.66	6.50	0.01	35534				

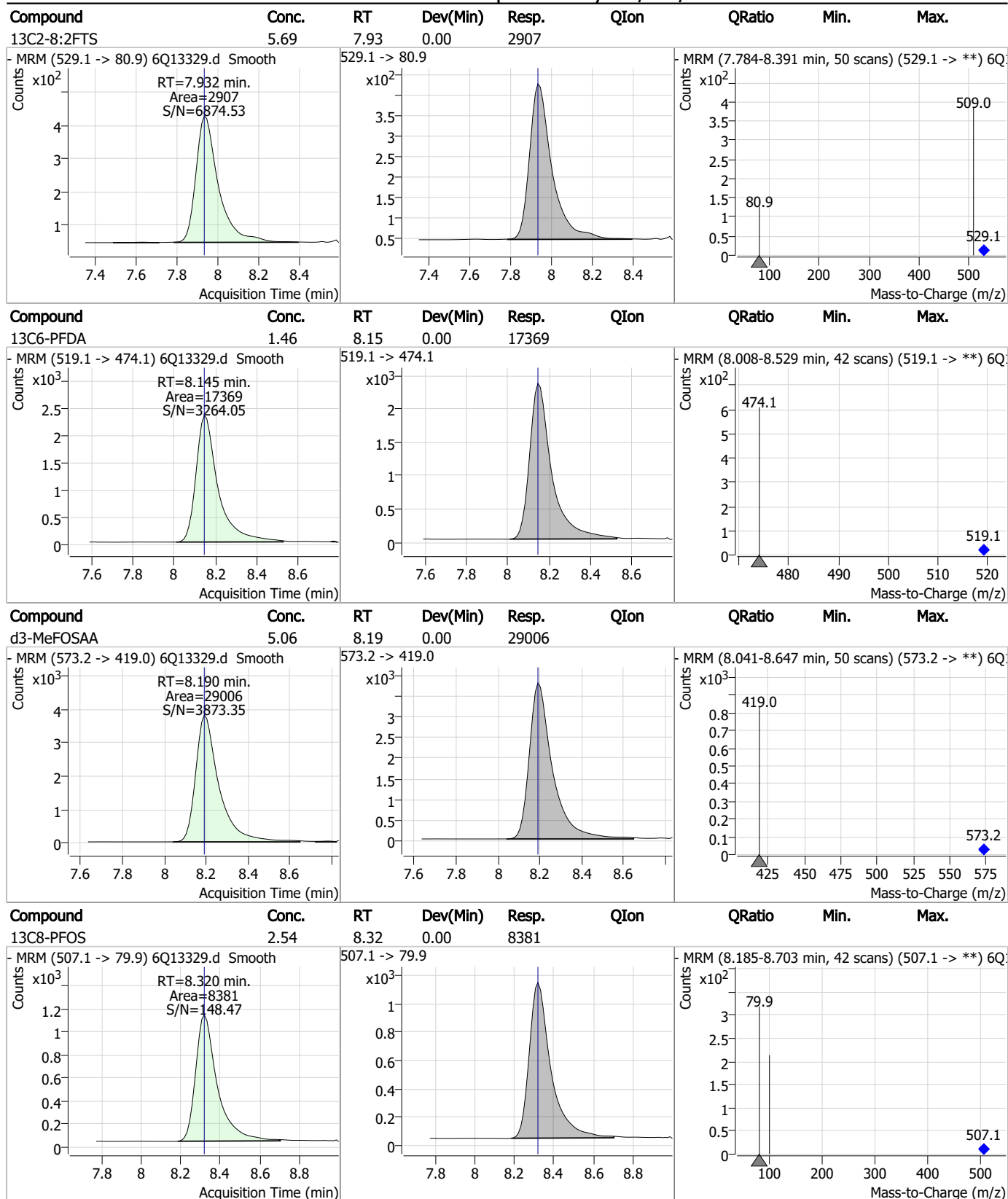
7.2.1  
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### Perfluorinated Compounds by LC/MS/MS



7.2.1  
7

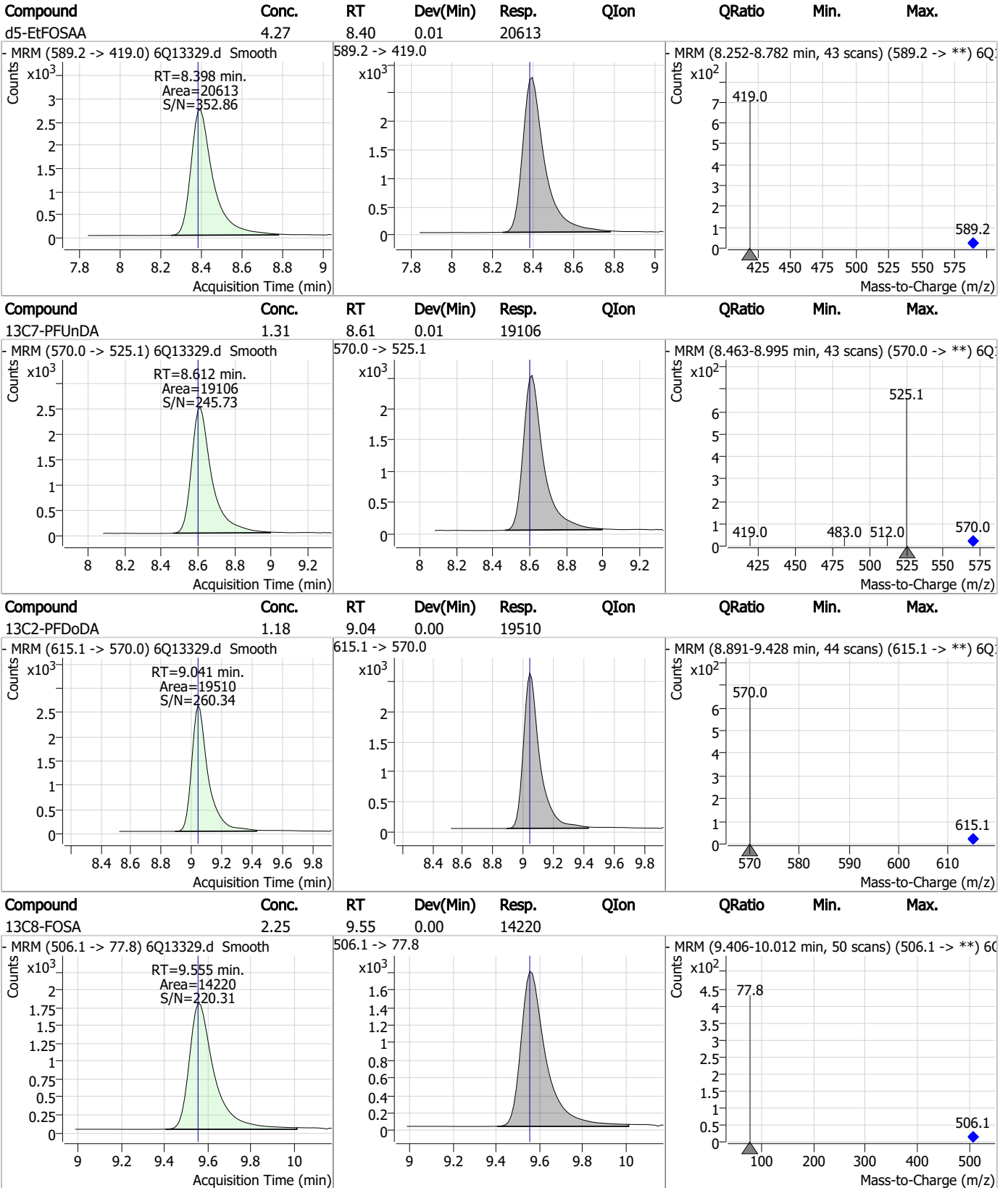
### Perfluorinated Compounds by LC/MS/MS



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



7.2.1

7



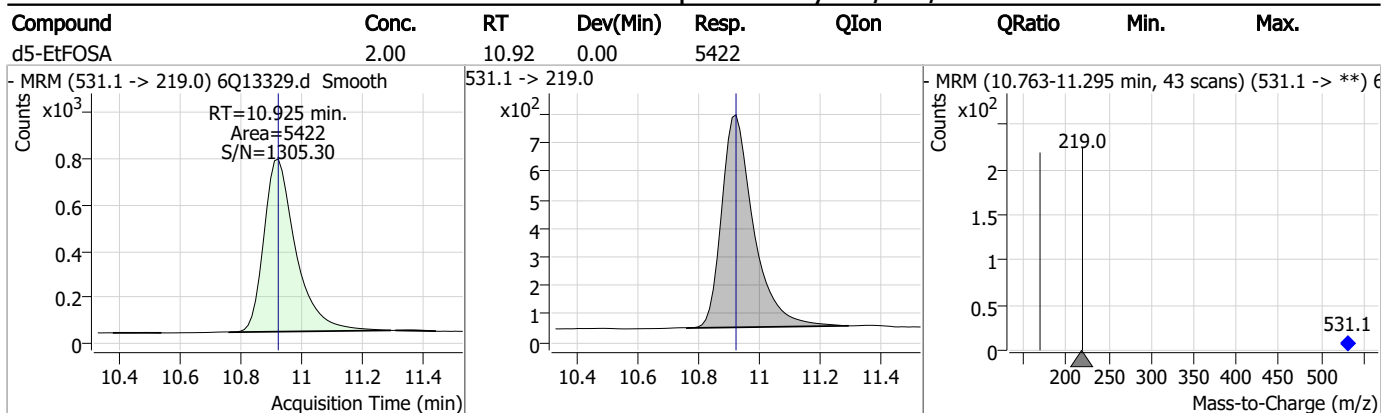


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.04	9.77	0.00	9659				
d7-MeFOSE	21.01	10.59	0.00	21106				
d3-MeFOSA	1.97	10.68	0.00	5058				
d9-EtFOSE	21.99	10.83	-0.01	14771				

7.2.1  
7

### Perfluorinated Compounds by LC/MS/MS



7.2.1  
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13305.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 2:37:49 PM  
 Sample Name : IBLK  
 Vial : P1-A1  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.963	216.8 -> 171.9	76999	10.00 µg/L	-0.037
M5-PFPeA	4.374	268.3 -> 223.0	37949	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	33290	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	35906	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	62006	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	21601	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	16744	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	21587	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	23244	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	13141	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	15748	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	13404	2.50 µg/L	-0.012
M3-PFHxS	7.262	402.1 -> 79.9	8684	2.50 µg/L	0.012
M8-PFOS	8.320	507.1 -> 79.9	8009	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2490	5.00 µg/L	-0.012
M2-6:2FTS	6.895	429.1 -> 80.9	2985	5.00 µg/L	0.000
M2-8:2FTS	7.932	529.1 -> 80.9	2991	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	26549	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	14000	10.00 µg/L	-0.012
M5-EtFOSAA	8.386	589.2 -> 419.0	23214	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	22489	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	16112	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6905	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6098	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	9406	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	34347	5.00 µg/L	-0.025
18O2-PFHxS	7.261	403.0 -> 83.9	6033	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	74955	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	23076	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	24716	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	33942	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2490	6.22 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.4%		
13C2-6:2FTS	6.895	429.1 -> 80.9	2985	5.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.9%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2991	5.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.9%		
13C2-PFDoDA	9.041	615.1 -> 570.0	23244	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C2-PFTeDA	9.768	715.2 -> 670.0	13141	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C3-PFBS	5.505	302.1 -> 79.9	13404	2.74 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.6%		
13C3-PFHxS	7.262	402.1 -> 79.9	8684	2.68 µg/L	0.012

7.22  
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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 = 107.0%	
13C4-PFBA	2.963	216.8 -> 171.9	76999	10.04 µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.490	367.1 -> 322.0	35906	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C5-PFHxA	5.563	318.0 -> 273.0	33290	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C5-PFPeA	4.374	268.3 -> 223.0	37949	4.89 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C6-PFDA	8.145	519.1 -> 474.1	16744	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C7-PFUnDA	8.599	570.0 -> 525.1	21587	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C8-FOSA	9.555	506.1 -> 77.8	15748	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C8-PFOA	7.134	421.1 -> 376.0	62006	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-PFOS	8.320	507.1 -> 79.9	8009	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C9-PFNA	7.664	472.1 -> 427.0	21601	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%	
d3-MeFOSAA	8.190	573.2 -> 419.0	26549	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	14000	10.33 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d3-MeFOSA	10.680	515.0 -> 219.0	6098	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
d5-EtFOSAA	8.386	589.2 -> 419.0	23214	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d7-MeFOSE	10.589	623.2 -> 58.9	22489	23.72 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d9-EtFOSE	10.847	639.2 -> 58.9	16112	25.41 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
d5-EtFOSA	10.925	531.1 -> 219.0	6905	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.0%	

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	8.387	584.2 -> 419.1	258	0.07 µg/L	96
		584.2 -> 526.0	134		
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

7.2.2  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	3.804	241.0 -> 177.0	0	µg/L	m	1
		241.0 -> 117.0	0			
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	10.889	526.0 -> 219.0	1151	0.34 µg/L	m	88
		526.0 -> 169.0	998			
EtFOSE	10.836	630.0 -> 58.9	2059	3.00 µg/L	m	100
		511.9 -> 219.0	499	0.18 µg/L	m	82
MeFOSA	10.620	511.9 -> 169.0	597			
		616.1 -> 58.9	1520	1.74 µg/L	m	100
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.2  
7

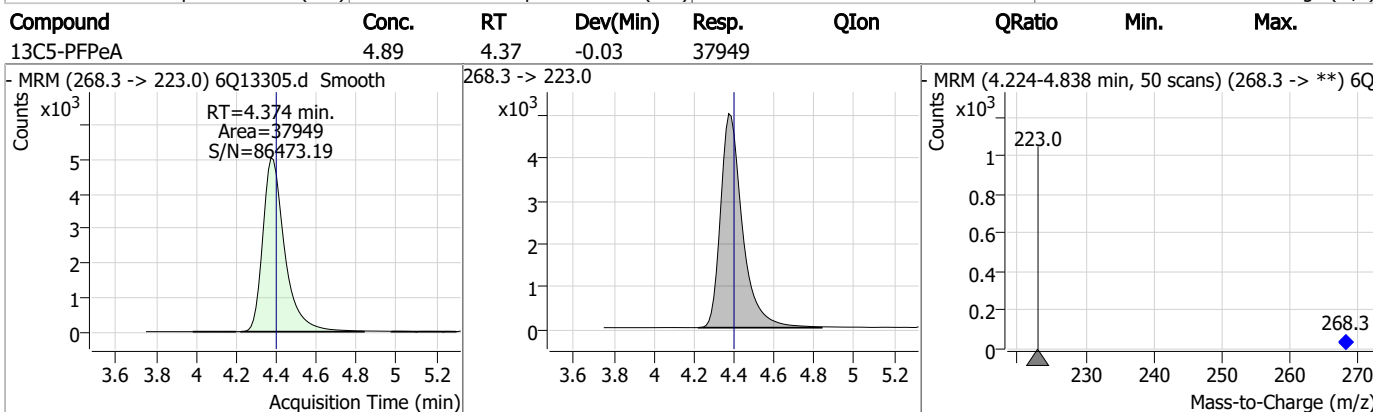
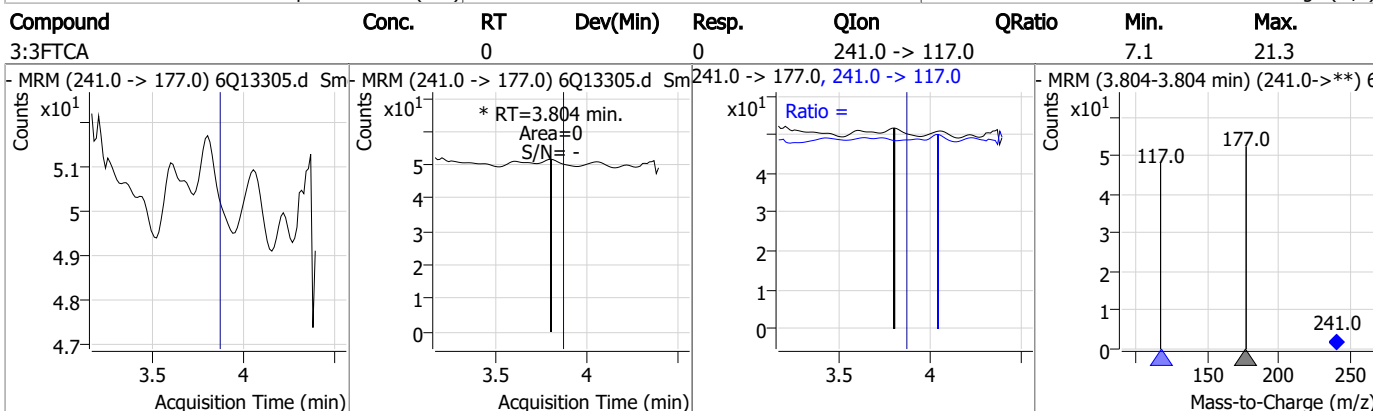
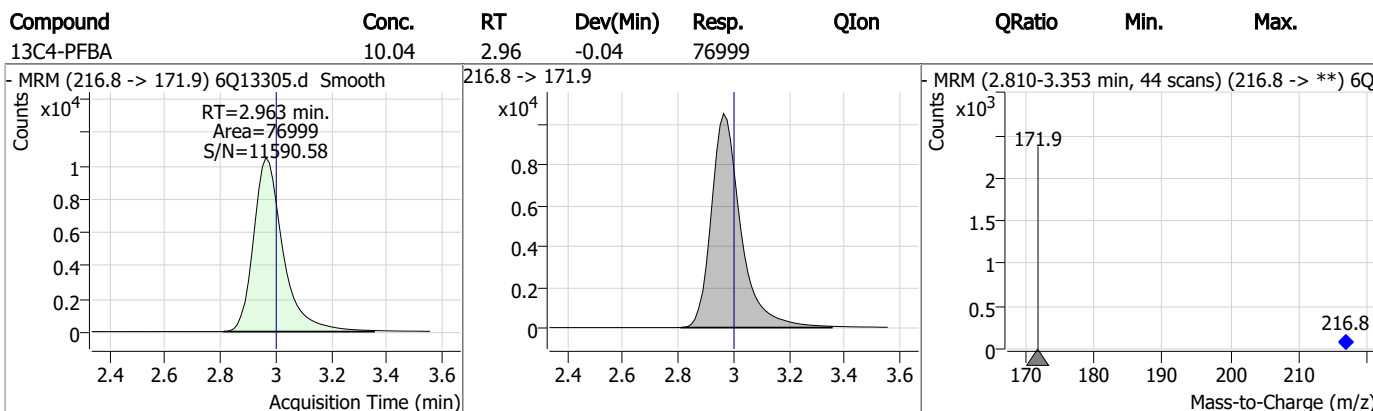
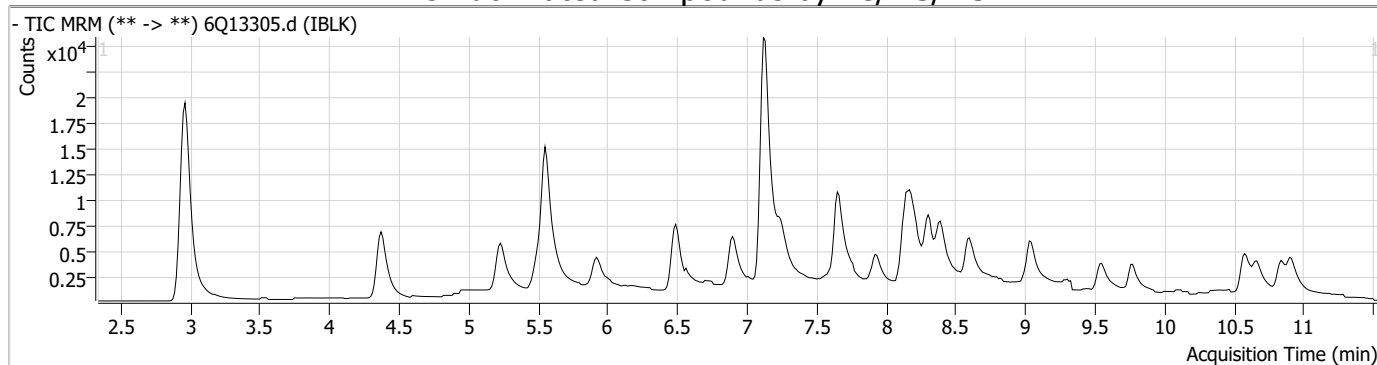
### Perfluorinated Compounds by LC/MS/MS

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

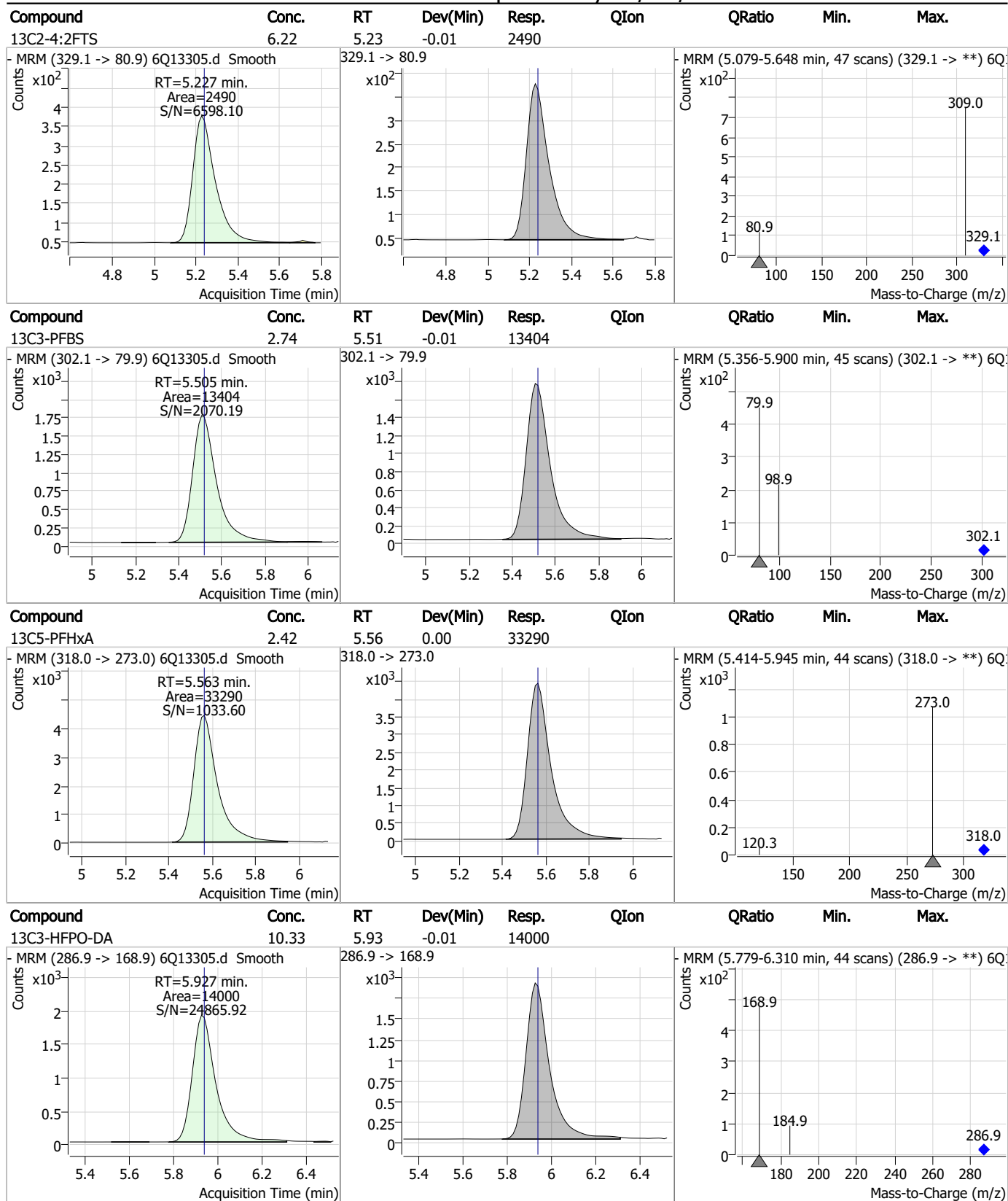
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### Perfluorinated Compounds by LC/MS/MS



7.2.2  
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### Perfluorinated Compounds by LC/MS/MS

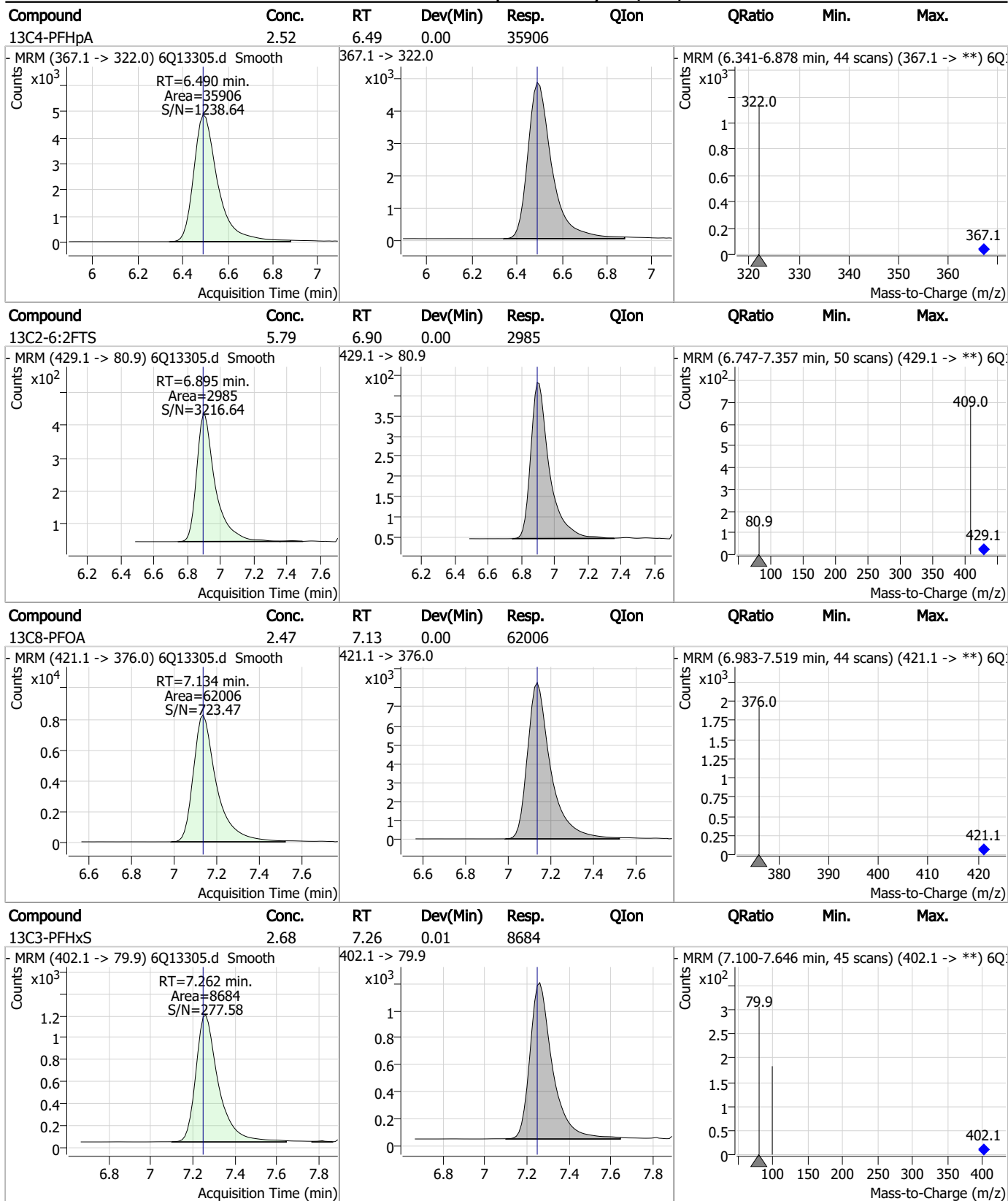


7.22  
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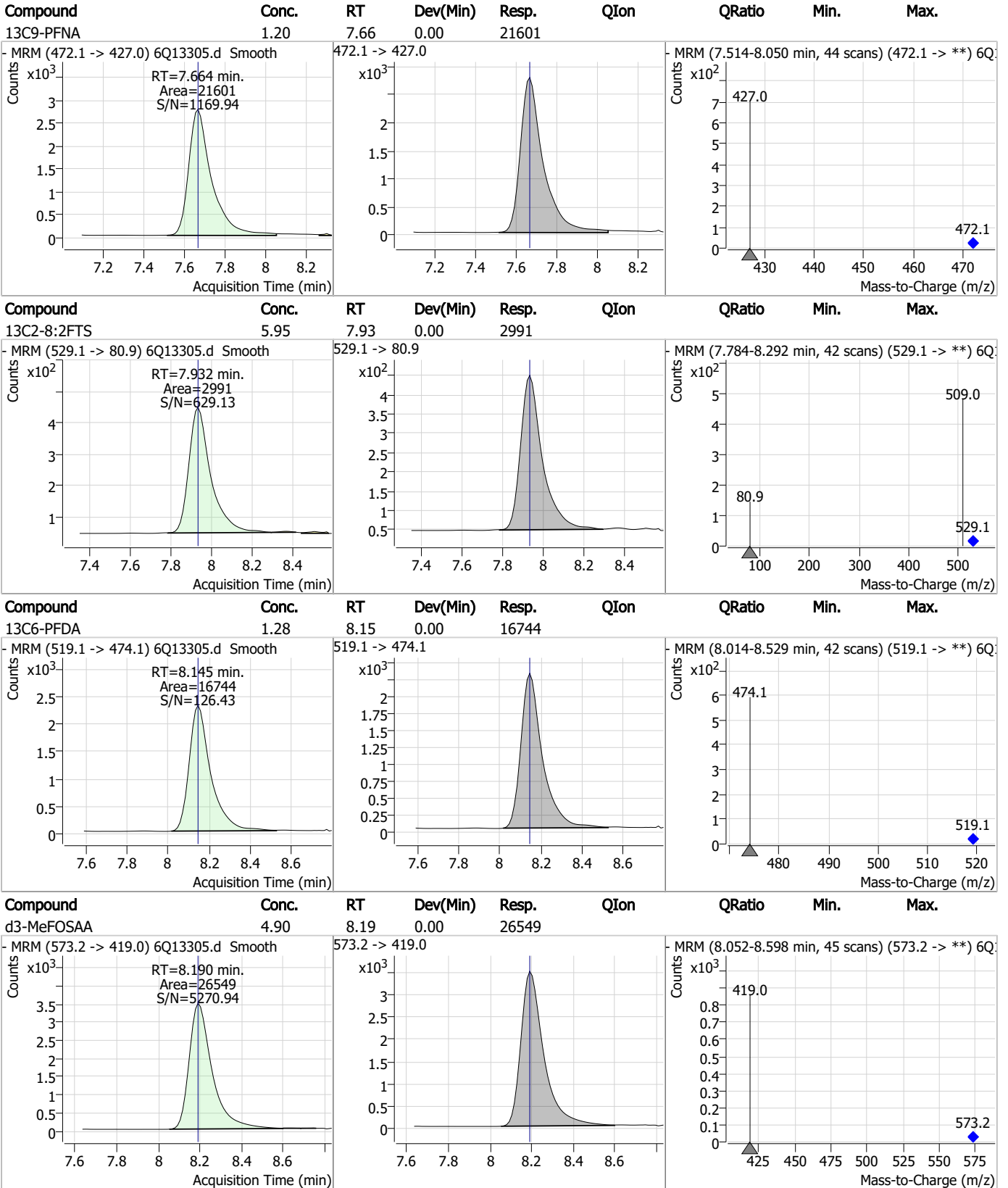


### Perfluorinated Compounds by LC/MS/MS



7.2.2  
7

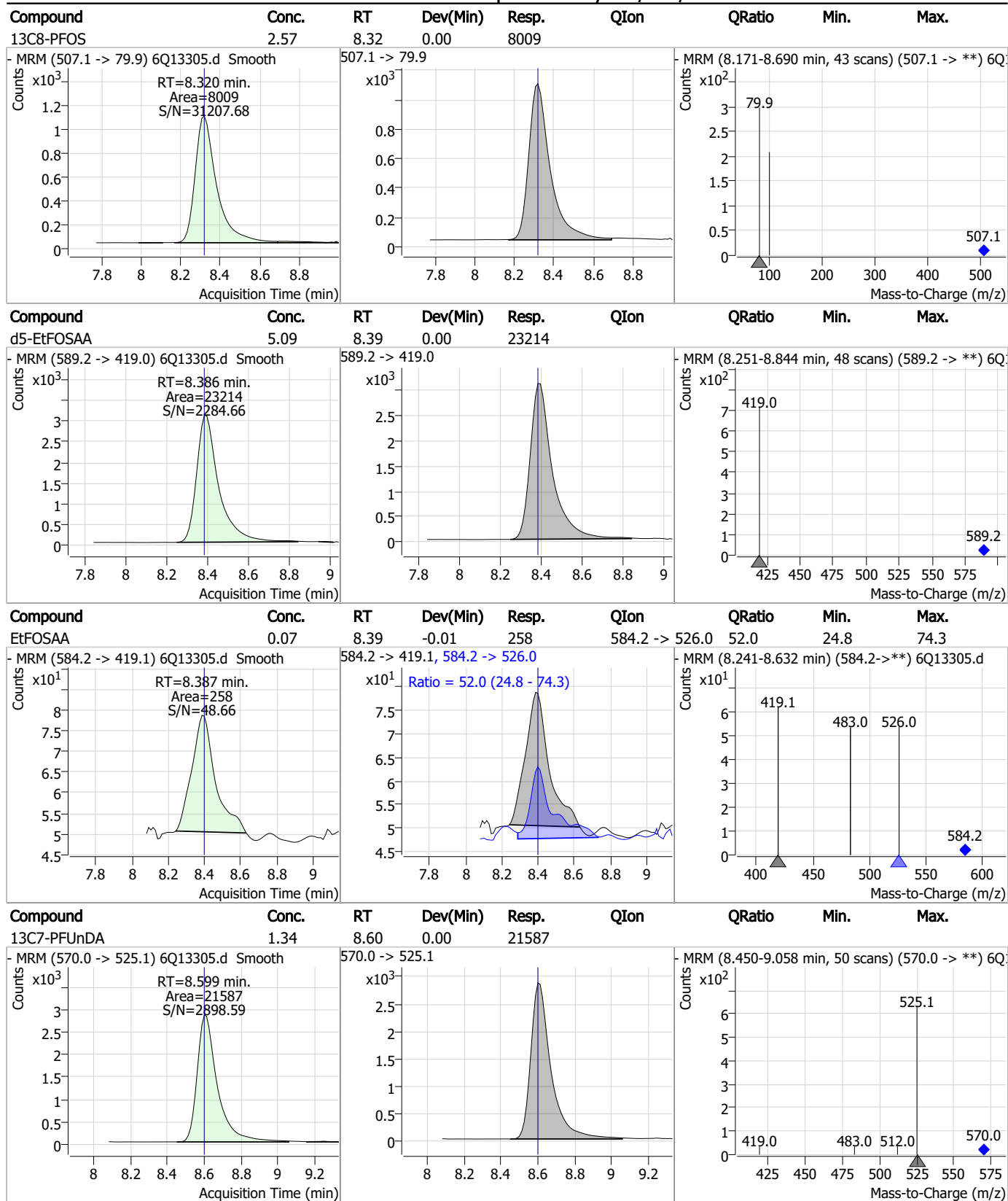
Perfluorinated Compounds by LC/MS/MS



7.22

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### Perfluorinated Compounds by LC/MS/MS



7.2.2  
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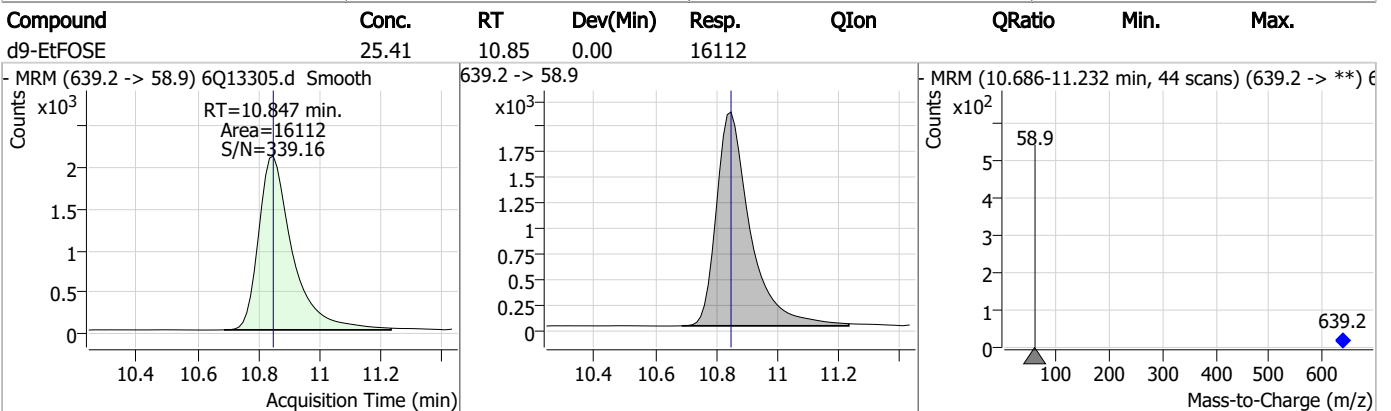
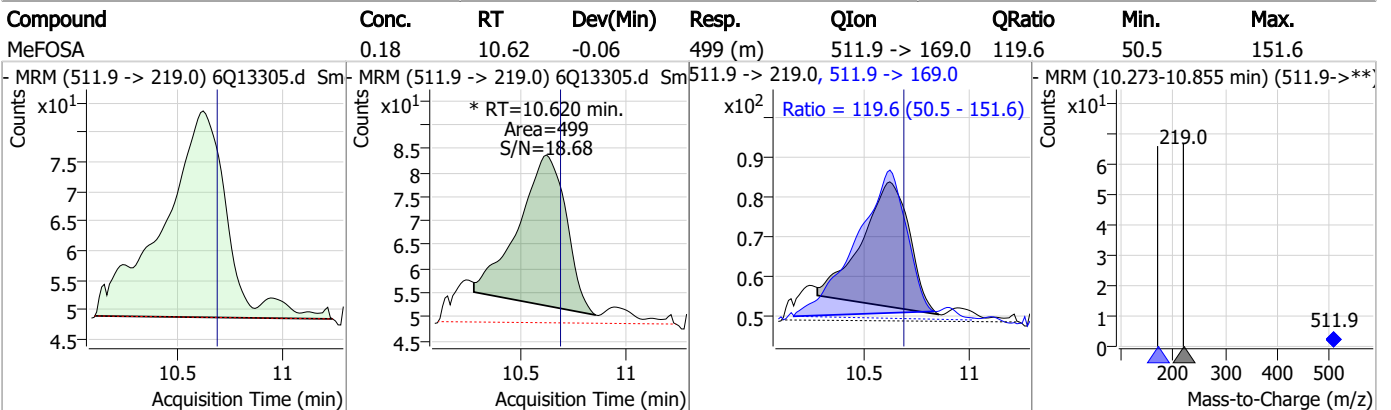
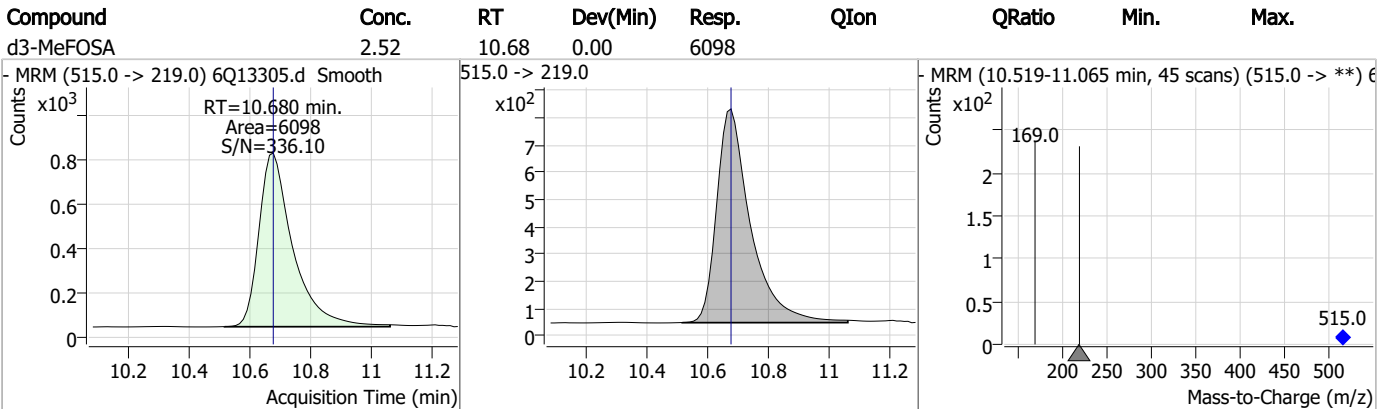
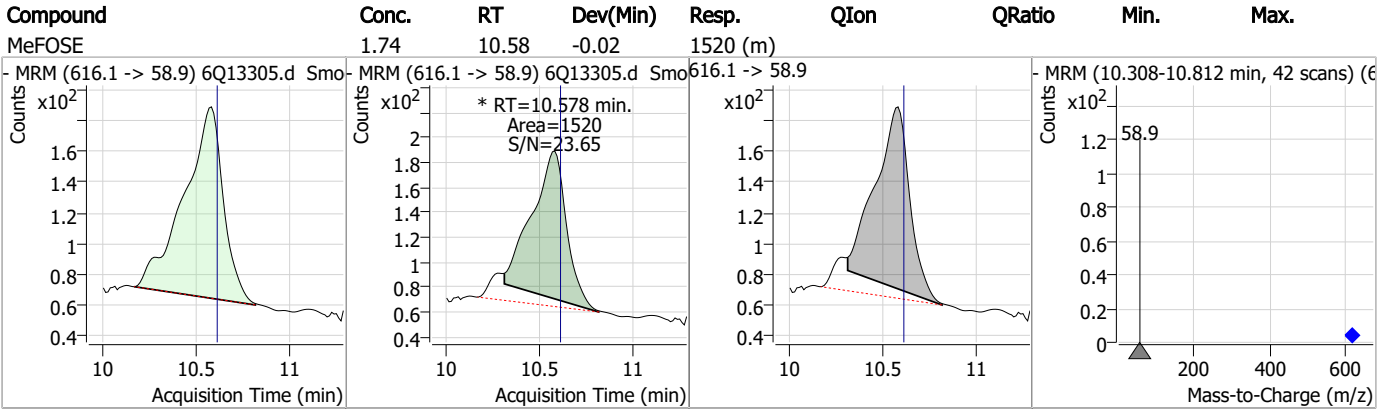
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.04	0.00	23244				
13C8-FOSA	2.64	9.55	0.00	15748				
13C2-PFTeDA	1.29	9.77	0.00	13141				
d7-MeFOSE	23.72	10.59	0.00	22489				

7.2.2  
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### Perfluorinated Compounds by LC/MS/MS

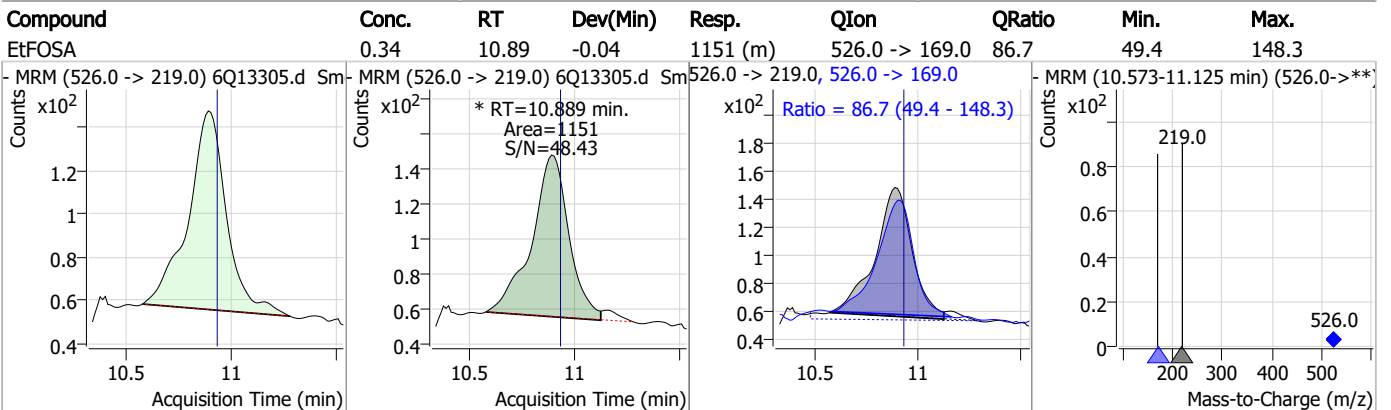
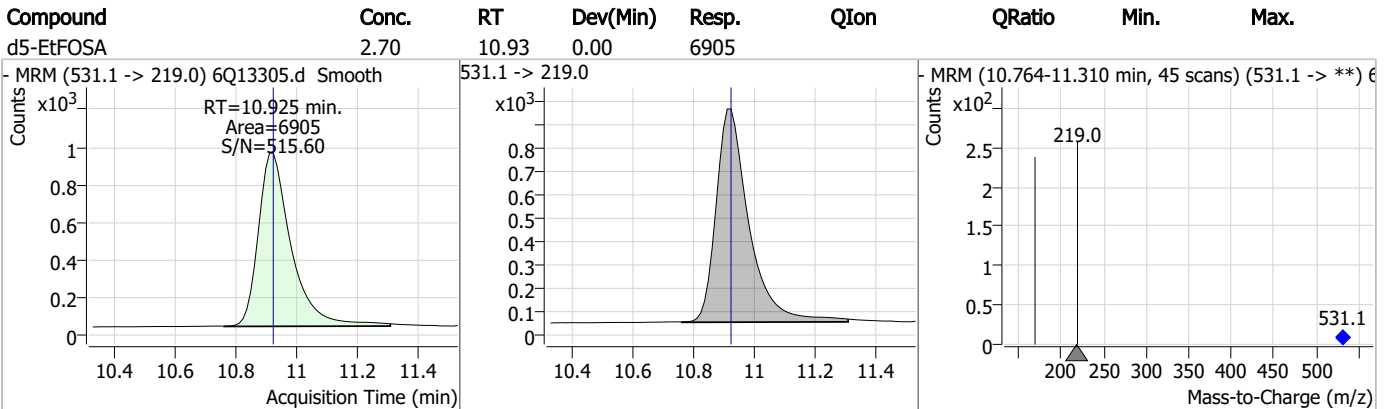
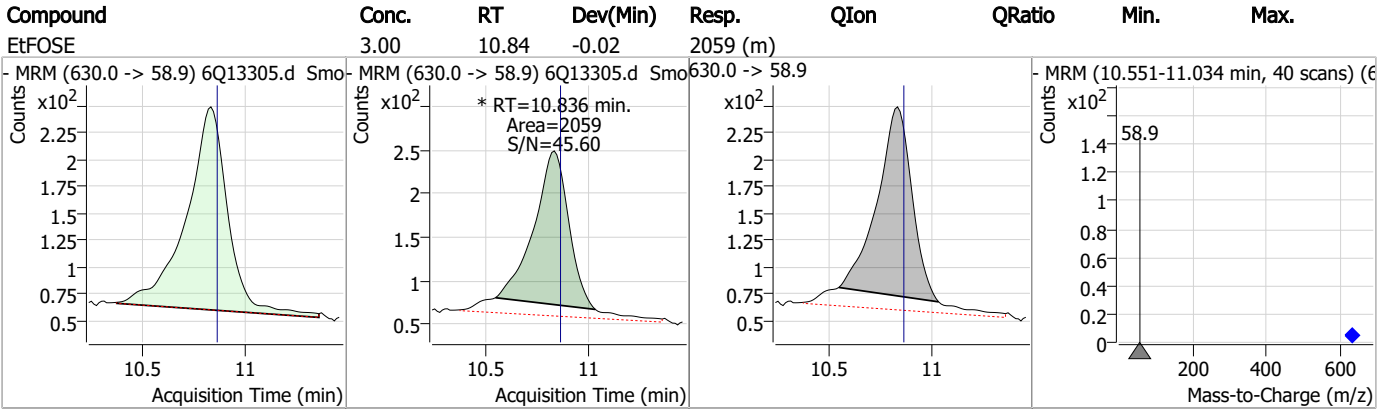


7.2.2

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### Perfluorinated Compounds by LC/MS/MS



7.2.2

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# Manual Integration Approval Summary

Sample Number: S6Q203-IBLK      Method: EPA DRAFT 1633  
Lab FileID: 6Q13305.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 14:37      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
MeFOSE	24448-09-7		10.58	Split peak
MeFOSA	31506-32-8		10.62	Split peak
EtFOSE	1691-99-2		10.84	Split peak
EtFOSA	4151-50-2		10.89	Split peak

7.2.2.1

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## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13326.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 7:36:00 PM  
 Sample Name : iccb  
 Vial : P1-A1  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.963	216.8 -> 171.9	82910	10.00 µg/L	-0.037
M5-PFPeA	4.374	268.3 -> 223.0	41107	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	37228	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	38784	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	67200	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	23387	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	17451	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	22747	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	23857	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	13495	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17241	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	13963	2.50 µg/L	-0.012
M3-PFHxS	7.262	402.1 -> 79.9	9035	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	8436	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2532	5.00 µg/L	-0.012
M2-6:2FTS	6.908	429.1 -> 80.9	3238	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2872	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	30846	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	14974	10.00 µg/L	-0.012
M5-EtFOSAA	8.386	589.2 -> 419.0	25191	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	24287	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	17167	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	6792	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6439	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	9811	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	37053	5.00 µg/L	-0.025
18O2-PFHxS	7.261	403.0 -> 83.9	6533	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	80388	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	23528	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	26162	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	34665	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2532	5.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.9%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3238	5.80 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.0%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2872	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-PFDoDA	9.041	615.1 -> 570.0	23857	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C2-PFTeDA	9.768	715.2 -> 670.0	13495	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C3-PFBS	5.505	302.1 -> 79.9	13963	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C3-PFHxS	7.262	402.1 -> 79.9	9035	2.57 µg/L	0.012

7.2.3  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C4-PFBA	2.963	216.8 -> 171.9	82910	10.02 µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.490	367.1 -> 322.0	38784	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C5-PFHxA	5.563	318.0 -> 273.0	37228	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C5-PFPeA	4.374	268.3 -> 223.0	41107	5.19 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C6-PFDA	8.145	519.1 -> 474.1	17451	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C7-PFUnDA	8.599	570.0 -> 525.1	22747	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.0%	
13C8-FOSA	9.555	506.1 -> 77.8	17241	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.7%	
13C8-PFOA	7.134	421.1 -> 376.0	67200	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-PFOS	8.319	507.1 -> 79.9	8436	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C9-PFNA	7.664	472.1 -> 427.0	23387	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.1%	
d3-MeFOSAA	8.190	573.2 -> 419.0	30846	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	14974	10.82 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
d3-MeFOSA	10.680	515.0 -> 219.0	6439	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
d5-EtFOSAA	8.386	589.2 -> 419.0	25191	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d7-MeFOSE	10.589	623.2 -> 58.9	24287	24.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d9-EtFOSE	10.835	639.2 -> 58.9	17167	25.96 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d5-EtFOSA	10.925	531.1 -> 219.0	6792	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	

Target Compounds

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

7.2.3  
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Perfluorinated Compounds by LC/MS/MS

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

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

7.2.3  
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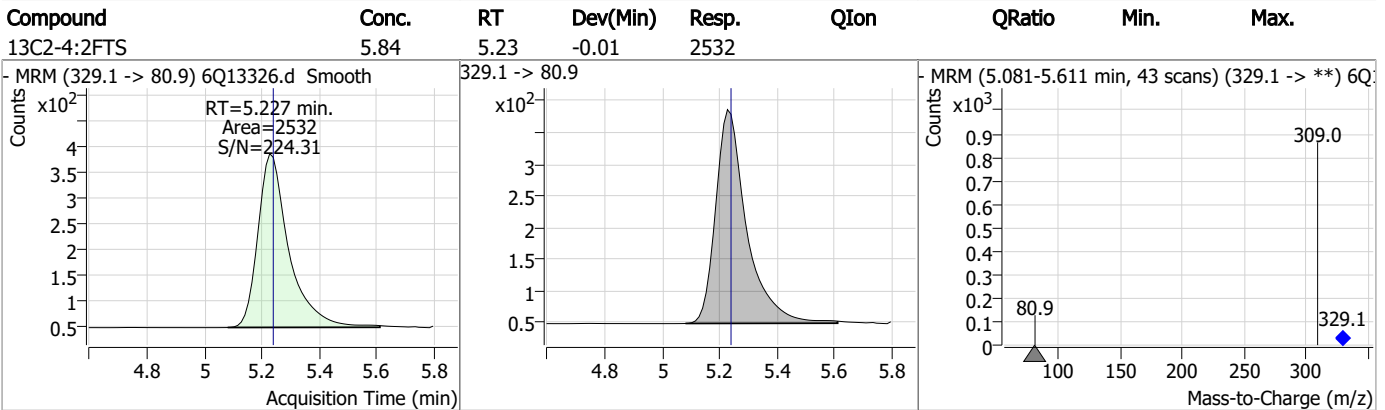
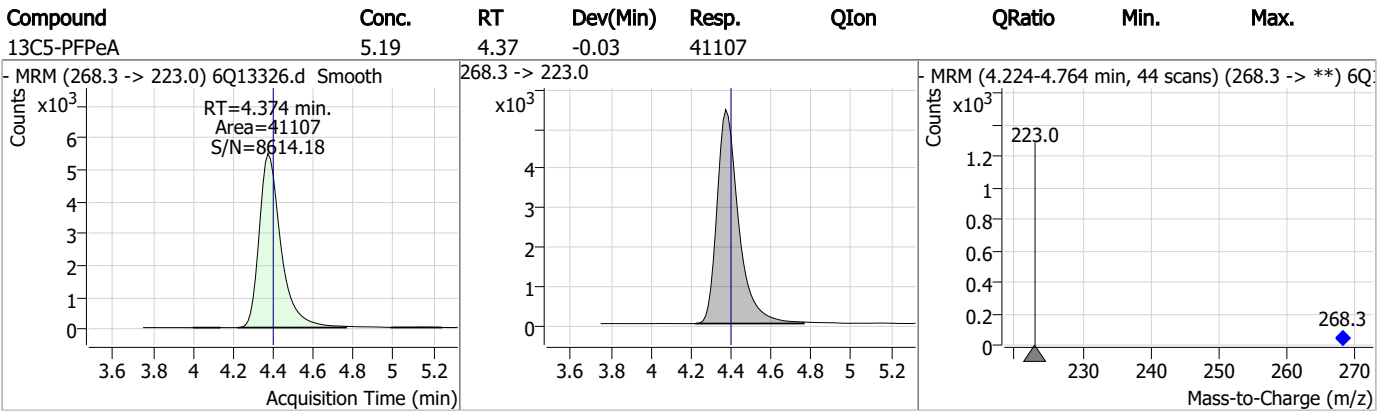
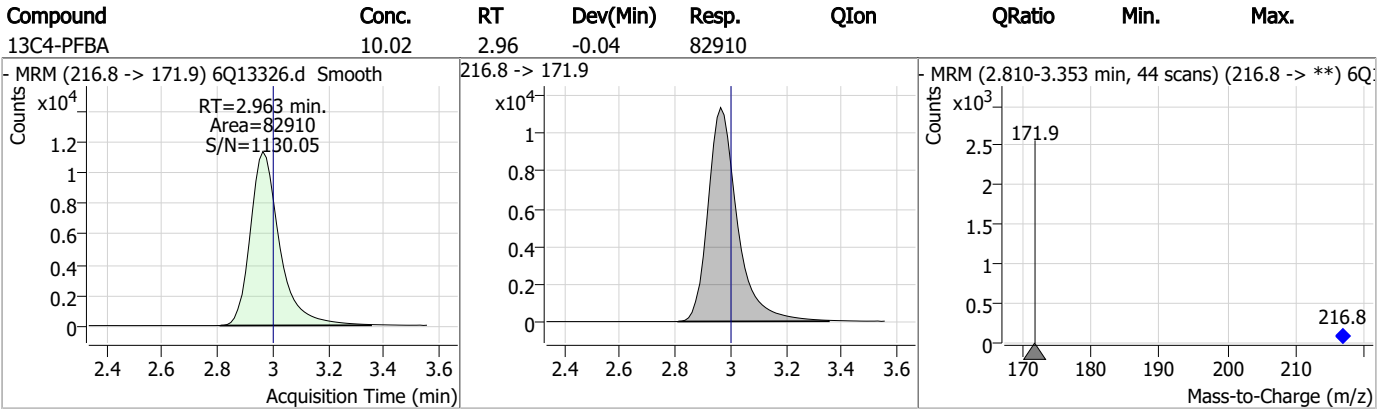
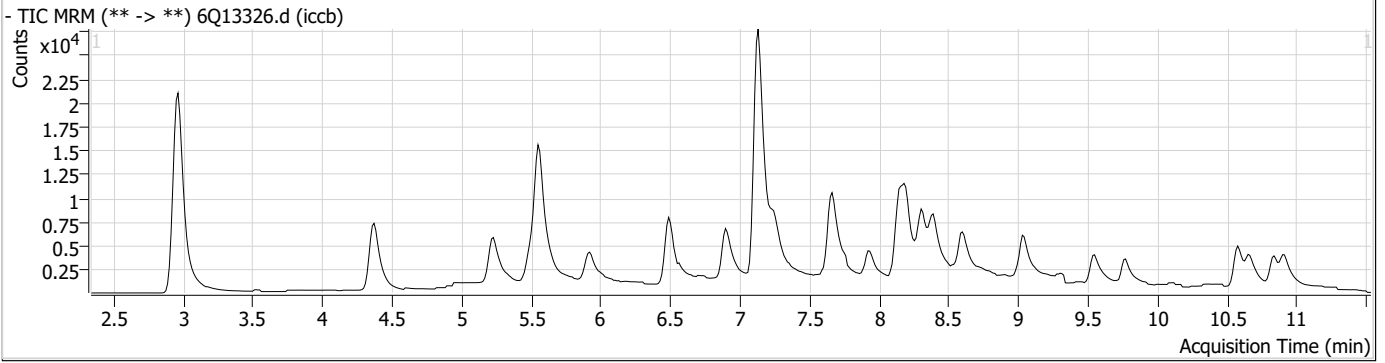
### Perfluorinated Compounds by LC/MS/MS

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



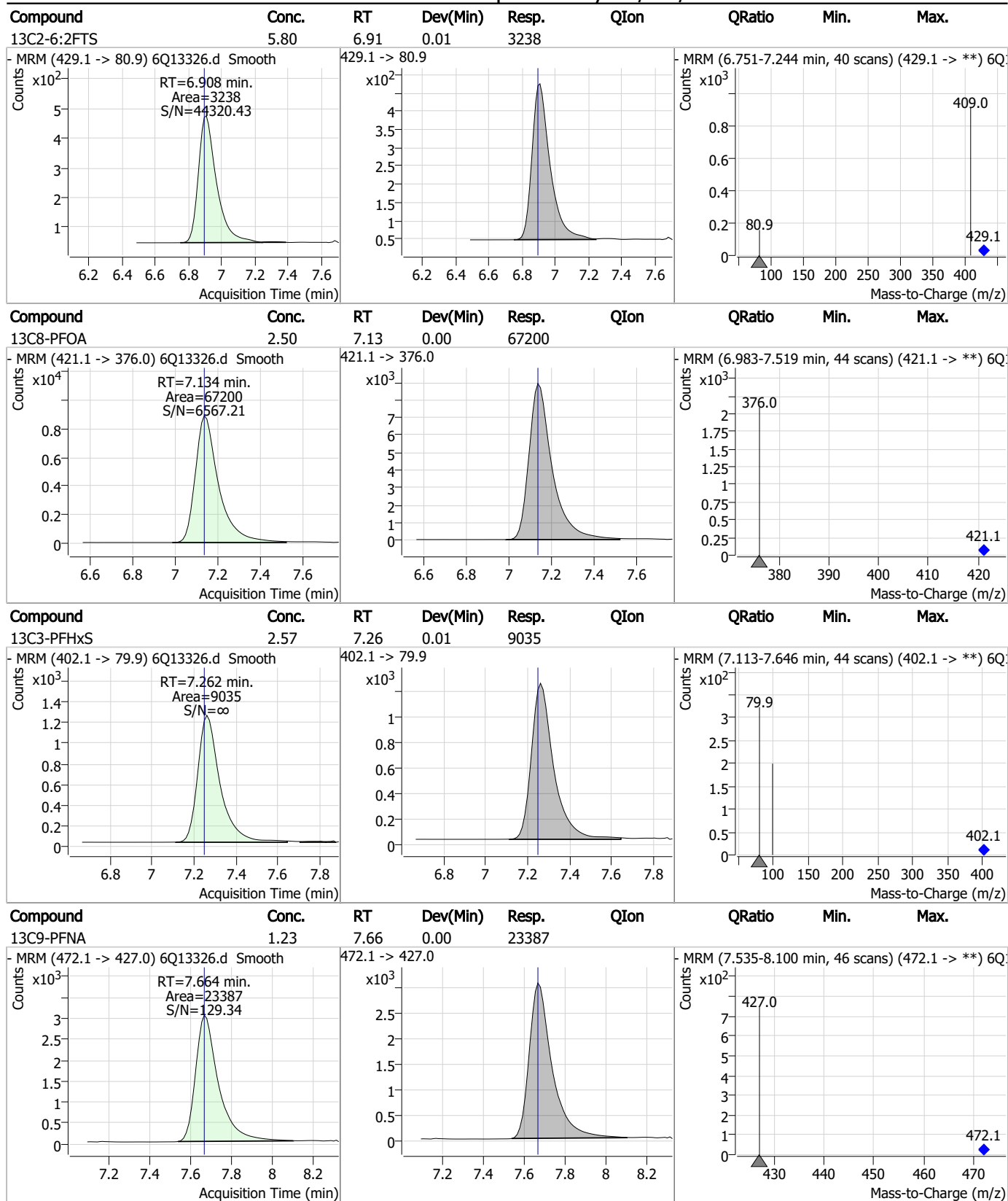
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.64	5.51	-0.01	13963				
13C5-PFHxA	2.65	5.56	0.00	37228				
13C3-HFPO-DA	10.82	5.93	-0.01	14974				
13C4-PFHpA	2.67	6.49	0.00	38784				

7.2.3  
7



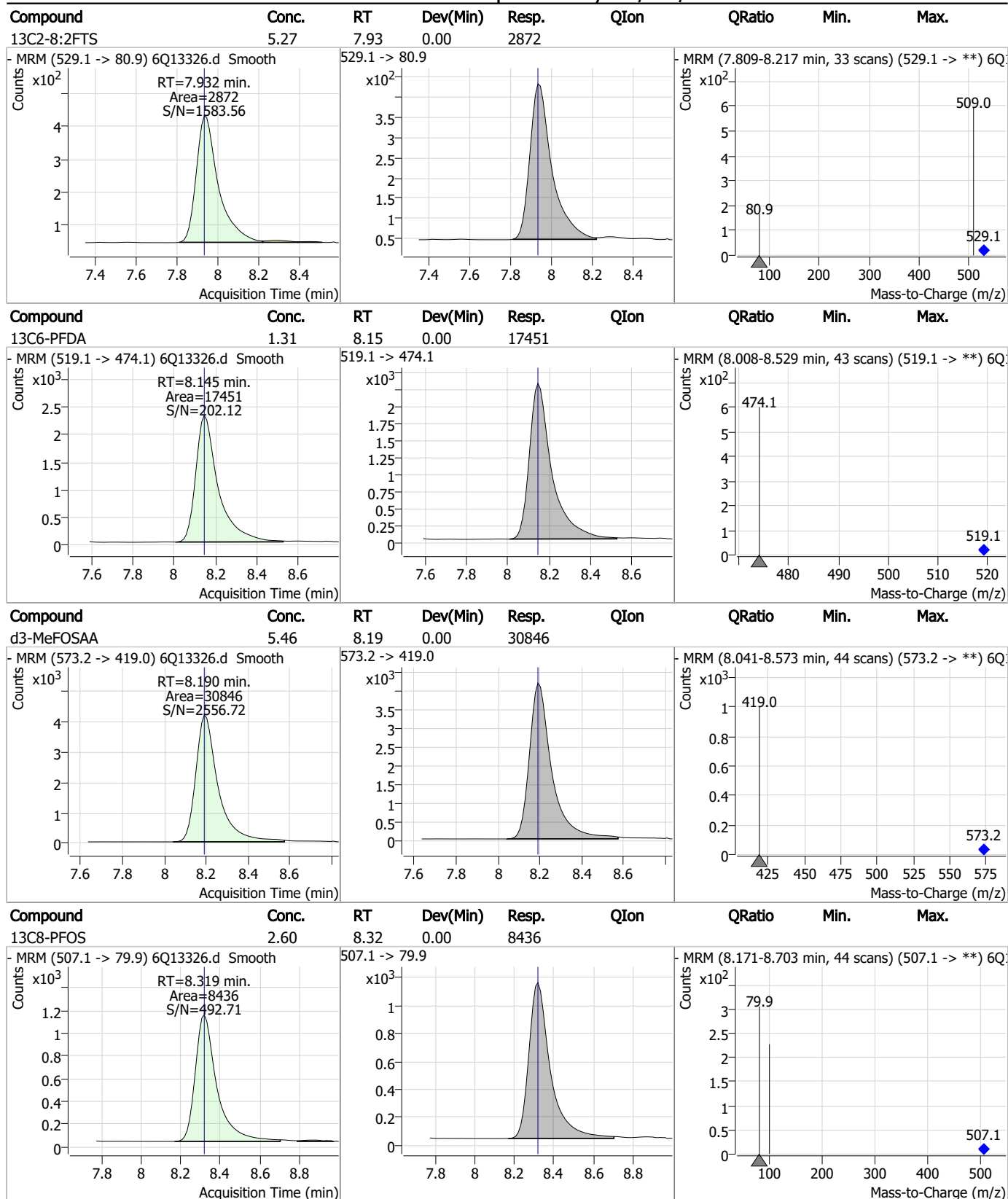
### Perfluorinated Compounds by LC/MS/MS



7.2.3  
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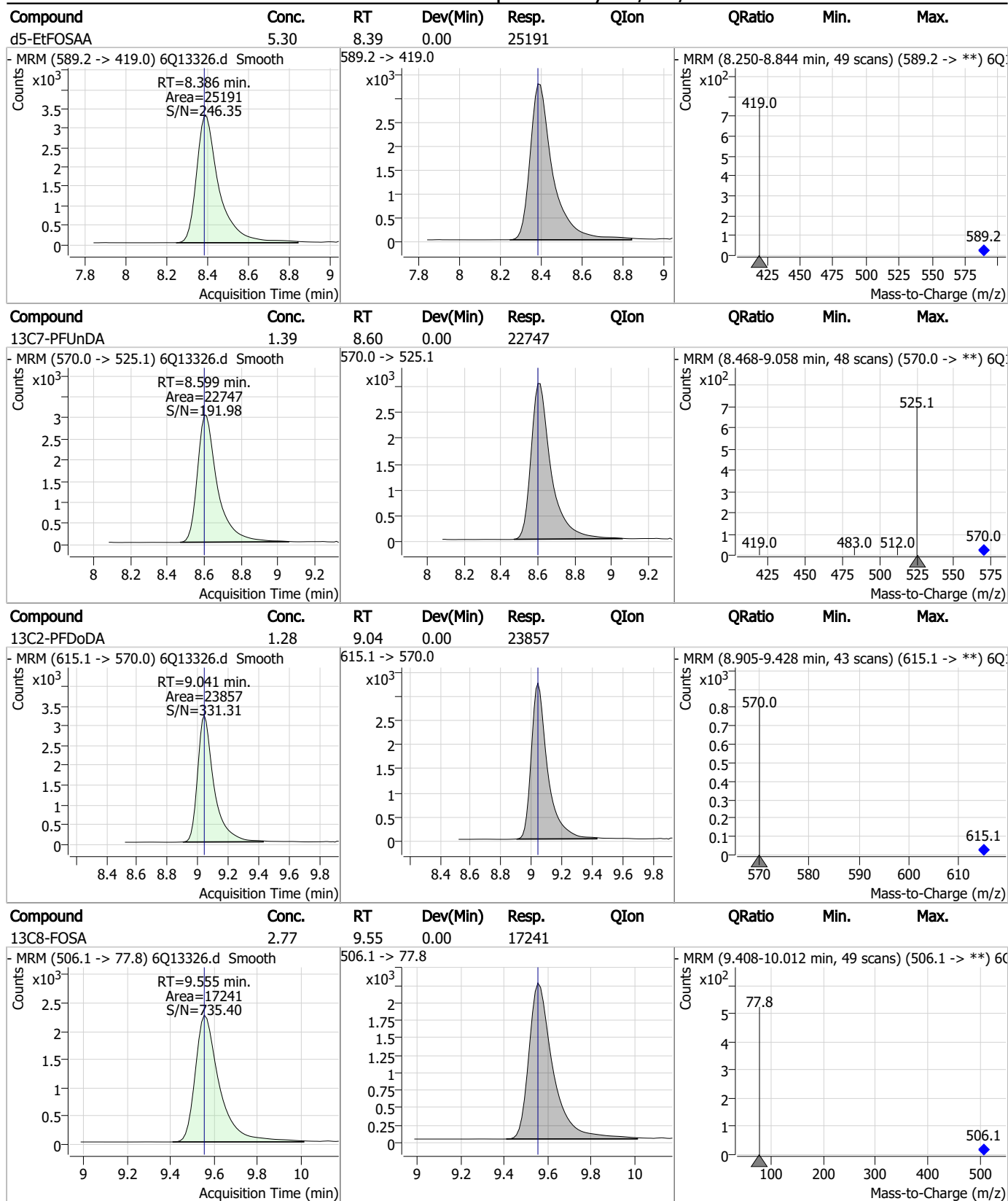


### Perfluorinated Compounds by LC/MS/MS



7.2.3  
7

### Perfluorinated Compounds by LC/MS/MS



7.2.3  
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### Perfluorinated Compounds by LC/MS/MS

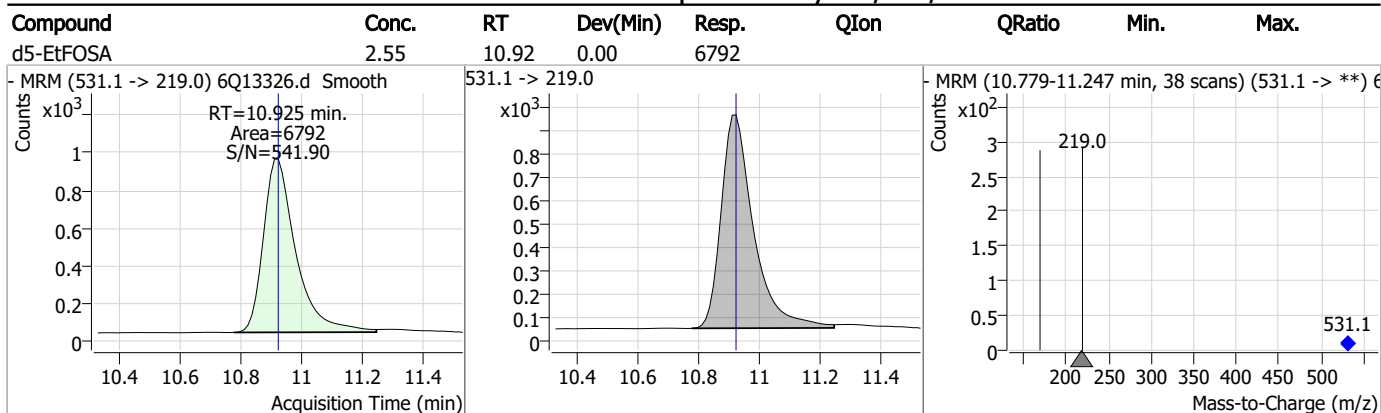
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	9.77	0.00	13495				
- MRM (715.2 -> 670.0) 6Q13326.d Smooth Counts x10 <sup>3</sup> RT=9.768 min. Area=13495 S/N=697.72 Acquisition Time (min)			715.2 -> 670.0 x10 <sup>3</sup> Acquisition Time (min)			- MRM (9.637-10.152 min, 42 scans) (715.2 -> **) 6Q13326.d Smooth Counts x10 <sup>2</sup> 670.0 715.2 Mass-to-Charge (m/z)		
d7-MeFOSE	24.56	10.59	0.00	24287				
- MRM (623.2 -> 58.9) 6Q13326.d Smooth Counts x10 <sup>3</sup> RT=10.589 min. Area=24287 S/N=644.97 Acquisition Time (min)			623.2 -> 58.9 x10 <sup>3</sup> Acquisition Time (min)			- MRM (10.431-10.973 min, 44 scans) (623.2 -> **) 6Q13326.d Smooth Counts x10 <sup>3</sup> 58.9 623.2 Mass-to-Charge (m/z)		
d3-MeFOSA	2.55	10.68	0.00	6439				
- MRM (515.0 -> 219.0) 6Q13326.d Smooth Counts x10 <sup>3</sup> RT=10.680 min. Area=6439 S/N=582.42 Acquisition Time (min)			515.0 -> 219.0 x10 <sup>2</sup> Acquisition Time (min)			- MRM (10.519-11.065 min, 45 scans) (515.0 -> **) 6Q13326.d Smooth Counts x10 <sup>2</sup> 169.0 515.0 Mass-to-Charge (m/z)		
d9-EtFOSE	25.96	10.83	-0.01	17167				
- MRM (639.2 -> 58.9) 6Q13326.d Smooth Counts x10 <sup>3</sup> RT=10.835 min. Area=17167 S/N=398.05 Acquisition Time (min)			639.2 -> 58.9 x10 <sup>3</sup> Acquisition Time (min)			- MRM (10.686-11.294 min, 50 scans) (639.2 -> **) 6Q13326.d Smooth Counts x10 <sup>2</sup> 58.9 639.2 Mass-to-Charge (m/z)		

7.2.3

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### Perfluorinated Compounds by LC/MS/MS



7.2.3  
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13327.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 7:50:02 PM  
 Sample Name : op95329-bs  
 Vial : P1-D1  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95329,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.013	216.8 -> 171.9	19918	10.00 µg/L	0.012
M5-PFPeA	4.386	268.3 -> 223.0	38544	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	34269	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	35820	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	62357	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	21454	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	17613	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	19554	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	21671	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	12275	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	16487	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	12548	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	9087	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	8055	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2501	5.00 µg/L	-0.012
M2-6:2FTS	6.908	429.1 -> 80.9	3181	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2854	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	28331	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	13703	10.00 µg/L	0.000
M5-EtFOSAA	8.386	589.2 -> 419.0	23936	5.00 µg/L	0.000
M7-MeFOSE	10.577	623.2 -> 58.9	23269	25.00 µg/L	-0.012
M9-EtFOSE	10.835	639.2 -> 58.9	16079	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	6228	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6147	2.50 µg/L	0.000
13C4-PFOS	8.308	502.8 -> 79.9	8722	2.50 µg/L	-0.012
13C3-PFBA	3.004	216.0 -> 172.0	30453	5.00 µg/L	0.012
18O2-PFHxS	7.261	403.0 -> 83.9	5524	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	61400	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	19504	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	21573	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	29597	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2501	6.82 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 136.5%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3181	6.74 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 134.8%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2854	6.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.9%		
13C2-PFDoDA	9.041	615.1 -> 570.0	21671	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 112.5%		
13C2-PFTeDA	9.768	715.2 -> 670.0	12275	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C3-PFBS	5.518	302.1 -> 79.9	12548	2.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.0%		
13C3-PFHxS	7.262	402.1 -> 79.9	9087	3.06 µg/L	0.012

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

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 122.3%	
13C4-PFBA	3.013	216.8 -> 171.9	19918	2.93 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 29.3%	
13C4-PFHpA	6.502	367.1 -> 322.0	35820	2.89 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.5%	
13C5-PFHxA	5.563	318.0 -> 273.0	34269	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.5%	
13C5-PFPeA	4.386	268.3 -> 223.0	38544	5.70 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.0%	
13C6-PFDA	8.145	519.1 -> 474.1	17613	1.59 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 127.6%	
13C7-PFUnDA	8.599	570.0 -> 525.1	19554	1.44 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.1%	
13C8-FOSA	9.555	506.1 -> 77.8	16487	2.98 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.1%	
13C8-PFOA	7.134	421.1 -> 376.0	62357	3.04 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 121.5%	
13C8-PFOS	8.319	507.1 -> 79.9	8055	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.5%	
13C9-PFNA	7.664	472.1 -> 427.0	21454	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.1%	
d3-MeFOSAA	8.190	573.2 -> 419.0	28331	5.64 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.8%	
13C3-HFPO-DA	5.940	286.9 -> 168.9	13703	11.60 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.0%	
d3-MeFOSA	10.680	515.0 -> 219.0	6147	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.5%	
d5-EtFOSAA	8.386	589.2 -> 419.0	23936	5.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.3%	
d7-MeFOSE	10.577	623.2 -> 58.9	23269	26.47 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
d9-EtFOSE	10.835	639.2 -> 58.9	16079	27.35 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.4%	
d5-EtFOSA	10.925	531.1 -> 219.0	6228	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.240	327.1 -> 307.0	48281	8.62 µg/L	97
		327.1 -> 80.9	10689		
6:2FTS	6.908	427.1 -> 407.0	42858	9.04 µg/L	100
		427.1 -> 80.9	7897		
8:2FTS	7.933	527.1 -> 507.0	21393	9.31 µg/L	100
		527.1 -> 80.8	5493		
EtFOSAA	8.399	584.2 -> 419.1	8794	2.34 µg/L	m 91
		584.2 -> 526.0	4895		
FOSA	9.557	498.1 -> 77.9	13733	2.09 µg/L	99
		498.1 -> 478.0	572		
MeFOSAA	8.191	570.1 -> 419.0	12849	2.47 µg/L	m 99
		570.1 -> 483.0	2438		
PFBA	3.007	212.8 -> 168.9	4288	9.57 µg/L	100
PFBS	5.518	298.7 -> 79.9	11132	2.32 µg/L	95
		298.7 -> 98.8	4885		
PFDA	8.146	512.9 -> 469.0	48197	2.35 µg/L	99
		512.9 -> 219.0	6714		
PFDODA	9.042	613.1 -> 569.0	39536	2.43 µg/L	97
		613.1 -> 319.0	4948		
PFDS	9.216	599.0 -> 79.9	5606	2.24 µg/L	97

7.3.1  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.503	599.0 -> 98.8	3042	2.43	µg/L	100
		363.1 -> 319.0	50620			
PFHpS	7.816	363.1 -> 169.0	6995	2.23	µg/L	92
		449.0 -> 79.9	7427			
PFHxA	5.566	449.0 -> 98.9	4572	2.46	µg/L	99
		313.0 -> 269.0	32605			
PFHxS	7.263	313.0 -> 118.9	1182	2.19	µg/L	99
		398.7 -> 79.9	8634			
PFNA	7.665	398.7 -> 98.9	4739	2.50	µg/L	98
		463.0 -> 419.0	35486			
PFNS	8.786	463.0 -> 219.0	6828	2.38	µg/L	100
		548.8 -> 79.9	8154			
PFOA	7.135	548.8 -> 98.9	4434	2.40	µg/L	100
		413.0 -> 369.0	64150			
PFOS	8.309	413.0 -> 169.0	8463	2.28	µg/L	89
		498.9 -> 79.9	8227			
PFPeA	4.388	498.9 -> 98.8	5161	4.83	µg/L	100
		263.0 -> 219.0	39312			
PFPeS	6.569	349.1 -> 79.9	9864	2.11	µg/L	96
		349.1 -> 98.9	5719			
PFTeDA	9.769	713.1 -> 669.0	31713	2.35	µg/L	100
		713.1 -> 168.9	2118			
PFTrDA	9.425	663.0 -> 619.0	36352	2.44	µg/L	99
		663.0 -> 168.9	2716			
PFUnDA	8.600	563.1 -> 519.0	38737	2.53	µg/L	99
		563.1 -> 269.1	5491			
11CI-PF3OUdS	9.477	630.9 -> 450.9	85697	9.29	µg/L	96
		632.9 -> 452.9	25202			
9CI-PF3ONS	8.651	530.8 -> 351.0	145979	8.92	µg/L	99
		532.8 -> 353.0	45953			
ADONA	6.753	376.9 -> 250.9	288758	9.51	µg/L	97
		376.9 -> 84.8	59799			
HFPO-DA	5.940	284.9 -> 168.9	12794	9.85	µg/L	98
		284.9 -> 184.9	1467			
3:3FTCA	3.866	241.0 -> 177.0	3049	7.58	µg/L	96
		241.0 -> 117.0	384			
5:3FTCA	6.206	341.0 -> 237.1	172511	61.39	µg/L	98
		341.0 -> 217.0	147700			
7:3FTCA	7.605	441.0 -> 316.9	87353	60.45	µg/L	90
		441.0 -> 336.9	179934			
EtFOSA	10.927	526.0 -> 219.0	6743	2.22	µg/L	94
		526.0 -> 169.0	6263			
EtFOSE	10.860	630.0 -> 58.9	14661	21.38	µg/L	100
		511.9 -> 219.0	5926			
MeFOSA	10.682	511.9 -> 169.0	6133	2.17	µg/L	98
		616.1 -> 58.9	20704			
MeFOSE	10.602	699.1 -> 79.9	3275	22.89	µg/L	100
		699.1 -> 98.8	2049			
PFDoDS	9.907	295.0 -> 201.0	3915	2.16	µg/L	99
		295.0 -> 84.9	2009			
NFDHA	5.445	279.0 -> 85.1	11368	5.06	µg/L	97
		229.0 -> 84.9	5691			
PFMBA	4.800	314.8 -> 134.9	85160	4.88	µg/L	100
PFMPA	3.553	314.8 -> 82.9	1945	2.68	µg/L	100
PFEESA	6.059			4.55	µg/L	99

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

7.3.1  
7

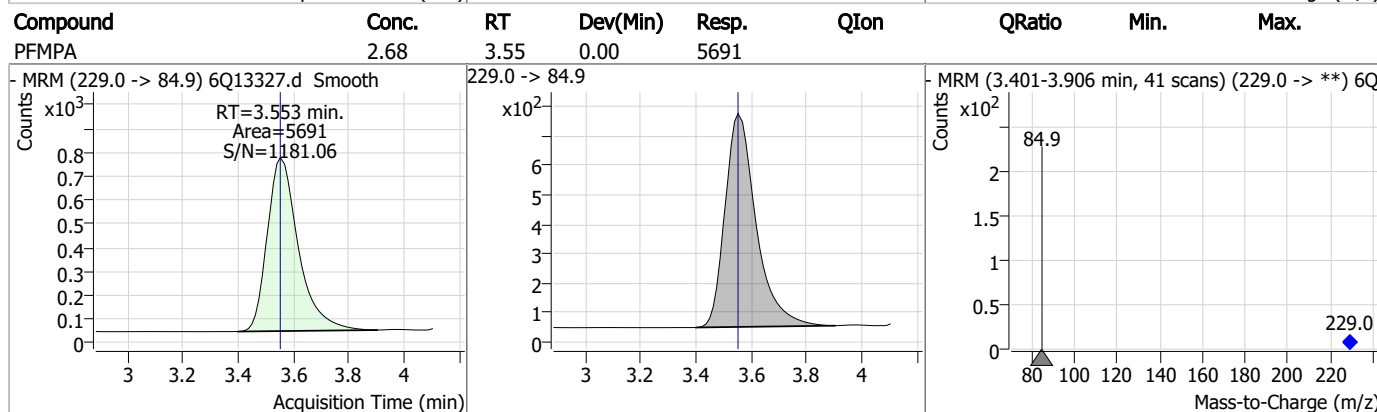
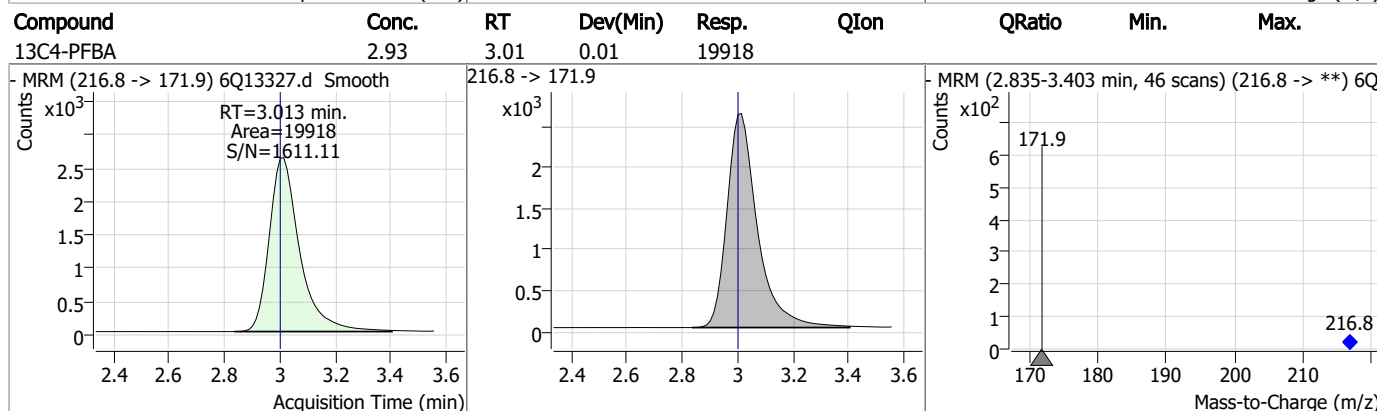
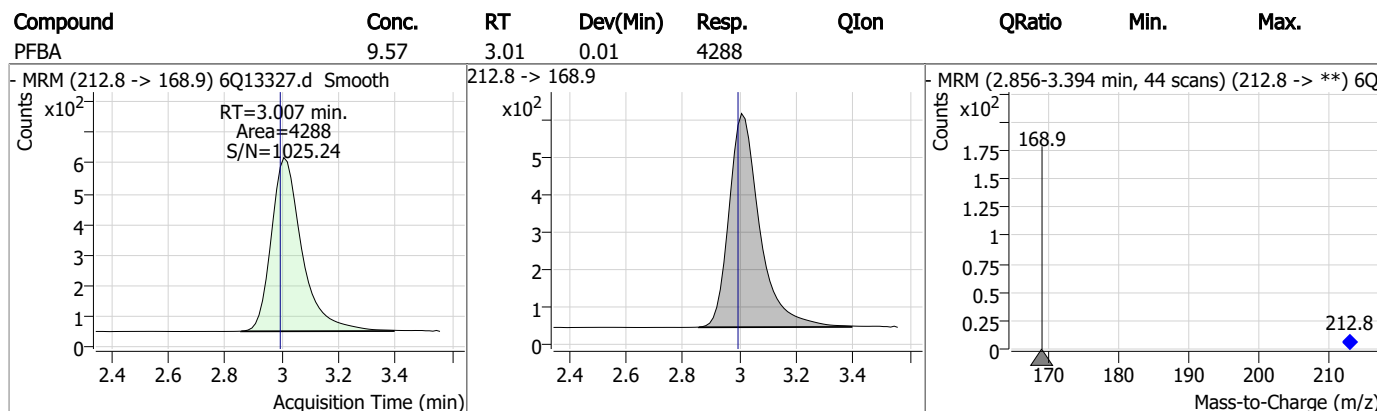
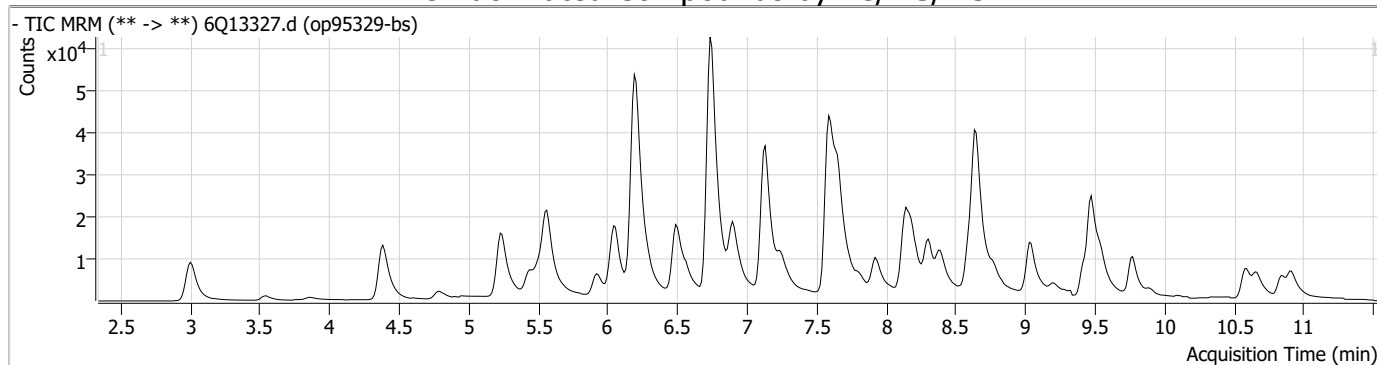
### Perfluorinated Compounds by LC/MS/MS

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

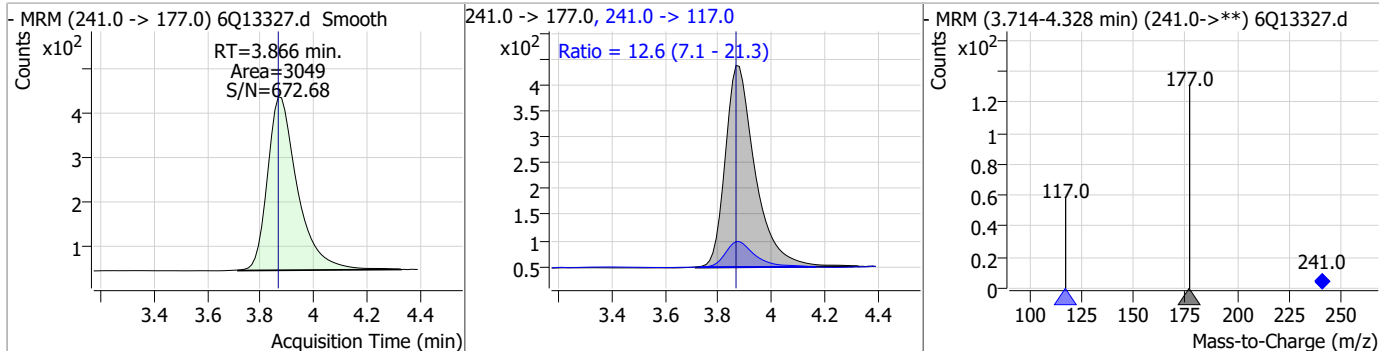
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### Perfluorinated Compounds by LC/MS/MS

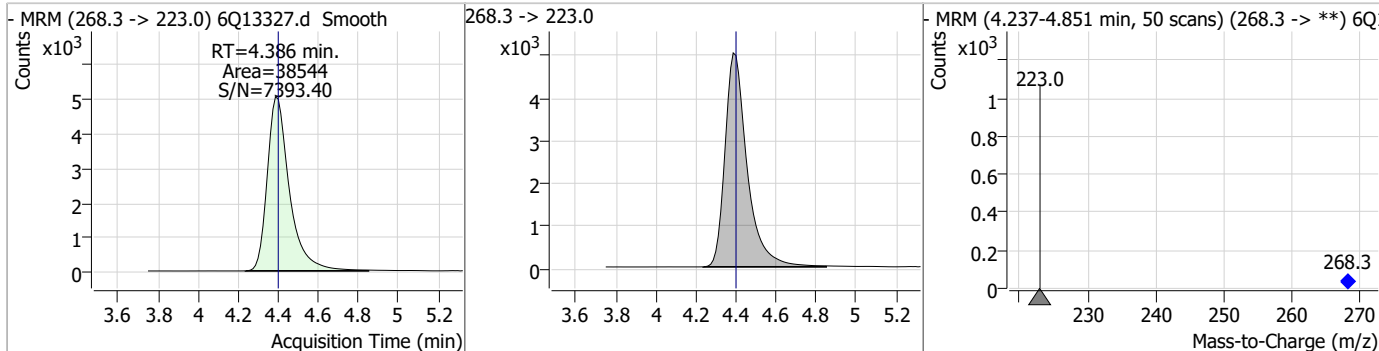


### Perfluorinated Compounds by LC/MS/MS

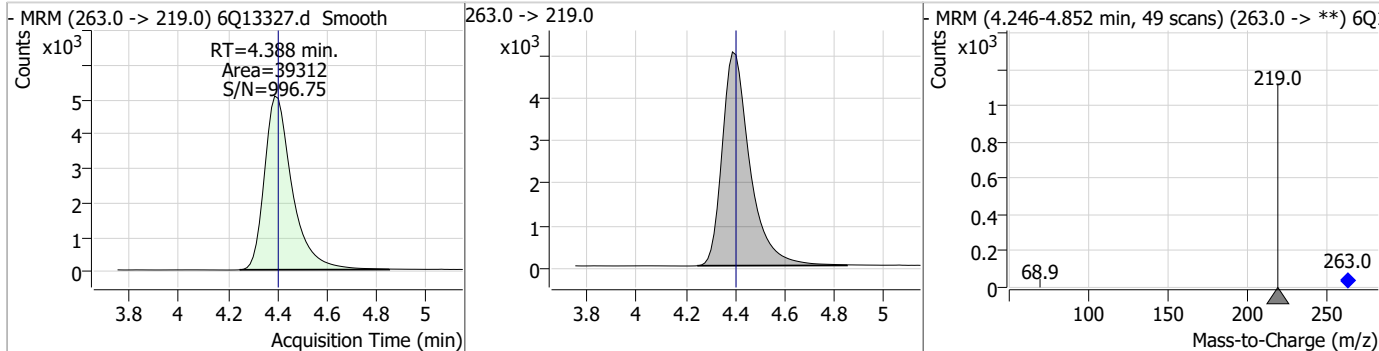
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	7.58	3.87	0.00	3049	241.0 -> 117.0	12.6	7.1	21.3



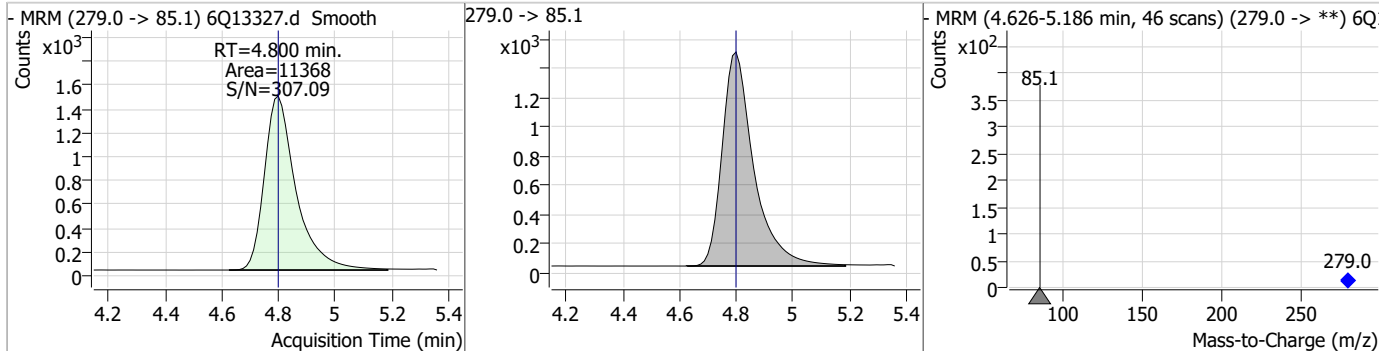
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.70	4.39	-0.01	38544				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.83	4.39	-0.01	39312				



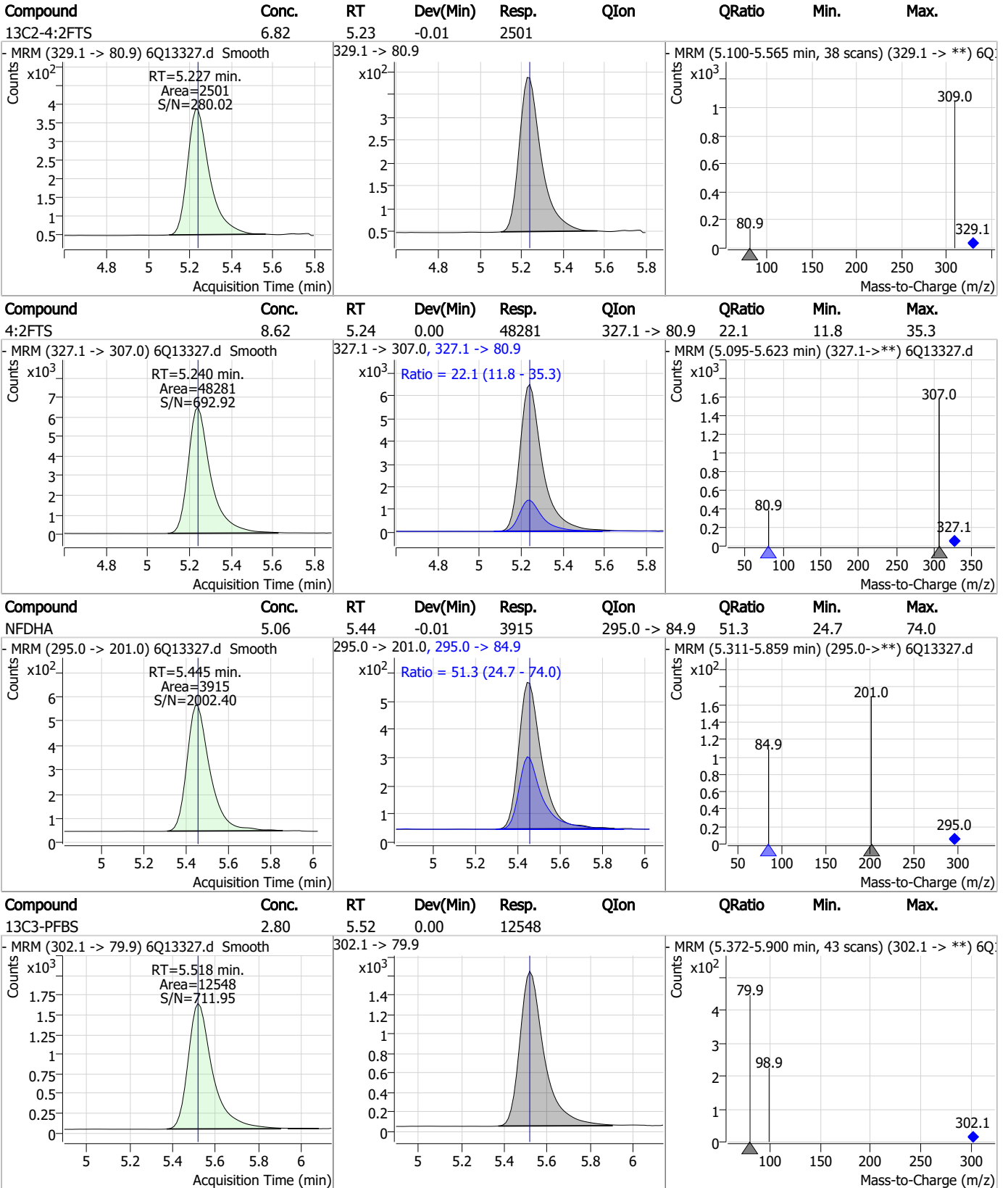
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.88	4.80	0.00	11368				



7.3.1  
7



### Perfluorinated Compounds by LC/MS/MS

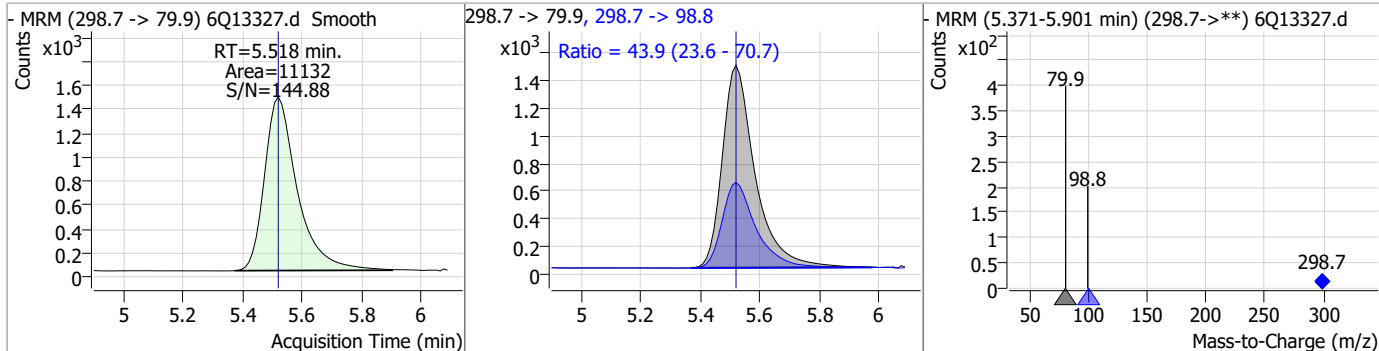


7.3.1

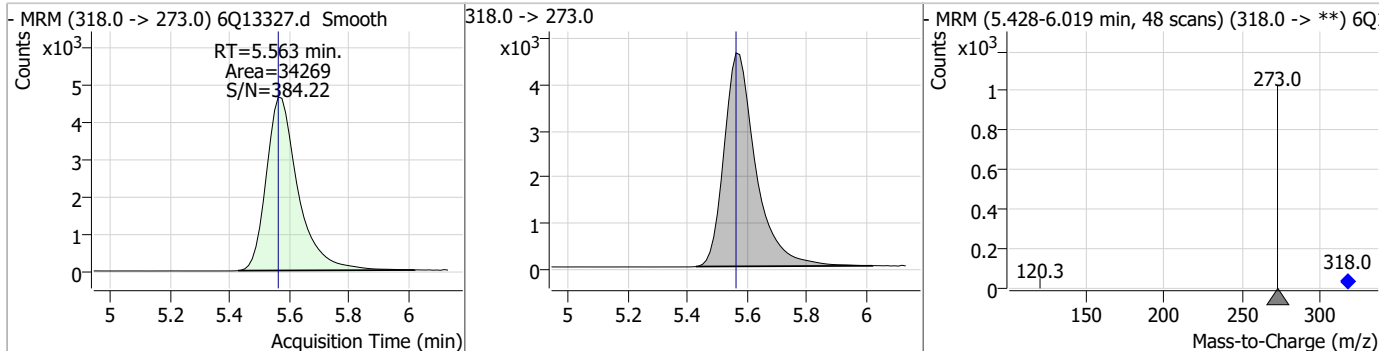
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### Perfluorinated Compounds by LC/MS/MS

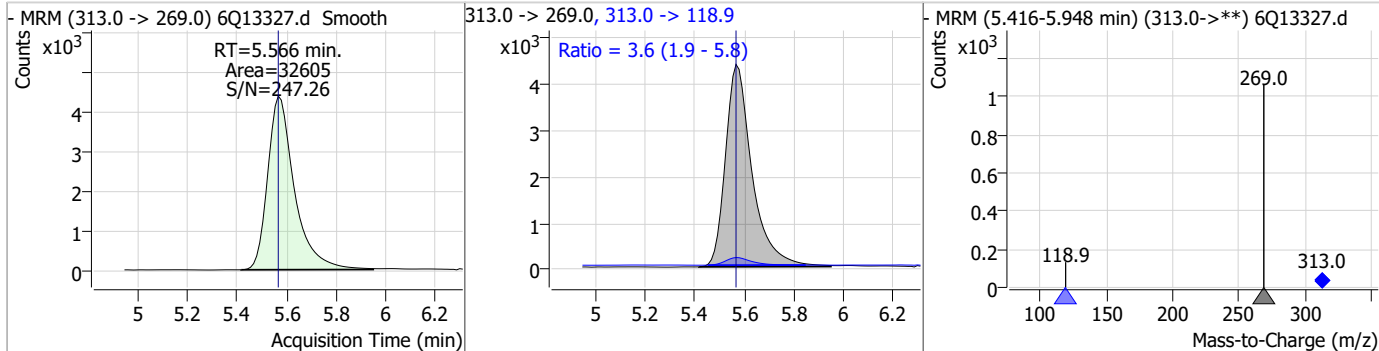
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.32	5.52	0.00	11132	298.7 -> 98.8	43.9	23.6	70.7



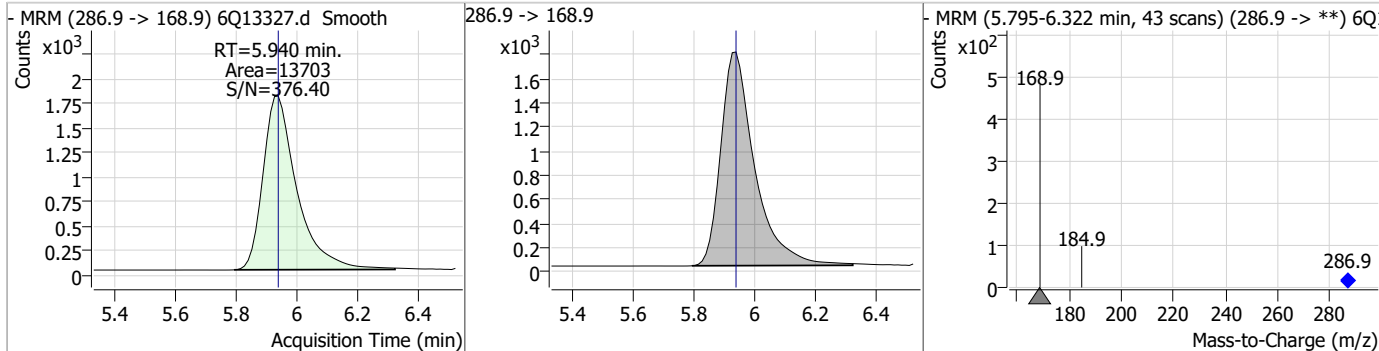
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.86	5.56	0.00	34269				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.46	5.57	0.00	32605	313.0 -> 118.9	3.6	1.9	5.8

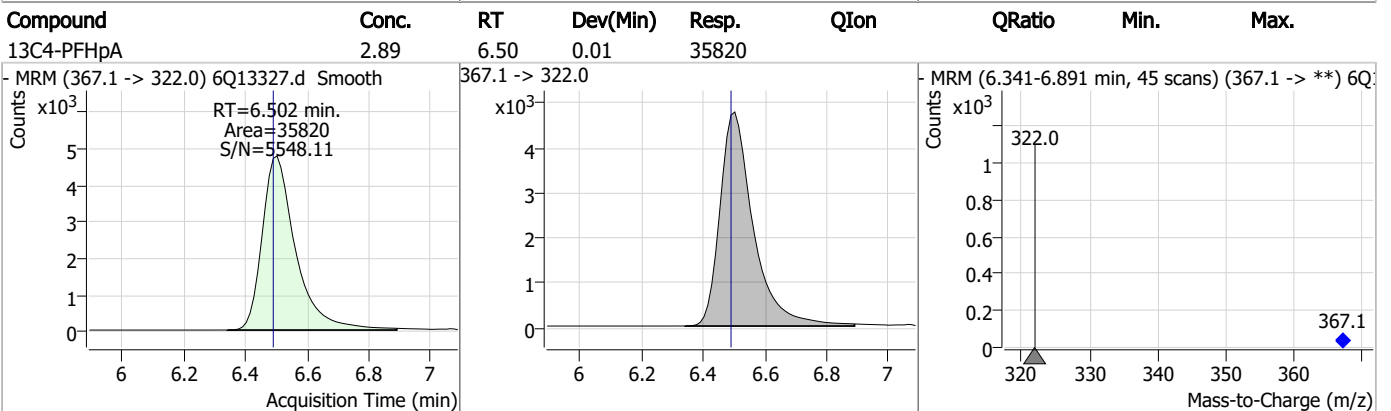
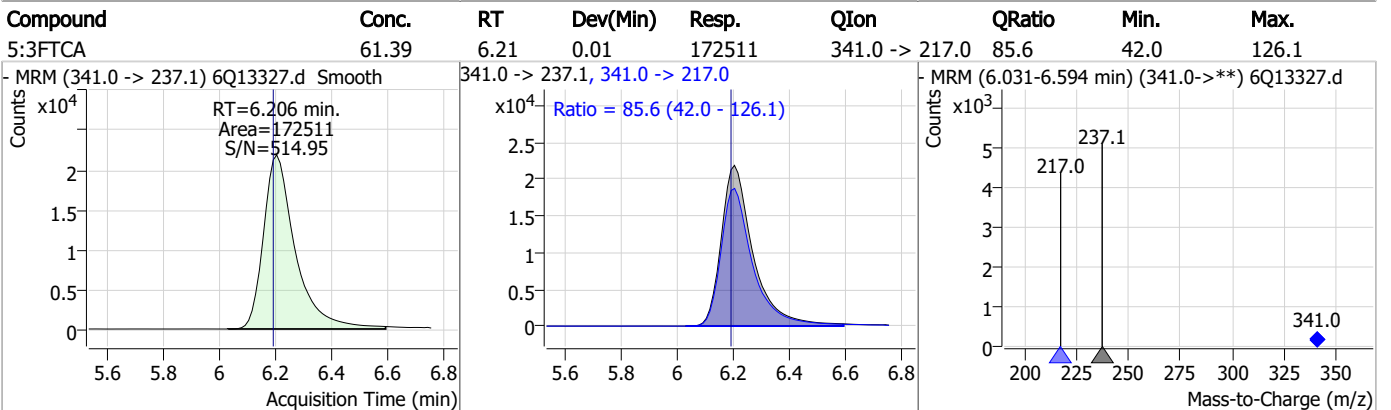
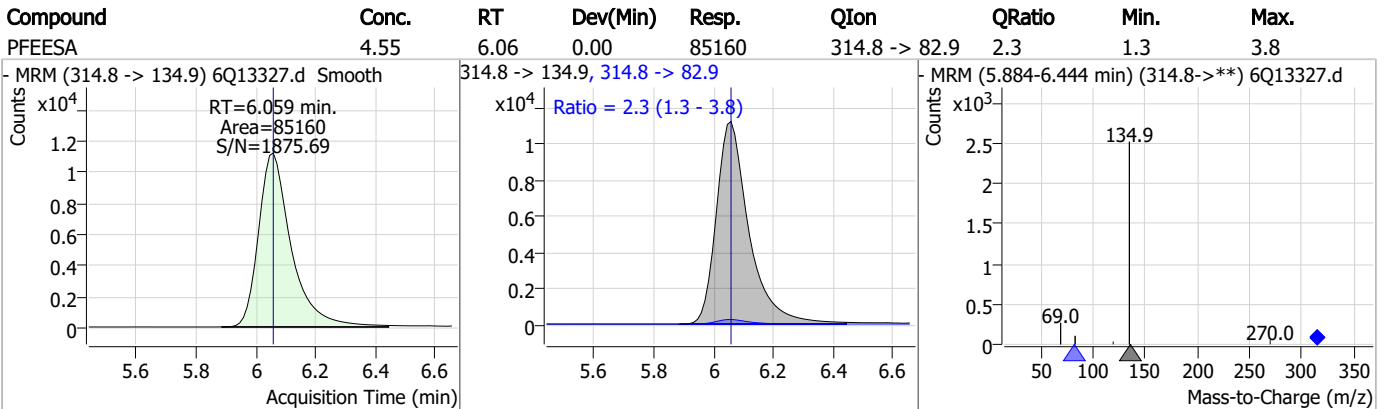
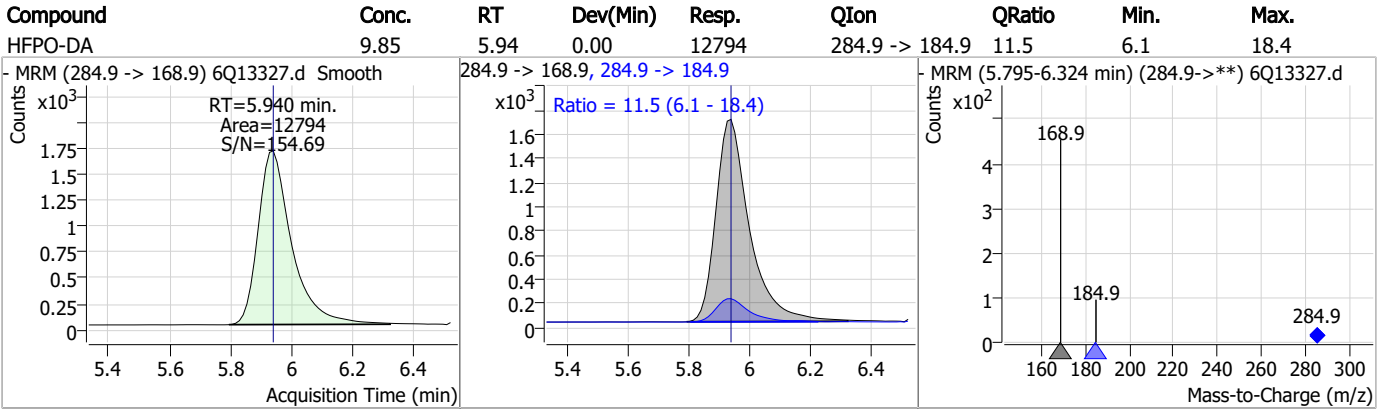


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.60	5.94	0.00	13703				



7.3.1  
7

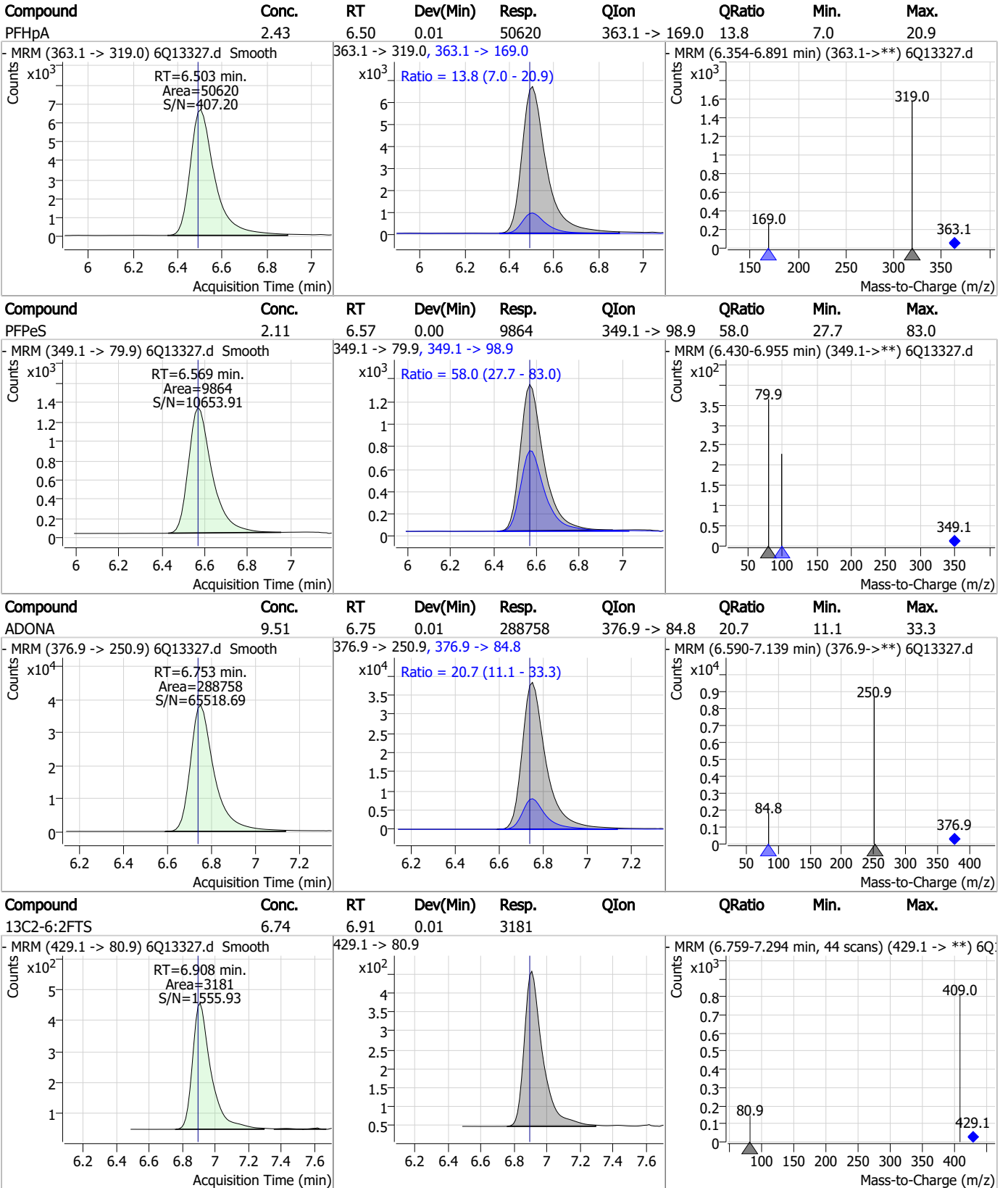
### Perfluorinated Compounds by LC/MS/MS



7.3.1

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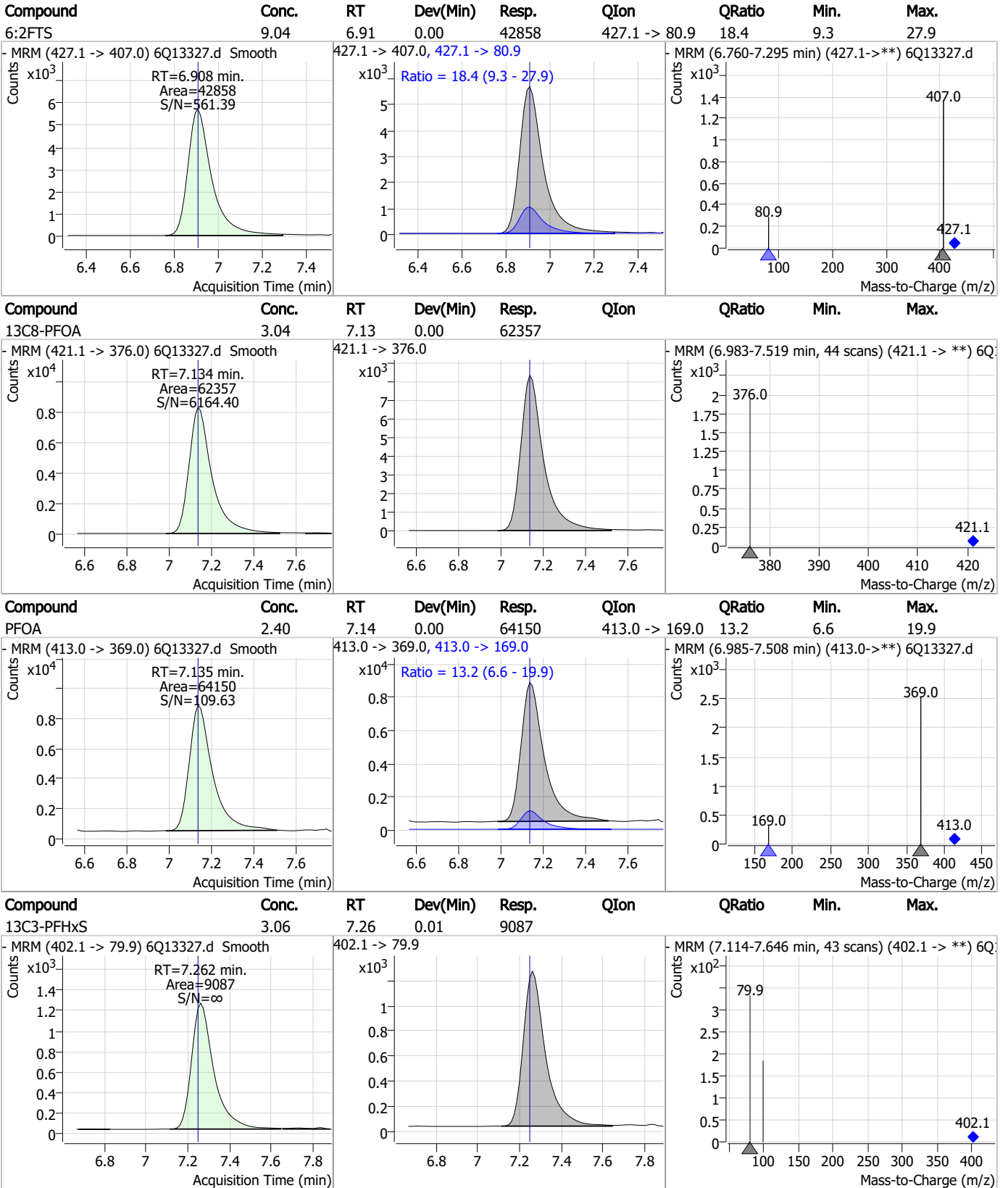
### Perfluorinated Compounds by LC/MS/MS



7.3.1

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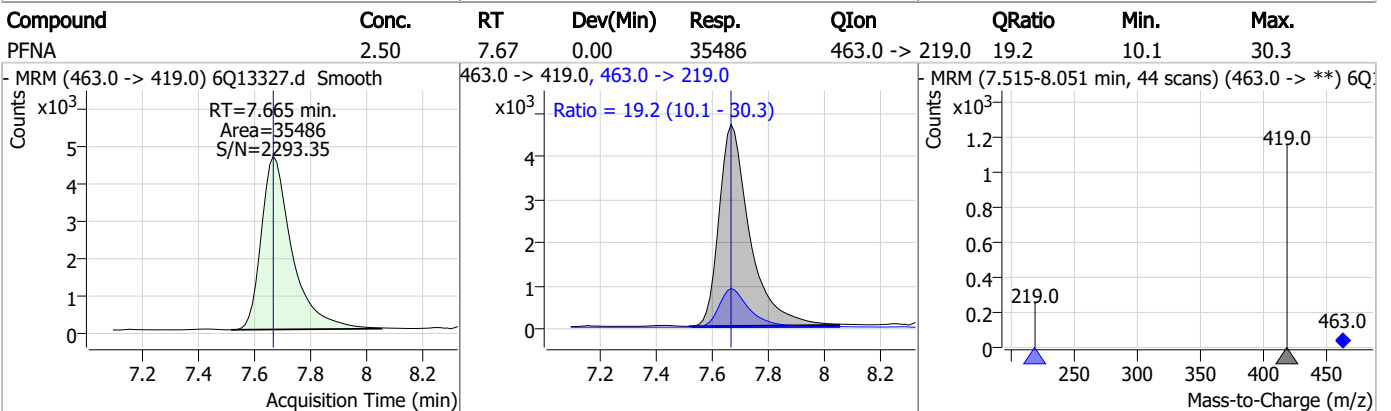
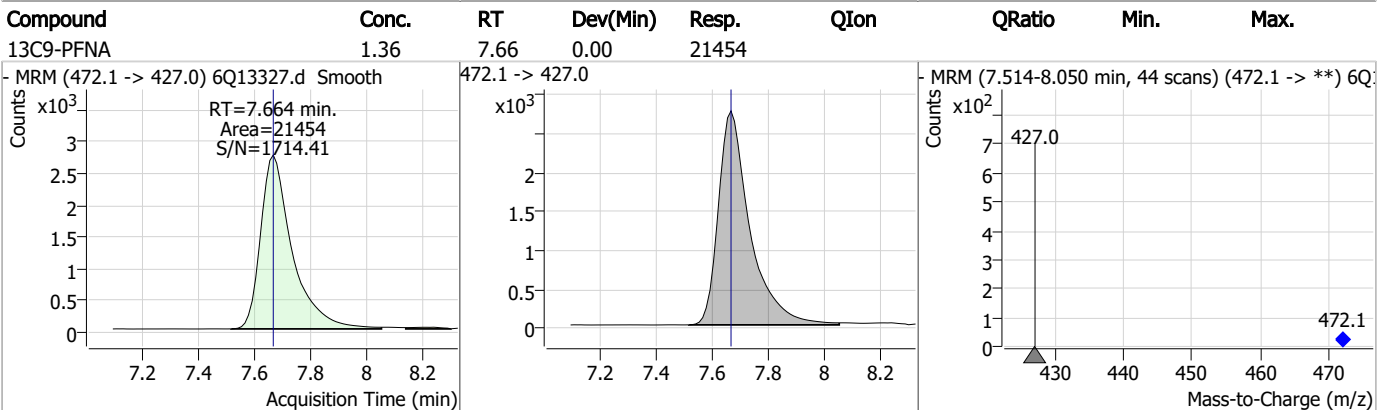
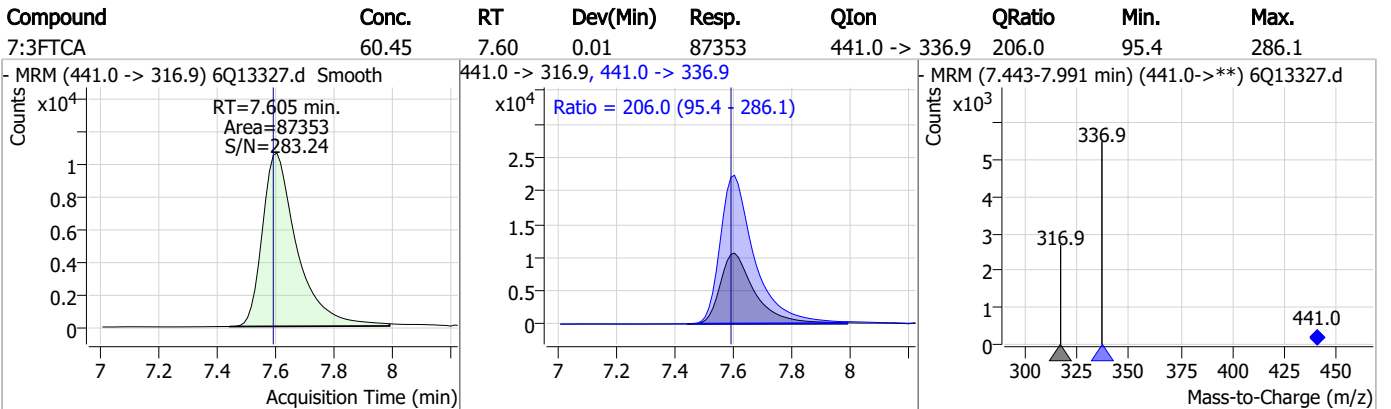
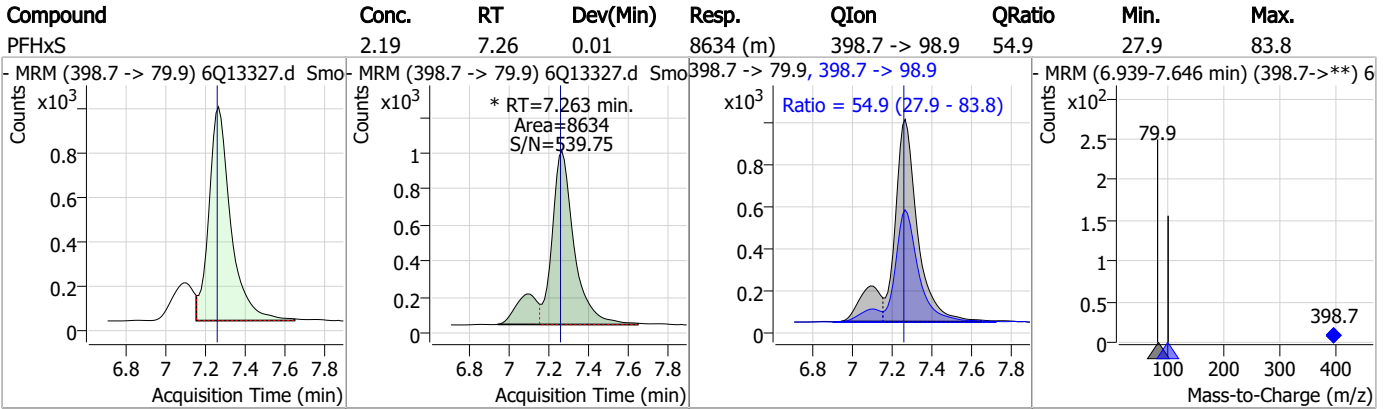
### Perfluorinated Compounds by LC/MS/MS



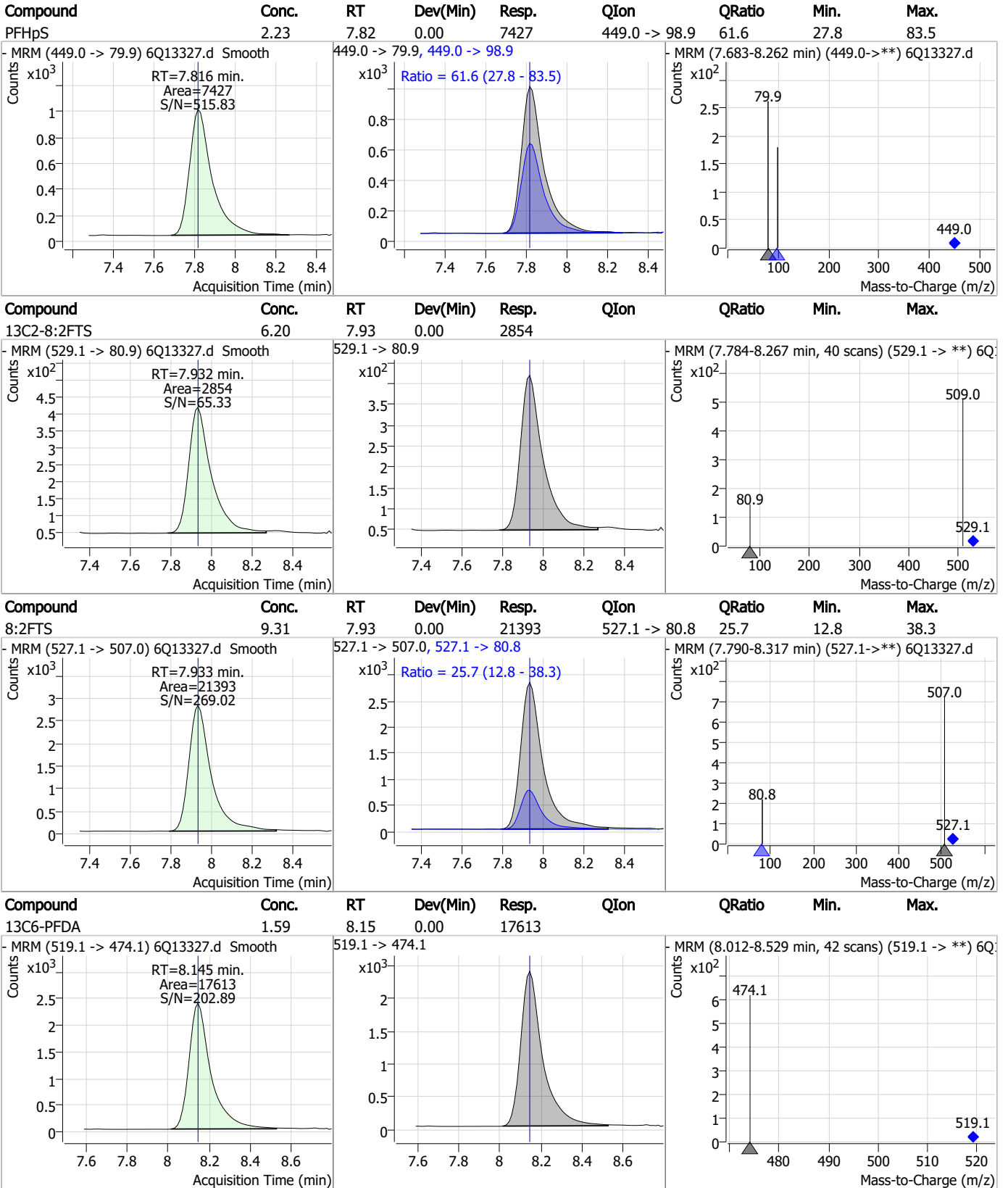
7.3.1

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### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS

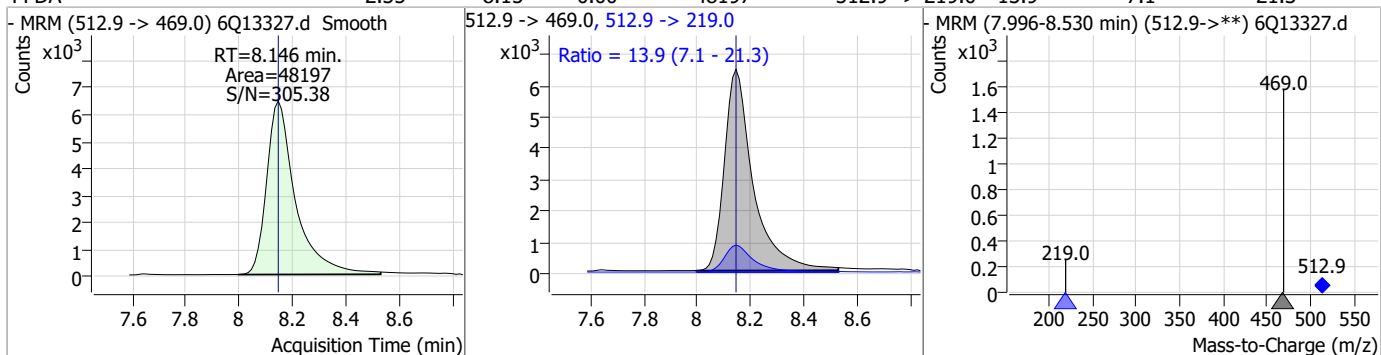


7.3.1

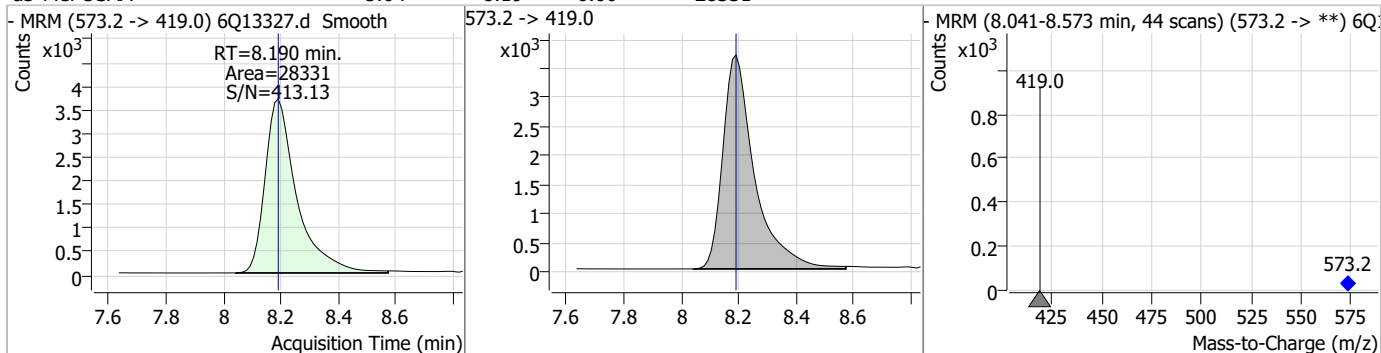
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### Perfluorinated Compounds by LC/MS/MS

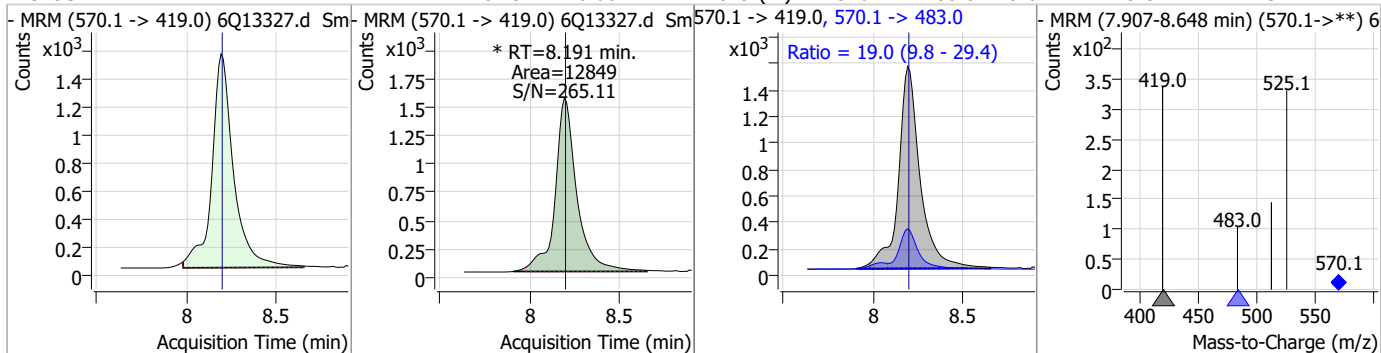
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.35	8.15	0.00	48197	512.9 -> 219.0	13.9	7.1	21.3



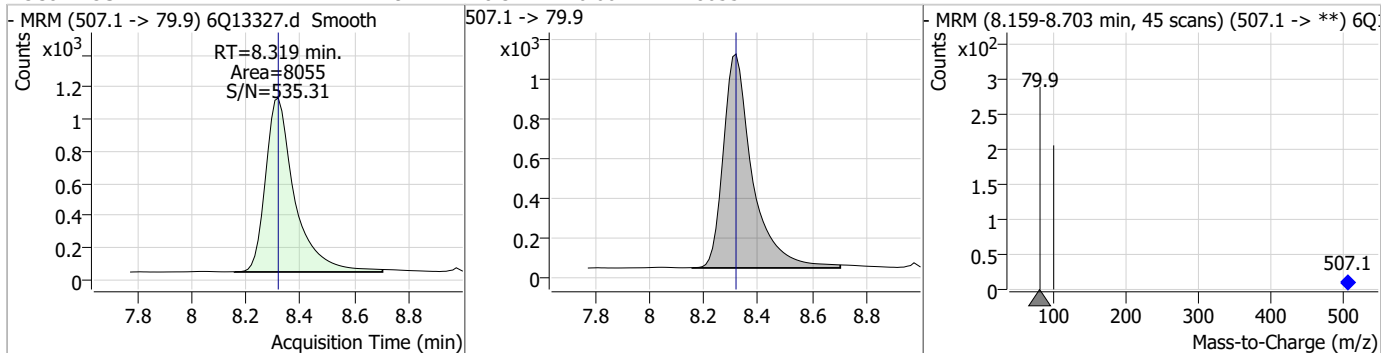
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.64	8.19	0.00	28331				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.47	8.19	0.00	12849 (m)	570.1 -> 483.0	19.0	9.8	29.4

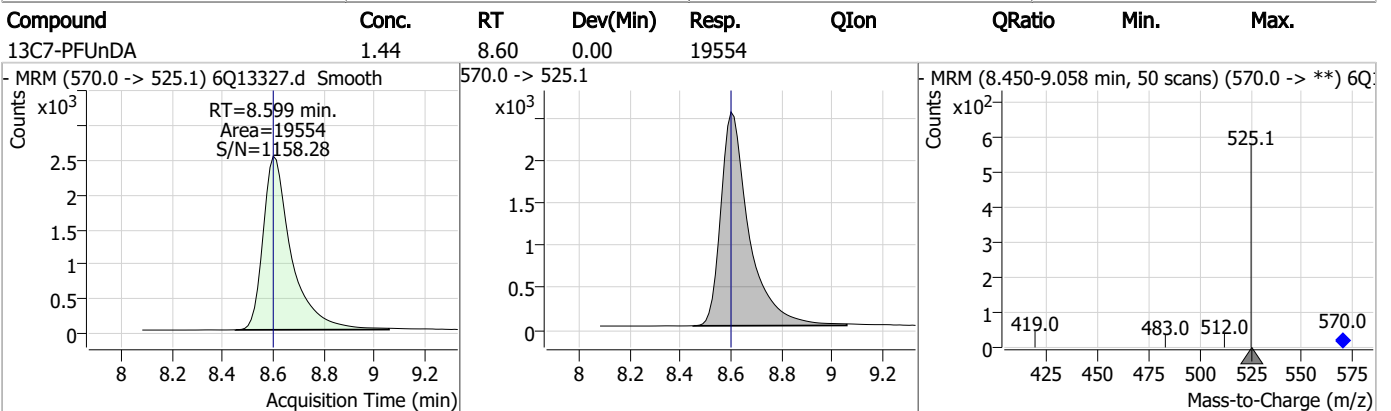
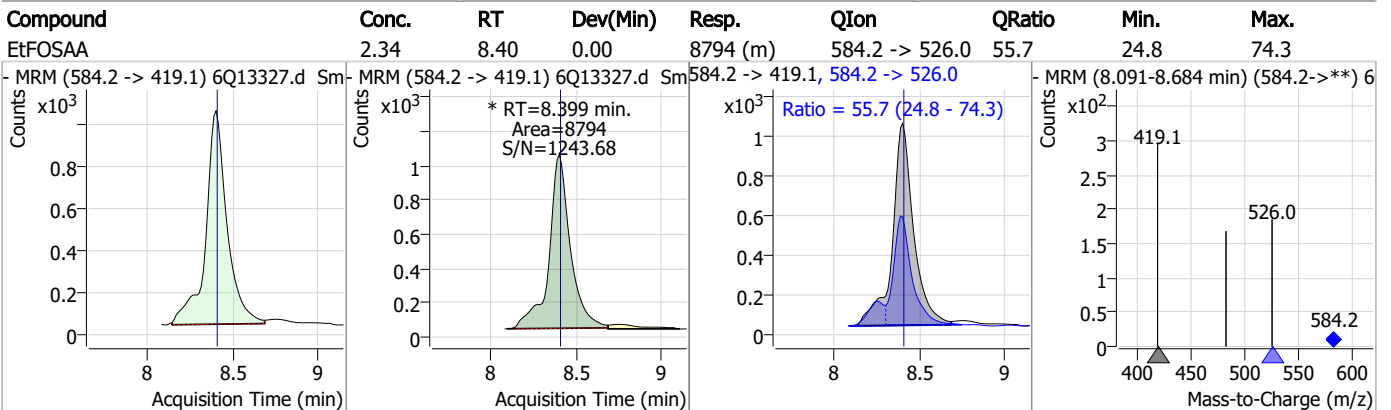
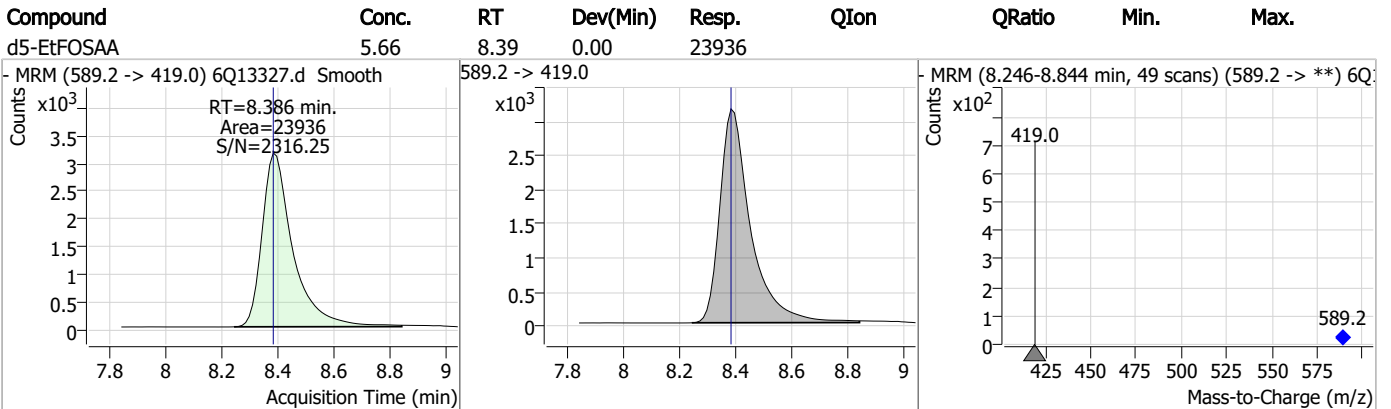
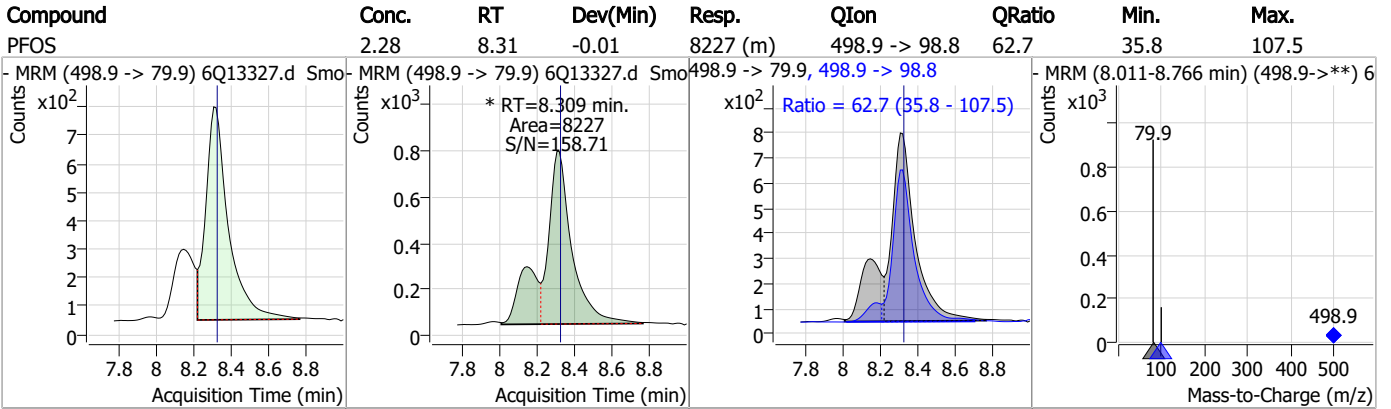


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.79	8.32	0.00	8055				





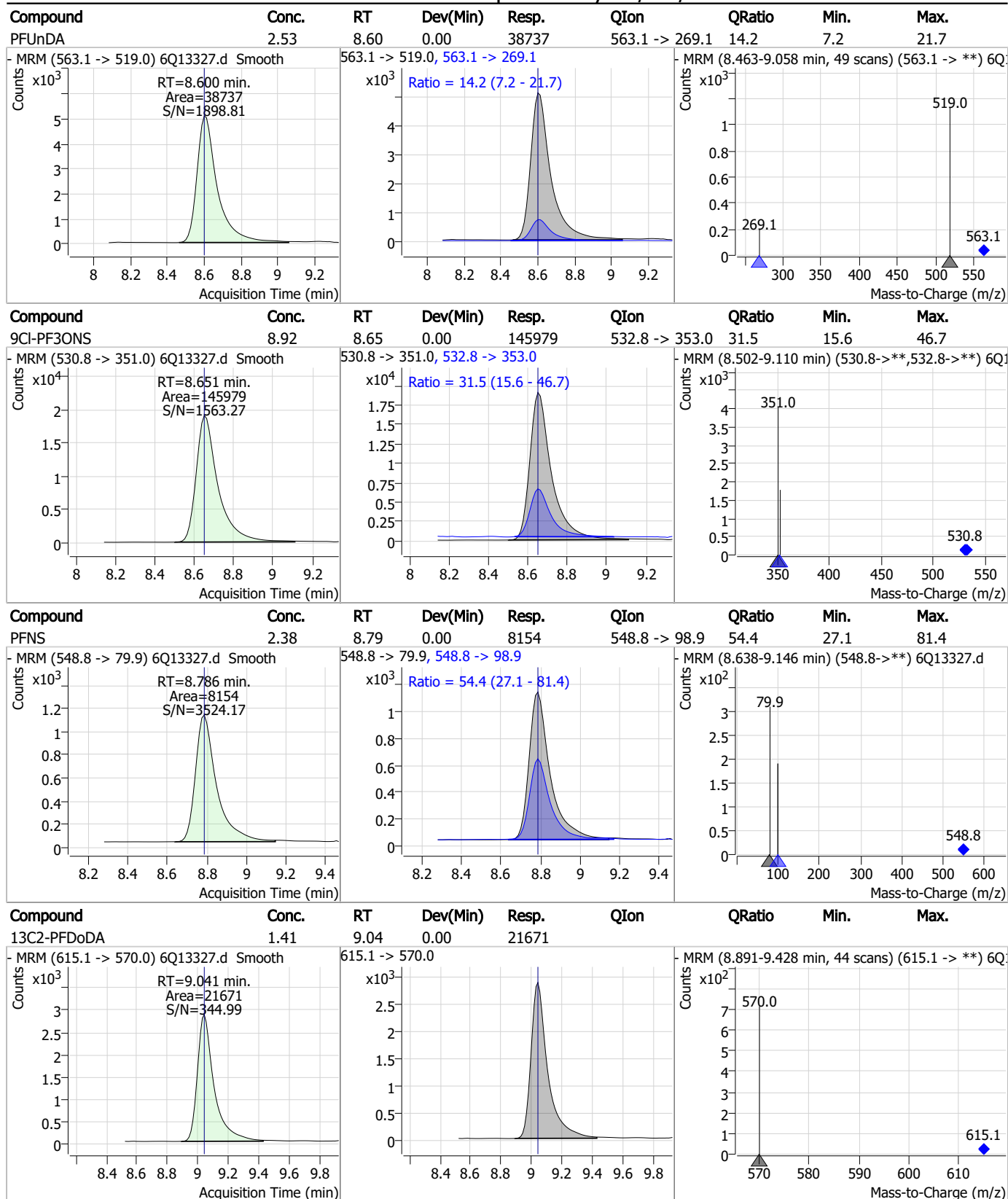
### Perfluorinated Compounds by LC/MS/MS



7.3.1

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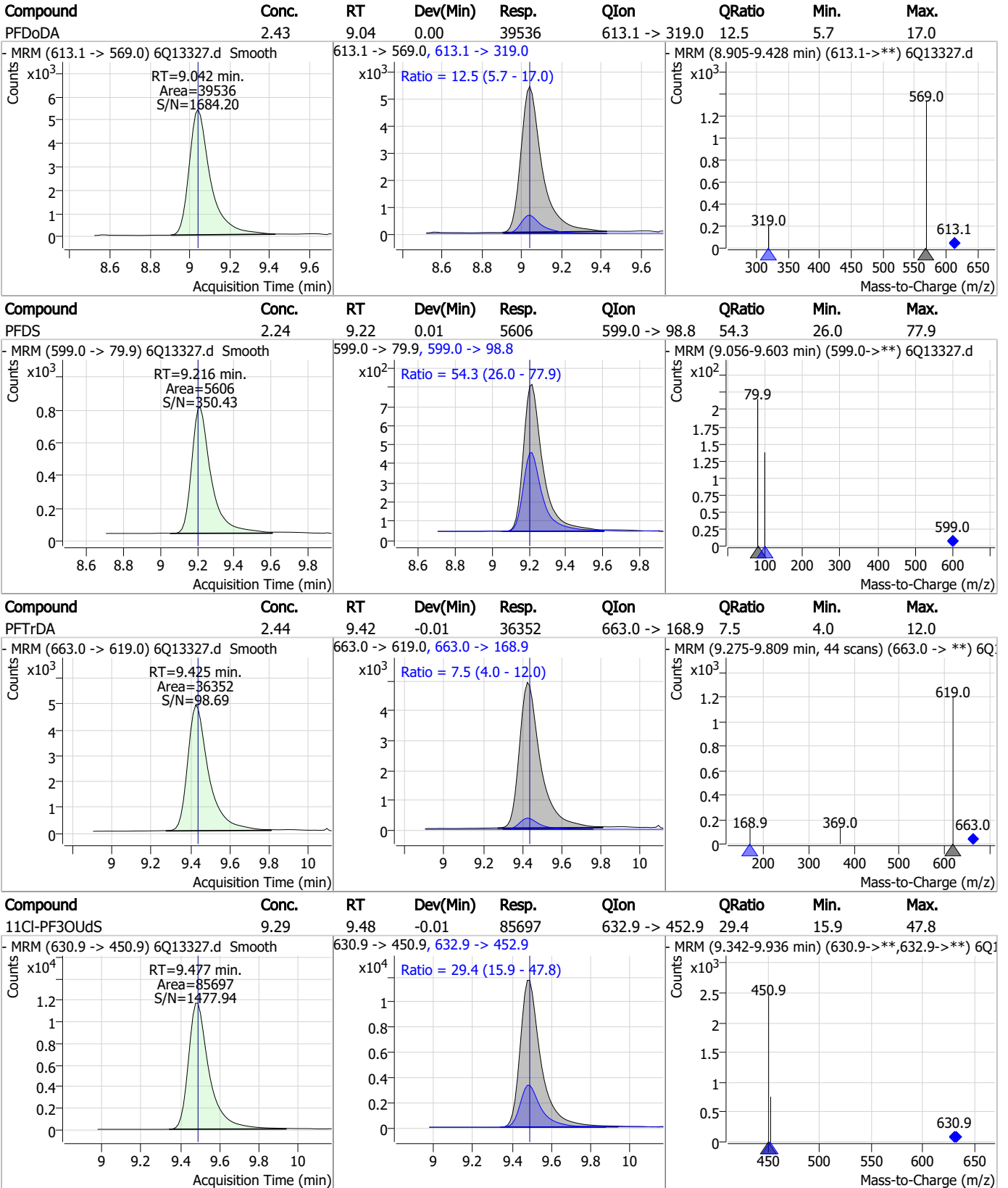
### Perfluorinated Compounds by LC/MS/MS



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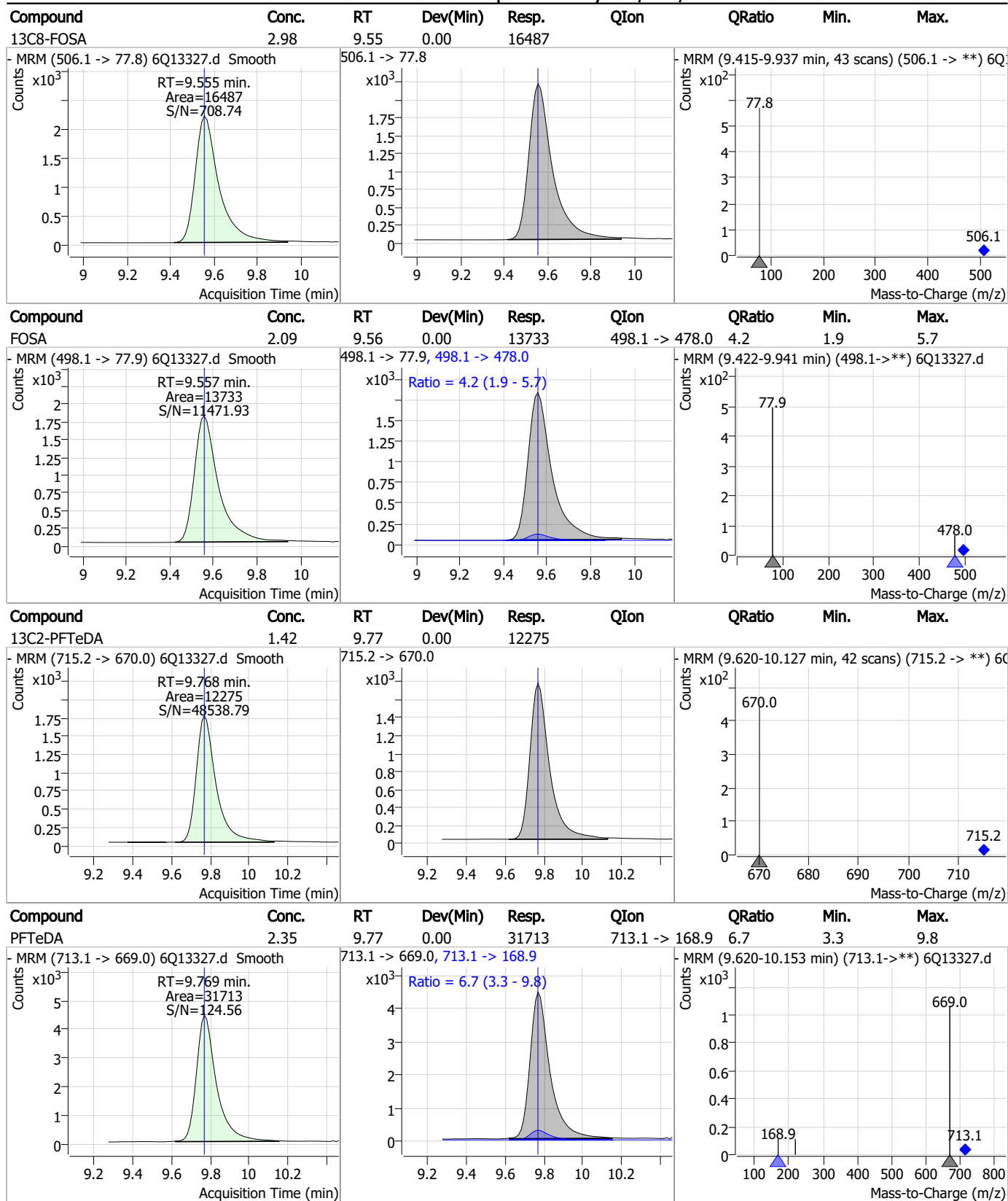
### Perfluorinated Compounds by LC/MS/MS



7.3.1

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### Perfluorinated Compounds by LC/MS/MS

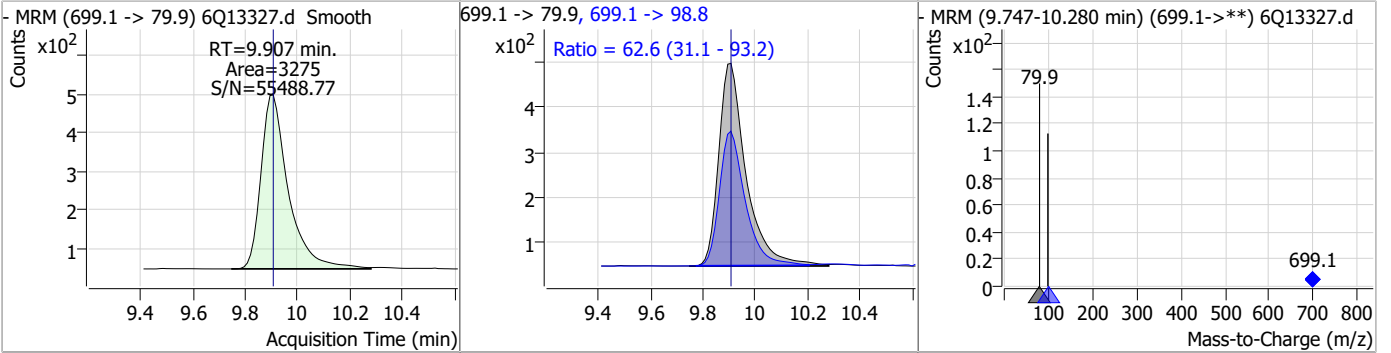


7.3.1  
7

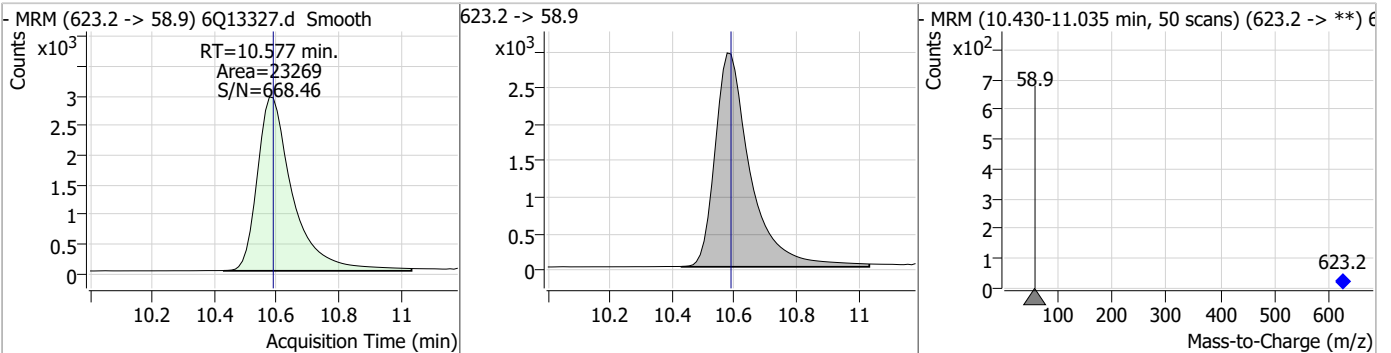


### Perfluorinated Compounds by LC/MS/MS

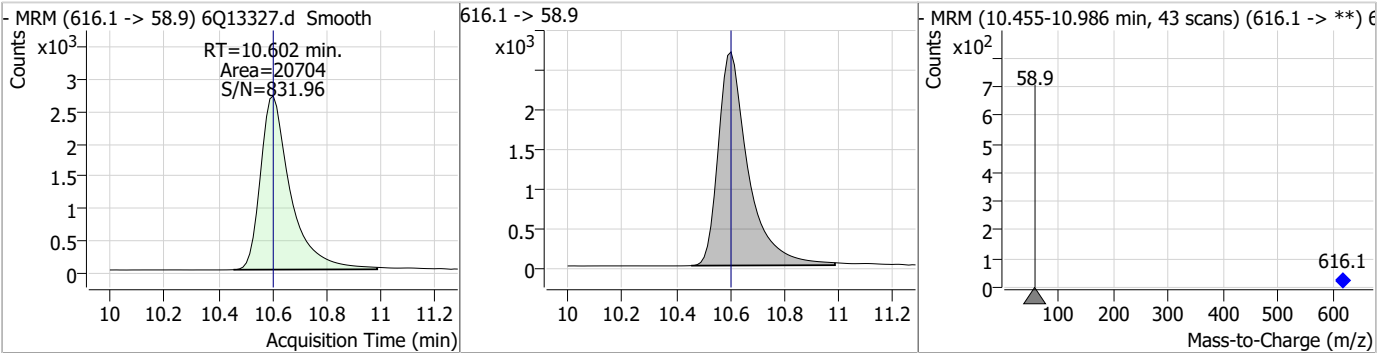
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.16	9.91	0.00	3275	699.1 -> 98.8	62.6	31.1	93.2



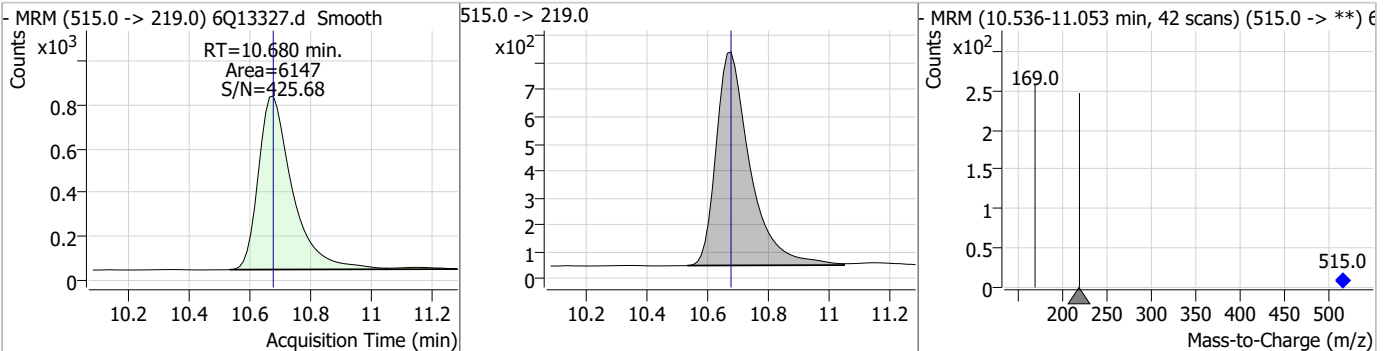
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.47	10.58	-0.01	23269				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.89	10.60	0.00	20704				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.74	10.68	0.00	6147				



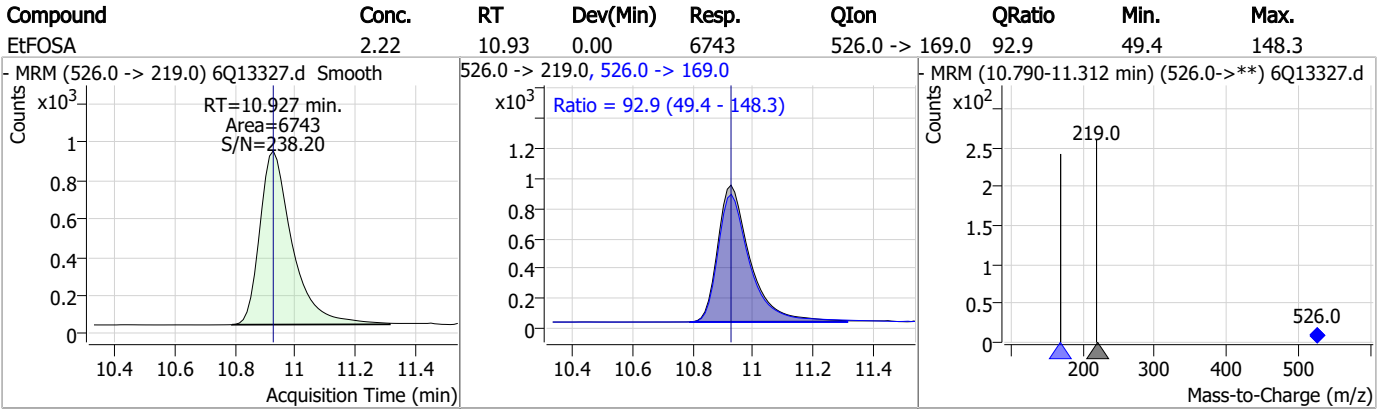
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.17	10.68	0.00	5926	511.9 -> 169.0	103.5	50.5	151.6
d9-EtFOSE	27.35	10.83	-0.01	16079	639.2 -> 58.9			
EtFOSE	21.38	10.86	0.00	14661	630.0 -> 58.9			
d5-EtFOSA	2.63	10.92	0.00	6228	531.1 -> 219.0			

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: OP95329-BS                      Method: EPA DRAFT 1633  
Lab FileID: 6Q13327.D                      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 19:50                      Supervisor approved: 02/10/23 17:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.3.1.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13328.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 8:04:00 PM  
 Sample Name : op95329-llbs:3  
 Vial : P1-D2  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95329,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.000	216.8 -> 171.9	81897	10.00 µg/L	0.000
M5-PFPeA	4.386	268.3 -> 223.0	38999	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	35538	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	36460	2.50 µg/L	0.012
M8-PFOA	7.146	421.1 -> 376.0	62337	2.50 µg/L	0.012
M9-PFNA	7.664	472.1 -> 427.0	22802	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	18032	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	20245	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	22901	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	11545	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	15947	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	13105	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	9216	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	8295	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2727	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	3090	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2915	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	29188	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	13975	10.00 µg/L	0.000
M5-EtFOSAA	8.398	589.2 -> 419.0	25107	5.00 µg/L	0.012
M7-MeFOSE	10.577	623.2 -> 58.9	20936	25.00 µg/L	-0.012
M9-EtFOSE	10.835	639.2 -> 58.9	14394	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	6075	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	5751	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	8754	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	31357	5.00 µg/L	0.012
18O2-PFHxS	7.273	403.0 -> 83.9	6210	2.50 µg/L	0.012
13C4-PFOA	7.147	417.1 -> 372.0	67701	2.50 µg/L	0.012
13C2-PFDA	8.145	515.1 -> 470.1	21523	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	22243	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	29921	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2727	6.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 132.4%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3090	5.82 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.5%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2915	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.6%		
13C2-PFDoDA	9.041	615.1 -> 570.0	22901	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C2-PFTeDA	9.768	715.2 -> 670.0	11545	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFBS	5.518	302.1 -> 79.9	13105	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C3-PFHxS	7.262	402.1 -> 79.9	9216	2.76 µg/L	0.012

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 = 110.4%	
13C4-PFBA	3.000	216.8 -> 171.9	81897	11.70 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.0%	
13C4-PFHpA	6.502	367.1 -> 322.0	36460	2.91 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.3%	
13C5-PFHxA	5.563	318.0 -> 273.0	35538	2.94 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.4%	
13C5-PFPeA	4.386	268.3 -> 223.0	38999	5.70 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.1%	
13C6-PFDA	8.145	519.1 -> 474.1	18032	1.48 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 118.4%	
13C7-PFUnDA	8.612	570.0 -> 525.1	20245	1.35 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C8-FOSA	9.555	506.1 -> 77.8	15947	2.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.8%	
13C8-PFOA	7.146	421.1 -> 376.0	62337	2.75 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C8-PFOS	8.319	507.1 -> 79.9	8295	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.4%	
13C9-PFNA	7.664	472.1 -> 427.0	22802	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.5%	
d3-MeFOSAA	8.190	573.2 -> 419.0	29188	5.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.8%	
13C3-HFPO-DA	5.940	286.9 -> 168.9	13975	11.70 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.0%	
d3-MeFOSA	10.680	515.0 -> 219.0	5751	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
d5-EtFOSAA	8.398	589.2 -> 419.0	25107	5.92 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.4%	
d7-MeFOSE	10.577	623.2 -> 58.9	20936	23.73 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d9-EtFOSE	10.835	639.2 -> 58.9	14394	24.39 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
d5-EtFOSA	10.913	531.1 -> 219.0	6075	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.240	327.1 -> 307.0	19876	3.26 µg/L	100
		327.1 -> 80.9	4664		
6:2FTS	6.908	427.1 -> 407.0	17320	3.76 µg/L	98
		427.1 -> 80.9	3369		
8:2FTS	7.933	527.1 -> 507.0	8964	3.82 µg/L	94
		527.1 -> 80.8	2039		
EtFOSAA	8.399	584.2 -> 419.1	3397	0.86 µg/L	90
		584.2 -> 526.0	1922		
FOSA	9.557	498.1 -> 77.9	5447	0.86 µg/L	97
		498.1 -> 478.0	268		
MeFOSAA	8.191	570.1 -> 419.0	5346	1.00 µg/L	96
		570.1 -> 483.0	1149	m	
PFBA	3.007	212.8 -> 168.9	6755	3.66 µg/L	100
PFBS	5.518	298.7 -> 79.9	4664	0.93 µg/L	93
		298.7 -> 98.8	1984		
PFDA	8.146	512.9 -> 469.0	17906	0.85 µg/L	97
		512.9 -> 219.0	2781		
PFDODA	9.042	613.1 -> 569.0	14564	0.85 µg/L	96
		613.1 -> 319.0	1878		
PFDS	9.216	599.0 -> 79.9	2209	0.86 µg/L	97

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	1101			
PFHpA	6.503	363.1 -> 319.0	19565	0.92	µg/L	98
		363.1 -> 169.0	2857			
PFHpS	7.828	449.0 -> 79.9	3278	0.96	µg/L	91
		449.0 -> 98.9	2029			
PFHxA	5.566	313.0 -> 269.0	13040	0.95	µg/L	97
		313.0 -> 118.9	376			
PFHxS	7.263	398.7 -> 79.9	3128	0.78	µg/L	m 89
		398.7 -> 98.9	2010			
PFNA	7.665	463.0 -> 419.0	12280	0.81	µg/L	96
		463.0 -> 219.0	2714			
PFNS	8.786	548.8 -> 79.9	3104	0.88	µg/L	91
		548.8 -> 98.9	1894			
PFOA	7.148	413.0 -> 369.0	27027	1.01	µg/L	99
		413.0 -> 169.0	3502			
PFOS	8.321	498.9 -> 79.9	3166	0.85	µg/L	m 91
		498.9 -> 98.8	2024			
PFPeA	4.388	263.0 -> 219.0	15669	1.90	µg/L	100
PFPeS	6.581	349.1 -> 79.9	4031	0.85	µg/L	96
		349.1 -> 98.9	2120			
PFTeDA	9.769	713.1 -> 669.0	12260	0.97	µg/L	99
		713.1 -> 168.9	768			
PFTrDA	9.425	663.0 -> 619.0	14303	0.91	µg/L	98
		663.0 -> 168.9	1241			
PFUnDA	8.612	563.1 -> 519.0	15356	0.97	µg/L	100
		563.1 -> 269.1	2253			
11CI-PF3OUdS	9.489	630.9 -> 450.9	33419	3.55	µg/L	97
		632.9 -> 452.9	10157			
9CI-PF3ONS	8.651	530.8 -> 351.0	58171	3.49	µg/L	100
		532.8 -> 353.0	17999			
ADONA	6.753	376.9 -> 250.9	112613	3.64	µg/L	99
		376.9 -> 84.8	25762			
HFPO-DA	5.940	284.9 -> 168.9	4891	3.69	µg/L	99
		284.9 -> 184.9	625			
3:3FTCA	3.866	241.0 -> 177.0	1423	3.49	µg/L	98
		241.0 -> 117.0	188			
5:3FTCA	6.206	341.0 -> 237.1	63475	21.78	µg/L	96
		341.0 -> 217.0	55758			
7:3FTCA	7.605	441.0 -> 316.9	35019	23.37	µg/L	87
		441.0 -> 336.9	73498			
EtFOSA	10.927	526.0 -> 219.0	2448	0.83	µg/L	97
		526.0 -> 169.0	2495			
EtFOSE	10.860	630.0 -> 58.9	5557	9.05	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	2208	0.86	µg/L	97
		511.9 -> 169.0	2155			
MeFOSE	10.602	616.1 -> 58.9	7678	9.43	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	1249	0.80	µg/L	97
		699.1 -> 98.8	804			
NFDHA	5.457	295.0 -> 201.0	1616	2.01	µg/L	89
		295.0 -> 84.9	673			
PFMBA	4.800	279.0 -> 85.1	4645	1.97	µg/L	100
PFMPA	3.553	229.0 -> 84.9	4135	1.93	µg/L	100
PFEESA	6.059	314.8 -> 134.9	32796	1.69	µg/L	100
		314.8 -> 82.9	807			

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

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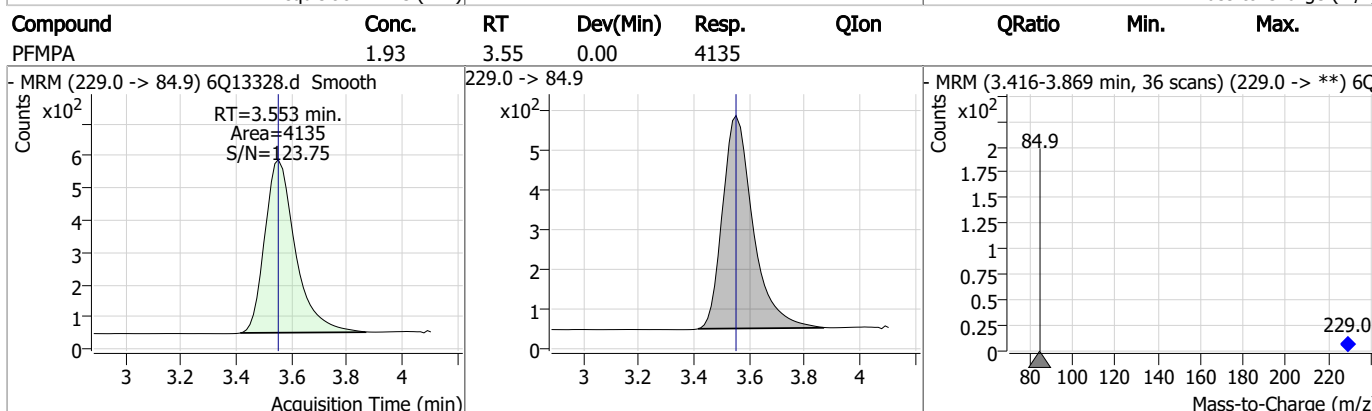
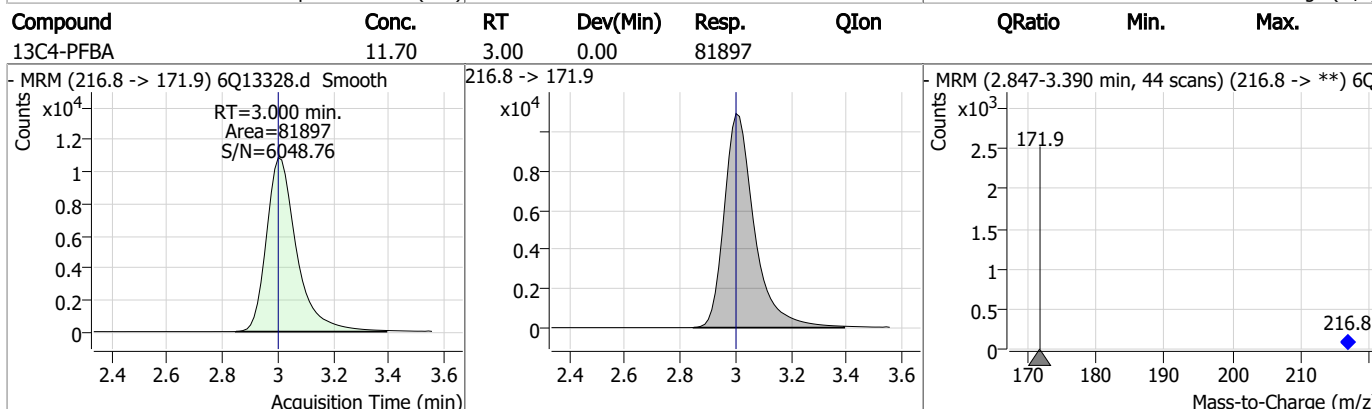
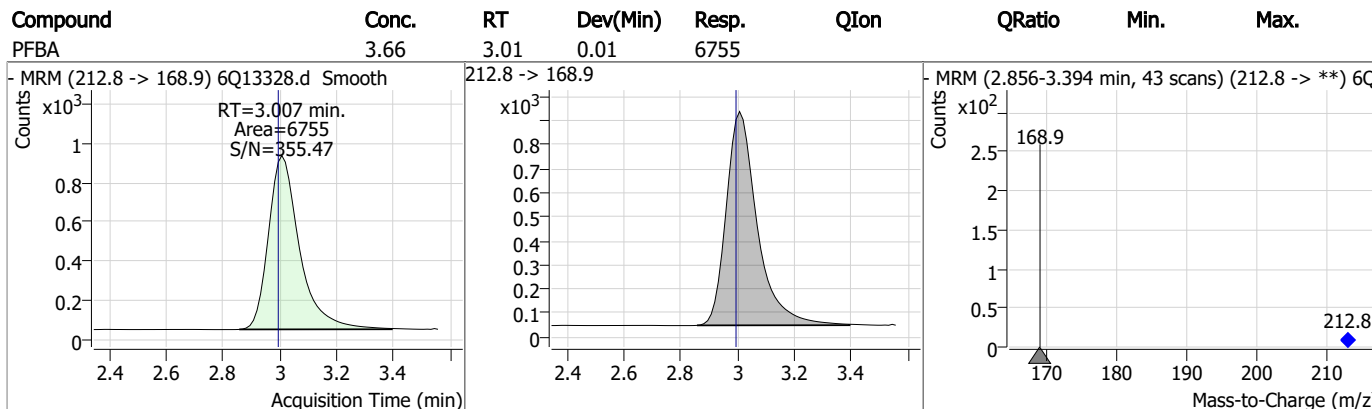
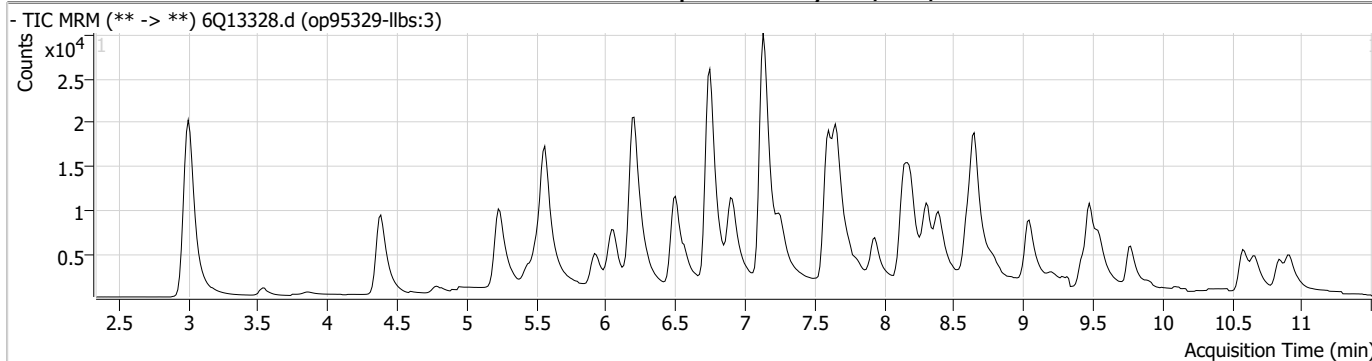
### Perfluorinated Compounds by LC/MS/MS

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

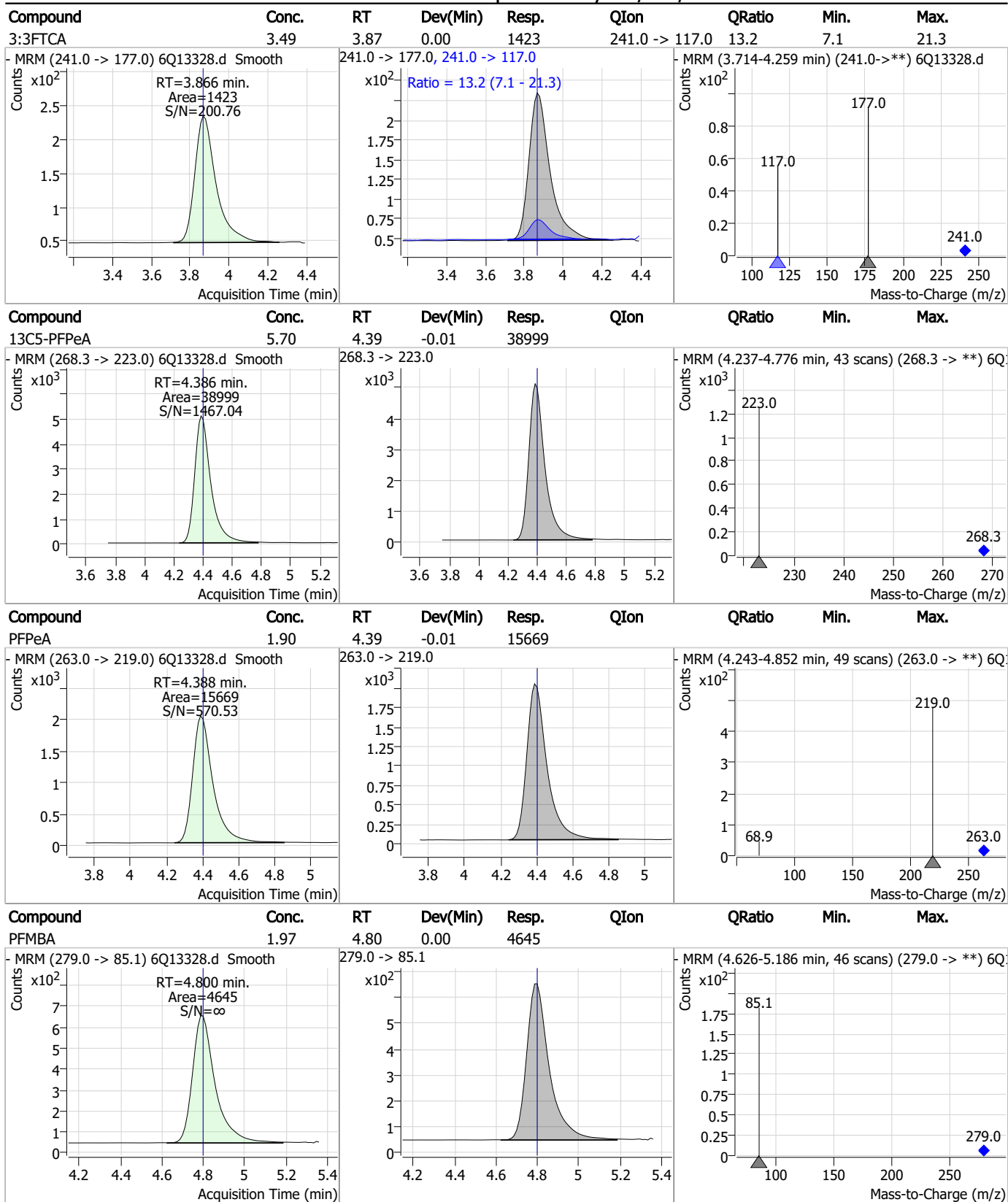
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### Perfluorinated Compounds by LC/MS/MS



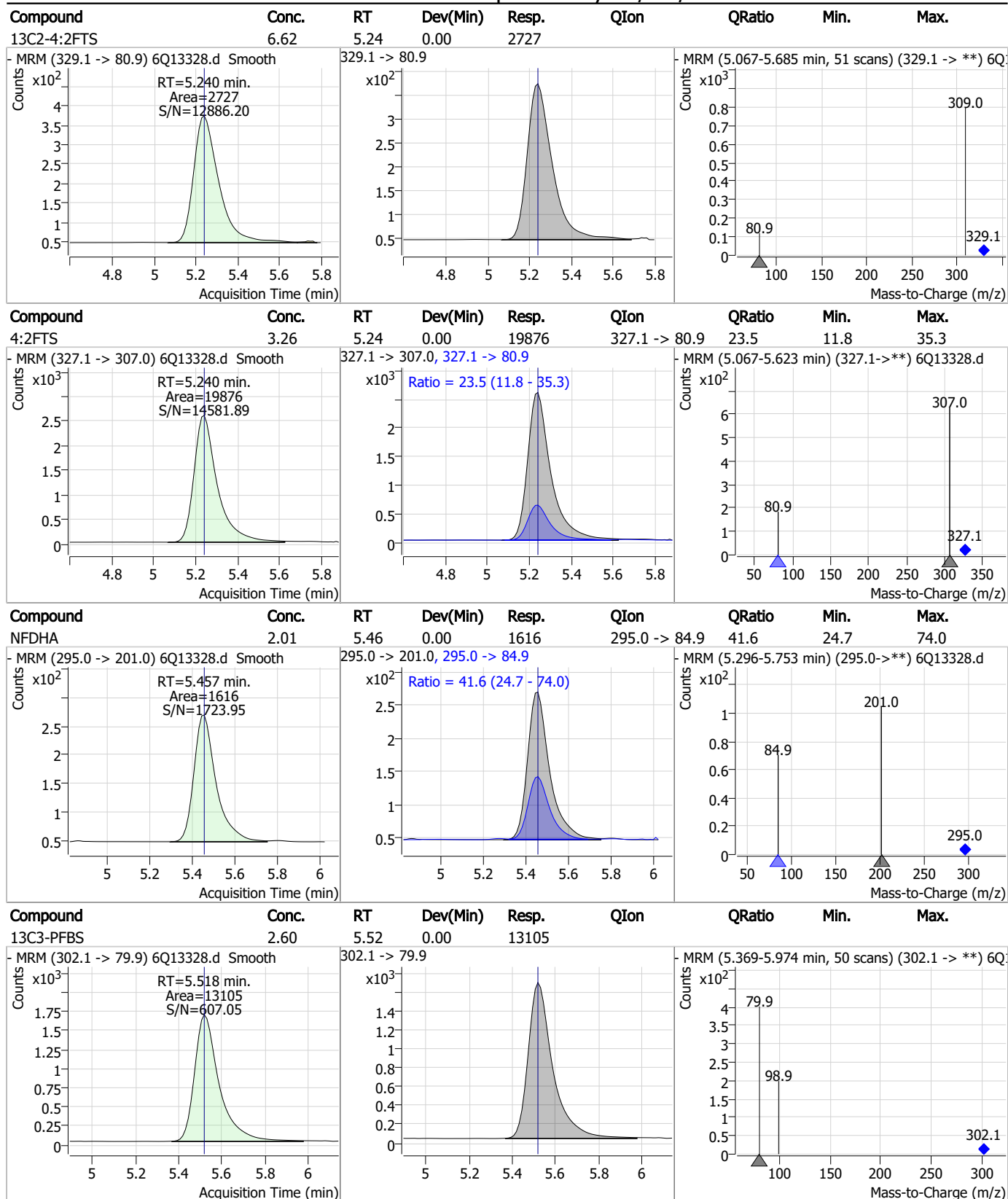
7.3.2  
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### Perfluorinated Compounds by LC/MS/MS



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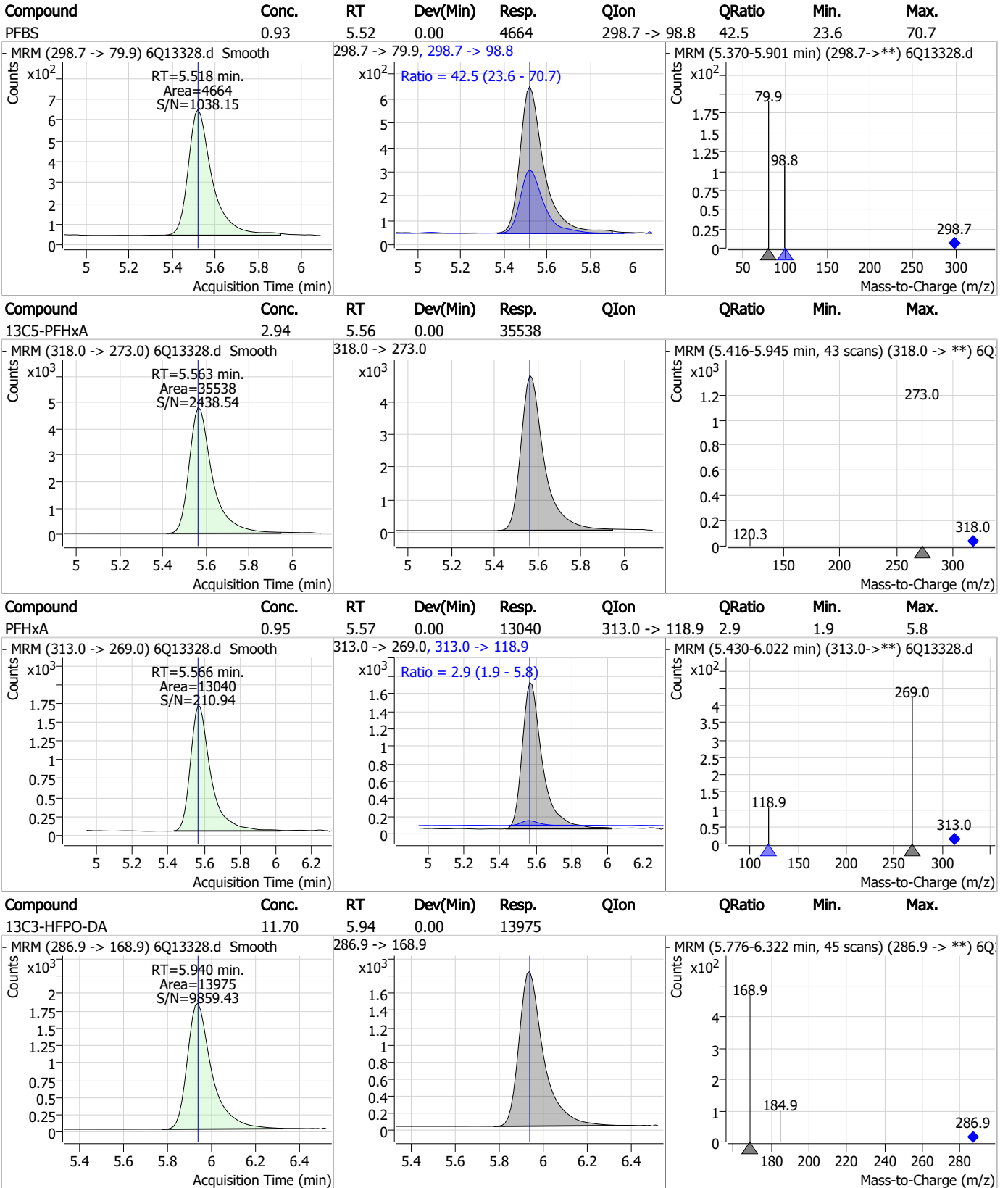
### Perfluorinated Compounds by LC/MS/MS



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

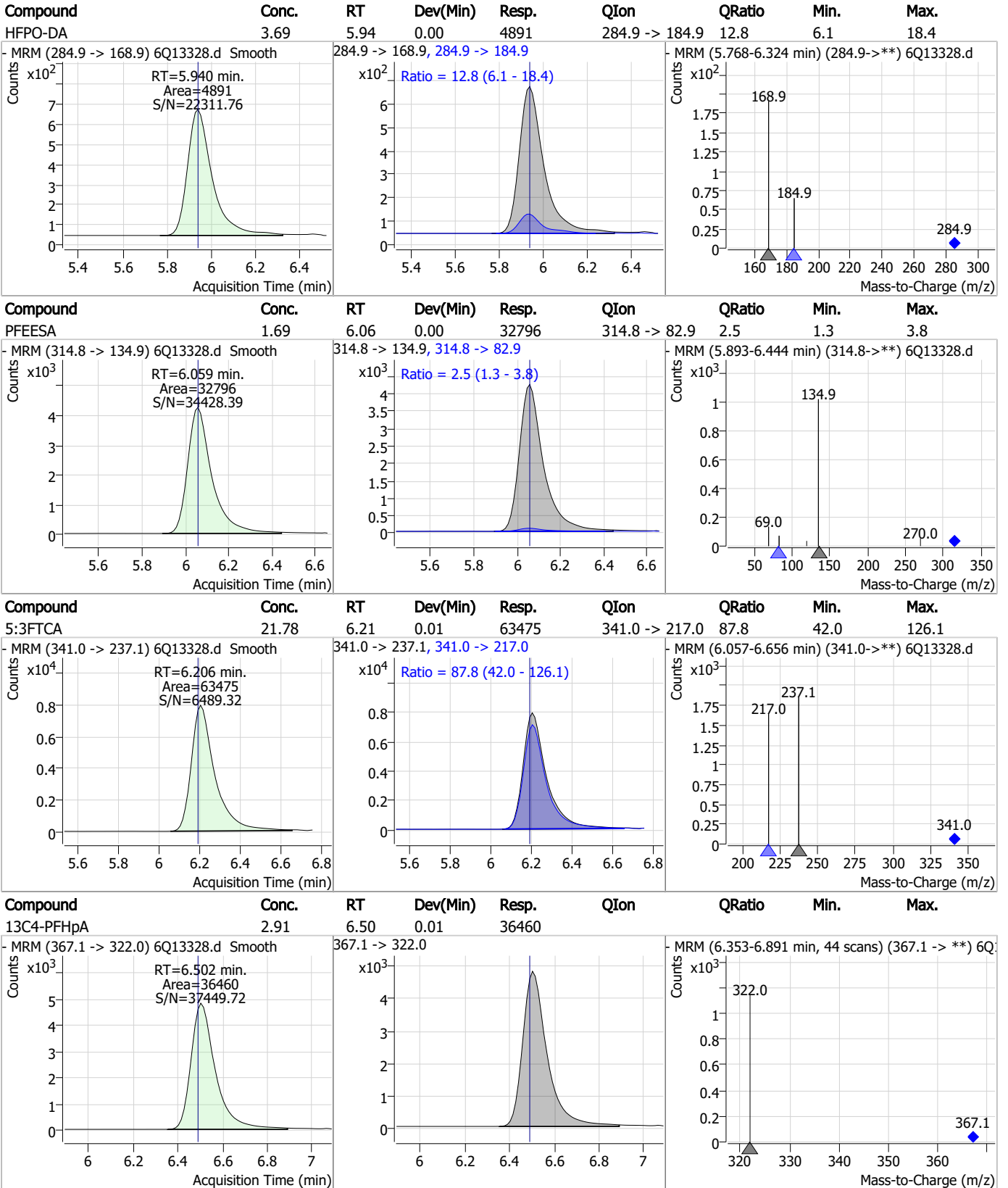


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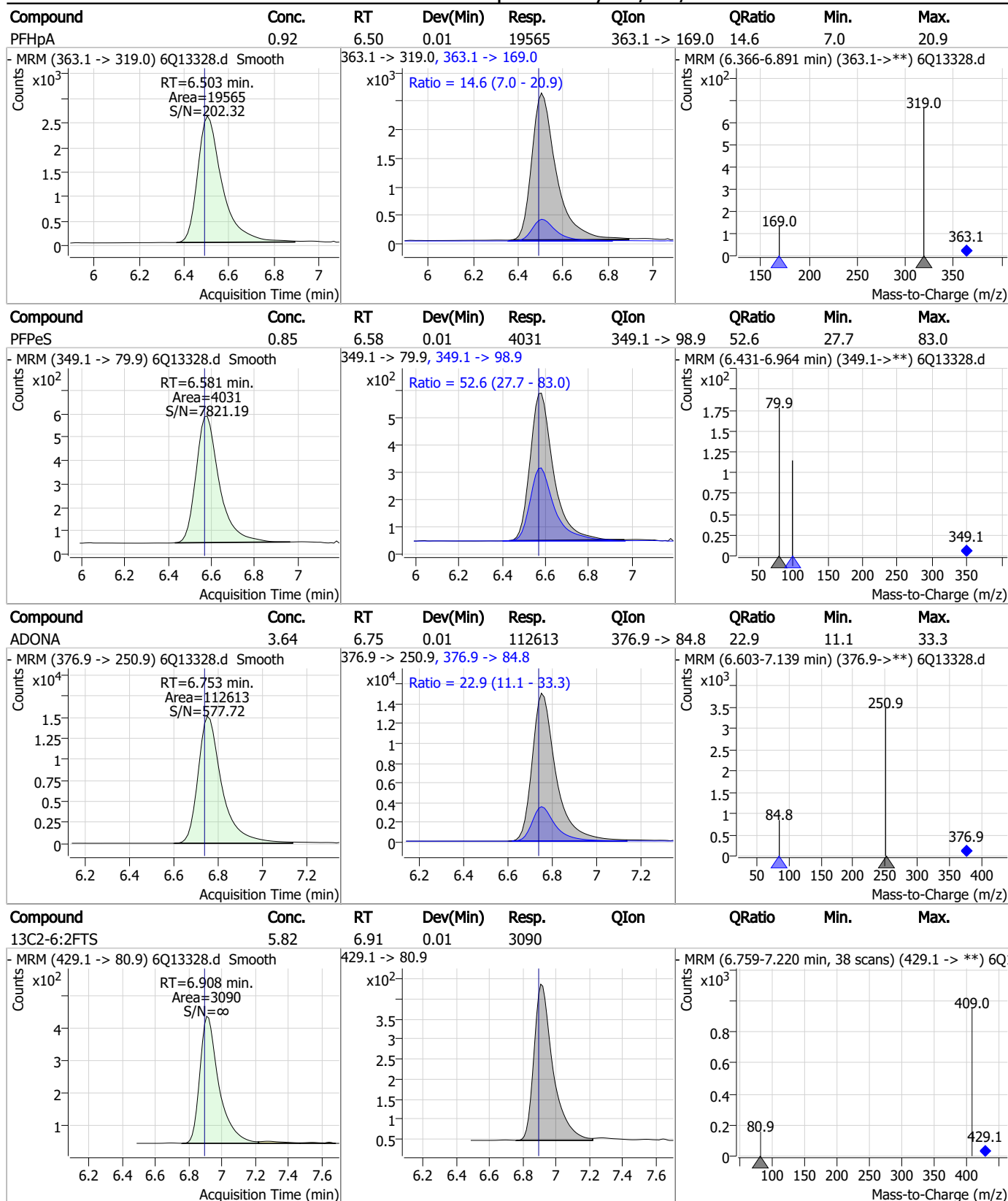
### Perfluorinated Compounds by LC/MS/MS



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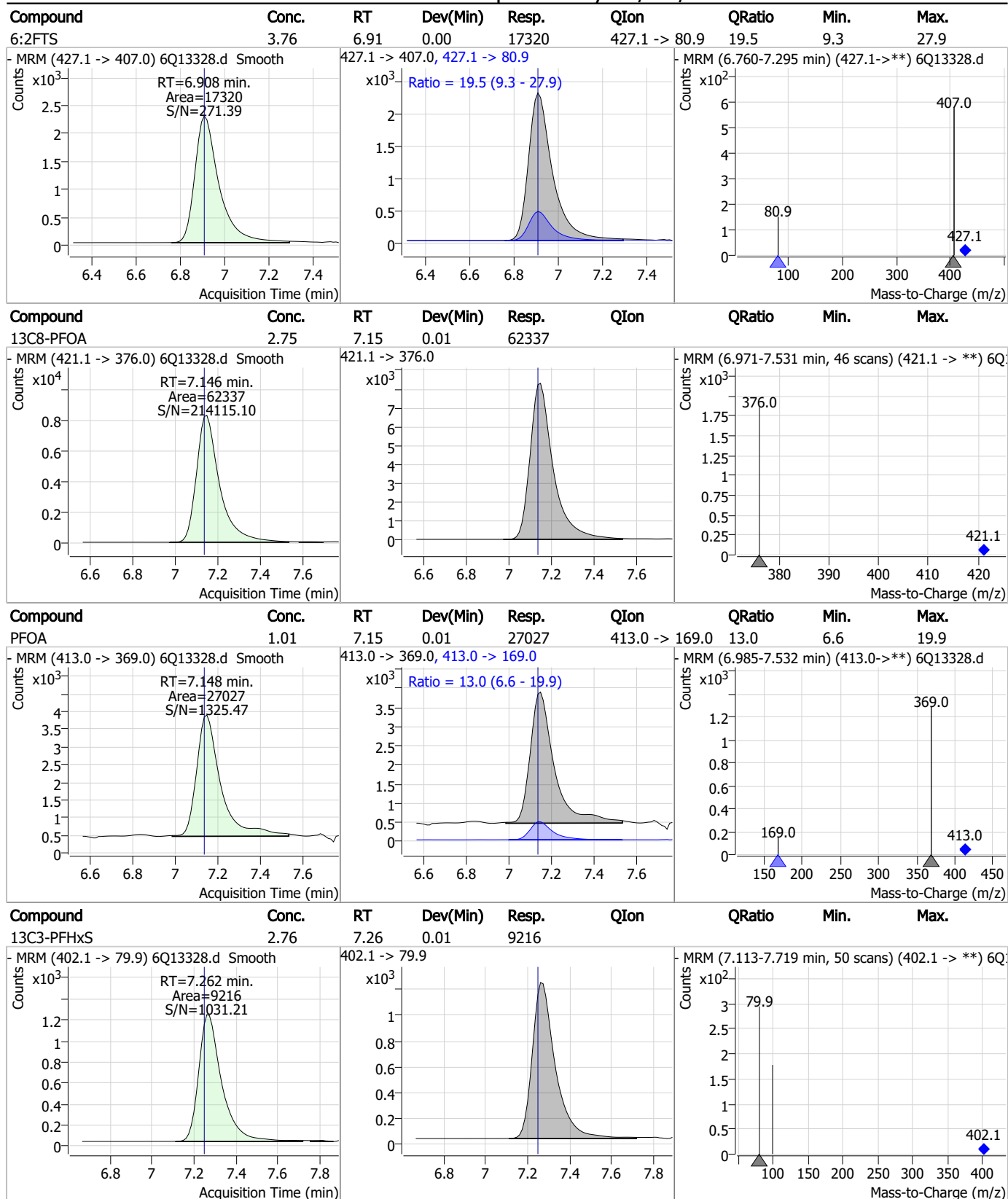
### Perfluorinated Compounds by LC/MS/MS



7.3.2  
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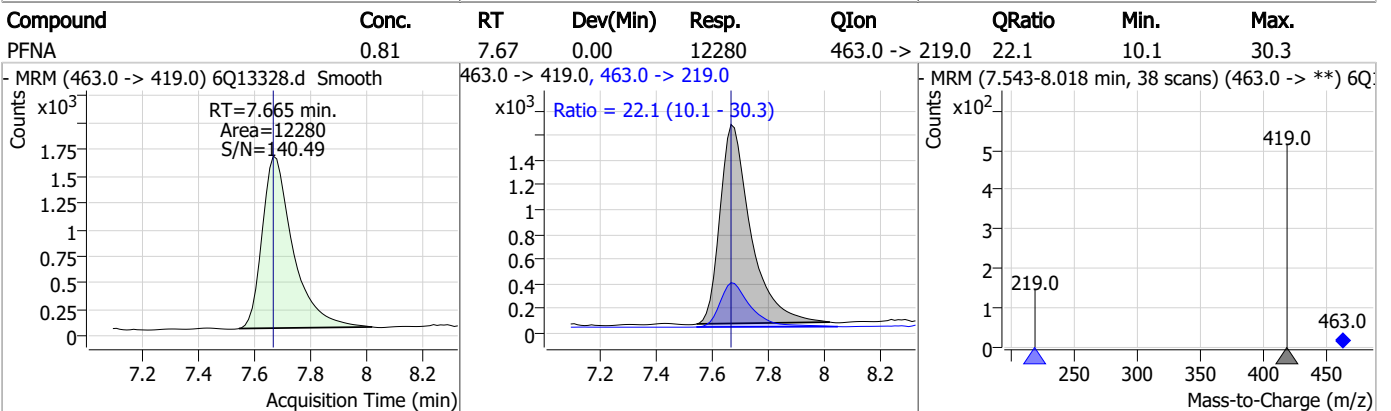
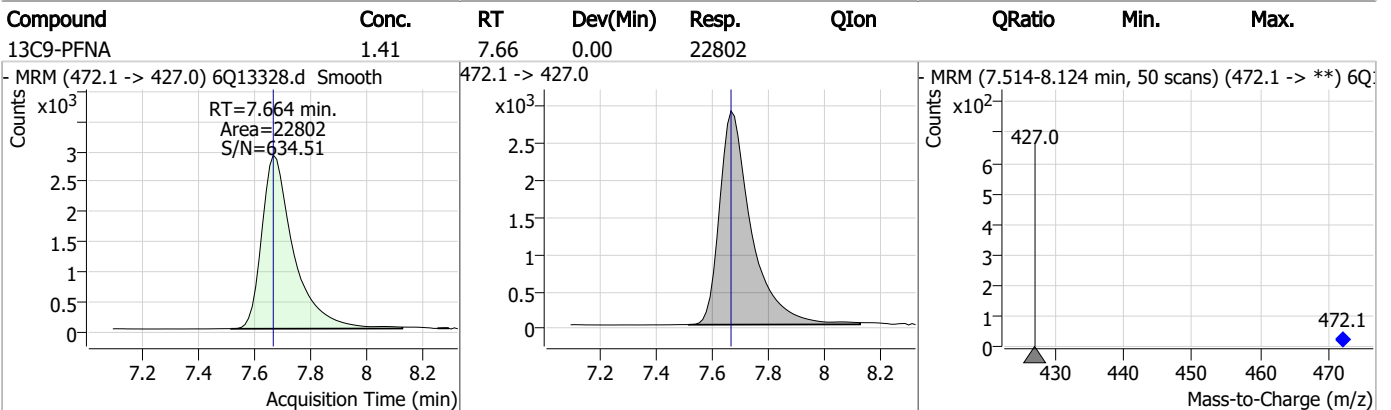
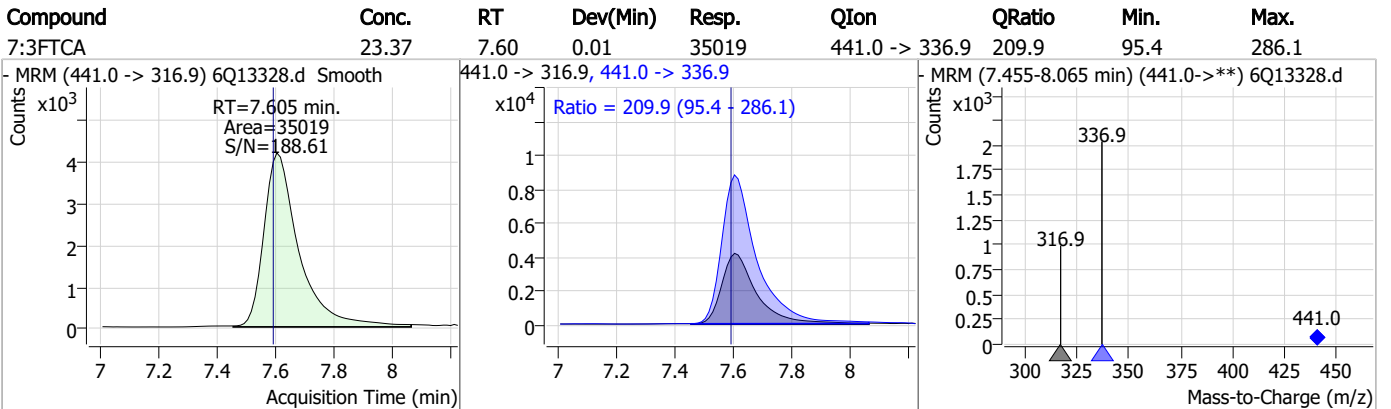
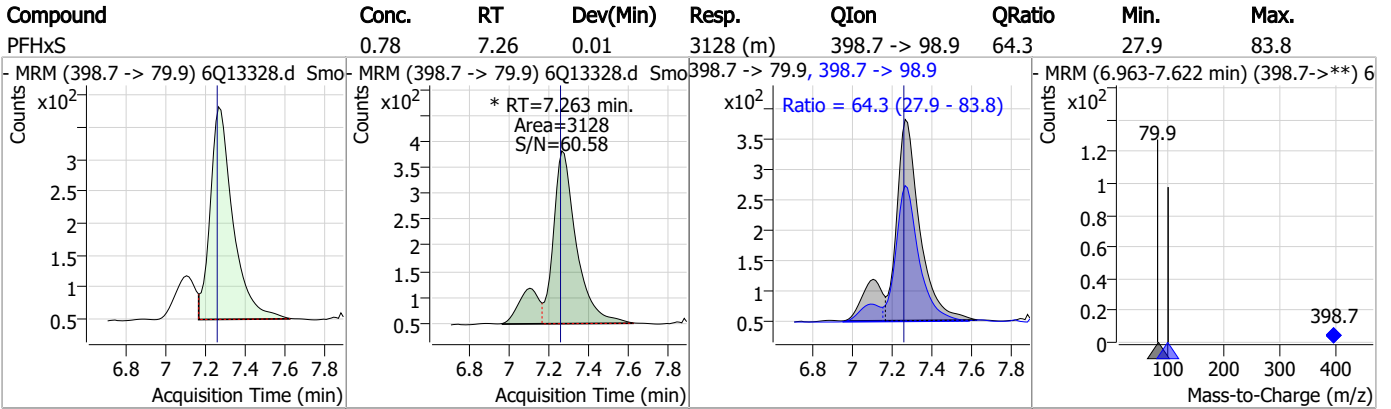


### Perfluorinated Compounds by LC/MS/MS



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

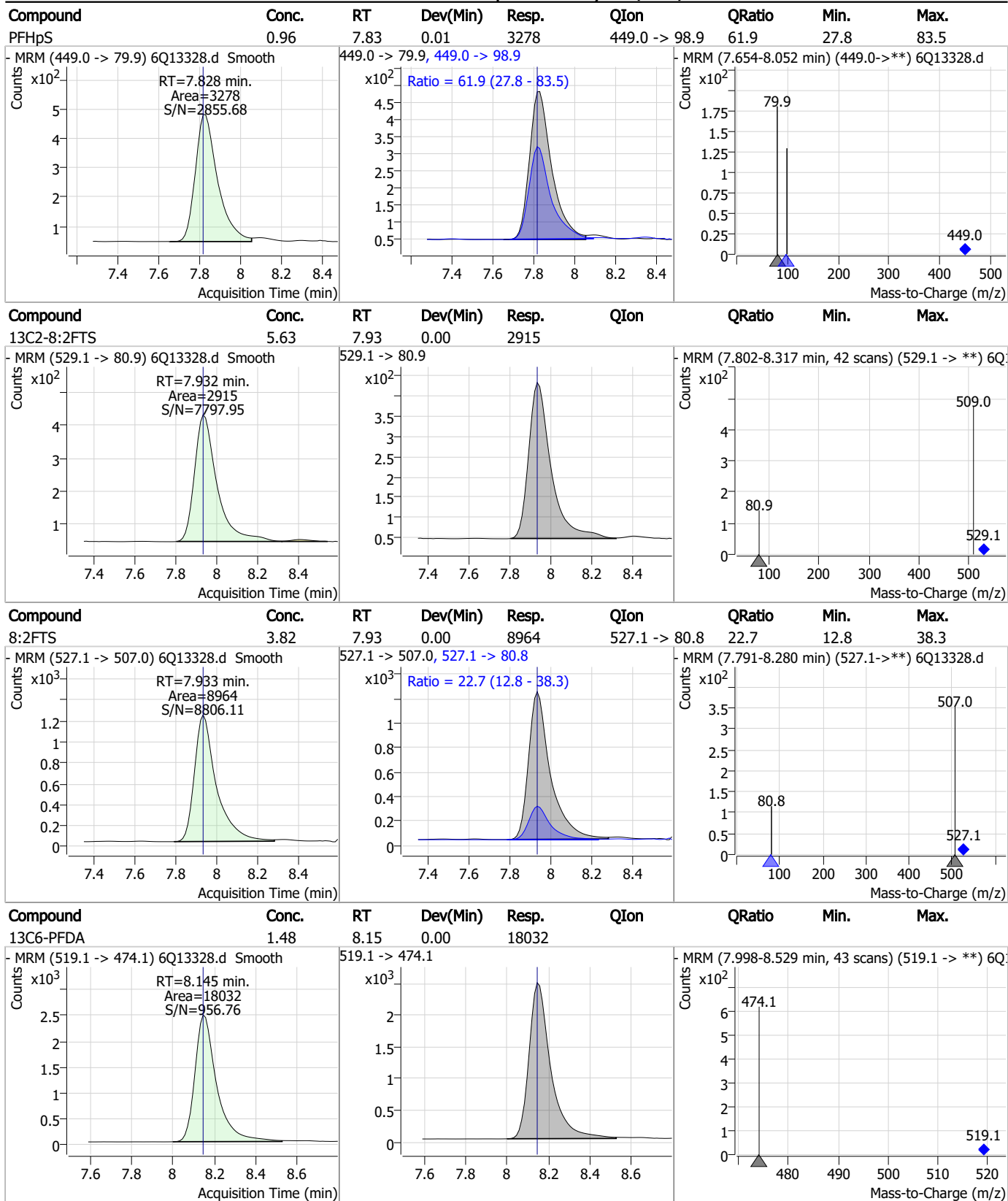


7.3.2

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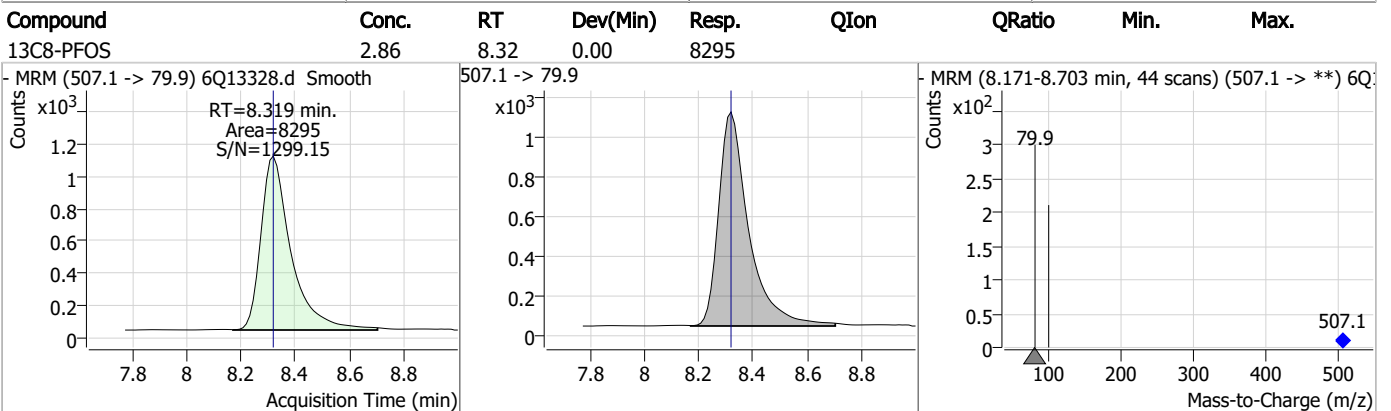
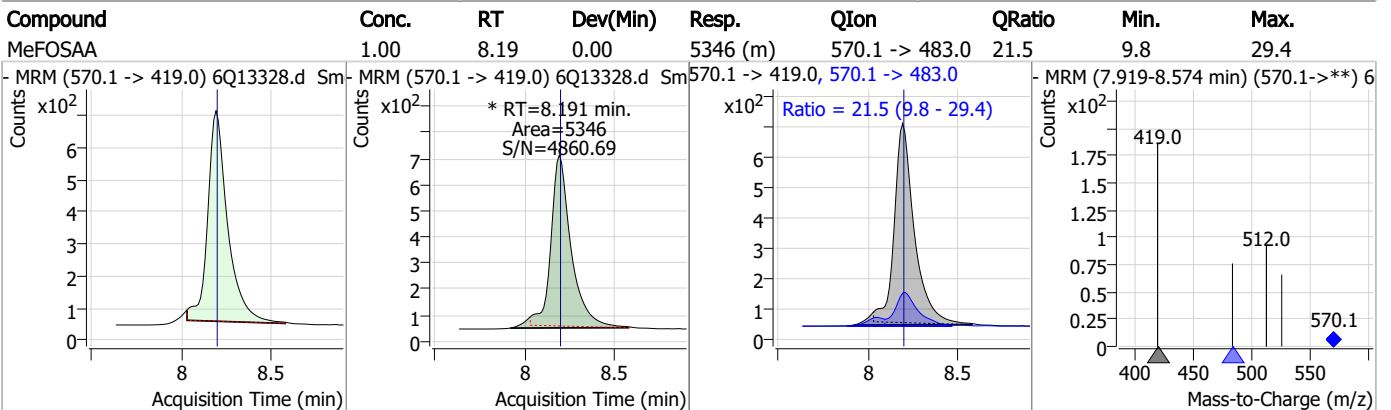
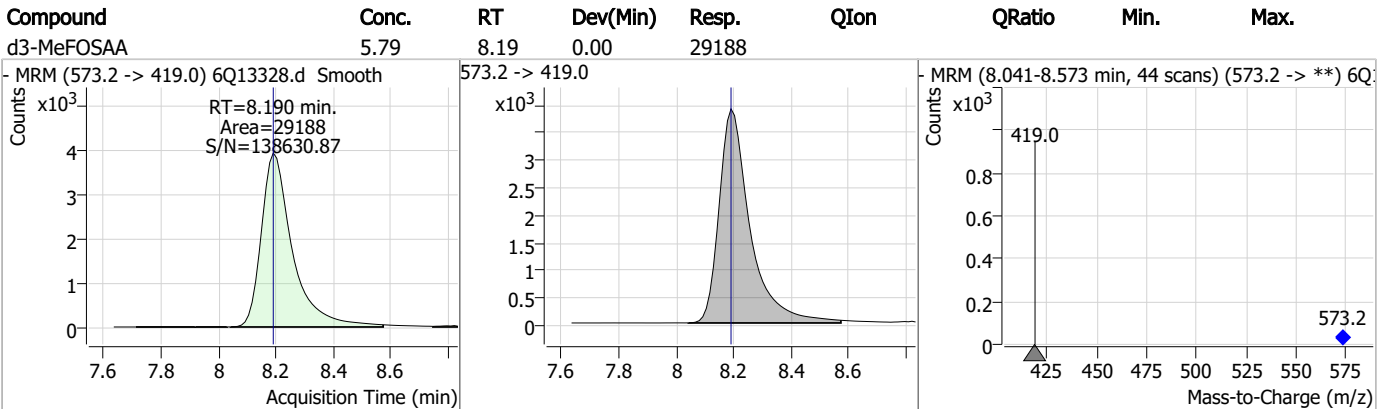
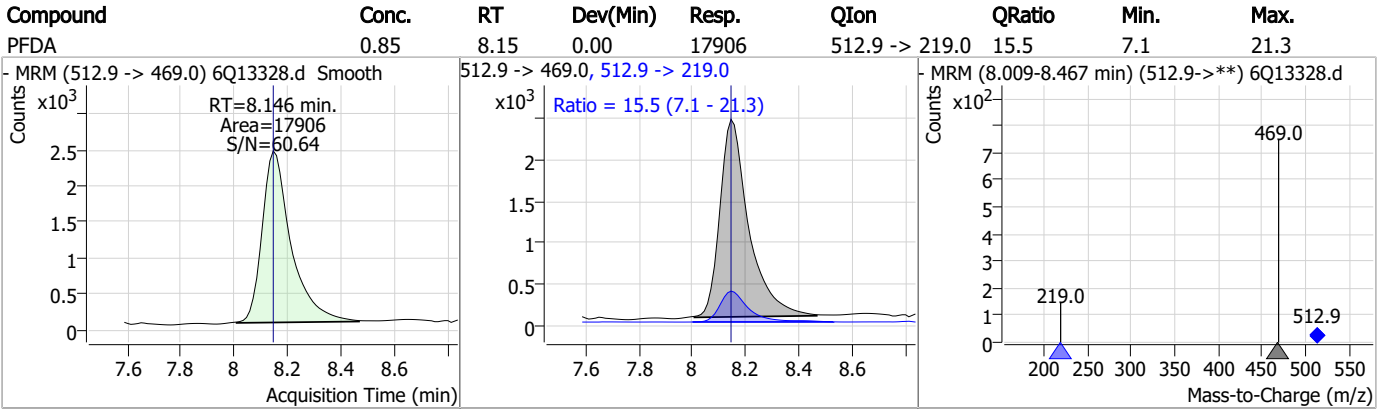
### Perfluorinated Compounds by LC/MS/MS



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



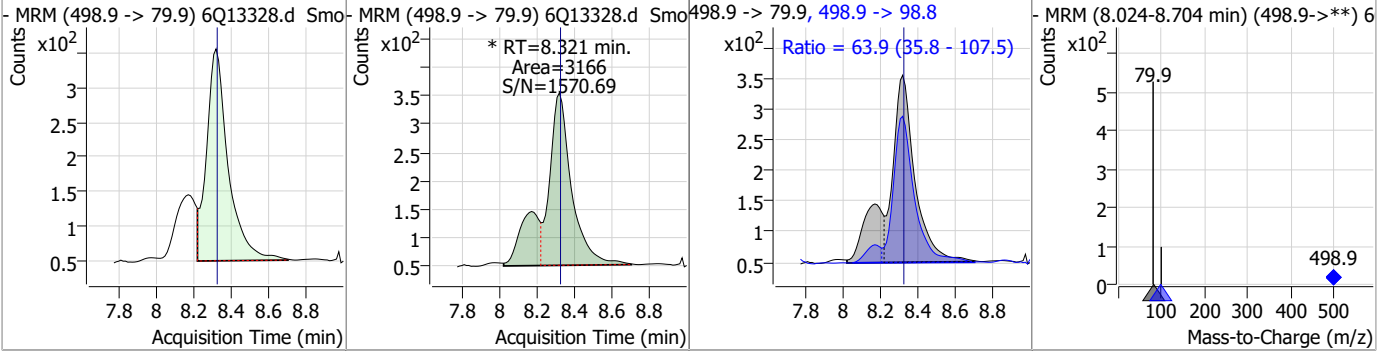
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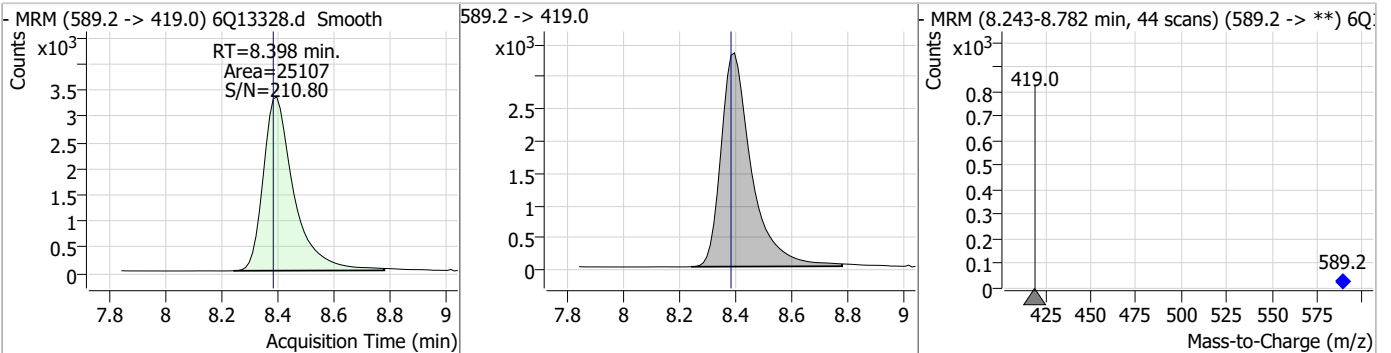


### Perfluorinated Compounds by LC/MS/MS

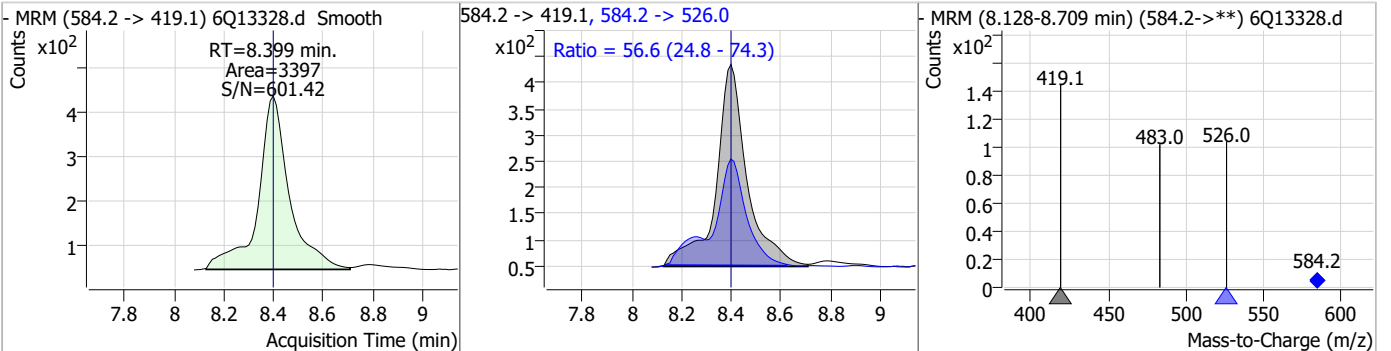
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.85	8.32	0.00	3166 (m)	498.9 -> 98.8	63.9	35.8	107.5



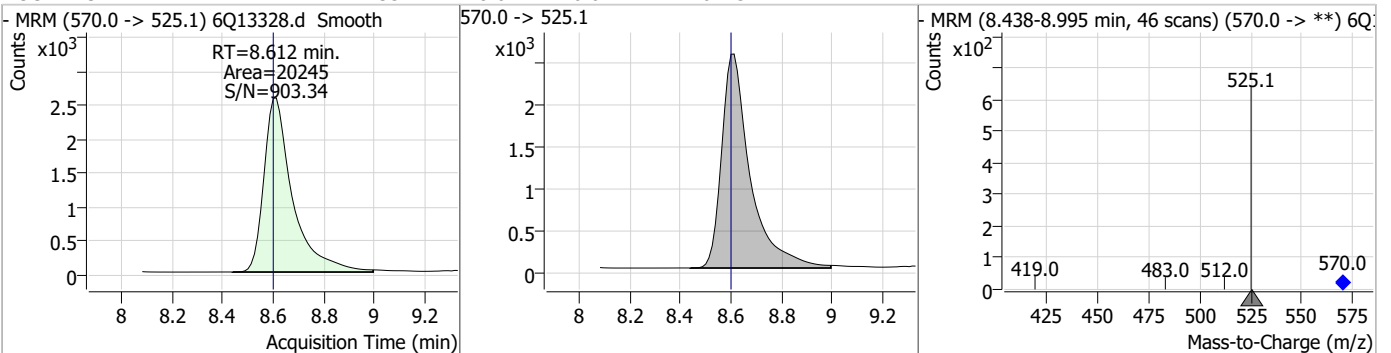
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.92	8.40	0.01	25107				



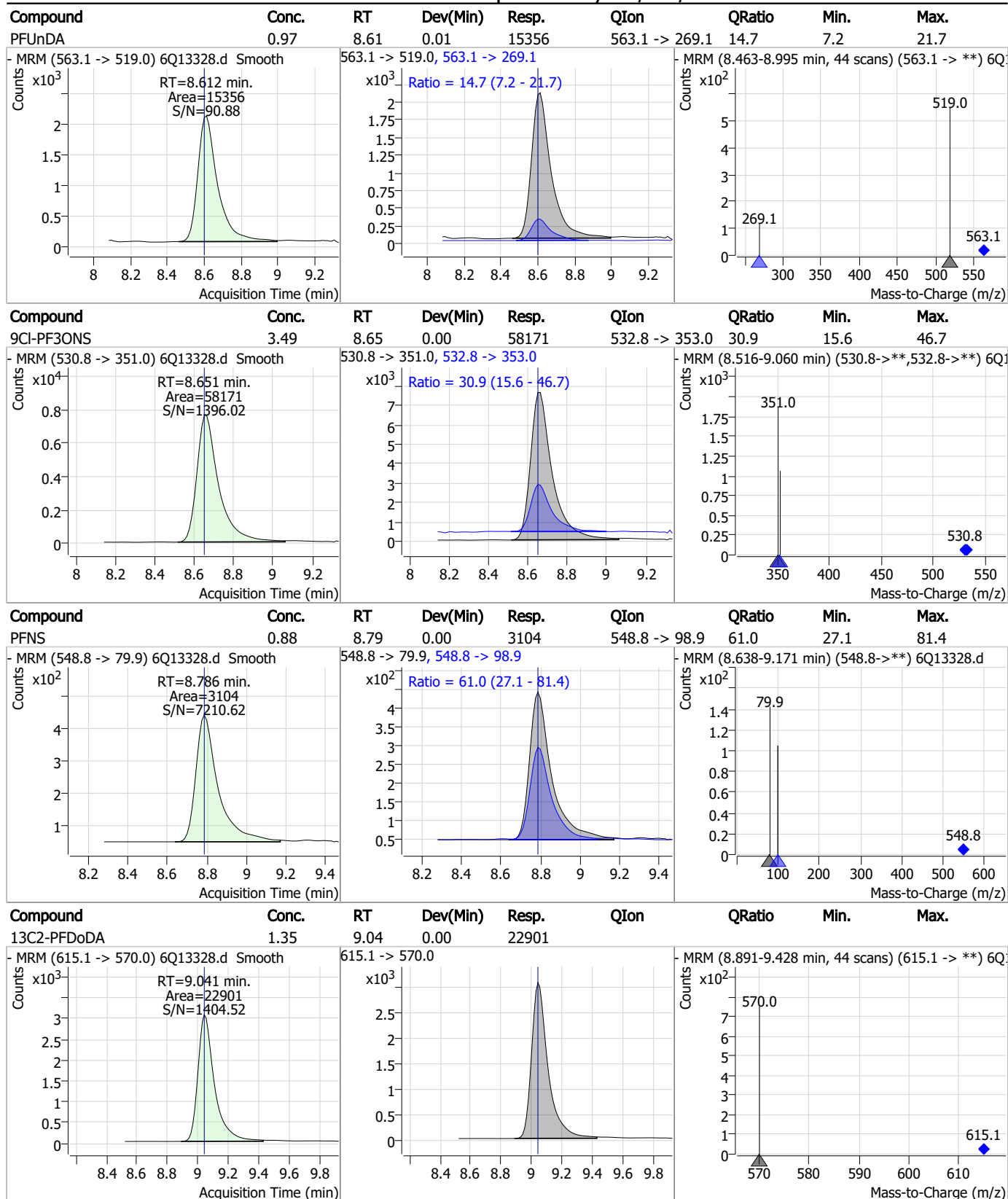
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.86	8.40	0.00	3397	584.2 -> 526.0	56.6	24.8	74.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	8.61	0.01	20245				



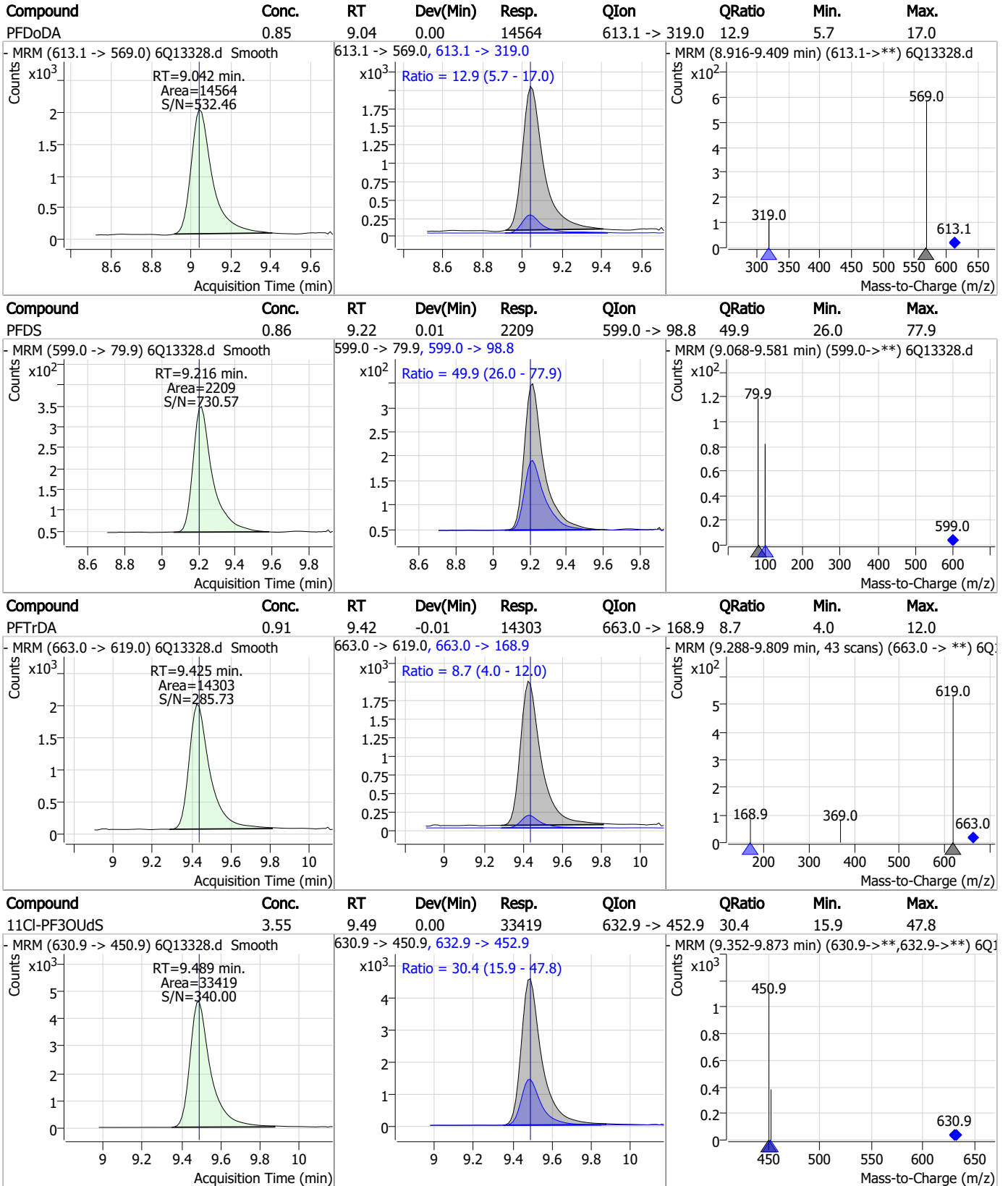
### Perfluorinated Compounds by LC/MS/MS



7.3.2  
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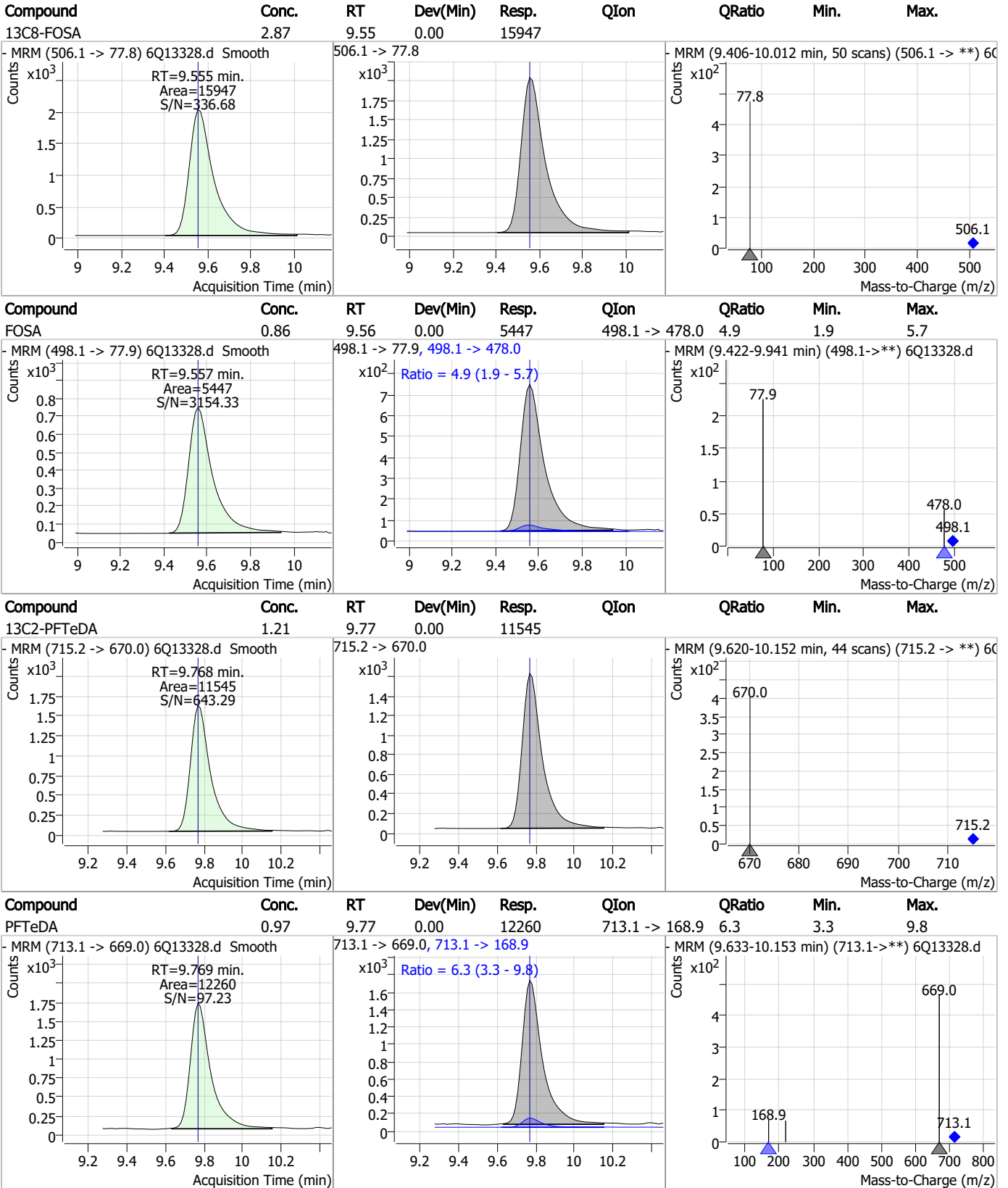


### Perfluorinated Compounds by LC/MS/MS



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



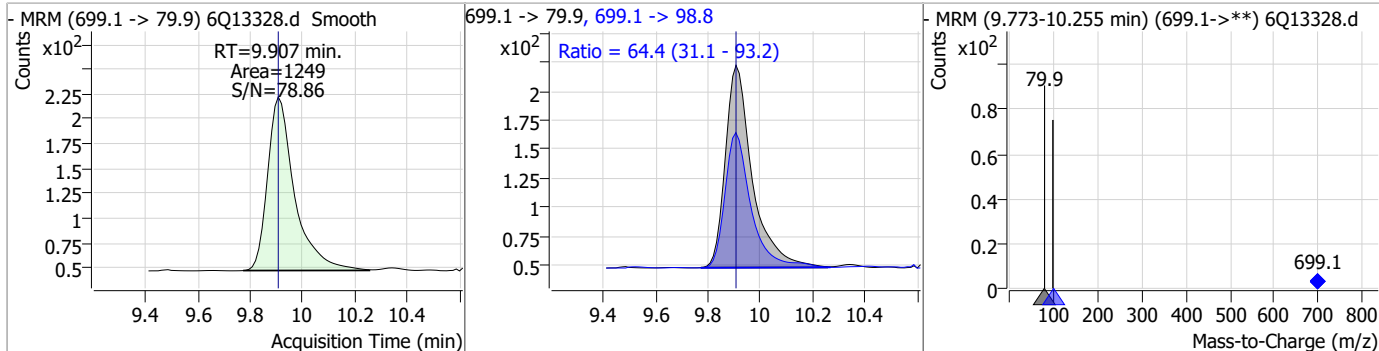
7.3.2

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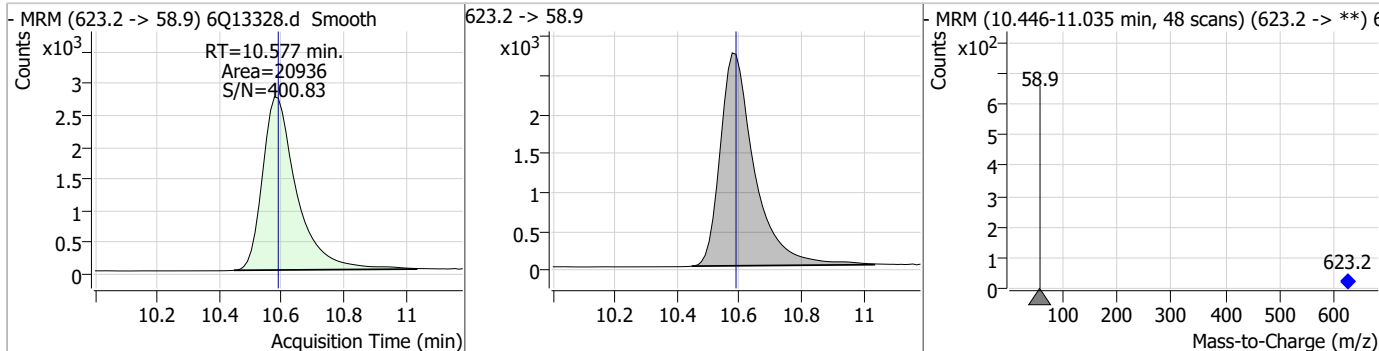


### Perfluorinated Compounds by LC/MS/MS

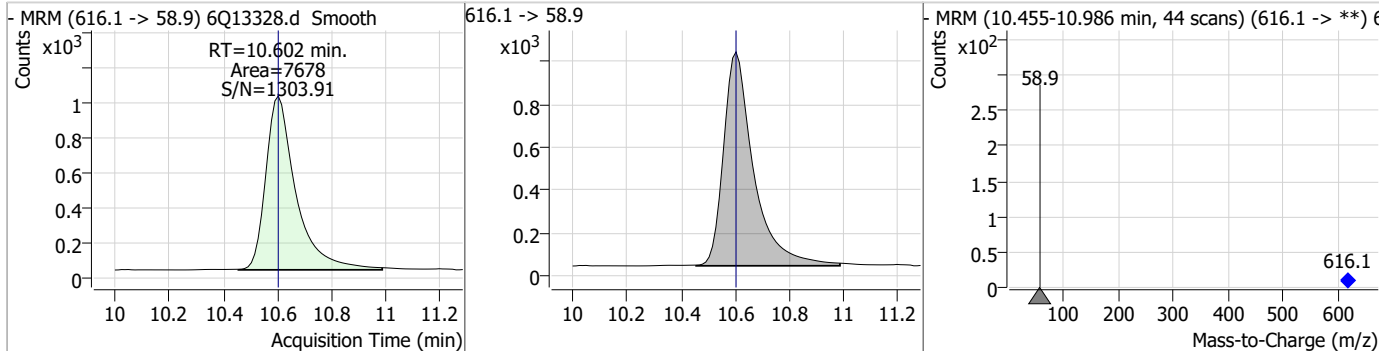
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD <sub>o</sub> DS	0.80	9.91	0.00	1249	699.1 -> 98.8	64.4	31.1	93.2



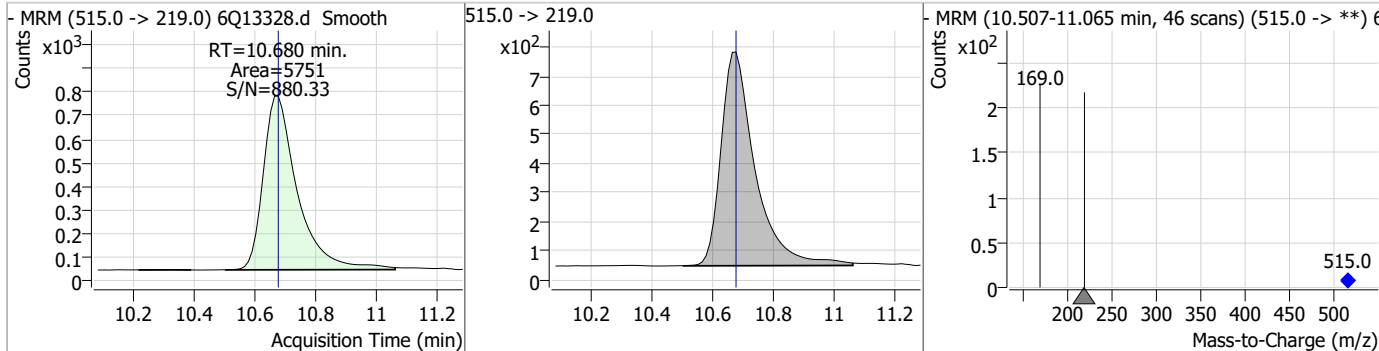
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.73	10.58	-0.01	20936				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	9.43	10.60	0.00	7678				



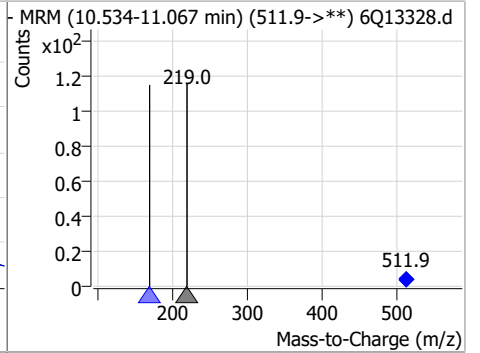
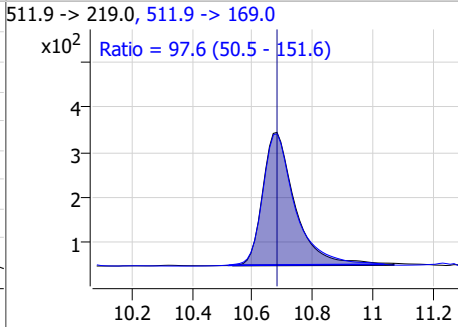
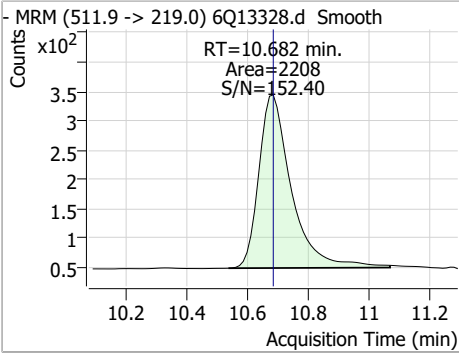
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.55	10.68	0.00	5751				



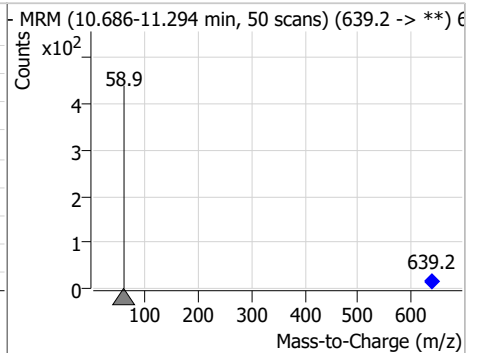
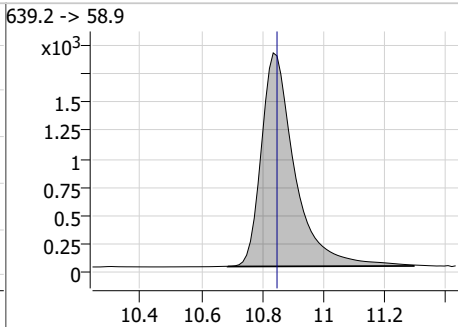
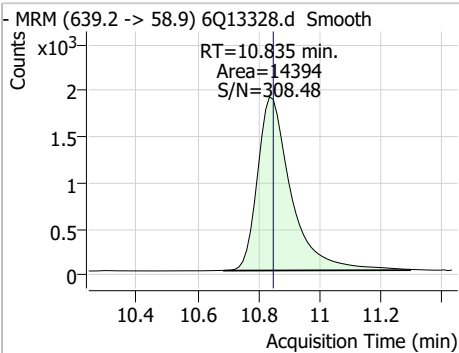
7.3.2  
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### Perfluorinated Compounds by LC/MS/MS

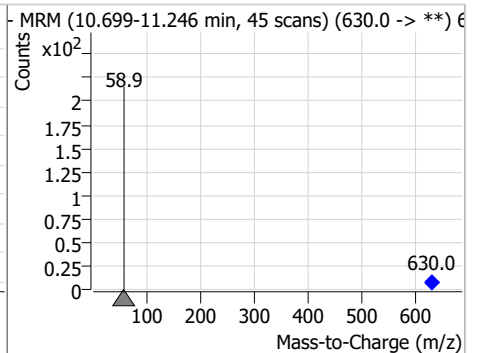
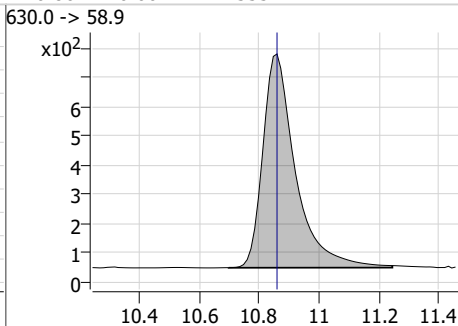
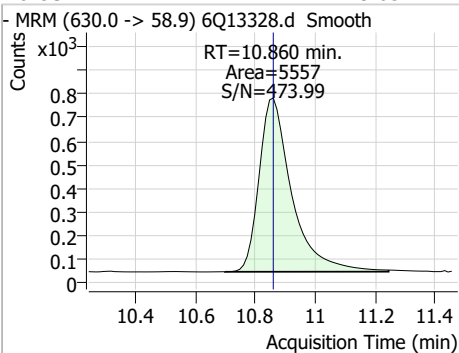
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.86	10.68	0.00	2208	511.9 -> 169.0	97.6	50.5	151.6



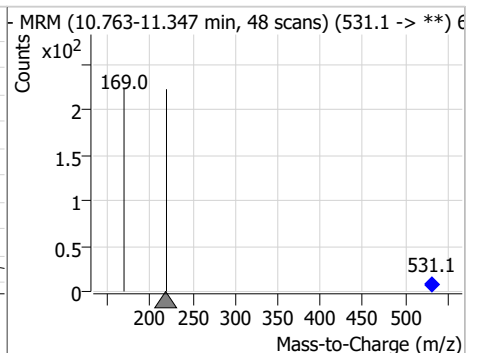
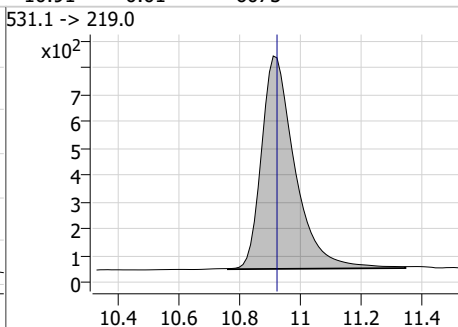
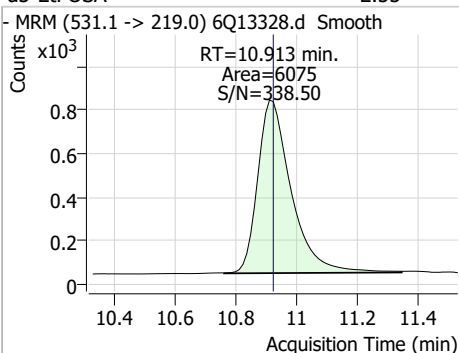
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.39	10.83	-0.01	14394				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	9.05	10.86	0.00	5557				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.55	10.91	-0.01	6075				



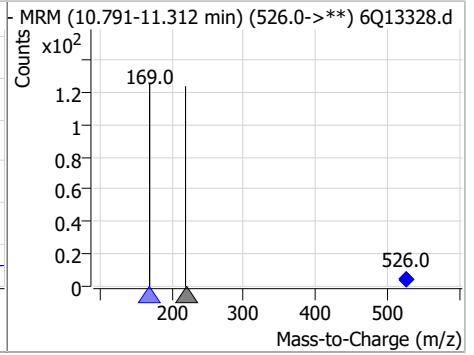
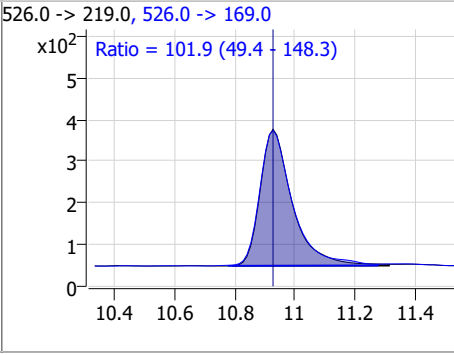
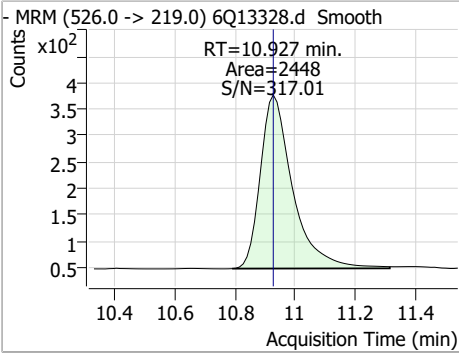
7.3.2

7



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.83	10.93	0.00	2448	526.0 -> 169.0	101.9	49.4	148.3



7.3.2

7

# Manual Integration Approval Summary

Sample Number: OP95329-LLBS      Method: EPA DRAFT 1633  
Lab FileID: 6Q13328.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 20:04      Supervisor approved: 02/10/23 17:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak

7.3.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13331.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 8:45:57 PM  
 Sample Name : op95329-ms  
 Vial : P1-D5  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95329,S6Q203,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.000	216.8 -> 171.9	73171	10.00 µg/L	0.000
M5-PFPeA	4.386	268.3 -> 223.0	38210	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	34364	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	34259	2.50 µg/L	0.012
M8-PFOA	7.146	421.1 -> 376.0	59042	2.50 µg/L	0.012
M9-PFNA	7.664	472.1 -> 427.0	21150	1.25 µg/L	0.000
M6-PFDA	8.157	519.1 -> 474.1	14544	1.25 µg/L	0.012
M7-PFUnDA	8.612	570.0 -> 525.1	16726	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	18279	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	9456	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	15535	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	13253	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	8497	2.50 µg/L	0.012
M8-PFOS	8.320	507.1 -> 79.9	7131	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2375	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	2999	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2605	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	26401	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	13508	10.00 µg/L	0.000
M5-EtFOSAA	8.398	589.2 -> 419.0	20959	5.00 µg/L	0.012
M7-MeFOSE	10.577	623.2 -> 58.9	20199	25.00 µg/L	-0.012
M9-EtFOSE	10.835	639.2 -> 58.9	13814	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	6058	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	5604	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	8777	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	31624	5.00 µg/L	0.012
18O2-PFHxS	7.261	403.0 -> 83.9	5960	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	69473	2.50 µg/L	0.000
13C2-PFDA	8.158	515.1 -> 470.1	21527	1.25 µg/L	0.012
13C5-PFNA	7.665	468.0 -> 423.0	21321	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	29494	2.50 µg/L	0.000

**System Monitoring Compounds**

13C2-4:2FTS	5.240	329.1 -> 80.9	2375	6.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.1%		
13C2-6:2FTS	6.908	429.1 -> 80.9	2999	5.89 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.8%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2605	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-PFDoDA	9.041	615.1 -> 570.0	18279	1.07 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.9%		
13C2-PFTeDA	9.768	715.2 -> 670.0	9456	0.99 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 79.3%		
13C3-PFBS	5.518	302.1 -> 79.9	13253	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C3-PFHxS	7.262	402.1 -> 79.9	8497	2.65 µg/L	0.012

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 = 106.0%		
13C4-PFBA	3.000	216.8 -> 171.9	73171	10.37 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C4-PFHpA	6.502	367.1 -> 322.0	34259	2.77 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C5-PFHxA	5.563	318.0 -> 273.0	34364	2.88 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 115.2%		
13C5-PFPeA	4.386	268.3 -> 223.0	38210	5.67 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.4%		
13C6-PFDA	8.157	519.1 -> 474.1	14544	1.19 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C7-PFUnDA	8.612	570.0 -> 525.1	16726	1.11 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.2%		
13C8-FOSA	9.555	506.1 -> 77.8	15535	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C8-PFOA	7.146	421.1 -> 376.0	59042	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C8-PFOS	8.320	507.1 -> 79.9	7131	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C9-PFNA	7.664	472.1 -> 427.0	21150	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.8%		
d3-MeFOSAA	8.190	573.2 -> 419.0	26401	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C3-HFPO-DA	5.940	286.9 -> 168.9	13508	11.47 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 114.7%		
d3-MeFOSA	10.680	515.0 -> 219.0	5604	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		
d5-EtFOSAA	8.398	589.2 -> 419.0	20959	4.93 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
d7-MeFOSE	10.577	623.2 -> 58.9	20199	22.83 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 91.3%		
d9-EtFOSE	10.835	639.2 -> 58.9	13814	23.35 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 93.4%		
d5-EtFOSA	10.913	531.1 -> 219.0	6058	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.240	327.1 -> 307.0	48154	9.06 µg/L	98
		327.1 -> 80.9	10925		
6:2FTS	6.908	427.1 -> 407.0	39591	8.86 µg/L	95
		427.1 -> 80.9	8161		
8:2FTS	7.933	527.1 -> 507.0	20479	9.76 µg/L	99
		527.1 -> 80.8	5148		
EtFOSAA	8.399	584.2 -> 419.1	7993	2.43 µg/L	m 91
		584.2 -> 526.0	4437		
FOSA	9.557	498.1 -> 77.9	14567	2.35 µg/L	98
		498.1 -> 478.0	669		
MeFOSAA	8.191	570.1 -> 419.0	12344	2.55 µg/L	m 97
		570.1 -> 483.0	2236		
PFBA	3.007	212.8 -> 168.9	16343	9.92 µg/L	100
PFBS	5.518	298.7 -> 79.9	10754	2.12 µg/L	98
		298.7 -> 98.8	5218		
PFDA	8.158	512.9 -> 469.0	41064	2.43 µg/L	98
		512.9 -> 219.0	6210		
PFDODA	9.042	613.1 -> 569.0	31790	2.32 µg/L	99
		613.1 -> 319.0	3678		
PFDS	9.216	599.0 -> 79.9	4656	2.10 µg/L	91

7.4.1  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2696			
PFHpA	6.503	363.1 -> 319.0	49360	2.47	µg/L	99
		363.1 -> 169.0	7057			
PFHpS	7.828	449.0 -> 79.9	7752	2.63	µg/L	96
		449.0 -> 98.9	4509			
PFHxA	5.566	313.0 -> 269.0	32526	2.45	µg/L	100
		313.0 -> 118.9	1260			
PFHxS	7.263	398.7 -> 79.9	8534	2.31	µg/L	m 94
		398.7 -> 98.9	5150			
PFNA	7.665	463.0 -> 419.0	33959	2.42	µg/L	99
		463.0 -> 219.0	7019			
PFNS	8.786	548.8 -> 79.9	7241	2.39	µg/L	97
		548.8 -> 98.9	4109			
PFOA	7.148	413.0 -> 369.0	64992	2.57	µg/L	100
		413.0 -> 169.0	8524			
PFOS	8.321	498.9 -> 79.9	7618	2.39	µg/L	m 85
		498.9 -> 98.8	4495			
PFPeA	4.388	263.0 -> 219.0	40905	5.07	µg/L	100
PFPeS	6.569	349.1 -> 79.9	10297	2.35	µg/L	98
		349.1 -> 98.9	5531			
PFTeDA	9.769	713.1 -> 669.0	27048	2.60	µg/L	99
		713.1 -> 168.9	1730			
PFTrDA	9.425	663.0 -> 619.0	30271	2.41	µg/L	99
		663.0 -> 168.9	2284			
PFUnDA	8.612	563.1 -> 519.0	34510	2.63	µg/L	99
		563.1 -> 269.1	4916			
11CI-PF3OUdS	9.489	630.9 -> 450.9	71665	7.88	µg/L	99
		632.9 -> 452.9	22327			
9CI-PF3ONS	8.651	530.8 -> 351.0	139995	8.68	µg/L	100
		532.8 -> 353.0	43403			
ADONA	6.753	376.9 -> 250.9	276182	9.22	µg/L	97
		376.9 -> 84.8	65638			
HFPO-DA	5.940	284.9 -> 168.9	12862	10.05	µg/L	99
		284.9 -> 184.9	1625			
3:3FTCA	3.866	241.0 -> 177.0	3765	9.44	µg/L	98
		241.0 -> 117.0	500			
5:3FTCA	6.206	341.0 -> 237.1	174304	61.86	µg/L	98
		341.0 -> 217.0	149076			
7:3FTCA	7.605	441.0 -> 316.9	87547	60.41	µg/L	94
		441.0 -> 336.9	175230			
EtFOSA	10.927	526.0 -> 219.0	6500	2.20	µg/L	96
		526.0 -> 169.0	6152			
EtFOSE	10.860	630.0 -> 58.9	13585	23.06	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	5654	2.27	µg/L	97
		511.9 -> 169.0	5560			
MeFOSE	10.602	616.1 -> 58.9	19411	24.72	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	2889	2.15	µg/L	99
		699.1 -> 98.8	1779			
NFDHA	5.457	295.0 -> 201.0	3835	4.94	µg/L	96
		295.0 -> 84.9	1992			
PFMBA	4.800	279.0 -> 85.1	11783	5.10	µg/L	100
PFMPA	3.553	229.0 -> 84.9	10863	5.16	µg/L	100
PFEESA	6.059	314.8 -> 134.9	83010	4.43	µg/L	100
		314.8 -> 82.9	1978			

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

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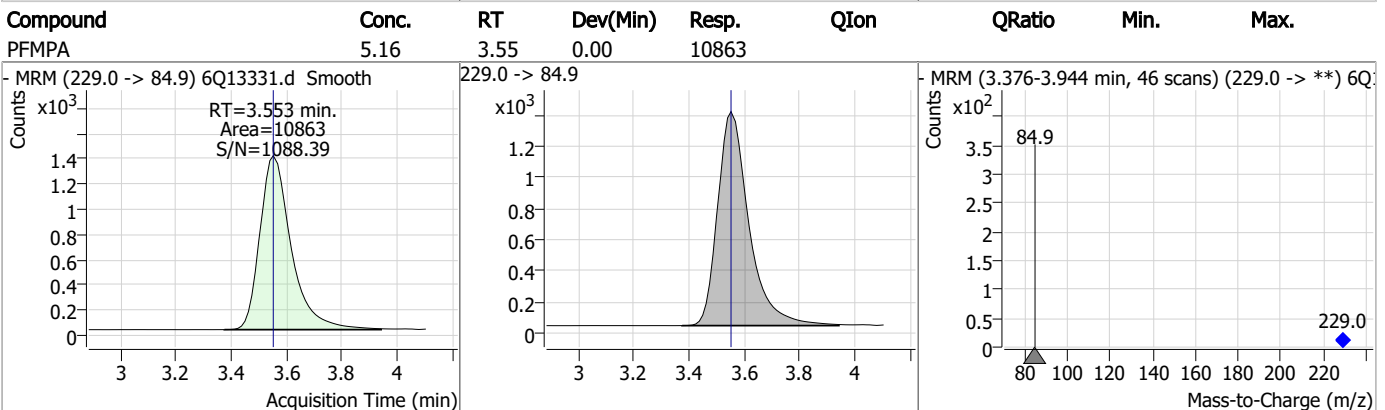
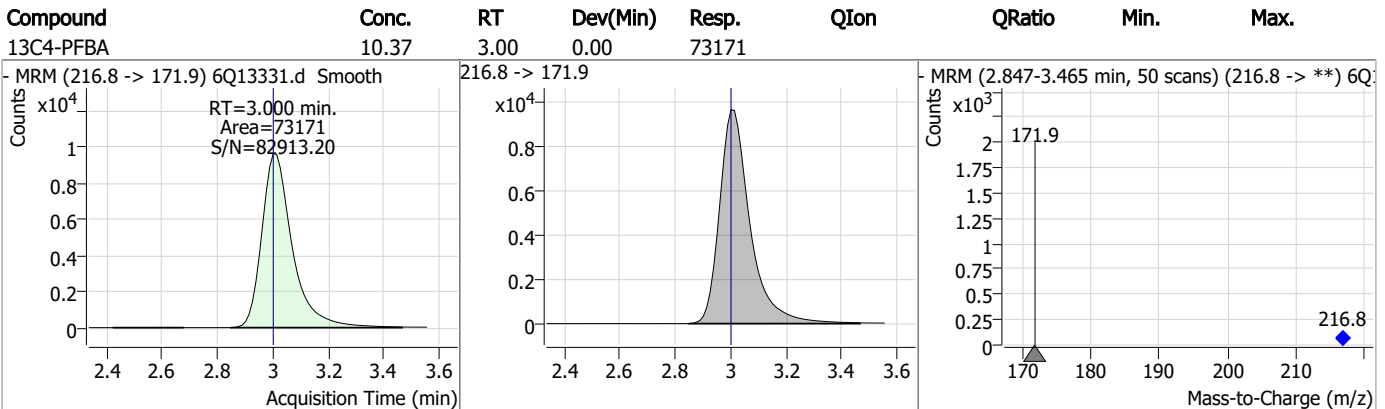
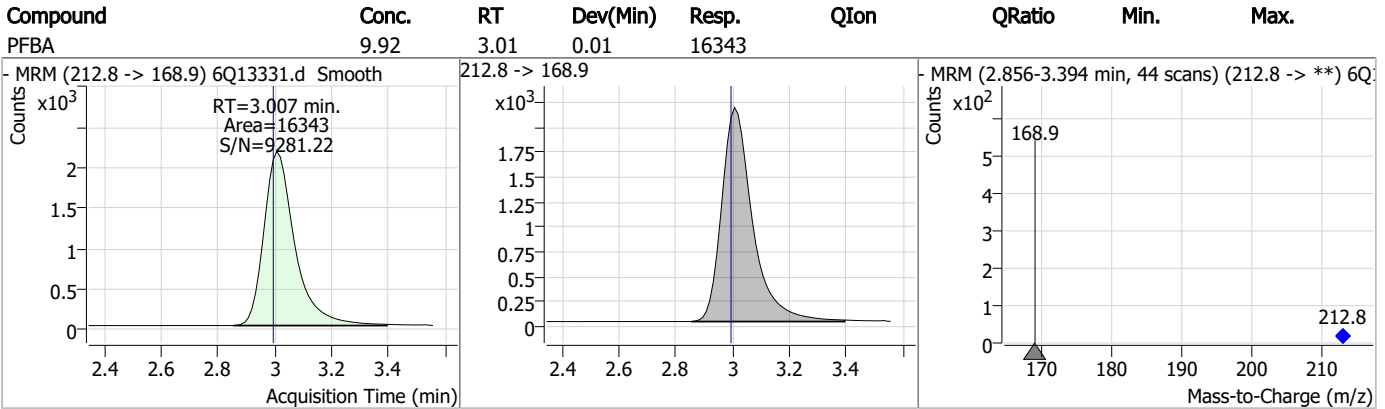
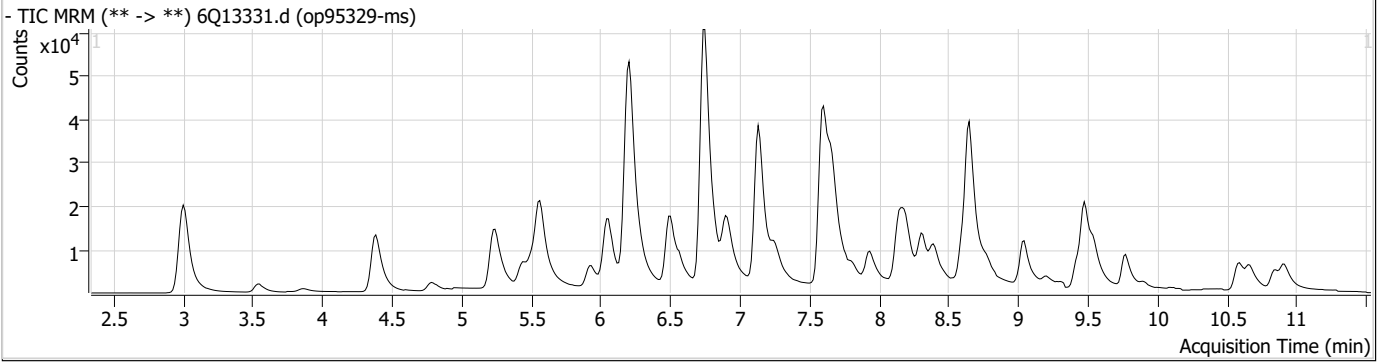
### Perfluorinated Compounds by LC/MS/MS

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

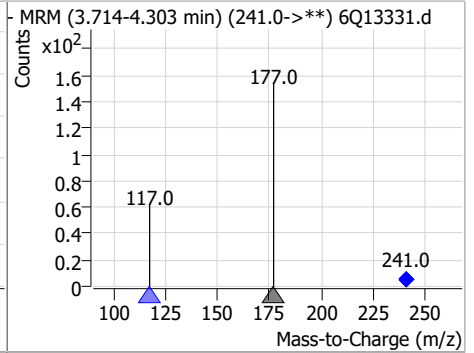
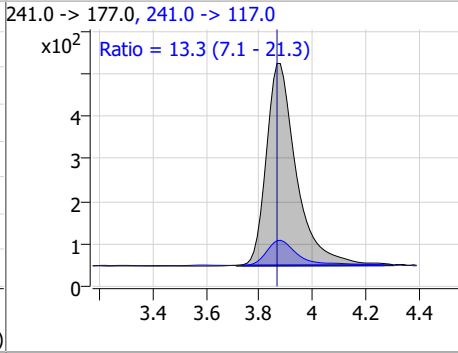
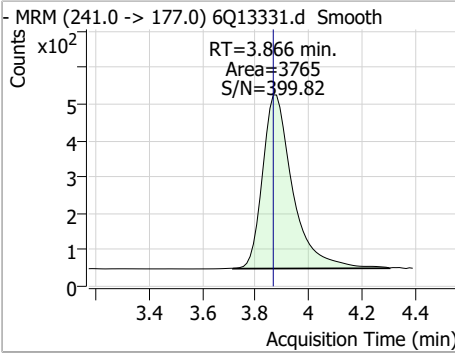
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### Perfluorinated Compounds by LC/MS/MS

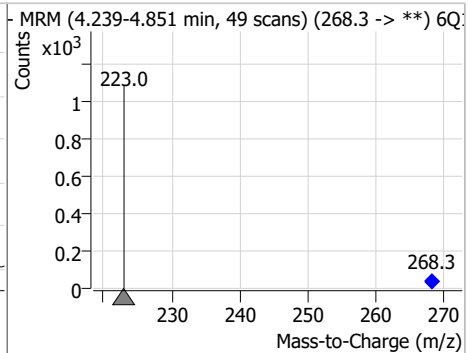
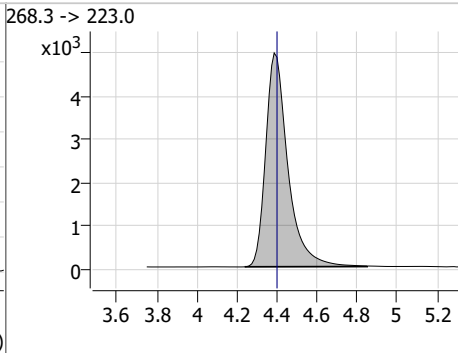
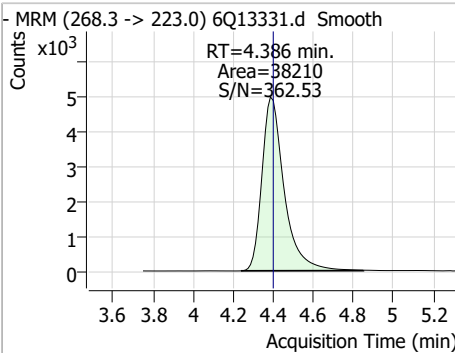


### Perfluorinated Compounds by LC/MS/MS

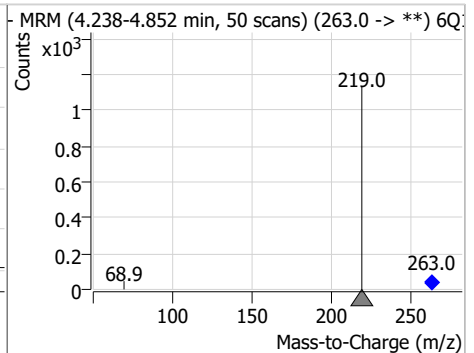
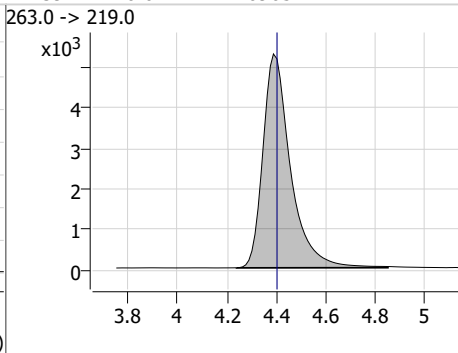
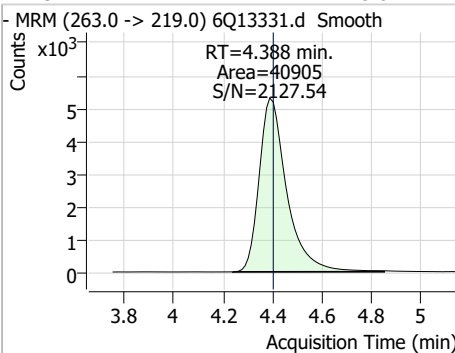
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	9.44	3.87	0.00	3765	241.0 -> 117.0	13.3	7.1	21.3



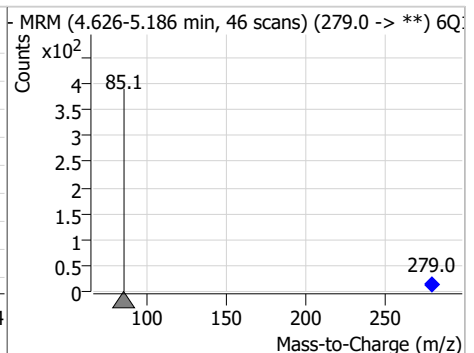
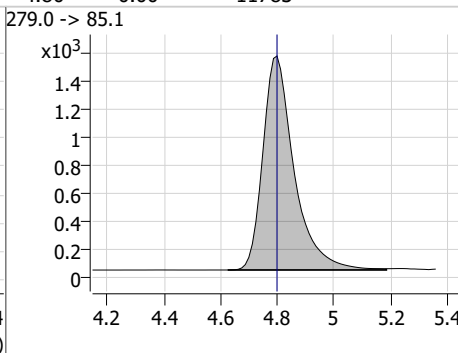
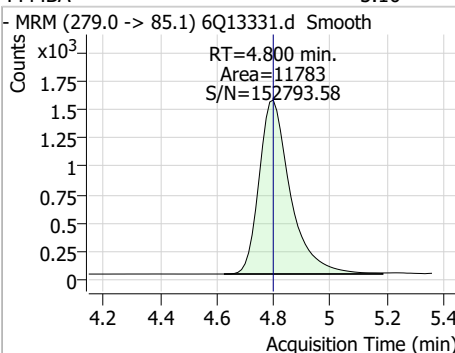
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.67	4.39	-0.01	38210				



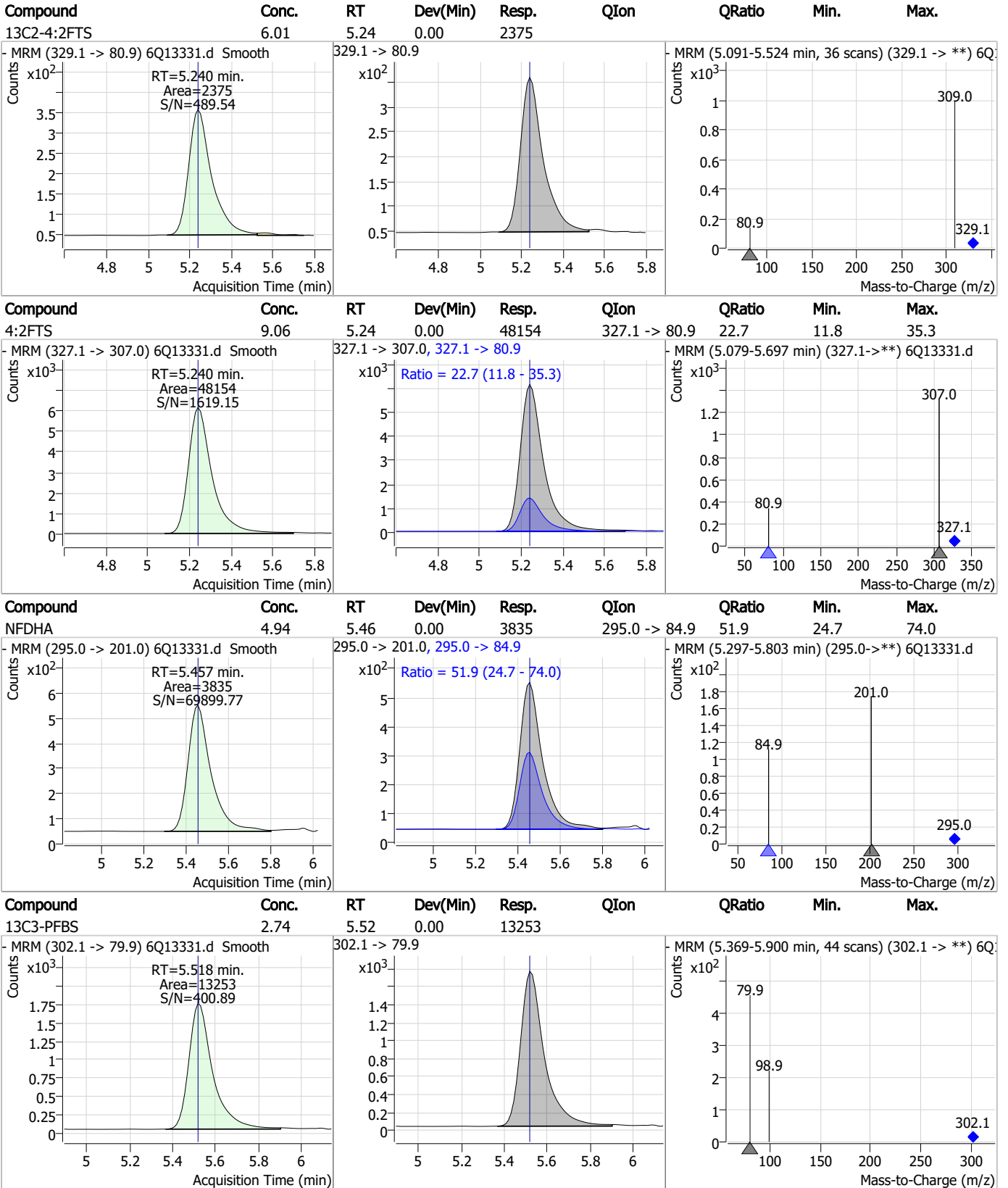
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.07	4.39	-0.01	40905				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.10	4.80	0.00	11783				



### Perfluorinated Compounds by LC/MS/MS

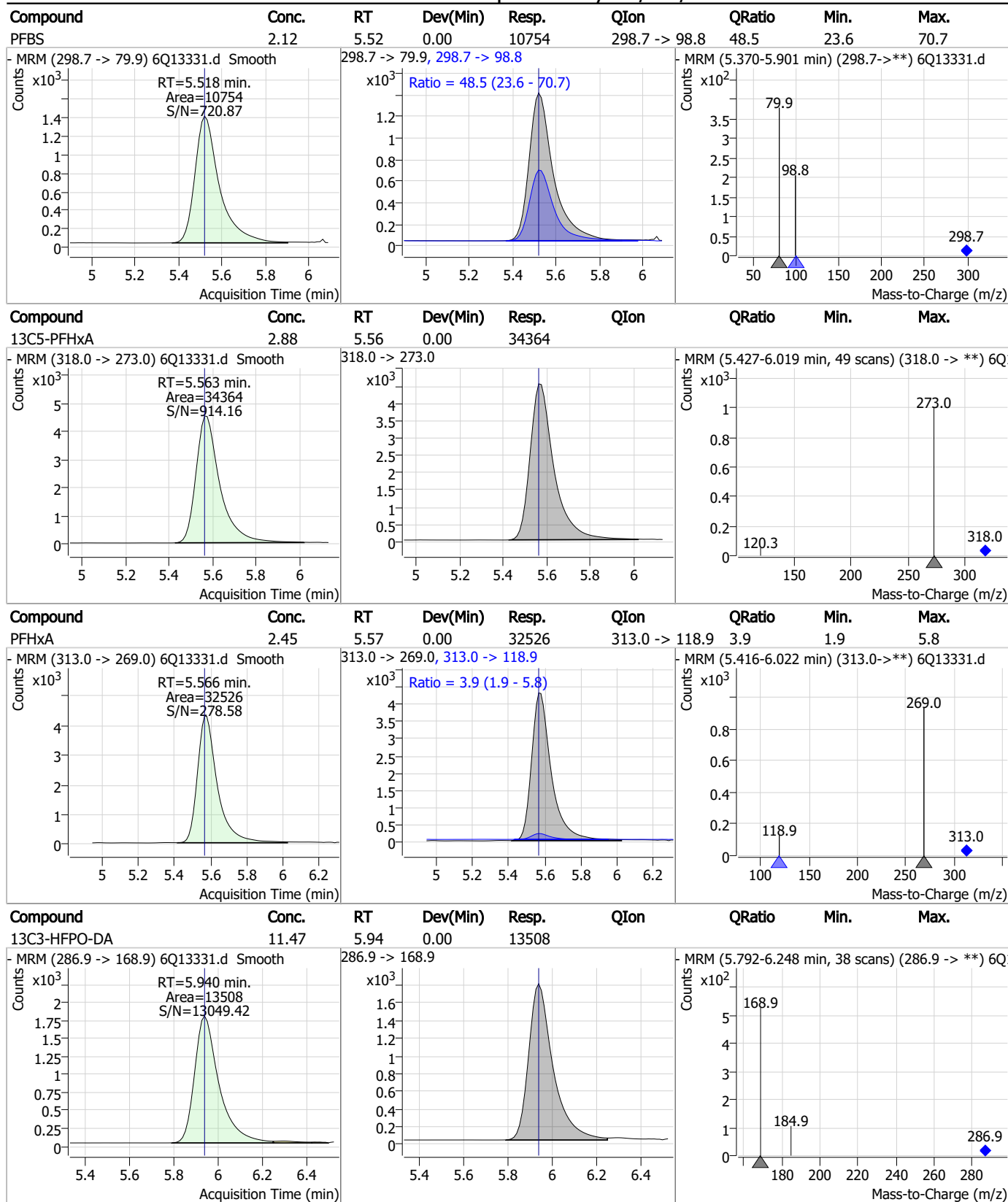


7.4.1

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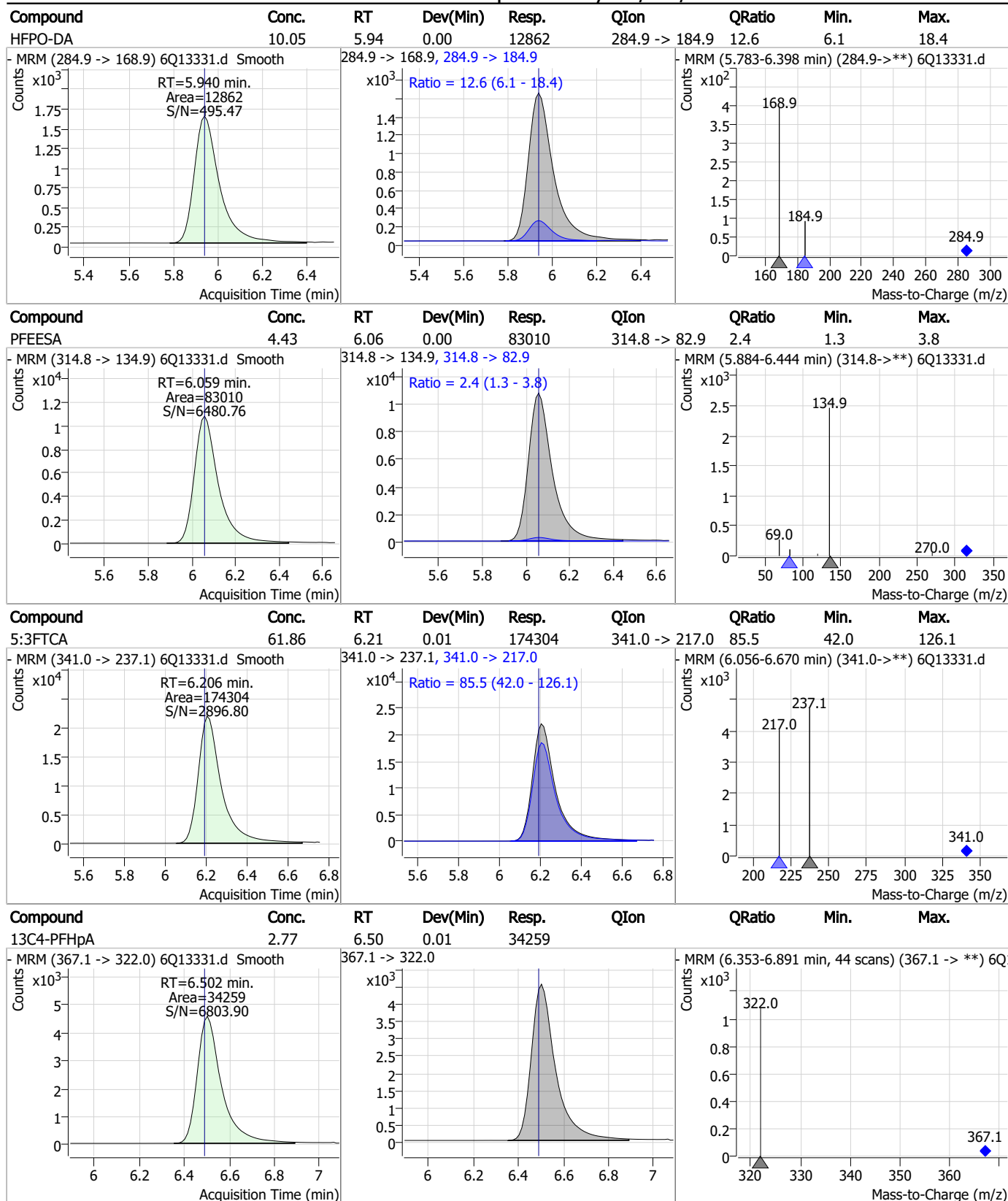


### Perfluorinated Compounds by LC/MS/MS



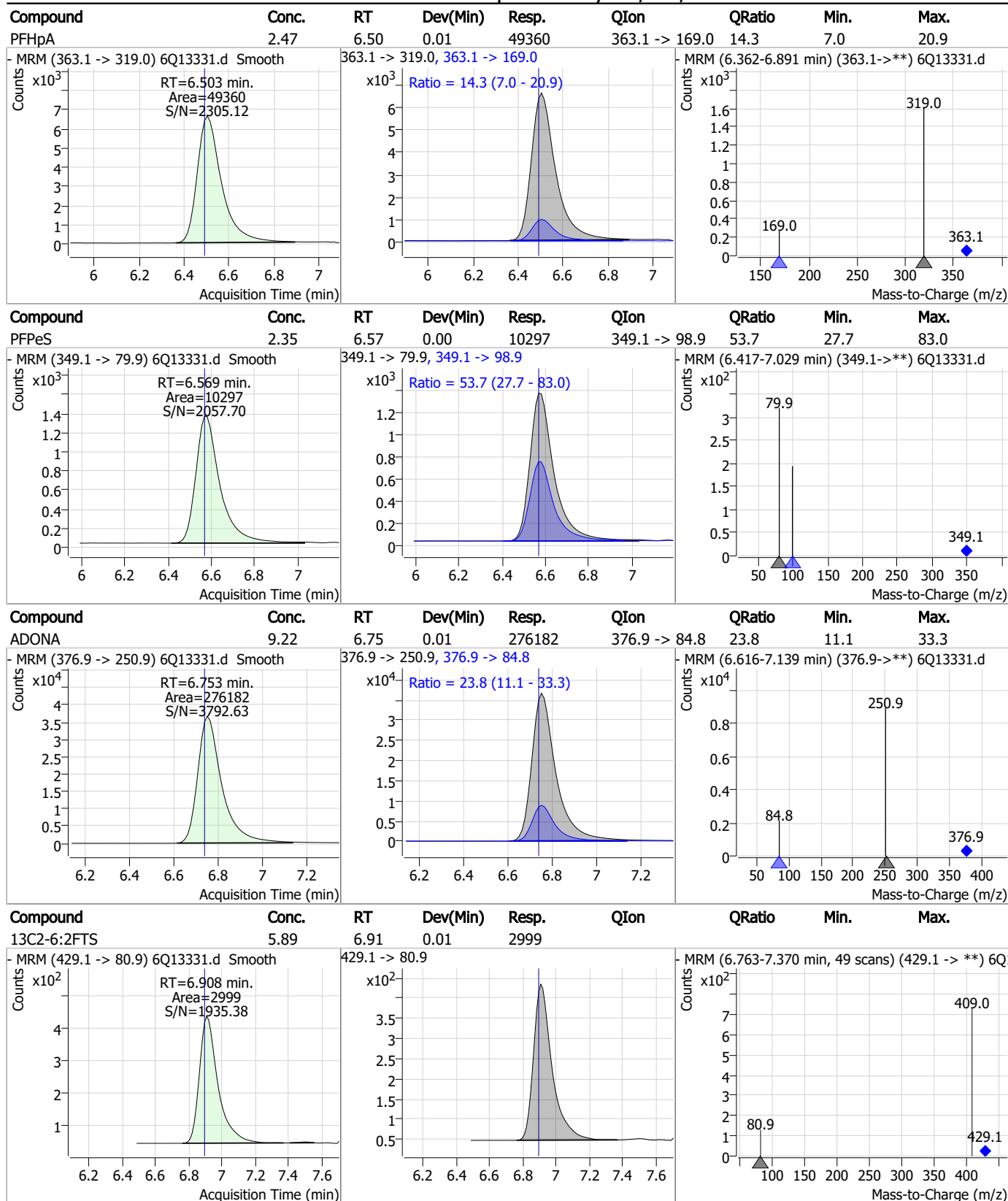
7.4.1  
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### Perfluorinated Compounds by LC/MS/MS



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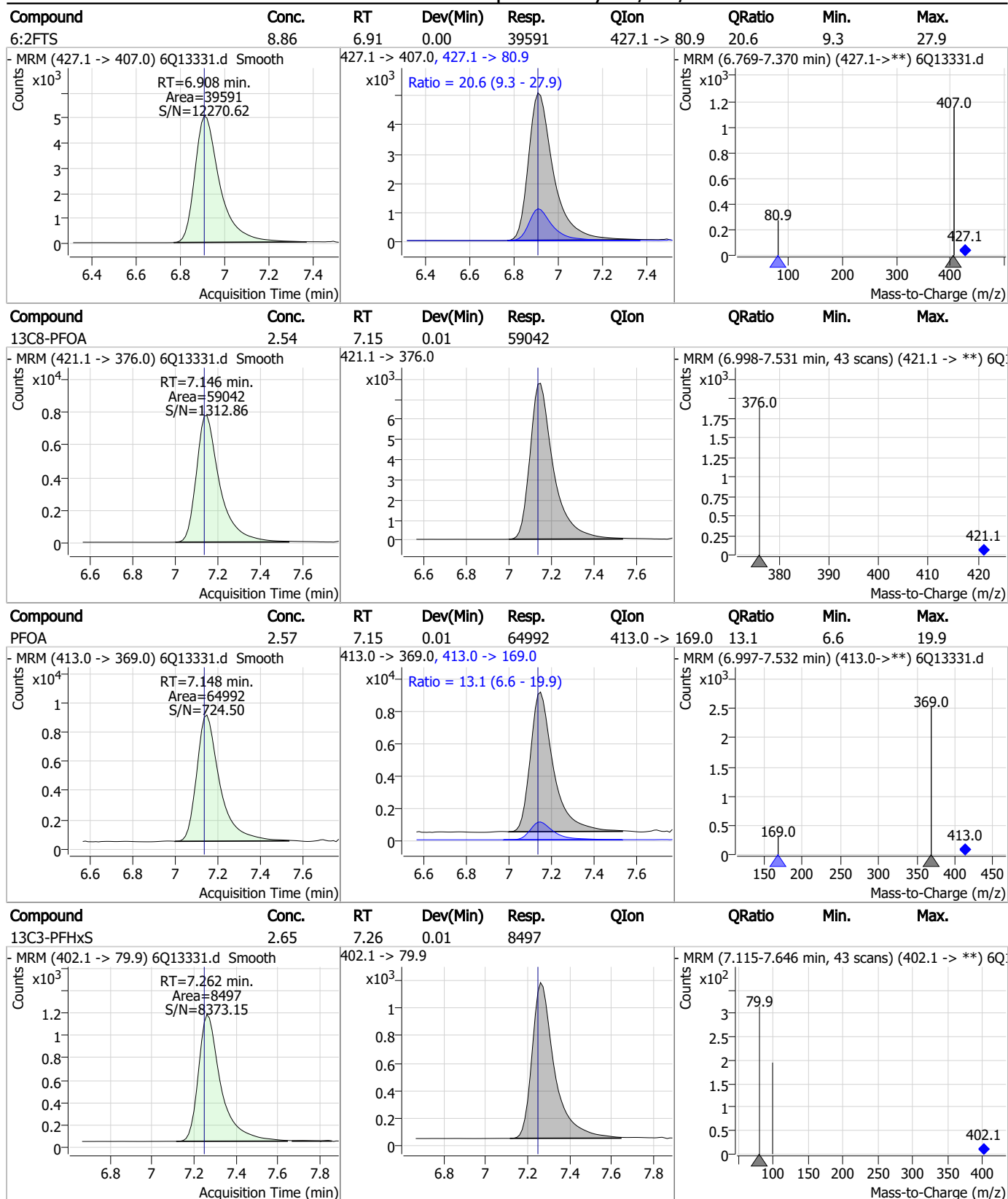
### Perfluorinated Compounds by LC/MS/MS



7.4.1  
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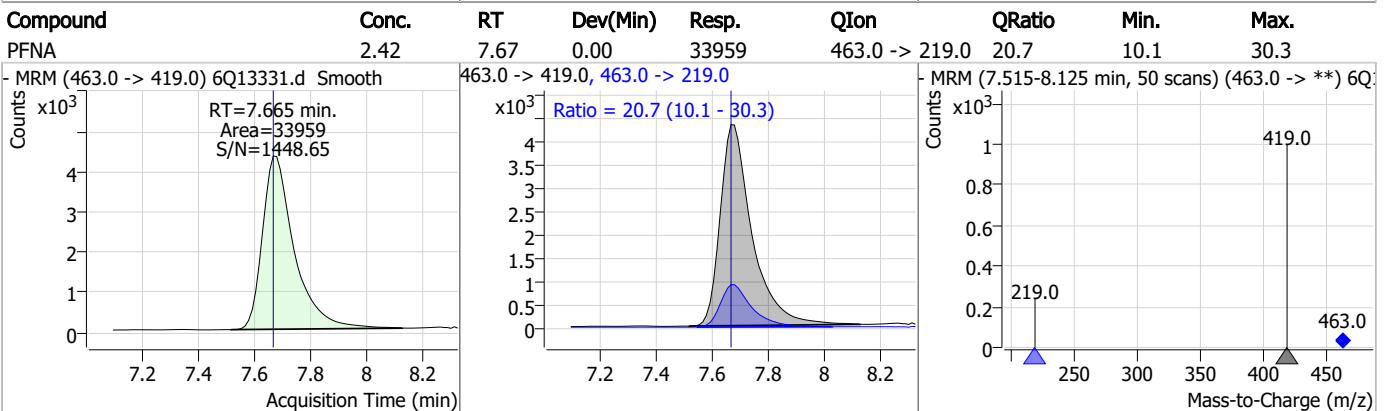
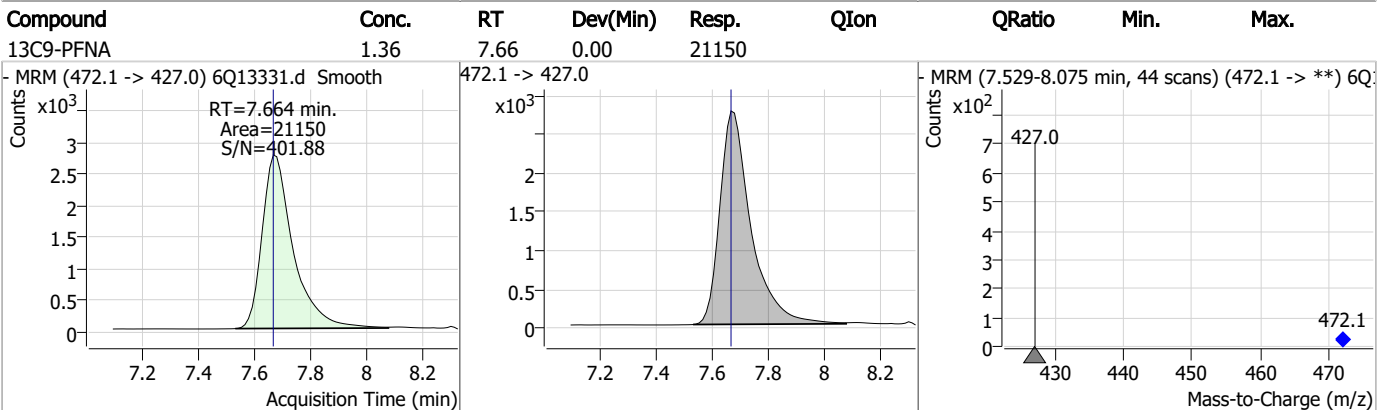
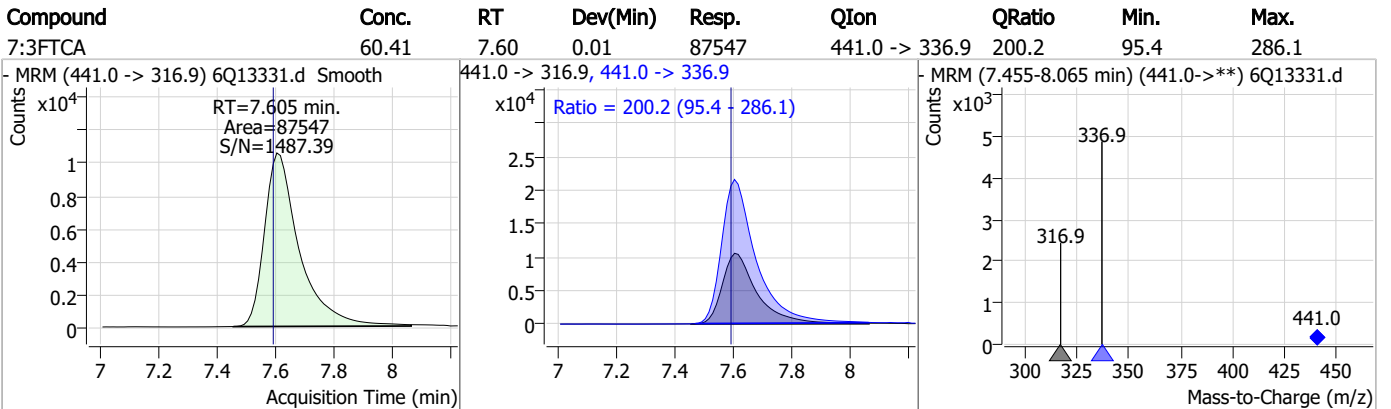
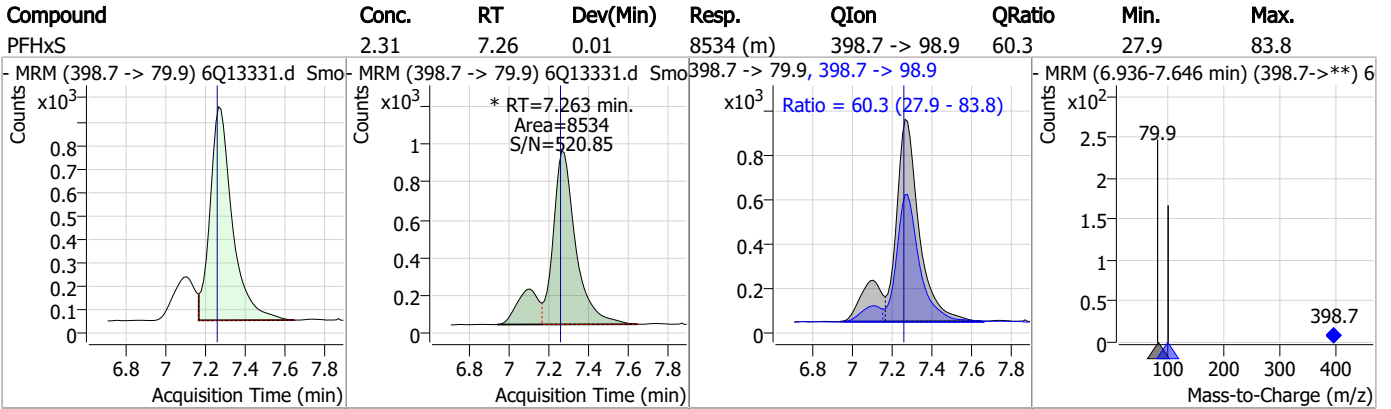


### Perfluorinated Compounds by LC/MS/MS

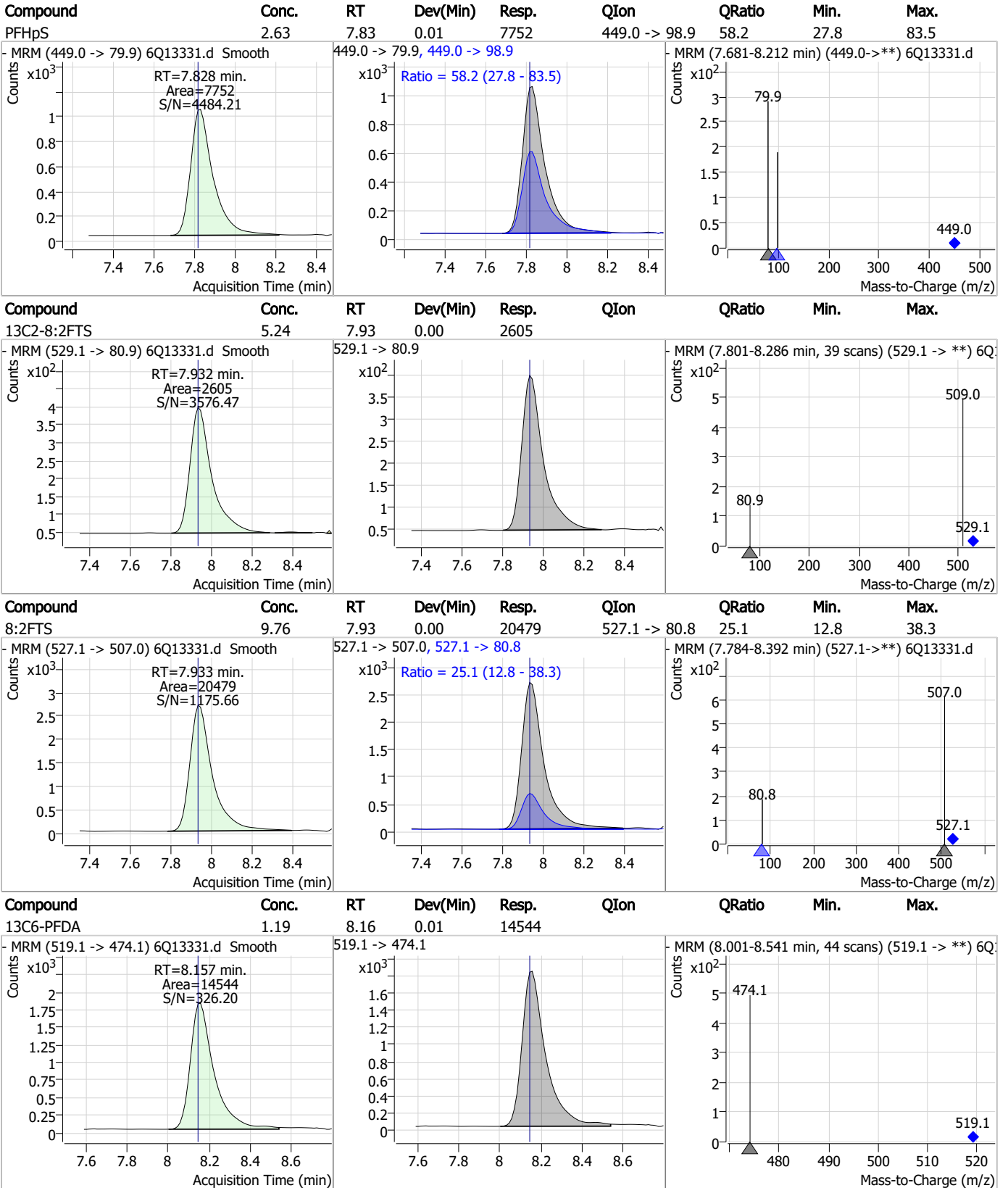


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### Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

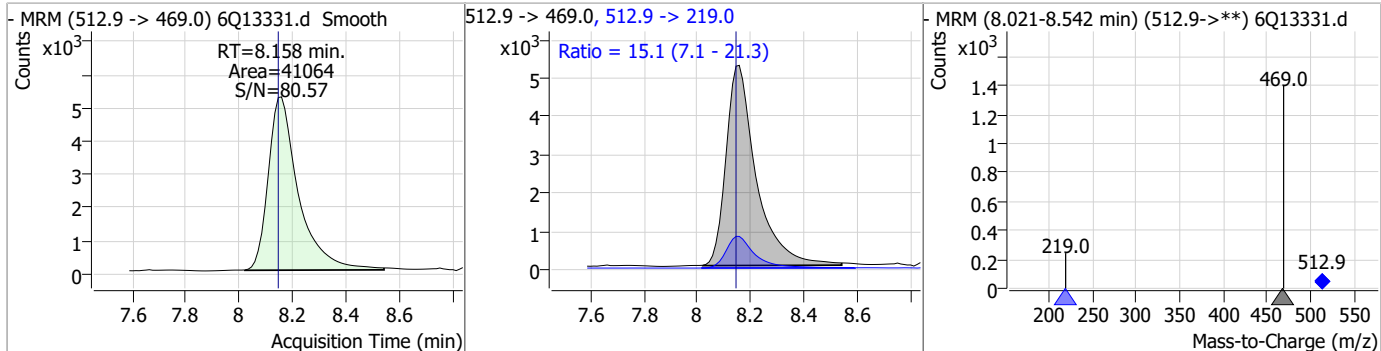


7.4.1

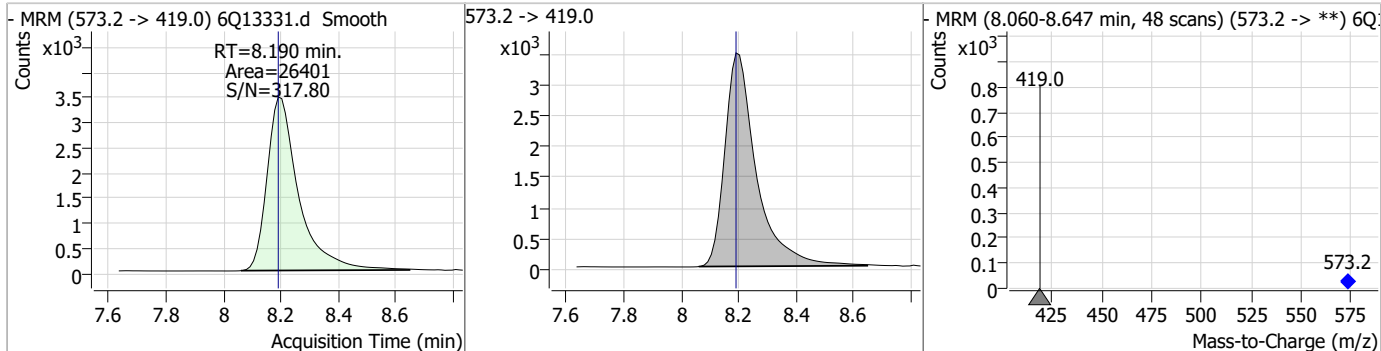
7

### Perfluorinated Compounds by LC/MS/MS

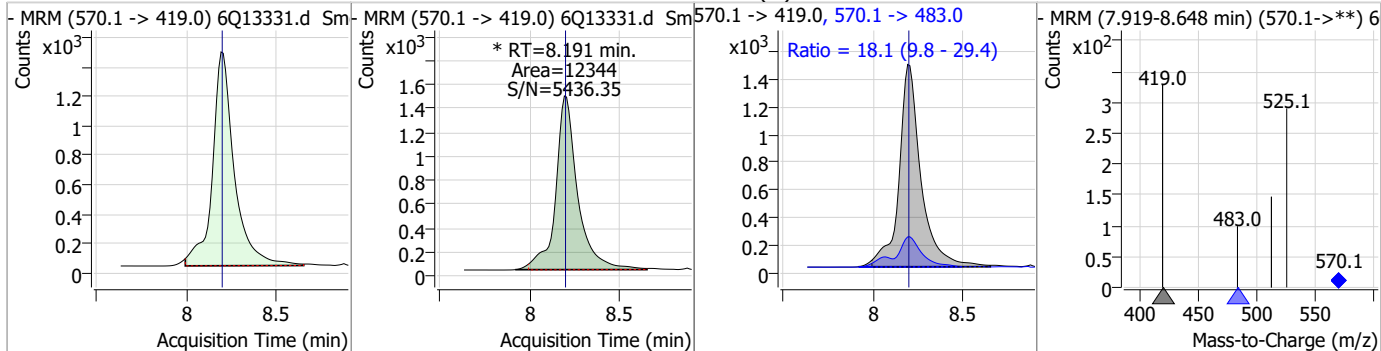
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.43	8.16	0.01	41064	512.9 -> 219.0	15.1	7.1	21.3



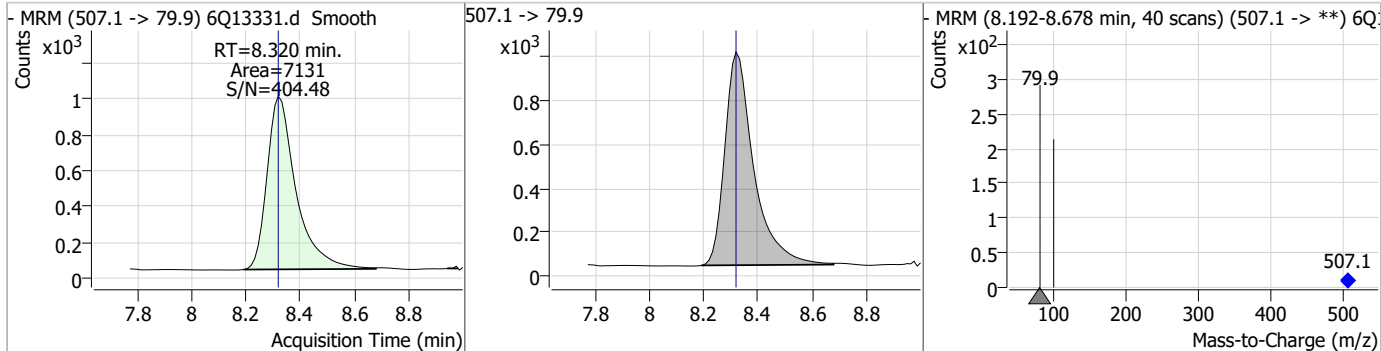
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.22	8.19	0.00	26401				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.55	8.19	0.00	12344 (m)	570.1 -> 483.0	18.1	9.8	29.4

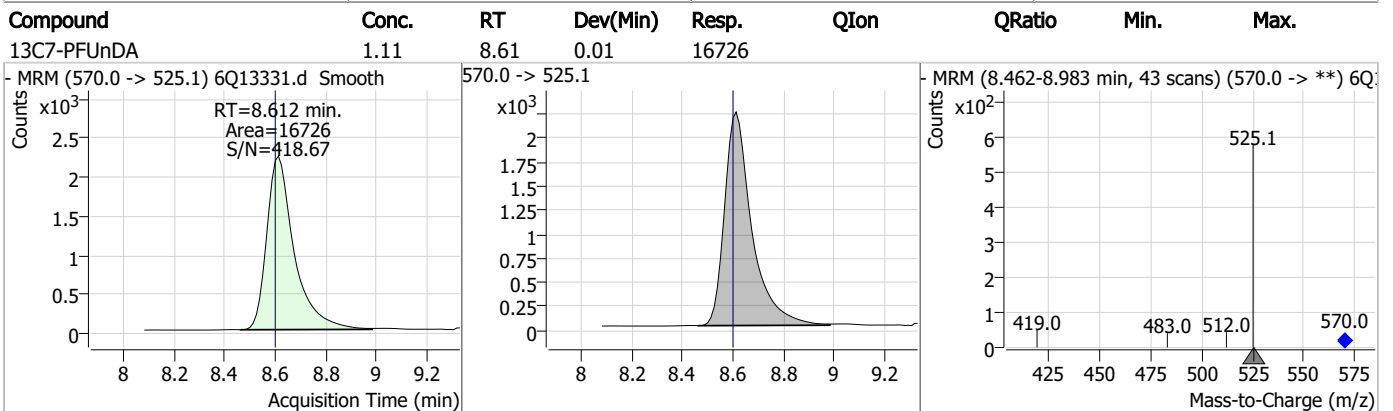
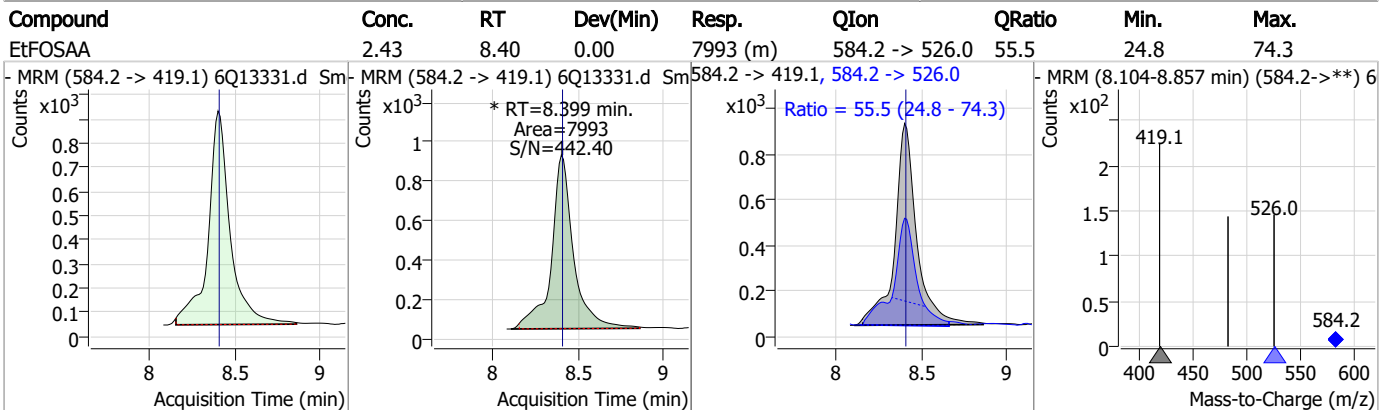
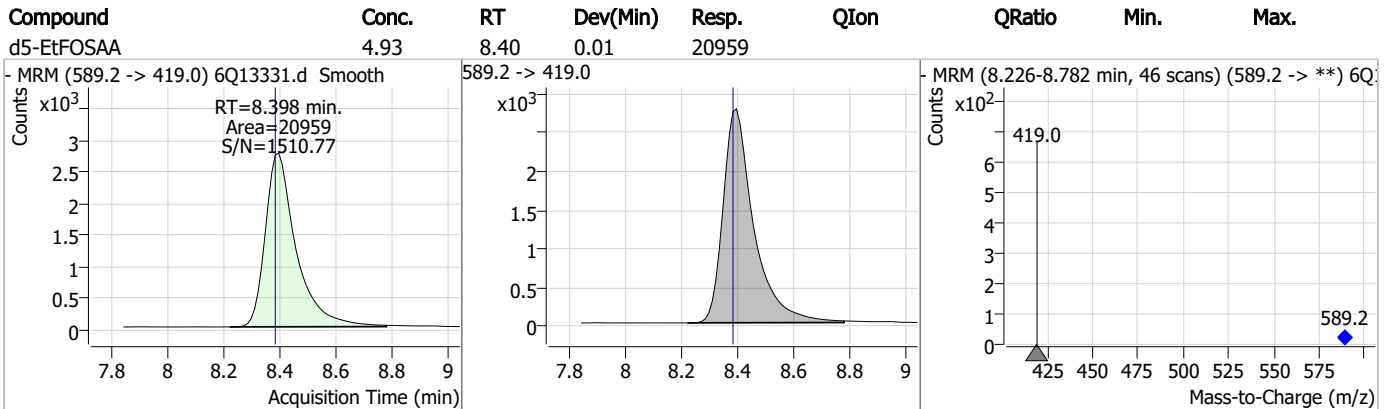
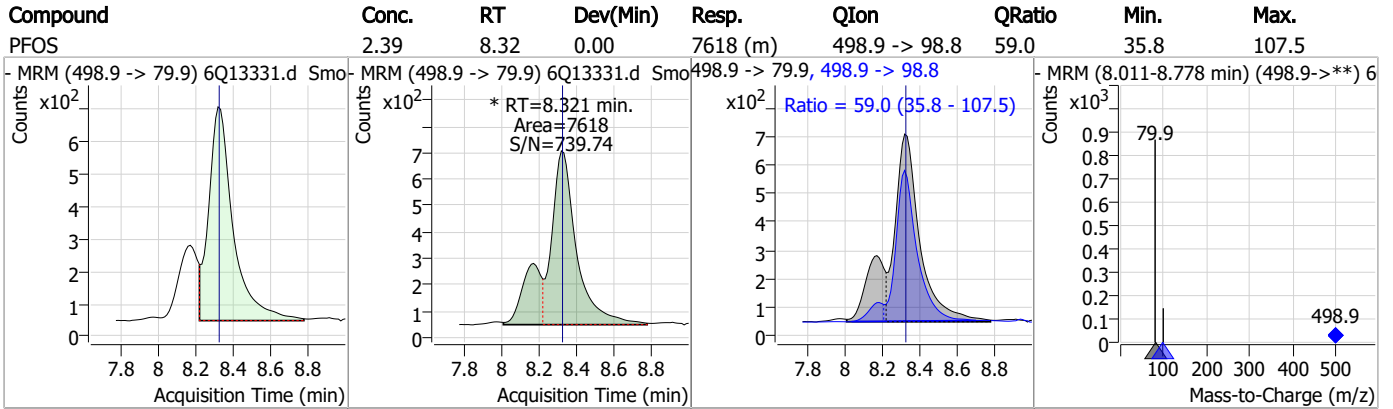


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.45	8.32	0.00	7131				

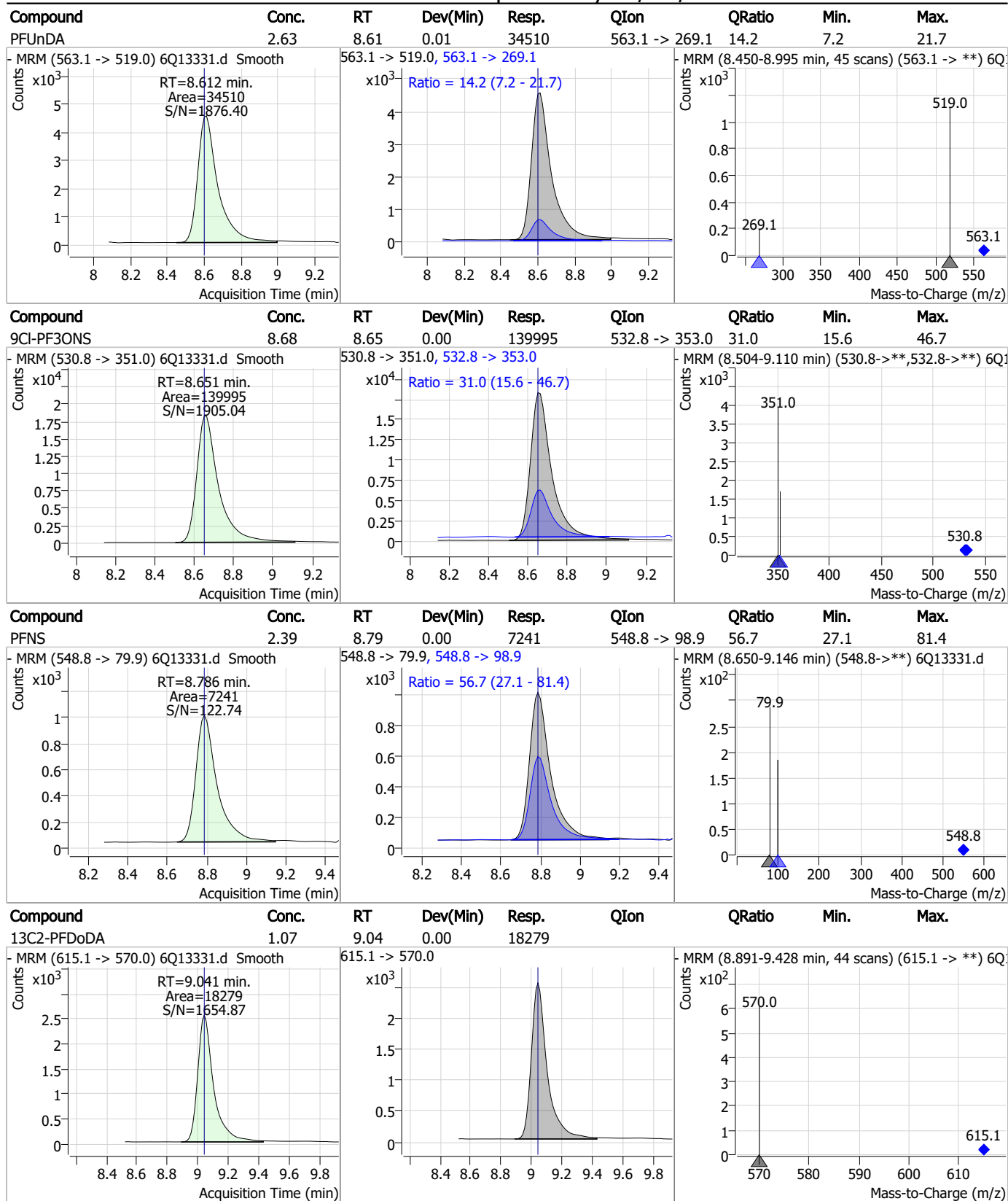


7.4.1  
7

### Perfluorinated Compounds by LC/MS/MS



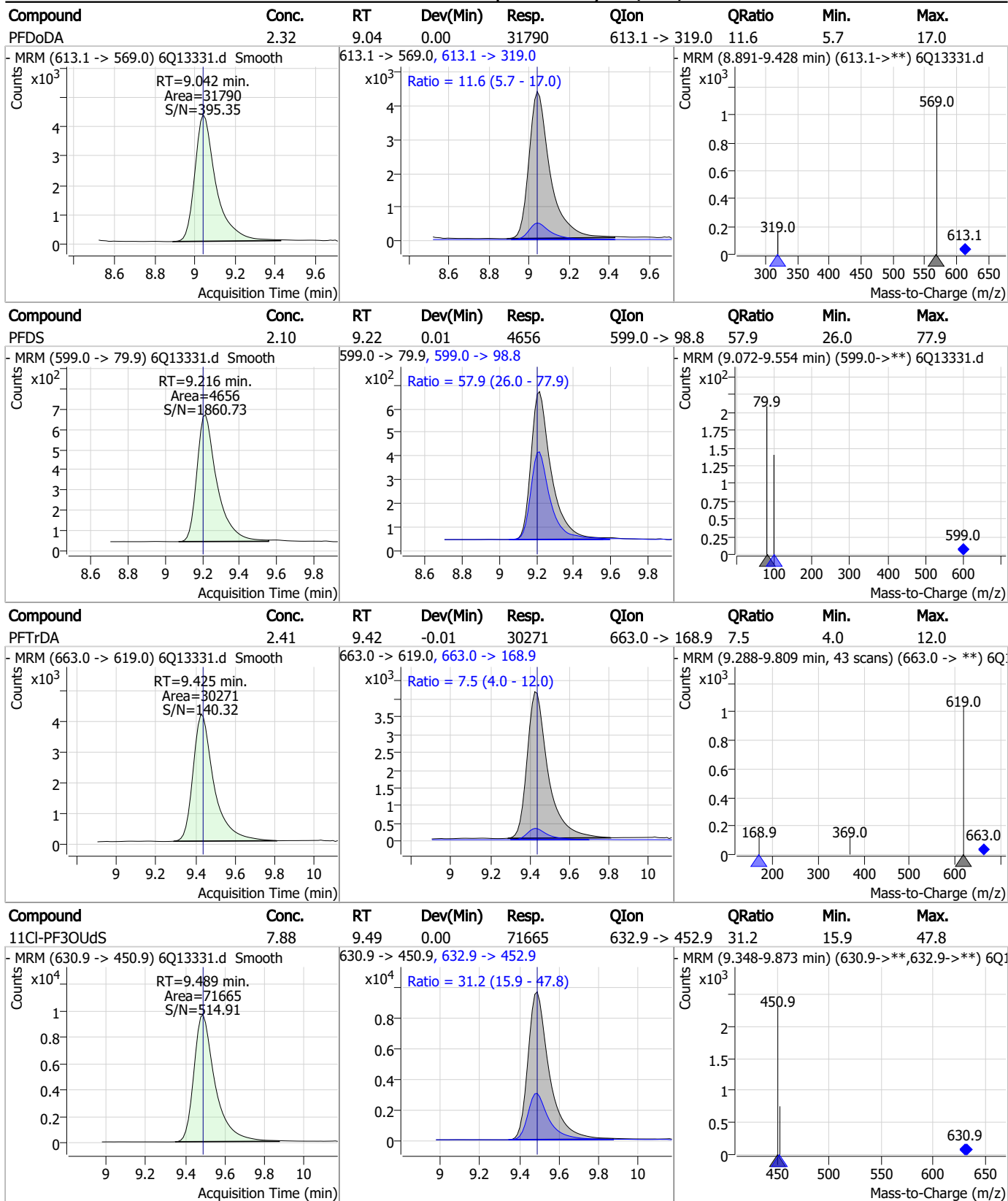
### Perfluorinated Compounds by LC/MS/MS



7.4.1

7

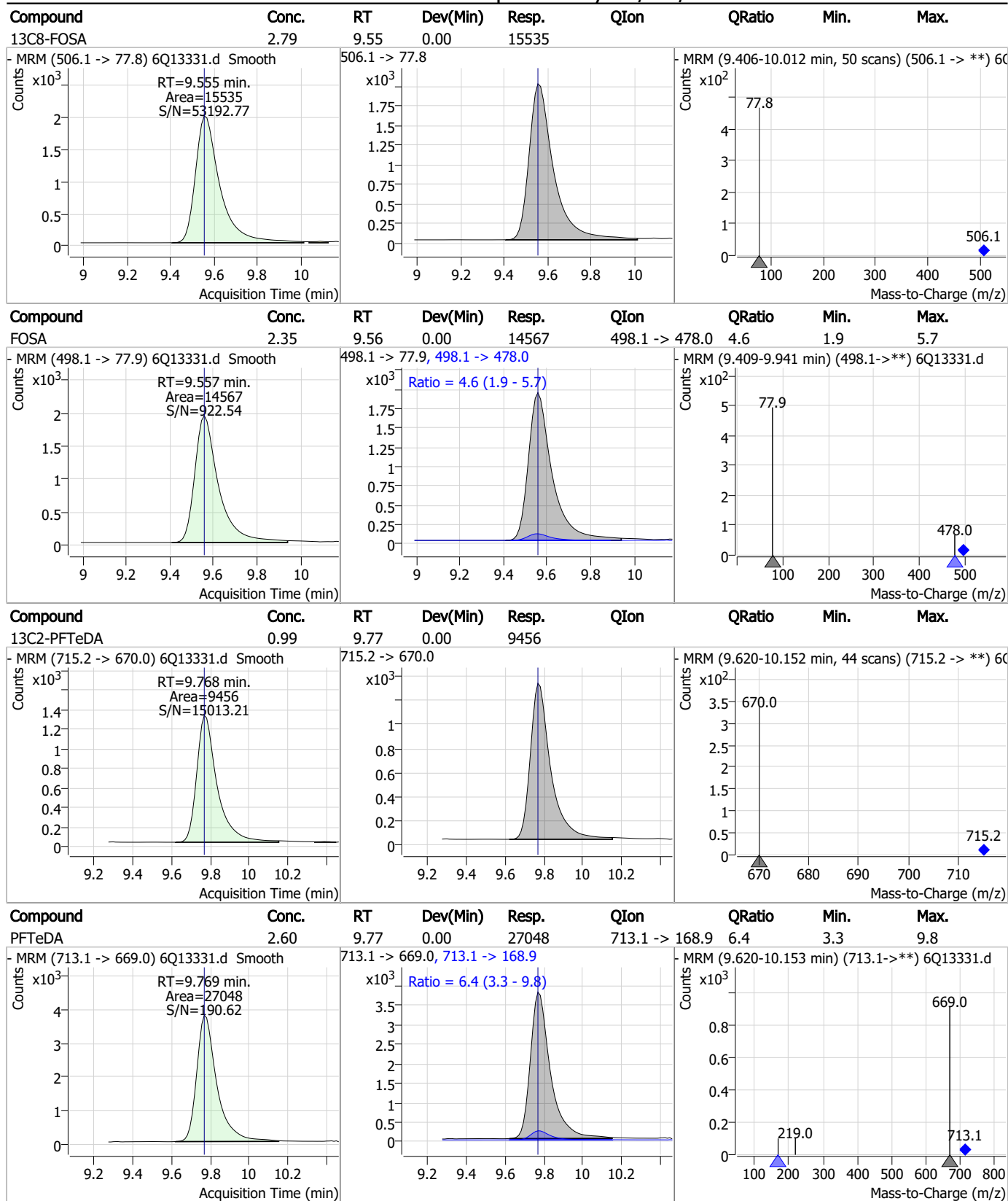
### Perfluorinated Compounds by LC/MS/MS



7.4.1  
7



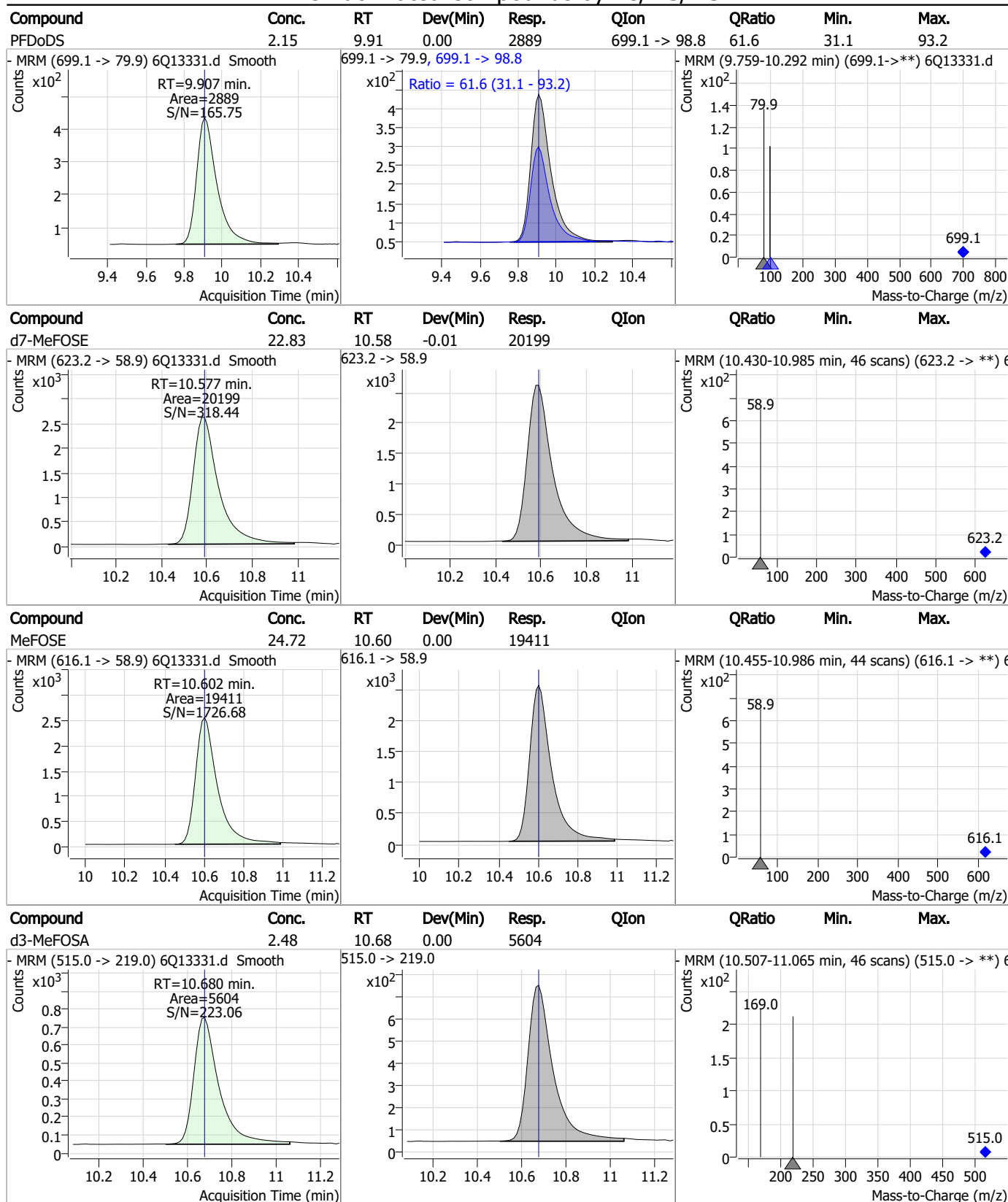
### Perfluorinated Compounds by LC/MS/MS



7.4.1  
7

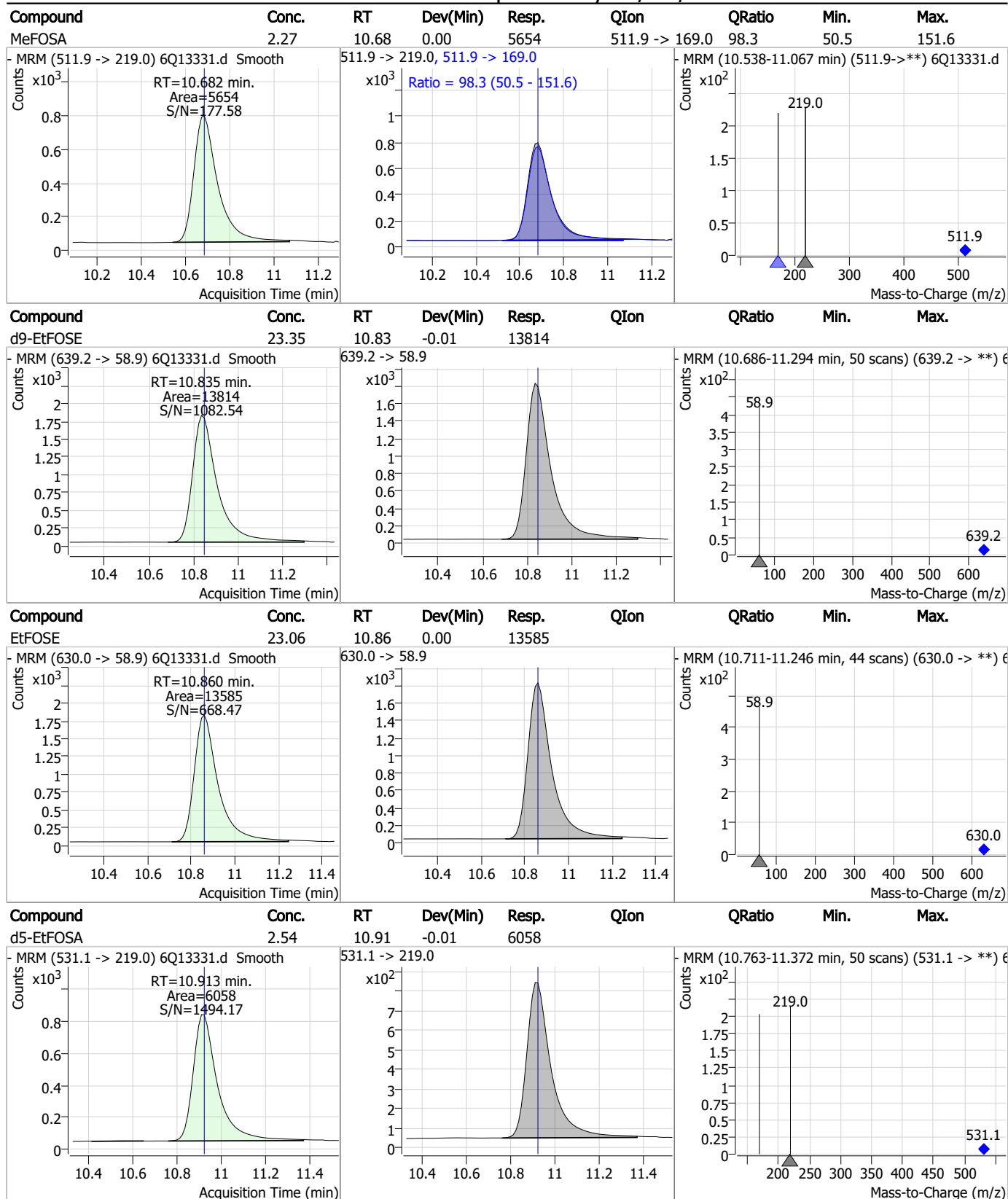


### Perfluorinated Compounds by LC/MS/MS



7.4.1  
7

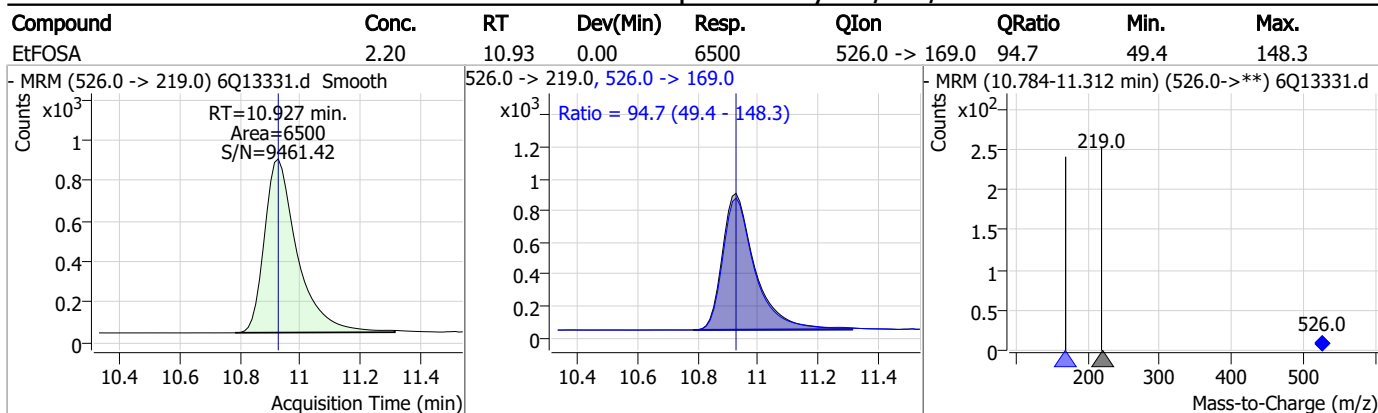
### Perfluorinated Compounds by LC/MS/MS



7.4.1  
7



### Perfluorinated Compounds by LC/MS/MS



7.4.1

7

# Manual Integration Approval Summary

Sample Number: OP95329-MS      Method: EPA DRAFT 1633  
Lab FileID: 6Q13331.D      Analyst approved: 02/10/23 13:38 Natasha Gumtie  
Injection Time: 02/09/23 20:45      Supervisor approved: 02/10/23 17:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.4.1.1

7

### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13333.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 9:13:55 PM  
 Sample Name : op95329-dup  
 Vial : P1-D7  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95329,S6Q203,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.013	216.8 -> 171.9	73244	10.00 µg/L	0.012
M5-PFPeA	4.386	268.3 -> 223.0	37909	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	34923	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	34280	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	60038	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	21048	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	16737	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	18554	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	20884	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	10815	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	15327	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	13141	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	9034	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	7320	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2264	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	3054	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2607	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	28128	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	13697	10.00 µg/L	0.000
M5-EtFOSAA	8.386	589.2 -> 419.0	22154	5.00 µg/L	0.000
M7-MeFOSE	10.577	623.2 -> 58.9	22954	25.00 µg/L	-0.012
M9-EtFOSE	10.835	639.2 -> 58.9	15668	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	6229	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	6013	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	8614	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	31385	5.00 µg/L	0.012
18O2-PFHxS	7.261	403.0 -> 83.9	6011	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	65415	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	22506	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	21602	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	28953	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2264	5.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.6%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3054	5.95 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.9%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2607	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C2-PFDoDA	9.041	615.1 -> 570.0	20884	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.9%		
13C2-PFTeDA	9.768	715.2 -> 670.0	10815	1.08 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 86.8%		
13C3-PFBS	5.518	302.1 -> 79.9	13141	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C3-PFHxS	7.262	402.1 -> 79.9	9034	2.79 µg/L	0.012

7.5.1  
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 = 111.7%	
13C4-PFBA	3.013	216.8 -> 171.9	73244	10.45 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C4-PFHpA	6.502	367.1 -> 322.0	34280	2.82 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C5-PFHxA	5.563	318.0 -> 273.0	34923	2.98 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.2%	
13C5-PFPeA	4.386	268.3 -> 223.0	37909	5.73 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.6%	
13C6-PFDA	8.145	519.1 -> 474.1	16737	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C7-PFUnDA	8.599	570.0 -> 525.1	18554	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C8-FOSA	9.555	506.1 -> 77.8	15327	2.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.1%	
13C8-PFOA	7.134	421.1 -> 376.0	60038	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C8-PFOS	8.319	507.1 -> 79.9	7320	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C9-PFNA	7.664	472.1 -> 427.0	21048	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.9%	
d3-MeFOSAA	8.190	573.2 -> 419.0	28128	5.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.4%	
13C3-HFPO-DA	5.940	286.9 -> 168.9	13697	11.85 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.5%	
d3-MeFOSA	10.680	515.0 -> 219.0	6013	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.4%	
d5-EtFOSAA	8.386	589.2 -> 419.0	22154	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
d7-MeFOSE	10.577	623.2 -> 58.9	22954	26.43 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
d9-EtFOSE	10.835	639.2 -> 58.9	15668	26.98 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.9%	
d5-EtFOSA	10.913	531.1 -> 219.0	6229	2.66 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%	

**Target Compounds**

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.908	427.1 -> 407.0	2568	0.56 µg/L	97
		427.1 -> 80.9	512		
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.	



7.5.1  
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	5.566	449.0 -> 98.9	3186	0.24 µg/L	99
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	131	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	4.388	498.9 -> 98.8	4032	0.50 µg/L	100
		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

7.5.1  
7

### Perfluorinated Compounds by LC/MS/MS

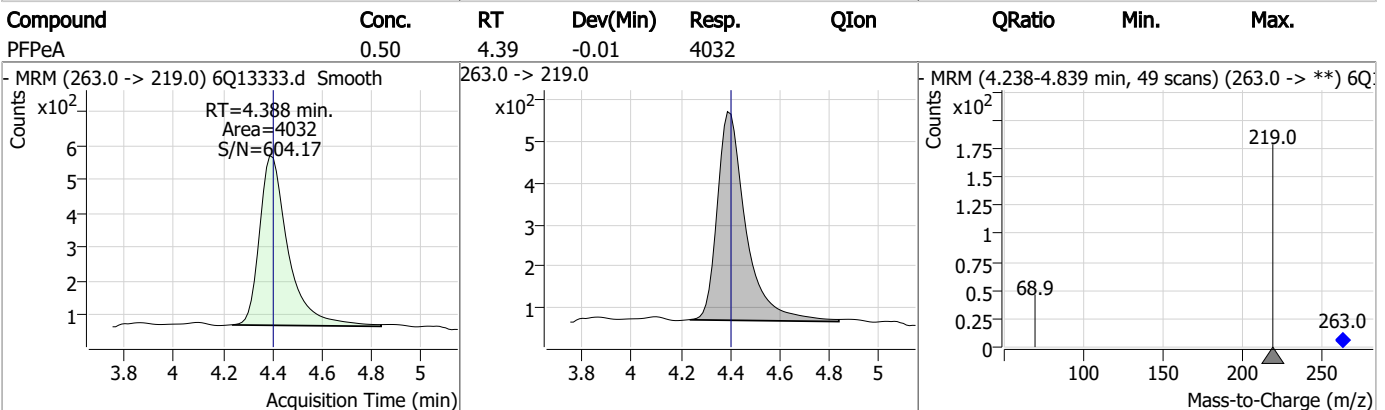
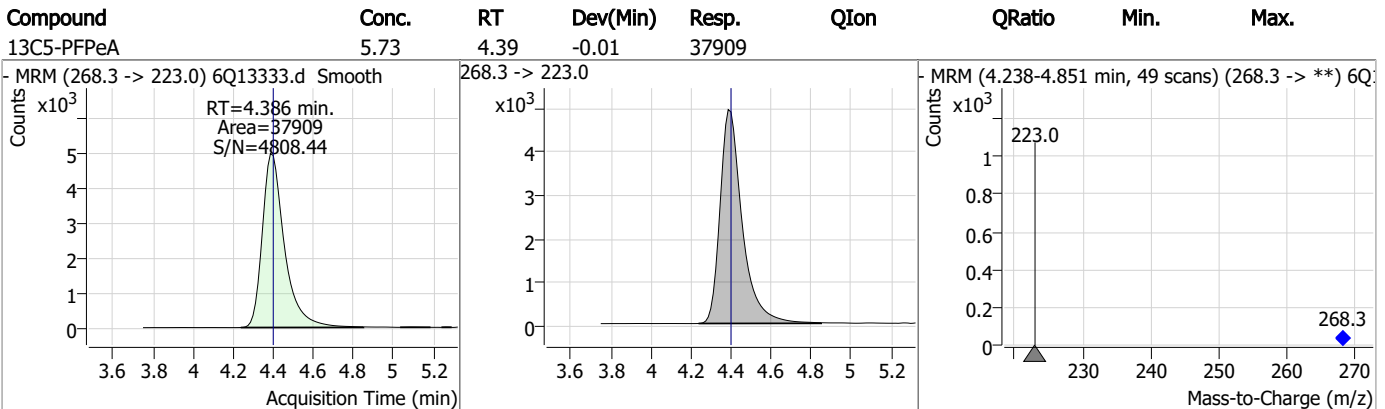
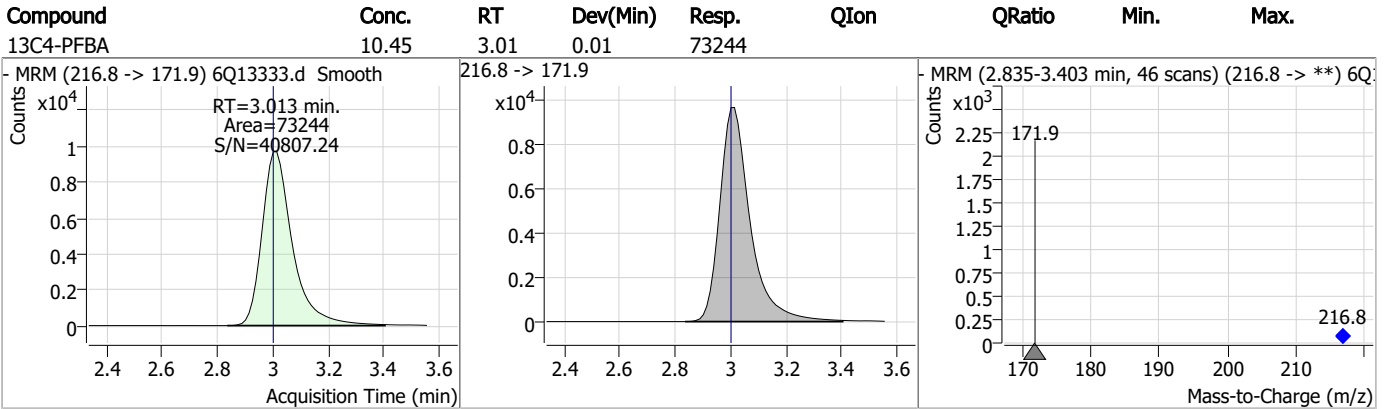
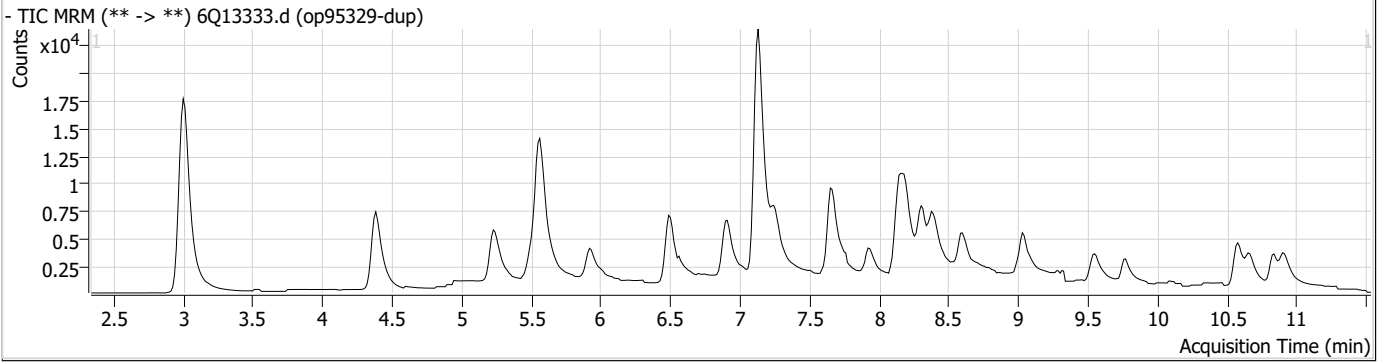
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.5.1

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### Perfluorinated Compounds by LC/MS/MS

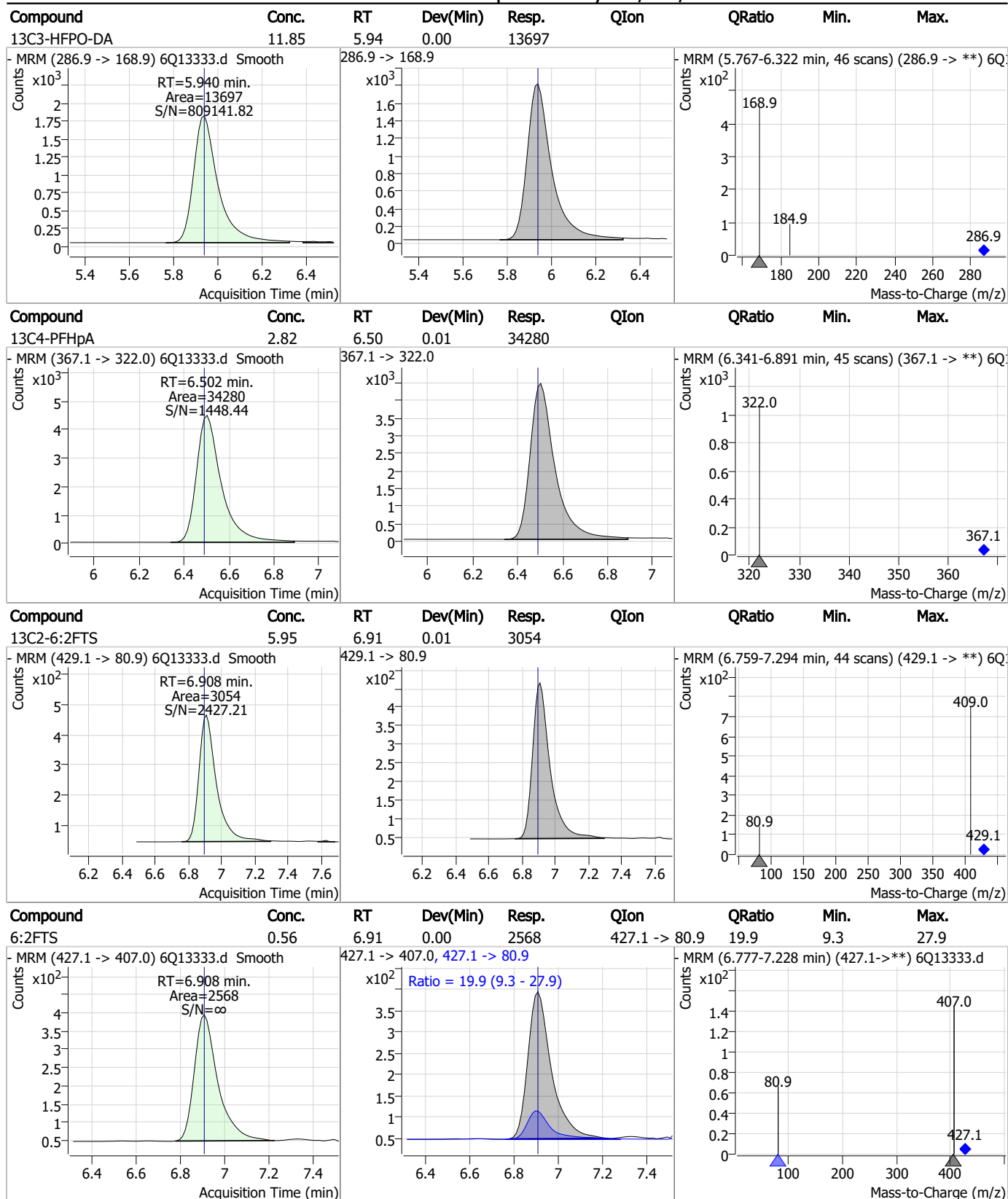


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.68	5.24	0.00	2264				
13C3-PFBS	2.70	5.52	0.00	13141				
13C5-PFHxA	2.98	5.56	0.00	34923				
PFHxA	0.24	5.57	0.00	3186	313.0 -> 118.9	4.1	1.9	5.8

7.5.1  
7

### Perfluorinated Compounds by LC/MS/MS



7.5.1  
7



### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.75	7.13	0.00	60038				
13C3-PFHxS	2.79	7.26	0.01	9034				
13C9-PFNA	1.34	7.66	0.00	21048				
13C2-8:2FTS	5.20	7.93	0.00	2607				

7.5.1  
7

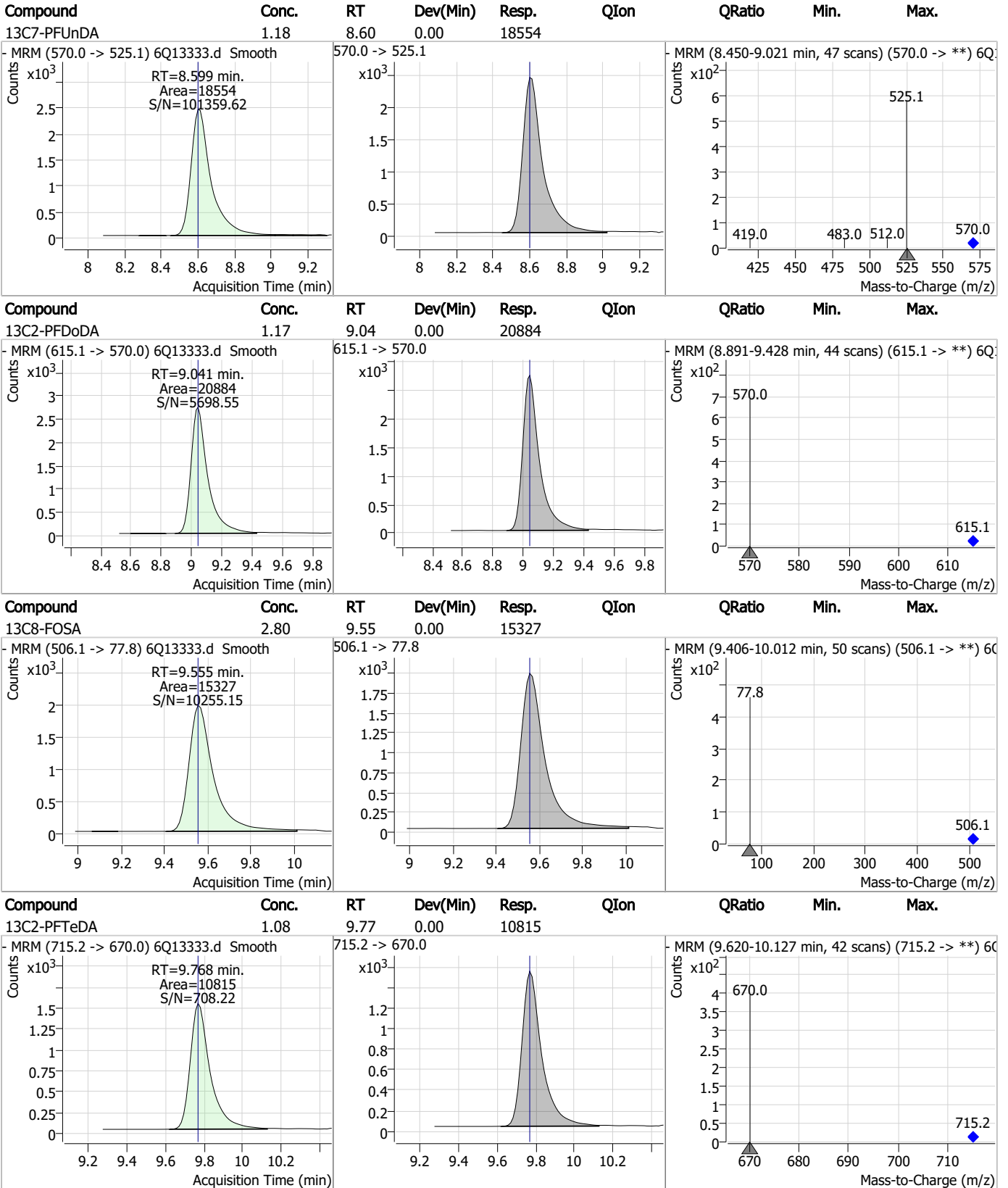
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.31	8.15	0.00	16737				
d3-MeFOSAA	5.67	8.19	0.00	28128				
13C8-PFOS	2.57	8.32	0.00	7320				
d5-EtFOSAA	5.31	8.39	0.00	22154				

7.5.1

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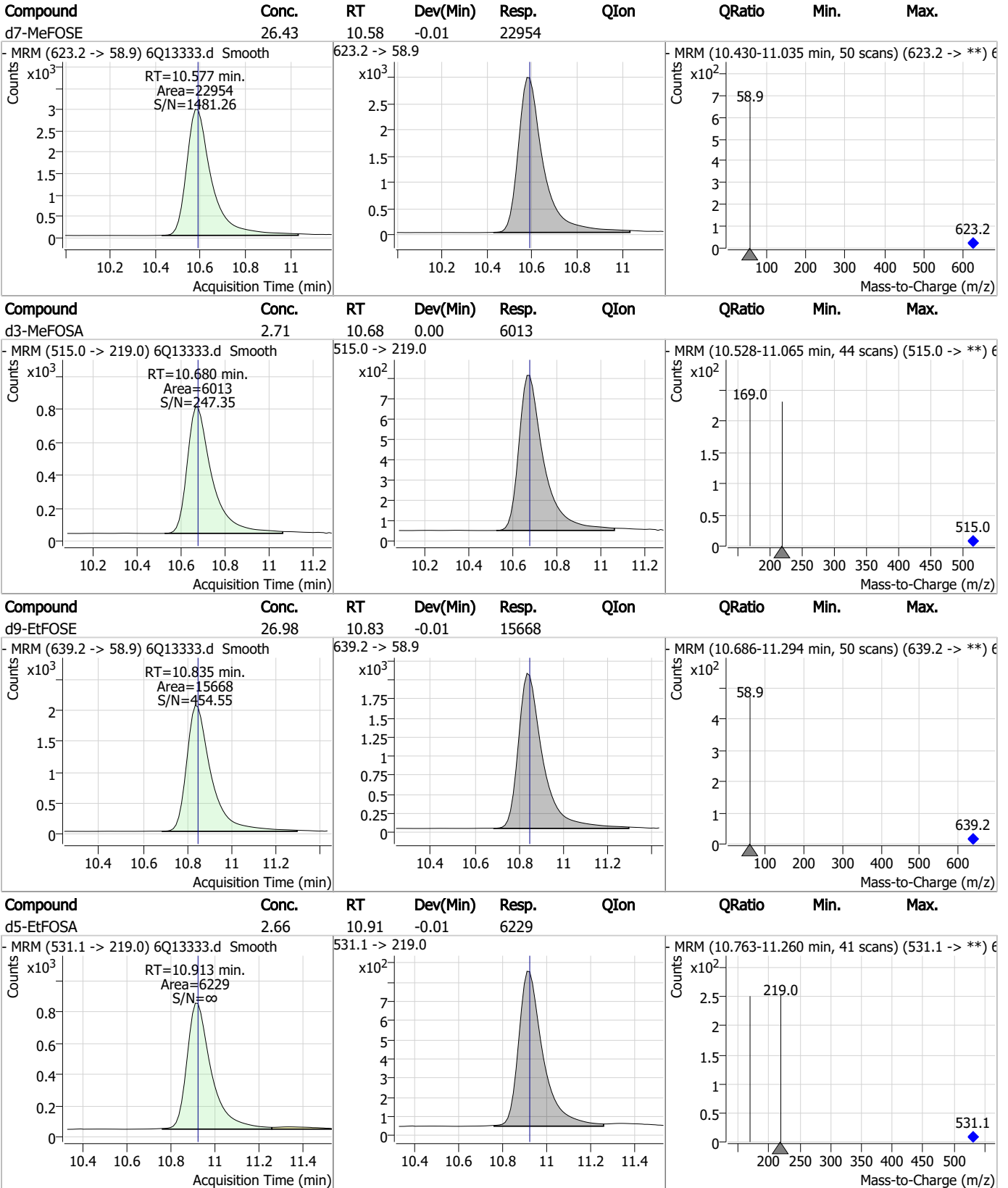
### Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Perfluorinated Compounds by LC/MS/MS



7.5.1

7

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

**Norman Farmer**  
 02/10/23 16:31

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13294.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 12:01:14 PM  
 Sample Name : RT TDCA  
 Vial : P1-B3  
 DA Method File : TDCA.quantmethod.xml  
 Batch Name : s6q203 TDCA.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

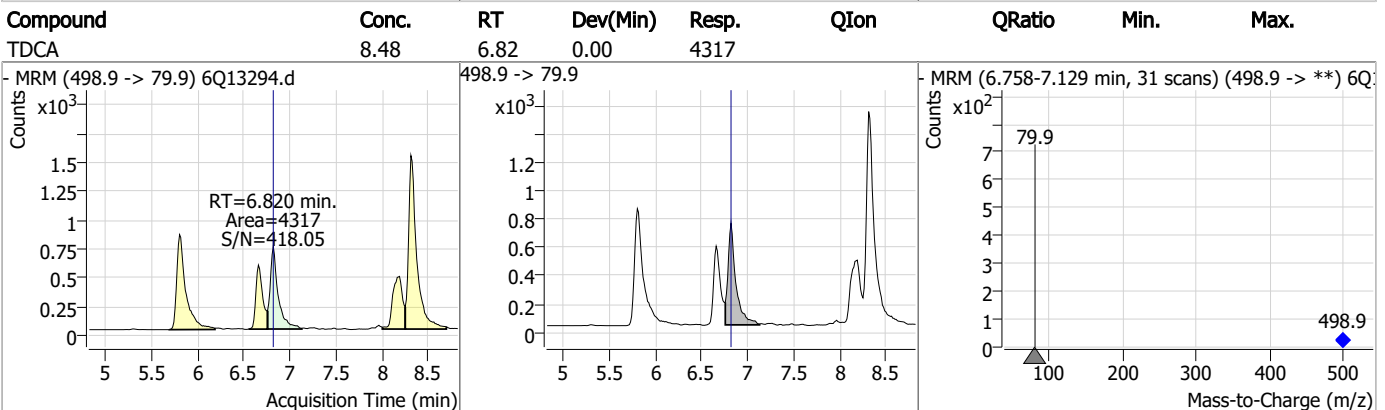
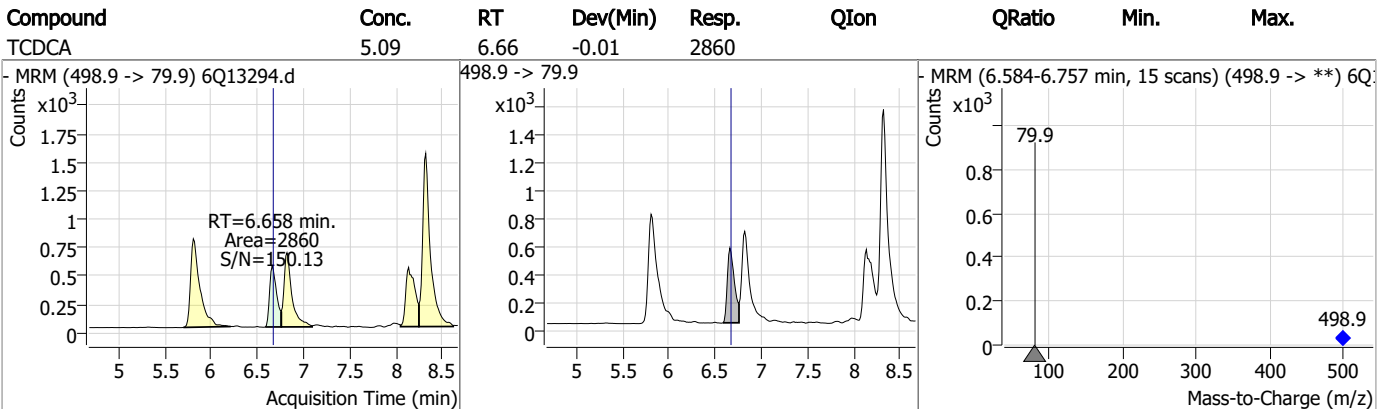
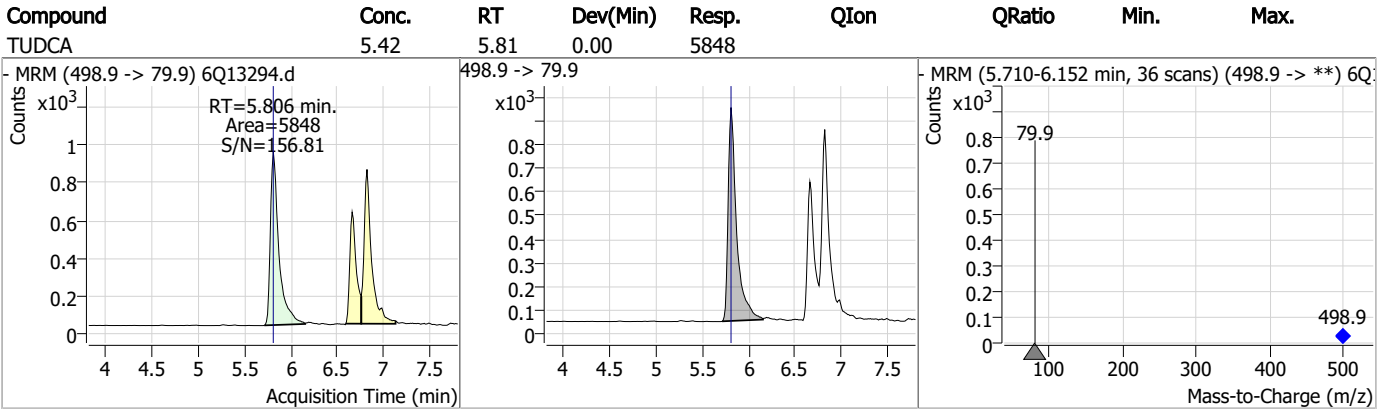
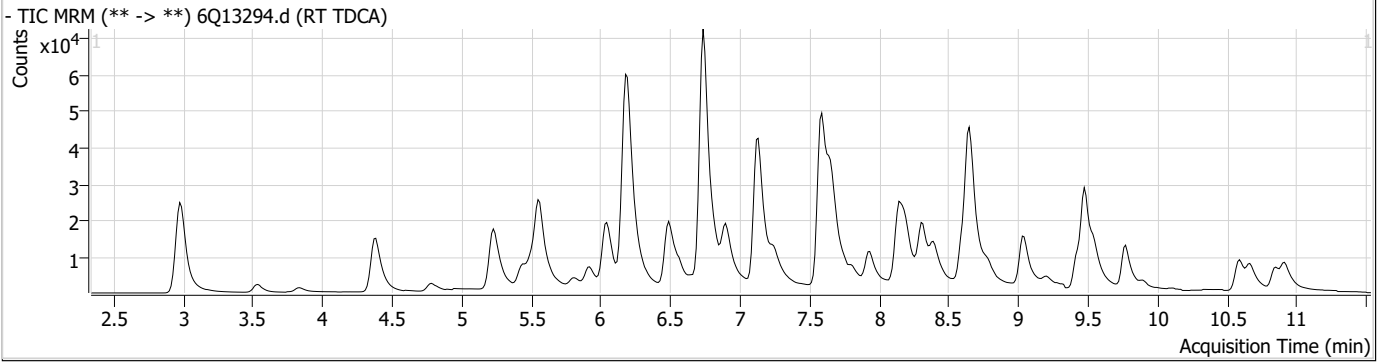
Compound	RT	Transition	Response	Conc. Units	Dev(Min)	
<b>Internal Standards</b>						
M8-PFOS	8.320	507.1 -> 79.9	12178	2.50 µg/L	-0.026	
13C4-PFOS	8.320	502.8 -> 79.9	14032	2.50 µg/L	-0.013	
<b>System Monitoring Compounds</b>						
13C8-PFOS	8.320	507.1 -> 79.9	12178	2.20 µg/L	-0.026	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 88.1%			
<b>Target Compounds</b>						
PFOS	8.321	498.9 -> 79.9	12403	2.98 µg/L #m	74	QValue
		498.9 -> 98.8	7599			
TCDCa	6.658	498.9 -> 79.9	2860	5.09 ng/ml	100	
TDCA	6.820	498.9 -> 79.9	4317	8.48 ng/ml	100	
TUDCA	5.806	498.9 -> 79.9	5848	5.42 ng/ml	100	

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

7.6.1  
7

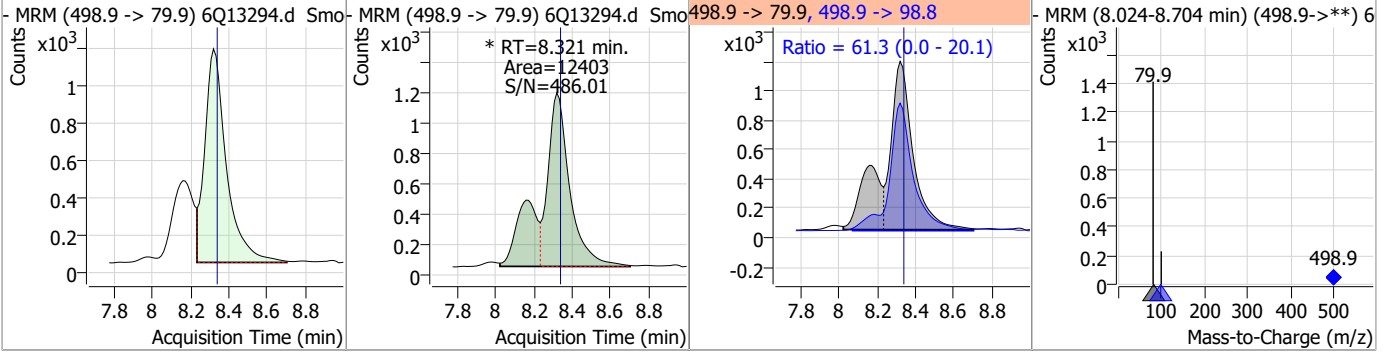


### Perfluorinated Compounds by LC/MS/MS

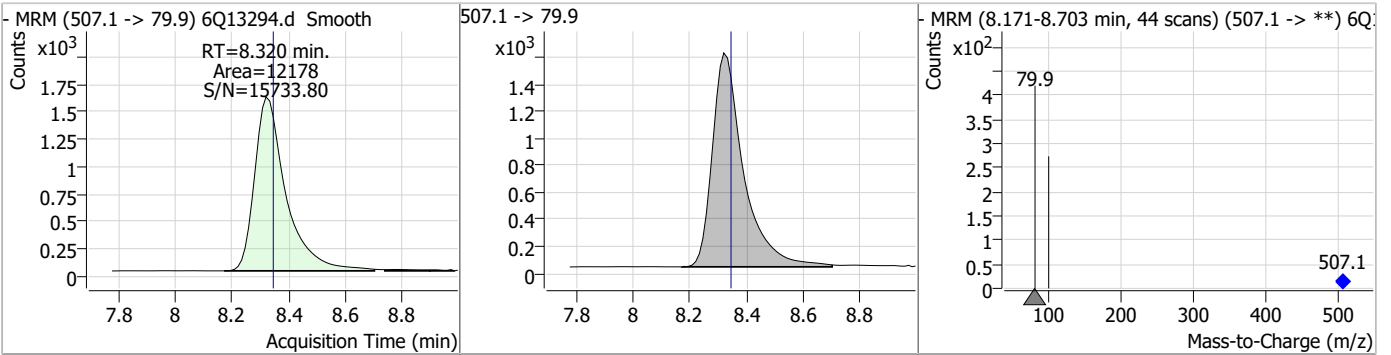


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.98	8.32	-0.01	12403 (m)	498.9 -> 98.8	61.3	0.0	20.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.20	8.32	-0.03	12178				



7.6.1

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# Manual Integration Approval Summary

Sample Number: S6Q203-RT                      Method: EPA DRAFT 1633  
Lab FileID: 6Q13294.D                      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 12:01                      Supervisor approved: 02/10/23 16:31 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak

## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13295.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 12:15:14 PM  
 Sample Name : RT BR-LN  
 Vial : P1-B4  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	82524	10.00 µg/L	-0.025
M5-PFPeA	4.386	268.3 -> 223.0	41729	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	37543	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	38715	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	66853	2.50 µg/L	0.000
M9-PFNA	7.677	472.1 -> 427.0	22313	1.25 µg/L	0.012
M6-PFDA	8.157	519.1 -> 474.1	18867	1.25 µg/L	0.012
M7-PFUnDA	8.612	570.0 -> 525.1	22108	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	24466	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14075	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17000	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	14263	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	9253	2.50 µg/L	0.012
M8-PFOS	8.320	507.1 -> 79.9	8901	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2253	5.00 µg/L	-0.012
M2-6:2FTS	6.908	429.1 -> 80.9	2841	5.00 µg/L	0.012
M2-8:2FTS	7.944	529.1 -> 80.9	2704	5.00 µg/L	0.012
M3-MeFOSAA	8.190	573.2 -> 419.0	28069	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	15434	10.00 µg/L	0.000
M5-EtFOSAA	8.398	589.2 -> 419.0	24357	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	25710	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	16758	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	7069	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	7191	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10312	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	37793	5.00 µg/L	-0.012
18O2-PFHxS	7.273	403.0 -> 83.9	7065	2.50 µg/L	0.012
13C4-PFOA	7.135	417.1 -> 372.0	81625	2.50 µg/L	0.000
13C2-PFDA	8.158	515.1 -> 470.1	24394	1.25 µg/L	0.012
13C5-PFNA	7.665	468.0 -> 423.0	25729	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	36392	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2253	4.81 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C2-6:2FTS	6.908	429.1 -> 80.9	2841	4.71 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.2%		
13C2-8:2FTS	7.944	529.1 -> 80.9	2704	4.59 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.8%		
13C2-PFDoDA	9.041	615.1 -> 570.0	24466	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14075	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C3-PFBS	5.518	302.1 -> 79.9	14263	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C3-PFHxS	7.262	402.1 -> 79.9	9253	2.43 µg/L	0.012

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## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C4-PFBA	2.975	216.8 -> 171.9	82524	9.78 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C4-PFHpA	6.502	367.1 -> 322.0	38715	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFHxA	5.563	318.0 -> 273.0	37543	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFPeA	4.386	268.3 -> 223.0	41729	5.02 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C6-PFDA	8.157	519.1 -> 474.1	18867	1.37 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C7-PFUnDA	8.612	570.0 -> 525.1	22108	1.30 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-FOSA	9.555	506.1 -> 77.8	17000	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C8-PFOA	7.134	421.1 -> 376.0	66853	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C8-PFOS	8.320	507.1 -> 79.9	8901	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C9-PFNA	7.677	472.1 -> 427.0	22313	1.19 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.1%	
d3-MeFOSAA	8.190	573.2 -> 419.0	28069	4.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C3-HFPO-DA	5.940	286.9 -> 168.9	15434	10.62 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
d3-MeFOSA	10.680	515.0 -> 219.0	7191	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.3%	
d5-EtFOSAA	8.398	589.2 -> 419.0	24357	4.87 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
d7-MeFOSE	10.589	623.2 -> 58.9	25710	24.73 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
d9-EtFOSE	10.835	639.2 -> 58.9	16758	24.11 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
d5-EtFOSA	10.925	531.1 -> 219.0	7069	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.240	327.1 -> 307.0	237096	47.01 µg/L	98
		327.1 -> 80.9	53877		
6:2FTS	6.908	427.1 -> 407.0	208639	49.29 µg/L	99
		427.1 -> 80.9	39789		
8:2FTS	7.933	527.1 -> 507.0	107261	49.25 µg/L	99
		527.1 -> 80.8	27950		
EtFOSAA	8.399	584.2 -> 419.1	51992	13.61 µg/L	m 94
		584.2 -> 526.0	27803		
FOSA	9.557	498.1 -> 77.9	203364	29.97 µg/L	m 99
		498.1 -> 478.0	8386		
MeFOSAA	8.191	570.1 -> 419.0	75643	14.68 µg/L	m 94
		570.1 -> 483.0	12764		
PFBA	2.982	212.8 -> 168.9	98812	53.20 µg/L	100
PFBS	5.518	298.7 -> 79.9	60392	11.05 µg/L	99
		298.7 -> 98.8	28877		
PFDA	8.158	512.9 -> 469.0	264865	12.07 µg/L	99
		512.9 -> 219.0	36845		
PFDoDA	9.042	613.1 -> 569.0	242482	13.20 µg/L	97
		613.1 -> 319.0	29833		
PFDS	9.216	599.0 -> 79.9	34362	12.40 µg/L	99

7.6.2  
7

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	17696			
PFHpA	6.503	363.1 -> 319.0	296852	13.17	µg/L	99
		363.1 -> 169.0	40275			
PFHpS	7.828	449.0 -> 79.9	43720	11.90	µg/L	98
		449.0 -> 98.9	24820			
PFHxA	5.566	313.0 -> 269.0	189646	13.06	µg/L	99
		313.0 -> 118.9	6823			
PFHxS	7.263	398.7 -> 79.9	47421	11.81	µg/L	m 97
		398.7 -> 98.9	27694			
PFNA	7.665	463.0 -> 419.0	415768	28.12	µg/L	m 98
		463.0 -> 219.0	80363			
PFNS	8.786	548.8 -> 79.9	47497	12.55	µg/L	100
		548.8 -> 98.9	25634			
PFOA	7.135	413.0 -> 369.0	820250	28.66	µg/L	m 100
		413.0 -> 169.0	110633			
PFOS	8.321	498.9 -> 79.9	46131	11.57	µg/L	m 89
		498.9 -> 98.8	28876			
PFPeA	4.388	263.0 -> 219.0	233282	26.50	µg/L	100
PFPeS	6.569	349.1 -> 79.9	58315	12.24	µg/L	96
		349.1 -> 98.9	30716			
PFTeDA	9.769	713.1 -> 669.0	203445	13.15	µg/L	100
		713.1 -> 168.9	13081			
PFTrDA	9.425	663.0 -> 619.0	231633	13.79	µg/L	98
		663.0 -> 168.9	17117			
PFUnDA	8.612	563.1 -> 519.0	223625	12.91	µg/L	99
		563.1 -> 269.1	31697			
11Cl-PF3OUdS	9.489	630.9 -> 450.9	515551	49.63	µg/L	95
		632.9 -> 452.9	149552			
9Cl-PF3ONS	8.663	530.8 -> 351.0	846233	45.92	µg/L	100
		532.8 -> 353.0	264890			
ADONA	6.753	376.9 -> 250.9	1648753	48.19	µg/L	98
		376.9 -> 84.8	350635			
HFPO-DA	5.940	284.9 -> 168.9	73985	50.58	µg/L	97
		284.9 -> 184.9	8361			
3:3FTCA	3.841	241.0 -> 177.0	29050	66.68	µg/L	97
		241.0 -> 117.0	3811			
5:3FTCA	6.193	341.0 -> 237.1	986512	320.47	µg/L	96
		341.0 -> 217.0	861778			
7:3FTCA	7.605	441.0 -> 316.9	522163	329.82	µg/L	96
		441.0 -> 336.9	964656			
EtFOSA	10.927	526.0 -> 219.0	110592	32.14	µg/L	90
		526.0 -> 169.0	120876			
EtFOSE	10.860	630.0 -> 58.9	105327	147.37	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	93198	29.17	µg/L	82
		511.9 -> 169.0	111504			
MeFOSE	10.602	616.1 -> 58.9	141240	141.31	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	19679	11.73	µg/L	97
		699.1 -> 98.8	12613			
NFDHA	5.445	295.0 -> 201.0	21182	24.98	µg/L	95
		295.0 -> 84.9	11136			
PFMBA	4.787	279.0 -> 85.1	67600	26.81	µg/L	100
PFMPA	3.541	229.0 -> 84.9	61390	26.71	µg/L	100
PFEESA	6.059	314.8 -> 134.9	457530	22.33	µg/L	100
		314.8 -> 82.9	11900			

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

7.6.2  
7

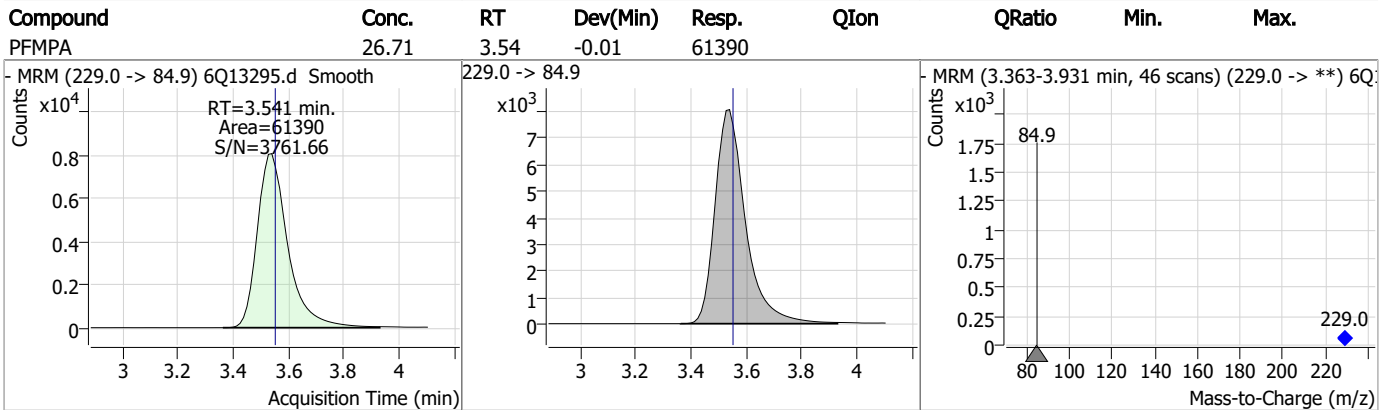
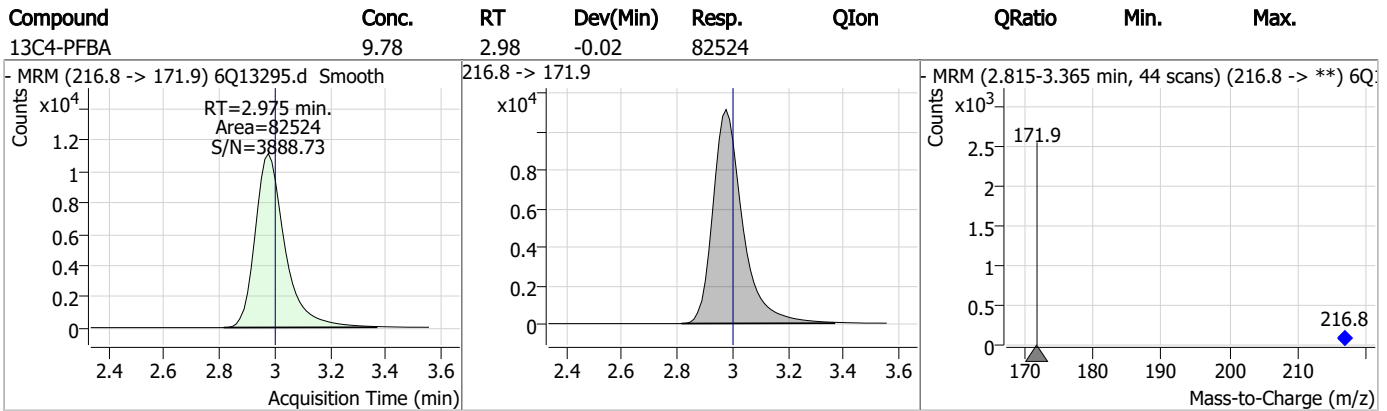
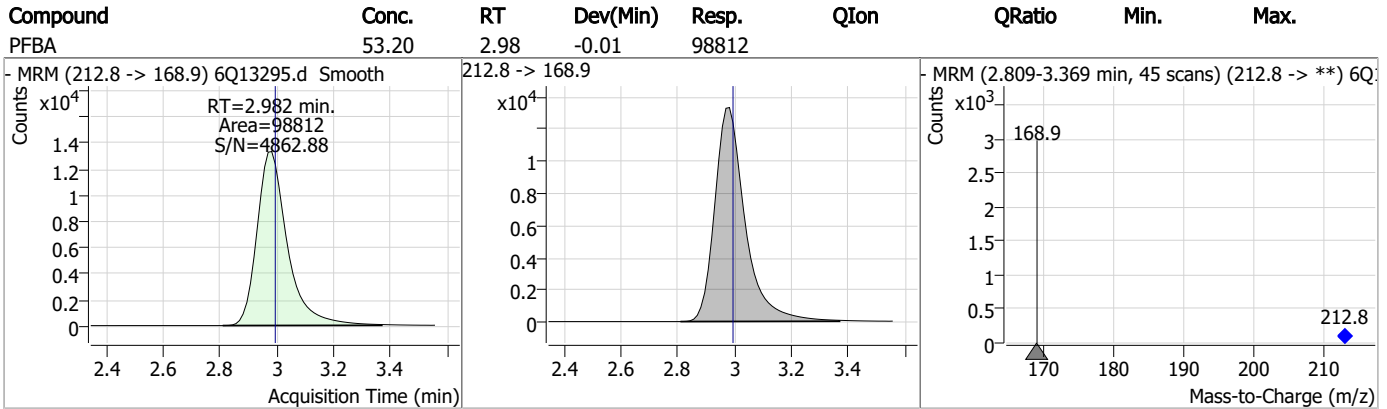
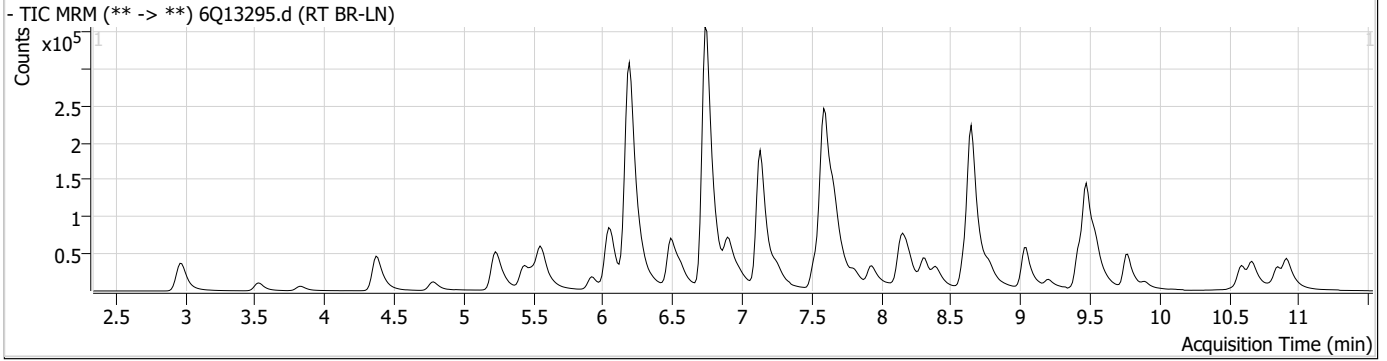
# Perfluorinated Compounds by LC/MS/MS

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

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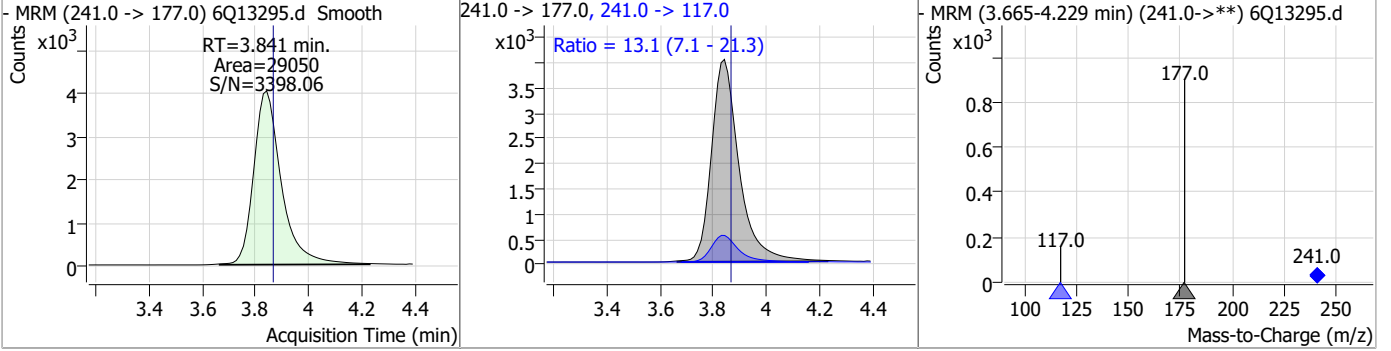
# Perfluorinated Compounds by LC/MS/MS



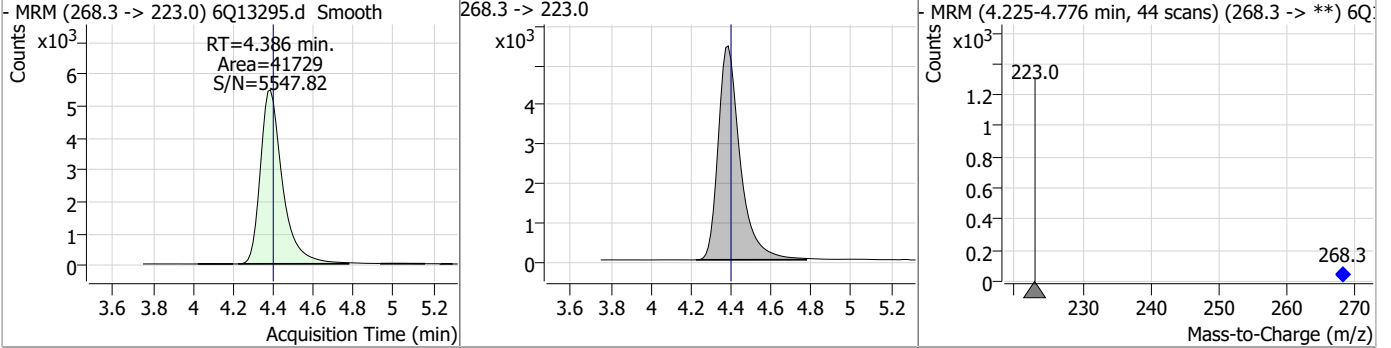


# Perfluorinated Compounds by LC/MS/MS

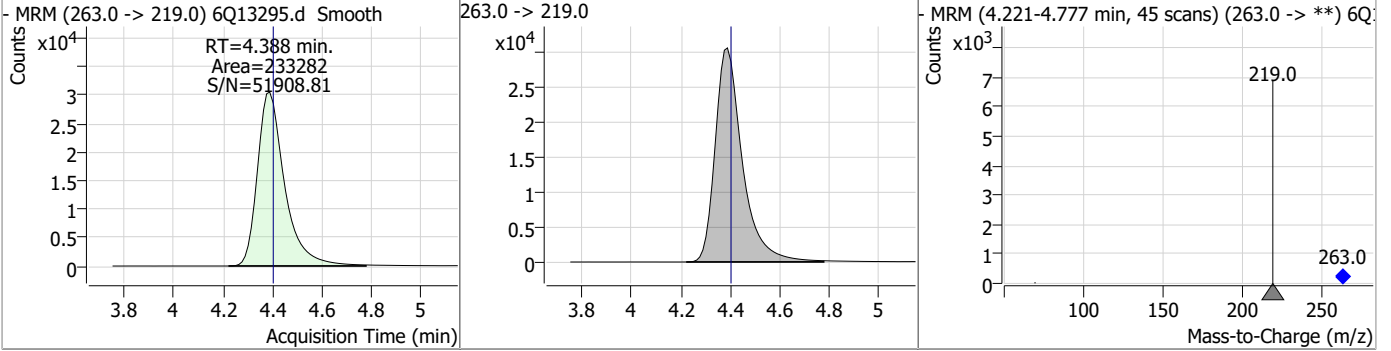
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	66.68	3.84	-0.02	29050	241.0 -> 117.0	13.1	7.1	21.3



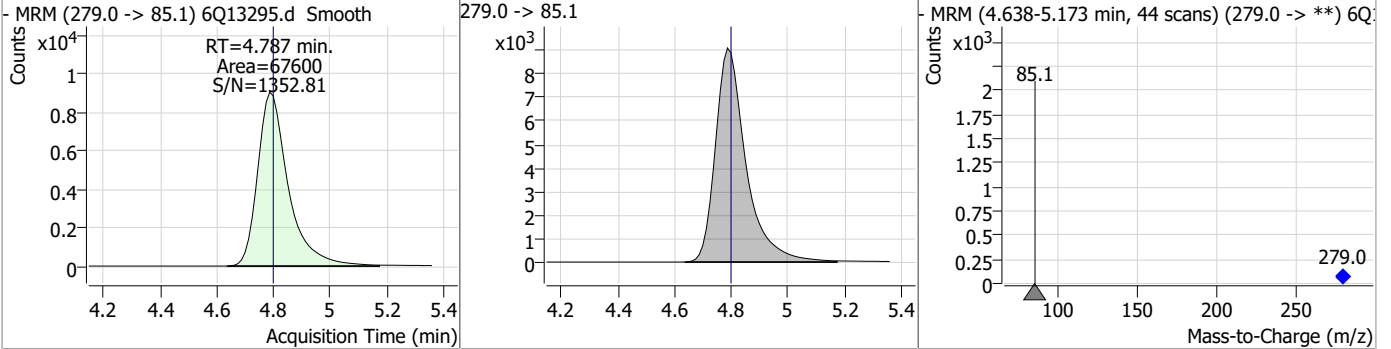
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.02	4.39	-0.01	41729				



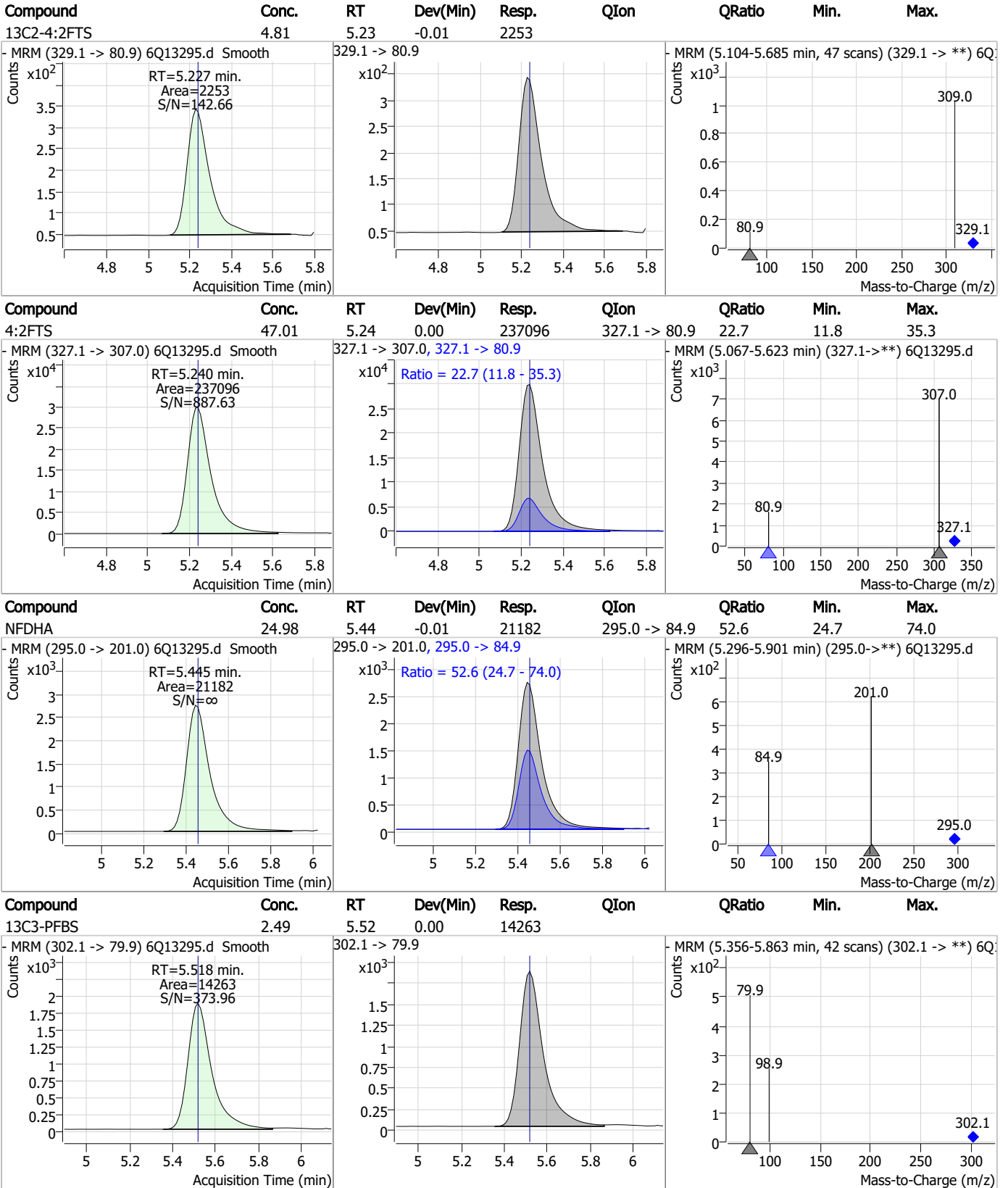
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	26.50	4.39	-0.01	233282				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	26.81	4.79	-0.01	67600				

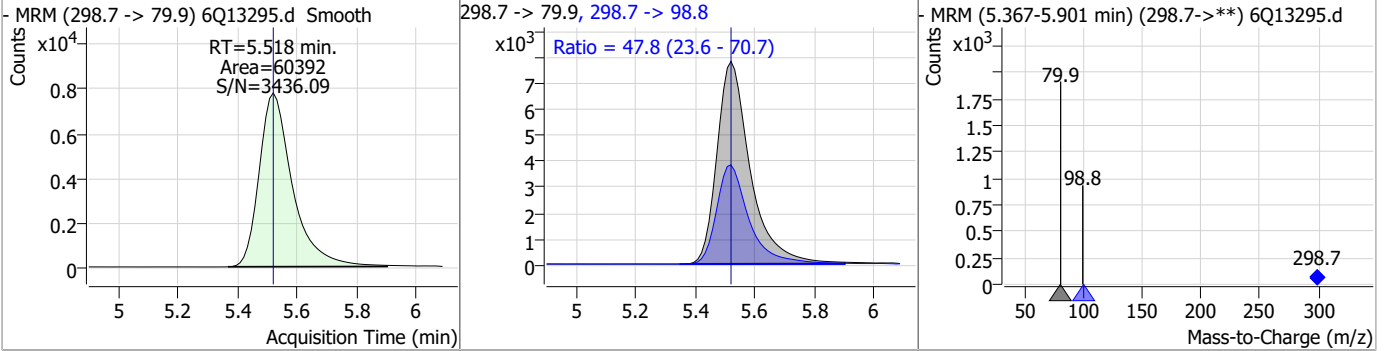


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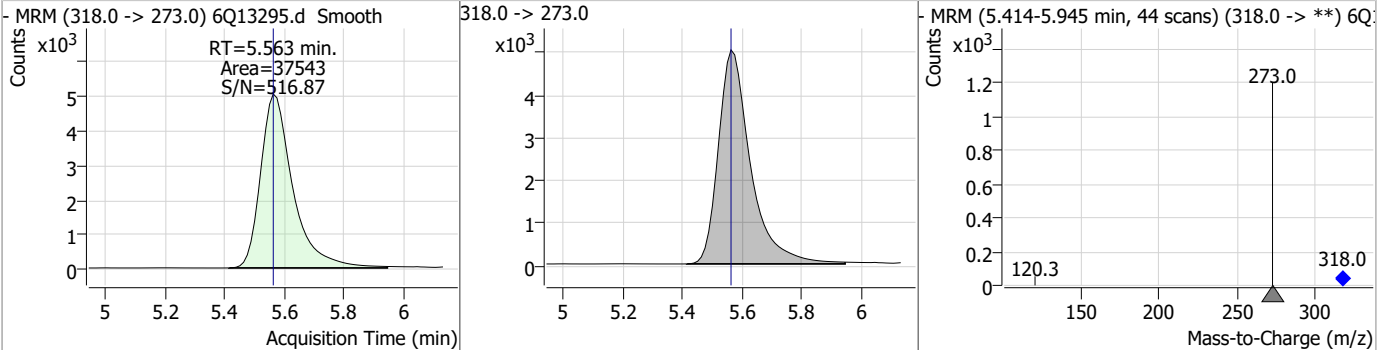


# Perfluorinated Compounds by LC/MS/MS

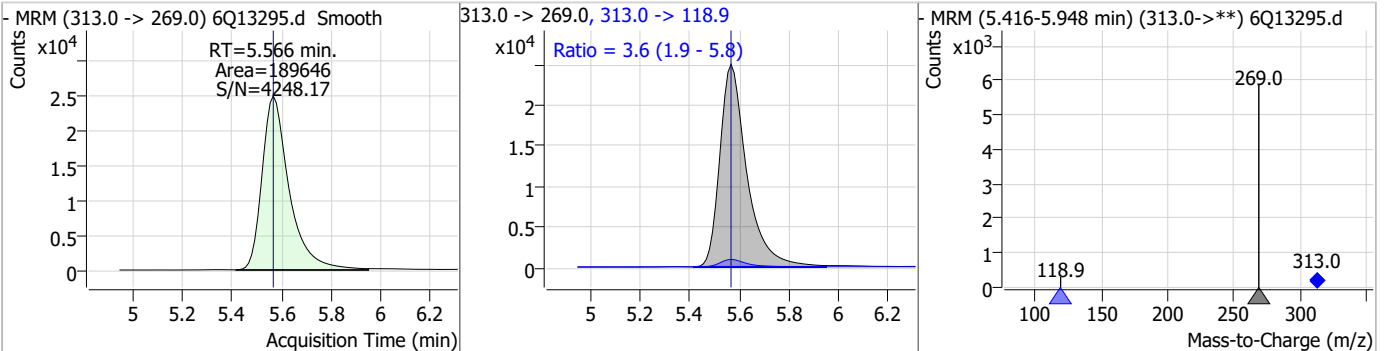
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.05	5.52	0.00	60392	298.7 -> 98.8	47.8	23.6	70.7



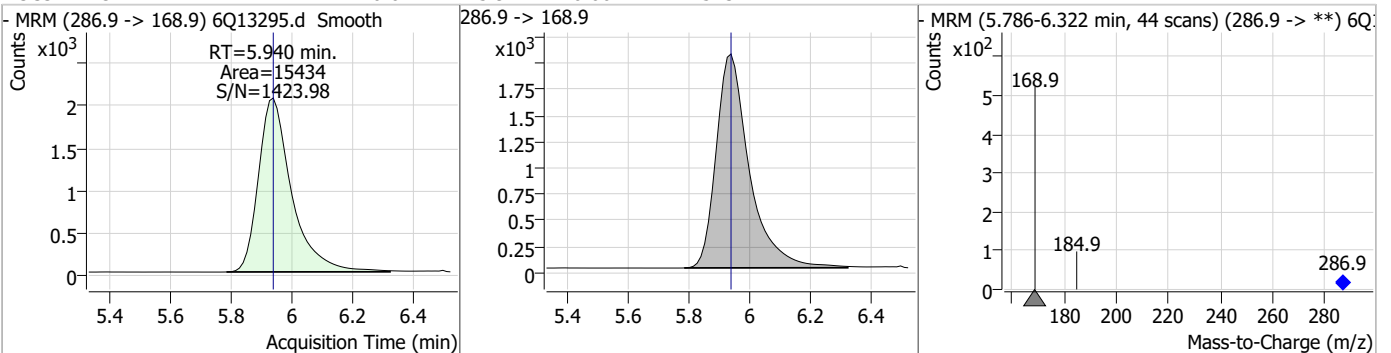
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.55	5.56	0.00	37543				



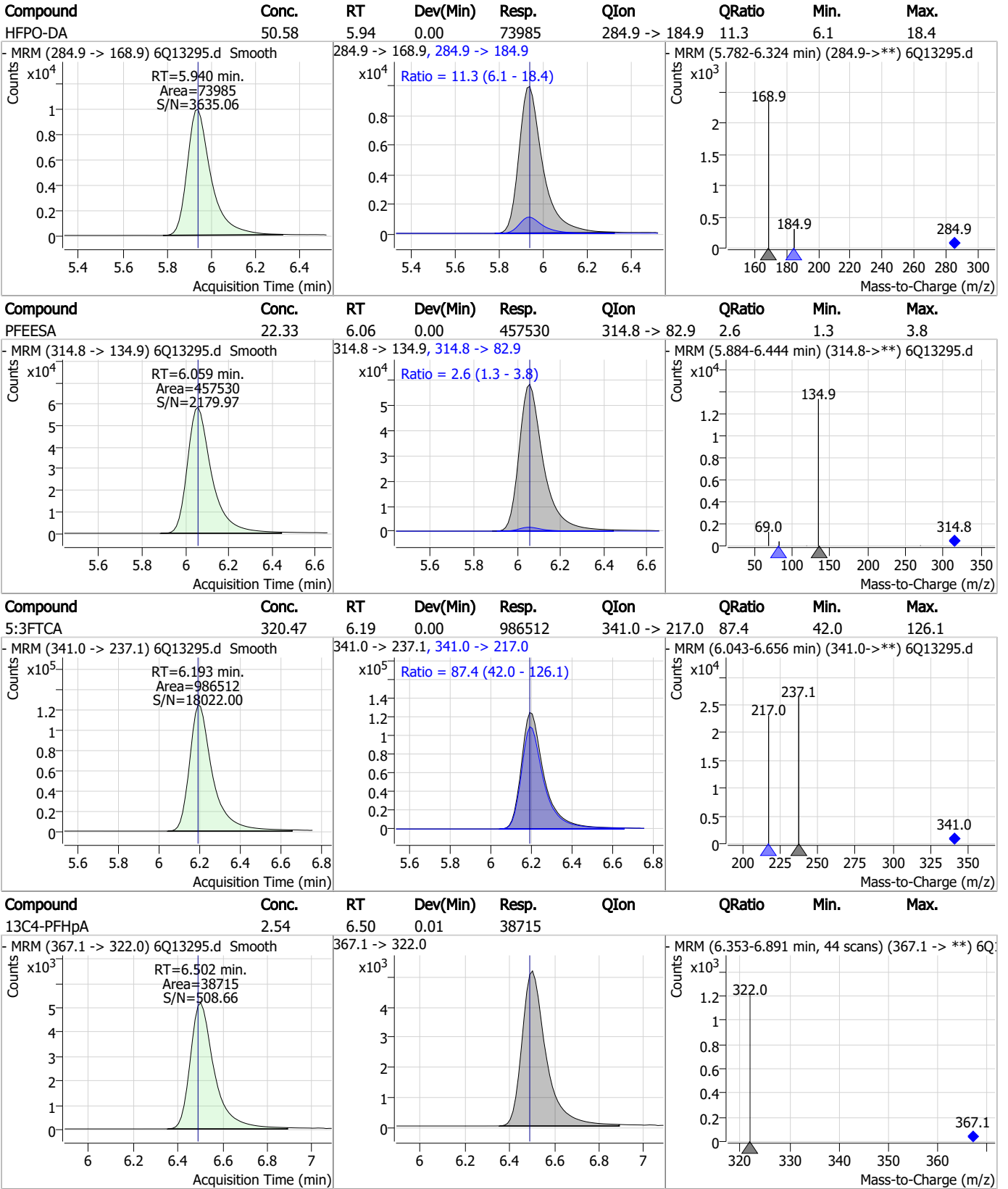
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.06	5.57	0.00	189646	313.0 -> 118.9	3.6	1.9	5.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.62	5.94	0.00	15434				



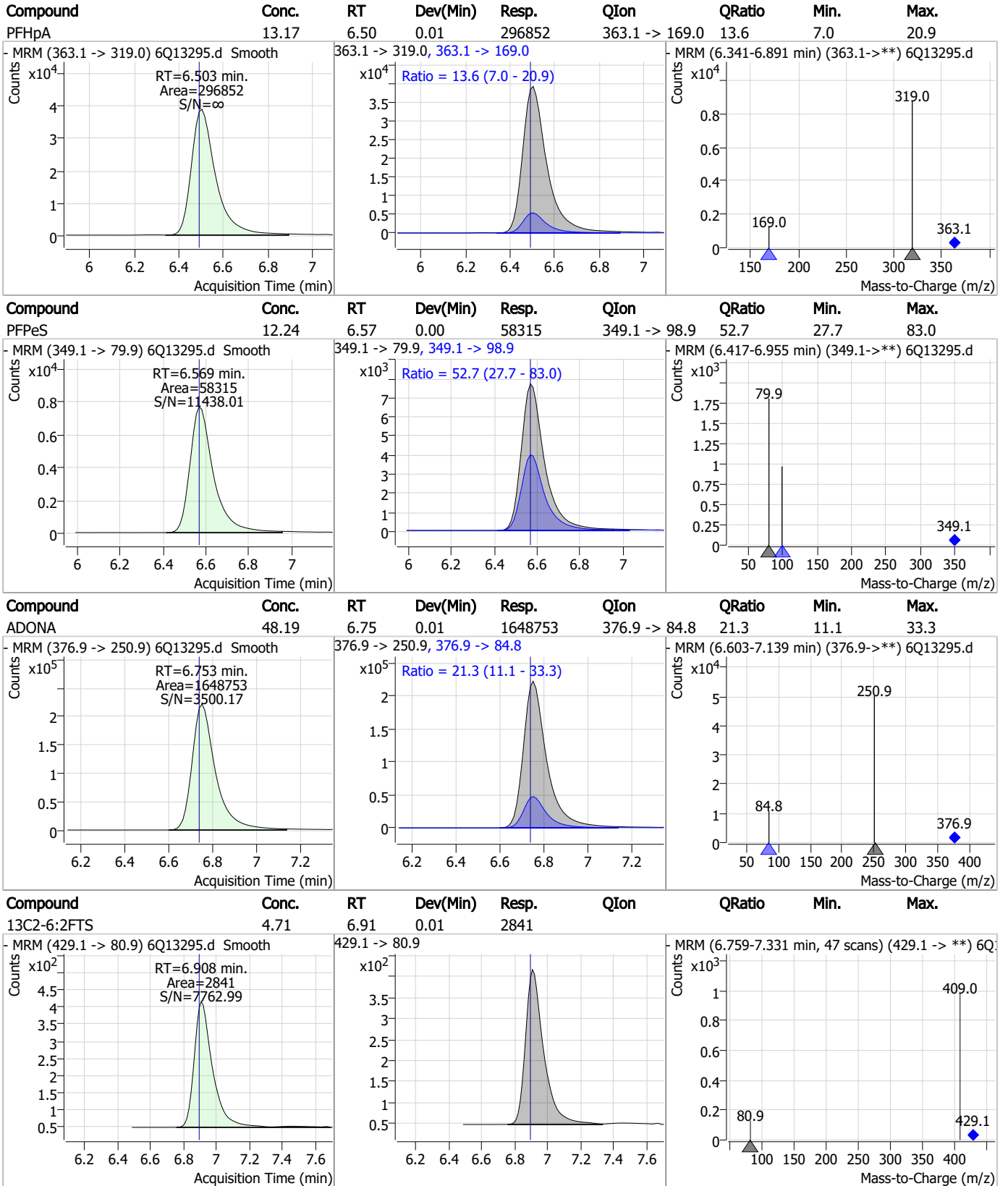
# Perfluorinated Compounds by LC/MS/MS



7.6.2

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# Perfluorinated Compounds by LC/MS/MS

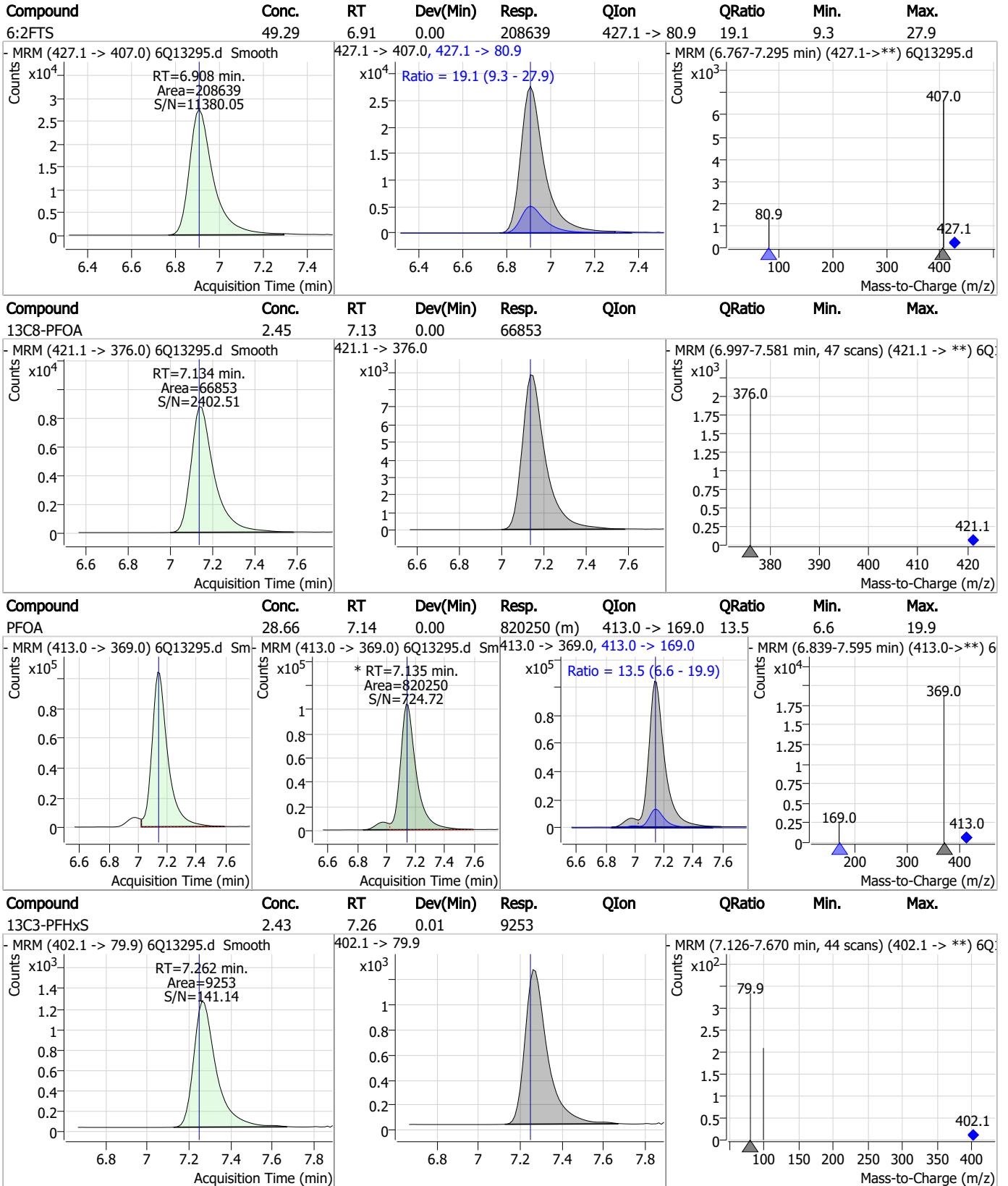


7.6.2

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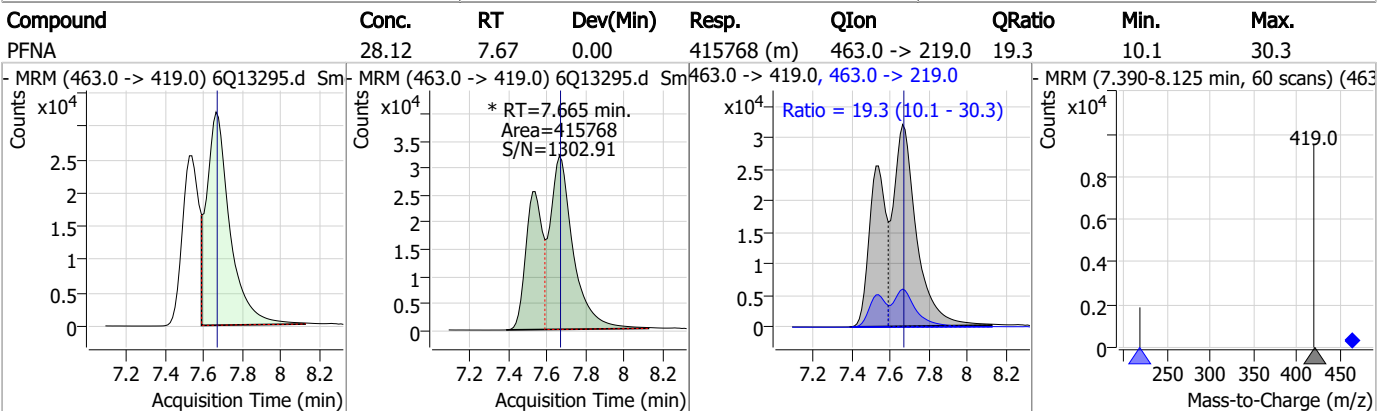
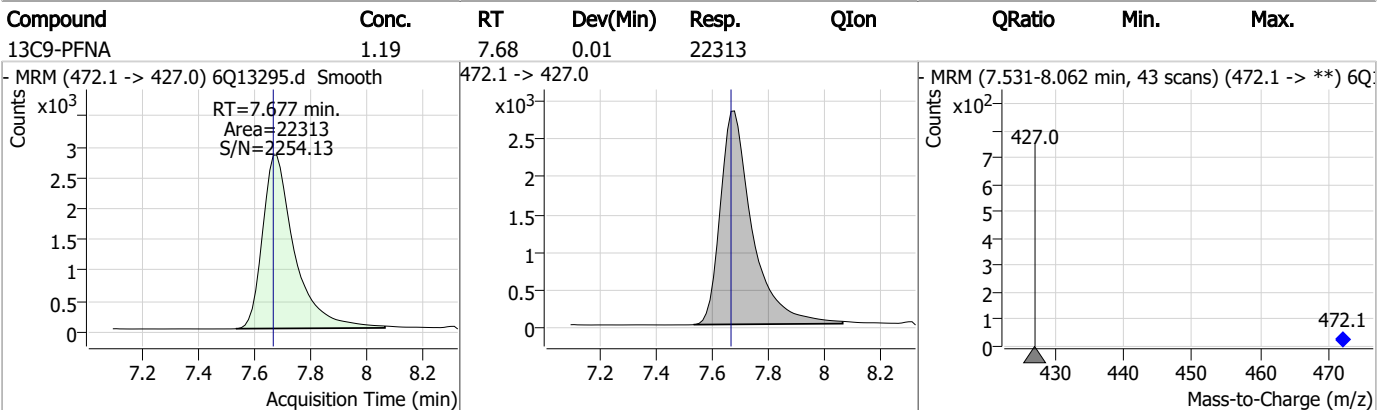
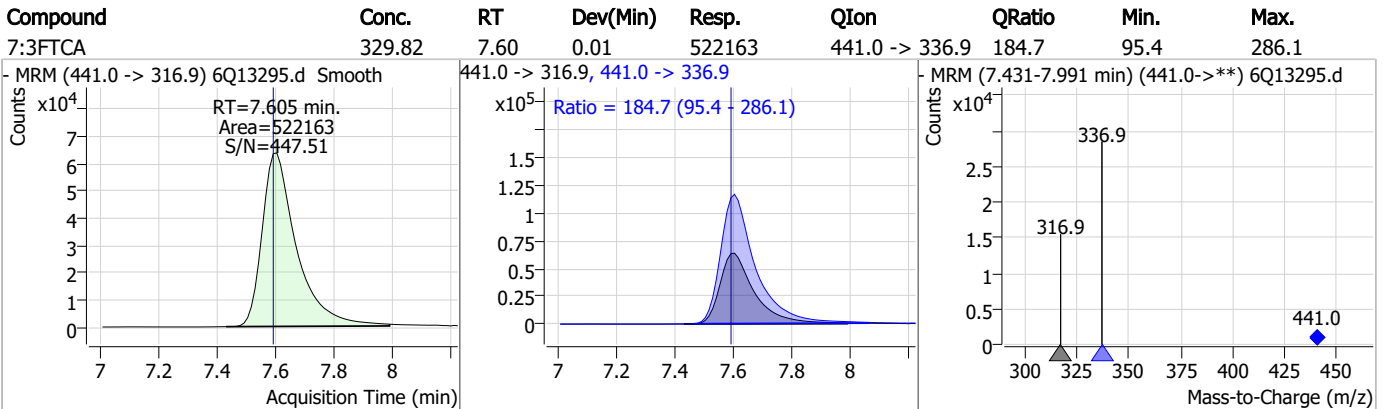
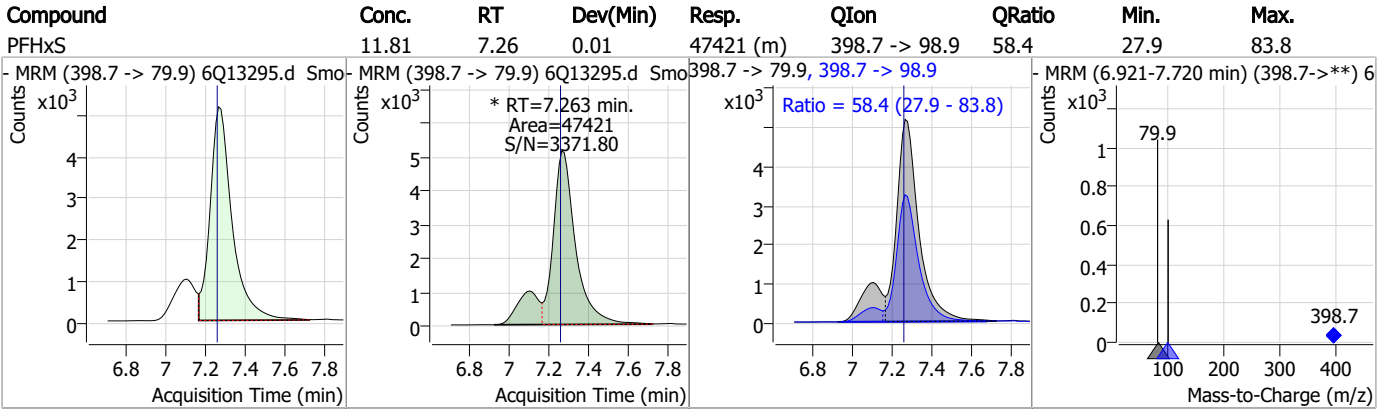
# Perfluorinated Compounds by LC/MS/MS



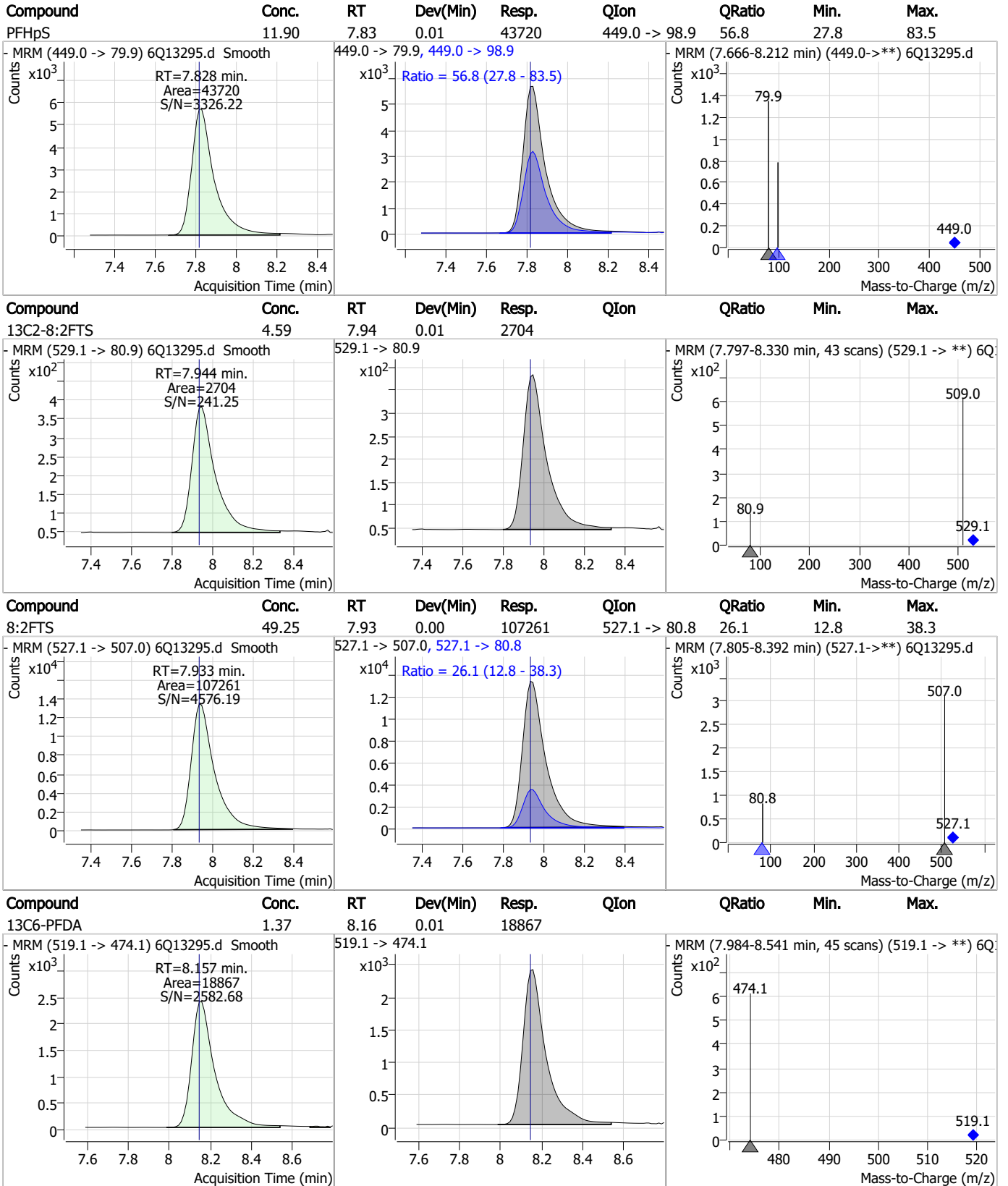
7.6.2

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# Perfluorinated Compounds by LC/MS/MS



# Perfluorinated Compounds by LC/MS/MS



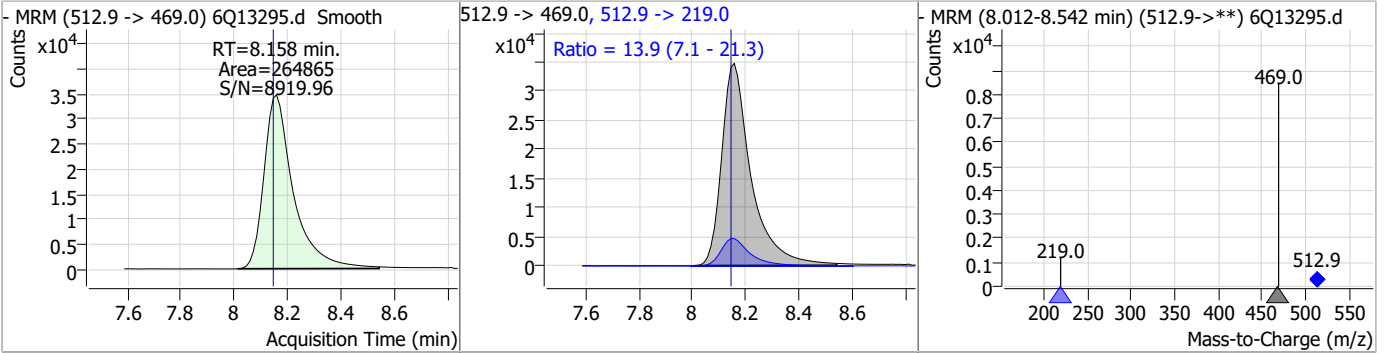
7.6.2

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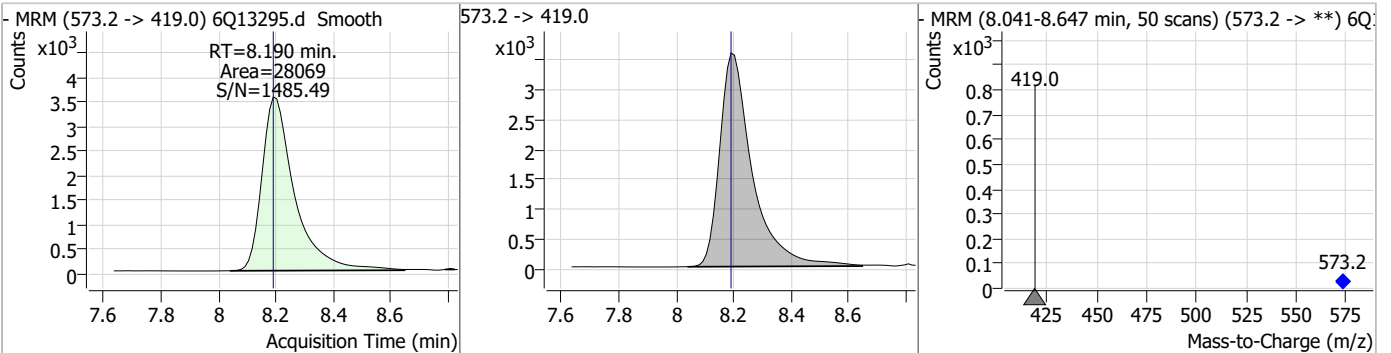


# Perfluorinated Compounds by LC/MS/MS

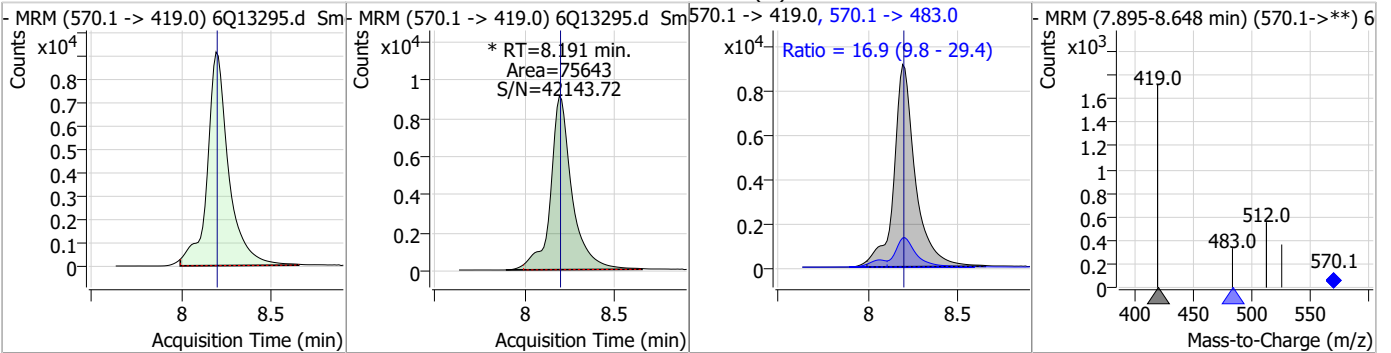
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	12.07	8.16	0.01	264865	512.9 -> 219.0	13.9	7.1	21.3



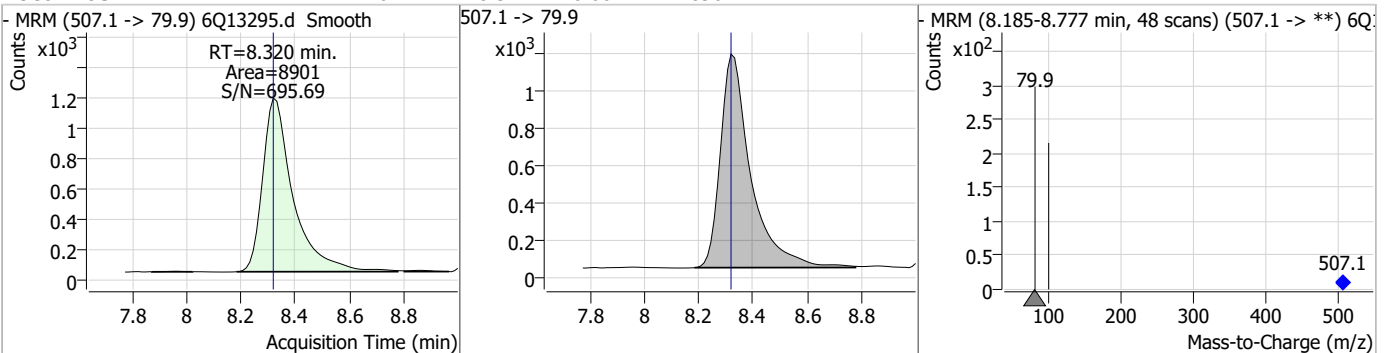
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.73	8.19	0.00	28069				



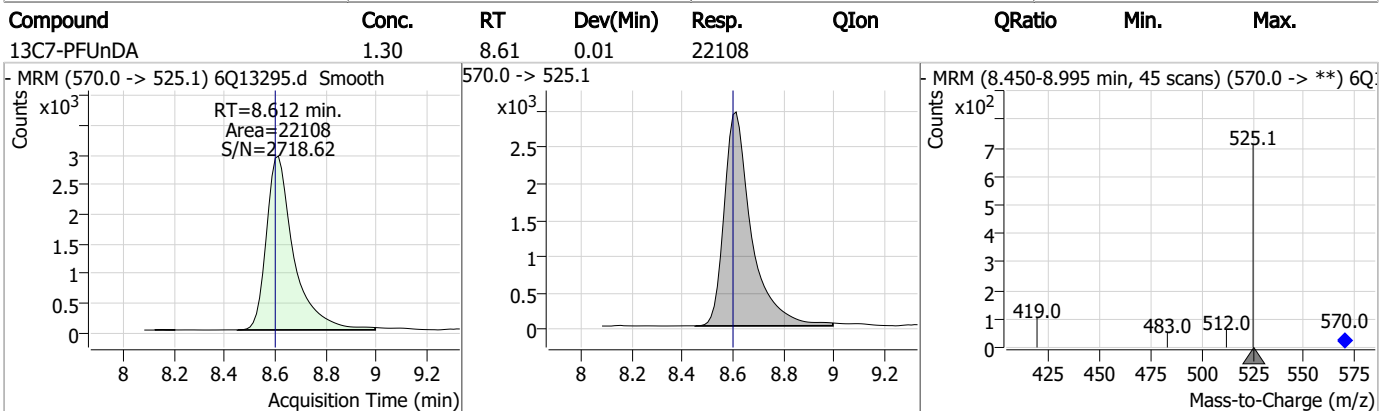
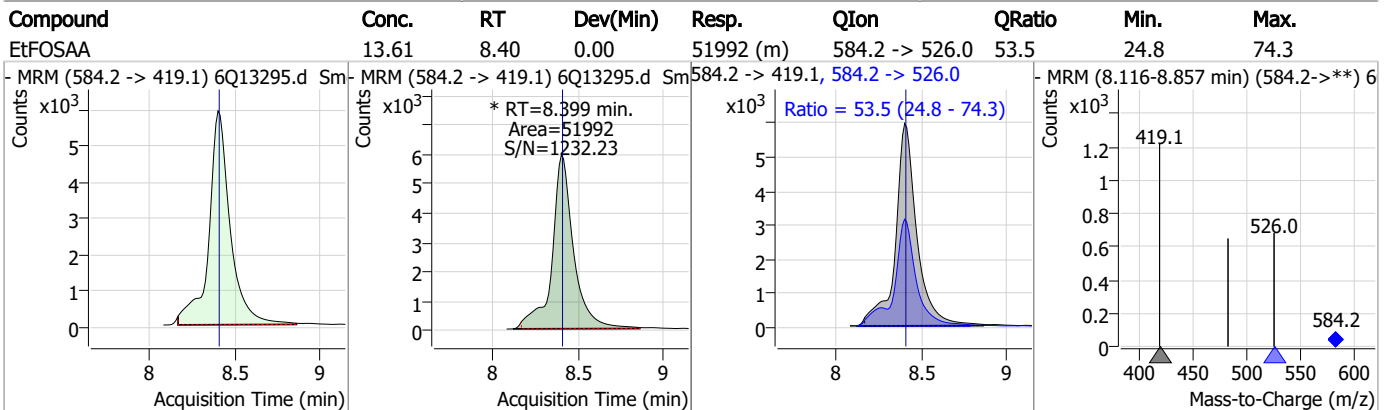
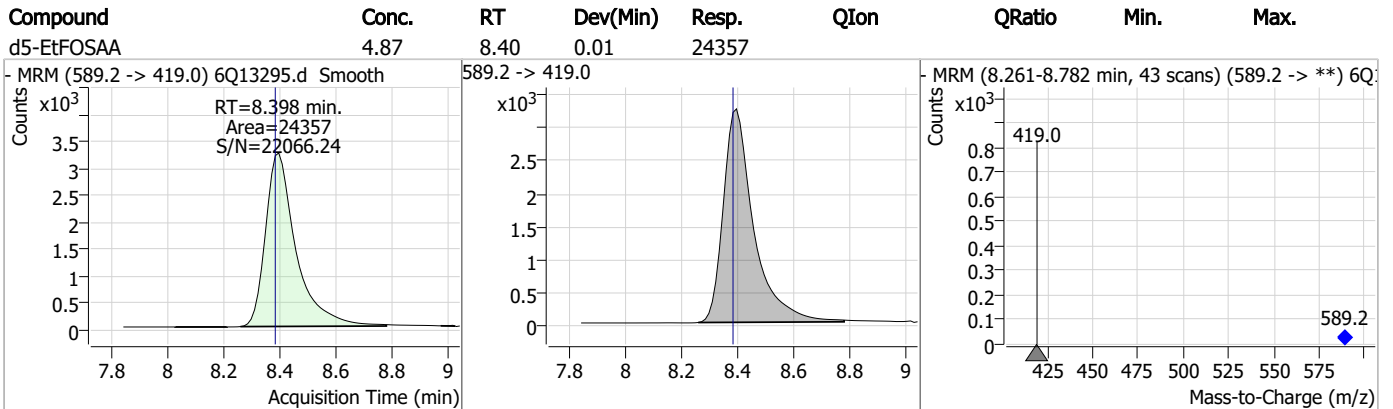
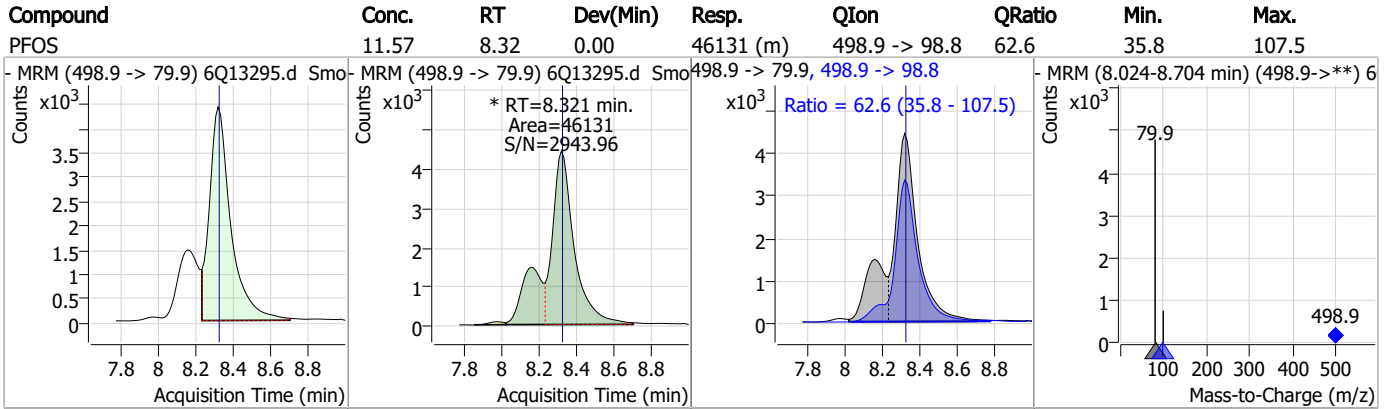
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	14.68	8.19	0.00	75643 (m)	570.1 -> 483.0	16.9	9.8	29.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.61	8.32	0.00	8901				

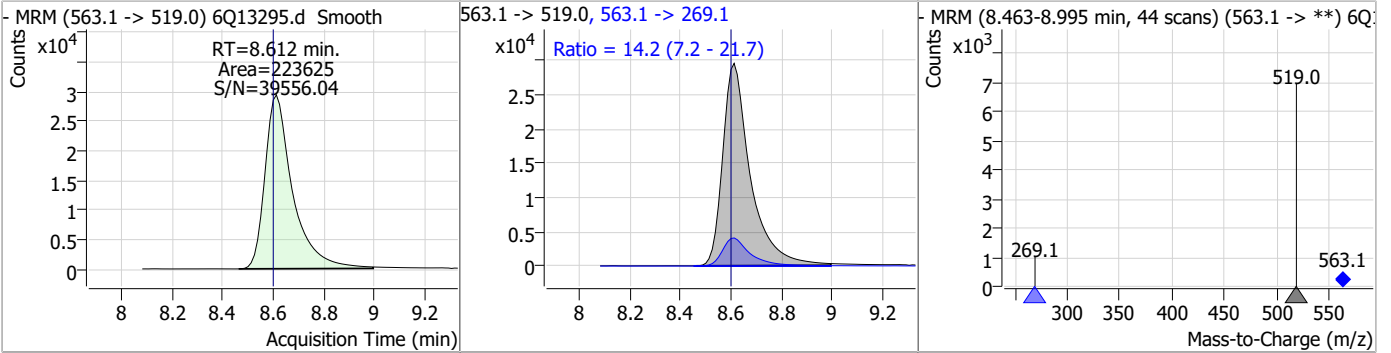


# Perfluorinated Compounds by LC/MS/MS

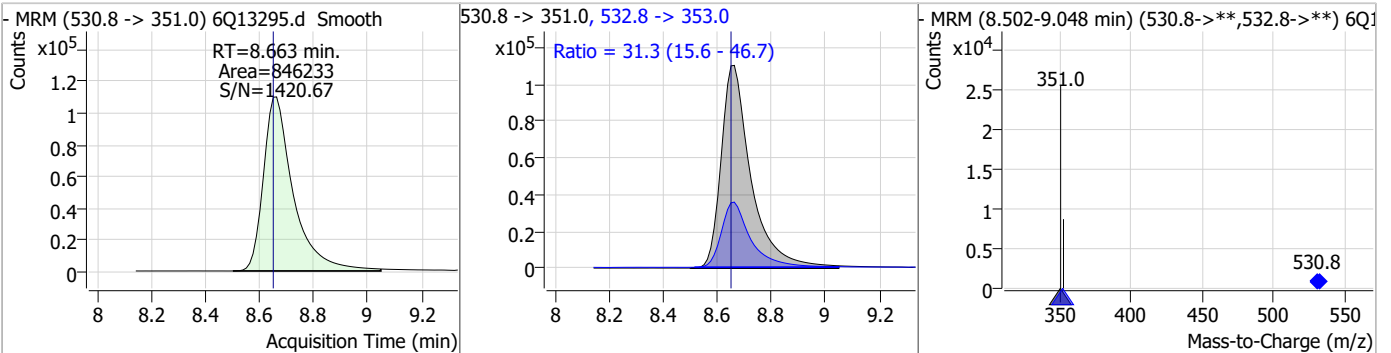


# Perfluorinated Compounds by LC/MS/MS

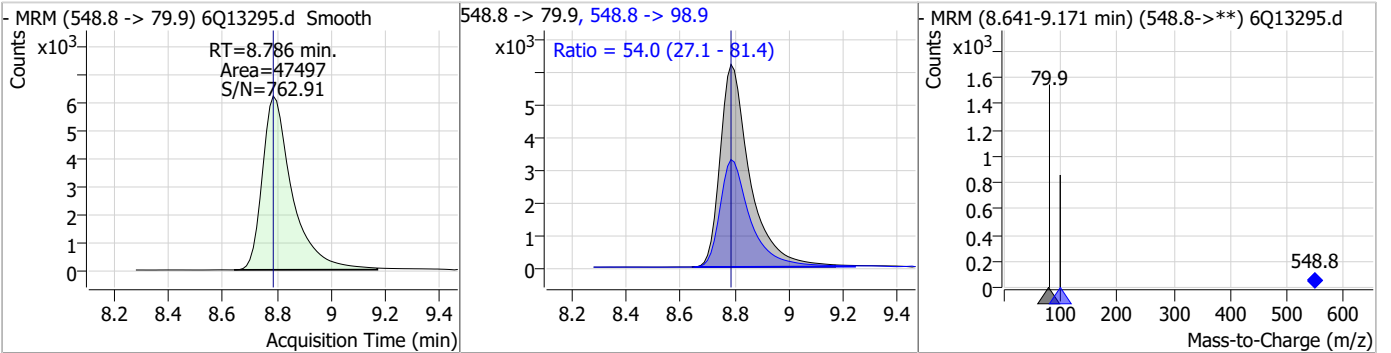
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	12.91	8.61	0.01	223625	563.1 -> 269.1	14.2	7.2	21.7



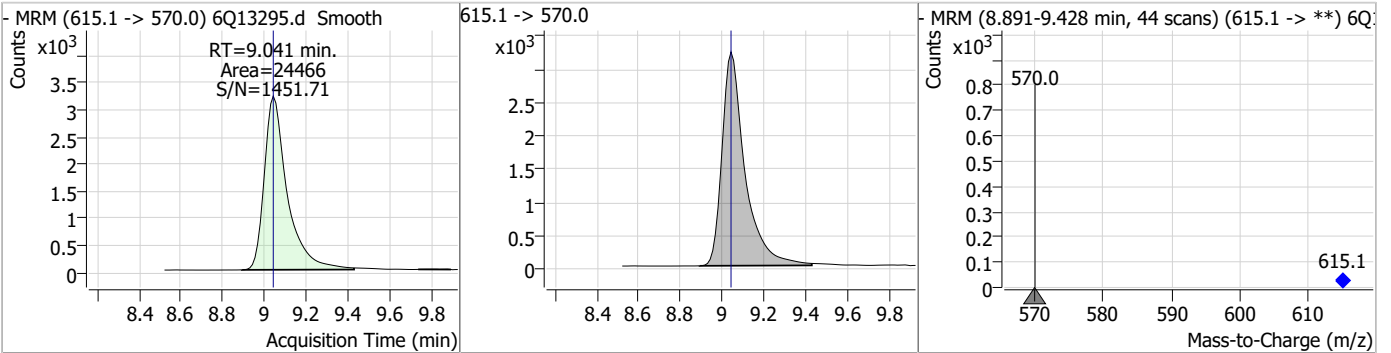
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	45.92	8.66	0.01	846233	532.8 -> 353.0	31.3	15.6	46.7



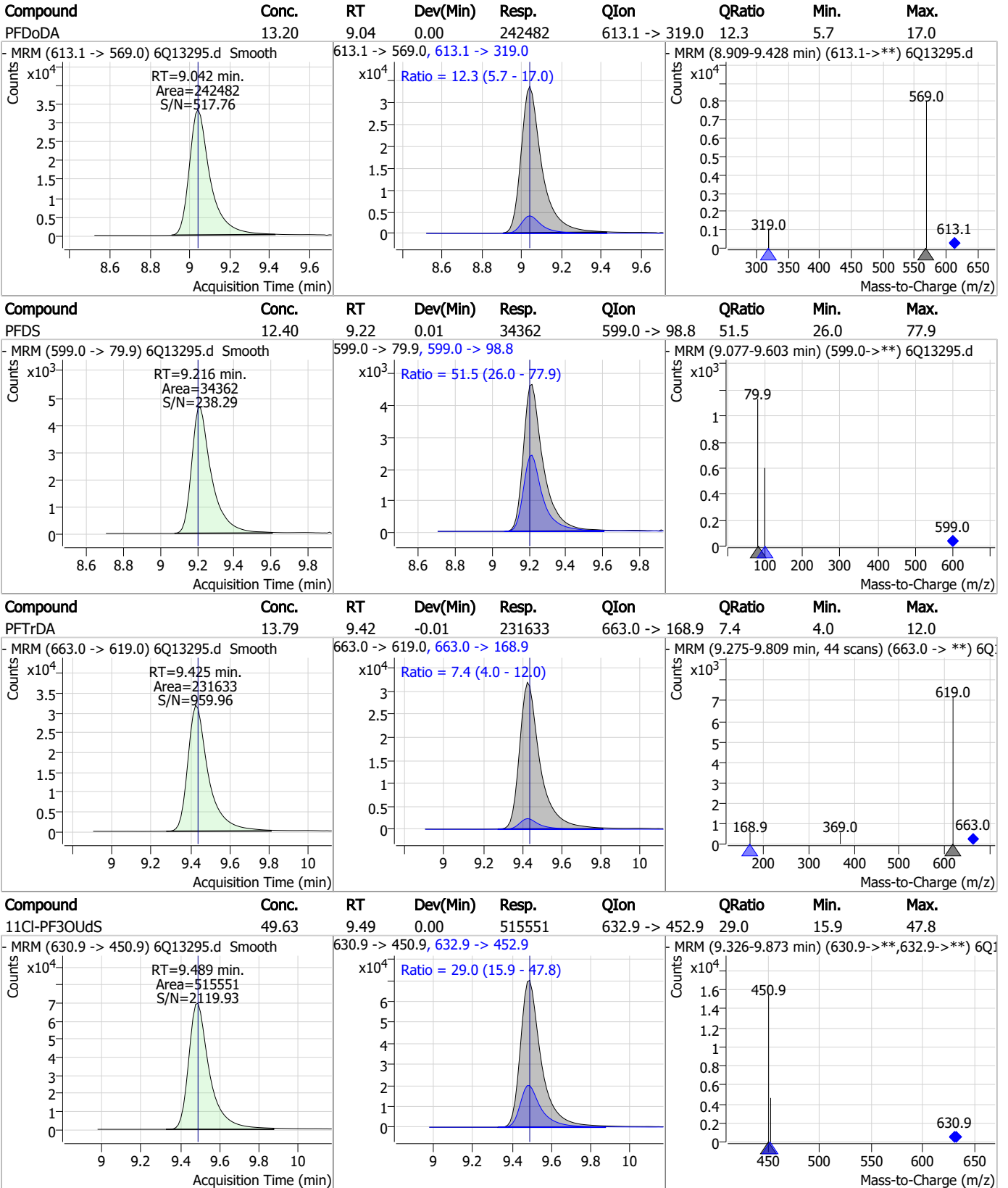
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.55	8.79	0.00	47497	548.8 -> 98.9	54.0	27.1	81.4



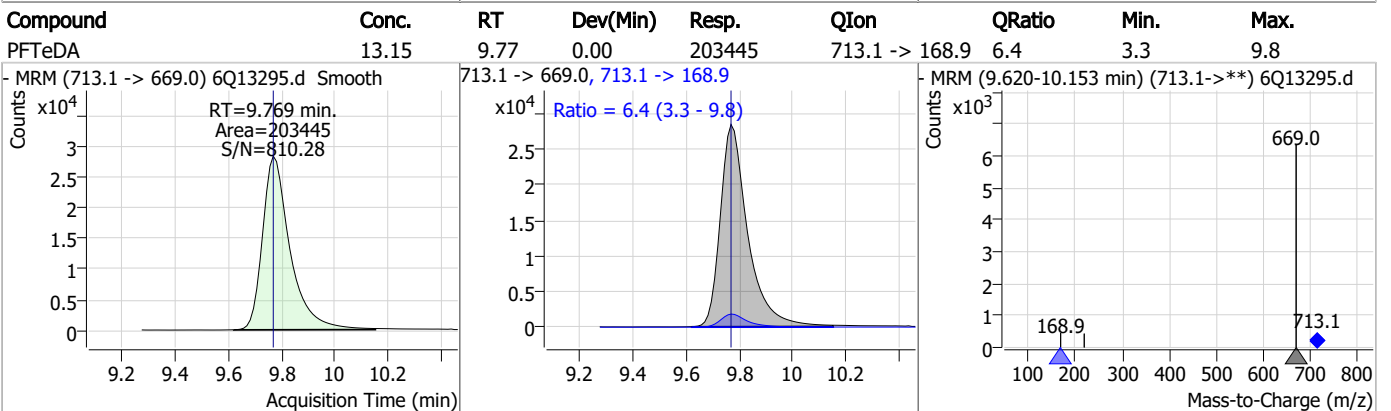
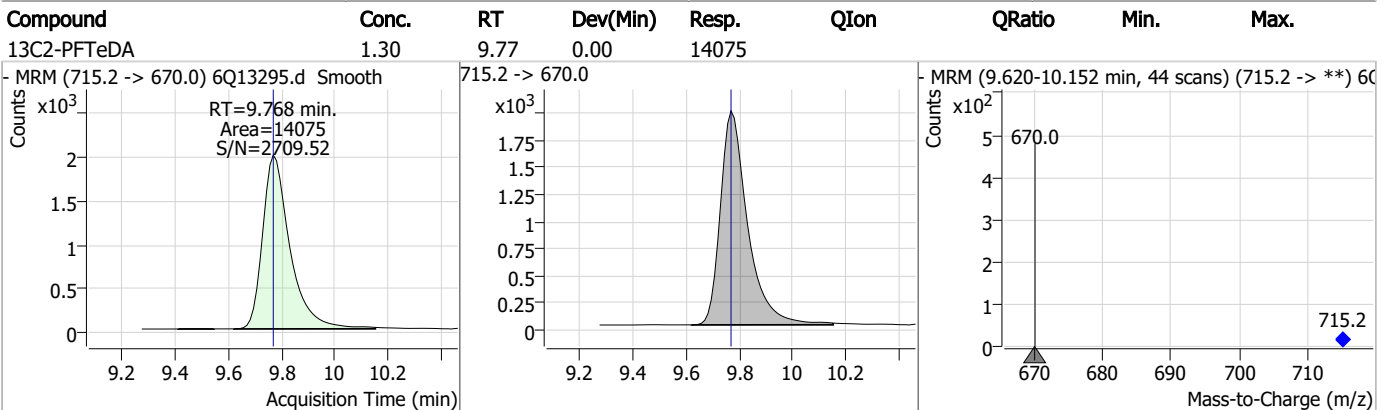
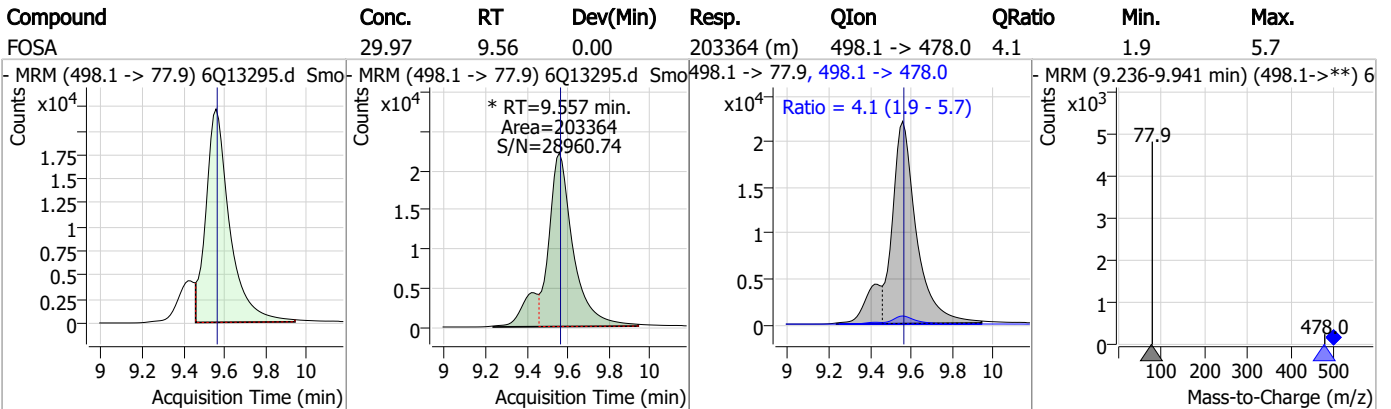
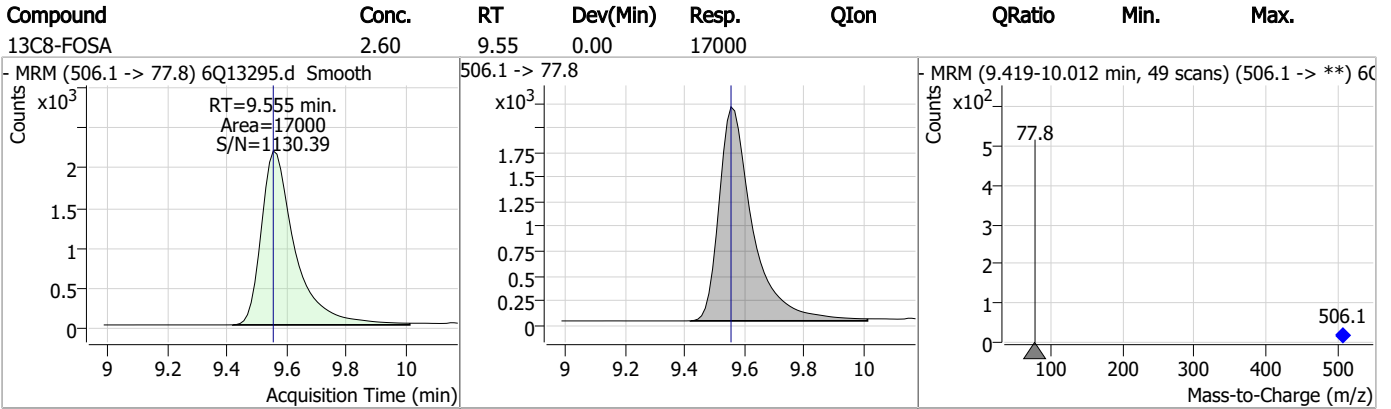
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.04	0.00	24466	615.1 -> 570.0			



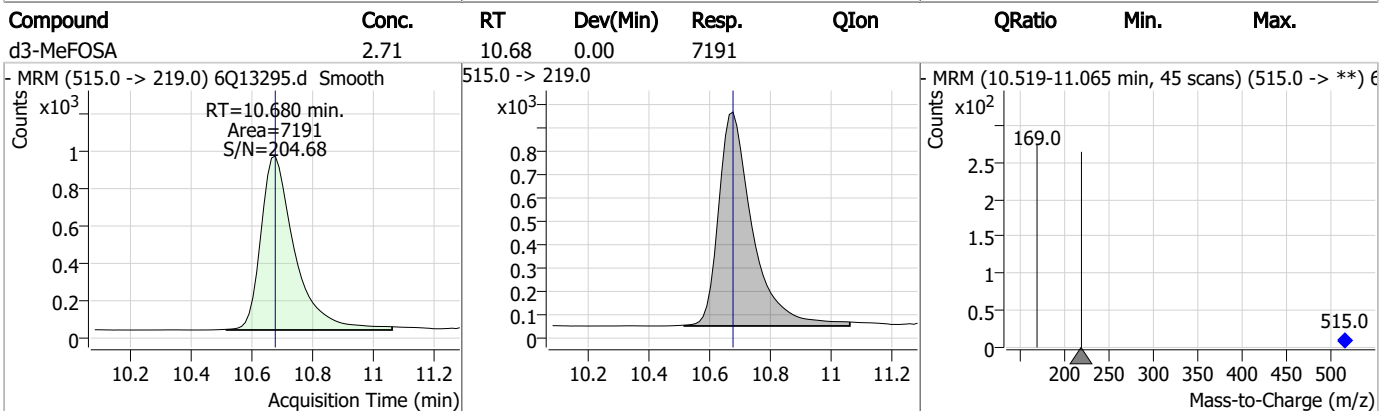
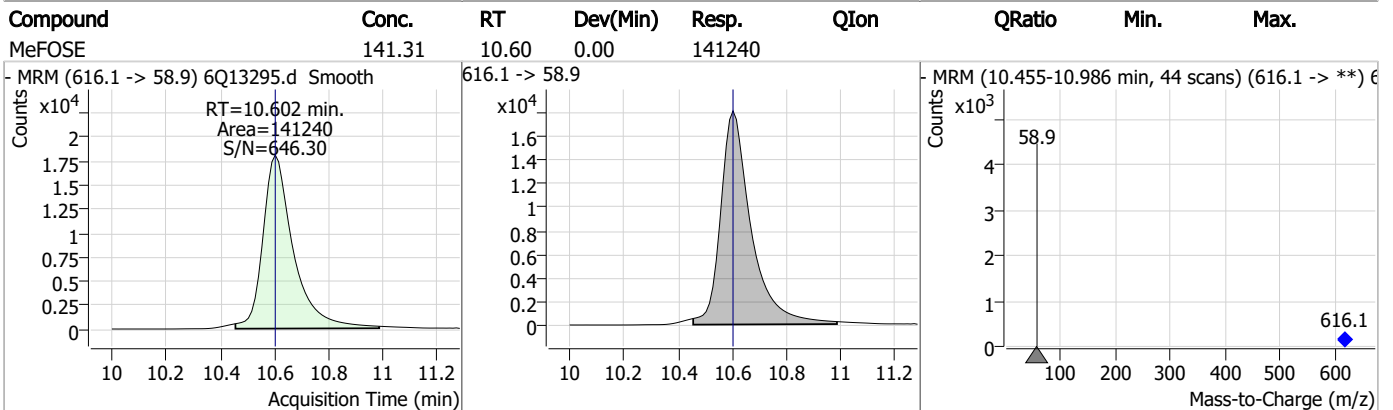
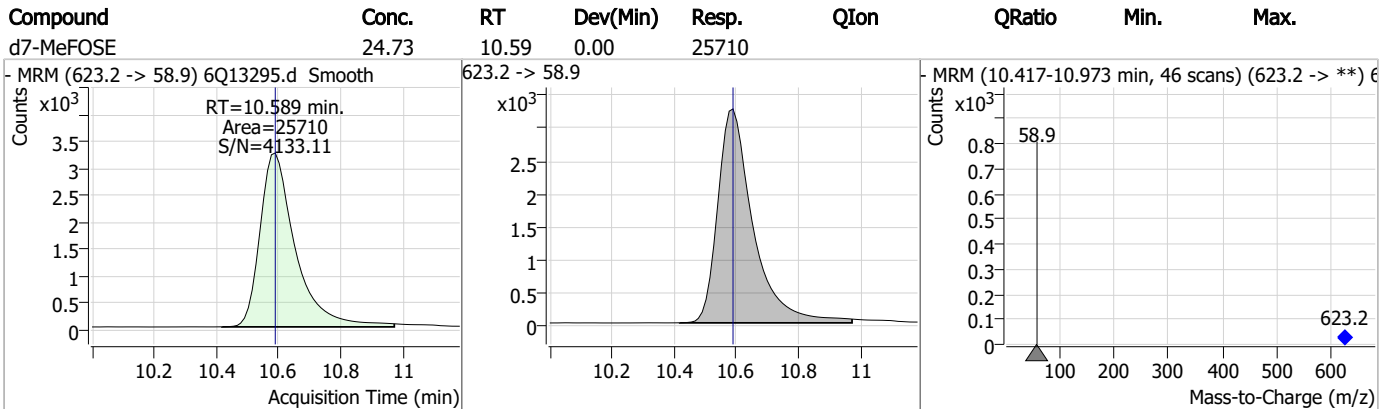
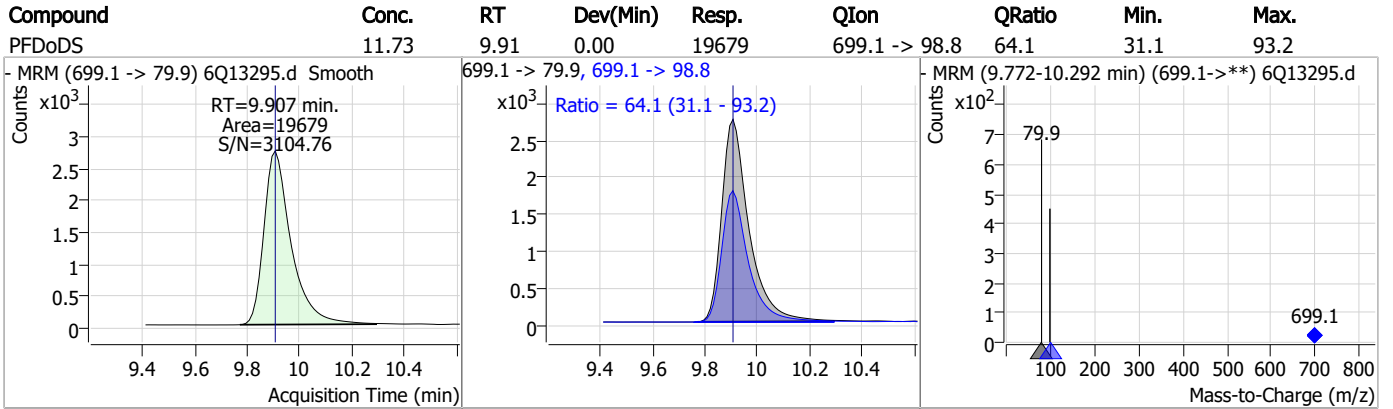
# Perfluorinated Compounds by LC/MS/MS



# Perfluorinated Compounds by LC/MS/MS

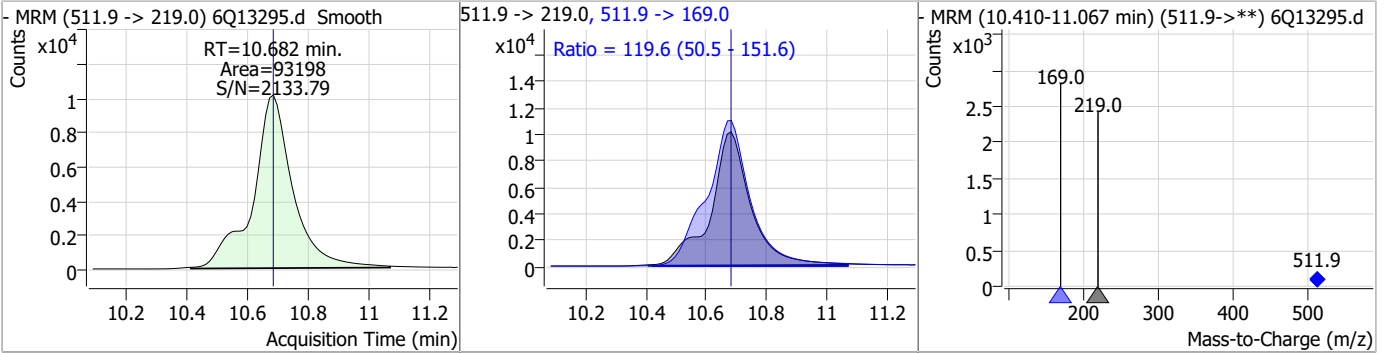


# Perfluorinated Compounds by LC/MS/MS

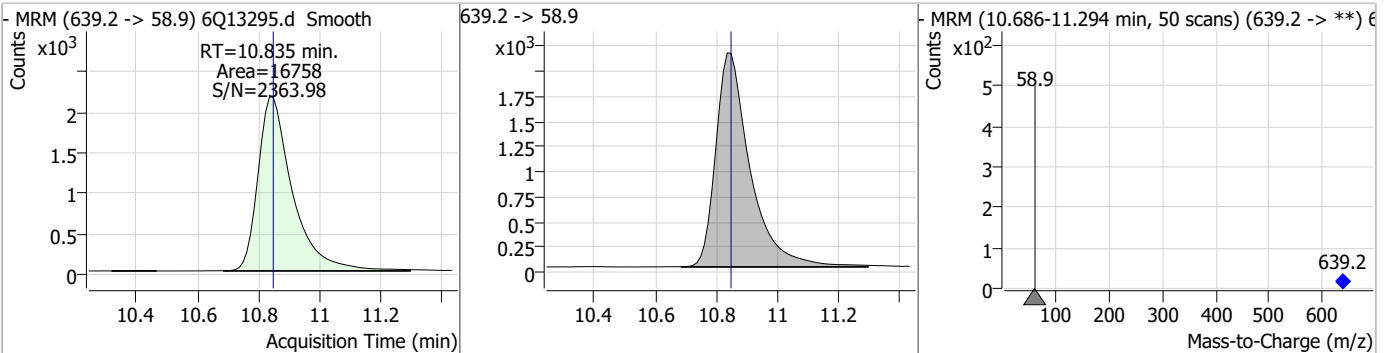


# Perfluorinated Compounds by LC/MS/MS

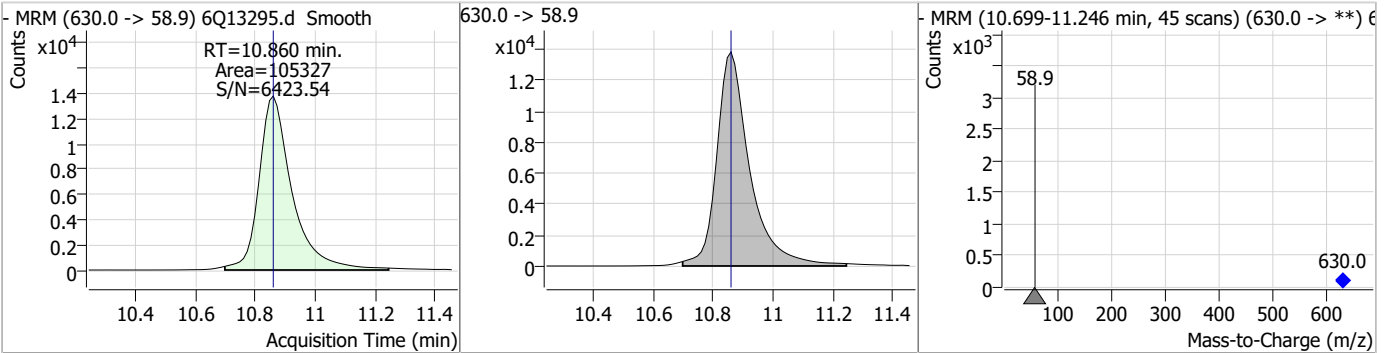
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	29.17	10.68	0.00	93198	511.9 -> 169.0	119.6	50.5	151.6



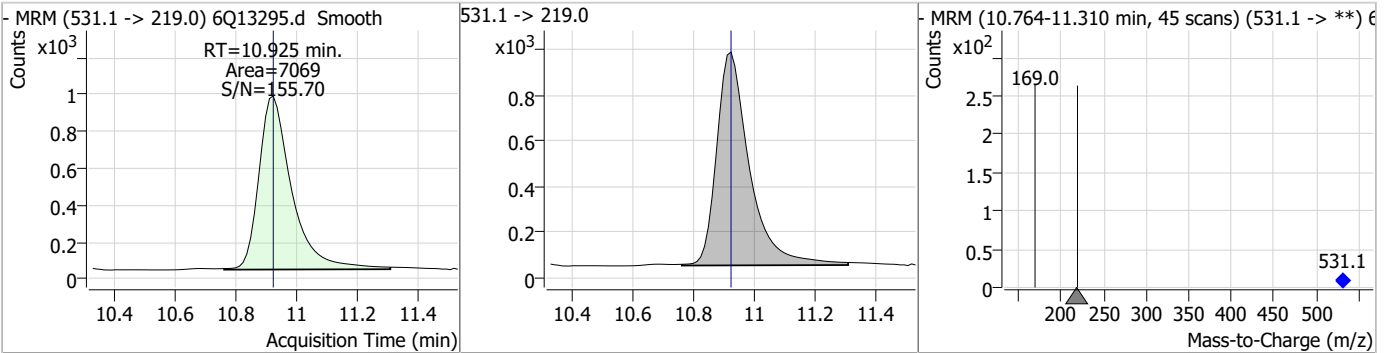
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.11	10.83	-0.01	16758				



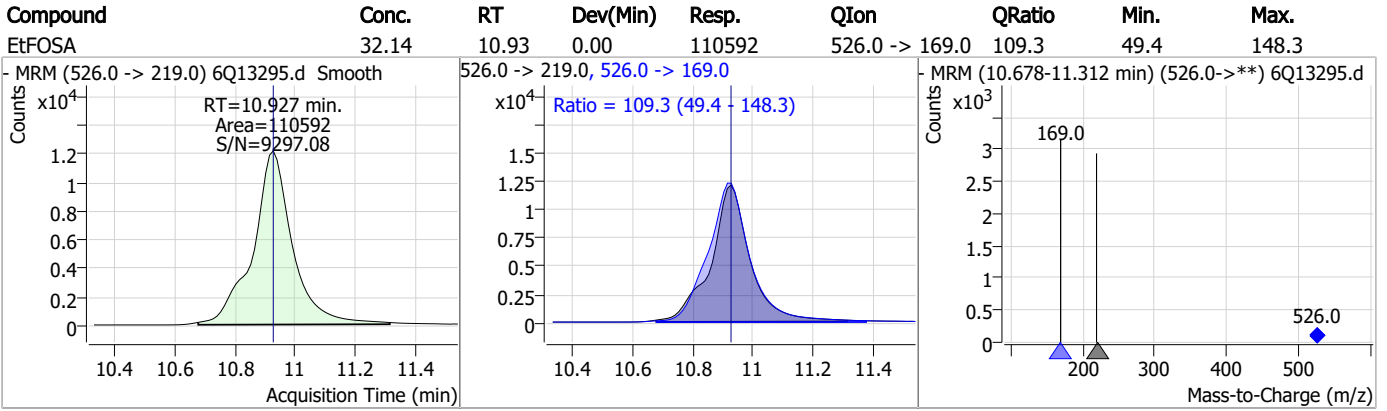
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	147.37	10.86	0.00	105327				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.52	10.92	0.00	7069				



# Perfluorinated Compounds by LC/MS/MS



7.6.2

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# Manual Integration Approval Summary

Sample Number: S6Q203-RT                      Method: EPA DRAFT 1633  
Lab FileID: 6Q13295.D                      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 12:15                      Supervisor approved: 02/10/23 16:31 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.13	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorononanoic acid	375-95-1		7.67	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak
EtFOSAA	2991-50-6		8.40	Split peak
PFOSA	754-91-6		9.56	Split peak

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7

## QQQ Check Tune Report



**Instrument Name** LCMS Q6  
**MS Model** G6495B  
**MS Instrument Serial** SG1752D103  
**Software\_Firmware Version** 10.1.67, FW: A.00.08.112  
**Tune Date & Time** 06 February 2023 11:01:45  
**File Path** D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML  
**Ion Source** AJS ESI  
**Ionization Mode** AJS ESI  
**Tuned Resolution** All  
**Vacuum Pressure** 1.84E+0 [R] (Torr); 2.93E-5 [H] (Torr)

**Source Parameters**

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

### QQQ Check Tune Report



#### Negative Results

**Analyzer: MS1 Polarity: Negative Width: Unit**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.93	-0.06	Pass	0.70	0.77	0.07	Pass	79673
302.00	301.98	-0.02	Pass	0.70	0.72	0.02	Pass	567244
601.98	601.93	-0.05	Pass	0.70	0.78	0.08	Pass	2486046
1033.99	1033.88	-0.11	Pass	0.70	0.74	0.04	Pass	478773
1633.95	1633.87	-0.08	Pass	0.70	0.80	0.10	Pass	276966
2233.91	2233.90	-0.01	Pass	0.70	0.73	0.03	Pass	69740

**Analyzer: MS2 Polarity: Negative Width: Unit**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	0.70	0.58	-0.12	Pass	57113
112.99	112.99	0.00	Pass	0.70	0.65	-0.05	Pass	111465
302.00	302.00	0.00	Pass	0.70	0.75	0.05	Pass	341257
601.98	601.93	-0.05	Pass	0.70	0.71	0.01	Pass	1621796
1033.99	1033.93	-0.06	Pass	0.70	0.72	0.02	Pass	693654
1633.95	1633.90	-0.05	Pass	0.70	0.77	0.07	Pass	594057
2233.91	2233.81	-0.10	Pass	0.70	0.72	0.02	Pass	121187

**Analyzer: MS1 Polarity: Negative Width: Wide**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.95	-0.04	Pass	1.20	1.41	0.21	Pass	107745
302.00	301.98	-0.02	Pass	1.20	1.57	0.37	Pass	677078
601.98	601.90	-0.08	Pass	1.20	1.55	0.35	Pass	3943163
1033.99	1033.82	-0.17	Pass	1.20	1.52	0.32	Pass	899729
1633.95	1633.83	-0.12	Pass	1.20	1.42	0.22	Pass	481801
2233.91	2233.83	-0.08	Pass	1.20	1.26	0.06	Pass	128003

**Analyzer: MS2 Polarity: Negative Width: Wide**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	1.20	1.19	-0.01	Pass	76639
112.99	112.97	-0.02	Pass	1.20	1.20	0.00	Pass	138511
302.00	302.01	0.01	Pass	1.20	1.38	0.18	Pass	558859
601.98	601.99	0.01	Pass	1.20	1.29	0.09	Pass	3294042
1033.99	1034.00	0.01	Pass	1.20	1.35	0.15	Pass	1846745
1633.95	1633.85	-0.10	Pass	1.20	1.44	0.24	Pass	1542859
2233.91	2233.86	-0.05	Pass	1.20	1.40	0.20	Pass	338207

**Analyzer: MS1 Polarity: Negative Width: Widest**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.92	-0.07	Pass	2.50	2.69	0.19	Pass	127640
302.00	301.86	-0.14	Pass	2.50	2.96	0.46	Pass	819433
601.98	601.74	-0.24	Pass	2.50	2.75	0.25	Pass	4697264
1033.99	1033.75	-0.24	Pass	2.50	2.84	0.34	Pass	1630092
1633.95	1633.75	-0.20	Pass	2.50	2.57	0.07	Pass	1154237
2233.91	2233.59	-0.32	Pass	2.50	2.28	-0.22	Pass	436896

**Analyzer: MS2 Polarity: Negative Width: Widest**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.02	0.02	Pass	2.50	2.54	0.04	Pass	115612
112.99	113.01	0.02	Pass	2.50	2.58	0.08	Pass	208069
302.00	301.97	-0.03	Pass	2.50	2.68	0.18	Pass	946379
601.98	602.02	0.04	Pass	2.50	2.72	0.22	Pass	4916196
1033.99	1033.93	-0.06	Pass	2.50	2.66	0.16	Pass	3056371
1633.95	1633.95	0.00	Pass	2.50	2.84	0.34	Pass	2735651
2233.91	2233.74	-0.17	Pass	2.50	2.67	0.17	Pass	801259

7.7.1  
7

### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13297.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 12:43:15 PM  
 Sample Name : ic203-1  
 Vial : P1-A2  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	88515	10.00 µg/L	-0.025
M5-PFPeA	4.386	268.3 -> 223.0	43041	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	37903	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	41567	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	70918	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	24295	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	20071	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	23714	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	25241	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14310	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17167	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	14433	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	9599	2.50 µg/L	0.012
M8-PFOS	8.320	507.1 -> 79.9	9000	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2587	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	3309	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	3343	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	30574	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	14717	10.00 µg/L	-0.012
M5-EtFOSAA	8.398	589.2 -> 419.0	26104	5.00 µg/L	0.012
M7-MeFOSE	10.577	623.2 -> 58.9	28327	25.00 µg/L	-0.012
M9-EtFOSE	10.835	639.2 -> 58.9	18673	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	7533	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6767	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	11158	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	39511	5.00 µg/L	-0.012
18O2-PFHxS	7.261	403.0 -> 83.9	7449	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	86654	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	25362	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	28081	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	38037	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2587	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3309	5.20 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3343	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C2-PFDoDA	9.041	615.1 -> 570.0	25241	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14310	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C3-PFBS	5.518	302.1 -> 79.9	14433	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C3-PFHxS	7.262	402.1 -> 79.9	9599	2.40 µg/L	0.012

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## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C4-PFBA	2.975	216.8 -> 171.9	88515	10.04 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.490	367.1 -> 322.0	41567	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C5-PFHxA	5.563	318.0 -> 273.0	37903	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFPeA	4.386	268.3 -> 223.0	43041	4.95 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C6-PFDA	8.145	519.1 -> 474.1	20071	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.8%	
13C7-PFUnDA	8.612	570.0 -> 525.1	23714	1.34 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C8-FOSA	9.555	506.1 -> 77.8	17167	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOA	7.134	421.1 -> 376.0	70918	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-PFOS	8.320	507.1 -> 79.9	9000	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C9-PFNA	7.664	472.1 -> 427.0	24295	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.9%	
d3-MeFOSAA	8.190	573.2 -> 419.0	30574	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	14717	9.69 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
d3-MeFOSA	10.680	515.0 -> 219.0	6767	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%	
d5-EtFOSAA	8.398	589.2 -> 419.0	26104	4.83 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
d7-MeFOSE	10.577	623.2 -> 58.9	28327	25.18 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d9-EtFOSE	10.835	639.2 -> 58.9	18673	24.82 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d5-EtFOSA	10.925	531.1 -> 219.0	7533	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.228	327.1 -> 307.0	4617	0.80 µg/L	97
		327.1 -> 80.9	1018		
6:2FTS	6.908	427.1 -> 407.0	3936	0.80 µg/L	97
		427.1 -> 80.9	780		
8:2FTS	7.933	527.1 -> 507.0	2140	0.79 µg/L	96
		527.1 -> 80.8	502		
EtFOSAA	8.399	584.2 -> 419.1	871	0.21 µg/L	96
		584.2 -> 526.0	456		
FOSA	9.557	498.1 -> 77.9	1394	0.20 µg/L	98
		498.1 -> 478.0	42		
MeFOSAA	8.203	570.1 -> 419.0	1236	0.22 µg/L	84
		570.1 -> 483.0	335	m	
PFBA	2.982	212.8 -> 168.9	1606	0.81 µg/L	100
PFBS	5.518	298.7 -> 79.9	1077	0.19 µg/L	100
		298.7 -> 98.8	512		
PFDA	8.146	512.9 -> 469.0	5041	0.22 µg/L	97
		512.9 -> 219.0	768		
PFDODA	9.042	613.1 -> 569.0	4144	0.22 µg/L	99
		613.1 -> 319.0	450		
PFDS	9.216	599.0 -> 79.9	467	0.17 µg/L	93

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	266			
PFHpA	6.503	363.1 -> 319.0	4845	0.20	µg/L	94
		363.1 -> 169.0	564			
PFHpS	7.816	449.0 -> 79.9	809	0.22	µg/L	90
		449.0 -> 98.9	389			
PFHxA	5.566	313.0 -> 269.0	3097	0.21	µg/L	98
		313.0 -> 118.9	100			
PFHxS	7.263	398.7 -> 79.9	775	0.19	µg/L	m 92
		398.7 -> 98.9	476			
PFNA	7.665	463.0 -> 419.0	3914	0.24	µg/L	96
		463.0 -> 219.0	714			
PFNS	8.799	548.8 -> 79.9	722	0.19	µg/L	93
		548.8 -> 98.9	354			
PFOA	7.148	413.0 -> 369.0	5993	0.20	µg/L	m 95
		413.0 -> 169.0	915			
PFOS	8.321	498.9 -> 79.9	711	0.18	µg/L	m 95
		498.9 -> 98.8	542			
PFPeA	4.388	263.0 -> 219.0	3857	0.42	µg/L	100
PFPeS	6.569	349.1 -> 79.9	959	0.19	µg/L	90
		349.1 -> 98.9	458			
PFTeDA	9.769	713.1 -> 669.0	3370	0.21	µg/L	96
		713.1 -> 168.9	271			
PFTrDA	9.425	663.0 -> 619.0	3348	0.19	µg/L	98
		663.0 -> 168.9	288			
PFUnDA	8.612	563.1 -> 519.0	4009	0.22	µg/L	99
		563.1 -> 269.1	571			
11CI-PF3OUdS	9.489	630.9 -> 450.9	7468	0.75	µg/L	98
		632.9 -> 452.9	2479			
9CI-PF3ONS	8.663	530.8 -> 351.0	13441	0.76	µg/L	94
		532.8 -> 353.0	4648			
ADONA	6.741	376.9 -> 250.9	26272	0.81	µg/L	100
		376.9 -> 84.8	5864			
HFPO-DA	5.928	284.9 -> 168.9	1243	0.89	µg/L	98
		284.9 -> 184.9	144			
3:3FTCA	3.841	241.0 -> 177.0	447	1.00	µg/L	100
		241.0 -> 117.0	63			
5:3FTCA	6.193	341.0 -> 237.1	15944	5.13	µg/L	96
		341.0 -> 217.0	13903			
7:3FTCA	7.592	441.0 -> 316.9	8010	5.01	µg/L	94
		441.0 -> 336.9	15947			
EtFOSA	10.927	526.0 -> 219.0	762	0.21	µg/L	87
		526.0 -> 169.0	659			
EtFOSE	10.860	630.0 -> 58.9	1512	1.90	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	728	0.24	µg/L	91
		511.9 -> 169.0	670			
MeFOSE	10.602	616.1 -> 58.9	2170	1.97	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	357	0.21	µg/L	95
		699.1 -> 98.8	209			
NFDHA	5.457	295.0 -> 201.0	330	0.39	µg/L	99
		295.0 -> 84.9	165			
PFMBA	4.787	279.0 -> 85.1	1028	0.40	µg/L	100
PFMPA	3.541	229.0 -> 84.9	930	0.39	µg/L	m 100
PFEESA	6.046	314.8 -> 134.9	7951	0.38	µg/L	100
		314.8 -> 82.9	195			

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

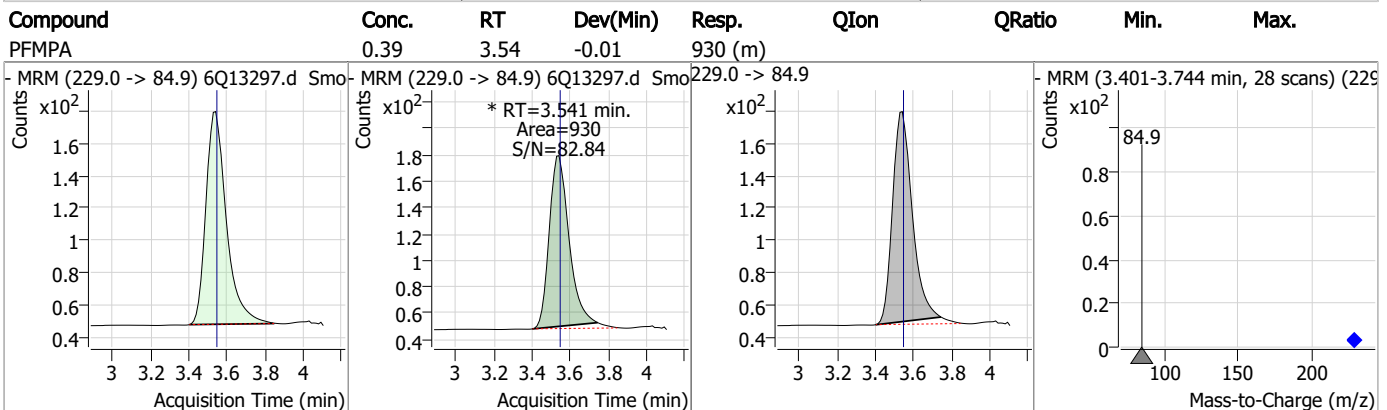
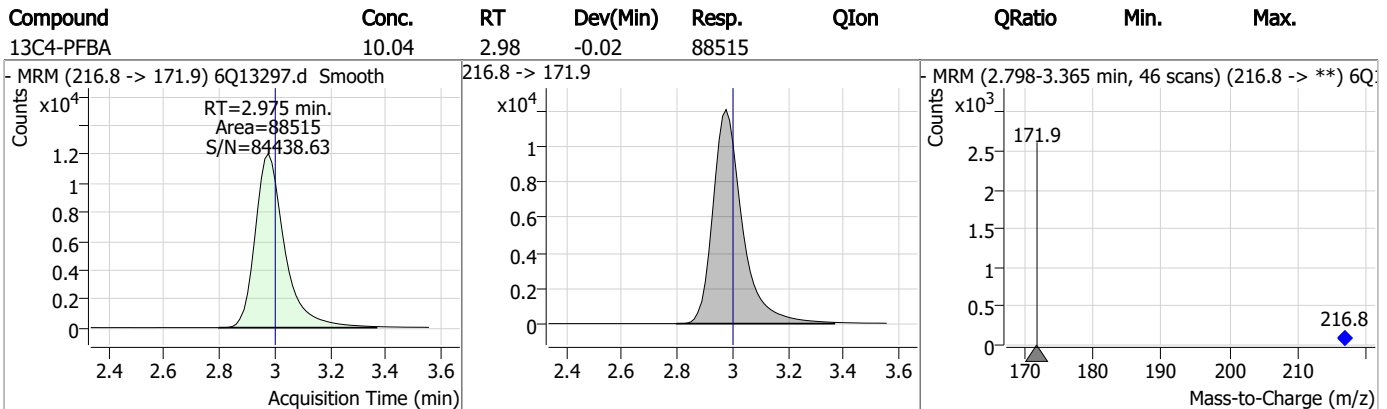
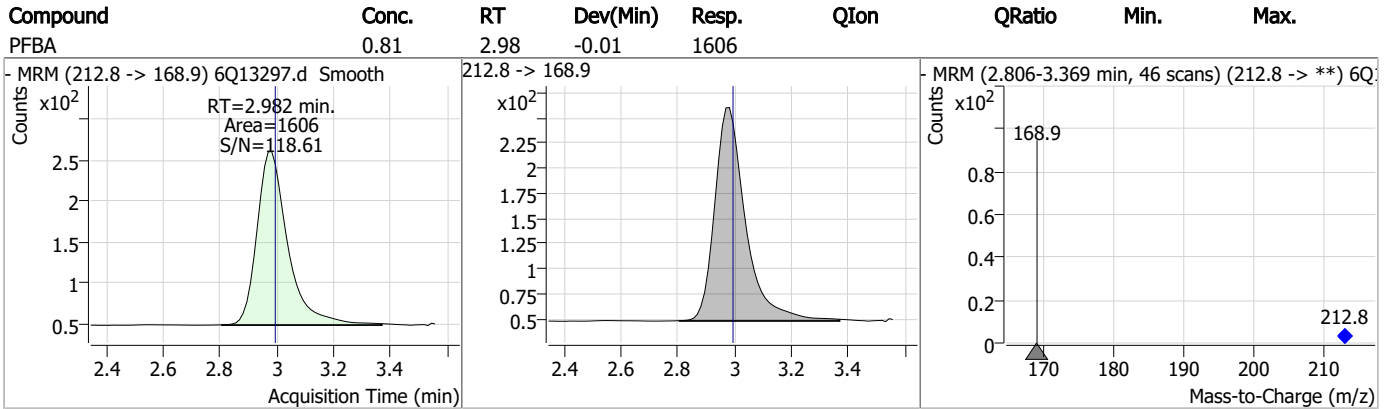
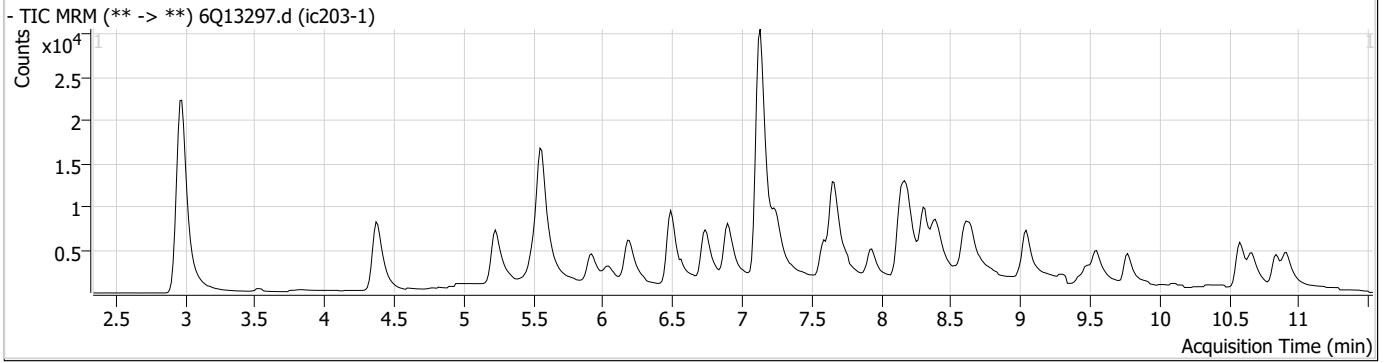
### Perfluorinated Compounds by LC/MS/MS

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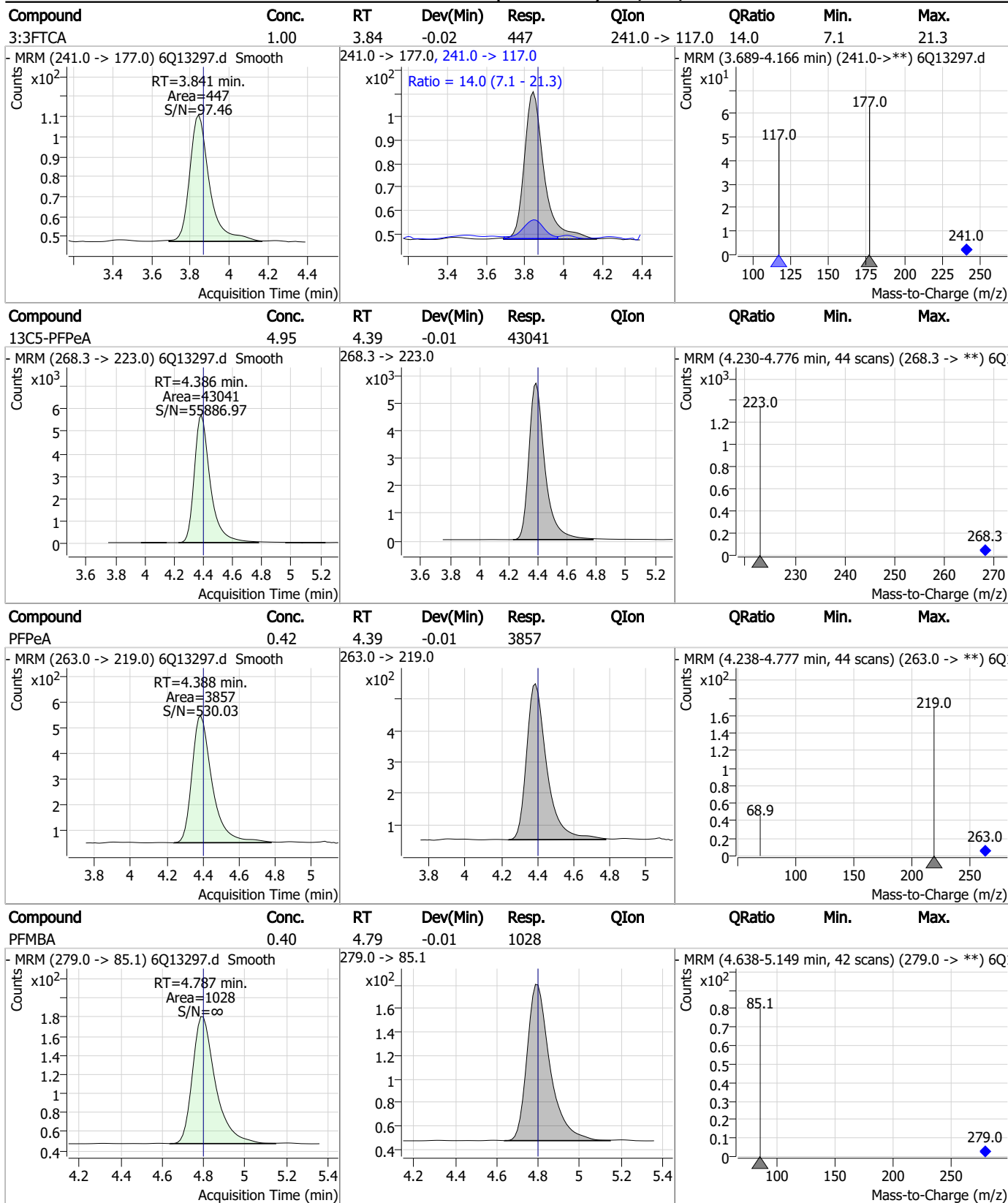


### Perfluorinated Compounds by LC/MS/MS





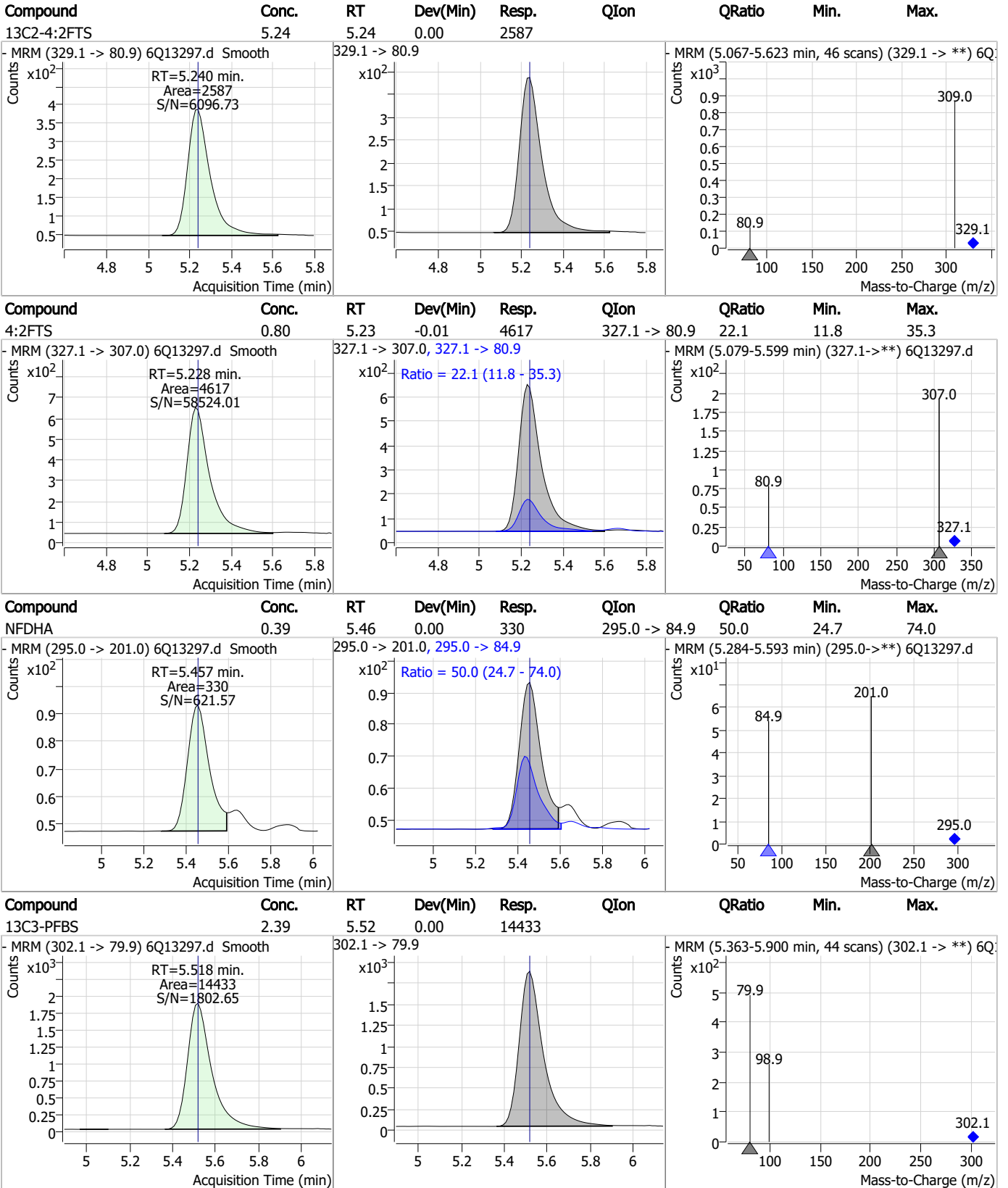
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

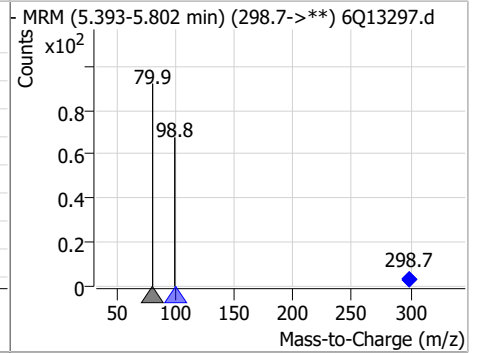
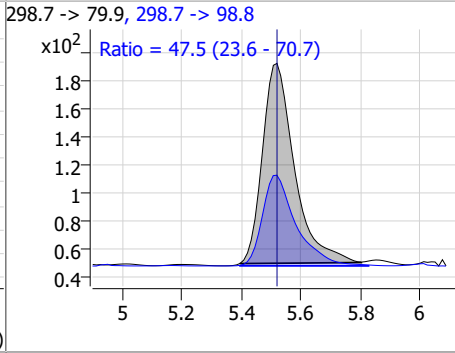
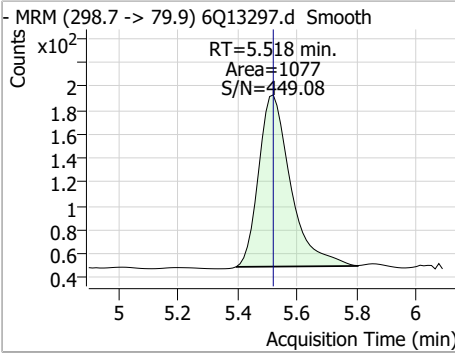


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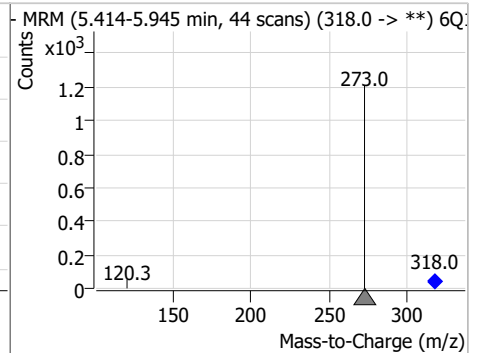
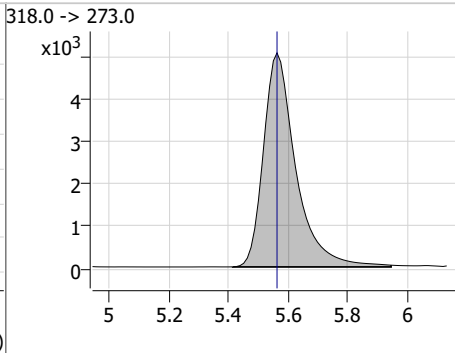
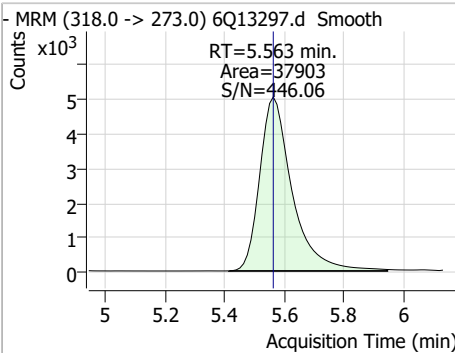
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### Perfluorinated Compounds by LC/MS/MS

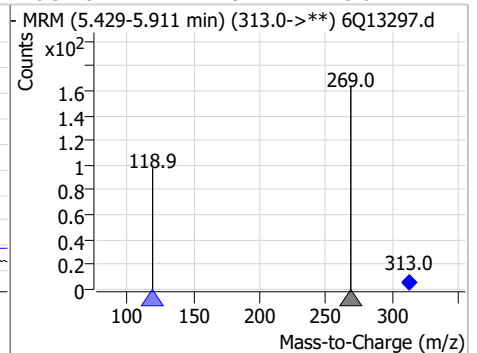
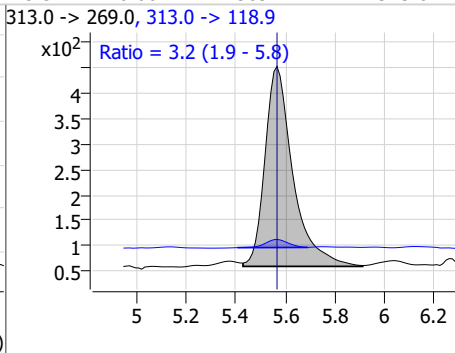
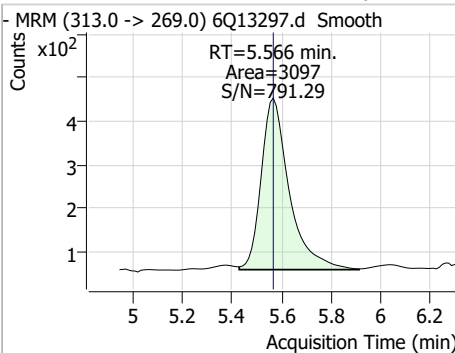
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.19	5.52	0.00	1077	298.7 -> 98.8	47.5	23.6	70.7



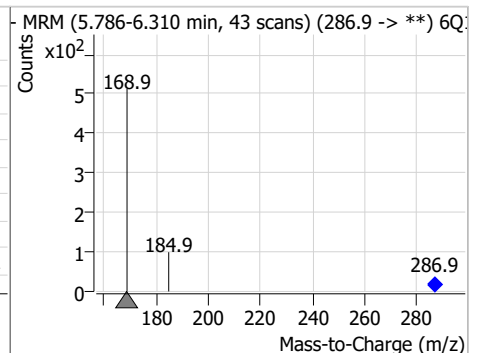
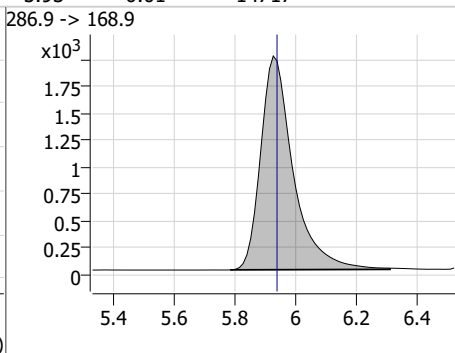
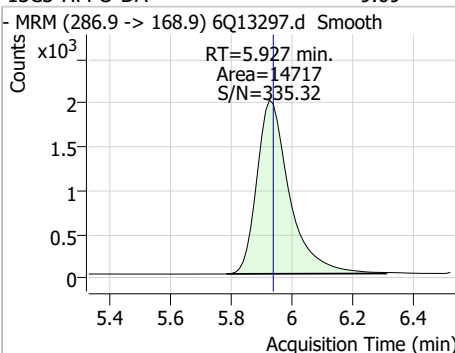
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.56	0.00	37903				



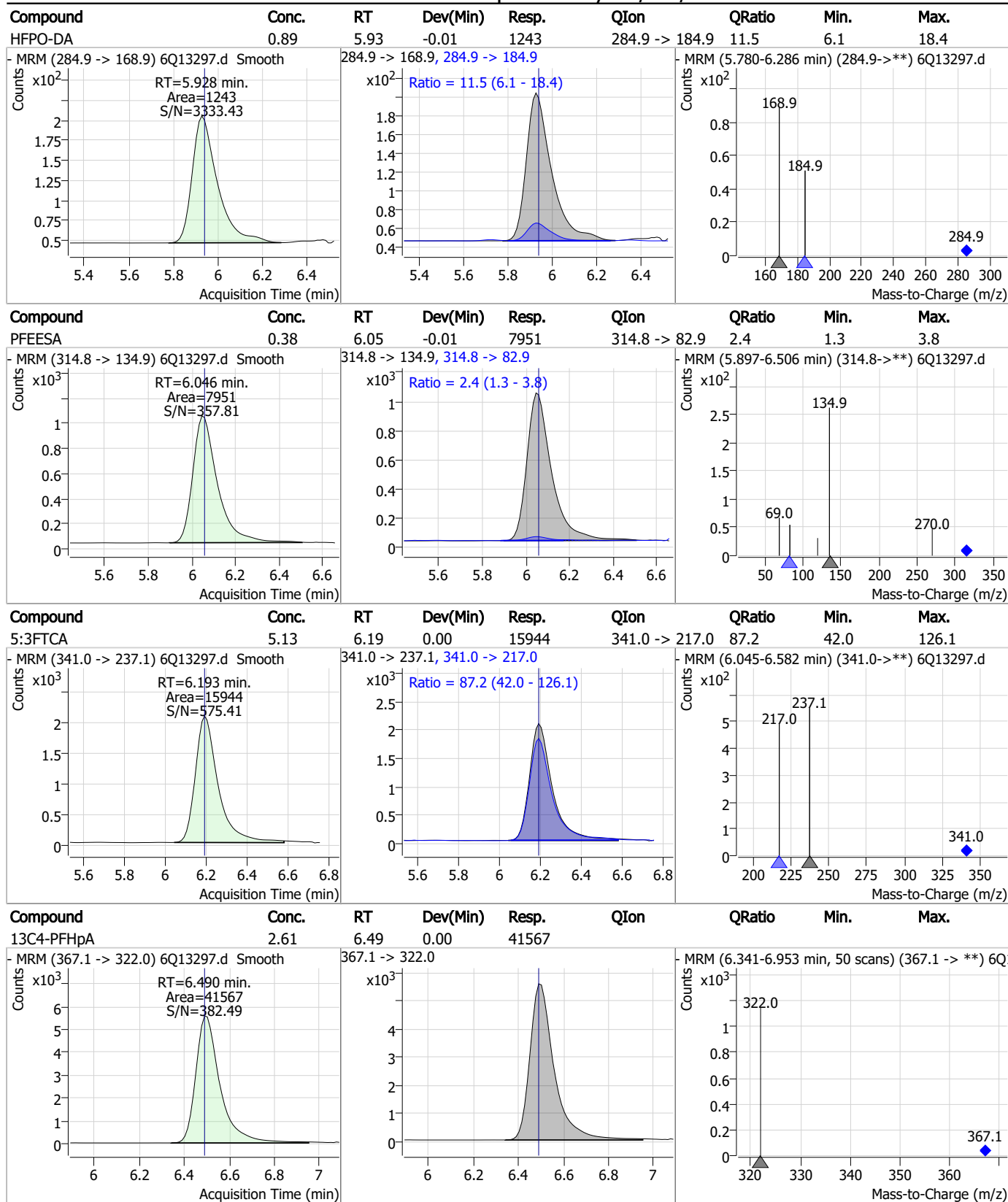
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.21	5.57	0.00	3097	313.0 -> 118.9	3.2	1.9	5.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.69	5.93	-0.01	14717				

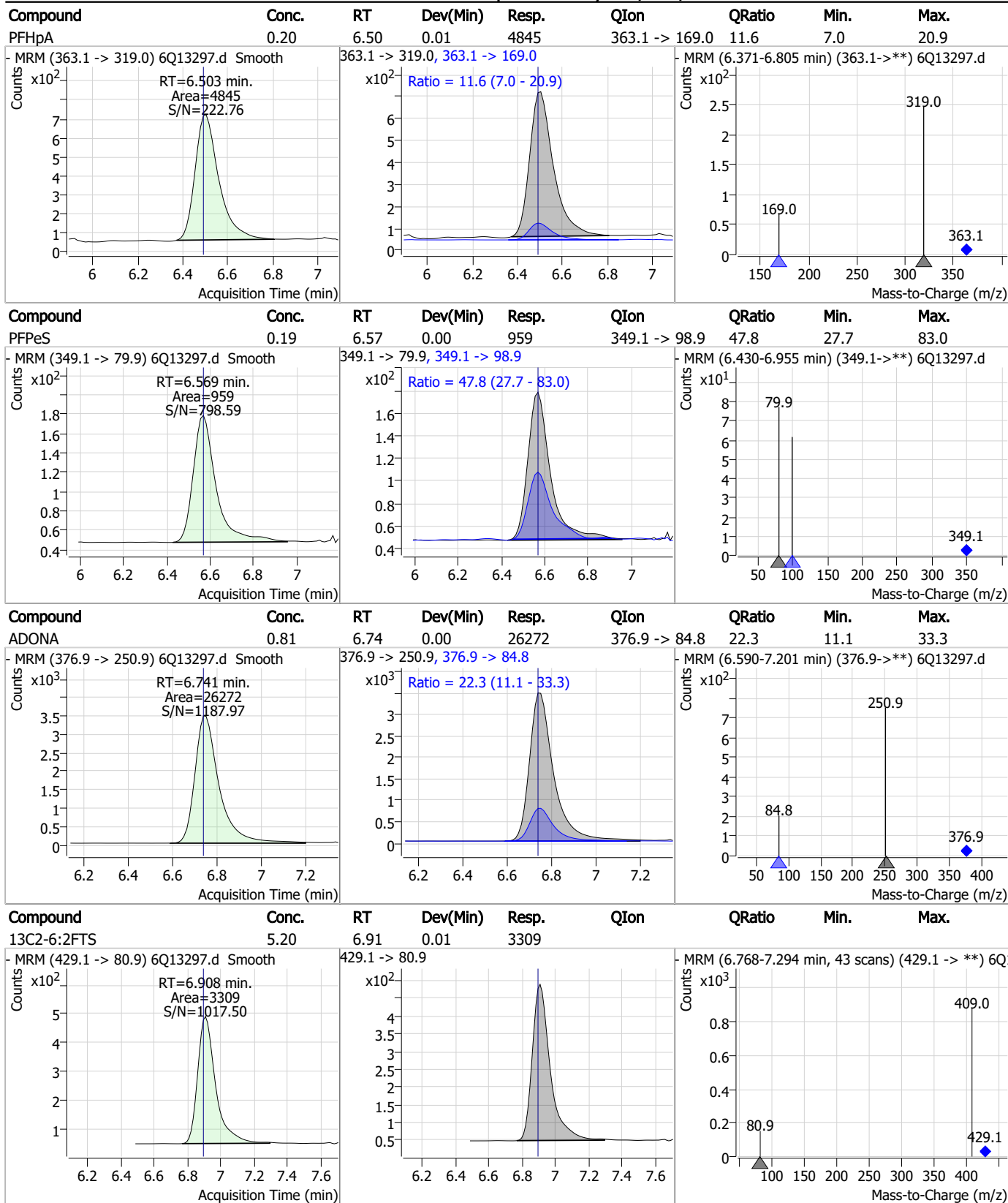


### Perfluorinated Compounds by LC/MS/MS



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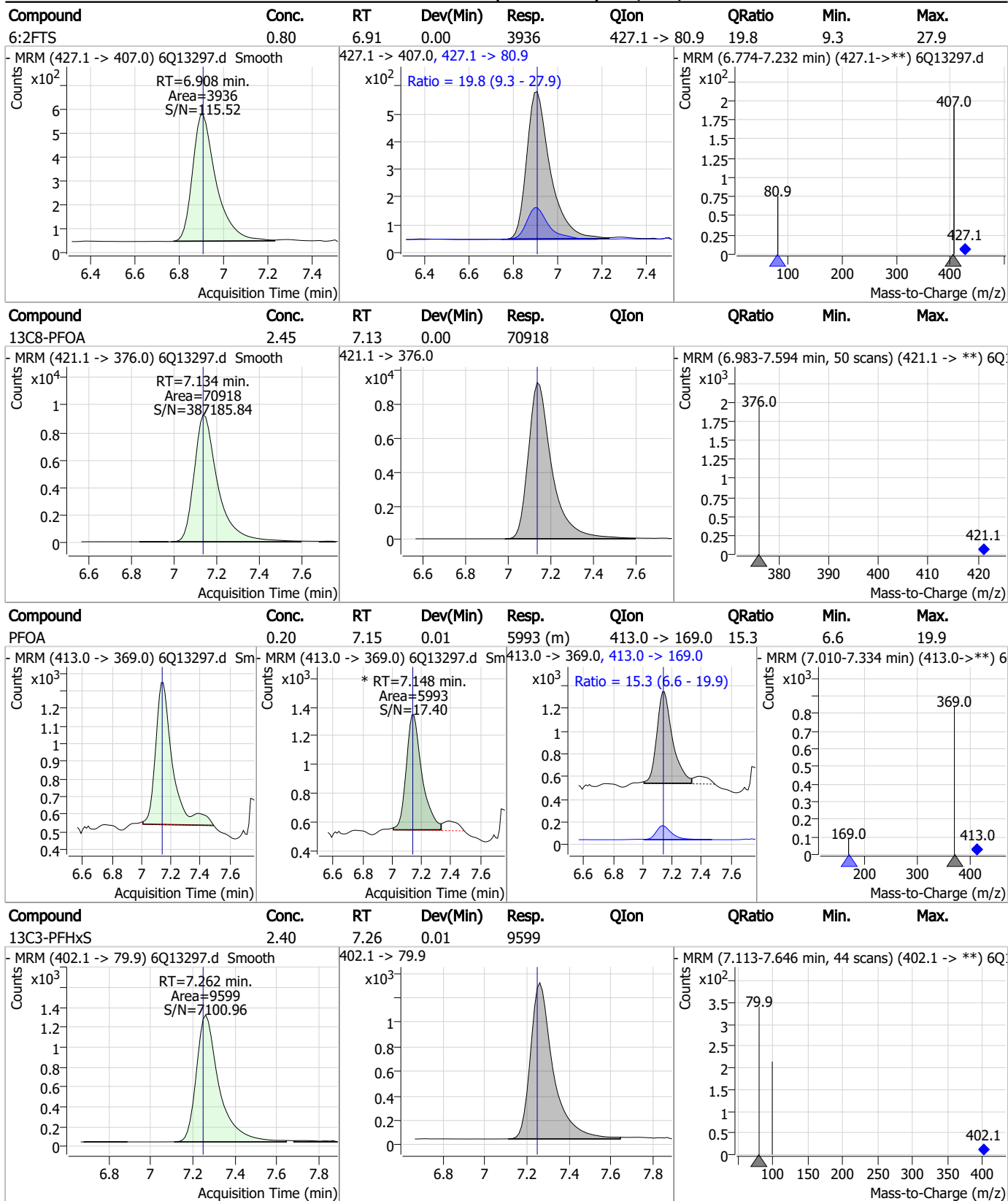
### Perfluorinated Compounds by LC/MS/MS



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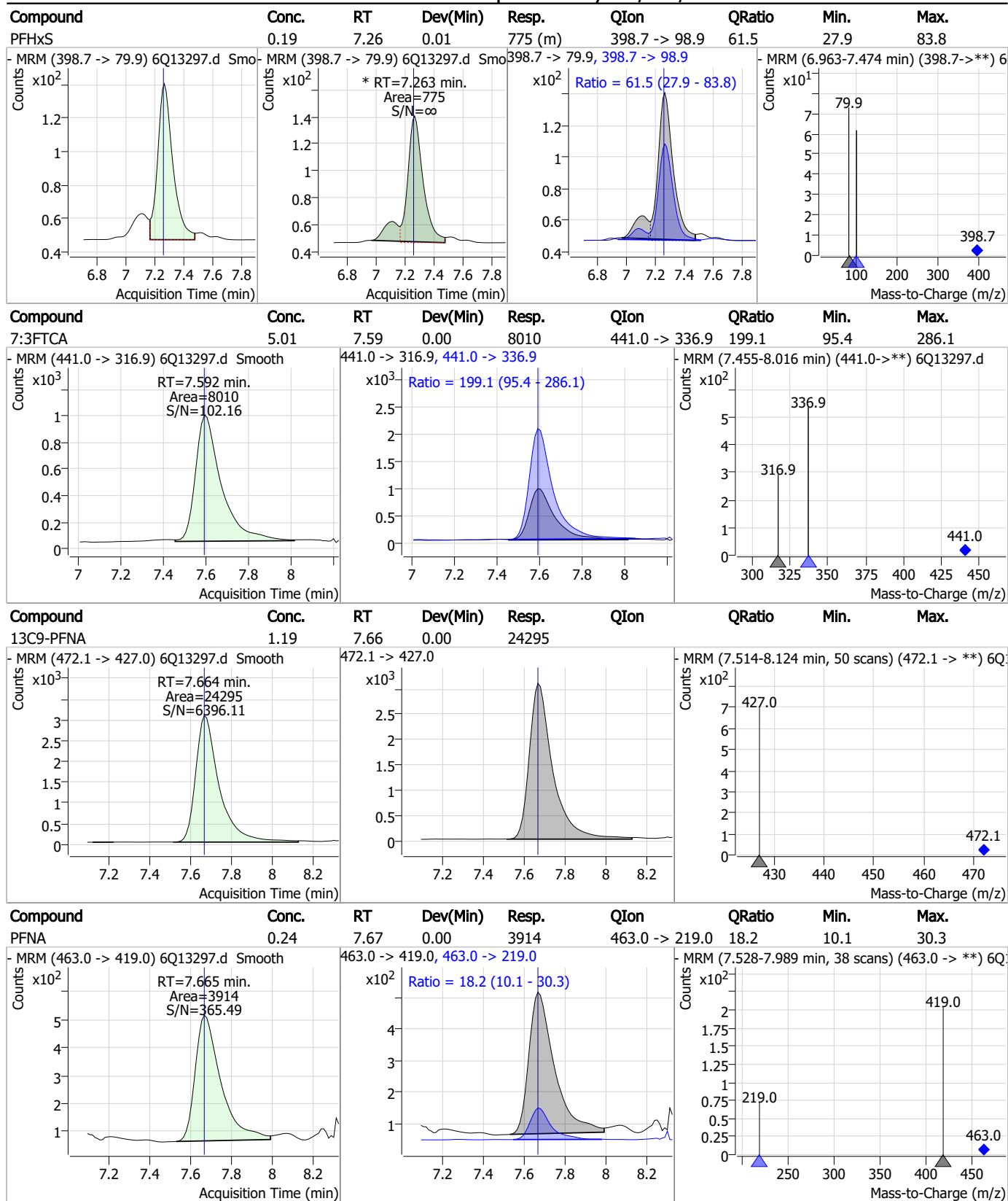
### Perfluorinated Compounds by LC/MS/MS



7.7.2  
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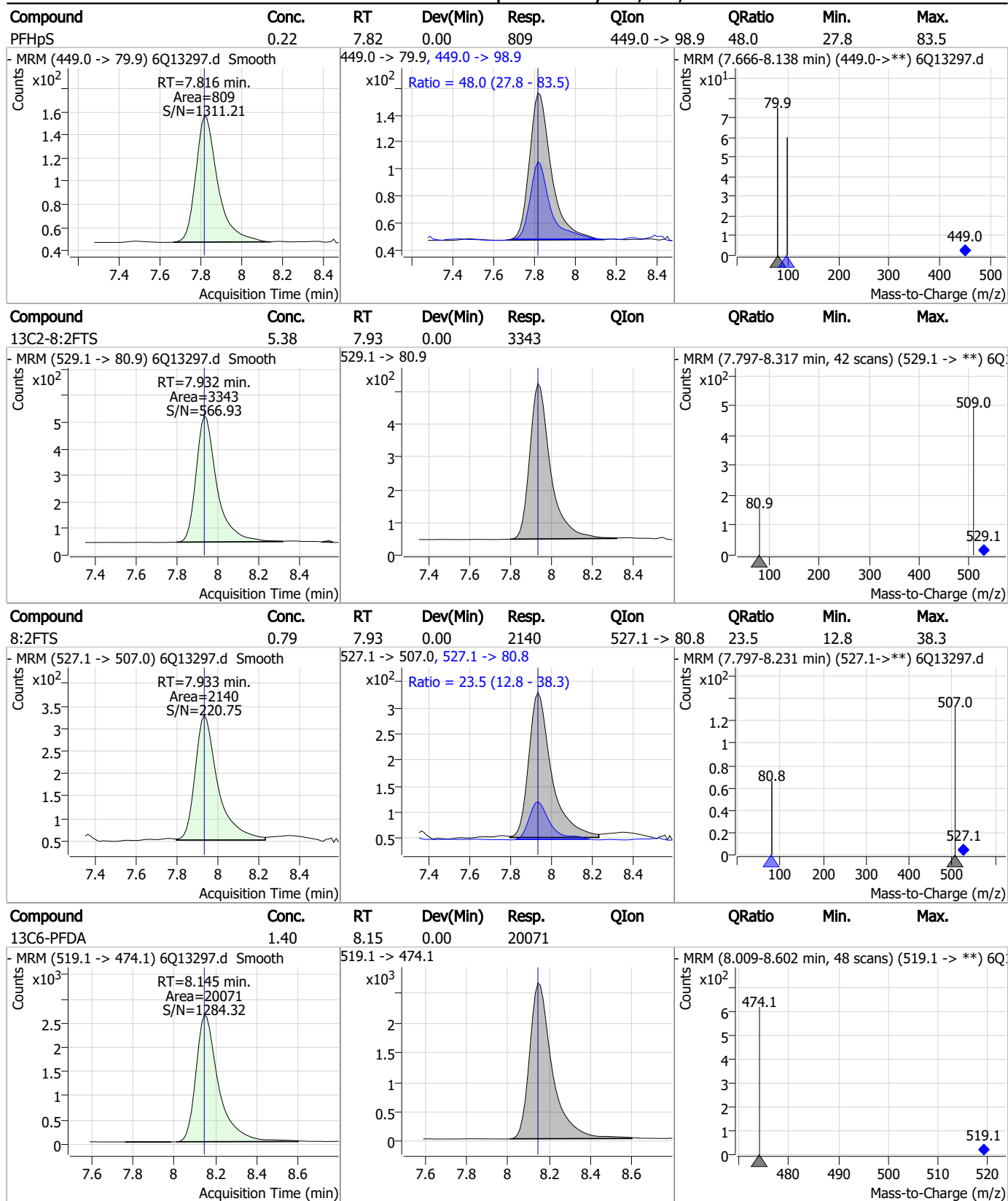


### Perfluorinated Compounds by LC/MS/MS



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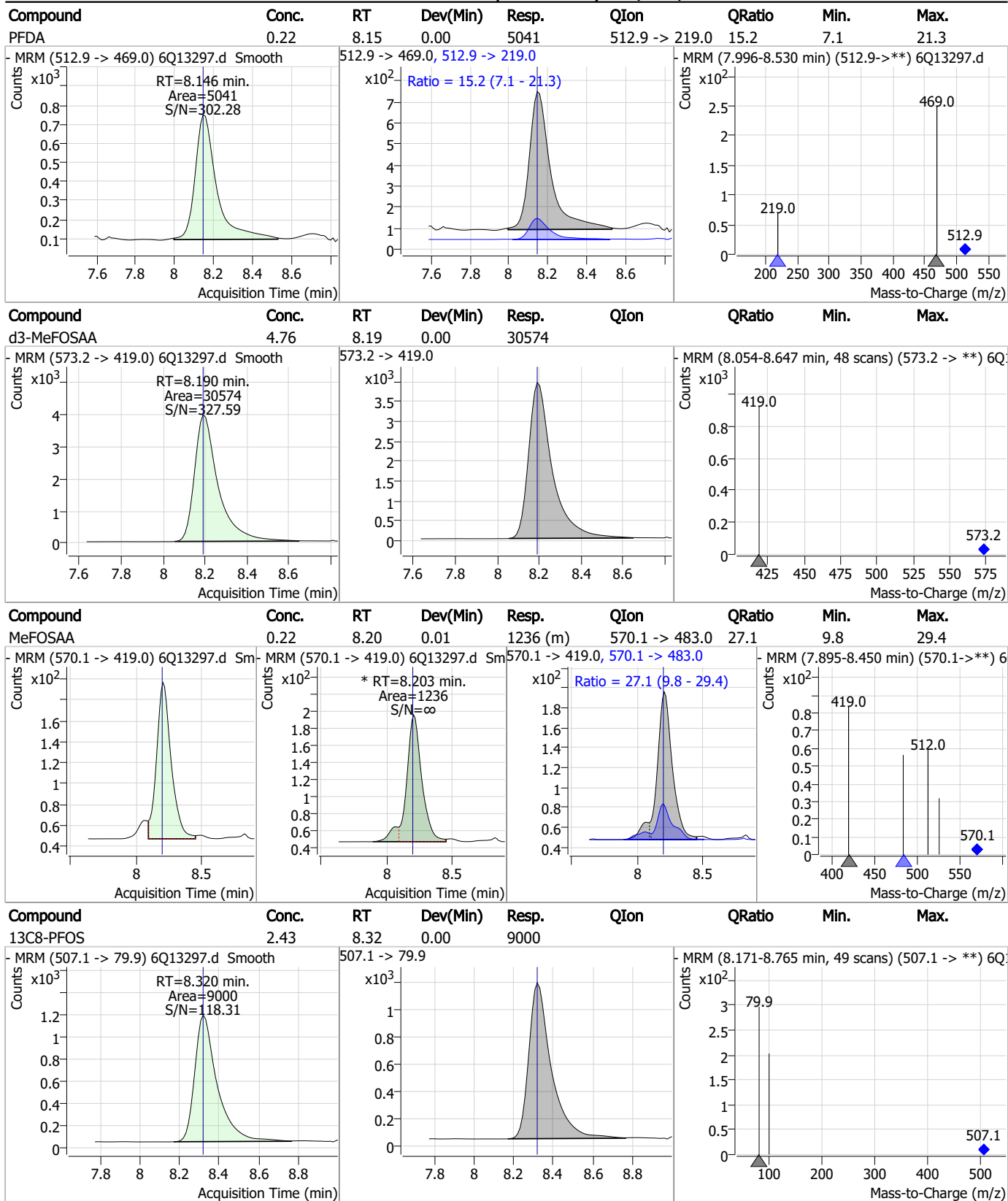
### Perfluorinated Compounds by LC/MS/MS



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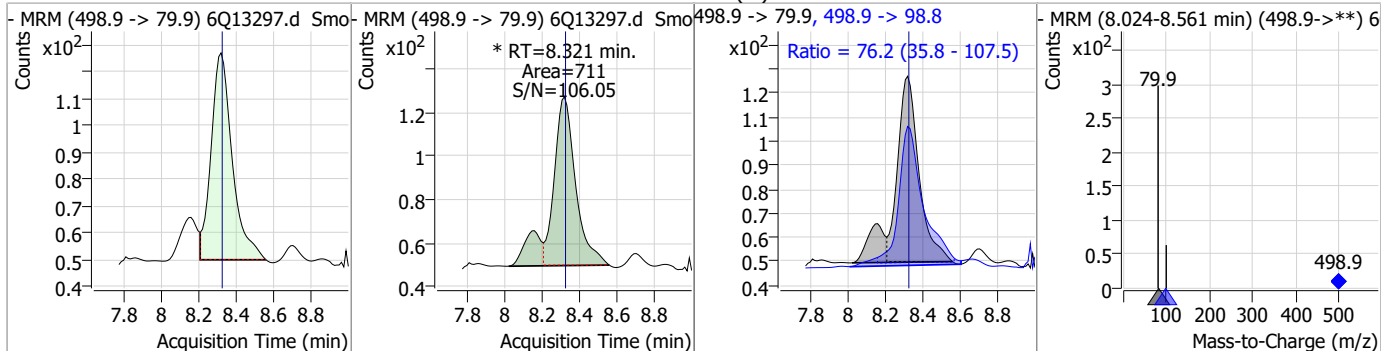
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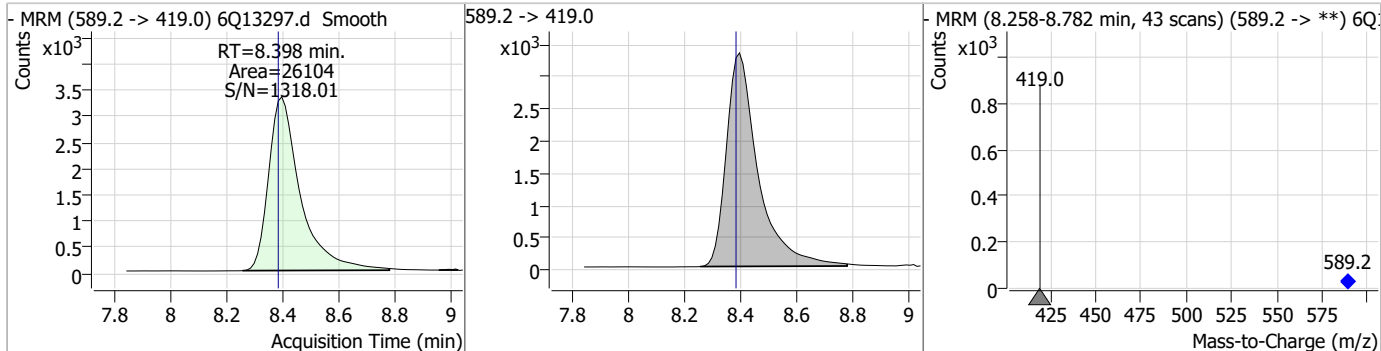
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### Perfluorinated Compounds by LC/MS/MS

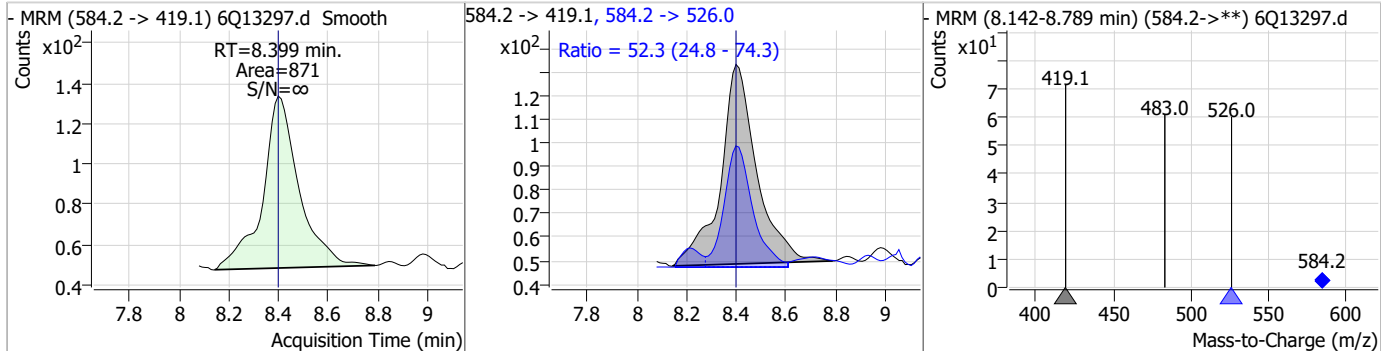
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.18	8.32	0.00	711 (m)	498.9 -> 98.8	76.2	35.8	107.5



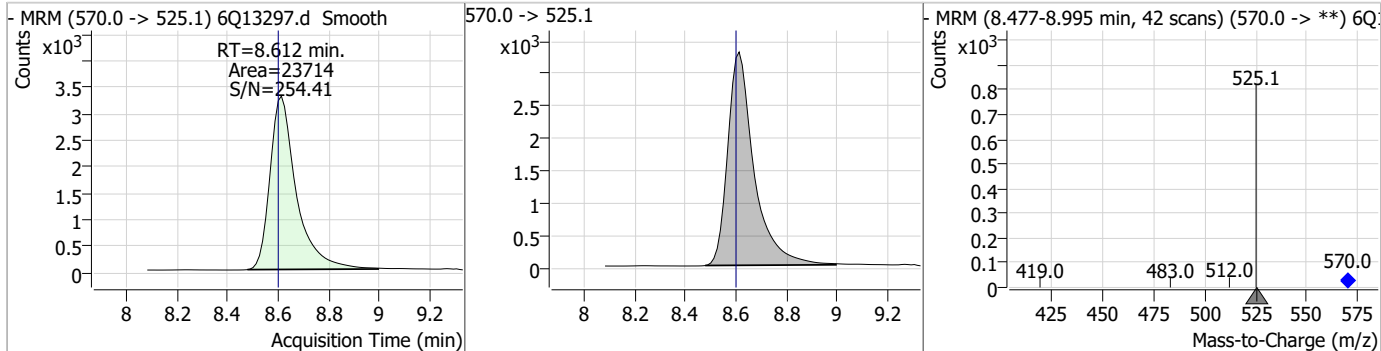
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.83	8.40	0.01	26104				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.21	8.40	0.00	871	584.2 -> 526.0	52.3	24.8	74.3

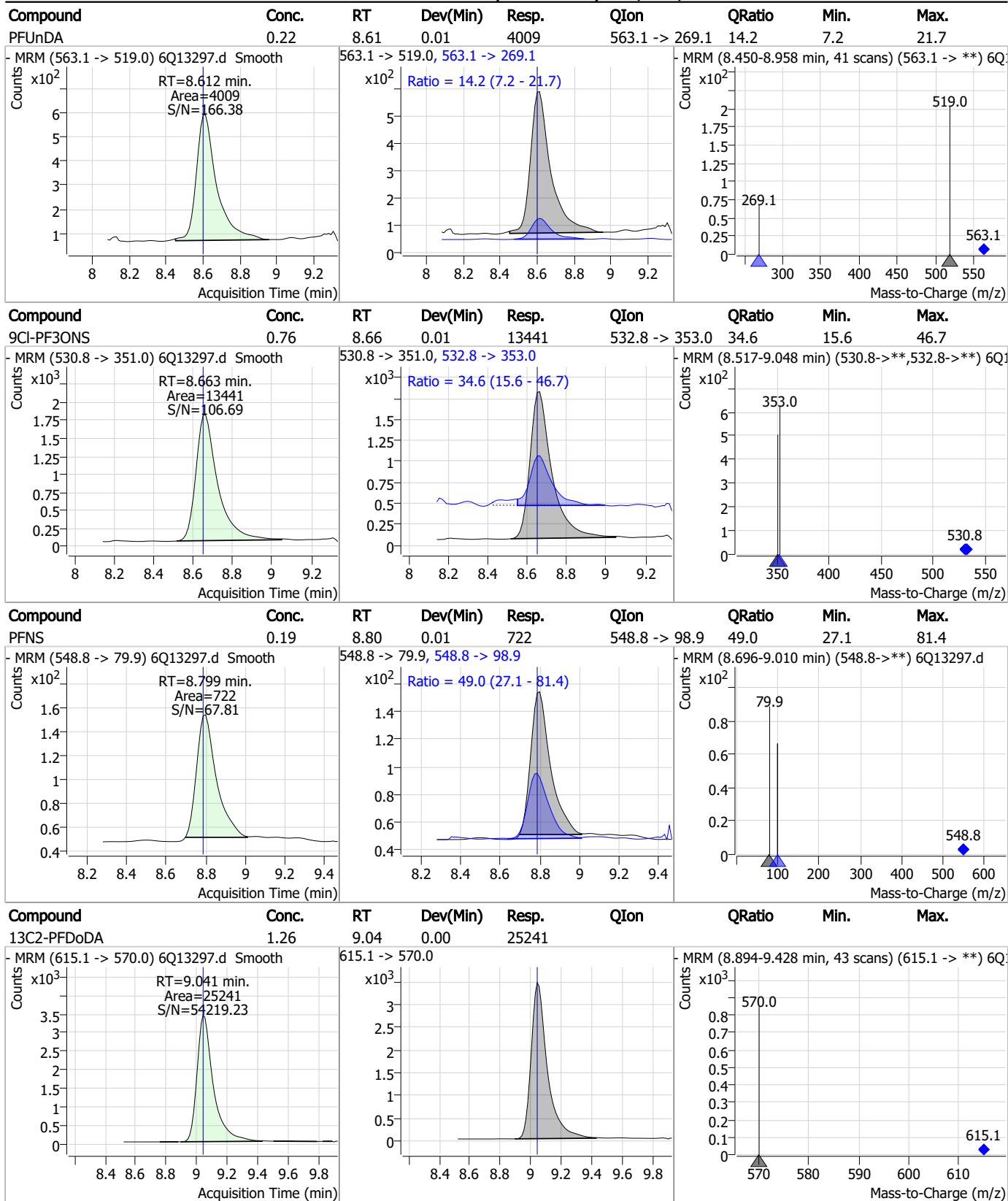


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.34	8.61	0.01	23714				



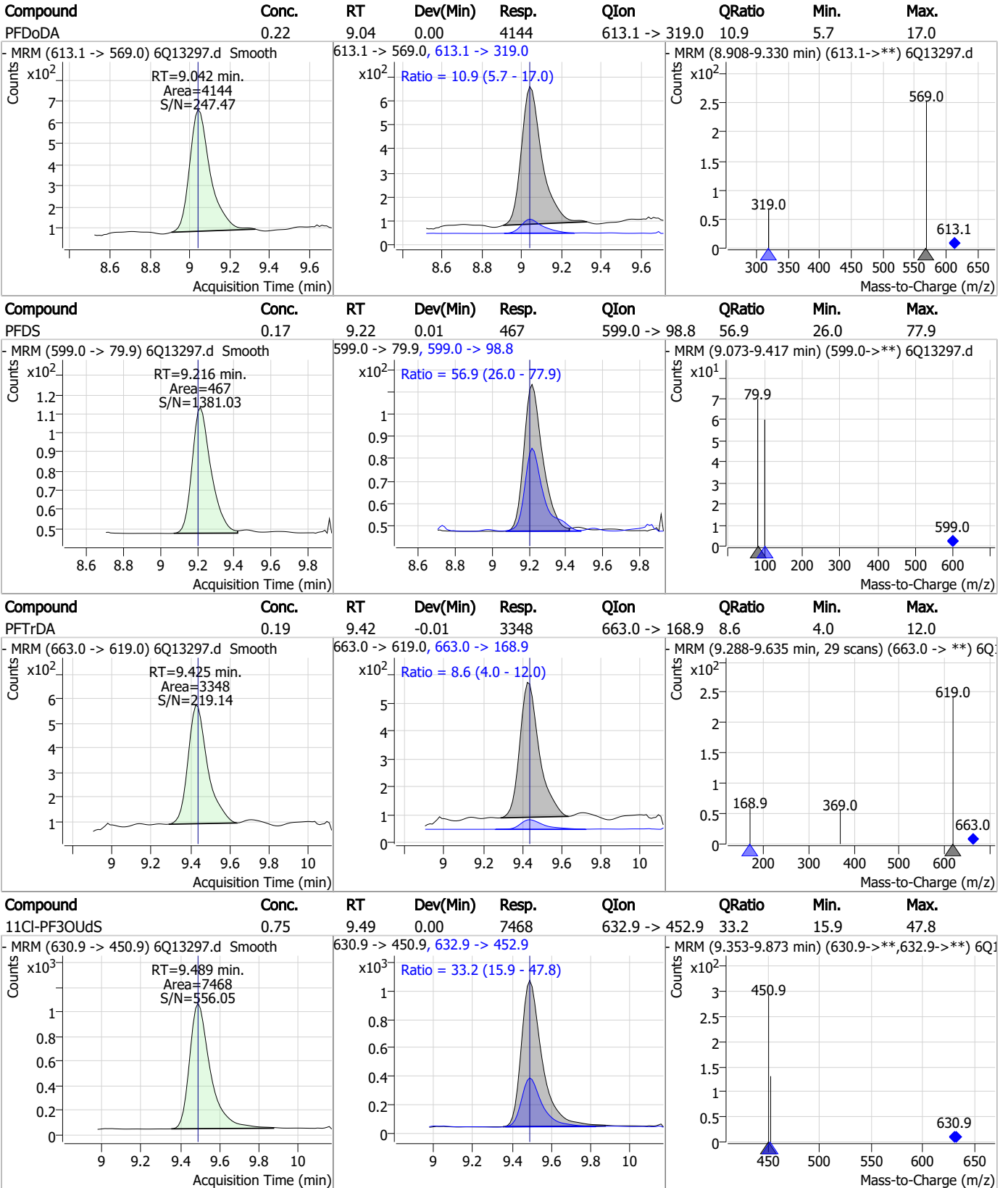
7.7.2  
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### Perfluorinated Compounds by LC/MS/MS



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

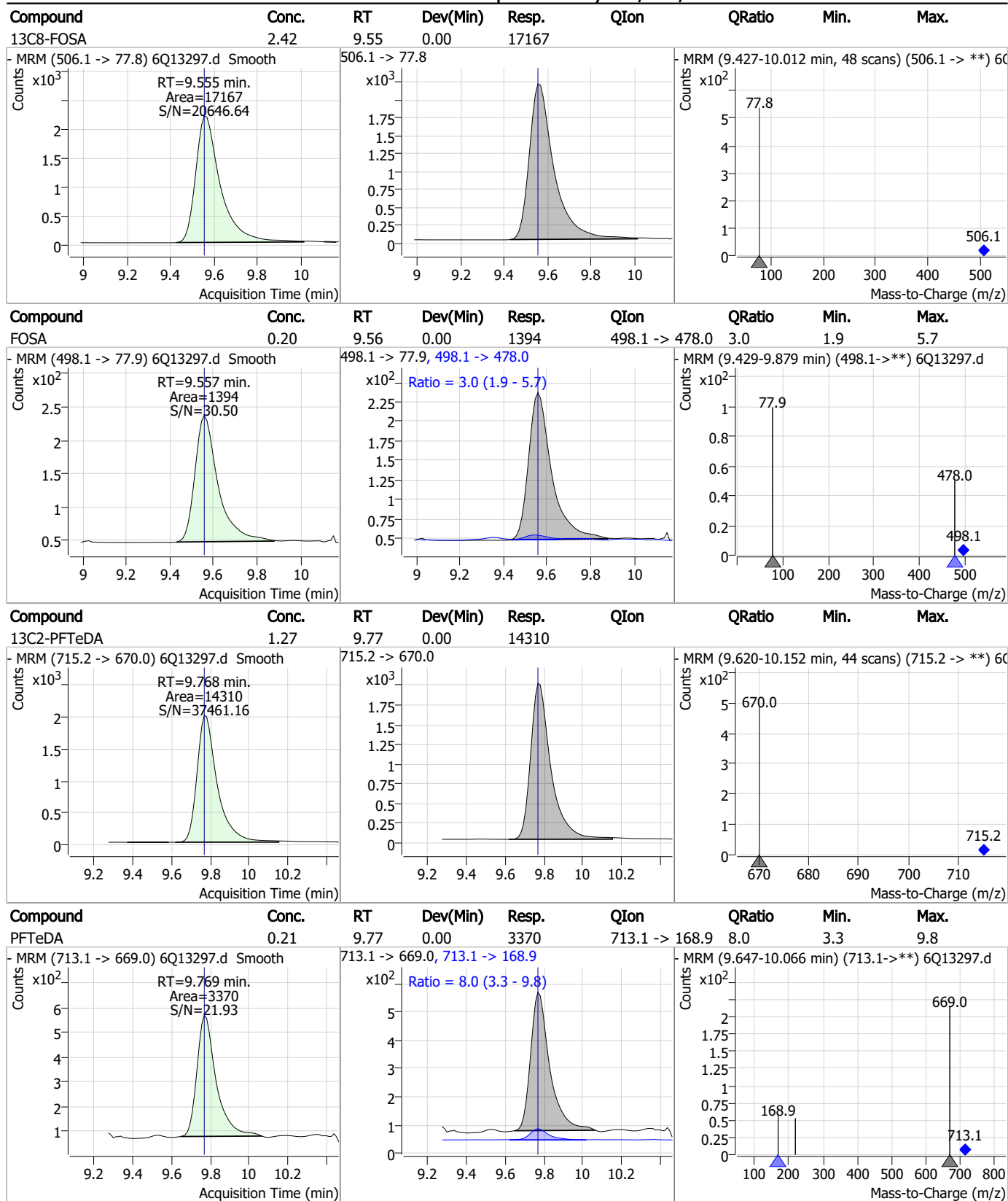


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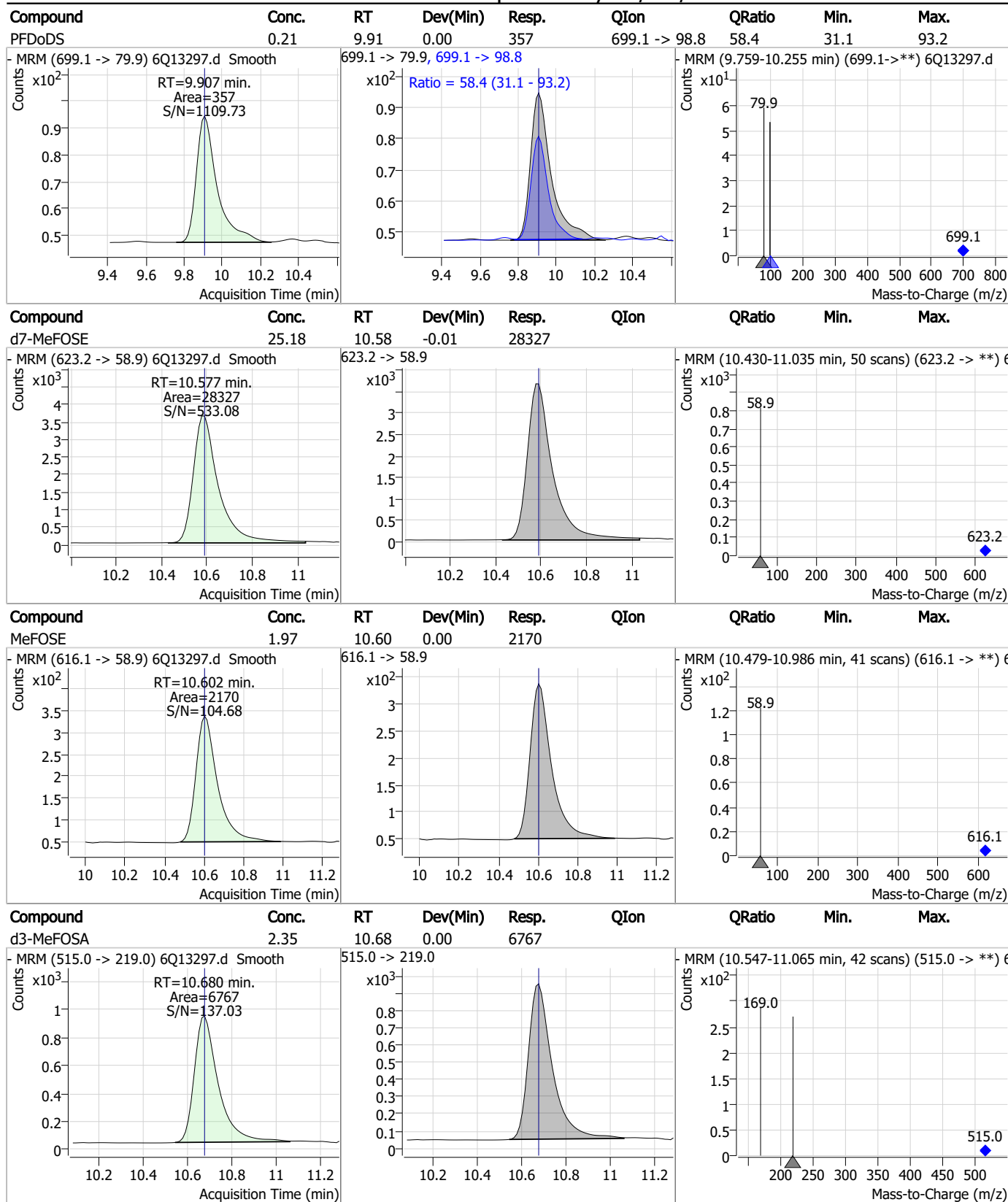


### Perfluorinated Compounds by LC/MS/MS



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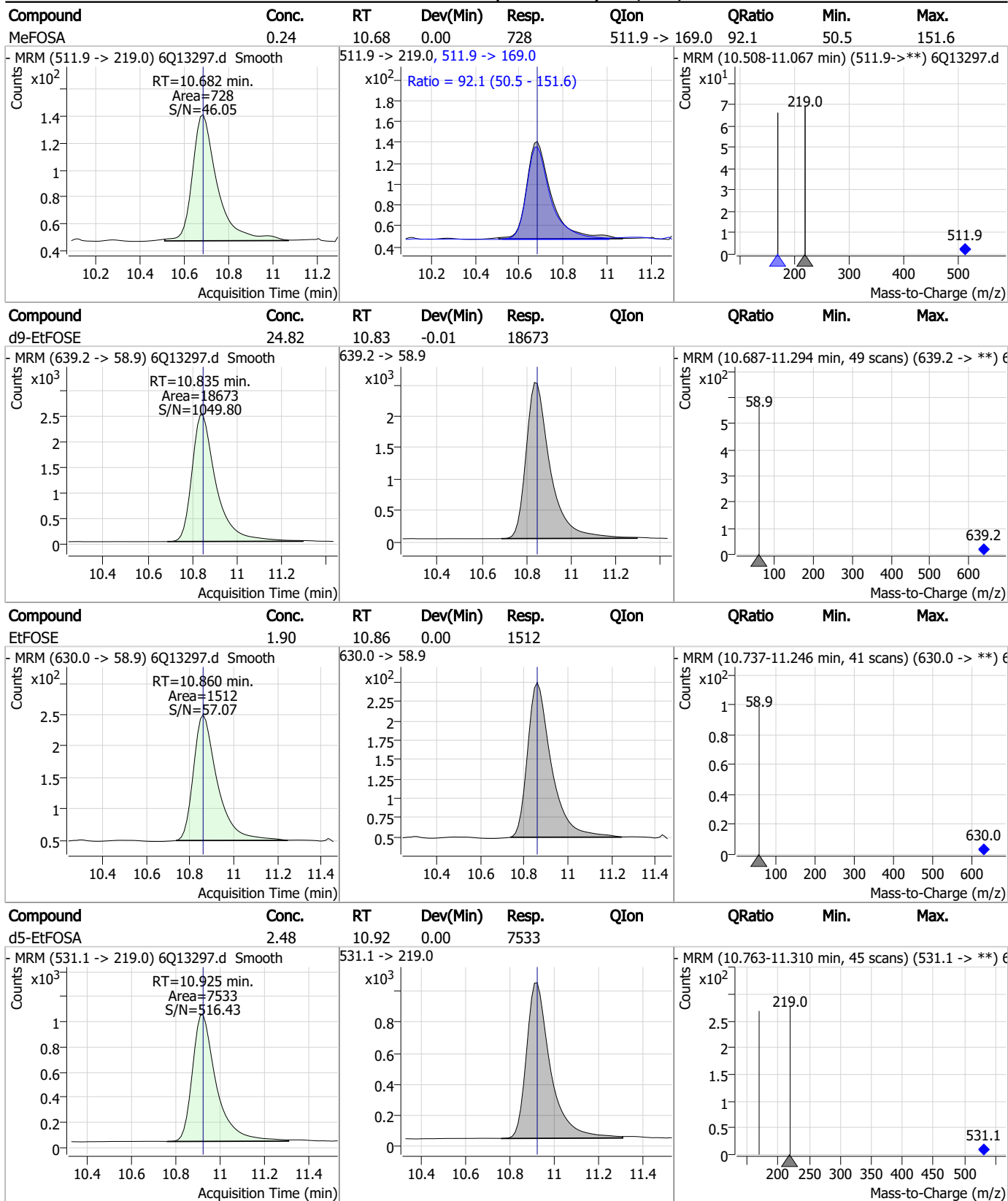
### Perfluorinated Compounds by LC/MS/MS



7.7.2

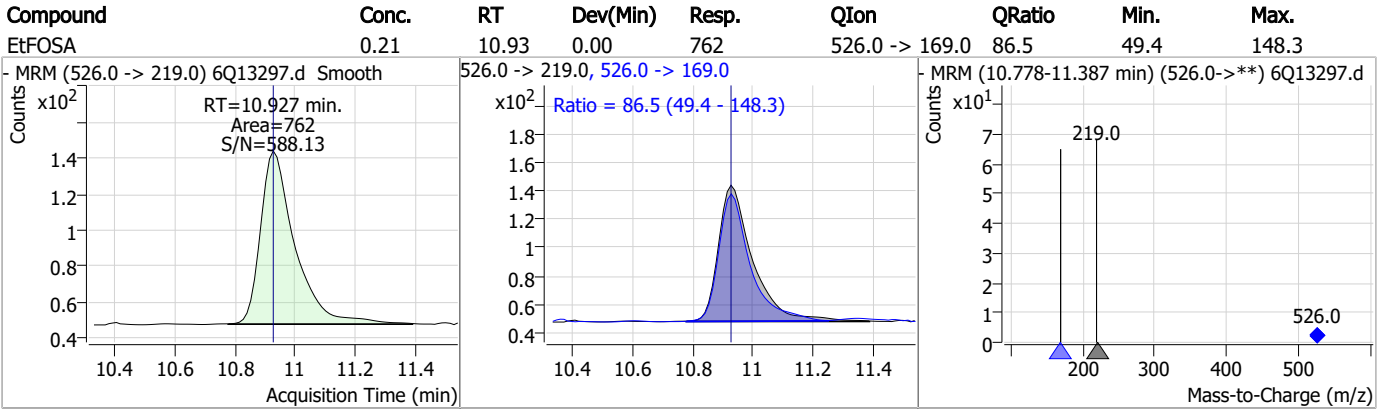
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### Perfluorinated Compounds by LC/MS/MS



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



7.7.2

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# Manual Integration Approval Summary

Sample Number: S6Q203-IC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13297.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 12:43      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFMPA	377-73-1		3.54	Poor instrument integration
Perfluorooctanoic acid	335-67-1		7.15	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak

7.7.2.1

7

## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13298.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 12:57:15 PM  
 Sample Name : ic203-2  
 Vial : P1-A3  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	89256	10.00 µg/L	-0.025
M5-PFPeA	4.374	268.3 -> 223.0	43902	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	39483	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	39864	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	70211	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	25545	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	18022	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	24211	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	26191	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14670	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17623	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	14465	2.50 µg/L	-0.012
M3-PFHxS	7.262	402.1 -> 79.9	9512	2.50 µg/L	0.012
M8-PFOS	8.320	507.1 -> 79.9	8687	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2597	5.00 µg/L	-0.012
M2-6:2FTS	6.908	429.1 -> 80.9	3254	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	3501	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	30982	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	15252	10.00 µg/L	-0.012
M5-EtFOSAA	8.386	589.2 -> 419.0	27040	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	28318	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	18554	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	7648	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6842	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10809	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	39756	5.00 µg/L	-0.025
18O2-PFHxS	7.261	403.0 -> 83.9	7276	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	85944	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	26791	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	27428	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	40044	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2597	5.38 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3254	5.24 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3501	5.77 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.4%		
13C2-PFDoDA	9.041	615.1 -> 570.0	26191	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14670	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C3-PFBS	5.505	302.1 -> 79.9	14465	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C3-PFHxS	7.262	402.1 -> 79.9	9512	2.43 µg/L	0.012

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C4-PFBA	2.975	216.8 -> 171.9	89256	10.06 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.490	367.1 -> 322.0	39864	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C5-PFHxA	5.563	318.0 -> 273.0	39483	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C5-PFPeA	4.374	268.3 -> 223.0	43902	4.80 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C6-PFDA	8.145	519.1 -> 474.1	18022	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C7-PFUnDA	8.612	570.0 -> 525.1	24211	1.30 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C8-FOSA	9.555	506.1 -> 77.8	17623	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-PFOA	7.134	421.1 -> 376.0	70211	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C8-PFOS	8.320	507.1 -> 79.9	8687	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C9-PFNA	7.664	472.1 -> 427.0	25545	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSAA	8.190	573.2 -> 419.0	30982	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	15252	9.54 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
d3-MeFOSA	10.680	515.0 -> 219.0	6842	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
d5-EtFOSAA	8.386	589.2 -> 419.0	27040	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
d7-MeFOSE	10.589	623.2 -> 58.9	28318	25.99 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
d9-EtFOSE	10.847	639.2 -> 58.9	18554	25.46 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d5-EtFOSA	10.925	531.1 -> 219.0	7648	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.228	327.1 -> 307.0	11340	1.95 µg/L	98
		327.1 -> 80.9	2549		
6:2FTS	6.896	427.1 -> 407.0	10032	2.07 µg/L	100
		427.1 -> 80.9	1873		
8:2FTS	7.933	527.1 -> 507.0	4680	1.66 µg/L	94
		527.1 -> 80.8	1333		
EtFOSAA	8.399	584.2 -> 419.1	2196	0.52 µg/L	m 95
		584.2 -> 526.0	1007		
FOSA	9.557	498.1 -> 77.9	3554	0.51 µg/L	99
		498.1 -> 478.0	125		
MeFOSAA	8.191	570.1 -> 419.0	3122	0.55 µg/L	93
		570.1 -> 483.0	518		
PFBA	2.969	212.8 -> 168.9	3907	1.95 µg/L	100
PFBS	5.506	298.7 -> 79.9	2480	0.45 µg/L	89
		298.7 -> 98.8	1350		
PFDA	8.146	512.9 -> 469.0	10465	0.50 µg/L	97
		512.9 -> 219.0	1598		
PFDODA	9.042	613.1 -> 569.0	9738	0.50 µg/L	95
		613.1 -> 319.0	1278		
PFDS	9.216	599.0 -> 79.9	1519	0.56 µg/L	95

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	740			
PFHpA	6.490	363.1 -> 319.0	11544	0.50	µg/L	98
		363.1 -> 169.0	1678			
PFHpS	7.816	449.0 -> 79.9	1698	0.47	µg/L	91
		449.0 -> 98.9	1056			
PFHxA	5.566	313.0 -> 269.0	7586	0.50	µg/L	97
		313.0 -> 118.9	210			
PFHxS	7.263	398.7 -> 79.9	2097	0.51	µg/L	m 98
		398.7 -> 98.9	1138			
PFNA	7.665	463.0 -> 419.0	8491	0.50	µg/L	94
		463.0 -> 219.0	1488			
PFNS	8.786	548.8 -> 79.9	1889	0.51	µg/L	84
		548.8 -> 98.9	1249			
PFOA	7.135	413.0 -> 369.0	15504	0.52	µg/L	99
		413.0 -> 169.0	2134			
PFOS	8.321	498.9 -> 79.9	2018	0.52	µg/L	m 88
		498.9 -> 98.8	1240			
PFPeA	4.375	263.0 -> 219.0	9311	1.01	µg/L	100
PFPeS	6.555	349.1 -> 79.9	2479	0.51	µg/L	100
		349.1 -> 98.9	1372			
PFTeDA	9.769	713.1 -> 669.0	8337	0.52	µg/L	100
		713.1 -> 168.9	548			
PFTrDA	9.425	663.0 -> 619.0	9543	0.53	µg/L	96
		663.0 -> 168.9	637			
PFUnDA	8.612	563.1 -> 519.0	9257	0.49	µg/L	100
		563.1 -> 269.1	1349			
11Cl-PF3OUdS	9.489	630.9 -> 450.9	19328	1.88	µg/L	99
		632.9 -> 452.9	6079			
9Cl-PF3ONS	8.651	530.8 -> 351.0	35138	1.93	µg/L	96
		532.8 -> 353.0	10212			
ADONA	6.741	376.9 -> 250.9	65012	1.92	µg/L	99
		376.9 -> 84.8	14265			
HFPO-DA	5.928	284.9 -> 168.9	2874	1.99	µg/L	99
		284.9 -> 184.9	341			
3:3FTCA	3.829	241.0 -> 177.0	1104	2.41	µg/L	98
		241.0 -> 117.0	149			
5:3FTCA	6.193	341.0 -> 237.1	38893	12.01	µg/L	96
		341.0 -> 217.0	34242			
7:3FTCA	7.592	441.0 -> 316.9	21210	12.74	µg/L	99
		441.0 -> 336.9	40853			
EtFOSA	10.927	526.0 -> 219.0	1794	0.48	µg/L	95
		526.0 -> 169.0	1685			
EtFOSE	10.860	630.0 -> 58.9	4064	5.14	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	1547	0.51	µg/L	99
		511.9 -> 169.0	1581			
MeFOSE	10.602	616.1 -> 58.9	5333	4.84	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	911	0.56	µg/L	92
		699.1 -> 98.8	512			
NFDHA	5.445	295.0 -> 201.0	823	0.92	µg/L	100
		295.0 -> 84.9	407			
PFMBA	4.787	279.0 -> 85.1	2602	0.98	µg/L	100
PFMPA	3.528	229.0 -> 84.9	2265	0.94	µg/L	m 100
PFEESA	6.046	314.8 -> 134.9	18406	0.85	µg/L	99
		314.8 -> 82.9	504			

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

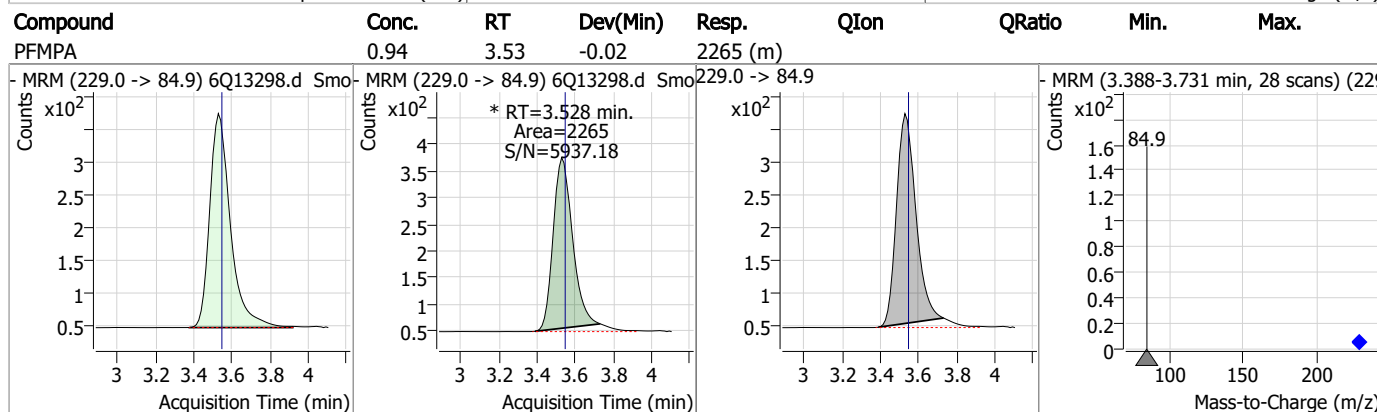
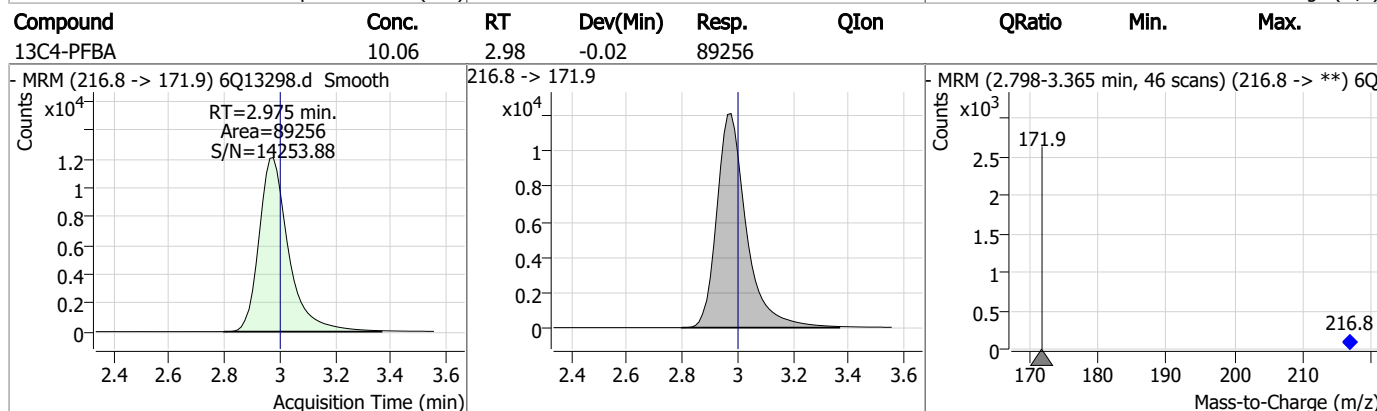
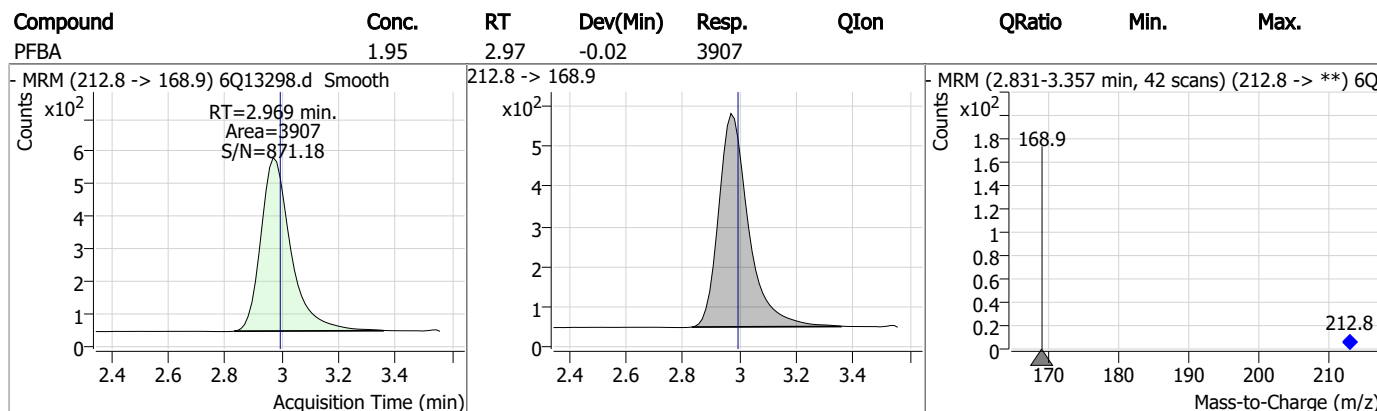
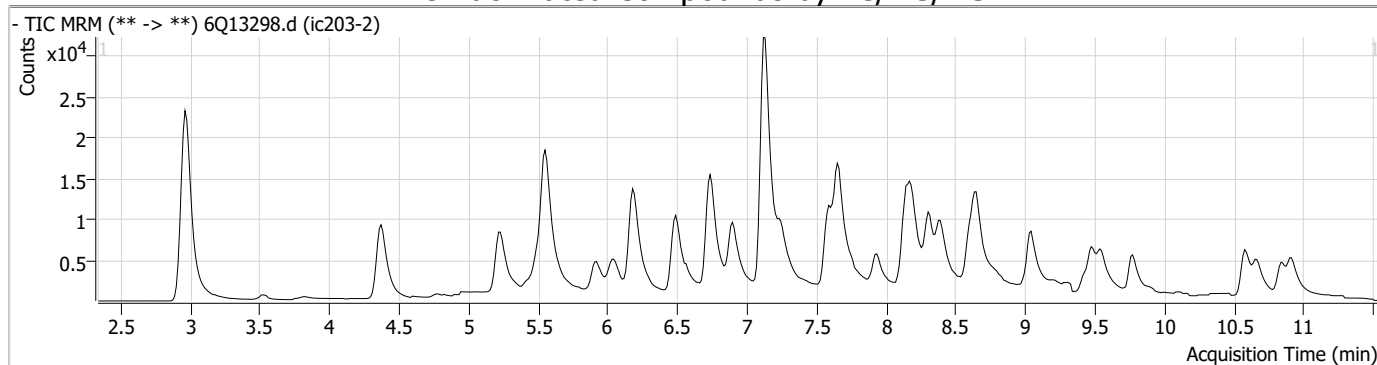
### Perfluorinated Compounds by LC/MS/MS

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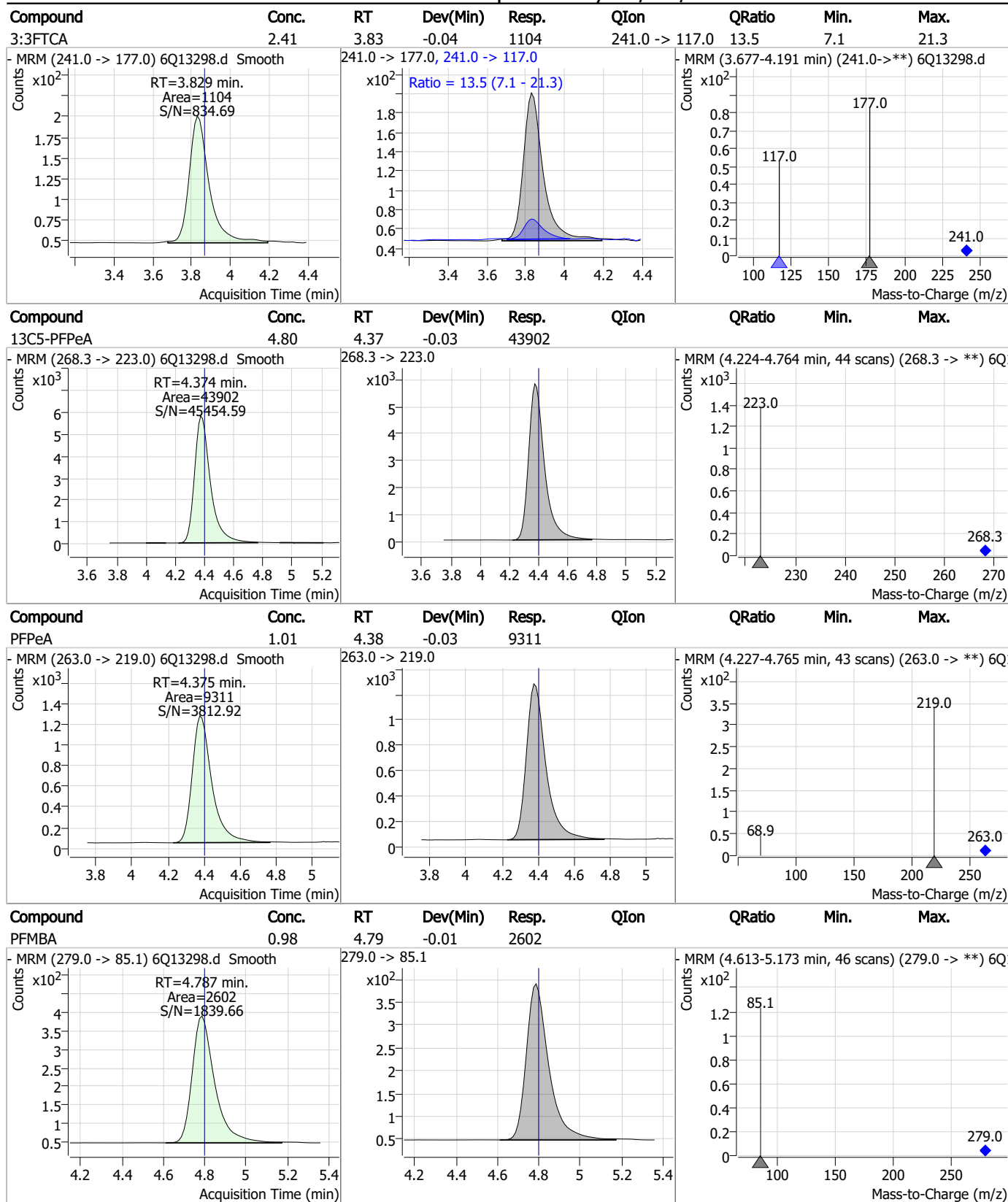
7.7.3

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### Perfluorinated Compounds by LC/MS/MS



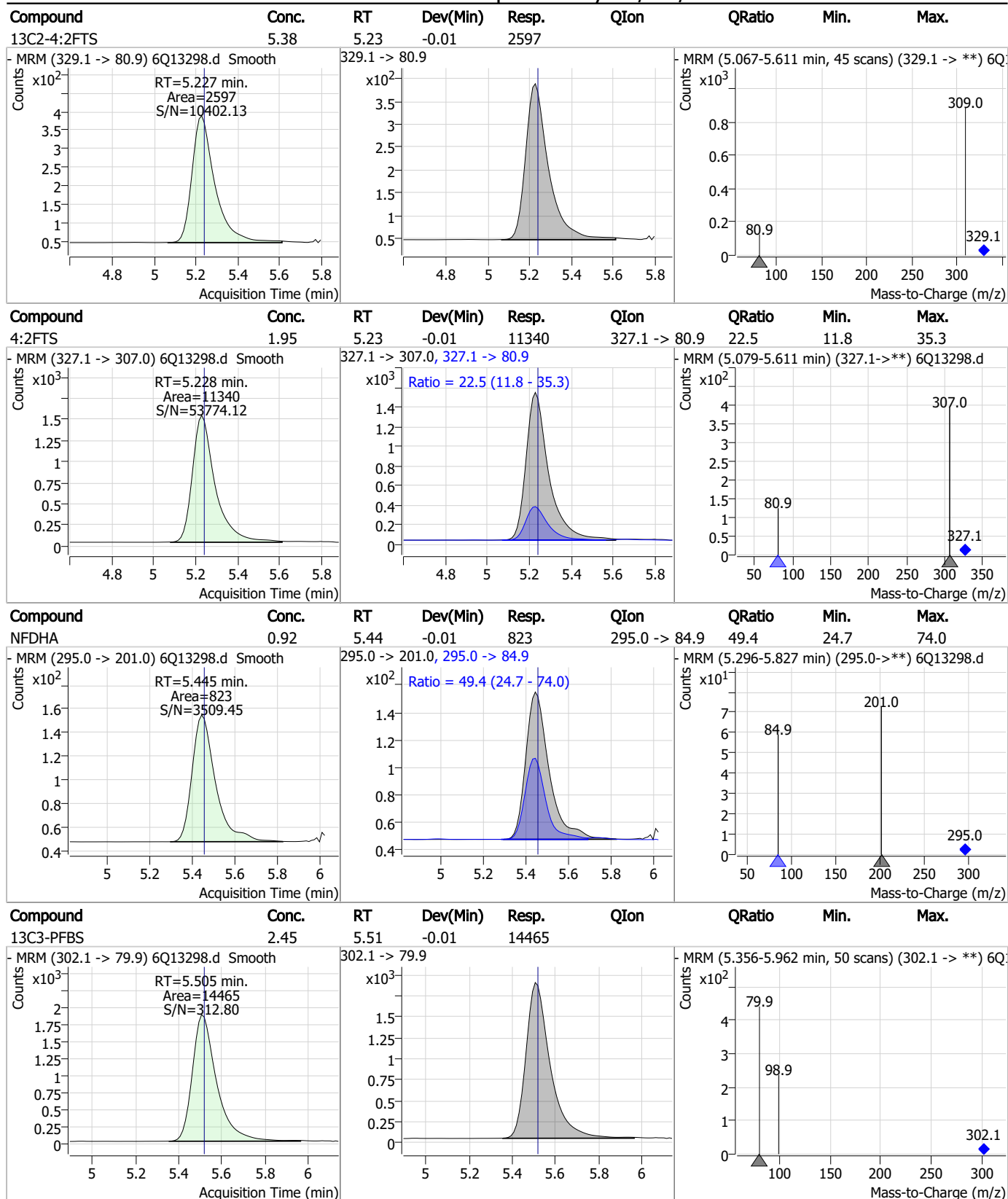
### Perfluorinated Compounds by LC/MS/MS



7.7.3

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### Perfluorinated Compounds by LC/MS/MS

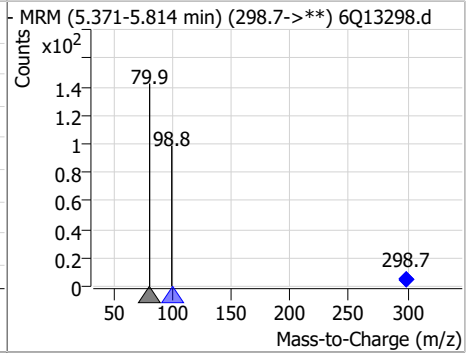
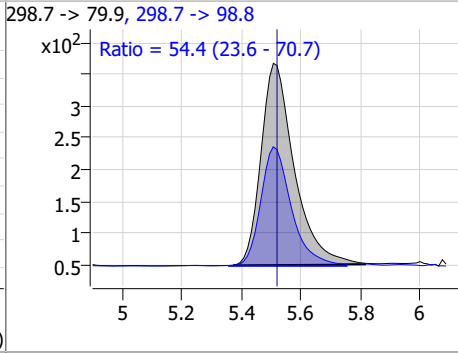
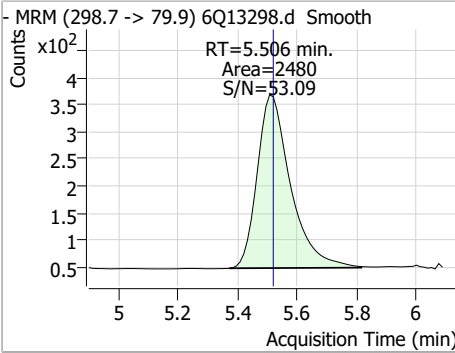


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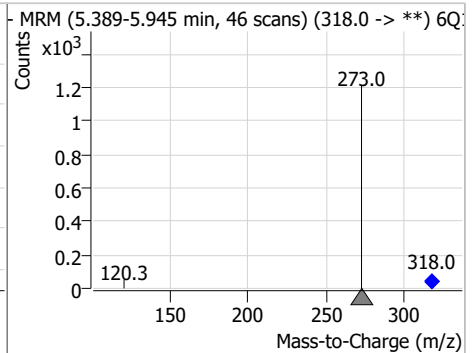
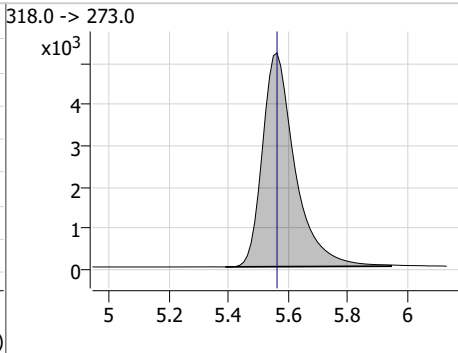
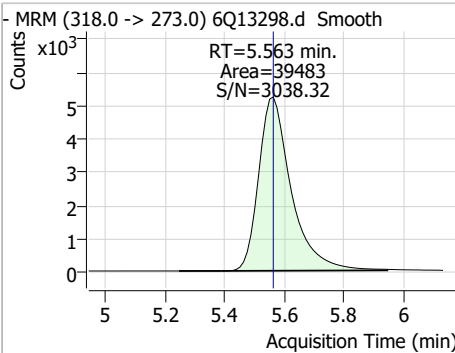


### Perfluorinated Compounds by LC/MS/MS

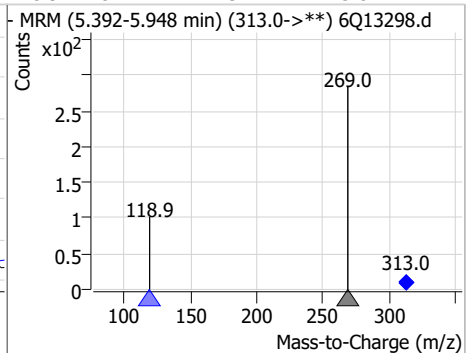
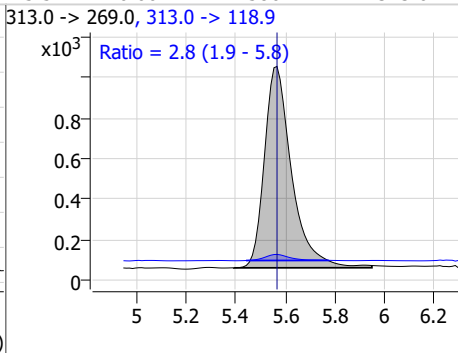
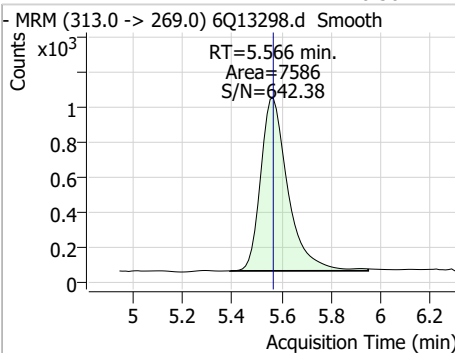
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.45	5.51	-0.01	2480	298.7 -> 98.8	54.4	23.6	70.7



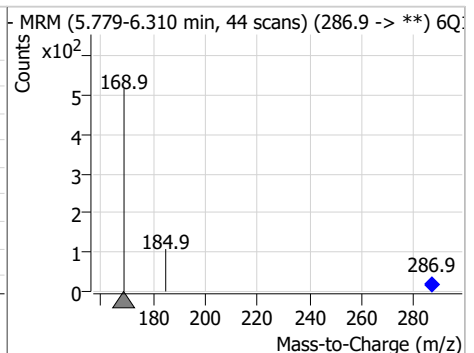
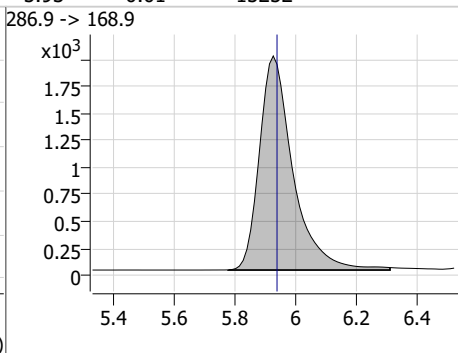
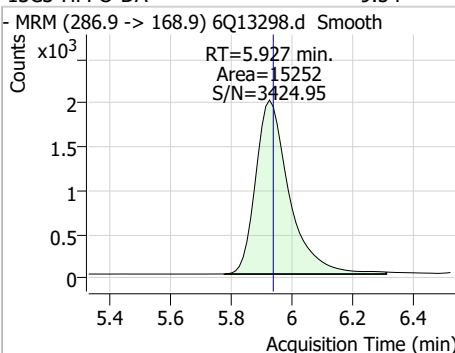
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.44	5.56	0.00	39483				



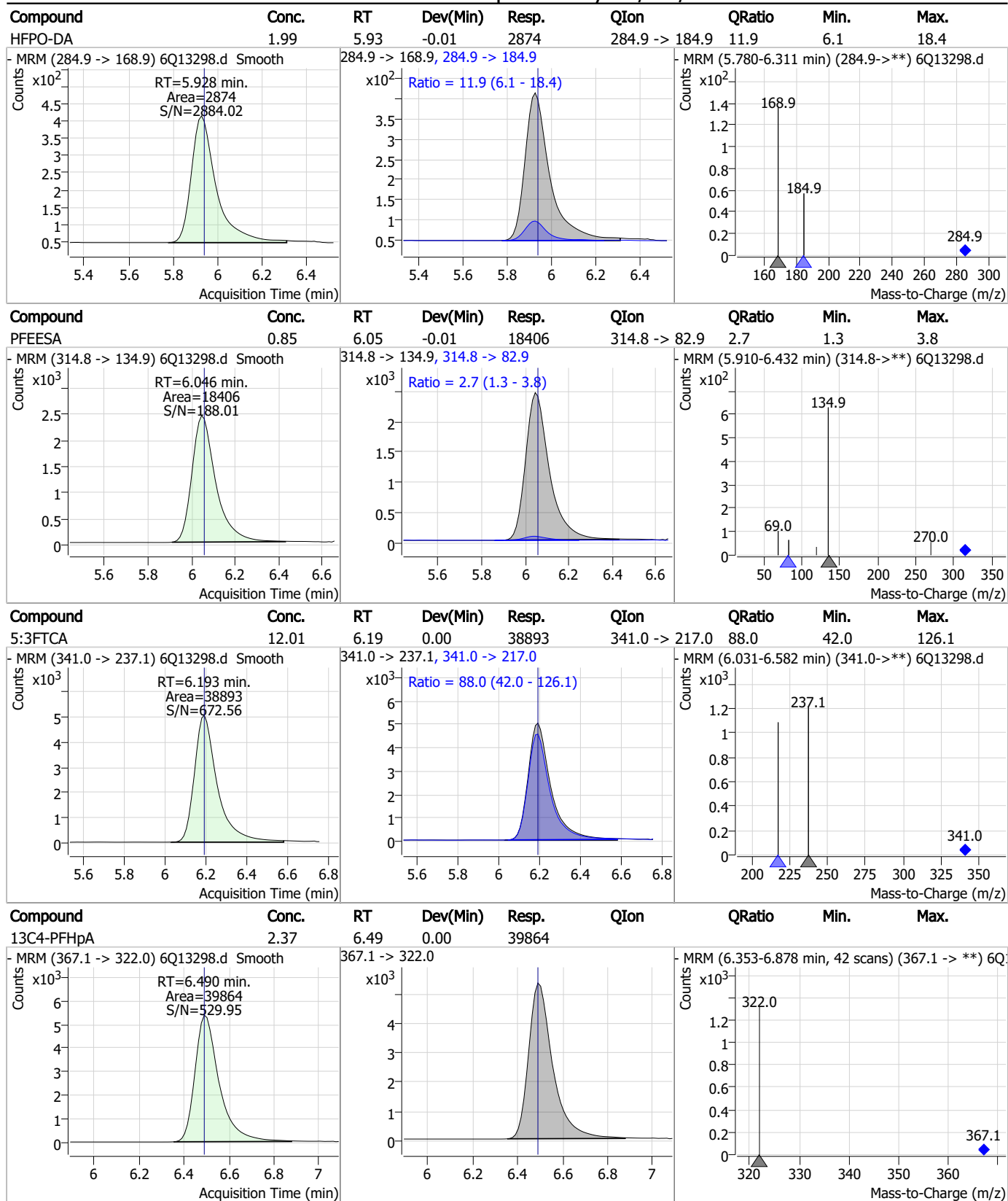
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.50	5.57	0.00	7586	313.0 -> 118.9	2.8	1.9	5.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.54	5.93	-0.01	15252				

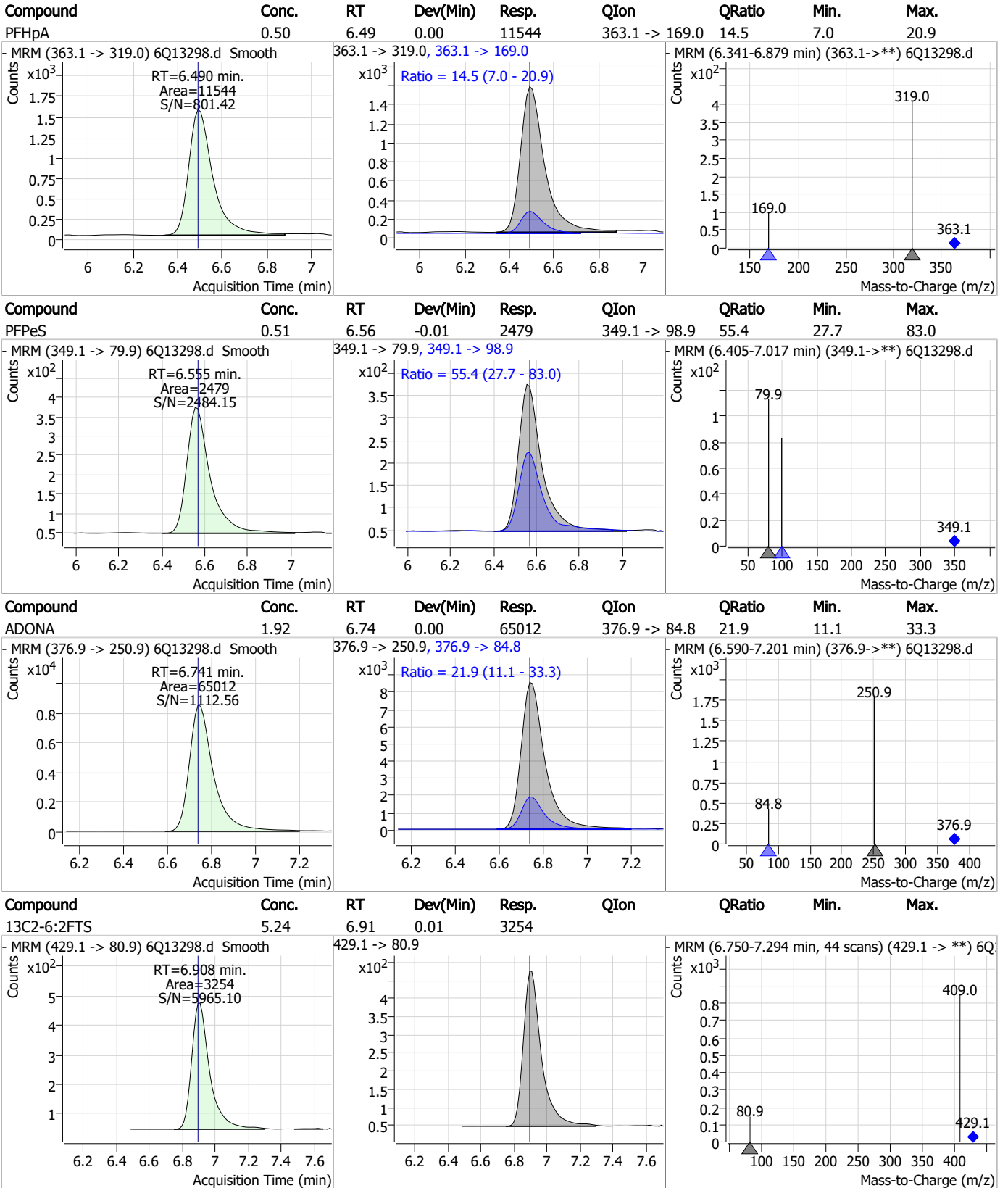


### Perfluorinated Compounds by LC/MS/MS



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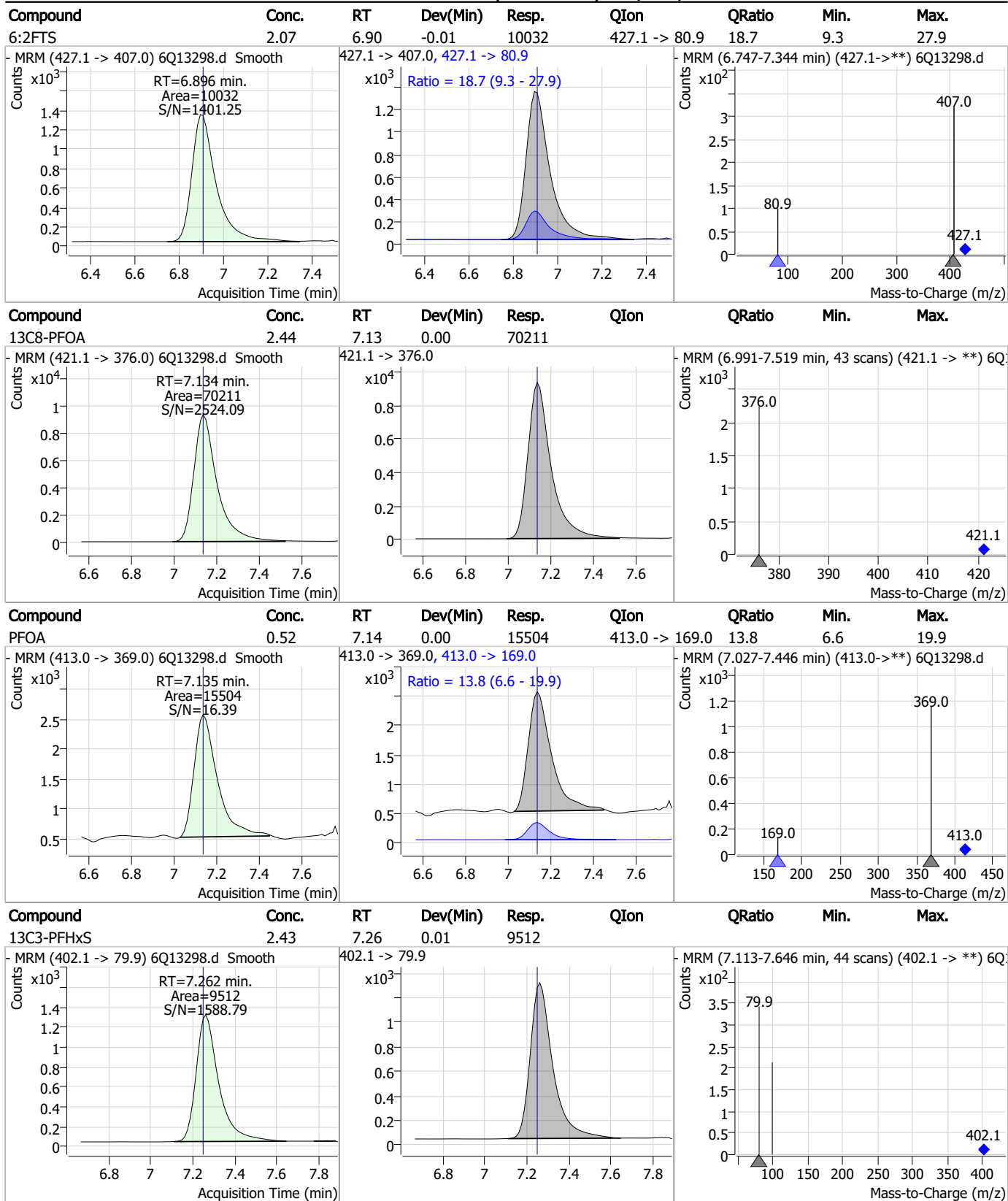
### Perfluorinated Compounds by LC/MS/MS



7.7.3

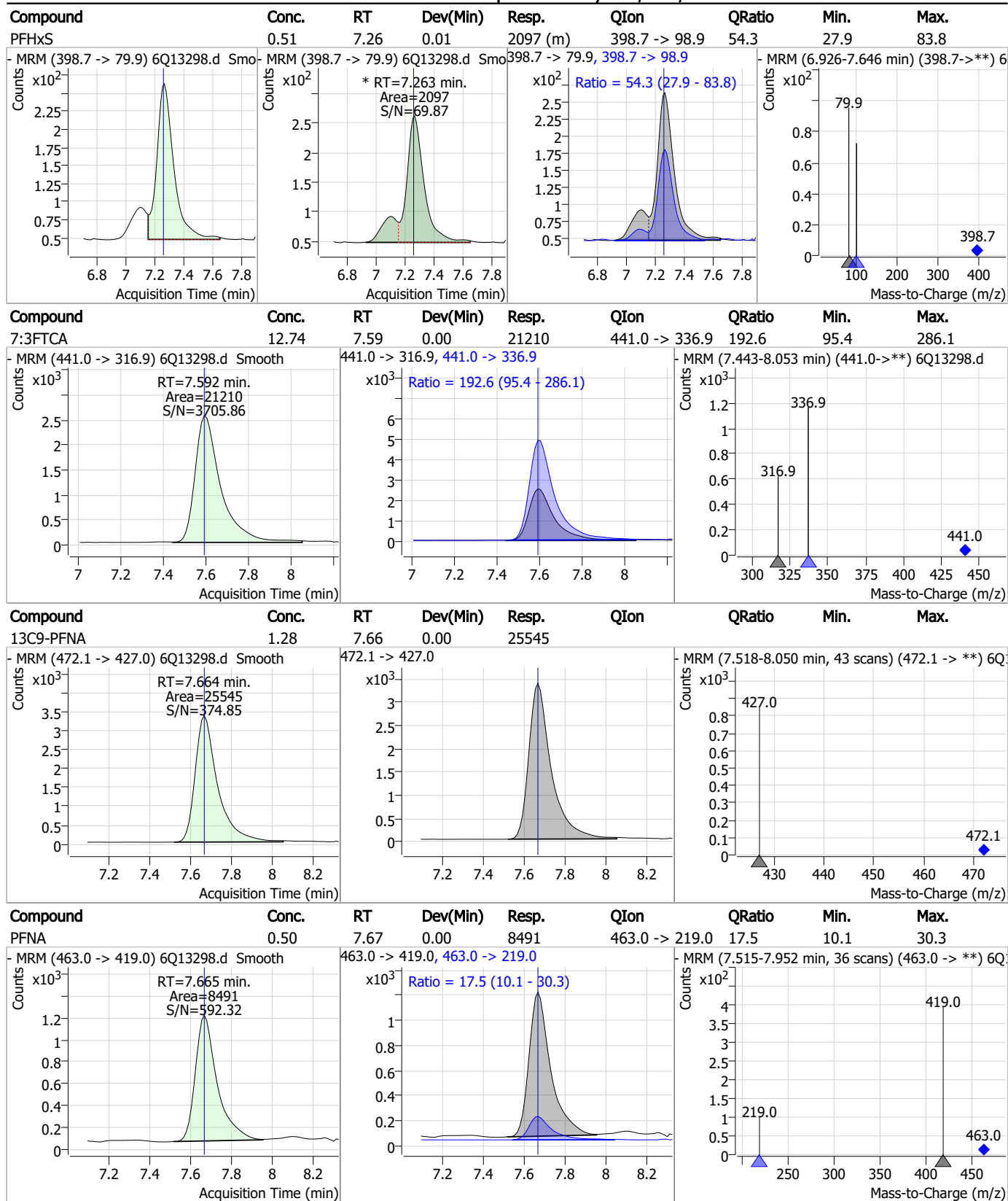
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### Perfluorinated Compounds by LC/MS/MS



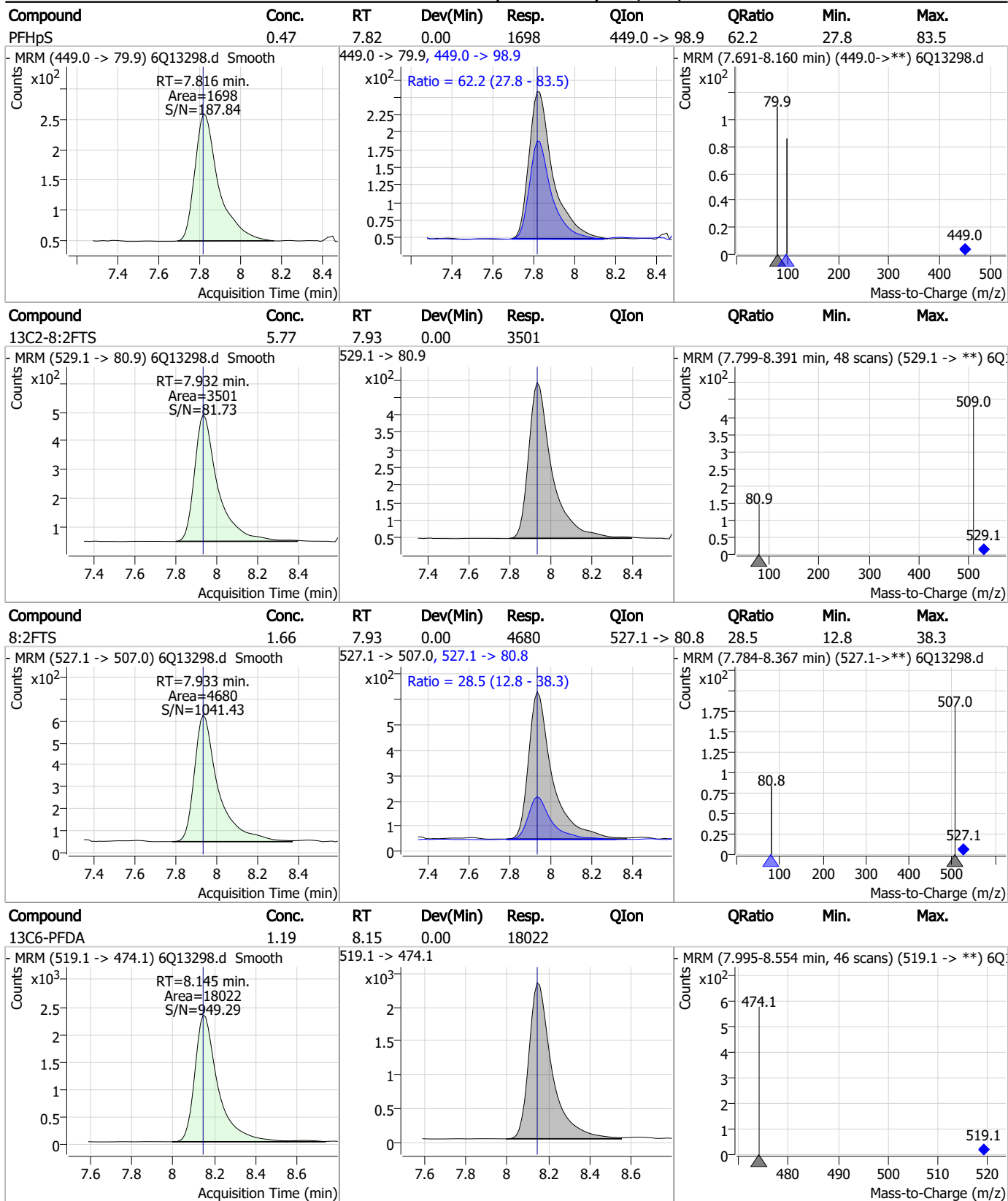
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### Perfluorinated Compounds by LC/MS/MS



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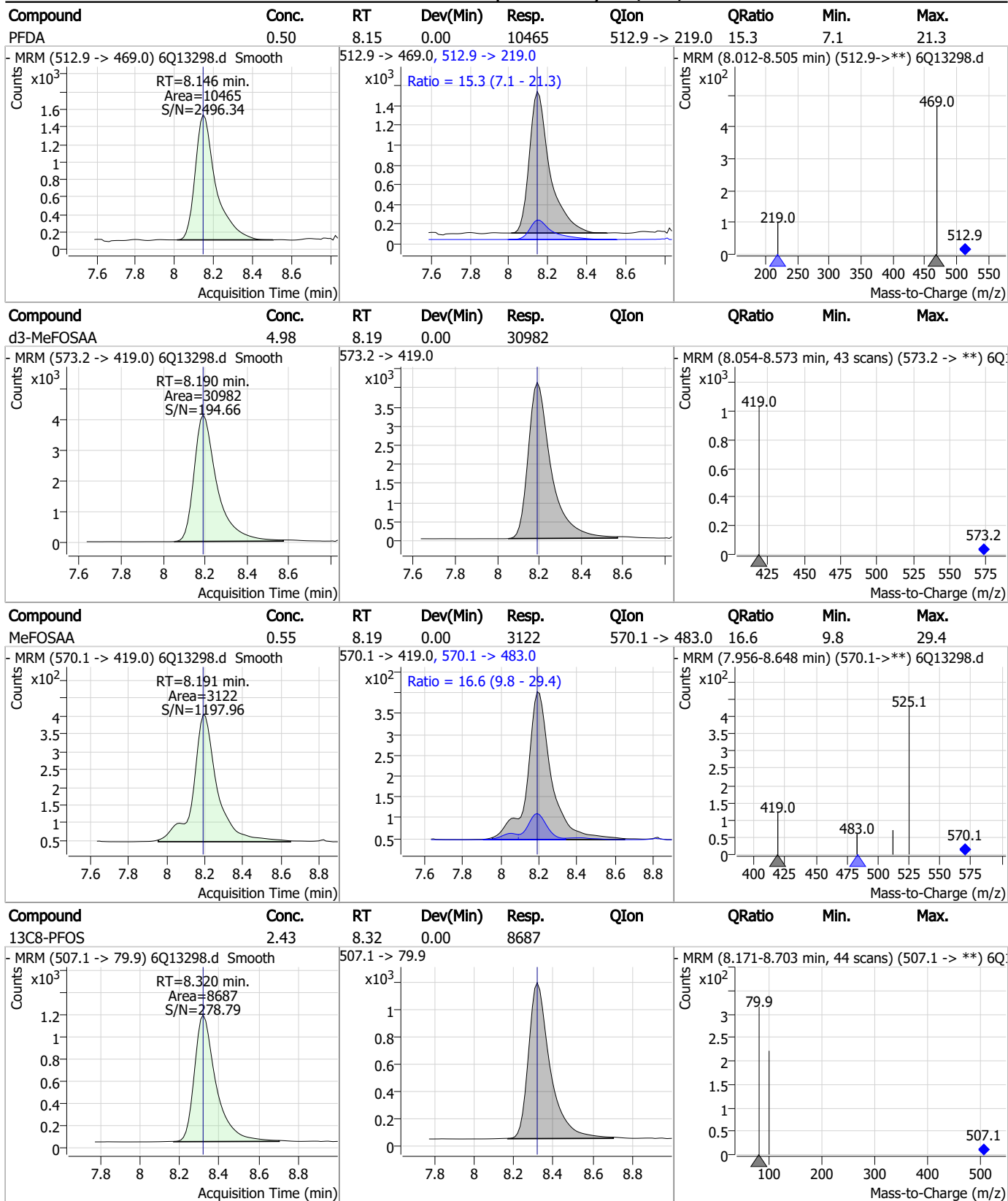
### Perfluorinated Compounds by LC/MS/MS



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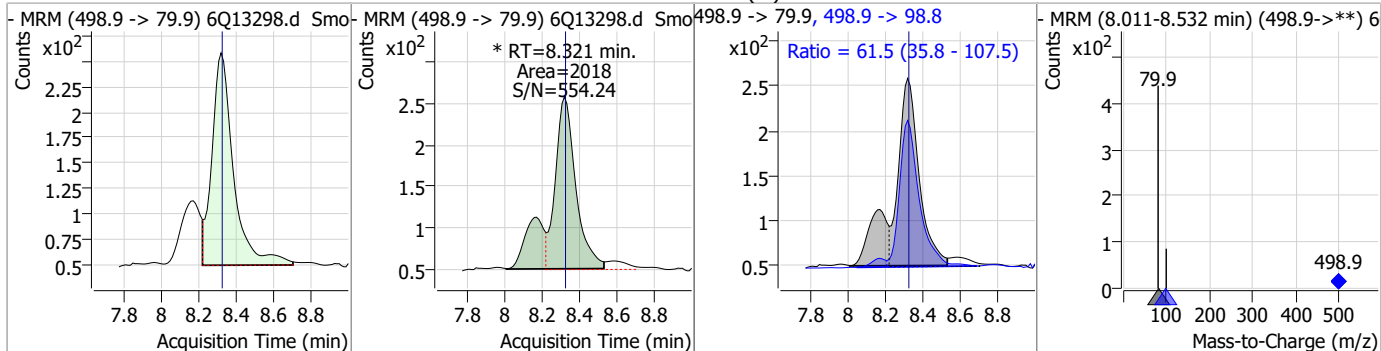
### Perfluorinated Compounds by LC/MS/MS



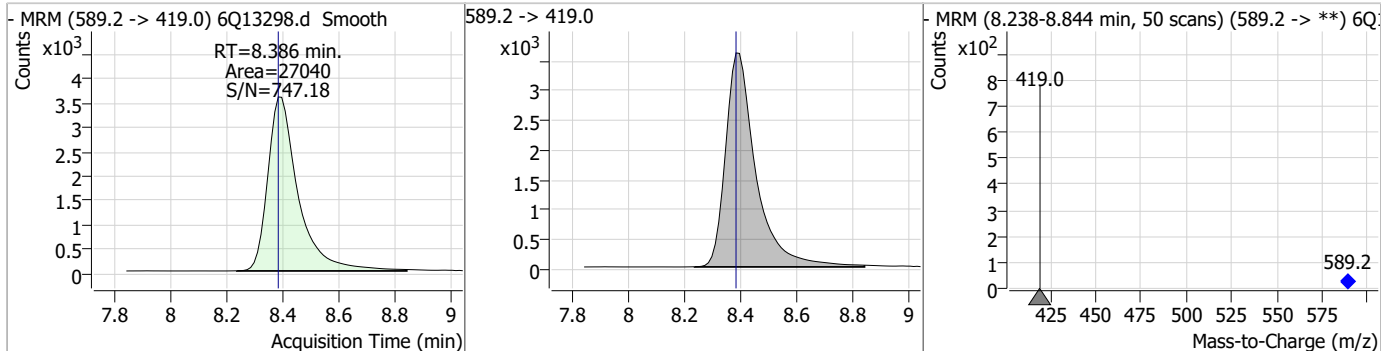
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### Perfluorinated Compounds by LC/MS/MS

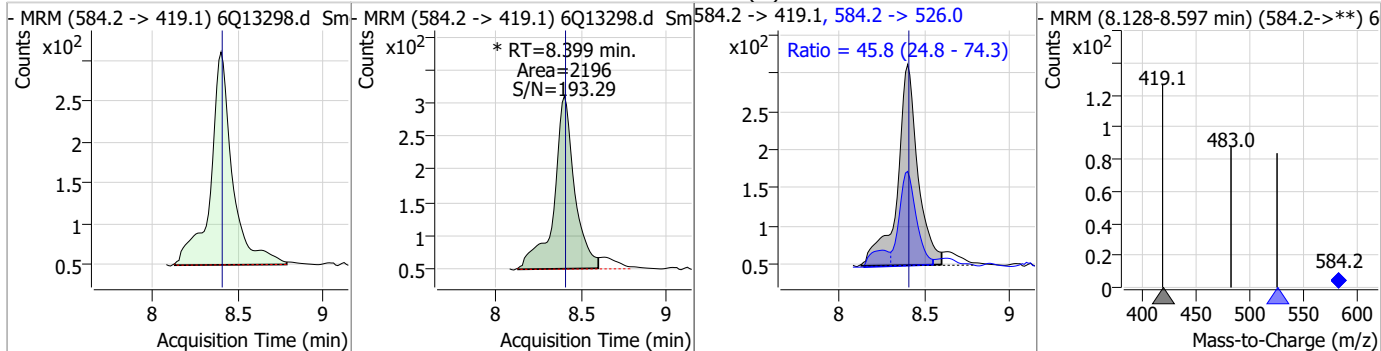
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.52	8.32	0.00	2018 (m)	498.9 -> 98.8	61.5	35.8	107.5



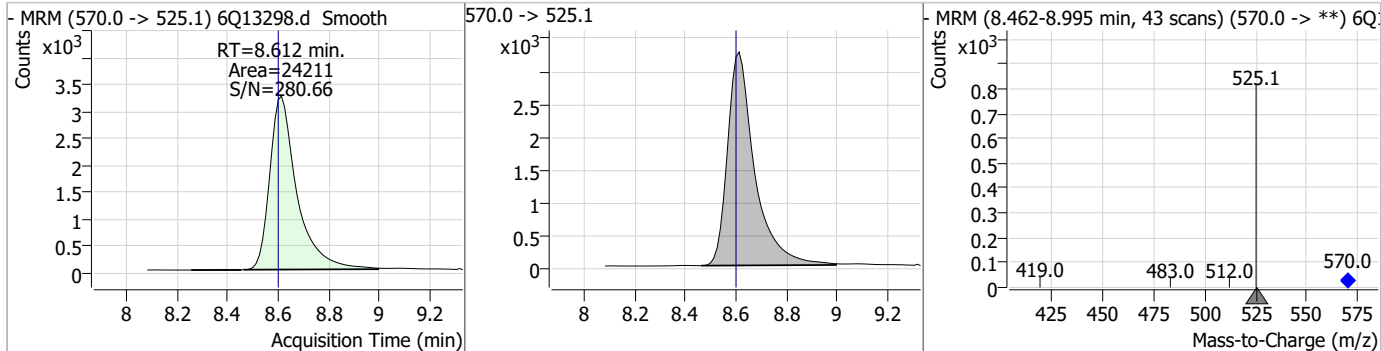
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.16	8.39	0.00	27040				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.52	8.40	0.00	2196 (m)	584.2 -> 526.0	45.8	24.8	74.3



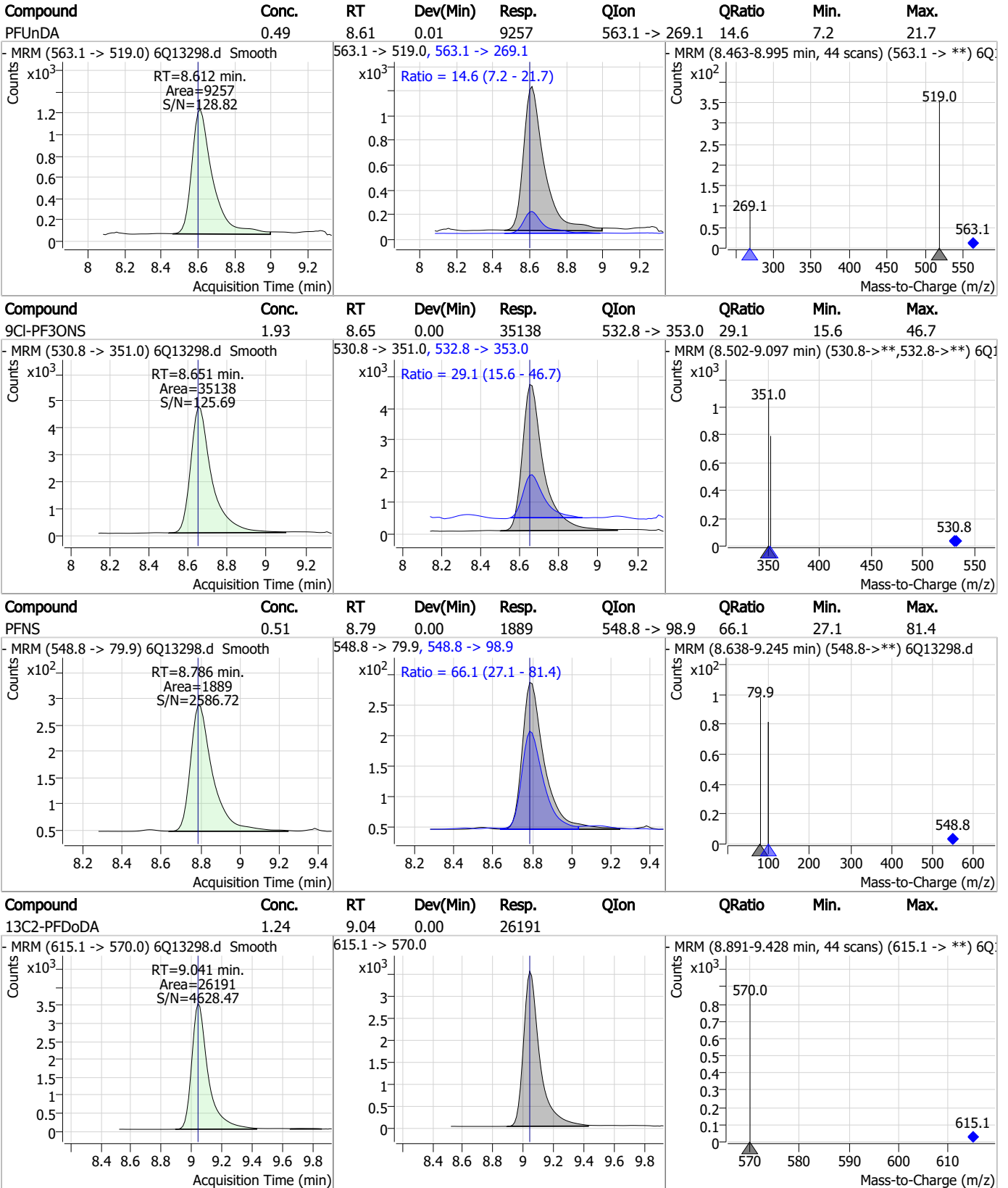
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.30	8.61	0.01	24211				



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

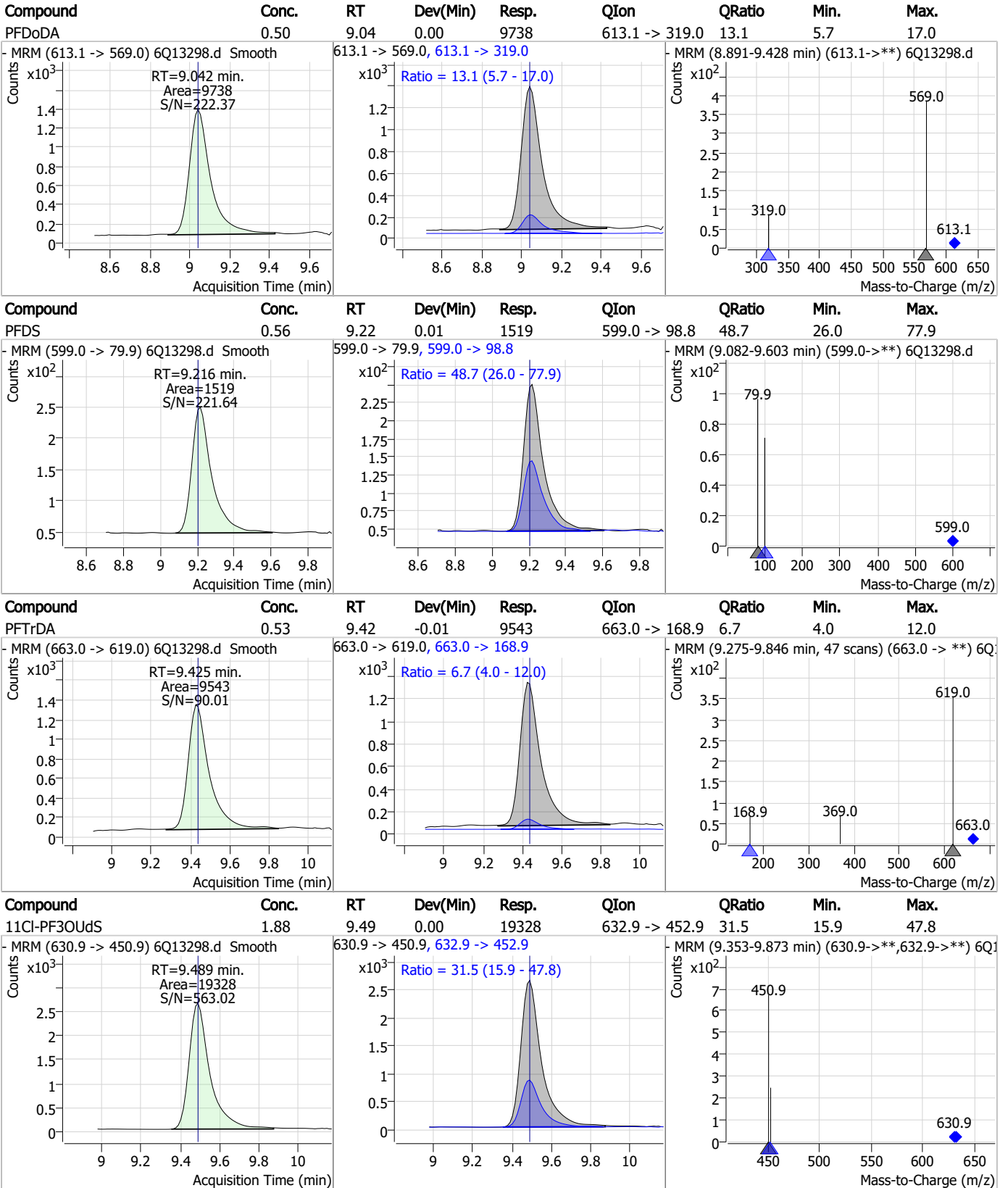


7.7.3

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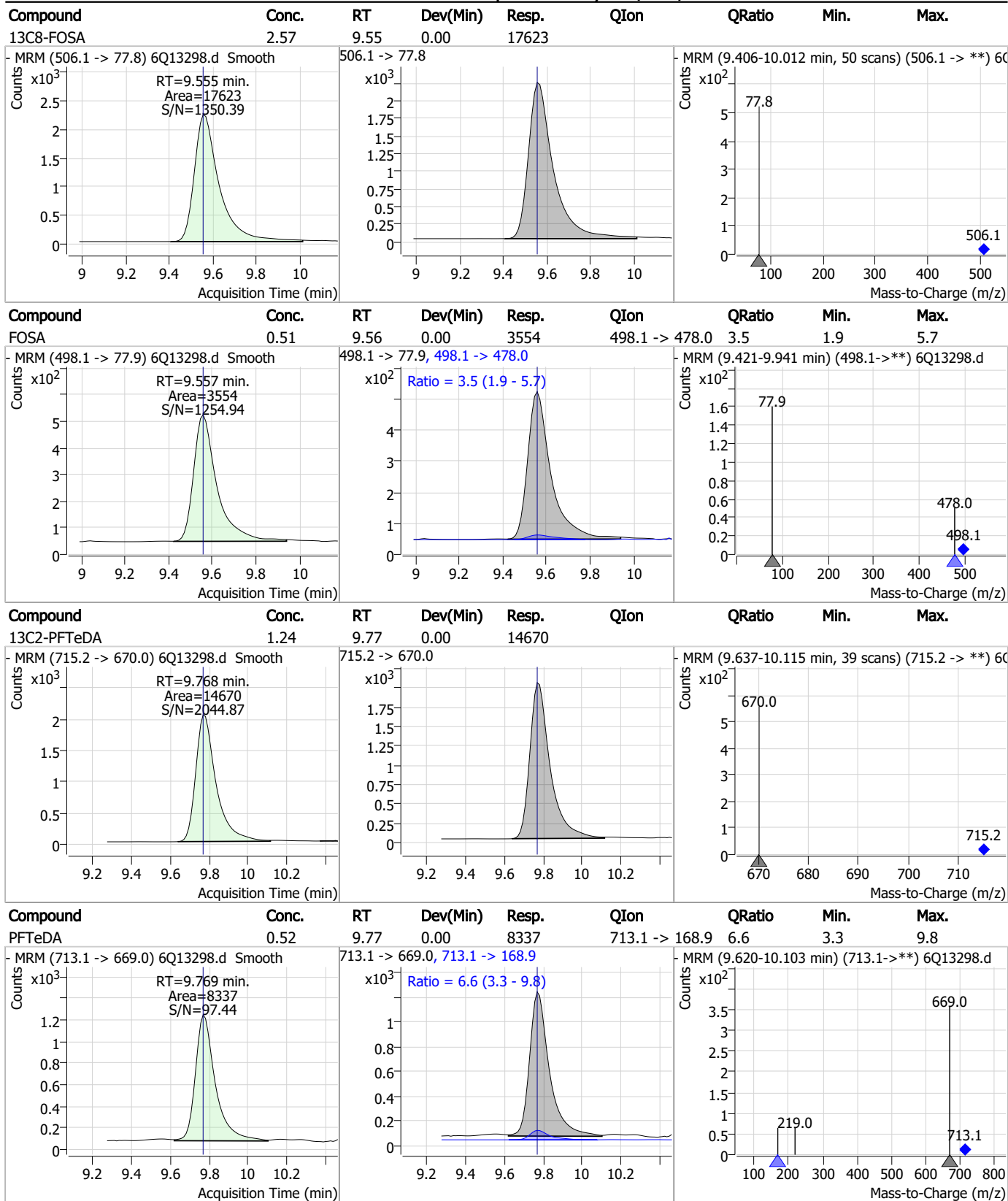


### Perfluorinated Compounds by LC/MS/MS



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

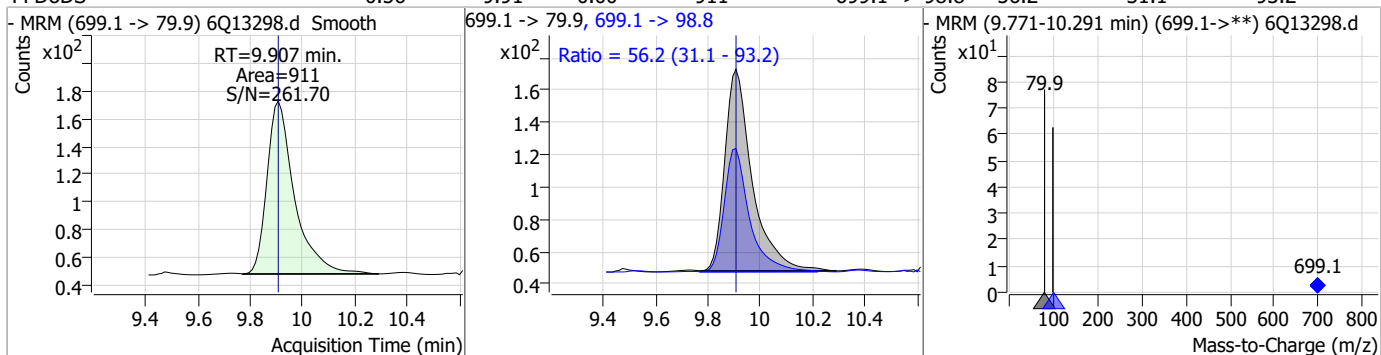


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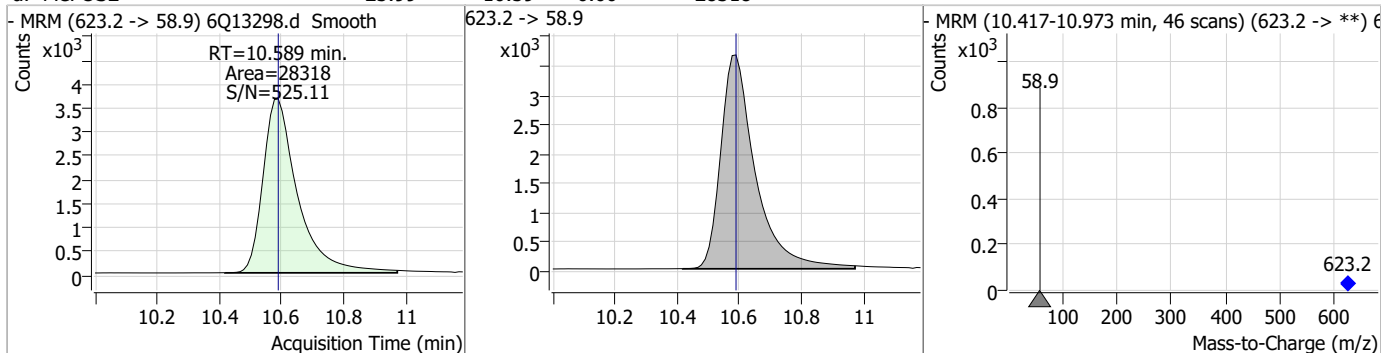
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### Perfluorinated Compounds by LC/MS/MS

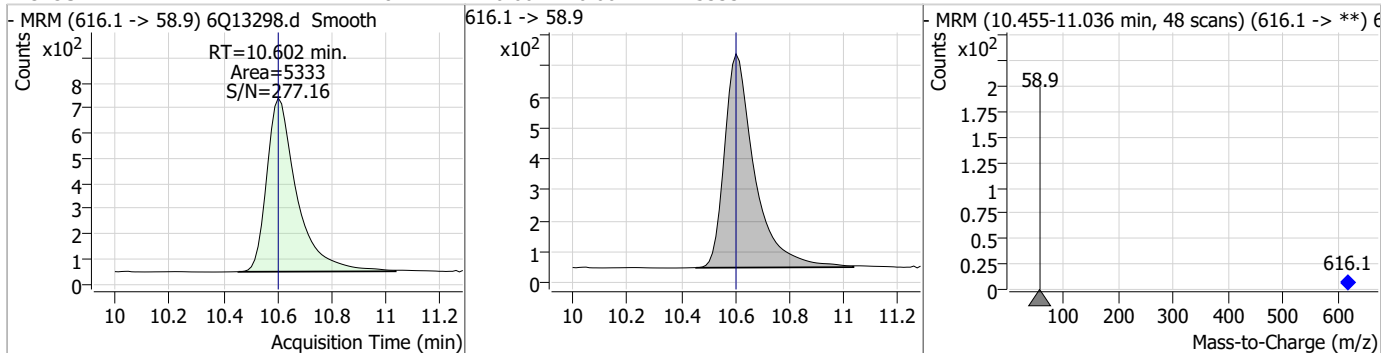
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD <sub>o</sub> DS	0.56	9.91	0.00	911	699.1 -> 98.8	56.2	31.1	93.2



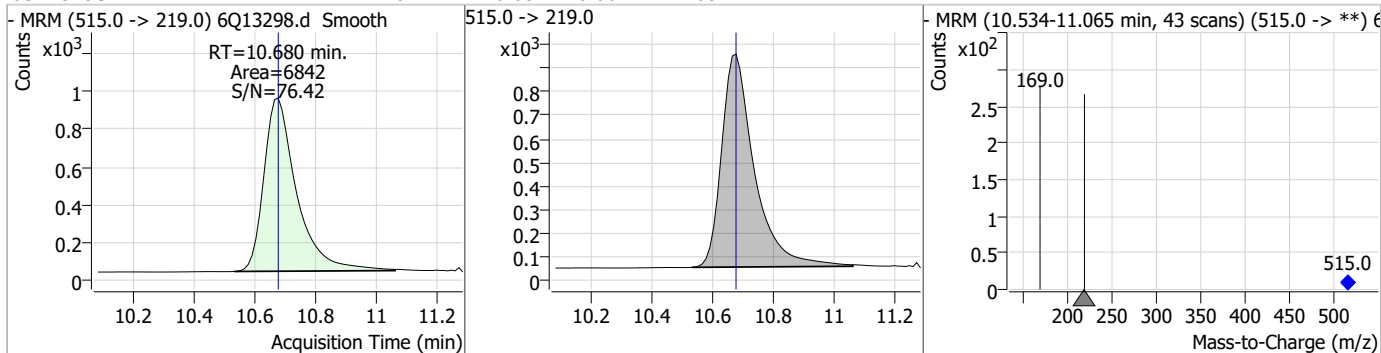
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.99	10.59	0.00	28318				



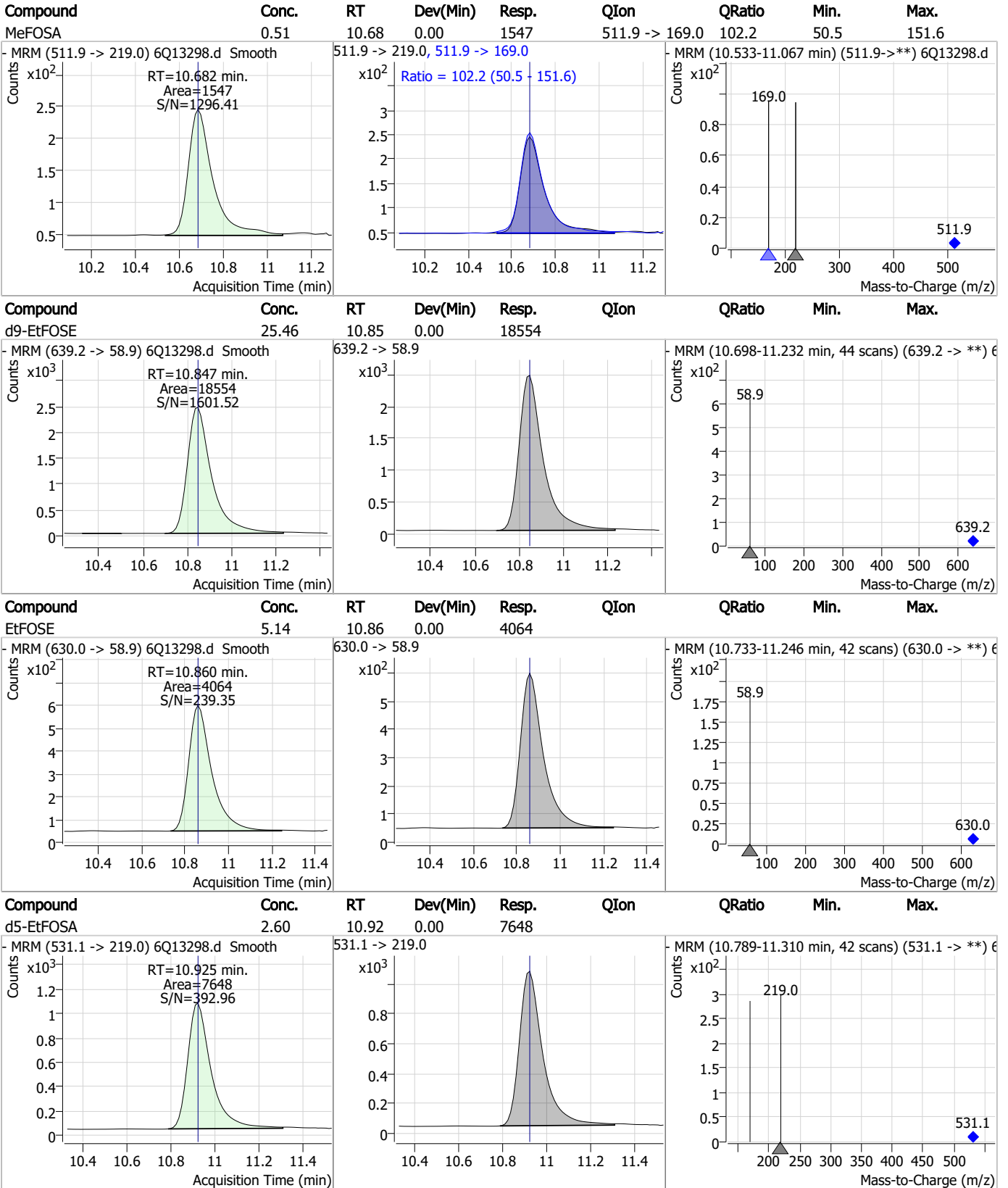
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	4.84	10.60	0.00	5333				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	10.68	0.00	6842				



### Perfluorinated Compounds by LC/MS/MS

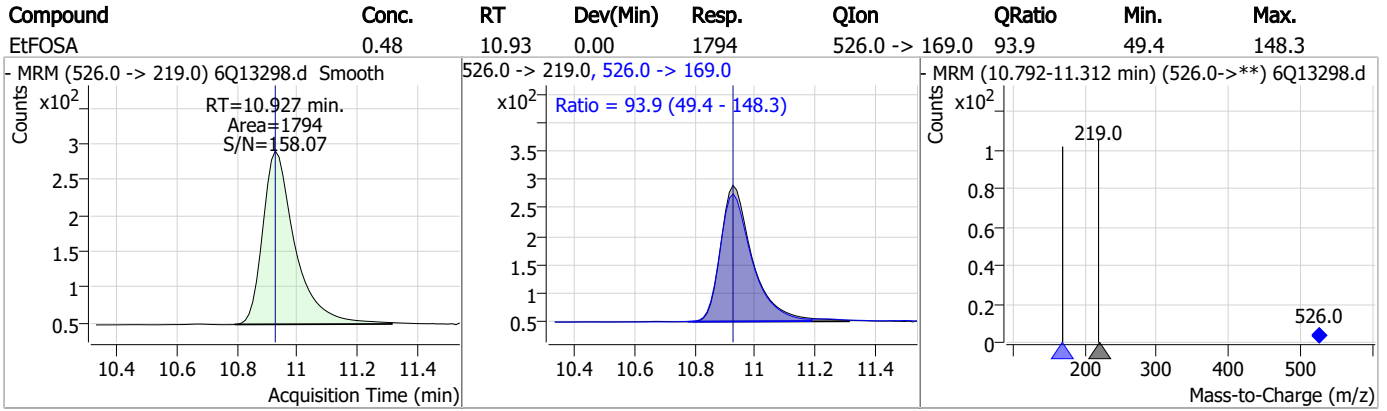


7.7.3

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### Perfluorinated Compounds by LC/MS/MS



7.7.3

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# Manual Integration Approval Summary

Sample Number: S6Q203-IC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13298.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 12:57      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFMPA	377-73-1		3.53	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.3.1

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## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13299.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 1:11:15 PM  
 Sample Name : ic203-3  
 Vial : P1-A4  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	96651	10.00 µg/L	-0.025
M5-PFPeA	4.374	268.3 -> 223.0	47308	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	42527	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	45451	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	75794	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	26446	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	19834	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	24403	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	26956	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	15546	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	19038	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	16441	2.50 µg/L	-0.012
M3-PFHxS	7.262	402.1 -> 79.9	10867	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	10025	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2893	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	3627	5.00 µg/L	0.012
M2-8:2FTS	7.944	529.1 -> 80.9	3391	5.00 µg/L	0.012
M3-MeFOSAA	8.190	573.2 -> 419.0	35642	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	17200	10.00 µg/L	-0.012
M5-EtFOSAA	8.398	589.2 -> 419.0	28594	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	30372	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	20583	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	8371	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	7380	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	12225	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	43080	5.00 µg/L	-0.025
18O2-PFHxS	7.261	403.0 -> 83.9	8035	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	92343	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	28614	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	30325	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	40876	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2893	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3627	5.28 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C2-8:2FTS	7.944	529.1 -> 80.9	3391	5.06 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-PFDoDA	9.041	615.1 -> 570.0	26956	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-PFTeDA	9.768	715.2 -> 670.0	15546	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C3-PFBS	5.505	302.1 -> 79.9	16441	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C3-PFHxS	7.262	402.1 -> 79.9	10867	2.51 µg/L	0.012



## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C4-PFBA	2.975	216.8 -> 171.9	96651	10.05 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C4-PFHpA	6.502	367.1 -> 322.0	45451	2.65 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C5-PFHxA	5.563	318.0 -> 273.0	42527	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C5-PFPeA	4.374	268.3 -> 223.0	47308	5.07 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C6-PFDA	8.145	519.1 -> 474.1	19834	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C7-PFUnDA	8.612	570.0 -> 525.1	24403	1.22 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C8-FOSA	9.555	506.1 -> 77.8	19038	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C8-PFOA	7.134	421.1 -> 376.0	75794	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C8-PFOS	8.319	507.1 -> 79.9	10025	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C9-PFNA	7.664	472.1 -> 427.0	26446	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.7%		
d3-MeFOSAA	8.190	573.2 -> 419.0	35642	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C3-HFPO-DA	5.927	286.9 -> 168.9	17200	10.54 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 105.4%		
d3-MeFOSA	10.680	515.0 -> 219.0	7380	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.8%		
d5-EtFOSAA	8.398	589.2 -> 419.0	28594	4.83 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.5%		
d7-MeFOSE	10.589	623.2 -> 58.9	30372	24.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
d9-EtFOSE	10.847	639.2 -> 58.9	20583	24.98 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
d5-EtFOSA	10.925	531.1 -> 219.0	8371	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.7%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.228	327.1 -> 307.0	28153	4.35 µg/L	98
		327.1 -> 80.9	6327		
6:2FTS	6.908	427.1 -> 407.0	25020	4.63 µg/L	99
		427.1 -> 80.9	4762		
8:2FTS	7.933	527.1 -> 507.0	13606	4.98 µg/L	96
		527.1 -> 80.8	3215		
EtFOSAA	8.399	584.2 -> 419.1	5678	1.27 µg/L	m 95
		584.2 -> 526.0	3001		
FOSA	9.557	498.1 -> 77.9	9129	1.20 µg/L	100
		498.1 -> 478.0	360		
MeFOSAA	8.203	570.1 -> 419.0	7172	1.10 µg/L	m 98
		570.1 -> 483.0	1475		
PFBA	2.969	212.8 -> 168.9	9991	4.59 µg/L	100
PFBS	5.518	298.7 -> 79.9	6317	1.00 µg/L	97
		298.7 -> 98.8	3114		
PFDA	8.146	512.9 -> 469.0	27927	1.21 µg/L	97
		512.9 -> 219.0	3610		
PFDODA	9.042	613.1 -> 569.0	25142	1.24 µg/L	96
		613.1 -> 319.0	3179		
PFDS	9.216	599.0 -> 79.9	3560	1.14 µg/L	93

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1675			
PFHpA	6.503	363.1 -> 319.0	30208	1.14	µg/L	100
		363.1 -> 169.0	4142			
PFHpS	7.828	449.0 -> 79.9	4416	1.07	µg/L	97
		449.0 -> 98.9	2539			
PFHxA	5.566	313.0 -> 269.0	18779	1.14	µg/L	100
		313.0 -> 118.9	757			
PFHxS	7.263	398.7 -> 79.9	4898	1.04	µg/L	m 99
		398.7 -> 98.9	2792			
PFNA	7.665	463.0 -> 419.0	20973	1.20	µg/L	99
		463.0 -> 219.0	4180			
PFNS	8.786	548.8 -> 79.9	4901	1.15	µg/L	97
		548.8 -> 98.9	2772			
PFOA	7.135	413.0 -> 369.0	37355	1.15	µg/L	100
		413.0 -> 169.0	4966			
PFOS	8.321	498.9 -> 79.9	4818	1.07	µg/L	m 94
		498.9 -> 98.8	3215			
PFPeA	4.375	263.0 -> 219.0	23983	2.40	µg/L	100
PFPeS	6.569	349.1 -> 79.9	5961	1.07	µg/L	98
		349.1 -> 98.9	3383			
PFTeDA	9.769	713.1 -> 669.0	20631	1.21	µg/L	99
		713.1 -> 168.9	1456			
PFTrDA	9.437	663.0 -> 619.0	23874	1.29	µg/L	97
		663.0 -> 168.9	1699			
PFUnDA	8.612	563.1 -> 519.0	23862	1.25	µg/L	100
		563.1 -> 269.1	3413			
11Cl-PF3OUdS	9.489	630.9 -> 450.9	49662	4.29	µg/L	100
		632.9 -> 452.9	15948			
9Cl-PF3ONS	8.663	530.8 -> 351.0	89469	4.36	µg/L	97
		532.8 -> 353.0	26489			
ADONA	6.753	376.9 -> 250.9	162303	4.26	µg/L	100
		376.9 -> 84.8	35733			
HFPO-DA	5.940	284.9 -> 168.9	7467	4.58	µg/L	100
		284.9 -> 184.9	930			
3:3FTCA	3.829	241.0 -> 177.0	2893	5.86	µg/L	98
		241.0 -> 117.0	383			
5:3FTCA	6.193	341.0 -> 237.1	102448	29.38	µg/L	98
		341.0 -> 217.0	84454			
7:3FTCA	7.605	441.0 -> 316.9	53662	29.92	µg/L	94
		441.0 -> 336.9	106676			
EtFOSA	10.927	526.0 -> 219.0	4781	1.17	µg/L	89
		526.0 -> 169.0	4225			
EtFOSE	10.860	630.0 -> 58.9	9590	10.92	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	3970	1.21	µg/L	100
		511.9 -> 169.0	4032			
MeFOSE	10.602	616.1 -> 58.9	13621	11.54	µg/L	100
PFDoS	9.907	699.1 -> 79.9	2069	1.10	µg/L	100
		699.1 -> 98.8	1284			
NFDHA	5.445	295.0 -> 201.0	2453	2.55	µg/L	97
		295.0 -> 84.9	1154			
PFMBA	4.787	279.0 -> 85.1	6756	2.36	µg/L	100
PFMPA	3.528	229.0 -> 84.9	6264	2.40	µg/L	m 100
PFEESA	6.046	314.8 -> 134.9	49636	2.14	µg/L	100
		314.8 -> 82.9	1288			

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

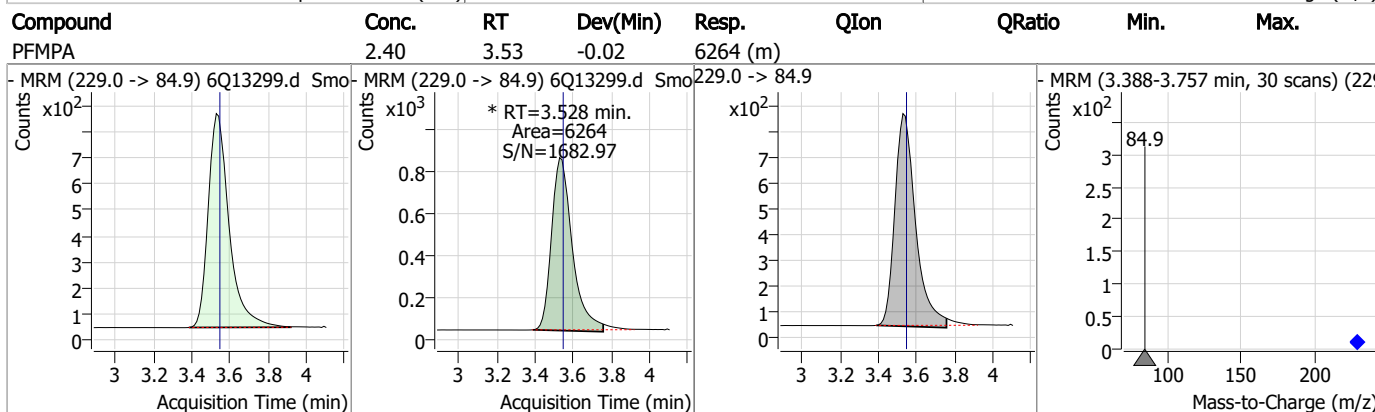
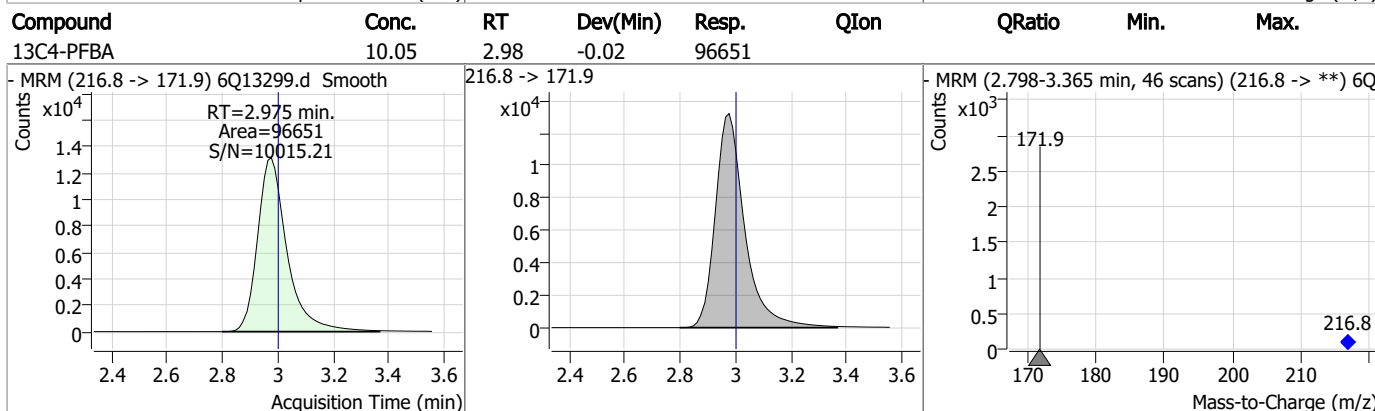
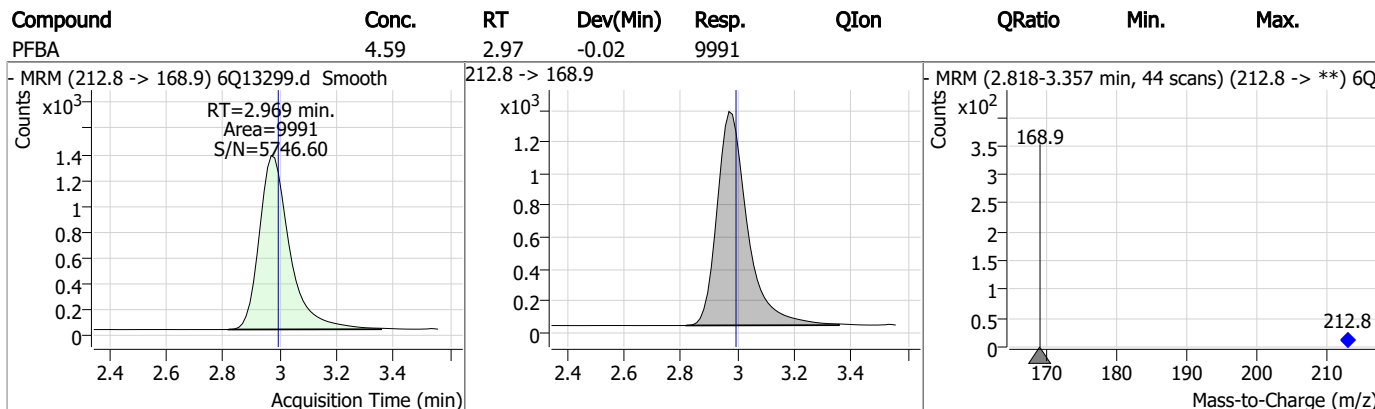
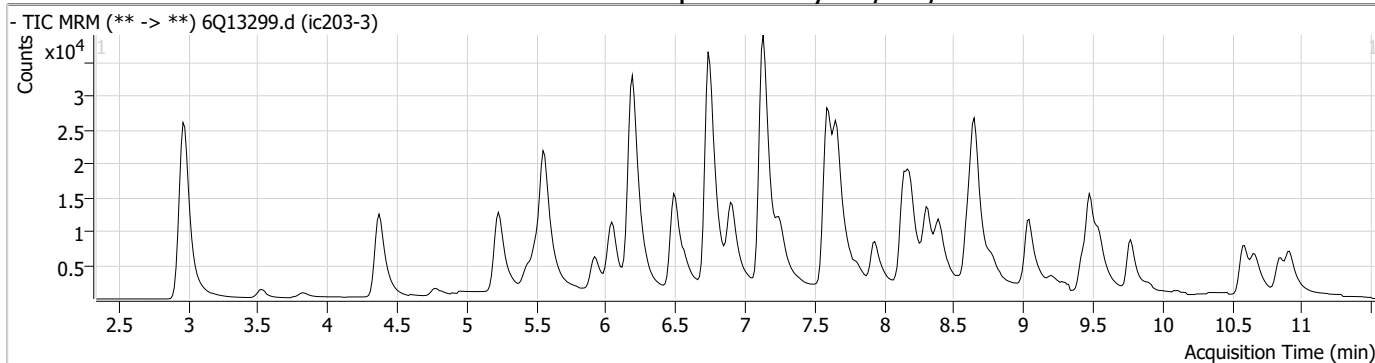
### Perfluorinated Compounds by LC/MS/MS

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

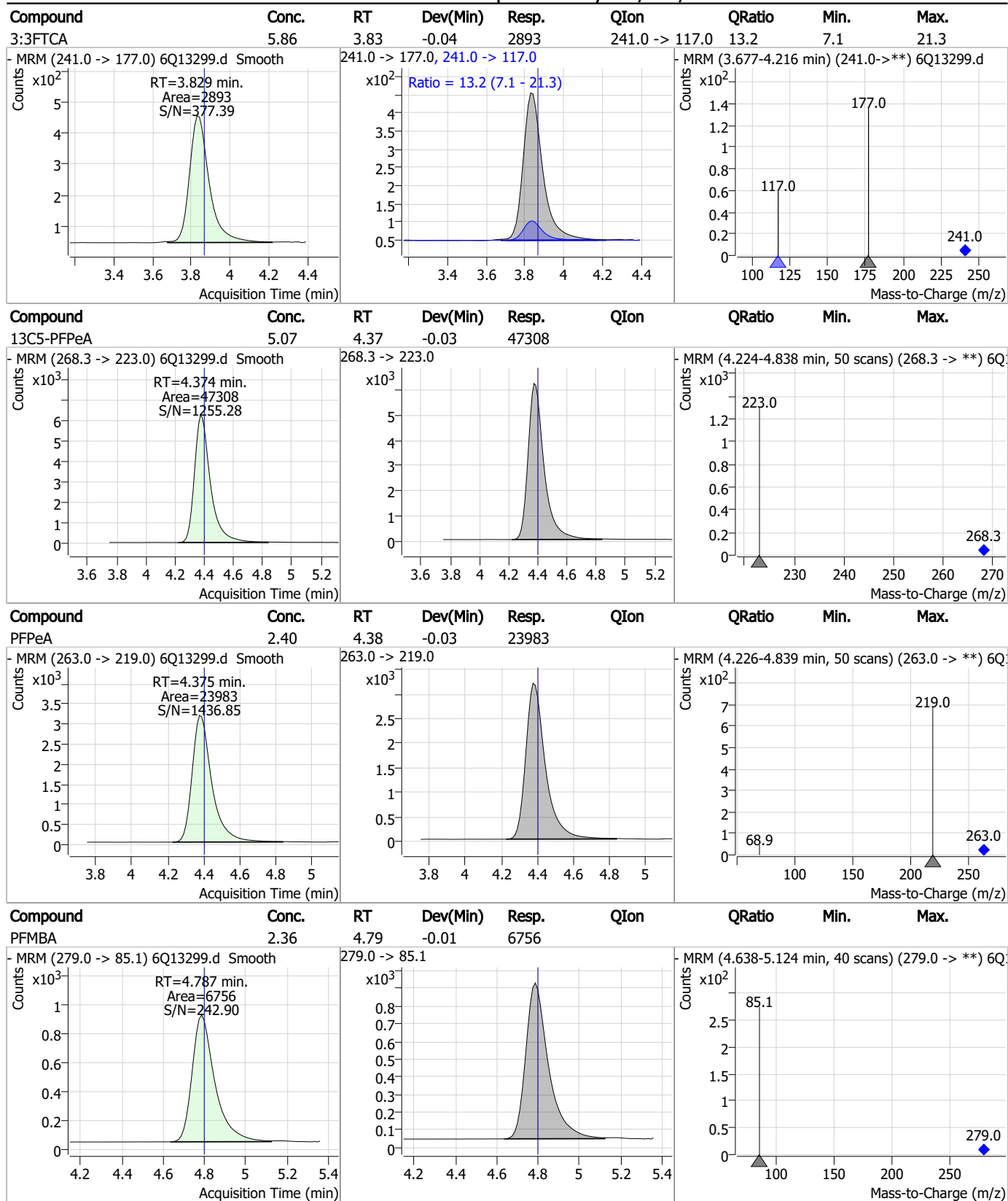
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### Perfluorinated Compounds by LC/MS/MS



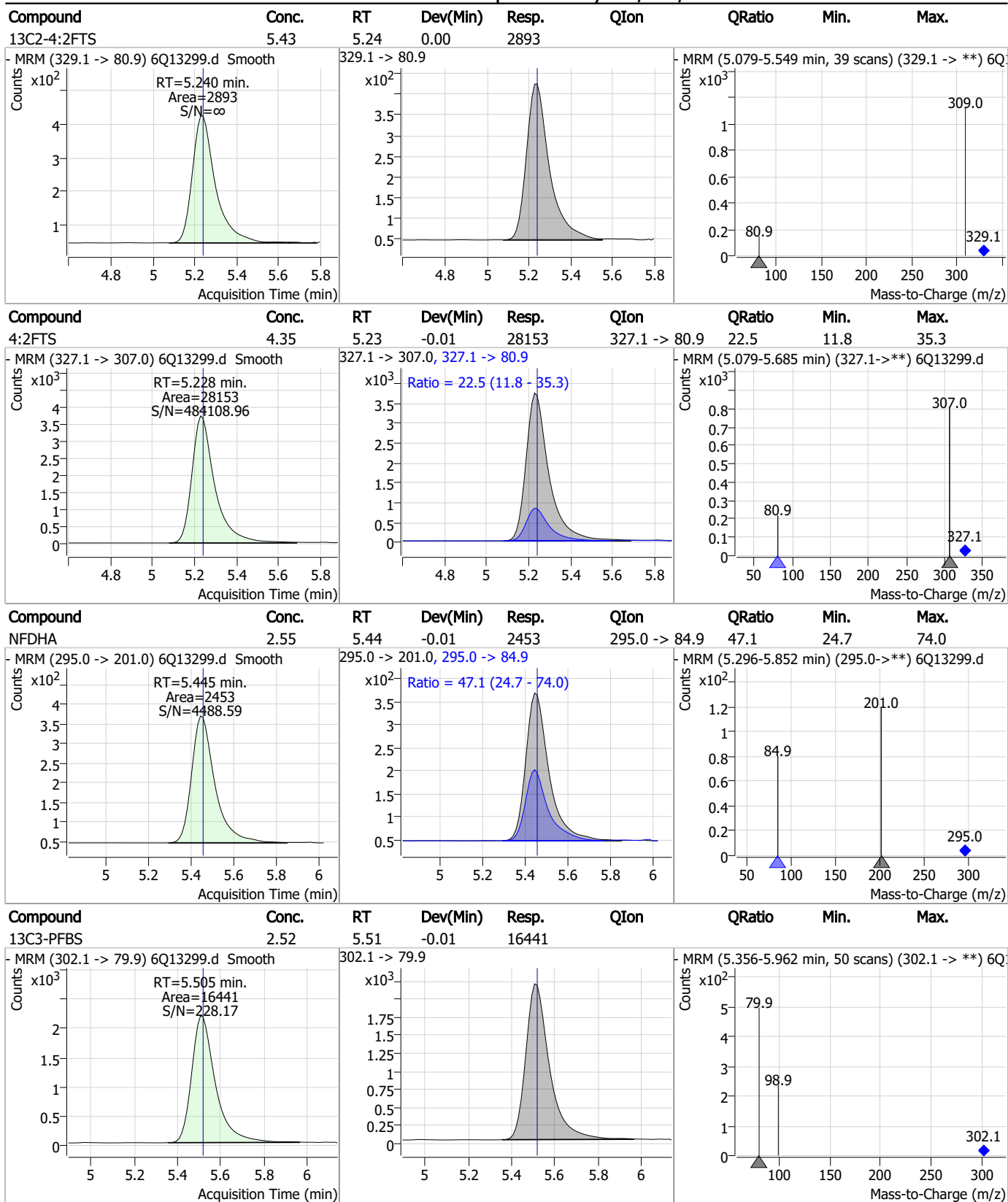
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### Perfluorinated Compounds by LC/MS/MS



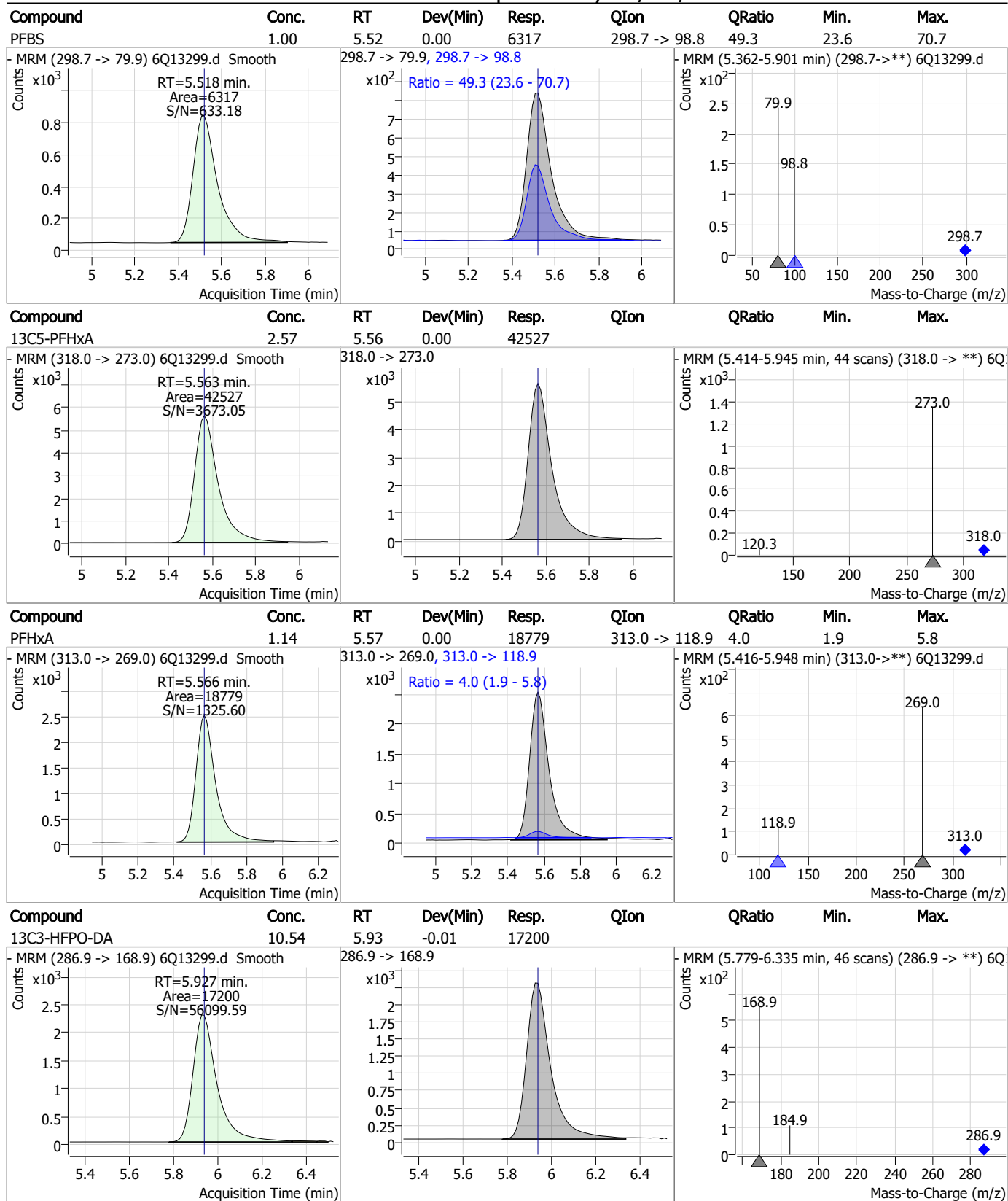
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### Perfluorinated Compounds by LC/MS/MS



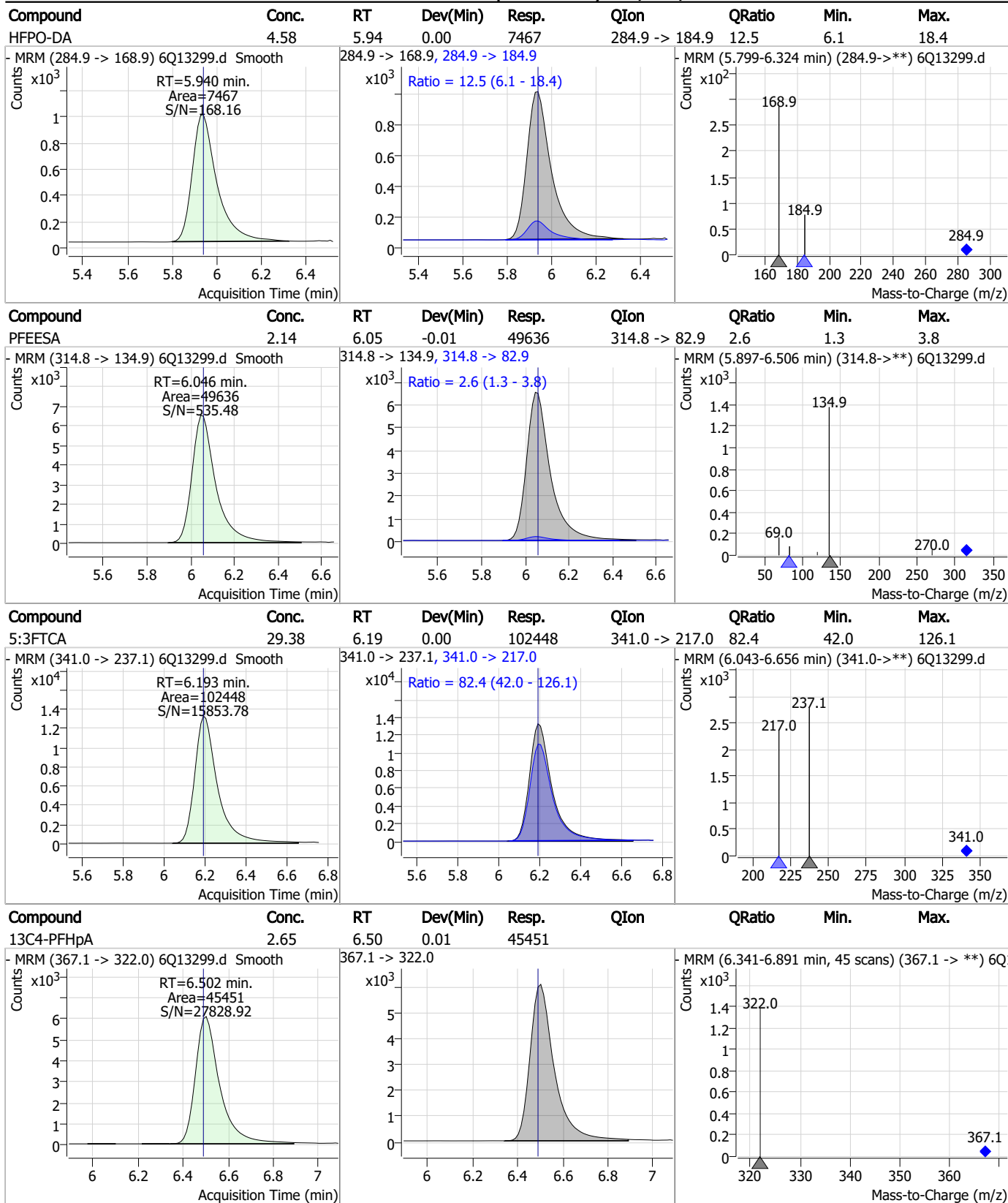
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### Perfluorinated Compounds by LC/MS/MS



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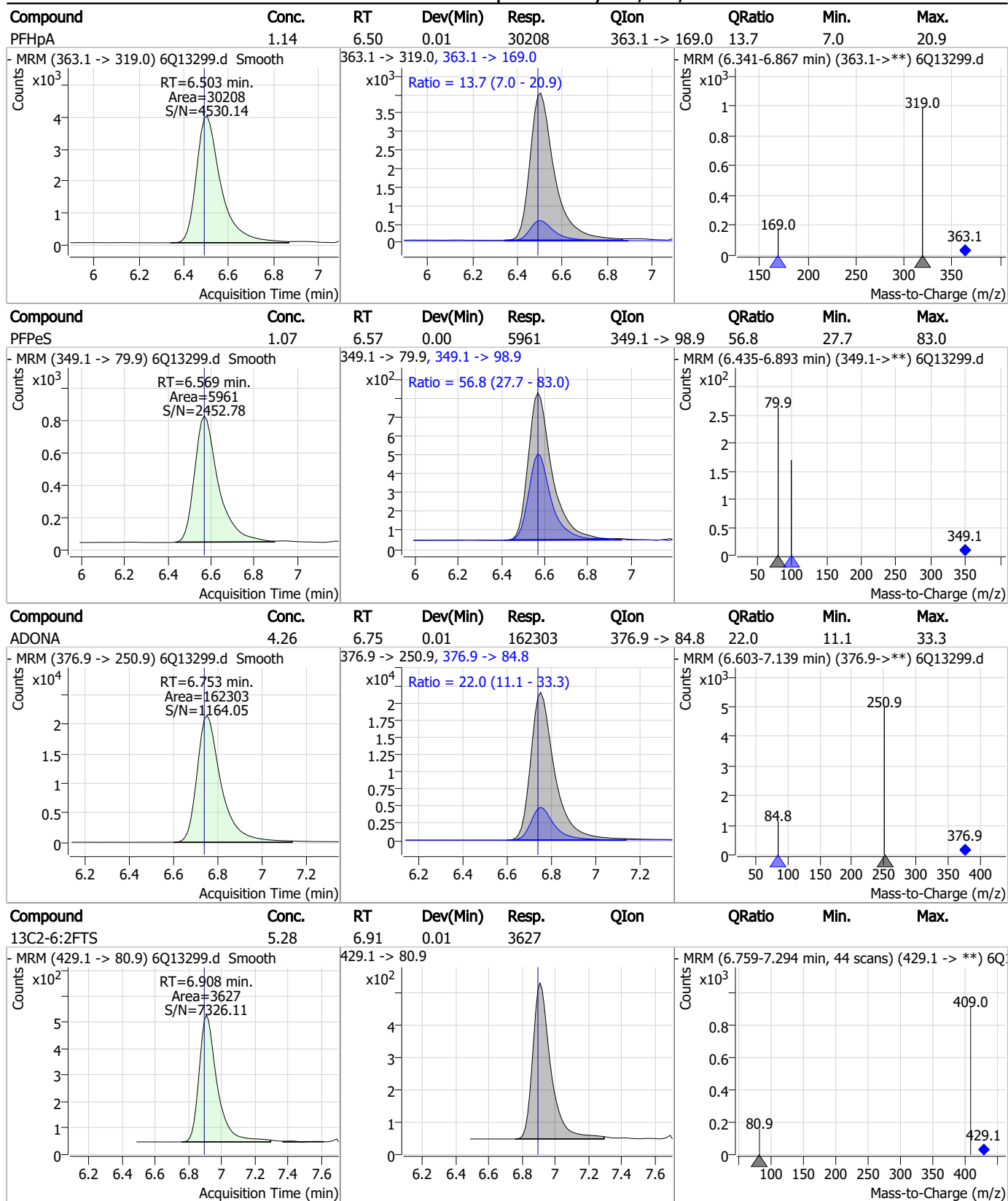
### Perfluorinated Compounds by LC/MS/MS



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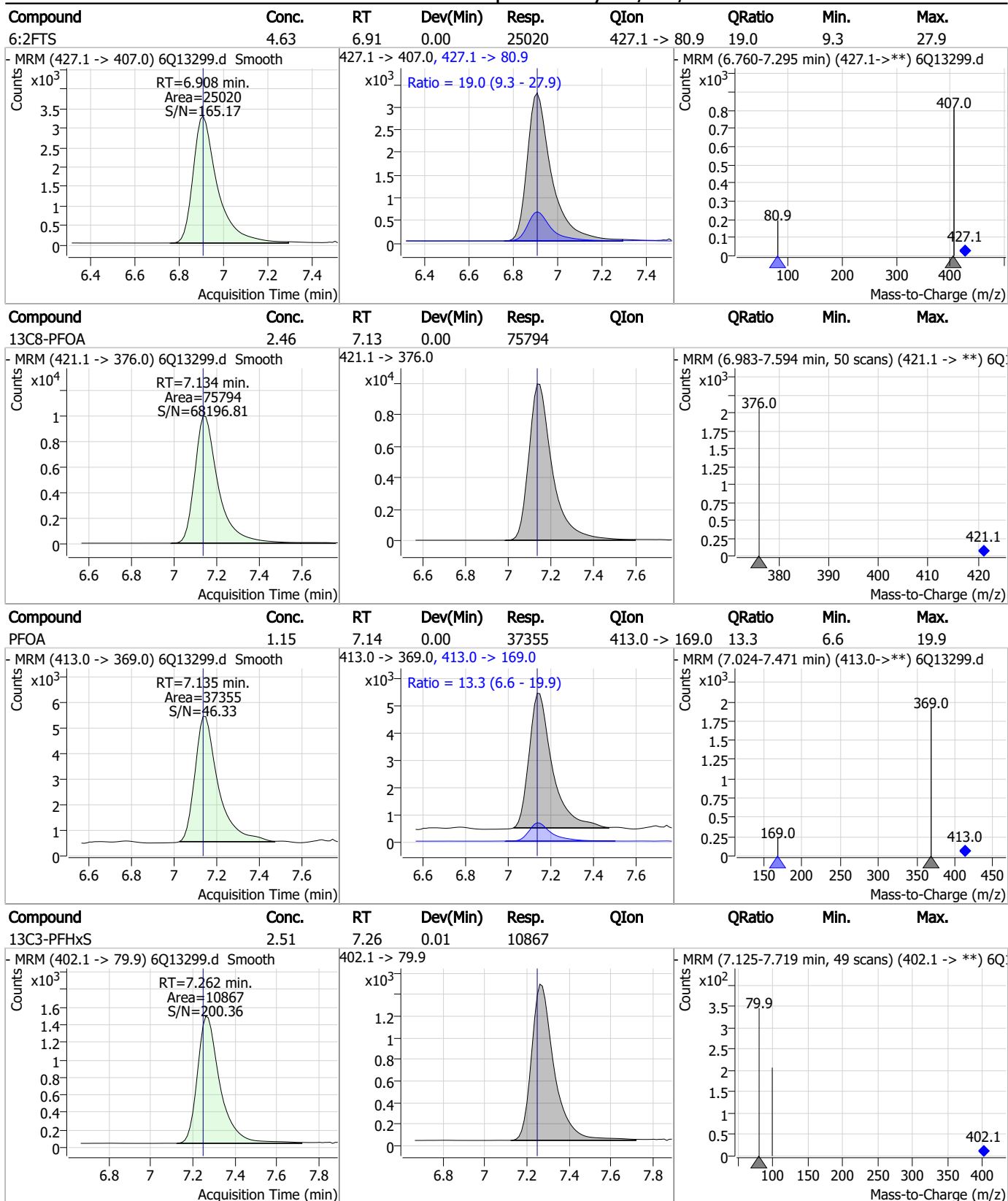


### Perfluorinated Compounds by LC/MS/MS



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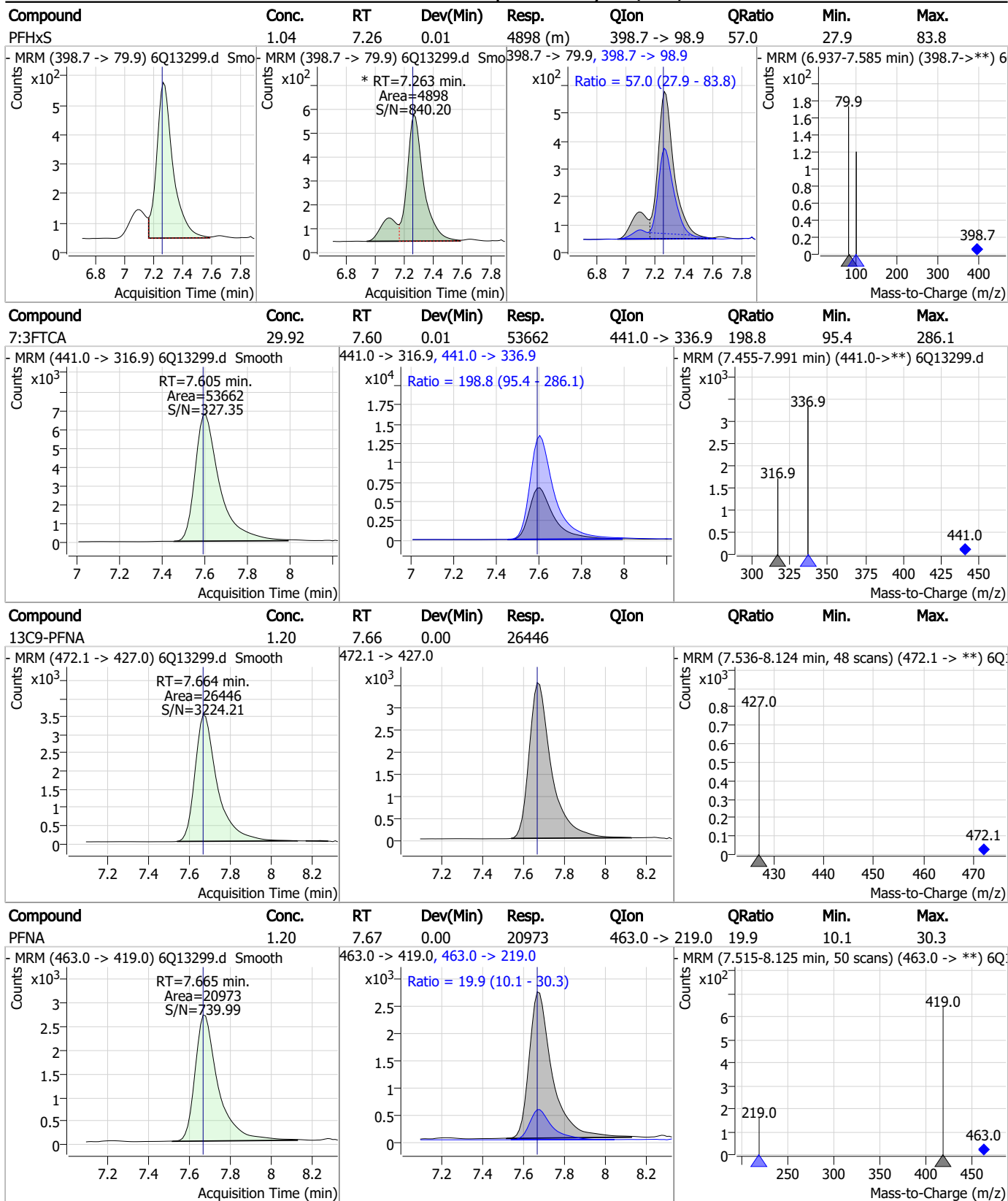
### Perfluorinated Compounds by LC/MS/MS



7.7.4

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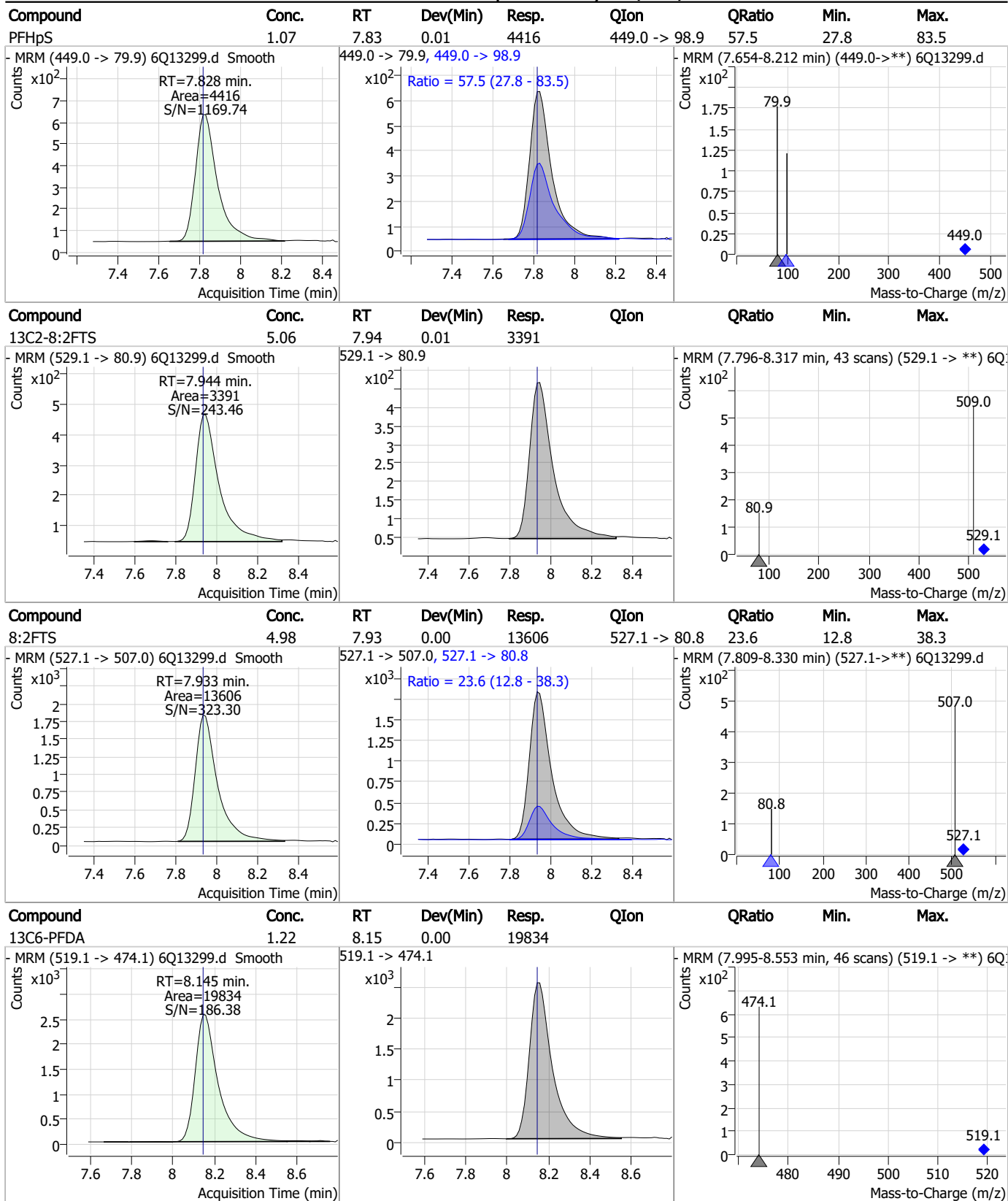
### Perfluorinated Compounds by LC/MS/MS



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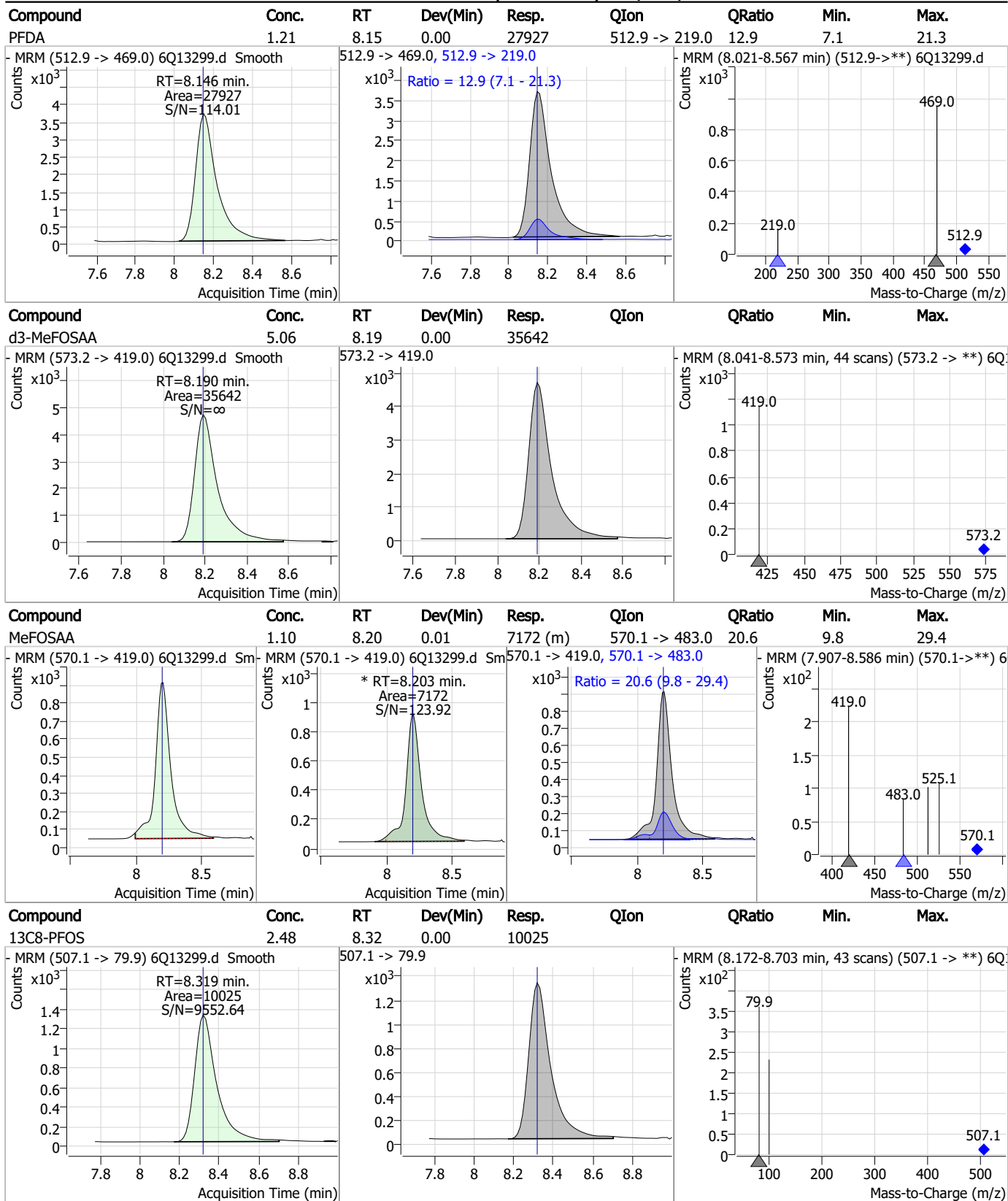


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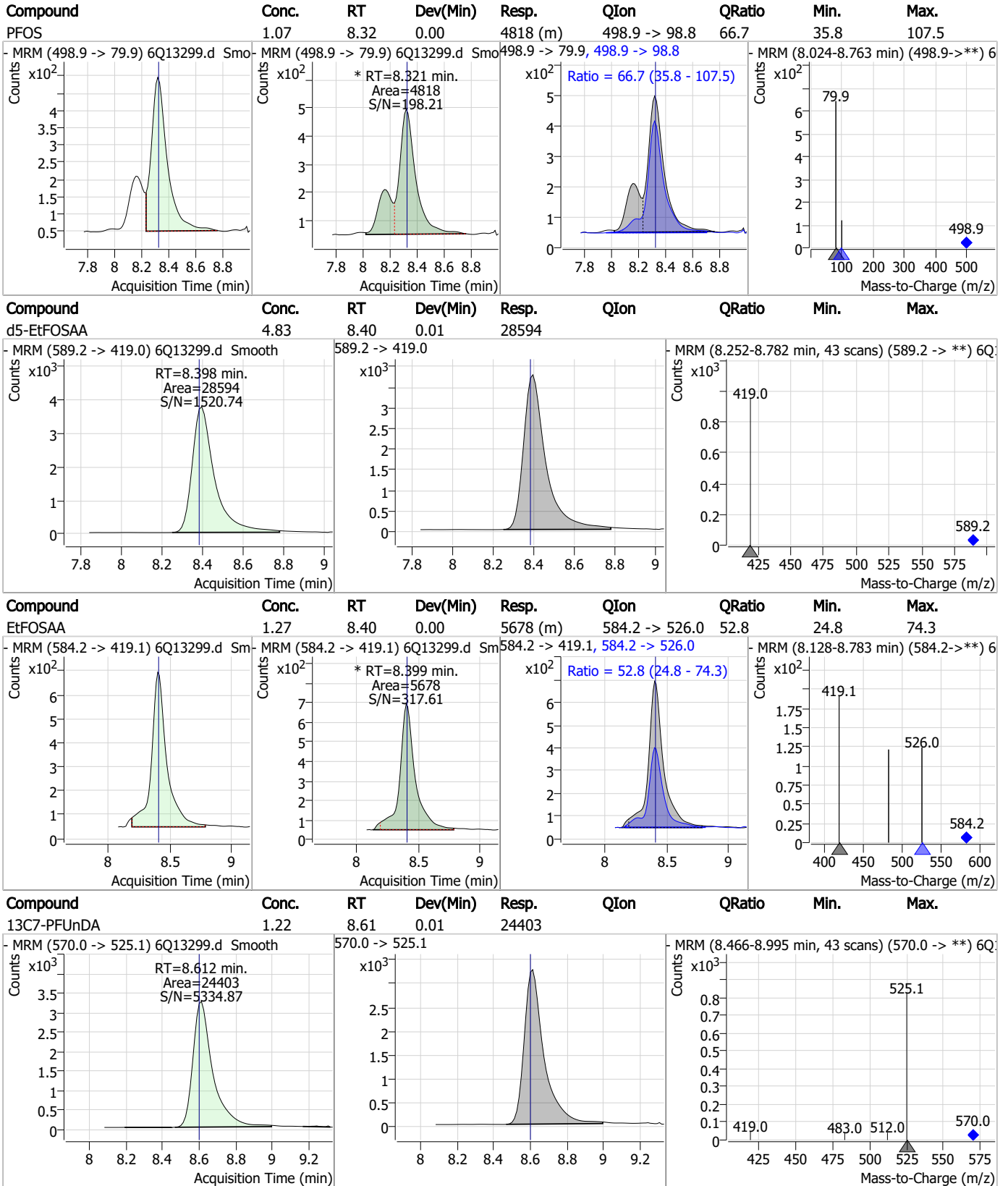
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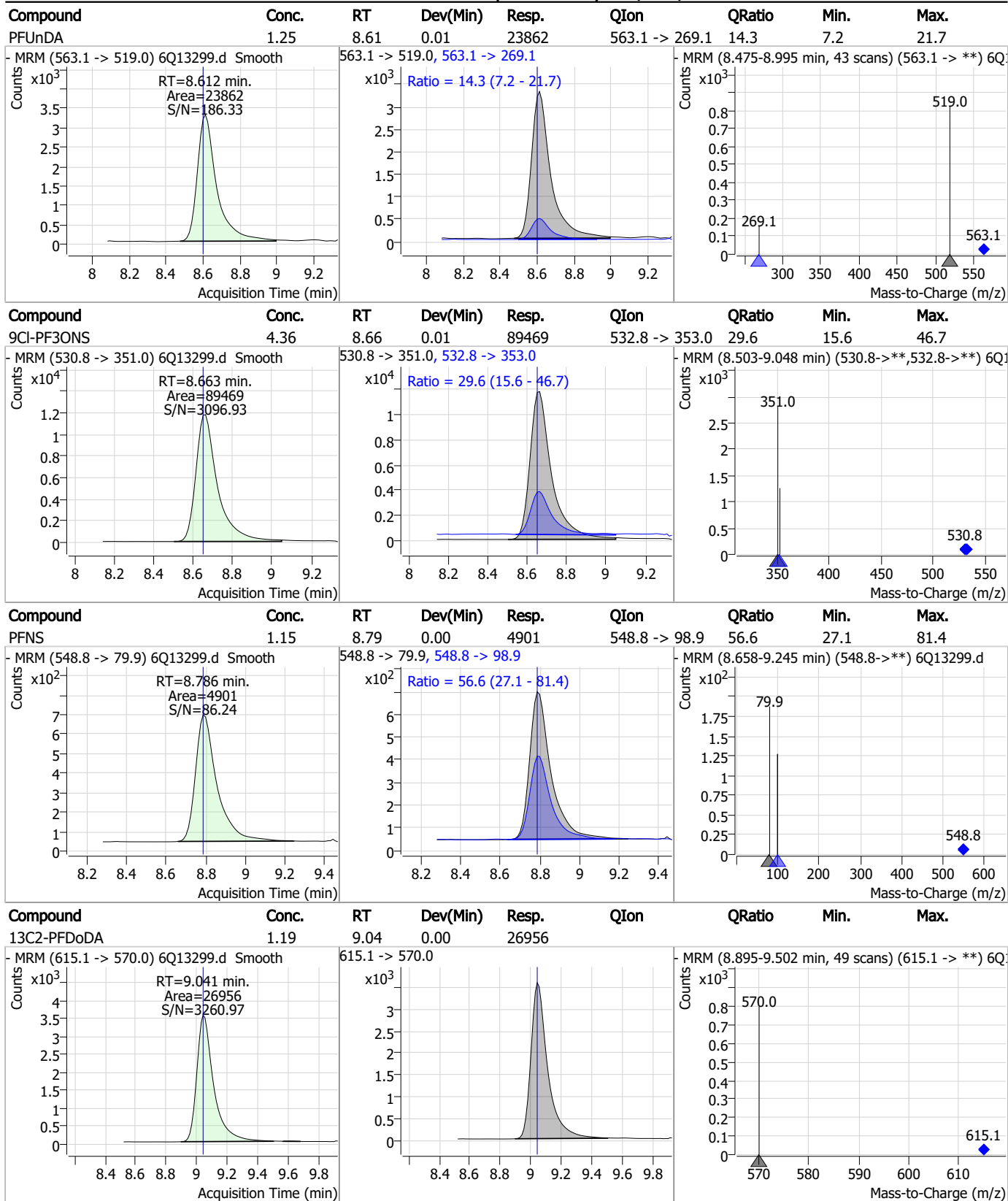


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### Perfluorinated Compounds by LC/MS/MS

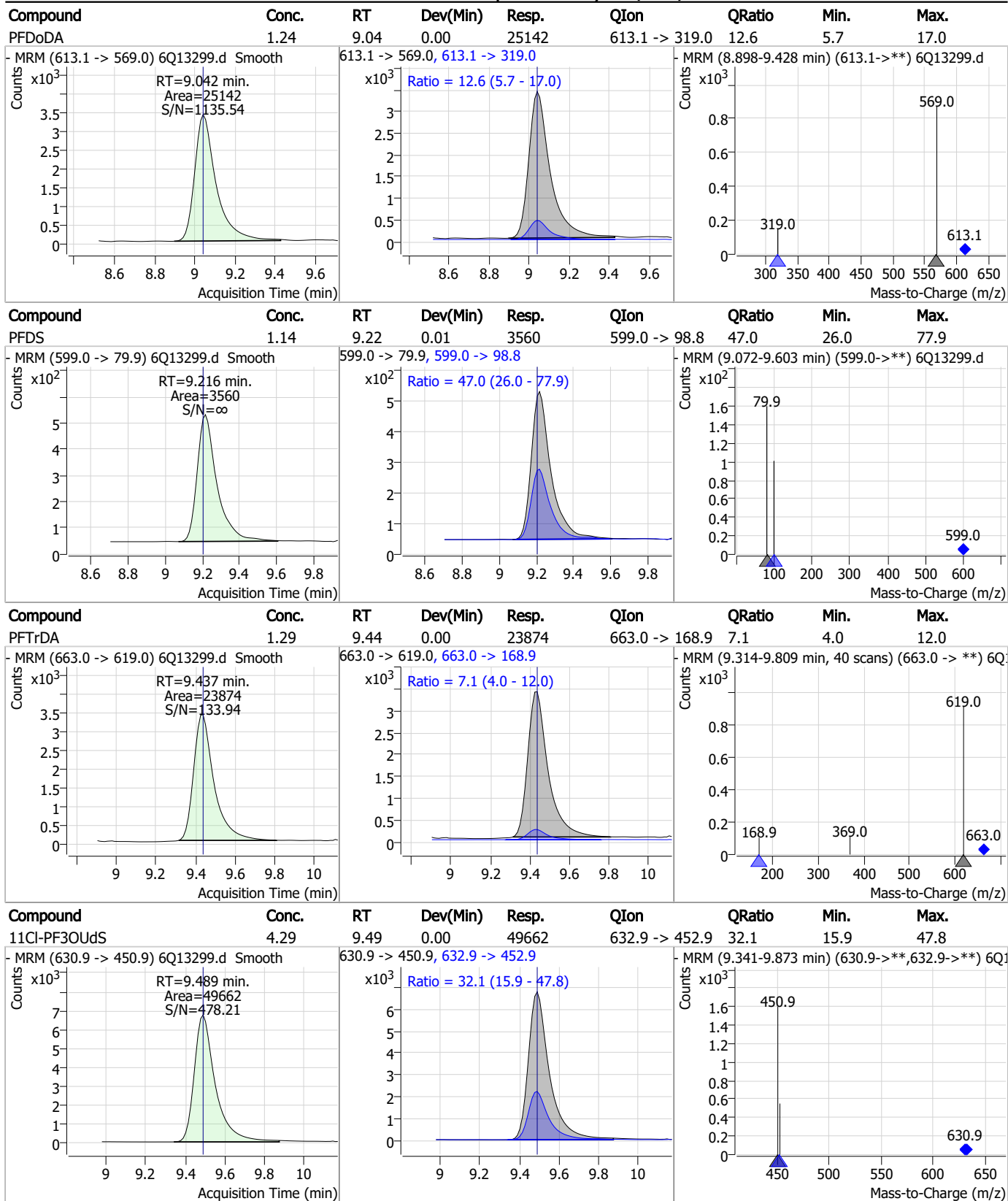


### Perfluorinated Compounds by LC/MS/MS



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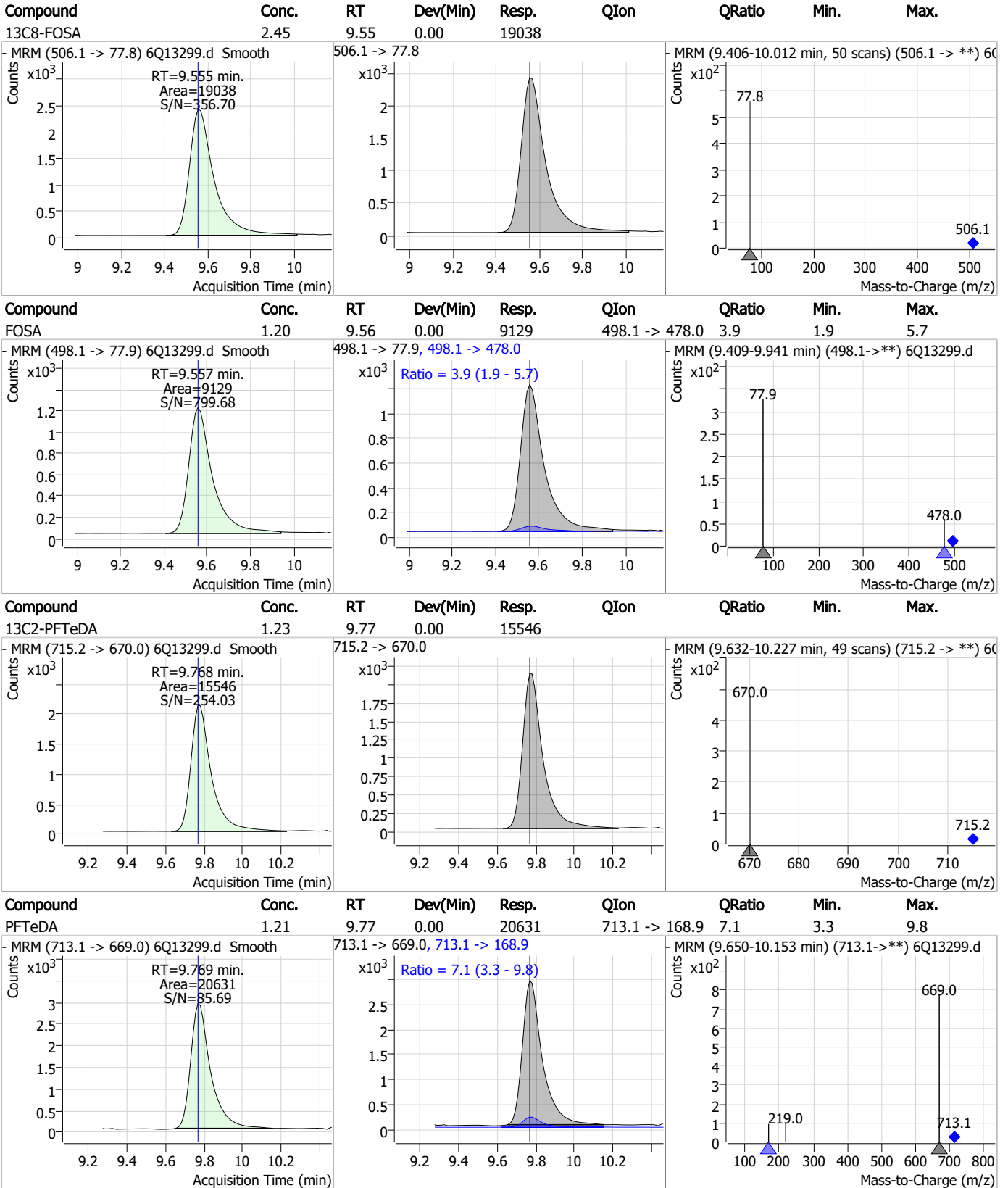
### Perfluorinated Compounds by LC/MS/MS



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

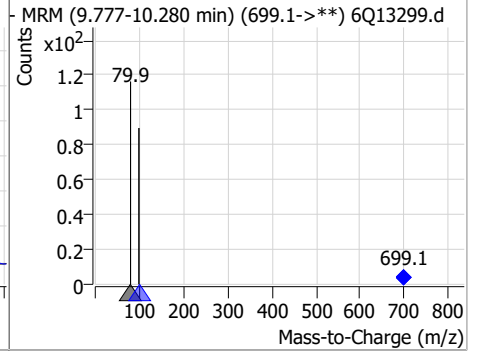
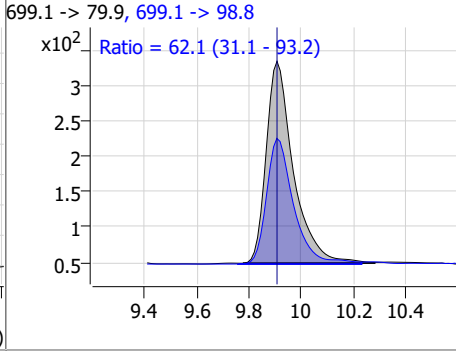
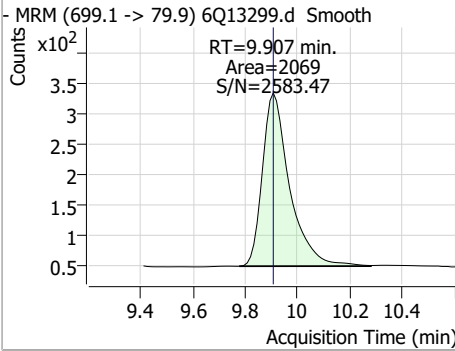


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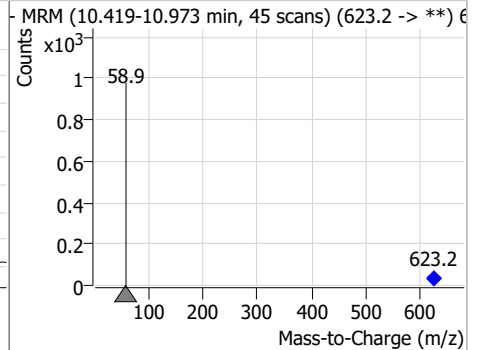
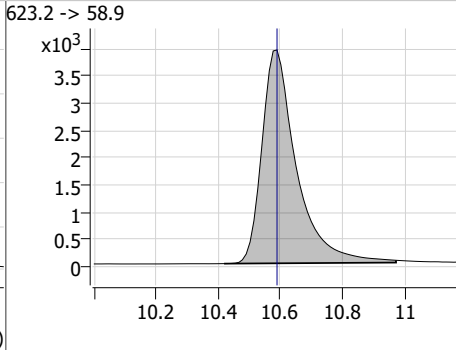
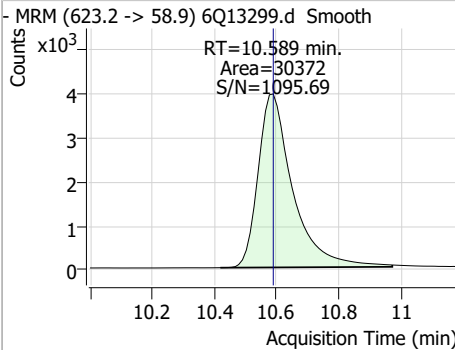
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### Perfluorinated Compounds by LC/MS/MS

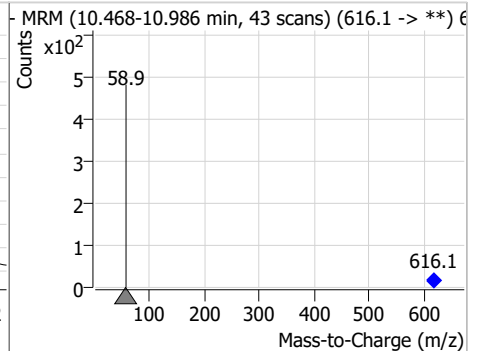
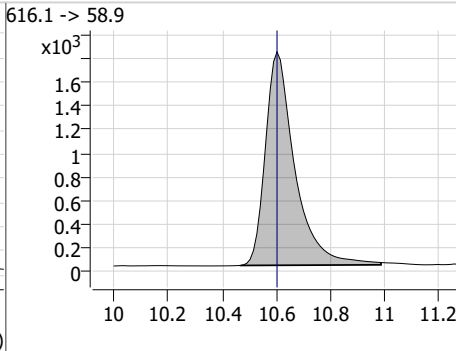
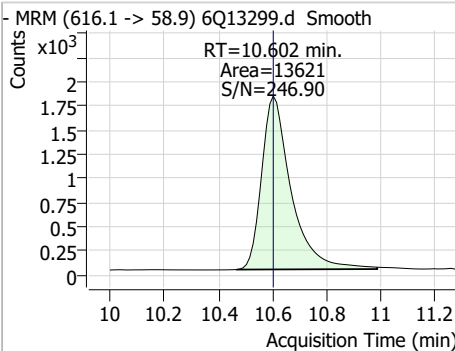
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	1.10	9.91	0.00	2069	699.1 -> 98.8	62.1	31.1	93.2



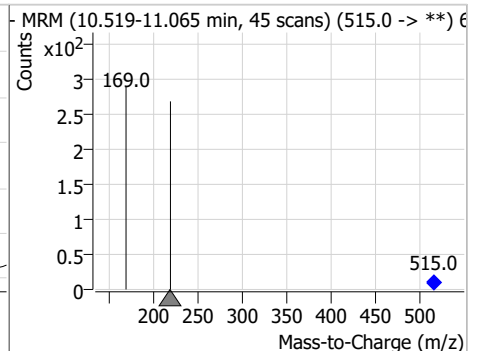
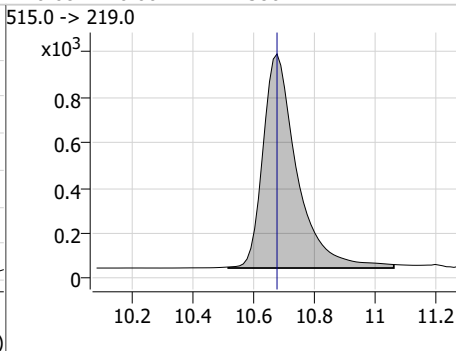
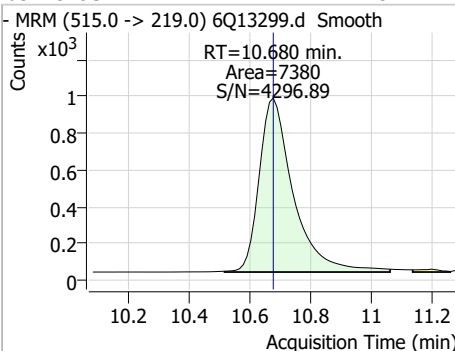
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.65	10.59	0.00	30372				



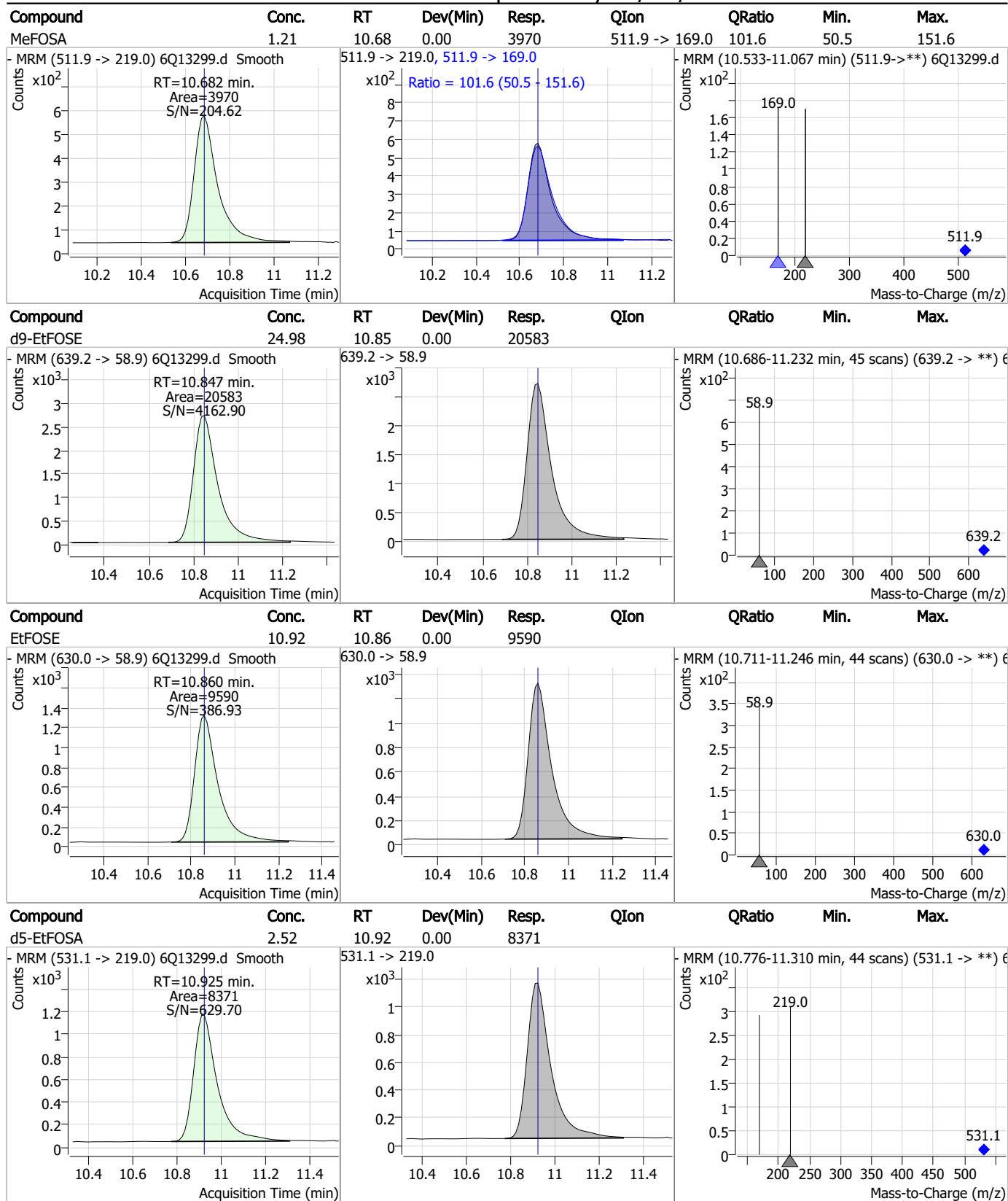
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.54	10.60	0.00	13621				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.34	10.68	0.00	7380				



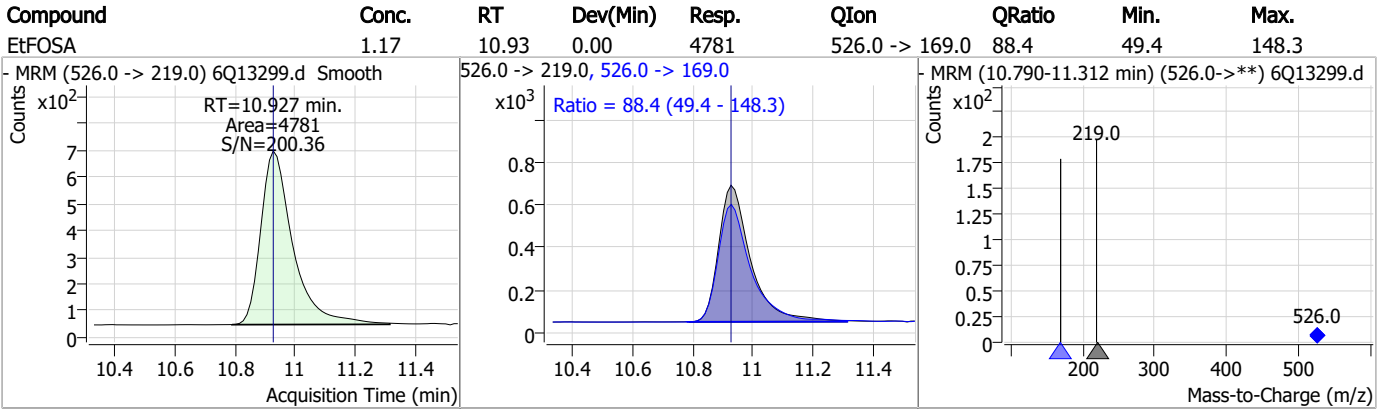
### Perfluorinated Compounds by LC/MS/MS



7.7.4

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Perfluorinated Compounds by LC/MS/MS



7.7.4

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# Manual Integration Approval Summary

Sample Number: S6Q203-IC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13299.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 13:11      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFMPA	377-73-1		3.53	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.4.1  
7

## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13300.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 1:26:38 PM  
 Sample Name : icc203-4  
 Vial : P1-A5  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.000	216.8 -> 171.9	95525	10.00 µg/L	0.000
M5-PFPeA	4.400	268.3 -> 223.0	47796	5.00 µg/L	0.000
M5-PFHxA	5.563	318.0 -> 273.0	40815	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	41657	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	75496	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	27133	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	20079	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	25810	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	28870	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	15798	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	19545	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	16476	2.50 µg/L	0.000
M3-PFHxS	7.249	402.1 -> 79.9	10875	2.50 µg/L	0.000
M8-PFOS	8.320	507.1 -> 79.9	9604	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2806	5.00 µg/L	0.000
M2-6:2FTS	6.895	429.1 -> 80.9	3641	5.00 µg/L	0.000
M2-8:2FTS	7.932	529.1 -> 80.9	3358	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	34846	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	16466	10.00 µg/L	0.000
M5-EtFOSAA	8.386	589.2 -> 419.0	30711	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	29166	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	20142	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	7954	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	7564	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	11023	2.50 µg/L	0.000
13C3-PFBA	2.991	216.0 -> 172.0	43569	5.00 µg/L	0.000
18O2-PFHxS	7.261	403.0 -> 83.9	7759	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	93164	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	29104	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	29570	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	42979	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2806	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C2-6:2FTS	6.895	429.1 -> 80.9	3641	5.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3358	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C2-PFDoDA	9.041	615.1 -> 570.0	28870	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C2-PFTeDA	9.768	715.2 -> 670.0	15798	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFBS	5.518	302.1 -> 79.9	16476	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFHxS	7.249	402.1 -> 79.9	10875	2.61 µg/L	0.000

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C4-PFBA	3.000	216.8 -> 171.9	95525	9.82 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C4-PFHpA	6.490	367.1 -> 322.0	41657	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.5%		
13C5-PFHxA	5.563	318.0 -> 273.0	40815	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.9%		
13C5-PFPeA	4.400	268.3 -> 223.0	47796	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C6-PFDA	8.145	519.1 -> 474.1	20079	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C7-PFUnDA	8.599	570.0 -> 525.1	25810	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C8-FOSA	9.555	506.1 -> 77.8	19545	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.7%		
13C8-PFOA	7.134	421.1 -> 376.0	75496	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C8-PFOS	8.320	507.1 -> 79.9	9604	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C9-PFNA	7.664	472.1 -> 427.0	27133	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
d3-MeFOSAA	8.190	573.2 -> 419.0	34846	5.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.8%		
13C3-HFPO-DA	5.940	286.9 -> 168.9	16466	9.60 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 96.0%		
d3-MeFOSA	10.680	515.0 -> 219.0	7564	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.6%		
d5-EtFOSAA	8.386	589.2 -> 419.0	30711	5.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.0%		
d7-MeFOSE	10.589	623.2 -> 58.9	29166	26.25 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 105.0%		
d9-EtFOSE	10.847	639.2 -> 58.9	20142	27.11 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 108.4%		
d5-EtFOSA	10.925	531.1 -> 219.0	7954	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.2%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.240	327.1 -> 307.0	52606	8.37 µg/L	100
		327.1 -> 80.9	12372		
6:2FTS	6.908	427.1 -> 407.0	48572	8.95 µg/L	100
		427.1 -> 80.9	9046		
8:2FTS	7.933	527.1 -> 507.0	25666	9.49 µg/L	100
		527.1 -> 80.8	6560		
EtFOSAA	8.399	584.2 -> 419.1	10157	2.11 µg/L	m 90
		584.2 -> 526.0	5724		
FOSA	9.557	498.1 -> 77.9	17369	2.23 µg/L	100
		498.1 -> 478.0	656		
MeFOSAA	8.191	570.1 -> 419.0	14767	2.31 µg/L	100
		570.1 -> 483.0	2898		
PFBA	2.994	212.8 -> 168.9	19589	9.11 µg/L	100
PFBS	5.518	298.7 -> 79.9	12446	1.97 µg/L	100
		298.7 -> 98.8	5869		
PFDA	8.146	512.9 -> 469.0	54574	2.34 µg/L	100
		512.9 -> 219.0	7761		
PFDODA	9.042	613.1 -> 569.0	48081	2.22 µg/L	100
		613.1 -> 319.0	5437		
PFDS	9.204	599.0 -> 79.9	6758	2.26 µg/L	100

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3511			
PFHpA	6.490	363.1 -> 319.0	58383	2.41	µg/L	100
		363.1 -> 169.0	8130			
PFHpS	7.816	449.0 -> 79.9	9238	2.33	µg/L	100
		449.0 -> 98.9	5140			
PFHxA	5.566	313.0 -> 269.0	38706	2.45	µg/L	100
		313.0 -> 118.9	1491			
PFHxS	7.250	398.7 -> 79.9	10085	2.14	µg/L	m 95
		398.7 -> 98.9	5298			
PFNA	7.665	463.0 -> 419.0	41019	2.28	µg/L	100
		463.0 -> 219.0	8286			
PFNS	8.786	548.8 -> 79.9	9411	2.30	µg/L	100
		548.8 -> 98.9	5107			
PFOA	7.135	413.0 -> 369.0	75183	2.33	µg/L	100
		413.0 -> 169.0	9977			
PFOS	8.321	498.9 -> 79.9	9950	2.31	µg/L	m 81
		498.9 -> 98.8	5572			
PFPeA	4.402	263.0 -> 219.0	46251	4.59	µg/L	100
PFPeS	6.569	349.1 -> 79.9	11861	2.12	µg/L	100
		349.1 -> 98.9	6561			
PFTeDA	9.769	713.1 -> 669.0	41914	2.41	µg/L	100
		713.1 -> 168.9	2746			
PFTrDA	9.437	663.0 -> 619.0	44567	2.25	µg/L	100
		663.0 -> 168.9	3560			
PFUnDA	8.600	563.1 -> 519.0	43167	2.13	µg/L	100
		563.1 -> 269.1	6246			
11CI-PF3OUdS	9.489	630.9 -> 450.9	98150	8.86	µg/L	100
		632.9 -> 452.9	31309			
9CI-PF3ONS	8.651	530.8 -> 351.0	165598	8.42	µg/L	100
		532.8 -> 353.0	51514			
ADONA	6.741	376.9 -> 250.9	328234	8.99	µg/L	100
		376.9 -> 84.8	72952			
HFPO-DA	5.940	284.9 -> 168.9	14397	9.23	µg/L	100
		284.9 -> 184.9	1765			
3:3FTCA	3.866	241.0 -> 177.0	5678	11.38	µg/L	100
		241.0 -> 117.0	805			
5:3FTCA	6.193	341.0 -> 237.1	204388	61.07	µg/L	100
		341.0 -> 217.0	171781			
7:3FTCA	7.592	441.0 -> 316.9	104978	60.99	µg/L	100
		441.0 -> 336.9	200206			
EtFOSA	10.927	526.0 -> 219.0	8927	2.31	µg/L	100
		526.0 -> 169.0	8827			
EtFOSE	10.860	630.0 -> 58.9	19444	22.63	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	7602	2.26	µg/L	100
		511.9 -> 169.0	7685			
MeFOSE	10.602	616.1 -> 58.9	26918	23.74	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	4048	2.24	µg/L	100
		699.1 -> 98.8	2515			
NFDHA	5.457	295.0 -> 201.0	4663	5.06	µg/L	100
		295.0 -> 84.9	2301			
PFMBA	4.800	279.0 -> 85.1	13708	4.75	µg/L	100
PFMPA	3.553	229.0 -> 84.9	12754	4.85	µg/L	m 100
PFEESA	6.059	314.8 -> 134.9	93746	4.21	µg/L	100
		314.8 -> 82.9	2374			

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



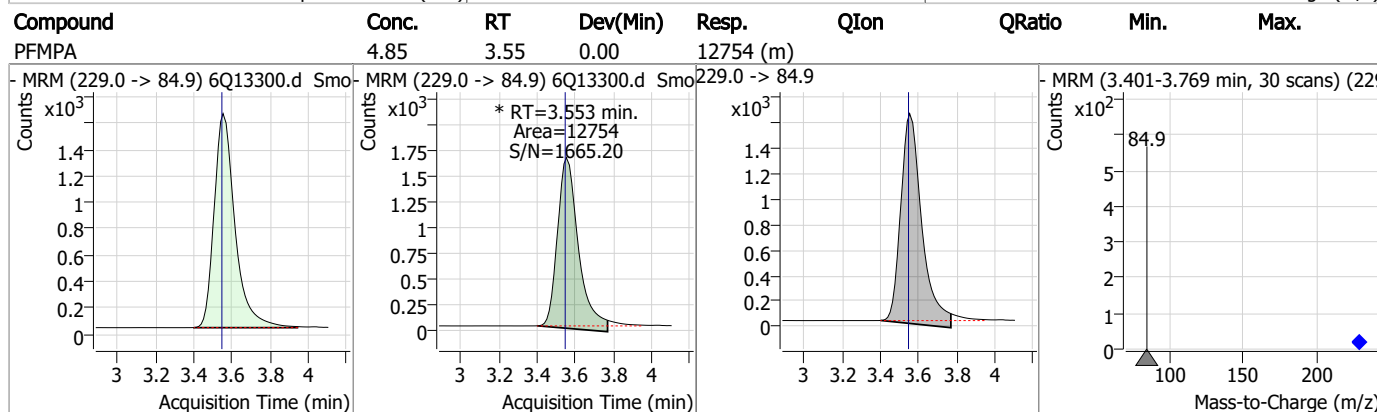
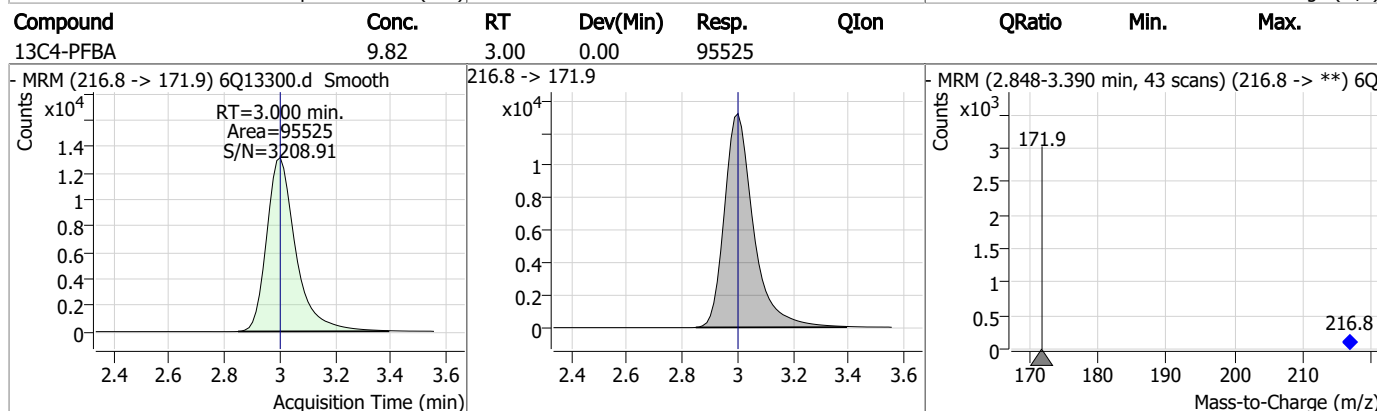
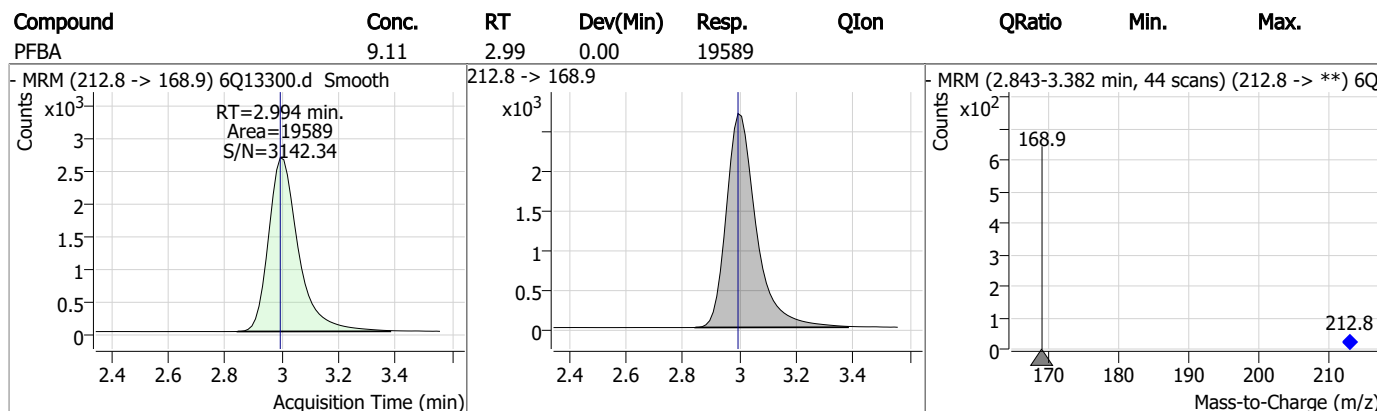
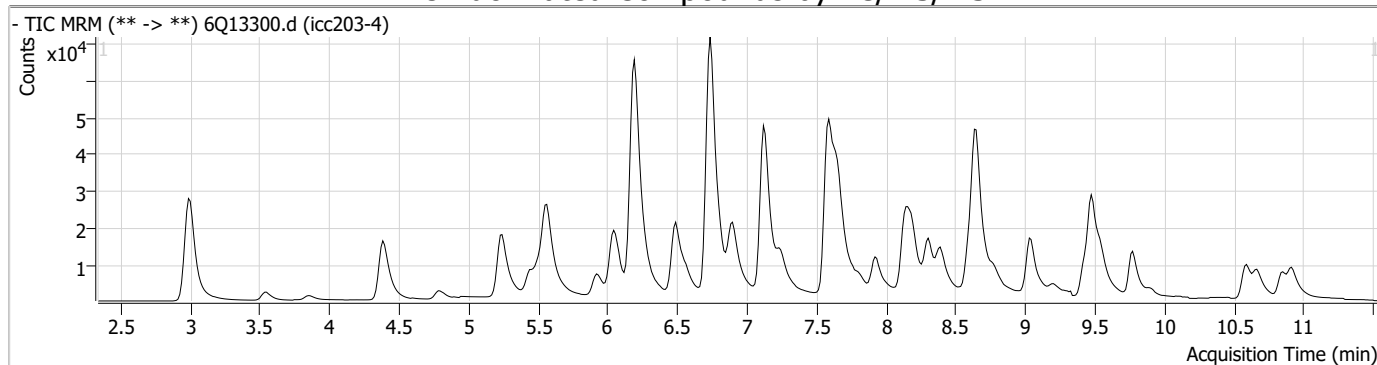
### Perfluorinated Compounds by LC/MS/MS

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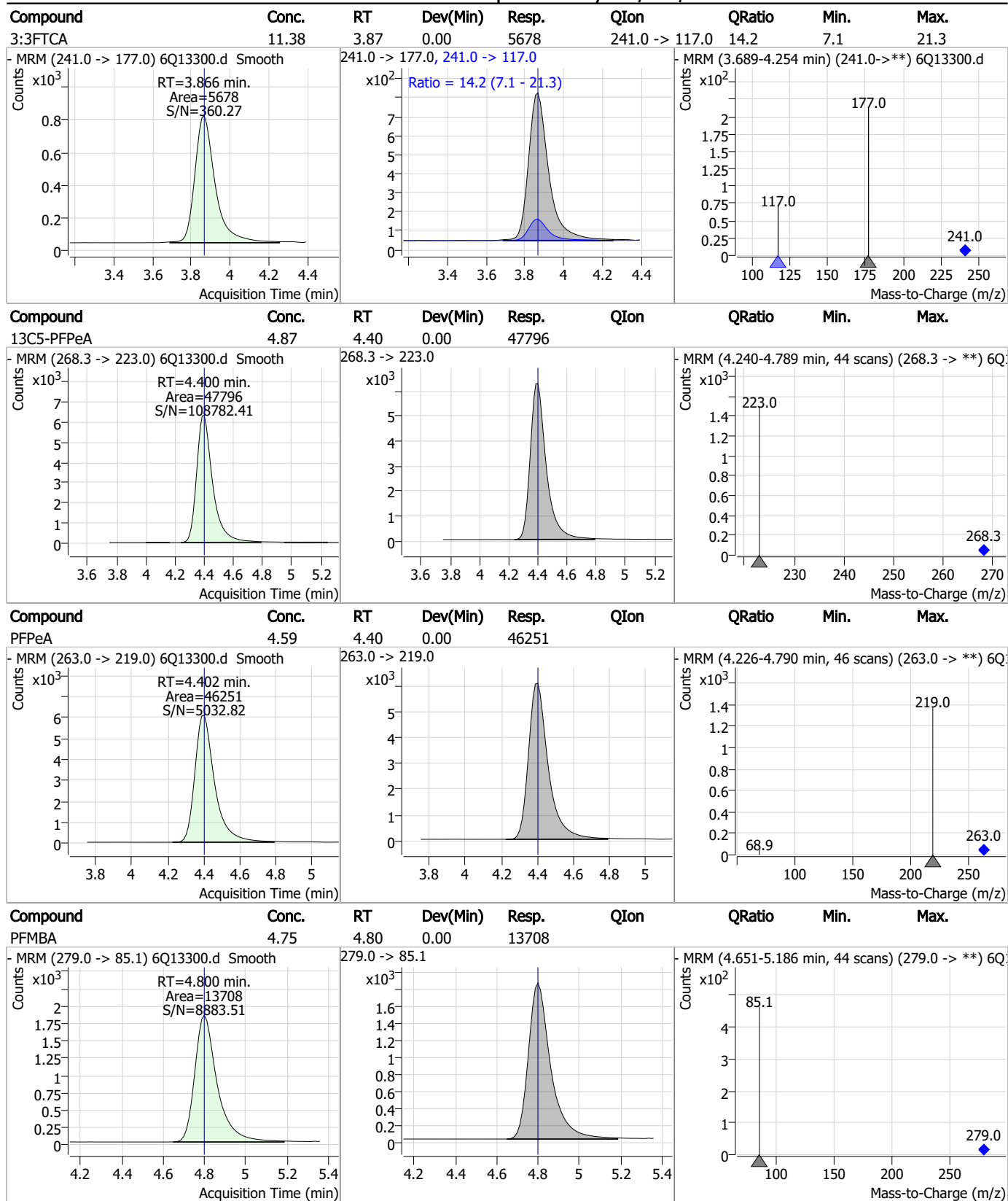


### Perfluorinated Compounds by LC/MS/MS



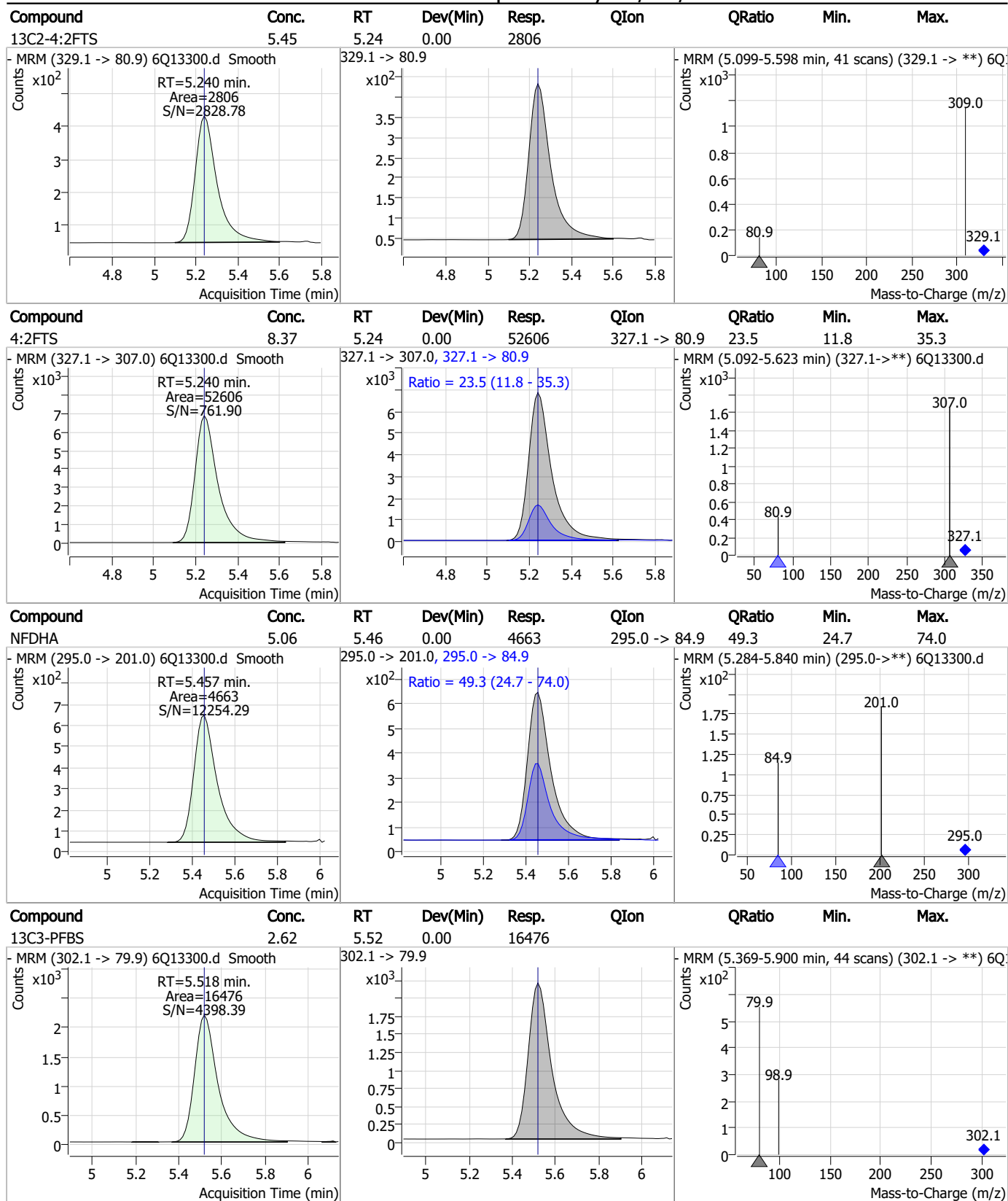
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### Perfluorinated Compounds by LC/MS/MS



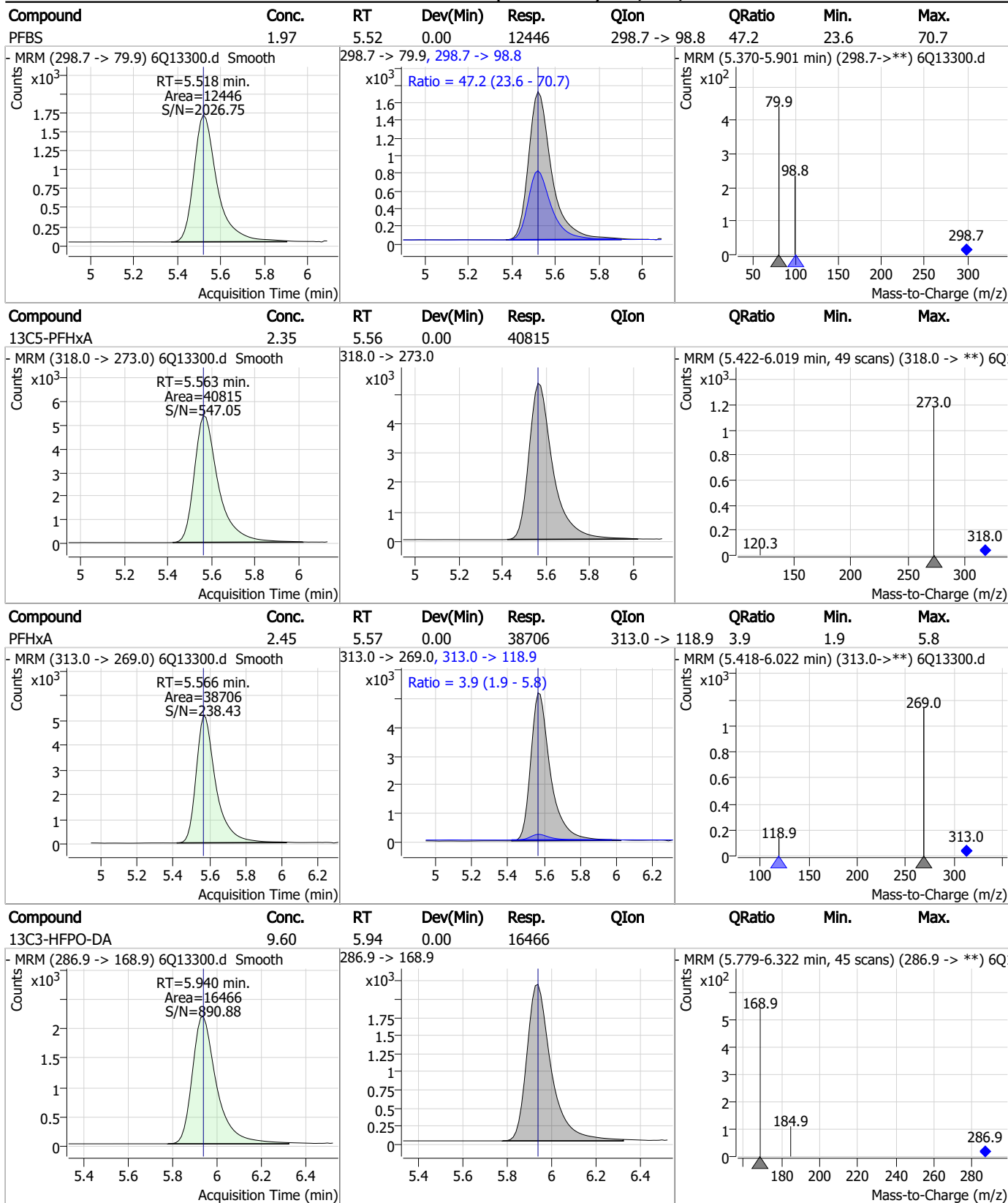
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### Perfluorinated Compounds by LC/MS/MS



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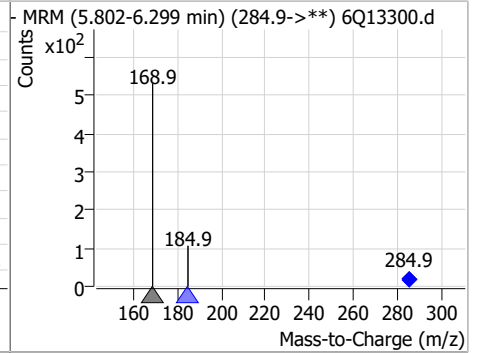
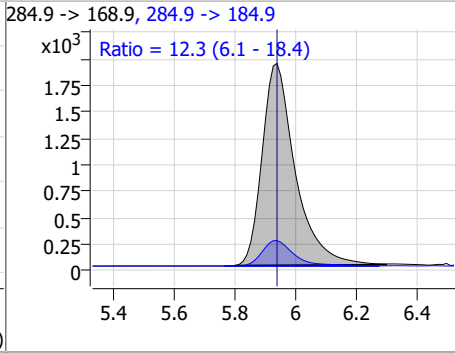
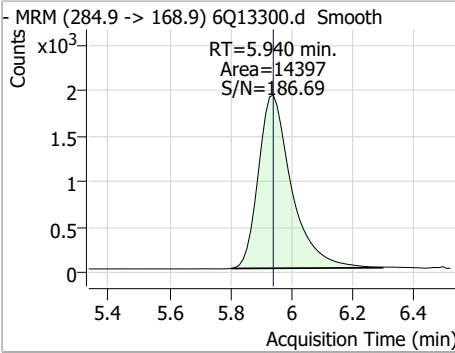
### Perfluorinated Compounds by LC/MS/MS



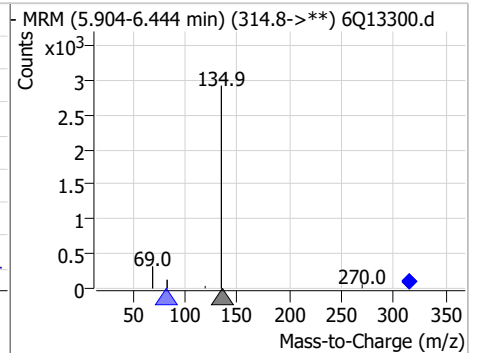
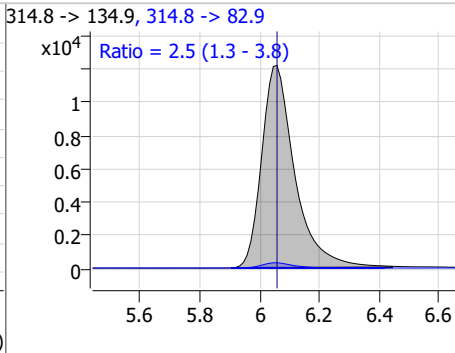
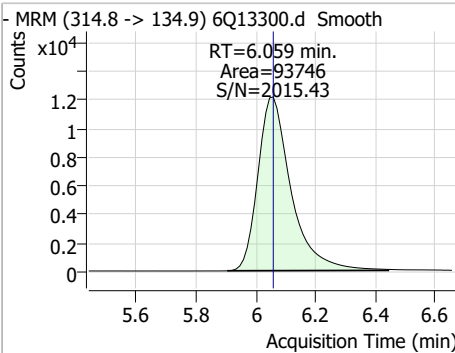
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### Perfluorinated Compounds by LC/MS/MS

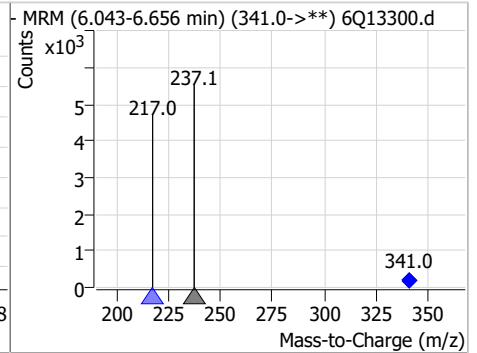
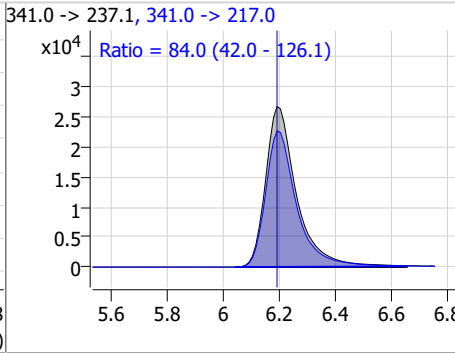
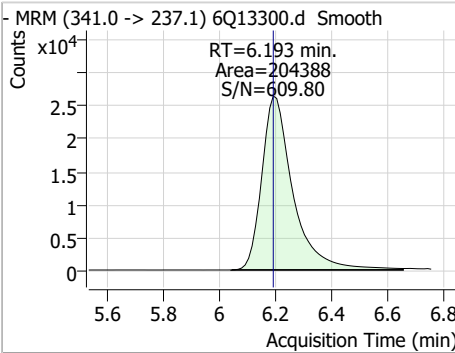
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.23	5.94	0.00	14397	284.9 -> 184.9	12.3	6.1	18.4



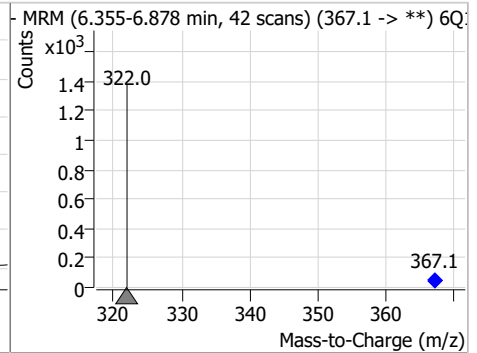
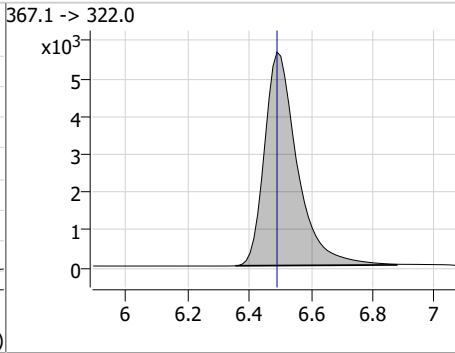
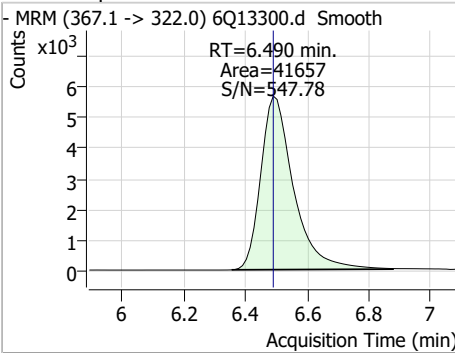
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.21	6.06	0.00	93746	314.8 -> 82.9	2.5	1.3	3.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	61.07	6.19	0.00	204388	341.0 -> 217.0	84.0	42.0	126.1



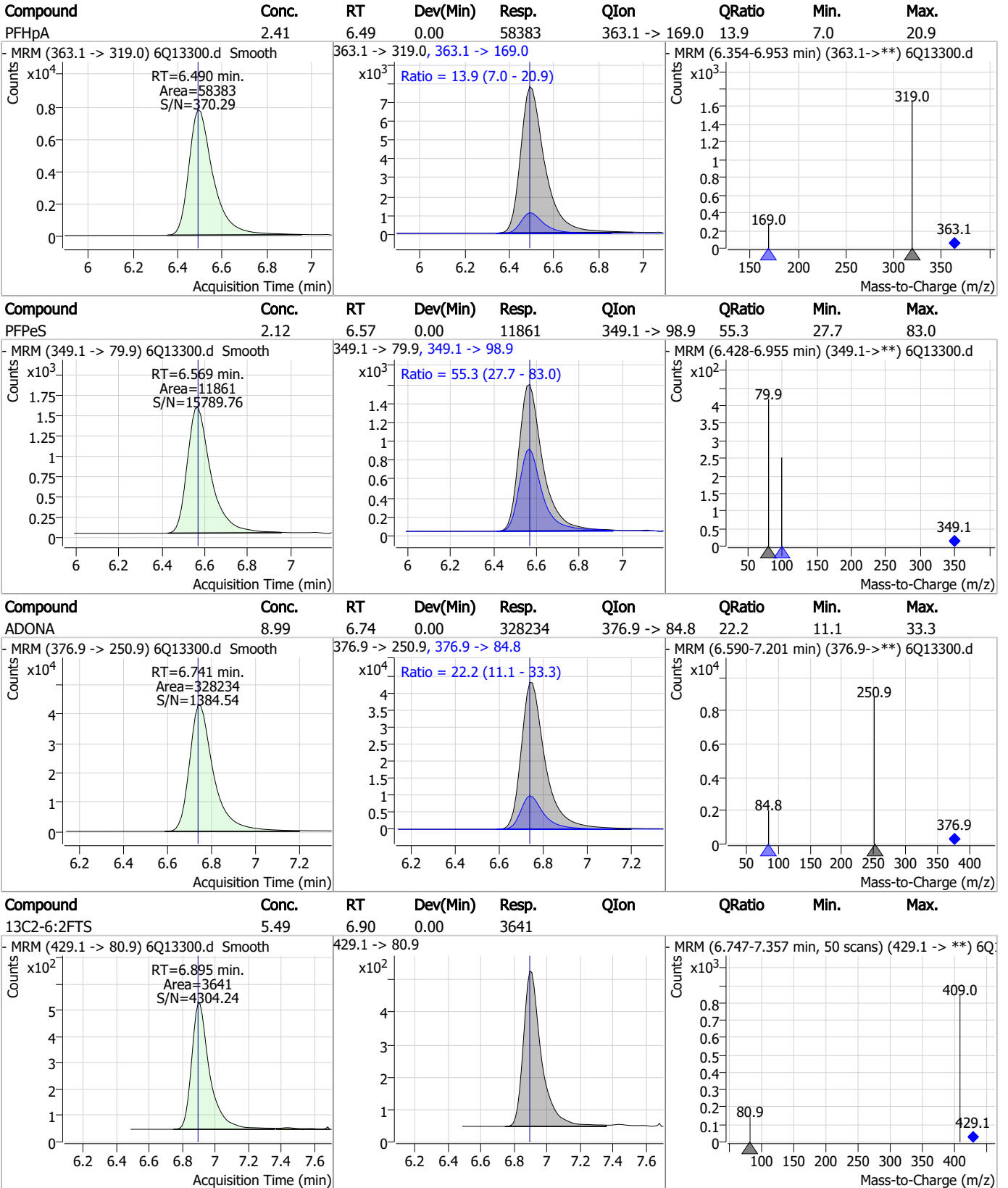
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.31	6.49	0.00	41657	367.1 -> 322.0			



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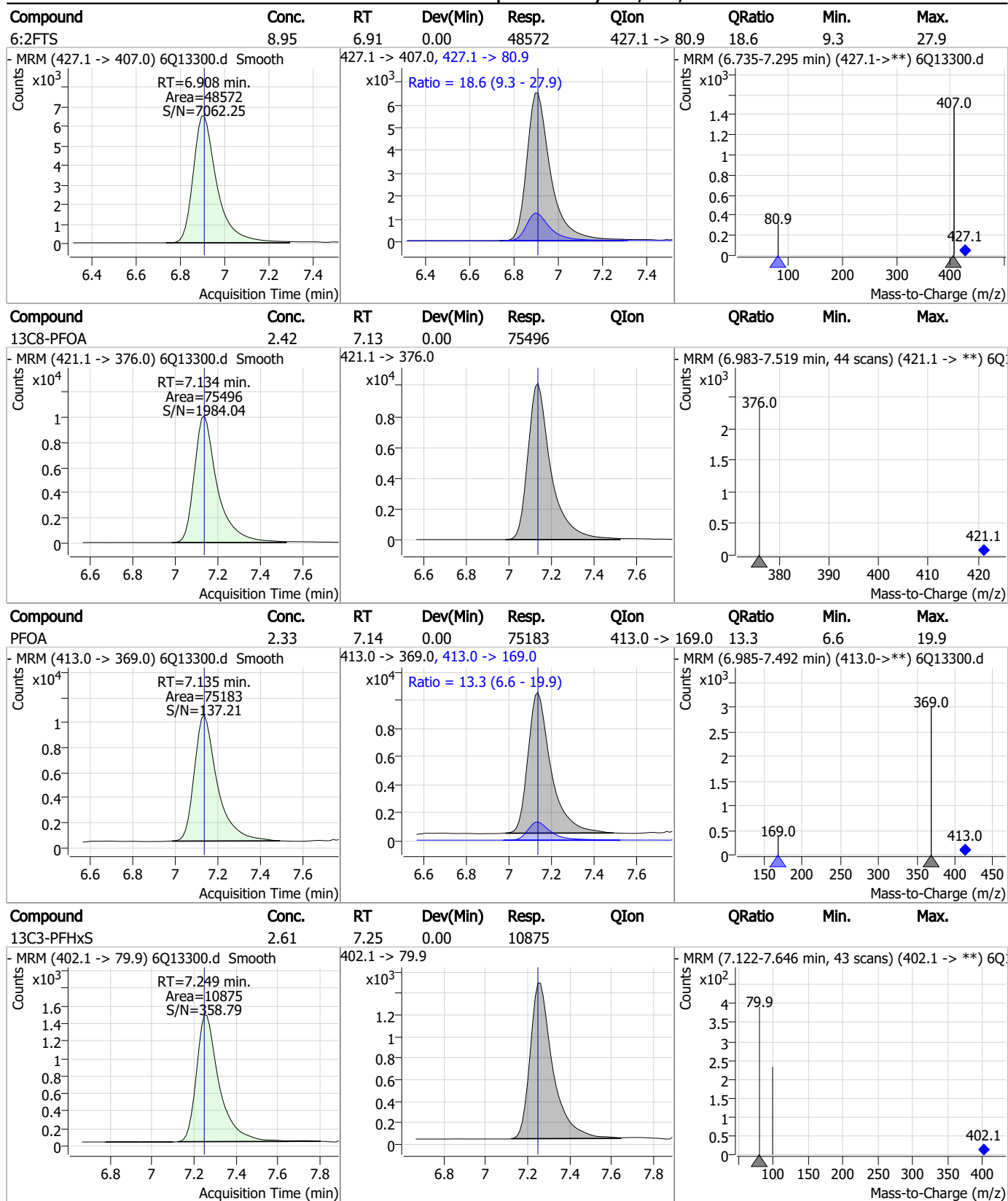
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

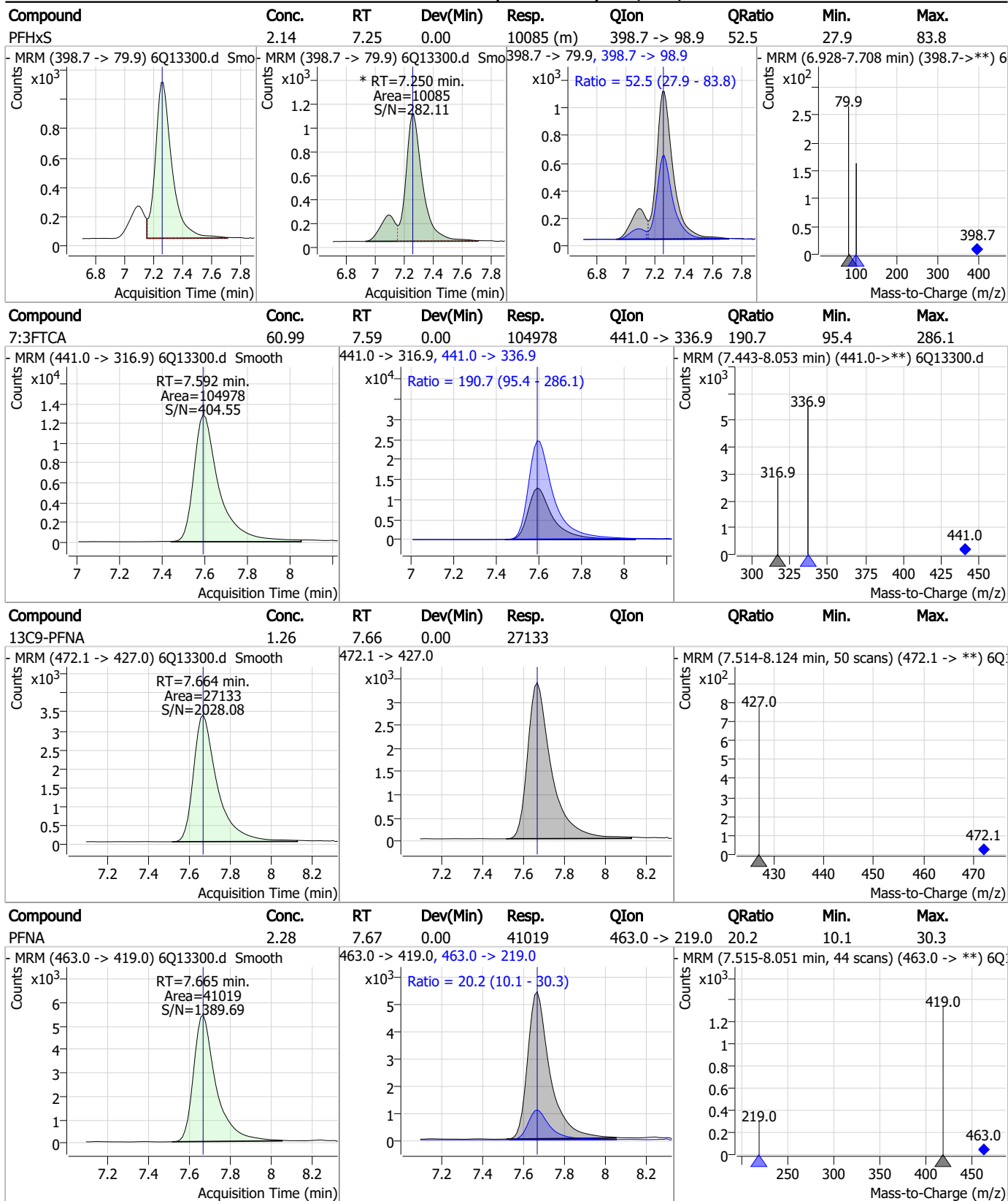


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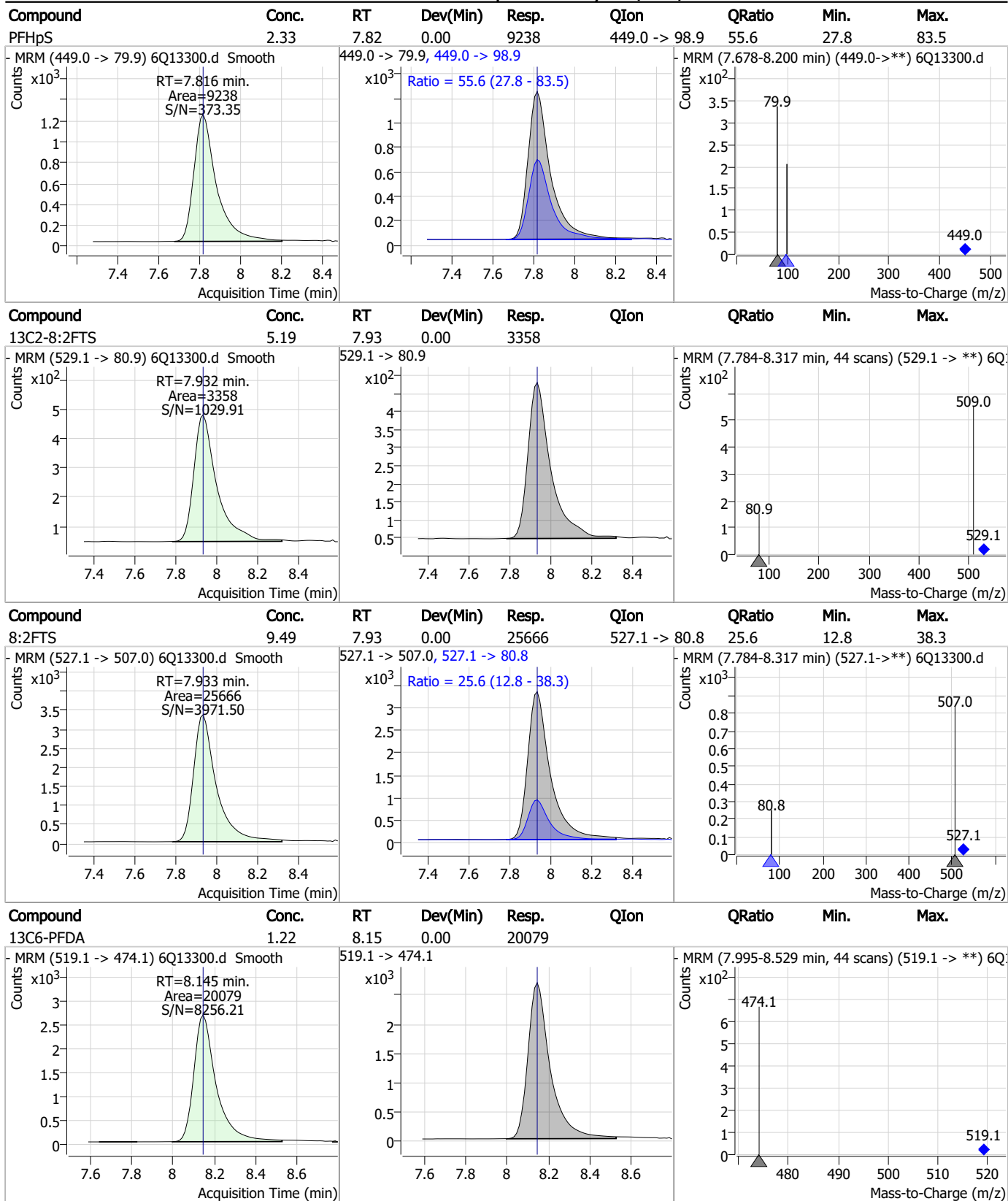


### Perfluorinated Compounds by LC/MS/MS



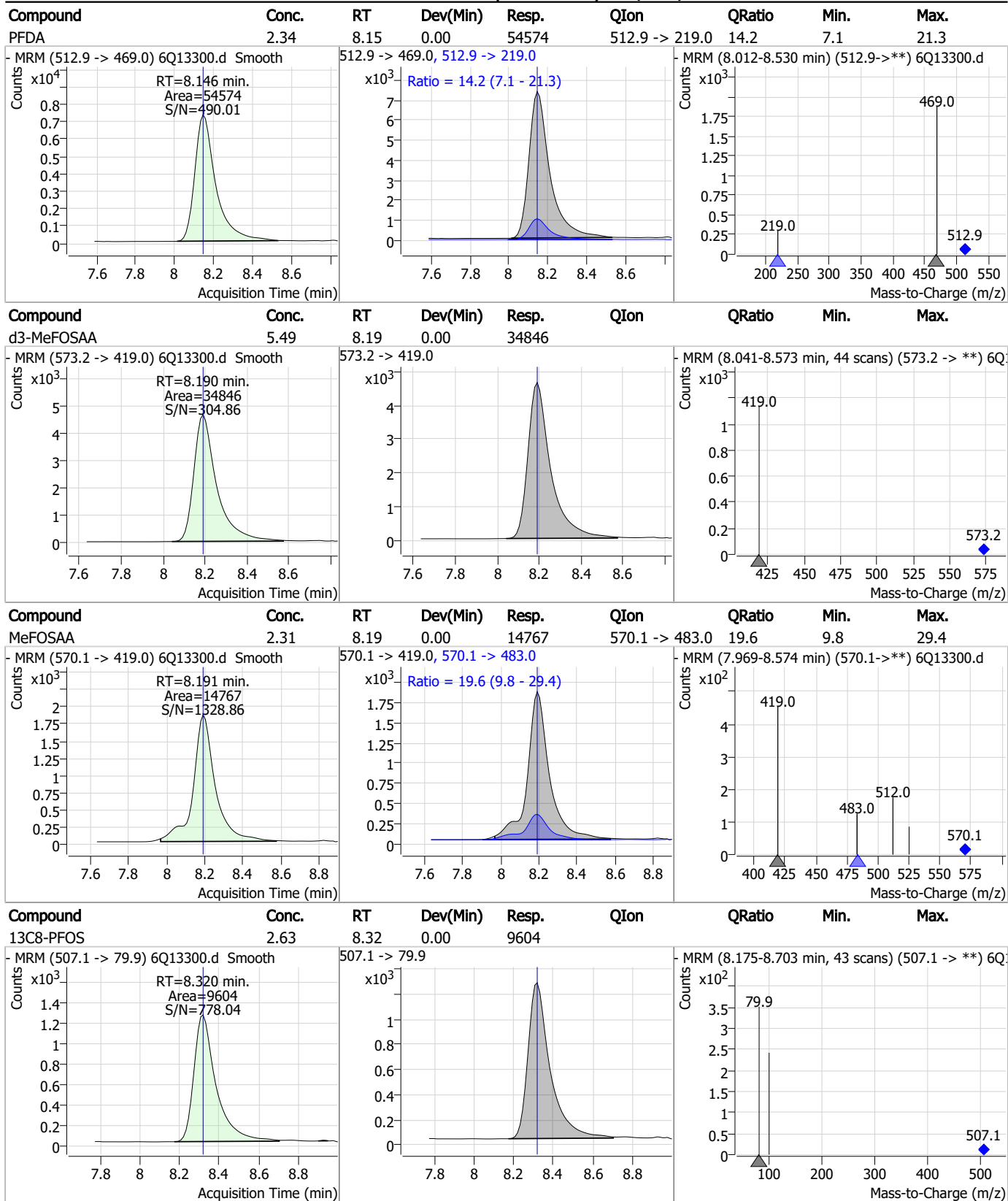
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### Perfluorinated Compounds by LC/MS/MS



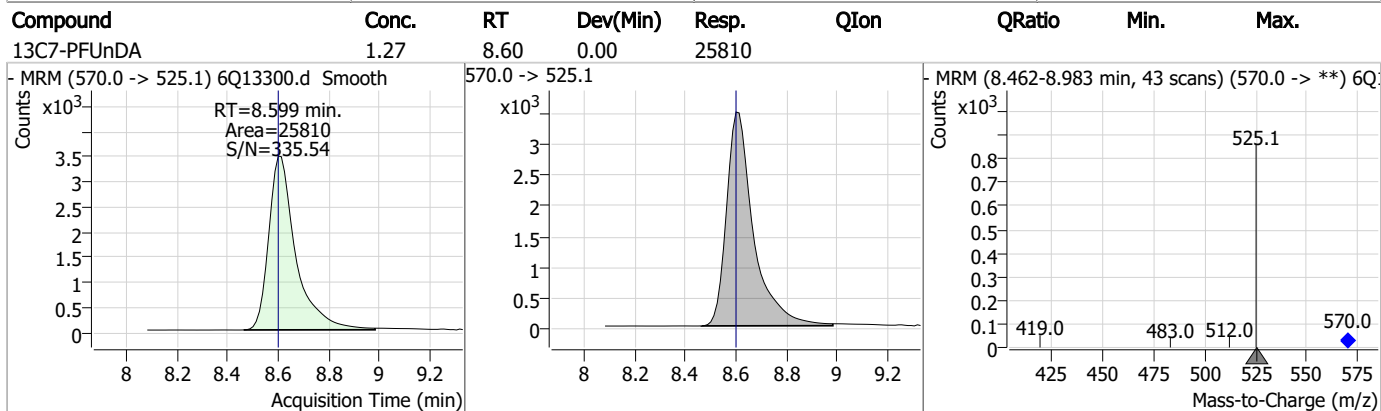
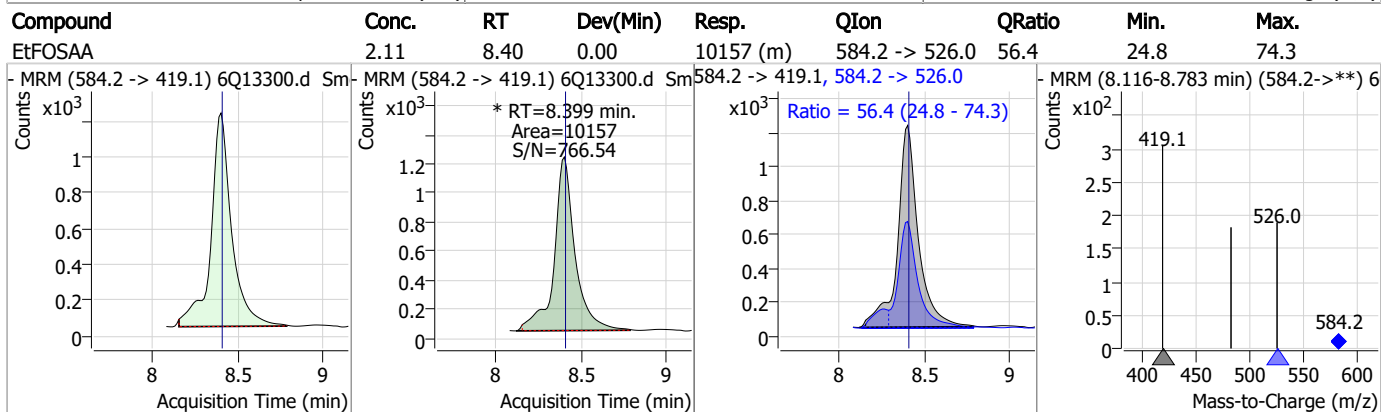
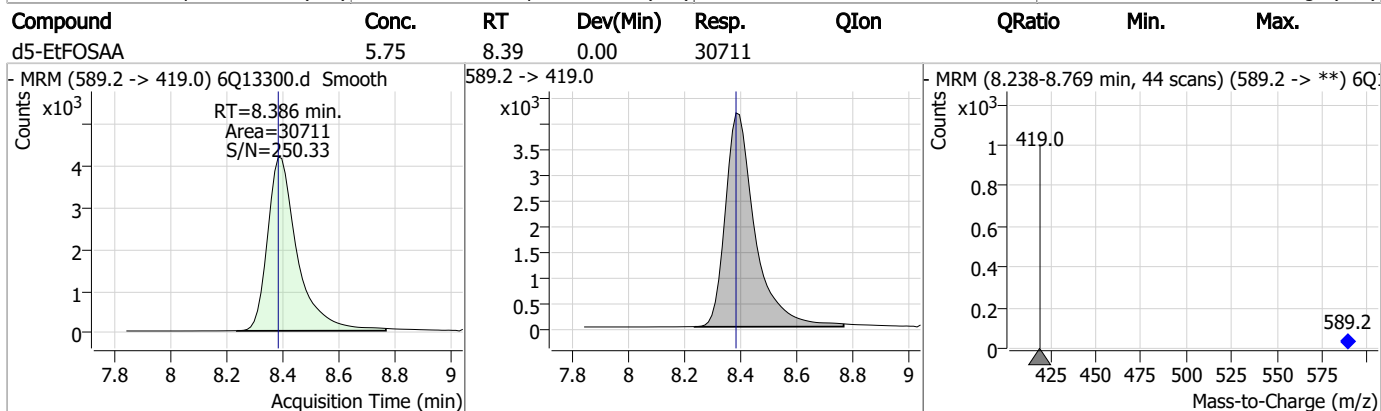
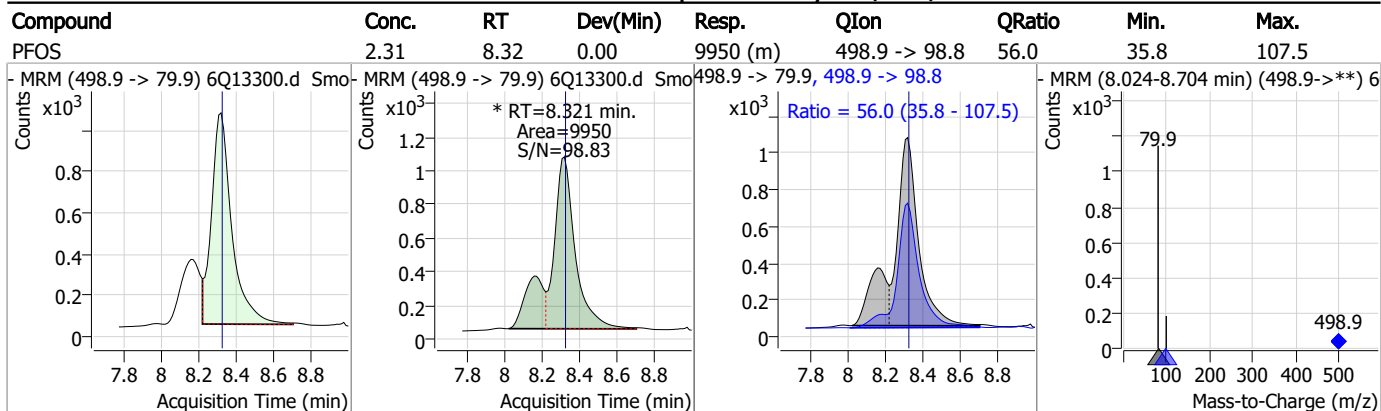
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### Perfluorinated Compounds by LC/MS/MS

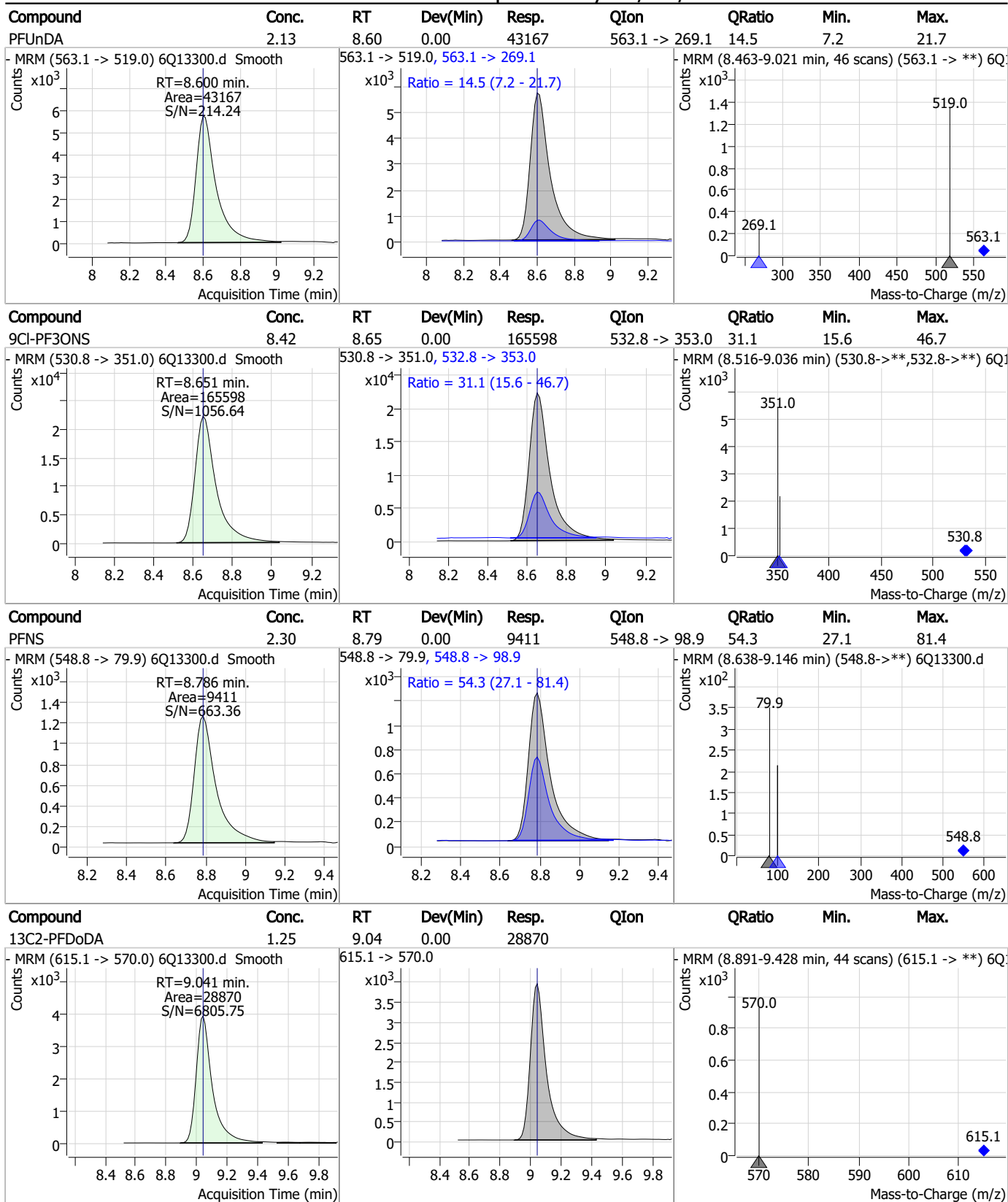


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### Perfluorinated Compounds by LC/MS/MS

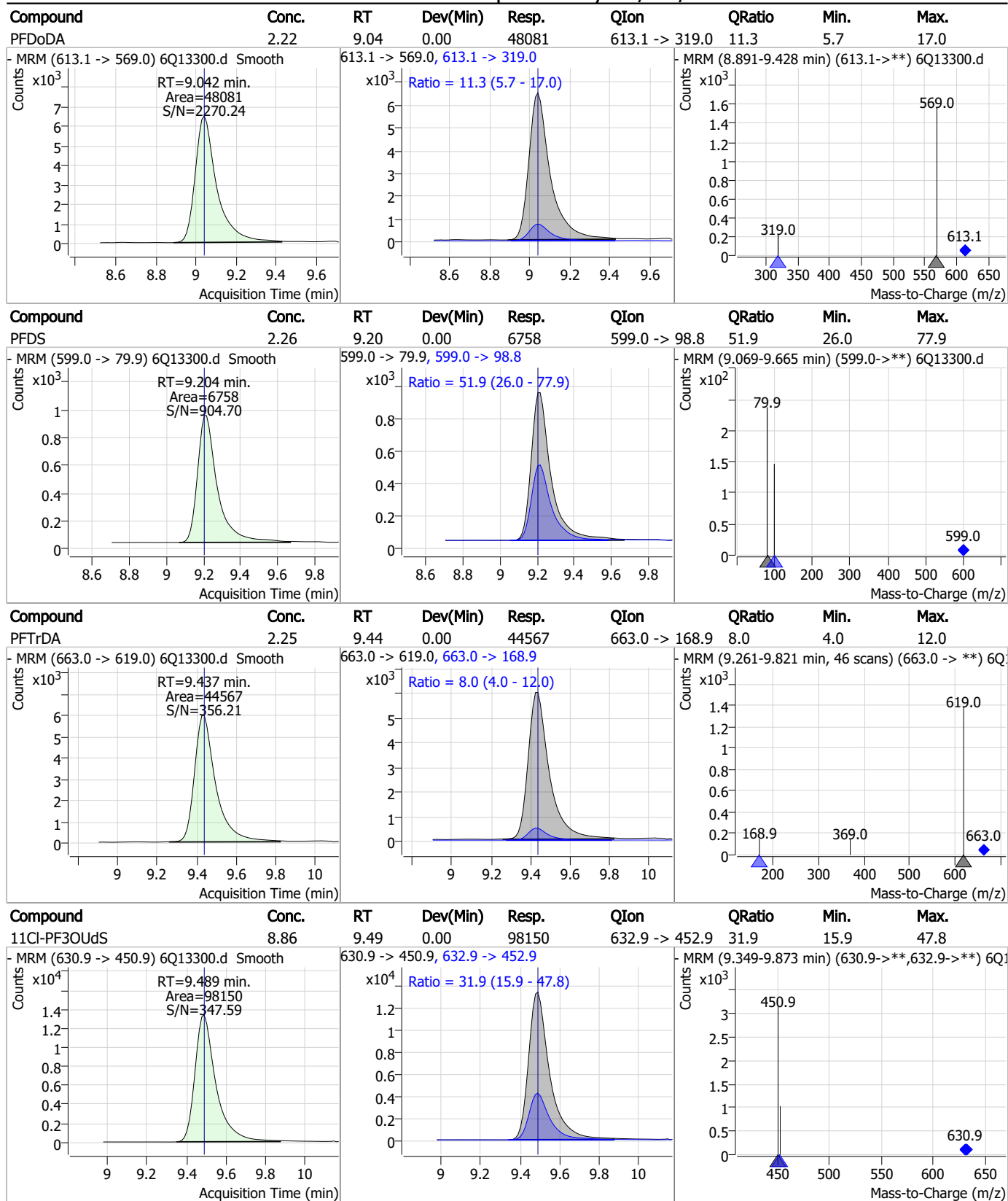


### Perfluorinated Compounds by LC/MS/MS



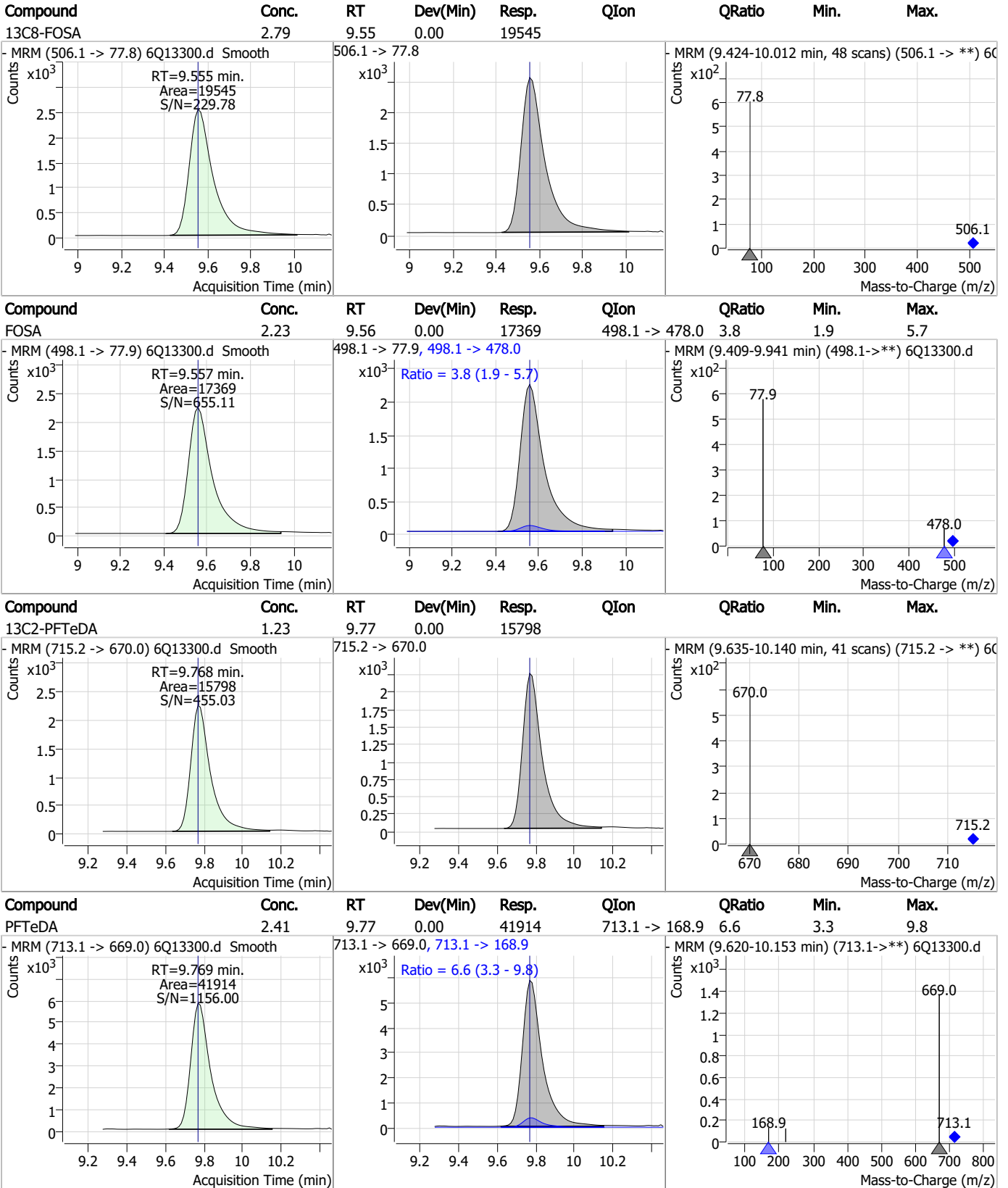
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### Perfluorinated Compounds by LC/MS/MS



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

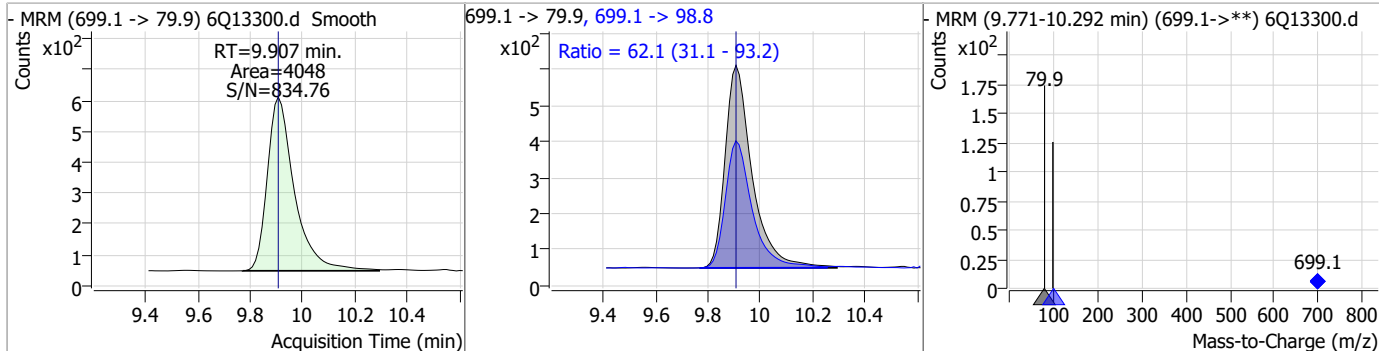


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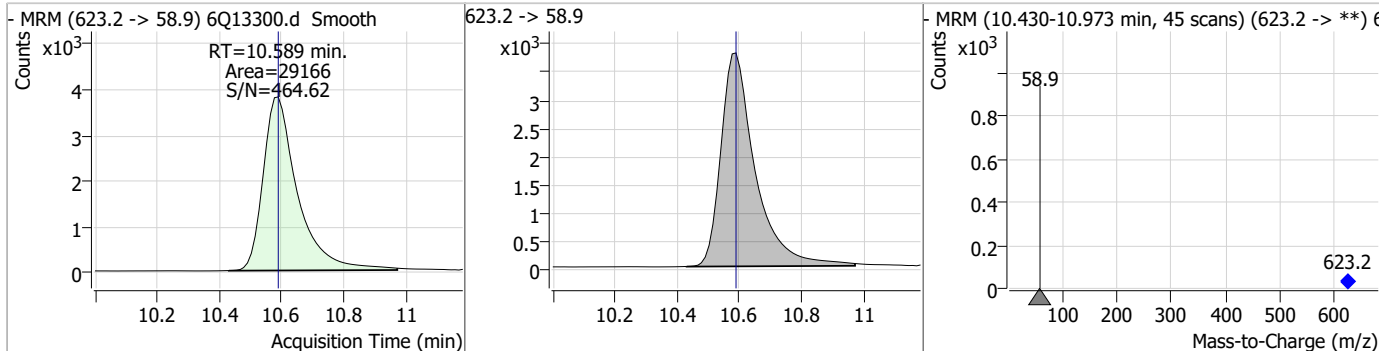
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### Perfluorinated Compounds by LC/MS/MS

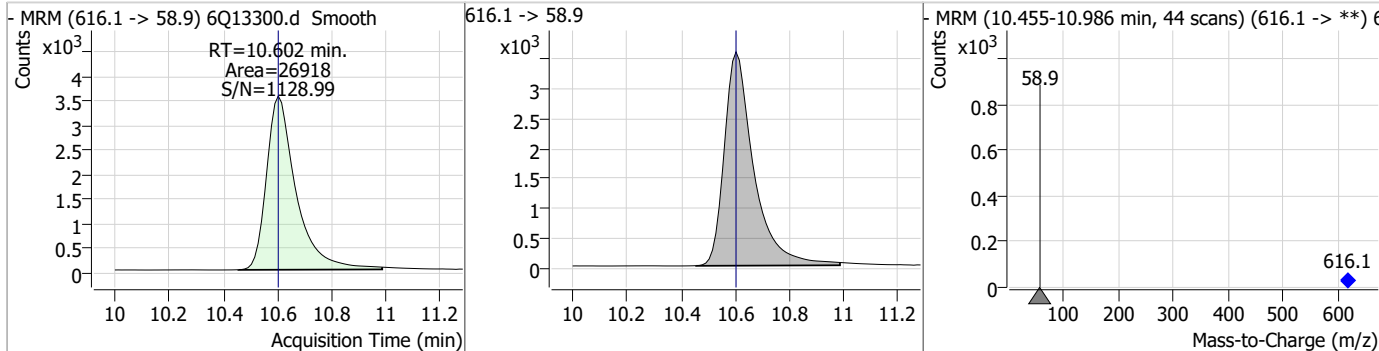
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD <sub>o</sub> DS	2.24	9.91	0.00	4048	699.1 -> 98.8	62.1	31.1	93.2



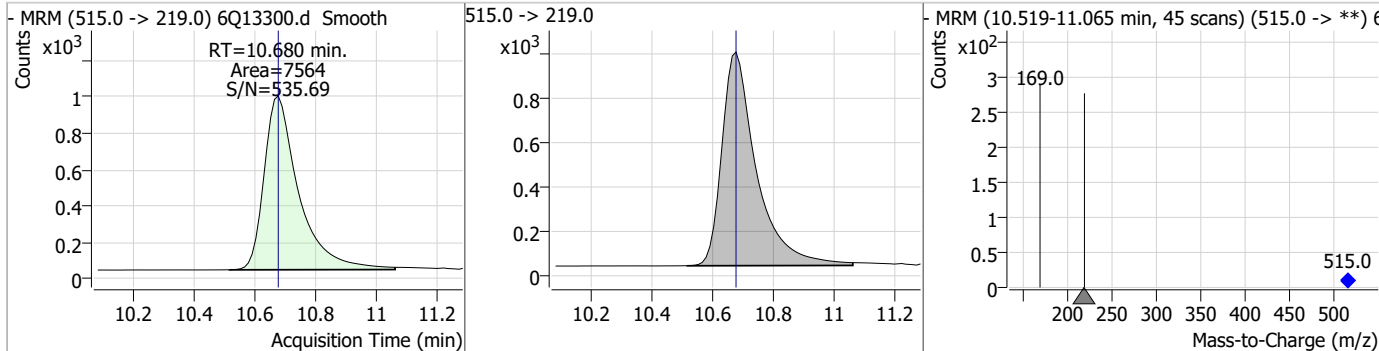
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.25	10.59	0.00	29166				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	23.74	10.60	0.00	26918				

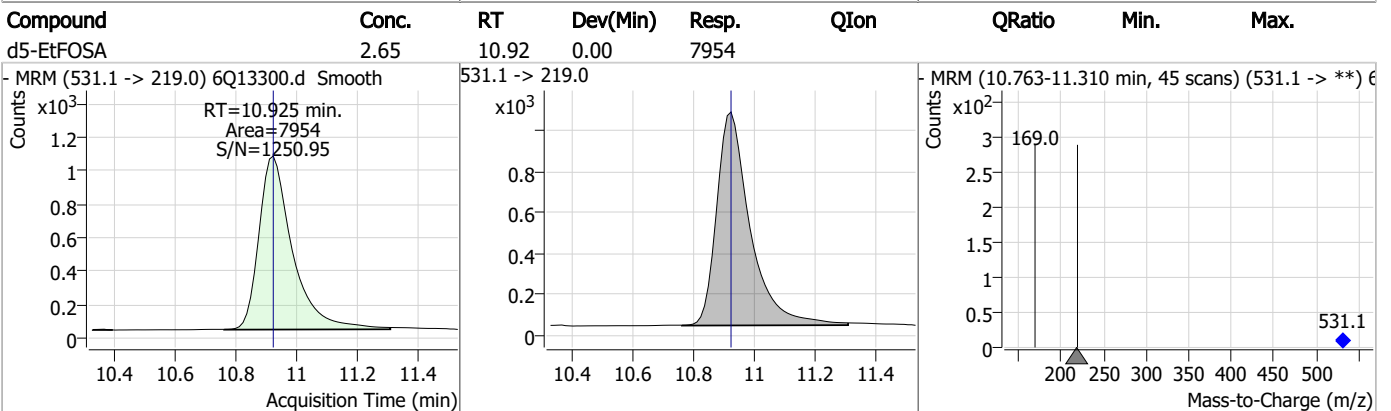
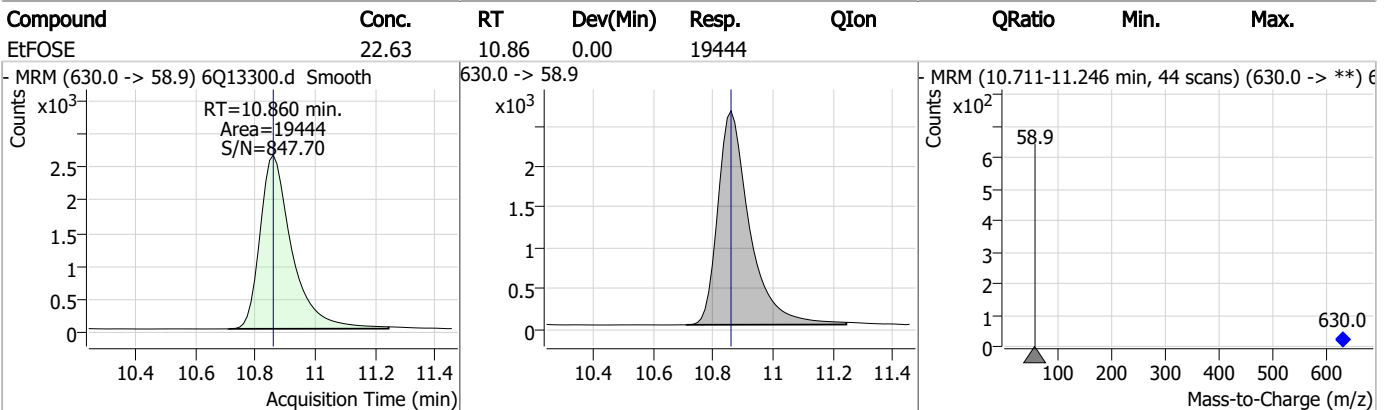
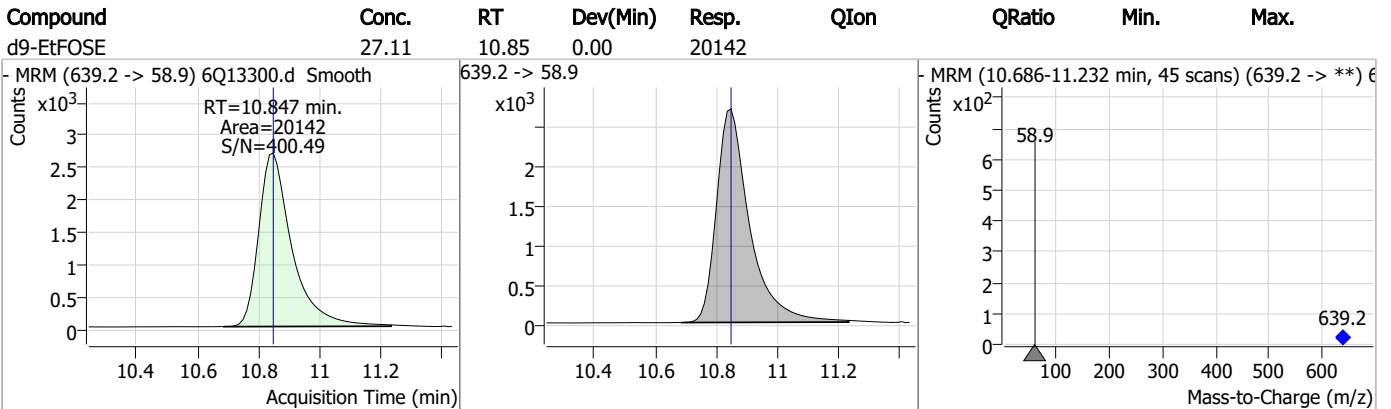
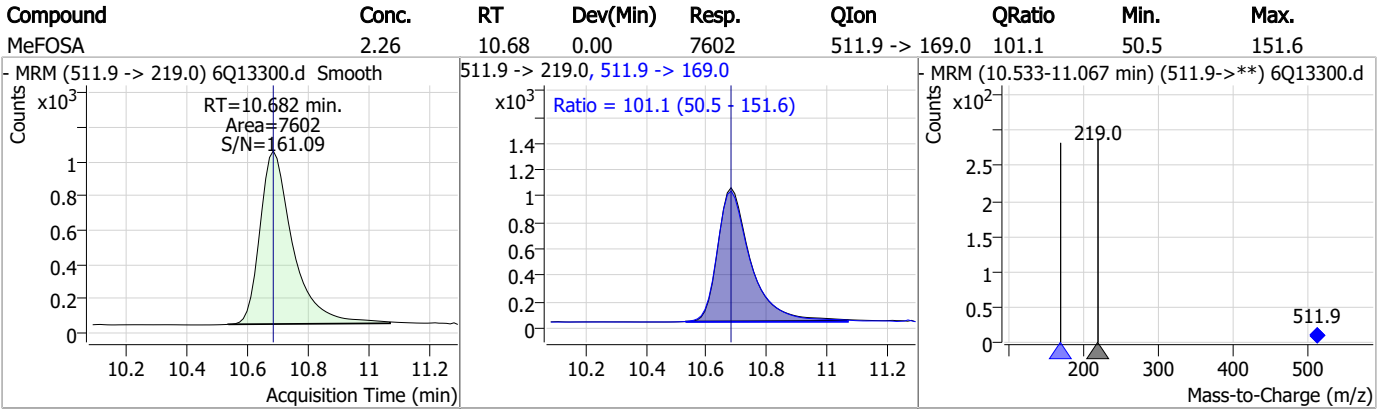


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.66	10.68	0.00	7564				





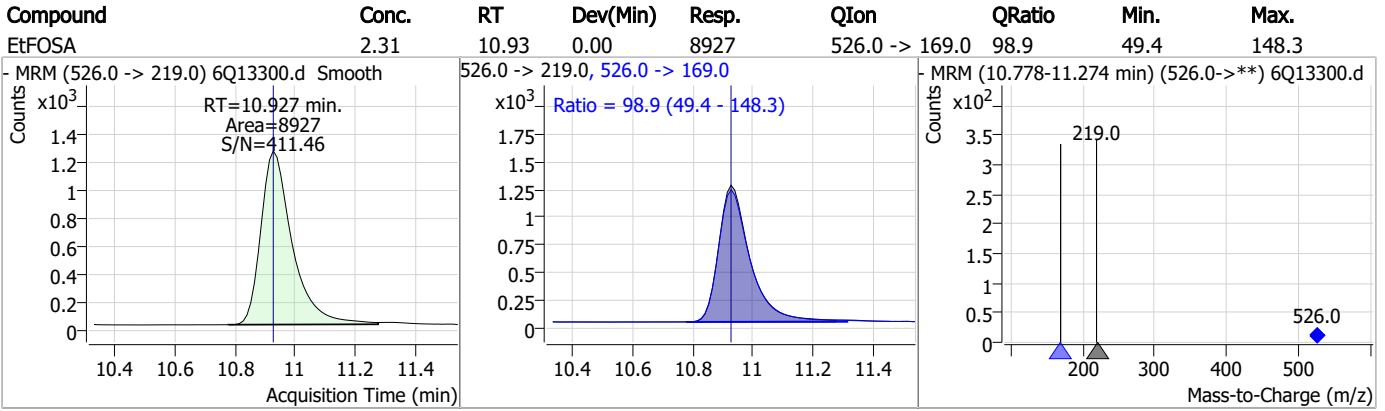
### Perfluorinated Compounds by LC/MS/MS



7.7.5

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Perfluorinated Compounds by LC/MS/MS



7.7.5

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# Manual Integration Approval Summary

Sample Number: S6Q203-ICC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13300.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 13:26      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFMPA	377-73-1		3.55	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

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

**Norman Farmer**  
**02/10/23 16:52**

### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13301.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 1:40:37 PM  
 Sample Name : ic203-5  
 Vial : P1-A6  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	90435	10.00 µg/L	-0.025
M5-PFPeA	4.374	268.3 -> 223.0	45730	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	40903	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	40128	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	70818	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	26013	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	19079	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	23666	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	26742	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14849	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17510	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	14901	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	9846	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	9250	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2354	5.00 µg/L	-0.012
M2-6:2FTS	6.908	429.1 -> 80.9	3491	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	3194	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	32983	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	15323	10.00 µg/L	0.000
M5-EtFOSAA	8.398	589.2 -> 419.0	26478	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	28040	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	18736	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	7166	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	7343	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10443	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	40227	5.00 µg/L	-0.025
18O2-PFHxS	7.261	403.0 -> 83.9	7351	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	85509	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	27337	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	27437	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	39041	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2354	4.83 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3491	5.56 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.2%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3194	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C2-PFDoDA	9.041	615.1 -> 570.0	26742	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14849	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C3-PFBS	5.518	302.1 -> 79.9	14901	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C3-PFHxS	7.262	402.1 -> 79.9	9846	2.49 µg/L	0.012

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## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C4-PFBA	2.975	216.8 -> 171.9	90435	10.07 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C4-PFHpA	6.502	367.1 -> 322.0	40128	2.45 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C5-PFHxA	5.563	318.0 -> 273.0	40903	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C5-PFPeA	4.374	268.3 -> 223.0	45730	5.13 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C6-PFDA	8.145	519.1 -> 474.1	19079	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C7-PFUnDA	8.612	570.0 -> 525.1	23666	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C8-FOSA	9.555	506.1 -> 77.8	17510	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C8-PFOA	7.134	421.1 -> 376.0	70818	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C8-PFOS	8.319	507.1 -> 79.9	9250	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C9-PFNA	7.664	472.1 -> 427.0	26013	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
d3-MeFOSAA	8.190	573.2 -> 419.0	32983	5.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C3-HFPO-DA	5.940	286.9 -> 168.9	15323	9.83 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.3%		
d3-MeFOSA	10.680	515.0 -> 219.0	7343	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.2%		
d5-EtFOSAA	8.398	589.2 -> 419.0	26478	5.23 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.6%		
d7-MeFOSE	10.589	623.2 -> 58.9	28040	26.64 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 106.5%		
d9-EtFOSE	10.835	639.2 -> 58.9	18736	26.61 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 106.5%		
d5-EtFOSA	10.925	531.1 -> 219.0	7166	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.0%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.228	327.1 -> 307.0	109508	20.78 µg/L	96
		327.1 -> 80.9	23341		
6:2FTS	6.908	427.1 -> 407.0	91832	17.65 µg/L	99
		427.1 -> 80.9	17477		
8:2FTS	7.933	527.1 -> 507.0	48059	18.68 µg/L	96
		527.1 -> 80.8	11319		
EtFOSAA	8.399	584.2 -> 419.1	20805	5.01 µg/L	97
		584.2 -> 526.0	10729		
FOSA	9.557	498.1 -> 77.9	35462	5.07 µg/L	99
		498.1 -> 478.0	1262		
MeFOSAA	8.191	570.1 -> 419.0	28479	4.70 µg/L	m 97
		570.1 -> 483.0	5256		
PFBA	2.969	212.8 -> 168.9	40200	19.75 µg/L	100
PFBS	5.518	298.7 -> 79.9	25873	4.53 µg/L	98
		298.7 -> 98.8	11825		
PFDA	8.146	512.9 -> 469.0	105273	4.74 µg/L	99
		512.9 -> 219.0	14619		
PFDODA	9.042	613.1 -> 569.0	100793	5.02 µg/L	100
		613.1 -> 319.0	11318		
PFDS	9.216	599.0 -> 79.9	13623	4.73 µg/L	94

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	7650			
PFHpA	6.503	363.1 -> 319.0	120719	5.17	µg/L	98
		363.1 -> 169.0	15740			
PFHpS	7.816	449.0 -> 79.9	17753	4.65	µg/L	94
		449.0 -> 98.9	10674			
PFHxA	5.566	313.0 -> 269.0	77939	4.93	µg/L	99
		313.0 -> 118.9	2744			
PFHxS	7.263	398.7 -> 79.9	19675	4.60	µg/L	m 99
		398.7 -> 98.9	11190			
PFNA	7.665	463.0 -> 419.0	84689	4.91	µg/L	96
		463.0 -> 219.0	15425			
PFNS	8.786	548.8 -> 79.9	19048	4.84	µg/L	93
		548.8 -> 98.9	11238			
PFOA	7.135	413.0 -> 369.0	155975	5.14	µg/L	100
		413.0 -> 169.0	20535			
PFOS	8.321	498.9 -> 79.9	18283	4.41	µg/L	m 92
		498.9 -> 98.8	11852			
PFPeA	4.375	263.0 -> 219.0	93099	9.65	µg/L	100
PFPeS	6.569	349.1 -> 79.9	24076	4.75	µg/L	98
		349.1 -> 98.9	12879			
PFTeDA	9.769	713.1 -> 669.0	77679	4.76	µg/L	99
		713.1 -> 168.9	5292			
PFTrDA	9.425	663.0 -> 619.0	94367	5.14	µg/L	98
		663.0 -> 168.9	6852			
PFUnDA	8.612	563.1 -> 519.0	95481	5.15	µg/L	96
		563.1 -> 269.1	12456			
11Cl-PF3OUdS	9.489	630.9 -> 450.9	208623	20.23	µg/L	96
		632.9 -> 452.9	61415			
9Cl-PF3ONS	8.651	530.8 -> 351.0	348101	19.03	µg/L	97
		532.8 -> 353.0	103105			
ADONA	6.753	376.9 -> 250.9	661850	19.49	µg/L	98
		376.9 -> 84.8	140522			
HFPO-DA	5.940	284.9 -> 168.9	29412	20.25	µg/L	99
		284.9 -> 184.9	3468			
3:3FTCA	3.829	241.0 -> 177.0	11833	24.79	µg/L	98
		241.0 -> 117.0	1563			
5:3FTCA	6.193	341.0 -> 237.1	401512	119.72	µg/L	95
		341.0 -> 217.0	356757			
7:3FTCA	7.605	441.0 -> 316.9	199198	115.49	µg/L	79
		441.0 -> 336.9	442079			
EtFOSA	10.927	526.0 -> 219.0	18349	5.26	µg/L	99
		526.0 -> 169.0	17898			
EtFOSE	10.860	630.0 -> 58.9	39229	49.09	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	15238	4.67	µg/L	98
		511.9 -> 169.0	15760			
MeFOSE	10.602	616.1 -> 58.9	53925	49.47	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	8017	4.60	µg/L	98
		699.1 -> 98.8	5077			
NFDHA	5.445	295.0 -> 201.0	8997	9.74	µg/L	96
		295.0 -> 84.9	4679			
PFMBA	4.787	279.0 -> 85.1	26768	9.69	µg/L	100
PFMPA	3.528	229.0 -> 84.9	25194	10.00	µg/L	m 100
PFEESA	6.046	314.8 -> 134.9	192120	8.61	µg/L	100
		314.8 -> 82.9	4543			

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

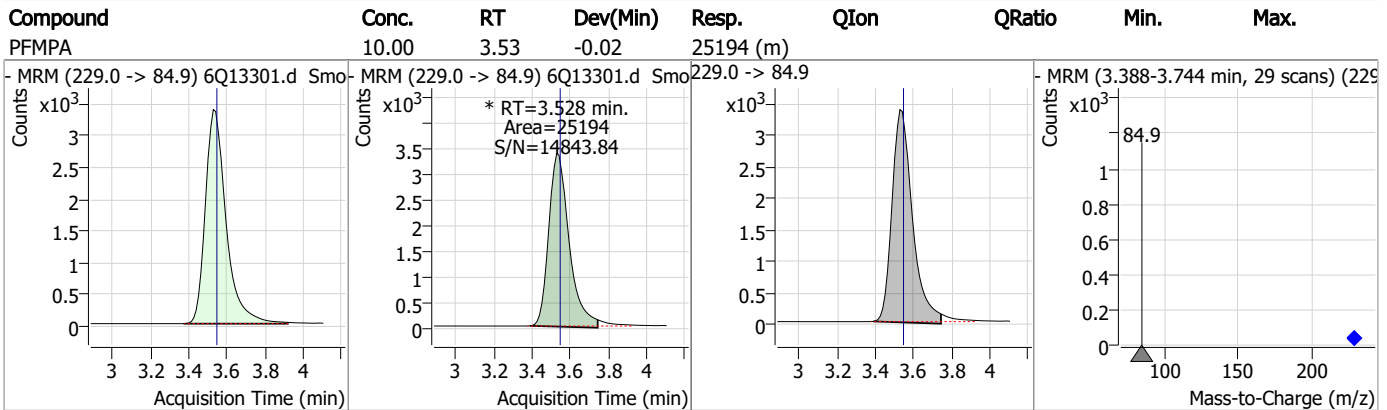
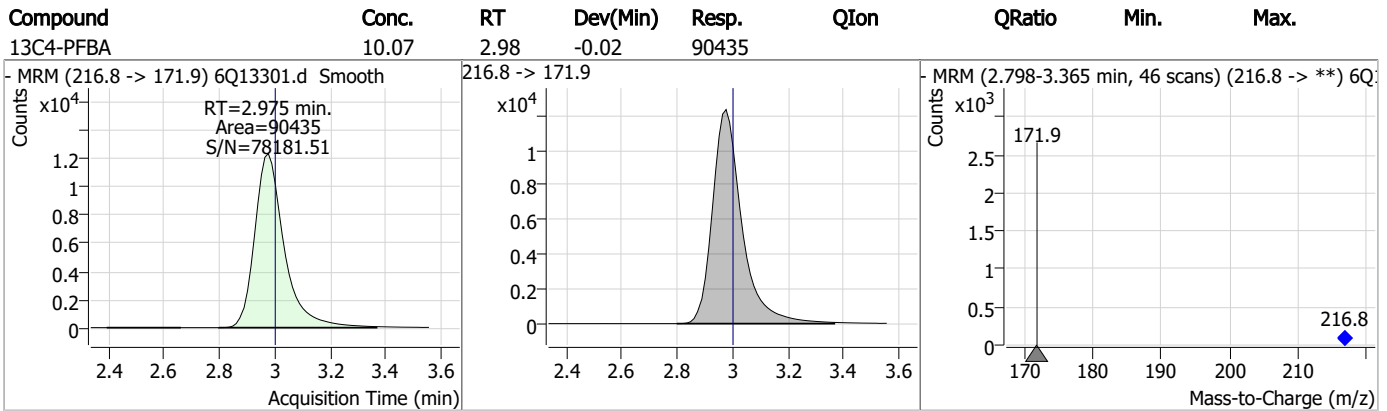
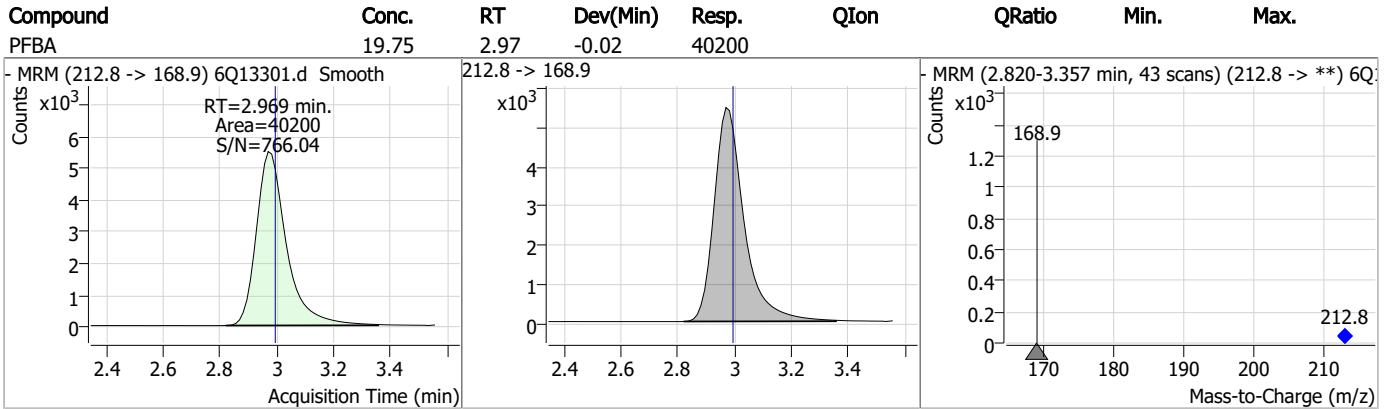
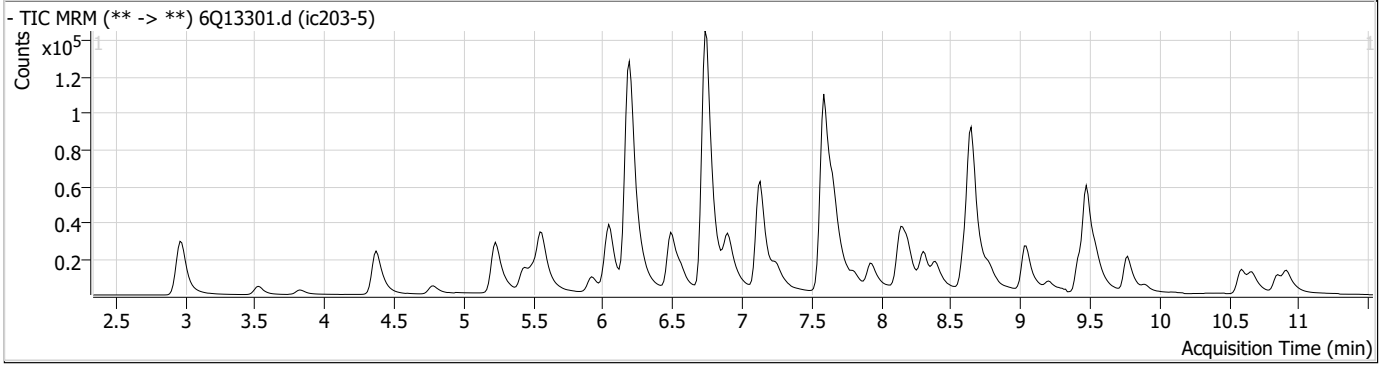
### Perfluorinated Compounds by LC/MS/MS

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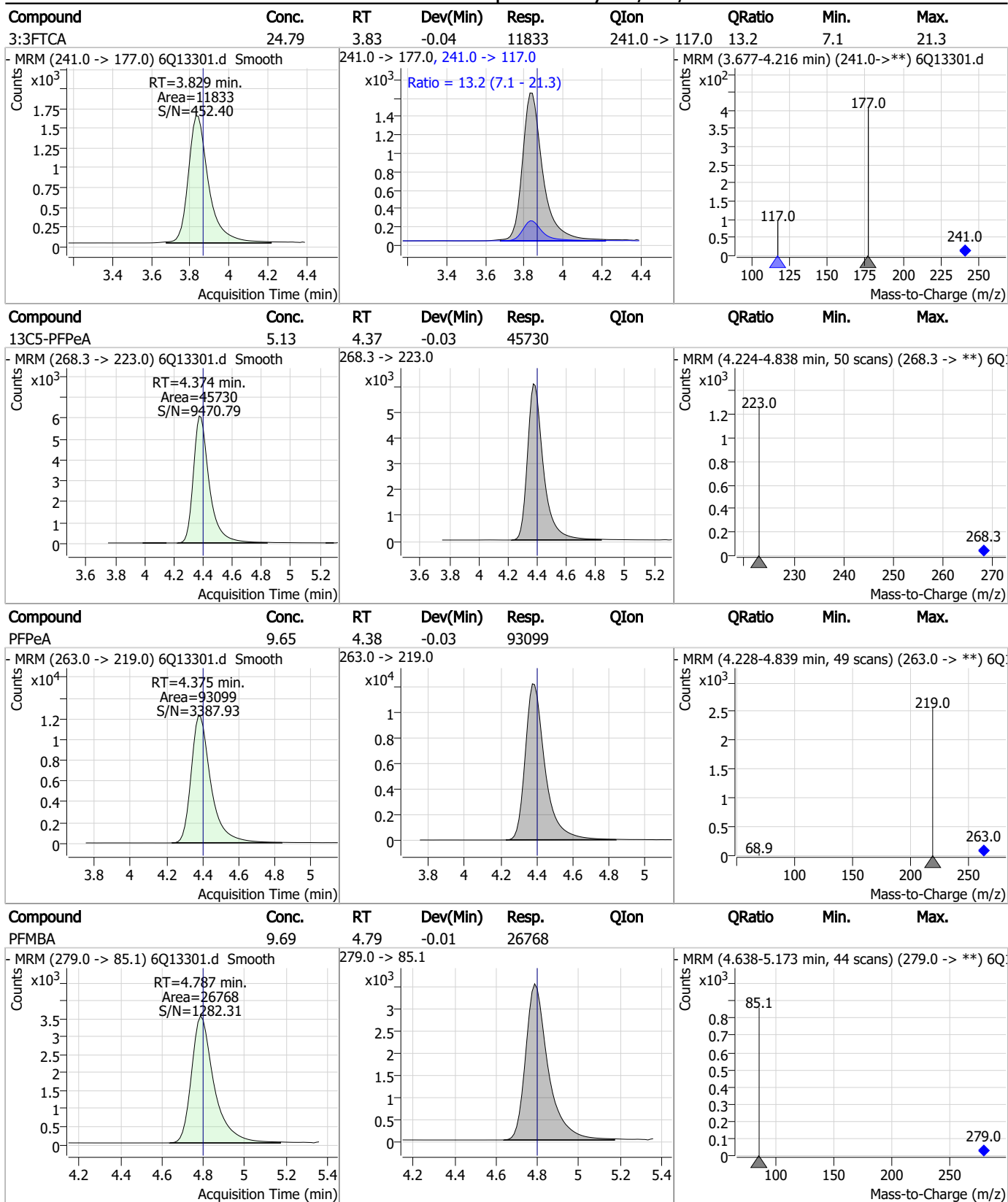
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### Perfluorinated Compounds by LC/MS/MS



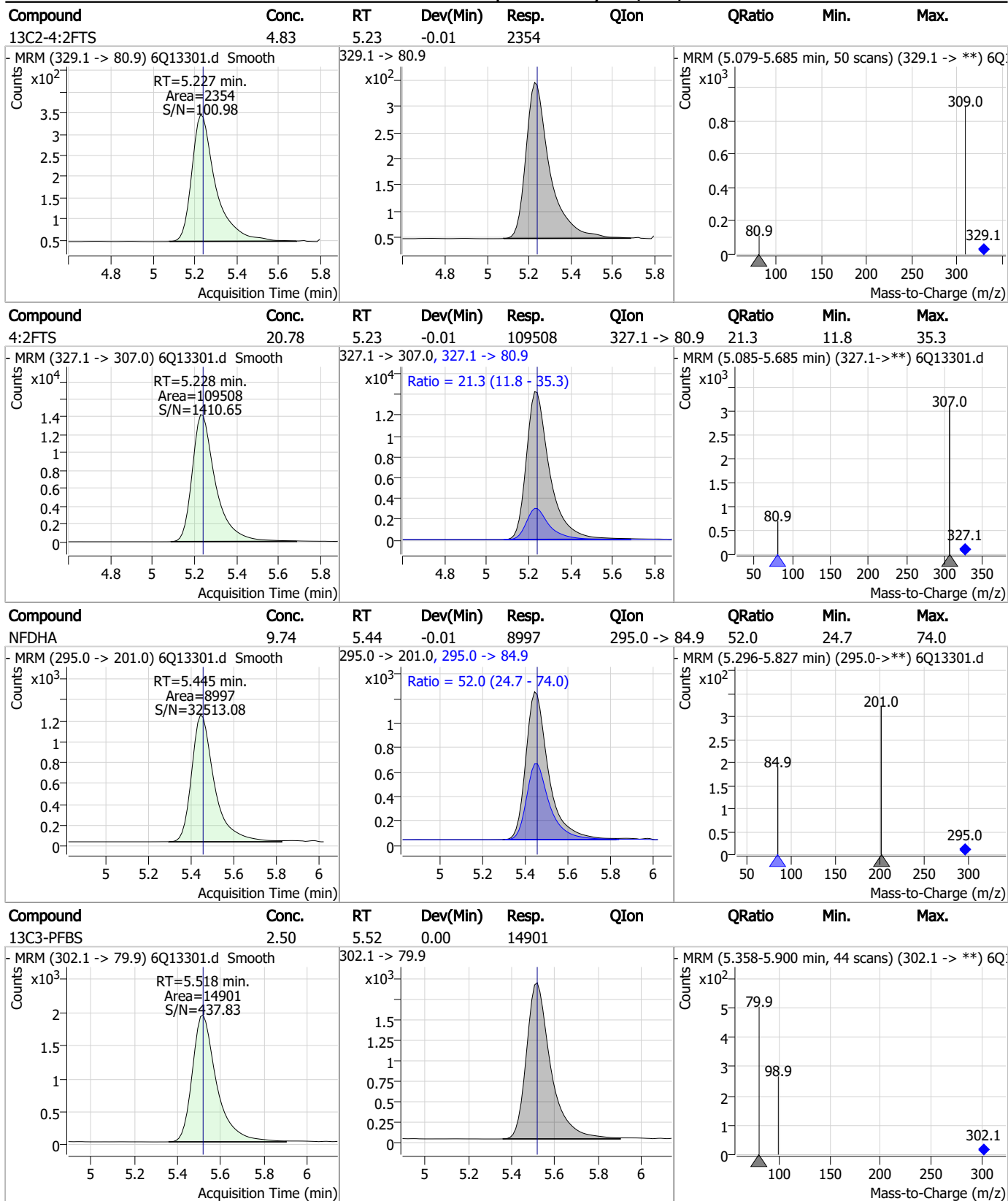


### Perfluorinated Compounds by LC/MS/MS



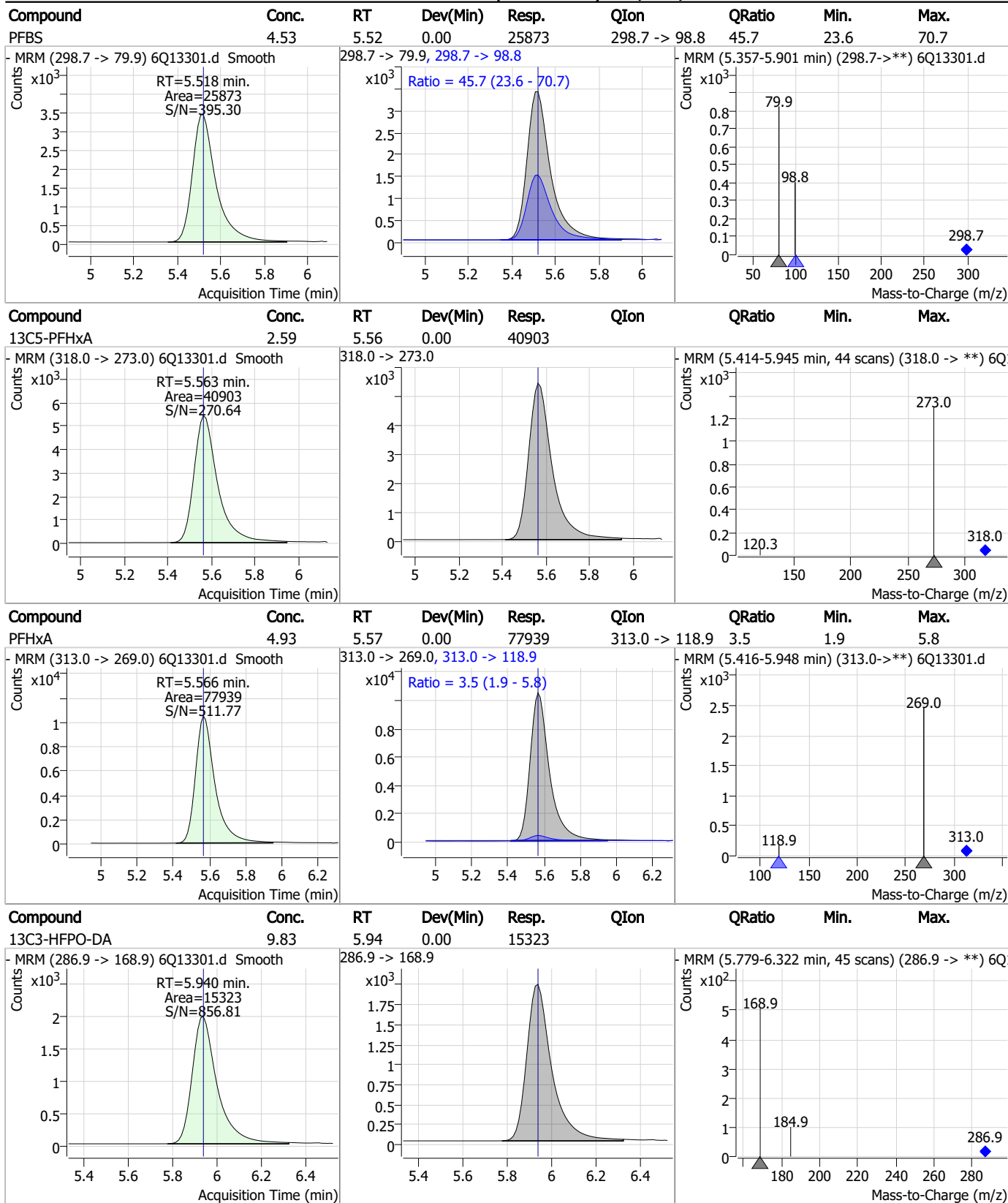
7.7.6  
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### Perfluorinated Compounds by LC/MS/MS



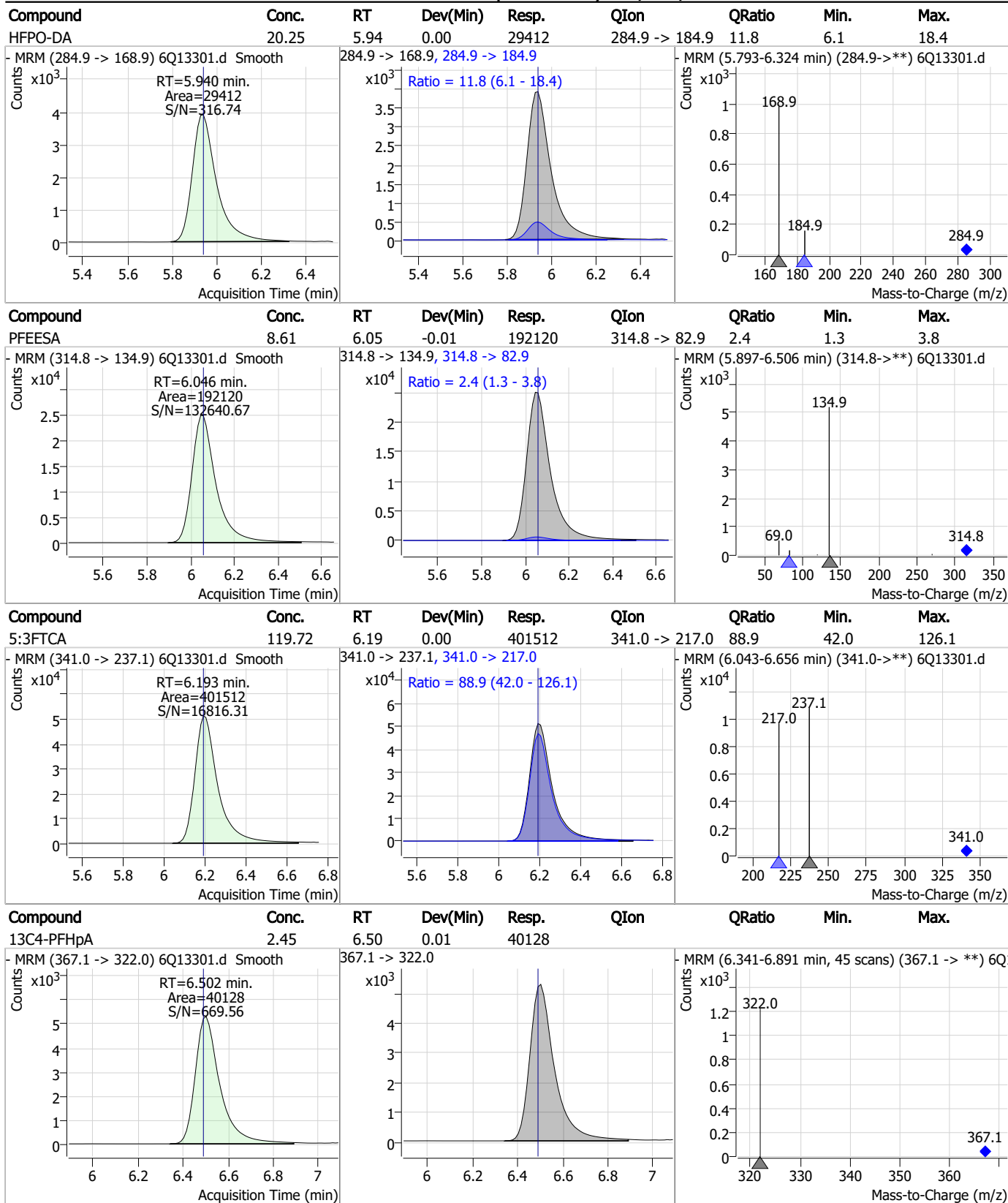
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### Perfluorinated Compounds by LC/MS/MS



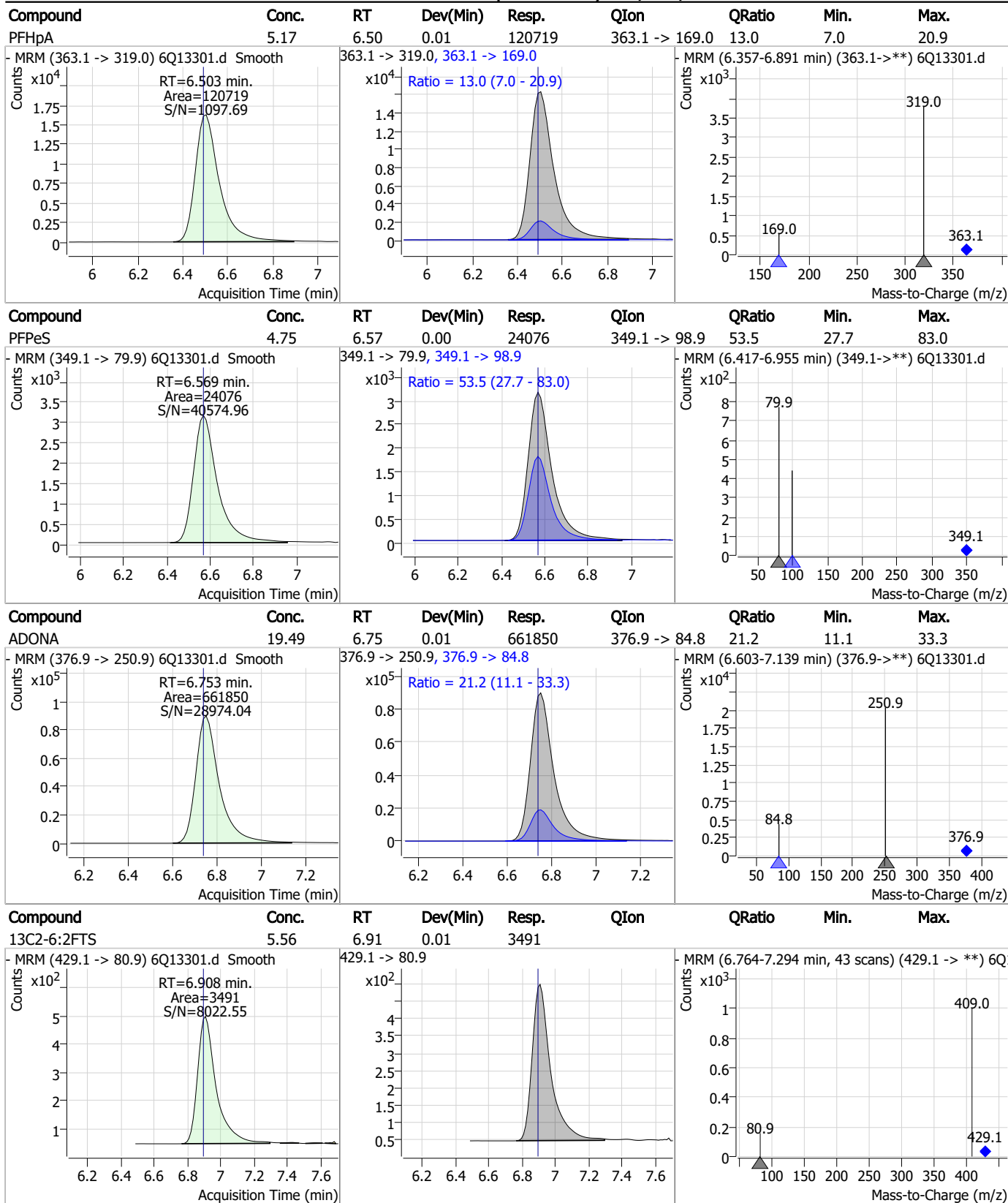
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### Perfluorinated Compounds by LC/MS/MS



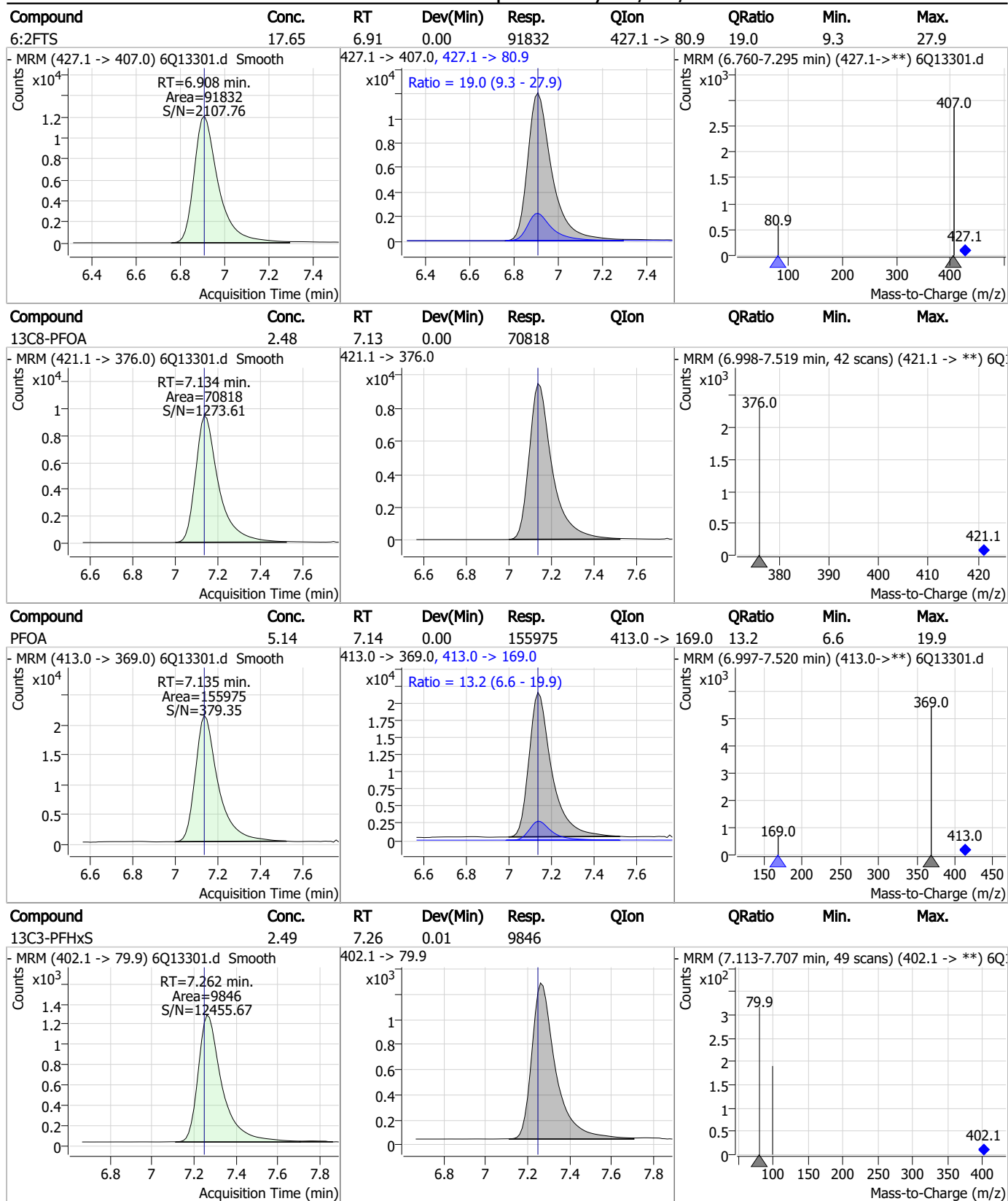
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### Perfluorinated Compounds by LC/MS/MS



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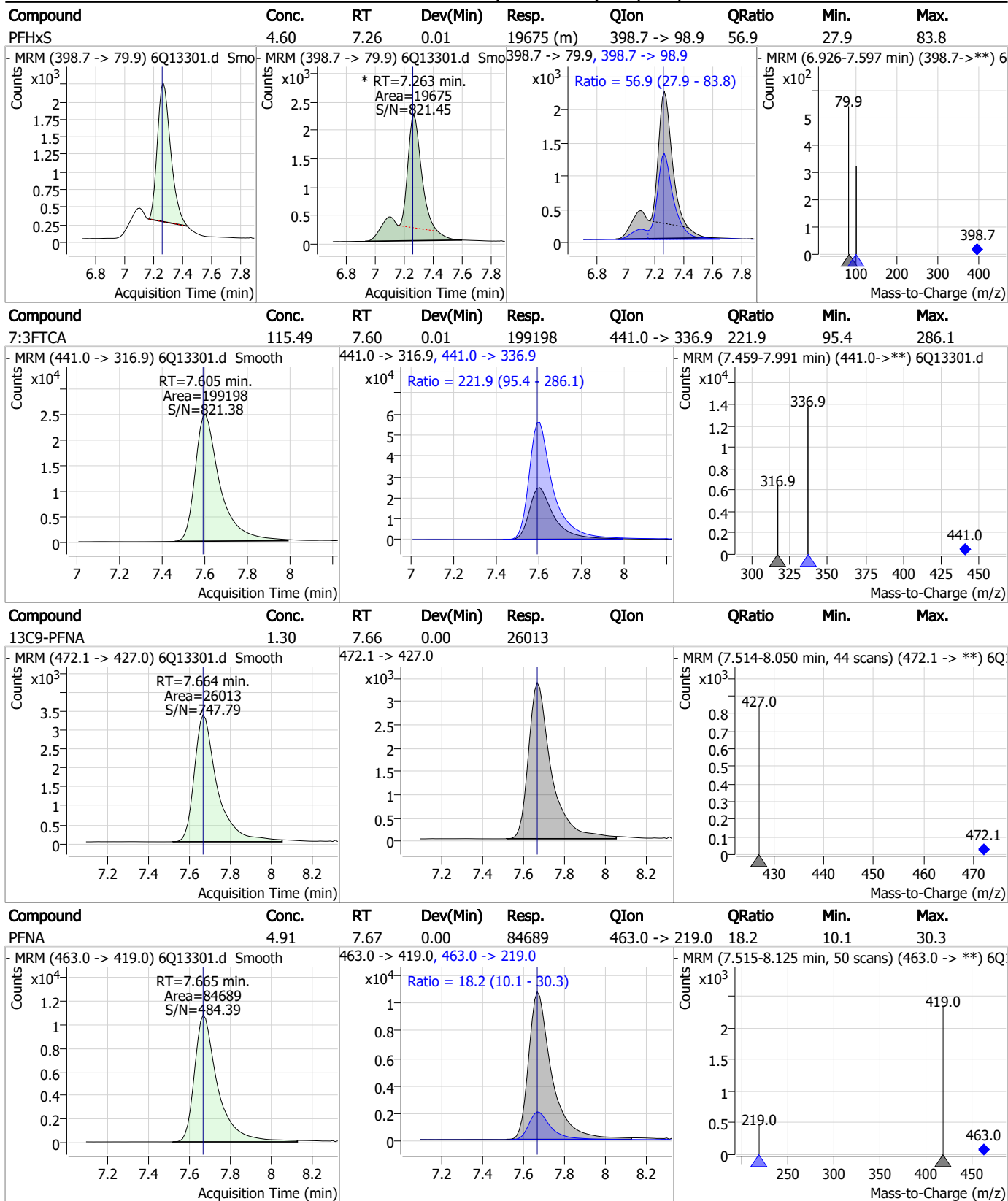
### Perfluorinated Compounds by LC/MS/MS



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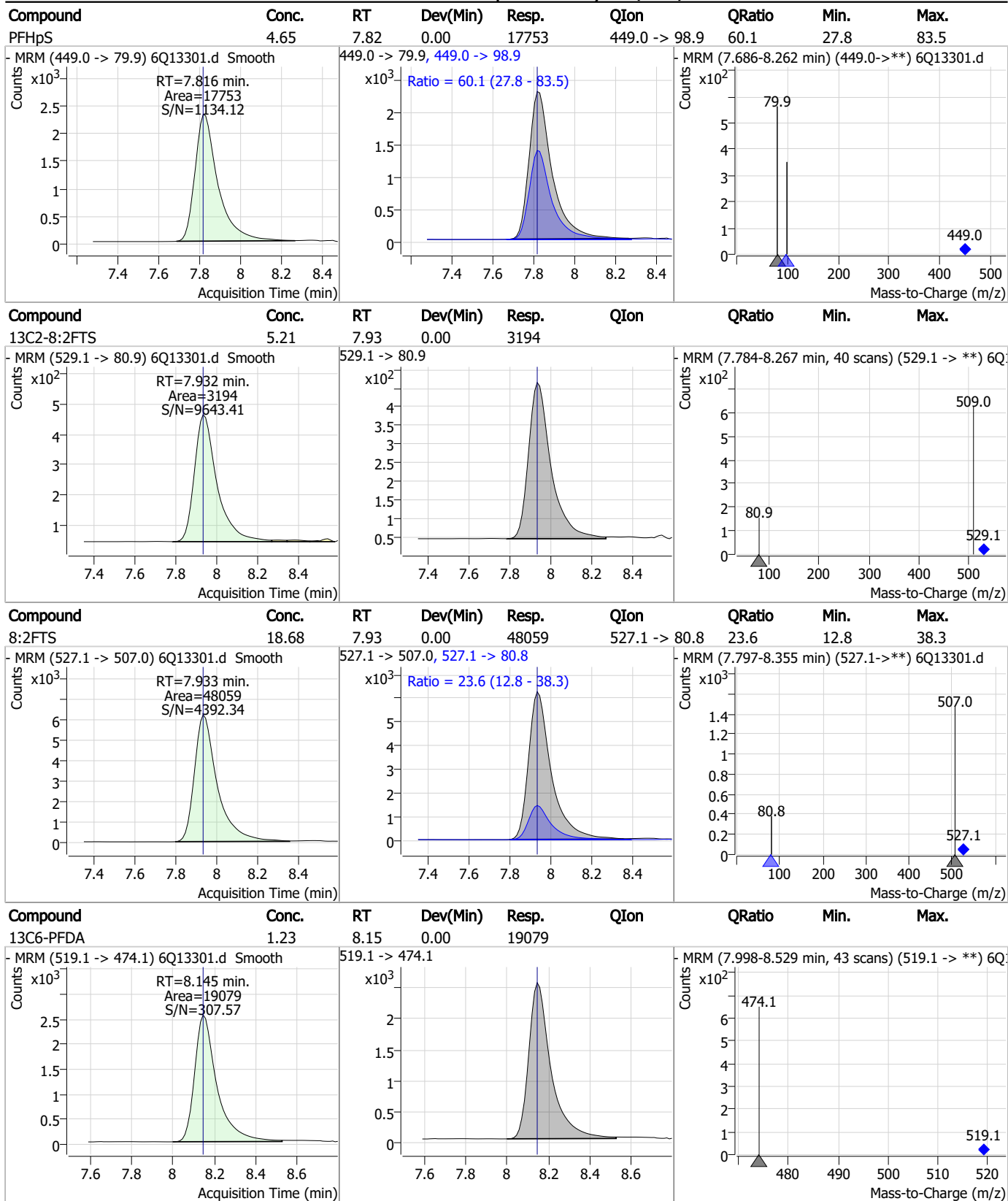
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### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

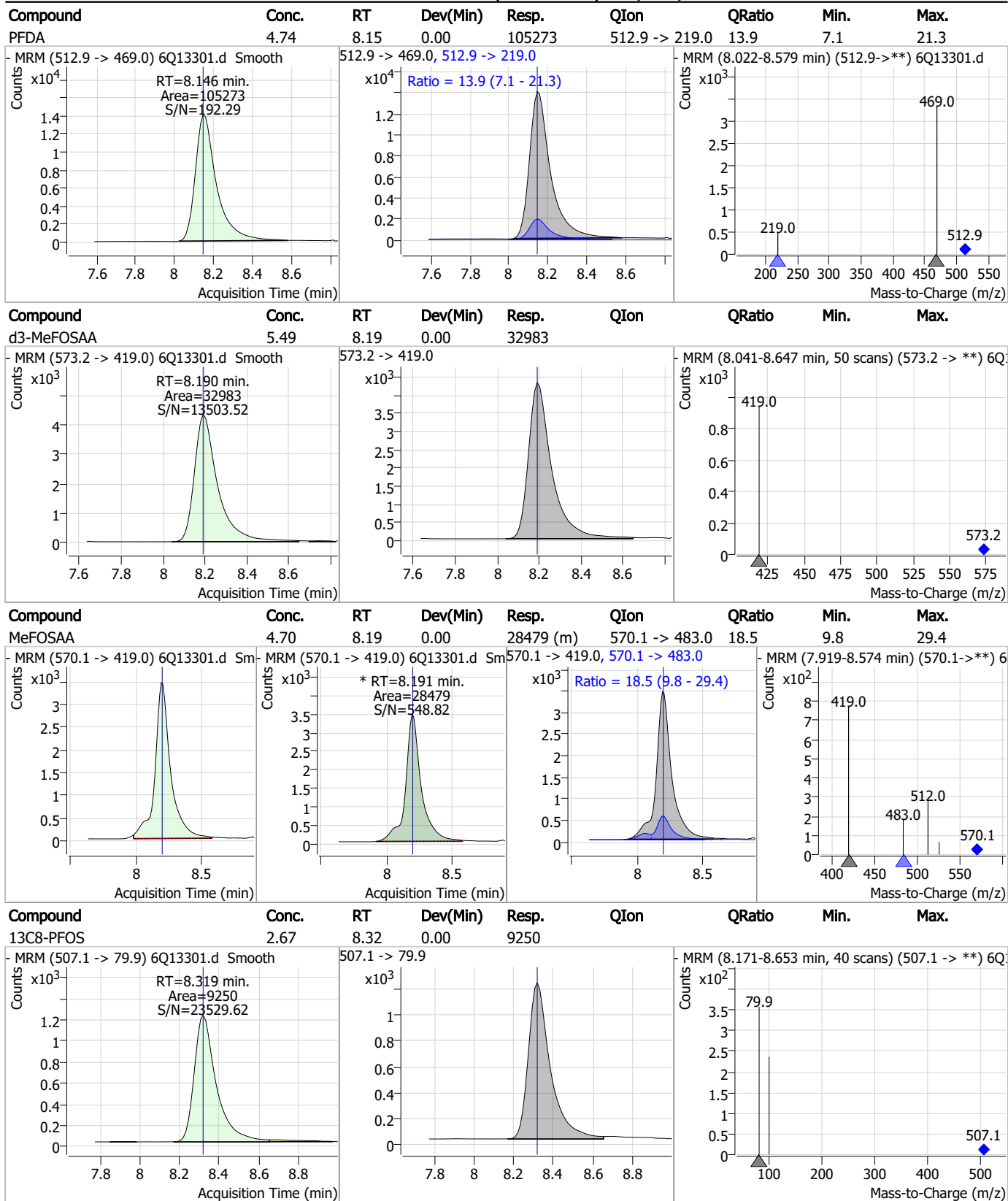


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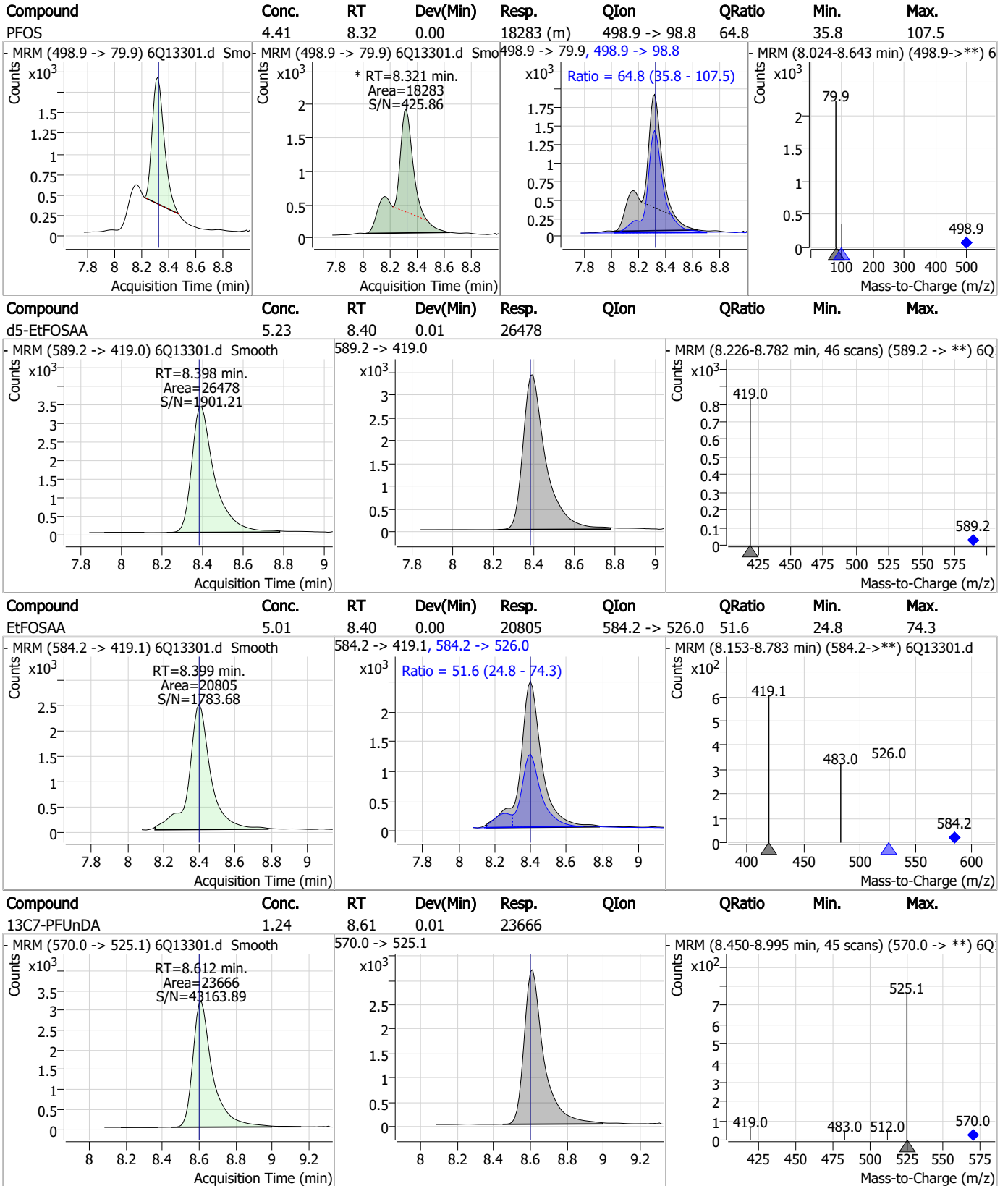


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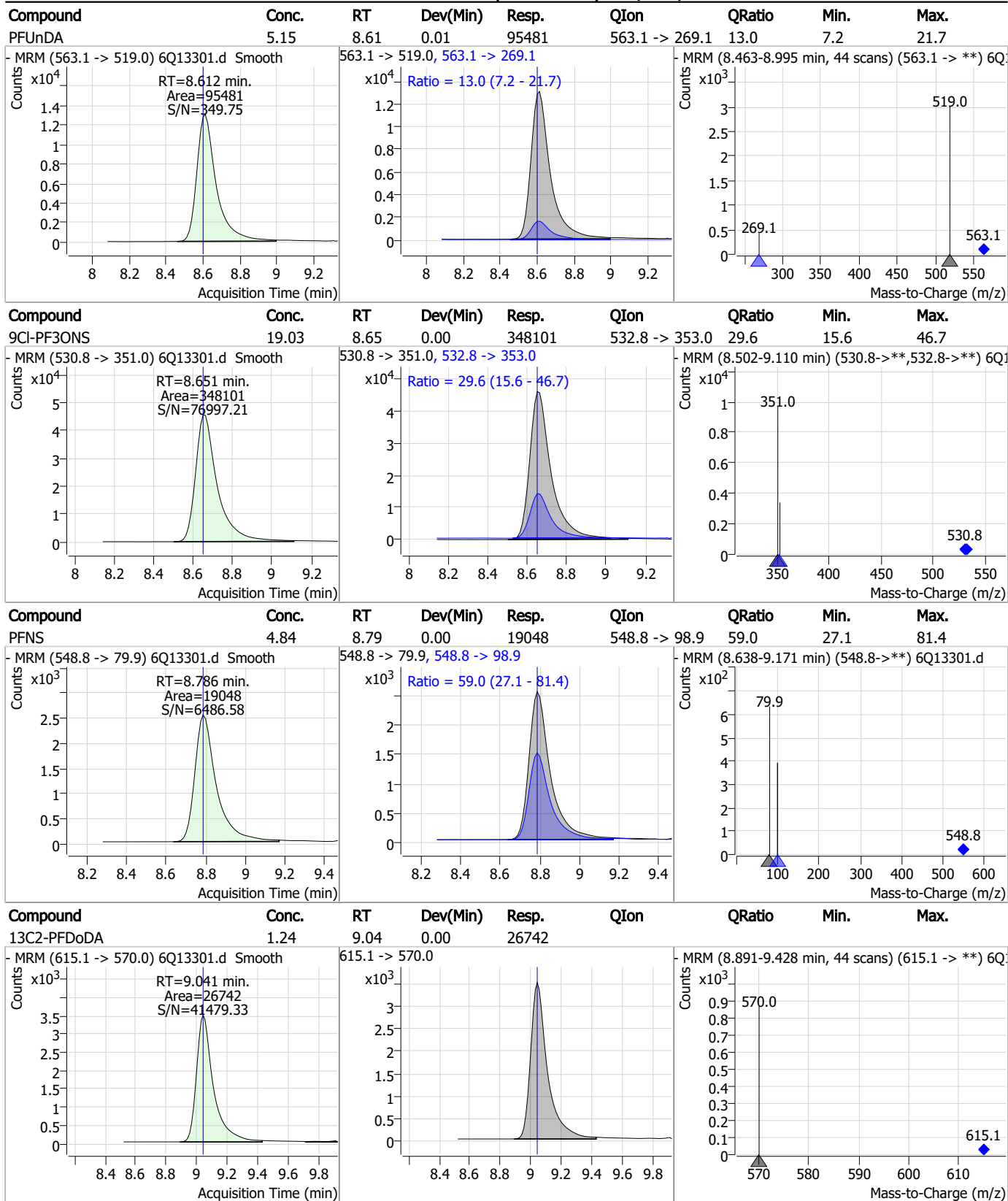


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### Perfluorinated Compounds by LC/MS/MS

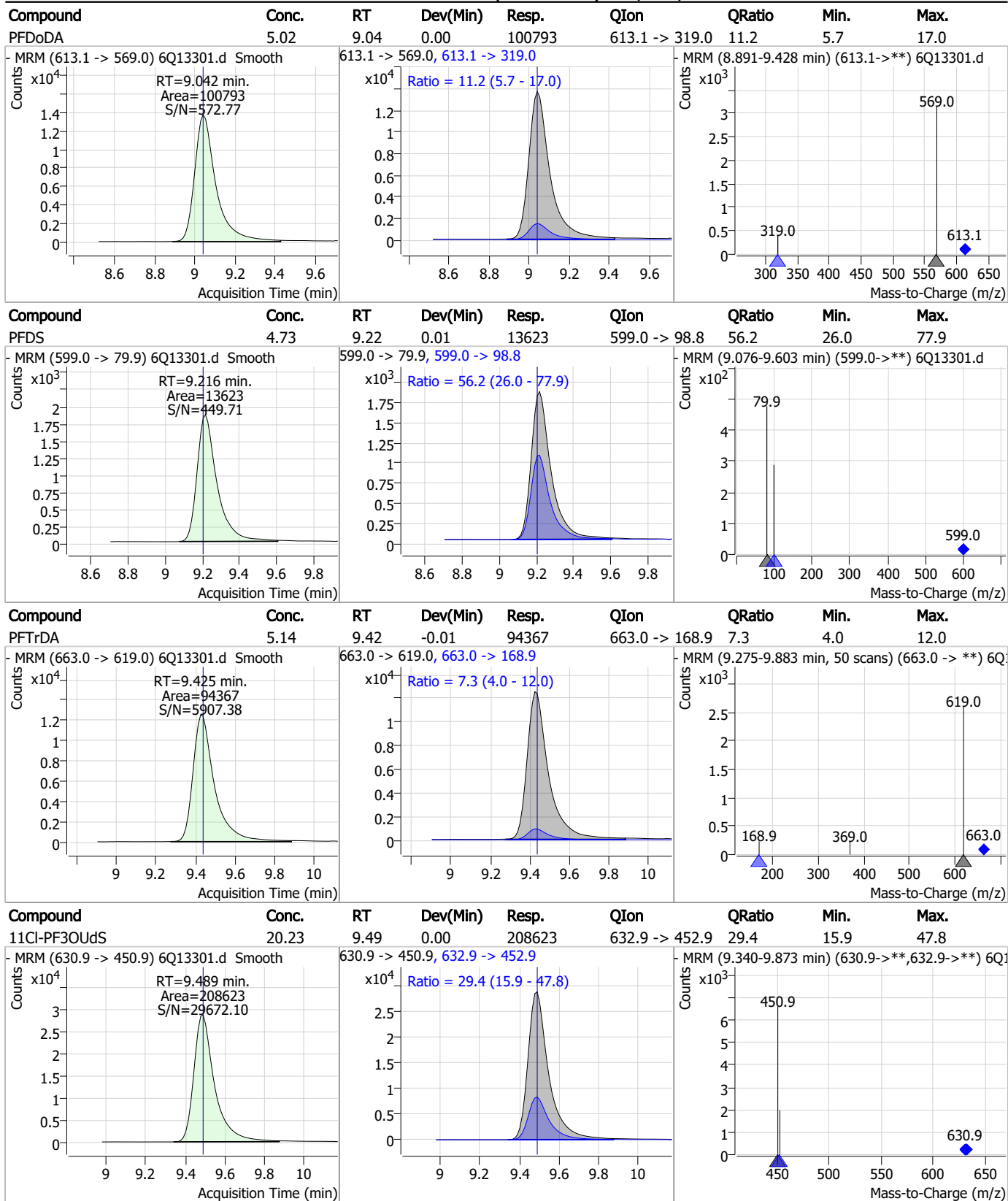


### Perfluorinated Compounds by LC/MS/MS



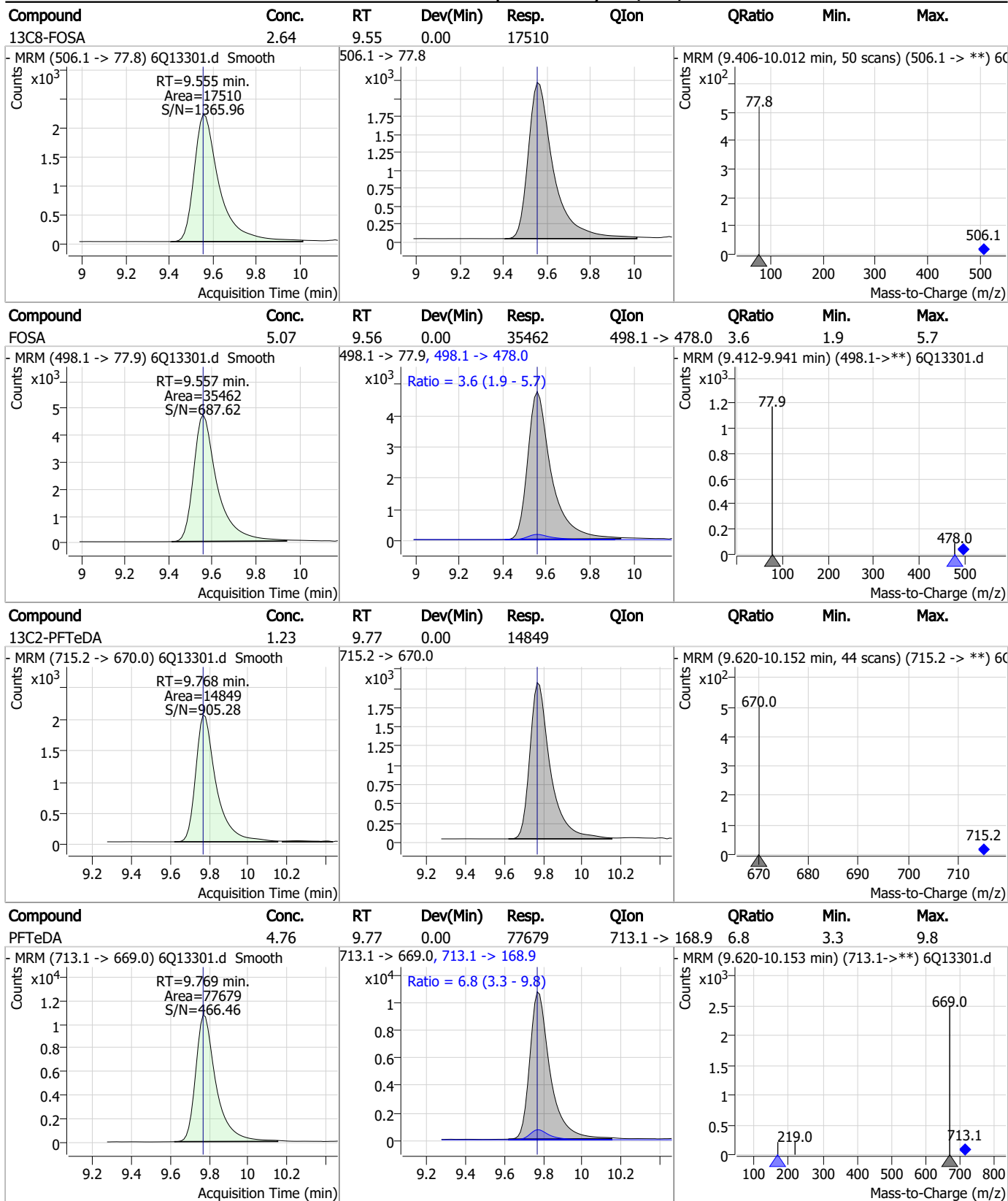
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### Perfluorinated Compounds by LC/MS/MS



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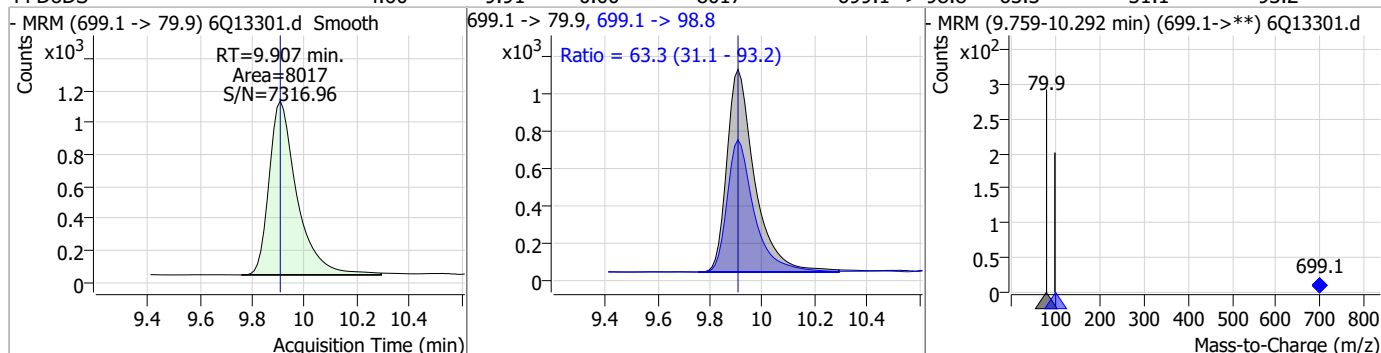
### Perfluorinated Compounds by LC/MS/MS



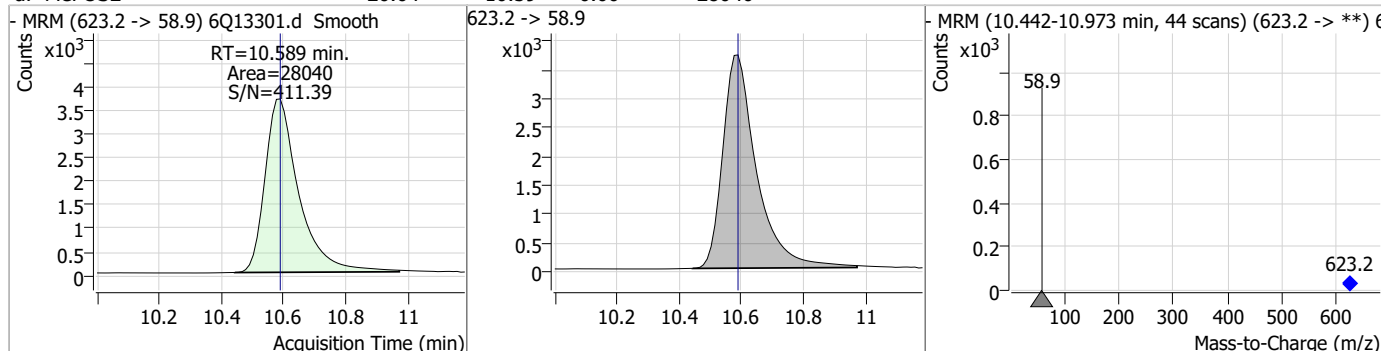
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### Perfluorinated Compounds by LC/MS/MS

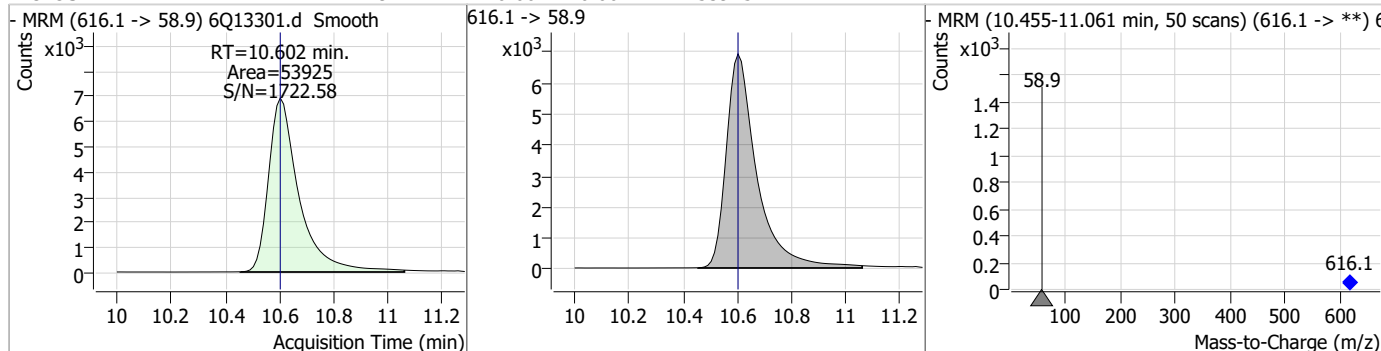
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	4.60	9.91	0.00	8017	699.1 -> 98.8	63.3	31.1	93.2



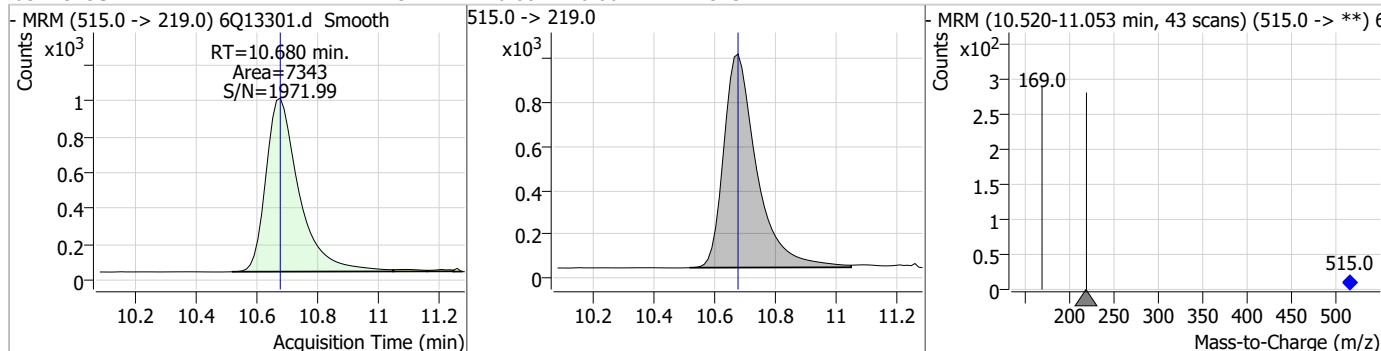
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.64	10.59	0.00	28040				



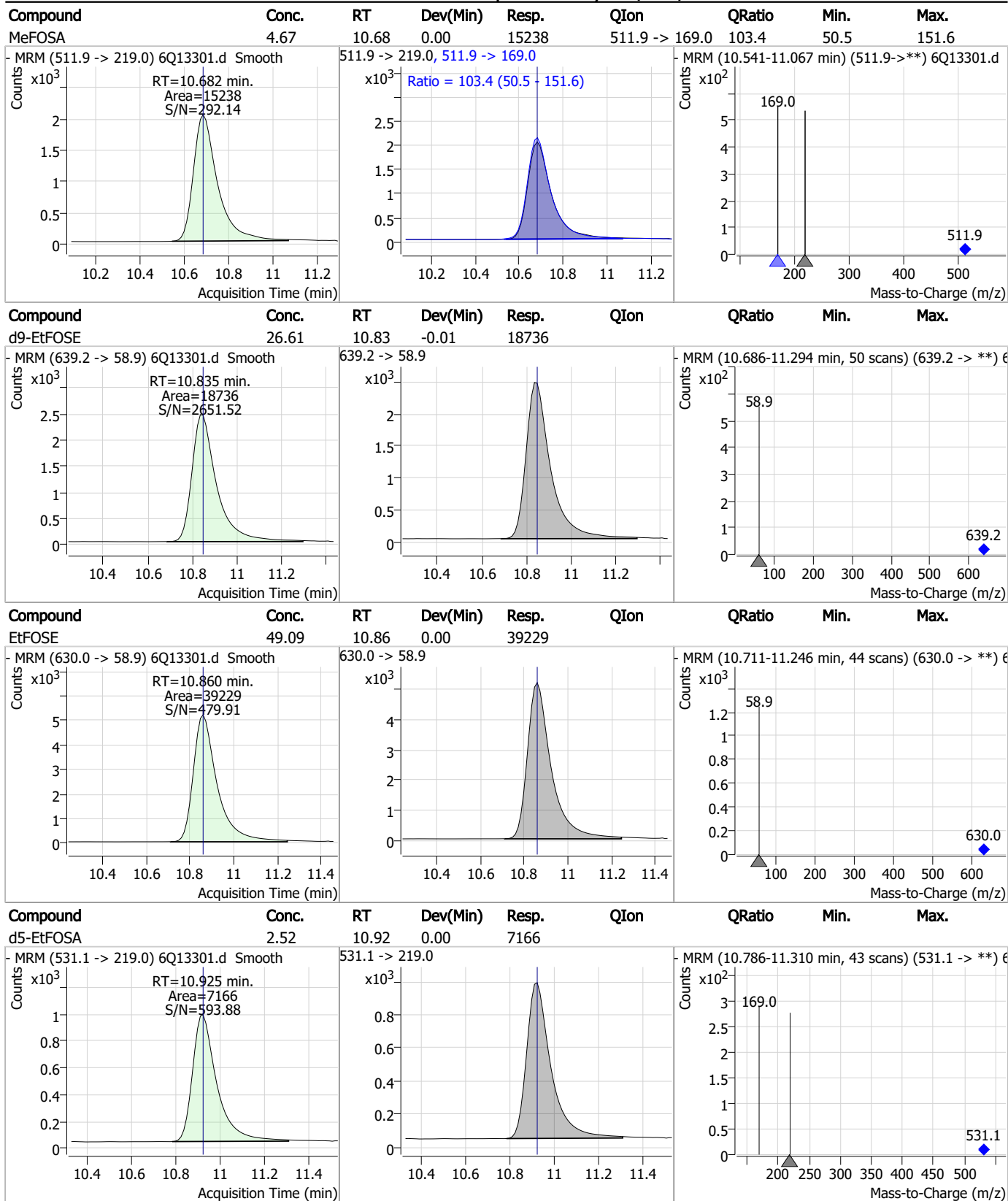
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	49.47	10.60	0.00	53925				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.73	10.68	0.00	7343				



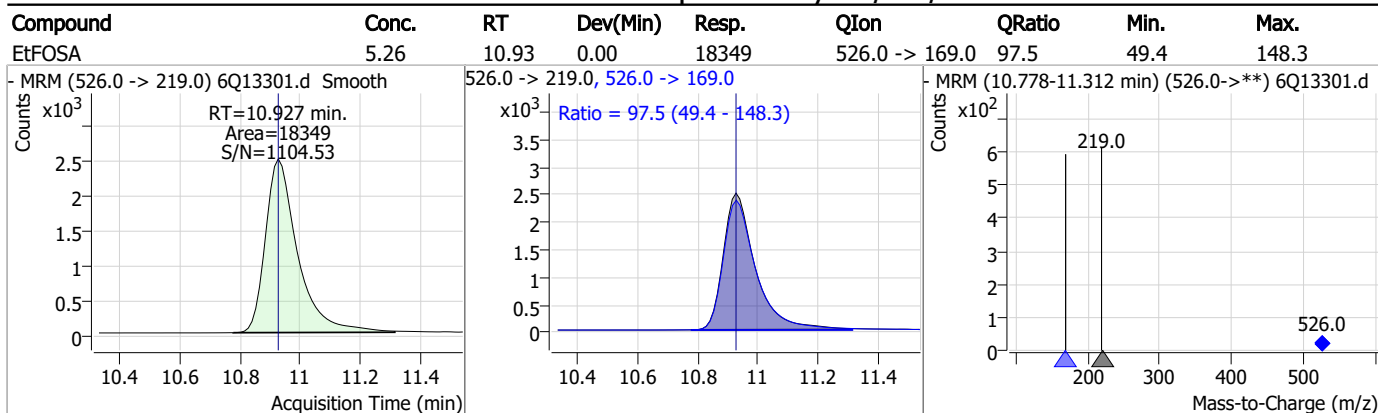
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q203-IC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13301.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 13:40      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFMPA	377-73-1		3.53	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak

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## Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13302.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 1:55:51 PM  
 Sample Name : ic203-6  
 Vial : P1-A7  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.988	216.8 -> 171.9	84923	10.00 µg/L	-0.012
M5-PFPeA	4.386	268.3 -> 223.0	42740	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	38067	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	39265	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	70784	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	23919	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	17765	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	22258	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	25768	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14074	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	16549	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	15002	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	9419	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	8932	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2222	5.00 µg/L	0.000
M2-6:2FTS	6.895	429.1 -> 80.9	2845	5.00 µg/L	0.000
M2-8:2FTS	7.932	529.1 -> 80.9	2764	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	31475	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	14879	10.00 µg/L	-0.012
M5-EtFOSAA	8.398	589.2 -> 419.0	26078	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	26292	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	17819	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	7313	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6685	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10742	2.50 µg/L	0.000
13C3-PFBA	2.991	216.0 -> 172.0	38061	5.00 µg/L	0.000
18O2-PFHxS	7.261	403.0 -> 83.9	7097	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	80743	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	25602	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	26943	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	37068	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2222	4.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C2-6:2FTS	6.895	429.1 -> 80.9	2845	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.9%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2764	4.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C2-PFDoDA	9.041	615.1 -> 570.0	25768	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14074	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C3-PFBS	5.518	302.1 -> 79.9	15002	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C3-PFHxS	7.262	402.1 -> 79.9	9419	2.47 µg/L	0.012

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C4-PFBA	2.988	216.8 -> 171.9	84923	10.00 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.490	367.1 -> 322.0	39265	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFHxA	5.563	318.0 -> 273.0	38067	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFPeA	4.386	268.3 -> 223.0	42740	5.05 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C6-PFDA	8.145	519.1 -> 474.1	17765	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C7-PFUnDA	8.599	570.0 -> 525.1	22258	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-FOSA	9.555	506.1 -> 77.8	16549	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C8-PFOA	7.134	421.1 -> 376.0	70784	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C8-PFOS	8.319	507.1 -> 79.9	8932	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C9-PFNA	7.664	472.1 -> 427.0	23919	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSAA	8.190	573.2 -> 419.0	31475	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	14879	10.05 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d3-MeFOSA	10.680	515.0 -> 219.0	6685	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
d5-EtFOSAA	8.398	589.2 -> 419.0	26078	5.01 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
d7-MeFOSE	10.589	623.2 -> 58.9	26292	24.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d9-EtFOSE	10.835	639.2 -> 58.9	17819	24.61 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d5-EtFOSA	10.925	531.1 -> 219.0	7313	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.240	327.1 -> 307.0	254179	51.08 µg/L	95
		327.1 -> 80.9	53689		
6:2FTS	6.908	427.1 -> 407.0	213066	50.26 µg/L	100
		427.1 -> 80.9	39893		
8:2FTS	7.933	527.1 -> 507.0	116412	52.28 µg/L	94
		527.1 -> 80.8	26508		
EtFOSAA	8.399	584.2 -> 419.1	48264	11.80 µg/L	85
		584.2 -> 526.0	28887		
FOSA	9.557	498.1 -> 77.9	85112	12.89 µg/L	99
		498.1 -> 478.0	3473		
MeFOSAA	8.191	570.1 -> 419.0	68759	11.90 µg/L	100
		570.1 -> 483.0	13393		
PFBA	2.994	212.8 -> 168.9	97774	51.16 µg/L	100
PFBS	5.518	298.7 -> 79.9	63113	10.98 µg/L	97
		298.7 -> 98.8	28339		
PFDA	8.146	512.9 -> 469.0	252300	12.21 µg/L	99
		512.9 -> 219.0	37022		
PFDoDA	9.042	613.1 -> 569.0	237093	12.25 µg/L	97
		613.1 -> 319.0	29108		
PFDS	9.216	599.0 -> 79.9	32083	11.54 µg/L	97

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	17360			
PFHpA	6.490	363.1 -> 319.0	280912	12.29	µg/L	98
		363.1 -> 169.0	36746			
PFHpS	7.816	449.0 -> 79.9	42634	11.57	µg/L	95
		449.0 -> 98.9	25116			
PFHxA	5.566	313.0 -> 269.0	181017	12.30	µg/L	99
		313.0 -> 118.9	6669			
PFHxS	7.263	398.7 -> 79.9	48063	11.75	µg/L	m 99
		398.7 -> 98.9	26406			
PFNA	7.665	463.0 -> 419.0	193604	12.21	µg/L	99
		463.0 -> 219.0	38659			
PFNS	8.786	548.8 -> 79.9	45367	11.94	µg/L	93
		548.8 -> 98.9	26883			
PFOA	7.135	413.0 -> 369.0	373810	12.34	µg/L	98
		413.0 -> 169.0	47463			
PFOS	8.321	498.9 -> 79.9	45640	11.41	µg/L	m 91
		498.9 -> 98.8	29315			
PFPeA	4.388	263.0 -> 219.0	225036	24.96	µg/L	100
PFPeS	6.569	349.1 -> 79.9	59318	12.24	µg/L	97
		349.1 -> 98.9	31515			
PFTeDA	9.769	713.1 -> 669.0	197810	12.78	µg/L	100
		713.1 -> 168.9	12743			
PFTrDA	9.425	663.0 -> 619.0	223773	12.65	µg/L	99
		663.0 -> 168.9	17209			
PFUnDA	8.612	563.1 -> 519.0	214691	12.31	µg/L	99
		563.1 -> 269.1	30085			
11Cl-PF3OUdS	9.489	630.9 -> 450.9	469563	46.89	µg/L	98
		632.9 -> 452.9	154625			
9Cl-PF3ONS	8.651	530.8 -> 351.0	896575	50.47	µg/L	95
		532.8 -> 353.0	251868			
ADONA	6.741	376.9 -> 250.9	1586460	48.10	µg/L	97
		376.9 -> 84.8	331034			
HFPO-DA	5.928	284.9 -> 168.9	68326	48.46	µg/L	98
		284.9 -> 184.9	8889			
3:3FTCA	3.854	241.0 -> 177.0	27861	62.44	µg/L	97
		241.0 -> 117.0	3656			
5:3FTCA	6.193	341.0 -> 237.1	977693	313.23	µg/L	100
		341.0 -> 217.0	819989			
7:3FTCA	7.605	441.0 -> 316.9	480616	299.40	µg/L	83
		441.0 -> 336.9	1034548			
EtFOSA	10.927	526.0 -> 219.0	43982	12.35	µg/L	95
		526.0 -> 169.0	41235			
EtFOSE	10.860	630.0 -> 58.9	97791	128.68	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	38404	12.93	µg/L	99
		511.9 -> 169.0	38488			
MeFOSE	10.602	616.1 -> 58.9	133035	130.16	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	19190	11.40	µg/L	99
		699.1 -> 98.8	12094			
NFDHA	5.457	295.0 -> 201.0	21822	25.38	µg/L	97
		295.0 -> 84.9	11251			
PFMBA	4.800	279.0 -> 85.1	65267	25.27	µg/L	100
PFMPA	3.553	229.0 -> 84.9	58897	25.02	µg/L	m 100
PFEESA	6.046	314.8 -> 134.9	448448	21.59	µg/L	99
		314.8 -> 82.9	12052			

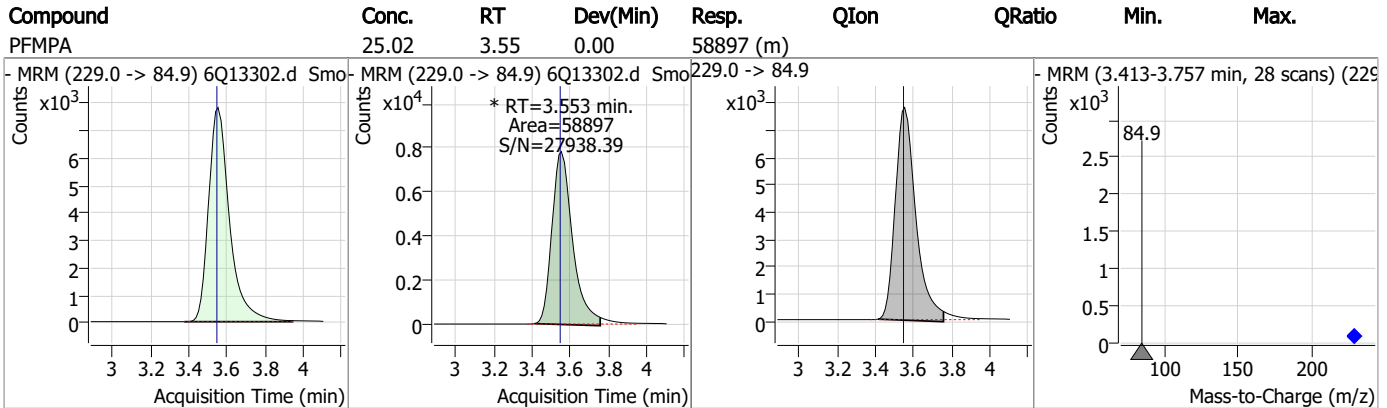
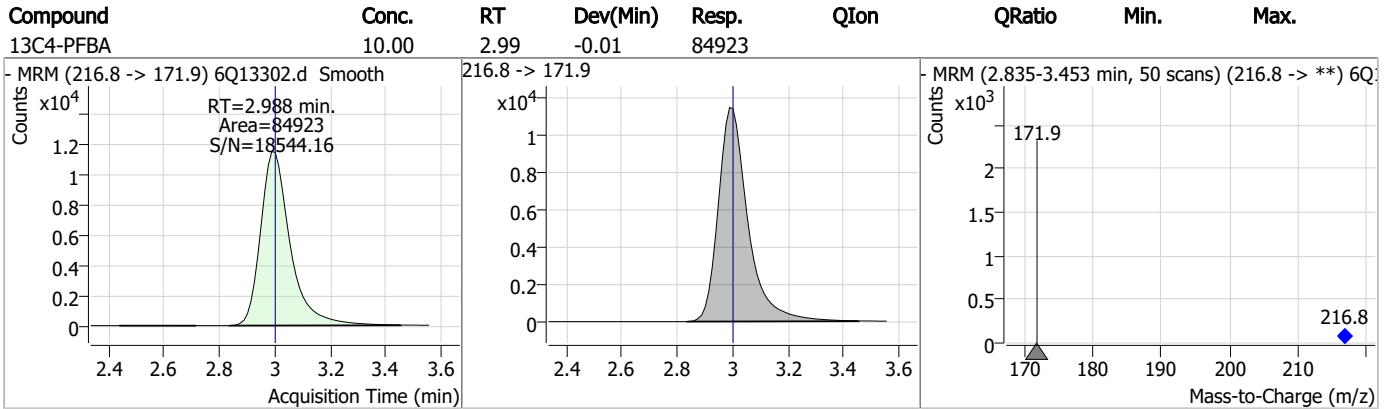
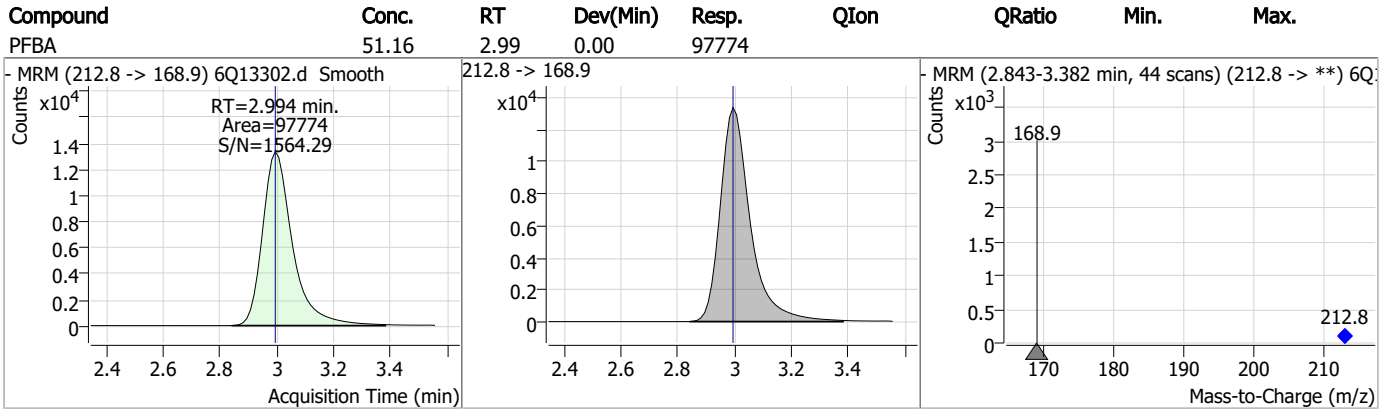
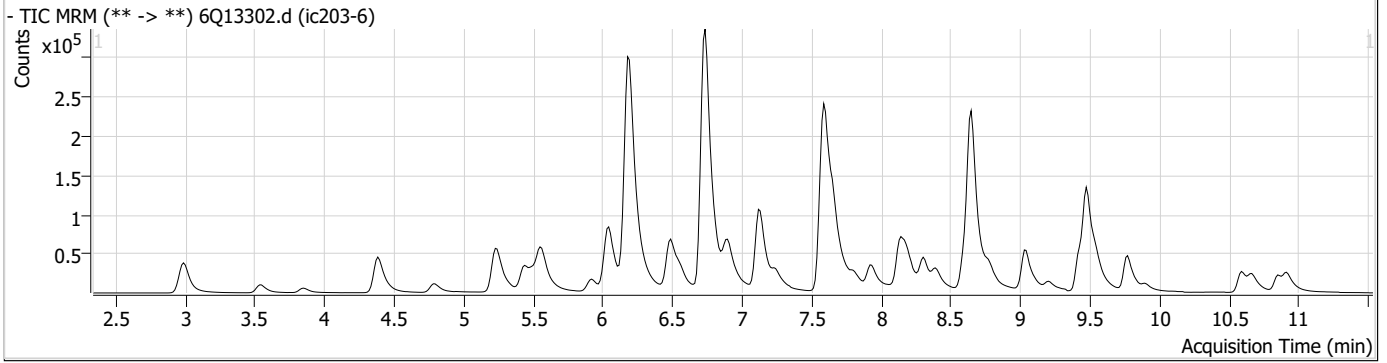
# = Qualifier out of range, m = manually integrated, + = Area summed

### Perfluorinated Compounds by LC/MS/MS

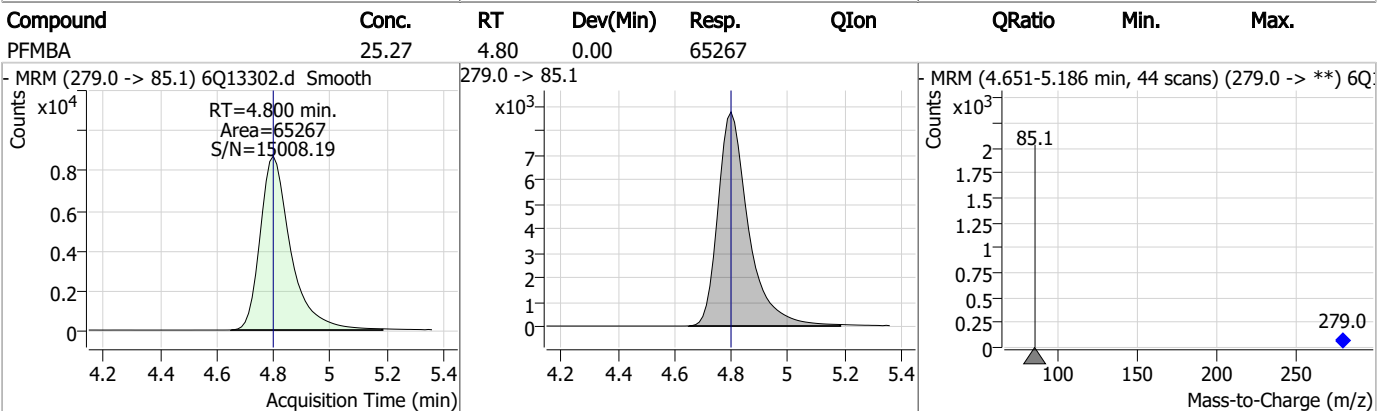
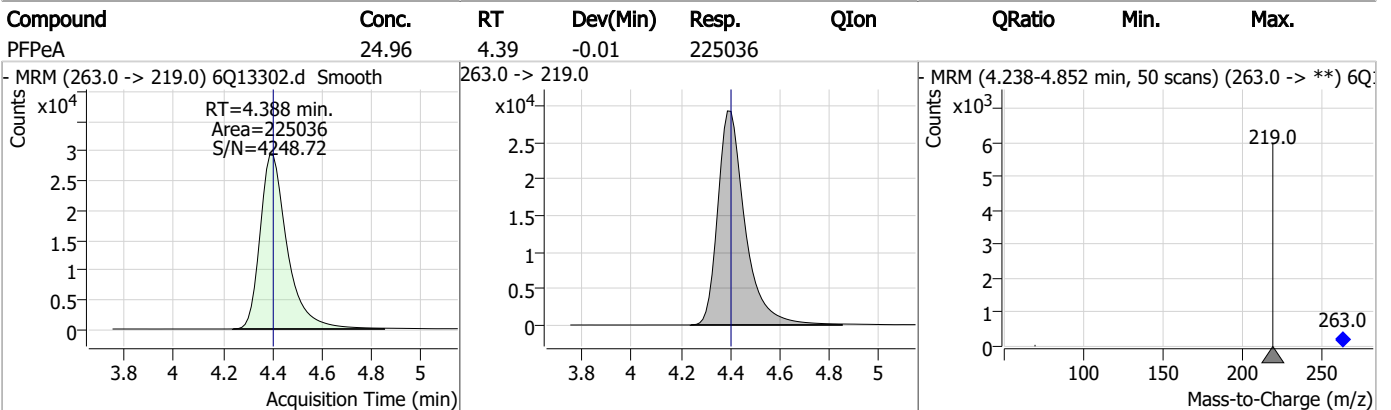
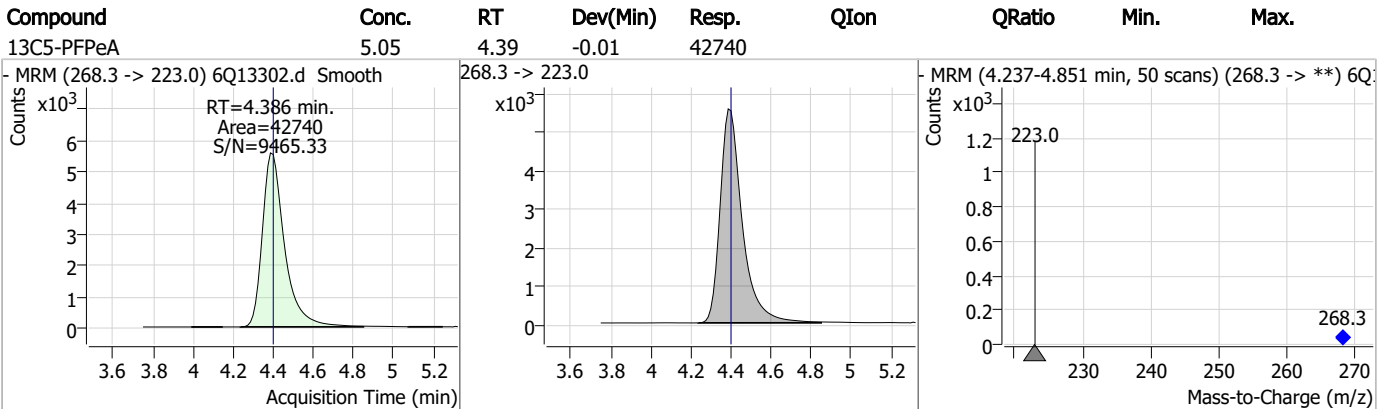
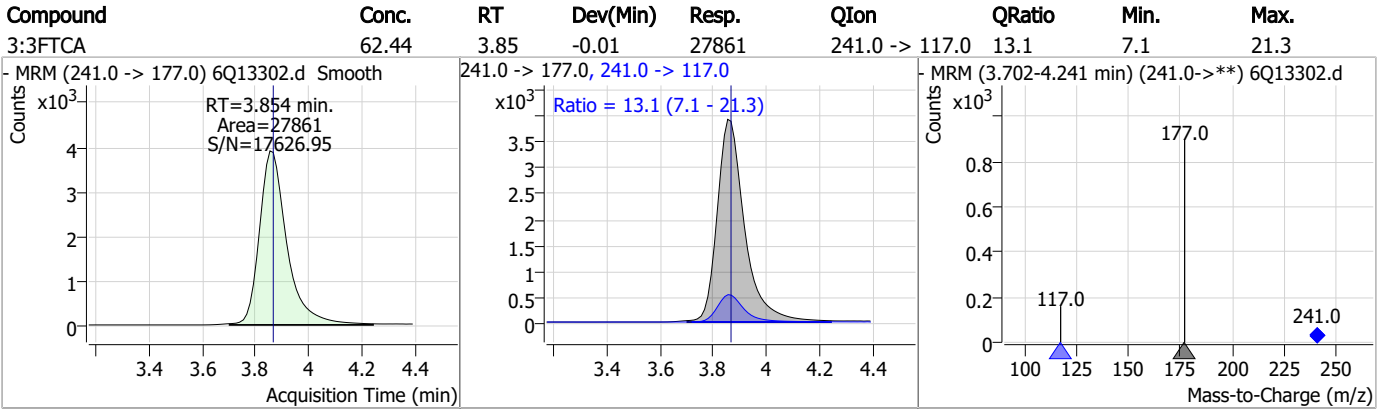
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.7  
7

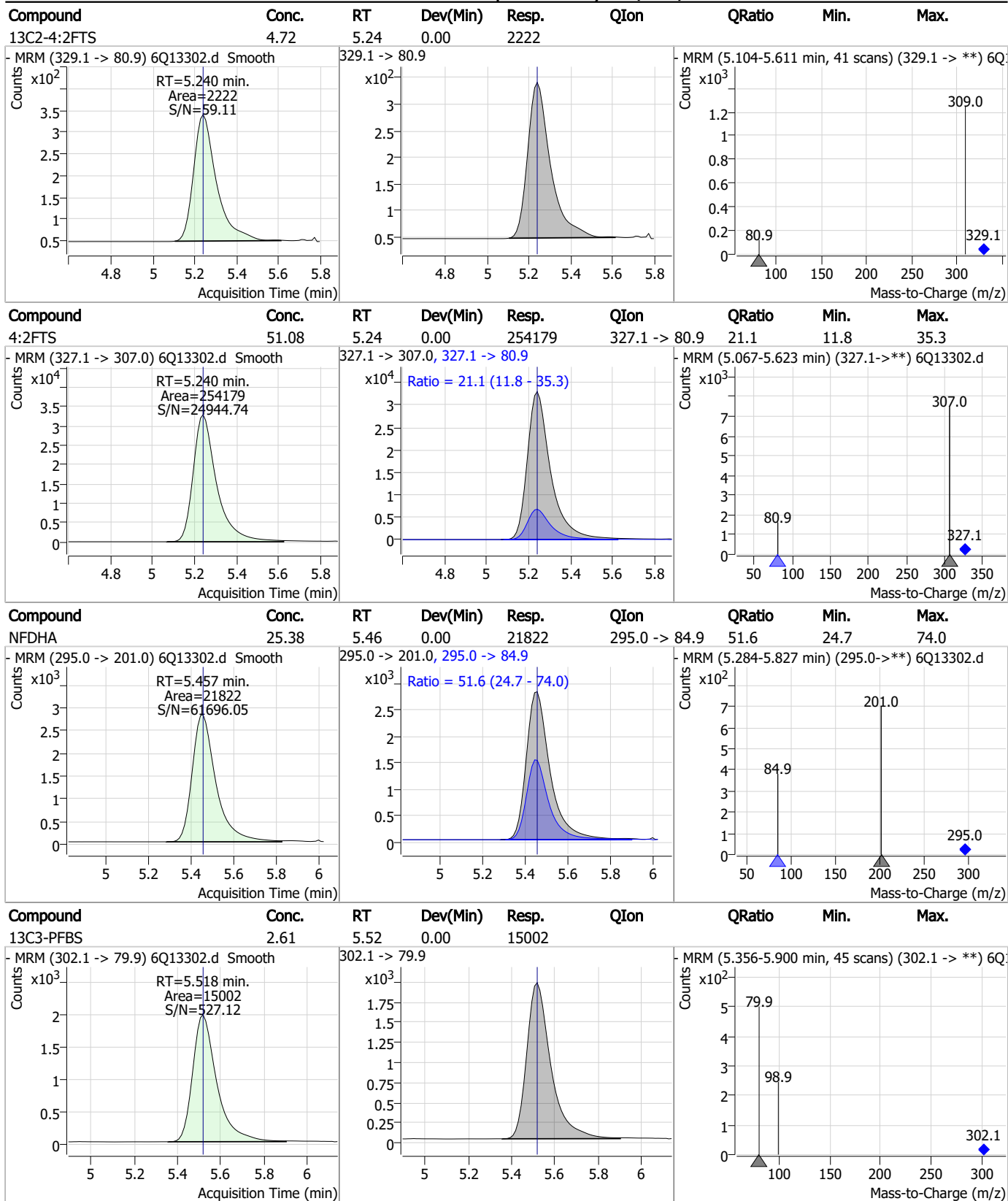
### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS

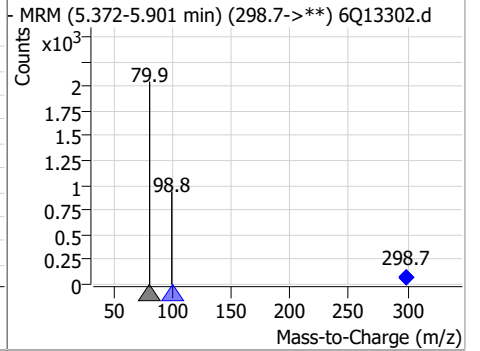
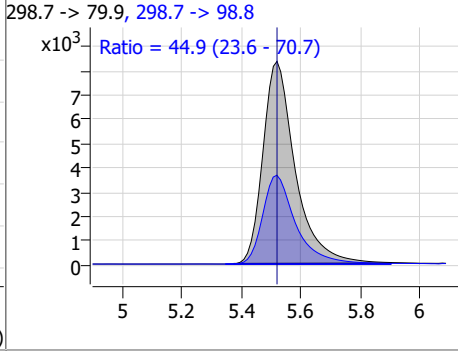
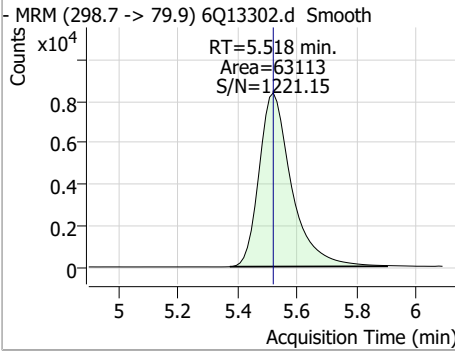


7.7.7  
7

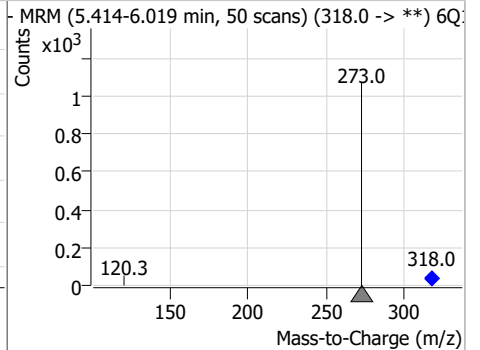
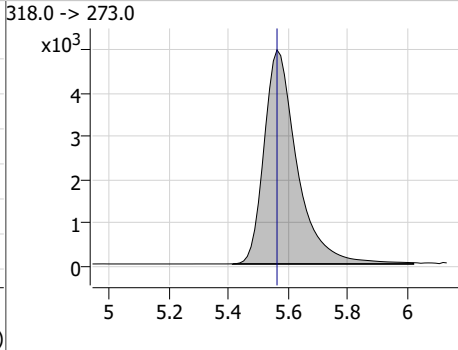
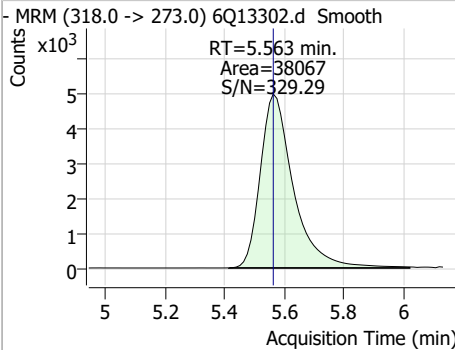


### Perfluorinated Compounds by LC/MS/MS

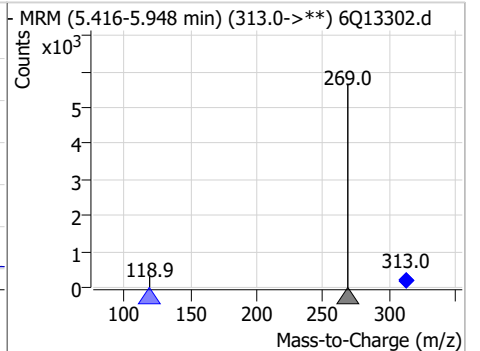
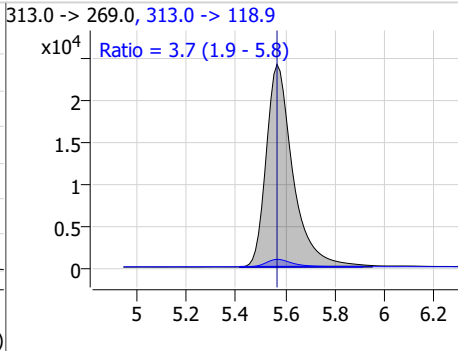
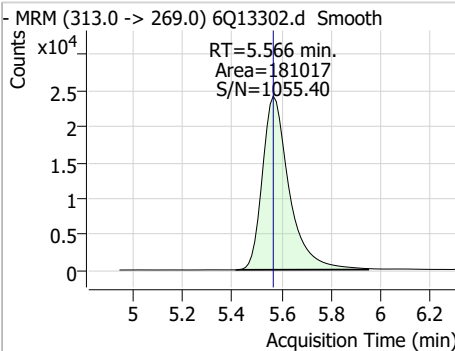
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.98	5.52	0.00	63113	298.7 -> 98.8	44.9	23.6	70.7



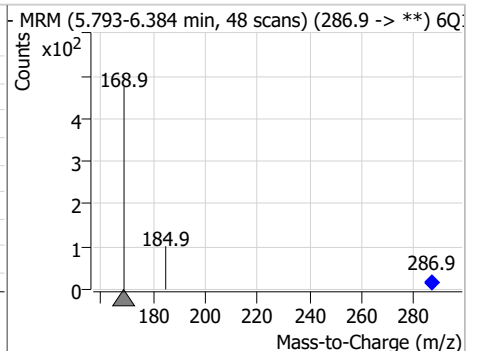
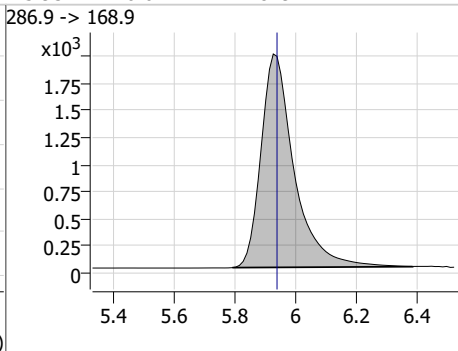
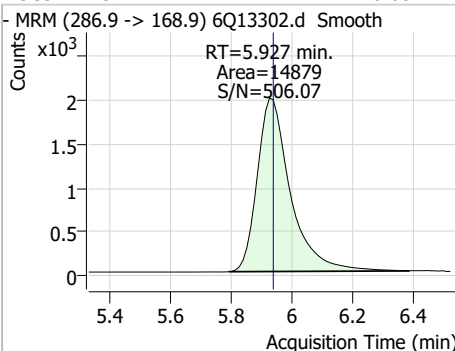
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	5.56	0.00	38067	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.30	5.57	0.00	181017	313.0 -> 118.9	3.7	1.9	5.8

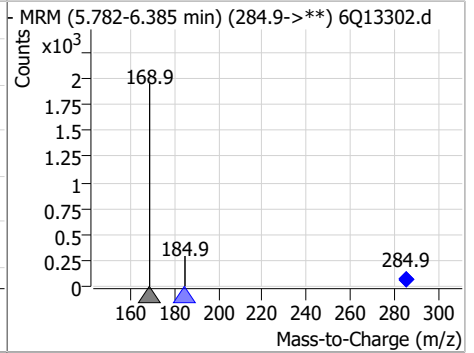
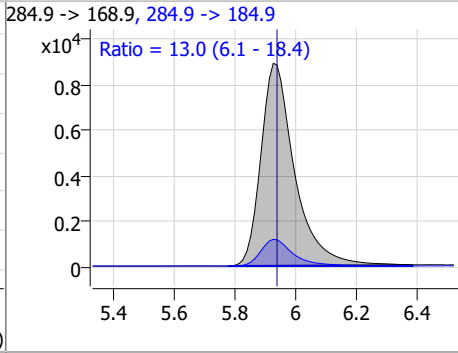
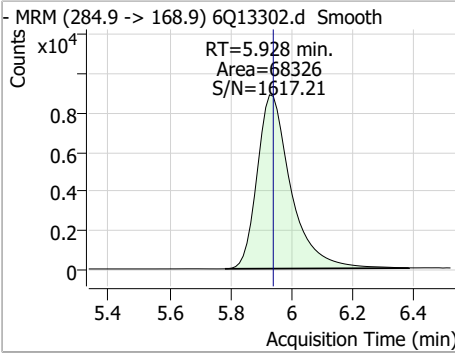


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.05	5.93	-0.01	14879	286.9 -> 168.9			

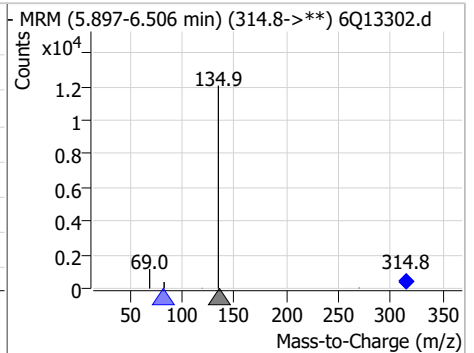
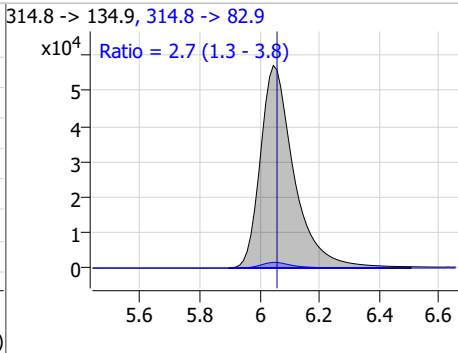
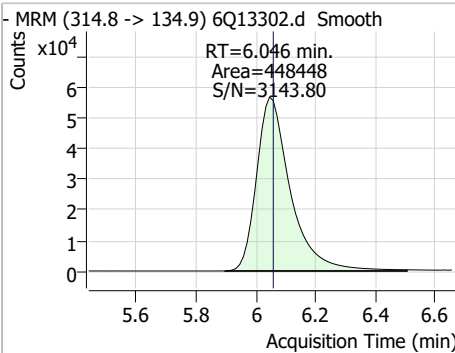


### Perfluorinated Compounds by LC/MS/MS

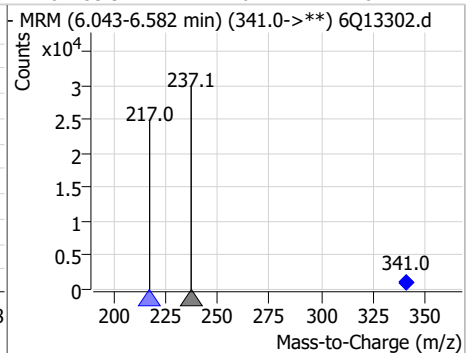
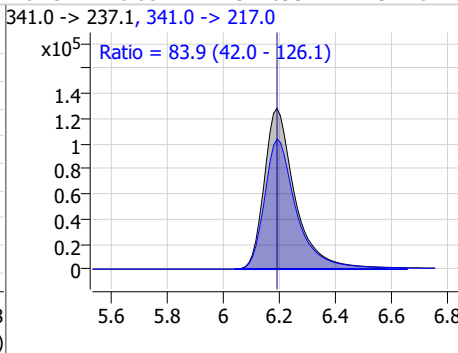
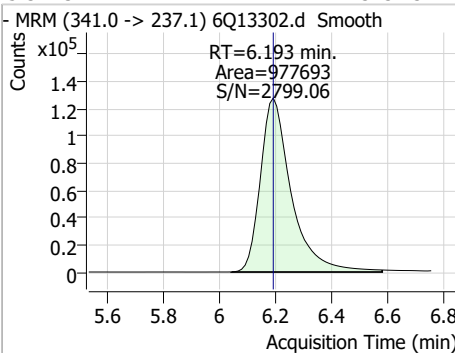
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	48.46	5.93	-0.01	68326	284.9 -> 184.9	13.0	6.1	18.4



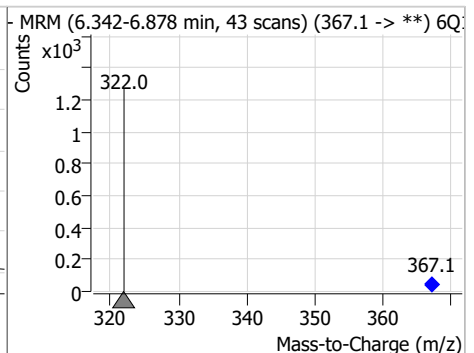
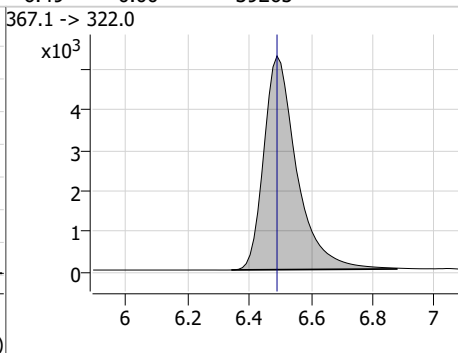
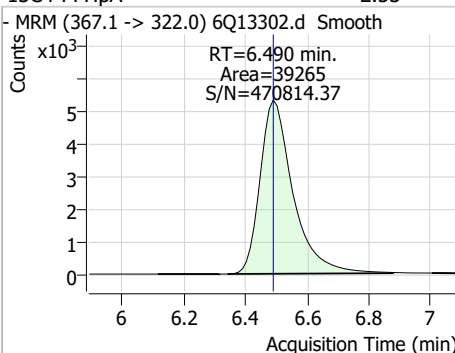
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	21.59	6.05	-0.01	448448	314.8 -> 82.9	2.7	1.3	3.8



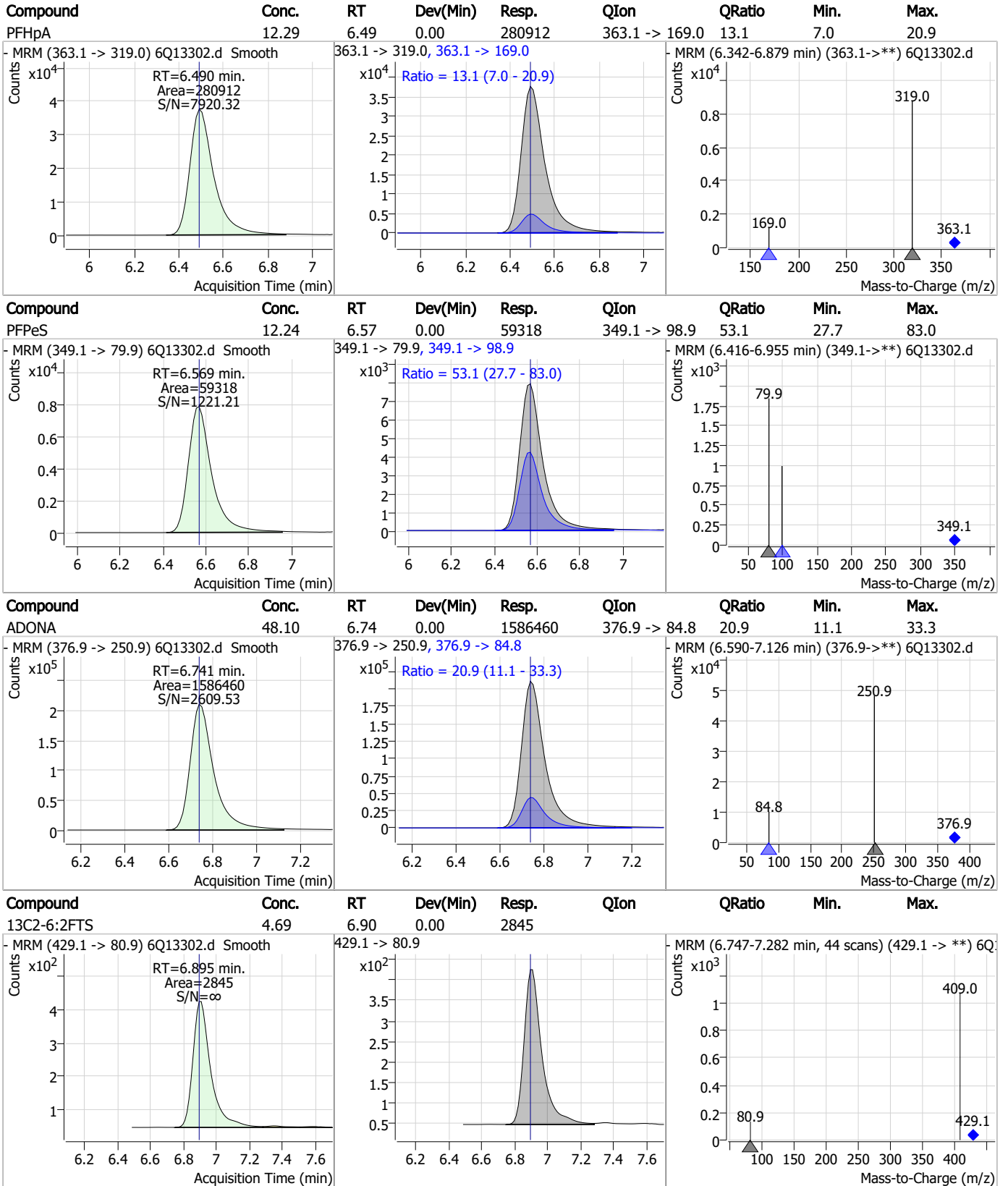
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	313.23	6.19	0.00	977693	341.0 -> 217.0	83.9	42.0	126.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.53	6.49	0.00	39265	367.1 -> 322.0			



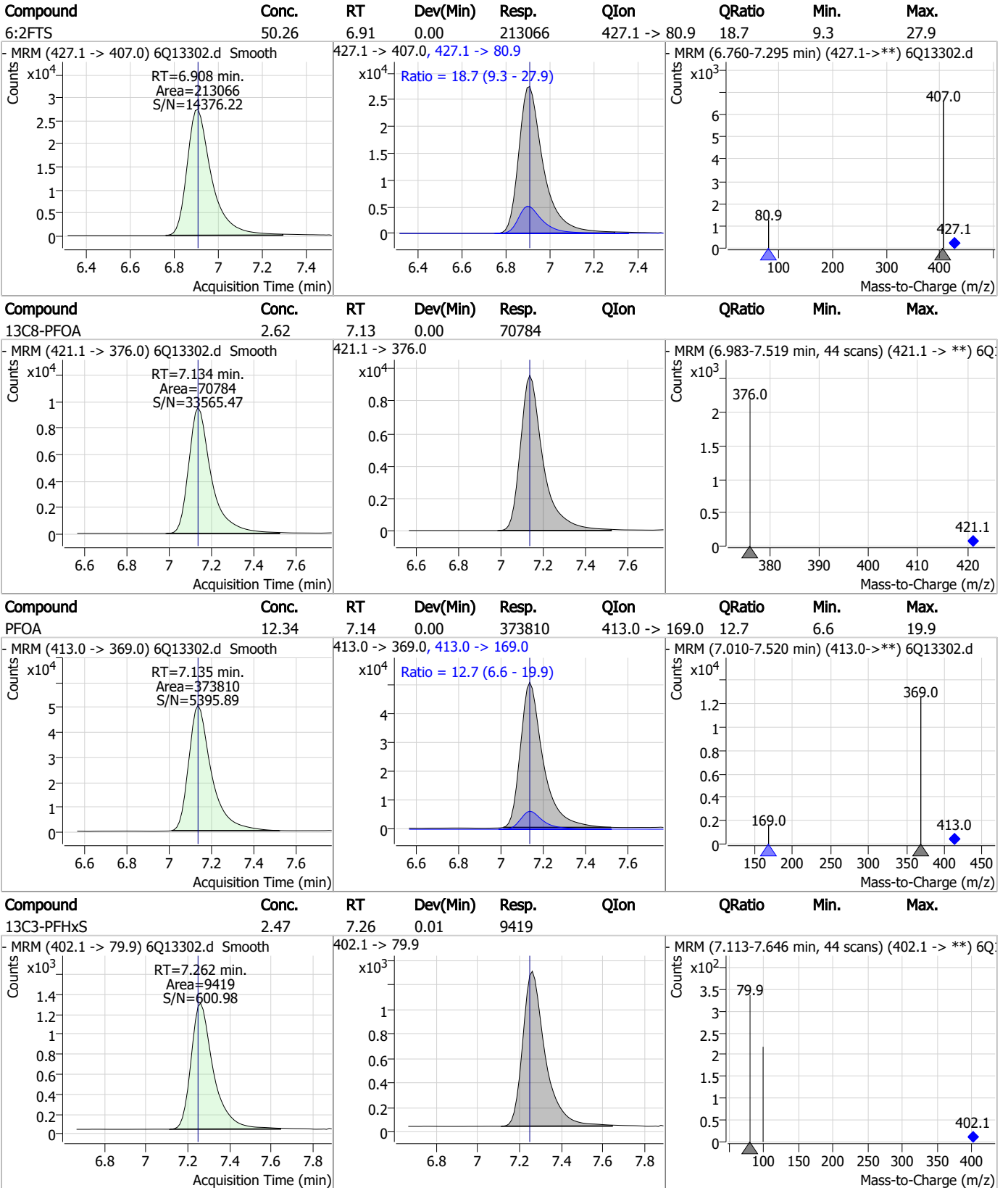
### Perfluorinated Compounds by LC/MS/MS



7.7.7

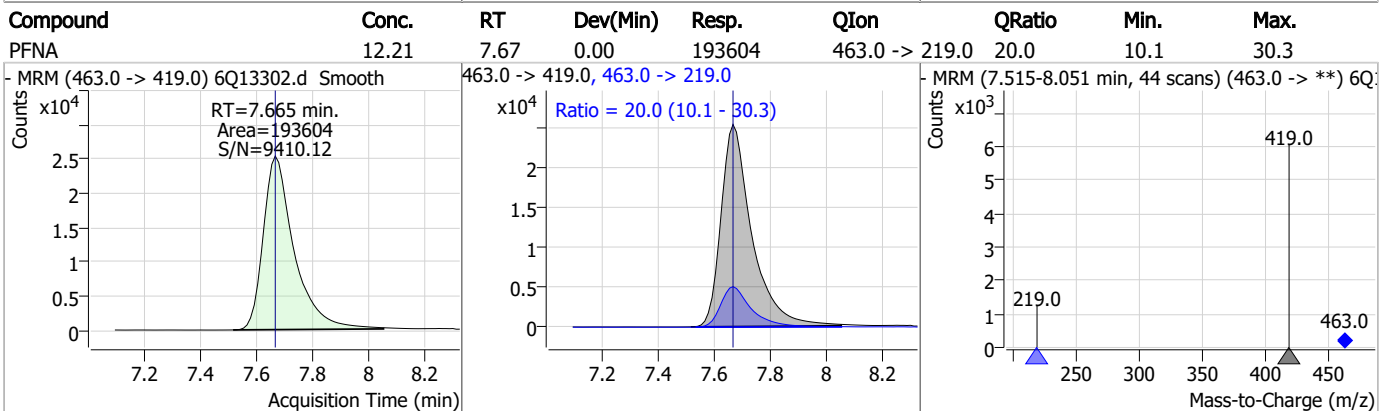
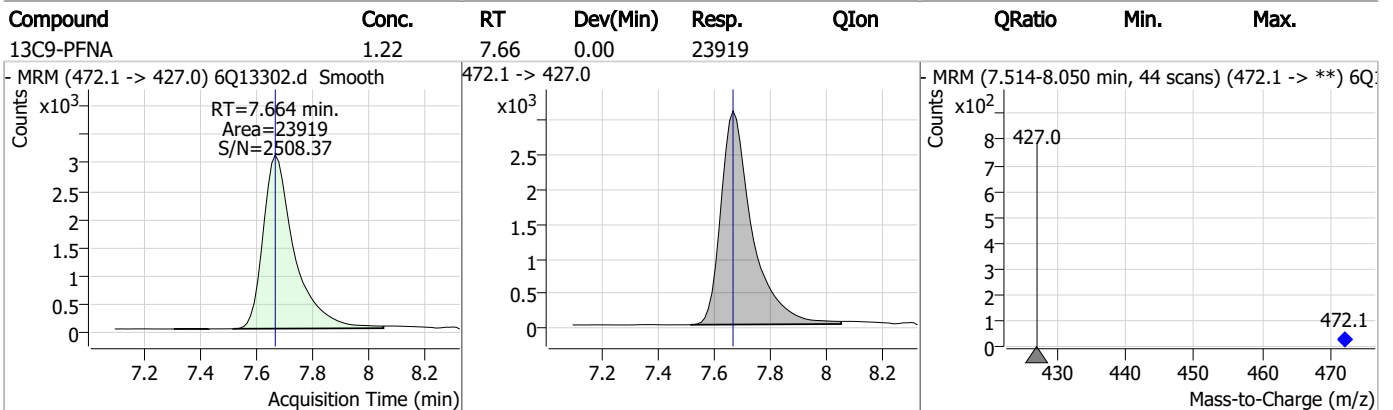
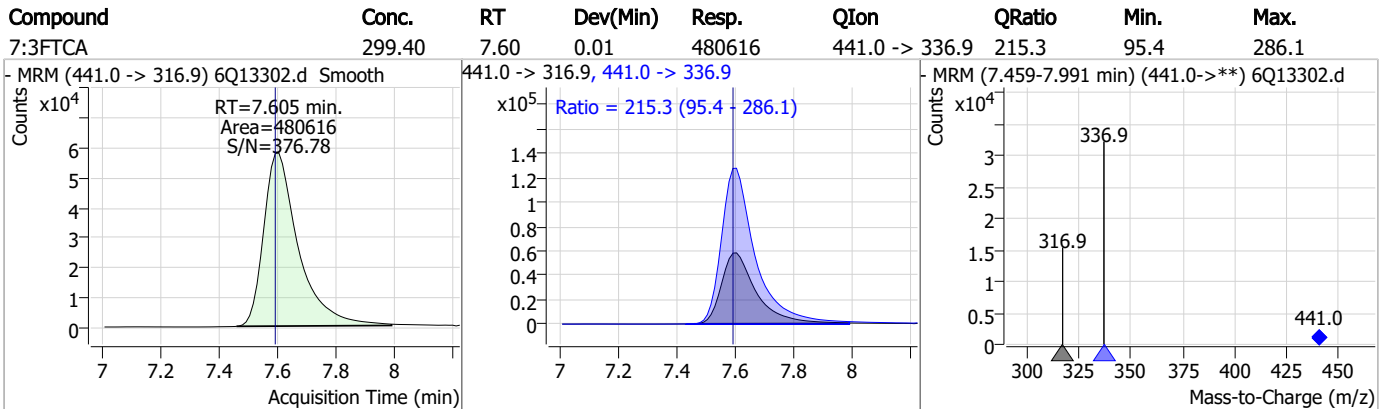
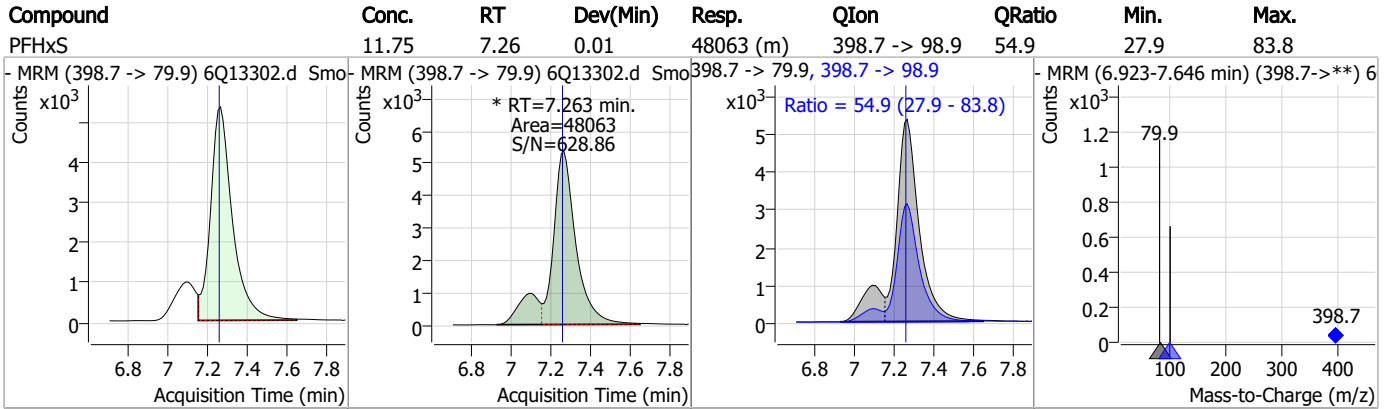
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### Perfluorinated Compounds by LC/MS/MS

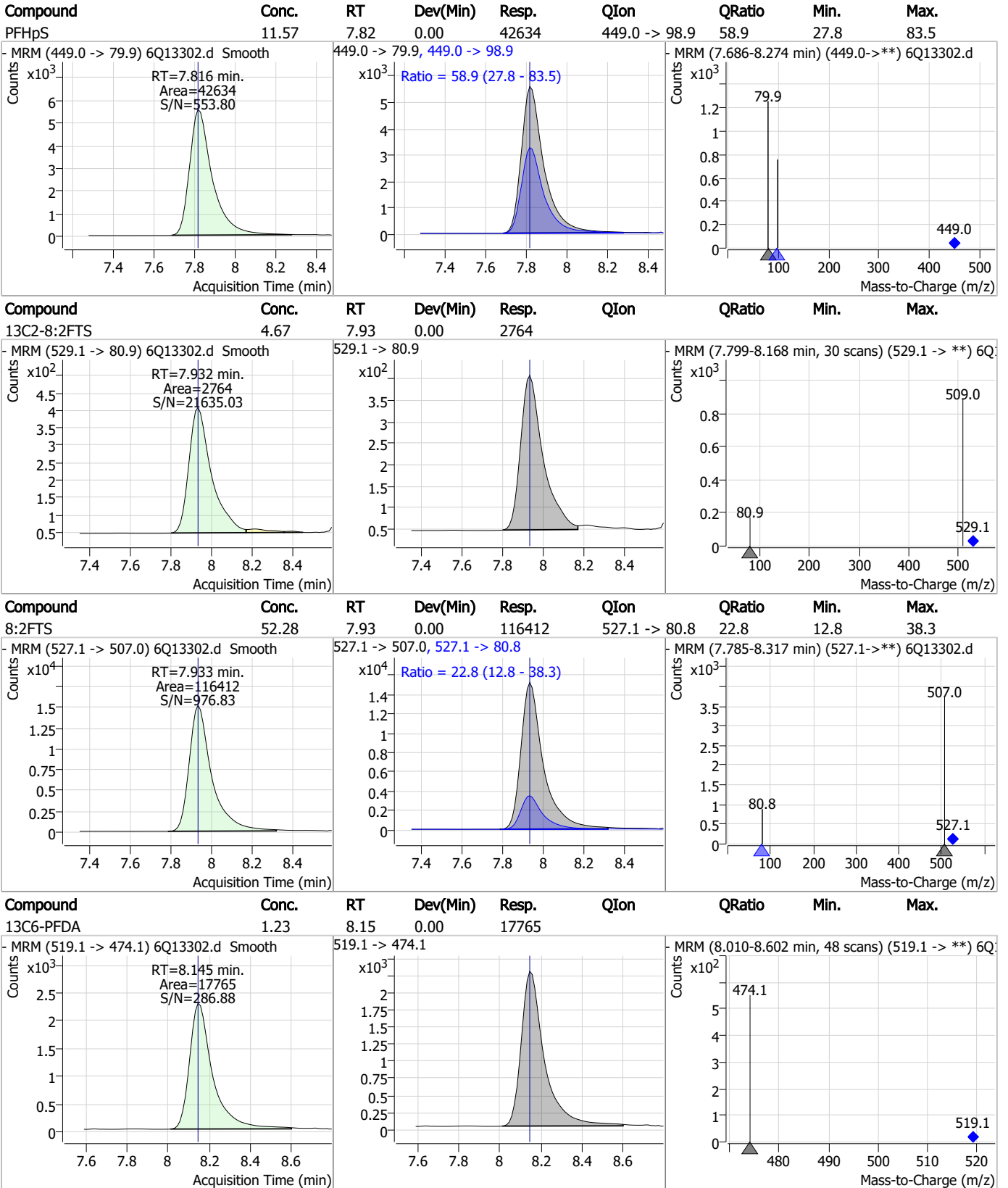


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### Perfluorinated Compounds by LC/MS/MS

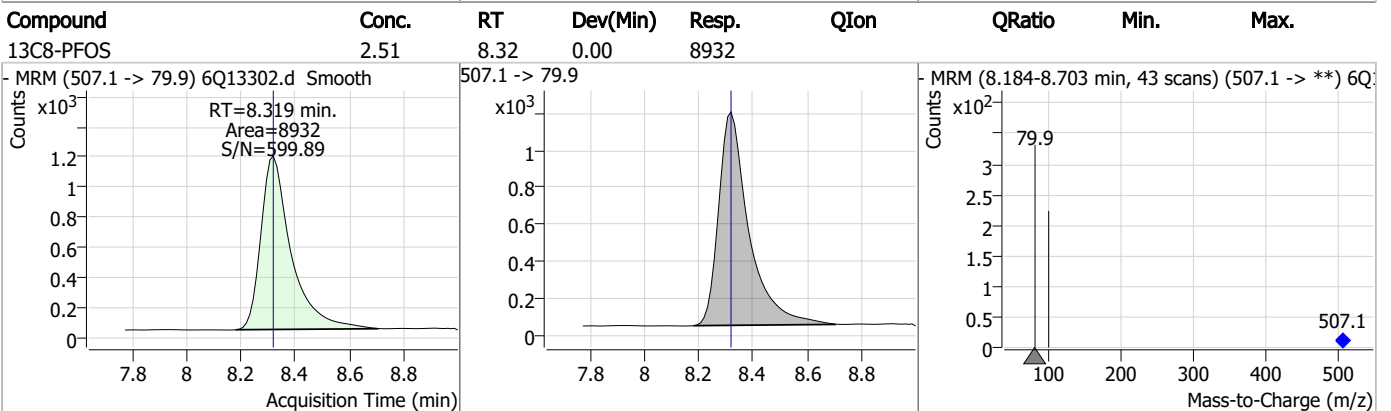
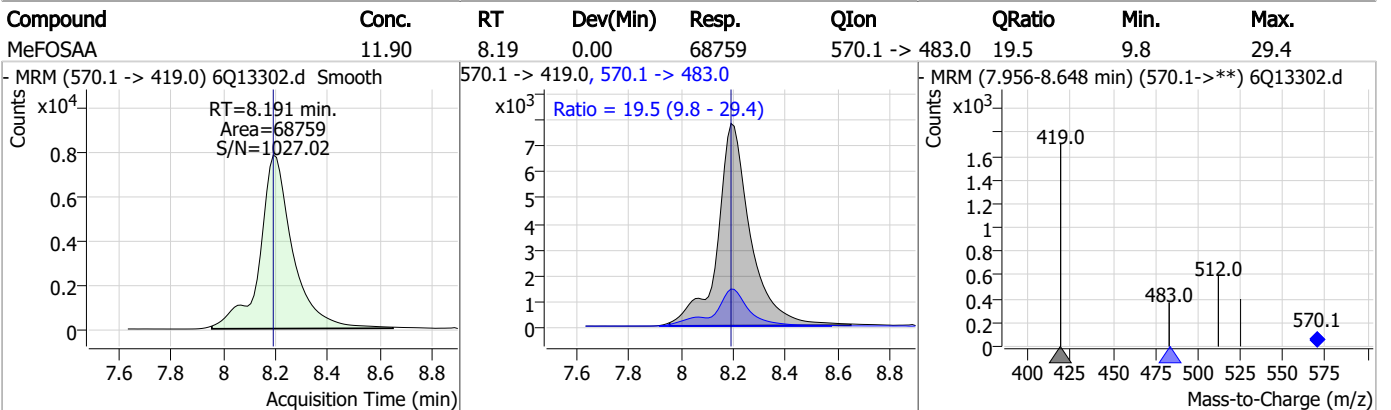
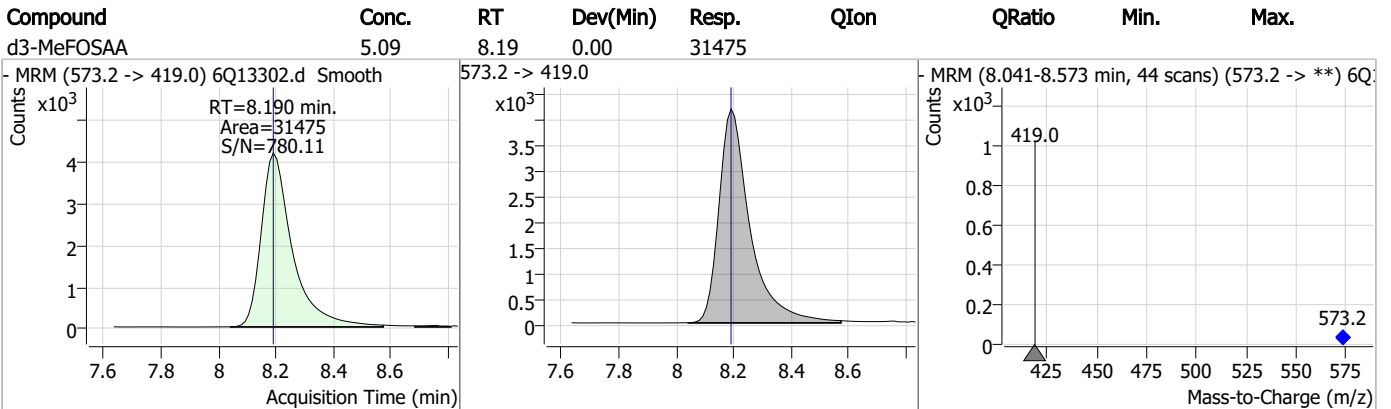
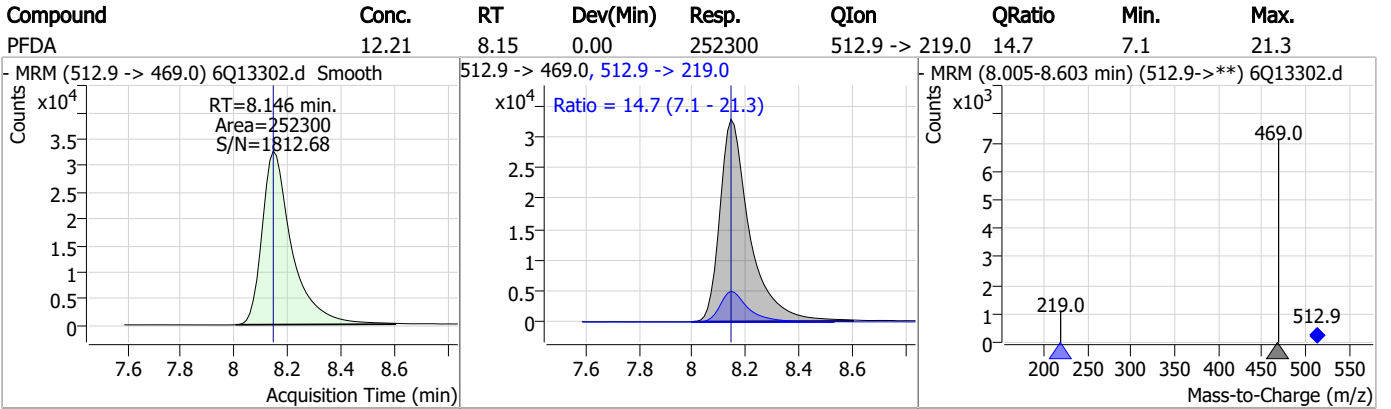


### Perfluorinated Compounds by LC/MS/MS



7.7.7  
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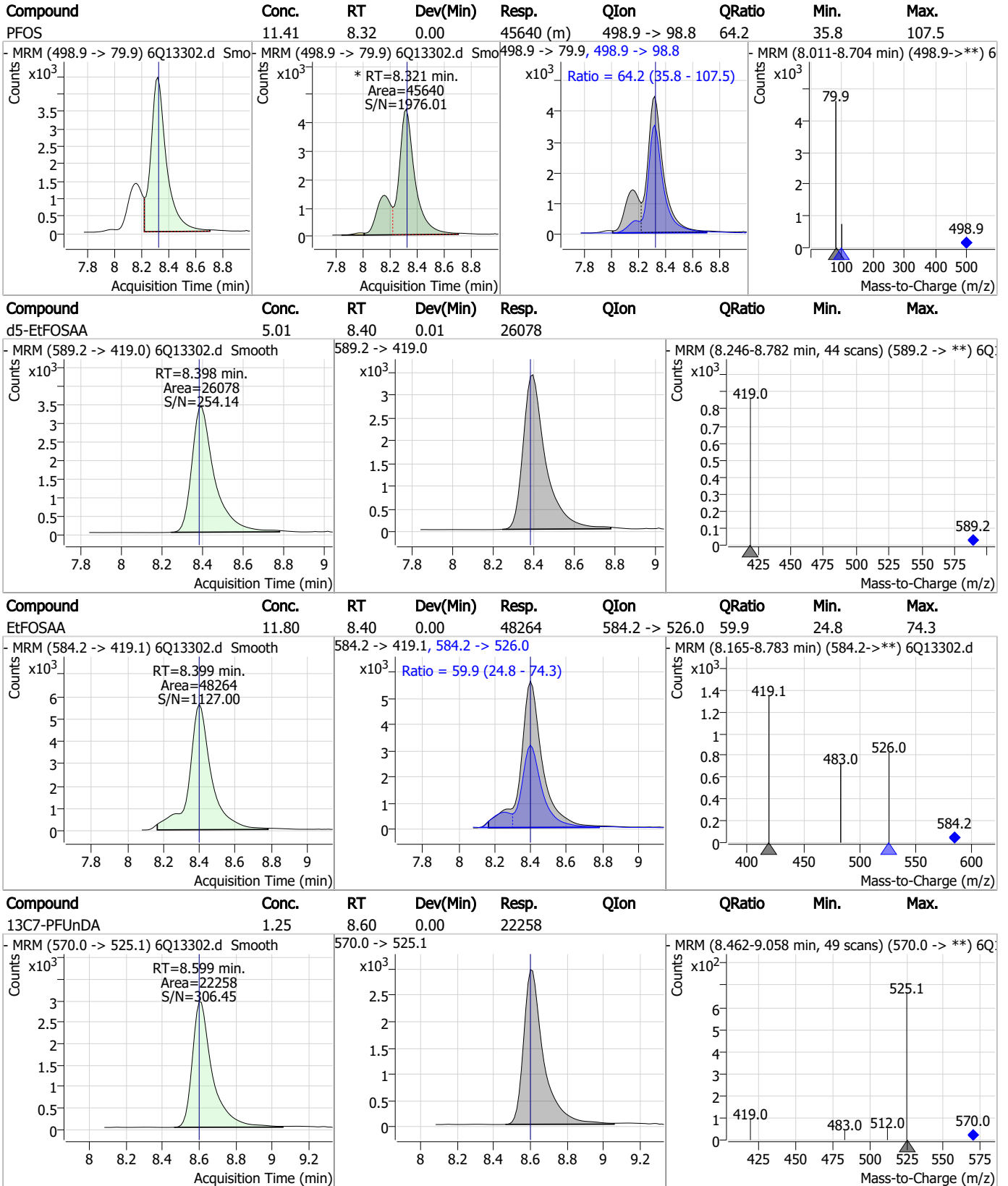
### Perfluorinated Compounds by LC/MS/MS



7.7.7

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### Perfluorinated Compounds by LC/MS/MS

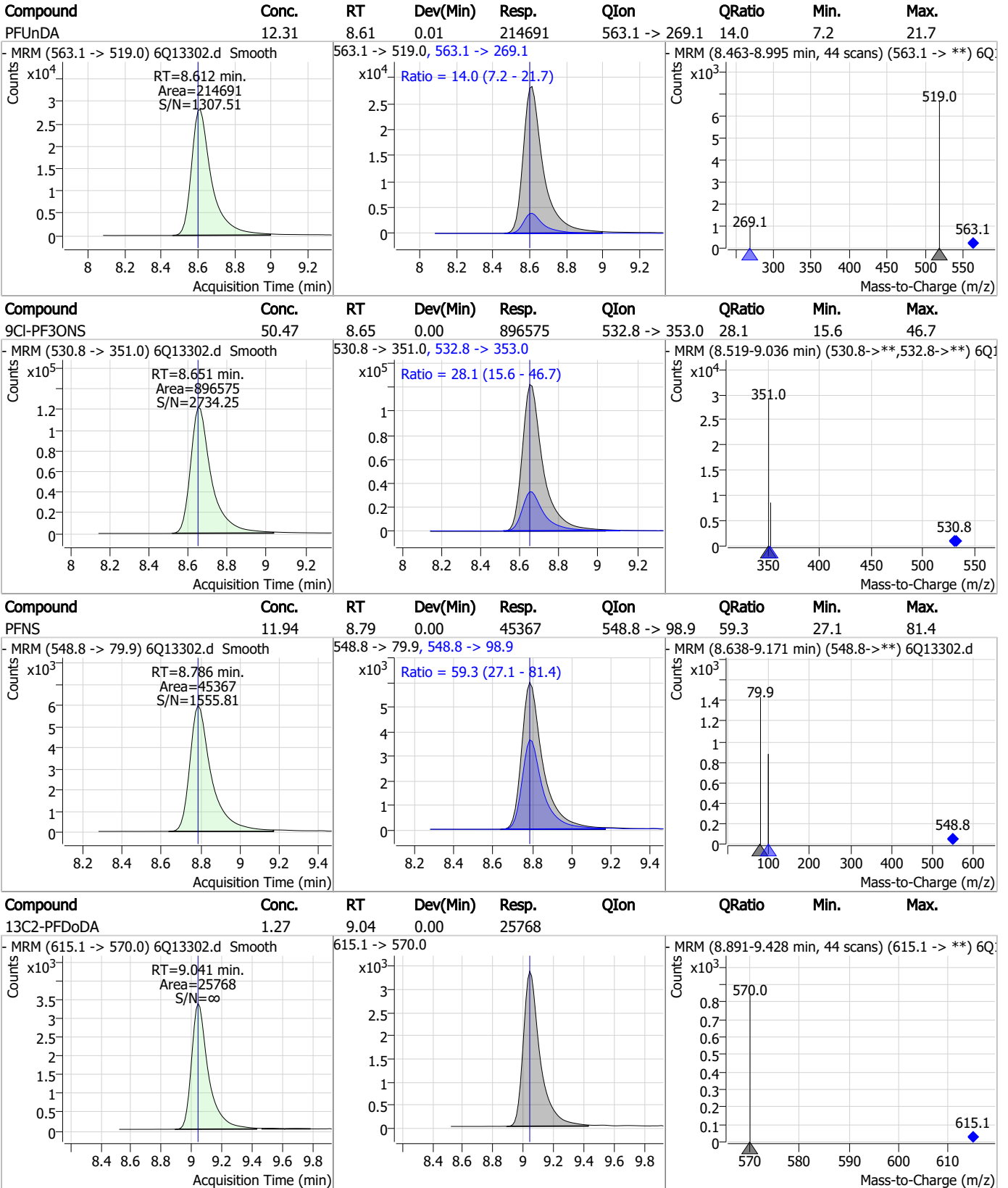


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### Perfluorinated Compounds by LC/MS/MS

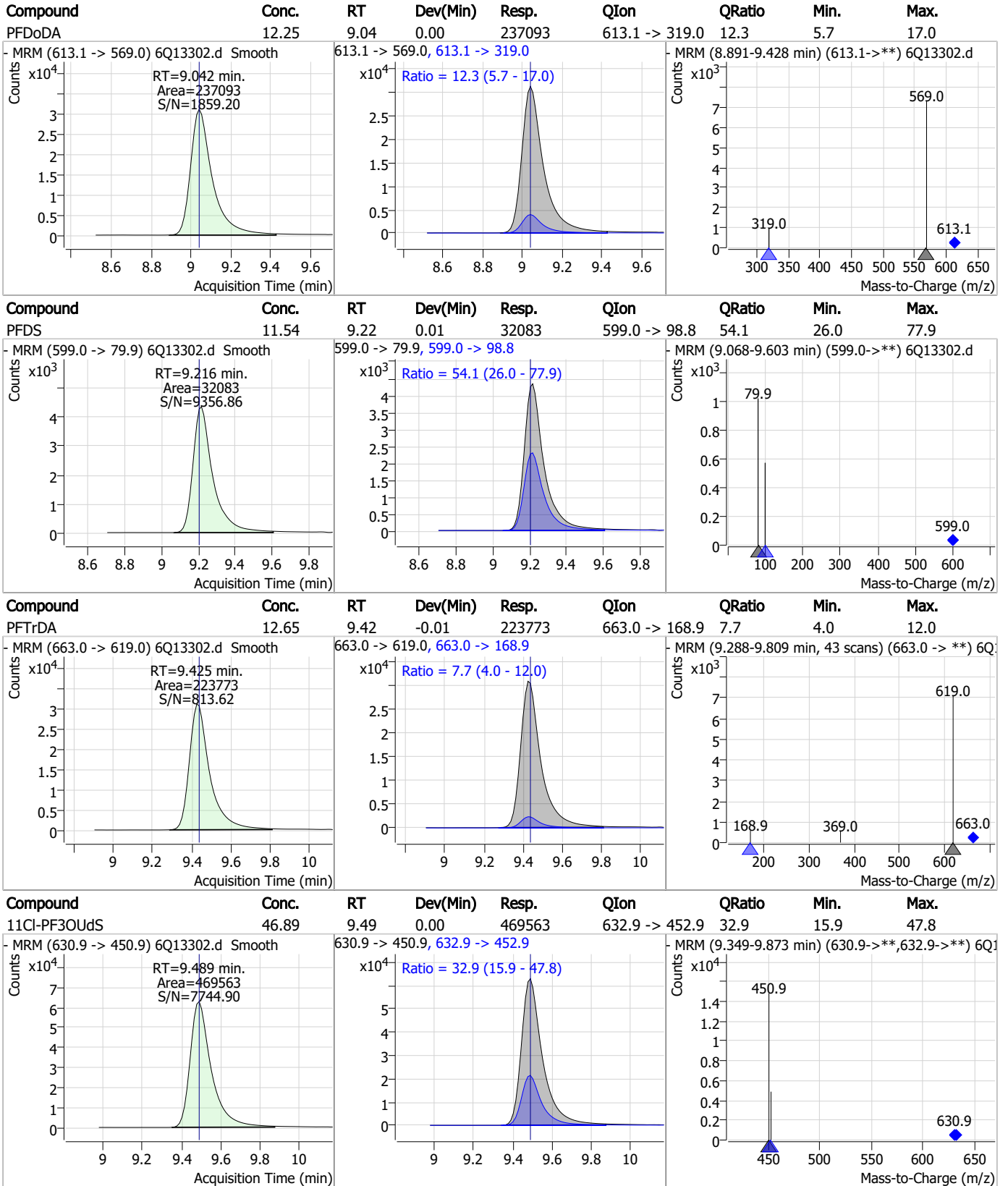


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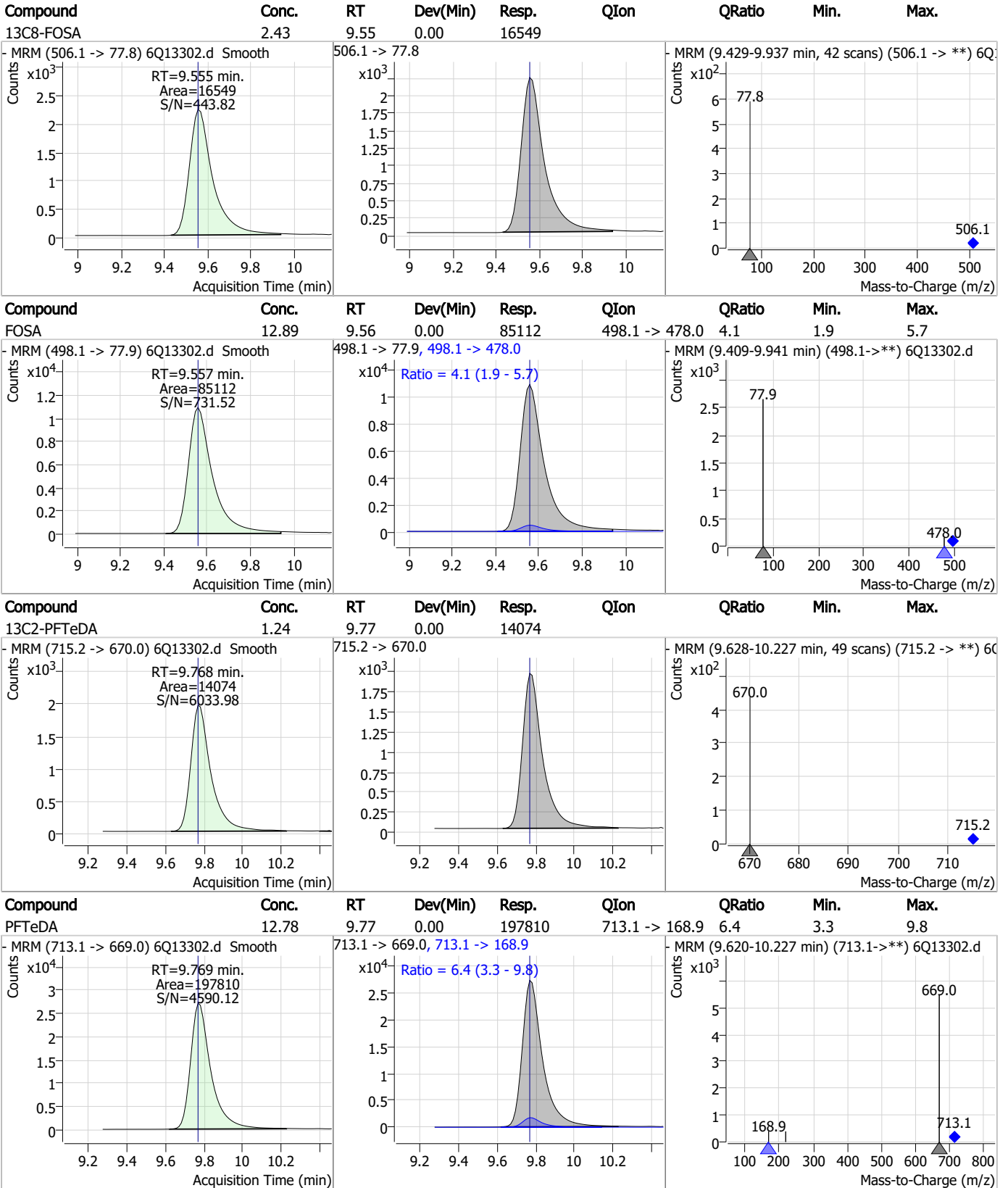


### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

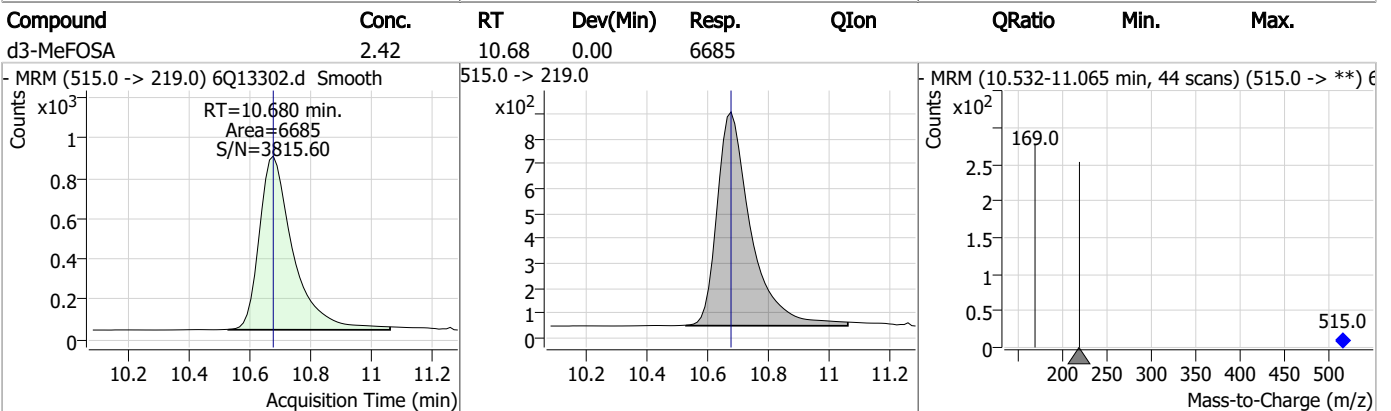
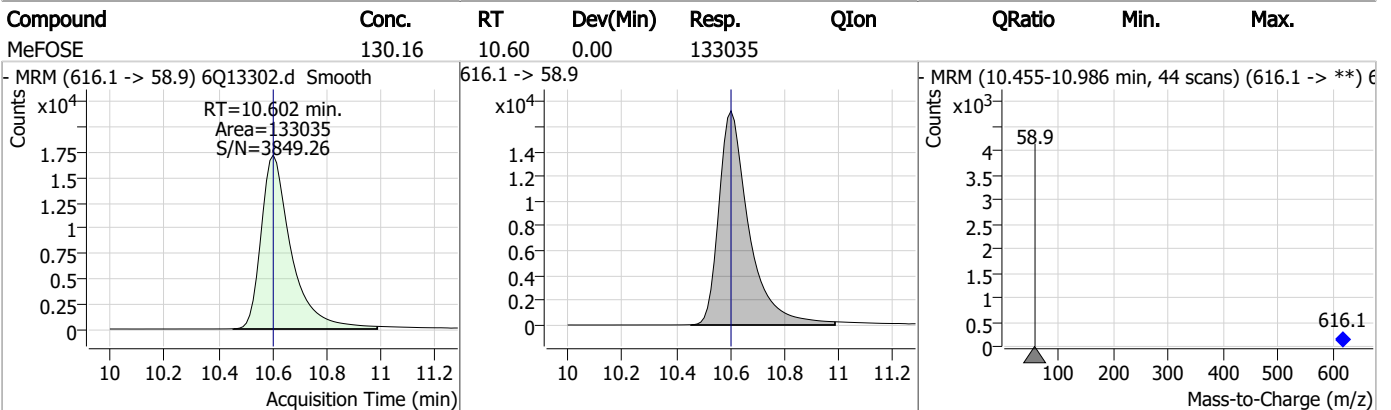
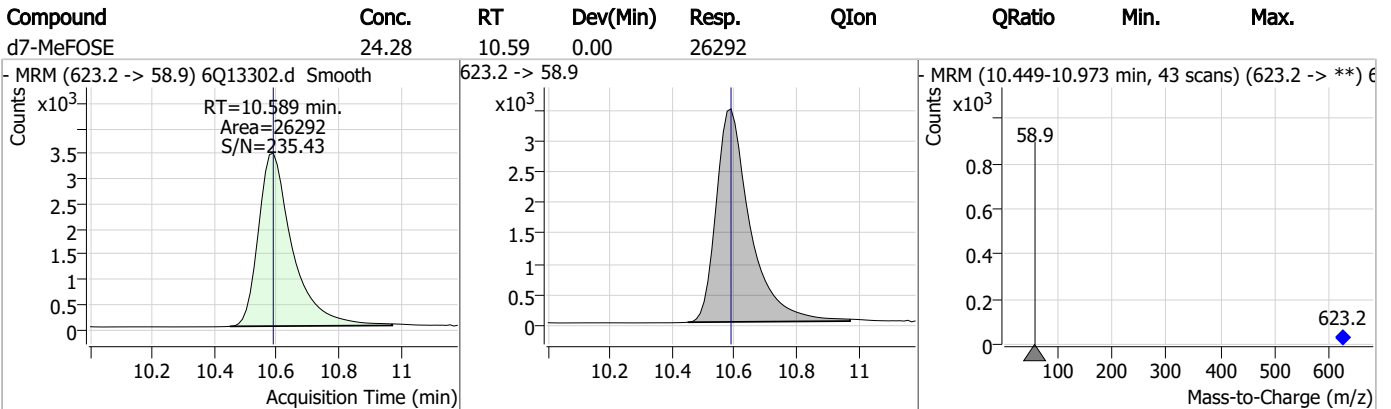
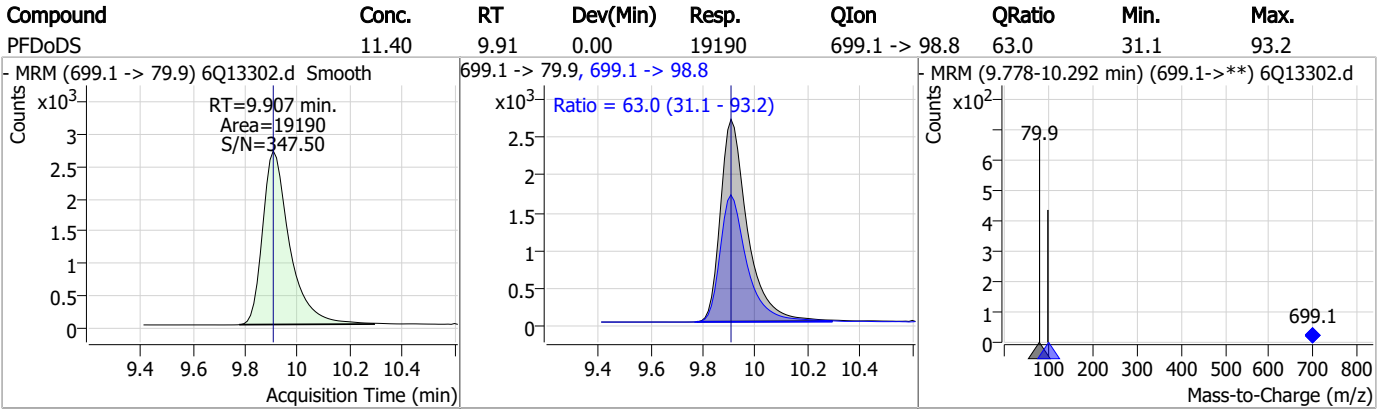


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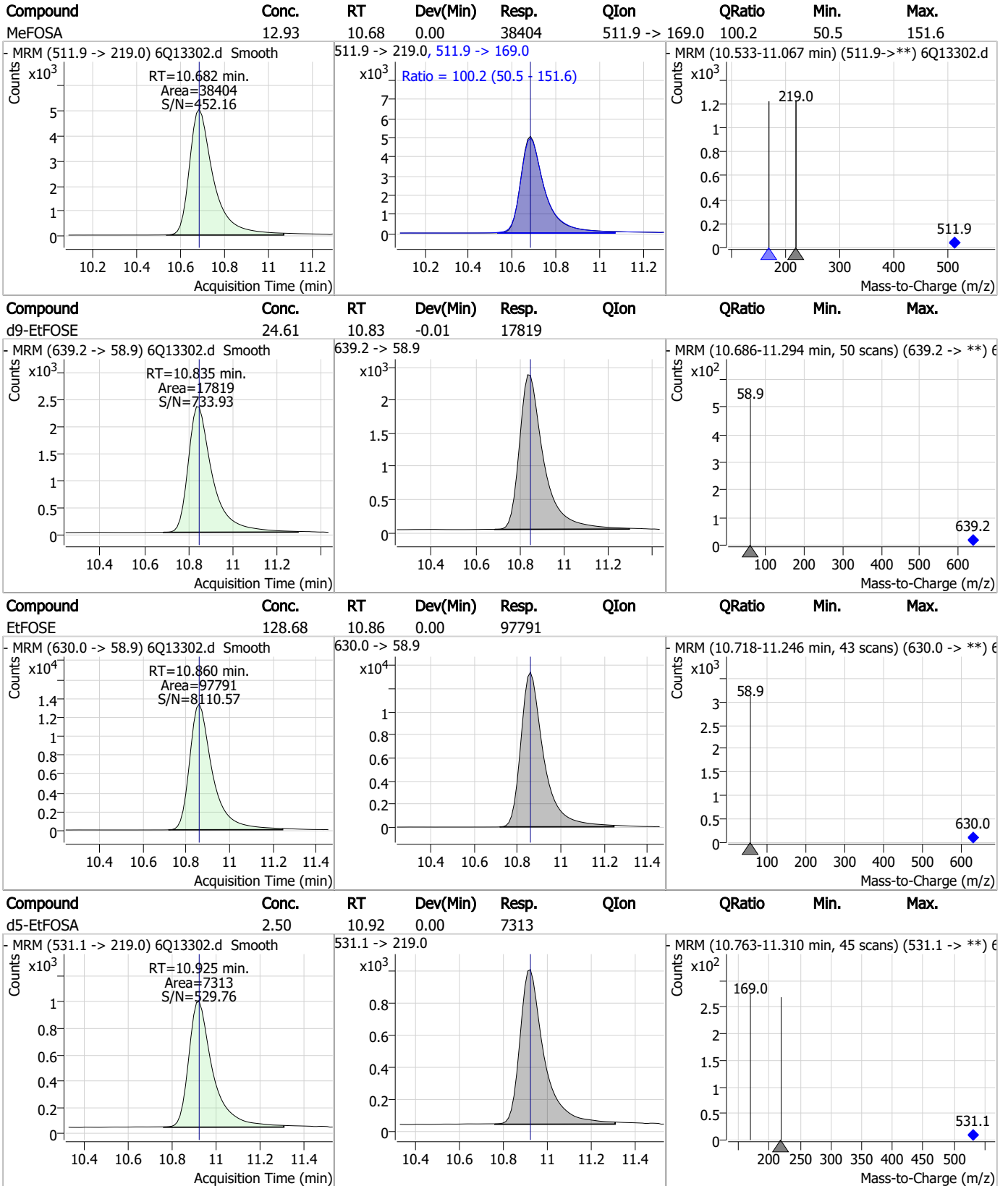
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### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS

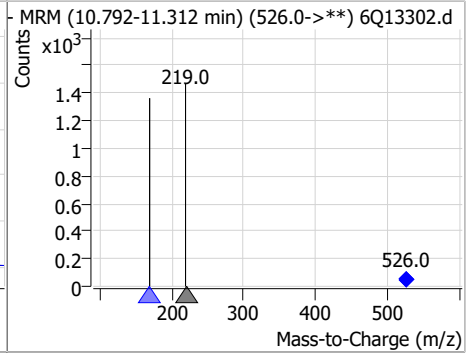
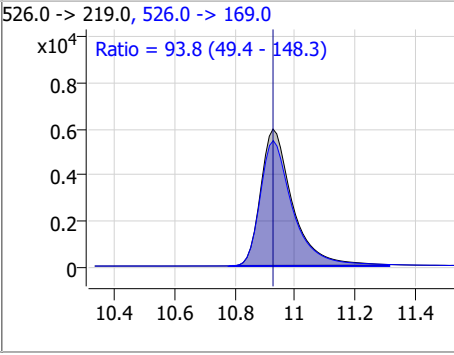
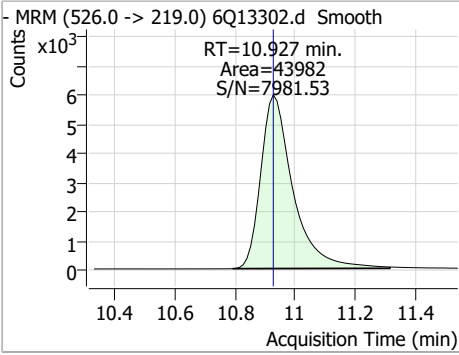


7.7.7

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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	12.35	10.93	0.00	43982	526.0 -> 169.0	93.8	49.4	148.3



7.7.7  
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# Manual Integration Approval Summary

Sample Number: S6Q203-IC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13302.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 13:55      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFMPA	377-73-1		3.55	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak

7.7.7.1  
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Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

**Norman Farmer**  
**02/10/23 16:52**

### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13303.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 2:09:50 PM  
 Sample Name : ic203-7  
 Vial : P1-A8  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	80392	10.00 µg/L	-0.025
M5-PFPeA	4.374	268.3 -> 223.0	41281	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	38186	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	38385	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	70204	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	24427	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	18147	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	22131	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	25563	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14097	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	15951	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	14013	2.50 µg/L	-0.012
M3-PFHxS	7.249	402.1 -> 79.9	9742	2.50 µg/L	0.000
M8-PFOS	8.320	507.1 -> 79.9	8022	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2160	5.00 µg/L	-0.012
M2-6:2FTS	6.895	429.1 -> 80.9	2611	5.00 µg/L	0.000
M2-8:2FTS	7.932	529.1 -> 80.9	2476	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	29493	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	14872	10.00 µg/L	-0.012
M5-EtFOSAA	8.398	589.2 -> 419.0	24974	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	26082	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	17643	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	6889	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6857	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10846	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	35770	5.00 µg/L	-0.025
18O2-PFHxS	7.261	403.0 -> 83.9	7115	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	75802	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	26022	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	25121	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	37297	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2160	4.58 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.5%		
13C2-6:2FTS	6.895	429.1 -> 80.9	2611	4.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.9%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2476	4.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 83.5%		
13C2-PFDoDA	9.041	615.1 -> 570.0	25563	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14097	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C3-PFBS	5.505	302.1 -> 79.9	14013	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C3-PFHxS	7.249	402.1 -> 79.9	9742	2.55 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 = 101.8%	
13C4-PFBA	2.975	216.8 -> 171.9	80392	10.07 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFHpA	6.490	367.1 -> 322.0	38385	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFHxA	5.563	318.0 -> 273.0	38186	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFPeA	4.374	268.3 -> 223.0	41281	4.84 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C6-PFDA	8.145	519.1 -> 474.1	18147	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C7-PFUnDA	8.599	570.0 -> 525.1	22131	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-FOSA	9.555	506.1 -> 77.8	15951	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%	
13C8-PFOA	7.134	421.1 -> 376.0	70204	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.8%	
13C8-PFOS	8.320	507.1 -> 79.9	8022	2.23 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.3%	
13C9-PFNA	7.664	472.1 -> 427.0	24427	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.7%	
d3-MeFOSAA	8.190	573.2 -> 419.0	29493	4.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	14872	9.99 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d3-MeFOSA	10.680	515.0 -> 219.0	6857	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
d5-EtFOSAA	8.398	589.2 -> 419.0	24974	4.75 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
d7-MeFOSE	10.589	623.2 -> 58.9	26082	23.86 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
d9-EtFOSE	10.835	639.2 -> 58.9	17643	24.13 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
d5-EtFOSA	10.925	531.1 -> 219.0	6889	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	5.228	327.1 -> 307.0	455968	94.29 µg/L	96
		327.1 -> 80.9	98812		
6:2FTS	6.896	427.1 -> 407.0	390480	100.37 µg/L	99
		427.1 -> 80.9	73880		
8:2FTS	7.933	527.1 -> 507.0	222588	111.60 µg/L	95
		527.1 -> 80.8	51816		
EtFOSAA	8.399	584.2 -> 419.1	98041	25.02 µg/L	93
		584.2 -> 526.0	53537		
FOSA	9.557	498.1 -> 77.9	169778	26.67 µg/L	100
		498.1 -> 478.0	6587		
MeFOSAA	8.191	570.1 -> 419.0	136537	25.22 µg/L	99
		570.1 -> 483.0	26136		
PFBA	2.969	212.8 -> 168.9	198682	109.81 µg/L	100
PFBS	5.506	298.7 -> 79.9	125357	23.35 µg/L	99
		298.7 -> 98.8	57959		
PFDA	8.146	512.9 -> 469.0	546813	25.91 µg/L	99
		512.9 -> 219.0	76077		
PFDoDA	9.042	613.1 -> 569.0	500547	26.08 µg/L	99
		613.1 -> 319.0	58505		
PFDS	9.216	599.0 -> 79.9	69901	27.99 µg/L	97

## Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	34960			
PFHpA	6.490	363.1 -> 319.0	605891	27.11	µg/L	98
		363.1 -> 169.0	80128			
PFHpS	7.816	449.0 -> 79.9	86706	26.19	µg/L	93
		449.0 -> 98.9	52552			
PFHxA	5.553	313.0 -> 269.0	379538	25.70	µg/L	99
		313.0 -> 118.9	13712			
PFHxS	7.263	398.7 -> 79.9	95309	22.53	µg/L	m 96
		398.7 -> 98.9	55756			
PFNA	7.665	463.0 -> 419.0	415819	25.69	µg/L	99
		463.0 -> 219.0	81757			
PFNS	8.786	548.8 -> 79.9	90857	26.63	µg/L	89
		548.8 -> 98.9	56580			
PFOA	7.135	413.0 -> 369.0	793472	26.40	µg/L	97
		413.0 -> 169.0	96863			
PFOS	8.321	498.9 -> 79.9	95678	26.64	µg/L	m 89
		498.9 -> 98.8	59773			
PFPeA	4.375	263.0 -> 219.0	464268	53.31	µg/L	100
PFPeS	6.569	349.1 -> 79.9	120165	23.96	µg/L	94
		349.1 -> 98.9	61138			
PFTeDA	9.769	713.1 -> 669.0	407586	26.30	µg/L	99
		713.1 -> 168.9	25133			
PFTrDA	9.425	663.0 -> 619.0	453712	25.86	µg/L	98
		663.0 -> 168.9	33835			
PFUnDA	8.600	563.1 -> 519.0	435924	25.13	µg/L	100
		563.1 -> 269.1	62965			
11Cl-PF3OUdS	9.489	630.9 -> 450.9	1020063	101.91	µg/L	95
		632.9 -> 452.9	294282			
9Cl-PF3ONS	8.651	530.8 -> 351.0	1744026	98.22	µg/L	99
		532.8 -> 353.0	535318			
ADONA	6.741	376.9 -> 250.9	3238369	98.23	µg/L	96
		376.9 -> 84.8	657544			
HFPO-DA	5.928	284.9 -> 168.9	149126	105.81	µg/L	98
		284.9 -> 184.9	17143			
3:3FTCA	3.829	241.0 -> 177.0	58078	134.76	µg/L	97
		241.0 -> 117.0	7456			
5:3FTCA	6.193	341.0 -> 237.1	2037075	650.59	µg/L	98
		341.0 -> 217.0	1745315			
7:3FTCA	7.592	441.0 -> 316.9	1047248	650.34	µg/L	99
		441.0 -> 336.9	2010148			
EtFOSA	10.927	526.0 -> 219.0	89083	26.56	µg/L	100
		526.0 -> 169.0	88009			
EtFOSE	10.860	630.0 -> 58.9	206514	274.45	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	73010	23.97	µg/L	93
		511.9 -> 169.0	79173			
MeFOSE	10.602	616.1 -> 58.9	276004	272.21	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	41794	27.65	µg/L	97
		699.1 -> 98.8	24966			
NFDHA	5.445	295.0 -> 201.0	44229	51.27	µg/L	98
		295.0 -> 84.9	22284			
PFMBA	4.787	279.0 -> 85.1	137750	55.22	µg/L	100
PFMPA	3.528	229.0 -> 84.9	124270	54.66	µg/L	m 100
PFEESA	6.046	314.8 -> 134.9	963590	46.24	µg/L	100
		314.8 -> 82.9	23562			

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

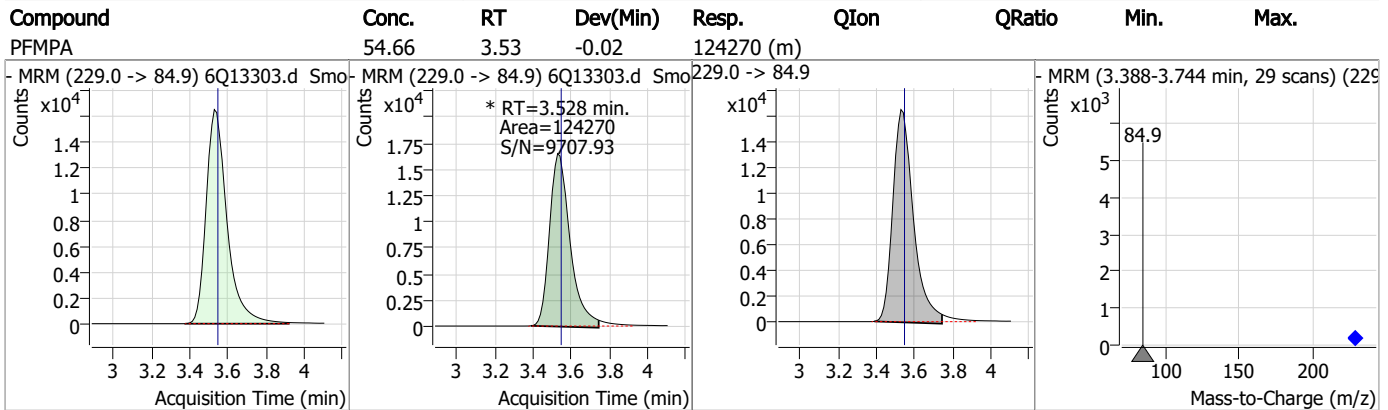
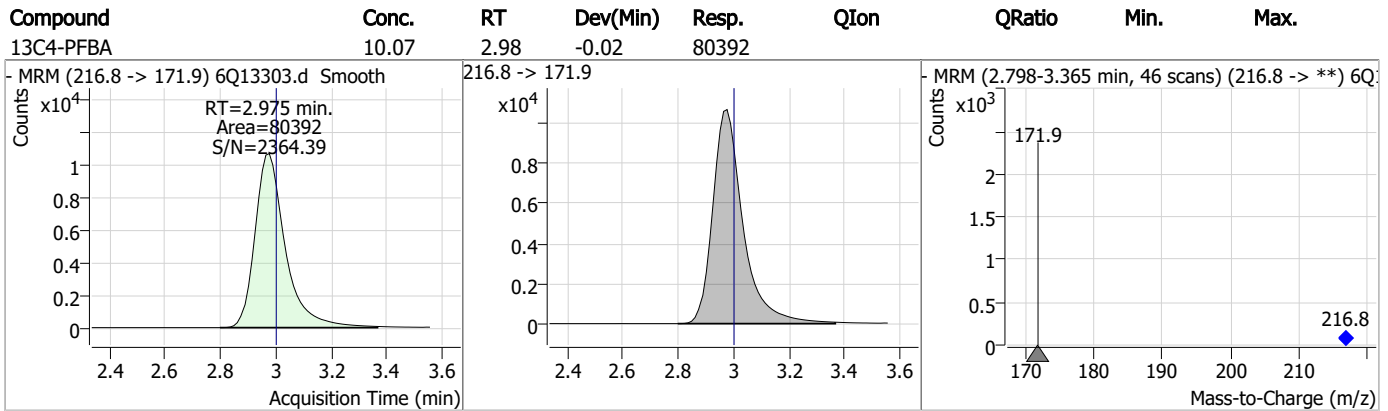
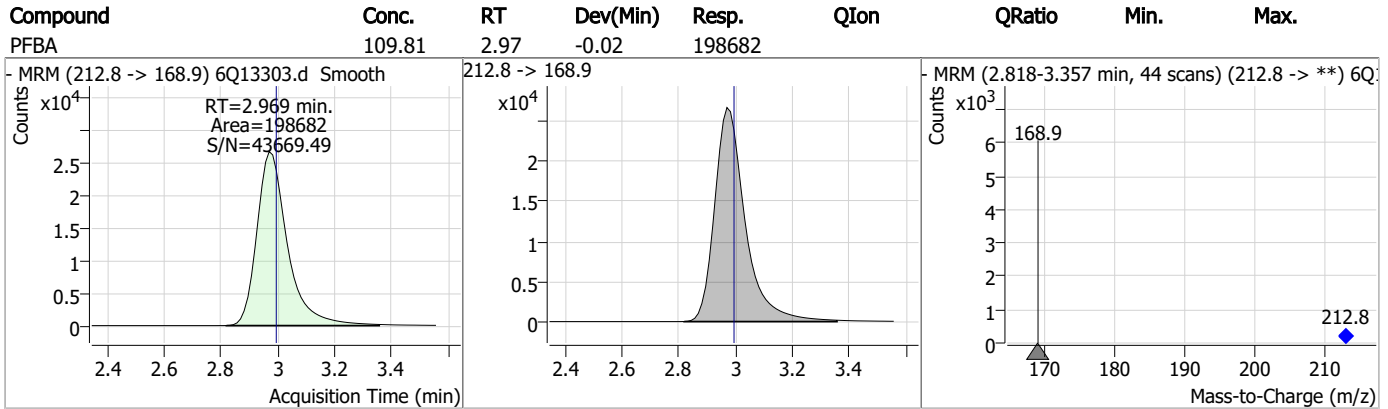
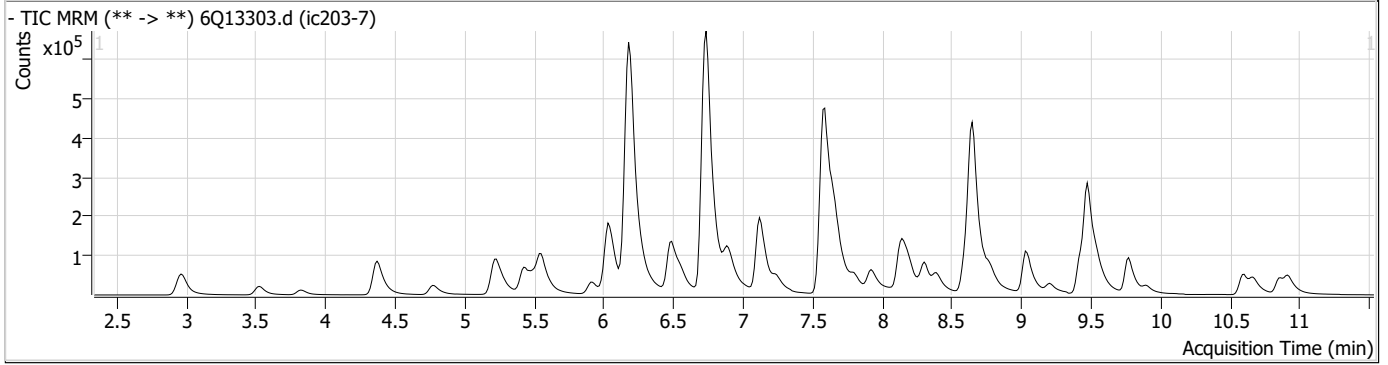
### Perfluorinated Compounds by LC/MS/MS

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



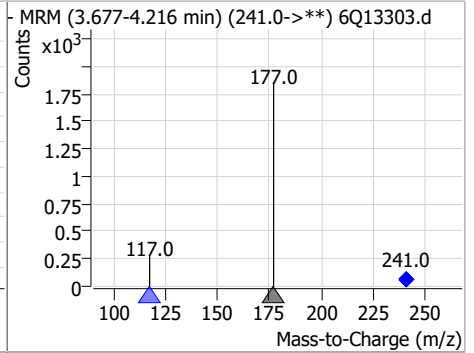
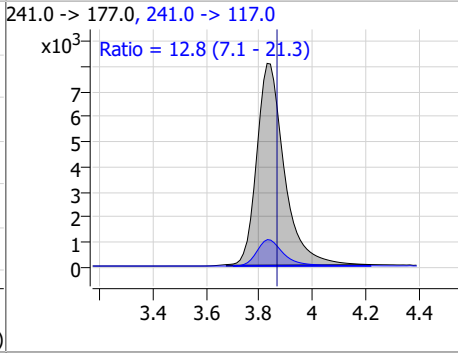
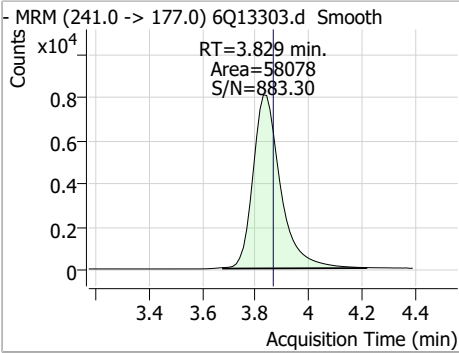
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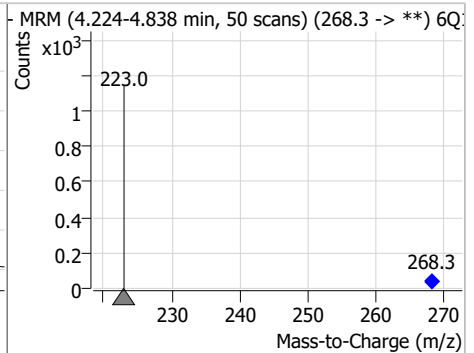
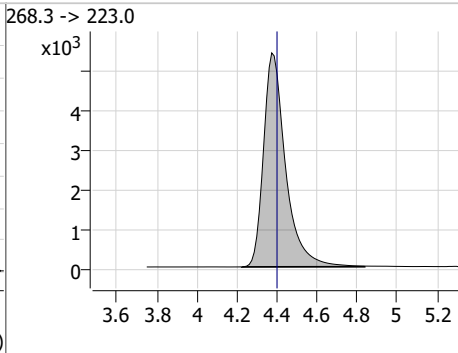
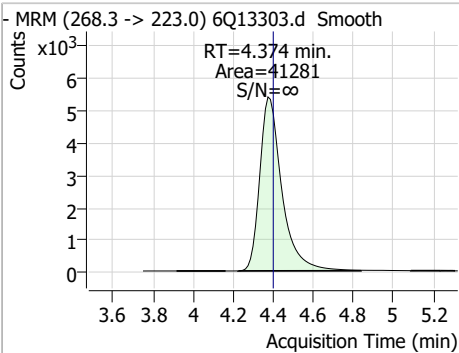


### Perfluorinated Compounds by LC/MS/MS

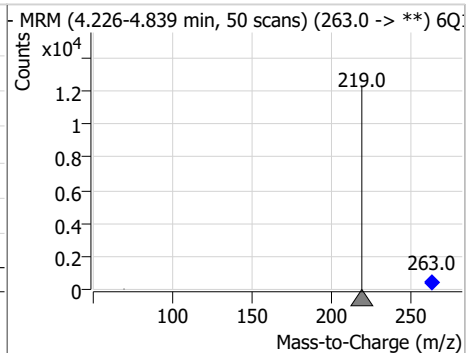
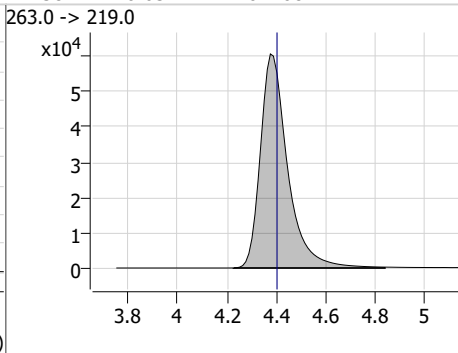
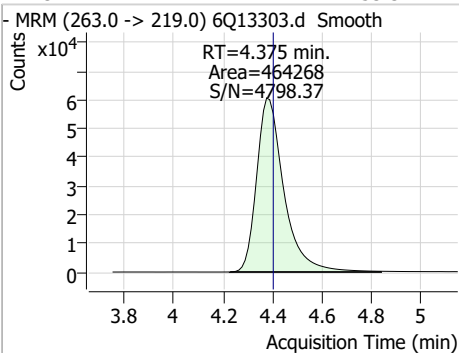
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	134.76	3.83	-0.04	58078	241.0 -> 117.0	12.8	7.1	21.3



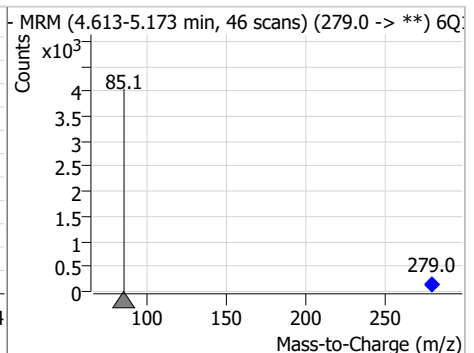
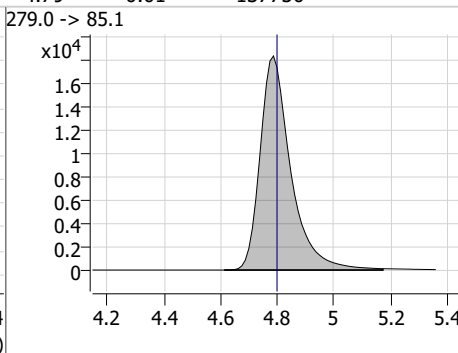
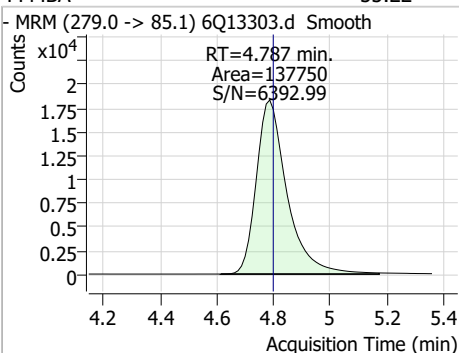
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.84	4.37	-0.03	41281				



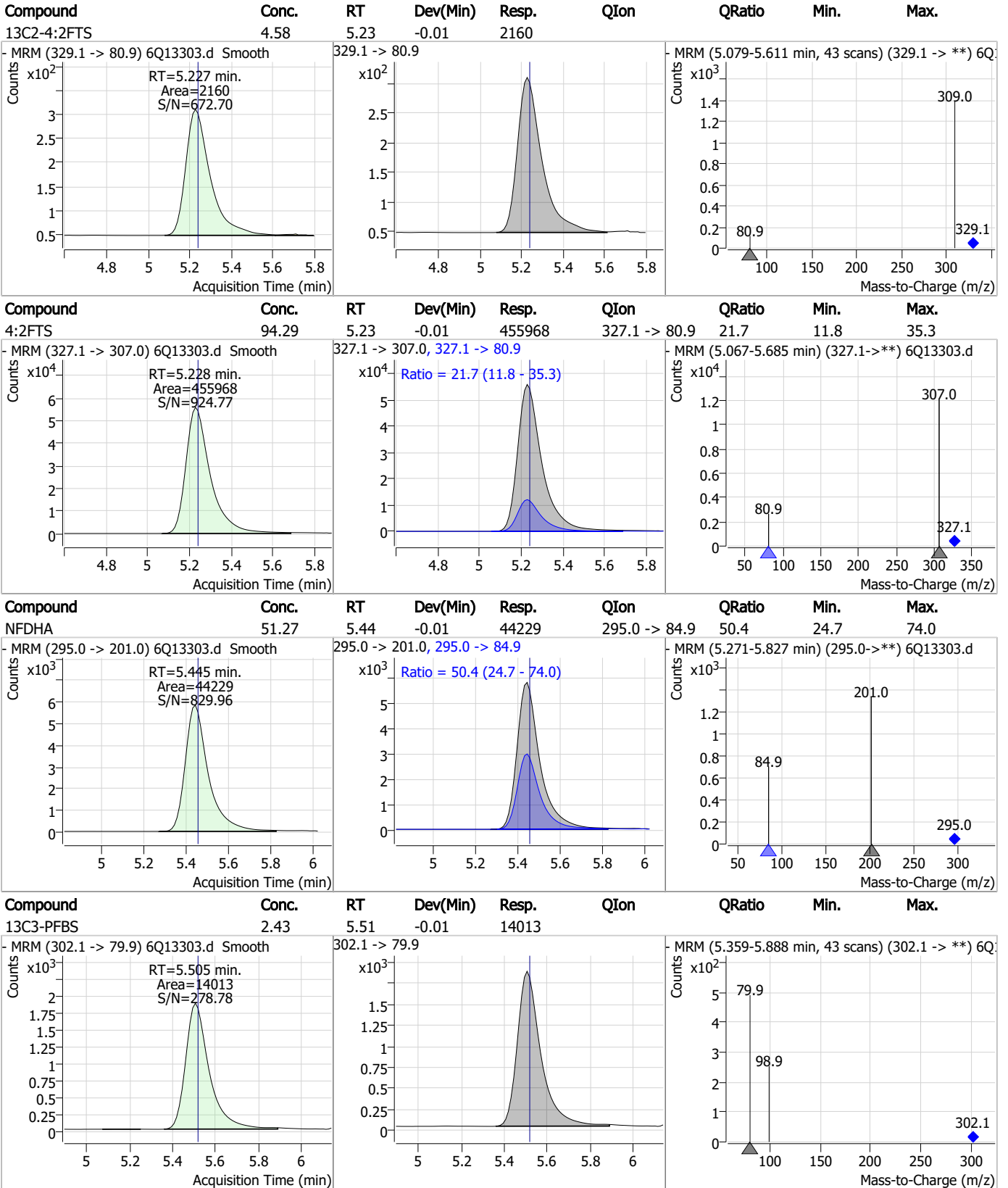
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	53.31	4.38	-0.03	464268				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	55.22	4.79	-0.01	137750				



### Perfluorinated Compounds by LC/MS/MS



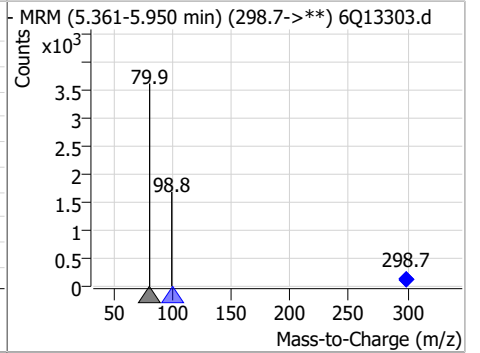
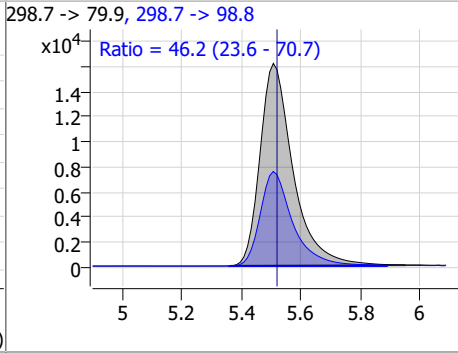
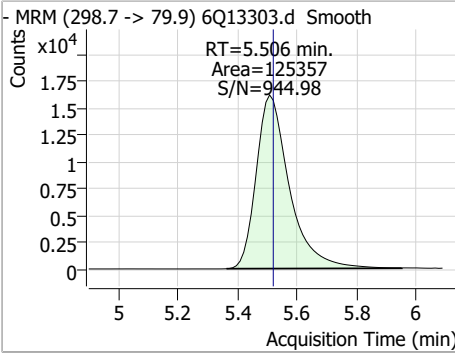
7.7.8

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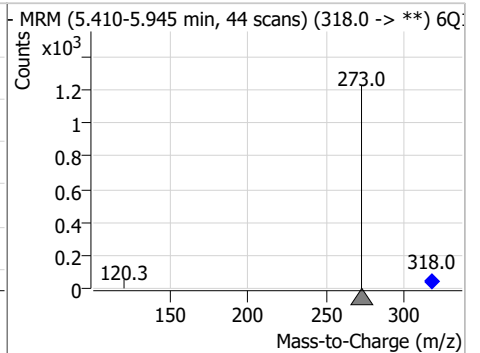
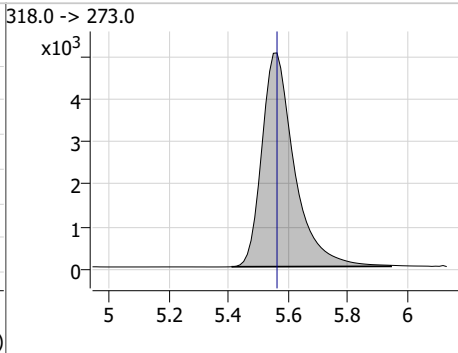
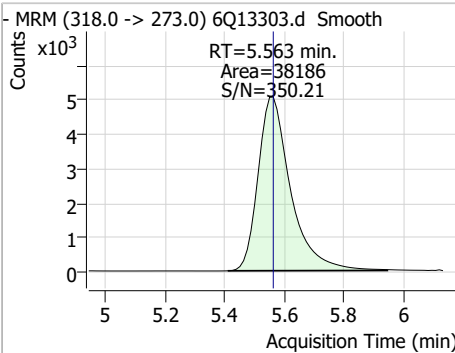


### Perfluorinated Compounds by LC/MS/MS

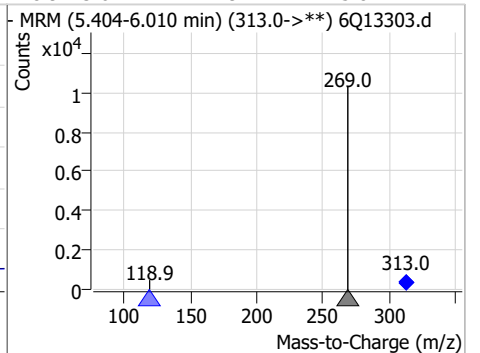
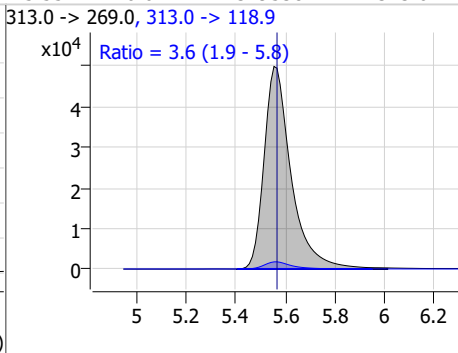
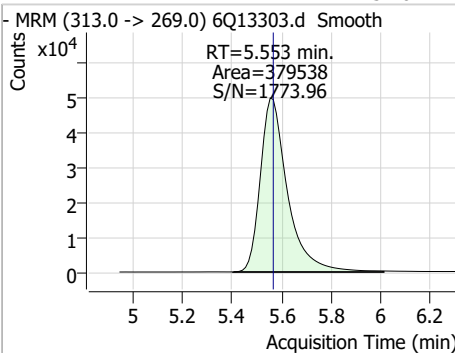
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	23.35	5.51	-0.01	125357	298.7 -> 98.8	46.2	23.6	70.7



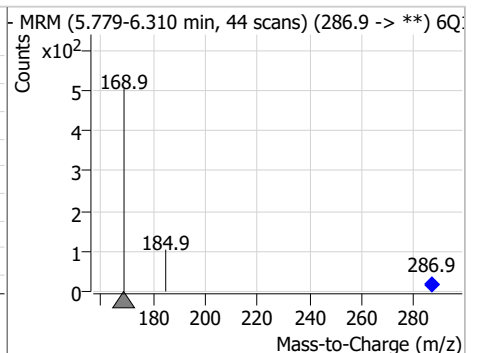
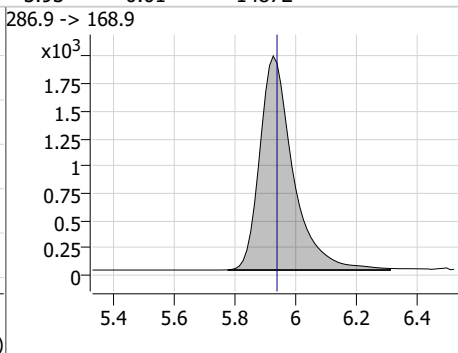
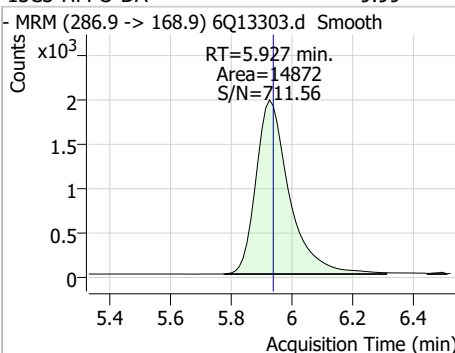
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.56	0.00	38186				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	25.70	5.55	-0.01	379538	313.0 -> 118.9	3.6	1.9	5.8

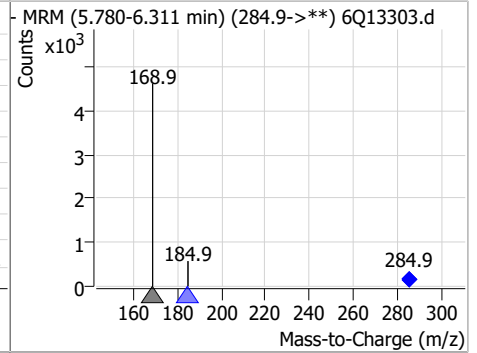
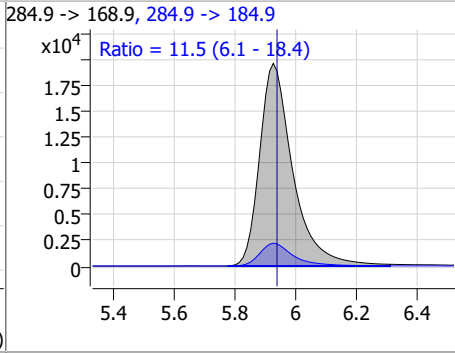
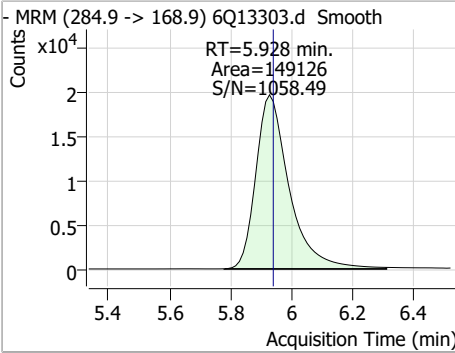


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.99	5.93	-0.01	14872				

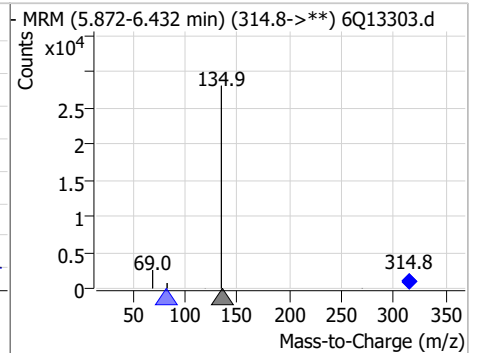
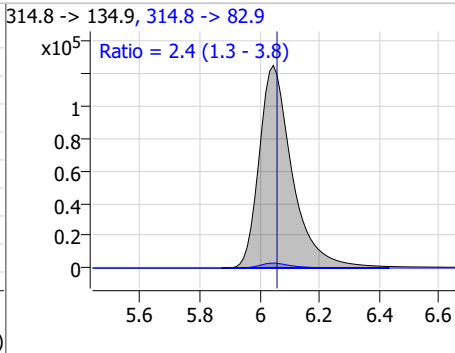
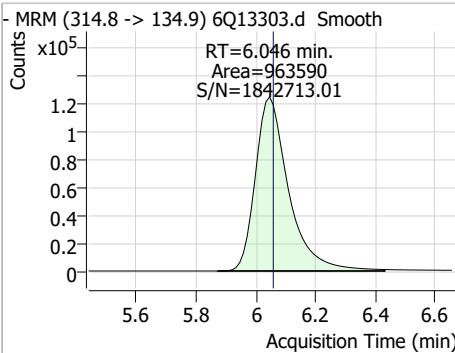


### Perfluorinated Compounds by LC/MS/MS

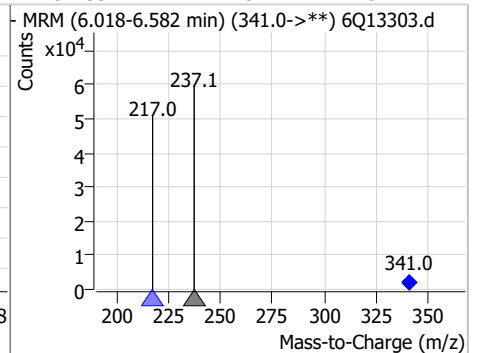
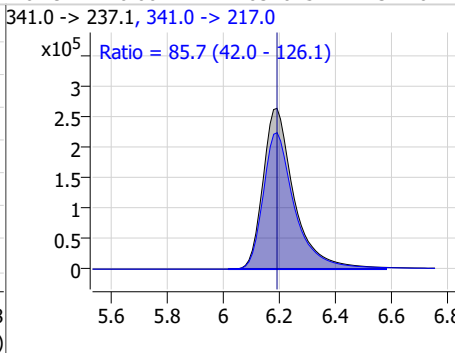
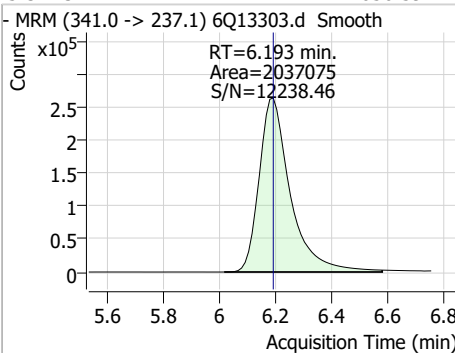
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	105.81	5.93	-0.01	149126	284.9 -> 184.9	11.5	6.1	18.4



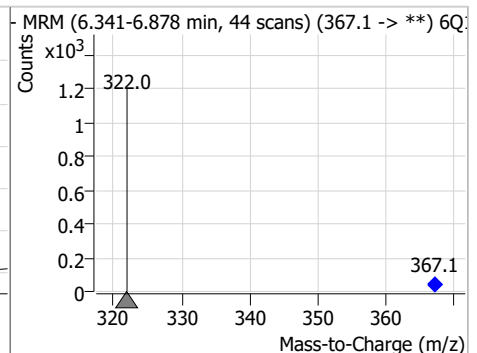
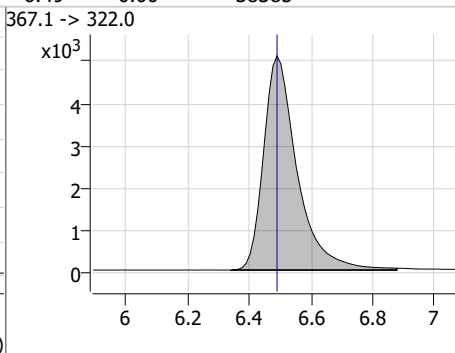
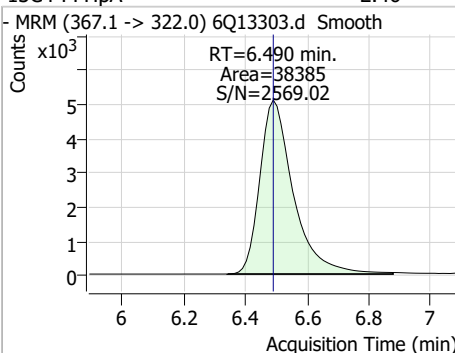
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	46.24	6.05	-0.01	963590	314.8 -> 82.9	2.4	1.3	3.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	650.59	6.19	0.00	2037075	341.0 -> 217.0	85.7	42.0	126.1

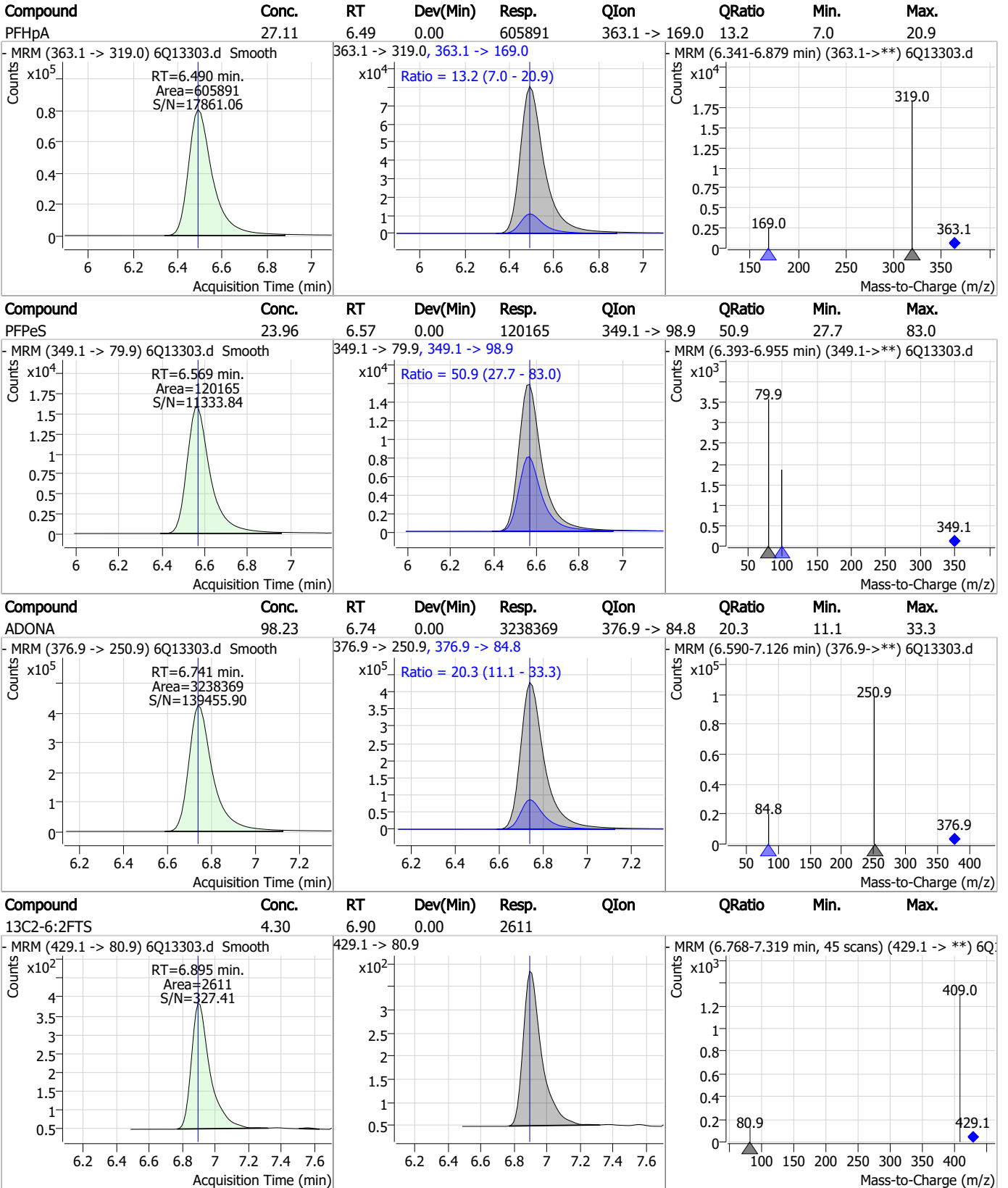


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.46	6.49	0.00	38385	367.1 -> 322.0			





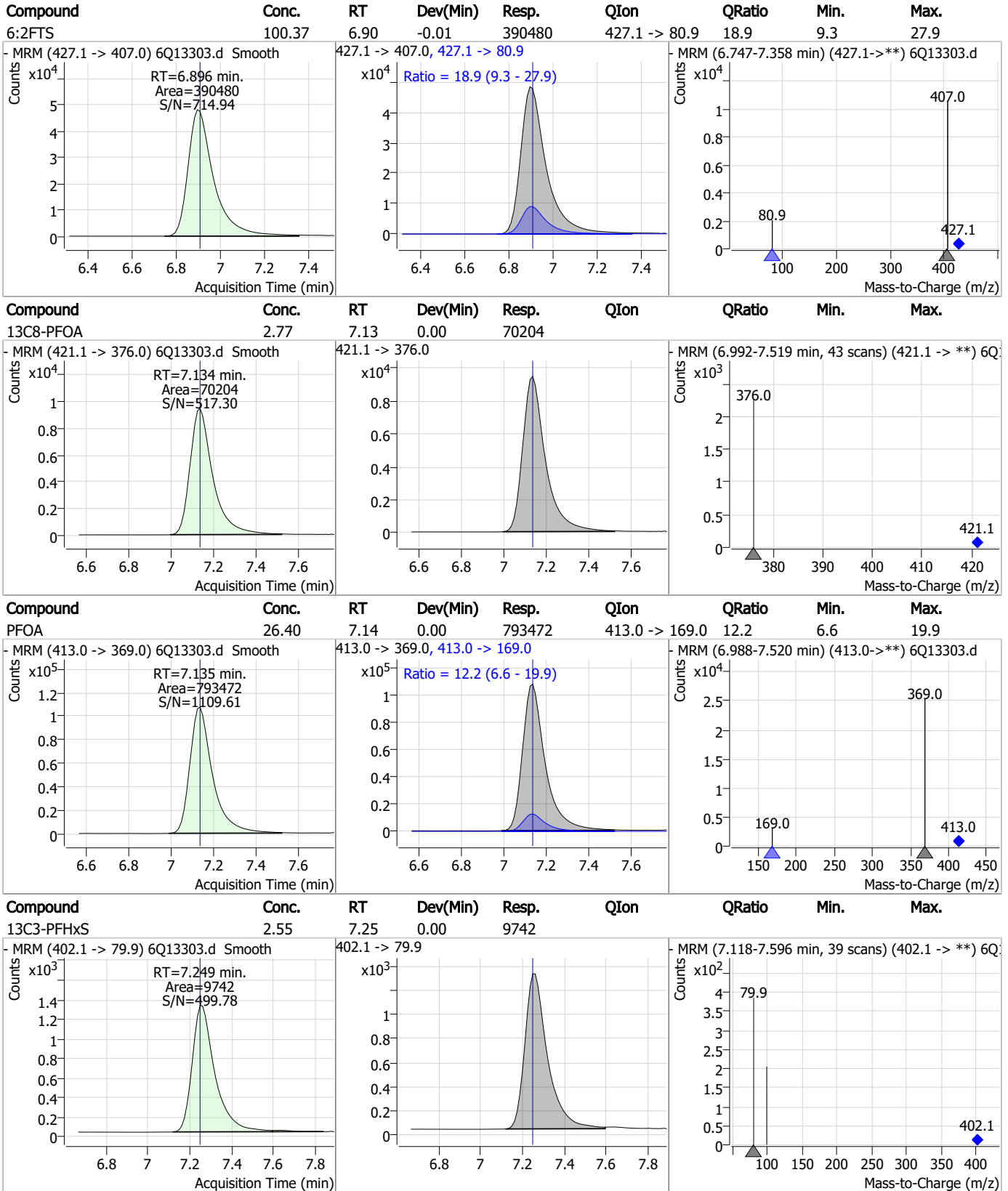
### Perfluorinated Compounds by LC/MS/MS



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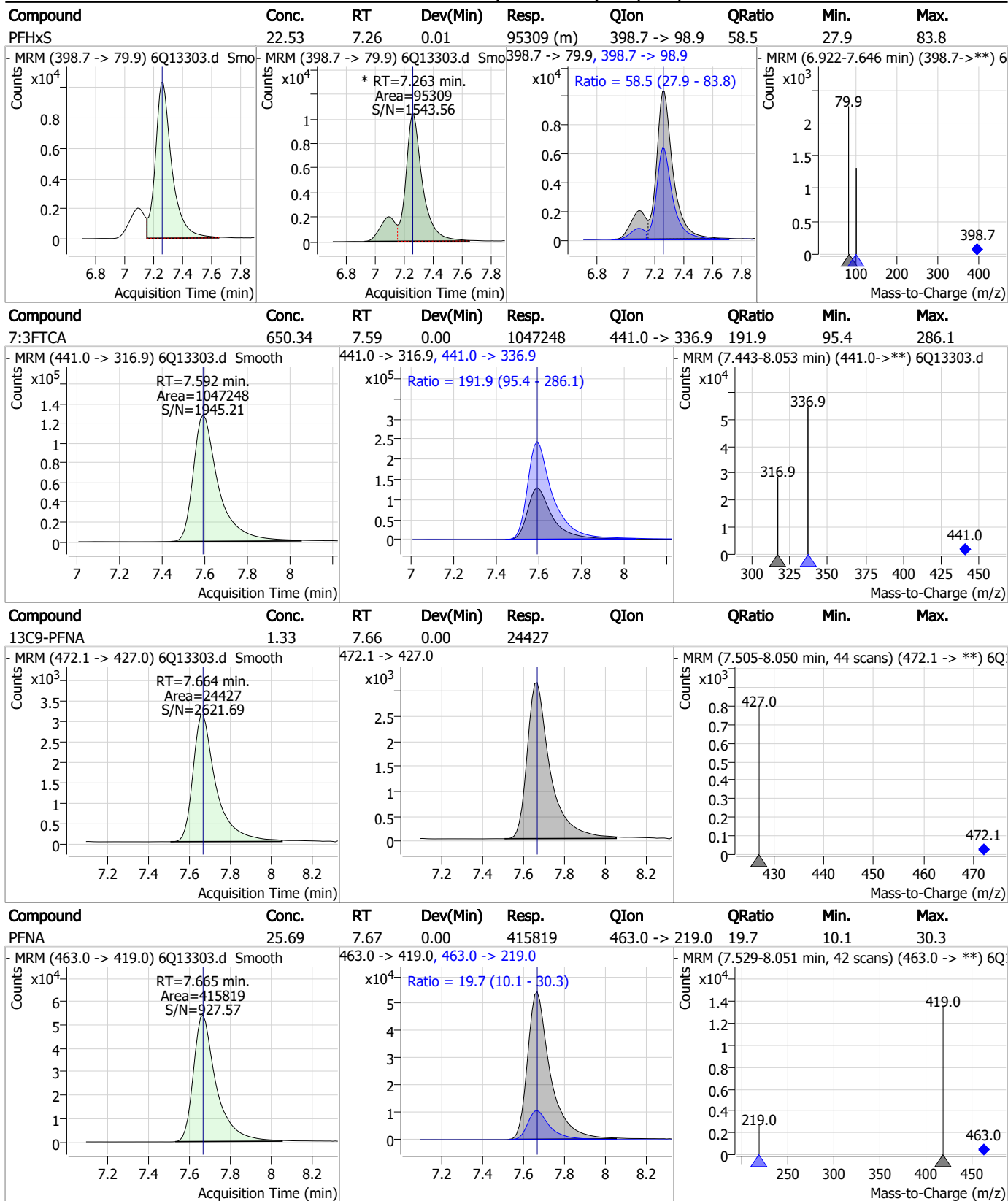
### Perfluorinated Compounds by LC/MS/MS



7.7.8

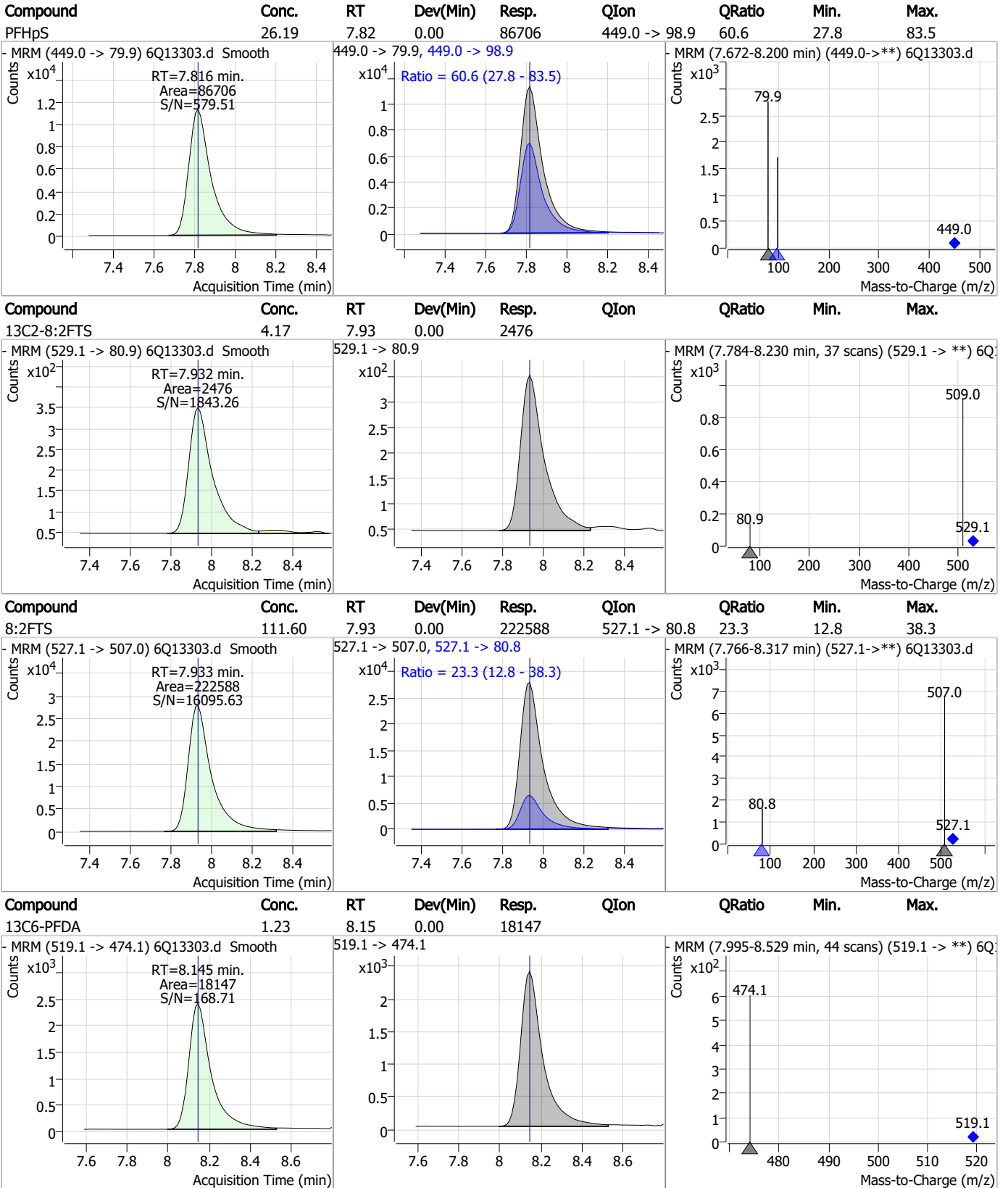
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### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

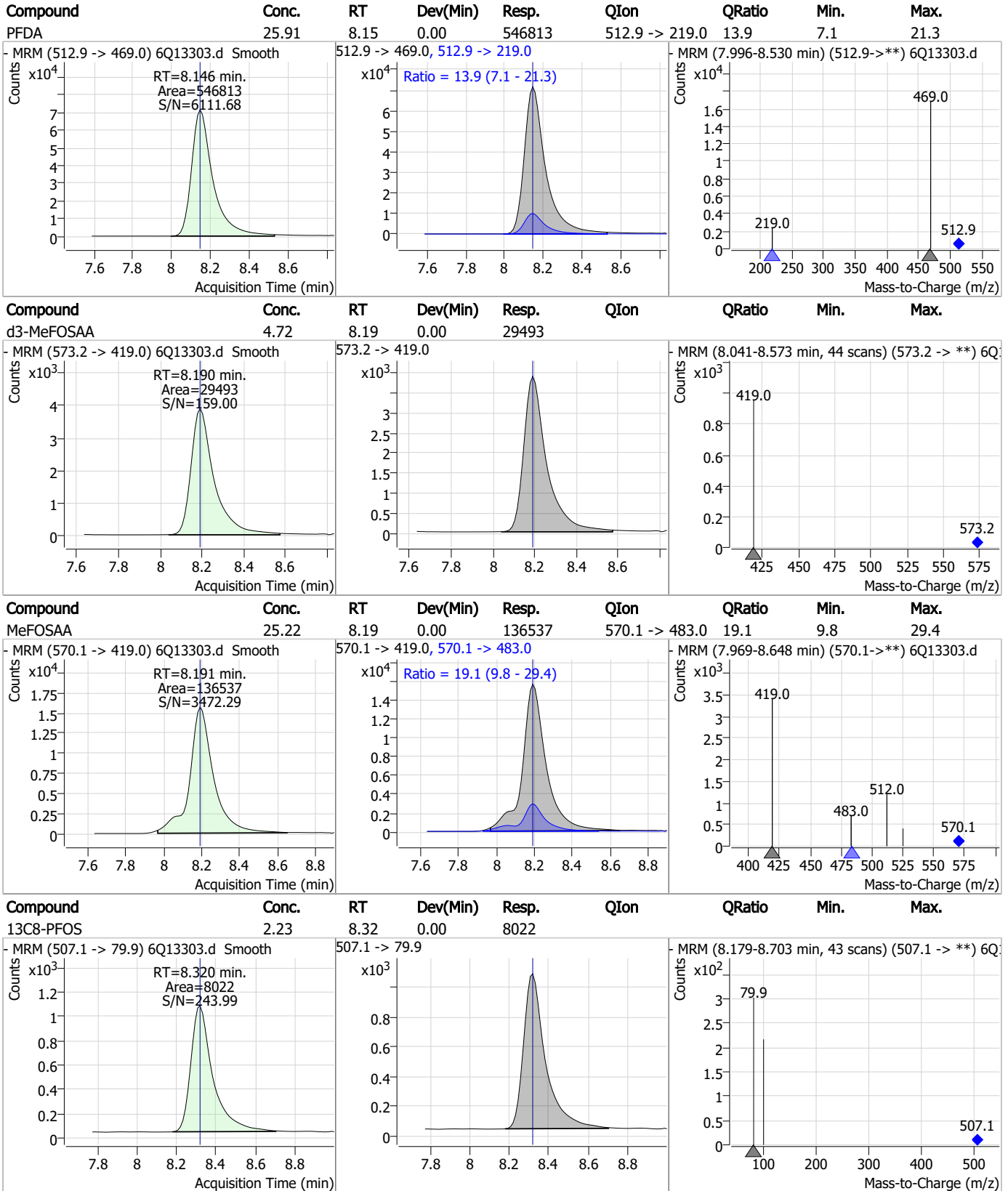


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### Perfluorinated Compounds by LC/MS/MS



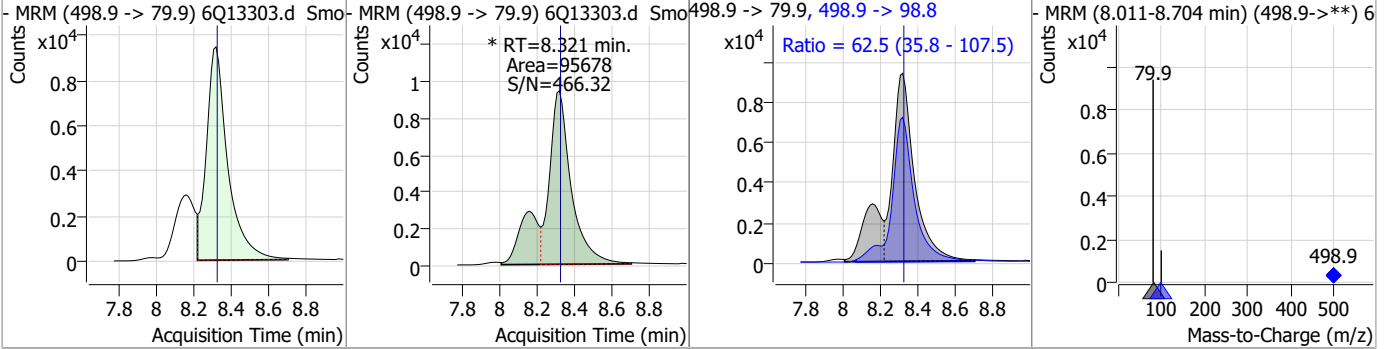
7.7.8

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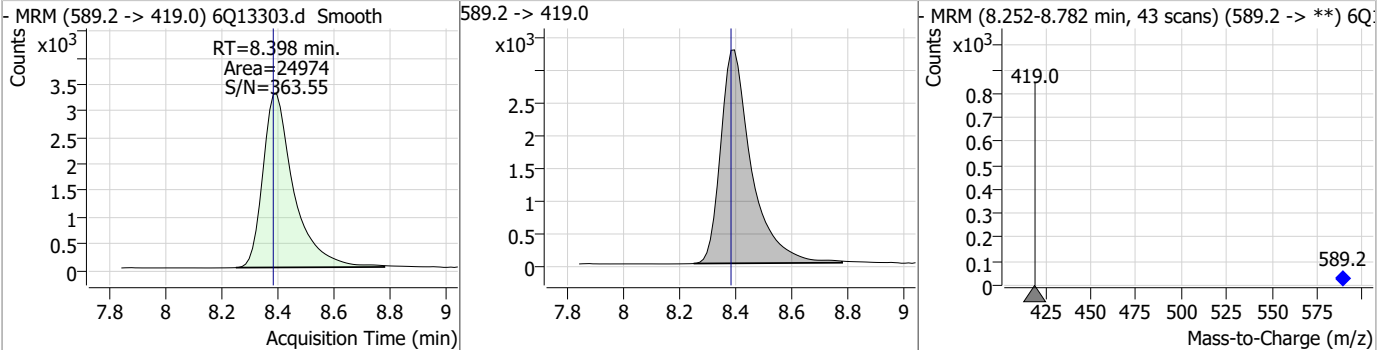


### Perfluorinated Compounds by LC/MS/MS

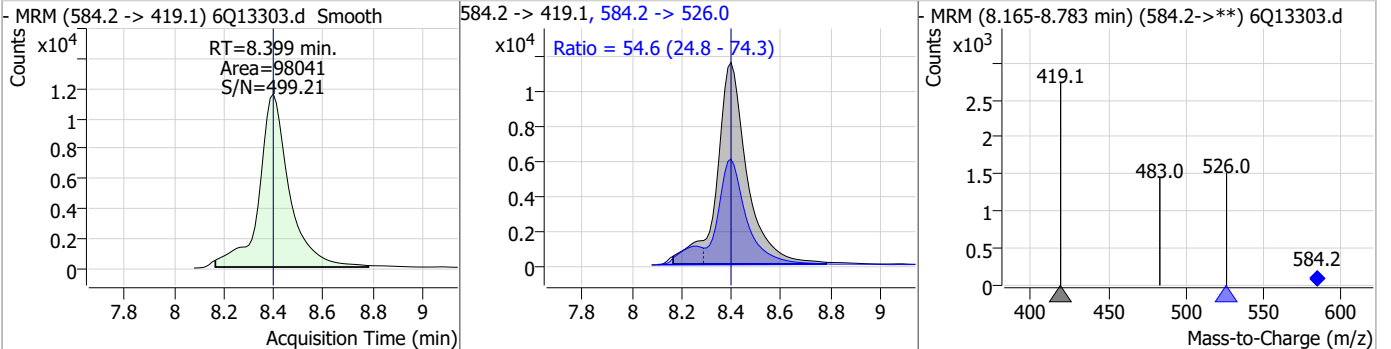
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	26.64	8.32	0.00	95678 (m)	498.9 -> 98.8	62.5	35.8	107.5



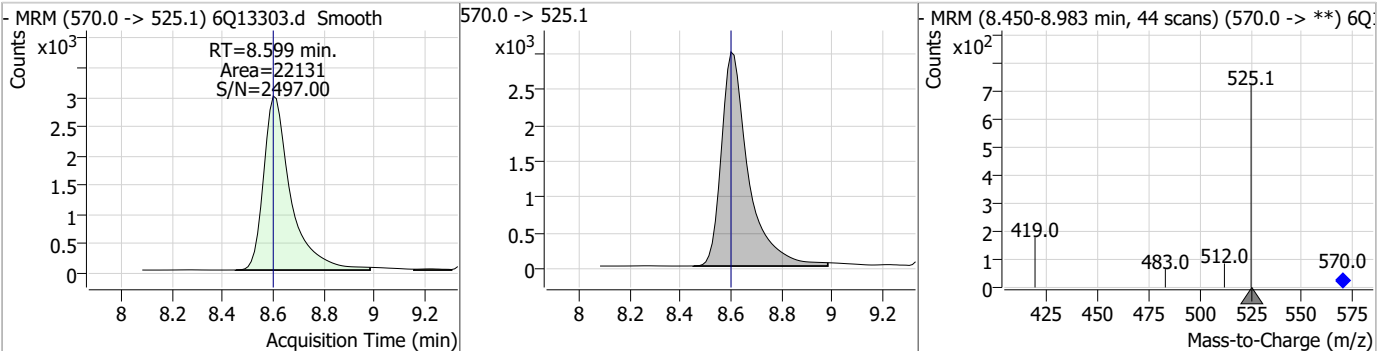
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.75	8.40	0.01	24974				



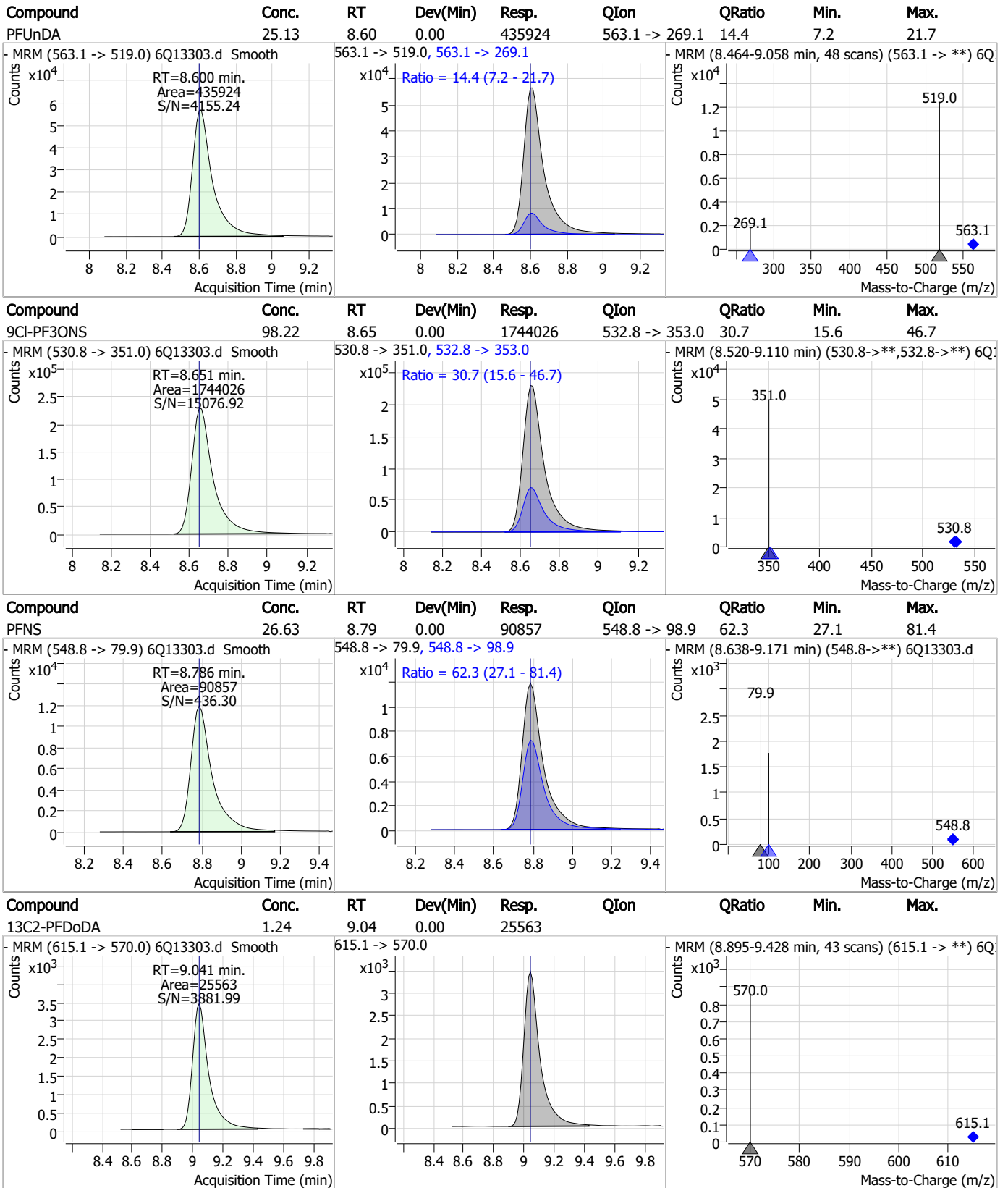
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	25.02	8.40	0.00	98041	584.2 -> 526.0	54.6	24.8	74.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.60	0.00	22131				



### Perfluorinated Compounds by LC/MS/MS

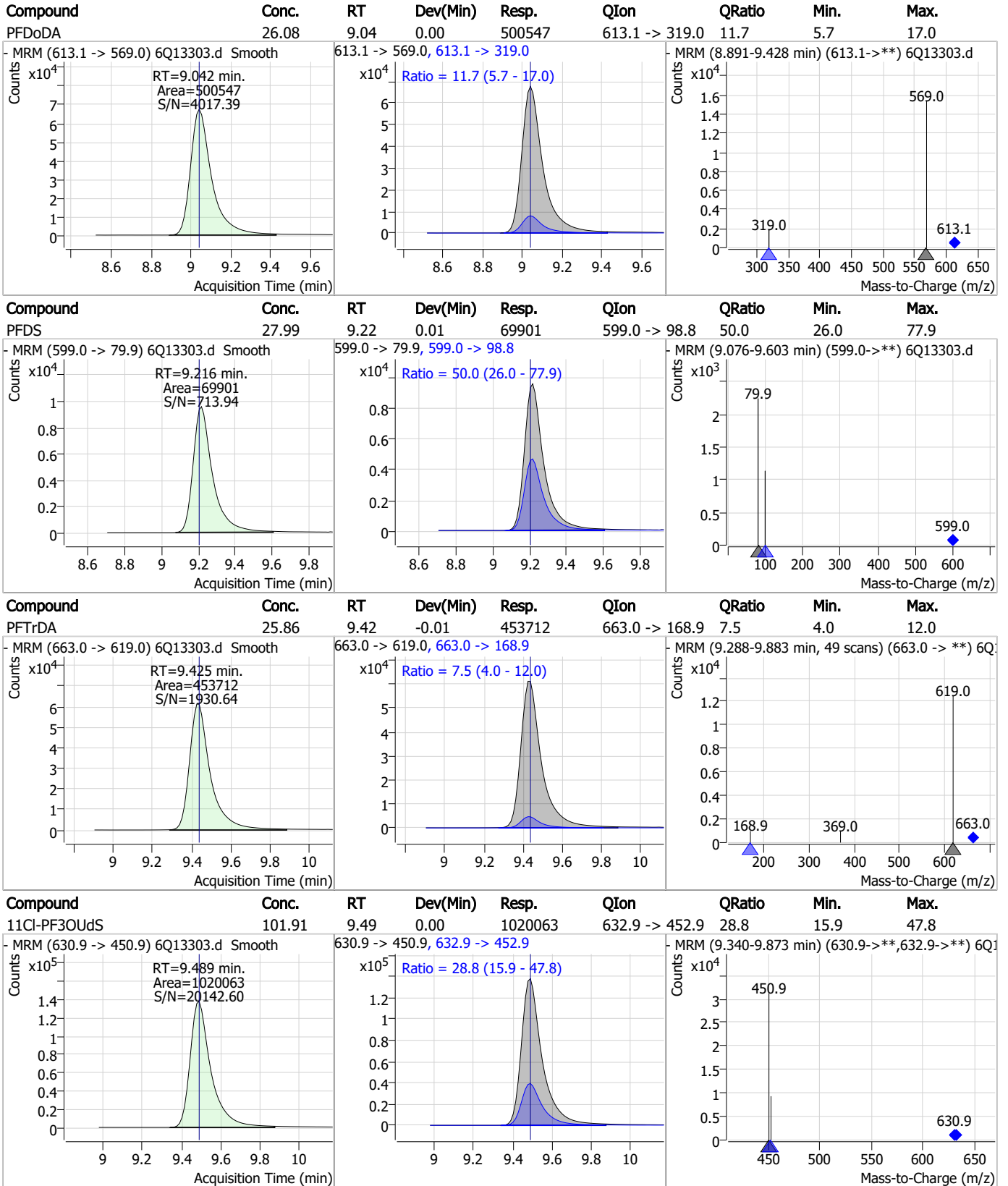


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### Perfluorinated Compounds by LC/MS/MS



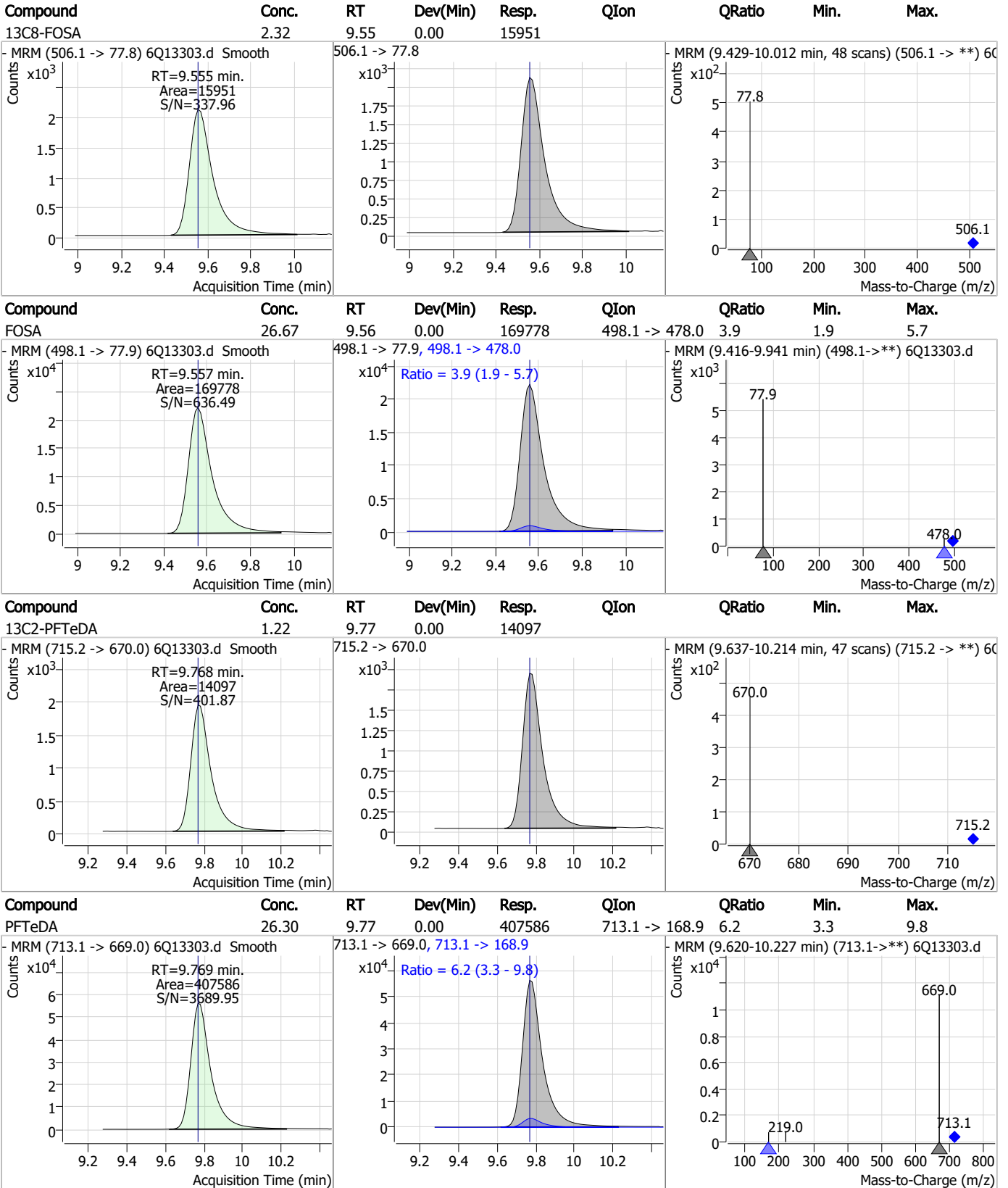
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### Perfluorinated Compounds by LC/MS/MS



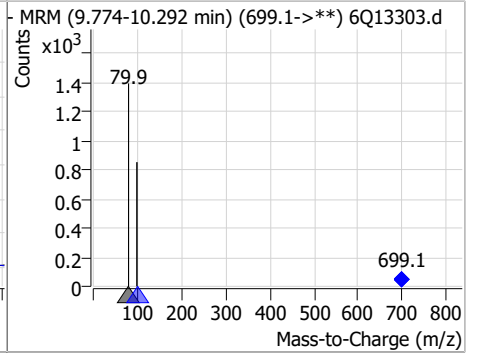
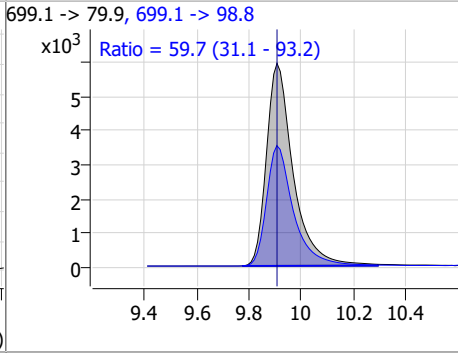
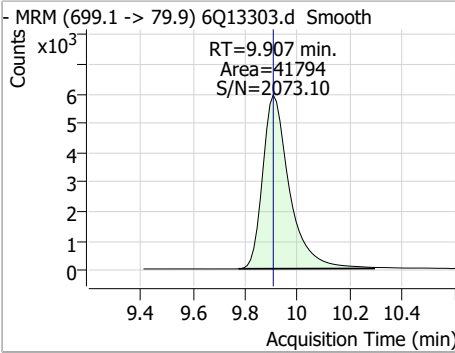
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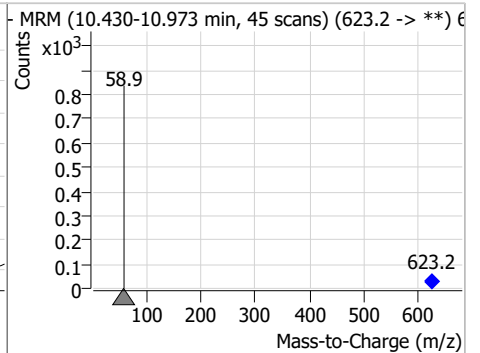
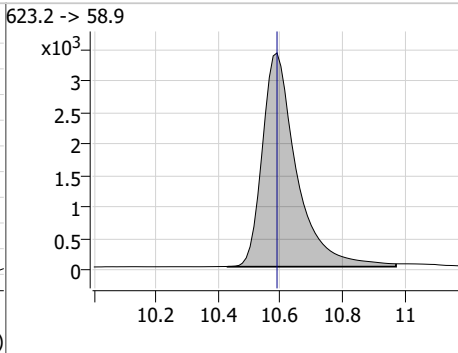
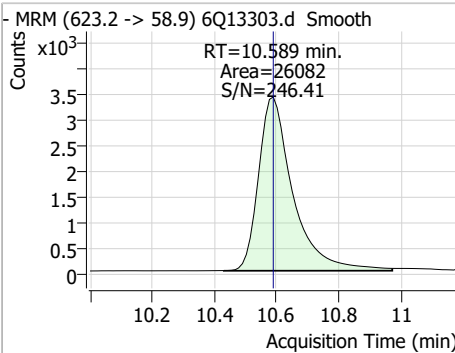


### Perfluorinated Compounds by LC/MS/MS

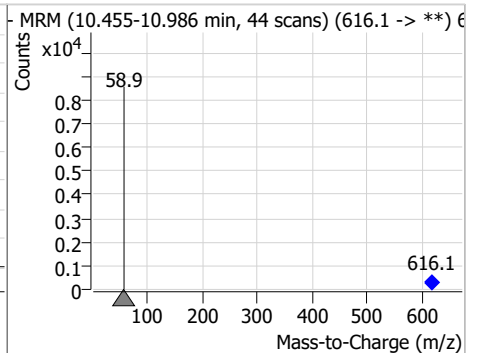
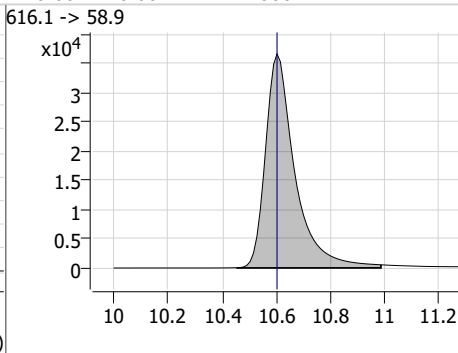
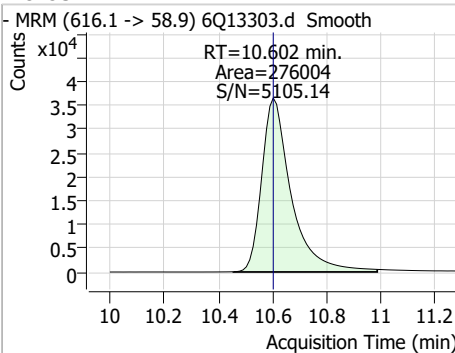
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	27.65	9.91	0.00	41794	699.1 -> 98.8	59.7	31.1	93.2



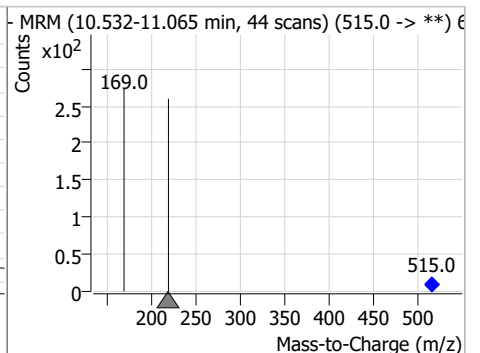
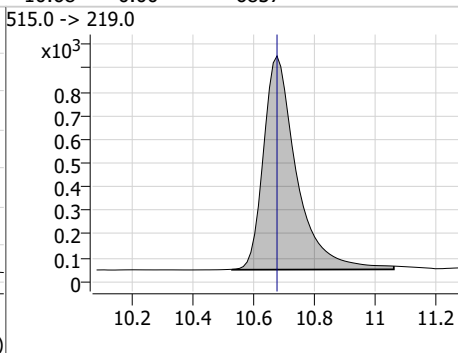
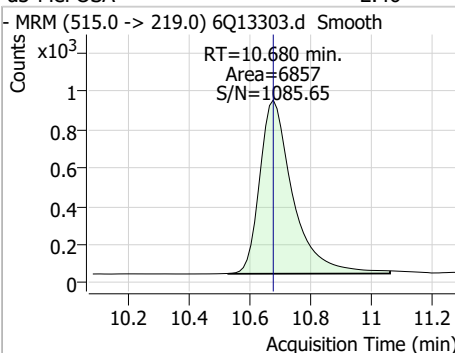
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.86	10.59	0.00	26082				



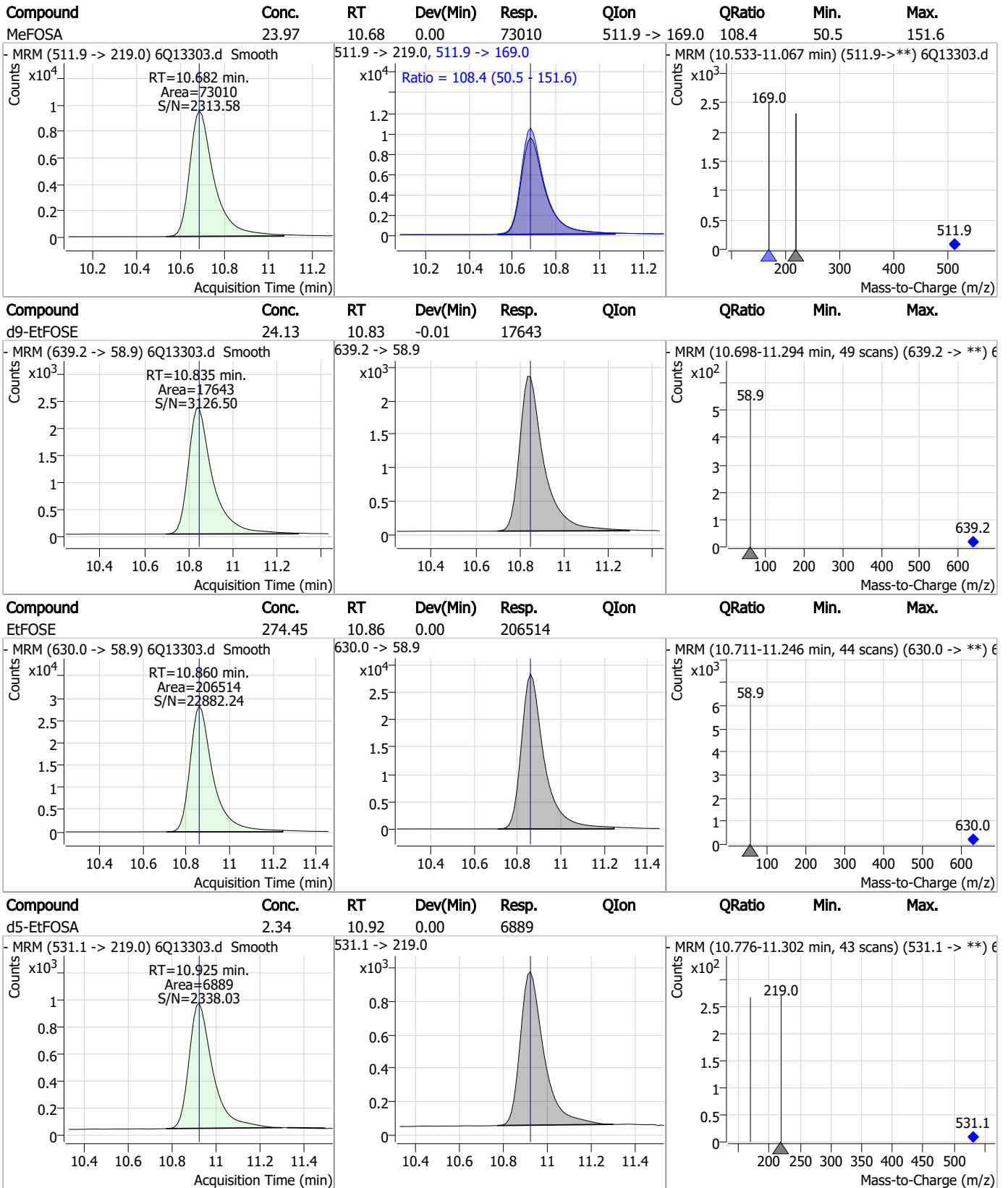
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	272.21	10.60	0.00	276004				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	10.68	0.00	6857				



### Perfluorinated Compounds by LC/MS/MS

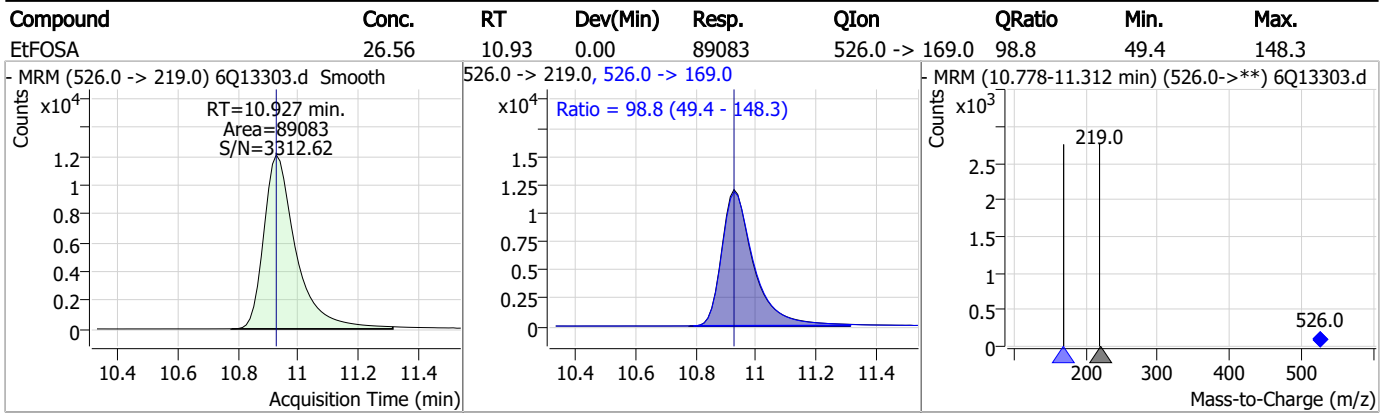


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### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q203-IC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13303.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 14:09      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFMPA	377-73-1		3.53	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak

7.7.8.1  
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13304.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 2:23:50 PM  
 Sample Name : ic203-8  
 Vial : P1-A9  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	75511	10.00 µg/L	-0.025
M5-PFPeA	4.374	268.3 -> 223.0	42458	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	35816	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	38506	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	66830	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	25704	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	18162	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	20158	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	25792	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14953	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	16339	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	14213	2.50 µg/L	-0.012
M3-PFHxS	7.262	402.1 -> 79.9	9682	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	9397	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2050	5.00 µg/L	-0.012
M2-6:2FTS	6.908	429.1 -> 80.9	2553	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	2665	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	27494	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	15082	10.00 µg/L	-0.012
M5-EtFOSAA	8.398	589.2 -> 419.0	23347	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	25312	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	16283	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	7005	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	7189	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10840	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	34179	5.00 µg/L	-0.012
18O2-PFHxS	7.261	403.0 -> 83.9	7053	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	84793	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	25021	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	28616	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	35079	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2050	4.38 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.6%		
13C2-6:2FTS	6.908	429.1 -> 80.9	2553	4.24 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 84.7%		
13C2-8:2FTS	7.932	529.1 -> 80.9	2665	4.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.6%		
13C2-PFDoDA	9.041	615.1 -> 570.0	25792	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14953	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C3-PFBS	5.505	302.1 -> 79.9	14213	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C3-PFHxS	7.262	402.1 -> 79.9	9682	2.55 µg/L	0.012

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 = 102.1%	
13C4-PFBA	2.975	216.8 -> 171.9	75511	9.90 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.490	367.1 -> 322.0	38506	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C5-PFHxA	5.563	318.0 -> 273.0	35816	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C5-PFPeA	4.374	268.3 -> 223.0	42458	5.30 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C6-PFDA	8.145	519.1 -> 474.1	18162	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C7-PFUnDA	8.612	570.0 -> 525.1	20158	1.16 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.5%	
13C8-FOSA	9.555	506.1 -> 77.8	16339	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C8-PFOA	7.134	421.1 -> 376.0	66830	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C8-PFOS	8.319	507.1 -> 79.9	9397	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C9-PFNA	7.664	472.1 -> 427.0	25704	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSAA	8.190	573.2 -> 419.0	27494	4.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.1%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	15082	10.77 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
d3-MeFOSA	10.680	515.0 -> 219.0	7189	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
d5-EtFOSAA	8.398	589.2 -> 419.0	23347	4.44 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.9%	
d7-MeFOSE	10.589	623.2 -> 58.9	25312	23.16 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.7%	
d9-EtFOSE	10.835	639.2 -> 58.9	16283	22.28 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.1%	
d5-EtFOSA	10.925	531.1 -> 219.0	7005	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.228	327.1 -> 307.0	939693	204.71 µg/L	97
		327.1 -> 80.9	206611		
6:2FTS	6.908	427.1 -> 407.0	812983	213.74 µg/L	100
		427.1 -> 80.9	150396		
8:2FTS	7.933	527.1 -> 507.0	438103	204.10 µg/L	95
		527.1 -> 80.8	101590		
EtFOSAA	8.399	584.2 -> 419.1	251638	68.70 µg/L	92
		584.2 -> 526.0	137559		
FOSA	9.557	498.1 -> 77.9	410613	62.97 µg/L	99
		498.1 -> 478.0	16472		
MeFOSAA	8.191	570.1 -> 419.0	346145	68.60 µg/L	96
		570.1 -> 483.0	61581		
PFBA	2.969	212.8 -> 168.9	459401	270.33 µg/L	100
PFBS	5.506	298.7 -> 79.9	311914	57.28 µg/L	100
		298.7 -> 98.8	148248		
PFDA	8.146	512.9 -> 469.0	1393951	66.00 µg/L	96
		512.9 -> 219.0	175812		
PFDoDA	9.042	613.1 -> 569.0	1219254	62.96 µg/L	97
		613.1 -> 319.0	151222		
PFDS	9.216	599.0 -> 79.9	175396	59.95 µg/L	96

7.7.9  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	86575			
PFHpA	6.490	363.1 -> 319.0	1439013	64.19	µg/L	99
		363.1 -> 169.0	193640			
PFHpS	7.816	449.0 -> 79.9	218394	56.32	µg/L	89
		449.0 -> 98.9	138647			
PFHxA	5.566	313.0 -> 269.0	916388	66.16	µg/L	100
		313.0 -> 118.9	34546			
PFHxS	7.263	398.7 -> 79.9	241895	57.55	µg/L	m 98
		398.7 -> 98.9	138254			
PFNA	7.665	463.0 -> 419.0	984726	57.80	µg/L	99
		463.0 -> 219.0	194993			
PFNS	8.786	548.8 -> 79.9	224494	56.17	µg/L	92
		548.8 -> 98.9	134254			
PFOA	7.135	413.0 -> 369.0	1891462	66.11	µg/L	99
		413.0 -> 169.0	246624			
PFOS	8.321	498.9 -> 79.9	226180	53.76	µg/L	m 90
		498.9 -> 98.8	143777			
PFPeA	4.375	263.0 -> 219.0	1146810	128.04	µg/L	100
PFPeS	6.569	349.1 -> 79.9	298141	59.82	µg/L	95
		349.1 -> 98.9	153482			
PFTeDA	9.769	713.1 -> 669.0	962996	58.58	µg/L	99
		713.1 -> 168.9	66187			
PFTrDA	9.425	663.0 -> 619.0	1068262	60.34	µg/L	99
		663.0 -> 168.9	80464			
PFUnDA	8.612	563.1 -> 519.0	1062059	67.22	µg/L	99
		563.1 -> 269.1	149409			
11Cl-PF3OUdS	9.489	630.9 -> 450.9	2446214	241.00	µg/L	95
		632.9 -> 452.9	716372			
9Cl-PF3ONS	8.663	530.8 -> 351.0	4063260	225.65	µg/L	97
		532.8 -> 353.0	1199004			
ADONA	6.753	376.9 -> 250.9	7708987	230.60	µg/L	98
		376.9 -> 84.8	1642558			
HFPO-DA	5.928	284.9 -> 168.9	361859	253.17	µg/L	99
		284.9 -> 184.9	43695			
3:3FTCA	3.841	241.0 -> 177.0	153996	347.41	µg/L	96
		241.0 -> 117.0	19254			
5:3FTCA	6.193	341.0 -> 237.1	4963922	1690.29	µg/L	97
		341.0 -> 217.0	4029180			
7:3FTCA	7.592	441.0 -> 316.9	2619299	1734.24	µg/L	91
		441.0 -> 336.9	5338074			
EtFOSA	10.927	526.0 -> 219.0	220377	64.62	µg/L	97
		526.0 -> 169.0	210504			
EtFOSE	10.860	630.0 -> 58.9	492646	709.40	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	193682	60.64	µg/L	98
		511.9 -> 169.0	191567			
MeFOSE	10.602	616.1 -> 58.9	648173	658.69	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	97864	55.27	µg/L	99
		699.1 -> 98.8	61680			
NFDHA	5.445	295.0 -> 201.0	107868	133.32	µg/L	99
		295.0 -> 84.9	54165			
PFMBA	4.787	279.0 -> 85.1	337299	131.47	µg/L	100
PFMPA	3.528	229.0 -> 84.9	309013	132.15	µg/L	m 100
PFEESA	6.046	314.8 -> 134.9	2340310	119.75	µg/L	100
		314.8 -> 82.9	55740			

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

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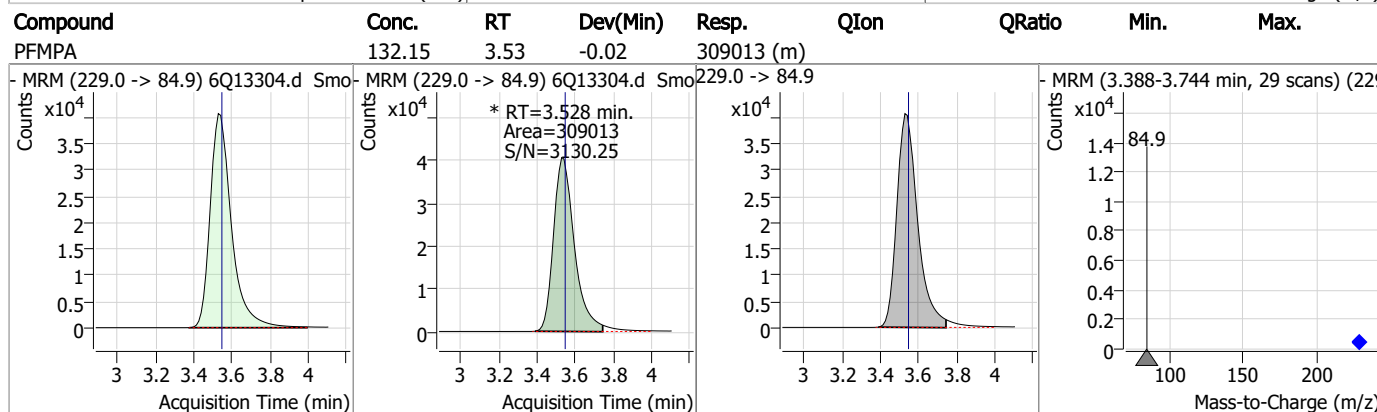
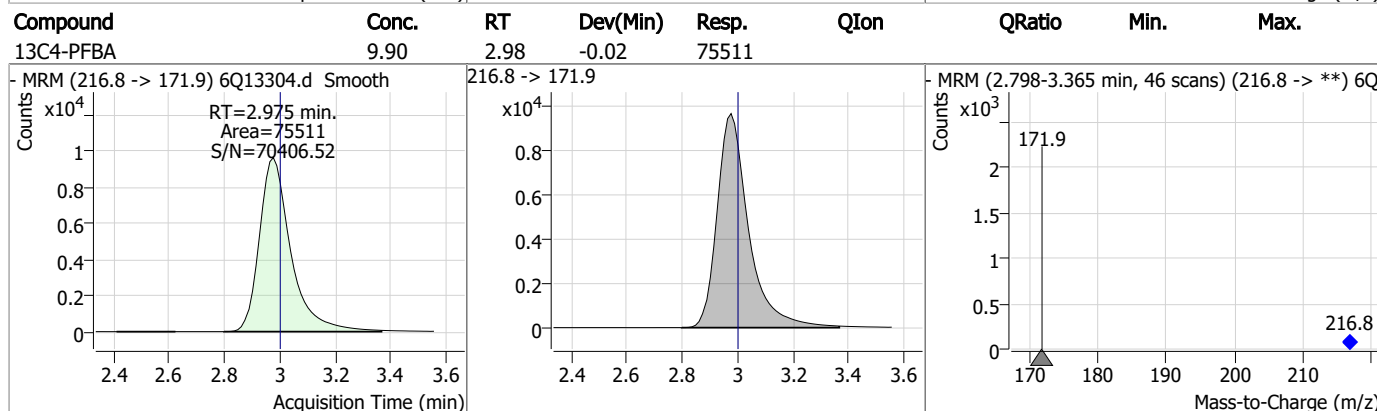
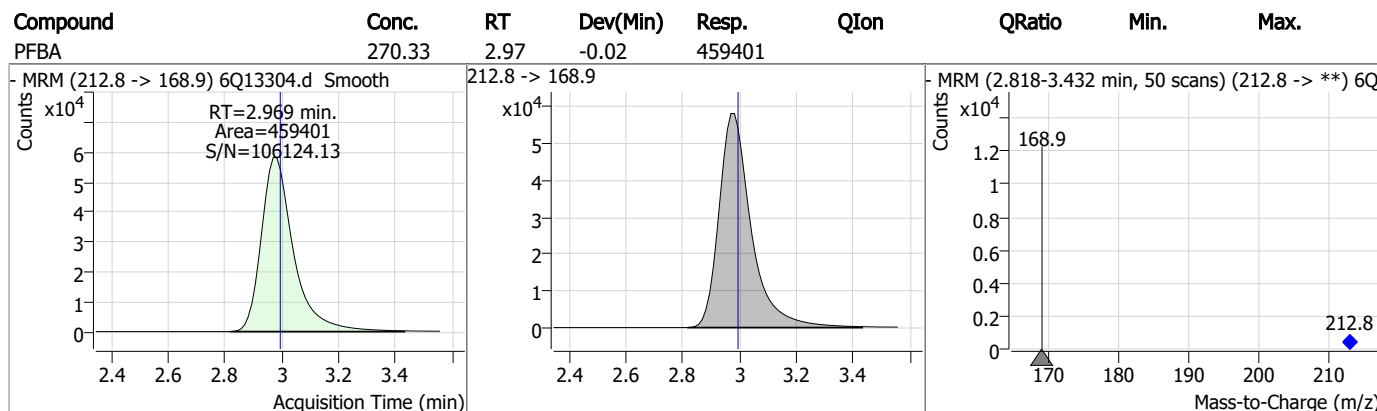
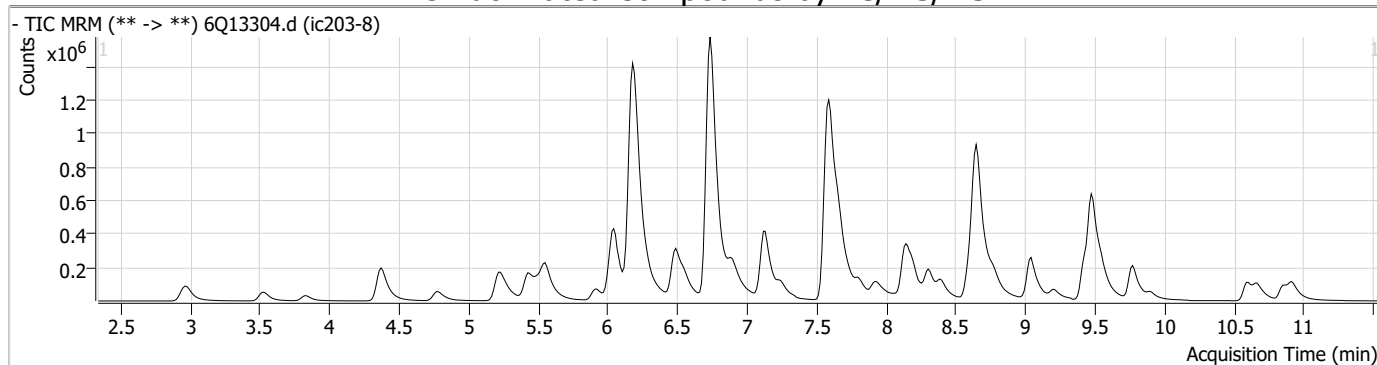
### Perfluorinated Compounds by LC/MS/MS

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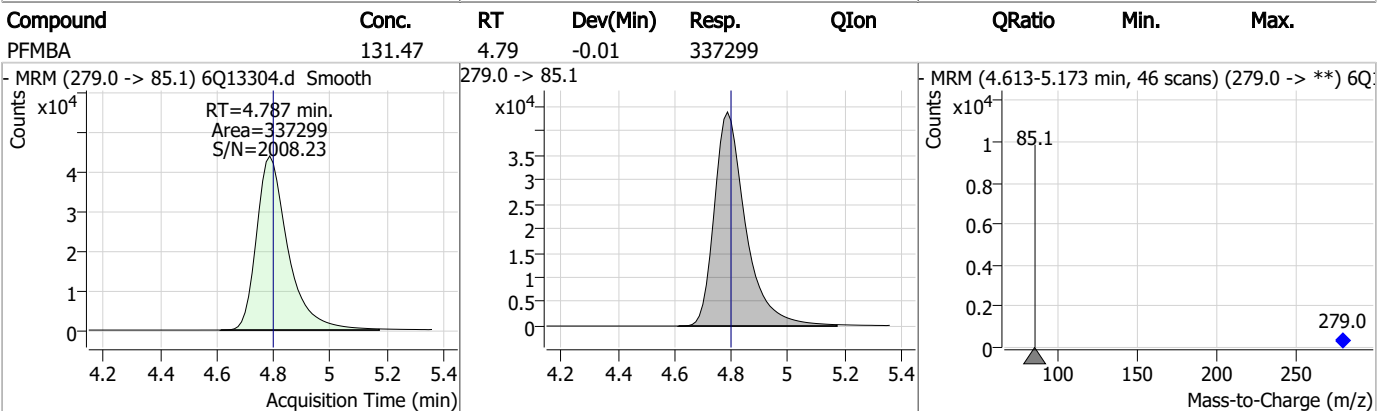
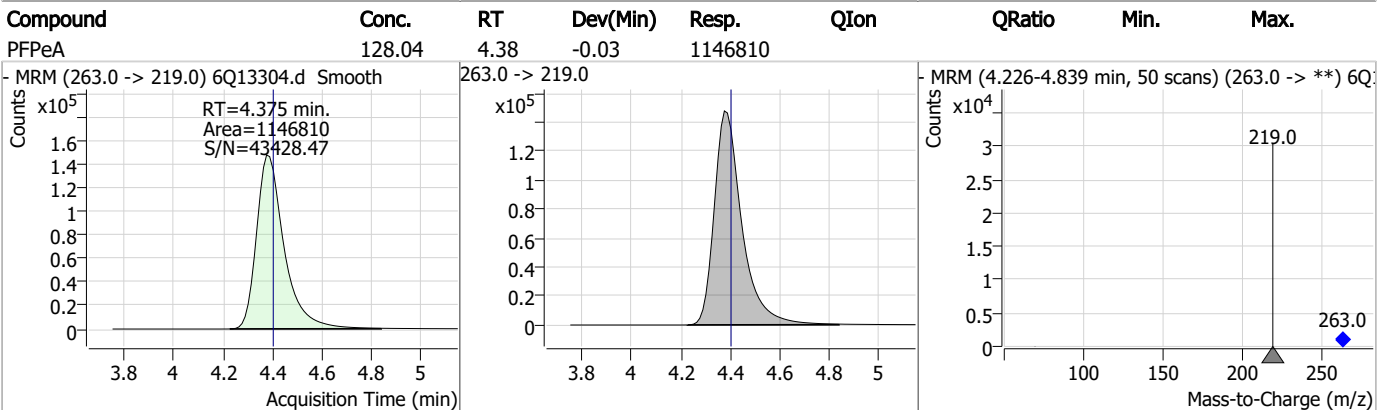
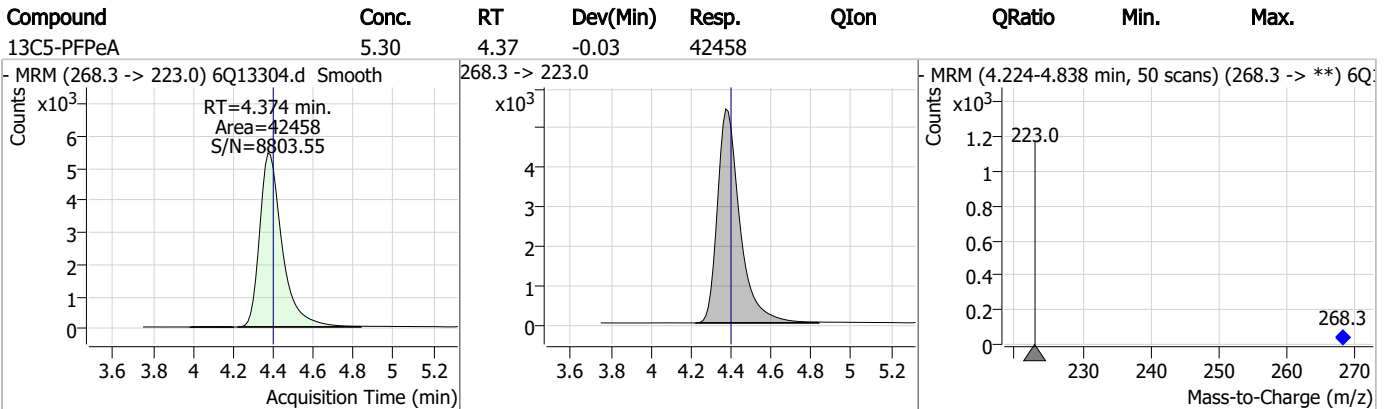
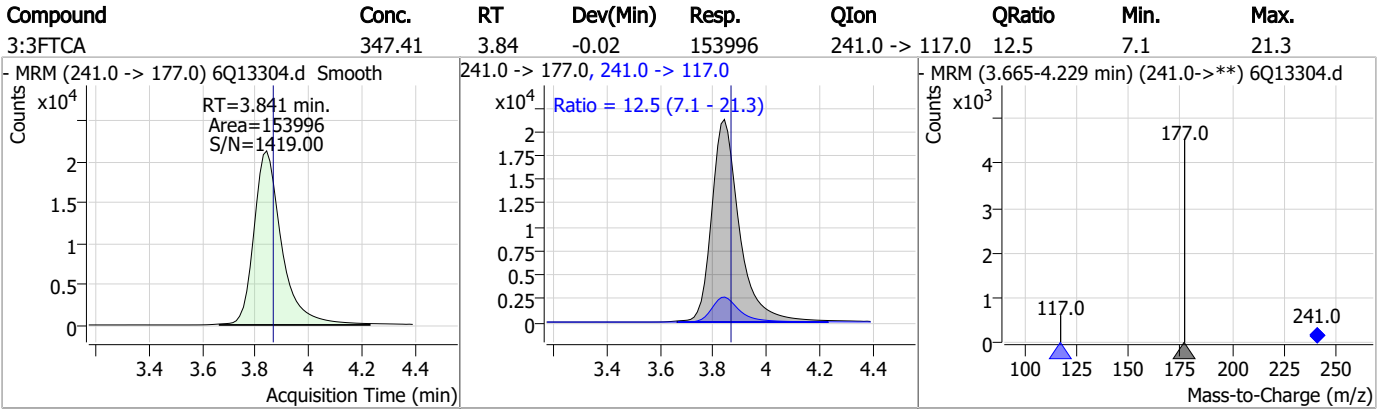
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### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS

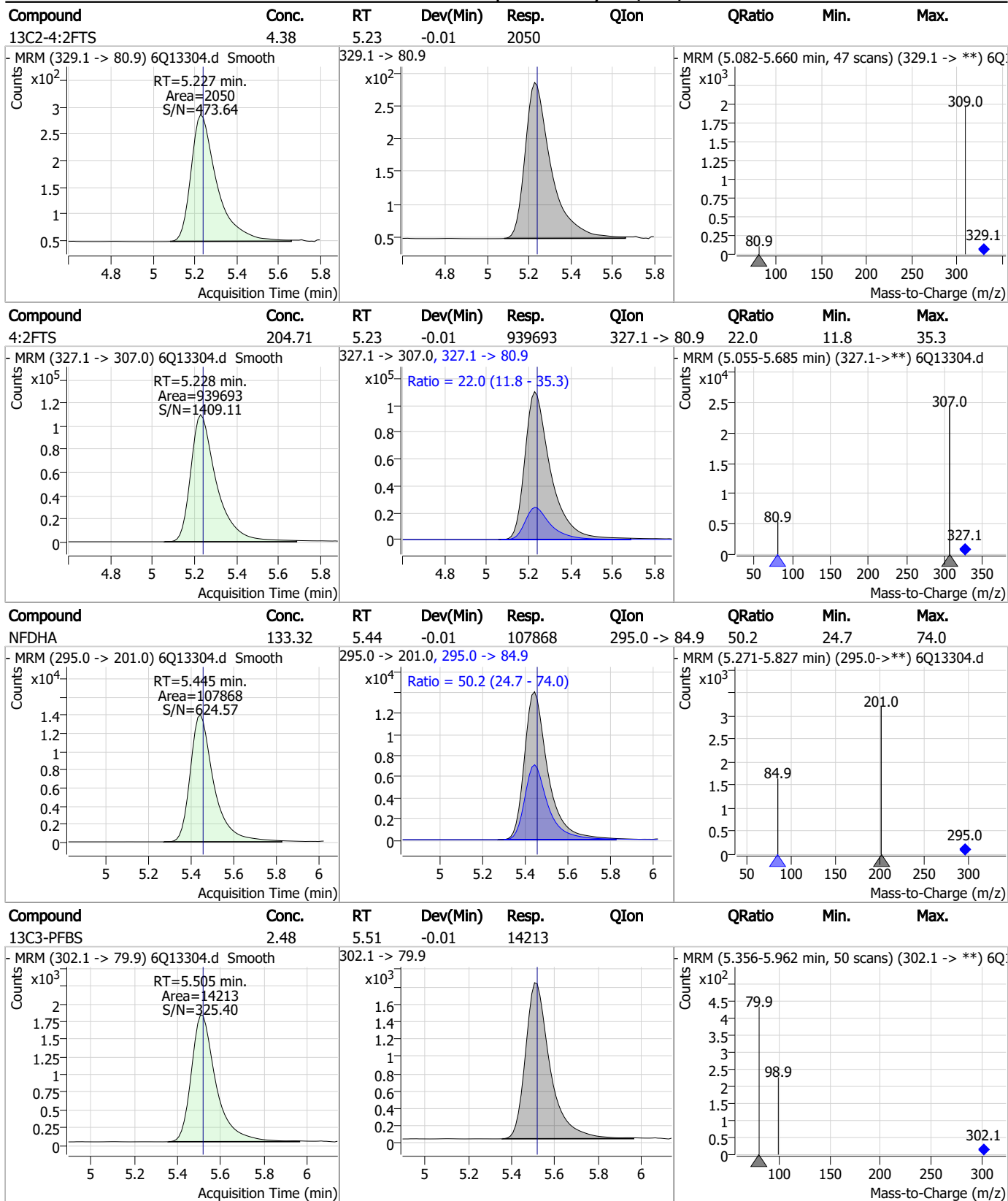


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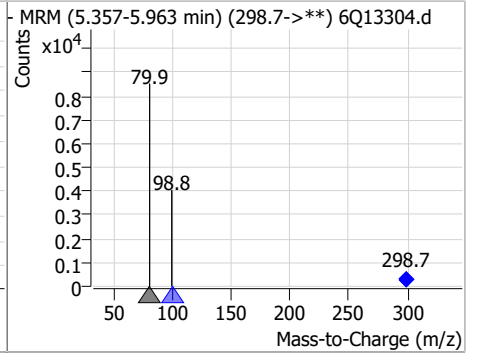
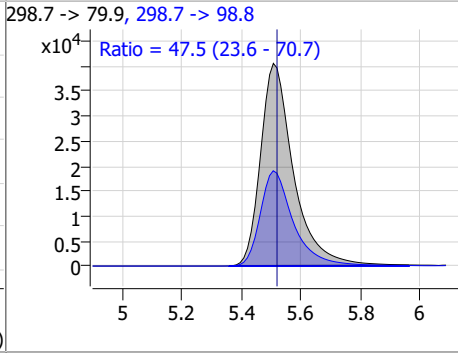
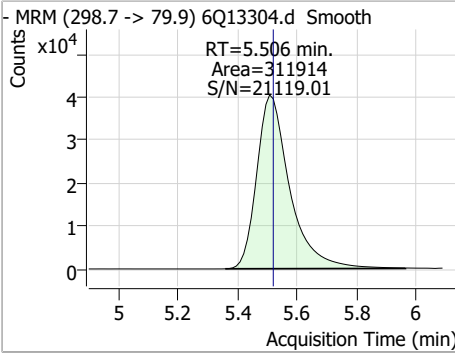
### Perfluorinated Compounds by LC/MS/MS



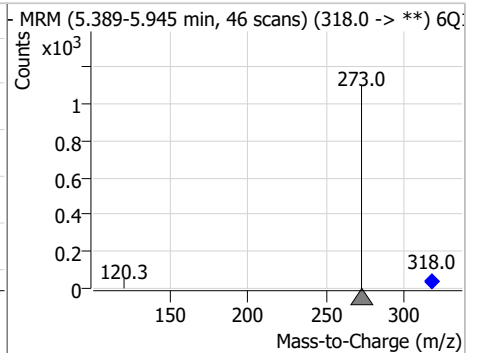
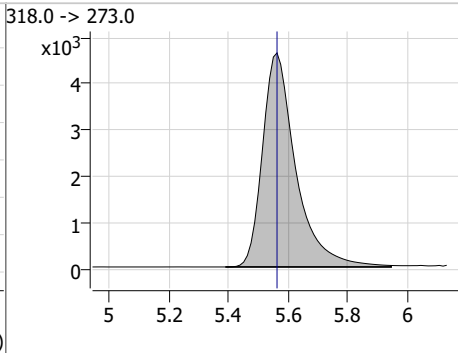
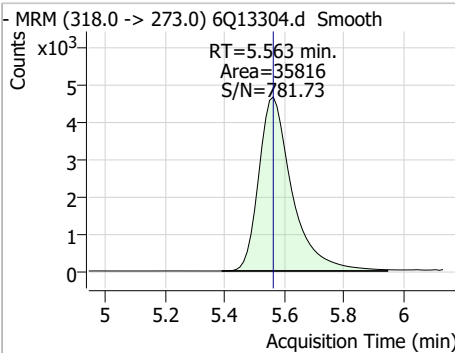
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### Perfluorinated Compounds by LC/MS/MS

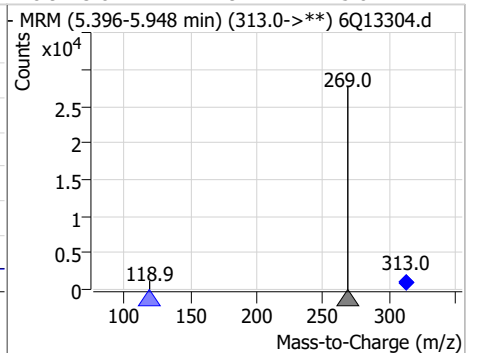
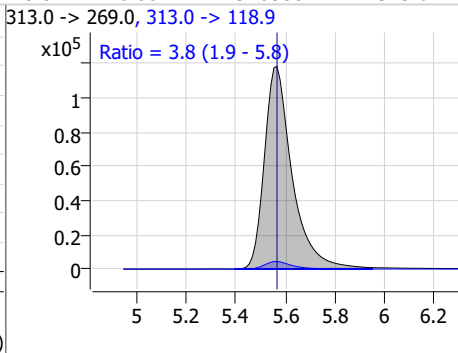
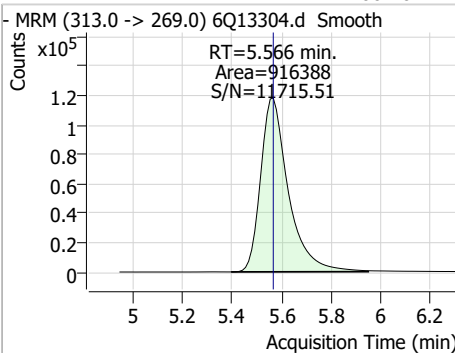
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	57.28	5.51	-0.01	311914	298.7 -> 98.8	47.5	23.6	70.7



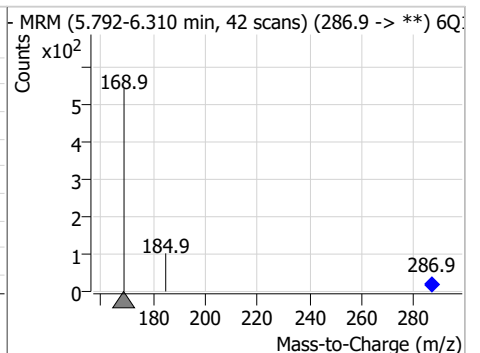
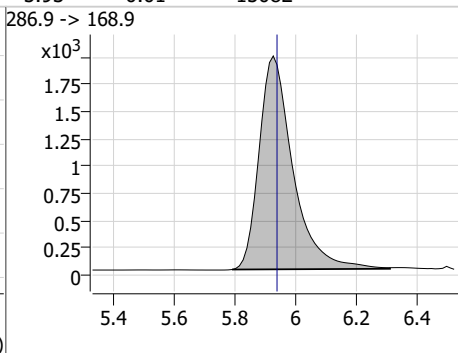
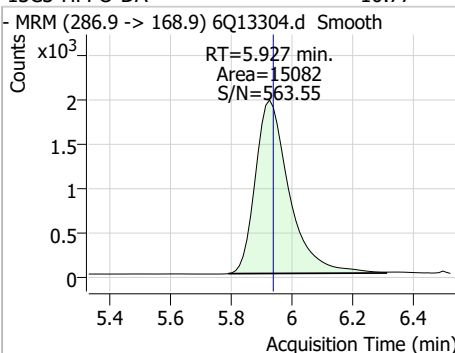
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	5.56	0.00	35816				



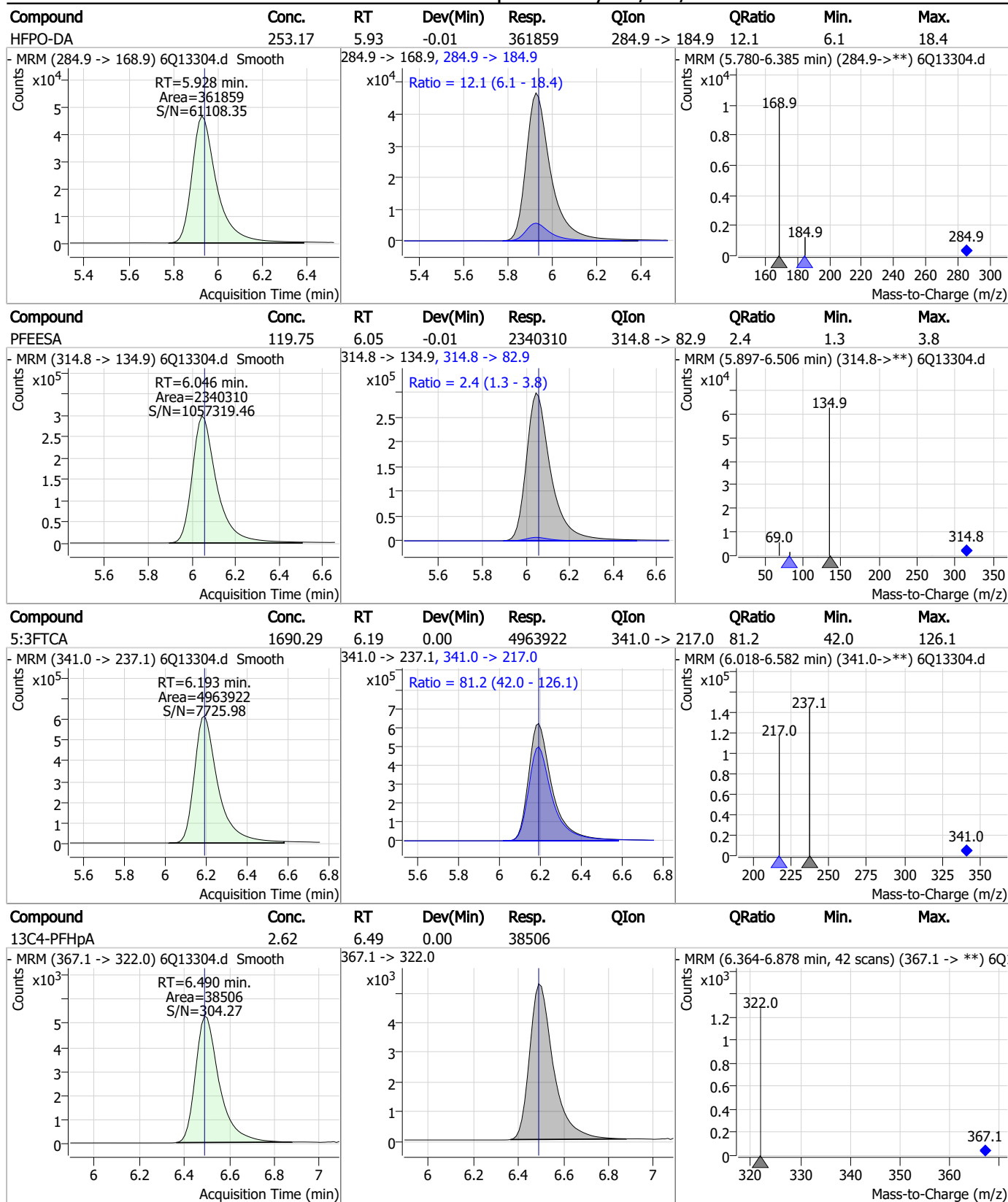
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	66.16	5.57	0.00	916388	313.0 -> 118.9	3.8	1.9	5.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.77	5.93	-0.01	15082				

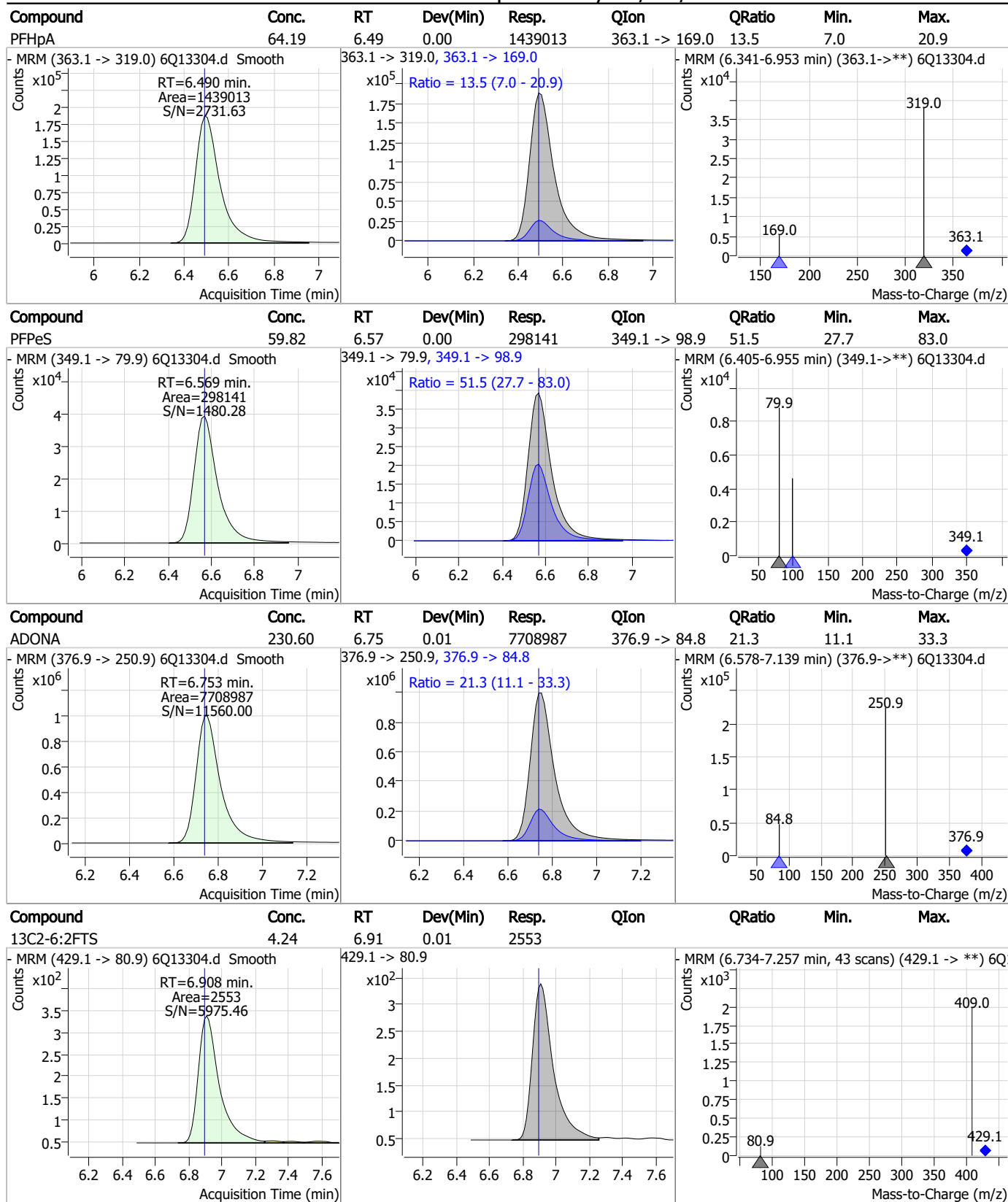


### Perfluorinated Compounds by LC/MS/MS



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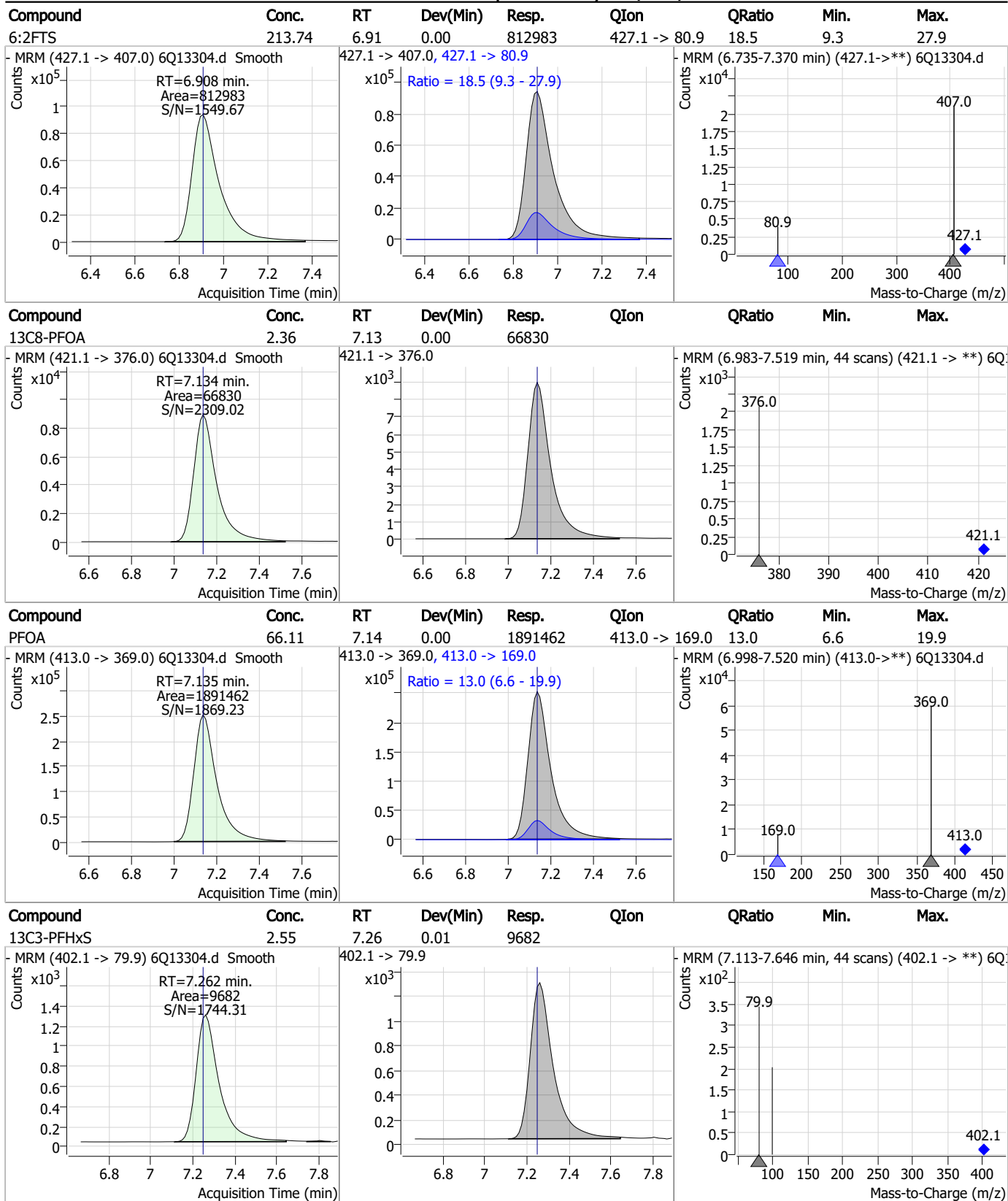
### Perfluorinated Compounds by LC/MS/MS



7.7.9

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### Perfluorinated Compounds by LC/MS/MS

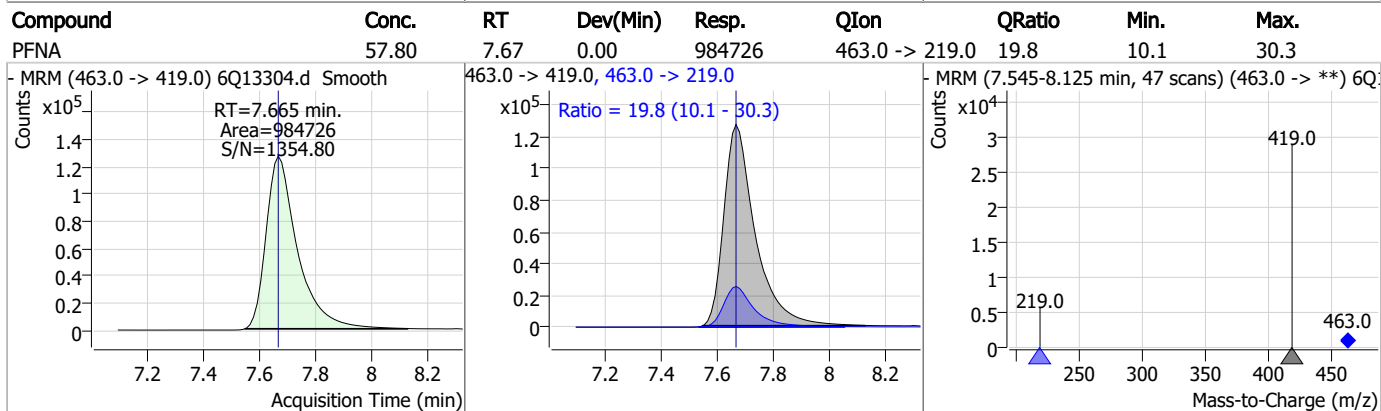
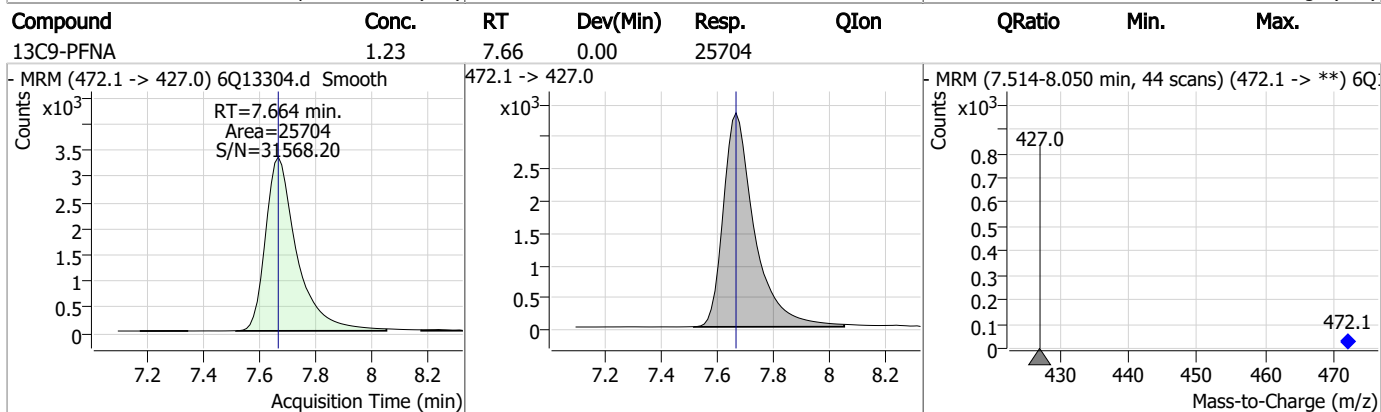
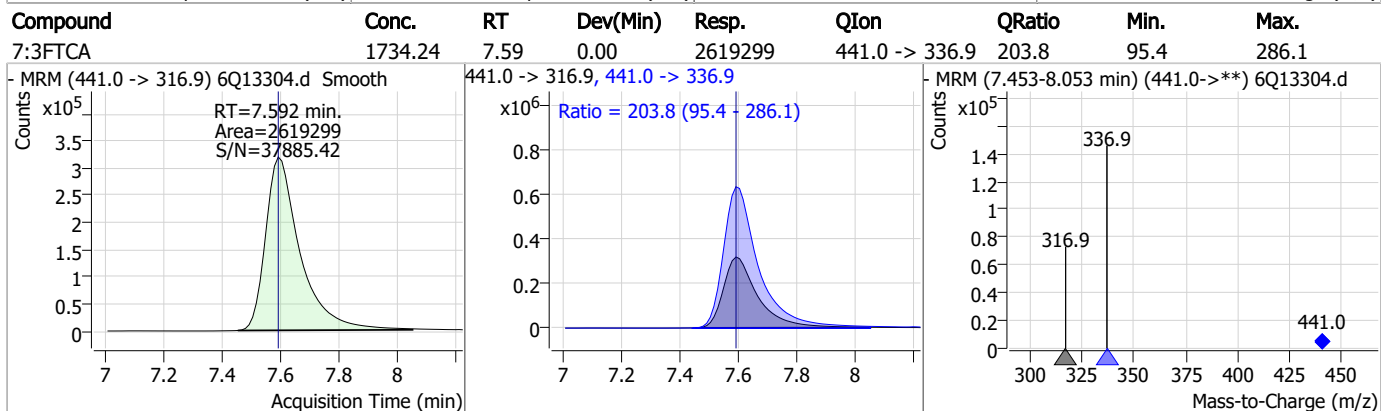
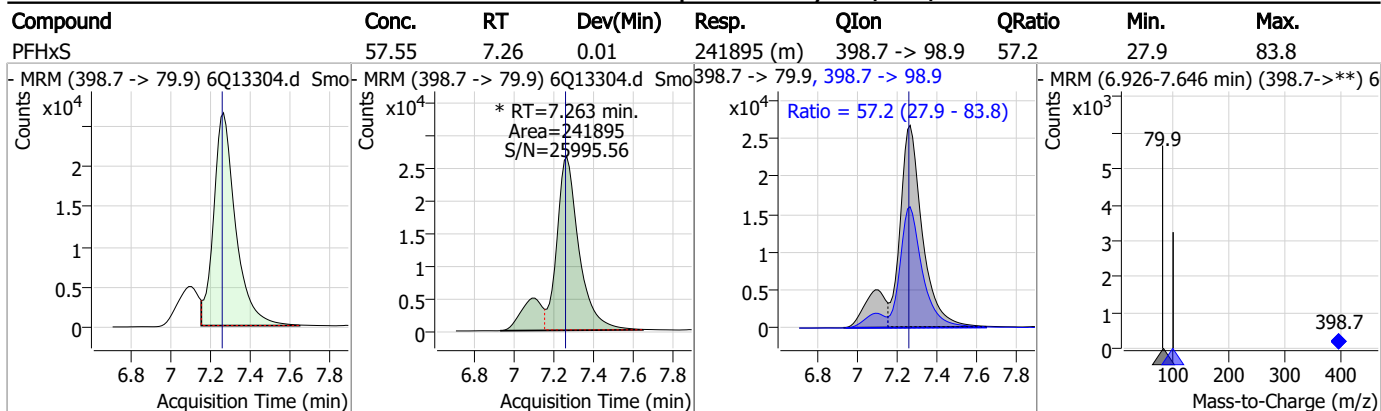


7.7.9  
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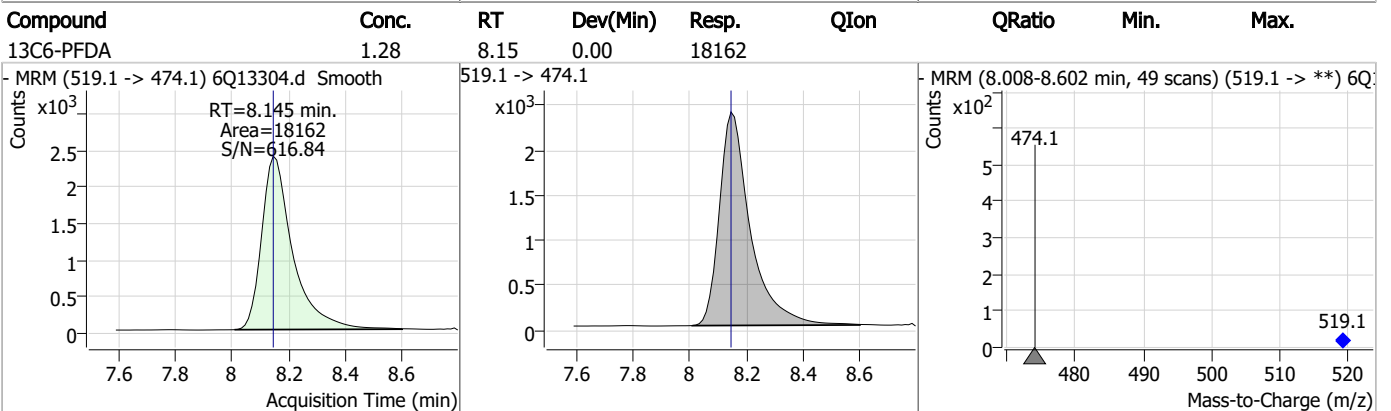
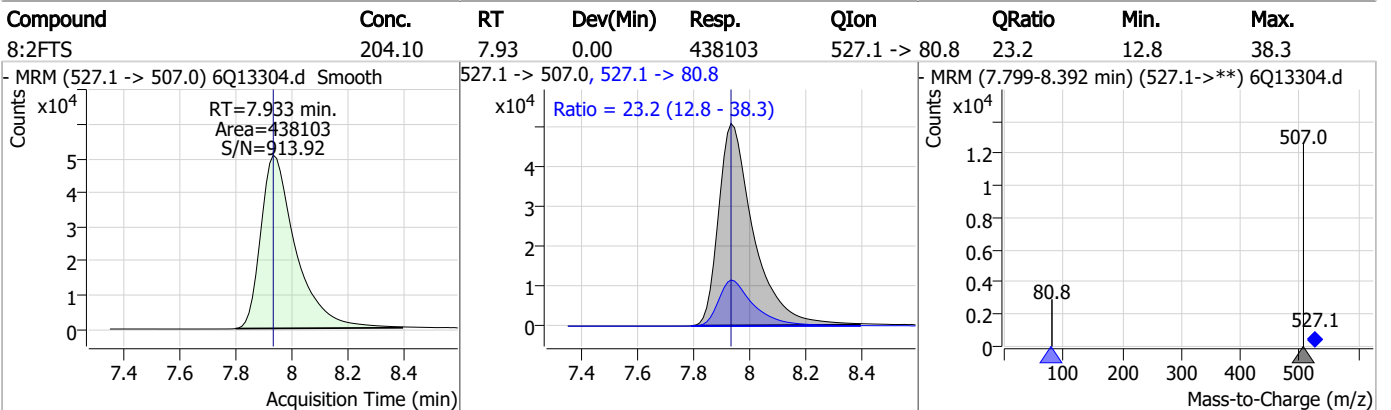
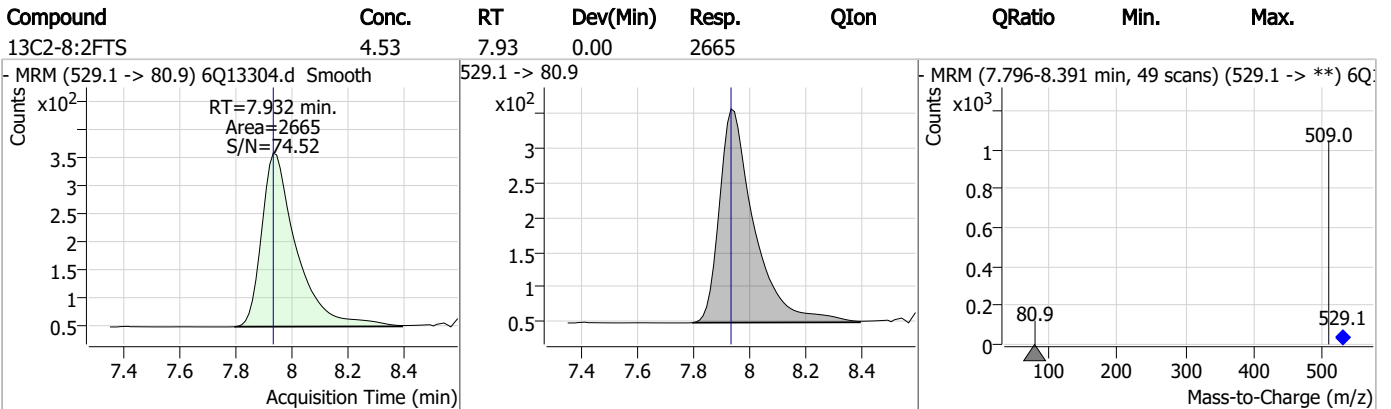
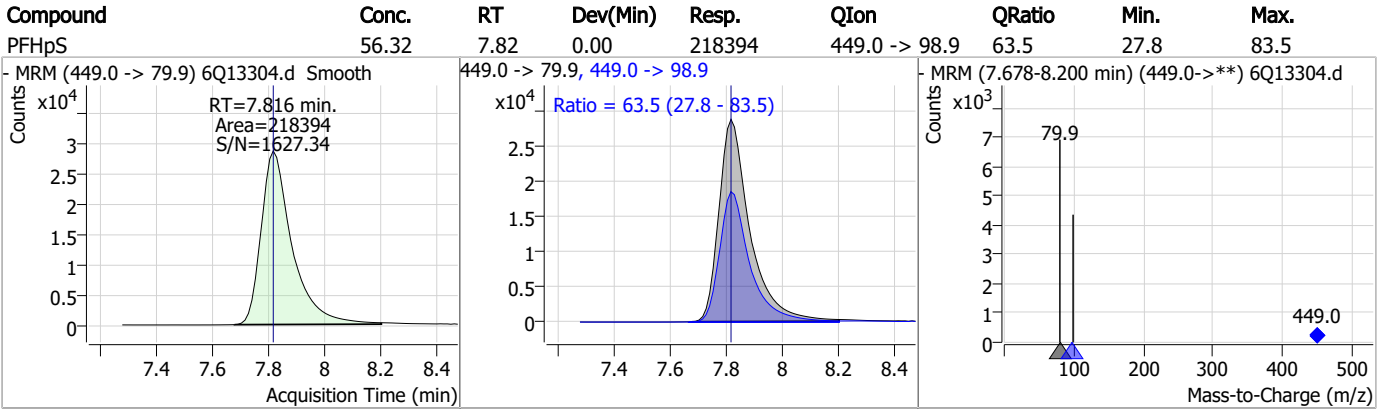


### Perfluorinated Compounds by LC/MS/MS

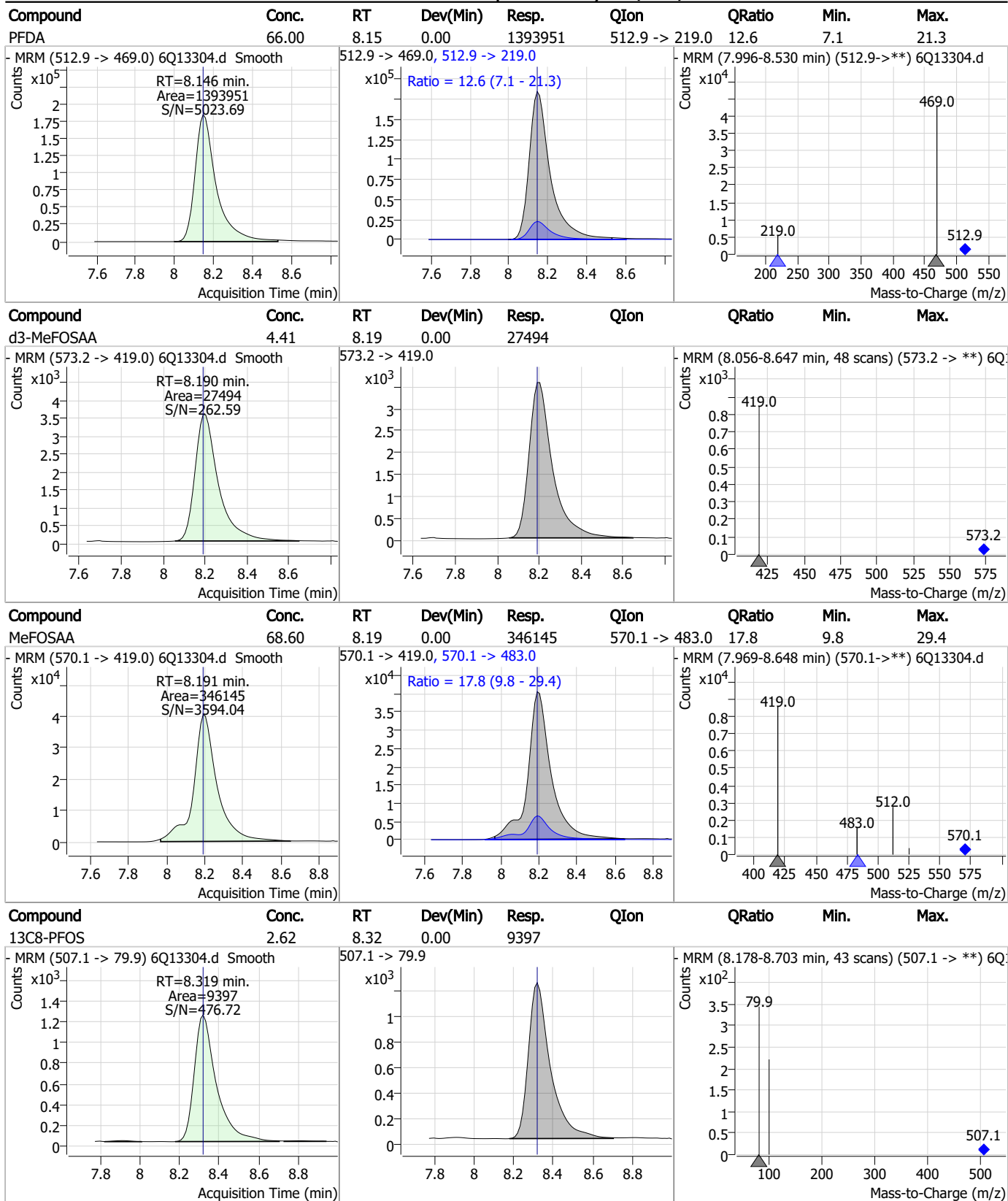


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### Perfluorinated Compounds by LC/MS/MS



### Perfluorinated Compounds by LC/MS/MS

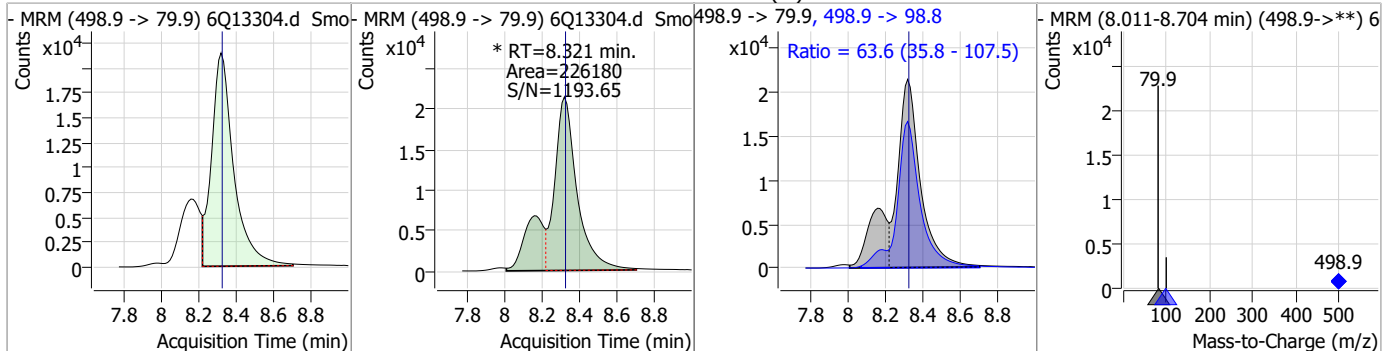


7.7.9  
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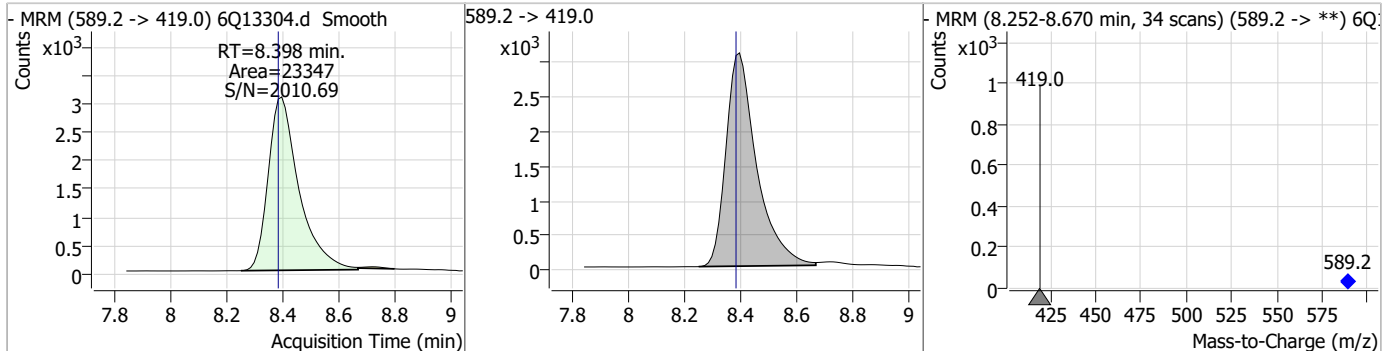


### Perfluorinated Compounds by LC/MS/MS

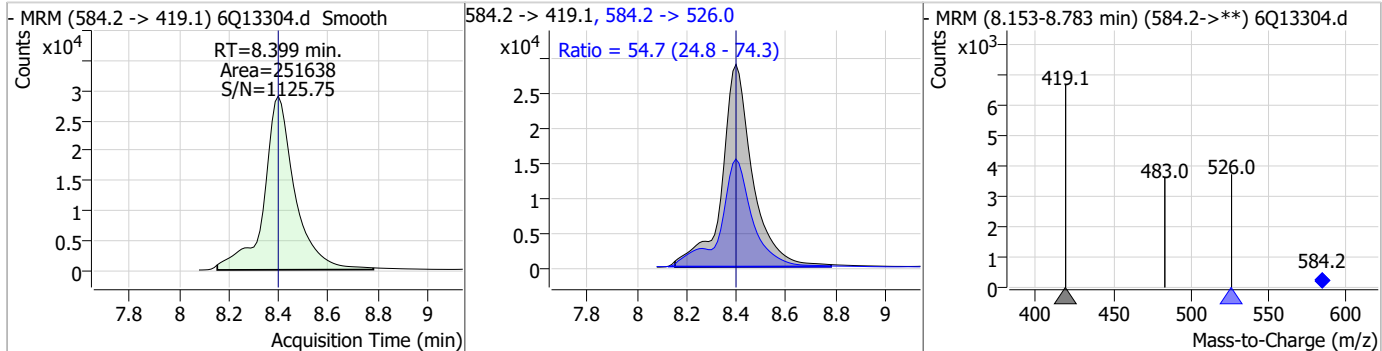
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	53.76	8.32	0.00	226180 (m)	498.9 -> 98.8	63.6	35.8	107.5



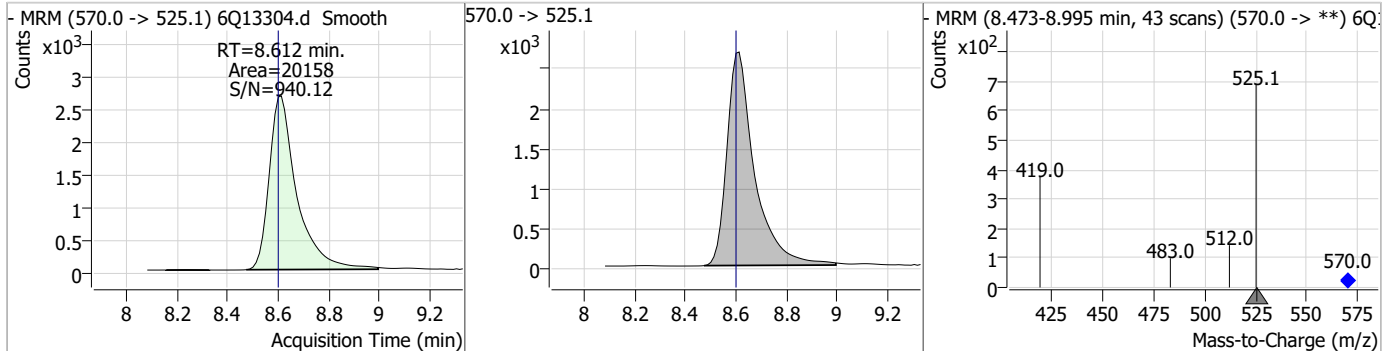
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.44	8.40	0.01	23347				



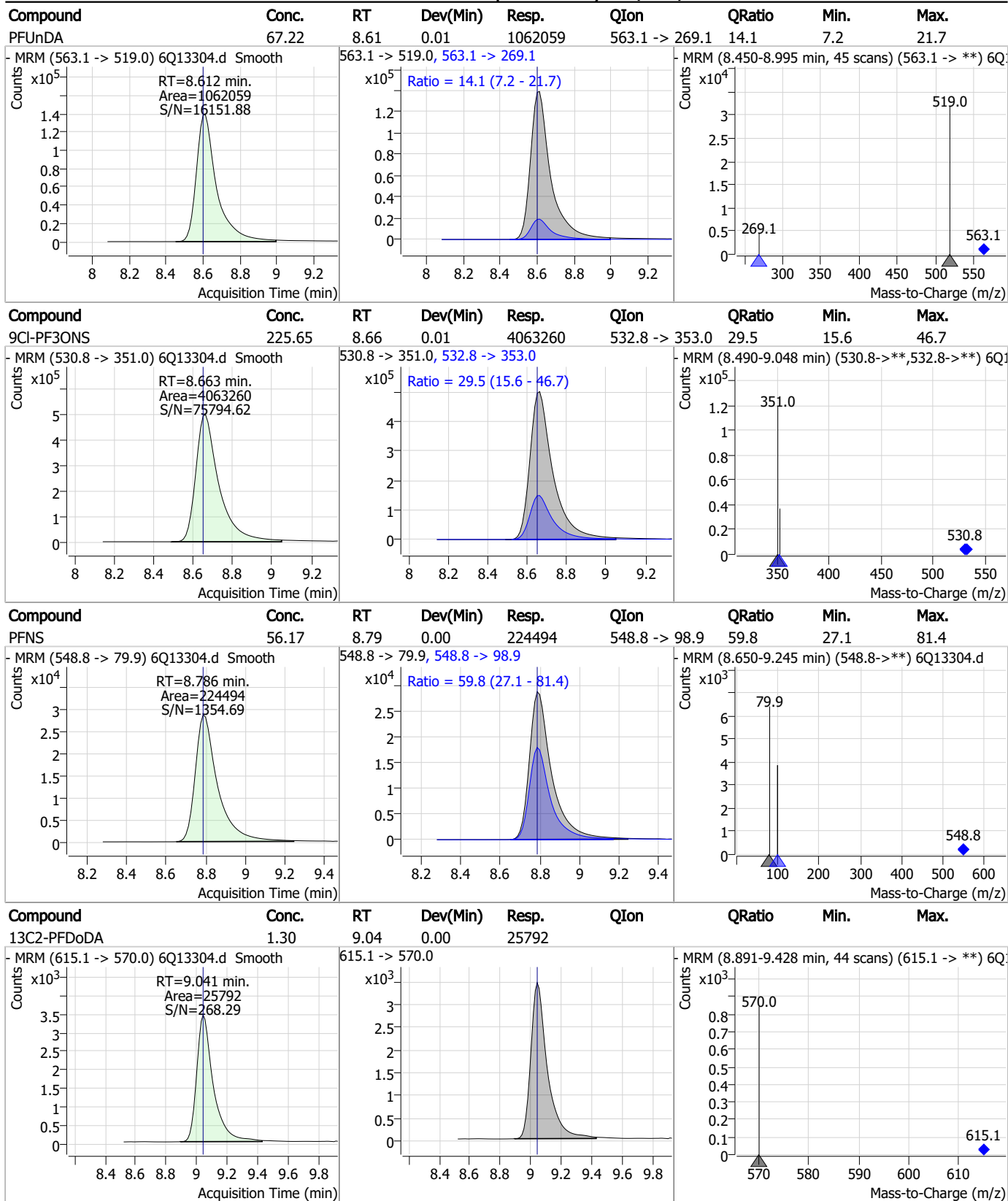
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	68.70	8.40	0.00	251638	584.2 -> 526.0	54.7	24.8	74.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.16	8.61	0.01	20158				



### Perfluorinated Compounds by LC/MS/MS



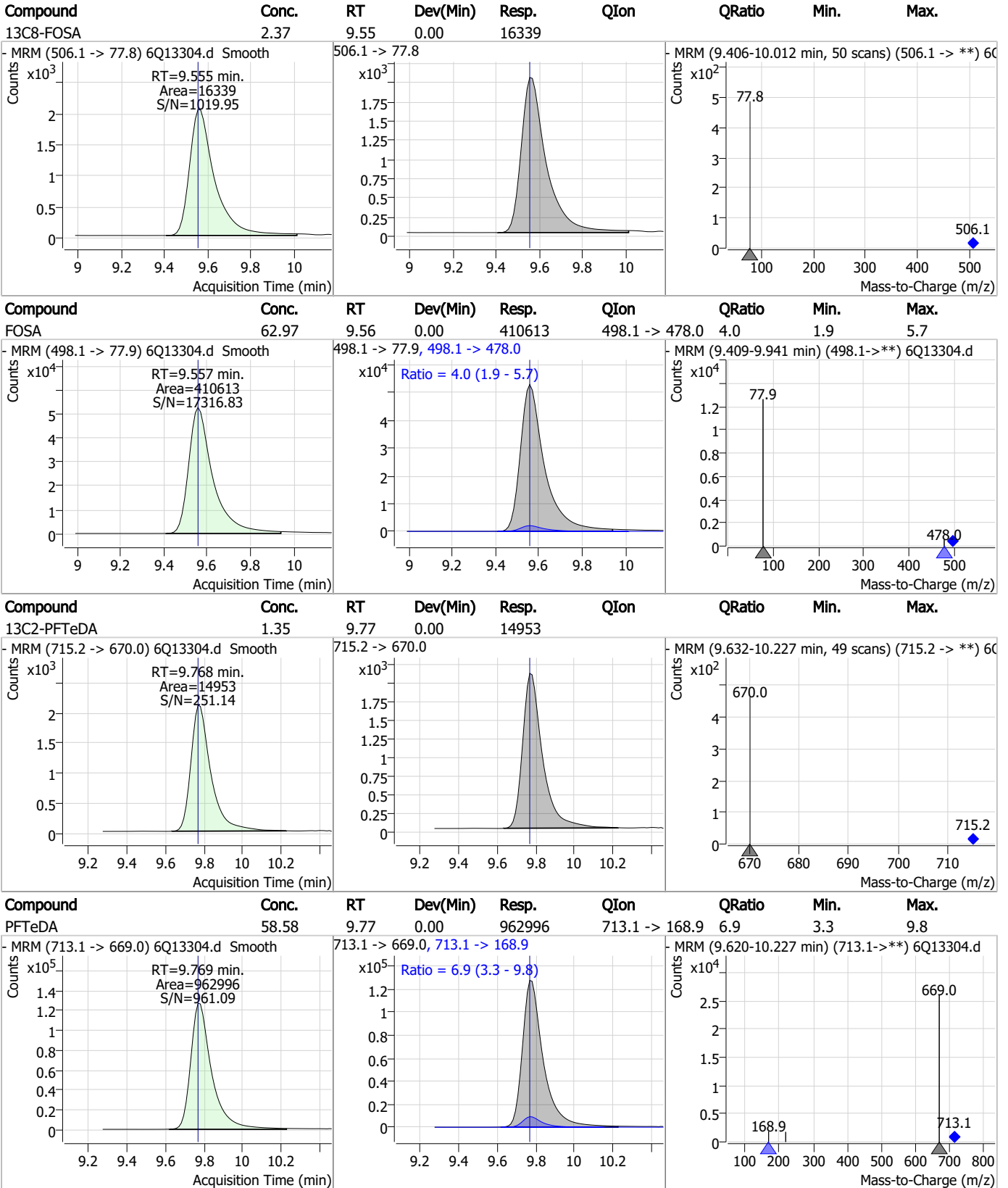
7.7.9  
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### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	62.96	9.04	0.00	1219254	613.1 -> 319.0	12.4	5.7	17.0
PFDS	59.95	9.22	0.01	175396	599.0 -> 98.8	49.4	26.0	77.9
PFTrDA	60.34	9.42	-0.01	1068262	663.0 -> 168.9	7.5	4.0	12.0
11CI-PF3OUds	241.00	9.49	0.00	2446214	632.9 -> 452.9	29.3	15.9	47.8

7.7.9

### Perfluorinated Compounds by LC/MS/MS

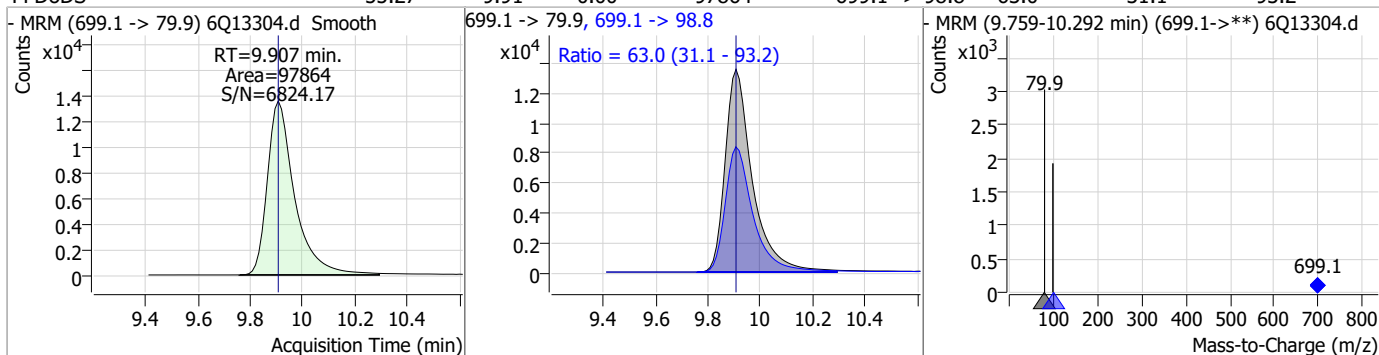


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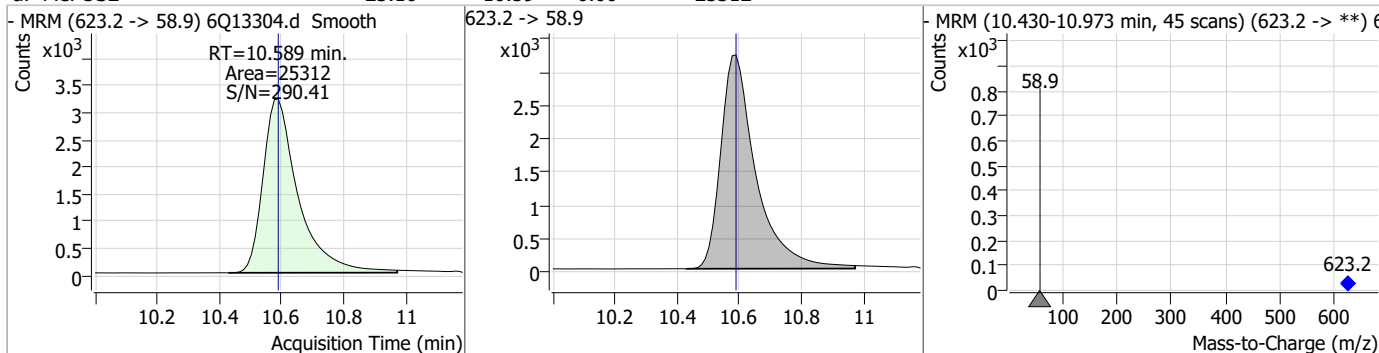
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### Perfluorinated Compounds by LC/MS/MS

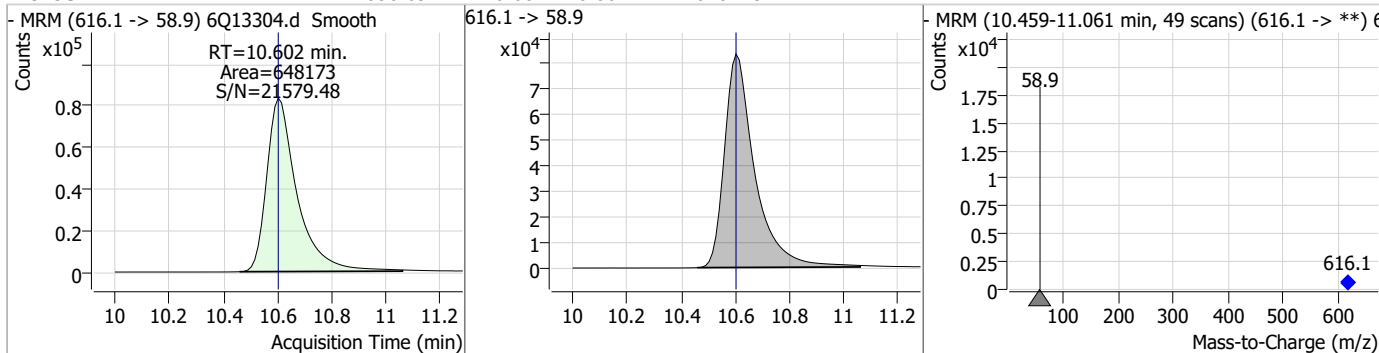
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	55.27	9.91	0.00	97864	699.1 -> 98.8	63.0	31.1	93.2



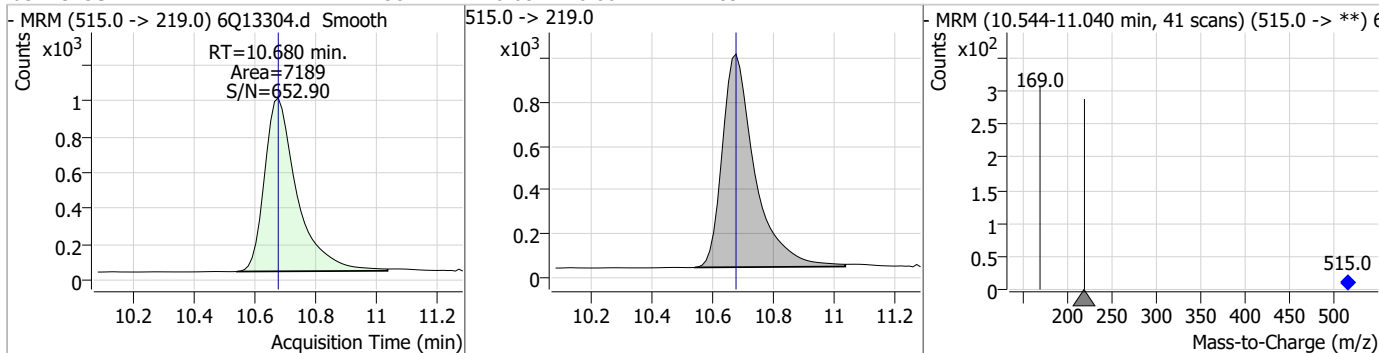
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.16	10.59	0.00	25312				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	658.69	10.60	0.00	648173				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.58	10.68	0.00	7189				

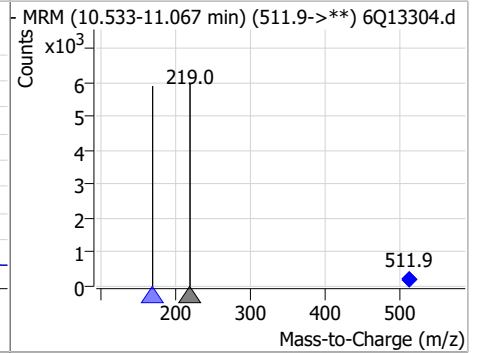
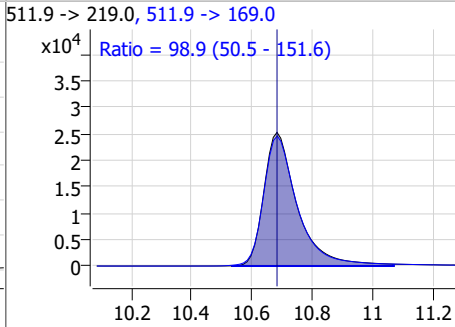
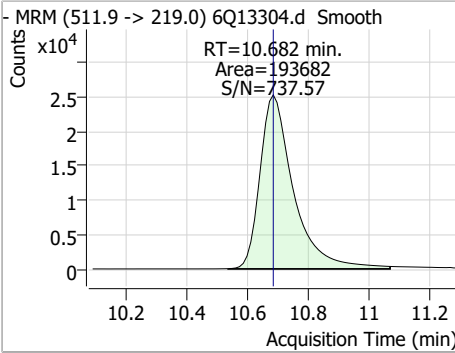


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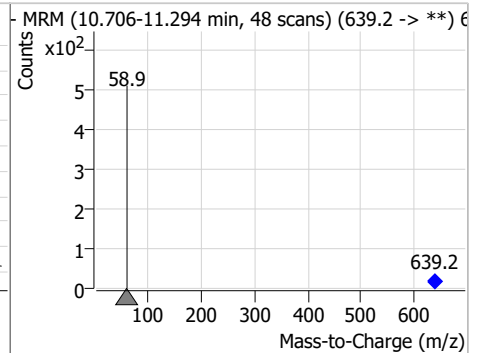
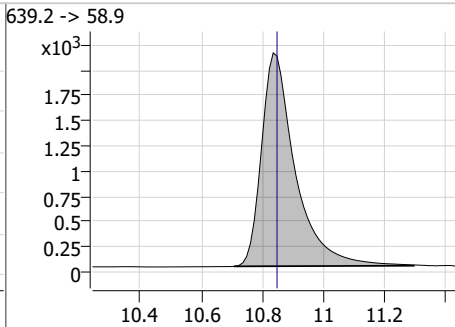
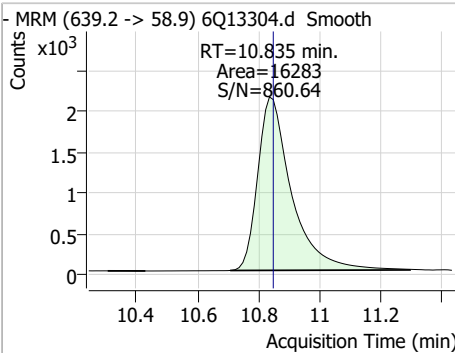


### Perfluorinated Compounds by LC/MS/MS

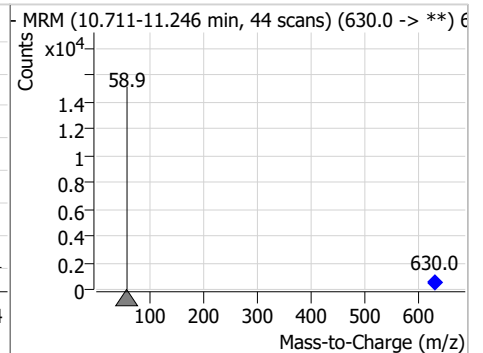
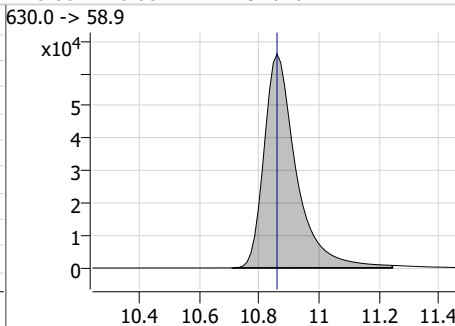
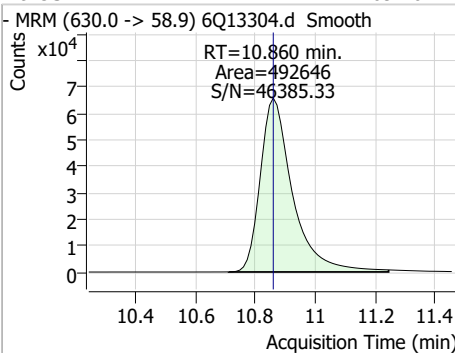
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	60.64	10.68	0.00	193682	511.9 -> 169.0	98.9	50.5	151.6



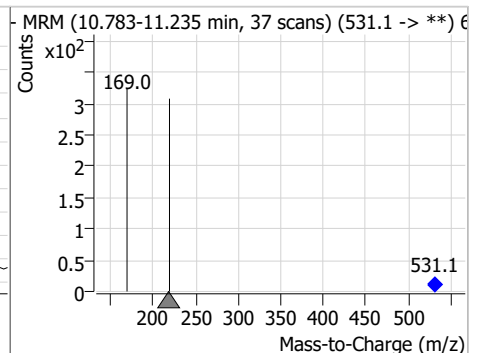
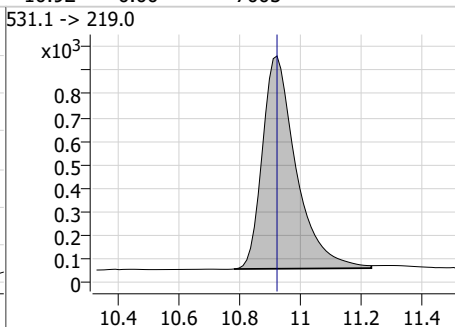
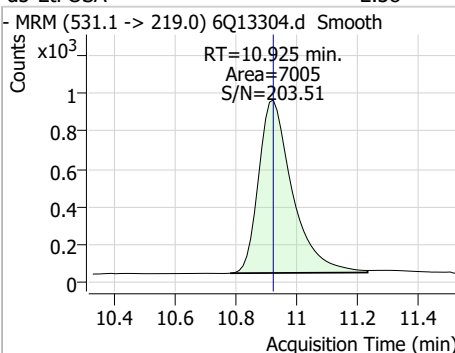
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.28	10.83	-0.01	16283				



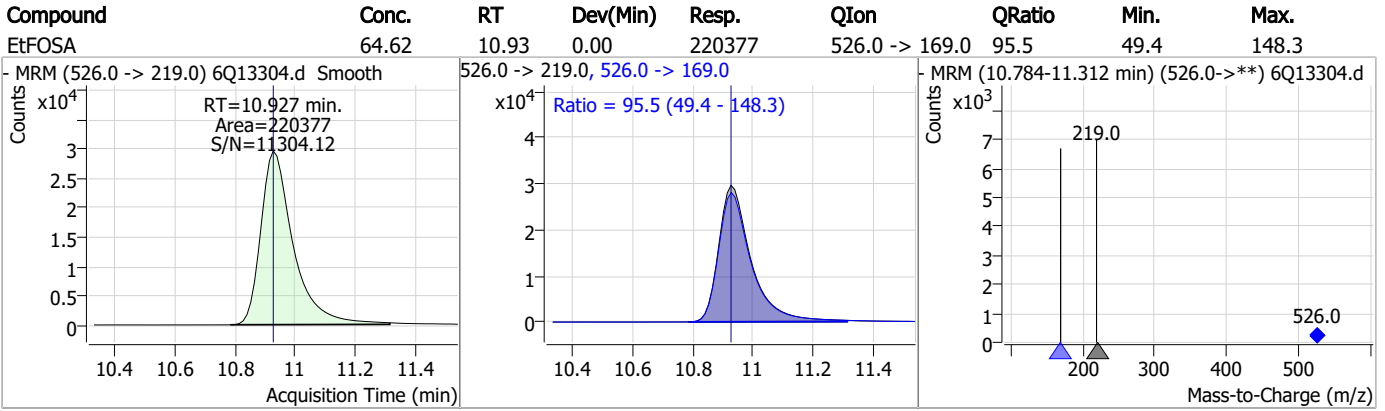
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	709.40	10.86	0.00	492646				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.38	10.92	0.00	7005				



### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q203-IC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13304.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 14:23      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFMPA	377-73-1		3.53	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak

7.7.9.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13306.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 2:51:49 PM  
 Sample Name : icv203-4  
 Vial : P1-B1  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	90080	10.00 µg/L	-0.025
M5-PFPeA	4.374	268.3 -> 223.0	44776	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	35688	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	41630	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	73366	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	24626	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	20104	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	23969	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	25350	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14432	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	18128	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	14950	2.50 µg/L	-0.012
M3-PFHxS	7.262	402.1 -> 79.9	9836	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	9504	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2651	5.00 µg/L	-0.012
M2-6:2FTS	6.908	429.1 -> 80.9	3312	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	3245	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	32241	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	15558	10.00 µg/L	-0.012
M5-EtFOSAA	8.398	589.2 -> 419.0	29011	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	27051	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	19455	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	7958	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	6893	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10816	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	39921	5.00 µg/L	-0.025
18O2-PFHxS	7.261	403.0 -> 83.9	7234	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	89311	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	26898	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	28501	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	38420	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2651	5.52 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3312	5.36 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3245	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C2-PFDoDA	9.041	615.1 -> 570.0	25350	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14432	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFBS	5.505	302.1 -> 79.9	14950	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C3-PFHxS	7.262	402.1 -> 79.9	9836	2.53 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C4-PFBA	2.975	216.8 -> 171.9	90080	10.11 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C4-PFHpA	6.490	367.1 -> 322.0	41630	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C5-PFHxA	5.563	318.0 -> 273.0	35688	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.8%		
13C5-PFPeA	4.374	268.3 -> 223.0	44776	5.10 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C6-PFDA	8.145	519.1 -> 474.1	20104	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C7-PFUnDA	8.612	570.0 -> 525.1	23969	1.28 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C8-FOSA	9.555	506.1 -> 77.8	18128	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C8-PFOA	7.134	421.1 -> 376.0	73366	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C8-PFOS	8.319	507.1 -> 79.9	9504	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C9-PFNA	7.664	472.1 -> 427.0	24626	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.8%		
d3-MeFOSAA	8.190	573.2 -> 419.0	32241	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C3-HFPO-DA	5.927	286.9 -> 168.9	15558	10.14 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
d3-MeFOSA	10.680	515.0 -> 219.0	6893	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.0%		
d5-EtFOSAA	8.398	589.2 -> 419.0	29011	5.53 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.7%		
d7-MeFOSE	10.589	623.2 -> 58.9	27051	24.81 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.2%		
d9-EtFOSE	10.835	639.2 -> 58.9	19455	26.68 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 106.7%		
d5-EtFOSA	10.913	531.1 -> 219.0	7958	2.71 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.3%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.228	327.1 -> 307.0	55327	9.32 µg/L	100
		327.1 -> 80.9	12908		
6:2FTS	6.908	427.1 -> 407.0	46942	9.51 µg/L	97
		427.1 -> 80.9	9404		
8:2FTS	7.933	527.1 -> 507.0	26567	10.16 µg/L	93
		527.1 -> 80.8	5921		
EtFOSAA	8.399	584.2 -> 419.1	10860	2.39 µg/L	100
		584.2 -> 526.0	5352		
FOSA	9.557	498.1 -> 77.9	16984	2.35 µg/L	100
		498.1 -> 478.0	659		
MeFOSAA	8.191	570.1 -> 419.0	14568	2.46 µg/L	99
		570.1 -> 483.0	2942		
PFBA	2.969	212.8 -> 168.9	20040	9.89 µg/L	100
PFBS	5.506	298.7 -> 79.9	12723	2.22 µg/L	99
		298.7 -> 98.8	5950		
PFDA	8.146	512.9 -> 469.0	54780	2.34 µg/L	98
		512.9 -> 219.0	7437		
PFDODA	9.042	613.1 -> 569.0	48250	2.54 µg/L	96
		613.1 -> 319.0	6120		
PFDS	9.216	599.0 -> 79.9	6873	2.32 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.503	599.0 -> 98.8	3438	2.45	µg/L	100
		363.1 -> 319.0	59331			
PFHpS	7.816	363.1 -> 169.0	8205	2.31	µg/L	97
		449.0 -> 79.9	9067			
PFHxA	5.566	449.0 -> 98.9	5234	2.71	µg/L	99
		313.0 -> 269.0	37448			
PFHxS	7.263	313.0 -> 118.9	1590	2.43	µg/L	99
		398.7 -> 79.9	10355			
PFNA	7.665	398.7 -> 98.9	5733	2.48	µg/L	98
		463.0 -> 419.0	40410			
PFNS	8.786	463.0 -> 219.0	7733	2.50	µg/L	93
		548.8 -> 79.9	10094			
PFOA	7.135	548.8 -> 98.9	4973	2.52	µg/L	99
		413.0 -> 369.0	79016			
PFOS	8.321	413.0 -> 169.0	10268	2.34	µg/L	84
		498.9 -> 79.9	9956			
PFPeA	4.375	498.9 -> 98.8	5840	4.86	µg/L	100
		263.0 -> 219.0	45935			
PFPeS	6.569	349.1 -> 79.9	11986	2.37	µg/L	99
		349.1 -> 98.9	6725			
PFTeDA	9.769	713.1 -> 669.0	41101	2.59	µg/L	99
		713.1 -> 168.9	2560			
PFTrDA	9.437	663.0 -> 619.0	45447	2.61	µg/L	100
		663.0 -> 168.9	3607			
PFUnDA	8.612	563.1 -> 519.0	46671	2.48	µg/L	97
		563.1 -> 269.1	6189			
11CI-PF3OUdS	9.489	630.9 -> 450.9	100054	9.56	µg/L	99
		632.9 -> 452.9	31263			
9CI-PF3ONS	8.663	530.8 -> 351.0	162093	8.73	µg/L	94
		532.8 -> 353.0	55363			
ADONA	6.753	376.9 -> 250.9	343193	9.95	µg/L	95
		376.9 -> 84.8	68037			
HFPO-DA	5.928	284.9 -> 168.9	14071	9.54	µg/L	97
		284.9 -> 184.9	1872			
3:3FTCA	3.829	241.0 -> 177.0	5904	12.63	µg/L	97
		241.0 -> 117.0	764			
5:3FTCA	6.193	341.0 -> 237.1	192341	65.73	µg/L	91
		341.0 -> 217.0	177174			
7:3FTCA	7.605	441.0 -> 316.9	101654	67.55	µg/L	83
		441.0 -> 336.9	219944			
EtFOSA	10.927	526.0 -> 219.0	9198	2.37	µg/L	95
		526.0 -> 169.0	8682			
EtFOSE	10.860	630.0 -> 58.9	19283	23.24	µg/L	100
		511.9 -> 219.0	7994			
MeFOSA	10.682	511.9 -> 169.0	7357	2.61	µg/L	91
		616.1 -> 58.9	27019			
MeFOSE	10.602	699.1 -> 79.9	4198	25.69	µg/L	100
		699.1 -> 98.8	2836			
PFDoDS	9.907	295.0 -> 201.0	4564	2.34	µg/L	93
		295.0 -> 84.9	2152			
NFDHA	5.445	279.0 -> 85.1	13574	5.66	µg/L	97
		229.0 -> 84.9	12237			
PFMBA	4.787	314.8 -> 134.9	97139	4.96	µg/L	100
		314.8 -> 82.9	2356			
PFMPA	3.528			4.99	µg/L	100
PFEESA	6.046					

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

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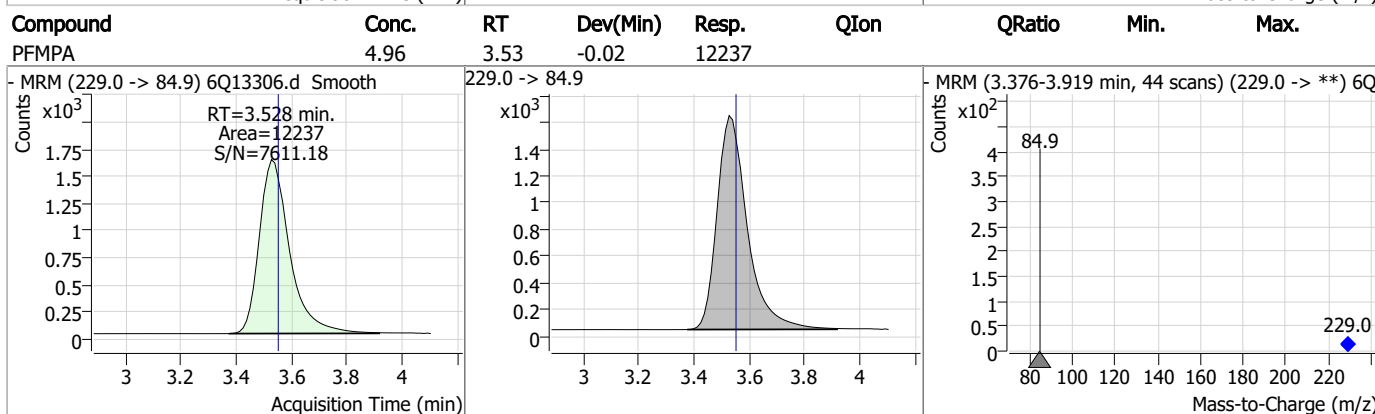
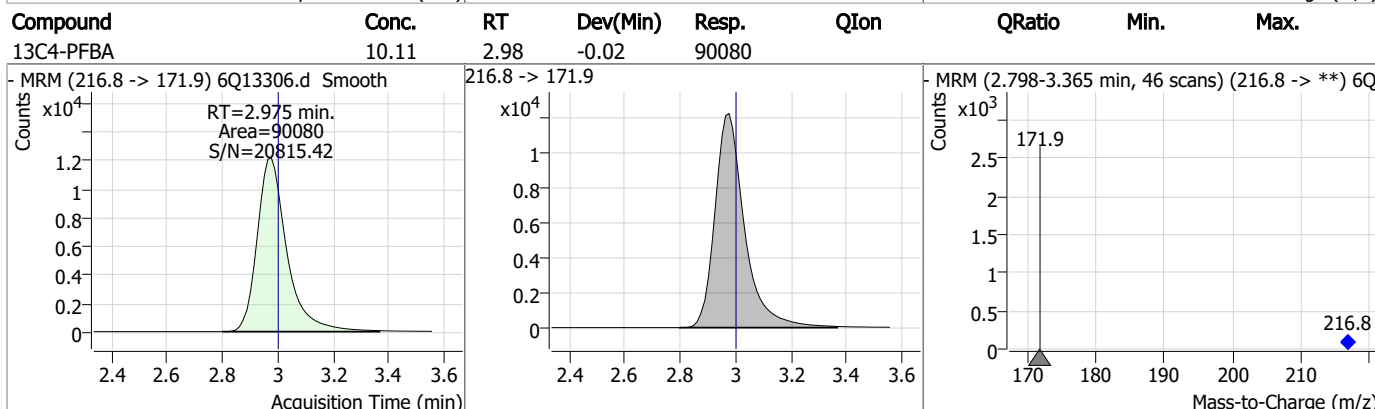
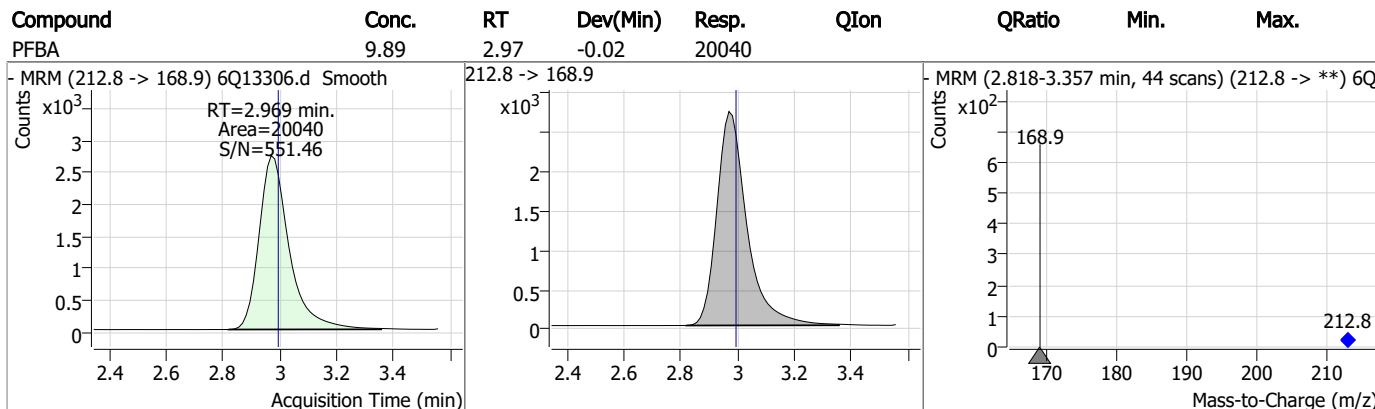
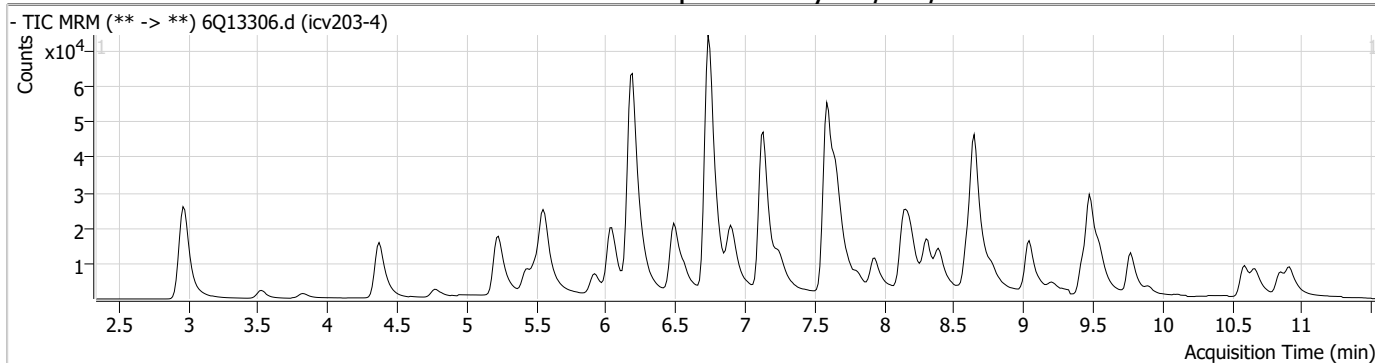
### Perfluorinated Compounds by LC/MS/MS

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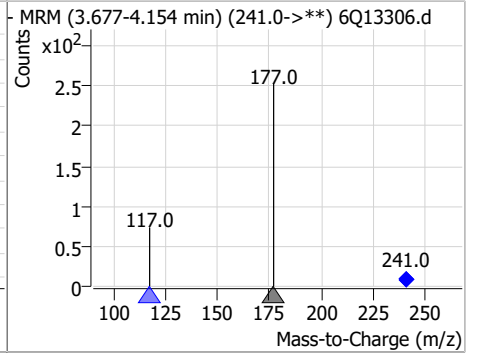
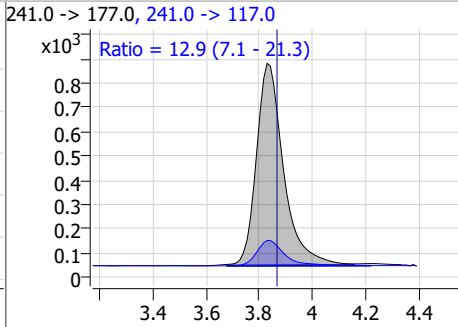
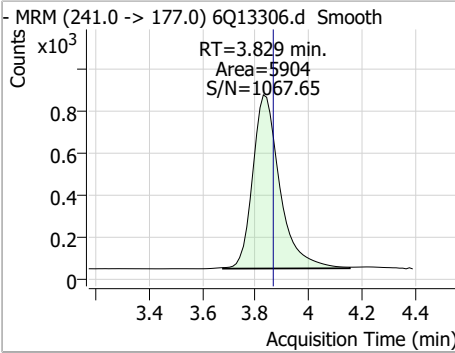
### Perfluorinated Compounds by LC/MS/MS



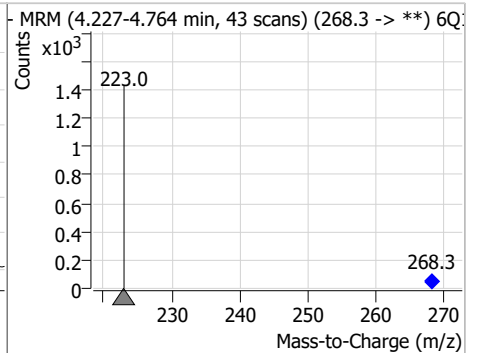
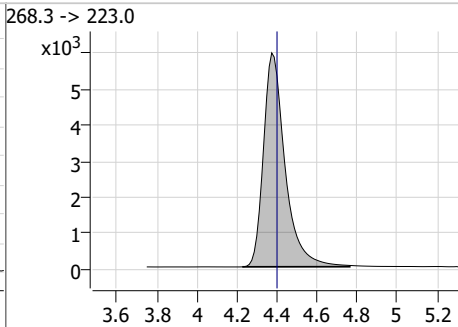
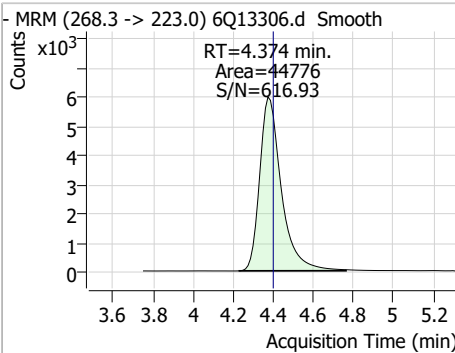


### Perfluorinated Compounds by LC/MS/MS

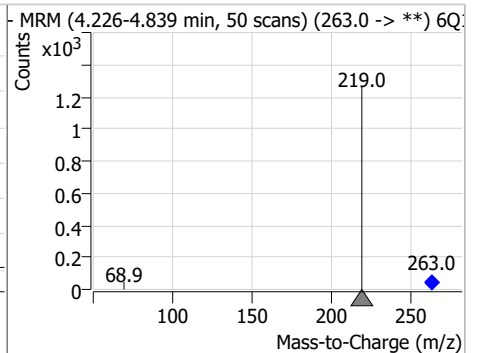
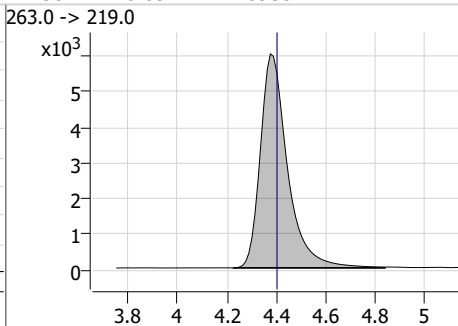
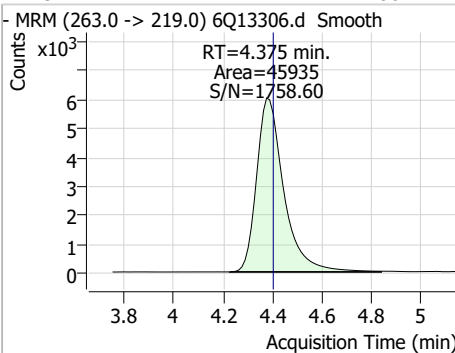
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.63	3.83	-0.04	5904	241.0 -> 117.0	12.9	7.1	21.3



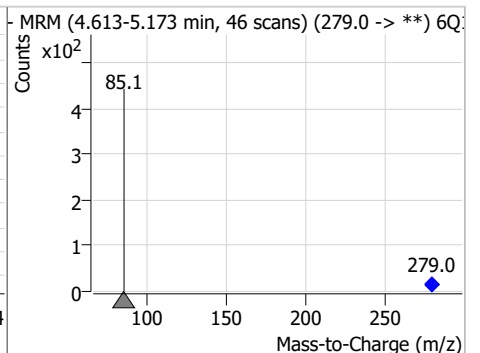
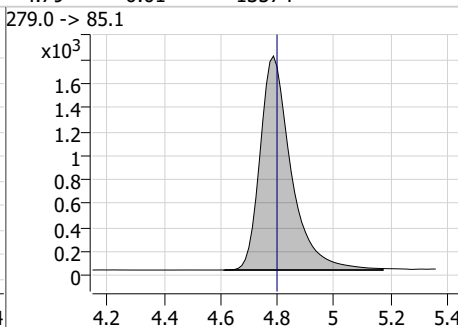
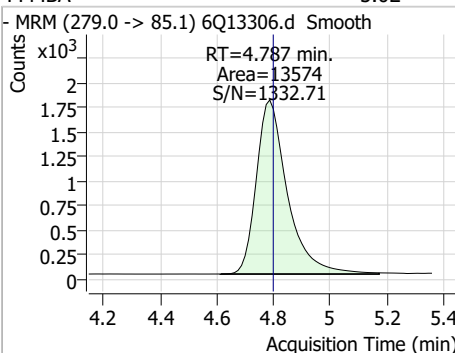
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.10	4.37	-0.03	44776				



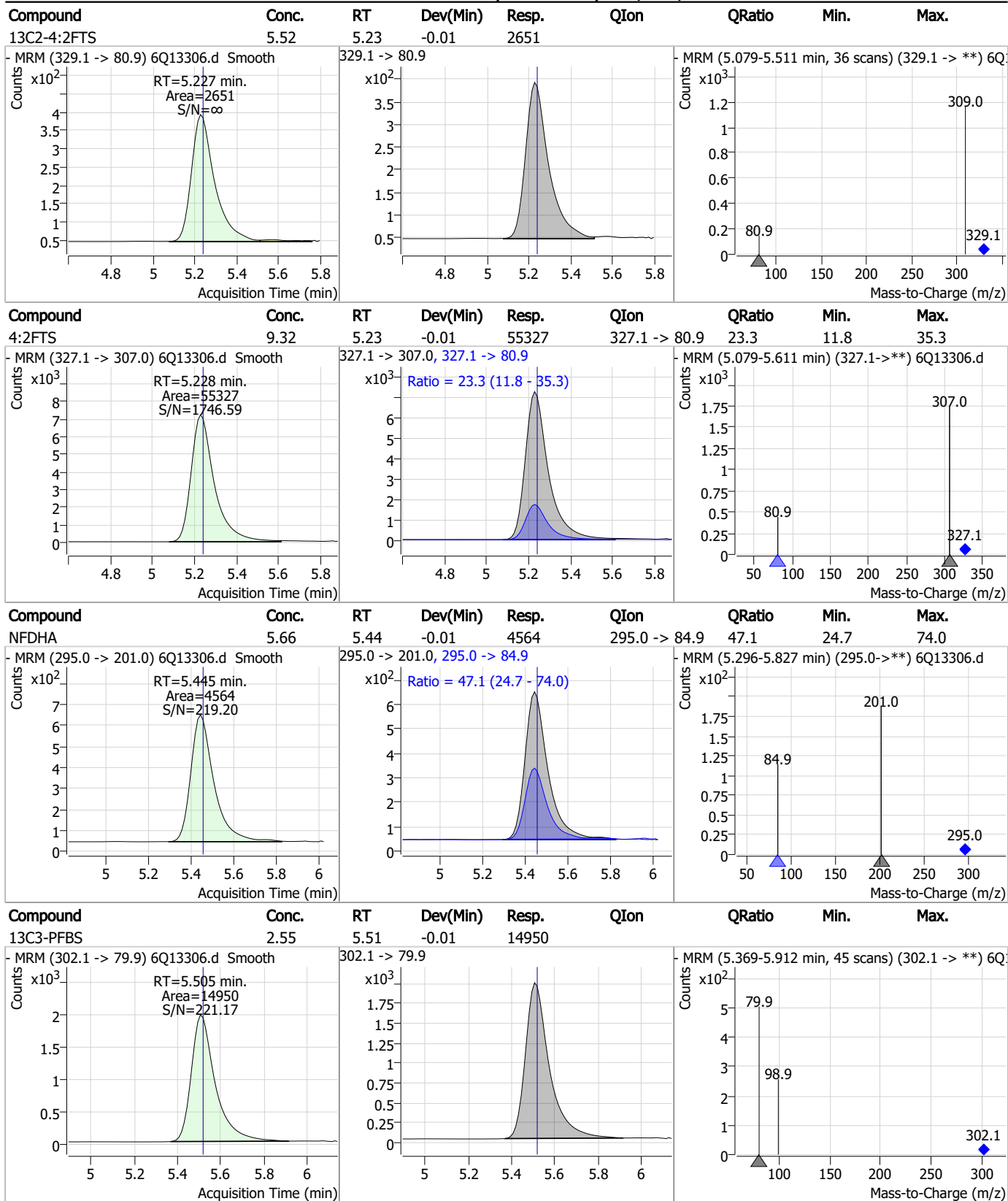
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.86	4.38	-0.03	45935				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.02	4.79	-0.01	13574				



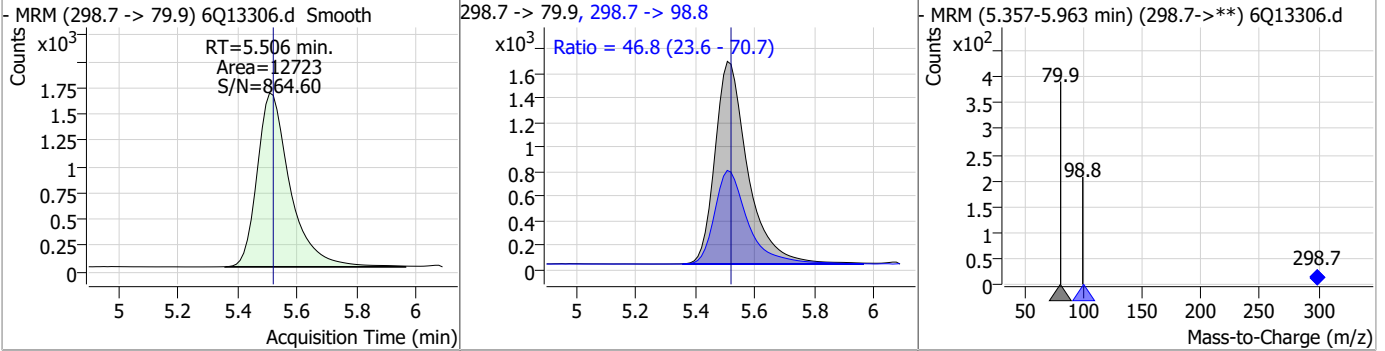
### Perfluorinated Compounds by LC/MS/MS



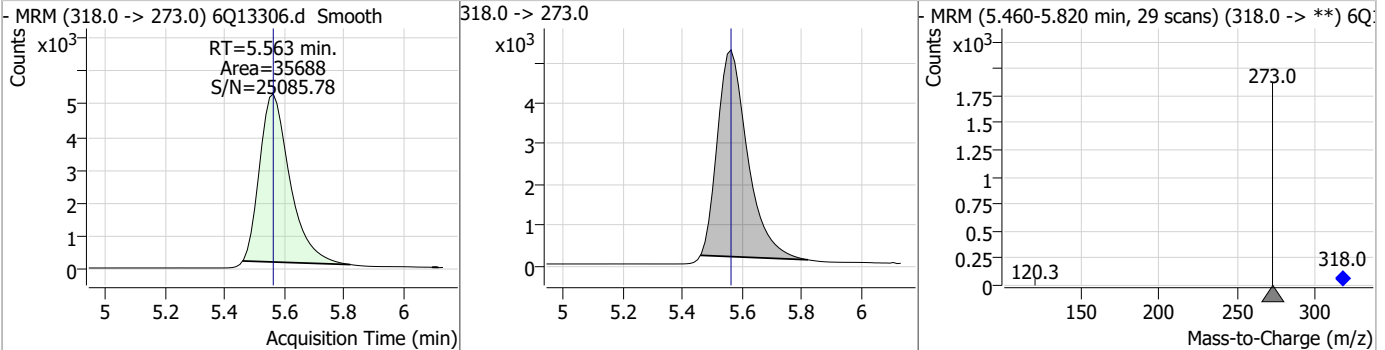
7.7.10  
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### Perfluorinated Compounds by LC/MS/MS

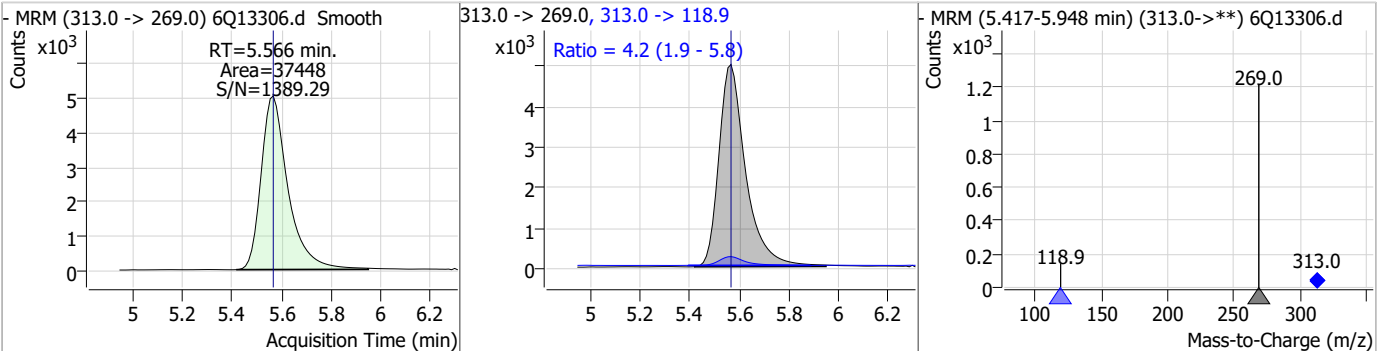
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.22	5.51	-0.01	12723	298.7 -> 98.8	46.8	23.6	70.7



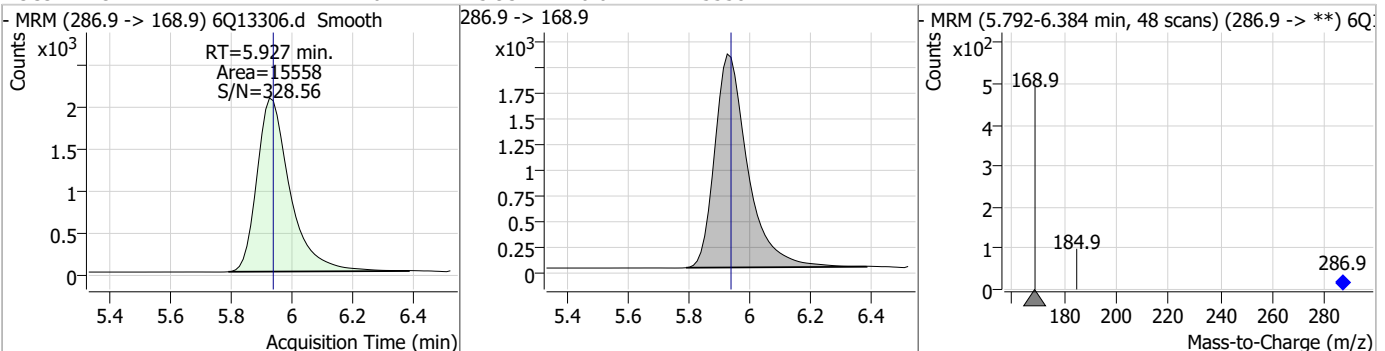
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.30	5.56	0.00	35688				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.71	5.57	0.00	37448	313.0 -> 118.9	4.2	1.9	5.8

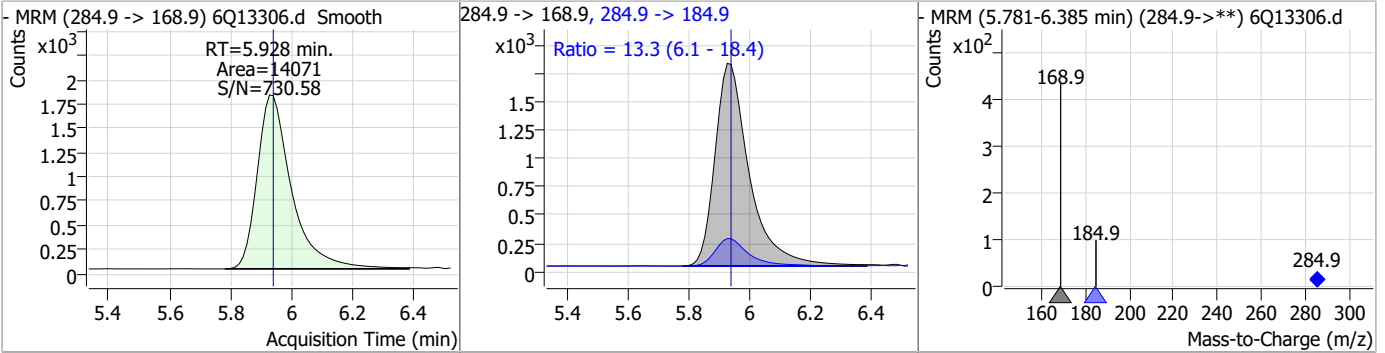


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.14	5.93	-0.01	15558				

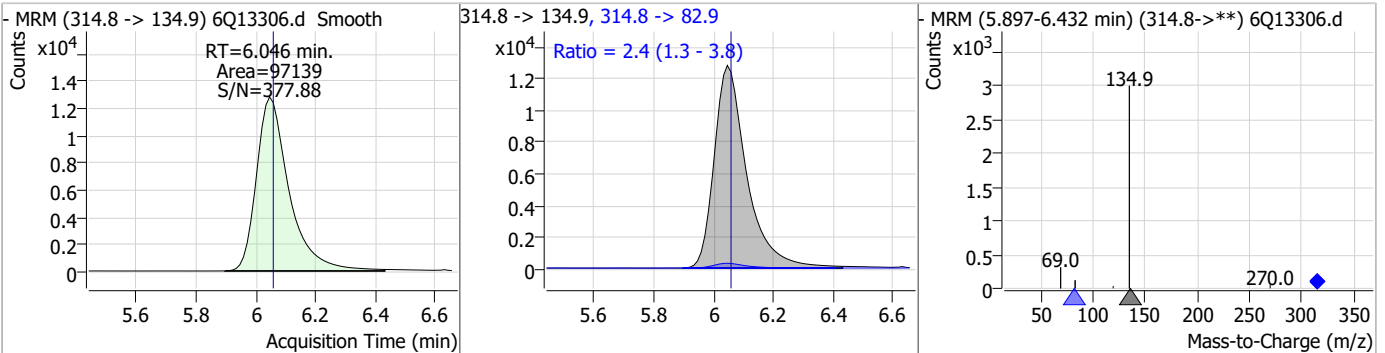


### Perfluorinated Compounds by LC/MS/MS

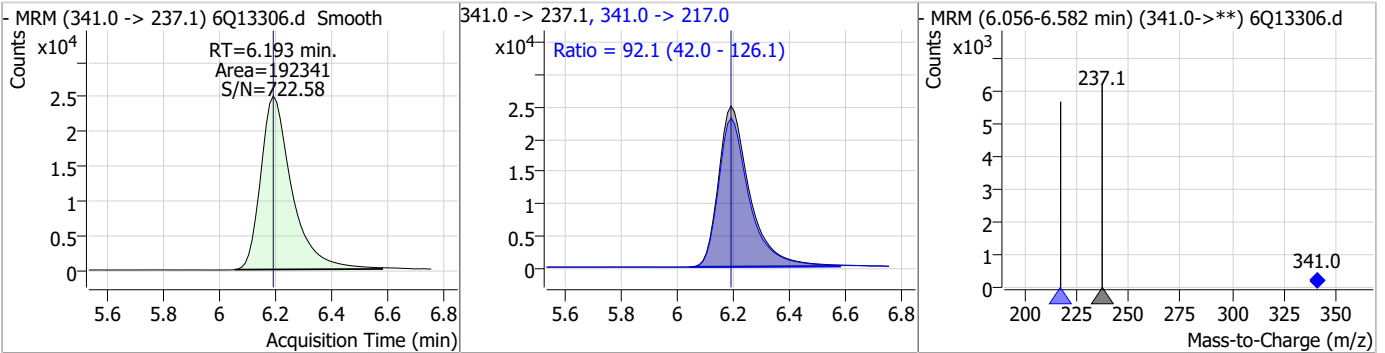
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.54	5.93	-0.01	14071	284.9 -> 184.9	13.3	6.1	18.4



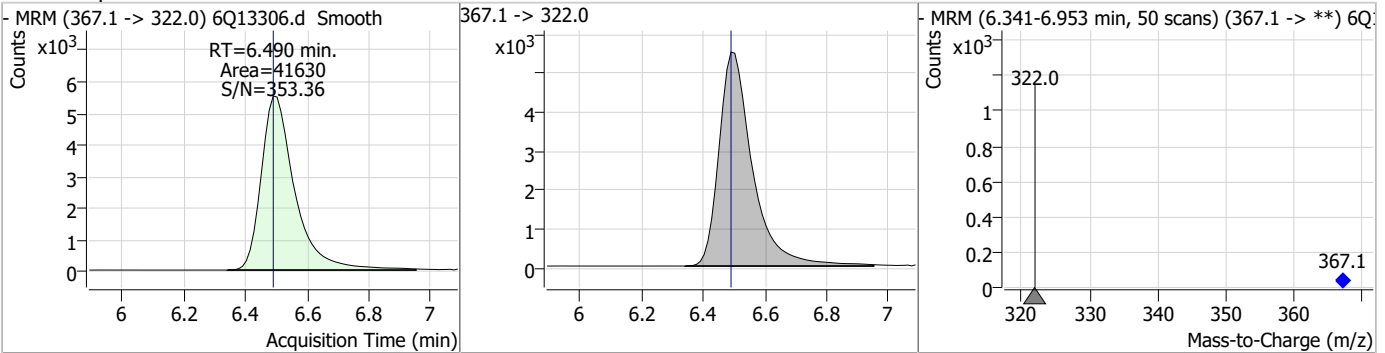
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.99	6.05	-0.01	97139	314.8 -> 82.9	2.4	1.3	3.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	65.73	6.19	0.00	192341	341.0 -> 217.0	92.1	42.0	126.1

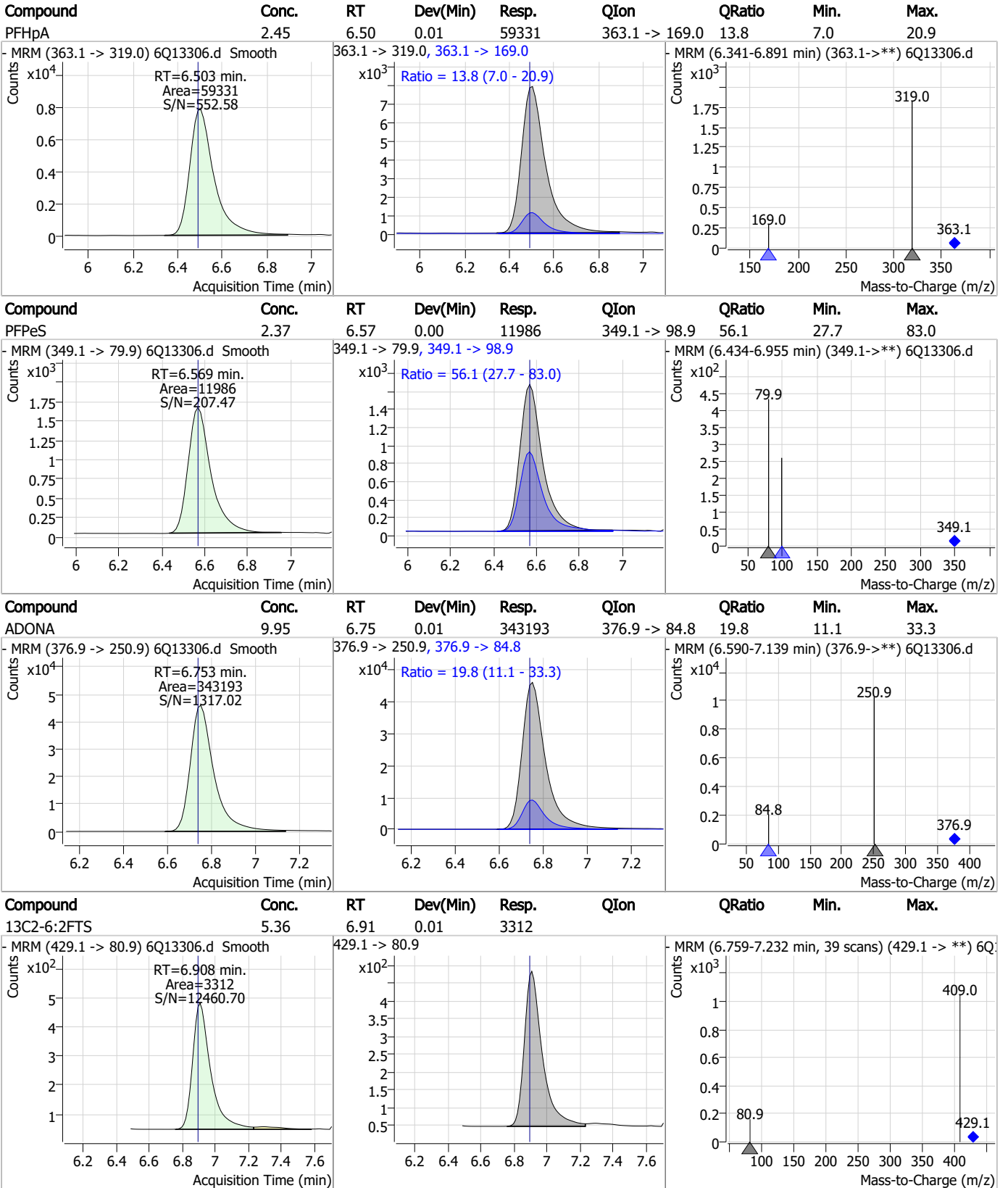


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.58	6.49	0.00	41630	367.1 -> 322.0			



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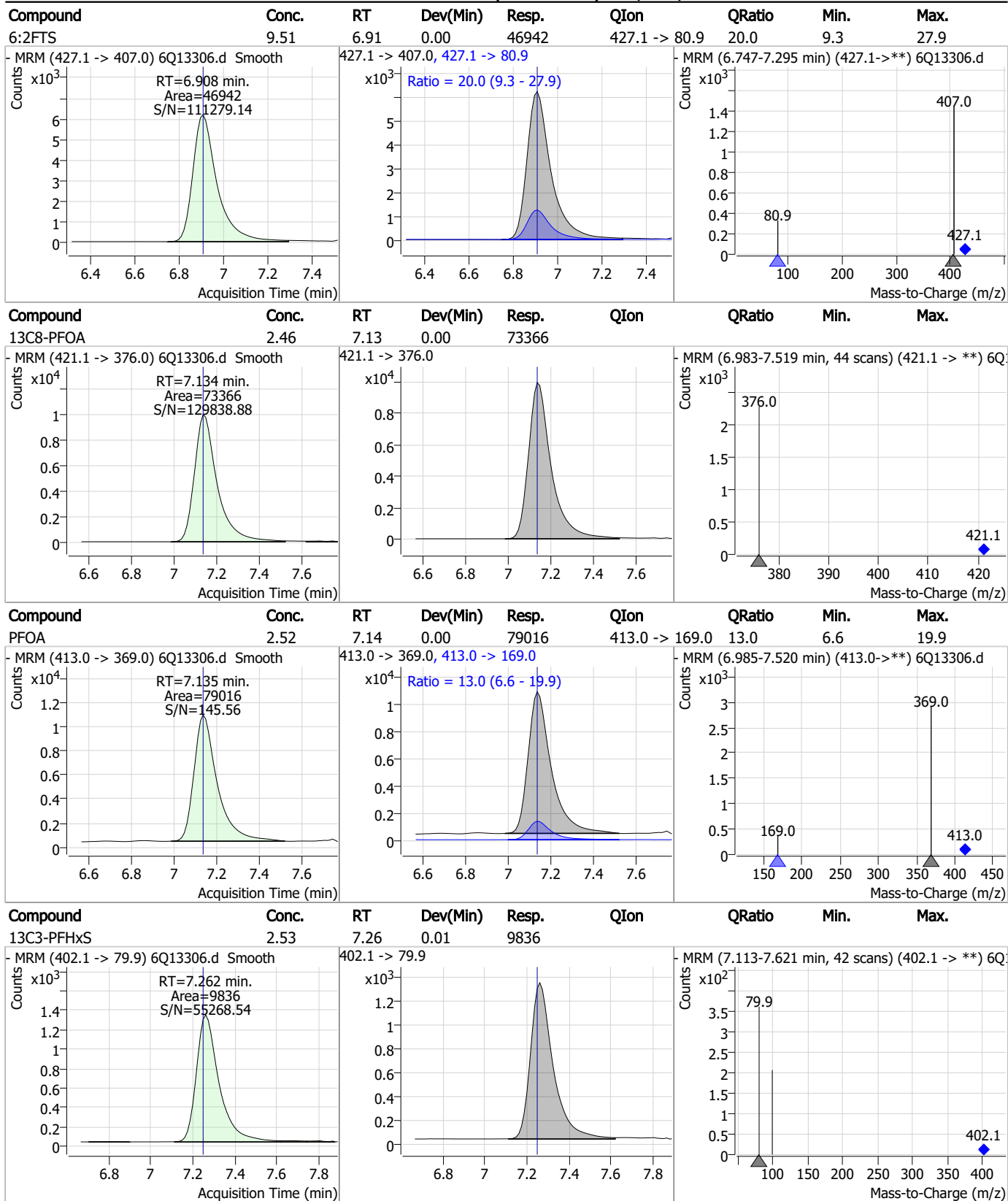
### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

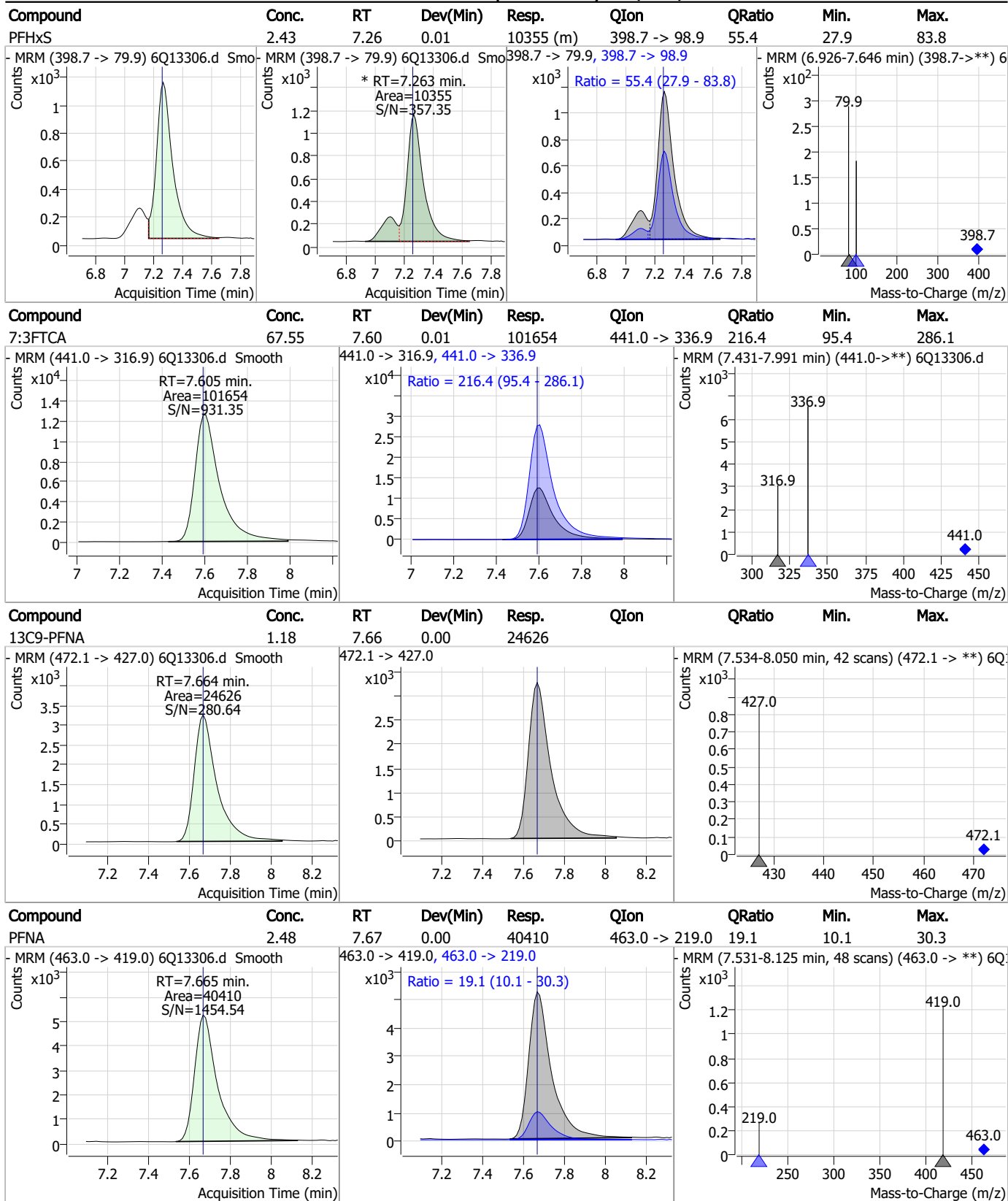


### Perfluorinated Compounds by LC/MS/MS



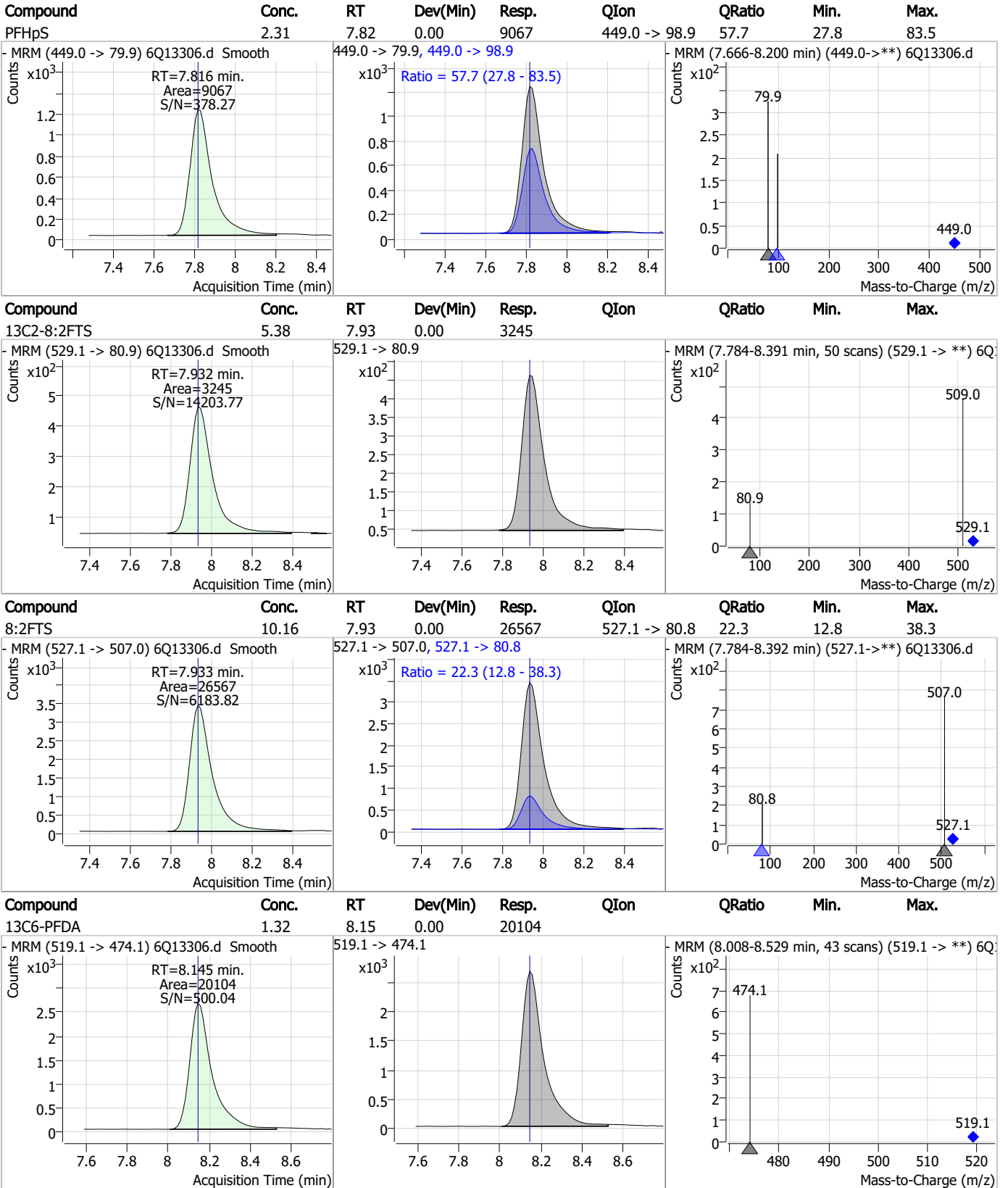
7.7.10 7

### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

### Perfluorinated Compounds by LC/MS/MS

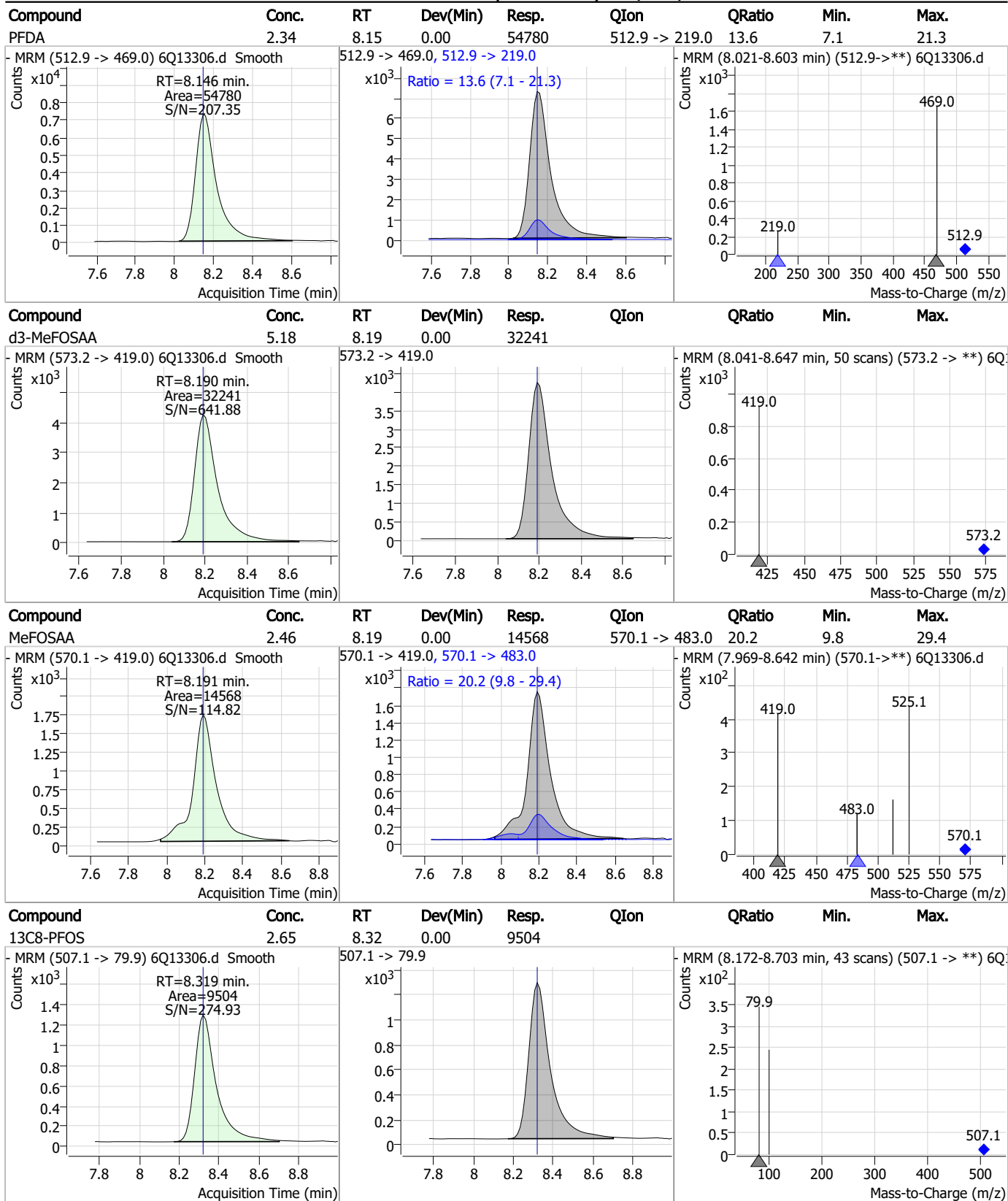


7.7.10 7





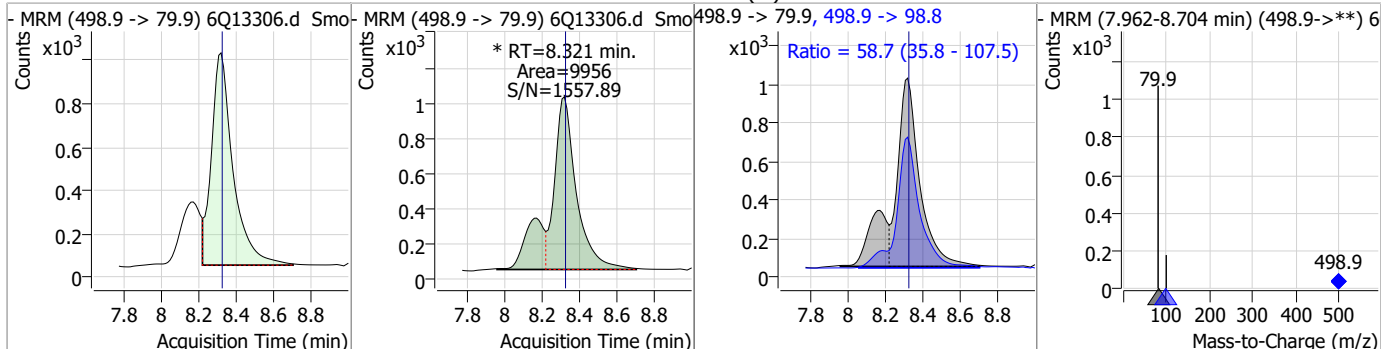
### Perfluorinated Compounds by LC/MS/MS



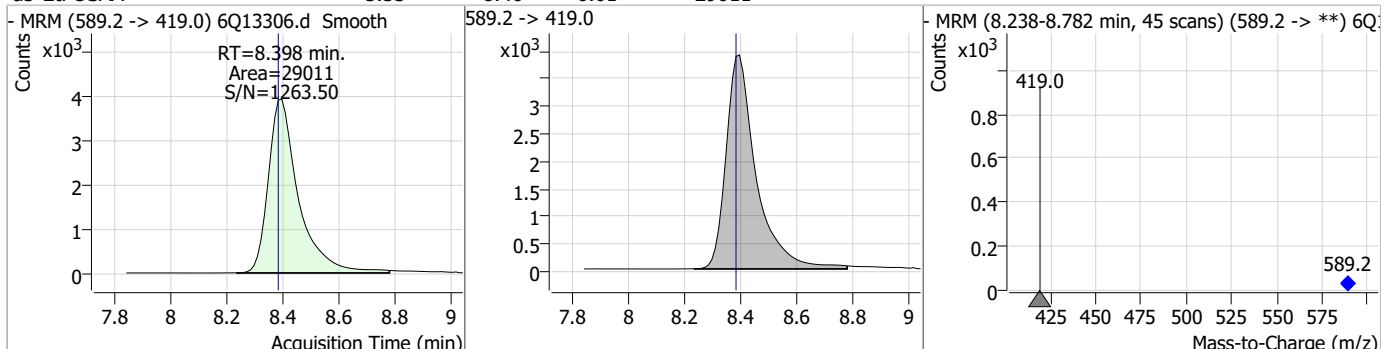
7.7.10 7

### Perfluorinated Compounds by LC/MS/MS

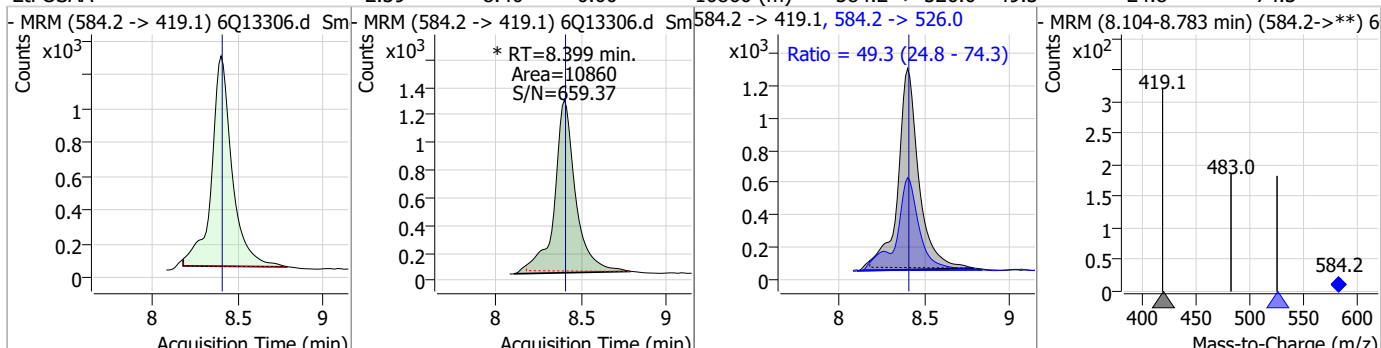
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.34	8.32	0.00	9956 (m)	498.9 -> 98.8	58.7	35.8	107.5



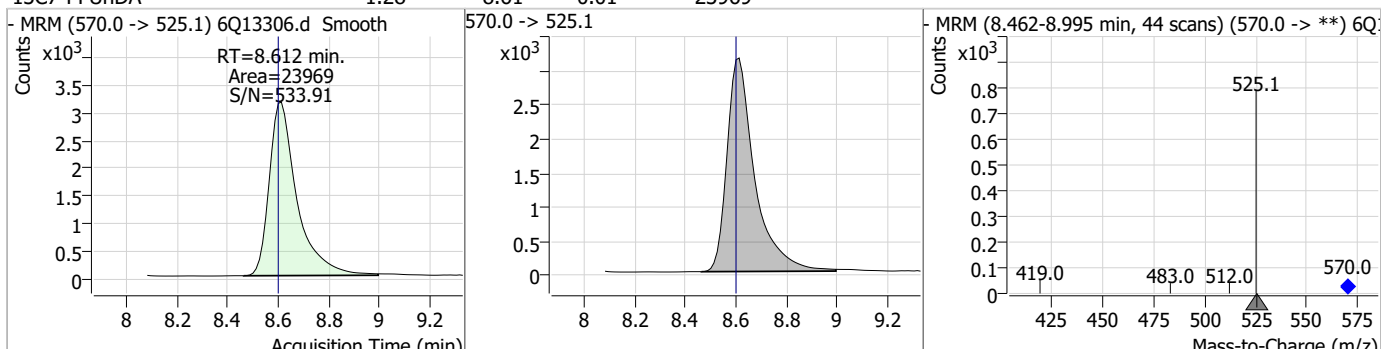
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.53	8.40	0.01	29011				



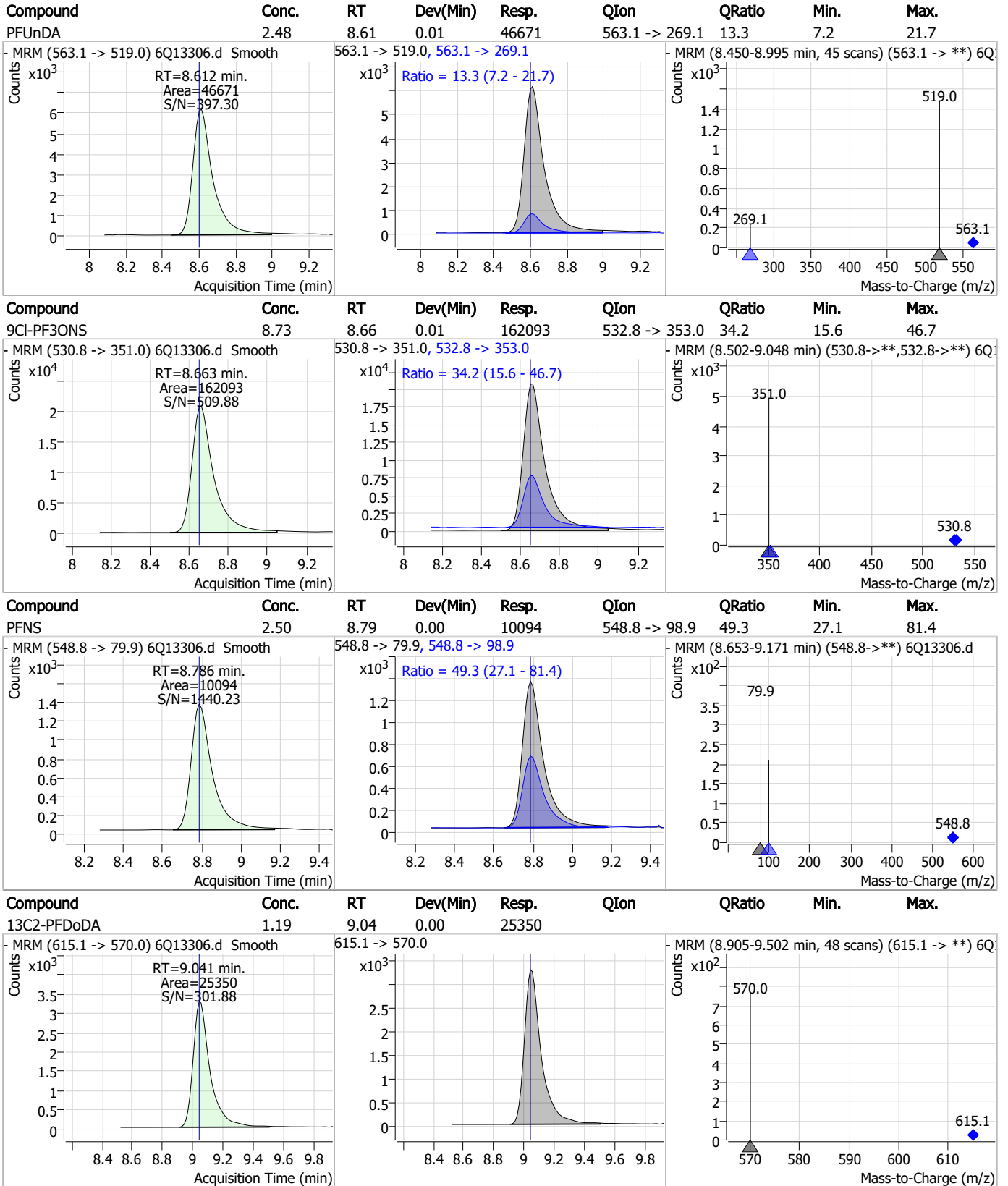
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.39	8.40	0.00	10860 (m)	584.2 -> 526.0	49.3	24.8	74.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.61	0.01	23969				



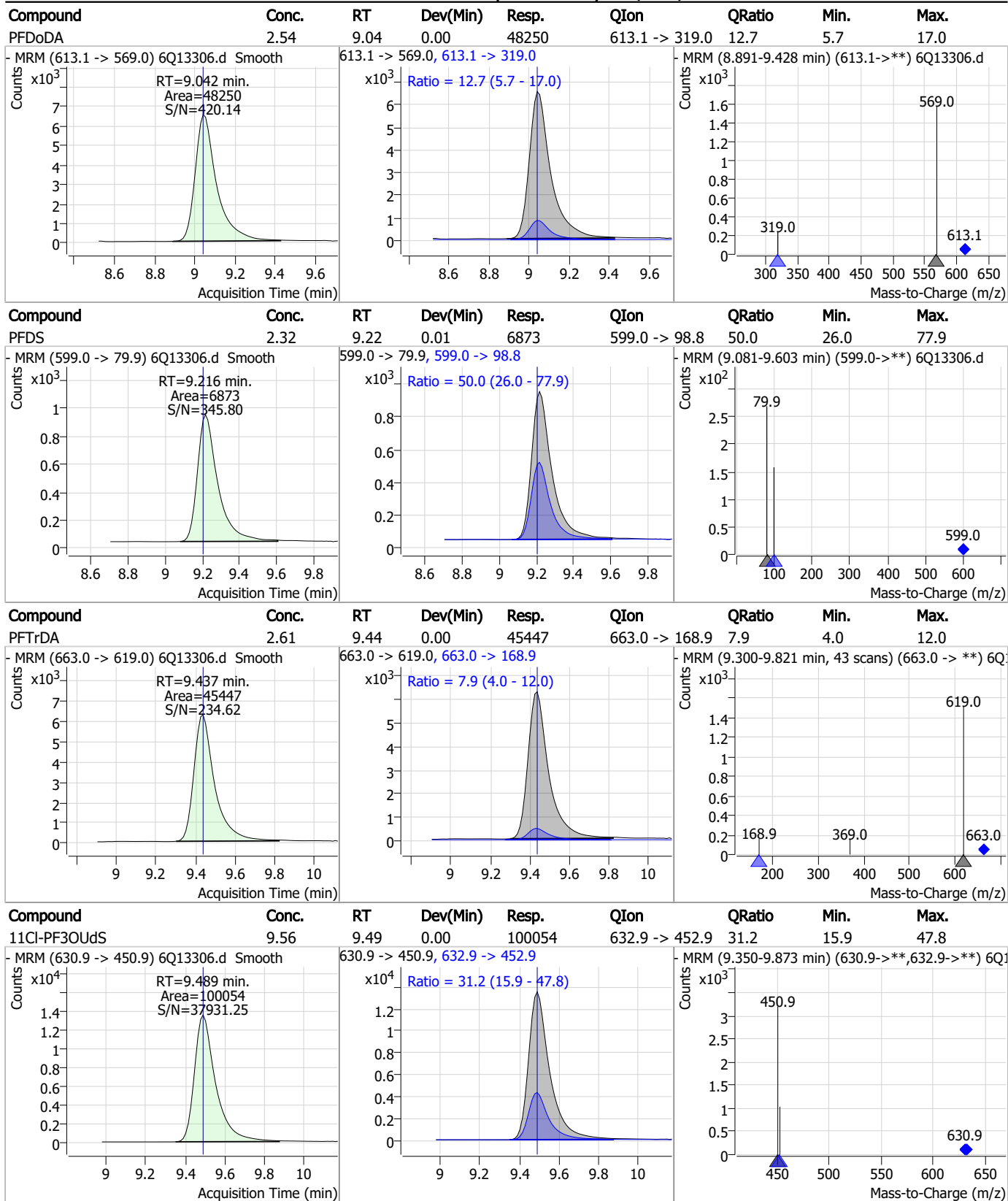
### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

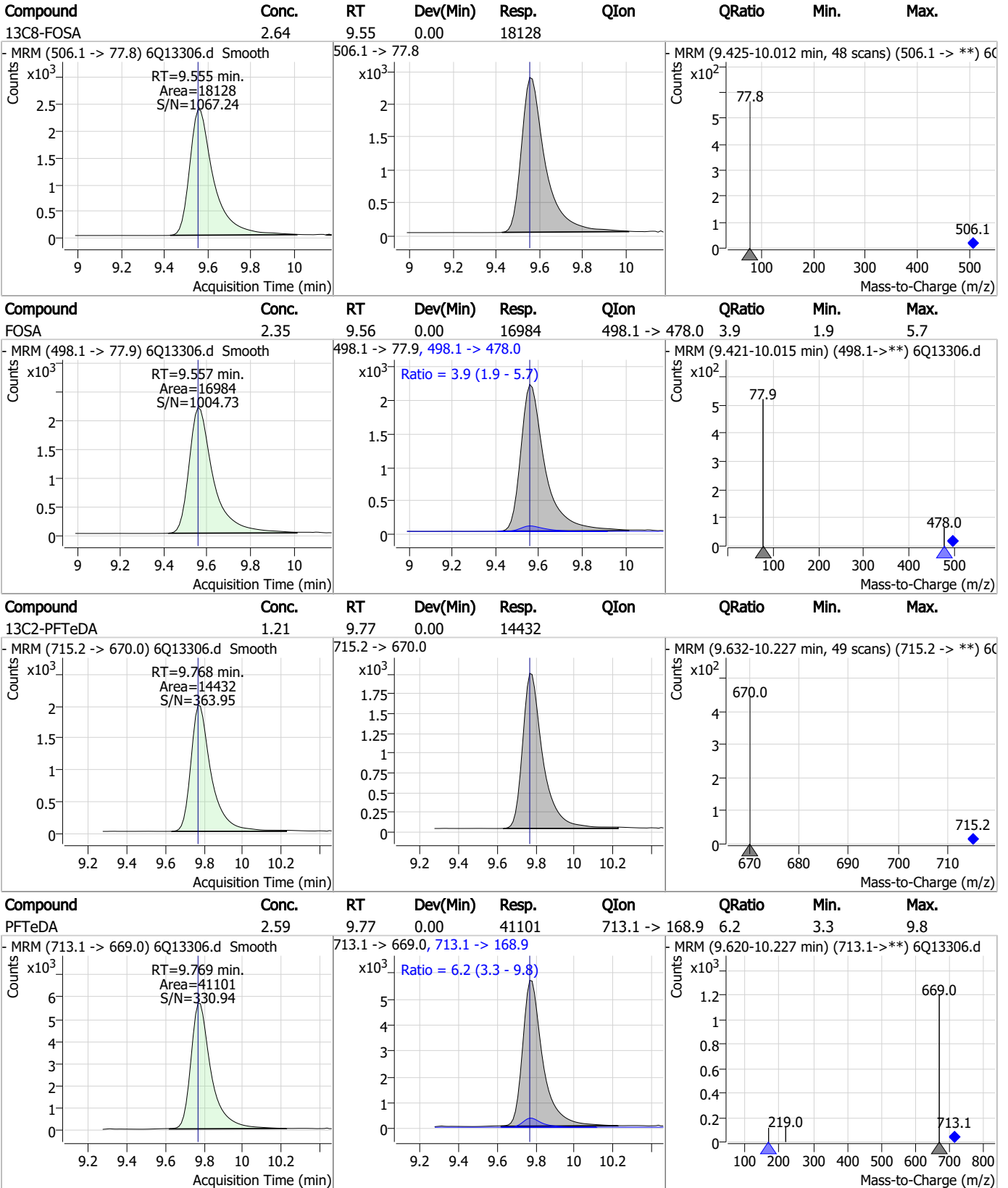


### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

### Perfluorinated Compounds by LC/MS/MS



7.7.10 7

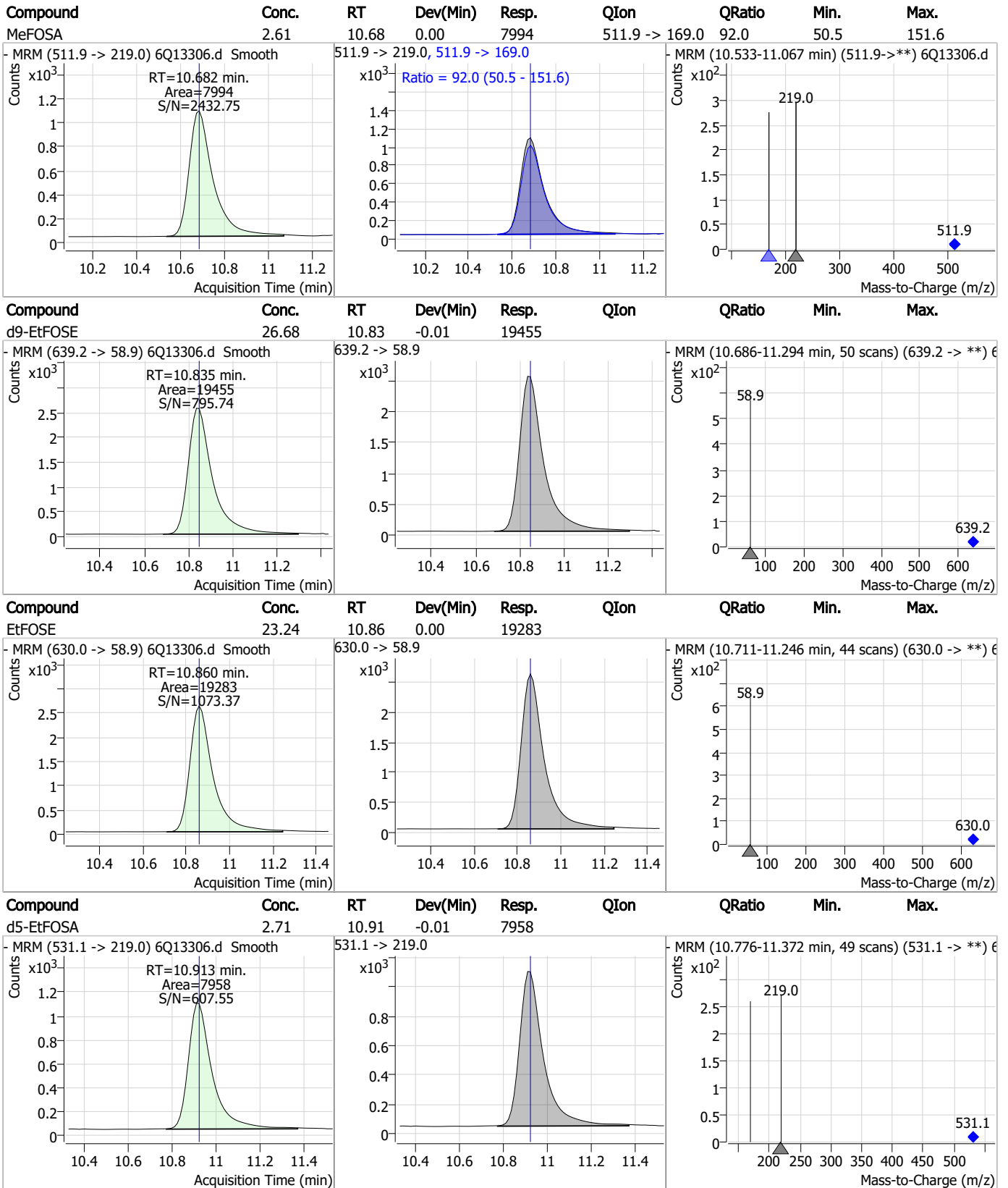


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.34	9.91	0.00	4198	699.1 -> 98.8	67.6	31.1	93.2
d7-MeFOSE	24.81	10.59	0.00	27051				
MeFOSE	25.69	10.60	0.00	27019				
d3-MeFOSA	2.47	10.68	0.00	6893				

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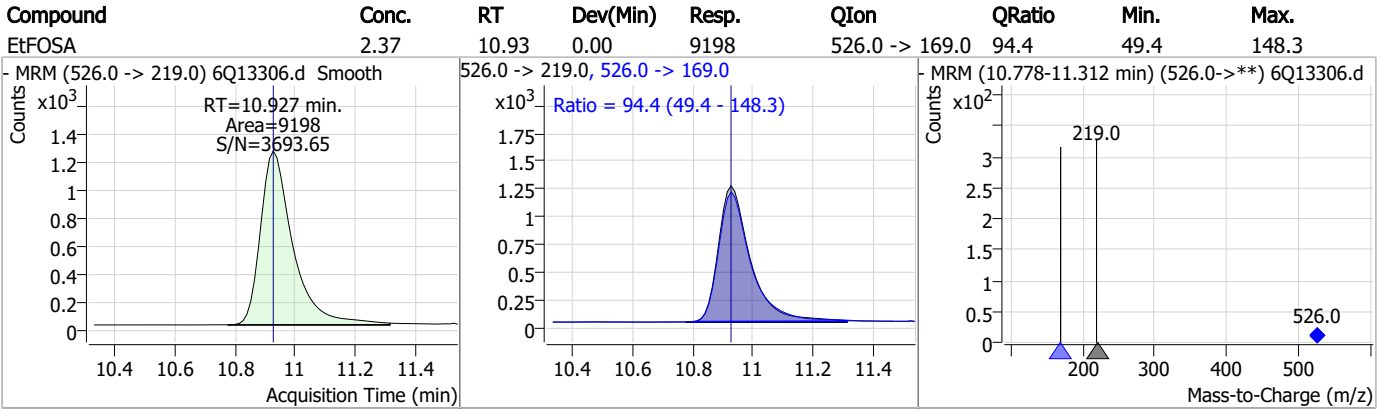
### Perfluorinated Compounds by LC/MS/MS



7.7.10 7



### Perfluorinated Compounds by LC/MS/MS



7.7.10  
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# Manual Integration Approval Summary

Sample Number: S6Q203-ICV203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13306.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 14:51      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13307.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 3:05:50 PM  
 Sample Name : icv203-4  
 Vial : P1-B2  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	89406	10.00 µg/L	-0.025
M5-PFPeA	4.374	268.3 -> 223.0	44384	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	38611	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	39083	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	71247	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	24854	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	19106	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	22351	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	24027	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14492	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17323	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	15014	2.50 µg/L	-0.012
M3-PFHxS	7.262	402.1 -> 79.9	9462	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	9026	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2529	5.00 µg/L	-0.012
M2-6:2FTS	6.908	429.1 -> 80.9	3316	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	3131	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	31484	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	15730	10.00 µg/L	-0.012
M5-EtFOSAA	8.386	589.2 -> 419.0	25324	5.00 µg/L	0.000
M7-MeFOSE	10.577	623.2 -> 58.9	27471	25.00 µg/L	-0.012
M9-EtFOSE	10.835	639.2 -> 58.9	18526	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	7607	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	6986	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10231	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	39926	5.00 µg/L	-0.012
18O2-PFHxS	7.261	403.0 -> 83.9	7295	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	81487	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	27576	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	29042	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	37600	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2529	5.23 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3316	5.32 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3131	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-PFDoDA	9.041	615.1 -> 570.0	24027	1.10 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 88.2%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14492	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.9%		
13C3-PFBS	5.505	302.1 -> 79.9	15014	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.262	402.1 -> 79.9	9462	2.41 µg/L	0.012

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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C4-PFBA	2.975	216.8 -> 171.9	89406	10.03 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.502	367.1 -> 322.0	39083	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFHxA	5.563	318.0 -> 273.0	38611	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFPeA	4.374	268.3 -> 223.0	44384	5.17 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C6-PFDA	8.145	519.1 -> 474.1	19106	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C7-PFUnDA	8.599	570.0 -> 525.1	22351	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.0%	
13C8-FOSA	9.555	506.1 -> 77.8	17323	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C8-PFOA	7.134	421.1 -> 376.0	71247	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C8-PFOS	8.319	507.1 -> 79.9	9026	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C9-PFNA	7.664	472.1 -> 427.0	24854	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.9%	
d3-MeFOSAA	8.190	573.2 -> 419.0	31484	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	15730	10.48 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
d3-MeFOSA	10.680	515.0 -> 219.0	6986	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
d5-EtFOSAA	8.386	589.2 -> 419.0	25324	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d7-MeFOSE	10.577	623.2 -> 58.9	27471	26.64 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
d9-EtFOSE	10.835	639.2 -> 58.9	18526	26.86 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.4%	
d5-EtFOSA	10.913	531.1 -> 219.0	7607	2.73 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.4%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.228	327.1 -> 307.0	106701	18.84 µg/L	100
		327.1 -> 80.9	24909		
6:2FTS	6.908	427.1 -> 407.0	92024	18.63 µg/L	98
		427.1 -> 80.9	18072		
8:2FTS	7.933	527.1 -> 507.0	50638	20.08 µg/L	95
		527.1 -> 80.8	11789		
EtFOSAA	8.399	584.2 -> 419.1	80961	20.38 µg/L	m 95
		584.2 -> 526.0	42967		
FOSA	9.557	498.1 -> 77.9	137970	19.96 µg/L	99
		498.1 -> 478.0	4979		
MeFOSAA	8.191	570.1 -> 419.0	108675	18.81 µg/L	m 97
		570.1 -> 483.0	20047		
PFBA	2.982	212.8 -> 168.9	36571	18.18 µg/L	100
PFBS	5.506	298.7 -> 79.9	116159	20.19 µg/L	98
		298.7 -> 98.8	53521		
PFDA	8.146	512.9 -> 469.0	417313	18.78 µg/L	99
		512.9 -> 219.0	57825		
PFDoDA	9.042	613.1 -> 569.0	331483	18.38 µg/L	99
		613.1 -> 319.0	38931		
PFDS	9.216	599.0 -> 79.9	51970	18.49 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	27743			
PFHpA	6.503	363.1 -> 319.0	439653	19.32	µg/L	98
		363.1 -> 169.0	57432			
PFHpS	7.828	449.0 -> 79.9	74668	20.04	µg/L	94
		449.0 -> 98.9	44572			
PFHxA	5.566	313.0 -> 269.0	298166	19.97	µg/L	99
		313.0 -> 118.9	10943			
PFHxS	7.263	398.7 -> 79.9	84351	20.53	µg/L	m 98
		398.7 -> 98.9	48417			
PFNA	7.665	463.0 -> 419.0	352270	21.39	µg/L	95
		463.0 -> 219.0	63108			
PFNS	8.786	548.8 -> 79.9	74049	19.29	µg/L	96
		548.8 -> 98.9	42505			
PFOA	7.135	413.0 -> 369.0	594054	19.48	µg/L	100
		413.0 -> 169.0	80090			
PFOS	8.309	498.9 -> 79.9	68069	16.84	µg/L	m 85
		498.9 -> 98.8	40224			
PFPeA	4.375	263.0 -> 219.0	189405	20.23	µg/L	100
PFPeS	6.569	349.1 -> 79.9	98239	20.17	µg/L	99
		349.1 -> 98.9	54797			
PFTeDA	9.769	713.1 -> 669.0	319175	20.03	µg/L	99
		713.1 -> 168.9	20370			
PFTrDA	9.425	663.0 -> 619.0	311784	18.91	µg/L	98
		663.0 -> 168.9	22784			
PFUnDA	8.612	563.1 -> 519.0	339345	19.37	µg/L	97
		563.1 -> 269.1	45491			
11Cl-PF3OUdS	9.489	630.9 -> 450.9	209094	19.75	µg/L	99
		632.9 -> 452.9	67583			
9Cl-PF3ONS	8.651	530.8 -> 351.0	354753	18.89	µg/L	98
		532.8 -> 353.0	105797			
ADONA	6.753	376.9 -> 250.9	646874	18.55	µg/L	98
		376.9 -> 84.8	148494			
HFPO-DA	5.928	284.9 -> 168.9	27214	18.26	µg/L	99
		284.9 -> 184.9	3430			
3:3FTCA	3.841	241.0 -> 177.0	8930	19.27	µg/L	98
		241.0 -> 117.0	1198			
5:3FTCA	6.193	341.0 -> 237.1	61225	19.34	µg/L	99
		341.0 -> 217.0	51788			
7:3FTCA	7.605	441.0 -> 316.9	31731	19.49	µg/L	97
		441.0 -> 336.9	58962			
EtFOSA	10.927	526.0 -> 219.0	66580	17.98	µg/L	99
		526.0 -> 169.0	66585			
EtFOSE	10.860	630.0 -> 58.9	76912	97.35	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	57888	18.65	µg/L	98
		511.9 -> 169.0	59769			
MeFOSE	10.602	616.1 -> 58.9	96128	90.01	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	31359	18.44	µg/L	97
		699.1 -> 98.8	18864			
NFDHA	5.445	295.0 -> 201.0	16704	19.15	µg/L	96
		295.0 -> 84.9	8669			
PFMBA	4.787	279.0 -> 85.1	51415	19.17	µg/L	100
PFMPA	3.541	229.0 -> 84.9	47385	19.39	µg/L	100
PFEESA	6.046	314.8 -> 134.9	364332	17.29	µg/L	100
		314.8 -> 82.9	8621			

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

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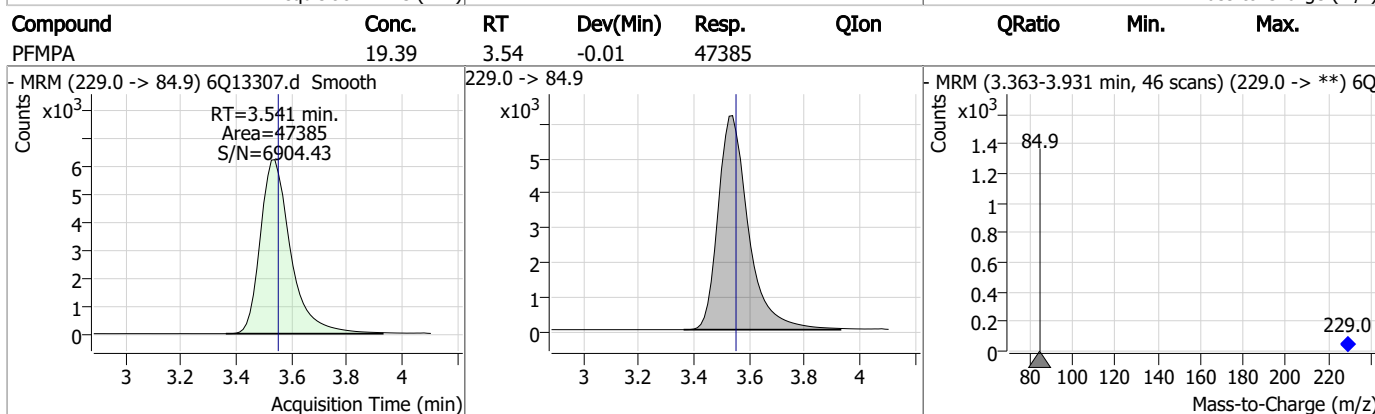
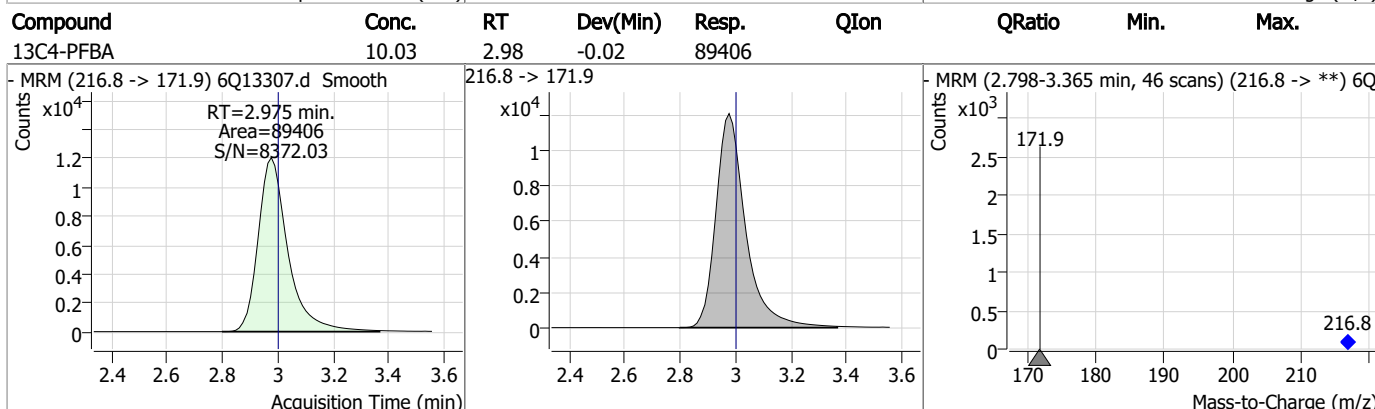
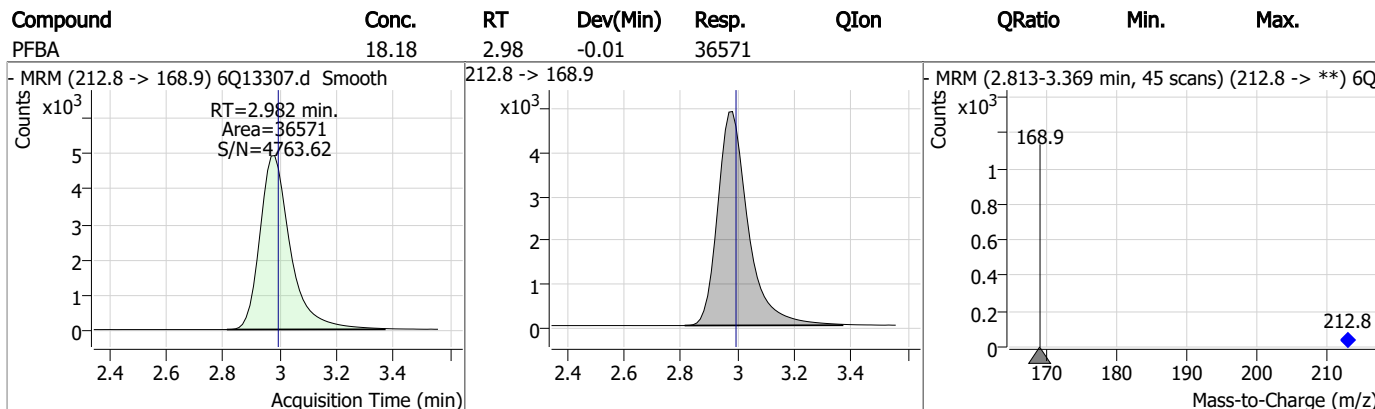
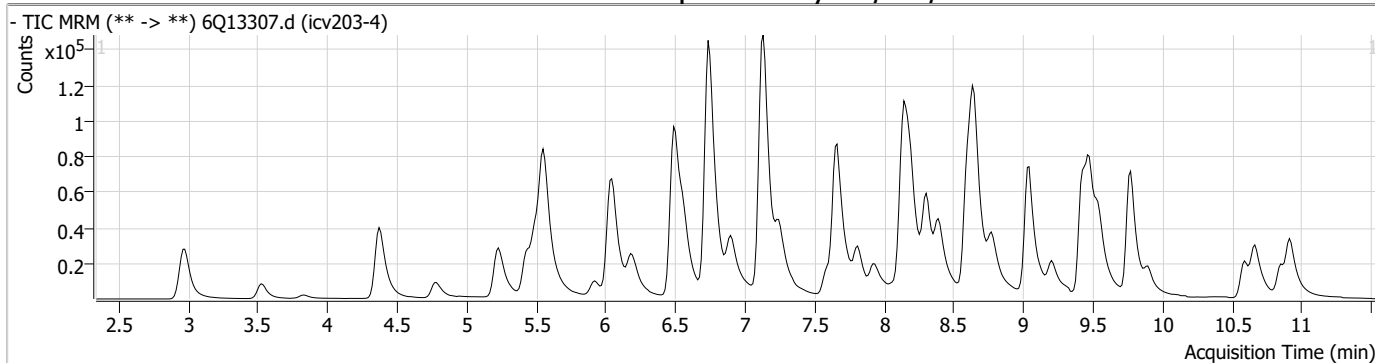
### Perfluorinated Compounds by LC/MS/MS

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

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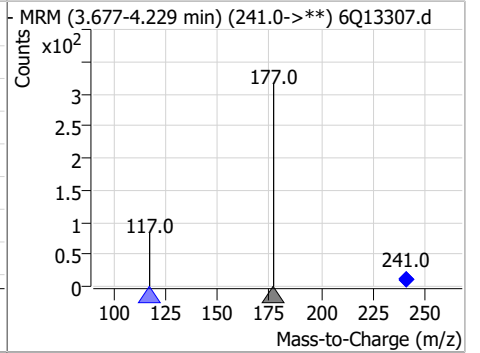
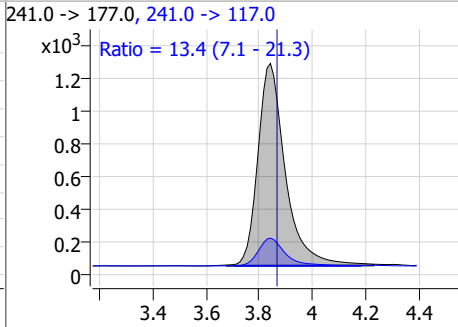
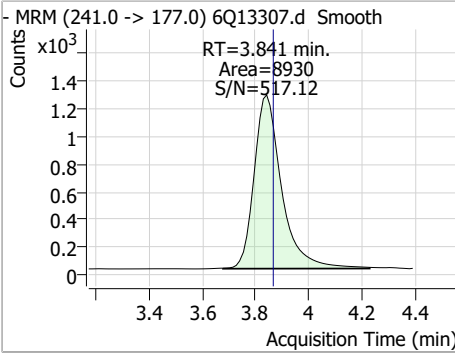
### Perfluorinated Compounds by LC/MS/MS



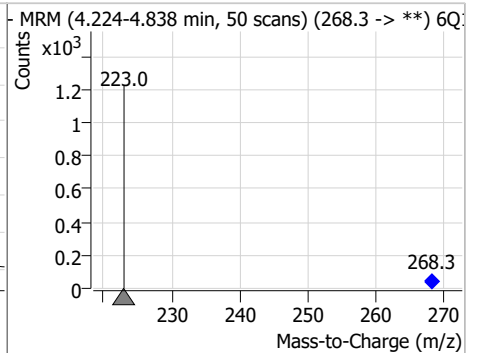
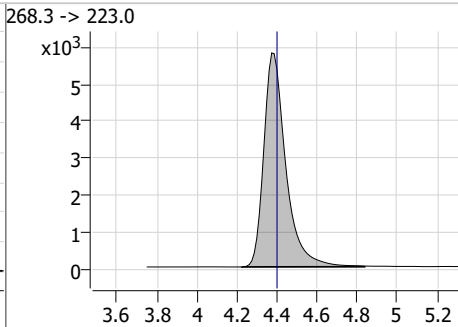
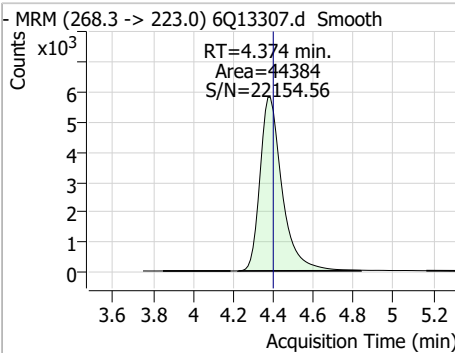
7.7.11  
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### Perfluorinated Compounds by LC/MS/MS

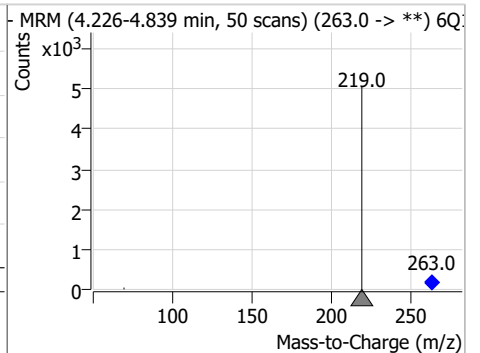
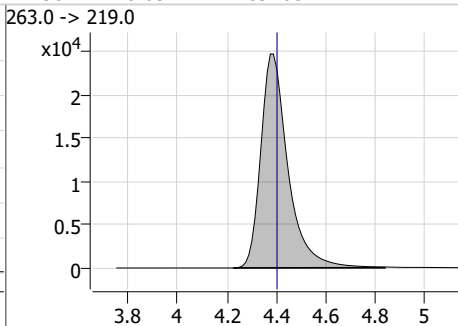
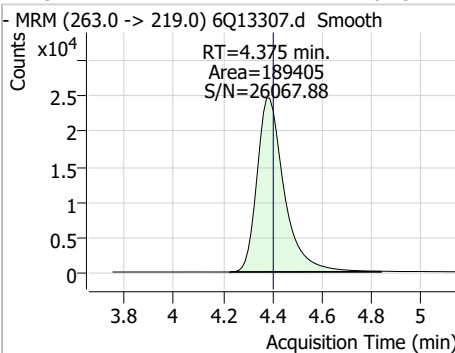
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	19.27	3.84	-0.02	8930	241.0 -> 117.0	13.4	7.1	21.3



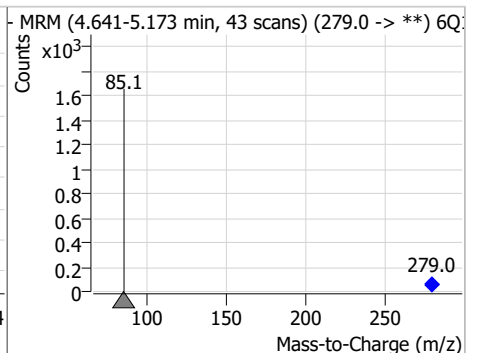
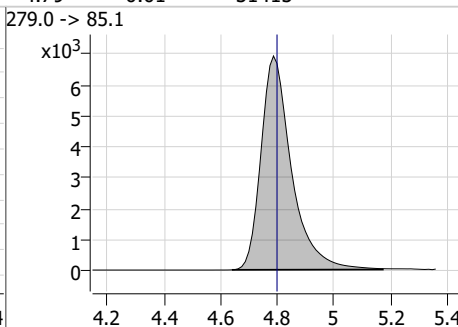
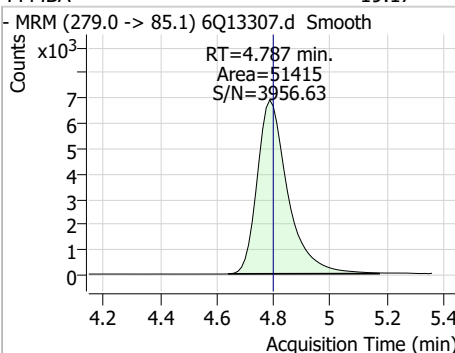
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.17	4.37	-0.03	44384				



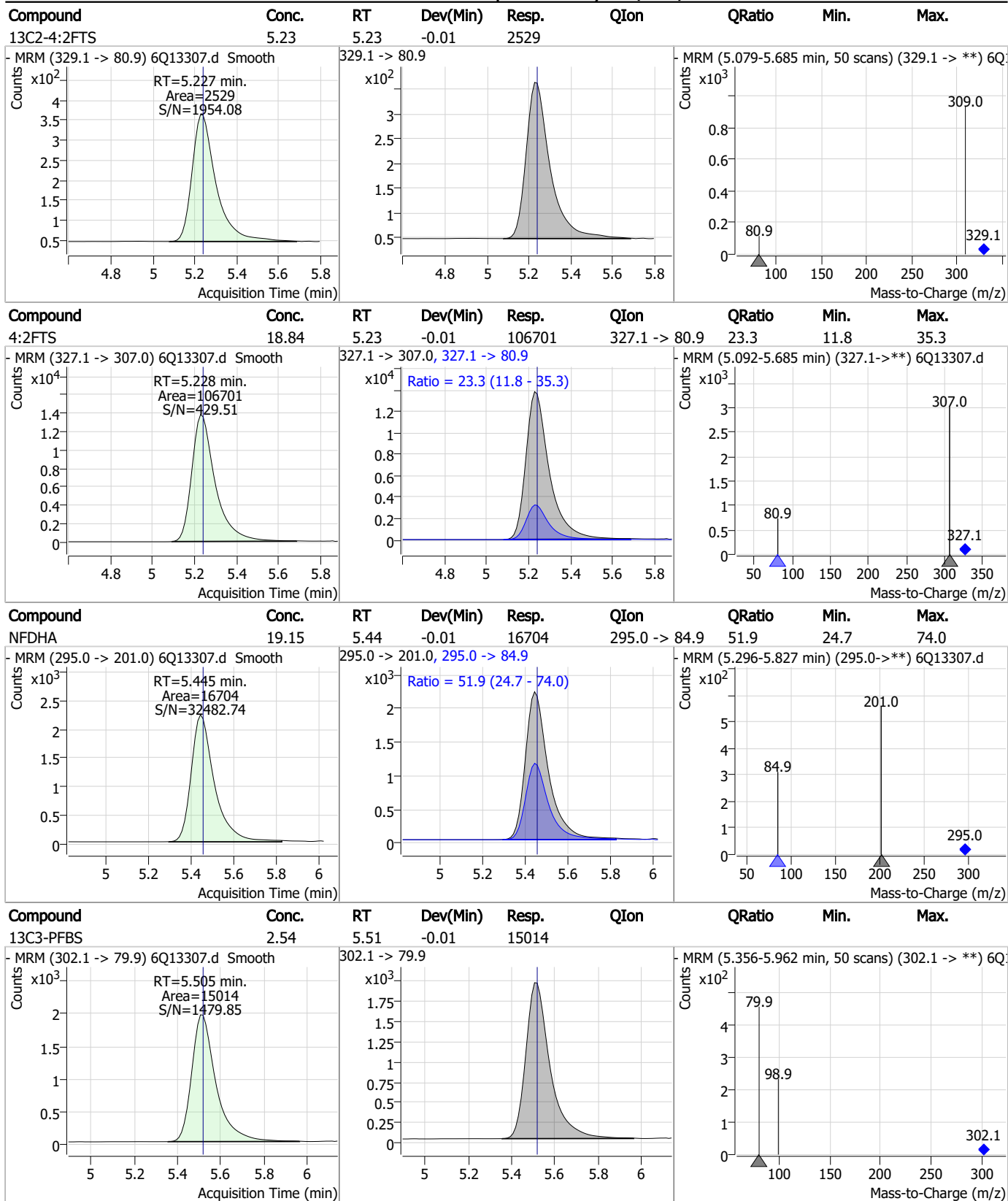
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.23	4.38	-0.03	189405				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	19.17	4.79	-0.01	51415				



### Perfluorinated Compounds by LC/MS/MS

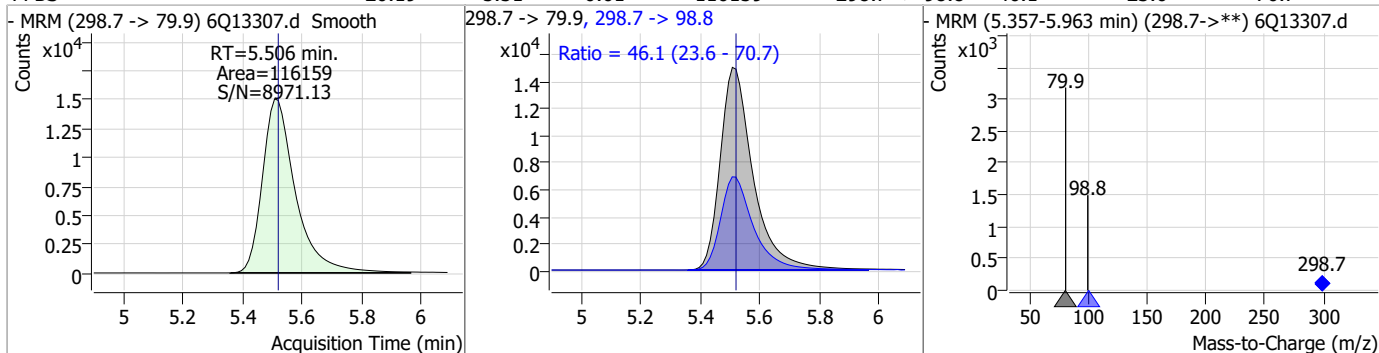


7.7.11  
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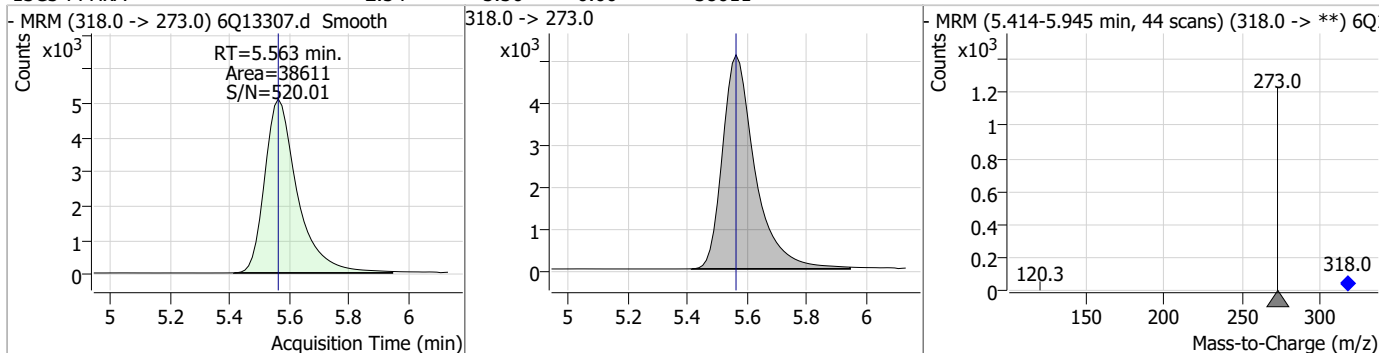


### Perfluorinated Compounds by LC/MS/MS

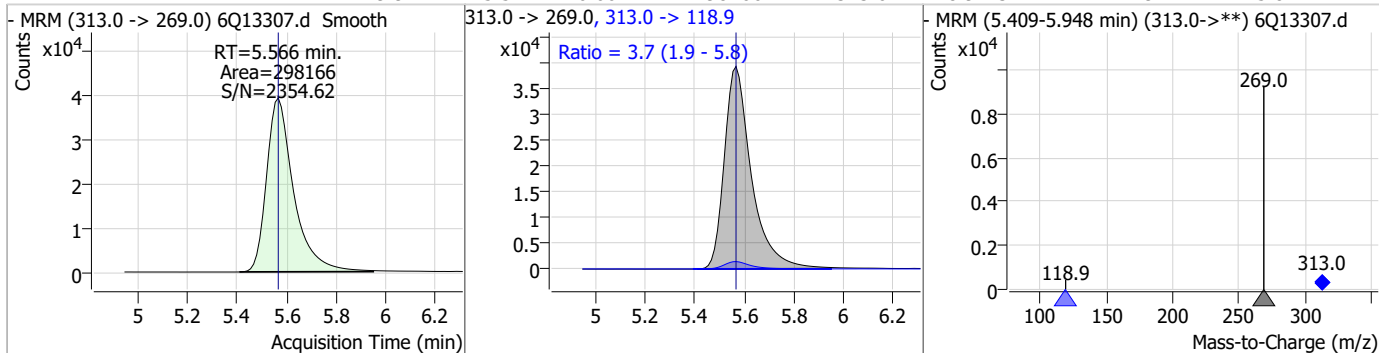
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.19	5.51	-0.01	116159	298.7 -> 98.8	46.1	23.6	70.7



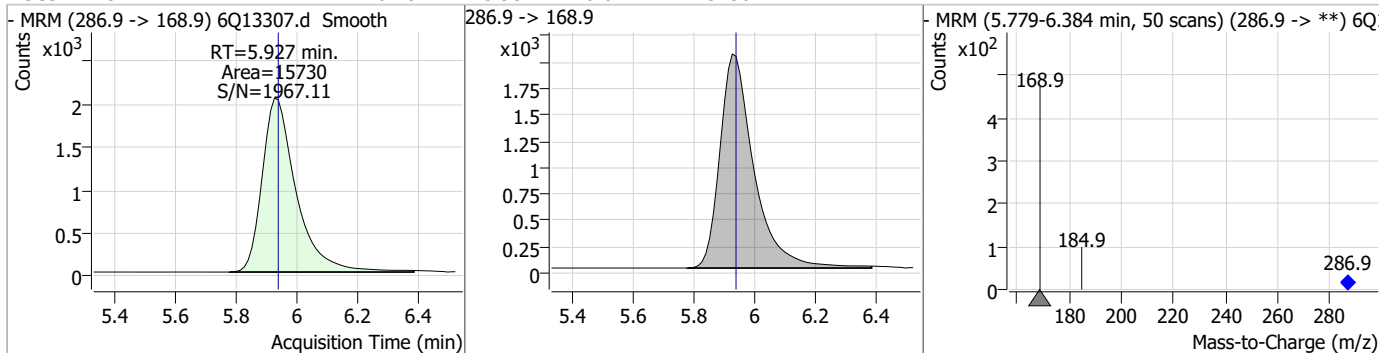
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	5.56	0.00	38611				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.97	5.57	0.00	298166	313.0 -> 118.9	3.7	1.9	5.8

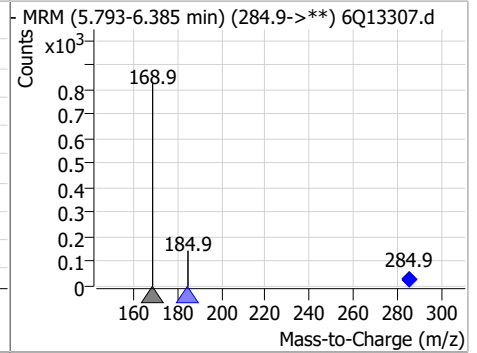
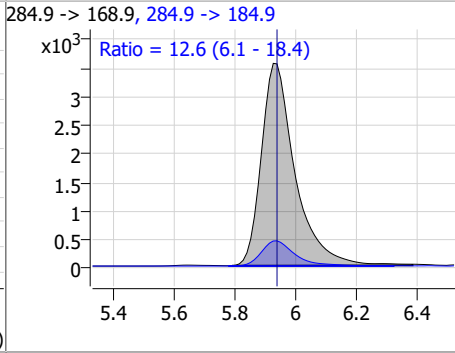
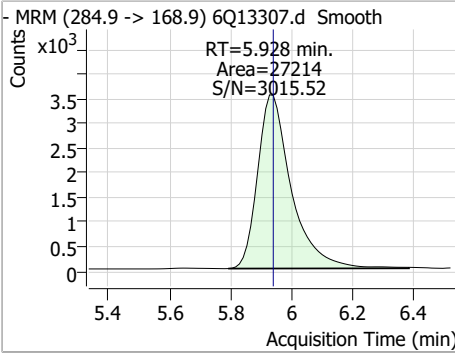


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.48	5.93	-0.01	15730				

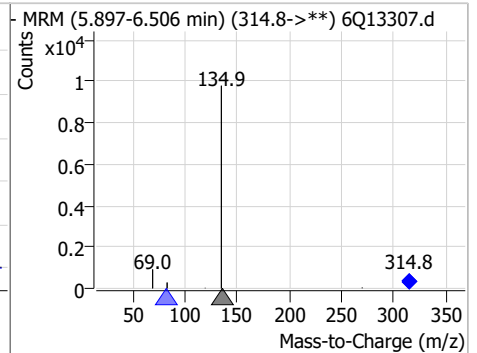
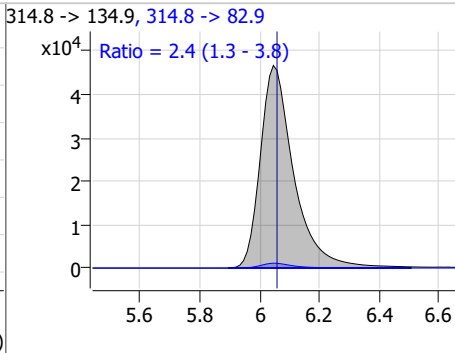
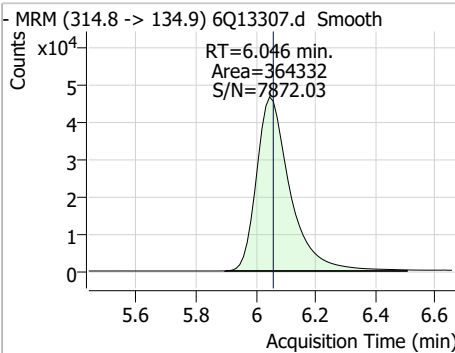


### Perfluorinated Compounds by LC/MS/MS

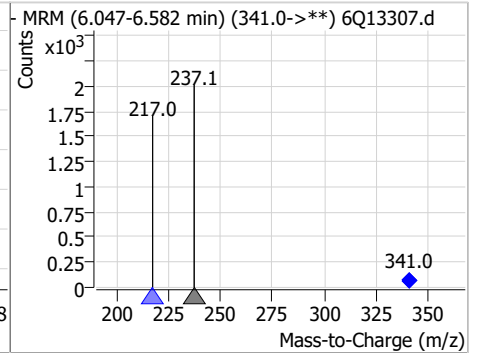
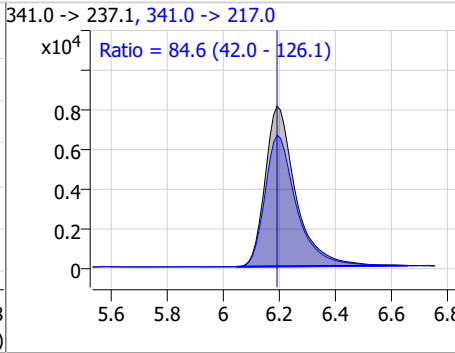
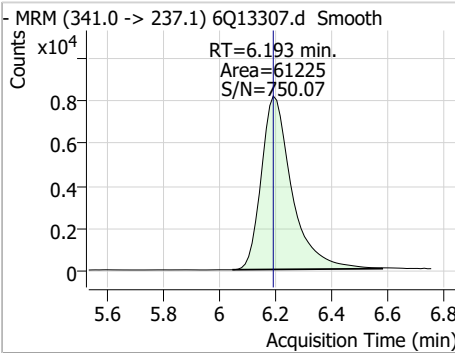
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.26	5.93	-0.01	27214	284.9 -> 184.9	12.6	6.1	18.4



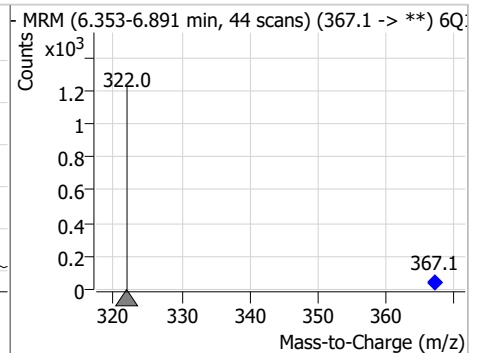
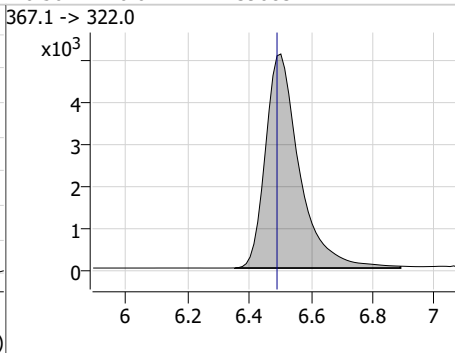
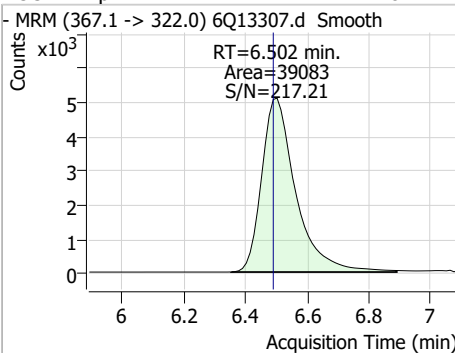
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	17.29	6.05	-0.01	364332	314.8 -> 82.9	2.4	1.3	3.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	19.34	6.19	0.00	61225	341.0 -> 217.0	84.6	42.0	126.1

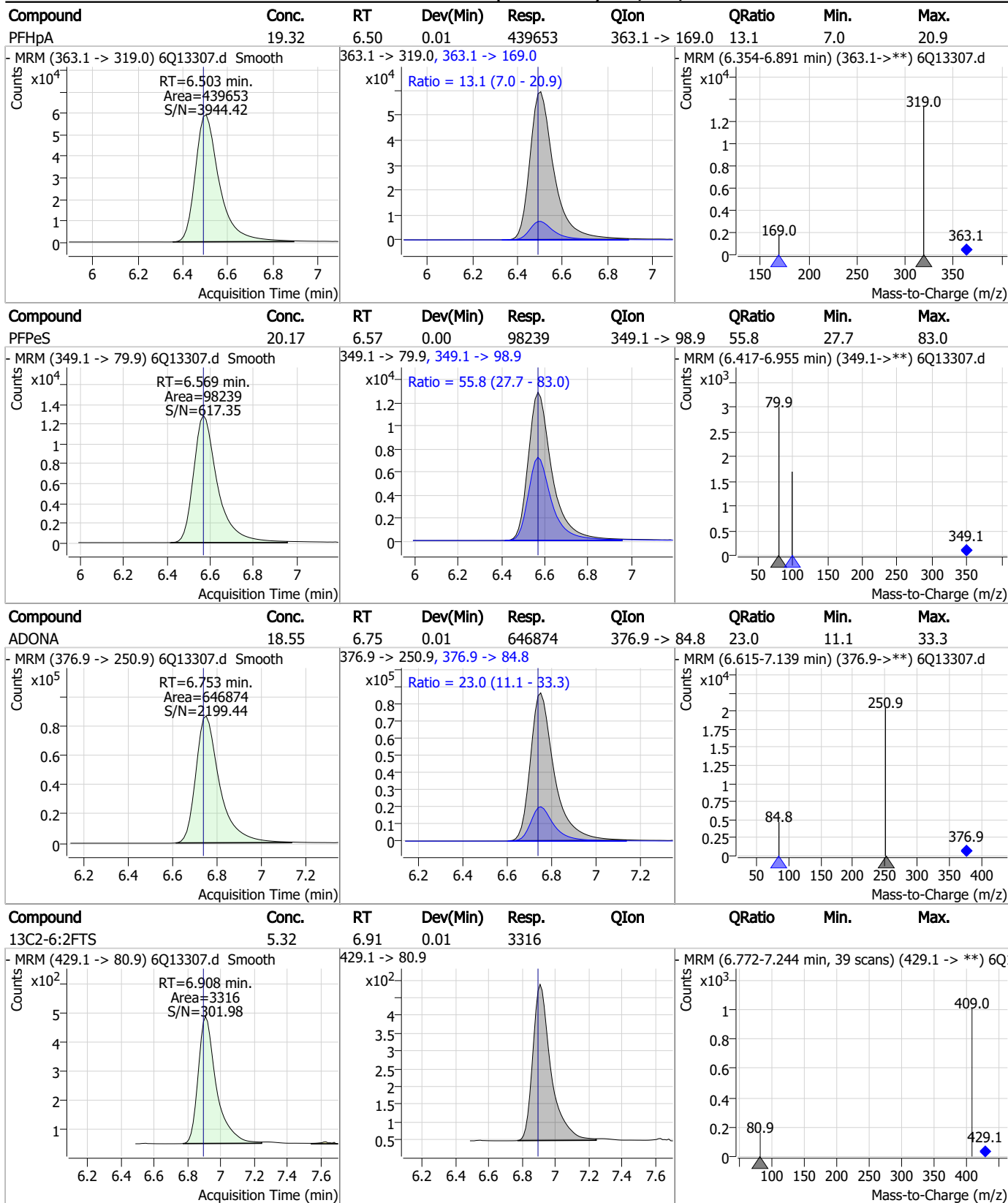


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.48	6.50	0.01	39083	367.1 -> 322.0			



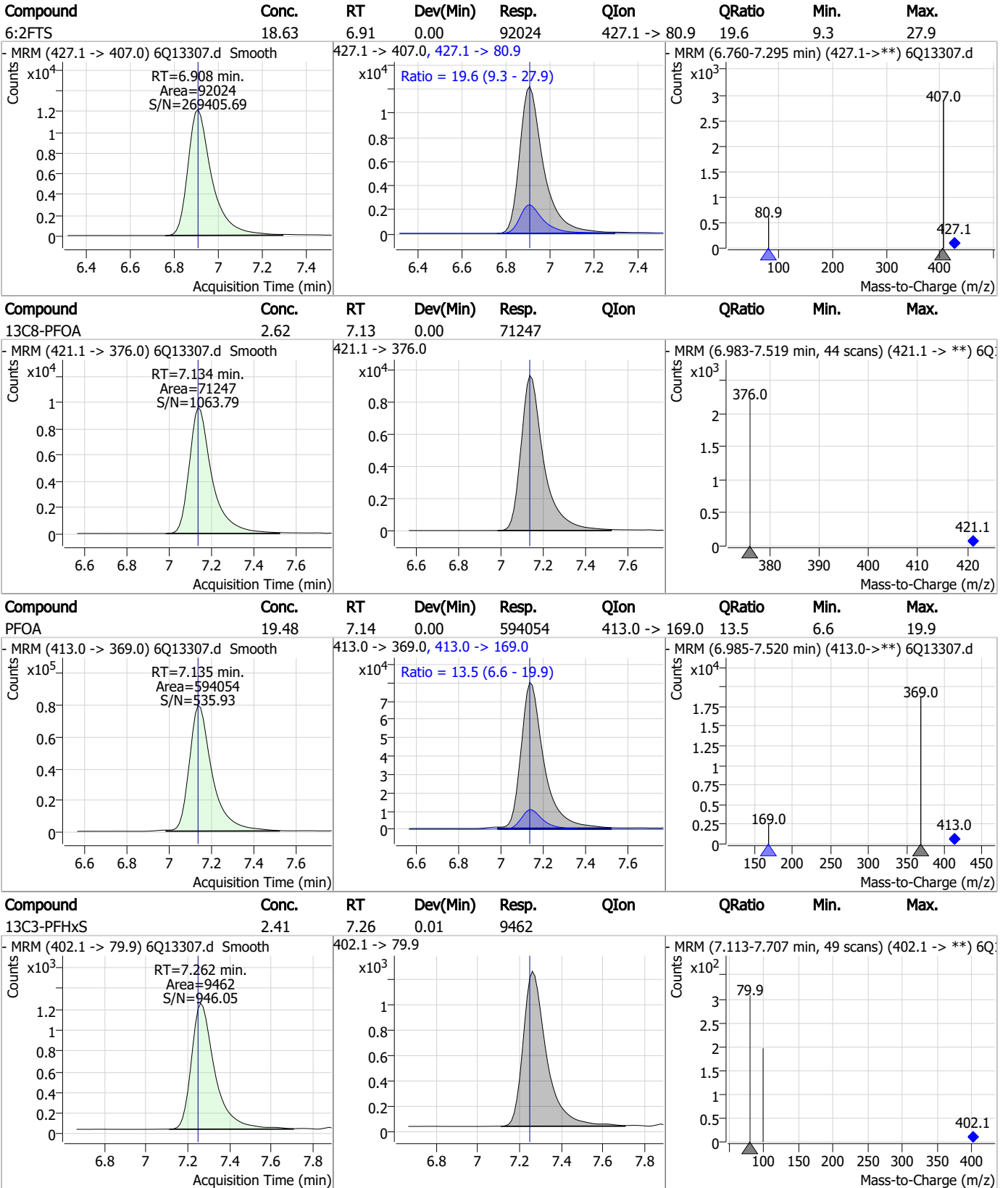
7.7.11  
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### Perfluorinated Compounds by LC/MS/MS



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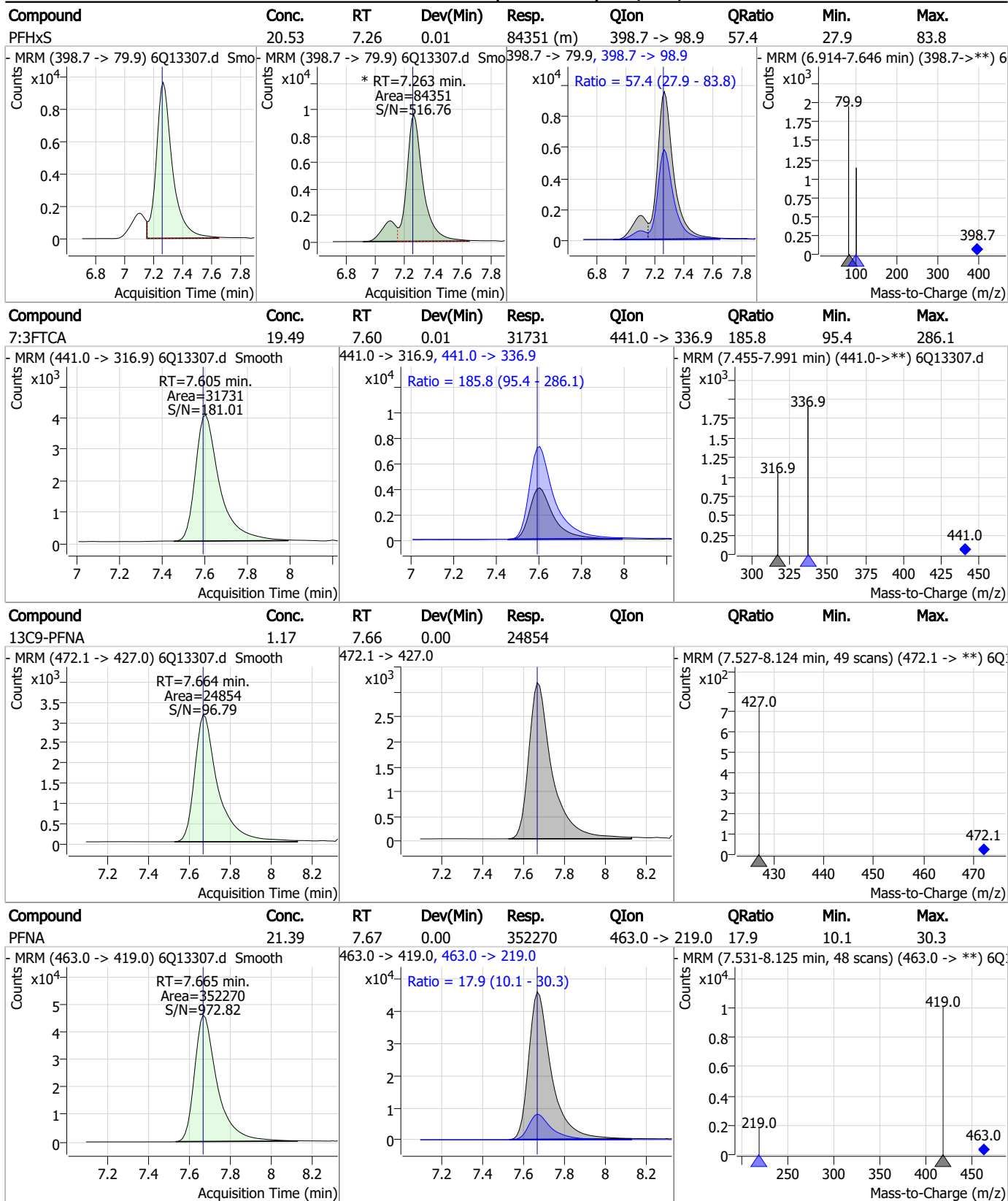
### Perfluorinated Compounds by LC/MS/MS



7.7.11  
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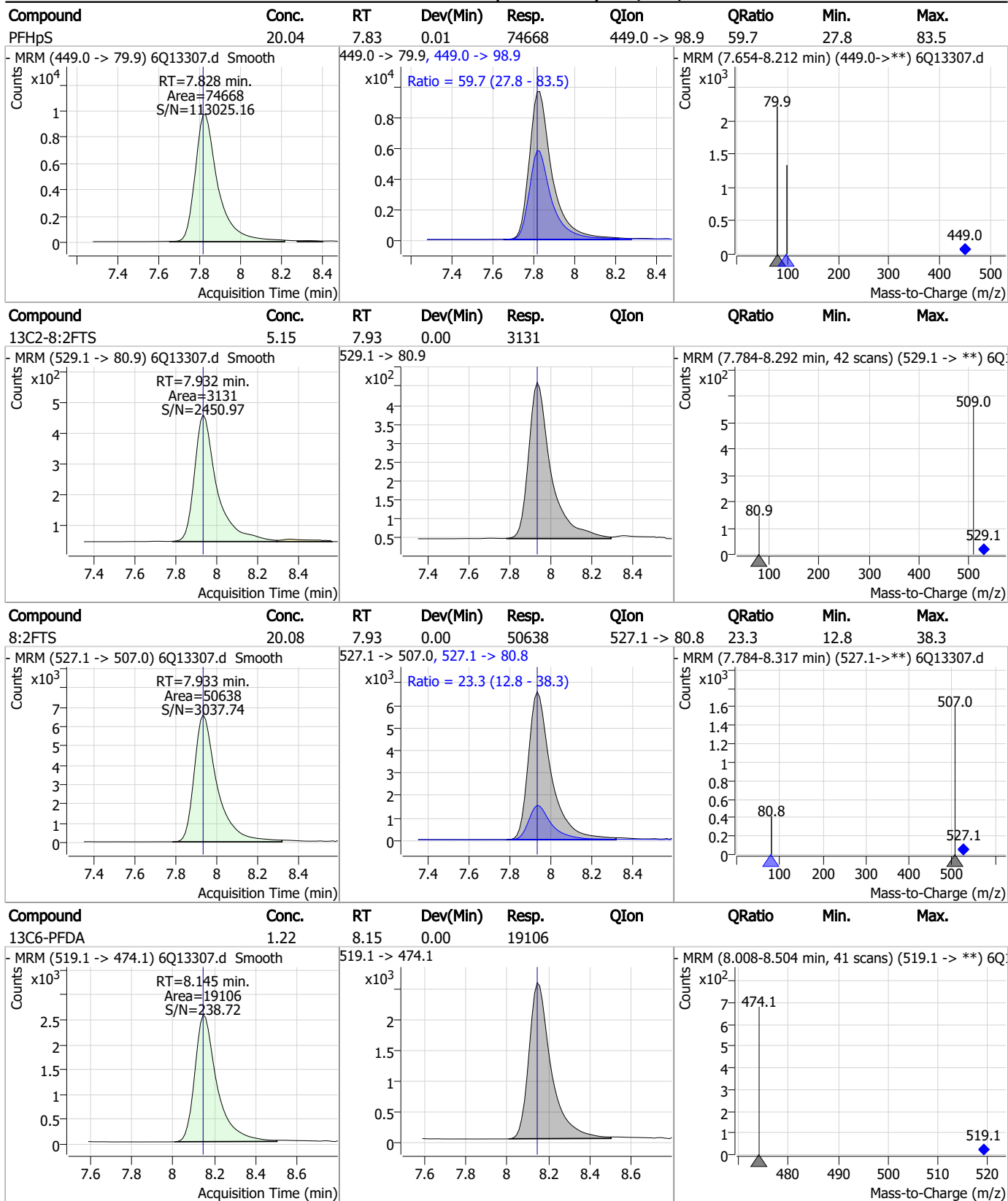


### Perfluorinated Compounds by LC/MS/MS



7.7.11

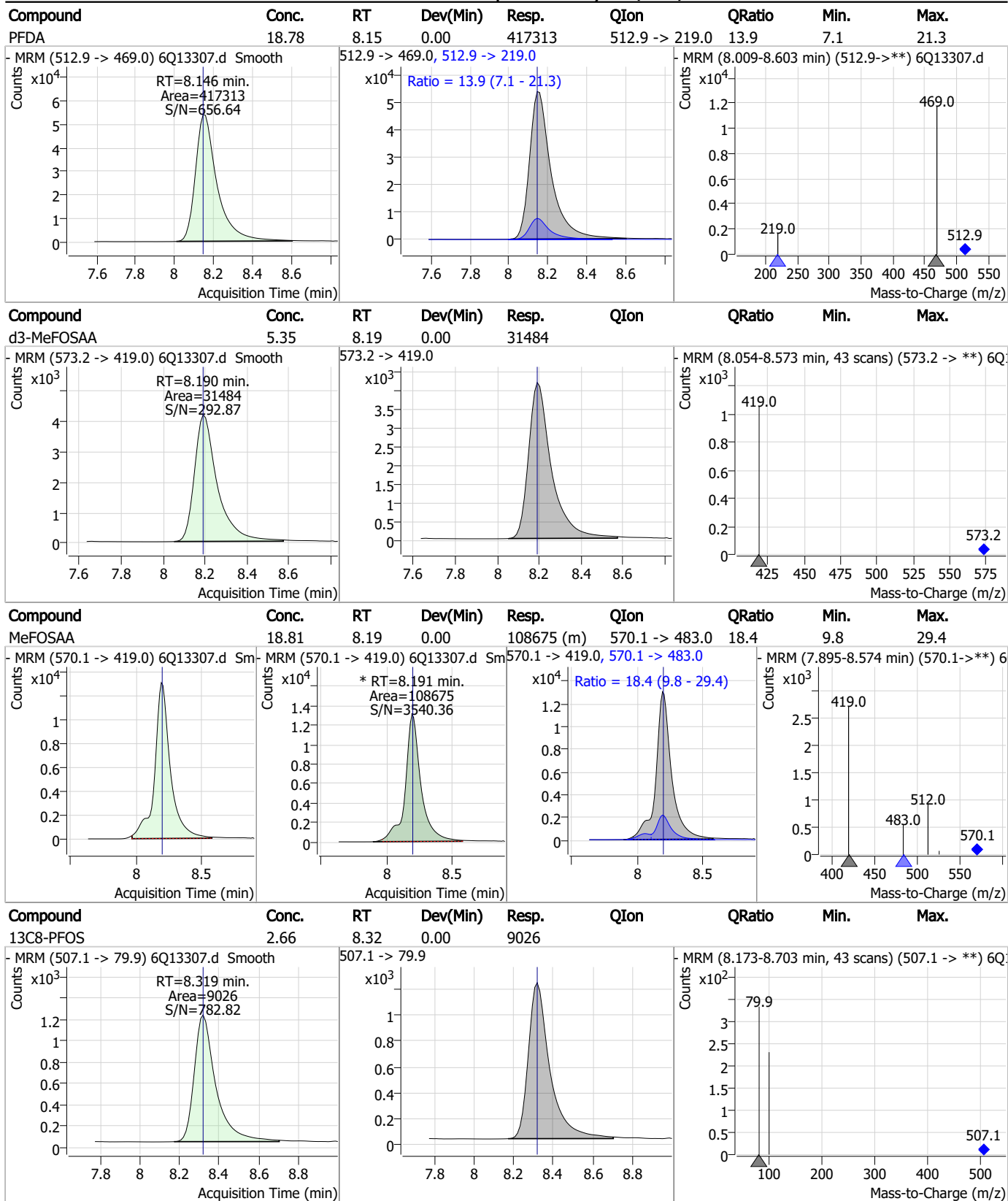
### Perfluorinated Compounds by LC/MS/MS



7.7.11

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### Perfluorinated Compounds by LC/MS/MS

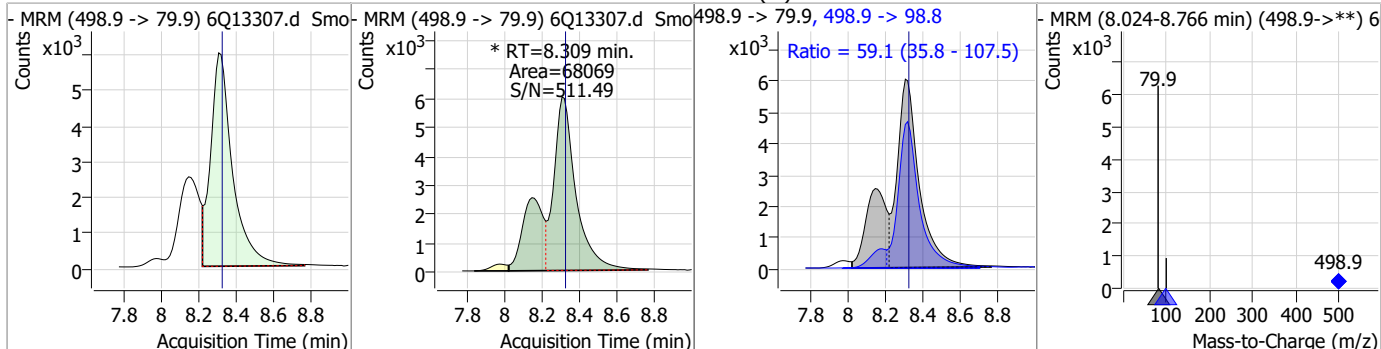


7.7.11

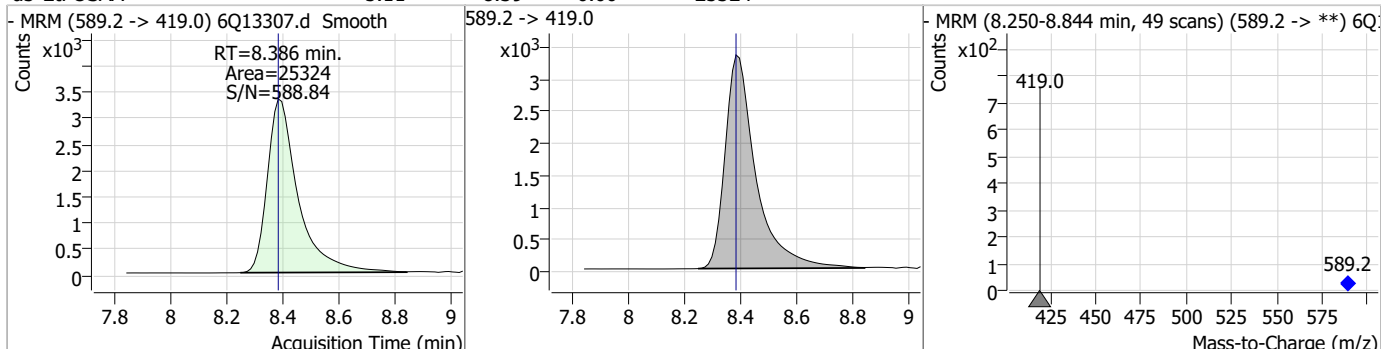
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### Perfluorinated Compounds by LC/MS/MS

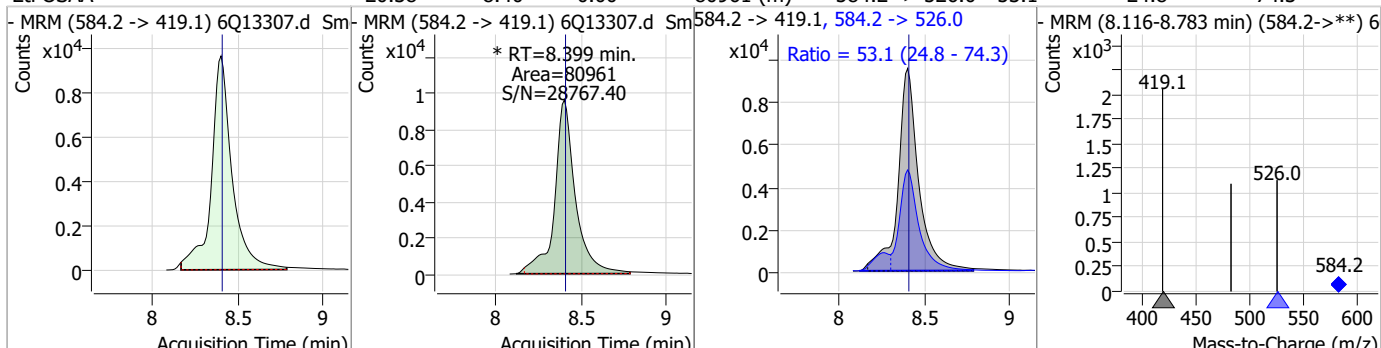
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.84	8.31	-0.01	68069 (m)	498.9 -> 98.8	59.1	35.8	107.5



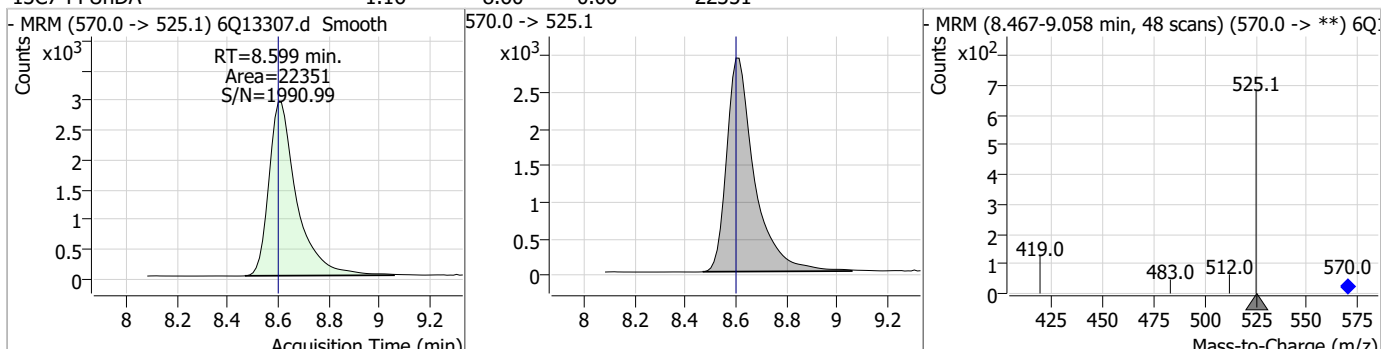
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.11	8.39	0.00	25324				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.38	8.40	0.00	80961 (m)	584.2 -> 526.0	53.1	24.8	74.3

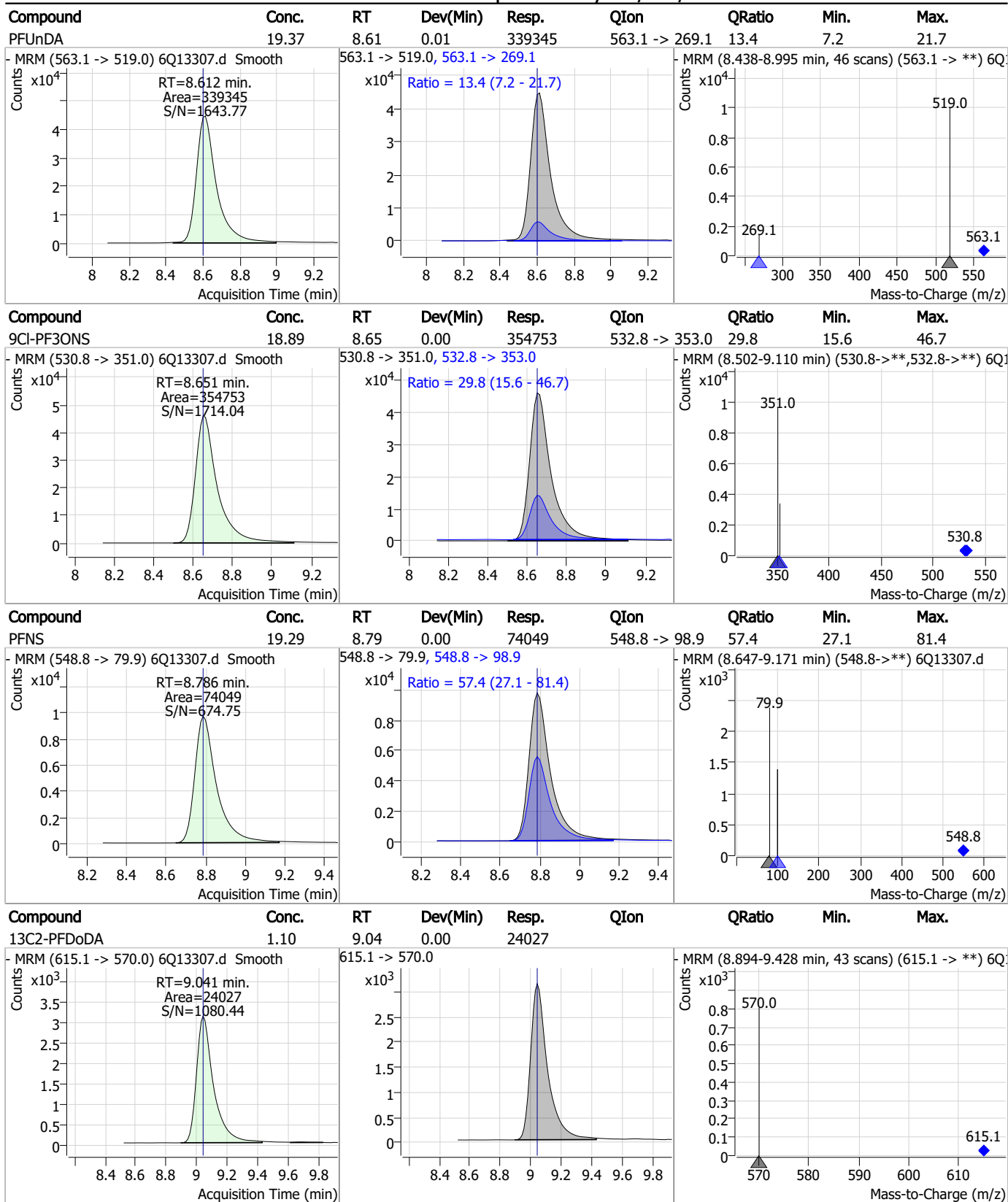


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.16	8.60	0.00	22351				





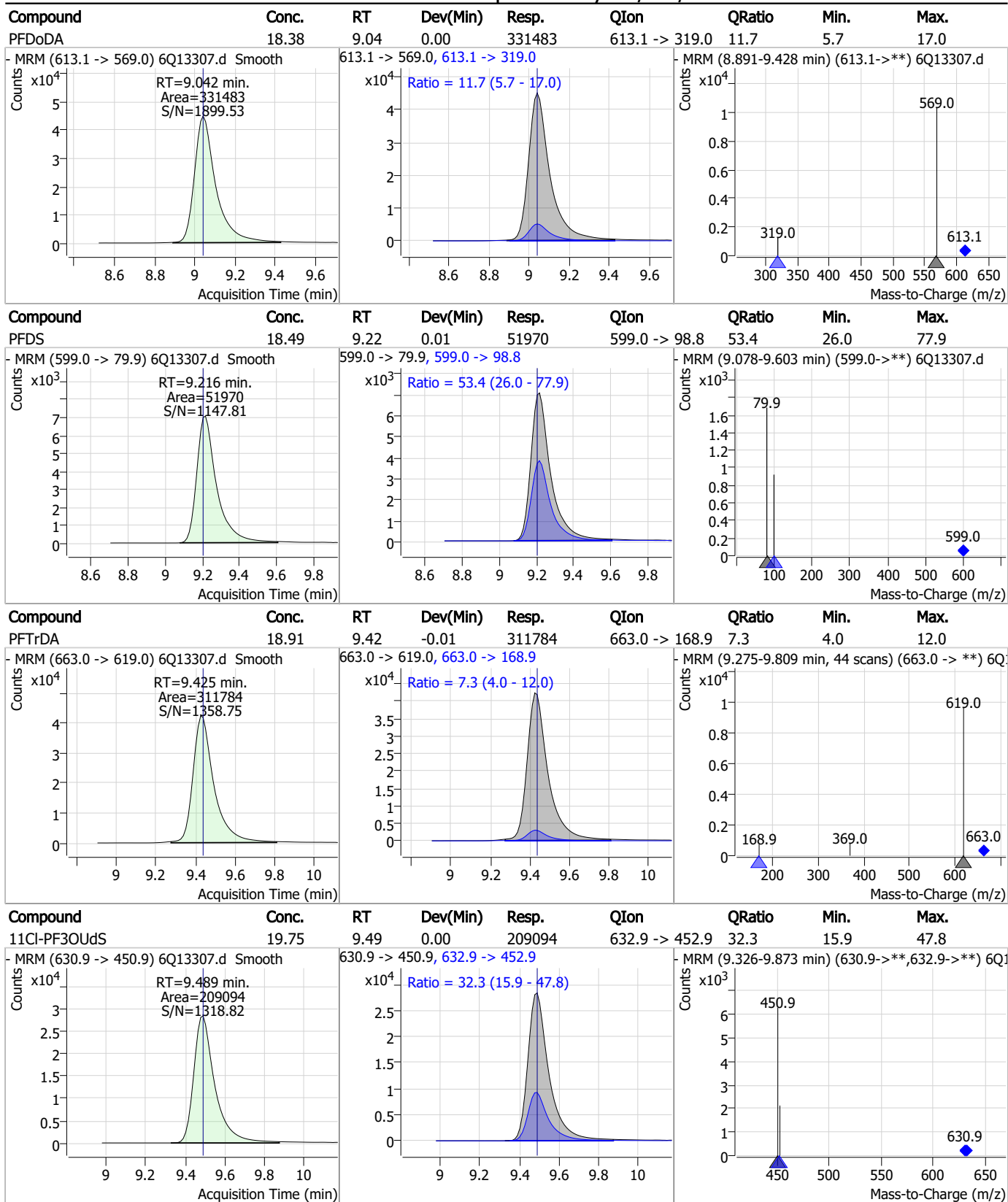
### Perfluorinated Compounds by LC/MS/MS



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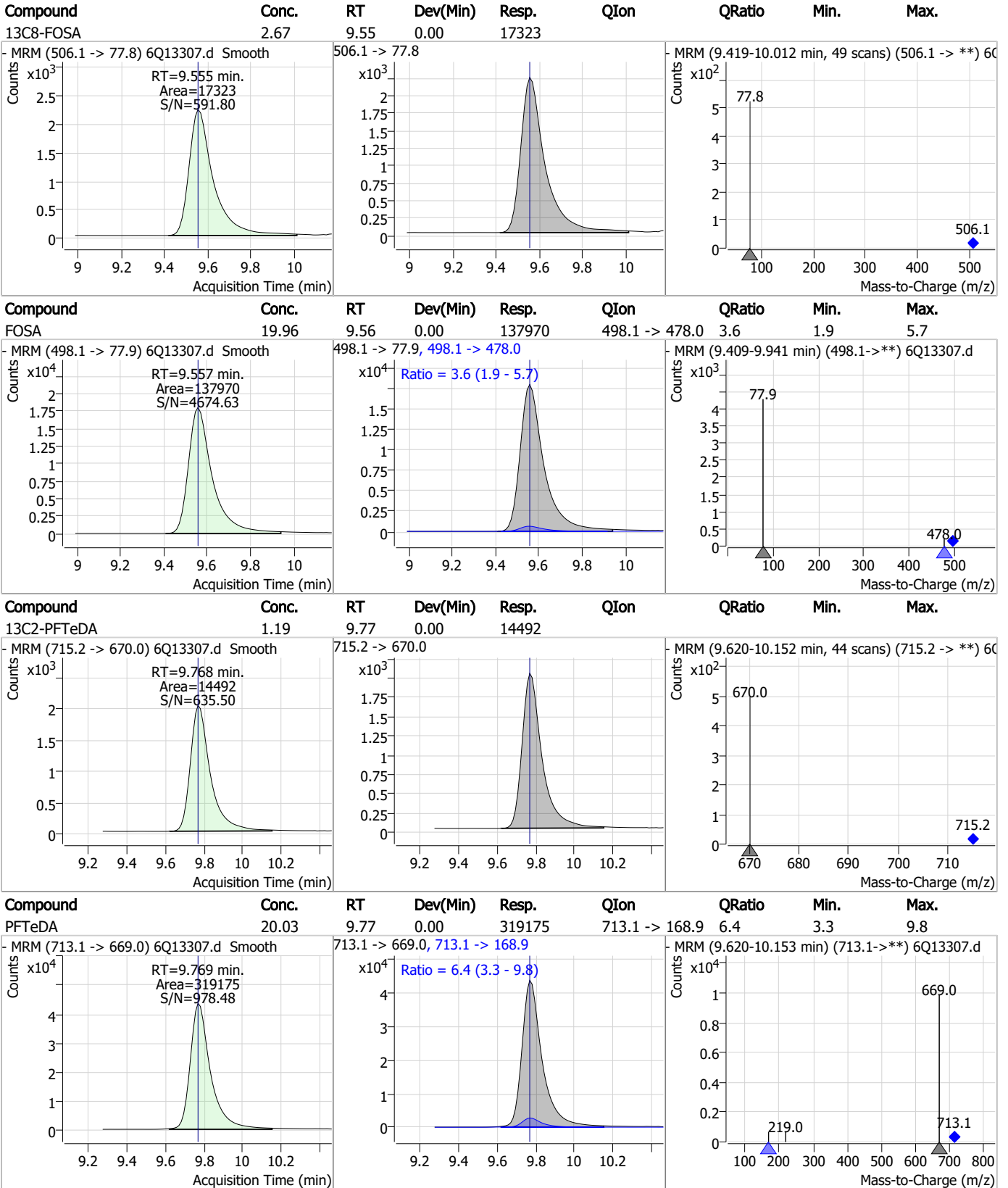
### Perfluorinated Compounds by LC/MS/MS



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

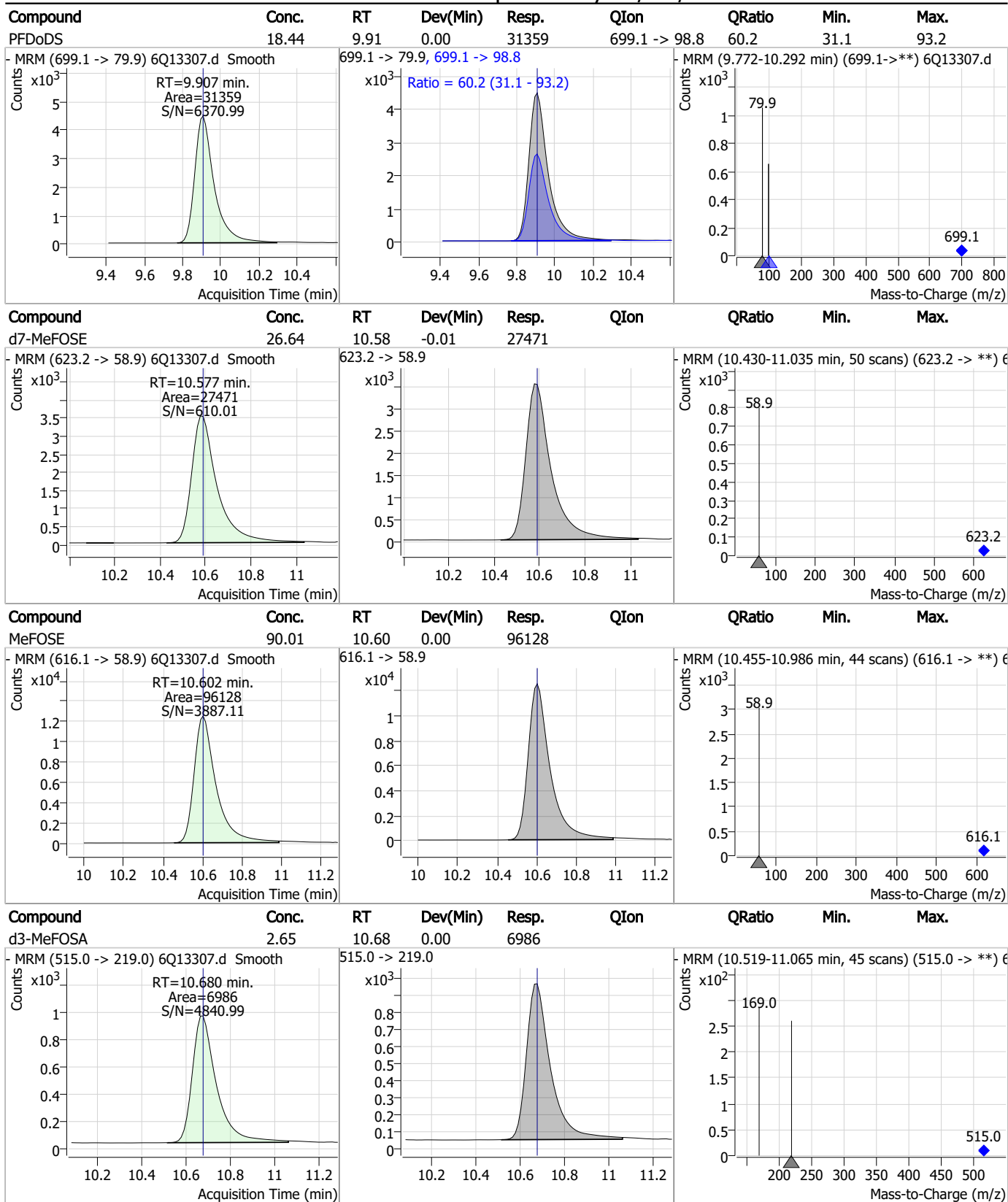


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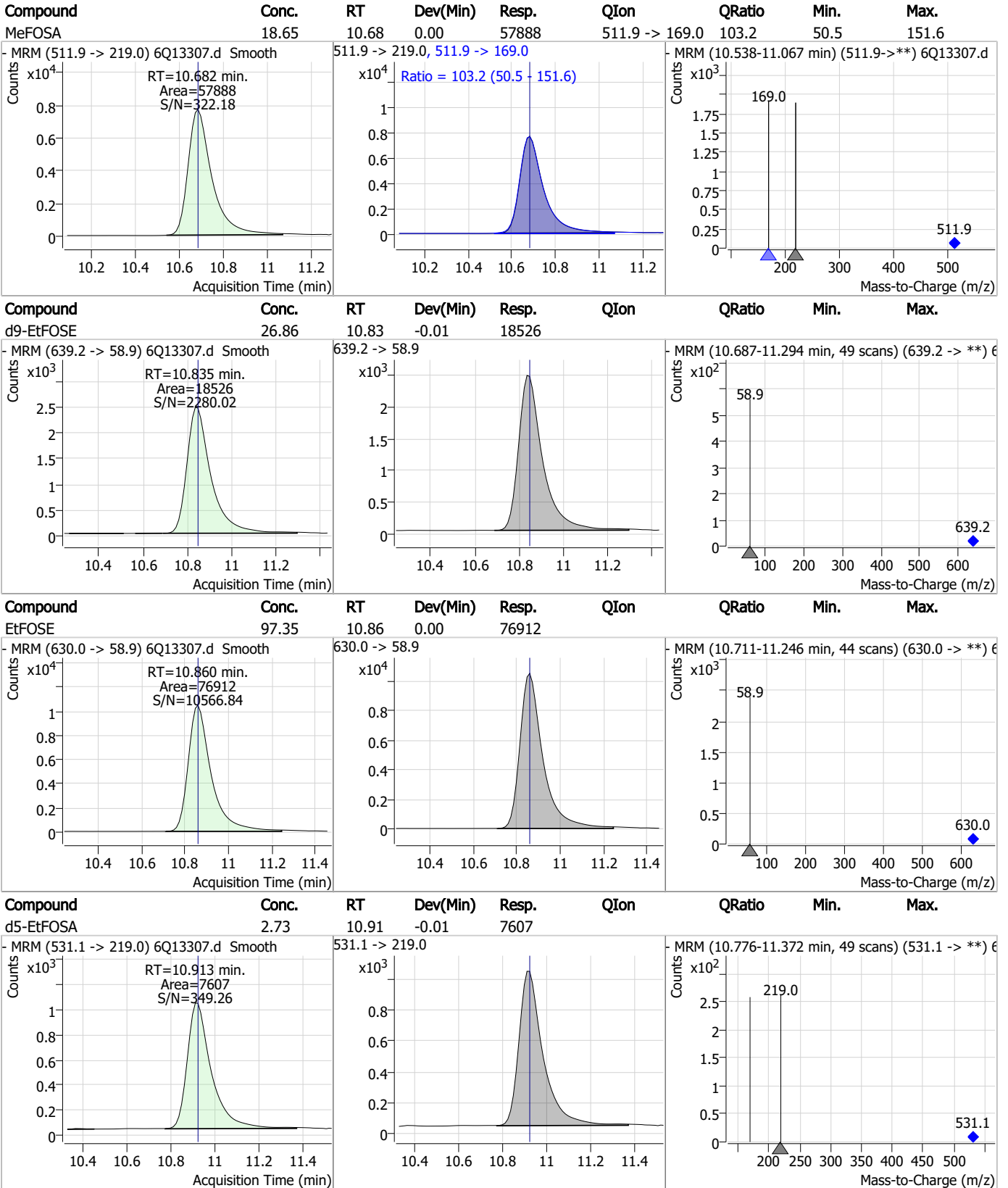
### Perfluorinated Compounds by LC/MS/MS



7.7.11

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### Perfluorinated Compounds by LC/MS/MS

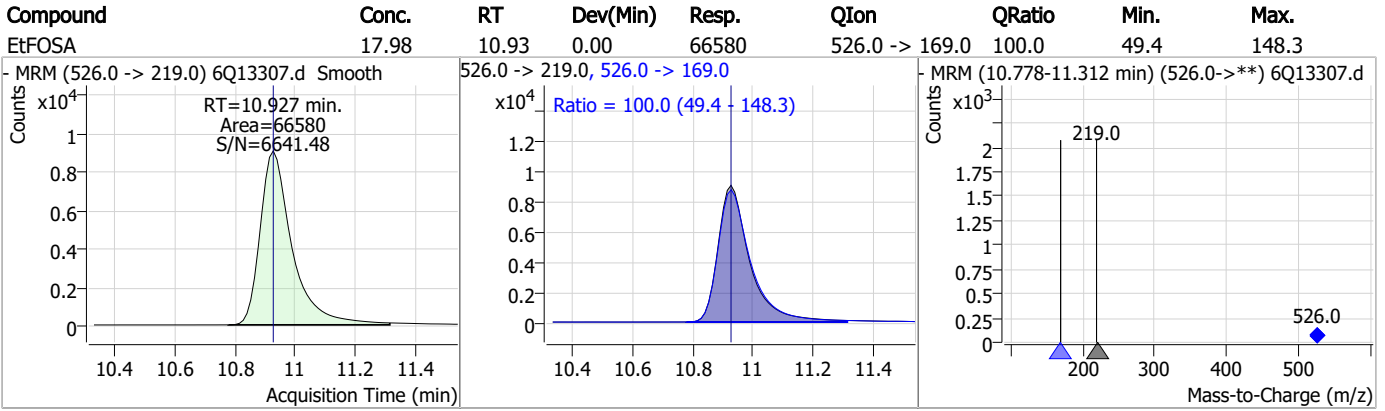


7.7.11

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Perfluorinated Compounds by LC/MS/MS



7.7.11

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# Manual Integration Approval Summary

Sample Number: S6Q203-ICV203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13307.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 15:05      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.11.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13308.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 3:24:12 PM  
 Sample Name : cc203-4  
 Vial : P1-A5  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	3.000	216.8 -> 171.9	94875	10.00 µg/L	0.000
M5-PFPeA	4.400	268.3 -> 223.0	47705	5.00 µg/L	0.000
M5-PFHxA	5.575	318.0 -> 273.0	41206	2.50 µg/L	0.012
M4-PFHpA	6.502	367.1 -> 322.0	42272	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	75108	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	27090	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	20598	1.25 µg/L	0.000
M7-PFUnDA	8.612	570.0 -> 525.1	24739	1.25 µg/L	0.012
M2-PFDoDA	9.041	615.1 -> 570.0	28330	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	15665	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	19571	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	16249	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	10562	2.50 µg/L	0.012
M8-PFOS	8.320	507.1 -> 79.9	9494	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2980	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	3429	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	3362	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	33202	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	16360	10.00 µg/L	0.000
M5-EtFOSAA	8.398	589.2 -> 419.0	28090	5.00 µg/L	0.012
M7-MeFOSE	10.589	623.2 -> 58.9	29255	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	19628	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	8161	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	7118	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	11546	2.50 µg/L	0.000
13C3-PFBA	3.004	216.0 -> 172.0	42789	5.00 µg/L	0.012
18O2-PFHxS	7.261	403.0 -> 83.9	7446	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	90795	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	26901	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	29360	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	42148	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2980	6.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.7%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3429	5.39 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3362	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C2-PFDoDA	9.041	615.1 -> 570.0	28330	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.6%		
13C2-PFTeDA	9.768	715.2 -> 670.0	15665	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C3-PFBS	5.518	302.1 -> 79.9	16249	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C3-PFHxS	7.262	402.1 -> 79.9	10562	2.64 µg/L	0.012

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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C4-PFBA	3.000	216.8 -> 171.9	94875	9.93 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C4-PFHpA	6.502	367.1 -> 322.0	42272	2.39 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C5-PFHxA	5.575	318.0 -> 273.0	41206	2.42 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C5-PFPeA	4.400	268.3 -> 223.0	47705	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C6-PFDA	8.145	519.1 -> 474.1	20598	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C7-PFUnDA	8.612	570.0 -> 525.1	24739	1.32 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C8-FOSA	9.555	506.1 -> 77.8	19571	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C8-PFOA	7.134	421.1 -> 376.0	75108	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-PFOS	8.320	507.1 -> 79.9	9494	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C9-PFNA	7.664	472.1 -> 427.0	27090	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%	
d3-MeFOSAA	8.190	573.2 -> 419.0	33202	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C3-HFPO-DA	5.940	286.9 -> 168.9	16360	9.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d3-MeFOSA	10.680	515.0 -> 219.0	7118	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
d5-EtFOSAA	8.398	589.2 -> 419.0	28090	5.02 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d7-MeFOSE	10.589	623.2 -> 58.9	29255	25.13 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d9-EtFOSE	10.847	639.2 -> 58.9	19628	25.22 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
d5-EtFOSA	10.925	531.1 -> 219.0	8161	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.240	327.1 -> 307.0	58409	8.75 µg/L	92
		327.1 -> 80.9	11522		
6:2FTS	6.908	427.1 -> 407.0	46602	9.12 µg/L	99
		427.1 -> 80.9	8508		
8:2FTS	7.933	527.1 -> 507.0	24237	8.95 µg/L	97
		527.1 -> 80.8	5815		
EtFOSAA	8.399	584.2 -> 419.1	10319	2.34 µg/L	m 89
		584.2 -> 526.0	5871		
FOSA	9.557	498.1 -> 77.9	17444	2.23 µg/L	99
		498.1 -> 478.0	743		
MeFOSAA	8.191	570.1 -> 419.0	13702	2.25 µg/L	m 97
		570.1 -> 483.0	2902		
PFBA	3.007	212.8 -> 168.9	19644	9.20 µg/L	100
PFBS	5.518	298.7 -> 79.9	13095	2.10 µg/L	95
		298.7 -> 98.8	5757		
PFDA	8.146	512.9 -> 469.0	52392	2.19 µg/L	100
		512.9 -> 219.0	7370		
PFDODA	9.042	613.1 -> 569.0	45476	2.14 µg/L	96
		613.1 -> 319.0	5805		
PFDS	9.216	599.0 -> 79.9	6528	2.21 µg/L	95

7.7.12  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.503	599.0 -> 98.8	3612	2.34	µg/L	100
		363.1 -> 319.0	57496			
PFHpS	7.816	363.1 -> 169.0	7957	2.25	µg/L	97
		449.0 -> 79.9	8811			
PFHxA	5.566	449.0 -> 98.9	5077	2.39	µg/L	100
		313.0 -> 269.0	38120			
PFHxS	7.263	313.0 -> 118.9	1525	2.12	µg/L	100
		398.7 -> 79.9	9728			
PFNA	7.665	398.7 -> 98.9	5417	2.13	µg/L	98
		463.0 -> 419.0	38187			
PFNS	8.786	463.0 -> 219.0	7443	2.36	µg/L	100
		548.8 -> 79.9	9542			
PFOA	7.135	548.8 -> 98.9	5178	2.29	µg/L	99
		413.0 -> 369.0	73658			
PFOS	8.309	413.0 -> 169.0	10224	2.21	µg/L	91
		498.9 -> 79.9	9411			
PFPeA	4.402	498.9 -> 98.8	6029	4.57	µg/L	100
		263.0 -> 219.0	46041			
PFPeS	6.569	349.1 -> 79.9	12422	2.29	µg/L	97
		349.1 -> 98.9	6626			
PFTeDA	9.769	713.1 -> 669.0	39438	2.29	µg/L	99
		713.1 -> 168.9	2497			
PFTrDA	9.425	663.0 -> 619.0	45608	2.35	µg/L	99
		663.0 -> 168.9	3432			
PFUnDA	8.612	563.1 -> 519.0	44807	2.31	µg/L	99
		563.1 -> 269.1	6265			
11CI-PF3OUdS	9.489	630.9 -> 450.9	96979	8.81	µg/L	99
		632.9 -> 452.9	30474			
9CI-PF3ONS	8.651	530.8 -> 351.0	161288	8.26	µg/L	93
		532.8 -> 353.0	56424			
ADONA	6.741	376.9 -> 250.9	316574	8.73	µg/L	99
		376.9 -> 84.8	68720			
HFPO-DA	5.940	284.9 -> 168.9	13924	8.98	µg/L	98
		284.9 -> 184.9	1830			
3:3FTCA	3.866	241.0 -> 177.0	5933	11.91	µg/L	95
		241.0 -> 117.0	721			
5:3FTCA	6.206	341.0 -> 237.1	198757	58.83	µg/L	100
		341.0 -> 217.0	166768			
7:3FTCA	7.605	441.0 -> 316.9	106428	61.25	µg/L	94
		441.0 -> 336.9	193047			
EtFOSA	10.927	526.0 -> 219.0	8690	2.19	µg/L	100
		526.0 -> 169.0	8599			
EtFOSE	10.860	630.0 -> 58.9	18962	22.65	µg/L	100
		511.9 -> 219.0	7854			
MeFOSA	10.682	511.9 -> 169.0	7781	2.48	µg/L	98
		616.1 -> 58.9	25142			
MeFOSE	10.602	699.1 -> 79.9	3873	22.11	µg/L	100
		699.1 -> 98.8	2396			
PFDoDS	9.907	295.0 -> 201.0	4456	2.17	µg/L	100
		295.0 -> 84.9	2279			
NFDHA	5.457	279.0 -> 85.1	13551	4.79	µg/L	97
		229.0 -> 84.9	12270			
PFMBA	4.800	314.8 -> 134.9	97918	4.35	µg/L	99
		314.8 -> 82.9	2215			

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



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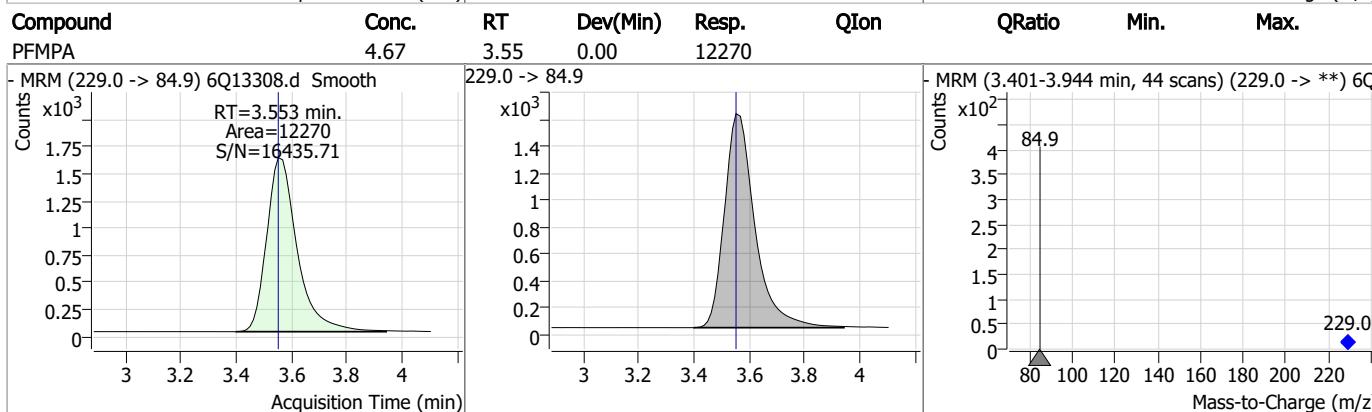
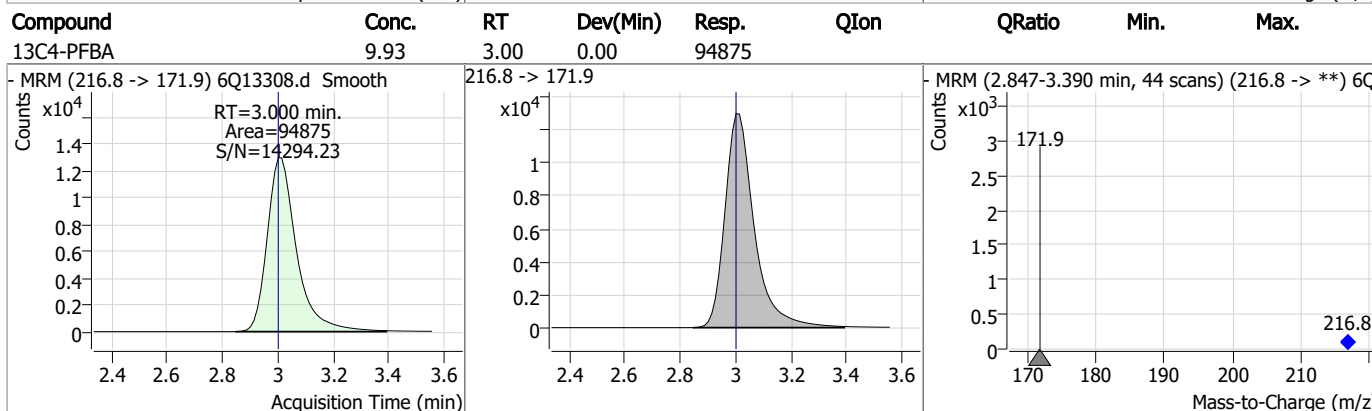
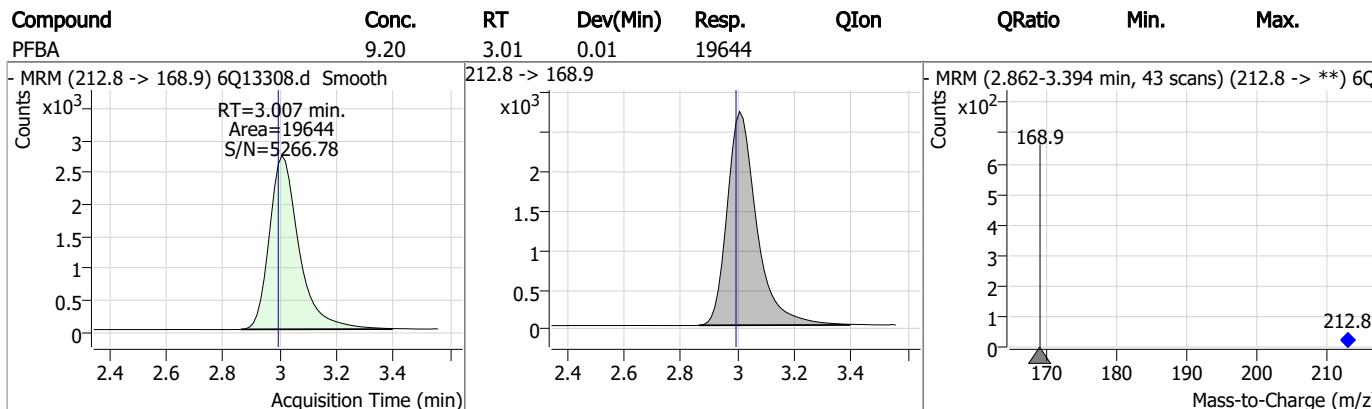
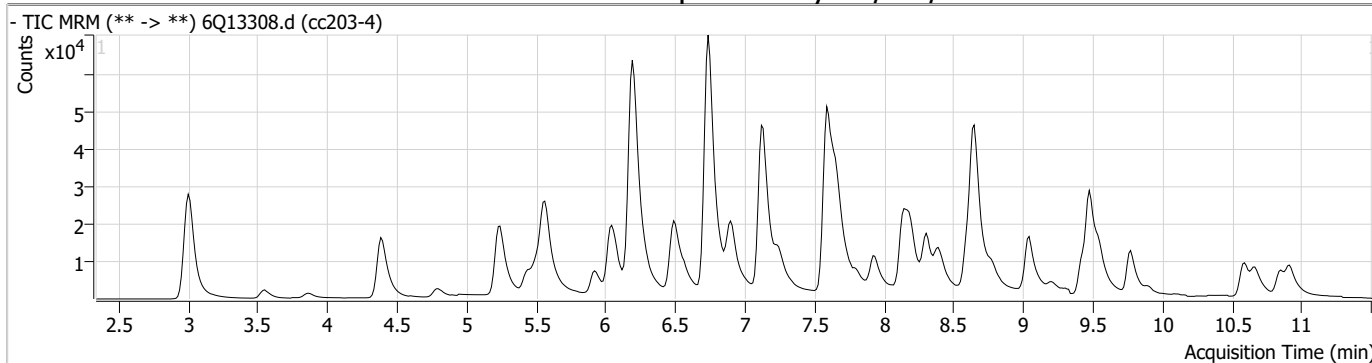
### Perfluorinated Compounds by LC/MS/MS

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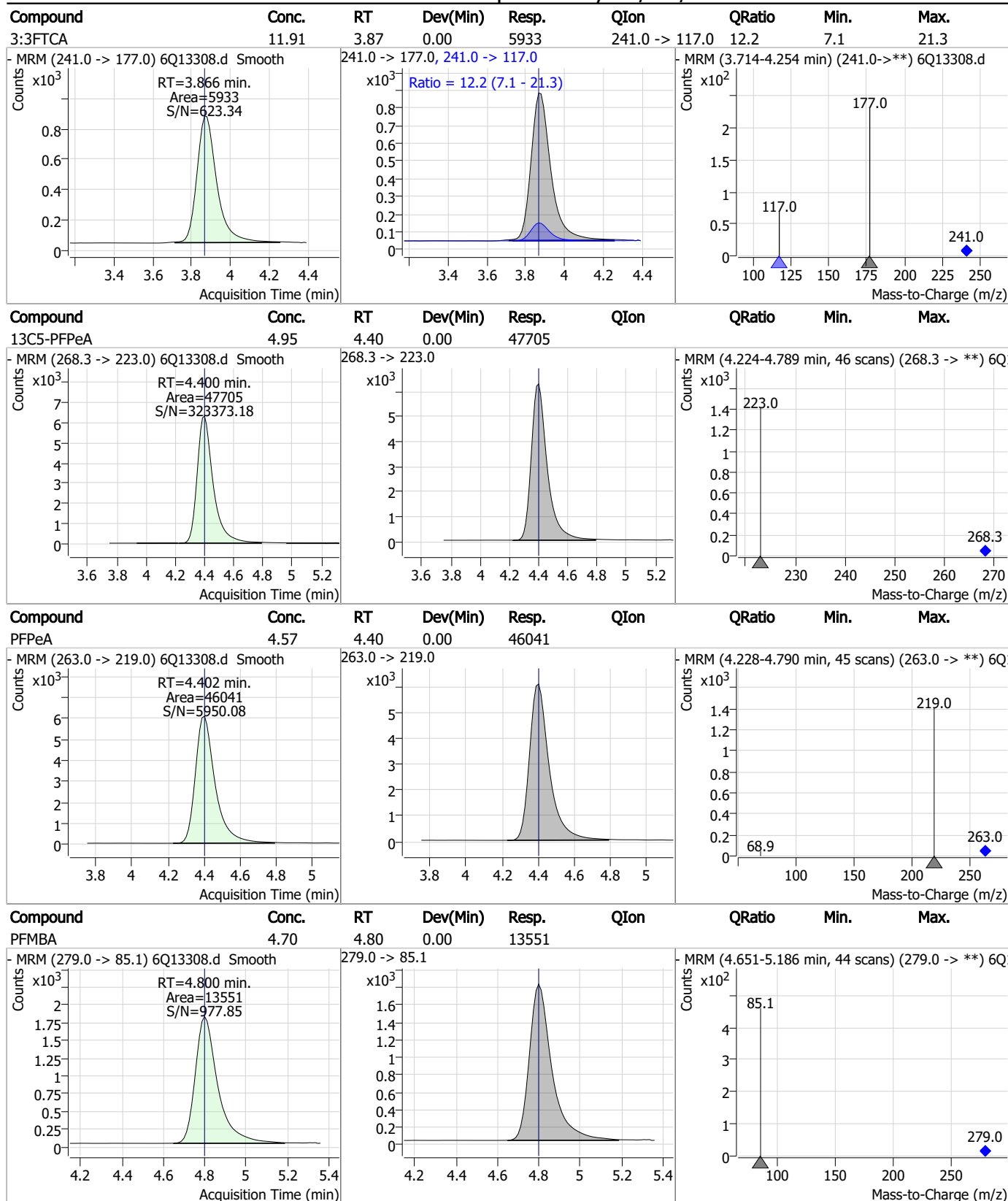
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### Perfluorinated Compounds by LC/MS/MS

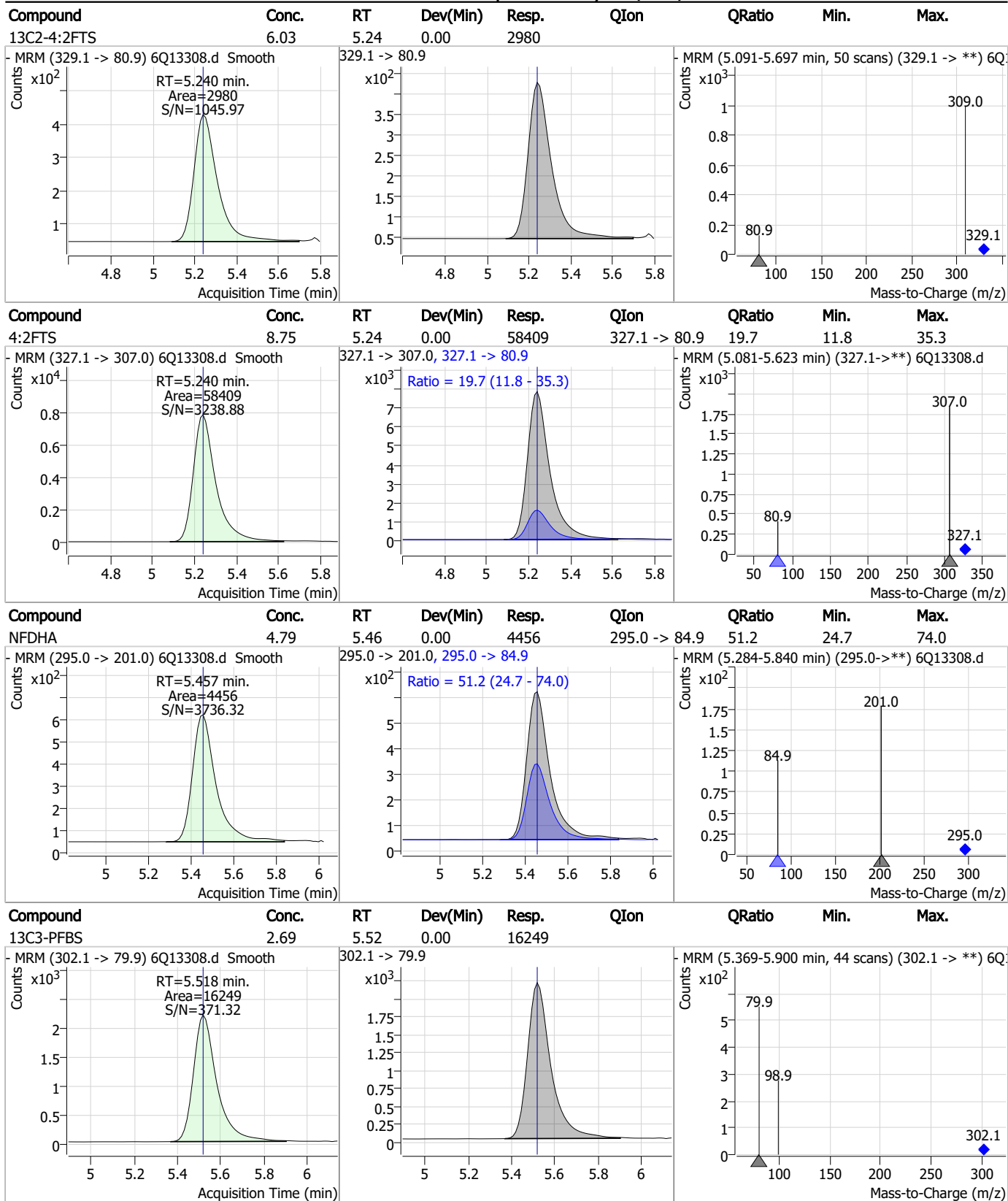


### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS



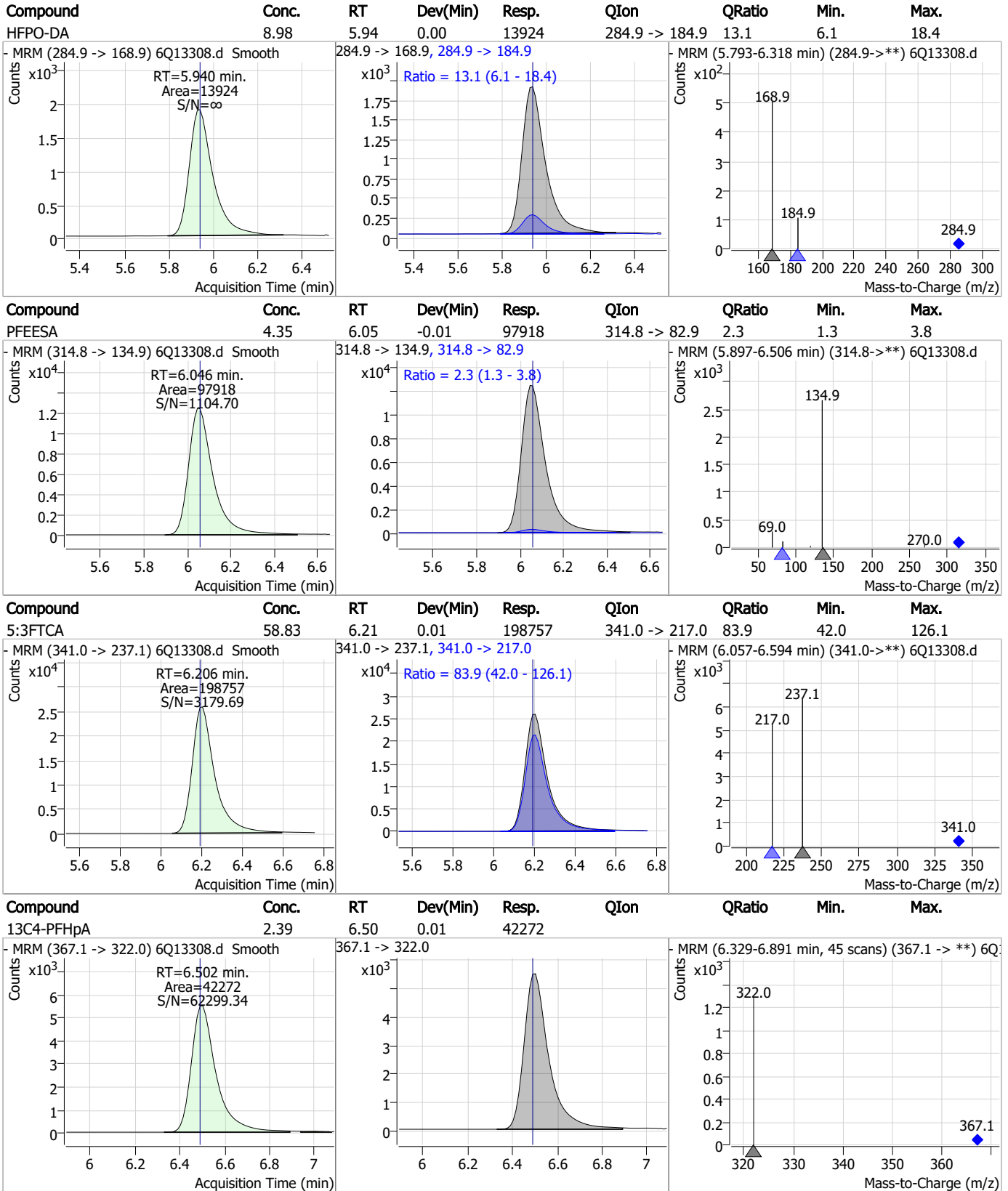
7.7.12  
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### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.10	5.52	0.00	13095	298.7 -> 98.8	44.0	23.6	70.7
13C5-PFHxA	2.42	5.57	0.01	41206	318.0 -> 273.0	4.0	1.9	5.8
PFHxA	2.39	5.57	0.00	38120	313.0 -> 118.9	4.0	1.9	5.8
13C3-HFPO-DA	9.72	5.94	0.00	16360	286.9 -> 168.9	4.0	1.9	5.8

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

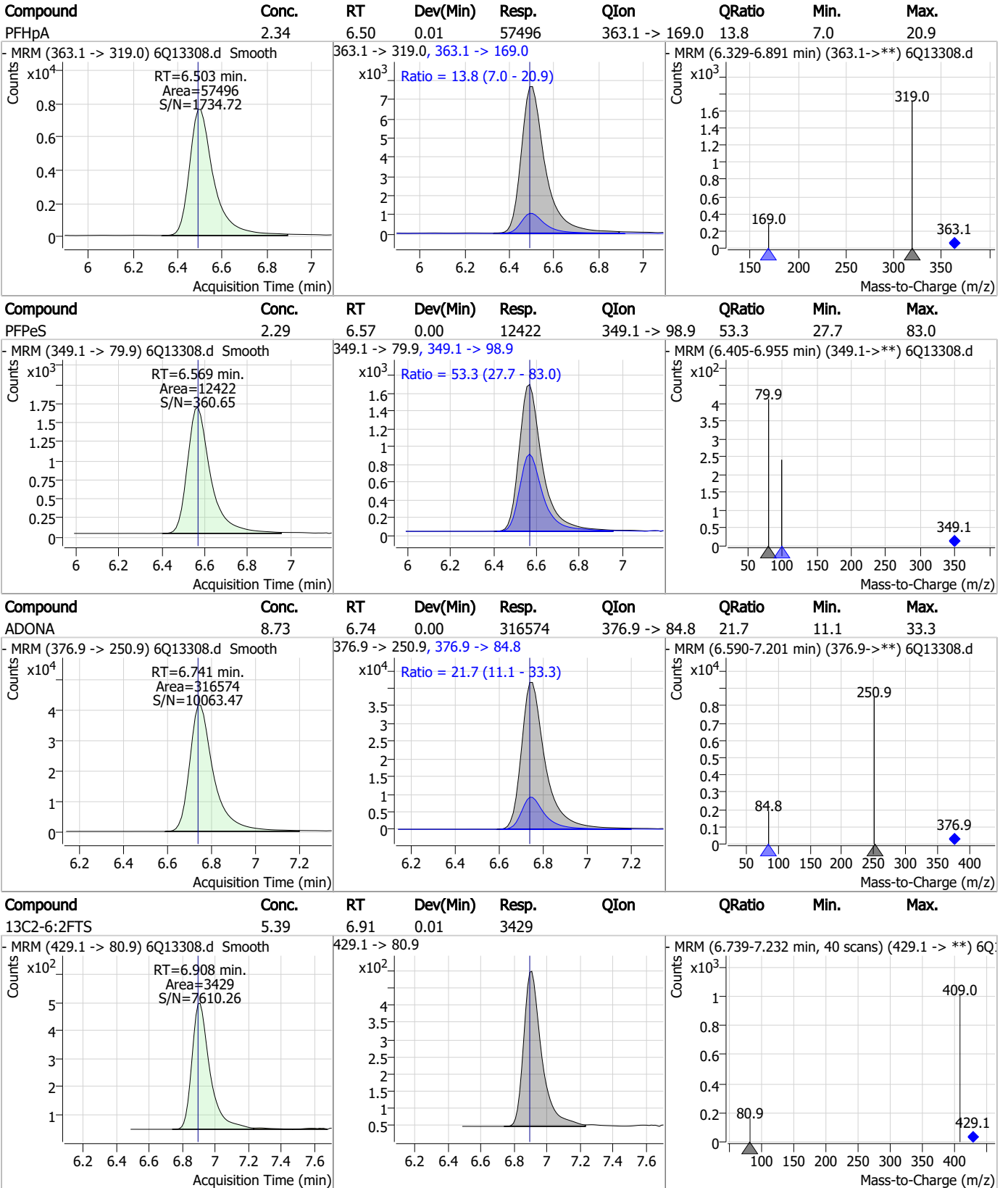


7.7.12 7





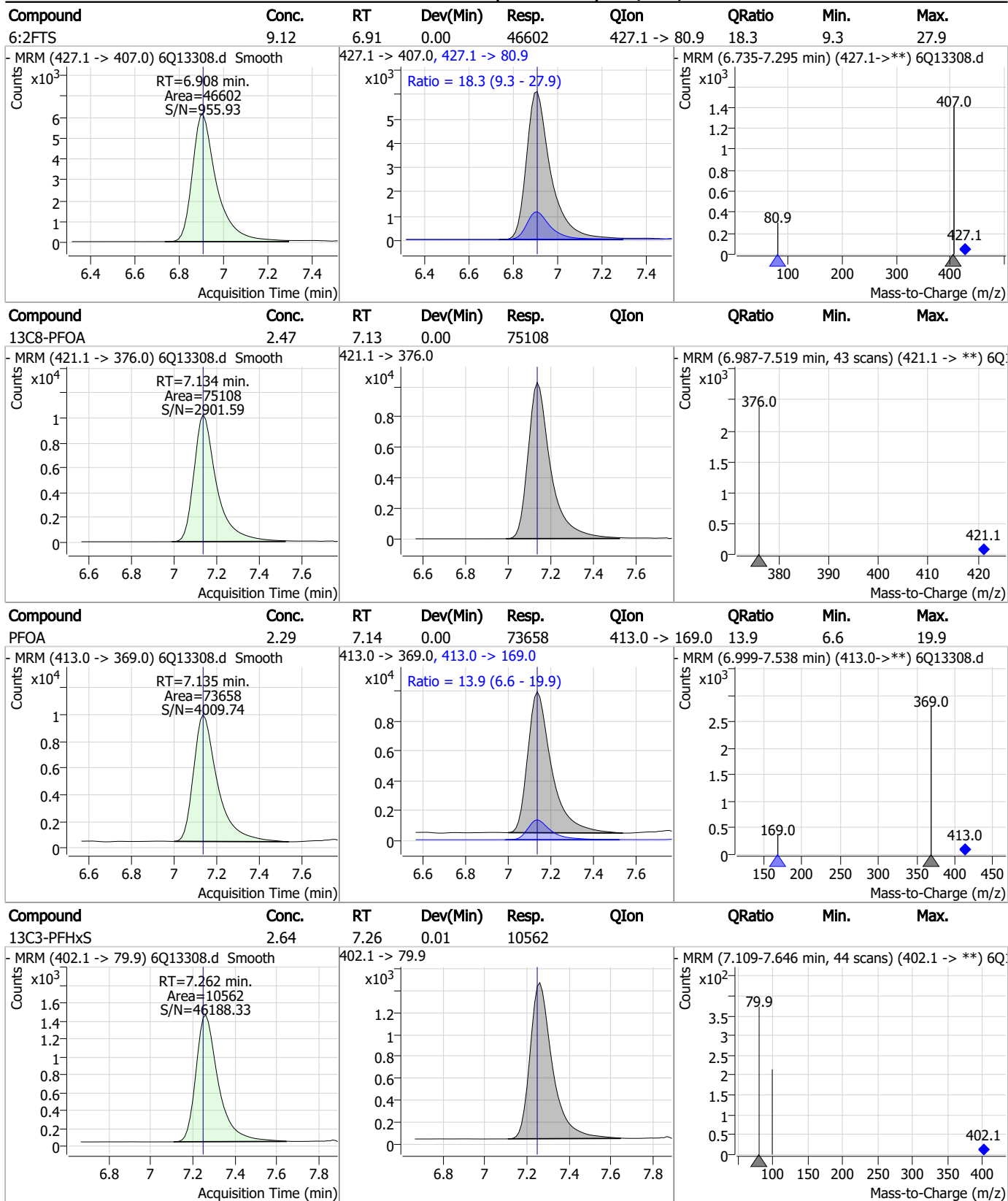
### Perfluorinated Compounds by LC/MS/MS



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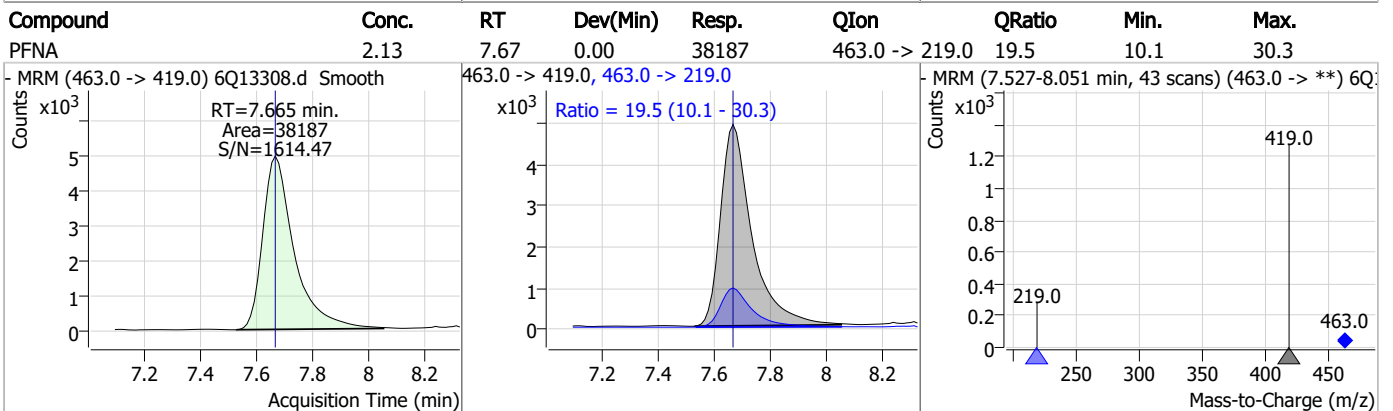
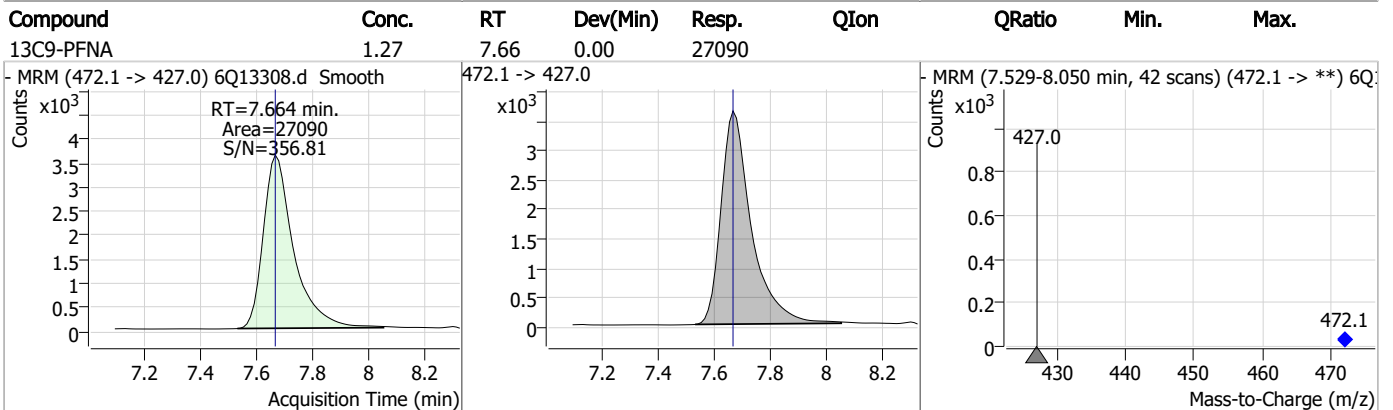
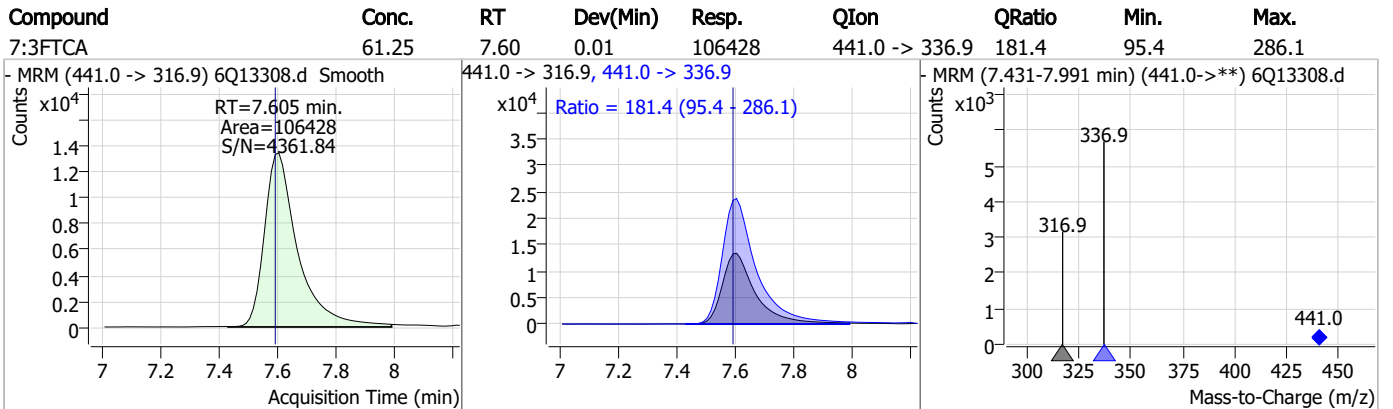
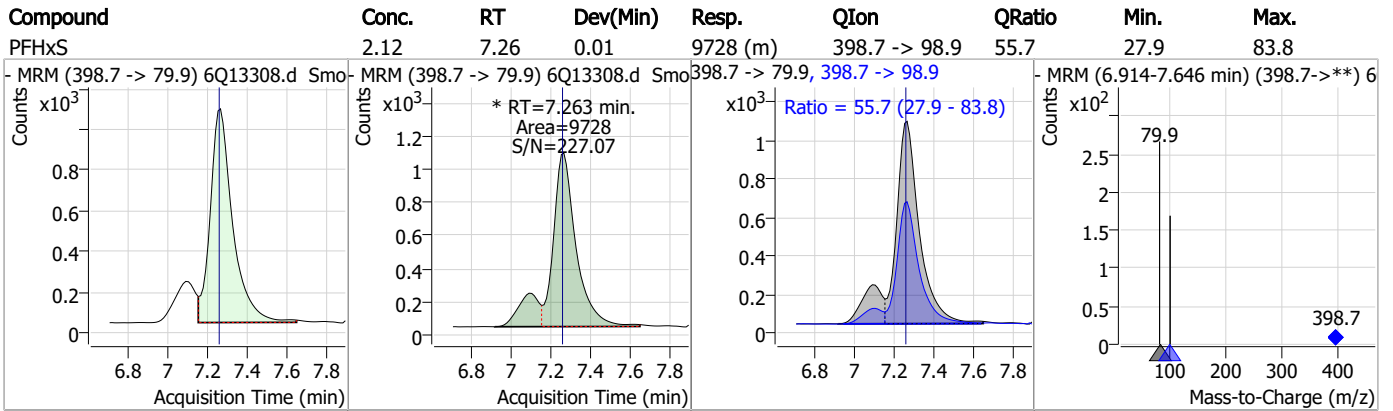
### Perfluorinated Compounds by LC/MS/MS



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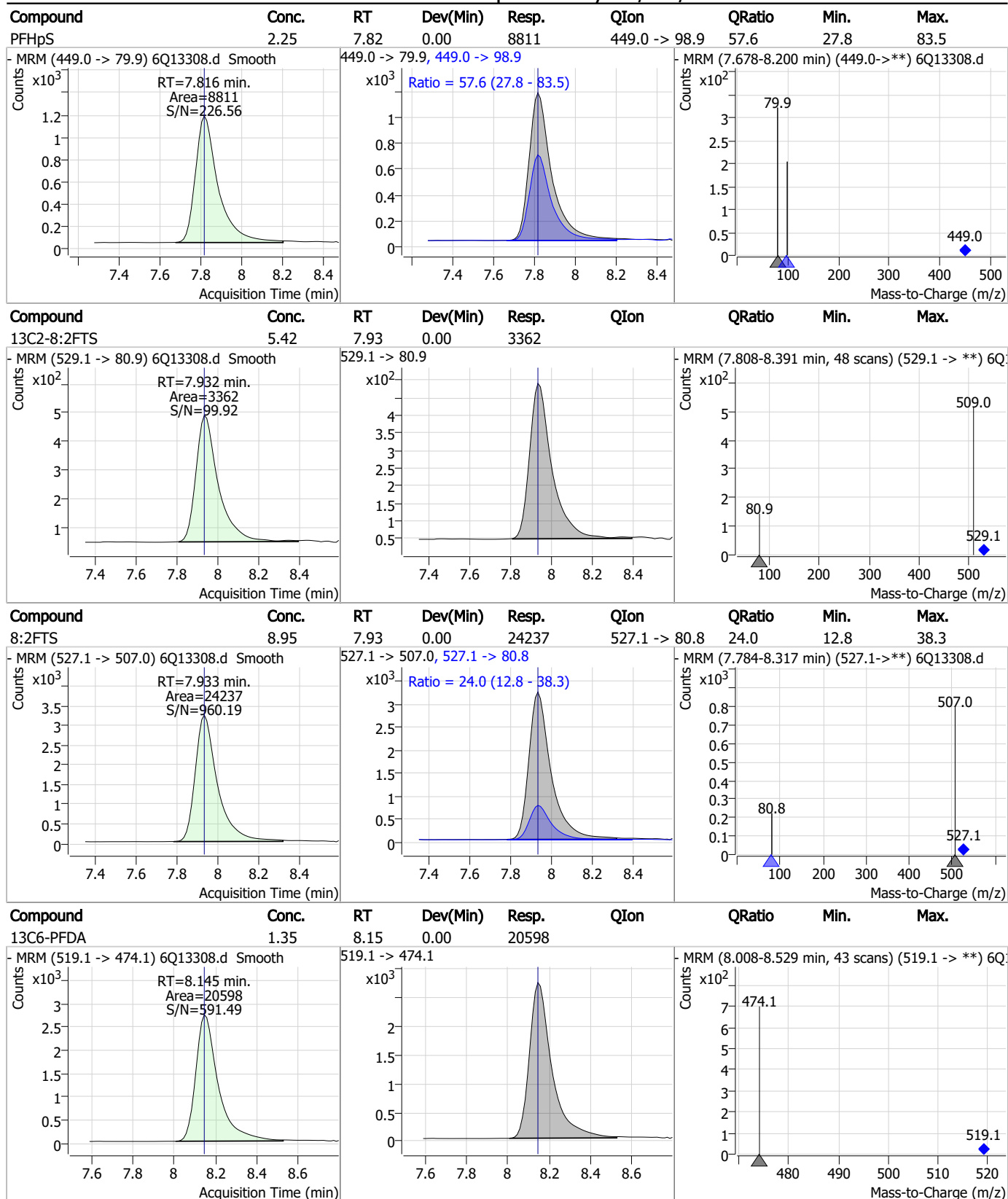
### Perfluorinated Compounds by LC/MS/MS



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

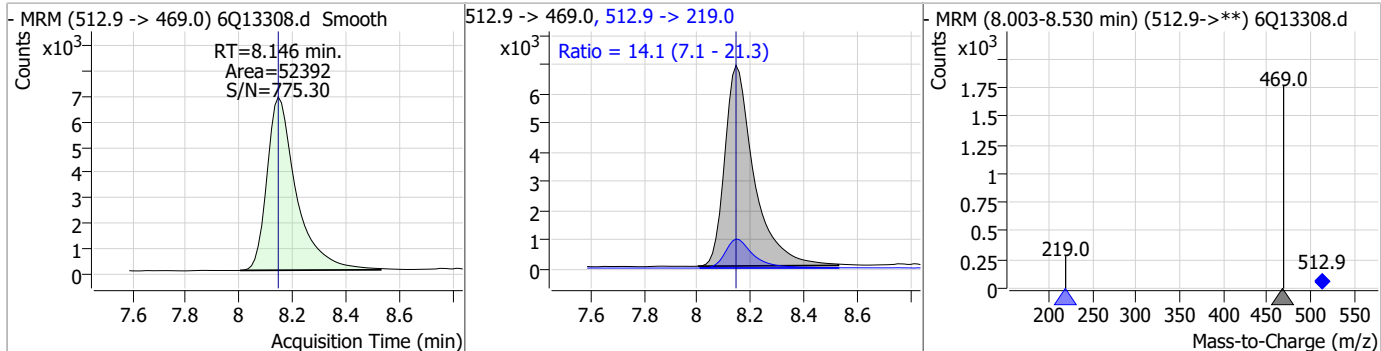


7.7.12  
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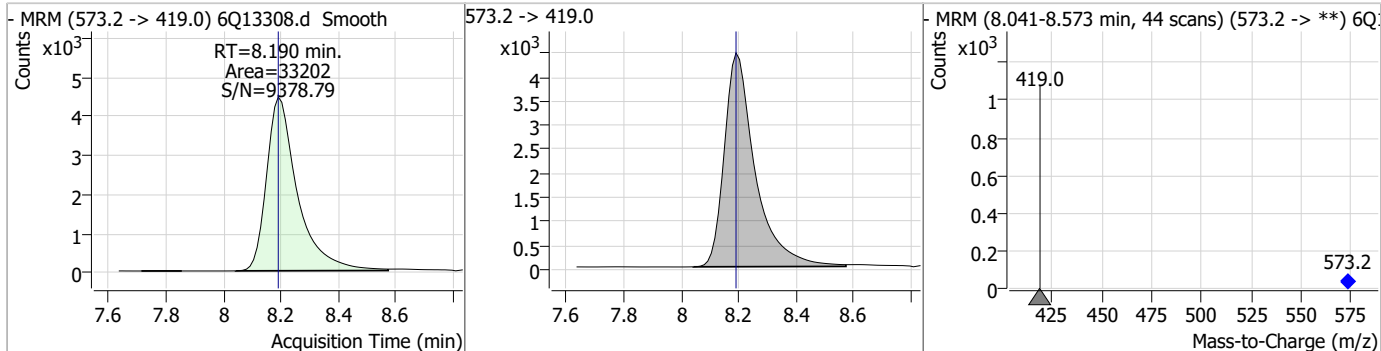


### Perfluorinated Compounds by LC/MS/MS

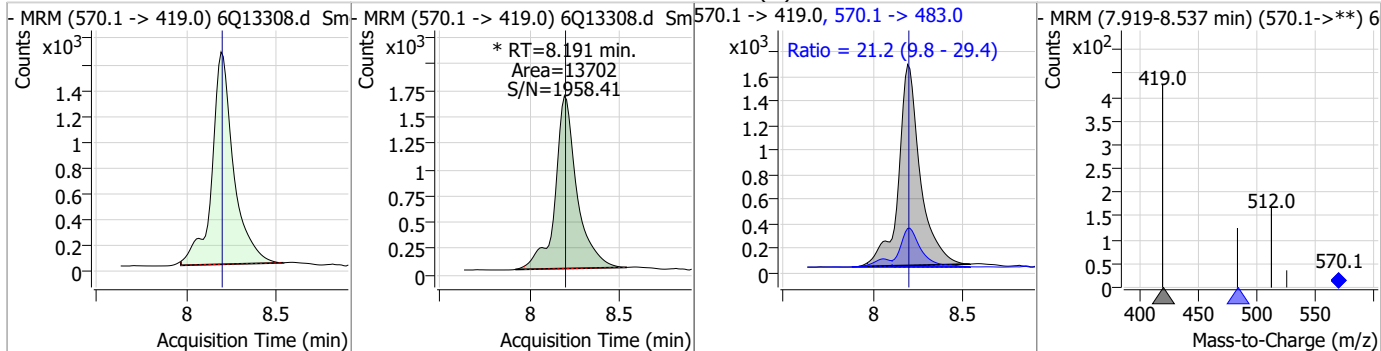
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.19	8.15	0.00	52392	512.9 -> 219.0	14.1	7.1	21.3



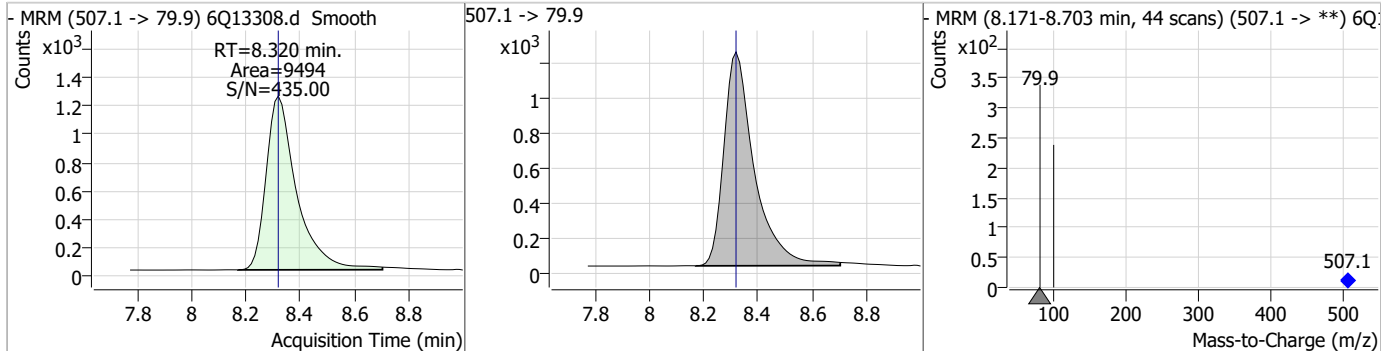
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.99	8.19	0.00	33202				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.25	8.19	0.00	13702 (m)	570.1 -> 483.0	21.2	9.8	29.4



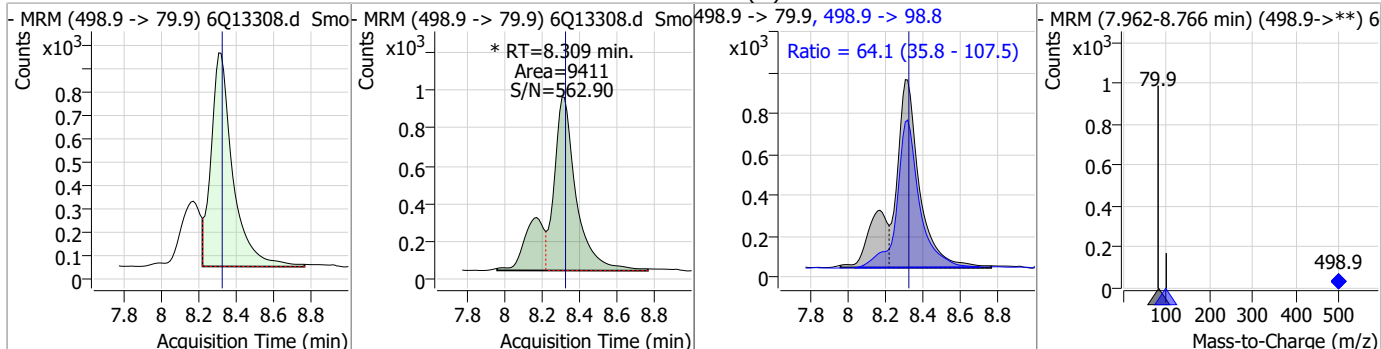
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.48	8.32	0.00	9494				



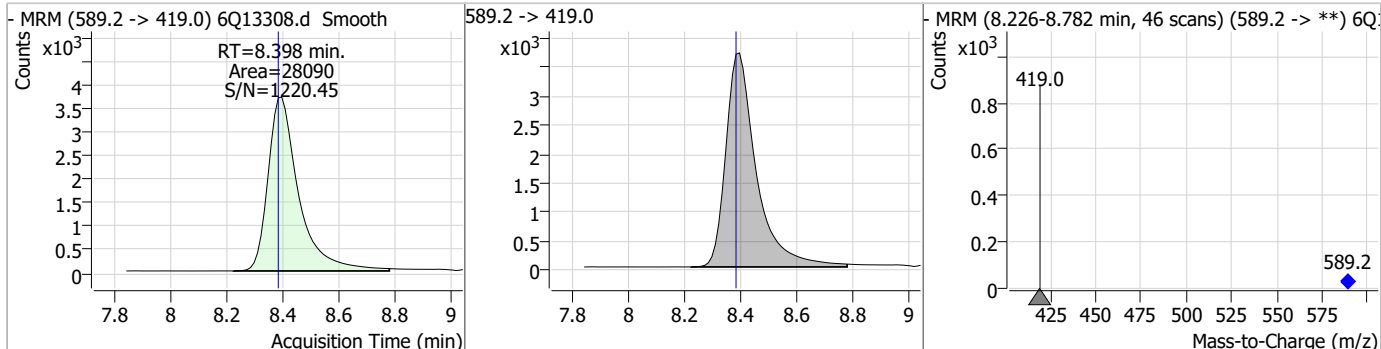
7.7.12  
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### Perfluorinated Compounds by LC/MS/MS

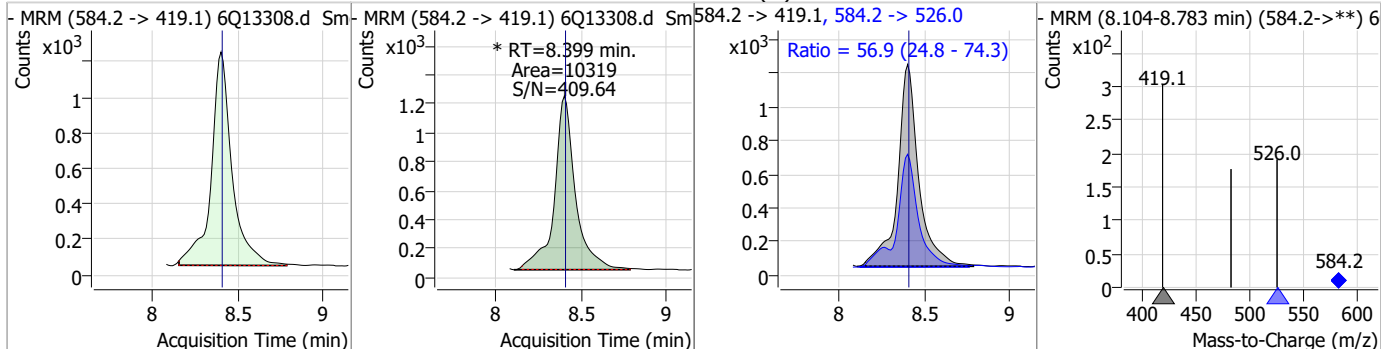
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.21	8.31	-0.01	9411 (m)	498.9 -> 98.8	64.1	35.8	107.5



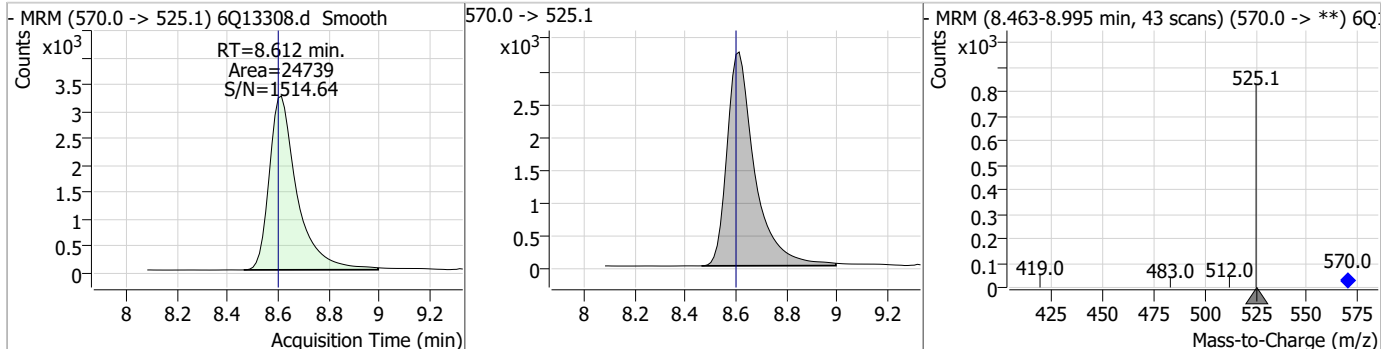
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.02	8.40	0.01	28090				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.34	8.40	0.00	10319 (m)	584.2 -> 526.0	56.9	24.8	74.3

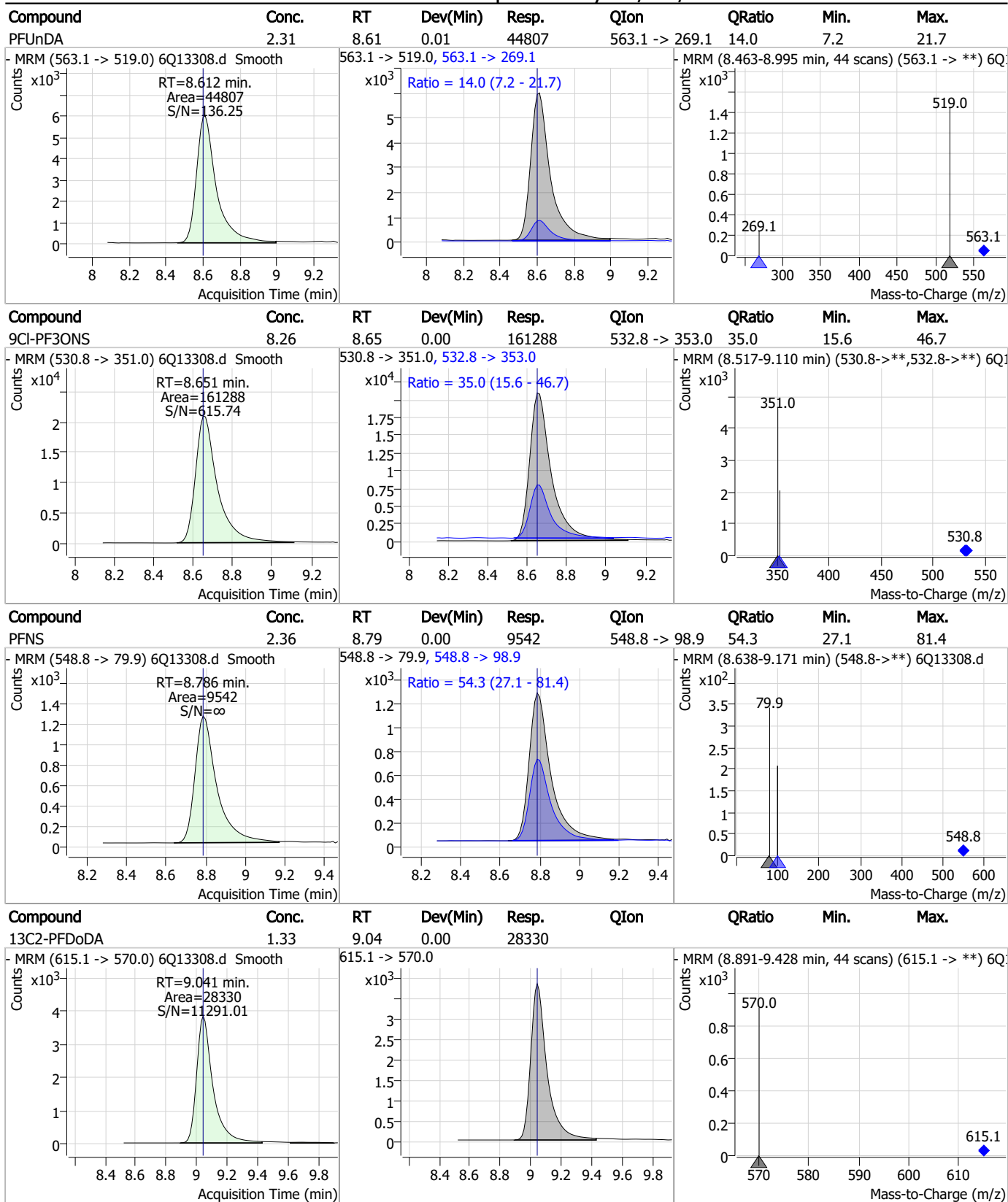


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.61	0.01	24739				



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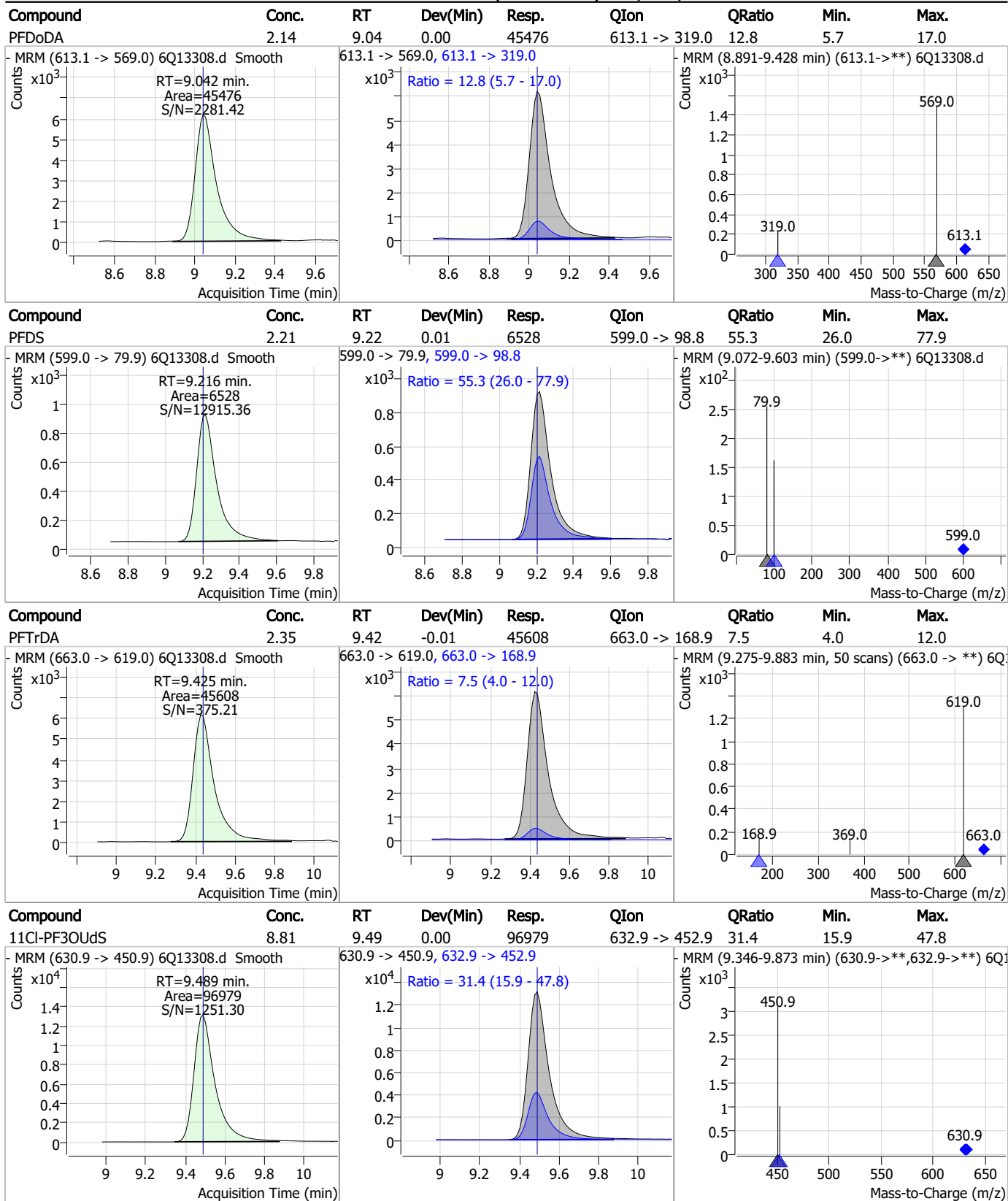
### Perfluorinated Compounds by LC/MS/MS



7.7.12 7



### Perfluorinated Compounds by LC/MS/MS

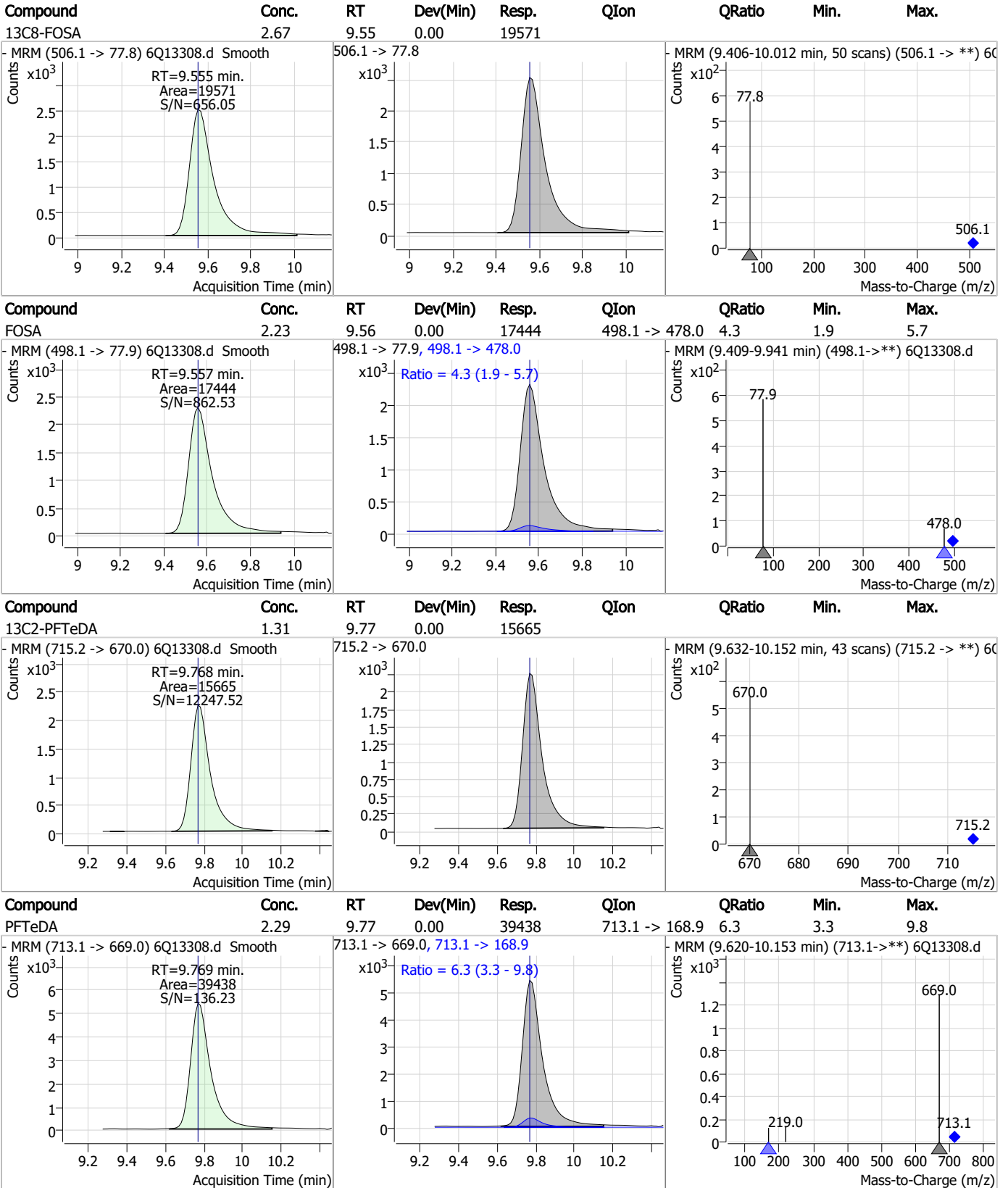


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### Perfluorinated Compounds by LC/MS/MS

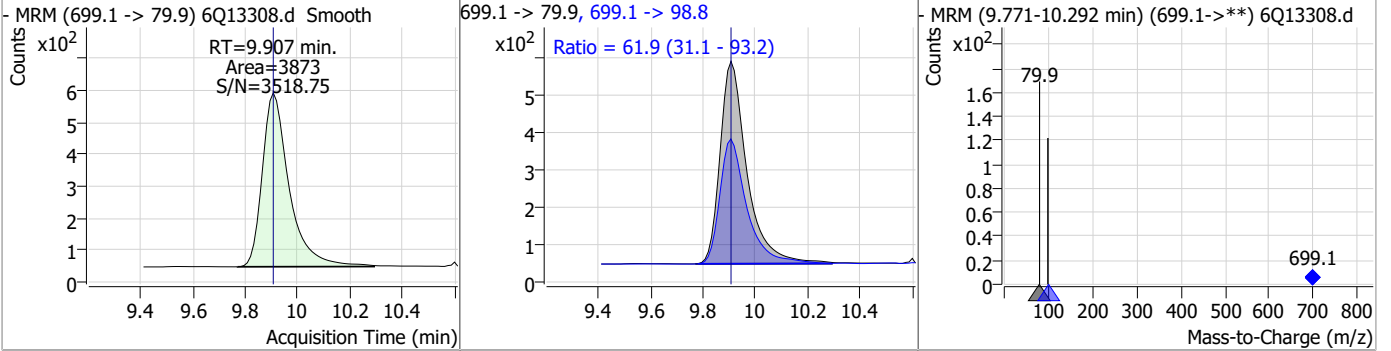


7.7.12 7

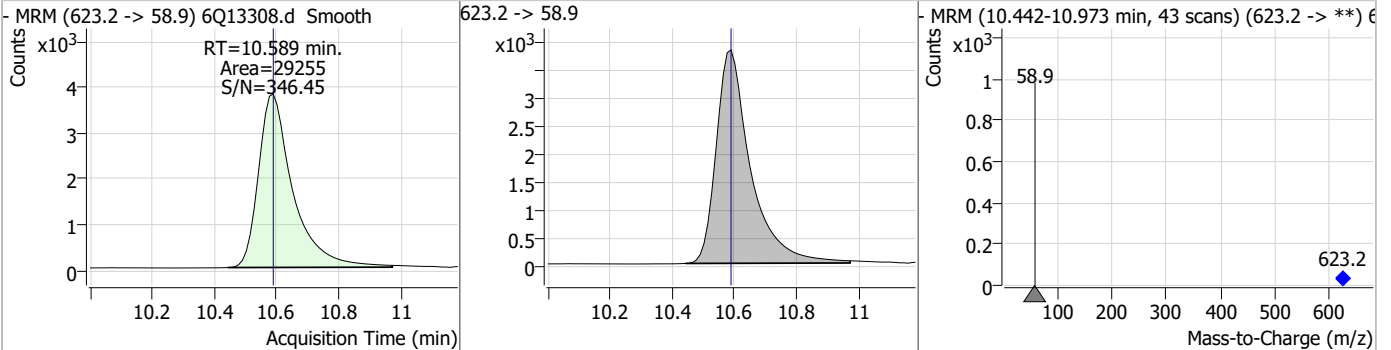


### Perfluorinated Compounds by LC/MS/MS

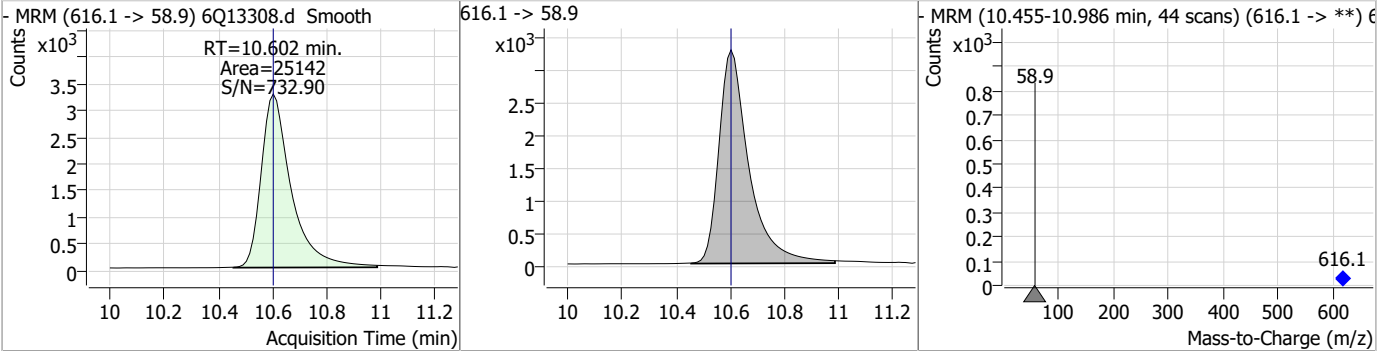
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.17	9.91	0.00	3873	699.1 -> 98.8	61.9	31.1	93.2



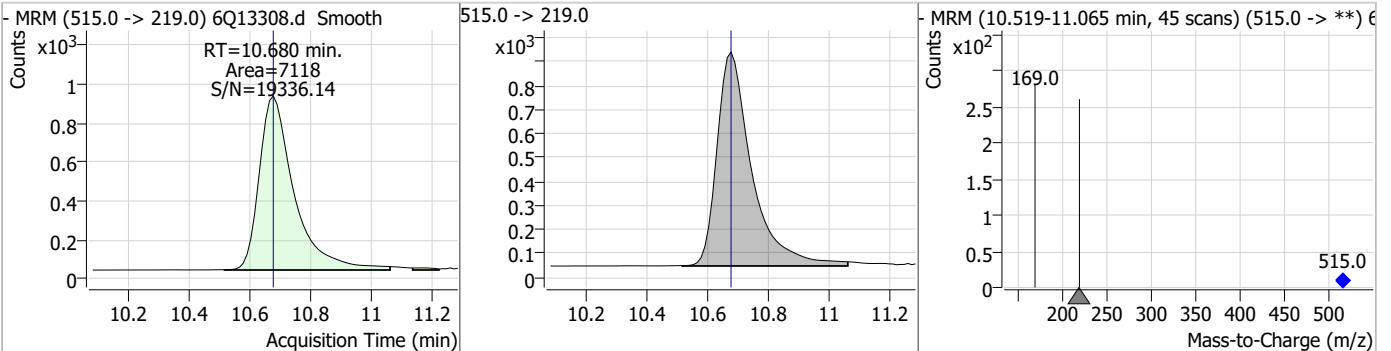
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.13	10.59	0.00	29255				



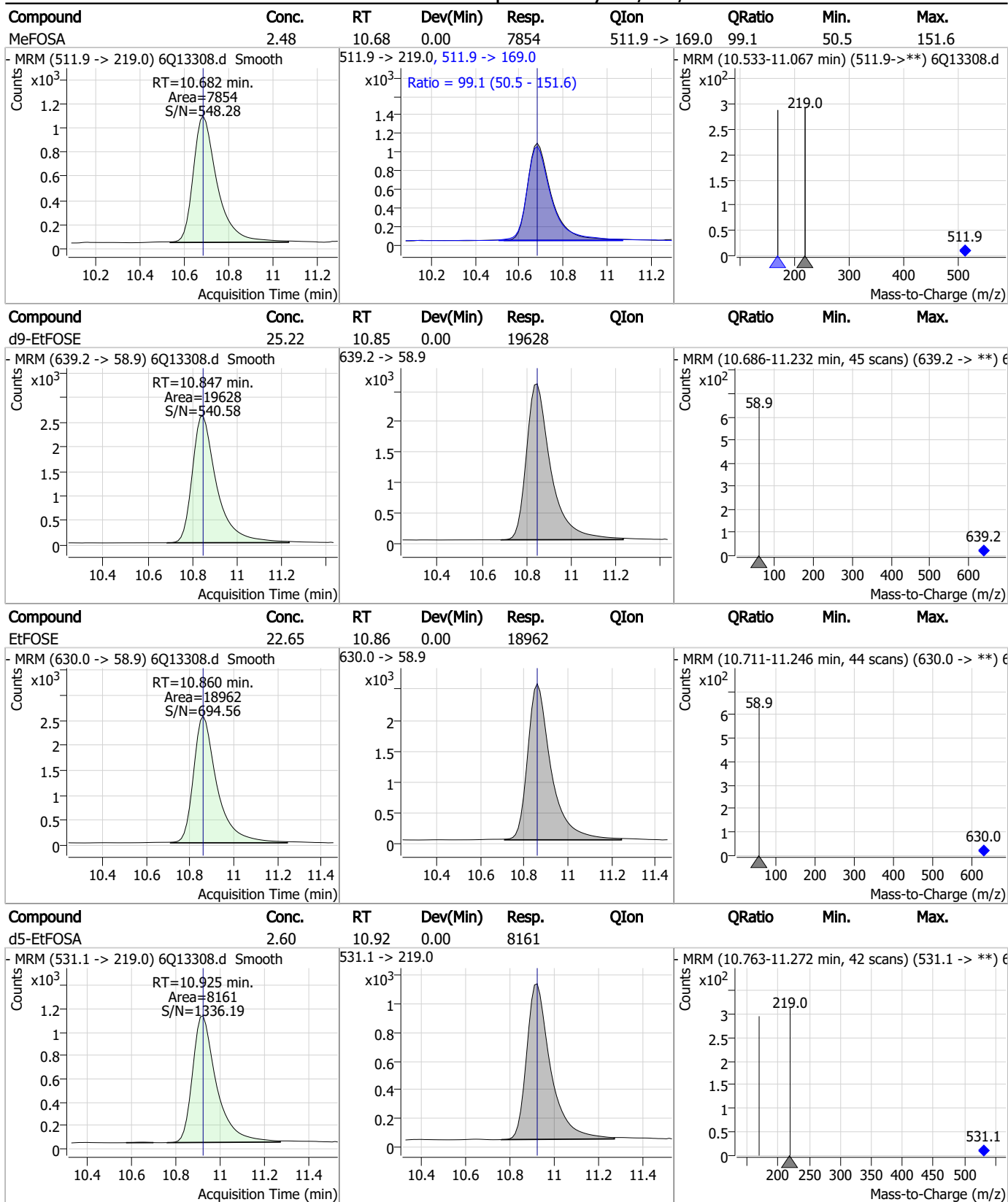
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.11	10.60	0.00	25142				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.39	10.68	0.00	7118				

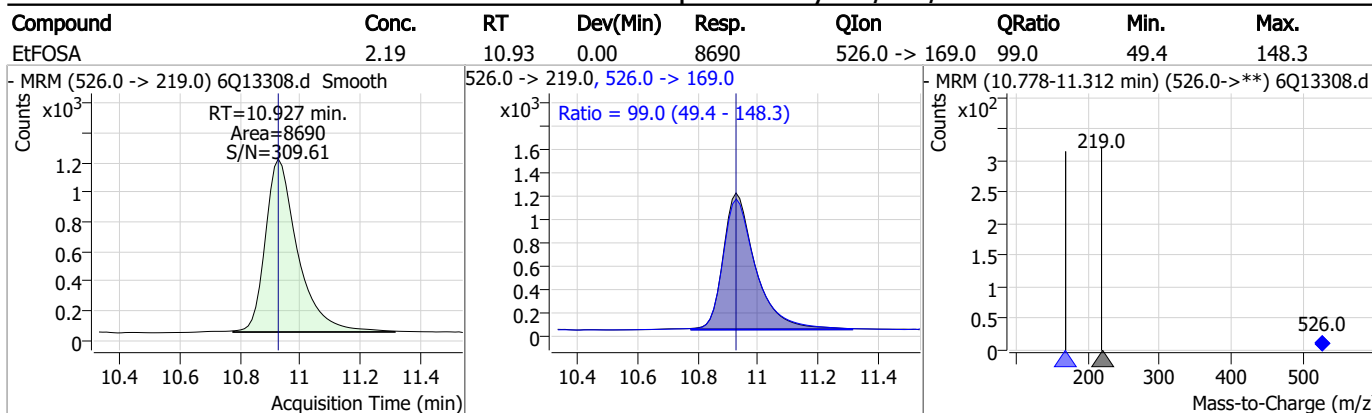


### Perfluorinated Compounds by LC/MS/MS



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: S6Q203-CC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13308.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 15:24      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.12.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13309.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 3:38:12 PM  
 Sample Name : cc203-1.0LL  
 Vial : P1-A2  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	88103	10.00 µg/L	-0.025
M5-PFPeA	4.374	268.3 -> 223.0	44006	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	38446	2.50 µg/L	0.000
M4-PFHpA	6.490	367.1 -> 322.0	40108	2.50 µg/L	0.000
M8-PFOA	7.134	421.1 -> 376.0	73711	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	26175	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	19011	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	23582	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	25029	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14315	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	18487	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	15611	2.50 µg/L	-0.012
M3-PFHxS	7.262	402.1 -> 79.9	9525	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	8812	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2641	5.00 µg/L	-0.012
M2-6:2FTS	6.895	429.1 -> 80.9	3312	5.00 µg/L	0.000
M2-8:2FTS	7.932	529.1 -> 80.9	3059	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	32764	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	15850	10.00 µg/L	-0.012
M5-EtFOSAA	8.386	589.2 -> 419.0	27491	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	27049	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	18349	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	7574	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6978	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10593	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	39575	5.00 µg/L	-0.025
18O2-PFHxS	7.261	403.0 -> 83.9	7092	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	83597	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	25822	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	28174	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	38486	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2641	5.61 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.3%		
13C2-6:2FTS	6.895	429.1 -> 80.9	3312	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.3%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3059	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C2-PFDoDA	9.041	615.1 -> 570.0	25029	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14315	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C3-PFBS	5.505	302.1 -> 79.9	15611	2.71 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C3-PFHxS	7.262	402.1 -> 79.9	9525	2.50 µg/L	0.012

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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C4-PFBA	2.975	216.8 -> 171.9	88103	9.97 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C4-PFHpA	6.490	367.1 -> 322.0	40108	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C5-PFHxA	5.563	318.0 -> 273.0	38446	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C5-PFPeA	4.374	268.3 -> 223.0	44006	5.00 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C6-PFDA	8.145	519.1 -> 474.1	19011	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C7-PFUnDA	8.599	570.0 -> 525.1	23582	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C8-FOSA	9.555	506.1 -> 77.8	18487	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.0%		
13C8-PFOA	7.134	421.1 -> 376.0	73711	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C8-PFOS	8.319	507.1 -> 79.9	8812	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C9-PFNA	7.664	472.1 -> 427.0	26175	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.9%		
d3-MeFOSAA	8.190	573.2 -> 419.0	32764	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C3-HFPO-DA	5.927	286.9 -> 168.9	15850	10.31 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 103.1%		
d3-MeFOSA	10.680	515.0 -> 219.0	6978	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.3%		
d5-EtFOSAA	8.386	589.2 -> 419.0	27491	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.1%		
d7-MeFOSE	10.589	623.2 -> 58.9	27049	25.33 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
d9-EtFOSE	10.847	639.2 -> 58.9	18349	25.70 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 102.8%		
d5-EtFOSA	10.925	531.1 -> 219.0	7574	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.2%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.228	327.1 -> 307.0	4855	0.82 µg/L	99
		327.1 -> 80.9	1109		
6:2FTS	6.908	427.1 -> 407.0	4312	0.87 µg/L	97
		427.1 -> 80.9	739		
8:2FTS	7.933	527.1 -> 507.0	2259	0.92 µg/L	93
		527.1 -> 80.8	500		
EtFOSAA	8.399	584.2 -> 419.1	755	0.18 µg/L	100
		584.2 -> 526.0	372		
FOSA	9.557	498.1 -> 77.9	1429	0.19 µg/L	95
		498.1 -> 478.0	29		
MeFOSAA	8.191	570.1 -> 419.0	1294	0.22 µg/L	100
		570.1 -> 483.0	252	m	
PFBA	2.969	212.8 -> 168.9	1628	0.82 µg/L	100
PFBS	5.506	298.7 -> 79.9	1041	0.17 µg/L	98
		298.7 -> 98.8	507		
PFDA	8.146	512.9 -> 469.0	5238	0.24 µg/L	96
		512.9 -> 219.0	652		
PFDODA	9.042	613.1 -> 569.0	4124	0.22 µg/L	99
		613.1 -> 319.0	443		
PFDS	9.216	599.0 -> 79.9	516	0.19 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.490	599.0 -> 98.8	271	0.21	µg/L	99
		363.1 -> 319.0	4960			
PFHpS	7.816	363.1 -> 169.0	670	0.20	µg/L	85
		449.0 -> 79.9	716			
PFHxA	5.566	449.0 -> 98.9	475	0.22	µg/L	100
		313.0 -> 269.0	3233			
PFHxS	7.250	313.0 -> 118.9	127	0.23	µg/L	82
		398.7 -> 79.9	948			
PFNA	7.665	398.7 -> 98.9	404	0.19	µg/L	97
		463.0 -> 419.0	3261			
PFNS	8.786	463.0 -> 219.0	607	0.23	µg/L	92
		548.8 -> 79.9	879			
PFOA	7.135	548.8 -> 98.9	527	0.26	µg/L	95
		413.0 -> 369.0	8173			
PFOS	8.321	413.0 -> 169.0	922	0.18	µg/L	89
		498.9 -> 79.9	716			
PFPeA	4.375	498.9 -> 98.8	578	0.42	µg/L	100
		263.0 -> 219.0	3890			
PFPeS	6.569	349.1 -> 79.9	947	0.19	µg/L	92
		349.1 -> 98.9	468			
PFTeDA	9.769	713.1 -> 669.0	3480	0.22	µg/L	100
		713.1 -> 168.9	231			
PFTrDA	9.425	663.0 -> 619.0	4158	0.24	µg/L	97
		663.0 -> 168.9	284			
PFUnDA	8.612	563.1 -> 519.0	3810	0.21	µg/L	97
		563.1 -> 269.1	595			
11CI-PF3OUdS	9.489	630.9 -> 450.9	8465	0.79	µg/L	91
		632.9 -> 452.9	2267			
9CI-PF3ONS	8.651	530.8 -> 351.0	13983	0.74	µg/L	97
		532.8 -> 353.0	4591			
ADONA	6.741	376.9 -> 250.9	26901	0.77	µg/L	97
		376.9 -> 84.8	5629			
HFPO-DA	5.928	284.9 -> 168.9	1144	0.76	µg/L	100
		284.9 -> 184.9	142			
3:3FTCA	3.829	241.0 -> 177.0	512	1.11	µg/L	100
		241.0 -> 117.0	72			
5:3FTCA	6.193	341.0 -> 237.1	15884	5.04	µg/L	97
		341.0 -> 217.0	13733			
7:3FTCA	7.592	441.0 -> 316.9	8168	5.04	µg/L	88
		441.0 -> 336.9	17063			
EtFOSA	10.927	526.0 -> 219.0	777	0.21	µg/L	99
		526.0 -> 169.0	778			
EtFOSE	10.860	630.0 -> 58.9	1728	2.21	µg/L	100
		511.9 -> 219.0	656			
MeFOSA	10.682	511.9 -> 169.0	669	0.21	µg/L	99
		616.1 -> 58.9	2234			
MeFOSE	10.602	699.1 -> 79.9	375	2.12	µg/L	100
		699.1 -> 98.8	230			
PFDoDS	9.907	295.0 -> 201.0	355	0.23	µg/L	99
		295.0 -> 84.9	174			
NFDHA	5.445	279.0 -> 85.1	1128	0.41	µg/L	100
		229.0 -> 84.9	967			
PFMBA	4.787	314.8 -> 134.9	7629	0.40	µg/L	100
		314.8 -> 82.9	224			
PFMPA	3.528			0.36	µg/L	99
PFEESA	6.046					

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

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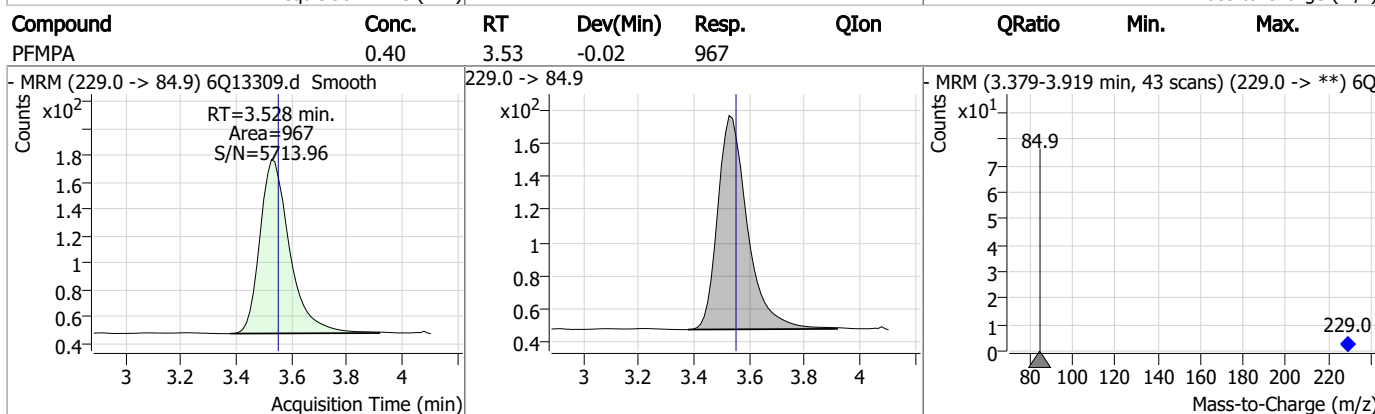
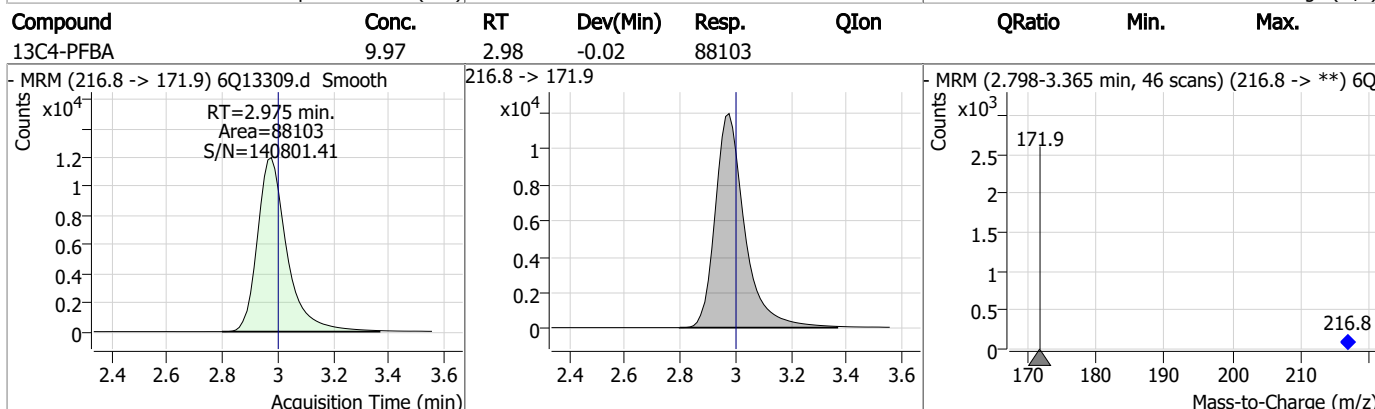
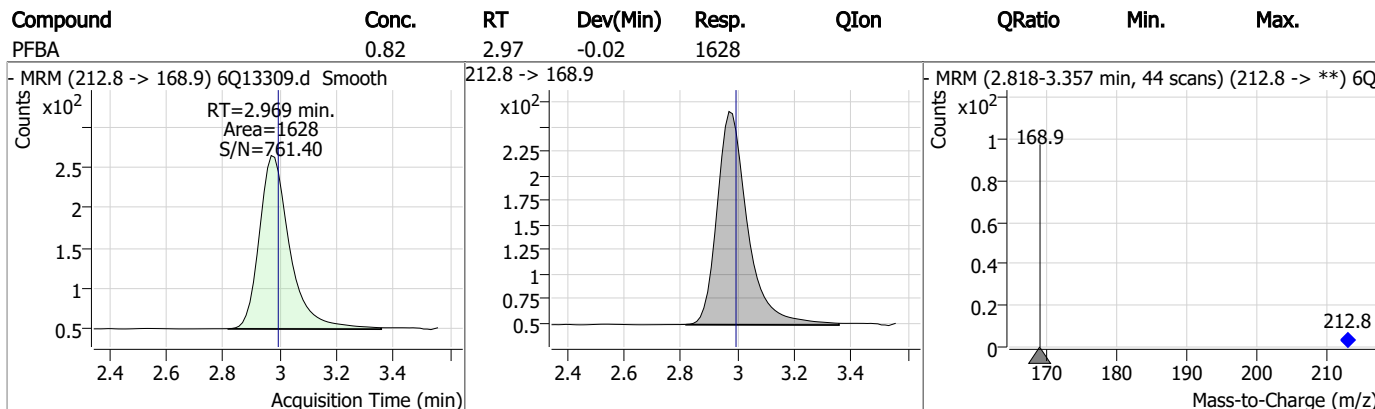
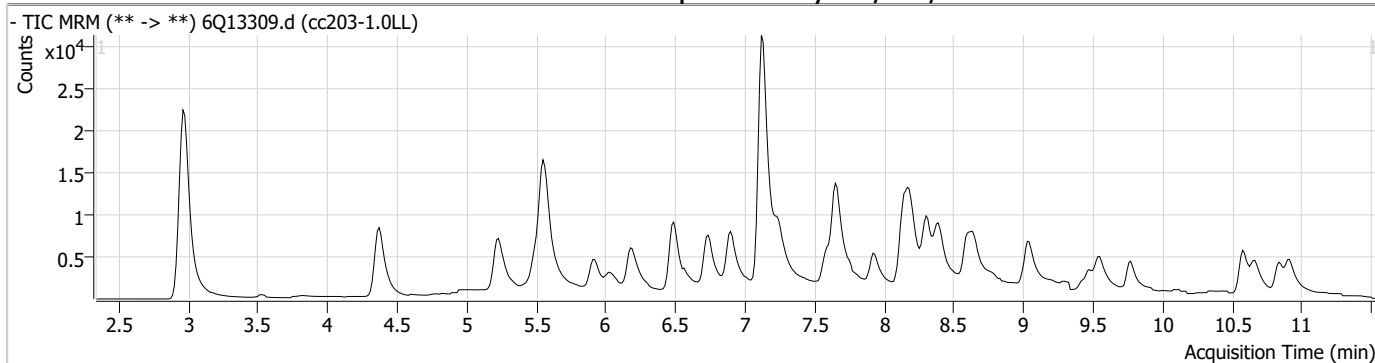
### Perfluorinated Compounds by LC/MS/MS

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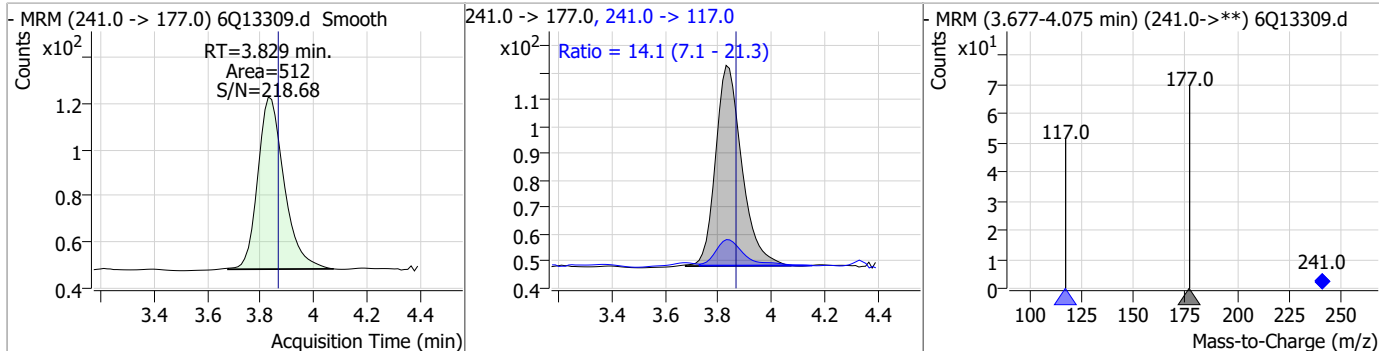
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### Perfluorinated Compounds by LC/MS/MS

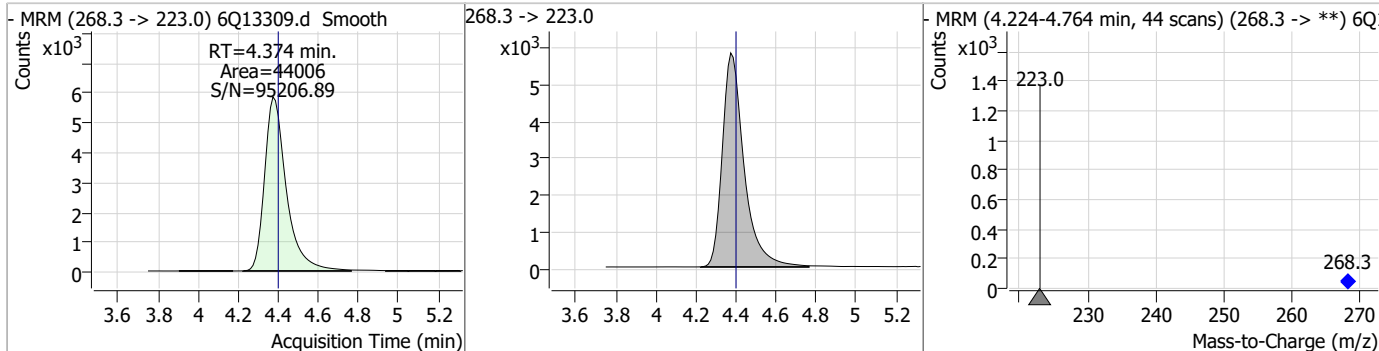


### Perfluorinated Compounds by LC/MS/MS

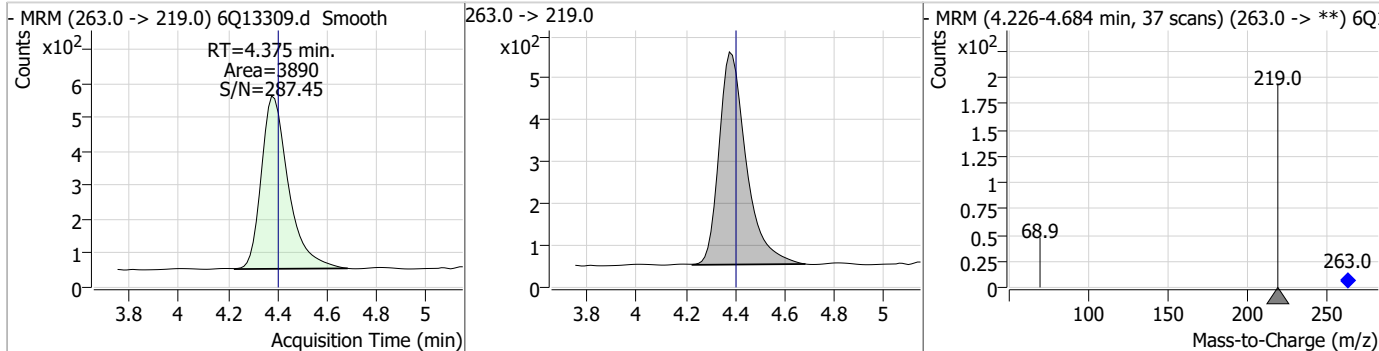
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.11	3.83	-0.04	512	241.0 -> 117.0	14.1	7.1	21.3



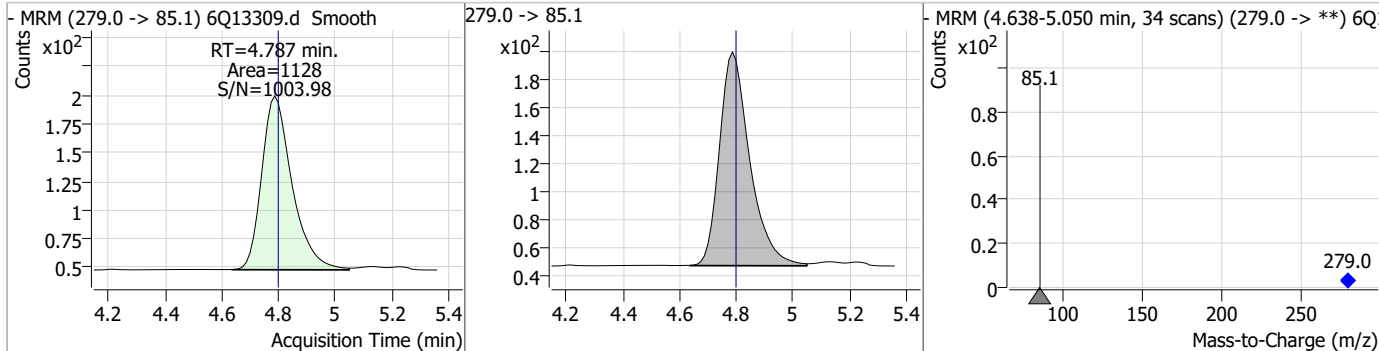
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.00	4.37	-0.03	44006				



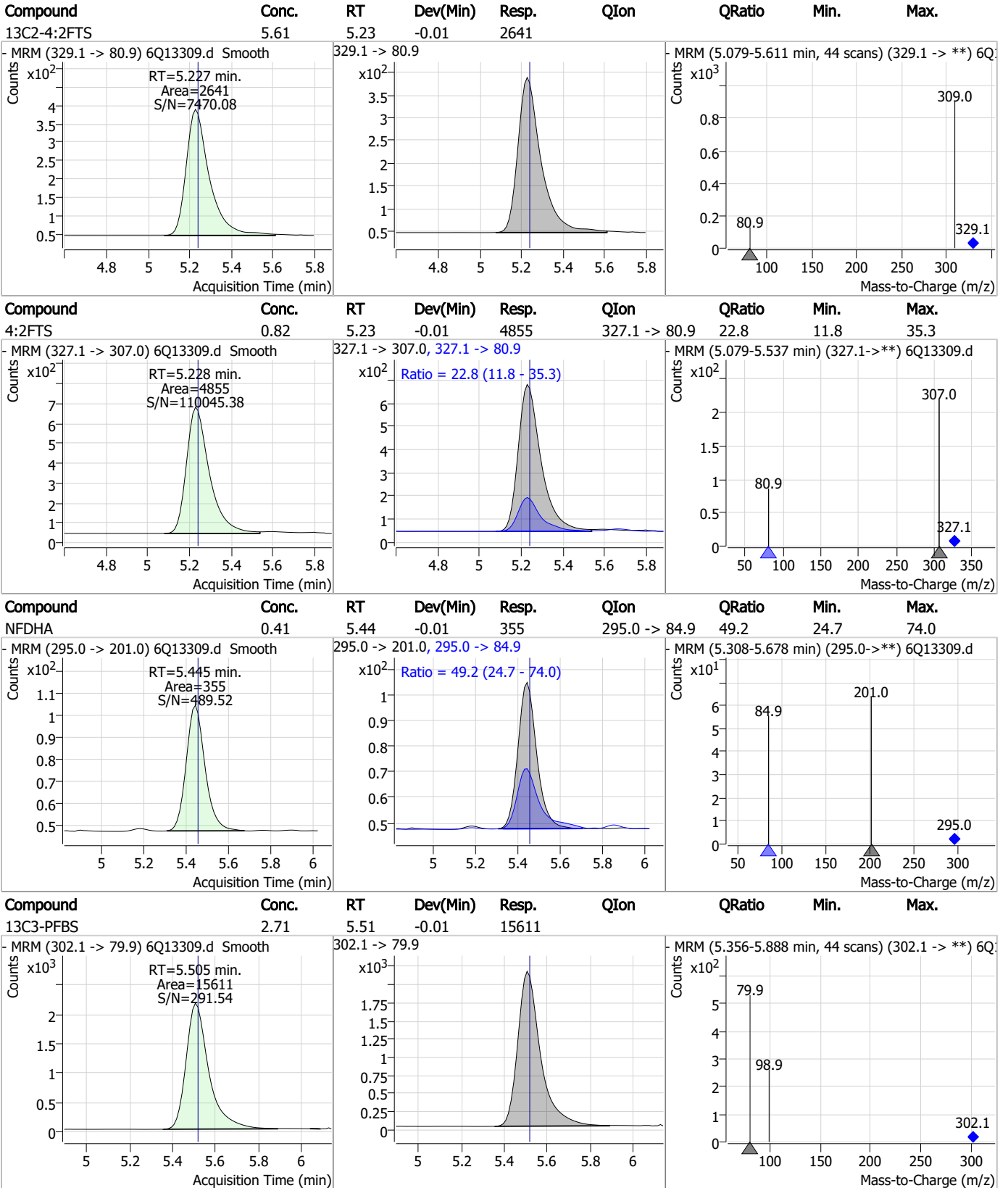
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.42	4.38	-0.03	3890				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.42	4.79	-0.01	1128				



### Perfluorinated Compounds by LC/MS/MS

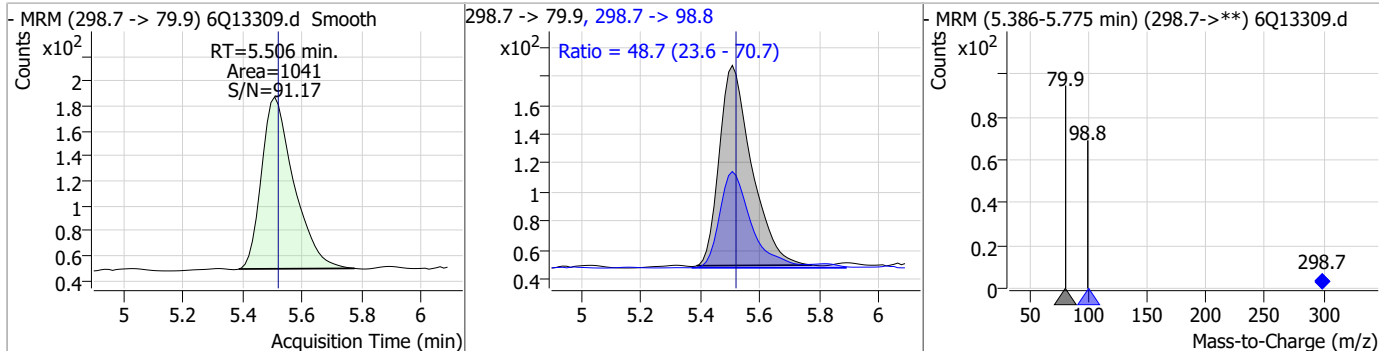


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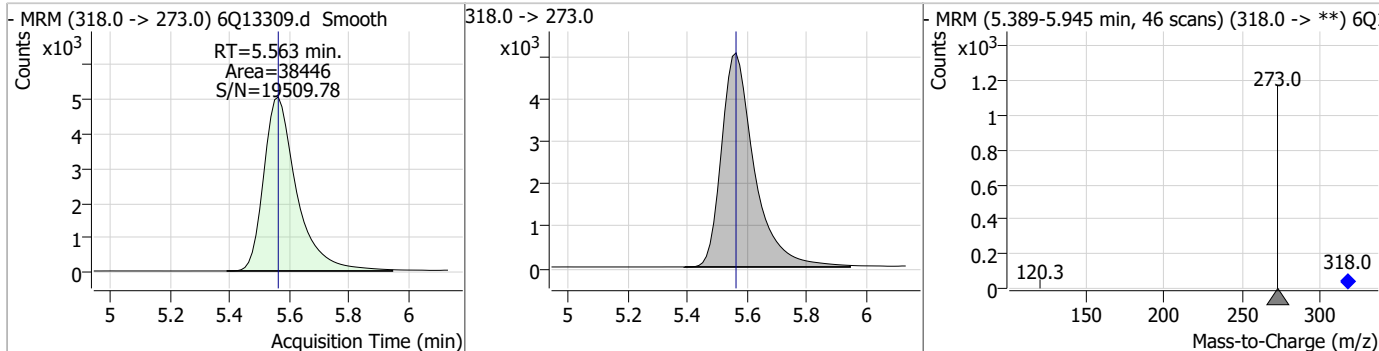


### Perfluorinated Compounds by LC/MS/MS

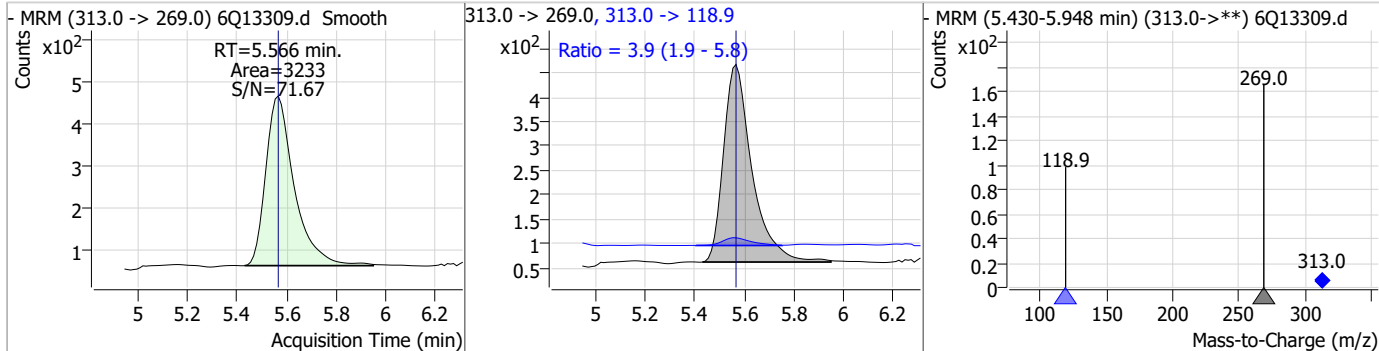
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.17	5.51	-0.01	1041	298.7 -> 98.8	48.7	23.6	70.7



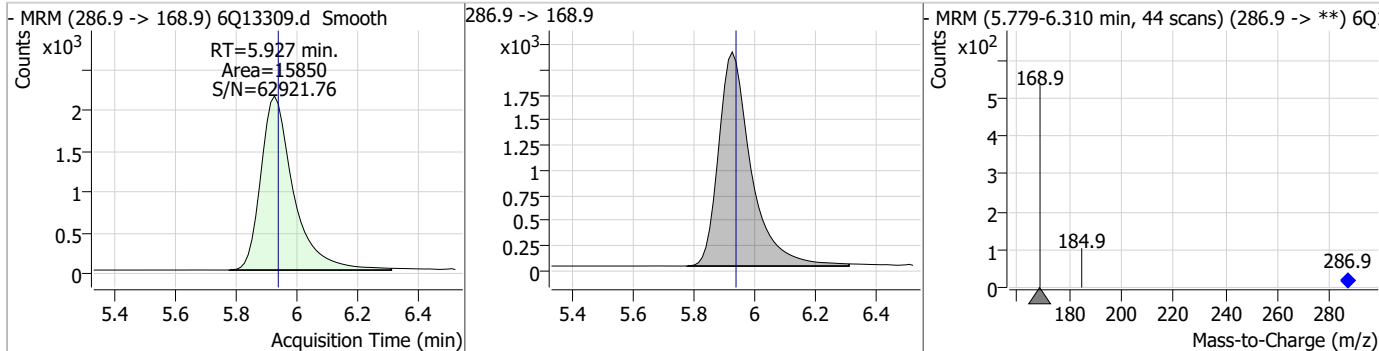
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.47	5.56	0.00	38446				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.22	5.57	0.00	3233	313.0 -> 118.9	3.9	1.9	5.8

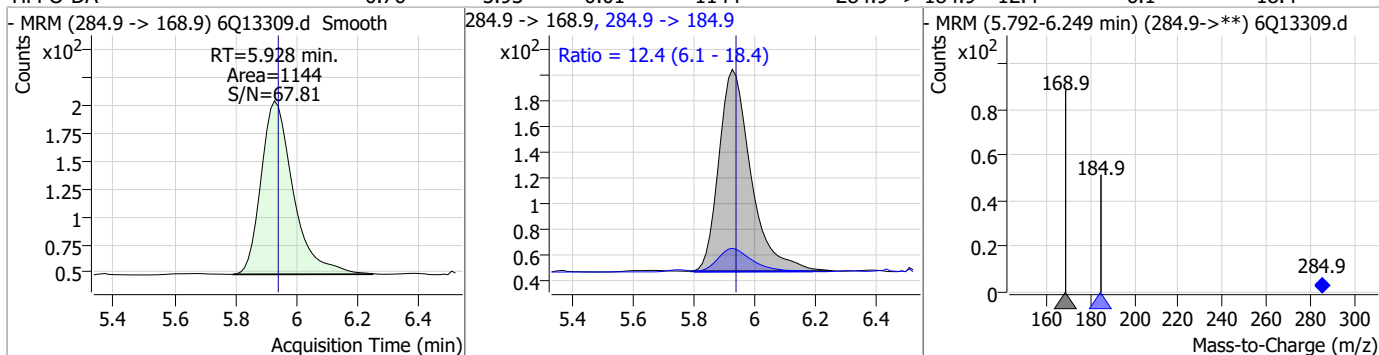


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.31	5.93	-0.01	15850				

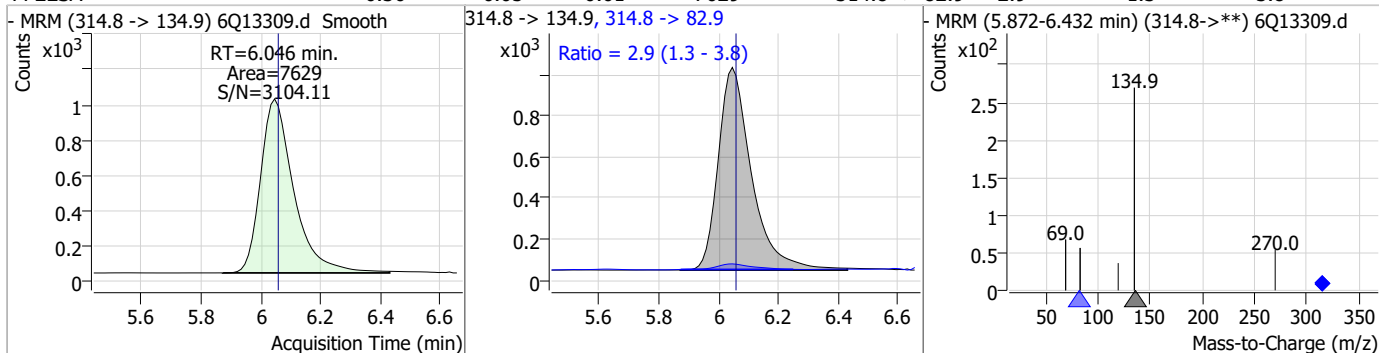


### Perfluorinated Compounds by LC/MS/MS

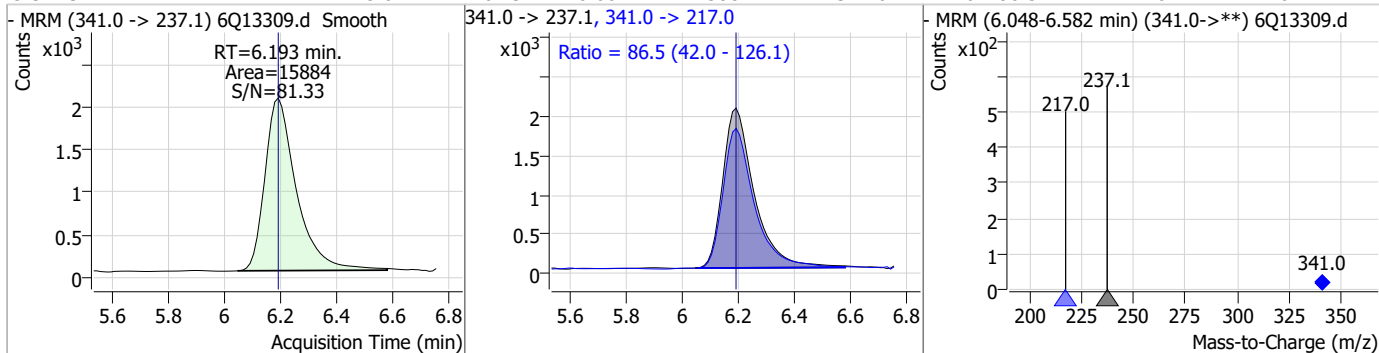
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.76	5.93	-0.01	1144	284.9 -> 184.9	12.4	6.1	18.4



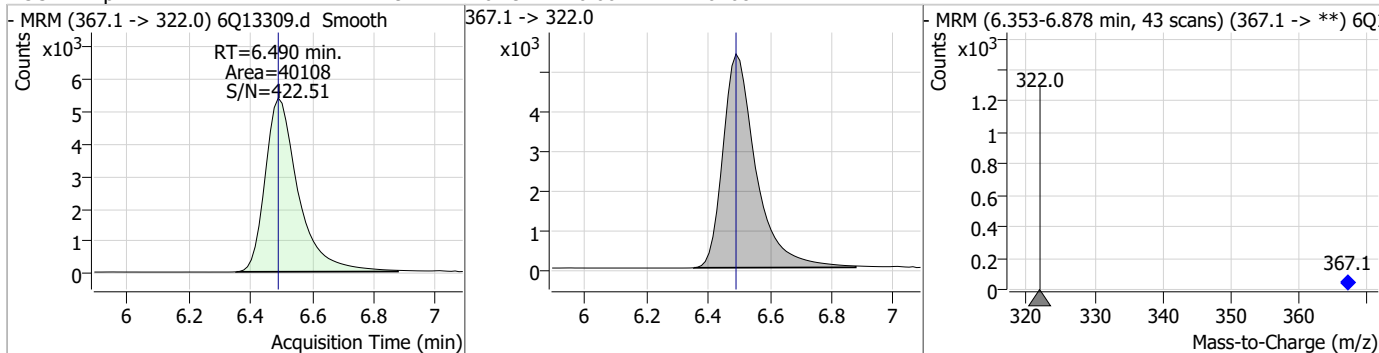
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.36	6.05	-0.01	7629	314.8 -> 82.9	2.9	1.3	3.8



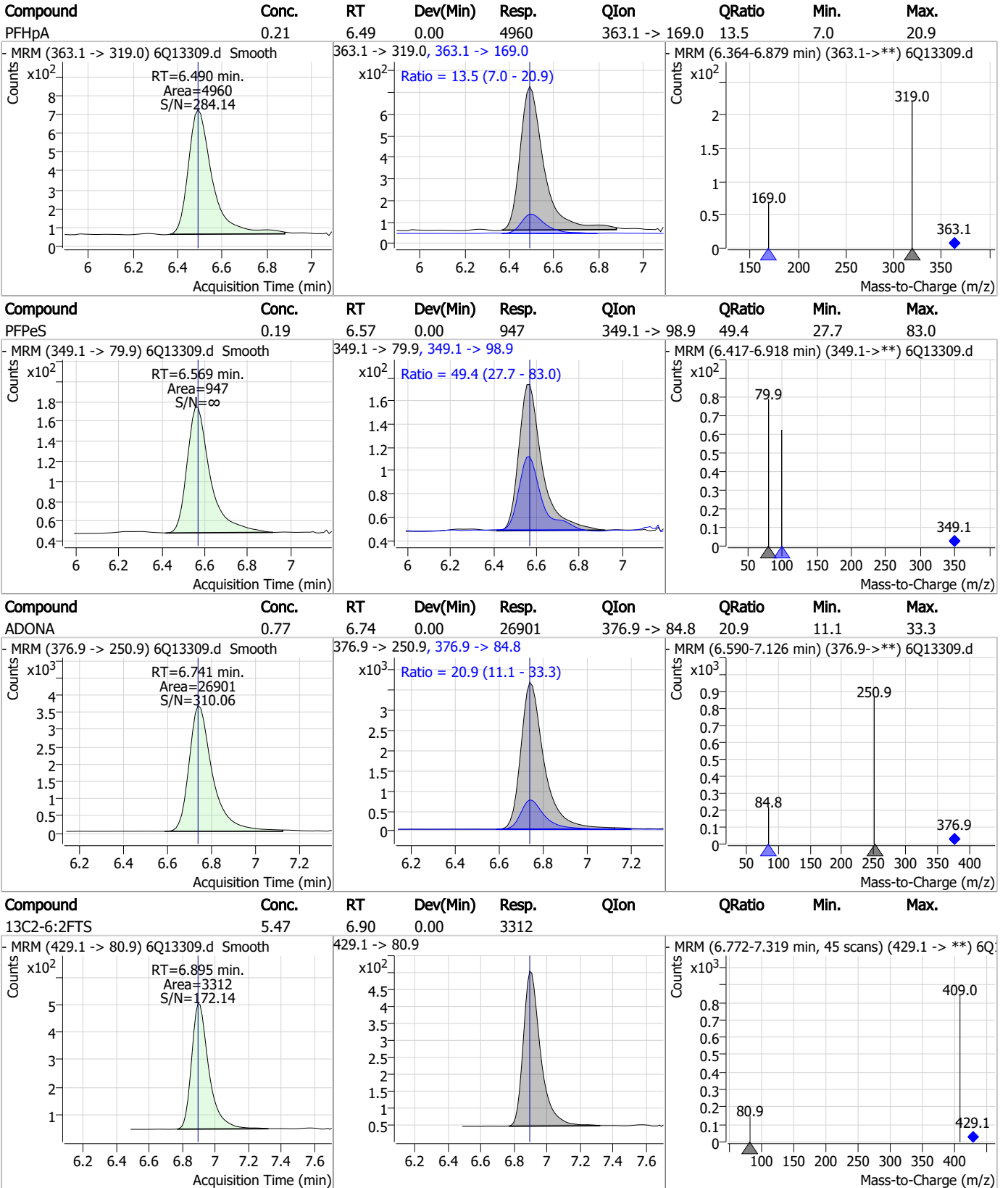
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.04	6.19	0.00	15884	341.0 -> 217.0	86.5	42.0	126.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.49	6.49	0.00	40108	367.1 -> 322.0			

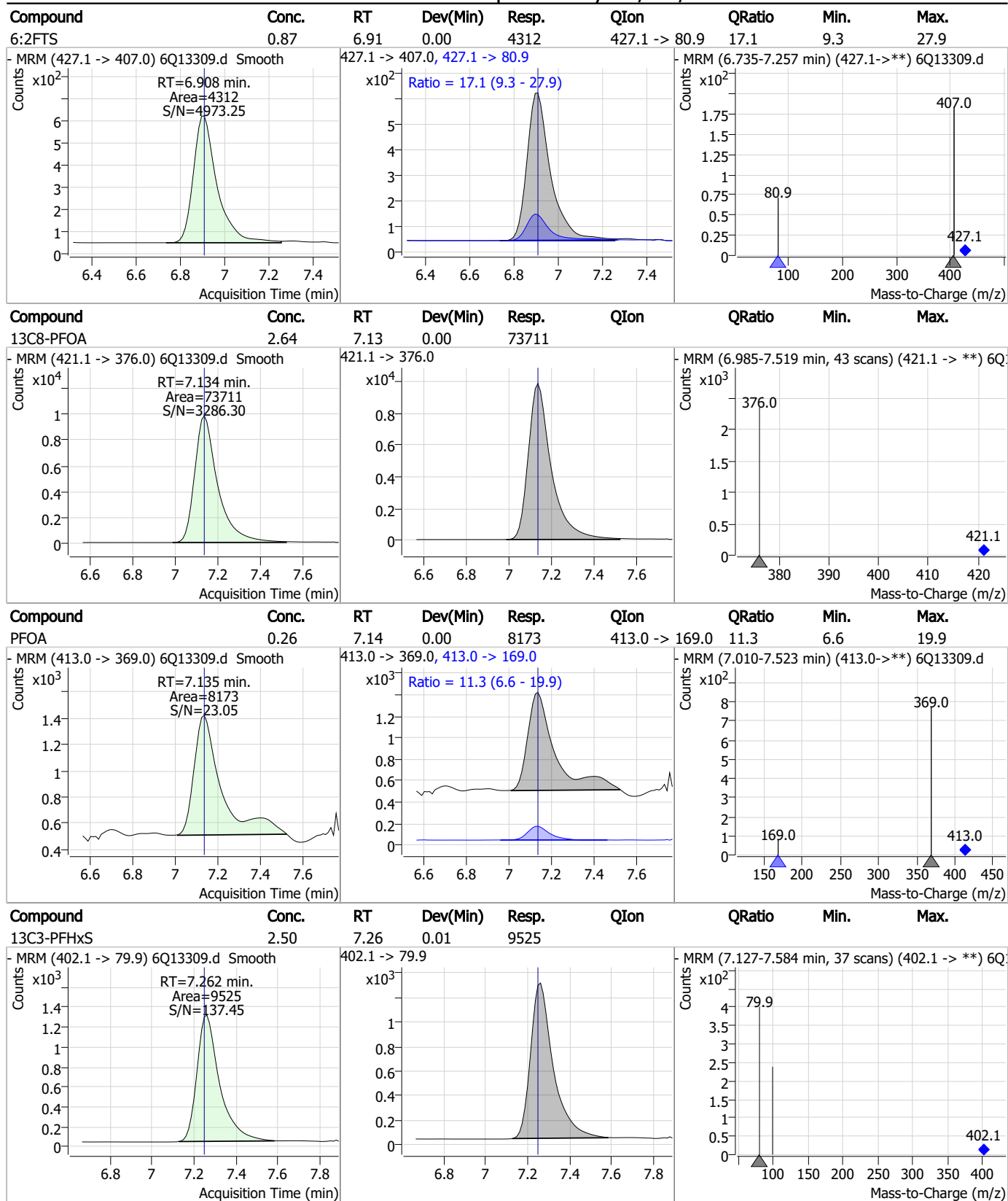


### Perfluorinated Compounds by LC/MS/MS



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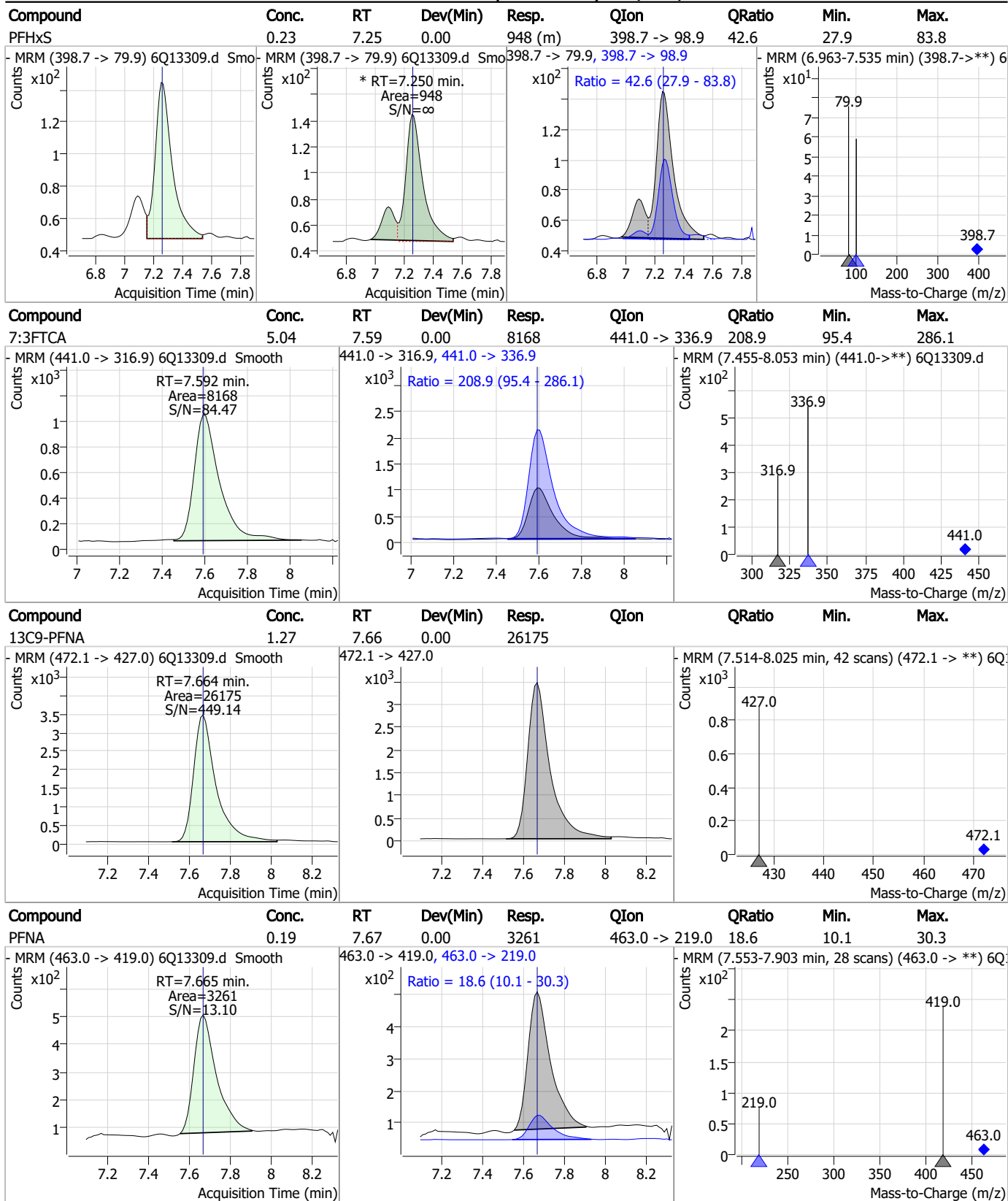
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

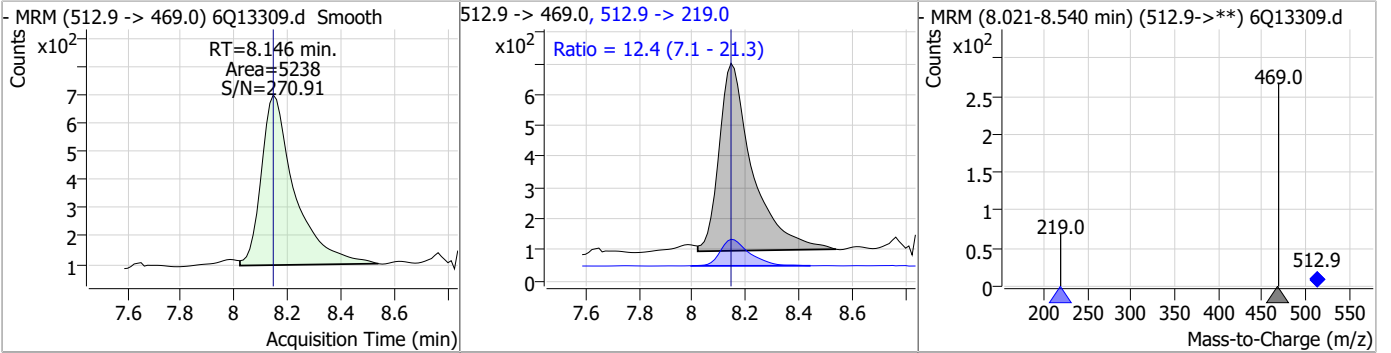
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.20	7.82	0.00	716	449.0 -> 98.9	66.3	27.8	83.5
13C2-8:2FTS	5.17	7.93	0.00	3059	529.1 -> 80.9	22.1	12.8	38.3
8:2FTS	0.92	7.93	0.00	2259	527.1 -> 80.8	22.1	12.8	38.3
13C6-PFDA	1.30	8.15	0.00	19011	519.1 -> 474.1	22.1	12.8	38.3

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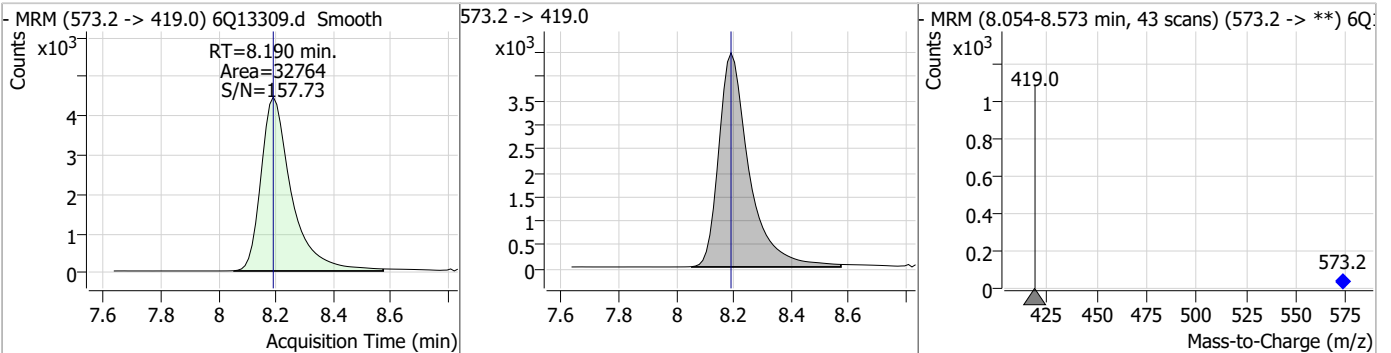


### Perfluorinated Compounds by LC/MS/MS

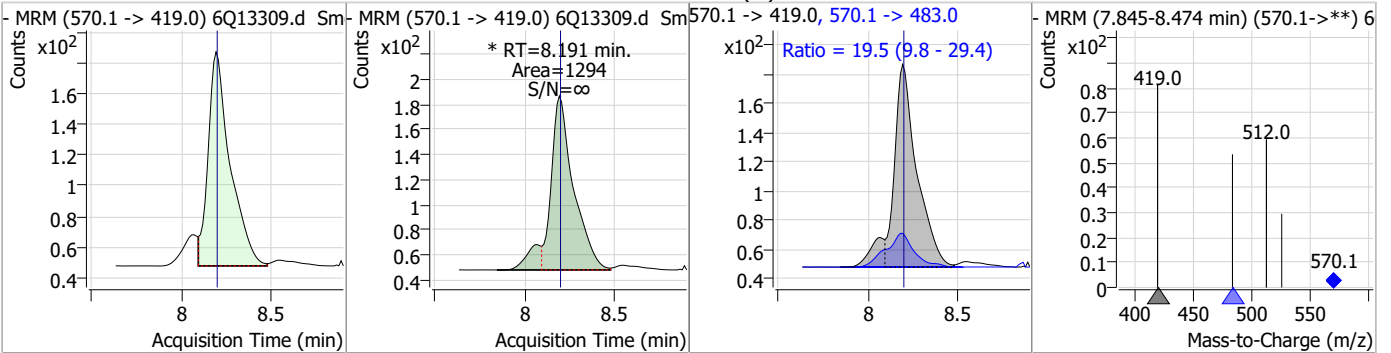
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.24	8.15	0.00	5238	512.9 -> 219.0	12.4	7.1	21.3



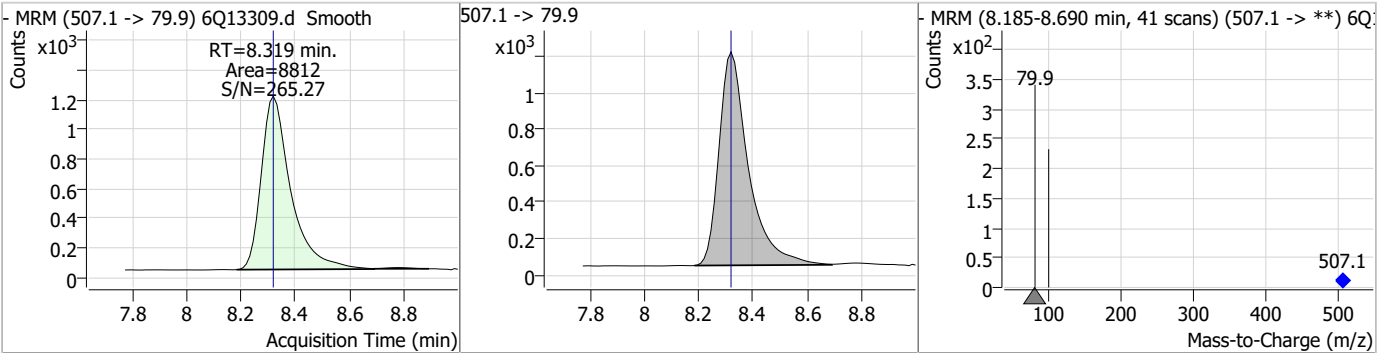
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.37	8.19	0.00	32764				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.22	8.19	0.00	1294 (m)	570.1 -> 483.0	19.5	9.8	29.4

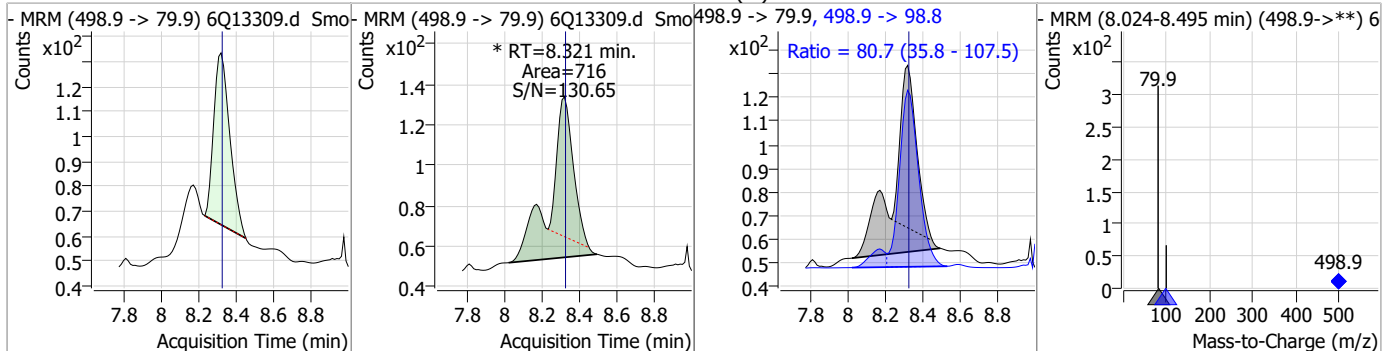


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.51	8.32	0.00	8812				

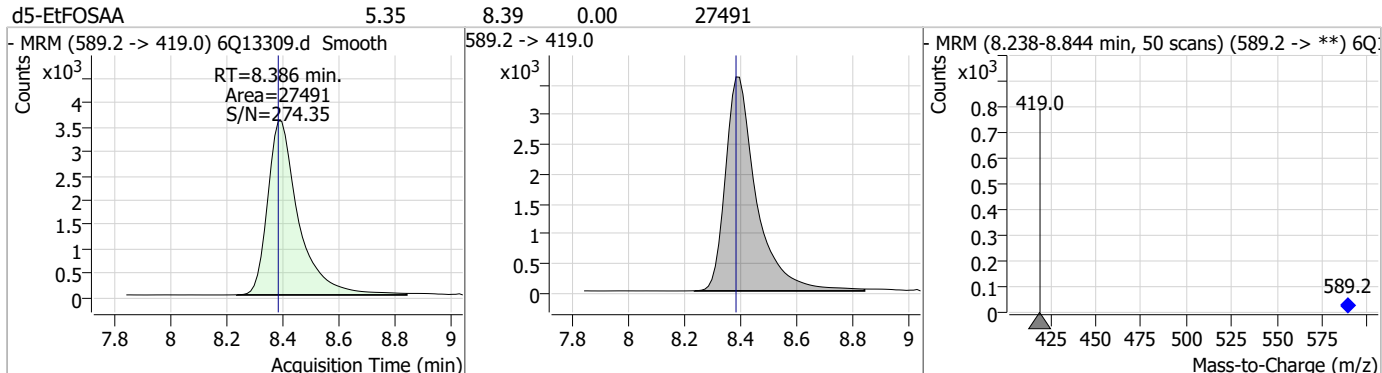


### Perfluorinated Compounds by LC/MS/MS

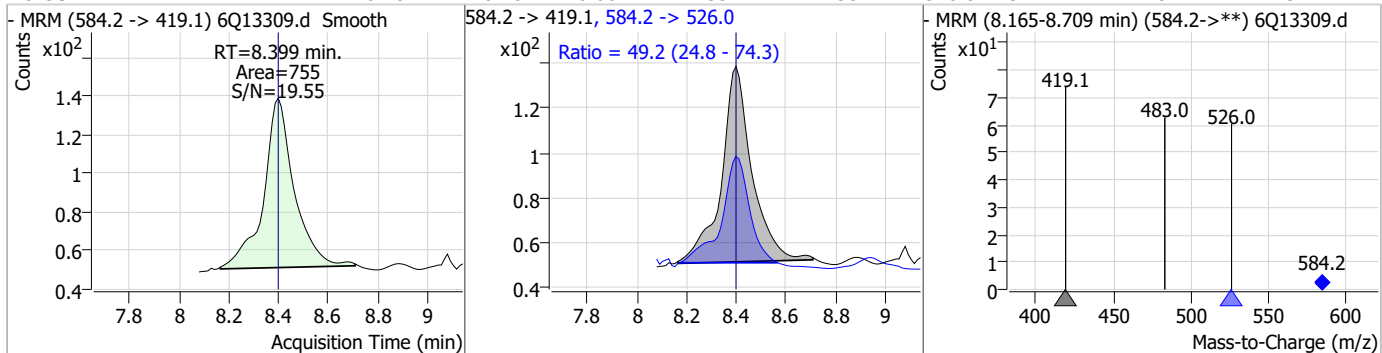
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.18	8.32	0.00	716 (m)	498.9 -> 98.8	80.7	35.8	107.5



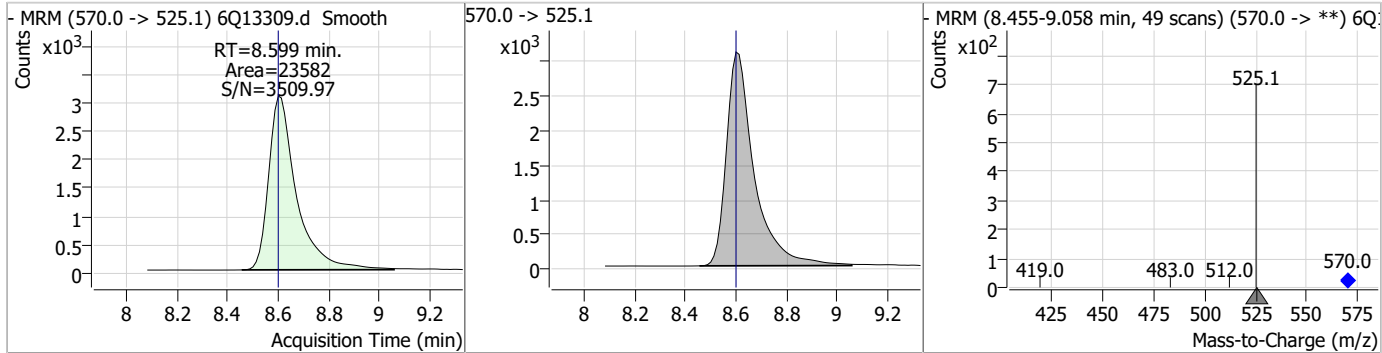
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.35	8.39	0.00	27491				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.18	8.40	0.00	755	584.2 -> 526.0	49.2	24.8	74.3

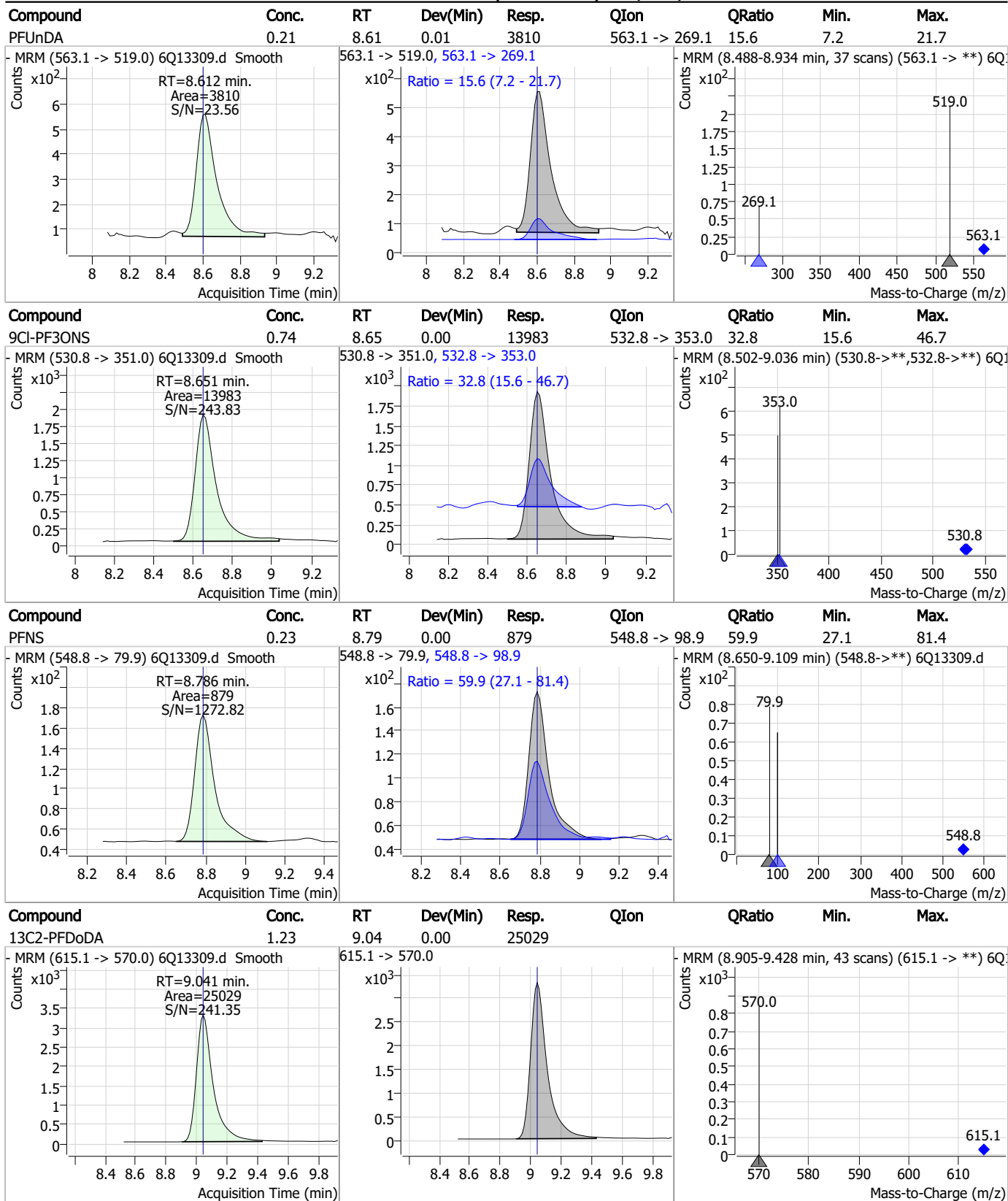


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.60	0.00	23582				



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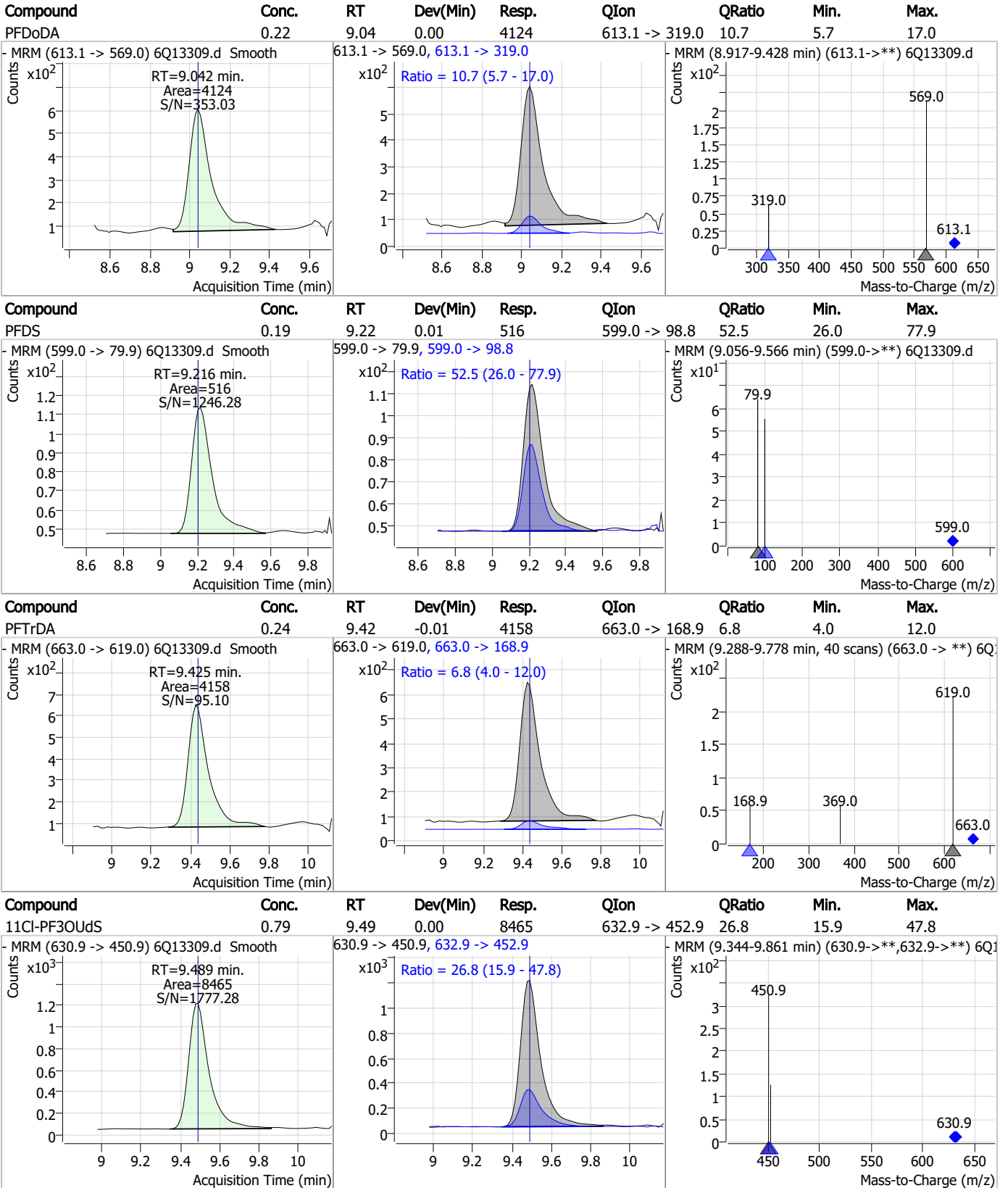
### Perfluorinated Compounds by LC/MS/MS



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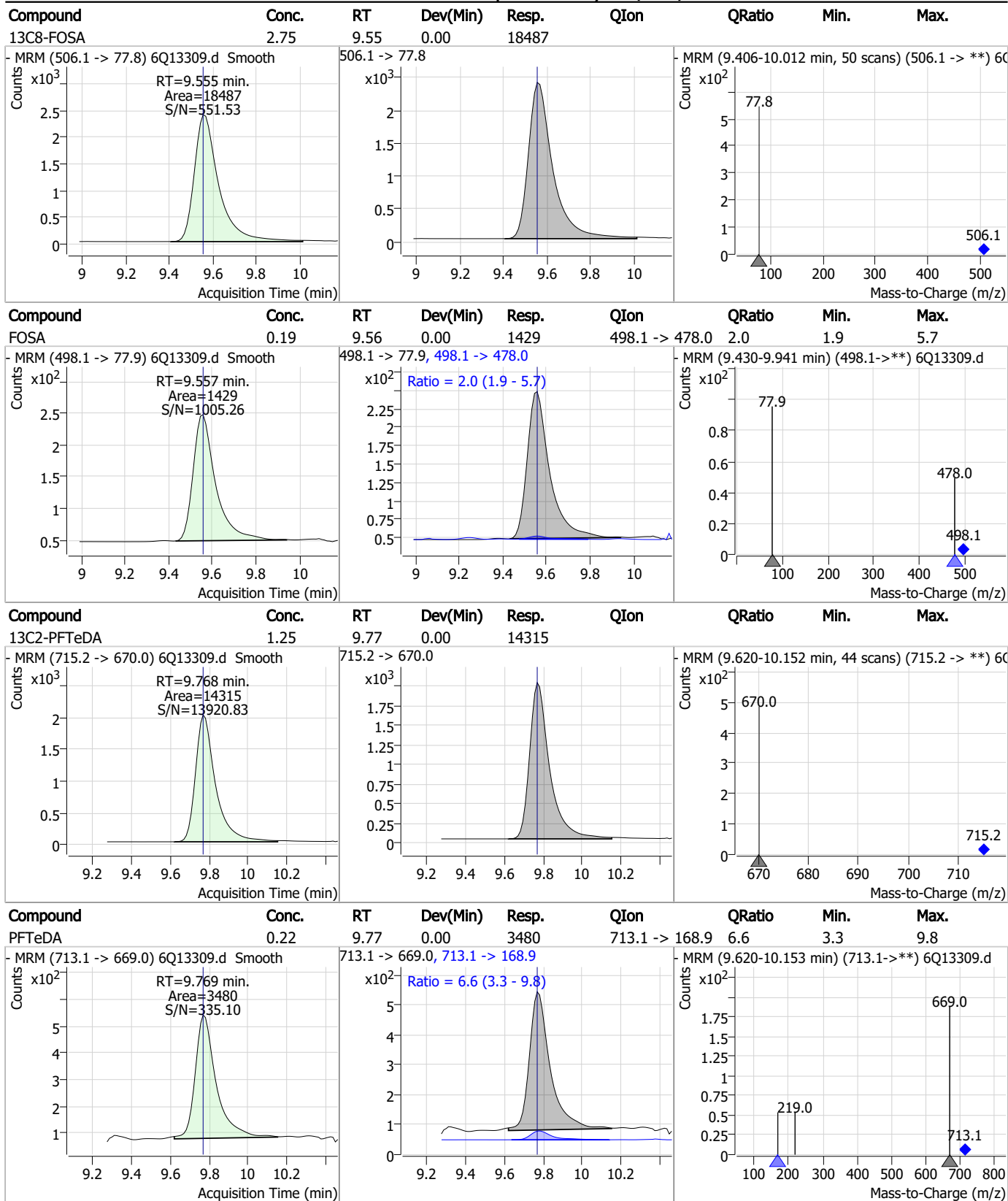
### Perfluorinated Compounds by LC/MS/MS



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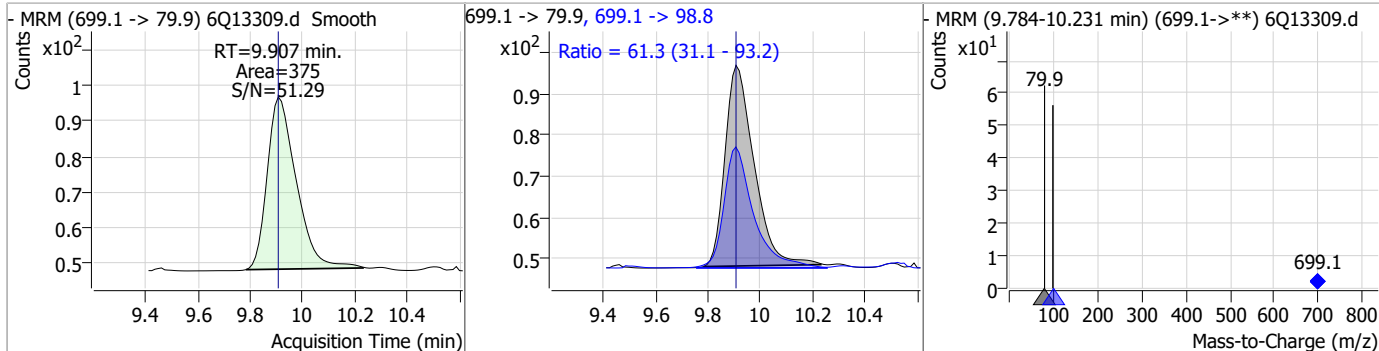
### Perfluorinated Compounds by LC/MS/MS



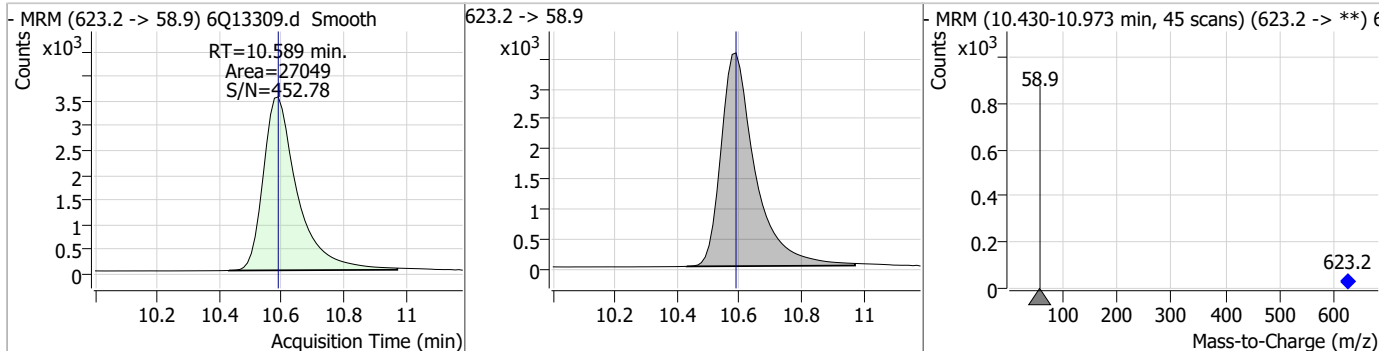
7.7.13  
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### Perfluorinated Compounds by LC/MS/MS

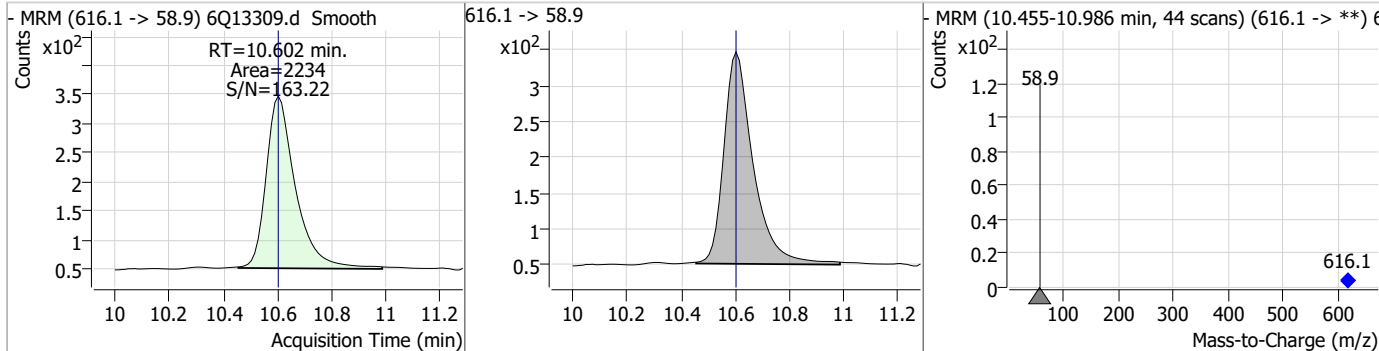
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.23	9.91	0.00	375	699.1 -> 98.8	61.3	31.1	93.2



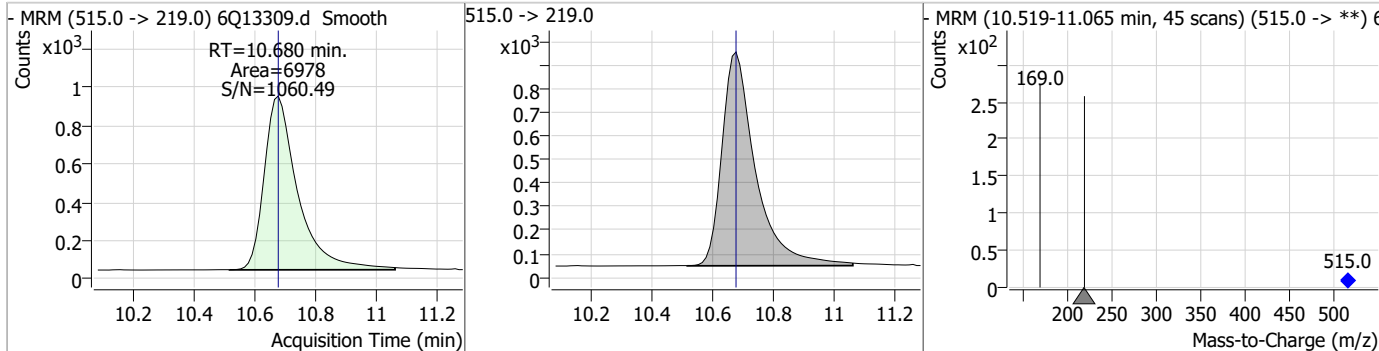
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.33	10.59	0.00	27049				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	2.12	10.60	0.00	2234				



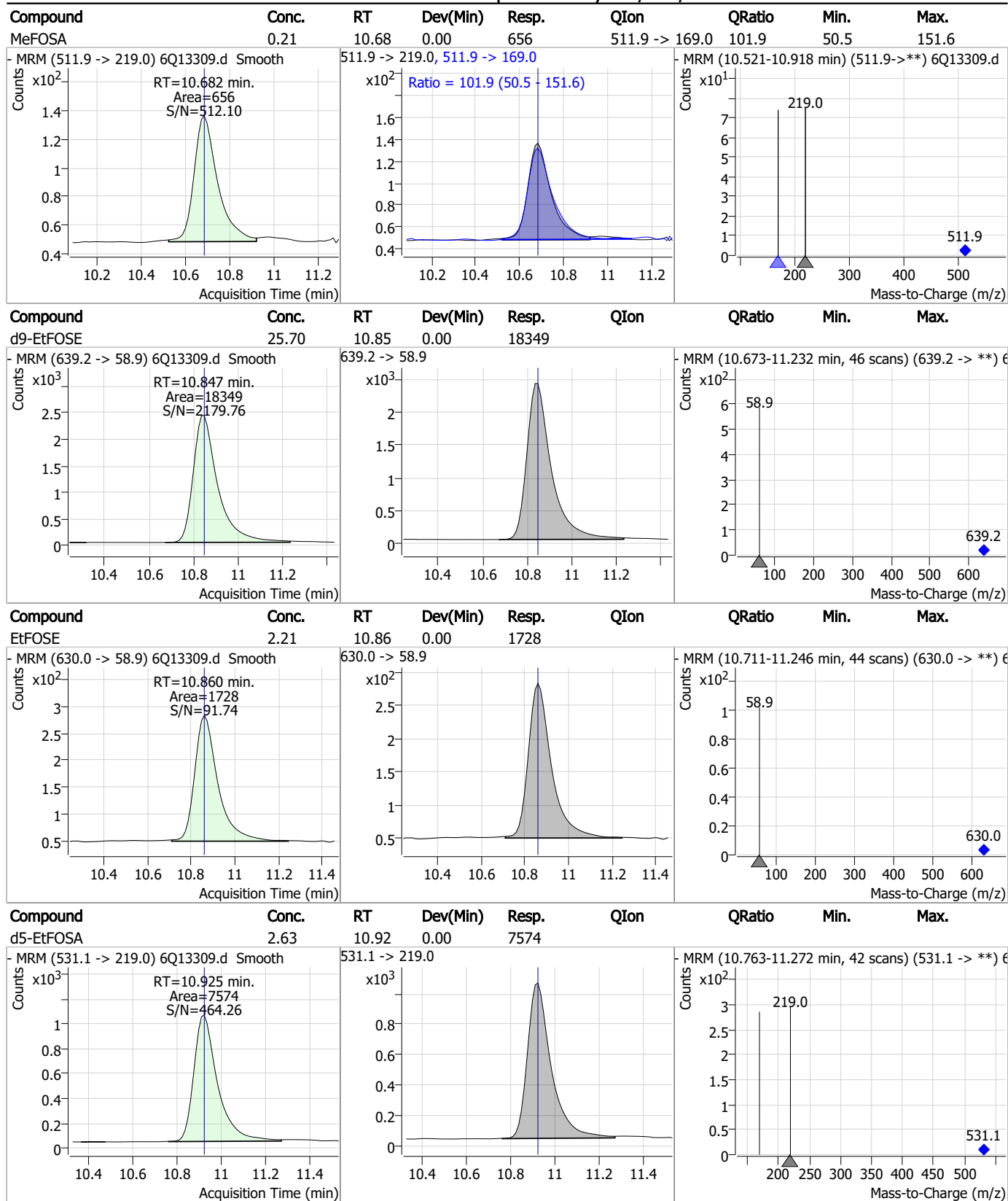
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.56	10.68	0.00	6978				



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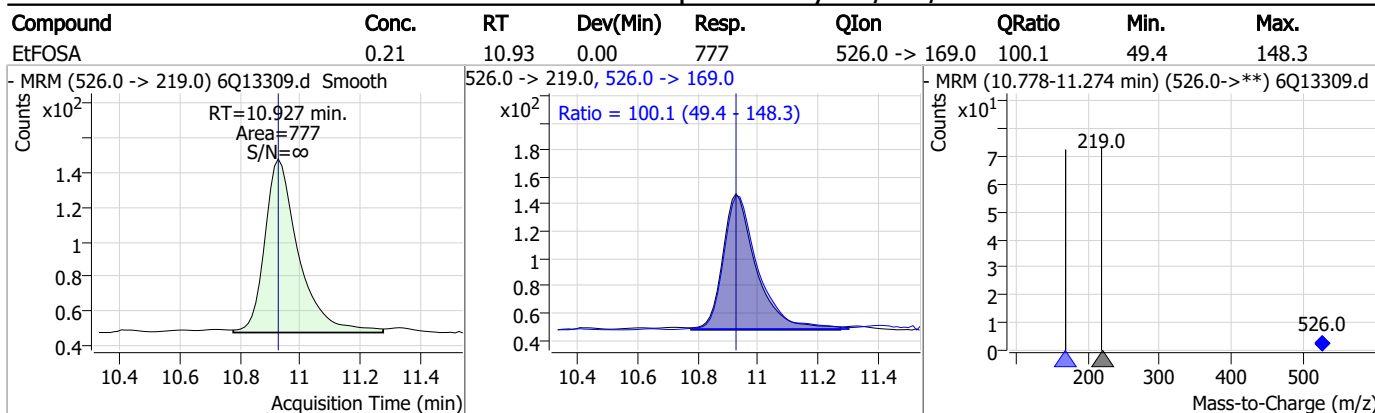
### Perfluorinated Compounds by LC/MS/MS



7.7.13

7

### Perfluorinated Compounds by LC/MS/MS



7.7.13

7

# Manual Integration Approval Summary

Sample Number: S6Q203-CC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13309.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 15:38      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak

7.7.13.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13325.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 7:22:00 PM  
 Sample Name : cc203-4  
 Vial : P1-A5  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	96628	10.00 µg/L	-0.025
M5-PFPeA	4.386	268.3 -> 223.0	47947	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	43610	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	43479	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	77572	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	27283	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	20546	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	23750	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	28218	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	15741	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17981	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	16434	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	10453	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	9773	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2845	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	3556	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	3452	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	37724	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	15844	10.00 µg/L	-0.012
M5-EtFOSAA	8.386	589.2 -> 419.0	29220	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	29214	25.00 µg/L	0.000
M9-EtFOSE	10.835	639.2 -> 58.9	19664	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	8167	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	7252	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	11417	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	42852	5.00 µg/L	-0.012
18O2-PFHxS	7.261	403.0 -> 83.9	7685	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	92843	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	25872	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	28894	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	41688	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2845	5.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.6%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3556	5.42 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3452	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-PFDoDA	9.041	615.1 -> 570.0	28218	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.4%		
13C2-PFTeDA	9.768	715.2 -> 670.0	15741	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C3-PFBS	5.518	302.1 -> 79.9	16434	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C3-PFHxS	7.262	402.1 -> 79.9	10453	2.53 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C4-PFBA	2.975	216.8 -> 171.9	96628	10.10 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C4-PFHpA	6.502	367.1 -> 322.0	43479	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C5-PFHxA	5.563	318.0 -> 273.0	43610	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C5-PFPeA	4.386	268.3 -> 223.0	47947	5.03 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C6-PFDA	8.145	519.1 -> 474.1	20546	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 112.2%		
13C7-PFUnDA	8.599	570.0 -> 525.1	23750	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C8-FOSA	9.555	506.1 -> 77.8	17981	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C8-PFOA	7.134	421.1 -> 376.0	77572	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C8-PFOS	8.319	507.1 -> 79.9	9773	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C9-PFNA	7.664	472.1 -> 427.0	27283	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.6%		
d3-MeFOSAA	8.190	573.2 -> 419.0	37724	5.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.8%		
13C3-HFPO-DA	5.927	286.9 -> 168.9	15844	9.52 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 95.2%		
d3-MeFOSA	10.680	515.0 -> 219.0	7252	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.7%		
d5-EtFOSAA	8.386	589.2 -> 419.0	29220	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
d7-MeFOSE	10.589	623.2 -> 58.9	29214	25.38 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
d9-EtFOSE	10.835	639.2 -> 58.9	19664	25.55 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 102.2%		
d5-EtFOSA	10.913	531.1 -> 219.0	8167	2.63 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.2%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.240	327.1 -> 307.0	55327	8.68 µg/L	97
		327.1 -> 80.9	12233		
6:2FTS	6.908	427.1 -> 407.0	46730	8.82 µg/L	96
		427.1 -> 80.9	9572		
8:2FTS	7.933	527.1 -> 507.0	24800	8.92 µg/L	96
		527.1 -> 80.8	5866		
EtFOSAA	8.399	584.2 -> 419.1	10382	2.26 µg/L	m 93
		584.2 -> 526.0	5665		
FOSA	9.557	498.1 -> 77.9	17264	2.41 µg/L	99
		498.1 -> 478.0	689		
MeFOSAA	8.191	570.1 -> 419.0	14798	2.14 µg/L	97
		570.1 -> 483.0	2694		
PFBA	2.982	212.8 -> 168.9	19654	9.04 µg/L	100
PFBS	5.518	298.7 -> 79.9	12675	2.01 µg/L	99
		298.7 -> 98.8	6076		
PFDA	8.146	512.9 -> 469.0	53894	2.26 µg/L	98
		512.9 -> 219.0	7103		
PFDoDA	9.042	613.1 -> 569.0	46726	2.21 µg/L	96
		613.1 -> 319.0	5976		
PFDS	9.216	599.0 -> 79.9	6748	2.22 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.503	599.0 -> 98.8	3656	2.32	µg/L	100
		363.1 -> 319.0	58756			
PFHpS	7.816	363.1 -> 169.0	8127	2.10	µg/L	92
		449.0 -> 79.9	8485			
PFHxA	5.566	449.0 -> 98.9	5224	2.31	µg/L	98
		313.0 -> 269.0	38878			
PFHxS	7.263	313.0 -> 118.9	1301	2.15	µg/L	100
		398.7 -> 79.9	9743			
PFNA	7.665	398.7 -> 98.9	5465	2.20	µg/L	99
		463.0 -> 419.0	39820			
PFNS	8.786	463.0 -> 219.0	8315	2.27	µg/L	99
		548.8 -> 79.9	9435			
PFOA	7.135	548.8 -> 98.9	5205	2.39	µg/L	98
		413.0 -> 369.0	79250			
PFOS	8.321	413.0 -> 169.0	10061	2.14	µg/L	94
		498.9 -> 79.9	9348			
PFPeA	4.388	498.9 -> 98.8	6251	4.52	µg/L	100
		263.0 -> 219.0	45675			
PFPeS	6.569	349.1 -> 79.9	12135	2.26	µg/L	99
		349.1 -> 98.9	6586			
PFTeDA	9.769	713.1 -> 669.0	42296	2.44	µg/L	99
		713.1 -> 168.9	2637			
PFTrDA	9.425	663.0 -> 619.0	47539	2.45	µg/L	97
		663.0 -> 168.9	3374			
PFUnDA	8.600	563.1 -> 519.0	44450	2.39	µg/L	100
		563.1 -> 269.1	6405			
11CI-PF3OUdS	9.489	630.9 -> 450.9	102299	9.59	µg/L	100
		632.9 -> 452.9	32569			
9CI-PF3ONS	8.651	530.8 -> 351.0	167447	8.85	µg/L	99
		532.8 -> 353.0	53059			
ADONA	6.753	376.9 -> 250.9	327078	9.31	µg/L	98
		376.9 -> 84.8	69688			
HFPO-DA	5.940	284.9 -> 168.9	14671	9.77	µg/L	98
		284.9 -> 184.9	1693			
3:3FTCA	3.841	241.0 -> 177.0	5645	11.28	µg/L	97
		241.0 -> 117.0	737			
5:3FTCA	6.193	341.0 -> 237.1	201836	56.44	µg/L	100
		341.0 -> 217.0	169706			
7:3FTCA	7.605	441.0 -> 316.9	105822	57.54	µg/L	97
		441.0 -> 336.9	196453			
EtFOSA	10.927	526.0 -> 219.0	8802	2.21	µg/L	97
		526.0 -> 169.0	8462			
EtFOSE	10.860	630.0 -> 58.9	18155	21.65	µg/L	100
		511.9 -> 219.0	7327			
MeFOSA	10.682	511.9 -> 169.0	7706	2.27	µg/L	96
		616.1 -> 58.9	25839			
MeFOSE	10.602	699.1 -> 79.9	4126	22.75	µg/L	100
		699.1 -> 98.8	2576			
PFDoDS	9.907	295.0 -> 201.0	4533	2.24	µg/L	100
		295.0 -> 84.9	2240			
NFDHA	5.445	279.0 -> 85.1	13765	4.60	µg/L	100
		229.0 -> 84.9	12165			
PFMBA	4.787	314.8 -> 134.9	93147	3.91	µg/L	100
		314.8 -> 82.9	2345			

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



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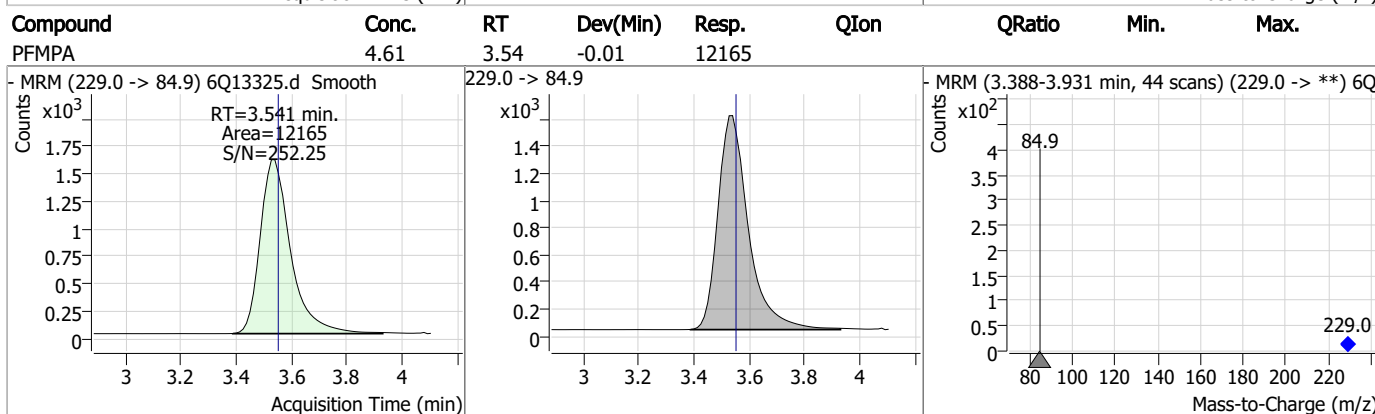
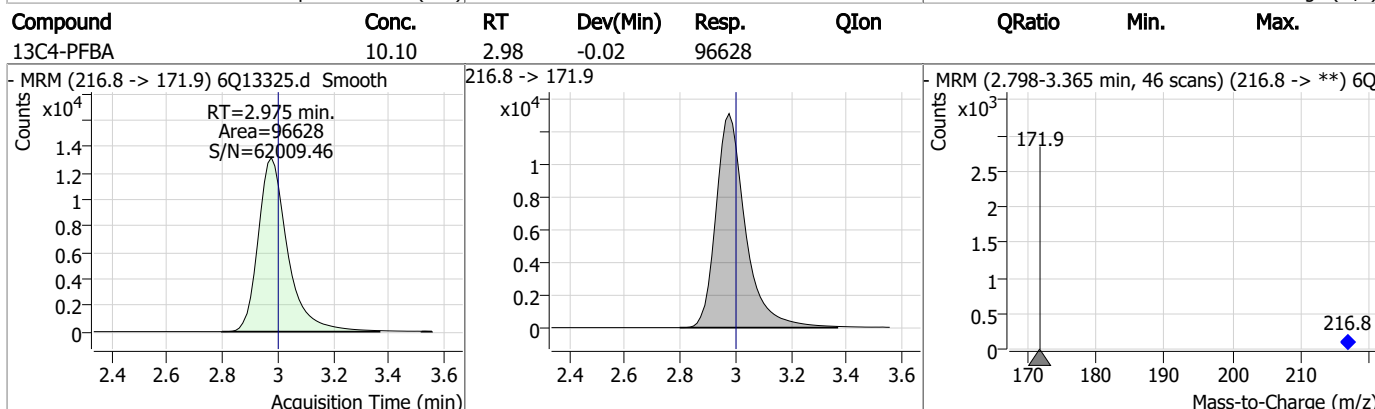
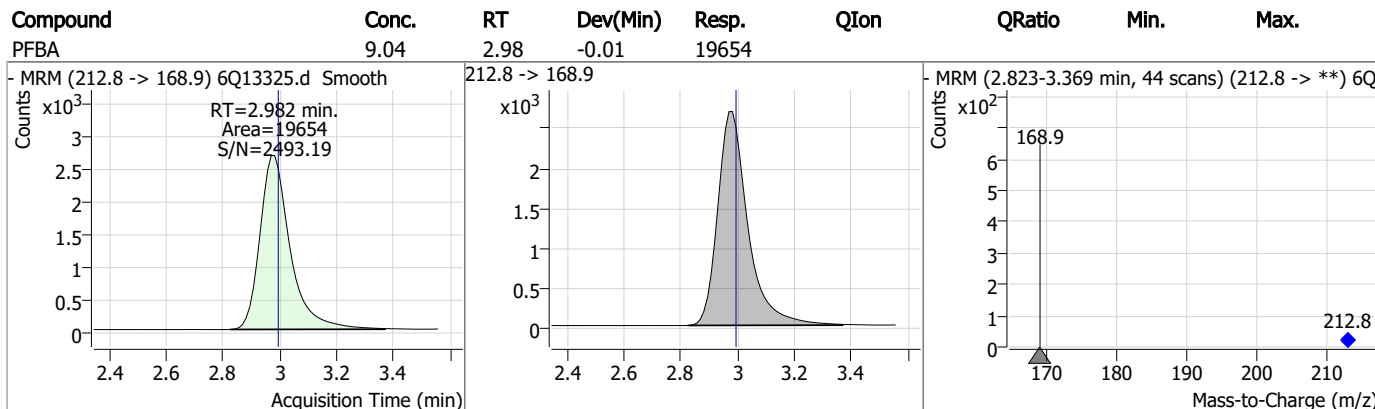
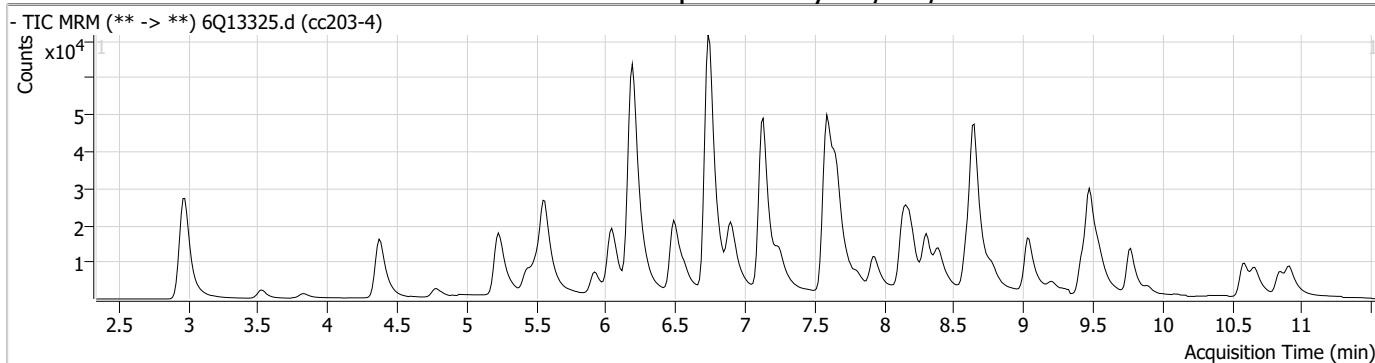
### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.14

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### Perfluorinated Compounds by LC/MS/MS

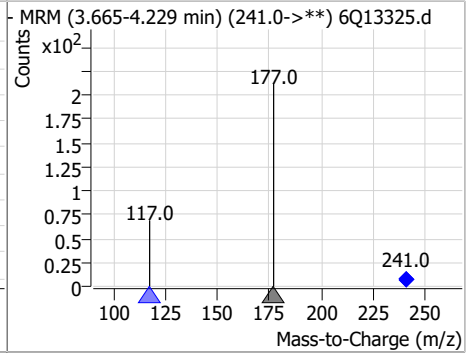
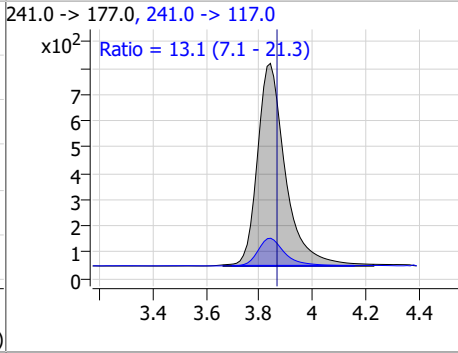
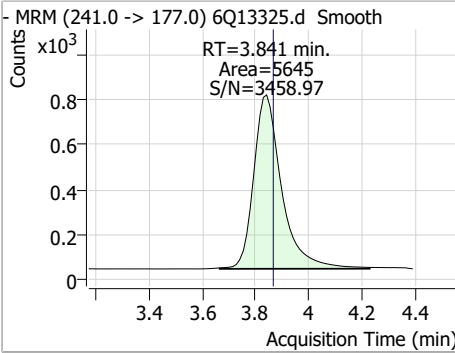


7.7.14  
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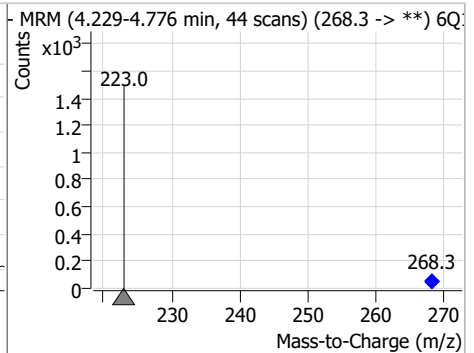
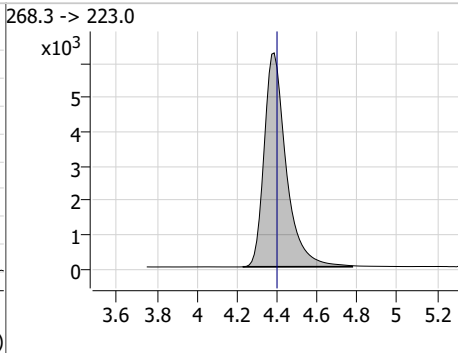
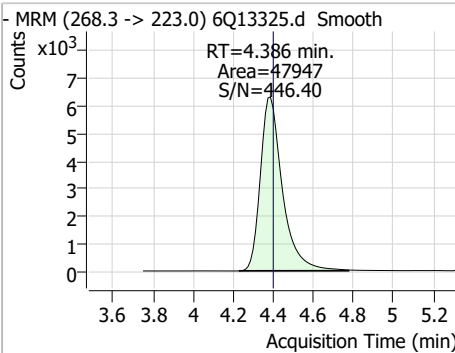


### Perfluorinated Compounds by LC/MS/MS

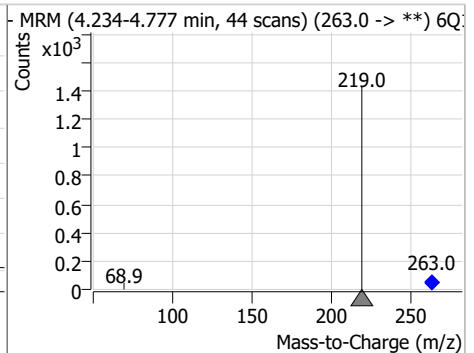
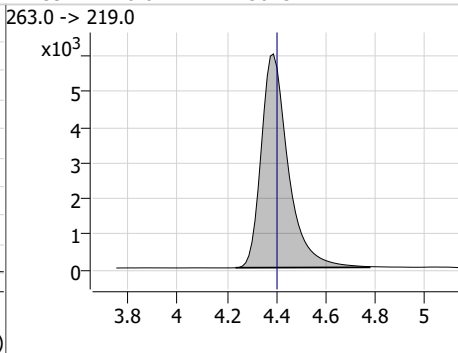
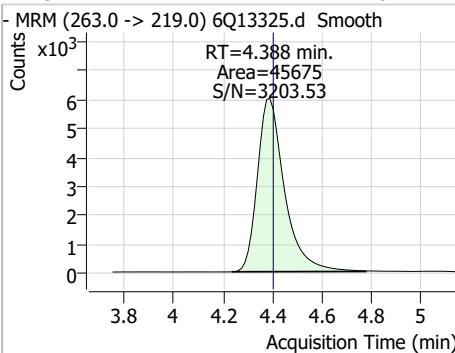
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.28	3.84	-0.02	5645	241.0 -> 117.0	13.1	7.1	21.3



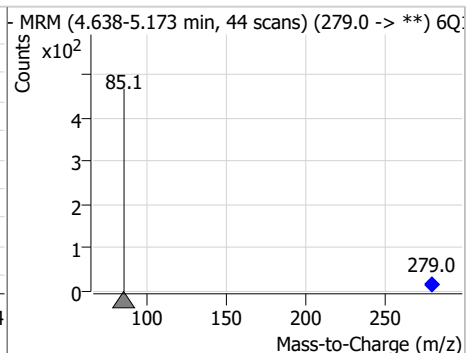
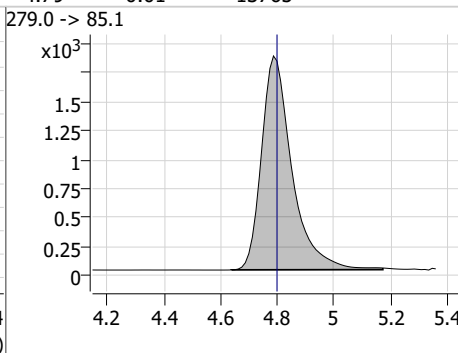
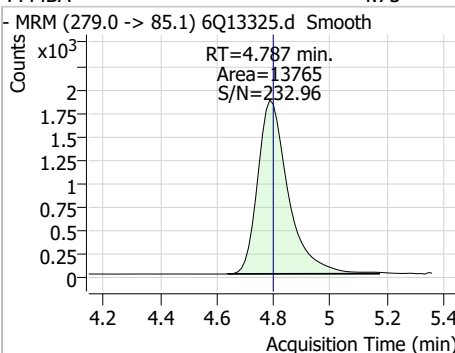
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.03	4.39	-0.01	47947				



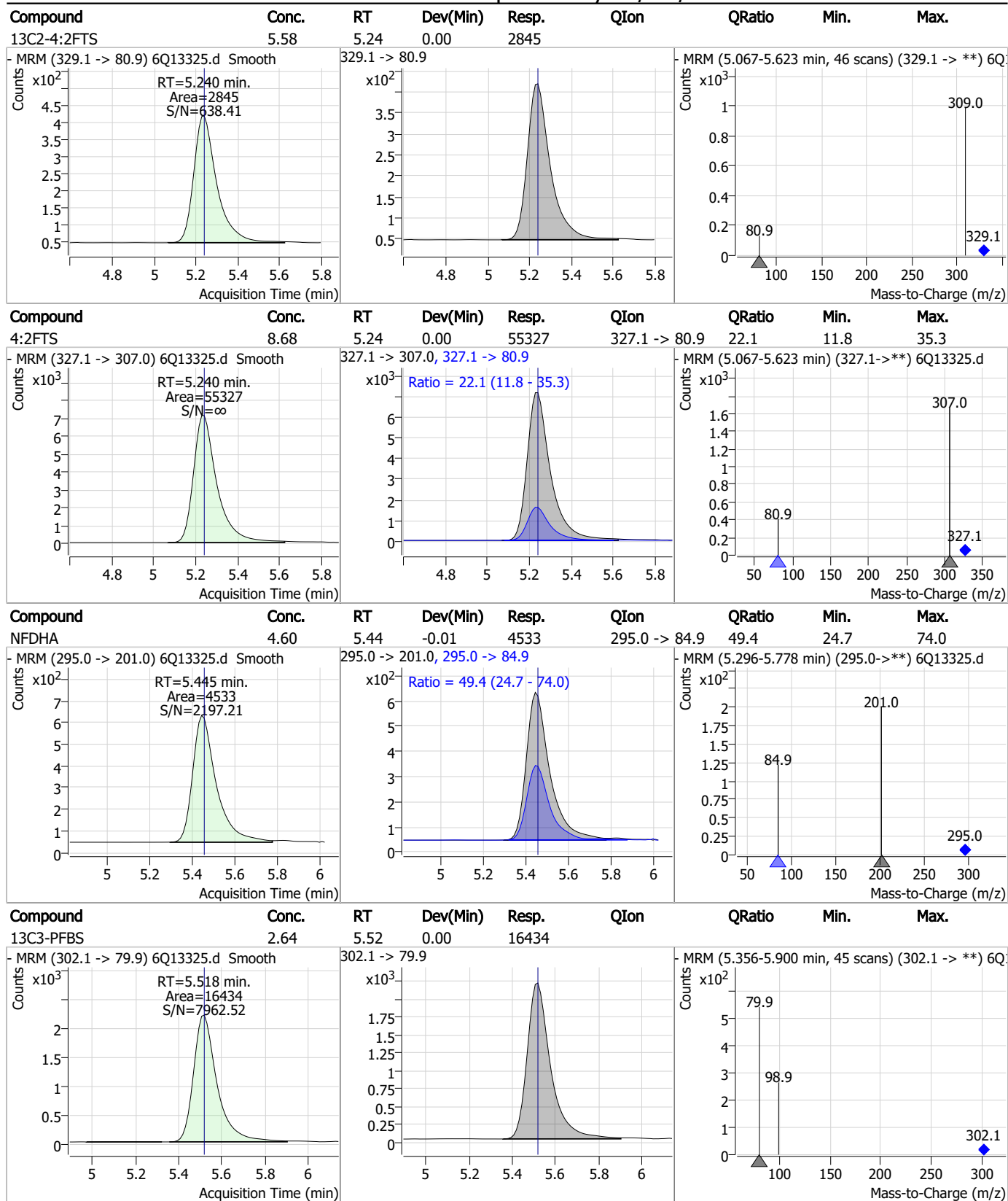
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.52	4.39	-0.01	45675				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.75	4.79	-0.01	13765				



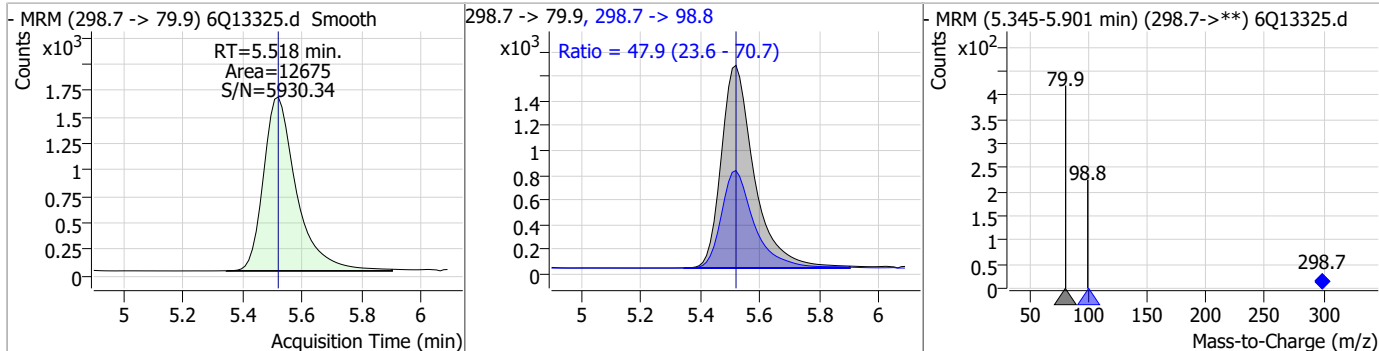
### Perfluorinated Compounds by LC/MS/MS



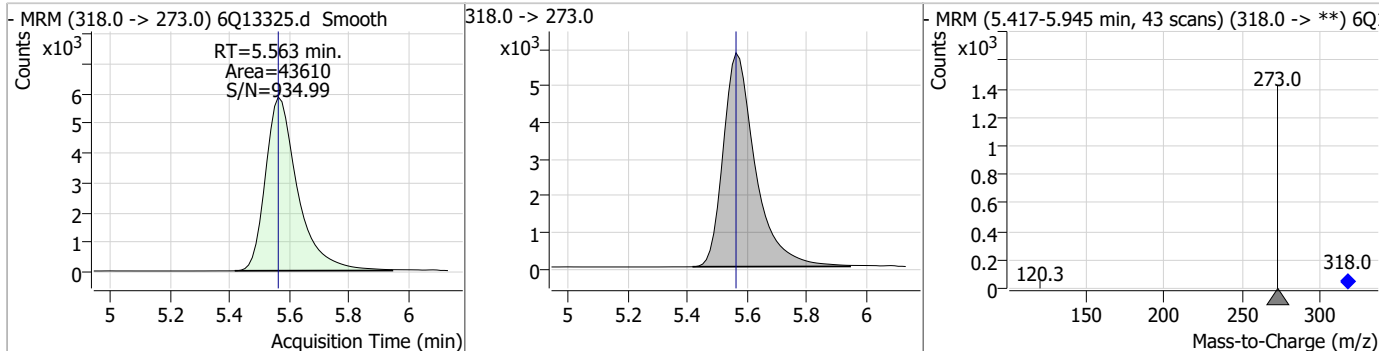
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### Perfluorinated Compounds by LC/MS/MS

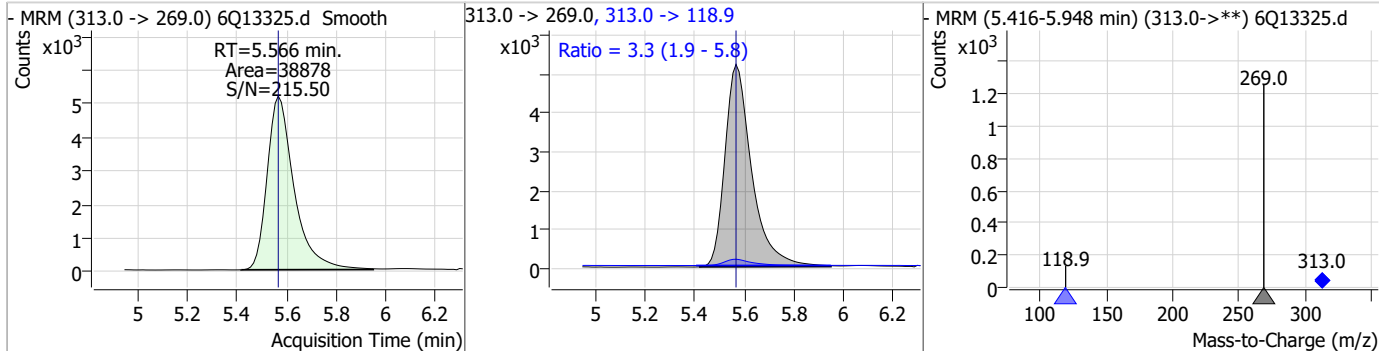
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.01	5.52	0.00	12675	298.7 -> 98.8	47.9	23.6	70.7



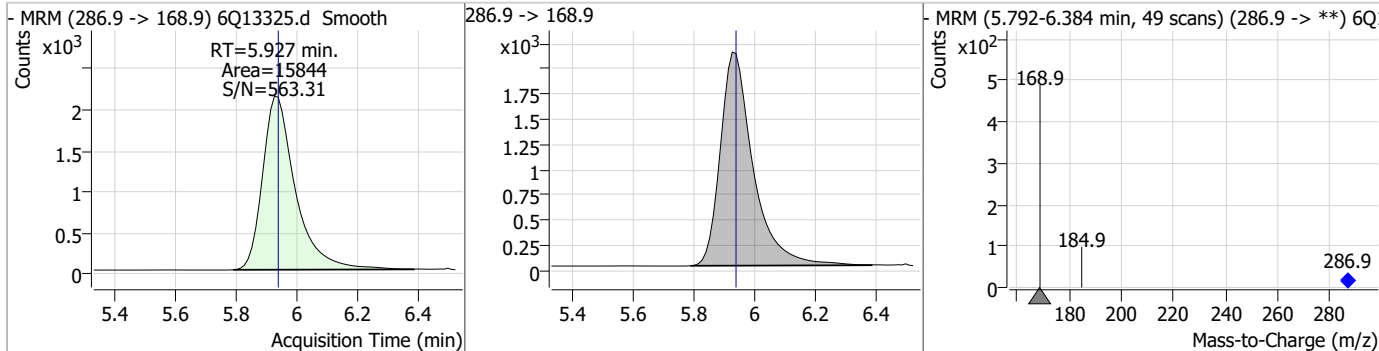
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.59	5.56	0.00	43610				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.31	5.57	0.00	38878	313.0 -> 118.9	3.3	1.9	5.8

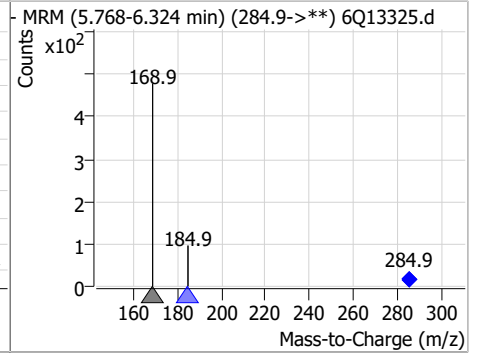
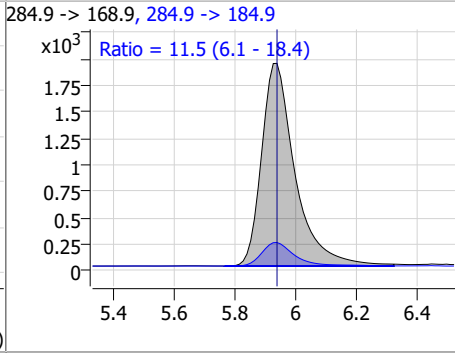
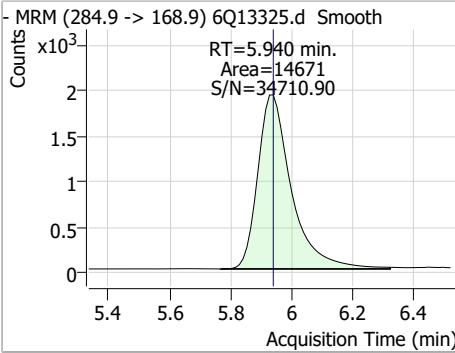


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.52	5.93	-0.01	15844				

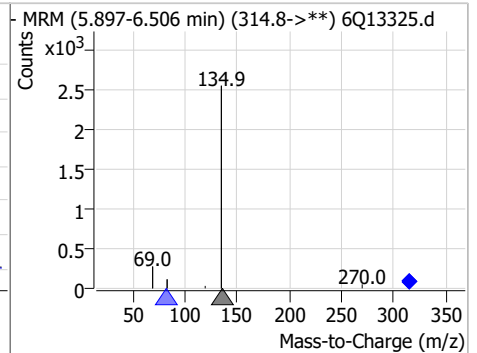
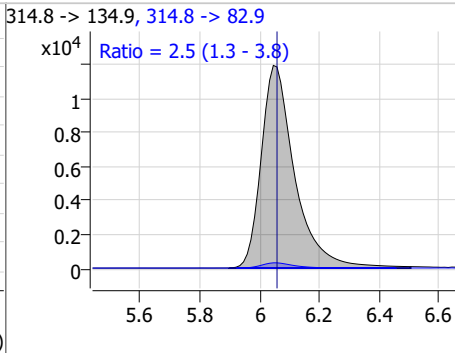
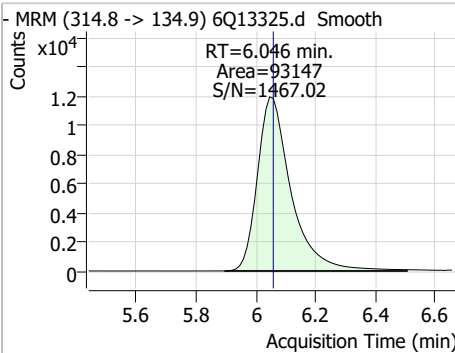


### Perfluorinated Compounds by LC/MS/MS

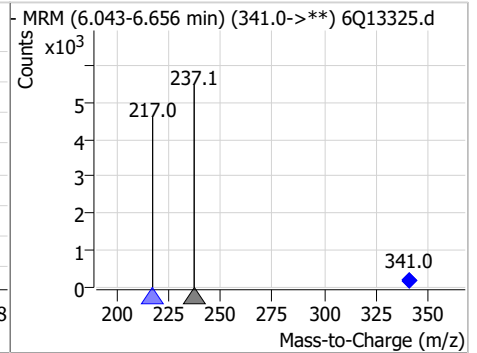
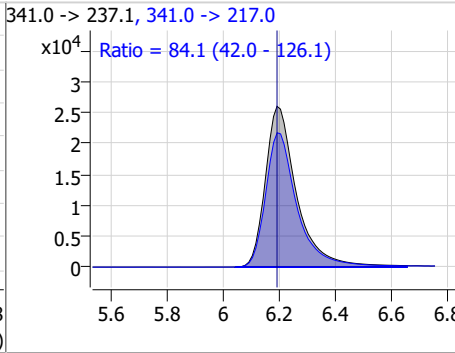
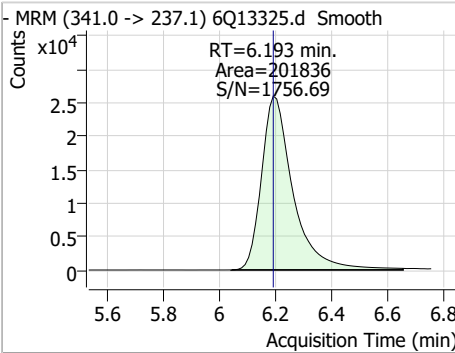
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.77	5.94	0.00	14671	284.9 -> 184.9	11.5	6.1	18.4



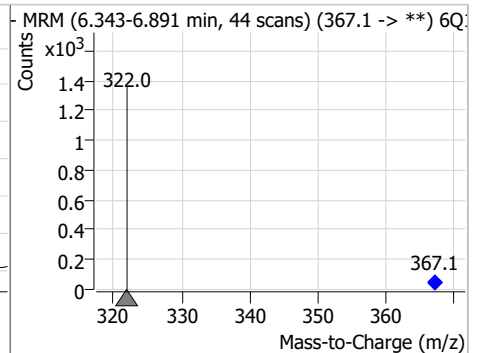
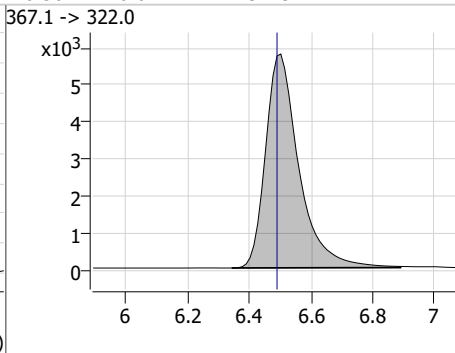
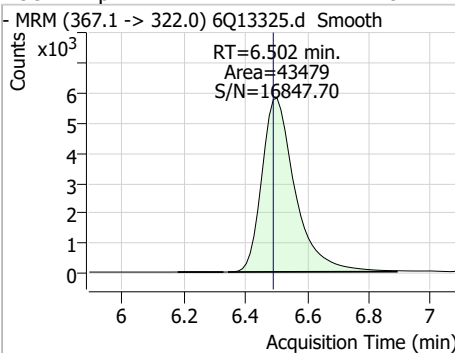
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	3.91	6.05	-0.01	93147	314.8 -> 82.9	2.5	1.3	3.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	56.44	6.19	0.00	201836	341.0 -> 217.0	84.1	42.0	126.1

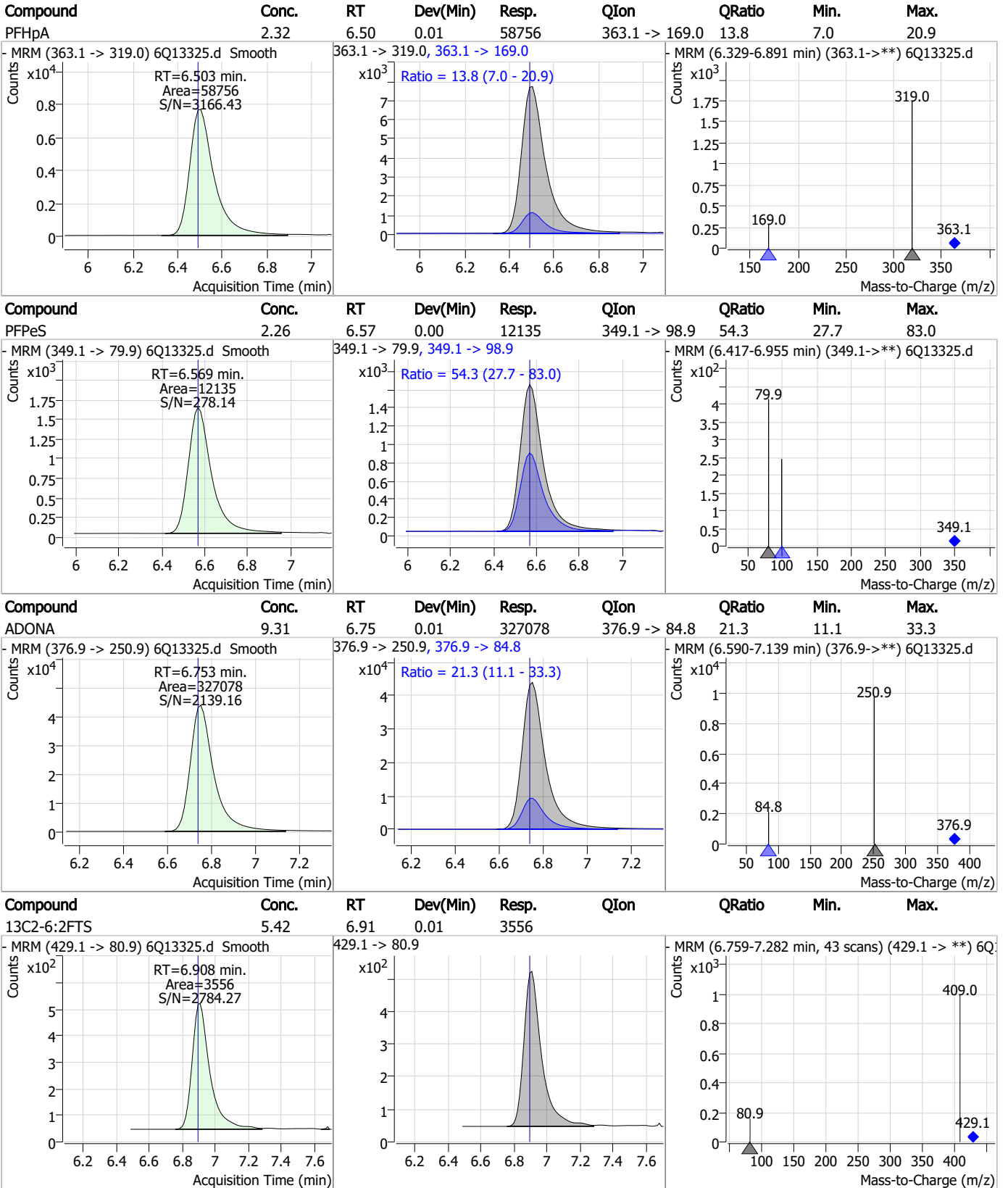


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.50	0.01	43479	367.1 -> 322.0			



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### Perfluorinated Compounds by LC/MS/MS

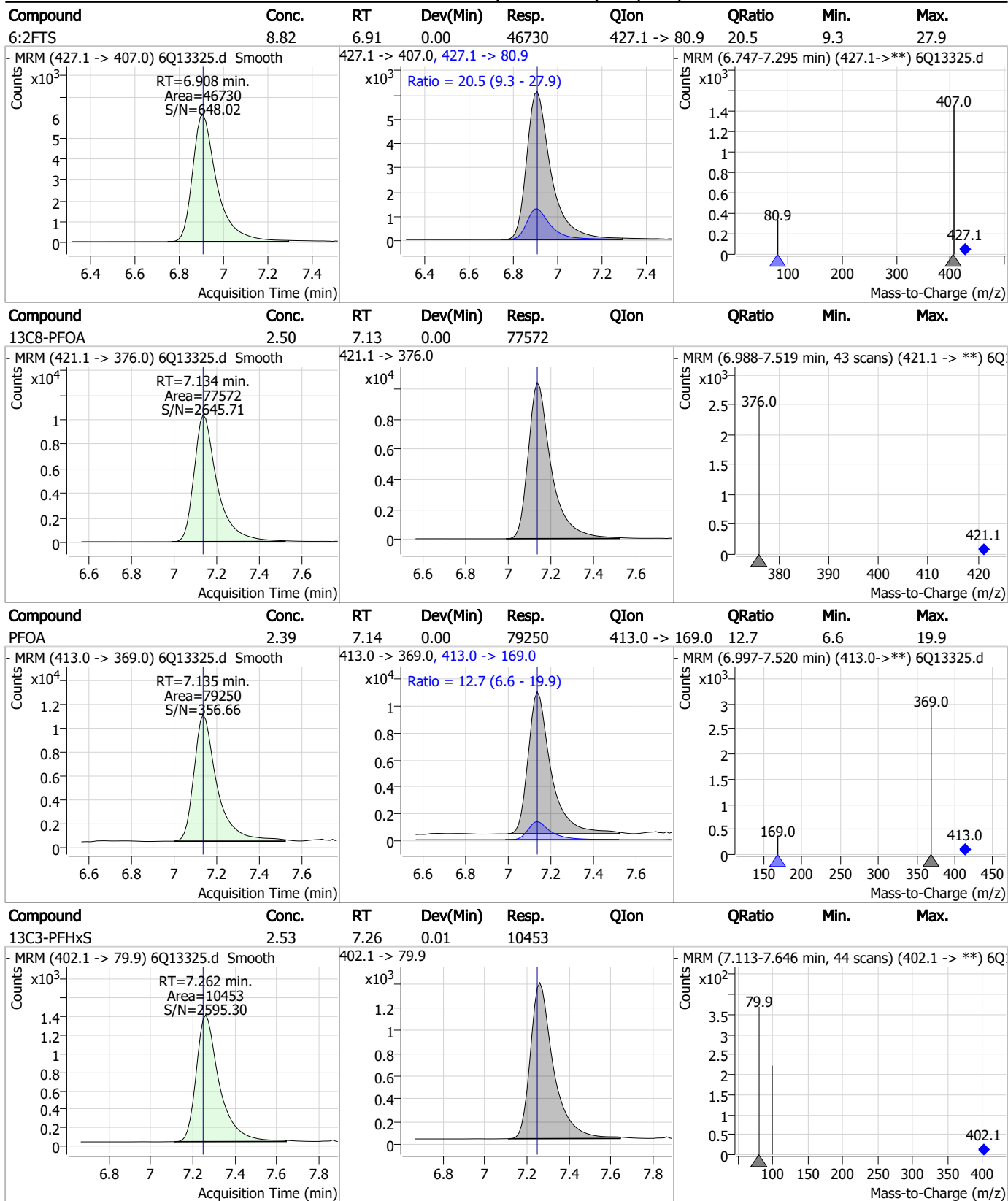


7.7.14

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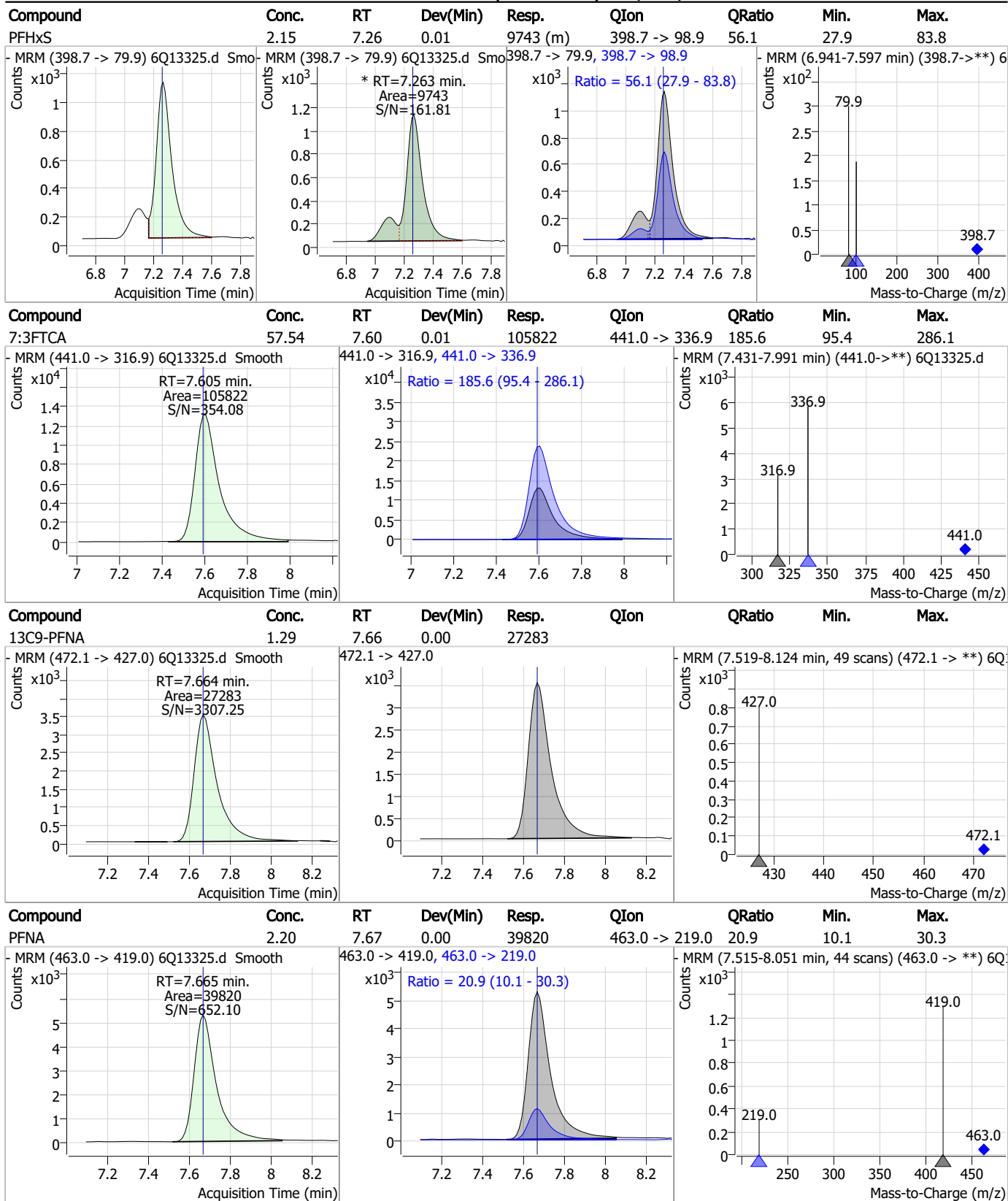


### Perfluorinated Compounds by LC/MS/MS



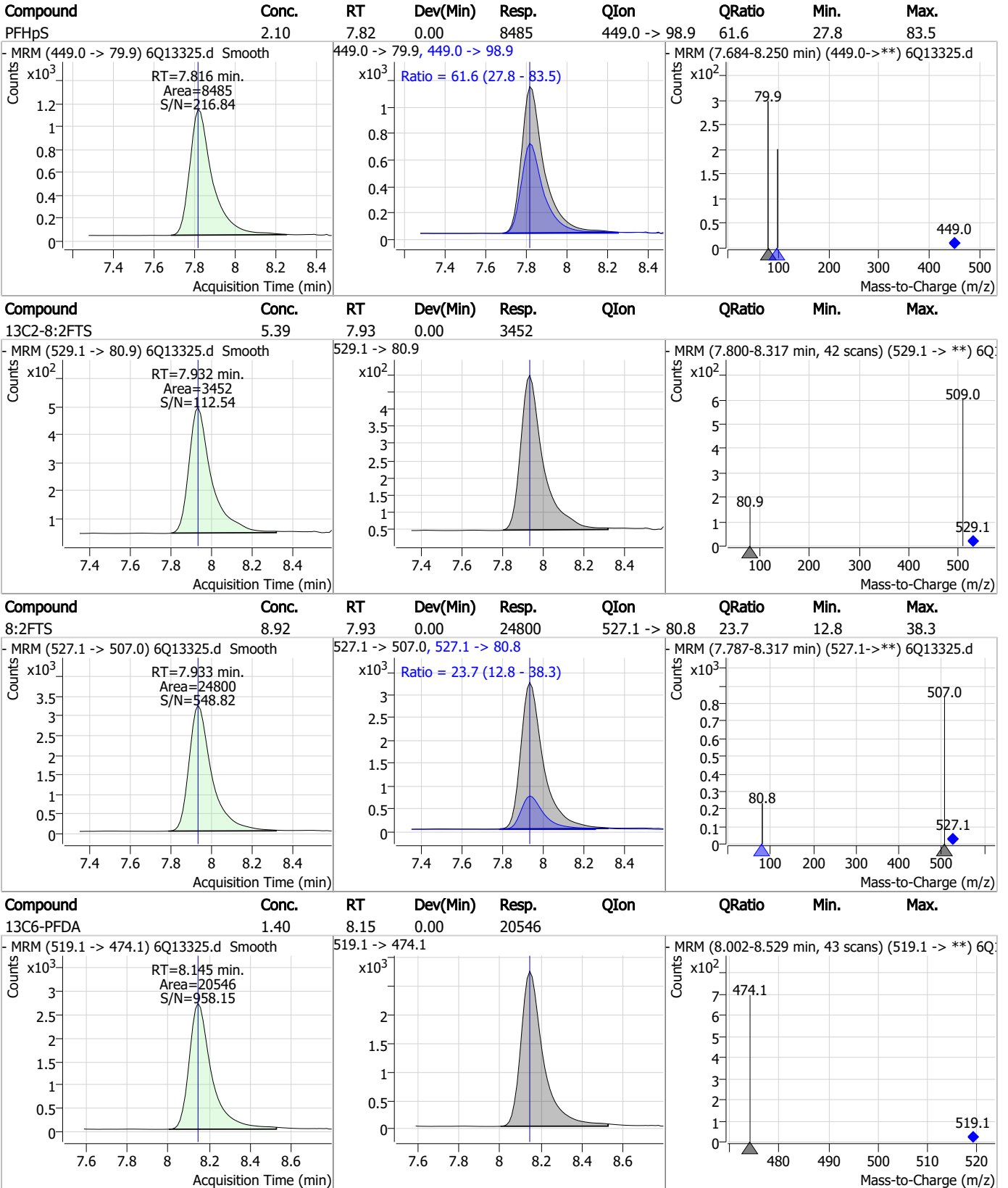
7.7.14

### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

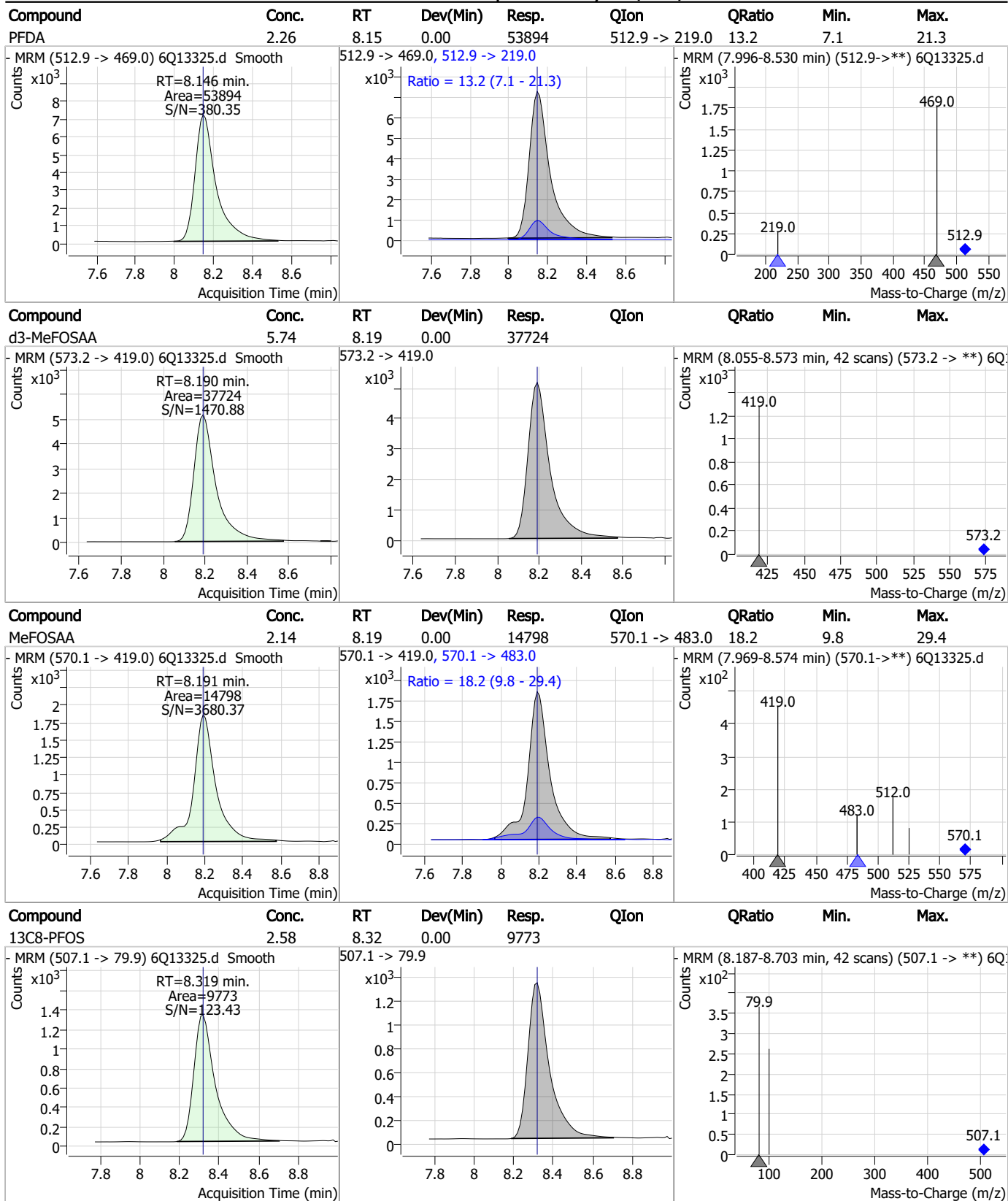


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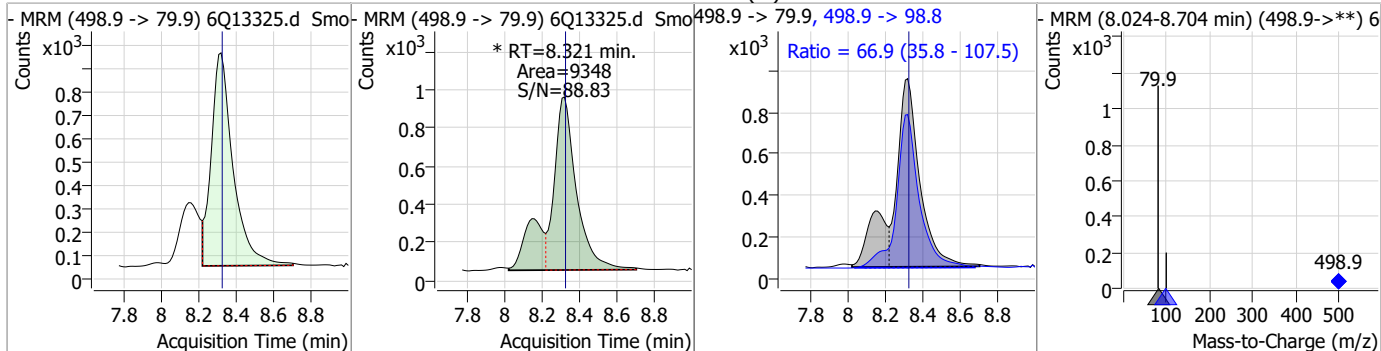
### Perfluorinated Compounds by LC/MS/MS



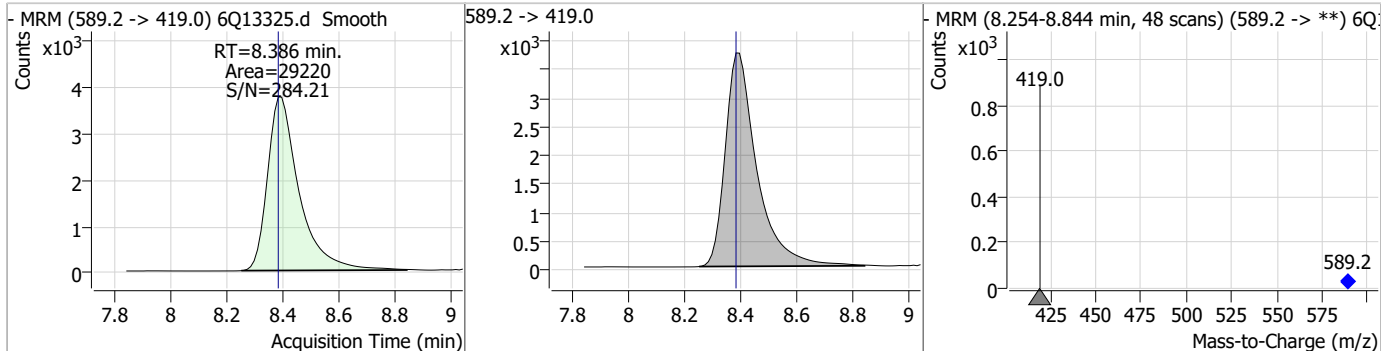
7.7.14  
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### Perfluorinated Compounds by LC/MS/MS

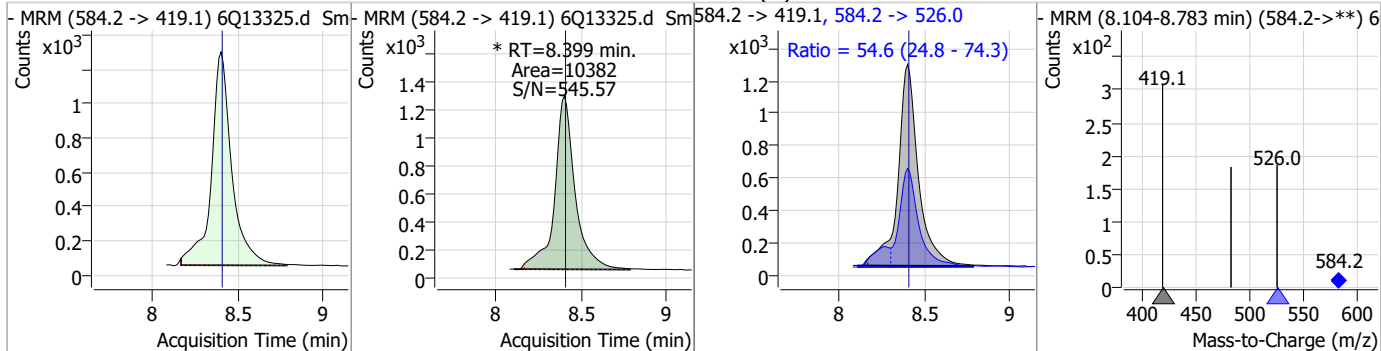
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.14	8.32	0.00	9348 (m)	498.9 -> 98.8	66.9	35.8	107.5



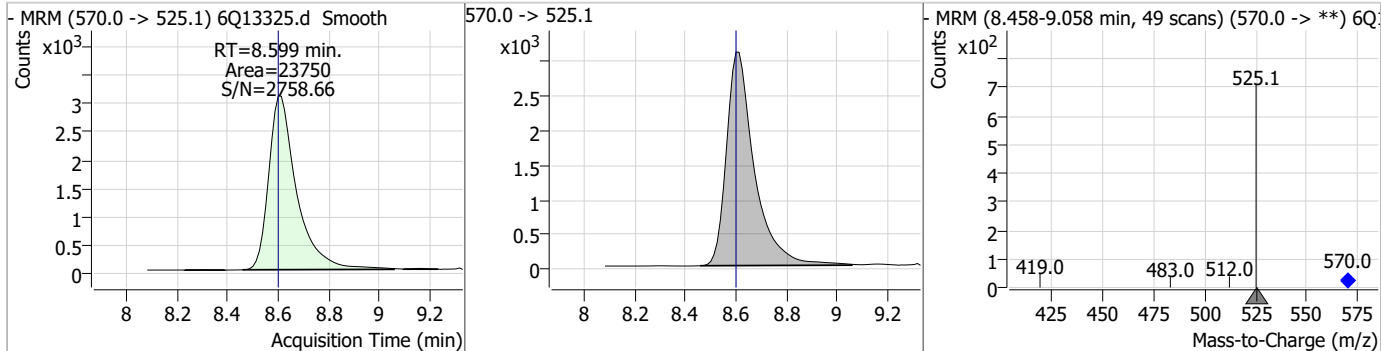
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.28	8.39	0.00	29220				



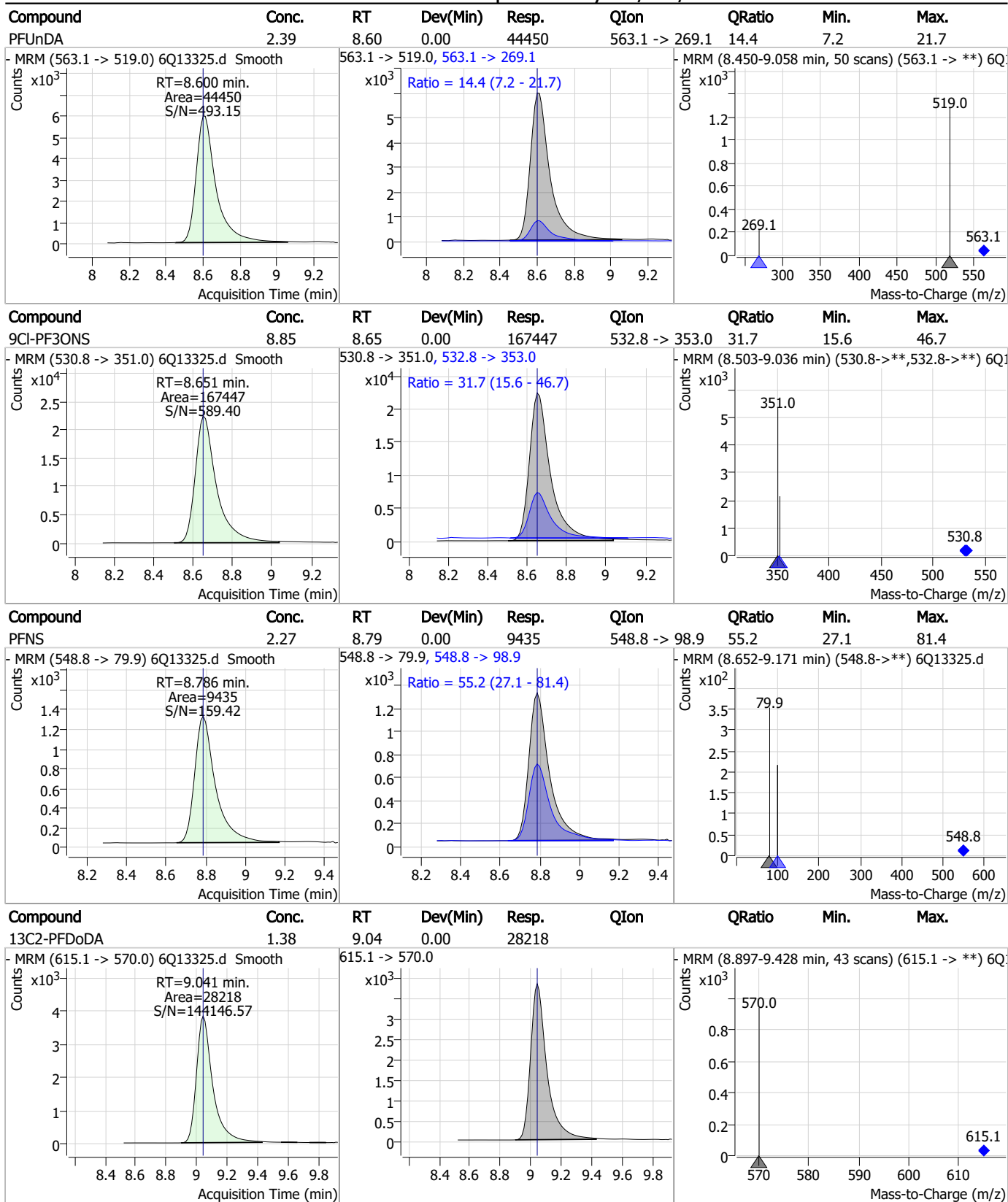
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.26	8.40	0.00	10382 (m)	584.2 -> 526.0	54.6	24.8	74.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.60	0.00	23750				



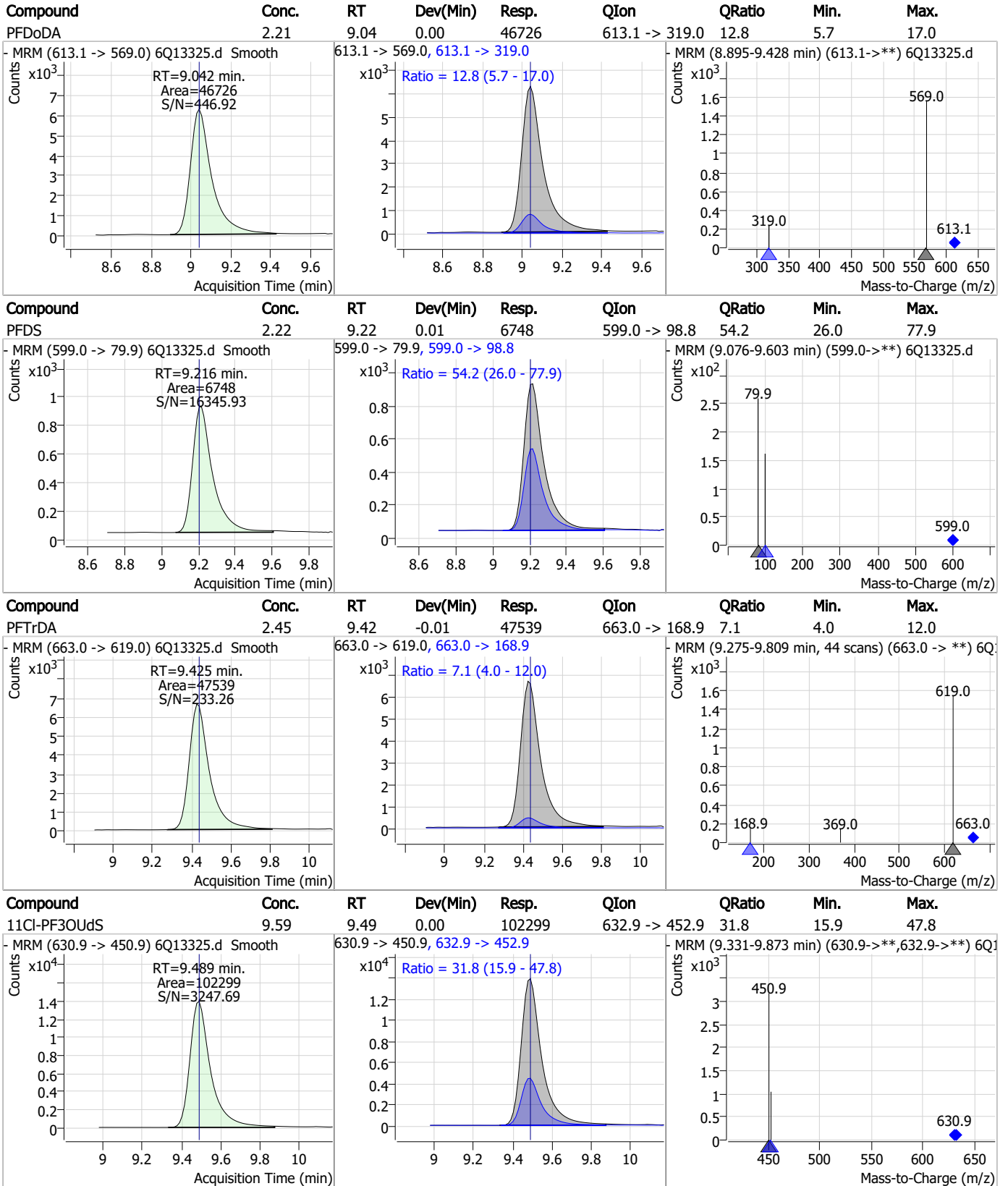
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

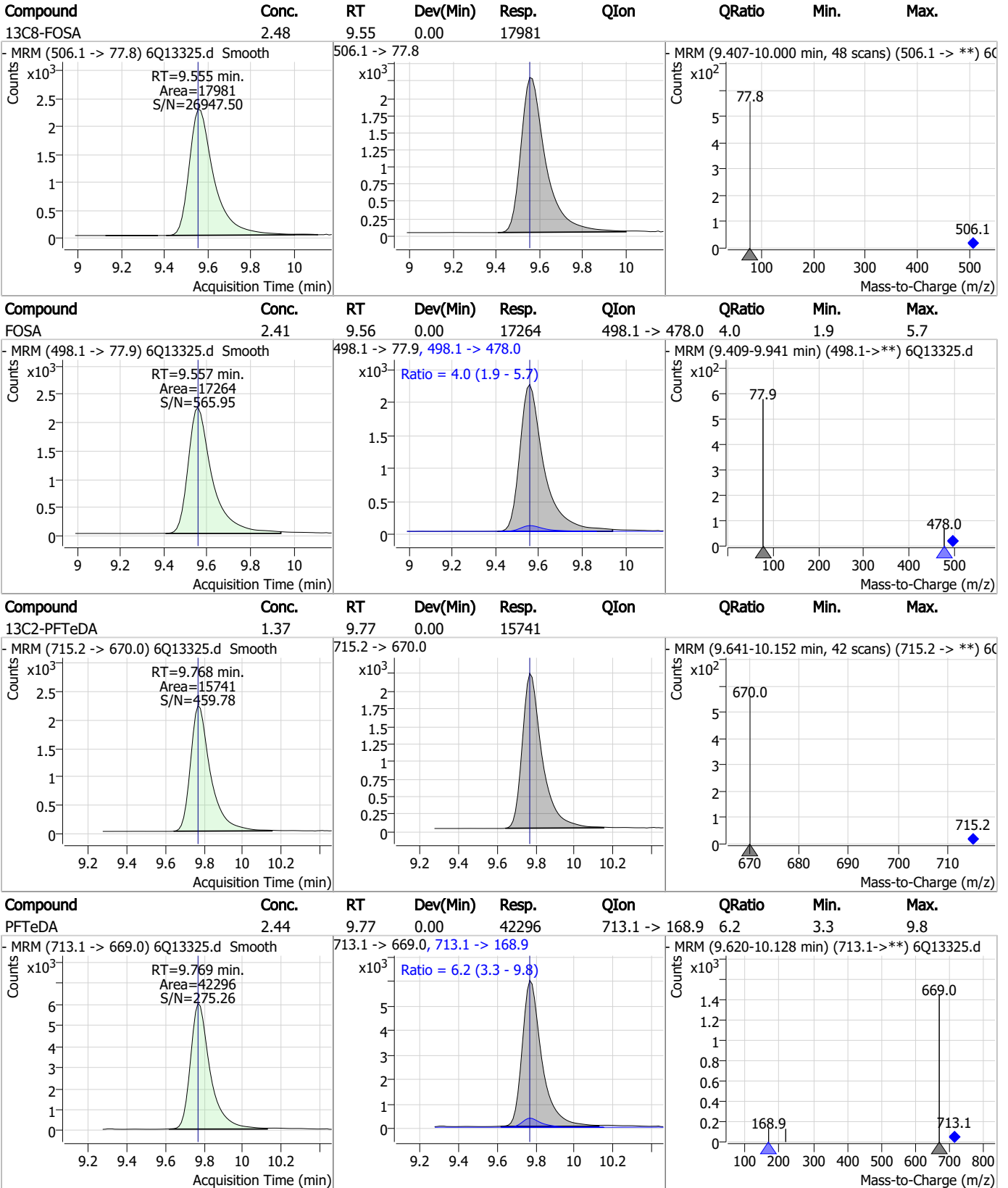


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### Perfluorinated Compounds by LC/MS/MS



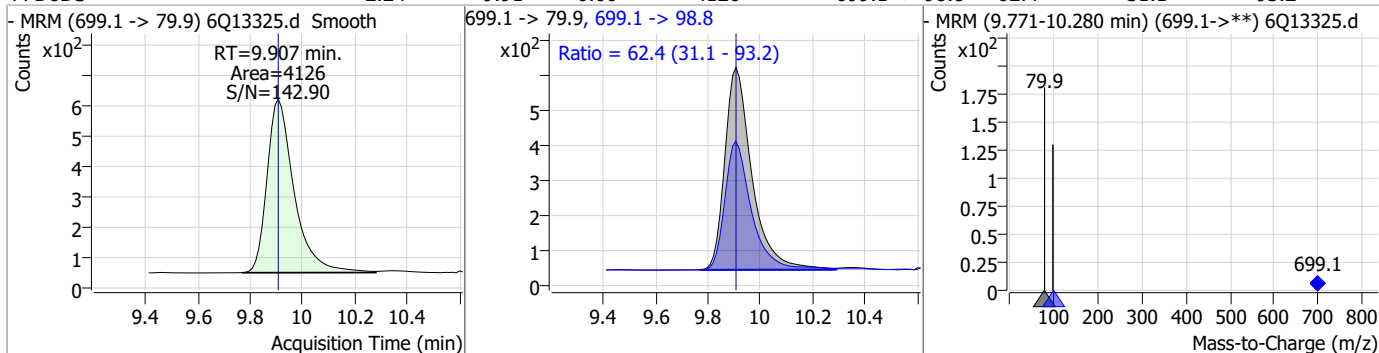
7.7.14

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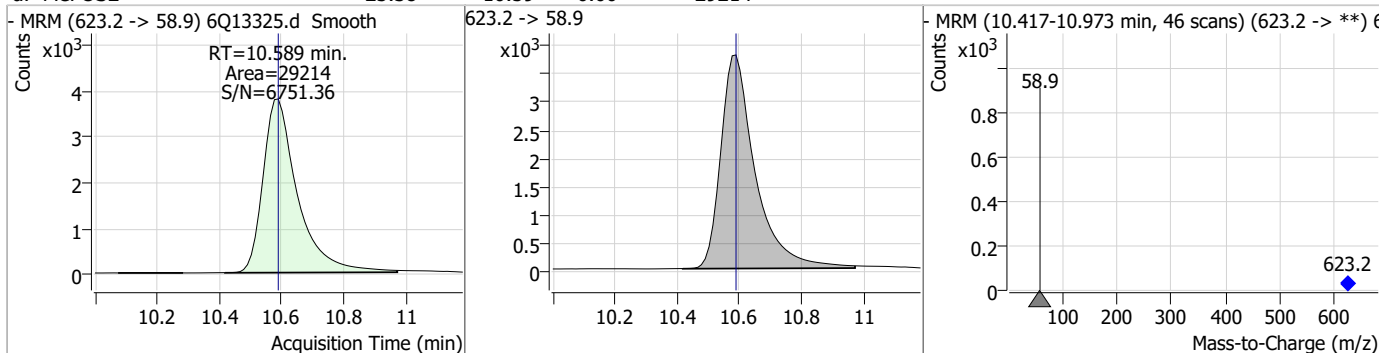


### Perfluorinated Compounds by LC/MS/MS

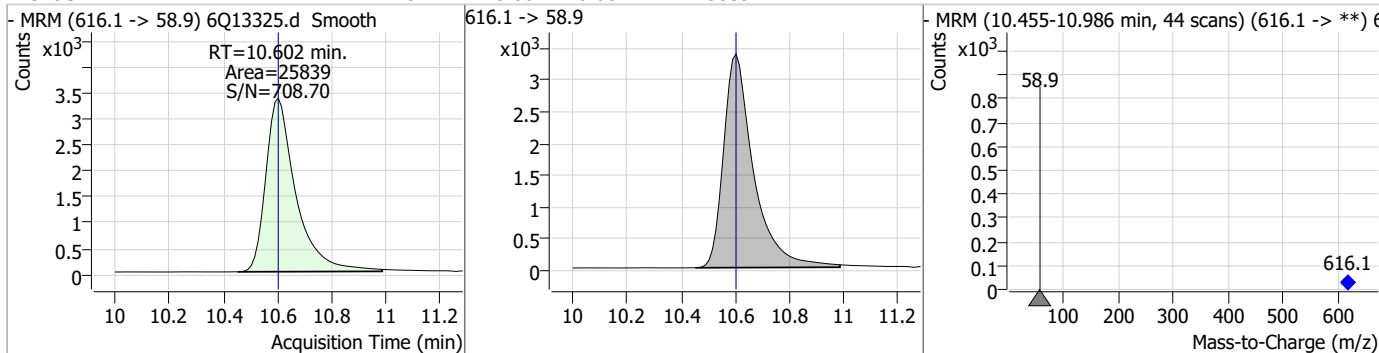
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.24	9.91	0.00	4126	699.1 -> 98.8	62.4	31.1	93.2



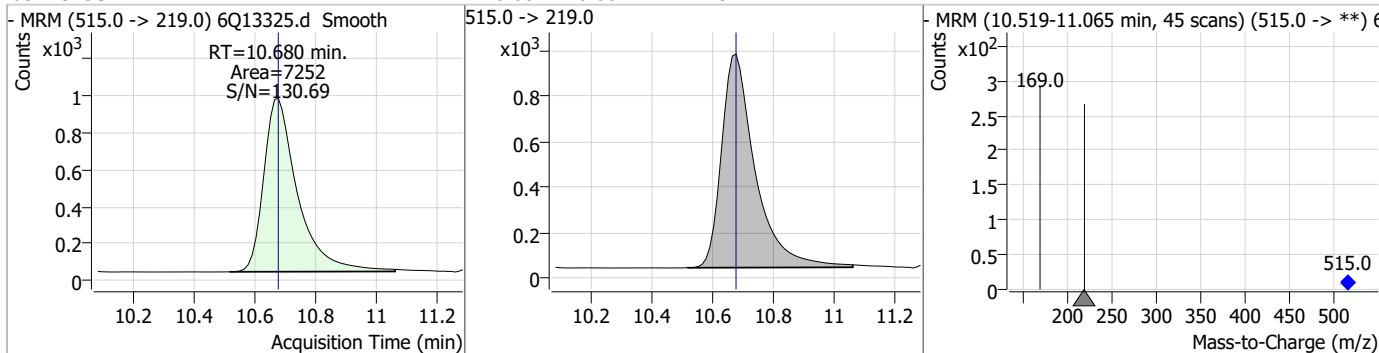
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.38	10.59	0.00	29214				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.75	10.60	0.00	25839				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.47	10.68	0.00	7252				



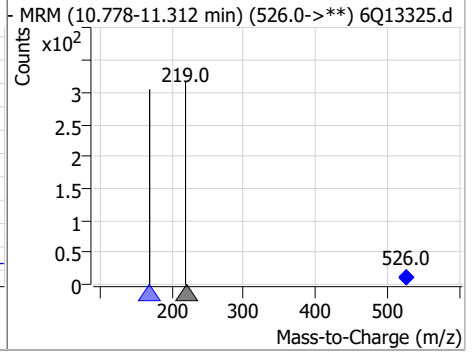
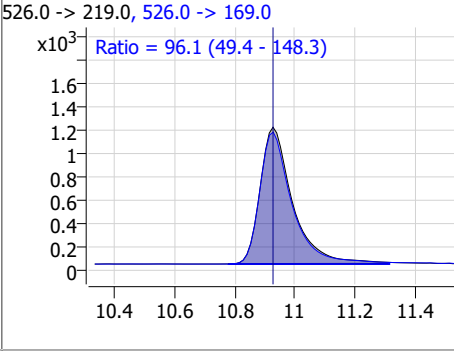
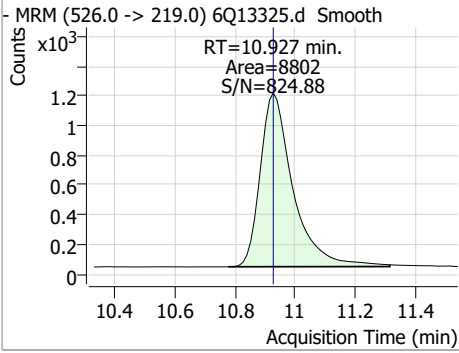
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOsa	2.27	10.68	0.00	7327	511.9 -> 169.0	105.2	50.5	151.6
d9-EtFOSE	25.55	10.83	-0.01	19664				
EtFOSE	21.65	10.86	0.00	18155				
d5-EtFOsa	2.63	10.91	-0.01	8167				

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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.21	10.93	0.00	8802	526.0 -> 169.0	96.1	49.4	148.3



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# Manual Integration Approval Summary

Sample Number: S6Q203-CC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13325.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 19:22      Supervisor approved: 02/10/23 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

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### Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13337.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 10:09:56 PM  
 Sample Name : cc203-4  
 Vial : P1-A5  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	96096	10.00 µg/L	-0.025
M5-PFPeA	4.386	268.3 -> 223.0	47249	5.00 µg/L	-0.014
M5-PFHxA	5.563	318.0 -> 273.0	43994	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	44101	2.50 µg/L	0.012
M8-PFOA	7.146	421.1 -> 376.0	75514	2.50 µg/L	0.012
M9-PFNA	7.664	472.1 -> 427.0	26573	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	21192	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	24059	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	27019	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	15019	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	20184	2.50 µg/L	0.000
M3-PFBS	5.518	302.1 -> 79.9	15579	2.50 µg/L	0.000
M3-PFHxS	7.262	402.1 -> 79.9	11158	2.50 µg/L	0.012
M8-PFOS	8.319	507.1 -> 79.9	9858	2.50 µg/L	0.000
M2-4:2FTS	5.240	329.1 -> 80.9	2796	5.00 µg/L	0.000
M2-6:2FTS	6.908	429.1 -> 80.9	3817	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	3418	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	33844	5.00 µg/L	0.000
M3-HFPO-DA	5.940	286.9 -> 168.9	17502	10.00 µg/L	0.000
M5-EtFOSAA	8.386	589.2 -> 419.0	29566	5.00 µg/L	0.000
M7-MeFOSE	10.577	623.2 -> 58.9	29514	25.00 µg/L	-0.012
M9-EtFOSE	10.835	639.2 -> 58.9	19823	25.00 µg/L	-0.012
M5-EtFOSA	10.913	531.1 -> 219.0	8216	2.50 µg/L	-0.012
M3-MeFOSA	10.680	515.0 -> 219.0	7681	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	11264	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	42660	5.00 µg/L	-0.012
18O2-PFHxS	7.273	403.0 -> 83.9	8060	2.50 µg/L	0.012
13C4-PFOA	7.147	417.1 -> 372.0	93942	2.50 µg/L	0.012
13C2-PFDA	8.145	515.1 -> 470.1	28557	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	30135	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	43339	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.240	329.1 -> 80.9	2796	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3817	5.54 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.9%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3418	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C2-PFDoDA	9.041	615.1 -> 570.0	27019	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C2-PFTeDA	9.768	715.2 -> 670.0	15019	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.0%		
13C3-PFBS	5.518	302.1 -> 79.9	15579	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C3-PFHxS	7.262	402.1 -> 79.9	11158	2.57 µg/L	0.012

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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C4-PFBA	2.975	216.8 -> 171.9	96096	10.09 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C4-PFHpA	6.502	367.1 -> 322.0	44101	2.43 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C5-PFHxA	5.563	318.0 -> 273.0	43994	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C5-PFPeA	4.386	268.3 -> 223.0	47249	4.77 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C6-PFDA	8.145	519.1 -> 474.1	21192	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C7-PFUnDA	8.599	570.0 -> 525.1	24059	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C8-FOSA	9.555	506.1 -> 77.8	20184	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.9%		
13C8-PFOA	7.146	421.1 -> 376.0	75514	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C8-PFOS	8.319	507.1 -> 79.9	9858	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C9-PFNA	7.664	472.1 -> 427.0	26573	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.7%		
d3-MeFOSAA	8.190	573.2 -> 419.0	33844	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C3-HFPO-DA	5.940	286.9 -> 168.9	17502	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.1%		
d3-MeFOSA	10.680	515.0 -> 219.0	7681	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.9%		
d5-EtFOSAA	8.386	589.2 -> 419.0	29566	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
d7-MeFOSE	10.577	623.2 -> 58.9	29514	25.99 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 104.0%		
d9-EtFOSE	10.835	639.2 -> 58.9	19823	26.11 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 104.4%		
d5-EtFOSA	10.913	531.1 -> 219.0	8216	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.3%		
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.240	327.1 -> 307.0	56016	8.95 µg/L	96
		327.1 -> 80.9	12187		
6:2FTS	6.908	427.1 -> 407.0	48248	8.48 µg/L	100
		427.1 -> 80.9	9004		
8:2FTS	7.933	527.1 -> 507.0	24707	8.98 µg/L	97
		527.1 -> 80.8	5889		
EtFOSAA	8.387	584.2 -> 419.1	10390	2.24 µg/L	m 95
		584.2 -> 526.0	5529		
FOSA	9.557	498.1 -> 77.9	17076	2.12 µg/L	99
		498.1 -> 478.0	681		
MeFOSAA	8.191	570.1 -> 419.0	14950	2.41 µg/L	m 97
		570.1 -> 483.0	2702		
PFBA	2.982	212.8 -> 168.9	19561	9.04 µg/L	100
PFBS	5.518	298.7 -> 79.9	12621	2.11 µg/L	100
		298.7 -> 98.8	5992		
PFDA	8.146	512.9 -> 469.0	56379	2.29 µg/L	95
		512.9 -> 219.0	6952		
PFDODA	9.042	613.1 -> 569.0	45851	2.26 µg/L	95
		613.1 -> 319.0	6051		
PFDS	9.204	599.0 -> 79.9	7077	2.31 µg/L	92

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.503	599.0 -> 98.8	3282	2.24	µg/L	100
		363.1 -> 319.0	57409			
PFHpS	7.828	363.1 -> 169.0	8054	2.16	µg/L	93
		449.0 -> 79.9	8783			
PFHxA	5.566	449.0 -> 98.9	5324	2.26	µg/L	98
		313.0 -> 269.0	38472			
PFHxS	7.263	313.0 -> 118.9	1257	2.06	µg/L	97
		398.7 -> 79.9	9988			
PFNA	7.665	398.7 -> 98.9	5771	2.36	µg/L	95
		463.0 -> 419.0	41534			
PFNS	8.786	463.0 -> 219.0	7516	2.31	µg/L	100
		548.8 -> 79.9	9701			
PFOA	7.148	548.8 -> 98.9	5269	2.25	µg/L	98
		413.0 -> 369.0	72674			
PFOS	8.321	413.0 -> 169.0	10162	2.14	µg/L	89
		498.9 -> 79.9	9431			
PFPeA	4.388	498.9 -> 98.8	5896	4.68	µg/L	100
		263.0 -> 219.0	46650			
PFPeS	6.581	349.1 -> 79.9	11799	2.05	µg/L	97
		349.1 -> 98.9	6288			
PFTeDA	9.769	713.1 -> 669.0	42691	2.59	µg/L	98
		713.1 -> 168.9	2560			
PFTrDA	9.425	663.0 -> 619.0	45349	2.45	µg/L	98
		663.0 -> 168.9	3286			
PFUnDA	8.600	563.1 -> 519.0	45159	2.39	µg/L	99
		563.1 -> 269.1	6427			
11Cl-PF3OUdS	9.477	630.9 -> 450.9	98149	8.33	µg/L	99
		632.9 -> 452.9	31884			
9Cl-PF3ONS	8.651	530.8 -> 351.0	174669	8.36	µg/L	100
		532.8 -> 353.0	53850			
ADONA	6.753	376.9 -> 250.9	329490	8.49	µg/L	97
		376.9 -> 84.8	68531			
HFPO-DA	5.940	284.9 -> 168.9	14380	8.67	µg/L	98
		284.9 -> 184.9	1893			
3:3FTCA	3.841	241.0 -> 177.0	5771	11.70	µg/L	99
		241.0 -> 117.0	808			
5:3FTCA	6.206	341.0 -> 237.1	193713	53.70	µg/L	97
		341.0 -> 217.0	168729			
7:3FTCA	7.605	441.0 -> 316.9	103693	55.89	µg/L	91
		441.0 -> 336.9	210966			
EtFOSA	10.927	526.0 -> 219.0	8616	2.15	µg/L	98
		526.0 -> 169.0	8364			
EtFOSE	10.860	630.0 -> 58.9	18202	21.53	µg/L	100
		511.9 -> 219.0	7306			
MeFOSA	10.682	511.9 -> 169.0	7710	2.14	µg/L	96
		616.1 -> 58.9	26220			
MeFOSE	10.602	699.1 -> 79.9	3975	22.85	µg/L	100
		699.1 -> 98.8	2493			
PFDoDS	9.907	295.0 -> 201.0	4337	2.14	µg/L	99
		295.0 -> 84.9	2337			
NFDHA	5.445	279.0 -> 85.1	13403	4.36	µg/L	93
		229.0 -> 84.9	12149			
PFMBA	4.787	314.8 -> 134.9	95221	4.69	µg/L	100
PFMPA	3.541	314.8 -> 82.9	2588	4.67	µg/L	100
PFEESA	6.059			3.97	µg/L	99

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



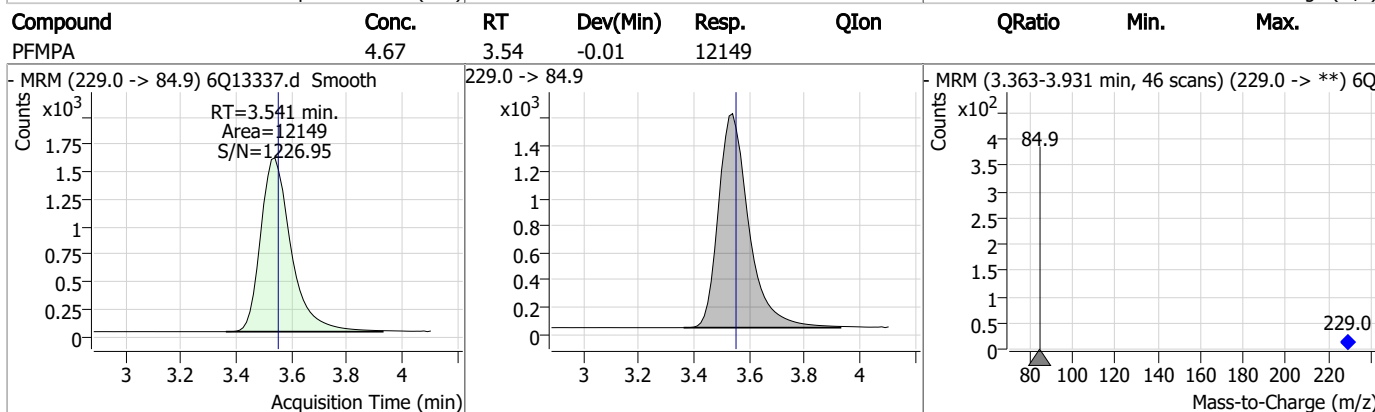
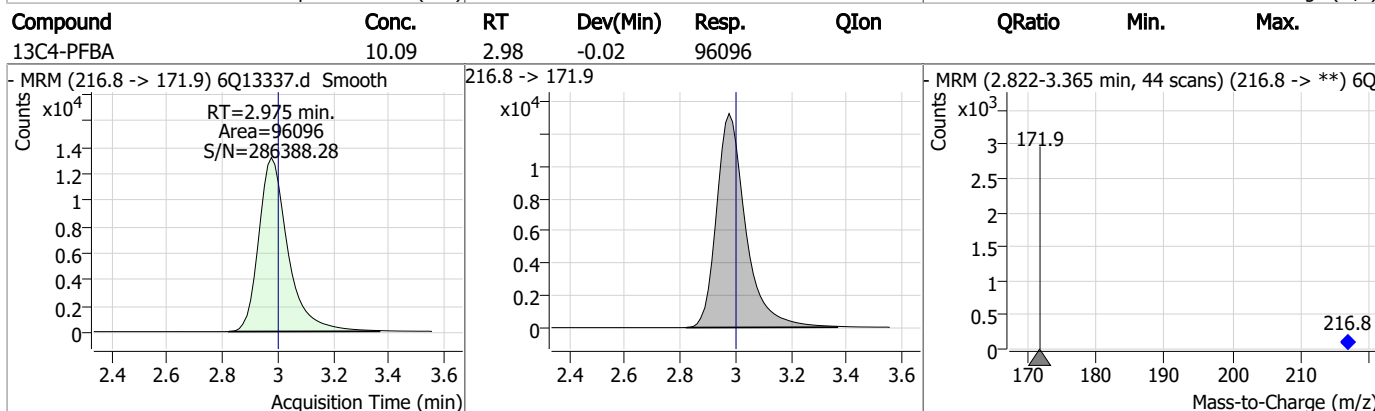
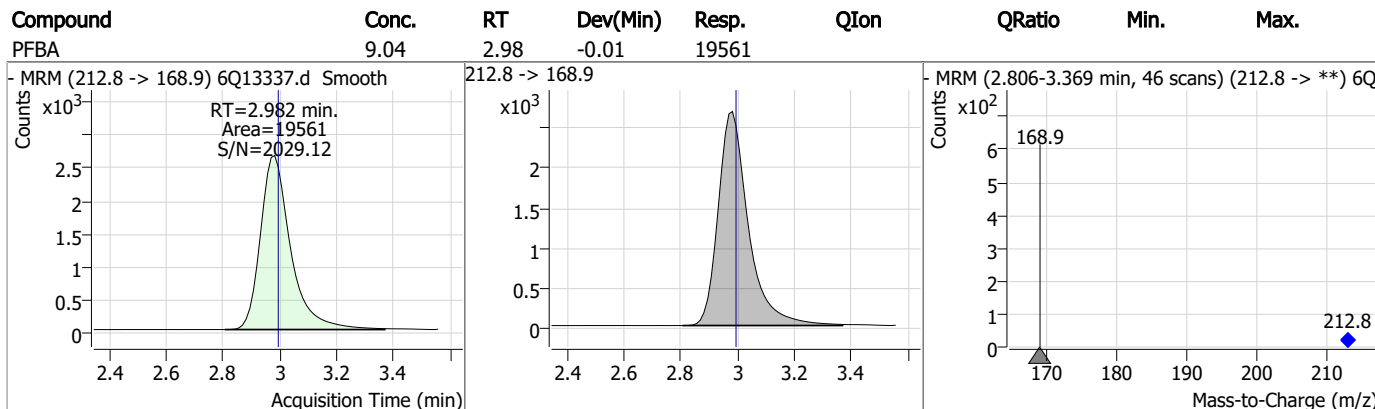
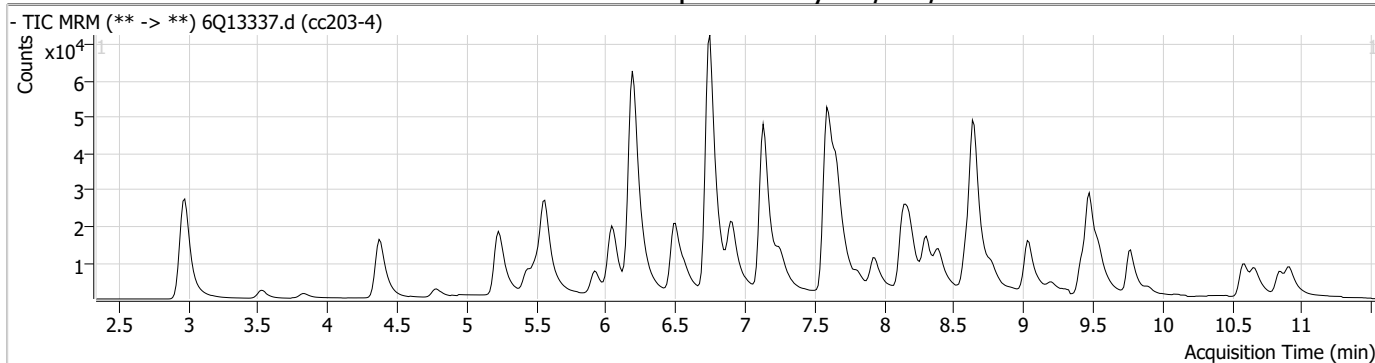
### Perfluorinated Compounds by LC/MS/MS

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

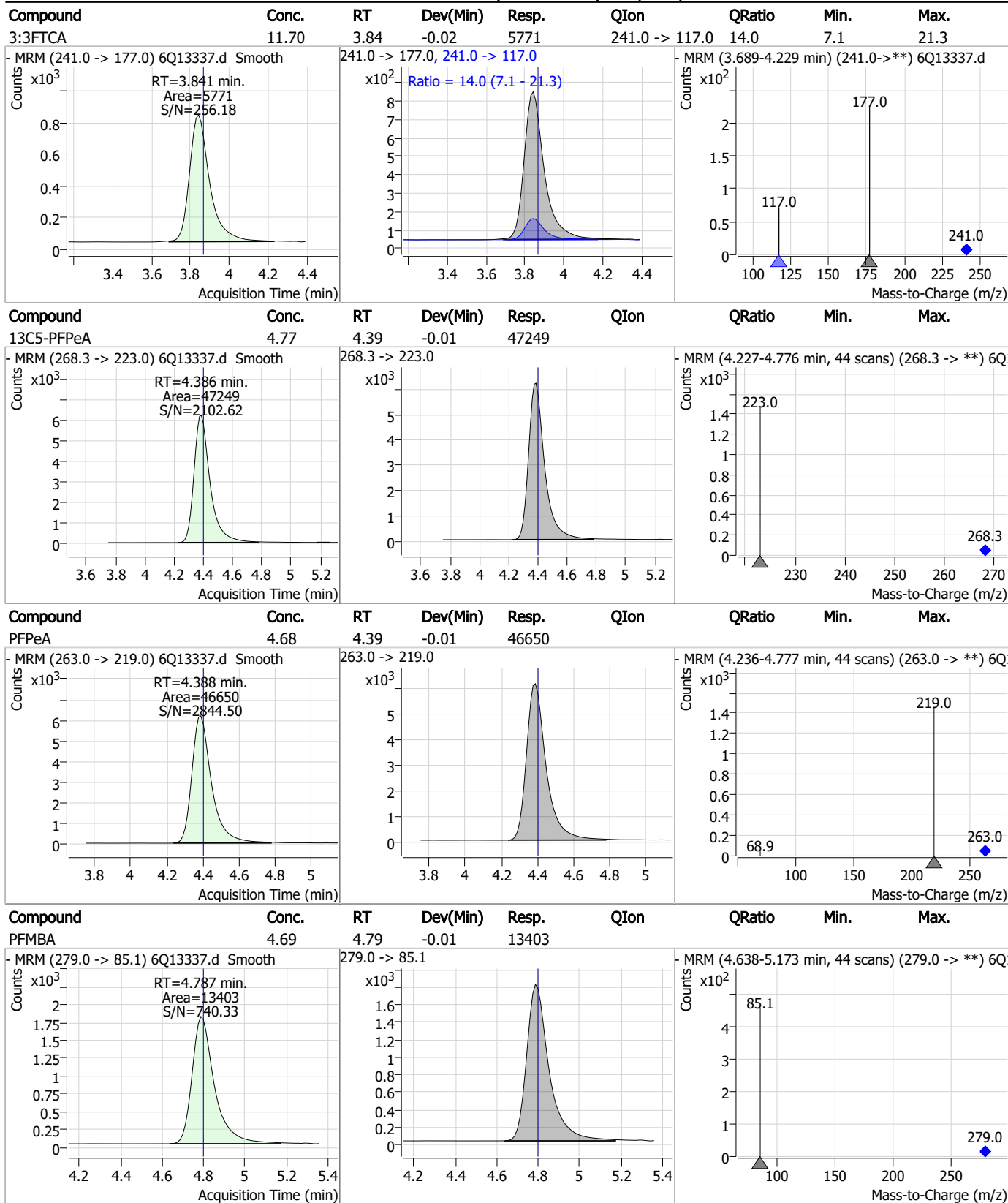
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### Perfluorinated Compounds by LC/MS/MS



7.7.15  
7

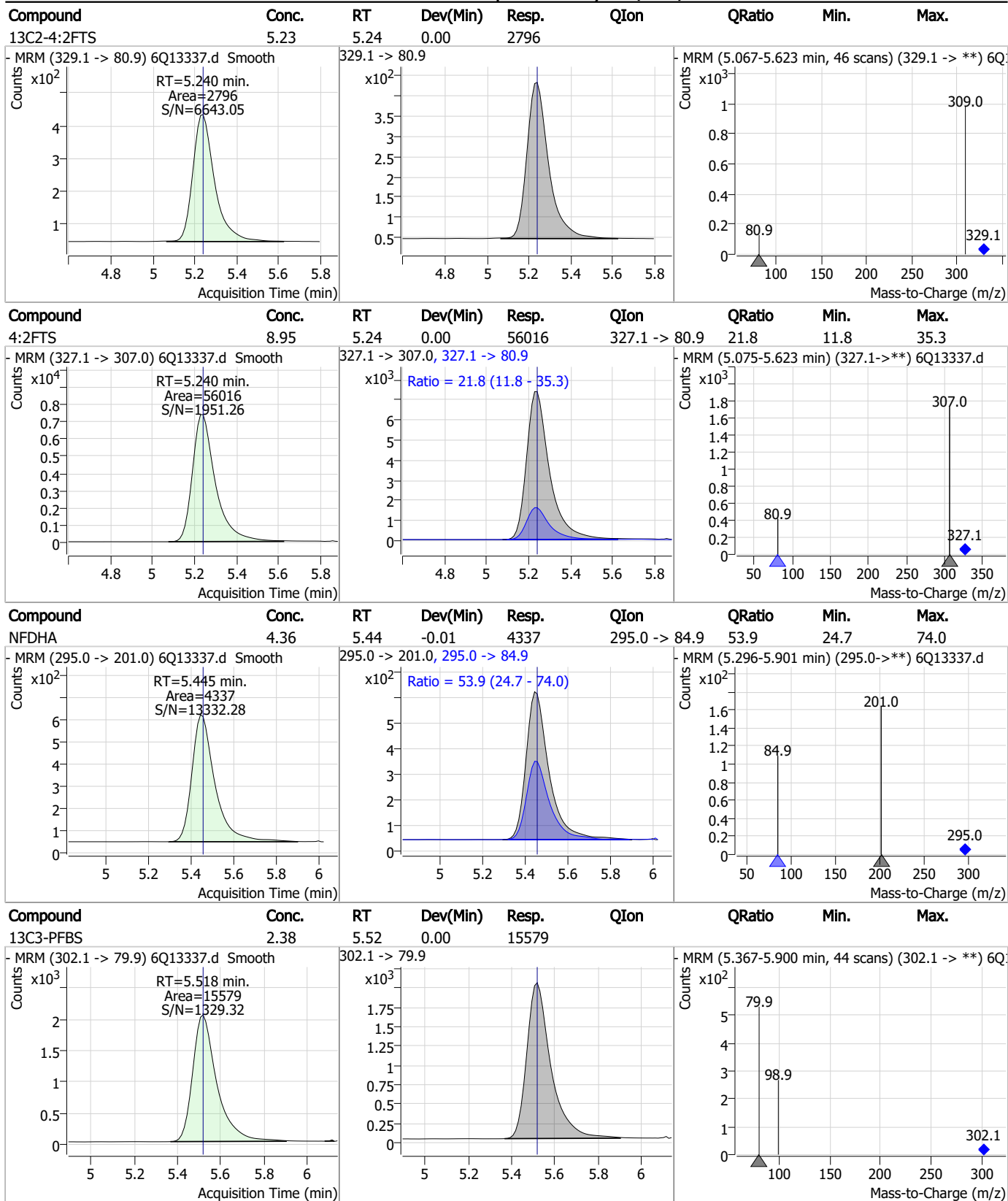
### Perfluorinated Compounds by LC/MS/MS



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

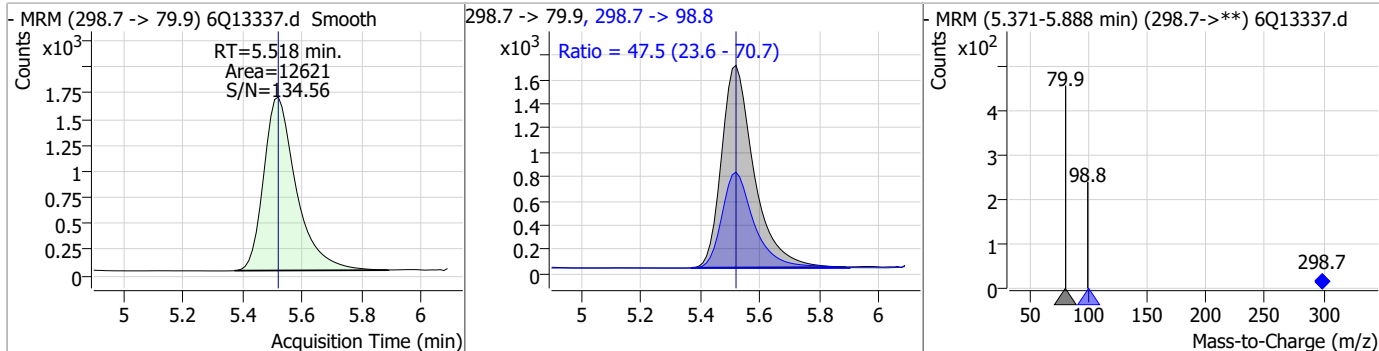


7.7.15  
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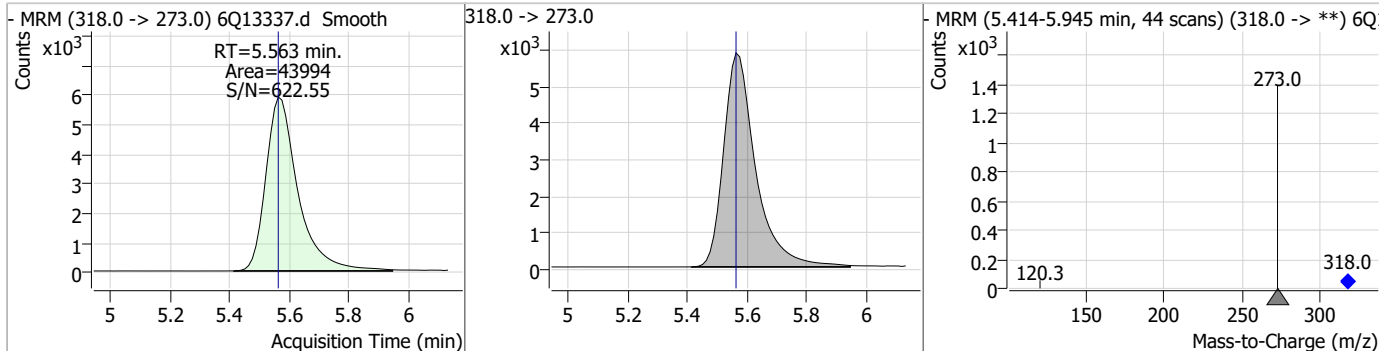


### Perfluorinated Compounds by LC/MS/MS

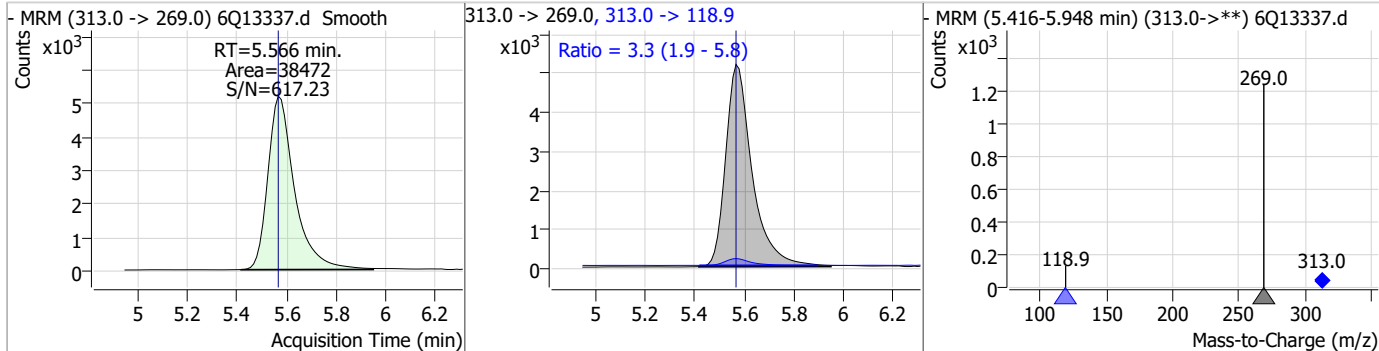
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.11	5.52	0.00	12621	298.7 -> 98.8	47.5	23.6	70.7



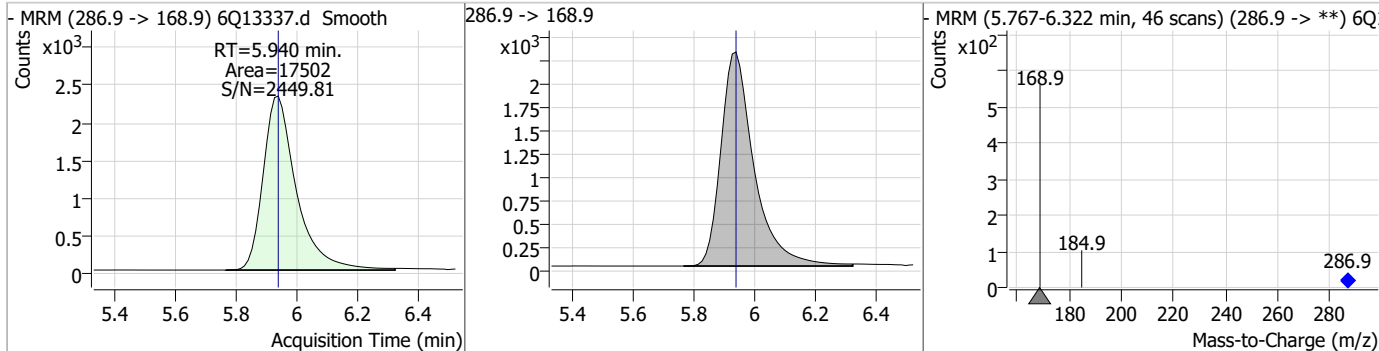
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.51	5.56	0.00	43994				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.26	5.57	0.00	38472	313.0 -> 118.9	3.3	1.9	5.8

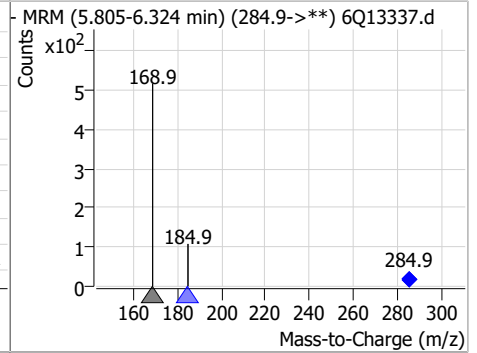
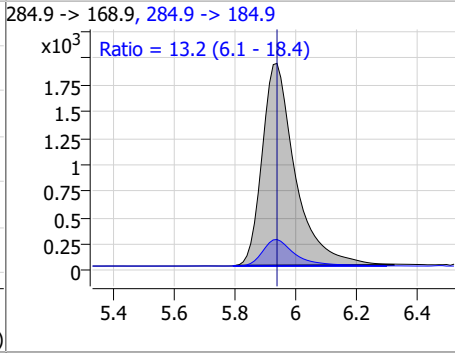
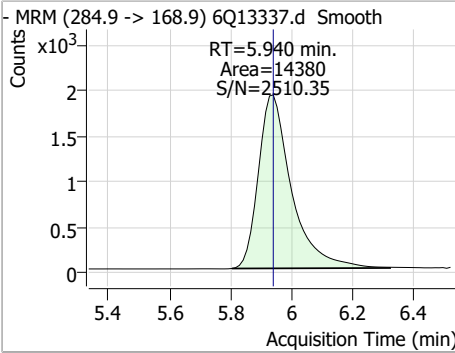


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.11	5.94	0.00	17502				

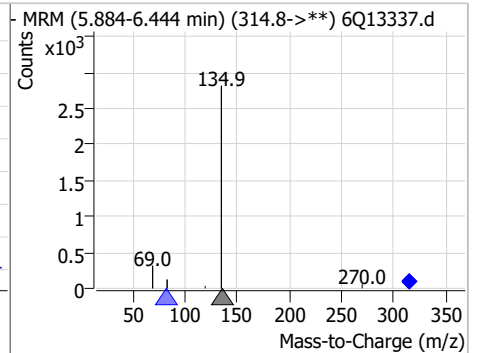
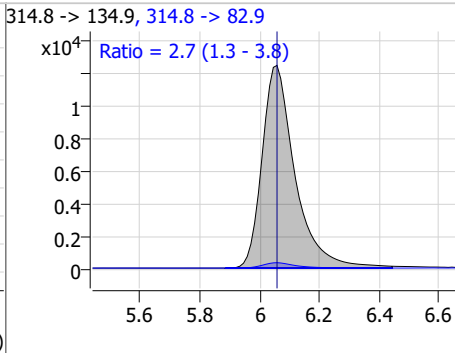
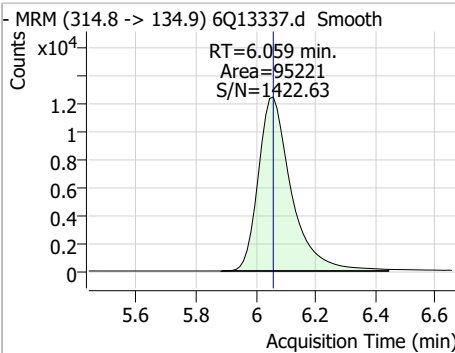


### Perfluorinated Compounds by LC/MS/MS

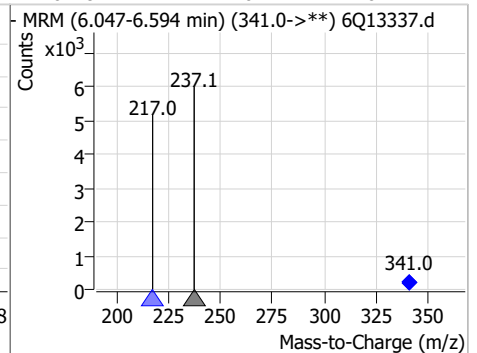
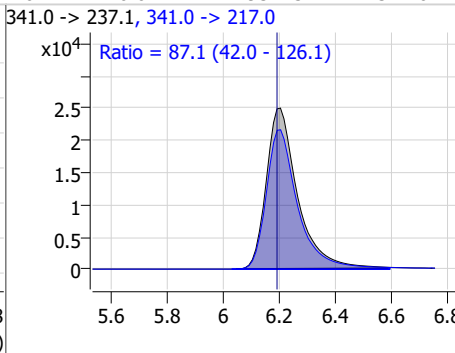
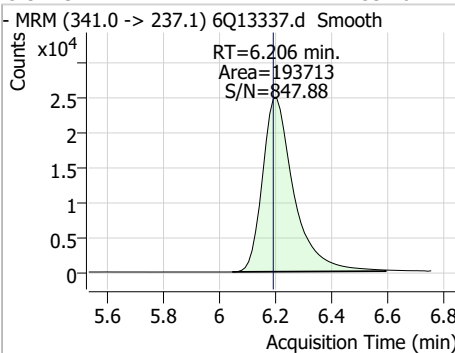
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	8.67	5.94	0.00	14380	284.9 -> 184.9	13.2	6.1	18.4



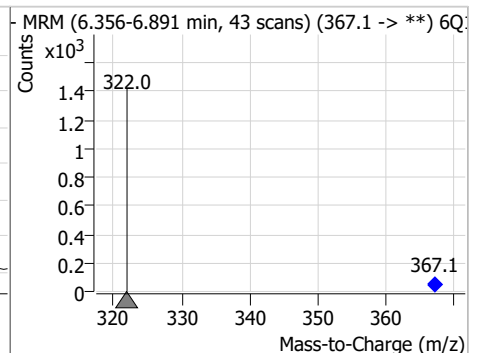
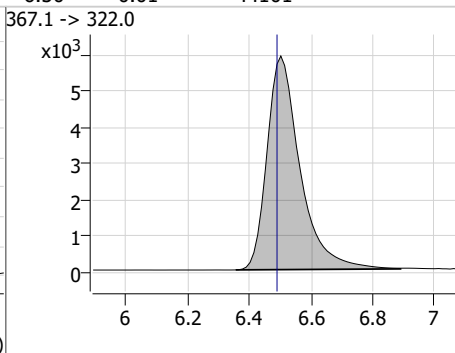
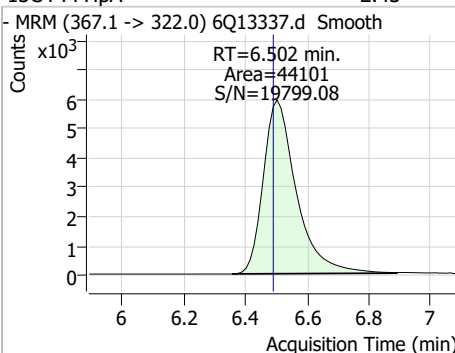
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	3.97	6.06	0.00	95221	314.8 -> 82.9	2.7	1.3	3.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	53.70	6.21	0.01	193713	341.0 -> 217.0	87.1	42.0	126.1

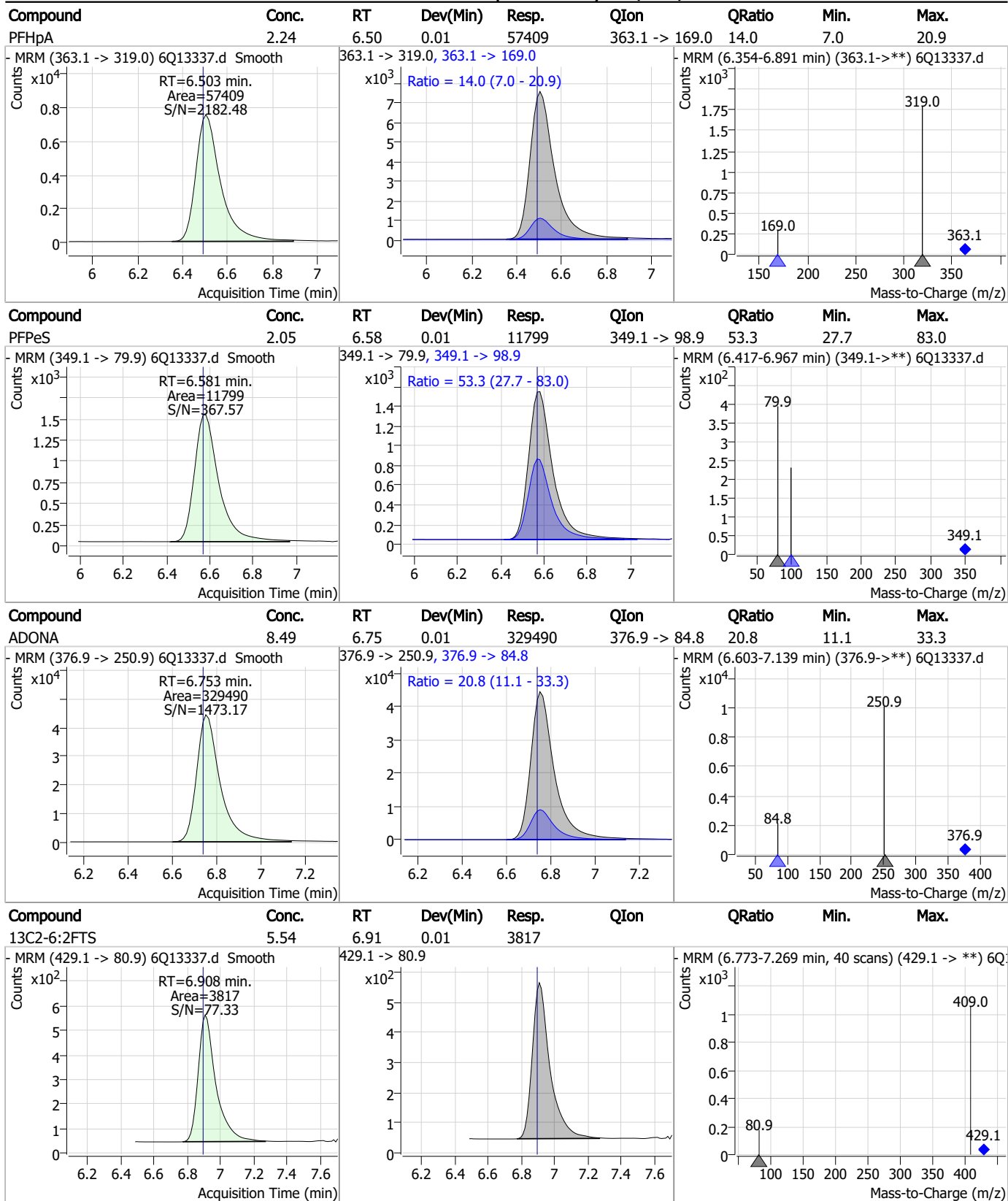


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.43	6.50	0.01	44101	367.1 -> 322.0	-	-	-



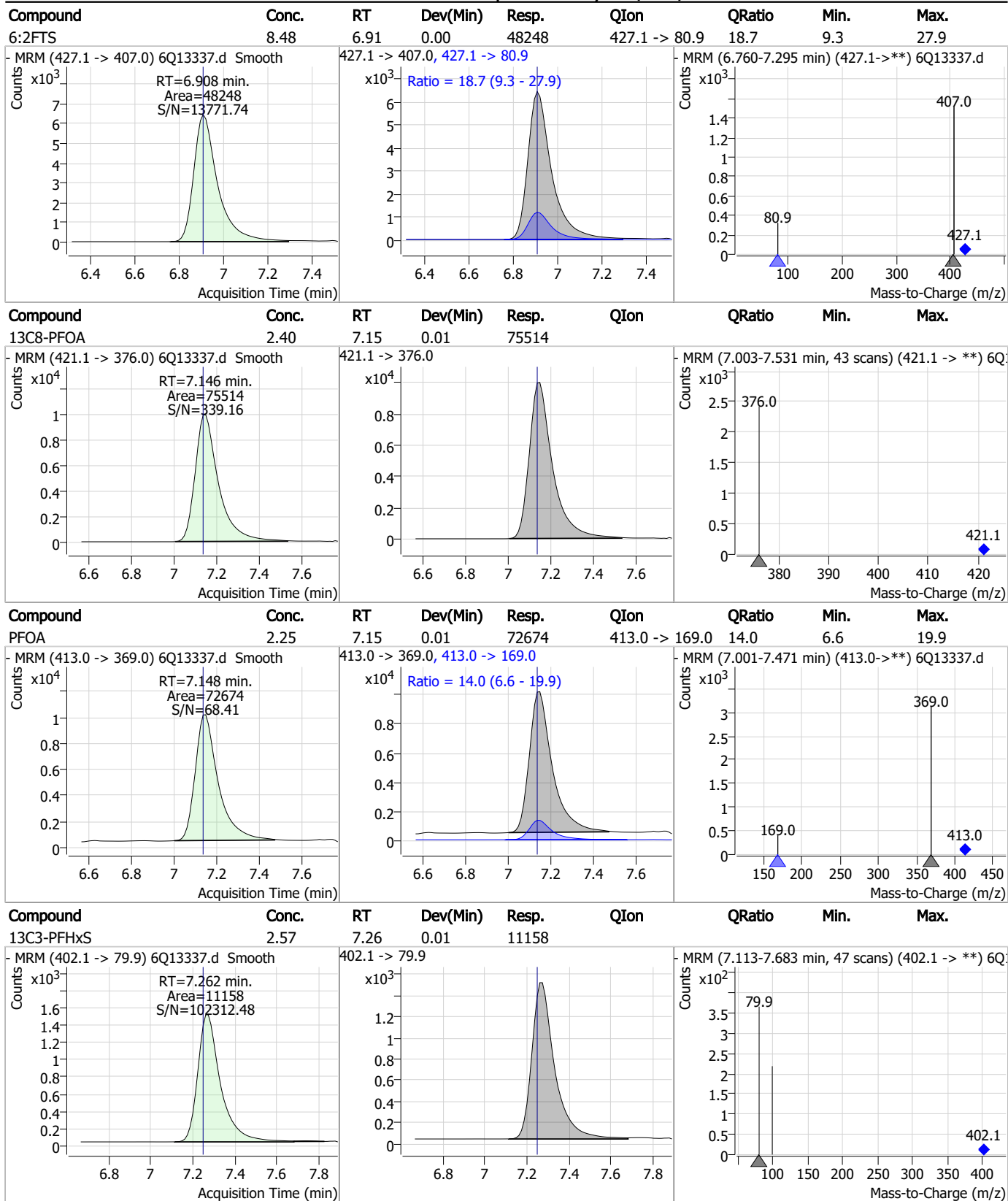
7.7.15  
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### Perfluorinated Compounds by LC/MS/MS



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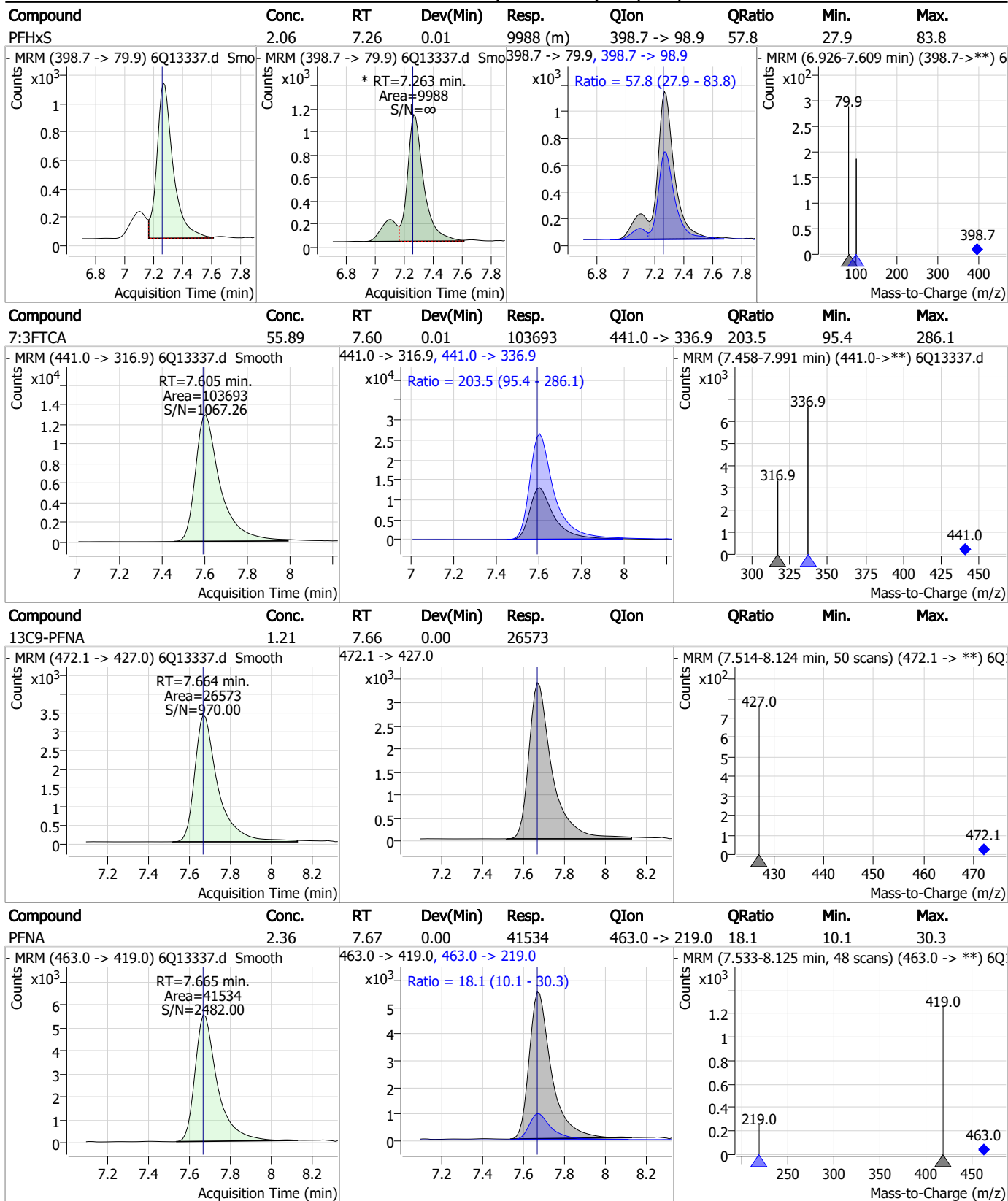
### Perfluorinated Compounds by LC/MS/MS



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

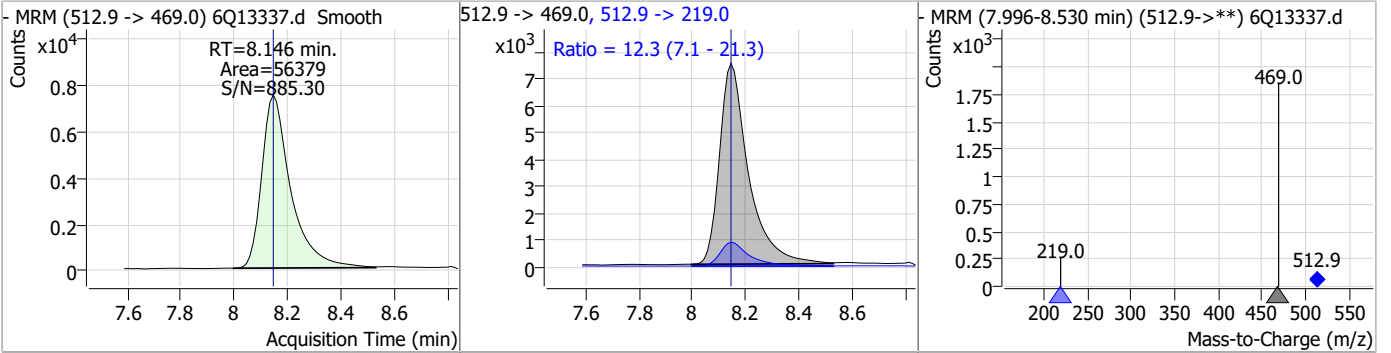
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.16	7.83	0.01	8783	449.0 -> 98.9	60.6	27.8	83.5
13C2-8:2FTS	5.09	7.93	0.00	3418				
8:2FTS	8.98	7.93	0.00	24707	527.1 -> 80.8	23.8	12.8	38.3
13C6-PFDA	1.31	8.15	0.00	21192				

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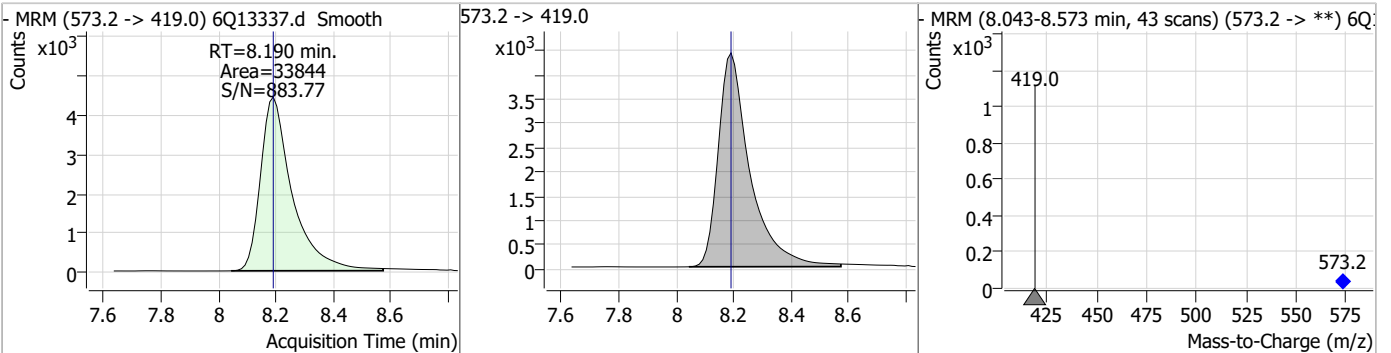


### Perfluorinated Compounds by LC/MS/MS

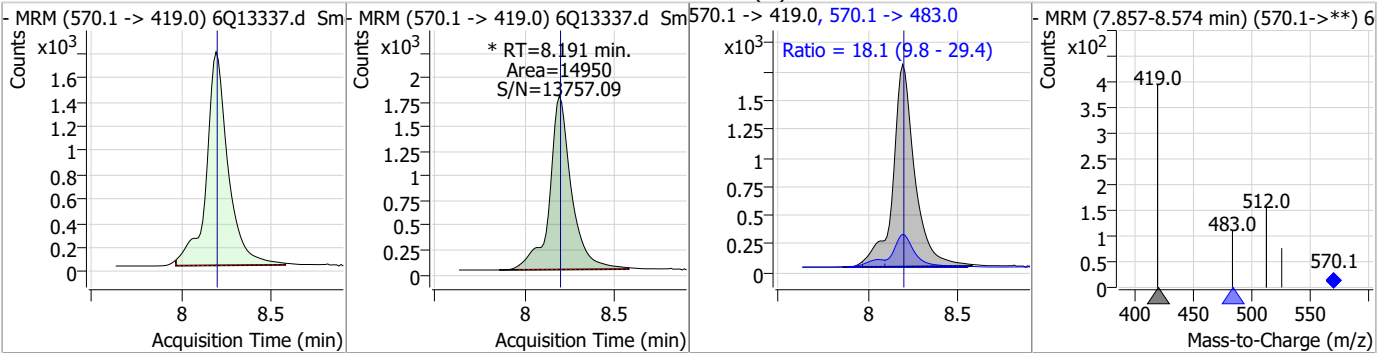
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.29	8.15	0.00	56379	512.9 -> 219.0	12.3	7.1	21.3



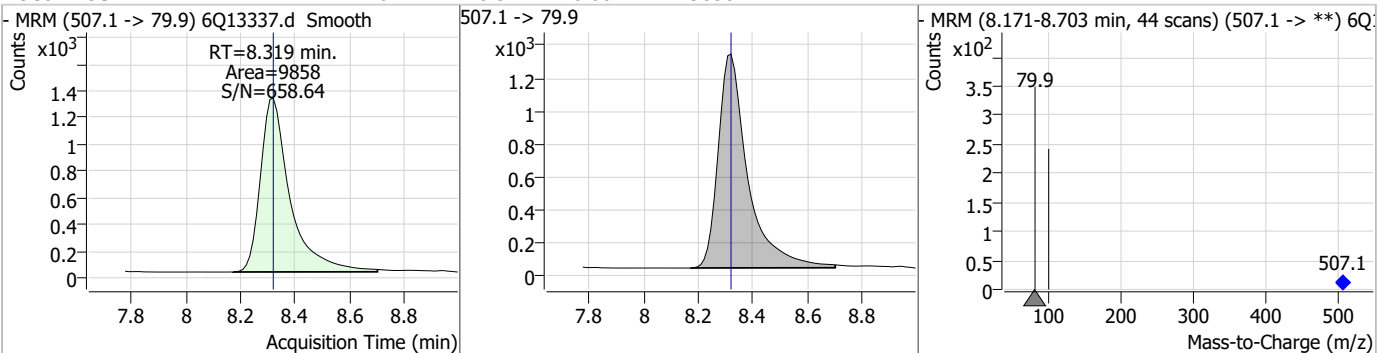
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.22	8.19	0.00	33844				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.41	8.19	0.00	14950 (m)	570.1 -> 483.0	18.1	9.8	29.4

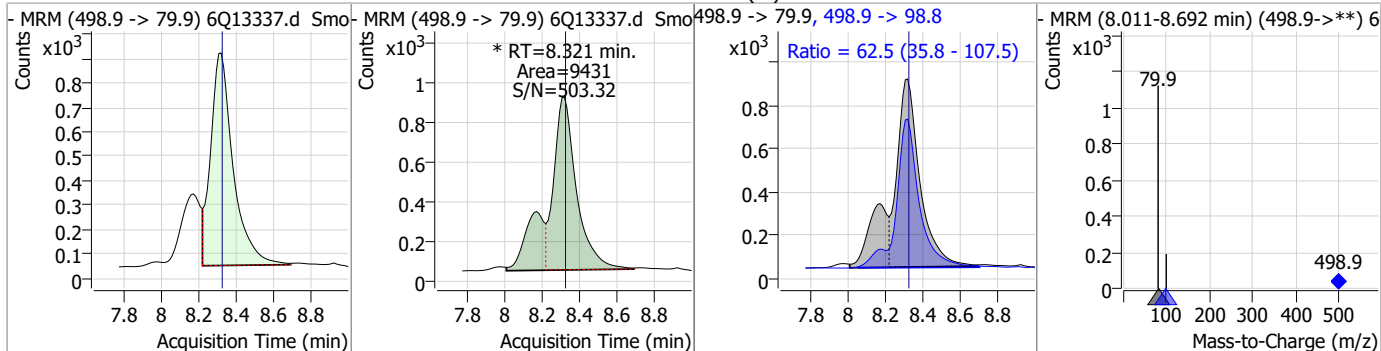


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.64	8.32	0.00	9858				

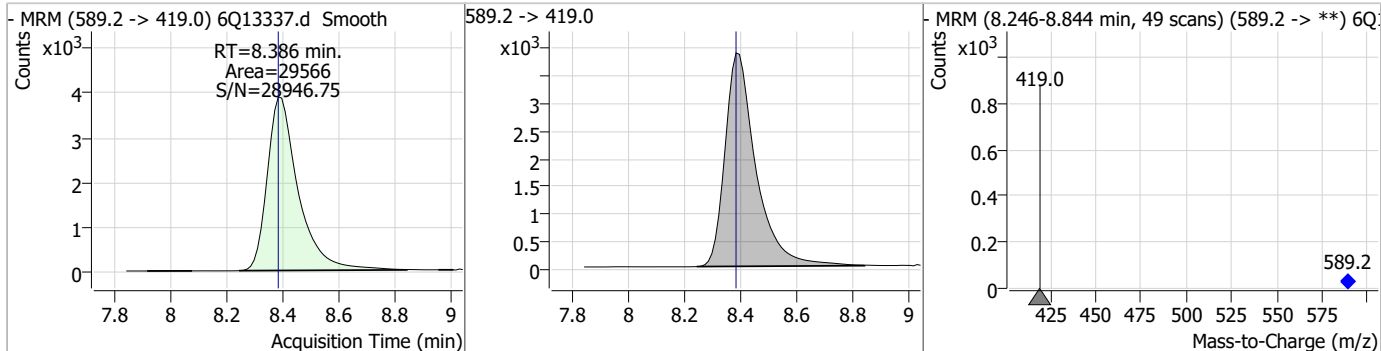


### Perfluorinated Compounds by LC/MS/MS

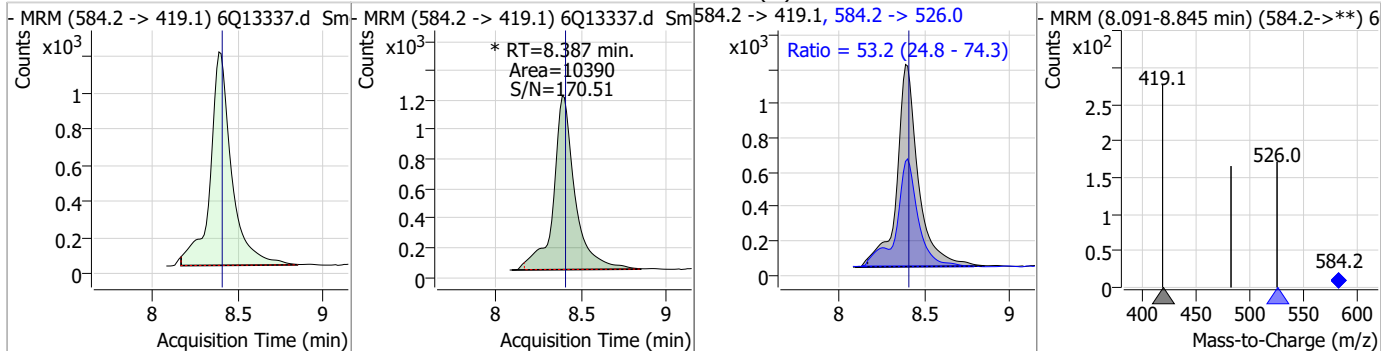
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.14	8.32	0.00	9431 (m)	498.9 -> 98.8	62.5	35.8	107.5



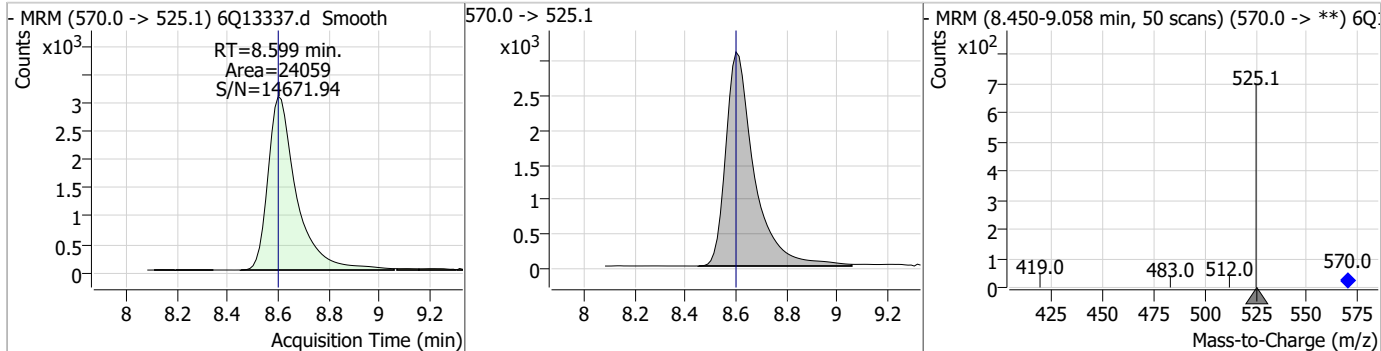
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.42	8.39	0.00	29566				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.24	8.39	-0.01	10390 (m)	584.2 -> 526.0	53.2	24.8	74.3

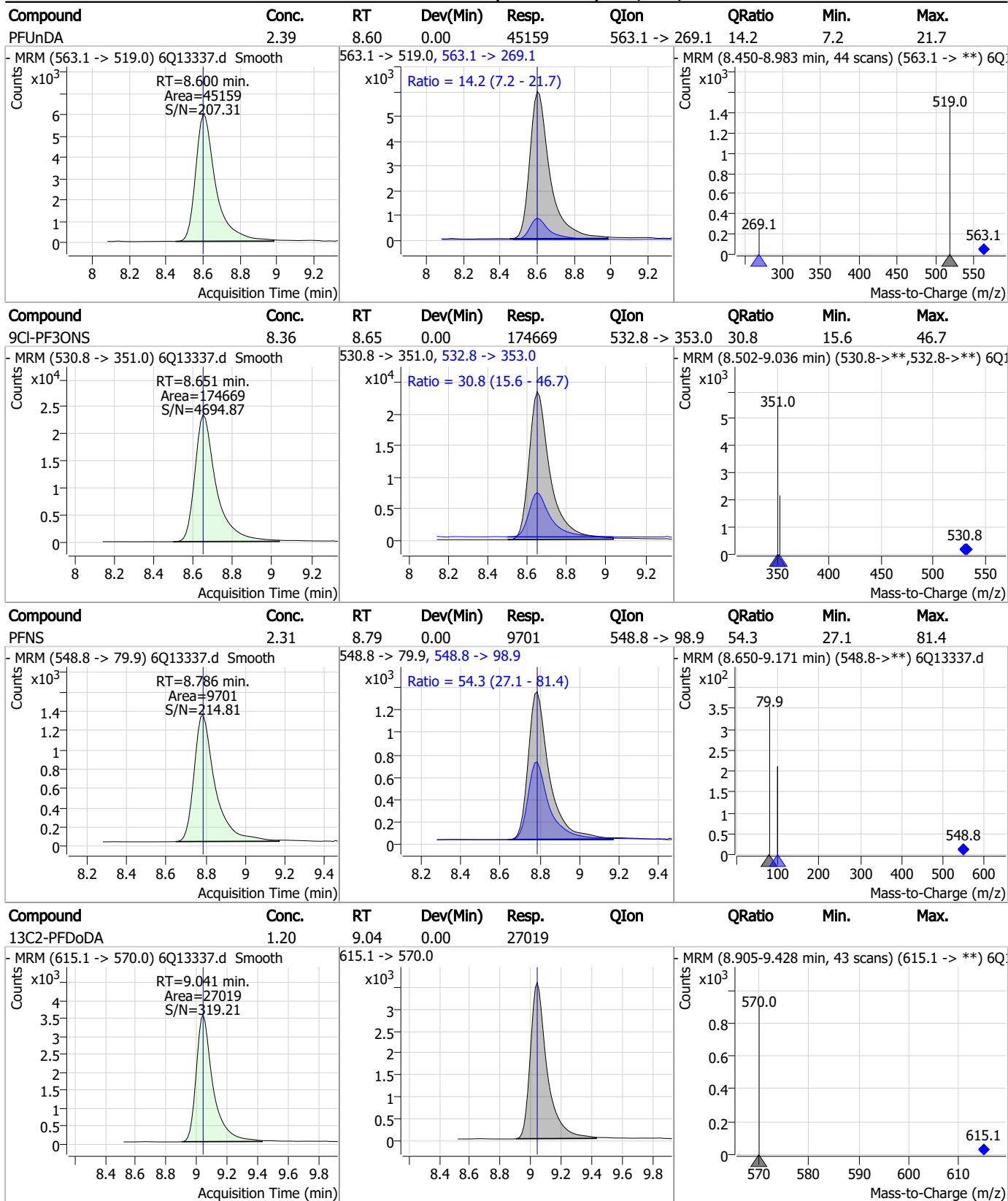


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.21	8.60	0.00	24059				





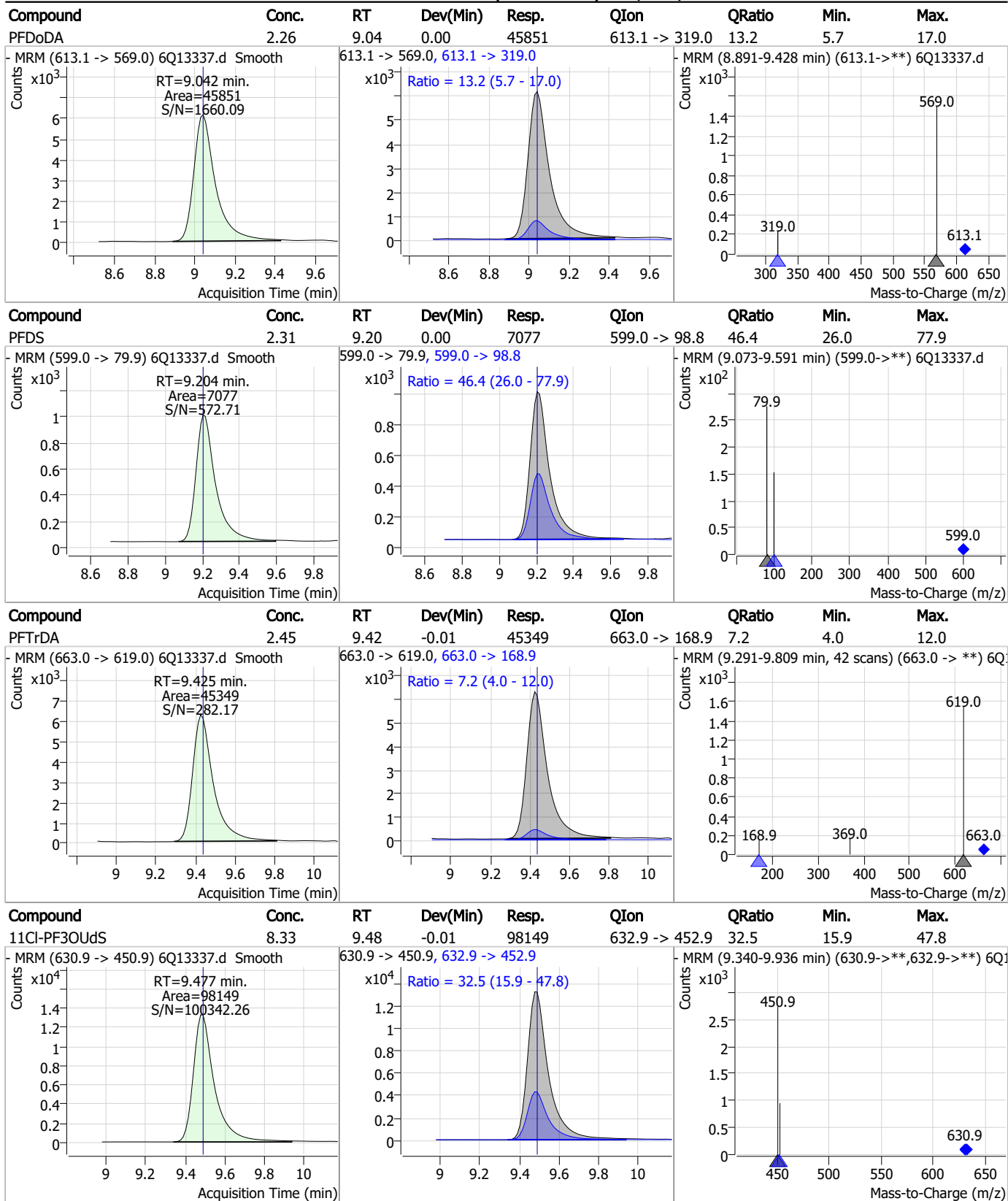
### Perfluorinated Compounds by LC/MS/MS



7.7.15 7



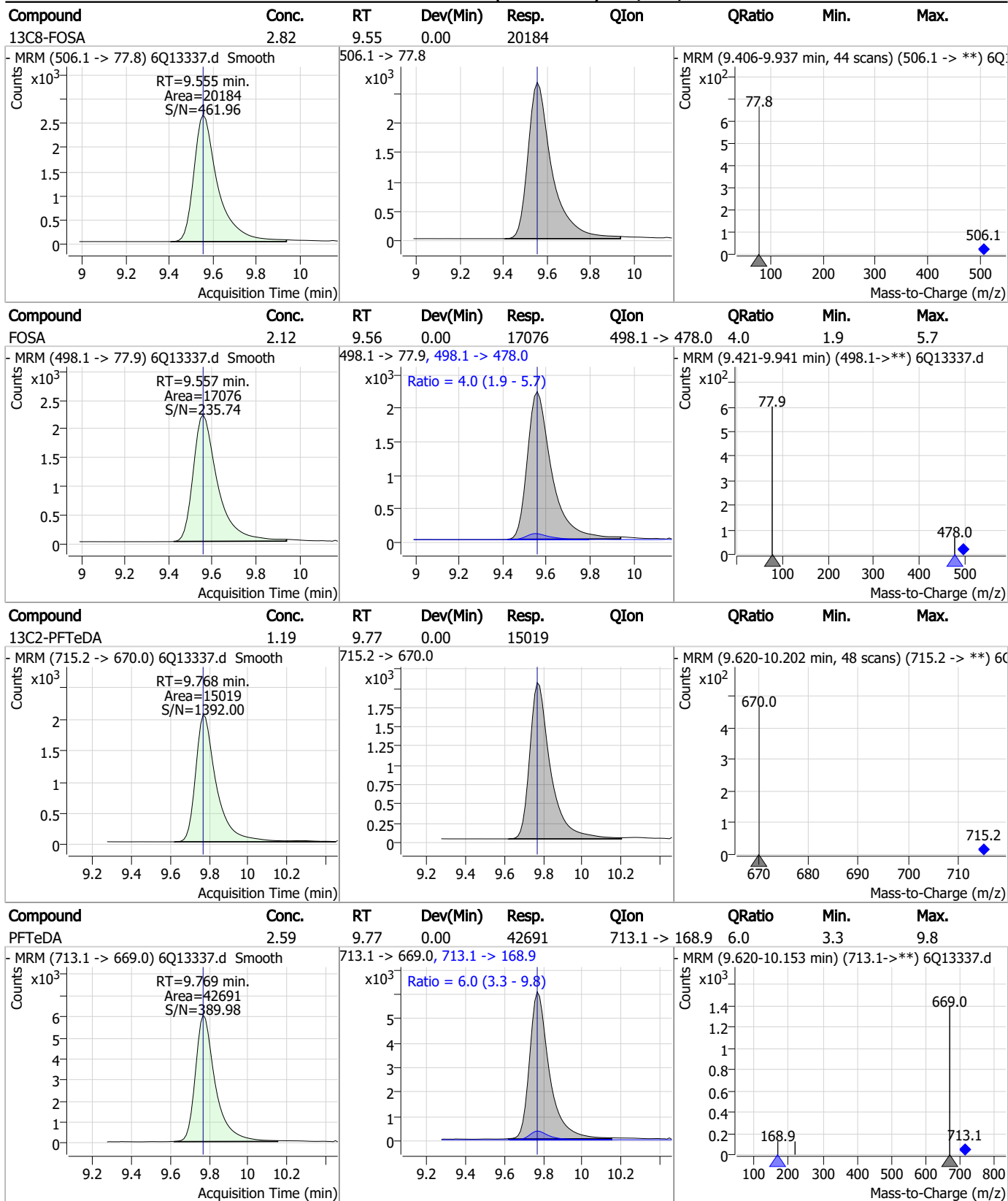
### Perfluorinated Compounds by LC/MS/MS



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



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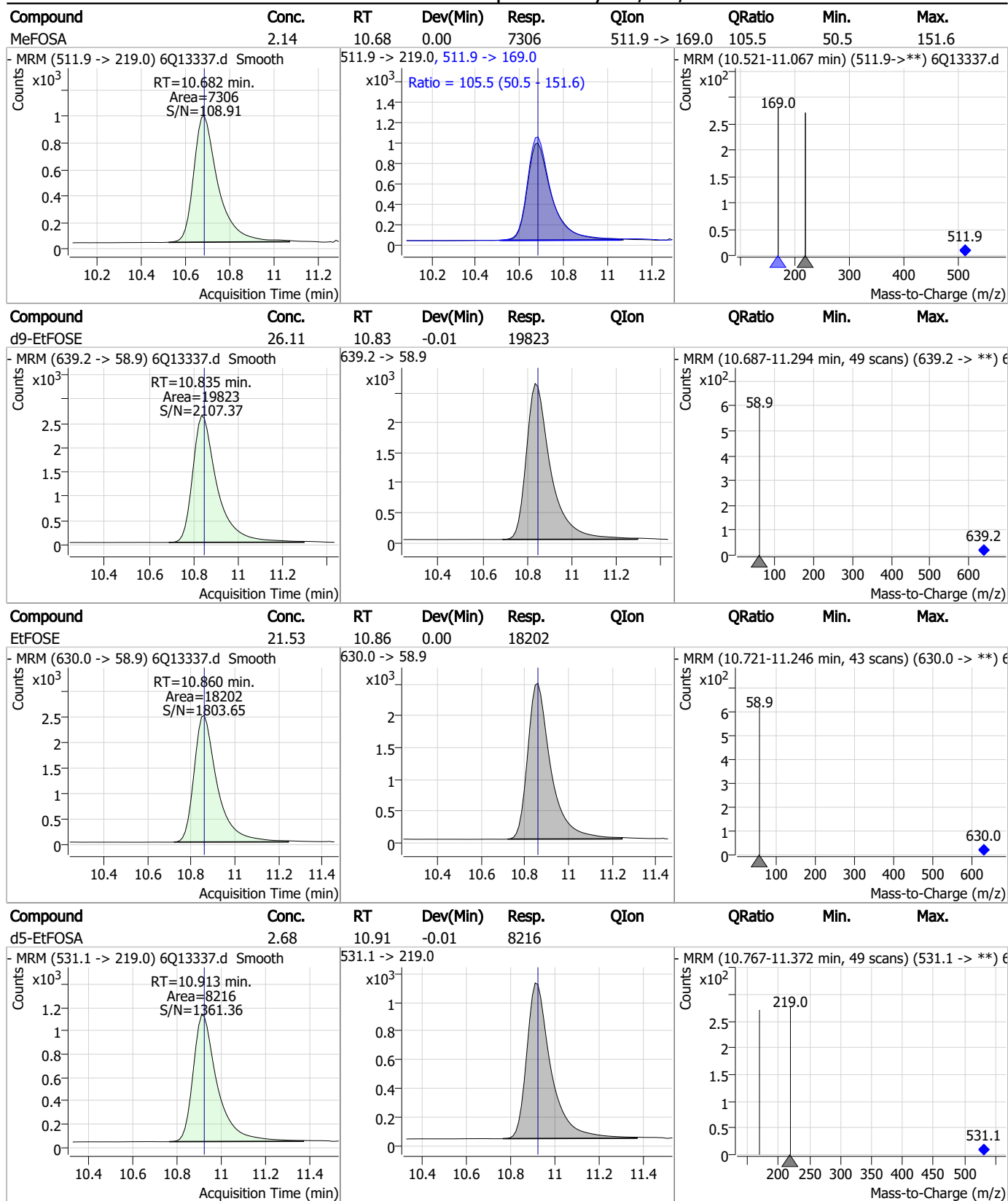


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.14	9.91	0.00	3975	699.1 -> 98.8	62.7	31.1	93.2
d7-MeFOSE	25.99	10.58	-0.01	29514				
MeFOSE	22.85	10.60	0.00	26220				
d3-MeFOSA	2.65	10.68	0.00	7681				

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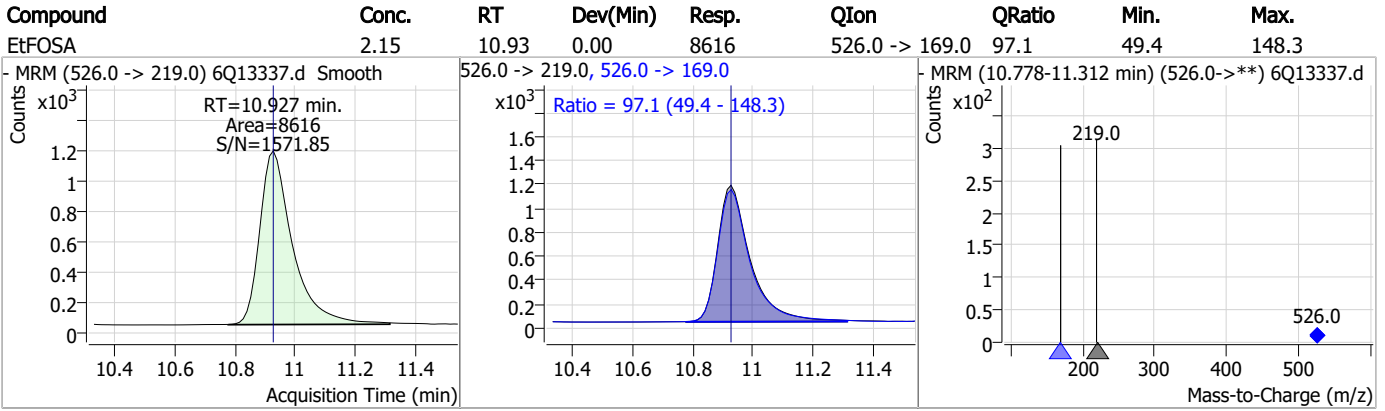
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q203-CC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13337.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 22:09      Supervisor approved: 02/10/23 17:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak
EtFOSAA	2991-50-6		8.39	Split peak

7.7.15.1  
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q13338.d  
 Operator : marthav  
 Acq. Method : 1633full.m  
 Acq. Date-Time : 2/9/2023 10:23:57 PM  
 Sample Name : cc203-1.0LL  
 Vial : P1-A2  
 DA Method File : 1633\_020923\_S6Q203.quantmethod.xml  
 Batch Name : s6q203.batch.bin  
 Sample Information : OP95142,S6Q203,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
M4-PFBA	2.975	216.8 -> 171.9	89052	10.00 µg/L	-0.025
M5-PFPeA	4.374	268.3 -> 223.0	44811	5.00 µg/L	-0.027
M5-PFHxA	5.563	318.0 -> 273.0	39948	2.50 µg/L	0.000
M4-PFHpA	6.502	367.1 -> 322.0	41218	2.50 µg/L	0.012
M8-PFOA	7.134	421.1 -> 376.0	70460	2.50 µg/L	0.000
M9-PFNA	7.664	472.1 -> 427.0	23803	1.25 µg/L	0.000
M6-PFDA	8.145	519.1 -> 474.1	18650	1.25 µg/L	0.000
M7-PFUnDA	8.599	570.0 -> 525.1	24518	1.25 µg/L	0.000
M2-PFDoDA	9.041	615.1 -> 570.0	24803	1.25 µg/L	0.000
M2-PFTeDA	9.768	715.2 -> 670.0	14627	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	16931	2.50 µg/L	0.000
M3-PFBS	5.505	302.1 -> 79.9	15344	2.50 µg/L	-0.012
M3-PFHxS	7.262	402.1 -> 79.9	10140	2.50 µg/L	0.012
M8-PFOS	8.320	507.1 -> 79.9	9016	2.50 µg/L	0.000
M2-4:2FTS	5.227	329.1 -> 80.9	2550	5.00 µg/L	-0.012
M2-6:2FTS	6.908	429.1 -> 80.9	3283	5.00 µg/L	0.012
M2-8:2FTS	7.932	529.1 -> 80.9	3300	5.00 µg/L	0.000
M3-MeFOSAA	8.190	573.2 -> 419.0	33283	5.00 µg/L	0.000
M3-HFPO-DA	5.927	286.9 -> 168.9	14662	10.00 µg/L	-0.012
M5-EtFOSAA	8.386	589.2 -> 419.0	27262	5.00 µg/L	0.000
M7-MeFOSE	10.577	623.2 -> 58.9	26115	25.00 µg/L	-0.012
M9-EtFOSE	10.835	639.2 -> 58.9	17977	25.00 µg/L	-0.012
M5-EtFOSA	10.925	531.1 -> 219.0	7619	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6687	2.50 µg/L	0.000
13C4-PFOS	8.320	502.8 -> 79.9	10684	2.50 µg/L	0.000
13C3-PFBA	2.979	216.0 -> 172.0	39955	5.00 µg/L	-0.012
18O2-PFHxS	7.261	403.0 -> 83.9	7299	2.50 µg/L	0.000
13C4-PFOA	7.135	417.1 -> 372.0	84935	2.50 µg/L	0.000
13C2-PFDA	8.145	515.1 -> 470.1	28258	1.25 µg/L	0.000
13C5-PFNA	7.665	468.0 -> 423.0	27845	1.25 µg/L	0.000
13C2-PFHxA	5.563	315.1 -> 270.0	38804	2.50 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-4:2FTS	5.227	329.1 -> 80.9	2550	5.27 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C2-6:2FTS	6.908	429.1 -> 80.9	3283	5.27 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C2-8:2FTS	7.932	529.1 -> 80.9	3300	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C2-PFDoDA	9.041	615.1 -> 570.0	24803	1.11 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 88.8%		
13C2-PFTeDA	9.768	715.2 -> 670.0	14627	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.5%		
13C3-PFBS	5.505	302.1 -> 79.9	15344	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C3-PFHxS	7.262	402.1 -> 79.9	10140	2.58 µg/L	0.012

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### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C4-PFBA	2.975	216.8 -> 171.9	89052	9.98 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFHpA	6.502	367.1 -> 322.0	41218	2.53 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C5-PFHxA	5.563	318.0 -> 273.0	39948	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFPeA	4.374	268.3 -> 223.0	44811	5.05 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C6-PFDA	8.145	519.1 -> 474.1	18650	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C7-PFUnDA	8.599	570.0 -> 525.1	24518	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-FOSA	9.555	506.1 -> 77.8	16931	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-PFOA	7.134	421.1 -> 376.0	70460	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-PFOS	8.320	507.1 -> 79.9	9016	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C9-PFNA	7.664	472.1 -> 427.0	23803	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.8%	
d3-MeFOSAA	8.190	573.2 -> 419.0	33283	5.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C3-HFPO-DA	5.927	286.9 -> 168.9	14662	9.46 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
d3-MeFOSA	10.680	515.0 -> 219.0	6687	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
d5-EtFOSAA	8.386	589.2 -> 419.0	27262	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
d7-MeFOSE	10.577	623.2 -> 58.9	26115	24.25 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
d9-EtFOSE	10.835	639.2 -> 58.9	17977	24.96 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSA	10.925	531.1 -> 219.0	7619	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
<b>Target Compounds</b>					<b>QValue</b>
4:2FTS	5.228	327.1 -> 307.0	4994	0.87 µg/L	96
		327.1 -> 80.9	1086		
6:2FTS	6.908	427.1 -> 407.0	3995	0.82 µg/L	97
		427.1 -> 80.9	795		
8:2FTS	7.933	527.1 -> 507.0	2056	0.77 µg/L	96
		527.1 -> 80.8	565		
EtFOSAA	8.399	584.2 -> 419.1	962	0.22 µg/L	87
		584.2 -> 526.0	392		
FOSA	9.557	498.1 -> 77.9	1503	0.22 µg/L	97
		498.1 -> 478.0	42		
MeFOSAA	8.191	570.1 -> 419.0	1332	0.22 µg/L	m 91
		570.1 -> 483.0	208		
PFBA	2.969	212.8 -> 168.9	1636	0.82 µg/L	100
PFBS	5.506	298.7 -> 79.9	955	0.16 µg/L	97
		298.7 -> 98.8	470		
PFDA	8.146	512.9 -> 469.0	4752	0.22 µg/L	96
		512.9 -> 219.0	602		
PFDODA	9.042	613.1 -> 569.0	4294	0.23 µg/L	95
		613.1 -> 319.0	560		
PFDS	9.204	599.0 -> 79.9	602	0.21 µg/L	95

7.7.16  
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	292			
PFHpA	6.503	363.1 -> 319.0	4877	0.20	µg/L	99
		363.1 -> 169.0	694			
PFHpS	7.816	449.0 -> 79.9	733	0.20	µg/L	80
		449.0 -> 98.9	513			
PFHxA	5.566	313.0 -> 269.0	3231	0.21	µg/L	99
		313.0 -> 118.9	137			
PFHxS	7.263	398.7 -> 79.9	983	0.22	µg/L	m 87
		398.7 -> 98.9	458			
PFNA	7.665	463.0 -> 419.0	3036	0.19	µg/L	93
		463.0 -> 219.0	713			
PFNS	8.786	548.8 -> 79.9	806	0.21	µg/L	95
		548.8 -> 98.9	469			
PFOA	7.135	413.0 -> 369.0	7049	0.23	µg/L	99
		413.0 -> 169.0	910			
PFOS	8.309	498.9 -> 79.9	678	0.17	µg/L	m 100
		498.9 -> 98.8	487			
PFPeA	4.375	263.0 -> 219.0	3966	0.42	µg/L	100
PFPeS	6.569	349.1 -> 79.9	893	0.17	µg/L	87
		349.1 -> 98.9	579			
PFTeDA	9.769	713.1 -> 669.0	3564	0.22	µg/L	100
		713.1 -> 168.9	230			
PFTrDA	9.425	663.0 -> 619.0	4141	0.24	µg/L	95
		663.0 -> 168.9	257			
PFUnDA	8.612	563.1 -> 519.0	3706	0.19	µg/L	99
		563.1 -> 269.1	516			
11Cl-PF3OUdS	9.477	630.9 -> 450.9	8120	0.82	µg/L	97
		632.9 -> 452.9	2453			
9Cl-PF3ONS	8.651	530.8 -> 351.0	13571	0.78	µg/L	100
		532.8 -> 353.0	4245			
ADONA	6.753	376.9 -> 250.9	26902	0.83	µg/L	99
		376.9 -> 84.8	5808			
HFPO-DA	5.928	284.9 -> 168.9	1275	0.92	µg/L	95
		284.9 -> 184.9	182			
3:3FTCA	3.841	241.0 -> 177.0	484	1.03	µg/L	98
		241.0 -> 117.0	66			
5:3FTCA	6.193	341.0 -> 237.1	16241	4.96	µg/L	96
		341.0 -> 217.0	13072			
7:3FTCA	7.605	441.0 -> 316.9	8354	4.96	µg/L	94
		441.0 -> 336.9	16609			
EtFOSA	10.927	526.0 -> 219.0	779	0.21	µg/L	89
		526.0 -> 169.0	858			
EtFOSE	10.860	630.0 -> 58.9	1590	2.07	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	656	0.22	µg/L	97
		511.9 -> 169.0	683			
MeFOSE	10.602	616.1 -> 58.9	2166	2.13	µg/L	100
PFDoDS	9.907	699.1 -> 79.9	380	0.22	µg/L	96
		699.1 -> 98.8	224			
NFDHA	5.445	295.0 -> 201.0	311	0.34	µg/L	65
		295.0 -> 84.9	229			
PFMBA	4.787	279.0 -> 85.1	1037	0.38	µg/L	100
PFMPA	3.541	229.0 -> 84.9	1047	0.42	µg/L	100
PFEESA	6.046	314.8 -> 134.9	7987	0.37	µg/L	99
		314.8 -> 82.9	160			

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

7.7.16  
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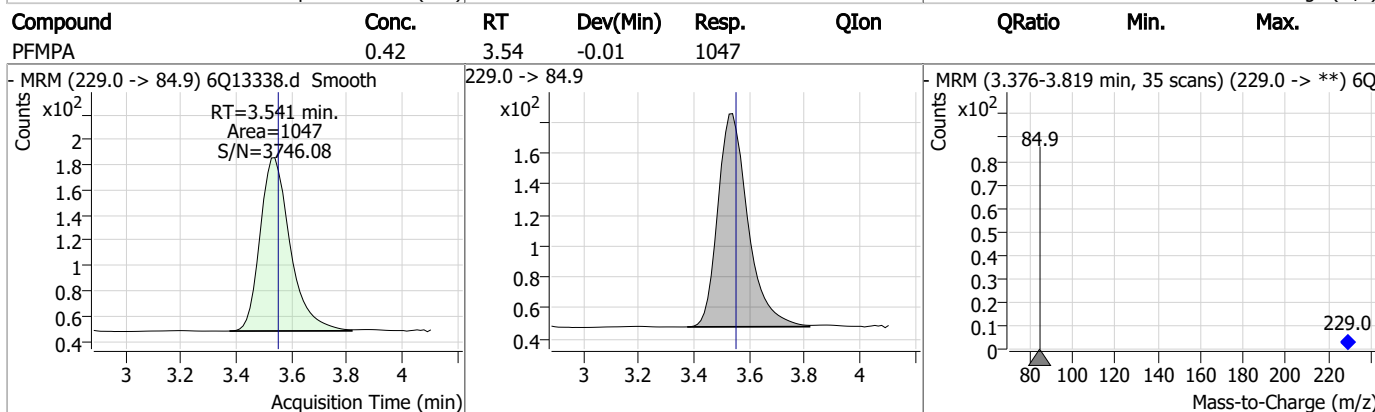
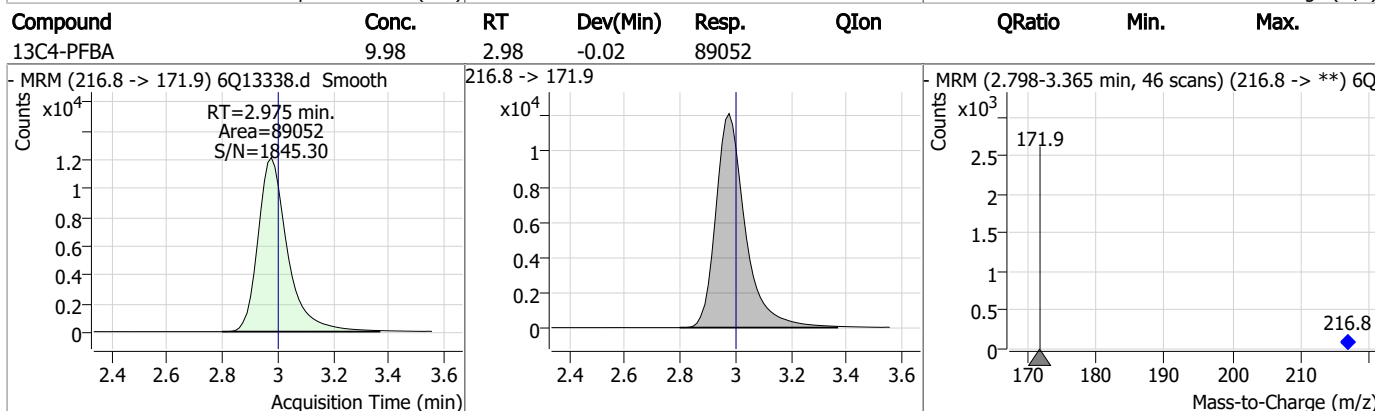
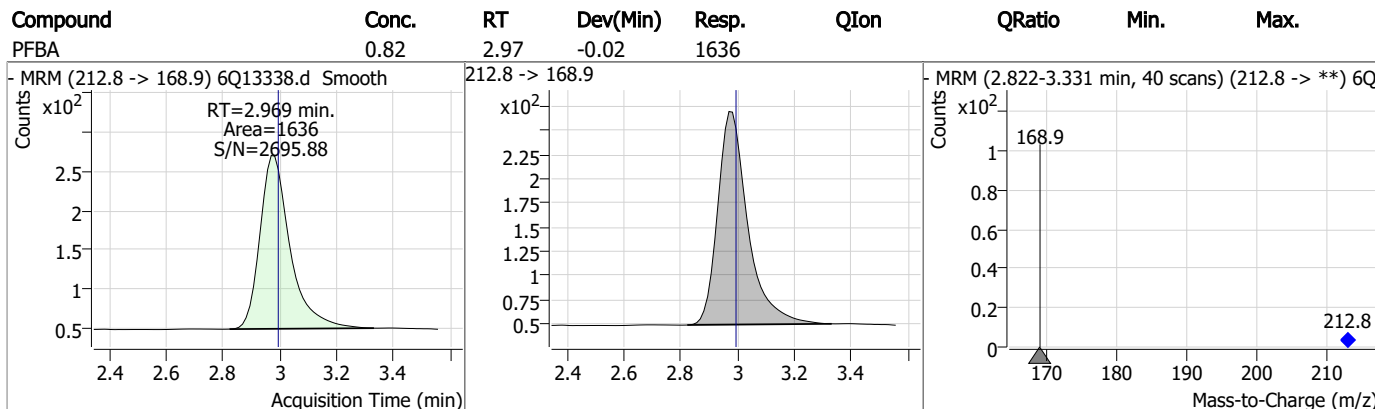
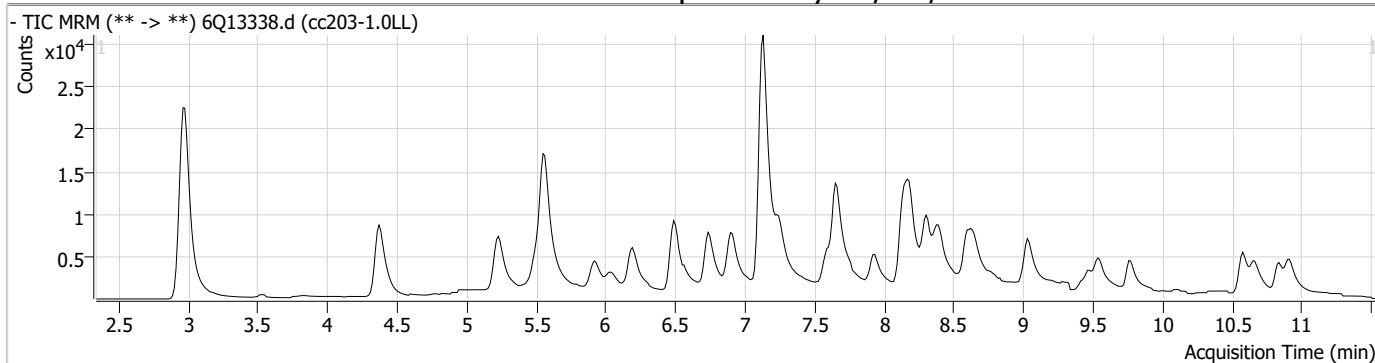
### Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.16

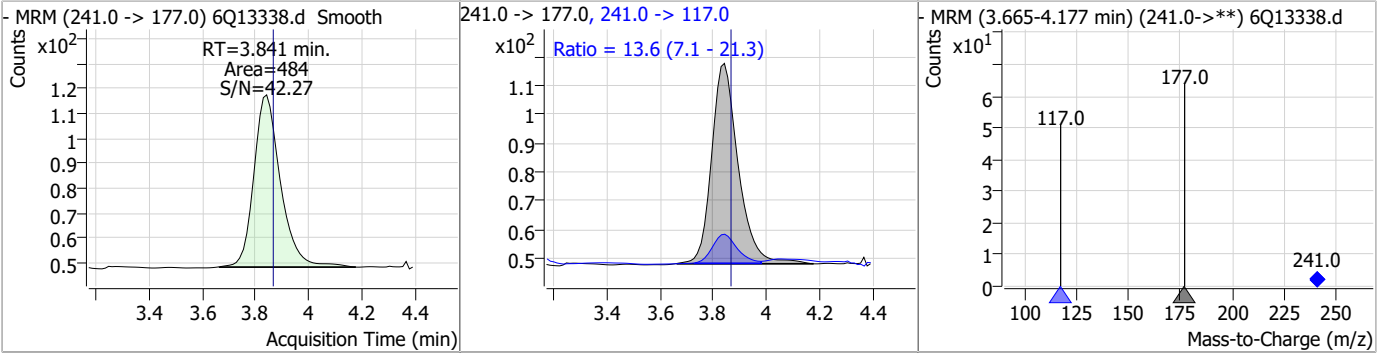
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### Perfluorinated Compounds by LC/MS/MS

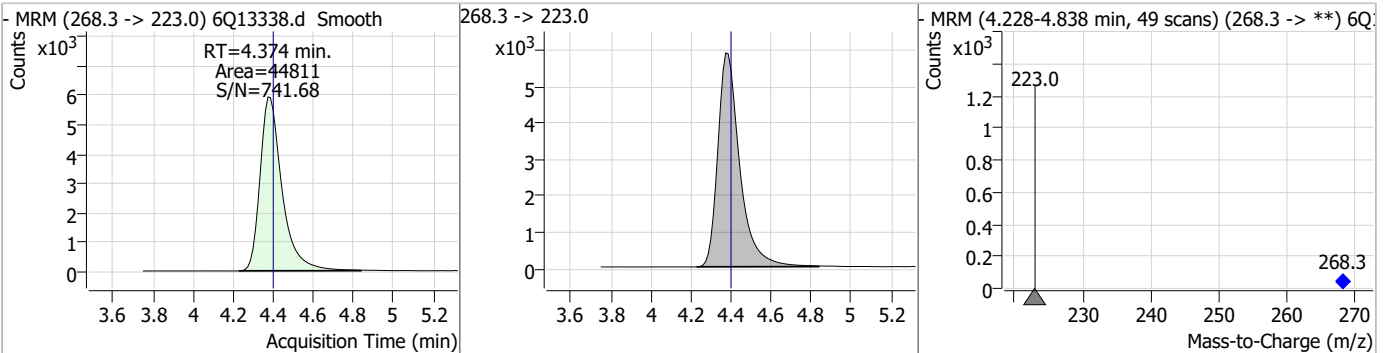


### Perfluorinated Compounds by LC/MS/MS

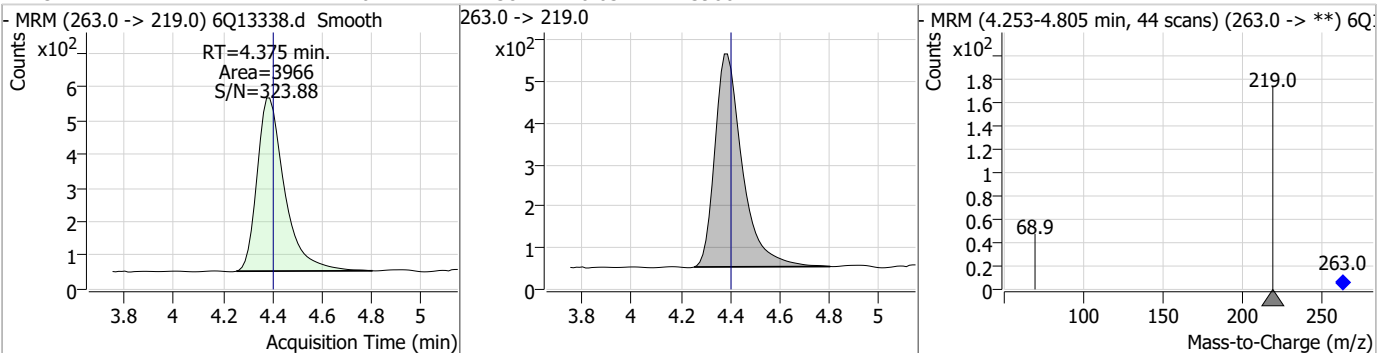
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.03	3.84	-0.02	484	241.0 -> 117.0	13.6	7.1	21.3



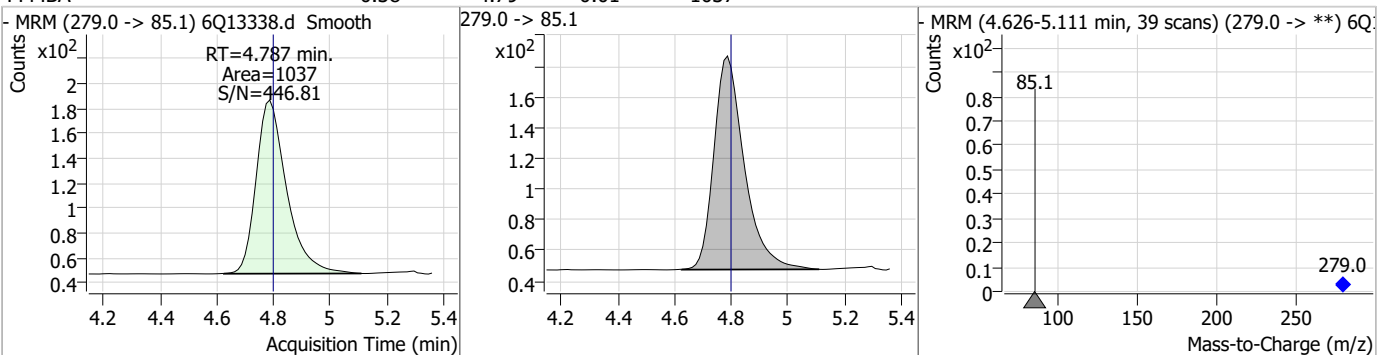
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.05	4.37	-0.03	44811				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.42	4.38	-0.03	3966				

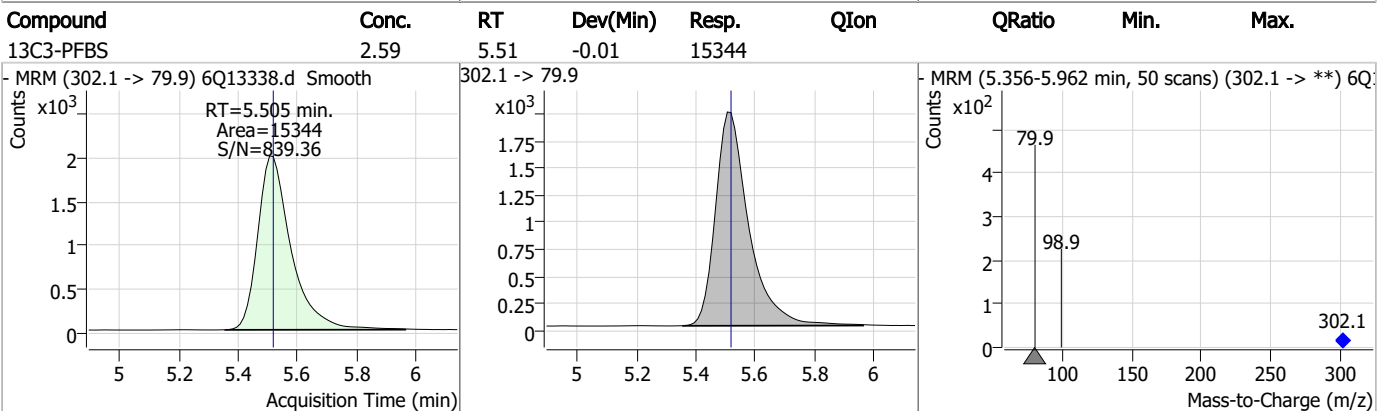
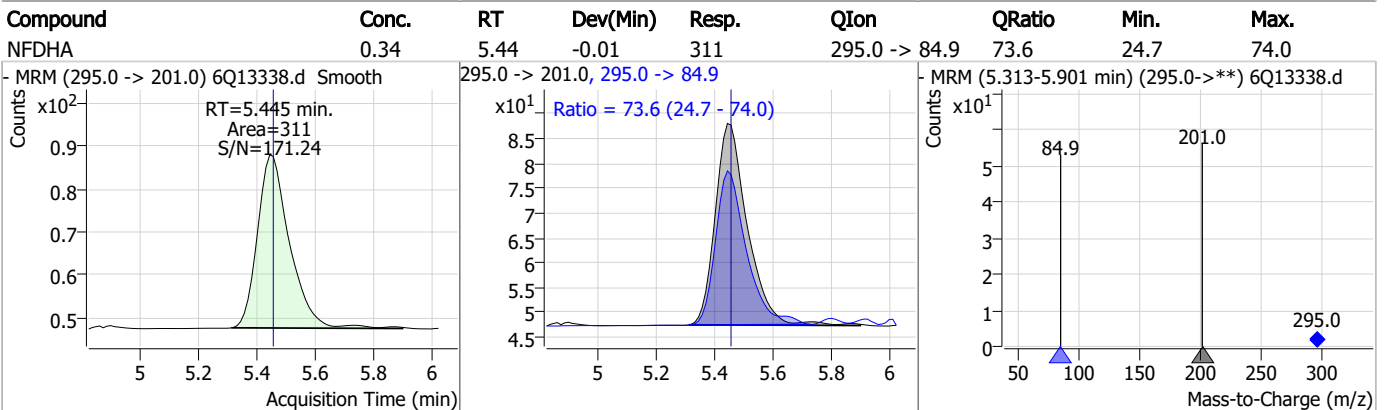
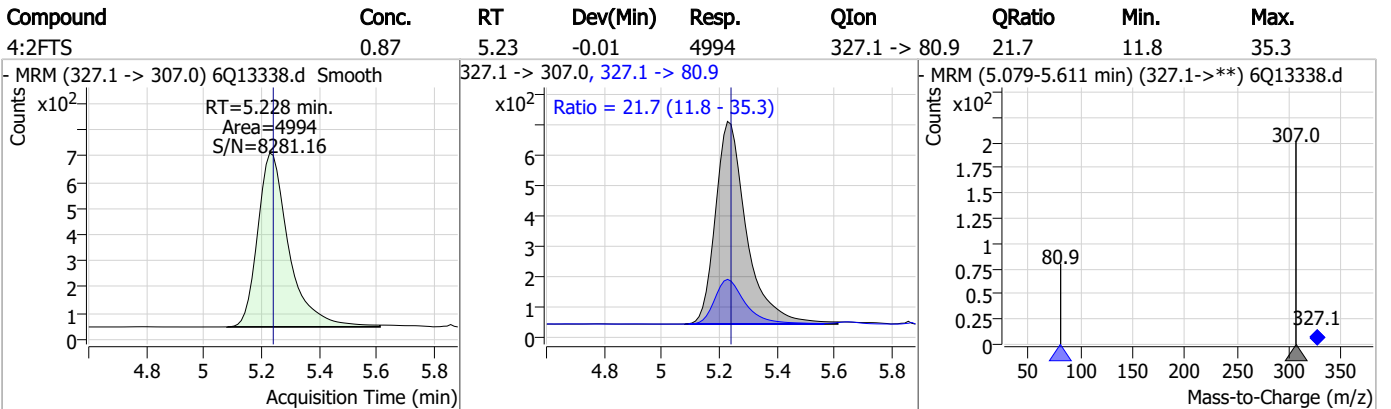
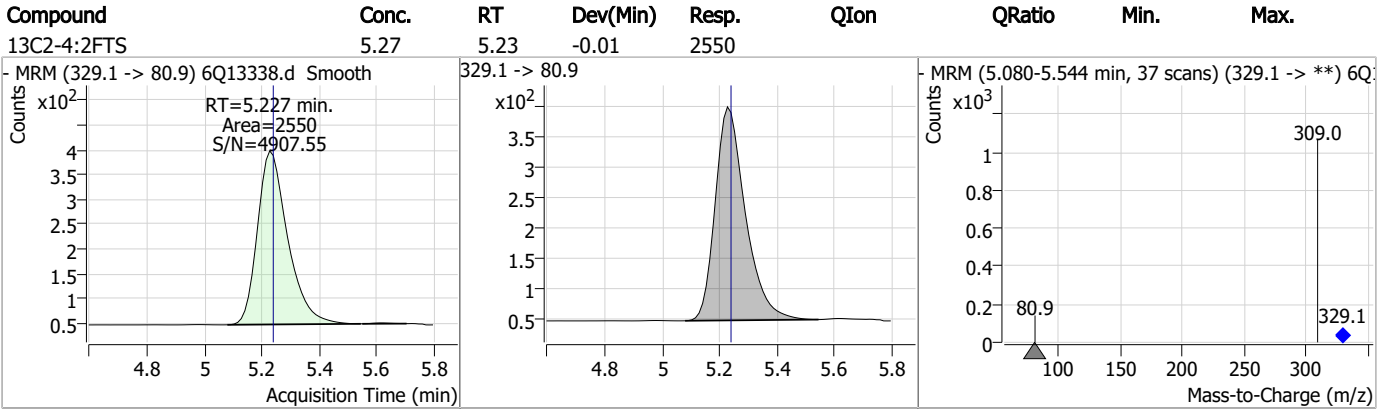


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.38	4.79	-0.01	1037				

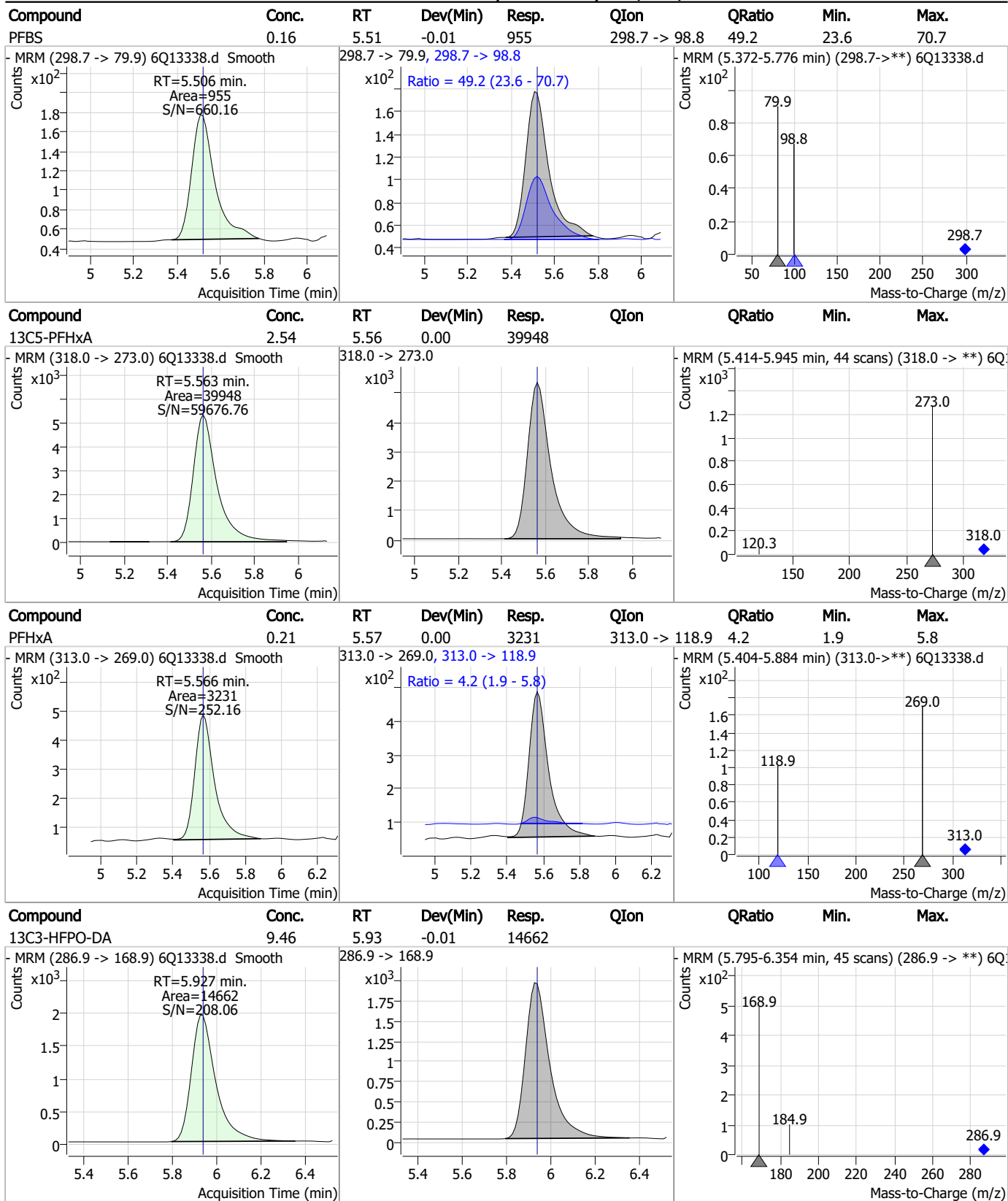


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### Perfluorinated Compounds by LC/MS/MS

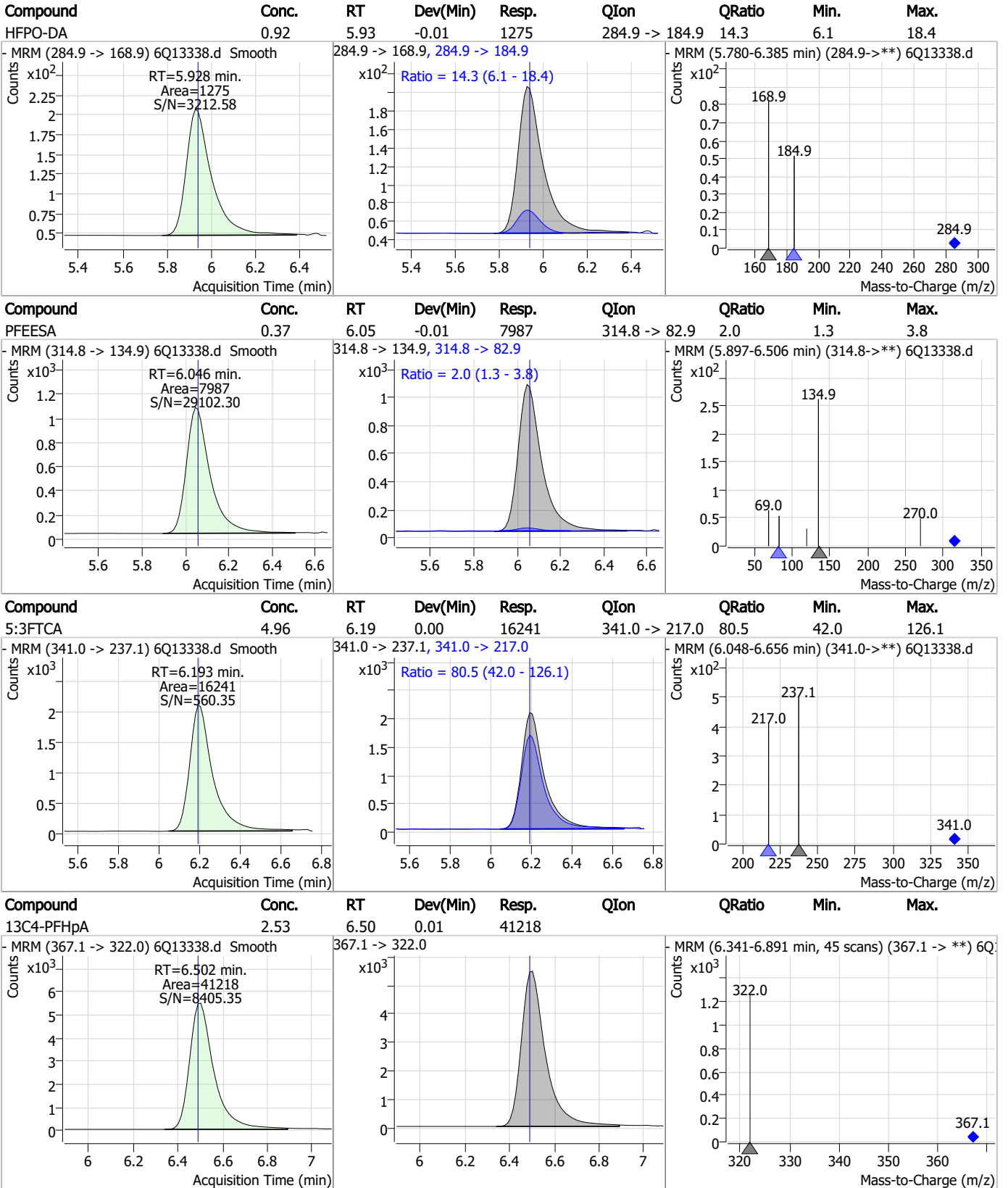


### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS

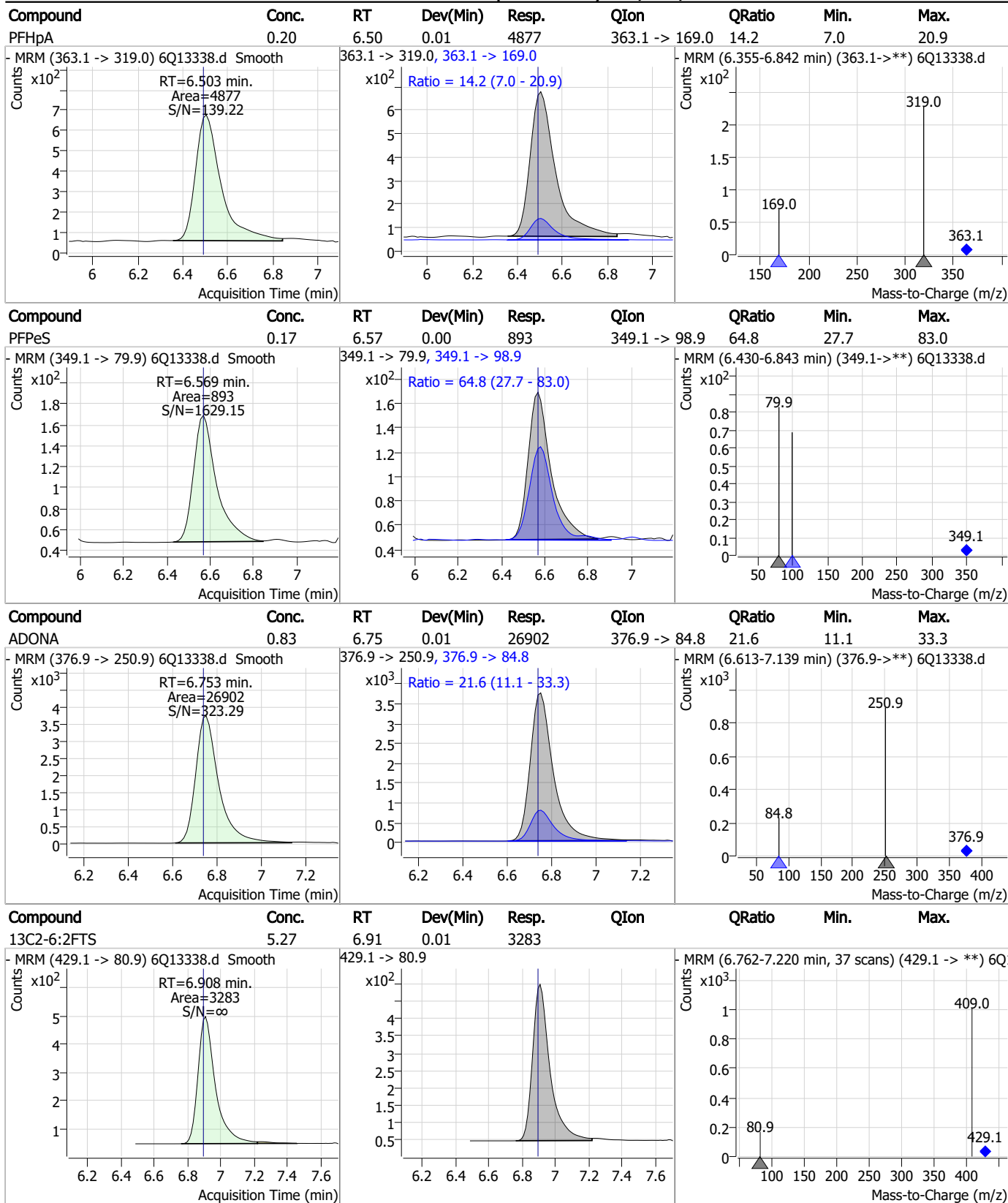


7.7.16 7





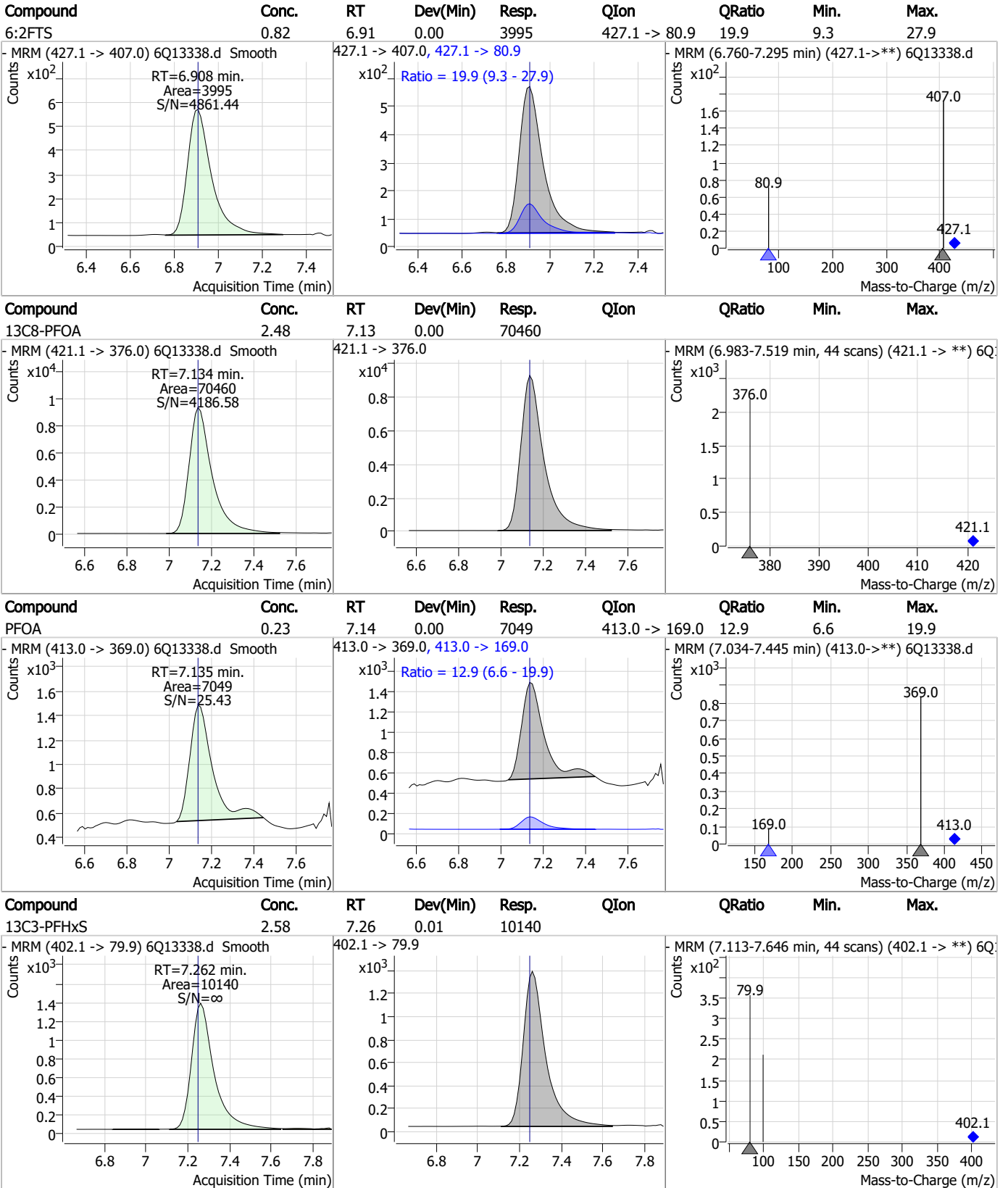
### Perfluorinated Compounds by LC/MS/MS



7.7.16

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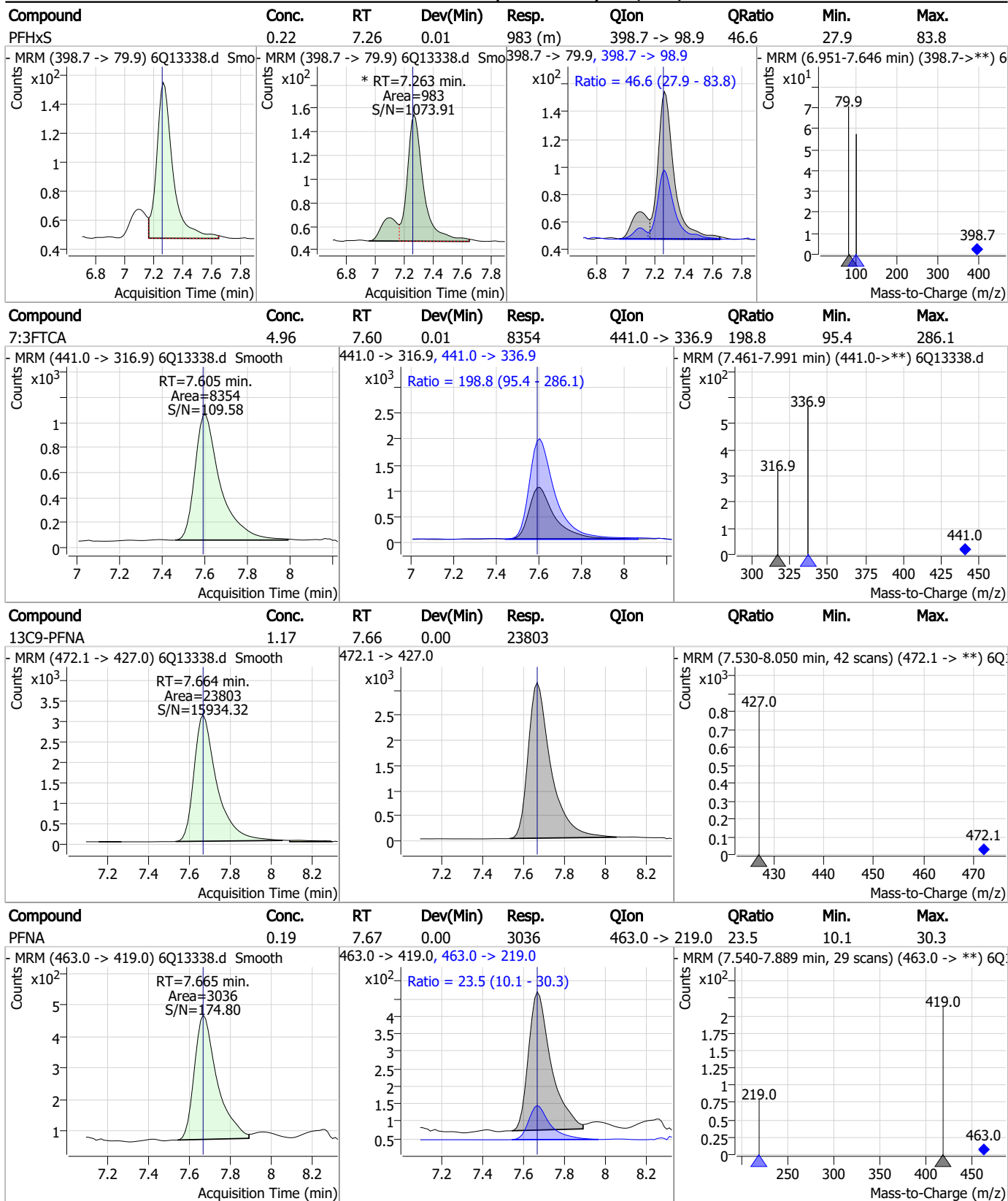
### Perfluorinated Compounds by LC/MS/MS



7.7.16 7

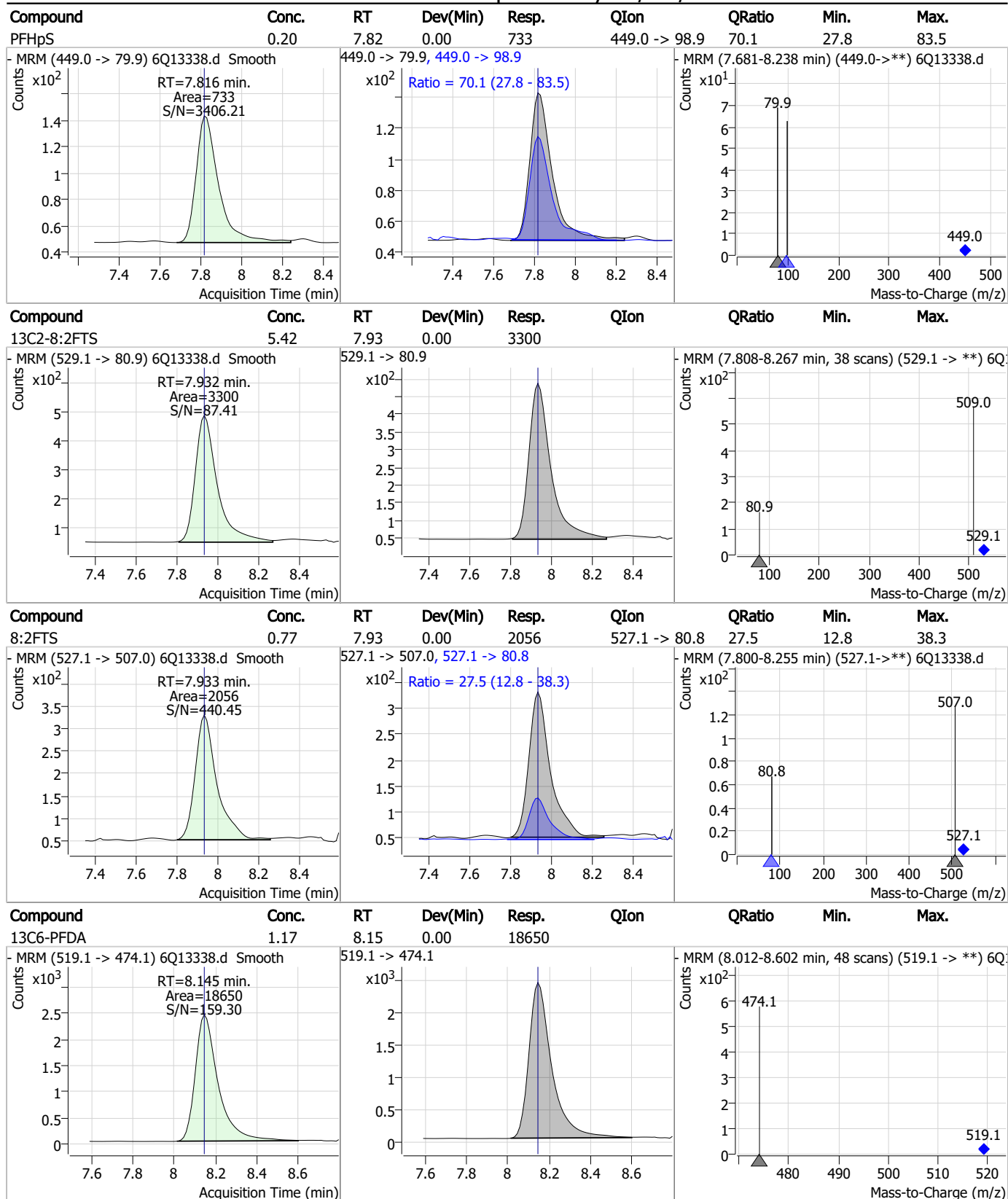


### Perfluorinated Compounds by LC/MS/MS



7.7.16  
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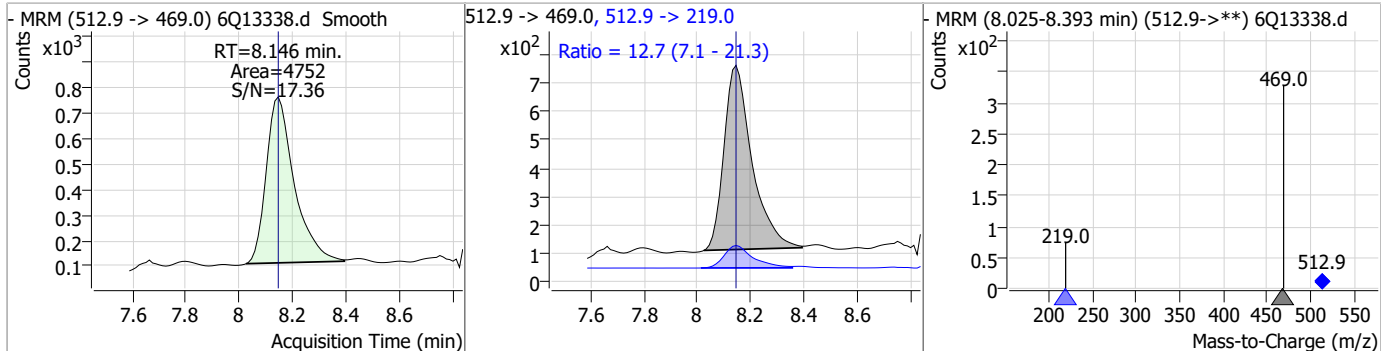
### Perfluorinated Compounds by LC/MS/MS



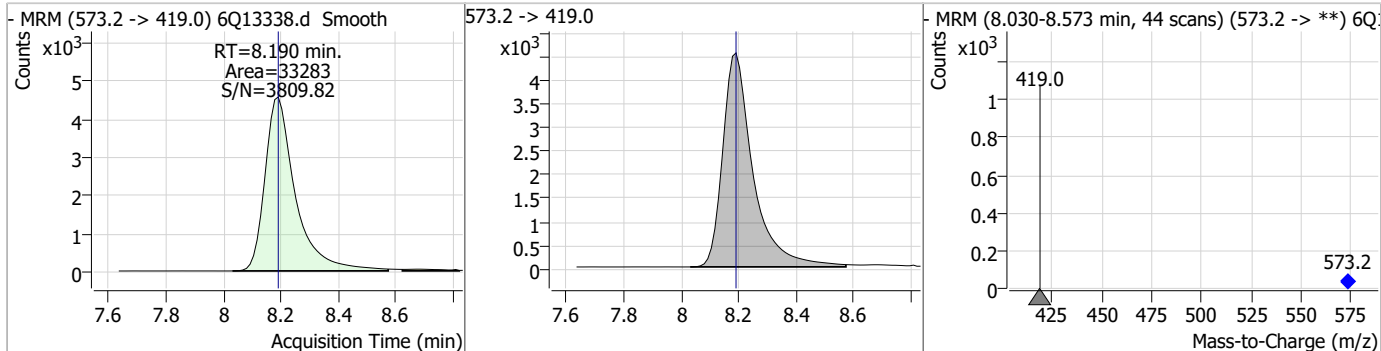
7.7.16 7

### Perfluorinated Compounds by LC/MS/MS

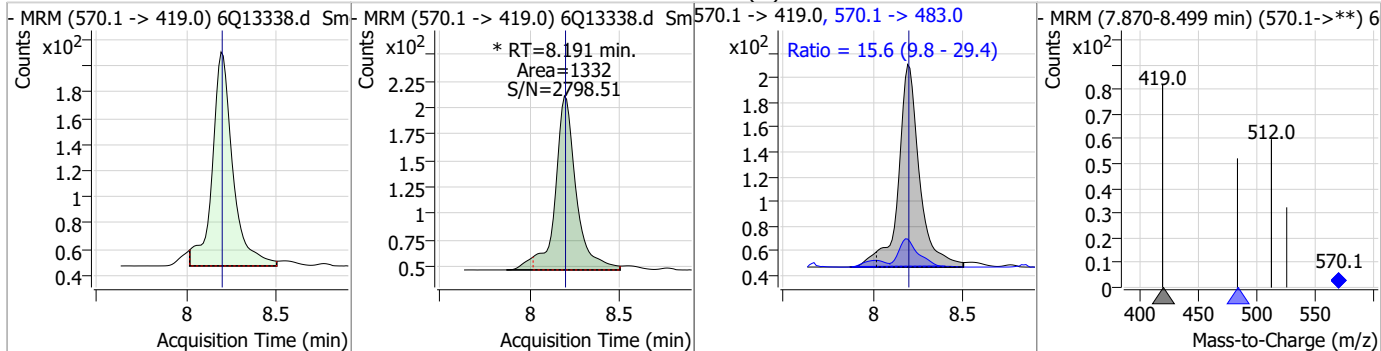
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.22	8.15	0.00	4752	512.9 -> 219.0	12.7	7.1	21.3



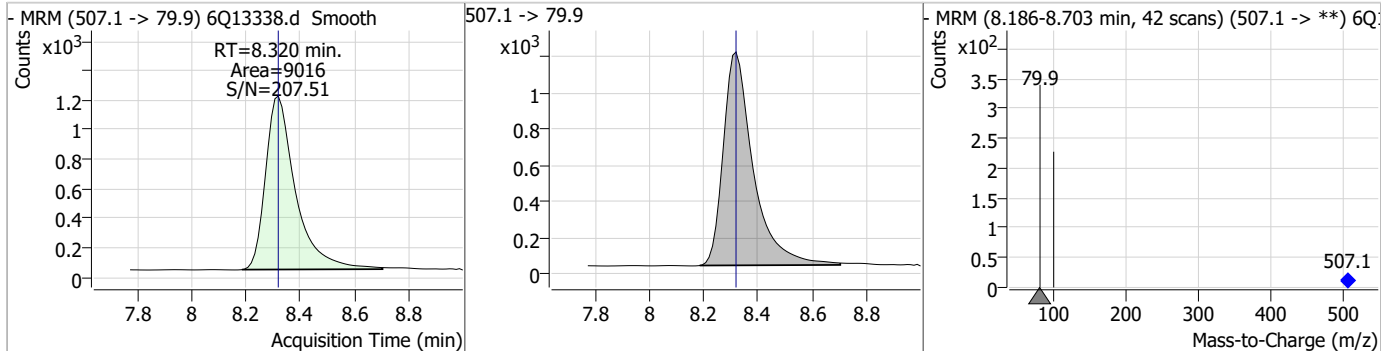
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.41	8.19	0.00	33283				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.22	8.19	0.00	1332 (m)	570.1 -> 483.0	15.6	9.8	29.4



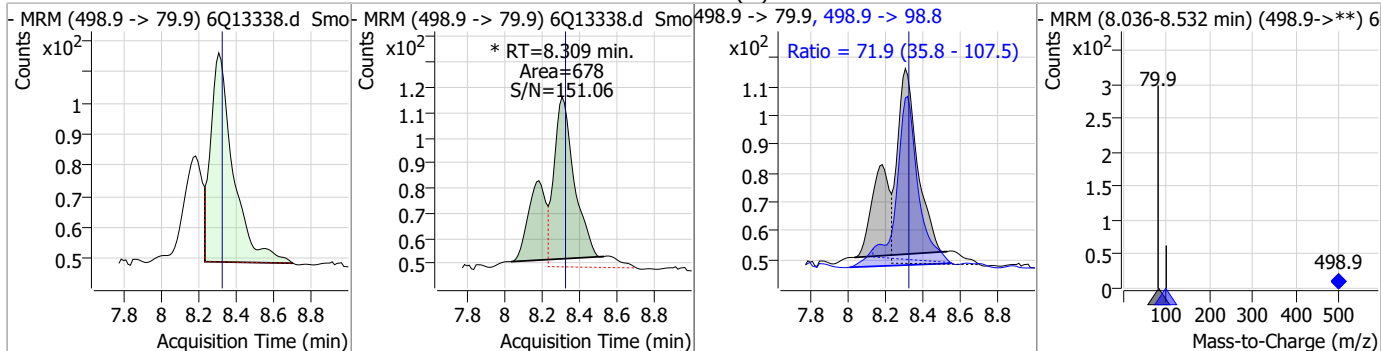
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.55	8.32	0.00	9016				



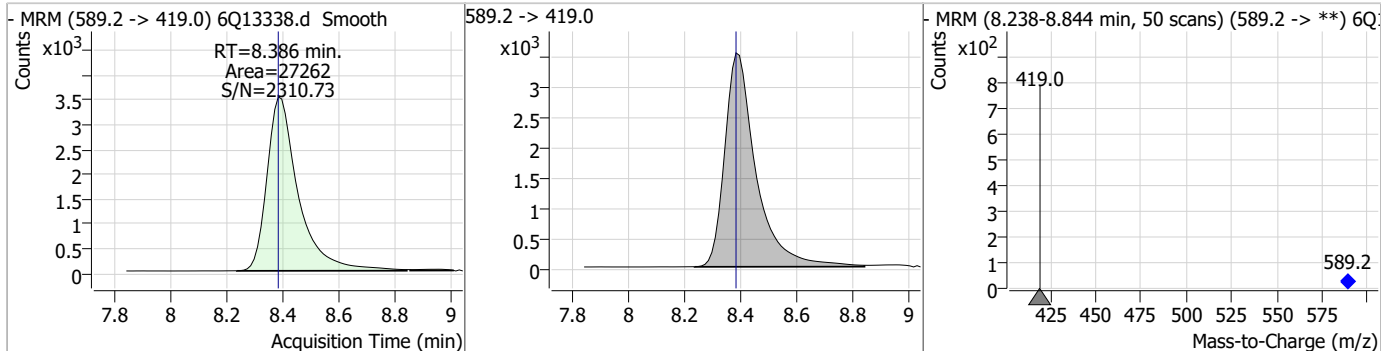
7.7.16  
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### Perfluorinated Compounds by LC/MS/MS

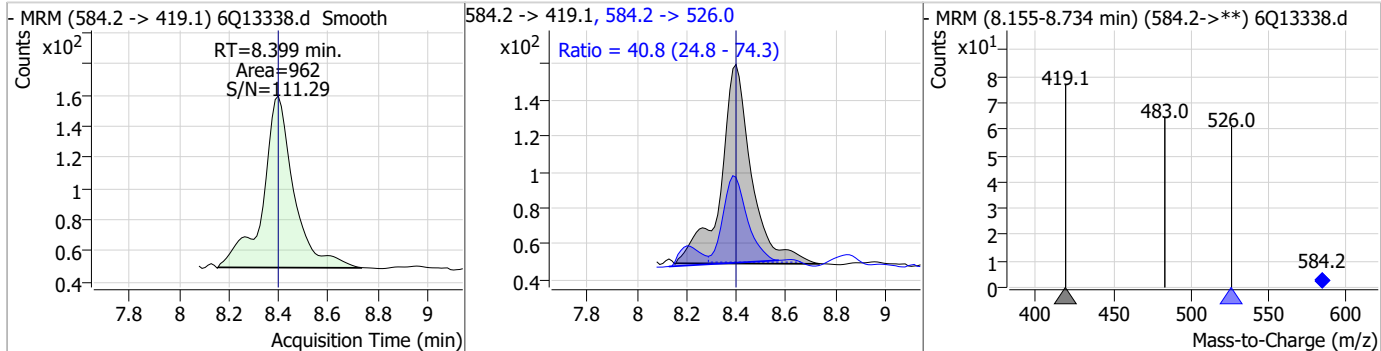
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.17	8.31	-0.01	678 (m)	498.9 -> 98.8	71.9	35.8	107.5



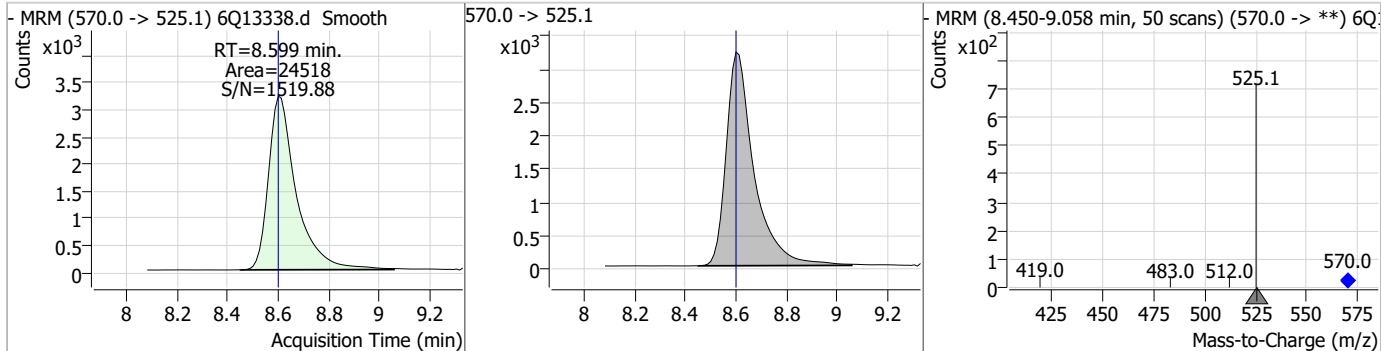
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.27	8.39	0.00	27262				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.22	8.40	0.00	962	584.2 -> 526.0	40.8	24.8	74.3

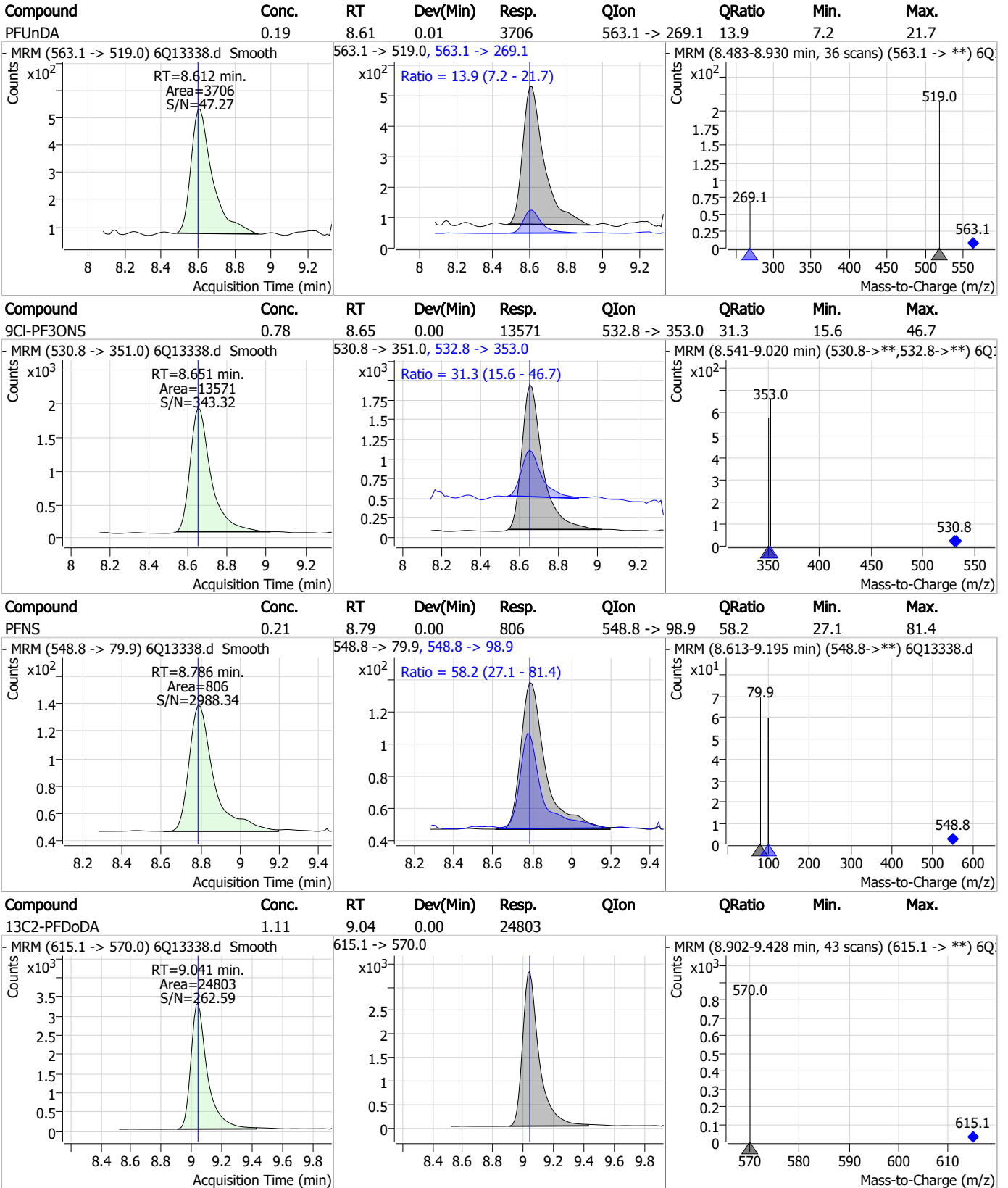


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.60	0.00	24518				



7.7.16  
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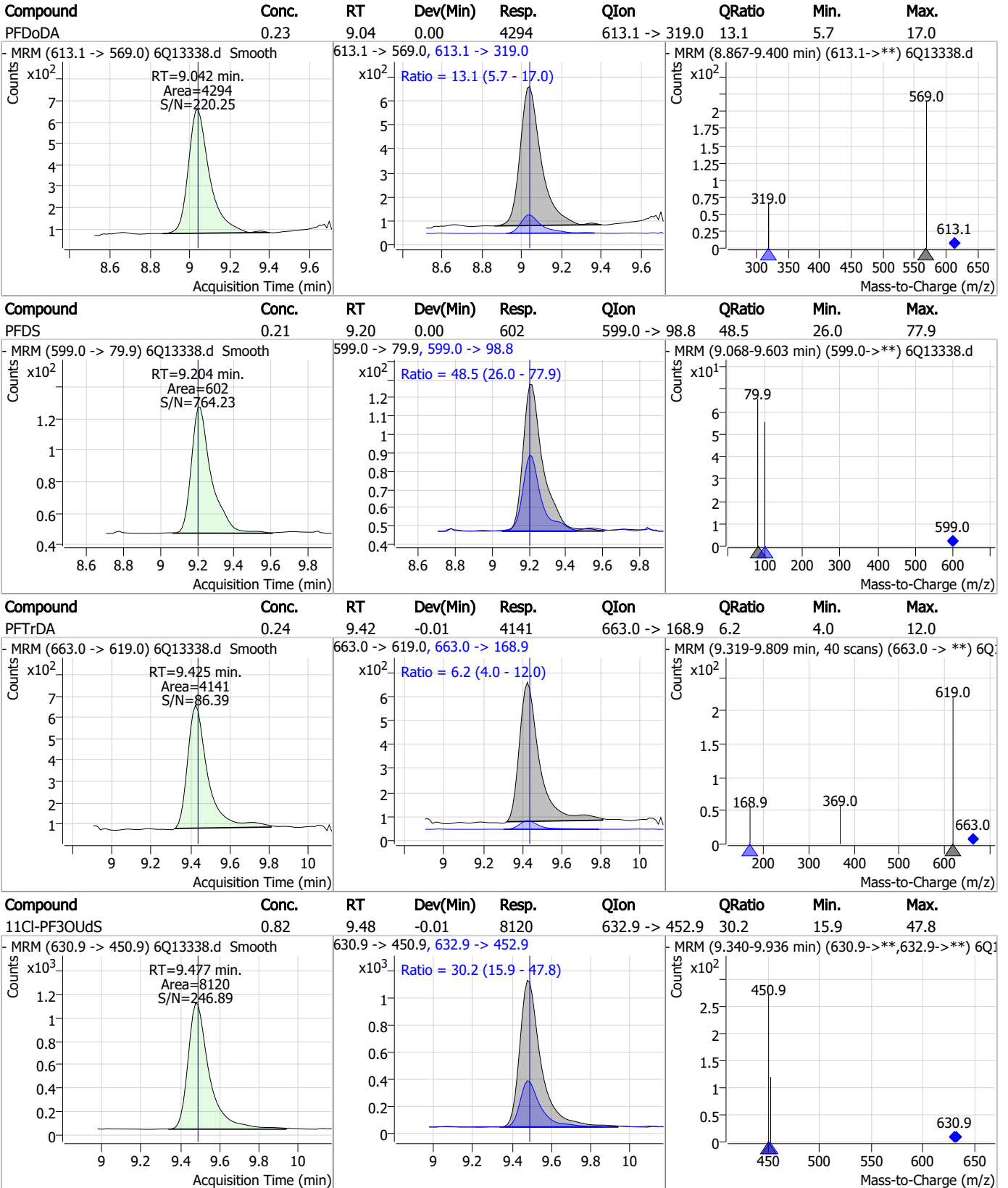
### Perfluorinated Compounds by LC/MS/MS



7.7.16  
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### Perfluorinated Compounds by LC/MS/MS

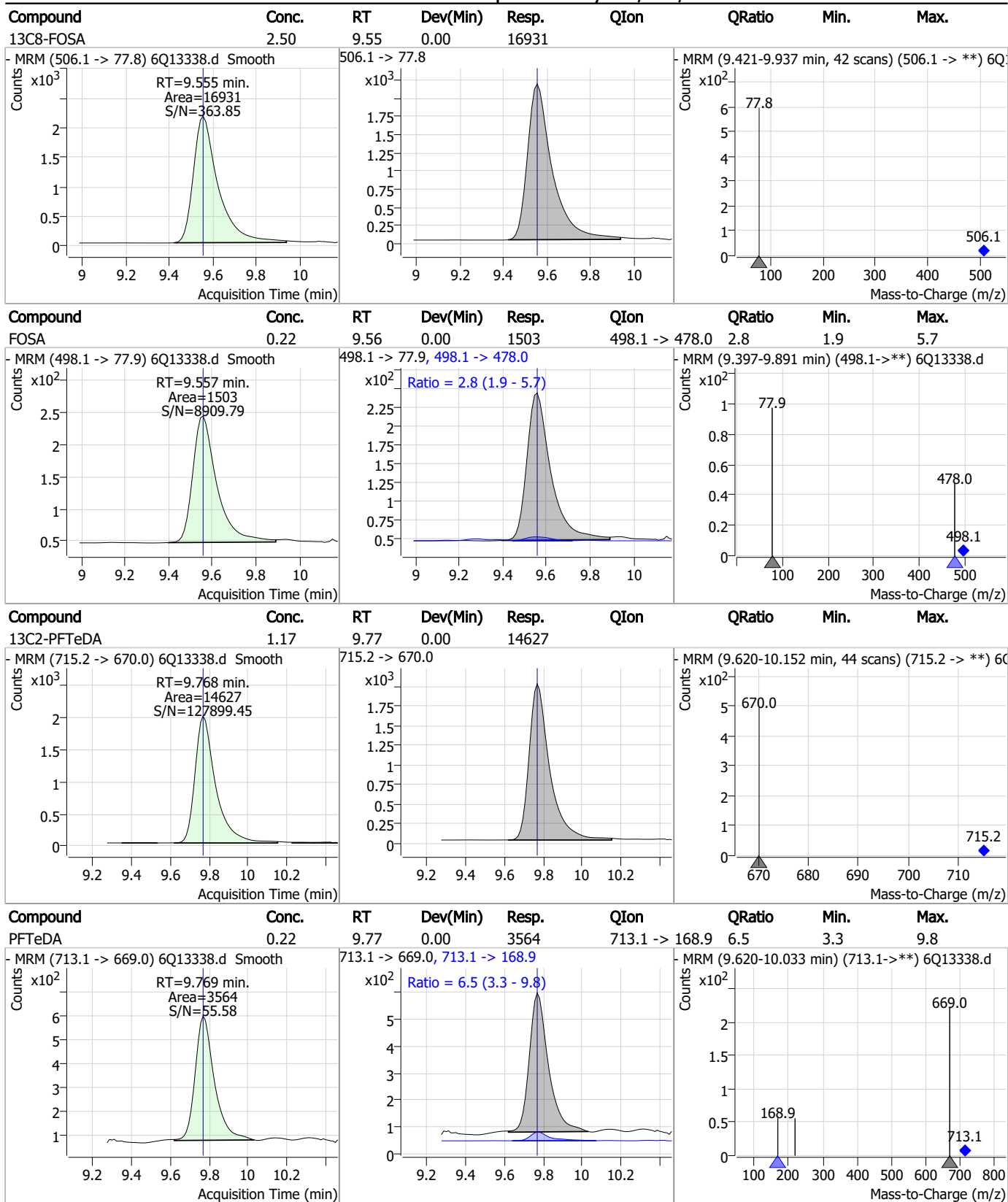


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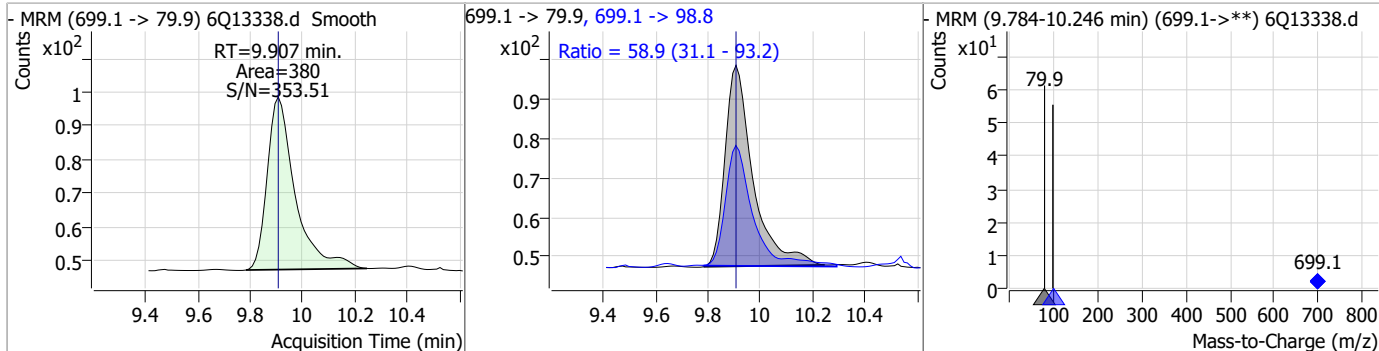
### Perfluorinated Compounds by LC/MS/MS



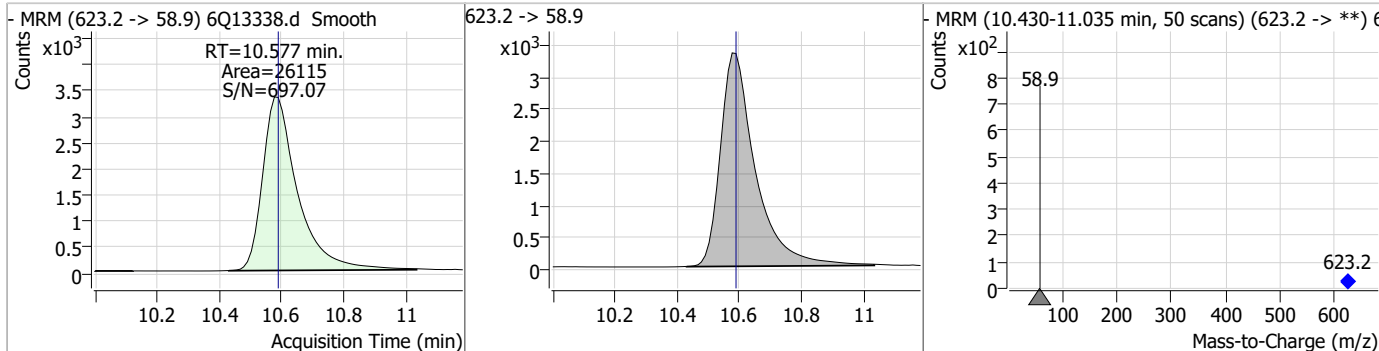
7.7.16  
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### Perfluorinated Compounds by LC/MS/MS

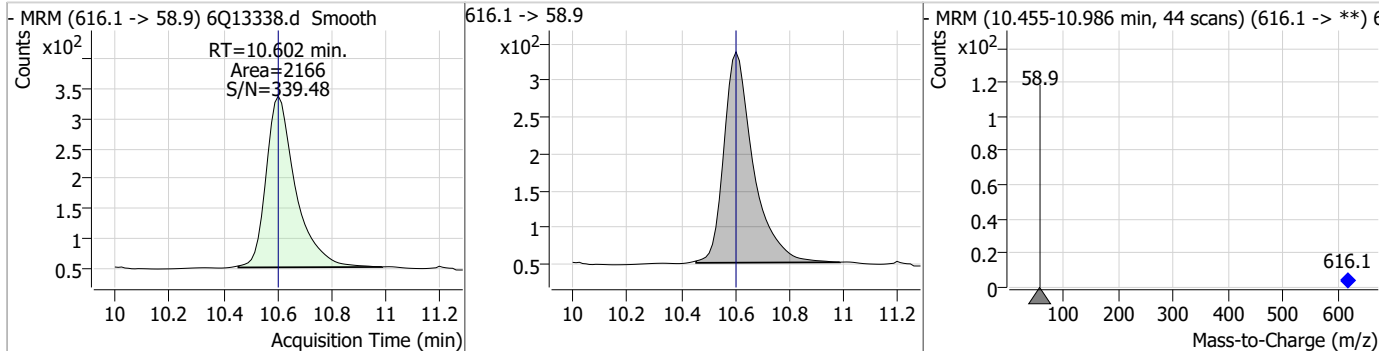
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.22	9.91	0.00	380	699.1 -> 98.8	58.9	31.1	93.2



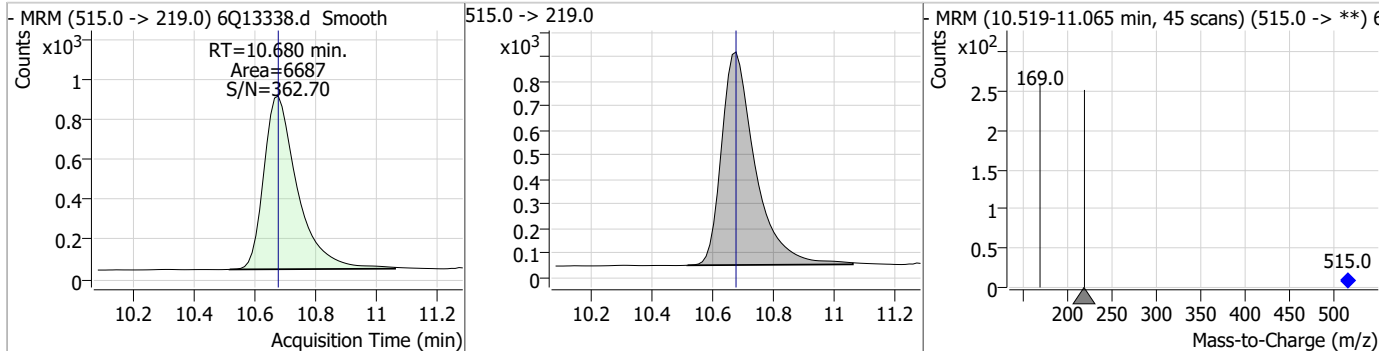
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.25	10.58	-0.01	26115				



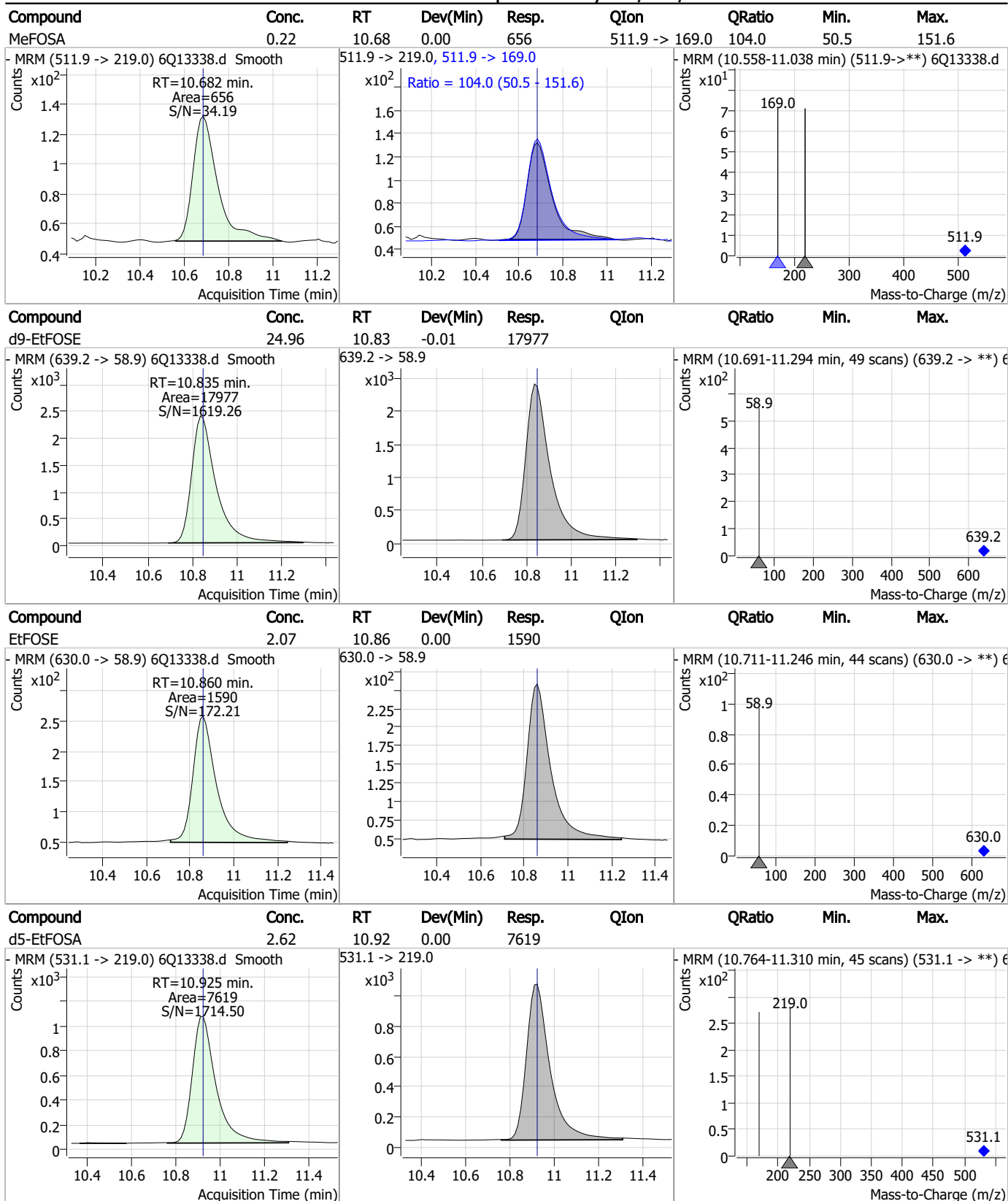
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	2.13	10.60	0.00	2166				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.43	10.68	0.00	6687				



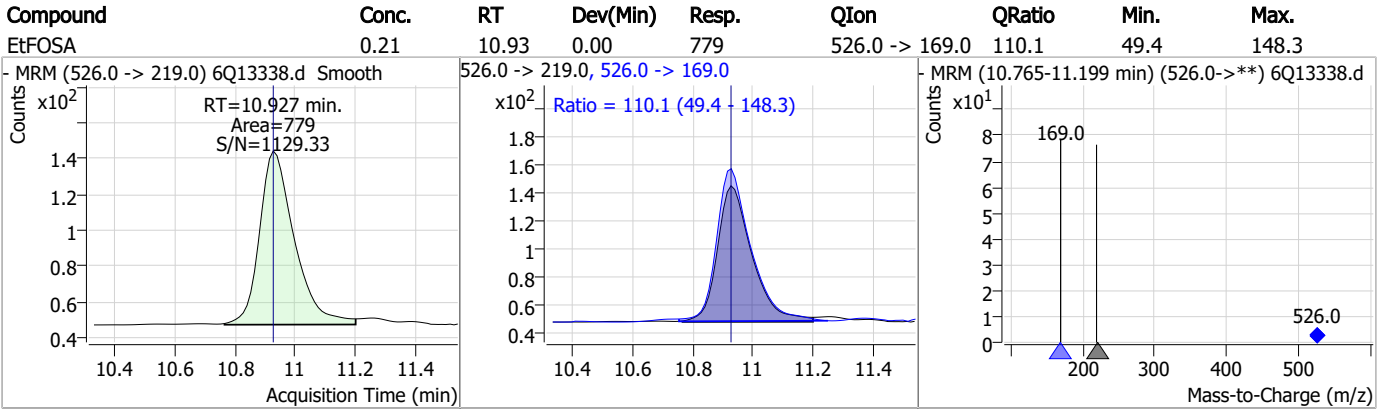
### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS



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# Manual Integration Approval Summary

Sample Number: S6Q203-CC203      Method: EPA DRAFT 1633  
Lab FileID: 6Q13338.D      Analyst approved: 02/10/23 13:23 Natasha Gumtie  
Injection Time: 02/09/23 22:23      Supervisor approved: 02/10/23 17:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.19	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

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SGS ORLANDO

DATE:	02/09/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_020923_S6Q203
CAL DATE:	02/09/23
ANALYST:	M.Valls NG
RUN BATCH:	S6Q203

ELUENT A LOT #:	ACN 220213
ELUENT B LOT #:	22457 W5% CAN 220213 2ml
IC/CC STD LOT #:	AMAC. 11387
ICV STD LOT #:	LCMS 2055-C
ISTD/ID STD LOT #:	LCMS 2041A/2042
	11384/11383

ICV 2: Full list LCMS2042		Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q13292.d	P1-A1	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	ND
2	6Q13293.d	P1-A1	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	ND
3	6Q13294.d	P1-B3	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	✓
4	6Q13295.d	P1-B4	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	✓
5	6Q13296.d	P1-A1	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	Check Tune File
6	6Q13297.d	P1-A2	1633full.m	Calibration	1.6/500	OP95142,S6Q203,500,,,5.0,1,water	PASS
7	6Q13298.d	P1-A3	1633full.m	Calibration	4/500	OP95142,S6Q203,500,,,5.0,1,water	PASS
8	6Q13299.d	P1-A4	1633full.m	Calibration	10/500	OP95142,S6Q203,500,,,5.0,1,water	PASS
9	6Q13300.d	P1-A5	1633full.m	Calibration	20/500	OP95142,S6Q203,500,,,5.0,1,water	PASS
10	6Q13301.d	P1-A6	1633full.m	Calibration	40/500	OP95142,S6Q203,500,,,5.0,1,water	PASS
11	6Q13302.d	P1-A7	1633full.m	Calibration	100/500	OP95142,S6Q203,500,,,5.0,1,water	PASS
12	6Q13303.d	P1-A8	1633full.m	Calibration	200/500	OP95142,S6Q203,500,,,5.0,1,water	PASS
13	6Q13304.d	P1-A9	1633full.m	Calibration	1x	OP95142,S6Q203,500,,,5.0,1,water	PASS
14	6Q13305.d	P1-A1	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	ND
15	6Q13306.d	P1-B1	1633full.m	QC	20/500	OP95142,S6Q203,500,,,5.0,1,water	prepped by NG
16	6Q13307.d	P1-B2	1633full.m	QC	100/500	OP95142,S6Q203,500,,,5.0,1,water	prepped by NG
17	6Q13308.d	P1-A5	1633full.m	QC	20/500	OP95142,S6Q203,500,,,5.0,1,water	PASS
18	6Q13309.d	P1-A2	1633full.m	QC	1.6/500	OP95142,S6Q203,500,,,5.0,1,water	PASS
19	6Q13310.d	P1-E4	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	test
20	6Q13311.d	P1-B4	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	test
21	6Q13312.d	P1-A9	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	test
22	6Q13313.d	P1-A1	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	test
23	6Q13314.d	P1-A5	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	test
24	6Q13315.d	P1-A2	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	test
25	6Q13316.d	P1-C1	1633full.m	Sample	100/500	OP95255,S6Q203,64,,,5.0,5,water	✓
26	6Q13317.d	P1-C2	1633full.m	Sample		OP95350,S6Q203,500,,,5.0,5,water	✓
27	6Q13318.d	P1-C3	1633full.m	Sample		OP95350,S6Q203,500,,,5.0,5,water	✓
28	6Q13319.d	P1-C4	1633full.m	Sample		OP95350,S6Q203,500,,,5.0,5,water	✓
29	6Q13320.d	P1-C5	1633full.m	Sample		OP95350,S6Q203,585,,,5.0,5,water	✓
30	6Q13321.d	P1-C6	1633full.m	Sample	re	OP95377,S6Q203,500,,,5.0,1,water	✓
31	6Q13322.d	P1-C7	1633full.m	Sample		OP95377,S6Q203,500,,,5.0,1,water	✓
32	6Q13323.d	P1-C8	1633full.m	Sample		OP95377,S6Q203,500,,,5.0,1,water	✓
33	6Q13324.d	P1-C9	1633full.m	Sample	re	OP95377,S6Q203,540,,,5.0,1,water	✓
34	6Q13325.d	P1-A5	1633full.m	QC	20/500	OP95142,S6Q203,500,,,5.0,1,water	✓
35	6Q13326.d	P1-A1	1633full.m	Sample		OP95142,S6Q203,500,,,5.0,1,water	✓



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36	6Q13327.d	P1-D1	op95329-bs	1633full.m	Sample		OP95329.S6Q203.500,,,5.0,1,water	✓
37	6Q13328.d	P1-D2	op95329-llbs:3	1633full.m	Sample		OP95329.S6Q203.500,,,5.0,1,water	✓
38	6Q13329.d	P1-D3	op95329-mb	1633full.m	Sample		OP95329.S6Q203.500,,,5.0,1,water	✓
39	6Q13330.d	P1-D4	FC2356-1	1633full.m	Sample		OP95329.S6Q203.570,,,5.0,1,water	✓
40	6Q13331.d	P1-D5	op95329-ms	1633full.m	Sample		OP95329.S6Q203.570,,,5.0,1,water	✓
41	6Q13332.d	P1-D6	FC2356-2	1633full.m	Sample		OP95329.S6Q203.540,,,5.0,1,water	✓
42	6Q13333.d	P1-D7	op95329-dup	1633full.m	Sample		OP95329.S6Q203.560,,,5.0,1,water	✓
43	6Q13334.d	P1-D8	FC2356-3	1633full.m	Sample		OP95329.S6Q203.540,,,5.0,1,water	✓
44	6Q13335.d	P1-D9	FC2356-4	1633full.m	Sample		OP95329.S6Q203.550,,,5.0,1,water	✓
45	6Q13336.d	P1-E1	FC1994-17	1633full.m	Sample		OP95329.S6Q203.500,,,5.0,1,water	✓
46	6Q13337.d	P1-A5	cc203-4	1633full.m	QC	20/500	OP95142.S6Q203.500,,,5.0,1,water	✓
47	6Q13338.d	P1-A2	cc203-1.0LL	1633full.m	QC	1.6/500	OP95142.S6Q203.500,,,5.0,1,water	✓
48	6Q13339.d	P1-A1	iccb	1633full.m	Sample		OP95142.S6Q203.500,,,5.0,1,water	✓
49	6Q13340.d	P2-A1	op95124-bs	1633full.m	Sample		OP95124.S6Q203.500,,,5.0,1,water	✓
50	6Q13341.d	P2-A2	op95124-llbs:3	1633full.m	Sample		OP95124.S6Q203.500,,,5.0,1,water	✓
51	6Q13342.d	P2-A3	op95124-mb	1633full.m	Sample		OP95124.S6Q203.500,,,5.0,1,water	✓
52	6Q13343.d	P2-A4	FC1912-1	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
53	6Q13344.d	P2-A5	FC1912-2	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
54	6Q13345.d	P2-A6	op95124-ms	1633full.m	Sample		OP95124.S6Q203.500,,,5.0,1,water	✓
55	6Q13346.d	P2-A7	op95124-msd	1633full.m	Sample		OP95124.S6Q203.500,,,5.0,1,water	✓
56	6Q13347.d	P2-A8	FC1912-3	1633full.m	Sample		OP95124.S6Q203.560,,,5.0,1,water	✓
57	6Q13348.d	P2-A9	FC1912-4	1633full.m	Sample		OP95124.S6Q203.560,,,5.0,1,water	✓
58	6Q13349.d	P2-B1	FC1912-5	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
59	6Q13350.d	P1-A5	cc203-4	1633full.m	QC	20/500	OP95142.S6Q203.500,,,5.0,1,water	✓
60	6Q13351.d	P1-A1	iccb	1633full.m	Sample		OP95142.S6Q203.500,,,5.0,1,water	✓
61	6Q13352.d	P2-B2	FC1912-6	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
62	6Q13353.d	P2-B3	FC1912-7	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
63	6Q13354.d	P2-B4	FC1912-8	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
64	6Q13355.d	P2-B5	FC1912-9	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
65	6Q13356.d	P2-B6	FC1912-10	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
66	6Q13357.d	P2-B7	FC1912-11	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
67	6Q13358.d	P2-B8	FC1912-12	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
68	6Q13359.d	P2-B9	FC1912-13	1633full.m	Sample		OP95124.S6Q203.560,,,5.0,1,water	✓
69	6Q13360.d	P2-C1	FC1912-14	1633full.m	Sample		OP95124.S6Q203.560,,,5.0,1,water	✓
70	6Q13361.d	P2-C2	FC1912-15	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
71	6Q13362.d	P1-A5	cc203-4	1633full.m	QC	20/500	OP95142.S6Q203.500,,,5.0,1,water	✓
72	6Q13363.d	P1-A1	iccb	1633full.m	Sample		OP95142.S6Q203.500,,,5.0,1,water	✓
73	6Q13364.d	P2-C3	FC1912-16	1633full.m	Sample		OP95124.S6Q203.570,,,5.0,1,water	✓
74	6Q13365.d	P2-C4	FC1912-17	1633full.m	Sample		OP95124.S6Q203.560,,,5.0,1,water	✓
75	6Q13366.d	P2-C5	op95142-bs	1633full.m	Sample		OP95142.S6Q203.500,,,5.0,1,water	✓
76	6Q13367.d	P2-C6	op95142-llbs:3	1633full.m	Sample		OP95142.S6Q203.500,,,5.0,1,water	✓
77	6Q13368.d	P2-C7	op95142-mb	1633full.m	Sample		OP95142.S6Q203.500,,,5.0,1,water	✓
78	6Q13369.d	P2-C8	FC1916-1	1633full.m	Sample		OP95142.S6Q203.570,,,5.0,1,water	✓

nr. 5x, d5 surr. high



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79	6Q13370.d	P2-C9	FC1916-2	1633full.m	Sample	OP95142,S6Q203,570,,,5.0,1,water	✓
80	6Q13371.d	P2-D1	FC1916-3	1633full.m	Sample	OP95142,S6Q203,560,,,5.0,1,water	✓
81	6Q13372.d	P2-D2	FC1916-4	1633full.m	Sample	OP95142,S6Q203,560,,,5.0,1,water	✓
82	6Q13373.d	P2-D3	FC1916-5	1633full.m	Sample	OP95142,S6Q203,560,,,5.0,1,water	✓
83	6Q13374.d	P1-A5	cc203-4	1633full.m	QC	OP95142,S6Q203,500,,,5.0,1,water	✓
84	6Q13375.d	P1-A1	iccb	1633full.m	Sample	OP95142,S6Q203,500,,,5.0,1,water	✓
85	6Q13376.d	P2-D4	FC1916-6	1633full.m	Sample	OP95142,S6Q203,560,,,5.0,1,water	✓
86	6Q13377.d	P2-D5	FC1916-7	1633full.m	Sample	OP95142,S6Q203,570,,,5.0,1,water	✓
87	6Q13378.d	P2-D6	FC1916-8	1633full.m	Sample	OP95142,S6Q203,540,,,5.0,1,water	✓
88	6Q13379.d	P2-D7	FC1916-9	1633full.m	Sample	OP95142,S6Q203,560,,,5.0,1,water	✓
89	6Q13380.d	P2-D8	FC1916-10	1633full.m	Sample	OP95142,S6Q203,540,,,5.0,1,water	ir 1x to confirm 6:2 hit EFF
90	6Q13381.d	P2-D9	FC1916-11	1633full.m	Sample	OP95142,S6Q203,530,,,5.0,1,water	✓
91	6Q13382.d	P2-E1	FC1916-12	1633full.m	Sample	OP95142,S6Q203,550,,,5.0,1,water	✓
92	6Q13383.d	P2-E2	FC1916-13	1633full.m	Sample	OP95142,S6Q203,550,,,5.0,1,water	✓
93	6Q13384.d	P2-E3	FC1916-14	1633full.m	Sample	OP95142,S6Q203,550,,,5.0,1,water	✓
94	6Q13385.d	P2-E4	FC1916-15	1633full.m	Sample	OP95142,S6Q203,560,,,5.0,1,water	ir 1x to confirm 6:2 hit EFF
95	6Q13386.d	P1-A5	cc203-4	1633full.m	QC	OP95142,S6Q203,500,,,5.0,1,water	✓
96	6Q13387.d	P1-A2	cc203-1,OLL	1633full.m	QC	OP95142,S6Q203,500,,,5.0,1,water	✓
97	6Q13388.d	P1-A1	iccb	1633full.m	Sample	OP95142,S6Q203,500,,,5.0,1,water	✓
98	6Q13389.d	P2-E5	FC1916-16	1633full.m	Sample	OP95142,S6Q203,560,,,5.0,1,water	✓
99	6Q13390.d	P2-E6	op95142-ms	1633full.m	Sample	OP95142,S6Q203,560,,,5.0,1,water	✓
100	6Q13391.d	P2-E7	op95142-msd	1633full.m	Sample	OP95142,S6Q203,550,,,5.0,1,water	✓
101	6Q13392.d	P2-E8	FC1916-17	1633full.m	Sample	OP95142,S6Q203,570,,,5.0,1,water	✓
102	6Q13393.d	P2-E9	FC1916-18	1633full.m	Sample	OP95142,S6Q203,570,,,5.0,1,water	✓
103	6Q13394.d	P1-E2	FC1761-1	1633full.m	Sample	OP95123,S6Q203,500,,,5.0,10,water	✓
104	6Q13395.d	P1-E3	FC1761-2	1633full.m	Sample	OP95123,S6Q203,500,,,5.0,10,water	✓
105	6Q13396.d	P1-A5	Ecc203-4	1633full.m	QC	OP95142,S6Q203,500,,,5.0,1,water	✓
106	6Q13397.d	P1-A1	iccb	1633full.m	Sample	OP95142,S6Q203,500,,,5.0,1,water	✓



Organic Standards Preparation Log

SGS - Orlando Std #	Name Description	Parent Std #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab Exp. Date	Percent Conc.	Vol. Used	Final Vol	Final Conc.	Parent Int.	Prep Date	Exp. Date	Int.
LCMS 2052	1633 prep mix	221994 Lot: 219481	MnCl <sub>2</sub>	Fisher	---	1/14/23	99.9%	92 mL	100 mL	99.9%	N/A	1/14/23	1/14/23	N/A
↓	↓	Lot: 224863	H <sub>2</sub> O	↓	---	1/17/23	100%	17 mL	---	100%	---	1/17/23	1/17/23	---
↓	↓	Lot: 224297	Acetic Acid	↓	---	6/24	99.7%	10.25 mL	---	99.7%	---	6/24	6/24	---
LCMS 2053	(301KE) Full list std	115688	PF09 Dn 2 <sup>nd</sup> Add on #2	SGS w/analytical	11/9/23	1/16/24	16 ppm	100 mL	100 mL	16 ppm	15.9 ppm	1/16/23	1/16/23	15.9 ppm
↓	↓	LCMS 1987	40 list	---	---	3/2/23	10 ppm	10 mL	---	10 ppm	---	3/2/23	3/2/23	---
↓	↓	LCMS 1986	40 list Add on #2	---	---	4/8/23	10 ppm	10 mL	---	10 ppm	---	4/8/23	4/8/23	---
↓	↓	LCMS 2054	50 list Add on #2	---	---	5/24/23	5.0 ppm	40 mL	---	5.0 ppm	---	5/24/23	5/24/23	---
↓	↓	LCMS 2054	50 list Add on #2	---	---	5/24/23	5.0 ppm	40 mL	---	5.0 ppm	---	5/24/23	5/24/23	---
LCMS 2054	F05e std	11336	N-E- F05E	w/analytical	5/2/23	9/19/23	50 ppm	250 mL	---	50 ppm	35.7 ppm	5/2/23	5/2/23	35.7 ppm
↓	↓	11338	N-Me F05E	↓	5/16/23	5/19/23	30 ppm	250 mL	---	30 ppm	---	5/16/23	5/16/23	---
LCMS 2055	1633 Cal. std.	108535	PFAC MxH	w/analytical	9/14/23	1/17/24	14 ppm	250 mL	---	14 ppm	10.5 ppm	9/14/23	9/14/23	10.5 ppm
↓	↓	108533	PFAC	---	9/14/23	1/11/24	14 ppm	250 mL	---	14 ppm	---	9/14/23	9/14/23	---
↓	↓	108532	PFAC	---	9/14/23	1/24/24	14 ppm	250 mL	---	14 ppm	---	9/14/23	9/14/23	---
↓	↓	115798	PFAC	---	11/1/23	1/11/24	24 ppm	500 mL	---	24 ppm	---	11/1/23	11/1/23	---
↓	↓	116184	PFAC	---	11/1/23	1/24/24	24 ppm	500 mL	---	24 ppm	---	11/1/23	11/1/23	---
↓	↓	108541	PFAC	---	11/1/23	1/11/24	2 ppm	250 mL	---	2 ppm	---	11/1/23	11/1/23	---
↓	↓	108542	MXG	---	11/1/23	1/24/24	4.25 ppm	250 mL	---	4.25 ppm	---	11/1/23	11/1/23	---
↓	↓	116031	PFAC MXJ	↓	9/14/23	1/24/24	4.25 ppm	312 mL	---	4.25 ppm	---	9/14/23	9/14/23	---

\* based on date opened as specified in each SGS - Orlando SOP

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Organic Standards Preparation Log

SGS - Orlando Sid #	Name Description	Parent Sid #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Dilution Lot	Prep Date	*Exp. Date	Initials
LCMS 2041	1633 Spike Cal std.	108534	PFRC-MXH	Waters	9/11/2012	12/20/13	1-4 ppm	250µL	4mL	62.5 / 250 ppm	1053	1/14/23	7/6/23	ML
		108534	PFRC-MXI		9/14/2012	12/28/13	1-10 ppm	250µL		62.5 / 250 ppm				
		11512B	PFAG-MXF		01/11/25	12/28/23	2 ppm	500µL		250 ppm				
		108544	PFHC-MXG		3/11/25	12/30/23	2 ppm	250µL		250 ppm				
		108545	PFRC-MXJ		7/11/2014	10/12/23	4-20 ppm	312 µL		514 ppm				
LCMS 2042	(Spike) Full list std.	11524	PFRC-MXJ		11/11/2012	11/11/23	1 ppm	400µL		122 ppm				
		LCMS 1457	4011ST	9999		3/20/23	1.0000	400µL		122 ppm				
		LCMS 1980	4011ST			4/6/23	1.0000	400µL		122 ppm				
		LCMS 2012	ESG Std.			5/10/23	5.0000	200µL		514 ppm				
LCMS 2043	1st 40 (Spike) ADD-IN Spike std.	11533	PFRC-MXJ		11/11/2012	11/11/23	1 ppm	400µL		122 ppm				
		11460	D9-N		01/21/21	12/1/23	1 ppm	200µL		122 ppm				
		11115	M2-PFR/D9		11/21/23	8/23/24	1 ppm	400µL		122 ppm				
		10836	D-N		12/20/25	8/23/23	1 ppm	400µL		122 ppm				
LCMS 2044	1633 Spike B	11387	PFRC-MXJ		9/11/2012	9/11/23	1-4 ppm	250µL		62.5 / 250 ppm				
		224856	Water		1/16/24			250µL		62.5 / 250 ppm				
		220228	Rechni-ml		9/16/24			250µL		62.5 / 250 ppm				

\* based on date opened as specified in each SGS - Orlando SGP.

Organic Standards Preparation Log

SGS - Orlando Std #	Name Description	Parent Std #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 1987	40 List-Std ADD-OLD #1	10726A	10:3 PFS	Wallington Labs	03/21/23	03/21/23	50ppm	80uL	4.0mL	1ppm	05/14/20	10/18/22	03/21/23	NS
		10840	PFS DOS		07/10/26	10/18/23								
		10829	N-HEXSA		08/13/26	08/13/23								
		10837	N-HEXSA		08/13/26	08/13/23								
		10842	PFBDA		09/22/26	10/18/23								
		10841	PFOBA		05/10/26	10/18/23								
		10844	3:3FPCA PFPPA		11/14/25	03/21/23								
		10655A	5:3FPCA PFPPA		11/14/25	08/13/23								
		10655A	7:3FPCA PFPPA		11/14/25	05/18/23								
		11117	PFECHS		10/14/26	06/13/23								
		10762B	PFECSA		05/13/25	10/18/23								
		10762B	PFA		03/21/25	10/18/23								
		10763B	PFSCHX		03/21/25	10/18/23								
		10764A	PFMPA		03/21/25	03/21/23								
		10765B	PFUOPA		03/21/25	10/18/23								
		10765B	PFHDA 3.6PFHDA		03/21/25	10/18/23								

\* based on date opened as specified in each SGS - Orlando SOP.

10/18/22



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 1985A & B	List 40 ASD-ON ASD-ON Metrose	11333	D7-N- Metrose	Wellington Labs	01/27/27	10/12/23	50ppm	200 uL	200 uL	115 ppm	95/MKOH 5% H2O	10/18/22	04/18/23	NS
		11339	DA-N- EFTOSA		01/27/27	10/12/23		200 uL						NS
		11115	MA- PERIODA		11/23/28	06/12/23		40 uL						NS
		10636	D-N- EFTOSA		12/20/25	08/12/23		40 uL						NS
LCMS 1985C	40 List Std. ADD-ON #2	11224	PSA-1	Wellington Labs	11/10/26	06/12/23	50ppm	80 uL	4.0 mL	10 ppm	95/meth 5% H2O	10/18/22	04/18/23	NS
		11225	FHSA-1		12/20/26	06/12/23	50ppm	80 uL						NS
		11140	L-PPTS		01/20/26	05/26/23	50ppm	80 uL						NS
NS 5/18/22														

\* 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 A 2009 &	PFC SPIKE	11483	PROADD (SUNCOMB)	Wellington Labs	08/25/27	11/08/23	1.0ppm	2ml	5ml	400ppb	Q51100H S1:H2O	11/08/22	05/11/23	NS
		10839	N-HE-ROSA-M		08/23/26	09/23/23	50ppm	40ul						NS
		11224	ROSA-1		11/10/26	06/23/23								NS
		11249	FTXSA-1		12/29/26	11/03/23								NS
		11332	PTECHS		03/28/27	10/18/23								NS
LCMS A-B 2010	(SPIKE) 1033 CAL. STD.	10855F	PFAC-MX4	Wellington Labs	09/14/26	11/04/23	1-H ppm	250ul	4ml	425/125/1250 ppb	1033 M1X	11/09/22	05/10/23	NS
		10853E	PFAC-MX2		09/14/26	11/04/23	1-H ppm	250ul		125/125 ppb				NS
		10856I	PFAC-MXE		05/10/23	05/10/23	2 ppm	500ul		250ppb				NS
		10854E	PFAC-MYG		03/10/25	11/04/23	2 ppm	250ul		125ppb				NS
		10857D	PFAC-MX5		10/12/23	11/08/23	4-20 ppm	32ul		212/1160 ppb				NS
LCMS 2011	(SPIKE) Full List Std.	11440	PROA-DONLIS	Absolute	08/10/27	10/24/23	1.0ppm	400ul	4.0ml	100ppb	Q51100H S1:H2O	11/11/22	04/24/23	NS
		1087	NO LIST					400ul		100ppb				NS
		1087	ADDON #1			03/21/23	1.0ppm	400ul		100ppb				NS
		1086	NO LIST					400ul		100ppb				NS
		1086	ADDON #2			04/18/23	1.0ppm	400ul		100ppb				NS
		1086	PFAC-ROSA			05/11/23	50ppm	400ul		500ppb				NS
LCMS 2012	FOSE STD.	11336	N-ET-FOSE	Wellington Labs	05/13/27	09/19/23	50ppm	200ul	2.0ml	5ppm	Q51100H S1:H2O	11/11/22	05/11/23	NS
		11336	N-HE-FOSE		05/13/27	09/19/23	50ppm	200ul		5ppm				NS

\* based on date opened as specified in each SGS - Orlando SOP.



10853



**WELLINGTON  
LABORATORIES**

**CERTIFICATE OF ANALYSIS  
DOCUMENTATION**

**PFAC-MXI**

**Native Perfluorooctanesulfonamide  
and Perfluorooctanesulfonamidoethanol  
Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	PFAC-MXI
<b><u>LOT NUMBER:</u></b>	PFACMXI0921
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/08/2021
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/14/2021
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	09/14/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

PFAC-MXI is a solution/mixture of two native perfluorooctanesulfonamides (FOSAs) and two native perfluorooctanesulfonamidoethanols (FOSEs). The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
 Figure 1: LC/MS Data (SIR)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

Form#: 13, Issued 2004-11-10  
Revision#: 3, Revised 2020-12-23

PFACMXI0921 (1 of 5)  
rev0

7.9.1  
7

**Table A: PFAC-MXI; Components and Concentrations (µg/mL; ± 5% in methanol)**

Compound	Acronym	Concentration (µg/mL)	Peak Assignment in Figure 1
N-methylperfluoro-1-octanesulfonamide	N-MeFOSA	1.00	B
N-ethylperfluoro-1-octanesulfonamide	N-EtFOSA	1.00	D
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	N-MeFOSE	10.0	A
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	N-EtFOSE	10.0	C

Certified By:   
 B.G. Chittim, General Manager

Date: 09/23/2021  
(mm/dd/yyyy)

Form#: 13, Issued 2004-11-10  
 Revision#: 9, Revised 2020-12-23

PFACMXI0921 (3 of 5)  
 rev0

7.9.1  
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**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>	PFACMXG1219
<b><u>SOLVENT(S):</u></b>	Methanol/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	12/03/2019
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	05/04/2020
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	05/04/2025
<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.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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Form#:13, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

PFACMXG1219 (1 of 5)  
rev2

7.9.1

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**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) is designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).




\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxahexanoic acid	3,6-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: 07/30/2021  
(mm/dd/yyyy)

10899



**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PFAC-MXH**

**Native Per- and Poly-fluoroalkyl Substance  
Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	PFAC-MXH
<b><u>LOT NUMBER:</u></b>	PFACMXH0921
<b><u>SOLVENT(S):</u></b>	Methanol / Isopropanol (2%) / Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/09/2021
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/14/2021
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	09/14/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

**DESCRIPTION:**

PFAC-MXH is a solution/mixture of eleven 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>8</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 (FOSA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
 Table B: Isomeric Components and Percent Composition of br-NMeFOSAA  
 Table C: Isomeric Components and Percent Composition of br-NEtFOSAA  
 Table D: Isomeric Components and Percent Composition of PFHxSK  
 Table E: Isomeric Components and Percent Composition of PFOSK  
 Figure 1: LC/MS Data (SIR)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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Form#:13, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

PFACMXH0921 (1 of 11)  
rev0

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: PFAC-MXH; Components and Concentrations (µg/mL, ± 5% in methanol / isopropanol (2%) / water (<1%))**

Compound	Acronym	Concentration* (µg/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4.00		1
Perfluoro-n-pentanoic acid	PFPeA	2.00		2
Perfluoro-n-hexanoic acid	PFHxA	1.00		5
Perfluoro-n-heptanoic acid	PFHpA	1.00		7
Perfluoro-n-octanoic acid	PFOA	1.00		11
Perfluoro-n-nonanoic acid	PFNA	1.00		14
Perfluoro-n-decanoic acid	PFDA	1.00		18
Perfluoro-n-undecanoic acid	PFUdA	1.00		23
Perfluoro-n-dodecanoic acid	PFDoA	1.00		26
Perfluoro-n-tridecanoic acid	PFTrDA	1.00		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1.00		29
Perfluoro-1-octanesulfonamide	FOSA	1.00		25
N-methylperfluorooctanesulfonamidoacetic acid <sup>a</sup>	N-MeFOSAA: linear isomer	0.760		20
	N-MeFOSAA: ∑ branched isomers	0.240		17
N-ethylperfluorooctanesulfonamidoacetic acid <sup>b</sup>	N-EtFOSAA: linear isomer	0.775		22
	N-EtFOSAA: ∑ branched isomers	0.225		21
Compound	Acronym	Concentration* (µg/mL)		Peak Assignment in Figure 1
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1.00	0.887	
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexanedisulfonate <sup>c</sup>	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: ∑ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanedisulfonate <sup>d</sup>	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: ∑ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanedisulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanedisulfonate	L-PFDS	1.00	0.965	24
Sodium perfluoro-1-dodecanedisulfonate	L-PFDoS	1.00	0.970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4.00	3.75	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4.00	3.80	10
Sodium 1H,1H,2H,2H-perfluorodecanedisulfonate	8:2FTS	4.00	3.84	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: 09/23/2021  
(mm/dd/yyyy)



rec'd 10/31/22 11492



**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>	PFACMXJ0921
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/08/2021
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/14/2021
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	09/14/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Form#:13, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

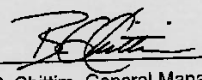
PFACMXJ0921 (1 of 5)  
rev1

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**Table A: PFAC-MXJ; Components and Concentrations ( $\mu\text{g}/\text{mL}$ ;  $\pm 5\%$  in methanol)**

Compound	Acronym	Concentration ( $\mu\text{g}/\text{mL}$ )
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By:   
 B.G. Chittim, General Manager

Date: 10/02/2021  
(mm/dd/yyyy)

11579 A-B  
rec'd 12/27/22



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXF

Native Replacement PFAS  
Solution/Mixture

<b><u>PRODUCT CODE:</u></b>	PFAC-MXF
<b><u>LOT NUMBER:</u></b>	PFACMXF0122
<b><u>SOLVENT(S):</u></b>	Methanol / Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	01/10/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	01/11/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	01/11/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

### DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

### DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

PFACMXF0122 (1 of 5)  
rev0

7.9.1

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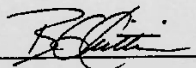


**Table A:** PFAC-MXF; Components and Concentrations (ng/mL;  $\pm$  5% in Methanol/Water (<1%))

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: 01/12/2022  
(mm/dd/yyyy)

11603  
rec'd: 01/10/23



# 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>	PFACMXJ0921
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/08/2021
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/14/2021
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	09/14/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

### DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

### DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.


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7.9.1  
7

**Table A: PFAC-MXJ; Components and Concentrations ( $\mu\text{g}/\text{mL}$ ;  $\pm 5\%$  in methanol)**

Compound	Acronym	Concentration ( $\mu\text{g}/\text{mL}$ )
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By:   
B.G. Chittim, General Manager

Date: 10/02/2021  
(mm/dd/yyyy)



11617 A-B rec'd 01/19/23



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXF

Native Replacement PFAS  
Solution/Mixture

**PRODUCT CODE:** PFAC-MXF  
**LOT NUMBER:** PFACMXF0122  
**SOLVENT(S):** Methanol / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 01/10/2022  
**LAST TESTED:** (mm/dd/yyyy) 01/11/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 01/11/2025  
**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 GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

#### DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

#### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Form# 13, Issued 2004-11-10  
Revision# 9, Revised 2020-12-23

PFACMXF0122 (1 of 5)  
revD

7.9.1

7

**Table A: PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))**

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-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: 01/12/2022  
(mm/dd/yyyy)

10857



**WELLINGTON  
LABORATORIES**

**CERTIFICATE OF ANALYSIS  
DOCUMENTATION**

**PFAC-MXJ**

**Native Fluorotelomer Propanoic Acid  
Solution/Mixture**

<b>PRODUCT CODE:</b>	PFAC-MXJ
<b>LOT NUMBER:</b>	PFACMXJ0921
<b>SOLVENT(S):</b>	Methanol
<b>DATE PREPARED:</b> (mm/dd/yyyy)	09/08/2021
<b>LAST TESTED:</b> (mm/dd/yyyy)	09/14/2021
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	09/14/2026
<b>RECOMMENDED STORAGE:</b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

PFAC-MXJ is a solution/mixture of three native fluorotelomer propanoic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Form#:13, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

PFACMXJ0921 (1 of 5)  
rev0

7.9.1

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**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) is designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)**

Compound	Acronym	Concentration (µg/mL)	Peak Assignment in Figure 1
3-Perfluoropropyl propanoic acid	FPrPA	4.00	A
3-Perfluoropentyl propanoic acid	FPePA	20.0	B
3-Perfluoroheptyl propanoic acid	FHpPA	20.0	C

Certified By:   
B.G. Chittim, General Manager

Date: 09/23/2021  
(mm/dd/yyyy)

Form#:13, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

PFACMXJ0921 (3 of 5)  
rev0



11512 A-B  
rec'd 11/11/22



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXF

#### Native Replacement PFAS Solution/Mixture

<b><u>PRODUCT CODE:</u></b>	PFAC-MXF
<b><u>LOT NUMBER:</u></b>	PFACMXF0122
<b><u>SOLVENT(S):</u></b>	Methanol / Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	01/10/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	01/11/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	01/11/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9CI-PF3ONS and 11CI-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

#### DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

#### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Revision#:9, Revised 2020-12-23

PFACMXF0122 (1 of 5)  
rev0

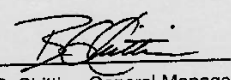
7.9.1

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**Table A: PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))**

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroicosafuoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

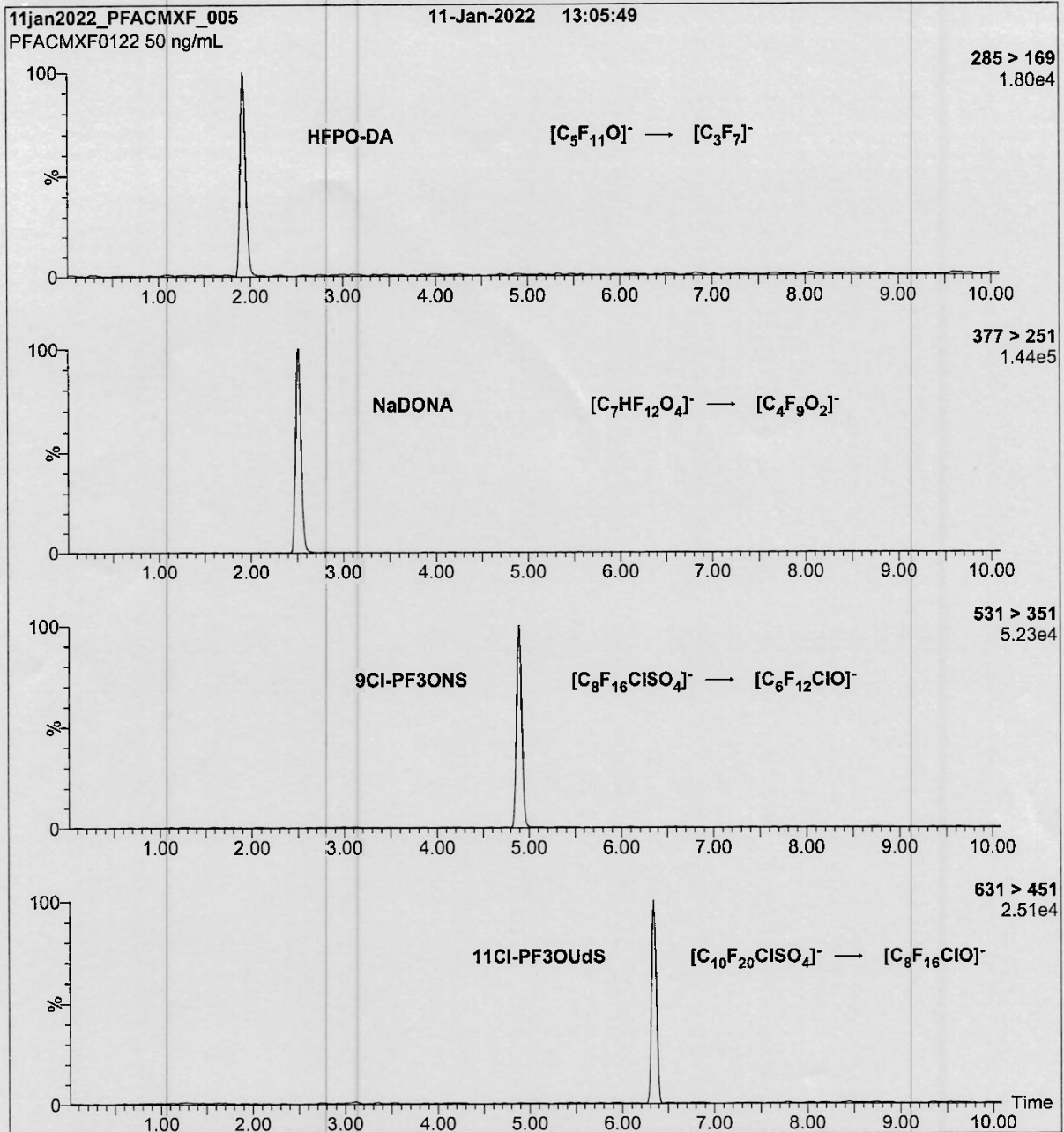
\* Concentrations have been rounded to three significant figures.

Certified By:   
 B.G. Chittim, General Manager

Date: 01/12/2022  
(mm/dd/yyyy)



Figure 2: PFAC-MXF; LC/MS/MS Data (Selected MRM Transitions)



**Conditions for Figure 2:**

Injection: On-column (PFAC-MXF)  
Mobile phase: Same as Figure 1  
Flow: 300  $\mu$ L/min

**MS Parameters:**

Collision Gas (mbar) = 3.43e-3  
Collision Energy (eV) = 6-60 (variable)

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# WELLINGTON LABORATORIES

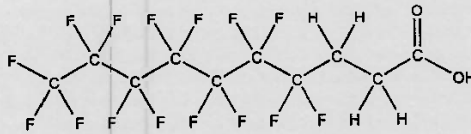
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FHpPA  
**COMPOUND:** 3-Perfluoroheptyl propanoic acid

**LOT NUMBER:** FHpPA1020

**STRUCTURE:**

**CAS #:** 812-70-4



**MOLECULAR FORMULA:** C<sub>10</sub>H<sub>9</sub>F<sub>15</sub>O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/12/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 11/12/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**MOLECULAR WEIGHT:** 442.12  
**SOLVENT(S):** Methanol


**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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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

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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

FPrPA

**LOT NUMBER:**

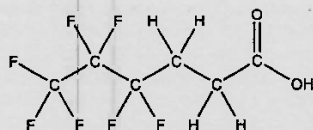
FPrPA1020

**COMPOUND:**

3-Perfluoropropyl propanoic acid

**STRUCTURE:****CAS #:**

356-02-5

**MOLECULAR FORMULA:** $C_6H_5F_7O_2$ **MOLECULAR WEIGHT:**

242.09

**CONCENTRATION:** $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

&gt;98%

**LAST TESTED:** (mm/dd/yyyy)

11/12/2020

**EXPIRY DATE:** (mm/dd/yyyy)

11/12/2025

**RECOMMENDED STORAGE:**

Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ( $C_8H_5F_7O_2$ ) as an impurity determined by  $^{19}\text{F}$  NMR.

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Certified By:

B.G. Chittim, General Manager

Date: 11/27/2020

(mm/dd/yyyy)

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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

FPePA

**LOT NUMBER:**

FPePA1120

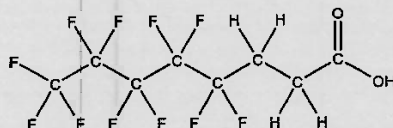
**COMPOUND:**

3-Perfluoropentyl propanoic acid

**STRUCTURE:**

**CAS #:**

914637-49-3



**MOLECULAR FORMULA:**

C<sub>8</sub>H<sub>5</sub>F<sub>11</sub>O<sub>2</sub>

**MOLECULAR WEIGHT:**

342.11

**CONCENTRATION:**

50.0 ± 2.5 µg/mL

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

11/11/2020

**EXPIRY DATE:** (mm/dd/yyyy)

11/11/2025

**RECOMMENDED STORAGE:**

Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

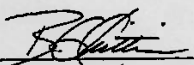
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid (C<sub>8</sub>H<sub>3</sub>F<sub>11</sub>O<sub>2</sub>) as an impurity determined by <sup>19</sup>F NMR.

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**Certified By:**

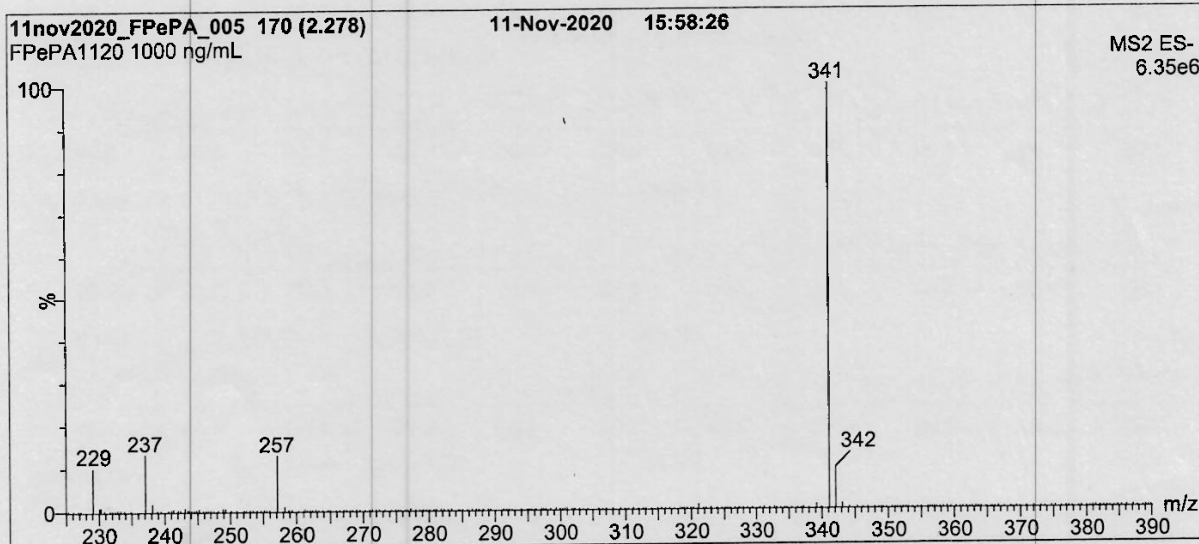
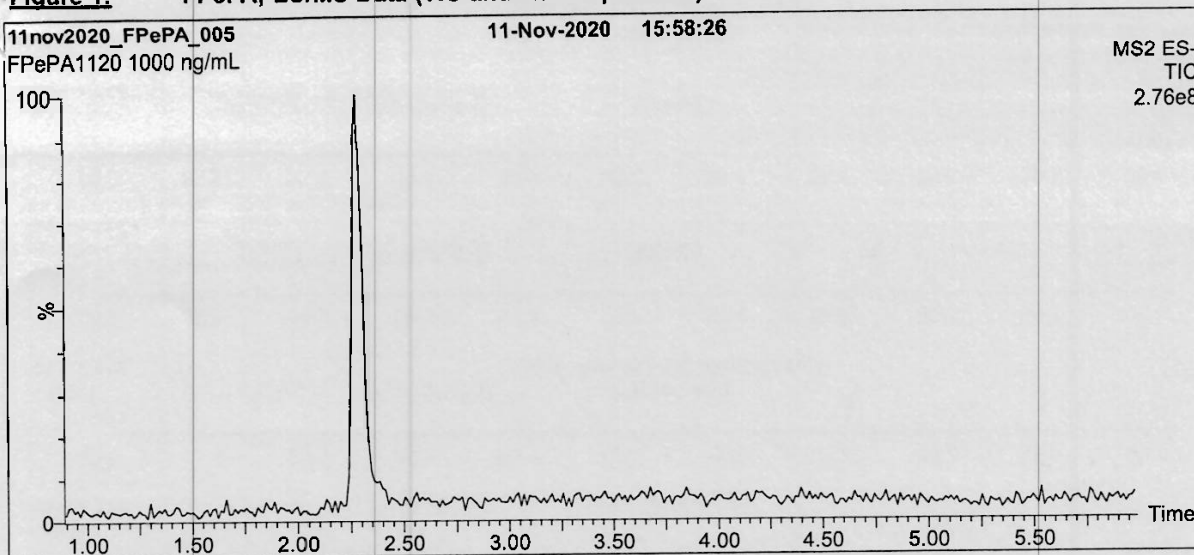
  
B.G. Chittim, General Manager

**Date:** 11/27/2020  
(mm/dd/yyyy)

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**Figure 1: FPePA; 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>1a</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) = 18.50  
Desolvation Temperature ( $^{\circ}$ C) = 500  
Desolvation Gas Flow (L/hr) = 1000

10726 A

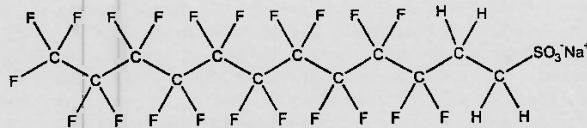


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 10:2FTS **LOT NUMBER:** 102FTS0221  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

**STRUCTURE:** **CAS #:** 108026-35-3



**MOLECULAR FORMULA:**  $C_{12}H_4F_{21}SO_3Na$  **MOLECULAR WEIGHT:** 650.18  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol  
48.3 ± 2.4 µg/mL (10:2FTS acid)  
48.2 ± 2.4 µg/mL (10:2FTS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 03/03/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 03/03/2026  
**RECOMMENDED STORAGE:** Refrigerate ampoule

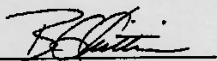
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

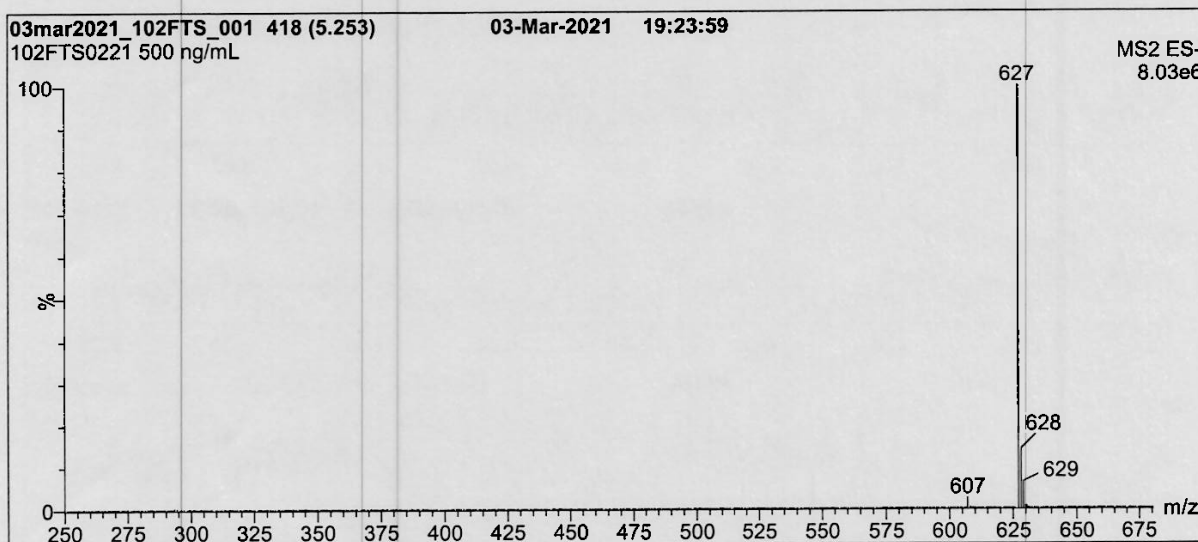
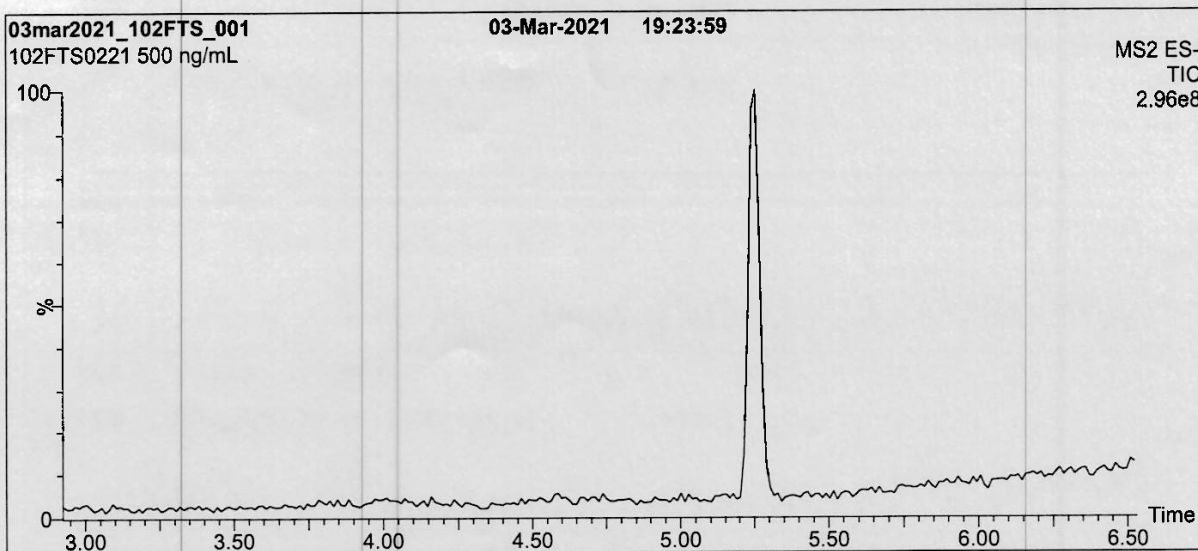
**Certified By:**  **Date:** 03/05/2021  
(mm/dd/yyyy)  
B.G. Chittim, General Manager

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Form#: 27, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23



**Figure 1:** 10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 3 min  
before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (250 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 25.00  
Desolvation Temperature ( $^{\circ}$ C) = 500  
Desolvation Gas Flow (L/hr) = 1000

10762 A-B



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

PFEESA

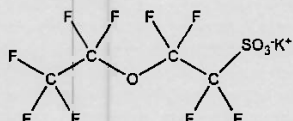
**LOT NUMBER:**

PFEESA0520

**COMPOUND:**

Potassium perfluoro(2-ethoxyethane)sulfonate

**STRUCTURE:**



**CAS #:**

117205-07-9

**MOLECULAR FORMULA:**

C<sub>4</sub>F<sub>8</sub>SO<sub>4</sub>K

**MOLECULAR WEIGHT:**

354.19

**CONCENTRATION:**

50.0 ± 2.5 µg/ml (K salt)  
44.6 ± 2.2 µg/ml (PFEESA acid)  
44.5 ± 2.2 µg/ml (PFEESA anion)

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

05/13/2020

**EXPIRY DATE:** (mm/dd/yyyy)

05/13/2025

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

B.G. Chittim, General Manager

**Date:** 05/29/2020  
(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
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10763 A-B



# WELLINGTON LABORATORIES

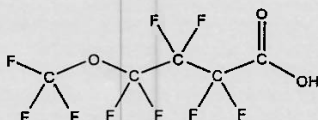
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PF5OHxA *res'd with 8/20/21* **LOT NUMBER:** PF5OHxA0320

**COMPOUND:** Perfluoro-5-oxahexanoic acid

**SYNONYM:** Perfluoro-4-methoxybutanoic acid (PFMBA)

**STRUCTURE:** **CAS #:** 863090-89-5



**MOLECULAR FORMULA:** C<sub>5</sub>HF<sub>9</sub>O<sub>3</sub> **MOLECULAR WEIGHT:** 280.05

**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%

**LAST TESTED:** (mm/dd/yyyy) 03/31/2020

**EXPIRY DATE:** (mm/dd/yyyy) 03/31/2025

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

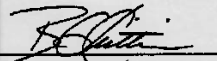
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 12/21/2020  
(mm/dd/yyyy)

B.G. Chittim, General Manager

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Form#: 27, Issued 2004-11-10  
Revision#: 8, Revised 2020-09-10

PF5OHxA0320 (1 of 4)  
rev1

7.9.1  
7

10764A-B



# WELLINGTON LABORATORIES

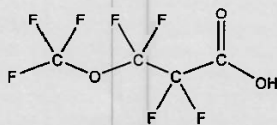
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PF4OPeA *rec'd  
WPH  
8/20/21* **LOT NUMBER:** PF4OPeA0320

**COMPOUND:** Perfluoro-4-oxapentanoic acid

**SYNONYM:** Perfluoro-3-methoxypropanoic acid (PFMPA)

**STRUCTURE:** **CAS #:** 377-73-1



**MOLECULAR FORMULA:** 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) 03/31/2020

**EXPIRY DATE:** (mm/dd/yyyy) 03/31/2025

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

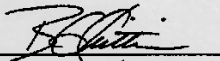
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 12/21/2020  
(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10  
Revision#: 8, Revised 2020-09-10

PF4OPeA0320 (1 of 4)  
rev1

7.9.1

7



10765 A-13



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

3,6-OPFHpA

*rec'd  
w/PA  
8/20/21*

**LOT NUMBER:**

36OPFHpA0320

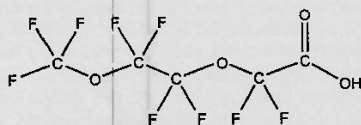
**COMPOUND:**

Perfluoro-3,6-dioxaheptanoic acid

**STRUCTURE:**

**CAS #:**

151772-58-6



**MOLECULAR FORMULA:**

C<sub>6</sub>H<sub>2</sub>F<sub>9</sub>O<sub>4</sub>

**MOLECULAR WEIGHT:**

296.04

**CONCENTRATION:**

50.0 ± 2.5 µg/ml

**SOLVENT(S):**

Methanol  
Water (<1%)

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

03/31/2020

**EXPIRY DATE:** (mm/dd/yyyy)

03/31/2025

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim, General Manager

Date: 05/27/2020  
(mm/dd/yyyy)

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10829



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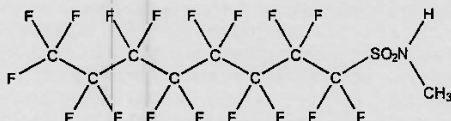
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSA-M  
**COMPOUND:** N-methylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NMeFOSA0721M

**STRUCTURE:**

**CAS #:** 31506-32-8



rec'd  
WPA  
10/5/21

**MOLECULAR FORMULA:** C<sub>9</sub>H<sub>4</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 08/03/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 08/03/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 513.17  
**SOLVENT(S):** Methanol

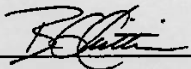
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 08/04/2021  
(mm/dd/yyyy)

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Form#:27, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

NMeFOSA0721M (1 of 4)  
rev0

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## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

N-EtFOSA-M

10837

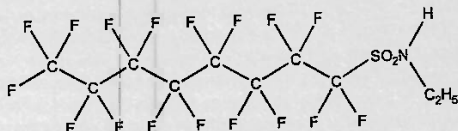
**LOT NUMBER:** NEtFOSA0821M

**COMPOUND:**

N-ethylperfluoro-1-octanesulfonamide

**STRUCTURE:**

**CAS #:** 4151-50-2



**MOLECULAR FORMULA:**

C<sub>10</sub>H<sub>9</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)

08/12/2021

**EXPIRY DATE:** (mm/dd/yyyy)

08/12/2026

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

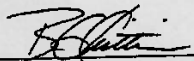
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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**Certified By:**

  
B.G. Chittim, General Manager

**Date:** 08/16/2021

(mm/dd/yyyy)

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7



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**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

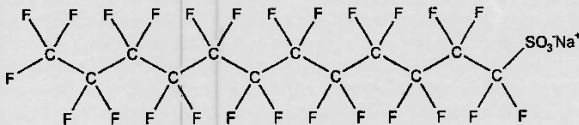
10840

**PRODUCT CODE:** L-PFDoS  
**COMPOUND:** Sodium perfluoro-1-dodecanesulfonate

**LOT NUMBER:** LPFDoS0721

**STRUCTURE:**

**CAS #:** 1260224-54-1



**MOLECULAR FORMULA:** C<sub>12</sub>F<sub>25</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL (Na salt)  
48.5 ± 2.4 µg/mL (PFDoS acid)  
48.4 ± 2.4 µg/mL (PFDoS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 07/09/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 07/09/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 722.14  
**SOLVENT(S):** Methanol

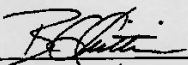
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDoA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 07/16/2021  
(mm/dd/yyyy)

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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

PFODA

10847 NS 01/18/23

**LOT NUMBER:**

PFODA0821

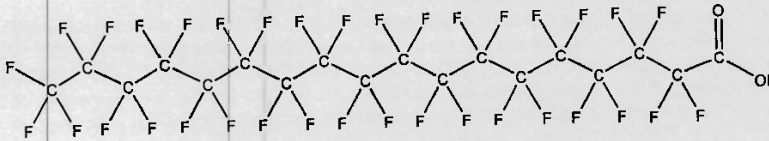
**COMPOUND:**

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)

09/03/2021

**EXPIRY DATE:** (mm/dd/yyyy)

09/03/2026

**RECOMMENDED STORAGE:**

Store ampoules at ambient temperature in a dark place

### DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

B.G. Chittim, General Manager

**Date:** 09/28/2021

(mm/dd/yyyy)

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7.9.1  
7



# WELLINGTON LABORATORIES

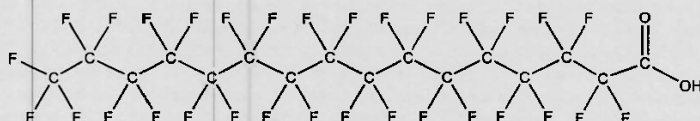
## CERTIFICATE OF ANALYSIS DOCUMENTATION

10842 \* NG 01/18/23

**PRODUCT CODE:** PFHxDA **LOT NUMBER:** PFHxDA0421

**COMPOUND:** Perfluoro-n-hexadecanoic acid

**STRUCTURE:** **CAS #:** 67905-19-5



**MOLECULAR FORMULA:** C<sub>16</sub>HF<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) 05/07/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 05/07/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

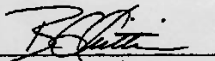
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 05/25/2021  
 B.G. Chittim, General Manager (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10  
 Revision#:9, Revised 2020-12-23

PFHxDA0421 (1 of 4)  
 rev0

7.9.1  
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1117



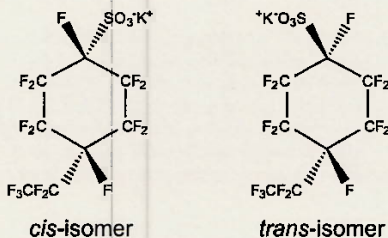
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

7.9.1  
7

**PRODUCT CODE:** PFECHS      **LOT NUMBER:** PFECHS1021  
**COMPOUND:** Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

**STRUCTURE:**      **CAS #:** 335-24-0



<b>MOLECULAR FORMULA:</b>	C <sub>8</sub> F <sub>16</sub> SO <sub>3</sub> K	<b>MOLECULAR WEIGHT:</b>	500.22
<b>CONCENTRATION:</b>	50.0 ± 2.5 µg/mL (K salt) 46.2 ± 2.3 µg/mL (PFECHS acid) 46.1 ± 2.3 µg/mL (PFECHS anion)	<b>SOLVENT(S):</b>	Methanol
<b>CHEMICAL PURITY:</b>	>98%		
<b>LAST TESTED:</b> (mm/dd/yyyy)	10/14/2021		
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	10/14/2026		
<b>RECOMMENDED STORAGE:</b>	Store ampoule in a cool, dark place		

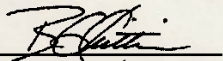
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**       **Date:** 10/15/2021  
B.G. Chittim, General Manager      (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

PFECHS1021 (1 of 4)  
rev0



11140



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

L-PFPrS

**LOT NUMBER:**

LPFPrS0721

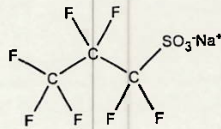
**COMPOUND:**

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.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim, General Manager

Date: 08/04/2021

(mm/dd/yyyy)

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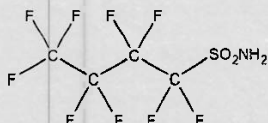


11224


**WELLINGTON**  
 LABORATORIES

**CERTIFICATE OF ANALYSIS**  
 DOCUMENTATION

**PRODUCT CODE:** FBSA-I **LOT NUMBER:** FBSA11211  
**COMPOUND:** Perfluoro-1-butanesulfonamide  
**STRUCTURE:** **CAS #:** 30334-69-1



**MOLECULAR FORMULA:** C<sub>4</sub>H<sub>2</sub>F<sub>9</sub>NO<sub>2</sub>S **MOLECULAR WEIGHT:** 299.11  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Isopropanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/10/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 11/10/2026  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

  
 B.G. Chittim, General Manager

Date: 11/10/2021

(mm/dd/yyyy)

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11225



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

FHxSA-I

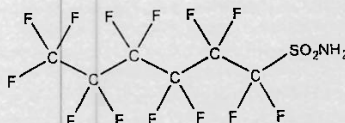
**LOT NUMBER:** FHxSA12211

**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)

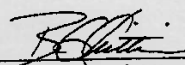
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

  
B.G. Chittim, General Manager

Date: 01/10/2022  
(mm/dd/yyyy)

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11338



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

N-MeFOSE-M

**LOT NUMBER:**

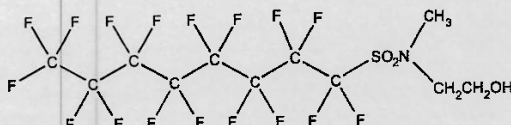
NMeFOSE0522M

**COMPOUND:**

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

**STRUCTURE:****CAS #:**

24448-09-7

**MOLECULAR FORMULA:**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:**

&gt;98%

**LAST TESTED:** (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

**EXPIRY DATE:** (mm/dd/yyyy)

05/13/2027

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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Certified By:

  
B.G. Chittim, General Manager
Date: 06/14/2022  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
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**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**MPFAC-HIF-ES**

**Mass-Labelled PFAS Extraction  
Standard Solution/Mixture**

<b>PRODUCT CODE:</b>	MPFAC-HIF-ES
<b>LOT NUMBER:</b>	MPFACHIFES0822
<b>SOLVENT(S):</b>	Methanol/Isopropanol (1%)/Water (<1%)
<b>DATE PREPARED:</b> (mm/dd/yyyy)	07/20/2022
<b>LAST TESTED:</b> (mm/dd/yyyy)	08/02/2022
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	08/02/2025
<b>RECOMMENDED STORAGE:</b>	Refrigerate ampoule

**DESCRIPTION:**

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled ( $^{13}\text{C}$ ) perfluoroalkylcarboxylic acids ( $\text{C}_4$ - $\text{C}_{12}$ ,  $\text{C}_{14}$ ), three mass-labelled ( $^{13}\text{C}$ ) perfluoroalkanesulfonates ( $\text{C}_4$ ,  $\text{C}_6$ , and  $\text{C}_8$ ), three mass-labelled (one  $^{13}\text{C}$  and two  $^2\text{H}$ ) perfluoro-1-octanesulfonamides, three mass-labelled ( $^{13}\text{C}$ ) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoacetic acids, two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoethanols, and mass-labelled ( $^{13}\text{C}$ ) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual  $^{13}\text{C}$ -labelled components all have chemical purities >98% and isotopic purities of  $\geq 99\%$ . The individual  $^2\text{H}$ -labelled components all have chemical purities >98% and isotopic purities of  $\geq 98\%$ .

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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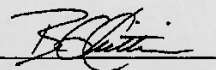
Form# 13, Issued 2004-11-10  
Revision#9, Revised 2020-12-23

MPFACHIFES0822 (1 of 7)  
rev0

**Table A: MPFAC-HIF-ES; Components and Concentrations**  
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-( <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>7</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>10</sub> )decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- <sup>13</sup> C <sub>11</sub> )undecanoic acid	M7PFUdA	250		17
Perfluoro-n-(1,2- <sup>13</sup> C <sub>12</sub> )dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- <sup>13</sup> C <sub>14</sub> )tetradecanoic acid	M2PFTeDA	250		23
Perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonamide	M8FOSA	500		18
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		24
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		16
2-(N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>3</sub> -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>5</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

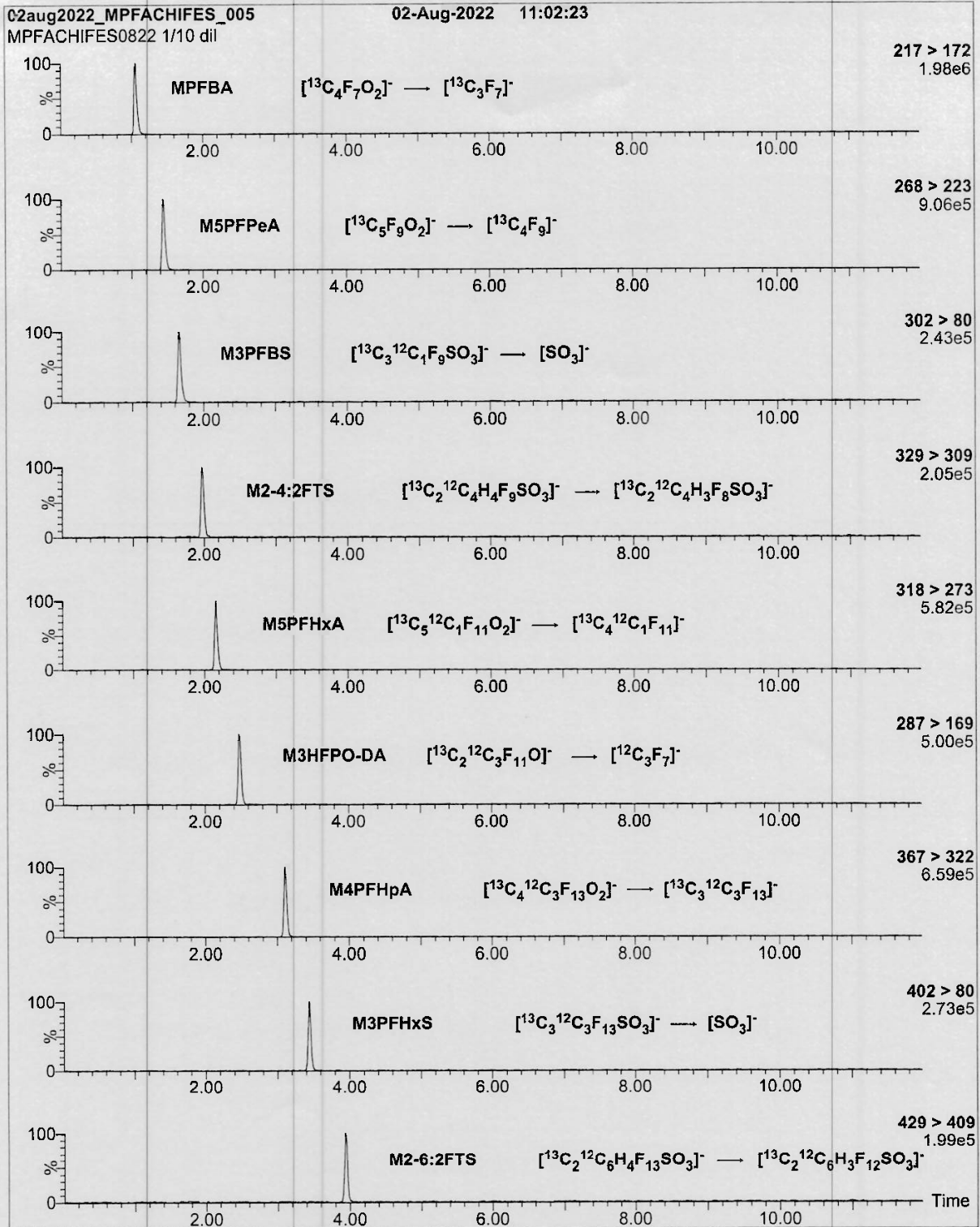
\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 08/02/2022  
(mm/dd/yyyy)



**Figure 2: MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)**



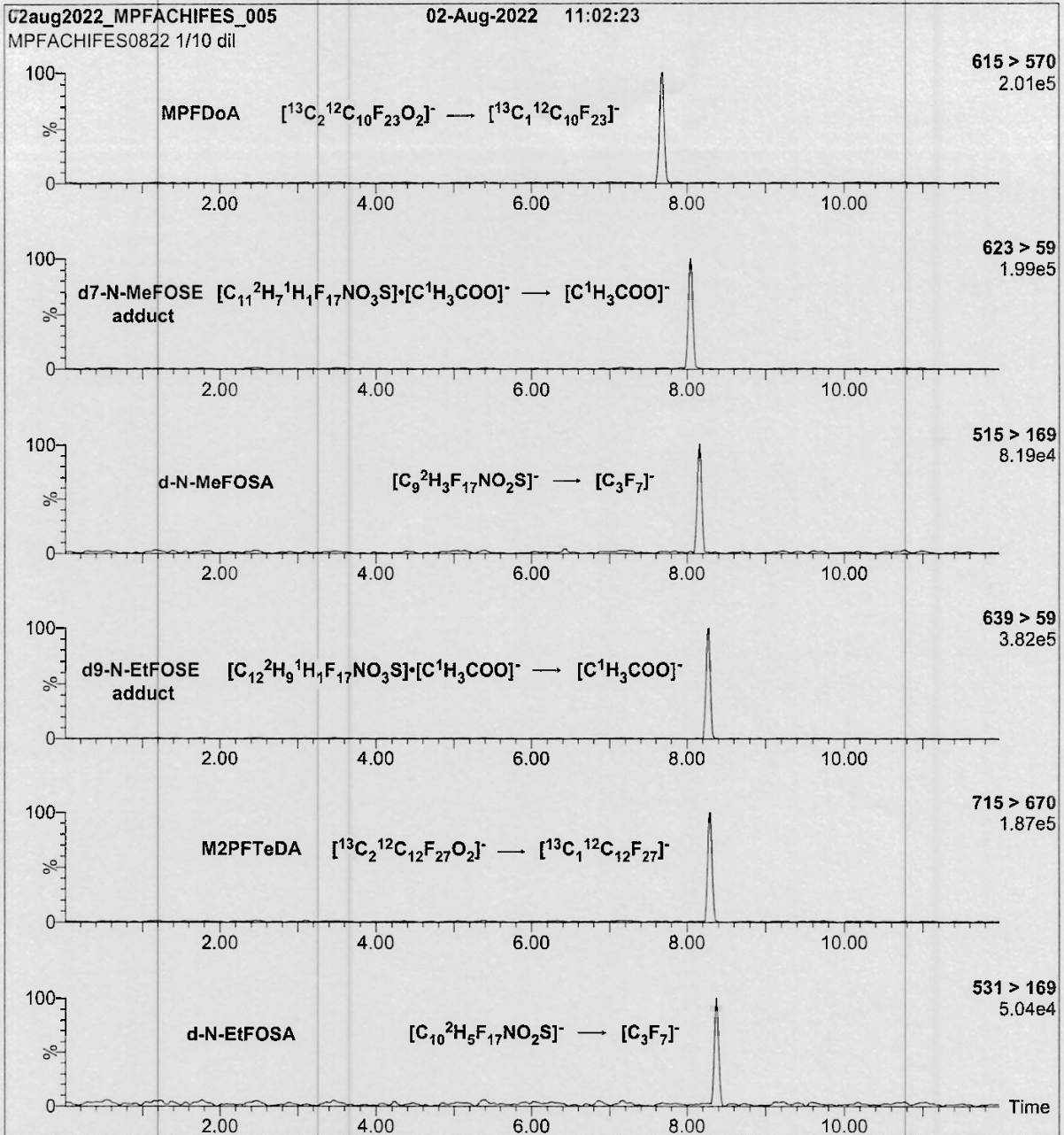
Form# 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

MPFACHIFES0822 (5 of 7)  
rev0

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**Figure 2: MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: On-column (MPFAC-HIF-ES)  
 Mobile phase: Same as Figure 1  
 Flow: 300  $\mu\text{L}/\text{min}$

**MS Parameters:**

Collision Gas (mbar) = 3.24e-3  
 Collision Energy (eV) = 4-64 (variable)



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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### MPFAC-HIF-IS

**Mass-Labelled Perfluoroalkyl Substance  
Injection Standard Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	MPFAC-HIF-IS
<b><u>LOT NUMBER:</u></b>	MPFACHIFIS0921
<b><u>SOLVENT(S):</u></b>	Methanol/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/07/2021
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/07/2021
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	09/07/2026
<b><u>RECOMMENDED STORAGE:</u></b>	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 mass-labelled 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

MPFACHIFIS0921 (1 of 5)  
rev1

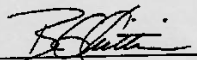
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**Table A: MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(2,3,4- <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

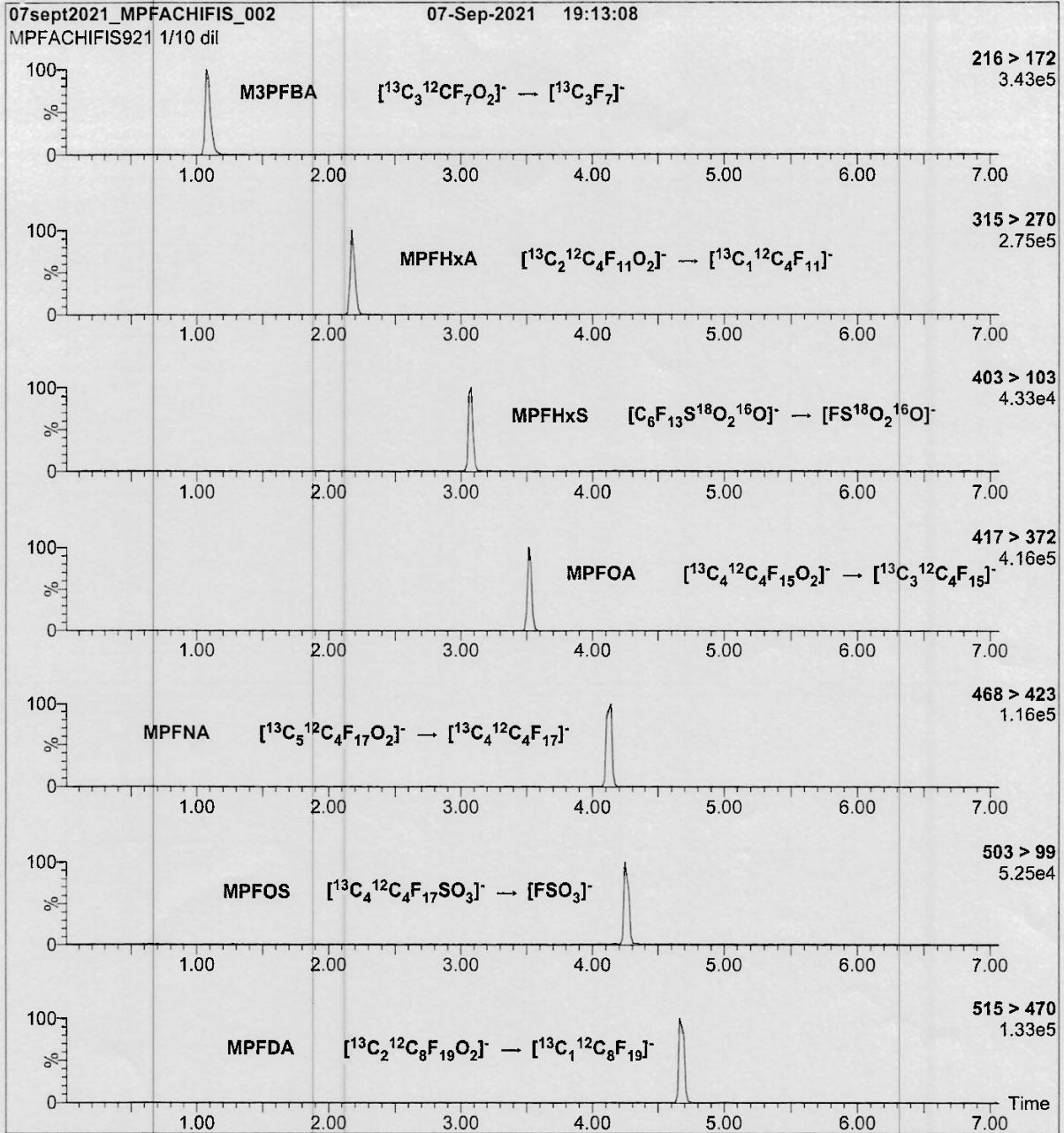
\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 10/13/2021  
(mm/dd/yyyy)



Figure 2: MPFAC-HIF-IS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFAC-HIF-IS)  
 Mobile phase: Same as Figure 1  
 Flow: 300  $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.18e-3  
 Collision Energy (eV) = 4-64 (variable)

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 02/06/23 09:00  
Started (mm/dd/yy 24:00)

Method: EPA 1633 Draft (QSM)

Date/Time: 2/9/23 14:15  
Finished (mm/dd/yy 24:00)

Balance ID: \_\_\_\_\_

Batch# OP95329 Ext. By: GH

Conc. By: \_\_\_\_\_ Viald By: \_\_\_\_\_

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP 95329 MB	/	500	7	N/A	25		5	E	
OP 95329 BS	/	500				200			
OP 95329 LLBS	/	500				80			
FC2350-1	2	570	7	N/A					
	2	540	7	N/A					
	3	540	8	7					
	4	550	7	N/A					
FC1994-17	1	500	7	N/A	25		5	E	
OPFC2350 IMS	3	570	7	N/A	25	200	5	E	
OP MSD									
OPFC2350-DUP	3	560	7	N/A	25		5	E	

Comments:

EIS (SURR) ID: 11630AC Conc: 250-5000 ng/ml Exp. Date: 01/23/25 Inj. By: GH Ver. By: AG  
 SPIKE.1 ID: LMS2061A Conc: VARIED Exp. Date: 08/02/23 Inj. By: GH Ver. By: AG  
 SPIKE.2 ID: \_\_\_\_\_ Conc: \_\_\_\_\_ Exp. Date: \_\_\_\_\_ Inj. By: \_\_\_\_\_ Ver. By: \_\_\_\_\_  
 NIS (ISTD) ID: 11631B Conc: 250-1000 ng/ml Exp. Date: 2/8/24 Inj. By: FS Ver. By: MV

TurboVap Temp (Therm ID): \_\_\_\_\_ N-Evap Temp (Therm ID): \_\_\_\_\_  
 Observed Temp °C: \_\_\_\_\_ Corr. Temp °C: \_\_\_\_\_ Observed Temp °C: \_\_\_\_\_ Corr. Temp °C: \_\_\_\_\_

Methanol Lot # 221068 1% NH4OH MeOH PF261 SPE Lot # 322-006891  
 Water Lot# OP95069 0.3M Formic Acid PF256 Syringe filter Lot #  
 Acetic Acid# 194003 3% NH4OH Sol pH paper Lot# 215322  
 0.1M Formic PF224 5% Formic Acid PF203 Carbon Lot# 160898

Relinquished By: Hahnlin Tadrat  
Accepted By: MV

Date: 02/06/23  
Date: 2/6/23 MV  
2/9/23

7.10.1  
7