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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC2799

Sampling Date: 02/16/23



Report to:

AECOM, Inc
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Denver, CO 80237
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ATTN: Katie Abbott

Total number of pages in report: 534



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

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

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

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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC2799

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC2799-1	02/16/23	11:40 GA	02/17/23	AQ	Ground Water	AF-RHMW02-WGN01LF-2302W2
FC2799-2	02/16/23	13:25 GA	02/17/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2302W2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC2799

Site: N6274223F0104 RH Fire Suppression System

Report Date: 2/27/2023 6:49:13 PM

On 02/17/2023, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 3.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2799 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: OP95581

Sample(s) FC2799-1MS, FC2833-2DUP were used as the QC samples indicated.

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

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: FC2799
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/16/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC2799-1	AF-RHMW02-WGN01LF-2302W2					
6:2 Fluorotelomer sulfonate		5.3 J	18	7.0	ng/l	EPA DRAFT 1633
FC2799-2	AF-RHMW03-WGN01LF-2302W2					
Perfluoropentanoic acid		3.4 J	8.8	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		2.7 J	4.4	0.88	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid		1.3 J	4.4	0.88	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate		16.3 J	18	7.0	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Page 1 of 3

Client Sample ID:	AF-RHMW02-WGN01LF-2302W2		
Lab Sample ID:	FC2799-1	Date Sampled:	02/16/23
Matrix:	AQ - Ground Water	Date Received:	02/17/23
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	6Q14345.D	1	02/24/23 22:20	MV	02/22/23 09:00	OP95581	S6Q218
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	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	
PERFLUOROALKYL SULFONIC ACIDS							
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	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	5.3	18	7.0	3.0	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	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-RHMW02-WGN01LF-2302W2		Date Sampled:	02/16/23
Lab Sample ID:	FC2799-1	Date Received:	02/17/23	
Matrix:	AQ - Ground Water	Percent Solids:	n/a	
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

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

2355-31-9	MeFOSAA	3.5 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
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	13C4-PFBA	113%		20-150%
	13C5-PFPeA	104%		20-150%
	13C5-PFHxA	103%		20-150%
	13C4-PFHpA	114%		20-150%
	13C8-PFOA	110%		20-150%
	13C9-PFNA	101%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	100%		20-150%
	13C2-PFDoDA	86%		20-150%
	13C2-PFTeDA	67%		20-150%
	13C3-PFBS	108%		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-RHMW02-WGN01LF-2302W2		
Lab Sample ID:	FC2799-1	Date Sampled:	02/16/23
Matrix:	AQ - Ground Water	Date Received:	02/17/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	109%		20-150%
	13C8-FOSA	98%		20-150%
	d3-MeFOSA	79%		20-150%
	d5-EtFOSA	75%		20-150%
	d3-MeFOSAA	102%		20-150%
	d5-EtFOSAA	96%		20-150%
	d7-MeFOSE	78%		20-150%
	d9-EtFOSE	77%		20-150%
	13C2-4:2FTS	117%		20-150%
	13C2-6:2FTS	99%		20-150%
	13C2-8:2FTS	95%		20-150%
	13C3-HFPO-DA	93%		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-RHMW03-WGN01LF-2302W2		
Lab Sample ID:	FC2799-2	Date Sampled:	02/16/23
Matrix:	AQ - Ground Water	Date Received:	02/17/23
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	6Q14347.D	1	02/24/23 22:48	MV	02/22/23 09:00	OP95581	S6Q218
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	18	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	3.4	8.8	1.8	0.82	ng/l	J
307-24-4	Perfluorohexanoic acid	2.7	4.4	0.88	0.44	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.3	4.4	0.88	0.44	ng/l	J
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	
PERFLUOROALKYL SULFONIC ACIDS							
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	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	16.3	18	7.0	3.0	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	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-RHMW03-WGN01LF-2302W2		Date Sampled:	02/16/23
Lab Sample ID:	FC2799-2		Date Received:	02/17/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

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

2355-31-9	MeFOSAA	3.5 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
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	13C4-PFBA	117%		20-150%
	13C5-PFPeA	112%		20-150%
	13C5-PFHxA	111%		20-150%
	13C4-PFHpA	115%		20-150%
	13C8-PFOA	105%		20-150%
	13C9-PFNA	105%		20-150%
	13C6-PFDA	120%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	96%		20-150%
	13C2-PFTeDA	78%		20-150%
	13C3-PFBS	121%		20-150%
	13C3-PFHxS	114%		20-150%

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

4.2
4

Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2302W2	
Lab Sample ID:	FC2799-2	Date Sampled: 02/16/23
Matrix:	AQ - Ground Water	Date Received: 02/17/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	103%		20-150%
	13C8-FOSA	98%		20-150%
	d3-MeFOSA	89%		20-150%
	d5-EtFOSA	88%		20-150%
	d3-MeFOSAA	101%		20-150%
	d5-EtFOSAA	100%		20-150%
	d7-MeFOSE	89%		20-150%
	d9-EtFOSE	86%		20-150%
	13C2-4:2FTS	111%		20-150%
	13C2-6:2FTS	125%		20-150%
	13C2-8:2FTS	107%		20-150%
	13C3-HFPO-DA	121%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



SGS North America Inc - Orlando
Chain of Custody

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

FC2799
SGS - ORLANDO JOB #:

COC #: 2302W2AFSG01
PAGE 1 OF 1

Client / Reporting Information				Project Information														SGS - ORLANDO Quote #		SKIFF #								
Company Name: AECOM				Project Name: N6274223F0104 RH Fire Suppression System																								
Address: 1001 Bishop St. ste 1600				Street																								
City: Honolulu		State: HI		Zip: 96813		City: Honolulu							State: Hawaii															
Project Contact: Katie Abbott Project Manager: Watson Tanji Phone #: 303-796-4624 / 808-954-4512				Email: katie.abbott@aecom.com Email: watson.tanji@aecom.com																								
Project # 60697810				Fax #																								
Sampler(s) Name(s) (Printed) Sampler 1: GABRIEL AUEW Sampler 2: MATT YIM				Client Purchase Order #																								
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION														PFAS EPA Draft 1633	LAB USE ONLY								
		DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	MONIE	HCl	NaOH	HNCS	H2SO4	NaOH/ZnAC	DI WATER	MEDIA													
1	AF-RHMW02-WGN01LF-2302W2	2.16.23	1140	GA	GW	3		X																				
				INITIAL ASSESSMENT																								
				LABEL VERIFICATION																								
Turnaround Time (Business days)				Data Deliverable Information														Comments / Remarks										
10 Day (Business)		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										
7 Day																		Undcd AWB 016-17993662										
5 Day																												
3 Day RUSH																												
2 Day RUSH																												
1 Day RUSH																												
Other																												
Rush T/A Data Available VIA Email or Lablink				Sample Custody must be documented below each time samples change possession, including courier delivery.																								
Relinquished by Sampler/Affiliation		Date Time:	Received By/Affiliation		Relinquished By/Affiliation		Date Time:	Received By/Affiliation		Relinquished By/Affiliation		Date Time:	Received By/Affiliation		Relinquished By/Affiliation		Date Time:	Received By/Affiliation										
1 GABRIEL AUEW / AECOM		2.16.23 1445	2 [Signature] / AECOM		3 [Signature] / AECOM		2.16.23	4 [Signature] / AECOM		5 [Signature] / AECOM		2.17.23	6 [Signature] / AECOM		7 [Signature] / AECOM		2.17.23	8 [Signature] / AECOM										
5 [Signature]			6 [Signature]		7 [Signature]			8 [Signature]		9 [Signature]			10 [Signature]		11 [Signature]			12 [Signature]										
Lab Use Only : Cooler Temperature (s) Celsius (corrected):				http://www.sgs.com/en/terms-and-conditions																								

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FC2799: 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

FC2799
SGS - ORLANDO JOB #:

COC #: 2302W2AFSG02
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="border: 1px solid black; padding: 5px;"> <p>PFAS EPA Draft 1633</p> <p><i>[Handwritten Signature]</i></p> <p><i>2-16-23</i></p> </div>										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe			
Address: 1001 Bishop St. ste 1600		Street															
City: Honolulu State: HI Zip: 96813		City Honolulu State Hawaii															
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 60697810															
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #															
Sampler(s) Name(s) (Printed)		Client Purchase Order #															
Sampler 1: <i>[Handwritten]</i>																	
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NOVE	HCl	NO3	HNO3	H2SO4	NO3/H2NO3	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
2	AF-RHMW03-WGN01LF-2302W2	2-16-23	1325	<i>[Handwritten]</i>	GW	3		X								X	
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p><i>[Handwritten Signature]</i></p> <p><i>2-16-23</i></p> </div>																	
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks									
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		Approved By: / Date:		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S				EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United AWB -016-17923462									
Rush T/A Data Available VIA Email or LabLink																	
Sample Custody must be documented below each time samples change possession, including courier delivery.																	
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation		Relinquished By/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Received By/Affiliation			
1 <i>[Handwritten]</i> / AECOM		2-16-23 <i>[Handwritten]</i>		2 <i>[Handwritten]</i> / AECOM		3 <i>[Handwritten]</i> / AECOM		2-16-23		4 <i>[Handwritten]</i> / AECOM							
5				6		7				8							

Lab Use Only: Cooler Temperature (s) Celsius (corrected):

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

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FC2799: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC2799

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 2/17/2023 2:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-17993662

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.0);

Cooler Temps (Corrected) °C: Cooler 1: (3.2);

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

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS

Date: 2/17/2023 2:00:00 PM

Reviewer: CD

Date: 2/21/2023

FC2799: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC2799
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/16/23

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

* Sample used for QC is not from job FC2799

5.2
5

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Instrument Blank

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q218-IBLK	6Q14339.D	1	02/24/23	MV	n/a	n/a	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

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	0.0037	0.0050	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0036	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	0.0236	0.050	0.0044	ug/l	J
1691-99-2	EtFOSE	0.0326	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: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q218-IBLK	6Q14339.D	1	02/24/23	MV	n/a	n/a	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

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	103% 20-150%
	13C5-PFPeA	99% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	106% 20-150%
	13C8-PFOA	98% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	98% 20-150%
	13C7-PFUnDA	98% 20-150%
	13C2-PFDoDA	99% 20-150%
	13C2-PFTeDA	96% 20-150%
	13C3-PFBS	106% 20-150%
	13C3-PFHxS	103% 20-150%
	13C8-PFOS	104% 20-150%
	13C8-FOSA	96% 20-150%
	d3-MeFOSA	90% 20-150%
	d5-EtFOSA	95% 20-150%
	d3-MeFOSAA	97% 20-150%
	d5-EtFOSAA	99% 20-150%
	d7-MeFOSE	96% 20-150%
	d9-EtFOSE	94% 20-150%
	13C2-4:2FTS	115% 20-150%
	13C2-6:2FTS	108% 20-150%
	13C2-8:2FTS	118% 20-150%
	13C3-HFPO-DA	102% 20-150%

6.1.1
6

Method Blank Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-MB	6Q14344.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

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: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-MB	6Q14344.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

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	112% 20-150%
	13C5-PFPeA	106% 20-150%
	13C5-PFHxA	108% 20-150%
	13C4-PFHpA	112% 20-150%
	13C8-PFOA	108% 20-150%
	13C9-PFNA	113% 20-150%
	13C6-PFDA	103% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	90% 20-150%
	13C2-PFTeDA	72% 20-150%
	13C3-PFBS	119% 20-150%
	13C3-PFHxS	117% 20-150%
	13C8-PFOS	100% 20-150%
	13C8-FOSA	86% 20-150%
	d3-MeFOSA	78% 20-150%
	d5-EtFOSA	74% 20-150%
	d3-MeFOSAA	94% 20-150%
	d5-EtFOSAA	88% 20-150%
	d7-MeFOSE	76% 20-150%
	d9-EtFOSE	76% 20-150%
	13C2-4:2FTS	130% 20-150%
	13C2-6:2FTS	127% 20-150%
	13C2-8:2FTS	117% 20-150%
	13C3-HFPO-DA	115% 20-150%

6.12

6

Blank Spike Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-LLBS	6Q14343.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0463	116	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0229	115	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0114	114	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0114	114	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0117	117	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0119	119	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0125	125	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0125	125	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0105	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0101	101	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0112	112	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0109	123	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0104	111	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0112	123	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0108	113	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0118	127	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0117	122	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0115	119	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0117	121	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0375	0.0435	116	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0472	124	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0441	115	40-150
754-91-6	PFOSA	0.01	0.0113	113	40-150
31506-32-8	MeFOSA	0.01	0.0111	111	40-150
4151-50-2	EtFOSA	0.01	0.0095	95	40-150
2355-31-9	MeFOSAA	0.01	0.0121	121	40-150
2991-50-6	EtFOSAA	0.01	0.0103	103	40-150
24448-09-7	MeFOSE	0.1	0.106	106	40-150
1691-99-2	EtFOSE	0.1	0.104	104	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0436	109	40-150
919005-14-4	ADONA	0.0378	0.0421	111	40-150
377-73-1	PFMPA	0.02	0.0237	119	40-150
863090-89-5	PFMBA	0.02	0.0243	122	40-150
151772-58-6	NFDHA	0.02	0.0238	119	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0374	0.0381	102	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0378	0.0357	94	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-LLBS	6Q14343.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0201	113	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0430	86	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.25	0.273	109	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.290	116	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	116%	20-150%
	13C5-PFPeA	113%	20-150%
	13C5-PFHxA	119%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	111%	20-150%
	13C9-PFNA	105%	20-150%
	13C6-PFDA	114%	20-150%
	13C7-PFUnDA	110%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	94%	20-150%
	13C3-PFBS	118%	20-150%
	13C3-PFHxS	122%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	87%	20-150%
	d5-EtFOSA	85%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	106%	20-150%
	d7-MeFOSE	83%	20-150%
	d9-EtFOSE	81%	20-150%
	13C2-4:2FTS	130%	20-150%
	13C2-6:2FTS	122%	20-150%
	13C2-8:2FTS	126%	20-150%
	13C3-HFPO-DA	127%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-BS	6Q14342.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.121	121	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0591	118	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0296	118	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0320	128	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0296	118	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0280	112	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0302	121	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0319	128	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0275	110	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0285	114	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0318	127	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0274	124	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0284	121	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0281	123	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0286	120	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0287	124	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0275	114	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0277	115	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0279	115	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.117	125	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.125	132	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.124	129	40-150
754-91-6	PFOSA	0.025	0.0285	114	40-150
31506-32-8	MeFOSA	0.025	0.0282	113	40-150
4151-50-2	EtFOSA	0.025	0.0257	103	40-150
2355-31-9	MeFOSAA	0.025	0.0290	116	40-150
2991-50-6	EtFOSAA	0.025	0.0309	124	40-150
24448-09-7	MeFOSE	0.25	0.261	104	40-150
1691-99-2	EtFOSE	0.25	0.266	106	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.115	115	40-150
919005-14-4	ADONA	0.0945	0.111	117	40-150
377-73-1	PFMPA	0.05	0.0598	120	40-150
863090-89-5	PFMBA	0.05	0.0602	120	40-150
151772-58-6	NFDHA	0.05	0.0666	133	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0935	0.100	107	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0945	0.100	106	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-BS	6Q14342.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0564	127	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.117	94	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.734	117	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.719	115	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	108%	20-150%
	13C5-PFPeA	103%	20-150%
	13C5-PFHxA	104%	20-150%
	13C4-PFHpA	101%	20-150%
	13C8-PFOA	99%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	108%	20-150%
	13C7-PFUnDA	101%	20-150%
	13C2-PFDoDA	100%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	101%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	102%	20-150%
	13C8-FOSA	108%	20-150%
	d3-MeFOSA	97%	20-150%
	d5-EtFOSA	95%	20-150%
	d3-MeFOSAA	105%	20-150%
	d5-EtFOSAA	103%	20-150%
	d7-MeFOSE	83%	20-150%
	d9-EtFOSE	85%	20-150%
	13C2-4:2FTS	111%	20-150%
	13C2-6:2FTS	101%	20-150%
	13C2-8:2FTS	99%	20-150%
	13C3-HFPO-DA	113%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-MS	6Q14346.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218
FC2799-1	6Q14345.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

CAS No.	Compound	FC2799-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.018 U		0.0909	0.0705	78	40-150
2706-90-3	Perfluoropentanoic acid	0.0088 U		0.0455	0.120	264*	40-150
307-24-4	Perfluorohexanoic acid	0.0044 U		0.0227	0.0271	119	40-150
375-85-9	Perfluoroheptanoic acid	0.0044 U		0.0227	0.0273	120	40-150
335-67-1	Perfluorooctanoic acid	0.0044 U		0.0227	0.0260	114	40-150
375-95-1	Perfluorononanoic acid	0.0044 U		0.0227	0.0278	122	40-150
335-76-2	Perfluorodecanoic acid	0.0044 U		0.0227	0.0270	119	40-150
2058-94-8	Perfluoroundecanoic acid	0.0044 U		0.0227	0.0287	126	40-150
307-55-1	Perfluorododecanoic acid	0.0044 U		0.0227	0.0270	119	40-150
72629-94-8	Perfluorotridecanoic acid	0.0044 U		0.0227	0.0249	110	40-150
376-06-7	Perfluorotetradecanoic acid	0.0044 U		0.0227	0.0279	123	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0044 U		0.0202	0.0233	116	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0044 U		0.0214	0.0250	117	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0044 U		0.0208	0.0244	117	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0044 U		0.0217	0.0273	126	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0044 U		0.0211	0.0246	117	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0044 U		0.0219	0.0247	113	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0044 U		0.0219	0.0211	96	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0044 U		0.022	0.0126	57	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U		0.0852	0.101	119	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0053 J		0.0864	0.102	112	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		0.0873	0.126	144	40-150
754-91-6	PFOSA	0.0044 U		0.0227	0.0290	128	40-150
31506-32-8	MeFOSA	0.0044 U		0.0227	0.0269	118	40-150
4151-50-2	EtFOSA	0.0044 U		0.0227	0.0261	115	40-150
2355-31-9	MeFOSAA	0.0044 U		0.0227	0.0272	120	40-150
2991-50-6	EtFOSAA	0.0044 U		0.0227	0.0276	121	40-150
24448-09-7	MeFOSE	0.044 U		0.227	0.249	110	40-150
1691-99-2	EtFOSE	0.044 U		0.227	0.252	111	40-150
13252-13-6	HFPO-DA (GenX)	0.018 U		0.0909	0.0989	109	40-150
919005-14-4	ADONA	0.018 U		0.0859	0.106	123	40-150
377-73-1	PFMPA	0.0088 U		0.0455	0.0460	101	40-150
863090-89-5	PFMBA	0.0088 U		0.0455	0.0568	125	40-150
151772-58-6	NFDHA	0.0088 U		0.0455	0.0523	115	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.018 U		0.085	0.0862	101	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.018 U		0.0859	0.0651	76	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-MS	6Q14346.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218
FC2799-1	6Q14345.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

CAS No.	Compound	FC2799-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0088 U	0.0405	0.0490	121	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.022 U	0.114	0.127	112	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.11 U	0.568	0.779	137	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.11 U	0.568	0.744	131	40-150

CAS No.	ID Standard Recoveries	MS	FC2799-1	Limits
	13C4-PFBA	112%	113%	20-150%
	13C5-PFPeA	102%	104%	20-150%
	13C5-PFHxA	105%	103%	20-150%
	13C4-PFHpA	110%	114%	20-150%
	13C8-PFOA	109%	110%	20-150%
	13C9-PFNA	104%	101%	20-150%
	13C6-PFDA	109%	102%	20-150%
	13C7-PFUnDA	91%	100%	20-150%
	13C2-PFDoDA	81%	86%	20-150%
	13C2-PFTeDA	69%	67%	20-150%
	13C3-PFBS	113%	108%	20-150%
	13C3-PFHxS	106%	106%	20-150%
	13C8-PFOS	101%	109%	20-150%
	13C8-FOSA	101%	98%	20-150%
	d3-MeFOSA	86%	79%	20-150%
	d5-EtFOSA	83%	75%	20-150%
	d3-MeFOSAA	107%	102%	20-150%
	d5-EtFOSAA	104%	96%	20-150%
	d7-MeFOSE	86%	78%	20-150%
	d9-EtFOSE	83%	77%	20-150%
	13C2-4:2FTS	124%	117%	20-150%
	13C2-6:2FTS	109%	99%	20-150%
	13C2-8:2FTS	88%	95%	20-150%
	13C3-HFPO-DA	106%	93%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-DUP	6Q14351.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218
FC2833-2	6Q14349.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

CAS No.	Compound	FC2833-2 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.018 U	ND		nc		30
2706-90-3	Perfluoropentanoic acid	0.0089 U	ND		nc		30
307-24-4	Perfluorohexanoic acid	0.0045 U	ND		nc		30
375-85-9	Perfluoroheptanoic acid	0.0045 U	ND		nc		30
335-67-1	Perfluorooctanoic acid	0.0045 U	ND		nc		30
375-95-1	Perfluorononanoic acid	0.0045 U	ND		nc		30
335-76-2	Perfluorodecanoic acid	0.0045 U	ND		nc		30
2058-94-8	Perfluoroundecanoic acid	0.0045 U	ND		nc		30
307-55-1	Perfluorododecanoic acid	0.0045 U	ND		nc		30
72629-94-8	Perfluorotridecanoic acid	0.0045 U	ND		nc		30
376-06-7	Perfluorotetradecanoic acid	0.0045 U	ND		nc		30
375-73-5	Perfluorobutanesulfonic acid	0.0045 U	ND		nc		30
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U	ND		nc		30
355-46-4	Perfluorohexanesulfonic acid	0.0045 U	ND		nc		30
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U	ND		nc		30
1763-23-1	Perfluorooctanesulfonic acid	0.0045 U	ND		nc		30
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	ND		nc		30
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	ND		nc		30
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U	ND		nc		30
757124-72-44:2	Fluorotelomer sulfonate	0.018 U	ND		nc		30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0053 U	J	0.0067 U	J	23	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U	ND		nc		30
754-91-6	PFOSA	0.0045 U	ND		nc		30
31506-32-8	MeFOSA	0.0045 U	ND		nc		30
4151-50-2	EtFOSA	0.0045 U	ND		nc		30
2355-31-9	MeFOSAA	0.0045 U	ND		nc		30
2991-50-6	EtFOSAA	0.0045 U	ND		nc		30
24448-09-7	MeFOSE	0.045 U	ND		nc		30
1691-99-2	EtFOSE	0.045 U	ND		nc		30
13252-13-6	HFPO-DA (GenX)	0.018 U	ND		nc		30
919005-14-4	ADONA	0.018 U	ND		nc		30
377-73-1	PFMPA	0.0089 U	ND		nc		30
863090-89-5	PFMBA	0.0089 U	ND		nc		30
151772-58-6	NFDHA	0.0089 U	ND		nc		30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.018 U	ND		nc		30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.018 U	ND		nc		30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-DUP	6Q14351.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218
FC2833-2	6Q14349.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2799-1, FC2799-2

CAS No.	Compound	FC2833-2 ug/l	DUP Q ug/l	Q	RPD	Limits
113507-82-7PFEESA		0.0089 U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.022 U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.11 U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.11 U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC2833-2	Limits
	13C4-PFBA	118%	115%	20-150%
	13C5-PFPeA	110%	106%	20-150%
	13C5-PFHxA	112%	110%	20-150%
	13C4-PFHpA	113%	109%	20-150%
	13C8-PFOA	110%	108%	20-150%
	13C9-PFNA	115%	108%	20-150%
	13C6-PFDA	116%	109%	20-150%
	13C7-PFUnDA	99%	99%	20-150%
	13C2-PFDoDA	90%	88%	20-150%
	13C2-PFTeDA	69%	71%	20-150%
	13C3-PFBS	118%	112%	20-150%
	13C3-PFHxS	119%	114%	20-150%
	13C8-PFOS	108%	95%	20-150%
	13C8-FOSA	121%	115%	20-150%
	d3-MeFOSA	114%	115%	20-150%
	d5-EtFOSA	112%	105%	20-150%
	d3-MeFOSAA	133%	142%	20-150%
	d5-EtFOSAA	154%* a	144%	20-150%
	d7-MeFOSE	105%	100%	20-150%
	d9-EtFOSE	108%	107%	20-150%
	13C2-4:2FTS	160%* a	136%	20-150%
	13C2-6:2FTS	115%	109%	20-150%
	13C2-8:2FTS	116%	99%	20-150%
	13C3-HFPO-DA	117%	115%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q218-CC217	Injection Date:	02/24/23
Lab File ID:	6Q14340.D	Injection Time:	21:10
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal ^b	40434	2.94	41730	5.51	86828	7.10	24471	7.63	26029	8.11
Check Std ^c	40773	2.93	44786	5.51	86383	7.10	23349	7.63	24641	8.11
Upper Limit ^d	80868	3.33	83460	5.91	173656	7.50	48942	8.03	52058	8.51
Lower Limit ^e	12130	2.53	12519	5.11	26048	6.70	7341	7.23	7809	7.71

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF ^a
OP95581-BS	32157	2.97	33238	5.50	69436	7.10	18752	7.63	19441	8.11	1
OP95581-LLBS	31923	2.97	32121	5.51	66250	7.10	18852	7.63	19323	8.10	1
OP95581-MB	32657	2.97	33597	5.51	70860	7.10	17996	7.62	20074	8.11	1
FC2799-1	22200	2.97	31639	5.51	67137	7.10	17129	7.63	18674	8.11	1
OP95581-MS	23582	2.97	33789	5.51	69615	7.10	18237	7.63	20017	8.11	1
FC2799-2	31620	2.97	32599	5.51	68732	7.10	18665	7.63	19251	8.11	1
ZZZZZZ	31591	2.97	32196	5.50	63464	7.10	18476	7.61	18705	8.11	1
FC2833-2	31256	2.97	32587	5.50	67391	7.10	17844	7.61	20571	8.10	1
ZZZZZZ	33531	2.97	32557	5.51	68560	7.10	19713	7.63	21085	8.11	1
OP95581-DUP	31961	2.98	33288	5.51	70277	7.10	17701	7.63	19622	8.11	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: S6Q217-ICC217 6Q14208.D 02/23/23 14:21. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q218-CC217	Injection Date:	02/24/23
Lab File ID:	6Q14340.D	Injection Time:	21:10
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	7331	7.21	10507	8.27
Check Std ^c	7354	7.21	10570	8.27
Upper Limit ^d	14662	7.61	21014	8.67
Lower Limit ^e	2199	6.81	3152	7.87

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
OP95581-BS	6050	7.21	8502	8.27	1
OP95581-LLBS	5569	7.21	9095	8.27	1
OP95581-MB	5621	7.21	9570	8.27	1
FC2799-1	5776	7.21	8392	8.27	1
OP95581-MS	5853	7.21	8079	8.27	1
FC2799-2	5554	7.21	9041	8.27	1
ZZZZZZ	5651	7.21	9202	8.27	1
FC2833-2	5820	7.21	7823	8.26	1
ZZZZZZ	6138	7.21	9516	8.27	1
OP95581-DUP	5662	7.21	7714	8.26	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q217-ICC217 6Q14208.D 02/23/23 14:21. 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
6

TDCA Retention Time Check

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q217-RT	Injection Date:	02/23/23
Lab File ID:	6Q14202.D	Injection Time:	12:57
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.271	--	--
TDCA	6.795	1.476	1.000
TCDCA	6.634	1.637	1.000
TUDCA	5.769	2.502	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
S6Q217-IC217	6Q14204.D	02/23/23	13:25	00:28	Mass Calibration Verification
S6Q217-IC217	6Q14205.D	02/23/23	13:39	00:42	Initial cal 1
S6Q217-IC217	6Q14206.D	02/23/23	13:53	00:56	Initial cal 2
S6Q217-IC217	6Q14207.D	02/23/23	14:07	01:10	Initial cal 3
S6Q217-ICC217	6Q14208.D	02/23/23	14:21	01:24	Initial cal 4
S6Q217-IC217	6Q14209.D	02/23/23	14:35	01:38	Initial cal 5
S6Q217-IC217	6Q14210.D	02/23/23	14:49	01:52	Initial cal 6
S6Q217-IC217	6Q14211.D	02/23/23	15:03	02:06	Initial cal 7
S6Q217-IC217	6Q14212.D	02/23/23	15:17	02:20	Initial cal 8
S6Q217-IBLK	6Q14213.D	02/23/23	15:31	02:34	Instrument Blank
S6Q217-IBLK	6Q14213.D	02/23/23	15:31	02:34	Instrument Blank
S6Q217-ICV217	6Q14214.D	02/23/23	15:45	02:48	Initial cal verification 4
S6Q217-ICV217	6Q14215.D	02/23/23	15:59	03:02	Initial cal verification 20
S6Q217-CC217	6Q14216.D	02/23/23	16:13	03:16	Continuing cal 4
S6Q217-CC217	6Q14217.D	02/23/23	16:27	03:30	Continuing cal 1.0LL
OP95496-BS	6Q14218.D	02/23/23	16:41	03:44	Blank Spike
OP95496-LLBS	6Q14219.D	02/23/23	16:57	04:00	Blank Spike
OP95496-MB	6Q14220.D	02/23/23	17:11	04:14	Method Blank
ZZZZZZ	6Q14221.D	02/23/23	17:25	04:28	(unrelated sample)
ZZZZZZ	6Q14222.D	02/23/23	17:39	04:42	(unrelated sample)
ZZZZZZ	6Q14223.D	02/23/23	17:53	04:56	(unrelated sample)
ZZZZZZ	6Q14224.D	02/23/23	18:07	05:10	(unrelated sample)
JD60059-26	6Q14225.D	02/23/23	18:21	05:24	(used for QC only; not part of job FC2799)
OP95496-MS	6Q14226.D	02/23/23	18:35	05:38	Matrix Spike
OP95496-MSD	6Q14227.D	02/23/23	18:49	05:52	Matrix Spike Duplicate
S6Q217-CC217	6Q14228.D	02/23/23	19:03	06:06	Continuing cal 4
S6Q217-ICCB	6Q14229.D	02/23/23	19:17	06:20	Continuing Calibration Blank
S6Q217-ICCB	6Q14229.D	02/23/23	19:17	06:20	Continuing Calibration Blank
ZZZZZZ	6Q14230.D	02/23/23	19:31	06:34	(unrelated sample)
ZZZZZZ	6Q14231.D	02/23/23	19:45	06:48	(unrelated sample)
ZZZZZZ	6Q14232.D	02/23/23	19:59	07:02	(unrelated sample)
ZZZZZZ	6Q14233.D	02/23/23	20:13	07:16	(unrelated sample)
ZZZZZZ	6Q14234.D	02/23/23	20:27	07:30	(unrelated sample)
ZZZZZZ	6Q14235.D	02/23/23	20:41	07:44	(unrelated sample)

TDCA Retention Time Check

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q217-RT	Injection Date:	02/23/23
Lab File ID:	6Q14202.D	Injection Time:	12:57
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q14236.D	02/23/23	20:55	07:58	(unrelated sample)
ZZZZZZ	6Q14237.D	02/23/23	21:09	08:12	(unrelated sample)
ZZZZZZ	6Q14238.D	02/23/23	21:23	08:26	(unrelated sample)
ZZZZZZ	6Q14239.D	02/23/23	21:37	08:40	(unrelated sample)
S6Q217-CC217	6Q14240.D	02/23/23	21:51	08:54	Continuing cal 4
S6Q217-ICCB	6Q14241.D	02/23/23	22:05	09:08	Continuing Calibration Blank
S6Q217-ICCB	6Q14241.D	02/23/23	22:05	09:08	Continuing Calibration Blank
OP95480-BS	6Q14242.D	02/23/23	22:19	09:22	Blank Spike
OP95480-LLBS	6Q14243.D	02/23/23	22:33	09:36	Blank Spike
OP95480-MB	6Q14244.D	02/23/23	22:47	09:50	Method Blank
ZZZZZZ	6Q14245.D	02/23/23	23:01	10:04	(unrelated sample)
FC2451-2	6Q14246.D	02/23/23	23:15	10:18	(used for QC only; not part of job FC2799)
OP95480-MS	6Q14247.D	02/23/23	23:29	10:32	Matrix Spike
OP95480-MSD	6Q14248.D	02/23/23	23:43	10:46	Matrix Spike Duplicate
ZZZZZZ	6Q14249.D	02/23/23	23:57	11:00	(unrelated sample)
ZZZZZZ	6Q14250.D	02/24/23	00:11	11:14	(unrelated sample)
ZZZZZZ	6Q14251.D	02/24/23	00:25	11:28	(unrelated sample)
S6Q217-CC217	6Q14252.D	02/24/23	00:39	11:42	Continuing cal 4
S6Q217-ICCB	6Q14253.D	02/24/23	00:53	11:56	Continuing Calibration Blank
ZZZZZZ	6Q14254.D	02/24/23	01:07	12:10	(unrelated sample)
ZZZZZZ	6Q14255.D	02/24/23	01:21	12:24	(unrelated sample)
ZZZZZZ	6Q14256.D	02/24/23	01:35	12:38	(unrelated sample)
ZZZZZZ	6Q14257.D	02/24/23	01:49	12:52	(unrelated sample)
ZZZZZZ	6Q14258.D	02/24/23	02:03	13:06	(unrelated sample)
ZZZZZZ	6Q14259.D	02/24/23	02:17	13:20	(unrelated sample)
ZZZZZZ	6Q14260.D	02/24/23	02:31	13:34	(unrelated sample)
ZZZZZZ	6Q14261.D	02/24/23	02:45	13:48	(unrelated sample)
ZZZZZZ	6Q14262.D	02/24/23	02:59	14:02	(unrelated sample)
ZZZZZZ	6Q14263.D	02/24/23	03:13	14:16	(unrelated sample)
S6Q217-CC217	6Q14264.D	02/24/23	03:27	14:30	Continuing cal 4
S6Q217-CC217	6Q14265.D	02/24/23	03:41	14:44	Continuing cal 1.0LL
S6Q217-ICCB	6Q14266.D	02/24/23	03:55	14:58	Continuing Calibration Blank
S6Q217-ICCB	6Q14266.D	02/24/23	03:55	14:58	Continuing Calibration Blank
ZZZZZZ	6Q14267.D	02/24/23	04:09	15:12	(unrelated sample)
ZZZZZZ	6Q14268.D	02/24/23	04:23	15:26	(unrelated sample)
ZZZZZZ	6Q14269.D	02/24/23	04:37	15:40	(unrelated sample)
ZZZZZZ	6Q14270.D	02/24/23	04:51	15:54	(unrelated sample)
ZZZZZZ	6Q14271.D	02/24/23	05:05	16:08	(unrelated sample)
ZZZZZZ	6Q14272.D	02/24/23	05:19	16:22	(unrelated sample)

6.6.1

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TDCA Retention Time Check

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q218-RT	Injection Date:	02/24/23
Lab File ID:	6Q14336.D	Injection Time:	20:14
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.259	--	--
TDCA	6.783	1.476	1.000
TCDCA	6.621	1.638	1.000
TUDCA	5.769	2.490	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
S6Q218-IBLK	6Q14339.D	02/24/23	20:56	00:42	Instrument Blank
S6Q218-IBLK	6Q14339.D	02/24/23	20:56	00:42	Instrument Blank
S6Q218-CC217	6Q14340.D	02/24/23	21:10	00:56	Continuing cal 4
S6Q218-CC217	6Q14341.D	02/24/23	21:24	01:10	Continuing cal 1.0LL
OP95581-BS	6Q14342.D	02/24/23	21:38	01:24	Blank Spike
OP95581-LLBS	6Q14343.D	02/24/23	21:52	01:38	Blank Spike
OP95581-MB	6Q14344.D	02/24/23	22:06	01:52	Method Blank
FC2799-1	6Q14345.D	02/24/23	22:20	02:06	AF-RHMW02-WGN01LF-2302W2
OP95581-MS	6Q14346.D	02/24/23	22:34	02:20	Matrix Spike
FC2799-2	6Q14347.D	02/24/23	22:48	02:34	AF-RHMW03-WGN01LF-2302W2
ZZZZZZ	6Q14348.D	02/24/23	23:02	02:48	(unrelated sample)
FC2833-2	6Q14349.D	02/24/23	23:16	03:02	(used for QC only; not part of job FC2799)
ZZZZZZ	6Q14350.D	02/24/23	23:30	03:16	(unrelated sample)
OP95581-DUP	6Q14351.D	02/24/23	23:44	03:30	Duplicate
S6Q218-CC217	6Q14352.D	02/24/23	23:58	03:44	Continuing cal 4
S6Q218-ICCB	6Q14353.D	02/25/23	00:12	03:58	Continuing Calibration Blank
OP95546-BS	6Q14354.D	02/25/23	00:26	04:12	Blank Spike
OP95546-LLBS	6Q14355.D	02/25/23	00:40	04:26	Blank Spike
OP95546-MB	6Q14356.D	02/25/23	00:54	04:40	Method Blank
ZZZZZZ	6Q14357.D	02/25/23	01:08	04:54	(unrelated sample)
ZZZZZZ	6Q14358.D	02/25/23	01:22	05:08	(unrelated sample)
ZZZZZZ	6Q14359.D	02/25/23	01:36	05:22	(unrelated sample)
ZZZZZZ	6Q14360.D	02/25/23	01:50	05:36	(unrelated sample)
ZZZZZZ	6Q14361.D	02/25/23	02:04	05:50	(unrelated sample)
ZZZZZZ	6Q14362.D	02/25/23	02:18	06:04	(unrelated sample)
S6Q218-CC217	6Q14363.D	02/25/23	02:32	06:18	Continuing cal 4
S6Q218-ICCB	6Q14364.D	02/25/23	02:46	06:32	Continuing Calibration Blank
FC2153-7	6Q14365.D	02/25/23	03:00	06:46	(used for QC only; not part of job FC2799)
OP95546-MS	6Q14366.D	02/25/23	03:14	07:00	Matrix Spike
OP95546-MSD	6Q14367.D	02/25/23	03:28	07:14	Matrix Spike Duplicate
ZZZZZZ	6Q14368.D	02/25/23	03:42	07:28	(unrelated sample)
ZZZZZZ	6Q14369.D	02/25/23	03:56	07:42	(unrelated sample)
ZZZZZZ	6Q14370.D	02/25/23	04:10	07:56	(unrelated sample)
ZZZZZZ	6Q14371.D	02/25/23	04:24	08:10	(unrelated sample)

TDCA Retention Time Check

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q218-RT	Injection Date:	02/24/23
Lab File ID:	6Q14336.D	Injection Time:	20:14
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q14372.D	02/25/23	04:38	08:24	(unrelated sample)
ZZZZZZ	6Q14373.D	02/25/23	04:52	08:38	(unrelated sample)
ZZZZZZ	6Q14374.D	02/25/23	05:06	08:52	(unrelated sample)
S6Q218-CC217	6Q14375.D	02/25/23	05:20	09:06	Continuing cal 4
S6Q218-ICCB	6Q14376.D	02/25/23	05:34	09:20	Continuing Calibration Blank
ZZZZZZ	6Q14377.D	02/25/23	05:48	09:34	(unrelated sample)
ZZZZZZ	6Q14378.D	02/25/23	06:01	09:47	(unrelated sample)
ZZZZZZ	6Q14379.D	02/25/23	06:15	10:01	(unrelated sample)
ZZZZZZ	6Q14380.D	02/25/23	06:29	10:15	(unrelated sample)
S6Q218-CC217	6Q14381.D	02/25/23	06:43	10:29	Continuing cal 4
S6Q218-CC217	6Q14382.D	02/25/23	06:57	10:43	Continuing cal 1.OLL
S6Q218-ICCB	6Q14383.D	02/25/23	07:11	10:57	Continuing Calibration Blank
OP95583-BS	6Q14384.D	02/25/23	07:25	11:11	Blank Spike
OP95583-LLBS	6Q14385.D	02/25/23	07:39	11:25	Blank Spike
OP95583-MB	6Q14386.D	02/25/23	07:53	11:39	Method Blank
FC2545-1	6Q14387.D	02/25/23	08:07	11:53	(used for QC only; not part of job FC2799)
OP95583-MS	6Q14388.D	02/25/23	08:21	12:07	Matrix Spike
FC2545-2	6Q14389.D	02/25/23	08:35	12:21	(used for QC only; not part of job FC2799)
OP95583-DUP	6Q14390.D	02/25/23	08:49	12:35	Duplicate
ZZZZZZ	6Q14391.D	02/25/23	09:03	12:49	(unrelated sample)
ZZZZZZ	6Q14392.D	02/25/23	09:17	13:03	(unrelated sample)
ZZZZZZ	6Q14393.D	02/25/23	09:31	13:17	(unrelated sample)
S6Q218-CC217	6Q14394.D	02/25/23	09:45	13:31	Continuing cal 4
S6Q218-ICCB	6Q14395.D	02/25/23	09:59	13:45	Continuing Calibration Blank
ZZZZZZ	6Q14396.D	02/25/23	10:13	13:59	(unrelated sample)
ZZZZZZ	6Q14397.D	02/25/23	10:27	14:13	(unrelated sample)
ZZZZZZ	6Q14398.D	02/25/23	10:41	14:27	(unrelated sample)
ZZZZZZ	6Q14399.D	02/25/23	10:55	14:41	(unrelated sample)
ZZZZZZ	6Q14400.D	02/25/23	11:09	14:55	(unrelated sample)
ZZZZZZ	6Q14401.D	02/25/23	11:23	15:09	(unrelated sample)
ZZZZZZ	6Q14402.D	02/25/23	11:37	15:23	(unrelated sample)
S6Q218-ECC217	6Q14403.D	02/25/23	11:51	15:37	Ending cal 4
S6Q218-ICCB	6Q14404.D	02/25/23	12:05	15:51	Continuing Calibration Blank

6.6.2

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Ion Ratio Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q218	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios			
		PFPeA	PFHxA	PFHpA	6:2FTS
S6Q217-ICC217	6Q14208.D	0	3.8	13.7	21.7
FC2799-1	6Q14345.D				21.3
FC2799-2	6Q14347.D	0	2.6	14.8	19.8

6.7.1

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Isotope Dilution Standard Recovery Summary

Job Number: FC2799
 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
FC2799-1	6Q14345.D	113	104	103	114	110	101	102	100
FC2799-2	6Q14347.D	117	112	111	115	105	105	120	99
OP95581-BS	6Q14342.D	108	103	104	101	99	107	108	101
OP95581-DUP	6Q14351.D	118	110	112	113	110	115	116	99
OP95581-LLBS	6Q14343.D	116	113	119	115	111	105	114	110
OP95581-MB	6Q14344.D	112	106	108	112	108	113	103	100
OP95581-MS	6Q14346.D	112	102	105	110	109	104	109	91
S6Q218-IBLK	6Q14339.D	103	99	96	106	98	102	98	98

Isotope Dilution Standards **Recovery Limits**

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

Isotope Dilution Standard Recovery Summary

Job Number: FC2799
 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
FC2799-1	6Q14345.D	86	67	108	106	109	98	79	75
FC2799-2	6Q14347.D	96	78	121	114	103	98	89	88
OP95581-BS	6Q14342.D	100	90	101	102	102	108	97	95
OP95581-DUP	6Q14351.D	90	69	118	119	108	121	114	112
OP95581-LLBS	6Q14343.D	105	94	118	122	98	99	87	85
OP95581-MB	6Q14344.D	90	72	119	117	100	86	78	74
OP95581-MS	6Q14346.D	81	69	113	106	101	101	86	83
S6Q218-IBLK	6Q14339.D	99	96	106	103	104	96	90	95

Isotope Dilution Standards **Recovery Limits**

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

6.8.1
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Isotope Dilution Standard Recovery Summary

Job Number: FC2799
 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
FC2799-1	6Q14345.D	102	96	78	77	117	99	95	93
FC2799-2	6Q14347.D	101	100	89	86	111	125	107	121
OP95581-BS	6Q14342.D	105	103	83	85	111	101	99	113
OP95581-DUP	6Q14351.D	133	154* a	105	108	160* a	115	116	117
OP95581-LLBS	6Q14343.D	103	106	83	81	130	122	126	127
OP95581-MB	6Q14344.D	94	88	76	76	130	127	117	115
OP95581-MS	6Q14346.D	107	104	86	83	124	109	88	106
S6Q218-IBLK	6Q14339.D	97	99	96	94	115	108	118	102

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: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q217-ICC217
 Lab FileID: 6Q14208.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods	Level Name	Calibration Files	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
Method File	D:\MassHunter\Methods	1	D:\MassHunter\Data\022323_1633_S6Q217\6Q14205.d	Avg RF	0.1795	0.1928	0.1935	0.1993	0.1989	0.2209	0.2177	0.2093	0.2015	6.851
Batch Name	D:\MassHunter\Data\022323_1633_S6Q217\6Q14206.d	2	D:\MassHunter\Data\022323_1633_S6Q217\6Q14207.d	Avg RF	0.2135	0.2179	0.2269	0.2350	0.2280	0.2575	0.2479	0.2466	0.2342	6.597
Last Calib Update	D:\MassHunter\Data\022323_1633_S6Q217\6Q14207.d	3	D:\MassHunter\Data\022323_1633_S6Q217\6Q14208.d	Avg RF	0.0434	0.0424	0.0460	0.0465	0.0446	0.0503	0.0489	0.0496	0.0465	6.313
	D:\MassHunter\Data\022323_1633_S6Q217\6Q14208.d	4	D:\MassHunter\Data\022323_1633_S6Q217\6Q14209.d	Avg RF	0.7978	0.8476	0.8451	0.8749	0.8567	0.9601	0.9258	0.8986	0.8758	5.841
	D:\MassHunter\Data\022323_1633_S6Q217\6Q14209.d	5	D:\MassHunter\Data\022323_1633_S6Q217\6Q14210.d	Avg RF	0.2356	0.2505	0.2558	0.2540	0.2432	0.2799	0.2742	0.2710	0.2580	6.064
	D:\MassHunter\Data\022323_1633_S6Q217\6Q14211.d	6	D:\MassHunter\Data\022323_1633_S6Q217\6Q14211.d	Avg RF	0.0334	0.0438	0.0423	0.0477	0.0477	0.0497	0.0496	0.0479	0.0453	12.088
	D:\MassHunter\Data\022323_1633_S6Q217\6Q14212.d	7	D:\MassHunter\Data\022323_1633_S6Q217\6Q14211.d	Avg RF	0.7132	0.7759	0.7828	0.8087	0.7859	0.8892	0.8256	0.8172	0.7998	6.270
		8	D:\MassHunter\Data\022323_1633_S6Q217\6Q14211.d	Avg RF	0.9737	1.0907	1.0591	1.1681	1.1183	1.2286	1.2496	1.1893	1.1347	8.157
				Avg RF	0.1588	0.1757	0.1760	0.1824	0.1829	0.2004	0.1941	0.1923	0.1828	7.172
				Avg RF	0.0862	0.0934	0.0932	0.0938	0.0989	0.1068	0.0993	0.1049	0.0971	6.957
				Avg RF	1.1046	1.2362	1.2009	1.2246	1.1595	1.3363	1.3648	1.2978	1.2406	7.131
				Avg RF	0.8898	0.8959	0.9422	0.9608	0.8772	0.9695	0.9256	0.9159	0.9221	3.652
				Avg RF	0.5074	0.5837	0.6148	0.6459	0.6423	0.7188	0.6963	0.6640	0.6341	10.514
				Avg RF	0.8796	1.0735	1.2509	1.0986	1.2120	1.4198	1.3115	1.2736	1.1899	14.100
				Avg RF	0.7765	0.8552	0.8392	0.8606	0.9545	0.9182	0.9005	0.8838	0.8736	6.190
				Avg RF										

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Initial Calibration Summary

Job Number: FC2799
 Account: AECOM AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q217-ICC217
 Lab FileID: 6Q14208.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	1.0479	0.8838	0.8393	0.7841	0.8823	0.9107	0.8832	0.7631	0.8743	9.995
T PFTfDA	Avg RF	0.7415	0.7382	0.7025	0.7538	0.7526	0.7841	0.8041	0.6638	0.7426	5.928
I M2-PFTeDA	Avg RF	1.2568	1.2019	1.0919	1.2279	1.0713	1.2778	1.1308	1.1052	1.1705	6.858
T PFTeDA	Avg RF					ISTD					
I M8-FOSA	Avg RF	0.7163	0.8207	0.8561	0.8131	0.8788	0.9354	0.8435	0.9198	0.8480	8.111
T FOSA	Avg RF					ISTD					
I M3-PFBS	Avg RF	0.7191	0.8934	0.8117	0.8301	0.8303	0.8370	0.8056	0.8501	0.8222	6.029
T PFBS	Avg RF					ISTD					
I M3-PFHxS	Avg RF	1.0986	1.1760	1.1581	1.1734	1.0975	1.2139	1.2121	1.0984	1.1535	4.297
T PFPeS	Avg RF	0.7601	0.9360	0.9533	0.9204	0.9218	0.9779	0.9760	0.8718	0.9147	7.788
T PFHxS	Avg RF					ISTD					
I M8-PFOS	Avg RF	0.7841	0.8570	0.8908	0.9125	0.8324	0.9544	0.8583	0.8793	0.8711	5.908
T PFHpS	Avg RF	1.0447	0.8607	0.8625	0.9473	0.9250	0.9954	0.9264	0.9119	0.9342	6.685
T PFOs	Avg RF	0.8925	0.9043	0.8116	0.9157	0.9047	1.0343	0.9249	0.8994	0.9109	6.672
T PPNs	Avg RF	0.7396	0.6026	0.6343	0.6828	0.6385	0.7288	0.6747	0.6185	0.6650	7.575
T PFDS	Avg RF	0.3734	0.3115	0.3651	0.4011	0.3774	0.4279	0.3778	0.3771	0.3764	8.766
T PFDoDS	Avg RF					ISTD					
I M2-4:2FTS	Avg RF	7.8048	8.4847	9.2713	9.2407	10.34	9.8043	10.33	8.9891	9.2839	9.469
T 4:2FTS	Avg RF					ISTD					
I M2-6:2FTS	Avg RF	5.5726	6.6698	5.7170	6.2046	6.3812	6.5616	6.2811	6.3921	6.2225	6.226
T 6:2FTS	Avg RF					ISTD					
I M2-8:2FTS	Avg RF	3.1079	3.4263	3.1538	3.4986	3.1002	3.8615	3.2795	2.5901	3.2523	11.357
T 8:2FTS	Avg RF					ISTD					
I M3-MeFOSAA	Avg RF	0.7867	0.8593	0.7775	0.8225	0.7999	0.9236	0.7997	0.8049	0.8218	5.856
T MeFOSAA	Avg RF					ISTD					
I M3-HFO-DA	Avg RF	0.6777	0.7590	0.8275	0.8185	0.8105	0.8645	0.8500	0.7691	0.7971	7.556
T HFO-DA	Avg RF	18.33	19.06	20.88	19.81	20.28	21.33	20.10	18.82	19.83	5.218
T ADONA	Avg RF	8.5823	9.0021	10.52	10.11	10.67	10.94	10.42	9.4514	9.9622	8.564
T 9Cl-PF3ONS	Avg RF	5.0592	5.2509	5.5509	5.7006	5.5029	5.9437	5.9352	5.3143	5.5322	5.764
T 11Cl-PF3OUds	Avg RF					ISTD					
I M5-EFOSAA	Avg RF	0.6140	0.5654	0.6873	0.6278	0.6885	0.7240	0.6795	0.6538	0.6550	7.734
T EFOSAA	Avg RF					ISTD					
I M7-MeFOSE	Avg RF	0.8118	0.8359	0.8096	0.8581	0.8819	0.9918	0.9341	0.8988	0.8777	7.175
T MeFOSE	Avg RF					ISTD					
I M9-EFOSE	Avg RF	0.7873	0.9114	0.8572	0.8781	0.8846	0.9518	0.9409	0.9957	0.9009	7.133
T EFOSE	Avg RF					ISTD					

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Initial Calibration Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q217-ICC217
 Lab FileID: 6Q14208.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	0.9436	1.0284	1.0579	1.0839	1.0916	1.1015	1.1516	1.1222	1.0726	5.983
I M3-MeFOSA											
T MeFOSA	Avg RF	1.0125	1.0781	1.0560	1.1026	1.0768	1.1276	1.0297	1.0442	1.0659	3.574
I 13C4-PFOS											
S d3-MeFOSAA	Linear	1.3917	1.2891	1.3471	1.2831	1.1492	1.3521	1.3828	1.2250	1.3025	6.419
S 13C8-PFOS	Linear	0.8234	0.8633	0.8916	0.8389	0.7965	0.8657	0.9046	0.8787	0.8578	4.215
S d5-EFOSAA	Linear	1.1527	1.1569	1.1517	1.2162	1.0395	1.1938	1.1300	1.0913	1.1415	4.893
S 13C8-FOSA	Linear	1.7266	1.6866	1.6728	1.7415	1.5094	1.7792	1.7126	1.5939	1.6778	5.208
S d7-MeFOSE	Linear	0.2505	0.2449	0.2523	0.2446	0.2261	0.2518	0.2352	0.2251	0.2413	4.615
S d3-MeFOSA	Linear	0.6049	0.5915	0.6096	0.6099	0.5491	0.6311	0.6369	0.6027	0.6045	4.443
S d9-EFOSE	Linear	0.1610	0.1558	0.1637	0.1611	0.1480	0.1687	0.1569	0.1436	0.1573	5.238
S d5-EFOSA	Linear	0.6638	0.6881	0.6834	0.6645	0.5896	0.7252	0.6485	0.6515	0.6643	5.866
I 13C3-PFBA											
S 13C4-PFBA	Linear	1.1340	1.1341	1.1450	1.1426	1.1370	1.1411	1.1367	1.1455	1.1395	0.409
I 1802-PFHxS											
S 13C2-4:2FTS	Linear	0.1607	0.1593	0.1562	0.1578	0.1410	0.1610	0.1312	0.1288	0.1495	9.135
S 13C3-PFBS	Linear	2.1683	2.0206	2.1124	2.1359	2.1796	2.3223	2.2226	2.0201	2.1477	4.701
S 13C2-6:2FTS	Linear	0.2079	0.1851	0.1987	0.1910	0.1946	0.1998	0.1765	0.1566	0.1888	8.544
S 13C3-PFHxS	Linear	1.4021	1.2764	1.3239	1.3710	1.4064	1.4772	1.3535	1.4746	1.3856	5.028
S 13C2-8:2FTS	Linear	0.1799	0.1815	0.1862	0.1773	0.2019	0.1775	0.1776	0.1888	0.1838	4.589
I 13C4-PFOA											
S 13C8-PFOA	Linear	0.8047	0.8203	0.8500	0.8213	0.8273	0.8312	0.8585	0.8495	0.8328	2.199
I 13C2-PFDA											
S 13C6-PFDA	Linear	0.6725	0.7032	0.6609	0.8008	0.8092	0.6941	0.7237	0.7686	0.7291	7.844
S 13C7-PFUDA	Linear	0.8170	0.8077	0.8398	0.8505	0.8423	0.8439	0.8223	0.8661	0.8362	2.299
S 13C2-PFDODA	Linear	0.9327	0.9218	0.9622	0.9841	1.0410	0.9885	0.9492	1.1013	0.9851	6.092
S 13C2-PFTeDA	Linear	0.5330	0.5258	0.5547	0.5698	0.6316	0.5623	0.5915	0.6214	0.5738	6.719
I 13C5-PFNA											
S 13C9-PFNA	Linear	0.9118	0.9852	0.9633	0.9291	0.9758	0.9587	0.9357	1.0487	0.9635	4.392
I 13C2-PFHxA											
S 13C5-PPeA	Linear	0.5722	0.5573	0.5887	0.5704	0.5618	0.5641	0.5320	0.5576	0.5593	2.211
S 13C5-PFHxA	Linear	1.0162	0.9709	0.9764	1.0177	0.9609	0.9942	0.9350	0.9549	0.9783	2.999
S 13C3-HPPO-DA	Linear	0.0943	0.0949	0.0917	0.0979	0.0930	0.0975	0.0919	0.1006	0.0952	3.340
S 13C4-PFHpA	Linear	1.0420	1.0066	1.0274	1.0507	1.0228	1.0237	0.9508	1.0142	1.0173	2.982

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

Initial Calibration Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q217-ICC217
 Lab FileID: 6Q14208.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PFBA	Linear	$y = 1.139477 * x$	
S 13C5-PFPeA	Linear	$y = 0.559260 * x$	
S 13C2-4:2FTS	Linear	$y = 0.149483 * x$	
S 13C3-PFBS	Linear	$y = 2.147749 * x$	
S 13C5-PFHxA	Linear	$y = 0.978268 * x$	
S 13C3-HFPO-DA	Linear	$y = 0.095201 * x$	
S 13C4-PFHpA	Linear	$y = 1.017285 * x$	
S 13C8-PFOA	Linear	$y = 0.188790 * x$	
S 13C3-PFHxS	Linear	$y = 0.832844 * x$	
S 13C9-PFNA	Linear	$y = 1.385638 * x$	
S 13C2-6:2FTS	Linear	$y = 0.963537 * x$	
S 13C6-PEDA	Linear	$y = 0.183838 * x$	
S d3-MeFOSAA	Linear	$y = 0.729107 * x$	
S 13C8-PFOS	Linear	$y = 1.302514 * x$	
S d5-EFOSAA	Linear	$y = 0.857848 * x$	
S 13C7-PFUridA	Linear	$y = 1.141515 * x$	
S 13C2-PFDODA	Linear	$y = 0.836187 * x$	
S 13C8-FOSA	Linear	$y = 0.985113 * x$	
S 13C2-PFTeDA	Linear	$y = 1.677812 * x$	
S d7-MeFOSE	Linear	$y = 0.573758 * x$	
S d3-MeFOSA	Linear	$y = 0.241321 * x$	
S d9-EFOSE	Linear	$y = 0.604455 * x$	
S d5-EFOSA	Linear	$y = 0.157330 * x$	
S d5-EFOSA	Linear	$y = 0.664328 * x$	

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

Initial Calibration Verification

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q217-ICV217
 Lab FileID: 6Q14214.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\022323_1633_S6Q217\s6q217.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\022323_1633_S6Q217\6Q14205.d
 2:D:\MassHunter\Data\022323_1633_S6Q217\6Q14206.d
 3:D:\MassHunter\Data\022323_1633_S6Q217\6Q14207.d
 4:D:\MassHunter\Data\022323_1633_S6Q217\6Q14208.d
 5:D:\MassHunter\Data\022323_1633_S6Q217\6Q14209.d
 6:D:\MassHunter\Data\022323_1633_S6Q217\6Q14210.d
 7:D:\MassHunter\Data\022323_1633_S6Q217\6Q14211.d
 8:D:\MassHunter\Data\022323_1633_S6Q217\6Q14212.d

Data File: 6Q14214
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.889	-2.2	97.8
13C2-6:2FTS	5.000	4.900	-2.0	98.0
13C2-8:2FTS	5.000	4.746	-5.1	94.9
13C2-PFDoDA	1.250	1.287	3.0	103.0
13C2-PFTeDA	1.250	1.324	5.9	105.9
13C3-PFBS	2.500	2.448	-2.1	97.9
13C3-PFHxS	2.500	2.386	-4.6	95.4
13C4-PFBA	10.000	10.066	0.7	100.7
13C4-PFHpA	2.500	2.667	6.7	106.7
13C5-PFHxA	2.500	2.524	1.0	101.0
13C5-PFPeA	5.000	5.199	4.0	104.0
13C6-PFDA	1.250	1.316	5.3	105.3
13C7-PFUnDA	1.250	1.299	3.9	103.9
13C8-FOSA	2.500	2.358	-5.7	94.3
13C8-PFOA	2.500	2.522	0.9	100.9
13C8-PFOS	2.500	2.344	-6.2	93.8
13C9-PFNA	1.250	1.267	1.4	101.4
4:2FTS	9.375	10.277	9.6	109.6
6:2FTS	9.500	11.078	16.6	116.6
8:2FTS	9.600	11.167	16.3	116.3
d3-MeFOSAA	5.000	4.952	-1.0	99.0
EtFOSAA	2.500	2.768	10.7	110.7
FOSA	2.500	2.682	7.3	107.3
MeFOSAA	2.500	2.570	2.8	102.8
PFBA	10.000	10.207	2.1	102.1
PFBS	2.218	2.391	7.8	107.8
PFDA	2.500	2.537	1.5	101.5
PFDoDA	2.500	2.533	1.3	101.3
PFDS	2.413	2.538	5.2	105.2
PFHpA	2.500	2.517	0.7	100.7
PFHpS	2.383	2.653	11.3	111.3
PFHxA	2.500	2.718	8.7	108.7
PFHxS	2.285	2.521	10.3	110.3
PFNA	2.500	2.475	-1.0	99.0
PFNS	2.405	2.547	5.9	105.9
PFOA	2.500	2.471	-1.2	98.8
PFOS	2.320	2.685	15.7	115.7

Initial Calibration Verification

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q217-ICV217
 Lab FileID: 6Q14214.D

PFPeA	5.000	5.150	3.0	103.0
PFPeS	2.353	2.484	5.6	105.6
PFTeDA	2.500	2.425	-3.0	97.0
PFTTrDA	2.500	2.567	2.7	102.7
PFUnDA	2.500	2.719	8.8	108.8
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	9.957	5.4	105.4
13C3-HFPO-DA	10.000	10.095	0.9	100.9
9C1-PF3ONS	9.350	10.020	7.2	107.2
ADONA	9.450	10.023	6.1	106.1
HFPO-DA	10.000	10.979	9.8	109.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	13.108	5.0	105.0
5:3FTCA	62.400	64.908	4.0	104.0
7:3FTCA	62.400	66.952	7.3	107.3
d3-MeFOSA	2.500	2.248	-10.1	89.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.729	9.1	109.1
EtFOSE	25.000	24.895	-0.4	99.6
MeFOSA	2.500	2.687	7.5	107.5
MeFOSE	25.000	25.452	1.8	101.8
PFDoDS	2.425	2.611	7.7	107.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.803	-3.9	96.1
d7-MeFOSE	25.000	24.104	-3.6	96.4
d9-EtFOSE	25.000	24.775	-0.9	99.1
d5-EtFOSA	2.500	2.293	-8.3	91.7
NFDHA	5.000	5.604	12.1	112.1
PFMBA	5.000	5.077	1.5	101.5
PFMPA	5.000	5.275	5.5	105.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.845	8.9	108.9

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q217-ICV217
 Lab FileID: 6Q14215.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\022323_1633_S6Q217\s6q217.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\022323_1633_S6Q217\6Q14205.d
 2:D:\MassHunter\Data\022323_1633_S6Q217\6Q14206.d
 3:D:\MassHunter\Data\022323_1633_S6Q217\6Q14207.d
 4:D:\MassHunter\Data\022323_1633_S6Q217\6Q14208.d
 5:D:\MassHunter\Data\022323_1633_S6Q217\6Q14209.d
 6:D:\MassHunter\Data\022323_1633_S6Q217\6Q14210.d
 7:D:\MassHunter\Data\022323_1633_S6Q217\6Q14211.d
 8:D:\MassHunter\Data\022323_1633_S6Q217\6Q14212.d

Data File: 6Q14215
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.717	-5.7	94.3
13C2-6:2FTS	5.000	5.085	1.7	101.7
13C2-8:2FTS	5.000	4.787	-4.3	95.7
13C2-PFDoDA	1.250	1.162	-7.1	92.9
13C2-PFTeDA	1.250	1.179	-5.7	94.3
13C3-PFBS	2.500	2.537	1.5	101.5
13C3-PFHxS	2.500	2.414	-3.5	96.5
13C4-PFBA	10.000	9.929	-0.7	99.3
13C4-PFHpA	2.500	2.513	0.5	100.5
13C5-PFHxA	2.500	2.531	1.2	101.2
13C5-PFPeA	5.000	4.994	-0.1	99.9
13C6-PFDA	1.250	1.190	-4.8	95.2
13C7-PFUnDA	1.250	1.339	7.1	107.1
13C8-FOSA	2.500	2.402	-3.9	96.1
13C8-PFOA	2.500	2.464	-1.5	98.5
13C8-PFOS	2.500	2.378	-4.9	95.1
13C9-PFNA	1.250	1.152	-7.8	92.2
4:2FTS	20.000	22.625	13.1	113.1
6:2FTS	20.000	20.594	3.0	103.0
8:2FTS	20.000	22.749	13.7	113.7
d3-MeFOSAA	5.000	4.470	-10.6	89.4
EtFOSAA	20.000	21.584	7.9	107.9
FOSA	20.000	22.148	10.7	110.7
MeFOSAA	20.000	23.161	15.8	115.8
PFBA	20.000	19.961	-0.2	99.8
PFBS	20.000	20.191	1.0	101.0
PFDA	20.000	22.326	11.6	111.6
PFDoDA	20.000	17.963	-10.2	89.8
PFDS	20.000	20.408	2.0	102.0
PFHpA	20.000	19.966	-0.2	99.8
PFHpS	20.000	20.389	1.9	101.9
PFHxA	20.000	21.495	7.5	107.5
PFHxS	20.000	22.015	10.1	110.1
PFNA	20.000	24.952	24.8	124.8
PFNS	20.000	21.524	7.6	107.6
PFOA	20.000	20.080	0.4	100.4
PFOS	20.000	16.628	-16.9	83.1

Initial Calibration Verification

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q217-ICV217
 Lab FileID: 6Q14215.D

PFPeA	20.000	22.192	11.0	111.0
PFPeS	20.000	22.100	10.5	110.5
PFTeDA	20.000	22.325	11.6	111.6
PFTTrDA	20.000	19.841	-0.8	99.2
PFUnDA	20.000	18.269	-8.7	91.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	20.674	3.4	103.4
13C3-HFPO-DA	10.000	10.454	4.5	104.5
9C1-PF3ONS	20.000	19.993	0.0	100.0
ADONA	20.000	20.032	0.2	100.2
HFPO-DA	20.000	20.347	1.7	101.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	19.332	-3.3	96.7
5:3FTCA	20.000	21.429	7.1	107.1
7:3FTCA	20.000	19.293	-3.5	96.5
d3-MeFOSA	2.500	2.351	-6.0	94.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	19.301	-3.5	96.5
EtFOSE	100.000	92.326	-7.7	92.3
MeFOSA	20.000	18.839	-5.8	94.2
MeFOSE	100.000	80.545	-19.5	80.5
PFDoDS	20.000	19.388	-3.1	96.9
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.659	-6.8	93.2
d7-MeFOSE	25.000	25.017	0.1	100.1
d9-EtFOSE	25.000	23.762	-5.0	95.0
d5-EtFOSA	2.500	2.362	-5.5	94.5
NFDHA	20.000	20.800	4.0	104.0
PFMBA	20.000	19.862	-0.7	99.3
PFMPA	20.000	20.245	1.2	101.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	17.530	-12.4	87.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q218-CC217
 Lab FileID: 6Q14340.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\022323_1633_S6Q217\s6q218.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\022323_1633_S6Q217\6Q14205.d
 2:D:\MassHunter\Data\022323_1633_S6Q217\6Q14206.d
 3:D:\MassHunter\Data\022323_1633_S6Q217\6Q14207.d
 4:D:\MassHunter\Data\022323_1633_S6Q217\6Q14208.d
 5:D:\MassHunter\Data\022323_1633_S6Q217\6Q14209.d
 6:D:\MassHunter\Data\022323_1633_S6Q217\6Q14210.d
 7:D:\MassHunter\Data\022323_1633_S6Q217\6Q14211.d
 8:D:\MassHunter\Data\022323_1633_S6Q217\6Q14212.d

Data File: 6Q14340
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.552	11.0	111.0
13C2-6:2FTS	5.000	5.349	7.0	107.0
13C2-8:2FTS	5.000	4.641	-7.2	92.8
13C2-PFDoDA	1.250	1.216	-2.7	97.3
13C2-PFTeDA	1.250	1.142	-8.7	91.3
13C3-PFBS	2.500	2.798	11.9	111.9
13C3-PFHxS	2.500	2.558	2.3	102.3
13C4-PFBA	10.000	10.250	2.5	102.5
13C4-PFHpA	2.500	2.403	-3.9	96.1
13C5-PFHxA	2.500	2.165	-13.4	86.6
13C5-PFPeA	5.000	4.699	-6.0	94.0
13C6-PFDA	1.250	1.291	3.3	103.3
13C7-PFUnDA	1.250	1.288	3.1	103.1
13C8-FOSA	2.500	2.397	-4.1	95.9
13C8-PFOA	2.500	2.531	1.2	101.2
13C8-PFOS	2.500	2.465	-1.4	98.6
13C9-PFNA	1.250	1.248	-0.2	99.8
4:2FTS	9.375	9.851	5.1	105.1
6:2FTS	9.500	9.418	-0.9	99.1
8:2FTS	9.600	11.300	17.7	117.7
d3-MeFOSAA	5.000	4.807	-3.9	96.1
EtFOSAA	2.500	2.446	-2.2	97.8
FOSA	2.500	2.549	2.0	102.0
MeFOSAA	2.500	2.639	5.6	105.6
PFBA	10.000	10.060	0.6	100.6
PFBS	2.218	2.081	-6.2	93.8
PFDA	2.500	2.686	7.4	107.4
PFDoDA	2.500	2.374	-5.0	95.0
PFDS	2.413	2.492	3.3	103.3
PFHpA	2.500	2.436	-2.5	97.5
PFHpS	2.383	2.237	-6.1	93.9
PFHxA	2.500	2.631	5.2	105.2
PFHxS	2.285	2.245	-1.7	98.3
PFNA	2.500	2.529	1.2	101.2
PFNS	2.405	2.482	3.2	103.2
PFOA	2.500	2.461	-1.6	98.4
PFOS	2.320	2.238	-3.5	96.5

Continuing Calibration Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q218-CC217
 Lab FileID: 6Q14340.D

PFPeA	5.000	4.928	-1.4	98.6
PFPeS	2.353	2.374	0.9	100.9
PFTeDA	2.500	2.654	6.1	106.1
PFTTrDA	2.500	2.700	8.0	108.0
PFUnDA	2.500	2.490	-0.4	99.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	9.450	8.748	-7.4	92.6
13C3-HFPO-DA	10.000	9.623	-3.8	96.2
9C1-PF3ONS	9.350	9.431	0.9	100.9
ADONA	9.450	9.115	-3.5	96.5
HFPO-DA	10.000	10.555	5.5	105.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.823	-5.3	94.7
5:3FTCA	62.400	65.566	5.1	105.1
7:3FTCA	62.400	67.044	7.4	107.4
d3-MeFOSA	2.500	2.294	-8.2	91.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.747	9.9	109.9
EtFOSE	25.000	24.927	-0.3	99.7
MeFOSA	2.500	2.671	6.9	106.9
MeFOSE	25.000	23.538	-5.8	94.2
PFDoDS	2.425	2.534	4.5	104.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.028	0.6	100.6
d7-MeFOSE	25.000	23.733	-5.1	94.9
d9-EtFOSE	25.000	24.060	-3.8	96.2
d5-EtFOSA	2.500	2.281	-8.7	91.3
NFDHA	5.000	5.819	16.4	116.4
PFMBA	5.000	5.006	0.1	100.1
PFMPA	5.000	4.892	-2.2	97.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	5.092	14.4	114.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q218-CC217
 Lab FileID: 6Q14341.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\022323_1633_S6Q217\s6q218.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\022323_1633_S6Q217\6Q14205.d
 2:D:\MassHunter\Data\022323_1633_S6Q217\6Q14206.d
 3:D:\MassHunter\Data\022323_1633_S6Q217\6Q14207.d
 4:D:\MassHunter\Data\022323_1633_S6Q217\6Q14208.d
 5:D:\MassHunter\Data\022323_1633_S6Q217\6Q14209.d
 6:D:\MassHunter\Data\022323_1633_S6Q217\6Q14210.d
 7:D:\MassHunter\Data\022323_1633_S6Q217\6Q14211.d
 8:D:\MassHunter\Data\022323_1633_S6Q217\6Q14212.d

Data File: 6Q14341
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.903	18.1	118.1
13C2-6:2FTS	5.000	5.774	15.5	115.5
13C2-8:2FTS	5.000	5.685	13.7	113.7
13C2-PFDoDA	1.250	1.243	-0.6	99.4
13C2-PFTeDA	1.250	1.149	-8.1	91.9
13C3-PFBS	2.500	2.749	9.9	109.9
13C3-PFHxS	2.500	2.538	1.5	101.5
13C4-PFBA	10.000	10.269	2.7	102.7
13C4-PFHpA	2.500	2.397	-4.1	95.9
13C5-PFHxA	2.500	2.240	-10.4	89.6
13C5-PFPeA	5.000	4.522	-9.6	90.4
13C6-PFDA	1.250	1.210	-3.2	96.8
13C7-PFUnDA	1.250	1.238	-1.0	99.0
13C8-FOSA	2.500	2.293	-8.3	91.7
13C8-PFOA	2.500	2.560	2.4	102.4
13C8-PFOS	2.500	2.258	-9.7	90.3
13C9-PFNA	1.250	1.222	-2.2	97.8
4:2FTS	0.750	0.684	-8.8	91.2
6:2FTS	0.760	0.739	-2.7	97.3
8:2FTS	0.768	0.634	-17.4	82.6
d3-MeFOSAA	5.000	4.679	-6.4	93.6
EtFOSAA	0.200	0.179	-10.6	89.4
FOSA	0.200	0.197	-1.4	98.6
MeFOSAA	0.200	0.177	-11.4	88.6
PFBA	0.800	0.704	-12.1	87.9
PFBS	0.177	0.147	-17.0	83.0
PFDA	0.200	0.179	-10.7	89.3
PFDoDA	0.200	0.223	11.7	111.7
PFDS	0.193	0.145	-24.6	75.4
PFHpA	0.200	0.184	-8.1	91.9
PFHpS	0.191	0.161	-15.6	84.4
PFHxA	0.200	0.192	-4.0	96.0
PFHxS	0.183	0.161	-12.3	87.7
PFNA	0.200	0.158	-21.1	78.9
PFNS	0.192	0.219	13.8	113.8
PFOA	0.200	0.208	4.1	104.1
PFOS	0.186	0.201	8.2	108.2

Continuing Calibration Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q218-CC217
 Lab FileID: 6Q14341.D

PFPeA	0.400	0.380	-5.0	95.0
PFPeS	0.188	0.184	-1.9	98.1
PFTeDA	0.200	0.212	6.1	106.1
PFTTrDA	0.200	0.201	0.5	100.5
PFUnDA	0.200	0.162	-19.2	80.8
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	0.756	0.593	-21.5	78.5
13C3-HFPO-DA	10.000	9.500	-5.0	95.0
9C1-PF3ONS	0.748	0.656	-12.3	87.7
ADONA	0.756	0.668	-11.6	88.4
HFPO-DA	0.800	0.827	3.4	103.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.796	-20.3	79.7
5:3FTCA	4.992	4.426	-11.3	88.7
7:3FTCA	4.992	4.720	-5.4	94.6
d3-MeFOSA	2.500	2.125	-15.0	85.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.229	14.4	114.4
EtFOSE	2.000	2.104	5.2	105.2
MeFOSA	0.200	0.199	-0.3	99.7
MeFOSE	2.000	1.861	-7.0	93.0
PFDoDS	0.194	0.200	3.1	103.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.776	-4.5	95.5
d7-MeFOSE	25.000	22.505	-10.0	90.0
d9-EtFOSE	25.000	21.117	-15.5	84.5
d5-EtFOSA	2.500	2.151	-14.0	86.0
NFDHA	0.400	0.426	6.4	106.4
PFMBA	0.400	0.364	-8.9	91.1
PFMPA	0.400	0.360	-10.0	90.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.335	-6.0	94.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q218-CC217
 Lab FileID: 6Q14352.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\022323_1633_S6Q217\s6q218.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\022323_1633_S6Q217\6Q14205.d
 2:D:\MassHunter\Data\022323_1633_S6Q217\6Q14206.d
 3:D:\MassHunter\Data\022323_1633_S6Q217\6Q14207.d
 4:D:\MassHunter\Data\022323_1633_S6Q217\6Q14208.d
 5:D:\MassHunter\Data\022323_1633_S6Q217\6Q14209.d
 6:D:\MassHunter\Data\022323_1633_S6Q217\6Q14210.d
 7:D:\MassHunter\Data\022323_1633_S6Q217\6Q14211.d
 8:D:\MassHunter\Data\022323_1633_S6Q217\6Q14212.d

Data File: 6Q14352
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.983	19.7	119.7
13C2-6:2FTS	5.000	5.666	13.3	113.3
13C2-8:2FTS	5.000	5.059	1.2	101.2
13C2-PFDoDA	1.250	1.194	-4.5	95.5
13C2-PFTeDA	1.250	1.162	-7.1	92.9
13C3-PFBS	2.500	2.611	4.4	104.4
13C3-PFHxS	2.500	2.470	-1.2	98.8
13C4-PFBA	10.000	10.162	1.6	101.6
13C4-PFHpA	2.500	2.587	3.5	103.5
13C5-PFHxA	2.500	2.465	-1.4	98.6
13C5-PFPeA	5.000	4.849	-3.0	97.0
13C6-PFDA	1.250	1.165	-6.8	93.2
13C7-PFUnDA	1.250	1.179	-5.7	94.3
13C8-FOSA	2.500	2.482	-0.7	99.3
13C8-PFOA	2.500	2.516	0.7	100.7
13C8-PFOS	2.500	2.462	-1.5	98.5
13C9-PFNA	1.250	1.230	-1.6	98.4
4:2FTS	9.375	8.887	-5.2	94.8
6:2FTS	9.500	9.303	-2.1	97.9
8:2FTS	9.600	9.728	1.3	101.3
d3-MeFOSAA	5.000	5.428	8.6	108.6
EtFOSAA	2.500	2.486	-0.6	99.4
FOSA	2.500	2.503	0.1	100.1
MeFOSAA	2.500	2.373	-5.1	94.9
PFBA	10.000	10.154	1.5	101.5
PFBS	2.218	2.134	-3.8	96.2
PFDA	2.500	2.821	12.8	112.8
PFDoDA	2.500	2.348	-6.1	93.9
PFDS	2.413	2.388	-1.1	98.9
PFHpA	2.500	2.266	-9.4	90.6
PFHpS	2.383	2.374	-0.4	99.6
PFHxA	2.500	2.408	-3.7	96.3
PFHxS	2.285	2.274	-0.5	99.5
PFNA	2.500	2.501	0.0	100.0
PFNS	2.405	2.533	5.3	105.3
PFOA	2.500	2.377	-4.9	95.1
PFOS	2.320	2.377	2.4	102.4

Continuing Calibration Summary

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q218-CC217
 Lab FileID: 6Q14352.D

PFPeA	5.000	4.906	-1.9	98.1
PFPeS	2.353	2.414	2.6	102.6
PFTeDA	2.500	2.562	2.5	102.5
PFTTrDA	2.500	2.526	1.0	101.0
PFUnDA	2.500	2.693	7.7	107.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	9.450	8.587	-9.1	90.9
13C3-HFPO-DA	10.000	10.127	1.3	101.3
9C1-PF3ONS	9.350	9.250	-1.1	98.9
ADONA	9.450	9.755	3.2	103.2
HFPO-DA	10.000	10.497	5.0	105.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.564	-7.3	92.7
5:3FTCA	62.400	60.575	-2.9	97.1
7:3FTCA	62.400	57.559	-7.8	92.2
d3-MeFOSA	2.500	2.314	-7.5	92.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.608	4.3	104.3
EtFOSE	25.000	25.381	1.5	101.5
MeFOSA	2.500	2.657	6.3	106.3
MeFOSE	25.000	25.092	0.4	100.4
PFDoDS	2.425	2.655	9.5	109.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.221	4.4	104.4
d7-MeFOSE	25.000	24.050	-3.8	96.2
d9-EtFOSE	25.000	23.219	-7.1	92.9
d5-EtFOSA	2.500	2.343	-6.3	93.7
NFDHA	5.000	5.401	8.0	108.0
PFMBA	5.000	5.153	3.1	103.1
PFMPA	5.000	5.080	1.6	101.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.530	1.8	101.8

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q217	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
S6Q217-RT	6Q14202.D	02/23/23 12:57	n/a	Retention Time Marker
S6Q217-RT	6Q14203.D	02/23/23 13:11	n/a	Retention Time Marker
S6Q217-IC217	6Q14204.D	02/23/23 13:25	n/a	Mass Calibration Verification
S6Q217-IC217	6Q14205.D	02/23/23 13:39	n/a	Initial cal 1
S6Q217-IC217	6Q14206.D	02/23/23 13:53	n/a	Initial cal 2
S6Q217-IC217	6Q14207.D	02/23/23 14:07	n/a	Initial cal 3
S6Q217-ICC217	6Q14208.D	02/23/23 14:21	n/a	Initial cal 4
S6Q217-IC217	6Q14209.D	02/23/23 14:35	n/a	Initial cal 5
S6Q217-IC217	6Q14210.D	02/23/23 14:49	n/a	Initial cal 6
S6Q217-IC217	6Q14211.D	02/23/23 15:03	n/a	Initial cal 7
S6Q217-IC217	6Q14212.D	02/23/23 15:17	n/a	Initial cal 8
S6Q217-IBLK	6Q14213.D	02/23/23 15:31	n/a	Instrument Blank
S6Q217-IBLK	6Q14213.D	02/23/23 15:31	n/a	Instrument Blank
S6Q217-ICV217	6Q14214.D	02/23/23 15:45	n/a	Initial cal verification 4
S6Q217-ICV217	6Q14215.D	02/23/23 15:59	n/a	Initial cal verification 20
S6Q217-CC217	6Q14216.D	02/23/23 16:13	n/a	Continuing cal 4
S6Q217-CC217	6Q14217.D	02/23/23 16:27	n/a	Continuing cal 1.0LL
OP95496-BS	6Q14218.D	02/23/23 16:41	OP95496	Blank Spike
OP95496-LLBS	6Q14219.D	02/23/23 16:57	OP95496	Blank Spike
OP95496-MB	6Q14220.D	02/23/23 17:11	OP95496	Method Blank
ZZZZZZ	6Q14221.D	02/23/23 17:25	OP95496	(unrelated sample)
ZZZZZZ	6Q14222.D	02/23/23 17:39	OP95496	(unrelated sample)
ZZZZZZ	6Q14223.D	02/23/23 17:53	OP95496	(unrelated sample)
ZZZZZZ	6Q14224.D	02/23/23 18:07	OP95496	(unrelated sample)
JD60059-26	6Q14225.D	02/23/23 18:21	OP95496	(used for QC only; not part of job FC2799)
OP95496-MS	6Q14226.D	02/23/23 18:35	OP95496	Matrix Spike
OP95496-MSD	6Q14227.D	02/23/23 18:49	OP95496	Matrix Spike Duplicate
S6Q217-CC217	6Q14228.D	02/23/23 19:03	n/a	Continuing cal 4
S6Q217-ICCB	6Q14229.D	02/23/23 19:17	n/a	Continuing Calibration Blank
S6Q217-ICCB	6Q14229.D	02/23/23 19:17	n/a	Continuing Calibration Blank
ZZZZZZ	6Q14230.D	02/23/23 19:31	OP95496	(unrelated sample)
ZZZZZZ	6Q14231.D	02/23/23 19:45	OP95496	(unrelated sample)
ZZZZZZ	6Q14232.D	02/23/23 19:59	OP95496	(unrelated sample)
ZZZZZZ	6Q14233.D	02/23/23 20:13	OP95496	(unrelated sample)
ZZZZZZ	6Q14234.D	02/23/23 20:27	OP95496	(unrelated sample)
ZZZZZZ	6Q14235.D	02/23/23 20:41	OP95496	(unrelated sample)
ZZZZZZ	6Q14236.D	02/23/23 20:55	OP95496	(unrelated sample)
ZZZZZZ	6Q14237.D	02/23/23 21:09	OP95496	(unrelated sample)
ZZZZZZ	6Q14238.D	02/23/23 21:23	OP95496	(unrelated sample)
ZZZZZZ	6Q14239.D	02/23/23 21:37	OP95496	(unrelated sample)
S6Q217-CC217	6Q14240.D	02/23/23 21:51	n/a	Continuing cal 4
S6Q217-ICCB	6Q14241.D	02/23/23 22:05	n/a	Continuing Calibration Blank
S6Q217-ICCB	6Q14241.D	02/23/23 22:05	n/a	Continuing Calibration Blank
OP95480-BS	6Q14242.D	02/23/23 22:19	OP95480	Blank Spike
OP95480-LLBS	6Q14243.D	02/23/23 22:33	OP95480	Blank Spike
OP95480-MB	6Q14244.D	02/23/23 22:47	OP95480	Method Blank

Run Sequence Report

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q217	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	6Q14245.D	02/23/23 23:01	OP95480	(unrelated sample)
FC2451-2	6Q14246.D	02/23/23 23:15	OP95480	(used for QC only; not part of job FC2799)
OP95480-MS	6Q14247.D	02/23/23 23:29	OP95480	Matrix Spike
OP95480-MSD	6Q14248.D	02/23/23 23:43	OP95480	Matrix Spike Duplicate
ZZZZZZ	6Q14249.D	02/23/23 23:57	OP95480	(unrelated sample)
ZZZZZZ	6Q14250.D	02/24/23 00:11	OP95480	(unrelated sample)
ZZZZZZ	6Q14251.D	02/24/23 00:25	OP95480	(unrelated sample)
S6Q217-CC217	6Q14252.D	02/24/23 00:39	n/a	Continuing cal 4
S6Q217-ICCB	6Q14253.D	02/24/23 00:53	n/a	Continuing Calibration Blank
ZZZZZZ	6Q14254.D	02/24/23 01:07	OP95480	(unrelated sample)
ZZZZZZ	6Q14255.D	02/24/23 01:21	OP95480	(unrelated sample)
ZZZZZZ	6Q14256.D	02/24/23 01:35	OP95480	(unrelated sample)
ZZZZZZ	6Q14257.D	02/24/23 01:49	OP95480	(unrelated sample)
ZZZZZZ	6Q14258.D	02/24/23 02:03	OP95480	(unrelated sample)
ZZZZZZ	6Q14259.D	02/24/23 02:17	OP95480	(unrelated sample)
ZZZZZZ	6Q14260.D	02/24/23 02:31	OP95480	(unrelated sample)
ZZZZZZ	6Q14261.D	02/24/23 02:45	OP95480	(unrelated sample)
ZZZZZZ	6Q14262.D	02/24/23 02:59	OP95480	(unrelated sample)
ZZZZZZ	6Q14263.D	02/24/23 03:13	OP95480	(unrelated sample)
S6Q217-CC217	6Q14264.D	02/24/23 03:27	n/a	Continuing cal 4
S6Q217-CC217	6Q14265.D	02/24/23 03:41	n/a	Continuing cal 1.0LL
S6Q217-ICCB	6Q14266.D	02/24/23 03:55	n/a	Continuing Calibration Blank
S6Q217-ICCB	6Q14266.D	02/24/23 03:55	n/a	Continuing Calibration Blank
ZZZZZZ	6Q14267.D	02/24/23 04:09	OP95480	(unrelated sample)
ZZZZZZ	6Q14268.D	02/24/23 04:23	OP95480	(unrelated sample)
ZZZZZZ	6Q14269.D	02/24/23 04:37	OP95480	(unrelated sample)
ZZZZZZ	6Q14270.D	02/24/23 04:51	OP95480	(unrelated sample)
ZZZZZZ	6Q14271.D	02/24/23 05:05	OP95521	(unrelated sample)
ZZZZZZ	6Q14272.D	02/24/23 05:19	OP95496	(unrelated sample)
S6Q217-RT	6Q14273.D	02/24/23 05:33	n/a	Retention Time Marker
S6Q217-RT	6Q14274.D	02/24/23 05:47	n/a	Retention Time Marker
S6Q217-IBLK	6Q14276.D	02/24/23 06:15	n/a	Instrument Blank
S6Q217-IBLK	6Q14276.D	02/24/23 06:15	n/a	Instrument Blank
S6Q217-CC217	6Q14277.D	02/24/23 06:29	n/a	Continuing cal 4
OP95540-BS	6Q14278.D	02/24/23 06:43	OP95540	Blank Spike
OP95540-LLBS	6Q14279.D	02/24/23 06:57	OP95540	Blank Spike
OP95540-MB	6Q14280.D	02/24/23 07:11	OP95540	Method Blank
ZZZZZZ	6Q14281.D	02/24/23 07:25	OP95540	(unrelated sample)
FC2631-2	6Q14282.D	02/24/23 07:39	OP95540	(used for QC only; not part of job FC2799)
OP95540-MS	6Q14283.D	02/24/23 07:53	OP95540	Matrix Spike
OP95540-MSD	6Q14284.D	02/24/23 08:07	OP95540	Matrix Spike Duplicate
ZZZZZZ	6Q14285.D	02/24/23 08:21	OP95540	(unrelated sample)
ZZZZZZ	6Q14286.D	02/24/23 08:35	OP95540	(unrelated sample)
ZZZZZZ	6Q14287.D	02/24/23 08:49	OP95540	(unrelated sample)
S6Q217-CC217	6Q14288.D	02/24/23 09:03	n/a	Continuing cal 4
S6Q217-ICCB	6Q14289.D	02/24/23 09:16	n/a	Continuing Calibration Blank

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Run Sequence Report

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q217	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	6Q14290.D	02/24/23 09:30	OP95540	(unrelated sample)
ZZZZZZ	6Q14291.D	02/24/23 09:44	OP95540	(unrelated sample)
ZZZZZZ	6Q14292.D	02/24/23 09:58	OP95540	(unrelated sample)
ZZZZZZ	6Q14293.D	02/24/23 10:12	OP95540	(unrelated sample)
ZZZZZZ	6Q14294.D	02/24/23 10:26	OP95540	(unrelated sample)
ZZZZZZ	6Q14295.D	02/24/23 10:40	OP95540	(unrelated sample)
ZZZZZZ	6Q14296.D	02/24/23 10:54	OP95540	(unrelated sample)
ZZZZZZ	6Q14297.D	02/24/23 11:08	OP95540	(unrelated sample)
ZZZZZZ	6Q14298.D	02/24/23 11:22	OP95540	(unrelated sample)
ZZZZZZ	6Q14299.D	02/24/23 11:36	OP95540	(unrelated sample)
S6Q217-CC217	6Q14300.D	02/24/23 11:50	n/a	Continuing cal 4
S6Q217-ICCB	6Q14301.D	02/24/23 12:04	n/a	Continuing Calibration Blank
ZZZZZZ	6Q14302.D	02/24/23 12:18	OP95540	(unrelated sample)
ZZZZZZ	6Q14303.D	02/24/23 12:32	OP95540	(unrelated sample)
ZZZZZZ	6Q14304.D	02/24/23 12:46	OP95540	(unrelated sample)
OP95539-BS	6Q14305.D	02/24/23 13:00	OP95539	Blank Spike
OP95539-LLBS	6Q14306.D	02/24/23 13:14	OP95539	Blank Spike
OP95539-MB	6Q14307.D	02/24/23 13:28	OP95539	Method Blank
ZZZZZZ	6Q14308.D	02/24/23 13:42	OP95539	(unrelated sample)
ZZZZZZ	6Q14309.D	02/24/23 13:56	OP95539	(unrelated sample)
ZZZZZZ	6Q14310.D	02/24/23 14:10	OP95539	(unrelated sample)
ZZZZZZ	6Q14311.D	02/24/23 14:24	OP95539	(unrelated sample)
S6Q217-CC217	6Q14312.D	02/24/23 14:38	n/a	Continuing cal 4
S6Q217-ICCB	6Q14313.D	02/24/23 14:52	n/a	Continuing Calibration Blank
ZZZZZZ	6Q14314.D	02/24/23 15:06	OP95539	(unrelated sample)
ZZZZZZ	6Q14315.D	02/24/23 15:20	OP95539	(unrelated sample)
ZZZZZZ	6Q14316.D	02/24/23 15:34	OP95539	(unrelated sample)
ZZZZZZ	6Q14317.D	02/24/23 15:48	OP95539	(unrelated sample)
ZZZZZZ	6Q14318.D	02/24/23 16:02	OP95539	(unrelated sample)
ZZZZZZ	6Q14319.D	02/24/23 16:16	OP95539	(unrelated sample)
ZZZZZZ	6Q14320.D	02/24/23 16:30	OP95539	(unrelated sample)
ZZZZZZ	6Q14321.D	02/24/23 16:44	OP95539	(unrelated sample)
FC2576-13	6Q14322.D	02/24/23 16:58	OP95539	(used for QC only; not part of job FC2799)
OP95539-MS	6Q14323.D	02/24/23 17:12	OP95539	Matrix Spike
S6Q217-CC217	6Q14324.D	02/24/23 17:26	n/a	Continuing cal 4
S6Q217-ICCB	6Q14325.D	02/24/23 17:40	n/a	Continuing Calibration Blank
FC2576-14	6Q14326.D	02/24/23 17:54	OP95539	(used for QC only; not part of job FC2799)
OP95539-DUP	6Q14327.D	02/24/23 18:08	OP95539	Duplicate
ZZZZZZ	6Q14328.D	02/24/23 18:22	OP95539	(unrelated sample)
ZZZZZZ	6Q14329.D	02/24/23 18:36	OP95539	(unrelated sample)
ZZZZZZ	6Q14330.D	02/24/23 18:50	OP95539	(unrelated sample)
ZZZZZZ	6Q14331.D	02/24/23 19:04	OP95539	(unrelated sample)
S6Q217-ECC217	6Q14332.D	02/24/23 19:18	n/a	Ending cal 4
S6Q217-ICCB	6Q14333.D	02/24/23 19:32	n/a	Continuing Calibration Blank

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Run Sequence Report

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q218	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q218-RT	6Q14336.D	02/24/23 20:14	n/a	Retention Time Marker
S6Q218-RT	6Q14337.D	02/24/23 20:28	n/a	Retention Time Marker
S6Q218-IBLK	6Q14339.D	02/24/23 20:56	n/a	Instrument Blank
S6Q218-IBLK	6Q14339.D	02/24/23 20:56	n/a	Instrument Blank
S6Q218-CC217	6Q14340.D	02/24/23 21:10	n/a	Continuing cal 4
S6Q218-CC217	6Q14341.D	02/24/23 21:24	n/a	Continuing cal 1.0LL
OP95581-BS	6Q14342.D	02/24/23 21:38	OP95581	Blank Spike
OP95581-LLBS	6Q14343.D	02/24/23 21:52	OP95581	Blank Spike
OP95581-MB	6Q14344.D	02/24/23 22:06	OP95581	Method Blank
FC2799-1	6Q14345.D	02/24/23 22:20	OP95581	AF-RHMW02-WGN01LF-2302W2
OP95581-MS	6Q14346.D	02/24/23 22:34	OP95581	Matrix Spike
FC2799-2	6Q14347.D	02/24/23 22:48	OP95581	AF-RHMW03-WGN01LF-2302W2
ZZZZZZ	6Q14348.D	02/24/23 23:02	OP95581	(unrelated sample)
FC2833-2	6Q14349.D	02/24/23 23:16	OP95581	(used for QC only; not part of job FC2799)
ZZZZZZ	6Q14350.D	02/24/23 23:30	OP95581	(unrelated sample)
OP95581-DUP	6Q14351.D	02/24/23 23:44	OP95581	Duplicate
S6Q218-CC217	6Q14352.D	02/24/23 23:58	n/a	Continuing cal 4
S6Q218-ICCB	6Q14353.D	02/25/23 00:12	n/a	Continuing Calibration Blank
OP95546-BS	6Q14354.D	02/25/23 00:26	OP95546	Blank Spike
OP95546-LLBS	6Q14355.D	02/25/23 00:40	OP95546	Blank Spike
OP95546-MB	6Q14356.D	02/25/23 00:54	OP95546	Method Blank
ZZZZZZ	6Q14357.D	02/25/23 01:08	OP95546	(unrelated sample)
ZZZZZZ	6Q14358.D	02/25/23 01:22	OP95546	(unrelated sample)
ZZZZZZ	6Q14359.D	02/25/23 01:36	OP95546	(unrelated sample)
ZZZZZZ	6Q14360.D	02/25/23 01:50	OP95546	(unrelated sample)
ZZZZZZ	6Q14361.D	02/25/23 02:04	OP95546	(unrelated sample)
ZZZZZZ	6Q14362.D	02/25/23 02:18	OP95546	(unrelated sample)
S6Q218-CC217	6Q14363.D	02/25/23 02:32	n/a	Continuing cal 4
S6Q218-ICCB	6Q14364.D	02/25/23 02:46	n/a	Continuing Calibration Blank
FC2153-7	6Q14365.D	02/25/23 03:00	OP95546	(used for QC only; not part of job FC2799)
OP95546-MS	6Q14366.D	02/25/23 03:14	OP95546	Matrix Spike
OP95546-MSD	6Q14367.D	02/25/23 03:28	OP95546	Matrix Spike Duplicate
ZZZZZZ	6Q14368.D	02/25/23 03:42	OP95546	(unrelated sample)
ZZZZZZ	6Q14369.D	02/25/23 03:56	OP95546	(unrelated sample)
ZZZZZZ	6Q14370.D	02/25/23 04:10	OP95546	(unrelated sample)
ZZZZZZ	6Q14371.D	02/25/23 04:24	OP95546	(unrelated sample)
ZZZZZZ	6Q14372.D	02/25/23 04:38	OP95546	(unrelated sample)
ZZZZZZ	6Q14373.D	02/25/23 04:52	OP95546	(unrelated sample)
ZZZZZZ	6Q14374.D	02/25/23 05:06	OP95546	(unrelated sample)
S6Q218-CC217	6Q14375.D	02/25/23 05:20	n/a	Continuing cal 4
S6Q218-ICCB	6Q14376.D	02/25/23 05:34	n/a	Continuing Calibration Blank
ZZZZZZ	6Q14377.D	02/25/23 05:48	OP95546	(unrelated sample)
ZZZZZZ	6Q14378.D	02/25/23 06:01	OP95546	(unrelated sample)
ZZZZZZ	6Q14379.D	02/25/23 06:15	OP95546	(unrelated sample)
ZZZZZZ	6Q14380.D	02/25/23 06:29	OP95546	(unrelated sample)
S6Q218-CC217	6Q14381.D	02/25/23 06:43	n/a	Continuing cal 4

Run Sequence Report

Job Number: FC2799
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q218	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
S6Q218-CC217	6Q14382.D	02/25/23 06:57	n/a	Continuing cal 1.0LL
S6Q218-ICCB	6Q14383.D	02/25/23 07:11	n/a	Continuing Calibration Blank
OP95583-BS	6Q14384.D	02/25/23 07:25	OP95583	Blank Spike
OP95583-LLBS	6Q14385.D	02/25/23 07:39	OP95583	Blank Spike
OP95583-MB	6Q14386.D	02/25/23 07:53	OP95583	Method Blank
FC2545-1	6Q14387.D	02/25/23 08:07	OP95583	(used for QC only; not part of job FC2799)
OP95583-MS	6Q14388.D	02/25/23 08:21	OP95583	Matrix Spike
FC2545-2	6Q14389.D	02/25/23 08:35	OP95583	(used for QC only; not part of job FC2799)
OP95583-DUP	6Q14390.D	02/25/23 08:49	OP95583	Duplicate
ZZZZZZ	6Q14391.D	02/25/23 09:03	OP95583	(unrelated sample)
ZZZZZZ	6Q14392.D	02/25/23 09:17	OP95583	(unrelated sample)
ZZZZZZ	6Q14393.D	02/25/23 09:31	OP95583	(unrelated sample)
S6Q218-CC217	6Q14394.D	02/25/23 09:45	n/a	Continuing cal 4
S6Q218-ICCB	6Q14395.D	02/25/23 09:59	n/a	Continuing Calibration Blank
ZZZZZZ	6Q14396.D	02/25/23 10:13	OP95583	(unrelated sample)
ZZZZZZ	6Q14397.D	02/25/23 10:27	OP95583	(unrelated sample)
ZZZZZZ	6Q14398.D	02/25/23 10:41	OP95583	(unrelated sample)
ZZZZZZ	6Q14399.D	02/25/23 10:55	OP95583	(unrelated sample)
ZZZZZZ	6Q14400.D	02/25/23 11:09	OP95583	(unrelated sample)
ZZZZZZ	6Q14401.D	02/25/23 11:23	OP95583	(unrelated sample)
ZZZZZZ	6Q14402.D	02/25/23 11:37	OP95583	(unrelated sample)
S6Q218-ECC217	6Q14403.D	02/25/23 11:51	n/a	Ending cal 4
S6Q218-ICCB	6Q14404.D	02/25/23 12:05	n/a	Continuing Calibration Blank

6.10.2
6

MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14345.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 10:20:22 PM
 Sample Name : FC2799-1
 Vial : P3-E4
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	57269	10.00 µg/L	0.025
M5-PFPeA	4.324	268.3 -> 223.0	36755	5.00 µg/L	-0.012
M5-PFHxA	5.513	318.0 -> 273.0	31869	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	36672	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	61552	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	16645	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	13837	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	15604	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	15746	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	7150	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	13797	2.50 µg/L	0.000
M3-PFBS	5.443	302.1 -> 79.9	13364	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	8476	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	7832	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2026	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	2149	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2023	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	22227	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	11173	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	18321	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	15721	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	10181	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	4159	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	4001	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	8392	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	22200	5.00 µg/L	0.025
18O2-PFHxS	7.211	403.0 -> 83.9	5776	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	67137	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	18674	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	17129	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	31639	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2026	5.87 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.3%		
13C2-6:2FTS	6.871	429.1 -> 80.9	2149	4.93 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2023	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-PFDoDA	8.991	615.1 -> 570.0	15746	1.07 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.6%		
13C2-PFTeDA	9.731	715.2 -> 670.0	7150	0.83 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 66.7%		
13C3-PFBS	5.443	302.1 -> 79.9	13364	2.69 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C3-PFHxS	7.212	402.1 -> 79.9	8476	2.65 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C4-PFBA	2.963	216.8 -> 171.9	57269	11.32 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 113.2%		
13C4-PFHpA	6.452	367.1 -> 322.0	36672	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.9%		
13C5-PFHxA	5.513	318.0 -> 273.0	31869	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C5-PFPeA	4.324	268.3 -> 223.0	36755	5.19 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C6-PFDA	8.108	519.1 -> 474.1	13837	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C7-PFUnDA	8.562	570.0 -> 525.1	15604	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C8-FOSA	9.555	506.1 -> 77.8	13797	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C8-PFOA	7.097	421.1 -> 376.0	61552	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.1%		
13C8-PFOS	8.270	507.1 -> 79.9	7832	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C9-PFNA	7.626	472.1 -> 427.0	16645	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
d3-MeFOSAA	8.153	573.2 -> 419.0	22227	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C3-HFPO-DA	5.878	286.9 -> 168.9	11173	9.27 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 92.7%		
d3-MeFOSA	10.680	515.0 -> 219.0	4001	1.97 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 78.9%		
d5-EtFOSAA	8.349	589.2 -> 419.0	18321	4.78 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.6%		
d7-MeFOSE	10.589	623.2 -> 58.9	15721	19.41 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 77.6%		
d9-EtFOSE	10.847	639.2 -> 58.9	10181	19.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 77.1%		
d5-EtFOSA	10.925	531.1 -> 219.0	4159	1.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 74.6%		

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.871	427.1 -> 407.0	1603	0.60 µg/L	93
		427.1 -> 80.9	341		
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	3.195	212.8 -> 168.9	0	µg/L m	1
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	4.465	498.9 -> 98.8	0	µg/L	m	1
		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	3.779	241.0 -> 177.0	0	µg/L	m	1
		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				

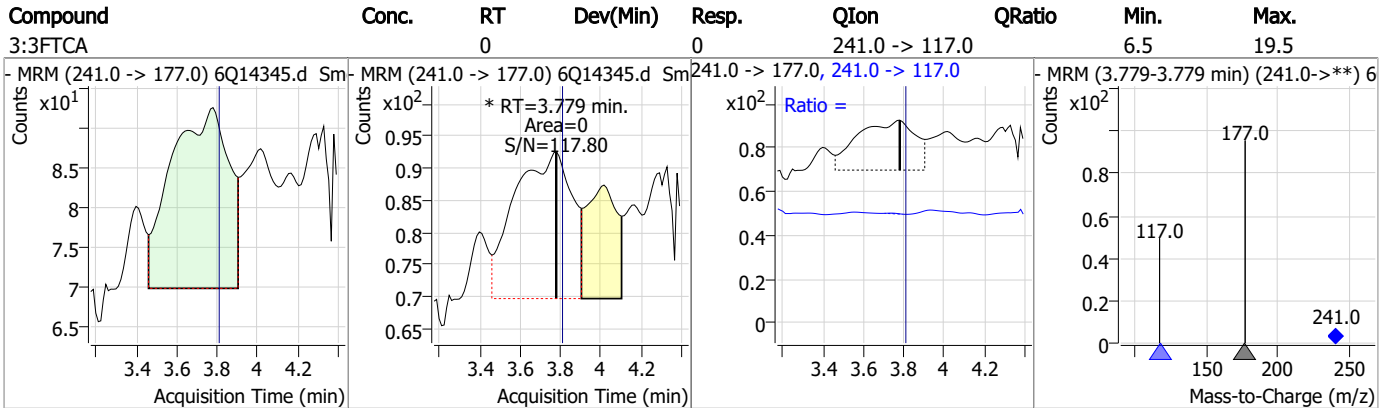
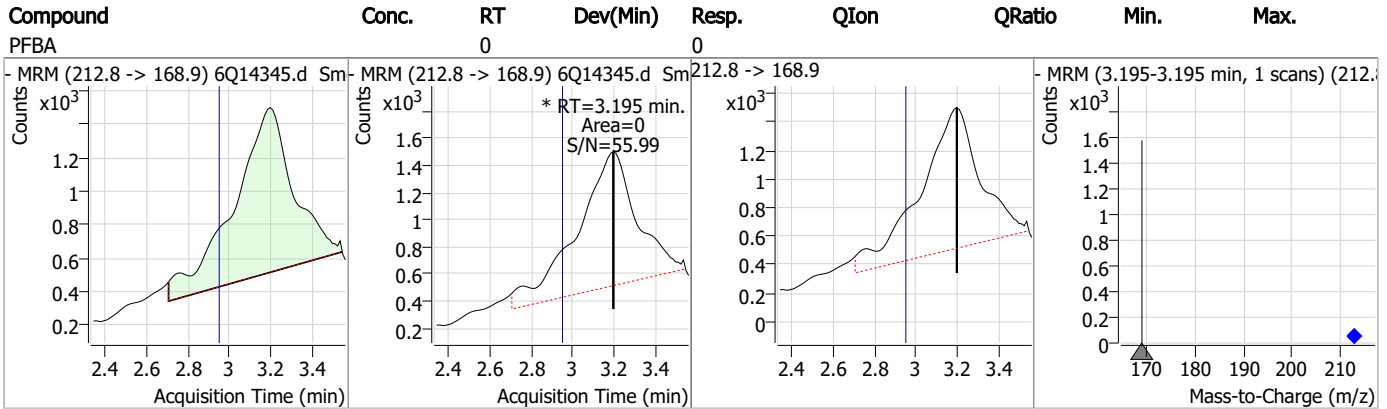
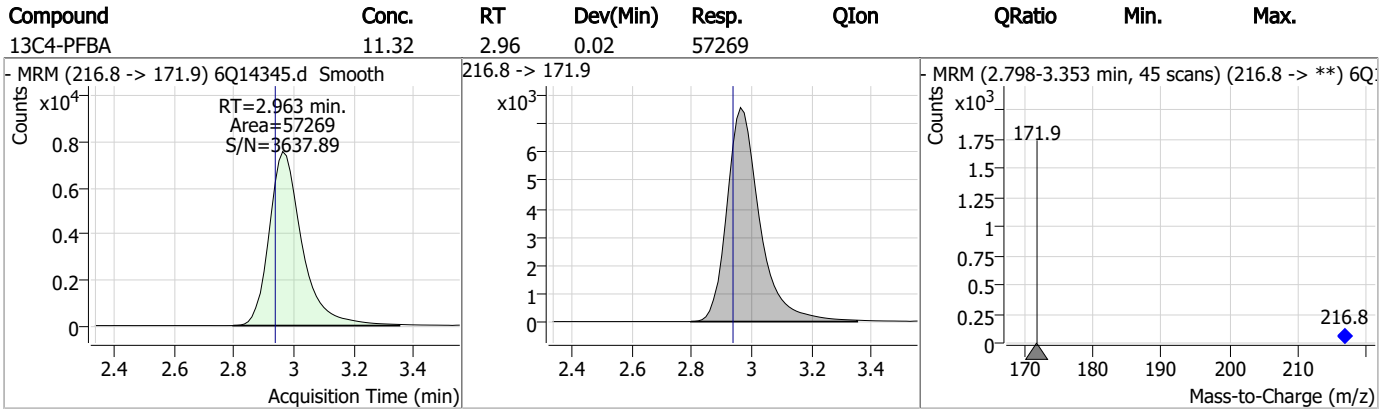
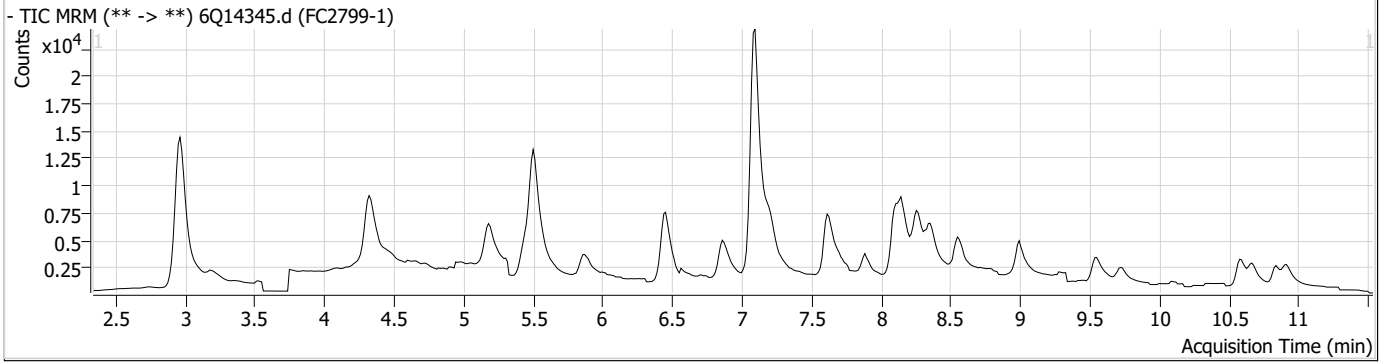
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

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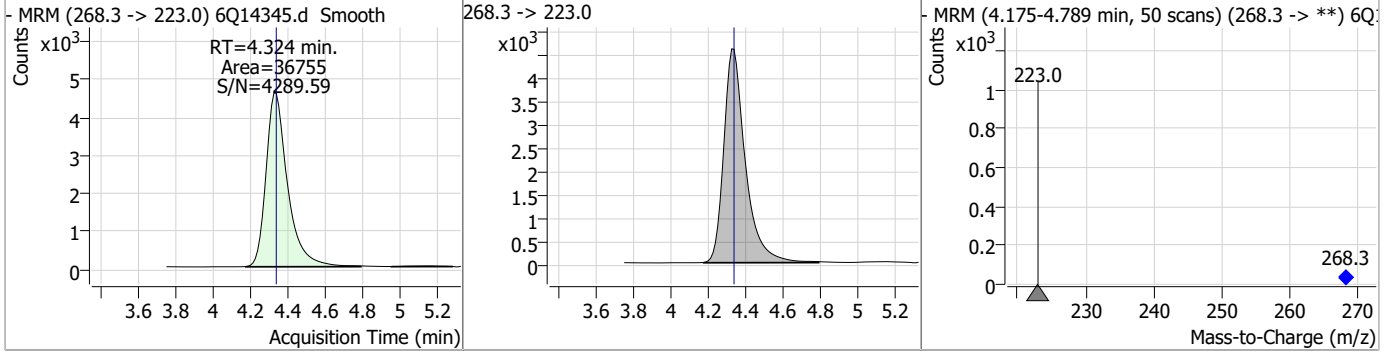
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Perfluorinated Compounds by LC/MS/MS

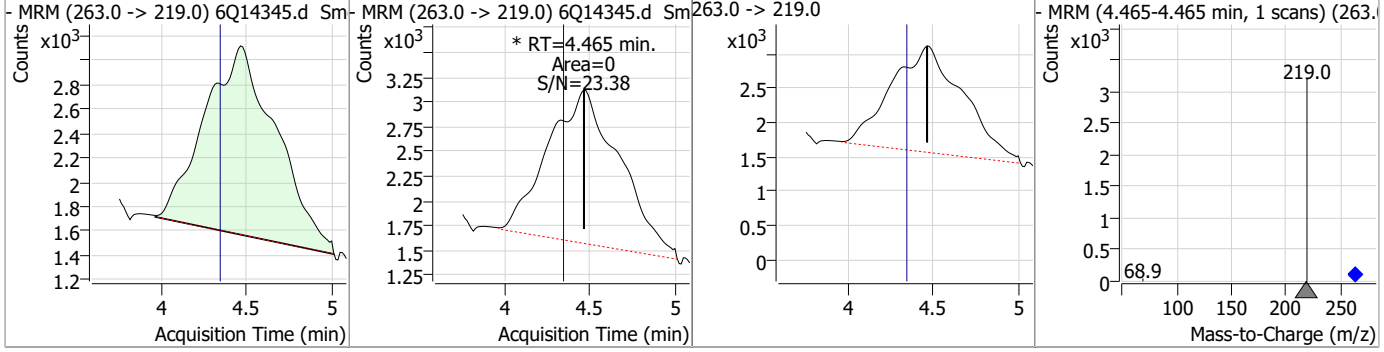


Perfluorinated Compounds by LC/MS/MS

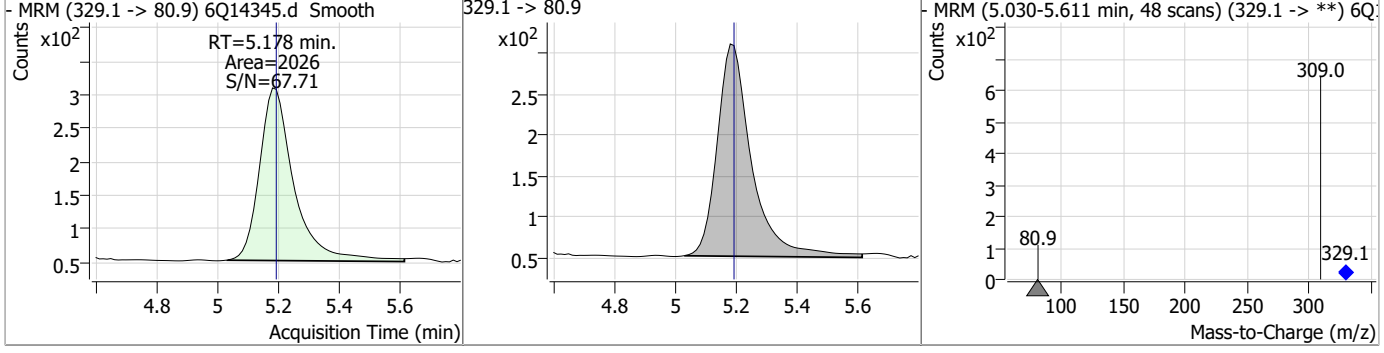
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.19	4.32	-0.01	36755				



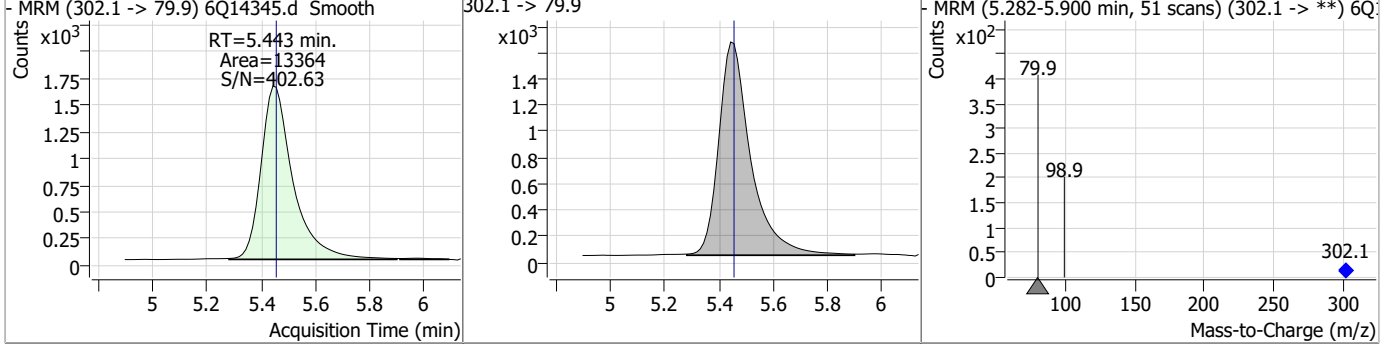
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0	0		0				



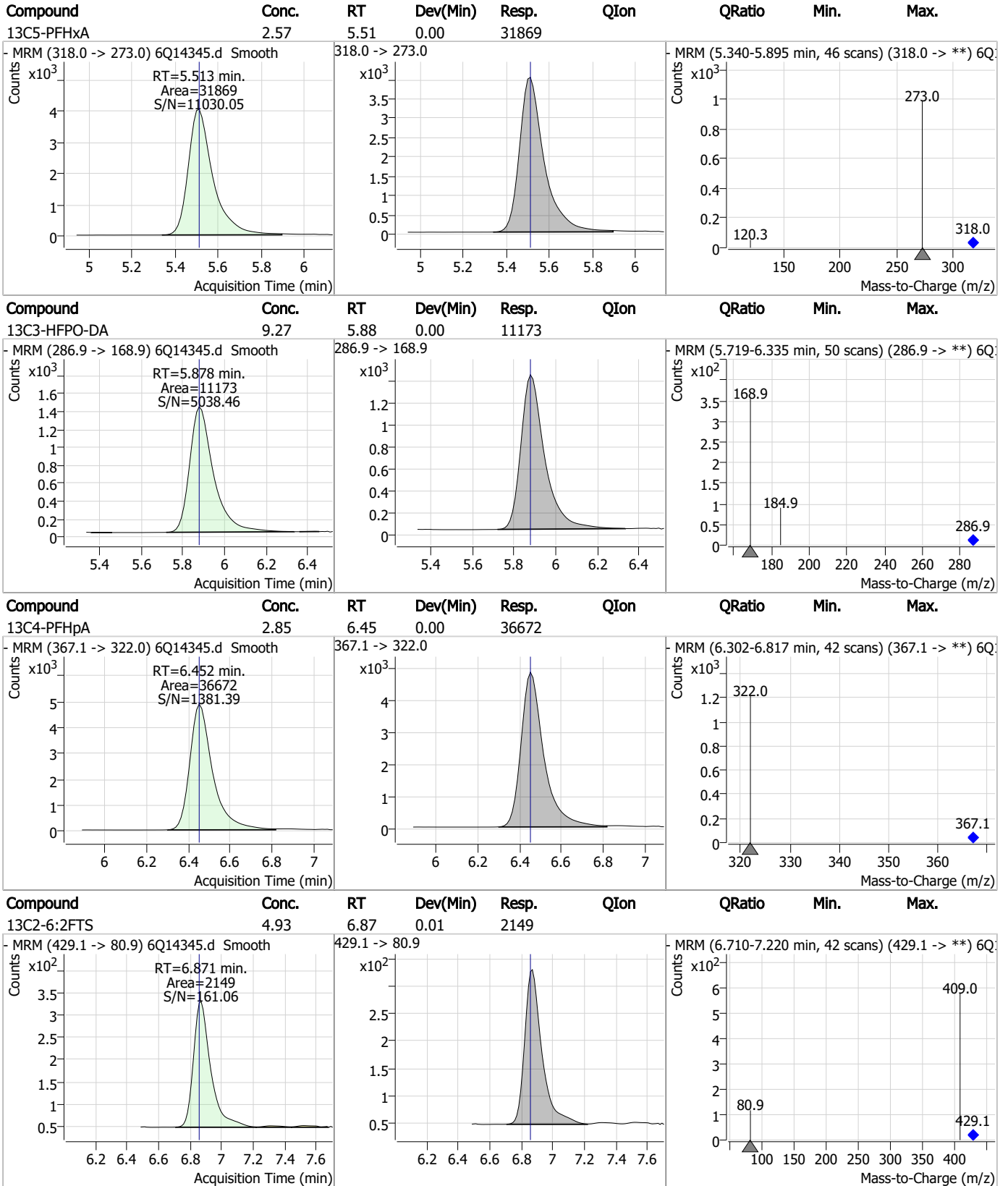
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.87	5.18	-0.01	2026				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.69	5.44	-0.01	13364				

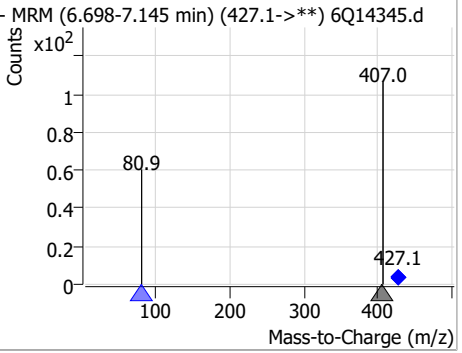
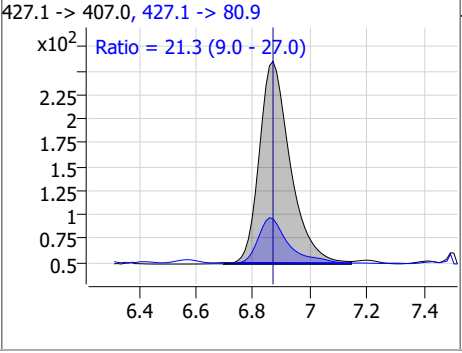
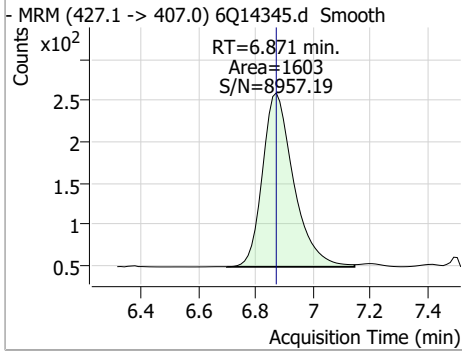


Perfluorinated Compounds by LC/MS/MS

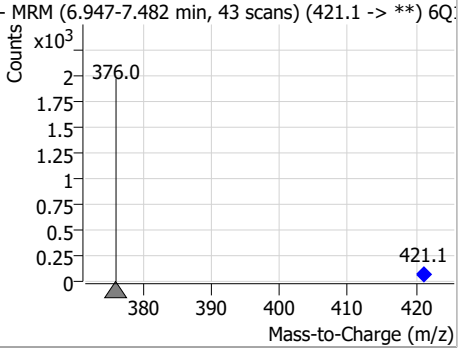
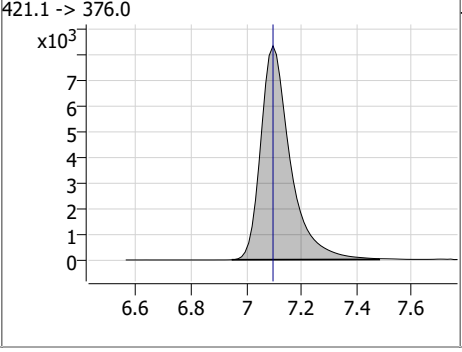
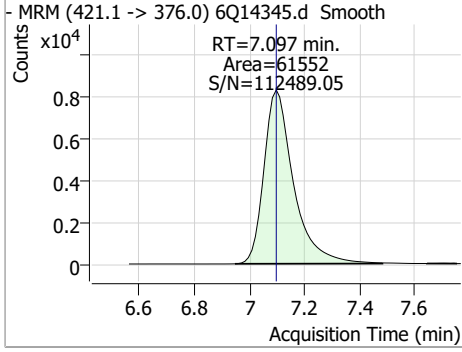


Perfluorinated Compounds by LC/MS/MS

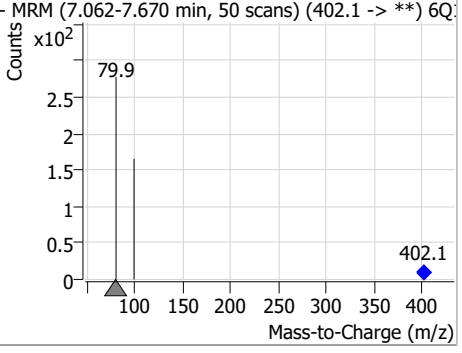
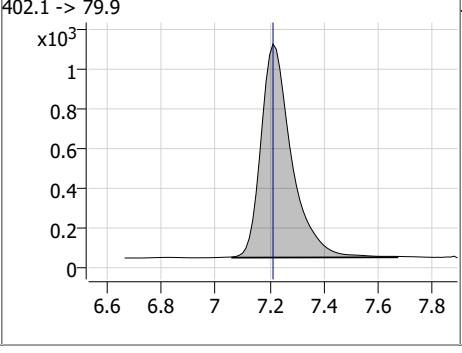
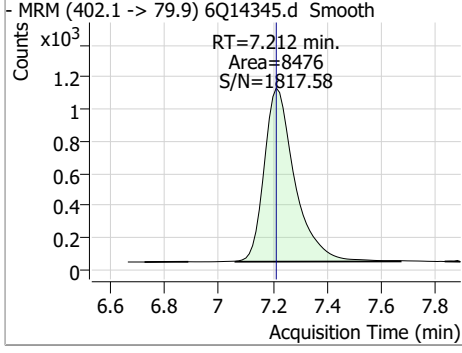
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.60	6.87	0.00	1603	427.1 -> 80.9	21.3	9.0	27.0



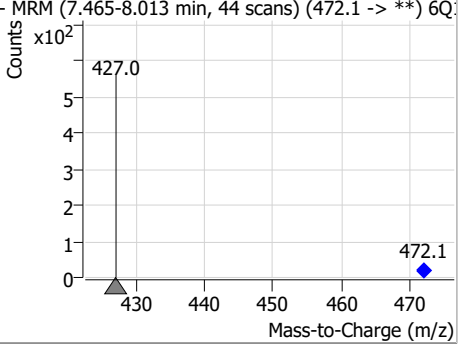
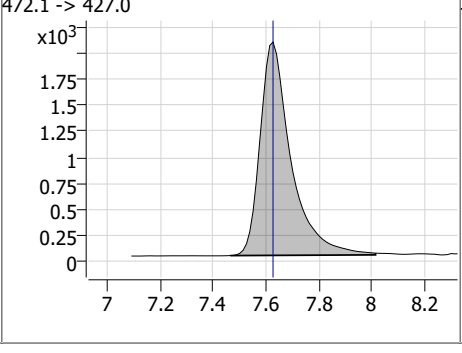
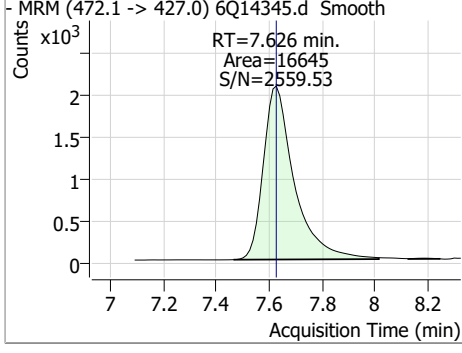
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.75	7.10	0.00	61552	421.1 -> 376.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.65	7.21	0.00	8476	402.1 -> 79.9			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.63	0.00	16645	472.1 -> 427.0			

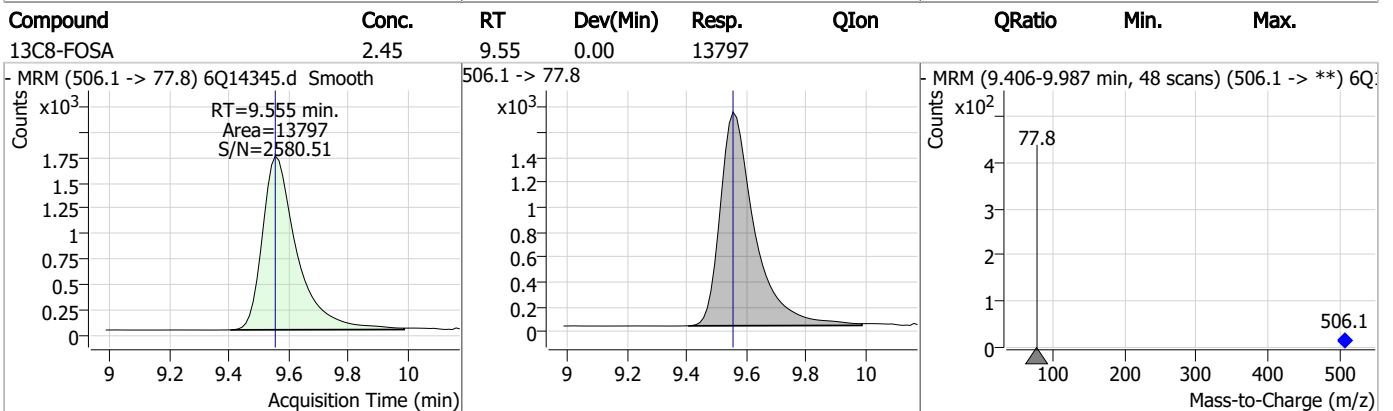
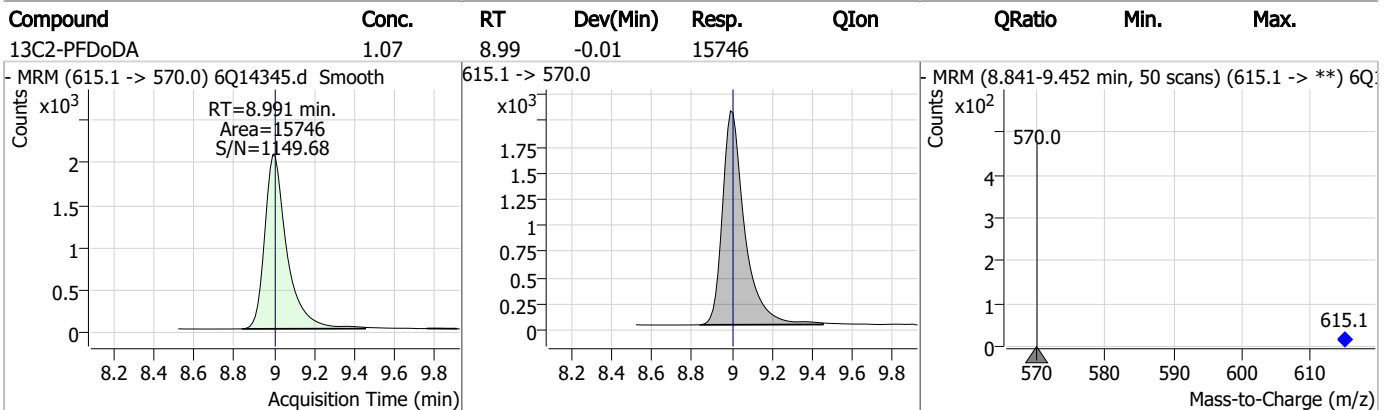
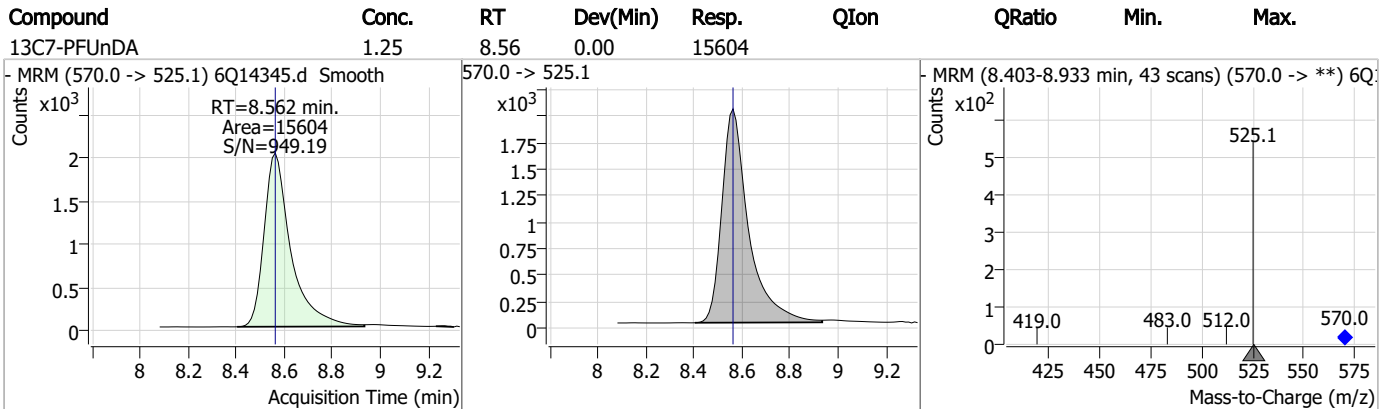
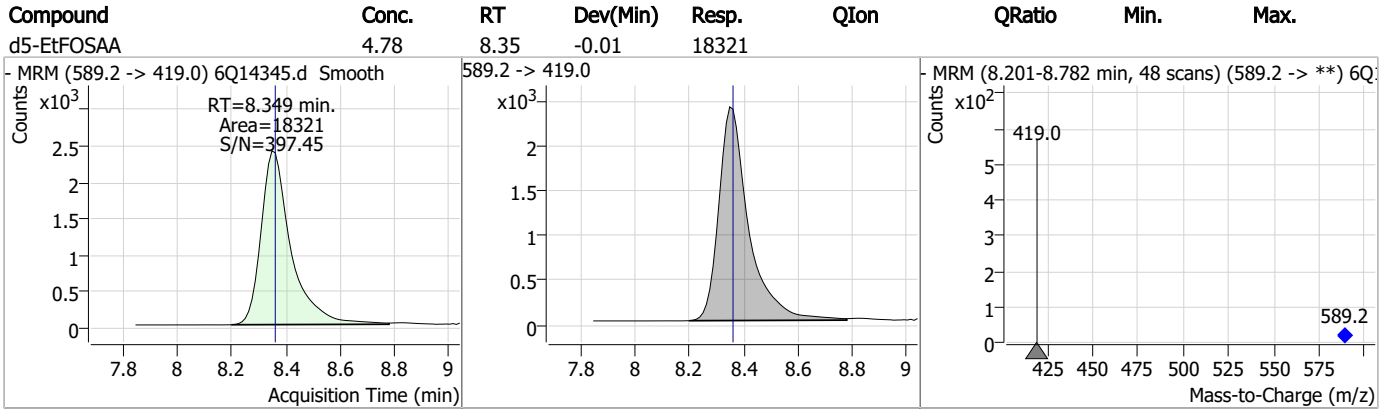


7.1.1
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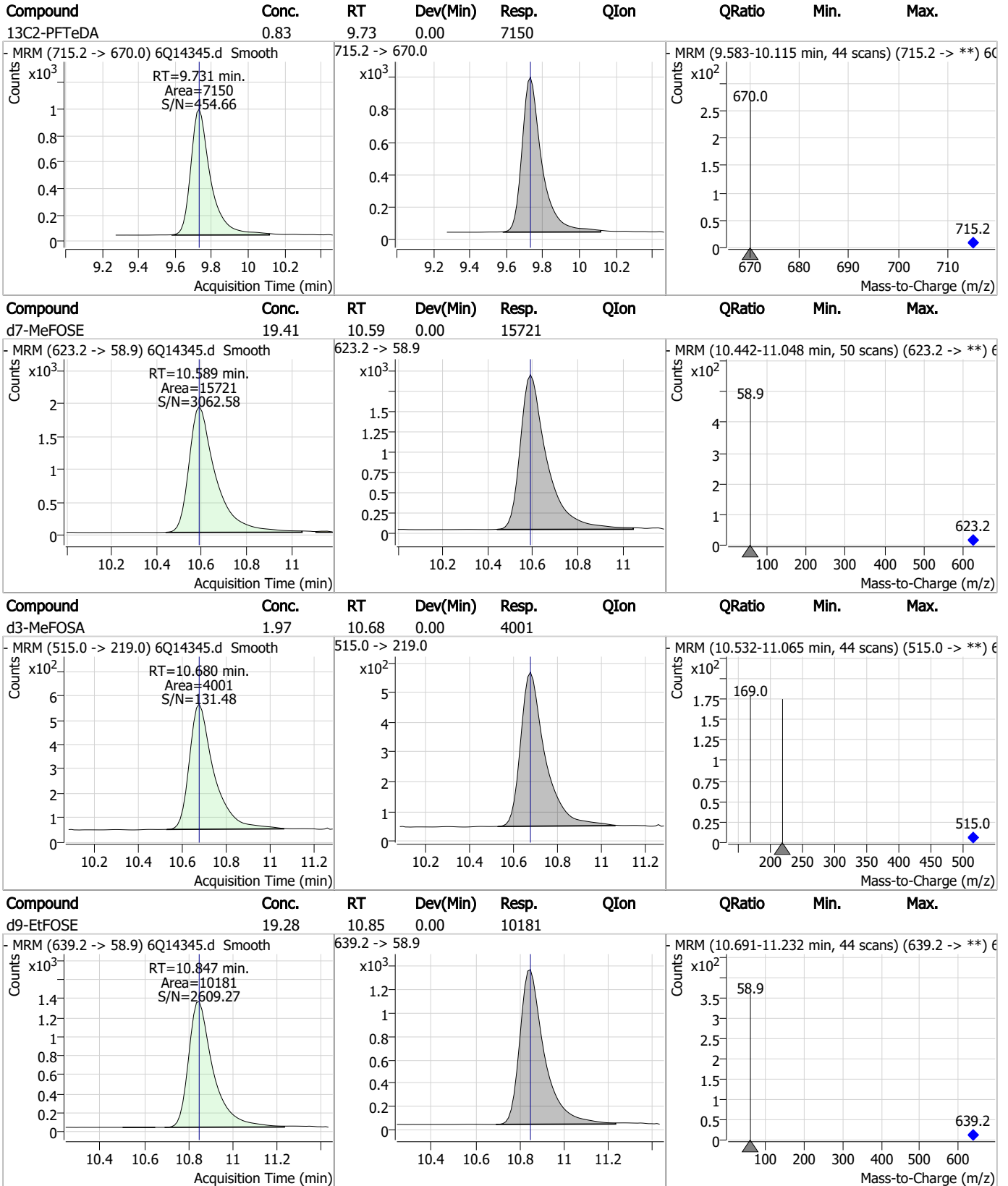
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.76	7.90	0.00	2023				
13C6-PFDA	1.27	8.11	0.00	13837				
d3-MeFOSAA	5.08	8.15	0.00	22227				
13C8-PFOS	2.72	8.27	0.00	7832				

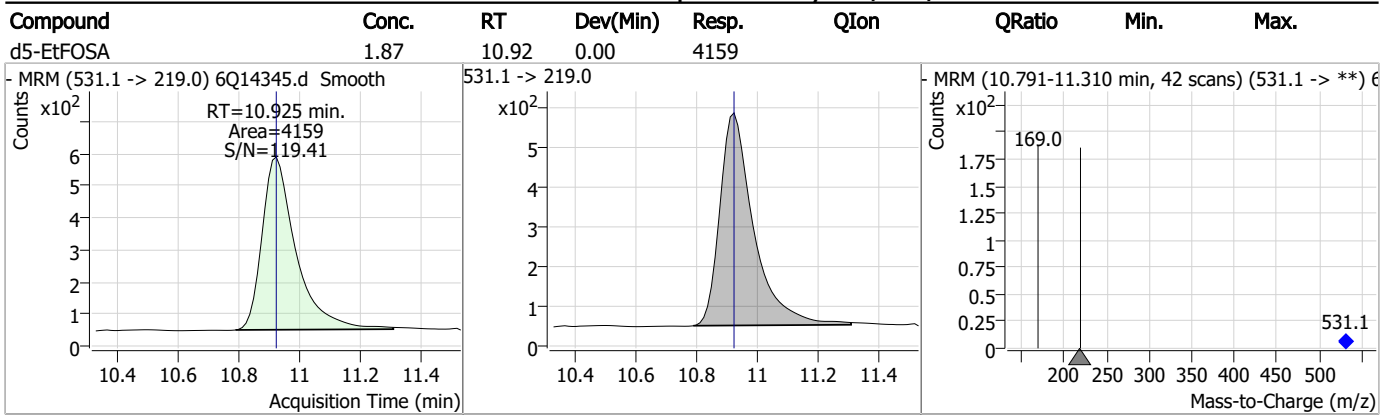
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.1
7



Manual Integrations
APPROVED
 (compounds with "m" flag)
 Mike Eger
 02/27/23 17:31

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14347.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 10:48:19 PM
 Sample Name : FC2799-2
 Vial : P3-E6
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	84369	10.00 µg/L	0.025
M5-PFPeA	4.337	268.3 -> 223.0	40822	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	35353	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	37985	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	59953	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	18884	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	16859	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	15930	1.25 µg/L	0.000
M2-PFDoDA	9.004	615.1 -> 570.0	18213	1.25 µg/L	0.000
M2-PFTeDA	9.731	715.2 -> 670.0	8659	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	14809	2.50 µg/L	0.000
M3-PFBS	5.444	302.1 -> 79.9	14389	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	8807	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	7999	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	1846	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	2618	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2178	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	23817	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	15036	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	20619	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	19444	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	12186	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	5276	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	4849	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	9041	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	31620	5.00 µg/L	0.025
18O2-PFHxS	7.211	403.0 -> 83.9	5554	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	68732	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	19251	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	18665	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	32599	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	1846	5.56 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.2%		
13C2-6:2FTS	6.871	429.1 -> 80.9	2618	6.24 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.9%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2178	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C2-PFDoDA	9.004	615.1 -> 570.0	18213	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C2-PFTeDA	9.731	715.2 -> 670.0	8659	0.98 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 78.4%		
13C3-PFBS	5.444	302.1 -> 79.9	14389	3.02 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 120.6%		
13C3-PFHxS	7.212	402.1 -> 79.9	8807	2.86 µg/L	0.000

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 = 114.4%	
13C4-PFBA	2.963	216.8 -> 171.9	84369	11.71 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C4-PFHpA	6.452	367.1 -> 322.0	37985	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.5%	
13C5-PFHxA	5.513	318.0 -> 273.0	35353	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.9%	
13C5-PFPeA	4.337	268.3 -> 223.0	40822	5.60 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C6-PFDA	8.108	519.1 -> 474.1	16859	1.50 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 120.1%	
13C7-PFUnDA	8.562	570.0 -> 525.1	15930	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-FOSA	9.555	506.1 -> 77.8	14809	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOA	7.097	421.1 -> 376.0	59953	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C8-PFOS	8.270	507.1 -> 79.9	7999	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C9-PFNA	7.626	472.1 -> 427.0	18884	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.0%	
d3-MeFOSAA	8.153	573.2 -> 419.0	23817	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	15036	12.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.1%	
d3-MeFOSA	10.680	515.0 -> 219.0	4849	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.7%	
d5-EtFOSAA	8.349	589.2 -> 419.0	20619	4.99 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d7-MeFOSE	10.589	623.2 -> 58.9	19444	22.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.1%	
d9-EtFOSE	10.847	639.2 -> 58.9	12186	21.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.7%	
d5-EtFOSA	10.925	531.1 -> 219.0	5276	2.20 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.8%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.871	427.1 -> 407.0	6059	1.86 µg/L	96
		427.1 -> 80.9	1197		
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	5.160	298.7 -> 79.9	0	µg/L m	1
		298.7 -> 98.8	0		
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



7.12

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.453	599.0 -> 98.8				
		363.1 -> 319.0	2852	0.15 µg/L	m	98
PFHpS	-	363.1 -> 169.0	421			
		449.0 -> 79.9	-	N.D.		
PFHxA	5.516	449.0 -> 98.9				
		313.0 -> 269.0	3460	0.31 µg/L		97
PFHxS	-	313.0 -> 118.9	90			
		398.7 -> 79.9	-	N.D.		
PFNA	-	398.7 -> 98.9				
		463.0 -> 419.0	-	N.D.		
PFNS	-	463.0 -> 219.0				
		548.8 -> 79.9	-	N.D.		
PFOA	7.123	548.8 -> 98.9				
		413.0 -> 369.0	732	0.03 µg/L	m	90
PFOS	-	413.0 -> 169.0	86			
		498.9 -> 79.9	-	N.D.		
PFPeA	4.338	498.9 -> 98.8				
		263.0 -> 219.0	2796	0.39 µg/L		100
PFPeS	6.380	349.1 -> 79.9	0	µg/L	m	1
		349.1 -> 98.9	0			
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0	-	N.D.		
MeFOSA	-	511.9 -> 169.0				
		616.1 -> 58.9	-	N.D.		
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9	-	N.D.		
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				
PFEESA	-					

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

7.12
7

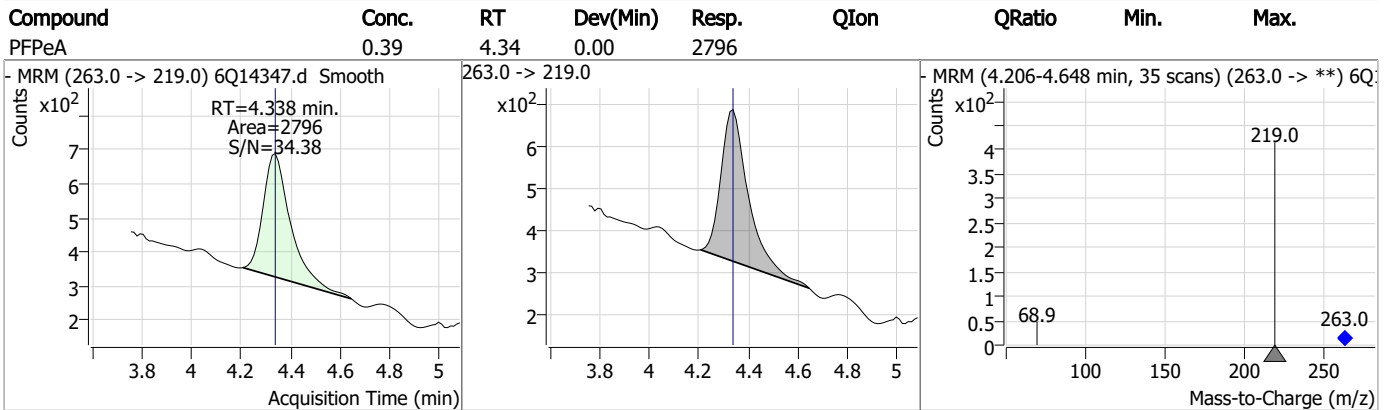
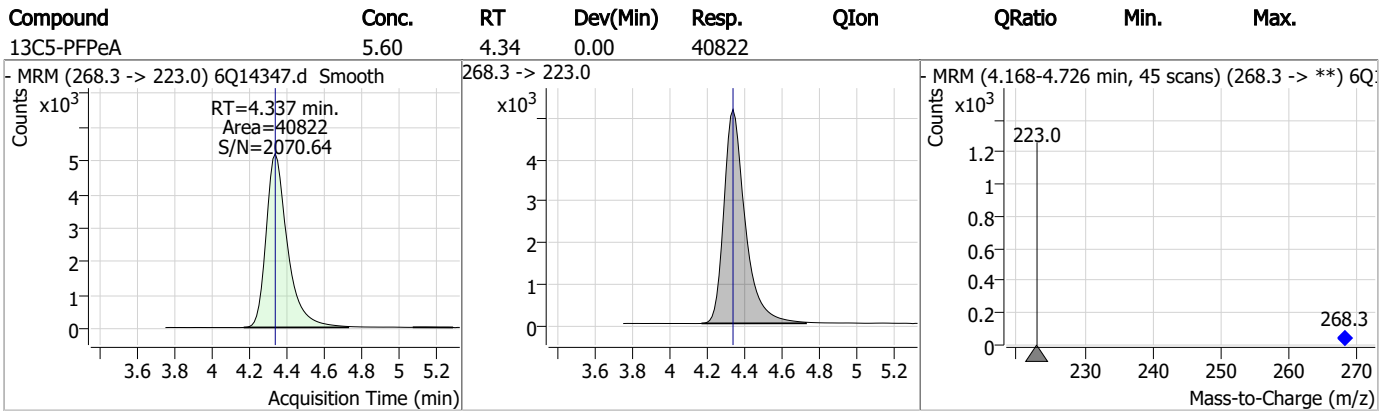
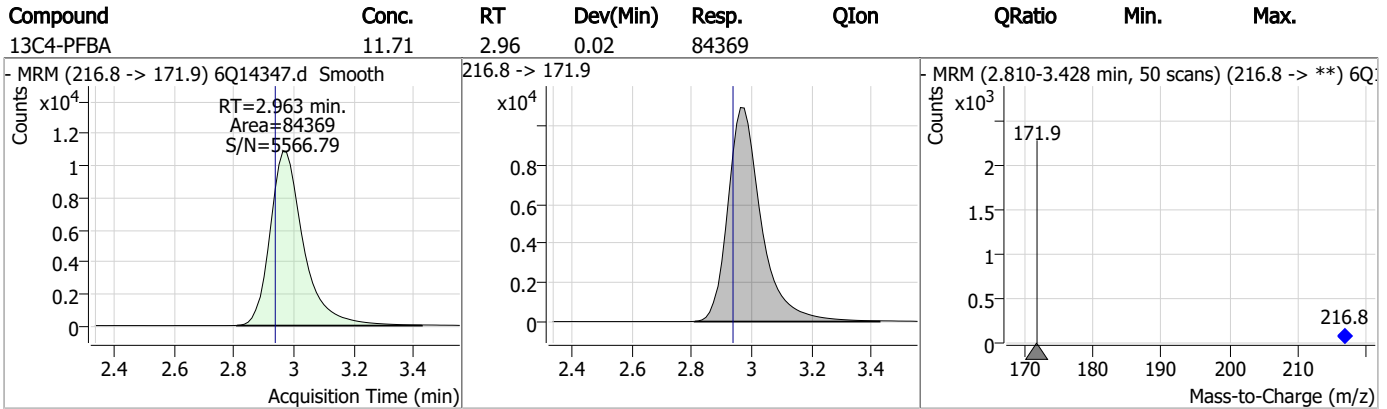
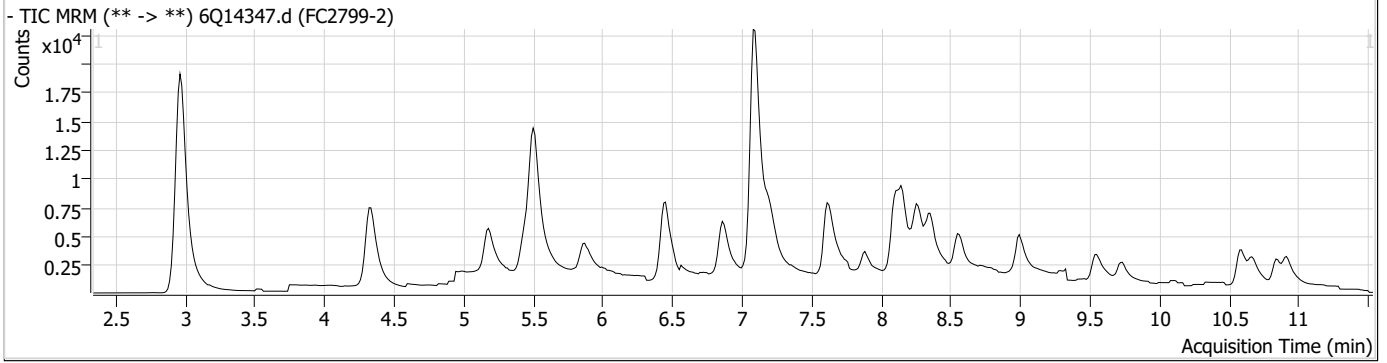
Perfluorinated Compounds by LC/MS/MS

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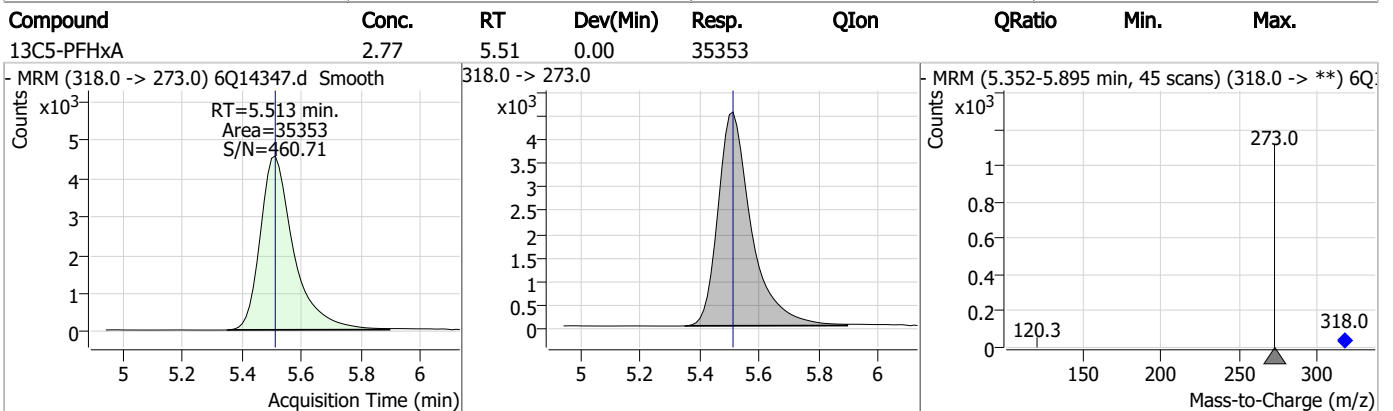
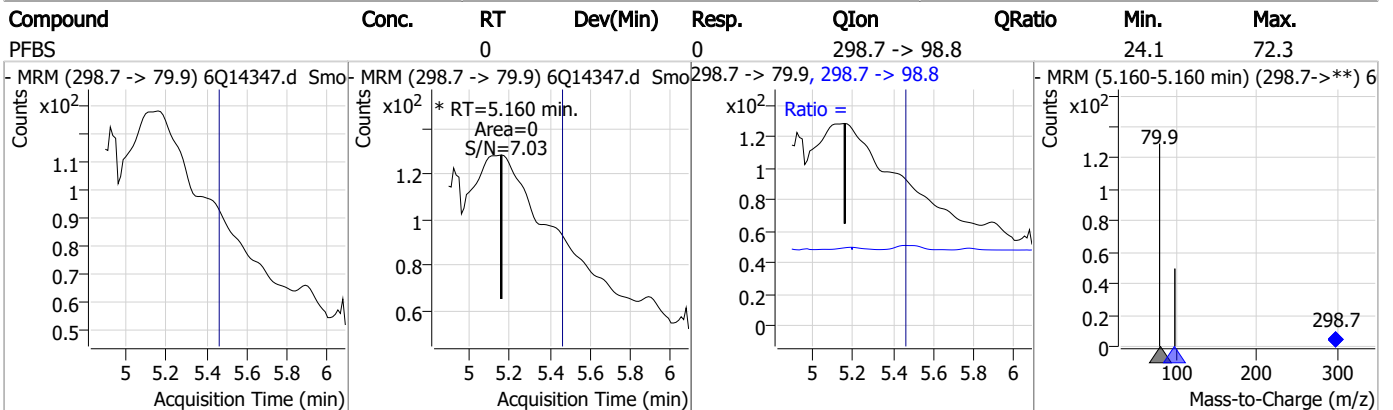
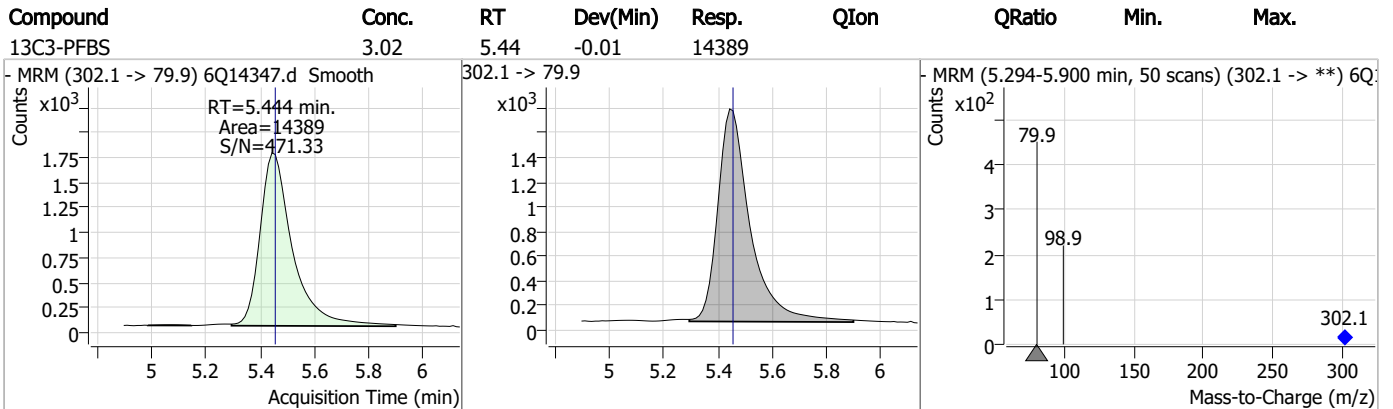
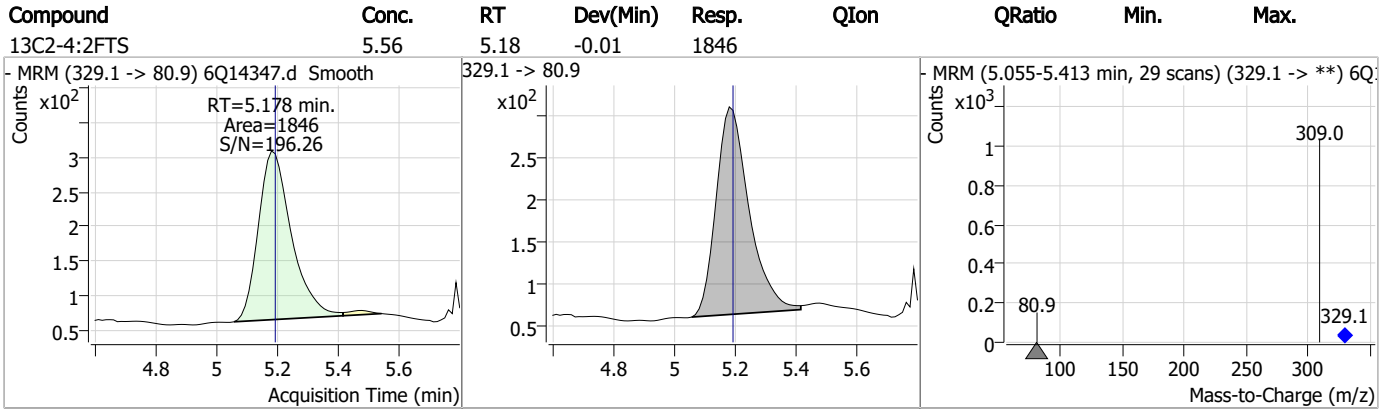
7.1.2

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

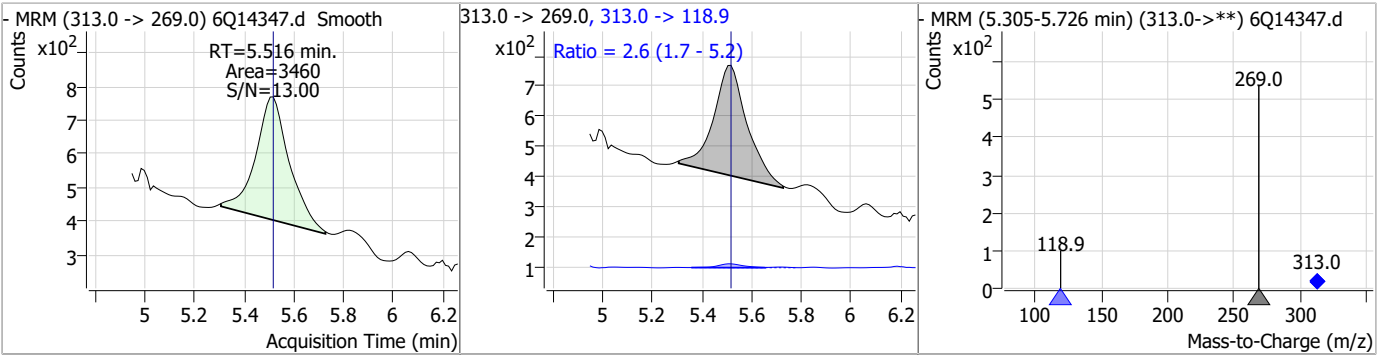


7.1.2

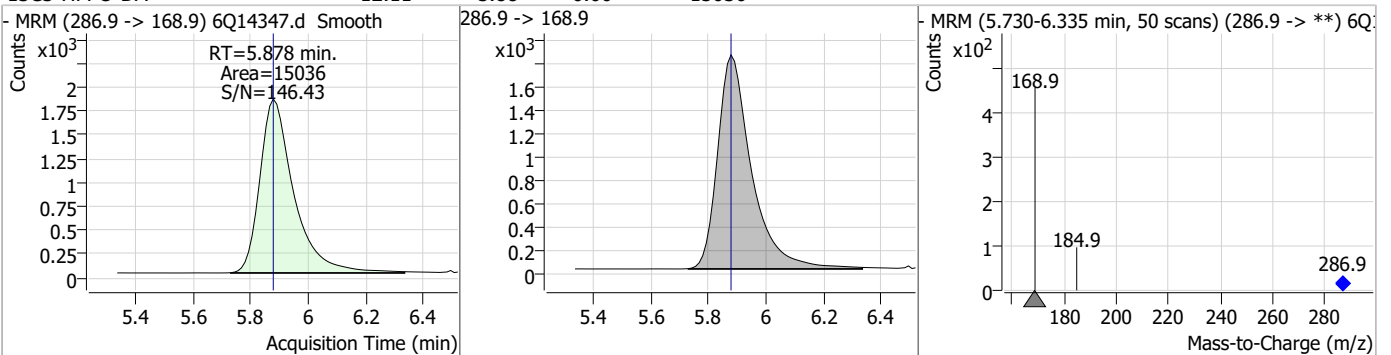
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Perfluorinated Compounds by LC/MS/MS

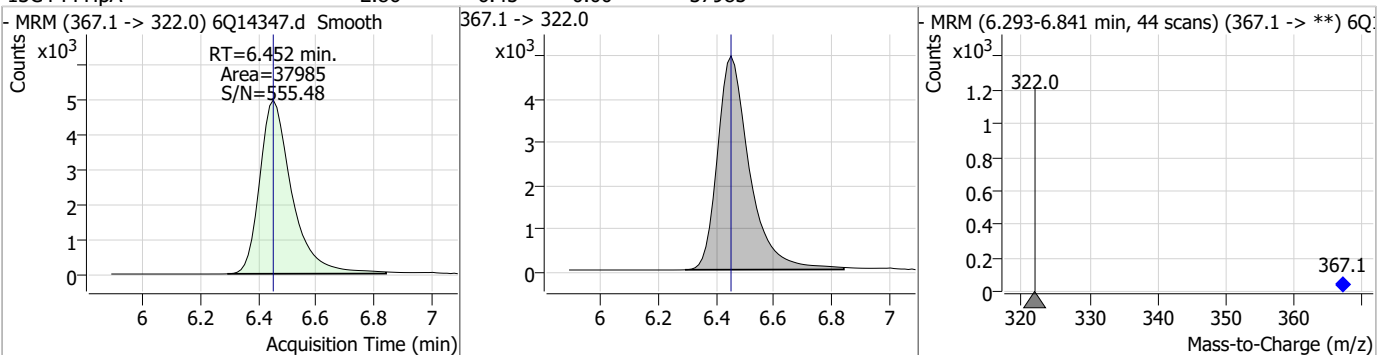
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.31	5.52	0.00	3460	313.0 -> 118.9	2.6	1.7	5.2



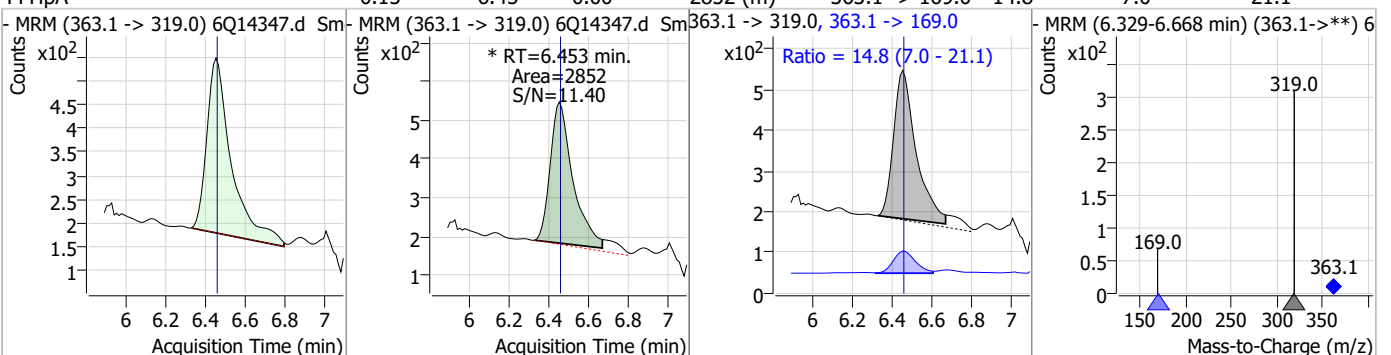
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.11	5.88	0.00	15036				



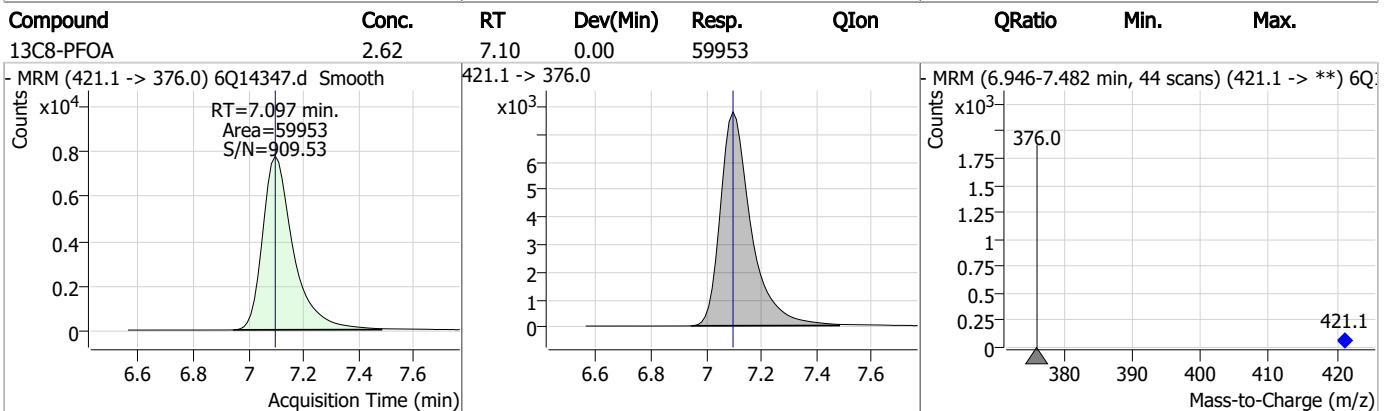
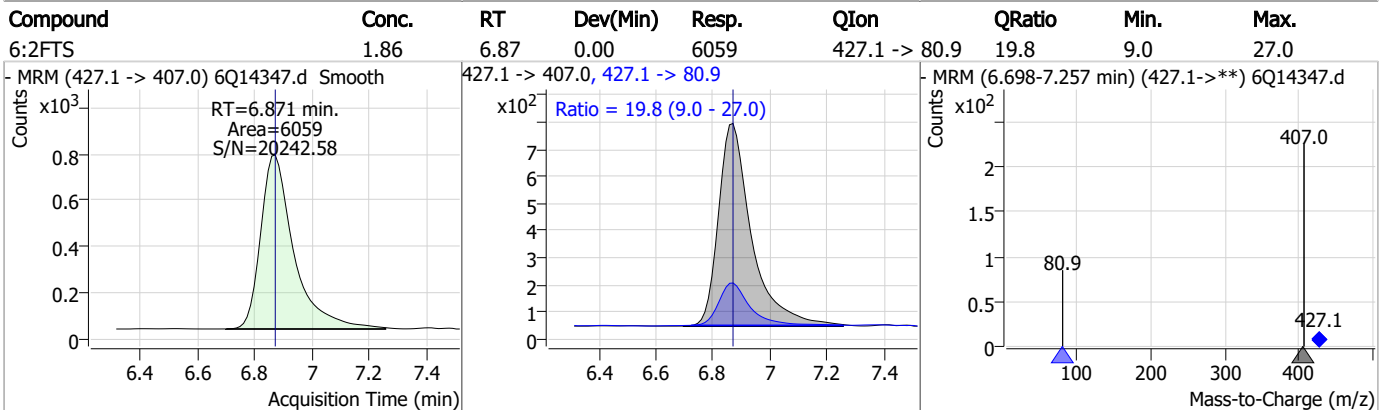
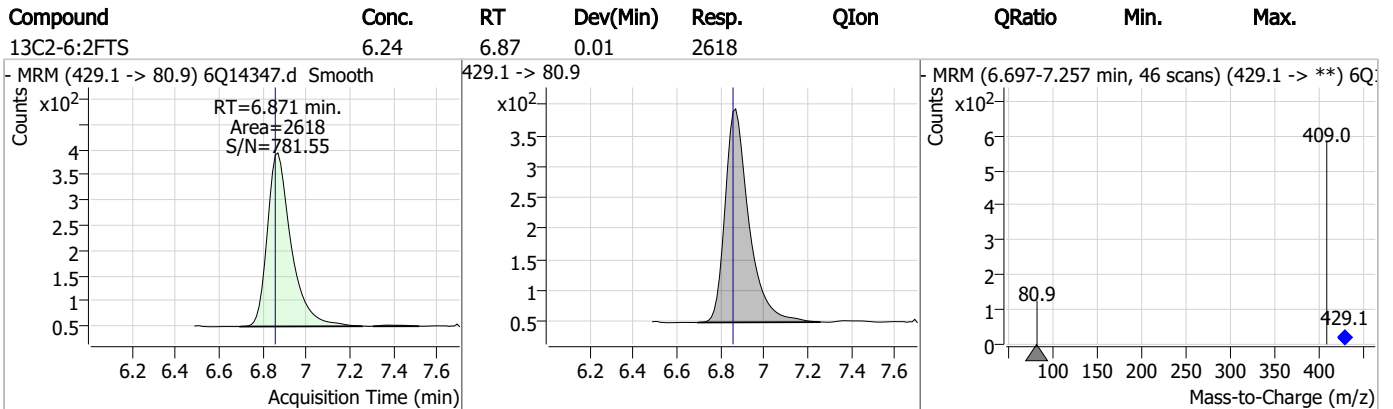
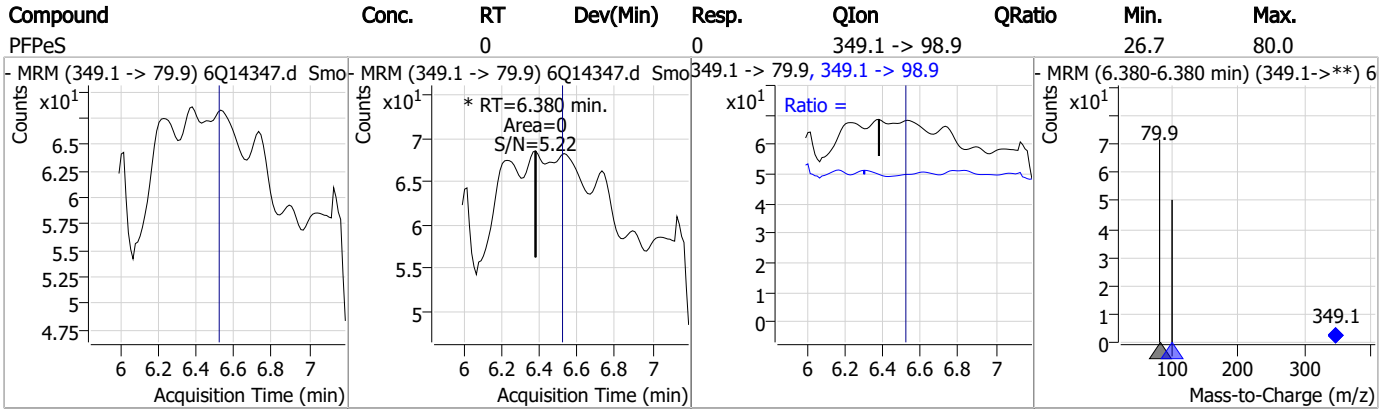
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.86	6.45	0.00	37985				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.15	6.45	0.00	2852 (m)	363.1 -> 169.0	14.8	7.0	21.1



Perfluorinated Compounds by LC/MS/MS



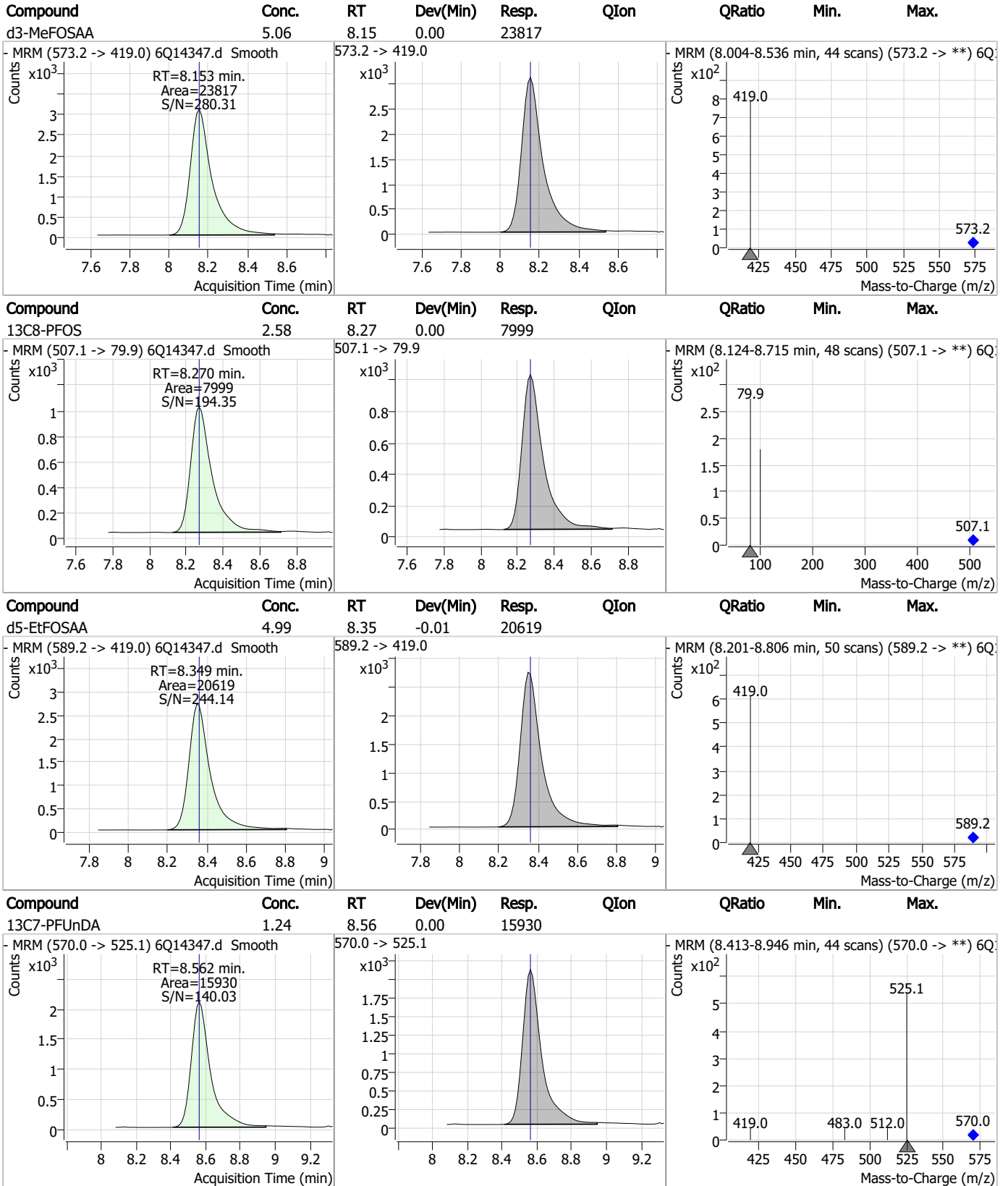
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.86	7.21	0.00	8807				
13C9-PFNA	1.31	7.63	0.00	18884				
13C2-8:2FTS	5.33	7.90	0.00	2178				
13C6-PFDA	1.50	8.11	0.00	16859				

7.1.2

7

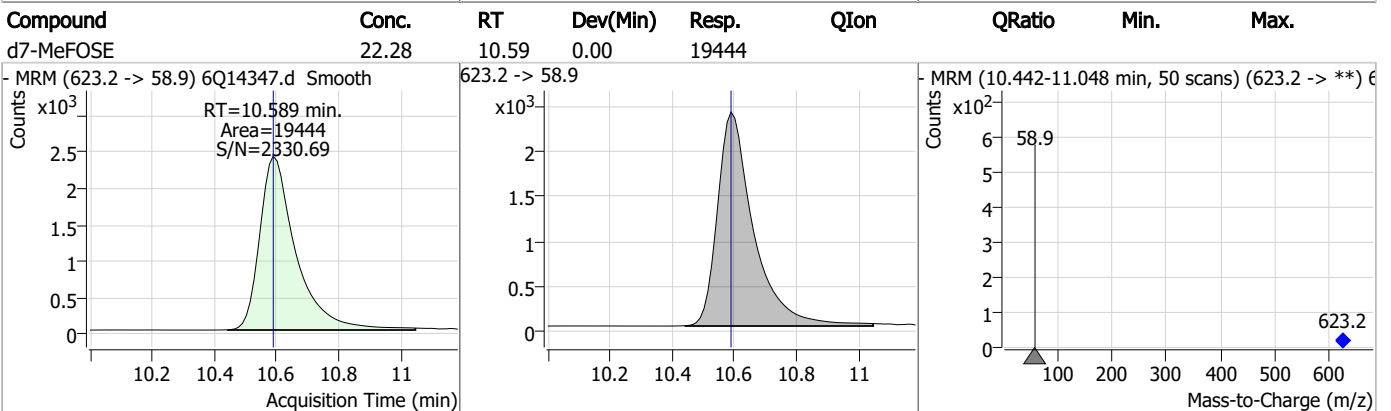
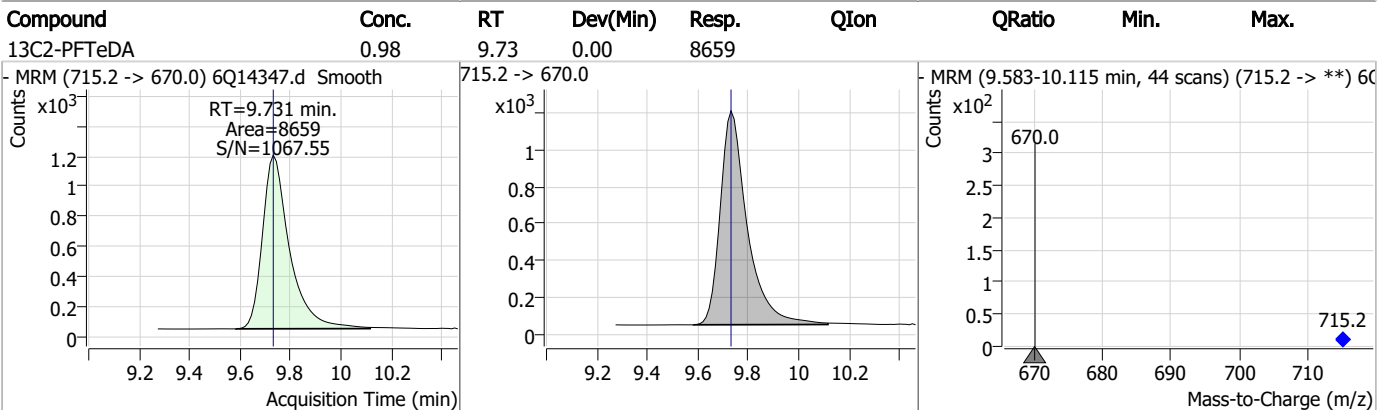
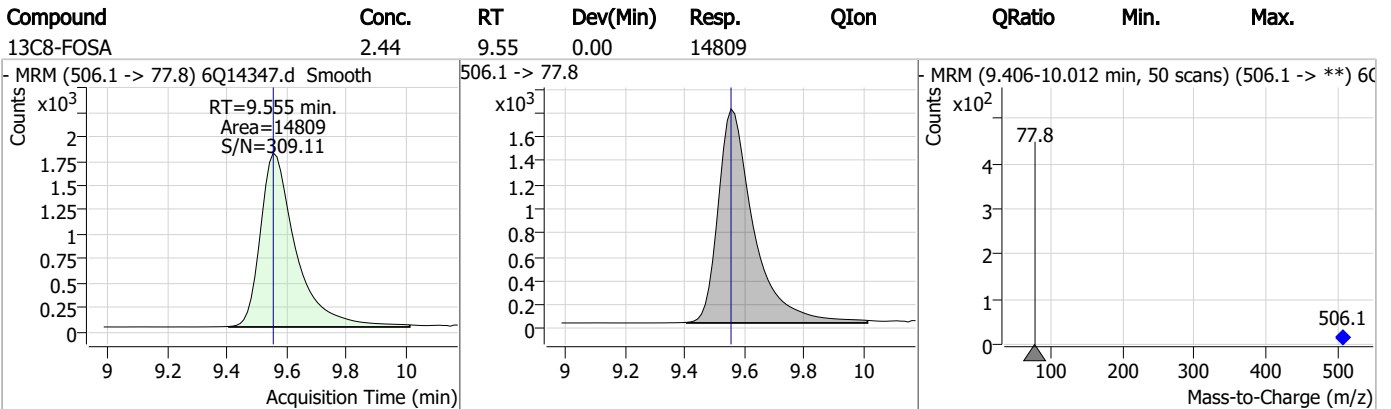
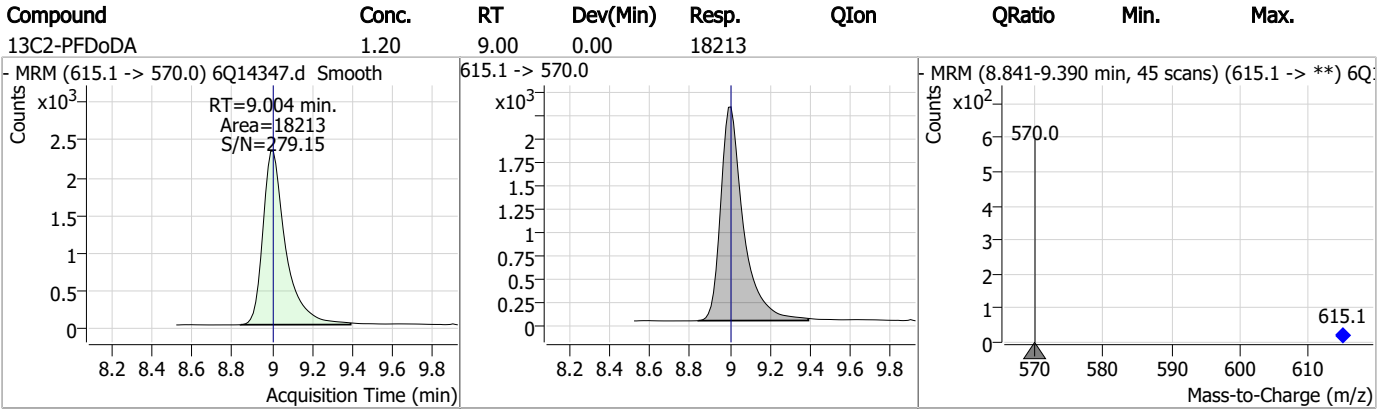
Perfluorinated Compounds by LC/MS/MS



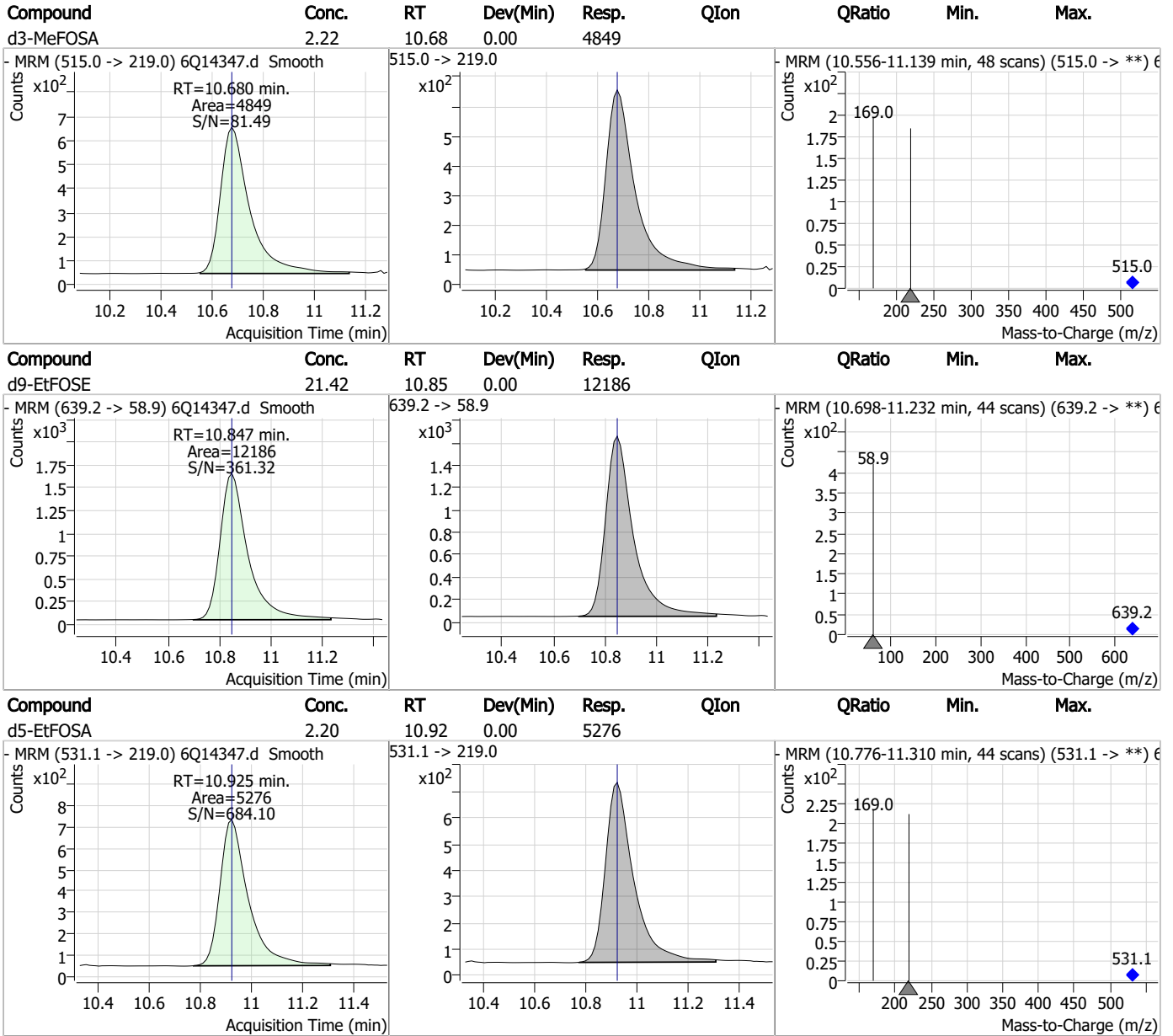
7.1.2

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.2

7

Manual Integration Approval Summary

Sample Number: FC2799-2 Method: EPA DRAFT 1633
Lab FileID: 6Q14347.D Analyst approved: 02/27/23 11:37 Martha Valls
Injection Time: 02/24/23 22:48 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.45	Poorly defined baseline
Perfluorooctanoic acid	335-67-1		7.12	Split peak

7.1.2.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14344.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 10:06:17 PM
 Sample Name : op95581-mb
 Vial : P3-E3
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.975	216.8 -> 171.9	83159	10.00 µg/L	0.037
M5-PFPeA	4.337	268.3 -> 223.0	39956	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	35520	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	38315	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	63444	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	19650	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	15035	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	16731	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	17731	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	8275	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	13830	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	14341	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	9147	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8217	2.50 µg/L	0.000
M2-4:2FTS	5.190	329.1 -> 80.9	2184	5.00 µg/L	0.000
M2-6:2FTS	6.858	429.1 -> 80.9	2699	5.00 µg/L	0.000
M2-8:2FTS	7.895	529.1 -> 80.9	2411	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	23490	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	14773	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	19320	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	17620	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	11427	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	4683	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	4485	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	9570	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	32657	5.00 µg/L	0.025
18O2-PFHxS	7.211	403.0 -> 83.9	5621	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	70860	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	20074	1.25 µg/L	0.000
13C5-PFNA	7.615	468.0 -> 423.0	17996	1.25 µg/L	-0.012
13C2-PFHxA	5.514	315.1 -> 270.0	33597	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.190	329.1 -> 80.9	2184	6.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 130.0%		
13C2-6:2FTS	6.858	429.1 -> 80.9	2699	6.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 127.2%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2411	5.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.6%		
13C2-PFDoDA	8.991	615.1 -> 570.0	17731	1.12 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.7%		
13C2-PFTeDA	9.731	715.2 -> 670.0	8275	0.90 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 71.8%		
13C3-PFBS	5.456	302.1 -> 79.9	14341	2.97 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 118.8%		
13C3-PFHxS	7.212	402.1 -> 79.9	9147	2.94 µg/L	0.000

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 = 117.4%	
13C4-PFBA	2.975	216.8 -> 171.9	83159	11.17 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C4-PFHpA	6.452	367.1 -> 322.0	38315	2.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.1%	
13C5-PFHxA	5.513	318.0 -> 273.0	35520	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C5-PFPeA	4.337	268.3 -> 223.0	39956	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C6-PFDA	8.108	519.1 -> 474.1	15035	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C7-PFUnDA	8.562	570.0 -> 525.1	16731	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C8-FOSA	9.555	506.1 -> 77.8	13830	2.15 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.1%	
13C8-PFOA	7.097	421.1 -> 376.0	63444	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C8-PFOS	8.270	507.1 -> 79.9	8217	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C9-PFNA	7.626	472.1 -> 427.0	19650	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.3%	
d3-MeFOSAA	8.153	573.2 -> 419.0	23490	4.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	14773	11.55 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.5%	
d3-MeFOSA	10.680	515.0 -> 219.0	4485	1.94 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.5%	
d5-EtFOSAA	8.349	589.2 -> 419.0	19320	4.42 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.4%	
d7-MeFOSE	10.589	623.2 -> 58.9	17620	19.07 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 76.3%	
d9-EtFOSE	10.847	639.2 -> 58.9	11427	18.97 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.9%	
d5-EtFOSA	10.925	531.1 -> 219.0	4683	1.84 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 73.7%	

Target Compounds

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	-	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
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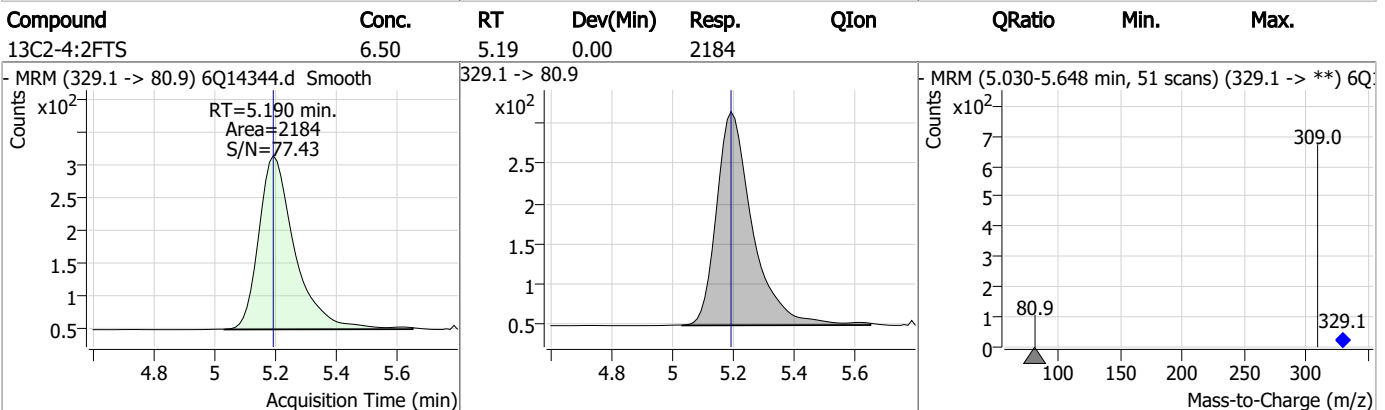
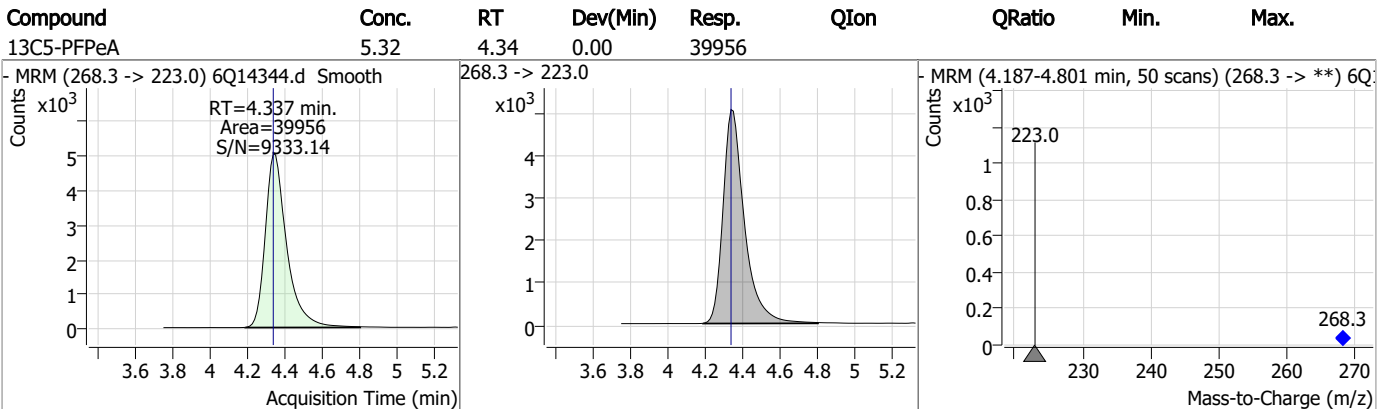
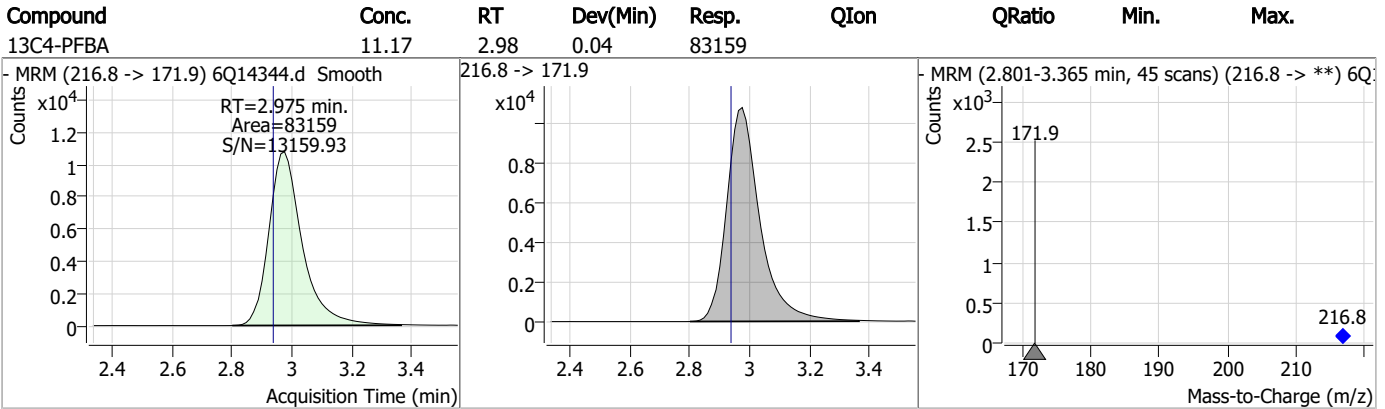
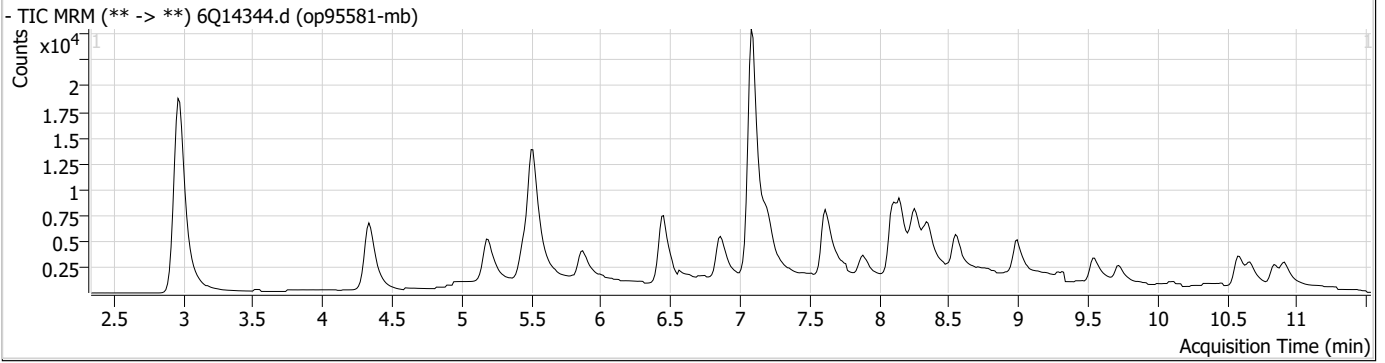
Perfluorinated Compounds by LC/MS/MS

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



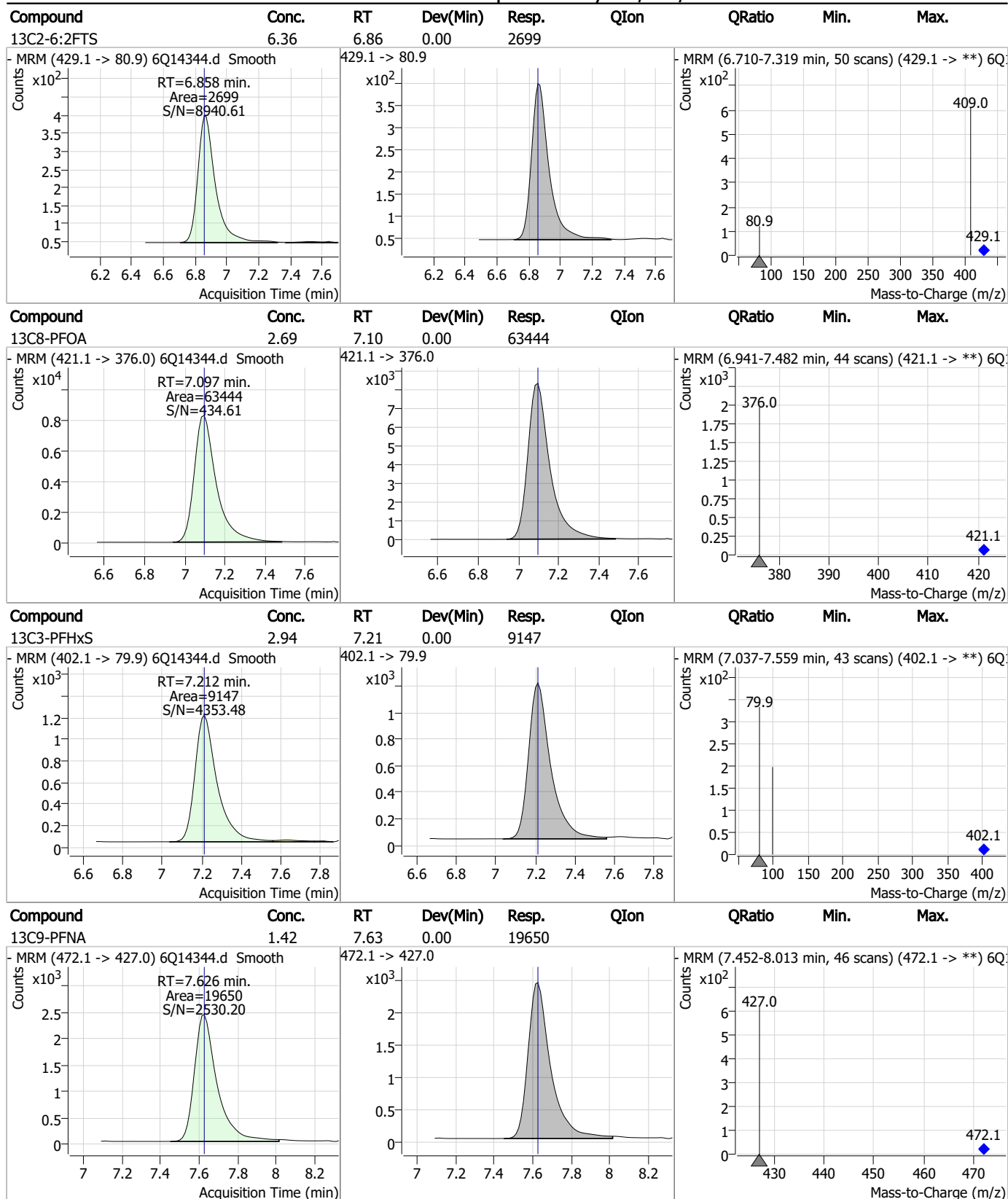
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.97	5.46	0.00	14341				
13C5-PFHxA	2.70	5.51	0.00	35520				
13C3-HFPO-DA	11.55	5.88	0.00	14773				
13C4-PFHpA	2.80	6.45	0.00	38315				

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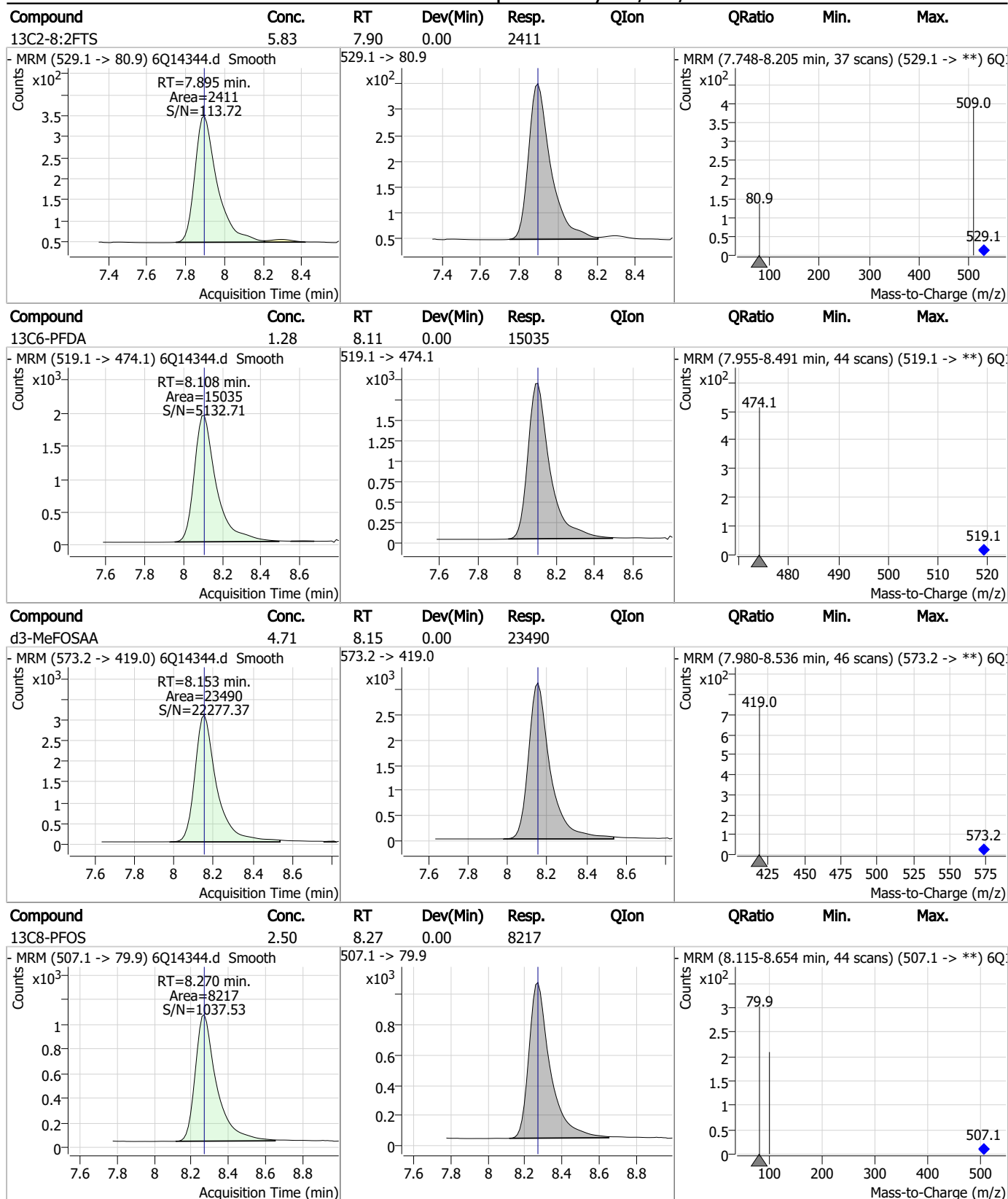
Perfluorinated Compounds by LC/MS/MS



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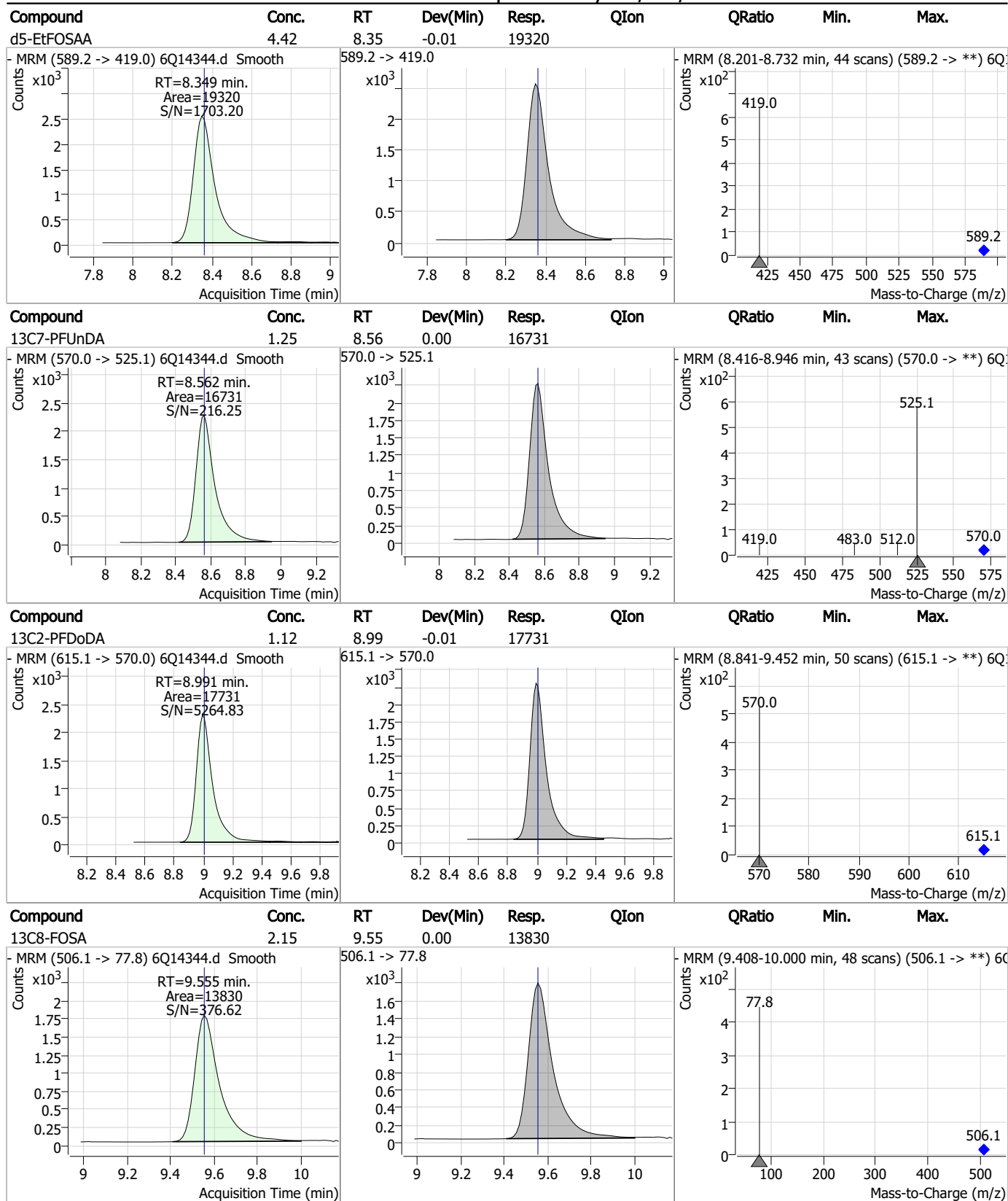
Perfluorinated Compounds by LC/MS/MS



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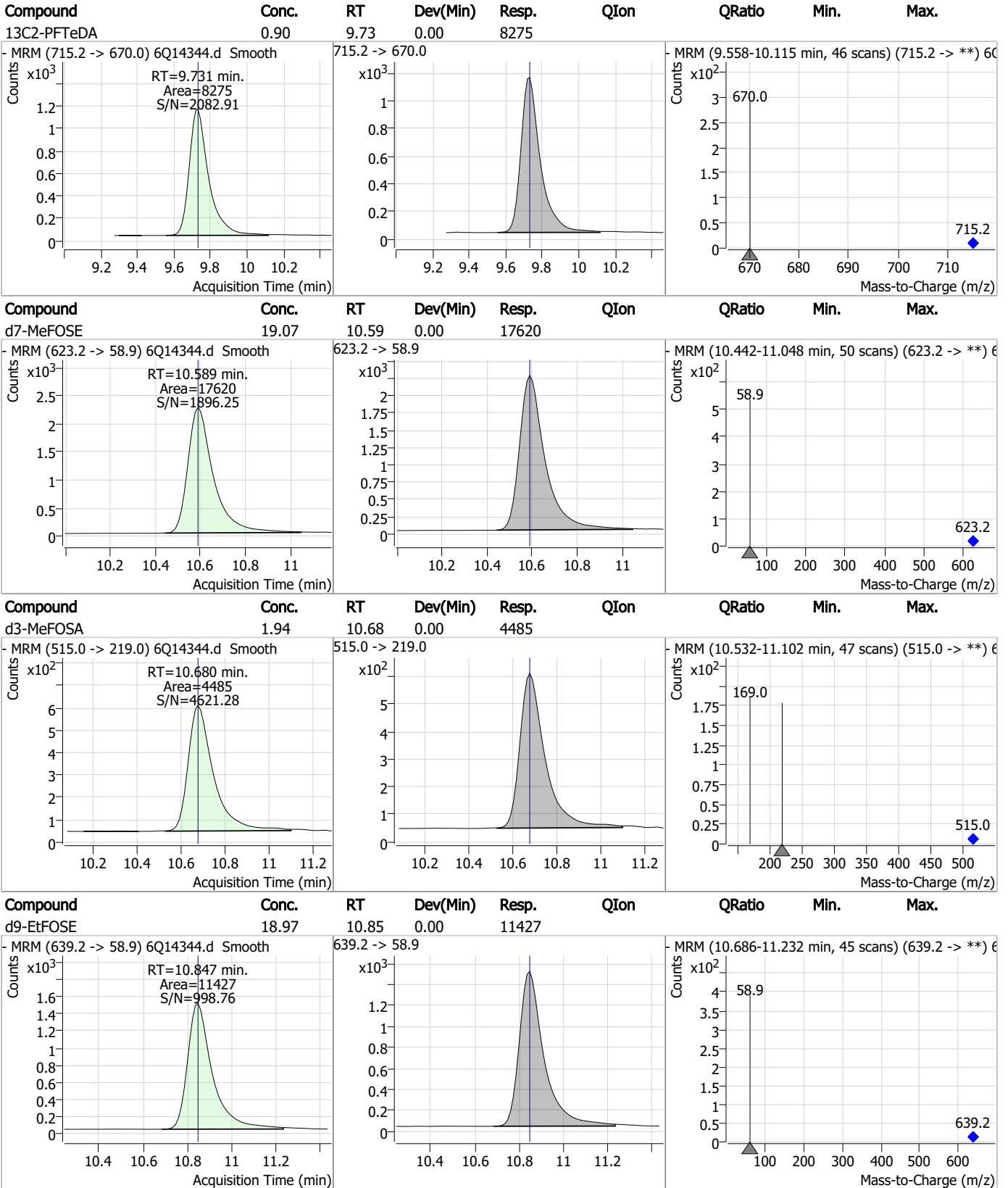
Perfluorinated Compounds by LC/MS/MS



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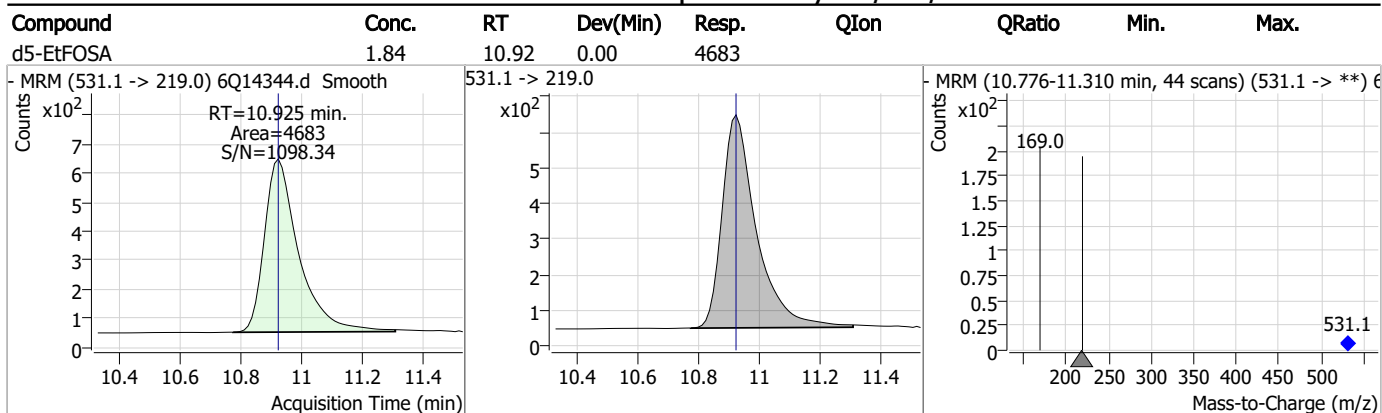
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14339.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 8:56:19 PM
 Sample Name : IBLK
 Vial : P1-A1
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	95519	10.00 µg/L	0.000
M5-PFPeA	4.324	268.3 -> 223.0	46669	5.00 µg/L	-0.012
M5-PFHxA	5.500	318.0 -> 273.0	39434	2.50 µg/L	-0.012
M4-PFHpA	6.452	367.1 -> 322.0	45547	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	72495	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	23054	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	17672	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	20219	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	23927	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	13559	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17121	2.50 µg/L	0.000
M3-PFBS	5.444	302.1 -> 79.9	17220	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	10832	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	9556	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2602	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	3088	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	3282	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	26914	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	16394	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	24198	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	24826	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	15776	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6719	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	5788	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10671	2.50 µg/L	0.000
13C3-PFBA	2.929	216.0 -> 172.0	40670	5.00 µg/L	-0.012
18O2-PFHxS	7.211	403.0 -> 83.9	7561	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	88979	2.50 µg/L	0.000
13C2-PFDA	8.096	515.1 -> 470.1	24632	1.25 µg/L	-0.012
13C5-PFNA	7.627	468.0 -> 423.0	23521	1.25 µg/L	0.000
13C2-PFHxA	5.501	315.1 -> 270.0	42137	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2602	5.76 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.1%		
13C2-6:2FTS	6.871	429.1 -> 80.9	3088	5.41 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.2%		
13C2-8:2FTS	7.895	529.1 -> 80.9	3282	5.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.1%		
13C2-PFDoDA	8.991	615.1 -> 570.0	23927	1.23 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C2-PFTeDA	9.731	715.2 -> 670.0	13559	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C3-PFBS	5.444	302.1 -> 79.9	17220	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C3-PFHxS	7.212	402.1 -> 79.9	10832	2.58 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFBA	2.938	216.8 -> 171.9	95519	10.31 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C4-PFHpA	6.452	367.1 -> 322.0	45547	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C5-PFHxA	5.500	318.0 -> 273.0	39434	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C5-PFPeA	4.324	268.3 -> 223.0	46669	4.95 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C6-PFDA	8.108	519.1 -> 474.1	17672	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C7-PFUnDA	8.562	570.0 -> 525.1	20219	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C8-FOSA	9.555	506.1 -> 77.8	17121	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C8-PFOA	7.097	421.1 -> 376.0	72495	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C8-PFOS	8.270	507.1 -> 79.9	9556	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C9-PFNA	7.626	472.1 -> 427.0	23054	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%	
d3-MeFOSAA	8.153	573.2 -> 419.0	26914	4.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	16394	10.22 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSA	10.680	515.0 -> 219.0	5788	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.7%	
d5-EtFOSAA	8.349	589.2 -> 419.0	24198	4.97 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d7-MeFOSE	10.589	623.2 -> 58.9	24826	24.10 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
d9-EtFOSE	10.847	639.2 -> 58.9	15776	23.49 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.0%	
d5-EtFOSA	10.925	531.1 -> 219.0	6719	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%	
Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	-	427.1 -> 407.0 427.1 -> 80.9	-	N.D.	
8:2FTS	-	527.1 -> 507.0 527.1 -> 80.8	-	N.D.	
EtFOSAA	-	584.2 -> 419.1 584.2 -> 526.0	-	N.D.	
FOSA	-	498.1 -> 77.9 498.1 -> 478.0	-	N.D.	
MeFOSAA	-	570.1 -> 419.0 570.1 -> 483.0	-	N.D.	
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9 298.7 -> 98.8	-	N.D.	
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDODA	8.942	613.1 -> 569.0 613.1 -> 319.0	0	µg/L m	1
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	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	10.927	526.0 -> 219.0	1040	0.36 µg/L	m	85
		526.0 -> 169.0	944			
EtFOSE	10.860	630.0 -> 58.9	1855	3.26 µg/L	m	100
		511.9 -> 219.0	914	0.37 µg/L	#	24
MeFOSA	10.669	511.9 -> 169.0	964			
		616.1 -> 58.9	2060	2.36 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

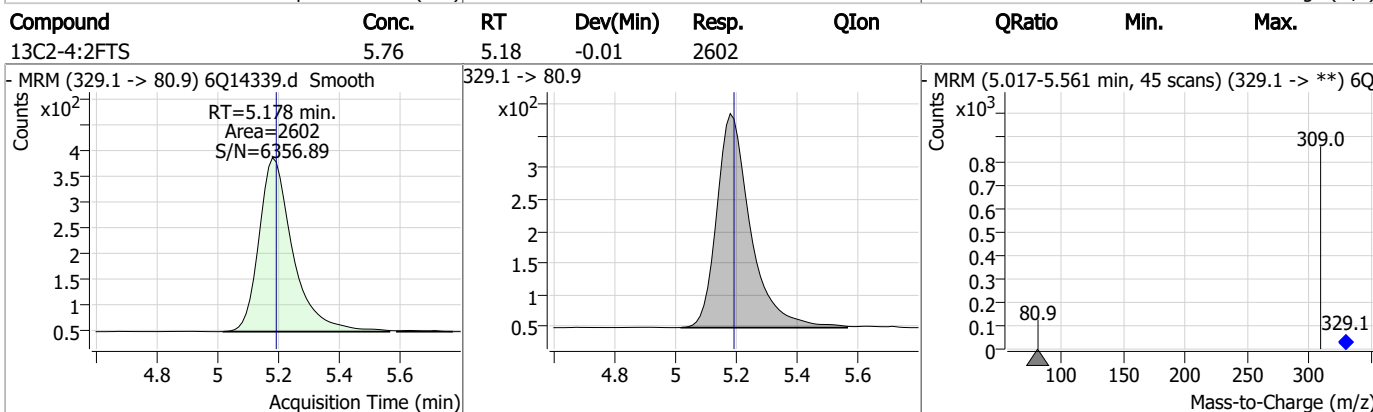
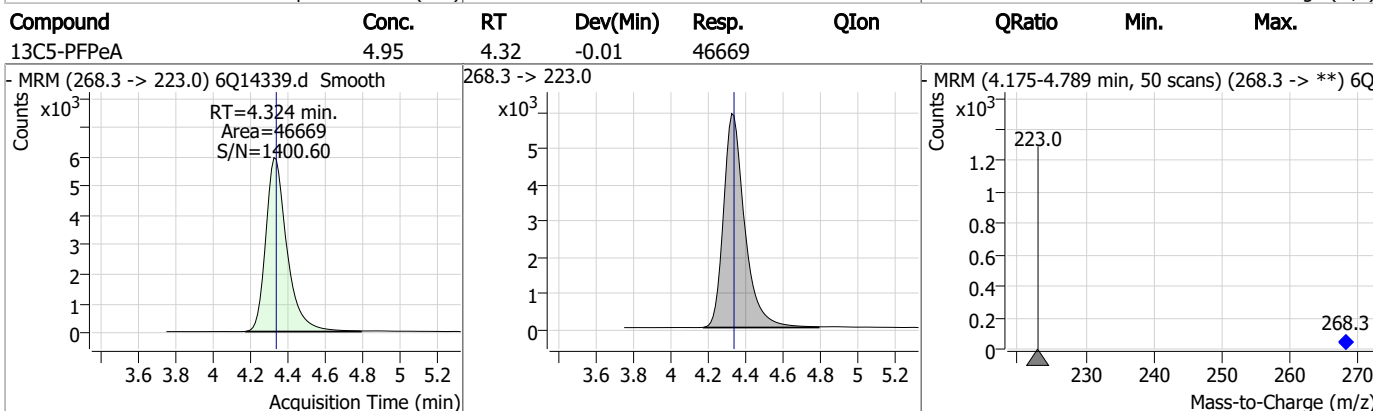
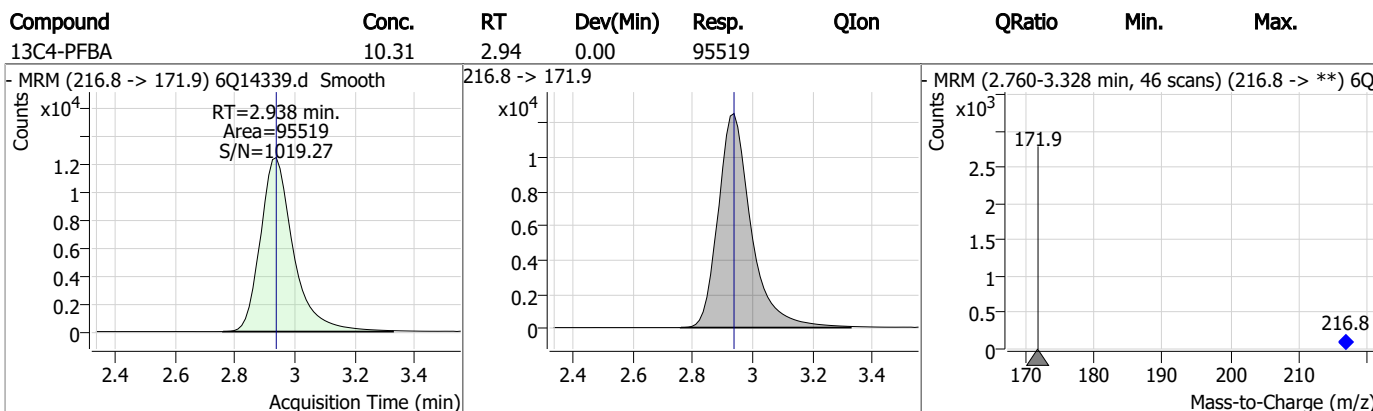
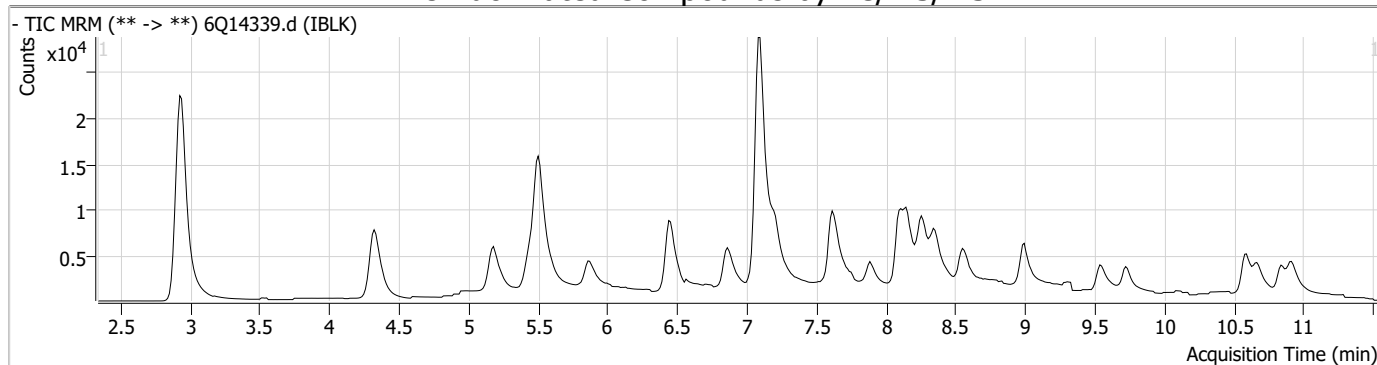
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS



7.2.2
7

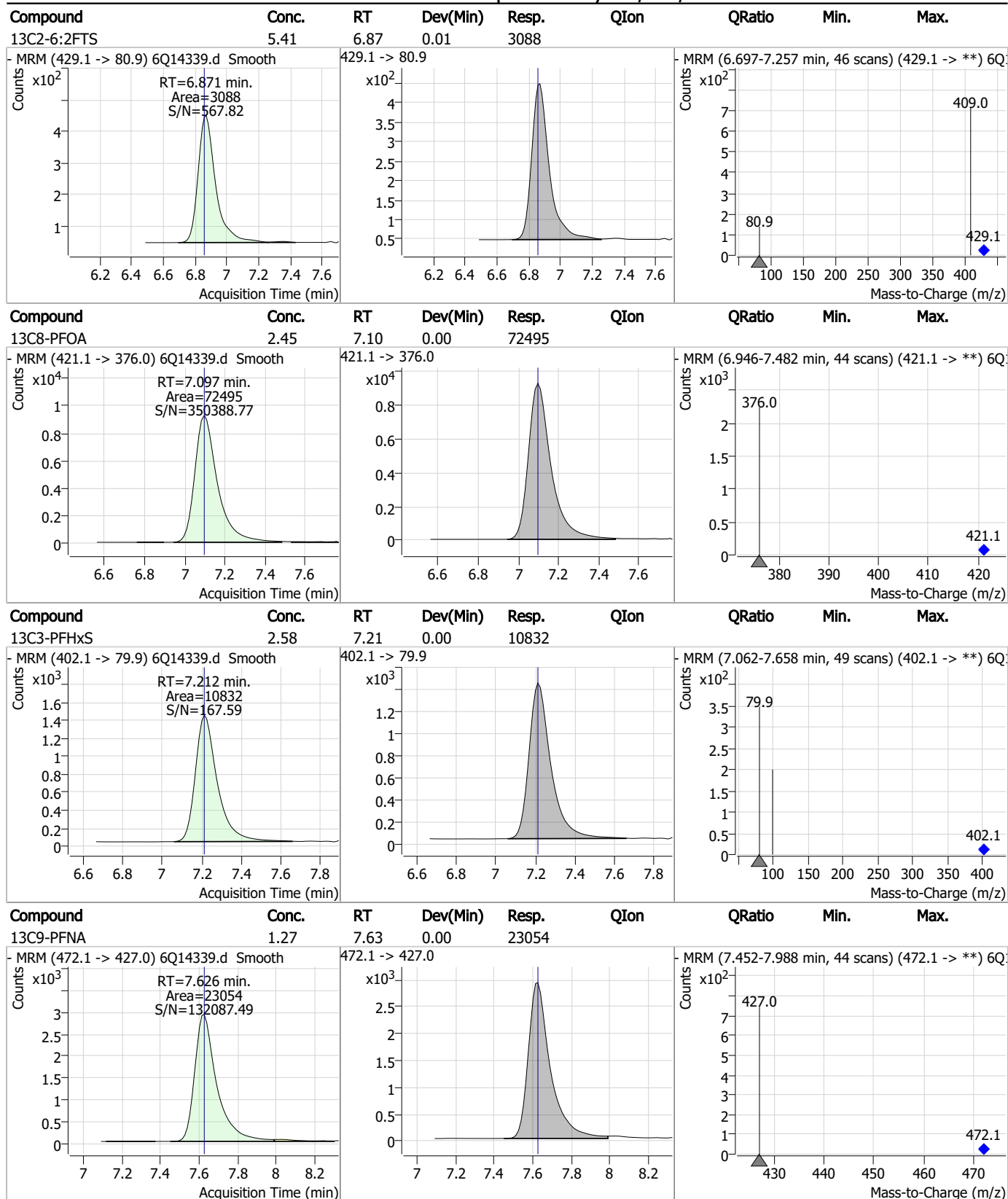
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.65	5.44	-0.01	17220				
13C5-PFHxA	2.39	5.50	-0.01	39434				
13C3-HFPO-DA	10.22	5.88	0.00	16394				
13C4-PFHpA	2.66	6.45	0.00	45547				

7.2.2
7



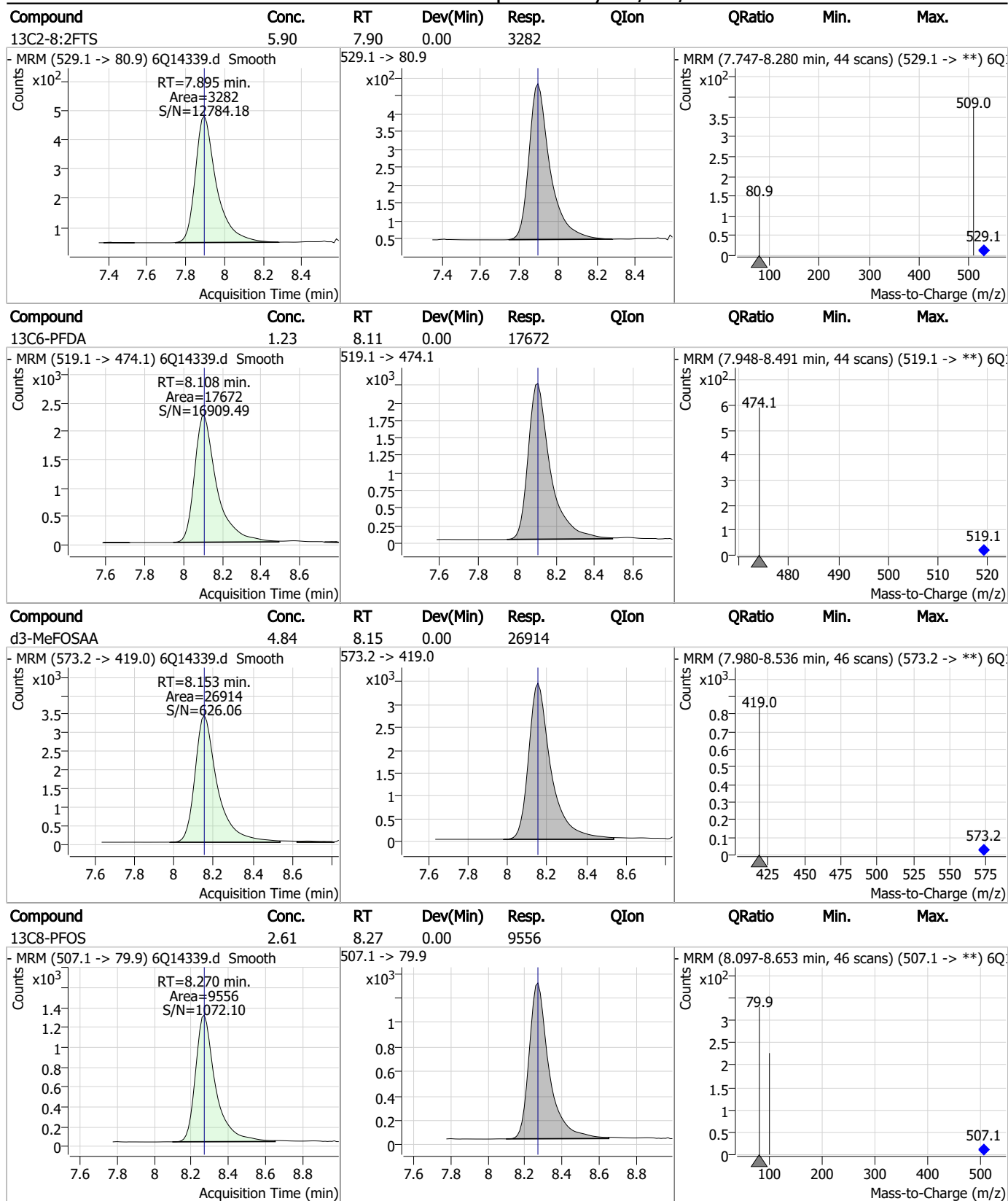
Perfluorinated Compounds by LC/MS/MS



7.2.2
7

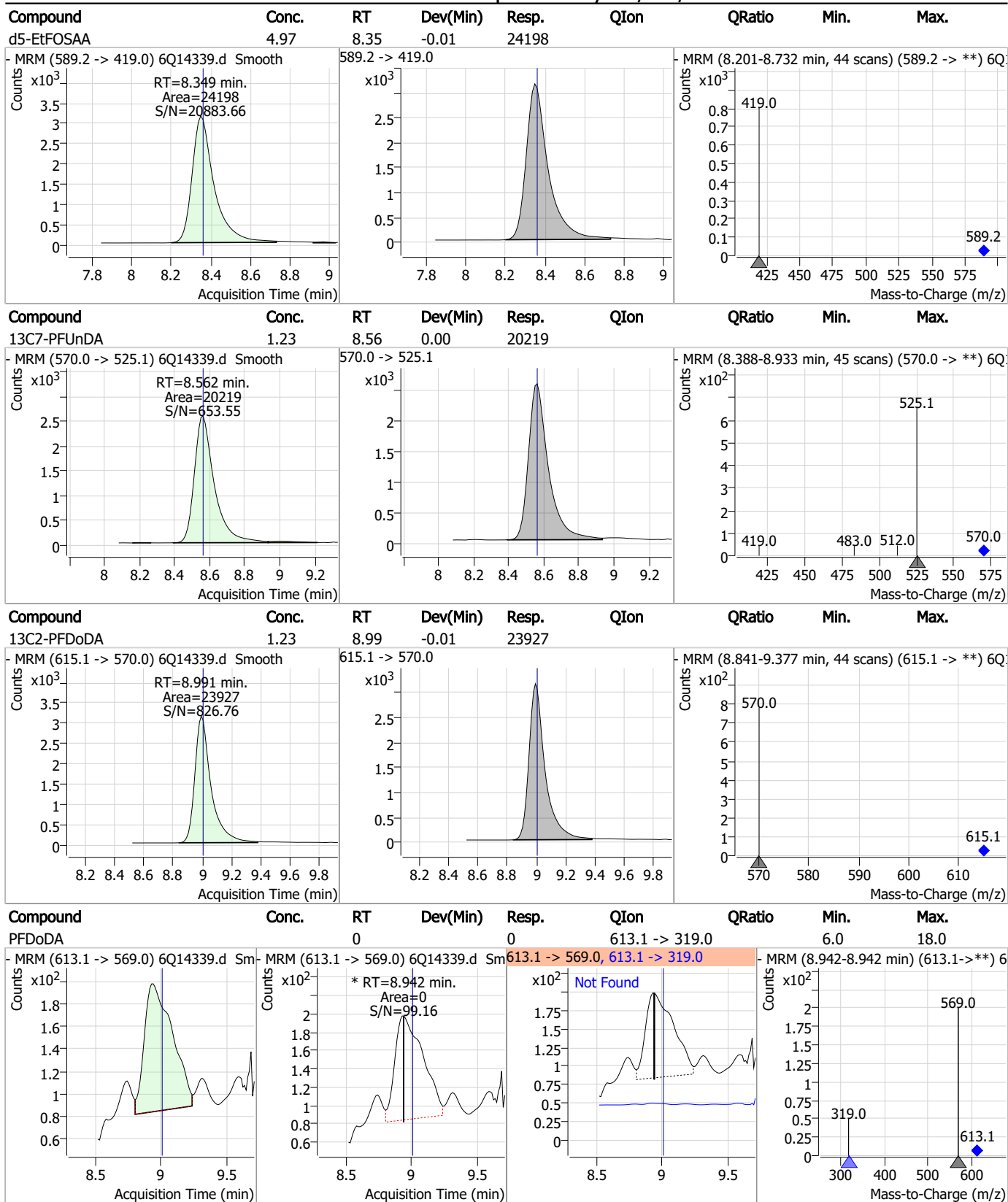


Perfluorinated Compounds by LC/MS/MS



7.2.2
7

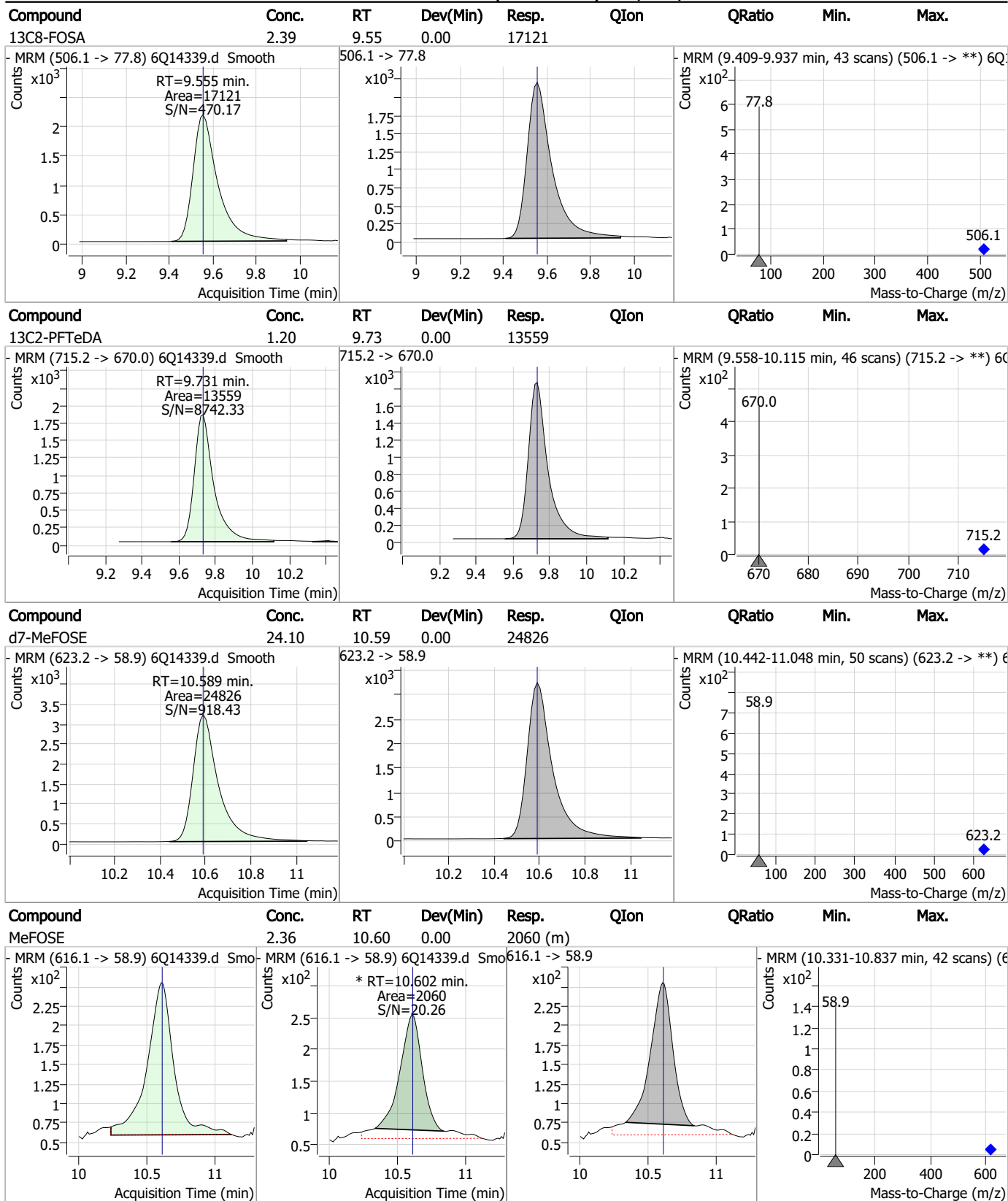
Perfluorinated Compounds by LC/MS/MS



7.2.2
7

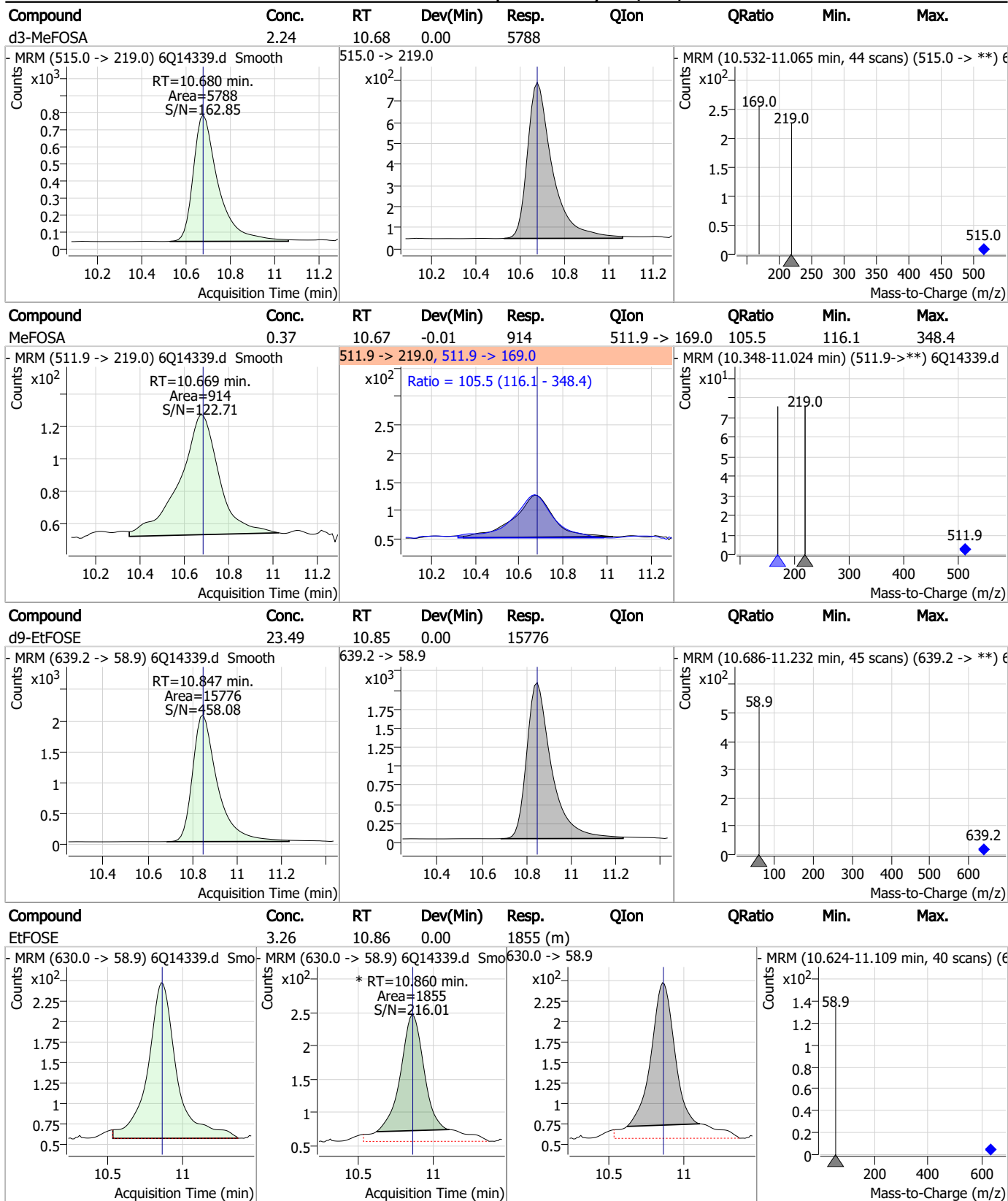


Perfluorinated Compounds by LC/MS/MS



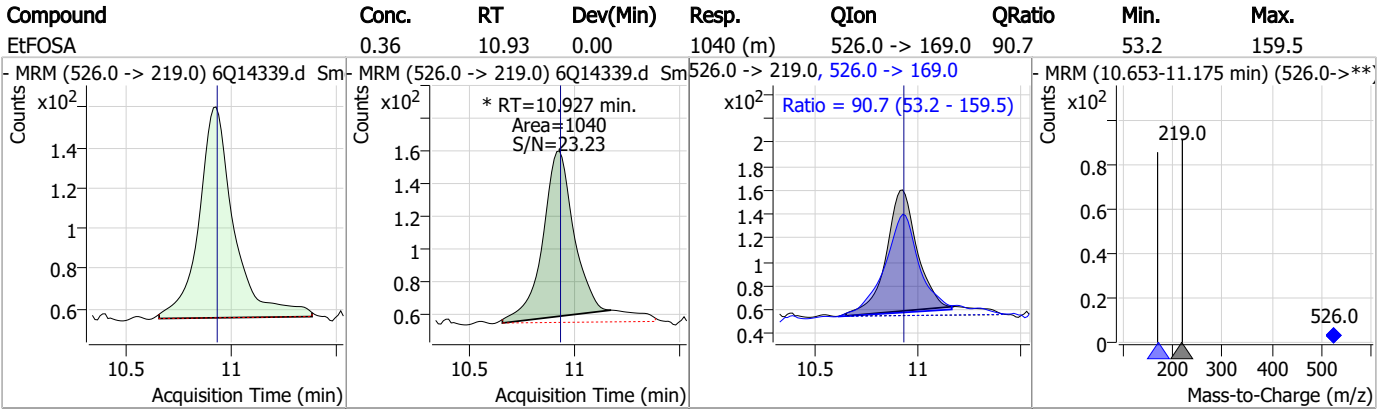
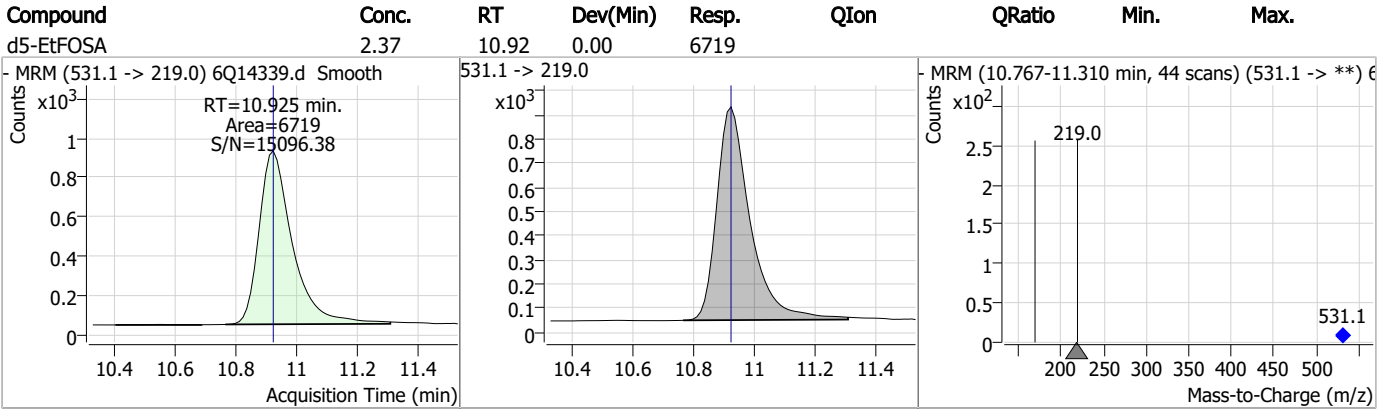
7.2.2
7

Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS



7.2.2

7

Manual Integration Approval Summary

Sample Number: S6Q218-IBLK Method: EPA DRAFT 1633
Lab FileID: 6Q14339.D Analyst approved: 02/27/23 11:07 Martha Valls
Injection Time: 02/24/23 20:56 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
MeFOSE	24448-09-7		10.60	Split peak
EtFOSE	1691-99-2		10.86	Split peak
EtFOSA	4151-50-2		10.93	Split peak

7.2.2.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Mike Eger
 02/27/23 17:31

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14342.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 9:38:20 PM
 Sample Name : op95581-bs
 Vial : P3-E1
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.975	216.8 -> 171.9	79391	10.00 µg/L	0.037
M5-PFPeA	4.337	268.3 -> 223.0	38396	5.00 µg/L	0.000
M5-PFHxA	5.500	318.0 -> 273.0	33716	2.50 µg/L	-0.012
M4-PFHpA	6.440	367.1 -> 322.0	34237	2.50 µg/L	-0.012
M8-PFOA	7.097	421.1 -> 376.0	57213	2.50 µg/L	0.000
M9-PFNA	7.614	472.1 -> 427.0	19271	1.25 µg/L	-0.012
M6-PFDA	8.108	519.1 -> 474.1	15314	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	16445	1.25 µg/L	0.000
M2-PFDoDA	9.004	615.1 -> 570.0	19130	1.25 µg/L	0.000
M2-PFTeDA	9.731	715.2 -> 670.0	10065	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	15341	2.50 µg/L	0.000
M3-PFBS	5.444	302.1 -> 79.9	13093	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	8587	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	7408	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2016	5.00 µg/L	-0.012
M2-6:2FTS	6.858	429.1 -> 80.9	2303	5.00 µg/L	0.000
M2-8:2FTS	7.895	529.1 -> 80.9	2212	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	23264	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	14252	10.00 µg/L	0.000
M5-EtFOSAA	8.361	589.2 -> 419.0	19916	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	17032	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	11320	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	5377	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	4979	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	8502	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	32157	5.00 µg/L	0.025
18O2-PFHxS	7.211	403.0 -> 83.9	6050	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	69436	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	19441	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	18752	1.25 µg/L	0.000
13C2-PFHxA	5.501	315.1 -> 270.0	33238	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2016	5.57 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-6:2FTS	6.858	429.1 -> 80.9	2303	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2212	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFDoDA	9.004	615.1 -> 570.0	19130	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C2-PFTeDA	9.731	715.2 -> 670.0	10065	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.2%		
13C3-PFBS	5.444	302.1 -> 79.9	13093	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFHxS	7.212	402.1 -> 79.9	8587	2.56 µg/L	0.000

7.31
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C4-PFBA	2.975	216.8 -> 171.9	79391	10.83 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C4-PFHpA	6.440	367.1 -> 322.0	34237	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C5-PFHxA	5.500	318.0 -> 273.0	33716	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C5-PFPeA	4.337	268.3 -> 223.0	38396	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C6-PFDA	8.108	519.1 -> 474.1	15314	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.0%		
13C7-PFUnDA	8.562	570.0 -> 525.1	16445	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C8-FOSA	9.555	506.1 -> 77.8	15341	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C8-PFOA	7.097	421.1 -> 376.0	57213	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C8-PFOS	8.270	507.1 -> 79.9	7408	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C9-PFNA	7.614	472.1 -> 427.0	19271	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.7%		
d3-MeFOSAA	8.153	573.2 -> 419.0	23264	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C3-HFPO-DA	5.878	286.9 -> 168.9	14252	11.26 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 112.6%		
d3-MeFOSA	10.680	515.0 -> 219.0	4979	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.9%		
d5-EtFOSAA	8.361	589.2 -> 419.0	19916	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.6%		
d7-MeFOSE	10.589	623.2 -> 58.9	17032	20.75 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 83.0%		
d9-EtFOSE	10.847	639.2 -> 58.9	11320	21.16 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 84.6%		
d5-EtFOSA	10.925	531.1 -> 219.0	5377	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.2%		
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	43916	11.73 µg/L	98
		327.1 -> 80.9	10089		
6:2FTS	6.859	427.1 -> 407.0	35734	12.47 µg/L	96
		427.1 -> 80.9	7021		
8:2FTS	7.896	527.1 -> 507.0	17836	12.40 µg/L	97
		527.1 -> 80.8	4511		
EtFOSAA	8.362	584.2 -> 419.1	8057	3.09 µg/L	m 90
		584.2 -> 526.0	3666		
FOSA	9.557	498.1 -> 77.9	14837	2.85 µg/L	98
		498.1 -> 478.0	500		
MeFOSAA	8.154	570.1 -> 419.0	11089	2.90 µg/L	98
		570.1 -> 483.0	1778		
PFBA	2.969	212.8 -> 168.9	19382	12.12 µg/L	100
PFBS	5.444	298.7 -> 79.9	11818	2.74 µg/L	100
		298.7 -> 98.8	5663		
PFDA	8.108	512.9 -> 469.0	43957	3.02 µg/L	95
		512.9 -> 219.0	6786		
PFDODA	8.992	613.1 -> 569.0	36738	2.75 µg/L	99
		613.1 -> 319.0	4591		
PFDS	9.167	599.0 -> 79.9	5457	2.77 µg/L	100

7.31
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2741			
PFHpA	6.440	363.1 -> 319.0	54414	3.20	µg/L	100
		363.1 -> 169.0	7574			
PFHpS	7.765	449.0 -> 79.9	7371	2.86	µg/L	98
		449.0 -> 98.9	4546			
PFHxA	5.503	313.0 -> 269.0	31943	2.96	µg/L	98
		313.0 -> 118.9	1293			
PFHxS	7.213	398.7 -> 79.9	8831	2.81	µg/L	m 95
		398.7 -> 98.9	5079			
PFNA	7.615	463.0 -> 419.0	27393	2.80	µg/L	99
		463.0 -> 219.0	5807			
PFNS	8.737	548.8 -> 79.9	7412	2.75	µg/L	88
		548.8 -> 98.9	4748			
PFOA	7.098	413.0 -> 369.0	62392	2.96	µg/L	94
		413.0 -> 169.0	8447			
PFOS	8.271	498.9 -> 79.9	7944	2.87	µg/L	m 77
		498.9 -> 98.8	5179			
PFPeA	4.338	263.0 -> 219.0	39723	5.91	µg/L	100
PFPeS	6.504	349.1 -> 79.9	11240	2.84	µg/L	94
		349.1 -> 98.9	5514			
PFTeDA	9.732	713.1 -> 669.0	30003	3.18	µg/L	99
		713.1 -> 168.9	1992			
PFTrDA	9.387	663.0 -> 619.0	32394	2.85	µg/L	99
		663.0 -> 168.9	2414			
PFUnDA	8.562	563.1 -> 519.0	36679	3.19	µg/L	100
		563.1 -> 269.1	5317			
11CI-PF3OUdS	9.439	630.9 -> 450.9	79225	10.05	µg/L	100
		632.9 -> 452.9	24147			
9CI-PF3ONS	8.602	530.8 -> 351.0	142123	10.01	µg/L	94
		532.8 -> 353.0	47152			
ADONA	6.704	376.9 -> 250.9	312526	11.06	µg/L	97
		376.9 -> 84.8	64388			
HFPO-DA	5.879	284.9 -> 168.9	13091	11.52	µg/L	97
		284.9 -> 184.9	1735			
3:3FTCA	3.829	241.0 -> 177.0	4187	11.74	µg/L	92
		241.0 -> 117.0	683			
5:3FTCA	6.156	341.0 -> 237.1	180930	73.39	µg/L	88
		341.0 -> 217.0	177025			
7:3FTCA	7.567	441.0 -> 316.9	94147	71.91	µg/L	99
		441.0 -> 336.9	175908			
EtFOSA	10.927	526.0 -> 219.0	5933	2.57	µg/L	93
		526.0 -> 169.0	5868			
EtFOSE	10.860	630.0 -> 58.9	10841	26.58	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	5979	2.82	µg/L	# 20
		511.9 -> 169.0	5940			
MeFOSE	10.615	616.1 -> 58.9	15594	26.08	µg/L	100
PFDoDS	9.858	699.1 -> 79.9	3110	2.79	µg/L	97
		699.1 -> 98.8	1904			
NFDHA	5.395	295.0 -> 201.0	4068	6.66	µg/L	94
		295.0 -> 84.9	1978			
PFMBA	4.738	279.0 -> 85.1	11936	6.02	µg/L	100
PFMPA	3.516	229.0 -> 84.9	10757	5.98	µg/L	100
PFEESA	5.983	314.8 -> 134.9	86301	5.64	µg/L	100
		314.8 -> 82.9	2150			

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

7.3.1
7

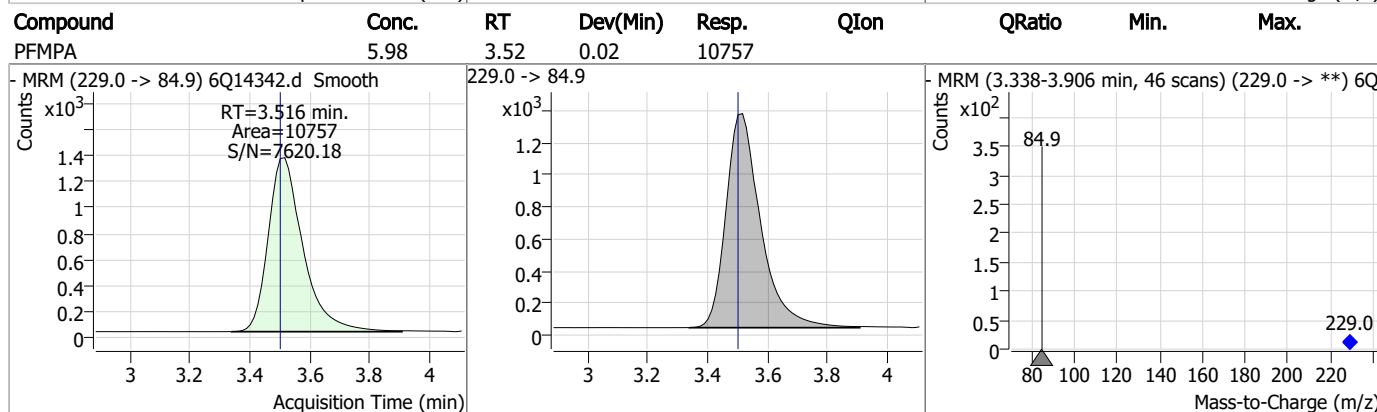
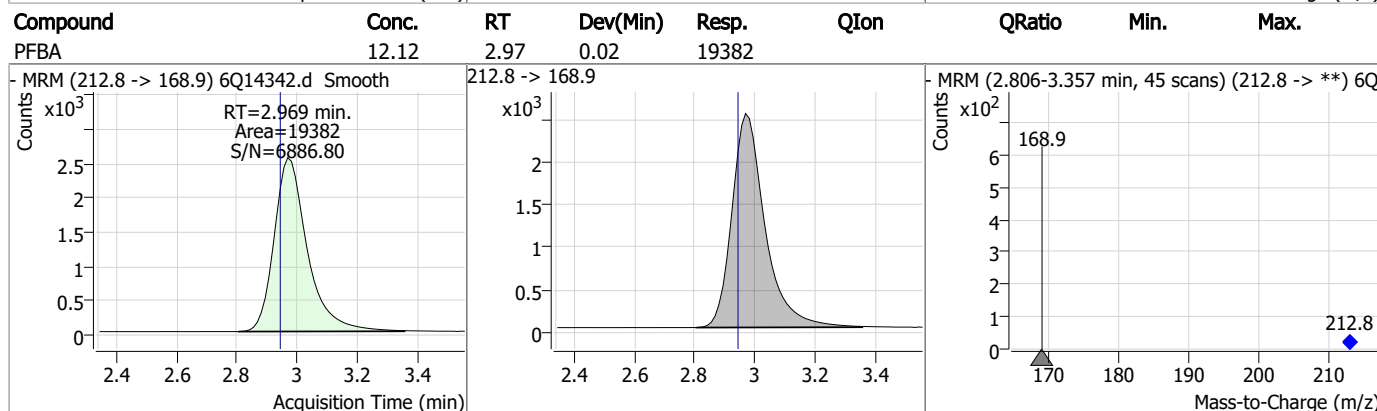
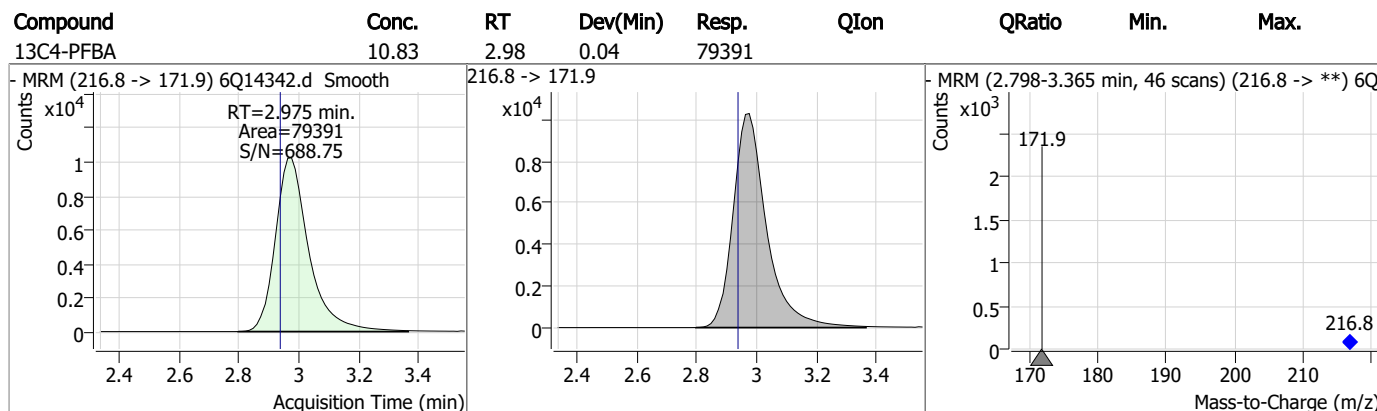
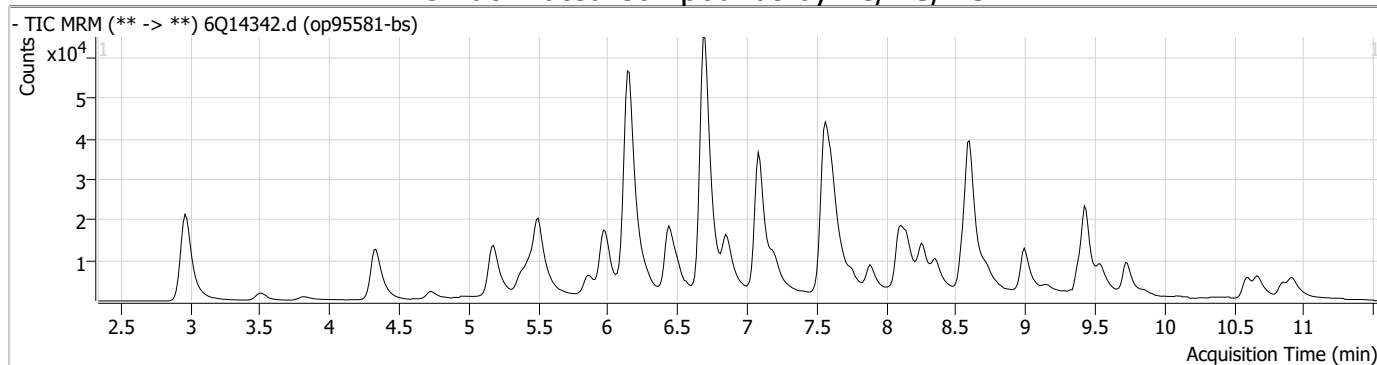
Perfluorinated Compounds by LC/MS/MS

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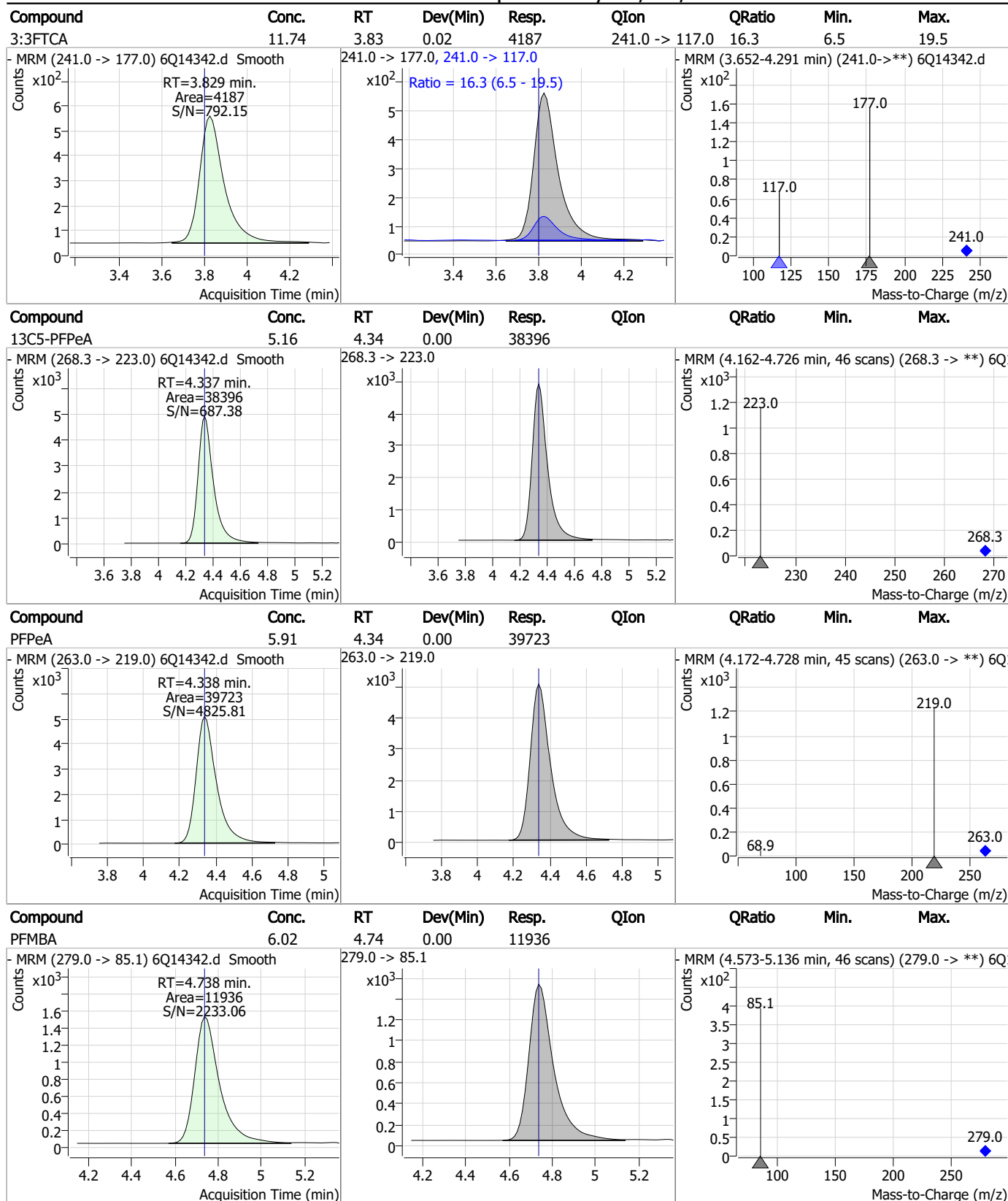
7.3.1

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Perfluorinated Compounds by LC/MS/MS

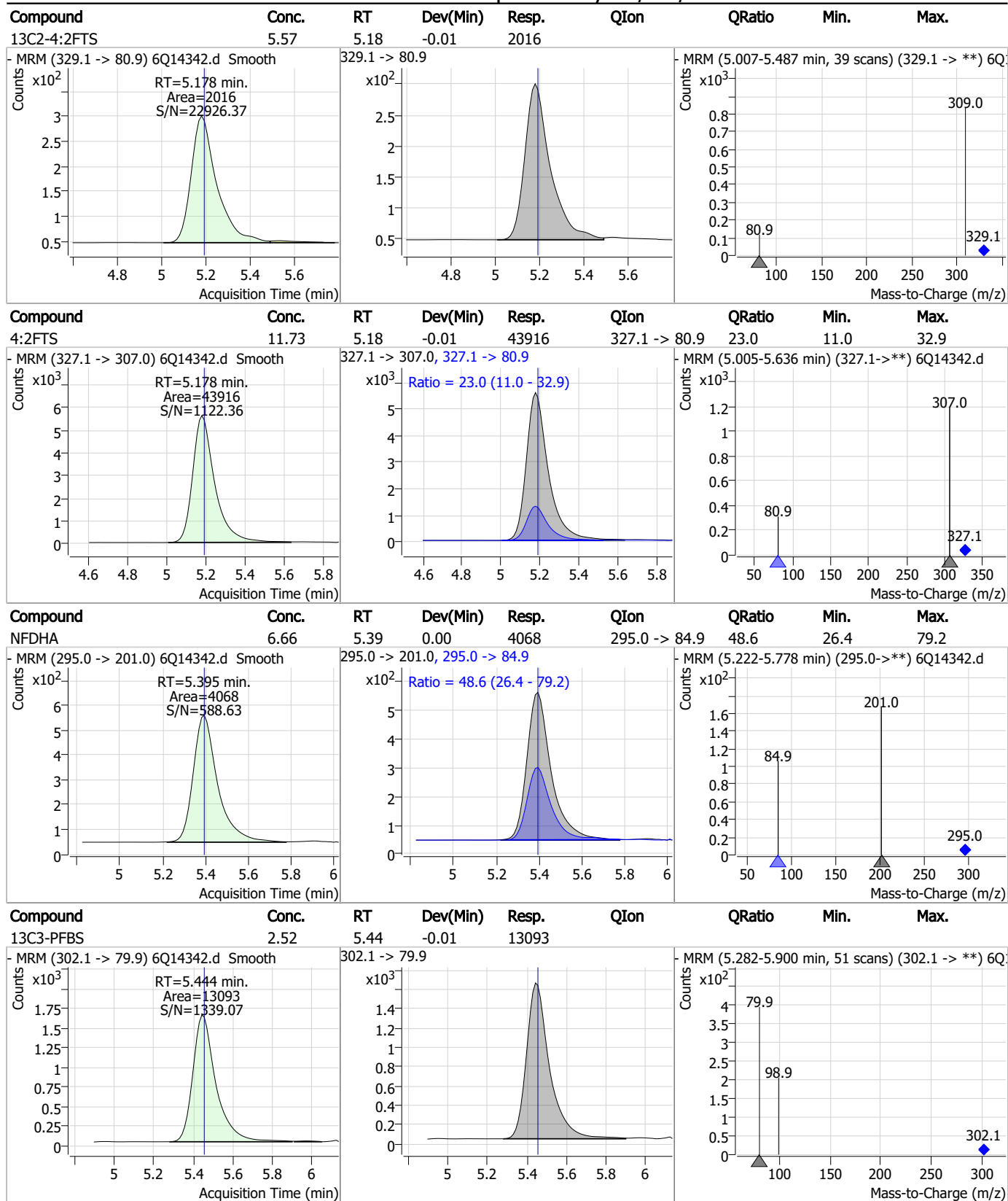


Perfluorinated Compounds by LC/MS/MS



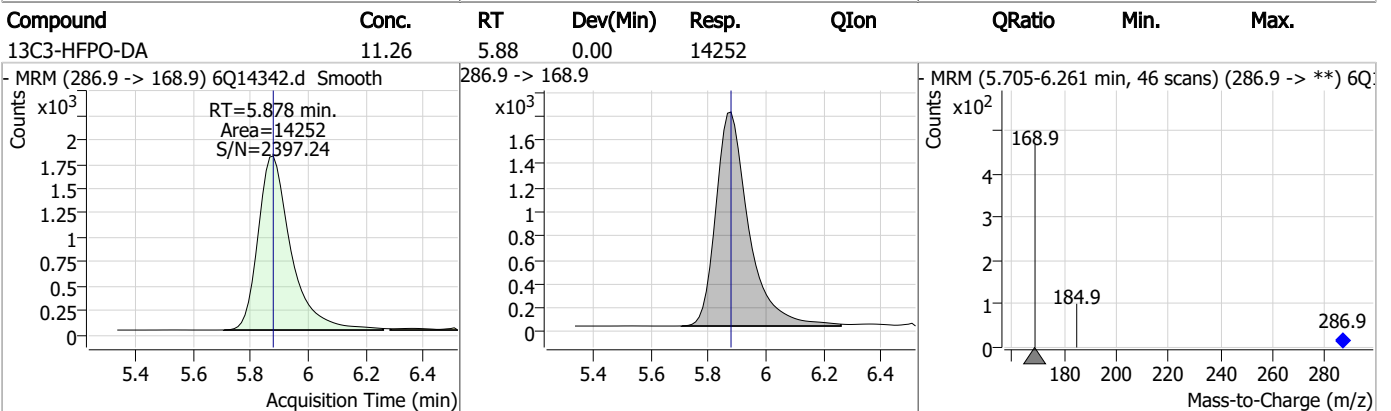
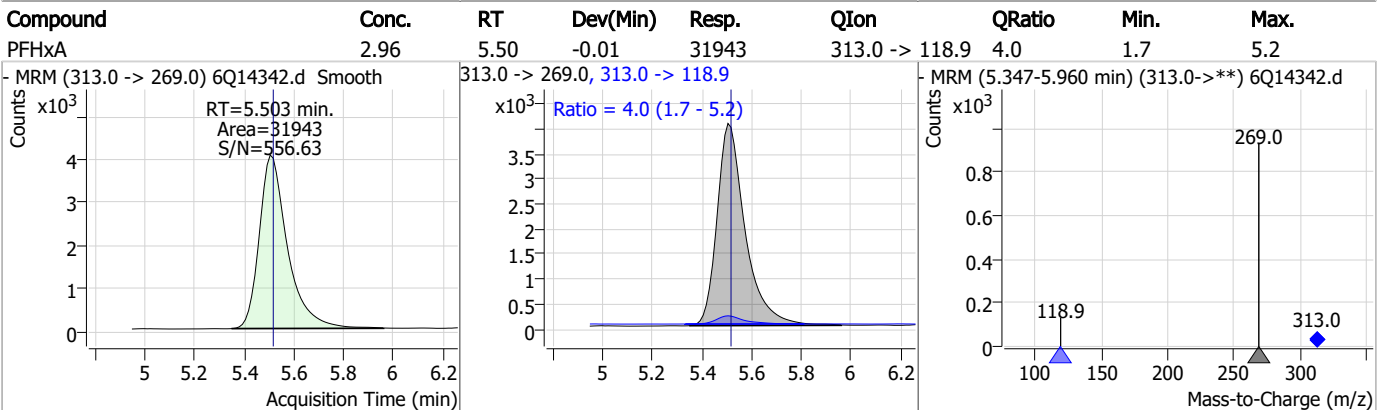
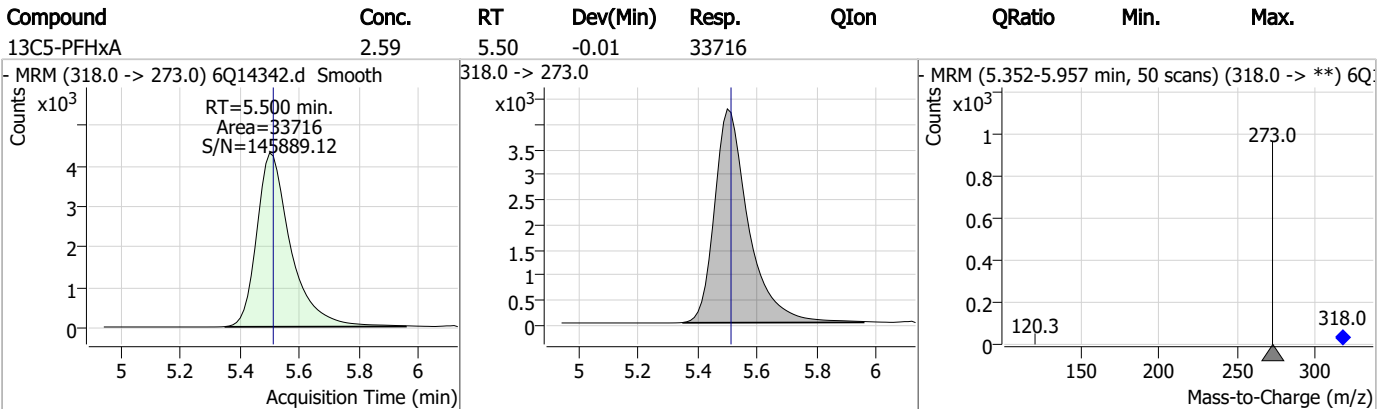
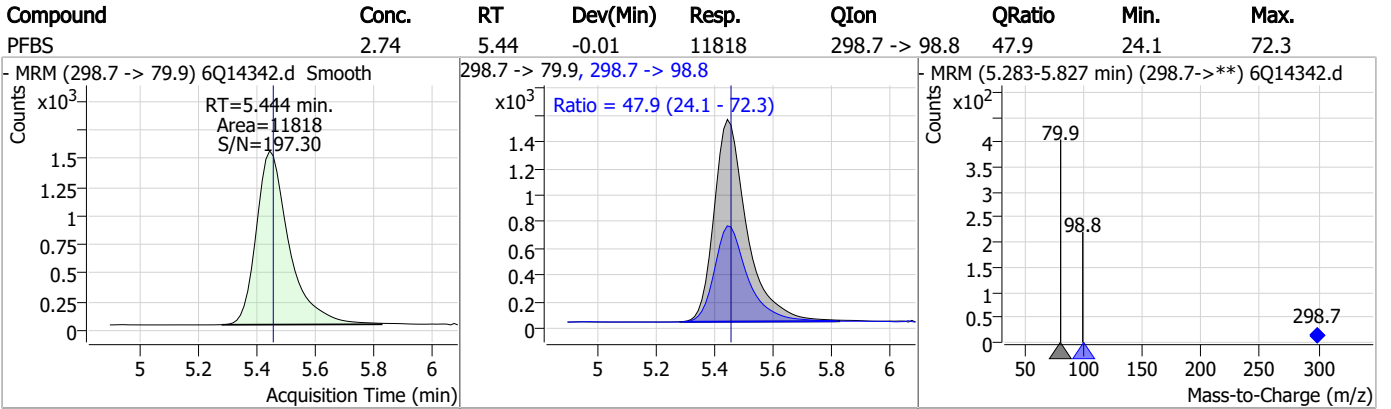
7.3.1
7

Perfluorinated Compounds by LC/MS/MS

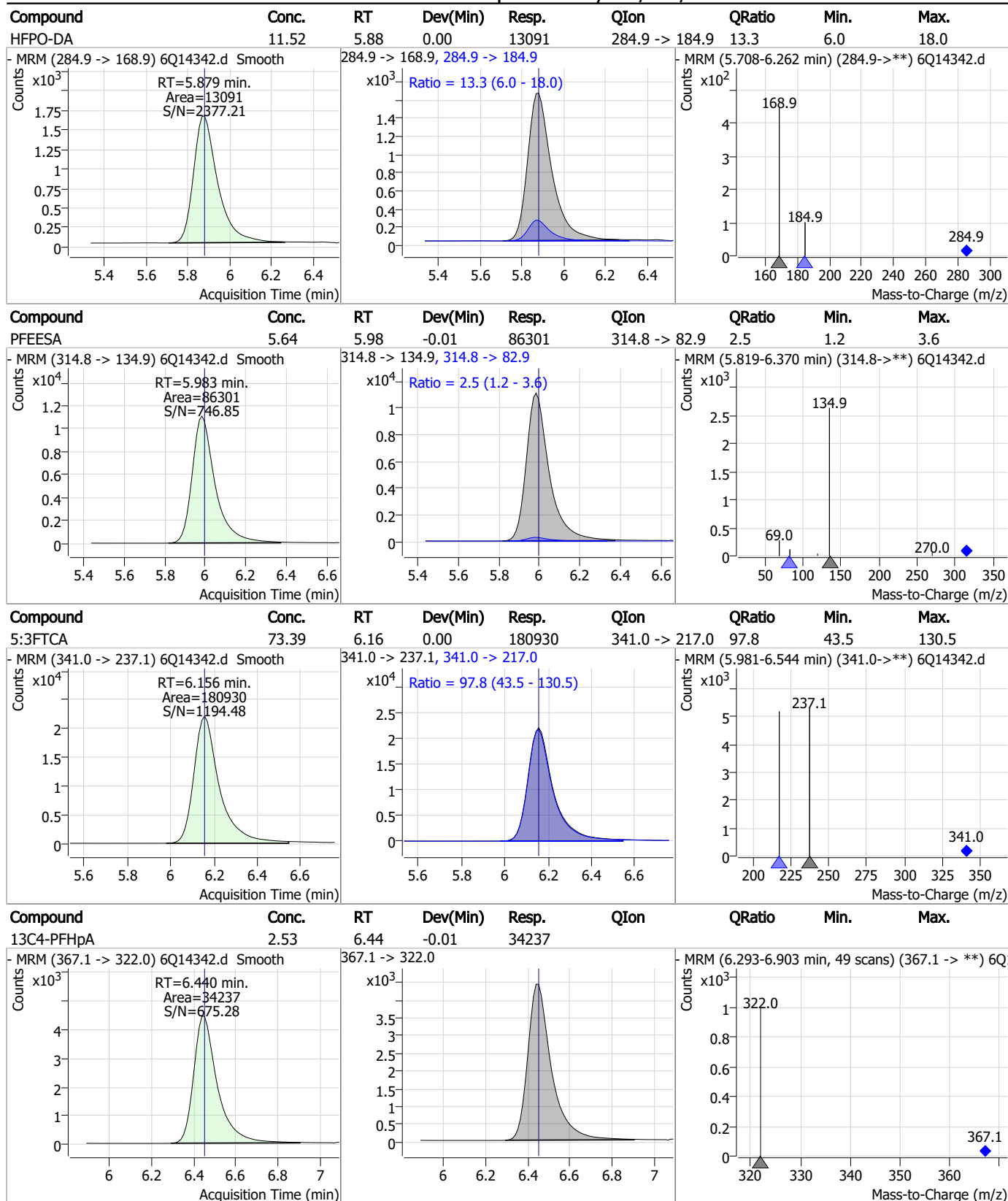


7.3.1
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

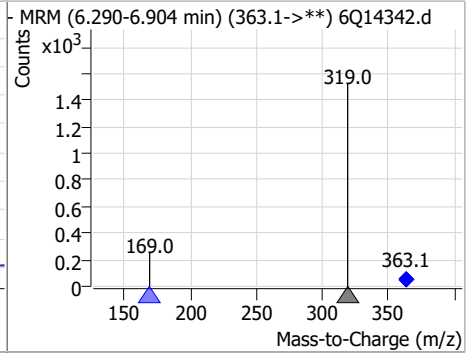
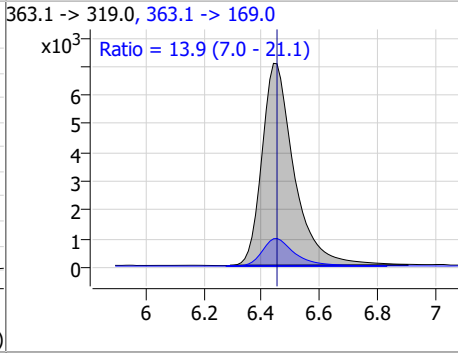
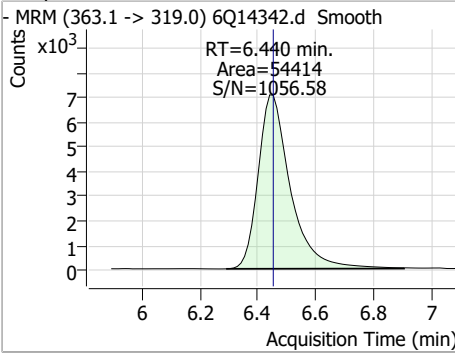


7.3.1
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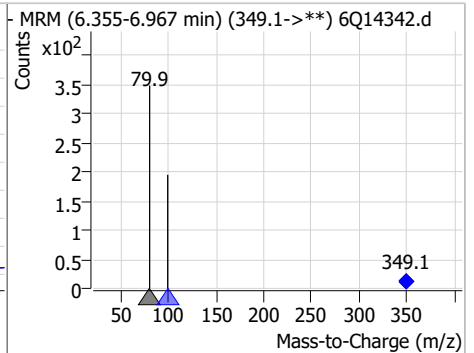
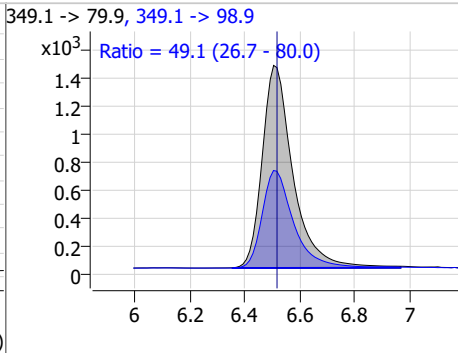
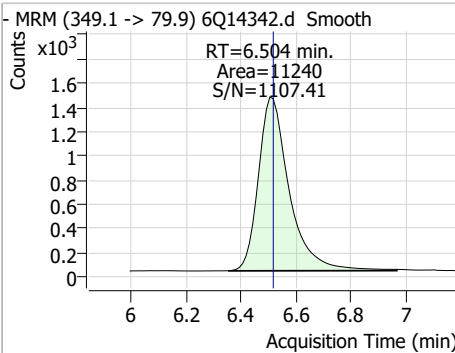


Perfluorinated Compounds by LC/MS/MS

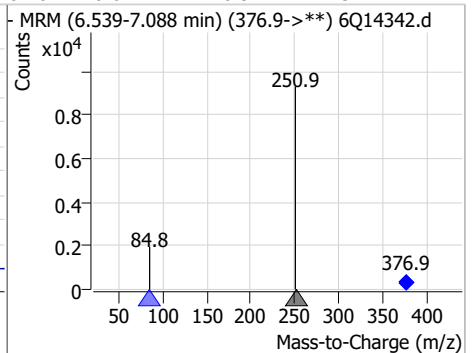
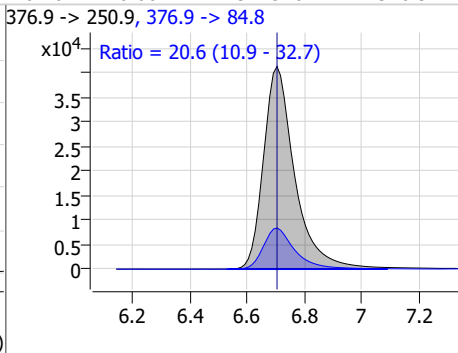
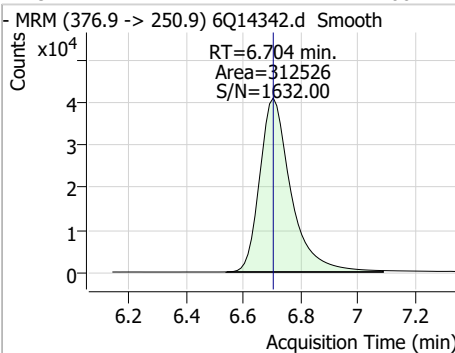
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	3.20	6.44	-0.01	54414	363.1 -> 169.0	13.9	7.0	21.1



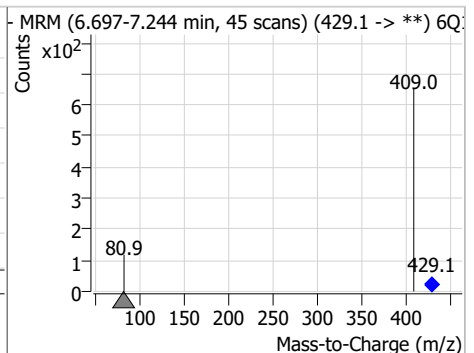
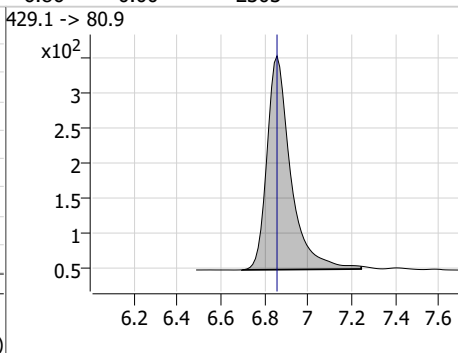
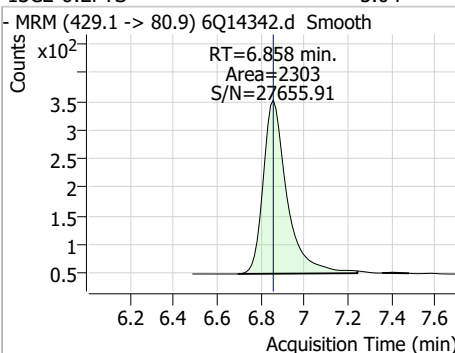
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.84	6.50	-0.01	11240	349.1 -> 98.9	49.1	26.7	80.0



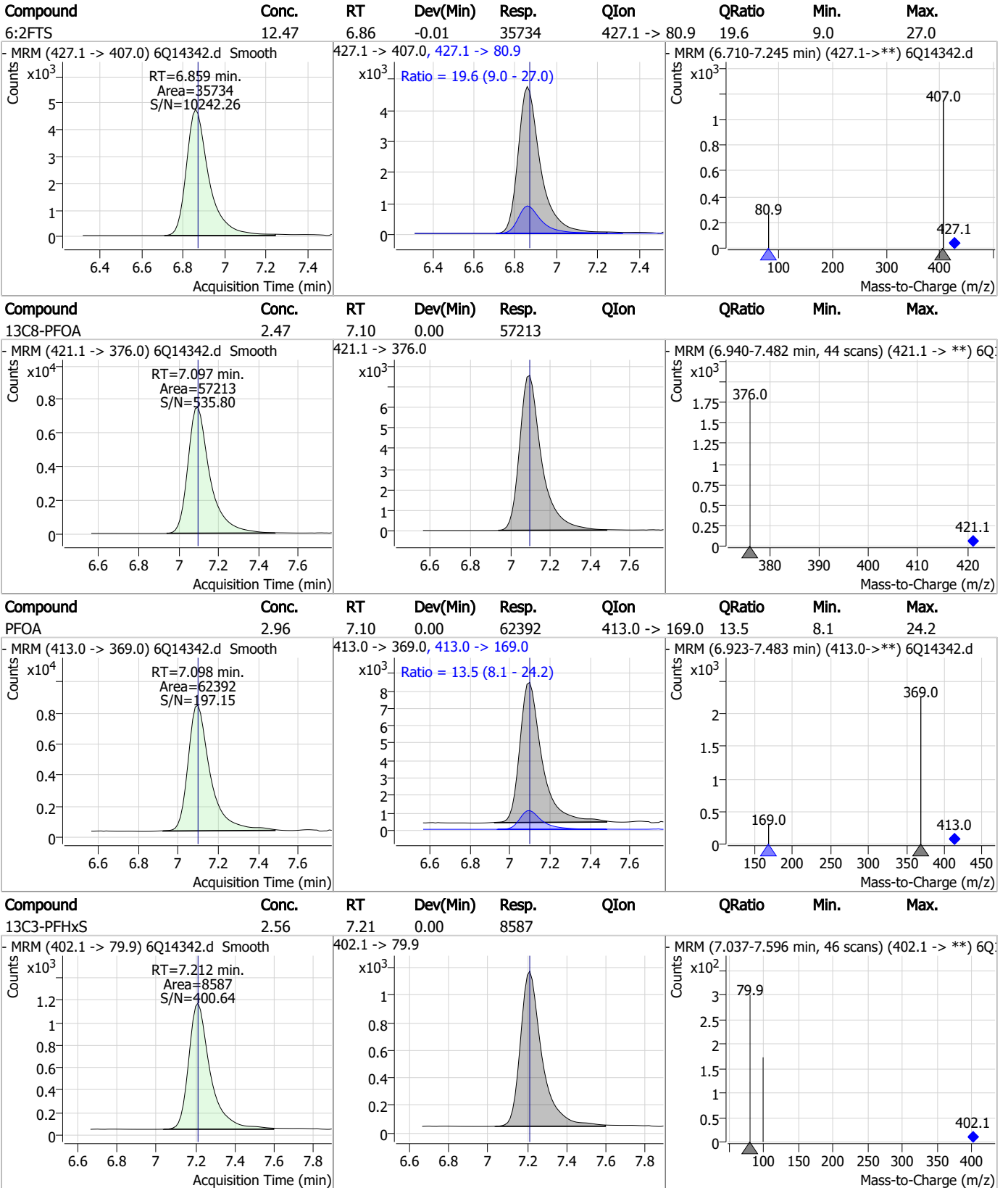
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	11.06	6.70	0.00	312526	376.9 -> 84.8	20.6	10.9	32.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.04	6.86	0.00	2303	429.1 -> 80.9			



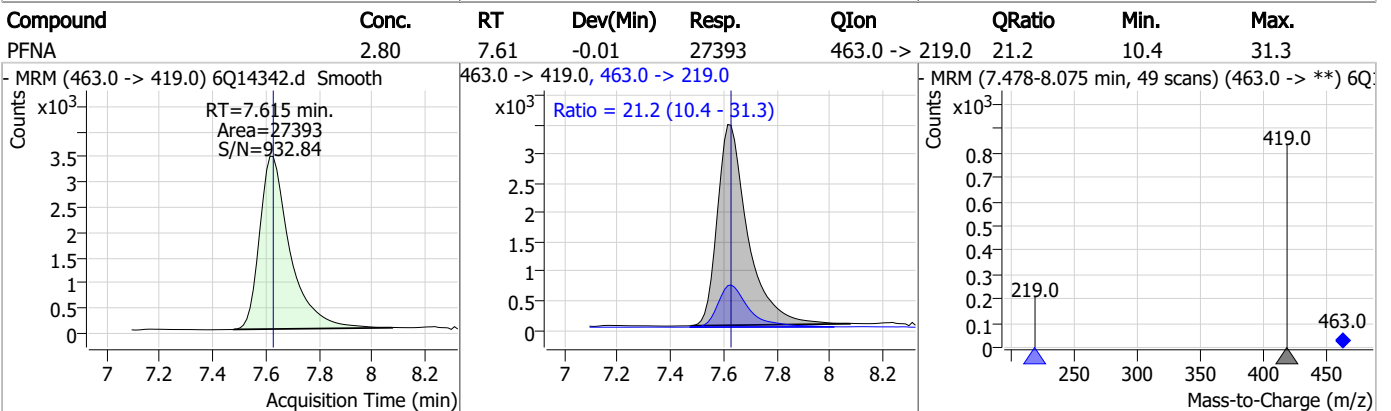
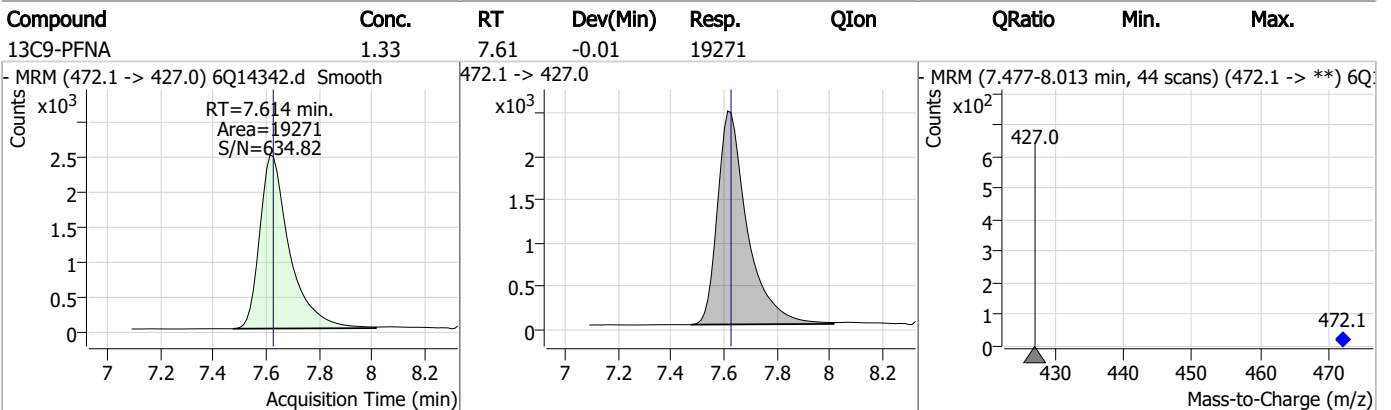
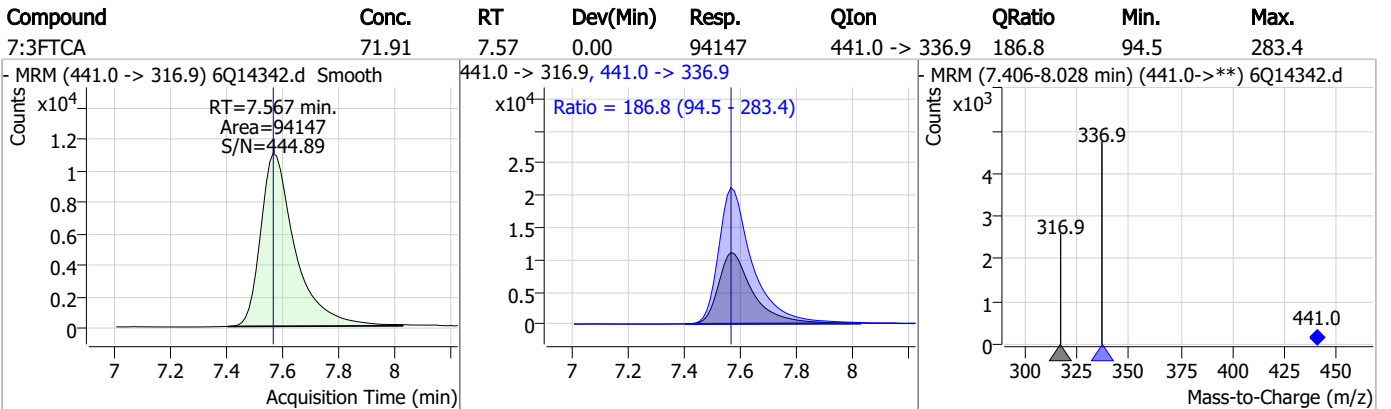
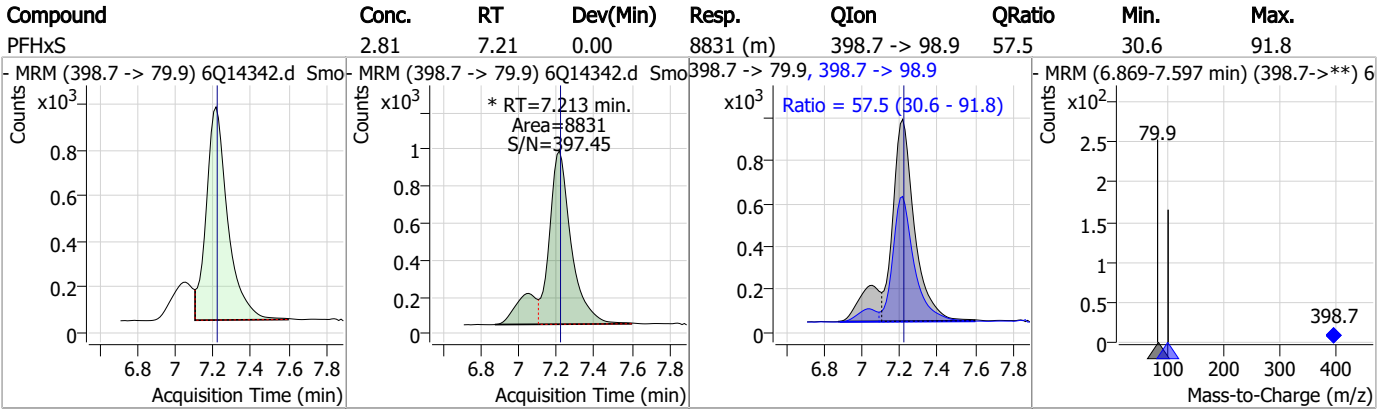
Perfluorinated Compounds by LC/MS/MS



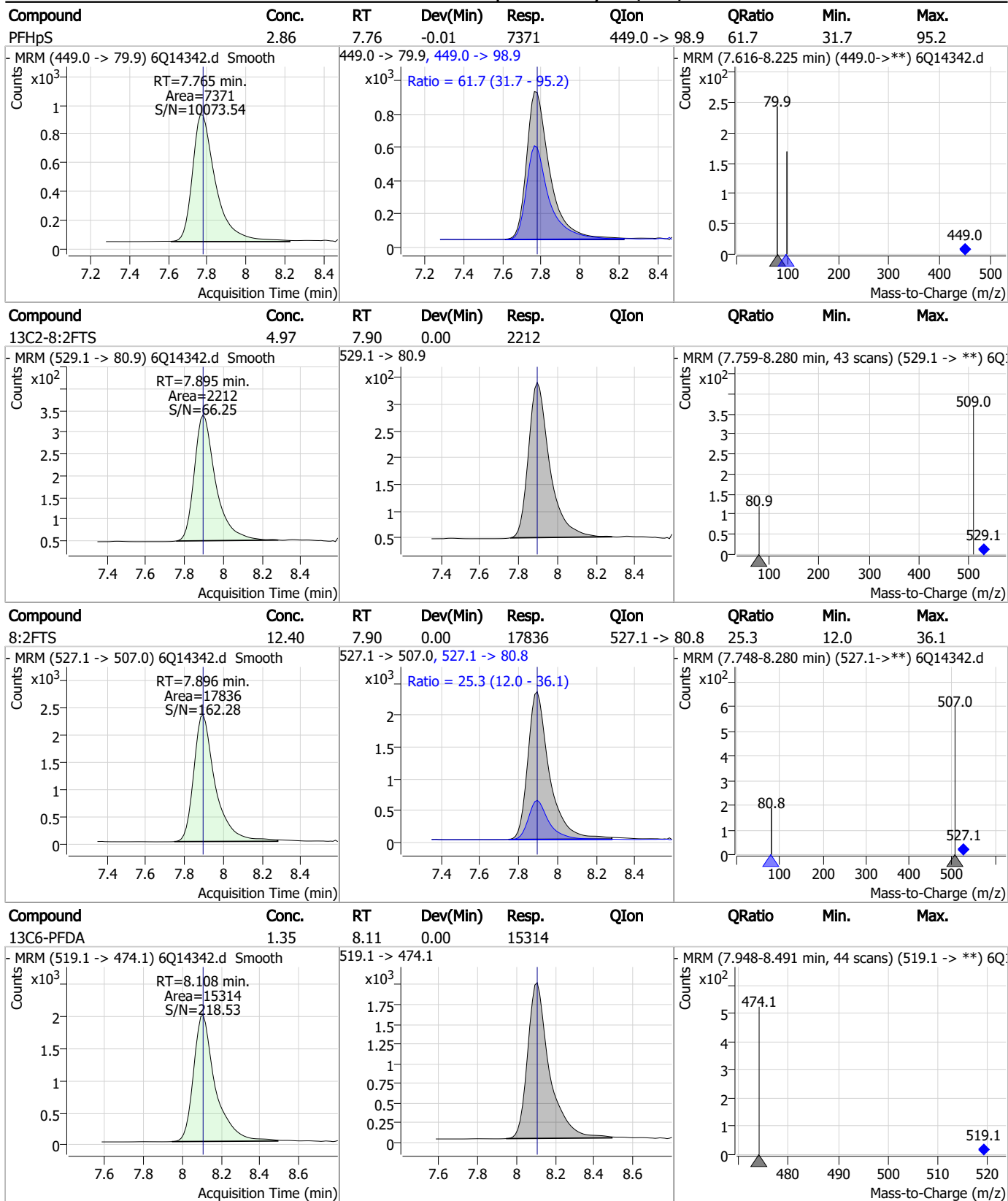
7.3.1

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Perfluorinated Compounds by LC/MS/MS

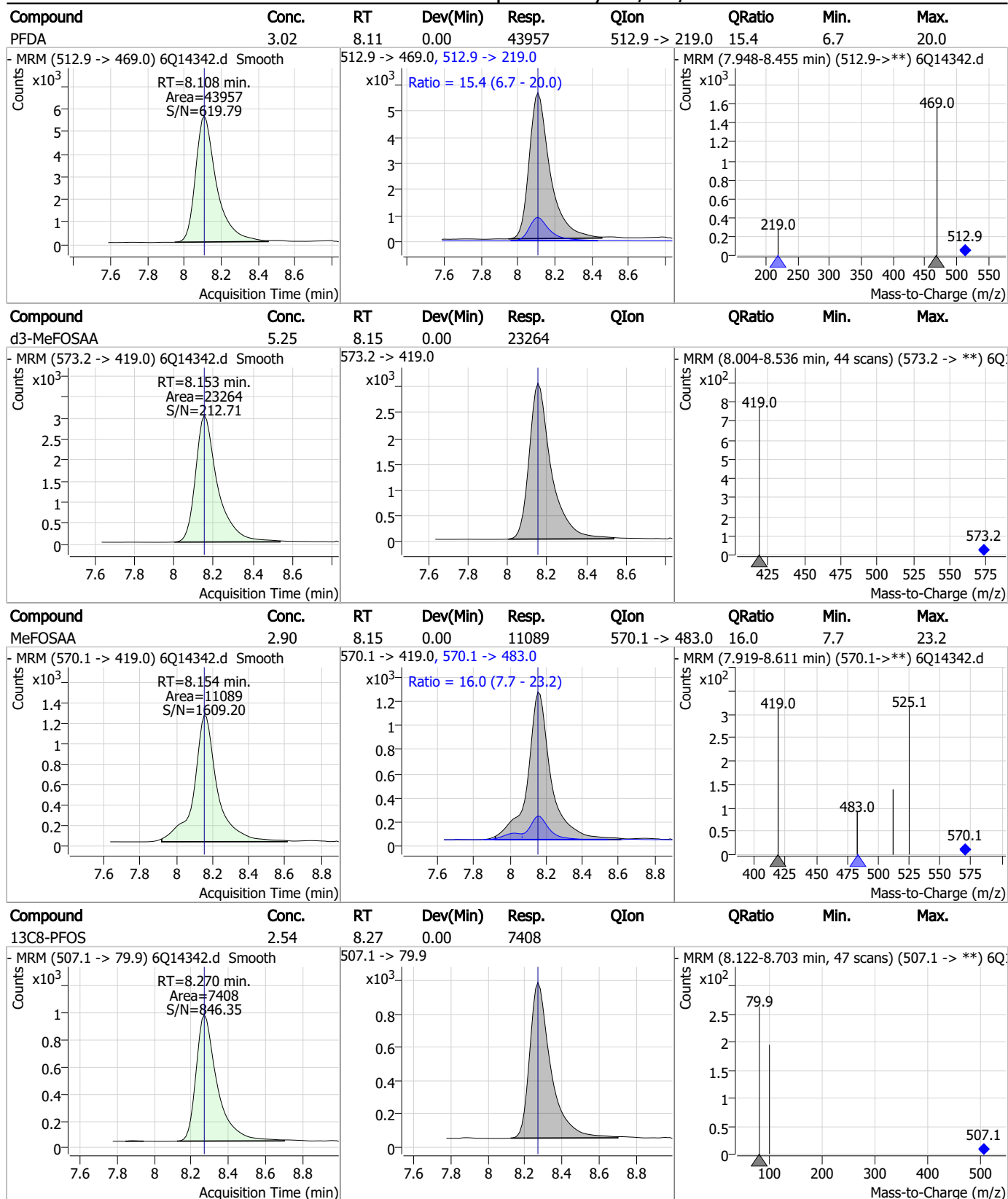


Perfluorinated Compounds by LC/MS/MS



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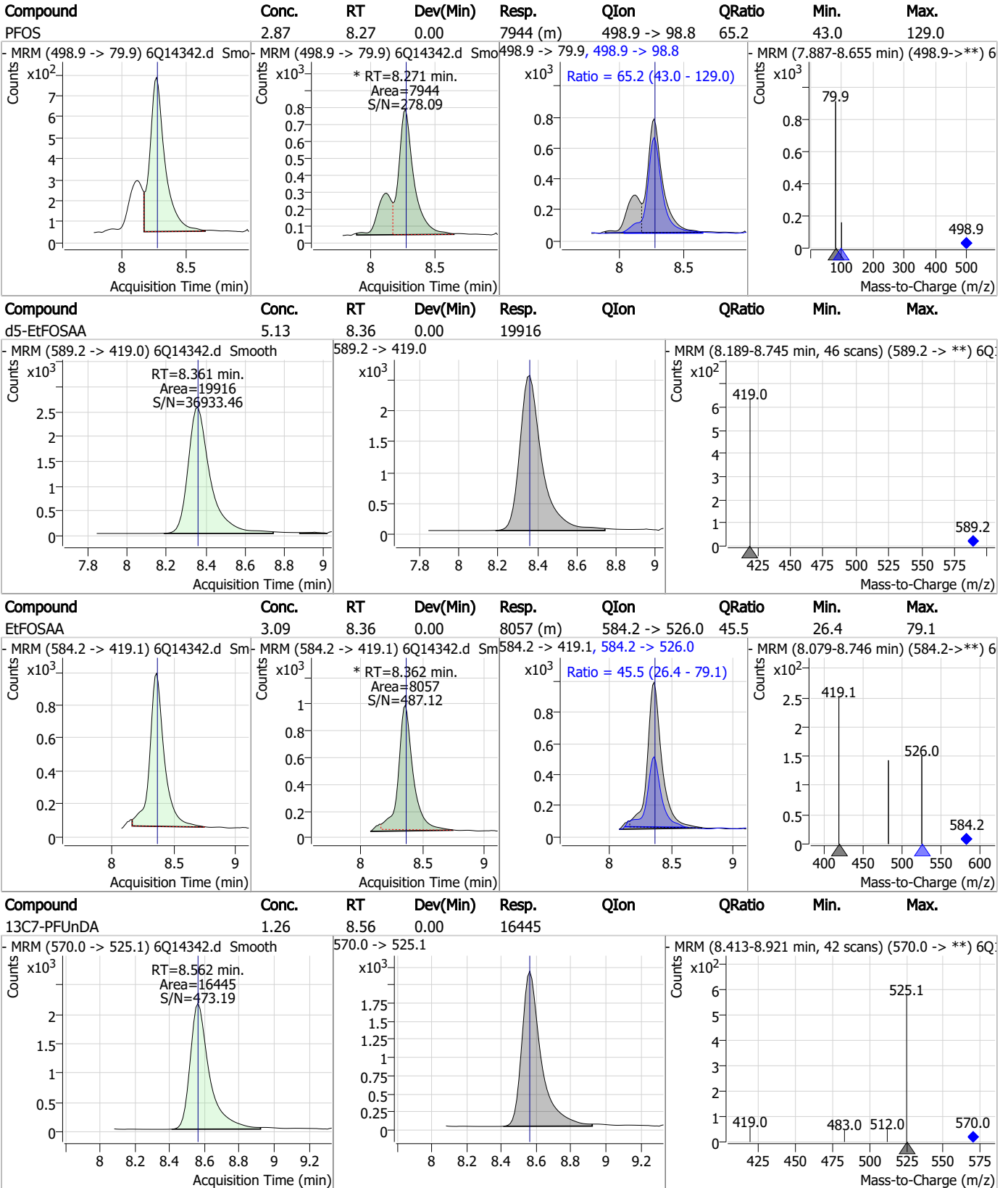
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

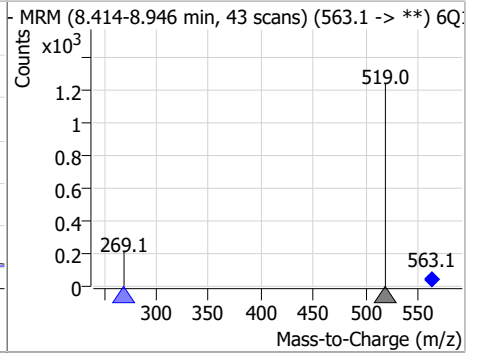
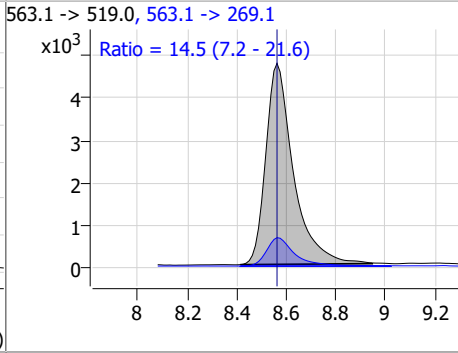
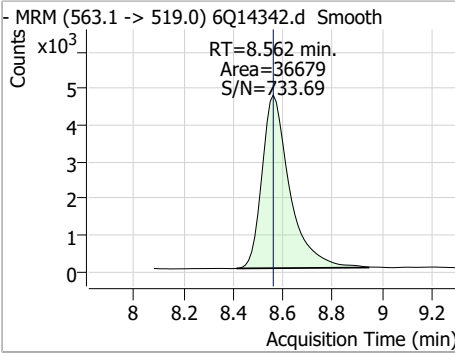


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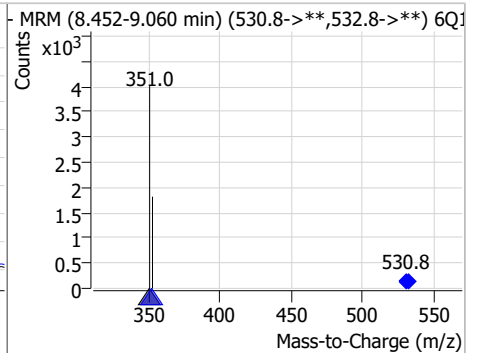
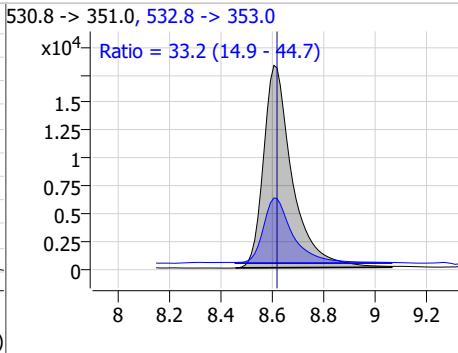
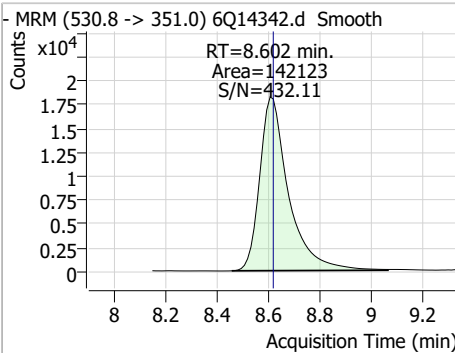
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Perfluorinated Compounds by LC/MS/MS

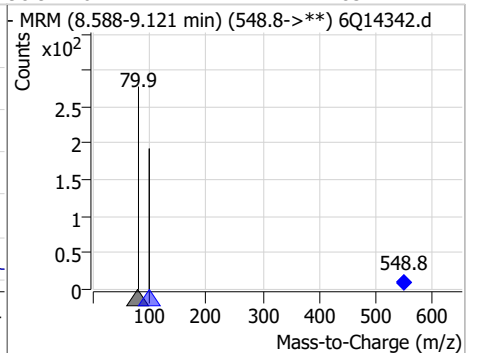
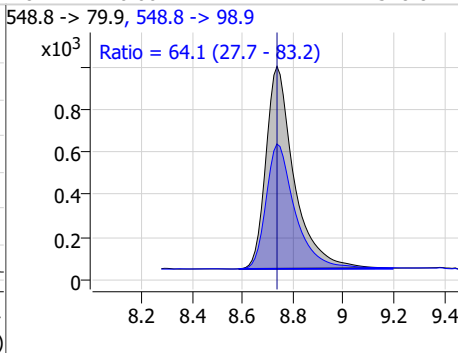
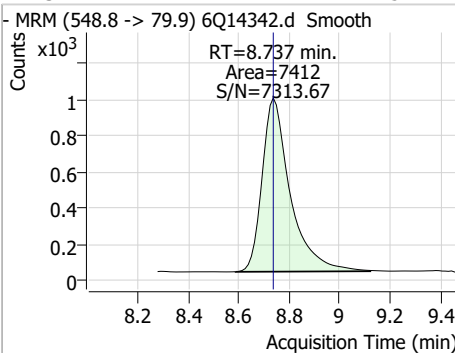
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	3.19	8.56	0.00	36679	563.1 -> 269.1	14.5	7.2	21.6



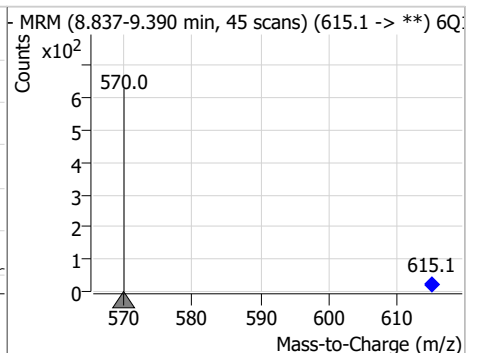
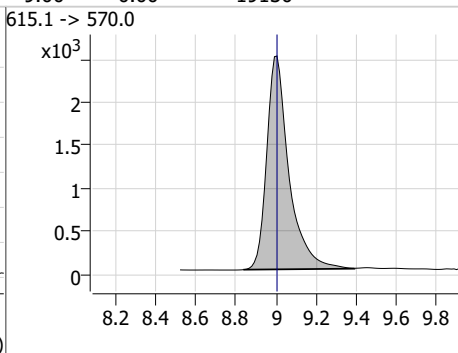
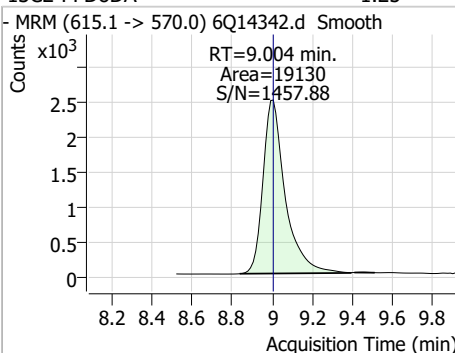
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	10.01	8.60	-0.01	142123	532.8 -> 353.0	33.2	14.9	44.7



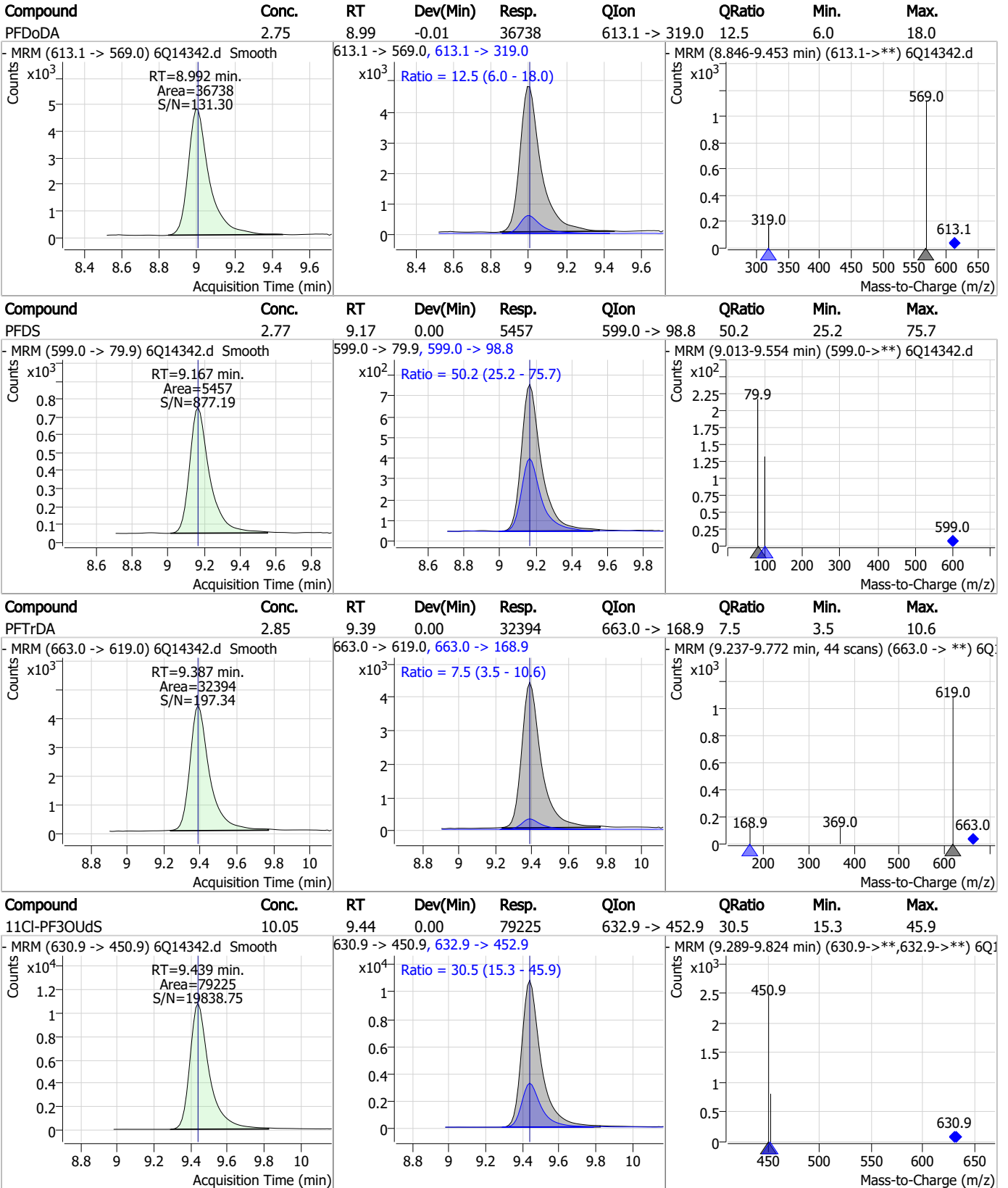
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.75	8.74	0.00	7412	548.8 -> 98.9	64.1	27.7	83.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.25	9.00	0.00	19130	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS

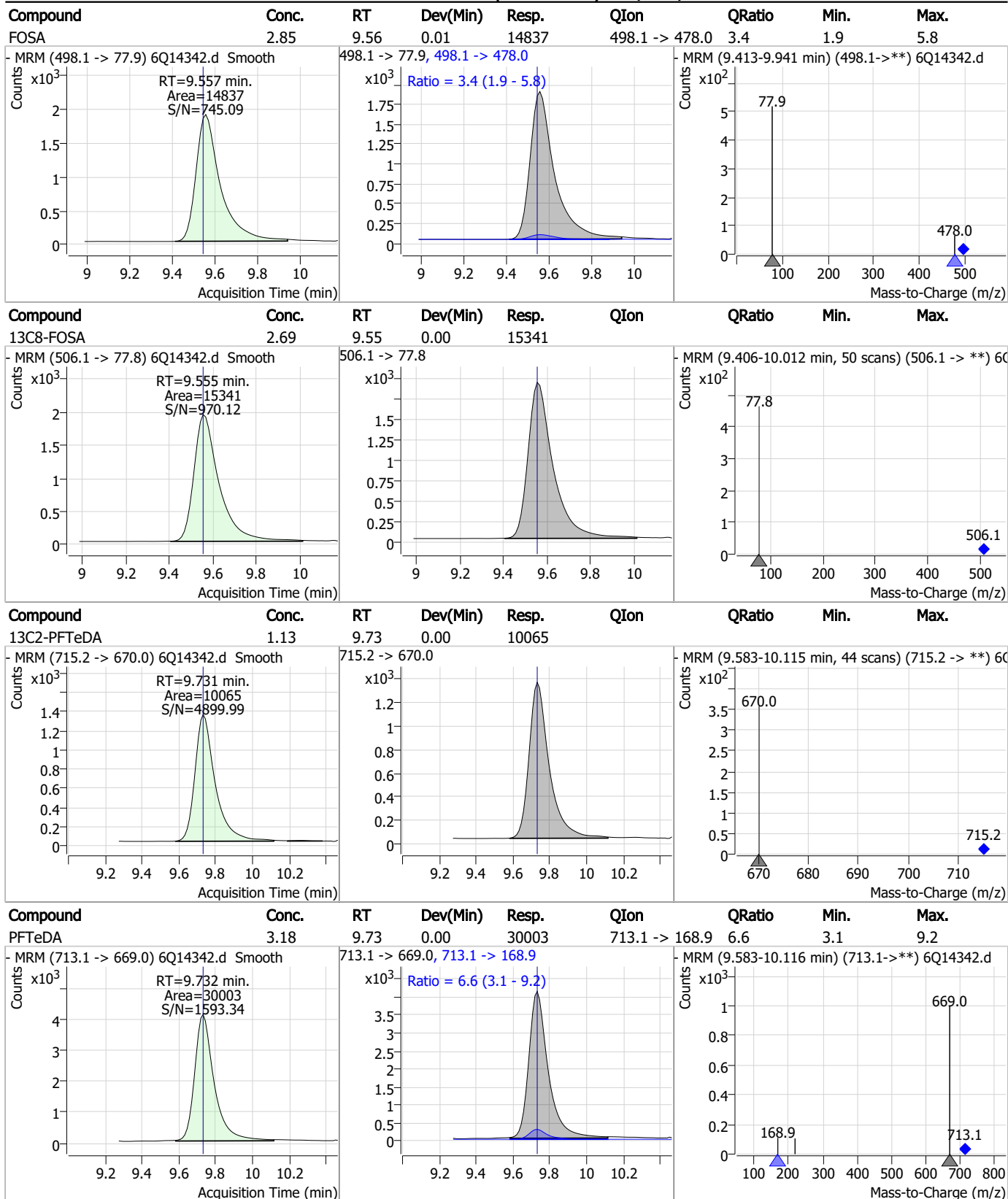


7.3.1

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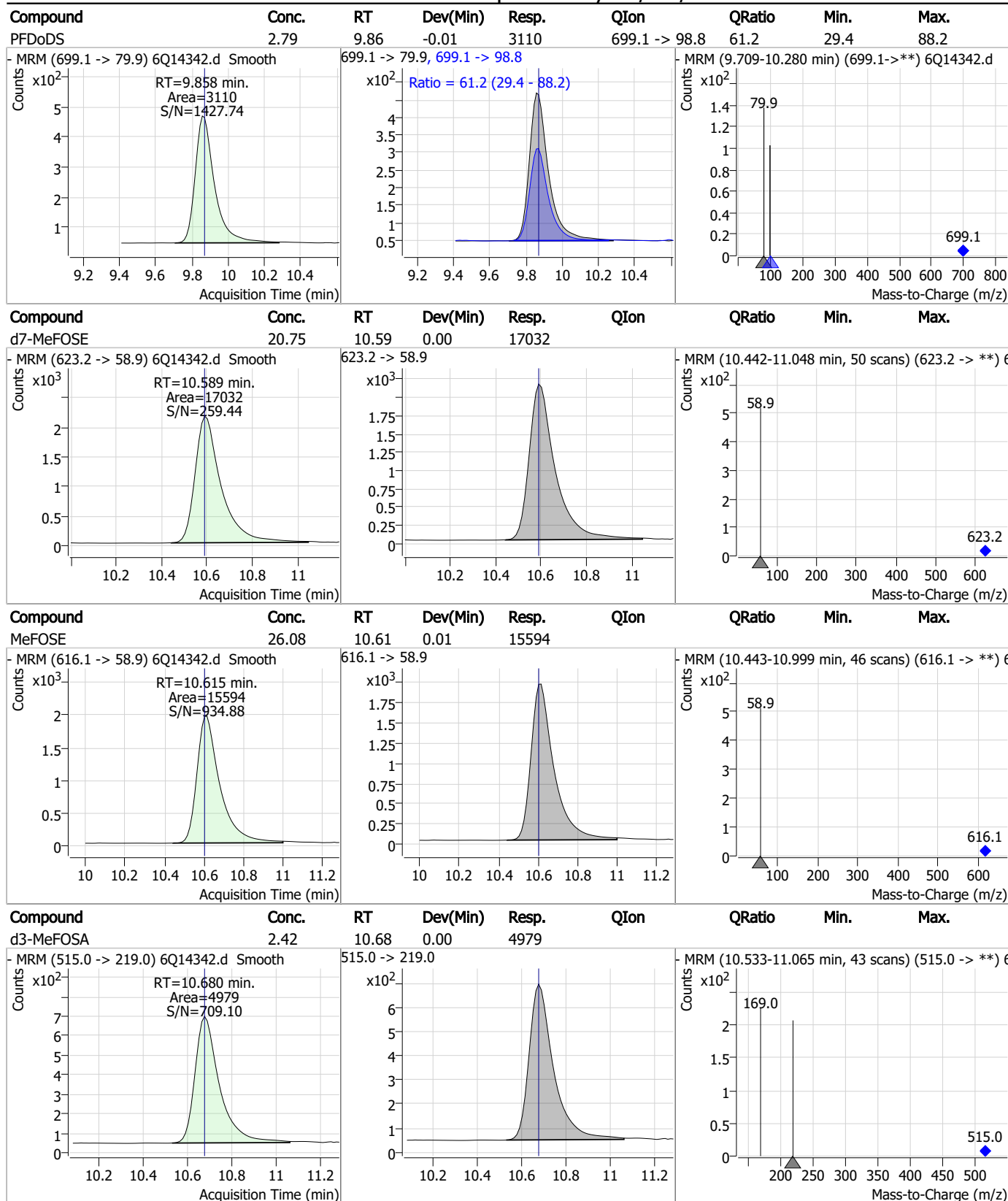
Perfluorinated Compounds by LC/MS/MS



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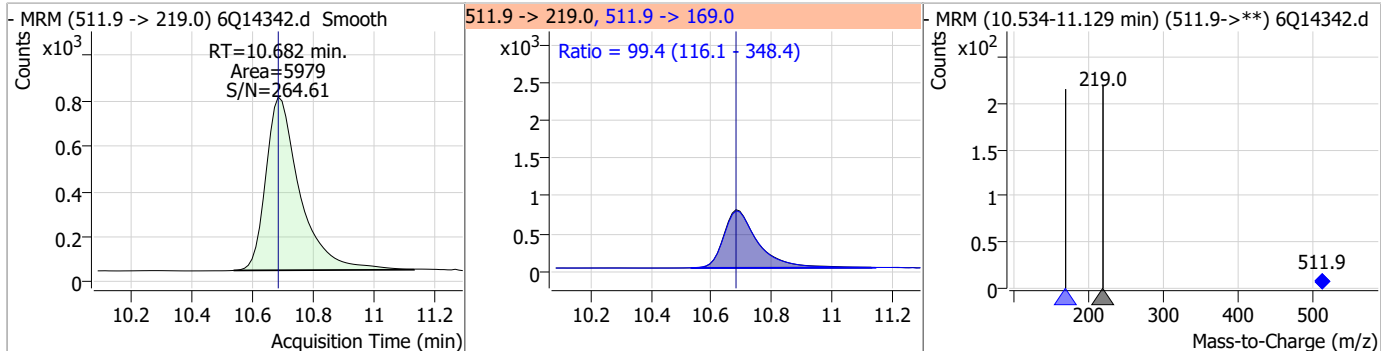
Perfluorinated Compounds by LC/MS/MS



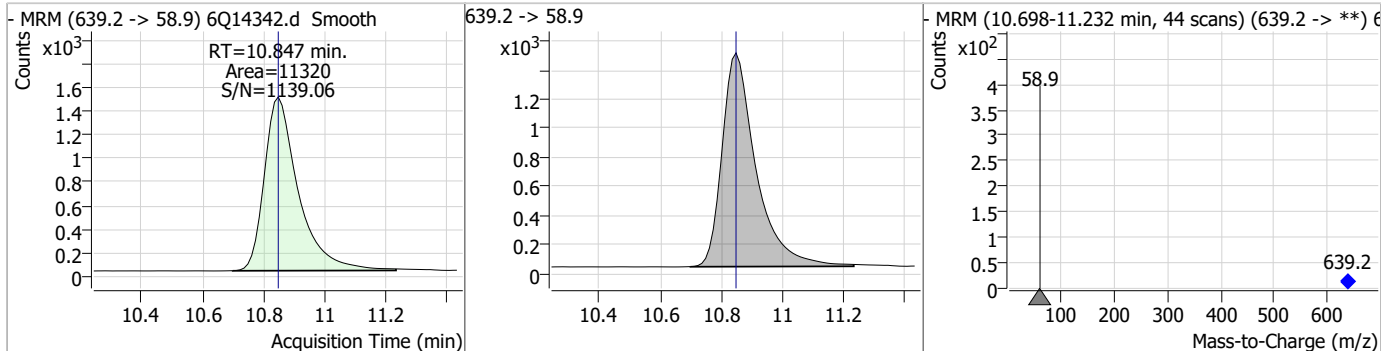
7.3.1
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Perfluorinated Compounds by LC/MS/MS

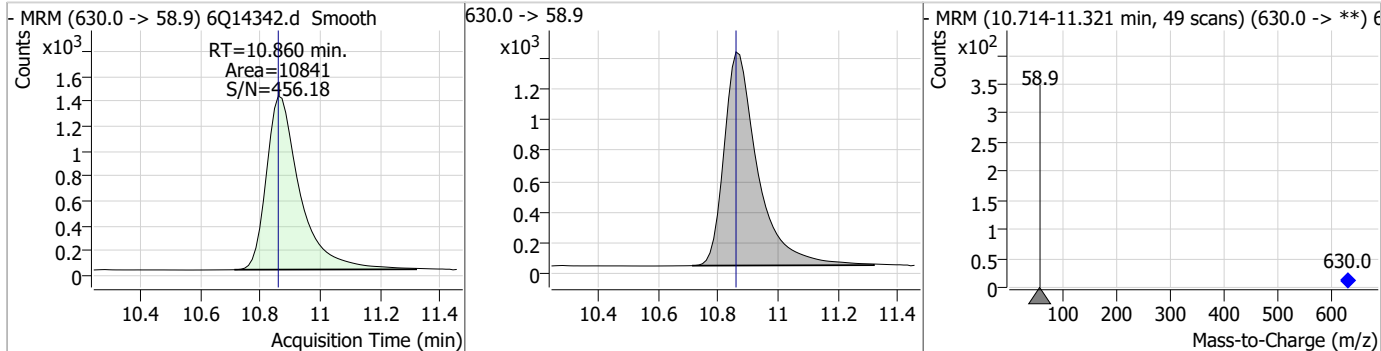
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.82	10.68	0.00	5979	511.9 -> 169.0	99.4	116.1	348.4



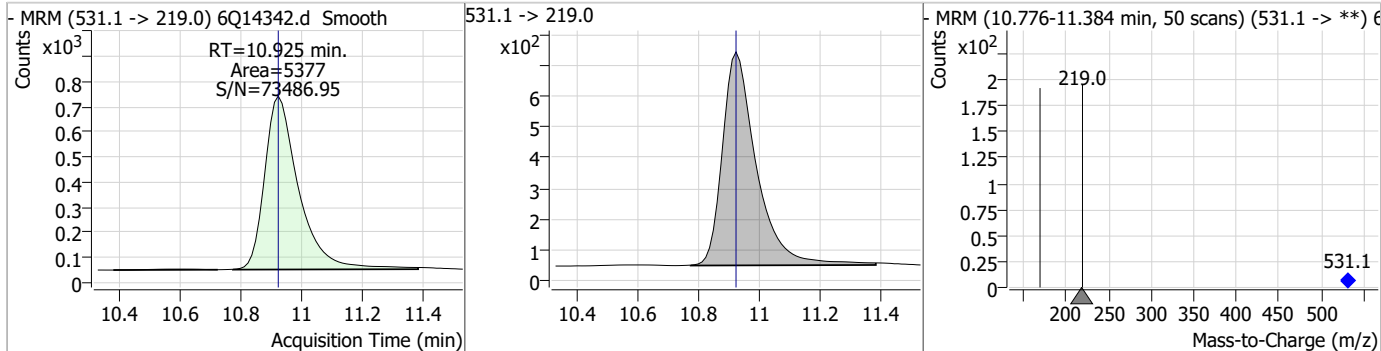
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.16	10.85	0.00	11320	639.2 -> 58.9			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	26.58	10.86	0.00	10841	630.0 -> 58.9			

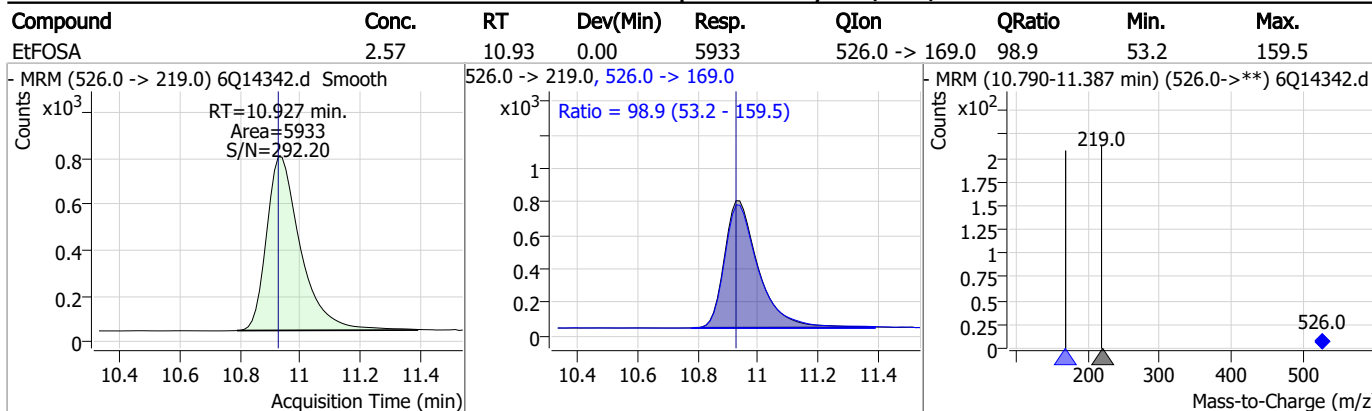


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.38	10.92	0.00	5377	531.1 -> 219.0			



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: OP95581-BS Method: EPA DRAFT 1633
Lab FileID: 6Q14342.D Analyst approved: 02/27/23 11:07 Martha Valls
Injection Time: 02/24/23 21:38 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.36	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14343.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 9:52:18 PM
 Sample Name : op95581-llbs:3
 Vial : P3-E2
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.975	216.8 -> 171.9	84223	10.00 µg/L	0.037
M5-PFPeA	4.337	268.3 -> 223.0	40444	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	37241	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	37569	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	61505	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	18989	1.25 µg/L	0.000
M6-PFDA	8.095	519.1 -> 474.1	16010	1.25 µg/L	-0.012
M7-PFUnDA	8.562	570.0 -> 525.1	17725	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	20020	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	10469	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	15155	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	14060	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	9451	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	7615	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2170	5.00 µg/L	-0.012
M2-6:2FTS	6.858	429.1 -> 80.9	2562	5.00 µg/L	0.000
M2-8:2FTS	7.895	529.1 -> 80.9	2571	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	24442	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	15480	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	21998	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	18274	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	11543	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	5118	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	4804	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	9095	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	31923	5.00 µg/L	0.025
18O2-PFHxS	7.211	403.0 -> 83.9	5569	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	66250	2.50 µg/L	0.000
13C2-PFDA	8.096	515.1 -> 470.1	19323	1.25 µg/L	-0.012
13C5-PFNA	7.627	468.0 -> 423.0	18852	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	32121	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2170	6.52 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 130.4%		
13C2-6:2FTS	6.858	429.1 -> 80.9	2562	6.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.8%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2571	6.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.6%		
13C2-PFDoDA	8.991	615.1 -> 570.0	20020	1.31 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C2-PFTeDA	9.731	715.2 -> 670.0	10469	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C3-PFBS	5.456	302.1 -> 79.9	14060	2.94 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 117.6%		
13C3-PFHxS	7.212	402.1 -> 79.9	9451	3.06 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 = 122.5%		
13C4-PFBA	2.975	216.8 -> 171.9	84223	11.58 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 115.8%		
13C4-PFHpA	6.452	367.1 -> 322.0	37569	2.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 115.0%		
13C5-PFHxA	5.513	318.0 -> 273.0	37241	2.96 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 118.5%		
13C5-PFPeA	4.337	268.3 -> 223.0	40444	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.6%		
13C6-PFDA	8.095	519.1 -> 474.1	16010	1.42 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.6%		
13C7-PFUnDA	8.562	570.0 -> 525.1	17725	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C8-FOSA	9.555	506.1 -> 77.8	15155	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C8-PFOA	7.097	421.1 -> 376.0	61505	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C8-PFOS	8.270	507.1 -> 79.9	7615	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C9-PFNA	7.626	472.1 -> 427.0	18989	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.5%		
d3-MeFOSAA	8.153	573.2 -> 419.0	24442	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-HFPO-DA	5.878	286.9 -> 168.9	15480	12.66 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 126.6%		
d3-MeFOSA	10.680	515.0 -> 219.0	4804	2.18 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 87.4%		
d5-EtFOSAA	8.349	589.2 -> 419.0	21998	5.30 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.9%		
d7-MeFOSE	10.589	623.2 -> 58.9	18274	20.82 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 83.3%		
d9-EtFOSE	10.847	639.2 -> 58.9	11543	20.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 80.7%		
d5-EtFOSA	10.925	531.1 -> 219.0	5118	2.12 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 84.7%		
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	17540	4.35 µg/L	97
		327.1 -> 80.9	4080		
6:2FTS	6.859	427.1 -> 407.0	15058	4.72 µg/L	93
		427.1 -> 80.9	3146		
8:2FTS	7.896	527.1 -> 507.0	7381	4.41 µg/L	99
		527.1 -> 80.8	1822		
EtFOSAA	8.362	584.2 -> 419.1	2958	1.03 µg/L	86
		584.2 -> 526.0	1846		
FOSA	9.557	498.1 -> 77.9	5809	1.13 µg/L	99
		498.1 -> 478.0	216		
MeFOSAA	8.154	570.1 -> 419.0	4878	1.21 µg/L	98
		570.1 -> 483.0	717		
PFBA	2.969	212.8 -> 168.9	7848	4.63 µg/L	100
PFBS	5.457	298.7 -> 79.9	5042	1.09 µg/L	94
		298.7 -> 98.8	2232		
PFDA	8.108	512.9 -> 469.0	19019	1.25 µg/L	99
		512.9 -> 219.0	2573		
PFDODA	8.992	613.1 -> 569.0	14650	1.05 µg/L	97
		613.1 -> 319.0	1918		
PFDS	9.167	599.0 -> 79.9	2334	1.15 µg/L	94

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.453	599.0 -> 98.8	1272	1.14	µg/L	100
		363.1 -> 319.0	21343			
PFHpS	7.779	363.1 -> 169.0	3006	1.08	µg/L	98
		449.0 -> 79.9	2868			
PFHxA	5.516	449.0 -> 98.9	1856	1.14	µg/L	98
		313.0 -> 269.0	13548			
PFHxS	7.213	313.0 -> 118.9	549	1.12	µg/L	92
		398.7 -> 79.9	3857			
PFNA	7.627	398.7 -> 98.9	2121	1.19	µg/L	99
		463.0 -> 419.0	11444			
PFNS	8.737	463.0 -> 219.0	2320	1.17	µg/L	97
		548.8 -> 79.9	3255			
PFOA	7.098	548.8 -> 98.9	1733	1.17	µg/L	94
		413.0 -> 369.0	26522			
PFOS	8.271	413.0 -> 169.0	3625	1.18	µg/L	78
		498.9 -> 79.9	3350			
PFPeA	4.338	498.9 -> 98.8	2197	2.29	µg/L	100
		263.0 -> 219.0	16256			
PFPeS	6.517	349.1 -> 79.9	4553	1.04	µg/L	96
		349.1 -> 98.9	2556			
PFTeDA	9.732	713.1 -> 669.0	10994	1.12	µg/L	96
		713.1 -> 168.9	818			
PFTrDA	9.387	663.0 -> 619.0	11958	1.01	µg/L	96
		663.0 -> 168.9	994			
PFUnDA	8.562	563.1 -> 519.0	15482	1.25	µg/L	98
		563.1 -> 269.1	2094			
11CI-PF3OUdS	9.439	630.9 -> 450.9	30541	3.57	µg/L	99
		632.9 -> 452.9	9153			
9CI-PF3ONS	8.602	530.8 -> 351.0	58772	3.81	µg/L	92
		532.8 -> 353.0	19925			
ADONA	6.704	376.9 -> 250.9	129149	4.21	µg/L	99
		376.9 -> 84.8	27642			
HFPO-DA	5.879	284.9 -> 168.9	5374	4.36	µg/L	94
		284.9 -> 184.9	763			
3:3FTCA	3.829	241.0 -> 177.0	1616	4.30	µg/L	#
		241.0 -> 117.0	366			
5:3FTCA	6.156	341.0 -> 237.1	74420	27.33	µg/L	92
		341.0 -> 217.0	69965			
7:3FTCA	7.567	441.0 -> 316.9	42007	29.05	µg/L	86
		441.0 -> 336.9	70631			
EtFOSA	10.927	526.0 -> 219.0	2081	0.95	µg/L	98
		526.0 -> 169.0	2261			
EtFOSE	10.860	630.0 -> 58.9	4345	10.45	µg/L	100
		511.9 -> 219.0	2278			
MeFOSA	10.682	511.9 -> 169.0	2106	1.11	µg/L	#
		616.1 -> 58.9	6810			
MeFOSE	10.602	699.1 -> 79.9	1344	10.61	µg/L	100
		699.1 -> 98.8	708			
PFDoDS	9.858	295.0 -> 201.0	1607	1.17	µg/L	92
		295.0 -> 84.9	810			
NFDHA	5.395	279.0 -> 85.1	5065	2.38	µg/L	97
		229.0 -> 84.9	4484			
PFMBA	4.738	314.8 -> 134.9	33891	2.43	µg/L	100
		314.8 -> 82.9	766			
PFMPA	3.516			2.37	µg/L	100
PFEESA	5.983			2.01	µg/L	100

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

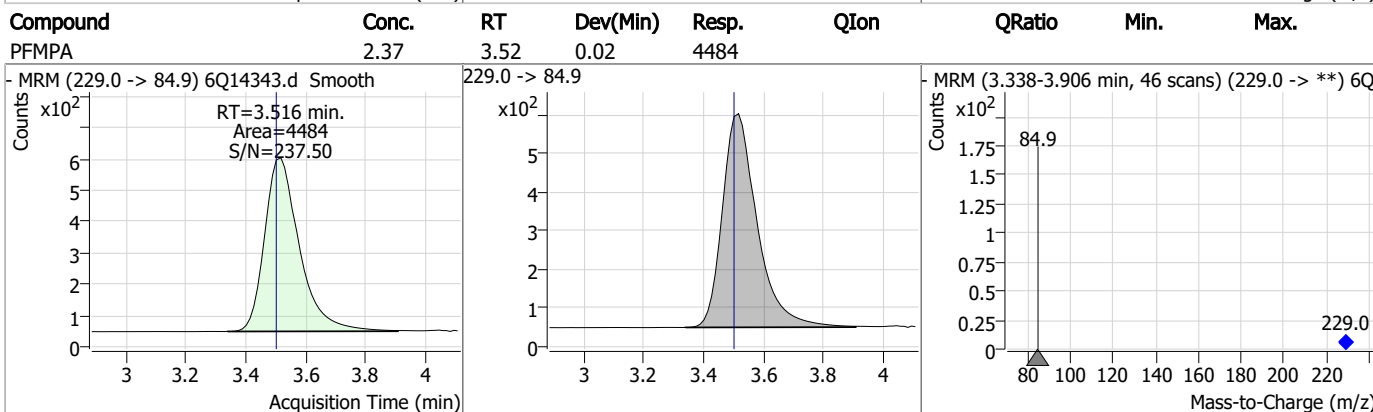
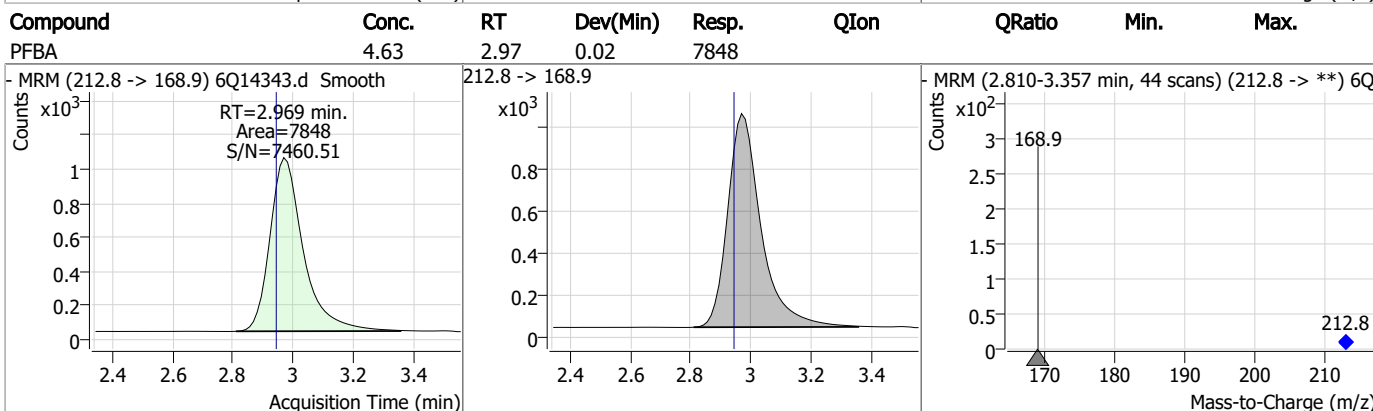
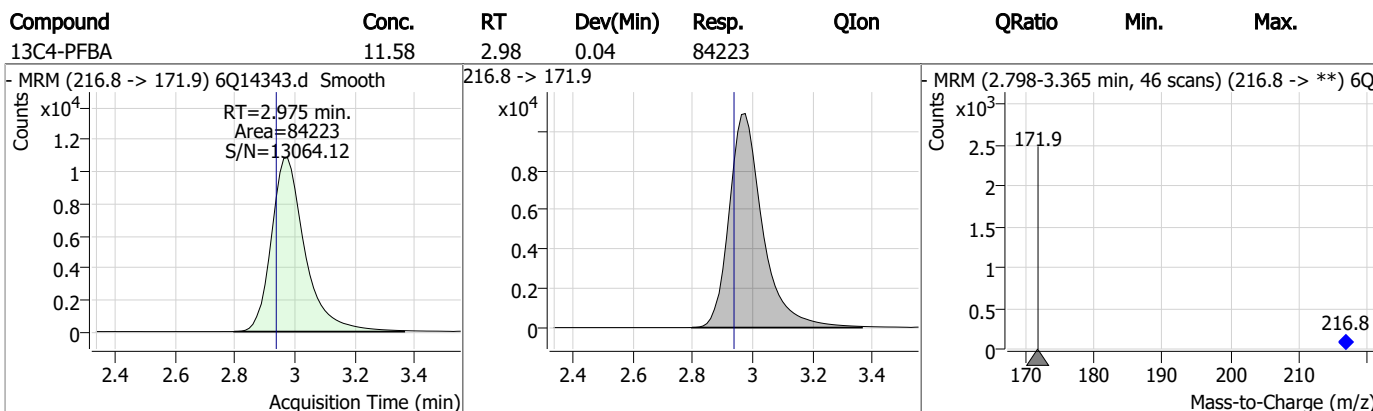
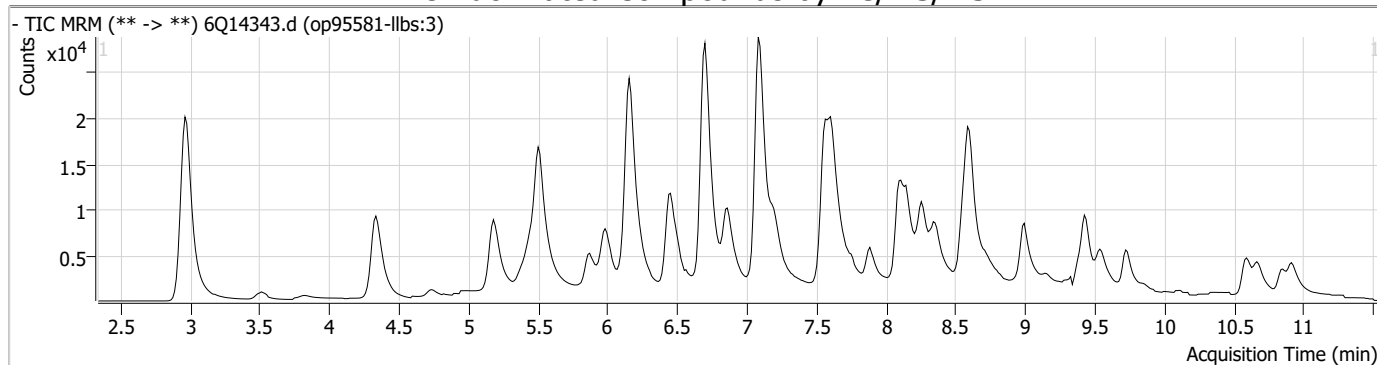
Perfluorinated Compounds by LC/MS/MS

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

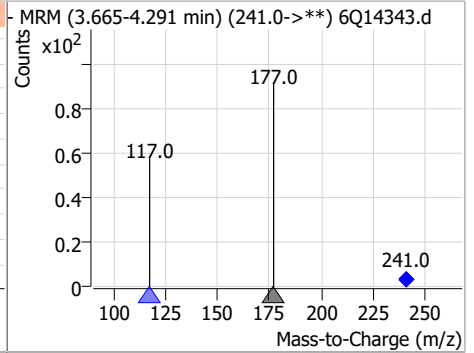
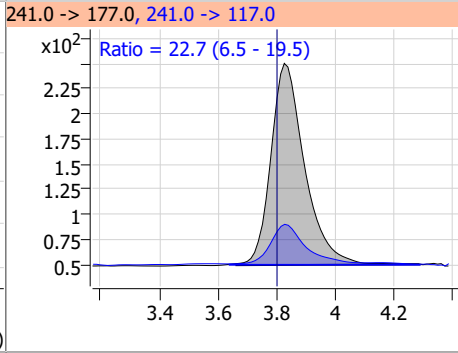
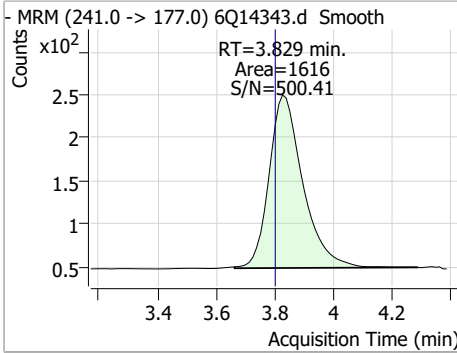
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Perfluorinated Compounds by LC/MS/MS

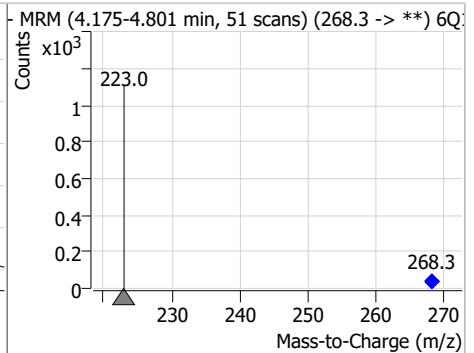
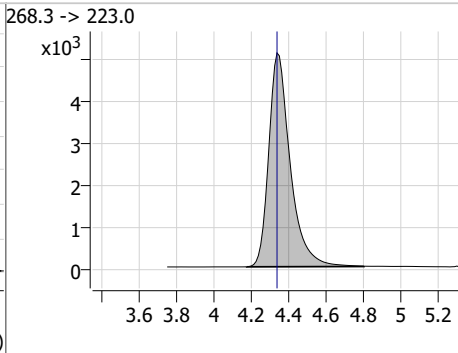
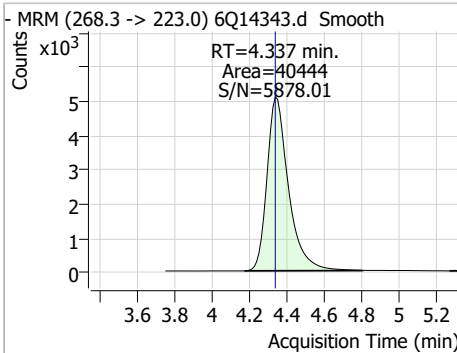


Perfluorinated Compounds by LC/MS/MS

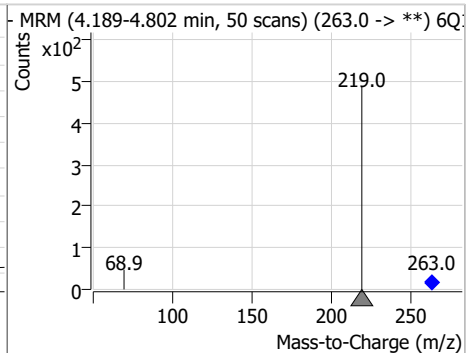
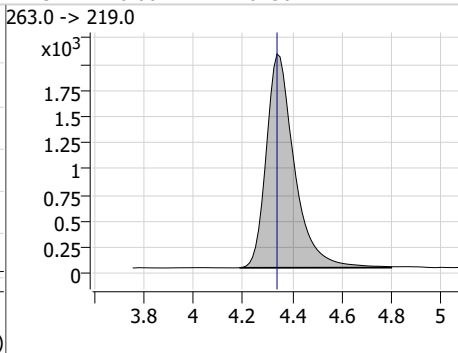
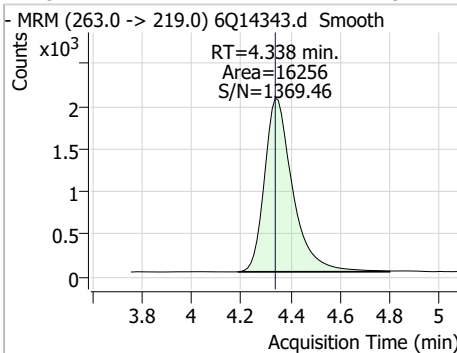
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	4.30	3.83	0.02	1616	241.0 -> 117.0	22.7	6.5	19.5



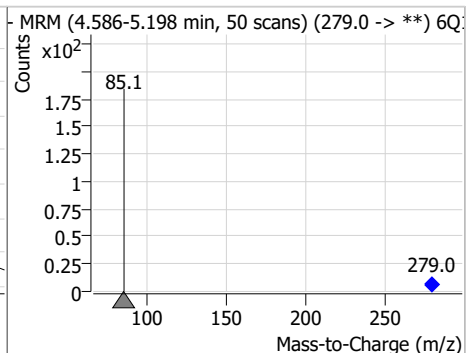
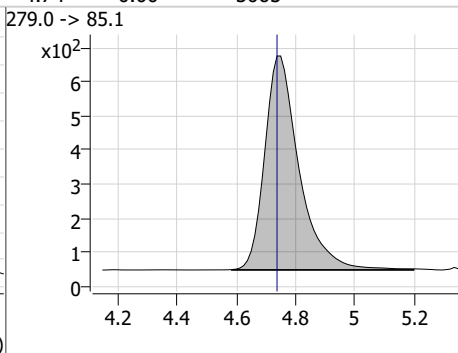
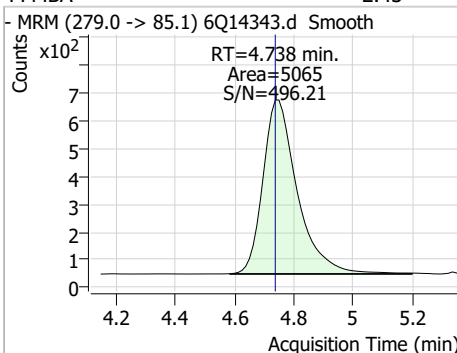
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.63	4.34	0.00	40444				



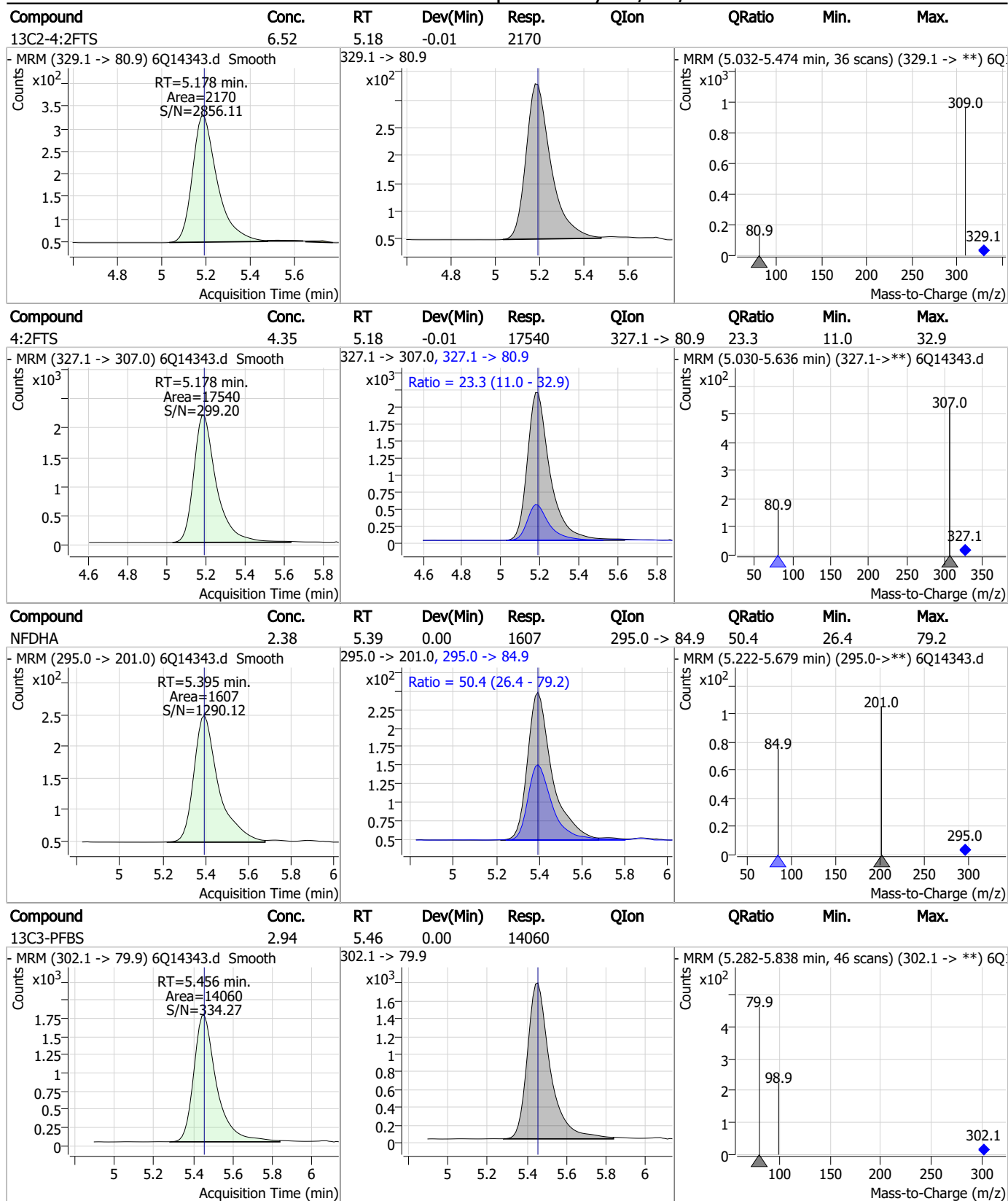
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.29	4.34	0.00	16256				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	2.43	4.74	0.00	5065				



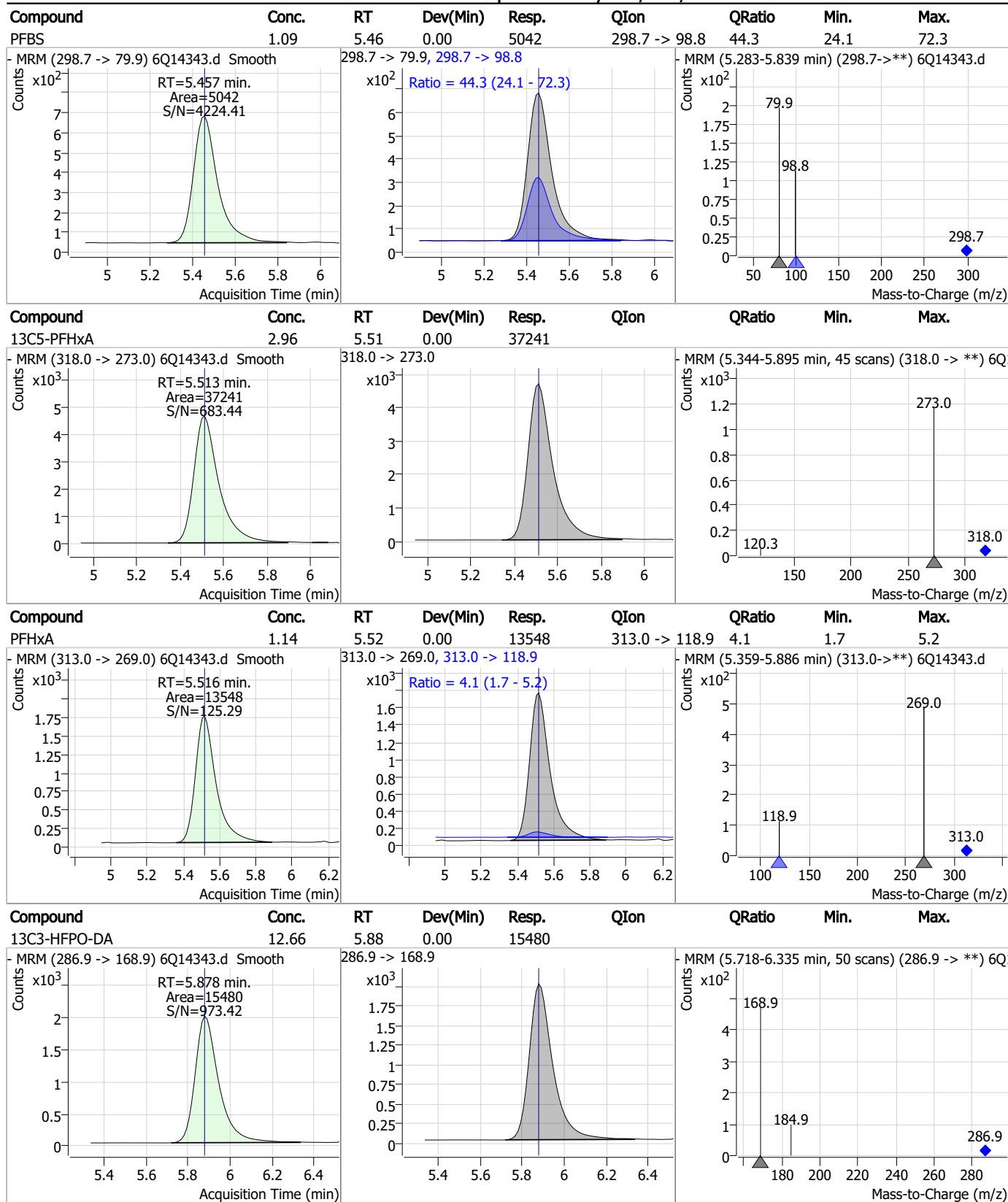
Perfluorinated Compounds by LC/MS/MS



7.3.2
7

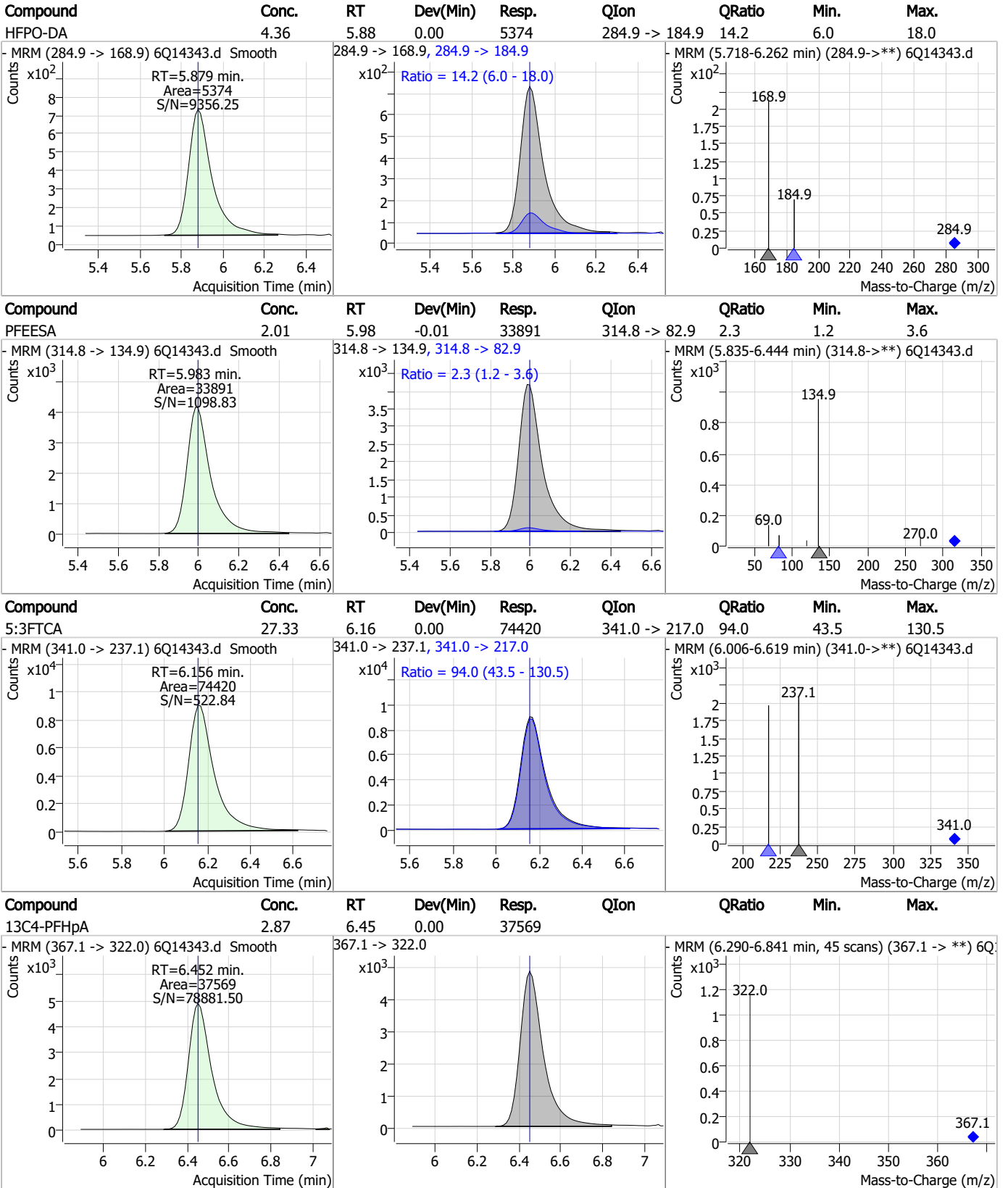


Perfluorinated Compounds by LC/MS/MS



7.3.2
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Perfluorinated Compounds by LC/MS/MS

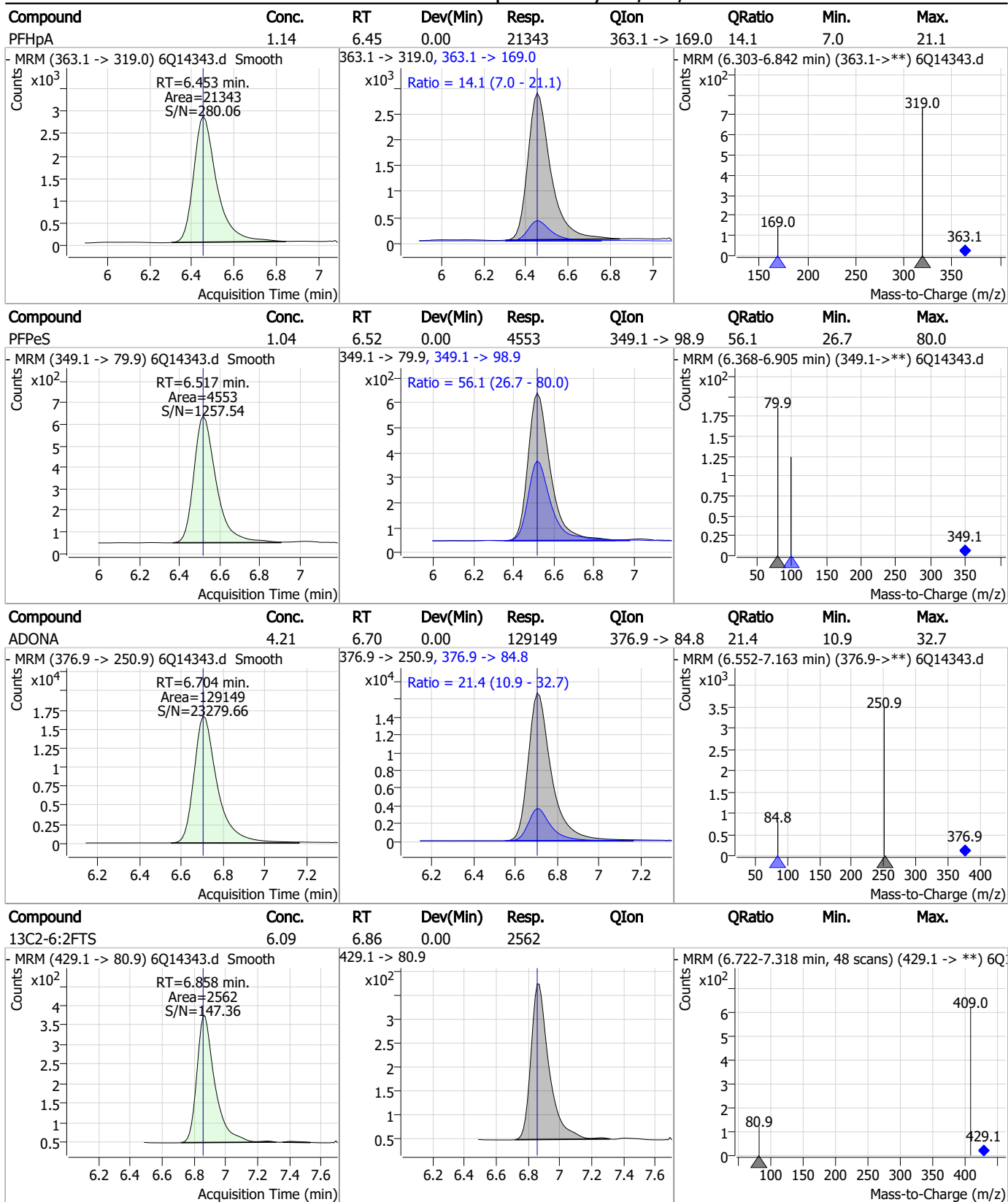


7.3.2

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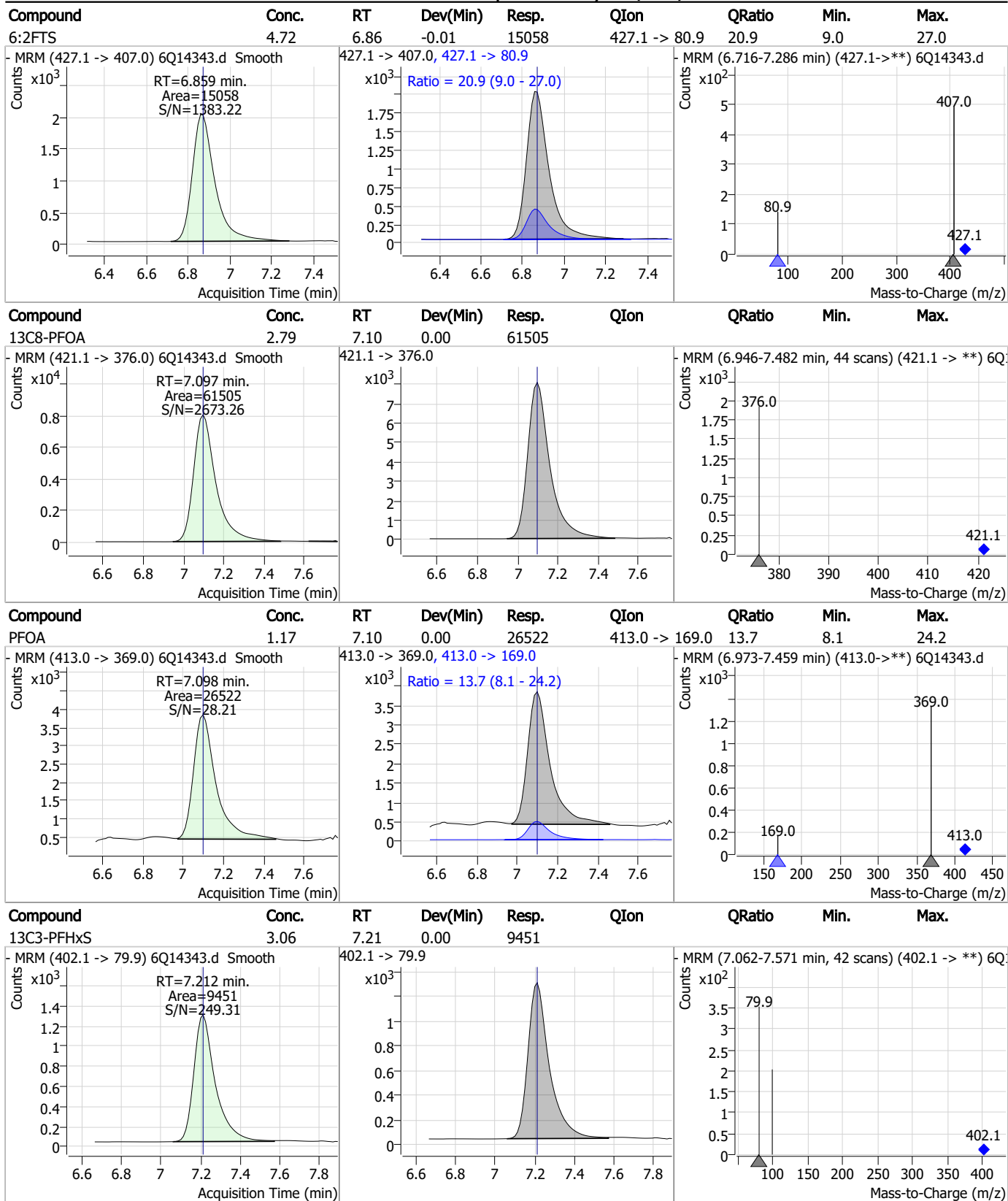


Perfluorinated Compounds by LC/MS/MS



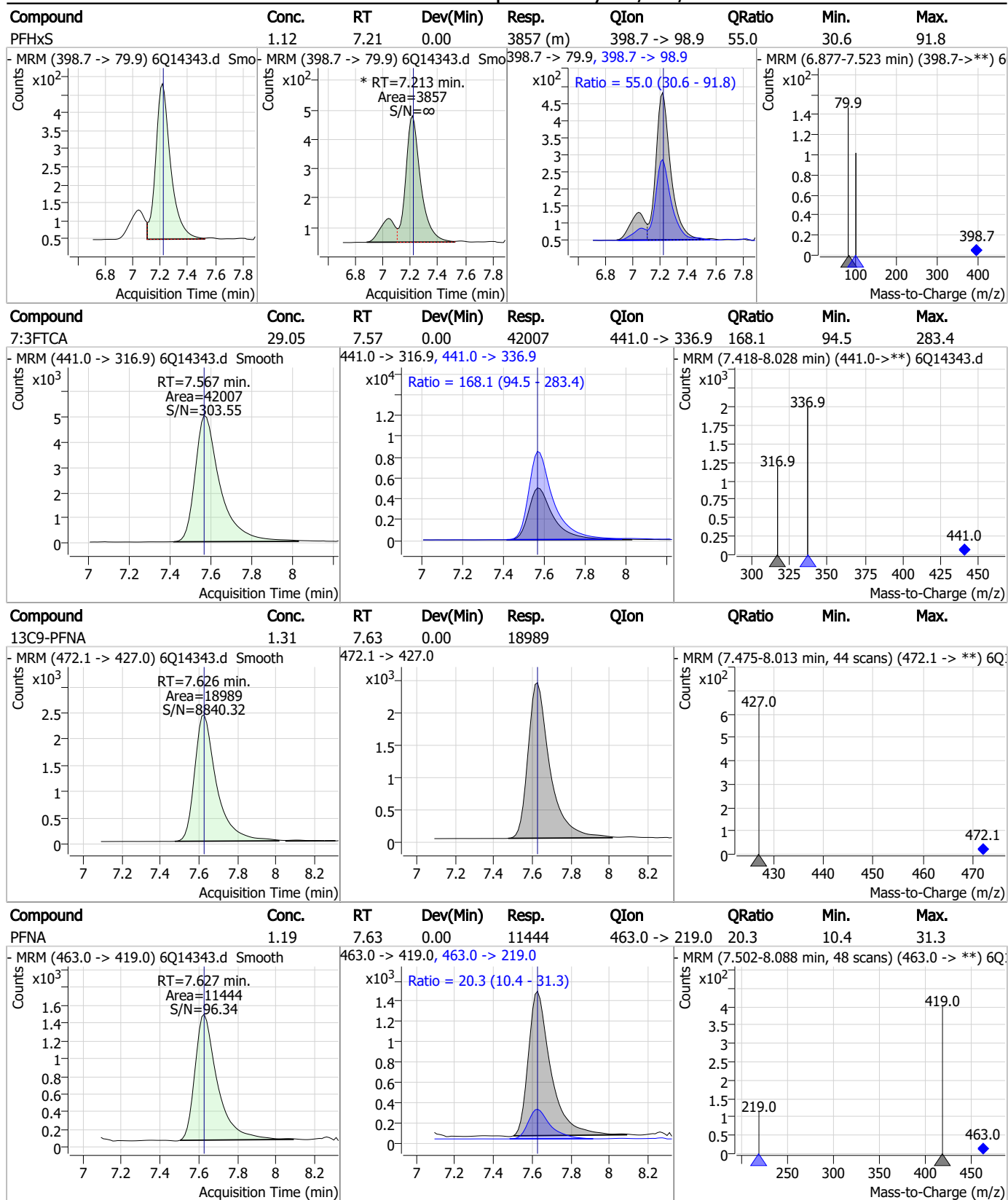
7.3.2
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Perfluorinated Compounds by LC/MS/MS



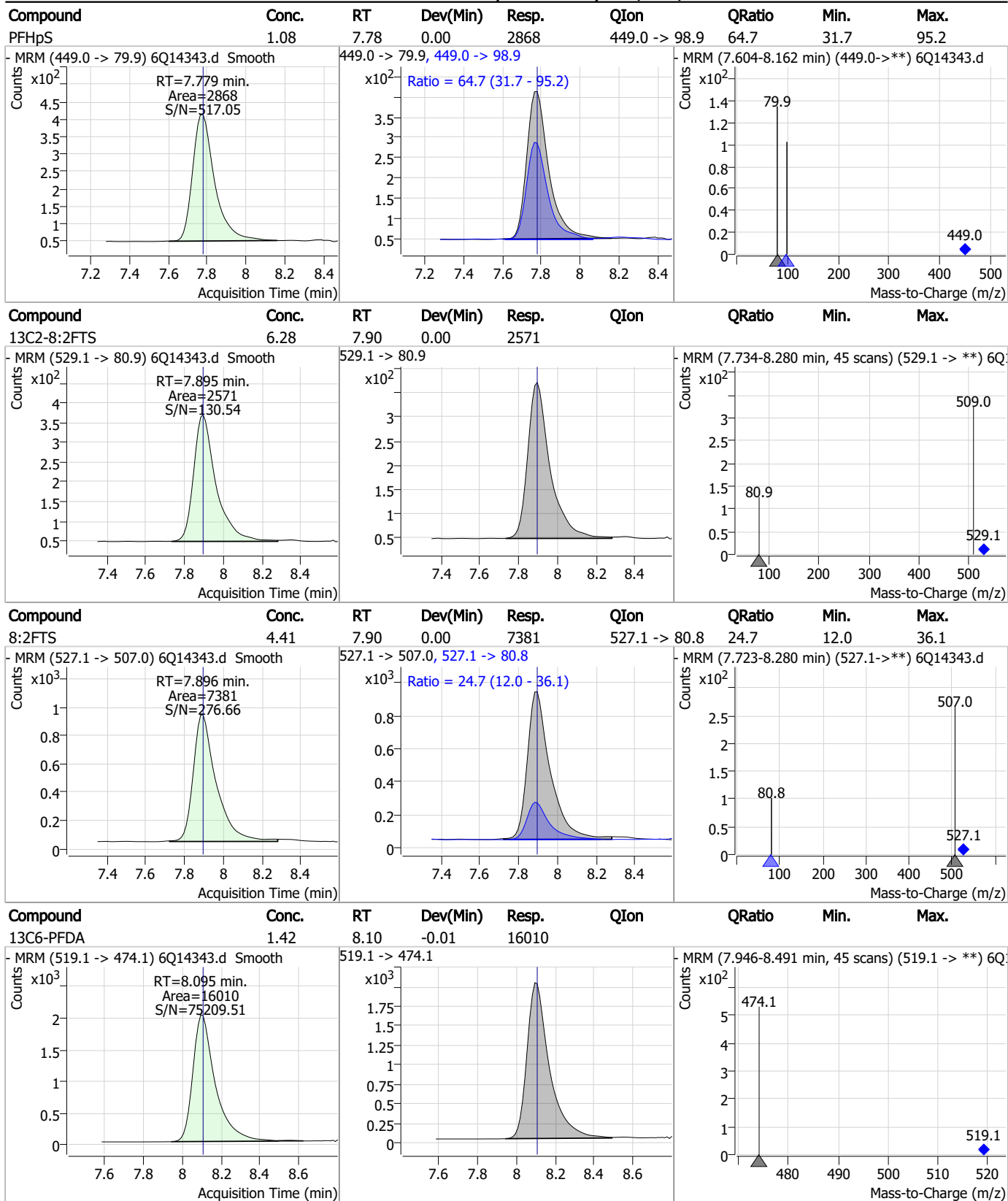
7.3.2
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Perfluorinated Compounds by LC/MS/MS



7.3.2
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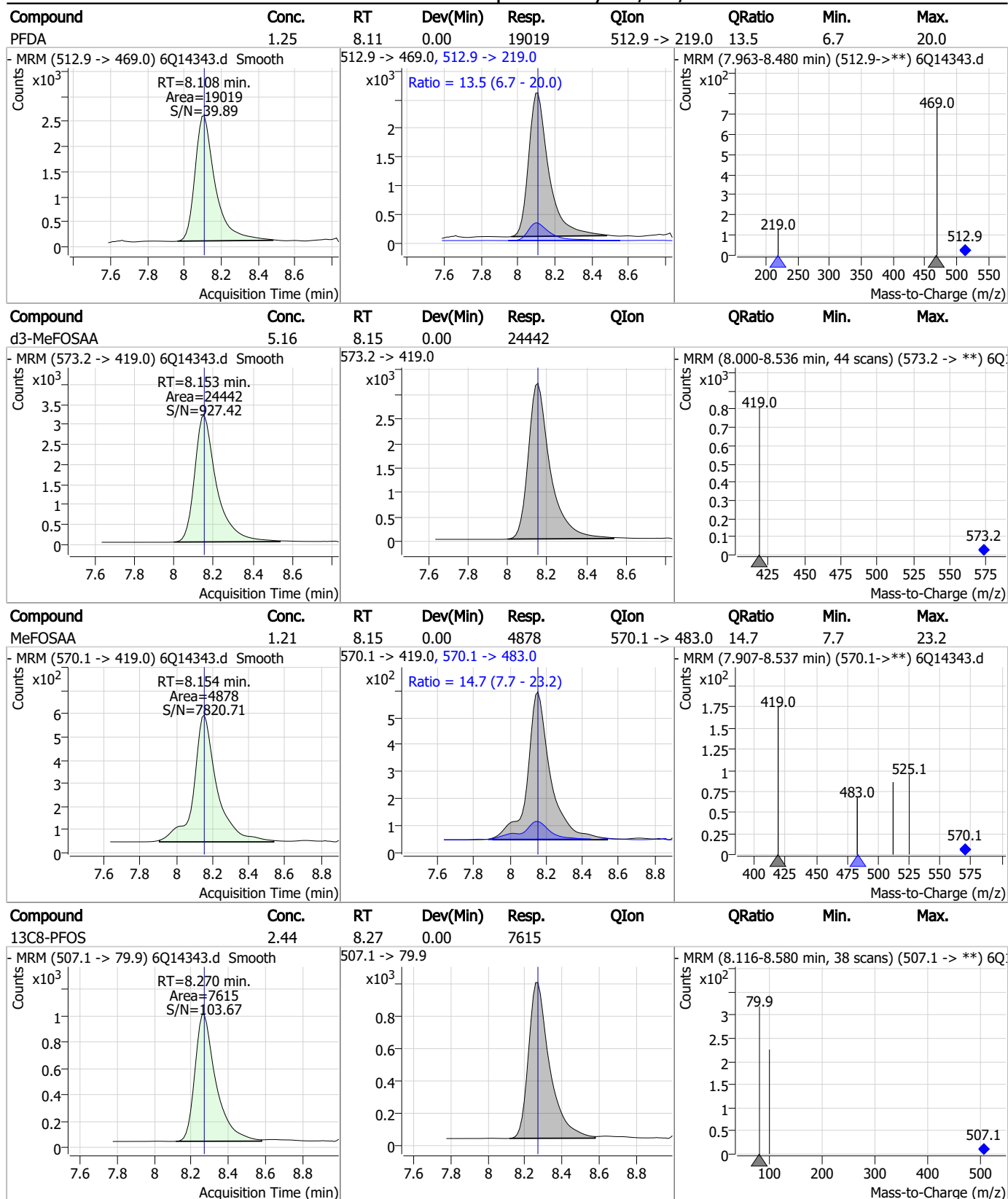
Perfluorinated Compounds by LC/MS/MS



7.3.2
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Perfluorinated Compounds by LC/MS/MS

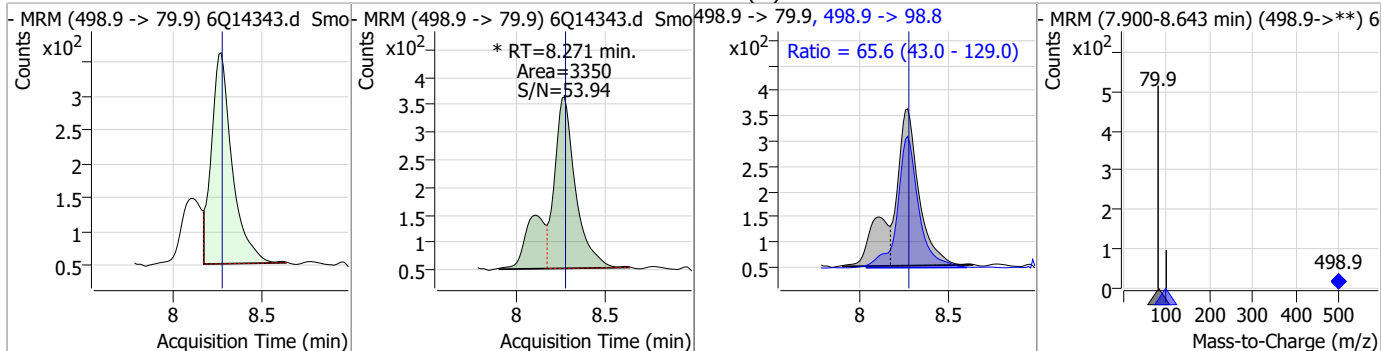


7.3.2
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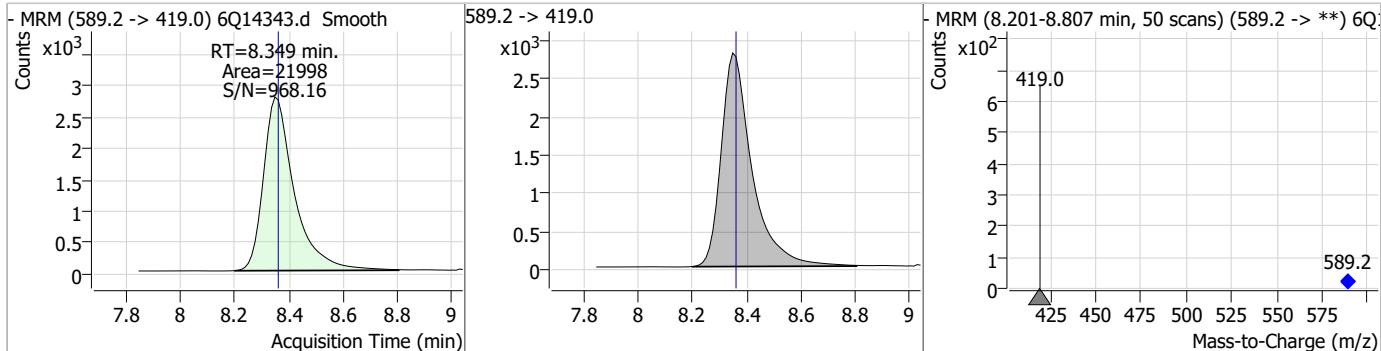


Perfluorinated Compounds by LC/MS/MS

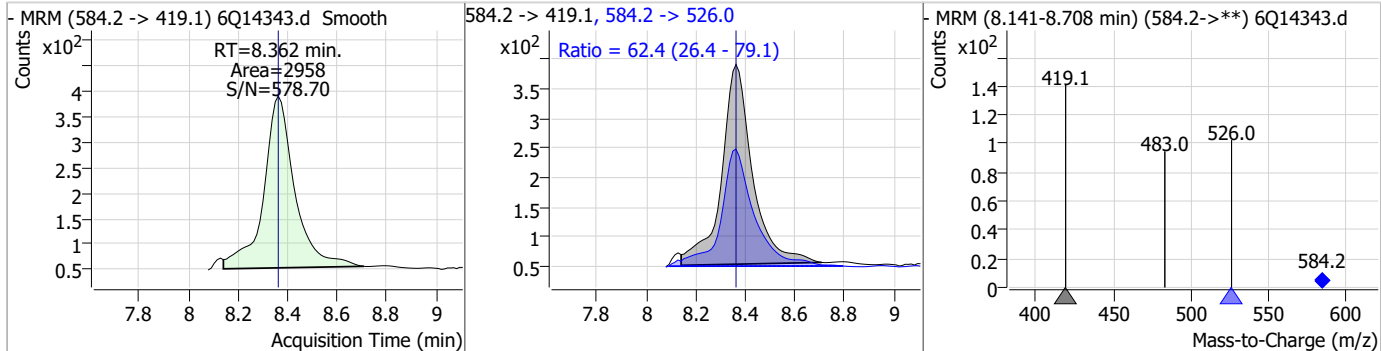
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.18	8.27	0.00	3350 (m)	498.9 -> 98.8	65.6	43.0	129.0



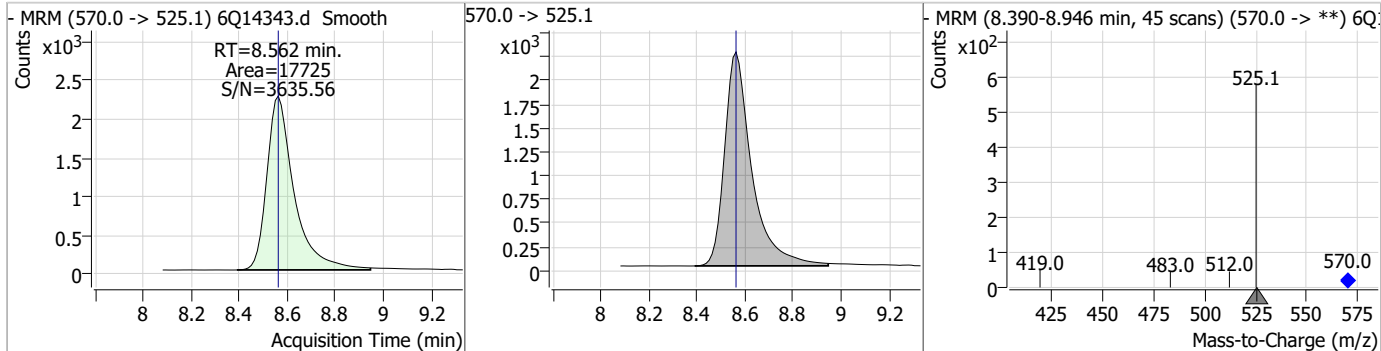
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.30	8.35	-0.01	21998				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.03	8.36	0.00	2958	584.2 -> 526.0	62.4	26.4	79.1

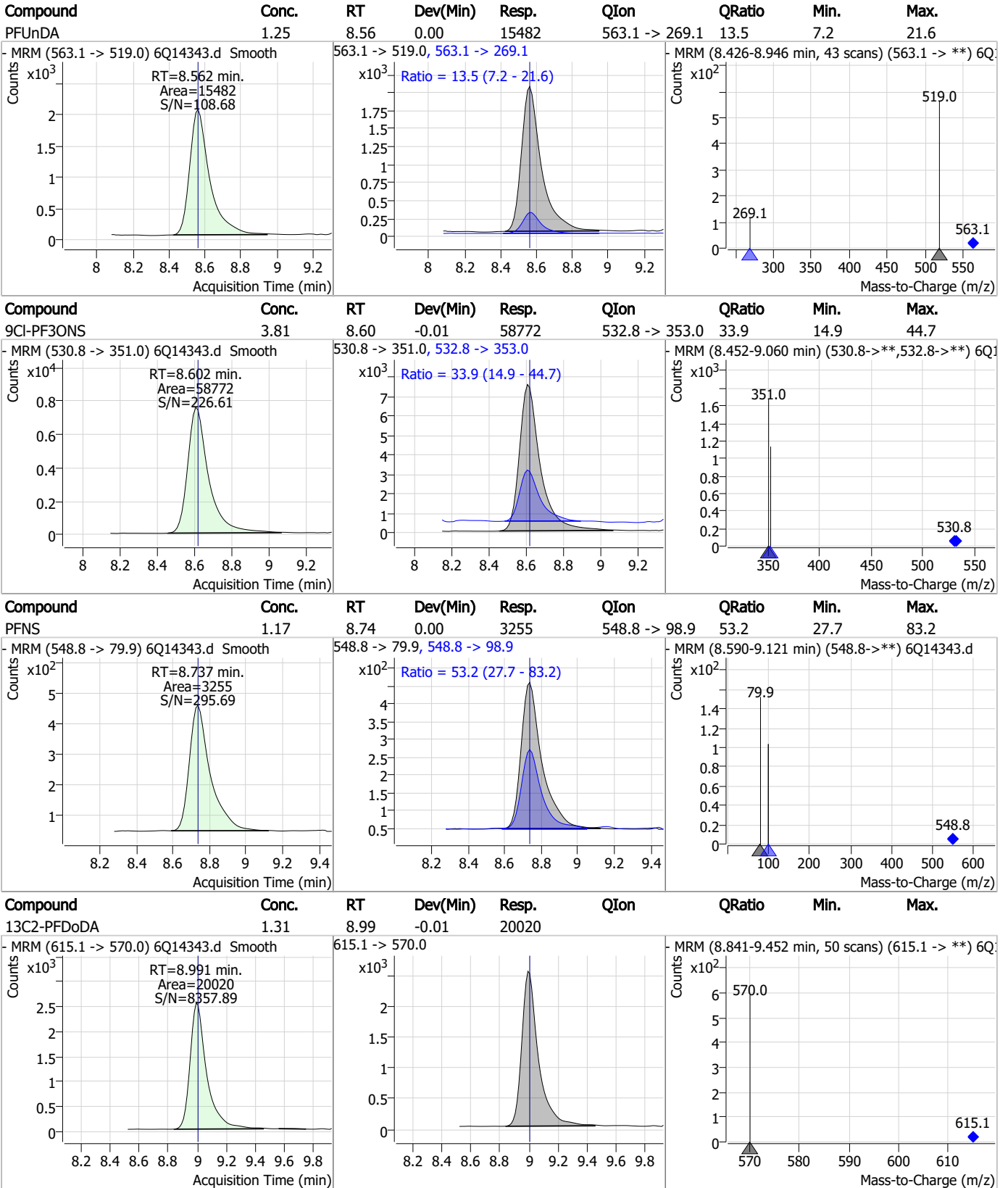


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.37	8.56	0.00	17725				



7.3.2
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Perfluorinated Compounds by LC/MS/MS

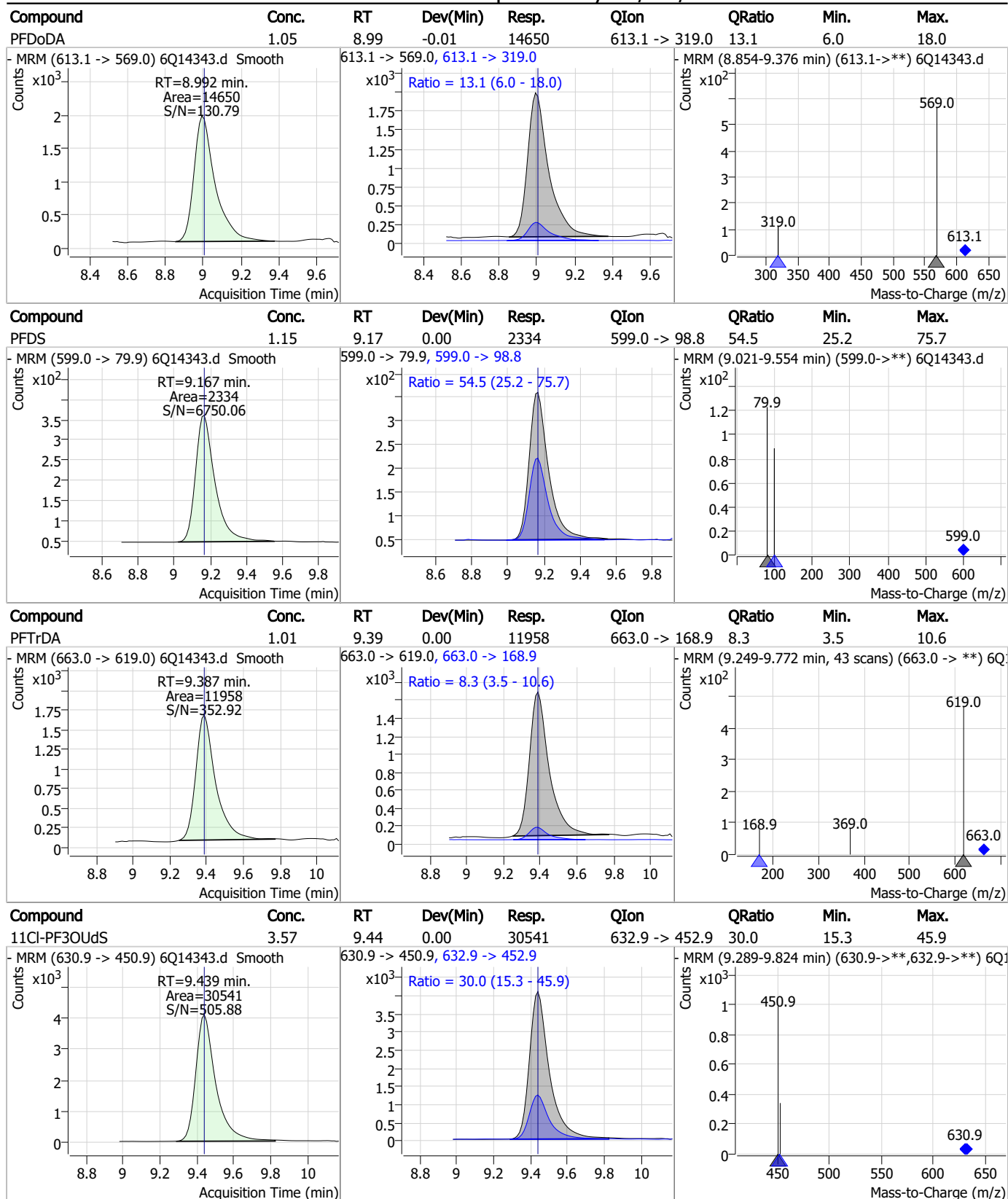


7.3.2

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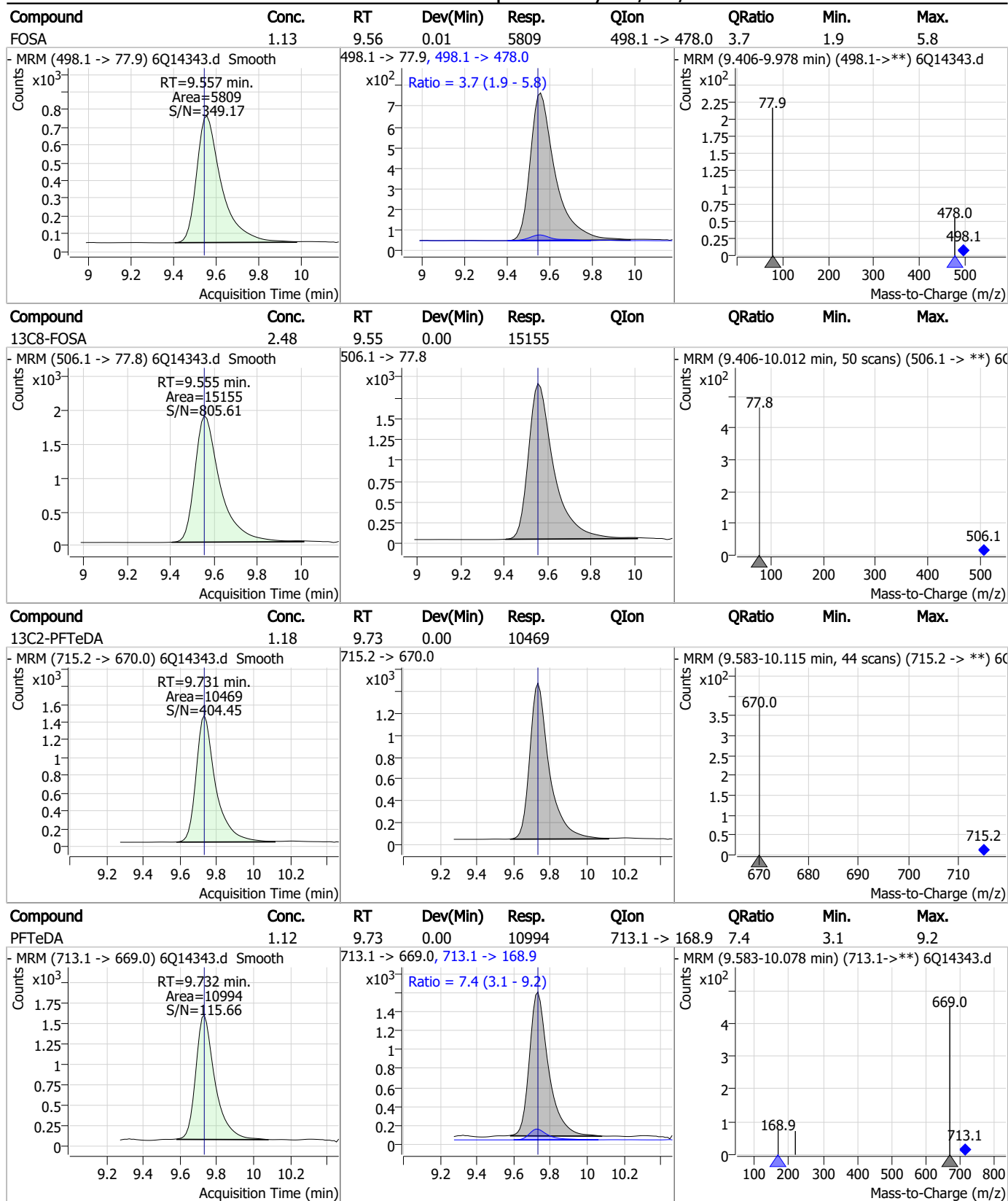


Perfluorinated Compounds by LC/MS/MS



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

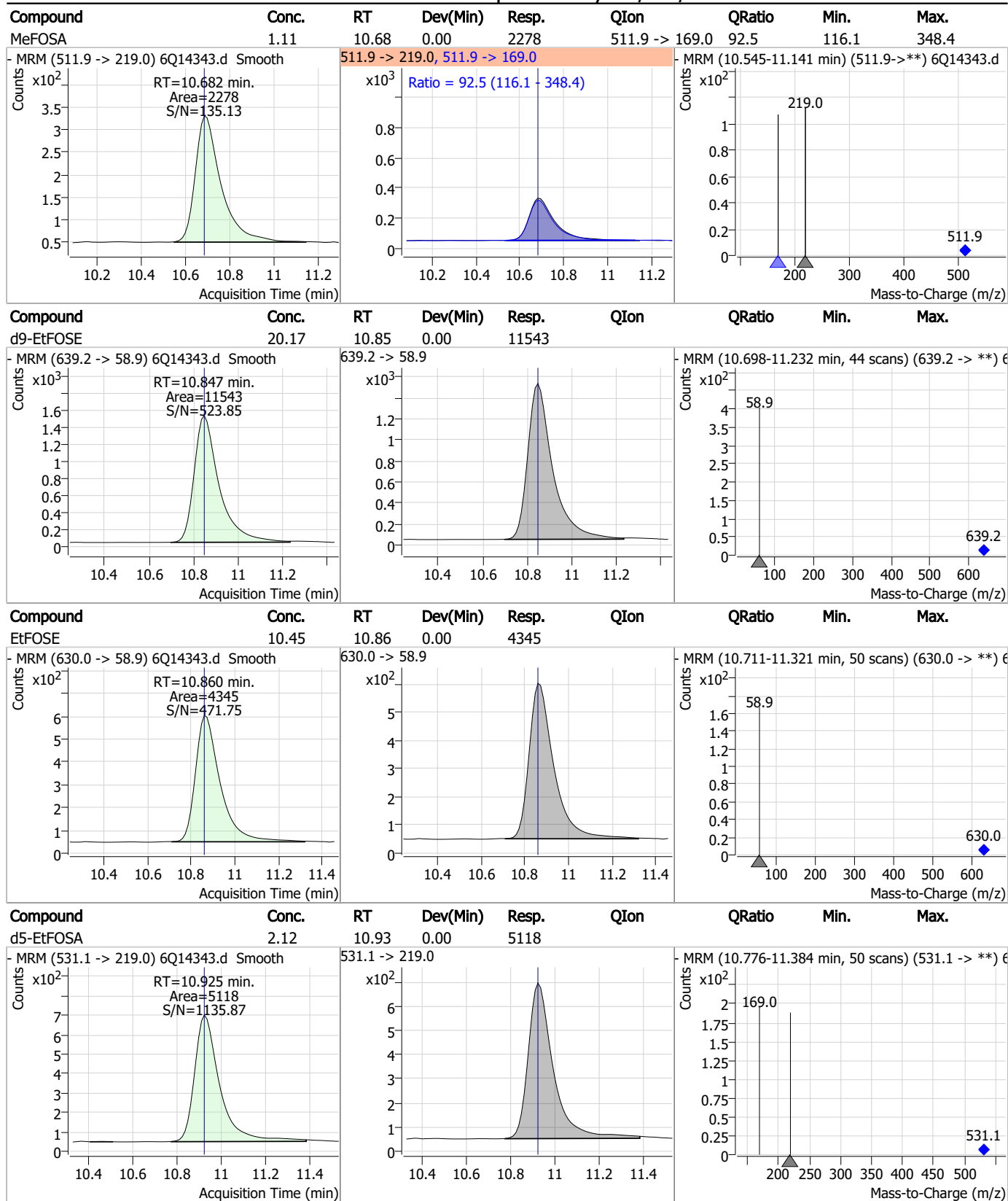
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	1.17	9.86	-0.01	1344	699.1 -> 98.8	52.7	29.4	88.2
- MRM (699.1 -> 79.9) 6Q14343.d Smooth			699.1 -> 79.9, 699.1 -> 98.8		- MRM (9.709-10.243 min) (699.1->**) 6Q14343.d			
d7-MeFOSE	20.82	10.59	0.00	18274				
- MRM (623.2 -> 58.9) 6Q14343.d Smooth			623.2 -> 58.9		- MRM (10.442-11.048 min, 50 scans) (623.2 -> **) 6Q14343.d			
MeFOSE	10.61	10.60	0.00	6810				
- MRM (616.1 -> 58.9) 6Q14343.d Smooth			616.1 -> 58.9		- MRM (10.455-11.061 min, 50 scans) (616.1 -> **) 6Q14343.d			
d3-MeFOSA	2.18	10.68	0.00	4804				
- MRM (515.0 -> 219.0) 6Q14343.d Smooth			515.0 -> 219.0		- MRM (10.532-11.065 min, 44 scans) (515.0 -> **) 6Q14343.d			

7.3.2

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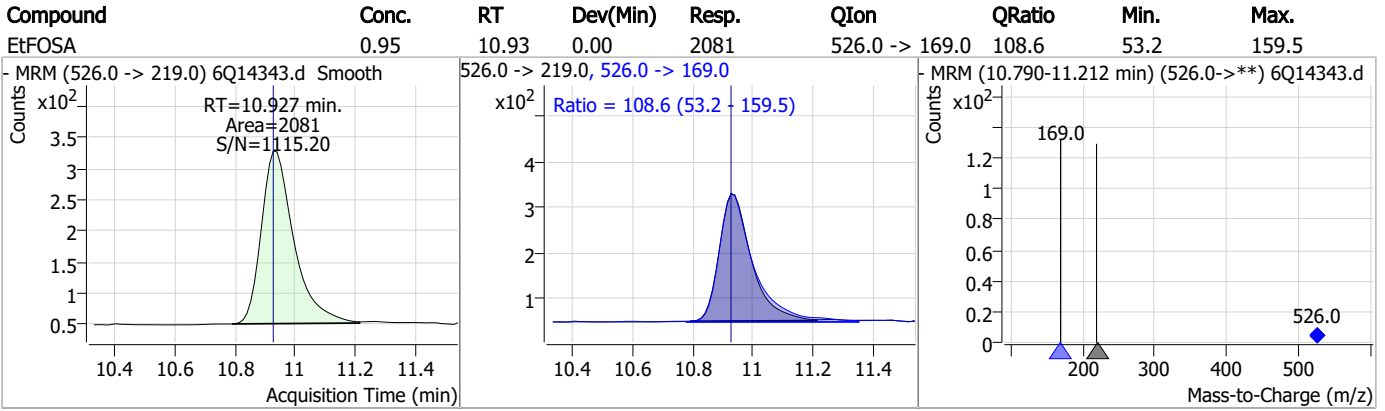


Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2

7

Manual Integration Approval Summary

Sample Number: OP95581-LLBS Method: EPA DRAFT 1633
Lab FileID: 6Q14343.D Analyst approved: 02/27/23 11:07 Martha Valls
Injection Time: 02/24/23 21:52 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.3.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14346.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 10:34:21 PM
 Sample Name : op95581-ms
 Vial : P3-E5
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	59989	10.00 µg/L	0.025
M5-PFPeA	4.324	268.3 -> 223.0	38566	5.00 µg/L	-0.012
M5-PFHxA	5.513	318.0 -> 273.0	34692	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	37677	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	63425	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	18308	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	15942	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	15174	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	15929	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	7897	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	13730	2.50 µg/L	0.000
M3-PFBS	5.444	302.1 -> 79.9	14144	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	8598	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	6967	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2176	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	2404	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	1896	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	22494	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	13606	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	19155	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	16708	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	10604	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	4445	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	4204	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	8079	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	23582	5.00 µg/L	0.025
18O2-PFHxS	7.211	403.0 -> 83.9	5853	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	69615	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	20017	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	18237	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	33789	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2176	6.22 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.4%		
13C2-6:2FTS	6.871	429.1 -> 80.9	2404	5.44 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C2-8:2FTS	7.895	529.1 -> 80.9	1896	4.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.1%		
13C2-PFDoDA	8.991	615.1 -> 570.0	15929	1.01 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 80.8%		
13C2-PFTeDA	9.731	715.2 -> 670.0	7897	0.86 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 68.8%		
13C3-PFBS	5.444	302.1 -> 79.9	14144	2.81 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.5%		
13C3-PFHxS	7.212	402.1 -> 79.9	8598	2.65 µg/L	0.000

7.4.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C4-PFBA	2.963	216.8 -> 171.9	59989	11.16 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.6%	
13C4-PFHpA	6.452	367.1 -> 322.0	37677	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.6%	
13C5-PFHxA	5.513	318.0 -> 273.0	34692	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C5-PFPeA	4.324	268.3 -> 223.0	38566	5.10 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C6-PFDA	8.108	519.1 -> 474.1	15942	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C7-PFUnDA	8.562	570.0 -> 525.1	15174	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C8-FOSA	9.555	506.1 -> 77.8	13730	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-PFOA	7.097	421.1 -> 376.0	63425	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C8-PFOS	8.270	507.1 -> 79.9	6967	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C9-PFNA	7.626	472.1 -> 427.0	18308	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%	
d3-MeFOSAA	8.153	573.2 -> 419.0	22494	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	13606	10.57 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
d3-MeFOSA	10.680	515.0 -> 219.0	4204	2.15 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.1%	
d5-EtFOSAA	8.349	589.2 -> 419.0	19155	5.19 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
d7-MeFOSE	10.589	623.2 -> 58.9	16708	21.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.7%	
d9-EtFOSE	10.847	639.2 -> 58.9	10604	20.86 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.4%	
d5-EtFOSA	10.925	531.1 -> 219.0	4445	2.07 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 82.8%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	44975	11.13 µg/L	99
		327.1 -> 80.9	9699		
6:2FTS	6.871	427.1 -> 407.0	33564	11.22 µg/L	93
		427.1 -> 80.9	7137		
8:2FTS	7.896	527.1 -> 507.0	17127	13.89 µg/L	100
		527.1 -> 80.8	4084		
EtFOSAA	8.362	584.2 -> 419.1	7612	3.03 µg/L	96
		584.2 -> 526.0	4229		
FOSA	9.557	498.1 -> 77.9	14857	3.19 µg/L	99
		498.1 -> 478.0	607		
MeFOSAA	8.154	570.1 -> 419.0	11074	3.00 µg/L	96
		570.1 -> 483.0	1518		
PFBA	2.969	212.8 -> 168.9	9379	7.76 µg/L	100
PFBS	5.444	298.7 -> 79.9	11933	2.57 µg/L	95
		298.7 -> 98.8	5364		
PFDA	8.108	512.9 -> 469.0	45107	2.97 µg/L	99
		512.9 -> 219.0	6193		
PFDODA	8.992	613.1 -> 569.0	33072	2.97 µg/L	98
		613.1 -> 319.0	3759		
PFDS	9.167	599.0 -> 79.9	4306	2.32 µg/L	92

7.4.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.453	599.0 -> 98.8	2403	3.00	µg/L	100
		363.1 -> 319.0	56073			
PFHpS	7.779	363.1 -> 169.0	7956	3.00	µg/L	90
		449.0 -> 79.9	7291			
PFHxA	5.503	449.0 -> 98.9	4063	2.98	µg/L	96
		313.0 -> 269.0	33084			
PFHxS	7.213	313.0 -> 118.9	1566	2.69	µg/L	98
		398.7 -> 79.9	8454			
PFNA	7.627	398.7 -> 98.9	5064	3.06	µg/L	96
		463.0 -> 419.0	28428			
PFNS	8.737	463.0 -> 219.0	5383	2.72	µg/L	94
		548.8 -> 79.9	6895			
PFOA	7.098	548.8 -> 98.9	4128	2.86	µg/L	92
		413.0 -> 369.0	67014			
PFOS	8.271	413.0 -> 169.0	8607	2.70	µg/L	85
		498.9 -> 79.9	7038			
PFPeA	4.326	498.9 -> 98.8	5104	13.23	µg/L	100
		263.0 -> 219.0	89341			
PFPeS	6.517	349.1 -> 79.9	10891	2.75	µg/L	99
		349.1 -> 98.9	5890			
PFTeDA	9.732	713.1 -> 669.0	22706	3.07	µg/L	97
		713.1 -> 168.9	1611			
PFTrDA	9.387	663.0 -> 619.0	25963	2.74	µg/L	99
		663.0 -> 168.9	1920			
PFUnDA	8.562	563.1 -> 519.0	33464	3.16	µg/L	97
		563.1 -> 269.1	5173			
11CI-PF3OUdS	9.439	630.9 -> 450.9	53923	7.16	µg/L	97
		632.9 -> 452.9	15705			
9CI-PF3ONS	8.602	530.8 -> 351.0	128586	9.49	µg/L	90
		532.8 -> 353.0	45500			
ADONA	6.704	376.9 -> 250.9	314141	11.65	µg/L	99
		376.9 -> 84.8	66298			
HFPO-DA	5.879	284.9 -> 168.9	11793	10.87	µg/L	98
		284.9 -> 184.9	1488			
3:3FTCA	3.829	241.0 -> 177.0	5017	14.00	µg/L	93
		241.0 -> 117.0	793			
5:3FTCA	6.156	341.0 -> 237.1	217497	85.74	µg/L	95
		341.0 -> 217.0	200042			
7:3FTCA	7.567	441.0 -> 316.9	110243	81.83	µg/L	85
		441.0 -> 336.9	183616			
EtFOSA	10.927	526.0 -> 219.0	5471	2.87	µg/L	83
		526.0 -> 169.0	4858			
EtFOSE	10.860	630.0 -> 58.9	10601	27.74	µg/L	100
		511.9 -> 219.0	5311			
MeFOSA	10.682	511.9 -> 169.0	5291	2.96	µg/L	#
		616.1 -> 58.9	16051			
MeFOSE	10.602	699.1 -> 79.9	1456	27.36	µg/L	100
		699.1 -> 98.8	976			
PFDoDS	9.858	295.0 -> 201.0	3612	1.39	µg/L	89
		295.0 -> 84.9	1846			
NFDHA	5.395	279.0 -> 85.1	12433	5.75	µg/L	98
		229.0 -> 84.9	9132			
PFMBA	4.738	314.8 -> 134.9	84891	6.25	µg/L	100
		314.8 -> 82.9	2193			
PFMPA	3.500			5.06	µg/L	100
PFEESA	5.983			5.39	µg/L	99

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

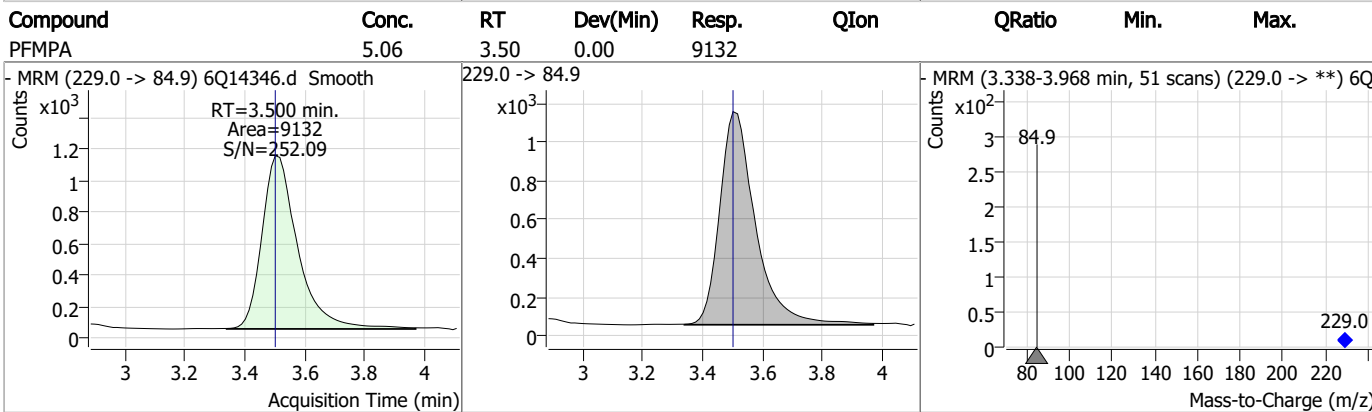
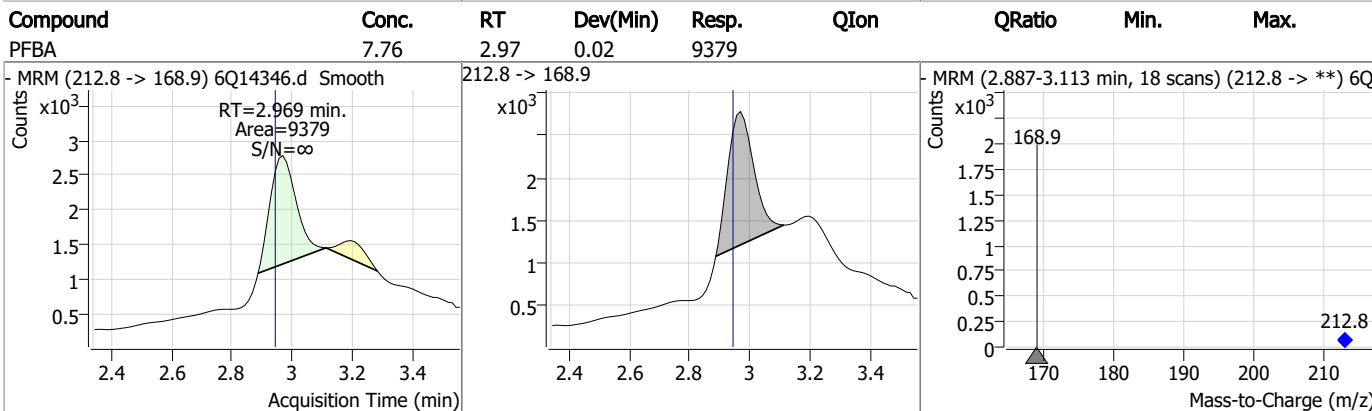
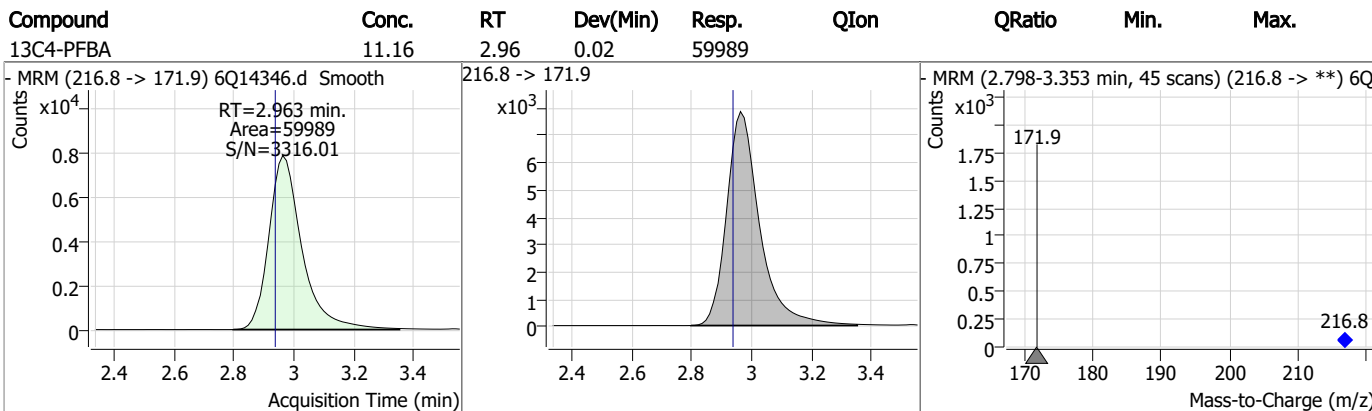
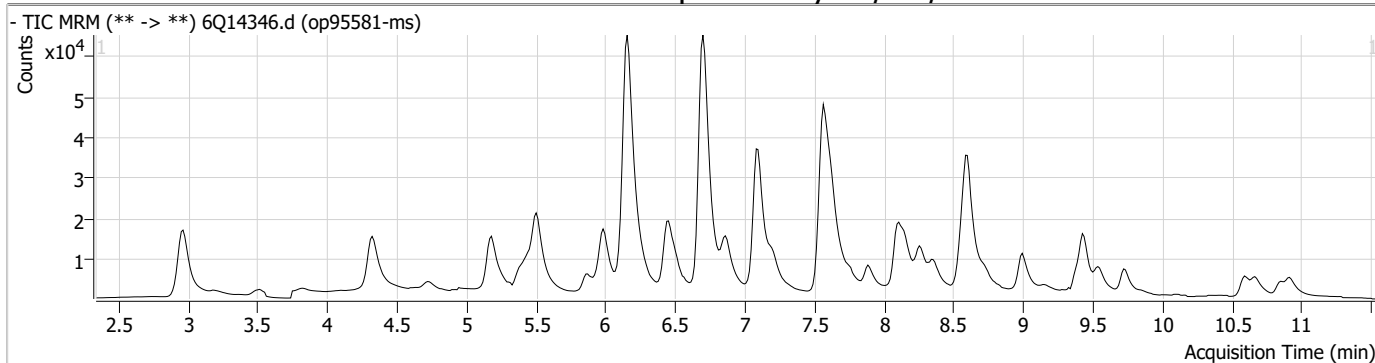
Perfluorinated Compounds by LC/MS/MS

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

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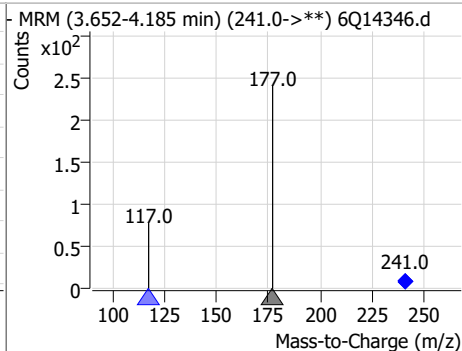
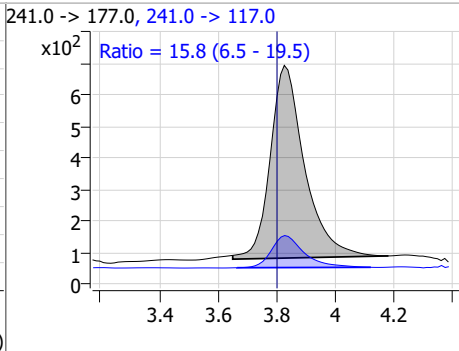
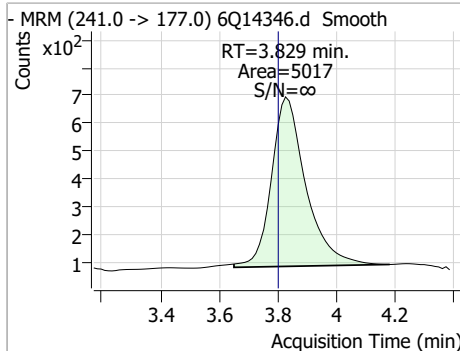
Perfluorinated Compounds by LC/MS/MS



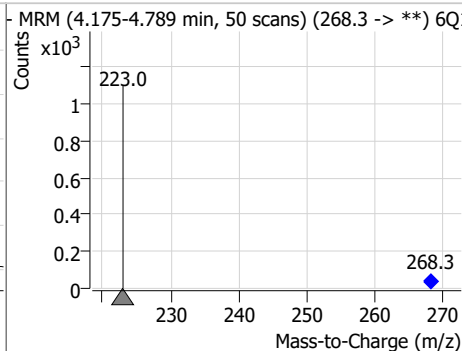
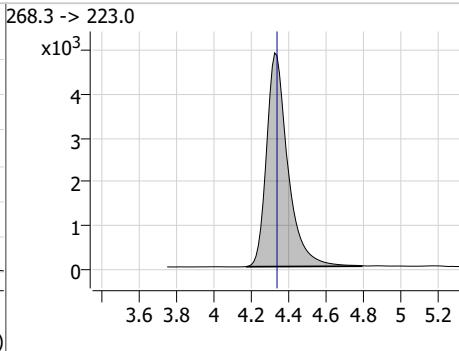
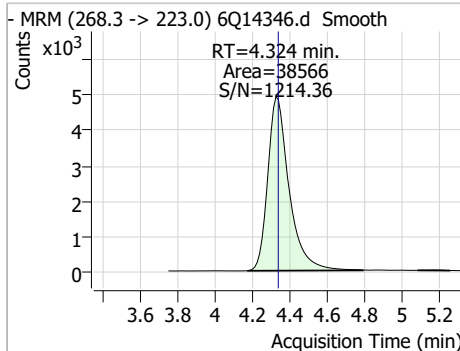
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Perfluorinated Compounds by LC/MS/MS

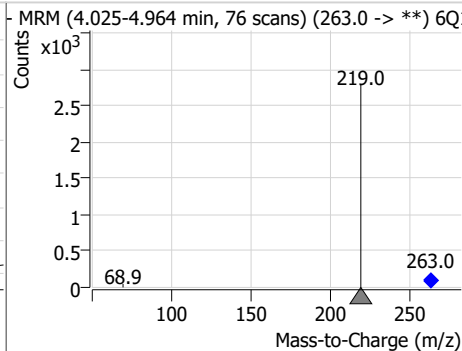
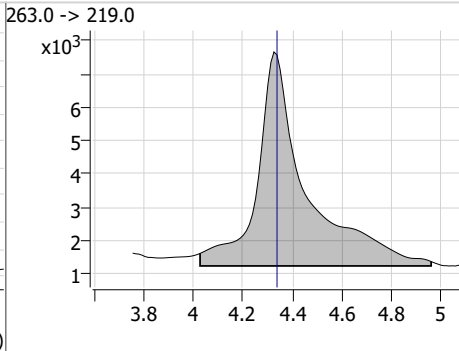
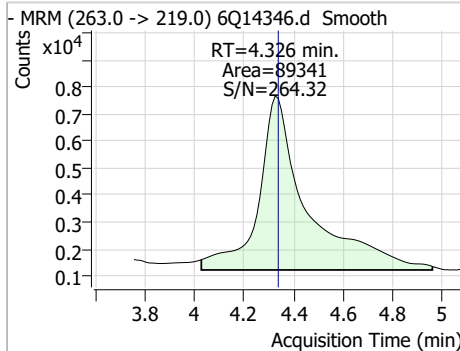
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	14.00	3.83	0.02	5017	241.0 -> 117.0	15.8	6.5	19.5



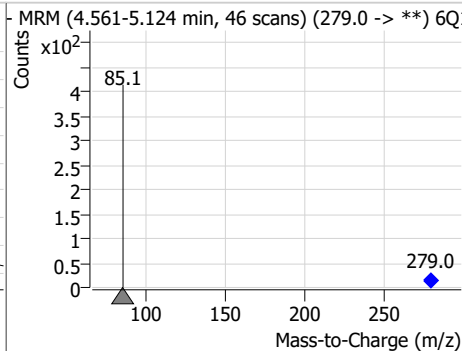
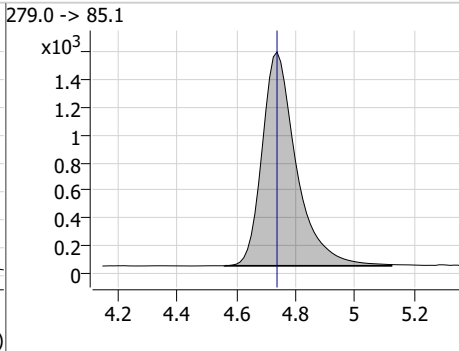
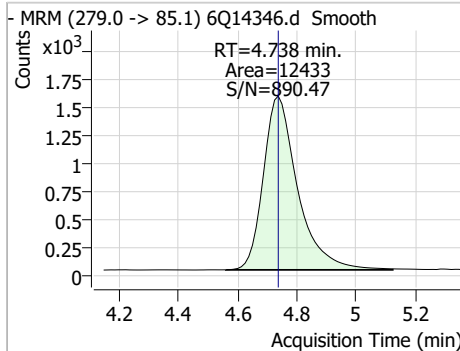
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.10	4.32	-0.01	38566				



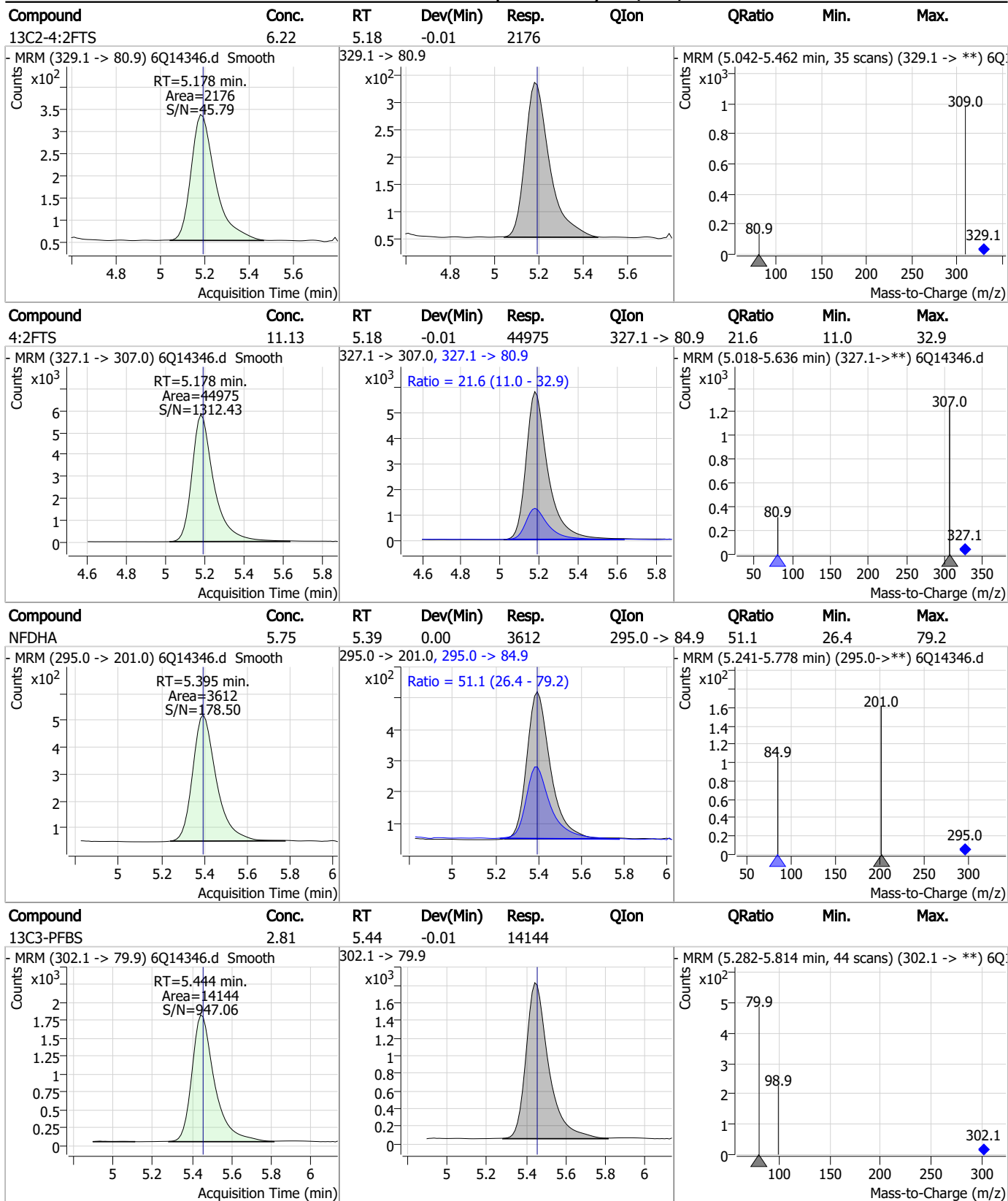
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	13.23	4.33	-0.01	89341				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	6.25	4.74	0.00	12433				

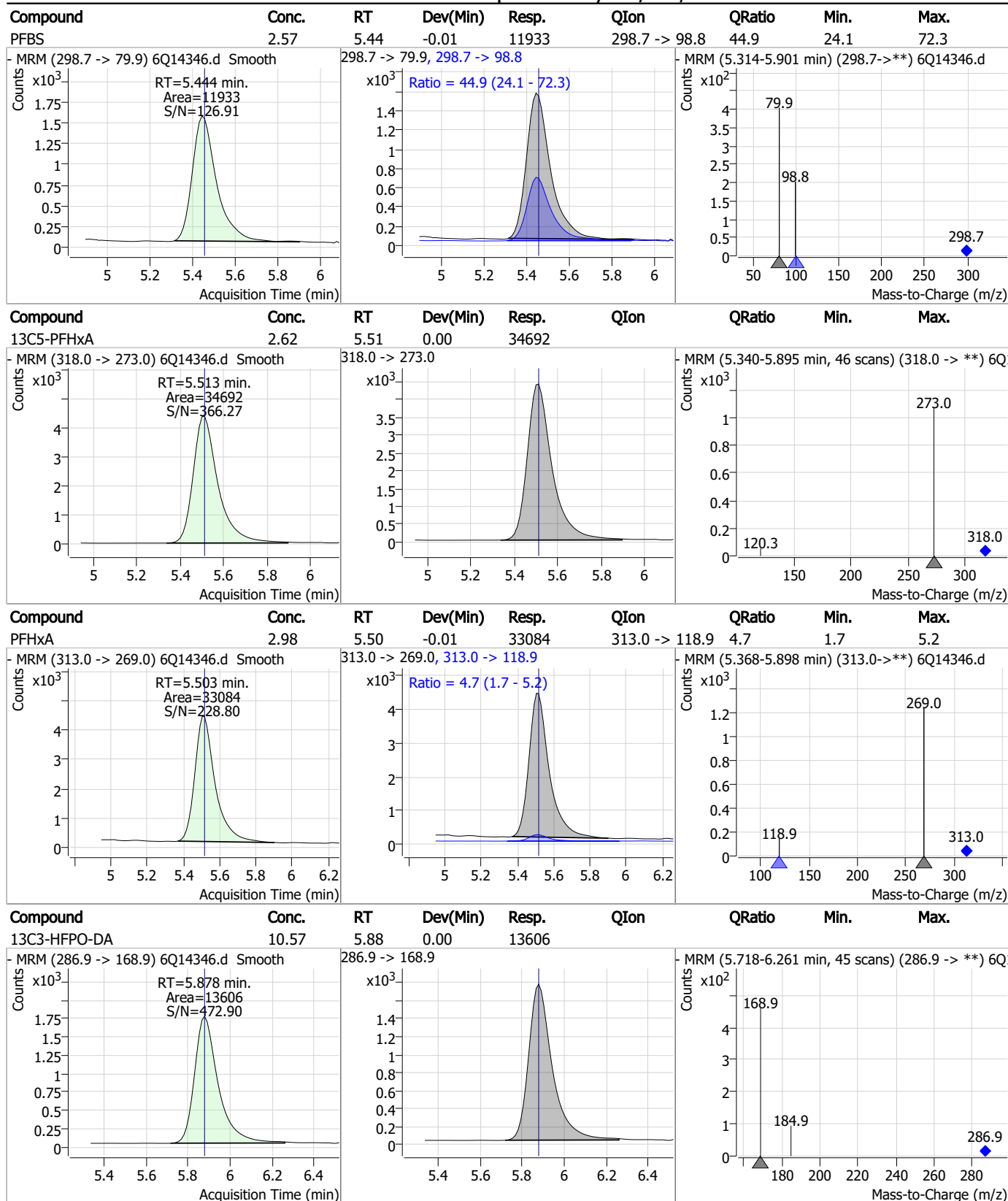


Perfluorinated Compounds by LC/MS/MS



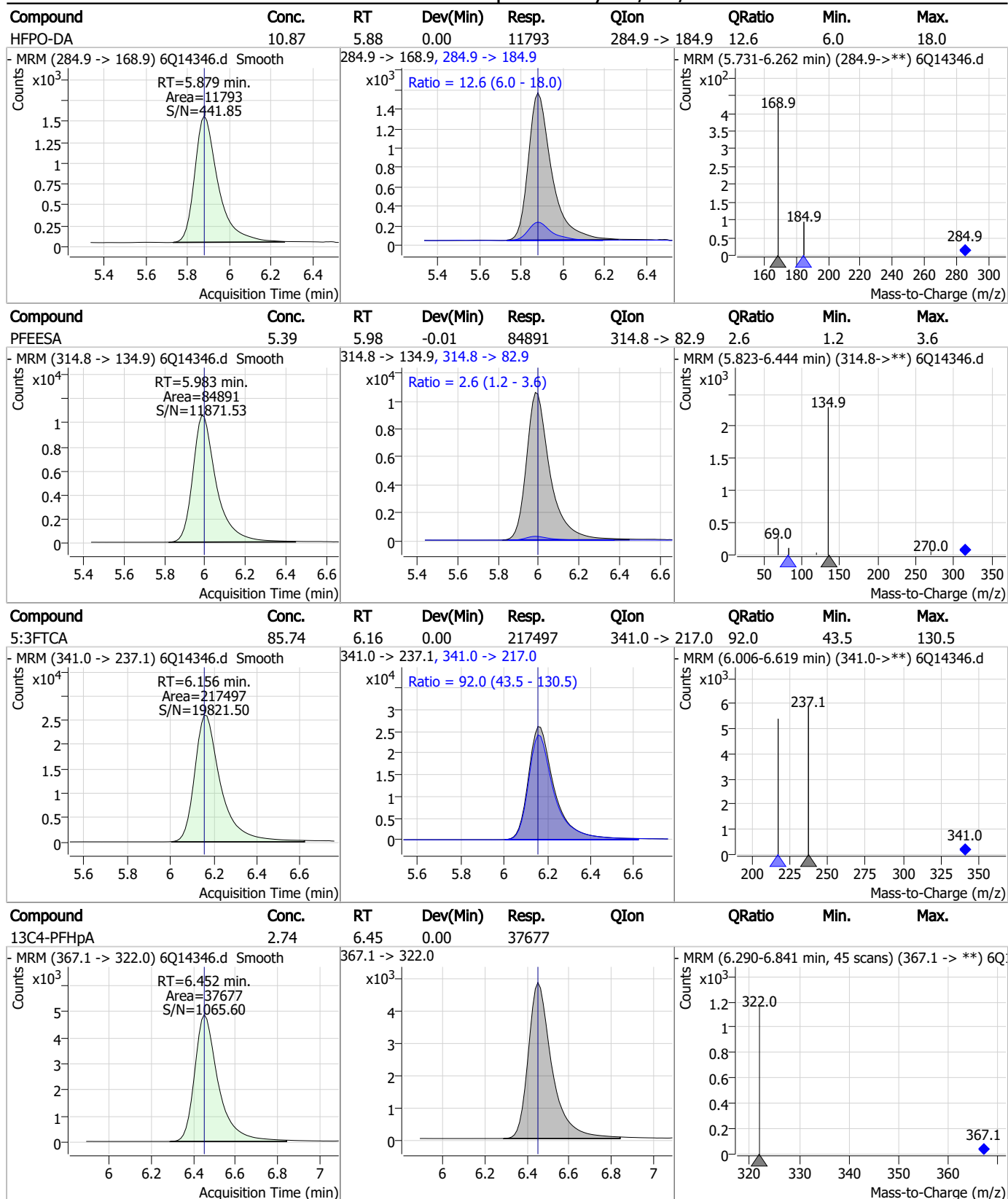
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Perfluorinated Compounds by LC/MS/MS



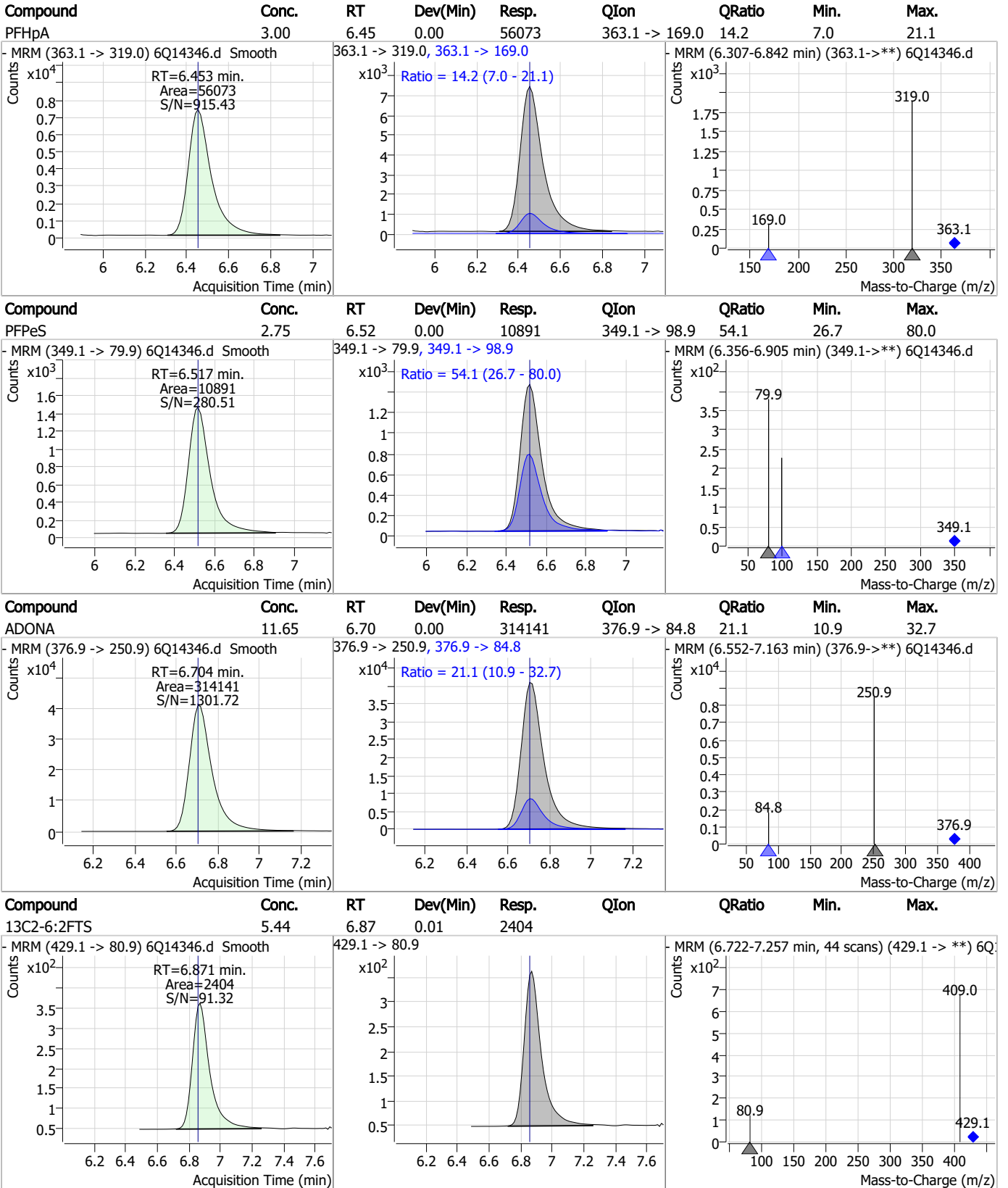
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Perfluorinated Compounds by LC/MS/MS



7.4.1
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Perfluorinated Compounds by LC/MS/MS

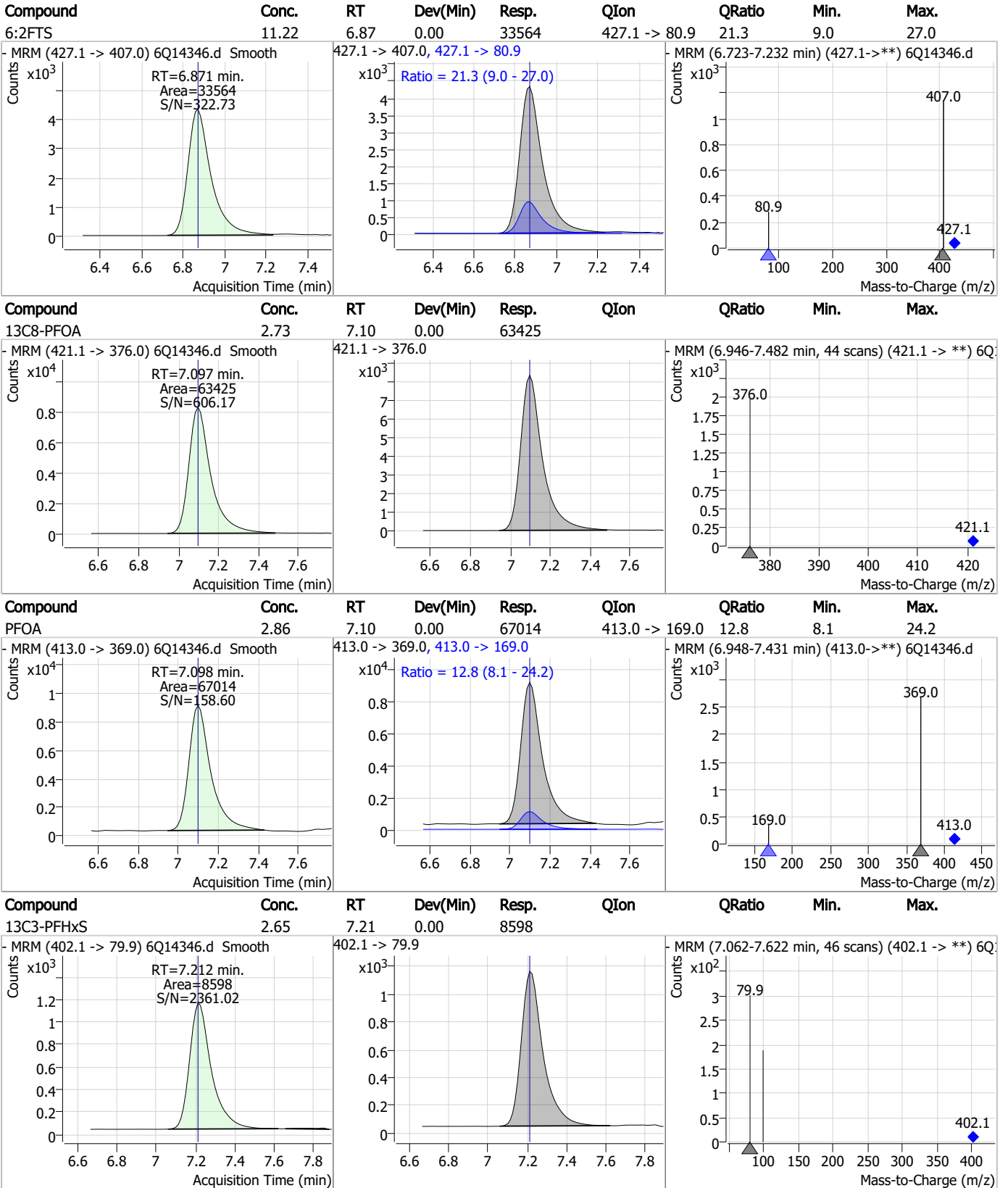


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Perfluorinated Compounds by LC/MS/MS

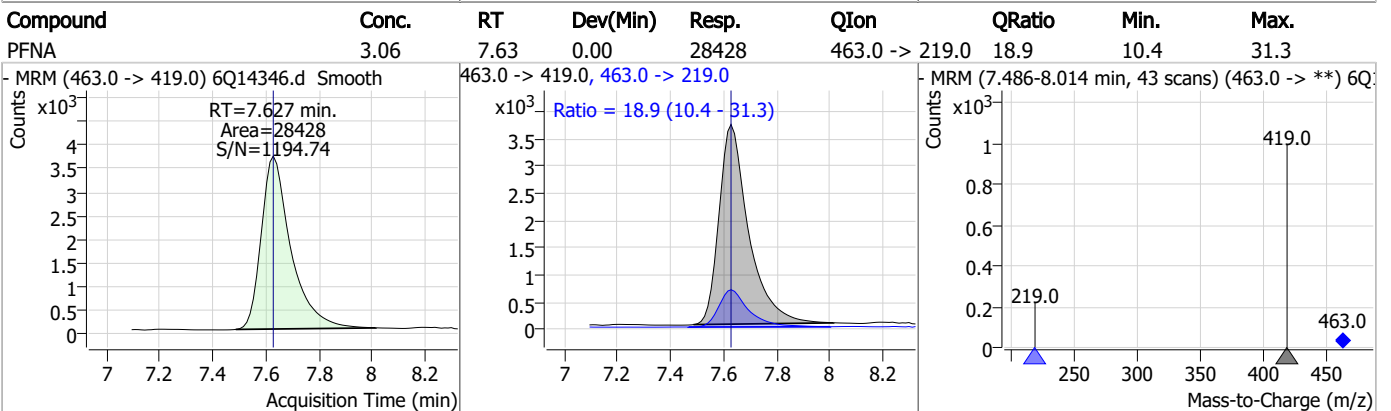
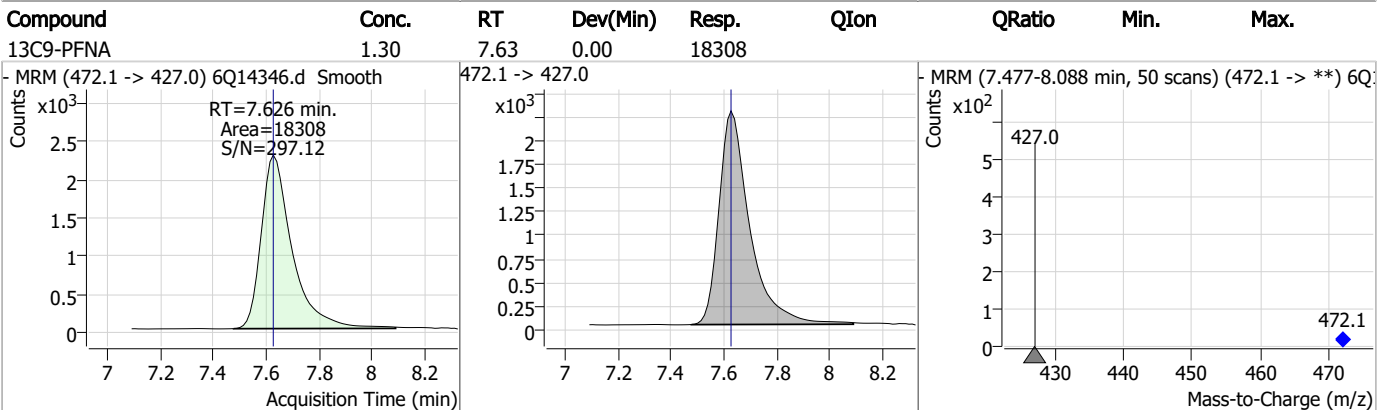
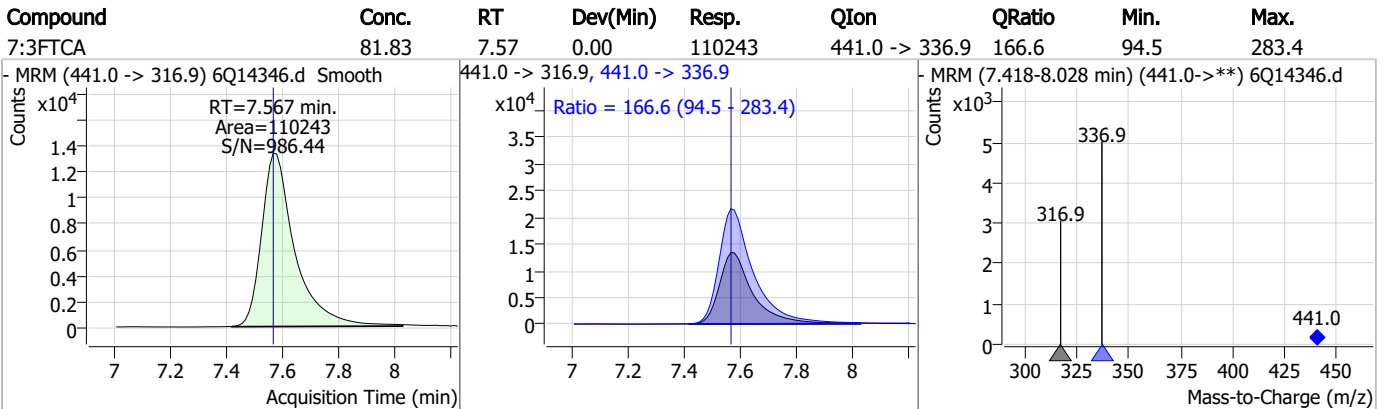
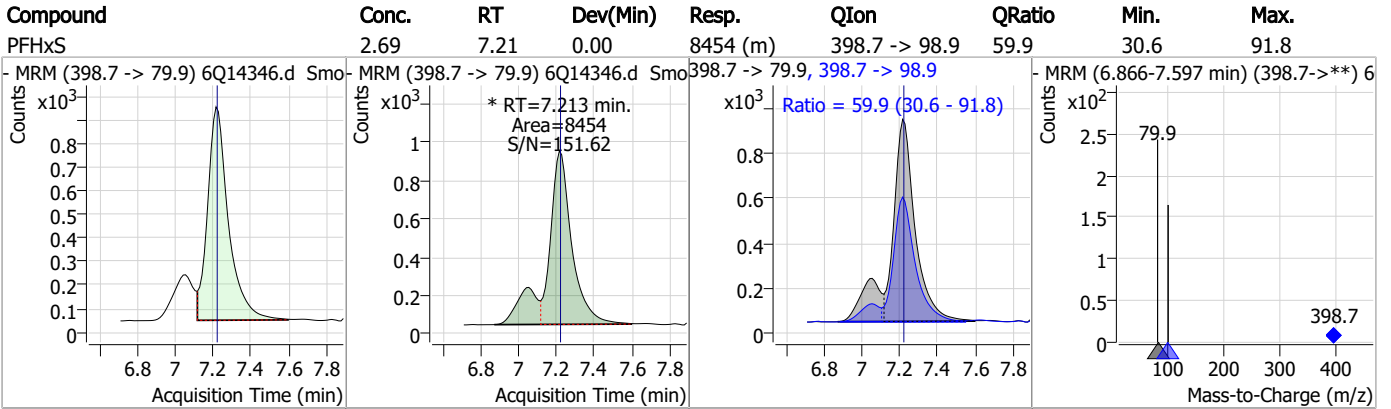


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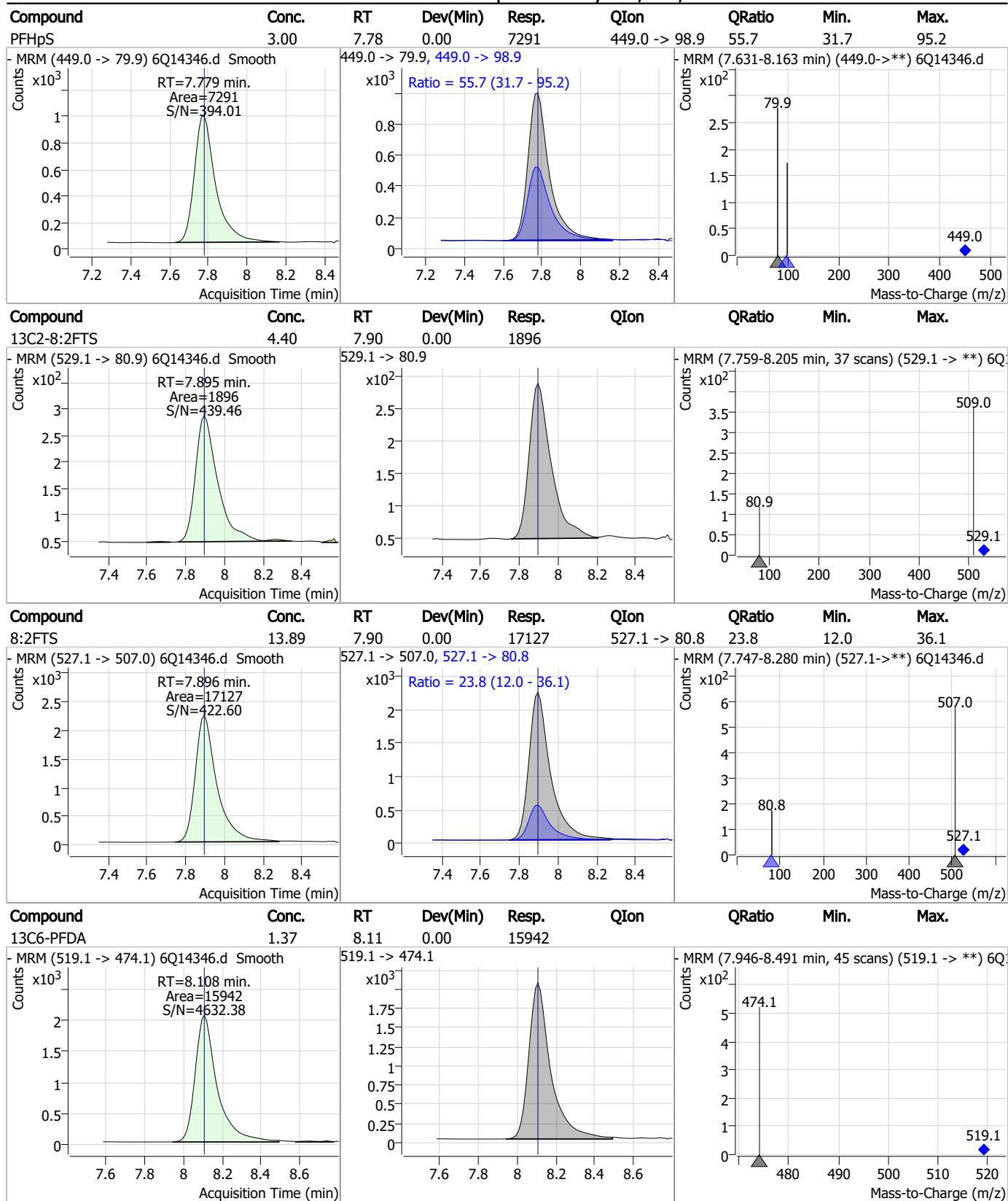
Perfluorinated Compounds by LC/MS/MS



7.4.1

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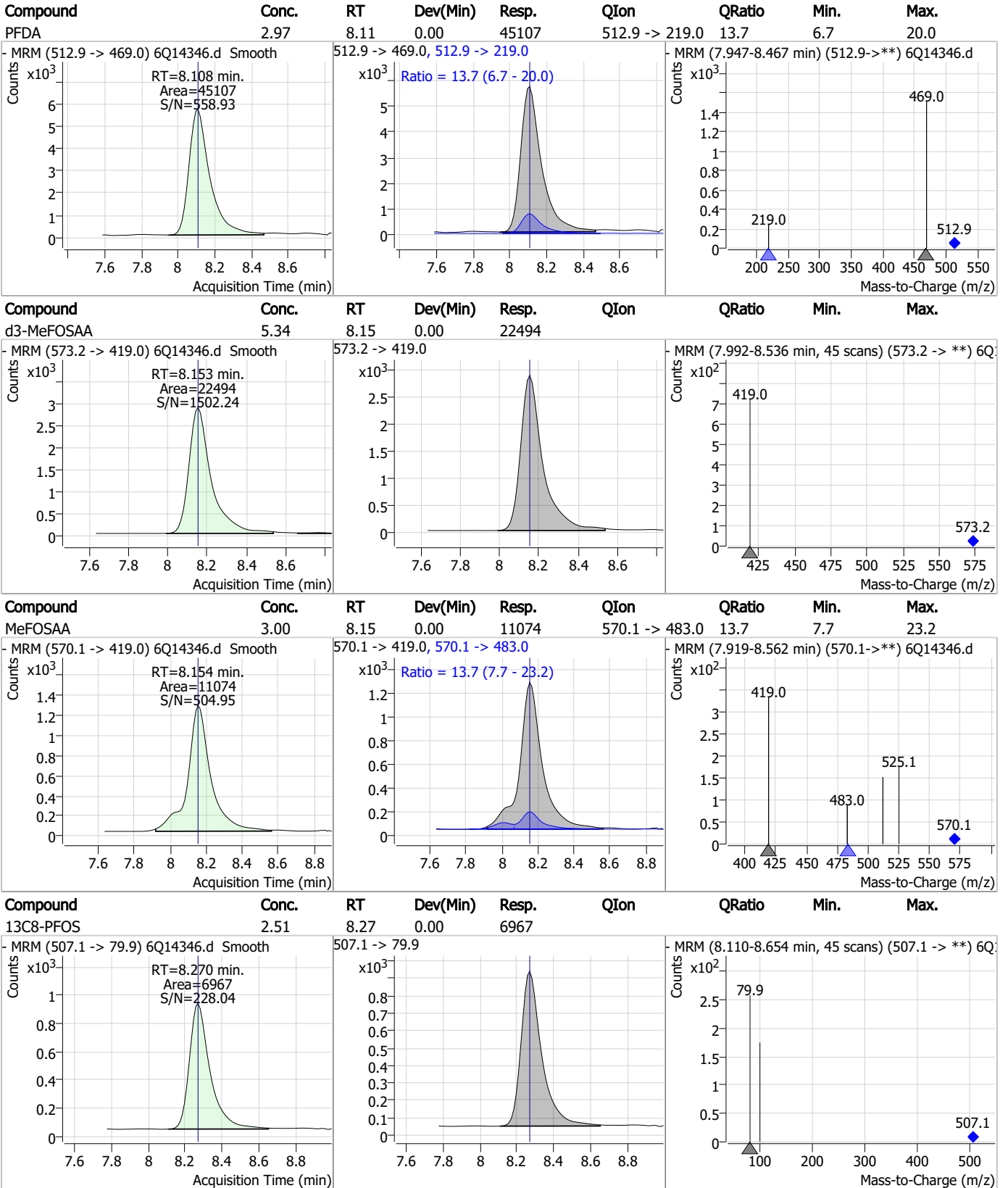
Perfluorinated Compounds by LC/MS/MS



7.4.1
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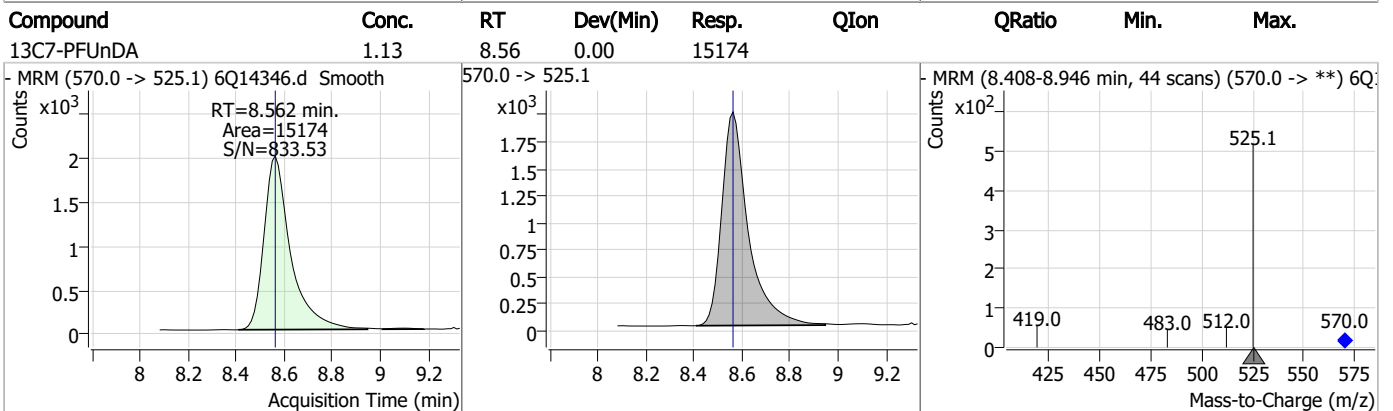
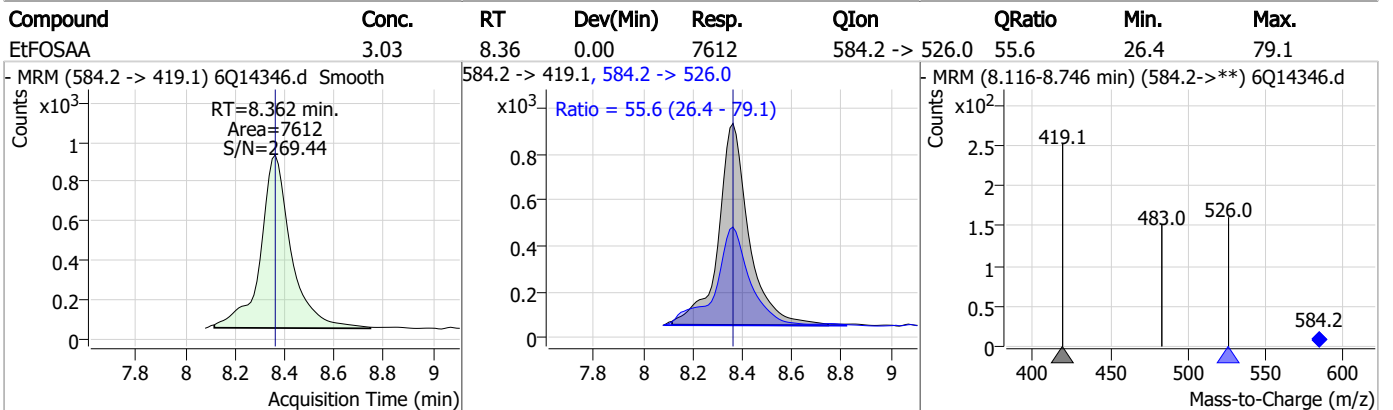
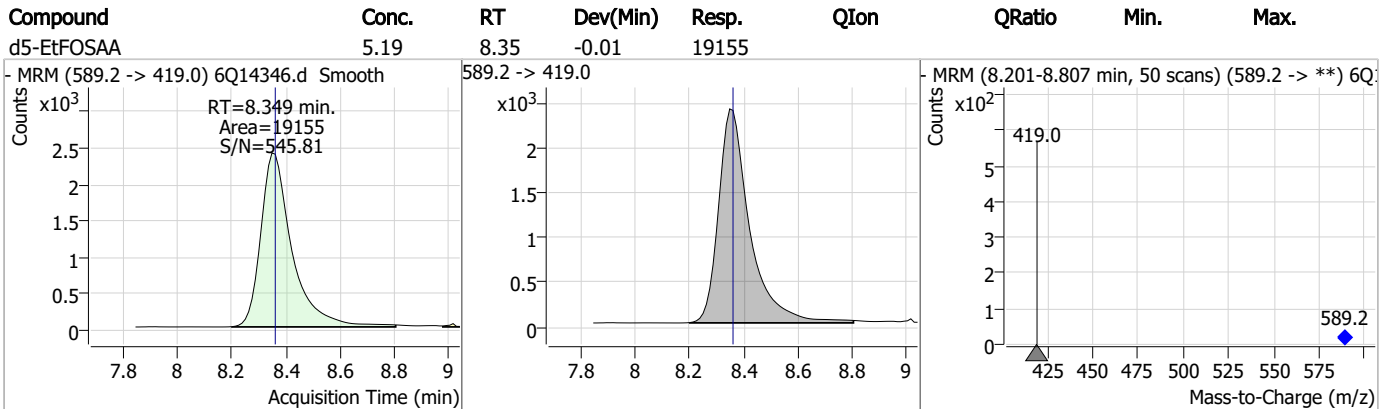
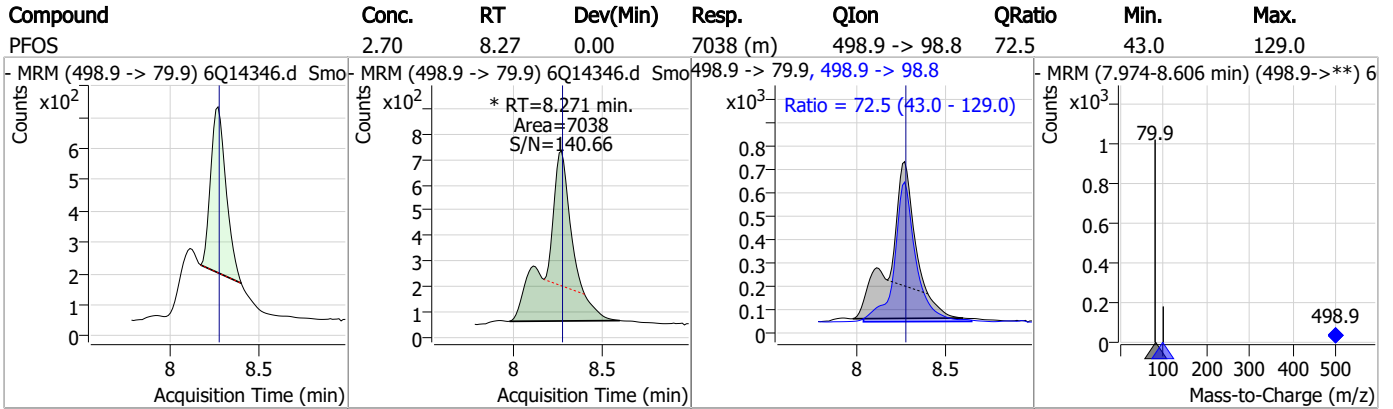
Perfluorinated Compounds by LC/MS/MS



7.4.1

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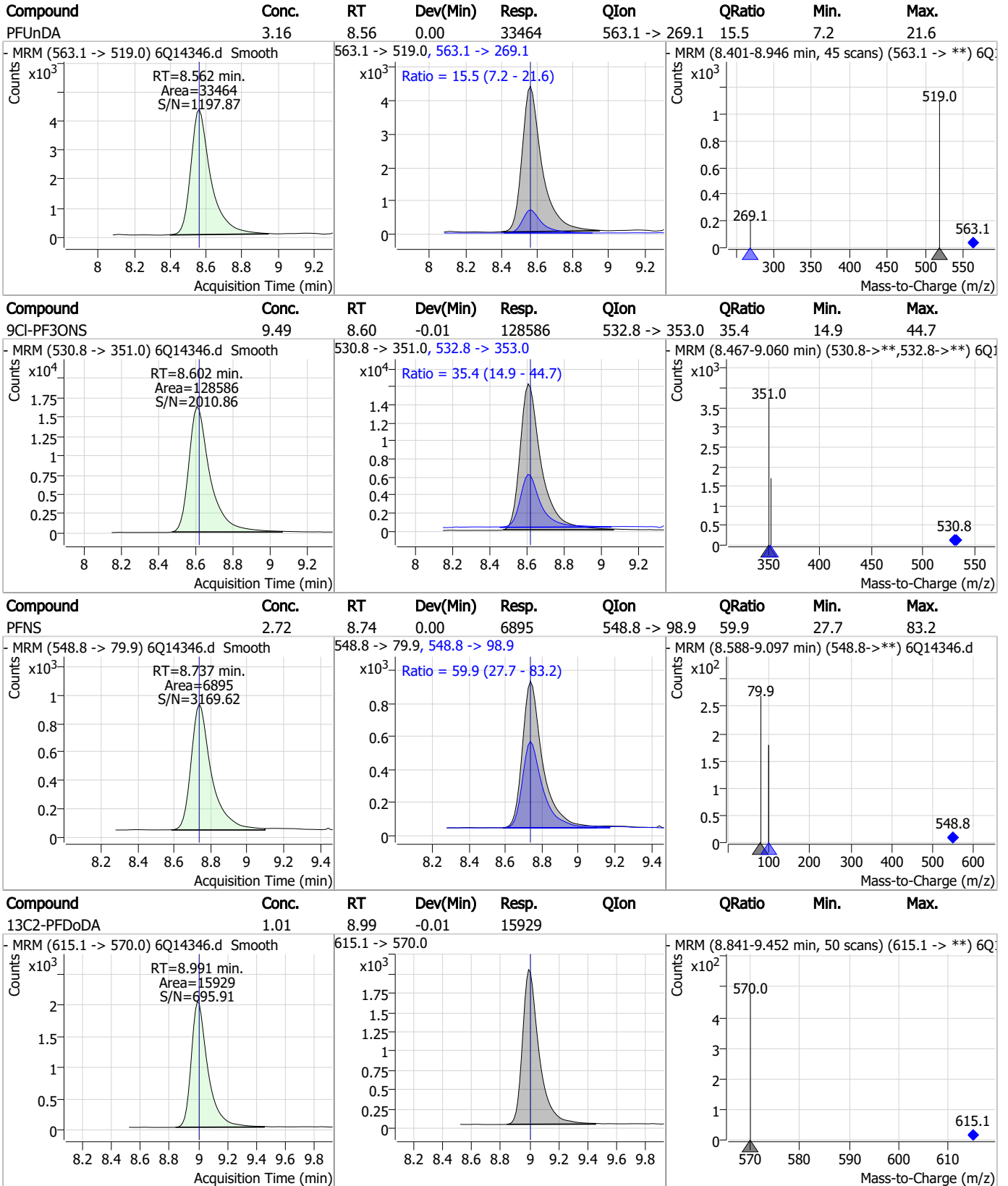
Perfluorinated Compounds by LC/MS/MS



7.4.1

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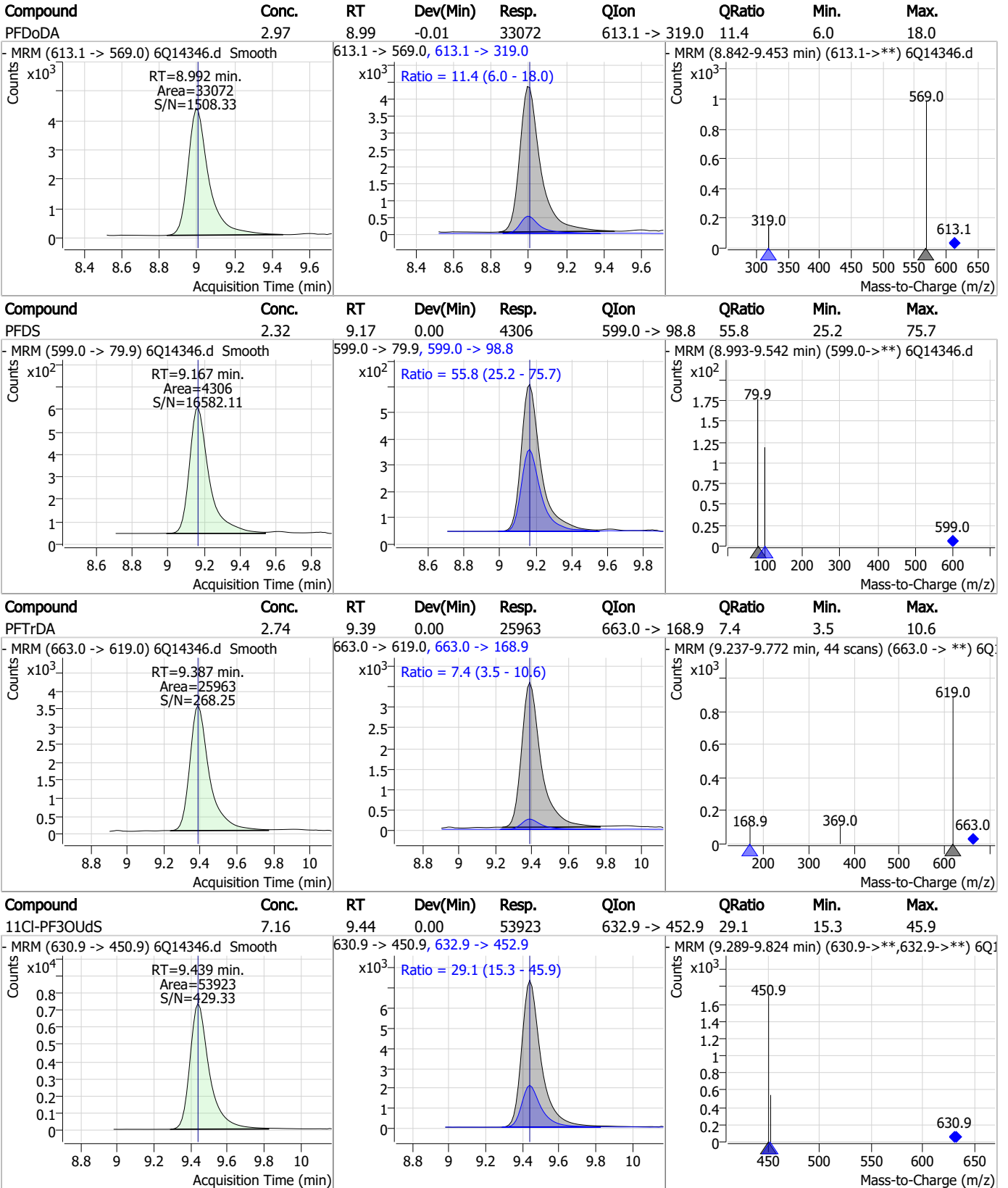
Perfluorinated Compounds by LC/MS/MS



7.4.1

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Perfluorinated Compounds by LC/MS/MS

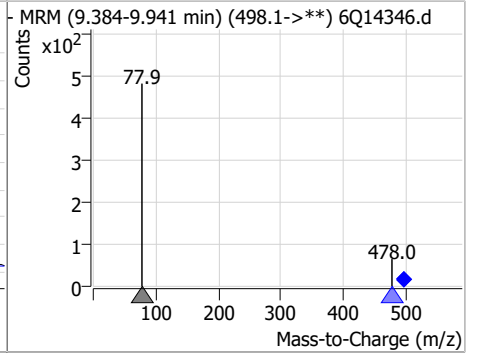
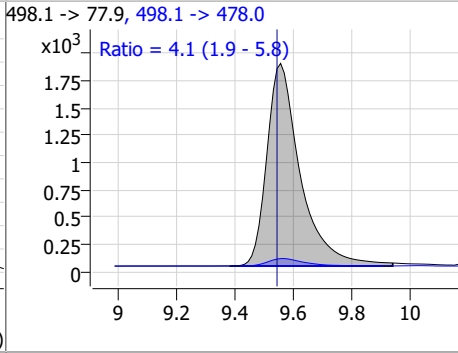
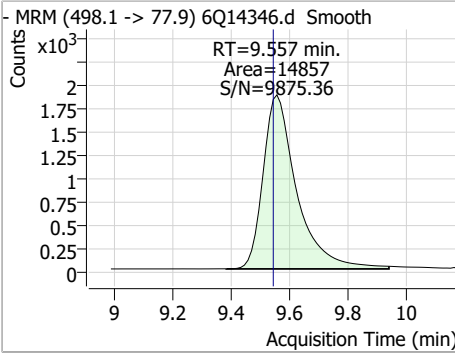


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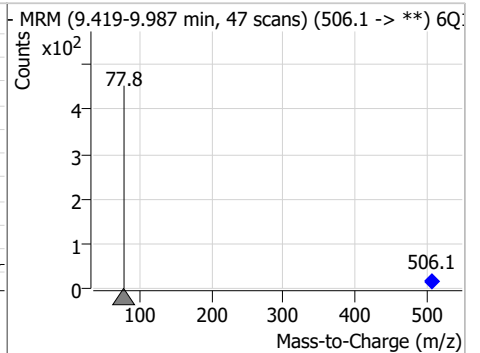
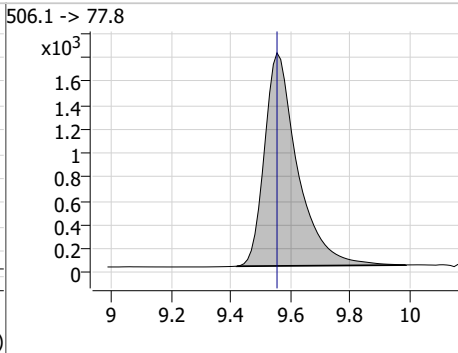
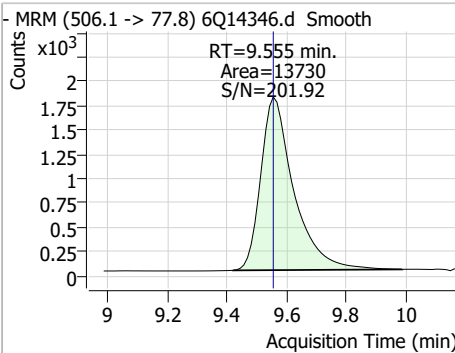
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Perfluorinated Compounds by LC/MS/MS

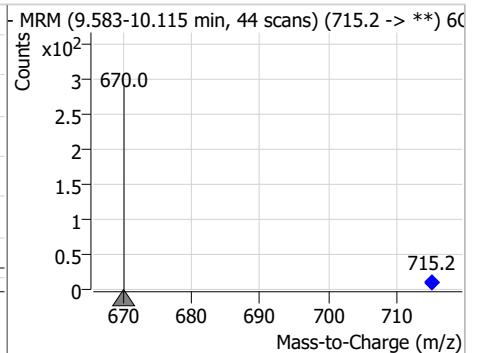
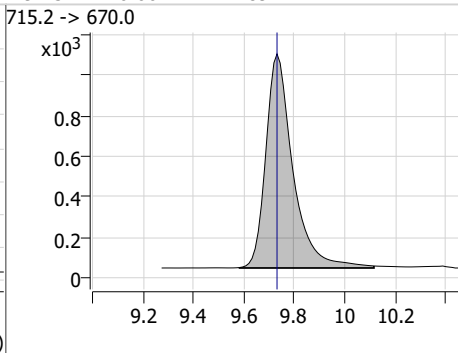
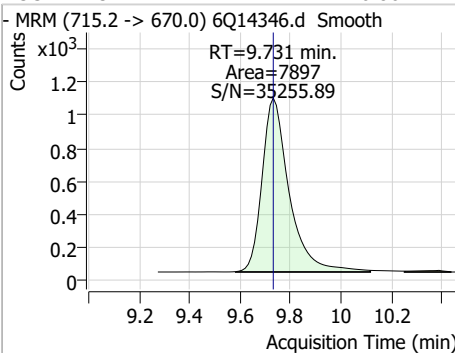
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	3.19	9.56	0.01	14857	498.1 -> 478.0	4.1	1.9	5.8



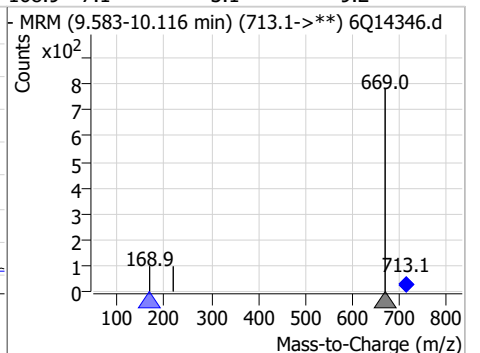
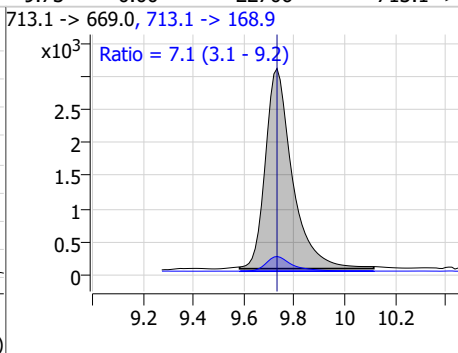
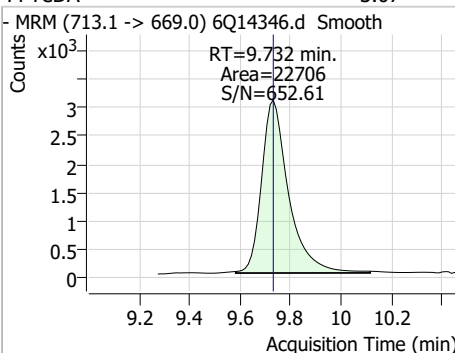
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.53	9.55	0.00	13730				



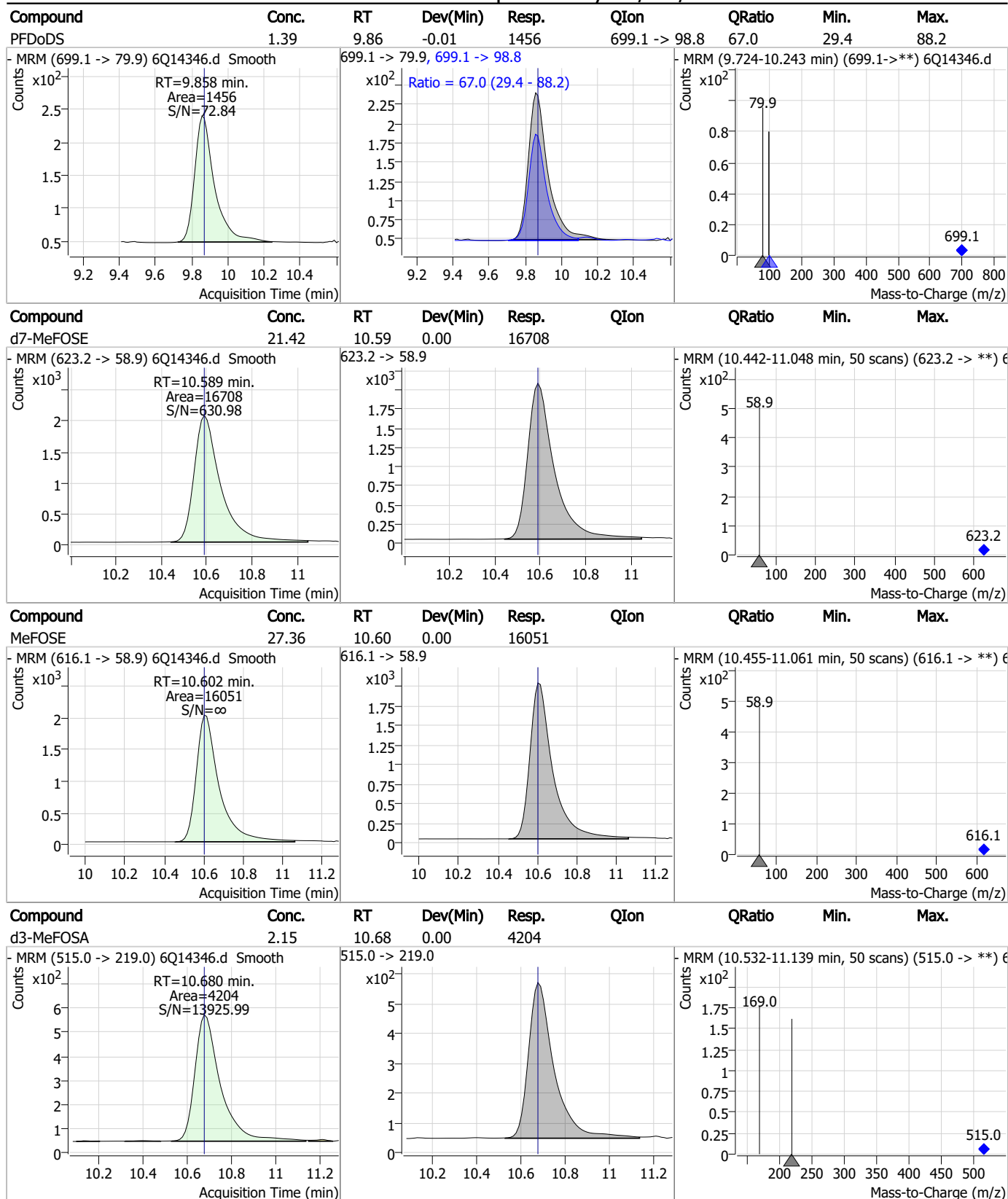
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.86	9.73	0.00	7897				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	3.07	9.73	0.00	22706	713.1 -> 168.9	7.1	3.1	9.2

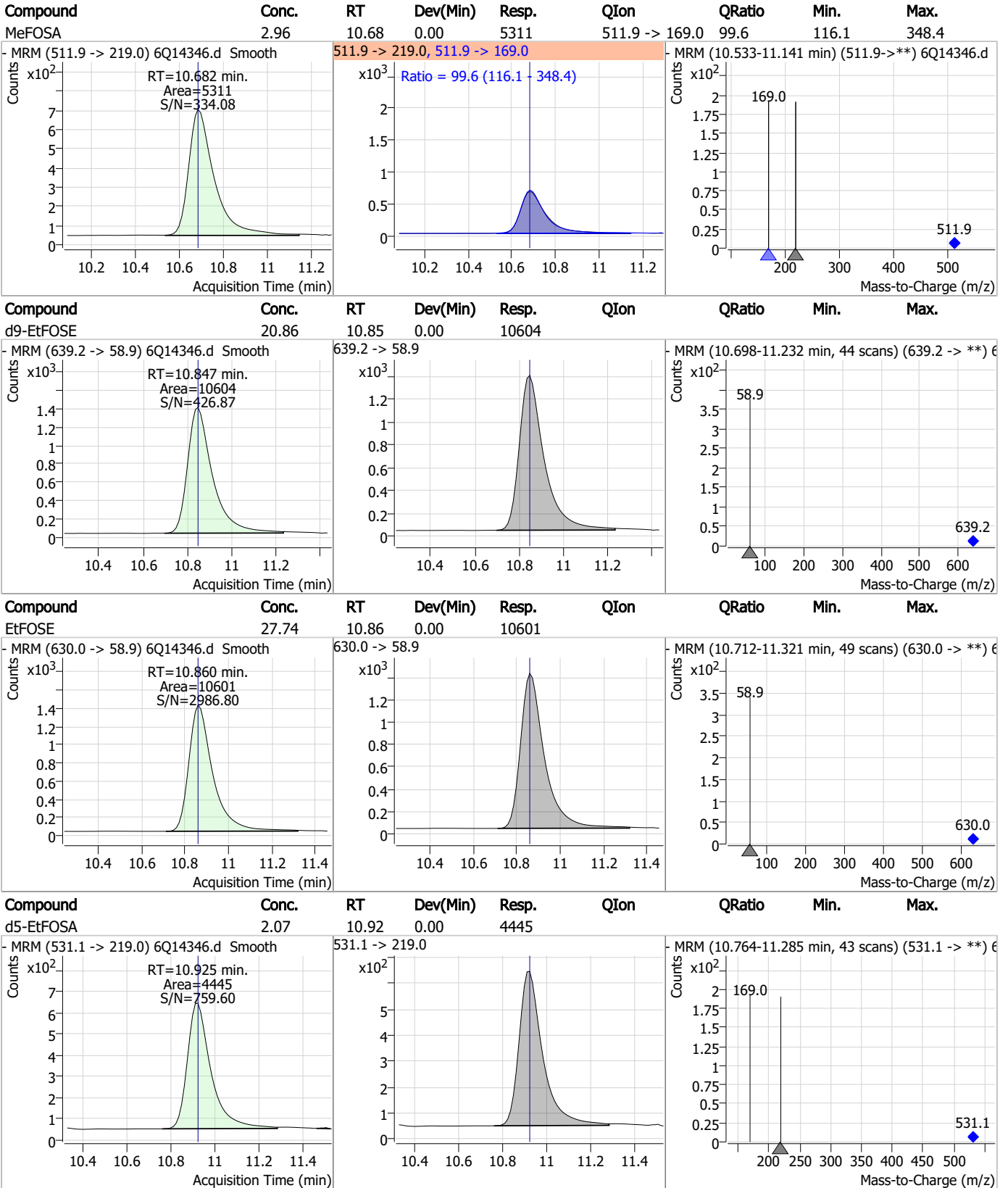


Perfluorinated Compounds by LC/MS/MS



7.4.1
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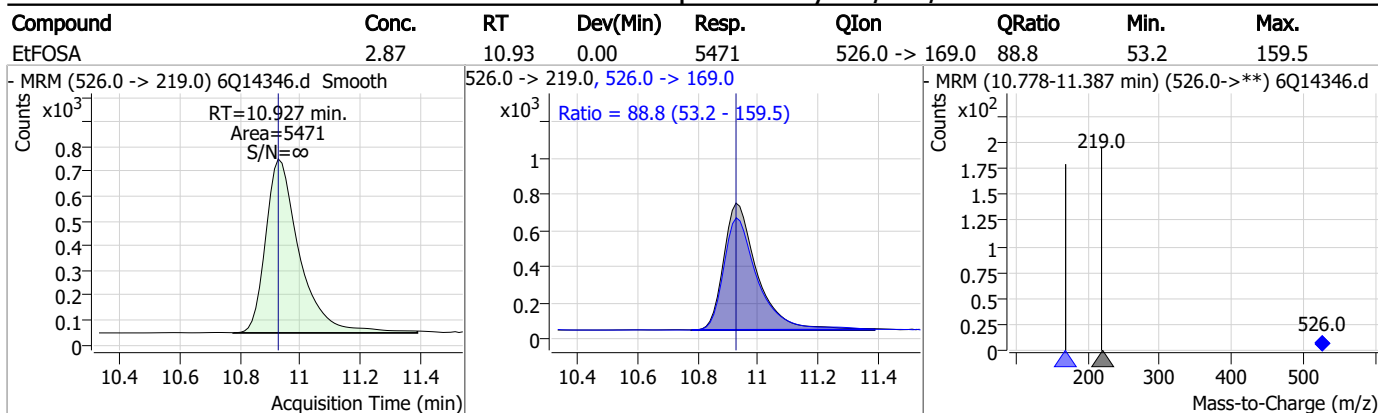
Perfluorinated Compounds by LC/MS/MS



7.4.1

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Perfluorinated Compounds by LC/MS/MS



7.4.1

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Manual Integration Approval Summary

Sample Number: OP95581-MS Method: EPA DRAFT 1633
Lab FileID: 6Q14346.D Analyst approved: 02/27/23 11:37 Martha Valls
Injection Time: 02/24/23 22:34 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.4.1.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14351.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 11:44:16 PM
 Sample Name : op95581-dup
 Vial : P3-F1
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.975	216.8 -> 171.9	86235	10.00 µg/L	0.037
M5-PFPeA	4.337	268.3 -> 223.0	41085	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	36540	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	38123	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	64253	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	19693	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	16609	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	16310	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	17462	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	7822	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	15675	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	14347	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	9337	2.50 µg/L	0.000
M8-PFOS	8.258	507.1 -> 79.9	7178	2.50 µg/L	-0.012
M2-4:2FTS	5.190	329.1 -> 80.9	2701	5.00 µg/L	0.000
M2-6:2FTS	6.858	429.1 -> 80.9	2449	5.00 µg/L	0.000
M2-8:2FTS	7.895	529.1 -> 80.9	2414	5.00 µg/L	0.000
M3-MeFOSAA	8.141	573.2 -> 419.0	26701	5.00 µg/L	-0.012
M3-HFPO-DA	5.878	286.9 -> 168.9	14769	10.00 µg/L	0.000
M5-EtFOSAA	8.336	589.2 -> 419.0	27035	5.00 µg/L	-0.025
M7-MeFOSE	10.589	623.2 -> 58.9	19482	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	13152	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	5753	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	5316	2.50 µg/L	0.000
13C4-PFOS	8.258	502.8 -> 79.9	7714	2.50 µg/L	-0.012
13C3-PFBA	2.979	216.0 -> 172.0	31961	5.00 µg/L	0.037
18O2-PFHxS	7.211	403.0 -> 83.9	5662	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	70277	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	19622	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	17701	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	33288	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.190	329.1 -> 80.9	2701	7.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 159.6%		
13C2-6:2FTS	6.858	429.1 -> 80.9	2449	5.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.5%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2414	5.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.0%		
13C2-PFDoDA	8.991	615.1 -> 570.0	17462	1.13 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.3%		
13C2-PFTeDA	9.731	715.2 -> 670.0	7822	0.87 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 69.5%		
13C3-PFBS	5.456	302.1 -> 79.9	14347	2.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 118.0%		
13C3-PFHxS	7.212	402.1 -> 79.9	9337	2.97 µg/L	0.000

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 = 119.0%	
13C4-PFBA	2.975	216.8 -> 171.9	86235	11.84 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.4%	
13C4-PFHpA	6.452	367.1 -> 322.0	38123	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C5-PFHxA	5.513	318.0 -> 273.0	36540	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.2%	
13C5-PFPeA	4.337	268.3 -> 223.0	41085	5.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C6-PFDA	8.108	519.1 -> 474.1	16609	1.45 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.1%	
13C7-PFUnDA	8.562	570.0 -> 525.1	16310	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C8-FOSA	9.555	506.1 -> 77.8	15675	3.03 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 121.1%	
13C8-PFOA	7.097	421.1 -> 376.0	64253	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C8-PFOS	8.258	507.1 -> 79.9	7178	2.71 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C9-PFNA	7.626	472.1 -> 427.0	19693	1.44 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.5%	
d3-MeFOSAA	8.141	573.2 -> 419.0	26701	6.64 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 132.9%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	14769	11.65 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.5%	
d3-MeFOSA	10.680	515.0 -> 219.0	5316	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.0%	
d5-EtFOSAA	8.336	589.2 -> 419.0	27035	7.67 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 153.5%	
d7-MeFOSE	10.589	623.2 -> 58.9	19482	26.16 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
d9-EtFOSE	10.847	639.2 -> 58.9	13152	27.09 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.4%	
d5-EtFOSA	10.925	531.1 -> 219.0	5753	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.3%	

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.859	427.1 -> 407.0	2315	0.76 µg/L	93
		427.1 -> 80.9	348		
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)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	7.728	449.0 -> 79.9	0	µg/L	m	1
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	8.638	548.8 -> 79.9	0	µg/L	m	1
		548.8 -> 98.9	0			
PFOA	7.084	413.0 -> 369.0	0	µg/L	m	1
		413.0 -> 169.0	0			
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.5.1
7

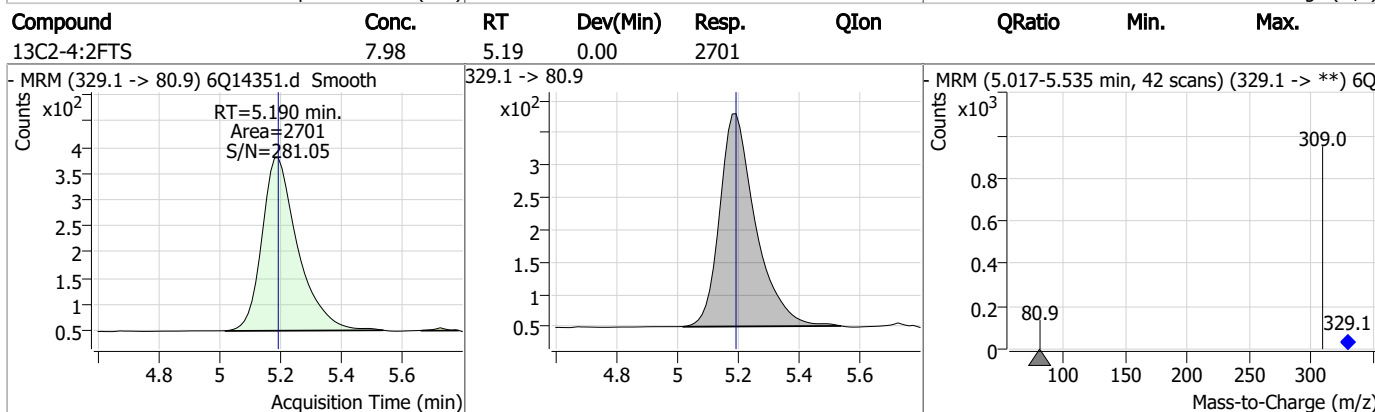
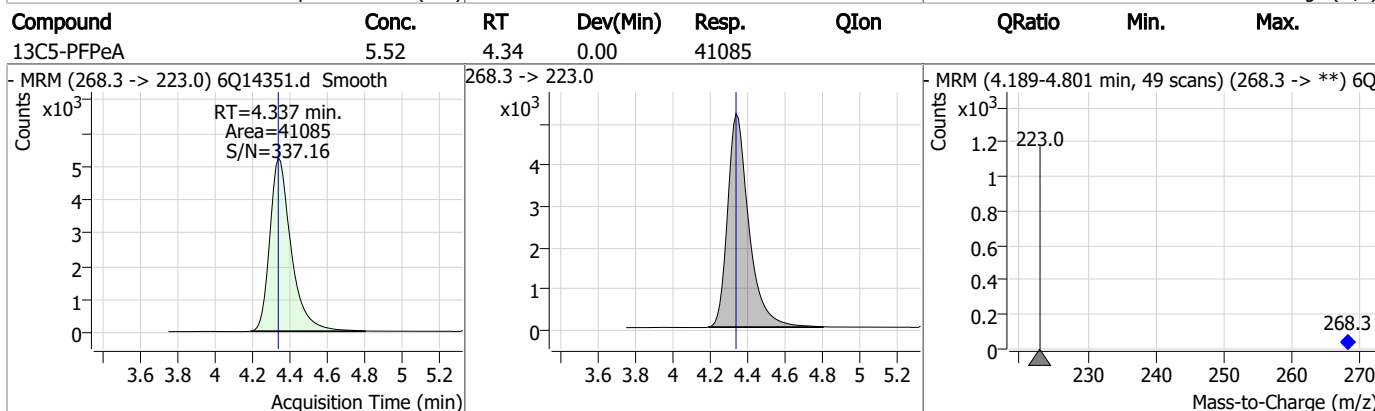
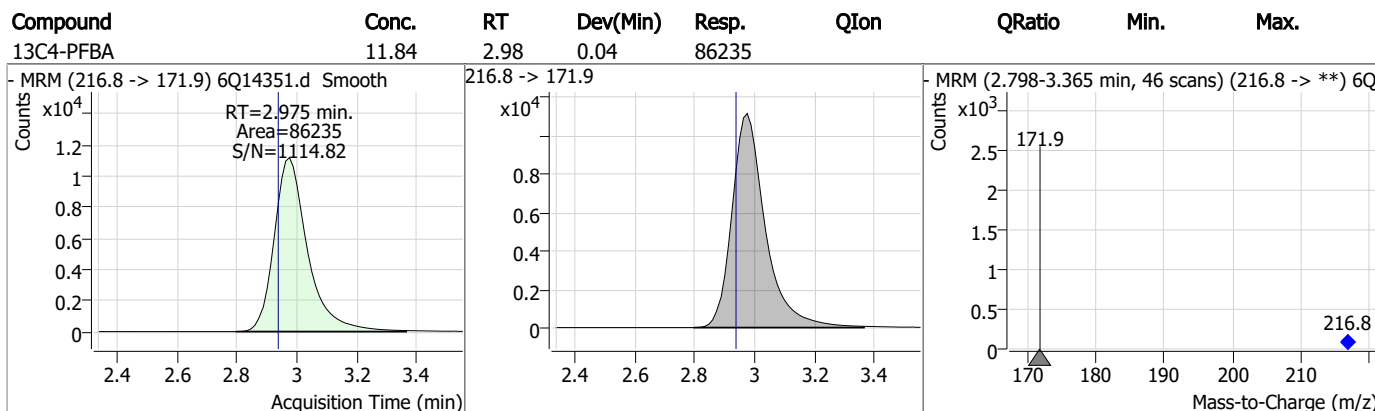
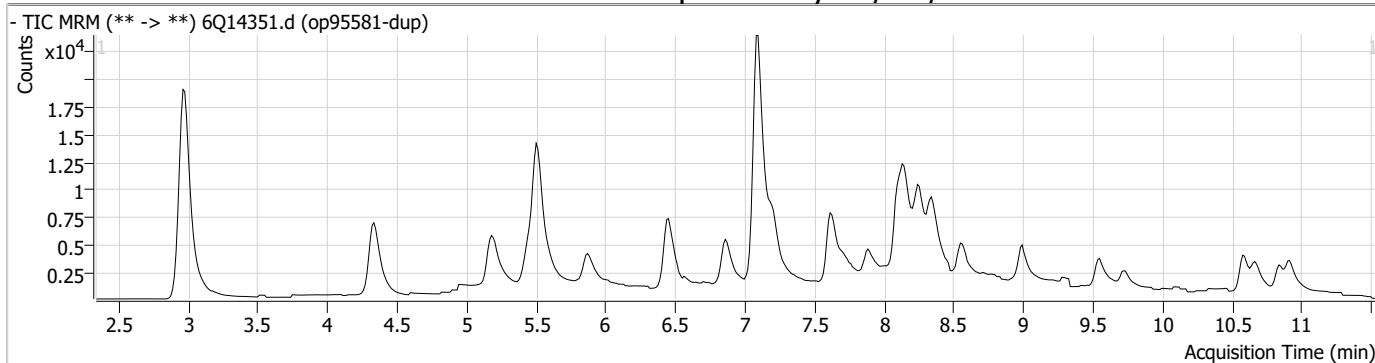
Perfluorinated Compounds by LC/MS/MS

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



7.5.1
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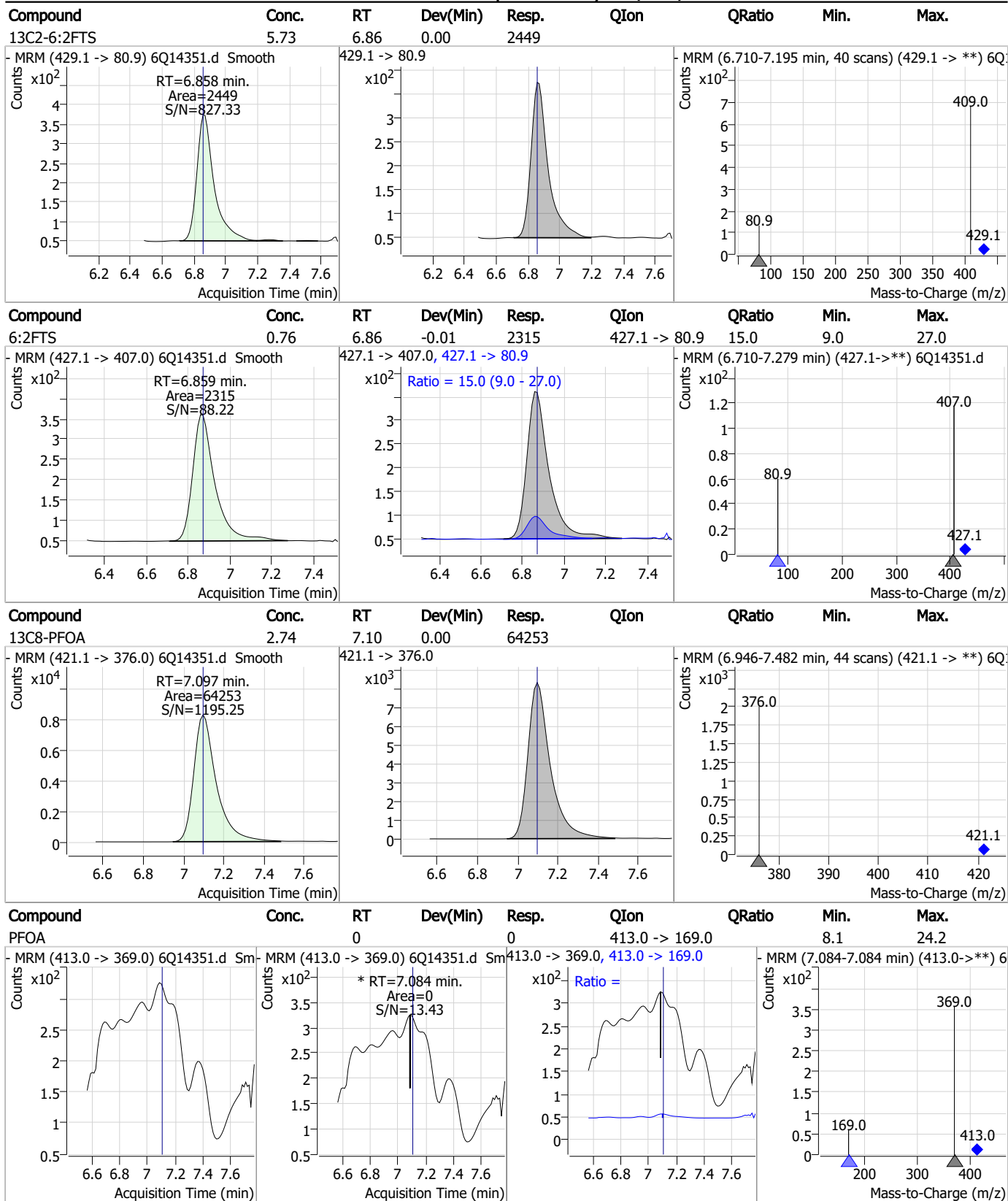
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.95	5.46	0.00	14347				
13C5-PFHxA	2.81	5.51	0.00	36540				
13C3-HFPO-DA	11.65	5.88	0.00	14769				
13C4-PFHpA	2.81	6.45	0.00	38123				

7.5.1
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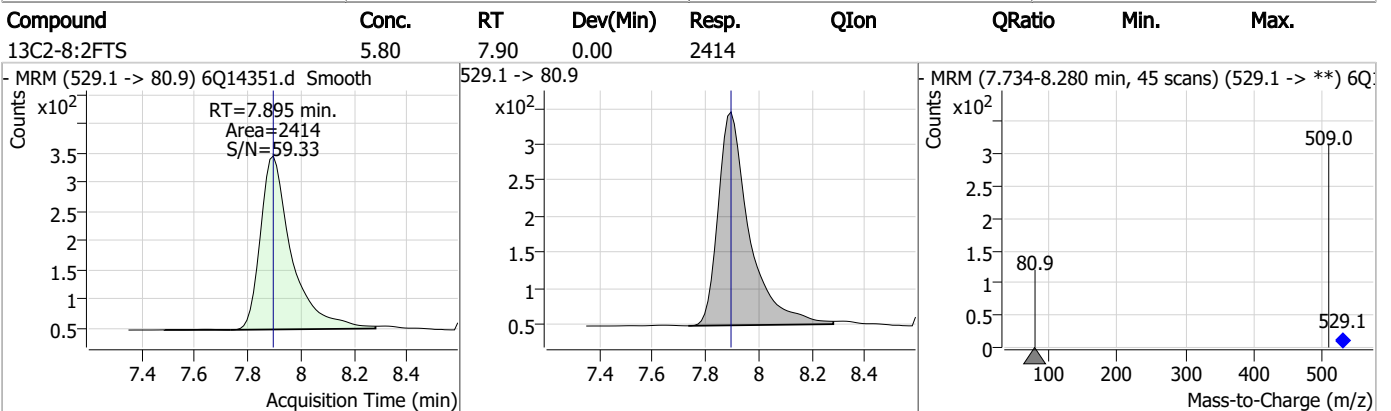
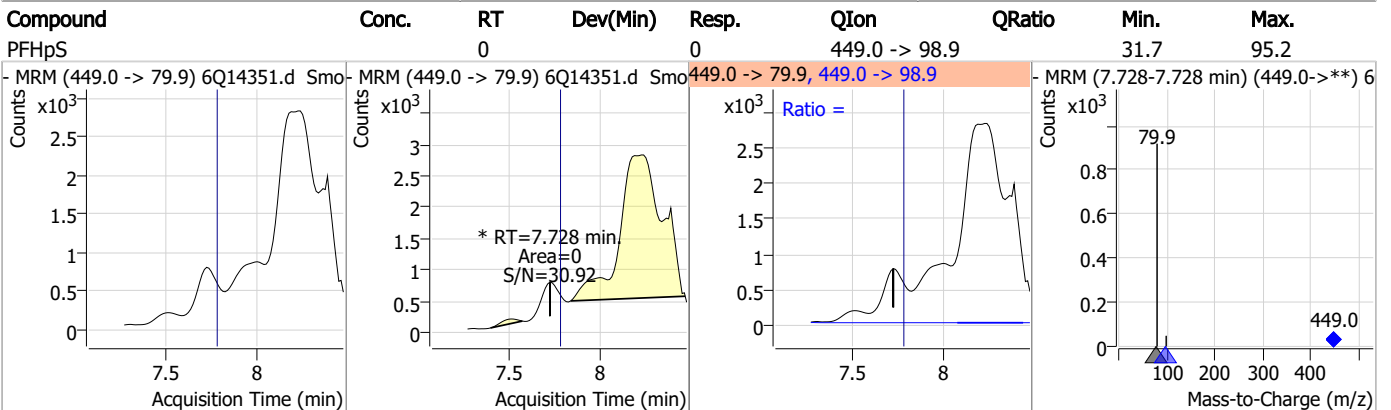
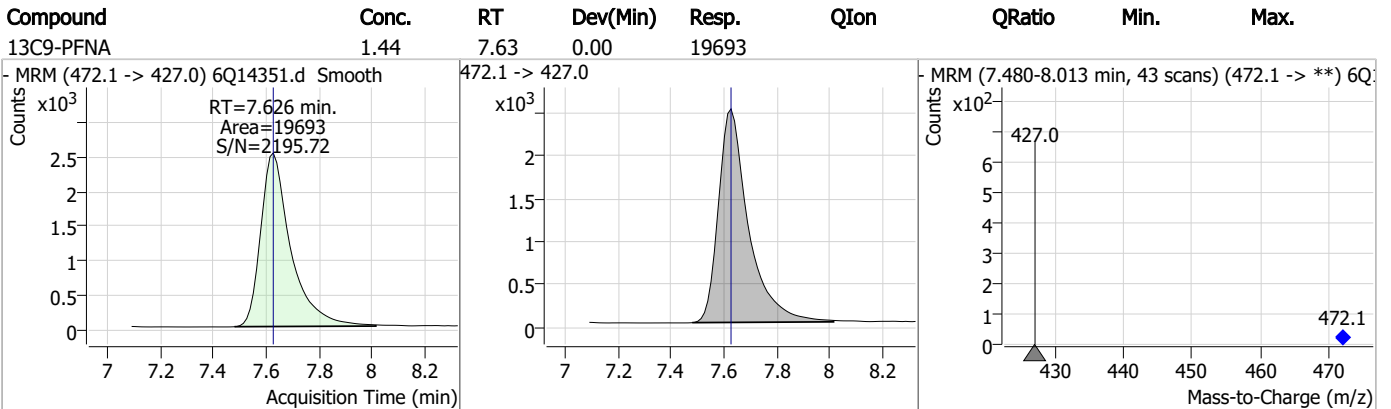
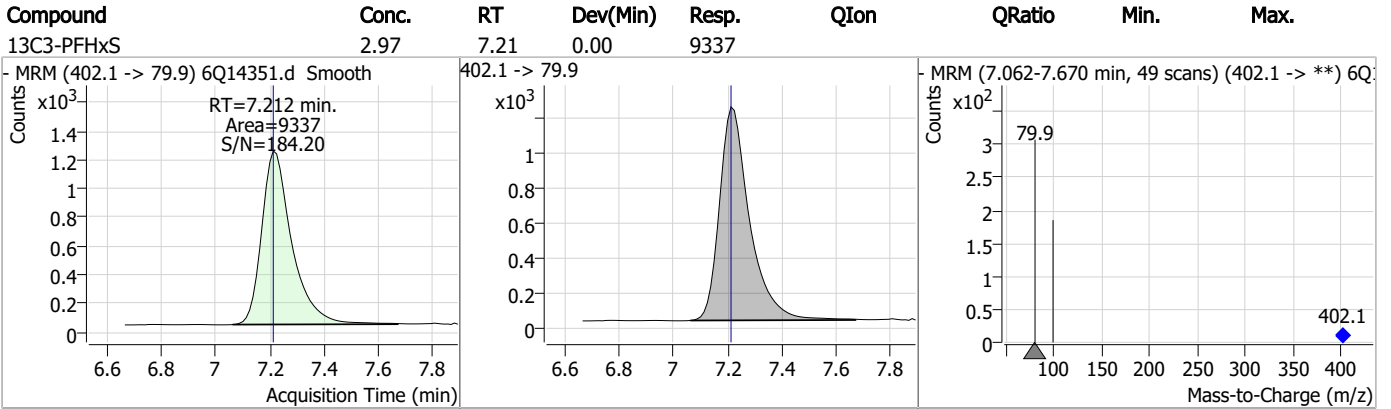
Perfluorinated Compounds by LC/MS/MS



7.5.1
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Perfluorinated Compounds by LC/MS/MS



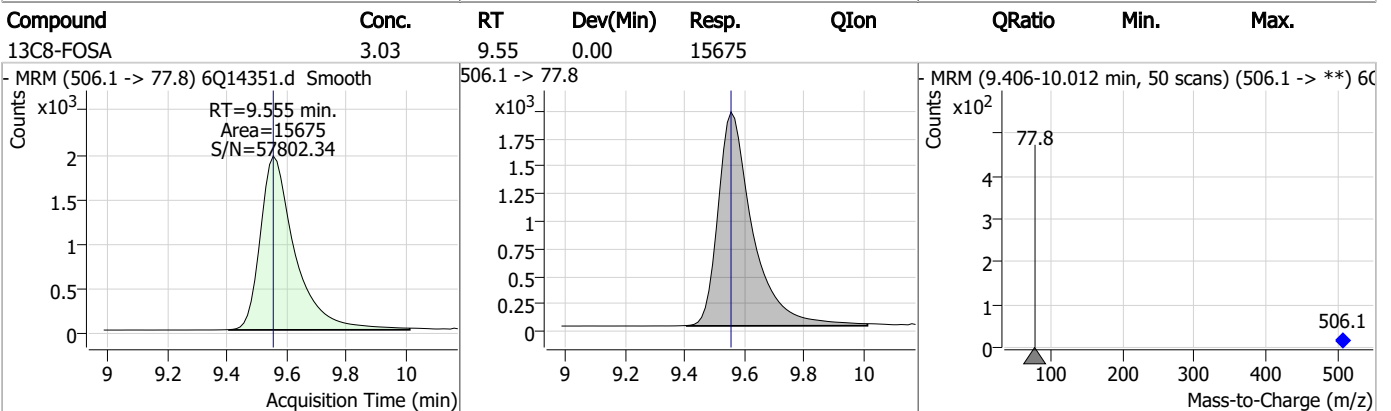
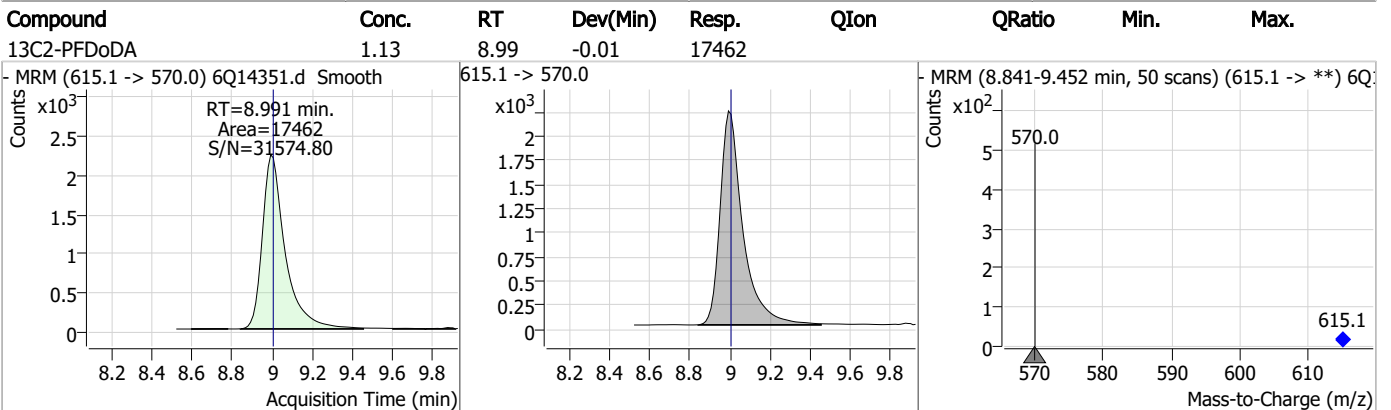
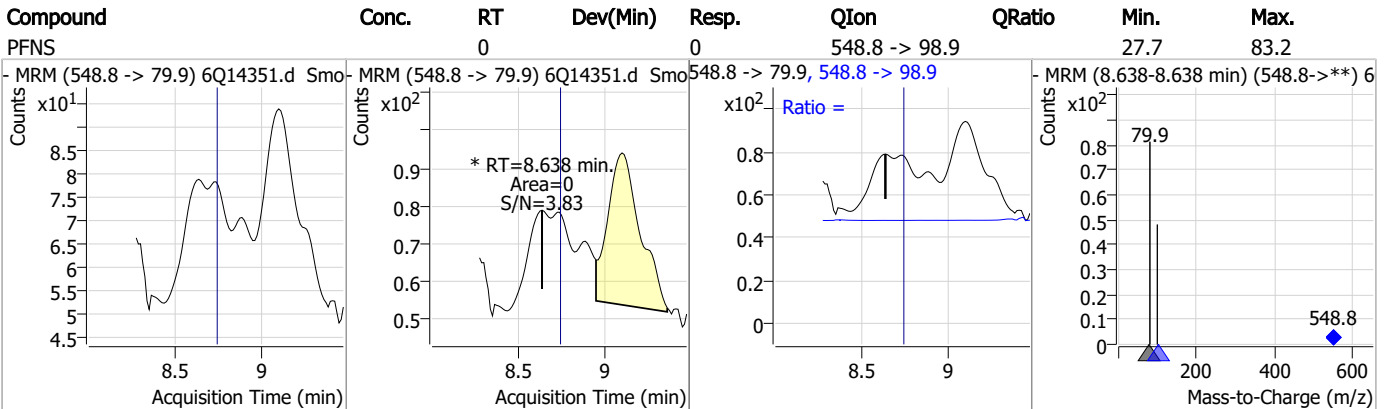
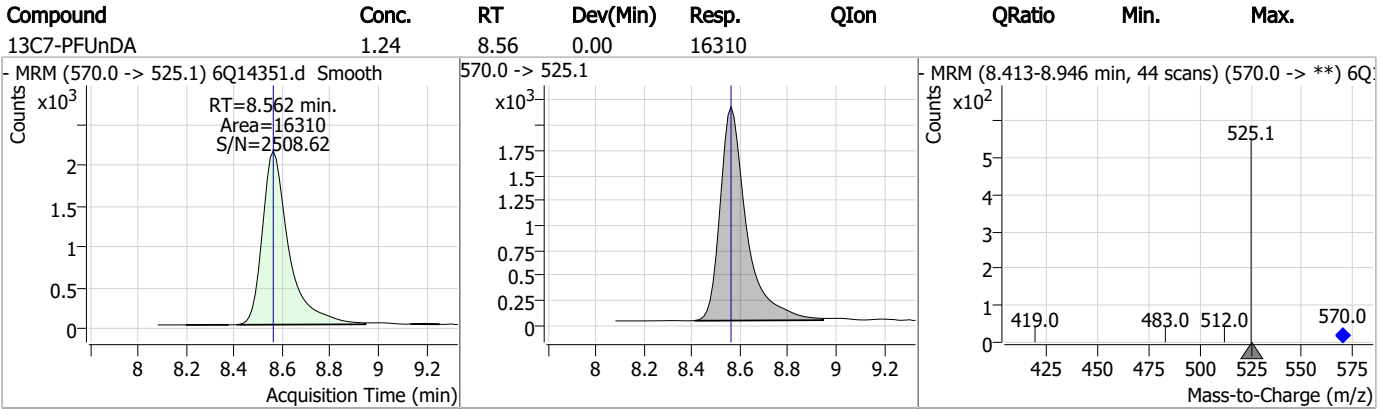
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.45	8.11	0.00	16609				
d3-MeFOSAA	6.64	8.14	-0.01	26701				
13C8-PFOS	2.71	8.26	-0.01	7178				
d5-EtFOSAA	7.67	8.34	-0.02	27035				

7.5.1
7



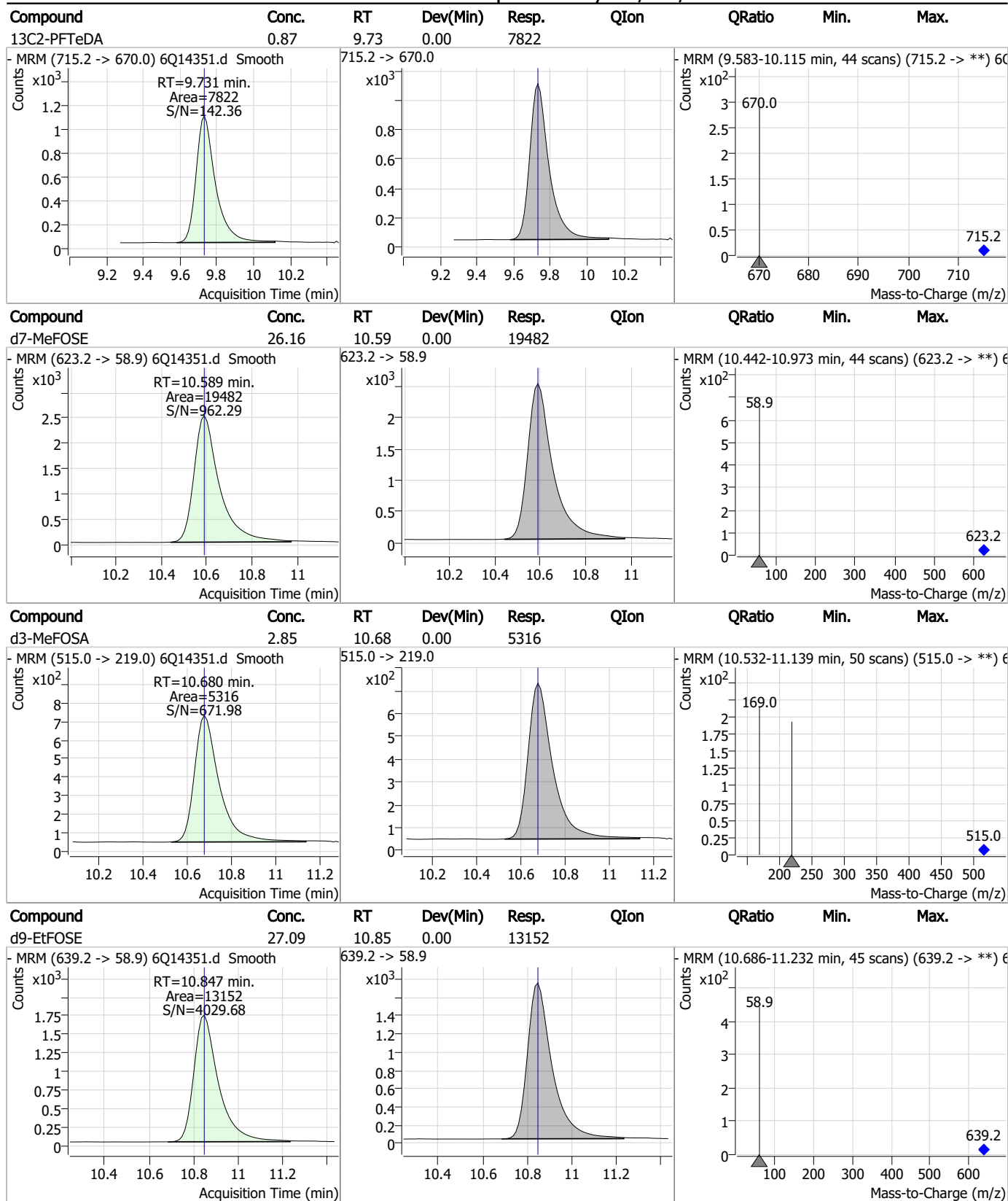
Perfluorinated Compounds by LC/MS/MS



7.5.1

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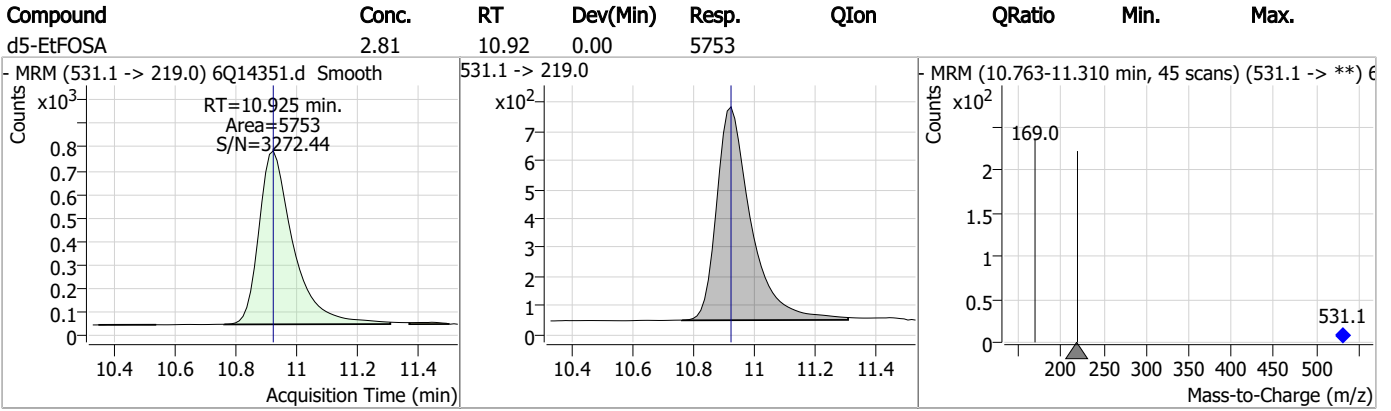
Perfluorinated Compounds by LC/MS/MS



7.5.1
7



Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Natasha Gumtie
 02/24/23 15:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14202.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 12:57:45 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q217_TDCA.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)	
Internal Standards						
M8-PFOS	8.270	507.1 -> 79.9	10965	2.50 µg/L	-0.013	
13C4-PFOS	8.271	502.8 -> 79.9	13810	2.50 µg/L	0.000	
System Monitoring Compounds						
13C8-PFOS	8.270	507.1 -> 79.9	10965	2.01 µg/L	-0.013	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 80.6%			
Target Compounds						
PFOS	8.271	498.9 -> 79.9 498.9 -> 98.8	10645 5791	2.84 µg/L	#m	77
TCDCa	6.634	498.9 -> 79.9	2165	4.28 ng/ml		100
TDCA	6.795	498.9 -> 79.9	3276	7.15 ng/ml		100
TUDCA	5.769	498.9 -> 79.9	4251	4.37 ng/ml		100

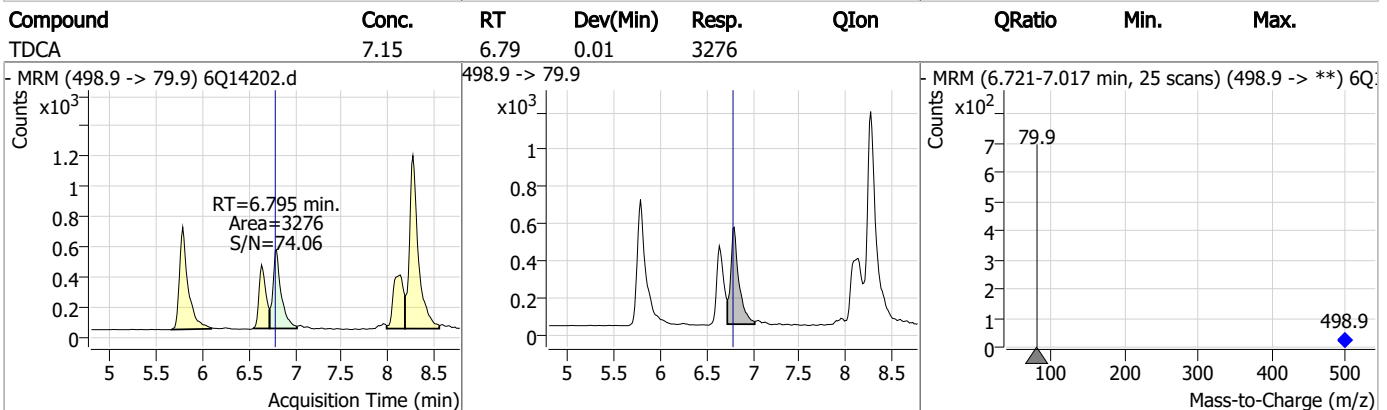
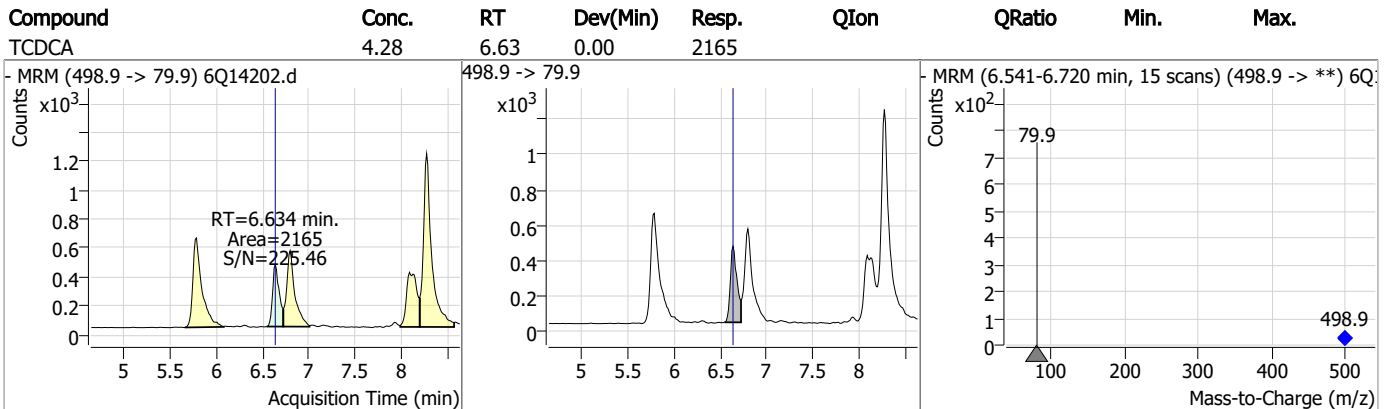
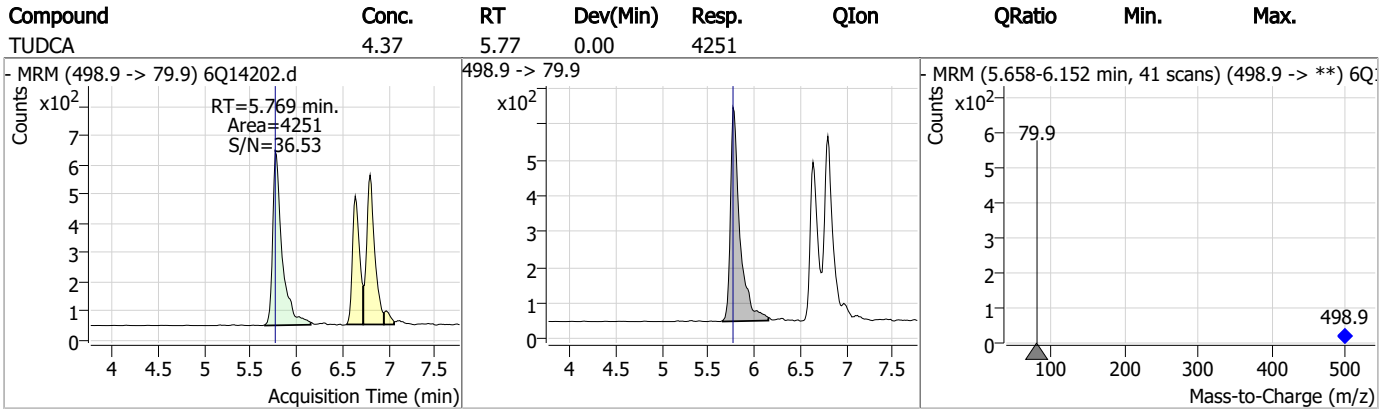
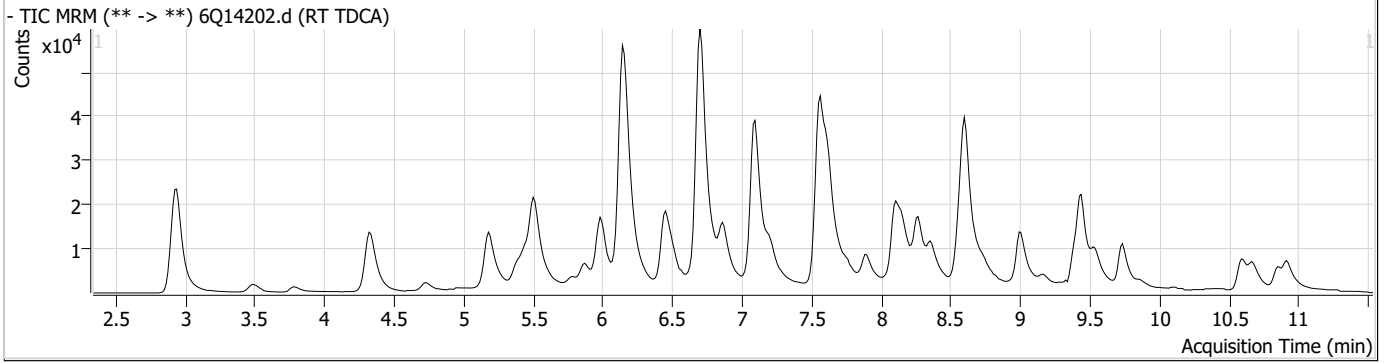
= Qualifier out of range, m = manually integrated, + = Area summed

7.6.1

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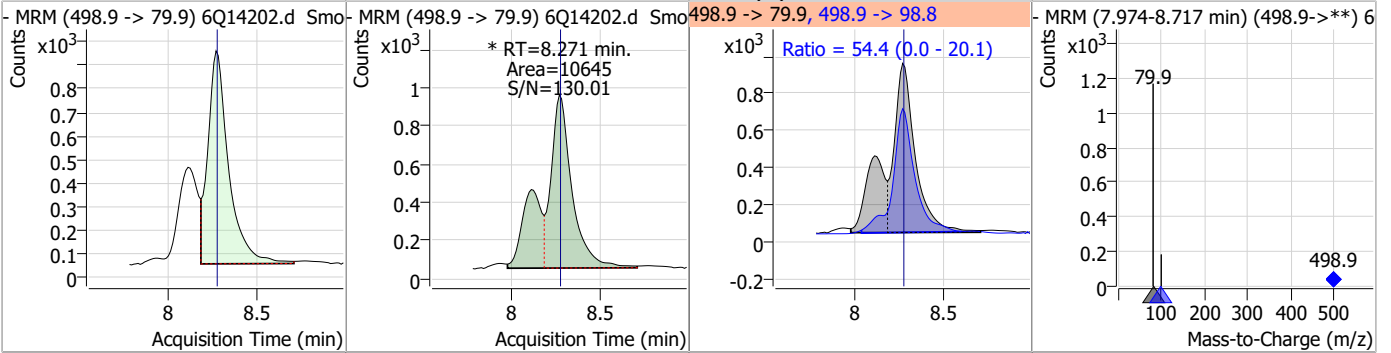


Perfluorinated Compounds by LC/MS/MS

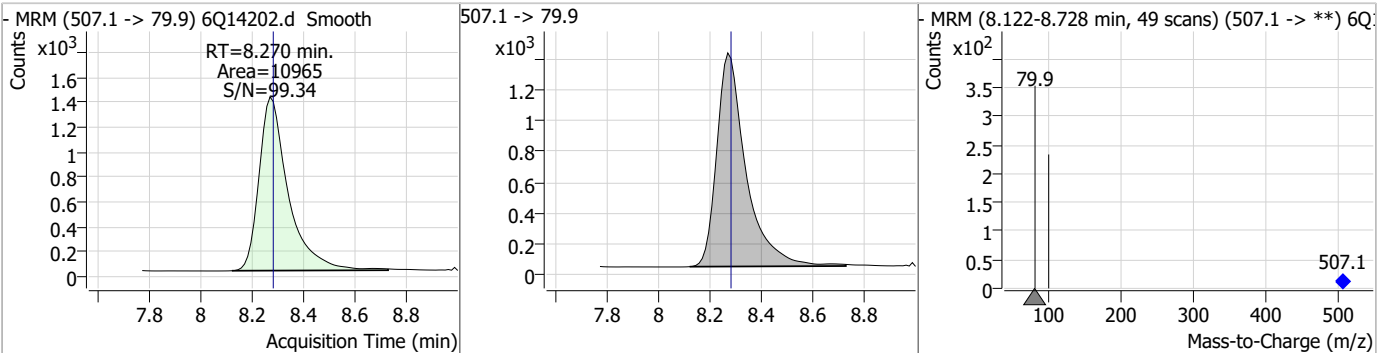


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.84	8.27	0.00	10645 (m)	498.9 -> 98.8	54.4	0.0	20.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.01	8.27	-0.01	10965				



7.6.1

7

Manual Integration Approval Summary

Sample Number: S6Q217-RT Method: EPA DRAFT 1633
Lab FileID: 6Q14202.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 12:57 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.6.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14203.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 1:11:44 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	88722	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	45358	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	37321	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	39733	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	68692	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	22157	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	18994	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	20256	1.25 µg/L	0.000
M2-PFDoDA	9.004	615.1 -> 570.0	23762	1.25 µg/L	0.000
M2-PFTeDA	9.731	715.2 -> 670.0	14363	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17263	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	14674	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	9621	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8298	2.50 µg/L	0.000
M2-4:2FTS	5.190	329.1 -> 80.9	2145	5.00 µg/L	0.000
M2-6:2FTS	6.858	429.1 -> 80.9	2536	5.00 µg/L	0.000
M2-8:2FTS	7.895	529.1 -> 80.9	2856	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	27026	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	15222	10.00 µg/L	0.000
M5-EtFOSAA	8.361	589.2 -> 419.0	22859	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	24228	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	15658	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6491	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	5971	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10362	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	38954	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	7159	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	81828	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	25640	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	22750	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	39258	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.190	329.1 -> 80.9	2145	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C2-6:2FTS	6.858	429.1 -> 80.9	2536	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.8%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2856	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C2-PFDoDA	9.004	615.1 -> 570.0	23762	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C2-PFTeDA	9.731	715.2 -> 670.0	14363	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C3-PFBS	5.456	302.1 -> 79.9	14674	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C3-PFHxS	7.212	402.1 -> 79.9	9621	2.42 µg/L	0.000

7.6.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C4-PFBA	2.938	216.8 -> 171.9	88722	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.452	367.1 -> 322.0	39733	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFHxA	5.513	318.0 -> 273.0	37321	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C5-PFPeA	4.337	268.3 -> 223.0	45358	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C6-PFDA	8.108	519.1 -> 474.1	18994	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C7-PFUnDA	8.562	570.0 -> 525.1	20256	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C8-FOSA	9.555	506.1 -> 77.8	17263	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-PFOA	7.097	421.1 -> 376.0	68692	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-PFOS	8.270	507.1 -> 79.9	8298	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.3%	
13C9-PFNA	7.626	472.1 -> 427.0	22157	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.1%	
d3-MeFOSAA	8.153	573.2 -> 419.0	27026	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	15222	10.18 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d3-MeFOSA	10.680	515.0 -> 219.0	5971	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
d5-EtFOSAA	8.361	589.2 -> 419.0	22859	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
d7-MeFOSE	10.589	623.2 -> 58.9	24228	24.22 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
d9-EtFOSE	10.847	639.2 -> 58.9	15658	24.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
d5-EtFOSA	10.925	531.1 -> 219.0	6491	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
Target Compounds					QValue
4:2FTS	5.191	327.1 -> 307.0	196105	49.25 µg/L	97
		327.1 -> 80.9	40543		
6:2FTS	6.871	427.1 -> 407.0	161548	51.18 µg/L	97
		427.1 -> 80.9	31098		
8:2FTS	7.896	527.1 -> 507.0	79426	42.76 µg/L	95
		527.1 -> 80.8	21058		
EtFOSAA	8.362	584.2 -> 419.1	39659	13.24 µg/L	94
		584.2 -> 526.0	22448		
FOSA	9.545	498.1 -> 77.9	187087	31.95 µg/L	99
		498.1 -> 478.0	6592		
MeFOSAA	8.154	570.1 -> 419.0	53956	12.15 µg/L	96
		570.1 -> 483.0	9265		
PFBA	2.944	212.8 -> 168.9	94506	52.87 µg/L	100
PFBS	5.457	298.7 -> 79.9	57577	11.93 µg/L	98
		298.7 -> 98.8	26937		
PFDA	8.108	512.9 -> 469.0	238836	13.21 µg/L	99
		512.9 -> 219.0	30808		
PFDoDA	9.005	613.1 -> 569.0	212986	12.81 µg/L	99
		613.1 -> 319.0	26622		
PFDS	9.167	599.0 -> 79.9	29055	13.16 µg/L	95

7.6.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	15725			
PFHpA	6.453	363.1 -> 319.0	269181	13.65	µg/L	99
		363.1 -> 169.0	36644			
PFHpS	7.779	449.0 -> 79.9	36287	12.55	µg/L	98
		449.0 -> 98.9	22505			
PFHxA	5.516	313.0 -> 269.0	165352	13.85	µg/L	99
		313.0 -> 118.9	6402			
PFHxS	7.213	398.7 -> 79.9	41605	11.82	µg/L	m 97
		398.7 -> 98.9	24387			
PFNA	7.627	463.0 -> 419.0	310640	27.64	µg/L	m 100
		463.0 -> 219.0	64685			
PFNS	8.737	548.8 -> 79.9	39666	13.12	µg/L	97
		548.8 -> 98.9	22944			
PFOA	7.098	413.0 -> 369.0	699419	27.61	µg/L	m 95
		413.0 -> 169.0	97597			
PFOS	8.271	498.9 -> 79.9	38750	12.50	µg/L	m 79
		498.9 -> 98.8	25676			
PFPeA	4.338	263.0 -> 219.0	204143	25.69	µg/L	100
PFPeS	6.517	349.1 -> 79.9	53588	12.07	µg/L	98
		349.1 -> 98.9	29284			
PFTeDA	9.732	713.1 -> 669.0	174734	12.99	µg/L	100
		713.1 -> 168.9	10963			
PFTrDA	9.387	663.0 -> 619.0	182017	12.89	µg/L	97
		663.0 -> 168.9	14773			
PFUnDA	8.562	563.1 -> 519.0	194628	13.75	µg/L	99
		563.1 -> 269.1	28904			
11CI-PF3OUdS	9.439	630.9 -> 450.9	420577	49.94	µg/L	98
		632.9 -> 452.9	123915			
9CI-PF3ONS	8.614	530.8 -> 351.0	725972	47.87	µg/L	93
		532.8 -> 353.0	245041			
ADONA	6.704	376.9 -> 250.9	1456264	48.25	µg/L	99
		376.9 -> 84.8	322285			
HFPO-DA	5.879	284.9 -> 168.9	63721	52.52	µg/L	99
		284.9 -> 184.9	7997			
3:3FTCA	3.804	241.0 -> 177.0	27159	64.44	µg/L	96
		241.0 -> 117.0	3983			
5:3FTCA	6.156	341.0 -> 237.1	1002060	367.19	µg/L	92
		341.0 -> 217.0	801657			
7:3FTCA	7.567	441.0 -> 316.9	483973	333.94	µg/L	96
		441.0 -> 336.9	940824			
EtFOSA	10.927	526.0 -> 219.0	95618	34.33	µg/L	98
		526.0 -> 169.0	103256			
EtFOSE	10.860	630.0 -> 58.9	81098	143.73	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	79677	31.30	µg/L	31
		511.9 -> 169.0	93035			
MeFOSE	10.602	616.1 -> 58.9	121800	143.19	µg/L	100
PFDoS	9.870	699.1 -> 79.9	16928	13.55	µg/L	96
		699.1 -> 98.8	10424			
NFDHA	5.395	295.0 -> 201.0	19229	28.46	µg/L	96
		295.0 -> 84.9	9589			
PFMBA	4.738	279.0 -> 85.1	60975	26.05	µg/L	100
PFMPA	3.500	229.0 -> 84.9	54957	25.87	µg/L	100
PFEESA	5.996	314.8 -> 134.9	415619	24.54	µg/L	100
		314.8 -> 82.9	9956			

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

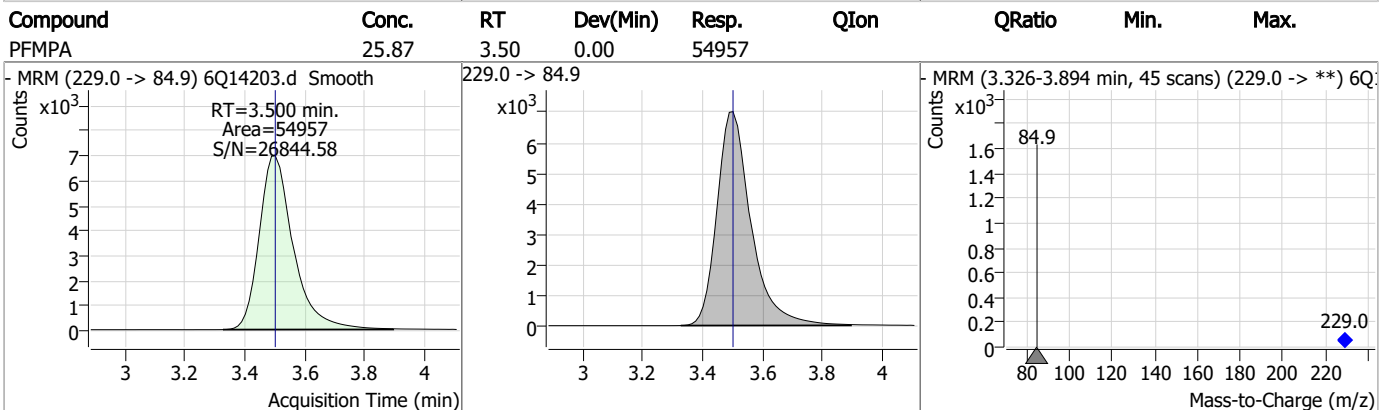
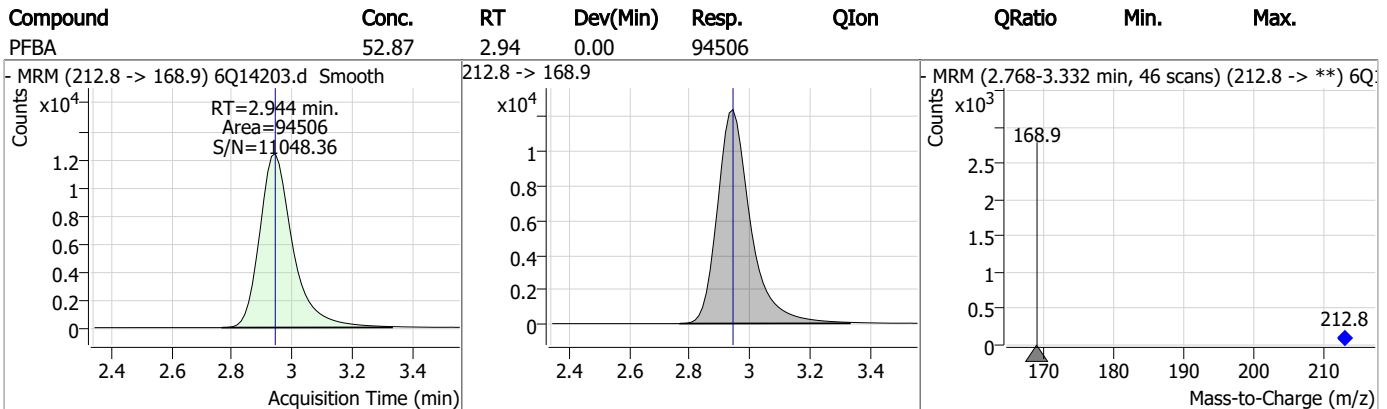
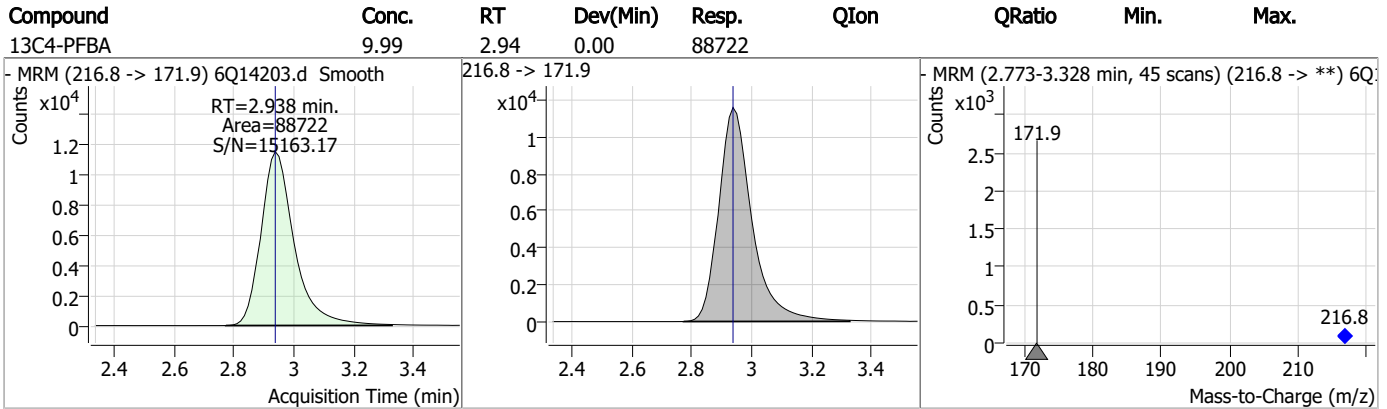
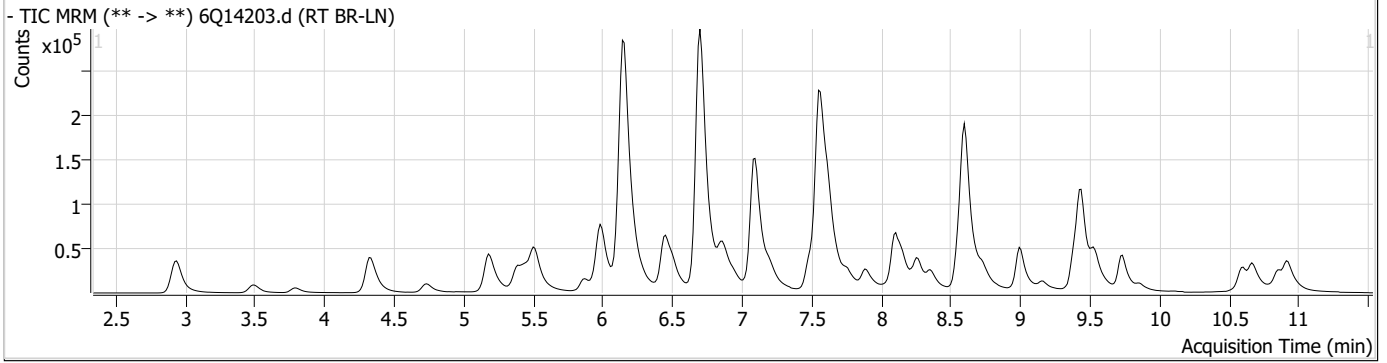
Perfluorinated Compounds by LC/MS/MS

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

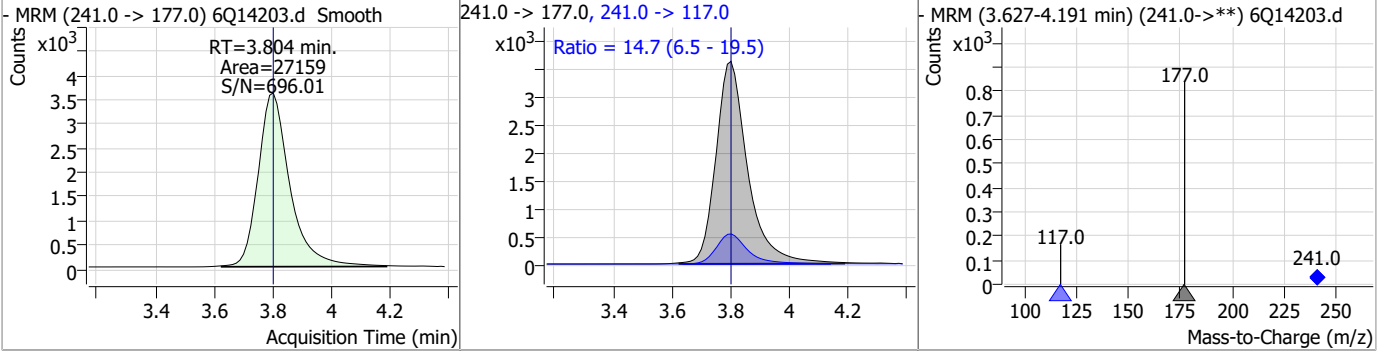
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Perfluorinated Compounds by LC/MS/MS

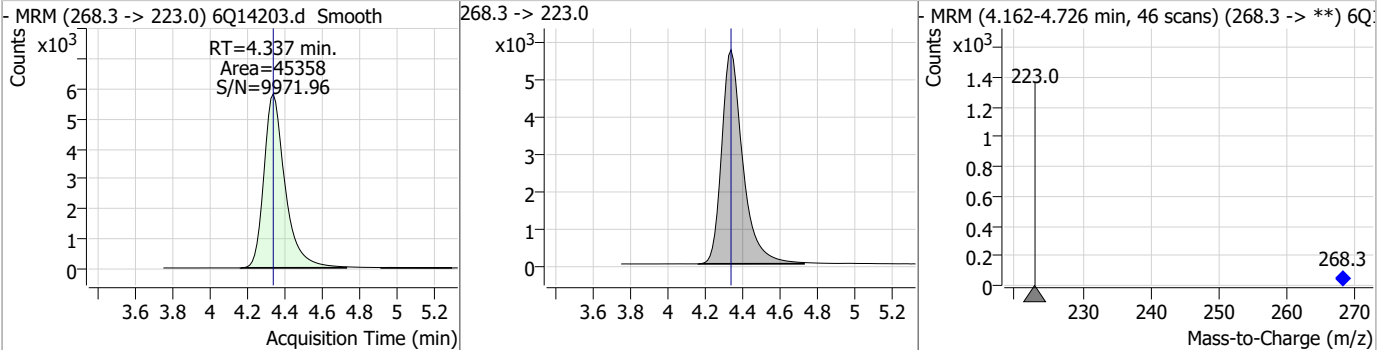


Perfluorinated Compounds by LC/MS/MS

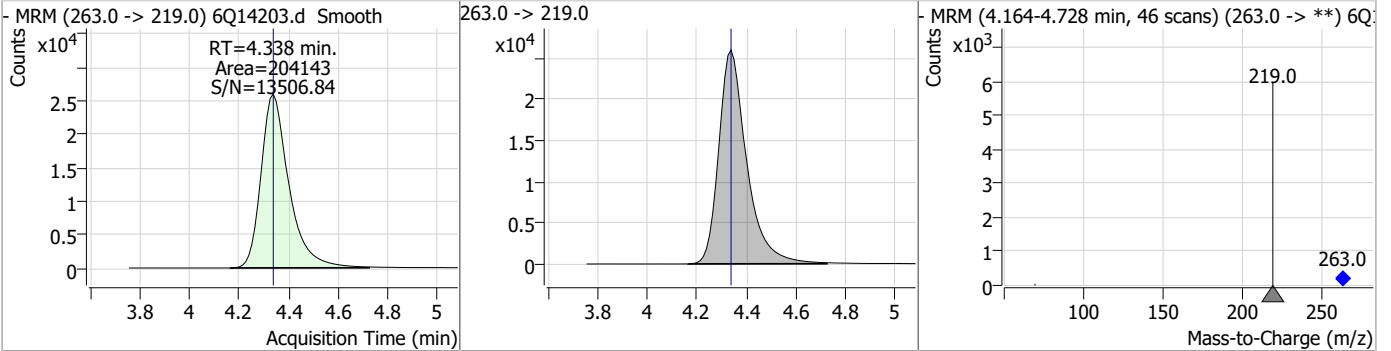
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	64.44	3.80	0.00	27159	241.0 -> 117.0	14.7	6.5	19.5



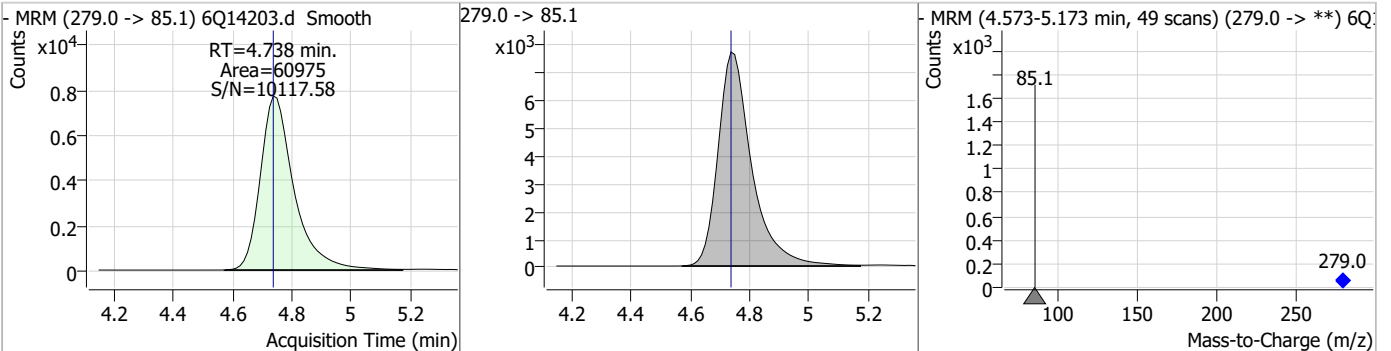
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.16	4.34	0.00	45358				



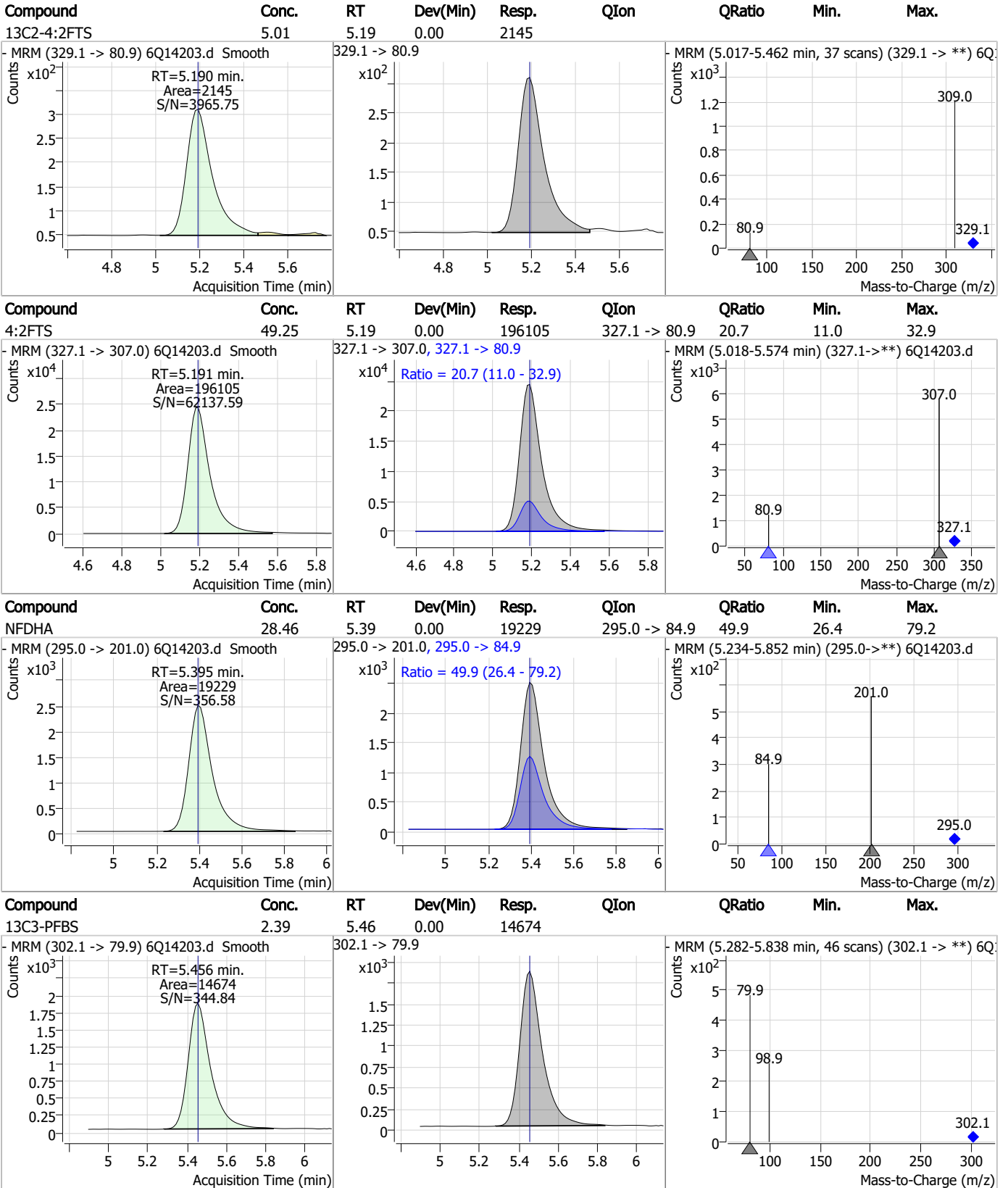
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	25.69	4.34	0.00	204143				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	26.05	4.74	0.00	60975				



Perfluorinated Compounds by LC/MS/MS

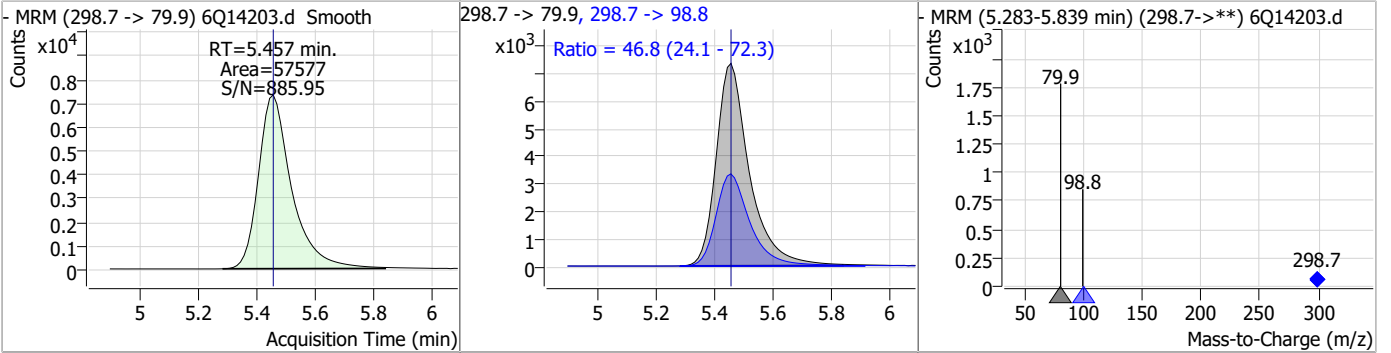


7.6.2

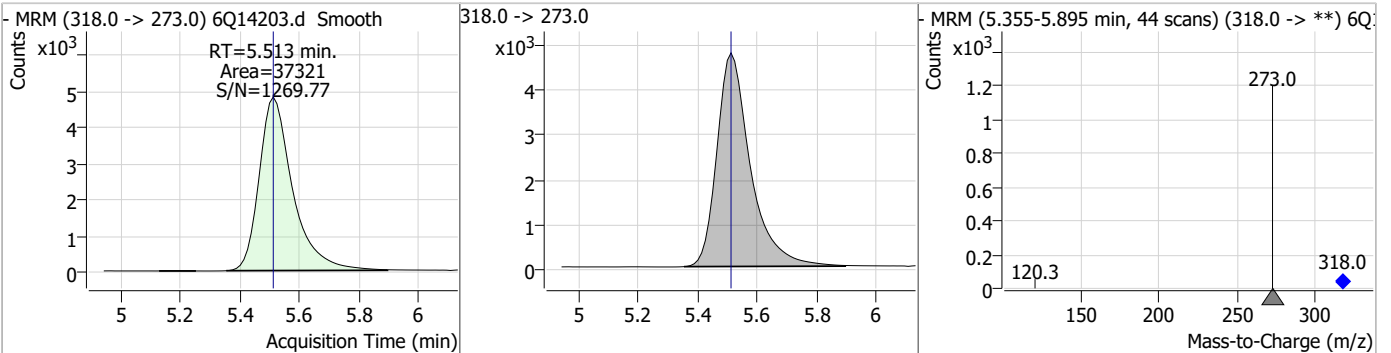
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Perfluorinated Compounds by LC/MS/MS

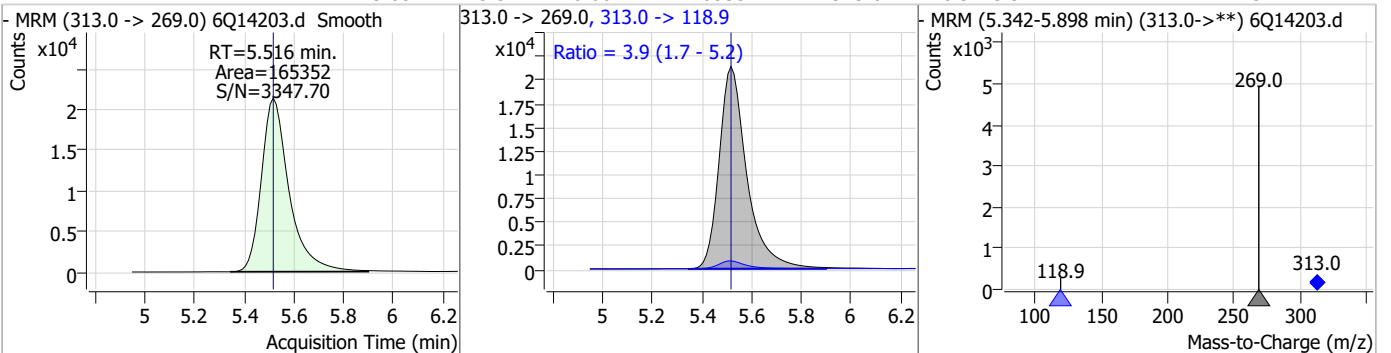
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.93	5.46	0.00	57577	298.7 -> 98.8	46.8	24.1	72.3



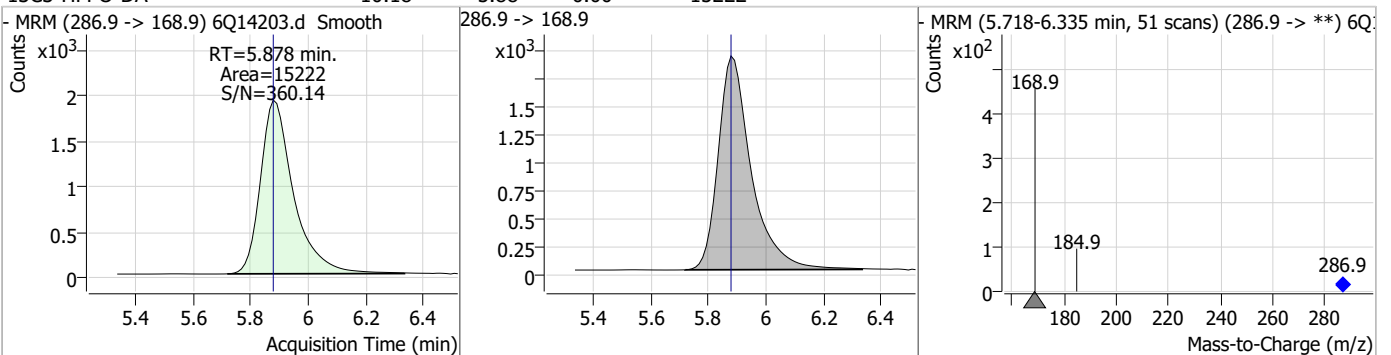
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.43	5.51	0.00	37321				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.85	5.52	0.00	165352	313.0 -> 118.9	3.9	1.7	5.2

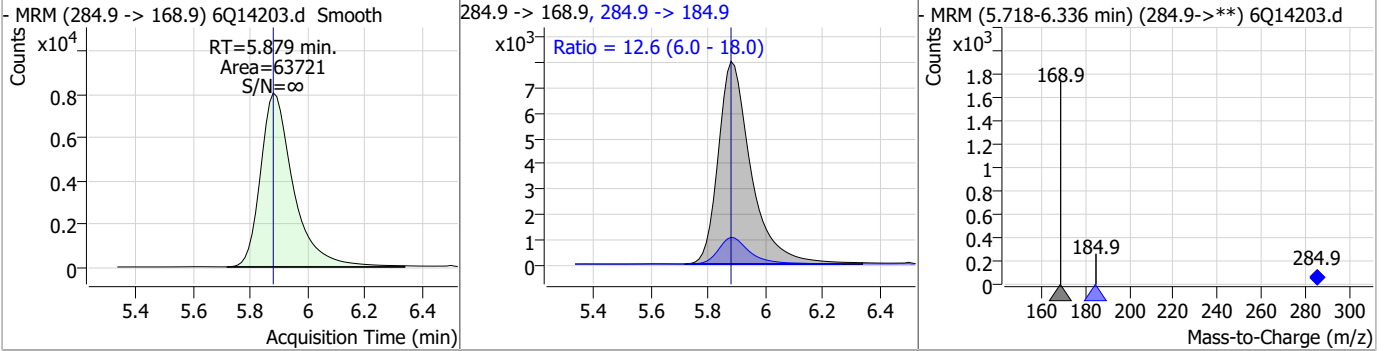


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.18	5.88	0.00	15222				

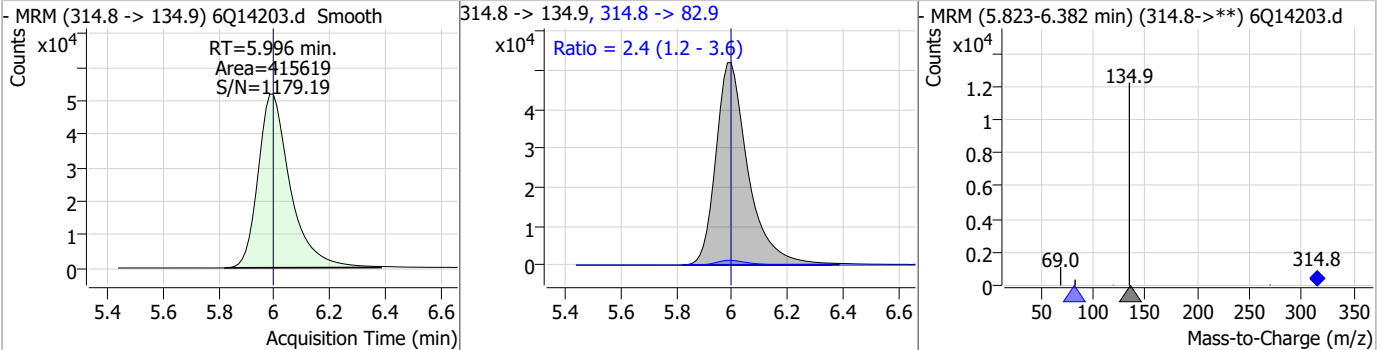


Perfluorinated Compounds by LC/MS/MS

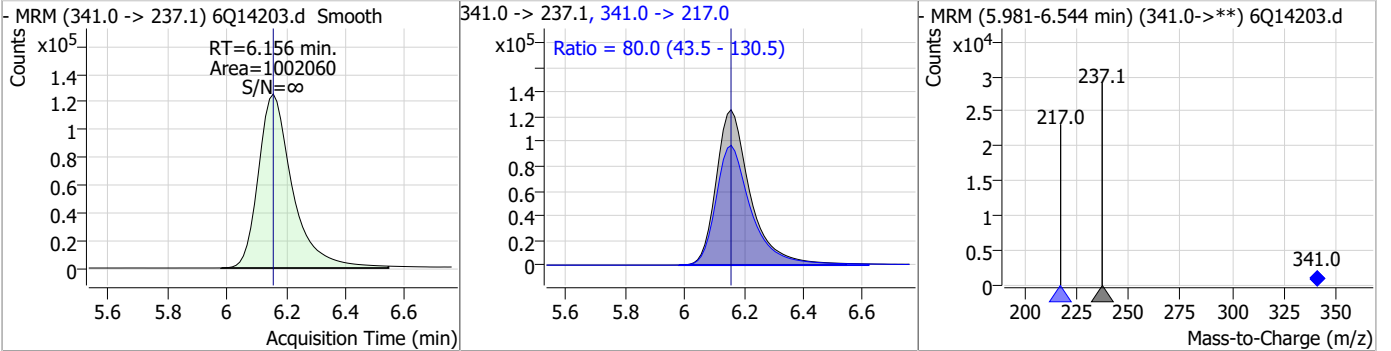
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	52.52	5.88	0.00	63721	284.9 -> 184.9	12.6	6.0	18.0



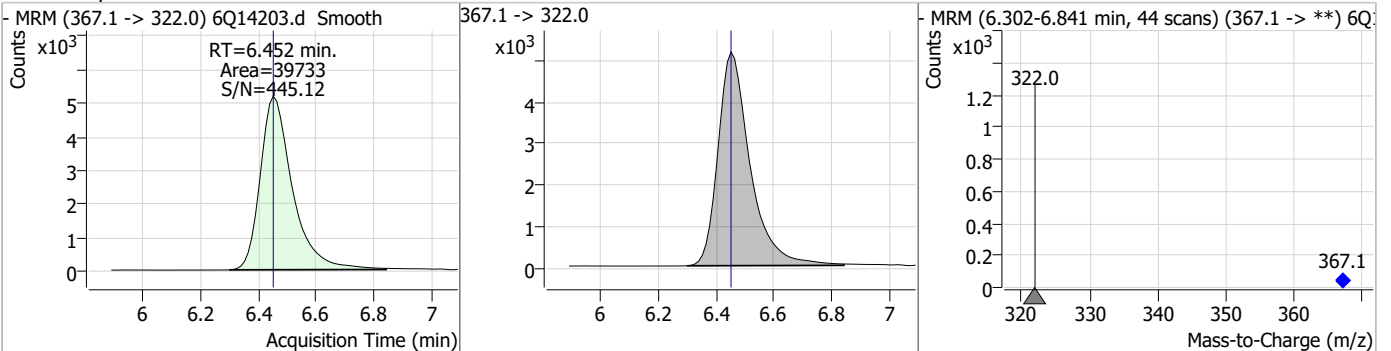
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	24.54	6.00	0.00	415619	314.8 -> 82.9	2.4	1.2	3.6



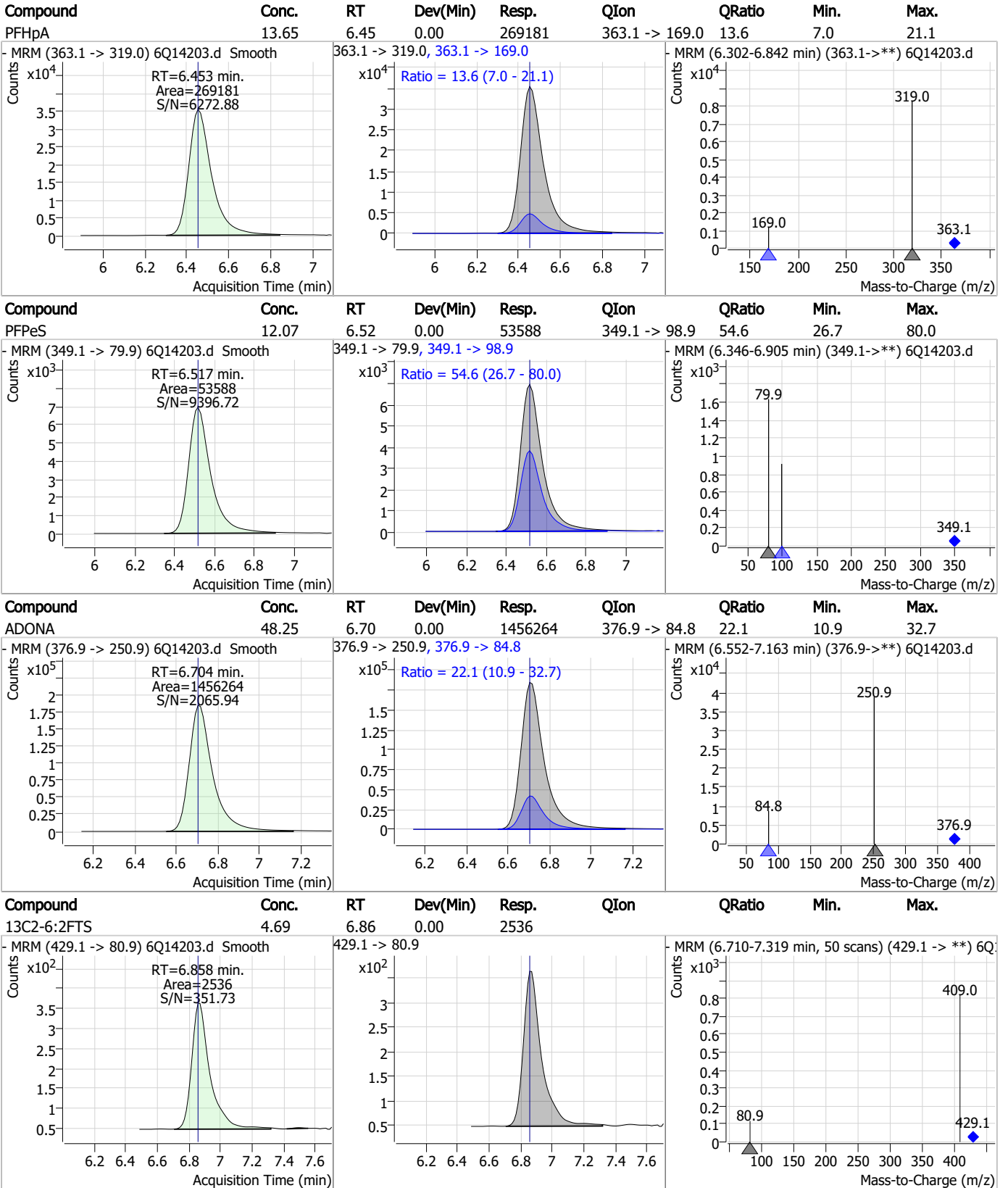
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	367.19	6.16	0.00	1002060	341.0 -> 217.0	80.0	43.5	130.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.45	0.00	39733	367.1 -> 322.0	-	-	-



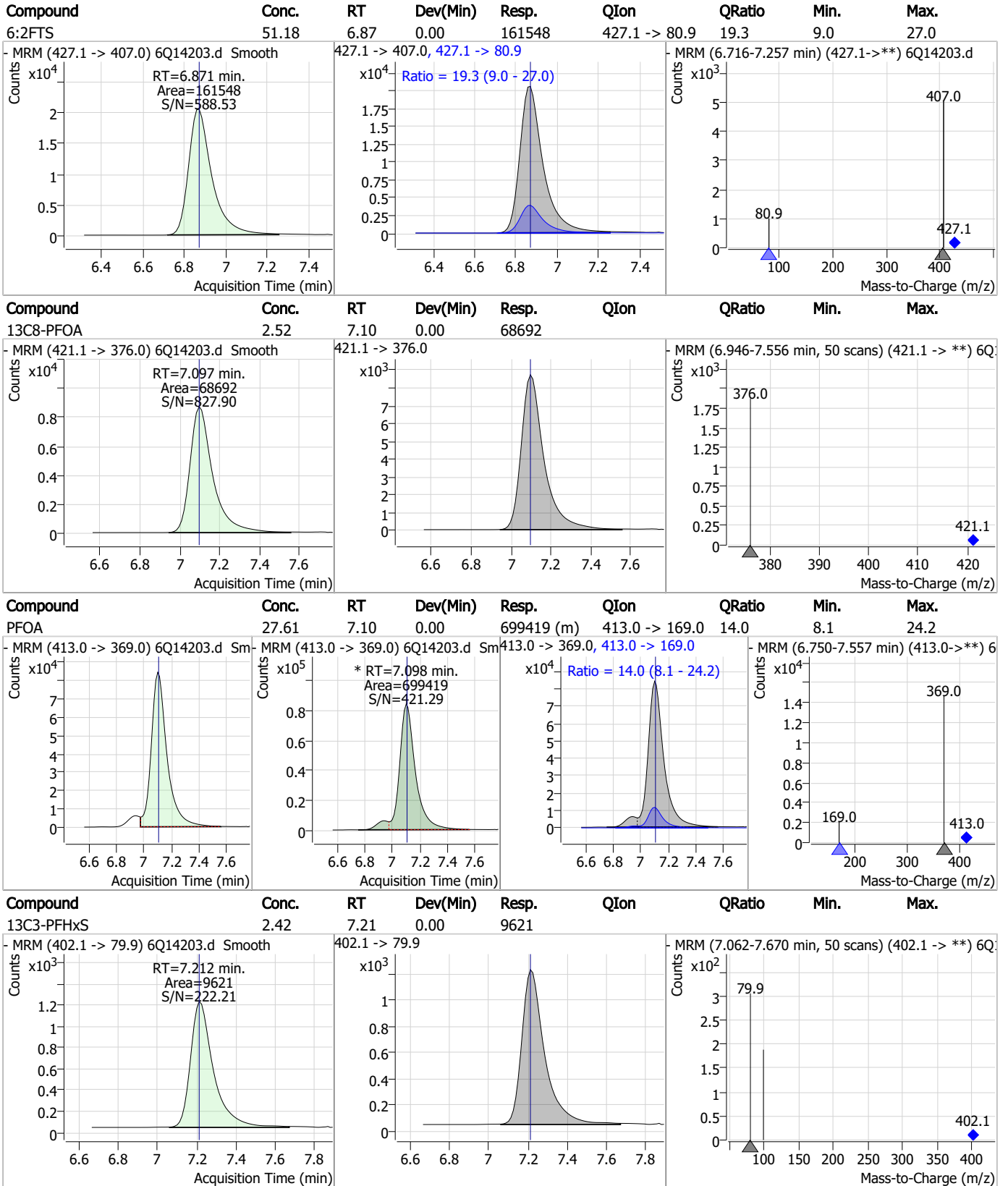
Perfluorinated Compounds by LC/MS/MS



7.6.2

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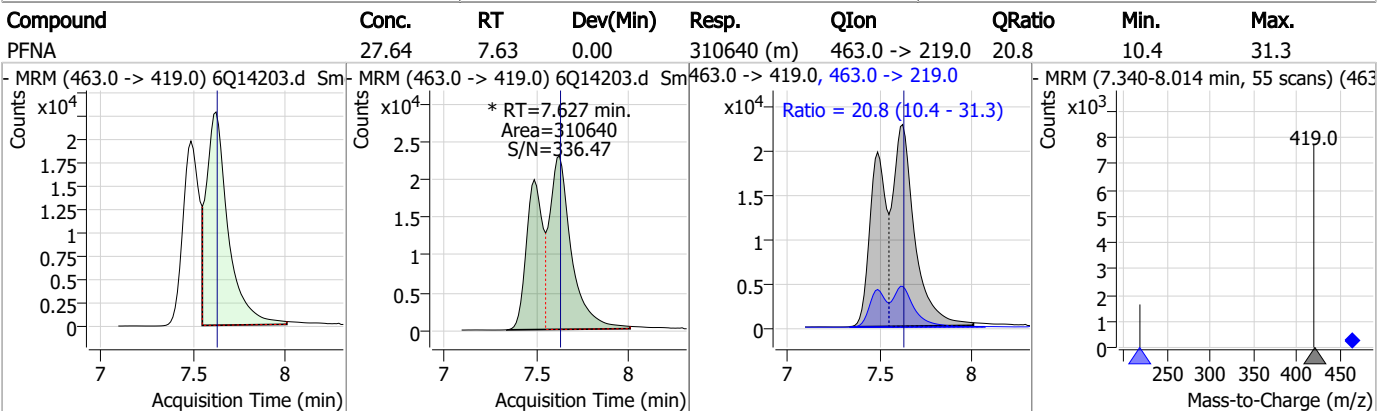
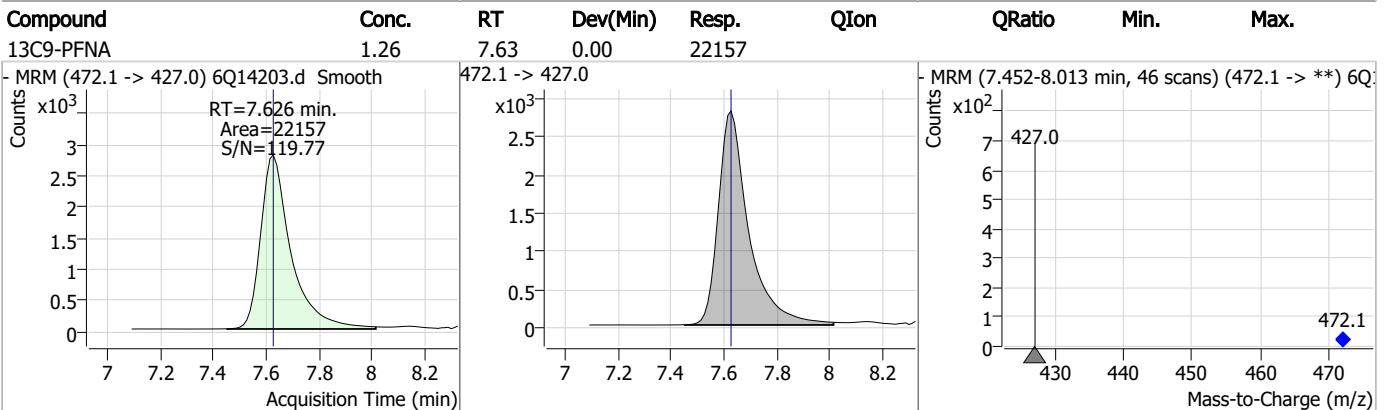
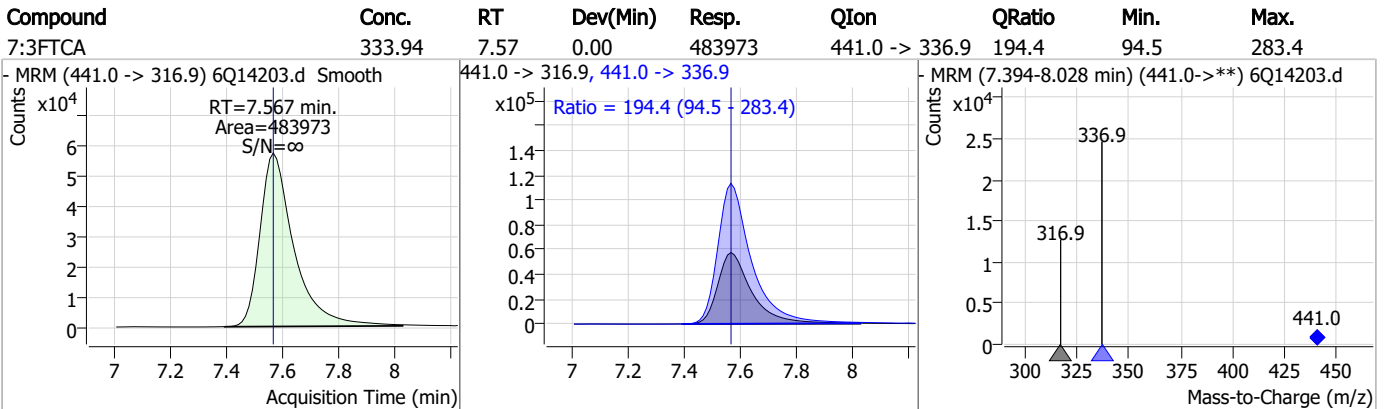
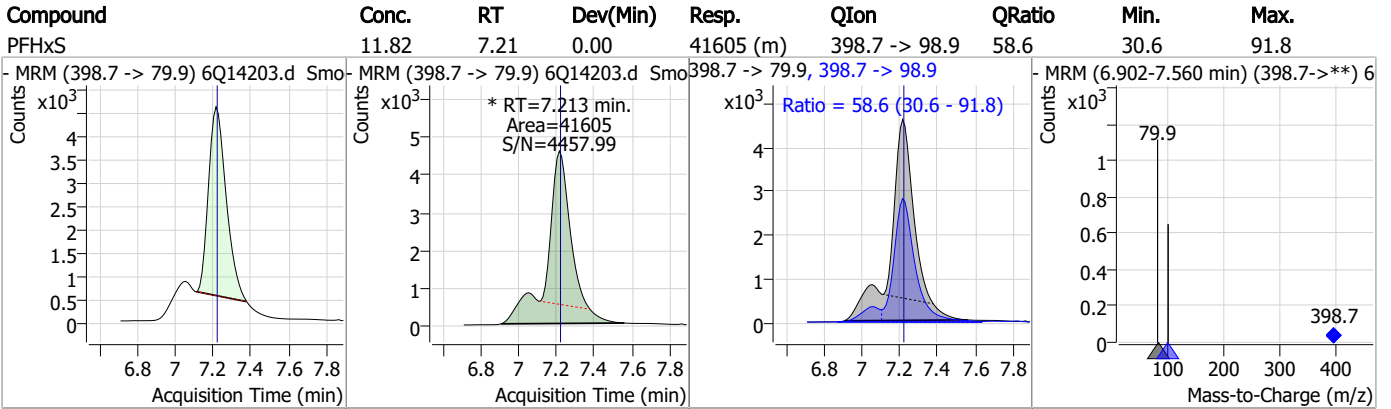
Perfluorinated Compounds by LC/MS/MS



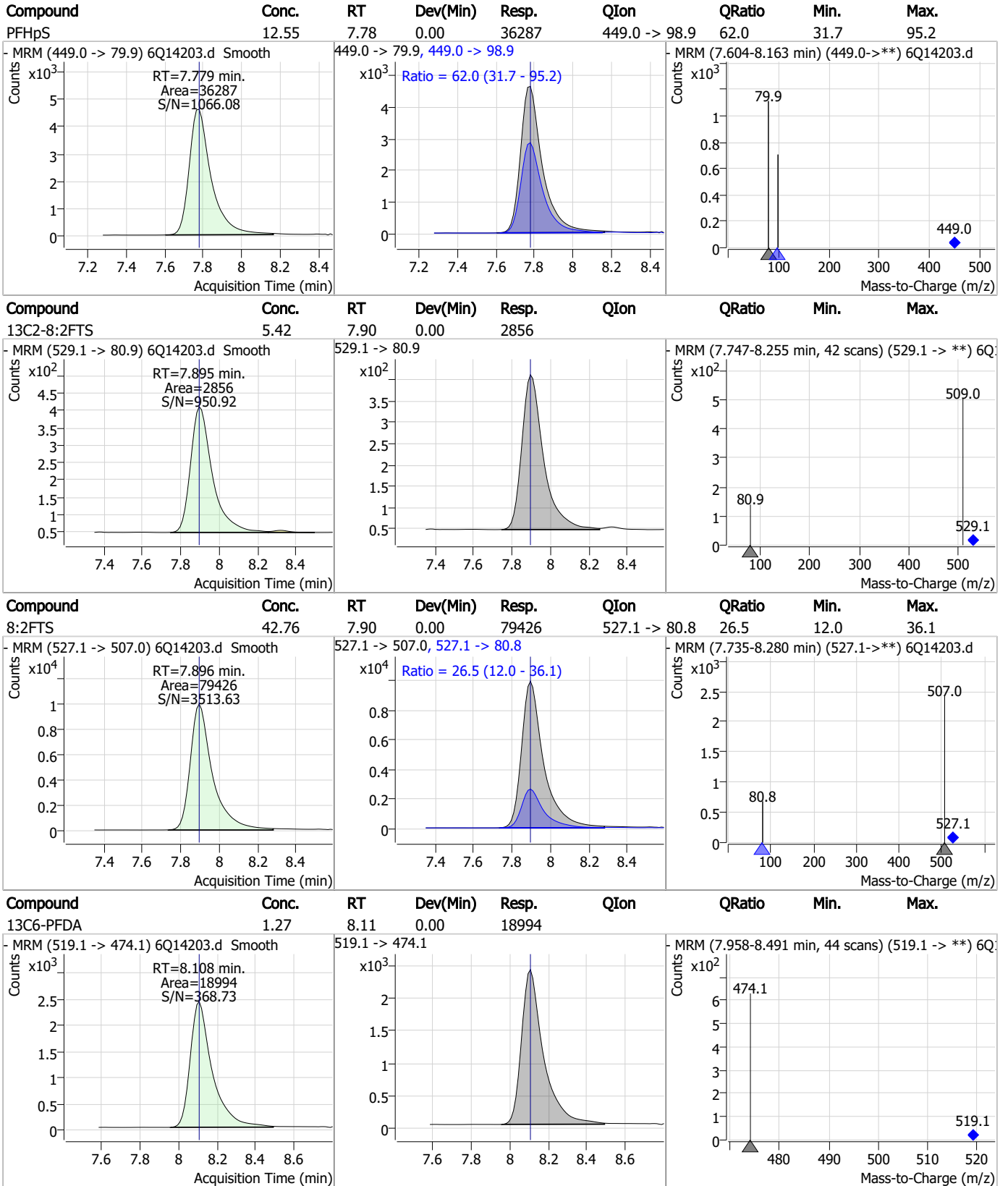
7.6.2

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Perfluorinated Compounds by LC/MS/MS



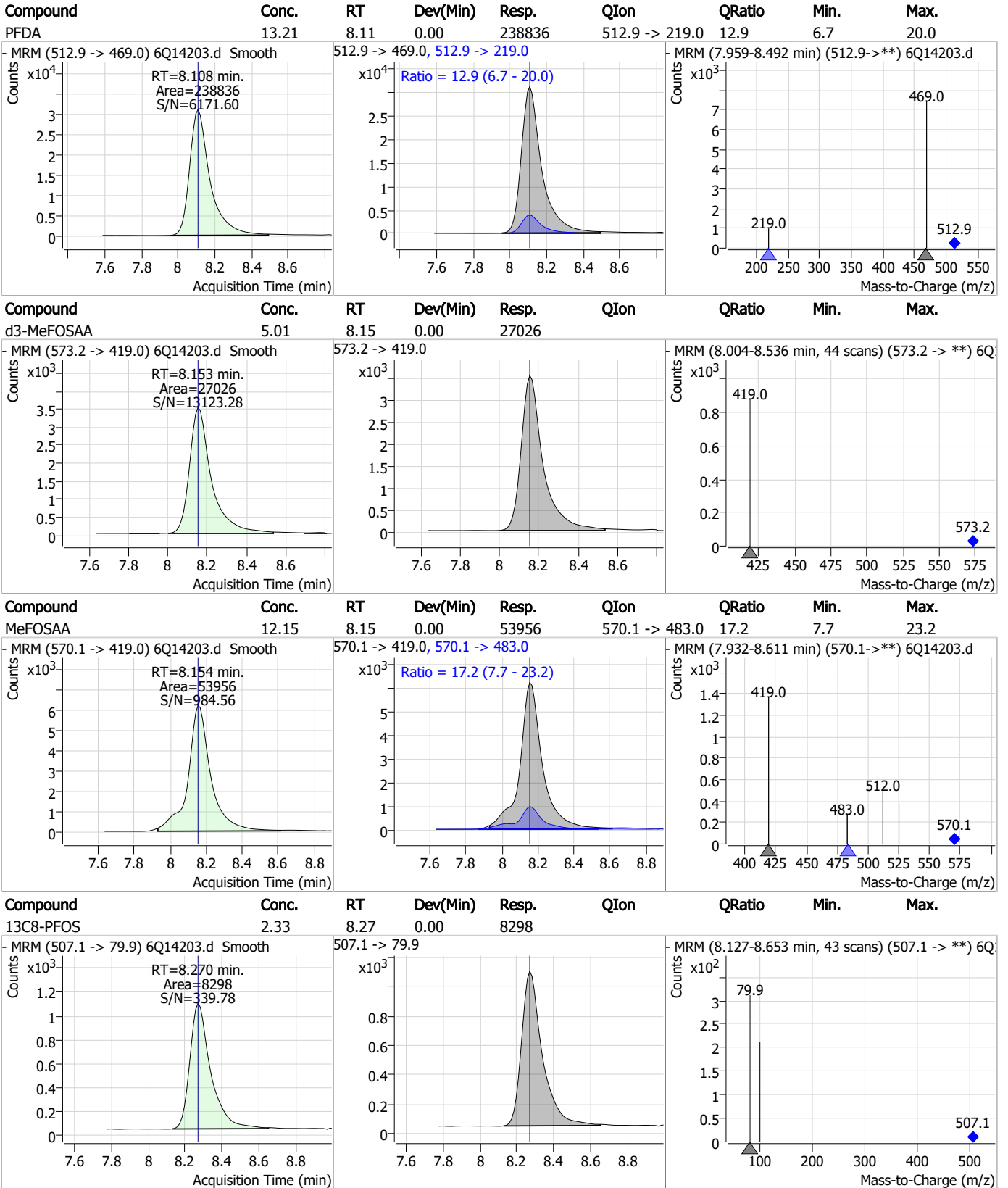
Perfluorinated Compounds by LC/MS/MS



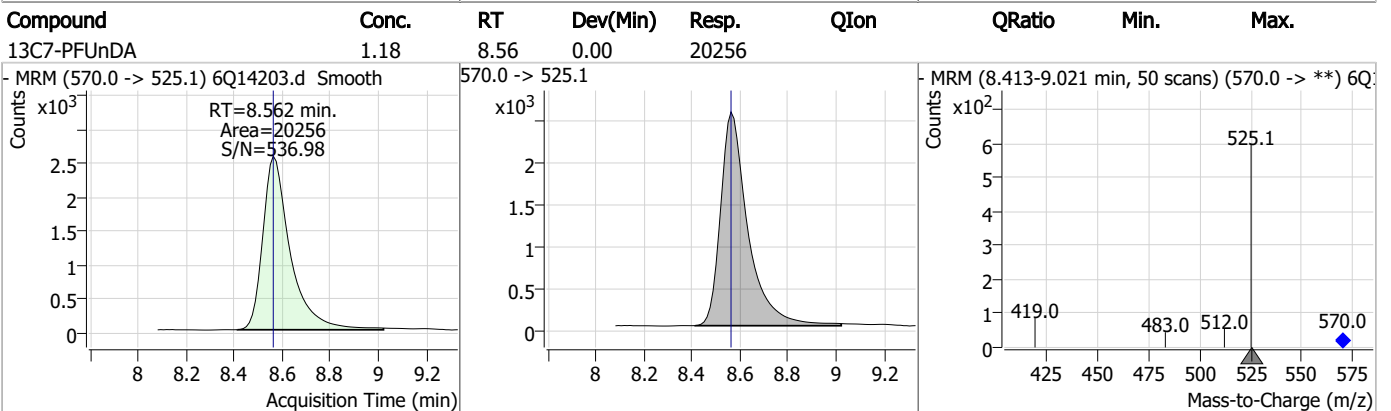
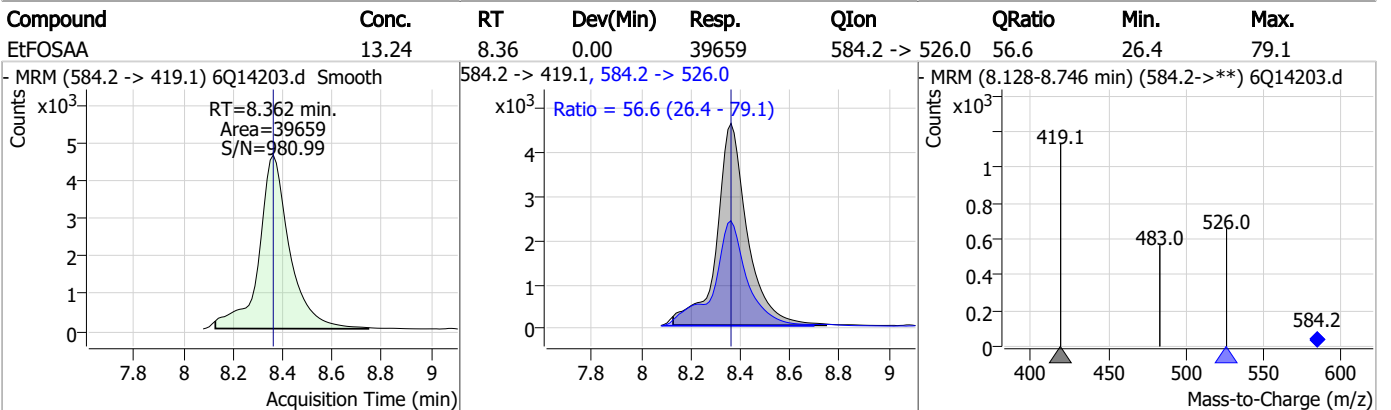
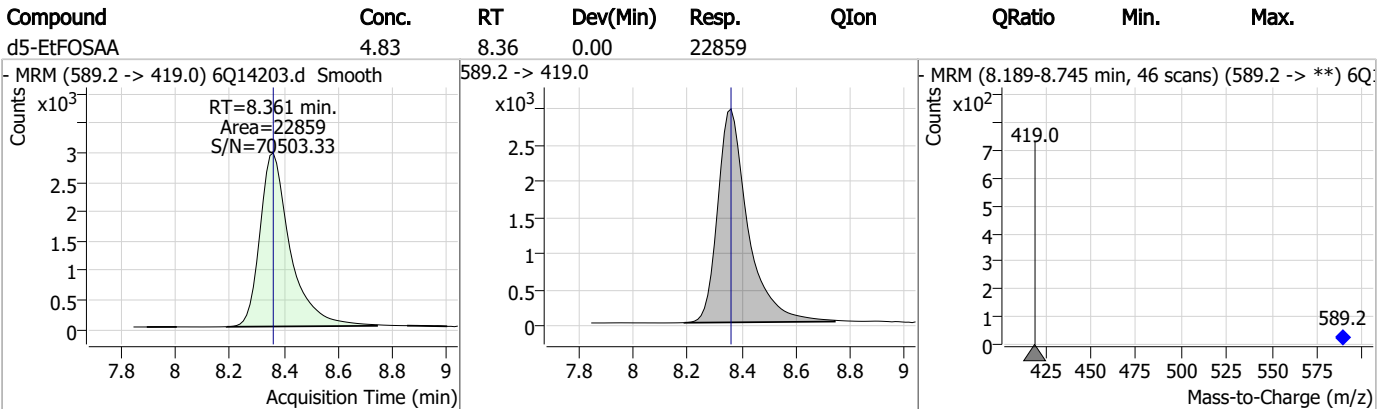
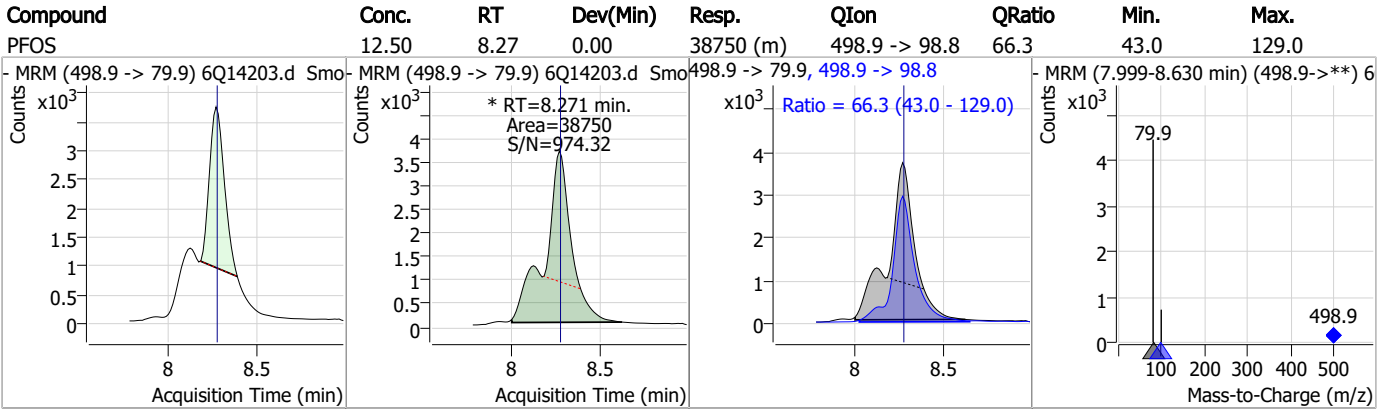
7.6.2

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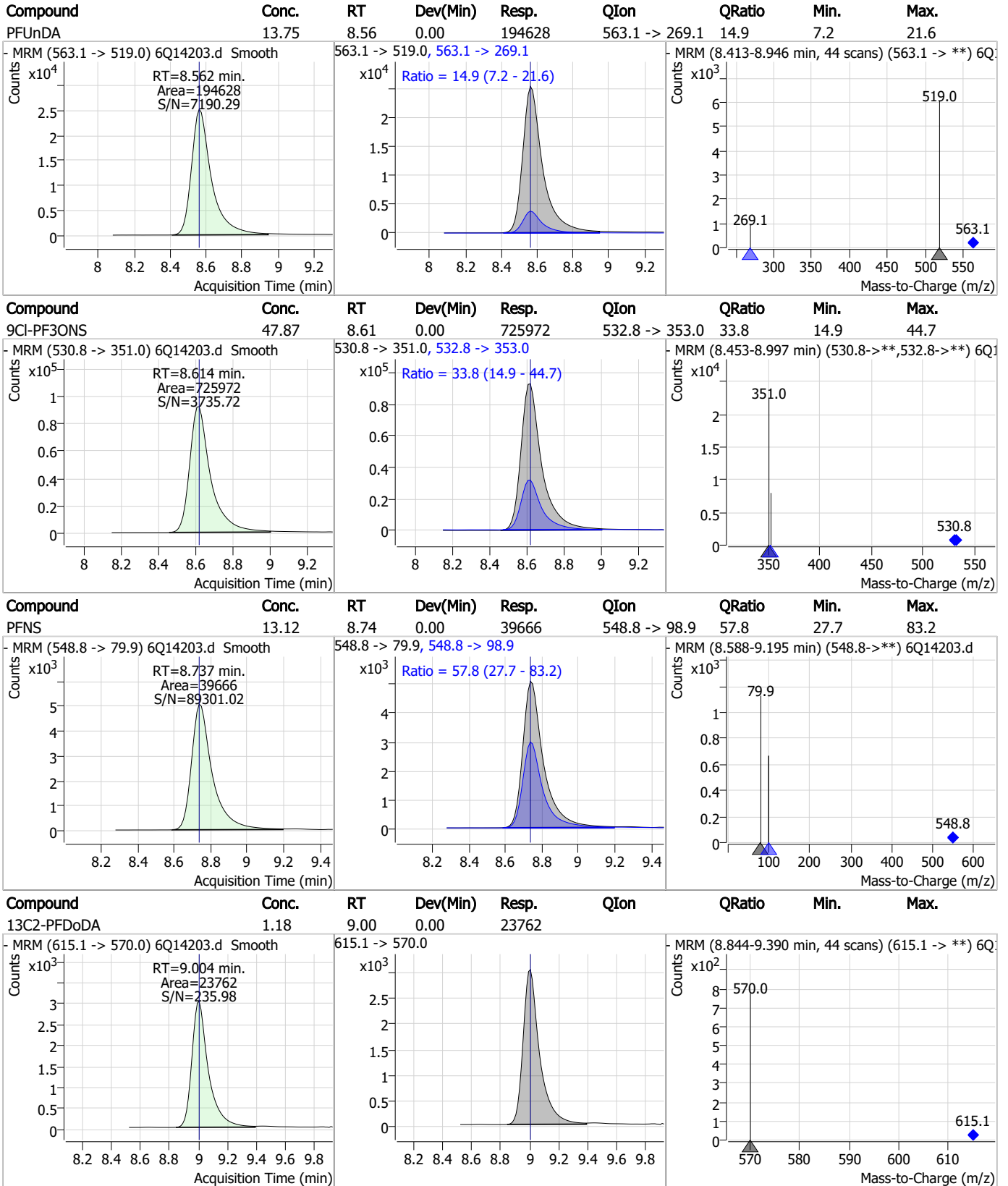
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



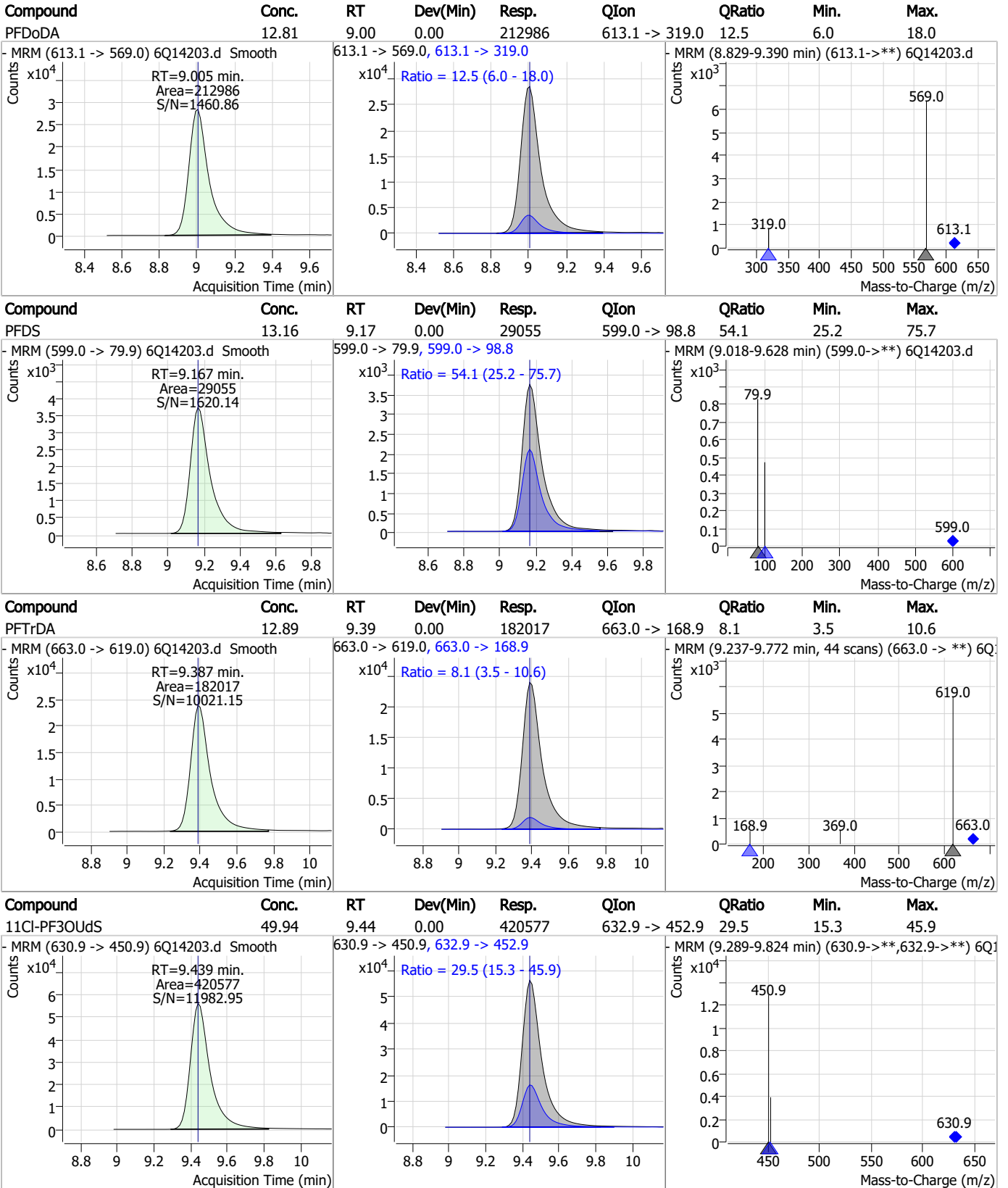
Perfluorinated Compounds by LC/MS/MS



7.6.2

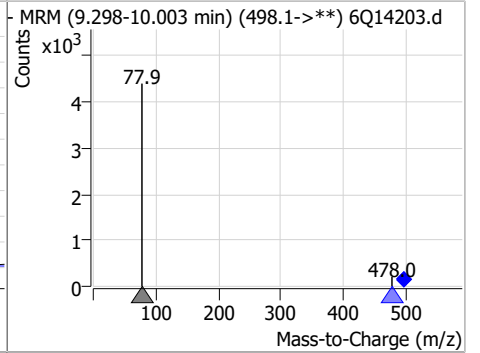
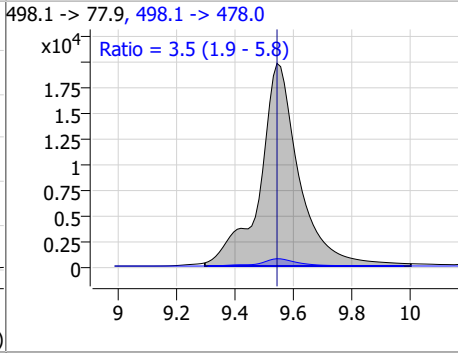
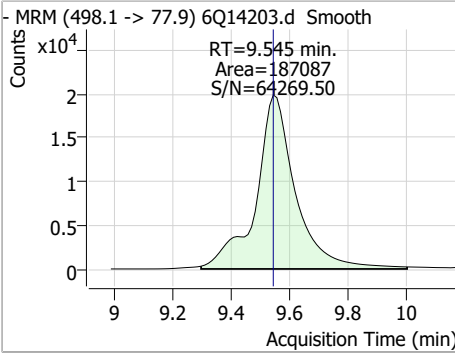
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Perfluorinated Compounds by LC/MS/MS

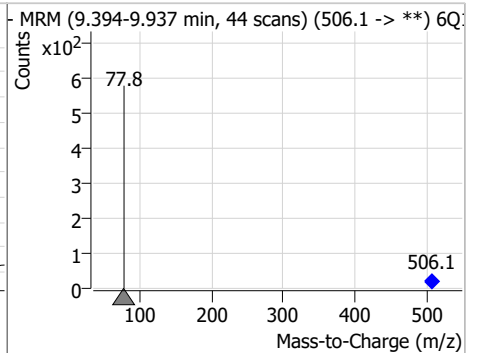
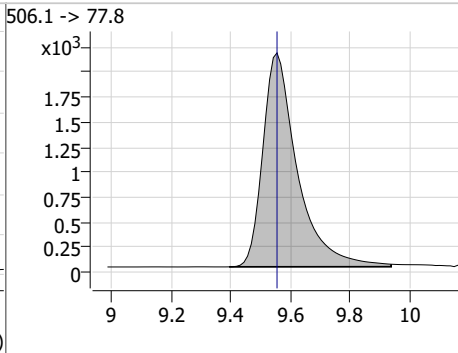
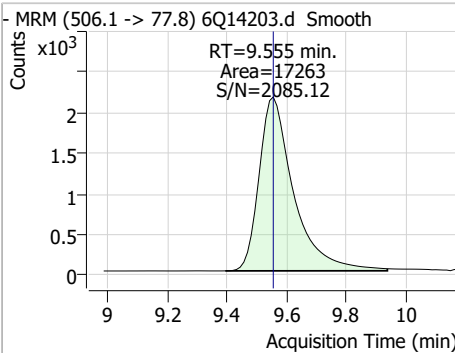


Perfluorinated Compounds by LC/MS/MS

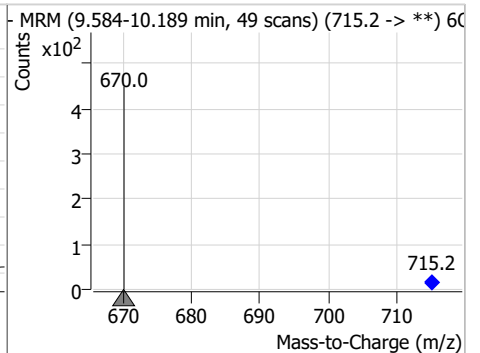
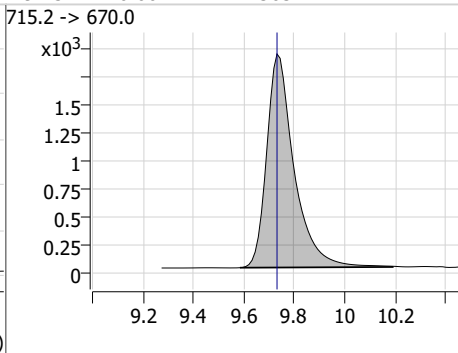
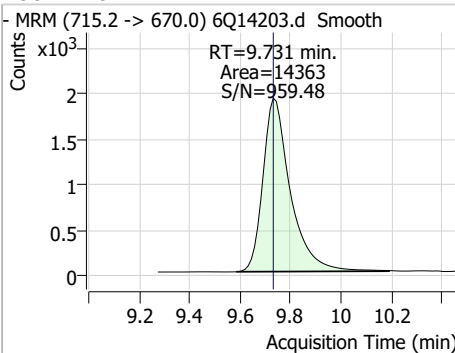
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	31.95	9.54	0.00	187087	498.1 -> 478.0	3.5	1.9	5.8



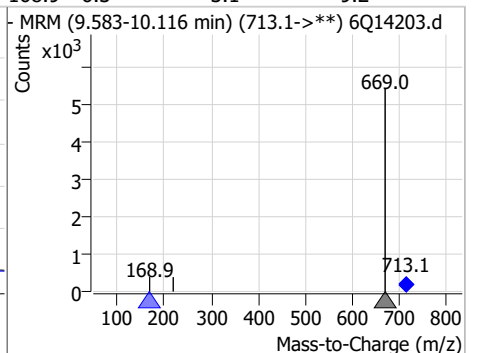
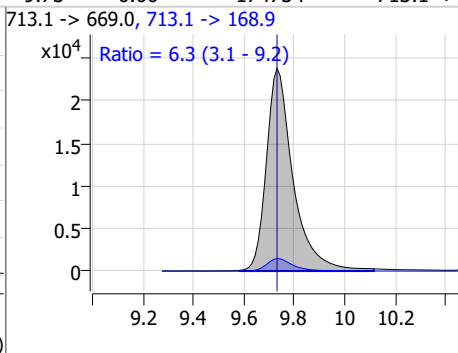
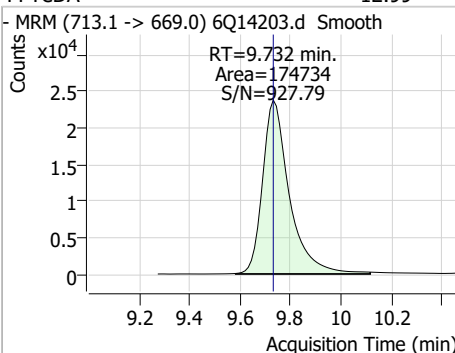
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.48	9.55	0.00	17263				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.73	0.00	14363				

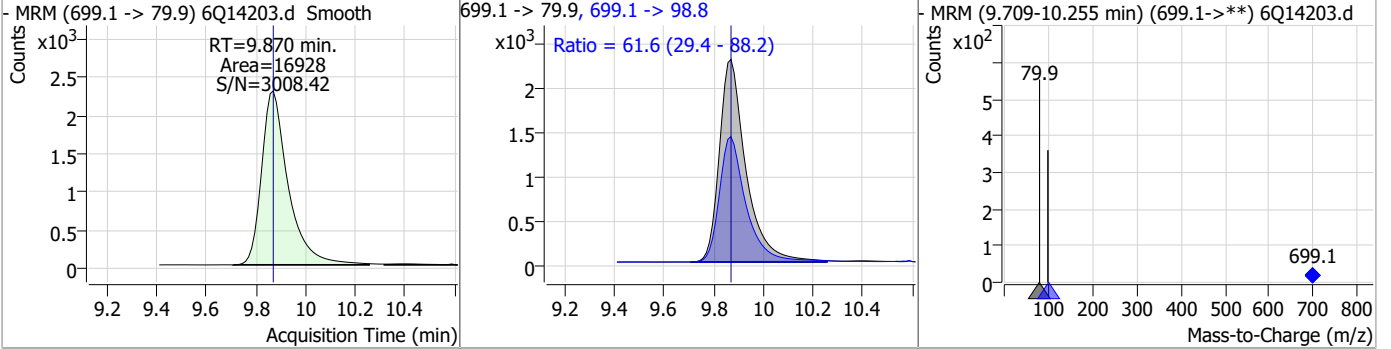


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	12.99	9.73	0.00	174734	713.1 -> 168.9	6.3	3.1	9.2

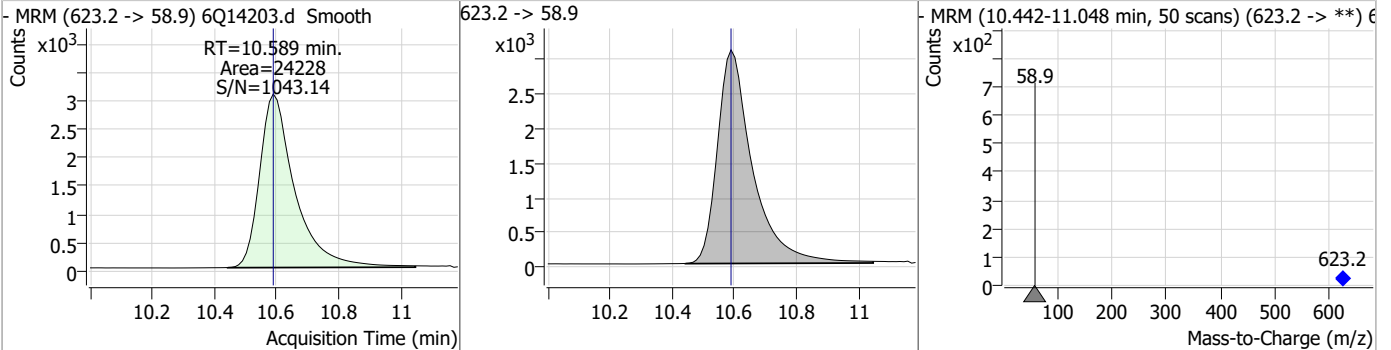


Perfluorinated Compounds by LC/MS/MS

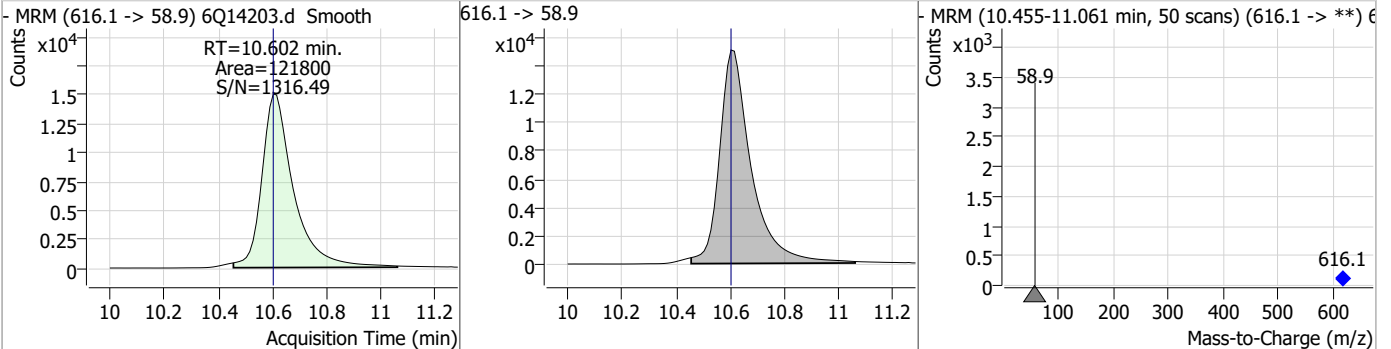
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	13.55	9.87	0.00	16928	699.1 -> 98.8	61.6	29.4	88.2



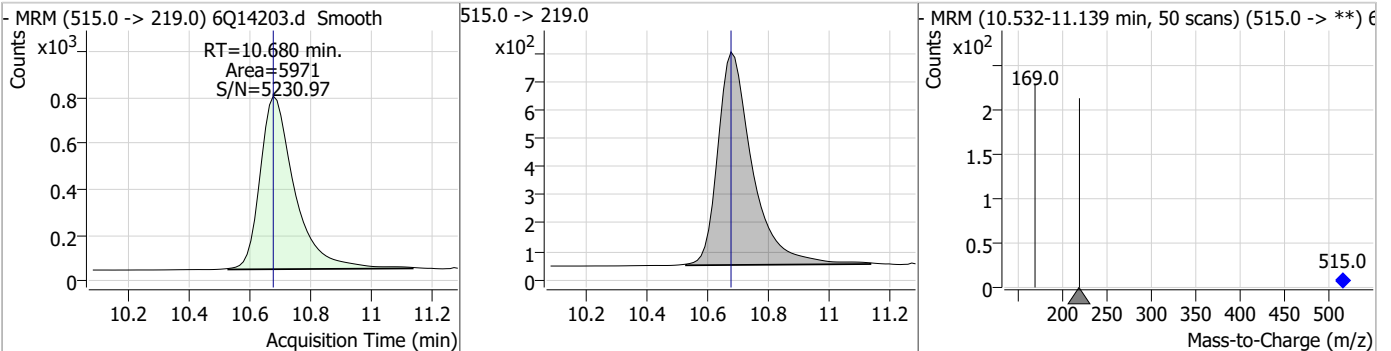
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.22	10.59	0.00	24228				



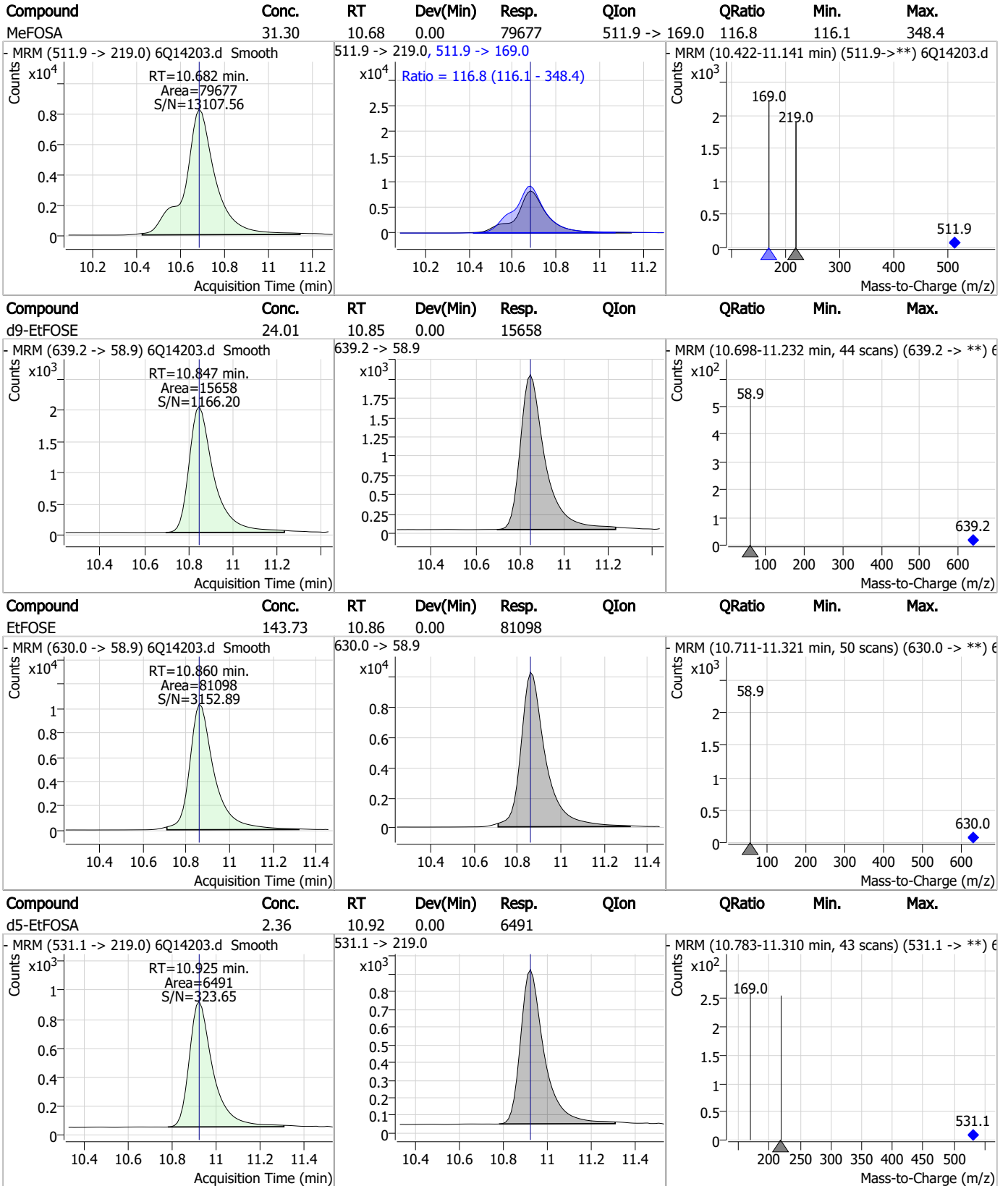
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	143.19	10.60	0.00	121800				



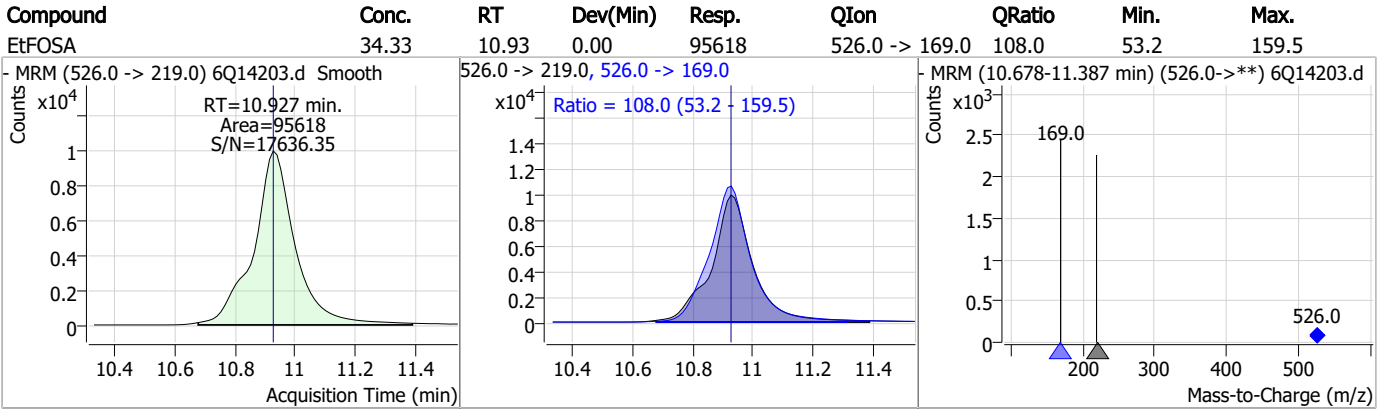
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.38	10.68	0.00	5971				



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

Sample Number: S6Q217-RT Method: EPA DRAFT 1633
Lab FileID: 6Q14203.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 13:11 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.10	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorononanoic acid	375-95-1		7.63	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.6.2.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Mike Eger
 02/27/23 17:31

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14336.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 8:14:21 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q218 TDCA.batch.bin
 Sample Information : OP95581,S6Q218,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)	
Internal Standards						
M8-PFOS	8.258	507.1 -> 79.9	10786	2.50 µg/L	-0.025	
13C4-PFOS	8.271	502.8 -> 79.9	13680	2.50 µg/L	0.000	
System Monitoring Compounds						
13C8-PFOS	8.258	507.1 -> 79.9	10786	2.00 µg/L	-0.025	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 80.0%			
Target Compounds						
PFOS	8.259	498.9 -> 79.9	9586	2.60 µg/L #m	72	QValue
		498.9 -> 98.8	6359			
TCDCa	6.621	498.9 -> 79.9	2355	4.73 ng/ml	100	
TDCA	6.783	498.9 -> 79.9	3206	7.11 ng/ml	100	
TUDCA	5.769	498.9 -> 79.9	4375	4.57 ng/ml	100	

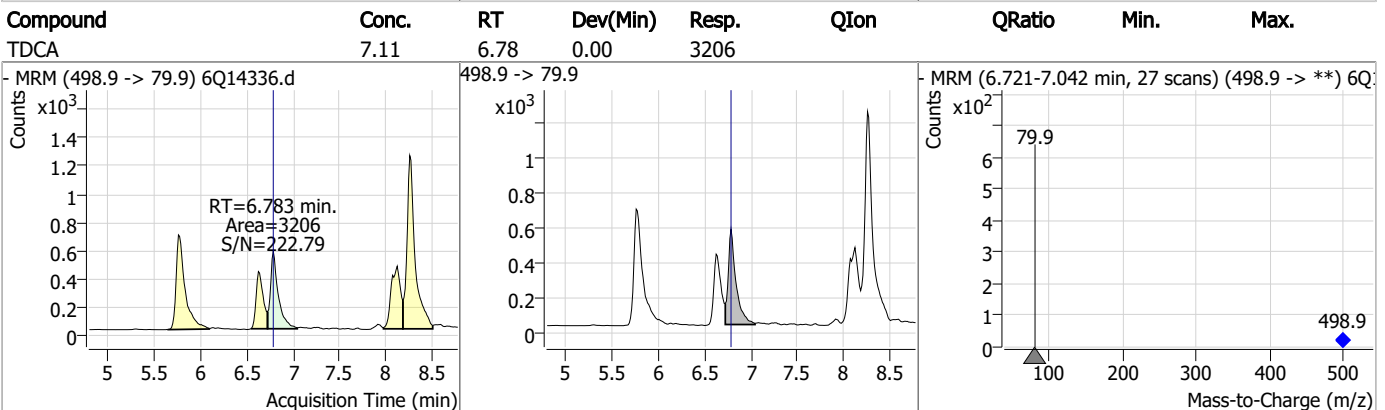
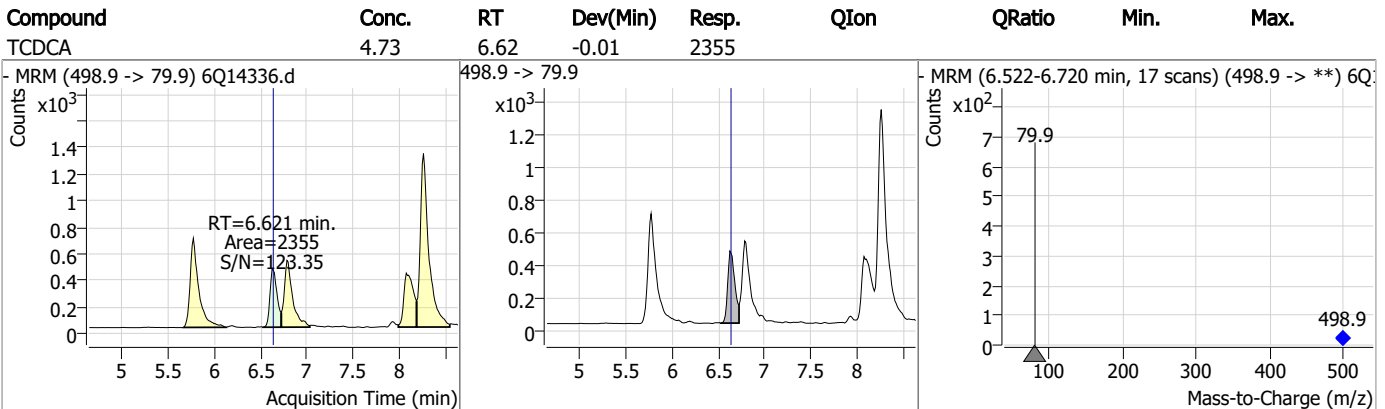
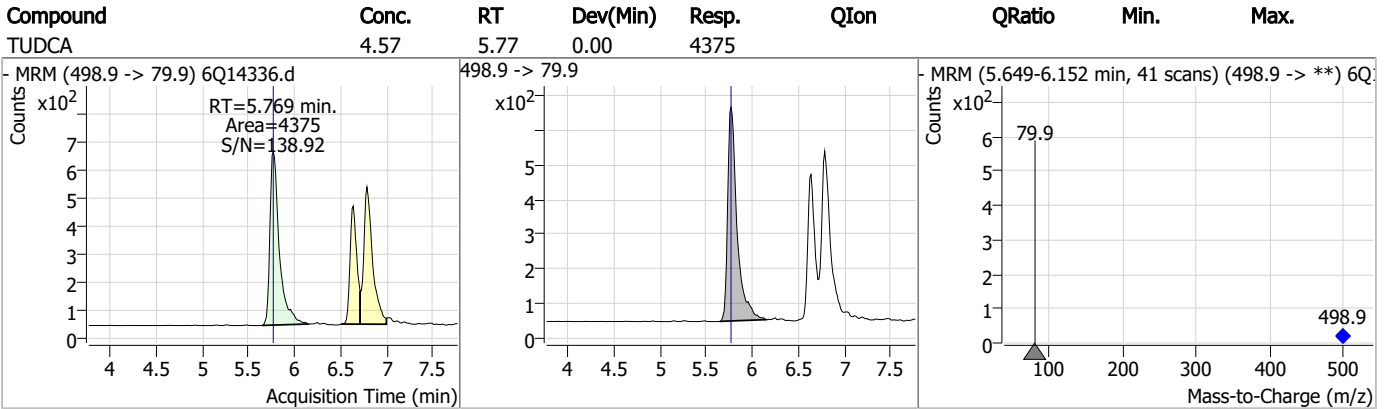
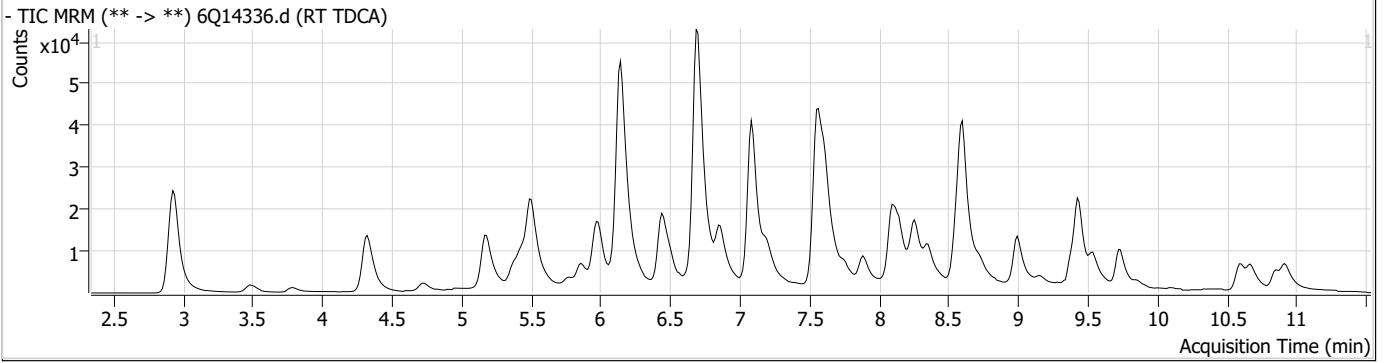
= Qualifier out of range, m = manually integrated, + = Area summed

7.6.3

7



Perfluorinated Compounds by LC/MS/MS

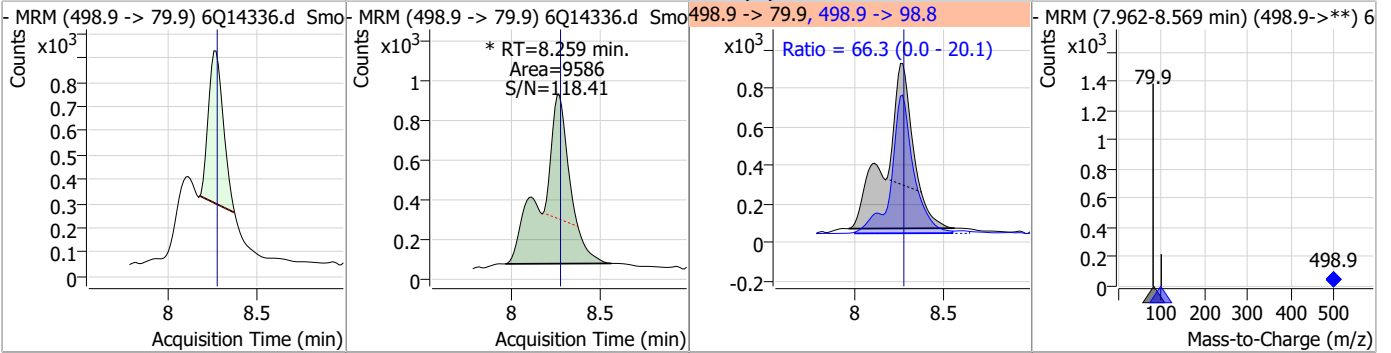


7.6.3

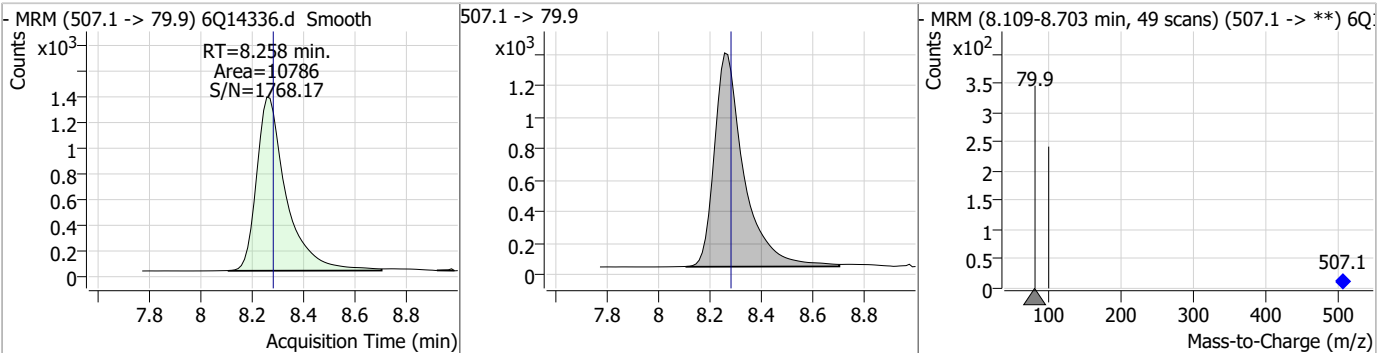
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.60	8.26	-0.01	9586 (m)	498.9 -> 98.8	66.3	0.0	20.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.00	8.26	-0.02	10786				



7.6.3

7

Manual Integration Approval Summary

Sample Number: S6Q218-RT Method: EPA DRAFT 1633
Lab FileID: 6Q14336.D Analyst approved: 02/27/23 11:07 Martha Valls
Injection Time: 02/24/23 20:14 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.26	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14337.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 8:28:20 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	91750	10.00 µg/L	0.000
M5-PFPeA	4.324	268.3 -> 223.0	45325	5.00 µg/L	-0.012
M5-PFHxA	5.500	318.0 -> 273.0	37222	2.50 µg/L	-0.012
M4-PFHpA	6.440	367.1 -> 322.0	42057	2.50 µg/L	-0.012
M8-PFOA	7.083	421.1 -> 376.0	69507	2.50 µg/L	-0.014
M9-PFNA	7.614	472.1 -> 427.0	21238	1.25 µg/L	-0.012
M6-PFDA	8.095	519.1 -> 474.1	18848	1.25 µg/L	-0.012
M7-PFUnDA	8.562	570.0 -> 525.1	19638	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	24493	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	13613	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17521	2.50 µg/L	0.000
M3-PFBS	5.444	302.1 -> 79.9	16434	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	9811	2.50 µg/L	0.000
M8-PFOS	8.258	507.1 -> 79.9	9224	2.50 µg/L	-0.012
M2-4:2FTS	5.178	329.1 -> 80.9	2281	5.00 µg/L	-0.012
M2-6:2FTS	6.858	429.1 -> 80.9	2804	5.00 µg/L	0.000
M2-8:2FTS	7.882	529.1 -> 80.9	2827	5.00 µg/L	-0.013
M3-MeFOSAA	8.153	573.2 -> 419.0	26635	5.00 µg/L	0.000
M3-HFPO-DA	5.866	286.9 -> 168.9	16826	10.00 µg/L	-0.012
M5-EtFOSAA	8.349	589.2 -> 419.0	24268	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	23145	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	14774	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6418	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6168	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10575	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	39470	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	7080	2.50 µg/L	0.000
13C4-PFOA	7.083	417.1 -> 372.0	84402	2.50 µg/L	-0.014
13C2-PFDA	8.096	515.1 -> 470.1	23663	1.25 µg/L	-0.012
13C5-PFNA	7.614	468.0 -> 423.0	20937	1.25 µg/L	-0.012
13C2-PFHxA	5.501	315.1 -> 270.0	41409	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2281	5.39 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-6:2FTS	6.858	429.1 -> 80.9	2804	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-8:2FTS	7.882	529.1 -> 80.9	2827	5.43 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C2-PFDoDA	8.991	615.1 -> 570.0	24493	1.31 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C2-PFTeDA	9.731	715.2 -> 670.0	13613	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C3-PFBS	5.444	302.1 -> 79.9	16434	2.70 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C3-PFHxS	7.212	402.1 -> 79.9	9811	2.50 µg/L	0.000

7.64
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFBA	2.938	216.8 -> 171.9	91750	10.20 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C4-PFHpA	6.440	367.1 -> 322.0	42057	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFHxA	5.500	318.0 -> 273.0	37222	2.30 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C5-PFPeA	4.324	268.3 -> 223.0	45325	4.89 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C6-PFDA	8.095	519.1 -> 474.1	18848	1.37 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C7-PFUnDA	8.562	570.0 -> 525.1	19638	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-FOSA	9.555	506.1 -> 77.8	17521	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-PFOA	7.083	421.1 -> 376.0	69507	2.47 µg/L	-0.014
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C8-PFOS	8.258	507.1 -> 79.9	9224	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C9-PFNA	7.614	472.1 -> 427.0	21238	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.3%	
d3-MeFOSAA	8.153	573.2 -> 419.0	26635	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C3-HFPO-DA	5.866	286.9 -> 168.9	16826	10.67 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
d3-MeFOSA	10.680	515.0 -> 219.0	6168	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
d5-EtFOSAA	8.349	589.2 -> 419.0	24268	5.03 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d7-MeFOSE	10.589	623.2 -> 58.9	23145	22.67 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.7%	
d9-EtFOSE	10.847	639.2 -> 58.9	14774	22.20 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.8%	
d5-EtFOSA	10.925	531.1 -> 219.0	6418	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	205738	48.57 µg/L	99
		327.1 -> 80.9	43801		
6:2FTS	6.859	427.1 -> 407.0	163314	46.80 µg/L	95
		427.1 -> 80.9	33086		
8:2FTS	7.883	527.1 -> 507.0	89667	48.76 µg/L	96
		527.1 -> 80.8	19777		
EtFOSAA	8.362	584.2 -> 419.1	38923	12.24 µg/L	95
		584.2 -> 526.0	21873		
FOSA	9.557	498.1 -> 77.9	186815	31.44 µg/L	99
		498.1 -> 478.0	6928		
MeFOSAA	8.154	570.1 -> 419.0	57901	13.23 µg/L	96
		570.1 -> 483.0	9905		
PFBA	2.932	212.8 -> 168.9	98560	53.32 µg/L	100
PFBS	5.444	298.7 -> 79.9	61333	11.35 µg/L	97
		298.7 -> 98.8	28388		
PFDA	8.096	512.9 -> 469.0	229303	12.78 µg/L	100
		512.9 -> 219.0	30744		
PFDoDA	8.992	613.1 -> 569.0	212712	12.42 µg/L	99
		613.1 -> 319.0	24504		
PFDS	9.167	599.0 -> 79.9	29212	11.91 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	14852			
PFHpA	6.440	363.1 -> 319.0	274446	13.15	µg/L	99
		363.1 -> 169.0	37146			
PFHpS	7.765	449.0 -> 79.9	37501	11.67	µg/L	92
		449.0 -> 98.9	21404			
PFHxA	5.503	313.0 -> 269.0	172407	14.48	µg/L	99
		313.0 -> 118.9	6498			
PFHxS	7.201	398.7 -> 79.9	42154	11.74	µg/L	m 98
		398.7 -> 98.9	25201			
PFNA	7.615	463.0 -> 419.0	288026	26.73	µg/L	m 98
		463.0 -> 219.0	63326			
PFNS	8.737	548.8 -> 79.9	40786	12.14	µg/L	100
		548.8 -> 98.9	22729			
PFOA	7.084	413.0 -> 369.0	697837	27.22	µg/L	m 94
		413.0 -> 169.0	95766			
PFOS	8.259	498.9 -> 79.9	37684	10.93	µg/L	m 84
		498.9 -> 98.8	26867			
PFPeA	4.326	263.0 -> 219.0	204272	25.73	µg/L	100
PFPeS	6.505	349.1 -> 79.9	55986	12.37	µg/L	100
		349.1 -> 98.9	29917			
PFTeDA	9.732	713.1 -> 669.0	167744	13.16	µg/L	99
		713.1 -> 168.9	10904			
PFTrDA	9.387	663.0 -> 619.0	181515	12.48	µg/L	98
		663.0 -> 168.9	14271			
PFUnDA	8.562	563.1 -> 519.0	188377	13.73	µg/L	100
		563.1 -> 269.1	26783			
11CI-PF3OUdS	9.439	630.9 -> 450.9	411853	44.25	µg/L	100
		632.9 -> 452.9	125204			
9CI-PF3ONS	8.602	530.8 -> 351.0	746188	44.52	µg/L	93
		532.8 -> 353.0	250416			
ADONA	6.704	376.9 -> 250.9	1553103	46.56	µg/L	99
		376.9 -> 84.8	333050			
HFPO-DA	5.866	284.9 -> 168.9	71541	53.34	µg/L	99
		284.9 -> 184.9	8867			
3:3FTCA	3.804	241.0 -> 177.0	26363	62.60	µg/L	93
		241.0 -> 117.0	4184			
5:3FTCA	6.144	341.0 -> 237.1	929816	341.62	µg/L	93
		341.0 -> 217.0	867929			
7:3FTCA	7.567	441.0 -> 316.9	490256	339.17	µg/L	89
		441.0 -> 336.9	849059			
EtFOSA	10.927	526.0 -> 219.0	91030	33.06	µg/L	94
		526.0 -> 169.0	102165			
EtFOSE	10.860	630.0 -> 58.9	80670	151.53	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	83085	31.59	µg/L	# 30
		511.9 -> 169.0	96293			
MeFOSE	10.602	616.1 -> 58.9	119603	147.18	µg/L	100
PFDoDS	9.858	699.1 -> 79.9	17536	12.63	µg/L	99
		699.1 -> 98.8	10496			
NFDHA	5.395	295.0 -> 201.0	20130	29.87	µg/L	93
		295.0 -> 84.9	9689			
PFMBA	4.738	279.0 -> 85.1	62867	26.88	µg/L	100
PFMPA	3.488	229.0 -> 84.9	56171	26.46	µg/L	100
PFEESA	5.983	314.8 -> 134.9	442744	26.21	µg/L	100
		314.8 -> 82.9	10925			

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

7.6.4
7

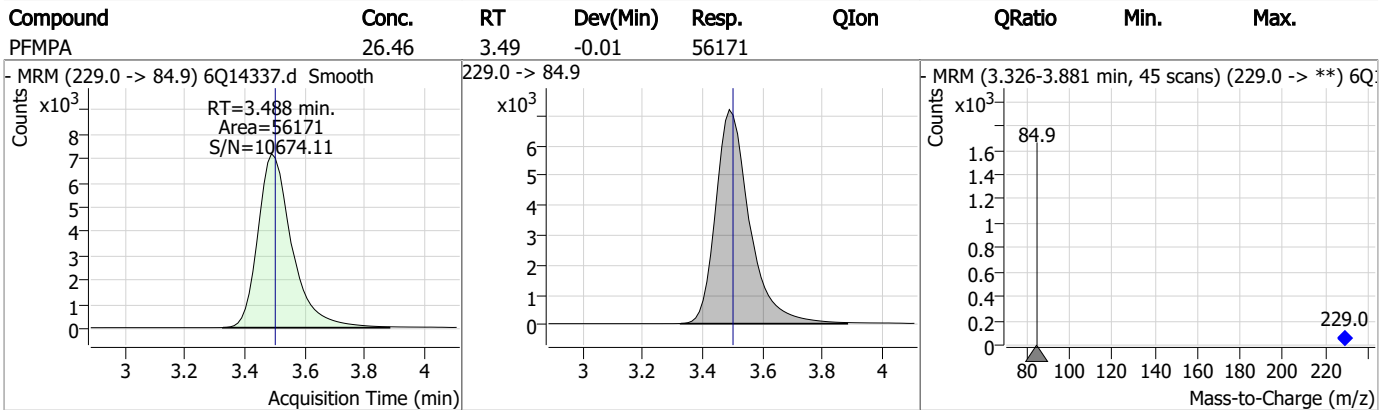
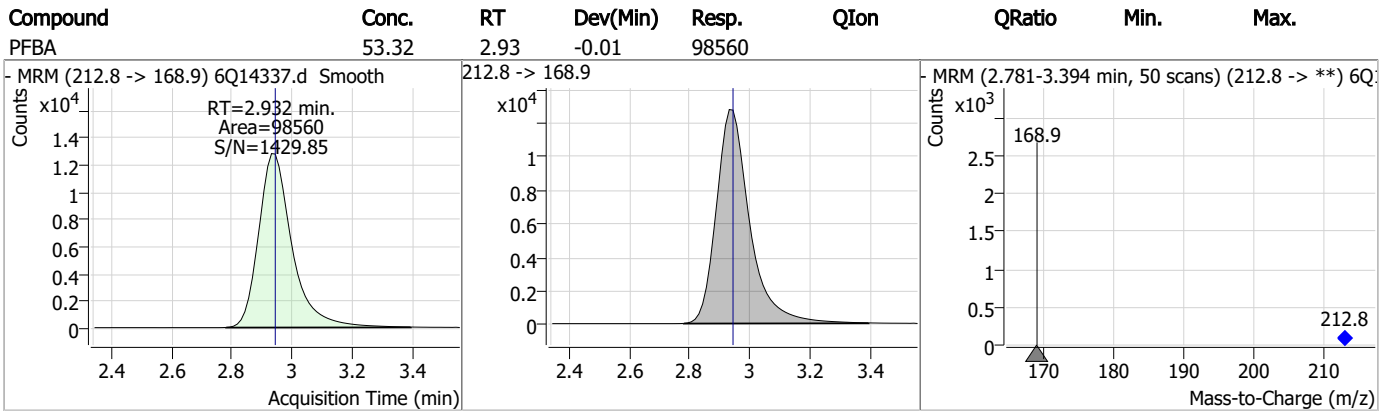
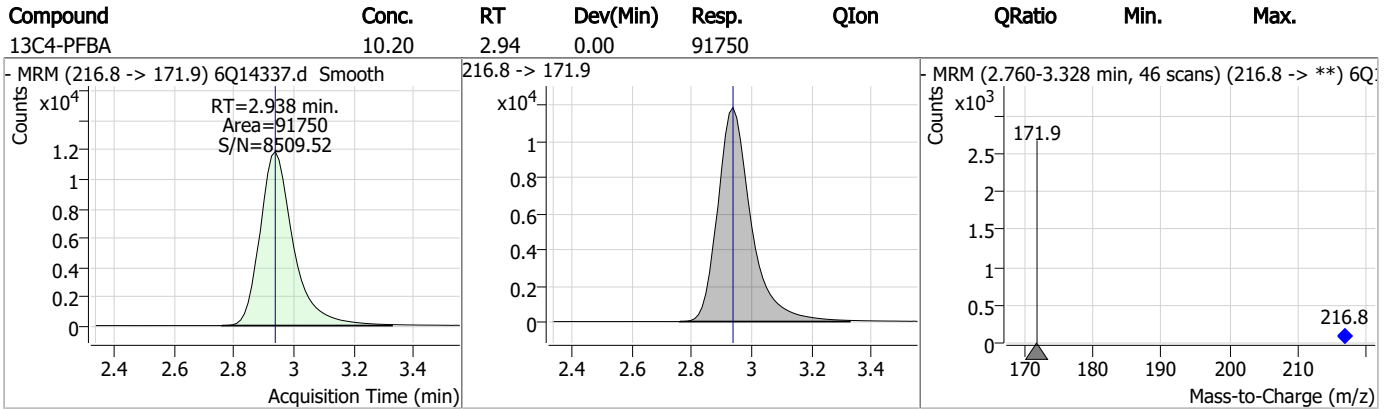
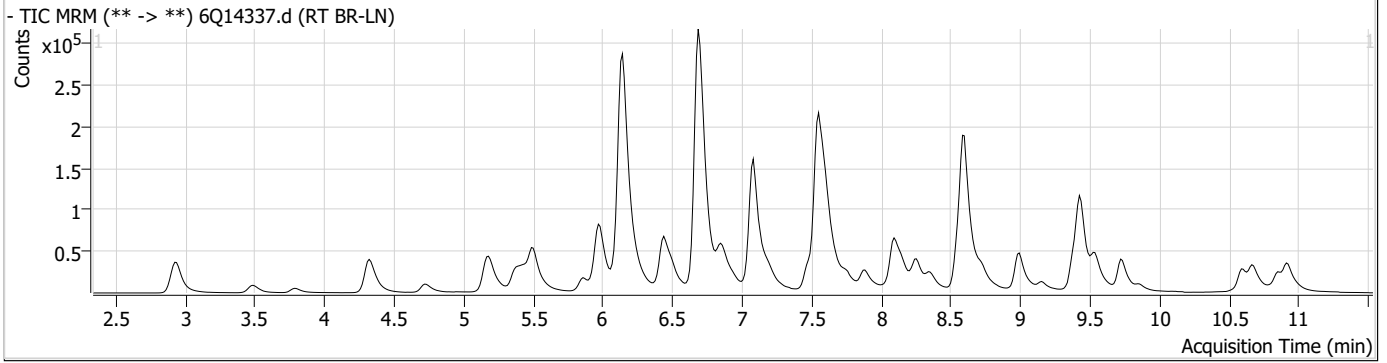
Perfluorinated Compounds by LC/MS/MS

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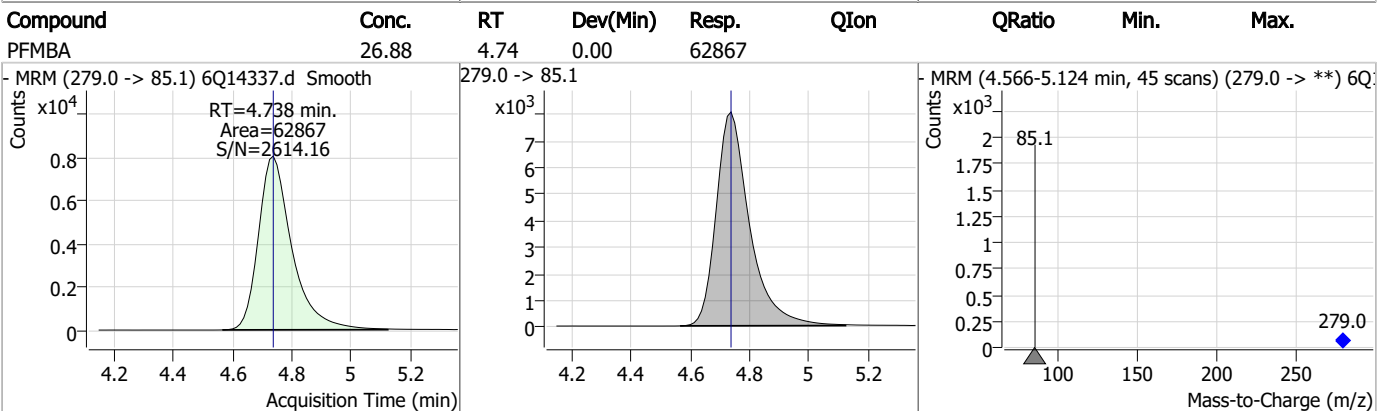
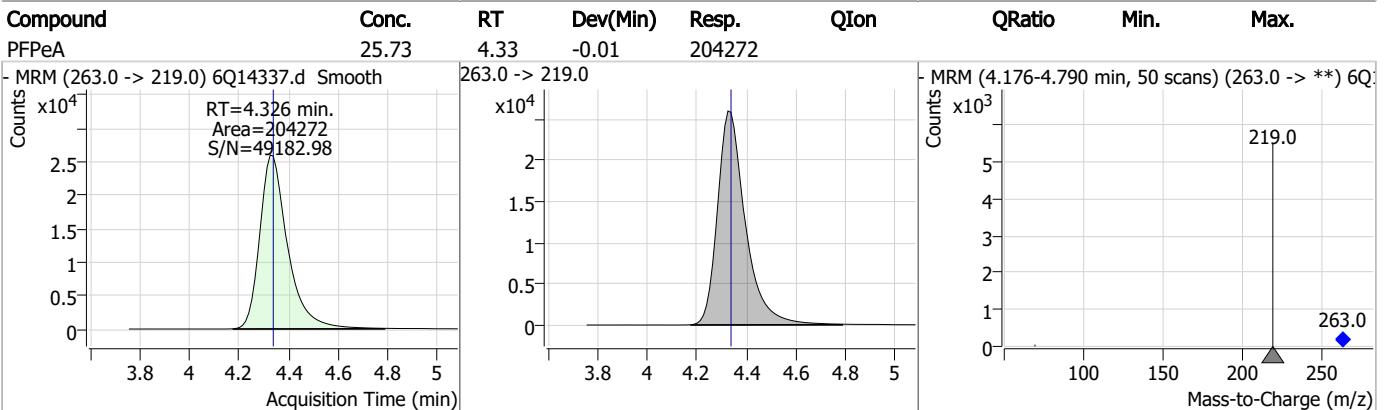
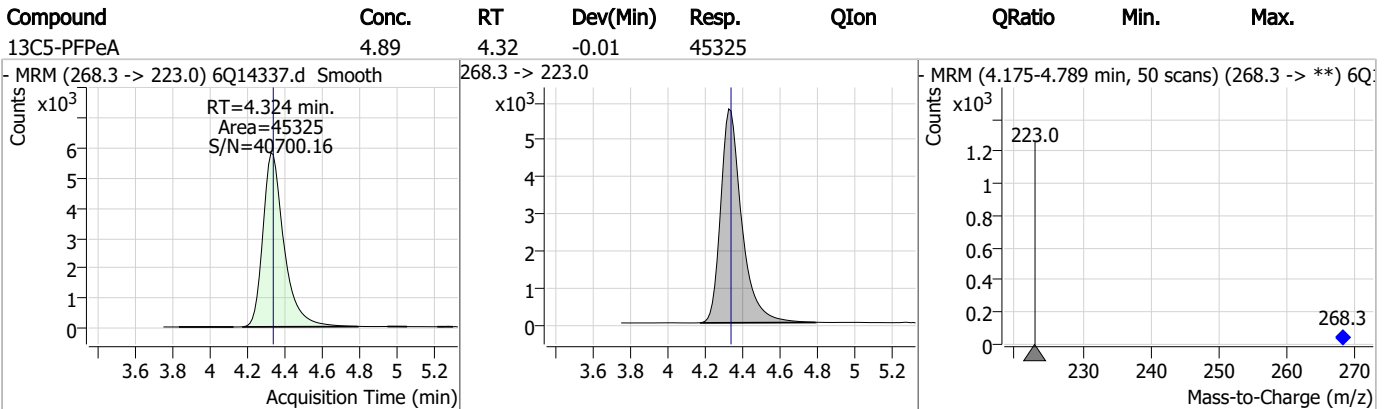
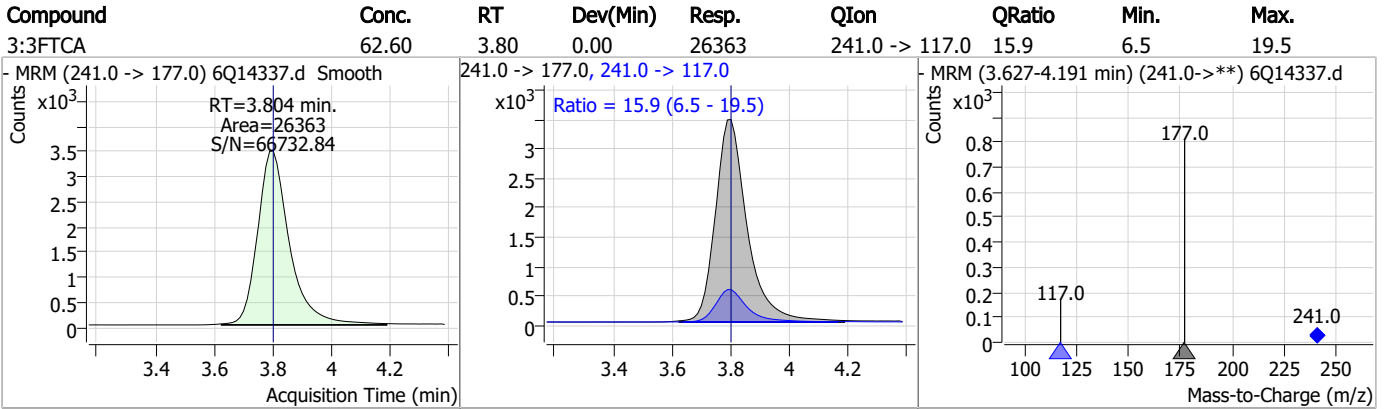
7.6.4

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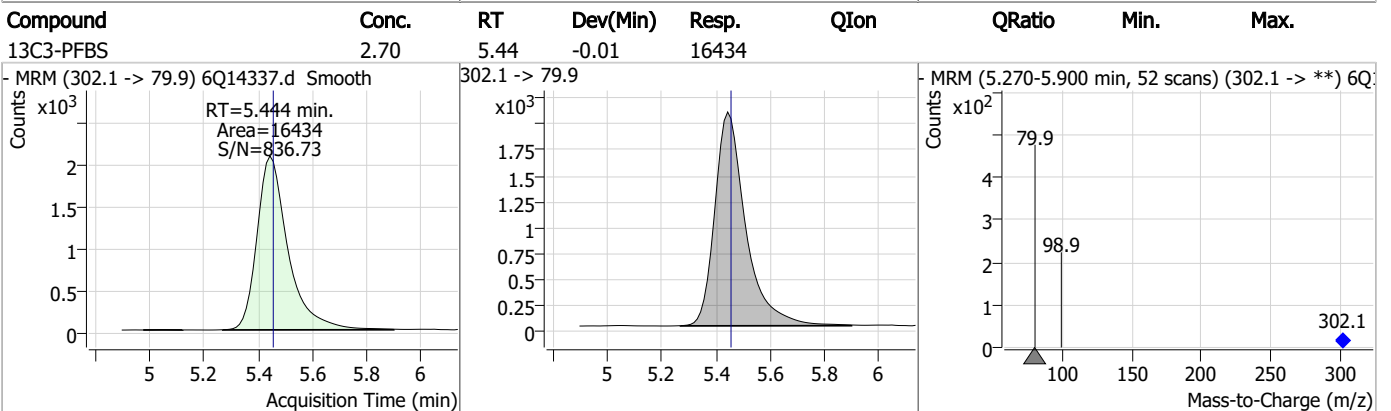
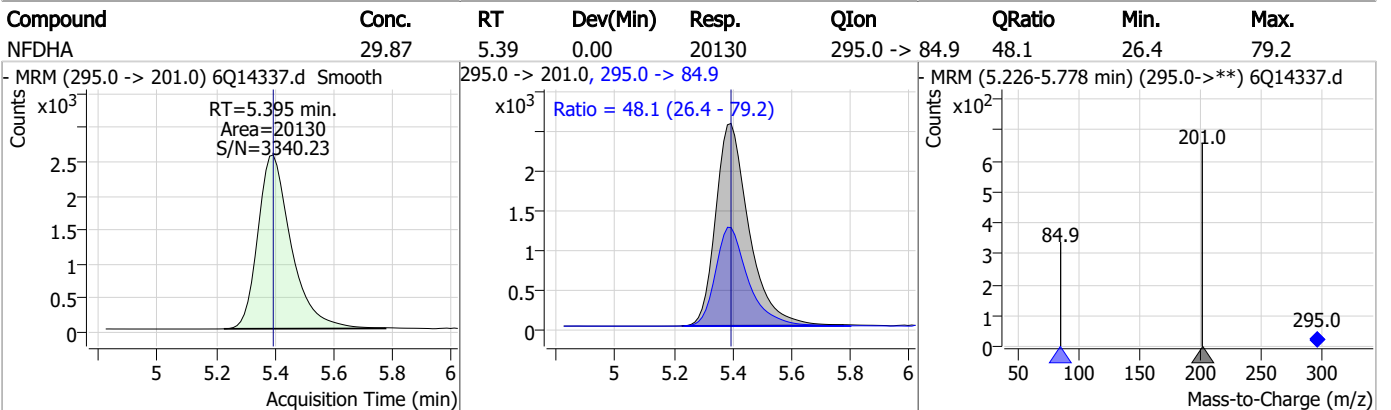
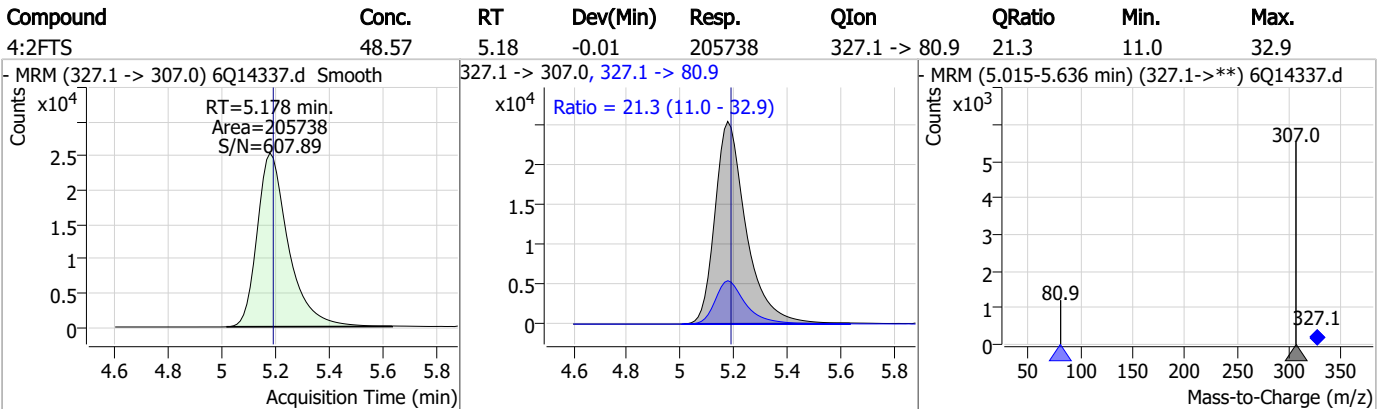
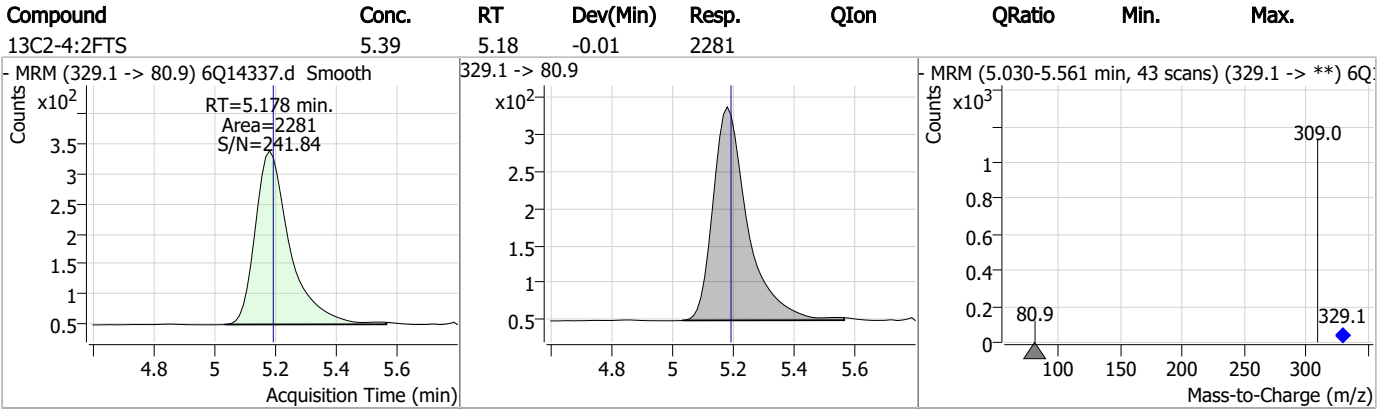
Perfluorinated Compounds by LC/MS/MS



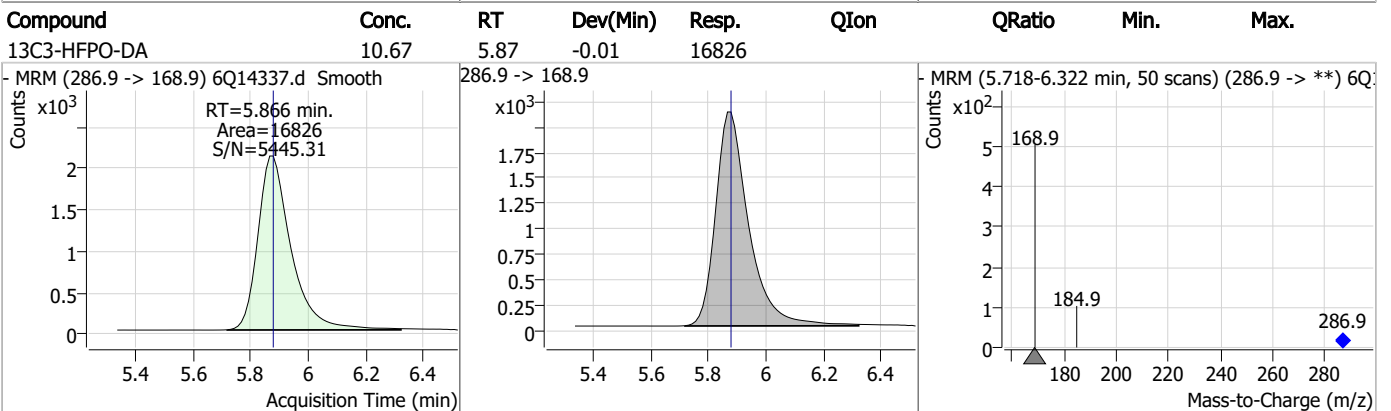
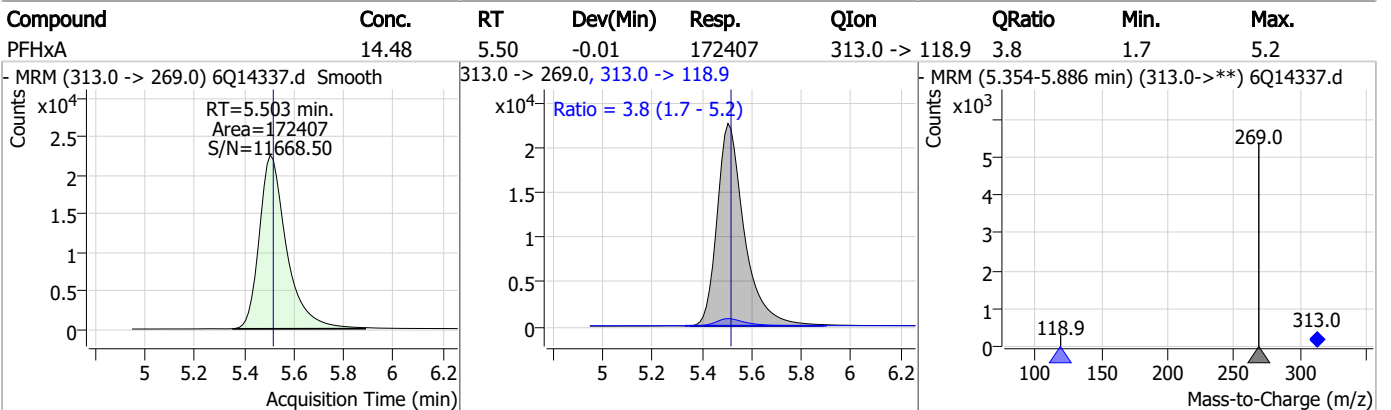
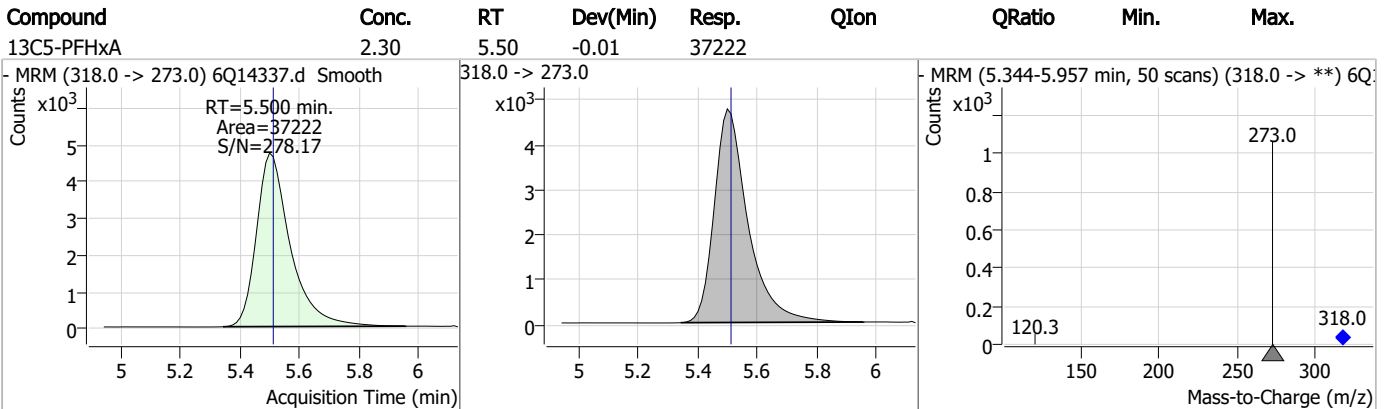
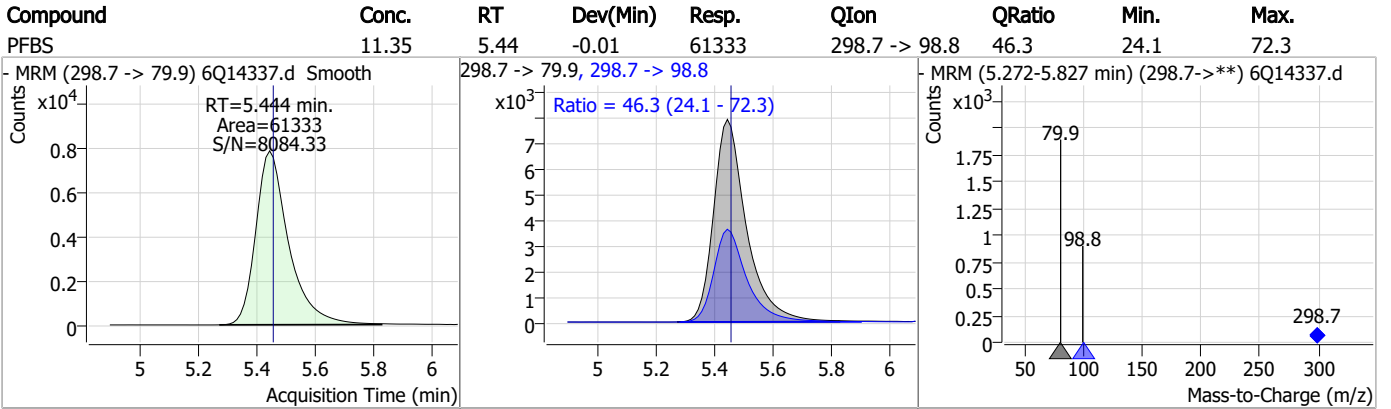
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

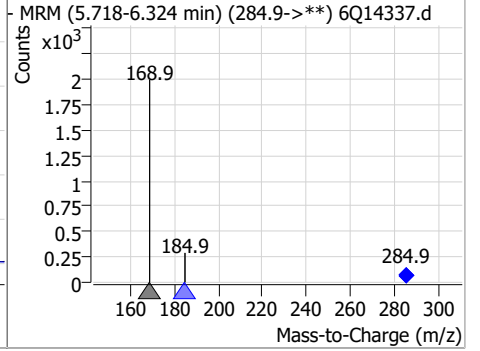
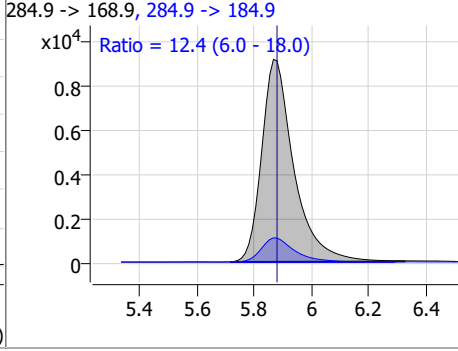
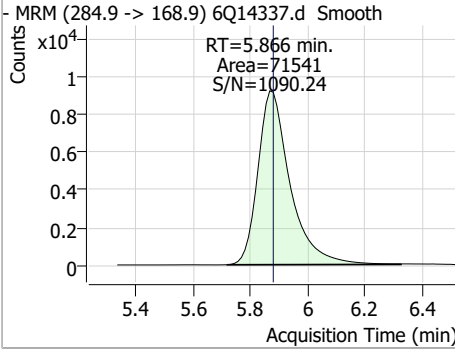


Perfluorinated Compounds by LC/MS/MS

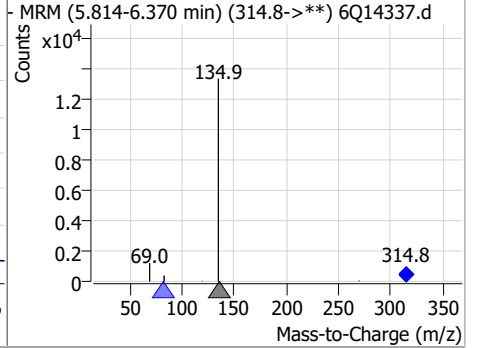
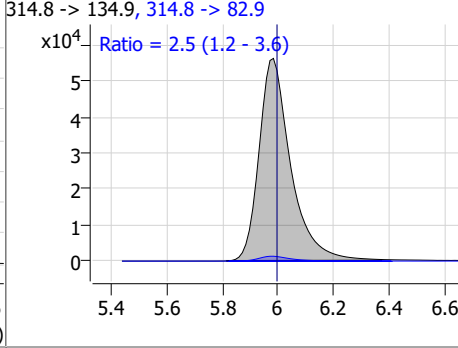
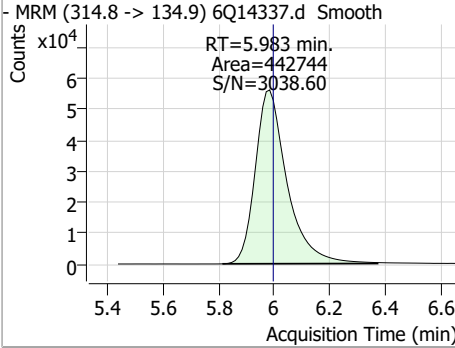


Perfluorinated Compounds by LC/MS/MS

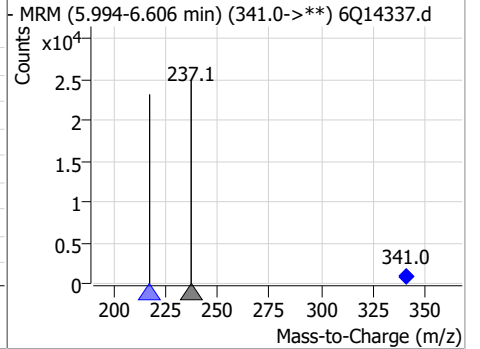
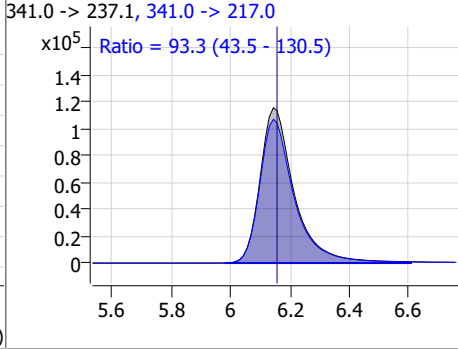
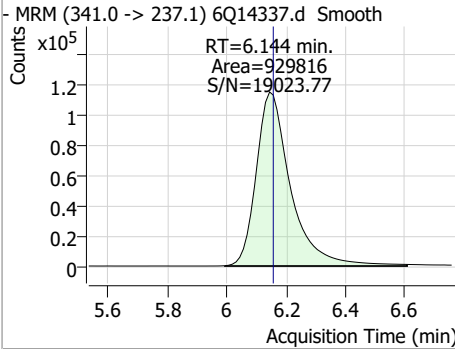
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	53.34	5.87	-0.01	71541	284.9 -> 184.9	12.4	6.0	18.0



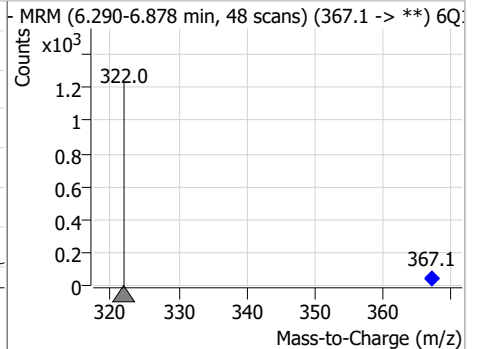
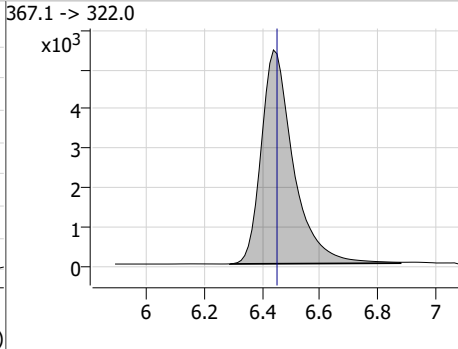
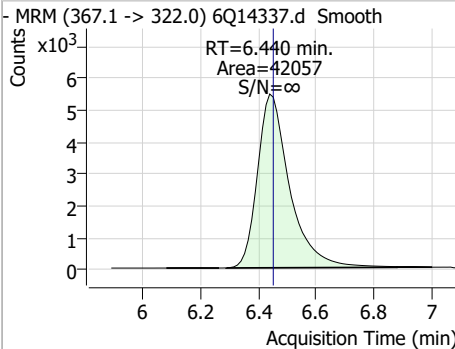
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	26.21	5.98	-0.01	442744	314.8 -> 82.9	2.5	1.2	3.6



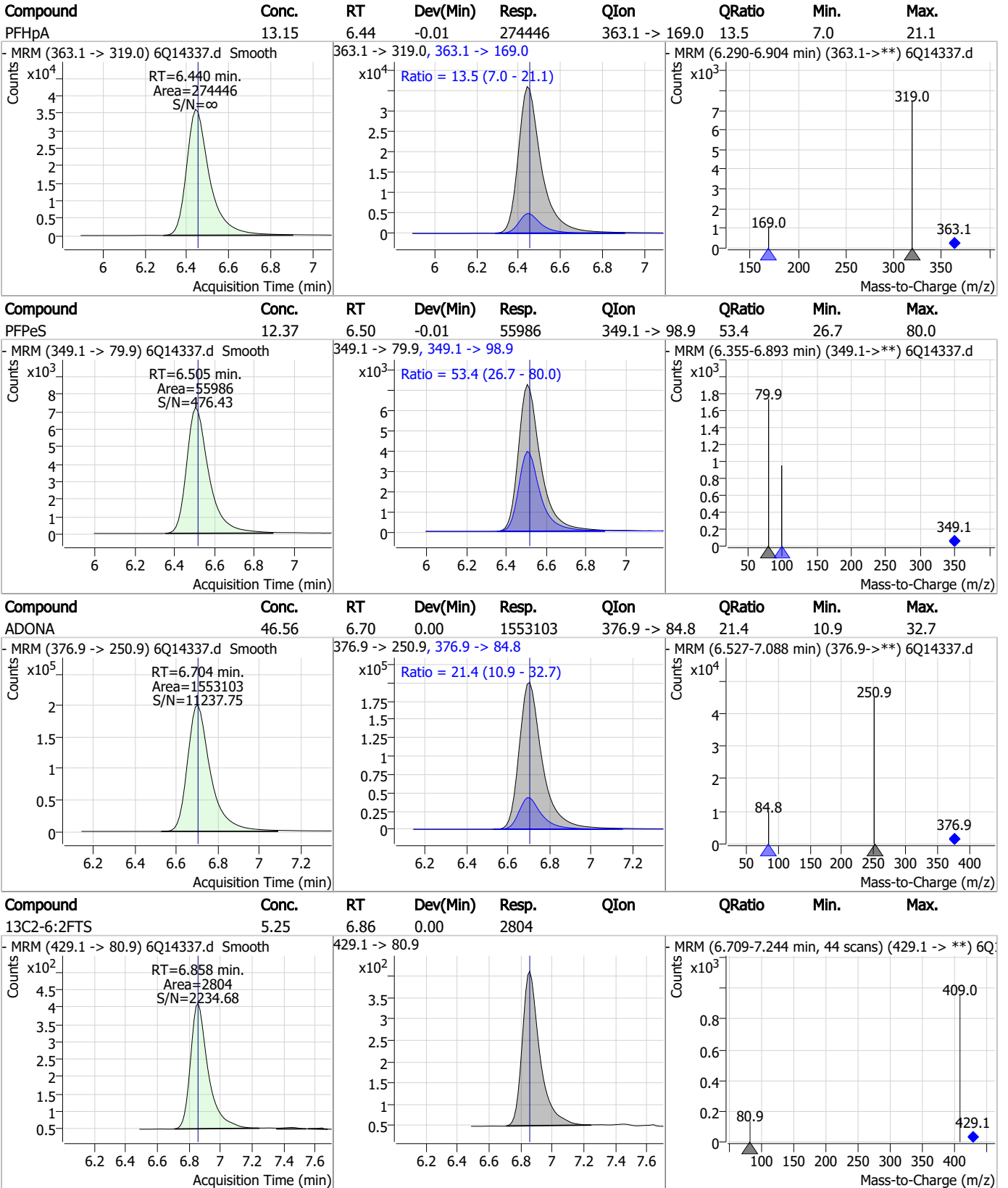
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	341.62	6.14	-0.01	929816	341.0 -> 217.0	93.3	43.5	130.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.44	-0.01	42057	367.1 -> 322.0	-	-	-



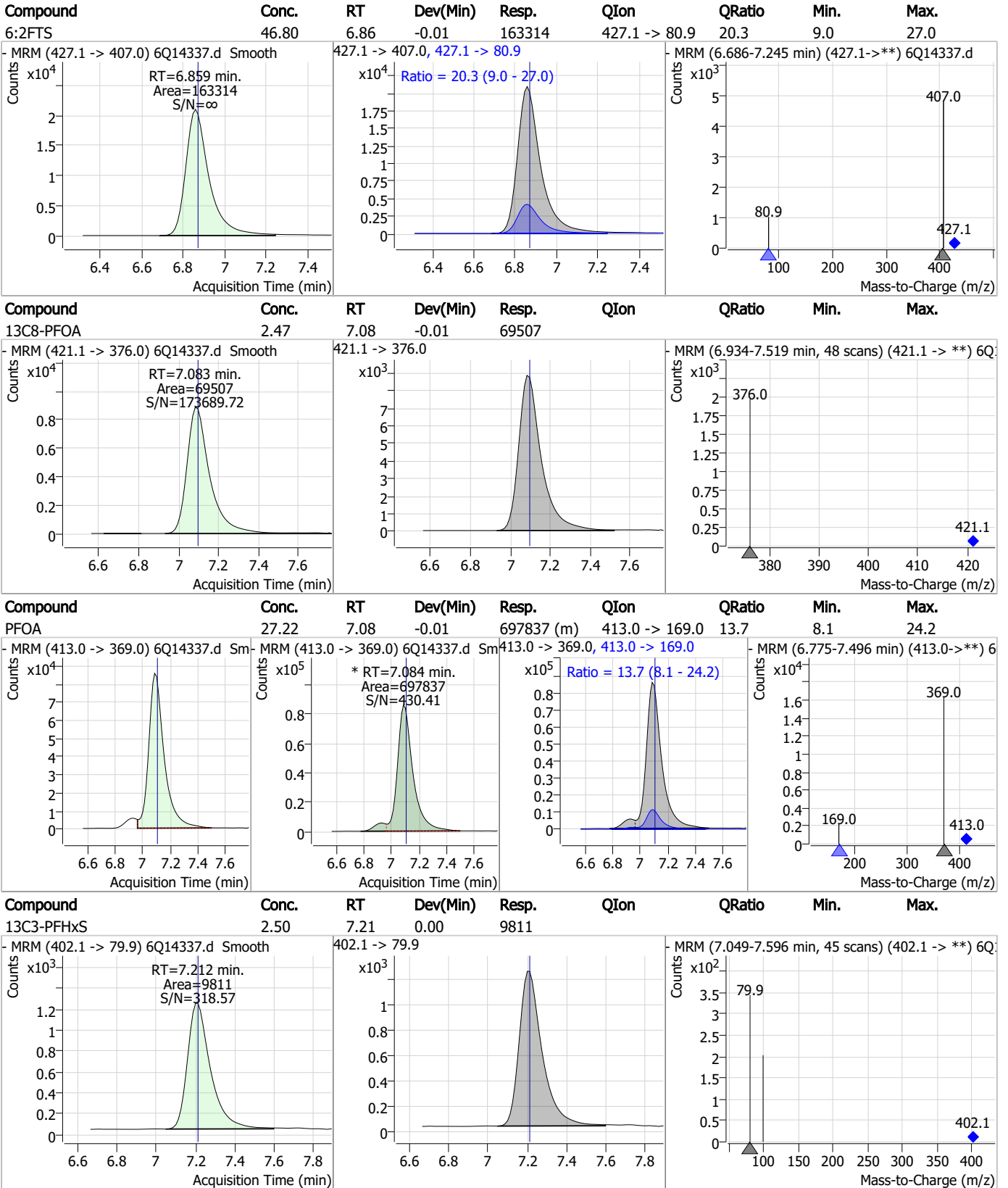
Perfluorinated Compounds by LC/MS/MS



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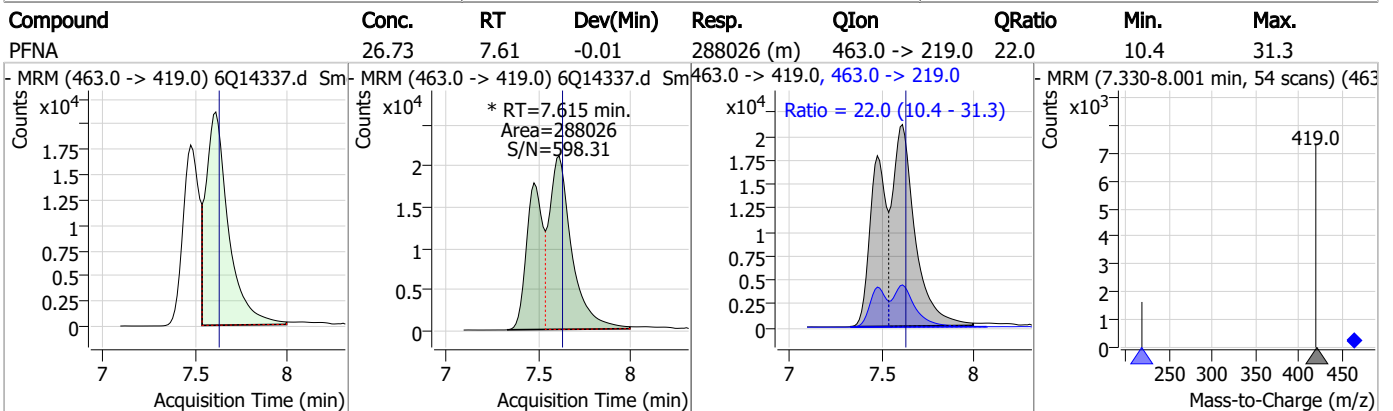
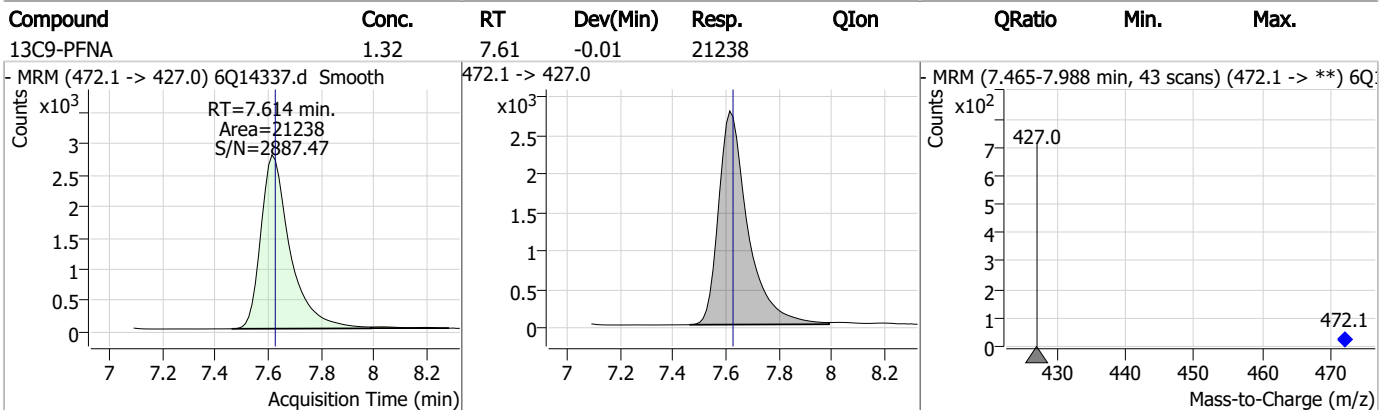
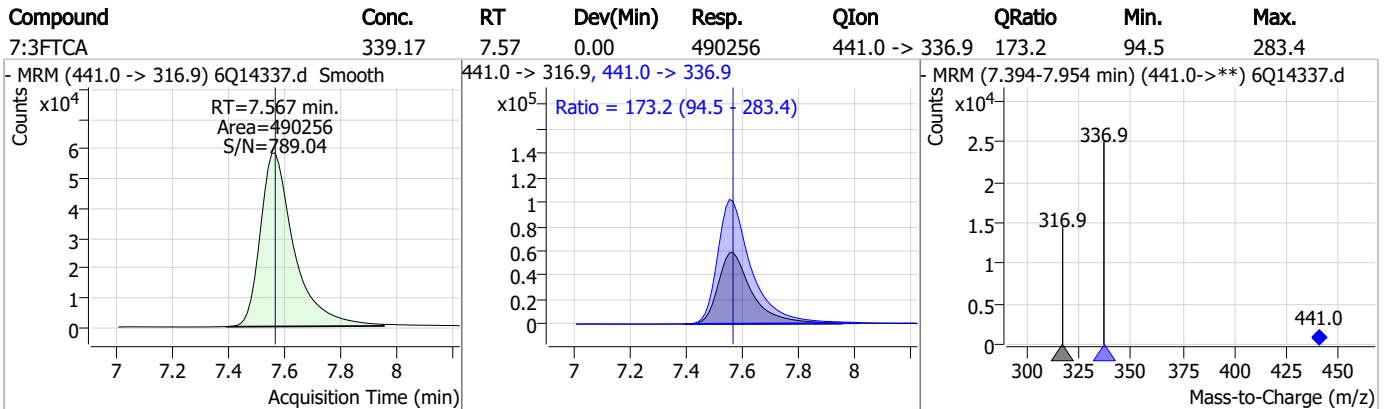
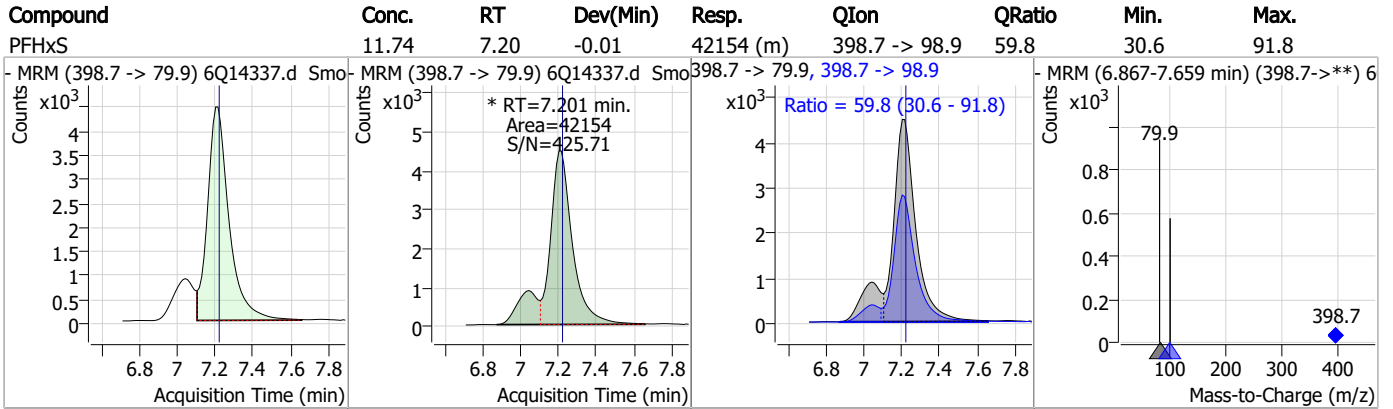
Perfluorinated Compounds by LC/MS/MS



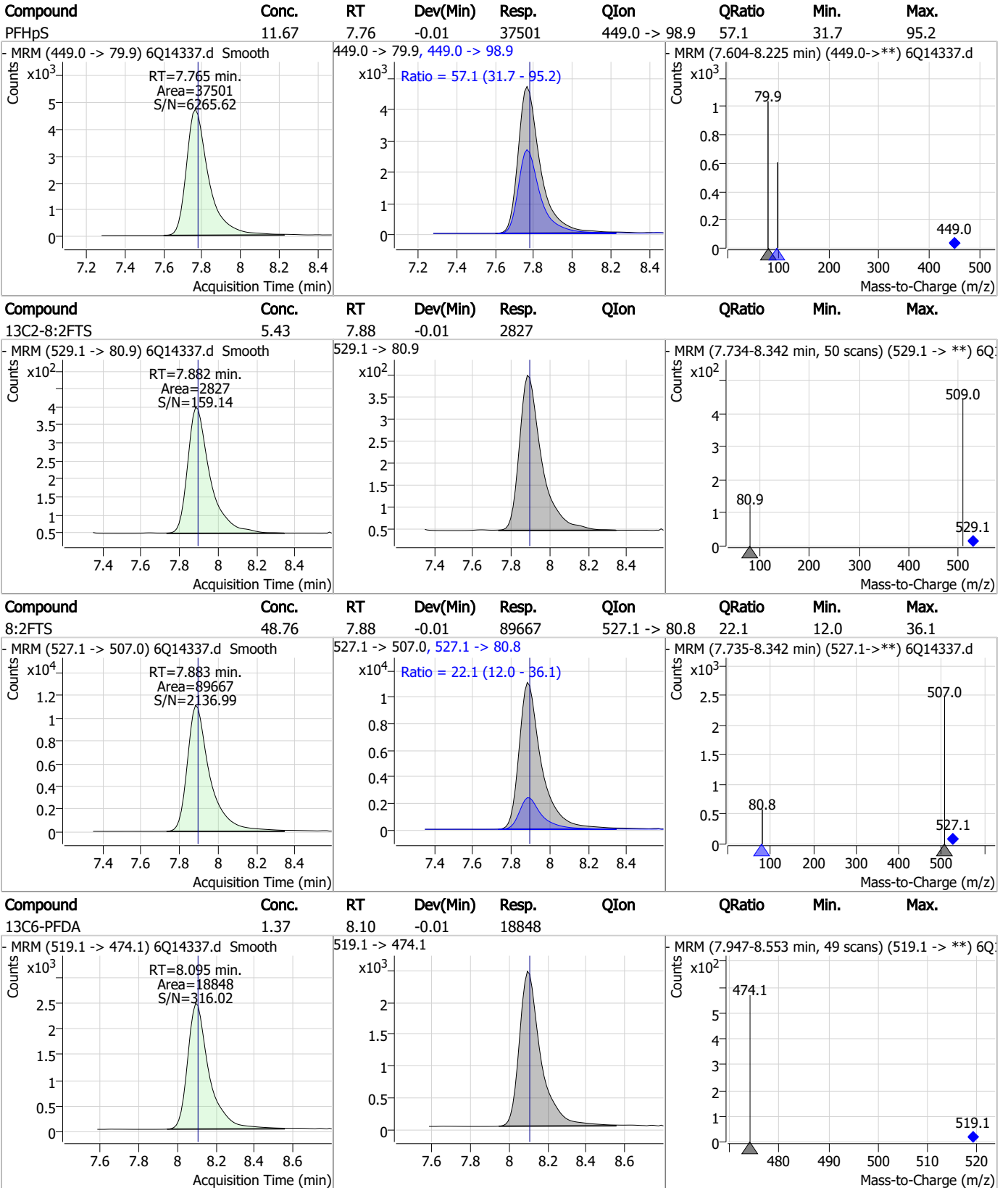
7.6.4

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Perfluorinated Compounds by LC/MS/MS



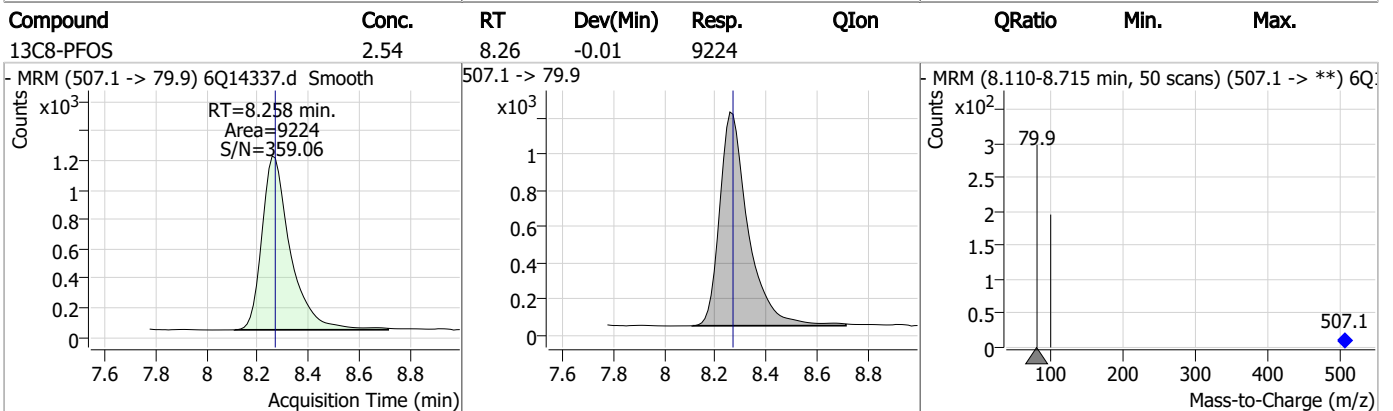
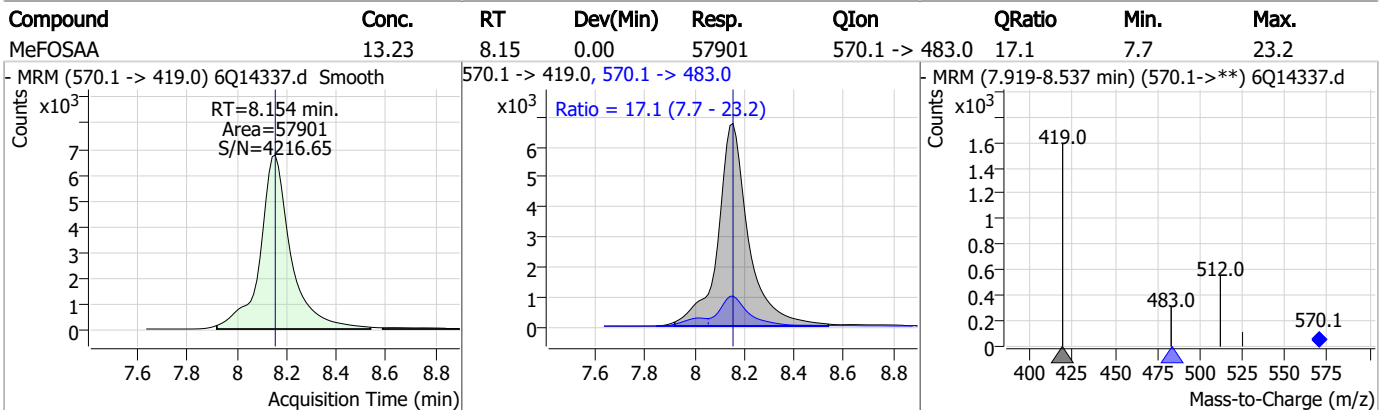
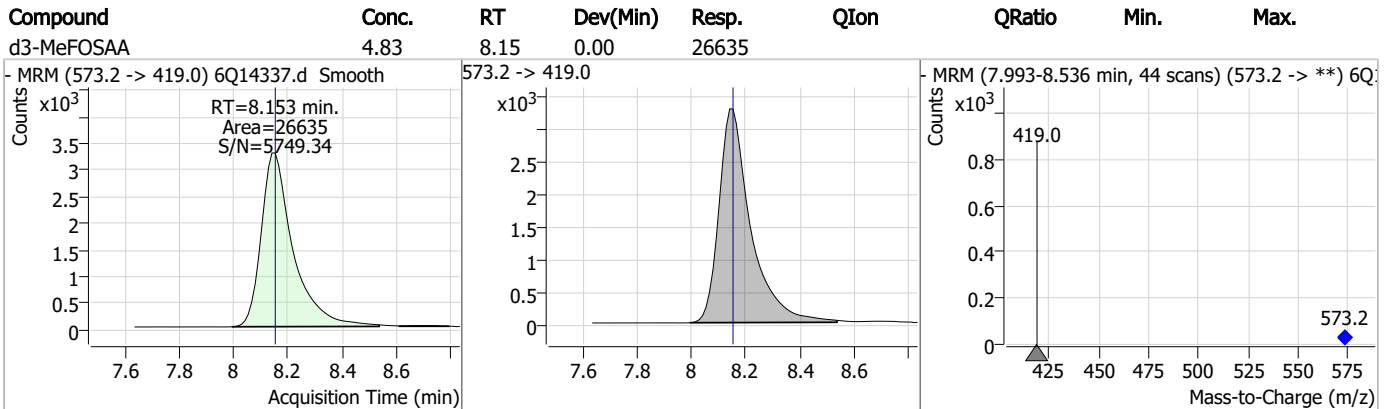
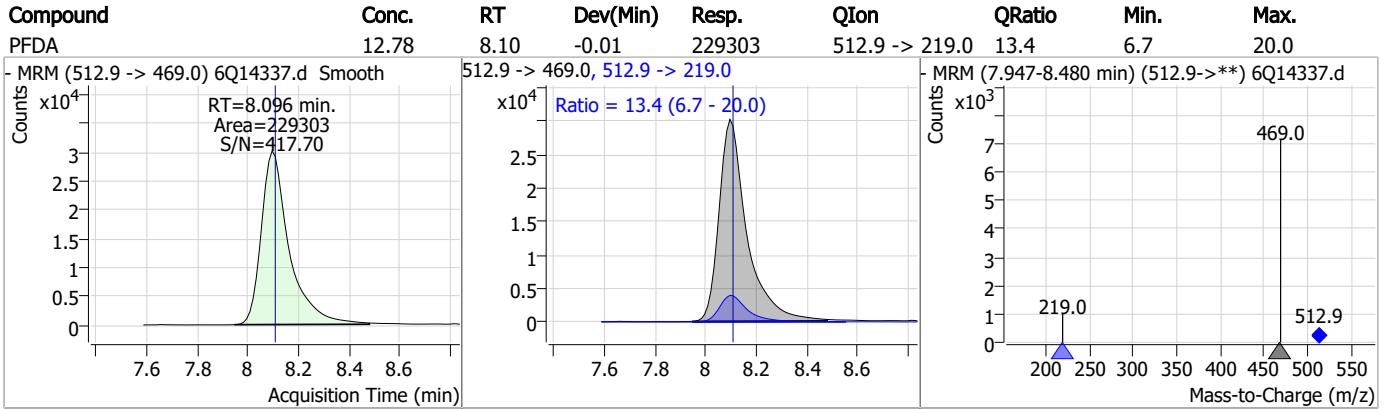
Perfluorinated Compounds by LC/MS/MS



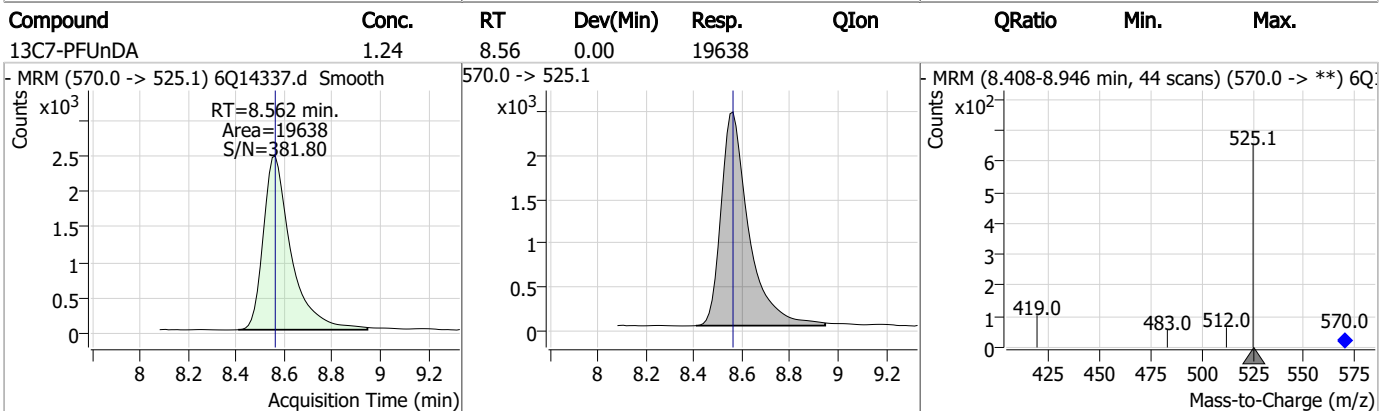
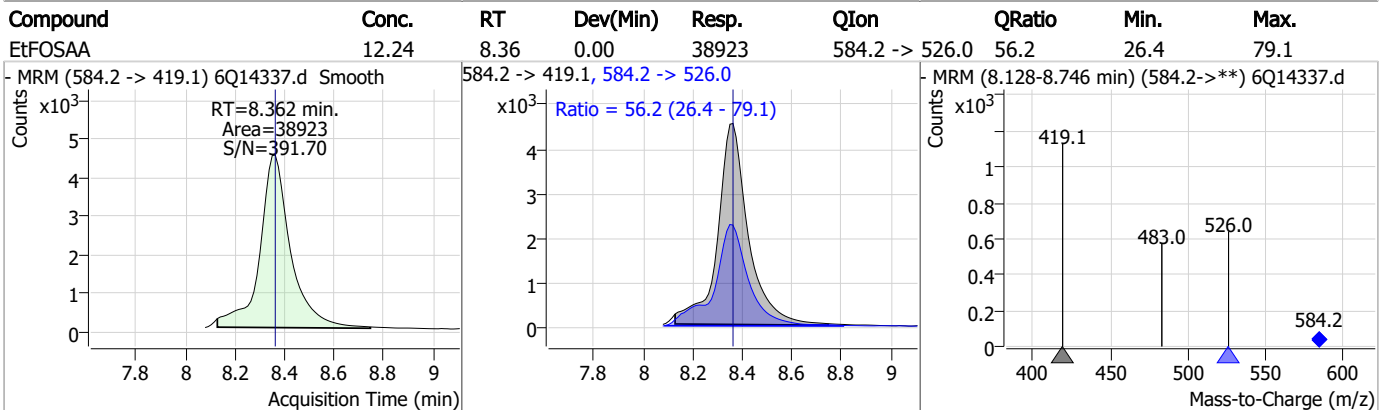
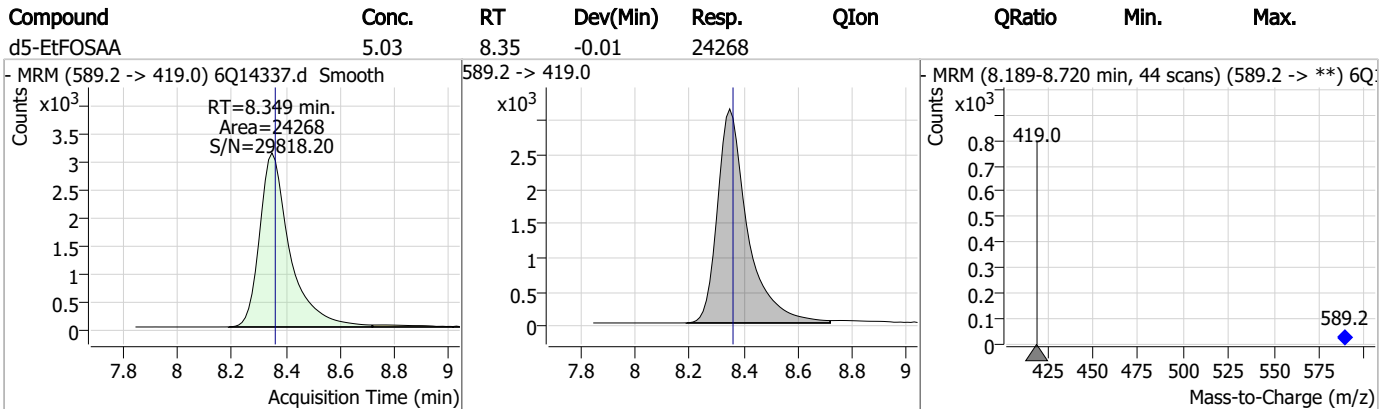
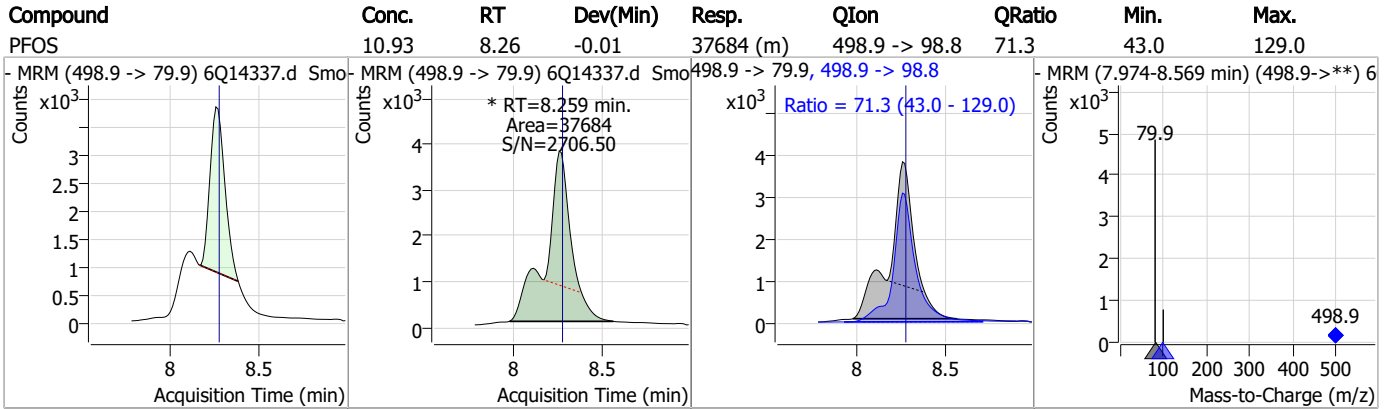
7.6.4

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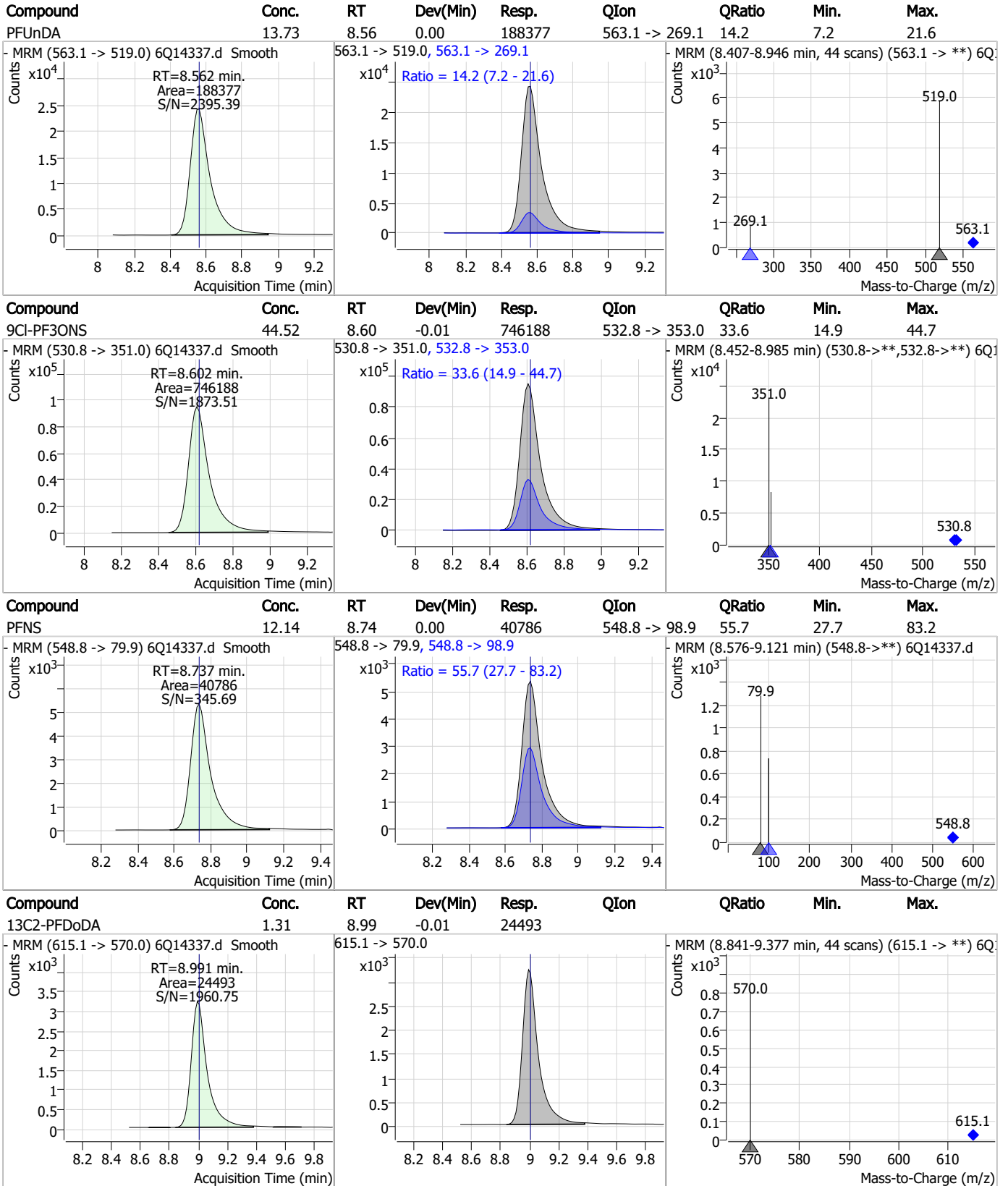
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



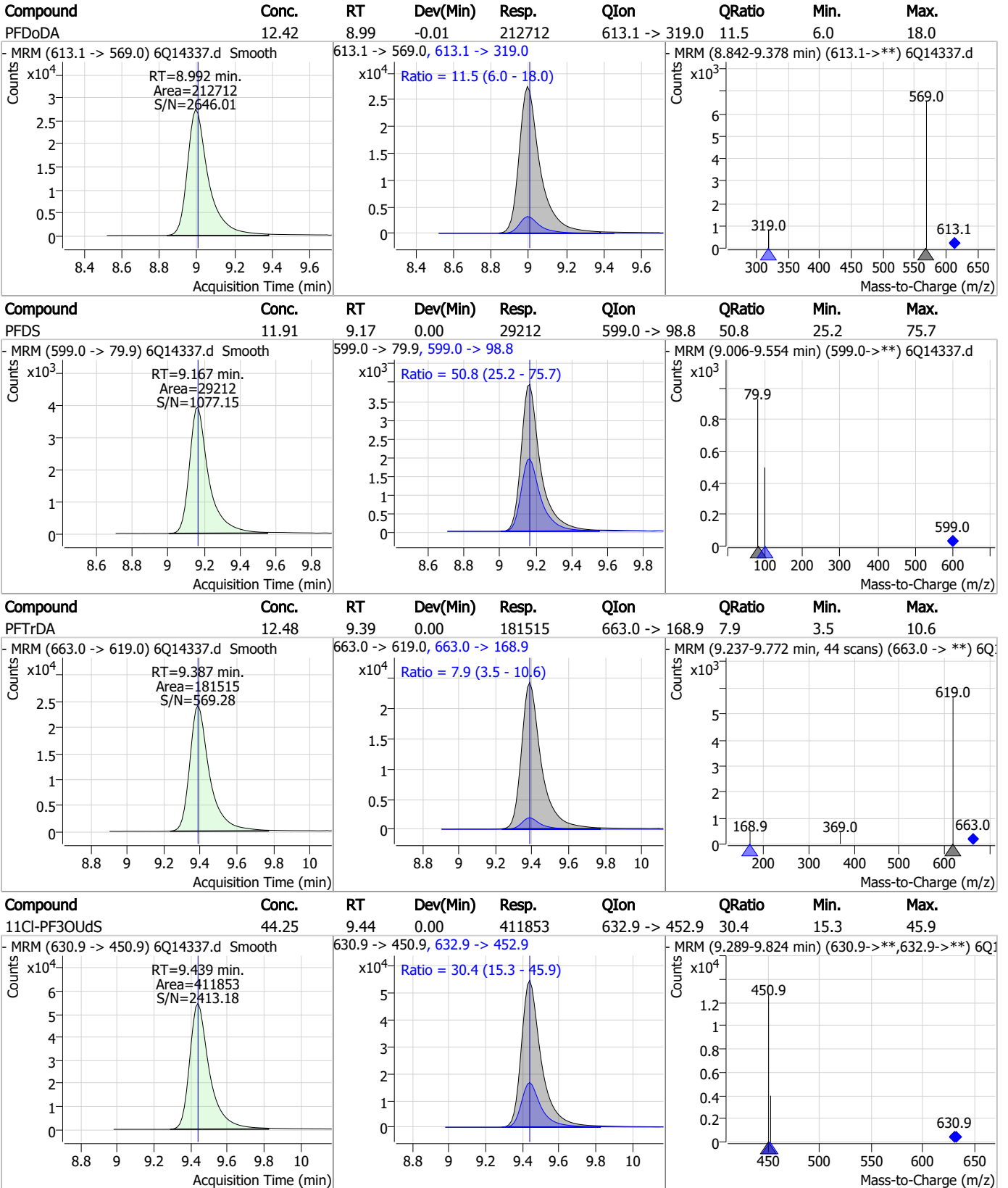
Perfluorinated Compounds by LC/MS/MS



7.6.4

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Perfluorinated Compounds by LC/MS/MS

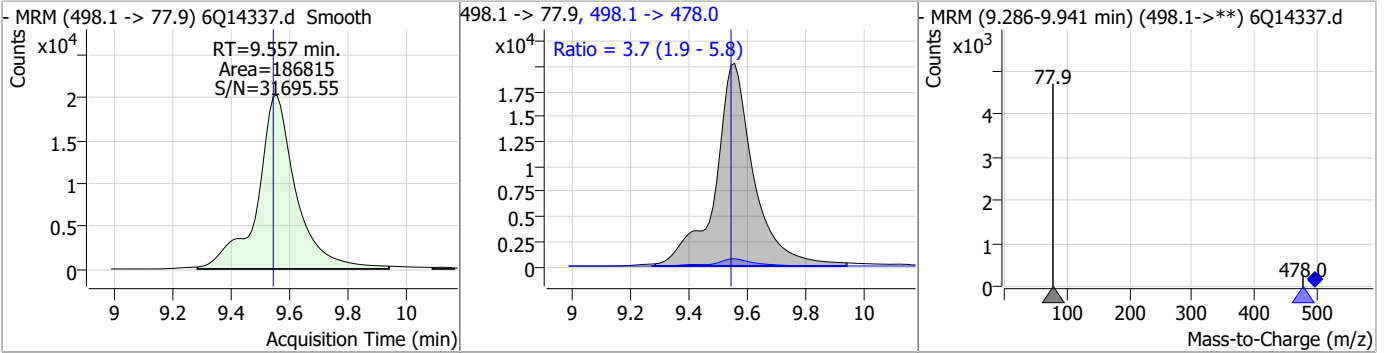


7.6.4

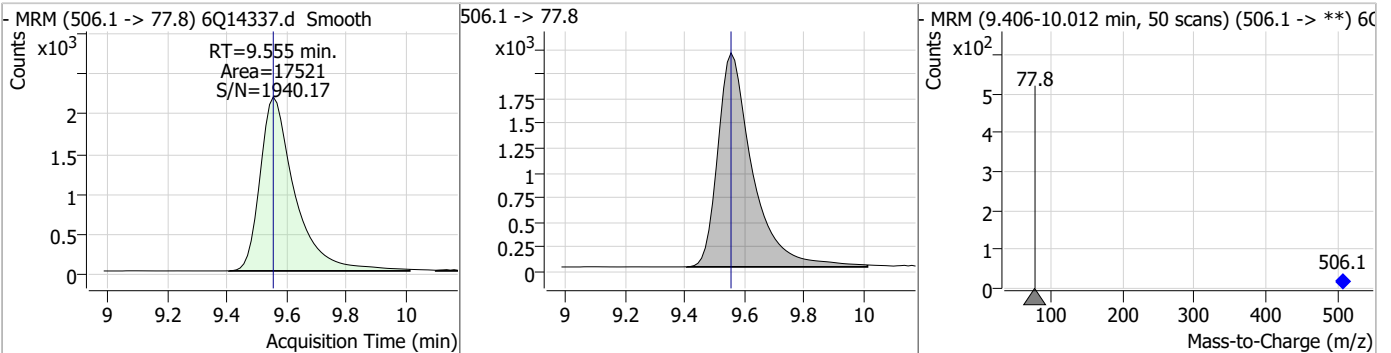
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Perfluorinated Compounds by LC/MS/MS

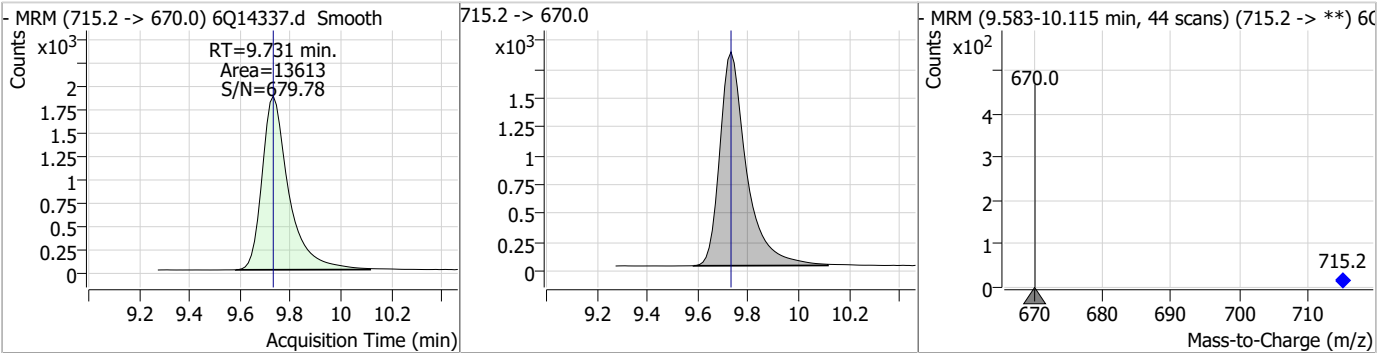
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	31.44	9.56	0.01	186815	498.1 -> 478.0	3.7	1.9	5.8



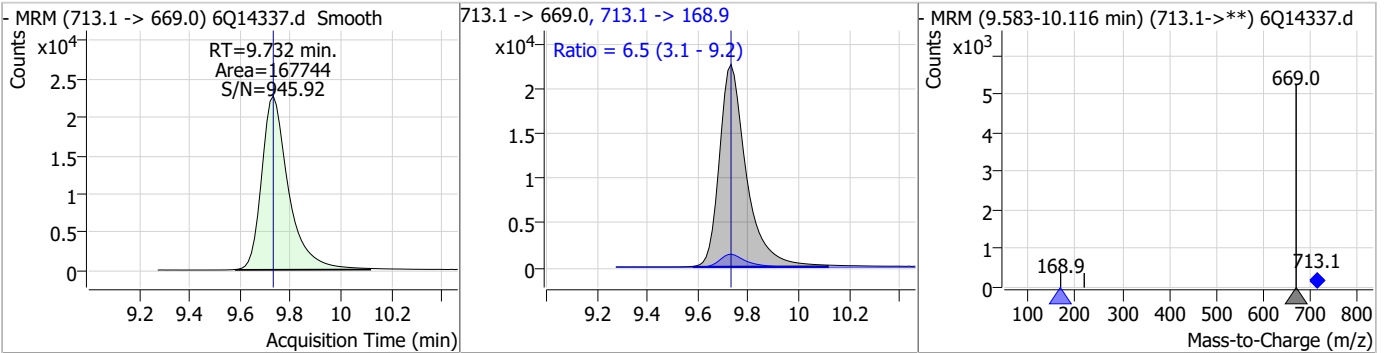
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.47	9.55	0.00	17521				



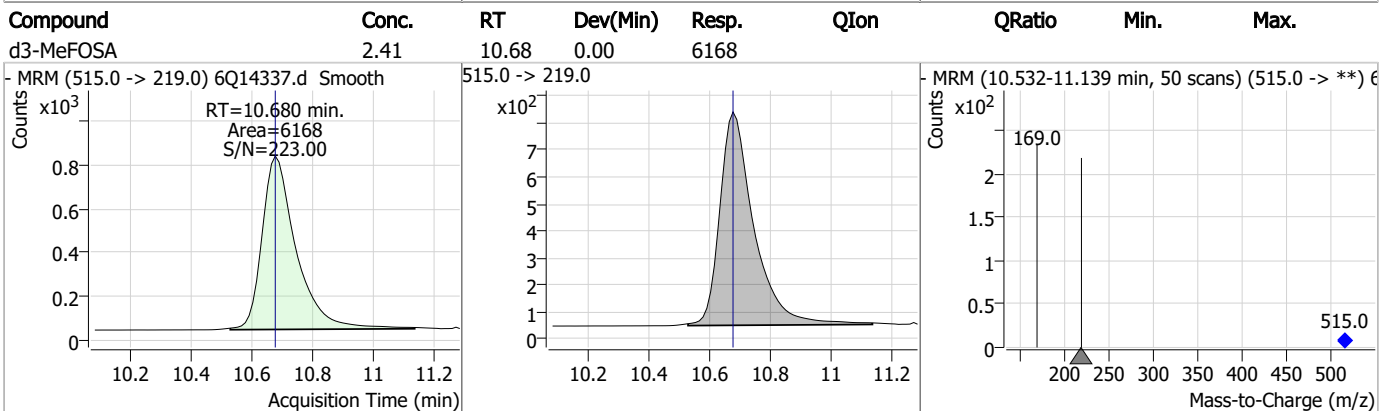
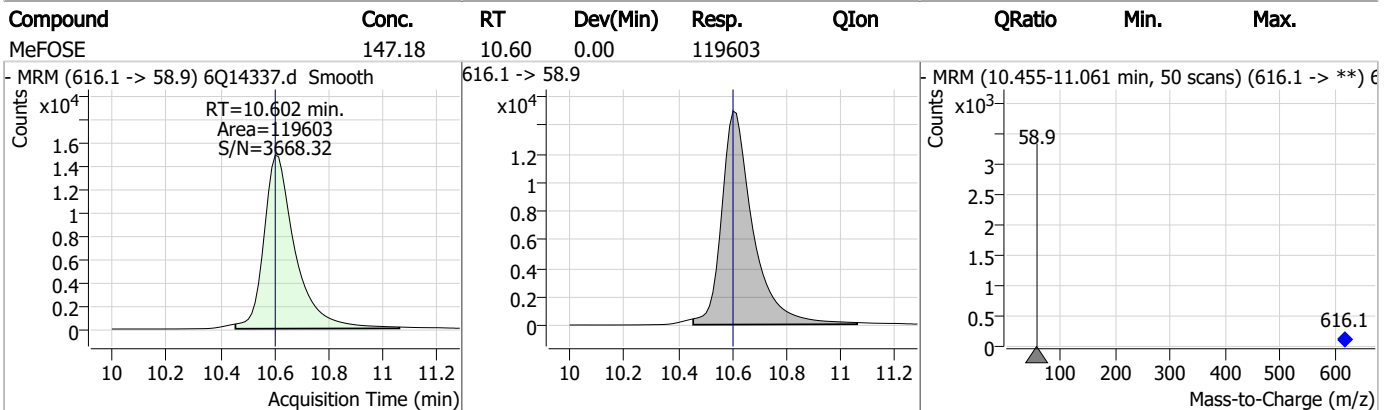
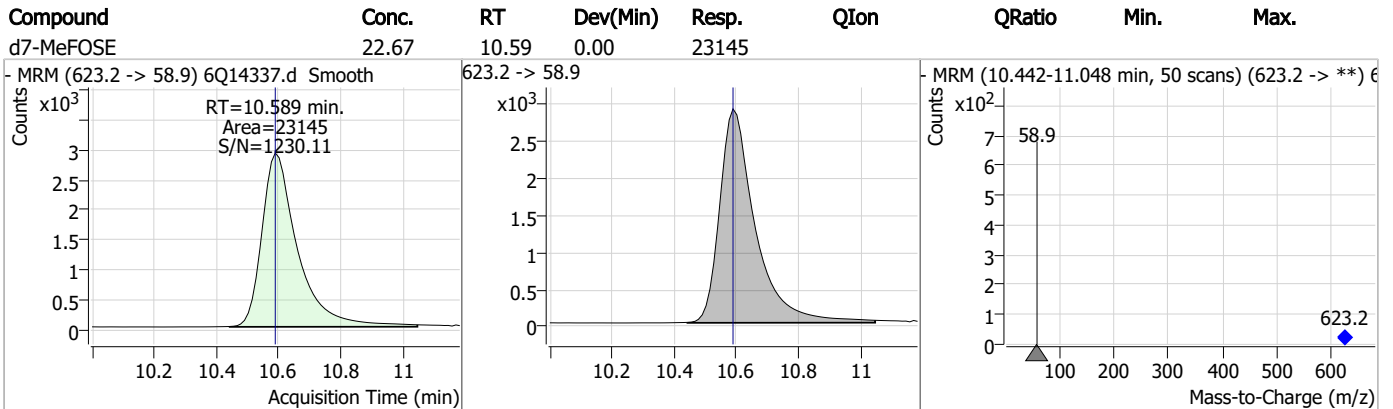
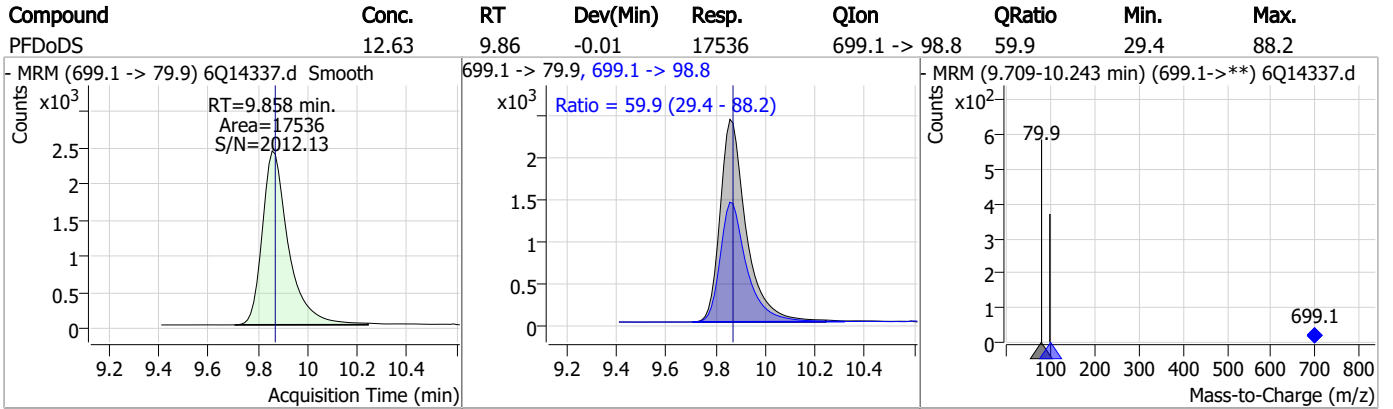
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.73	0.00	13613				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.16	9.73	0.00	167744	713.1 -> 168.9	6.5	3.1	9.2

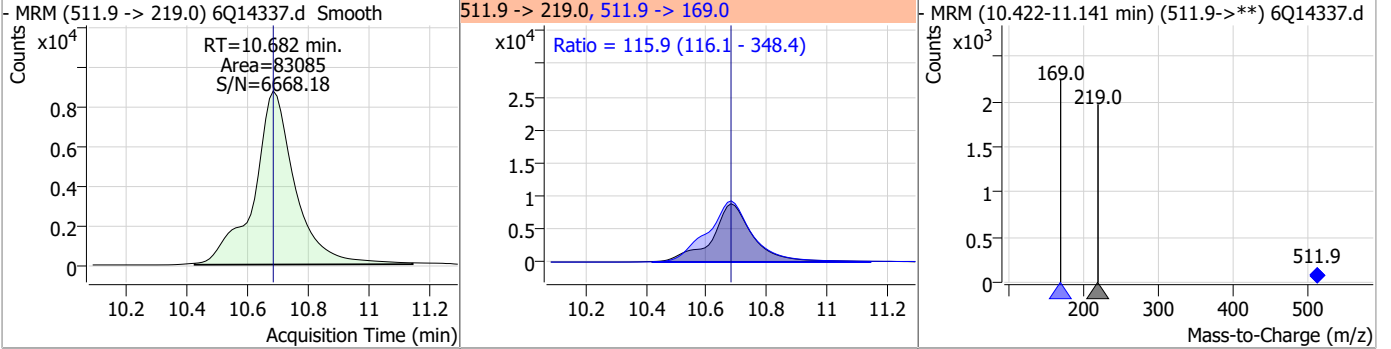


Perfluorinated Compounds by LC/MS/MS

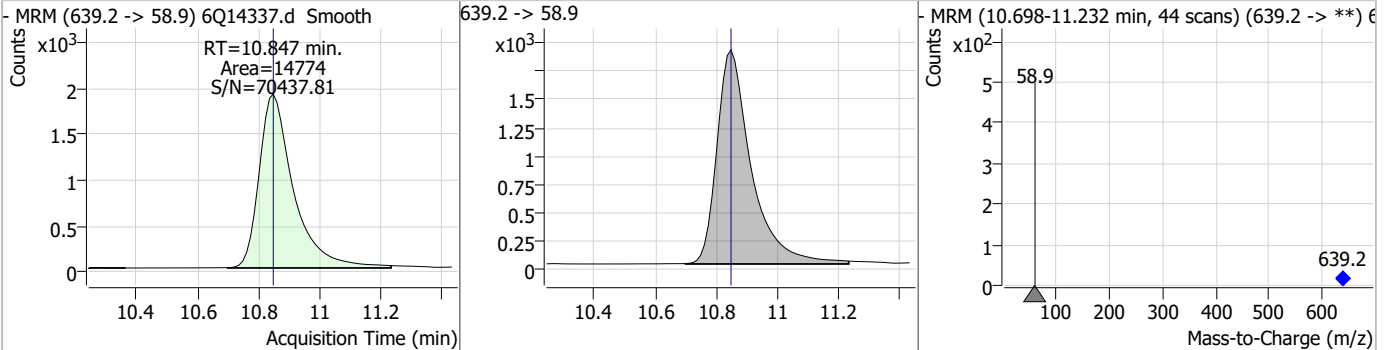


Perfluorinated Compounds by LC/MS/MS

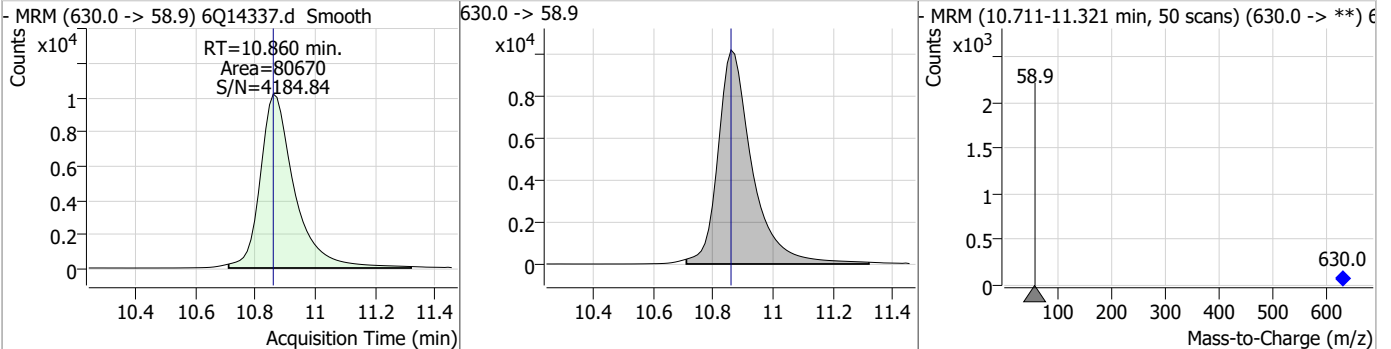
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	31.59	10.68	0.00	83085	511.9 -> 169.0	115.9	116.1	348.4



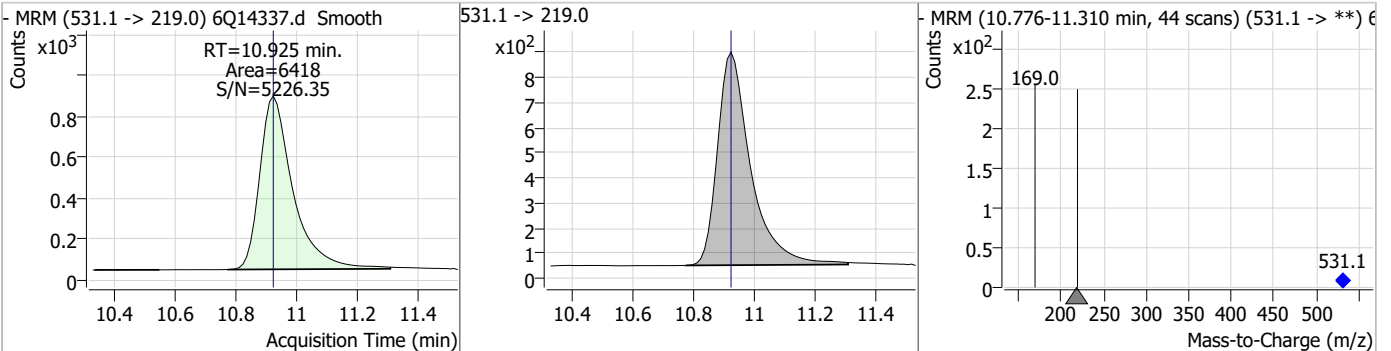
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.20	10.85	0.00	14774				



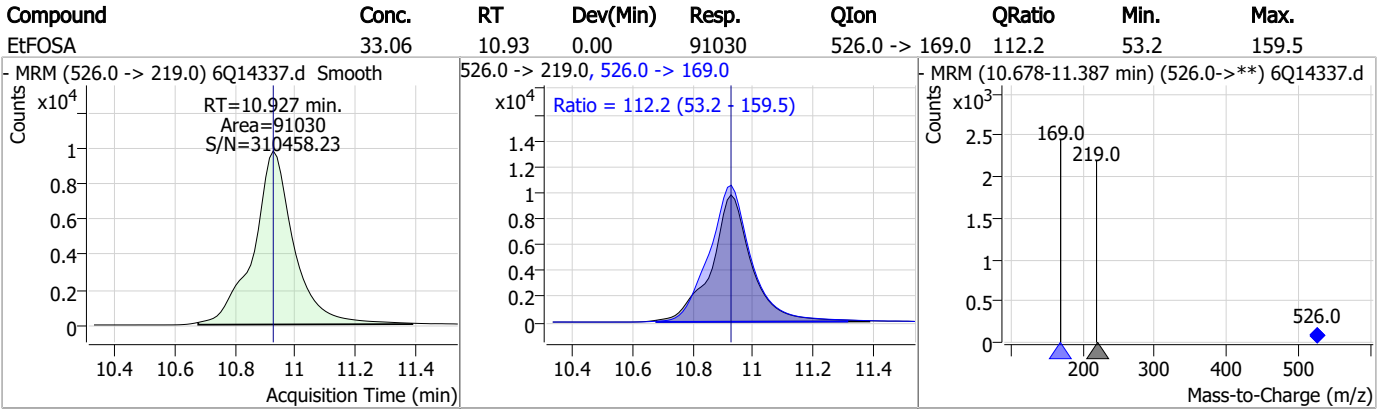
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	151.53	10.86	0.00	80670				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.28	10.92	0.00	6418				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q218-RT Method: EPA DRAFT 1633
Lab FileID: 6Q14337.D Analyst approved: 02/27/23 11:07 Martha Valls
Injection Time: 02/24/23 20:28 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.08	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.20	Split peak
Perfluorononanoic acid	375-95-1		7.62	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.26	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 20 February 2023 09:25:09
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.tune.xml
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.89E+0 [R] (Torr); 2.91E-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

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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	0.75	0.05	Pass	93624
302.00	301.97	-0.03	Pass	0.70	0.72	0.02	Pass	528368
601.98	601.94	-0.04	Pass	0.70	0.68	-0.02	Pass	2663582
1033.99	1033.91	-0.08	Pass	0.70	0.75	0.05	Pass	563241
1633.95	1633.93	-0.02	Pass	0.70	0.82	0.12	Pass	302659
2233.91	2233.88	-0.03	Pass	0.70	0.69	-0.01	Pass	74426

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.04	0.04	Pass	0.70	0.63	-0.07	Pass	62842
112.99	112.98	-0.01	Pass	0.70	0.71	0.01	Pass	116837
302.00	302.02	0.02	Pass	0.70	0.69	-0.01	Pass	404839
601.98	601.92	-0.06	Pass	0.70	0.76	0.06	Pass	1506564
1033.99	1033.98	-0.01	Pass	0.70	0.71	0.01	Pass	1124035
1633.95	1633.94	-0.01	Pass	0.70	0.76	0.06	Pass	718272
2233.91	2233.83	-0.08	Pass	0.70	0.73	0.03	Pass	170492

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	118683
302.00	302.01	0.01	Pass	1.20	1.49	0.29	Pass	641203
601.98	601.89	-0.09	Pass	1.20	1.53	0.33	Pass	3670015
1033.99	1033.83	-0.16	Pass	1.20	1.43	0.23	Pass	972447
1633.95	1633.84	-0.11	Pass	1.20	1.43	0.23	Pass	618533
2233.91	2233.87	-0.04	Pass	1.20	1.31	0.11	Pass	128900

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.02	0.02	Pass	1.20	1.14	-0.06	Pass	90393
112.99	112.97	-0.02	Pass	1.20	1.26	0.06	Pass	154090
302.00	302.01	0.01	Pass	1.20	1.25	0.05	Pass	548550
601.98	601.99	0.01	Pass	1.20	1.39	0.19	Pass	3220716
1033.99	1033.98	-0.01	Pass	1.20	1.33	0.13	Pass	2416225
1633.95	1633.85	-0.10	Pass	1.20	1.48	0.28	Pass	1818503
2233.91	2233.86	-0.05	Pass	1.20	1.32	0.12	Pass	457699

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.93	-0.06	Pass	2.50	2.80	0.30	Pass	139859
302.00	301.83	-0.17	Pass	2.50	2.88	0.38	Pass	704262
601.98	601.70	-0.28	Pass	2.50	2.85	0.35	Pass	5010166
1033.99	1033.81	-0.18	Pass	2.50	2.74	0.24	Pass	2134395
1633.95	1633.78	-0.17	Pass	2.50	2.48	-0.02	Pass	1322120
2233.91	2233.59	-0.32	Pass	2.50	2.41	-0.09	Pass	417641

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	2.50	2.50	0.00	Pass	106939
112.99	113.01	0.02	Pass	2.50	2.49	-0.01	Pass	235073
302.00	301.99	-0.01	Pass	2.50	2.52	0.02	Pass	739899
601.98	601.99	0.01	Pass	2.50	2.76	0.26	Pass	4776815
1033.99	1033.91	-0.08	Pass	2.50	2.88	0.38	Pass	4687396
1633.95	1633.98	0.03	Pass	2.50	2.81	0.31	Pass	3580732
2233.91	2233.76	-0.15	Pass	2.50	2.59	0.09	Pass	1058847

7.7.1
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14205.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 1:39:42 PM
 Sample Name : ic217-1
 Vial : P1-A2
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	95143	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	48262	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	42858	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	43945	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	72488	2.50 µg/L	0.000
M9-PFNA	7.614	472.1 -> 427.0	23690	1.25 µg/L	-0.012
M6-PFDA	8.108	519.1 -> 474.1	18775	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	22810	1.25 µg/L	0.000
M2-PFDoDA	9.004	615.1 -> 570.0	26041	1.25 µg/L	0.000
M2-PFTeDA	9.743	715.2 -> 670.0	14880	1.25 µg/L	0.012
M8-FOSA	9.555	506.1 -> 77.8	18132	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	15879	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	10268	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8647	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2354	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	3045	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2635	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	29230	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	15901	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	24211	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	26302	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	16906	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6971	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6352	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10502	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	41951	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	7323	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	90084	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	27919	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	25982	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	42174	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2354	5.37 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C2-6:2FTS	6.871	429.1 -> 80.9	3045	5.51 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.1%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2635	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C2-PFDoDA	9.004	615.1 -> 570.0	26041	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C2-PFTeDA	9.743	715.2 -> 670.0	14880	1.16 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C3-PFBS	5.456	302.1 -> 79.9	15879	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C3-PFHxS	7.212	402.1 -> 79.9	10268	2.53 µg/L	0.000

7.7.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C4-PFBA	2.938	216.8 -> 171.9	95143	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.452	367.1 -> 322.0	43945	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C5-PFHxA	5.513	318.0 -> 273.0	42858	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C5-PFPeA	4.337	268.3 -> 223.0	48262	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C6-PFDA	8.108	519.1 -> 474.1	18775	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.2%	
13C7-PFUnDA	8.562	570.0 -> 525.1	22810	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C8-FOSA	9.555	506.1 -> 77.8	18132	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C8-PFOA	7.097	421.1 -> 376.0	72488	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C8-PFOS	8.270	507.1 -> 79.9	8647	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C9-PFNA	7.614	472.1 -> 427.0	23690	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.6%	
d3-MeFOSAA	8.153	573.2 -> 419.0	29230	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	15901	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSA	10.680	515.0 -> 219.0	6352	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
d5-EtFOSAA	8.349	589.2 -> 419.0	24211	5.05 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d7-MeFOSE	10.589	623.2 -> 58.9	26302	25.95 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d9-EtFOSE	10.847	639.2 -> 58.9	16906	25.58 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
d5-EtFOSA	10.925	531.1 -> 219.0	6971	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	2755	0.63 µg/L	96
		327.1 -> 80.9	553		
6:2FTS	6.859	427.1 -> 407.0	2579	0.68 µg/L	95
		427.1 -> 80.9	520		
8:2FTS	7.896	527.1 -> 507.0	1258	0.73 µg/L	95
		527.1 -> 80.8	332		
EtFOSAA	8.362	584.2 -> 419.1	595	0.19 µg/L	81
		584.2 -> 526.0	393		
FOSA	9.557	498.1 -> 77.9	1039	0.17 µg/L	96
		498.1 -> 478.0	25		
MeFOSAA	8.154	570.1 -> 419.0	920	0.19 µg/L	98
		570.1 -> 483.0	151		
PFBA	2.932	212.8 -> 168.9	1366	0.71 µg/L	100
PFBS	5.444	298.7 -> 79.9	808	0.15 µg/L	91
		298.7 -> 98.8	441		
PFDA	8.108	512.9 -> 469.0	2642	0.15 µg/L	# 80
		512.9 -> 219.0	559		
PFDODA	9.005	613.1 -> 569.0	4366	0.24 µg/L	90
		613.1 -> 319.0	362		
PFDS	9.167	599.0 -> 79.9	494	0.21 µg/L	m 95

7.7.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.453	599.0 -> 98.8	265	0.18	µg/L	99
		363.1 -> 319.0	3883			
PFHpS	7.765	363.1 -> 169.0	567	0.17	µg/L	90
		449.0 -> 79.9	518			
PFHxA	5.516	449.0 -> 98.9	287	0.18	µg/L	#
		313.0 -> 269.0	2445			
PFHxS	7.213	313.0 -> 118.9	139	0.15	µg/L	m
		398.7 -> 79.9	571			
PFNA	7.627	398.7 -> 98.9	377	0.16	µg/L	99
		463.0 -> 419.0	1923			
PFNS	8.737	463.0 -> 219.0	415	0.19	µg/L	98
		548.8 -> 79.9	593			
PFOA	7.098	548.8 -> 98.9	336	0.19	µg/L	m
		413.0 -> 369.0	5160			
PFOS	8.271	413.0 -> 169.0	845	0.21	µg/L	m
		498.9 -> 79.9	672			
PFPeA	4.338	498.9 -> 98.8	450	0.36	µg/L	100
		263.0 -> 219.0	3080			
PFPeS	6.517	349.1 -> 79.9	848	0.18	µg/L	96
		349.1 -> 98.9	428			
PFTeDA	9.732	713.1 -> 669.0	2992	0.21	µg/L	98
		713.1 -> 168.9	166			
PFTrDA	9.387	663.0 -> 619.0	3089	0.20	µg/L	95
		663.0 -> 168.9	269			
PFUnDA	8.562	563.1 -> 519.0	2834	0.18	µg/L	99
		563.1 -> 269.1	400			
11Cl-PF3OUdS	9.439	630.9 -> 450.9	6082	0.69	µg/L	100
		632.9 -> 452.9	1855			
9Cl-PF3ONS	8.602	530.8 -> 351.0	10208	0.64	µg/L	96
		532.8 -> 353.0	3277			
ADONA	6.704	376.9 -> 250.9	22037	0.70	µg/L	99
		376.9 -> 84.8	4708			
HFPO-DA	5.879	284.9 -> 168.9	862	0.68	µg/L	92
		284.9 -> 184.9	77			
3:3FTCA	3.791	241.0 -> 177.0	418	0.93	µg/L	89
		241.0 -> 117.0	72			
5:3FTCA	6.144	341.0 -> 237.1	13586	4.34	µg/L	97
		341.0 -> 217.0	12166			
7:3FTCA	7.567	441.0 -> 316.9	7381	4.43	µg/L	98
		441.0 -> 336.9	14173			
EtFOSA	10.927	526.0 -> 219.0	526	0.18	µg/L	94
		526.0 -> 169.0	591			
EtFOSE	10.860	630.0 -> 58.9	1065	1.75	µg/L	100
		511.9 -> 219.0	515			
MeFOSA	10.682	511.9 -> 169.0	546	0.19	µg/L	#
		616.1 -> 58.9	1708			
MeFOSE	10.615	699.1 -> 79.9	251	1.85	µg/L	100
		699.1 -> 98.8	167			
PFDoDS	9.870	295.0 -> 201.0	229	0.19	µg/L	90
		295.0 -> 84.9	161			
NFDHA	5.395	279.0 -> 85.1	909	0.29	µg/L	75
		229.0 -> 84.9	824			
PFMBA	4.738	314.8 -> 134.9	5942	0.37	µg/L	100
PFMPA	3.488	314.8 -> 82.9	142	0.36	µg/L	100
PFEESA	5.996			0.31	µg/L	100

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

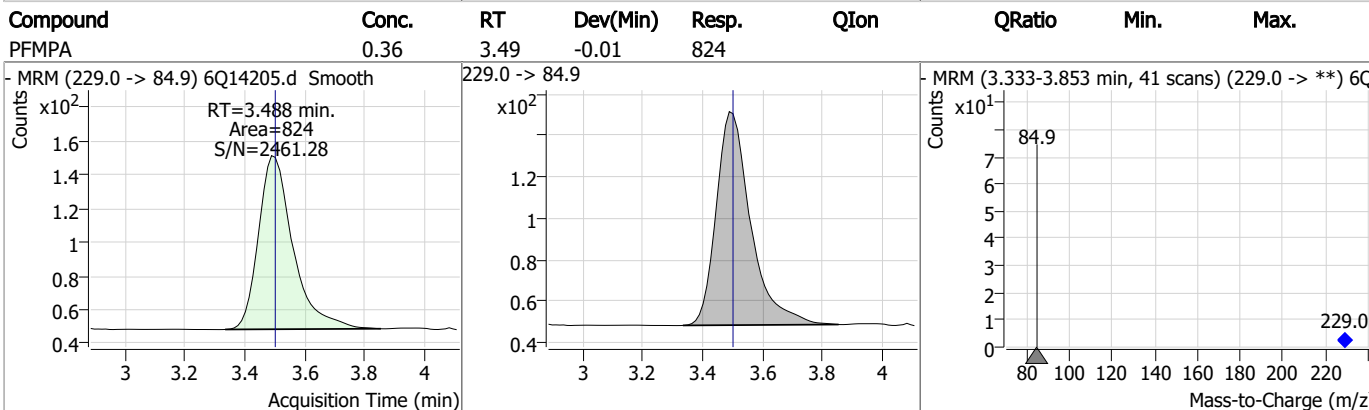
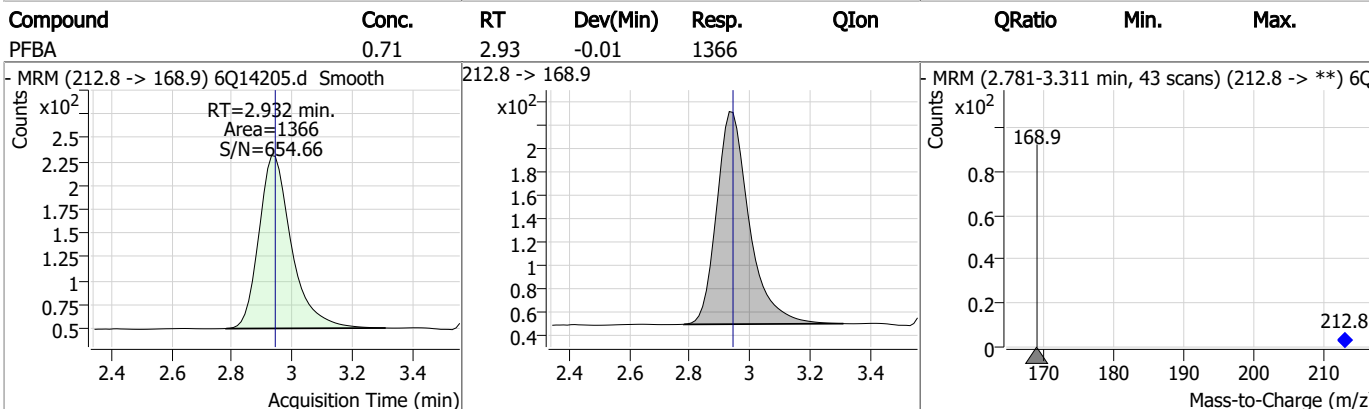
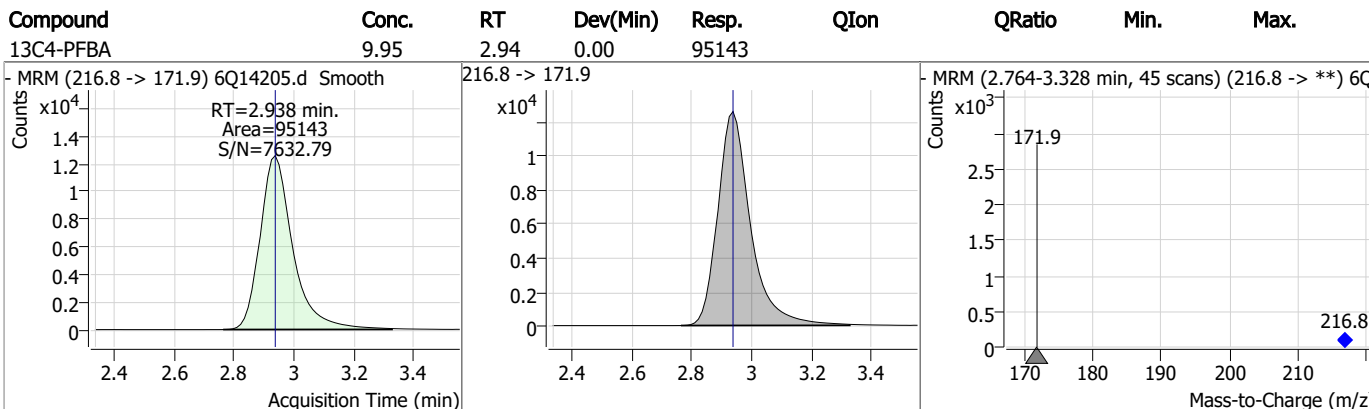
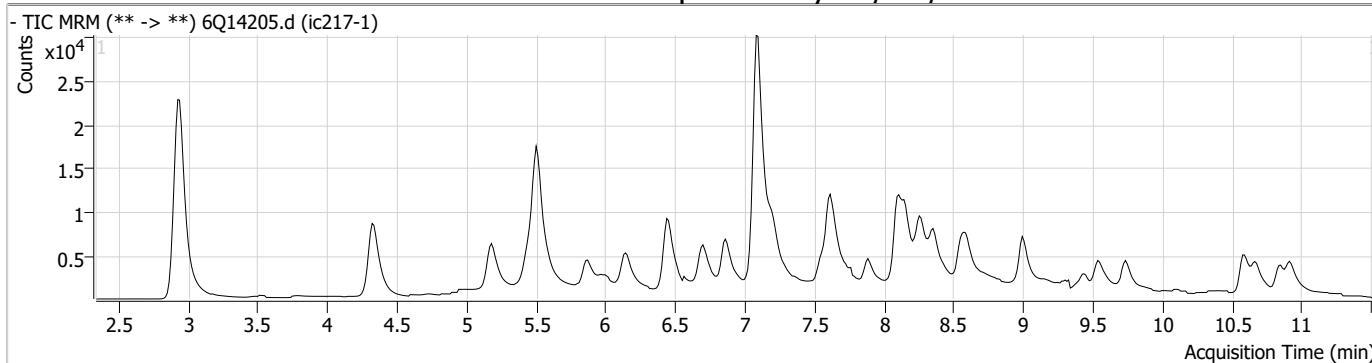
Perfluorinated Compounds by LC/MS/MS

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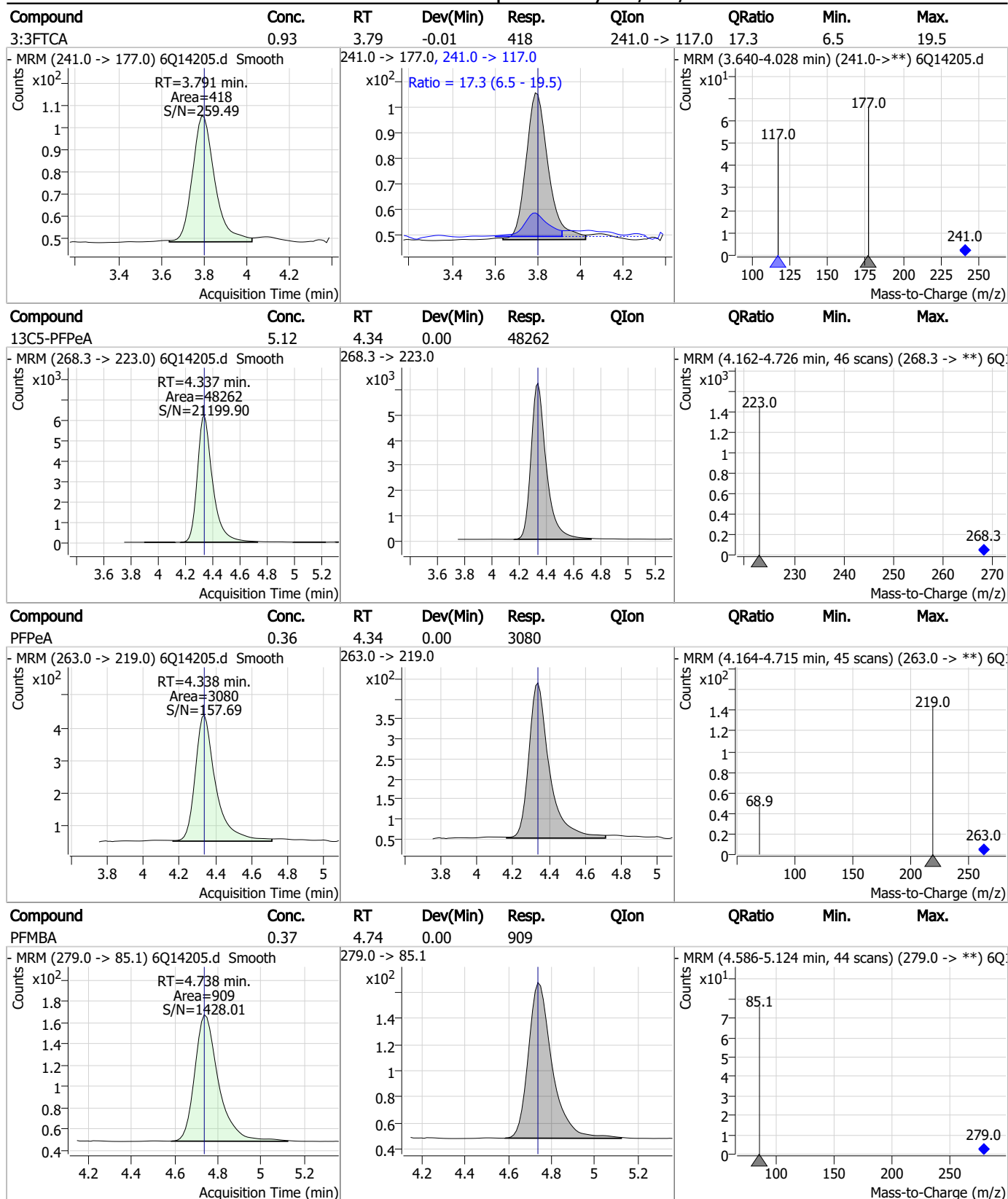
7.7.2
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Perfluorinated Compounds by LC/MS/MS



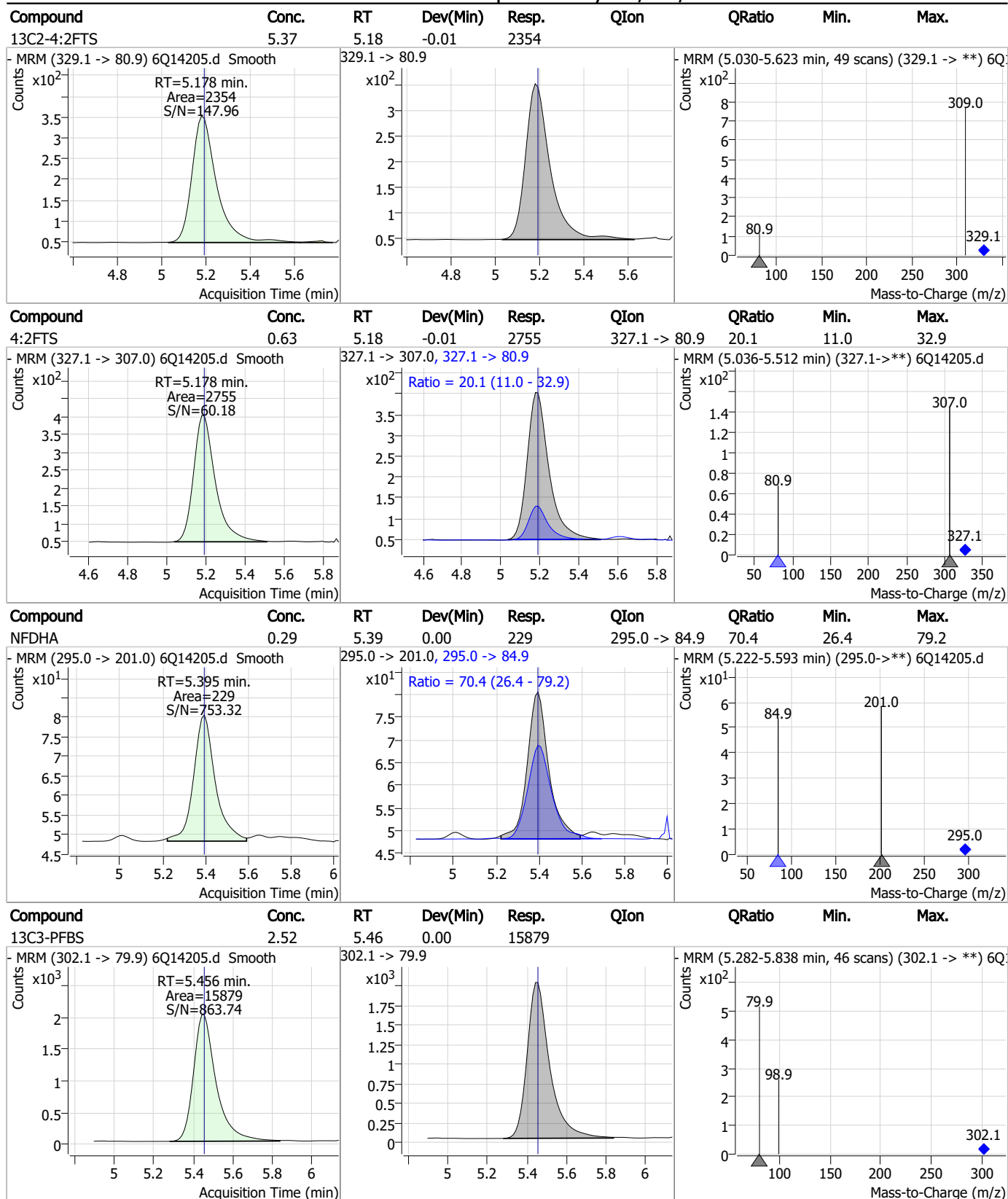
Perfluorinated Compounds by LC/MS/MS



7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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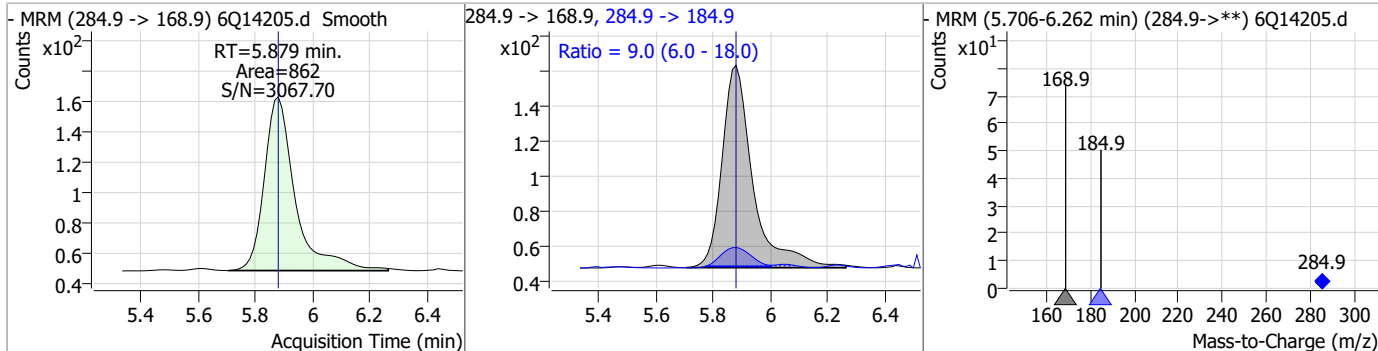
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.15	5.44	-0.01	808	298.7 -> 98.8	54.6	24.1	72.3
13C5-PFHxA	2.60	5.51	0.00	42858	318.0 -> 273.0			
PFHxA	0.18	5.52	0.00	2445	313.0 -> 118.9	5.7	1.7	5.2
13C3-HFPO-DA	9.90	5.88	0.00	15901	286.9 -> 168.9			

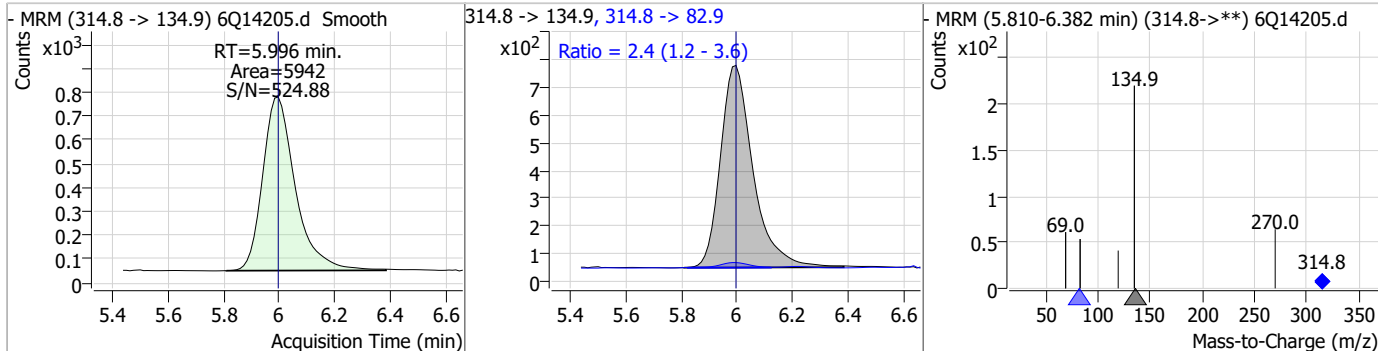
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Perfluorinated Compounds by LC/MS/MS

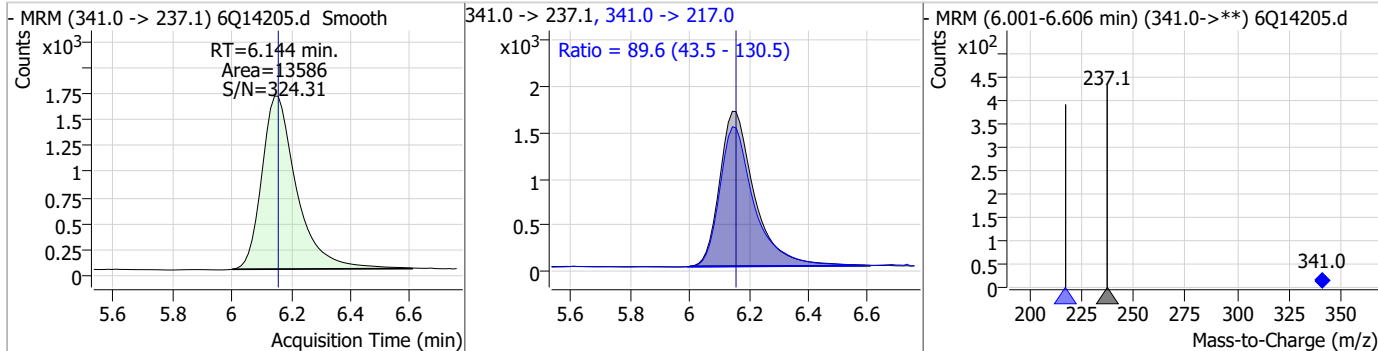
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.68	5.88	0.00	862	284.9 -> 184.9	9.0	6.0	18.0



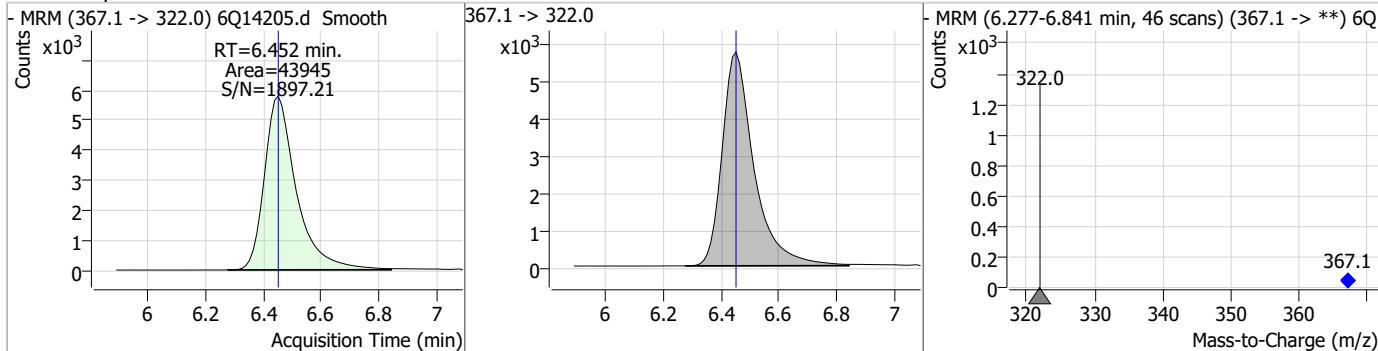
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.31	6.00	0.00	5942	314.8 -> 82.9	2.4	1.2	3.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.34	6.14	-0.01	13586	341.0 -> 217.0	89.6	43.5	130.5

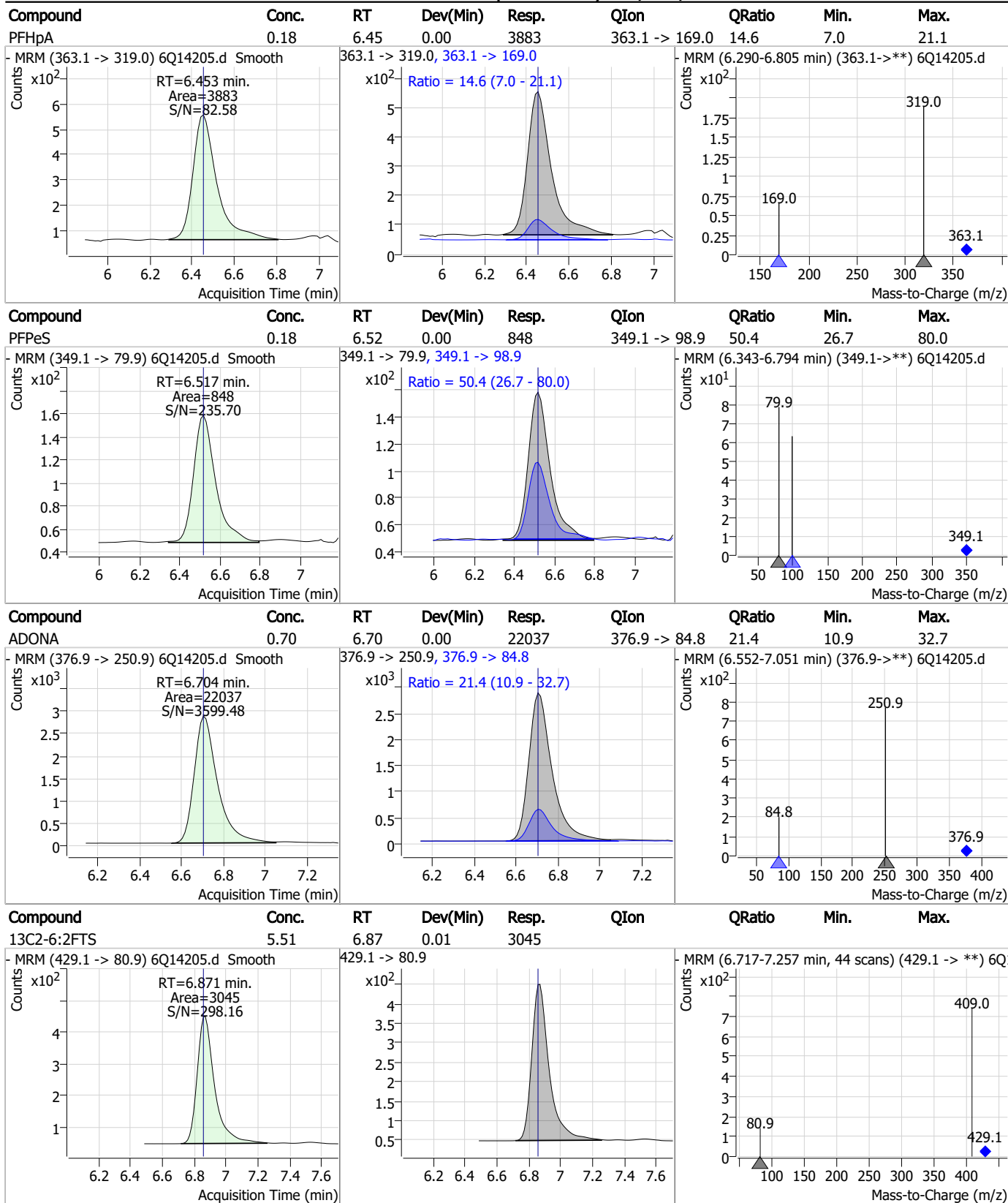


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.45	0.00	43945	367.1 -> 322.0			



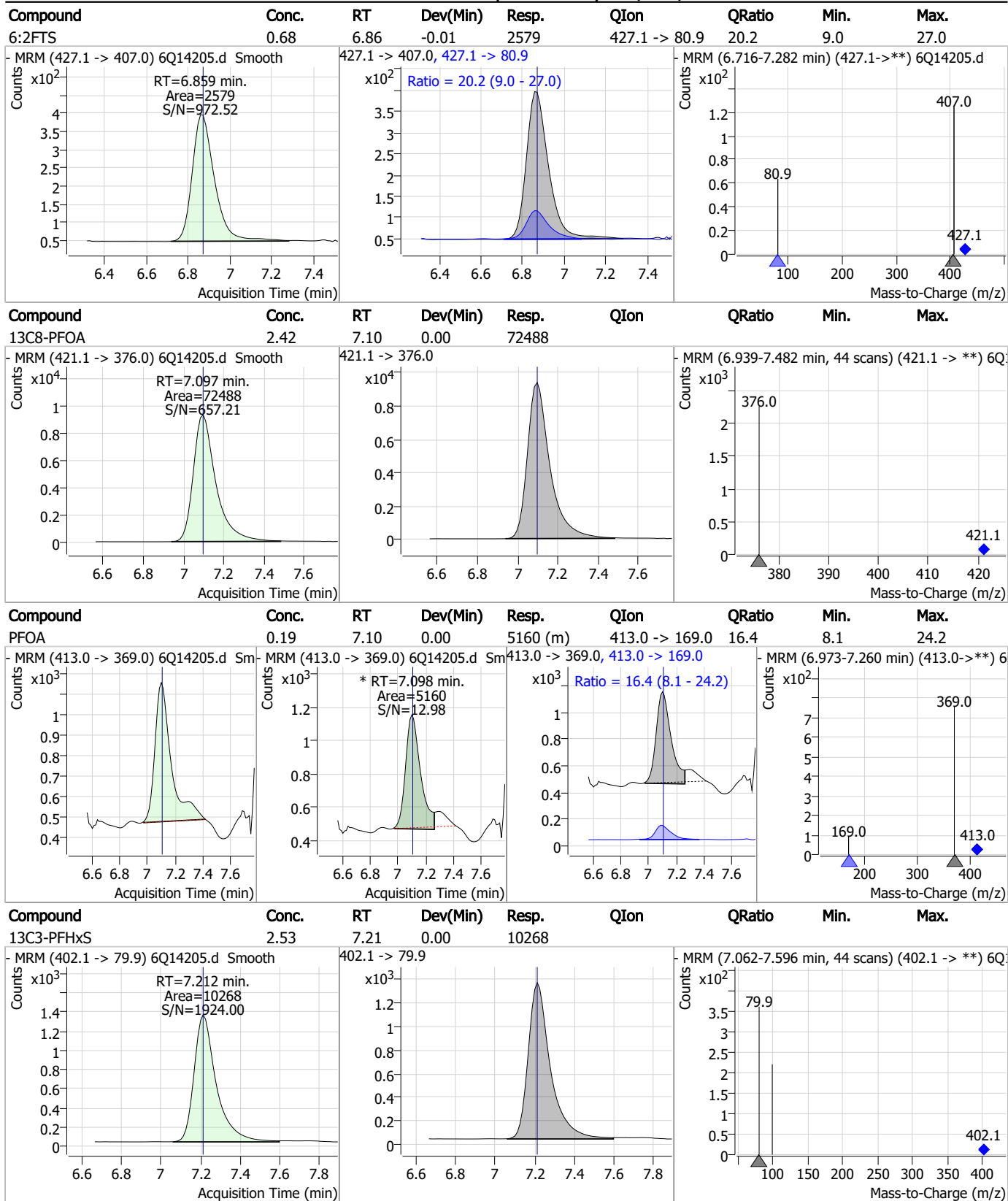
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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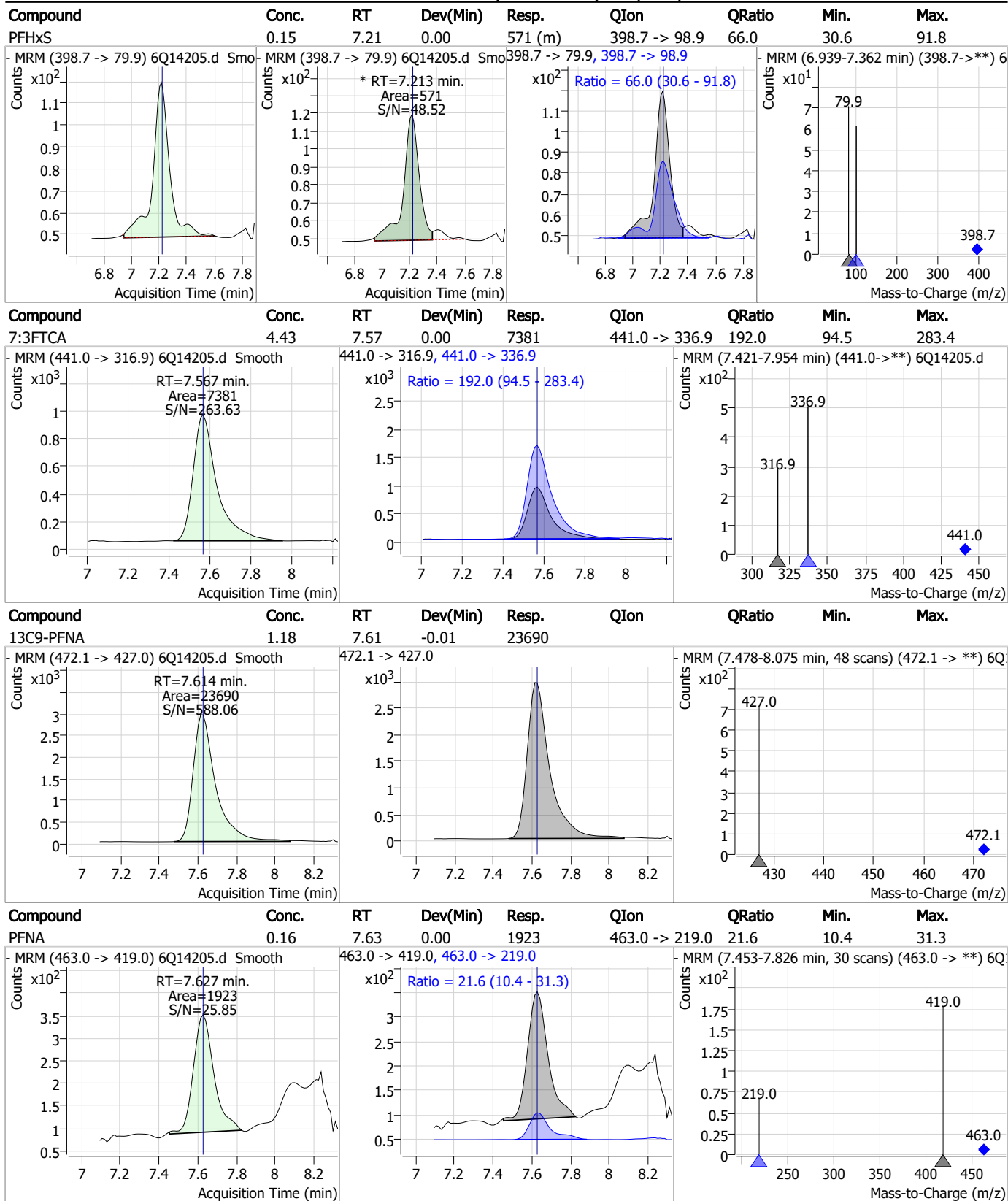
Perfluorinated Compounds by LC/MS/MS



7.7.2
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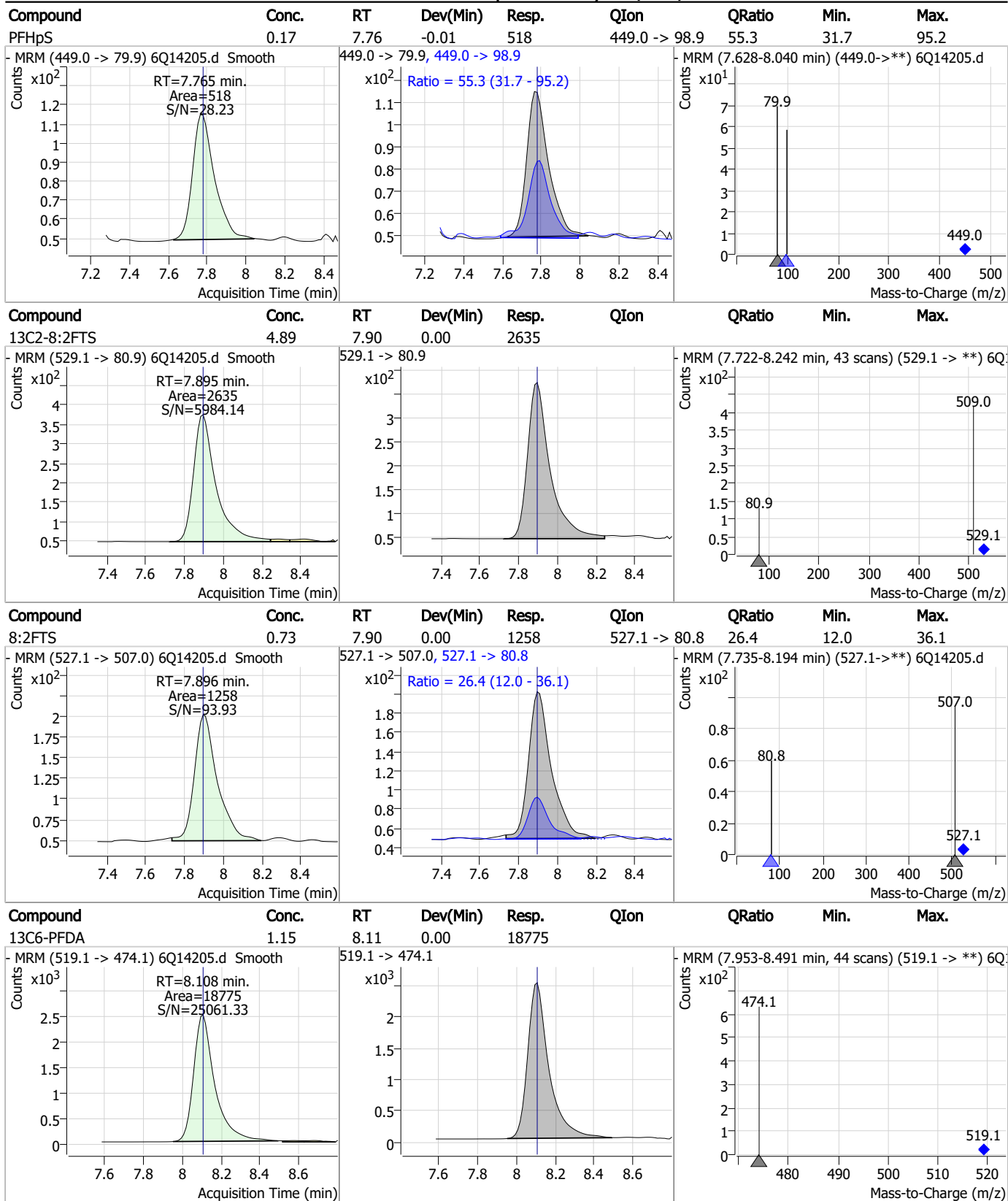


Perfluorinated Compounds by LC/MS/MS



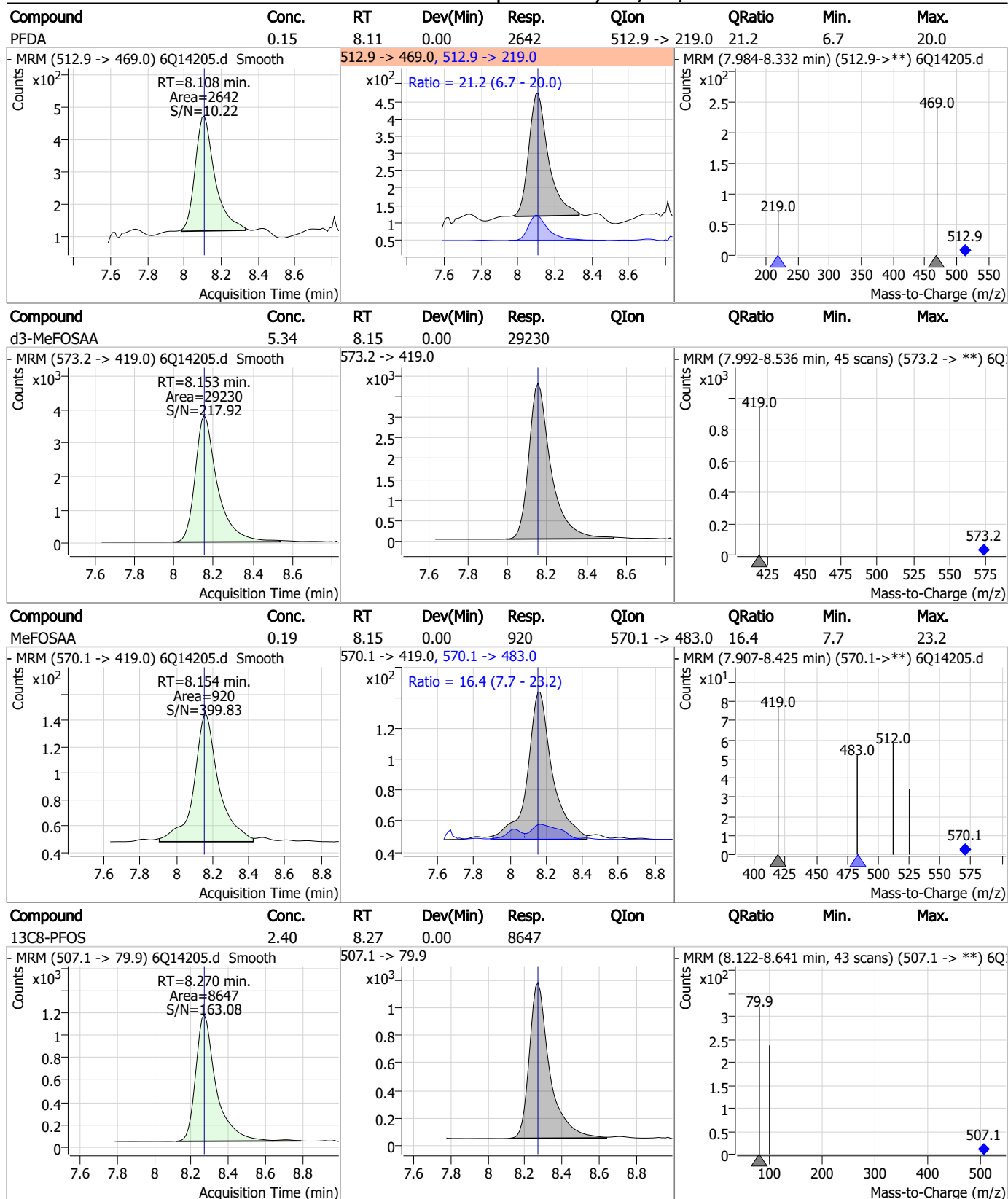
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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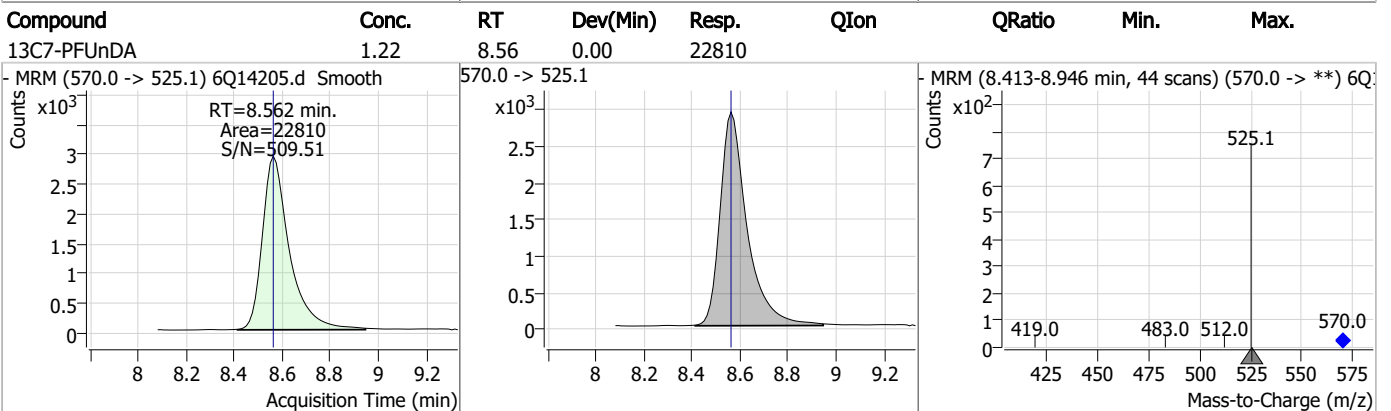
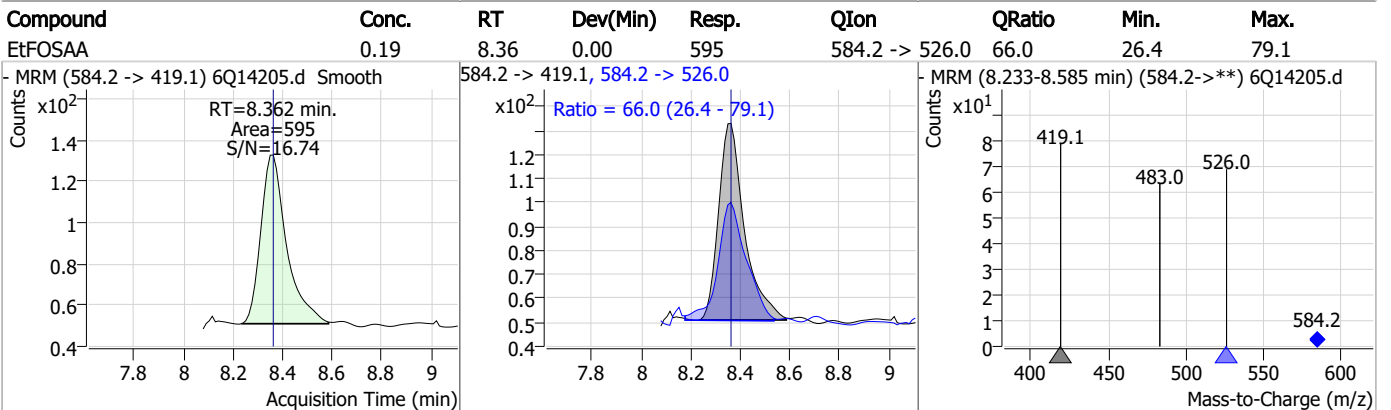
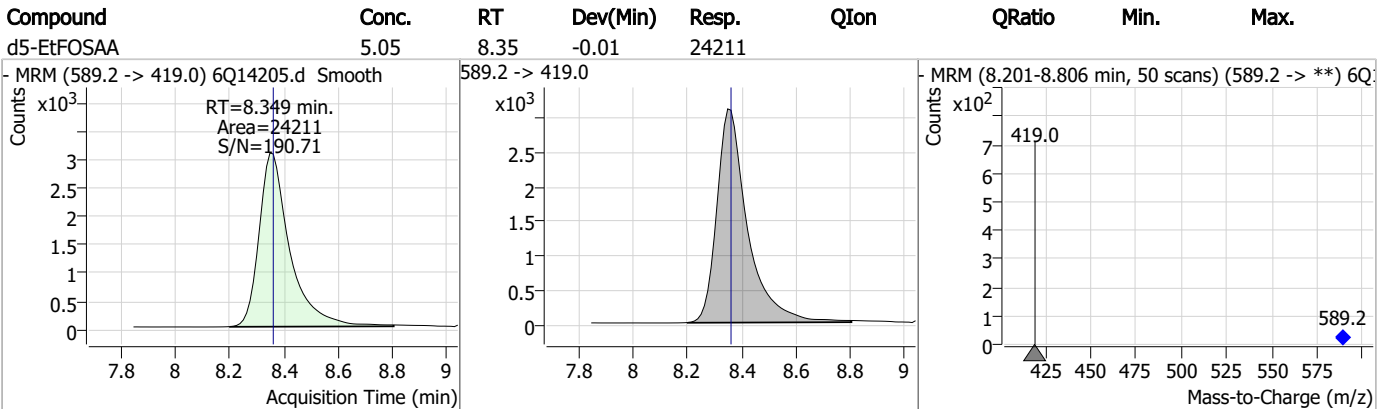
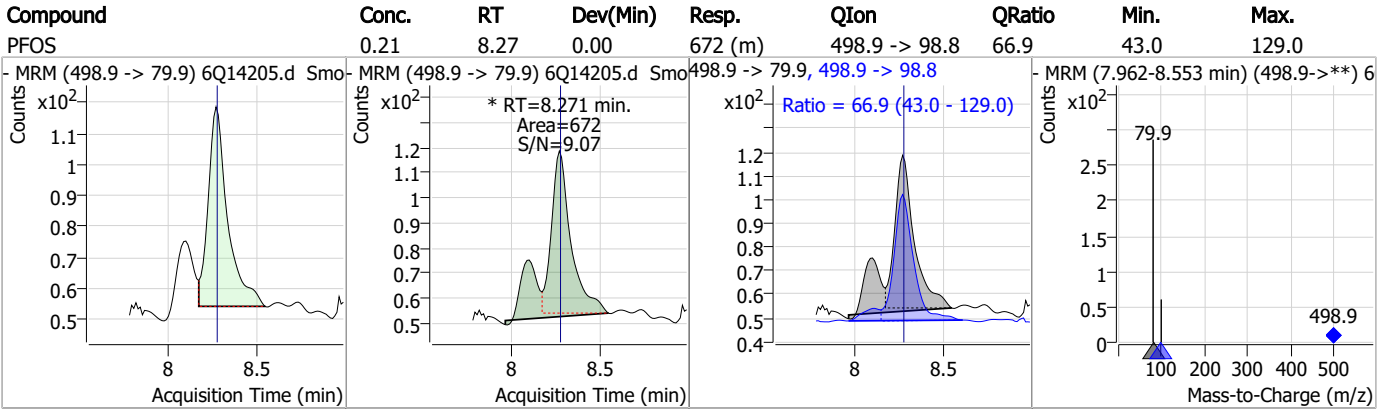
Perfluorinated Compounds by LC/MS/MS



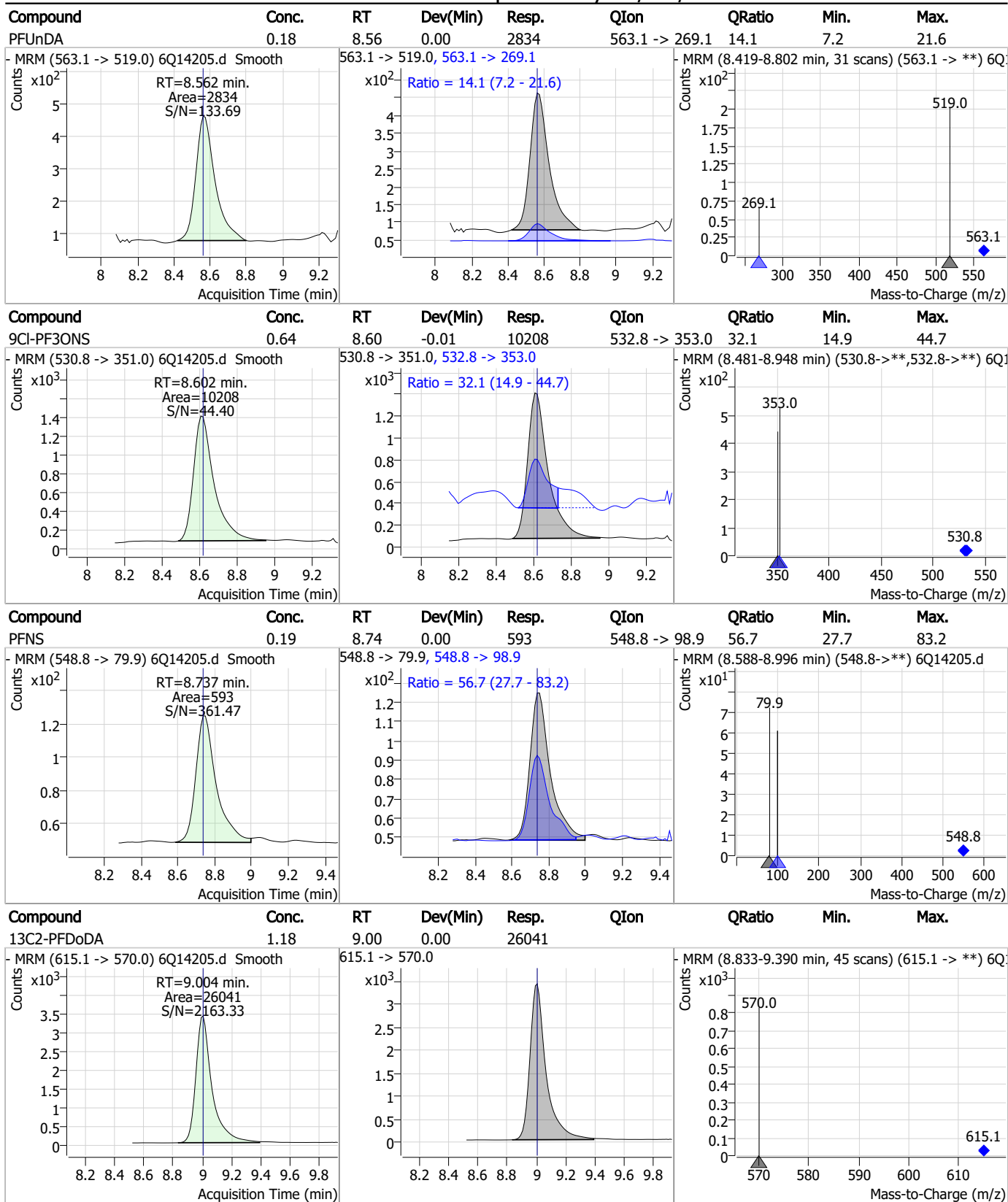
7.7.2

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Perfluorinated Compounds by LC/MS/MS



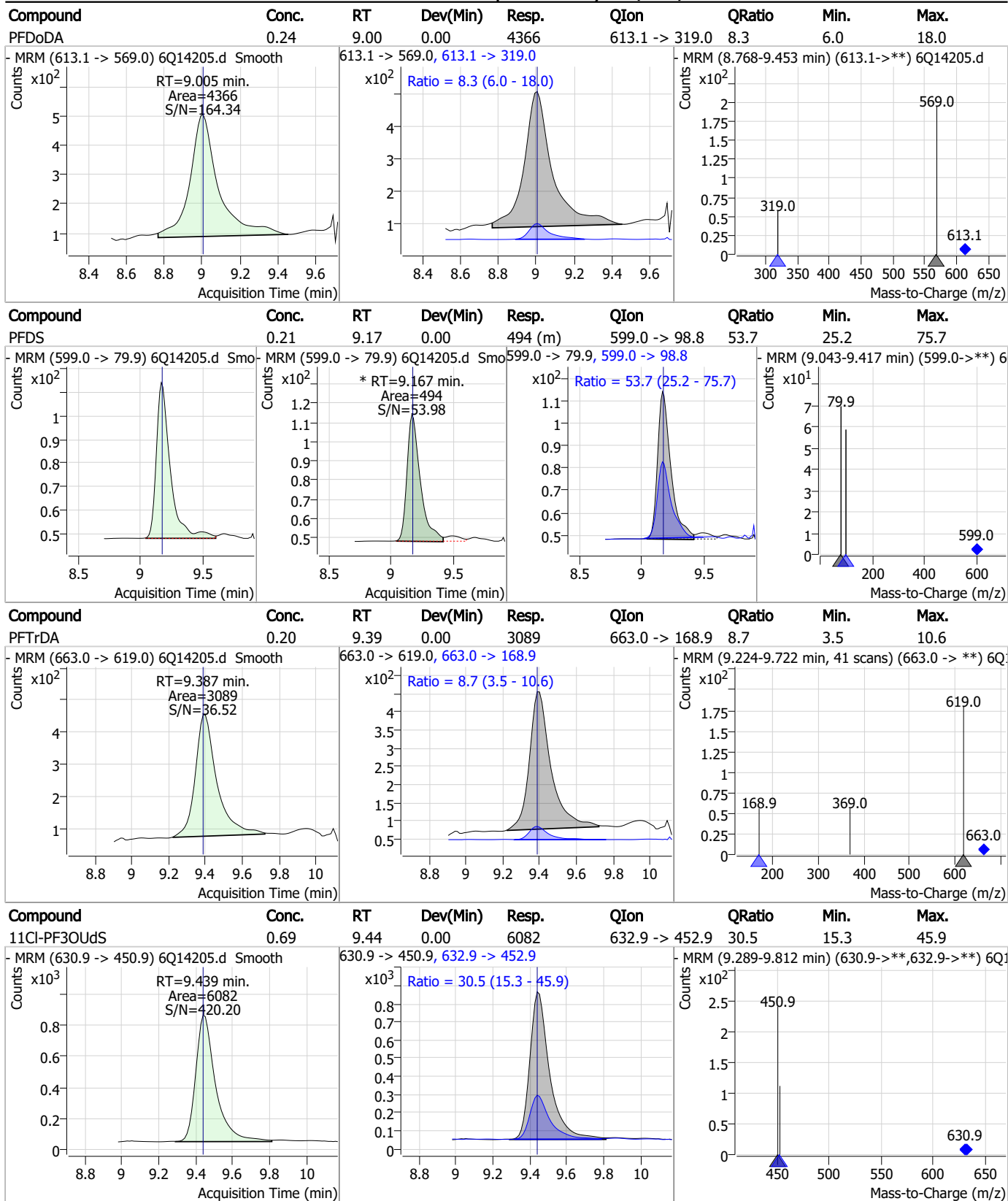
Perfluorinated Compounds by LC/MS/MS



7.7.2
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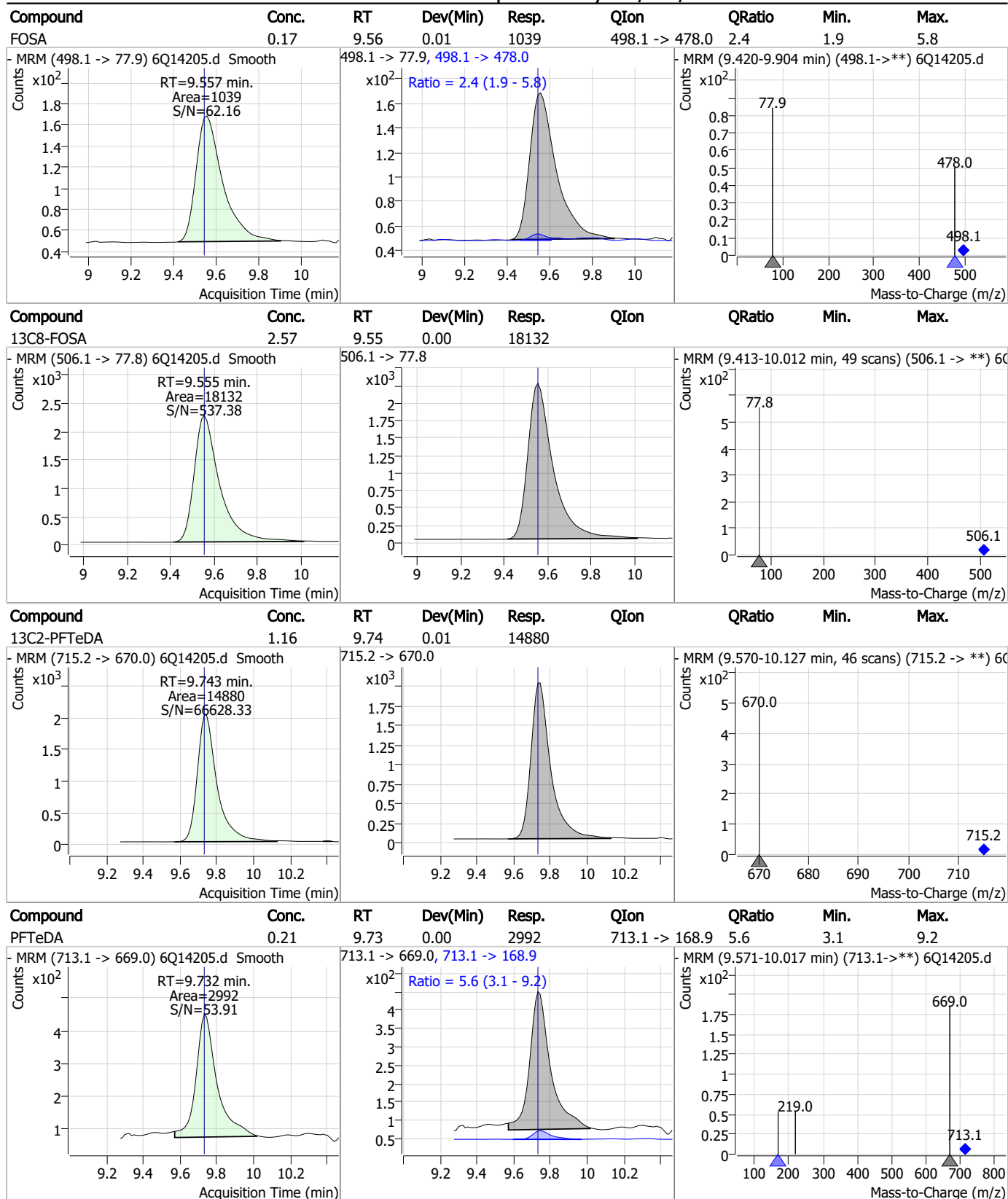
Perfluorinated Compounds by LC/MS/MS



7.7.2
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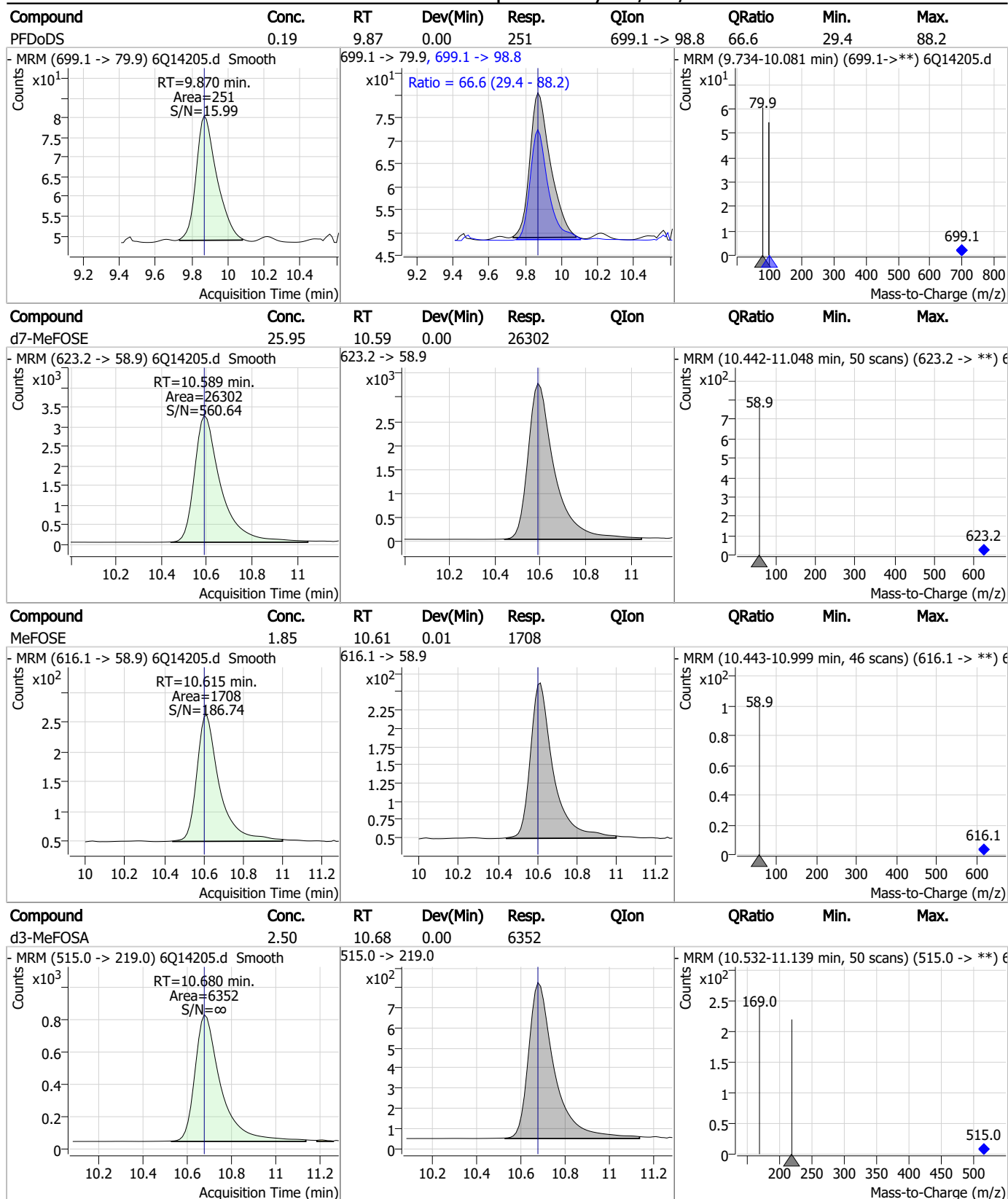


Perfluorinated Compounds by LC/MS/MS



7.7.2
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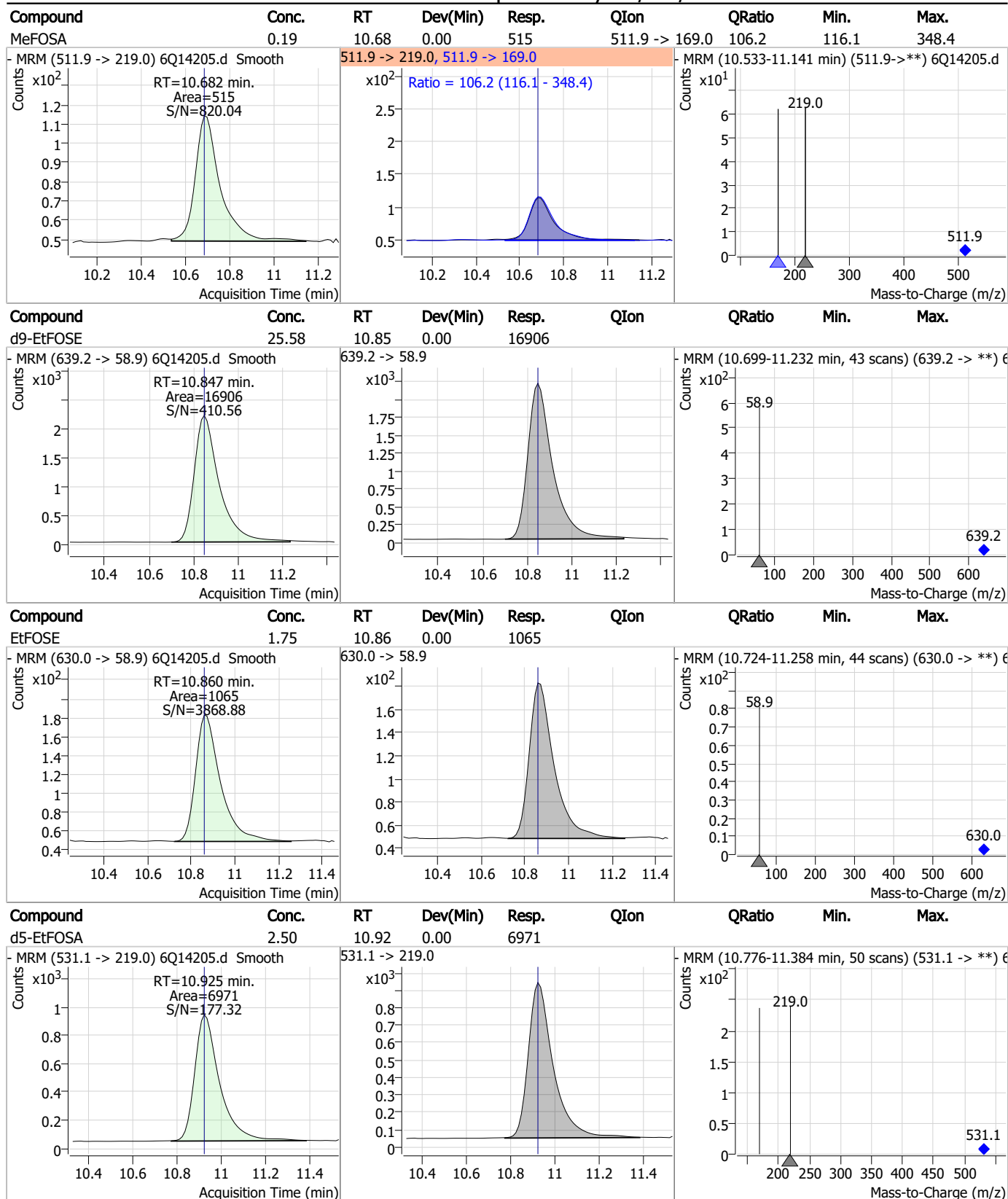
Perfluorinated Compounds by LC/MS/MS



7.7.2
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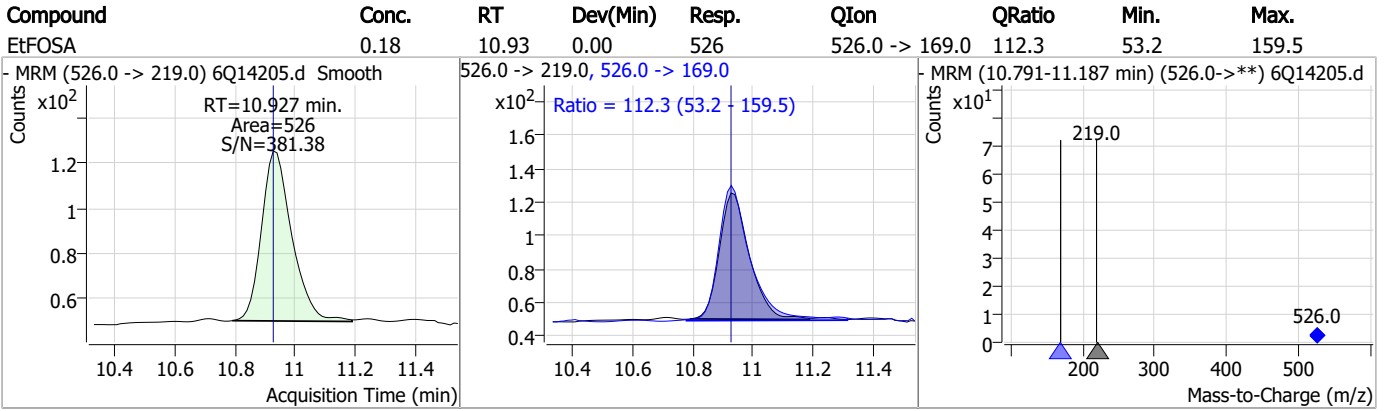


Perfluorinated Compounds by LC/MS/MS



7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2

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Manual Integration Approval Summary

Sample Number: S6Q217-IC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14205.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 13:39 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.10	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
Perfluorodecanesulfonic acid	335-77-3		9.17	Split peak

7.7.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14206.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 1:53:42 PM
 Sample Name : ic217-2
 Vial : P1-A3
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	96440	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	48411	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	42169	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	43718	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	75164	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	23272	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	19657	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	22578	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	25767	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	14699	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	18100	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	15834	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	10003	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	9265	2.50 µg/L	0.000
M2-4:2FTS	5.190	329.1 -> 80.9	2497	5.00 µg/L	0.000
M2-6:2FTS	6.871	429.1 -> 80.9	2902	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2845	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	27669	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	16489	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	24831	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	26283	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	16720	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	7385	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6348	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10732	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	42519	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	7836	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	91628	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	27955	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	23622	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	43432	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.190	329.1 -> 80.9	2497	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.6%		
13C2-6:2FTS	6.871	429.1 -> 80.9	2902	4.90 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2845	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C2-PFDoDA	8.991	615.1 -> 570.0	25767	1.17 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.6%		
13C2-PFTeDA	9.731	715.2 -> 670.0	14699	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.6%		
13C3-PFBS	5.456	302.1 -> 79.9	15834	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C3-PFHxS	7.212	402.1 -> 79.9	10003	2.30 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 = 92.1%	
13C4-PFBA	2.938	216.8 -> 171.9	96440	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.452	367.1 -> 322.0	43718	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C5-PFHxA	5.513	318.0 -> 273.0	42169	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFPeA	4.337	268.3 -> 223.0	48411	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	8.108	519.1 -> 474.1	19657	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C7-PFUnDA	8.562	570.0 -> 525.1	22578	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C8-FOSA	9.555	506.1 -> 77.8	18100	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-PFOA	7.097	421.1 -> 376.0	75164	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-PFOS	8.270	507.1 -> 79.9	9265	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C9-PFNA	7.626	472.1 -> 427.0	23272	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSAA	8.153	573.2 -> 419.0	27669	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	16489	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d3-MeFOSA	10.680	515.0 -> 219.0	6348	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
d5-EtFOSAA	8.349	589.2 -> 419.0	24831	5.07 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d7-MeFOSE	10.589	623.2 -> 58.9	26283	25.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d9-EtFOSE	10.847	639.2 -> 58.9	16720	24.76 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d5-EtFOSA	10.925	531.1 -> 219.0	7385	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
Target Compounds					QValue
4:2FTS	5.191	327.1 -> 307.0	7943	1.71 µg/L	95
		327.1 -> 80.9	1938		
6:2FTS	6.871	427.1 -> 407.0	7355	2.04 µg/L	94
		427.1 -> 80.9	1517		
8:2FTS	7.896	527.1 -> 507.0	3743	2.02 µg/L	99
		527.1 -> 80.8	919		
EtFOSAA	8.362	584.2 -> 419.1	1404	0.43 µg/L	79
		584.2 -> 526.0	953		
FOSA	9.545	498.1 -> 77.9	2971	0.48 µg/L	99
		498.1 -> 478.0	122		
MeFOSAA	8.154	570.1 -> 419.0	2378	0.52 µg/L	92
		570.1 -> 483.0	442		
PFBA	2.944	212.8 -> 168.9	3718	1.91 µg/L	100
PFBS	5.457	298.7 -> 79.9	2512	0.48 µg/L	94
		298.7 -> 98.8	1103		
PFDA	8.108	512.9 -> 469.0	8441	0.45 µg/L	95
		512.9 -> 219.0	1296		
PFDODA	8.992	613.1 -> 569.0	9110	0.51 µg/L	94
		613.1 -> 319.0	875		
PFDS	9.167	599.0 -> 79.9	1079	0.44 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	539			
PFHpA	6.453	363.1 -> 319.0	10809	0.50	µg/L	99
		363.1 -> 169.0	1551			
PFHpS	7.765	449.0 -> 79.9	1515	0.47	µg/L	91
		449.0 -> 98.9	850			
PFHxA	5.516	313.0 -> 269.0	6544	0.49	µg/L	98
		313.0 -> 118.9	277			
PFHxS	7.213	398.7 -> 79.9	1712	0.47	µg/L	m 92
		398.7 -> 98.9	943			
PFNA	7.627	463.0 -> 419.0	5433	0.46	µg/L	92
		463.0 -> 219.0	1350			
PFNS	8.737	548.8 -> 79.9	1612	0.48	µg/L	94
		548.8 -> 98.9	965			
PFOA	7.098	413.0 -> 369.0	13468	0.49	µg/L	90
		413.0 -> 169.0	1568			
PFOS	8.271	498.9 -> 79.9	1480	0.43	µg/L	m 86
		498.9 -> 98.8	1079			
PFPeA	4.338	263.0 -> 219.0	8207	0.97	µg/L	100
PFPeS	6.517	349.1 -> 79.9	2216	0.48	µg/L	99
		349.1 -> 98.9	1169			
PFTeDA	9.732	713.1 -> 669.0	7066	0.51	µg/L	99
		713.1 -> 168.9	420			
PFTrDA	9.387	663.0 -> 619.0	7609	0.50	µg/L	96
		663.0 -> 168.9	642			
PFUnDA	8.562	563.1 -> 519.0	7724	0.49	µg/L	98
		563.1 -> 269.1	1180			
11CI-PF3OUdS	9.439	630.9 -> 450.9	16364	1.79	µg/L	99
		632.9 -> 452.9	4950			
9CI-PF3ONS	8.602	530.8 -> 351.0	27757	1.69	µg/L	87
		532.8 -> 353.0	10252			
ADONA	6.704	376.9 -> 250.9	59408	1.82	µg/L	98
		376.9 -> 84.8	12297			
HFPO-DA	5.879	284.9 -> 168.9	2503	1.90	µg/L	99
		284.9 -> 184.9	307			
3:3FTCA	3.791	241.0 -> 177.0	1024	2.28	µg/L	99
		241.0 -> 117.0	138			
5:3FTCA	6.156	341.0 -> 237.1	36975	11.99	µg/L	98
		341.0 -> 217.0	31420			
7:3FTCA	7.567	441.0 -> 316.9	19667	12.01	µg/L	98
		441.0 -> 336.9	36712			
EtFOSA	10.927	526.0 -> 219.0	1519	0.48	µg/L	92
		526.0 -> 169.0	1487			
EtFOSE	10.860	630.0 -> 58.9	3048	5.06	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	1369	0.51	µg/L	# 20
		511.9 -> 169.0	1366			
MeFOSE	10.615	616.1 -> 58.9	4394	4.76	µg/L	100
PFDoDS	9.870	699.1 -> 79.9	560	0.40	µg/L	79
		699.1 -> 98.8	415			
NFDHA	5.407	295.0 -> 201.0	739	0.97	µg/L	96
		295.0 -> 84.9	409			
PFMBA	4.738	279.0 -> 85.1	2425	0.97	µg/L	100
PFMPA	3.500	229.0 -> 84.9	2110	0.93	µg/L	100
PFEESA	5.983	314.8 -> 134.9	16373	0.86	µg/L	100
		314.8 -> 82.9	416			

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

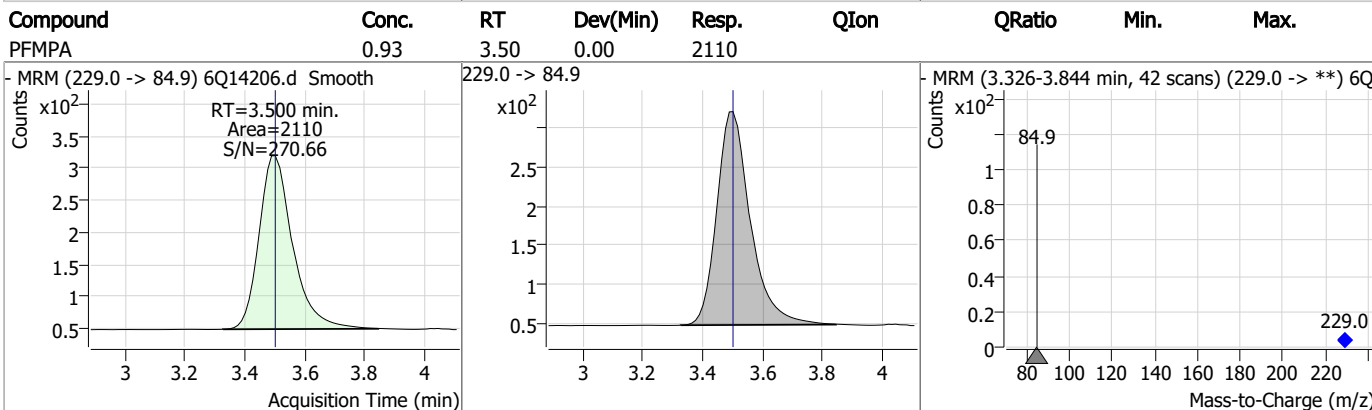
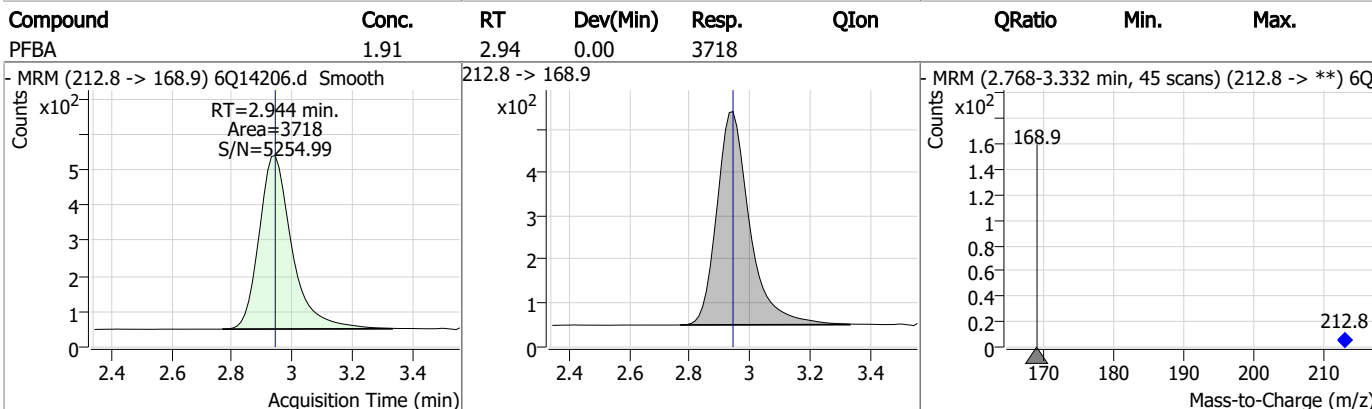
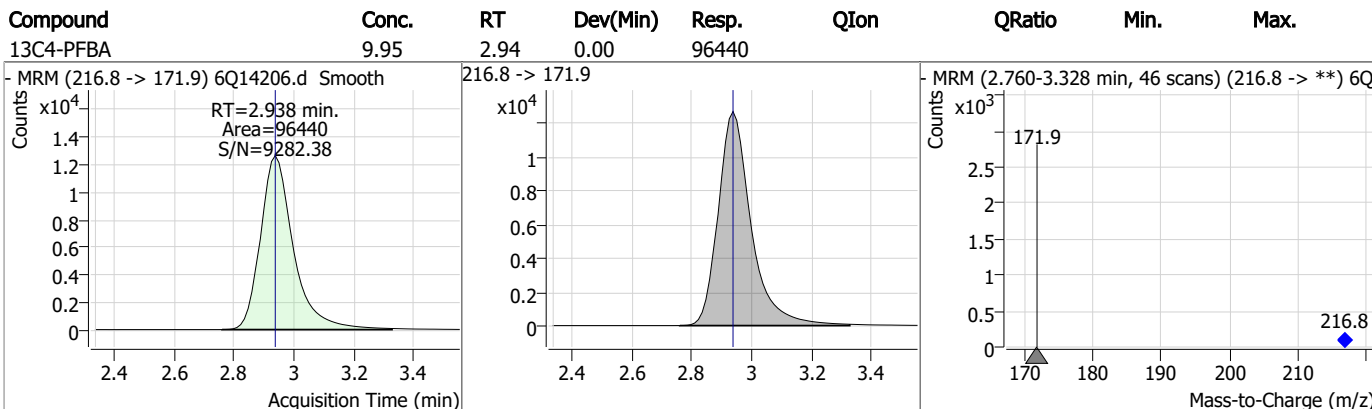
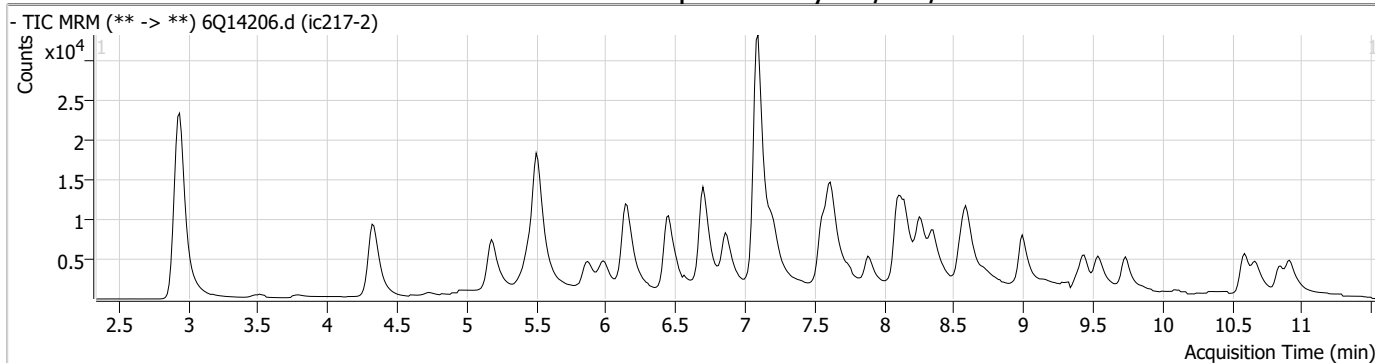
Perfluorinated Compounds by LC/MS/MS

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

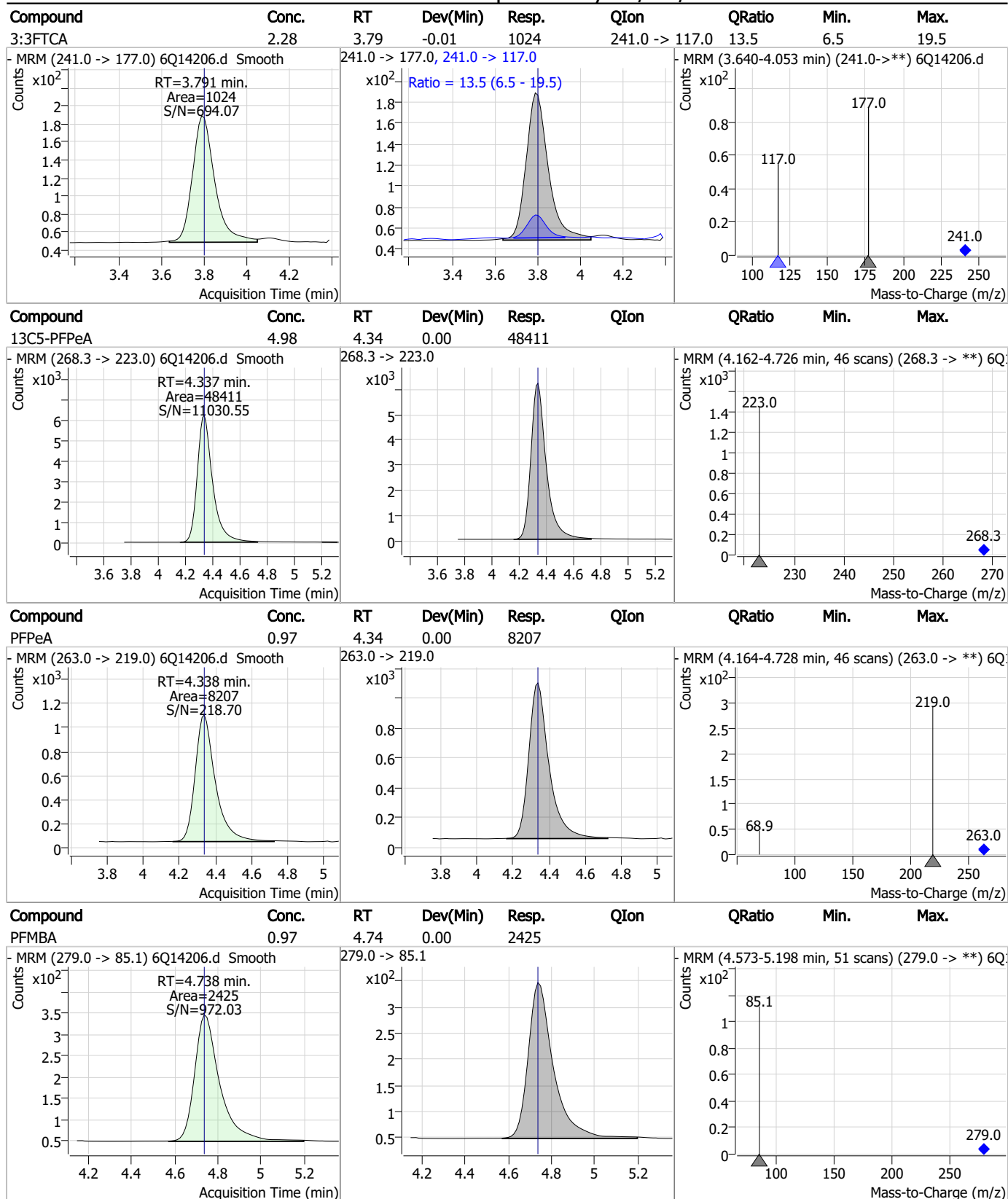
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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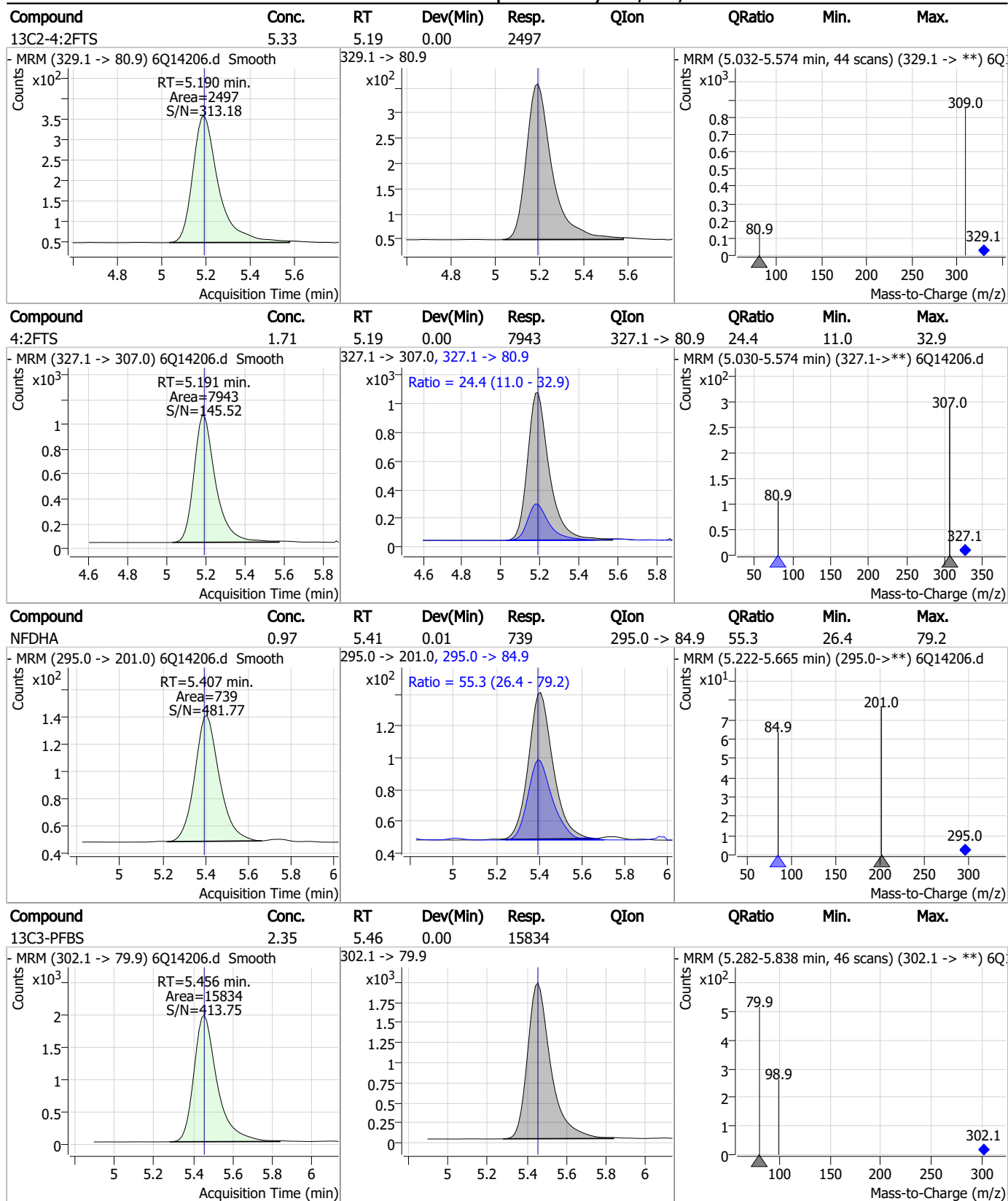
Perfluorinated Compounds by LC/MS/MS



7.7.3

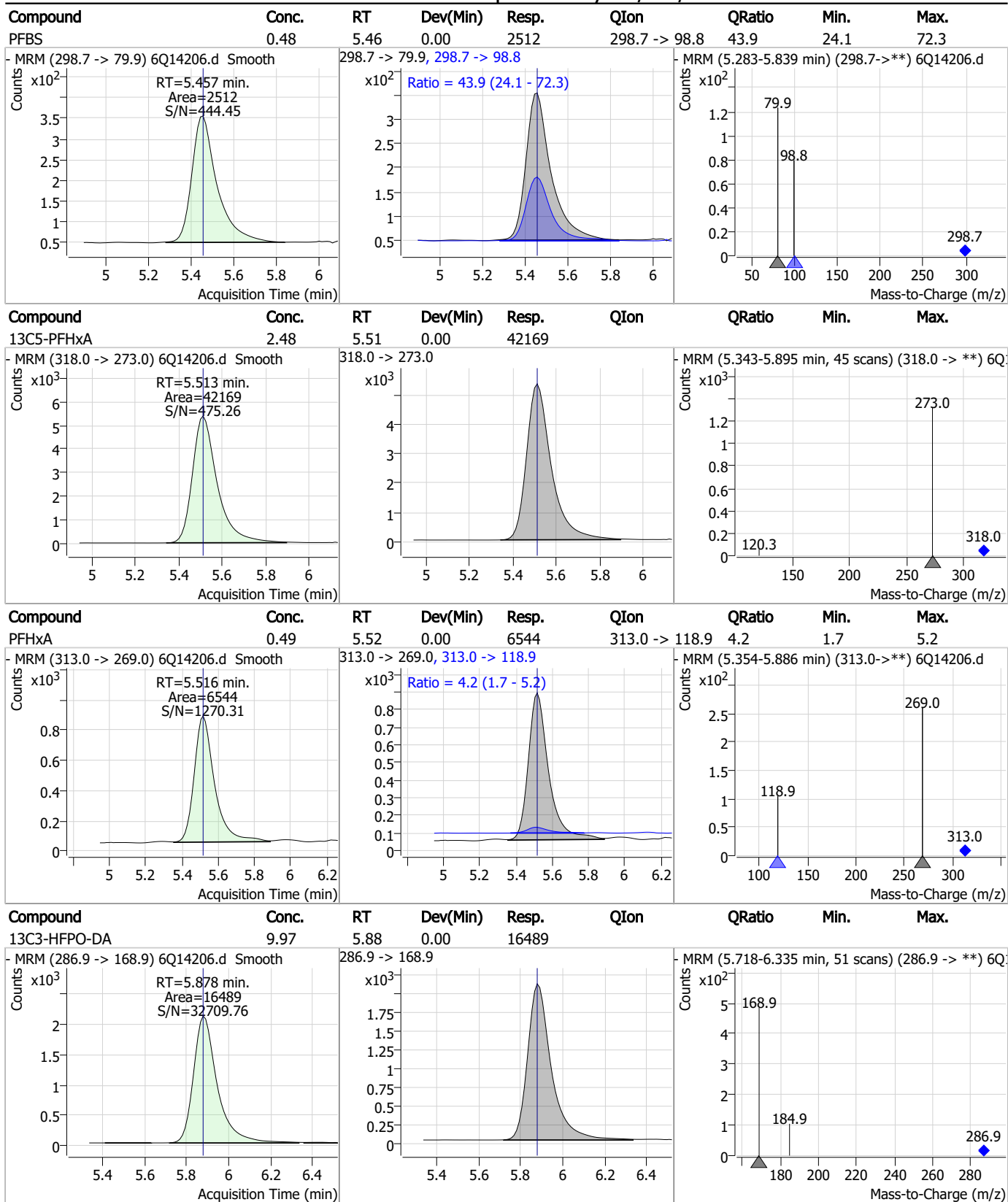
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Perfluorinated Compounds by LC/MS/MS



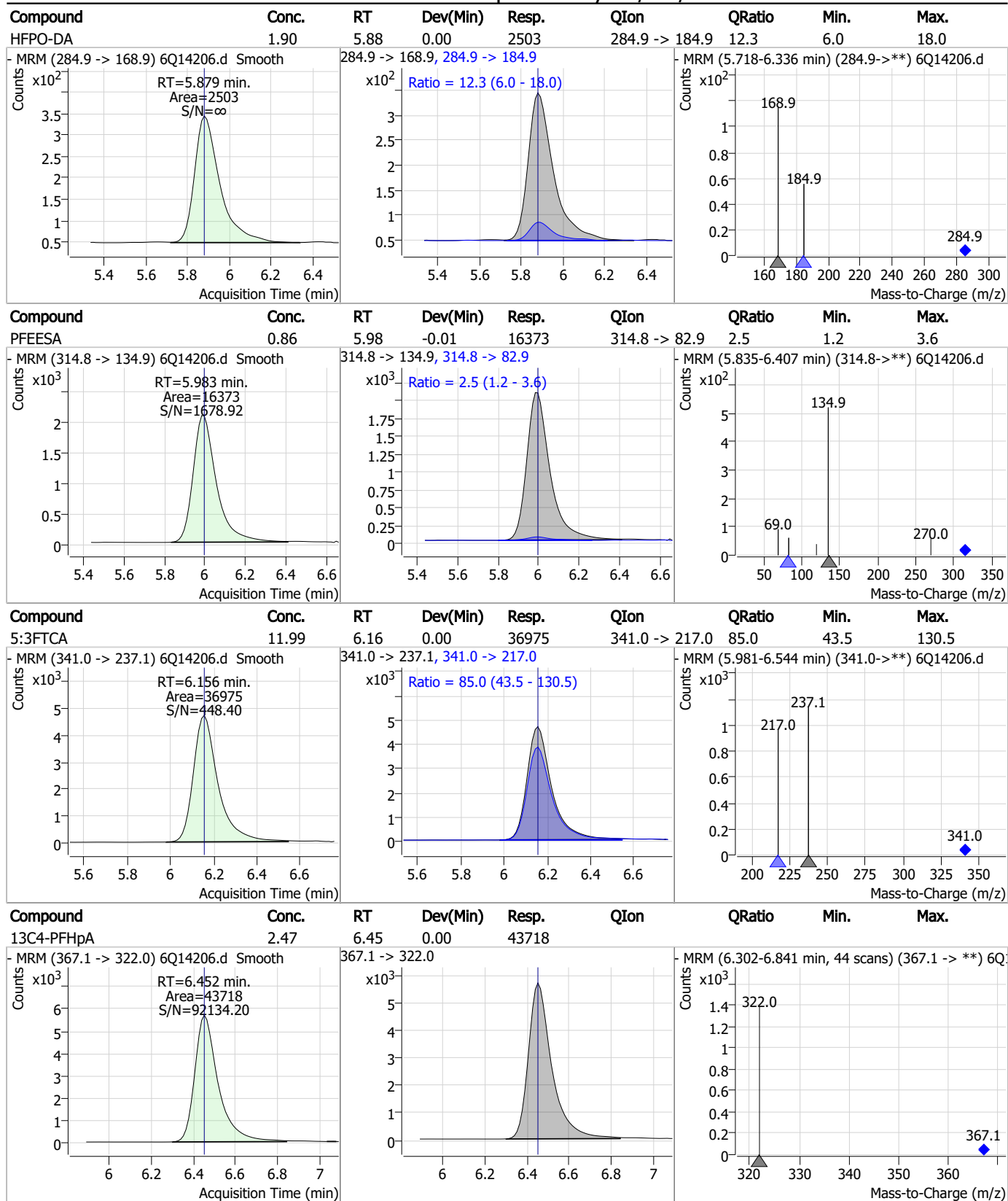
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Perfluorinated Compounds by LC/MS/MS



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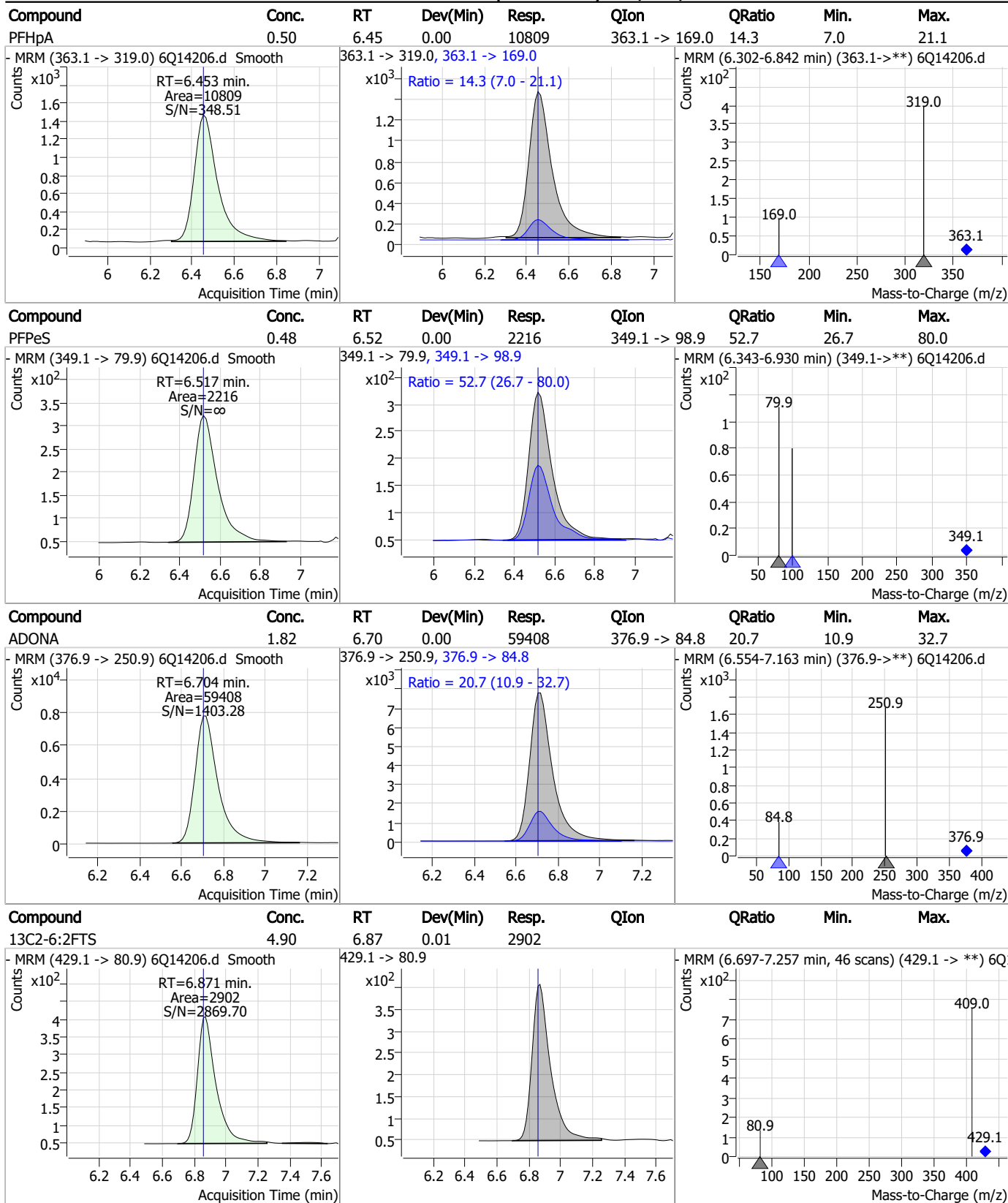
Perfluorinated Compounds by LC/MS/MS



7.7.3

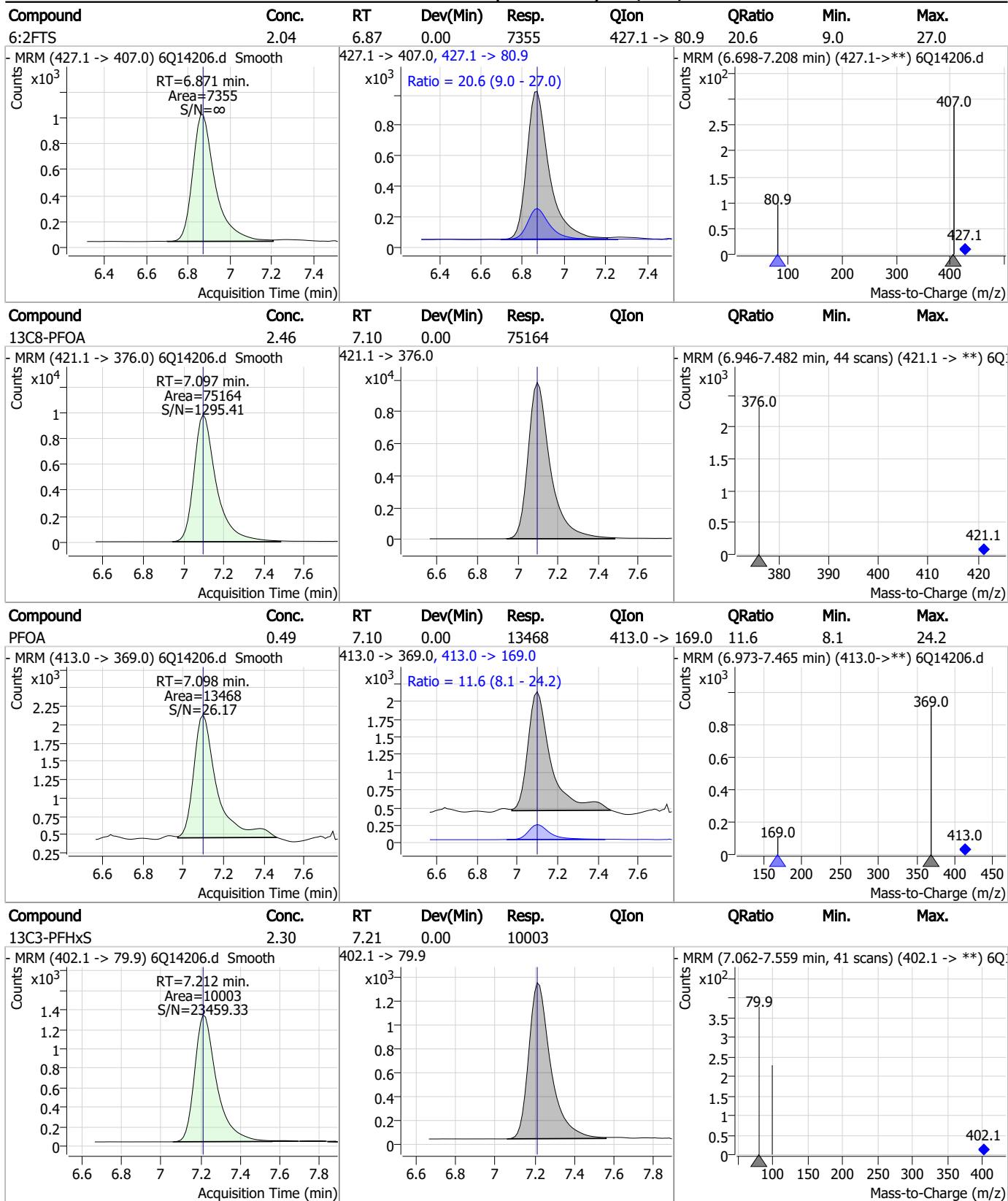
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Perfluorinated Compounds by LC/MS/MS



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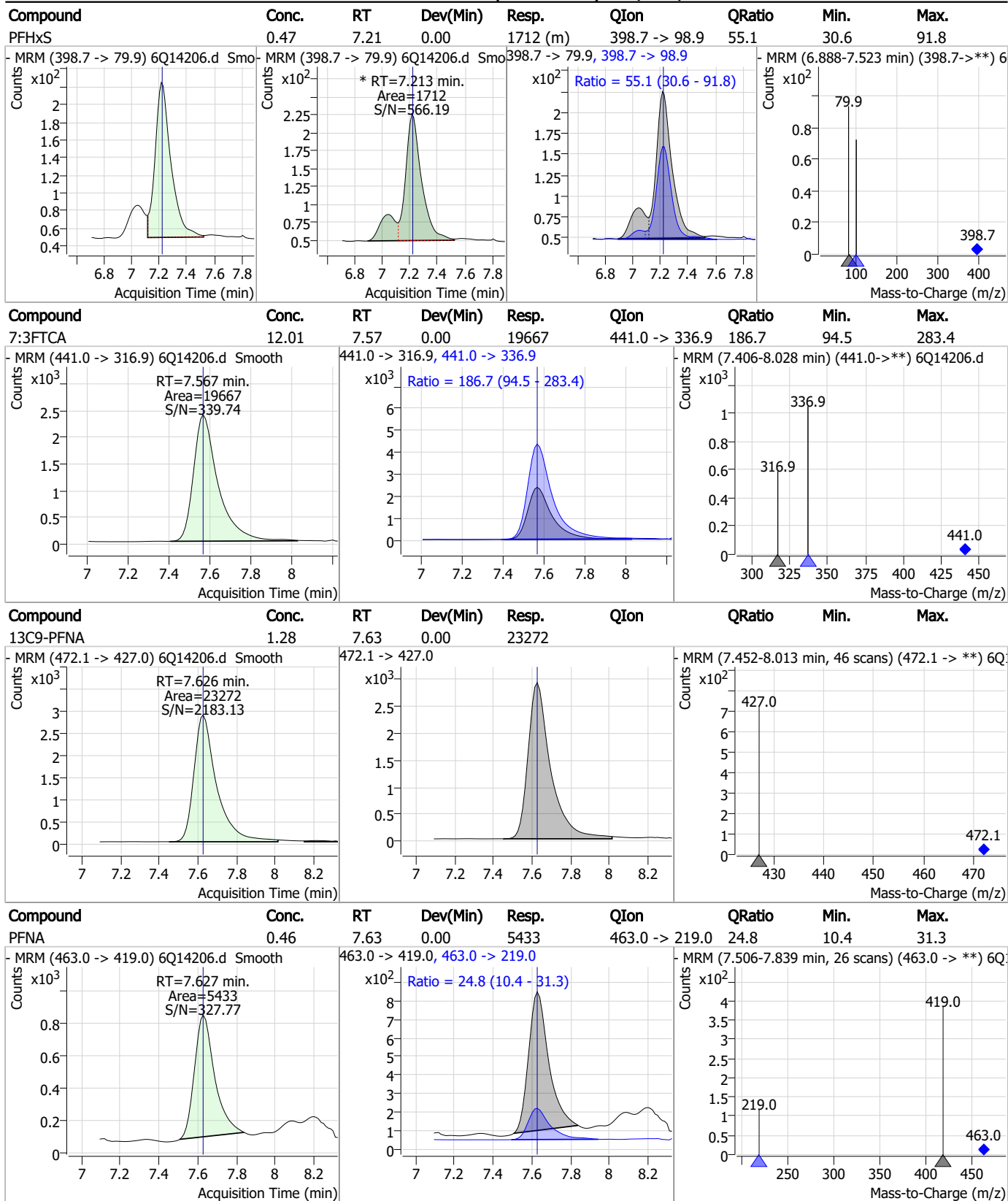
Perfluorinated Compounds by LC/MS/MS



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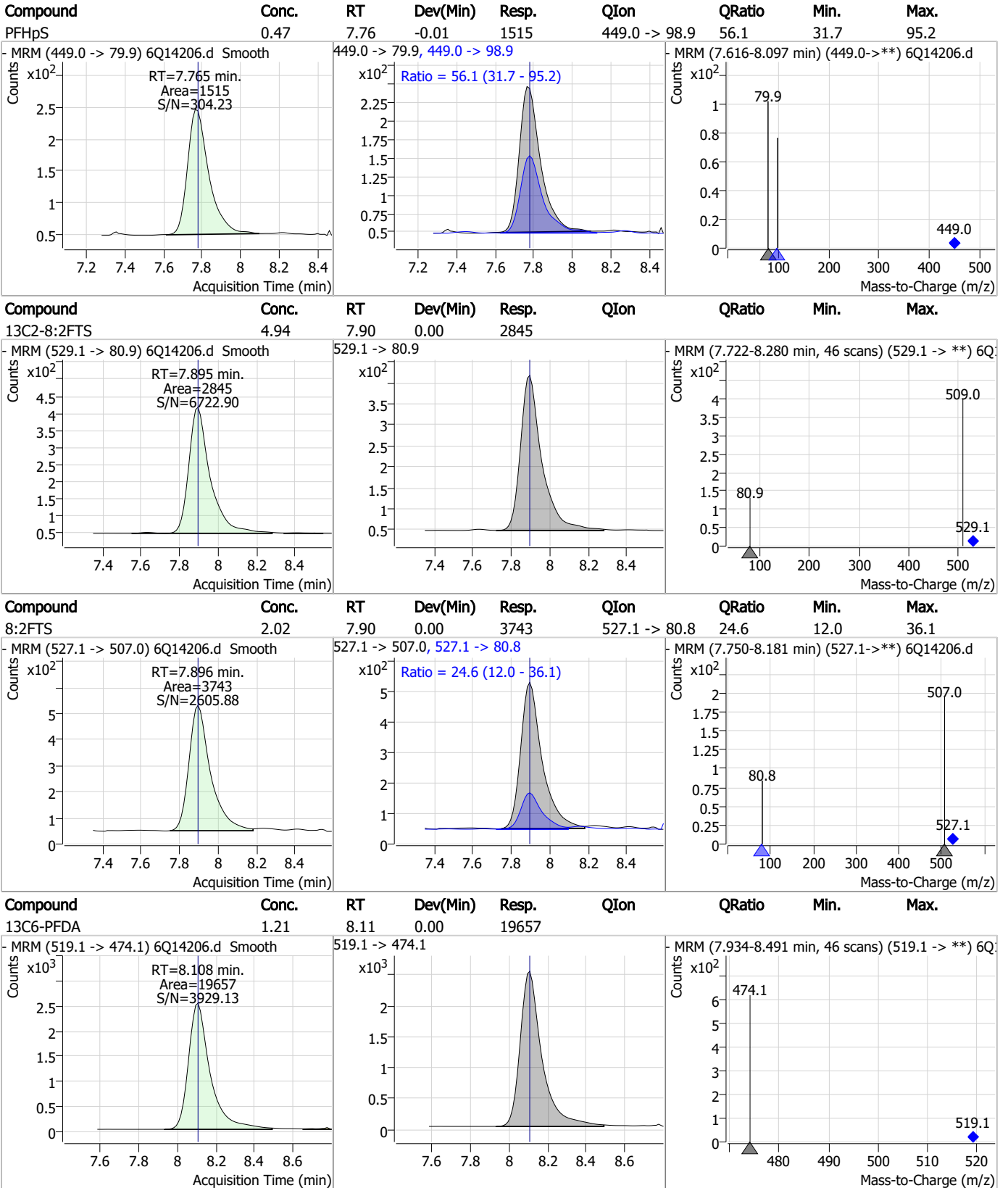


Perfluorinated Compounds by LC/MS/MS



7.7.3
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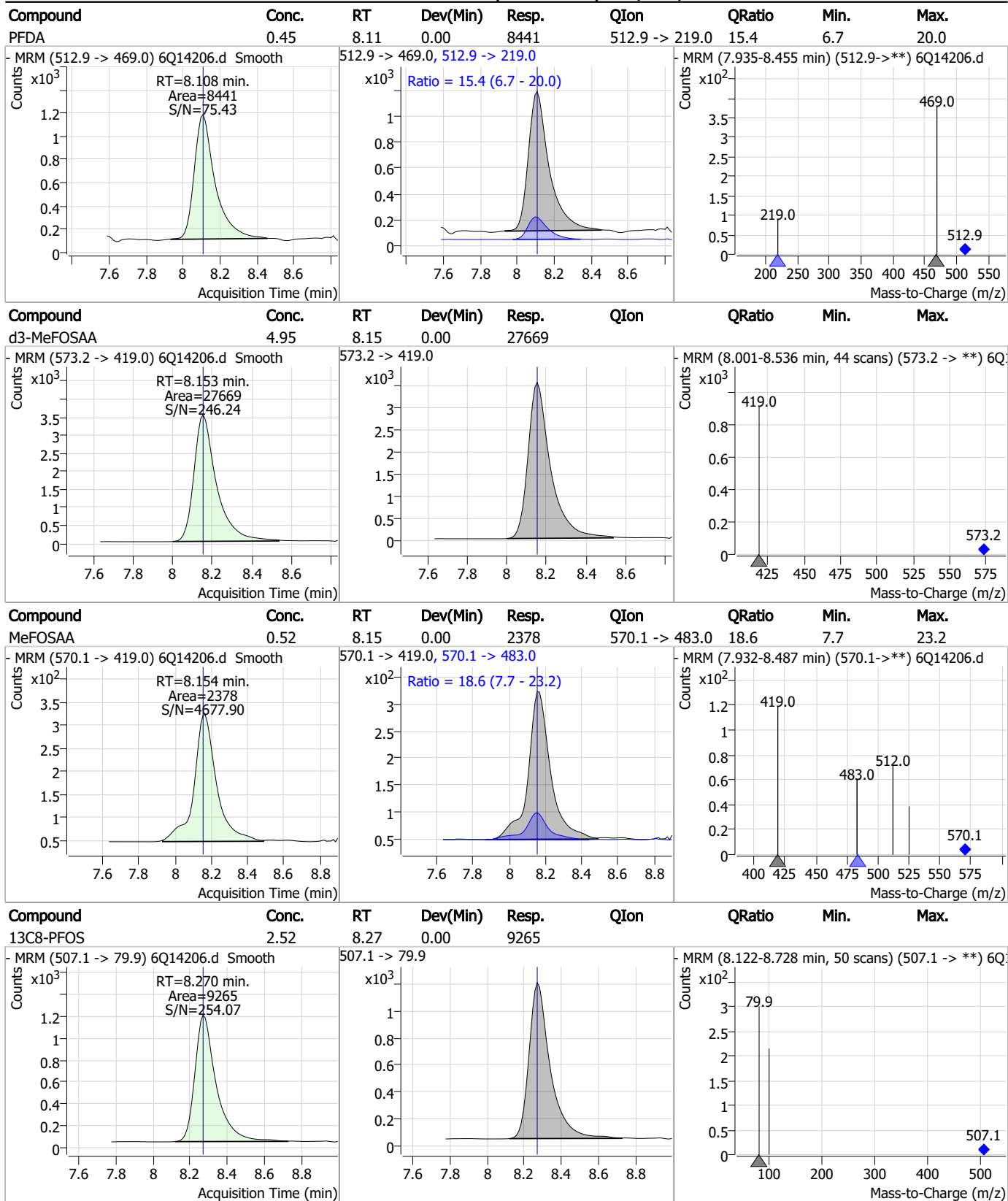
Perfluorinated Compounds by LC/MS/MS



7.7.3

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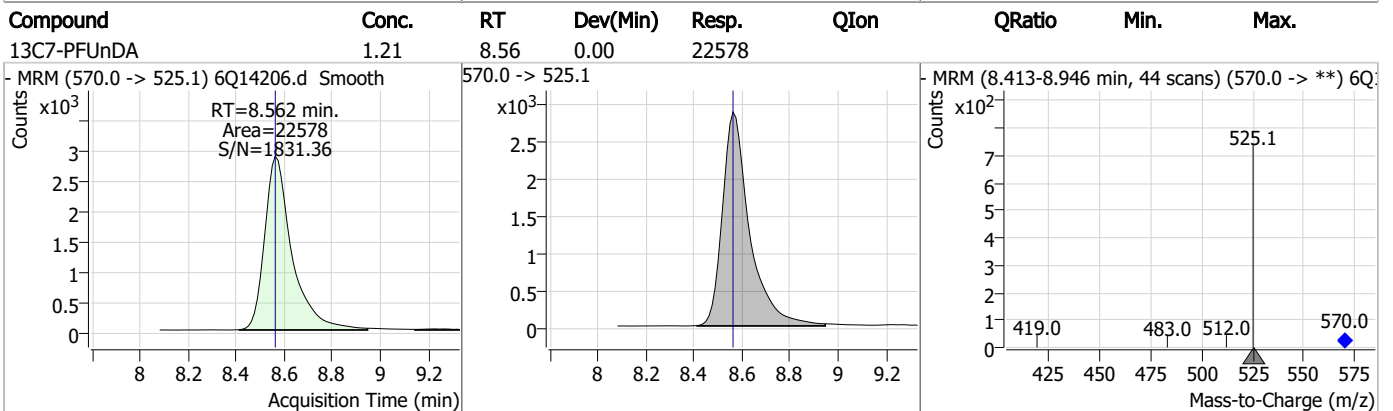
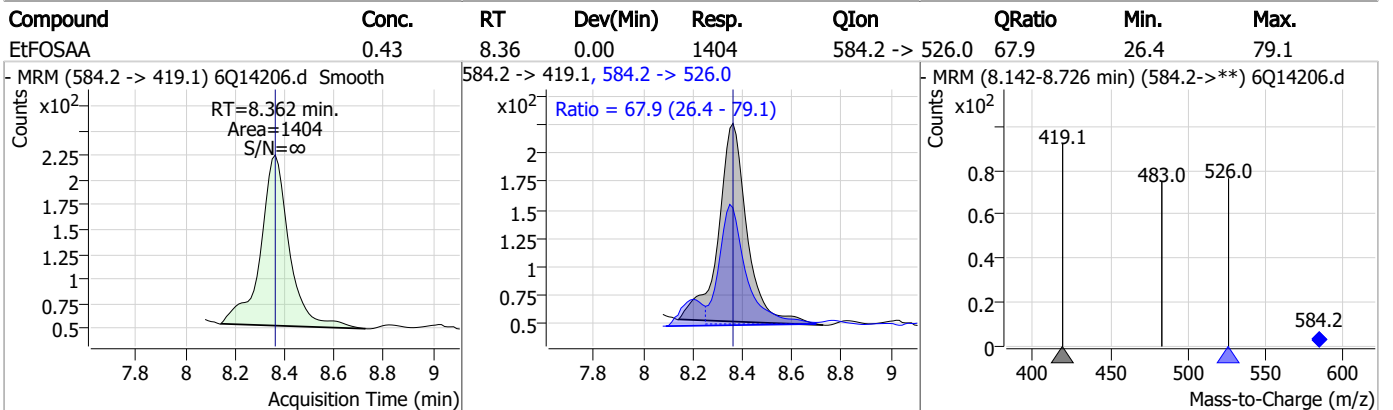
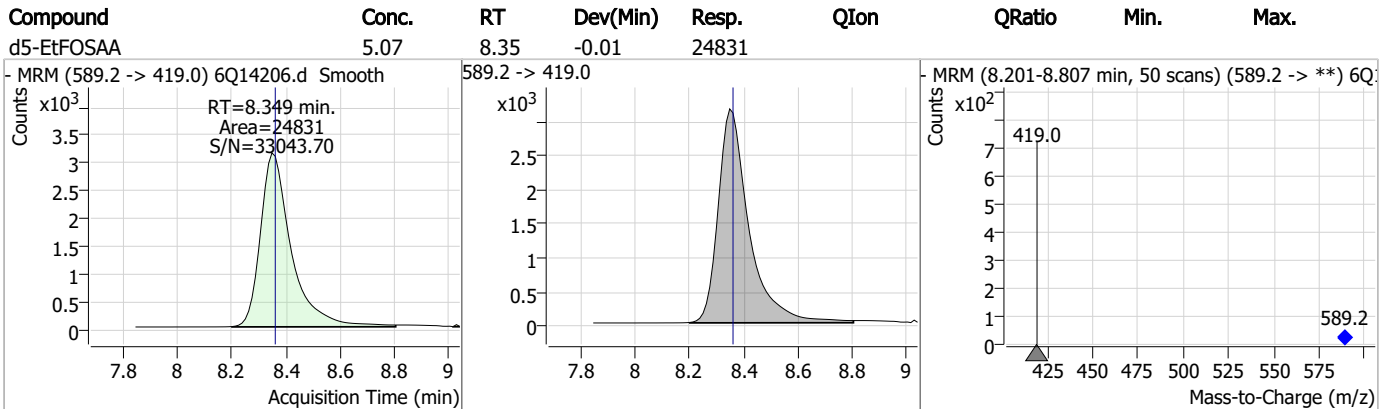
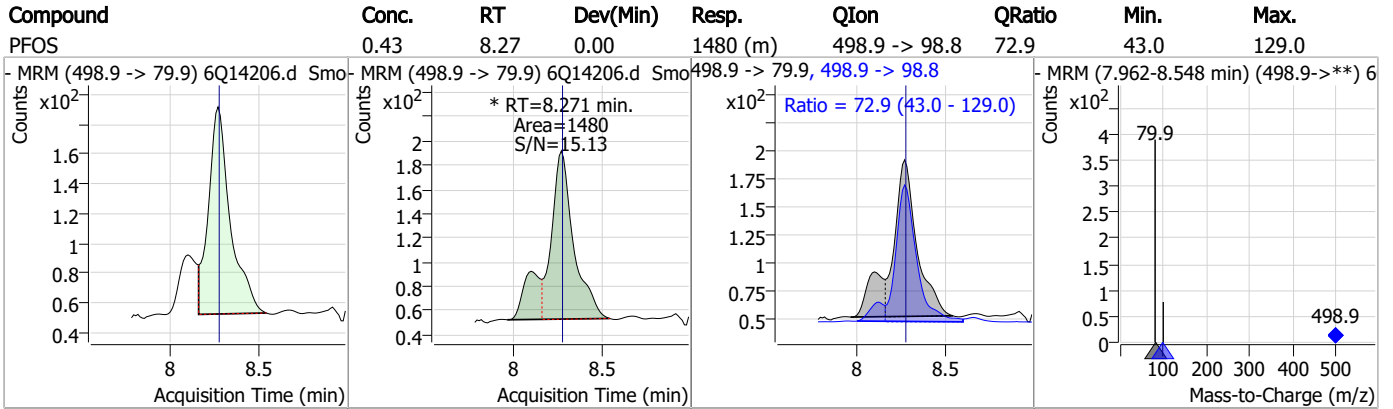
Perfluorinated Compounds by LC/MS/MS



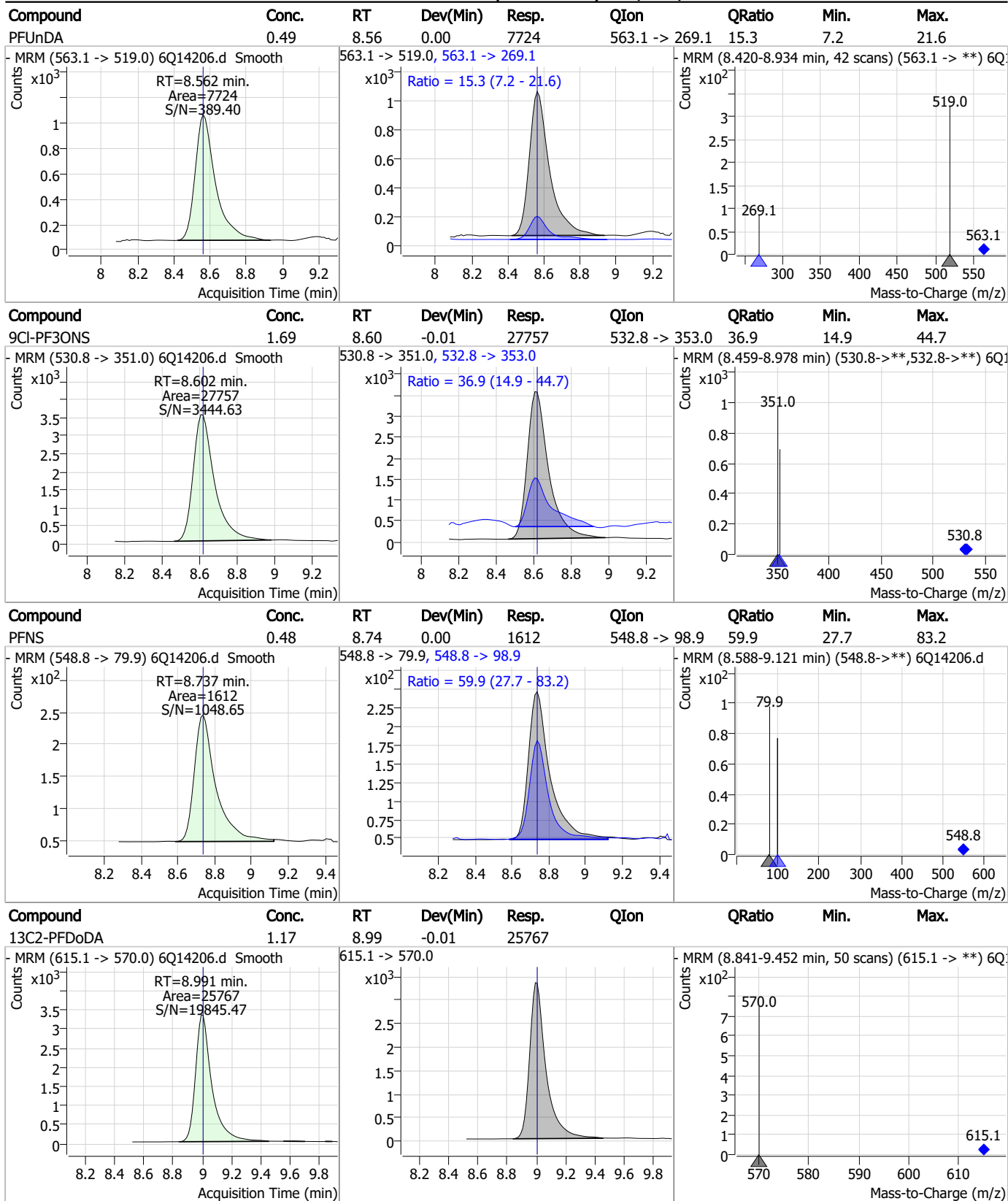
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Perfluorinated Compounds by LC/MS/MS

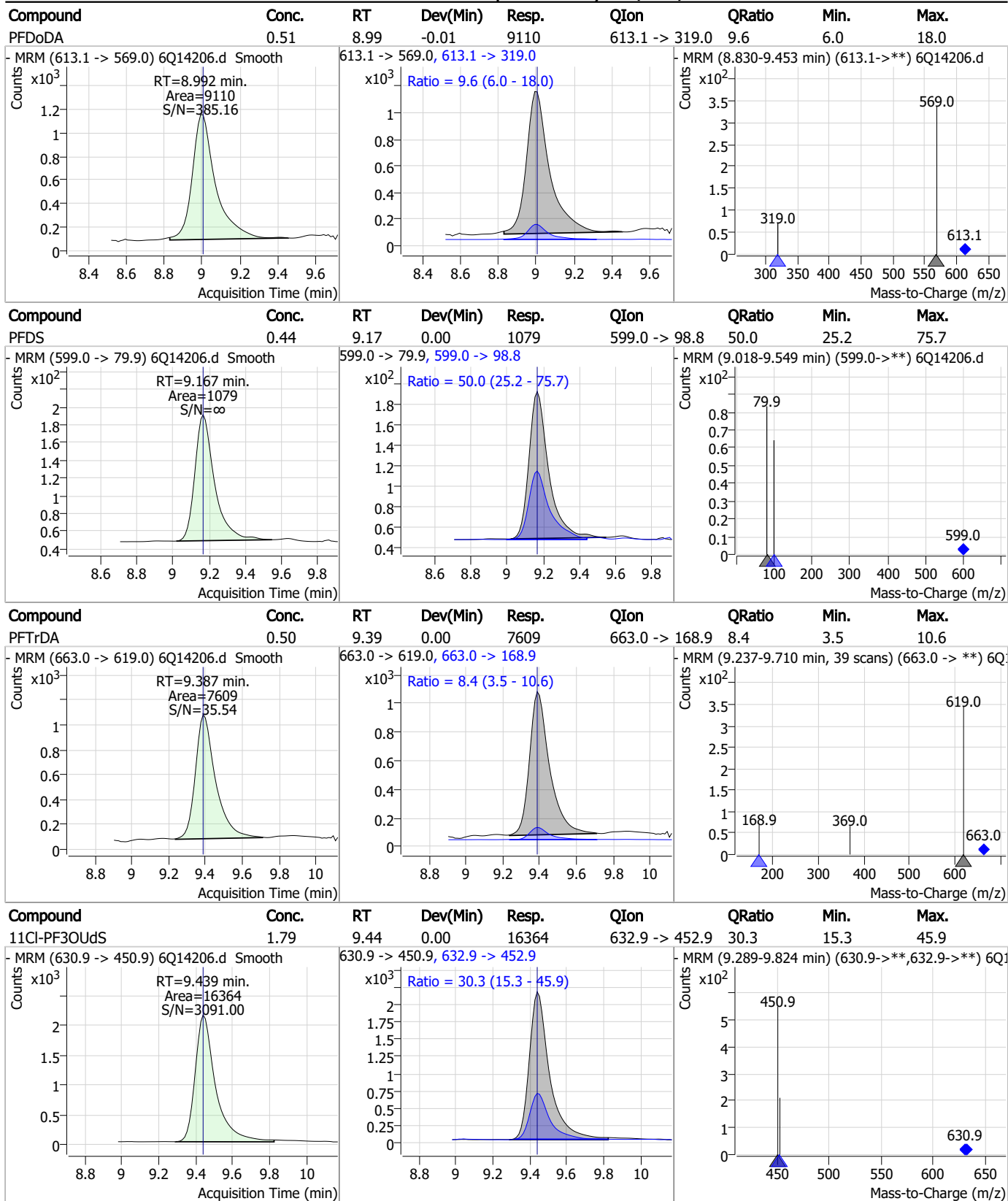


Perfluorinated Compounds by LC/MS/MS



7.7.3
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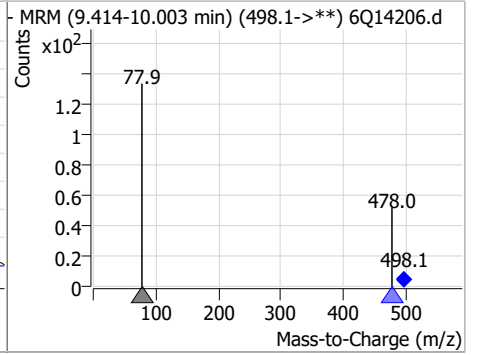
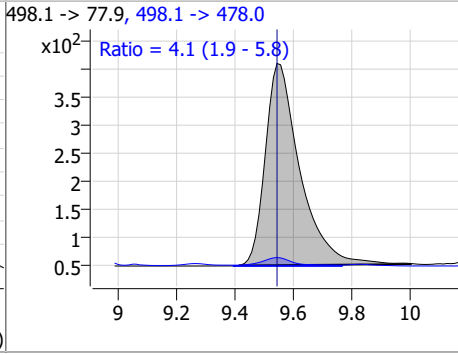
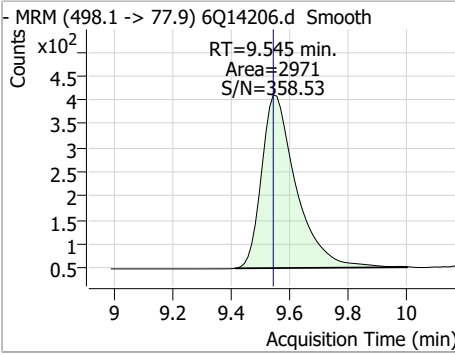
Perfluorinated Compounds by LC/MS/MS



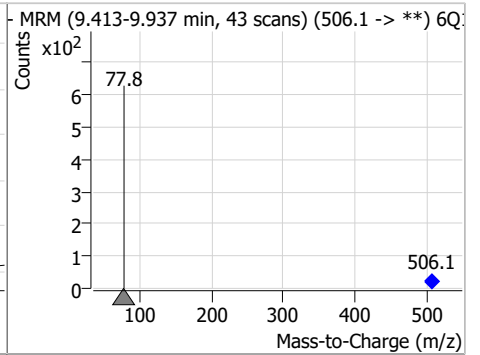
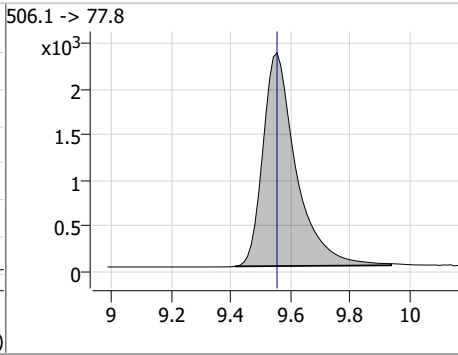
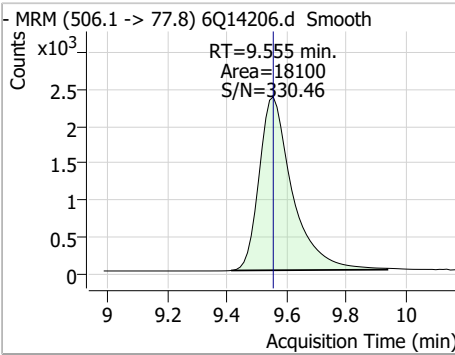
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Perfluorinated Compounds by LC/MS/MS

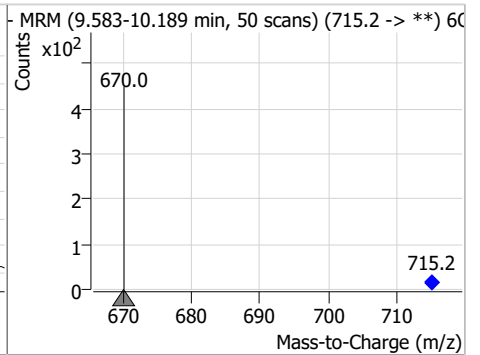
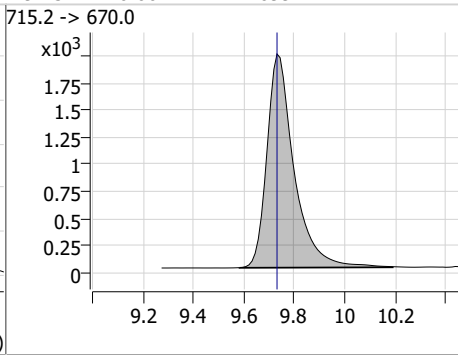
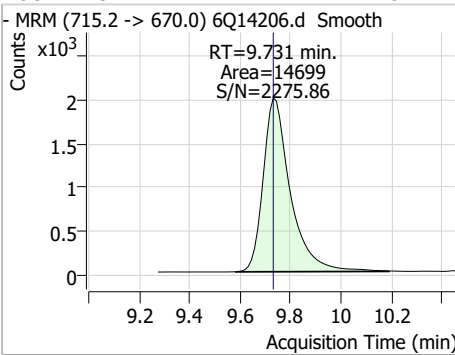
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.48	9.54	0.00	2971	498.1 -> 478.0	4.1	1.9	5.8



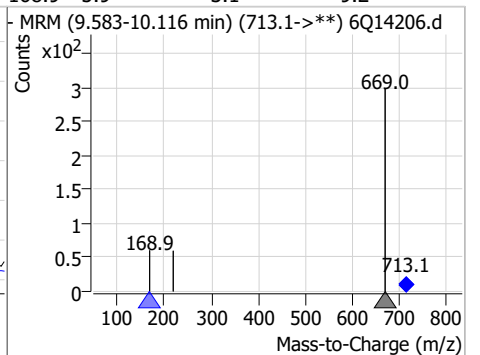
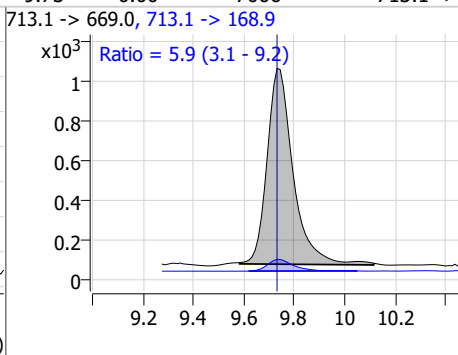
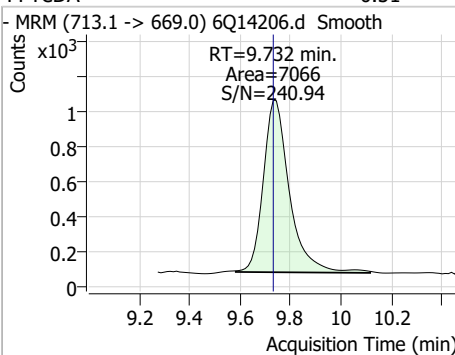
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.51	9.55	0.00	18100				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.15	9.73	0.00	14699				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.51	9.73	0.00	7066	713.1 -> 168.9	5.9	3.1	9.2



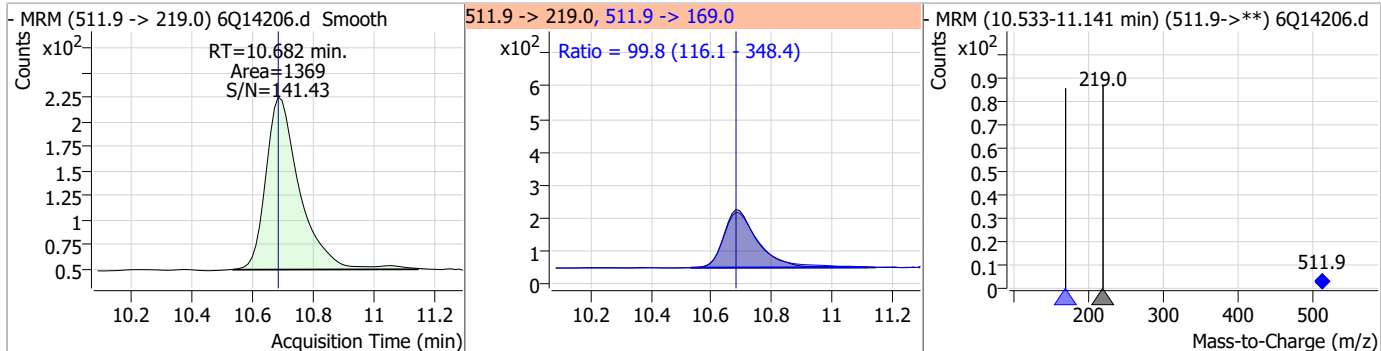
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.40	9.87	0.00	560	699.1 -> 98.8	74.1	29.4	88.2
d7-MeFOSE	25.37	10.59	0.00	26283				
MeFOSE	4.76	10.61	0.01	4394				
d3-MeFOSA	2.45	10.68	0.00	6348				

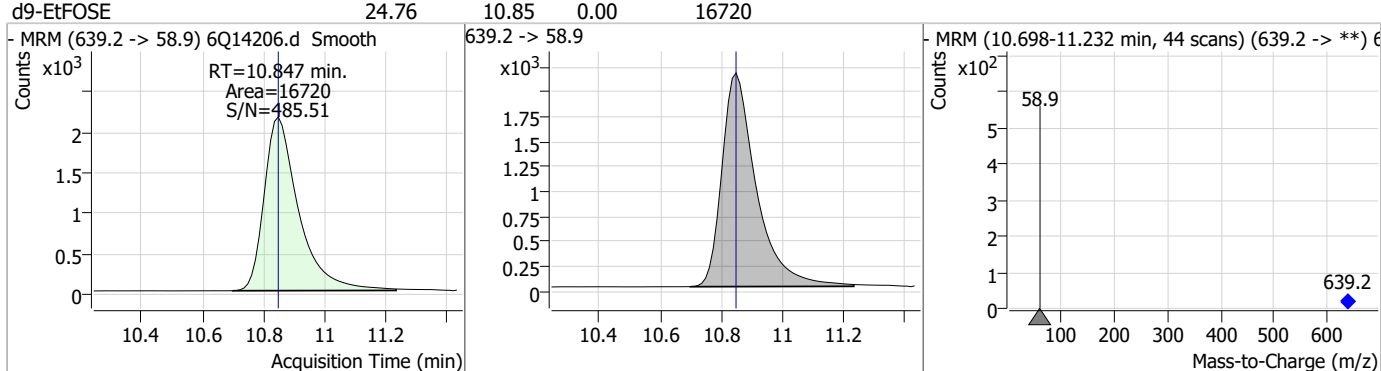
7.7.3
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Perfluorinated Compounds by LC/MS/MS

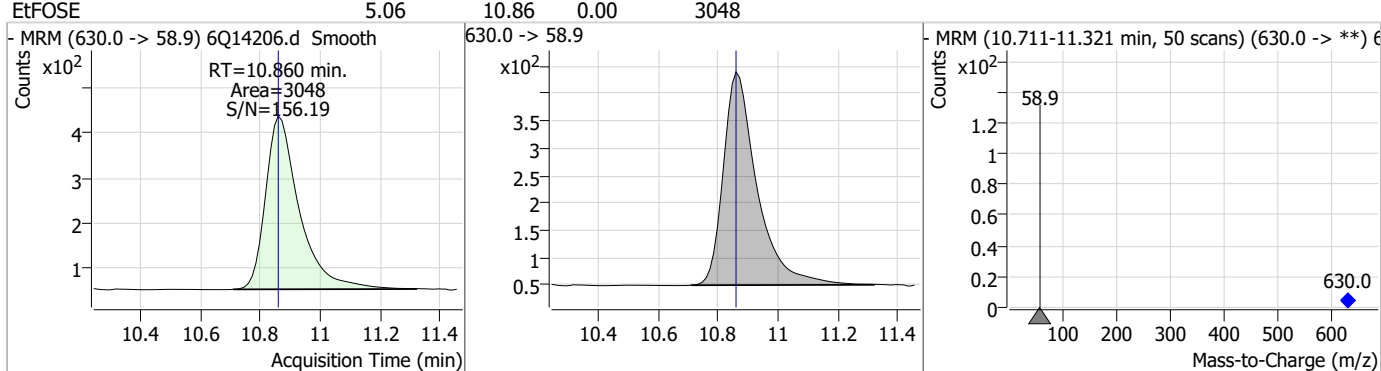
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.51	10.68	0.00	1369	511.9 -> 169.0	99.8	116.1	348.4



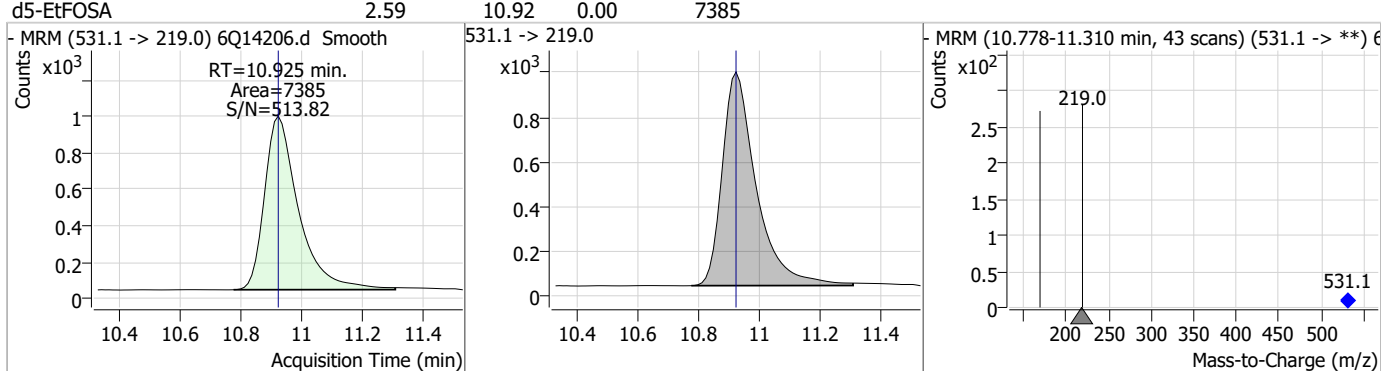
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.76	10.85	0.00	16720				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	5.06	10.86	0.00	3048				

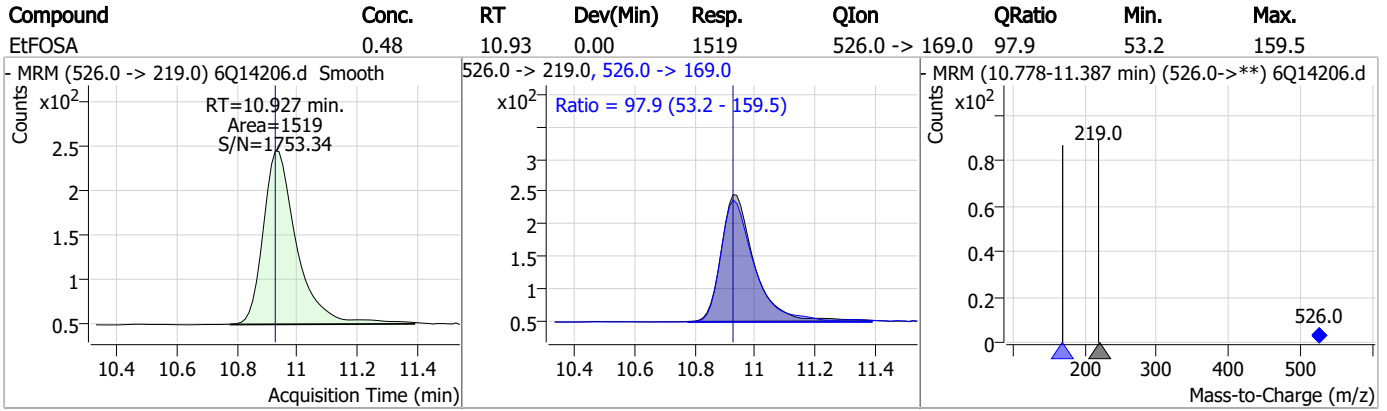


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.59	10.92	0.00	7385				



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: S6Q217-IC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14206.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 13:53 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.7.3.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14207.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 2:07:40 PM
 Sample Name : ic217-3
 Vial : P1-A4
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	97625	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	48543	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	42418	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	44634	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	75733	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	24727	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	18103	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	23003	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	26355	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	15194	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17787	2.50 µg/L	0.000
M3-PFBS	5.443	302.1 -> 79.9	16465	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	10319	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	9481	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2435	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	3098	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2903	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	28648	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	15931	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	24493	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	26830	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	17402	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	7267	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6482	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10633	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	42633	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	7794	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	89098	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	27391	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	25668	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	43444	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2435	5.23 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C2-6:2FTS	6.871	429.1 -> 80.9	3098	5.26 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2903	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-PFDoDA	8.991	615.1 -> 570.0	26355	1.22 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C2-PFTeDA	9.731	715.2 -> 670.0	15194	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C3-PFBS	5.443	302.1 -> 79.9	16465	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C3-PFHxS	7.212	402.1 -> 79.9	10319	2.39 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 = 95.5%	
13C4-PFBA	2.938	216.8 -> 171.9	97625	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.452	367.1 -> 322.0	44634	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C5-PFHxA	5.513	318.0 -> 273.0	42418	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFPeA	4.337	268.3 -> 223.0	48543	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C6-PFDA	8.108	519.1 -> 474.1	18103	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.6%	
13C7-PFUnDA	8.562	570.0 -> 525.1	23003	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-FOSA	9.555	506.1 -> 77.8	17787	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C8-PFOA	7.097	421.1 -> 376.0	75733	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C8-PFOS	8.270	507.1 -> 79.9	9481	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C9-PFNA	7.626	472.1 -> 427.0	24727	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
d3-MeFOSAA	8.153	573.2 -> 419.0	28648	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	15931	9.63 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
d3-MeFOSA	10.680	515.0 -> 219.0	6482	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
d5-EtFOSAA	8.349	589.2 -> 419.0	24493	5.04 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
d7-MeFOSE	10.589	623.2 -> 58.9	26830	26.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
d9-EtFOSE	10.847	639.2 -> 58.9	17402	26.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
d5-EtFOSA	10.925	531.1 -> 219.0	7267	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	21169	4.68 µg/L	99
		327.1 -> 80.9	4565		
6:2FTS	6.859	427.1 -> 407.0	16826	4.36 µg/L	95
		427.1 -> 80.9	3435		
8:2FTS	7.896	527.1 -> 507.0	8788	4.65 µg/L	95
		527.1 -> 80.8	2320		
EtFOSAA	8.362	584.2 -> 419.1	4209	1.31 µg/L	97
		584.2 -> 526.0	2320		
FOSA	9.545	498.1 -> 77.9	7614	1.26 µg/L	98
		498.1 -> 478.0	352		
MeFOSAA	8.154	570.1 -> 419.0	5569	1.18 µg/L	93
		570.1 -> 483.0	1030		
PFBA	2.932	212.8 -> 168.9	9443	4.80 µg/L	100
PFBS	5.444	298.7 -> 79.9	5929	1.09 µg/L	95
		298.7 -> 98.8	2677		
PFDA	8.108	512.9 -> 469.0	22644	1.31 µg/L	92
		512.9 -> 219.0	3695		
PFDODA	9.005	613.1 -> 569.0	22119	1.20 µg/L	97
		613.1 -> 319.0	2414		
PFDS	9.167	599.0 -> 79.9	2901	1.15 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1496			
PFHpA	6.453	363.1 -> 319.0	26800	1.21	µg/L	99
		363.1 -> 169.0	3876			
PFHpS	7.765	449.0 -> 79.9	4023	1.22	µg/L	93
		449.0 -> 98.9	2338			
PFHxA	5.516	313.0 -> 269.0	16603	1.22	µg/L	98
		313.0 -> 118.9	680			
PFHxS	7.213	398.7 -> 79.9	4498	1.19	µg/L	m 95
		398.7 -> 98.9	2567			
PFNA	7.627	463.0 -> 419.0	15202	1.21	µg/L	99
		463.0 -> 219.0	3113			
PFNS	8.737	548.8 -> 79.9	3703	1.07	µg/L	88
		548.8 -> 98.9	2388			
PFOA	7.098	413.0 -> 369.0	35677	1.28	µg/L	91
		413.0 -> 169.0	4449			
PFOS	8.271	498.9 -> 79.9	3794	1.07	µg/L	m 85
		498.9 -> 98.8	2744			
PFPeA	4.338	263.0 -> 219.0	20511	2.41	µg/L	100
PFPeS	6.504	349.1 -> 79.9	5621	1.18	µg/L	97
		349.1 -> 98.9	2871			
PFTeDA	9.732	713.1 -> 669.0	16590	1.17	µg/L	98
		713.1 -> 168.9	1132			
PFTrDA	9.387	663.0 -> 619.0	18515	1.18	µg/L	96
		663.0 -> 168.9	1552			
PFUnDA	8.562	563.1 -> 519.0	19305	1.20	µg/L	96
		563.1 -> 269.1	3102			
11CI-PF3OUdS	9.439	630.9 -> 450.9	41785	4.74	µg/L	99
		632.9 -> 452.9	12546			
9CI-PF3ONS	8.602	530.8 -> 351.0	78335	4.94	µg/L	96
		532.8 -> 353.0	21718			
ADONA	6.704	376.9 -> 250.9	157184	4.98	µg/L	95
		376.9 -> 84.8	30697			
HFPO-DA	5.879	284.9 -> 168.9	6592	5.19	µg/L	100
		284.9 -> 184.9	804			
3:3FTCA	3.791	241.0 -> 177.0	2786	6.18	µg/L	94
		241.0 -> 117.0	428			
5:3FTCA	6.156	341.0 -> 237.1	93154	30.03	µg/L	95
		341.0 -> 217.0	85618			
7:3FTCA	7.567	441.0 -> 316.9	49354	29.96	µg/L	99
		441.0 -> 336.9	92392			
EtFOSA	10.927	526.0 -> 219.0	3844	1.23	µg/L	91
		526.0 -> 169.0	3726			
EtFOSE	10.860	630.0 -> 58.9	7458	11.89	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	3422	1.24	µg/L	# 16
		511.9 -> 169.0	3172			
MeFOSE	10.615	616.1 -> 58.9	10861	11.53	µg/L	100
PFDoDS	9.870	699.1 -> 79.9	1679	1.18	µg/L	85
		699.1 -> 98.8	1170			
NFDHA	5.395	295.0 -> 201.0	1795	2.34	µg/L	93
		295.0 -> 84.9	1042			
PFMBA	4.738	279.0 -> 85.1	6208	2.48	µg/L	100
PFMPA	3.488	229.0 -> 84.9	5507	2.42	µg/L	100
PFEESA	5.983	314.8 -> 134.9	39984	2.08	µg/L	100
		314.8 -> 82.9	1006			

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

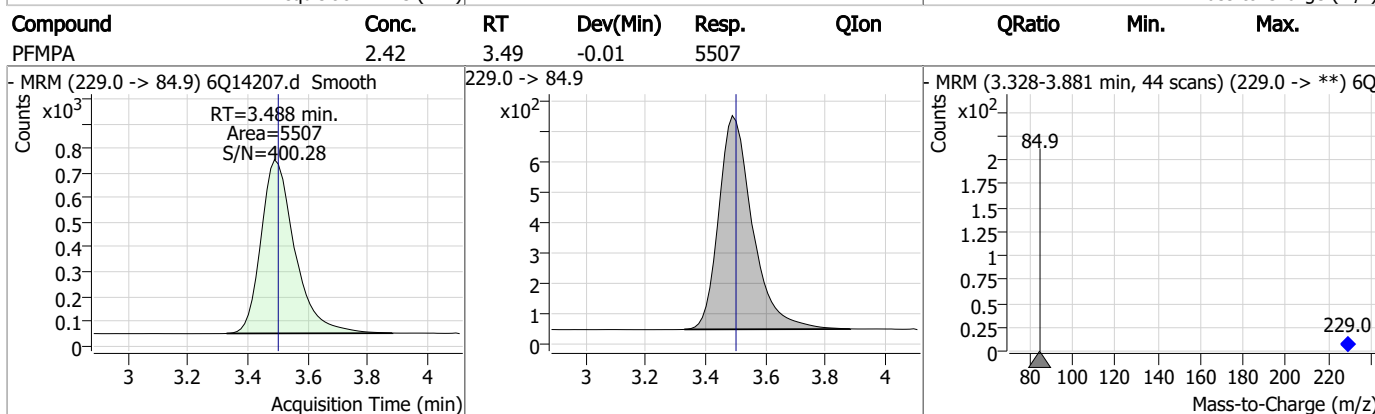
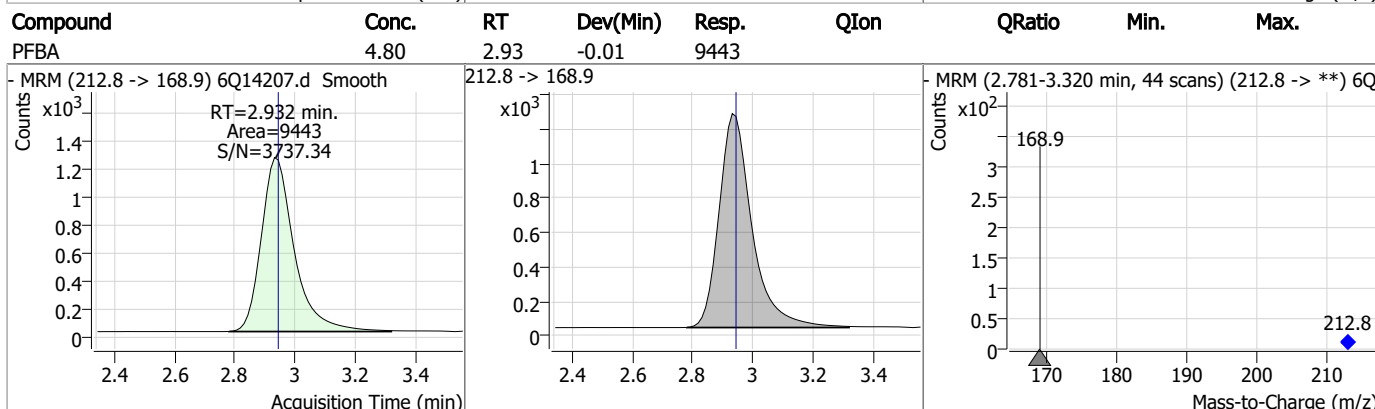
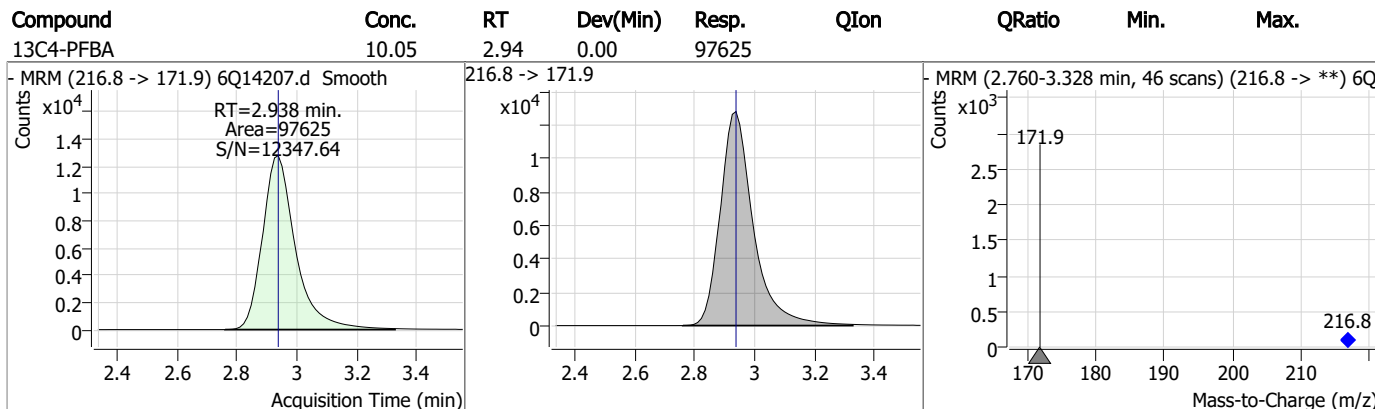
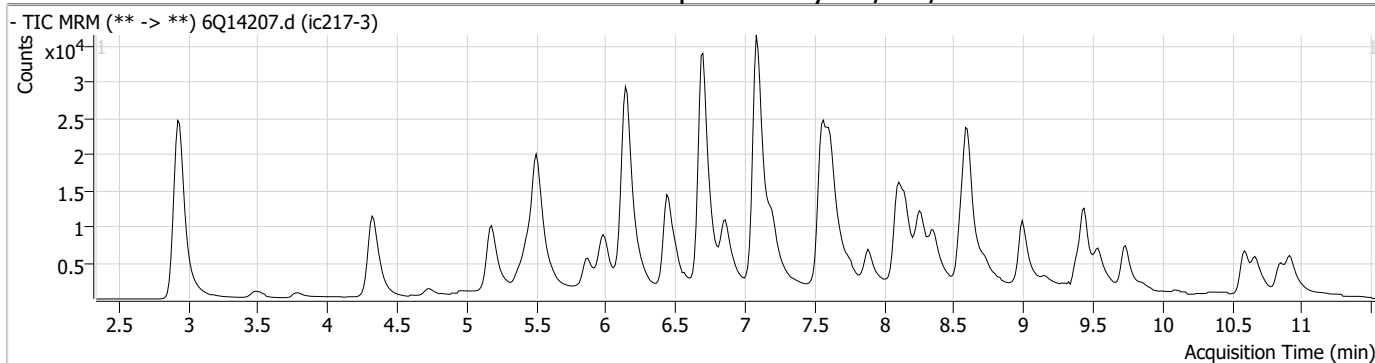
Perfluorinated Compounds by LC/MS/MS

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

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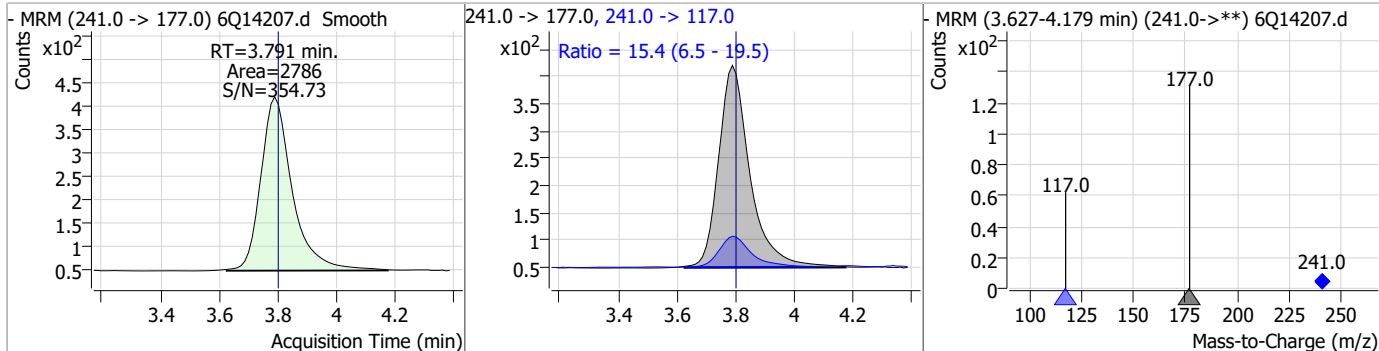
Perfluorinated Compounds by LC/MS/MS



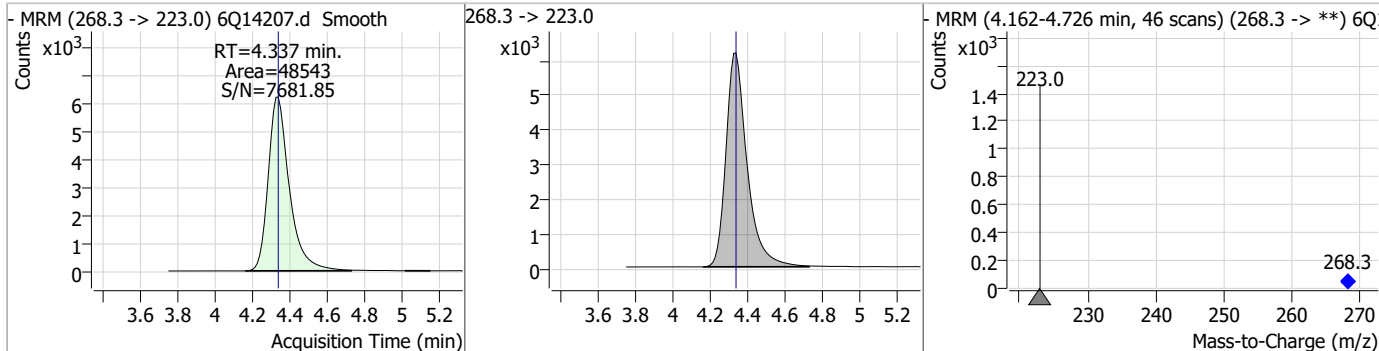
7.7.4
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Perfluorinated Compounds by LC/MS/MS

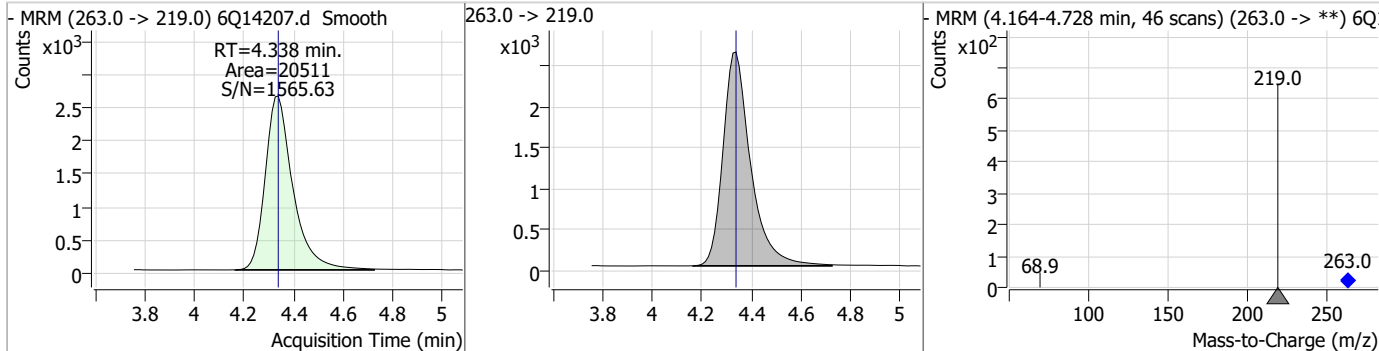
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	6.18	3.79	-0.01	2786	241.0 -> 117.0	15.4	6.5	19.5



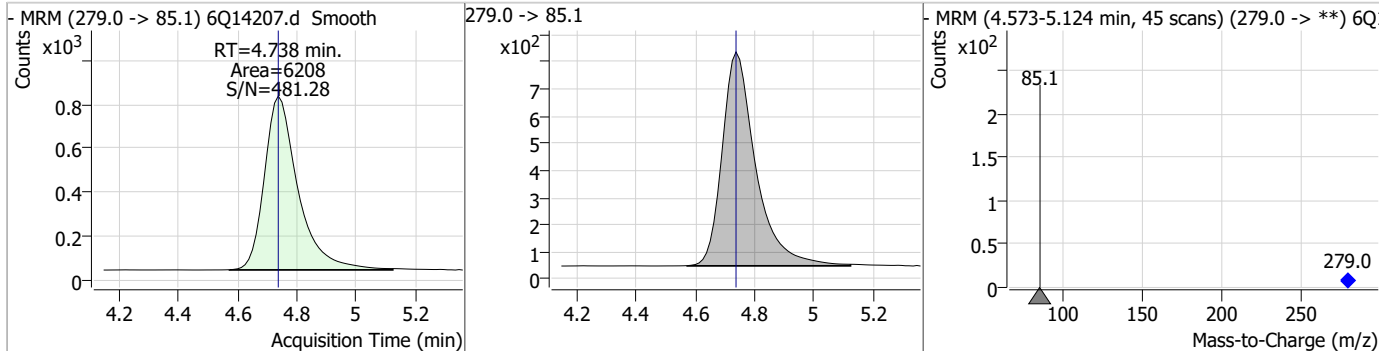
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.99	4.34	0.00	48543				



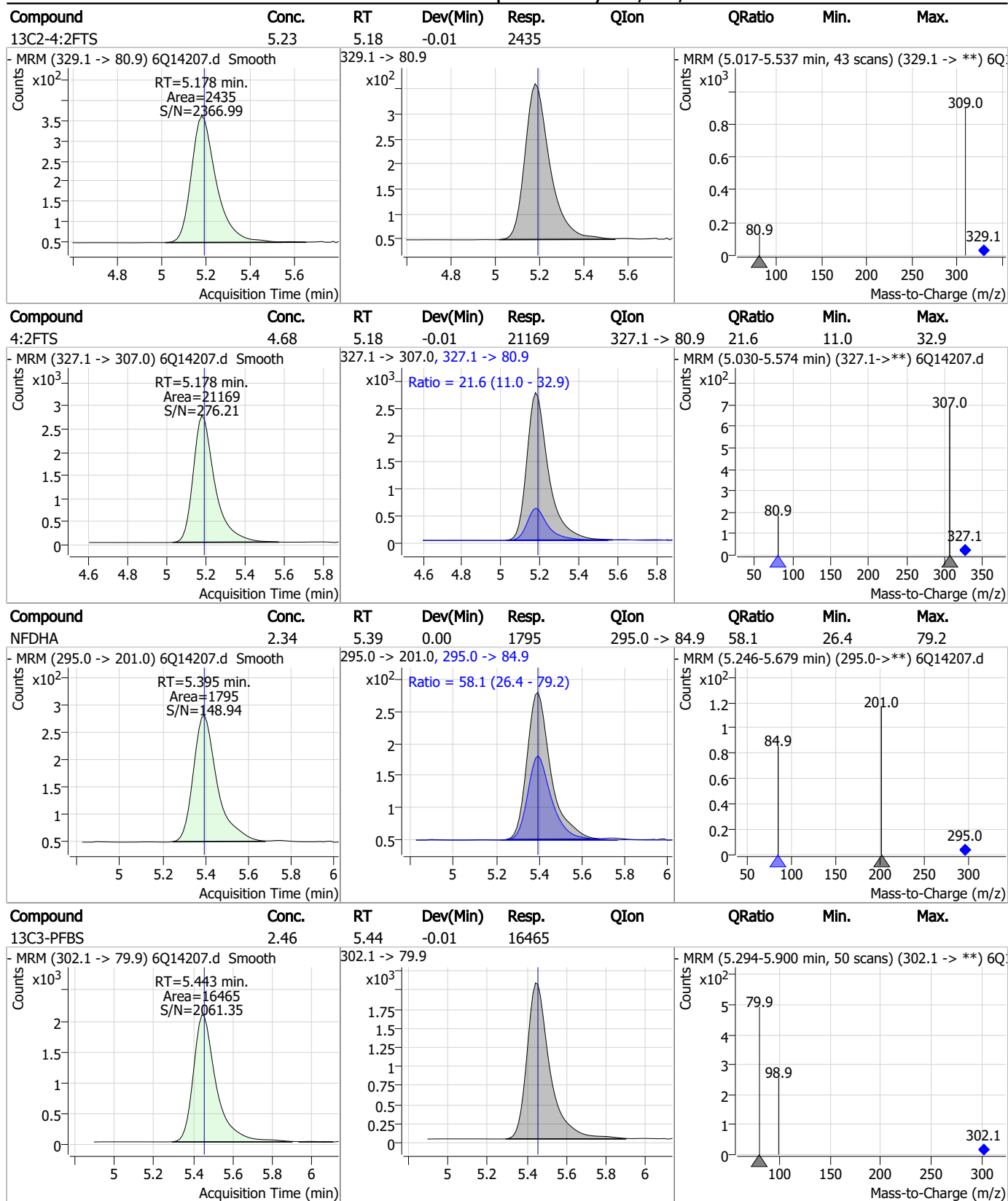
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.41	4.34	0.00	20511				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	2.48	4.74	0.00	6208				



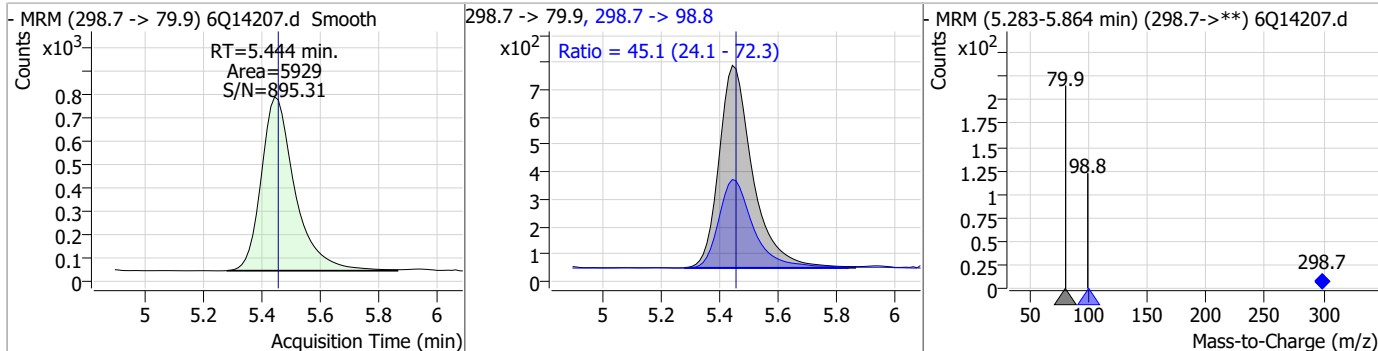
Perfluorinated Compounds by LC/MS/MS



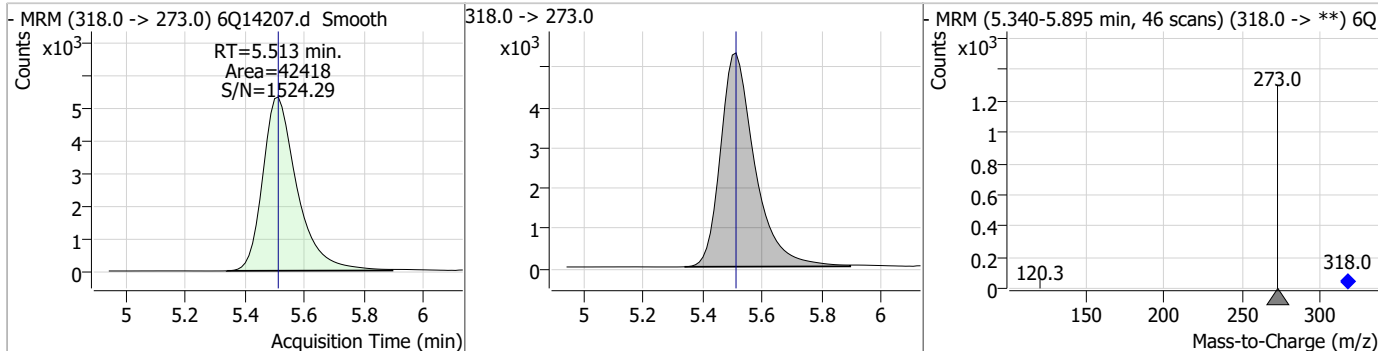
7.7.4
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Perfluorinated Compounds by LC/MS/MS

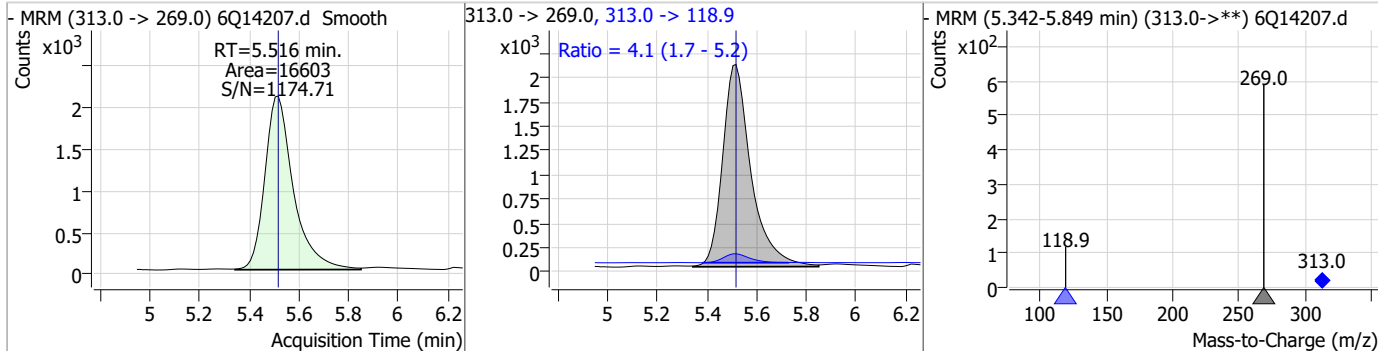
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.09	5.44	-0.01	5929	298.7 -> 98.8	45.1	24.1	72.3



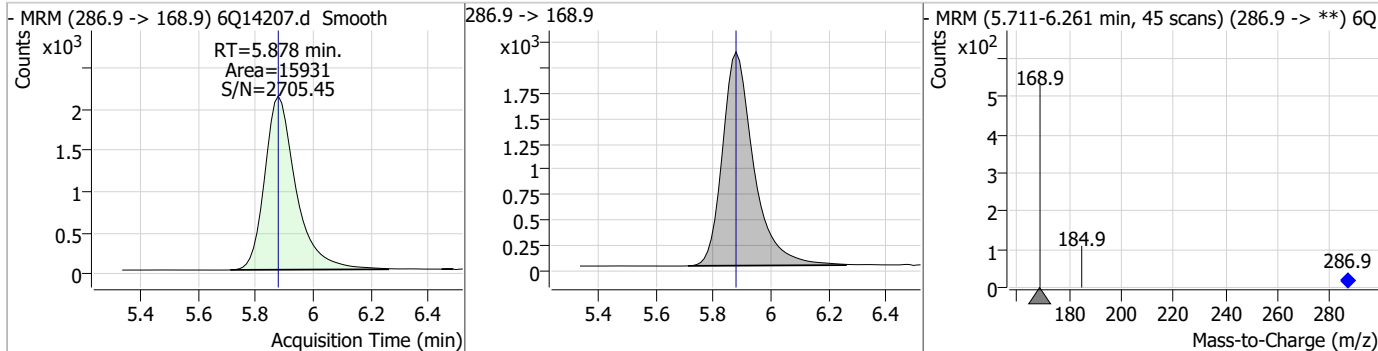
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.51	0.00	42418				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.22	5.52	0.00	16603	313.0 -> 118.9	4.1	1.7	5.2

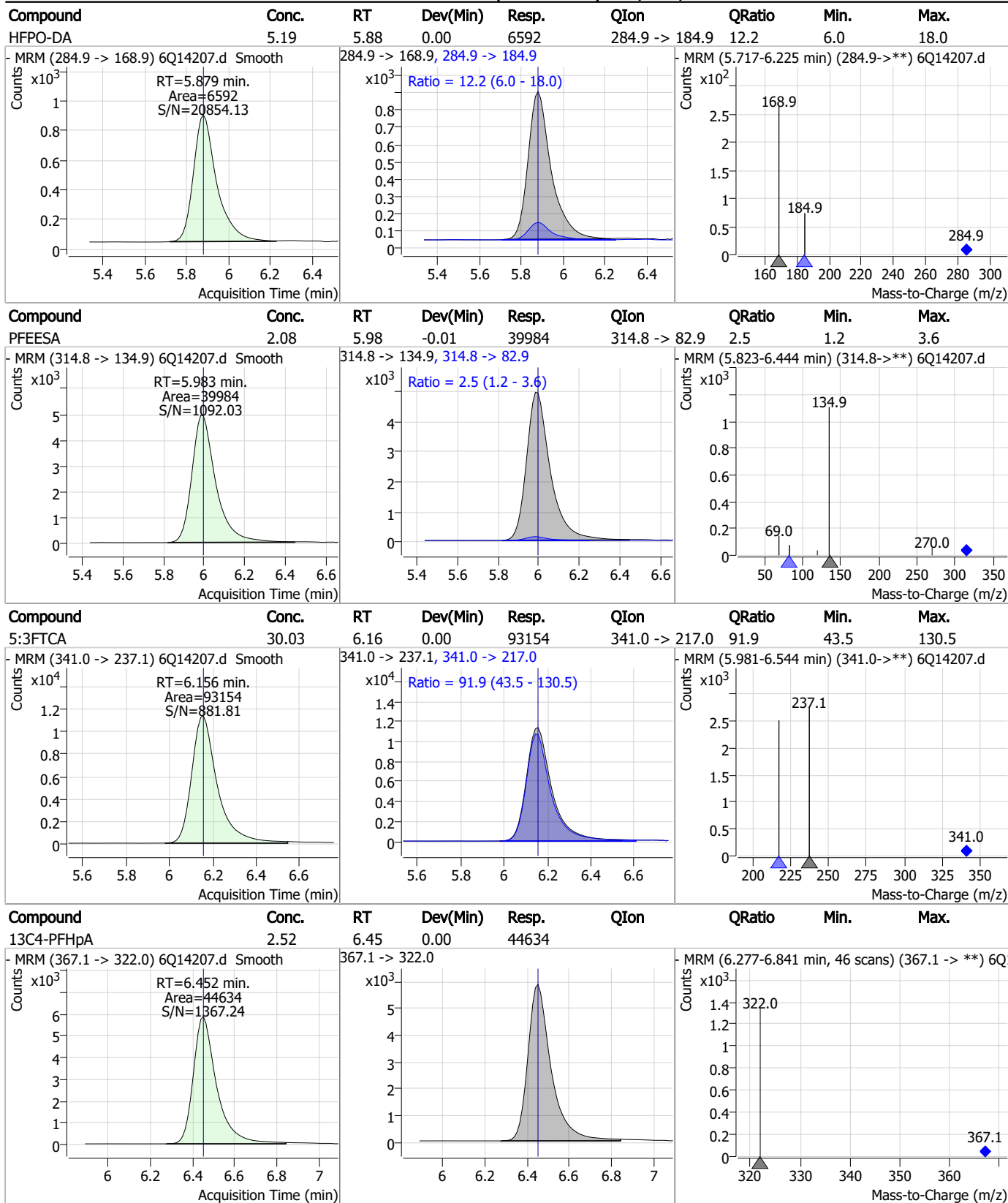


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.63	5.88	0.00	15931				



7.7.4
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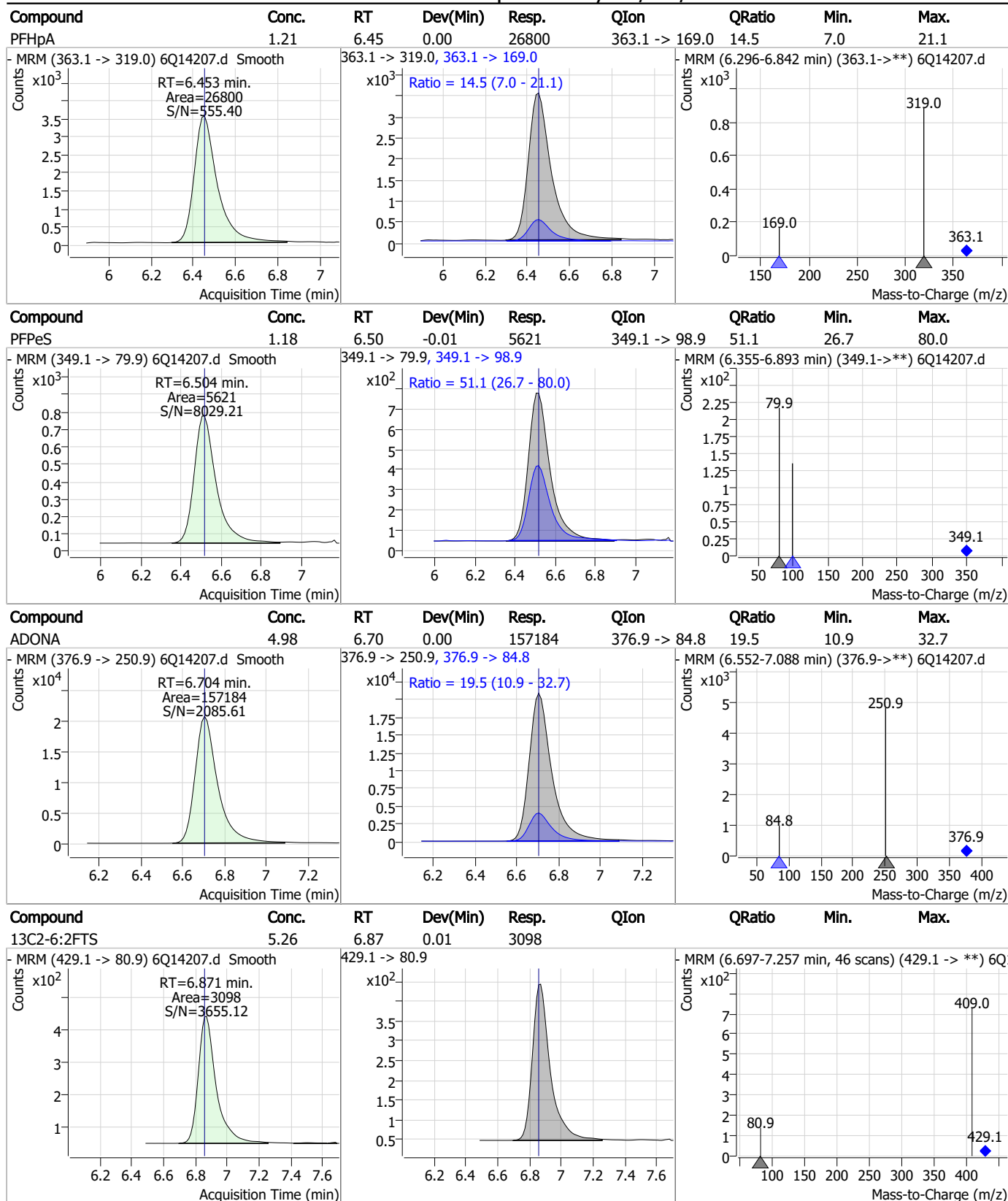
Perfluorinated Compounds by LC/MS/MS



7.7.4

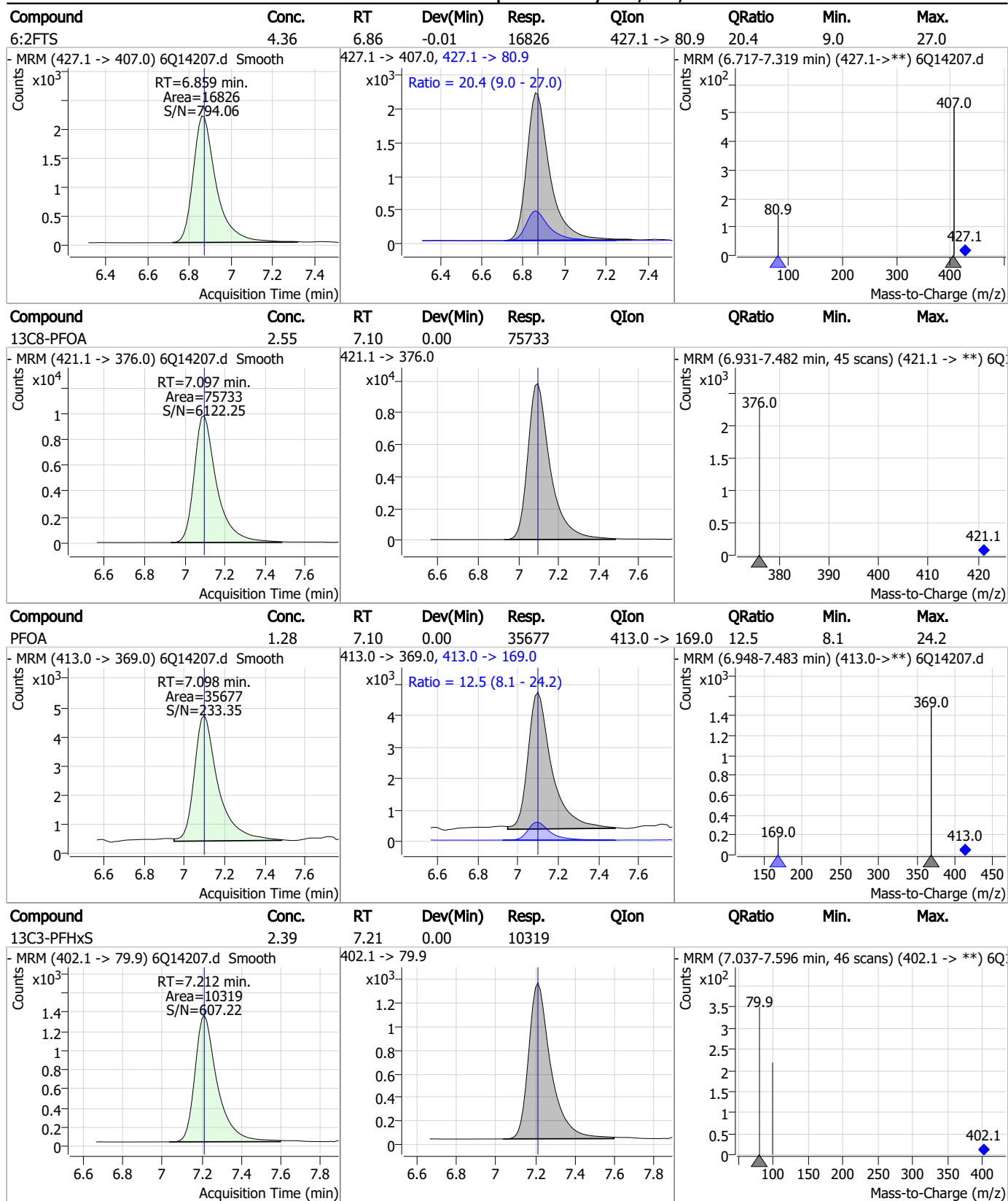
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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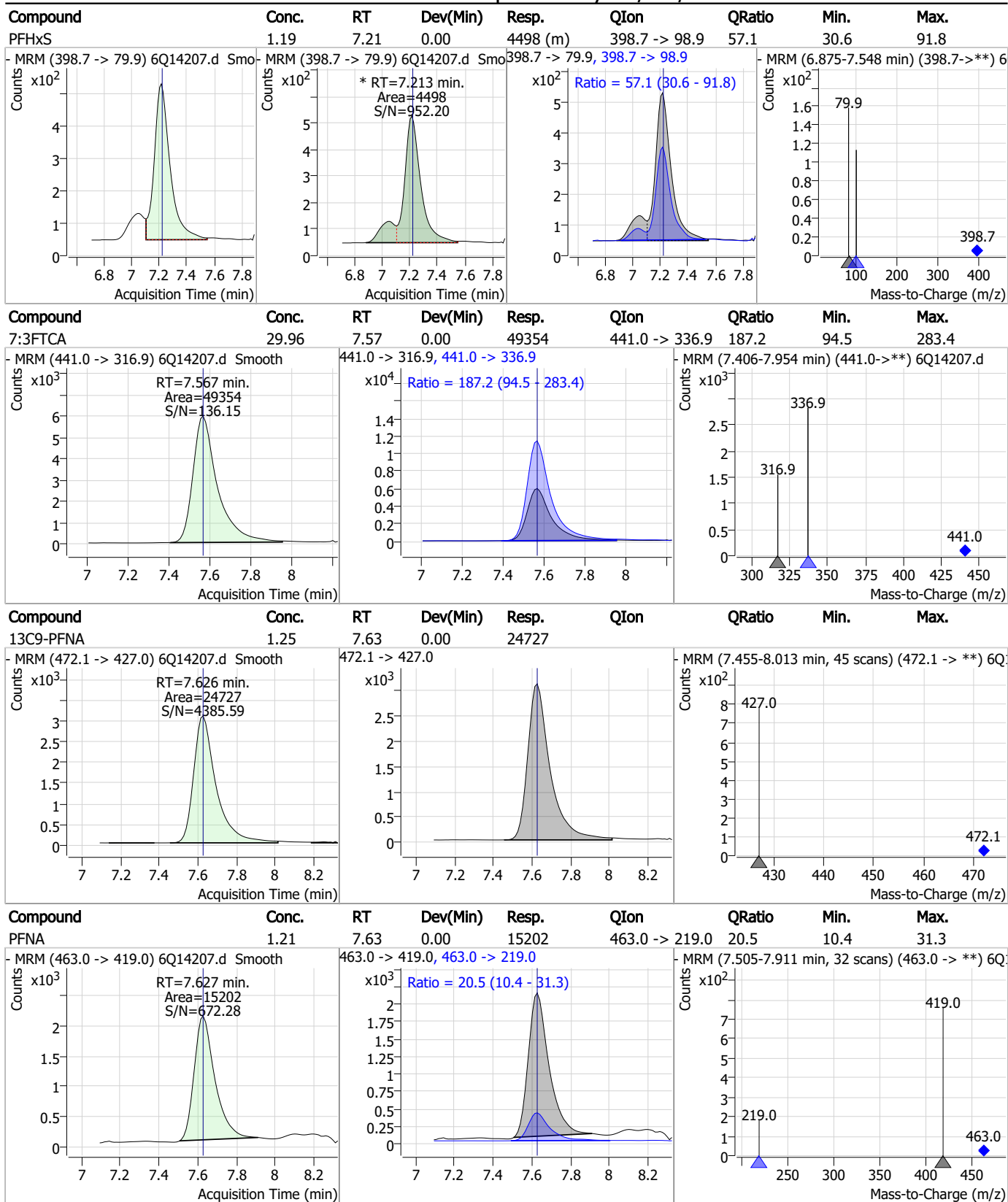
Perfluorinated Compounds by LC/MS/MS



7.7.4
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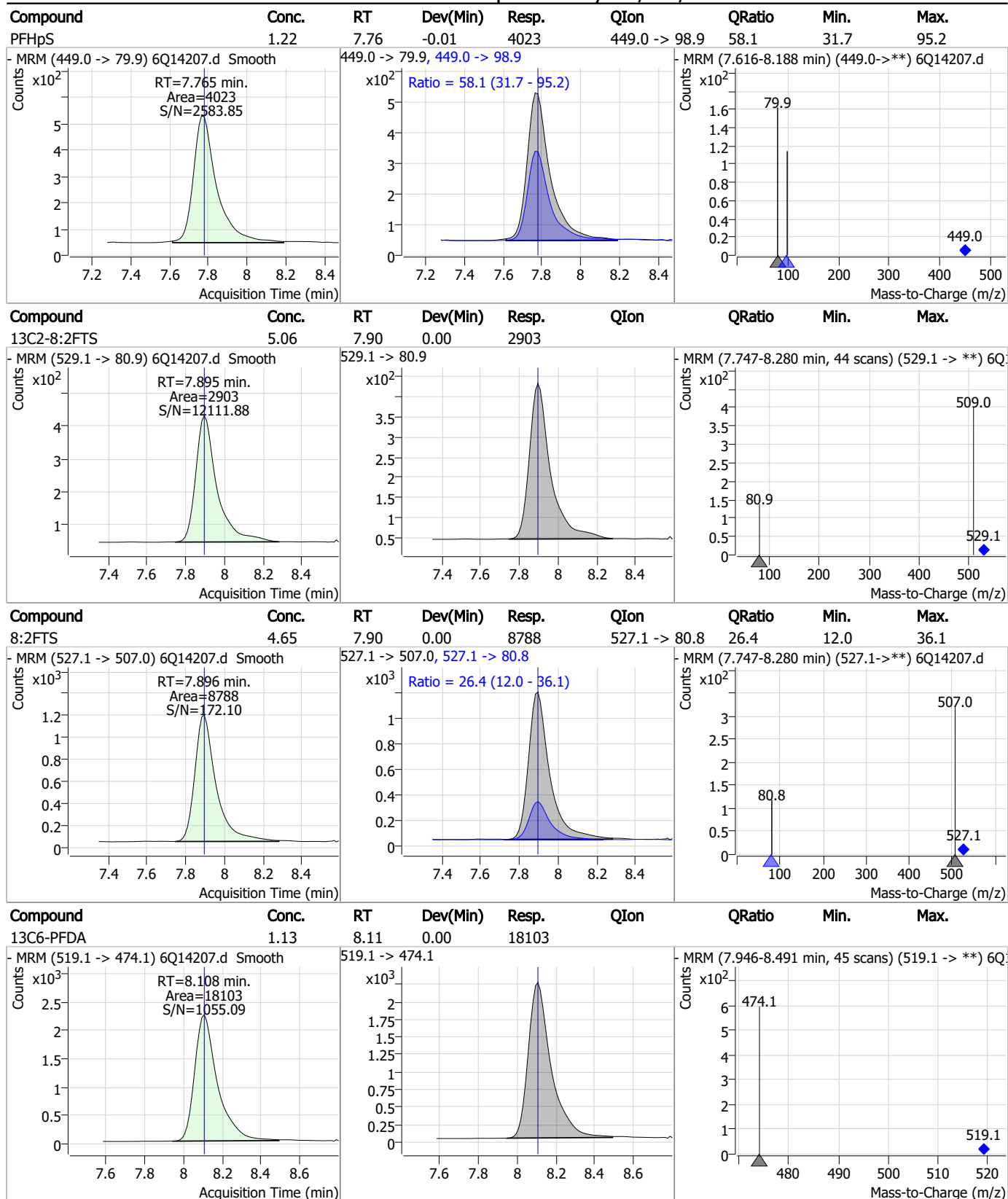


Perfluorinated Compounds by LC/MS/MS



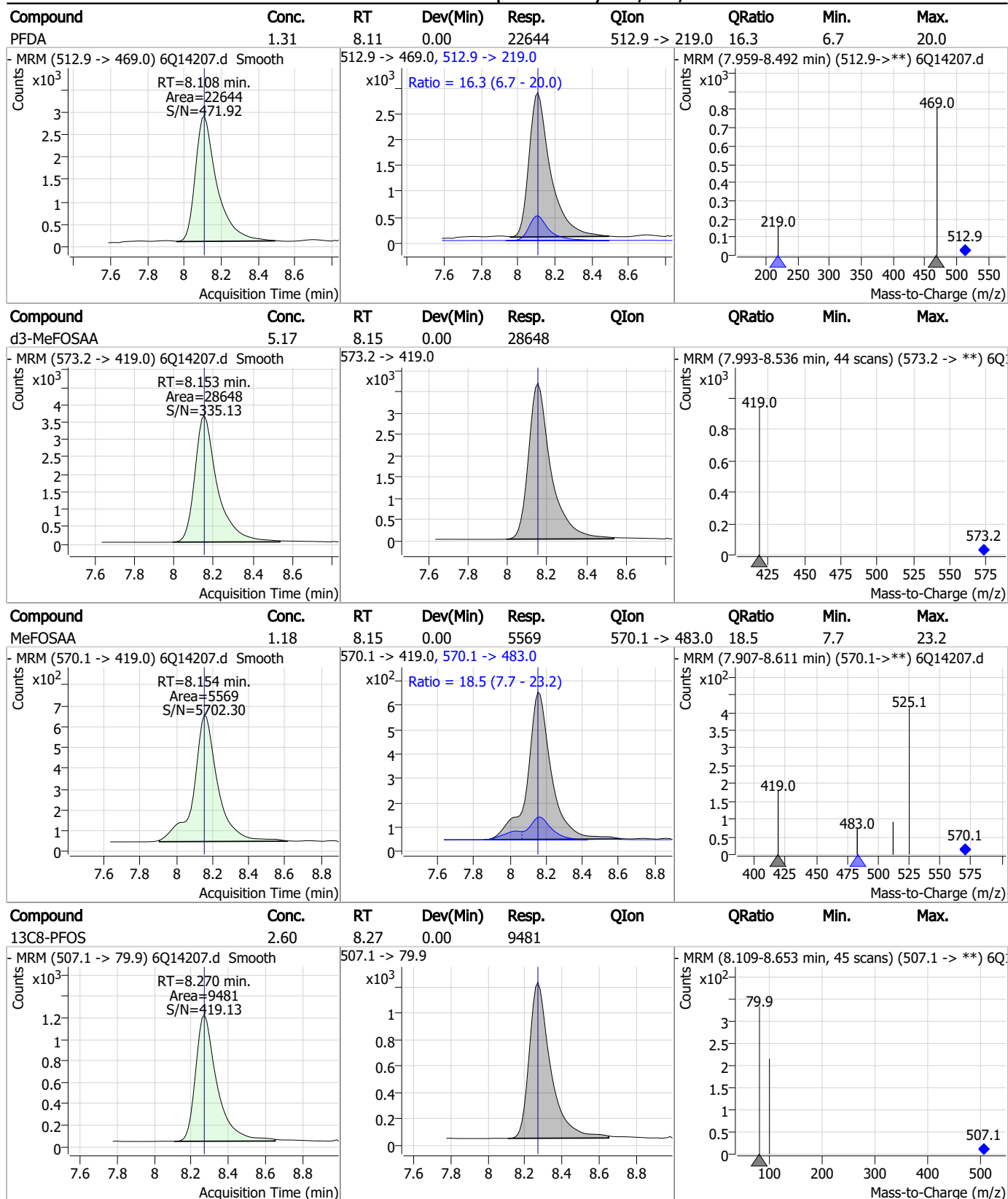
7.7.4
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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Perfluorinated Compounds by LC/MS/MS



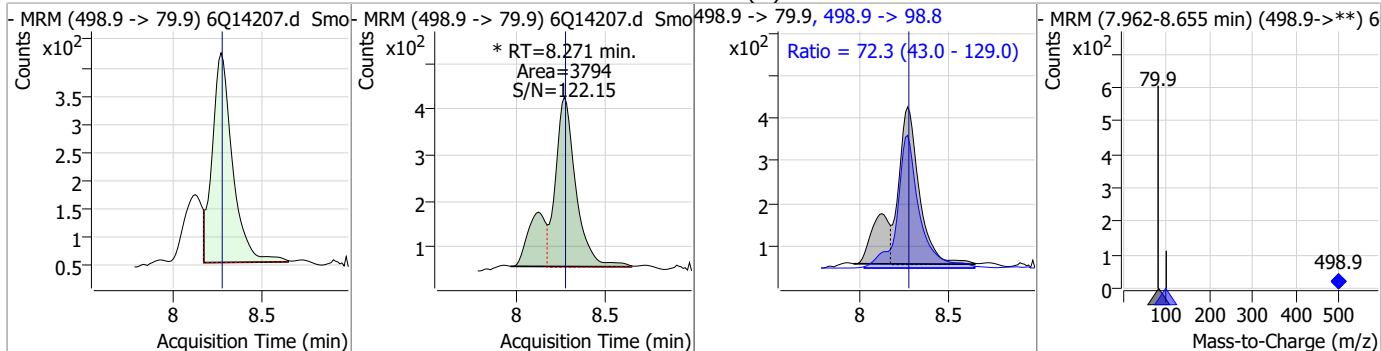
7.7.4

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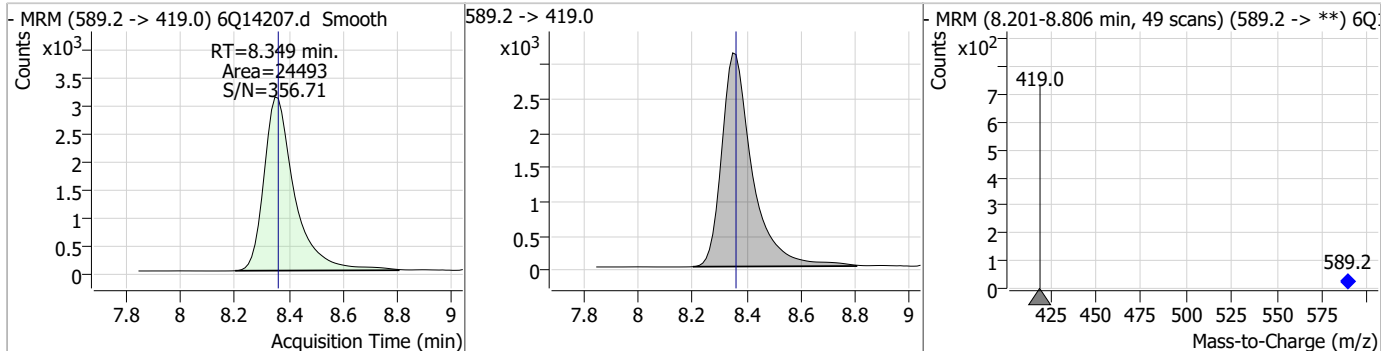


Perfluorinated Compounds by LC/MS/MS

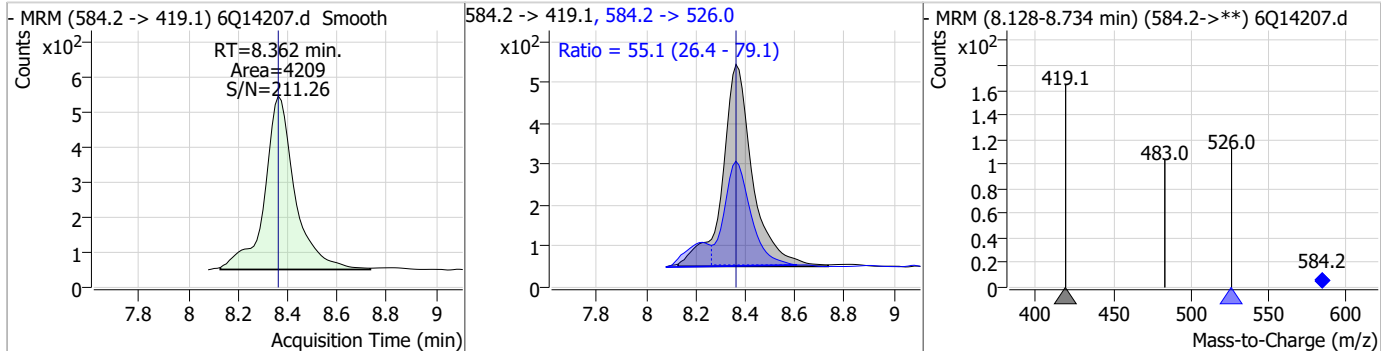
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.07	8.27	0.00	3794 (m)	498.9 -> 98.8	72.3	43.0	129.0



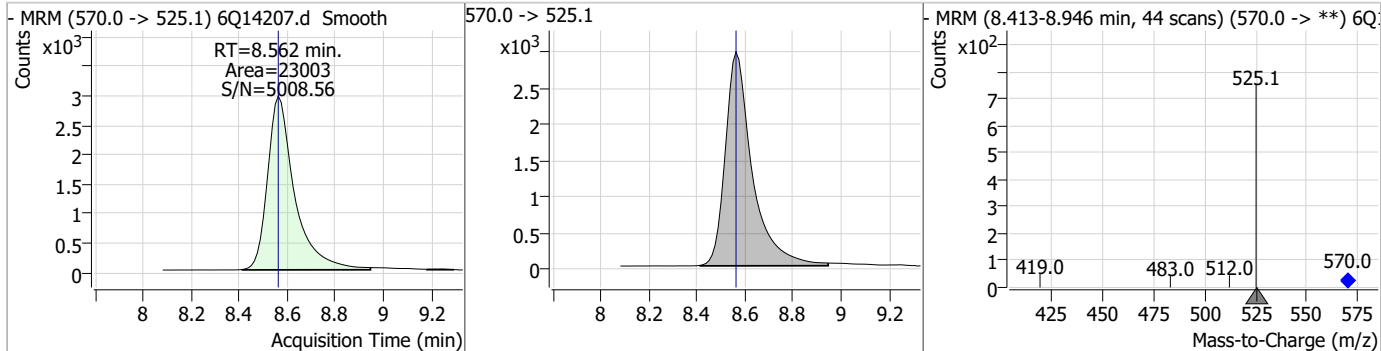
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.04	8.35	-0.01	24493				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.31	8.36	0.00	4209	584.2 -> 526.0	55.1	26.4	79.1

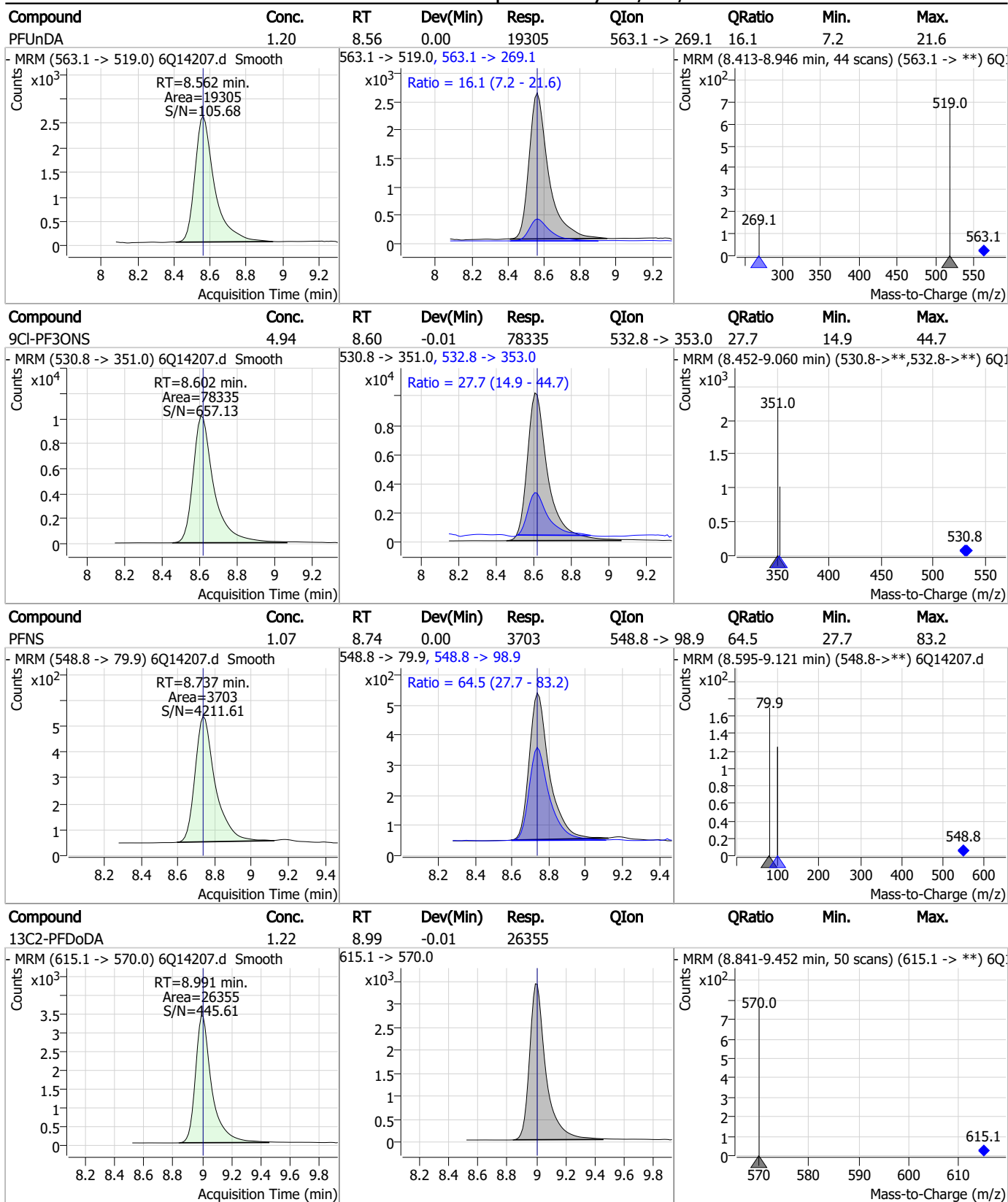


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.56	0.00	23003				



7.7.4
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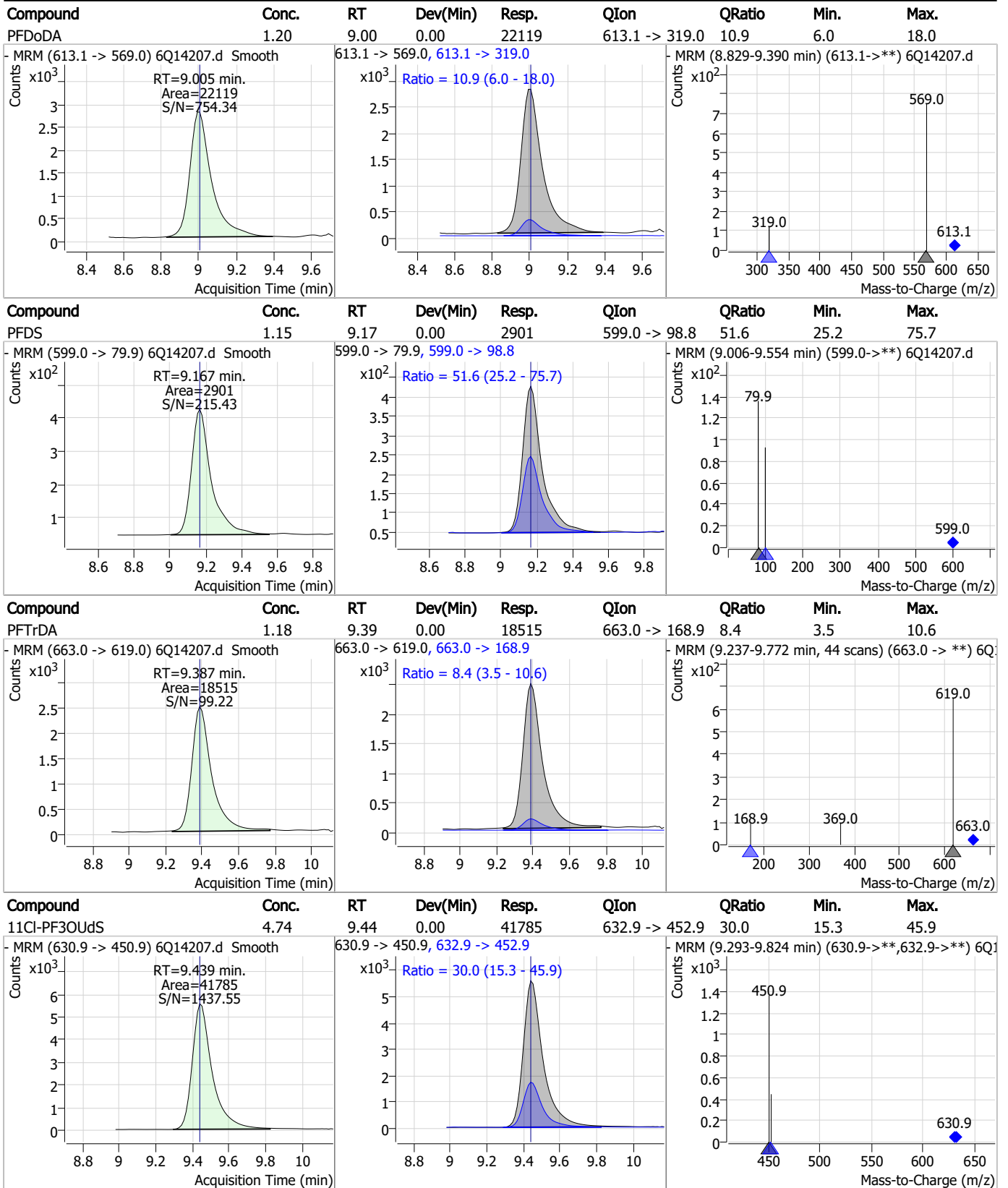
Perfluorinated Compounds by LC/MS/MS



7.7.4

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Perfluorinated Compounds by LC/MS/MS

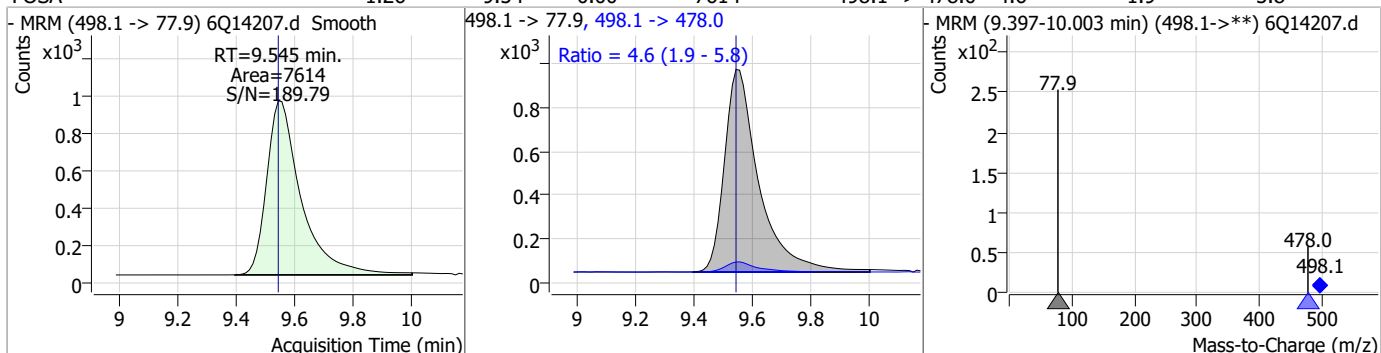


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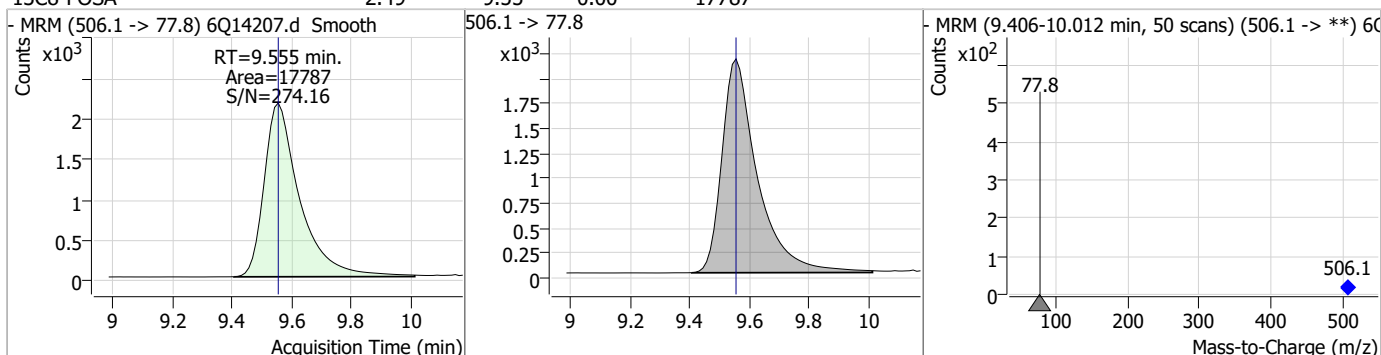
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Perfluorinated Compounds by LC/MS/MS

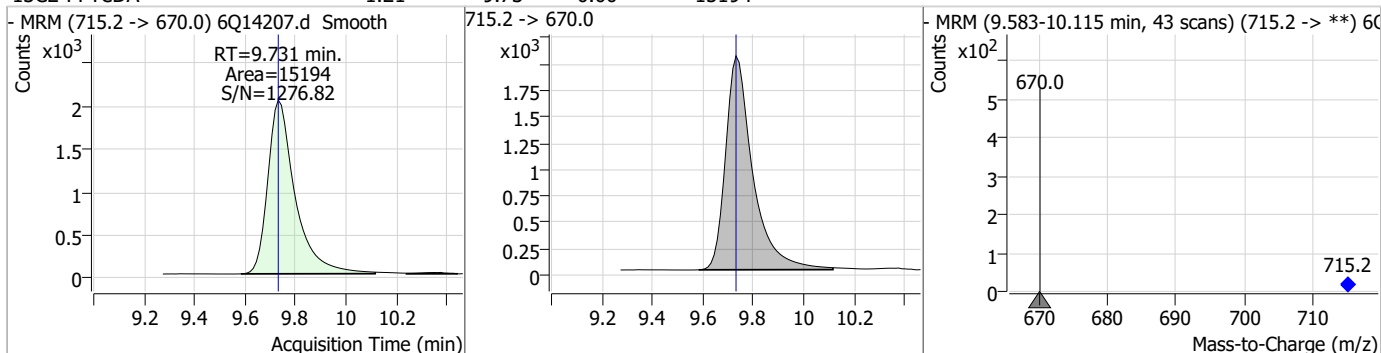
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.26	9.54	0.00	7614	498.1 -> 478.0	4.6	1.9	5.8



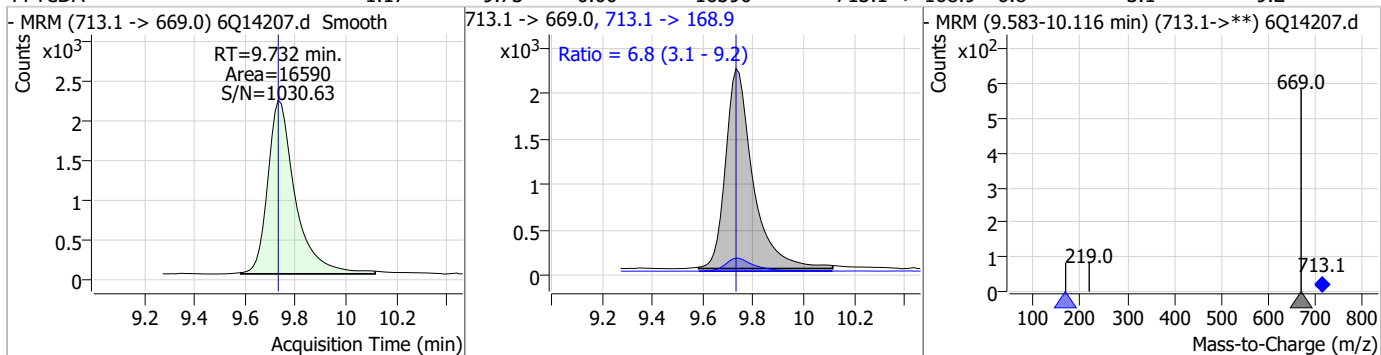
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.49	9.55	0.00	17787				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	9.73	0.00	15194				

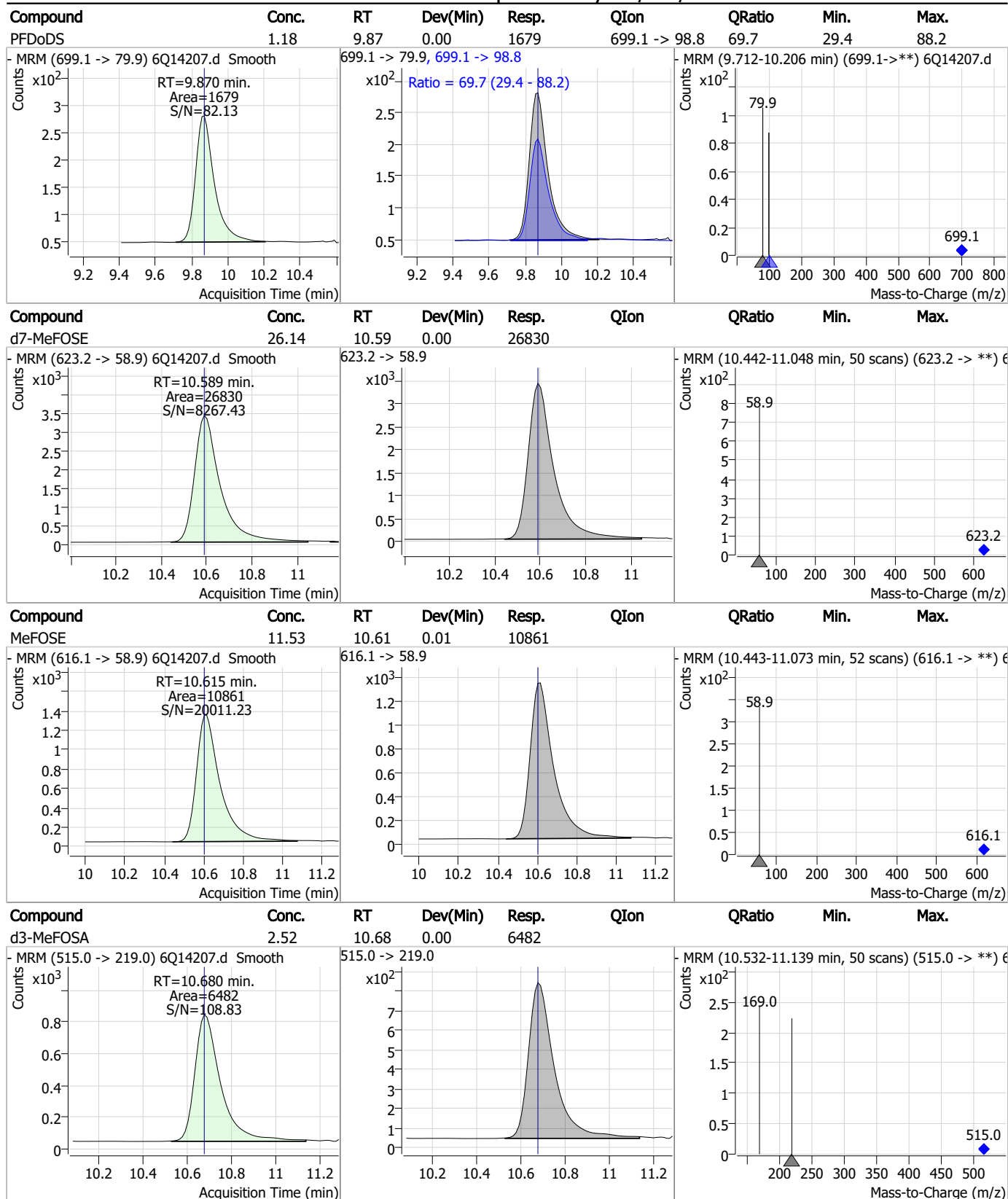


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.17	9.73	0.00	16590	713.1 -> 168.9	6.8	3.1	9.2



7.7.4
7

Perfluorinated Compounds by LC/MS/MS



7.7.4
7

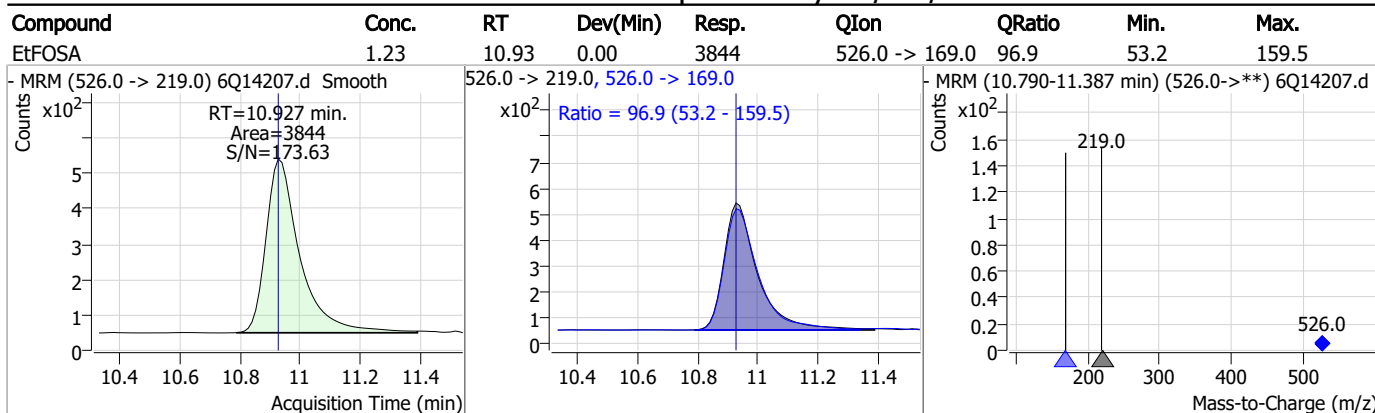


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.24	10.68	0.00	3422	511.9 -> 169.0	92.7	116.1	348.4
- MRM (511.9 -> 219.0) 6Q14207.d Smooth			511.9 -> 219.0, 511.9 -> 169.0			- MRM (10.533-11.141 min) (511.9->**) 6Q14207.d		
			Ratio = 92.7 (116.1 - 348.4)					
d9-EtFOSE	26.01	10.85	0.00	17402				
- MRM (639.2 -> 58.9) 6Q14207.d Smooth			639.2 -> 58.9			- MRM (10.698-11.232 min, 44 scans) (639.2 -> **) 6Q14207.d		
EtFOSE	11.89	10.86	0.00	7458				
- MRM (630.0 -> 58.9) 6Q14207.d Smooth			630.0 -> 58.9			- MRM (10.725-11.321 min, 48 scans) (630.0 -> **) 6Q14207.d		
d5-EtFOSA	2.57	10.92	0.00	7267				
- MRM (531.1 -> 219.0) 6Q14207.d Smooth			531.1 -> 219.0			- MRM (10.776-11.310 min, 44 scans) (531.1 -> **) 6Q14207.d		

7.7.4
7

Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Manual Integration Approval Summary

Sample Number: S6Q217-IC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14207.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 14:07 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.7.4.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtie
 02/24/23 15:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14208.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 2:21:40 PM
 Sample Name : icc217-4
 Vial : P1-A5
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	92107	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	45987	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	41021	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	42353	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	70628	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	23180	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	20261	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	21519	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	24900	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	14416	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17883	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	15534	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	9970	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8614	2.50 µg/L	0.000
M2-4:2FTS	5.190	329.1 -> 80.9	2295	5.00 µg/L	0.000
M2-6:2FTS	6.871	429.1 -> 80.9	2778	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2579	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	26350	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	15782	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	24977	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	25121	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	16539	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6824	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6263	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10268	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	40305	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	7273	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	85994	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	25301	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	24950	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	40309	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.190	329.1 -> 80.9	2295	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-6:2FTS	6.871	429.1 -> 80.9	2778	5.06 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2579	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C2-PFDoDA	8.991	615.1 -> 570.0	24900	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C2-PFTeDA	9.731	715.2 -> 670.0	14416	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C3-PFBS	5.456	302.1 -> 79.9	15534	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C3-PFHxS	7.212	402.1 -> 79.9	9970	2.47 µg/L	0.000

7.7.5
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 = 98.9%	
13C4-PFBA	2.938	216.8 -> 171.9	92107	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.452	367.1 -> 322.0	42353	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFHxA	5.513	318.0 -> 273.0	41021	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C5-PFPeA	4.337	268.3 -> 223.0	45987	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C6-PFDA	8.108	519.1 -> 474.1	20261	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C7-PFUnDA	8.562	570.0 -> 525.1	21519	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-FOSA	9.555	506.1 -> 77.8	17883	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C8-PFOA	7.097	421.1 -> 376.0	70628	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C8-PFOS	8.270	507.1 -> 79.9	8614	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C9-PFNA	7.626	472.1 -> 427.0	23180	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.4%	
d3-MeFOSAA	8.153	573.2 -> 419.0	26350	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	15782	10.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
d3-MeFOSA	10.680	515.0 -> 219.0	6263	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
d5-EtFOSAA	8.349	589.2 -> 419.0	24977	5.33 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
d7-MeFOSE	10.589	623.2 -> 58.9	25121	25.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
d9-EtFOSE	10.847	639.2 -> 58.9	16539	25.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
d5-EtFOSA	10.925	531.1 -> 219.0	6824	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	39761	9.33 µg/L	100
		327.1 -> 80.9	8749		
6:2FTS	6.859	427.1 -> 407.0	32749	9.47 µg/L	92
		427.1 -> 80.9	7099		
8:2FTS	7.896	527.1 -> 507.0	17322	10.33 µg/L	97
		527.1 -> 80.8	4396		
EtFOSAA	8.362	584.2 -> 419.1	7841	2.40 µg/L	99
		584.2 -> 526.0	4067		
FOSA	9.545	498.1 -> 77.9	14541	2.40 µg/L	100
		498.1 -> 478.0	586		
MeFOSAA	8.154	570.1 -> 419.0	10837	2.50 µg/L	91
		570.1 -> 483.0	2088		
PFBA	2.932	212.8 -> 168.9	18360	9.89 µg/L	100
PFBS	5.457	298.7 -> 79.9	11440	2.24 µg/L	96
		298.7 -> 98.8	5166		
PFDA	8.108	512.9 -> 469.0	44520	2.31 µg/L	99
		512.9 -> 219.0	6022		
PFDoDA	8.992	613.1 -> 569.0	39047	2.24 µg/L	100
		613.1 -> 319.0	4678		
PFDS	9.167	599.0 -> 79.9	5678	2.48 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3014			
PFHpA	6.453	363.1 -> 319.0	51863	2.47	µg/L	99
		363.1 -> 169.0	7108			
PFHpS	7.779	449.0 -> 79.9	7493	2.50	µg/L	99
		449.0 -> 98.9	4836			
PFHxA	5.516	313.0 -> 269.0	33172	2.53	µg/L	99
		313.0 -> 118.9	1266			
PFHxS	7.213	398.7 -> 79.9	8388	2.30	µg/L	m 97
		398.7 -> 98.9	4923			
PFNA	7.627	463.0 -> 419.0	29944	2.55	µg/L	99
		463.0 -> 219.0	6175			
PFNS	8.737	548.8 -> 79.9	7589	2.42	µg/L	94
		548.8 -> 98.9	4549			
PFOA	7.098	413.0 -> 369.0	67856	2.60	µg/L	92
		413.0 -> 169.0	8715			
PFOS	8.271	498.9 -> 79.9	7573	2.35	µg/L	m 74
		498.9 -> 98.8	4724			
PFPeA	4.338	263.0 -> 219.0	40233	4.99	µg/L	100
PFPeS	6.517	349.1 -> 79.9	11011	2.39	µg/L	96
		349.1 -> 98.9	5538			
PFTeDA	9.732	713.1 -> 669.0	35404	2.62	µg/L	100
		713.1 -> 168.9	2199			
PFTrDA	9.387	663.0 -> 619.0	37539	2.54	µg/L	98
		663.0 -> 168.9	2878			
PFUnDA	8.562	563.1 -> 519.0	37039	2.46	µg/L	99
		563.1 -> 269.1	5504			
11CI-PF3OUdS	9.439	630.9 -> 450.9	85020	9.74	µg/L	98
		632.9 -> 452.9	24858			
9CI-PF3ONS	8.602	530.8 -> 351.0	149114	9.48	µg/L	99
		532.8 -> 353.0	44934			
ADONA	6.704	376.9 -> 250.9	295456	9.44	µg/L	98
		376.9 -> 84.8	61914			
HFPO-DA	5.879	284.9 -> 168.9	12918	10.27	µg/L	99
		284.9 -> 184.9	1489			
3:3FTCA	3.791	241.0 -> 177.0	5343	12.50	µg/L	97
		241.0 -> 117.0	766			
5:3FTCA	6.156	341.0 -> 237.1	186763	62.26	µg/L	100
		341.0 -> 217.0	162800			
7:3FTCA	7.567	441.0 -> 316.9	96082	60.32	µg/L	99
		441.0 -> 336.9	180041			
EtFOSA	10.927	526.0 -> 219.0	7396	2.53	µg/L	92
		526.0 -> 169.0	7252			
EtFOSE	10.860	630.0 -> 58.9	14523	24.37	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	6906	2.59	µg/L	# 16
		511.9 -> 169.0	6426			
MeFOSE	10.602	616.1 -> 58.9	21557	24.44	µg/L	100
PFDoDS	9.870	699.1 -> 79.9	3352	2.58	µg/L	91
		699.1 -> 98.8	2193			
NFDHA	5.395	295.0 -> 201.0	3913	5.27	µg/L	95
		295.0 -> 84.9	1921			
PFMBA	4.738	279.0 -> 85.1	11679	4.92	µg/L	100
PFMPA	3.488	229.0 -> 84.9	10806	5.02	µg/L	100
PFEESA	5.983	314.8 -> 134.9	85294	4.58	µg/L	100
		314.8 -> 82.9	1918			

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

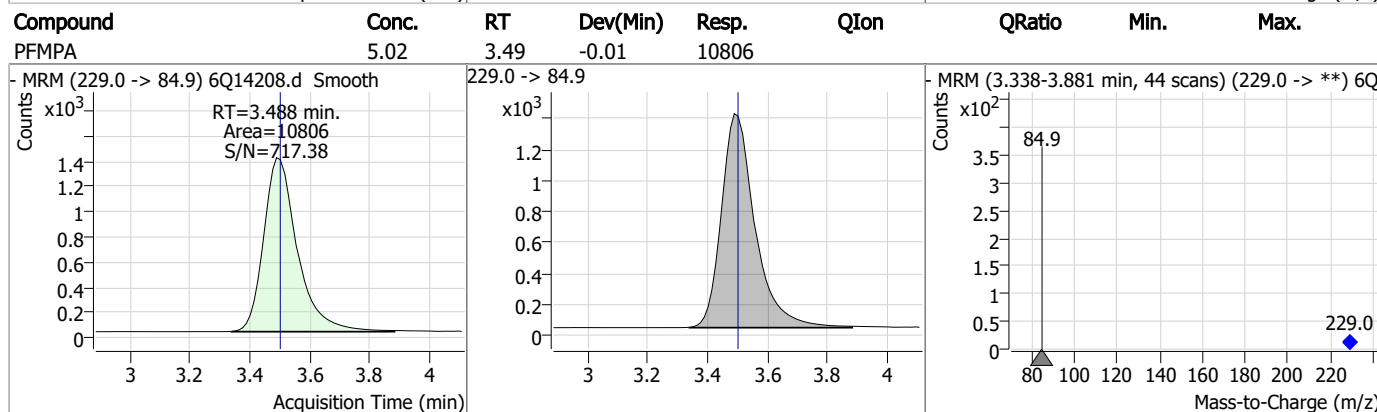
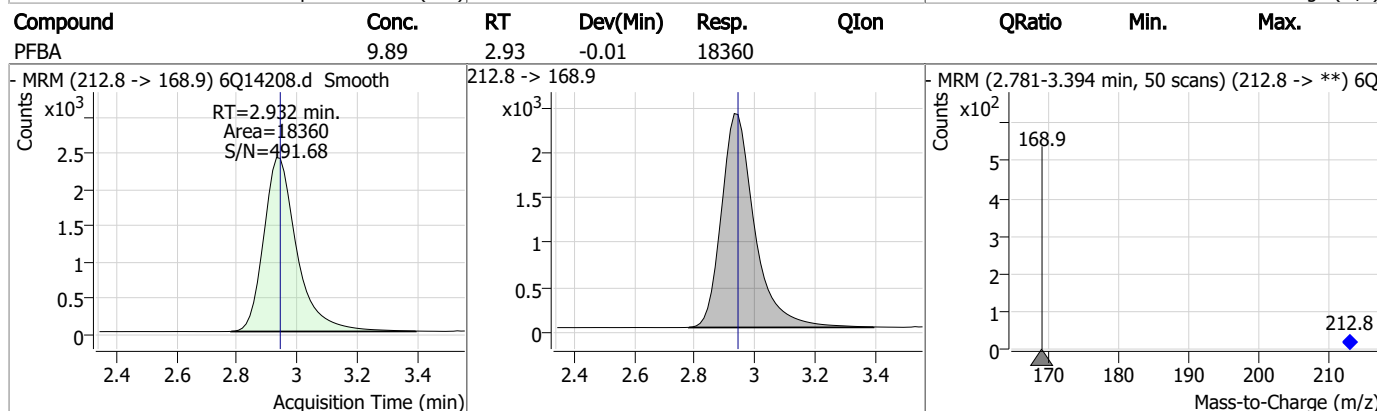
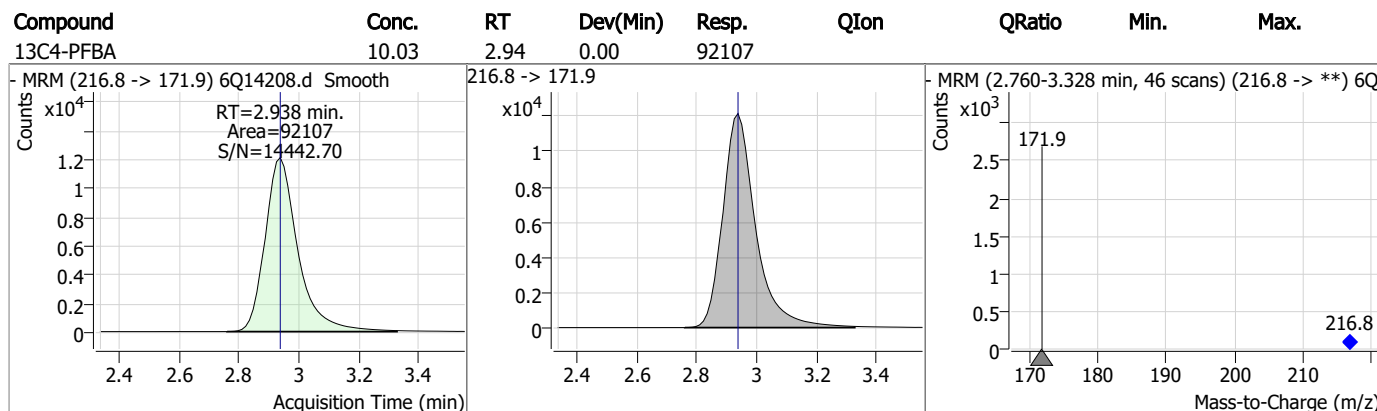
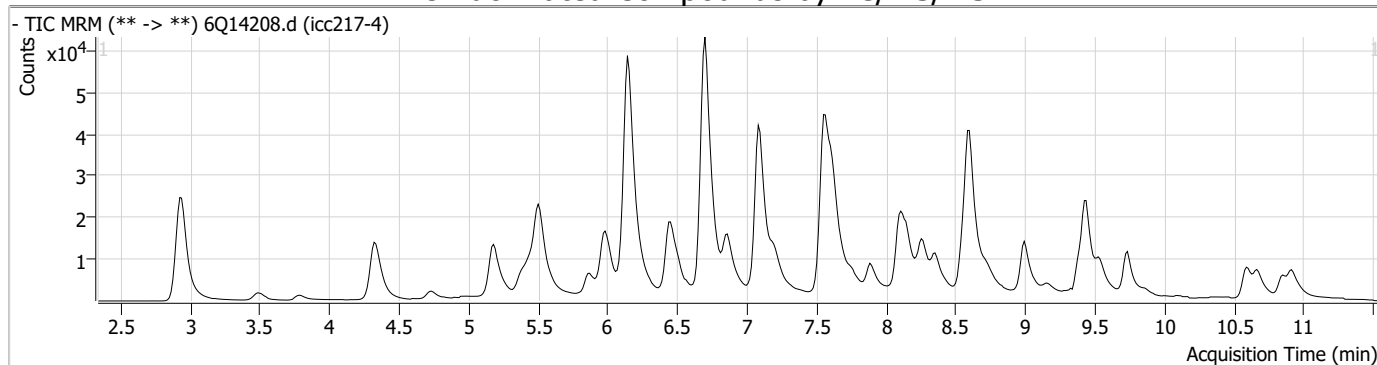
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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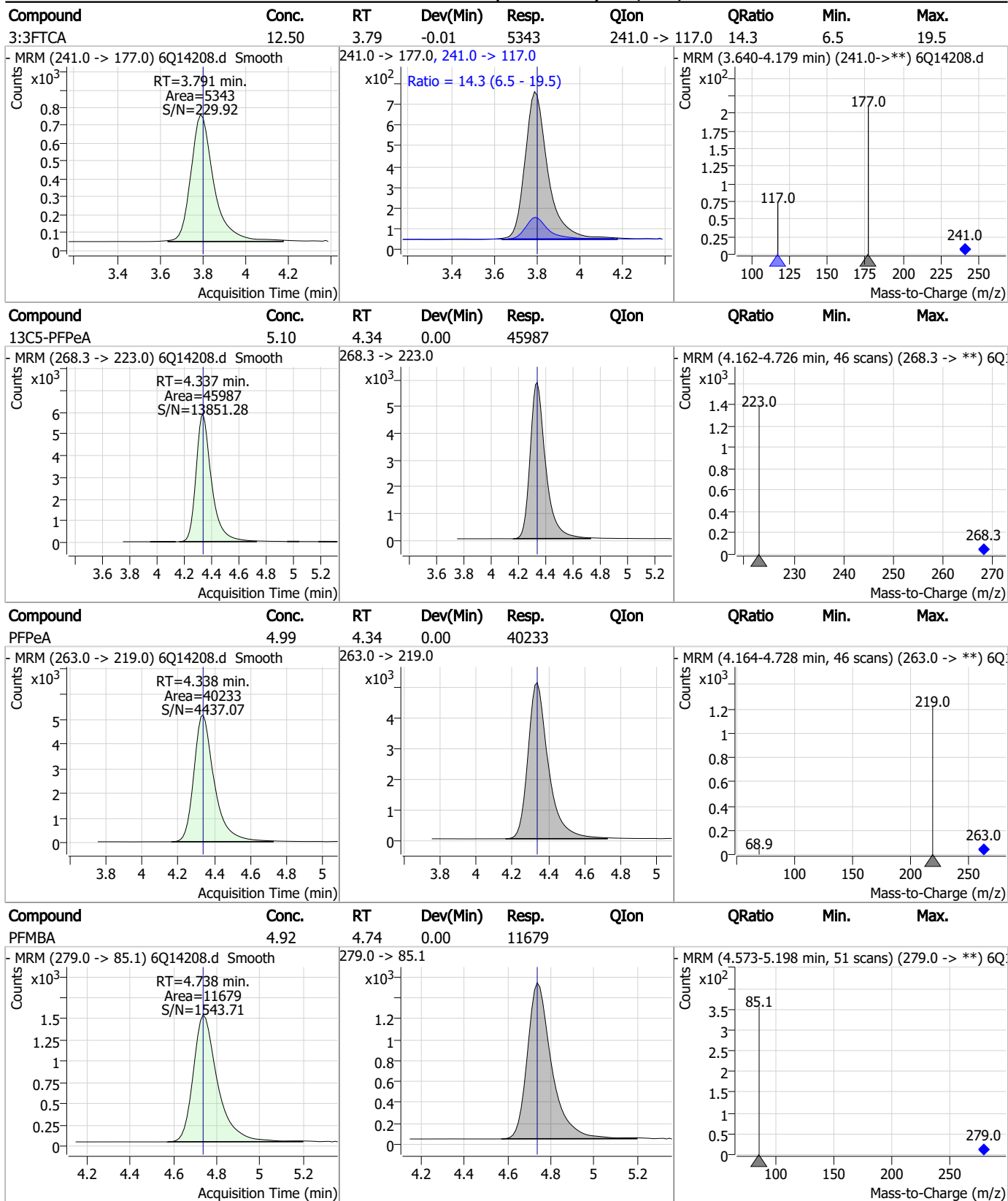
7.7.5
7



Perfluorinated Compounds by LC/MS/MS

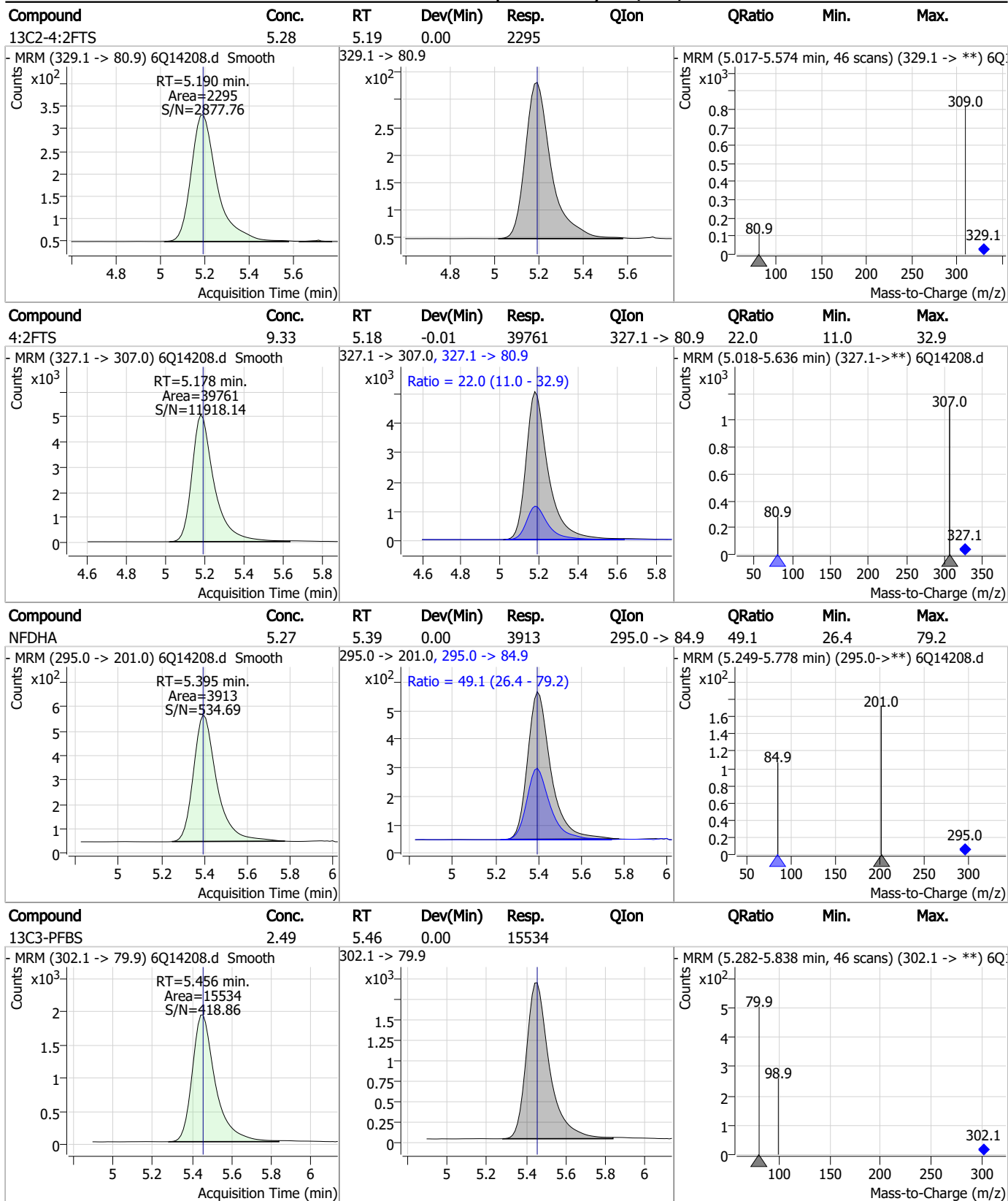


Perfluorinated Compounds by LC/MS/MS



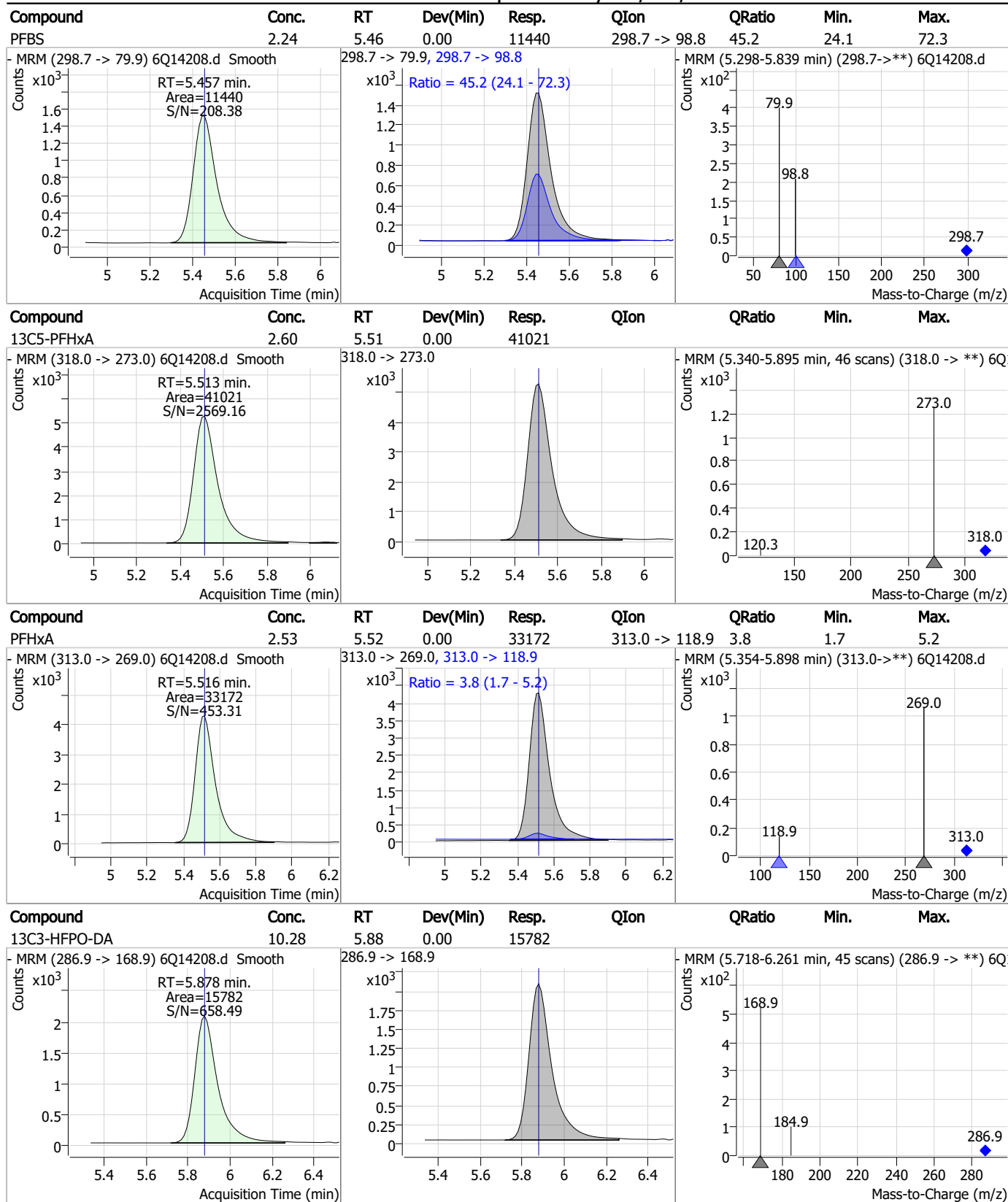
7.7.5
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Perfluorinated Compounds by LC/MS/MS



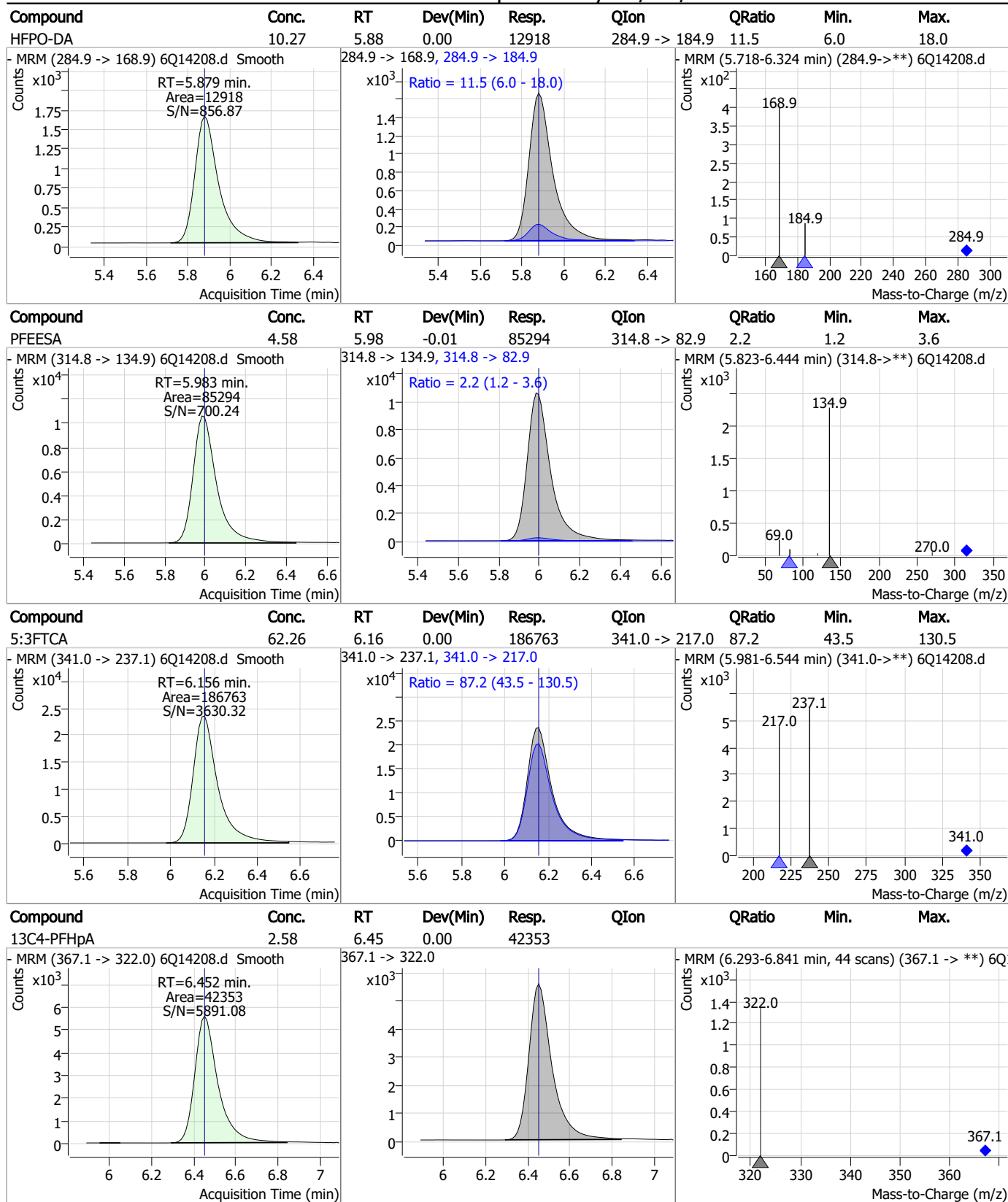
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5
7

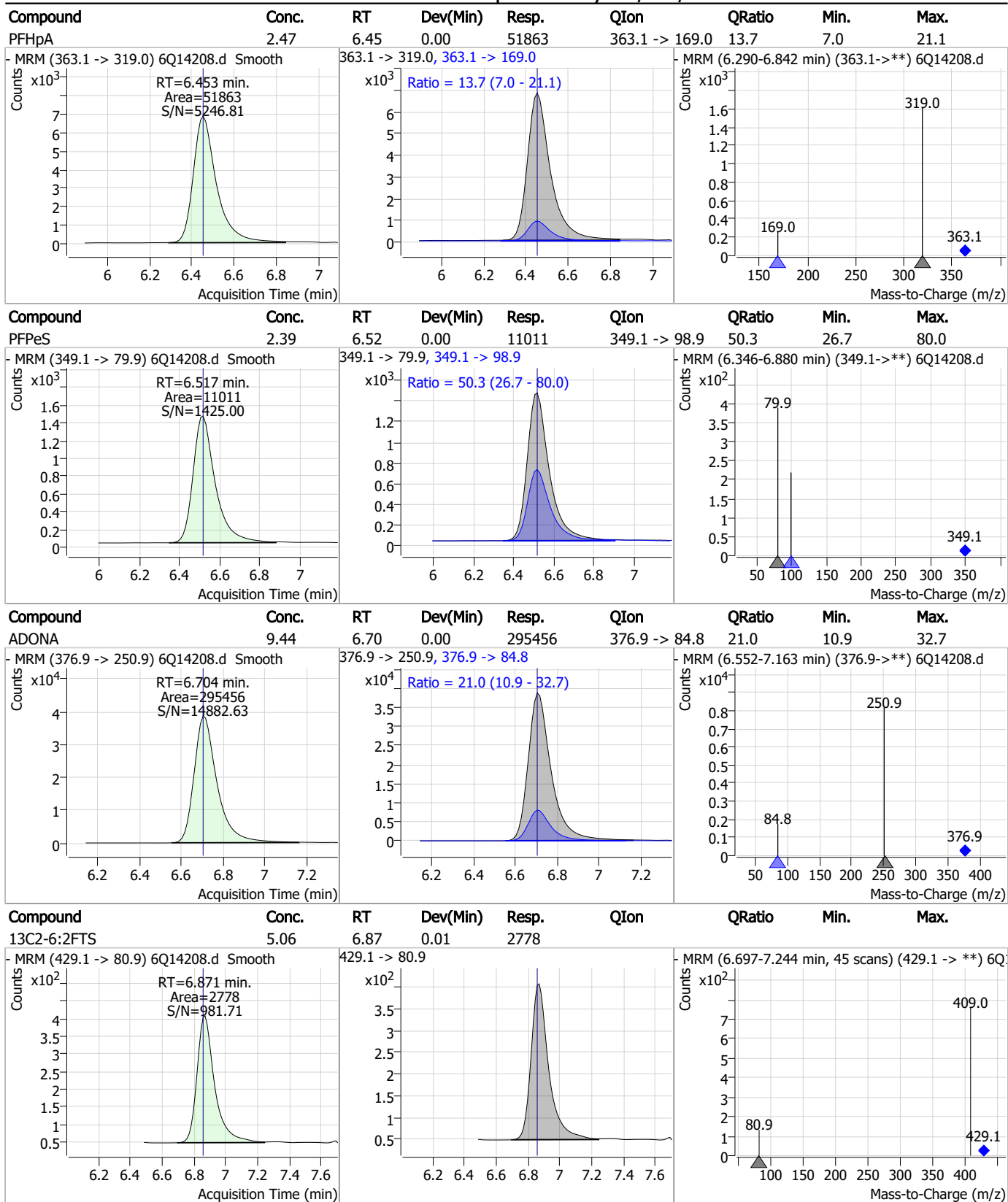
Perfluorinated Compounds by LC/MS/MS



7.7.5

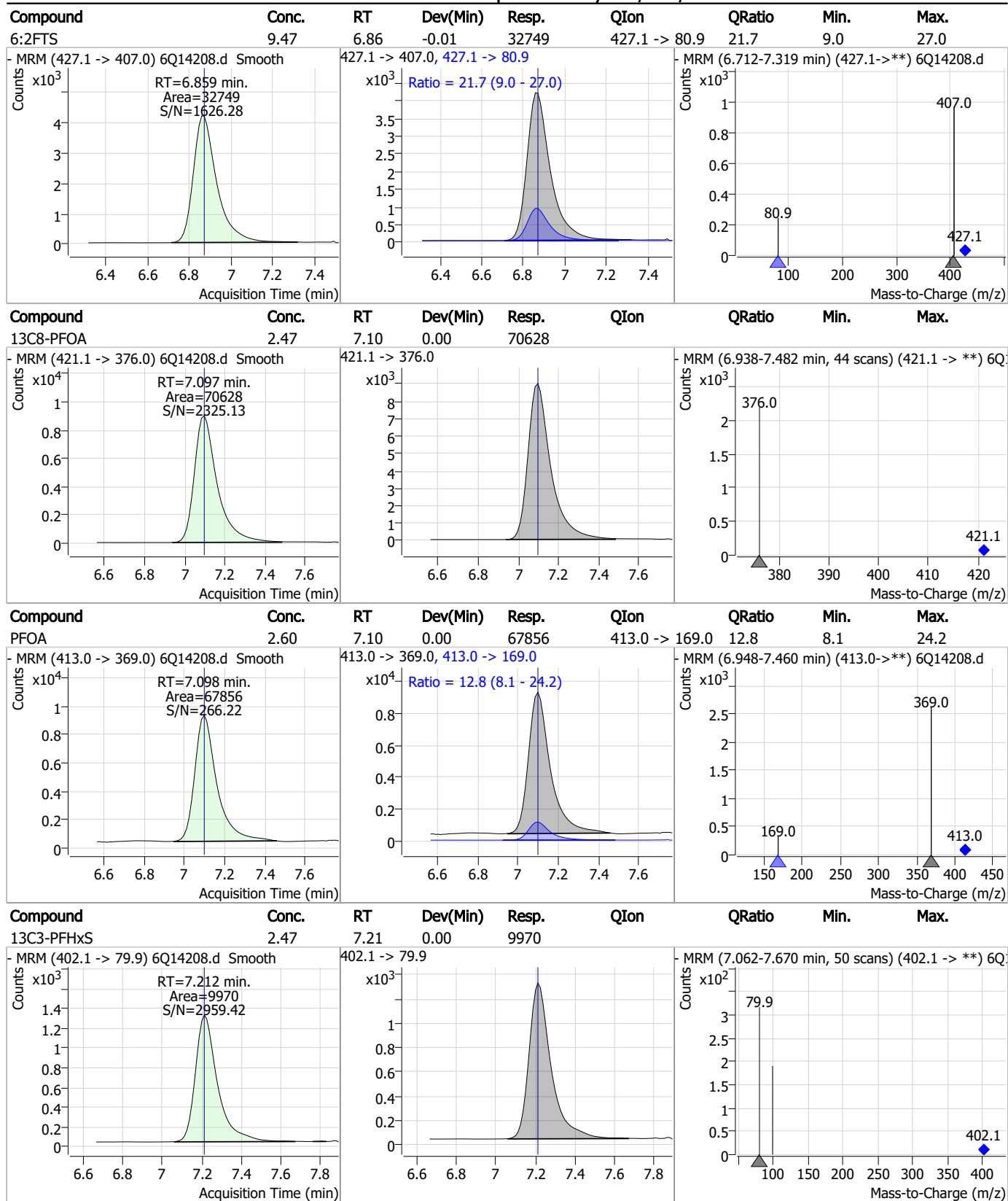
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Perfluorinated Compounds by LC/MS/MS



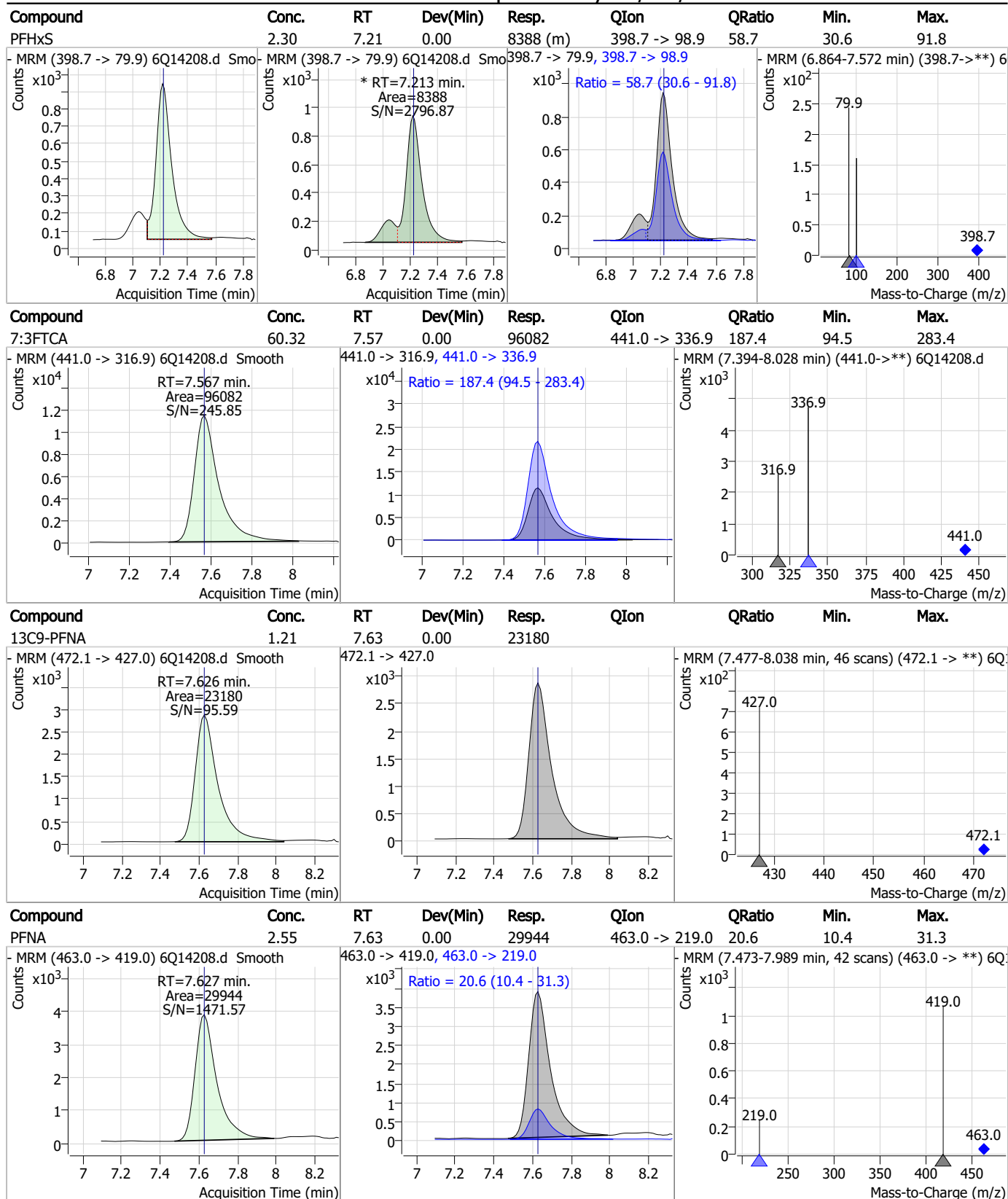
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5
7

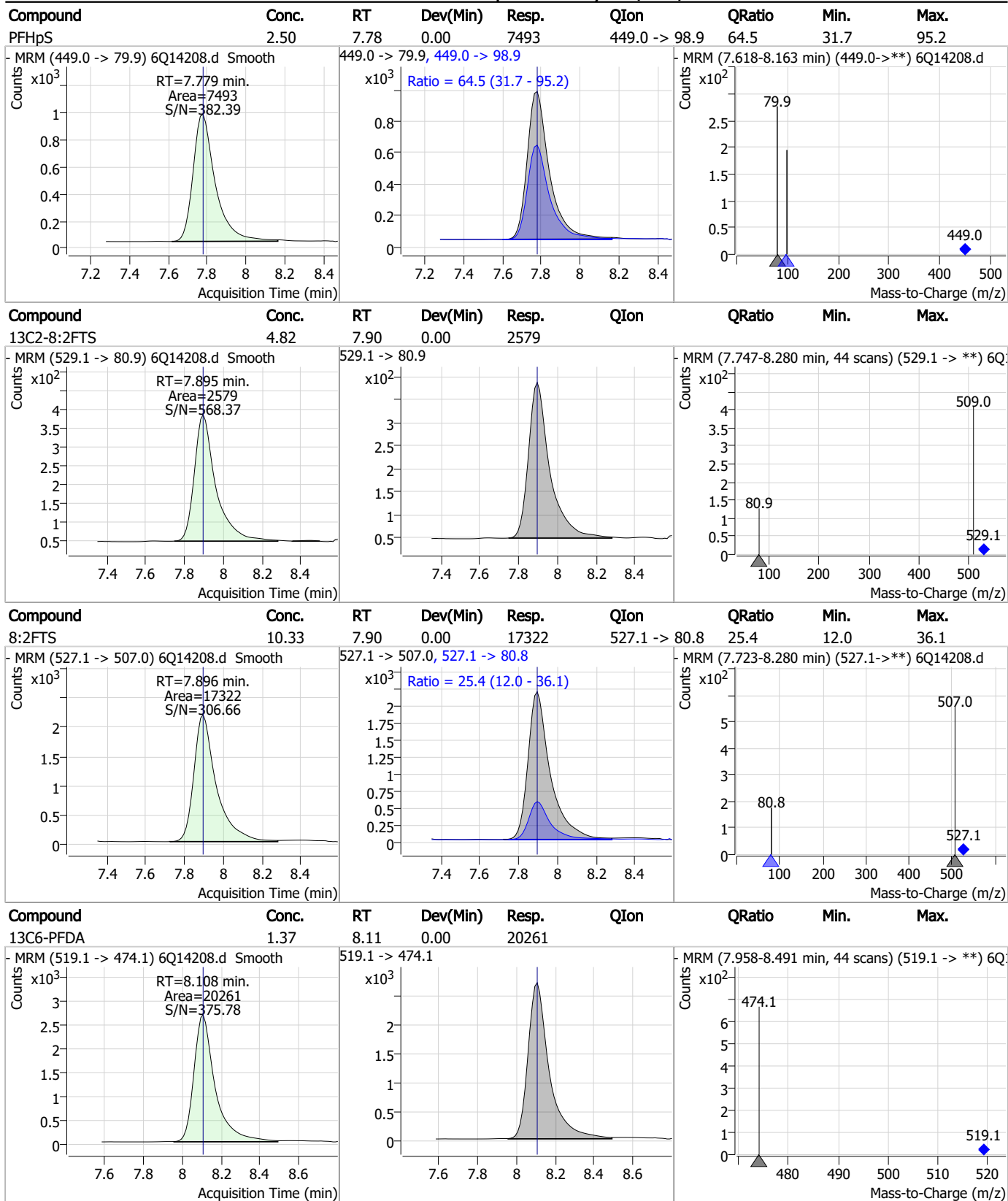
Perfluorinated Compounds by LC/MS/MS



7.7.5
7

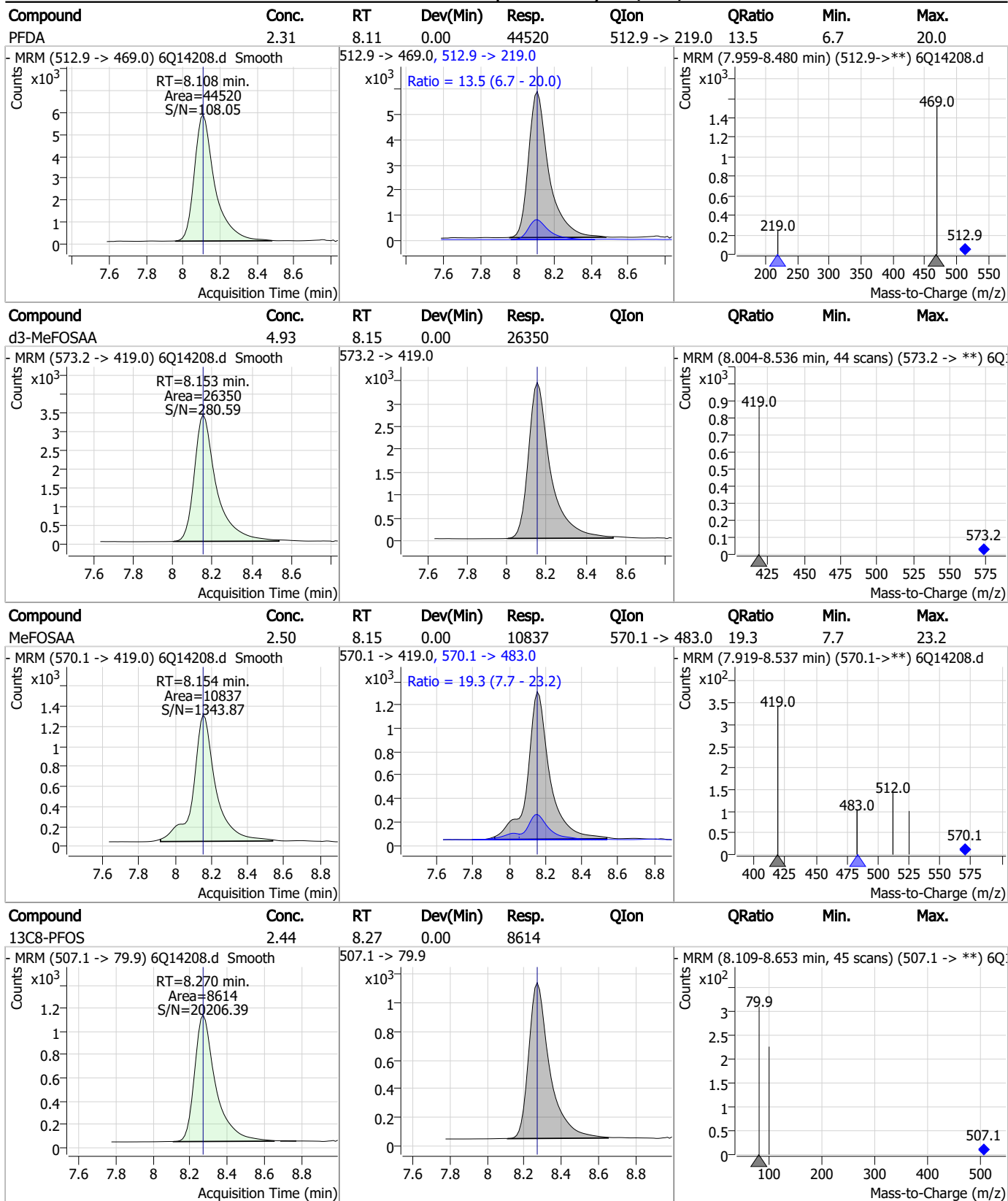


Perfluorinated Compounds by LC/MS/MS



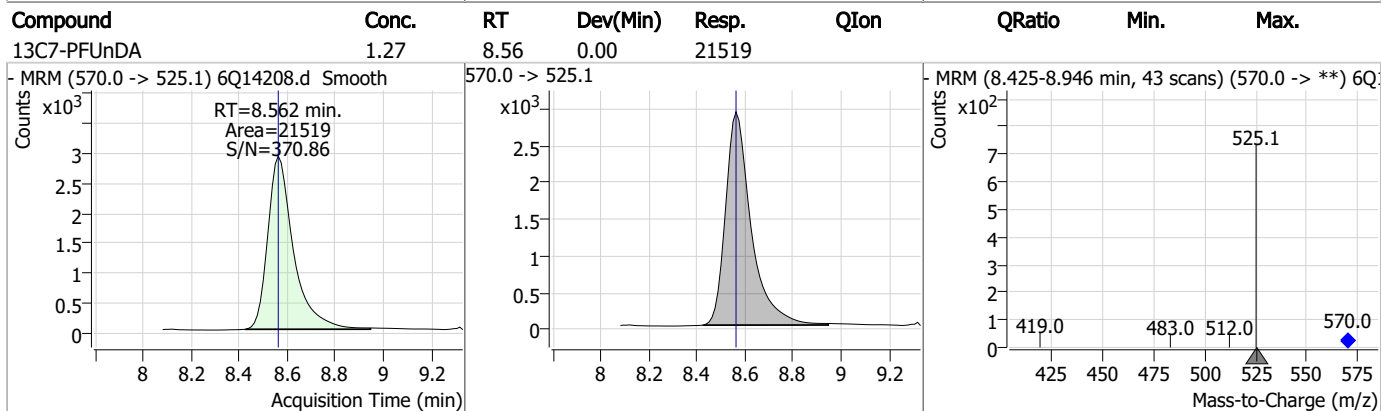
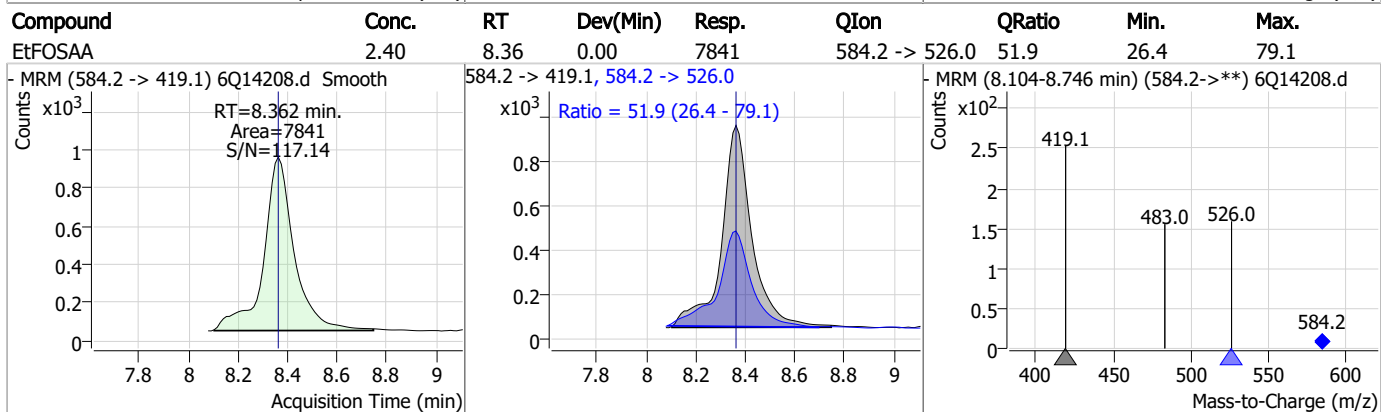
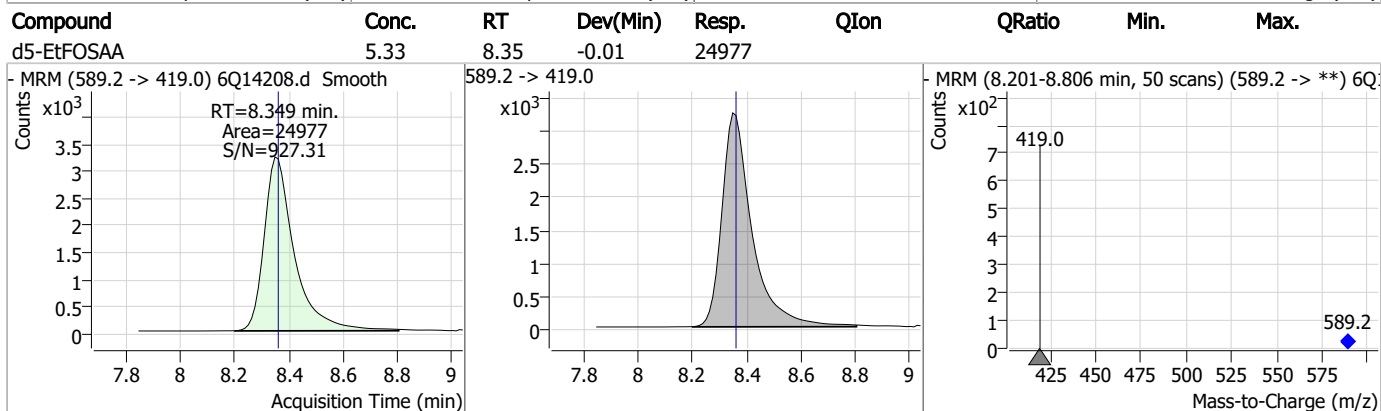
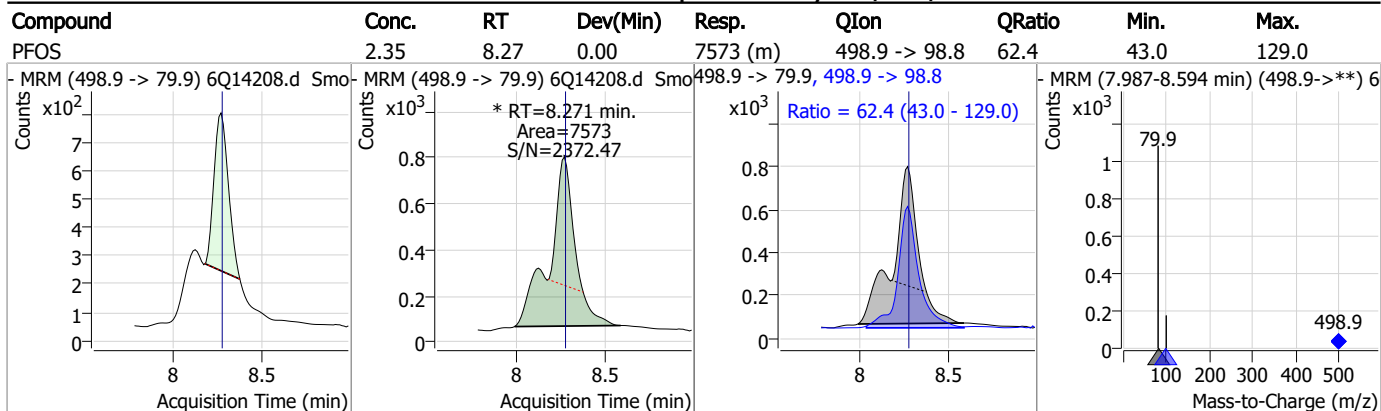
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



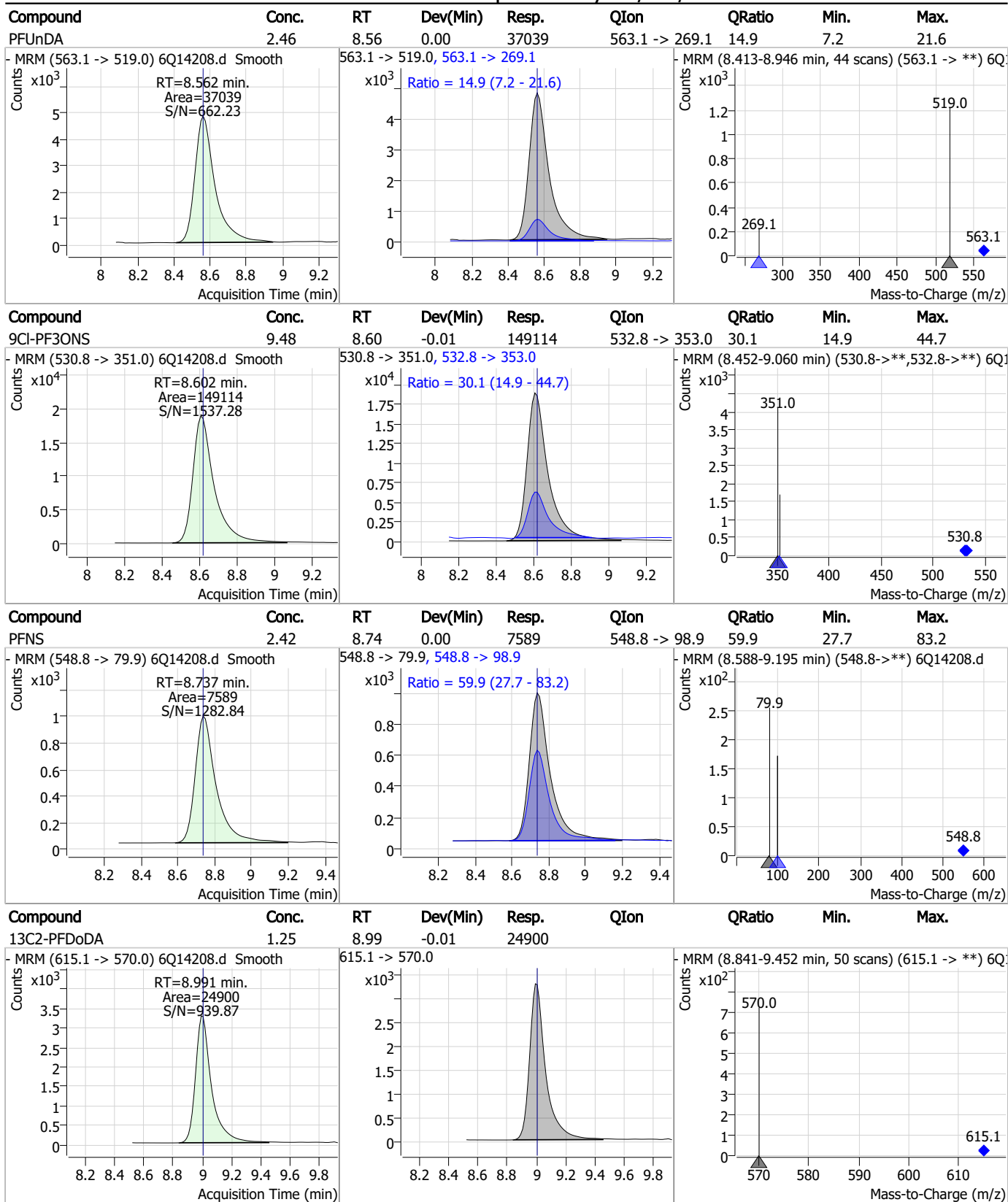
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



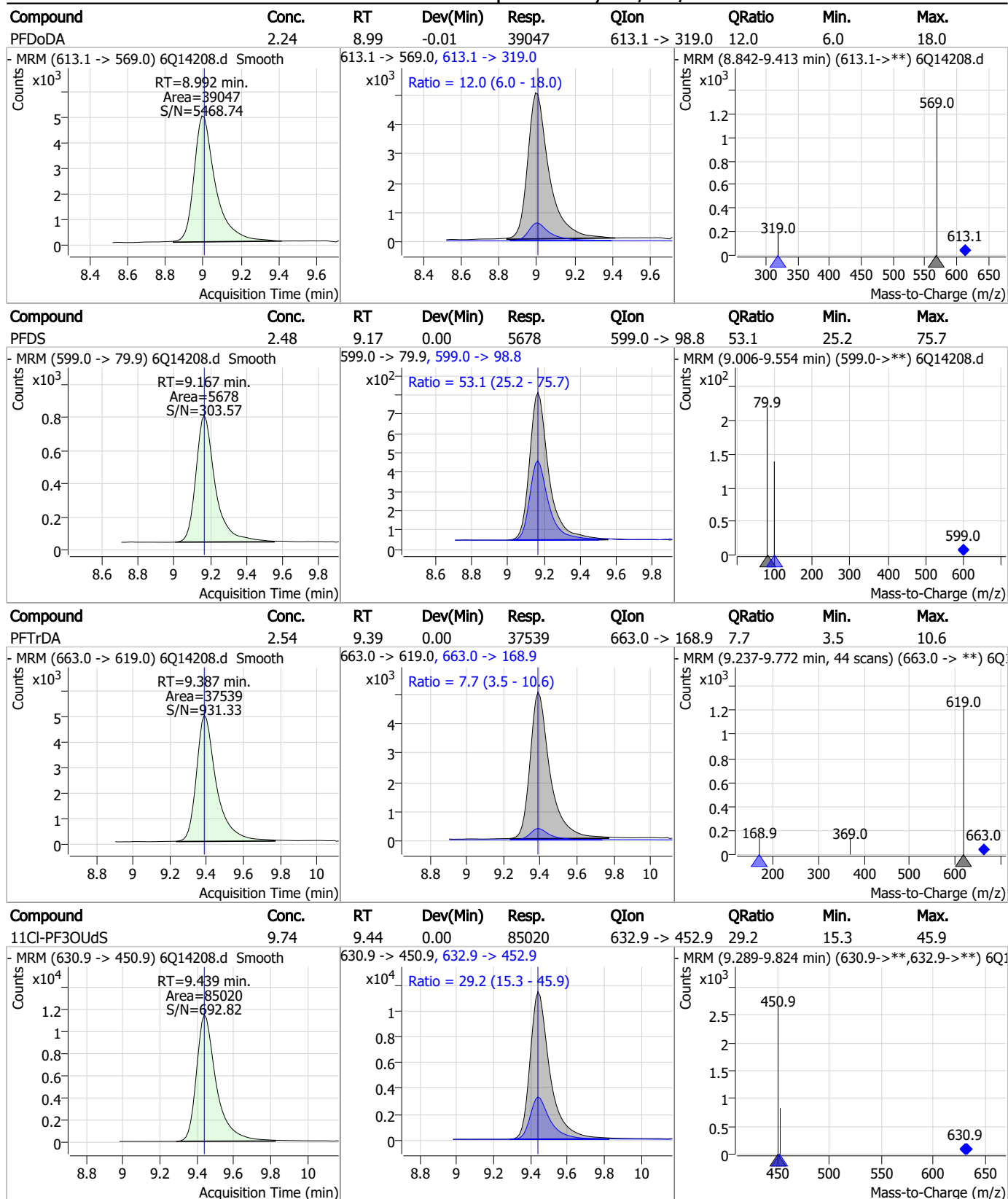
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5
7

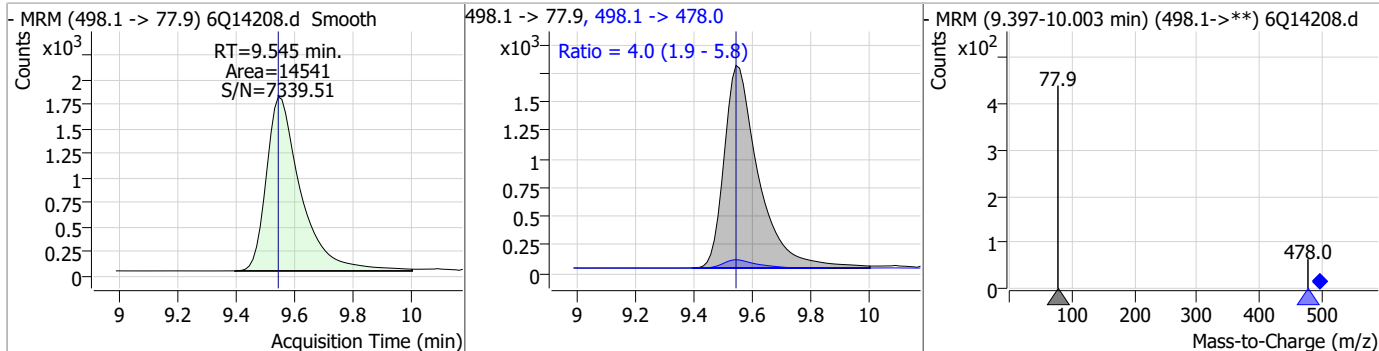
Perfluorinated Compounds by LC/MS/MS



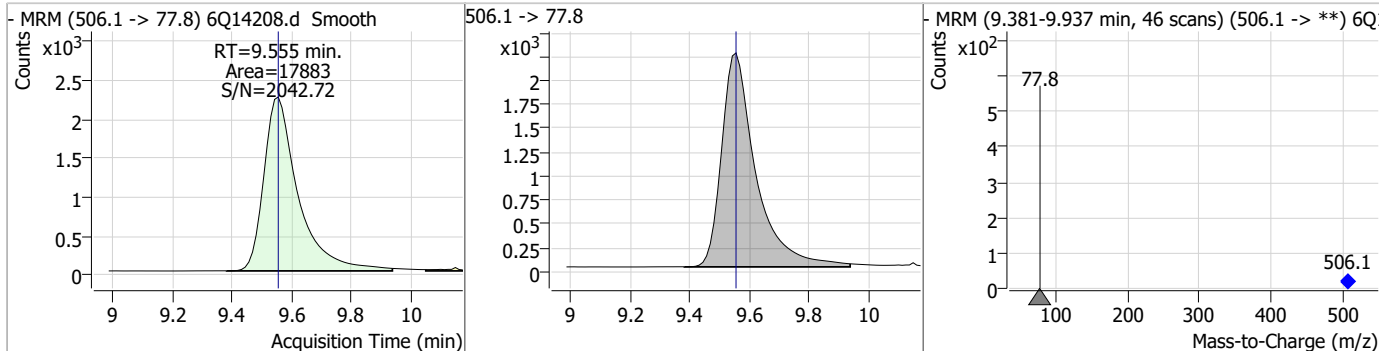
7.7.5
7

Perfluorinated Compounds by LC/MS/MS

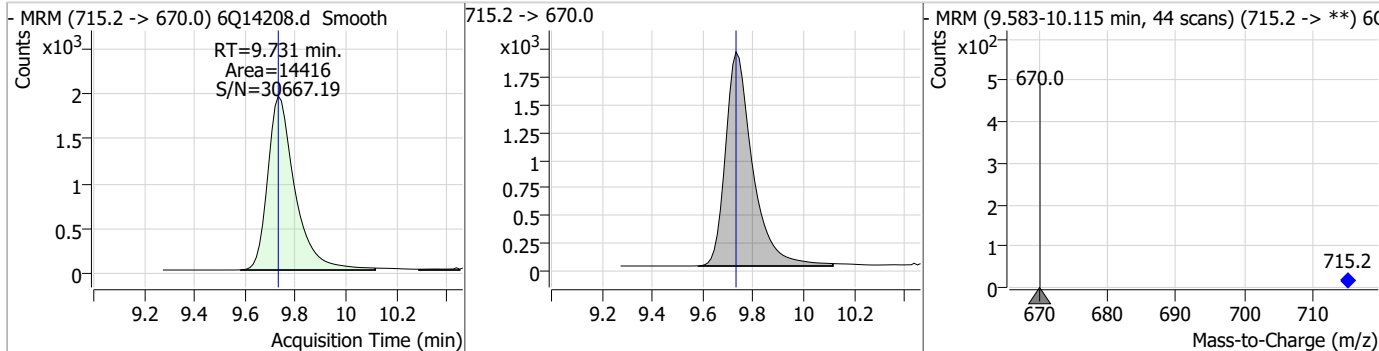
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.40	9.54	0.00	14541	498.1 -> 478.0	4.0	1.9	5.8



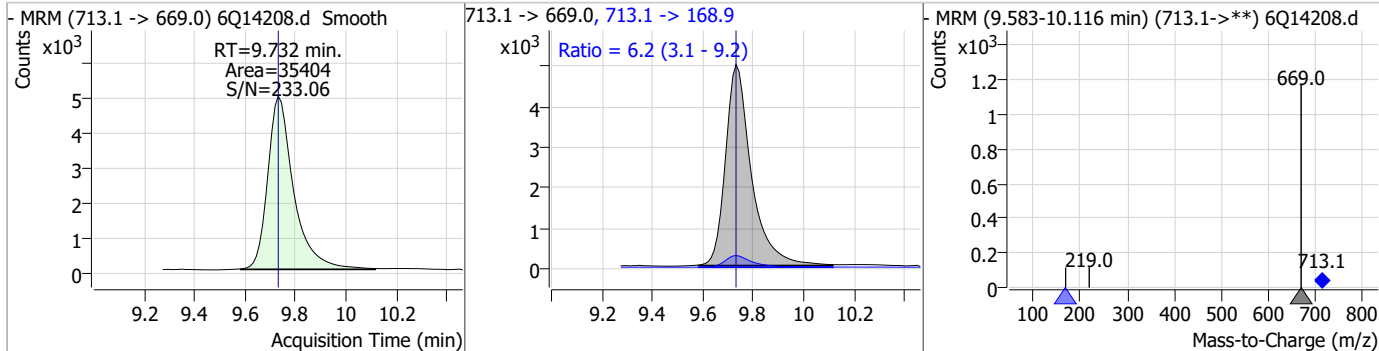
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.59	9.55	0.00	17883				



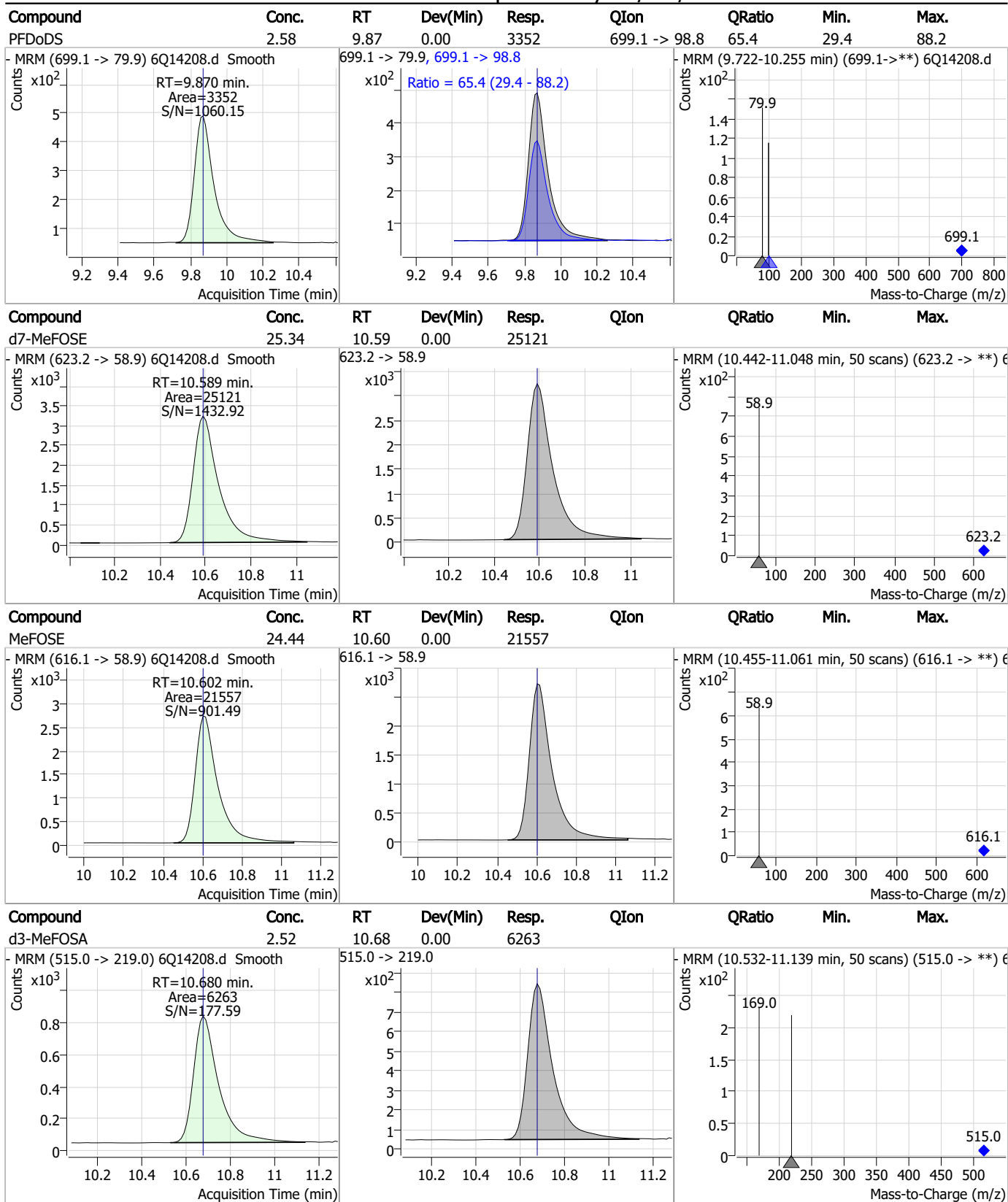
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.24	9.73	0.00	14416				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.62	9.73	0.00	35404	713.1 -> 168.9	6.2	3.1	9.2

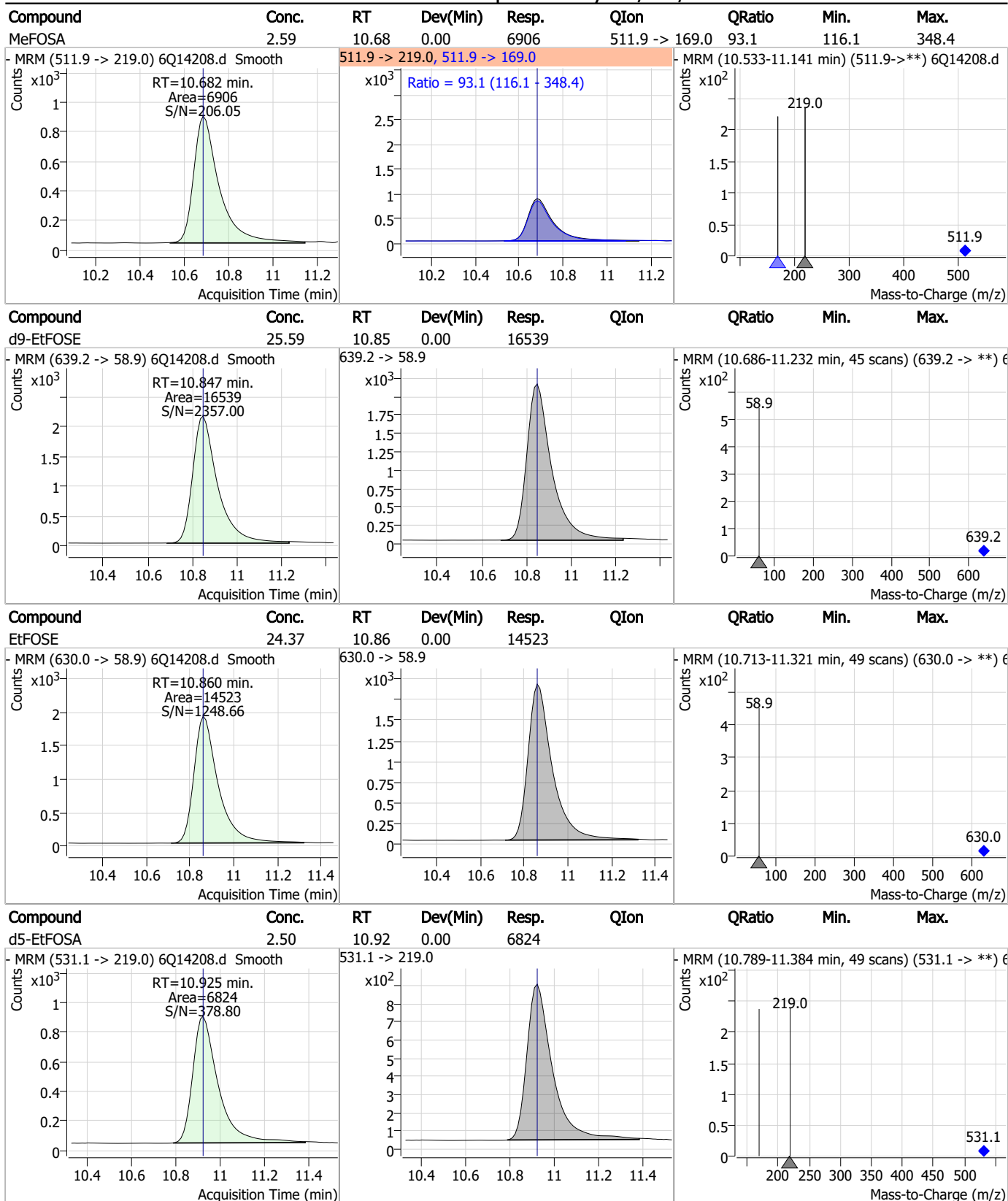


Perfluorinated Compounds by LC/MS/MS



7.7.5
7

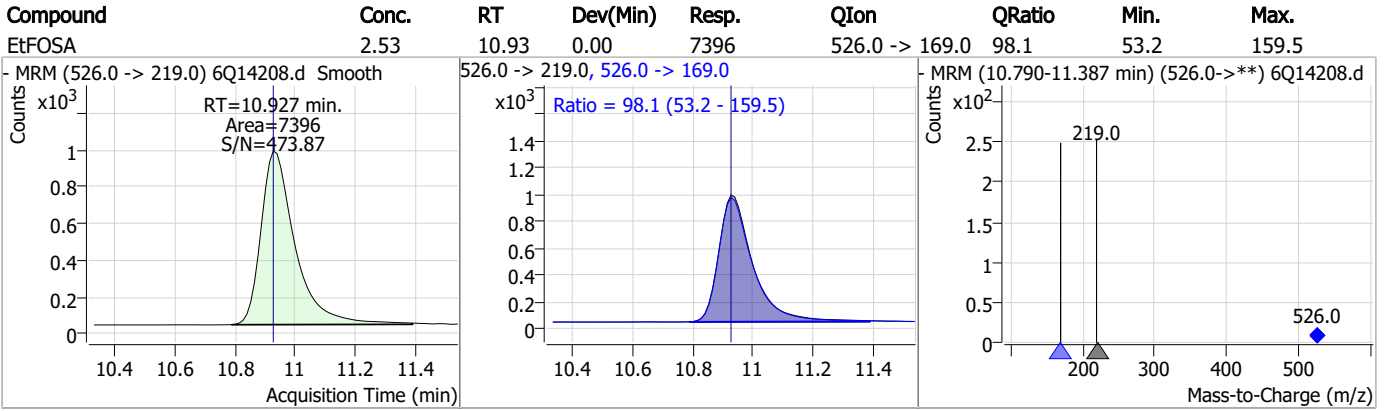
Perfluorinated Compounds by LC/MS/MS



7.7.5

7

Perfluorinated Compounds by LC/MS/MS



7.7.5

7

Manual Integration Approval Summary

Sample Number: S6Q217-ICC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14208.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 14:21 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.7.5.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtje
 02/24/23 15:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14209.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 2:35:40 PM
 Sample Name : ic217-5
 Vial : P1-A6
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	96115	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	48616	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	41577	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	44256	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	74021	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	24139	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	20075	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	20896	1.25 µg/L	0.000
M2-PFDoDA	9.004	615.1 -> 570.0	25828	1.25 µg/L	0.000
M2-PFTeDA	9.731	715.2 -> 670.0	15670	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17804	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	16103	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	10391	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	9395	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2083	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	2875	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2983	5.00 µg/L	0.000
M3-MeFOSAA	8.165	573.2 -> 419.0	27111	5.00 µg/L	0.012
M3-HFPO-DA	5.878	286.9 -> 168.9	16088	10.00 µg/L	0.000
M5-EtFOSAA	8.361	589.2 -> 419.0	24524	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	26674	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	17455	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6955	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6477	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	11796	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	42268	5.00 µg/L	0.000
18O2-PFHxS	7.223	403.0 -> 83.9	7388	2.50 µg/L	0.012
13C4-PFOA	7.098	417.1 -> 372.0	89477	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	24810	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	24737	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	43267	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2083	4.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.3%		
13C2-6:2FTS	6.871	429.1 -> 80.9	2875	5.15 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2983	5.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.8%		
13C2-PFDoDA	9.004	615.1 -> 570.0	25828	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C2-PFTeDA	9.731	715.2 -> 670.0	15670	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.1%		
13C3-PFBS	5.456	302.1 -> 79.9	16103	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.212	402.1 -> 79.9	10391	2.54 µg/L	0.000

7.7.6
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C4-PFBA	2.938	216.8 -> 171.9	96115	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C4-PFHpA	6.452	367.1 -> 322.0	44256	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C5-PFHxA	5.513	318.0 -> 273.0	41577	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C5-PFPeA	4.337	268.3 -> 223.0	48616	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C6-PFDA	8.108	519.1 -> 474.1	20075	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.0%		
13C7-PFUnDA	8.562	570.0 -> 525.1	20896	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C8-FOSA	9.555	506.1 -> 77.8	17804	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 90.0%		
13C8-PFOA	7.097	421.1 -> 376.0	74021	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C8-PFOS	8.270	507.1 -> 79.9	9395	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C9-PFNA	7.626	472.1 -> 427.0	24139	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.3%		
d3-MeFOSAA	8.165	573.2 -> 419.0	27111	4.41 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.2%		
13C3-HFPO-DA	5.878	286.9 -> 168.9	16088	9.76 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 97.6%		
d3-MeFOSA	10.680	515.0 -> 219.0	6477	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 90.8%		
d5-EtFOSAA	8.361	589.2 -> 419.0	24524	4.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.1%		
d7-MeFOSE	10.589	623.2 -> 58.9	26674	23.43 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 93.7%		
d9-EtFOSE	10.847	639.2 -> 58.9	17455	23.51 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.1%		
d5-EtFOSA	10.925	531.1 -> 219.0	6955	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 88.8%		
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	80802	20.89 µg/L	99
		327.1 -> 80.9	17212		
6:2FTS	6.871	427.1 -> 407.0	69717	19.48 µg/L	95
		427.1 -> 80.9	13937		
8:2FTS	7.896	527.1 -> 507.0	35511	18.30 µg/L	95
		527.1 -> 80.8	9477		
EtFOSAA	8.362	584.2 -> 419.1	16884	5.26 µg/L	m 96
		584.2 -> 526.0	8372		
FOSA	9.557	498.1 -> 77.9	31292	5.18 µg/L	99
		498.1 -> 478.0	1071		
MeFOSAA	8.166	570.1 -> 419.0	21685	4.87 µg/L	94
		570.1 -> 483.0	3918		
PFBA	2.932	212.8 -> 168.9	38243	19.75 µg/L	100
PFBS	5.444	298.7 -> 79.9	23720	4.48 µg/L	96
		298.7 -> 98.8	10840		
PFDA	8.108	512.9 -> 469.0	97327	5.09 µg/L	100
		512.9 -> 219.0	12873		
PFDODA	9.005	613.1 -> 569.0	91152	5.05 µg/L	97
		613.1 -> 319.0	9921		
PFDS	9.167	599.0 -> 79.9	11578	4.63 µg/L	95

7.7.6
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	6230			
PFHpA	6.453	363.1 -> 319.0	102629	4.67	µg/L	99
		363.1 -> 169.0	14766			
PFHpS	7.779	449.0 -> 79.9	14907	4.55	µg/L	96
		449.0 -> 98.9	9011			
PFHxA	5.503	313.0 -> 269.0	65348	4.91	µg/L	99
		313.0 -> 118.9	2520			
PFHxS	7.213	398.7 -> 79.9	17509	4.61	µg/L	m 91
		398.7 -> 98.9	9456			
PFNA	7.627	463.0 -> 419.0	62014	5.06	µg/L	99
		463.0 -> 219.0	12703			
PFNS	8.737	548.8 -> 79.9	16354	4.78	µg/L	98
		548.8 -> 98.9	8843			
PFOA	7.098	413.0 -> 369.0	129860	4.76	µg/L	94
		413.0 -> 169.0	17330			
PFOS	8.271	498.9 -> 79.9	16130	4.59	µg/L	m 76
		498.9 -> 98.8	10350			
PFPeA	4.338	263.0 -> 219.0	83294	9.78	µg/L	100
PFPeS	6.517	349.1 -> 79.9	21461	4.48	µg/L	100
		349.1 -> 98.9	11468			
PFTeDA	9.732	713.1 -> 669.0	67148	4.58	µg/L	98
		713.1 -> 168.9	4506			
PFTrDA	9.387	663.0 -> 619.0	77751	5.07	µg/L	98
		663.0 -> 168.9	6061			
PFUnDA	8.562	563.1 -> 519.0	79779	5.46	µg/L	100
		563.1 -> 269.1	11523			
11CI-PF3OUdS	9.439	630.9 -> 450.9	167319	18.80	µg/L	99
		632.9 -> 452.9	52086			
9CI-PF3ONS	8.614	530.8 -> 351.0	321055	20.03	µg/L	99
		532.8 -> 353.0	94393			
ADONA	6.704	376.9 -> 250.9	616484	19.33	µg/L	97
		376.9 -> 84.8	126358			
HFPO-DA	5.879	284.9 -> 168.9	26079	20.34	µg/L	99
		284.9 -> 184.9	3275			
3:3FTCA	3.791	241.0 -> 177.0	10821	23.95	µg/L	97
		241.0 -> 117.0	1531			
5:3FTCA	6.156	341.0 -> 237.1	379621	124.86	µg/L	98
		341.0 -> 217.0	336589			
7:3FTCA	7.567	441.0 -> 316.9	205338	127.18	µg/L	100
		441.0 -> 336.9	389190			
EtFOSA	10.927	526.0 -> 219.0	15183	5.09	µg/L	96
		526.0 -> 169.0	15522			
EtFOSE	10.860	630.0 -> 58.9	30883	49.10	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	13950	5.05	µg/L	# 18
		511.9 -> 169.0	13445			
MeFOSE	10.602	616.1 -> 58.9	47046	50.23	µg/L	100
PFDoDS	9.870	699.1 -> 79.9	6879	4.86	µg/L	96
		699.1 -> 98.8	4231			
NFDHA	5.395	295.0 -> 201.0	7937	10.54	µg/L	91
		295.0 -> 84.9	3703			
PFMBA	4.738	279.0 -> 85.1	23651	9.43	µg/L	100
PFMPA	3.488	229.0 -> 84.9	22169	9.74	µg/L	100
PFEESA	5.983	314.8 -> 134.9	165531	8.77	µg/L	100
		314.8 -> 82.9	4026			

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

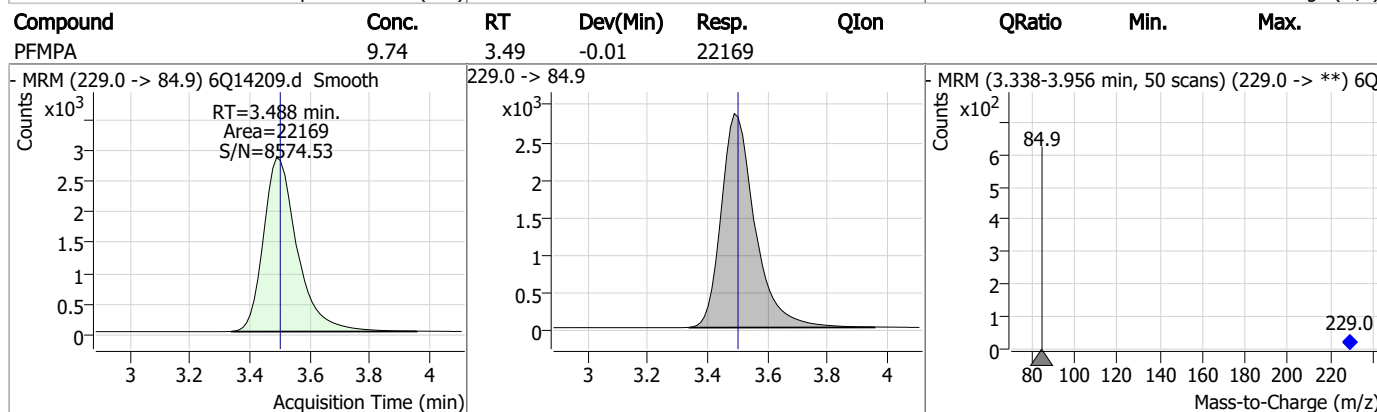
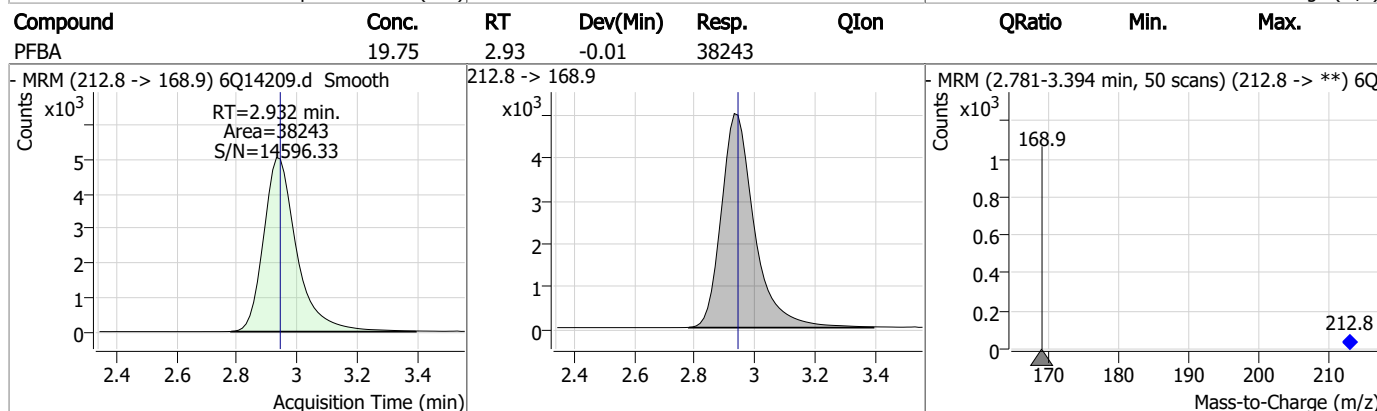
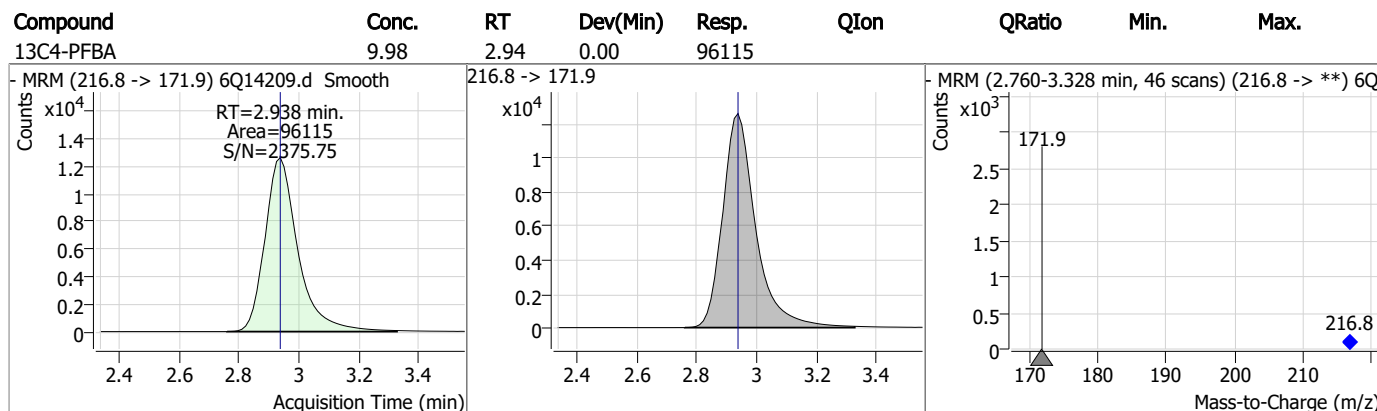
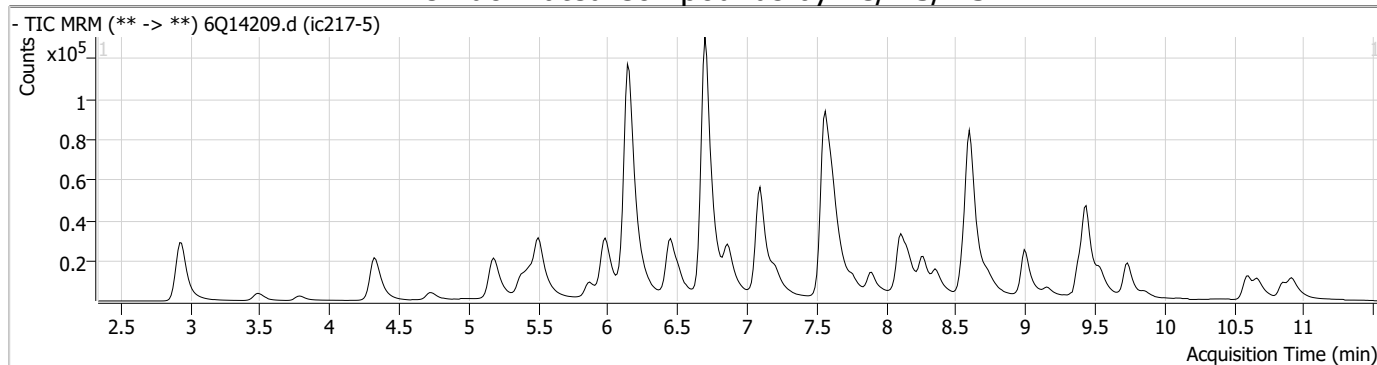
Perfluorinated Compounds by LC/MS/MS

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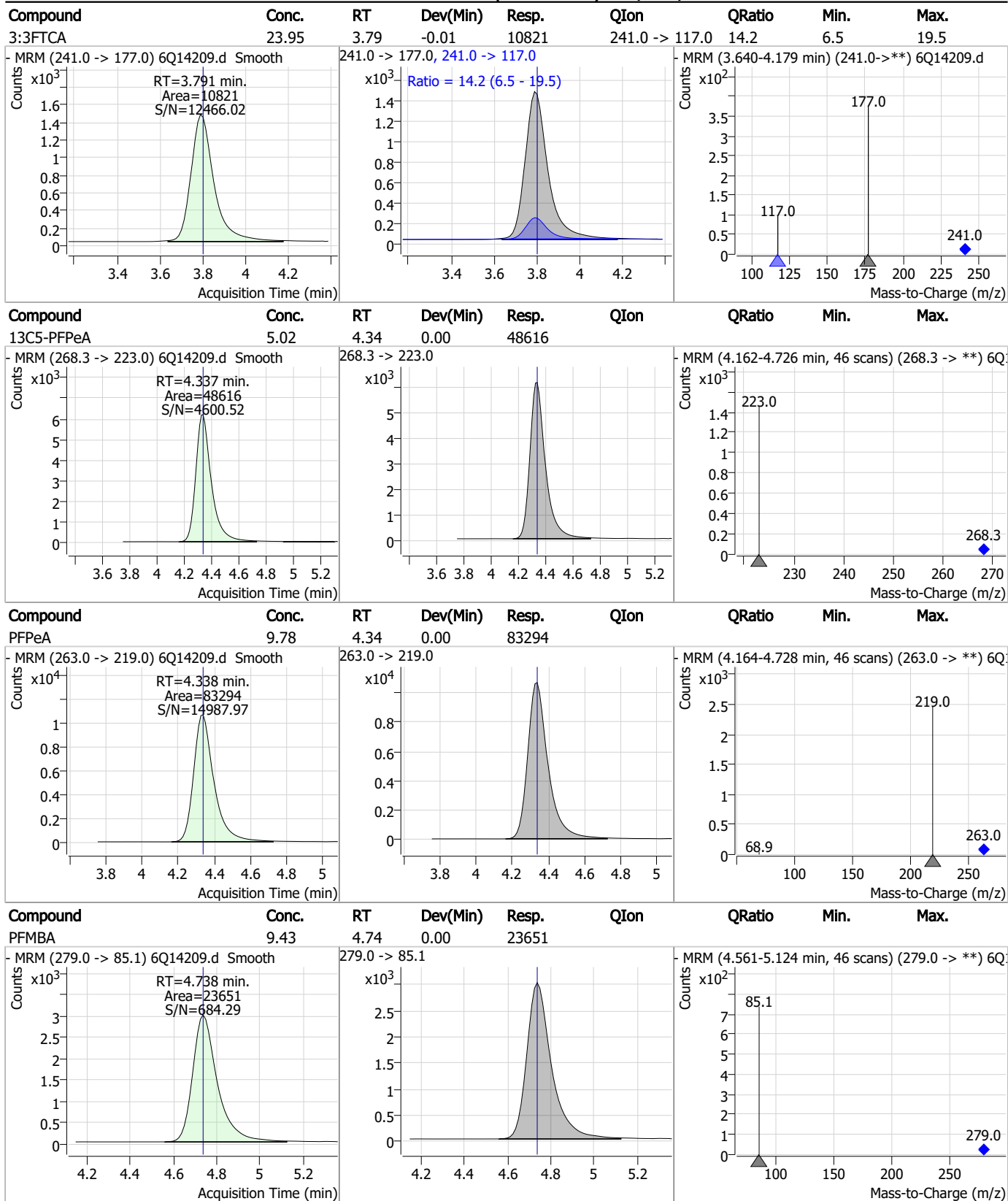
7.7.6

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Perfluorinated Compounds by LC/MS/MS

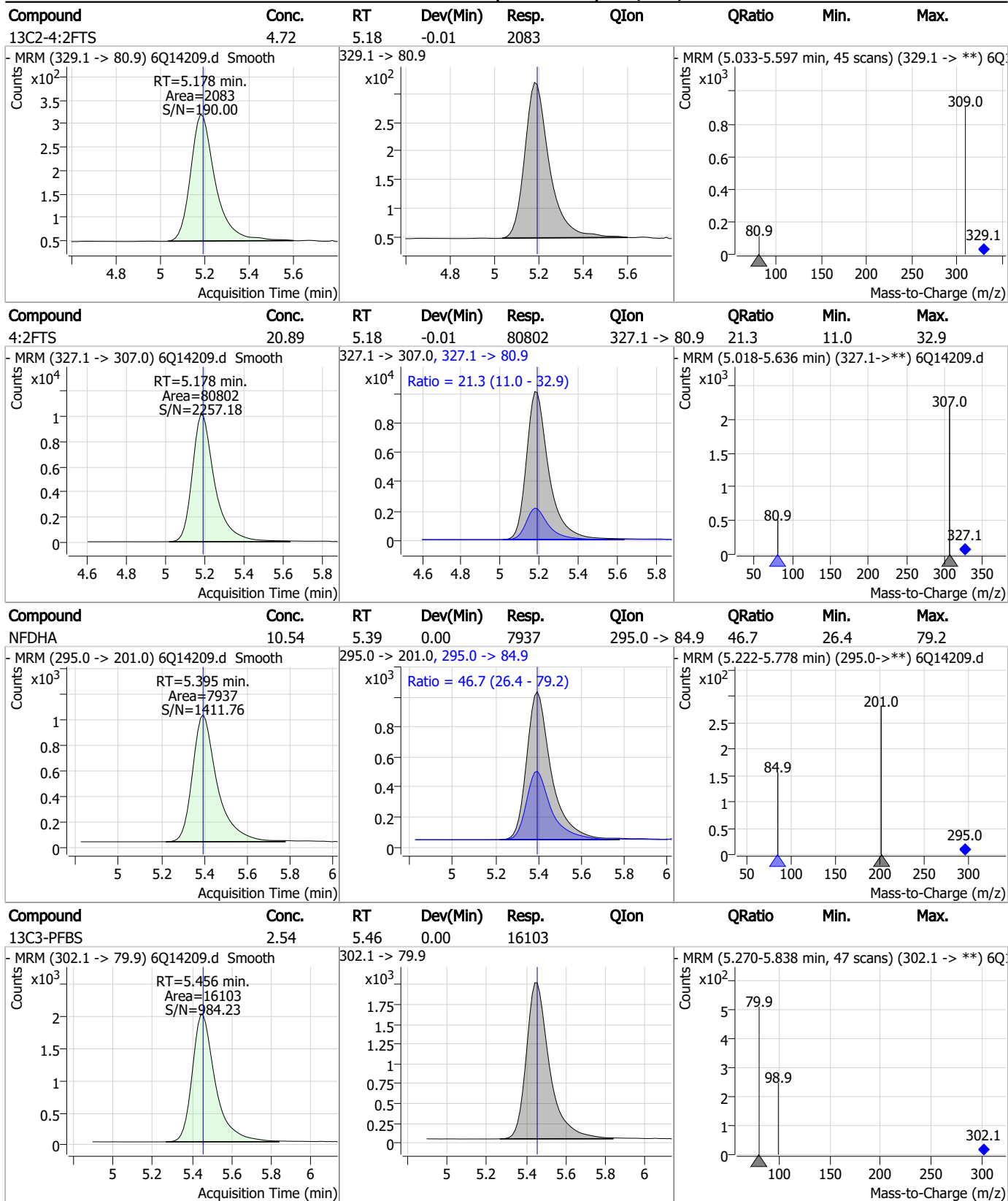


Perfluorinated Compounds by LC/MS/MS



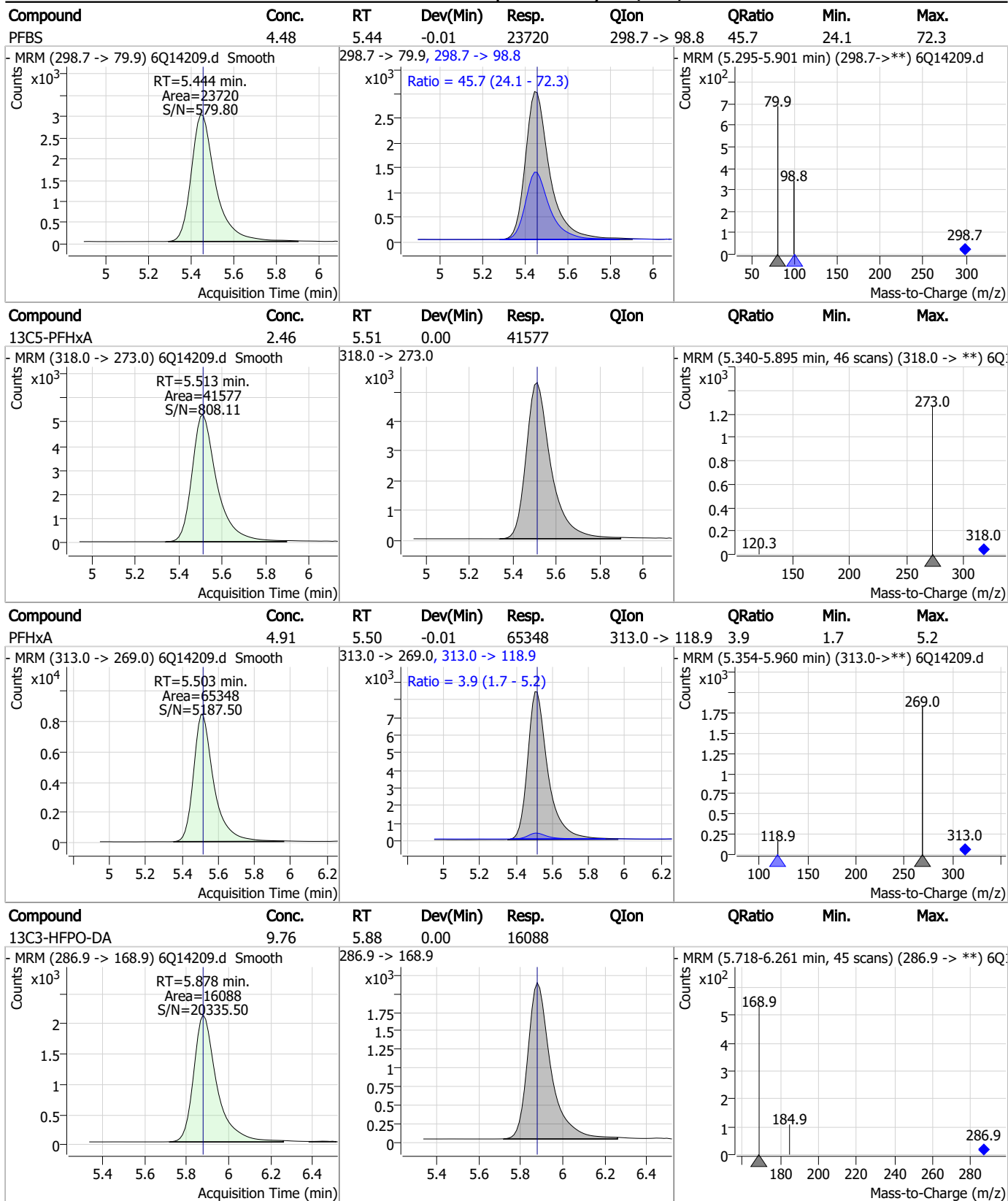
7.7.6
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Perfluorinated Compounds by LC/MS/MS



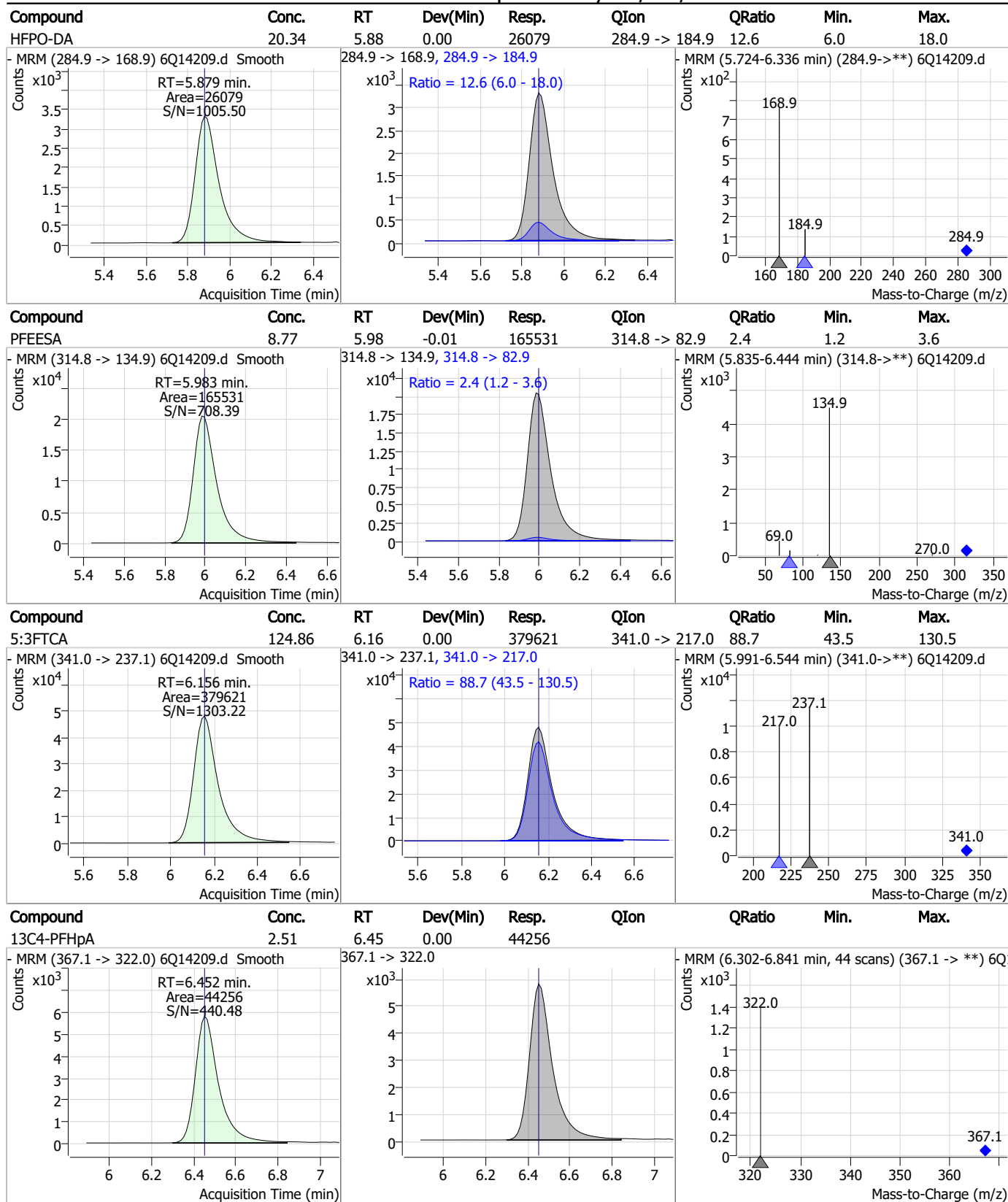
7.7.6
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Perfluorinated Compounds by LC/MS/MS



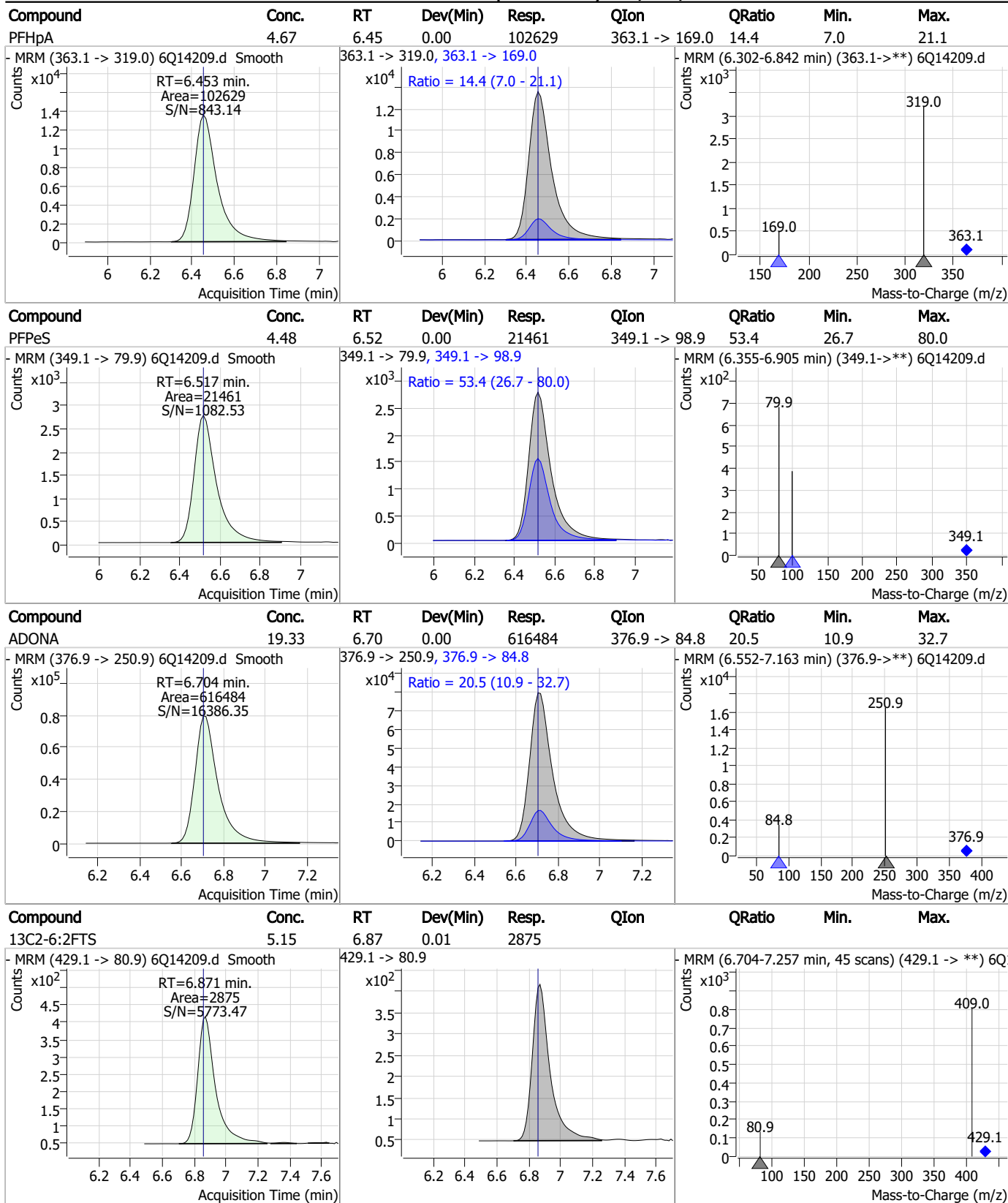
7.7.6
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Perfluorinated Compounds by LC/MS/MS



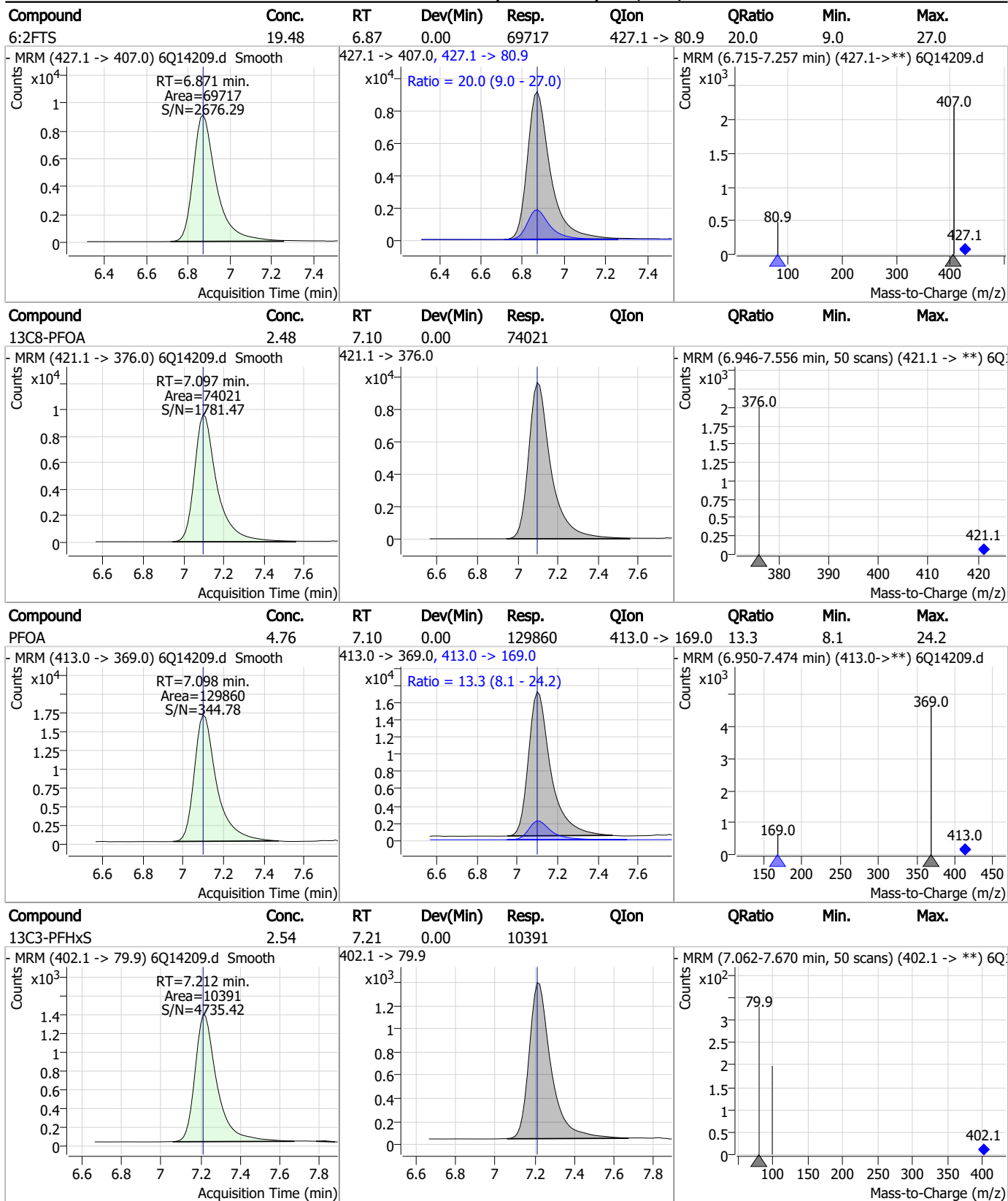
7.7.6
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Perfluorinated Compounds by LC/MS/MS



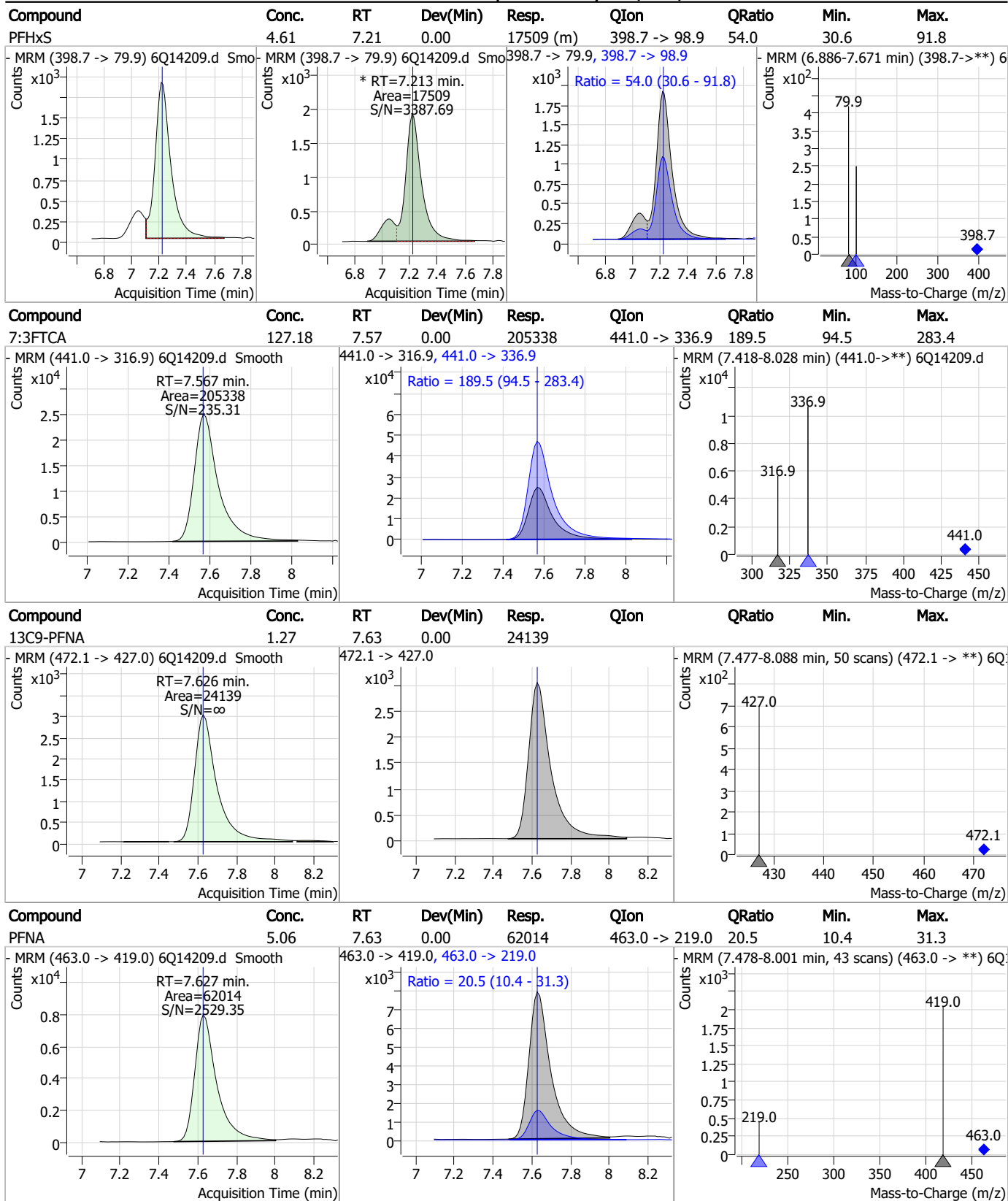
7.7.6
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Perfluorinated Compounds by LC/MS/MS



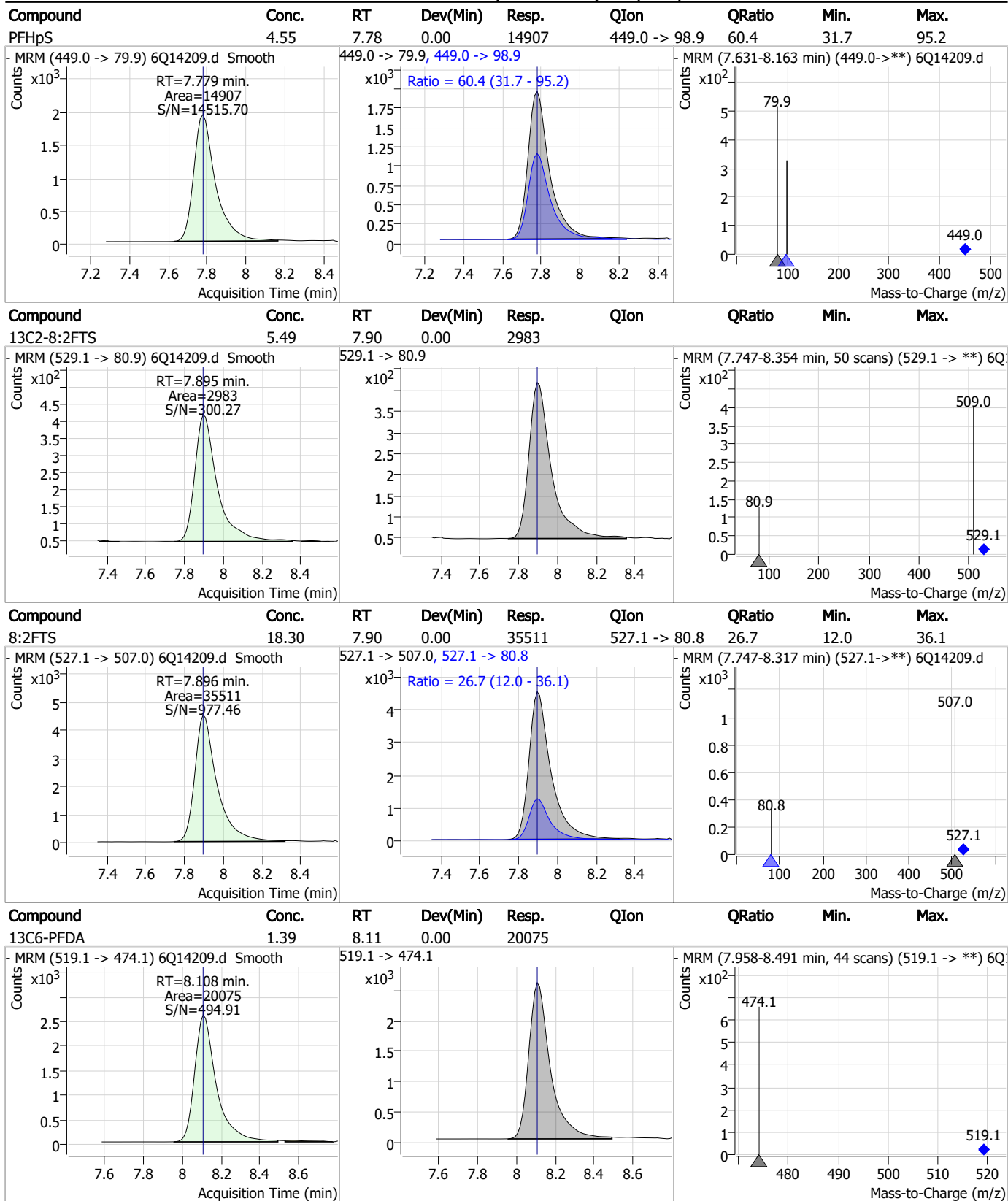
7.7.6
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Perfluorinated Compounds by LC/MS/MS



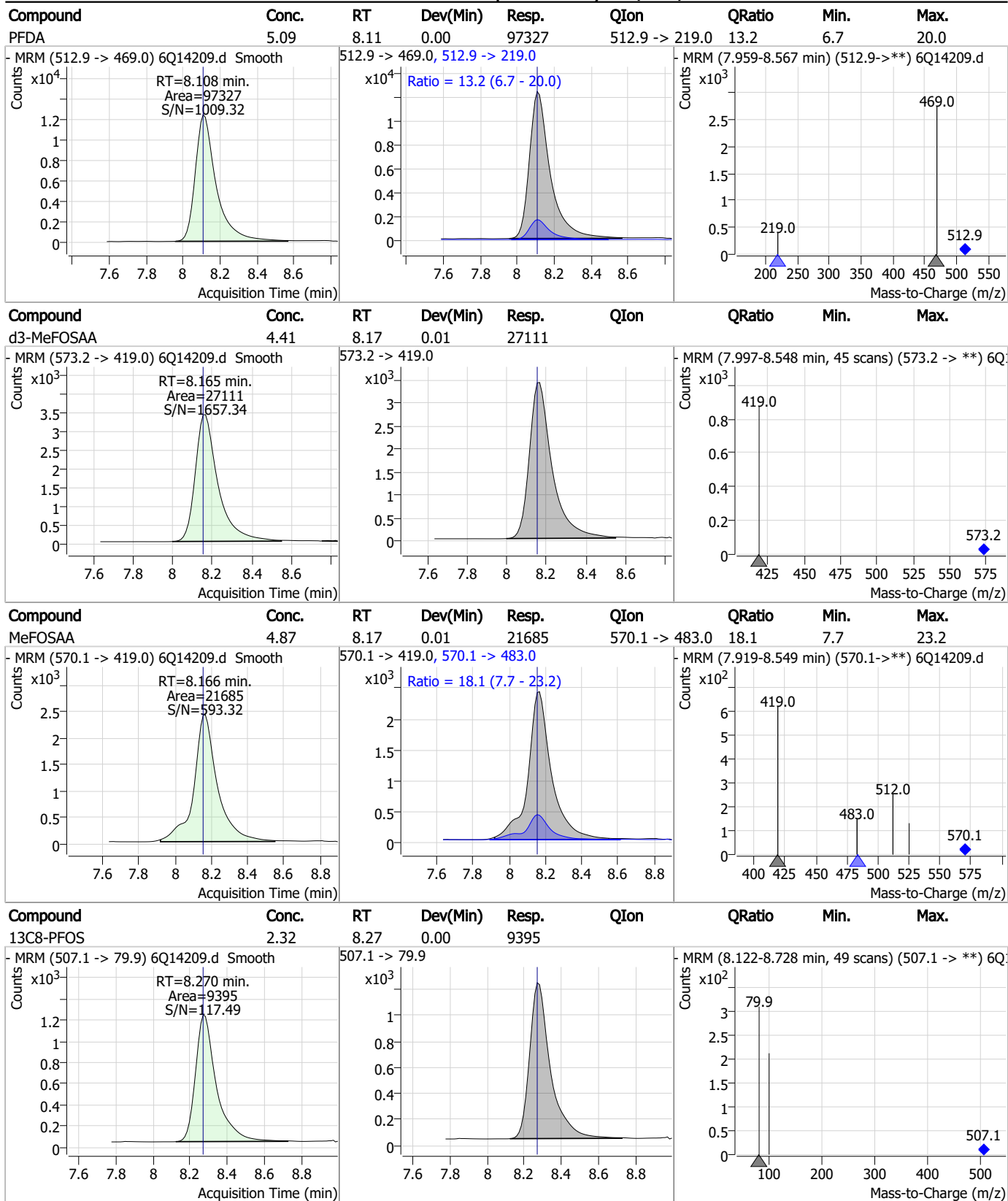
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

Perfluorinated Compounds by LC/MS/MS

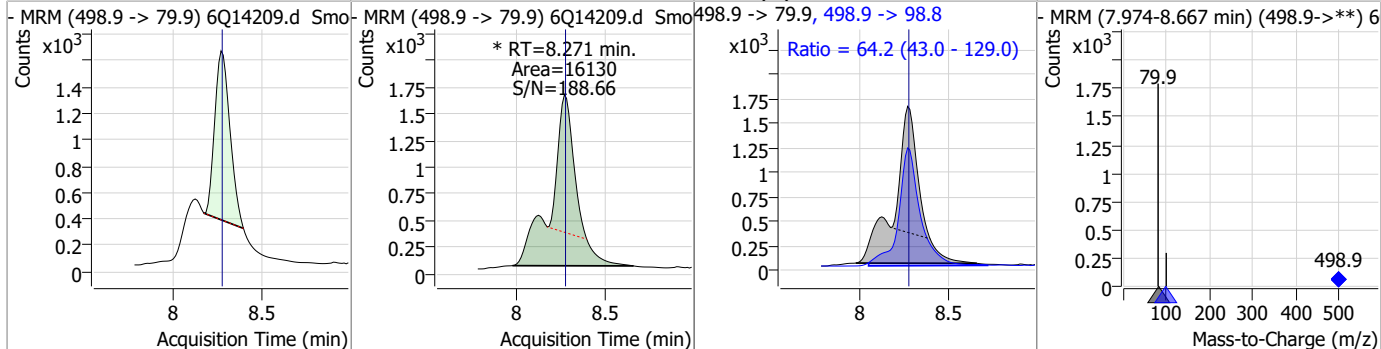


7.7.6

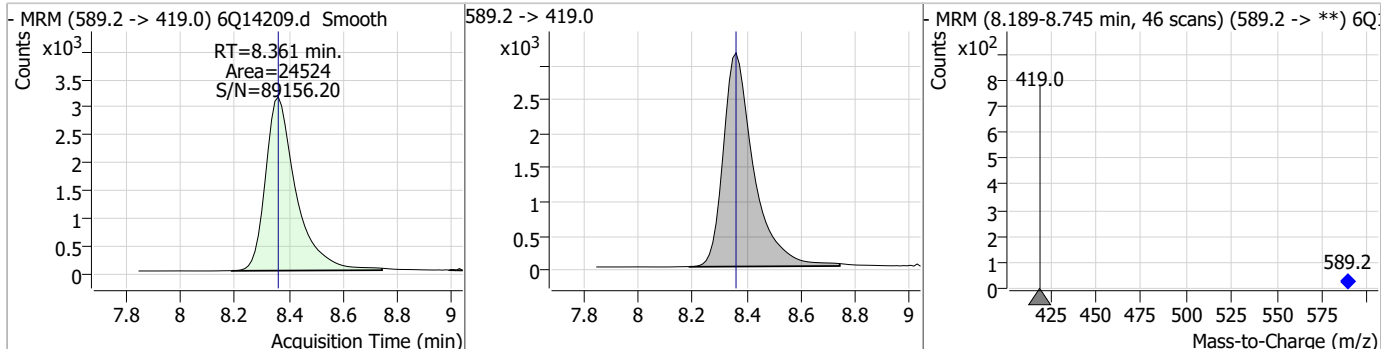
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Perfluorinated Compounds by LC/MS/MS

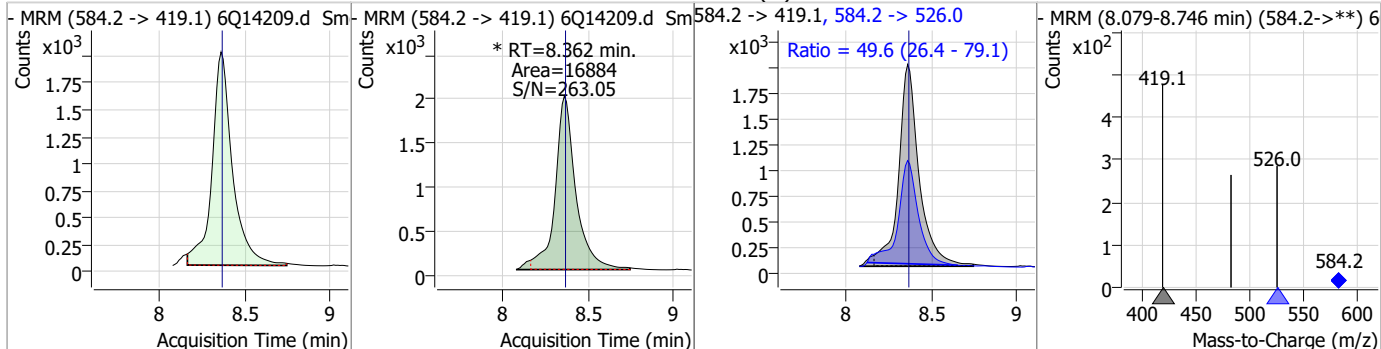
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.59	8.27	0.00	16130 (m)	498.9 -> 98.8	64.2	43.0	129.0



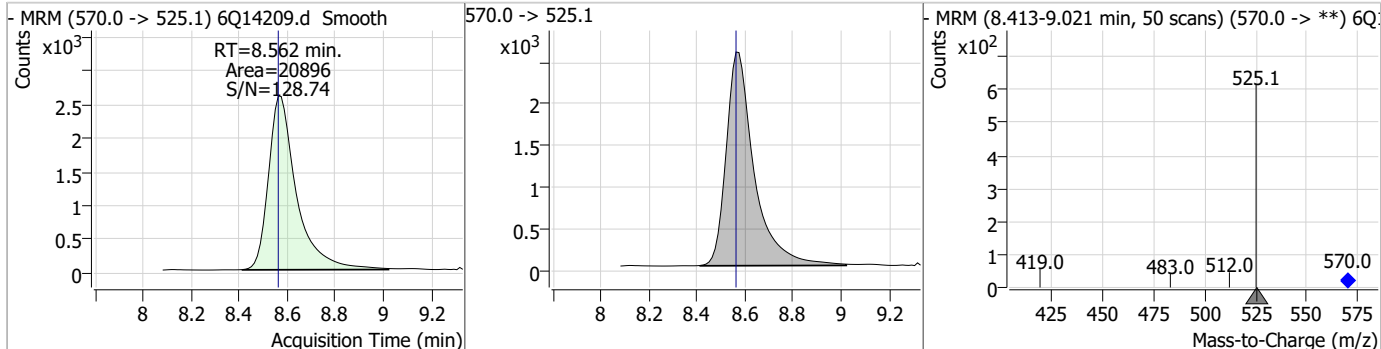
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.55	8.36	0.00	24524				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.26	8.36	0.00	16884 (m)	584.2 -> 526.0	49.6	26.4	79.1

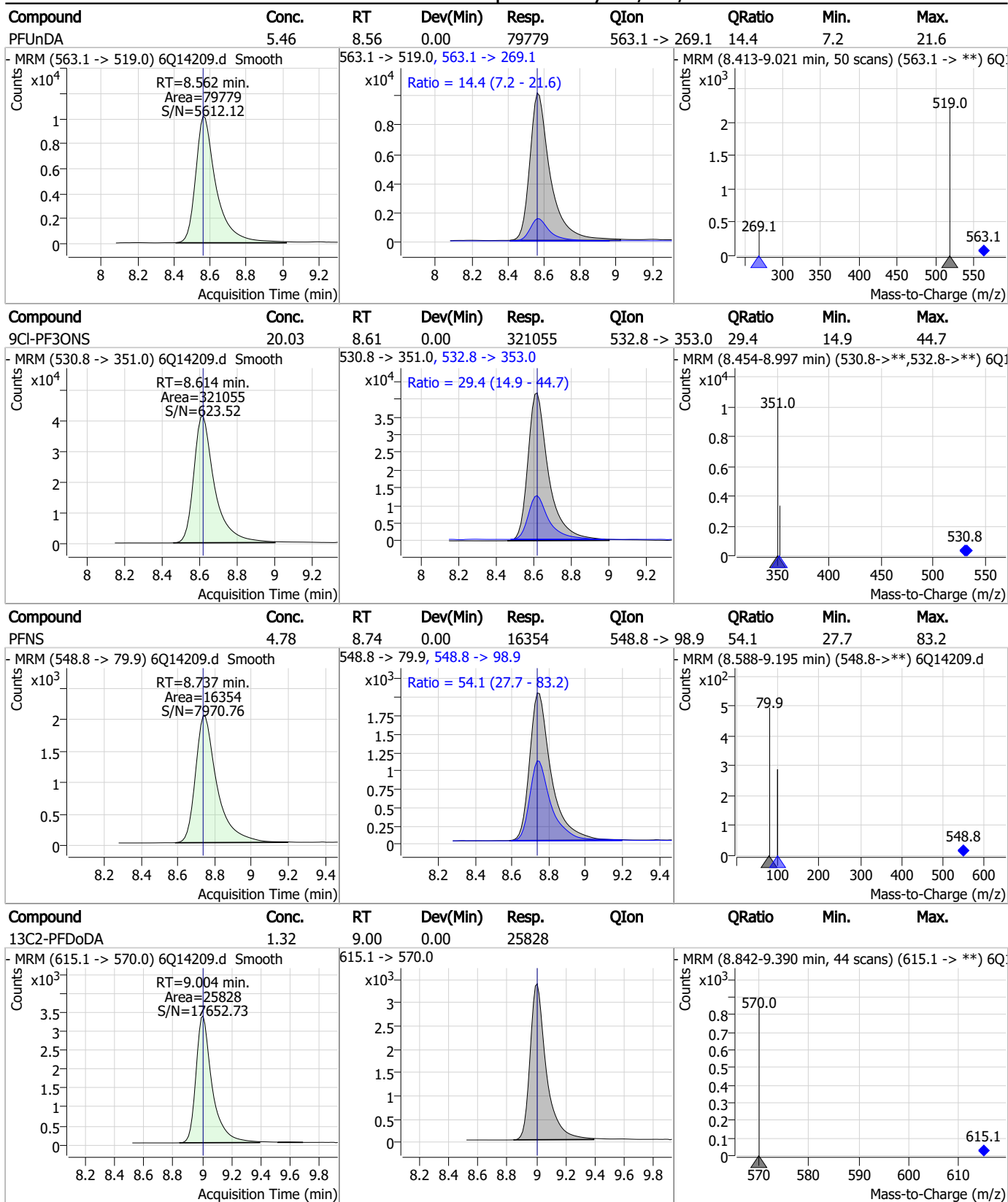


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.56	0.00	20896				



7.7.6
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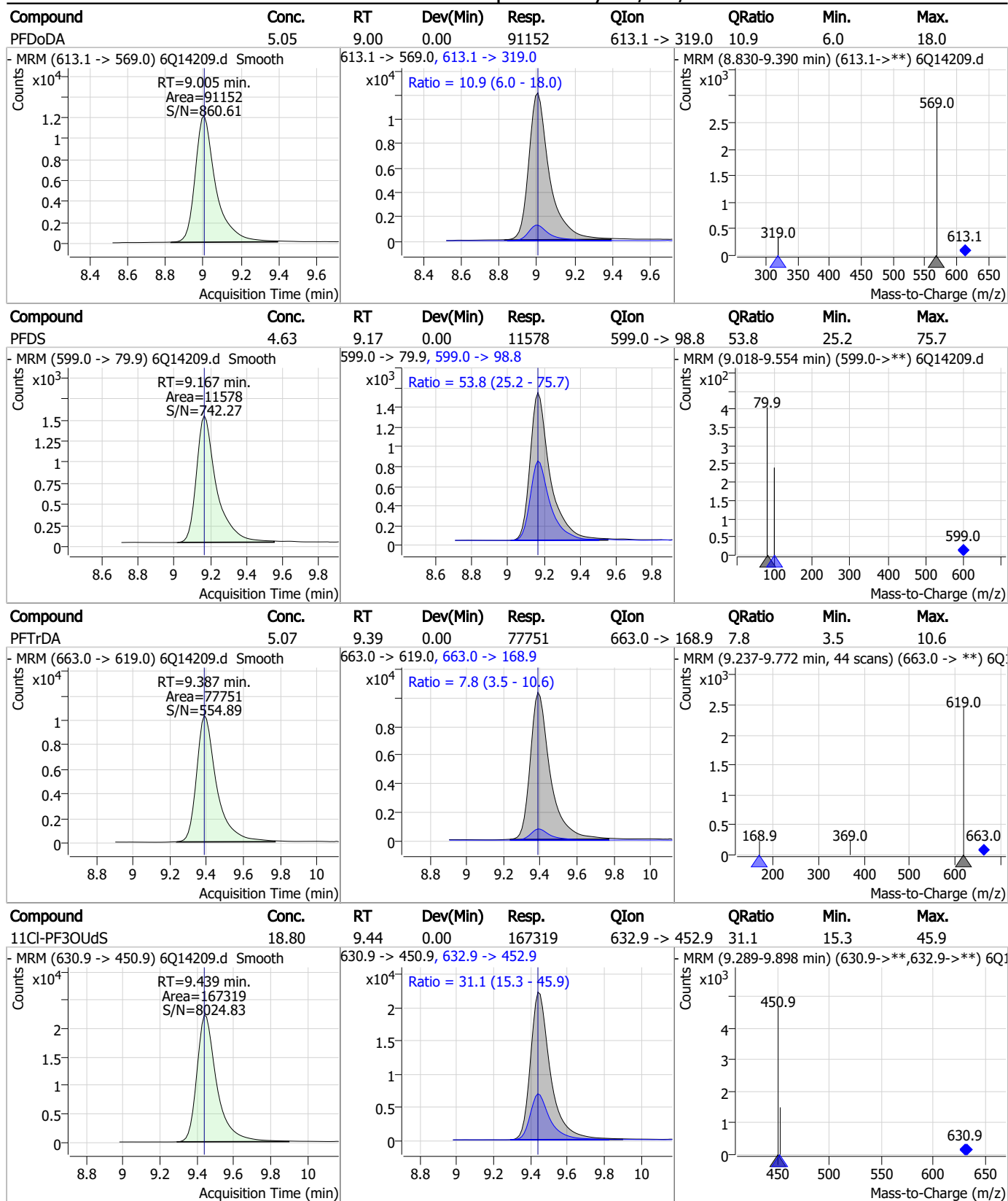
Perfluorinated Compounds by LC/MS/MS



7.7.6

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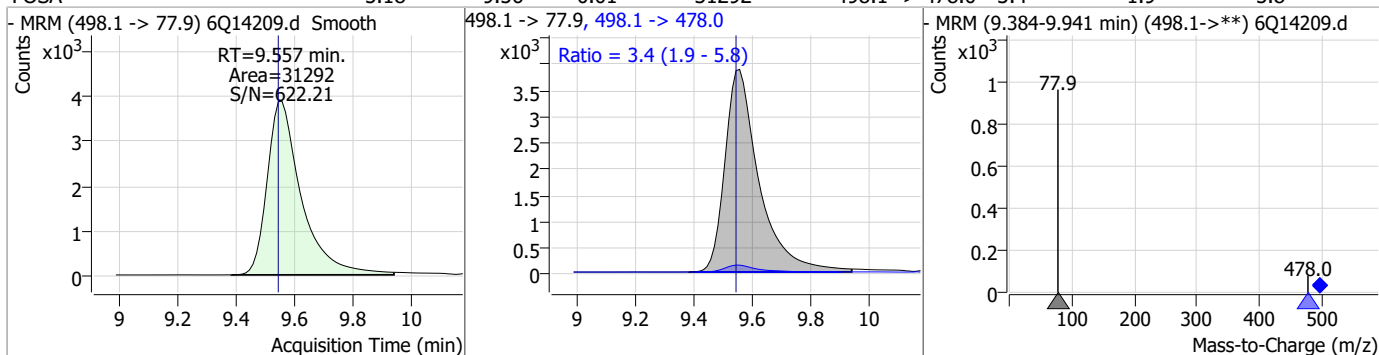
Perfluorinated Compounds by LC/MS/MS



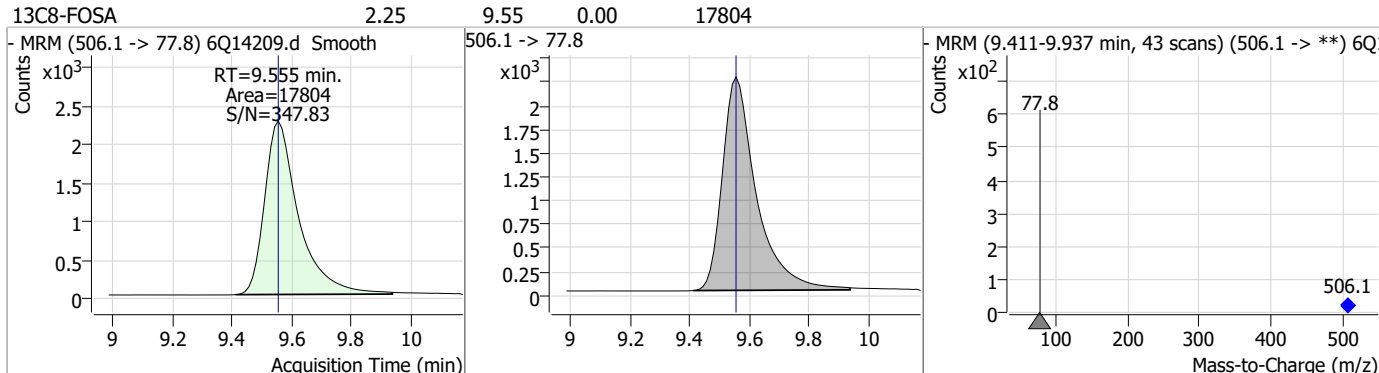
7.7.6
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Perfluorinated Compounds by LC/MS/MS

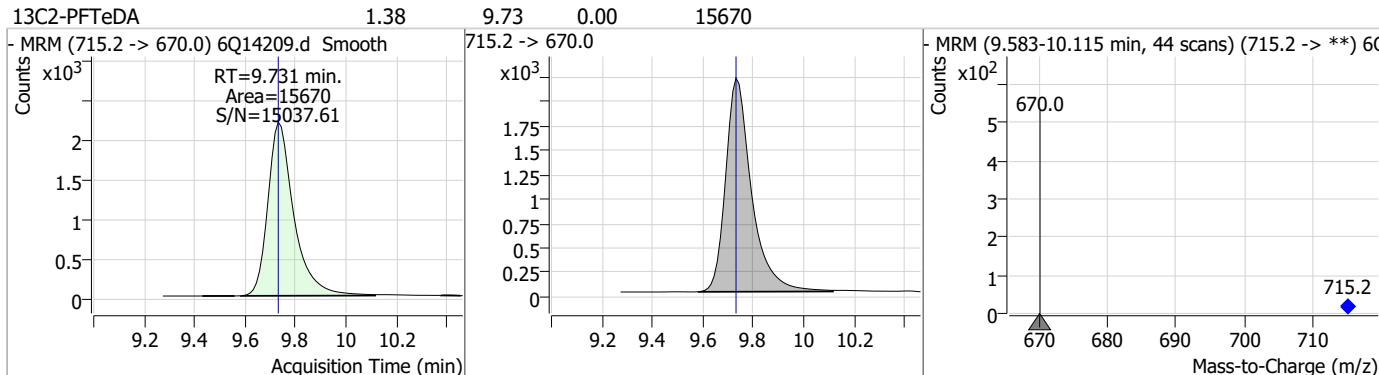
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.18	9.56	0.01	31292	498.1 -> 478.0	3.4	1.9	5.8



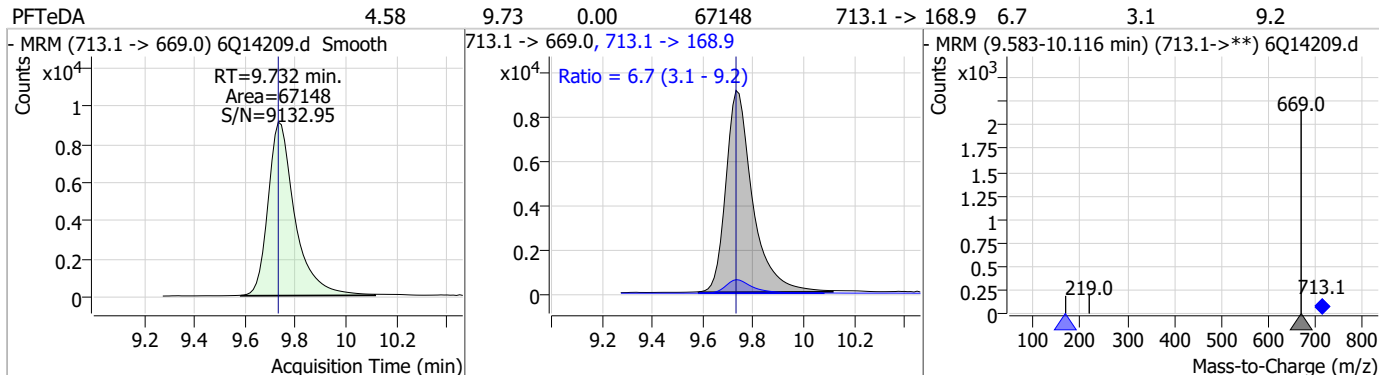
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.25	9.55	0.00	17804				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.38	9.73	0.00	15670				

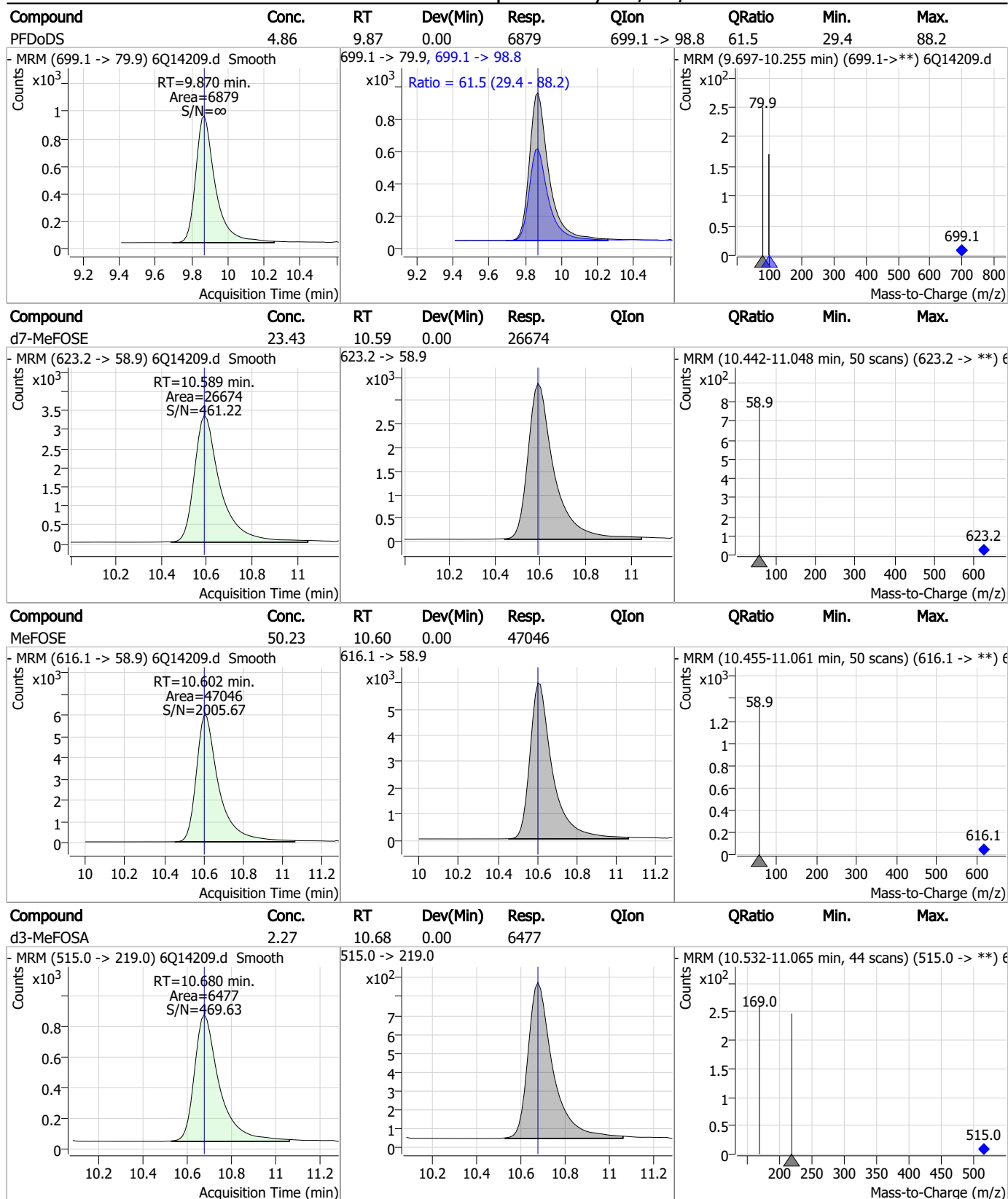


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.58	9.73	0.00	67148	713.1 -> 168.9	6.7	3.1	9.2



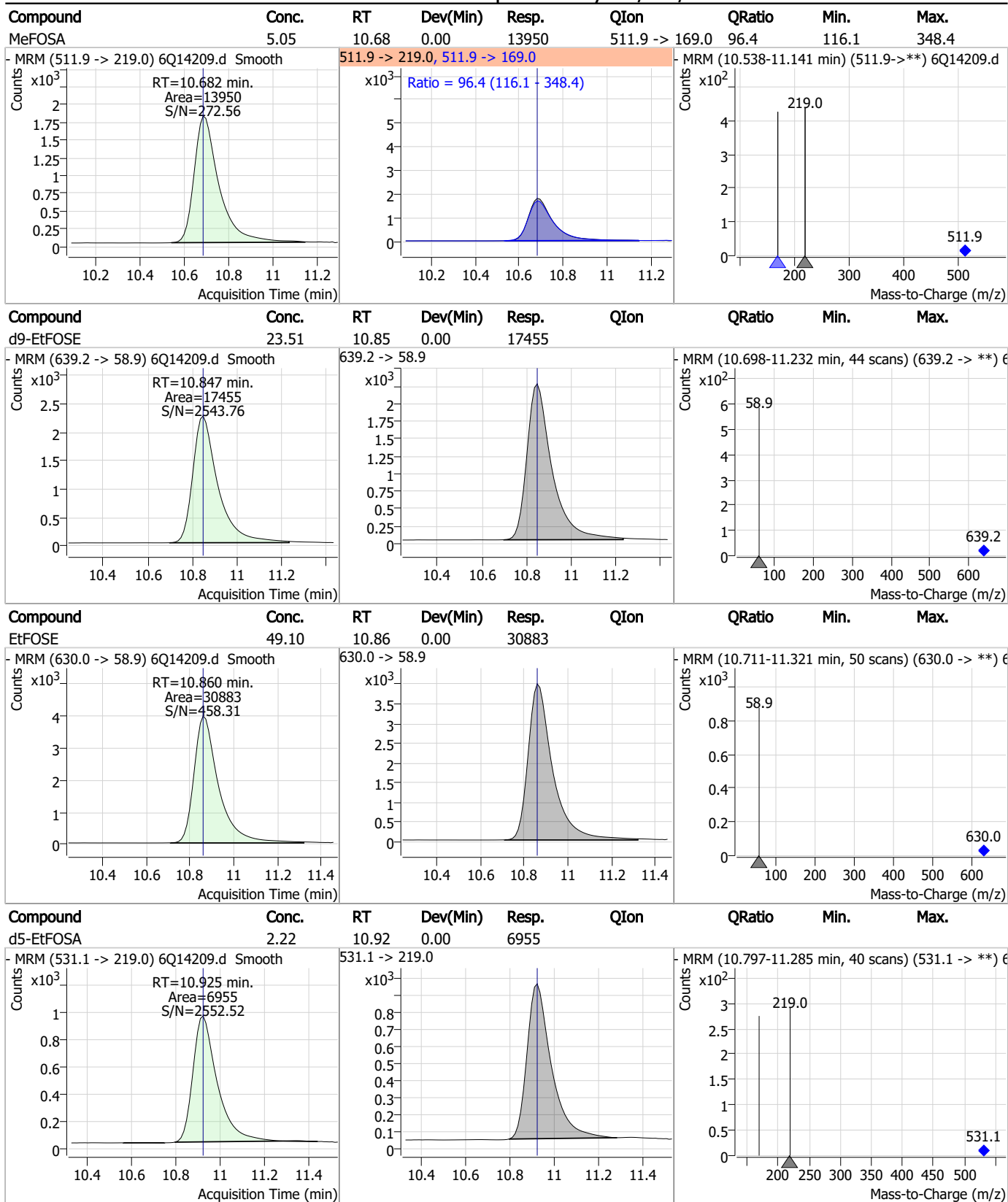
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6
7

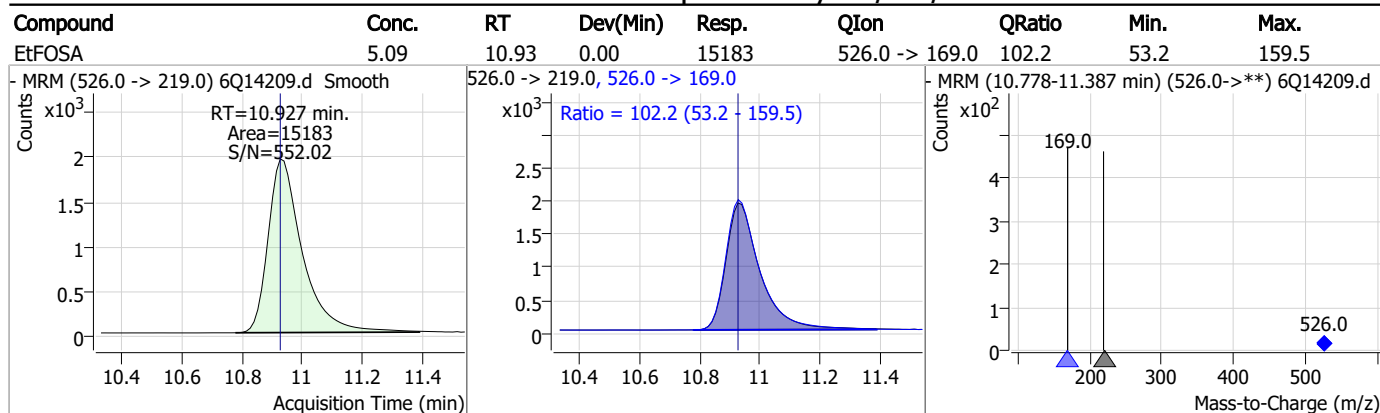
Perfluorinated Compounds by LC/MS/MS



7.7.6

7

Perfluorinated Compounds by LC/MS/MS



7.7.6

7

Manual Integration Approval Summary

Sample Number: S6Q217-IC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14209.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 14:35 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.36	Split peak

7.7.6.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtje
 02/24/23 15:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14210.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 2:49:40 PM
 Sample Name : ic217-6
 Vial : P1-A7
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	91299	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	45711	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	40283	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	41479	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	70639	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	23282	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	17926	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	21795	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	25532	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	14522	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17382	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	16110	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	10247	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8458	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2233	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	2772	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2463	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	26419	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	15803	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	23326	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	24596	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	16481	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	7084	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6165	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	9770	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	40006	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	6937	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	84984	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	25828	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	24284	1.25 µg/L	0.000
13C2-PFHxA	5.501	315.1 -> 270.0	40518	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2233	5.38 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C2-6:2FTS	6.871	429.1 -> 80.9	2772	5.29 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2463	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C2-PFDoDA	8.991	615.1 -> 570.0	25532	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-PFTeDA	9.731	715.2 -> 670.0	14522	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFBS	5.456	302.1 -> 79.9	16110	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C3-PFHxS	7.212	402.1 -> 79.9	10247	2.67 µg/L	0.000

7.7.7
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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 = 106.6%	
13C4-PFBA	2.938	216.8 -> 171.9	91299	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.452	367.1 -> 322.0	41479	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C5-PFHxA	5.513	318.0 -> 273.0	40283	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFPeA	4.337	268.3 -> 223.0	45711	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C6-PFDA	8.108	519.1 -> 474.1	17926	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C7-PFUnDA	8.562	570.0 -> 525.1	21795	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-FOSA	9.555	506.1 -> 77.8	17382	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C8-PFOA	7.097	421.1 -> 376.0	70639	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOS	8.270	507.1 -> 79.9	8458	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C9-PFNA	7.626	472.1 -> 427.0	23282	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.5%	
d3-MeFOSAA	8.153	573.2 -> 419.0	26419	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	15803	10.24 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSA	10.680	515.0 -> 219.0	6165	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
d5-EtFOSAA	8.349	589.2 -> 419.0	23326	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	24596	26.08 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.3%	
d9-EtFOSE	10.847	639.2 -> 58.9	16481	26.81 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
d5-EtFOSA	10.925	531.1 -> 219.0	7084	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	205271	49.50 µg/L	99
		327.1 -> 80.9	44075		
6:2FTS	6.871	427.1 -> 407.0	172775	50.09 µg/L	97
		427.1 -> 80.9	33012		
8:2FTS	7.896	527.1 -> 507.0	91309	56.99 µg/L	100
		527.1 -> 80.8	21855		
EtFOSAA	8.362	584.2 -> 419.1	42222	13.82 µg/L	93
		584.2 -> 526.0	24421		
FOSA	9.557	498.1 -> 77.9	81291	13.79 µg/L	99
		498.1 -> 478.0	2983		
MeFOSAA	8.154	570.1 -> 419.0	61001	14.05 µg/L	98
		570.1 -> 483.0	9811		
PFBA	2.932	212.8 -> 168.9	100834	54.82 µg/L	100
PFBS	5.444	298.7 -> 79.9	59804	11.29 µg/L	99
		298.7 -> 98.8	28486		
PFDA	8.108	512.9 -> 469.0	254522	14.91 µg/L	99
		512.9 -> 219.0	33177		
PFDoDA	9.005	613.1 -> 569.0	232528	13.02 µg/L	99
		613.1 -> 319.0	26593		
PFDS	9.167	599.0 -> 79.9	29745	13.22 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	15928			
PFHpA	6.453	363.1 -> 319.0	277138	13.46	µg/L	99
		363.1 -> 169.0	38217			
PFHpS	7.779	449.0 -> 79.9	38465	13.05	µg/L	94
		449.0 -> 98.9	22733			
PFHxA	5.516	313.0 -> 269.0	179108	13.90	µg/L	99
		313.0 -> 118.9	6699			
PFHxS	7.213	398.7 -> 79.9	45795	12.21	µg/L	m 94
		398.7 -> 98.9	25842			
PFNA	7.627	463.0 -> 419.0	167352	14.17	µg/L	95
		463.0 -> 219.0	31005			
PFNS	8.737	548.8 -> 79.9	42078	13.65	µg/L	97
		548.8 -> 98.9	24402			
PFOA	7.098	413.0 -> 369.0	342407	13.14	µg/L	95
		413.0 -> 169.0	48462			
PFOS	8.271	498.9 -> 79.9	39064	12.36	µg/L	m 81
		498.9 -> 98.8	26629			
PFPeA	4.338	263.0 -> 219.0	219429	27.40	µg/L	100
PFPeS	6.517	349.1 -> 79.9	58526	12.38	µg/L	99
		349.1 -> 98.9	30759			
PFTeDA	9.732	713.1 -> 669.0	185573	13.65	µg/L	99
		713.1 -> 168.9	11883			
PFTrDA	9.387	663.0 -> 619.0	200206	13.20	µg/L	98
		663.0 -> 168.9	15779			
PFUnDA	8.562	563.1 -> 519.0	200111	13.14	µg/L	100
		563.1 -> 269.1	29029			
11Cl-PF3OUdS	9.439	630.9 -> 450.9	443816	50.76	µg/L	99
		632.9 -> 452.9	139156			
9Cl-PF3ONS	8.614	530.8 -> 351.0	808547	51.36	µg/L	96
		532.8 -> 353.0	258604			
ADONA	6.704	376.9 -> 250.9	1592915	50.84	µg/L	100
		376.9 -> 84.8	349097			
HFPO-DA	5.879	284.9 -> 168.9	68306	54.23	µg/L	99
		284.9 -> 184.9	8566			
3:3FTCA	3.791	241.0 -> 177.0	28702	67.57	µg/L	96
		241.0 -> 117.0	4225			
5:3FTCA	6.156	341.0 -> 237.1	1007437	342.01	µg/L	99
		341.0 -> 217.0	870196			
7:3FTCA	7.567	441.0 -> 316.9	536833	343.18	µg/L	89
		441.0 -> 336.9	930463			
EtFOSA	10.927	526.0 -> 219.0	39018	12.84	µg/L	97
		526.0 -> 169.0	40126			
EtFOSE	10.860	630.0 -> 58.9	78429	132.06	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	34759	13.22	µg/L	# 23
		511.9 -> 169.0	35929			
MeFOSE	10.602	616.1 -> 58.9	121968	141.24	µg/L	100
PFDoDS	9.870	699.1 -> 79.9	17554	13.78	µg/L	94
		699.1 -> 98.8	11163			
NFDHA	5.395	295.0 -> 201.0	20007	27.43	µg/L	97
		295.0 -> 84.9	10202			
PFMBA	4.738	279.0 -> 85.1	63981	27.12	µg/L	100
PFMPA	3.488	229.0 -> 84.9	58850	27.49	µg/L	100
PFEESA	5.983	314.8 -> 134.9	440474	24.09	µg/L	100
		314.8 -> 82.9	10344			

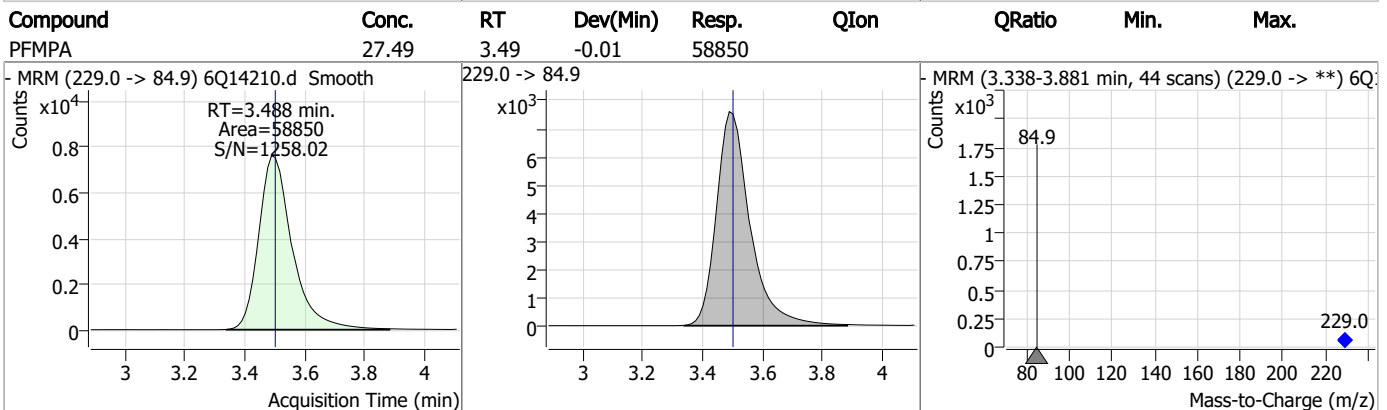
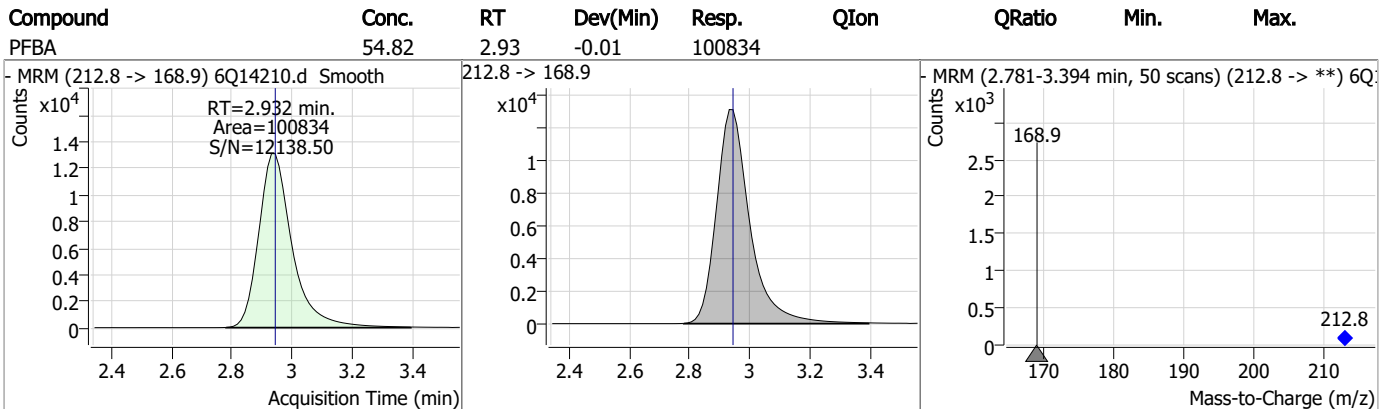
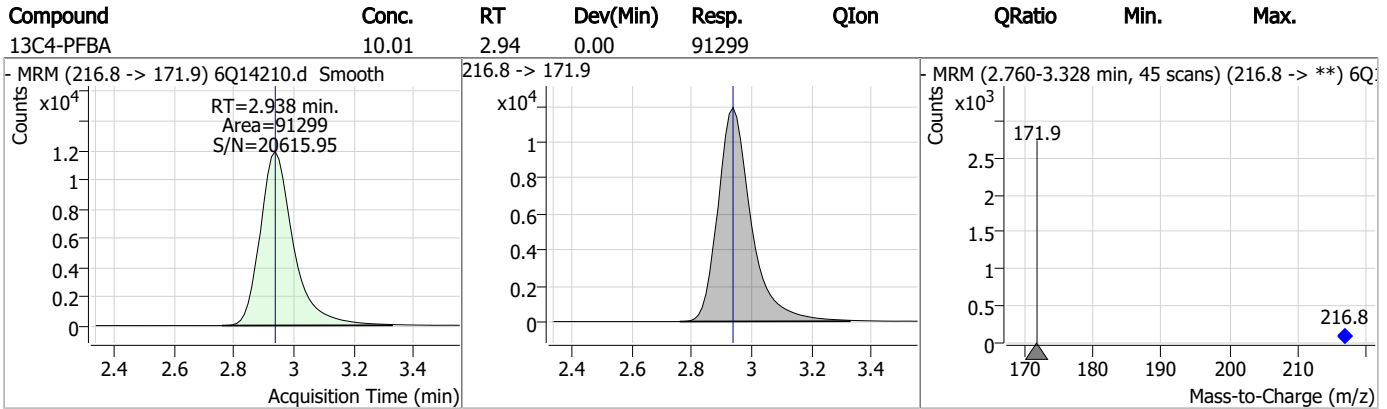
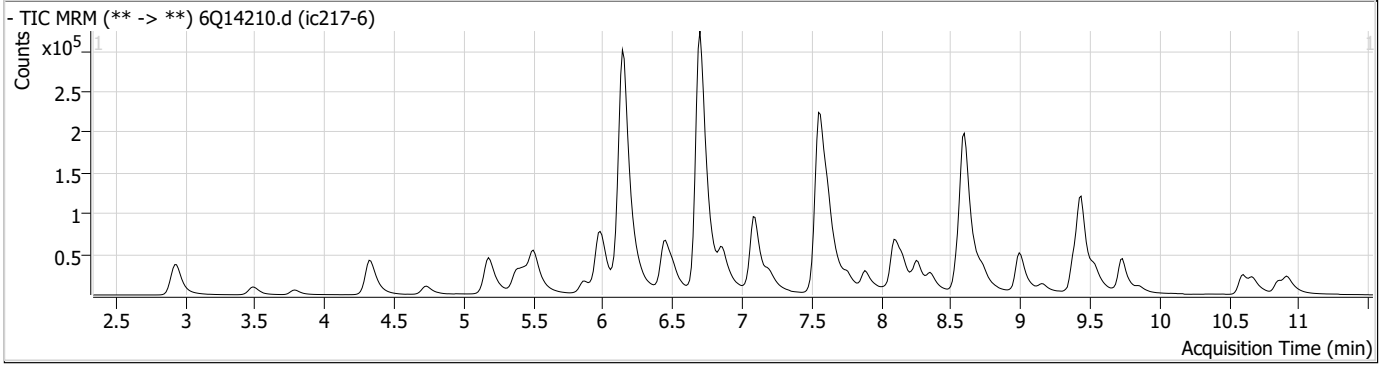
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

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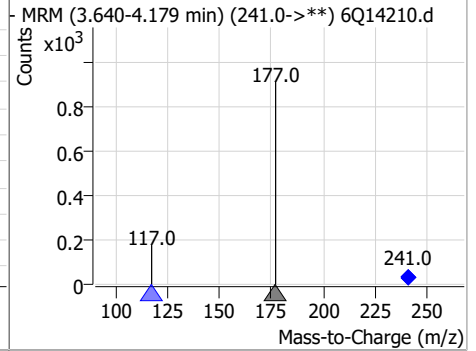
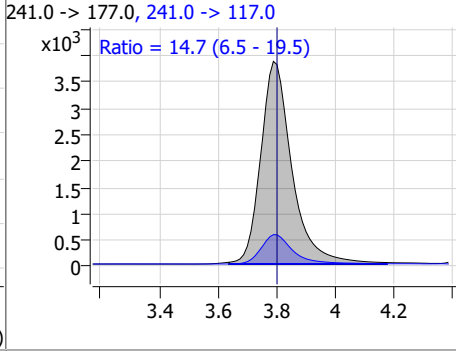
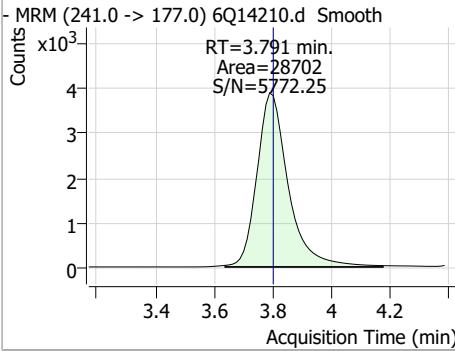
7.7.7
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Perfluorinated Compounds by LC/MS/MS

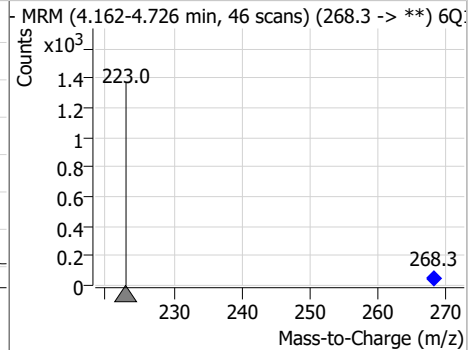
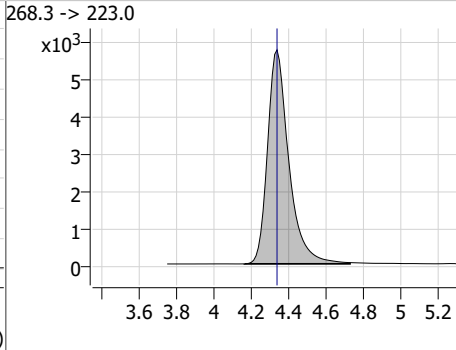
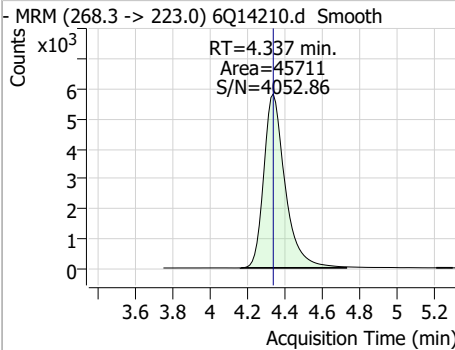


Perfluorinated Compounds by LC/MS/MS

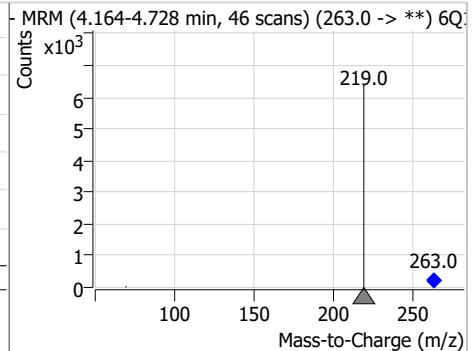
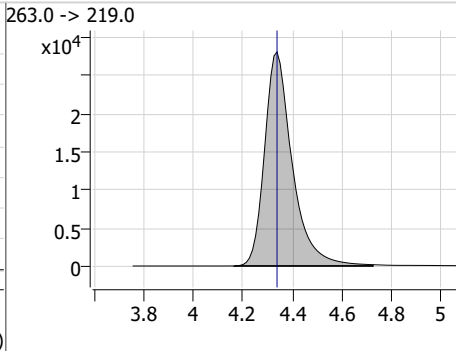
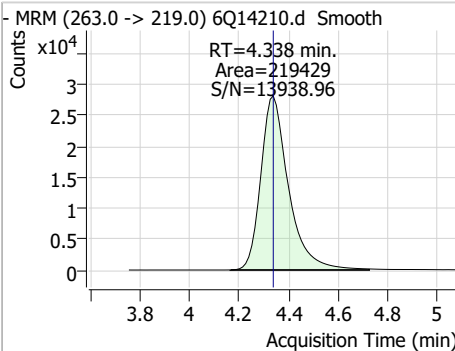
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	67.57	3.79	-0.01	28702	241.0 -> 117.0	14.7	6.5	19.5



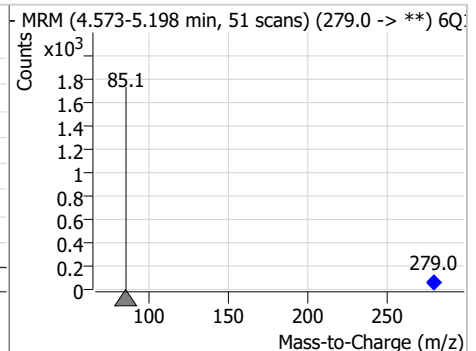
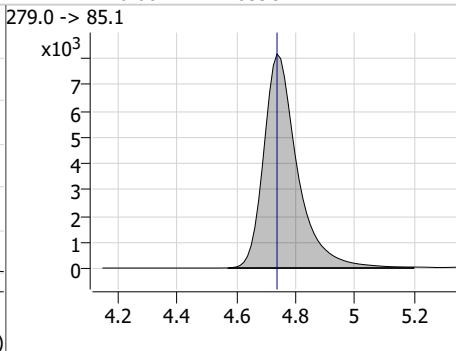
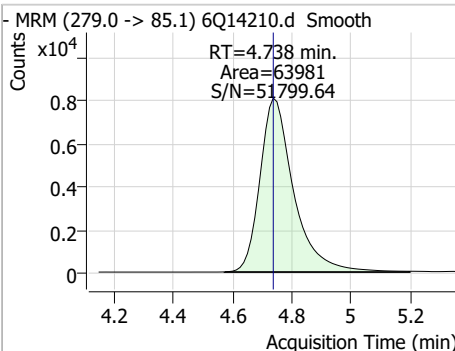
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.04	4.34	0.00	45711				



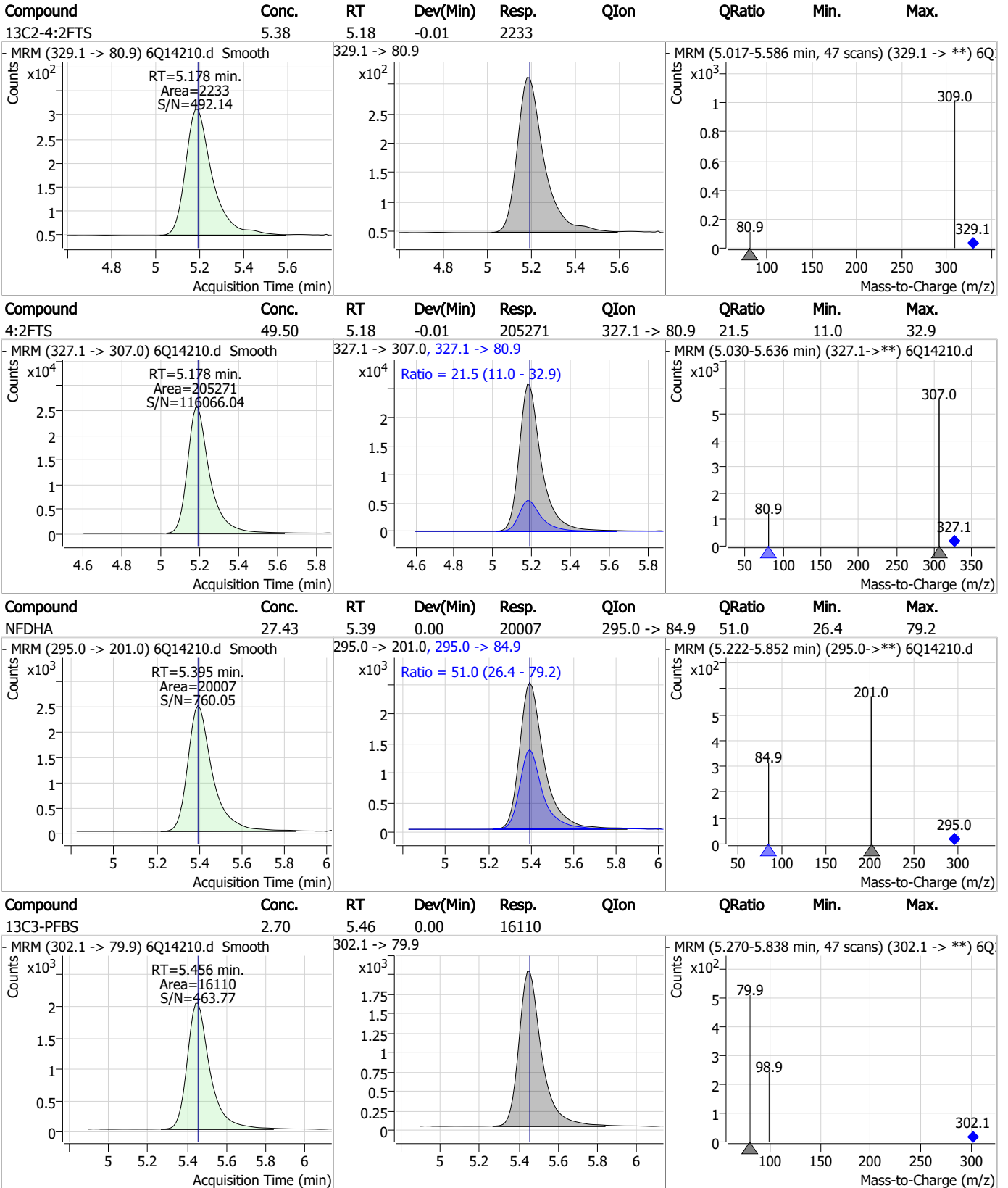
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	27.40	4.34	0.00	219429				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	27.12	4.74	0.00	63981				



Perfluorinated Compounds by LC/MS/MS

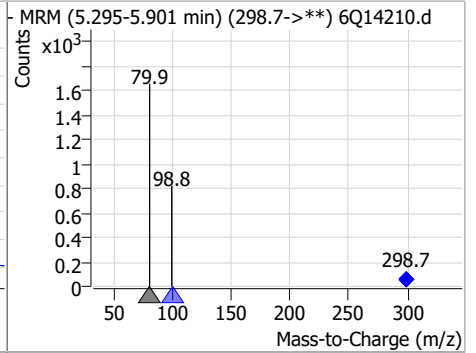
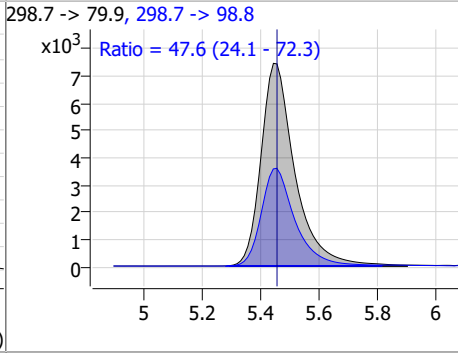
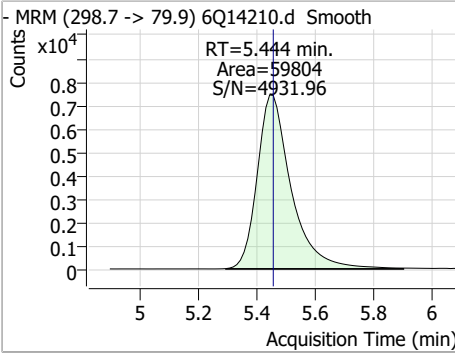


7.7.7

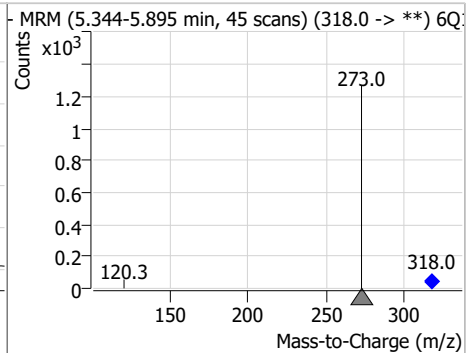
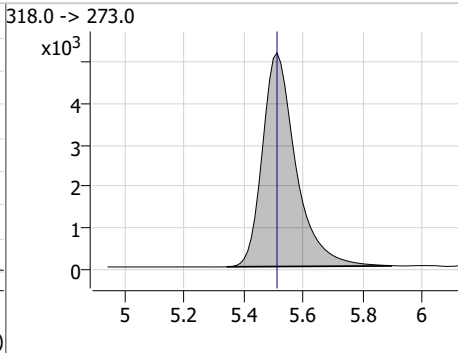
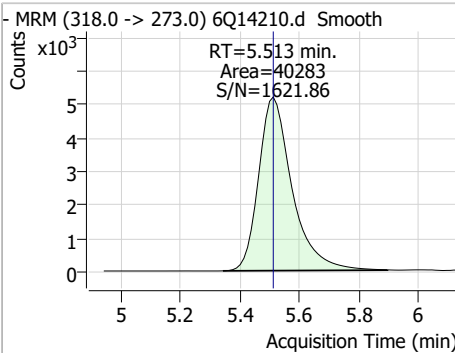
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Perfluorinated Compounds by LC/MS/MS

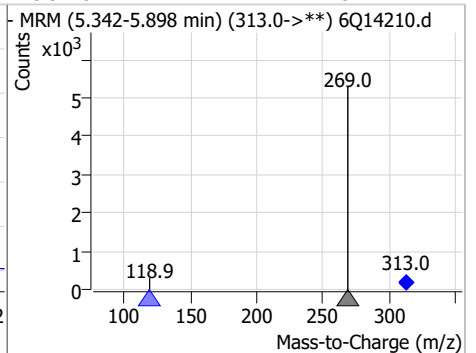
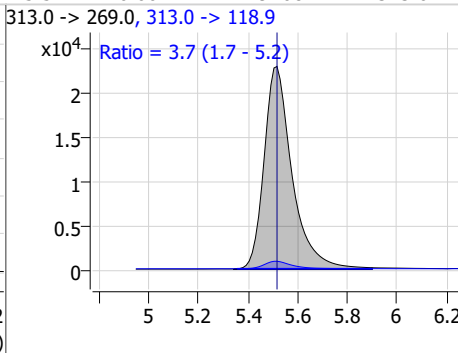
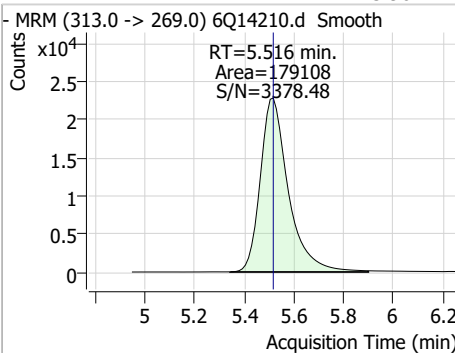
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.29	5.44	-0.01	59804	298.7 -> 98.8	47.6	24.1	72.3



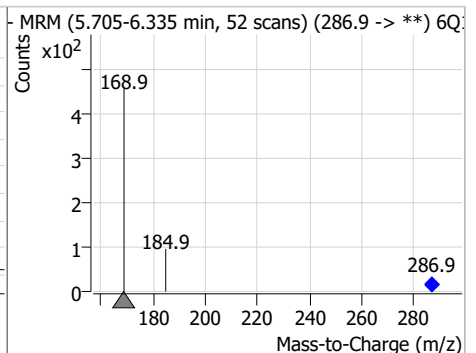
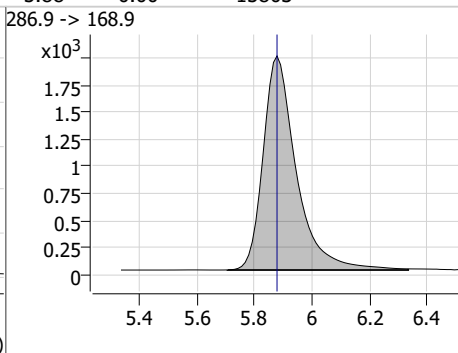
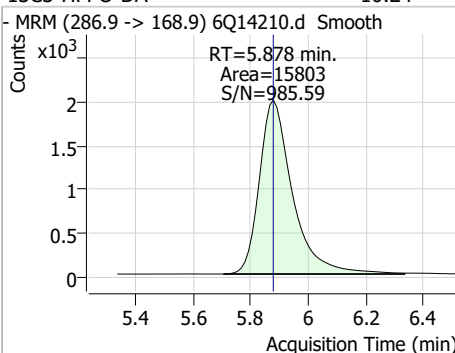
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	5.51	0.00	40283				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.90	5.52	0.00	179108	313.0 -> 118.9	3.7	1.7	5.2

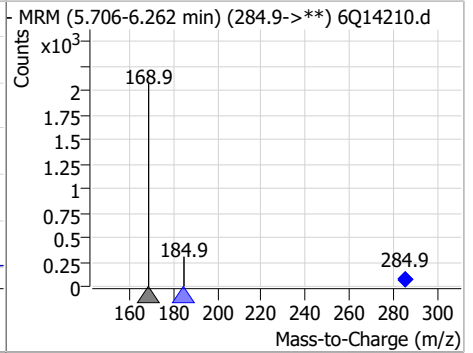
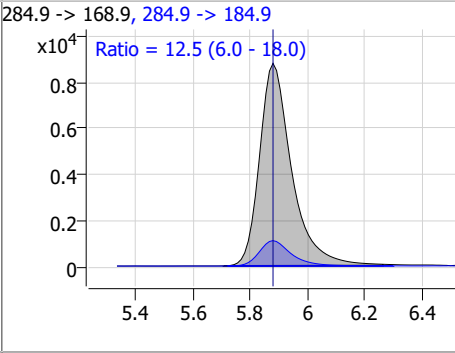
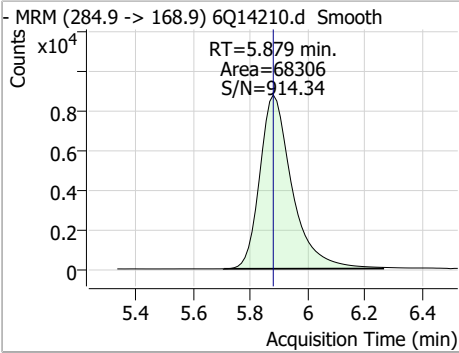


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.24	5.88	0.00	15803				

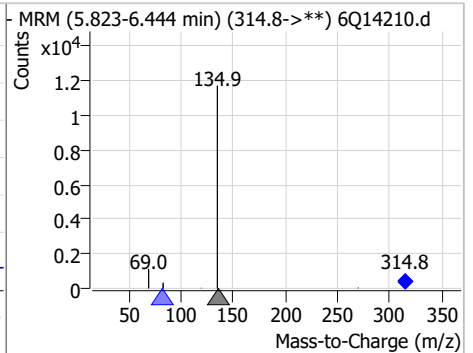
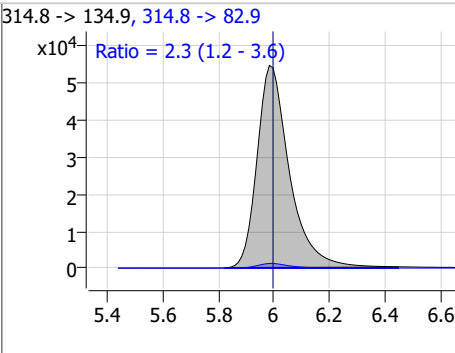
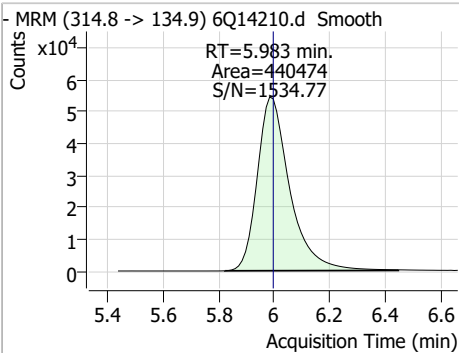


Perfluorinated Compounds by LC/MS/MS

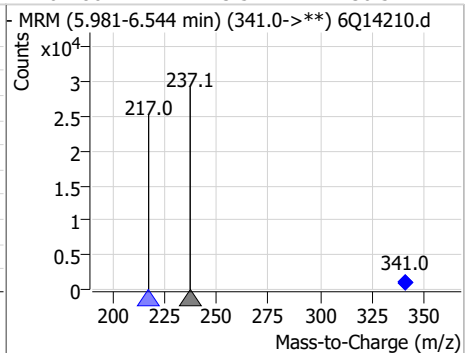
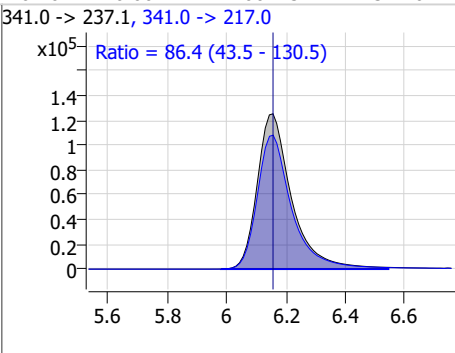
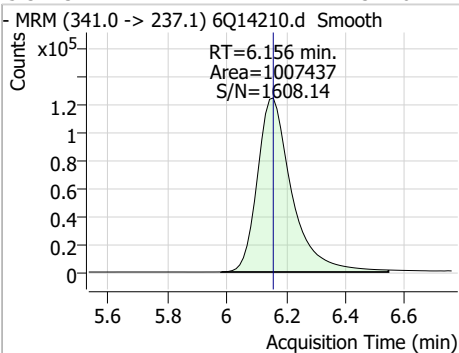
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	54.23	5.88	0.00	68306	284.9 -> 184.9	12.5	6.0	18.0



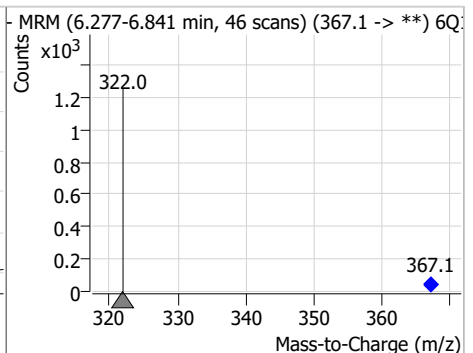
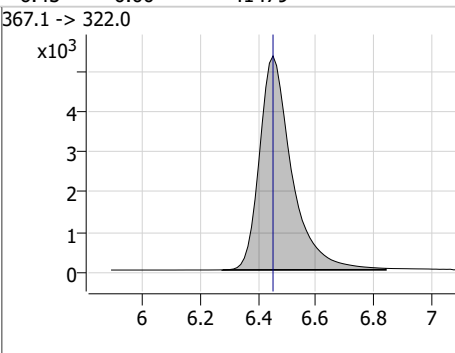
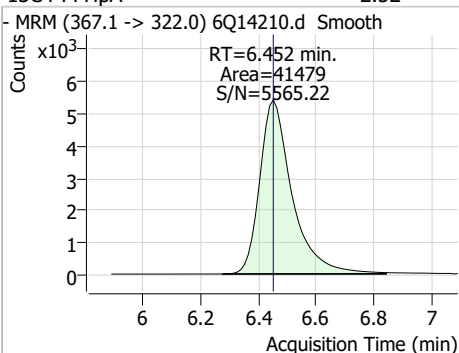
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	24.09	5.98	-0.01	440474	314.8 -> 82.9	2.3	1.2	3.6



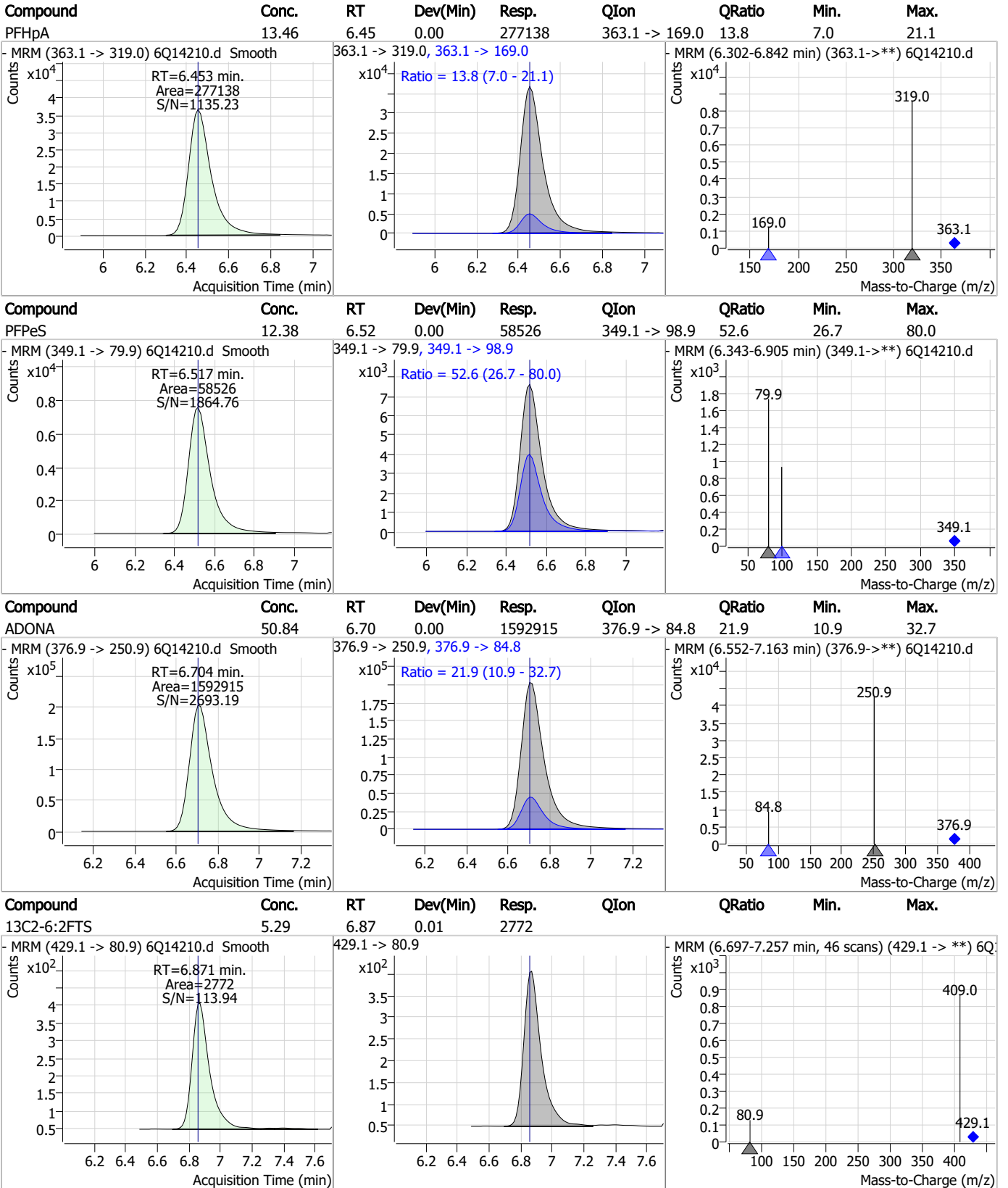
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	342.01	6.16	0.00	1007437	341.0 -> 217.0	86.4	43.5	130.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	6.45	0.00	41479	367.1 -> 322.0			



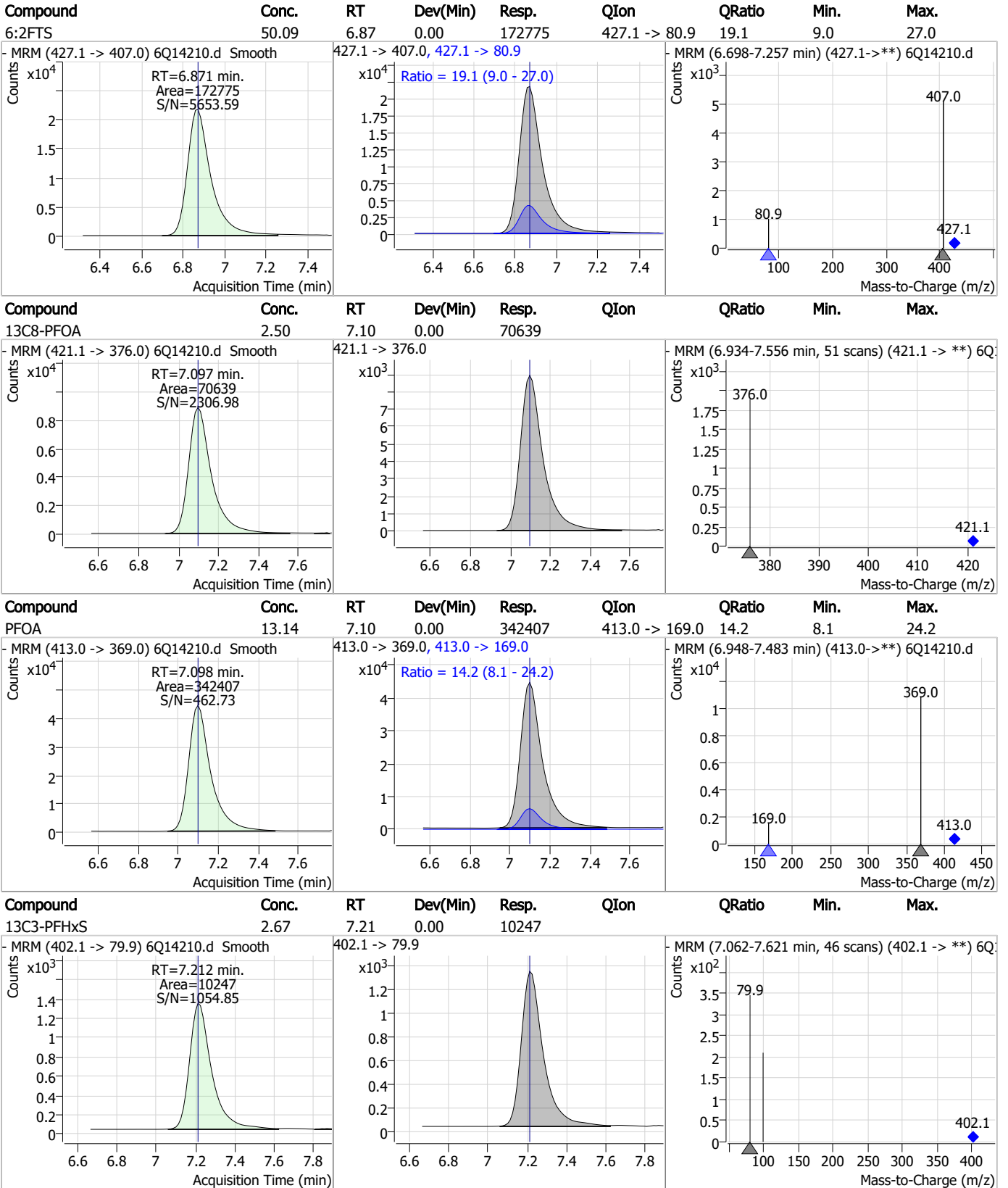
Perfluorinated Compounds by LC/MS/MS



7.7.7

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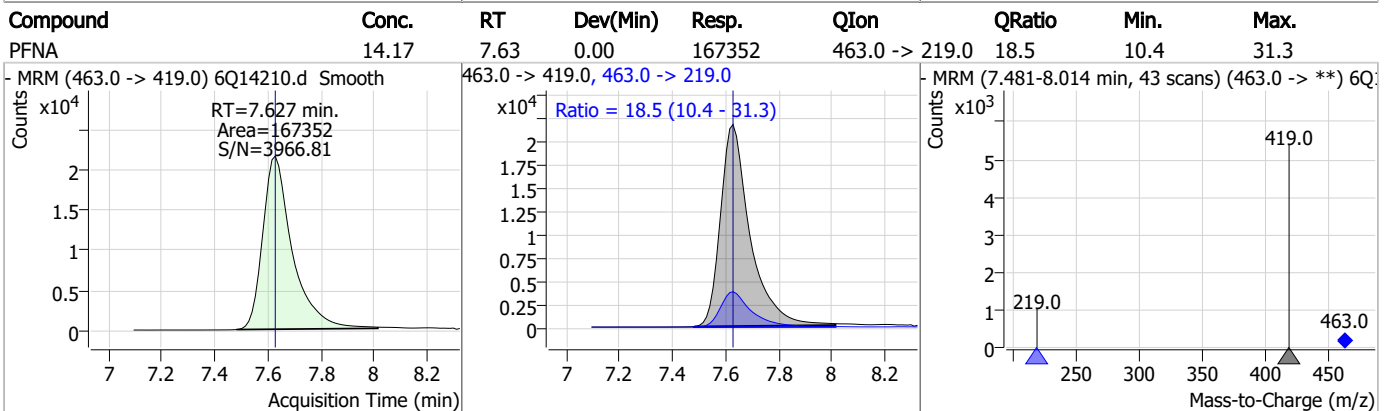
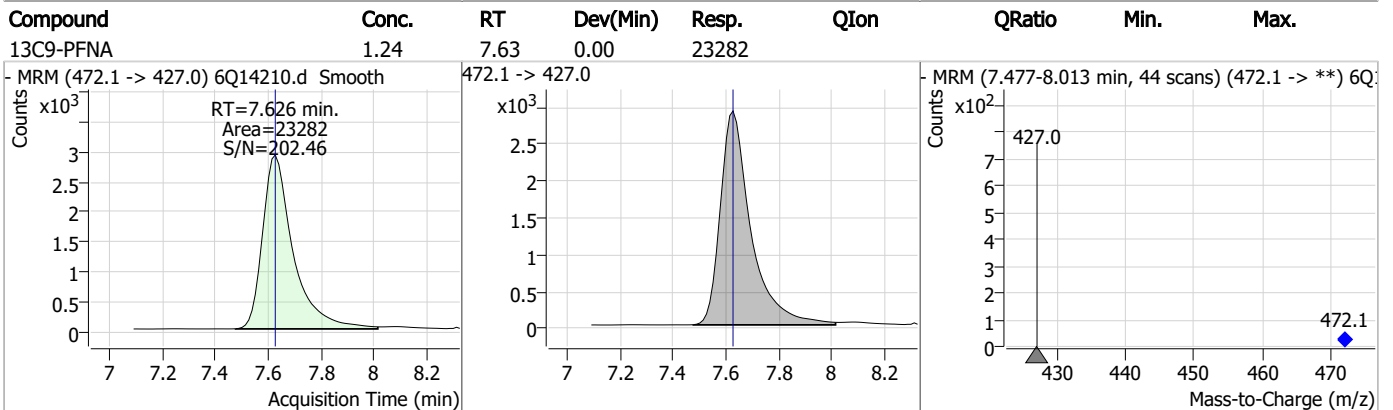
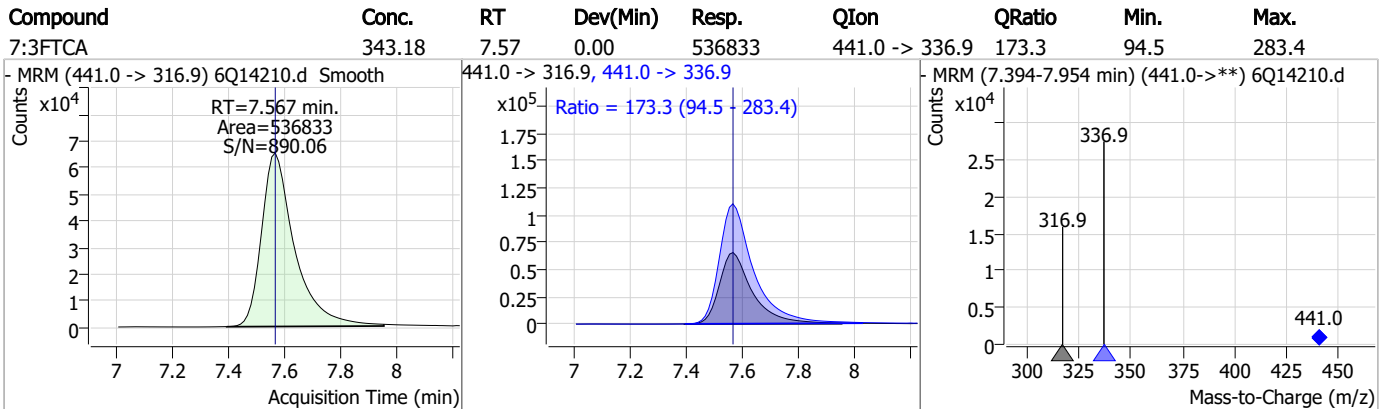
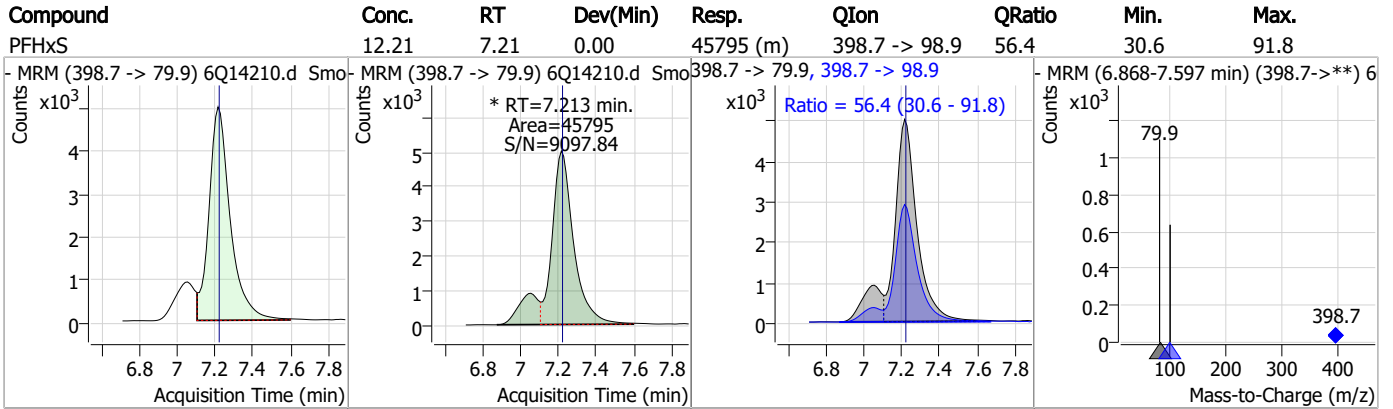
Perfluorinated Compounds by LC/MS/MS



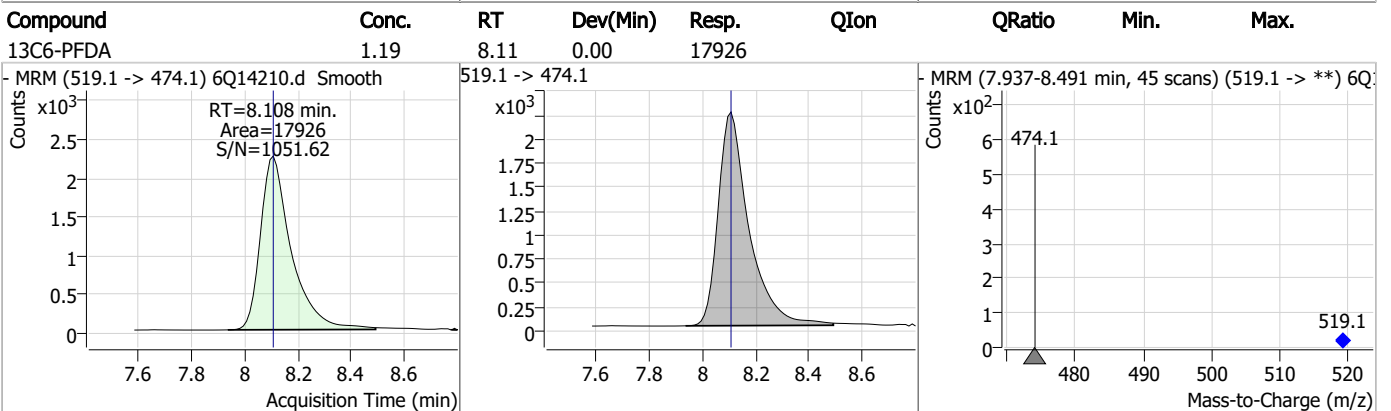
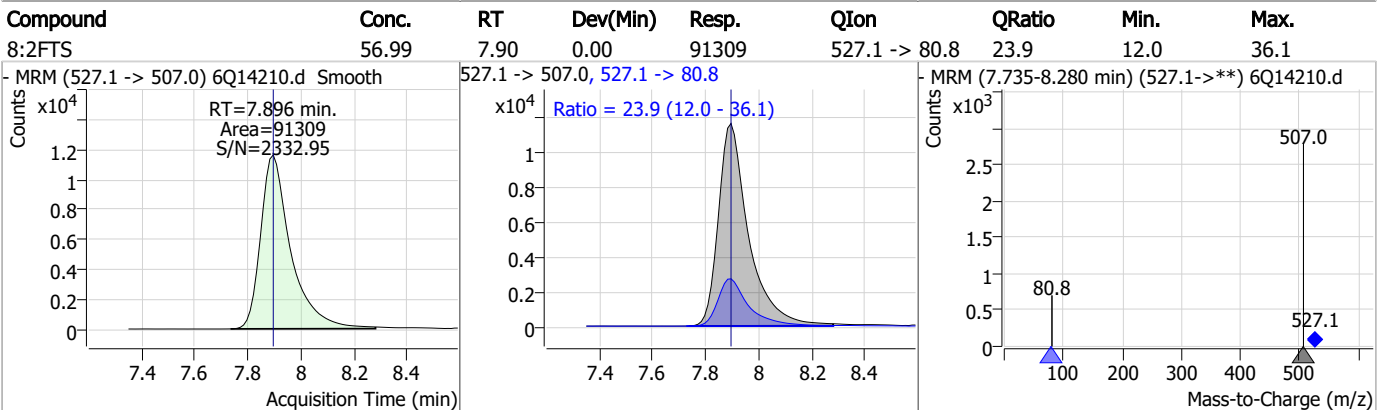
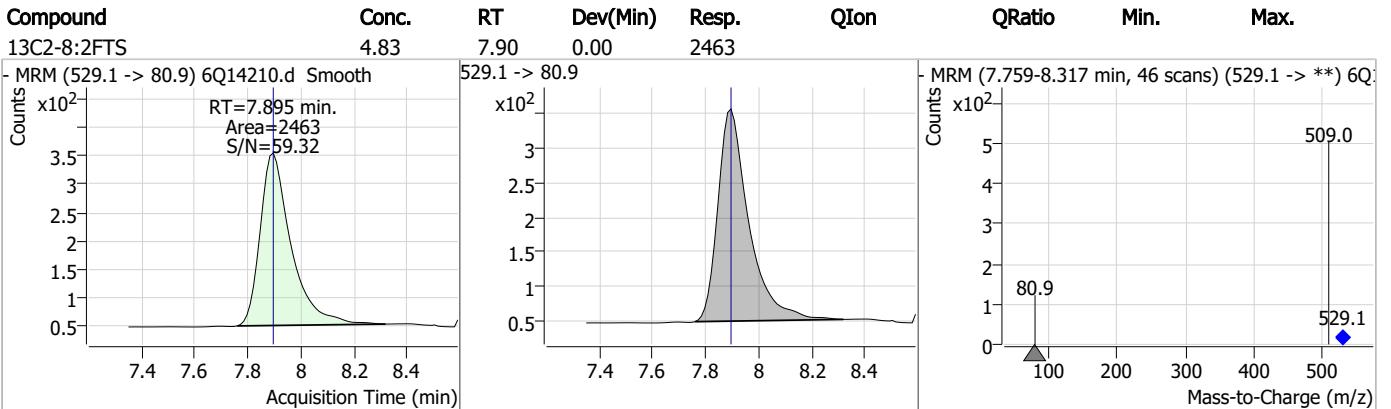
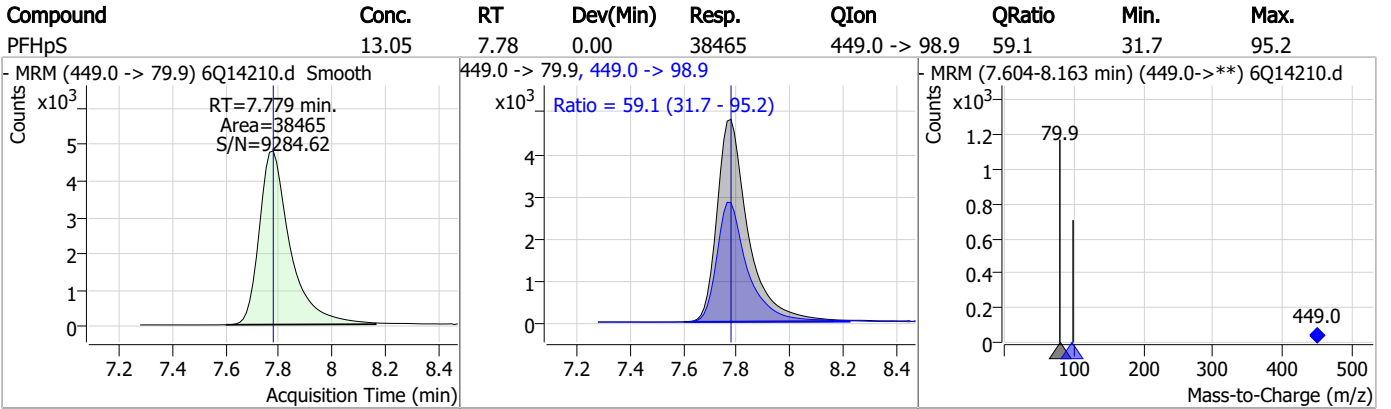
7.7.7
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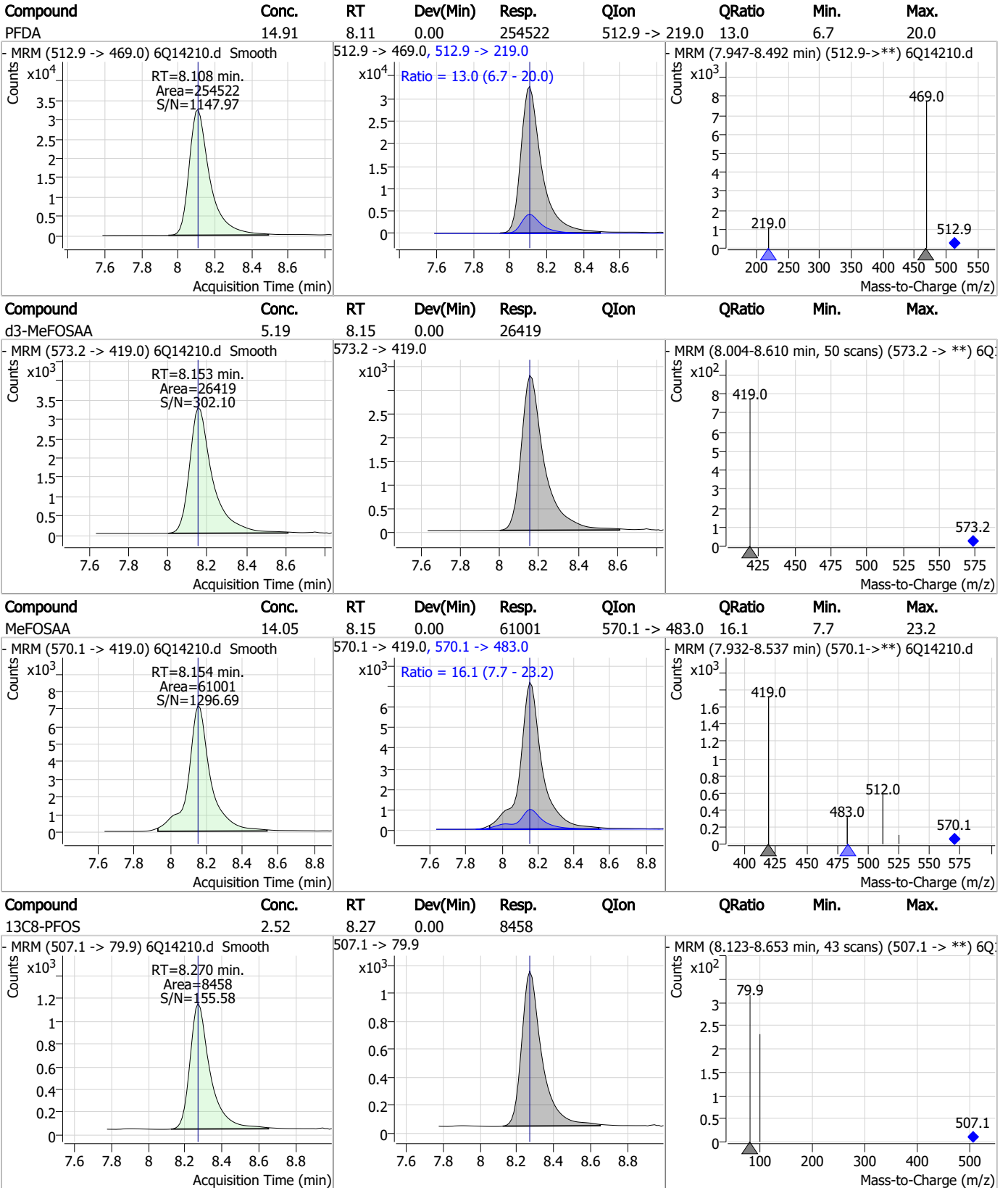
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



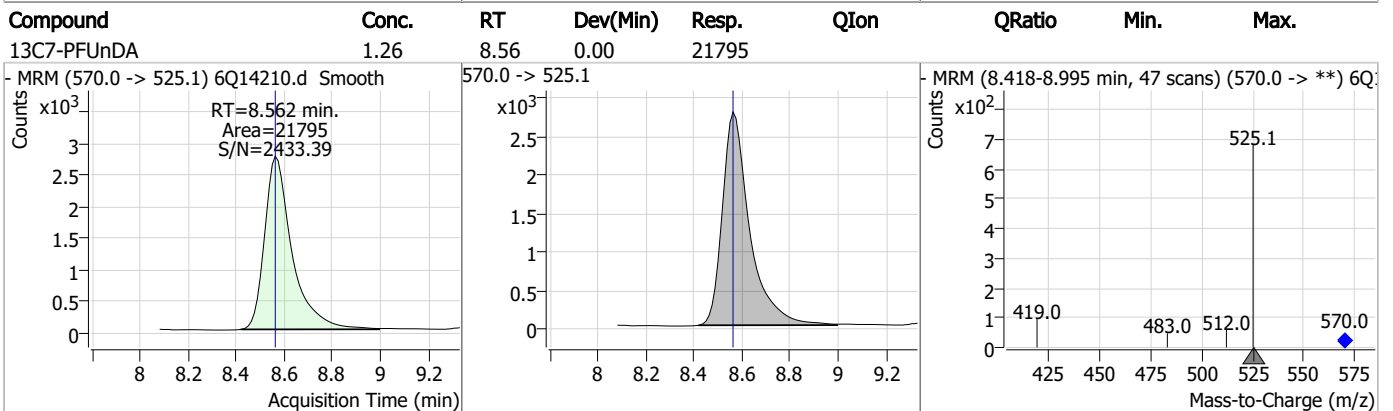
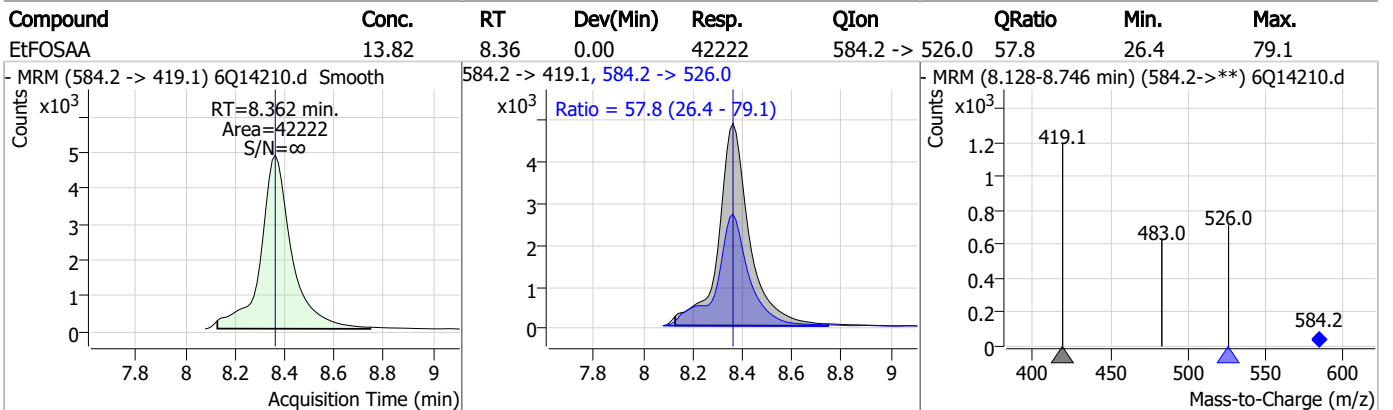
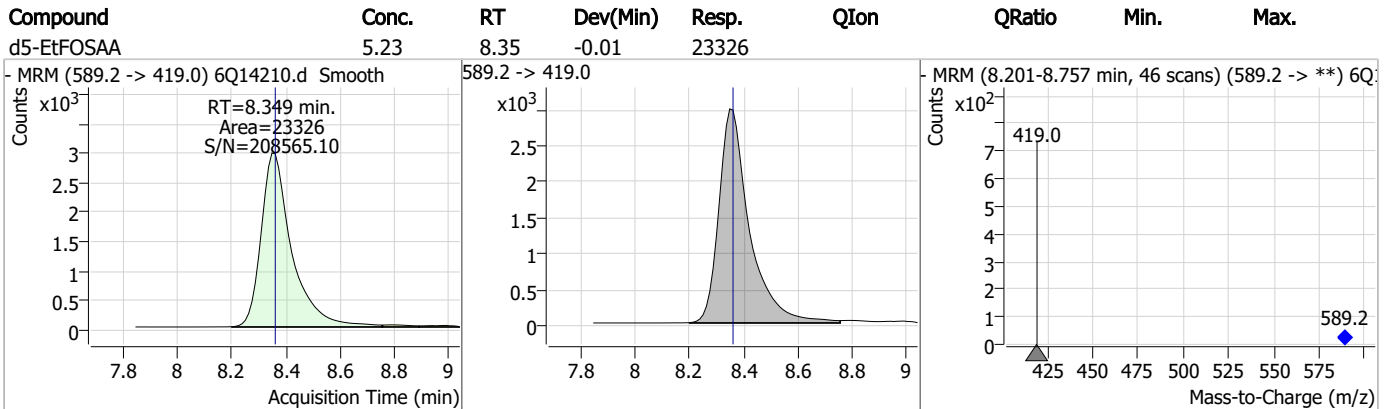
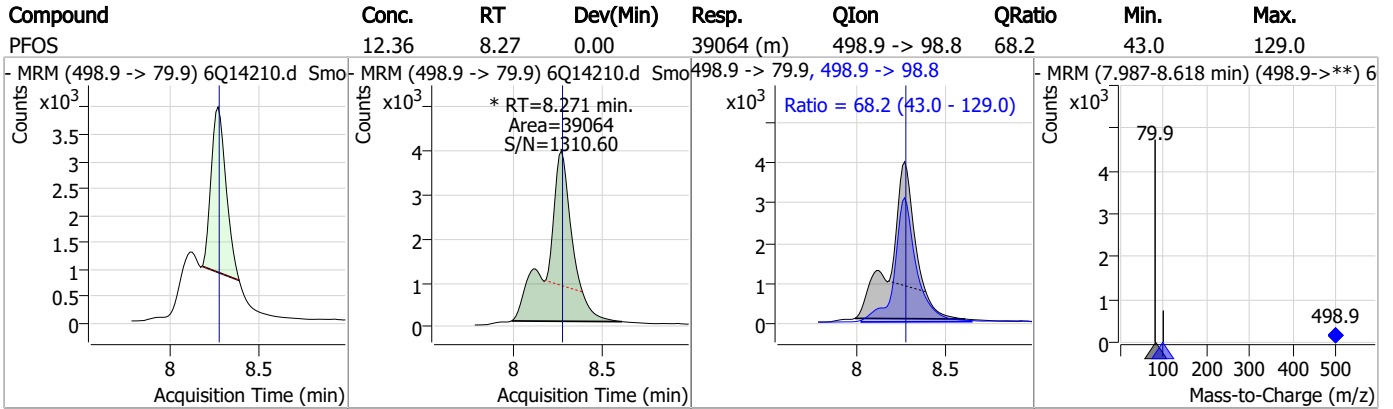
Perfluorinated Compounds by LC/MS/MS



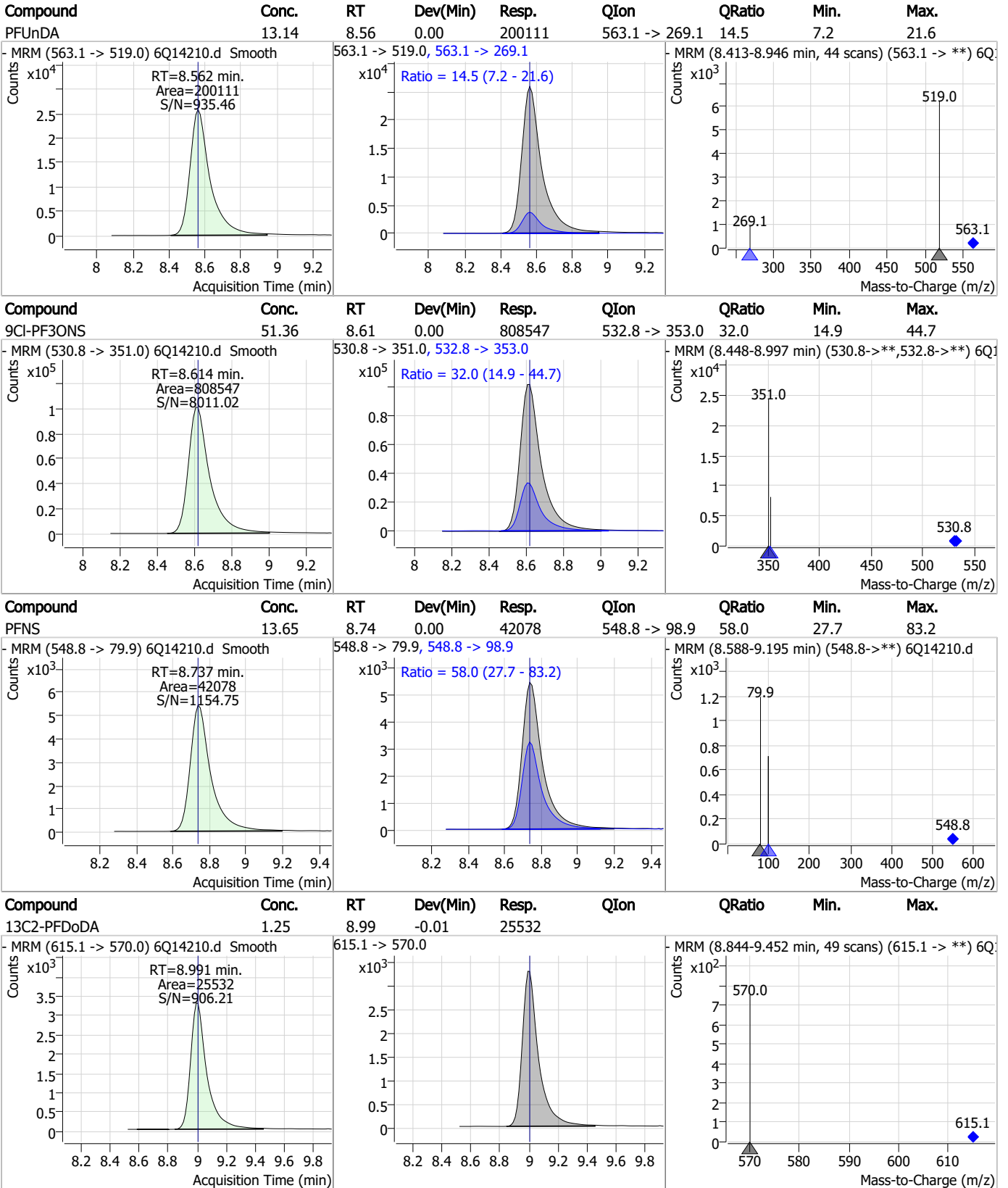
7.7.7

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Perfluorinated Compounds by LC/MS/MS



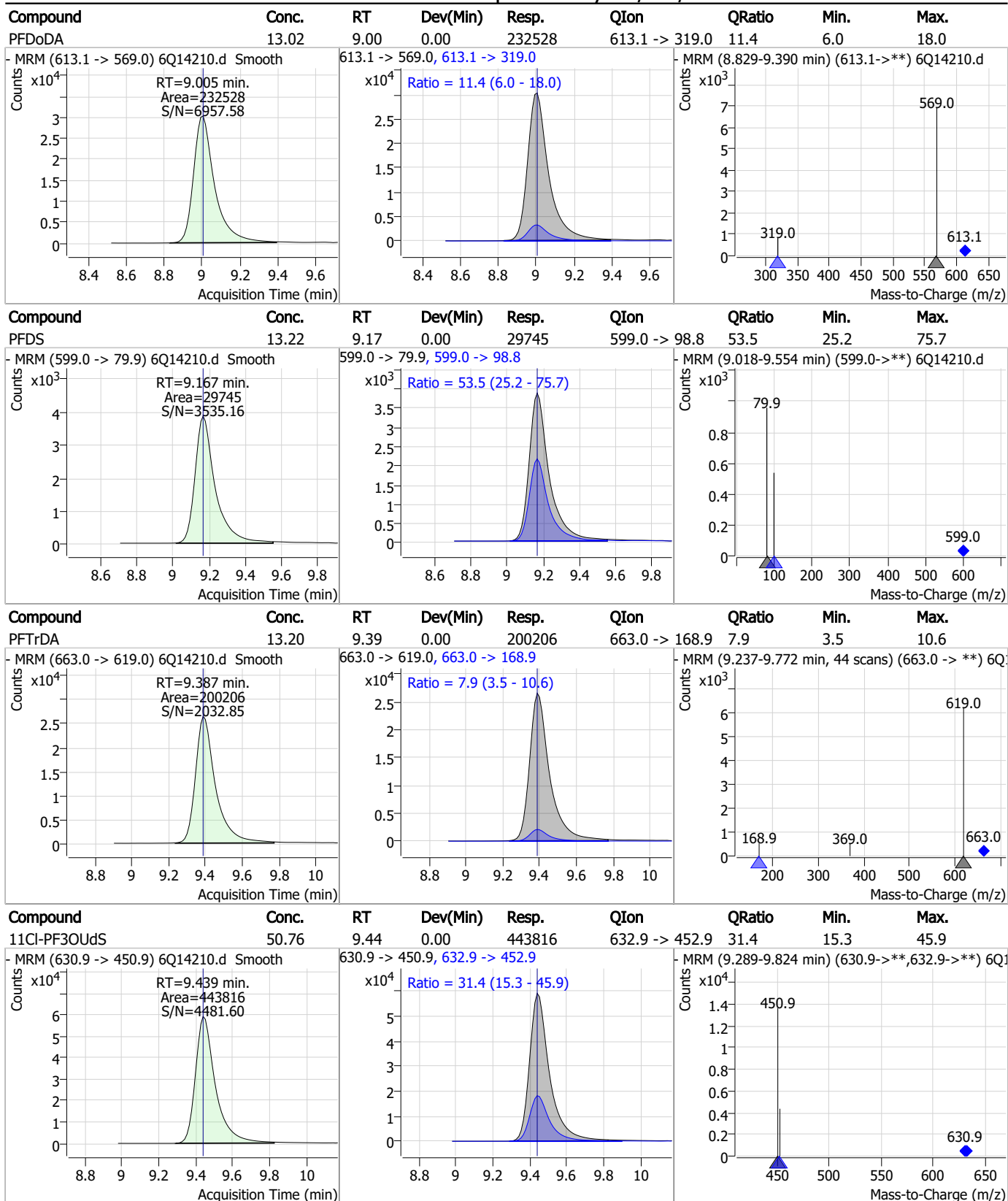
Perfluorinated Compounds by LC/MS/MS



7.7.7

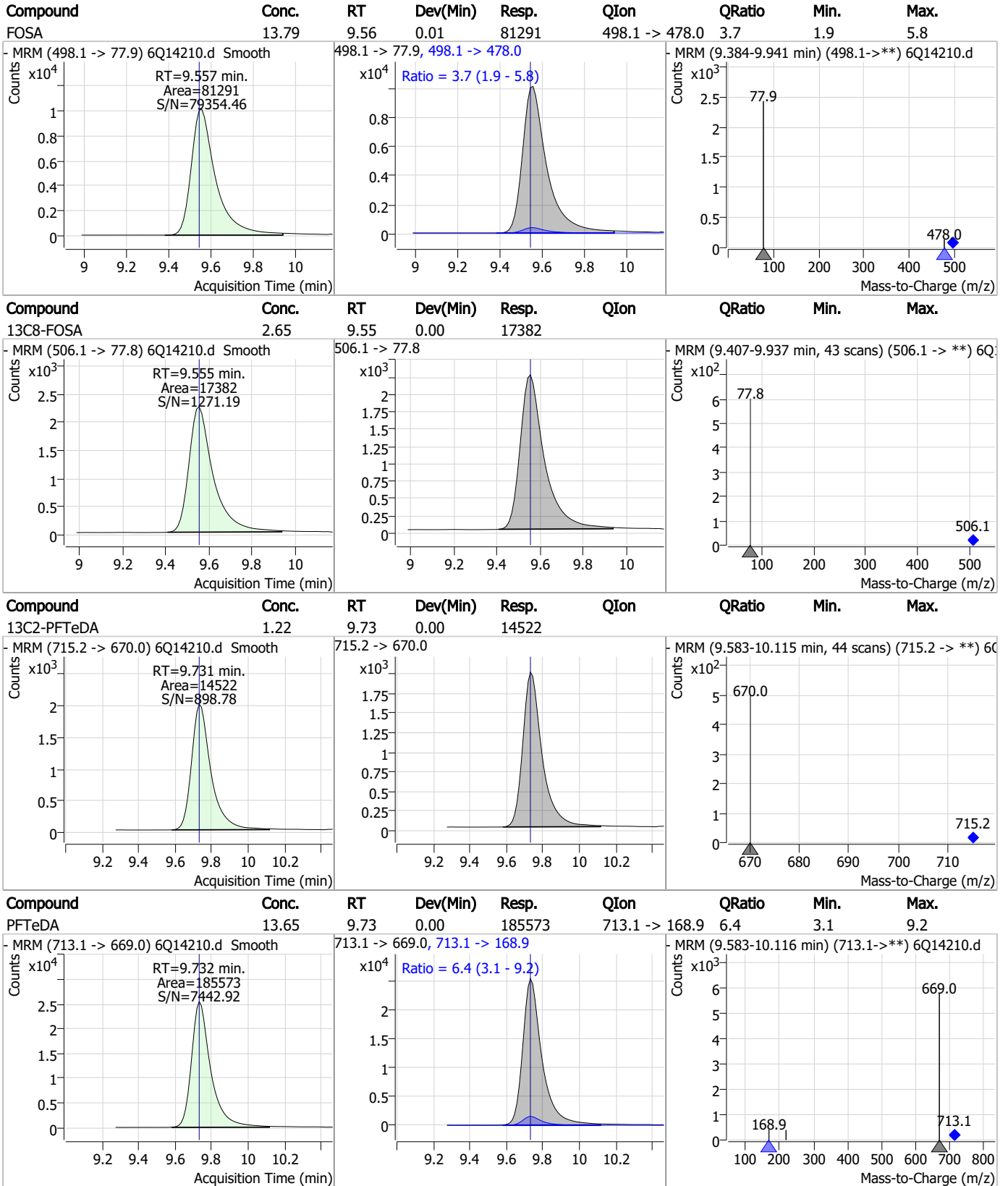
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Perfluorinated Compounds by LC/MS/MS



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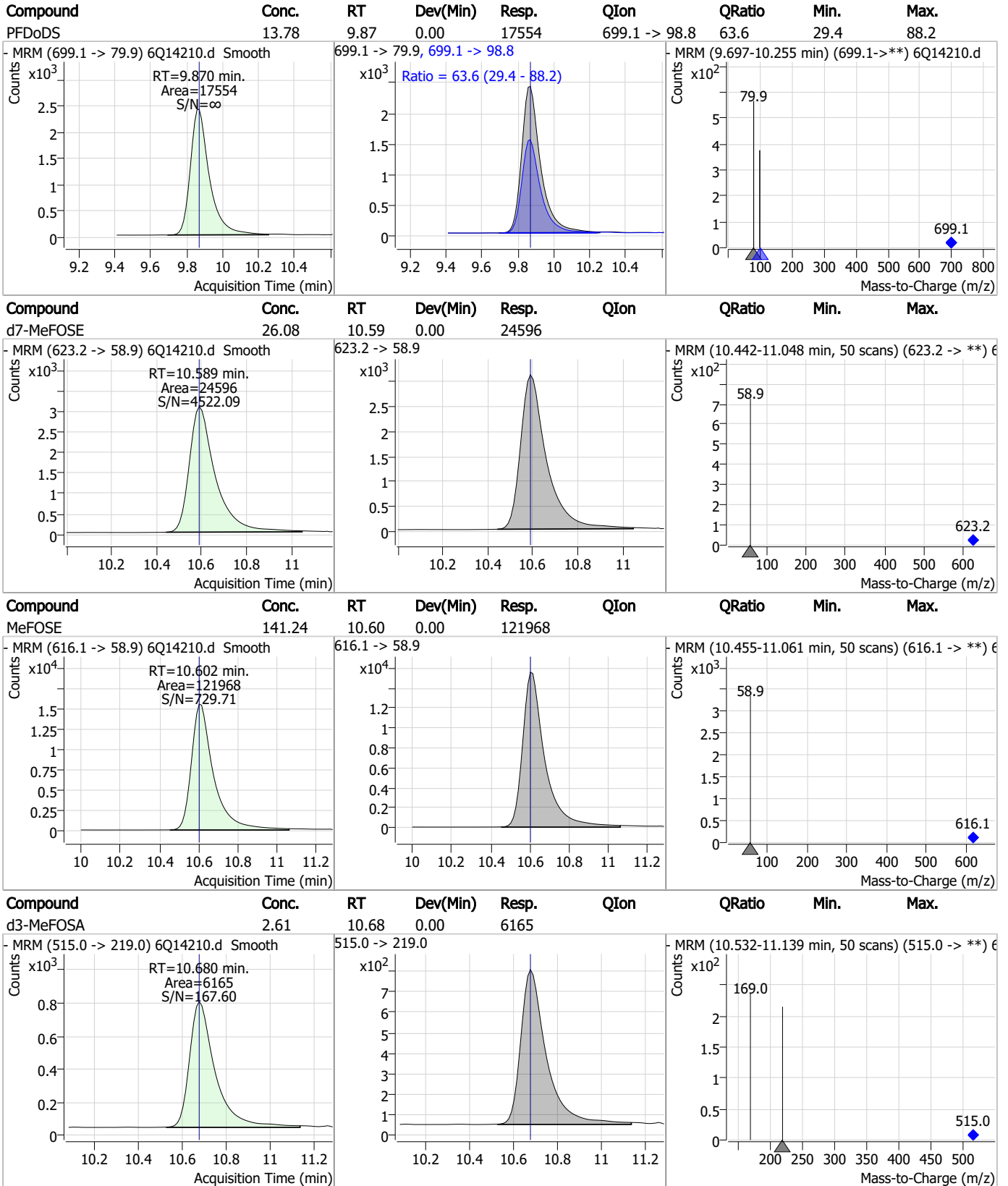
Perfluorinated Compounds by LC/MS/MS



7.7.7

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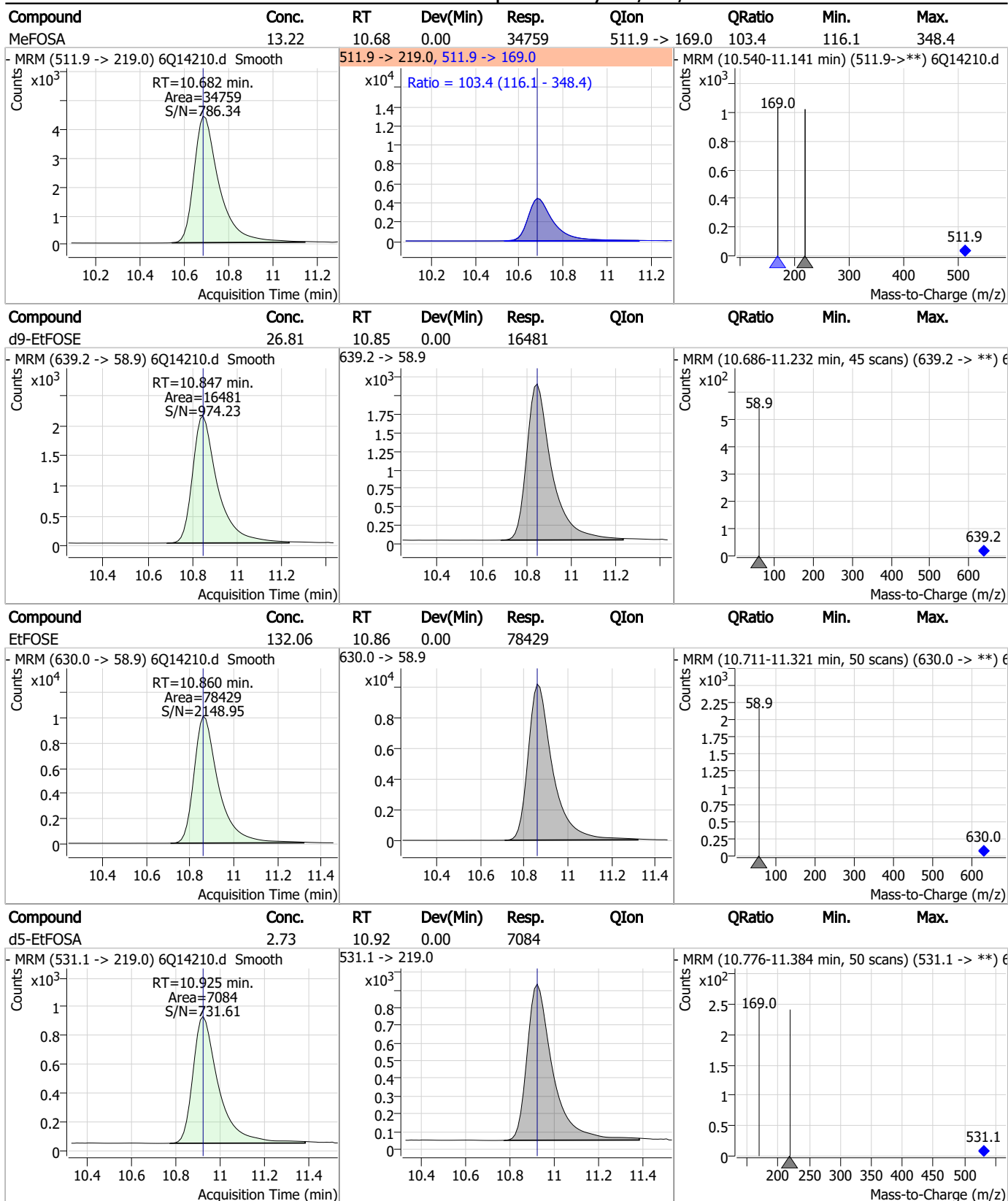
Perfluorinated Compounds by LC/MS/MS



7.7.7

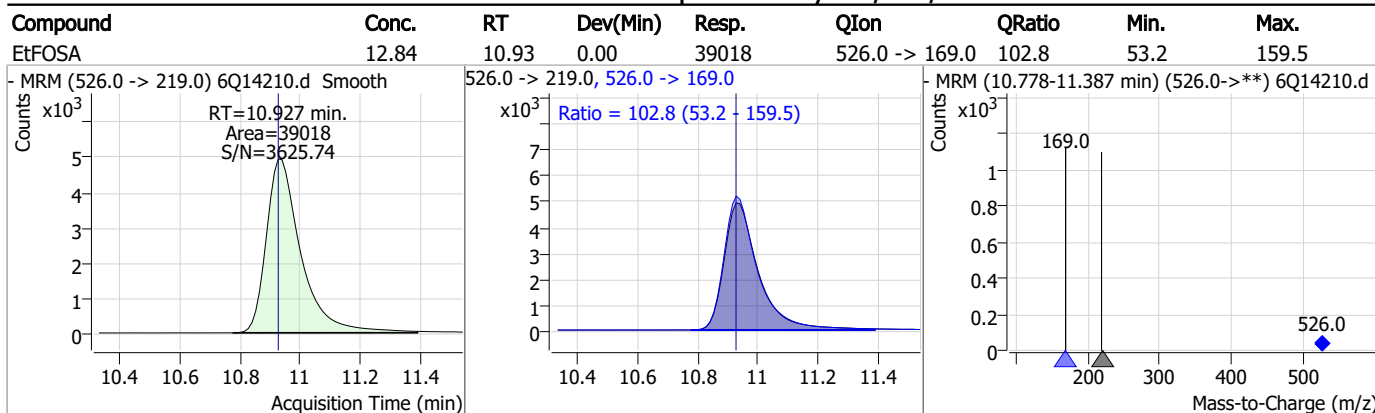
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.7
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Manual Integration Approval Summary

Sample Number: S6Q217-IC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14210.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 14:49 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

777.1

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtje
 02/24/23 15:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14211.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 3:03:38 PM
 Sample Name : ic217-7
 Vial : P1-A8
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	87918	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	44723	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	39298	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	39964	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	72003	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	22707	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	18549	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	21075	1.25 µg/L	0.000
M2-PFDoDA	9.004	615.1 -> 570.0	24330	1.25 µg/L	0.000
M2-PFTeDA	9.731	715.2 -> 670.0	15160	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17328	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	15840	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	9646	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	9152	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	1869	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	2516	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2531	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	27982	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	15444	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	22865	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	23801	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	15873	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6561	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6444	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10118	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	38673	5.00 µg/L	0.000
18O2-PFHxS	7.223	403.0 -> 83.9	7127	2.50 µg/L	0.012
13C4-PFOA	7.098	417.1 -> 372.0	83869	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	25631	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	24267	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	42030	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	1869	4.39 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.7%		
13C2-6:2FTS	6.871	429.1 -> 80.9	2516	4.68 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.5%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2531	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C2-PFDoDA	9.004	615.1 -> 570.0	24330	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C2-PFTeDA	9.731	715.2 -> 670.0	15160	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFBS	5.456	302.1 -> 79.9	15840	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C3-PFHxS	7.212	402.1 -> 79.9	9646	2.44 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C4-PFBA	2.938	216.8 -> 171.9	87918	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C4-PFHpA	6.452	367.1 -> 322.0	39964	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.5%		
13C5-PFHxA	5.513	318.0 -> 273.0	39298	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C5-PFPeA	4.337	268.3 -> 223.0	44723	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C6-PFDA	8.108	519.1 -> 474.1	18549	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C7-PFUnDA	8.562	570.0 -> 525.1	21075	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C8-FOSA	9.555	506.1 -> 77.8	17328	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C8-PFOA	7.097	421.1 -> 376.0	72003	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C8-PFOS	8.270	507.1 -> 79.9	9152	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C9-PFNA	7.626	472.1 -> 427.0	22707	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
d3-MeFOSAA	8.153	573.2 -> 419.0	27982	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C3-HFPO-DA	5.878	286.9 -> 168.9	15444	9.65 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 96.5%		
d3-MeFOSA	10.680	515.0 -> 219.0	6444	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
d5-EtFOSAA	8.349	589.2 -> 419.0	22865	4.95 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
d7-MeFOSE	10.589	623.2 -> 58.9	23801	24.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 97.5%		
d9-EtFOSE	10.847	639.2 -> 58.9	15873	24.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
d5-EtFOSA	10.925	531.1 -> 219.0	6561	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.6%		
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	362233	104.36 µg/L	99
		327.1 -> 80.9	78078		
6:2FTS	6.871	427.1 -> 407.0	300300	95.89 µg/L	98
		427.1 -> 80.9	57270		
8:2FTS	7.896	527.1 -> 507.0	159375	96.80 µg/L	100
		527.1 -> 80.8	38373		
EtFOSAA	8.362	584.2 -> 419.1	77684	25.93 µg/L	93
		584.2 -> 526.0	45048		
FOSA	9.557	498.1 -> 77.9	146154	24.87 µg/L	100
		498.1 -> 478.0	5741		
MeFOSAA	8.154	570.1 -> 419.0	111893	24.33 µg/L	97
		570.1 -> 483.0	18713		
PFBA	2.932	212.8 -> 168.9	191372	108.04 µg/L	100
PFBS	5.457	298.7 -> 79.9	113191	21.73 µg/L	97
		298.7 -> 98.8	52102		
PFDA	8.108	512.9 -> 469.0	486521	27.55 µg/L	100
		512.9 -> 219.0	65654		
PFDoDA	9.005	613.1 -> 569.0	429747	25.25 µg/L	100
		613.1 -> 319.0	52062		
PFDS	9.167	599.0 -> 79.9	59585	24.48 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	30903			
PFHpA	6.453	363.1 -> 319.0	545419	27.50	µg/L	99
		363.1 -> 169.0	74181			
PFHpS	7.779	449.0 -> 79.9	74858	23.47	µg/L	91
		449.0 -> 98.9	42577			
PFHxA	5.516	313.0 -> 269.0	324451	25.81	µg/L	98
		313.0 -> 118.9	13158			
PFHxS	7.213	398.7 -> 79.9	86050	24.38	µg/L	m 91
		398.7 -> 98.9	46437			
PFNA	7.627	463.0 -> 419.0	316212	27.45	µg/L	97
		463.0 -> 219.0	61288			
PFNS	8.737	548.8 -> 79.9	81436	24.42	µg/L	97
		548.8 -> 98.9	47207			
PFOA	7.098	413.0 -> 369.0	666493	25.10	µg/L	93
		413.0 -> 169.0	86466			
PFOS	8.271	498.9 -> 79.9	78681	23.01	µg/L	m 74
		498.9 -> 98.8	49049			
PFPeA	4.338	263.0 -> 219.0	414064	52.86	µg/L	100
PFPeS	6.517	349.1 -> 79.9	110023	24.72	µg/L	98
		349.1 -> 98.9	57455			
PFTeDA	9.732	713.1 -> 669.0	342873	24.15	µg/L	99
		713.1 -> 168.9	22457			
PFTrDA	9.387	663.0 -> 619.0	391274	27.07	µg/L	100
		663.0 -> 168.9	27388			
PFUnDA	8.562	563.1 -> 519.0	379563	25.77	µg/L	99
		563.1 -> 269.1	52785			
11Cl-PF3OUdS	9.439	630.9 -> 450.9	866222	101.38	µg/L	99
		632.9 -> 452.9	261646			
9Cl-PF3ONS	8.614	530.8 -> 351.0	1505028	97.82	µg/L	98
		532.8 -> 353.0	467368			
ADONA	6.716	376.9 -> 250.9	2932906	95.79	µg/L	98
		376.9 -> 84.8	610720			
HFPO-DA	5.879	284.9 -> 168.9	131282	106.64	µg/L	98
		284.9 -> 184.9	17021			
3:3FTCA	3.791	241.0 -> 177.0	54569	131.31	µg/L	95
		241.0 -> 117.0	8204			
5:3FTCA	6.156	341.0 -> 237.1	1903588	662.45	µg/L	100
		341.0 -> 217.0	1649788			
7:3FTCA	7.567	441.0 -> 316.9	974291	638.44	µg/L	97
		441.0 -> 336.9	1886103			
EtFOSA	10.927	526.0 -> 219.0	75555	26.84	µg/L	93
		526.0 -> 169.0	74851			
EtFOSE	10.860	630.0 -> 58.9	149352	261.12	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	66351	24.15	µg/L	# 20
		511.9 -> 169.0	66172			
MeFOSE	10.615	616.1 -> 58.9	222323	266.05	µg/L	100
PFDoS	9.870	699.1 -> 79.9	33543	24.34	µg/L	96
		699.1 -> 98.8	20686			
NFDHA	5.395	295.0 -> 201.0	39005	54.82	µg/L	92
		295.0 -> 84.9	18376			
PFMBA	4.738	279.0 -> 85.1	122643	53.14	µg/L	100
PFMPA	3.488	229.0 -> 84.9	110858	52.93	µg/L	100
PFEESA	5.996	314.8 -> 134.9	874118	49.01	µg/L	99
		314.8 -> 82.9	19297			

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

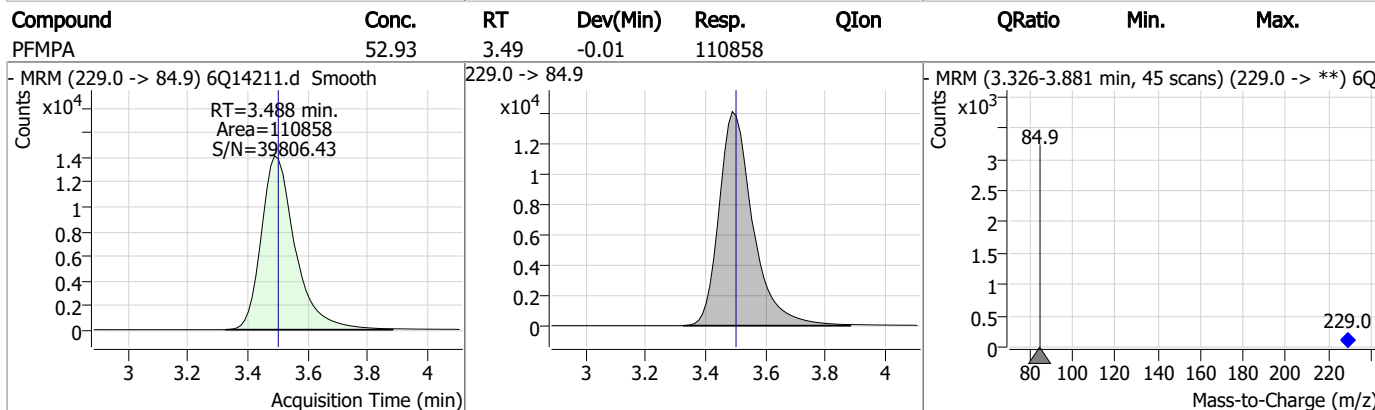
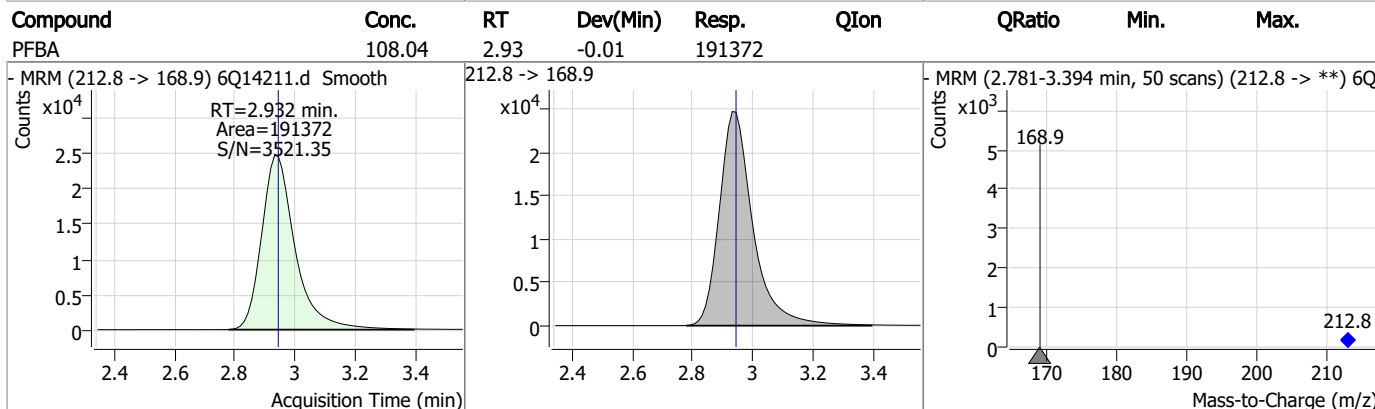
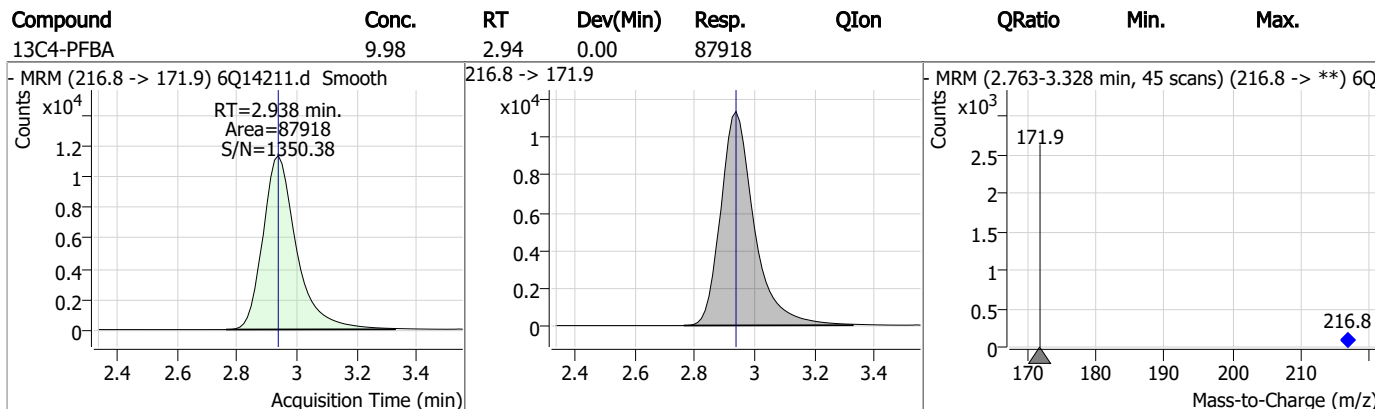
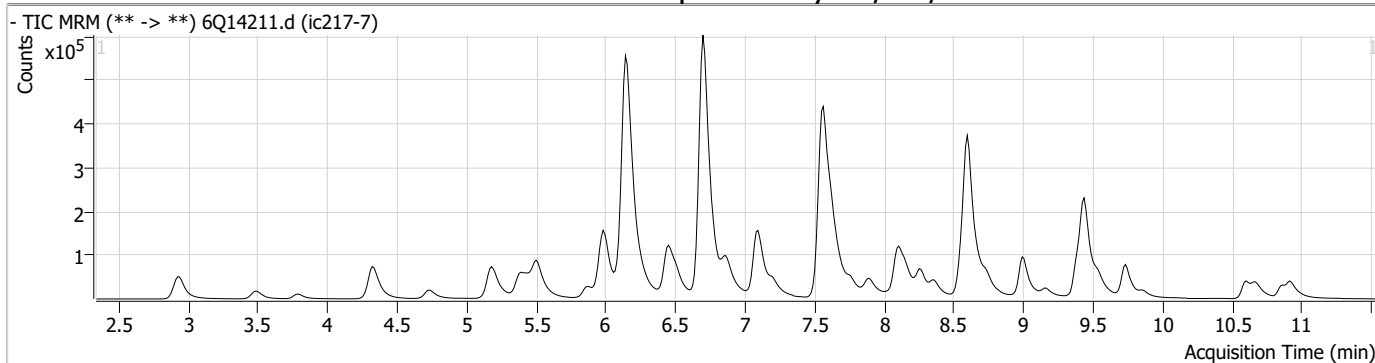
Perfluorinated Compounds by LC/MS/MS

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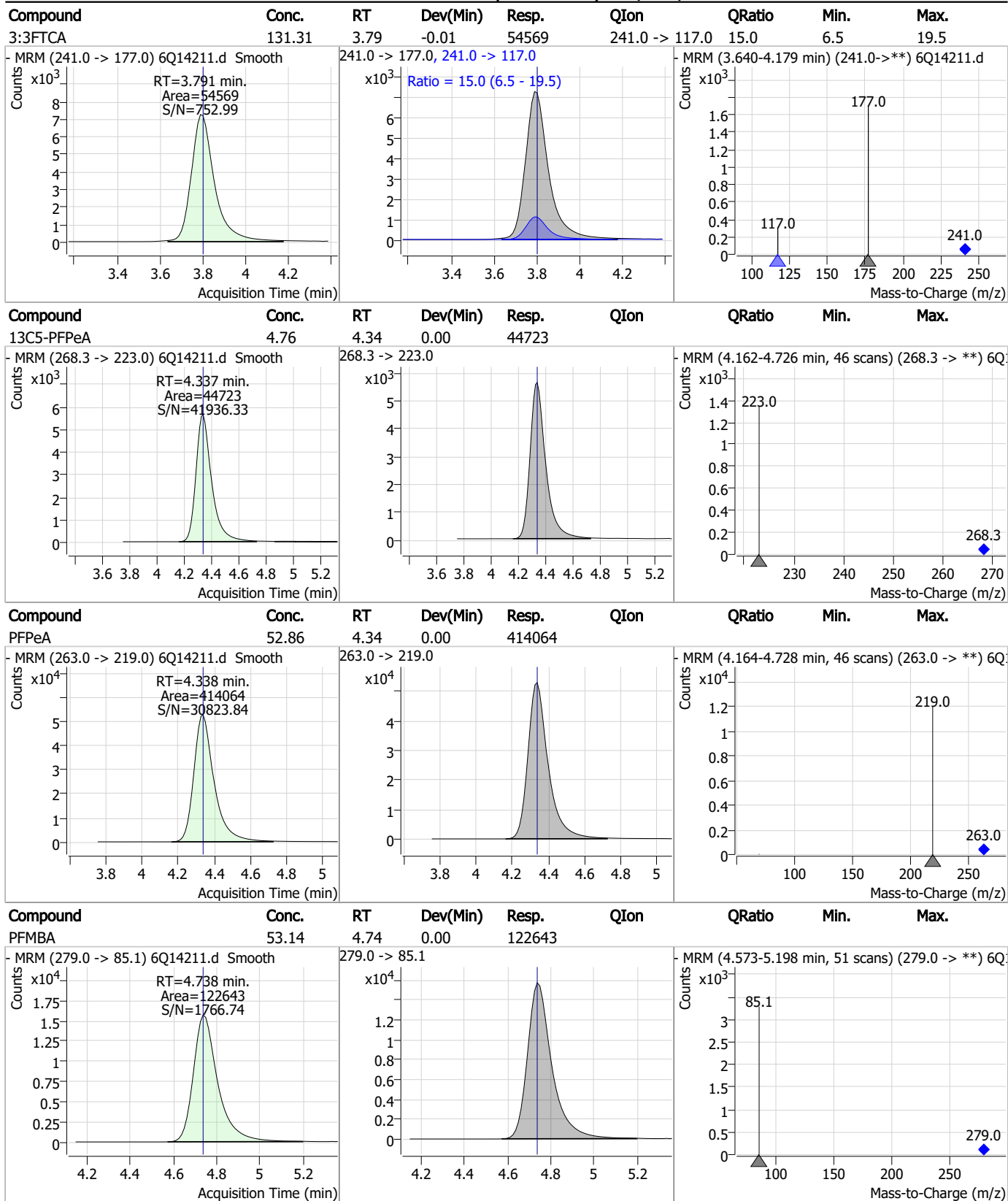
7.7.8
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Perfluorinated Compounds by LC/MS/MS

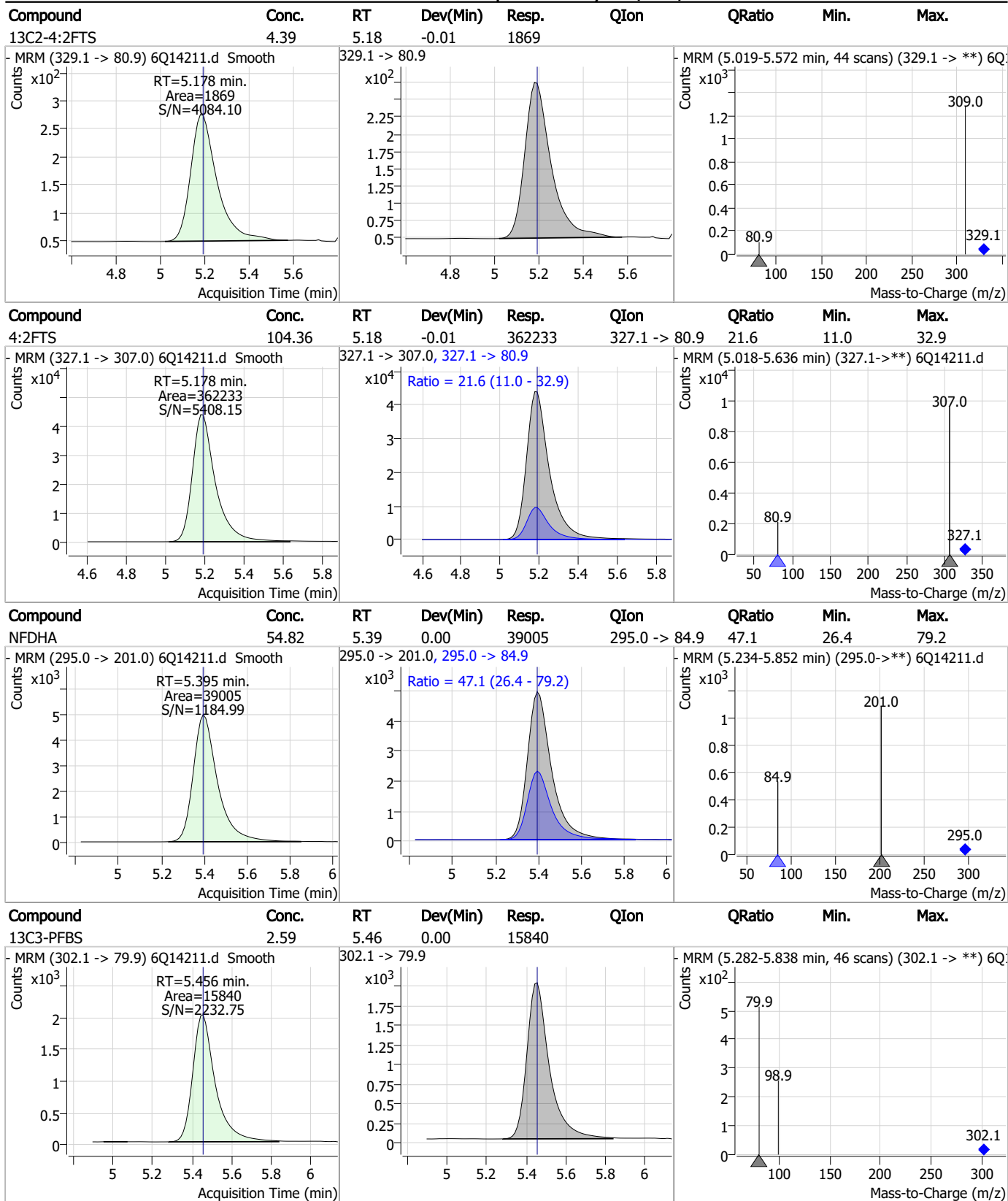


Perfluorinated Compounds by LC/MS/MS



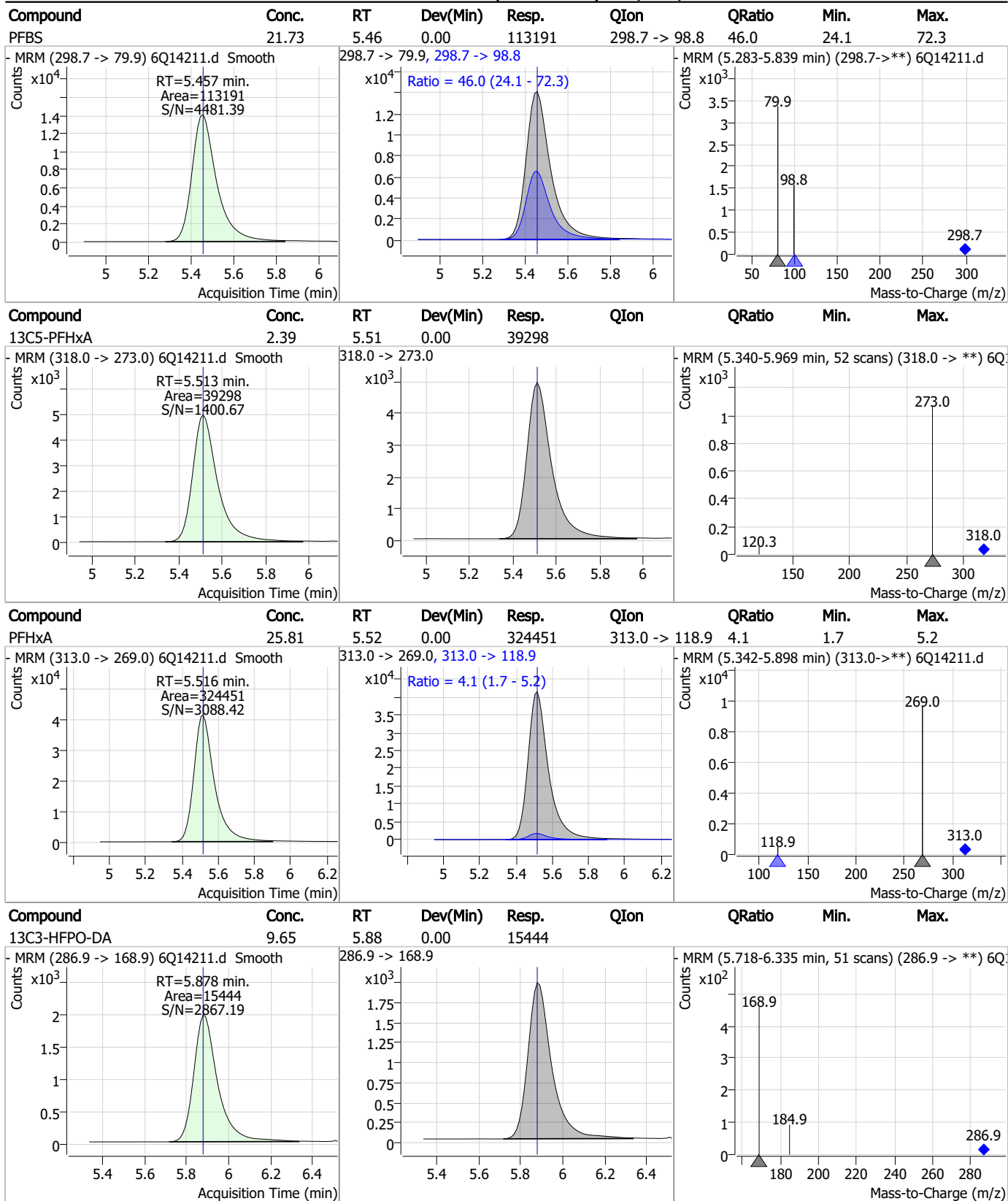
7.7.8
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Perfluorinated Compounds by LC/MS/MS



7.7.8
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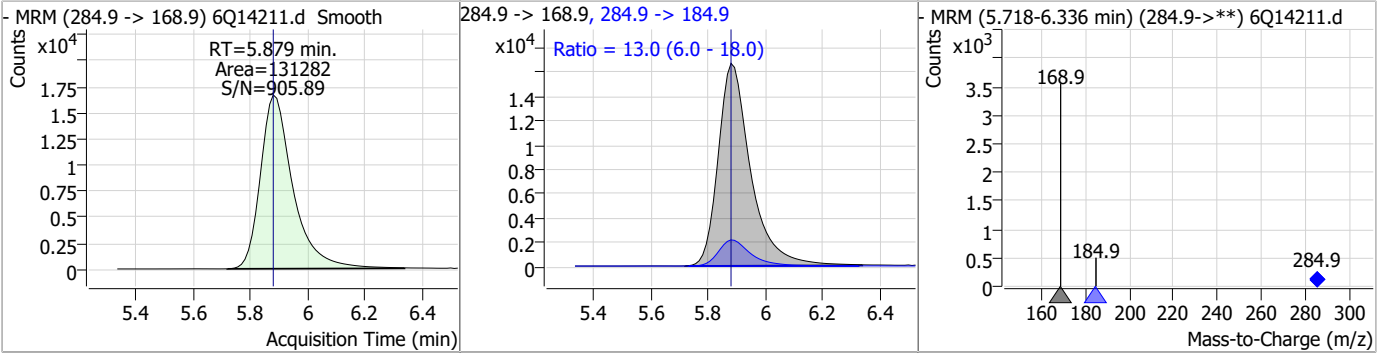
Perfluorinated Compounds by LC/MS/MS



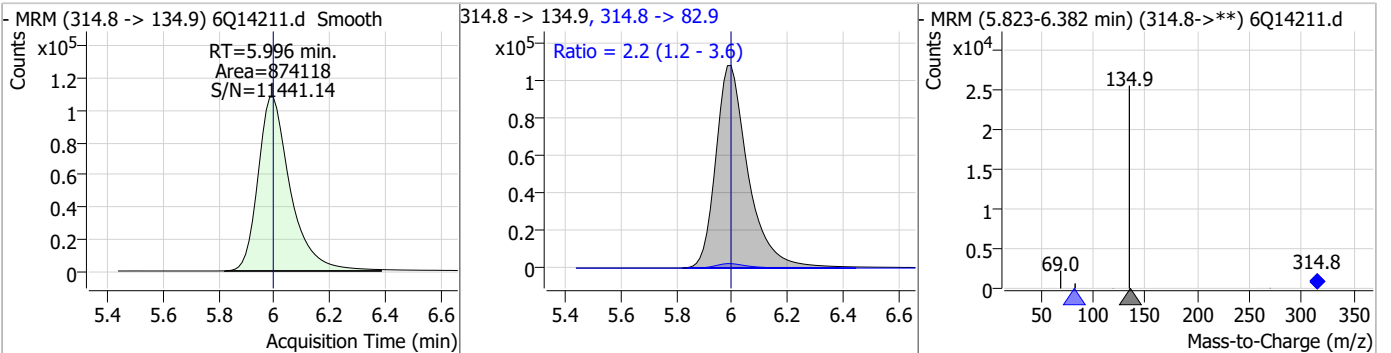
7.7.8
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Perfluorinated Compounds by LC/MS/MS

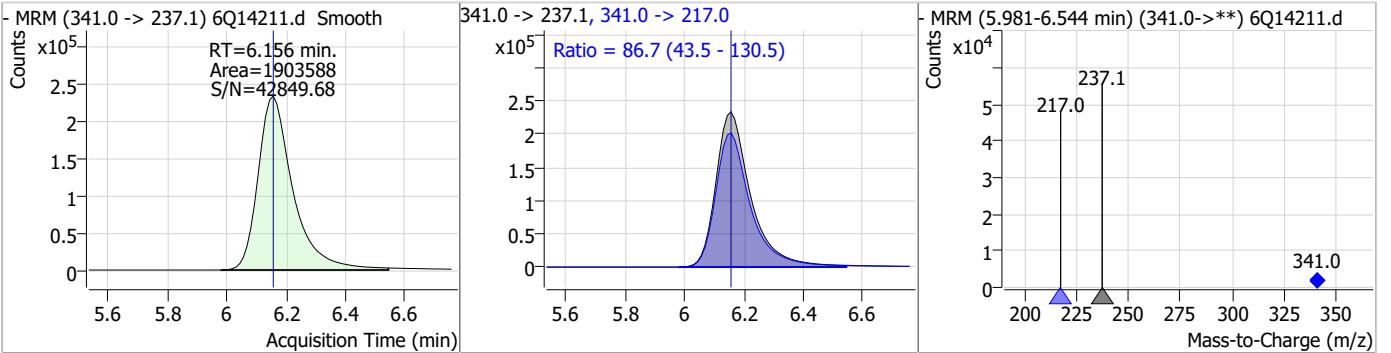
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	106.64	5.88	0.00	131282	284.9 -> 184.9	13.0	6.0	18.0



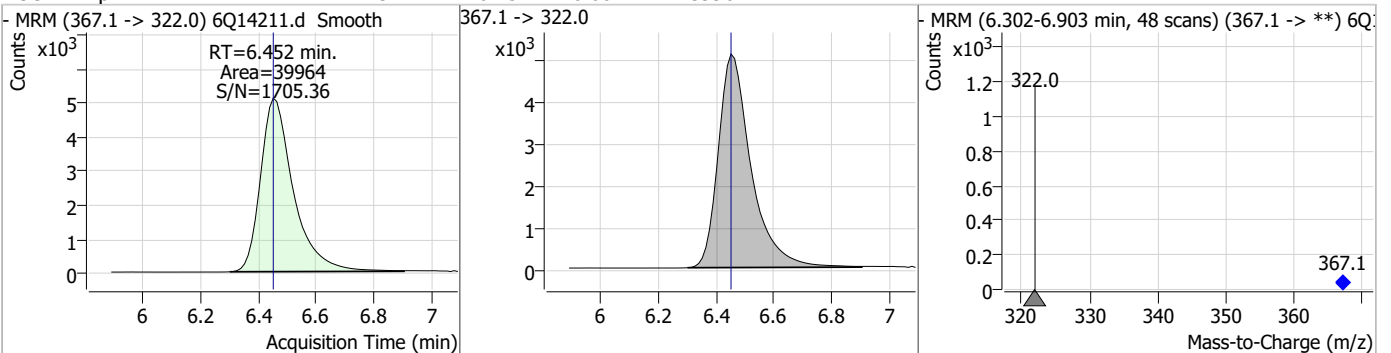
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	49.01	6.00	0.00	874118	314.8 -> 82.9	2.2	1.2	3.6



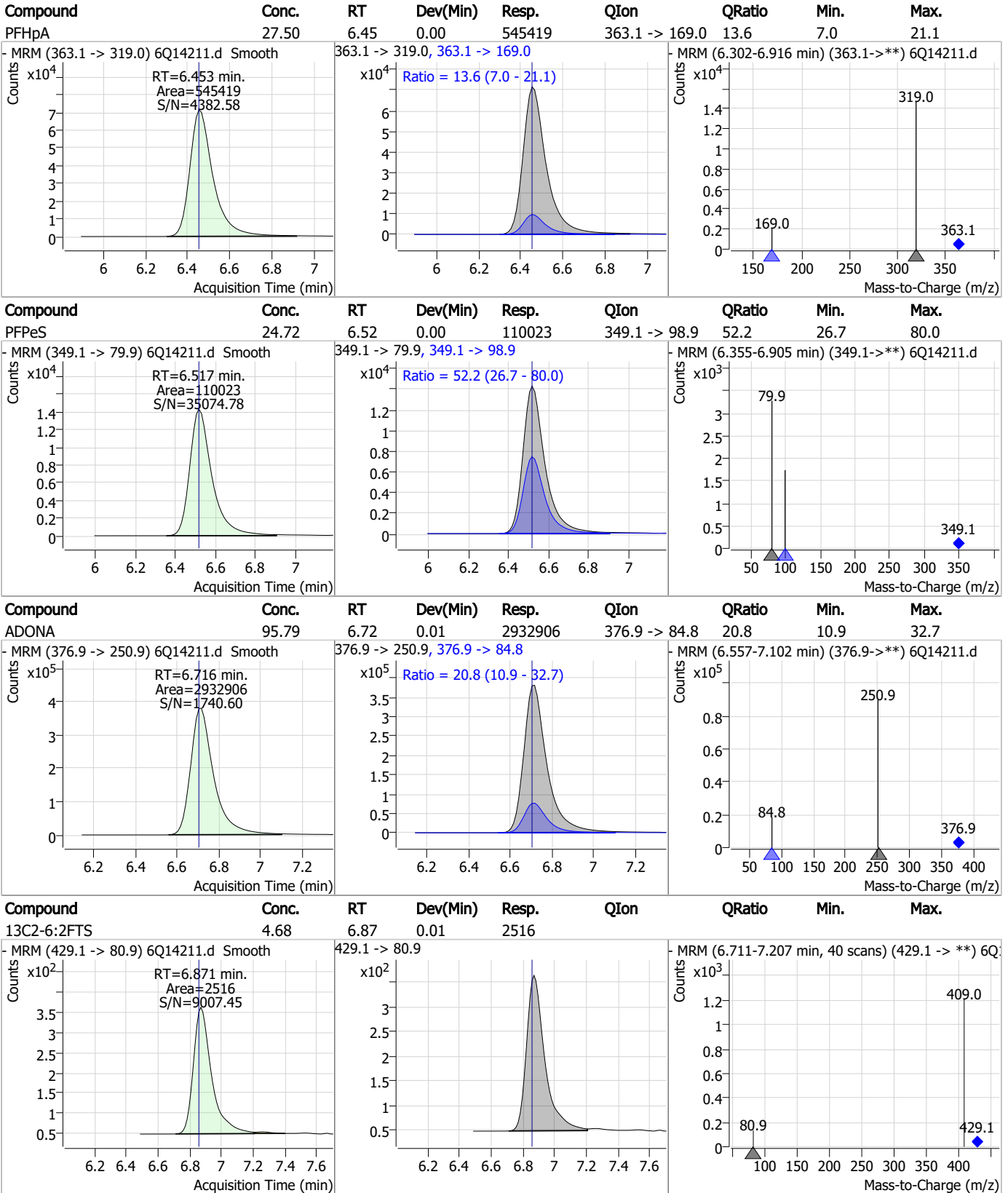
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	662.45	6.16	0.00	1903588	341.0 -> 217.0	86.7	43.5	130.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.34	6.45	0.00	39964	367.1 -> 322.0			



Perfluorinated Compounds by LC/MS/MS

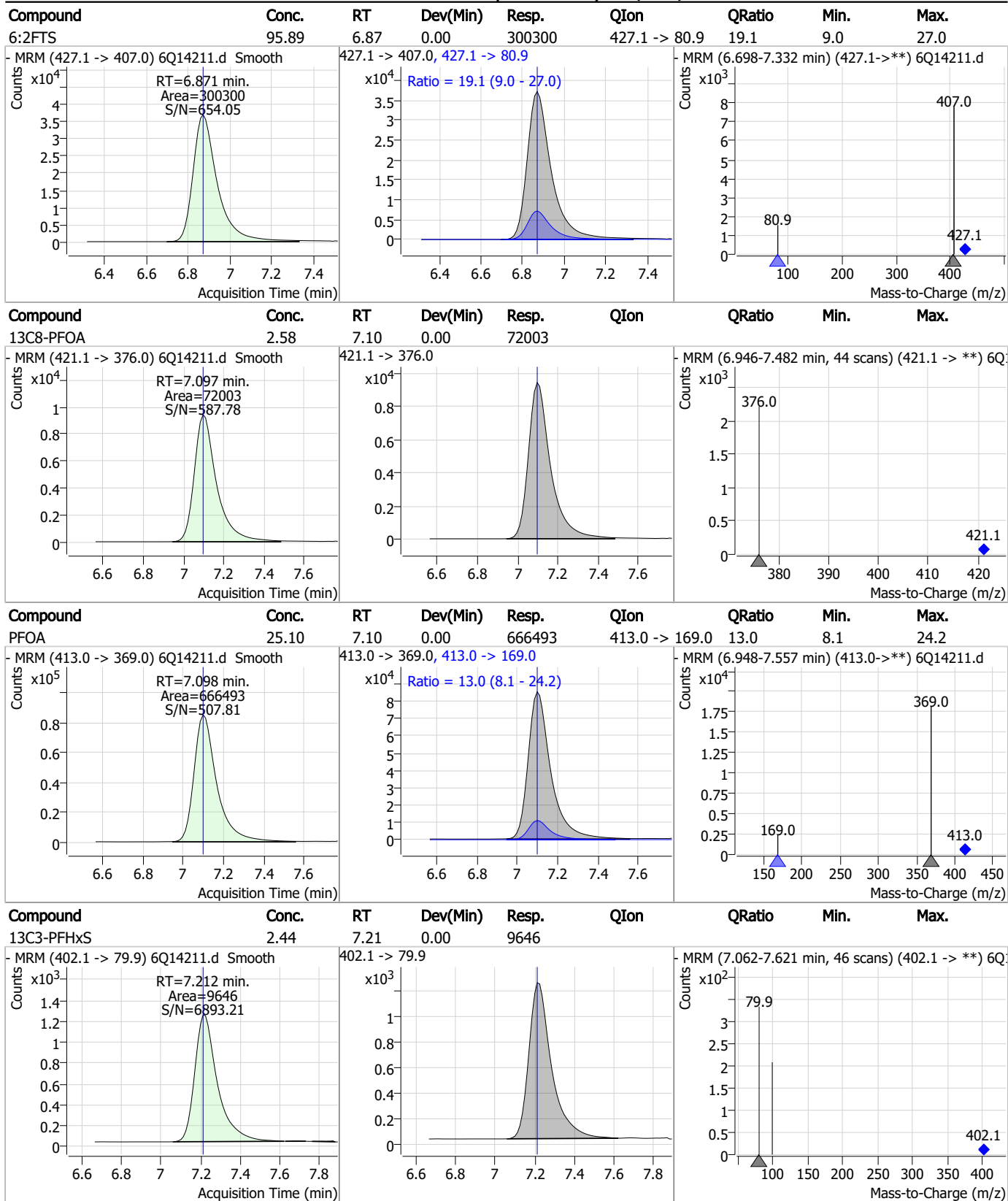


7.7.8

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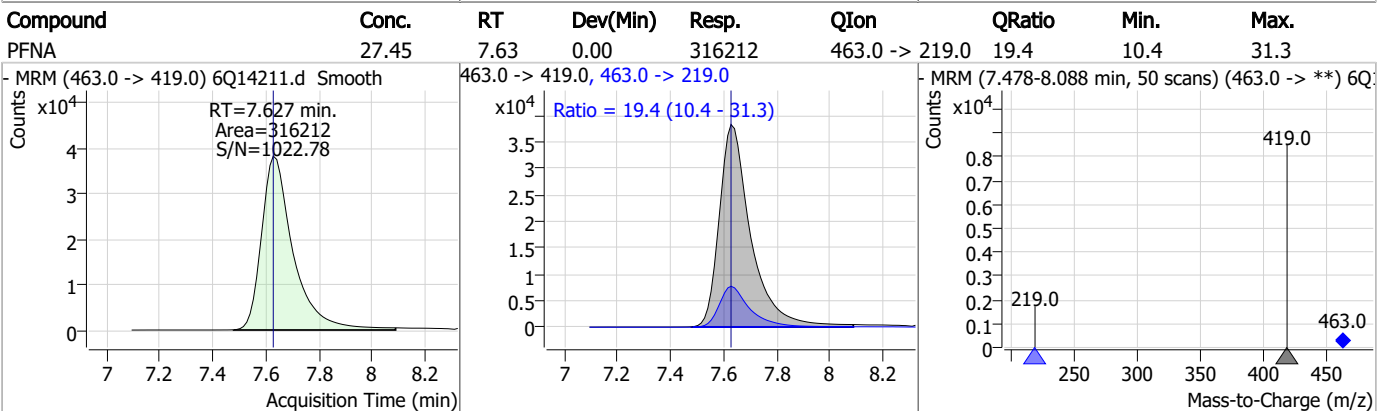
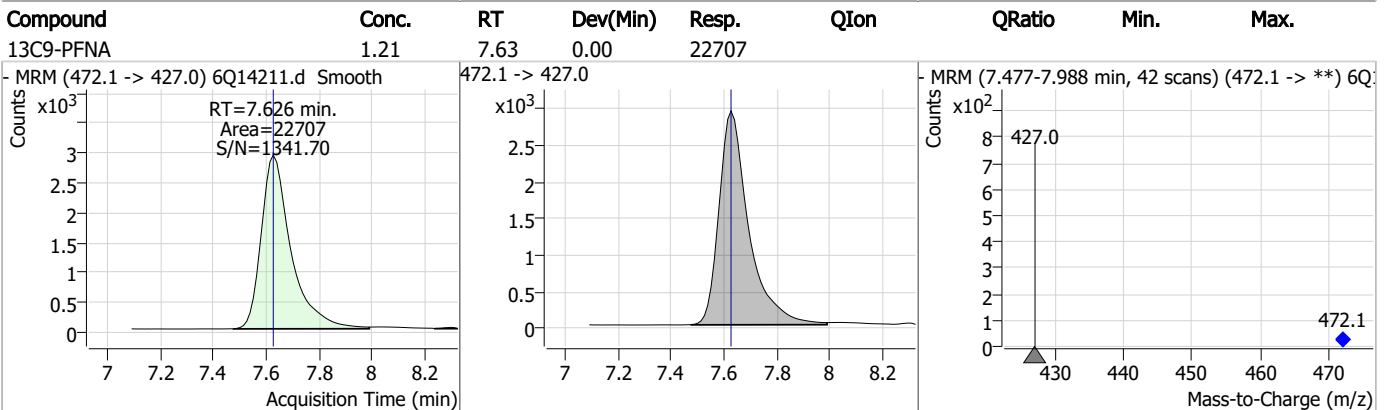
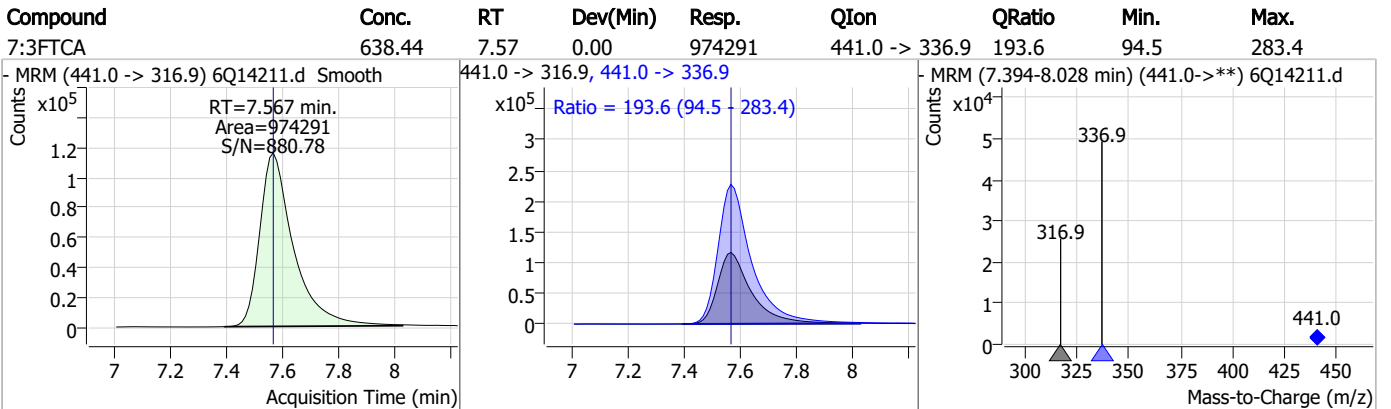
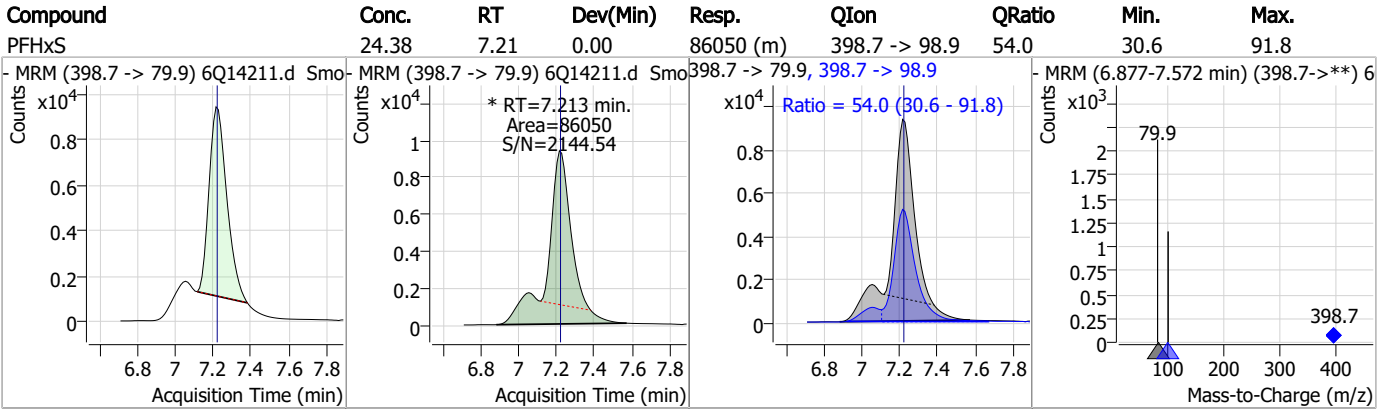


Perfluorinated Compounds by LC/MS/MS



7.7.8
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Perfluorinated Compounds by LC/MS/MS



7.7.8

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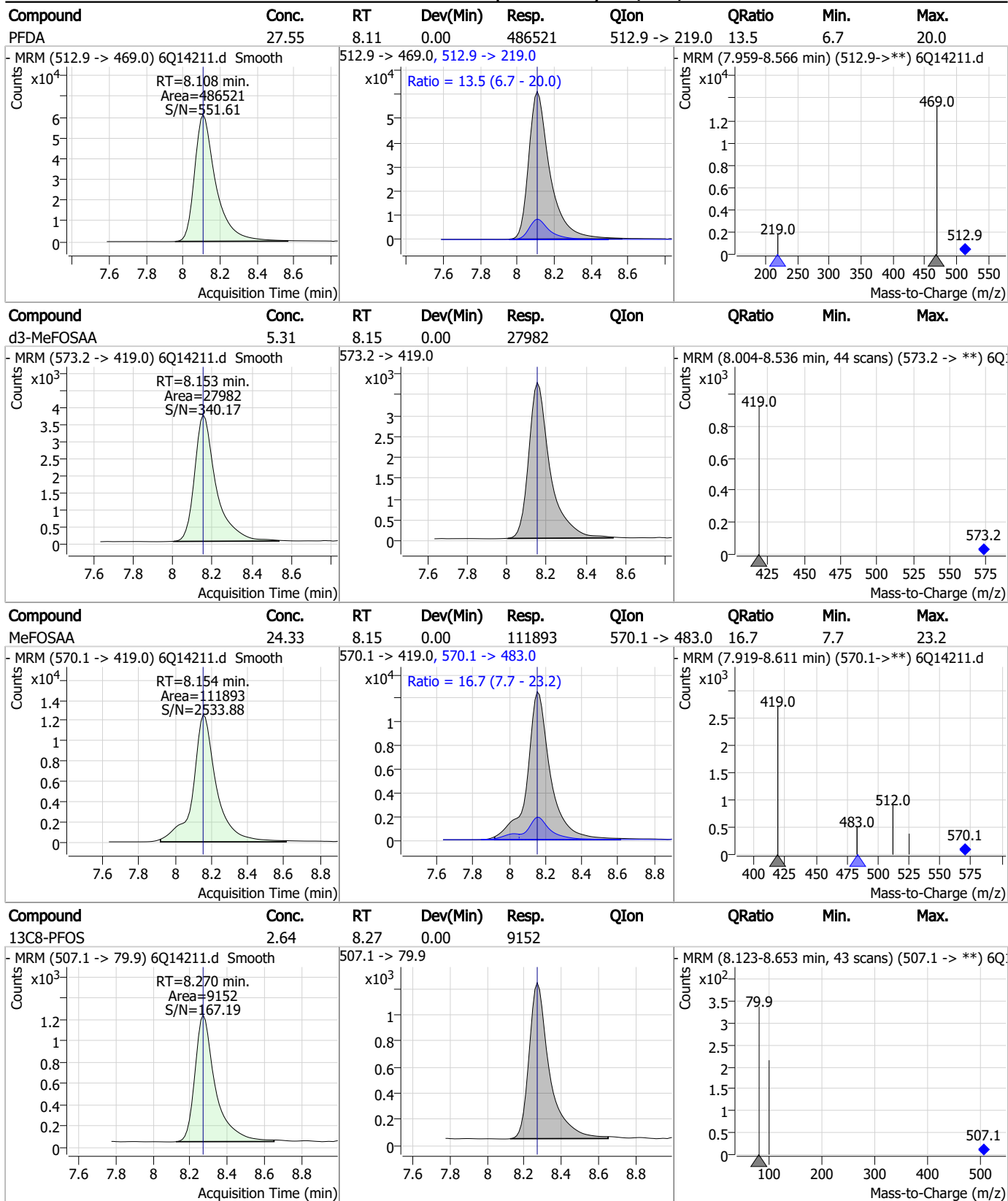
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	23.47	7.78	0.00	74858	449.0 -> 98.9	56.9	31.7	95.2
13C2-8:2FTS	4.83	7.90	0.00	2531				
8:2FTS	96.80	7.90	0.00	159375	527.1 -> 80.8	24.1	12.0	36.1
13C6-PFDA	1.24	8.11	0.00	18549				

7.7.8
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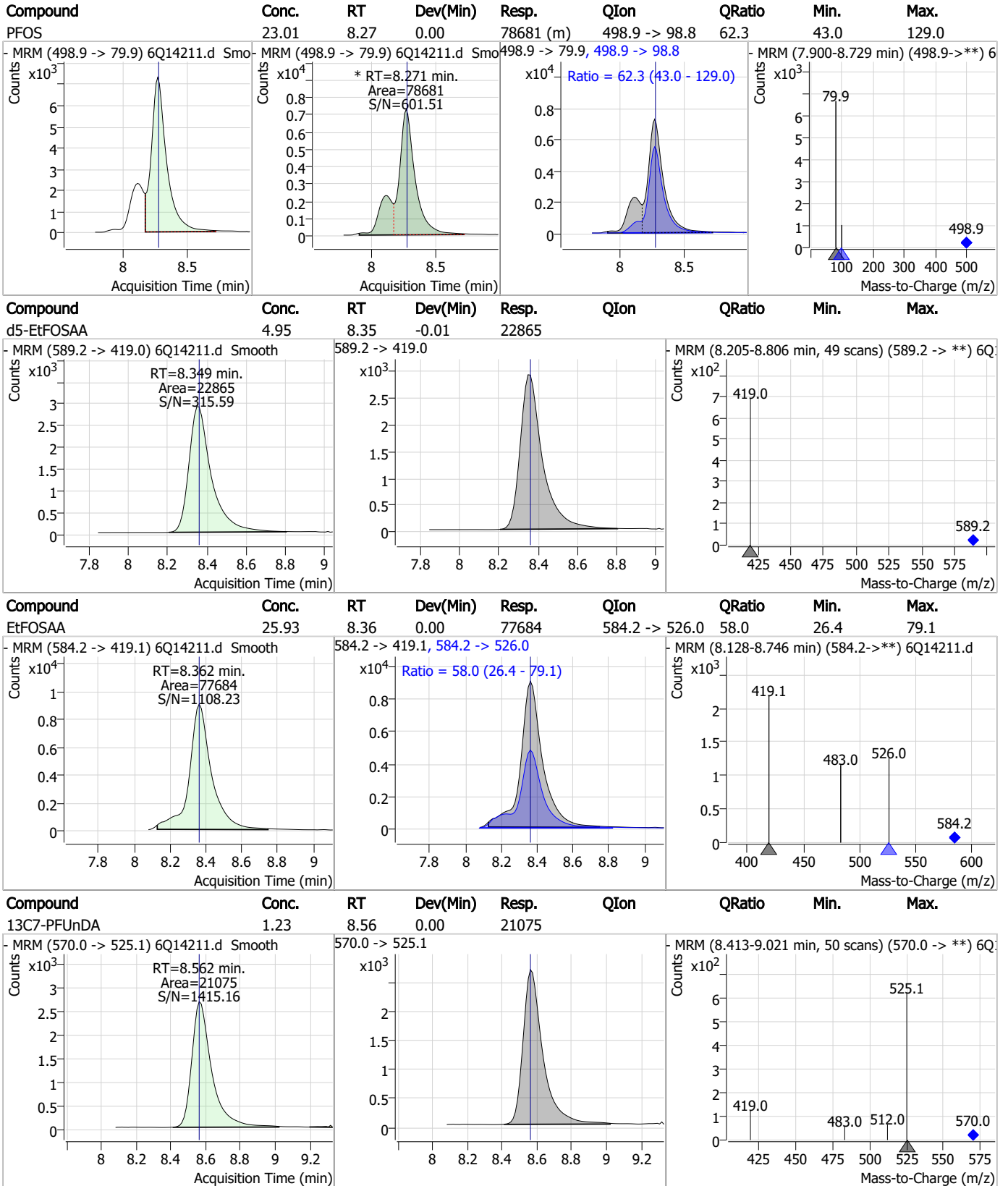


Perfluorinated Compounds by LC/MS/MS



7.7.8
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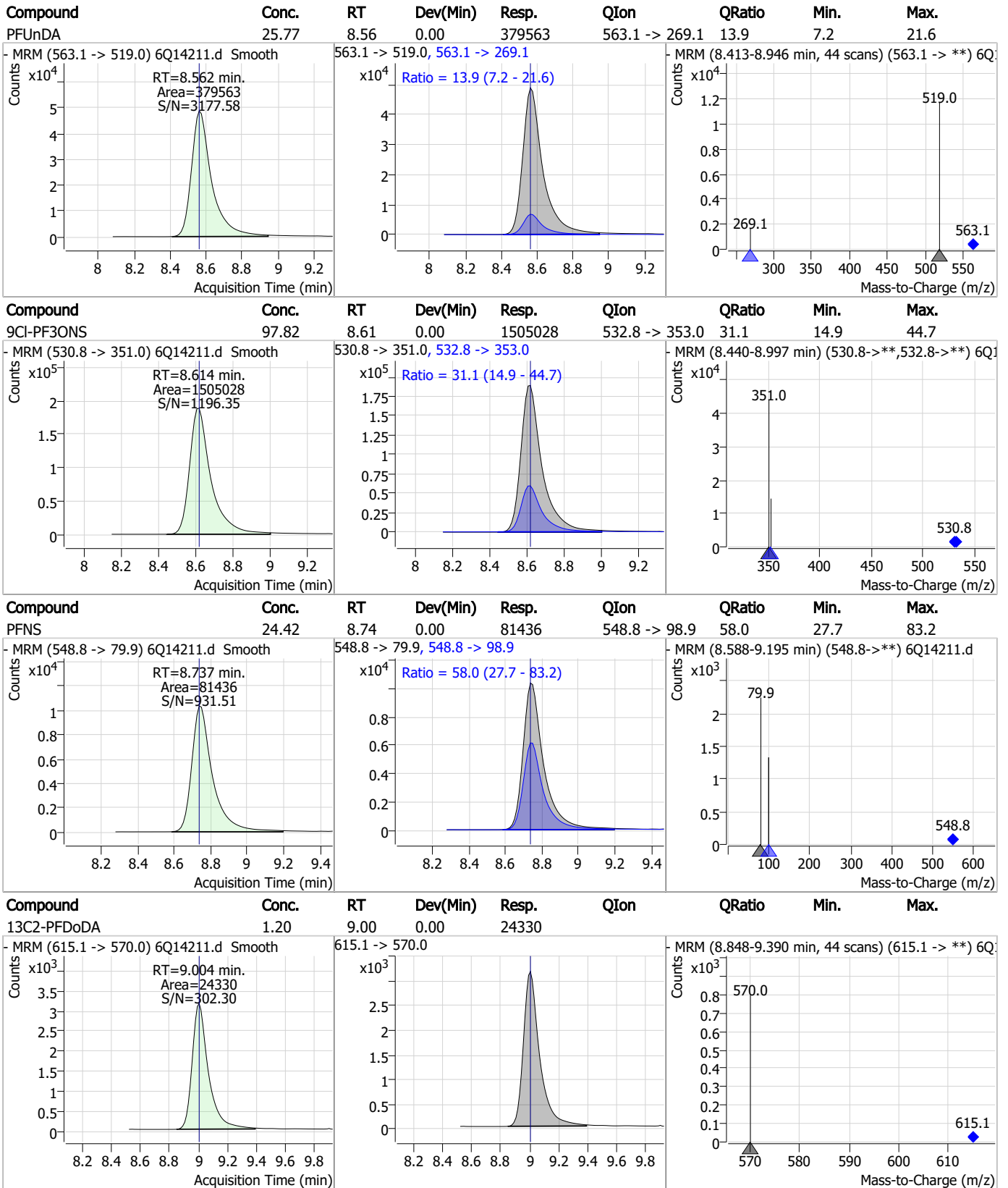
Perfluorinated Compounds by LC/MS/MS



7.7.8

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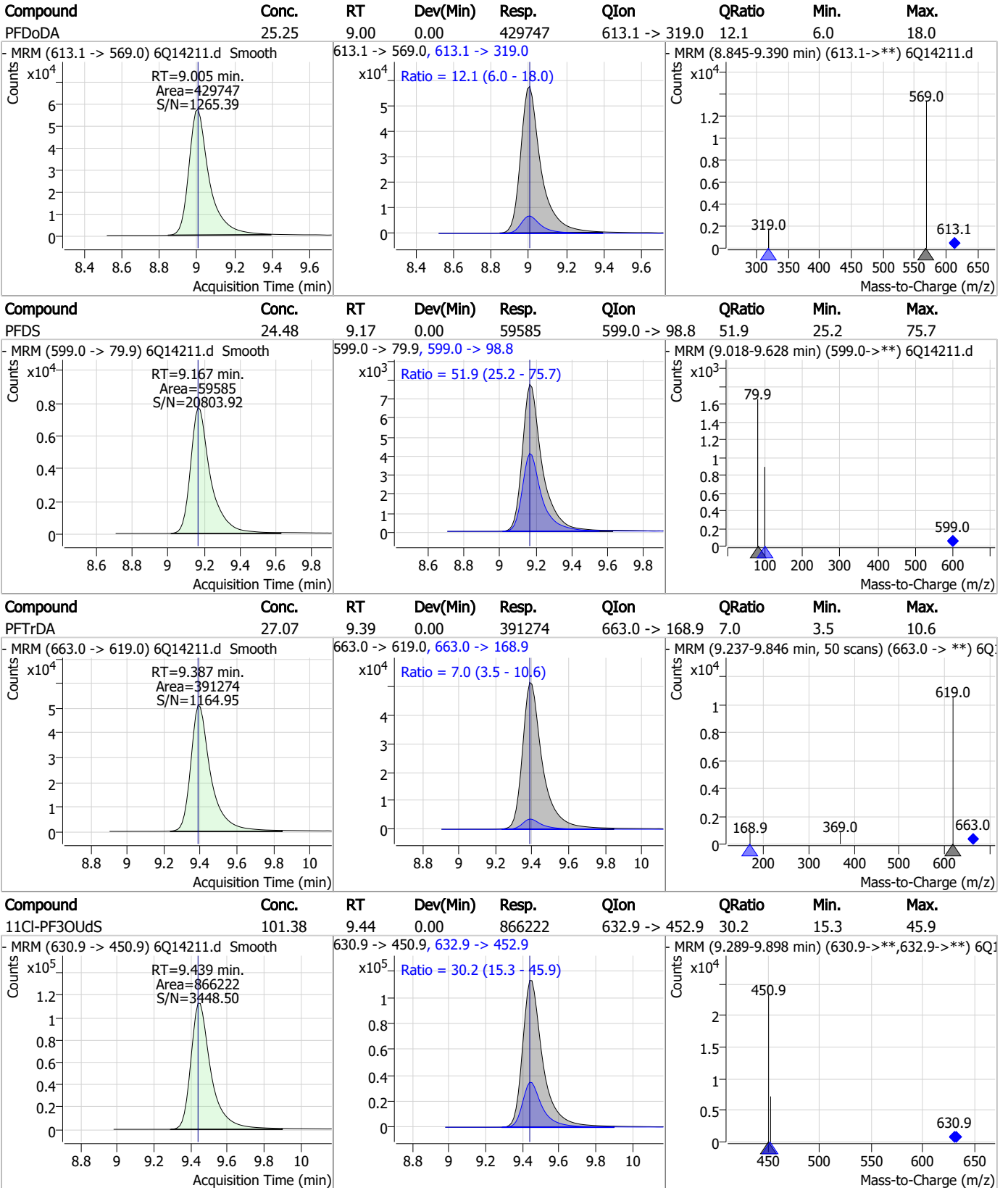
Perfluorinated Compounds by LC/MS/MS



7.7.8

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Perfluorinated Compounds by LC/MS/MS



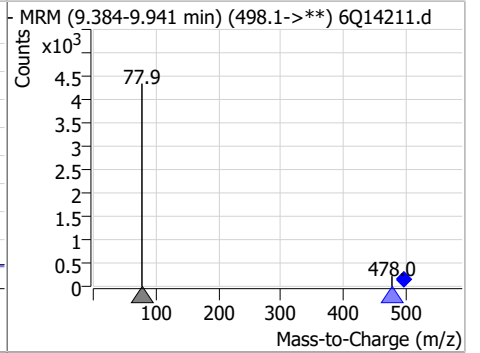
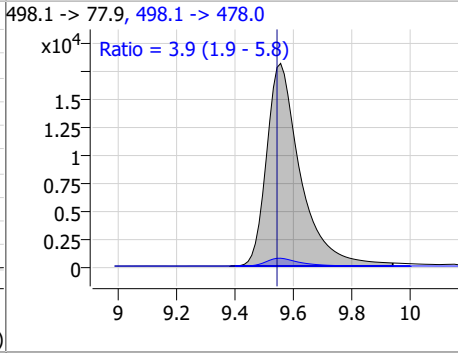
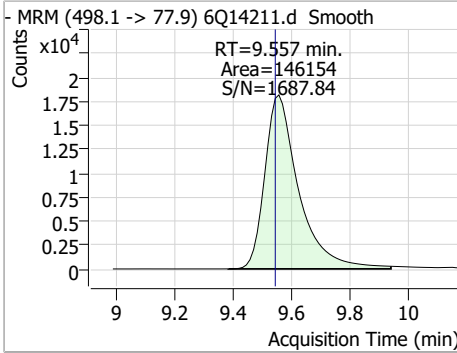
7.7.8

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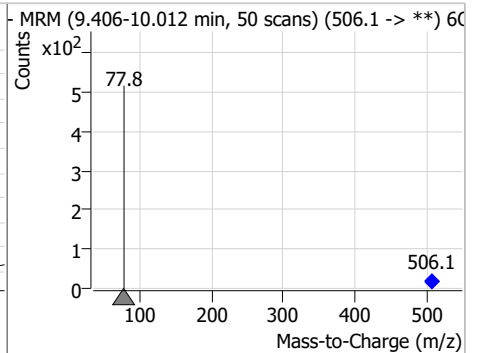
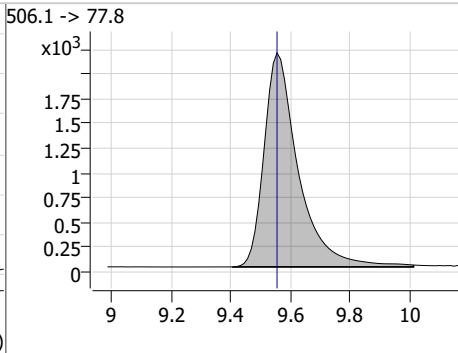
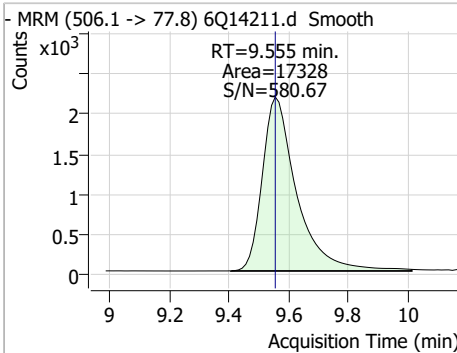


Perfluorinated Compounds by LC/MS/MS

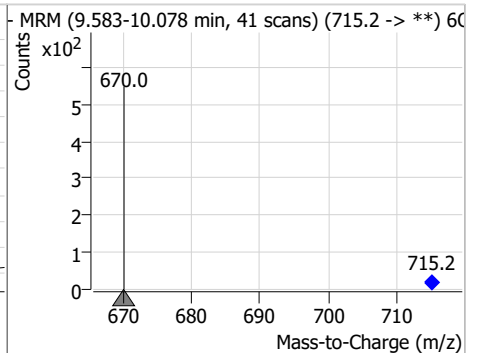
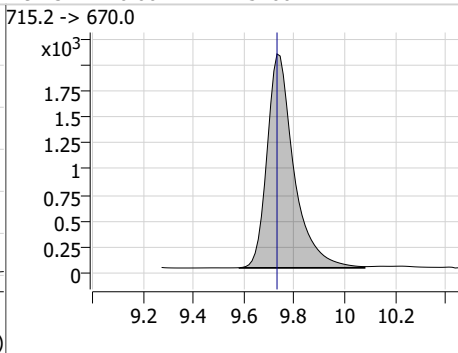
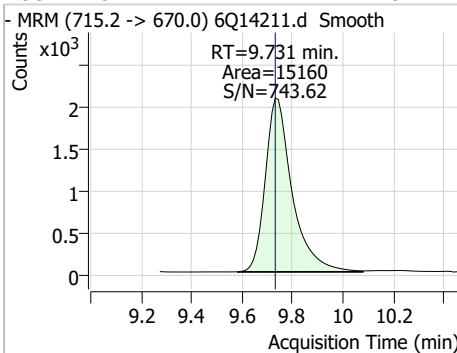
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	24.87	9.56	0.01	146154	498.1 -> 478.0	3.9	1.9	5.8



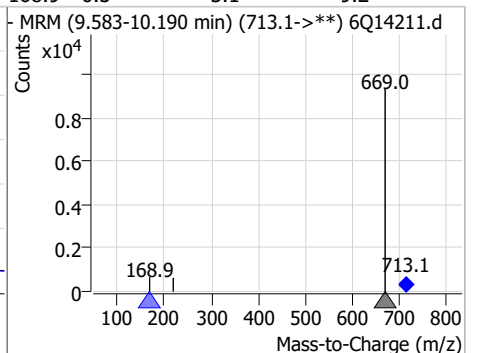
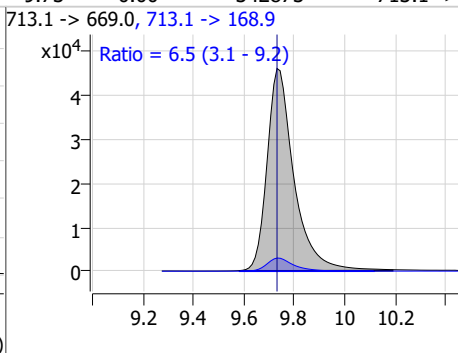
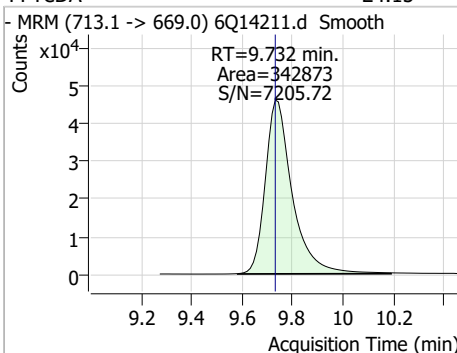
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.55	9.55	0.00	17328				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	9.73	0.00	15160				



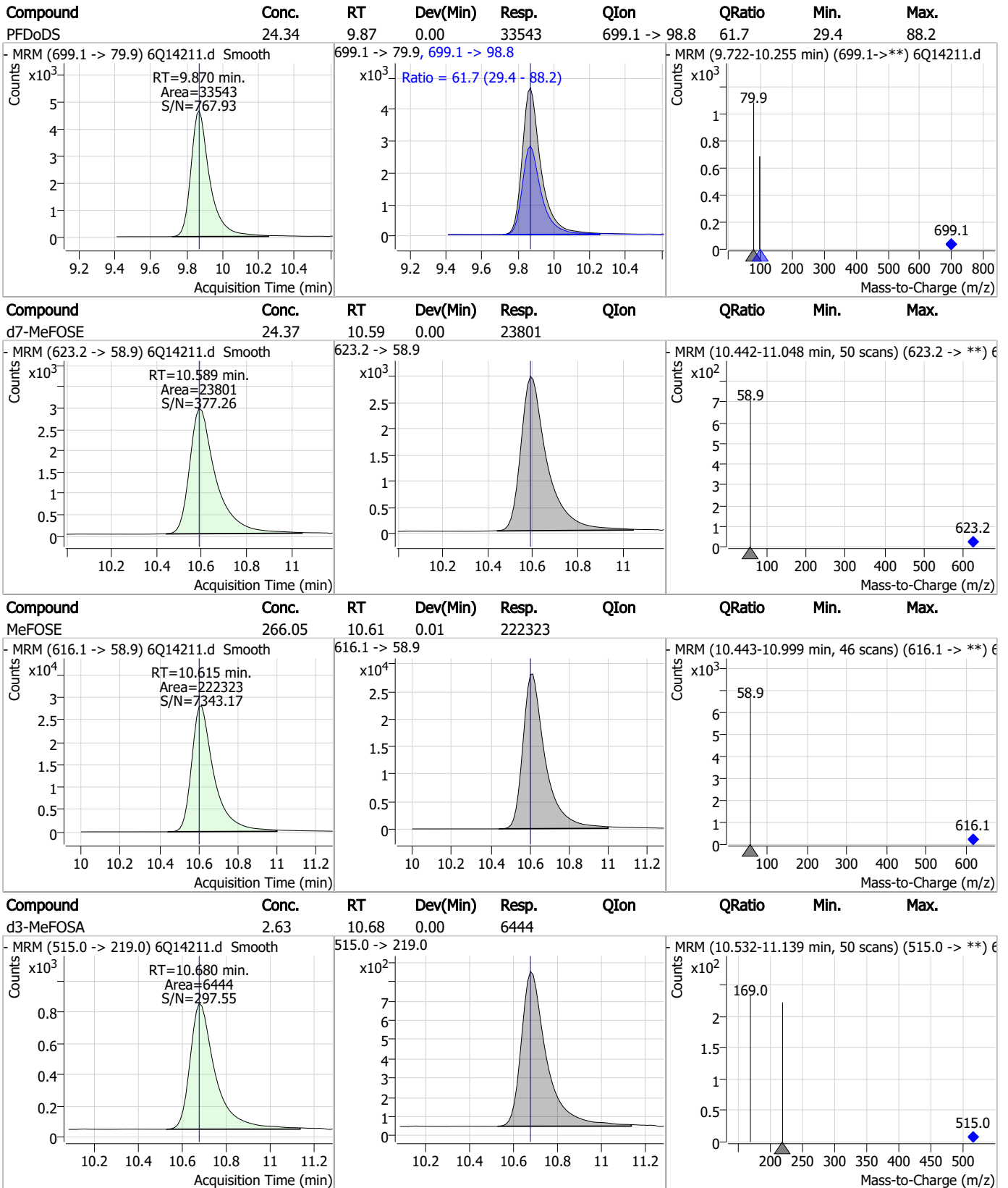
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	24.15	9.73	0.00	342873	713.1 -> 168.9	6.5	3.1	9.2



7.7.8

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Perfluorinated Compounds by LC/MS/MS

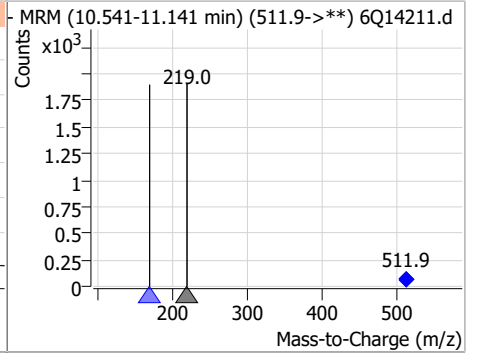
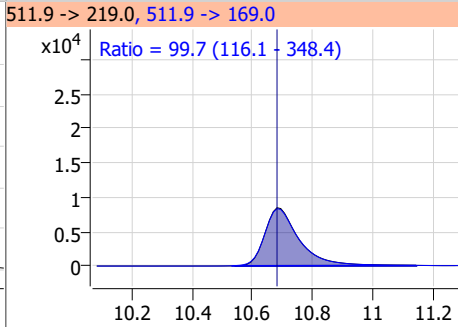
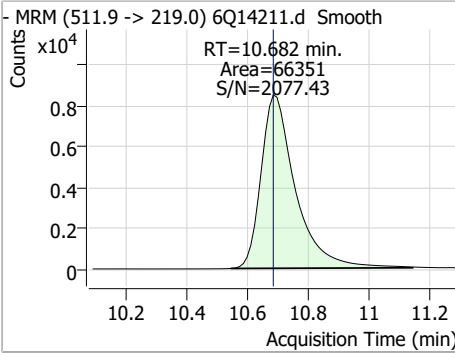


7.7.8

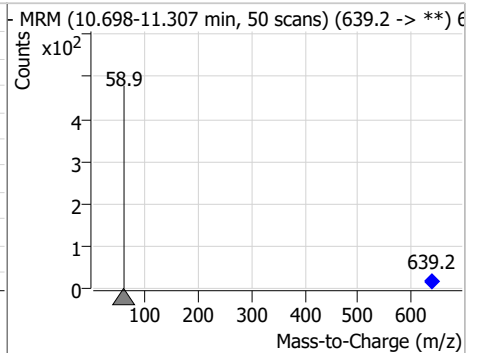
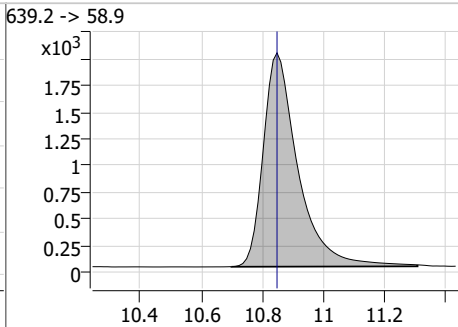
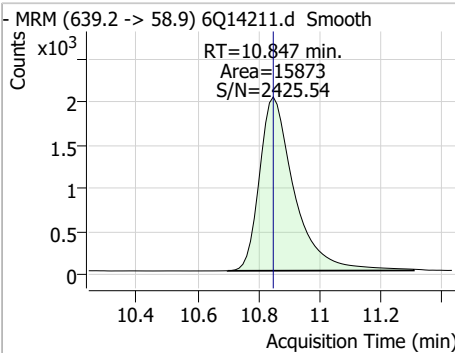
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Perfluorinated Compounds by LC/MS/MS

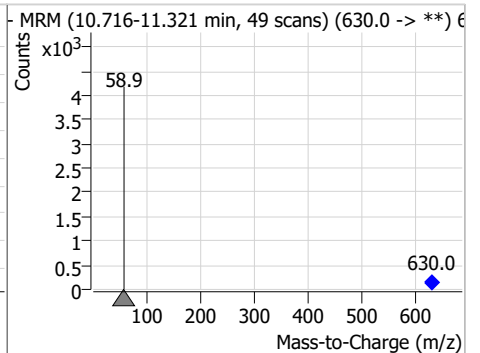
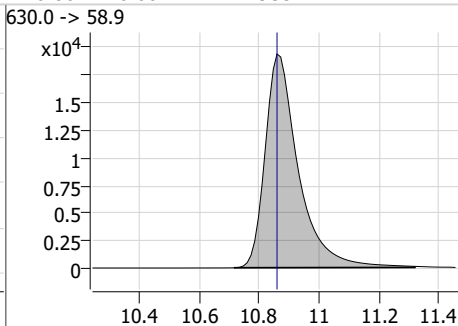
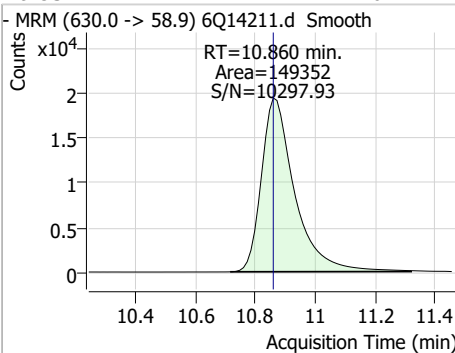
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	24.15	10.68	0.00	66351	511.9 -> 169.0	99.7	116.1	348.4



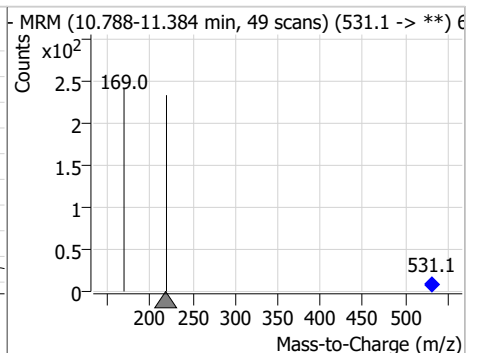
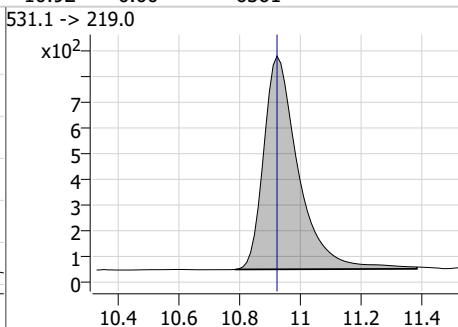
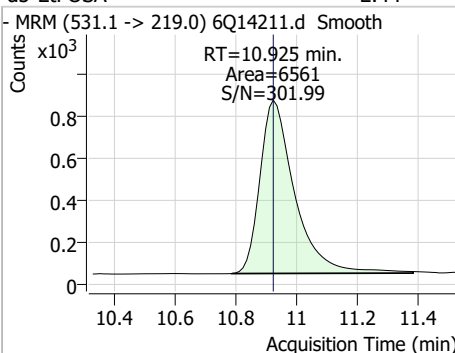
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.93	10.85	0.00	15873	639.2 -> 58.9			



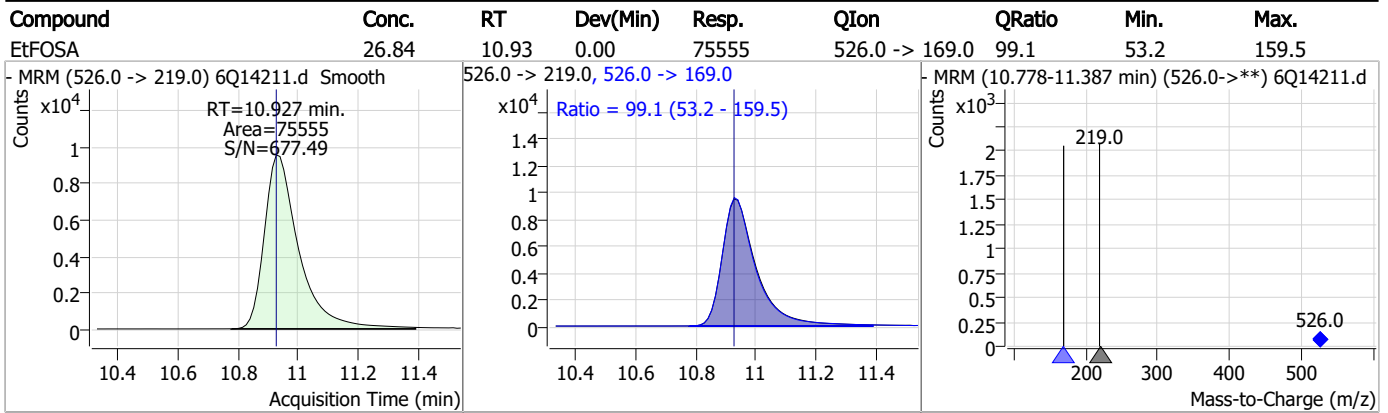
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	261.12	10.86	0.00	149352	630.0 -> 58.9			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.44	10.92	0.00	6561	531.1 -> 219.0			



Perfluorinated Compounds by LC/MS/MS



7.7.8

7

Manual Integration Approval Summary

Sample Number: S6Q217-IC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14211.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 15:03 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.7.8.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14212.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 3:17:40 PM
 Sample Name : ic217-8
 Vial : P1-A9
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	80450	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	43117	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	36920	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	39216	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	67526	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	23345	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	17982	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	20264	1.25 µg/L	0.000
M2-PFDoDA	9.004	615.1 -> 570.0	25766	1.25 µg/L	0.000
M2-PFTeDA	9.731	715.2 -> 670.0	14539	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	16316	2.50 µg/L	0.000
M3-PFBS	5.443	302.1 -> 79.9	14073	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	10272	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8994	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	1794	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	2182	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2631	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	25080	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	15553	10.00 µg/L	0.000
M5-EtFOSAA	8.361	589.2 -> 419.0	22341	5.00 µg/L	0.000
M7-MeFOSE	10.589	623.2 -> 58.9	23042	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	14697	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6669	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6169	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10237	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	35117	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	6966	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	79491	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	23396	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	22261	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	38666	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	1794	4.31 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 86.1%		
13C2-6:2FTS	6.871	429.1 -> 80.9	2182	4.15 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 83.0%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2631	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-PFDoDA	9.004	615.1 -> 570.0	25766	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.8%		
13C2-PFTeDA	9.731	715.2 -> 670.0	14539	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C3-PFBS	5.443	302.1 -> 79.9	14073	2.35 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C3-PFHxS	7.212	402.1 -> 79.9	10272	2.66 µg/L	0.000



7.7.9
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 = 106.4%	
13C4-PFBA	2.938	216.8 -> 171.9	80450	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.452	367.1 -> 322.0	39216	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFHxA	5.513	318.0 -> 273.0	36920	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C5-PFPeA	4.337	268.3 -> 223.0	43117	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	8.108	519.1 -> 474.1	17982	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C7-PFUnDA	8.562	570.0 -> 525.1	20264	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C8-FOSA	9.555	506.1 -> 77.8	16316	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C8-PFOA	7.097	421.1 -> 376.0	67526	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C8-PFOS	8.270	507.1 -> 79.9	8994	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C9-PFNA	7.626	472.1 -> 427.0	23345	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.8%	
d3-MeFOSAA	8.153	573.2 -> 419.0	25080	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	15553	10.56 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
d3-MeFOSA	10.680	515.0 -> 219.0	6169	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
d5-EtFOSAA	8.361	589.2 -> 419.0	22341	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
d7-MeFOSE	10.589	623.2 -> 58.9	23042	23.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d9-EtFOSE	10.847	639.2 -> 58.9	14697	22.81 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.3%	
d5-EtFOSA	10.925	531.1 -> 219.0	6669	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	755935	226.93 µg/L	99
		327.1 -> 80.9	163318		
6:2FTS	6.871	427.1 -> 407.0	662607	243.97 µg/L	98
		427.1 -> 80.9	125449		
8:2FTS	7.896	527.1 -> 507.0	327052	191.14 µg/L	97
		527.1 -> 80.8	82929		
EtFOSAA	8.362	584.2 -> 419.1	182578	62.38 µg/L	97
		584.2 -> 526.0	99913		
FOSA	9.557	498.1 -> 77.9	375170	67.79 µg/L	99
		498.1 -> 478.0	13426		
MeFOSAA	8.154	570.1 -> 419.0	252338	61.22 µg/L	94
		570.1 -> 483.0	45414		
PFBA	2.944	212.8 -> 168.9	420859	259.65 µg/L	100
PFBS	5.457	298.7 -> 79.9	265290	57.32 µg/L	97
		298.7 -> 98.8	122123		
PFDA	8.108	512.9 -> 469.0	1145079	66.89 µg/L	99
		512.9 -> 219.0	147056		
PFDoDA	9.005	613.1 -> 569.0	983038	54.55 µg/L	100
		613.1 -> 319.0	118033		
PFDS	9.167	599.0 -> 79.9	134208	56.10 µg/L	95

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.453	599.0 -> 98.8	72545	65.38	µg/L	98
		363.1 -> 319.0	1272405			
PFHpS	7.779	363.1 -> 169.0	166451	60.13	µg/L	90
		449.0 -> 79.9	188439			
PFHxA	5.516	449.0 -> 98.9	105608	63.86	µg/L	99
		313.0 -> 269.0	754250			
PFHxS	7.213	313.0 -> 118.9	30004	54.45	µg/L	m
		398.7 -> 79.9	204630			
PFNA	7.627	398.7 -> 98.9	114041	65.44	µg/L	96
		463.0 -> 419.0	775038			
PFNS	8.737	463.0 -> 219.0	146678	59.36	µg/L	100
		548.8 -> 79.9	194554			
PFOA	7.098	548.8 -> 98.9	108570	62.08	µg/L	94
		413.0 -> 369.0	1546258			
PFOS	8.271	413.0 -> 169.0	207208	56.61	µg/L	m
		498.9 -> 79.9	190278			
PFPeA	4.338	498.9 -> 98.8	121312	128.26	µg/L	100
		263.0 -> 219.0	968674			
PFPeS	6.517	349.1 -> 79.9	265442	56.01	µg/L	99
		349.1 -> 98.9	139626			
PFTeDA	9.732	713.1 -> 669.0	803433	59.02	µg/L	99
		713.1 -> 168.9	53670			
PFTrDA	9.387	663.0 -> 619.0	855198	55.87	µg/L	99
		663.0 -> 168.9	64651			
PFUnDA	8.562	563.1 -> 519.0	895425	63.23	µg/L	98
		563.1 -> 269.1	122604			
11Cl-PF3OUdS	9.439	630.9 -> 450.9	1952661	226.94	µg/L	100
		632.9 -> 452.9	600485			
9Cl-PF3ONS	8.614	530.8 -> 351.0	3436004	221.77	µg/L	99
		532.8 -> 353.0	1043010			
ADONA	6.704	376.9 -> 250.9	6914247	224.24	µg/L	97
		376.9 -> 84.8	1412556			
HFPO-DA	5.879	284.9 -> 168.9	299051	241.23	µg/L	98
		284.9 -> 184.9	38758			
3:3FTCA	3.804	241.0 -> 177.0	133398	332.96	µg/L	96
		241.0 -> 117.0	19209			
5:3FTCA	6.156	341.0 -> 237.1	4430593	1641.12	µg/L	100
		341.0 -> 217.0	3837787			
7:3FTCA	7.567	441.0 -> 316.9	2415966	1685.09	µg/L	92
		441.0 -> 336.9	4278512			
EtFOSA	10.927	526.0 -> 219.0	187107	65.39	µg/L	89
		526.0 -> 169.0	177887			
EtFOSE	10.860	630.0 -> 58.9	365866	690.81	µg/L	100
		511.9 -> 219.0	161051			
MeFOSA	10.682	511.9 -> 169.0	164952	61.23	µg/L	#
		616.1 -> 58.9	517735			
MeFOSE	10.615	699.1 -> 79.9	82259	639.99	µg/L	100
		699.1 -> 98.8	51359			
PFDoDS	9.870	295.0 -> 201.0	88355	60.74	µg/L	95
		295.0 -> 84.9	42869			
NFDHA	5.395	279.0 -> 85.1	292171	132.19	µg/L	94
		229.0 -> 84.9	265859			
PFMBA	4.738	314.8 -> 134.9	1953996	131.31	µg/L	100
		314.8 -> 82.9	47270			
PFMPA	3.488			131.66	µg/L	100
PFEESA	5.983			116.61	µg/L	100

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

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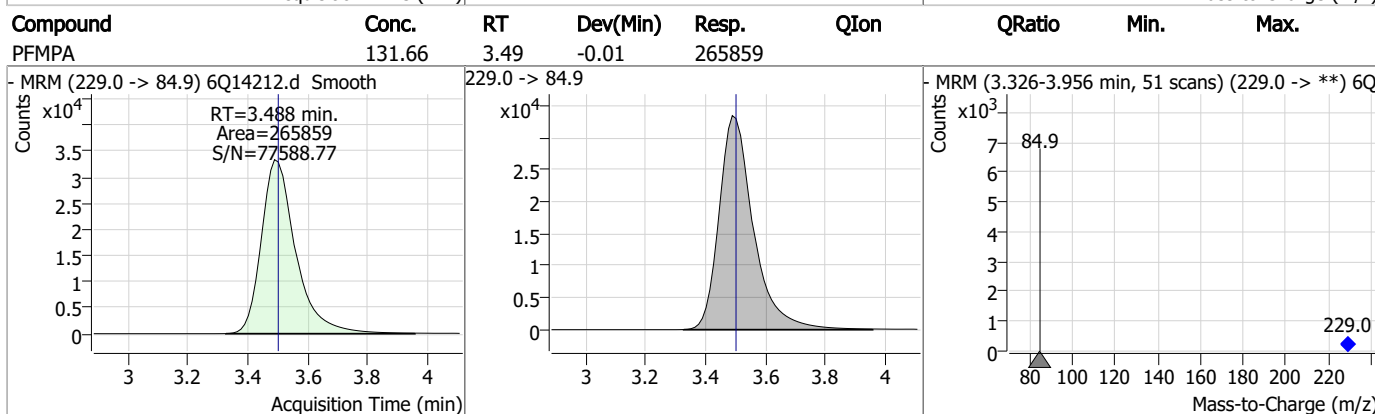
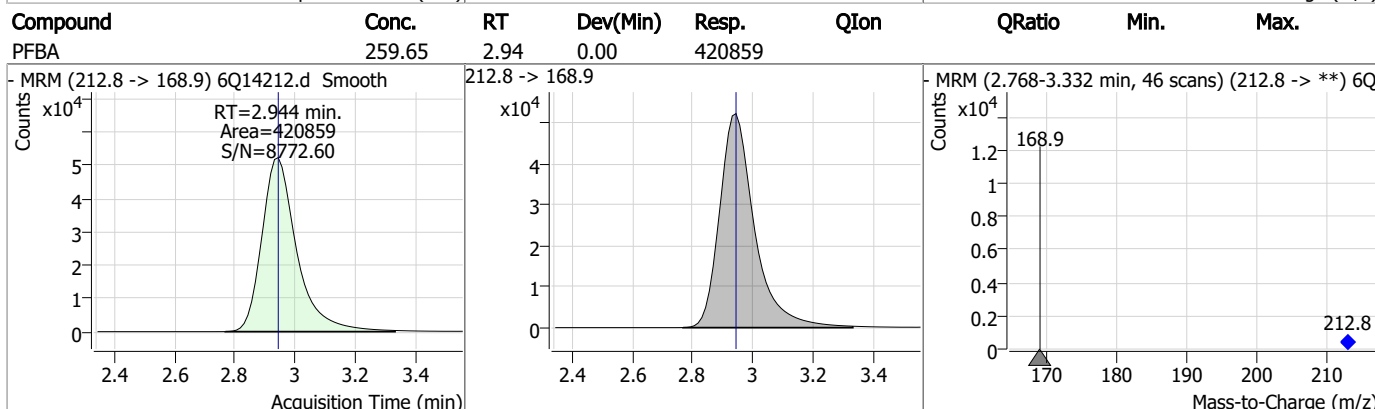
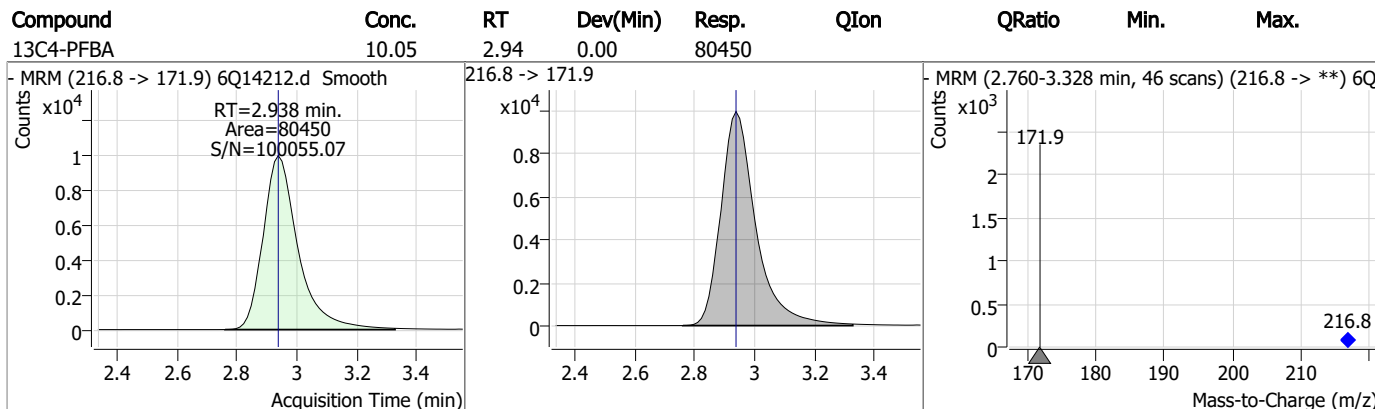
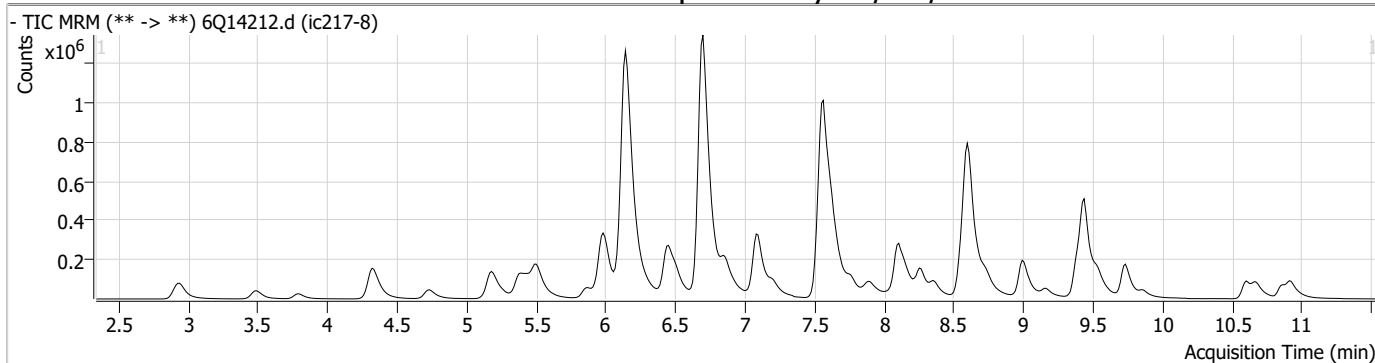
Perfluorinated Compounds by LC/MS/MS

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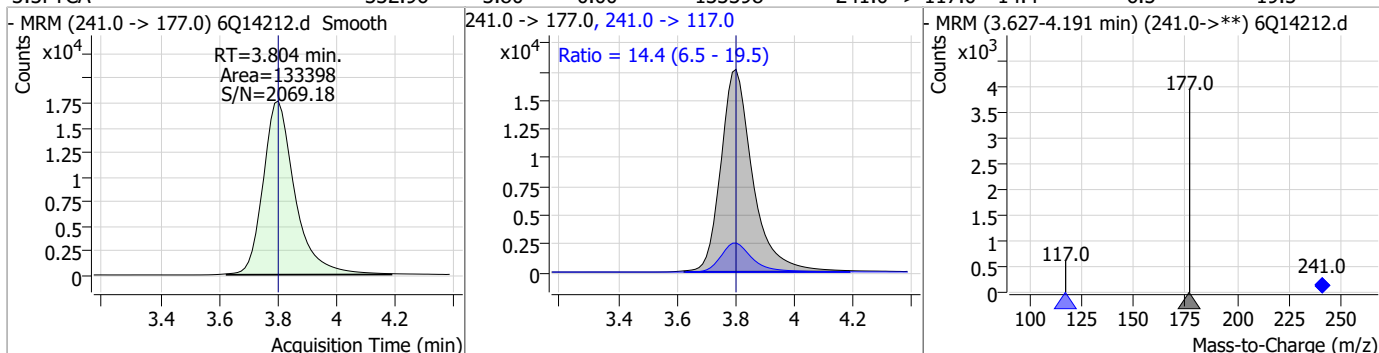
Perfluorinated Compounds by LC/MS/MS



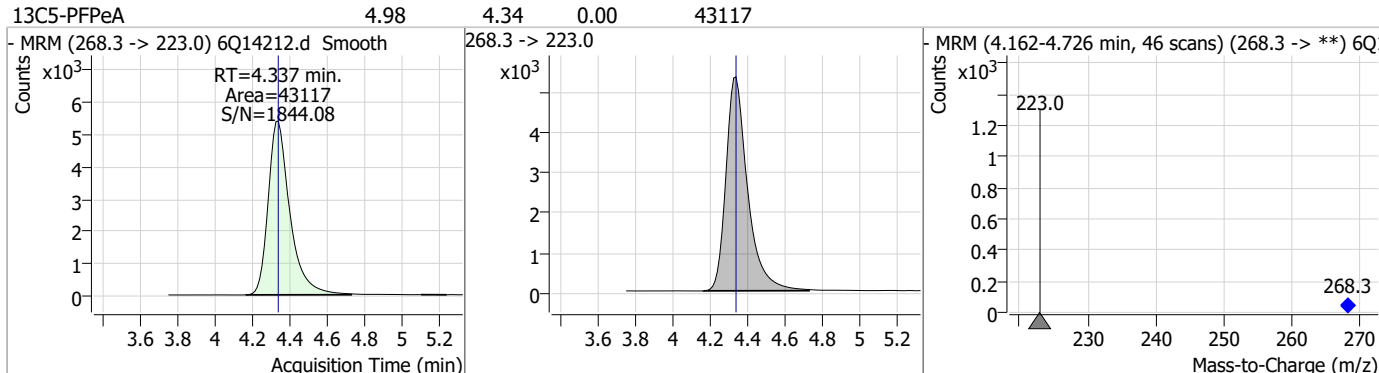
7.7.9
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Perfluorinated Compounds by LC/MS/MS

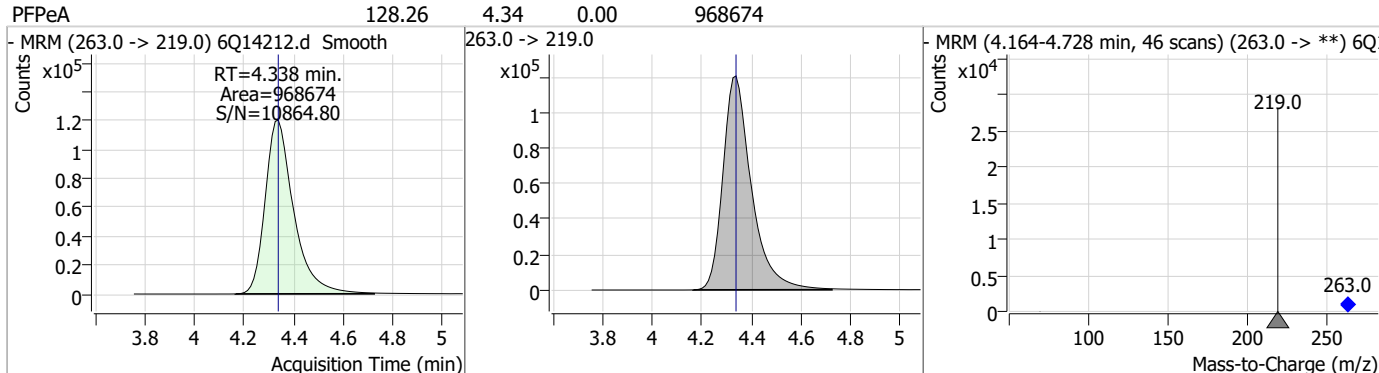
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	332.96	3.80	0.00	133398	241.0 -> 117.0	14.4	6.5	19.5



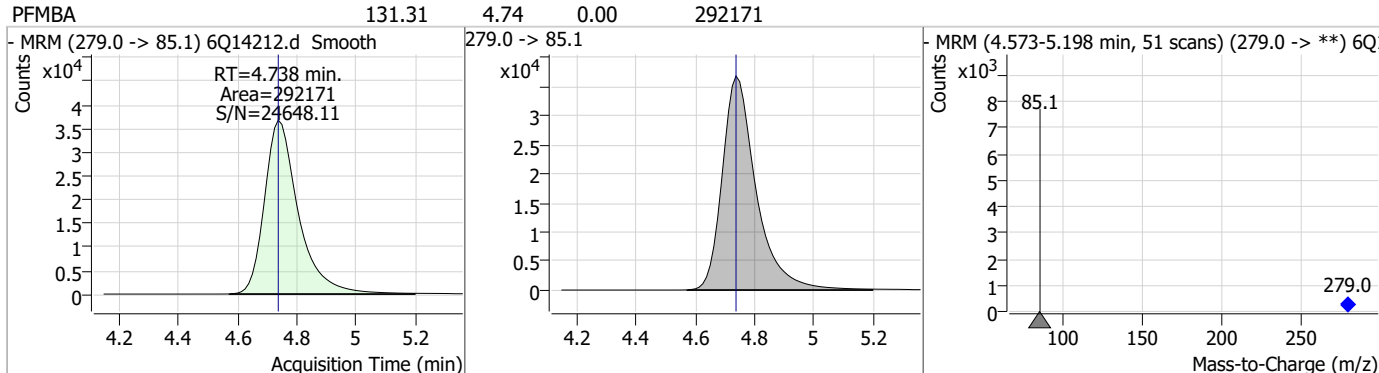
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.98	4.34	0.00	43117				



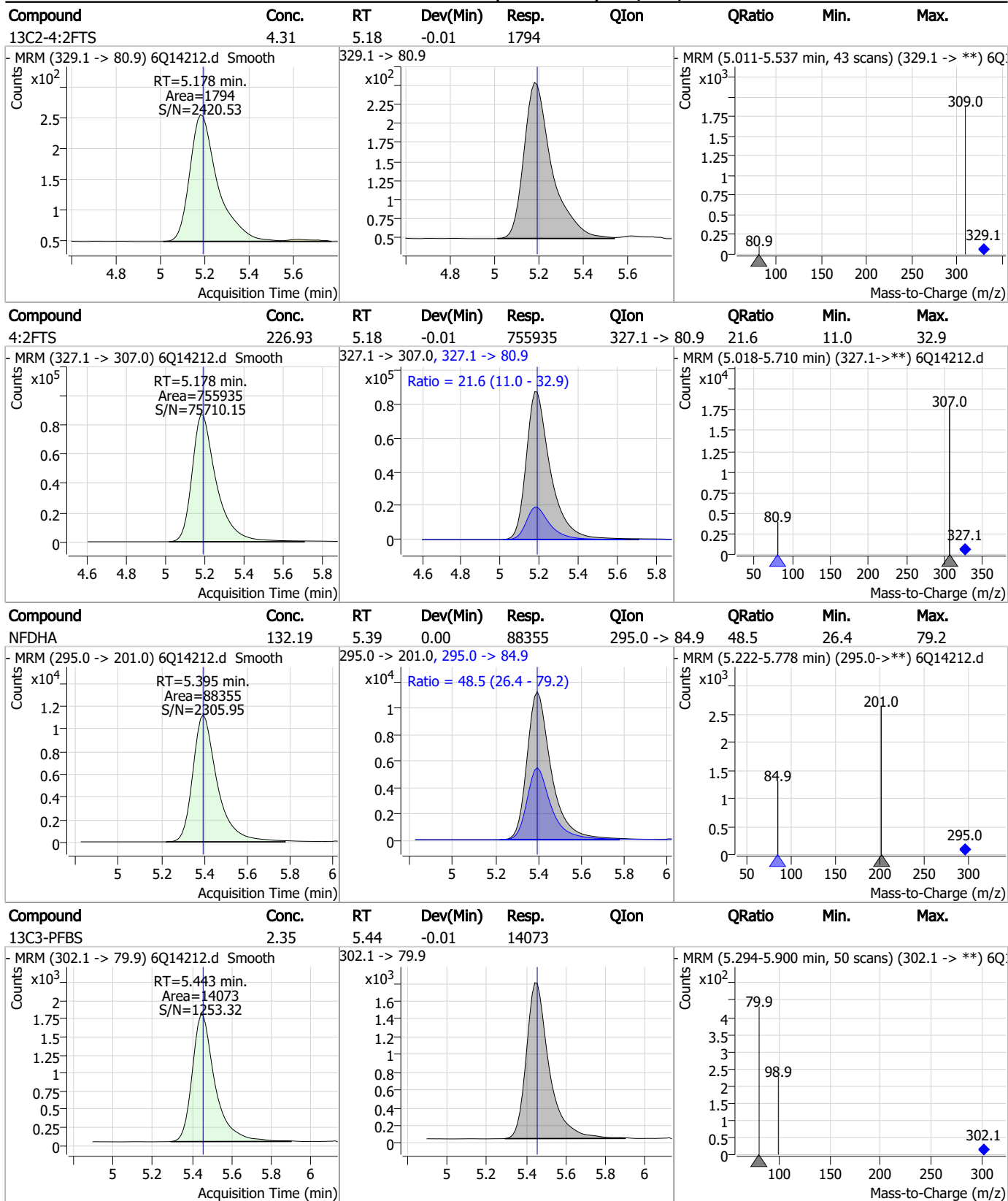
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	128.26	4.34	0.00	968674				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	131.31	4.74	0.00	292171				



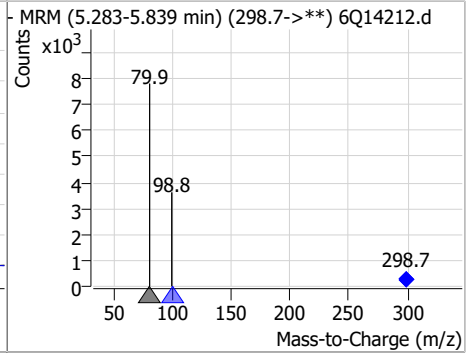
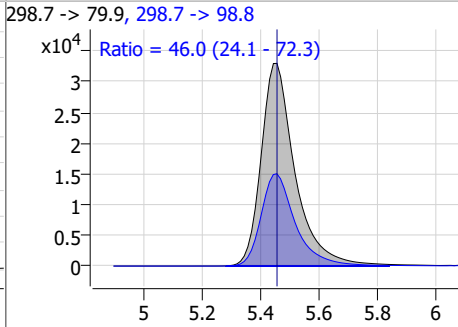
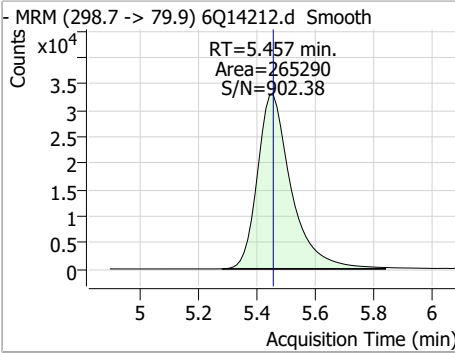
Perfluorinated Compounds by LC/MS/MS



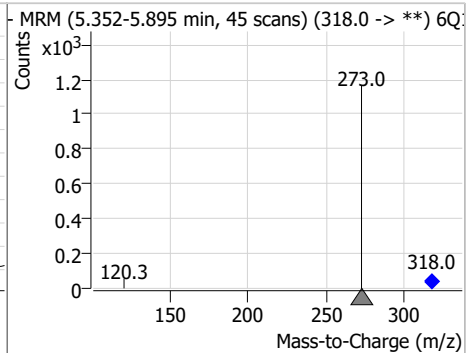
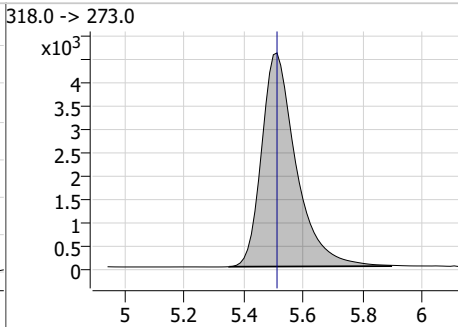
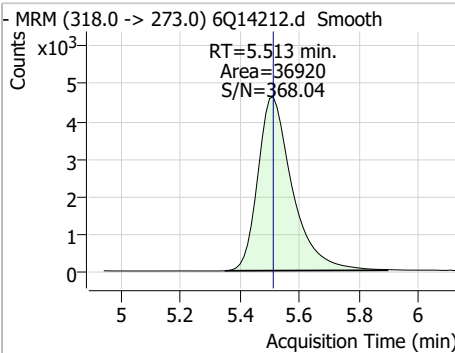
7.7.9
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Perfluorinated Compounds by LC/MS/MS

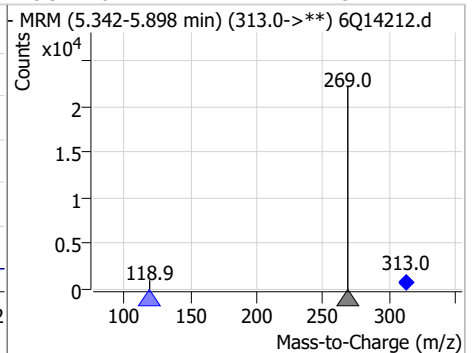
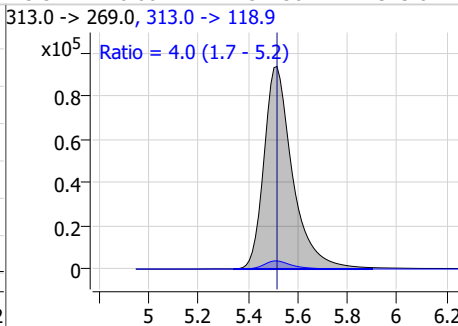
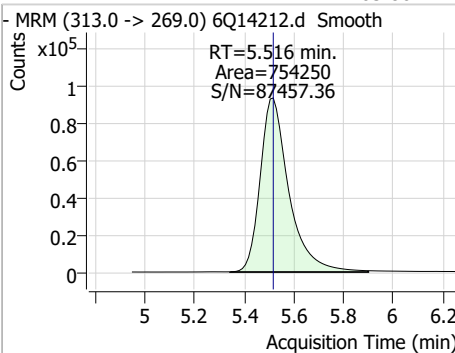
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	57.32	5.46	0.00	265290	298.7 -> 98.8	46.0	24.1	72.3



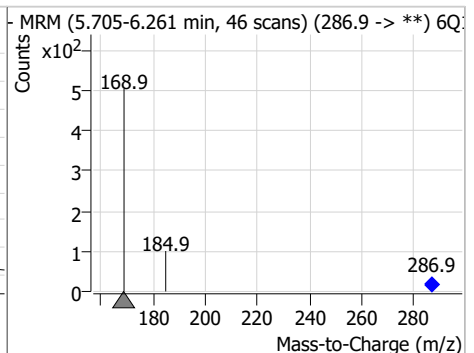
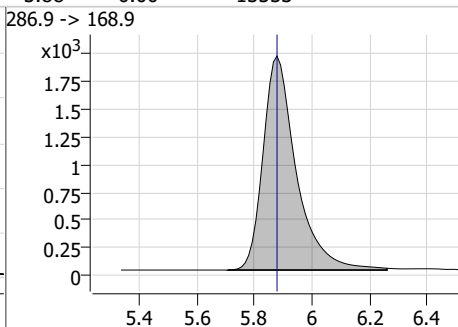
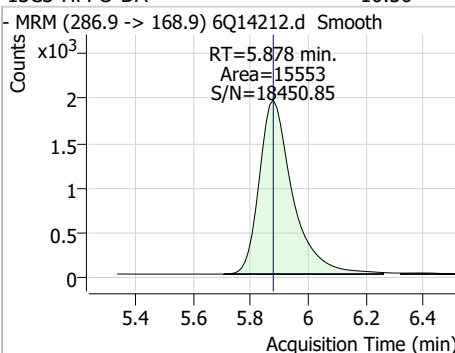
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.44	5.51	0.00	36920				



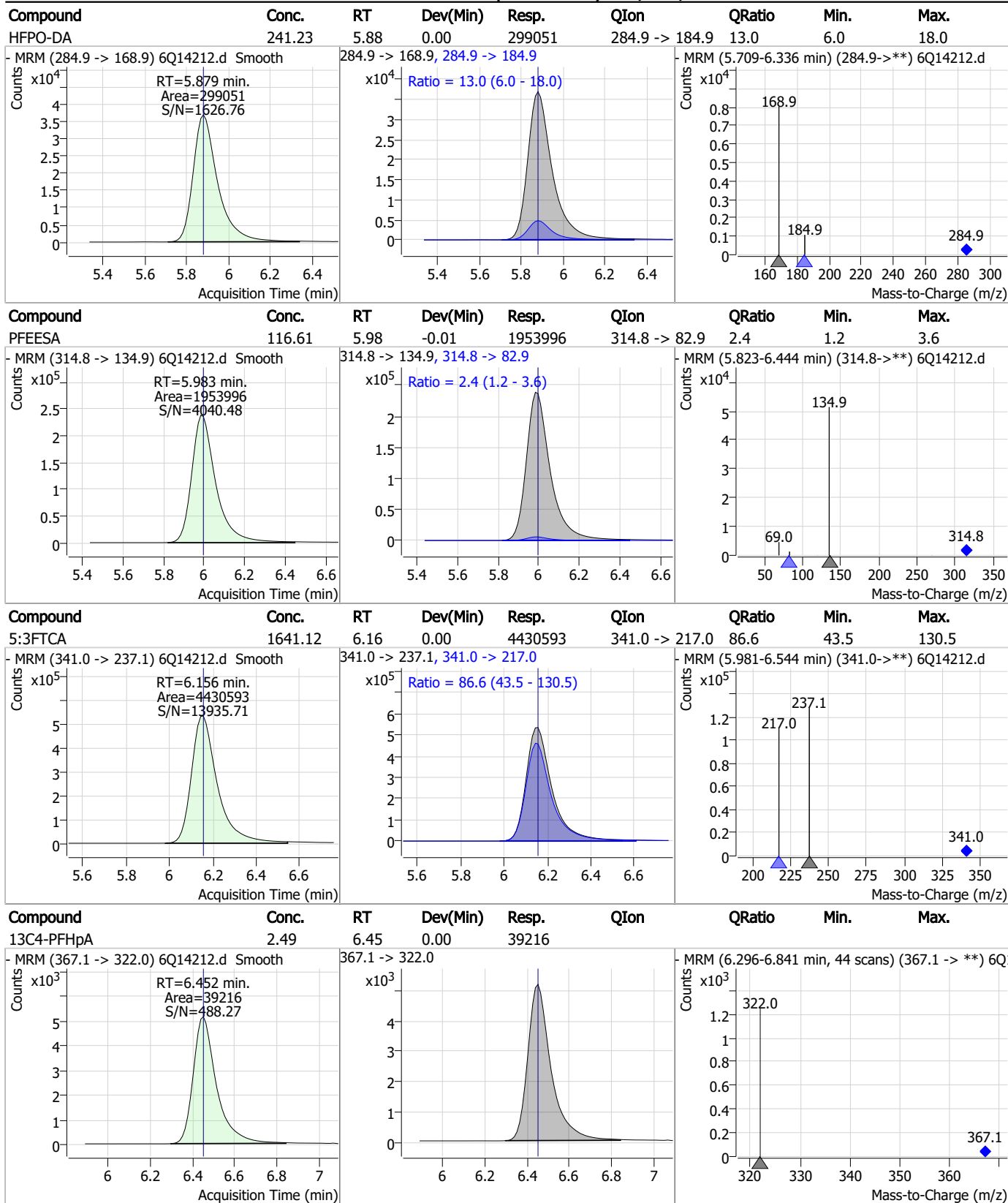
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	63.86	5.52	0.00	754250	313.0 -> 118.9	4.0	1.7	5.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.56	5.88	0.00	15553				



Perfluorinated Compounds by LC/MS/MS

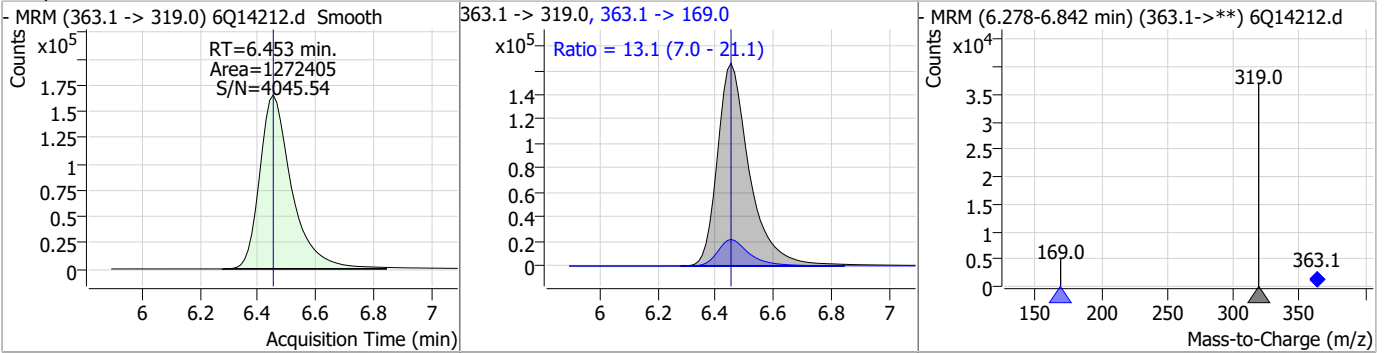


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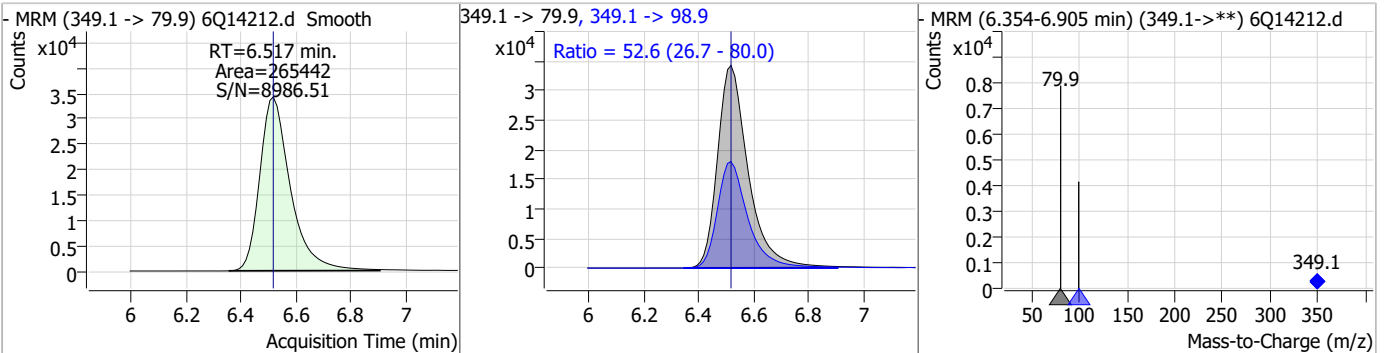


Perfluorinated Compounds by LC/MS/MS

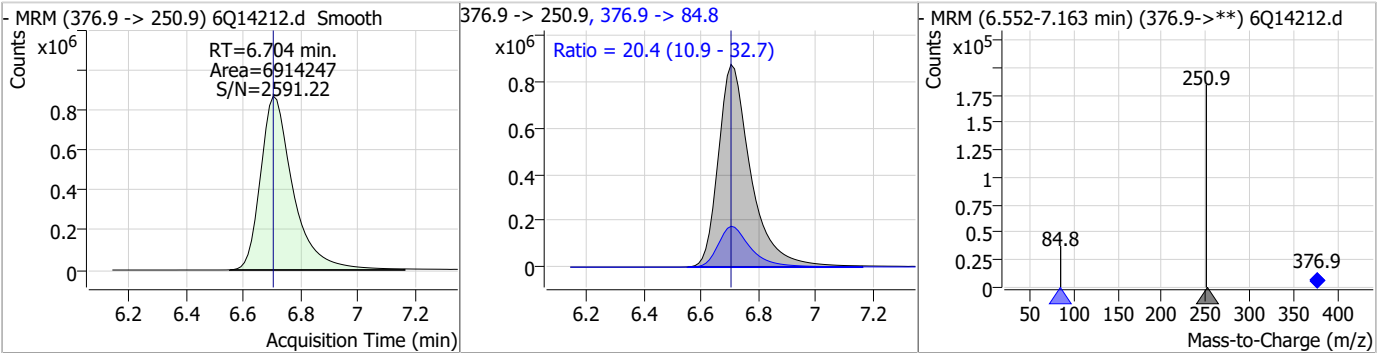
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	65.38	6.45	0.00	1272405	363.1 -> 169.0	13.1	7.0	21.1



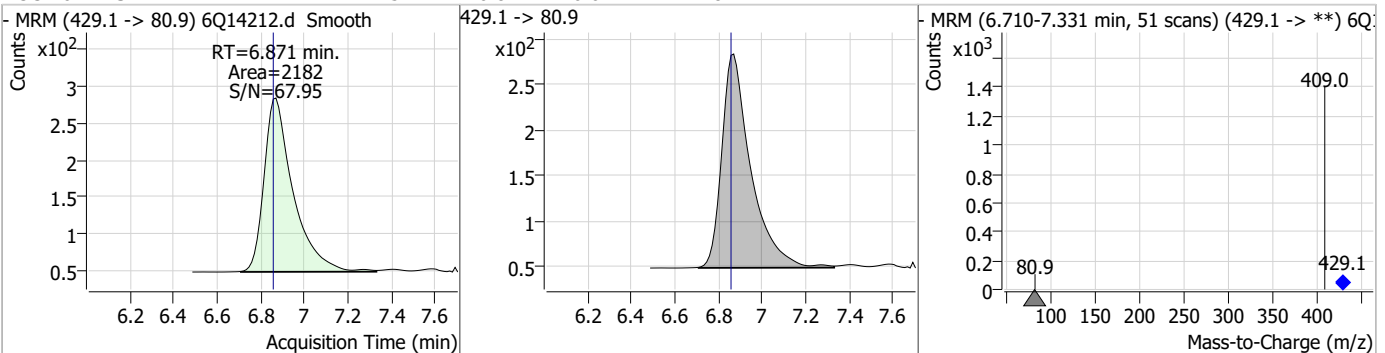
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	56.01	6.52	0.00	265442	349.1 -> 98.9	52.6	26.7	80.0



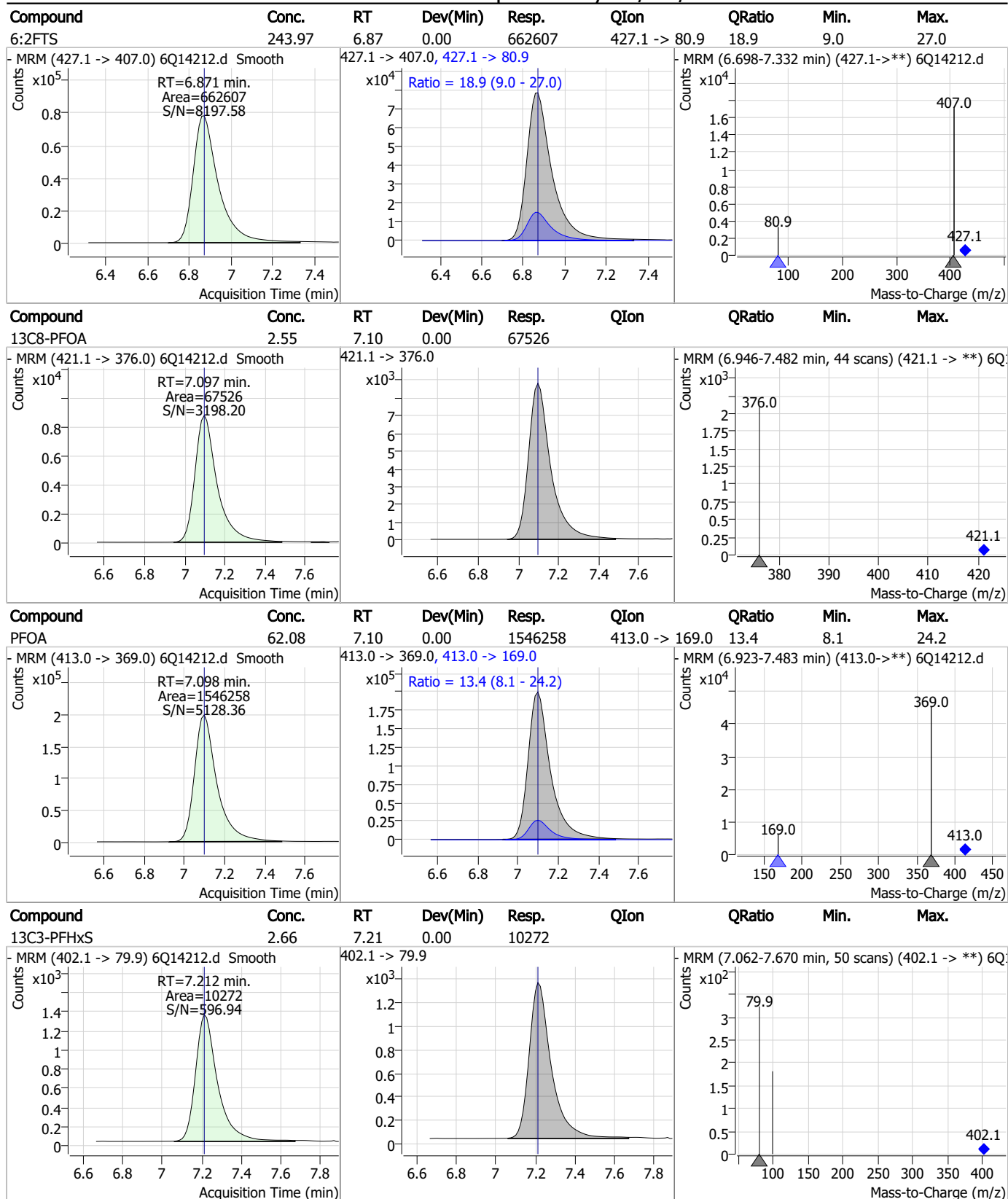
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	224.24	6.70	0.00	6914247	376.9 -> 84.8	20.4	10.9	32.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.15	6.87	0.01	2182	429.1 -> 80.9			



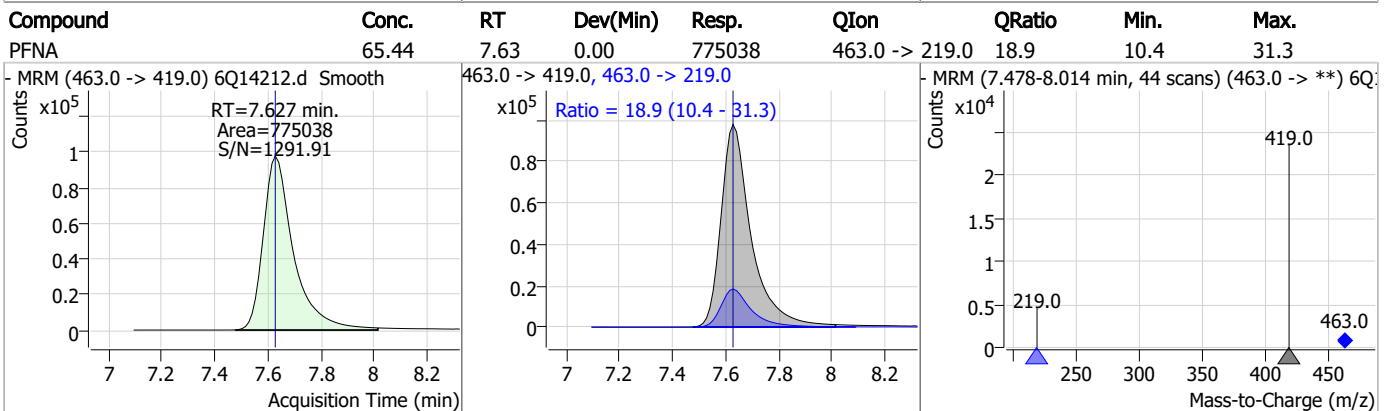
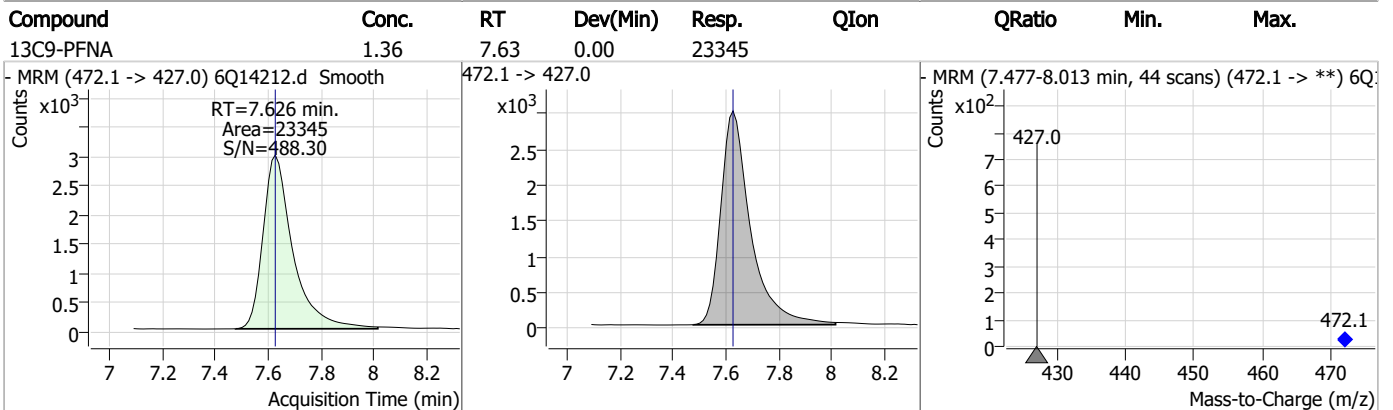
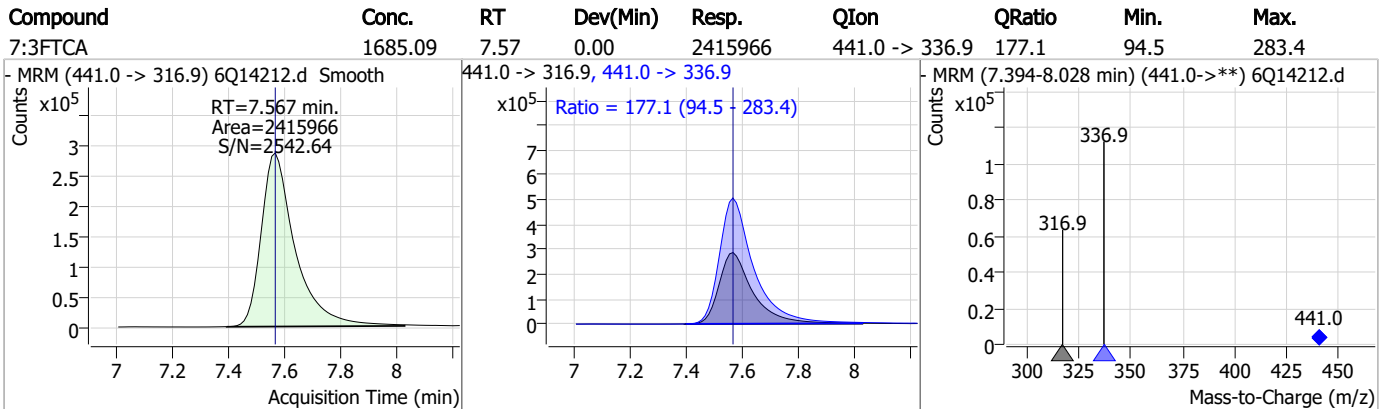
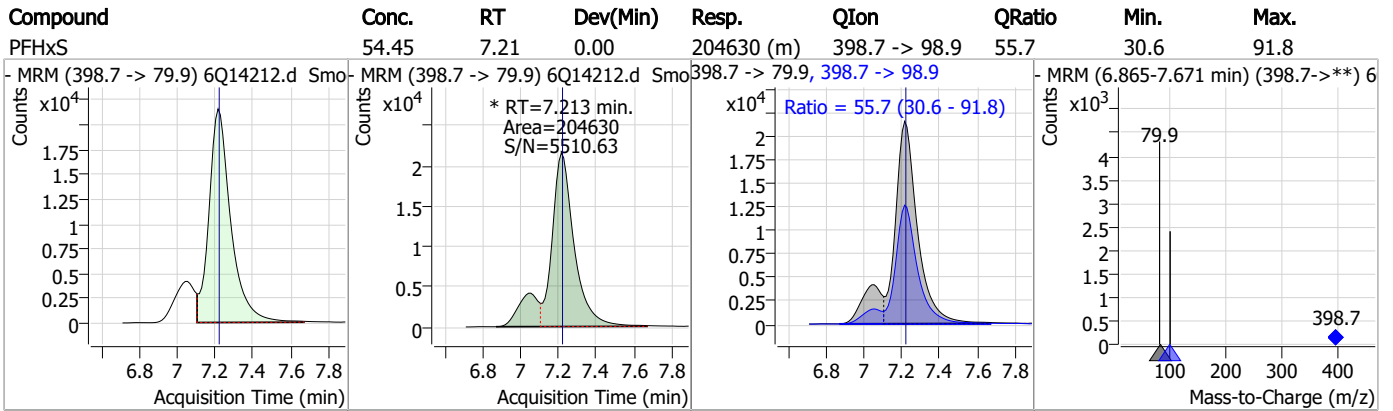
Perfluorinated Compounds by LC/MS/MS



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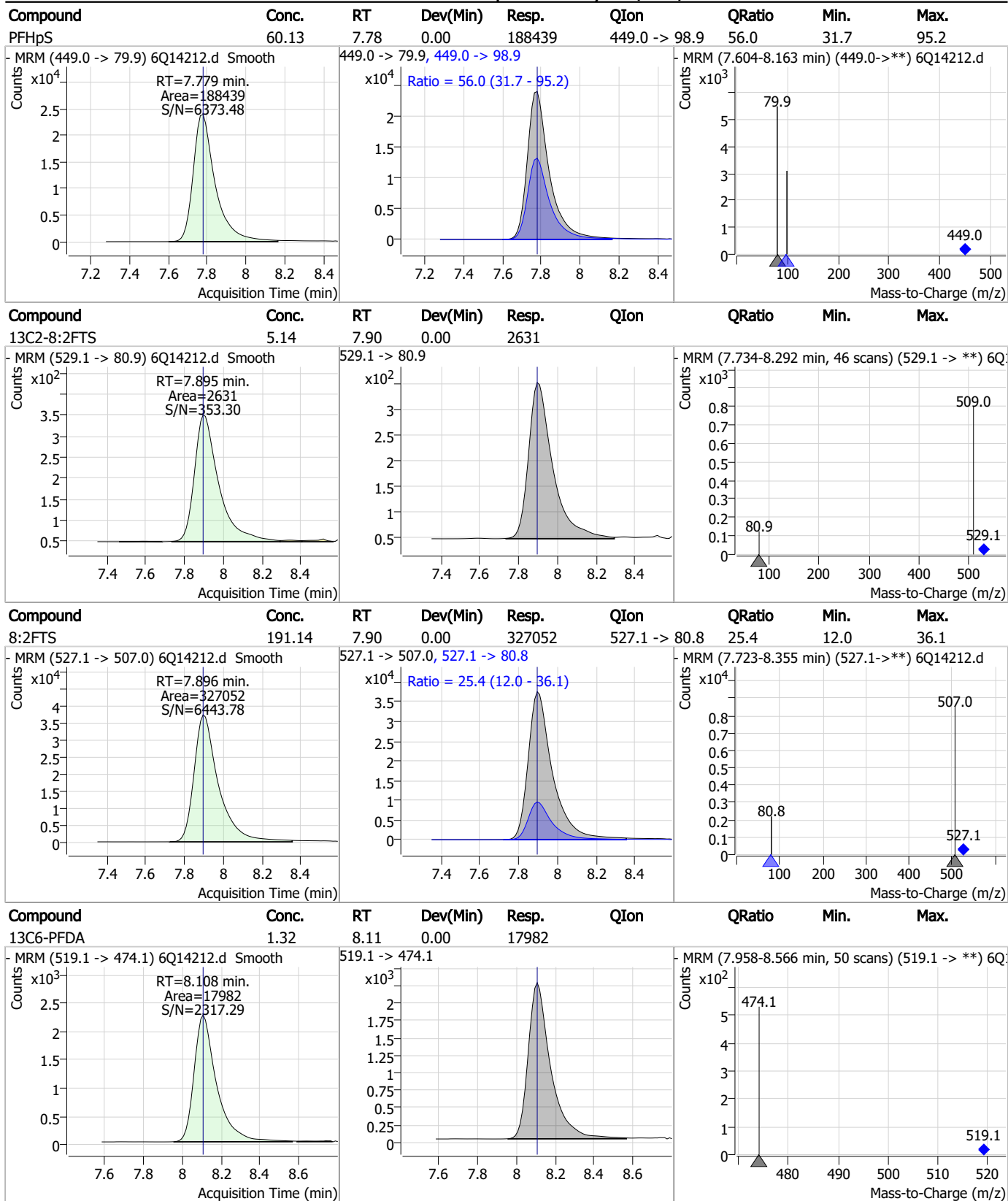
Perfluorinated Compounds by LC/MS/MS



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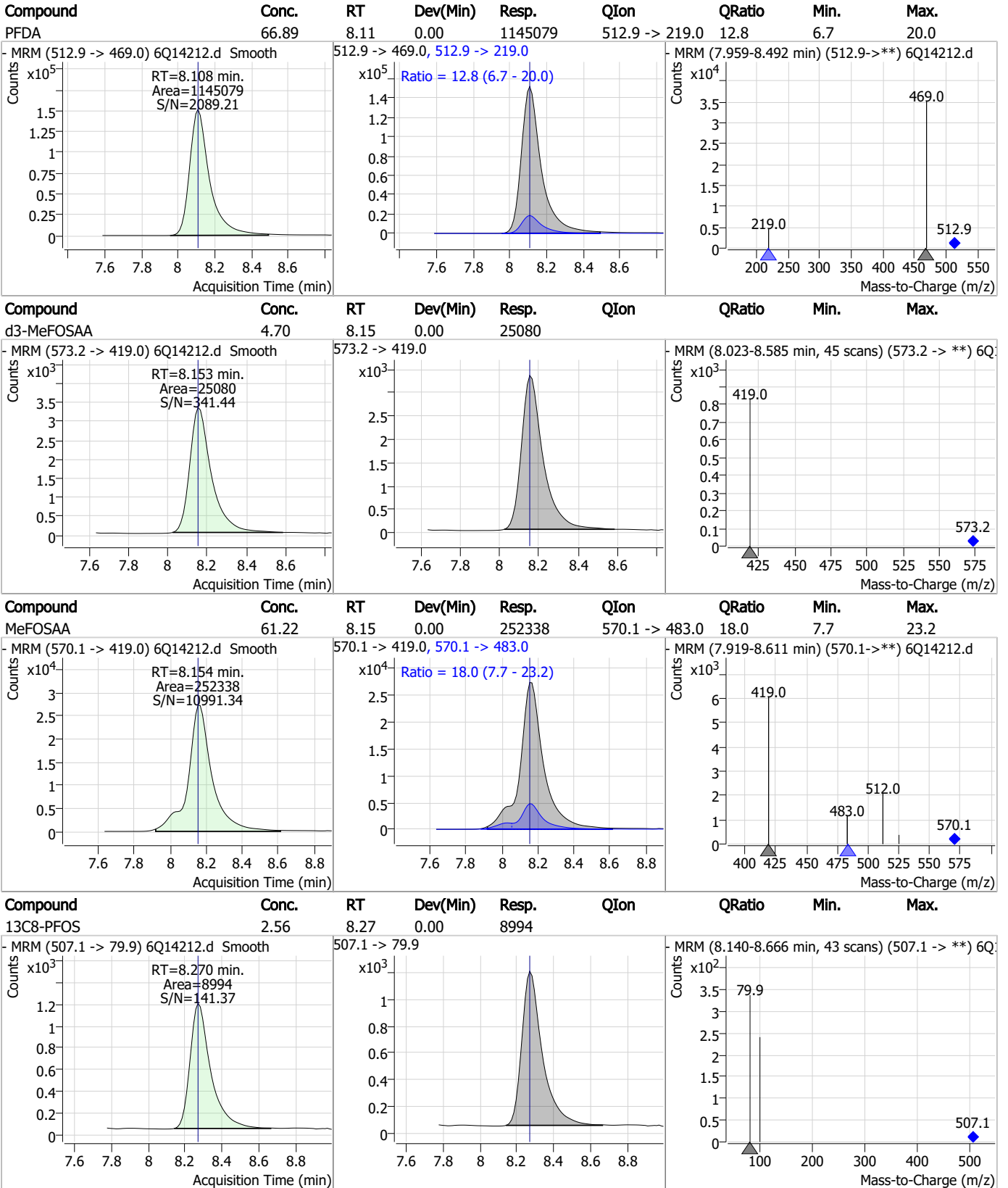
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

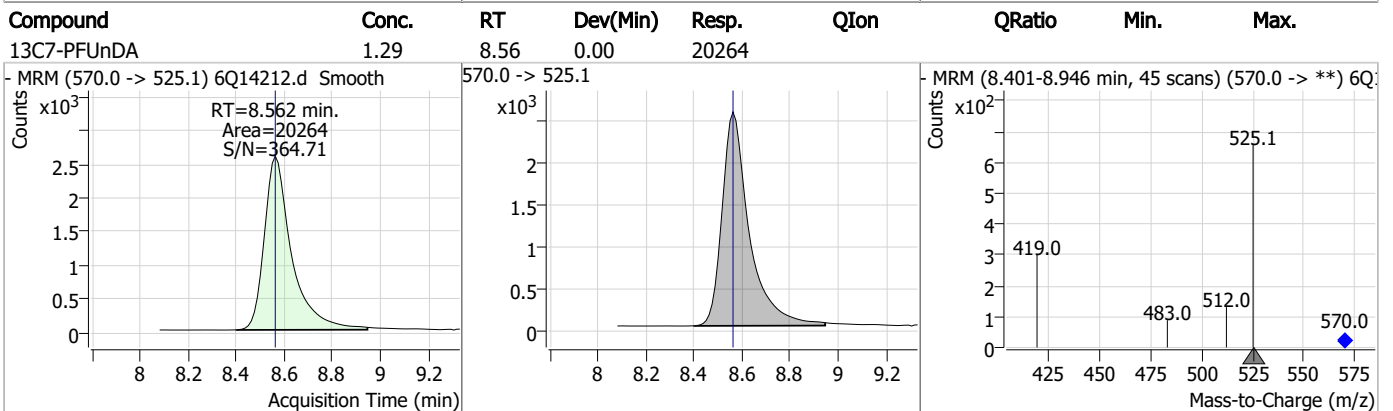
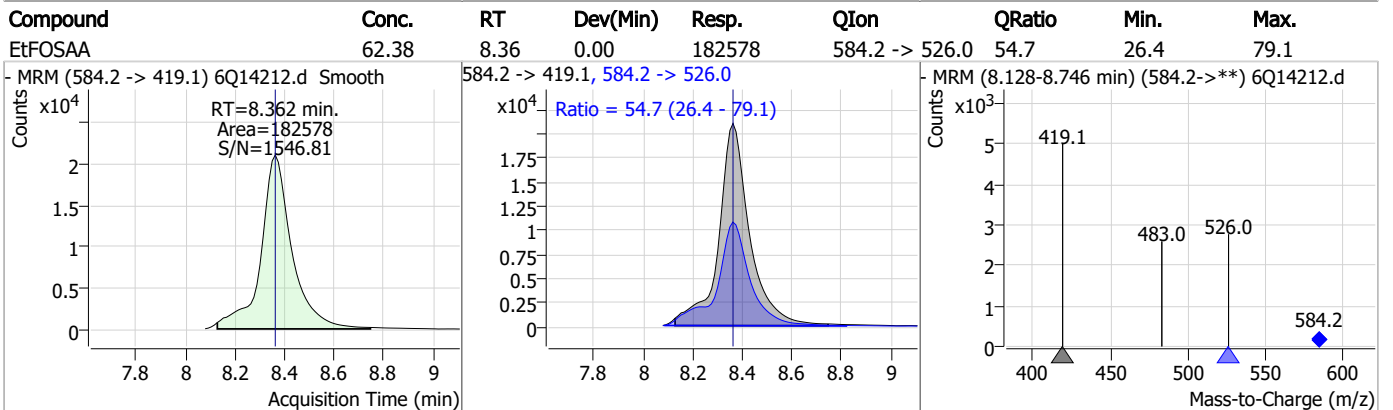
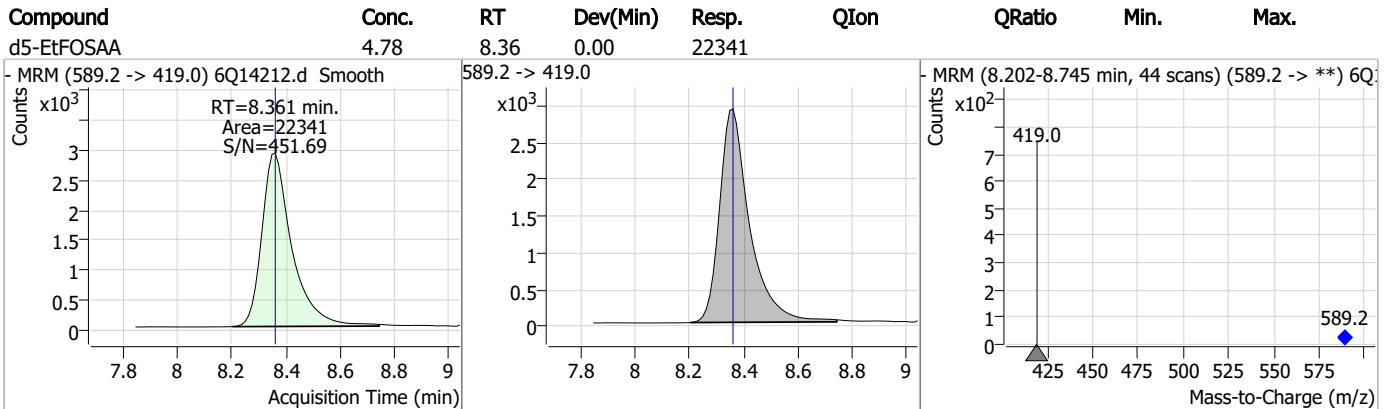
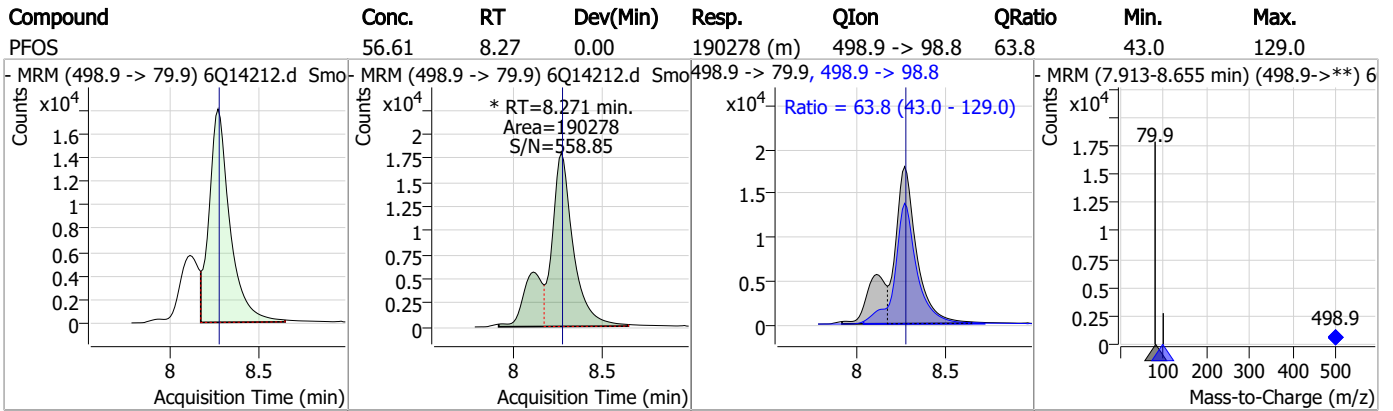


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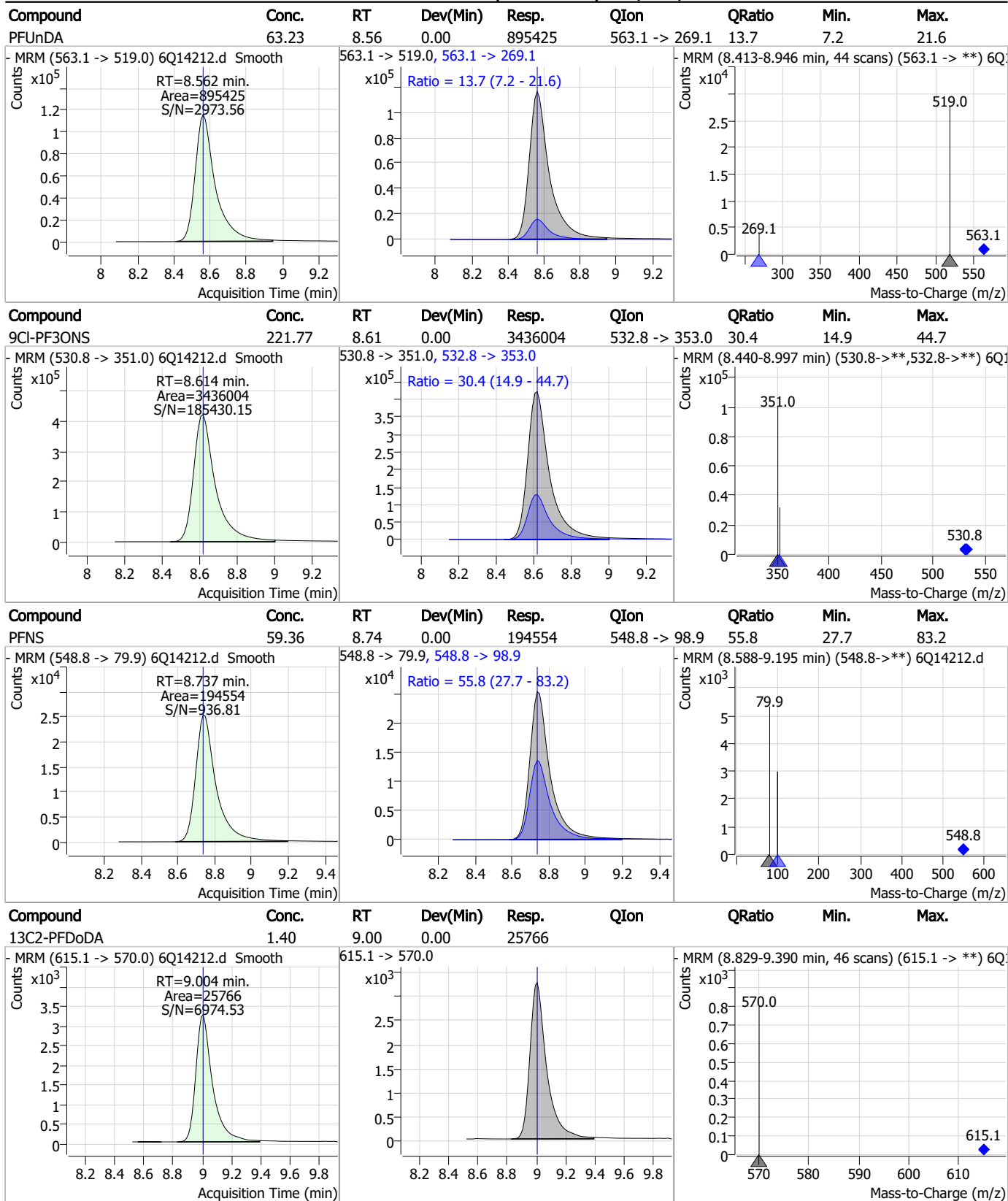
Perfluorinated Compounds by LC/MS/MS



7.7.9

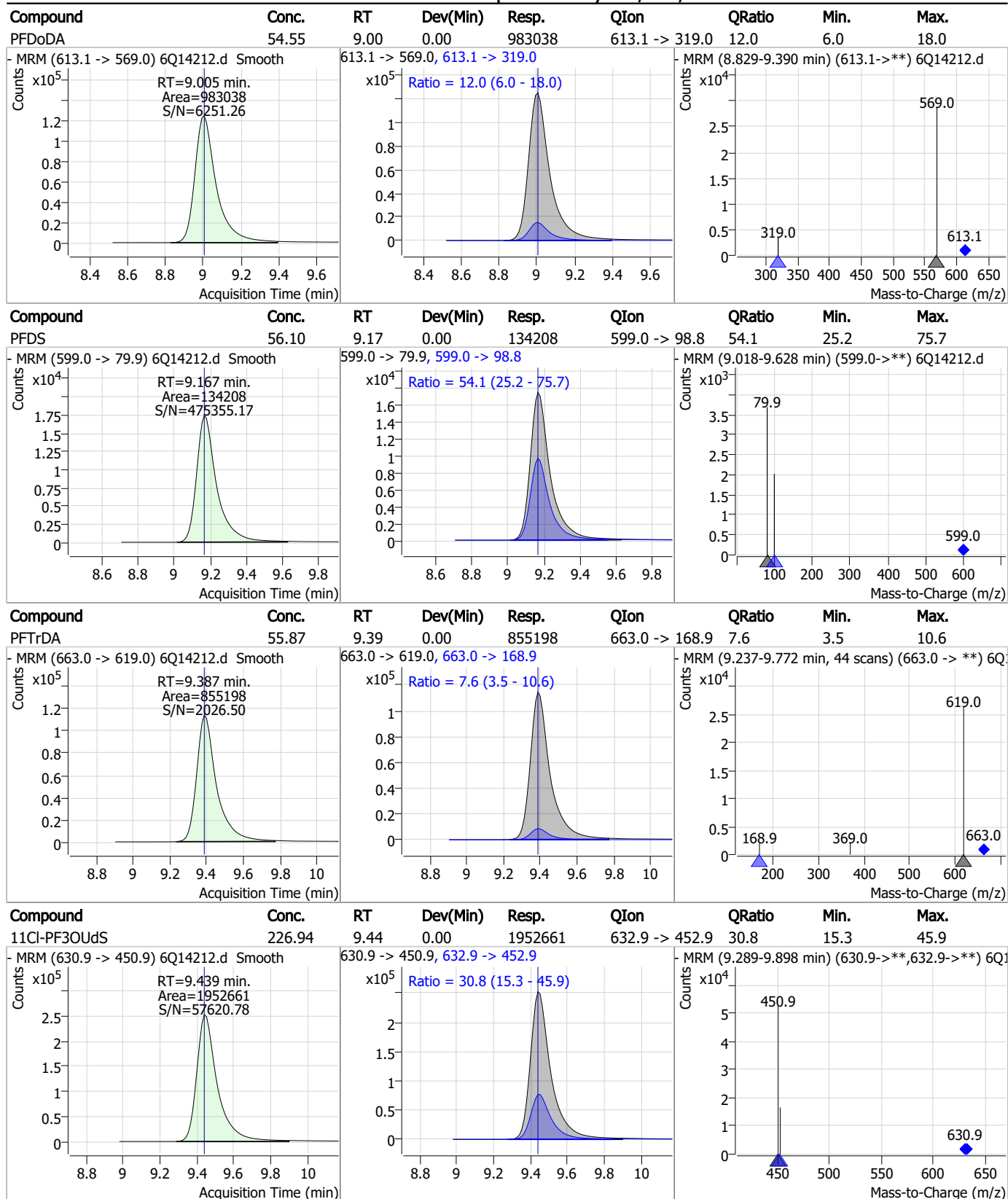
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Perfluorinated Compounds by LC/MS/MS



7.7.9
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Perfluorinated Compounds by LC/MS/MS

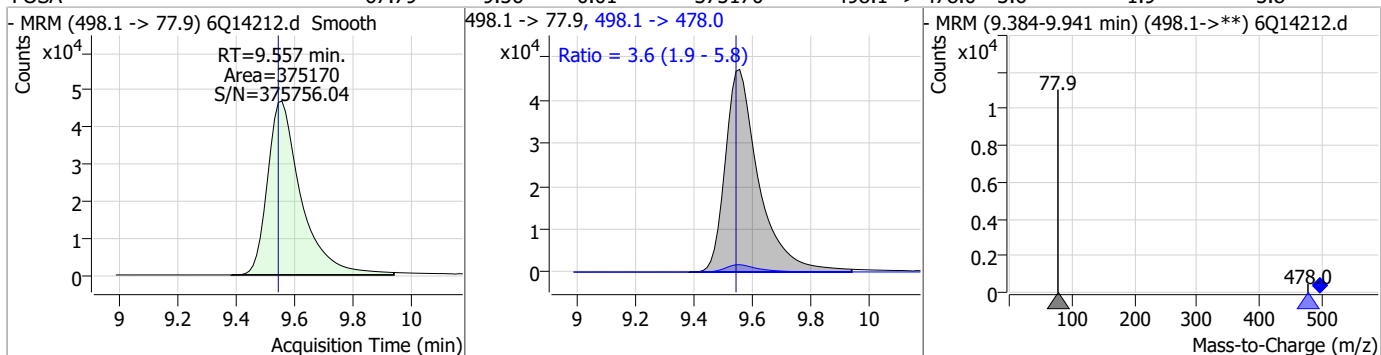


7.7.9
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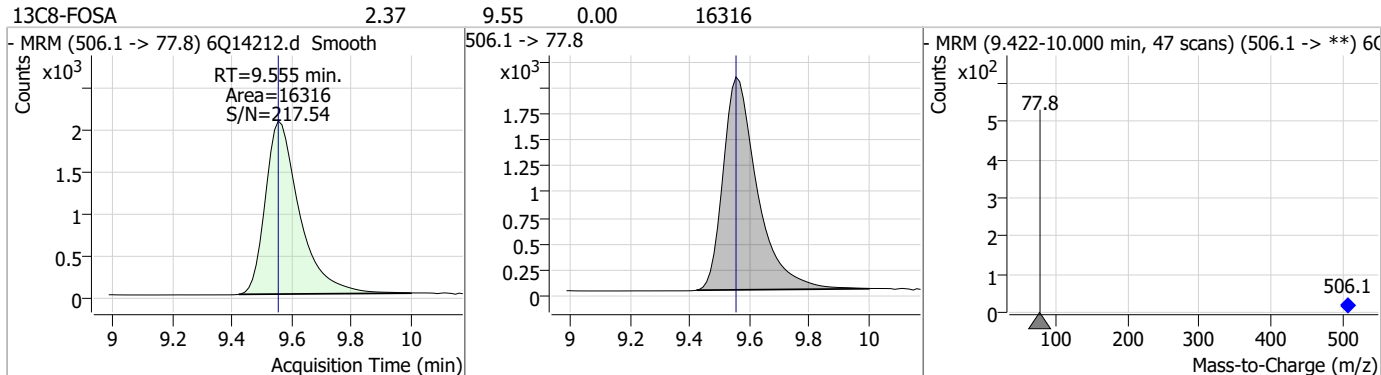


Perfluorinated Compounds by LC/MS/MS

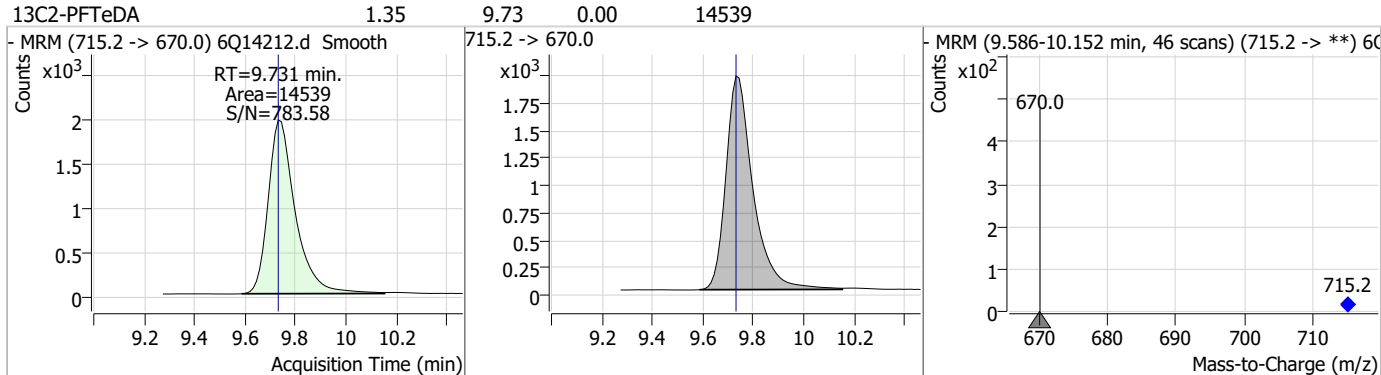
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	67.79	9.56	0.01	375170	498.1 -> 478.0	3.6	1.9	5.8



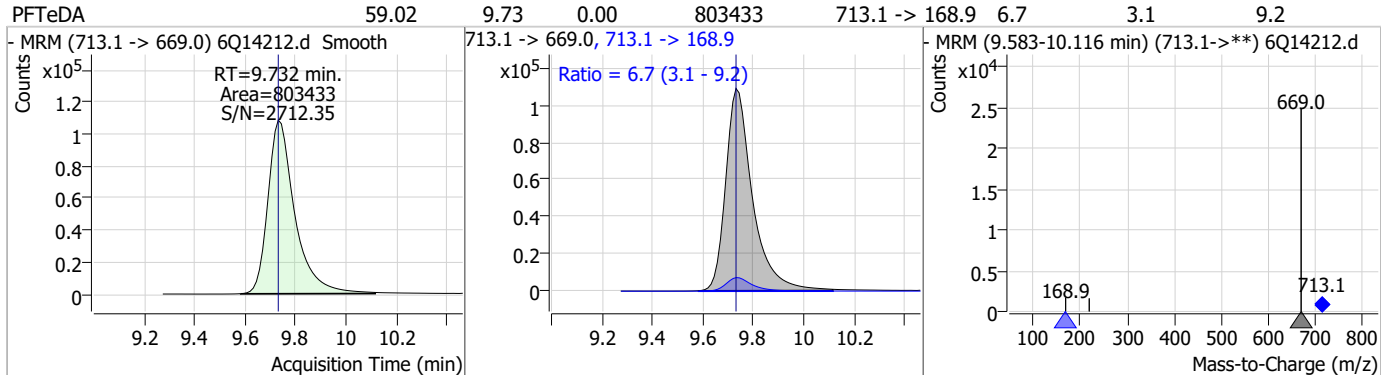
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.37	9.55	0.00	16316				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.35	9.73	0.00	14539				

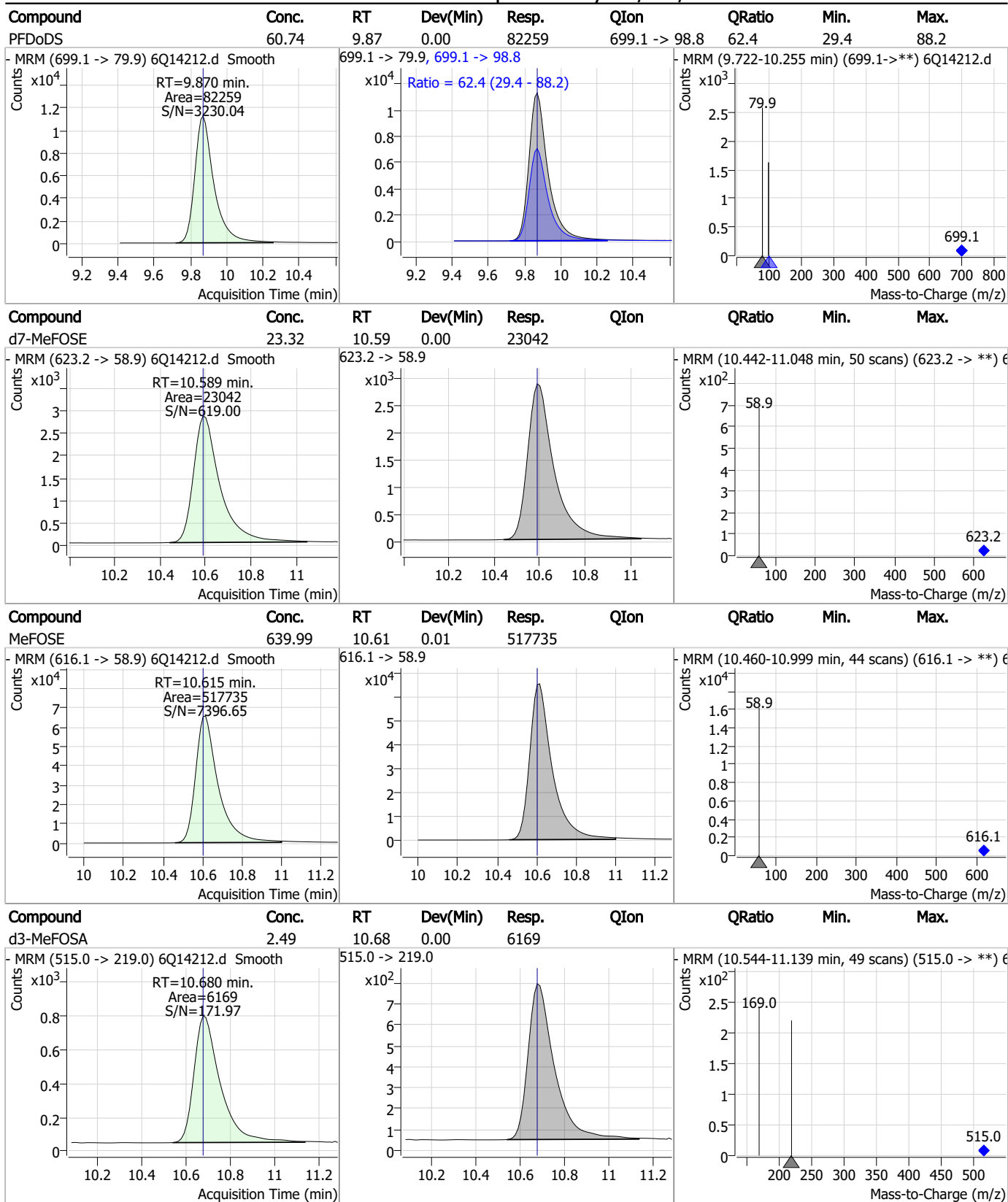


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	59.02	9.73	0.00	803433	713.1 -> 168.9	6.7	3.1	9.2



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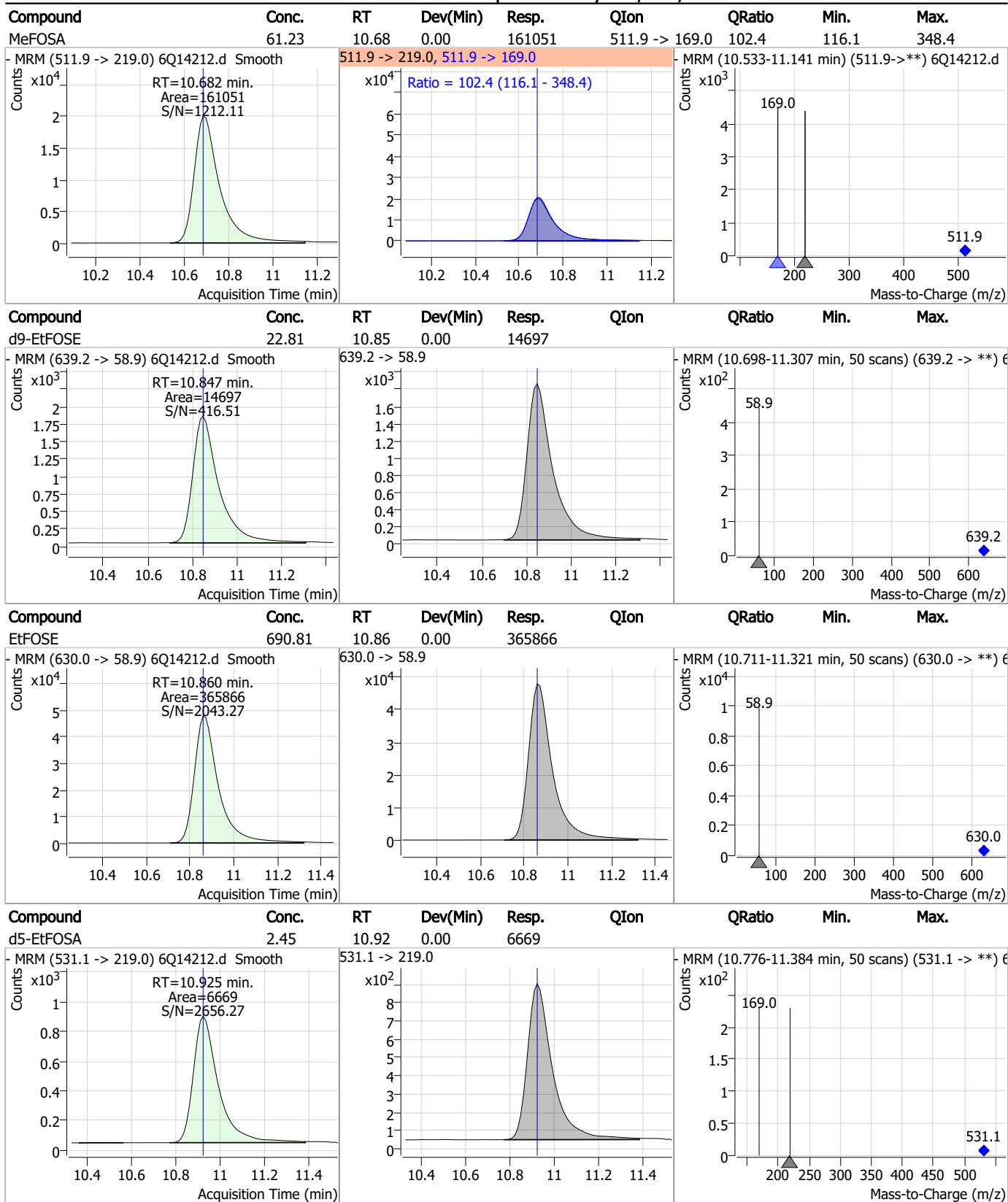
Perfluorinated Compounds by LC/MS/MS



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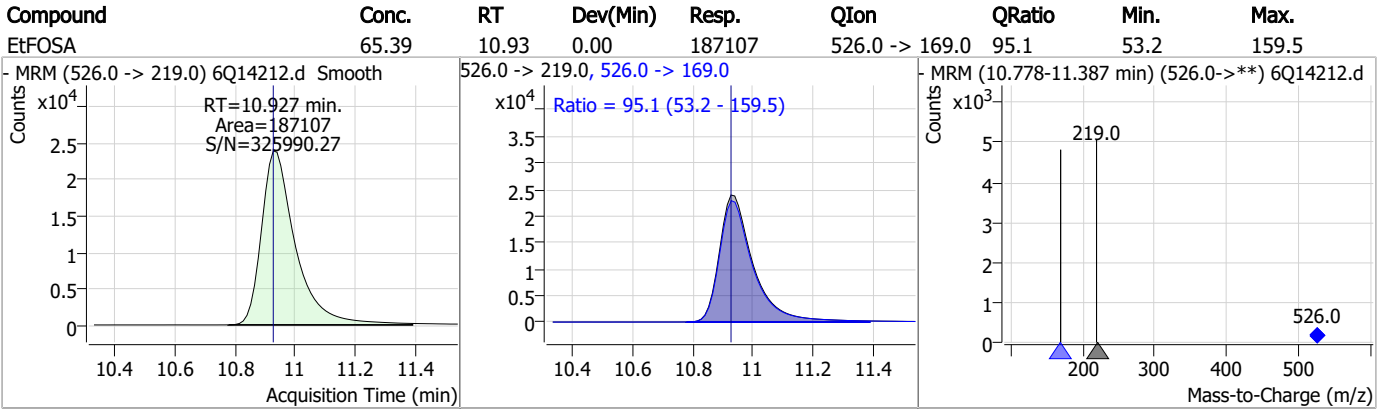


Perfluorinated Compounds by LC/MS/MS



7.7.9
7

Perfluorinated Compounds by LC/MS/MS



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7

Manual Integration Approval Summary

Sample Number: S6Q217-IC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14212.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 15:17 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.7.9.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14214.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 3:45:37 PM
 Sample Name : icv217-4
 Vial : P1-B1
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	87705	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	43795	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	37194	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	40860	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	69200	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	22159	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	17819	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	20170	1.25 µg/L	0.000
M2-PFDoDA	9.004	615.1 -> 570.0	23553	1.25 µg/L	0.000
M2-PFTeDA	9.731	715.2 -> 670.0	14106	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	16225	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	14747	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	9271	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8246	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2050	5.00 µg/L	-0.012
M2-6:2FTS	6.858	429.1 -> 80.9	2595	5.00 µg/L	0.000
M2-8:2FTS	7.895	529.1 -> 80.9	2447	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	26452	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	14476	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	22483	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	23856	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	15986	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6248	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	5573	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10253	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	38232	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	7011	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	82372	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	23214	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	22687	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	37656	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2050	4.89 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-6:2FTS	6.858	429.1 -> 80.9	2595	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2447	4.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.9%		
13C2-PFDoDA	9.004	615.1 -> 570.0	23553	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-PFTeDA	9.731	715.2 -> 670.0	14106	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C3-PFBS	5.456	302.1 -> 79.9	14747	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C3-PFHxS	7.212	402.1 -> 79.9	9271	2.39 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 = 95.4%		
13C4-PFBA	2.938	216.8 -> 171.9	87705	10.07 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C4-PFHpA	6.452	367.1 -> 322.0	40860	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C5-PFHxA	5.513	318.0 -> 273.0	37194	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C5-PFPeA	4.337	268.3 -> 223.0	43795	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C6-PFDA	8.108	519.1 -> 474.1	17819	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C7-PFUnDA	8.562	570.0 -> 525.1	20170	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C8-FOSA	9.555	506.1 -> 77.8	16225	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.3%		
13C8-PFOA	7.097	421.1 -> 376.0	69200	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C8-PFOS	8.270	507.1 -> 79.9	8246	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.8%		
13C9-PFNA	7.626	472.1 -> 427.0	22159	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.4%		
d3-MeFOSAA	8.153	573.2 -> 419.0	26452	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C3-HFPO-DA	5.878	286.9 -> 168.9	14476	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
d3-MeFOSA	10.680	515.0 -> 219.0	5573	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 89.9%		
d5-EtFOSAA	8.349	589.2 -> 419.0	22483	4.80 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.1%		
d7-MeFOSE	10.589	623.2 -> 58.9	23856	24.10 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 96.4%		
d9-EtFOSE	10.847	639.2 -> 58.9	15986	24.78 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
d5-EtFOSA	10.925	531.1 -> 219.0	6248	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.7%		
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	39112	10.28 µg/L	98
		327.1 -> 80.9	8912		
6:2FTS	6.871	427.1 -> 407.0	35770	11.08 µg/L	98
		427.1 -> 80.9	6708		
8:2FTS	7.896	527.1 -> 507.0	17774	11.17 µg/L	98
		527.1 -> 80.8	4133		
EtFOSAA	8.362	584.2 -> 419.1	8152	2.77 µg/L	m 96
		584.2 -> 526.0	4076		
FOSA	9.557	498.1 -> 77.9	14757	2.68 µg/L	99
		498.1 -> 478.0	508		
MeFOSAA	8.154	570.1 -> 419.0	11174	2.57 µg/L	99
		570.1 -> 483.0	1755		
PFBA	2.932	212.8 -> 168.9	18036	10.21 µg/L	100
PFBS	5.444	298.7 -> 79.9	11598	2.39 µg/L	94
		298.7 -> 98.8	5133		
PFDA	8.108	512.9 -> 469.0	43035	2.54 µg/L	98
		512.9 -> 219.0	6002		
PFDODA	8.992	613.1 -> 569.0	41728	2.53 µg/L	100
		613.1 -> 319.0	4941		
PFDS	9.167	599.0 -> 79.9	5566	2.54 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.453	599.0 -> 98.8	2943	2.52	µg/L	99
		363.1 -> 319.0	51033			
PFHpS	7.779	363.1 -> 169.0	7447	2.65	µg/L	93
		449.0 -> 79.9	7622			
PFHxA	5.516	449.0 -> 98.9	4451	2.72	µg/L	97
		313.0 -> 269.0	32343			
PFHxS	7.213	313.0 -> 118.9	1405	2.52	µg/L	m
		398.7 -> 79.9	8549			
PFNA	7.627	398.7 -> 98.9	4657	2.47	µg/L	97
		463.0 -> 419.0	27822			
PFNS	8.737	463.0 -> 219.0	6254	2.55	µg/L	95
		548.8 -> 79.9	7652			
PFOA	7.098	548.8 -> 98.9	4550	2.47	µg/L	96
		413.0 -> 369.0	63074			
PFOS	8.271	413.0 -> 169.0	9056	2.68	µg/L	m
		498.9 -> 79.9	8273			
PFPeA	4.338	498.9 -> 98.8	4946	5.15	µg/L	100
		263.0 -> 219.0	39508			
PFPeS	6.517	349.1 -> 79.9	10624	2.48	µg/L	100
		349.1 -> 98.9	5625			
PFTeDA	9.732	713.1 -> 669.0	32034	2.43	µg/L	97
		713.1 -> 168.9	2279			
PFTrDA	9.387	663.0 -> 619.0	35918	2.57	µg/L	97
		663.0 -> 168.9	2909			
PFUnDA	8.562	563.1 -> 519.0	38333	2.72	µg/L	99
		563.1 -> 269.1	5657			
11CI-PF3OUdS	9.439	630.9 -> 450.9	79739	9.96	µg/L	99
		632.9 -> 452.9	24914			
9CI-PF3ONS	8.614	530.8 -> 351.0	144491	10.02	µg/L	99
		532.8 -> 353.0	42270			
ADONA	6.704	376.9 -> 250.9	287652	10.02	µg/L	99
		376.9 -> 84.8	64027			
HFPO-DA	5.879	284.9 -> 168.9	12668	10.98	µg/L	99
		284.9 -> 184.9	1583			
3:3FTCA	3.791	241.0 -> 177.0	5334	13.11	µg/L	96
		241.0 -> 117.0	773			
5:3FTCA	6.156	341.0 -> 237.1	176534	64.91	µg/L	95
		341.0 -> 217.0	161569			
7:3FTCA	7.567	441.0 -> 316.9	96703	66.95	µg/L	98
		441.0 -> 336.9	179406			
EtFOSA	10.927	526.0 -> 219.0	7315	2.73	µg/L	87
		526.0 -> 169.0	6827			
EtFOSE	10.860	630.0 -> 58.9	14341	24.90	µg/L	100
		511.9 -> 219.0	6384			
MeFOSA	10.682	511.9 -> 169.0	6453	2.69	µg/L	#
		616.1 -> 58.9	21318			
MeFOSE	10.615	699.1 -> 79.9	3242	25.45	µg/L	100
		699.1 -> 98.8	2100			
PFDoDS	9.870	295.0 -> 201.0	3774	2.61	µg/L	92
		295.0 -> 84.9	1839			
NFDHA	5.395	279.0 -> 85.1	11475	5.60	µg/L	94
		229.0 -> 84.9	10819			
PFMBA	4.738	314.8 -> 134.9	81792	4.85	µg/L	100
		314.8 -> 82.9	2013			

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



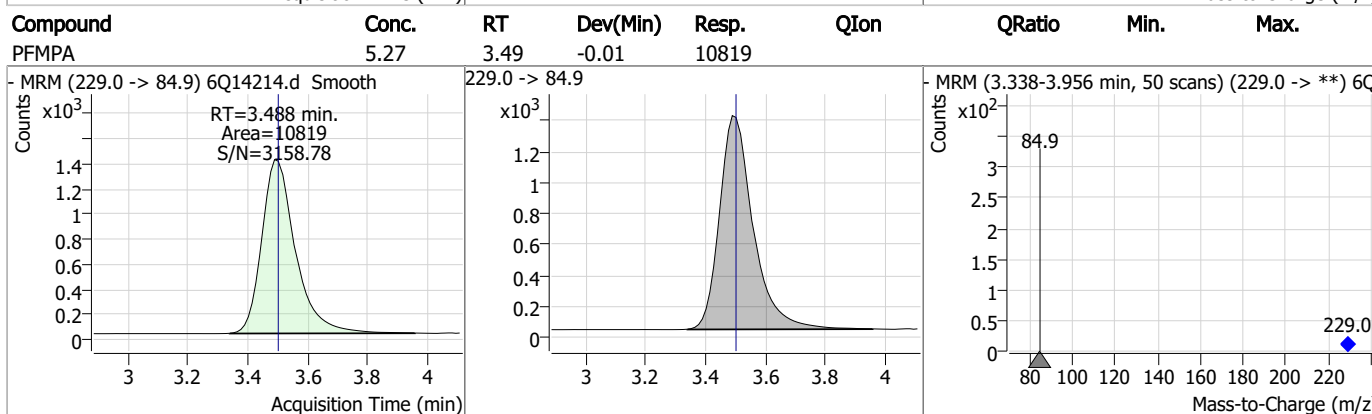
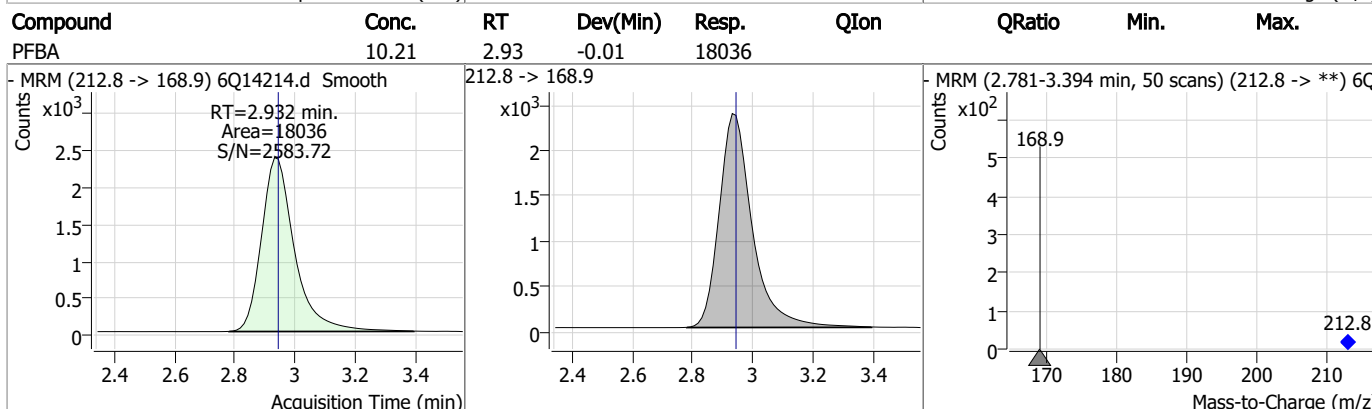
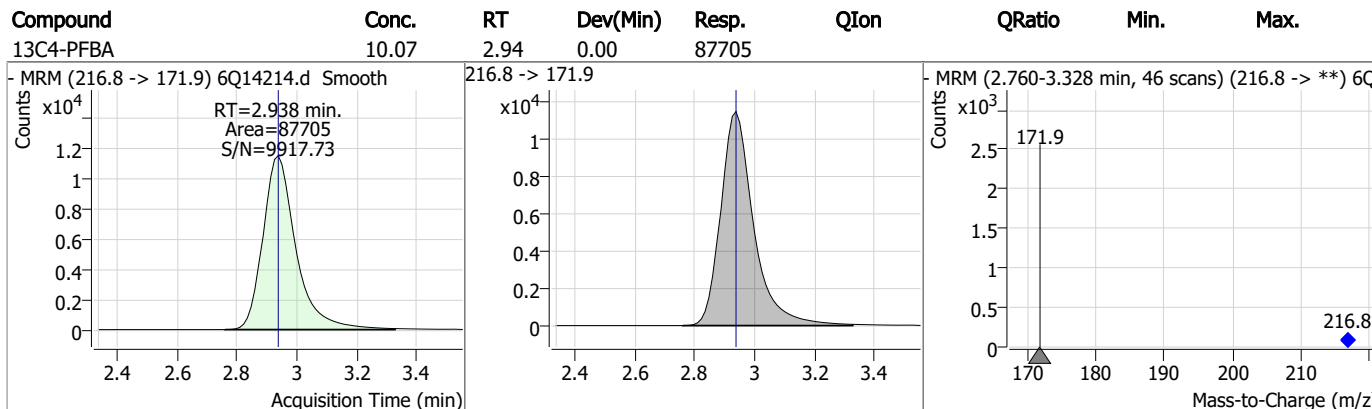
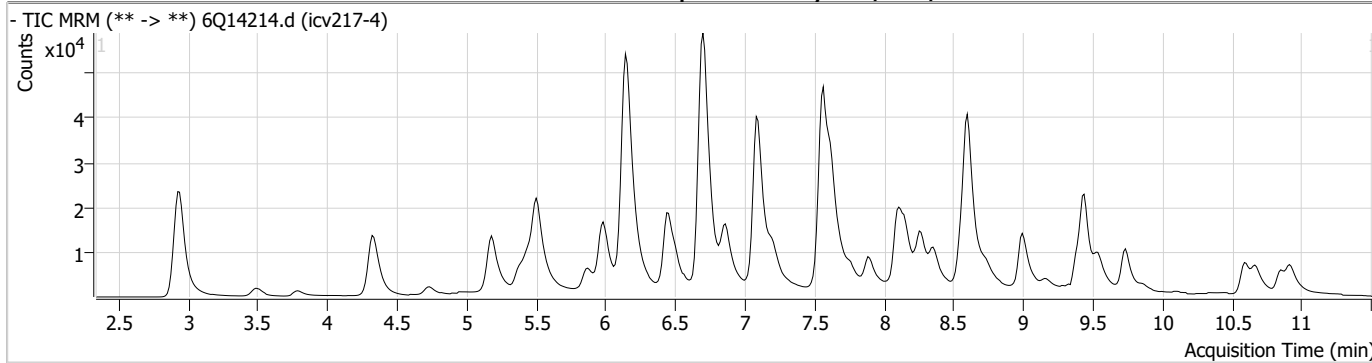
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.10

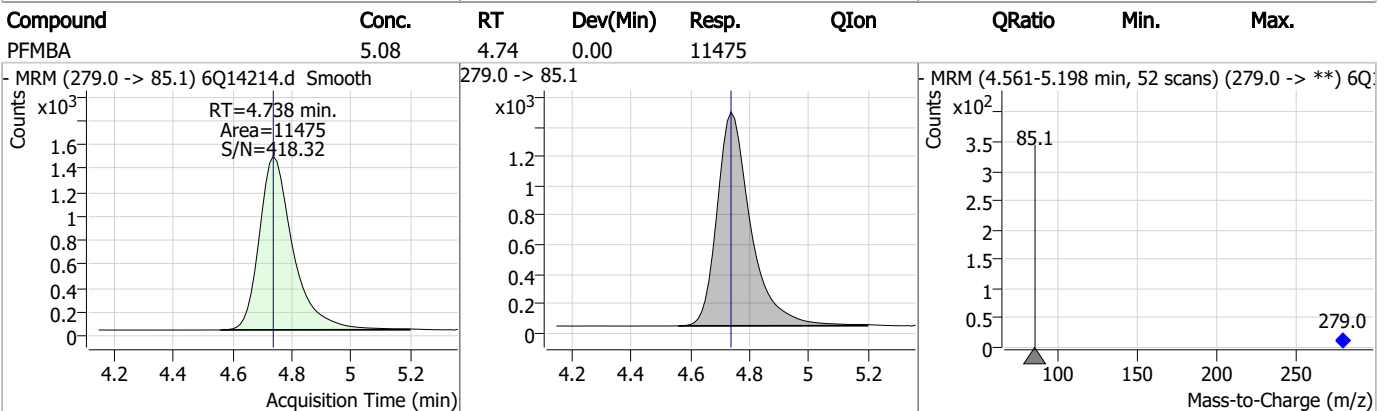
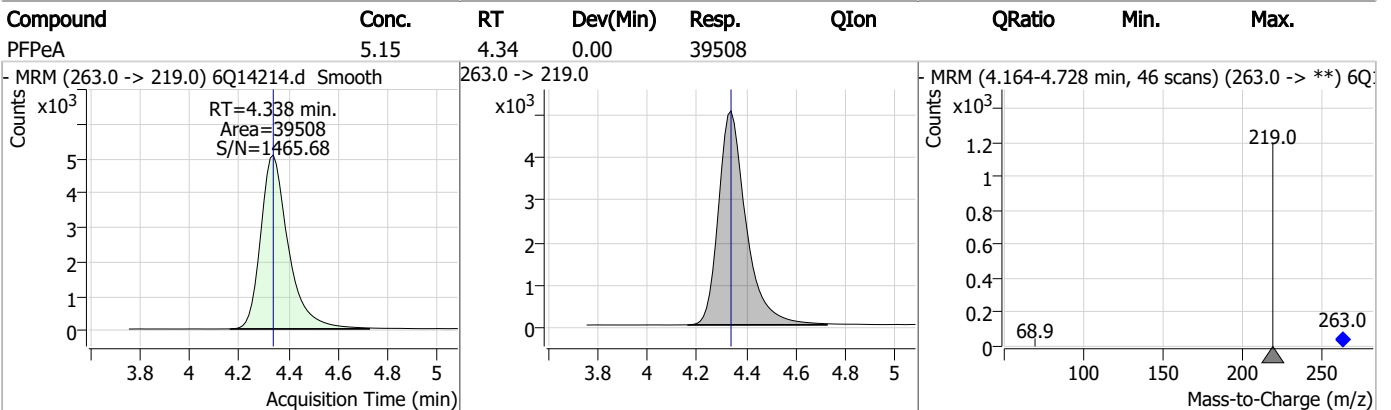
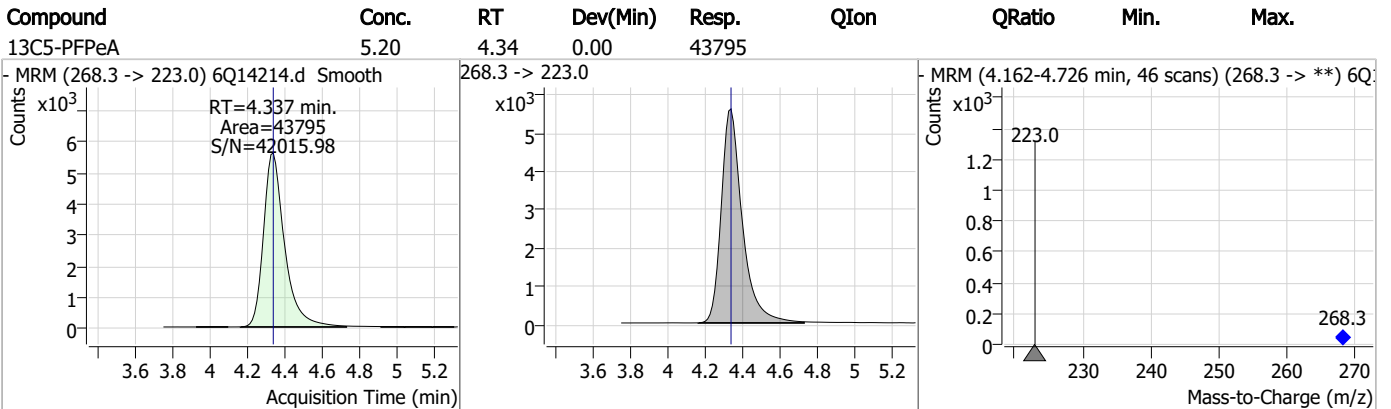
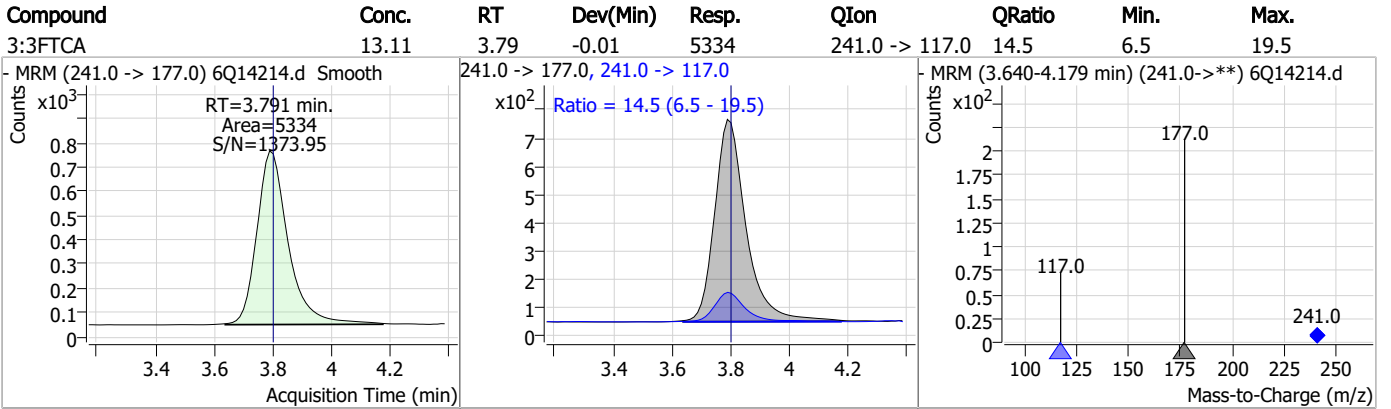
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Perfluorinated Compounds by LC/MS/MS

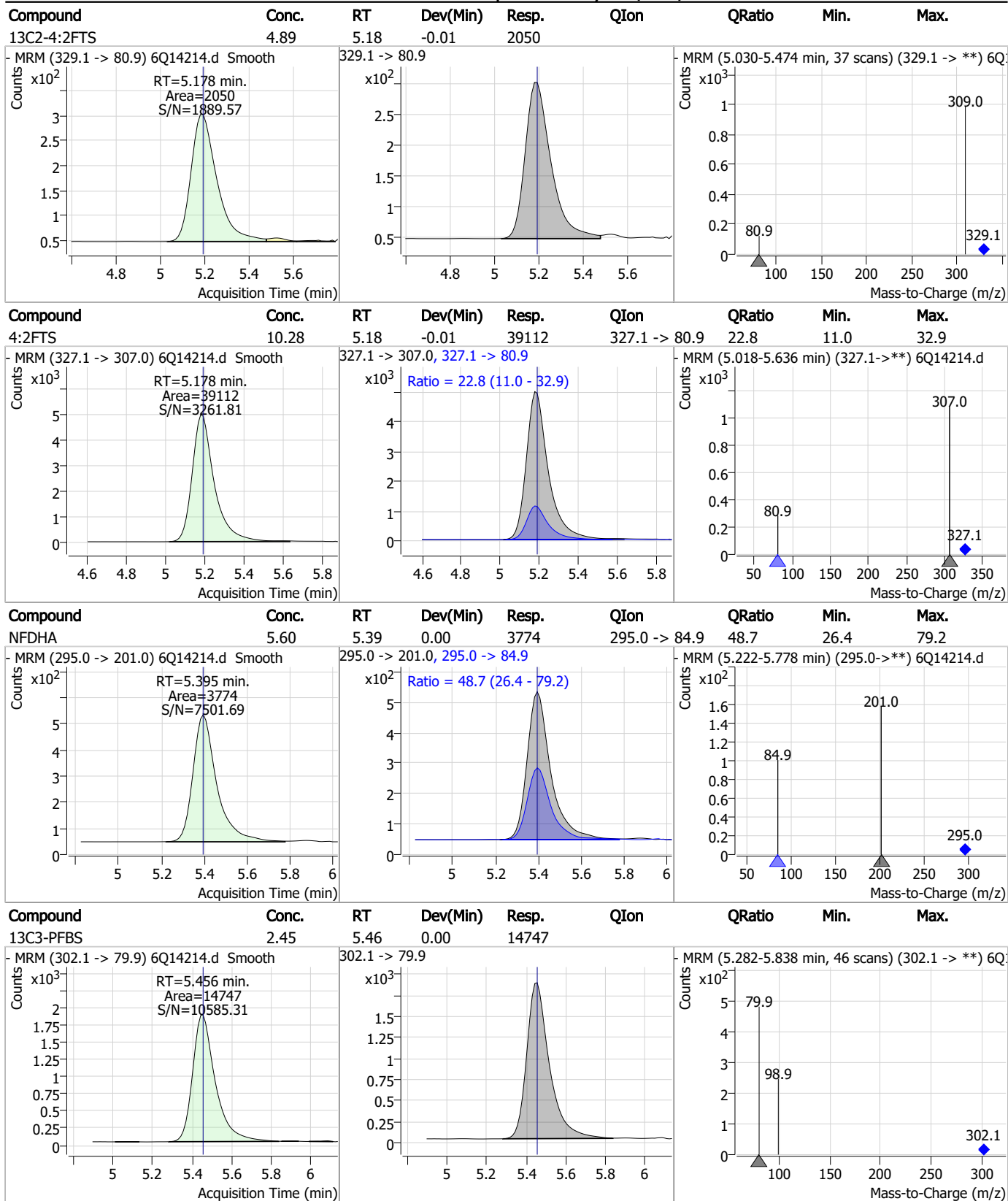


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Perfluorinated Compounds by LC/MS/MS

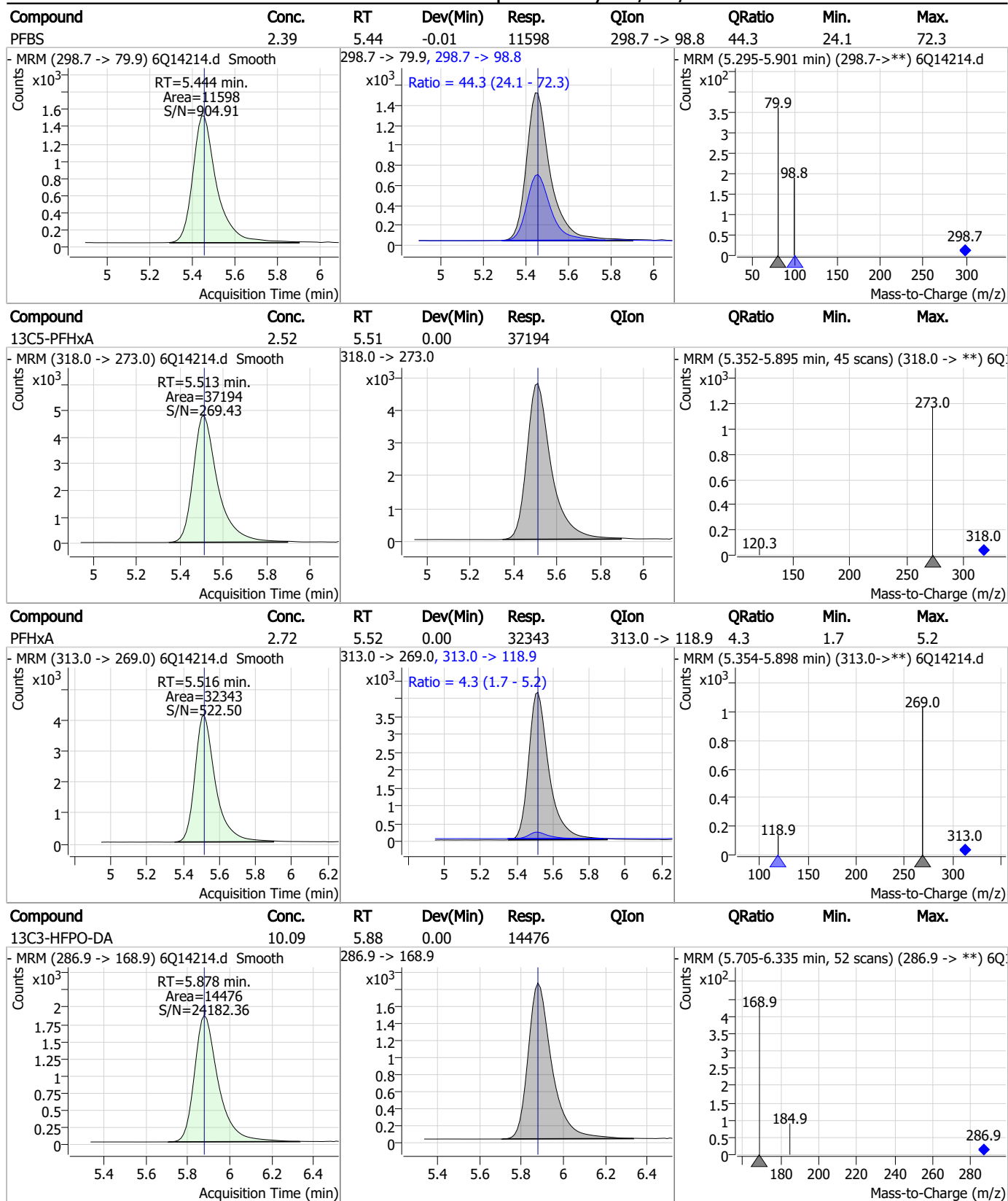


Perfluorinated Compounds by LC/MS/MS



7.7.10
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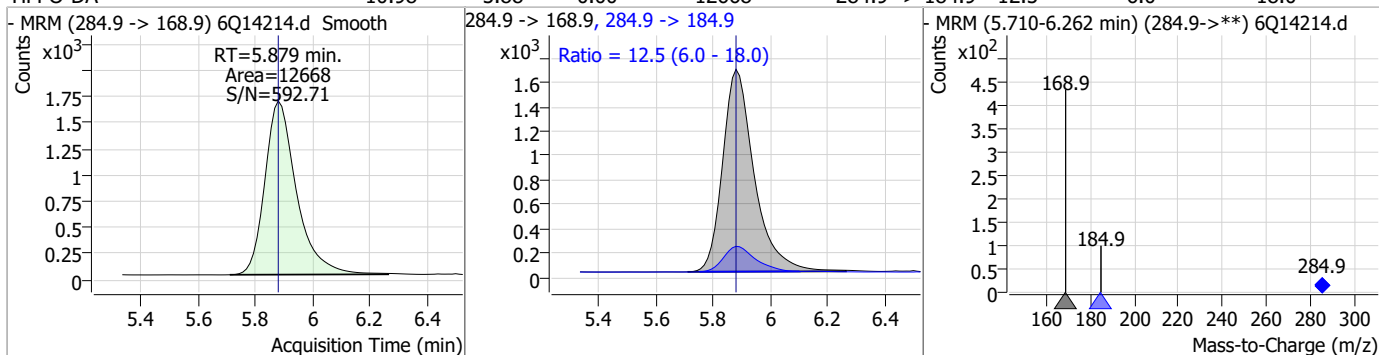
Perfluorinated Compounds by LC/MS/MS



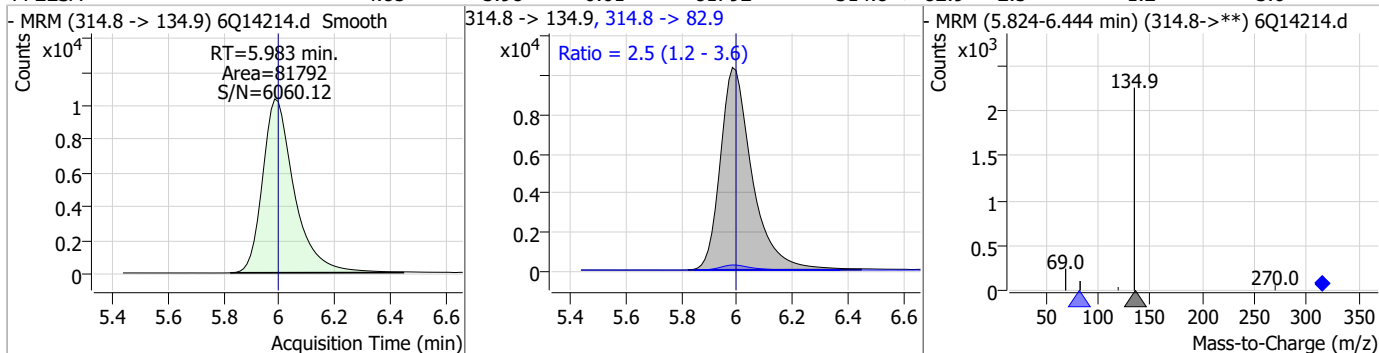
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Perfluorinated Compounds by LC/MS/MS

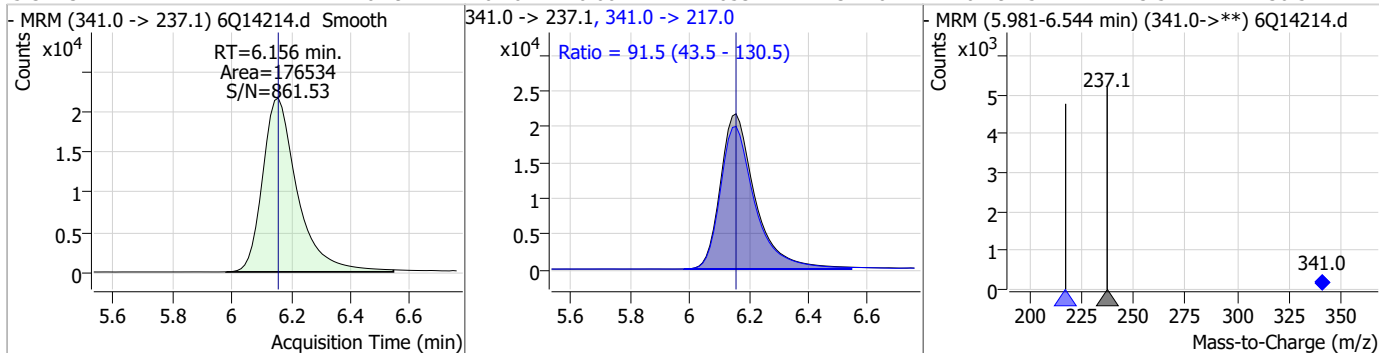
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.98	5.88	0.00	12668	284.9 -> 184.9	12.5	6.0	18.0



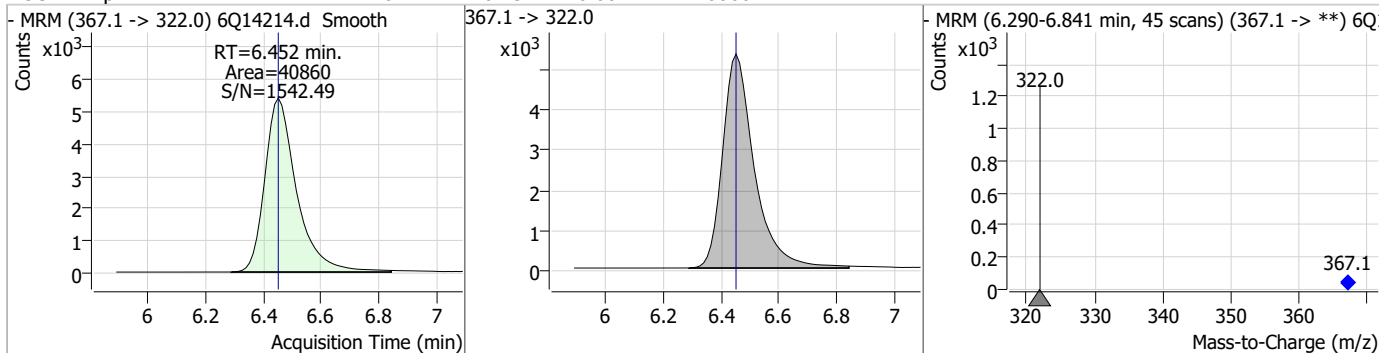
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.85	5.98	-0.01	81792	314.8 -> 82.9	2.5	1.2	3.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	64.91	6.16	0.00	176534	341.0 -> 217.0	91.5	43.5	130.5



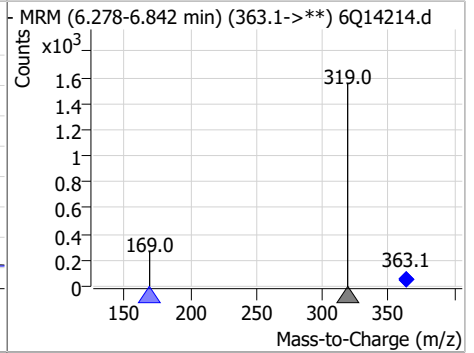
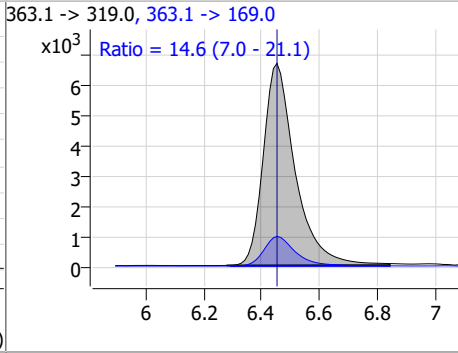
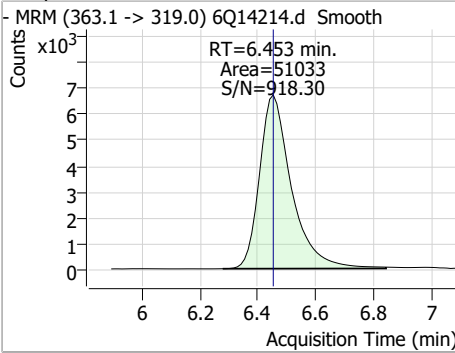
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.67	6.45	0.00	40860	367.1 -> 322.0			



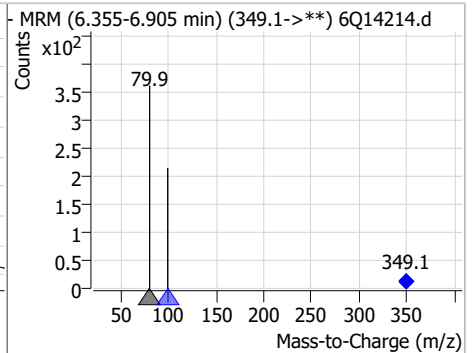
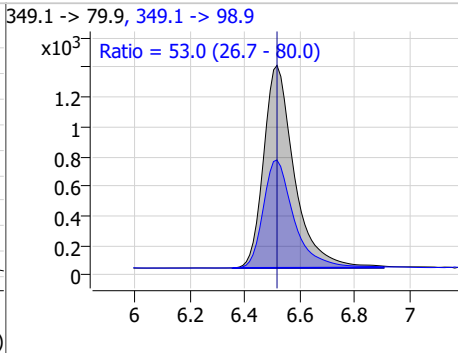
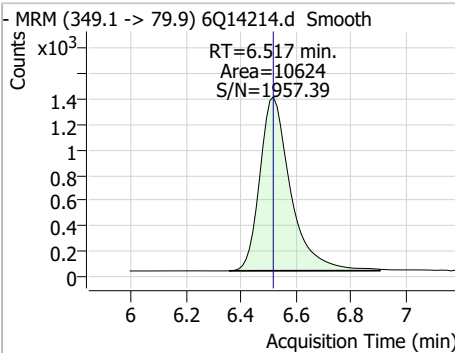
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

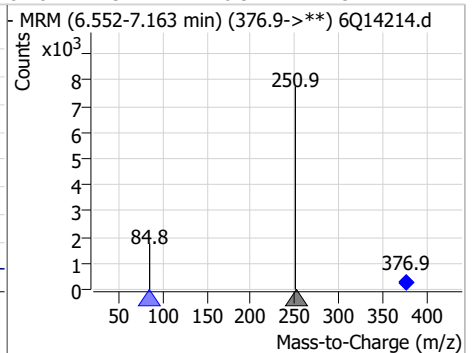
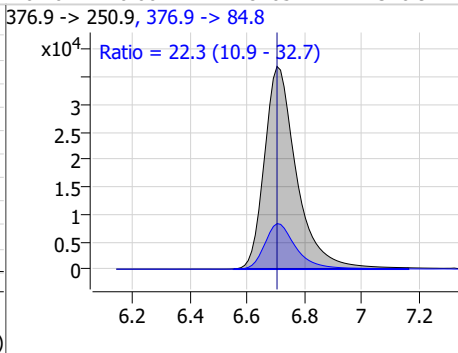
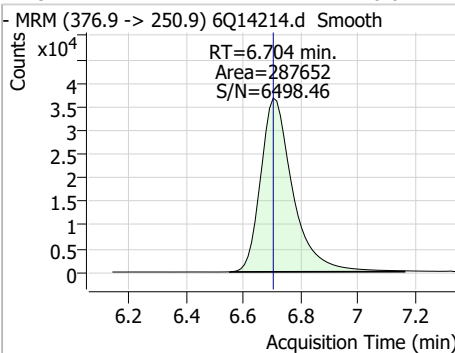
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.52	6.45	0.00	51033	363.1 -> 169.0	14.6	7.0	21.1



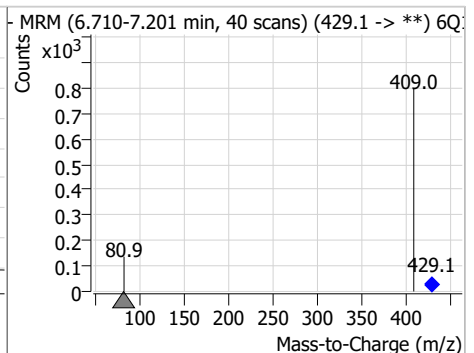
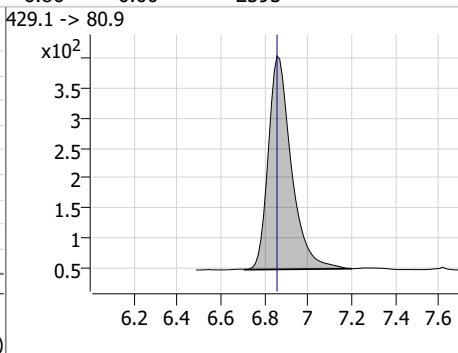
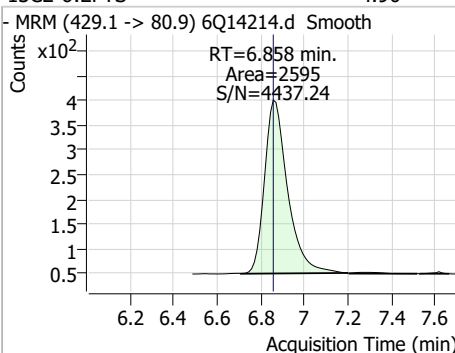
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.48	6.52	0.00	10624	349.1 -> 98.9	53.0	26.7	80.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	10.02	6.70	0.00	287652	376.9 -> 84.8	22.3	10.9	32.7

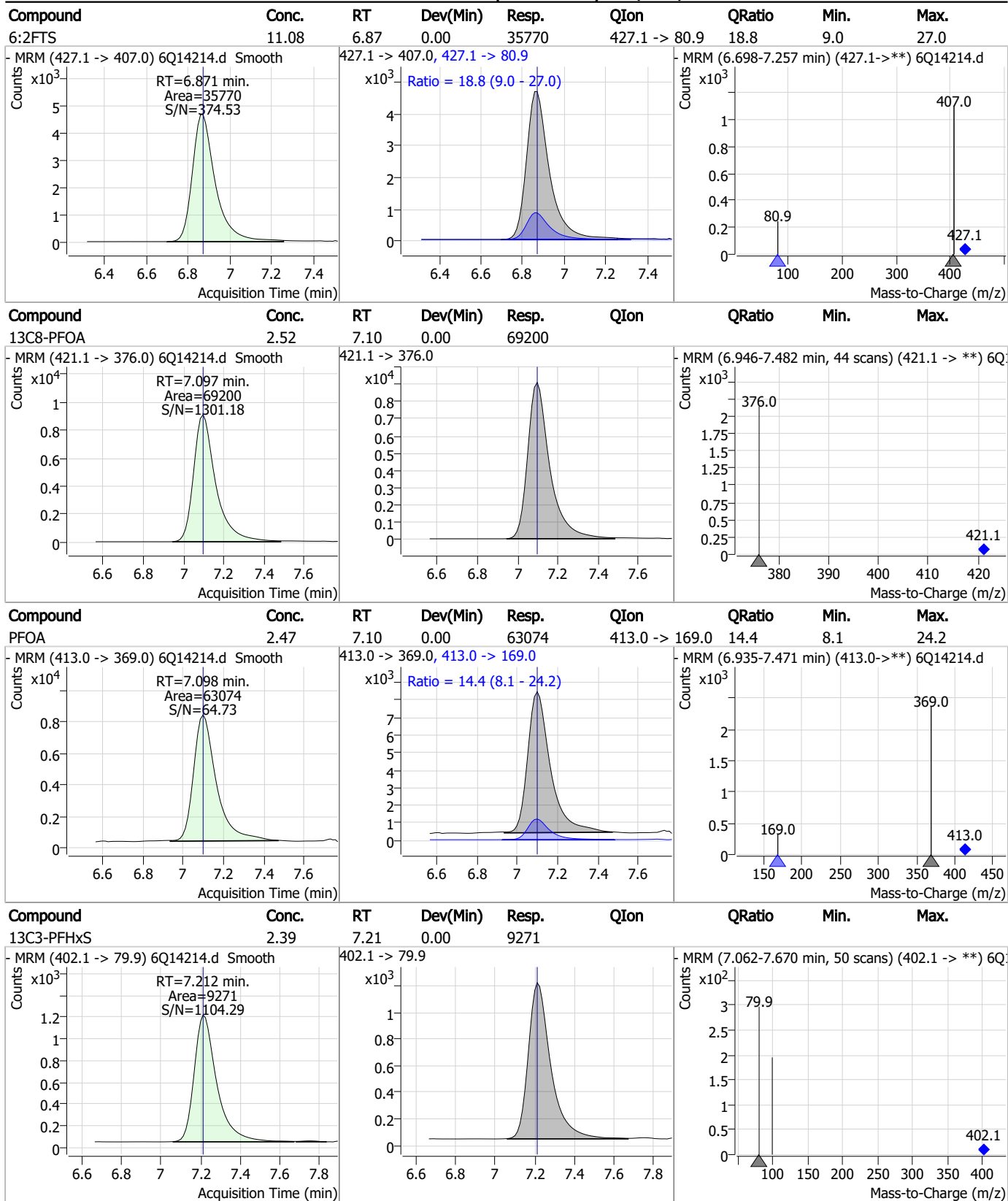


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.90	6.86	0.00	2595	429.1 -> 80.9			



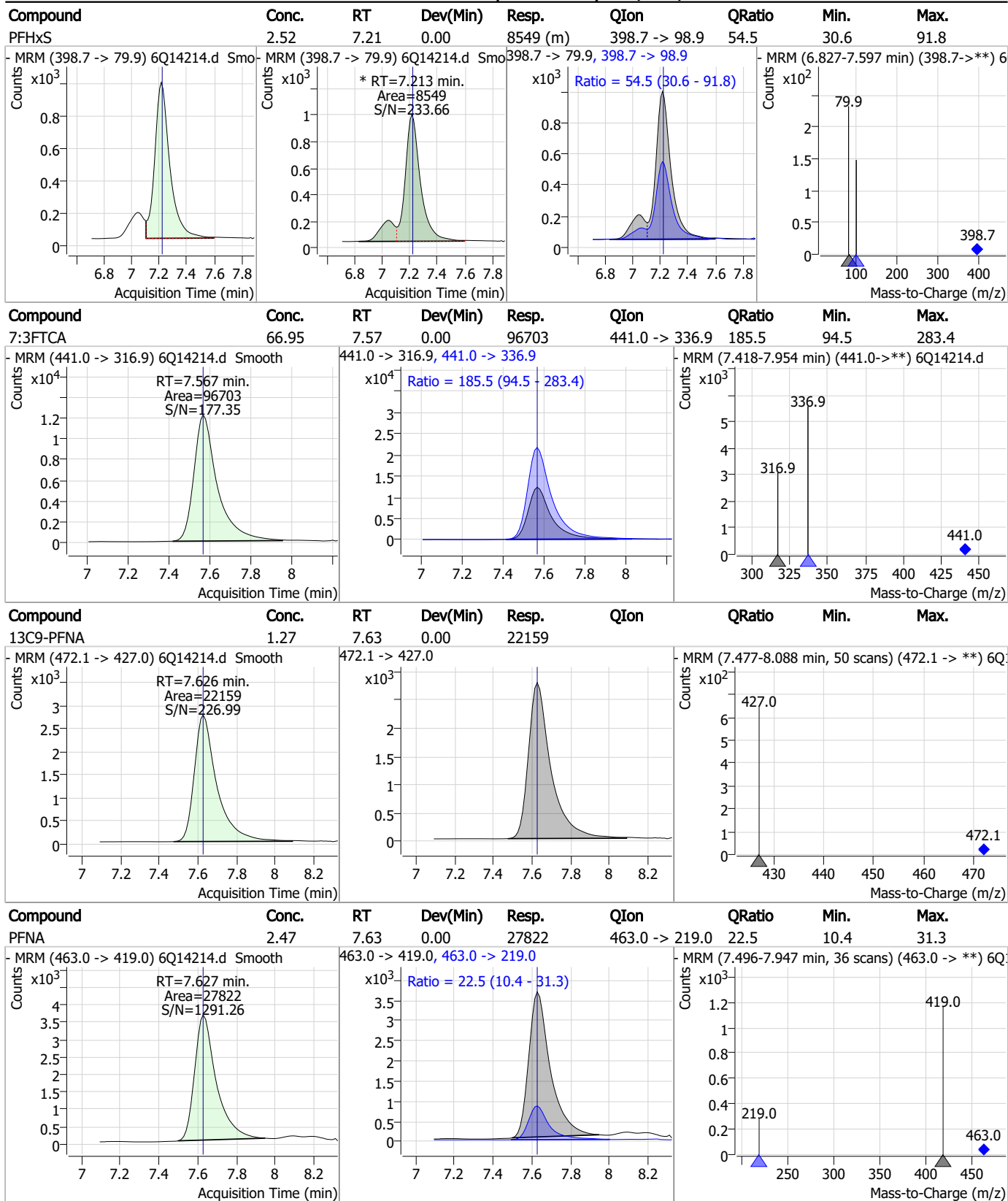
7.7.10
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Perfluorinated Compounds by LC/MS/MS



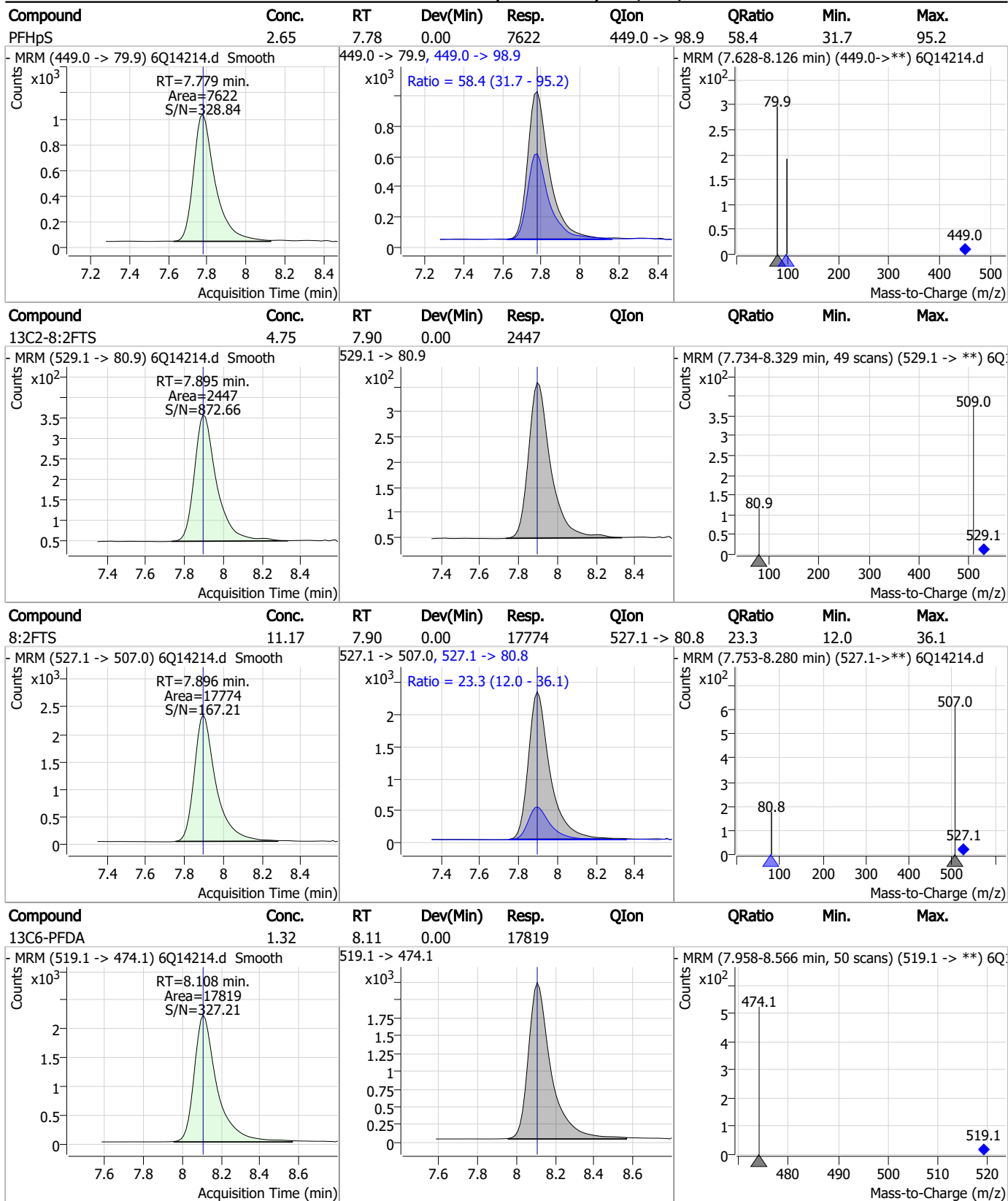
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



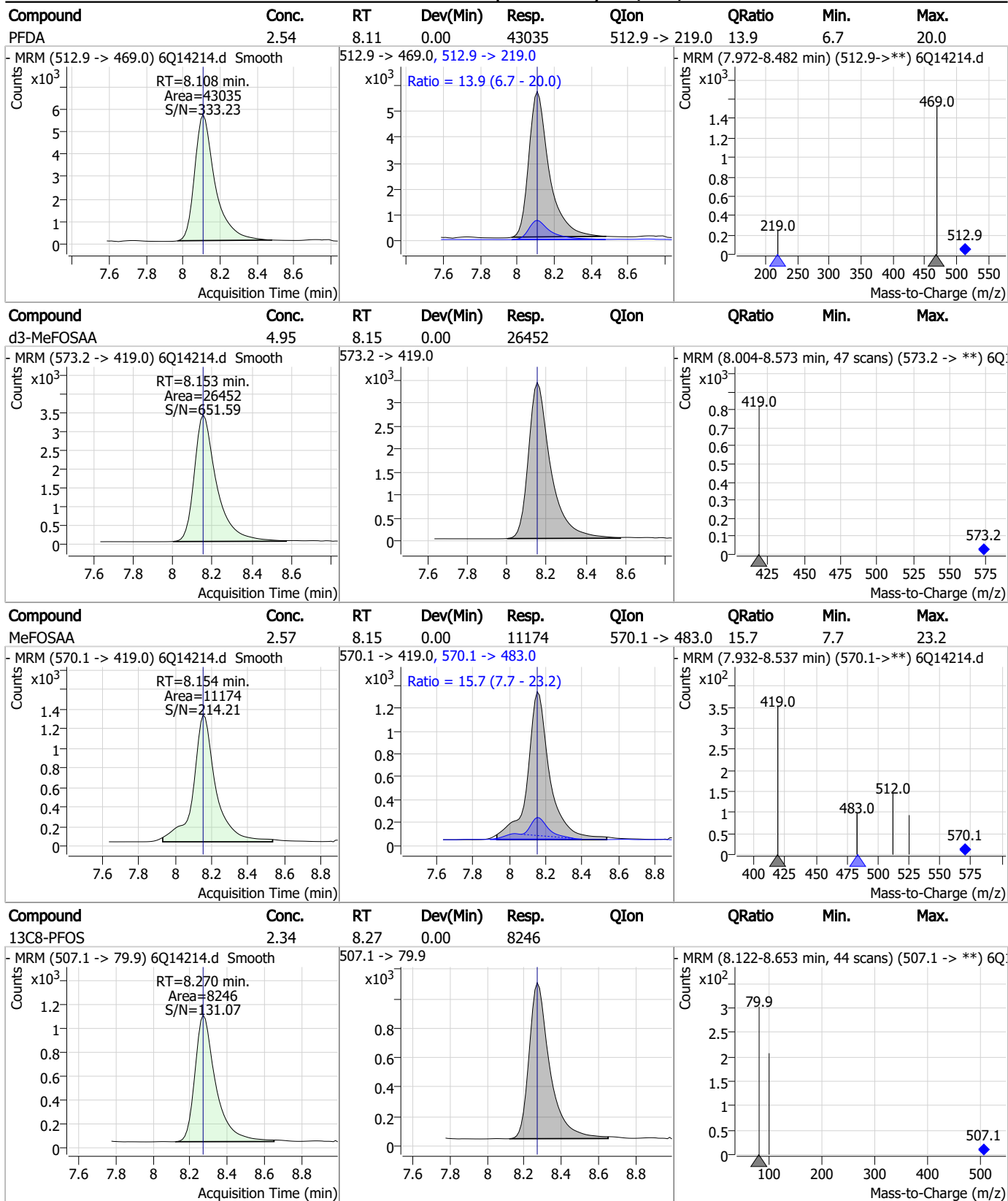
7.7.10
7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

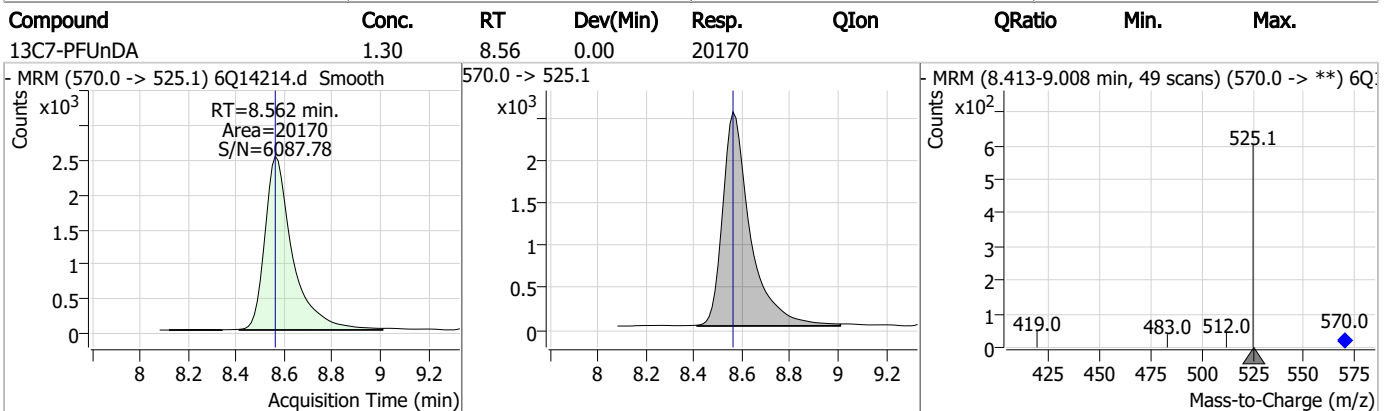
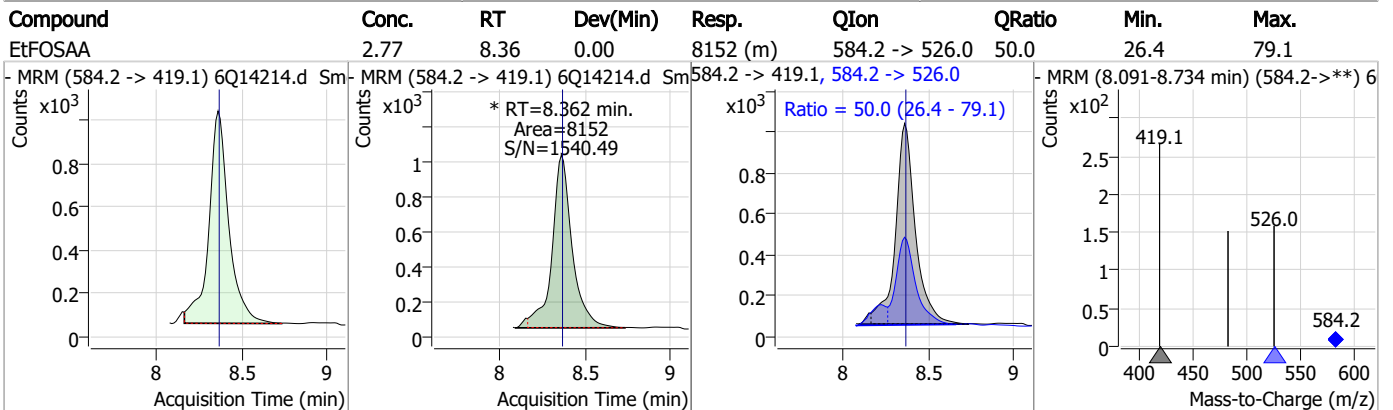
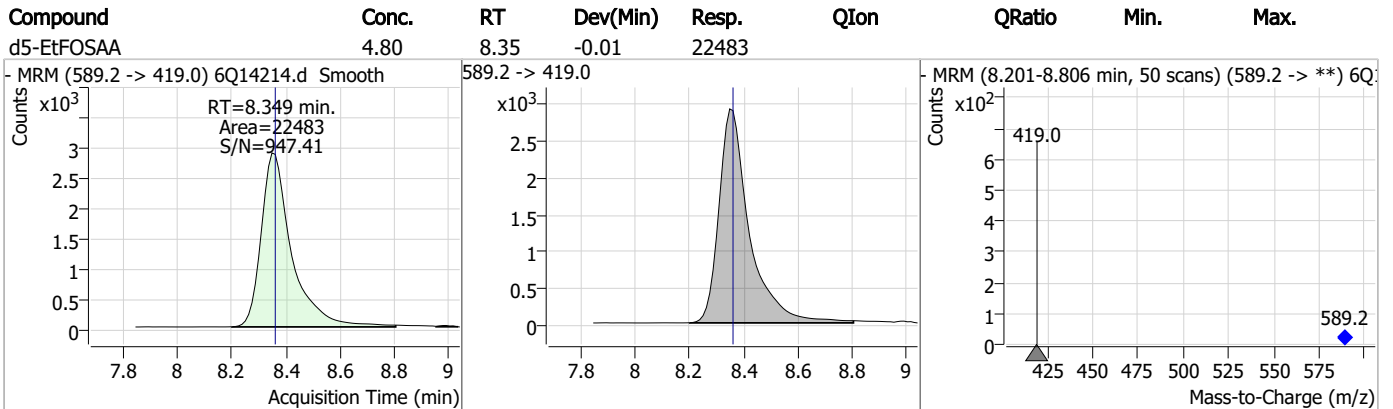
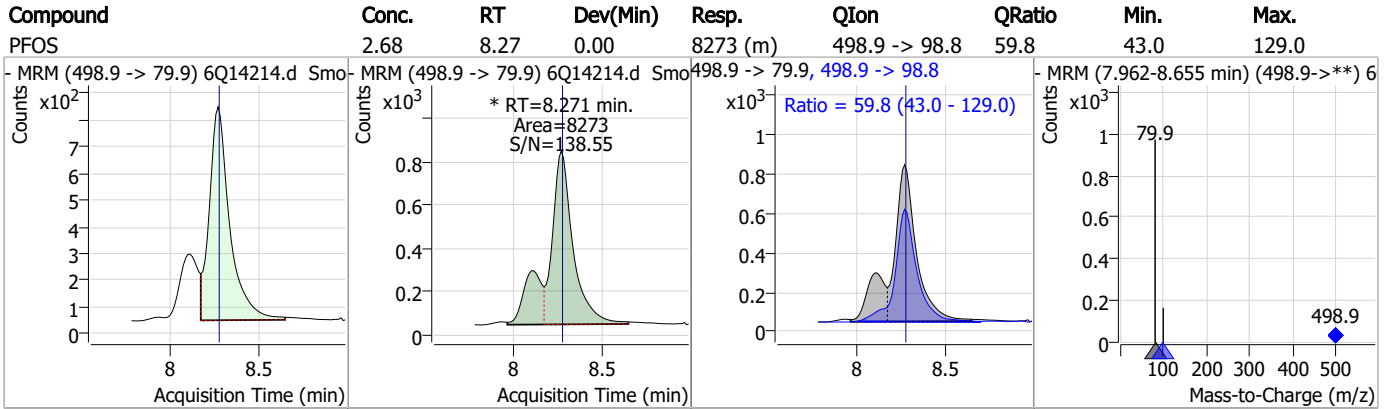
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



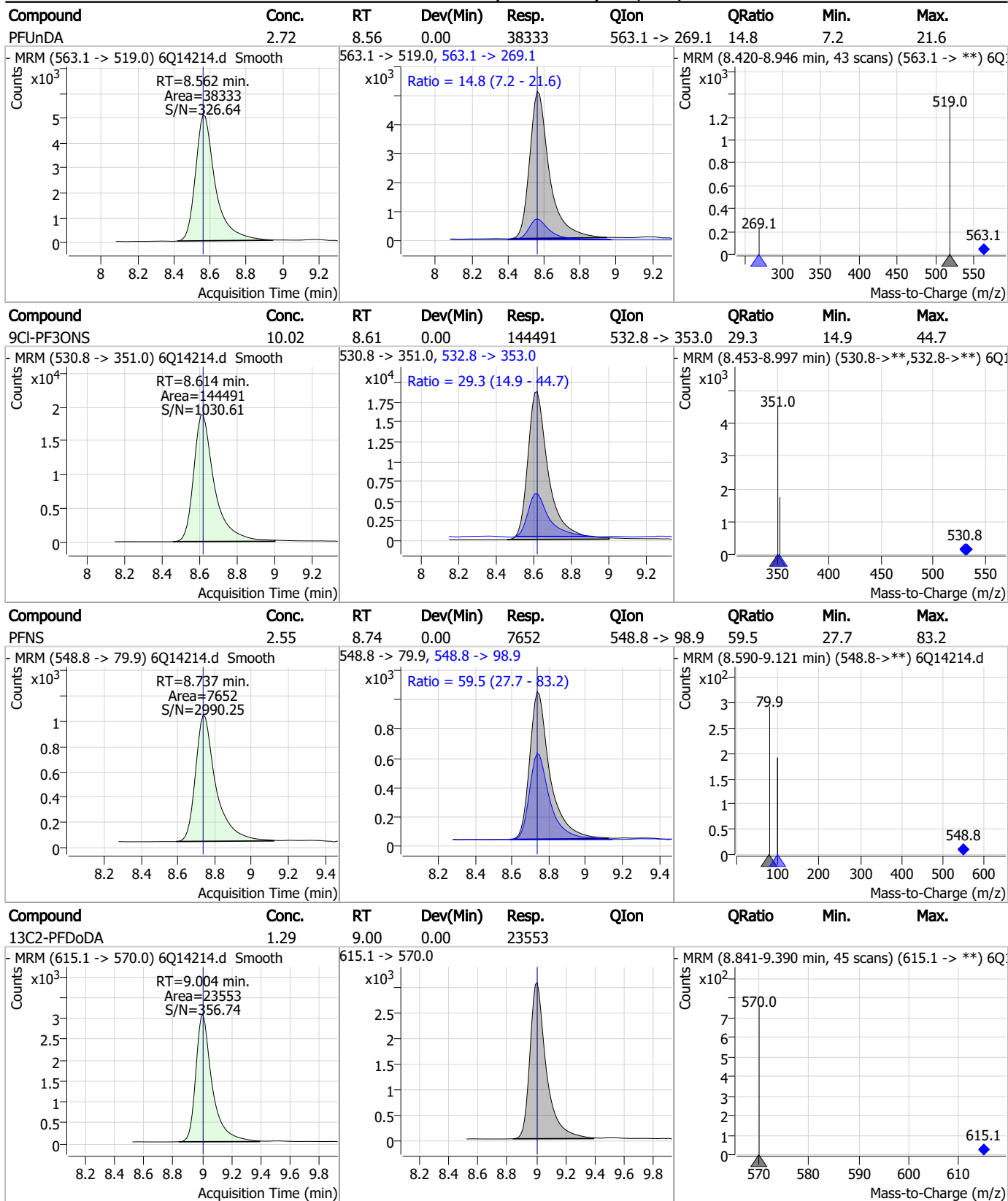
Perfluorinated Compounds by LC/MS/MS



7.7.10
7

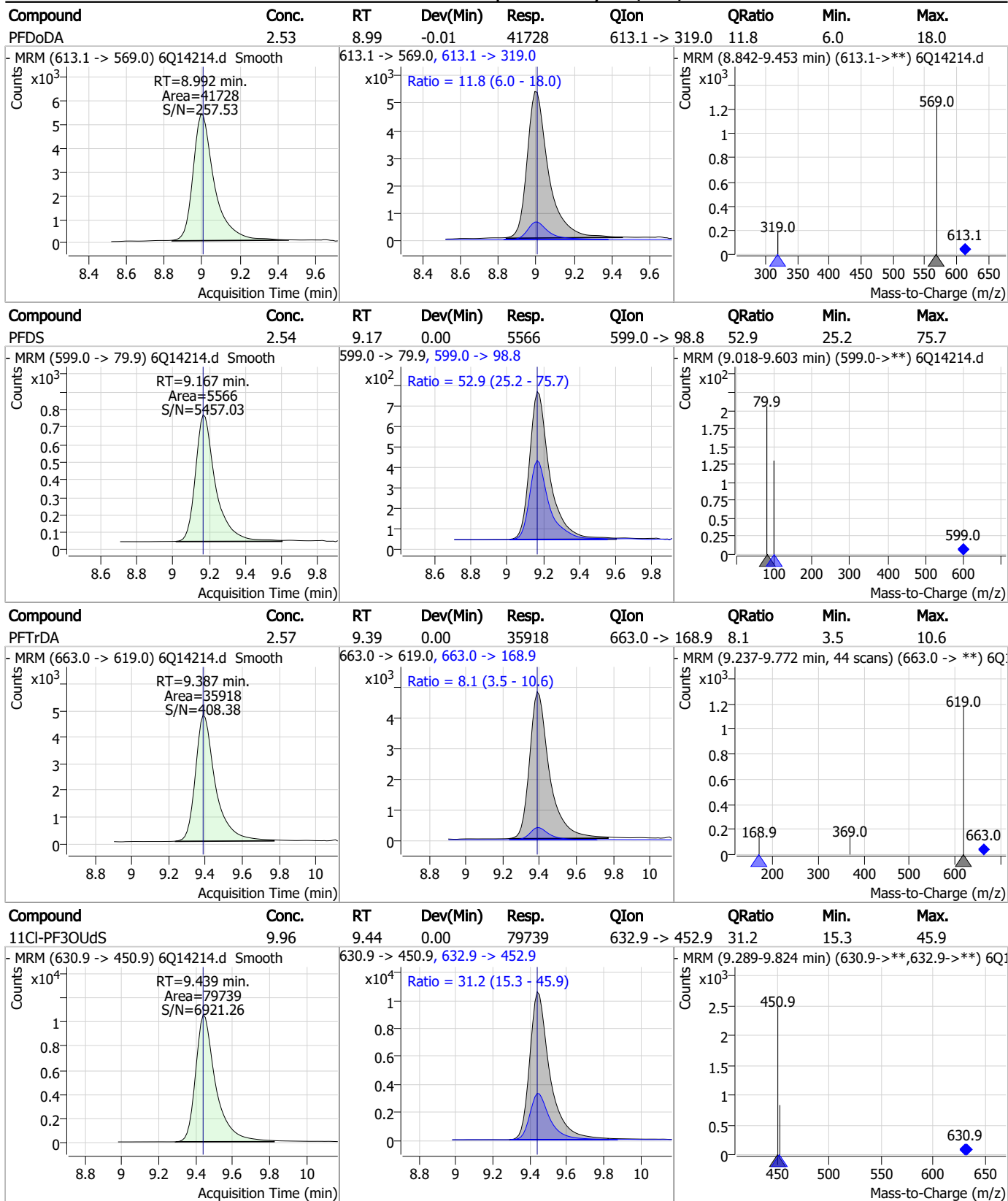


Perfluorinated Compounds by LC/MS/MS



7.7.10 7

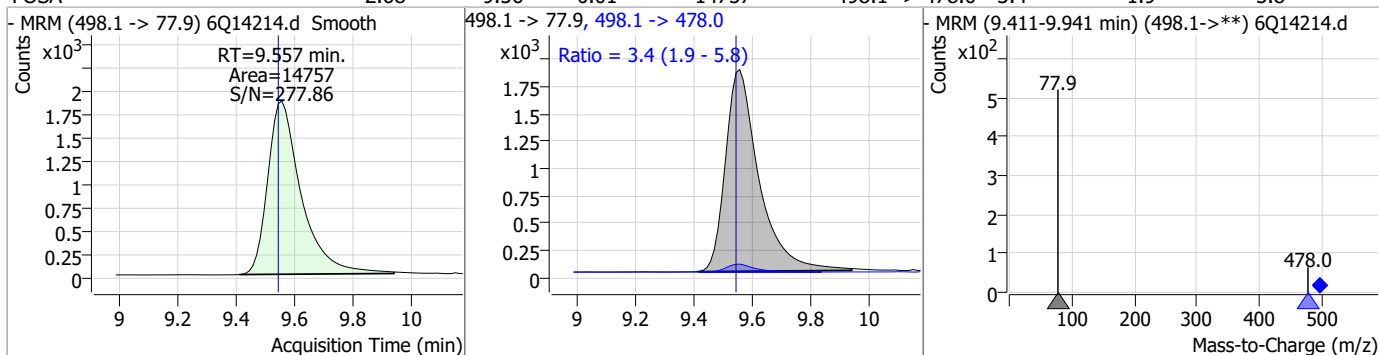
Perfluorinated Compounds by LC/MS/MS



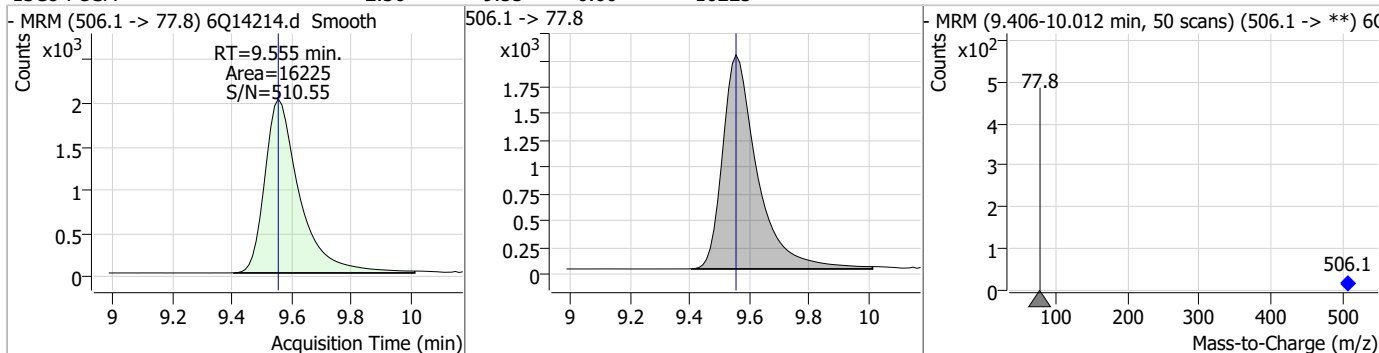
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

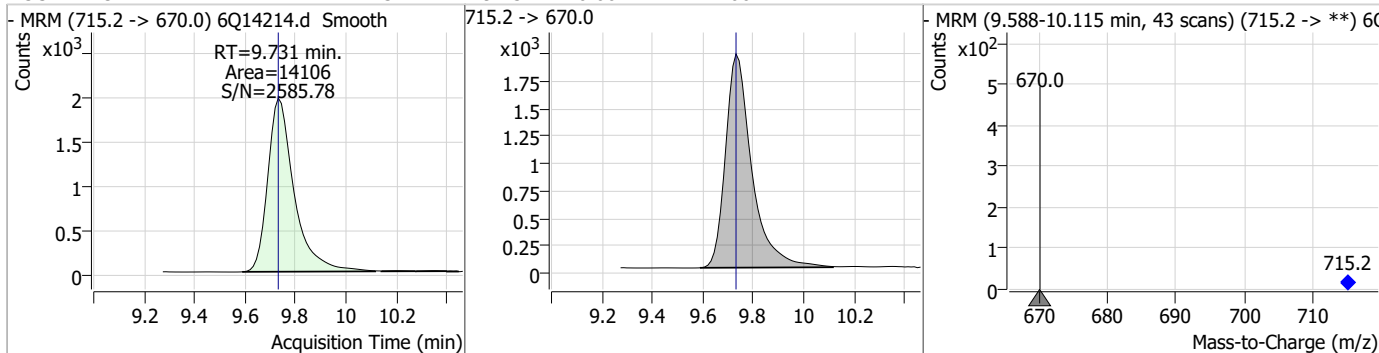
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.68	9.56	0.01	14757	498.1 -> 478.0	3.4	1.9	5.8



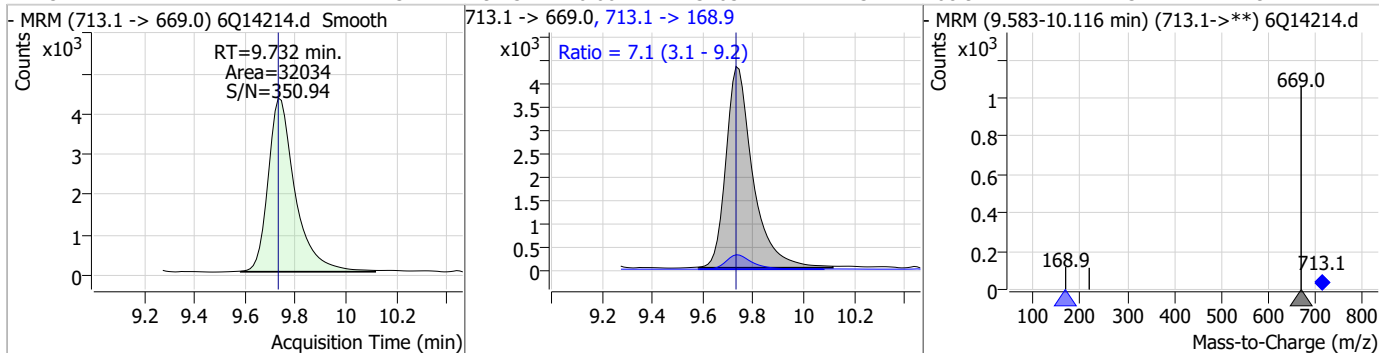
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.36	9.55	0.00	16225	506.1 -> 77.8			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.32	9.73	0.00	14106	715.2 -> 670.0			

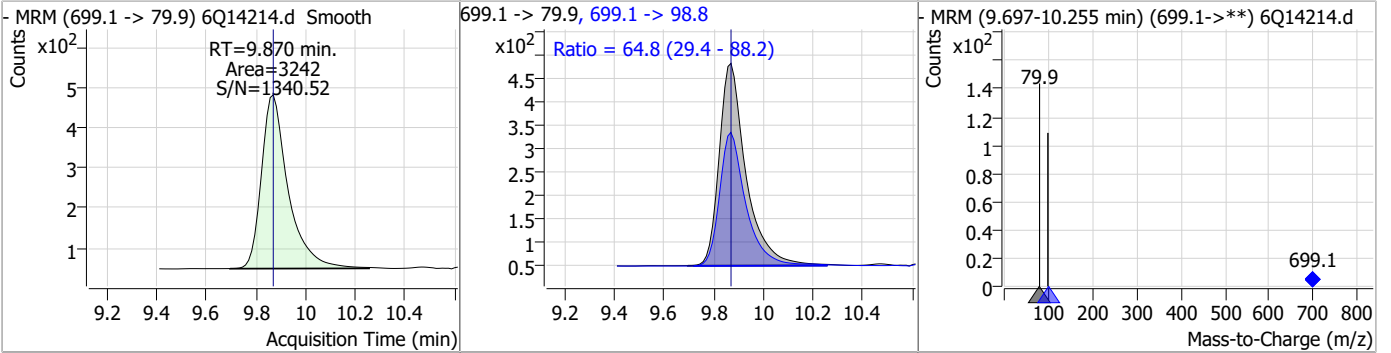


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.43	9.73	0.00	32034	713.1 -> 168.9	7.1	3.1	9.2

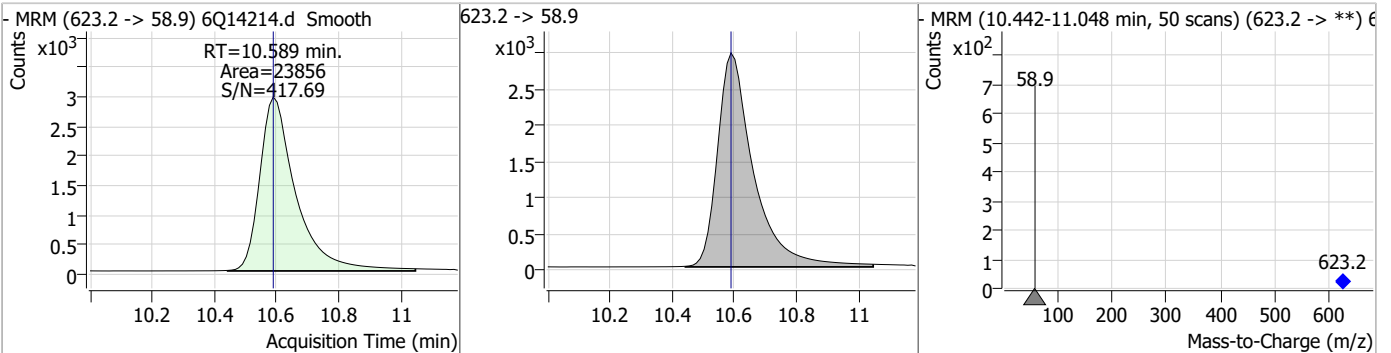


Perfluorinated Compounds by LC/MS/MS

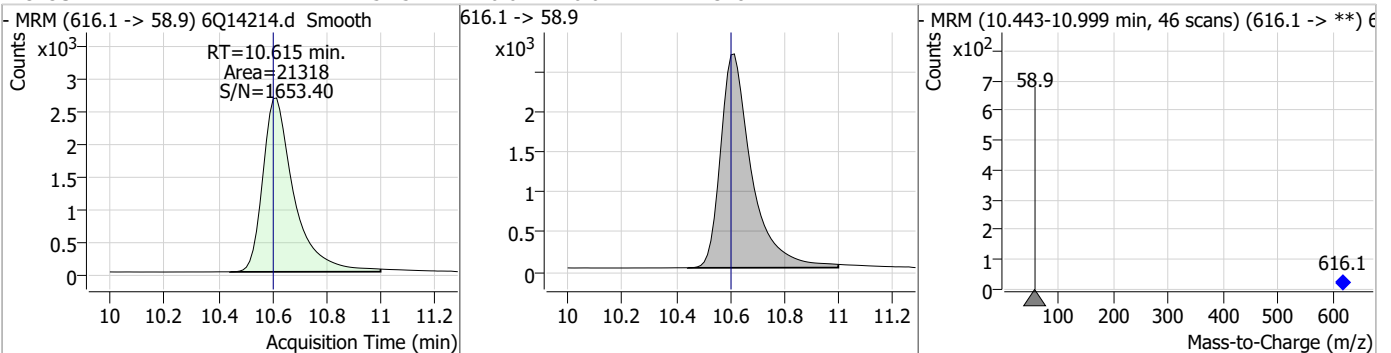
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.61	9.87	0.00	3242	699.1 -> 98.8	64.8	29.4	88.2



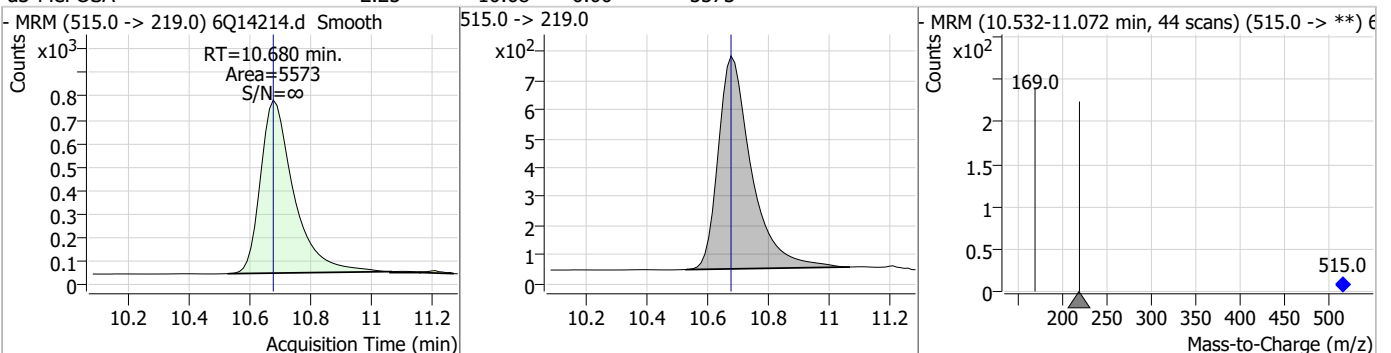
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.10	10.59	0.00	23856				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	25.45	10.61	0.01	21318				

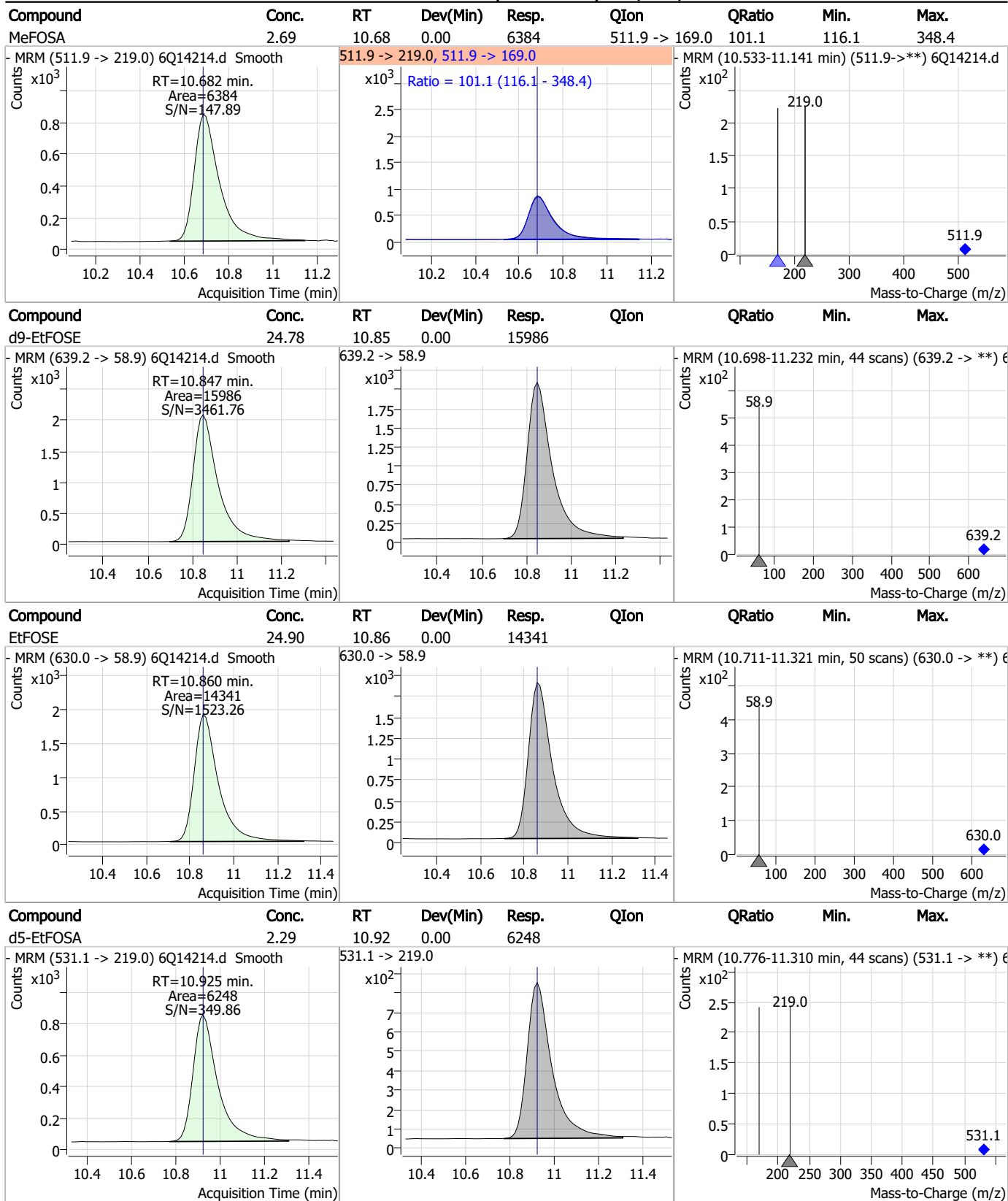


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.25	10.68	0.00	5573				



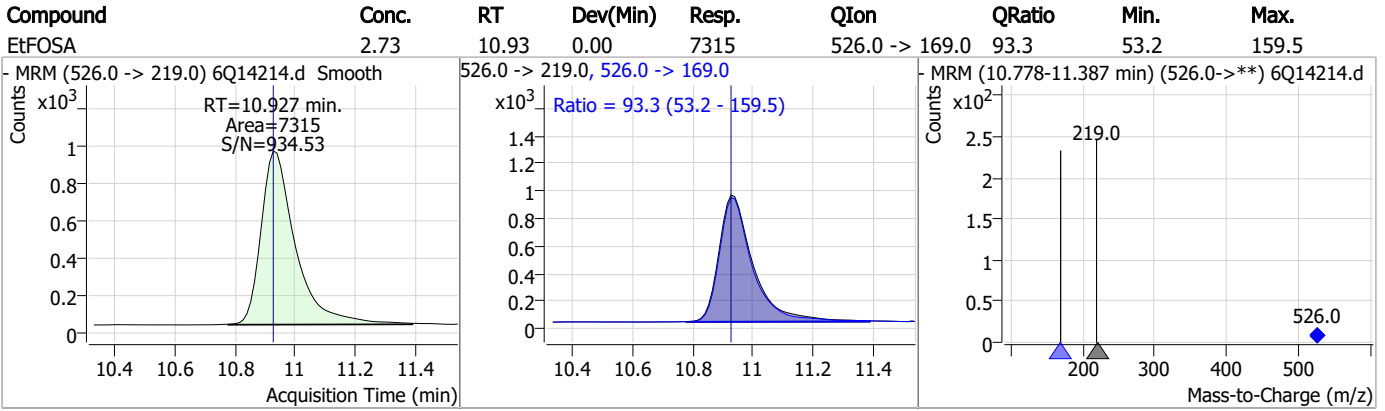
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10
7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7



Manual Integration Approval Summary

Sample Number: S6Q217-ICV217 Method: EPA DRAFT 1633
Lab FileID: 6Q14214.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 15:45 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.36	Split peak

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7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtie
 02/24/23 15:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14215.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/23/2023 3:59:36 PM
 Sample Name : icv217-20
 Vial : P1-B2
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q217.batch.bin
 Sample Information : OP95480,S6Q217,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	93437	10.00 µg/L	0.000
M5-PFPeA	4.337	268.3 -> 223.0	46588	5.00 µg/L	0.000
M5-PFHxA	5.513	318.0 -> 273.0	41300	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	42646	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	71167	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	22739	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	18278	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	23592	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	24111	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	14248	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17430	2.50 µg/L	0.000
M3-PFBS	5.456	302.1 -> 79.9	16175	2.50 µg/L	0.000
M3-PFHxS	7.212	402.1 -> 79.9	9926	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8821	2.50 µg/L	0.000
M2-4:2FTS	5.190	329.1 -> 80.9	2093	5.00 µg/L	0.000
M2-6:2FTS	6.858	429.1 -> 80.9	2849	5.00 µg/L	0.000
M2-8:2FTS	7.895	529.1 -> 80.9	2612	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	25180	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	16601	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	22999	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	26109	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	16168	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6786	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6145	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10812	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	41292	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	7420	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	86713	2.50 µg/L	0.000
13C2-PFDA	8.096	515.1 -> 470.1	26338	1.25 µg/L	-0.012
13C5-PFNA	7.627	468.0 -> 423.0	25610	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	41700	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.190	329.1 -> 80.9	2093	4.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.3%		
13C2-6:2FTS	6.858	429.1 -> 80.9	2849	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2612	4.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C2-PFDoDA	8.991	615.1 -> 570.0	24111	1.16 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C2-PFTeDA	9.731	715.2 -> 670.0	14248	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.3%		
13C3-PFBS	5.456	302.1 -> 79.9	16175	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.212	402.1 -> 79.9	9926	2.41 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C4-PFBA	2.938	216.8 -> 171.9	93437	9.93 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C4-PFHpA	6.452	367.1 -> 322.0	42646	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C5-PFHxA	5.513	318.0 -> 273.0	41300	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C5-PFPeA	4.337	268.3 -> 223.0	46588	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C6-PFDA	8.108	519.1 -> 474.1	18278	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C7-PFUnDA	8.562	570.0 -> 525.1	23592	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C8-FOSA	9.555	506.1 -> 77.8	17430	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C8-PFOA	7.097	421.1 -> 376.0	71167	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C8-PFOS	8.270	507.1 -> 79.9	8821	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C9-PFNA	7.626	472.1 -> 427.0	22739	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.2%		
d3-MeFOSAA	8.153	573.2 -> 419.0	25180	4.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.4%		
13C3-HFPO-DA	5.878	286.9 -> 168.9	16601	10.45 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
d3-MeFOSA	10.680	515.0 -> 219.0	6145	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.0%		
d5-EtFOSAA	8.349	589.2 -> 419.0	22999	4.66 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.2%		
d7-MeFOSE	10.589	623.2 -> 58.9	26109	25.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 100.1%		
d9-EtFOSE	10.847	639.2 -> 58.9	16168	23.76 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 95.0%		
d5-EtFOSA	10.925	531.1 -> 219.0	6786	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.5%		
Target Compounds					QValue
4:2FTS	5.191	327.1 -> 307.0	87912	22.63 µg/L	98
		327.1 -> 80.9	20168		
6:2FTS	6.859	427.1 -> 407.0	73023	20.59 µg/L	95
		427.1 -> 80.9	14785		
8:2FTS	7.896	527.1 -> 507.0	38650	22.75 µg/L	98
		527.1 -> 80.8	8913		
EtFOSAA	8.362	584.2 -> 419.1	65034	21.58 µg/L	m 95
		584.2 -> 526.0	36722		
FOSA	9.545	498.1 -> 77.9	130937	22.15 µg/L	99
		498.1 -> 478.0	4687		
MeFOSAA	8.154	570.1 -> 419.0	95850	23.16 µg/L	100
		570.1 -> 483.0	14952		
PFBA	2.944	212.8 -> 168.9	37577	19.96 µg/L	100
PFBS	5.457	298.7 -> 79.9	107401	20.19 µg/L	98
		298.7 -> 98.8	52900		
PFDA	8.108	512.9 -> 469.0	388463	22.33 µg/L	98
		512.9 -> 219.0	54088		
PFDoDA	8.992	613.1 -> 569.0	302922	17.96 µg/L	99
		613.1 -> 319.0	35486		
PFDS	9.167	599.0 -> 79.9	47883	20.41 µg/L	93

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.453	599.0 -> 98.8	26532	19.97	µg/L	100
		363.1 -> 319.0	422534			
PFHpS	7.765	363.1 -> 169.0	59964	20.39	µg/L	99
		449.0 -> 79.9	62666			
PFHxA	5.516	449.0 -> 98.9	39267	21.49	µg/L	99
		313.0 -> 269.0	284006			
PFHxS	7.213	313.0 -> 118.9	11040	22.01	µg/L	m
		398.7 -> 79.9	79950			
PFNA	7.627	398.7 -> 98.9	46171	24.95	µg/L	96
		463.0 -> 419.0	287834			
PFNS	8.737	463.0 -> 219.0	54749	21.52	µg/L	94
		548.8 -> 79.9	69181			
PFOA	7.098	548.8 -> 98.9	41174	20.08	µg/L	94
		413.0 -> 369.0	527081			
PFOS	8.271	413.0 -> 169.0	71357	16.63	µg/L	m
		498.9 -> 79.9	54811			
PFPeA	4.338	498.9 -> 98.8	38718	22.19	µg/L	100
		263.0 -> 219.0	181097			
PFPeS	6.517	349.1 -> 79.9	101214	22.10	µg/L	95
		349.1 -> 98.9	50649			
PFTeDA	9.732	713.1 -> 669.0	297846	22.33	µg/L	98
		713.1 -> 168.9	20104			
PFTrDA	9.387	663.0 -> 619.0	284181	19.84	µg/L	97
		663.0 -> 168.9	22656			
PFUnDA	8.562	563.1 -> 519.0	301199	18.27	µg/L	100
		563.1 -> 269.1	43425			
11CI-PF3OUdS	9.439	630.9 -> 450.9	189878	20.67	µg/L	99
		632.9 -> 452.9	57518			
9CI-PF3ONS	8.602	530.8 -> 351.0	330655	19.99	µg/L	97
		532.8 -> 353.0	103551			
ADONA	6.704	376.9 -> 250.9	659334	20.03	µg/L	99
		376.9 -> 84.8	145348			
HFPO-DA	5.879	284.9 -> 168.9	26926	20.35	µg/L	98
		284.9 -> 184.9	3406			
3:3FTCA	3.804	241.0 -> 177.0	8369	19.33	µg/L	95
		241.0 -> 117.0	1245			
5:3FTCA	6.156	341.0 -> 237.1	64714	21.43	µg/L	100
		341.0 -> 217.0	56036			
7:3FTCA	7.567	441.0 -> 316.9	30941	19.29	µg/L	95
		441.0 -> 336.9	60541			
EtFOSA	10.927	526.0 -> 219.0	56194	19.30	µg/L	93
		526.0 -> 169.0	55425			
EtFOSE	10.860	630.0 -> 58.9	53790	92.33	µg/L	100
		511.9 -> 219.0	49358			
MeFOSA	10.682	511.9 -> 169.0	53194	18.84	µg/L	#
		616.1 -> 58.9	73832			
MeFOSE	10.602	699.1 -> 79.9	25750	80.54	µg/L	100
		699.1 -> 98.8	15778			
PFDoDS	9.870	295.0 -> 201.0	15552	19.39	µg/L	97
		295.0 -> 84.9	7660			
NFDHA	5.395	279.0 -> 85.1	47752	20.80	µg/L	95
		229.0 -> 84.9	44170			
PFMBA	4.738	314.8 -> 134.9	328597	17.53	µg/L	100
		314.8 -> 82.9	7747			

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



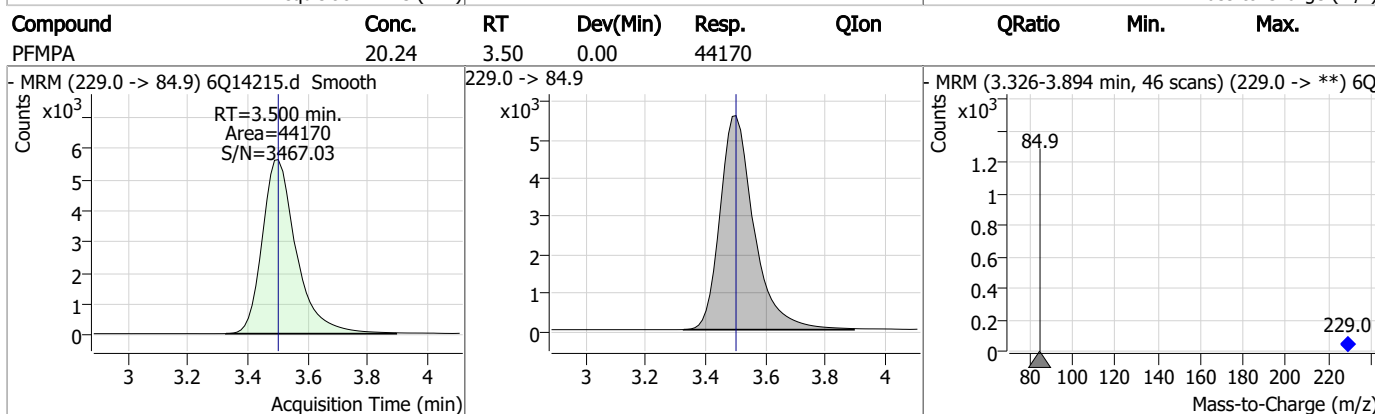
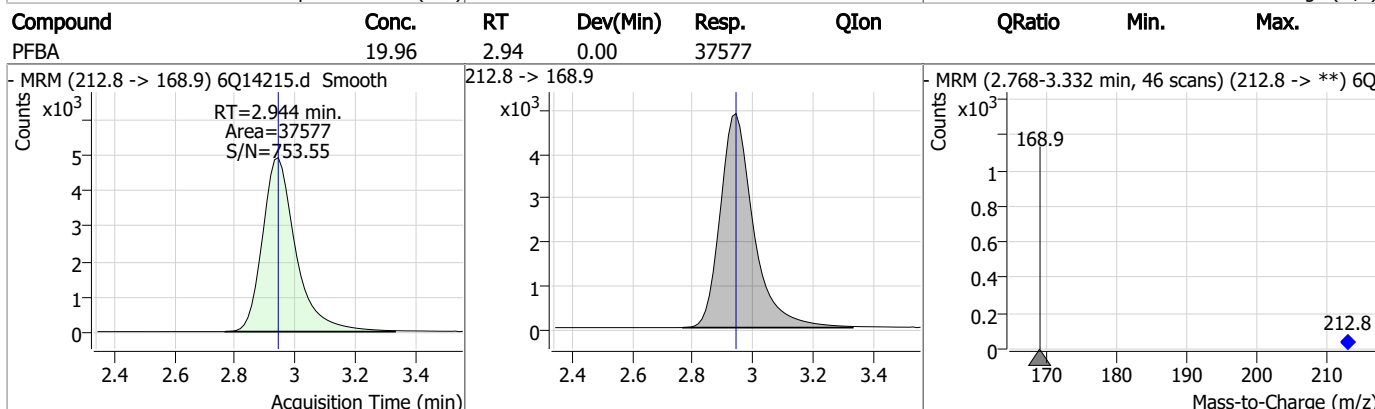
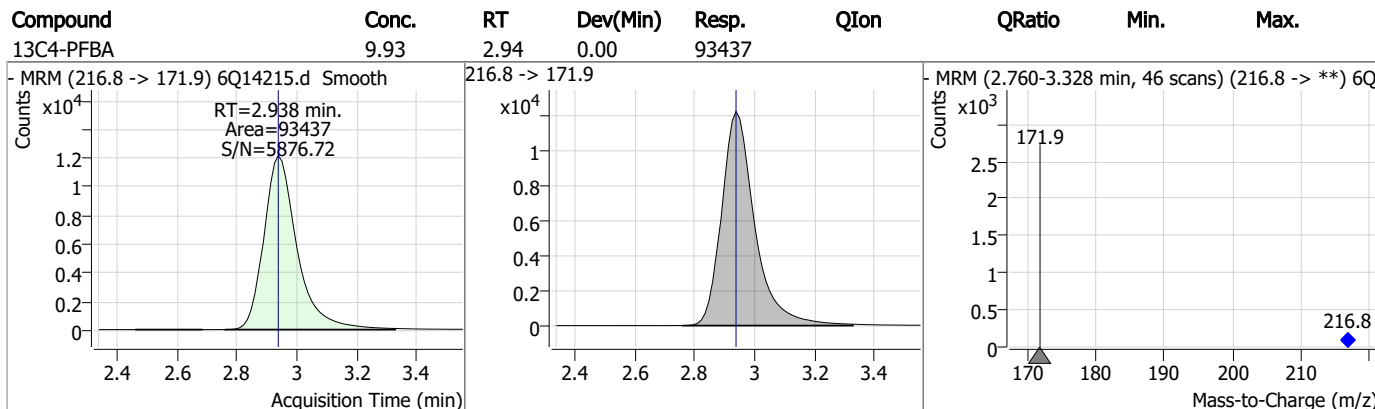
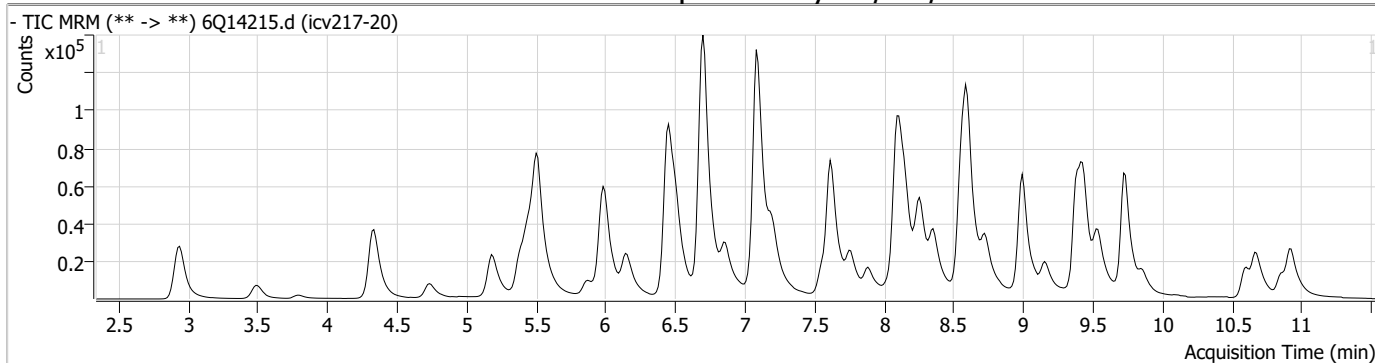
Perfluorinated Compounds by LC/MS/MS

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

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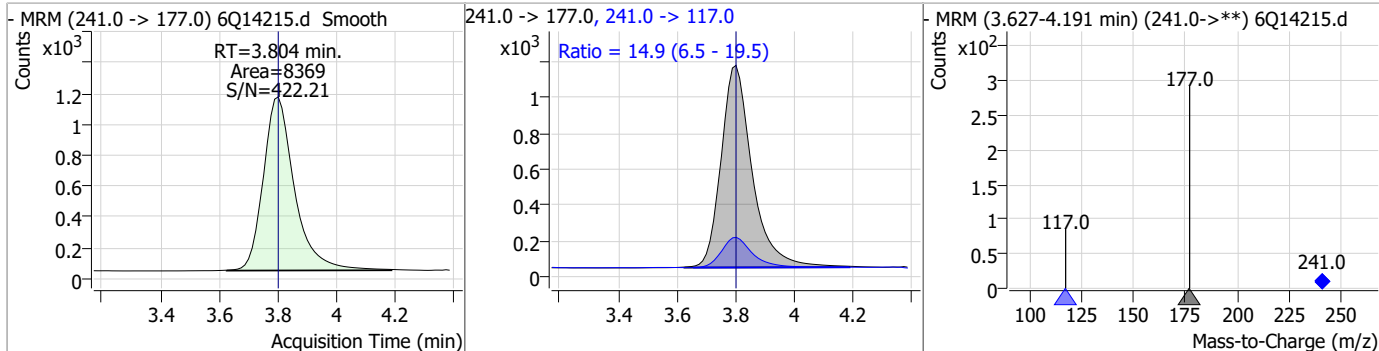
Perfluorinated Compounds by LC/MS/MS



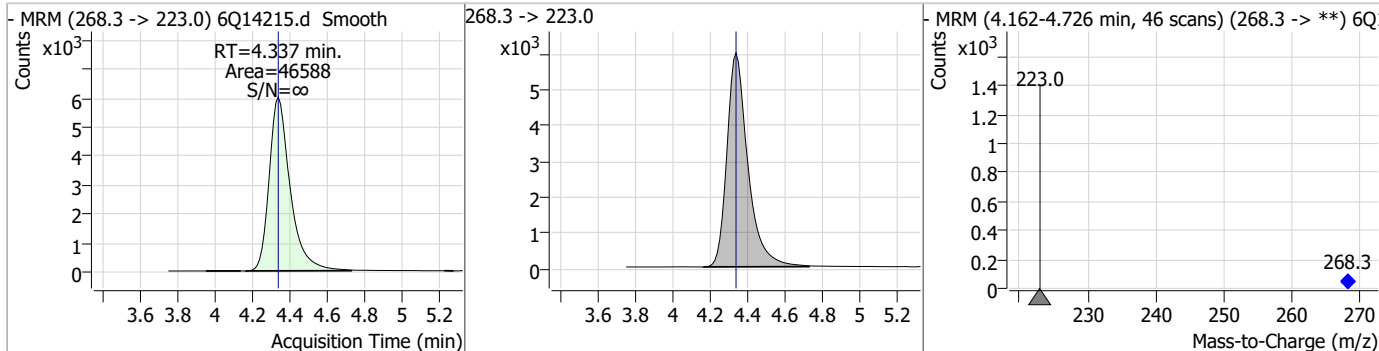
7.7.11
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Perfluorinated Compounds by LC/MS/MS

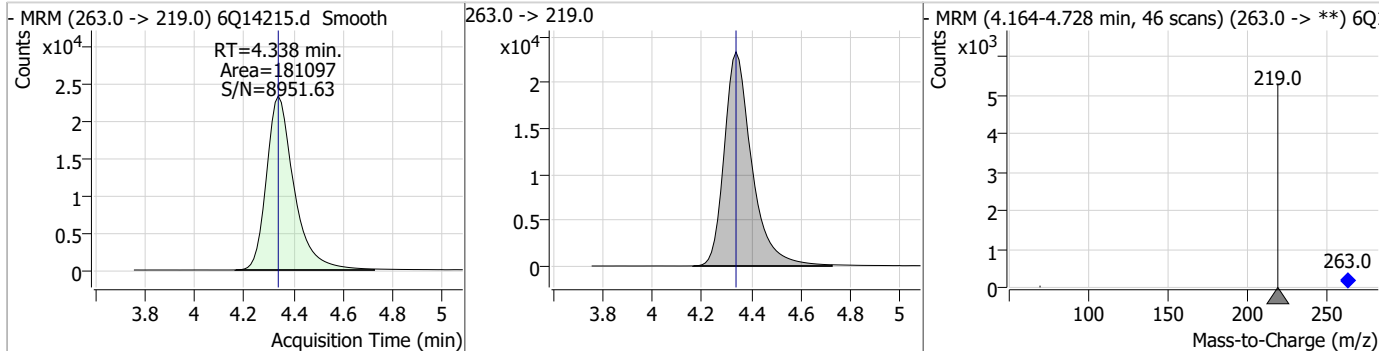
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	19.33	3.80	0.00	8369	241.0 -> 117.0	14.9	6.5	19.5



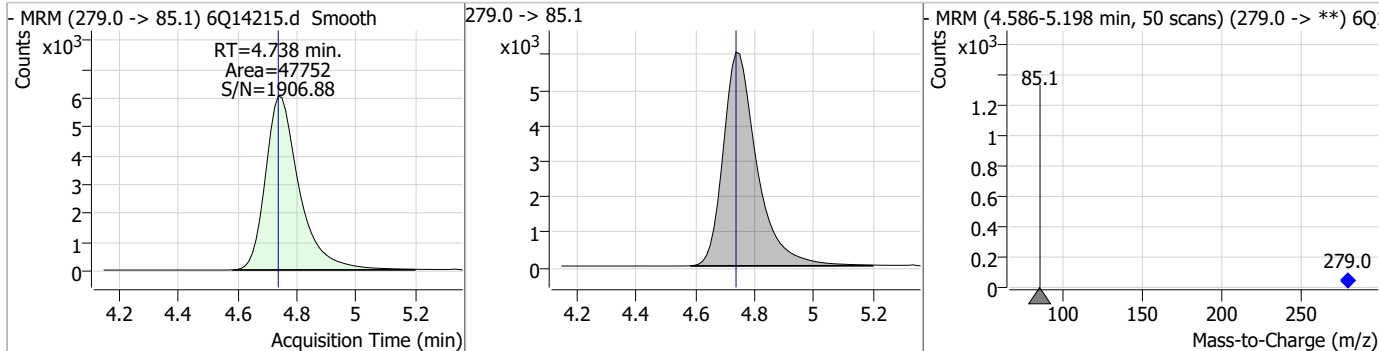
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.99	4.34	0.00	46588				



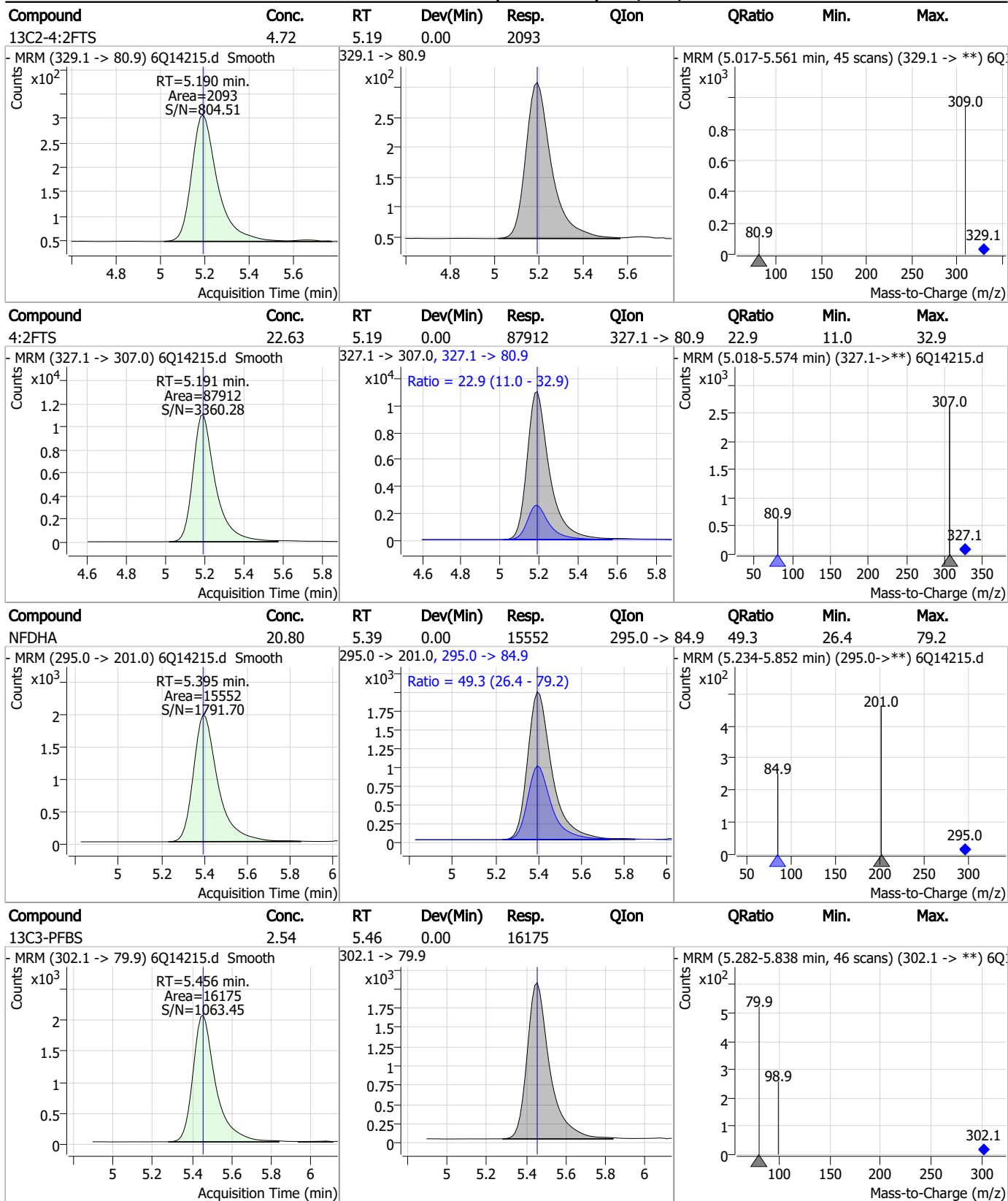
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.19	4.34	0.00	181097				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	19.86	4.74	0.00	47752				



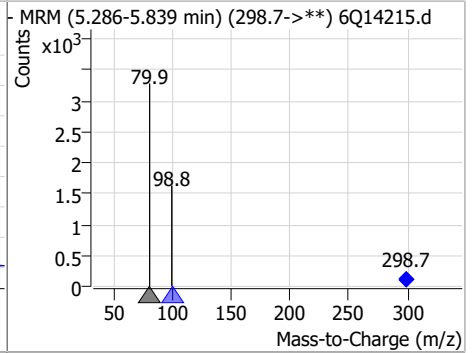
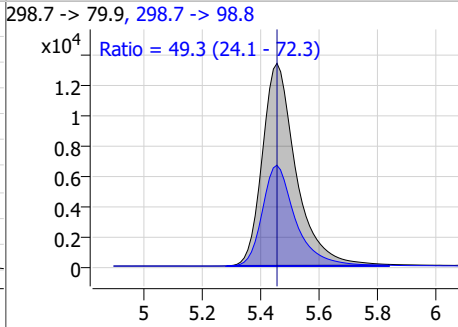
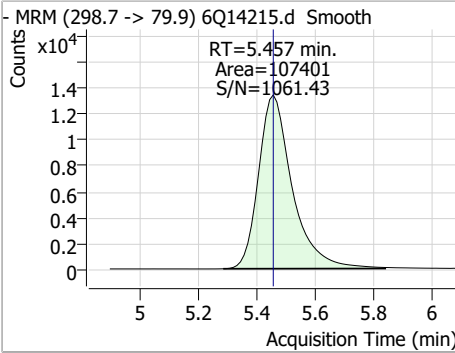
Perfluorinated Compounds by LC/MS/MS



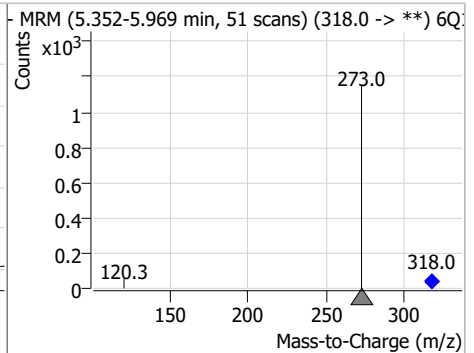
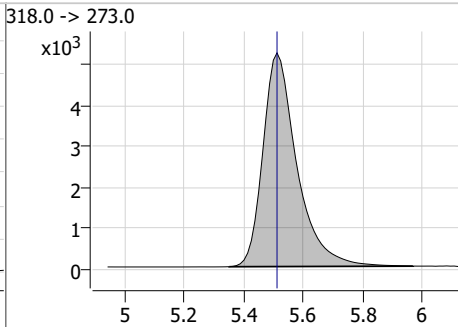
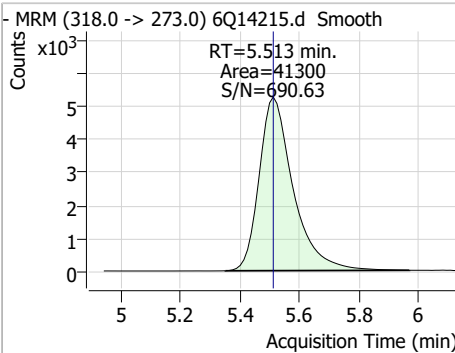
7.7.11
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Perfluorinated Compounds by LC/MS/MS

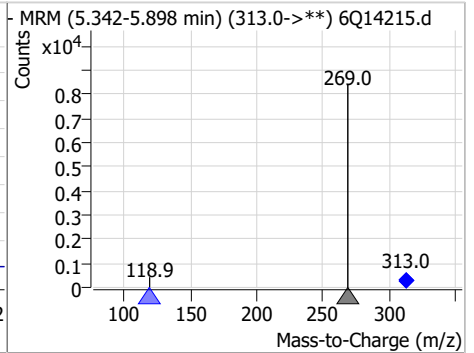
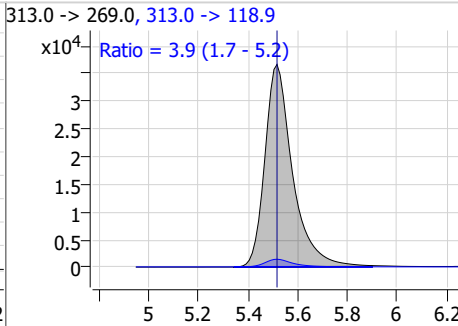
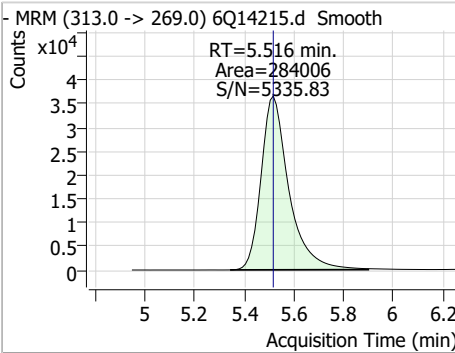
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.19	5.46	0.00	107401	298.7 -> 98.8	49.3	24.1	72.3



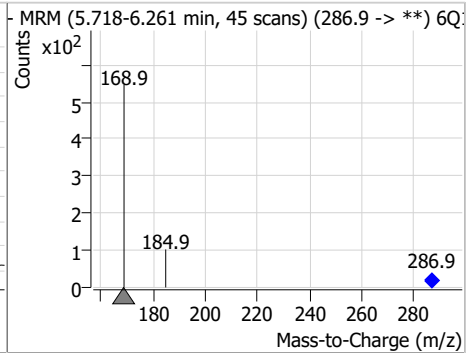
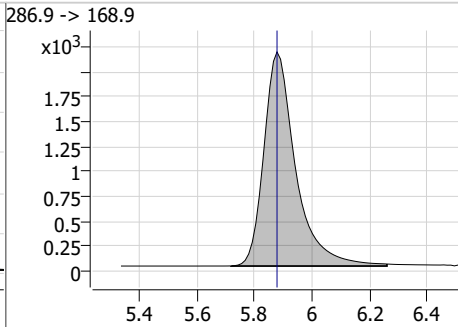
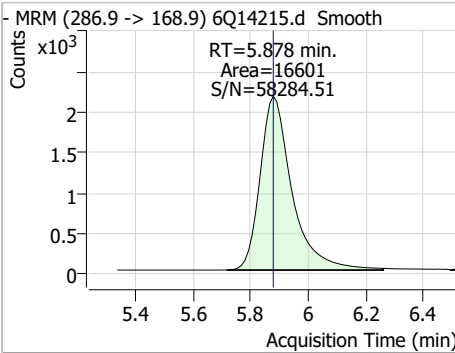
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.51	0.00	41300	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.49	5.52	0.00	284006	313.0 -> 118.9	3.9	1.7	5.2

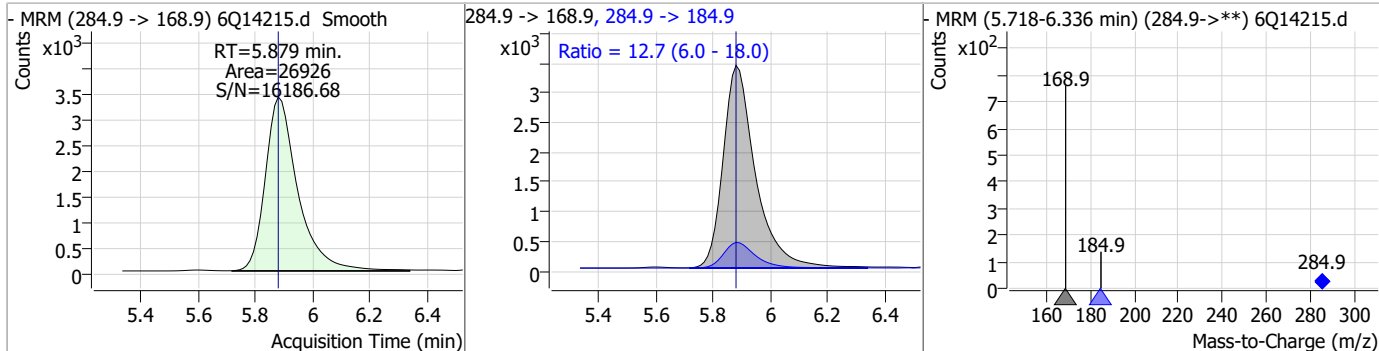


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.45	5.88	0.00	16601	286.9 -> 168.9			

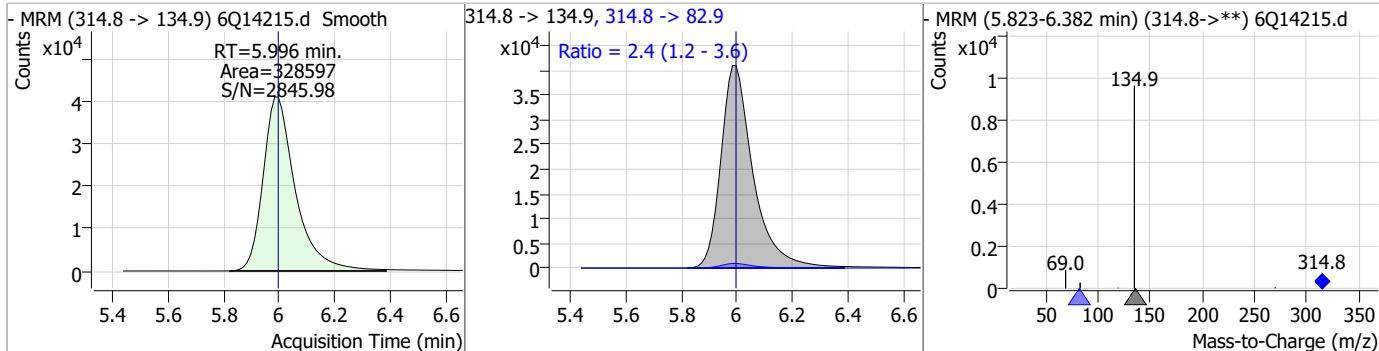


Perfluorinated Compounds by LC/MS/MS

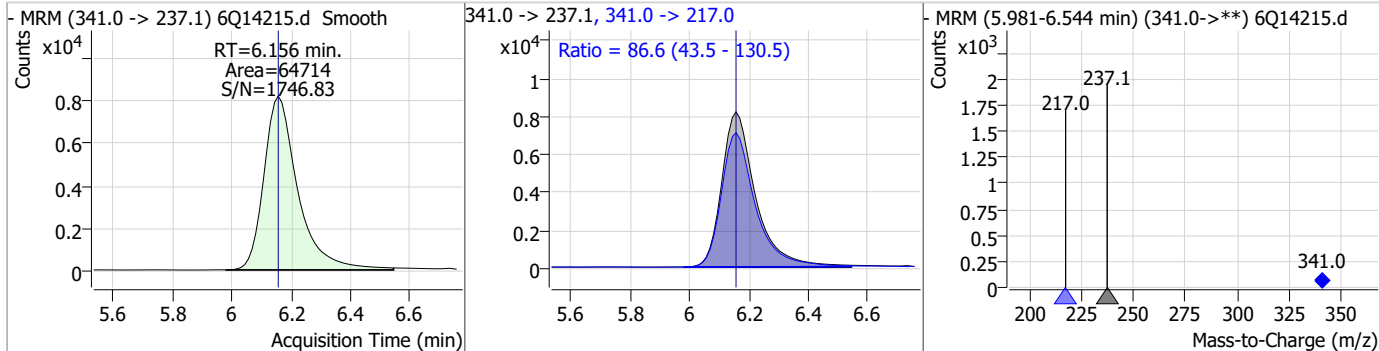
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.35	5.88	0.00	26926	284.9 -> 184.9	12.7	6.0	18.0



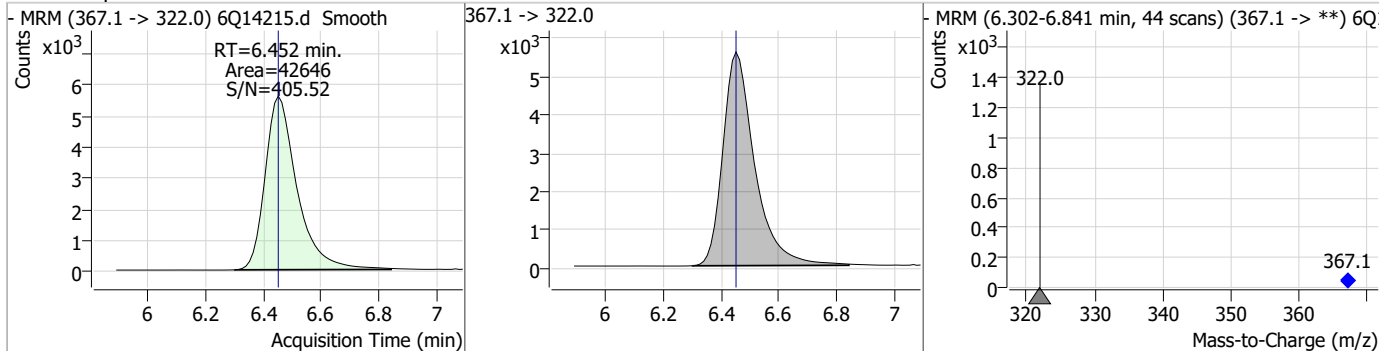
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	17.53	6.00	0.00	328597	314.8 -> 82.9	2.4	1.2	3.6



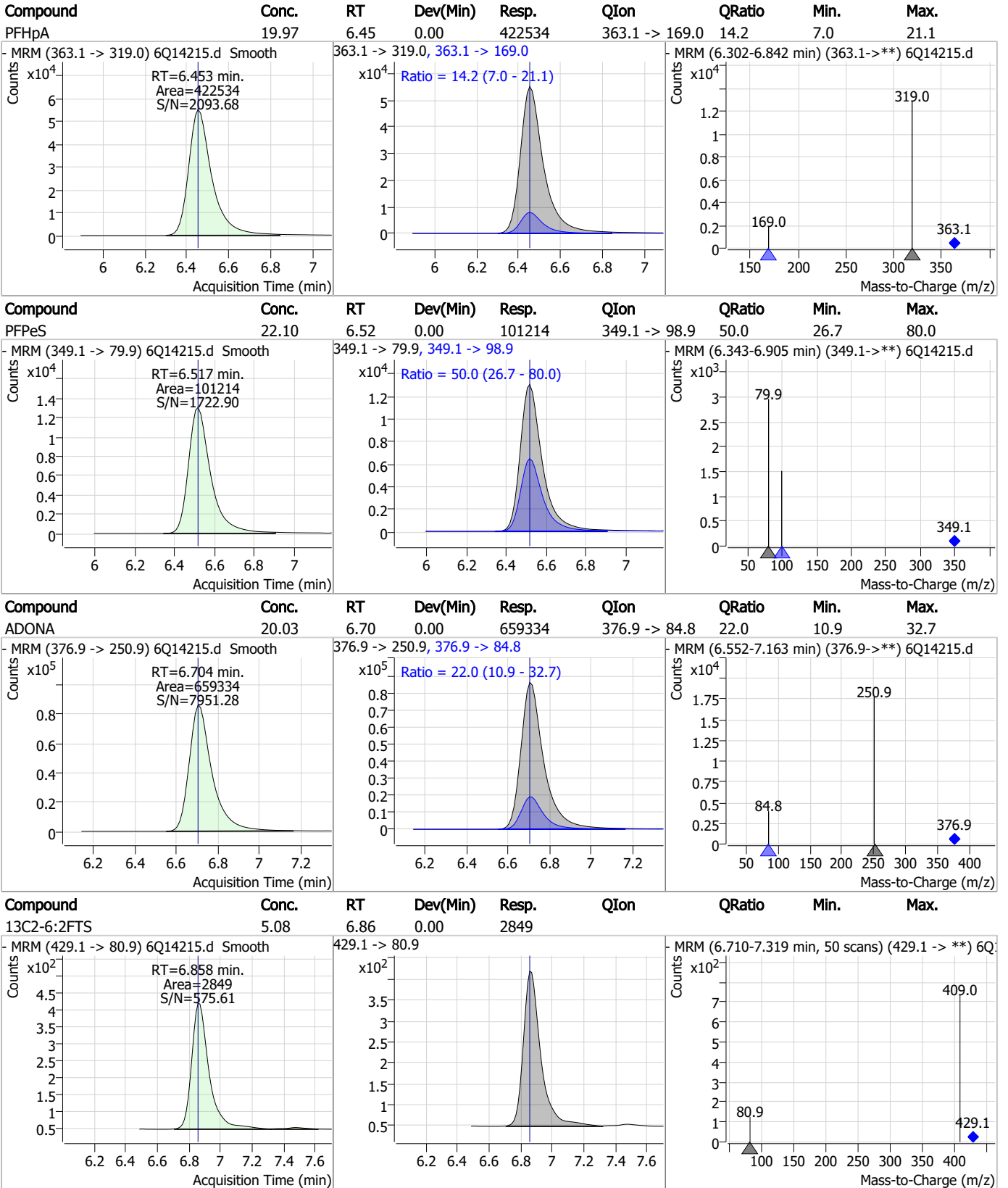
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	21.43	6.16	0.00	64714	341.0 -> 217.0	86.6	43.5	130.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.51	6.45	0.00	42646	367.1 -> 322.0	-	-	-



Perfluorinated Compounds by LC/MS/MS

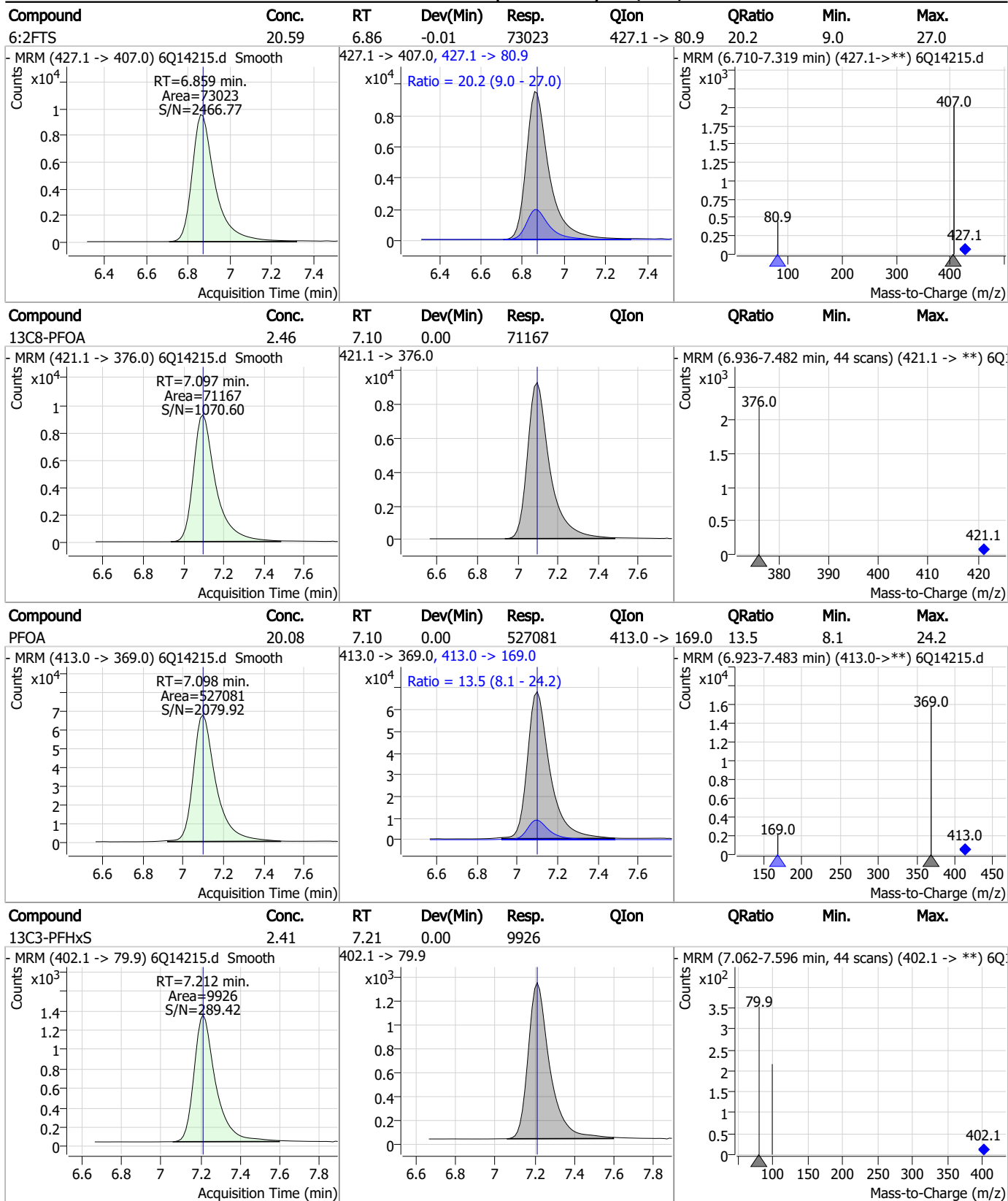


7.7.11

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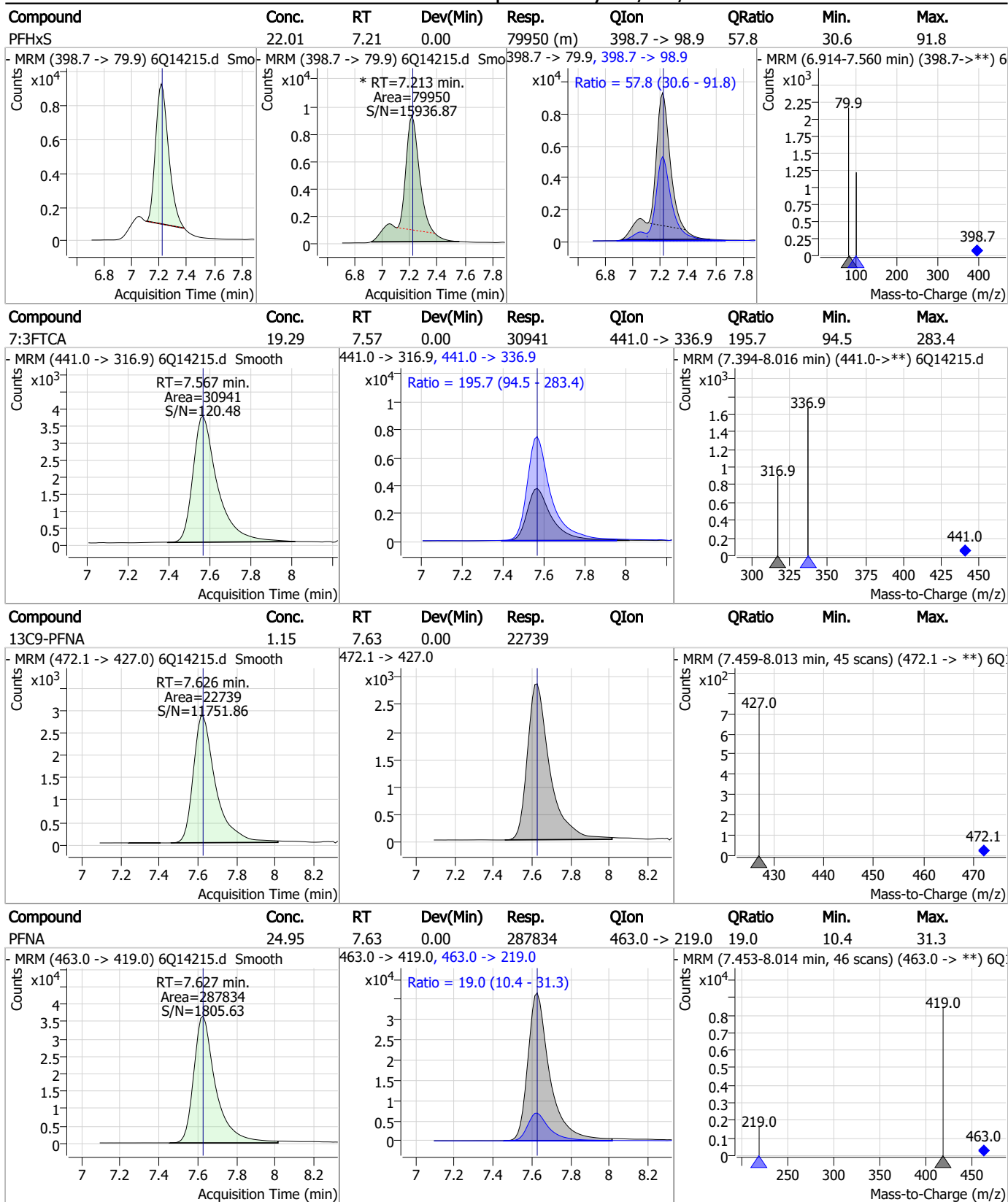


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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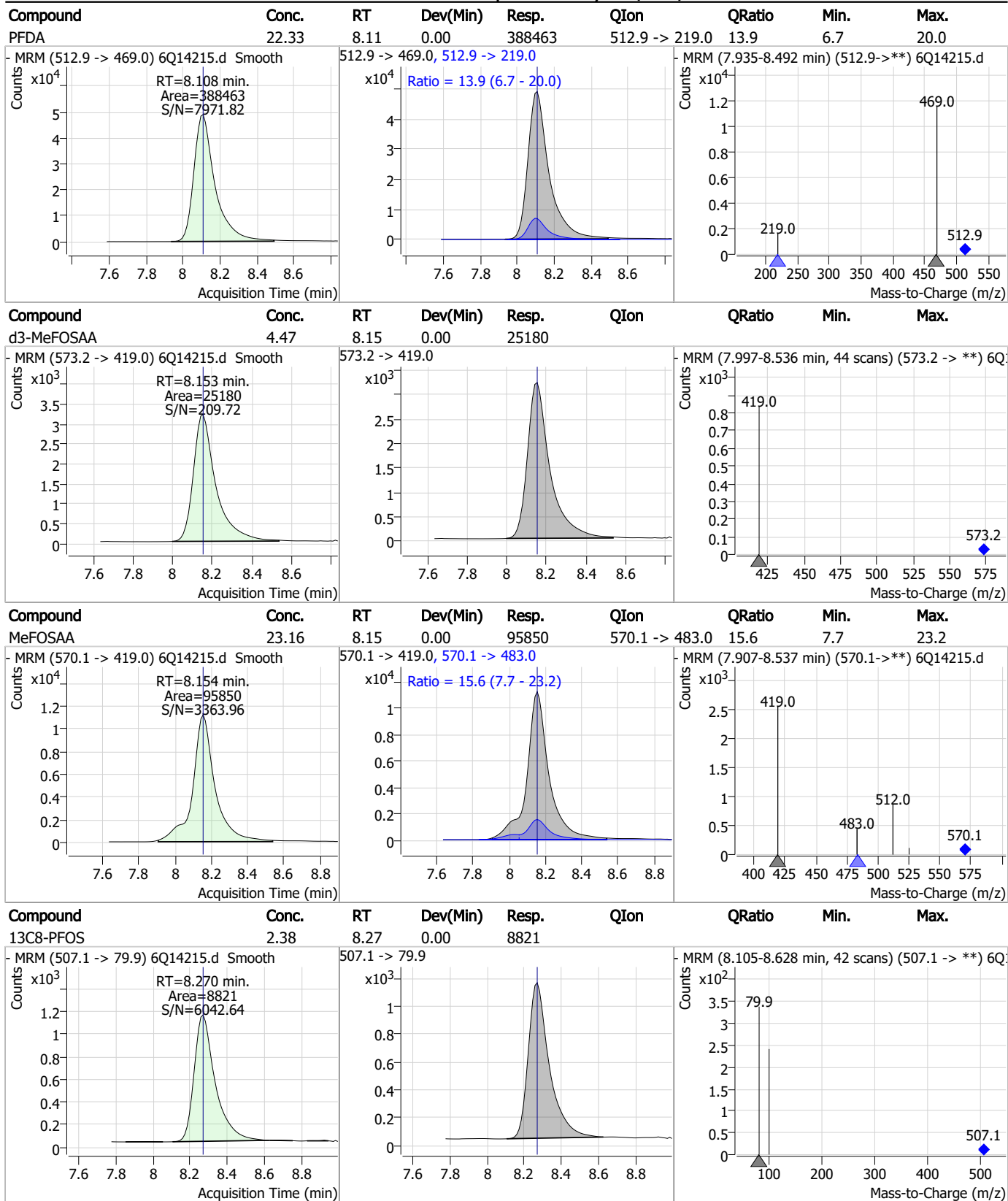
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.39	7.76	-0.01	62666	449.0 -> 98.9	62.7	31.7	95.2
13C2-8:2FTS	4.79	7.90	0.00	2612	529.1 -> 80.9			
8:2FTS	22.75	7.90	0.00	38650	527.1 -> 80.8	23.1	12.0	36.1
13C6-PFDA	1.19	8.11	0.00	18278	519.1 -> 474.1			

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Perfluorinated Compounds by LC/MS/MS

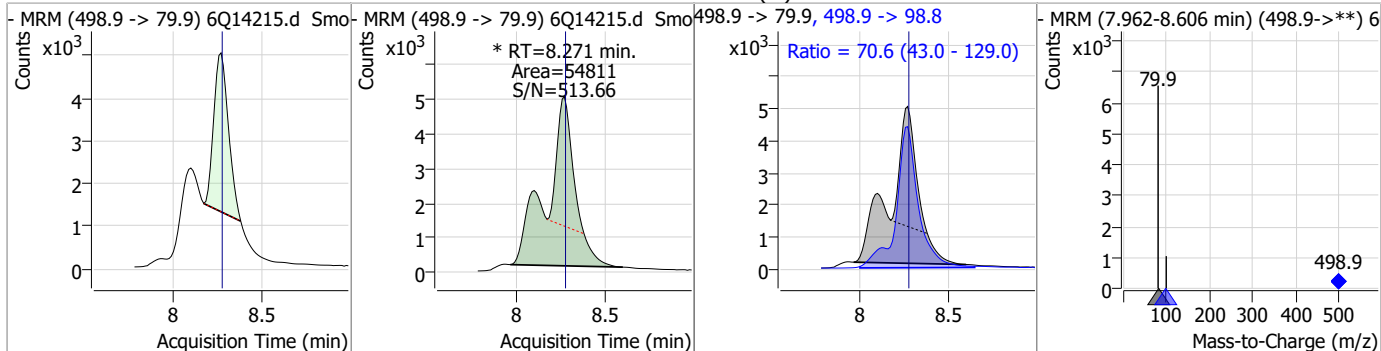


7.7.11

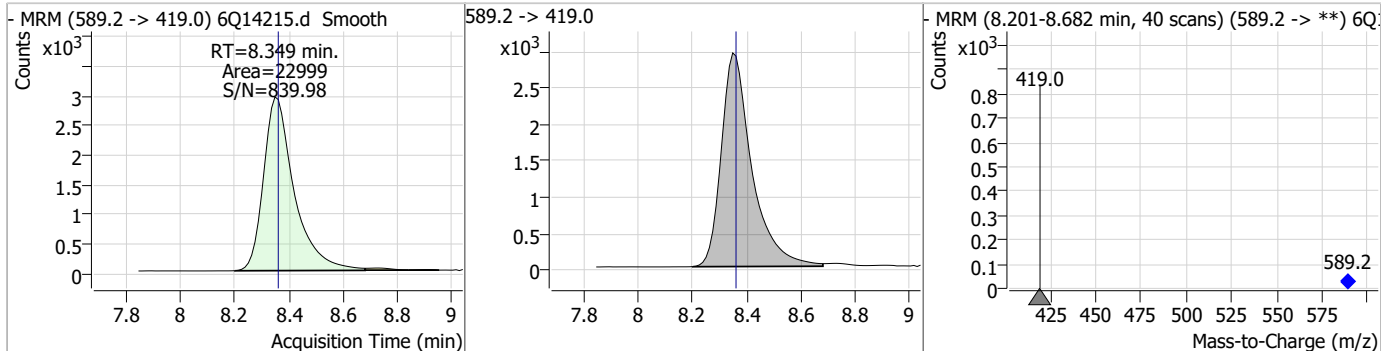
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Perfluorinated Compounds by LC/MS/MS

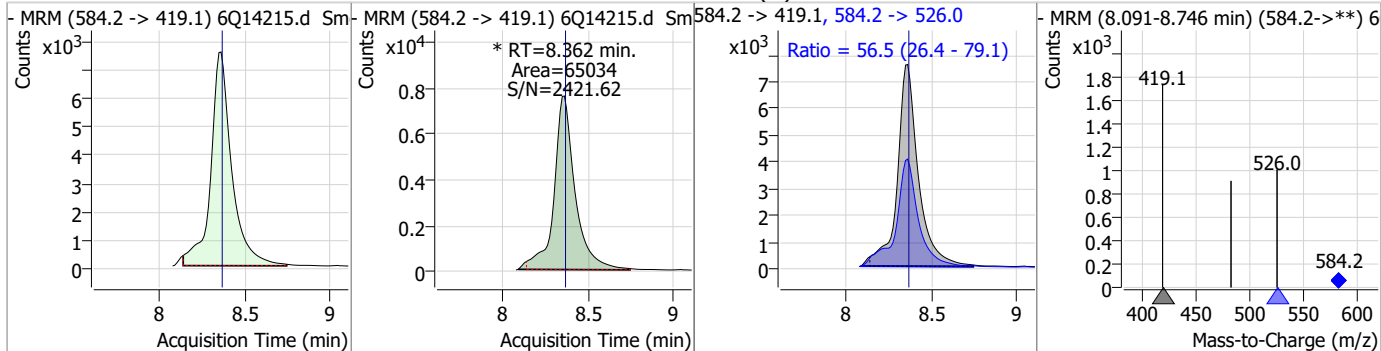
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.63	8.27	0.00	54811 (m)	498.9 -> 98.8	70.6	43.0	129.0



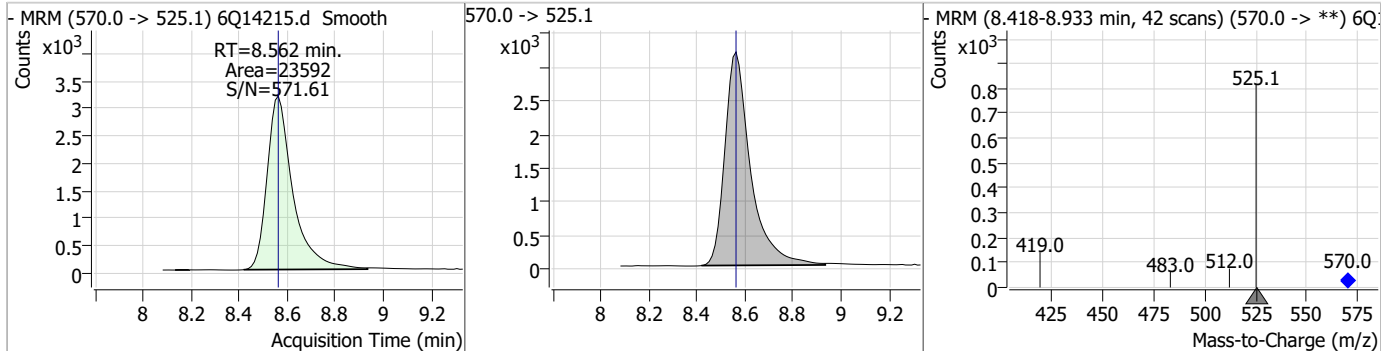
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.66	8.35	-0.01	22999				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.58	8.36	0.00	65034 (m)	584.2 -> 526.0	56.5	26.4	79.1

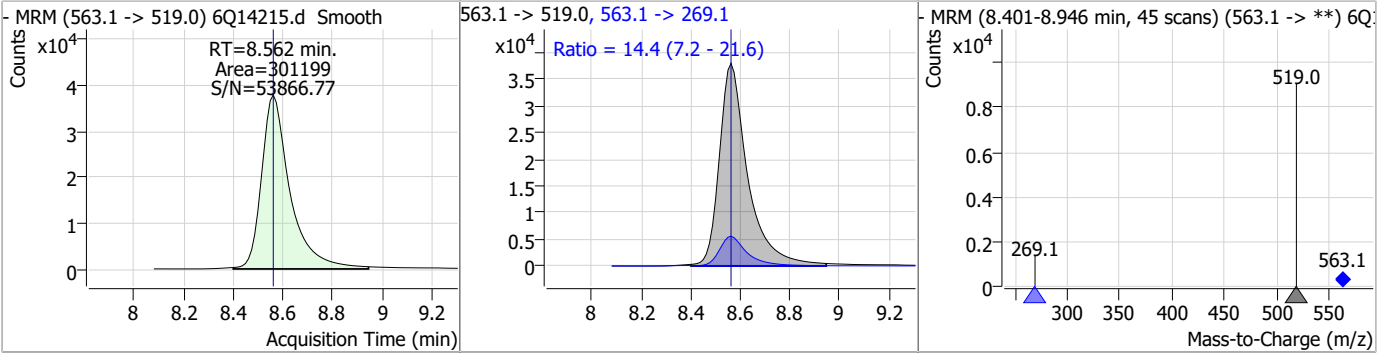


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.34	8.56	0.00	23592				

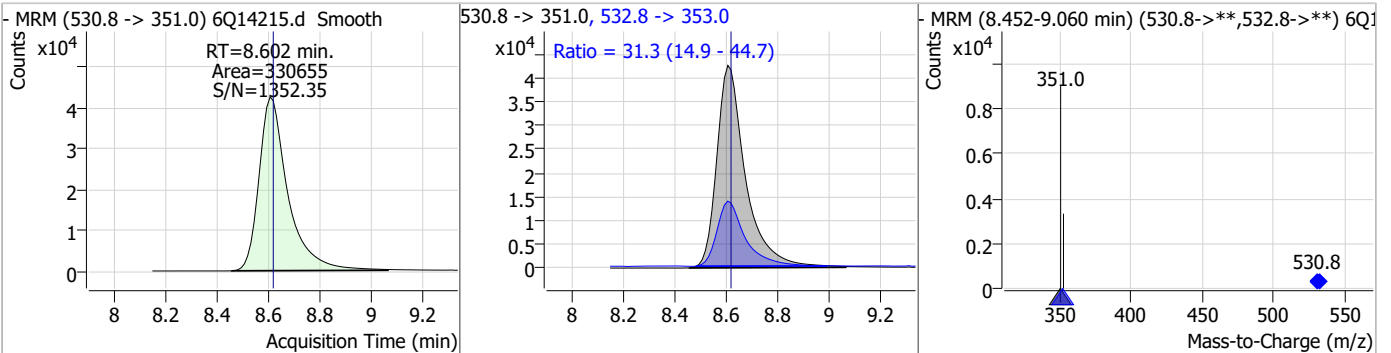


Perfluorinated Compounds by LC/MS/MS

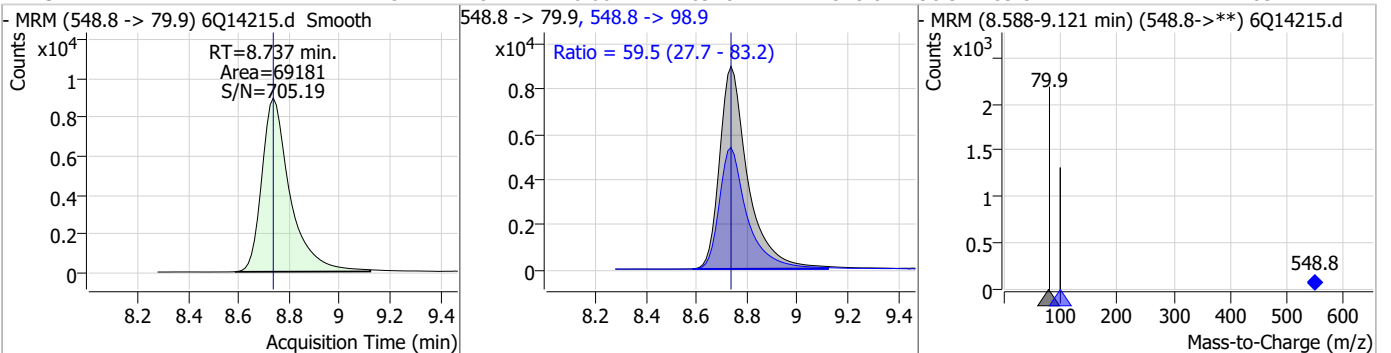
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.27	8.56	0.00	301199	563.1 -> 269.1	14.4	7.2	21.6



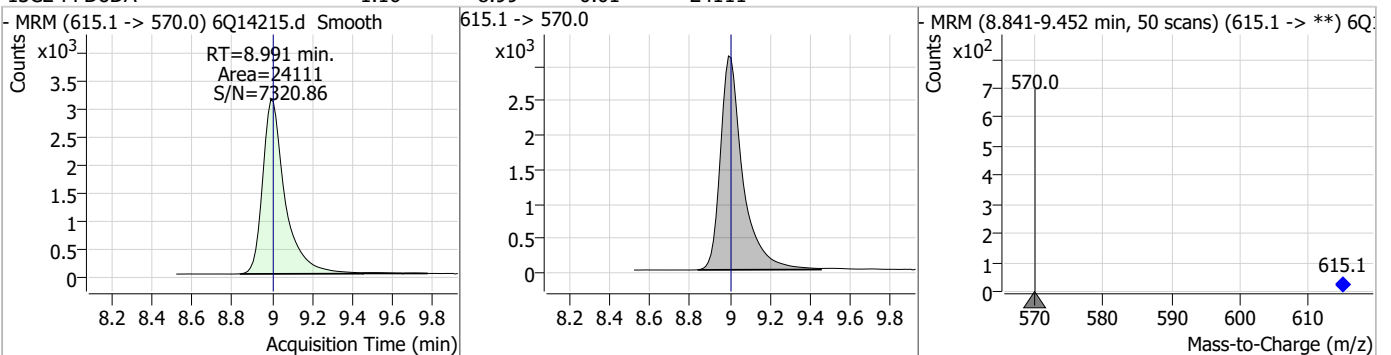
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	19.99	8.60	-0.01	330655	532.8 -> 353.0	31.3	14.9	44.7



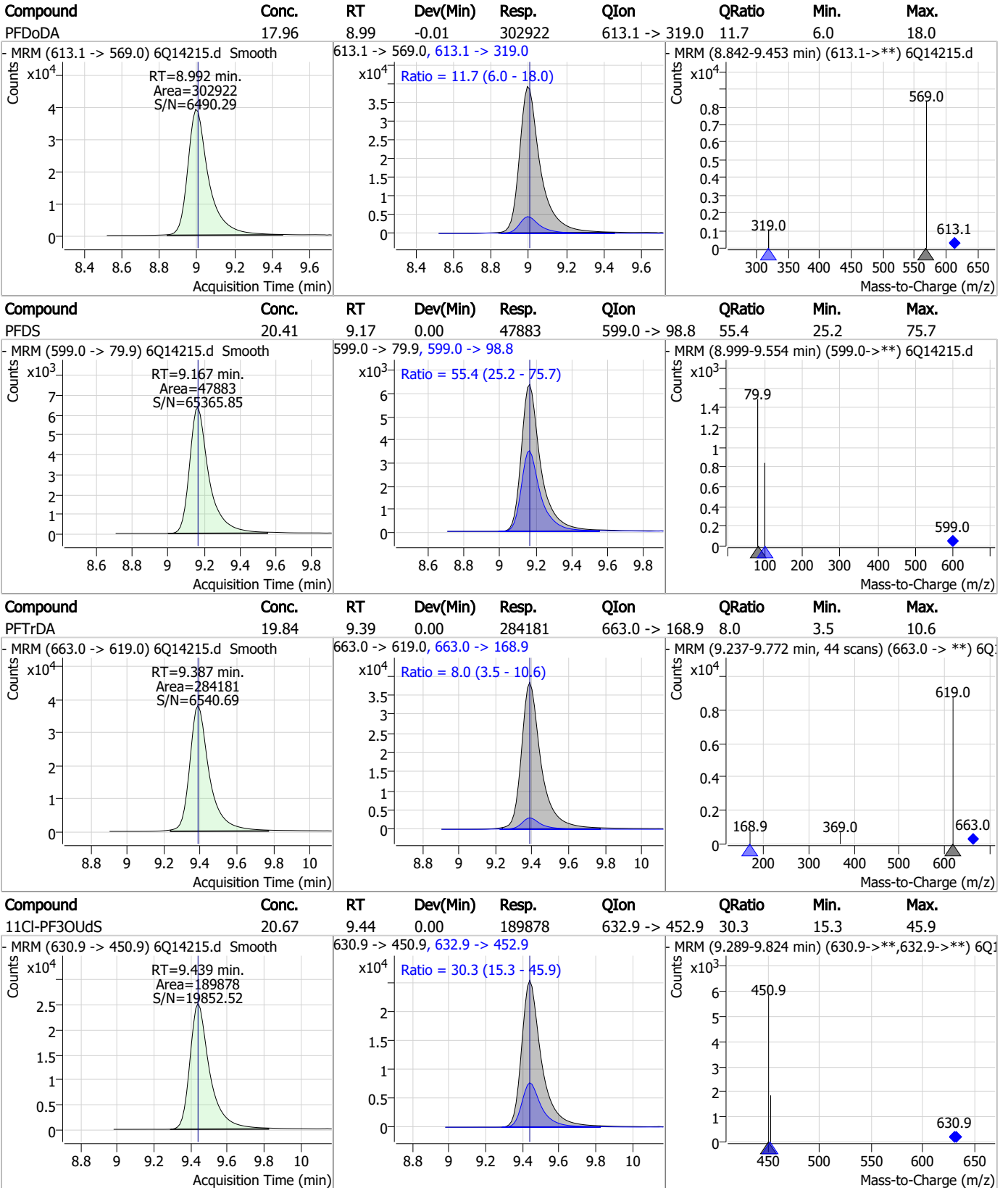
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.52	8.74	0.00	69181	548.8 -> 98.9	59.5	27.7	83.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.16	8.99	-0.01	24111	615.1 -> 570.0	-	-	-



Perfluorinated Compounds by LC/MS/MS

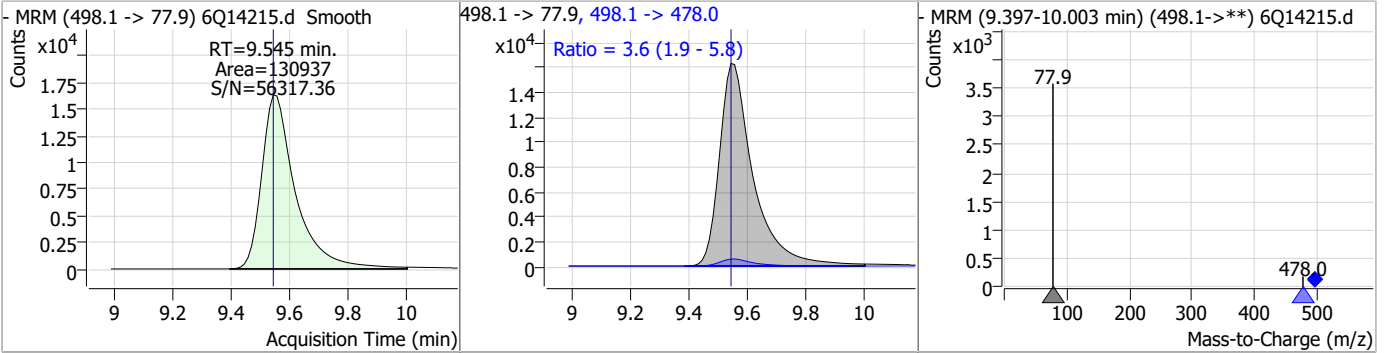


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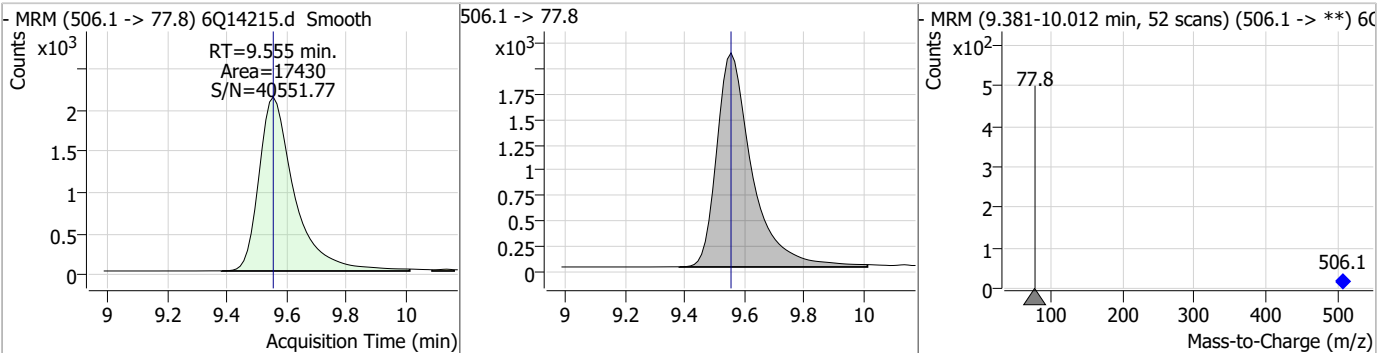


Perfluorinated Compounds by LC/MS/MS

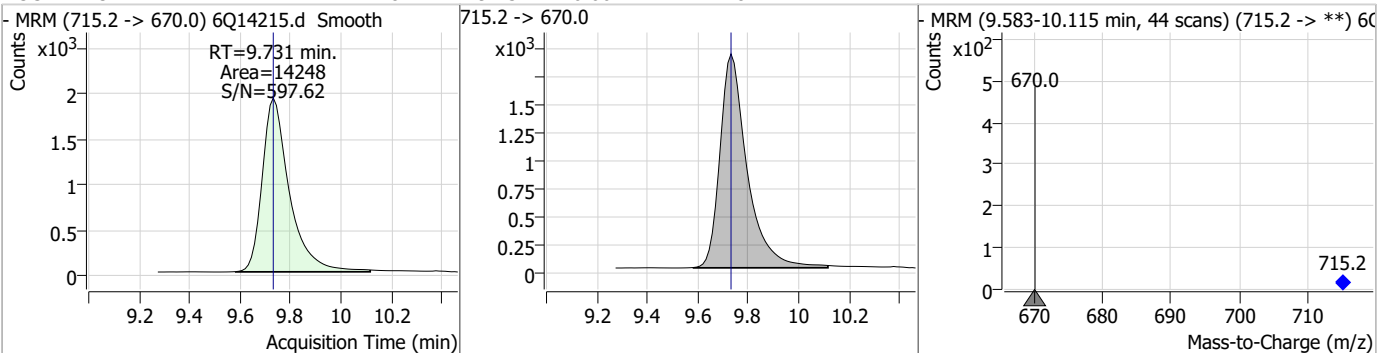
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	22.15	9.54	0.00	130937	498.1 -> 478.0	3.6	1.9	5.8



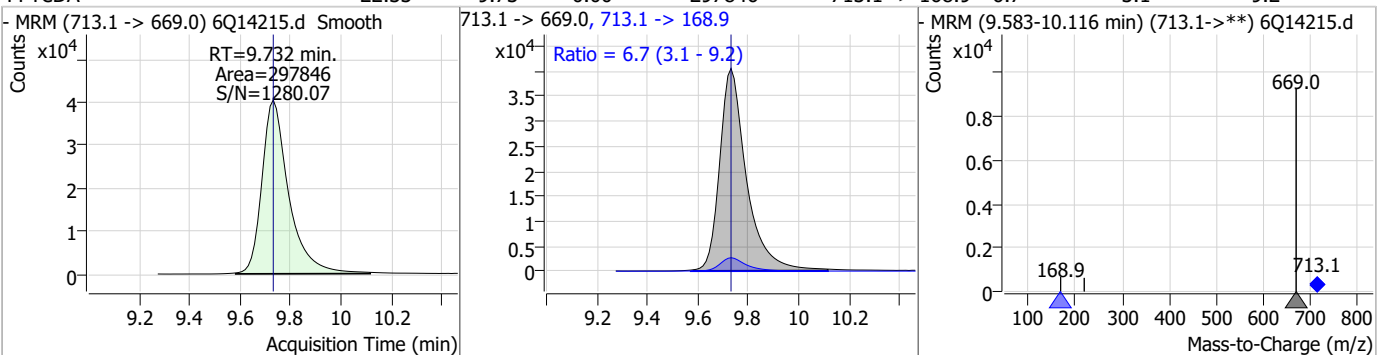
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.40	9.55	0.00	17430				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	9.73	0.00	14248				

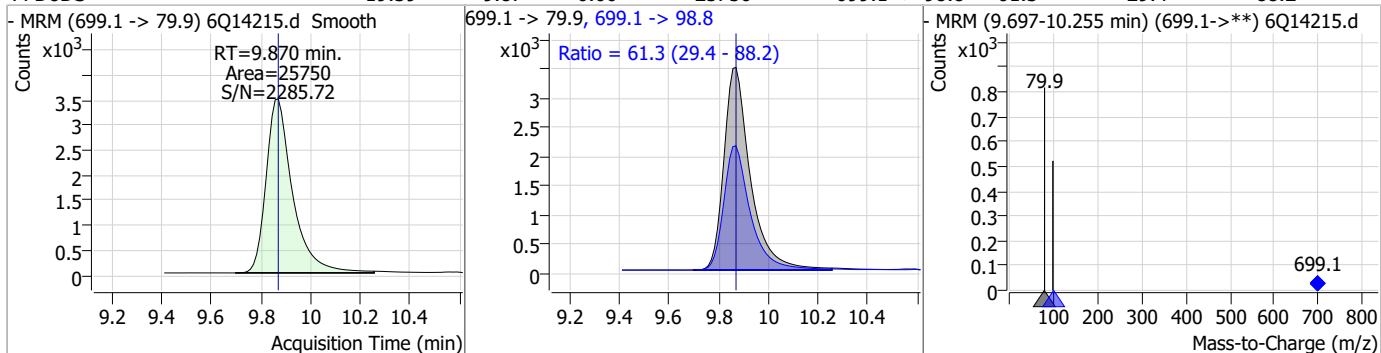


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	22.33	9.73	0.00	297846	713.1 -> 168.9	6.7	3.1	9.2

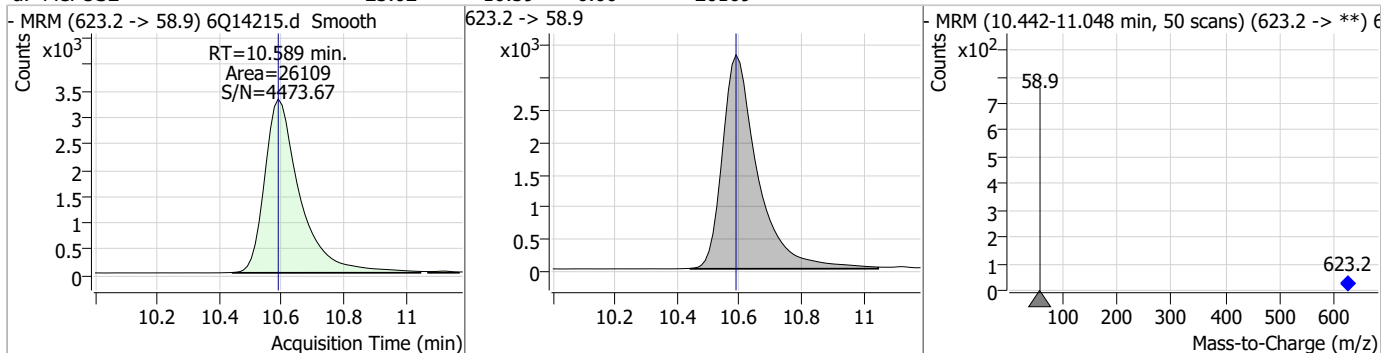


Perfluorinated Compounds by LC/MS/MS

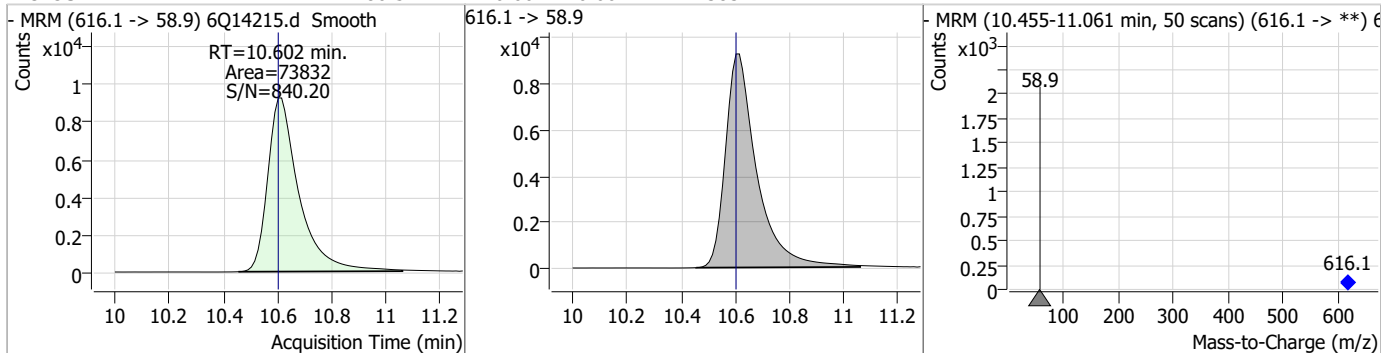
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	19.39	9.87	0.00	25750	699.1 -> 98.8	61.3	29.4	88.2



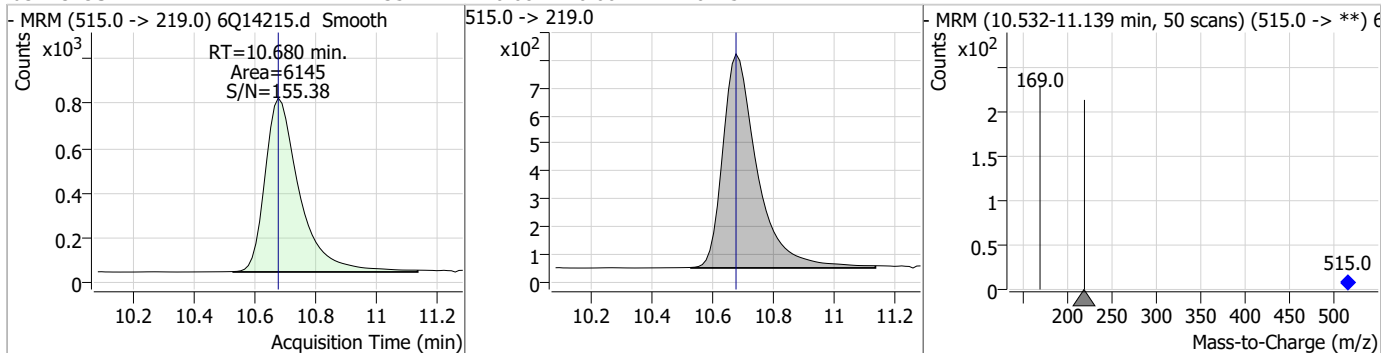
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.02	10.59	0.00	26109				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	80.54	10.60	0.00	73832				

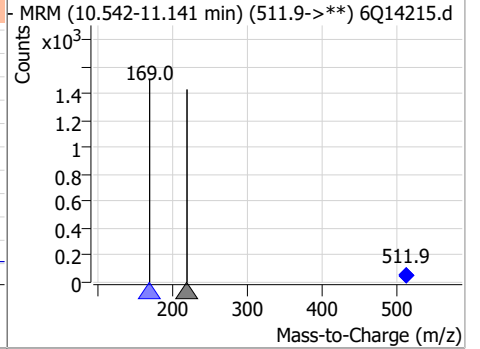
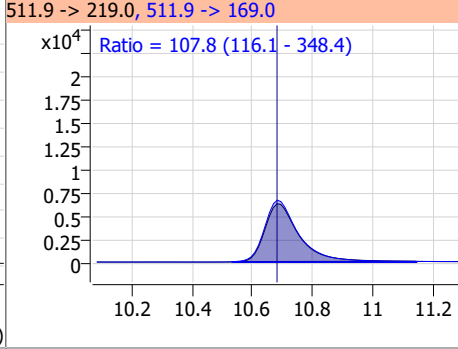
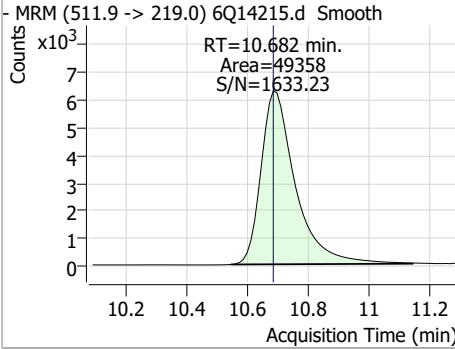


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.35	10.68	0.00	6145				

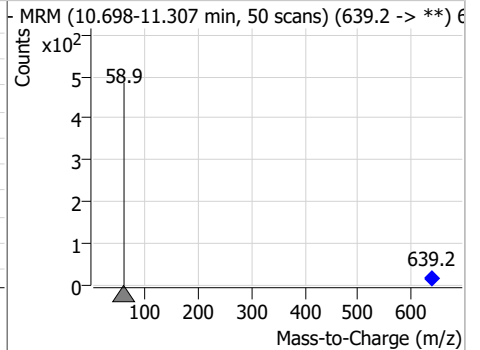
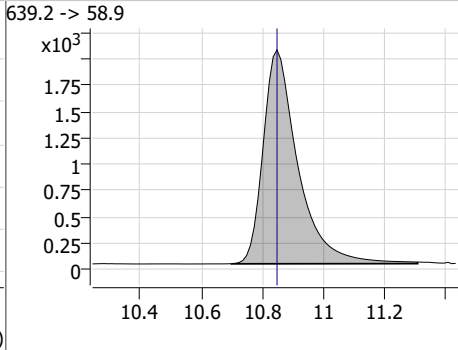
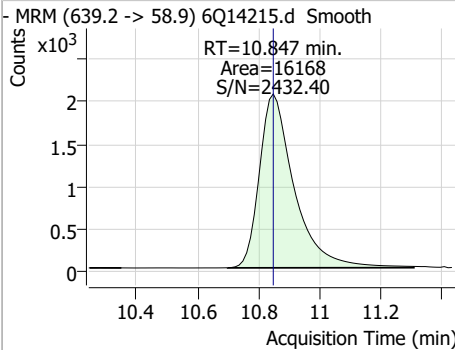


Perfluorinated Compounds by LC/MS/MS

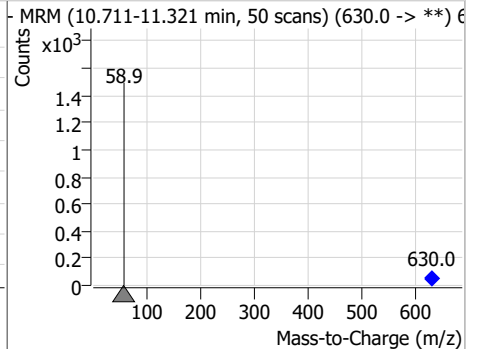
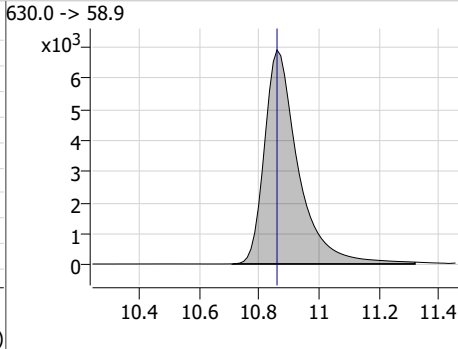
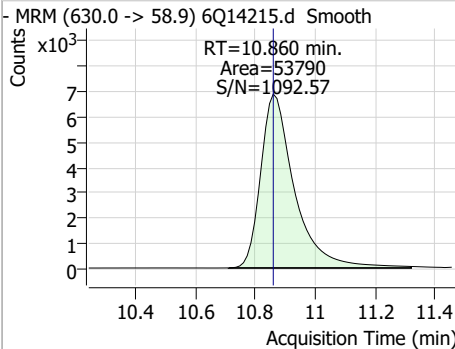
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.84	10.68	0.00	49358	511.9 -> 169.0	107.8	116.1	348.4



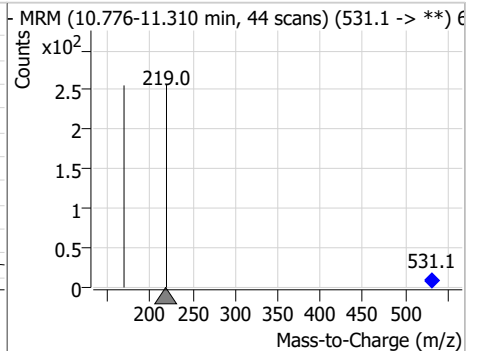
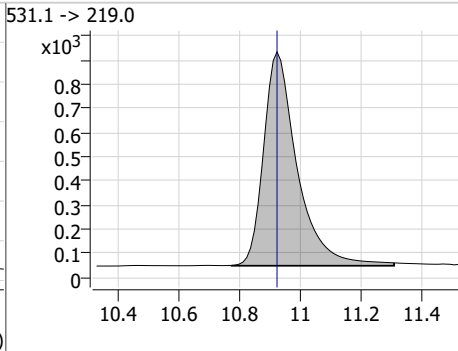
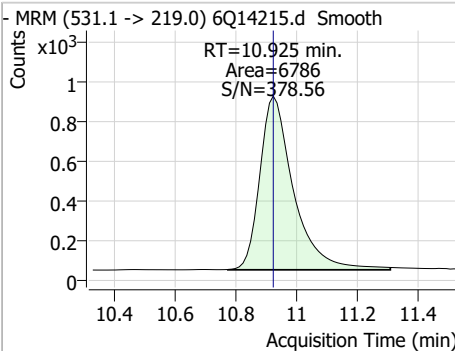
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.76	10.85	0.00	16168	639.2 -> 58.9			



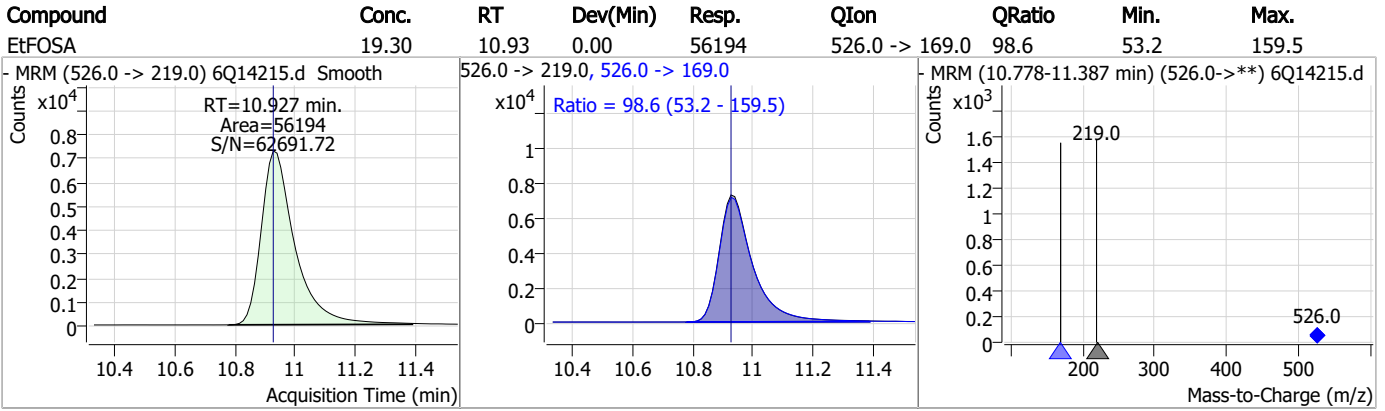
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	92.33	10.86	0.00	53790	630.0 -> 58.9			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.36	10.92	0.00	6786	531.1 -> 219.0			



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q217-ICV217 Method: EPA DRAFT 1633
Lab FileID: 6Q14215.D Analyst approved: 02/24/23 13:08 Lindsay Ritner
Injection Time: 02/23/23 15:59 Supervisor approved: 02/24/23 15:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.36	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14340.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 9:10:18 PM
 Sample Name : cc217-4
 Vial : P1-A5
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	95243	10.00 µg/L	0.000
M5-PFPeA	4.324	268.3 -> 223.0	47084	5.00 µg/L	-0.012
M5-PFHxA	5.513	318.0 -> 273.0	37938	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	43797	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	72834	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	22462	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	18553	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	21239	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	23623	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	12914	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17002	2.50 µg/L	0.000
M3-PFBS	5.444	302.1 -> 79.9	17677	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	10427	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8940	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2441	5.00 µg/L	-0.012
M2-6:2FTS	6.858	429.1 -> 80.9	2971	5.00 µg/L	0.000
M2-8:2FTS	7.895	529.1 -> 80.9	2510	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	26471	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	16412	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	24266	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	24215	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	16005	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6408	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	5863	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10570	2.50 µg/L	0.000
13C3-PFBA	2.929	216.0 -> 172.0	40773	5.00 µg/L	-0.012
18O2-PFHxS	7.211	403.0 -> 83.9	7354	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	86383	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	24641	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	23349	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	44786	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2441	5.55 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.0%		
13C2-6:2FTS	6.858	429.1 -> 80.9	2971	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2510	4.64 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.8%		
13C2-PFDoDA	8.991	615.1 -> 570.0	23623	1.22 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C2-PFTeDA	9.731	715.2 -> 670.0	12914	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.3%		
13C3-PFBS	5.444	302.1 -> 79.9	17677	2.80 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.9%		
13C3-PFHxS	7.212	402.1 -> 79.9	10427	2.56 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C4-PFBA	2.938	216.8 -> 171.9	95243	10.25 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C4-PFHpA	6.452	367.1 -> 322.0	43797	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C5-PFHxA	5.513	318.0 -> 273.0	37938	2.16 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.6%	
13C5-PFPeA	4.324	268.3 -> 223.0	47084	4.70 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C6-PFDA	8.108	519.1 -> 474.1	18553	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C7-PFUnDA	8.562	570.0 -> 525.1	21239	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-FOSA	9.555	506.1 -> 77.8	17002	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C8-PFOA	7.097	421.1 -> 376.0	72834	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.270	507.1 -> 79.9	8940	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C9-PFNA	7.626	472.1 -> 427.0	22462	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
d3-MeFOSAA	8.153	573.2 -> 419.0	26471	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	16412	9.62 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d3-MeFOSA	10.680	515.0 -> 219.0	5863	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.8%	
d5-EtFOSAA	8.349	589.2 -> 419.0	24266	5.03 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d7-MeFOSE	10.589	623.2 -> 58.9	24215	23.73 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d9-EtFOSE	10.847	639.2 -> 58.9	16005	24.06 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d5-EtFOSA	10.925	531.1 -> 219.0	6408	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.3%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	44653	9.85 µg/L	96
		327.1 -> 80.9	8940		
6:2FTS	6.859	427.1 -> 407.0	34820	9.42 µg/L	96
		427.1 -> 80.9	6892		
8:2FTS	7.896	527.1 -> 507.0	18448	11.30 µg/L	99
		527.1 -> 80.8	4486		
EtFOSAA	8.362	584.2 -> 419.1	7775	2.45 µg/L	88
		584.2 -> 526.0	4739		
FOSA	9.557	498.1 -> 77.9	14700	2.55 µg/L	99
		498.1 -> 478.0	512		
MeFOSAA	8.154	570.1 -> 419.0	11483	2.64 µg/L	m 97
		570.1 -> 483.0	1900		
PFBA	2.932	212.8 -> 168.9	19305	10.06 µg/L	100
PFBS	5.444	298.7 -> 79.9	12100	2.08 µg/L	96
		298.7 -> 98.8	5501		
PFDA	8.108	512.9 -> 469.0	47443	2.69 µg/L	100
		512.9 -> 219.0	6398		
PFDODA	8.992	613.1 -> 569.0	39226	2.37 µg/L	98
		613.1 -> 319.0	5054		
PFDS	9.167	599.0 -> 79.9	5926	2.49 µg/L	100

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2977			
PFHpA	6.453	363.1 -> 319.0	52953	2.44	µg/L	100
		363.1 -> 169.0	7463			
PFHpS	7.779	449.0 -> 79.9	6969	2.24	µg/L	100
		449.0 -> 98.9	4400			
PFHxA	5.503	313.0 -> 269.0	31928	2.63	µg/L	99
		313.0 -> 118.9	1258			
PFHxS	7.213	398.7 -> 79.9	8565	2.25	µg/L	m 93
		398.7 -> 98.9	4798			
PFNA	7.627	463.0 -> 419.0	28815	2.53	µg/L	98
		463.0 -> 219.0	5791			
PFNS	8.737	548.8 -> 79.9	8086	2.48	µg/L	100
		548.8 -> 98.9	4465			
PFOA	7.098	413.0 -> 369.0	66108	2.46	µg/L	92
		413.0 -> 169.0	8441			
PFOS	8.271	498.9 -> 79.9	7476	2.24	µg/L	m 84
		498.9 -> 98.8	5338			
PFPeA	4.326	263.0 -> 219.0	40640	4.93	µg/L	100
PFPeS	6.517	349.1 -> 79.9	11419	2.37	µg/L	93
		349.1 -> 98.9	5510			
PFTeDA	9.732	713.1 -> 669.0	32089	2.65	µg/L	98
		713.1 -> 168.9	2197			
PFTrDA	9.387	663.0 -> 619.0	37897	2.70	µg/L	100
		663.0 -> 168.9	2736			
PFUnDA	8.562	563.1 -> 519.0	36963	2.49	µg/L	100
		563.1 -> 269.1	5396			
11CI-PF3OUdS	9.439	630.9 -> 450.9	79423	8.75	µg/L	97
		632.9 -> 452.9	25736			
9CI-PF3ONS	8.602	530.8 -> 351.0	154189	9.43	µg/L	99
		532.8 -> 353.0	44906			
ADONA	6.704	376.9 -> 250.9	296578	9.11	µg/L	99
		376.9 -> 84.8	65925			
HFPO-DA	5.879	284.9 -> 168.9	13807	10.55	µg/L	98
		284.9 -> 184.9	1791			
3:3FTCA	3.791	241.0 -> 177.0	5173	11.82	µg/L	96
		241.0 -> 117.0	760			
5:3FTCA	6.156	341.0 -> 237.1	181888	65.57	µg/L	94
		341.0 -> 217.0	168592			
7:3FTCA	7.567	441.0 -> 316.9	98771	67.04	µg/L	98
		441.0 -> 336.9	184244			
EtFOSA	10.927	526.0 -> 219.0	7553	2.75	µg/L	89
		526.0 -> 169.0	7136			
EtFOSE	10.860	630.0 -> 58.9	14377	24.93	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	6678	2.67	µg/L	# 21
		511.9 -> 169.0	6734			
MeFOSE	10.602	616.1 -> 58.9	20012	23.54	µg/L	100
PFDoDS	9.858	699.1 -> 79.9	3412	2.53	µg/L	96
		699.1 -> 98.8	2104			
NFDHA	5.395	295.0 -> 201.0	3996	5.82	µg/L	96
		295.0 -> 84.9	2010			
PFMBA	4.738	279.0 -> 85.1	12163	5.01	µg/L	100
PFMPA	3.488	229.0 -> 84.9	10786	4.89	µg/L	100
PFEESA	5.983	314.8 -> 134.9	87673	5.09	µg/L	100
		314.8 -> 82.9	2225			

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



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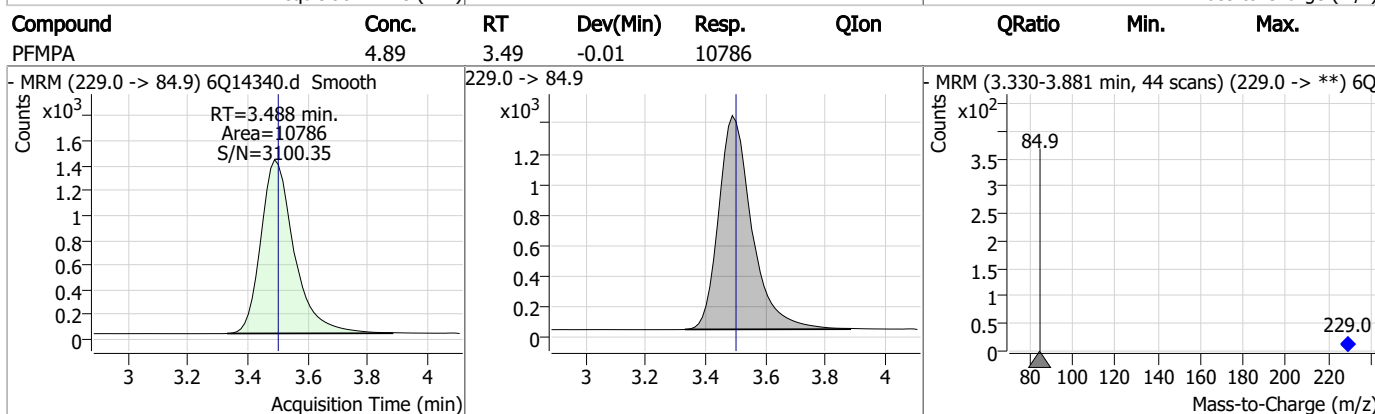
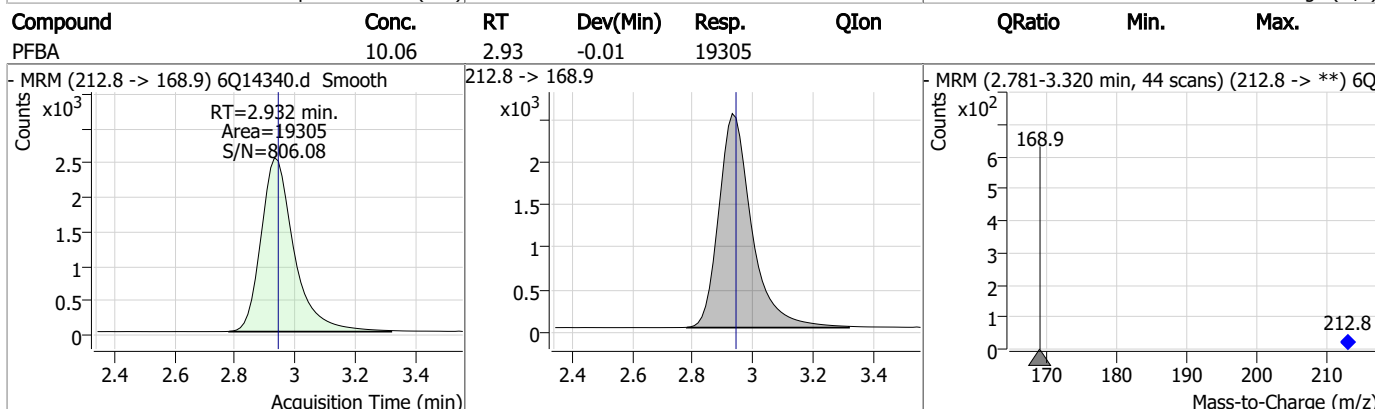
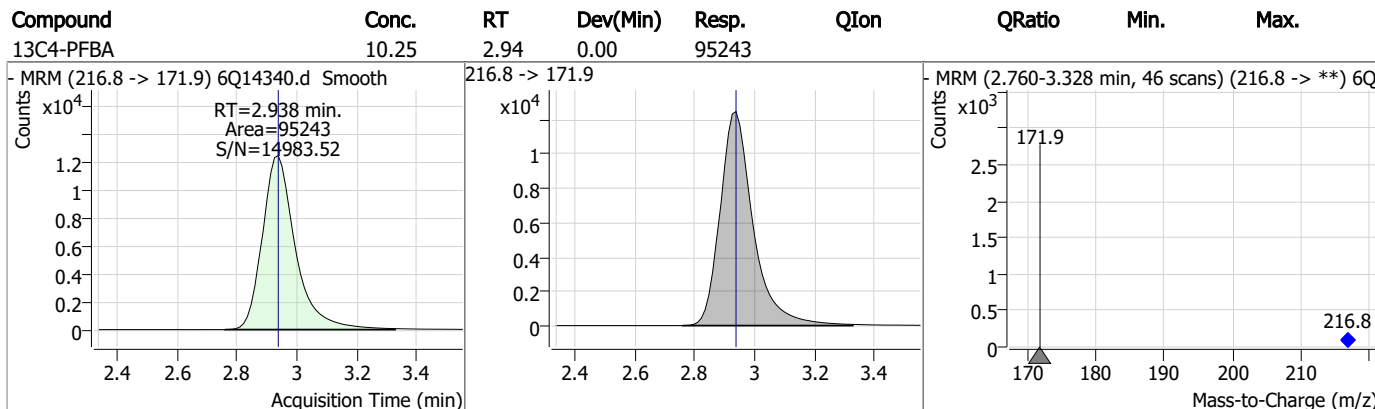
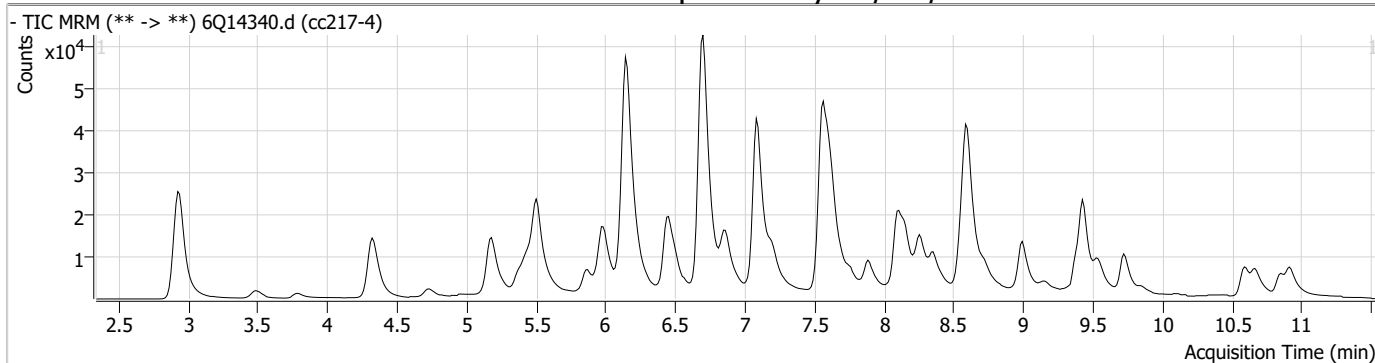
Perfluorinated Compounds by LC/MS/MS

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

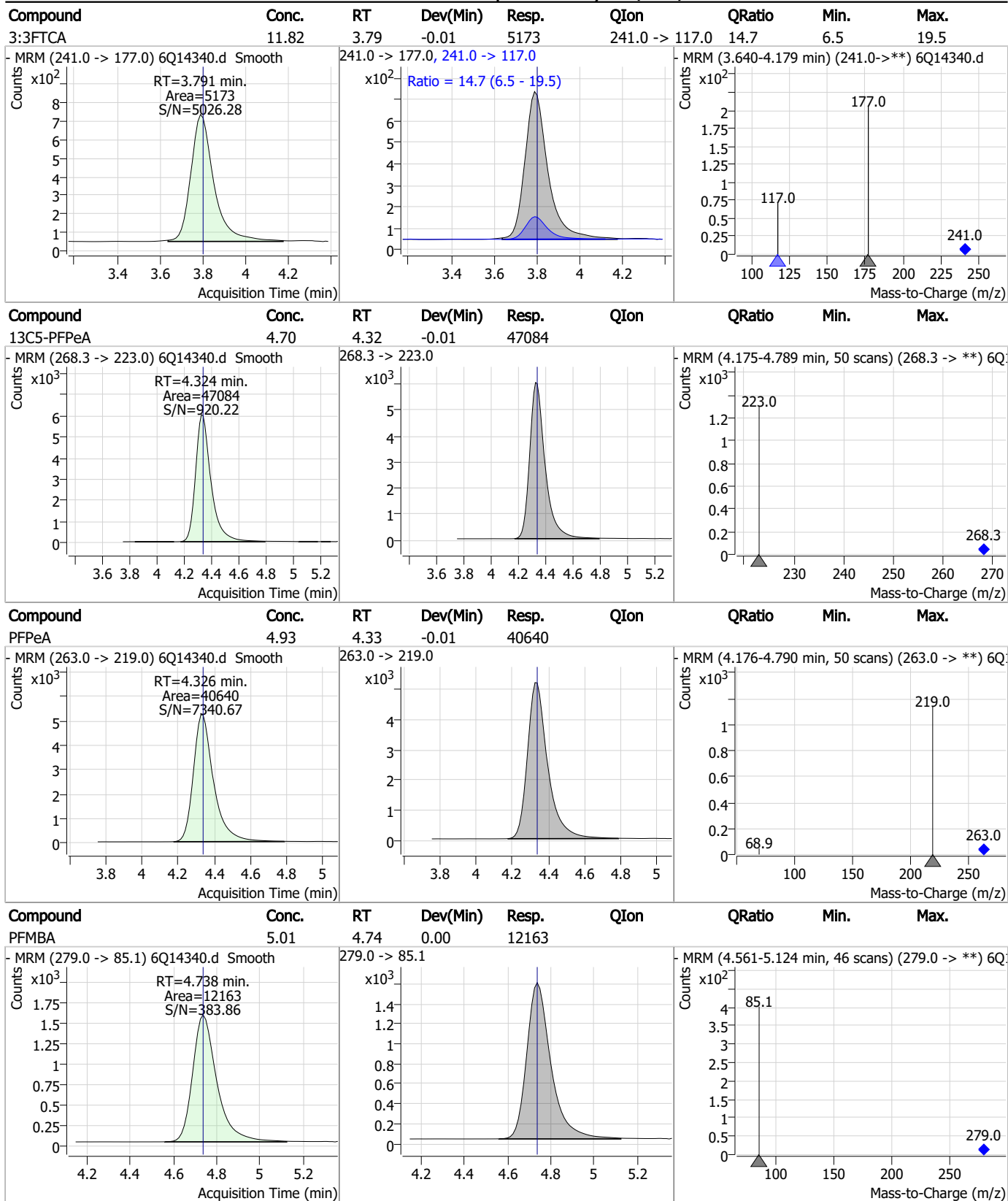
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Perfluorinated Compounds by LC/MS/MS



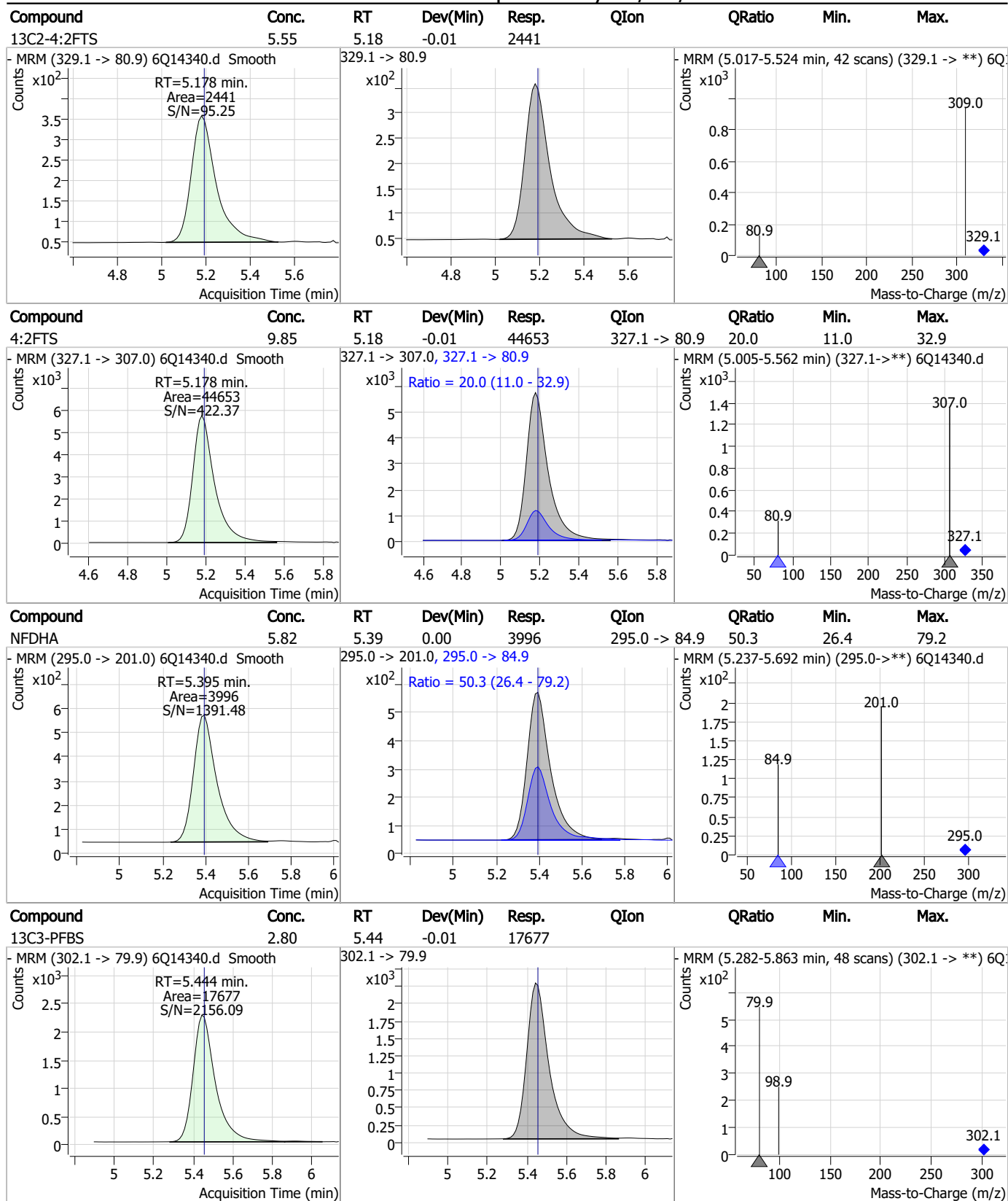
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Perfluorinated Compounds by LC/MS/MS



7.7.12
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Perfluorinated Compounds by LC/MS/MS

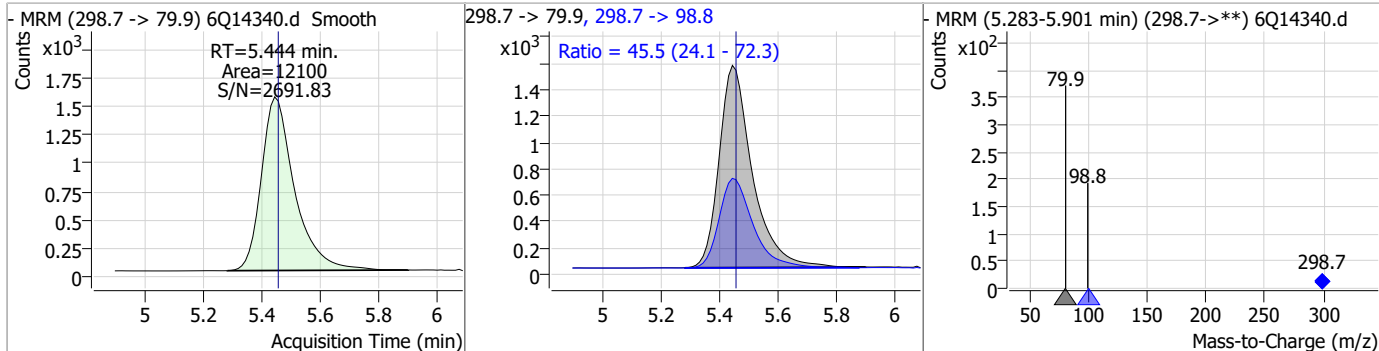


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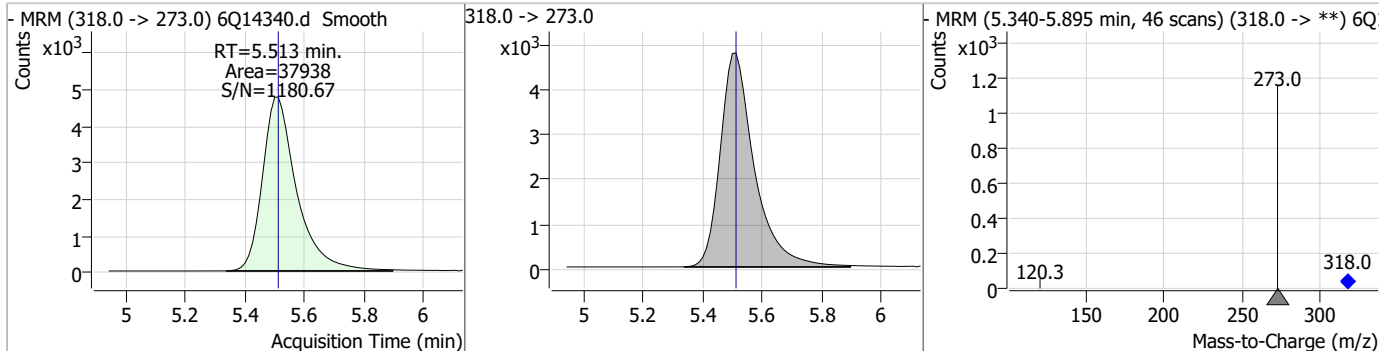


Perfluorinated Compounds by LC/MS/MS

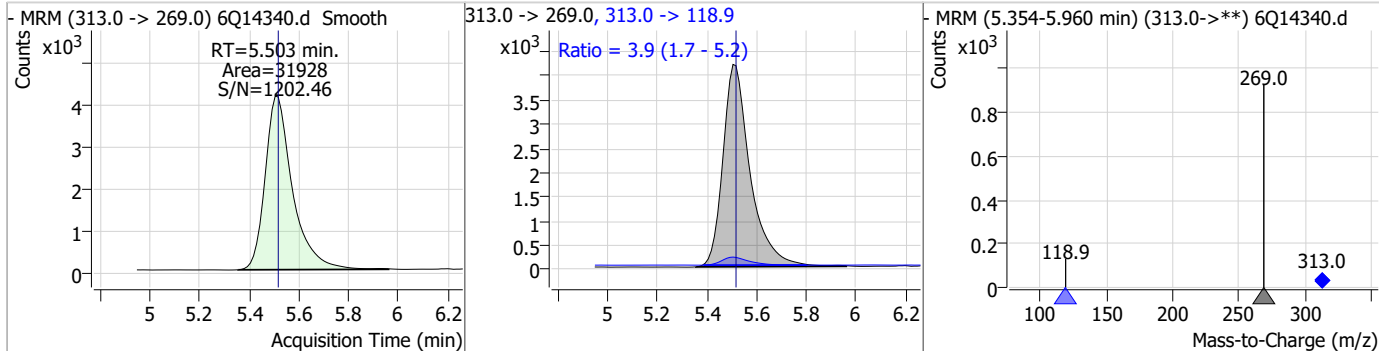
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.08	5.44	-0.01	12100	298.7 -> 98.8	45.5	24.1	72.3



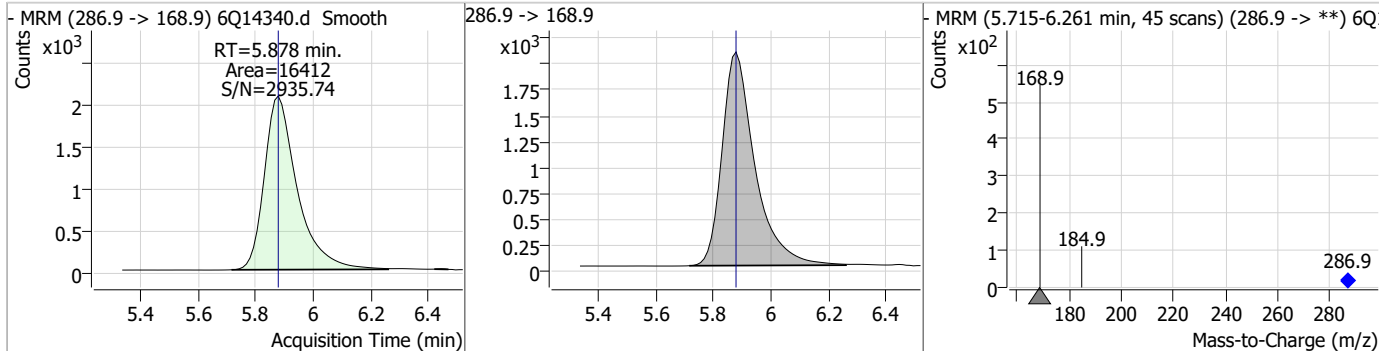
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.16	5.51	0.00	37938				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.63	5.50	-0.01	31928	313.0 -> 118.9	3.9	1.7	5.2

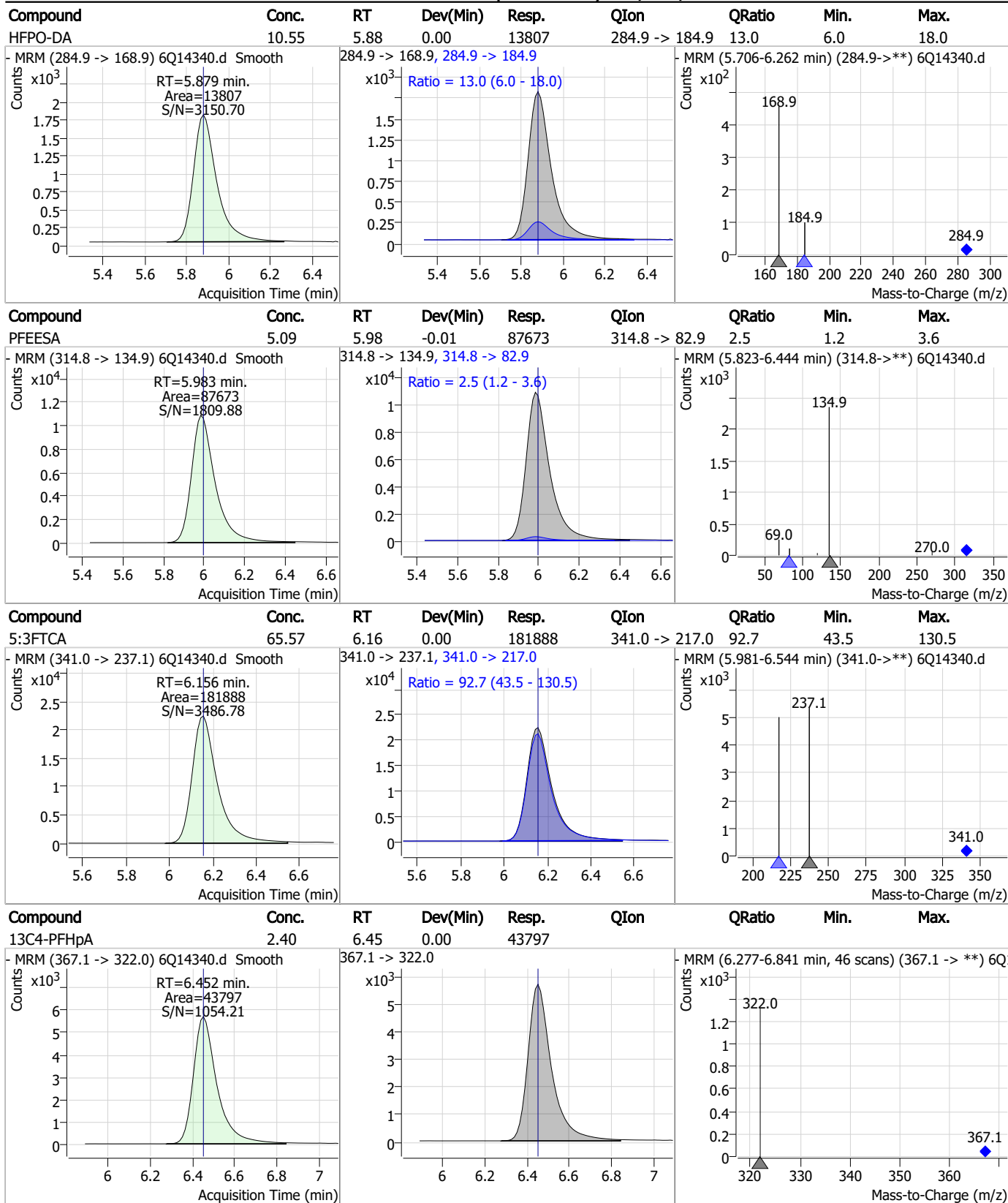


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.62	5.88	0.00	16412				



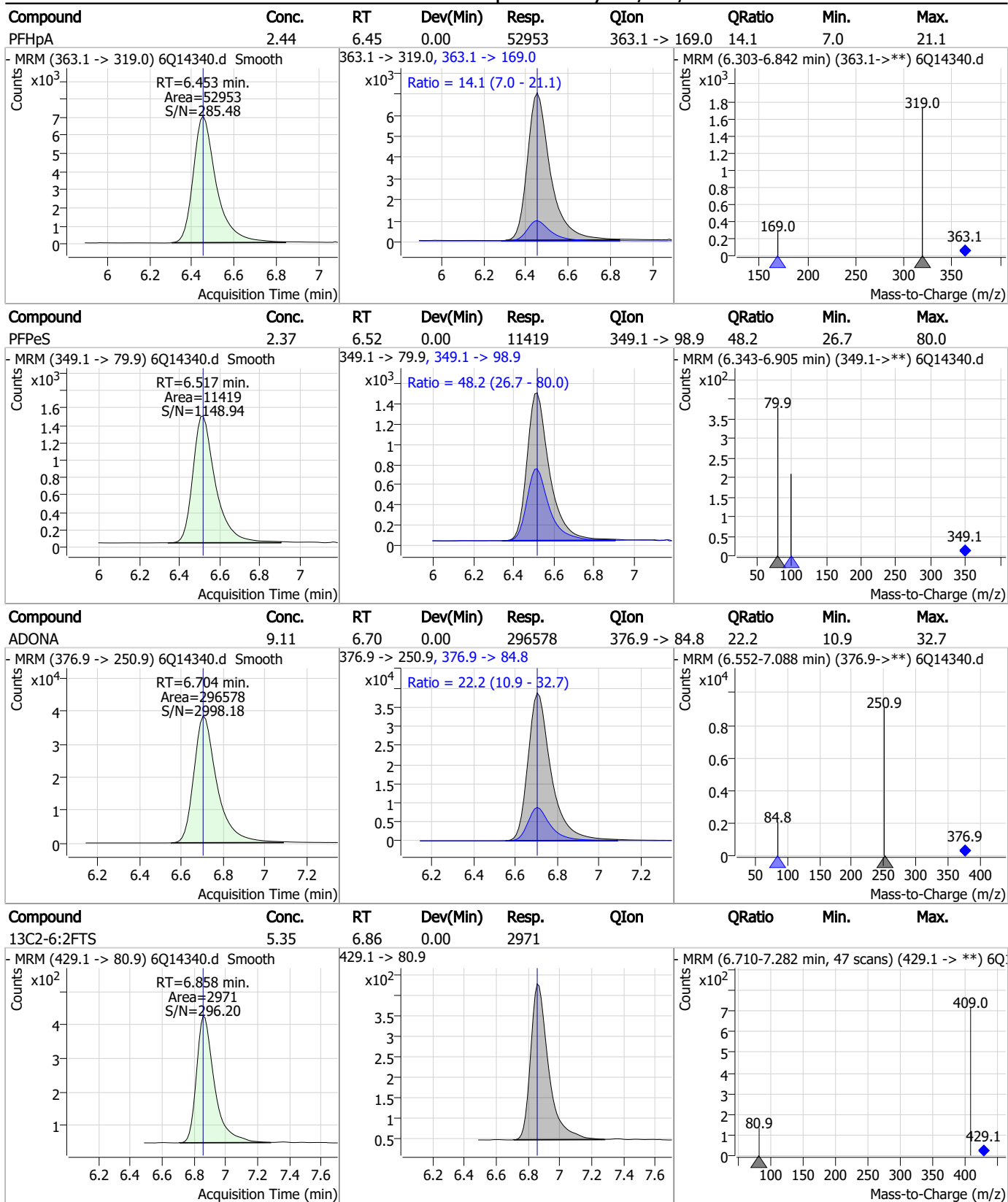
7.7.12 7

Perfluorinated Compounds by LC/MS/MS



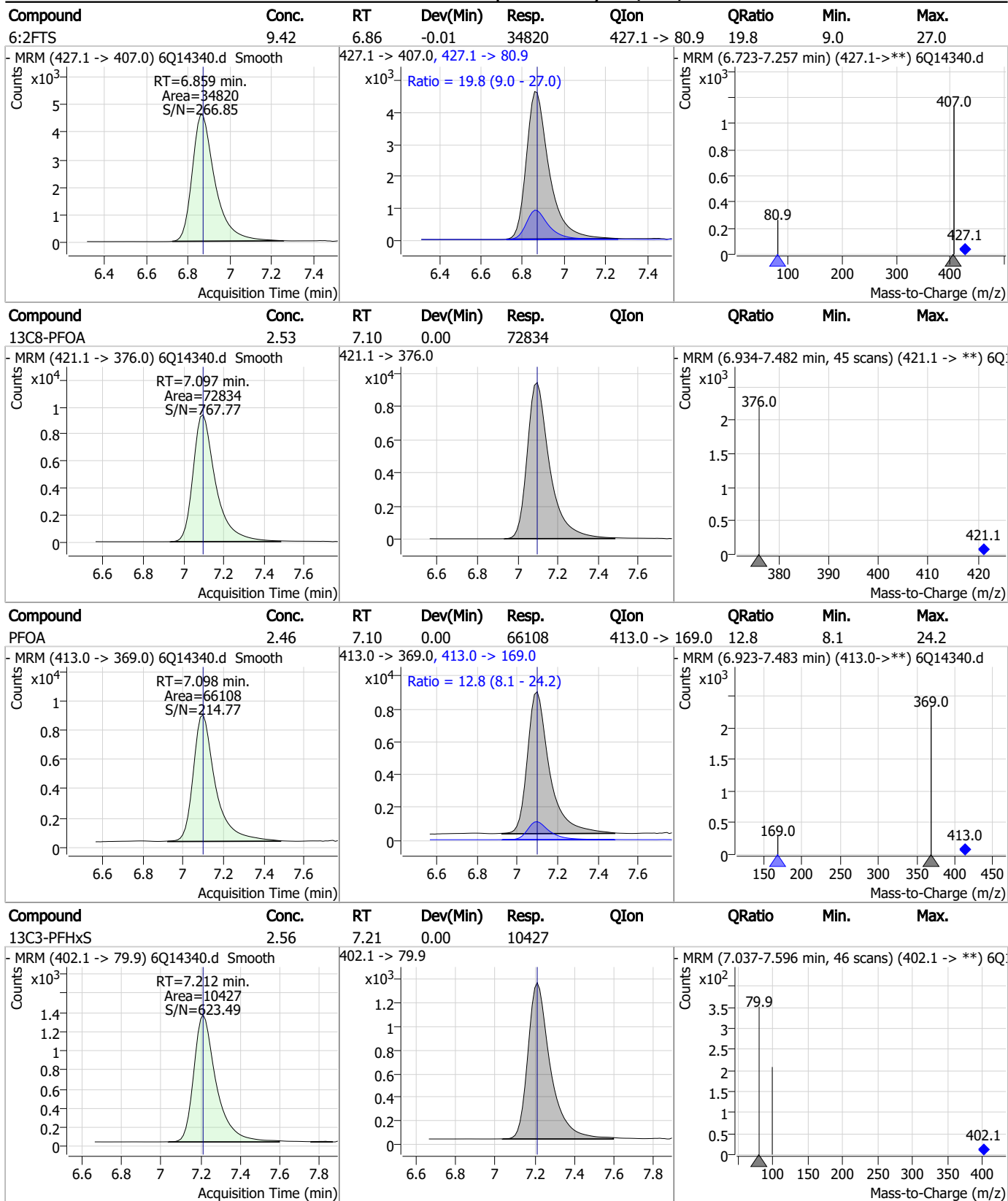
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Perfluorinated Compounds by LC/MS/MS



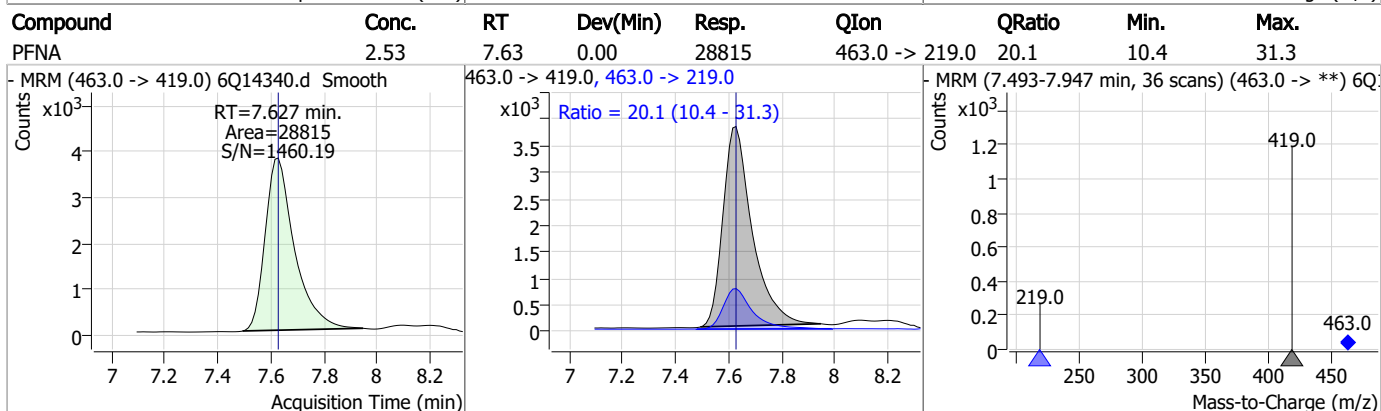
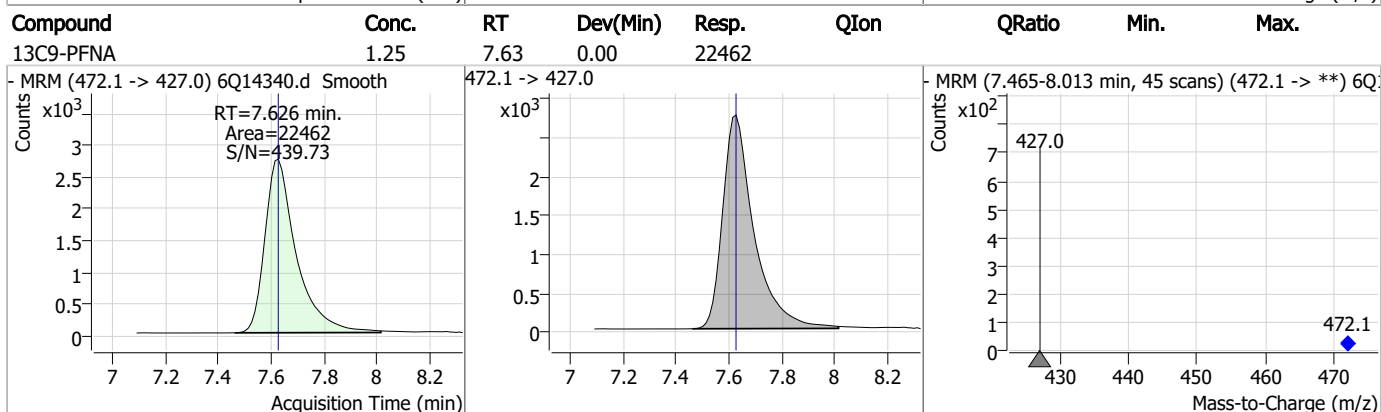
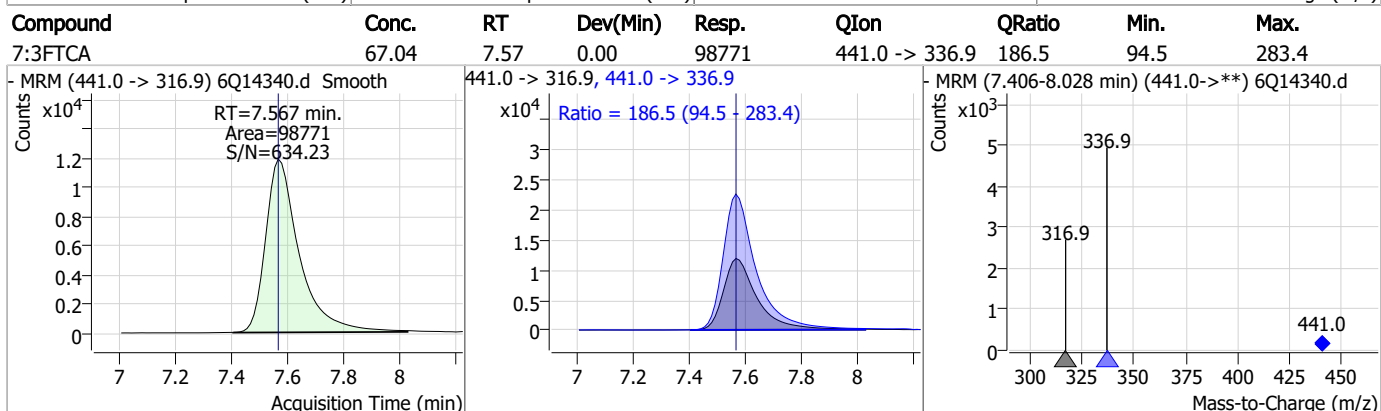
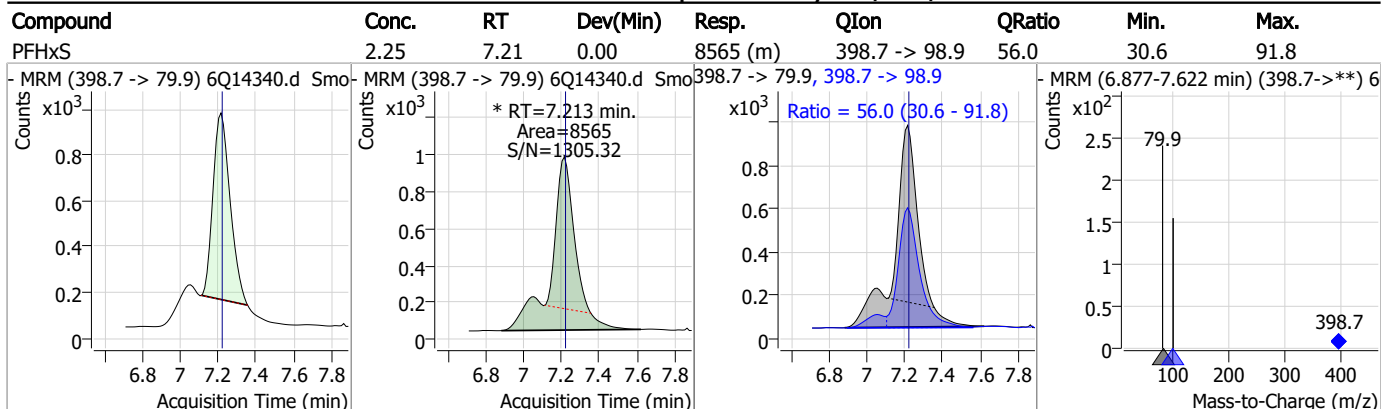
7.7.12
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Perfluorinated Compounds by LC/MS/MS



7.7.12
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

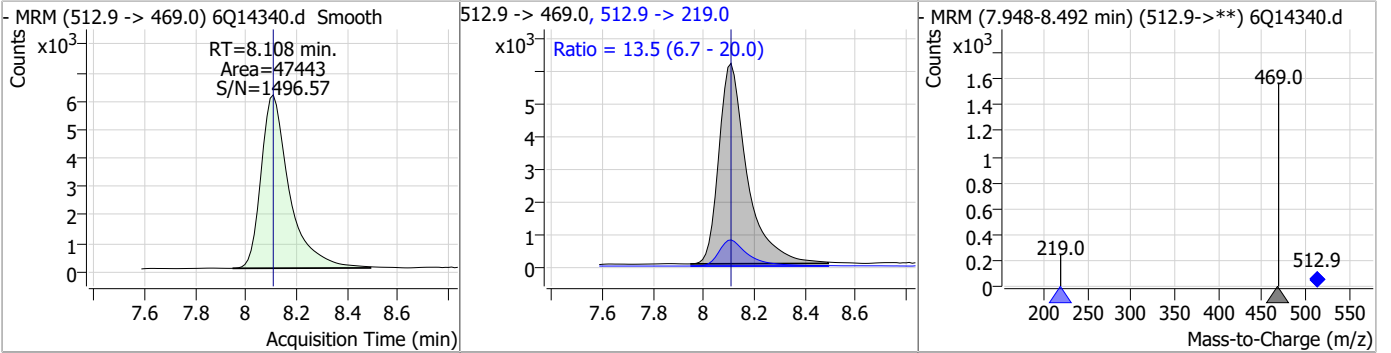
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.24	7.78	0.00	6969	449.0 -> 98.9	63.1	31.7	95.2
13C2-8:2FTS	4.64	7.90	0.00	2510				
8:2FTS	11.30	7.90	0.00	18448	527.1 -> 80.8	24.3	12.0	36.1
13C6-PFDA	1.29	8.11	0.00	18553				

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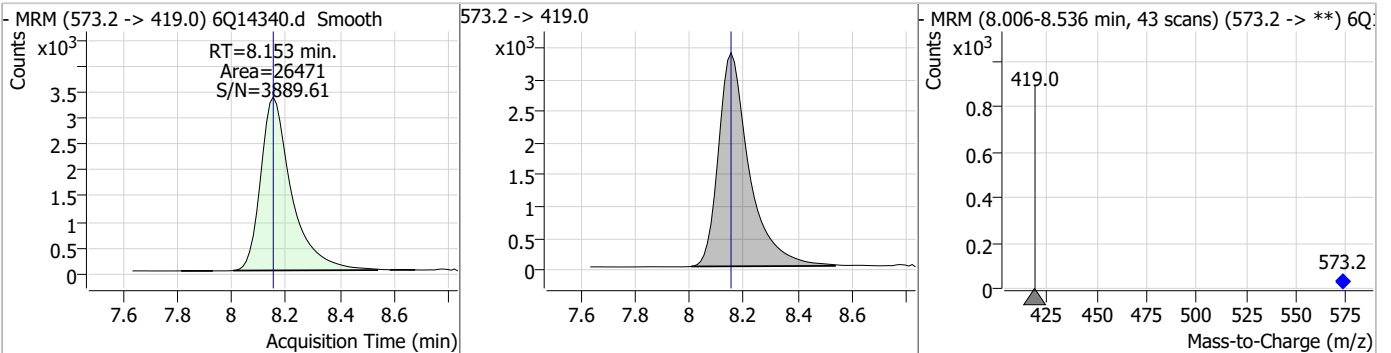


Perfluorinated Compounds by LC/MS/MS

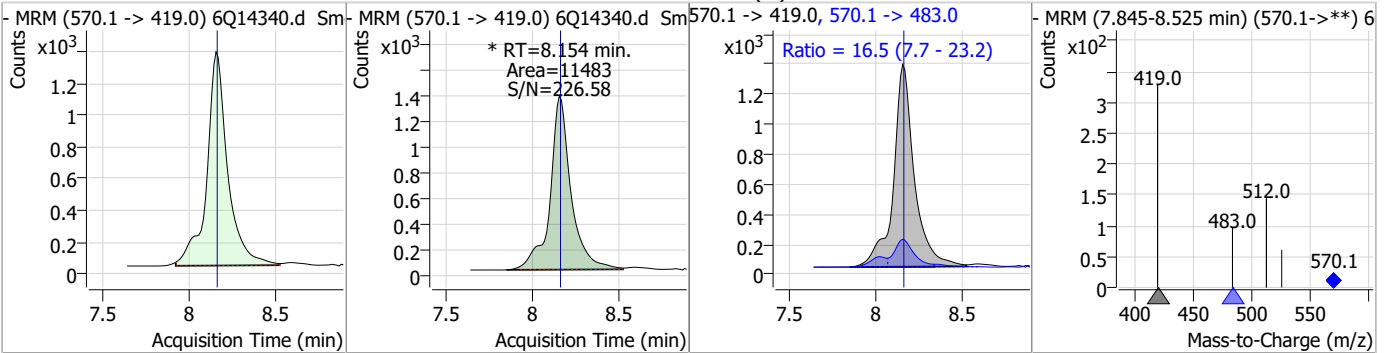
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.69	8.11	0.00	47443	512.9 -> 219.0	13.5	6.7	20.0



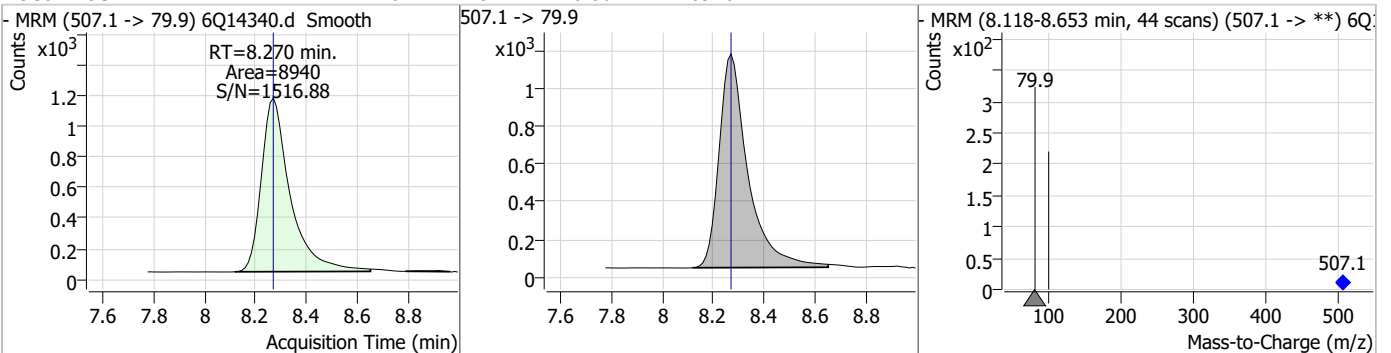
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.81	8.15	0.00	26471				



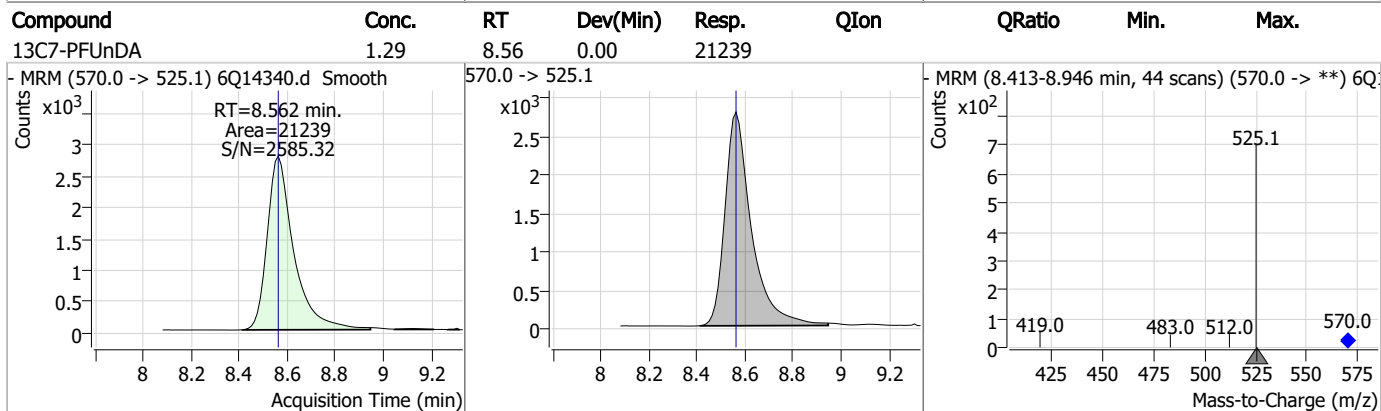
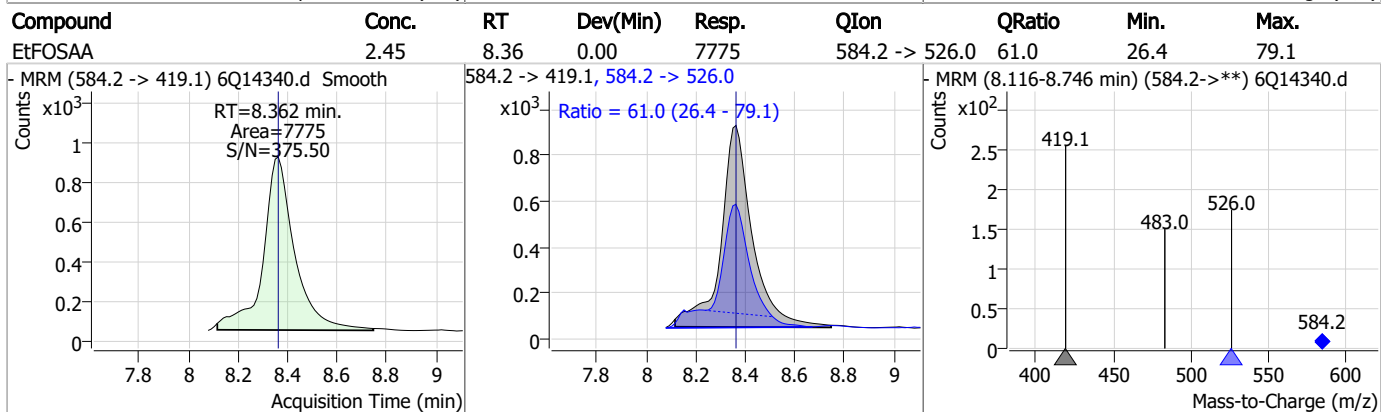
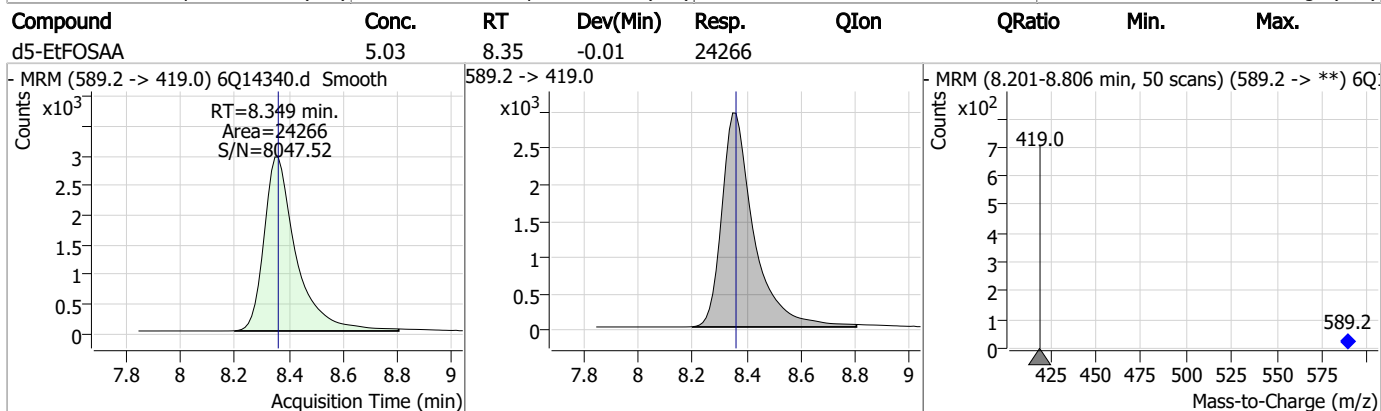
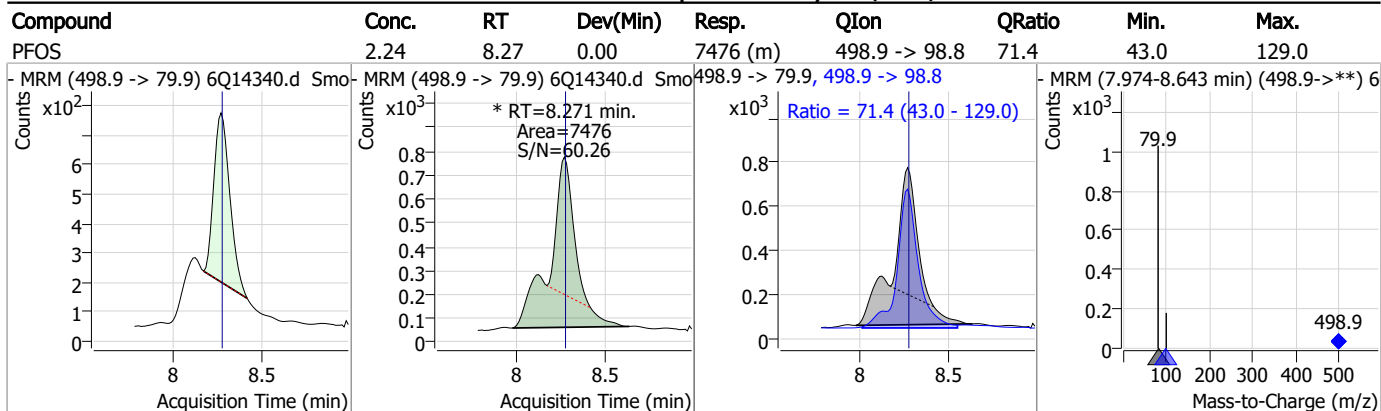
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.64	8.15	0.00	11483 (m)	570.1 -> 483.0	16.5	7.7	23.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.46	8.27	0.00	8940				

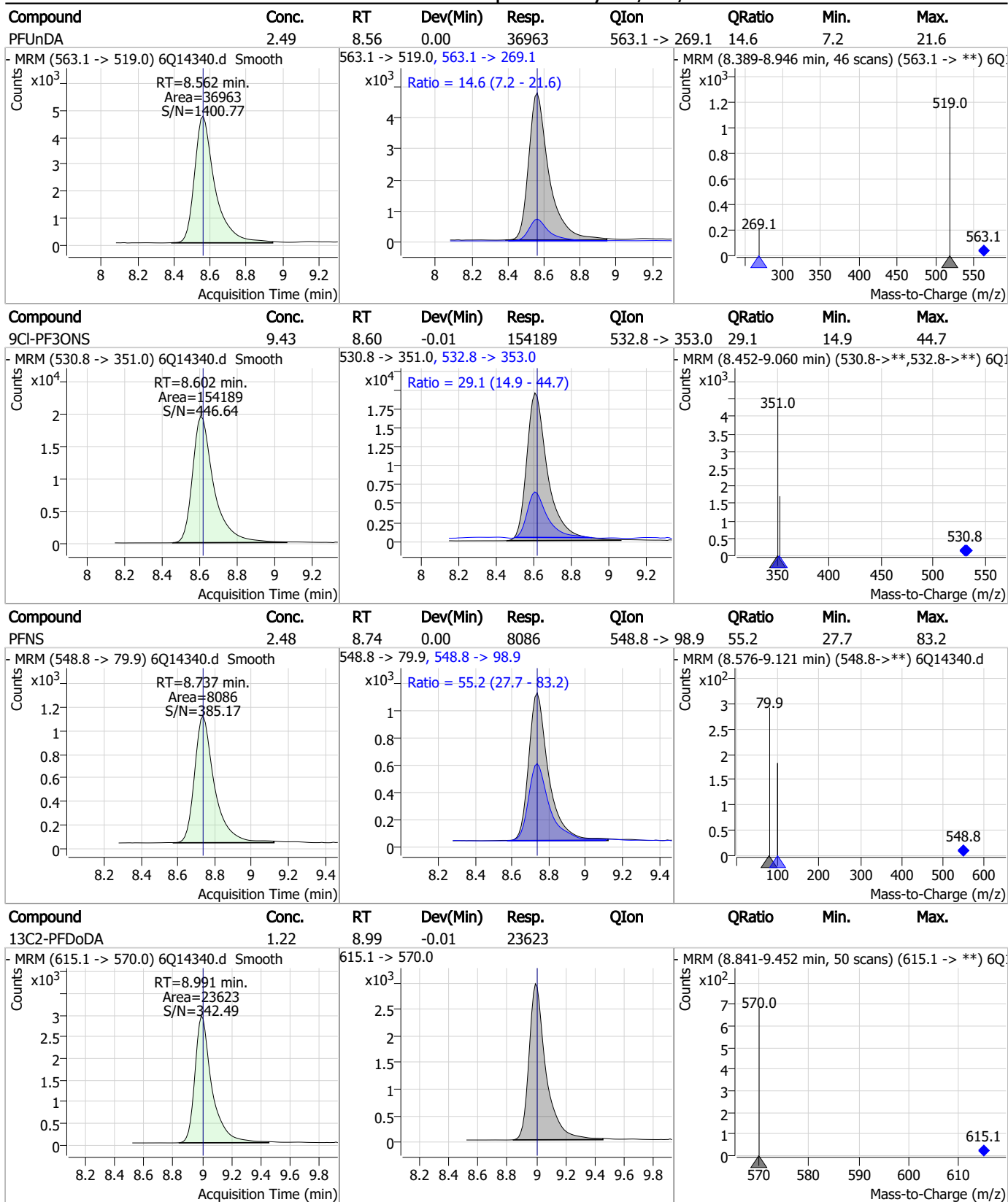


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

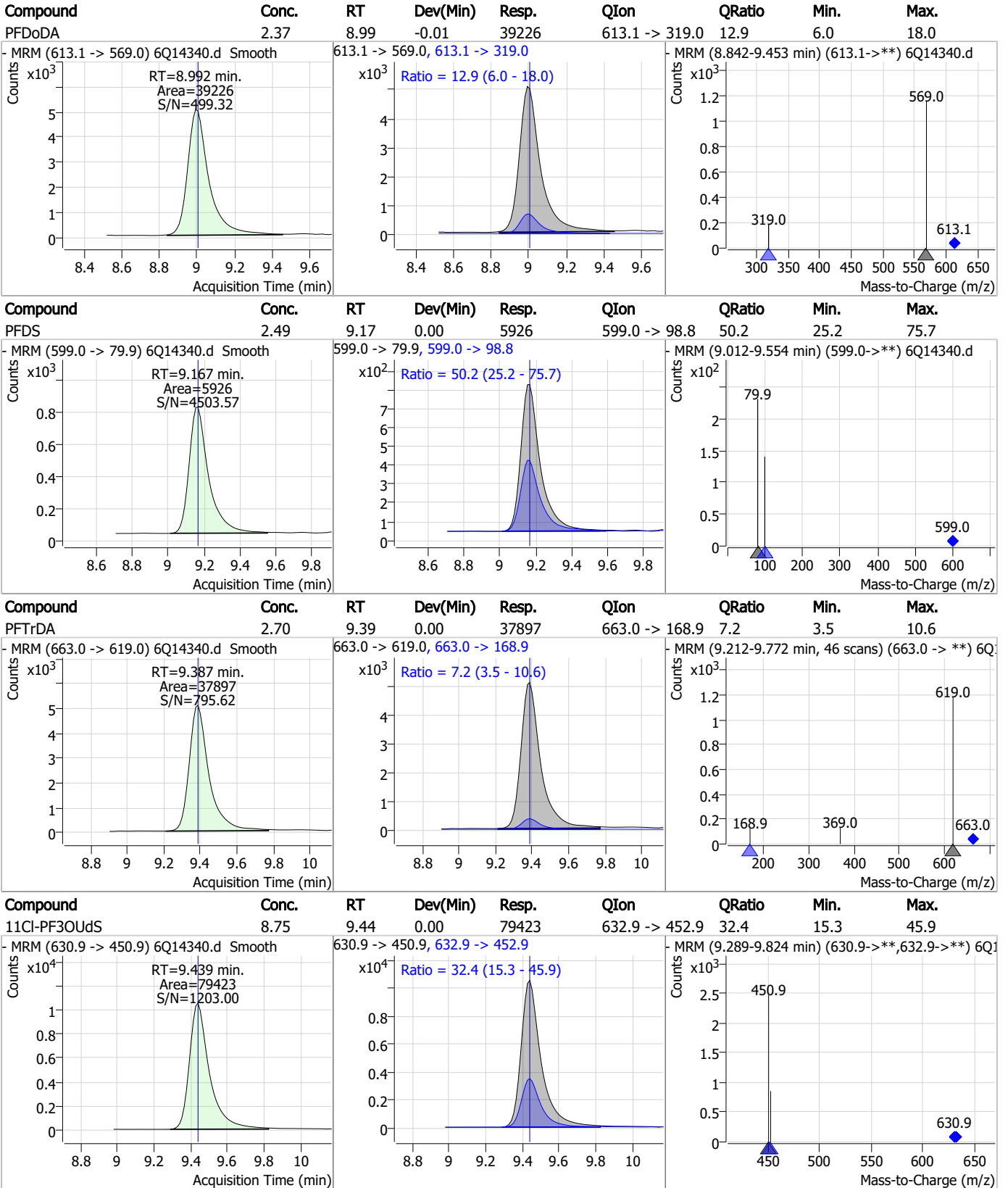


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Perfluorinated Compounds by LC/MS/MS

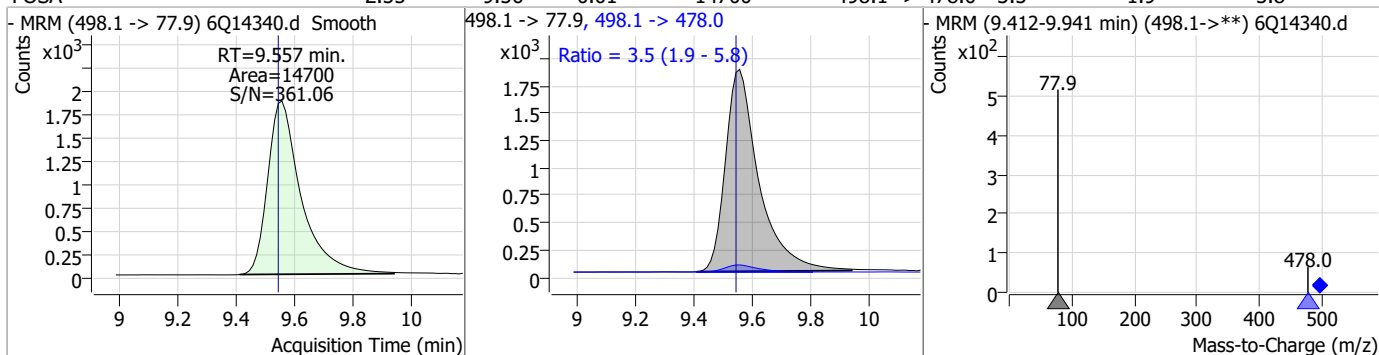


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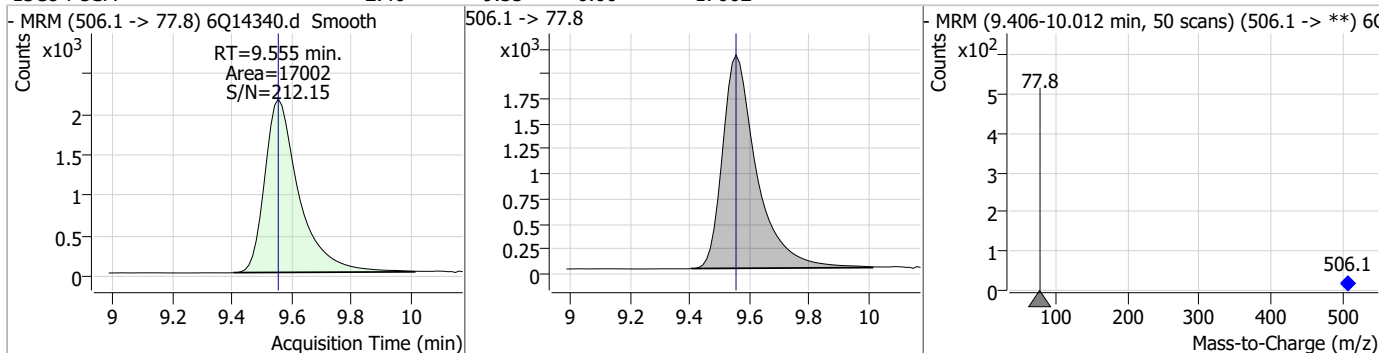


Perfluorinated Compounds by LC/MS/MS

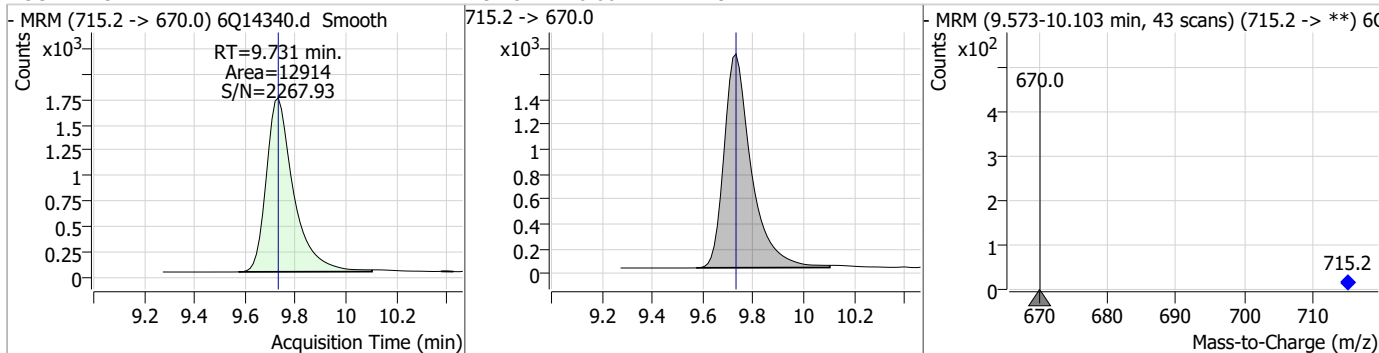
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.55	9.56	0.01	14700	498.1 -> 478.0	3.5	1.9	5.8



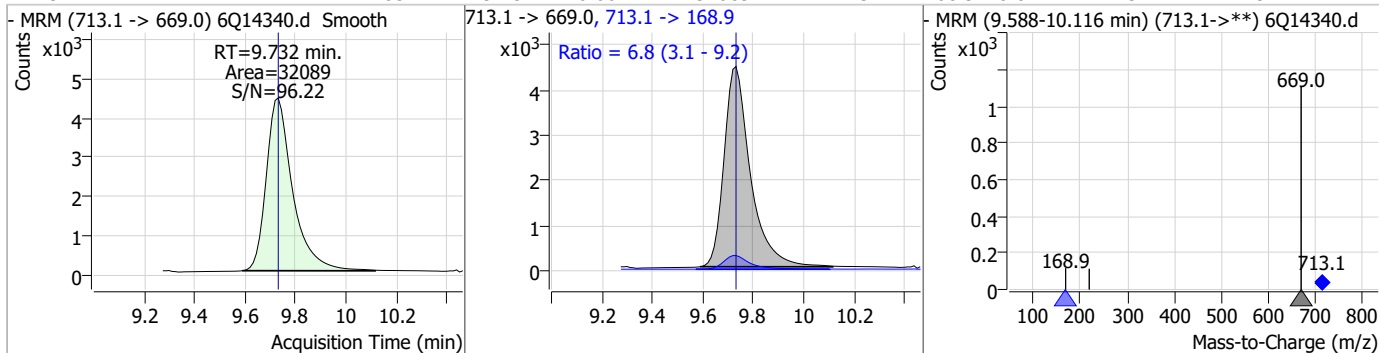
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.40	9.55	0.00	17002				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.14	9.73	0.00	12914				



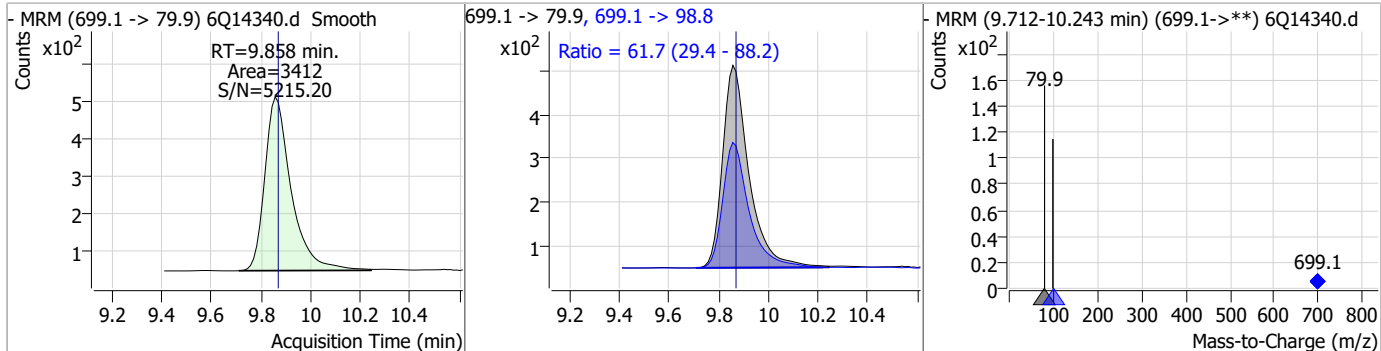
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.65	9.73	0.00	32089	713.1 -> 168.9	6.8	3.1	9.2



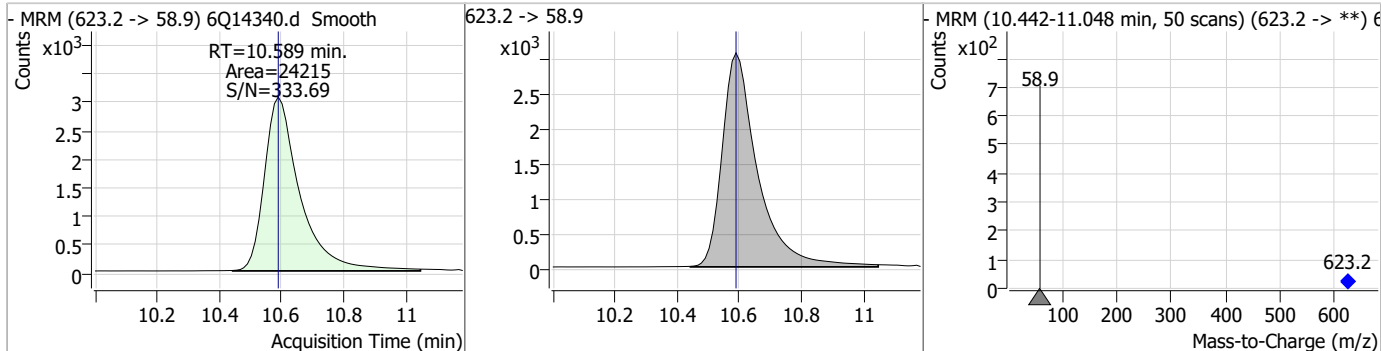
7.7.12
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Perfluorinated Compounds by LC/MS/MS

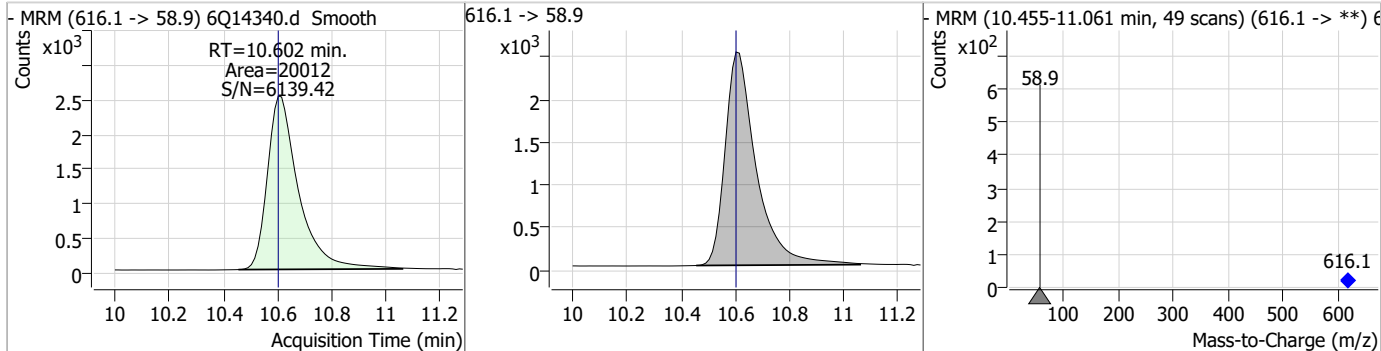
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.53	9.86	-0.01	3412	699.1 -> 98.8	61.7	29.4	88.2



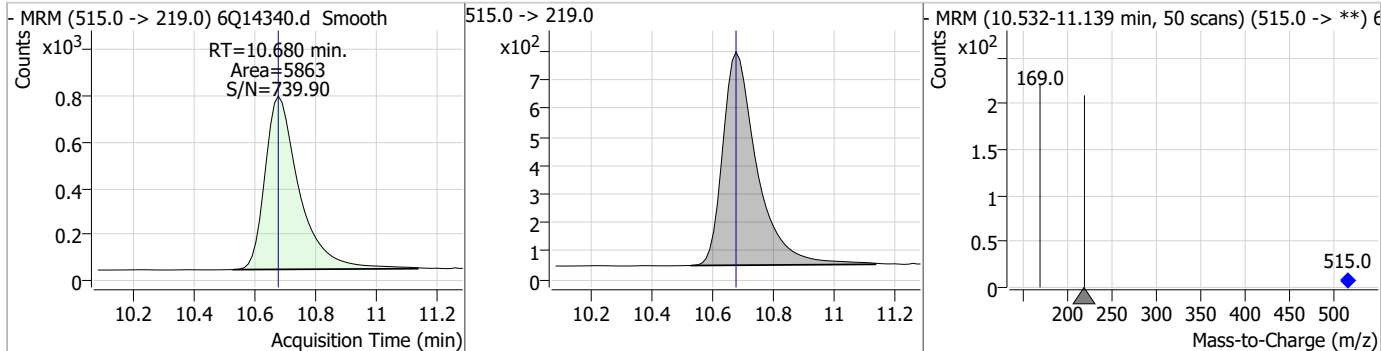
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.73	10.59	0.00	24215				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	23.54	10.60	0.00	20012				

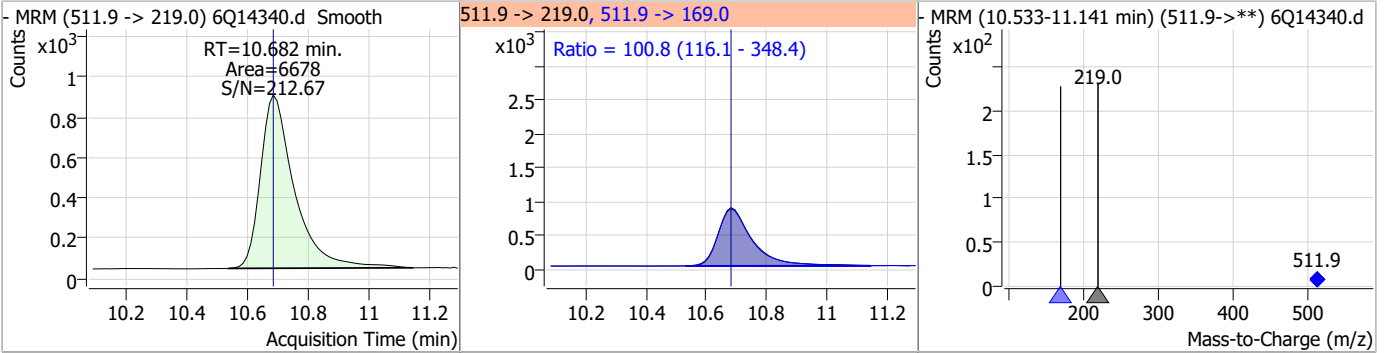


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.29	10.68	0.00	5863				

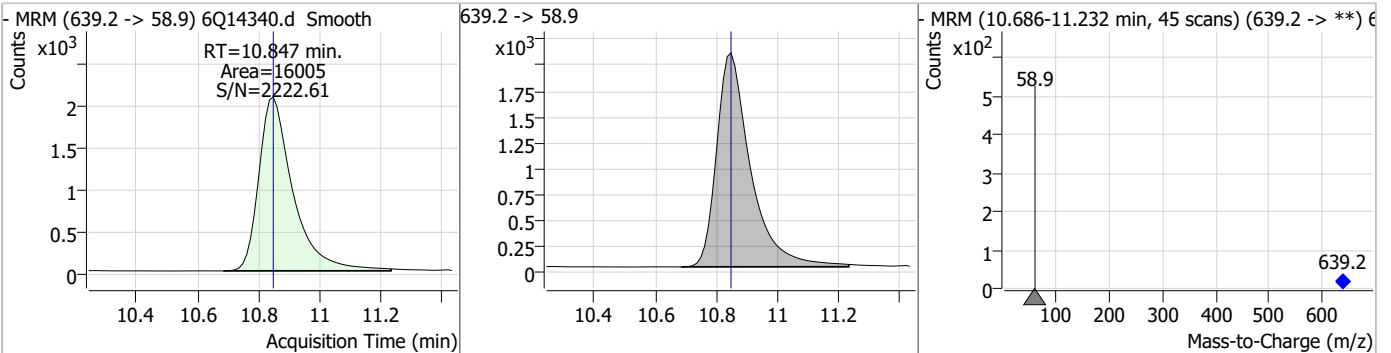


Perfluorinated Compounds by LC/MS/MS

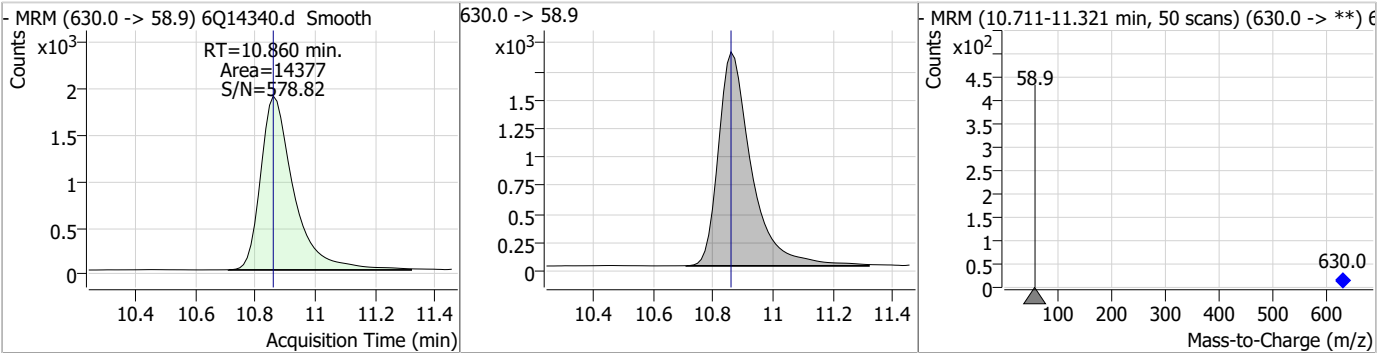
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.67	10.68	0.00	6678	511.9 -> 169.0	100.8	116.1	348.4



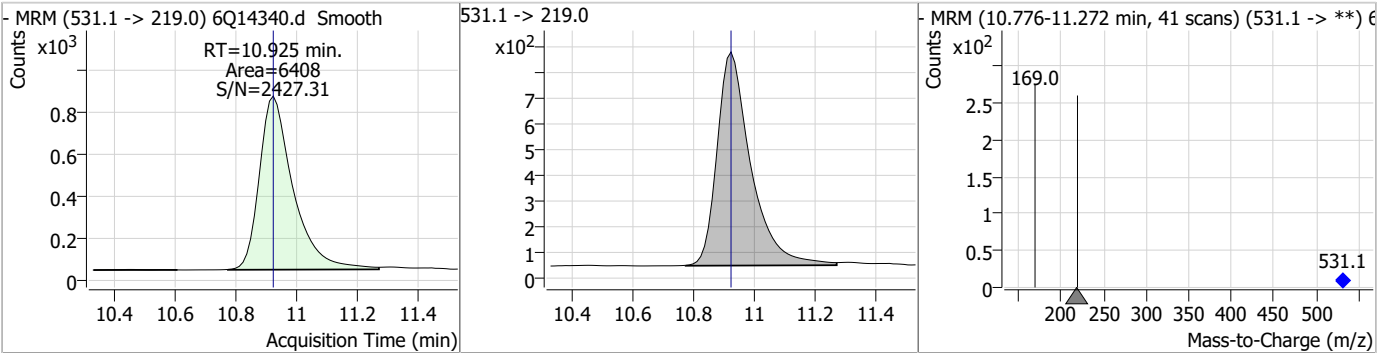
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.06	10.85	0.00	16005				



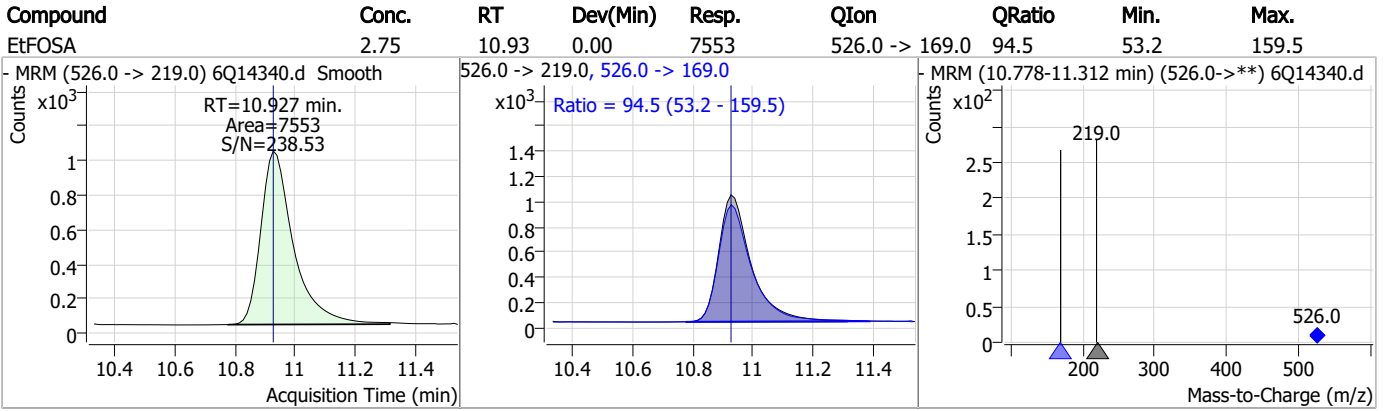
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.93	10.86	0.00	14377				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.28	10.92	0.00	6408				



Perfluorinated Compounds by LC/MS/MS



7.7.12
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Manual Integration Approval Summary

Sample Number: S6Q218-CC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14340.D Analyst approved: 02/27/23 11:07 Martha Valls
Injection Time: 02/24/23 21:10 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
MeFOSAA	2355-31-9		8.15	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.7.12.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14341.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 9:24:18 PM
 Sample Name : cc217-1.0LL
 Vial : P1-A2
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95581,S6Q218,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.926	216.8 -> 171.9	98748	10.00 µg/L	-0.012
M5-PFPeA	4.324	268.3 -> 223.0	47428	5.00 µg/L	-0.012
M5-PFHxA	5.500	318.0 -> 273.0	41085	2.50 µg/L	-0.012
M4-PFHpA	6.452	367.1 -> 322.0	45717	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	75213	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	23125	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	18488	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	21700	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	25665	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	13816	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	18056	2.50 µg/L	0.000
M3-PFBS	5.444	302.1 -> 79.9	17359	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	10342	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	9093	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2595	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	3205	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	3073	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	28605	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	16959	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	25591	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	25491	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	15594	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6707	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	6030	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	11735	2.50 µg/L	0.000
13C3-PFBA	2.929	216.0 -> 172.0	42197	5.00 µg/L	-0.012
18O2-PFHxS	7.211	403.0 -> 83.9	7351	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	88177	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	26202	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	24548	1.25 µg/L	0.000
13C2-PFHxA	5.501	315.1 -> 270.0	46880	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2595	5.90 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.1%		
13C2-6:2FTS	6.871	429.1 -> 80.9	3205	5.77 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.5%		
13C2-8:2FTS	7.895	529.1 -> 80.9	3073	5.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C2-PFDoDA	8.991	615.1 -> 570.0	25665	1.24 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFTeDA	9.731	715.2 -> 670.0	13816	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.9%		
13C3-PFBS	5.444	302.1 -> 79.9	17359	2.75 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C3-PFHxS	7.212	402.1 -> 79.9	10342	2.54 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C4-PFBA	2.926	216.8 -> 171.9	98748	10.27 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C4-PFHpA	6.452	367.1 -> 322.0	45717	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C5-PFHxA	5.500	318.0 -> 273.0	41085	2.24 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.6%	
13C5-PFPeA	4.324	268.3 -> 223.0	47428	4.52 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.4%	
13C6-PFDA	8.108	519.1 -> 474.1	18488	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C7-PFUnDA	8.562	570.0 -> 525.1	21700	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-FOSA	9.555	506.1 -> 77.8	18056	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.7%	
13C8-PFOA	7.097	421.1 -> 376.0	75213	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOS	8.270	507.1 -> 79.9	9093	2.26 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.3%	
13C9-PFNA	7.626	472.1 -> 427.0	23125	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%	
d3-MeFOSAA	8.153	573.2 -> 419.0	28605	4.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	16959	9.50 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
d3-MeFOSA	10.680	515.0 -> 219.0	6030	2.13 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.0%	
d5-EtFOSAA	8.349	589.2 -> 419.0	25591	4.78 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
d7-MeFOSE	10.589	623.2 -> 58.9	25491	22.50 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.0%	
d9-EtFOSE	10.847	639.2 -> 58.9	15594	21.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.5%	
d5-EtFOSA	10.925	531.1 -> 219.0	6707	2.15 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.0%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	3295	0.68 µg/L	98
		327.1 -> 80.9	683		
6:2FTS	6.859	427.1 -> 407.0	2948	0.74 µg/L	98
		427.1 -> 80.9	502		
8:2FTS	7.896	527.1 -> 507.0	1268	0.63 µg/L	96
		527.1 -> 80.8	278		
EtFOSAA	8.362	584.2 -> 419.1	600	0.18 µg/L	m 79
		584.2 -> 526.0	406		
FOSA	9.557	498.1 -> 77.9	1207	0.20 µg/L	# 93
		498.1 -> 478.0	74		
MeFOSAA	8.154	570.1 -> 419.0	833	0.18 µg/L	98
		570.1 -> 483.0	134		
PFBA	2.932	212.8 -> 168.9	1400	0.70 µg/L	100
PFBS	5.444	298.7 -> 79.9	839	0.15 µg/L	95
		298.7 -> 98.8	431		
PFDA	8.108	512.9 -> 469.0	3144	0.18 µg/L	96
		512.9 -> 219.0	470		
PFDODA	8.992	613.1 -> 569.0	4010	0.22 µg/L	94
		613.1 -> 319.0	383		
PFDS	9.154	599.0 -> 79.9	352	0.15 µg/L	86

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	211			
PFHpA	6.453	363.1 -> 319.0	4169	0.18	µg/L	99
		363.1 -> 169.0	607			
PFHpS	7.779	449.0 -> 79.9	511	0.16	µg/L	85
		449.0 -> 98.9	266			
PFHxA	5.503	313.0 -> 269.0	2523	0.19	µg/L	97
		313.0 -> 118.9	114			
PFHxS	7.213	398.7 -> 79.9	607	0.16	µg/L	m 91
		398.7 -> 98.9	414			
PFNA	7.627	463.0 -> 419.0	1852	0.16	µg/L	93
		463.0 -> 219.0	446			
PFNS	8.737	548.8 -> 79.9	724	0.22	µg/L	94
		548.8 -> 98.9	368			
PFOA	7.098	413.0 -> 369.0	5778	0.21	µg/L	92
		413.0 -> 169.0	745			
PFOS	8.271	498.9 -> 79.9	684	0.20	µg/L	m 84
		498.9 -> 98.8	489			
PFPeA	4.326	263.0 -> 219.0	3157	0.38	µg/L	100
PFPeS	6.504	349.1 -> 79.9	880	0.18	µg/L	98
		349.1 -> 98.9	483			
PFTeDA	9.732	713.1 -> 669.0	2746	0.21	µg/L	98
		713.1 -> 168.9	154			
PFTrDA	9.387	663.0 -> 619.0	3063	0.20	µg/L	96
		663.0 -> 168.9	175			
PFUnDA	8.562	563.1 -> 519.0	2449	0.16	µg/L	90
		563.1 -> 269.1	455			
11CI-PF3OUdS	9.439	630.9 -> 450.9	5566	0.59	µg/L	99
		632.9 -> 452.9	1743			
9CI-PF3ONS	8.602	530.8 -> 351.0	11078	0.66	µg/L	94
		532.8 -> 353.0	3641			
ADONA	6.704	376.9 -> 250.9	22461	0.67	µg/L	100
		376.9 -> 84.8	4907			
HFPO-DA	5.879	284.9 -> 168.9	1118	0.83	µg/L	96
		284.9 -> 184.9	151			
3:3FTCA	3.791	241.0 -> 177.0	351	0.80	µg/L	87
		241.0 -> 117.0	64			
5:3FTCA	6.156	341.0 -> 237.1	13296	4.43	µg/L	93
		341.0 -> 217.0	12475			
7:3FTCA	7.567	441.0 -> 316.9	7530	4.72	µg/L	89
		441.0 -> 336.9	13038			
EtFOSA	10.927	526.0 -> 219.0	658	0.23	µg/L	77
		526.0 -> 169.0	541			
EtFOSE	10.860	630.0 -> 58.9	1182	2.10	µg/L	100
MeFOSA	10.682	511.9 -> 219.0	513	0.20	µg/L	# 23
		511.9 -> 169.0	534			
MeFOSE	10.602	616.1 -> 58.9	1665	1.86	µg/L	100
PFDoDS	9.858	699.1 -> 79.9	274	0.20	µg/L	94
		699.1 -> 98.8	149			
NFDHA	5.395	295.0 -> 201.0	317	0.43	µg/L	91
		295.0 -> 84.9	148			
PFMBA	4.725	279.0 -> 85.1	892	0.36	µg/L	100
PFMPA	3.488	229.0 -> 84.9	799	0.36	µg/L	100
PFEESA	5.983	314.8 -> 134.9	6240	0.33	µg/L	99
		314.8 -> 82.9	167			

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



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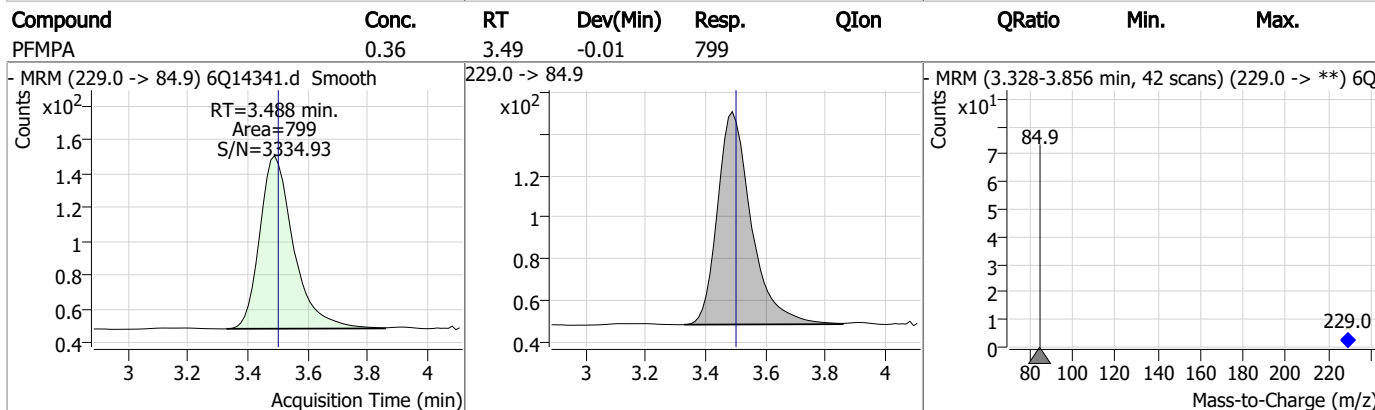
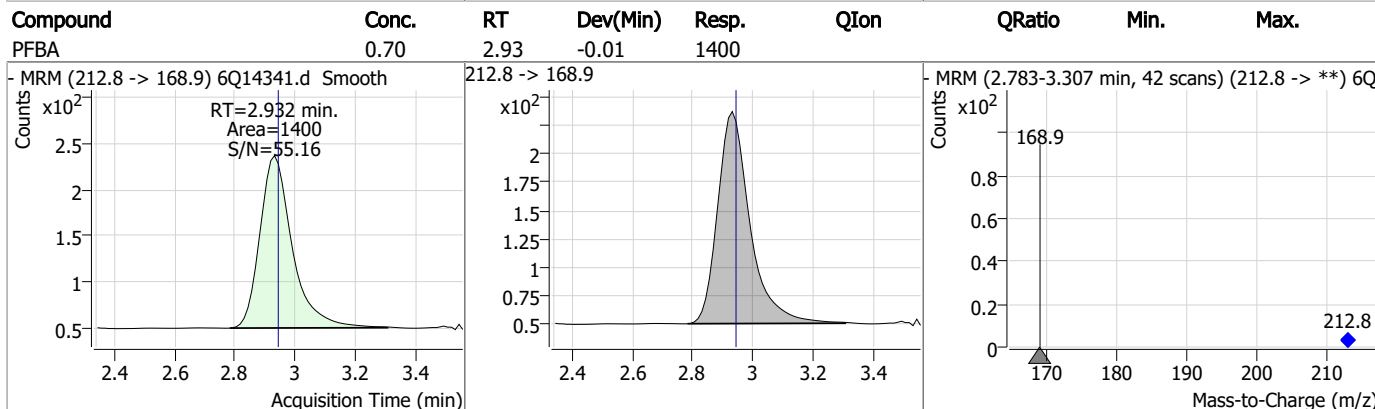
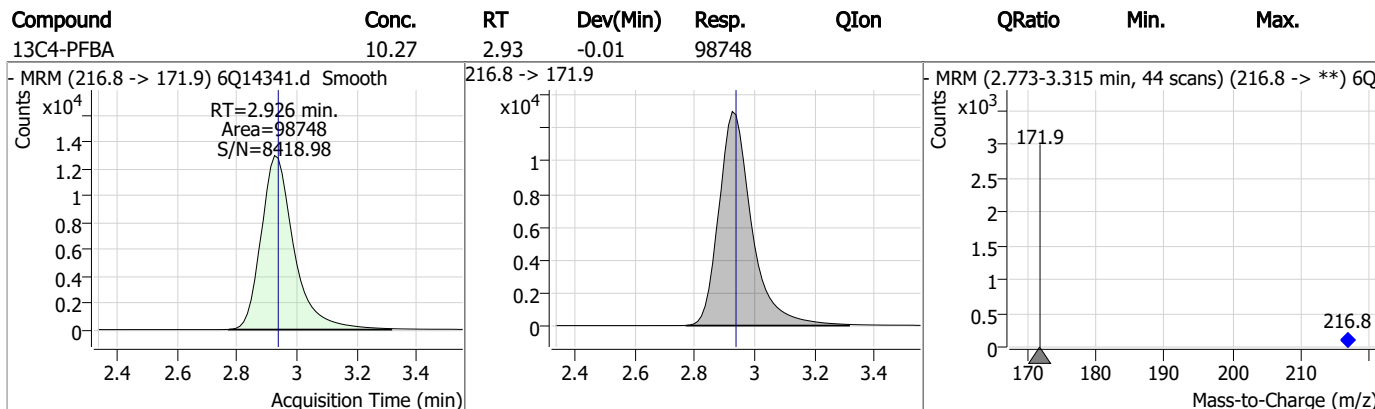
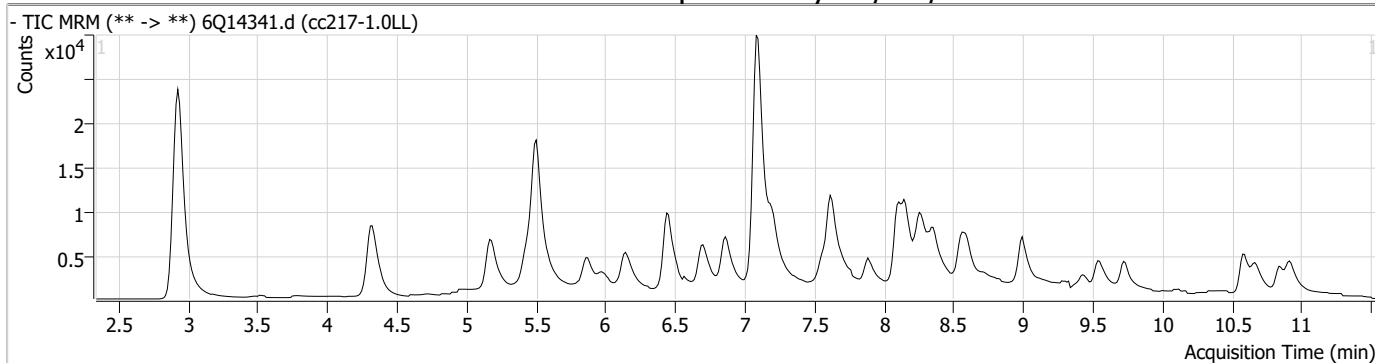
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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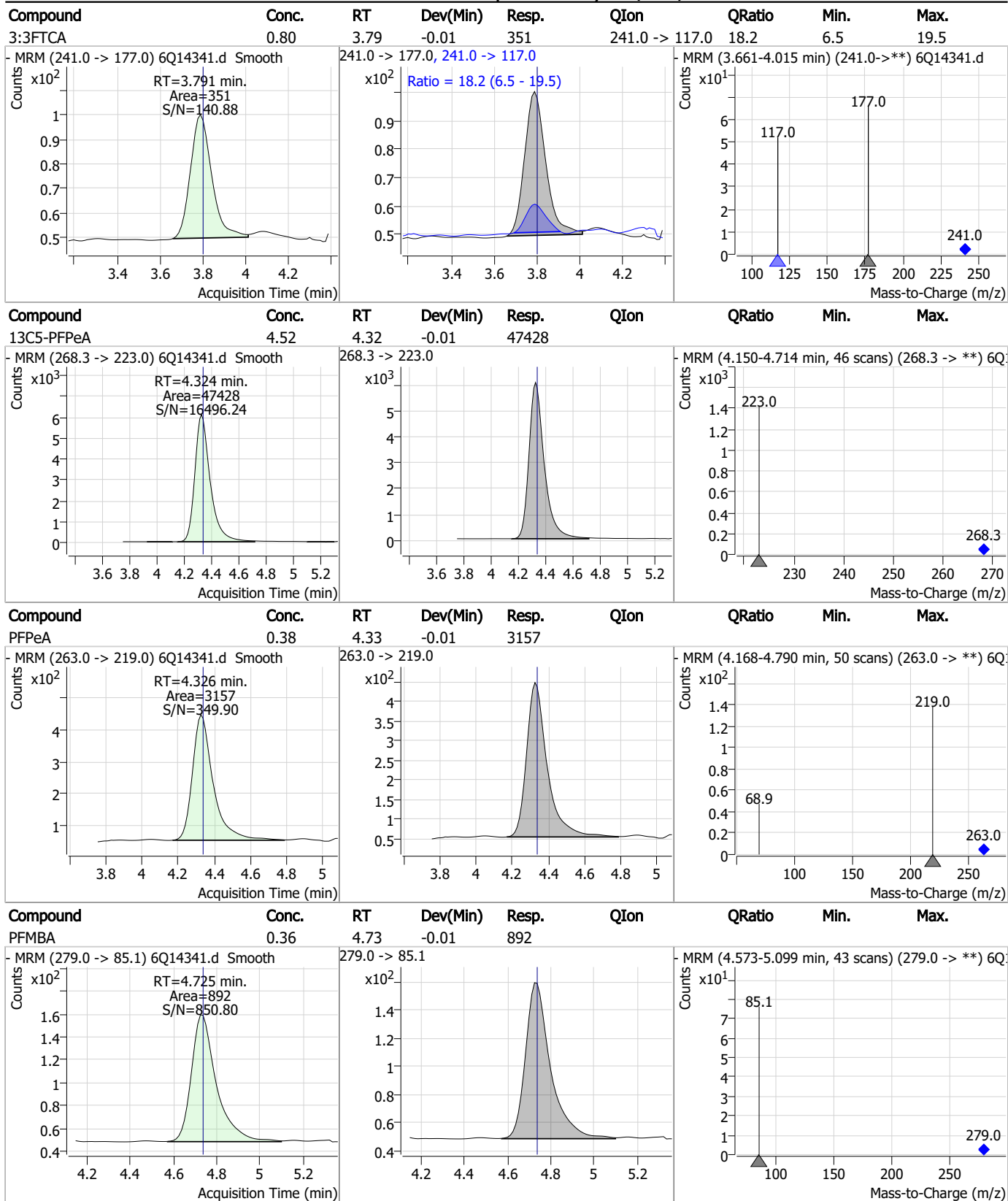
7.7.13

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Perfluorinated Compounds by LC/MS/MS

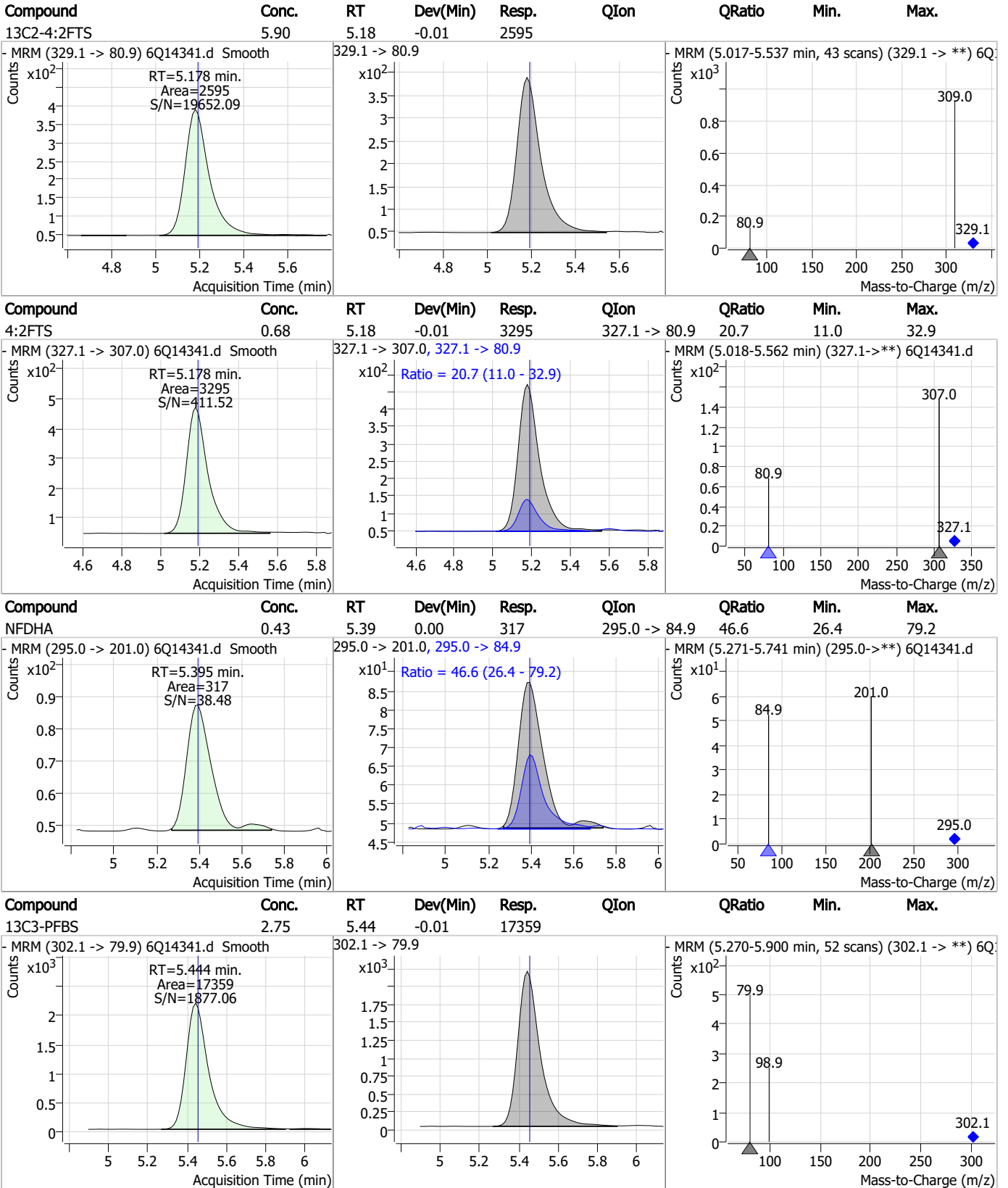


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

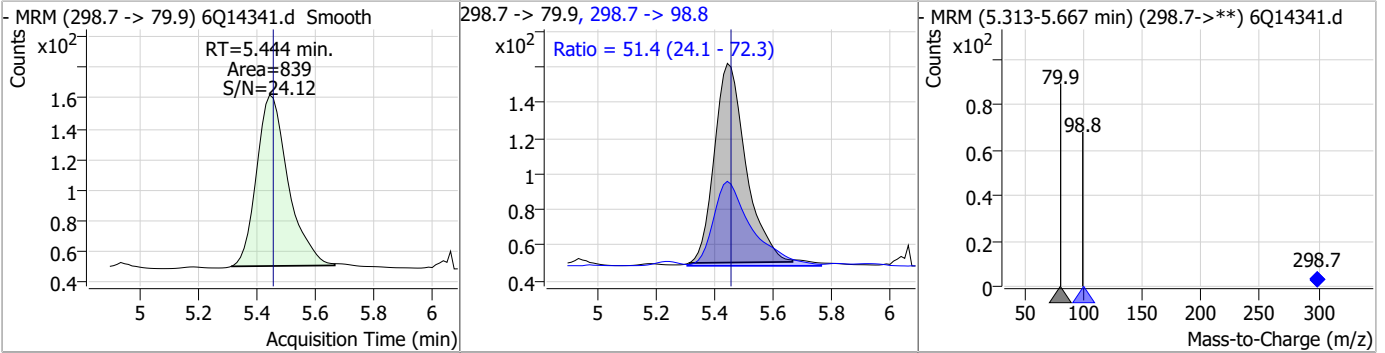


7.7.13 7

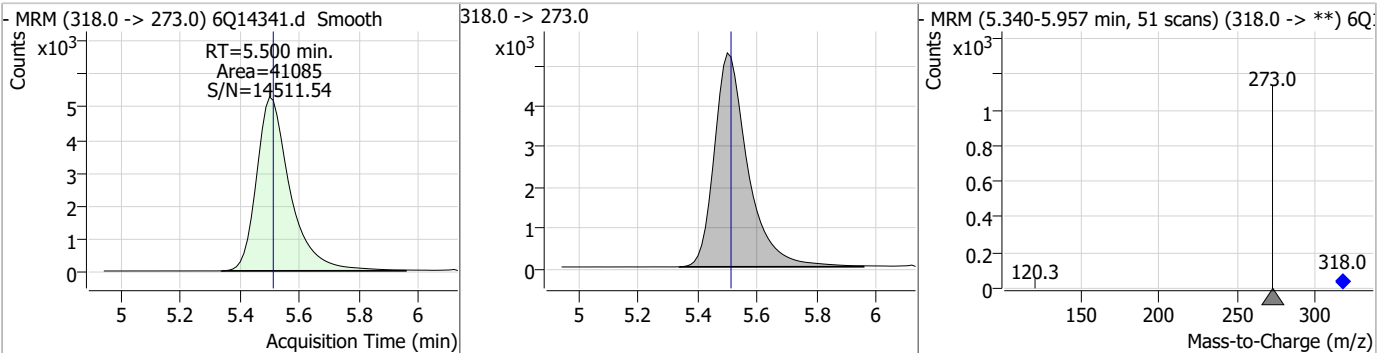


Perfluorinated Compounds by LC/MS/MS

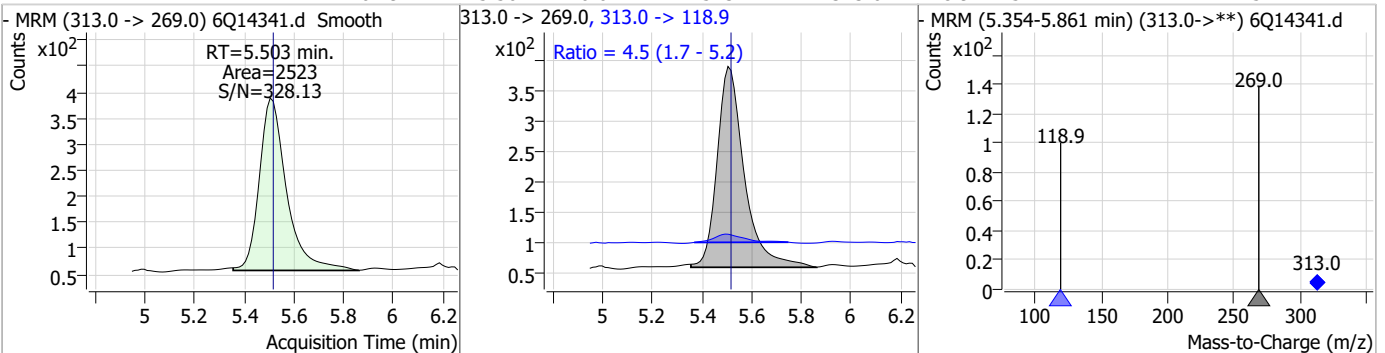
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.15	5.44	-0.01	839	298.7 -> 98.8	51.4	24.1	72.3



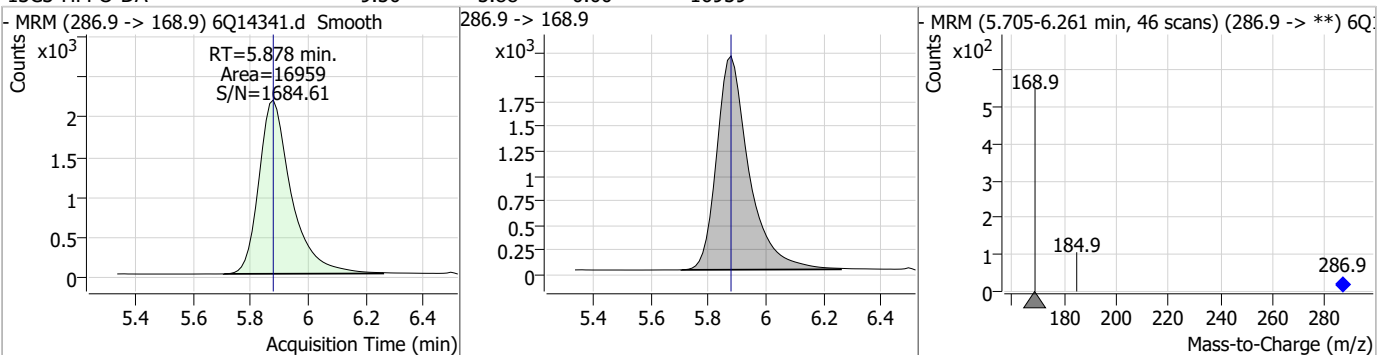
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.24	5.50	-0.01	41085				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.19	5.50	-0.01	2523	313.0 -> 118.9	4.5	1.7	5.2

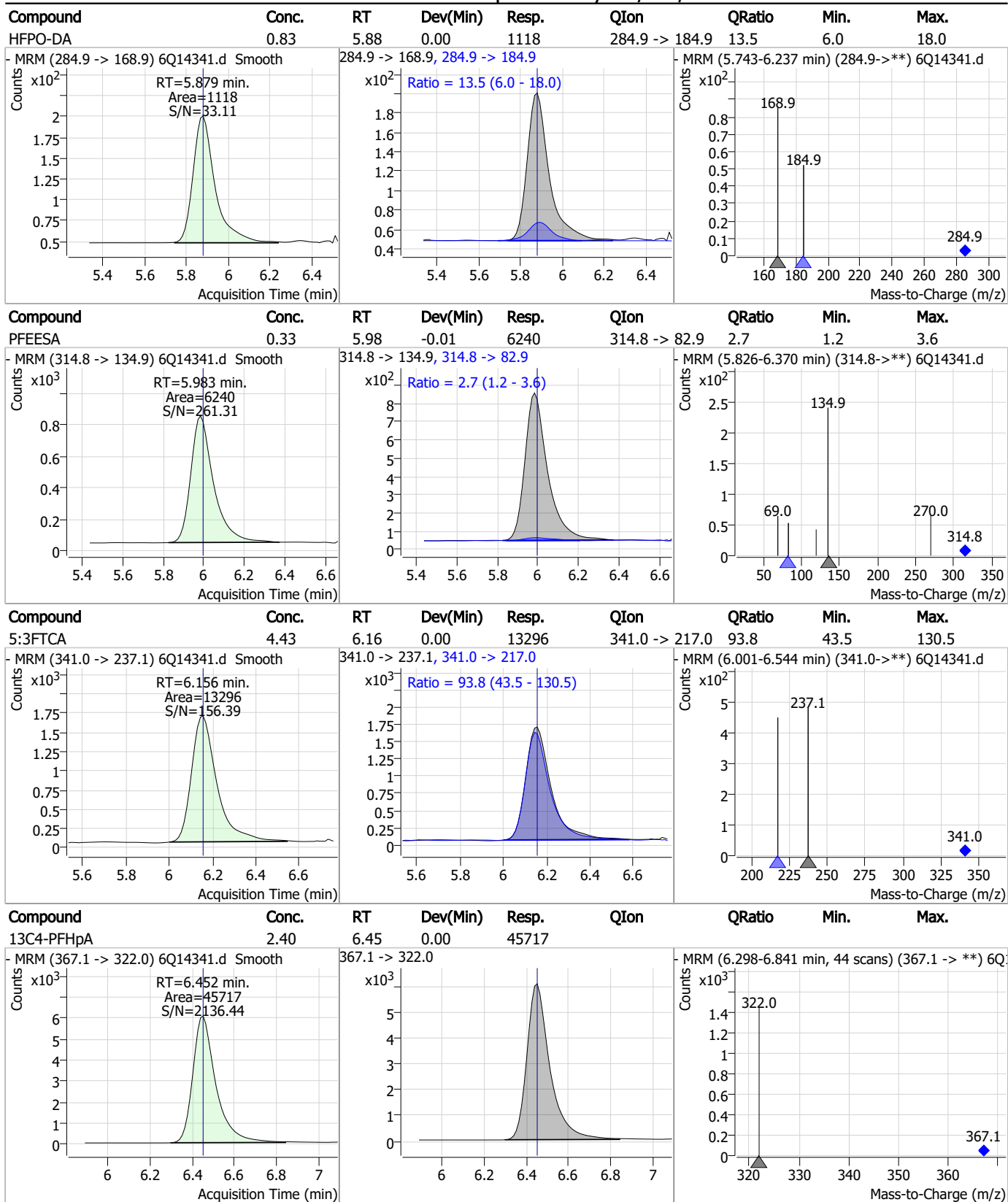


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.50	5.88	0.00	16959				



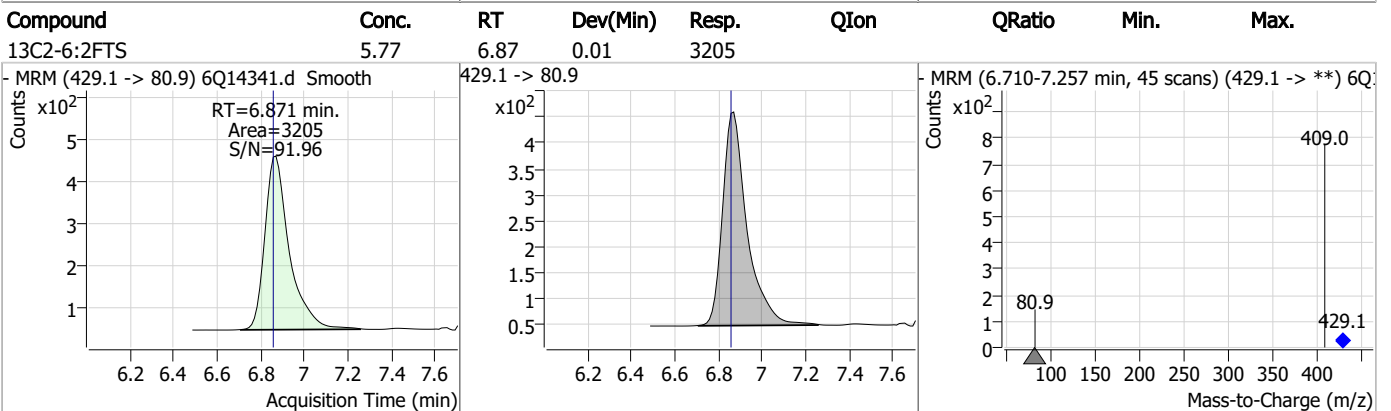
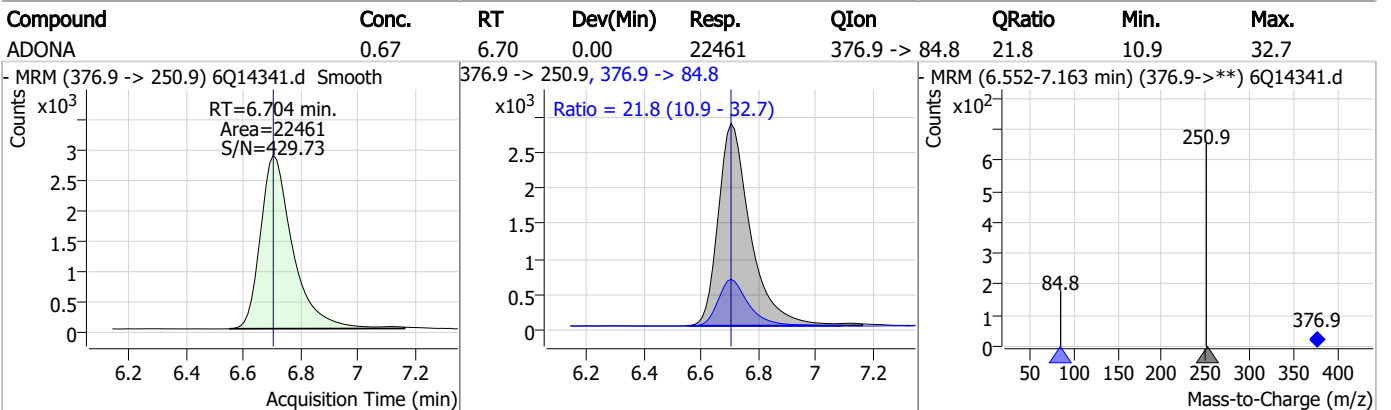
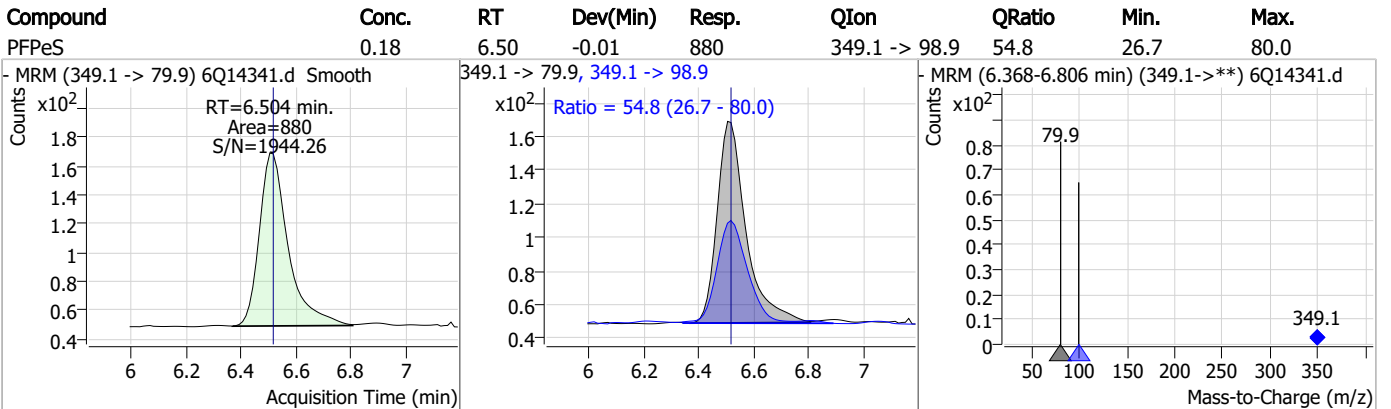
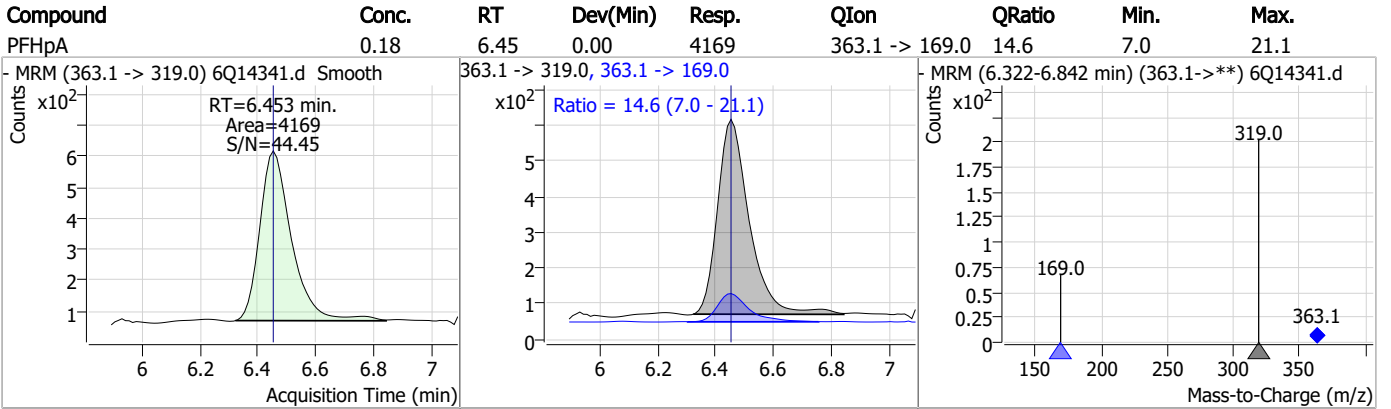
7.7.13
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Perfluorinated Compounds by LC/MS/MS



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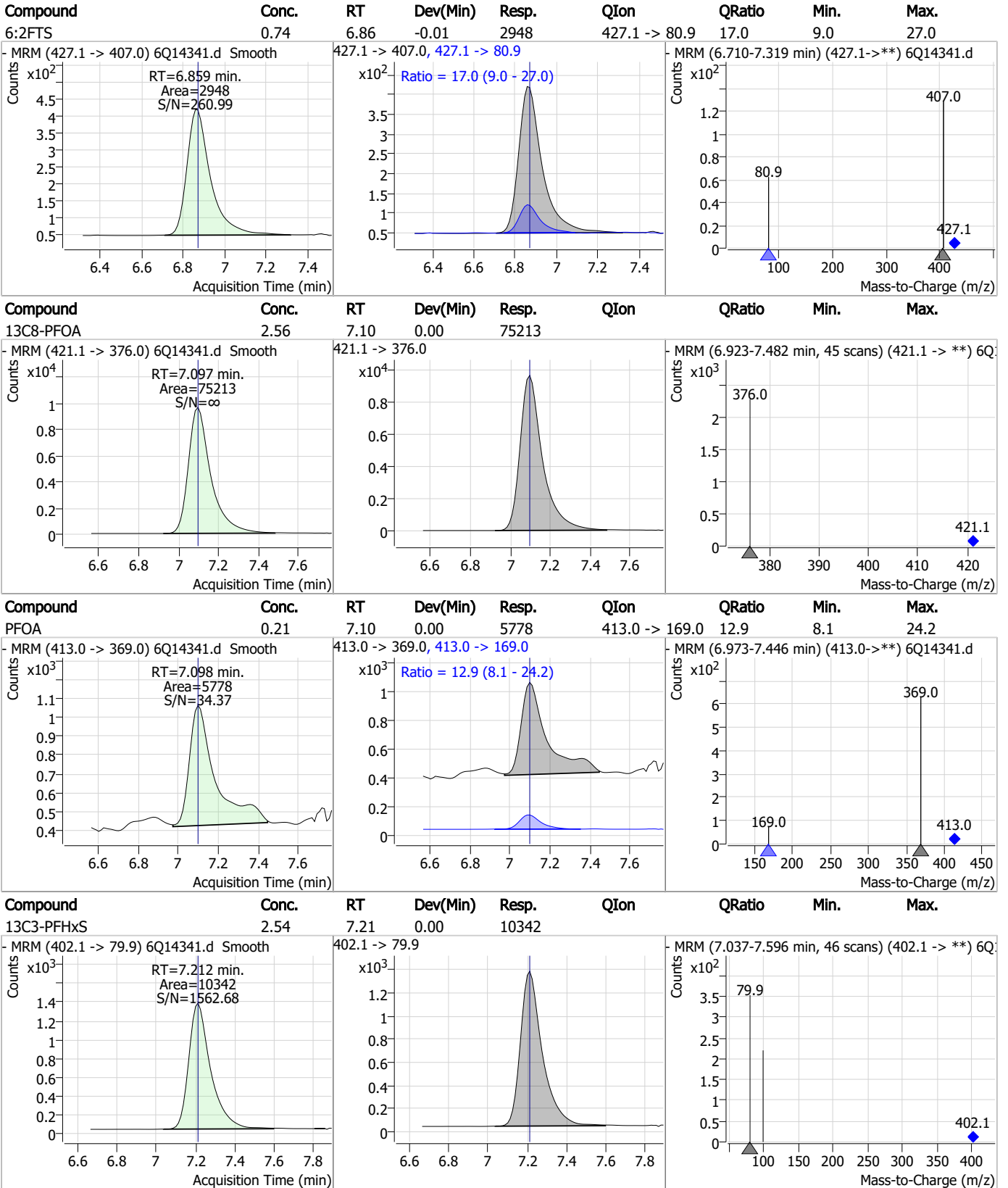
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

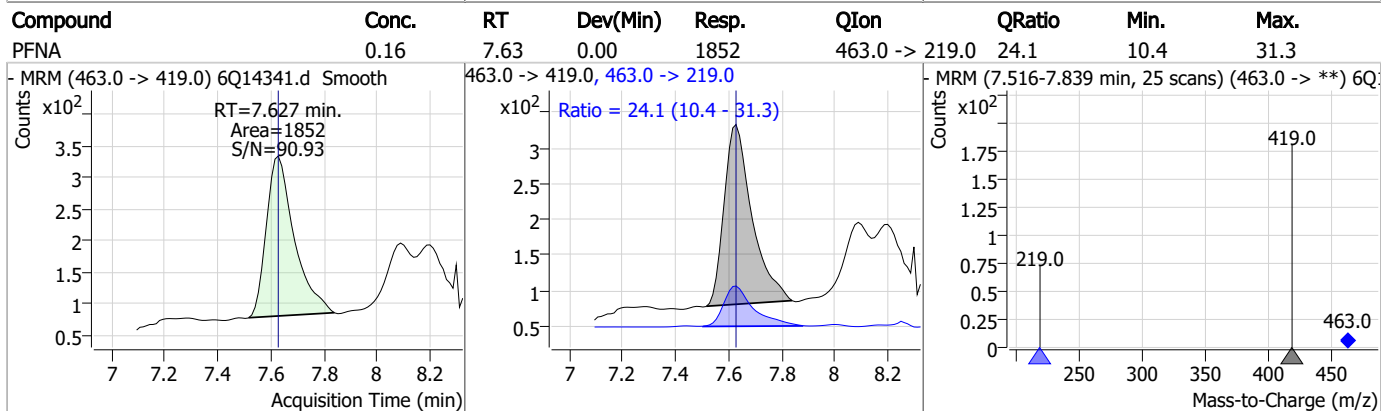
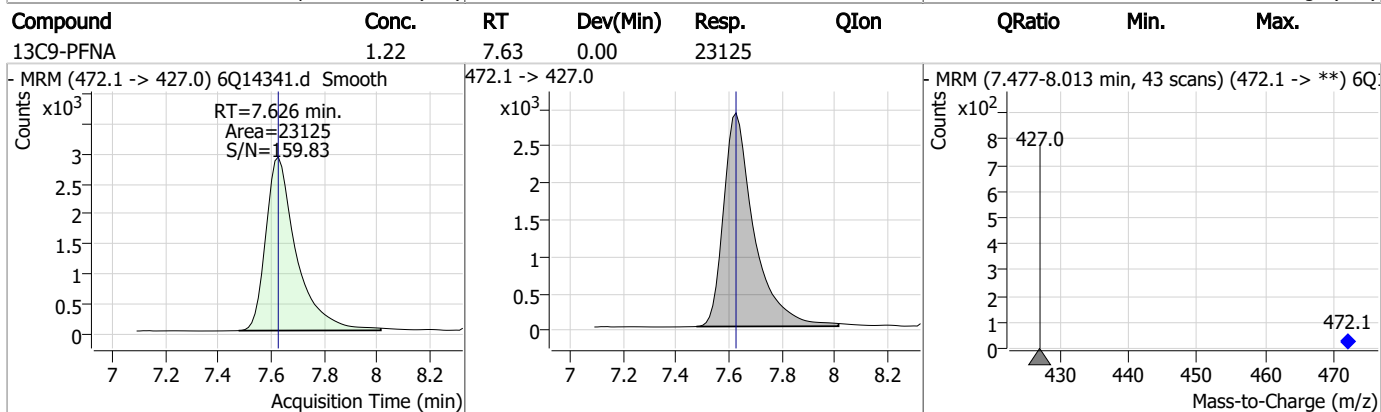
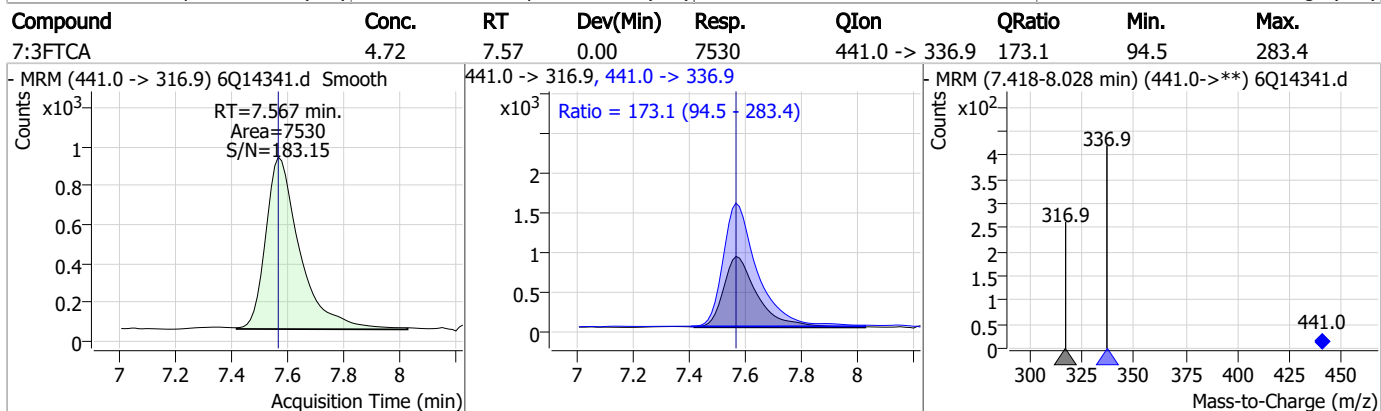
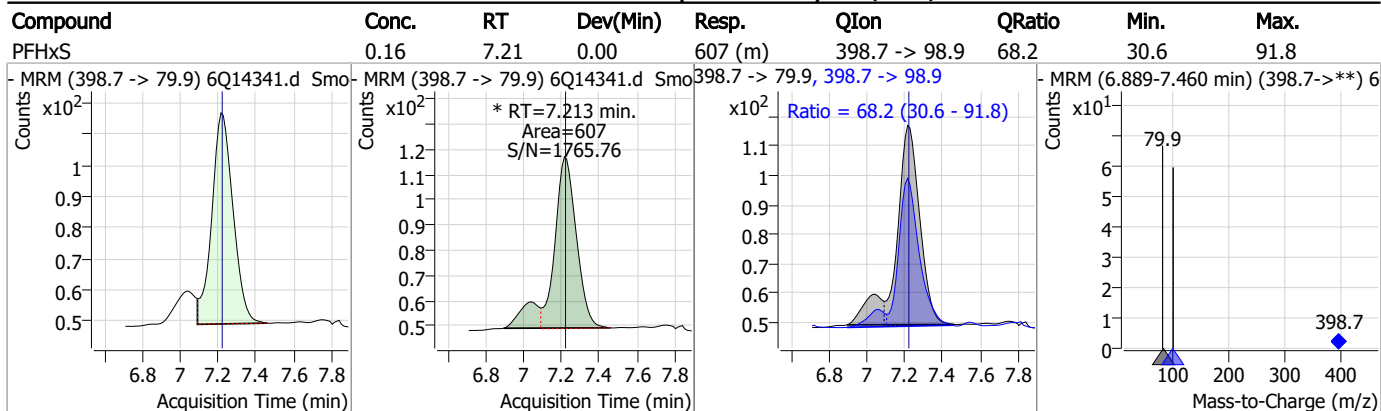


7.7.13

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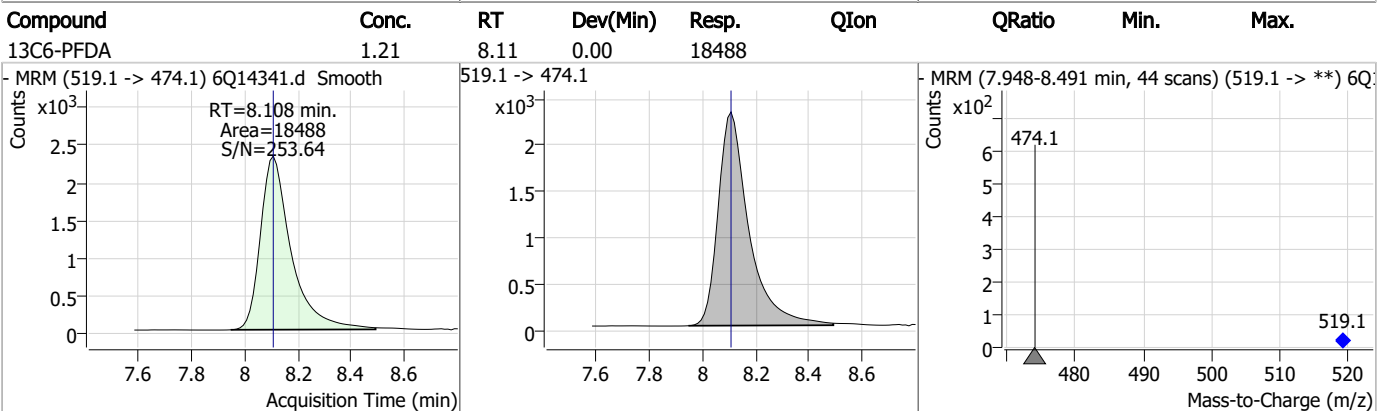
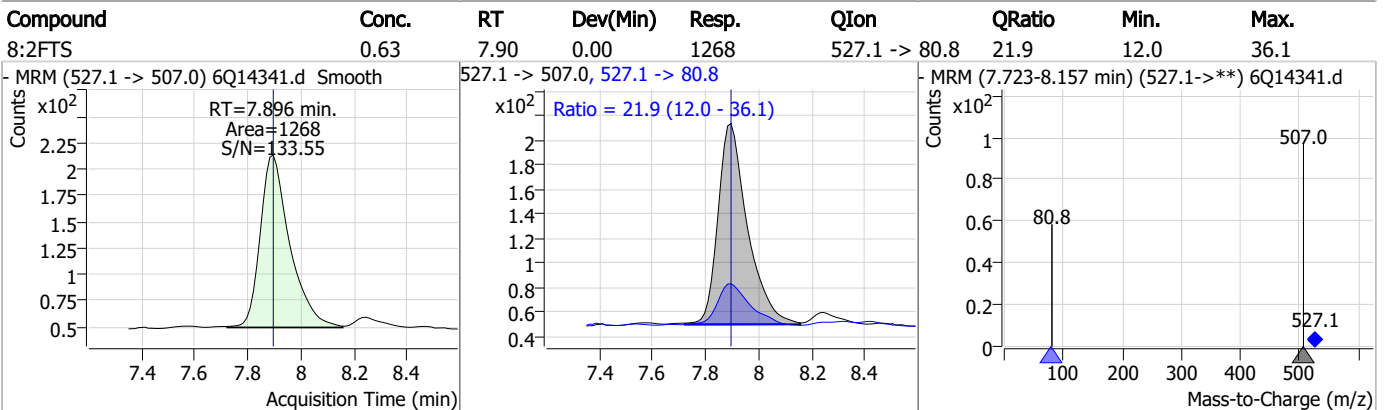
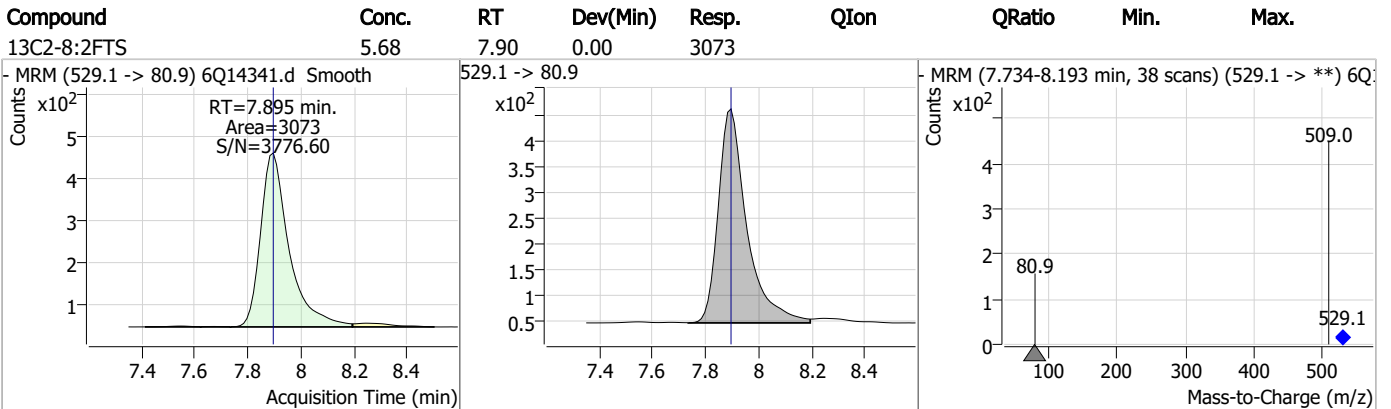
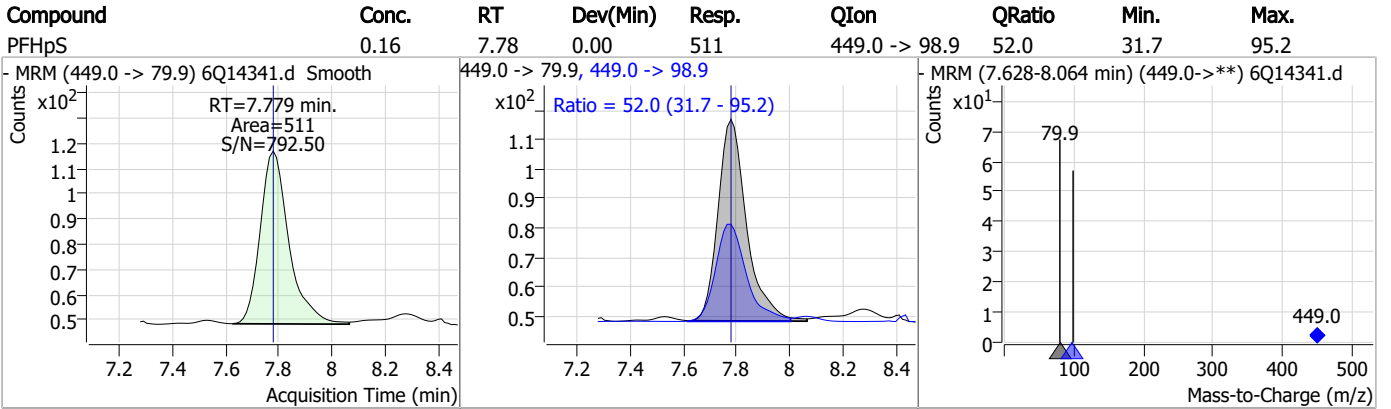
Perfluorinated Compounds by LC/MS/MS



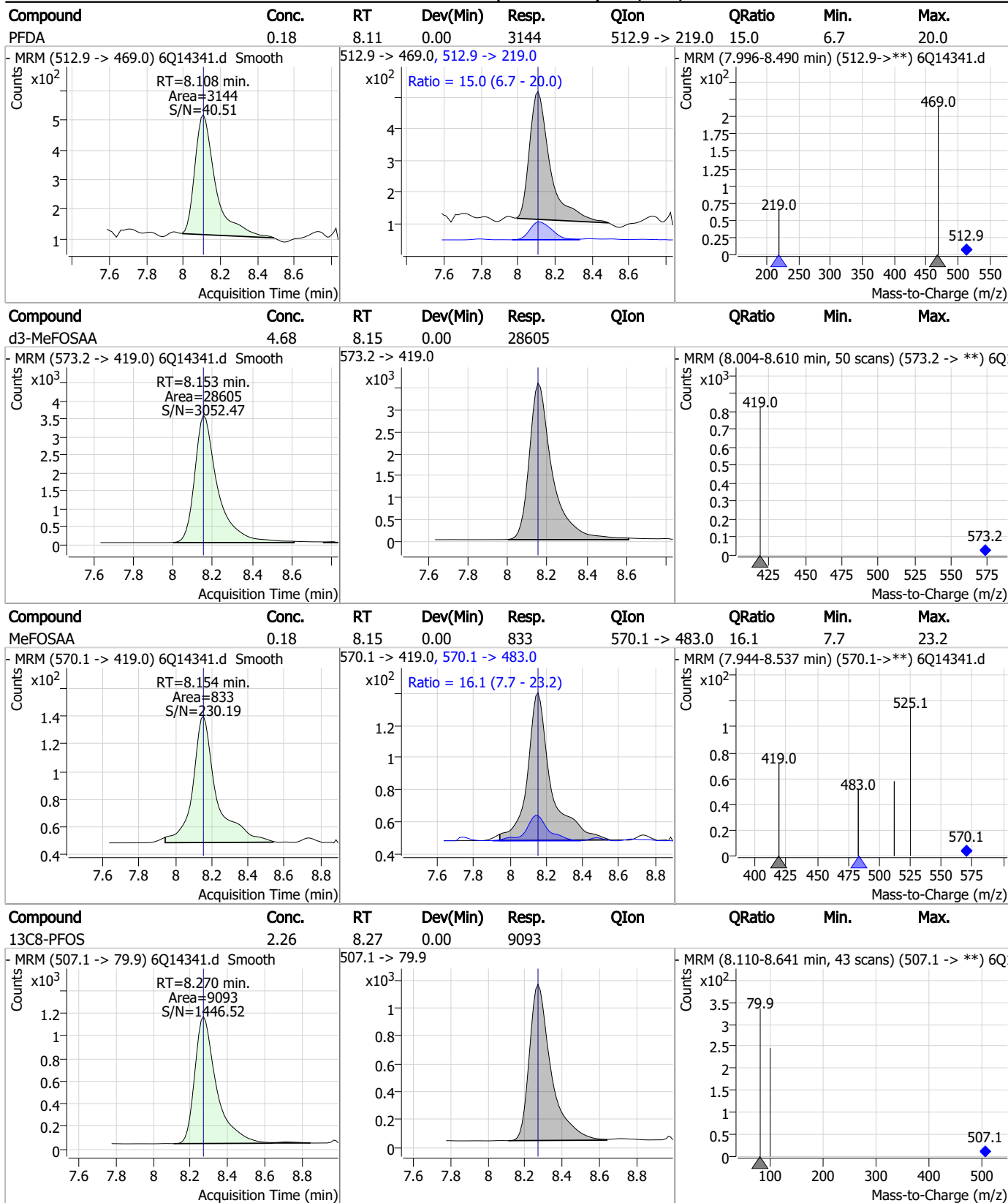
7.7.13
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

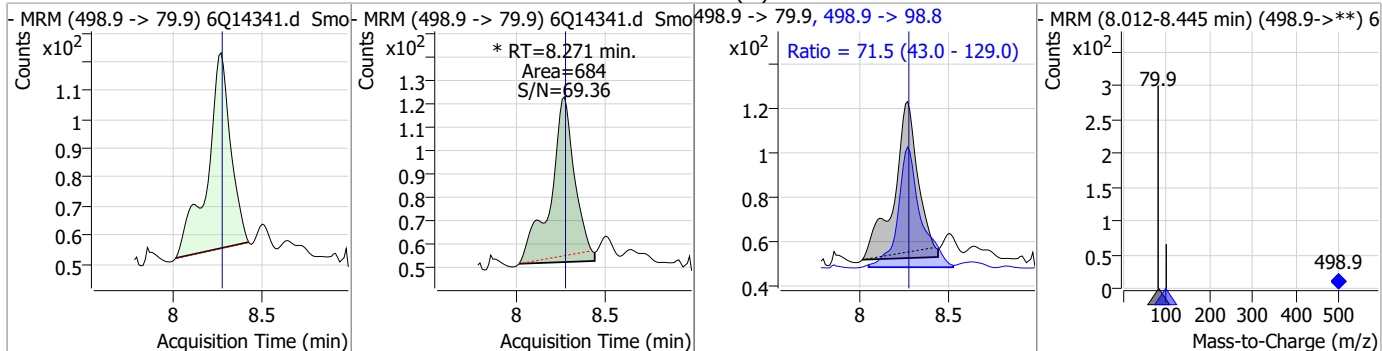


7.7.13

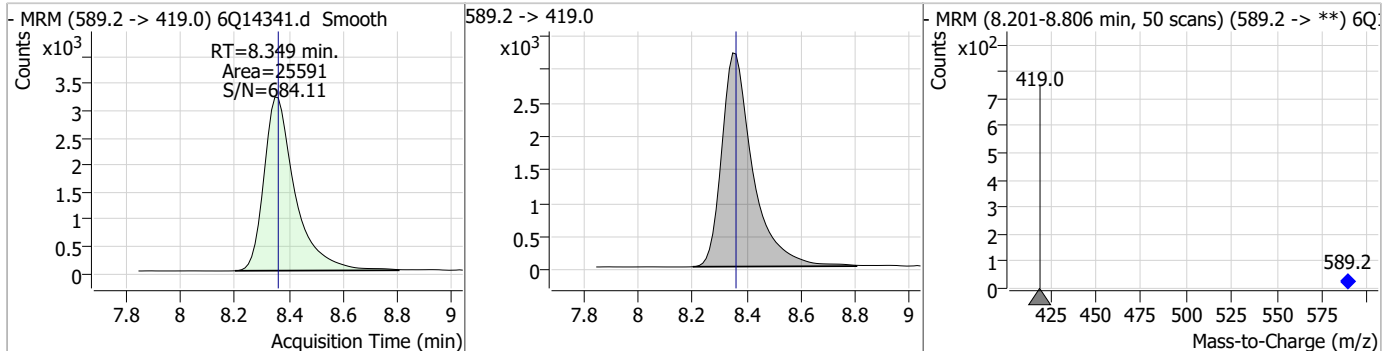
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Perfluorinated Compounds by LC/MS/MS

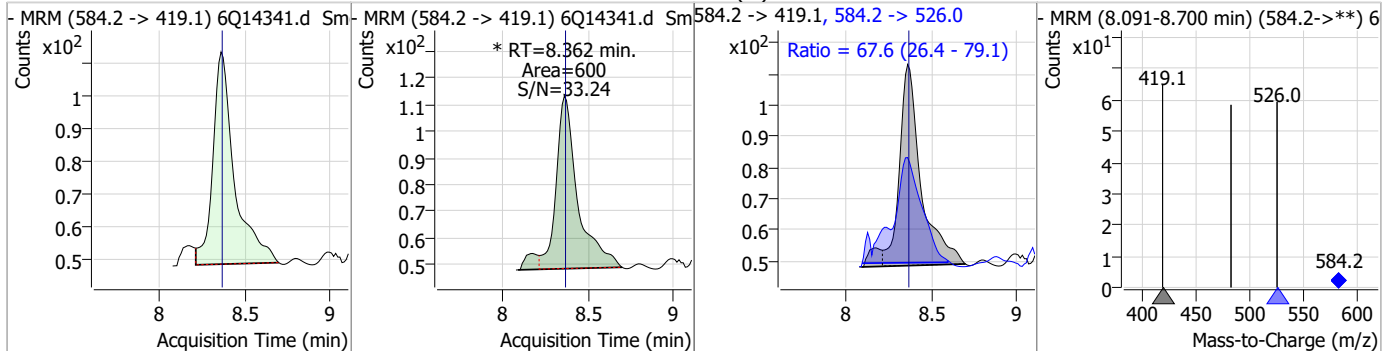
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.20	8.27	0.00	684 (m)	498.9 -> 98.8	71.5	43.0	129.0



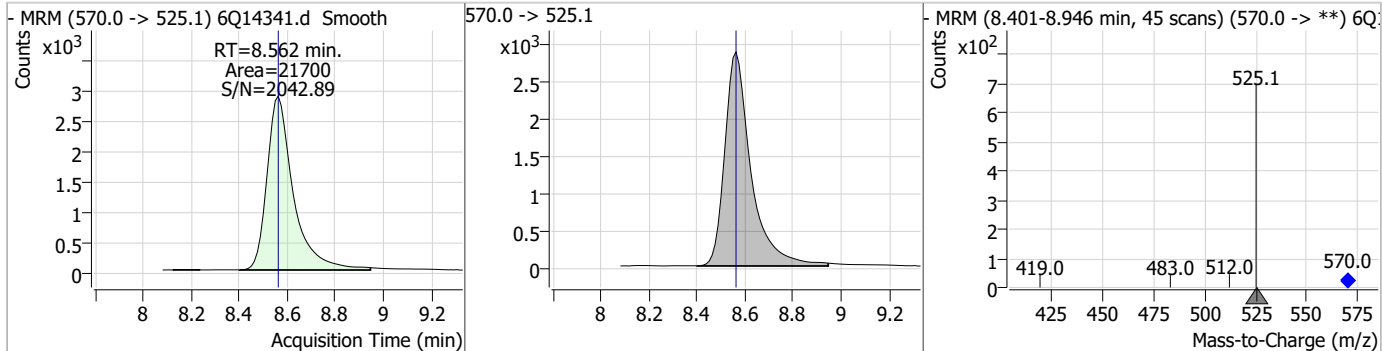
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.78	8.35	-0.01	25591				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.18	8.36	0.00	600 (m)	584.2 -> 526.0	67.6	26.4	79.1

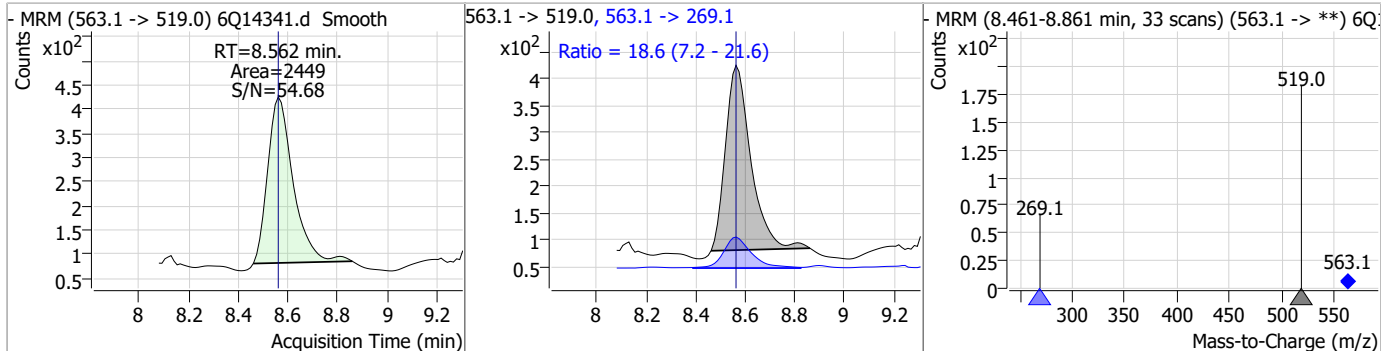


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.56	0.00	21700				

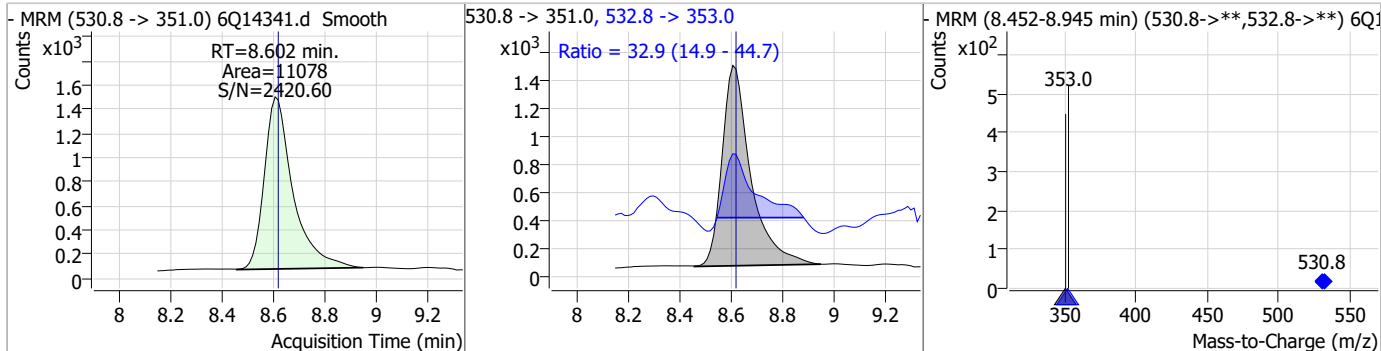


Perfluorinated Compounds by LC/MS/MS

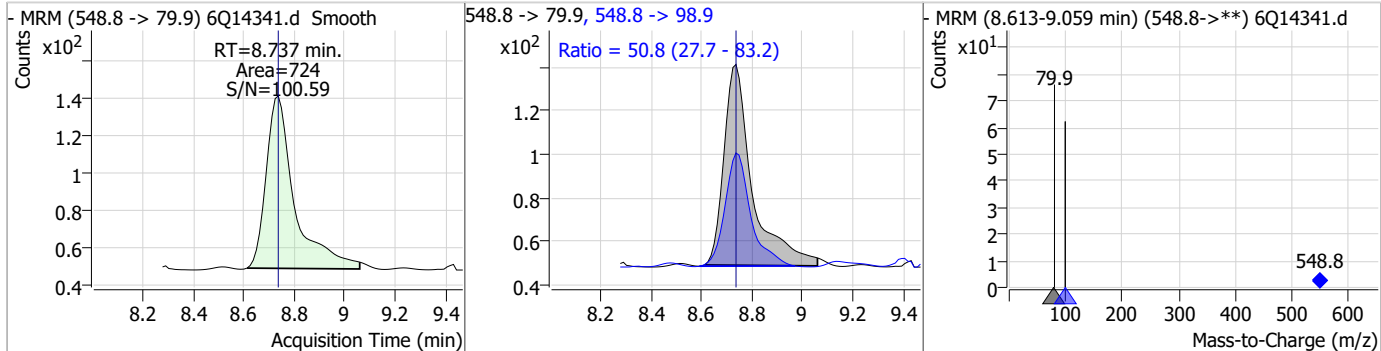
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.16	8.56	0.00	2449	563.1 -> 269.1	18.6	7.2	21.6



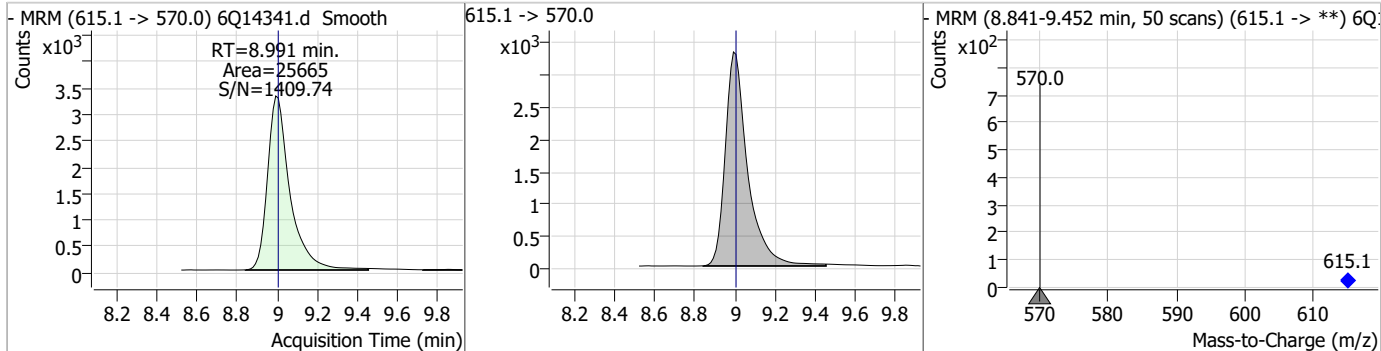
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	0.66	8.60	-0.01	11078	532.8 -> 353.0	32.9	14.9	44.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.22	8.74	0.00	724	548.8 -> 98.9	50.8	27.7	83.2

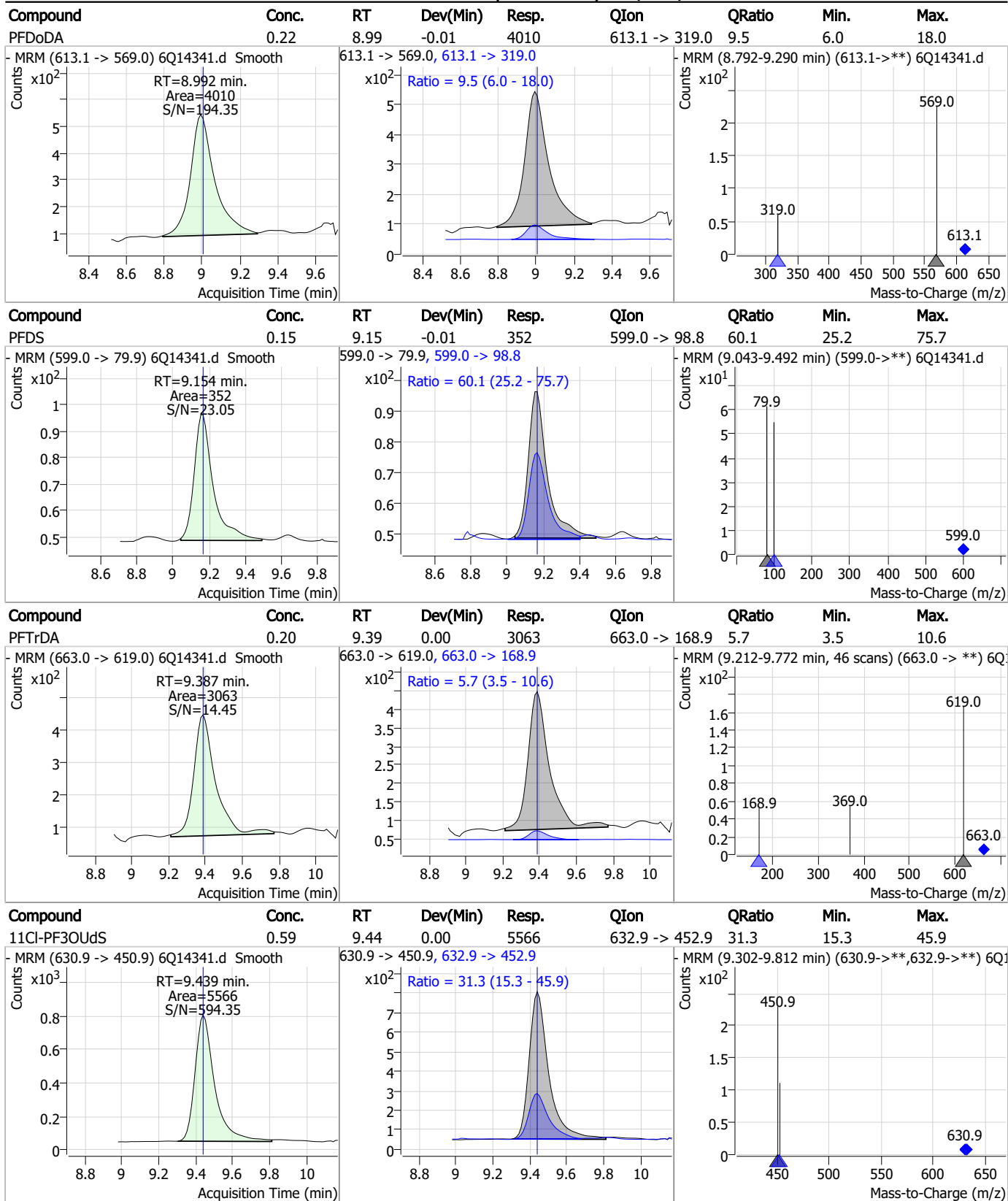


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.24	8.99	-0.01	25665	615.1 -> 570.0			



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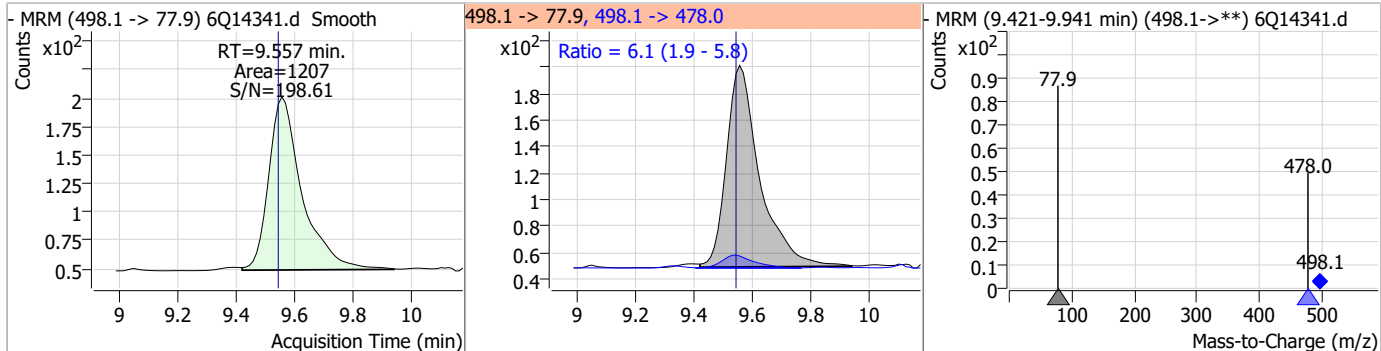
Perfluorinated Compounds by LC/MS/MS



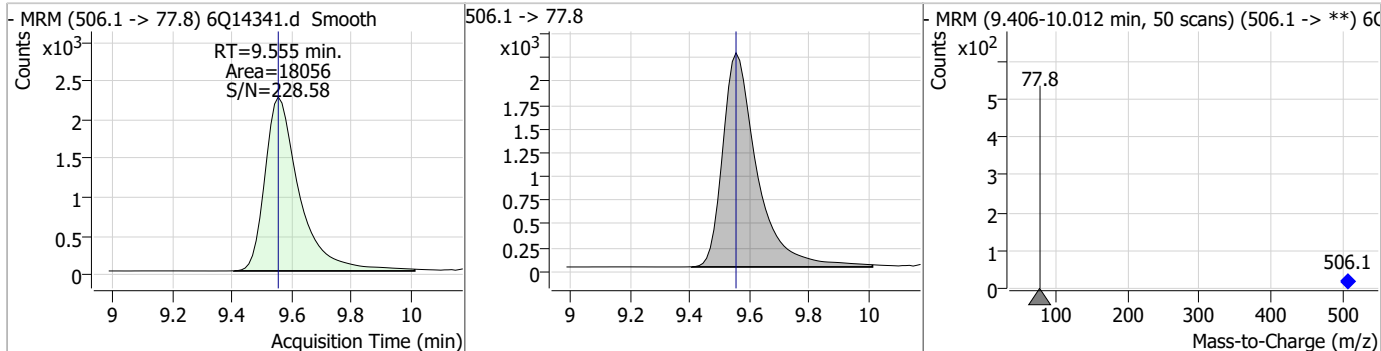
7.7.13
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Perfluorinated Compounds by LC/MS/MS

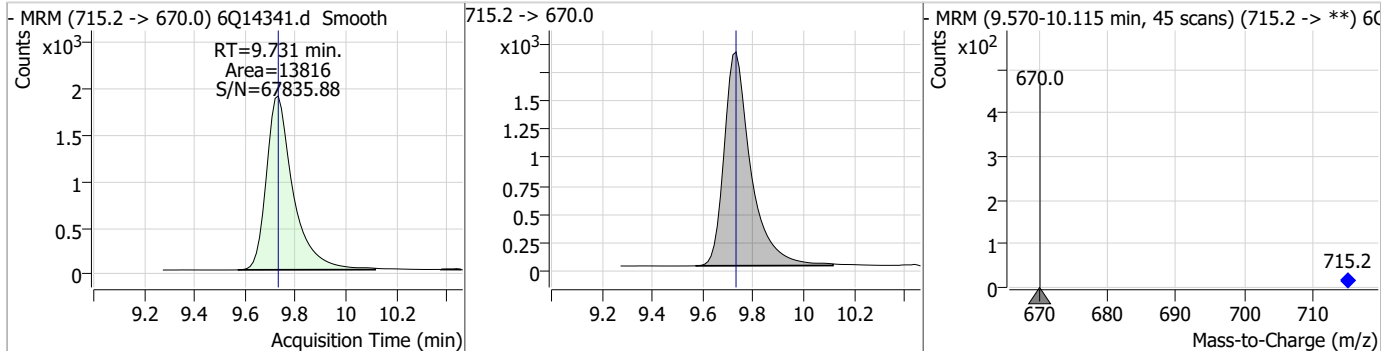
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.20	9.56	0.01	1207	498.1 -> 478.0	6.1	1.9	5.8



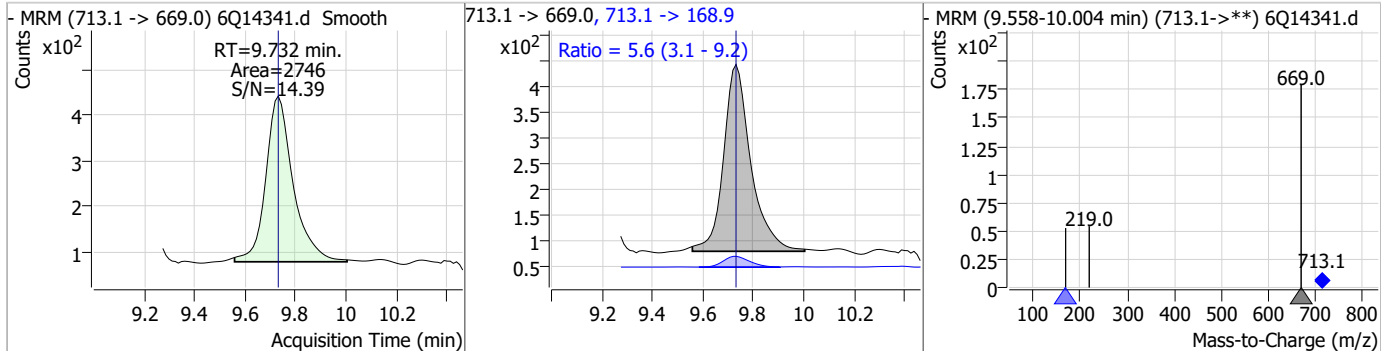
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.29	9.55	0.00	18056				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.15	9.73	0.00	13816				

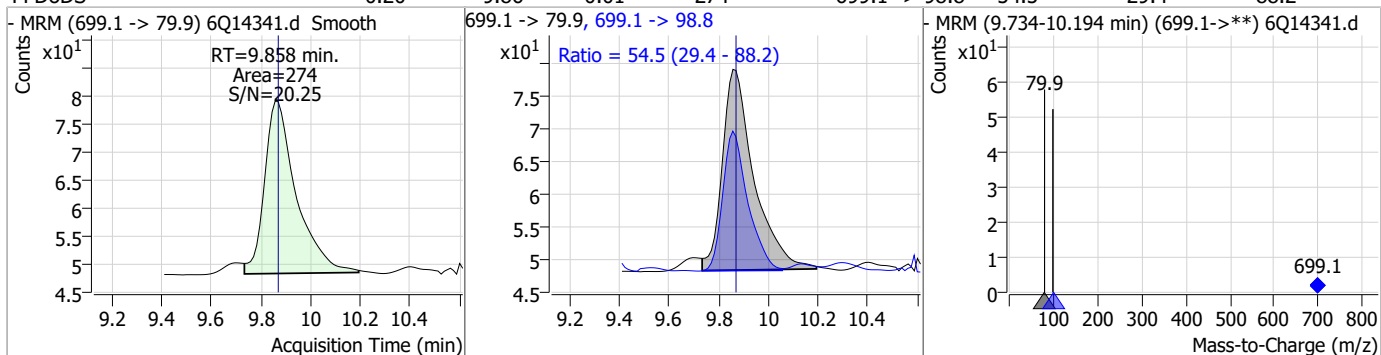


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.21	9.73	0.00	2746	713.1 -> 168.9	5.6	3.1	9.2

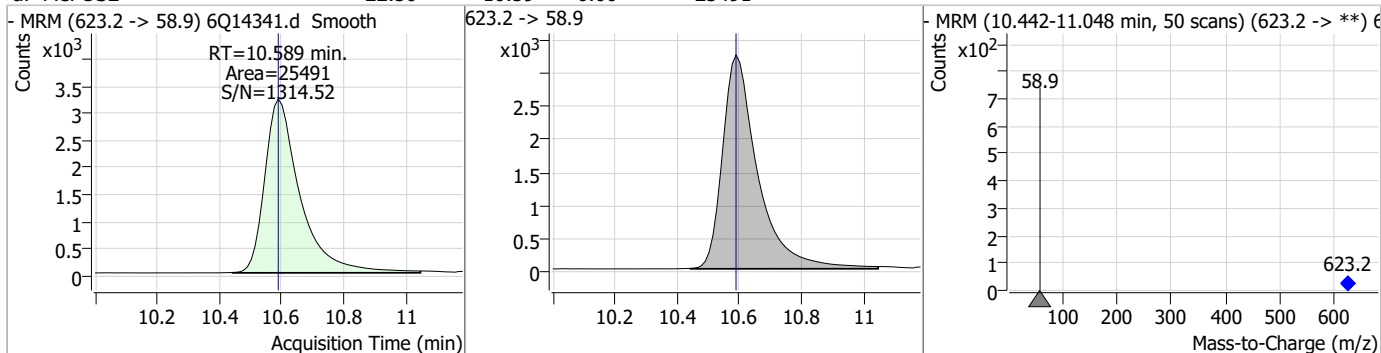


Perfluorinated Compounds by LC/MS/MS

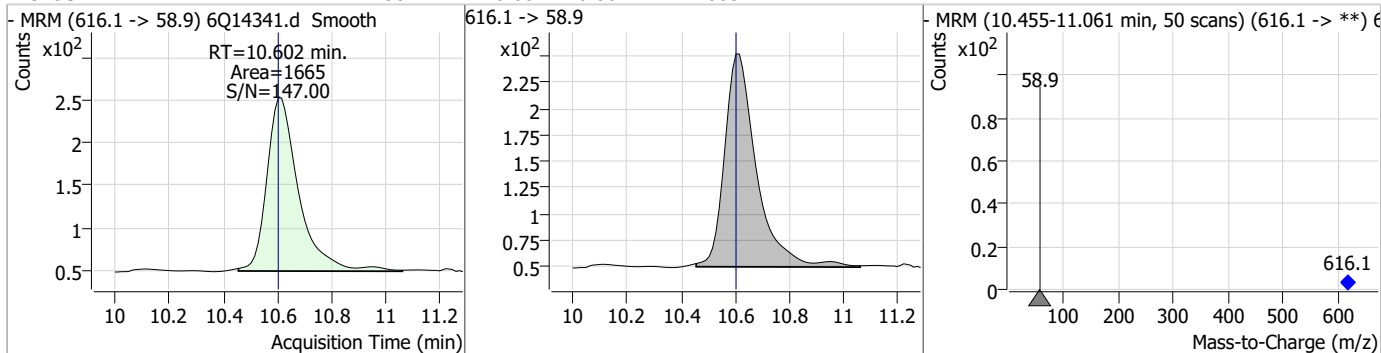
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	0.20	9.86	-0.01	274	699.1 -> 98.8	54.5	29.4	88.2



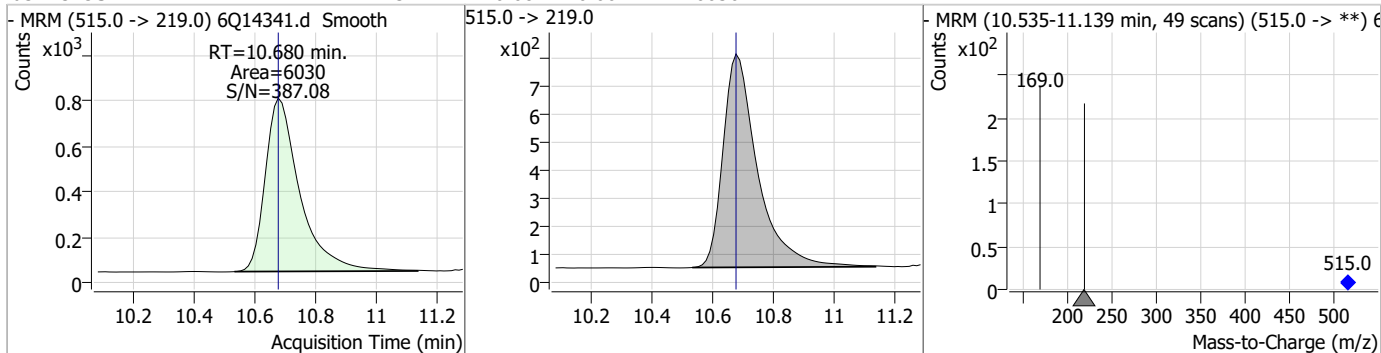
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.50	10.59	0.00	25491				



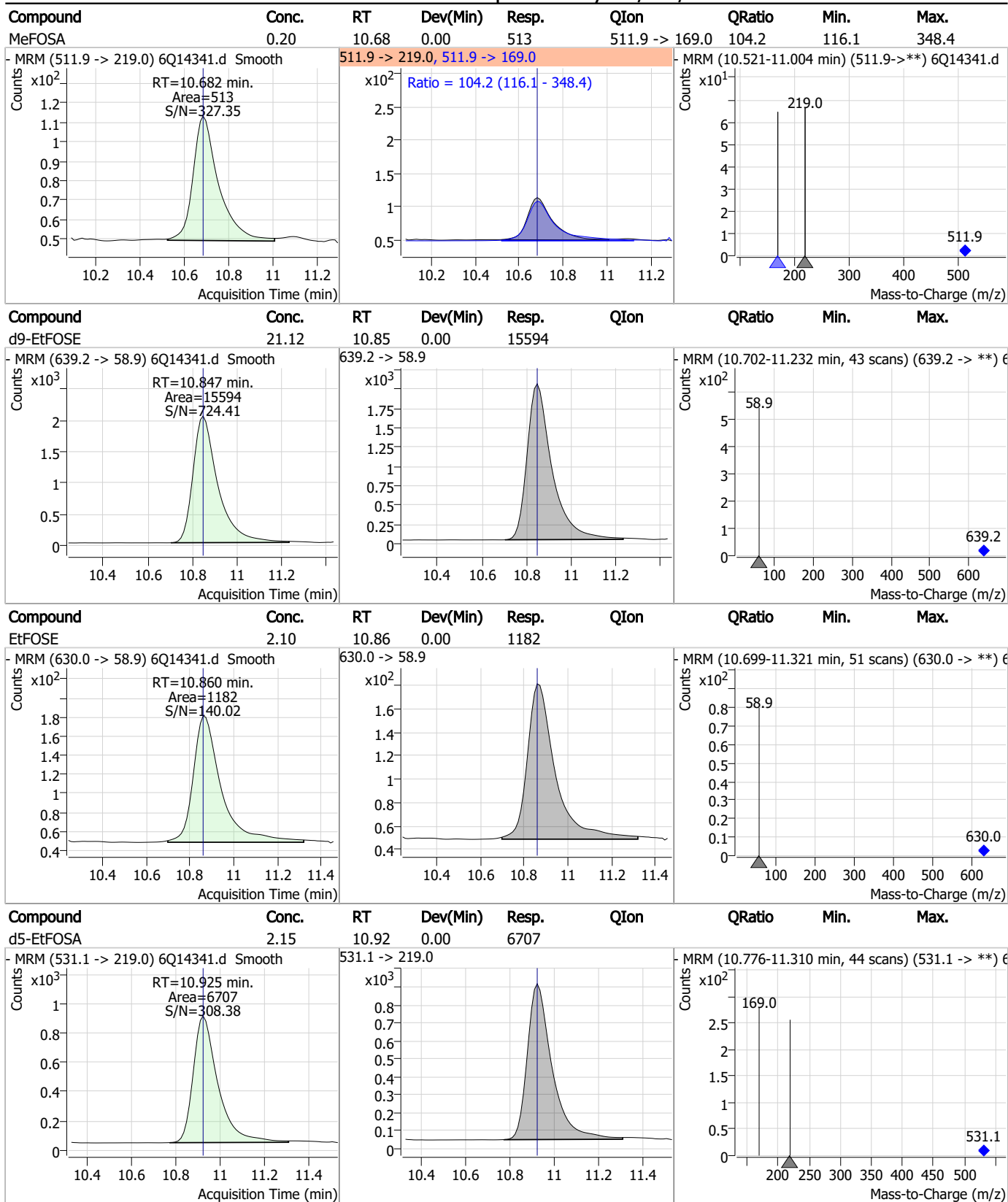
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.86	10.60	0.00	1665				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.13	10.68	0.00	6030				



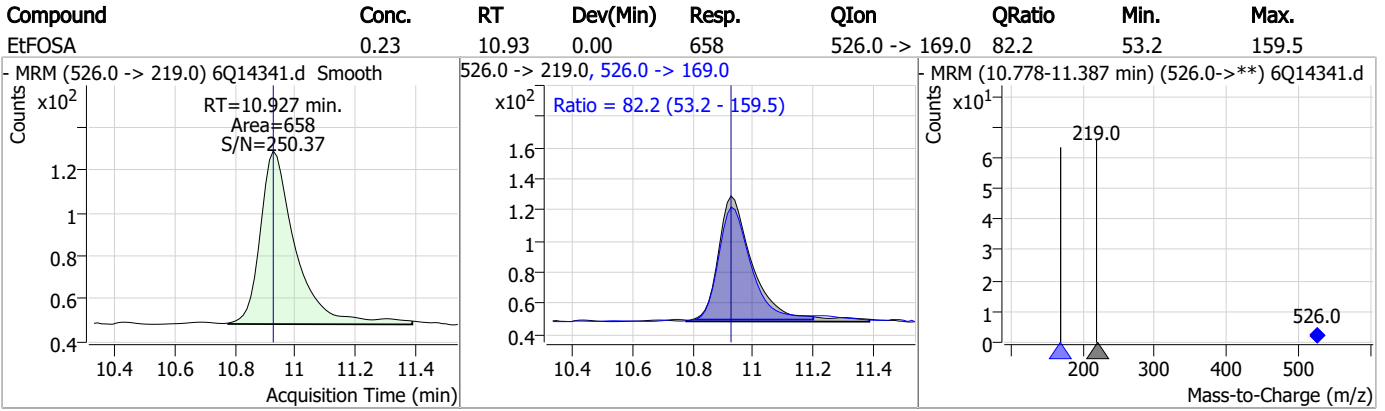
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q218-CC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14341.D Analyst approved: 02/27/23 11:07 Martha Valls
Injection Time: 02/24/23 21:24 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.36	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q14352.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 2/24/2023 11:58:18 PM
 Sample Name : cc217-4
 Vial : P1-A5
 DA Method File : 1633_022323_S6Q217.quantmethod.xml
 Batch Name : s6q218.batch.bin
 Sample Information : OP95480,S6Q218,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	95165	10.00 µg/L	0.000
M5-PFPeA	4.324	268.3 -> 223.0	47146	5.00 µg/L	-0.012
M5-PFHxA	5.513	318.0 -> 273.0	41919	2.50 µg/L	0.000
M4-PFHpA	6.452	367.1 -> 322.0	45760	2.50 µg/L	0.000
M8-PFOA	7.097	421.1 -> 376.0	72449	2.50 µg/L	0.000
M9-PFNA	7.626	472.1 -> 427.0	22017	1.25 µg/L	0.000
M6-PFDA	8.108	519.1 -> 474.1	17434	1.25 µg/L	0.000
M7-PFUnDA	8.562	570.0 -> 525.1	20231	1.25 µg/L	0.000
M2-PFDoDA	8.991	615.1 -> 570.0	24144	1.25 µg/L	-0.013
M2-PFTeDA	9.731	715.2 -> 670.0	13681	1.25 µg/L	0.000
M8-FOSA	9.555	506.1 -> 77.8	17555	2.50 µg/L	0.000
M3-PFBS	5.444	302.1 -> 79.9	16661	2.50 µg/L	-0.012
M3-PFHxS	7.212	402.1 -> 79.9	10167	2.50 µg/L	0.000
M8-PFOS	8.270	507.1 -> 79.9	8904	2.50 µg/L	0.000
M2-4:2FTS	5.178	329.1 -> 80.9	2657	5.00 µg/L	-0.012
M2-6:2FTS	6.871	429.1 -> 80.9	3178	5.00 µg/L	0.012
M2-8:2FTS	7.895	529.1 -> 80.9	2763	5.00 µg/L	0.000
M3-MeFOSAA	8.153	573.2 -> 419.0	29808	5.00 µg/L	0.000
M3-HFPO-DA	5.878	286.9 -> 168.9	16762	10.00 µg/L	0.000
M5-EtFOSAA	8.349	589.2 -> 419.0	25127	5.00 µg/L	-0.012
M7-MeFOSE	10.589	623.2 -> 58.9	24470	25.00 µg/L	0.000
M9-EtFOSE	10.847	639.2 -> 58.9	15402	25.00 µg/L	0.000
M5-EtFOSA	10.925	531.1 -> 219.0	6561	2.50 µg/L	0.000
M3-MeFOSA	10.680	515.0 -> 219.0	5896	2.50 µg/L	0.000
13C4-PFOS	8.271	502.8 -> 79.9	10540	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	41093	5.00 µg/L	0.000
18O2-PFHxS	7.211	403.0 -> 83.9	7428	2.50 µg/L	0.000
13C4-PFOA	7.098	417.1 -> 372.0	86421	2.50 µg/L	0.000
13C2-PFDA	8.108	515.1 -> 470.1	25657	1.25 µg/L	0.000
13C5-PFNA	7.627	468.0 -> 423.0	23221	1.25 µg/L	0.000
13C2-PFHxA	5.514	315.1 -> 270.0	43464	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.178	329.1 -> 80.9	2657	5.98 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.7%		
13C2-6:2FTS	6.871	429.1 -> 80.9	3178	5.67 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.3%		
13C2-8:2FTS	7.895	529.1 -> 80.9	2763	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-PFDoDA	8.991	615.1 -> 570.0	24144	1.19 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C2-PFTeDA	9.731	715.2 -> 670.0	13681	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C3-PFBS	5.444	302.1 -> 79.9	16661	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C3-PFHxS	7.212	402.1 -> 79.9	10167	2.47 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C4-PFBA	2.938	216.8 -> 171.9	95165	10.16 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C4-PFHpA	6.452	367.1 -> 322.0	45760	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFHxA	5.513	318.0 -> 273.0	41919	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFPeA	4.324	268.3 -> 223.0	47146	4.85 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C6-PFDA	8.108	519.1 -> 474.1	17434	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C7-PFUnDA	8.562	570.0 -> 525.1	20231	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C8-FOSA	9.555	506.1 -> 77.8	17555	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-PFOA	7.097	421.1 -> 376.0	72449	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C8-PFOS	8.270	507.1 -> 79.9	8904	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C9-PFNA	7.626	472.1 -> 427.0	22017	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
d3-MeFOSAA	8.153	573.2 -> 419.0	29808	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C3-HFPO-DA	5.878	286.9 -> 168.9	16762	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d3-MeFOSA	10.680	515.0 -> 219.0	5896	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
d5-EtFOSAA	8.349	589.2 -> 419.0	25127	5.22 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
d7-MeFOSE	10.589	623.2 -> 58.9	24470	24.05 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d9-EtFOSE	10.847	639.2 -> 58.9	15402	23.22 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.9%	
d5-EtFOSA	10.925	531.1 -> 219.0	6561	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
Target Compounds					QValue
4:2FTS	5.178	327.1 -> 307.0	43849	8.89 µg/L	99
		327.1 -> 80.9	9389		
6:2FTS	6.859	427.1 -> 407.0	36795	9.30 µg/L	98
		427.1 -> 80.9	6961		
8:2FTS	7.896	527.1 -> 507.0	17486	9.73 µg/L	98
		527.1 -> 80.8	4393		
EtFOSAA	8.362	584.2 -> 419.1	8184	2.49 µg/L	m 97
		584.2 -> 526.0	4477		
FOSA	9.557	498.1 -> 77.9	14903	2.50 µg/L	100
		498.1 -> 478.0	572		
MeFOSAA	8.154	570.1 -> 419.0	11626	2.37 µg/L	99
		570.1 -> 483.0	1731		
PFBA	2.944	212.8 -> 168.9	19468	10.15 µg/L	100
PFBS	5.444	298.7 -> 79.9	11694	2.13 µg/L	95
		298.7 -> 98.8	5276		
PFDA	8.108	512.9 -> 469.0	46819	2.82 µg/L	99
		512.9 -> 219.0	6327		
PFDoDA	9.005	613.1 -> 569.0	39644	2.35 µg/L	98
		613.1 -> 319.0	5110		
PFDS	9.167	599.0 -> 79.9	5654	2.39 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.453	599.0 -> 98.8	3028	2.27	µg/L	100
		363.1 -> 319.0	51445			
PFHpS	7.779	363.1 -> 169.0	7306	2.37	µg/L	92
		449.0 -> 79.9	7364			
PFHxA	5.503	449.0 -> 98.9	4226	2.41	µg/L	98
		313.0 -> 269.0	32291			
PFHxS	7.213	313.0 -> 118.9	1307	2.27	µg/L	m
		398.7 -> 79.9	8461			
PFNA	7.627	398.7 -> 98.9	4913	2.50	µg/L	99
		463.0 -> 419.0	27930			
PFNS	8.737	463.0 -> 219.0	5995	2.53	µg/L	99
		548.8 -> 79.9	8219			
PFOA	7.098	548.8 -> 98.9	4515	2.38	µg/L	95
		413.0 -> 369.0	63520			
PFOS	8.271	413.0 -> 169.0	8777	2.38	µg/L	m
		498.9 -> 79.9	7908			
PFPeA	4.326	498.9 -> 98.8	5106	4.91	µg/L	100
		263.0 -> 219.0	40519			
PFPeS	6.517	349.1 -> 79.9	11323	2.41	µg/L	100
		349.1 -> 98.9	6015			
PFTeDA	9.732	713.1 -> 669.0	32821	2.56	µg/L	98
		713.1 -> 168.9	2251			
PFTrDA	9.387	663.0 -> 619.0	36228	2.53	µg/L	97
		663.0 -> 168.9	2929			
PFUnDA	8.562	563.1 -> 519.0	38082	2.69	µg/L	100
		563.1 -> 269.1	5516			
11CI-PF3OUdS	9.439	630.9 -> 450.9	79629	8.59	µg/L	99
		632.9 -> 452.9	24637			
9CI-PF3ONS	8.614	530.8 -> 351.0	154454	9.25	µg/L	100
		532.8 -> 353.0	46238			
ADONA	6.704	376.9 -> 250.9	324189	9.76	µg/L	96
		376.9 -> 84.8	64854			
HFPO-DA	5.879	284.9 -> 168.9	14024	10.50	µg/L	97
		284.9 -> 184.9	1847			
3:3FTCA	3.791	241.0 -> 177.0	5066	11.56	µg/L	93
		241.0 -> 117.0	805			
5:3FTCA	6.156	341.0 -> 237.1	185677	60.57	µg/L	95
		341.0 -> 217.0	170881			
7:3FTCA	7.567	441.0 -> 316.9	93697	57.56	µg/L	97
		441.0 -> 336.9	180461			
EtFOSA	10.927	526.0 -> 219.0	7341	2.61	µg/L	93
		526.0 -> 169.0	7272			
EtFOSE	10.860	630.0 -> 58.9	14086	25.38	µg/L	100
		511.9 -> 219.0	6681			
MeFOSA	10.682	511.9 -> 169.0	6961	2.66	µg/L	#
		616.1 -> 58.9	21558			
MeFOSE	10.602	699.1 -> 79.9	3560	25.09	µg/L	100
		699.1 -> 98.8	2103			
PFDoDS	9.858	295.0 -> 201.0	4099	2.66	µg/L	100
		295.0 -> 84.9	2034			
NFDHA	5.395	279.0 -> 85.1	12537	5.40	µg/L	96
		229.0 -> 84.9	11217			
PFMBA	4.738	314.8 -> 134.9	86182	5.15	µg/L	100
		314.8 -> 82.9	2073			
PFMPA	3.488			5.08	µg/L	100
PFEESA	5.983			4.53	µg/L	100

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



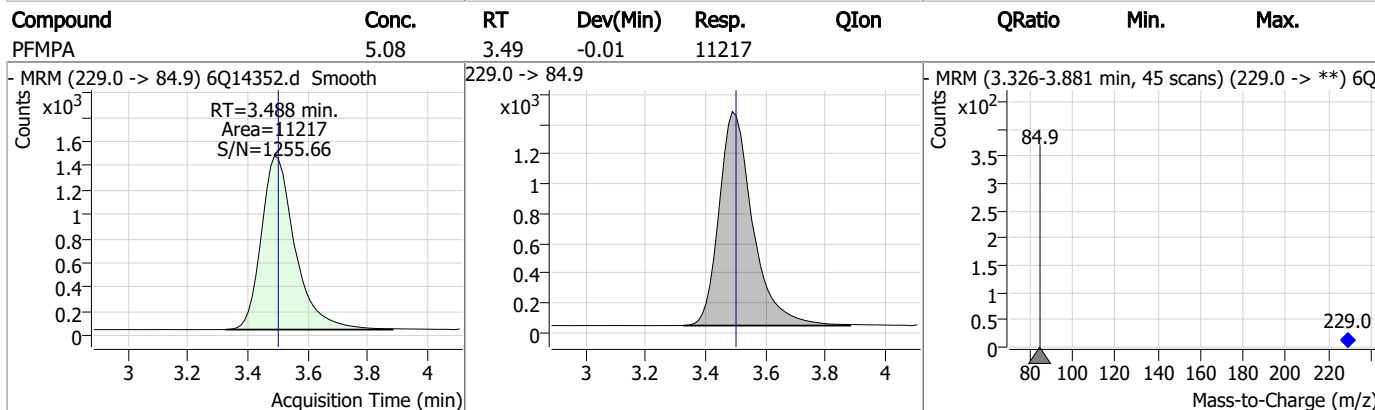
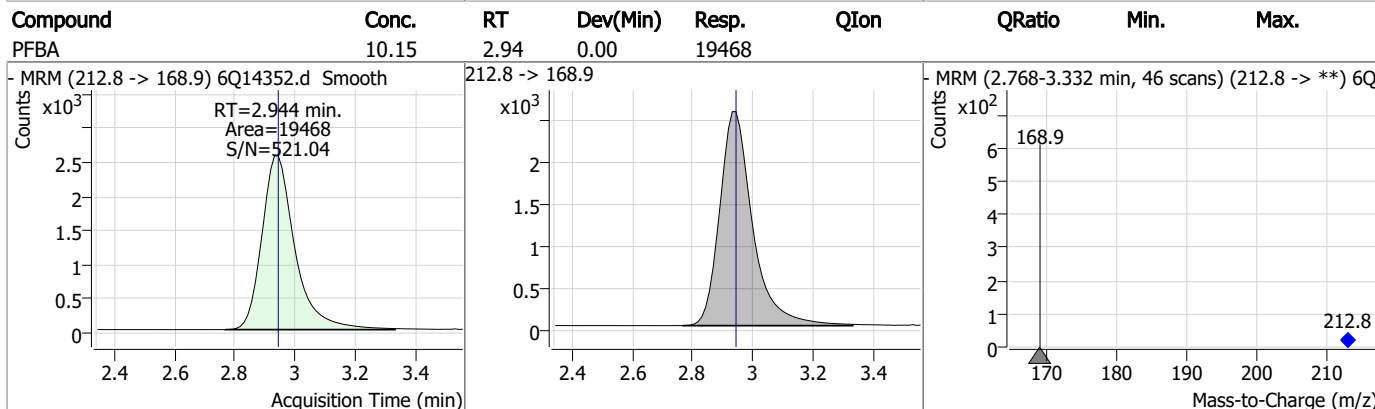
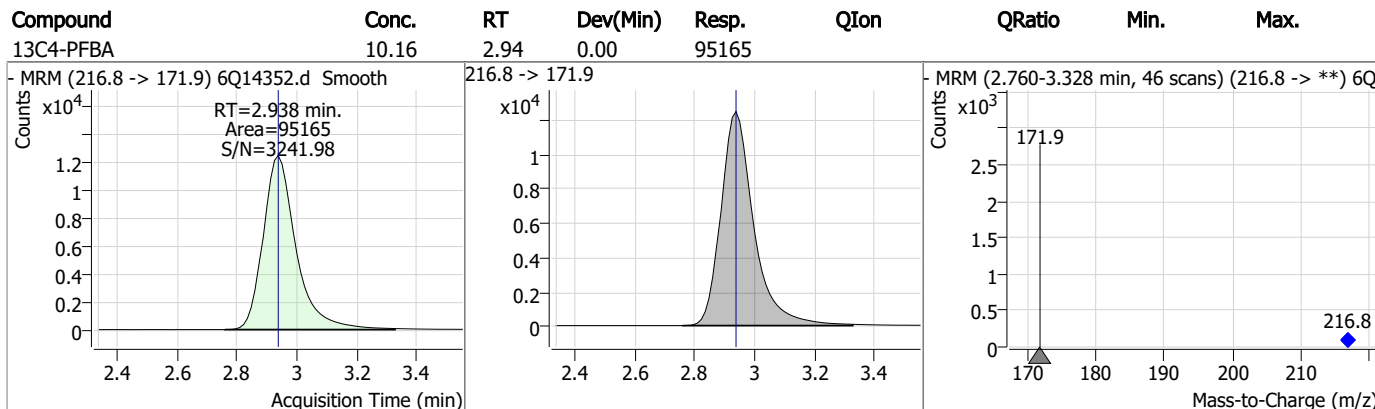
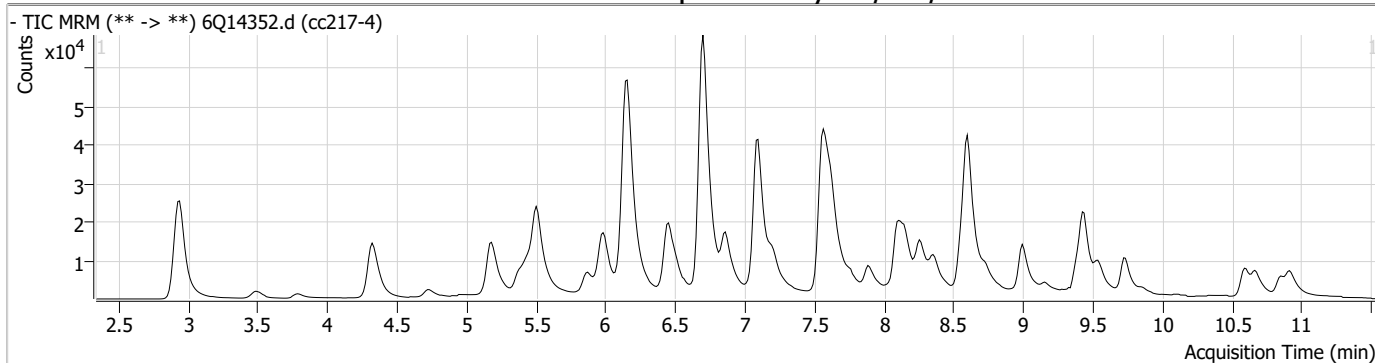
Perfluorinated Compounds by LC/MS/MS

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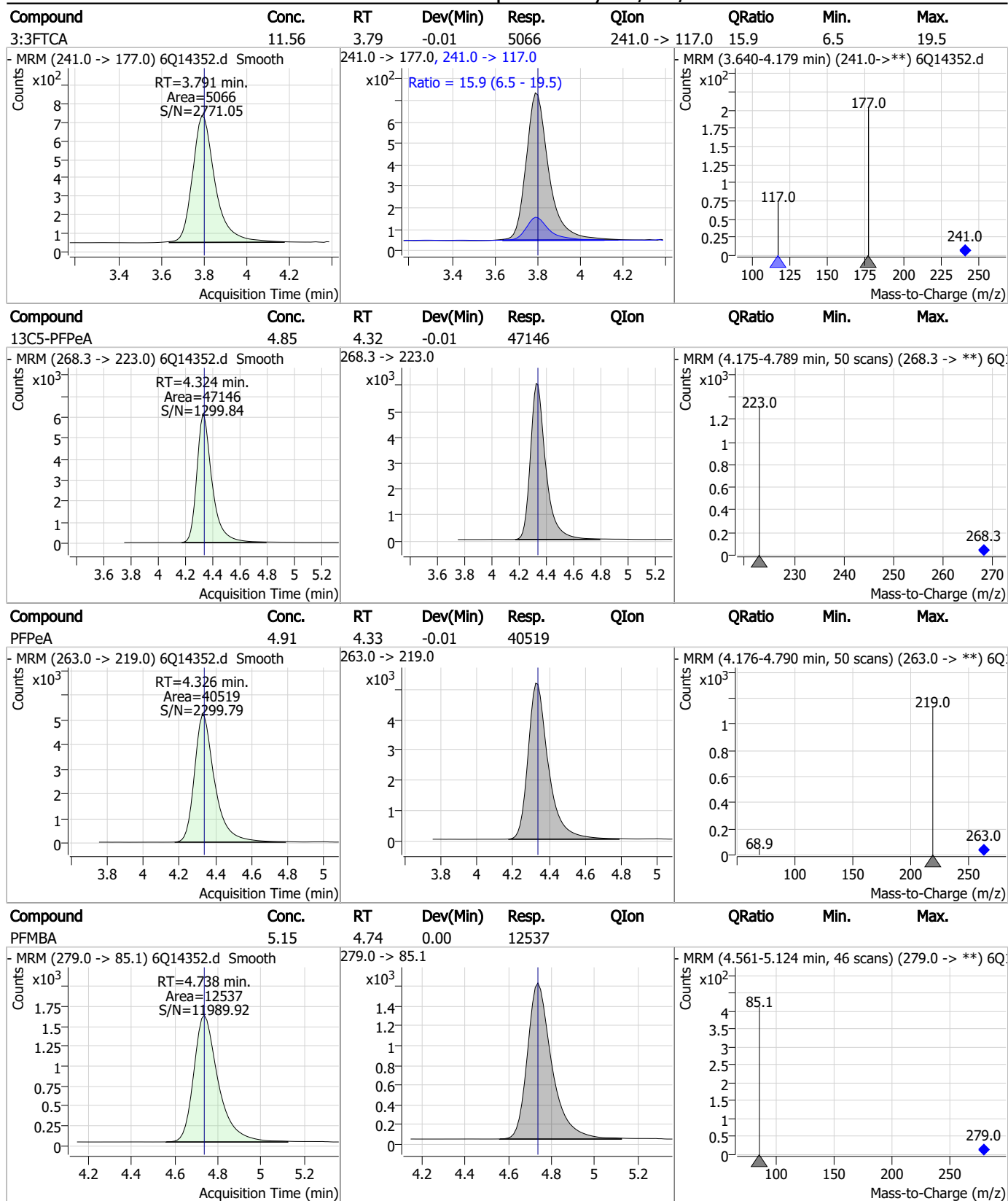
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Perfluorinated Compounds by LC/MS/MS



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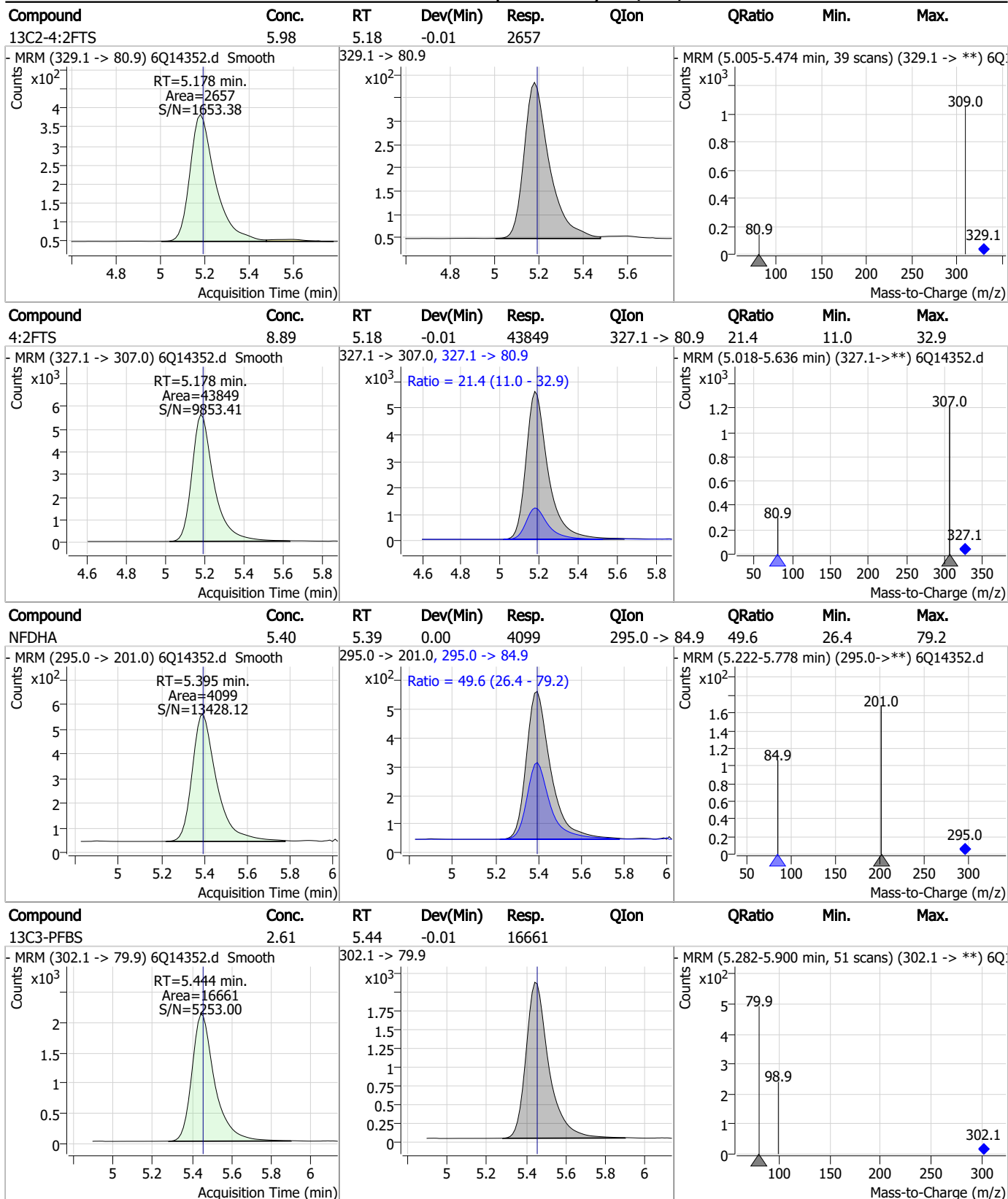
Perfluorinated Compounds by LC/MS/MS



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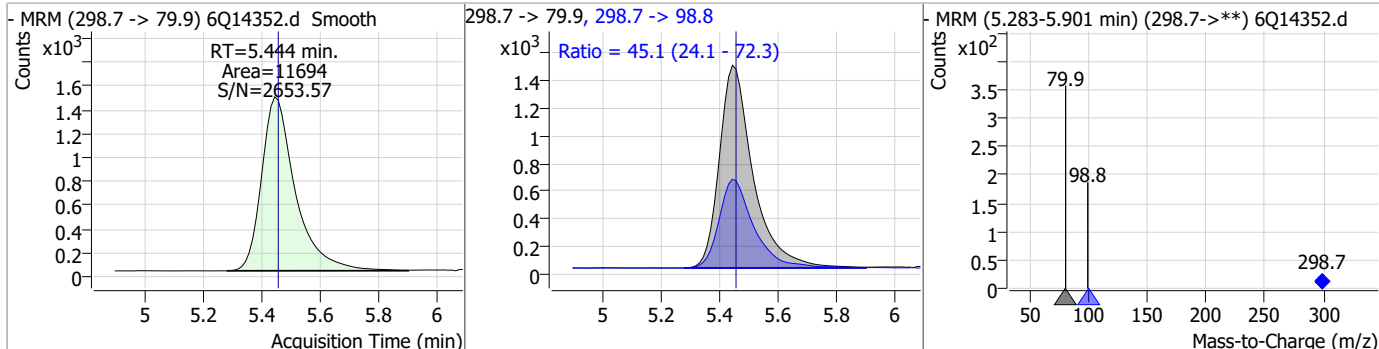
Perfluorinated Compounds by LC/MS/MS



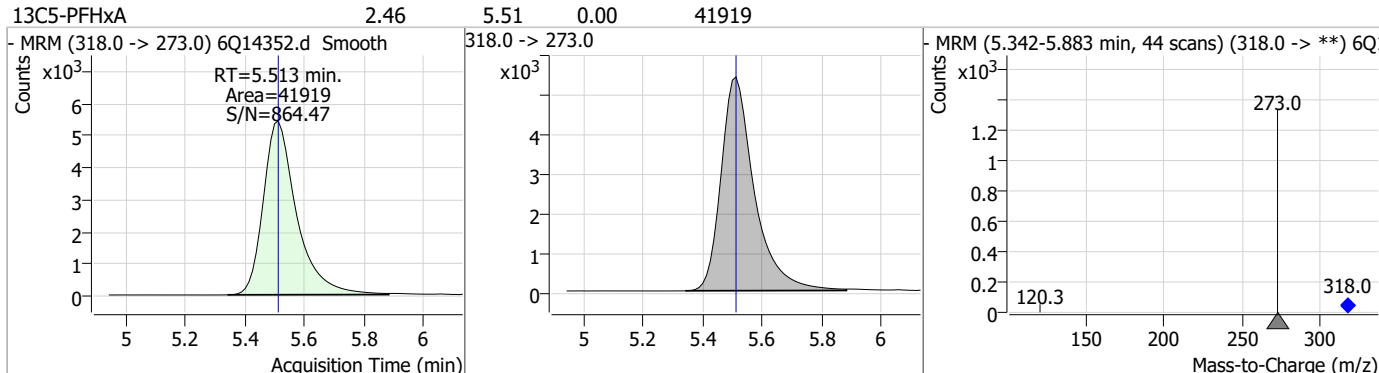
7.7.14
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Perfluorinated Compounds by LC/MS/MS

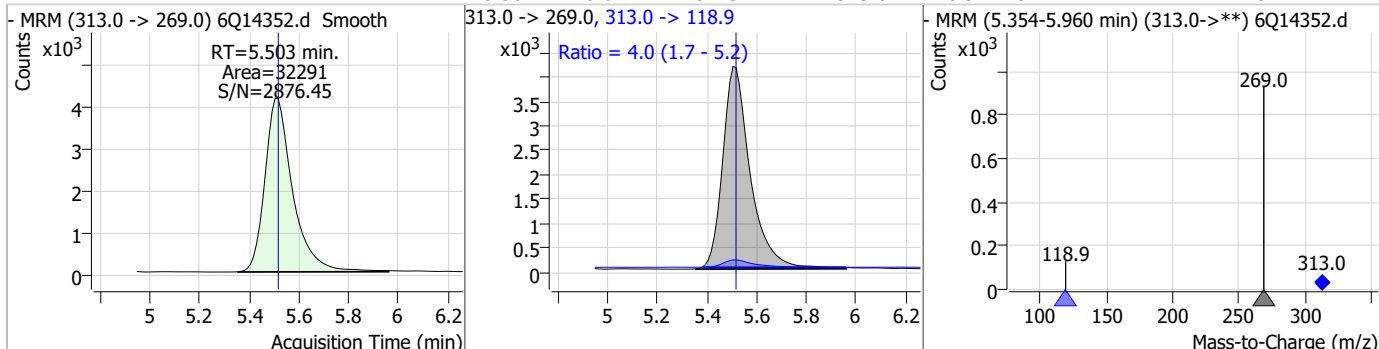
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.13	5.44	-0.01	11694	298.7 -> 98.8	45.1	24.1	72.3



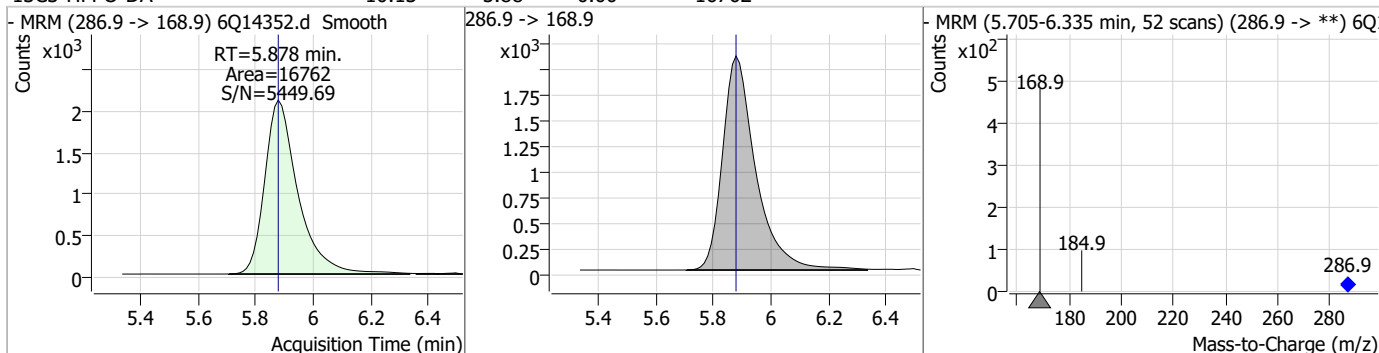
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.51	0.00	41919				



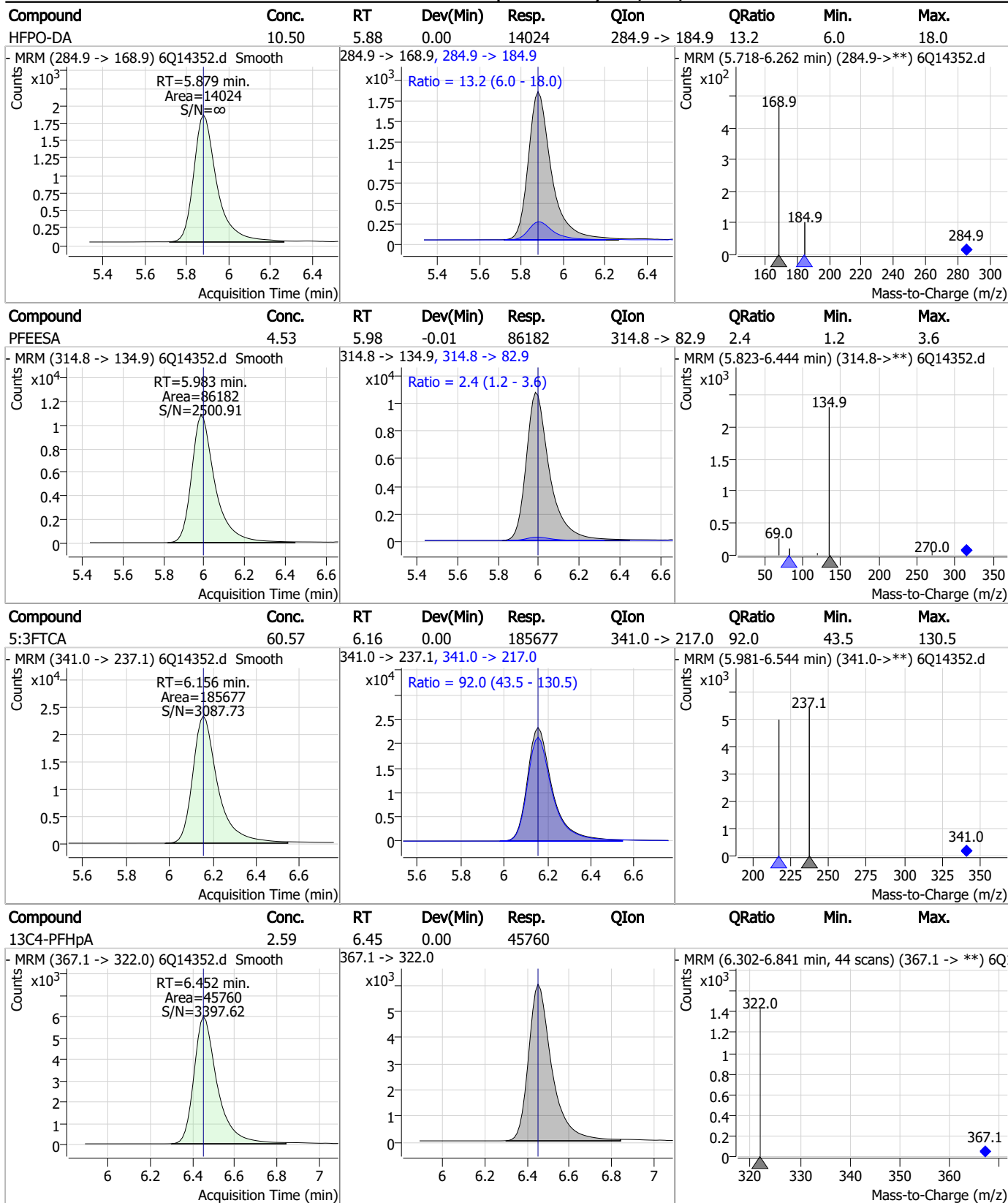
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.41	5.50	-0.01	32291	313.0 -> 118.9	4.0	1.7	5.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.13	5.88	0.00	16762				

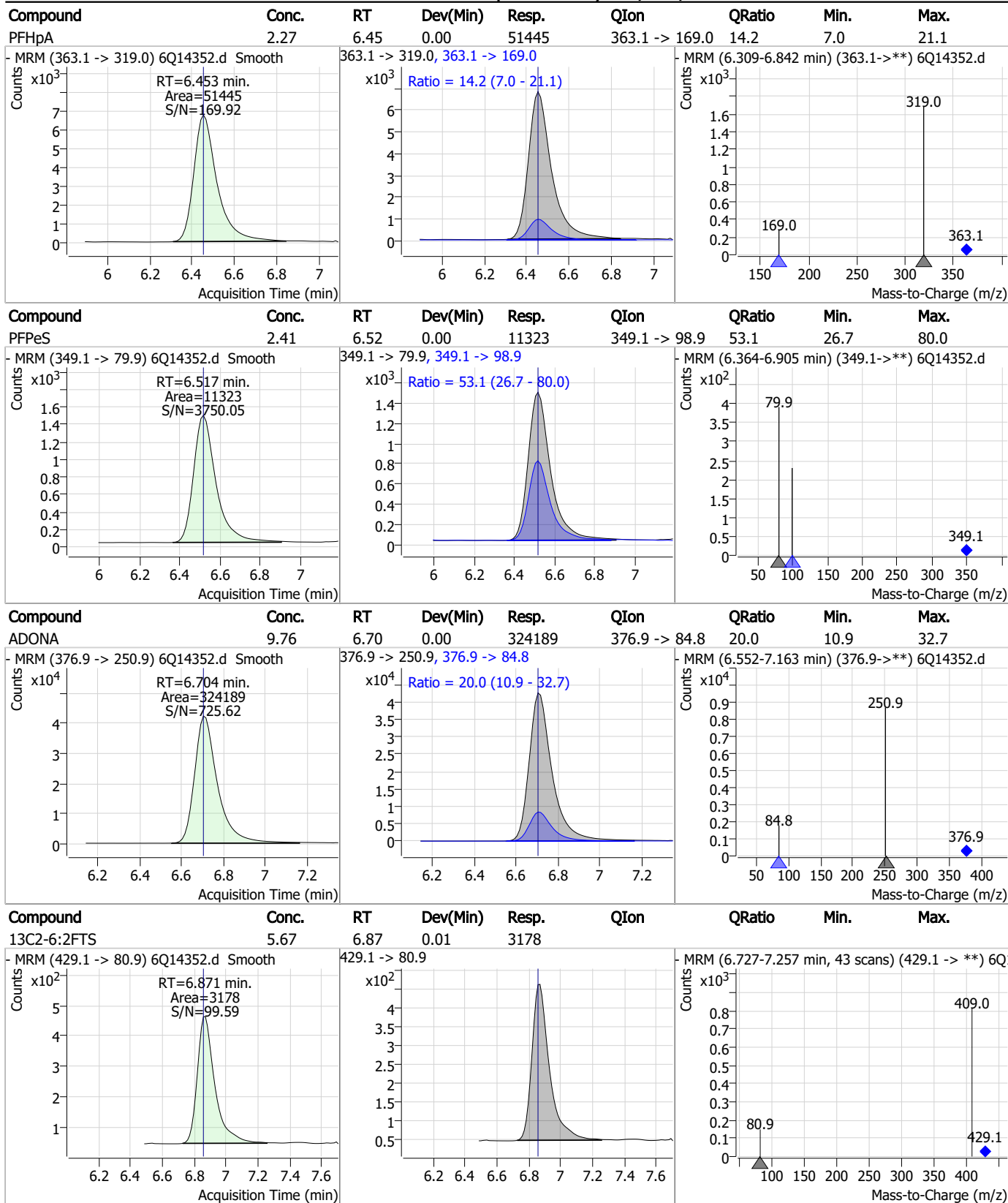


Perfluorinated Compounds by LC/MS/MS



7.7.14
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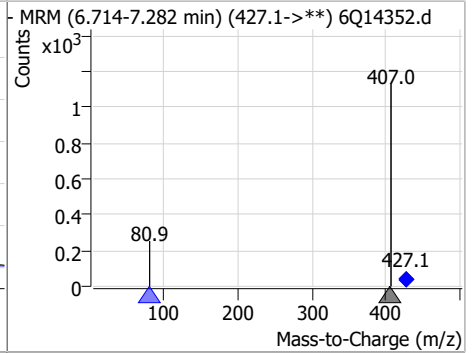
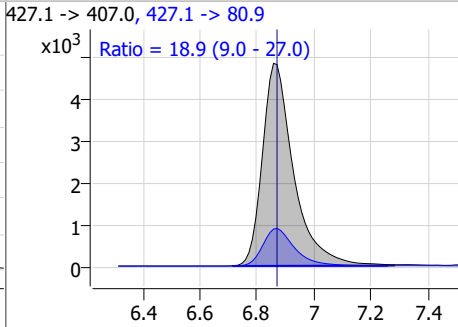
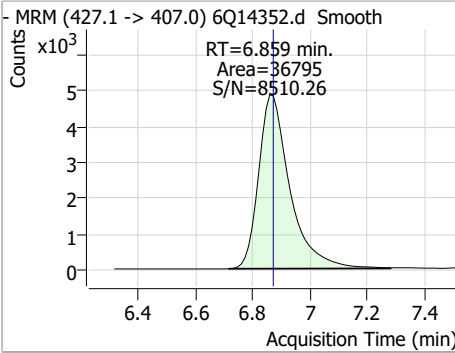
Perfluorinated Compounds by LC/MS/MS



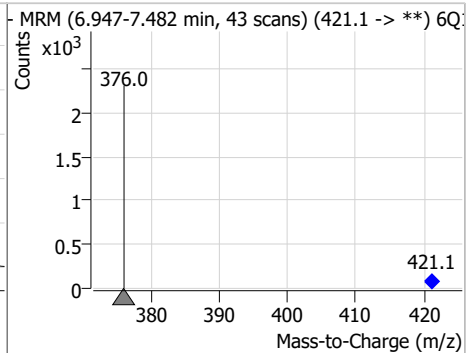
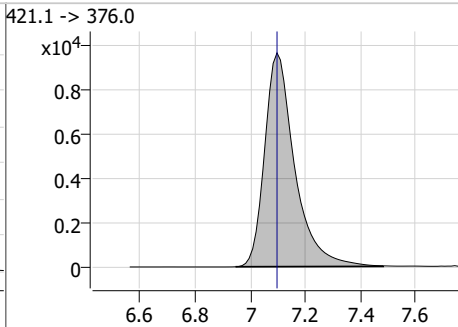
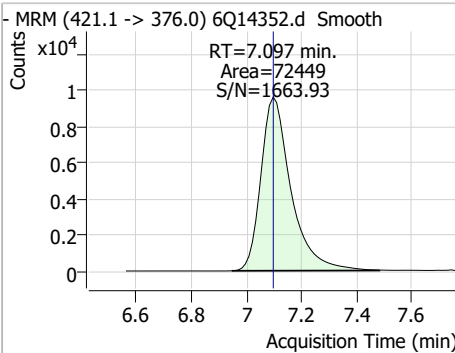
7.7.14
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Perfluorinated Compounds by LC/MS/MS

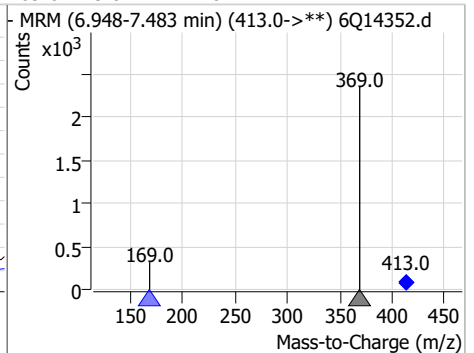
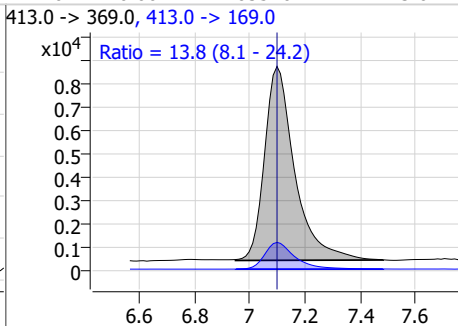
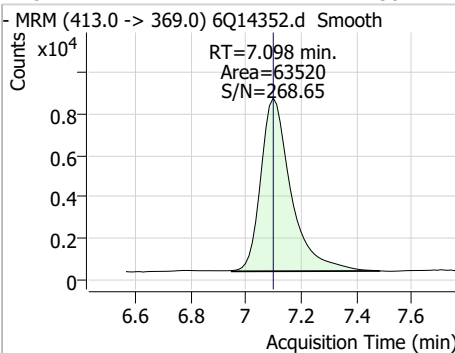
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.30	6.86	-0.01	36795	427.1 -> 80.9	18.9	9.0	27.0



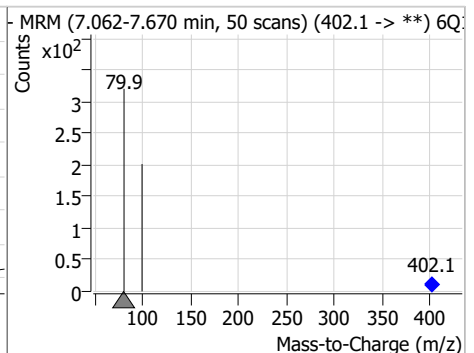
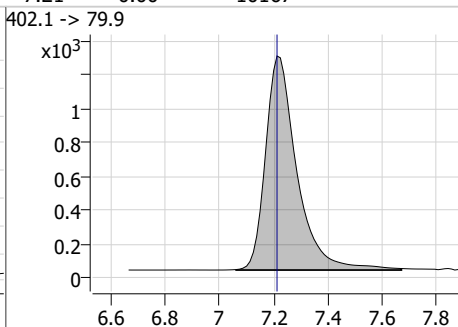
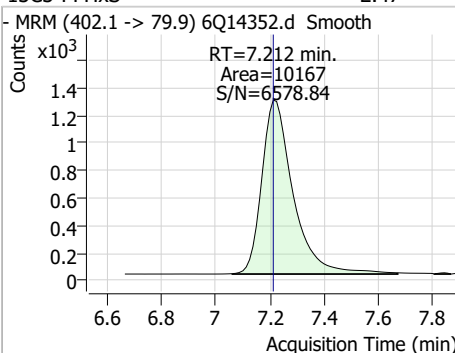
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.52	7.10	0.00	72449				



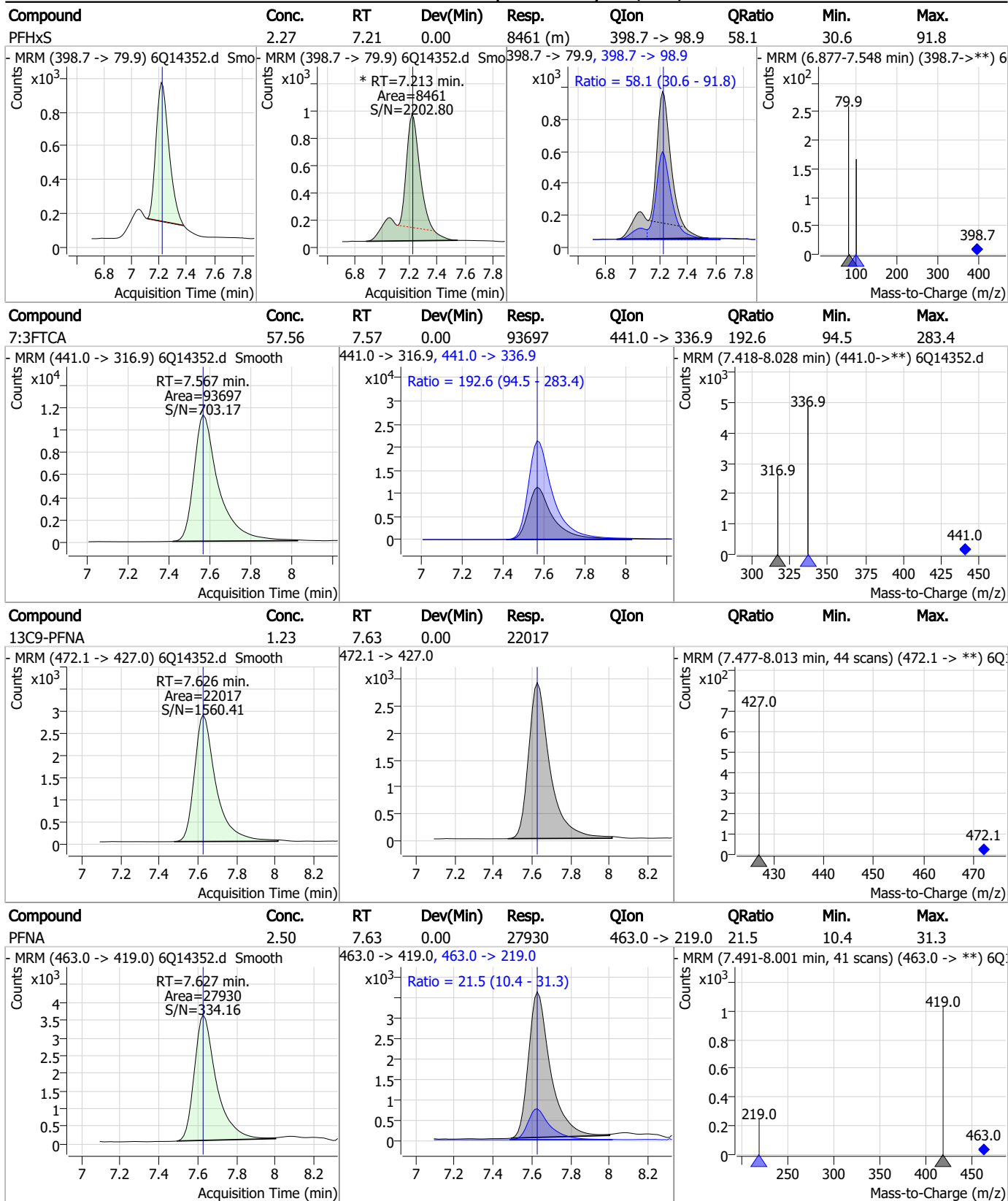
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.38	7.10	0.00	63520	413.0 -> 169.0	13.8	8.1	24.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.47	7.21	0.00	10167				

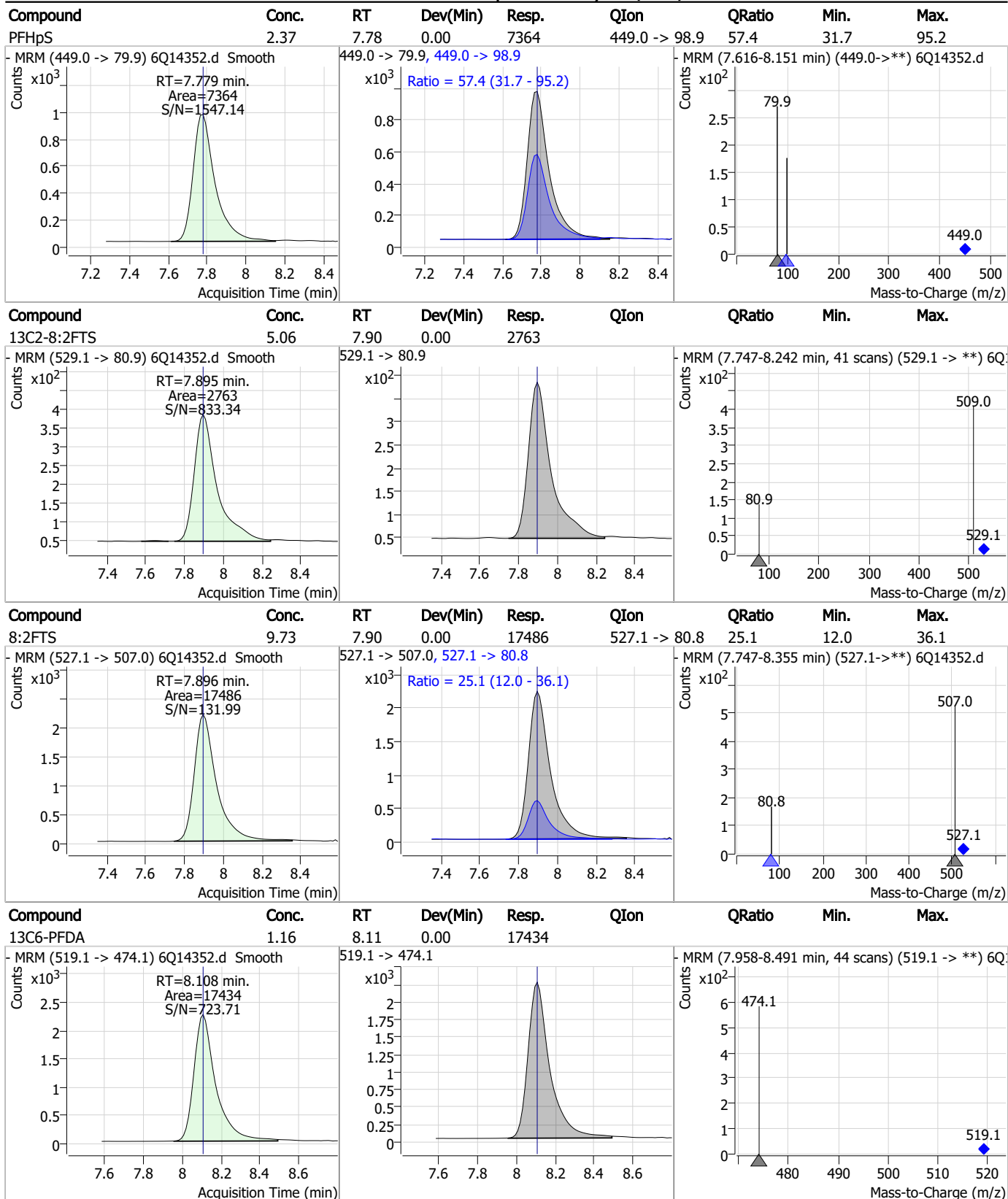


Perfluorinated Compounds by LC/MS/MS



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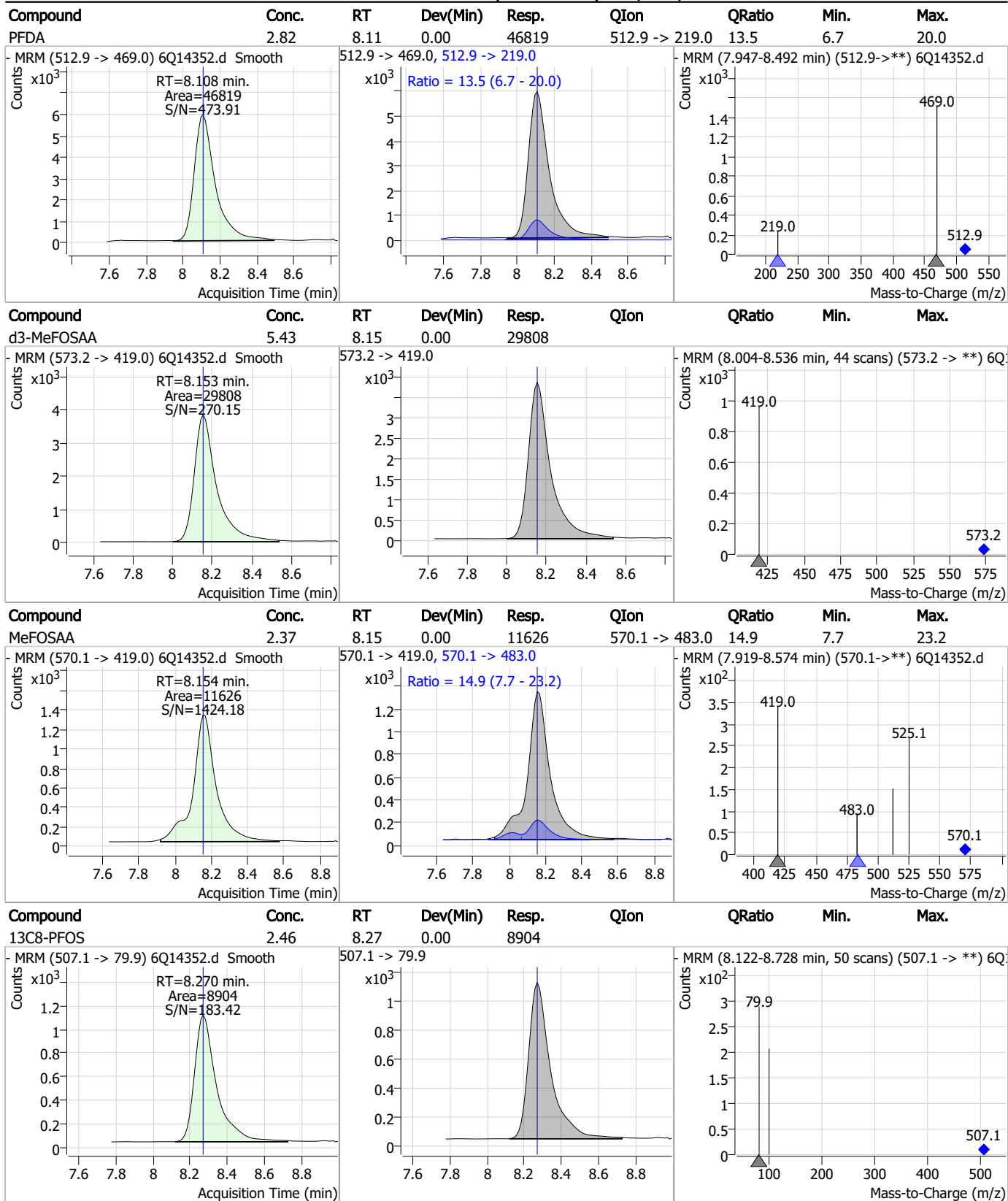
Perfluorinated Compounds by LC/MS/MS



7.7.14
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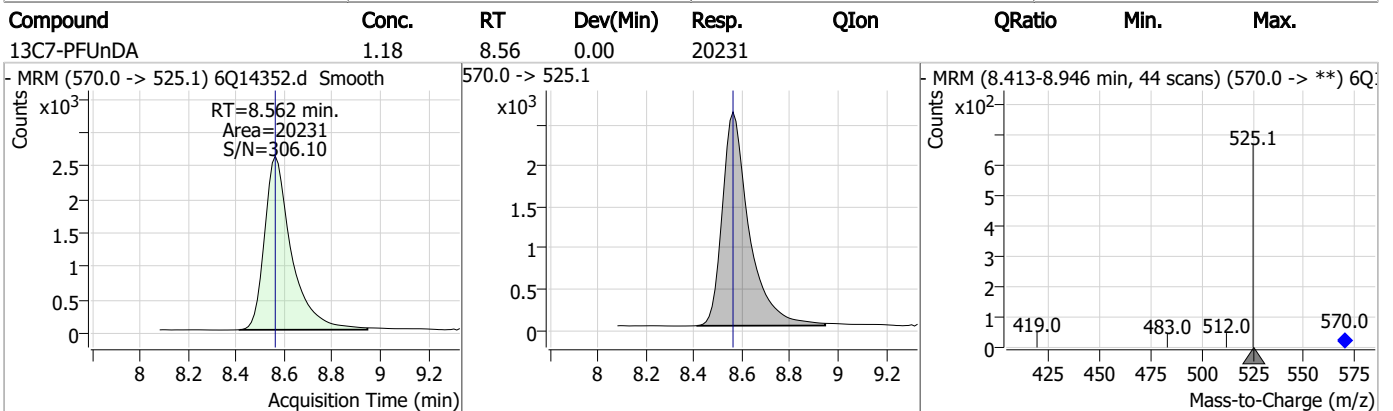
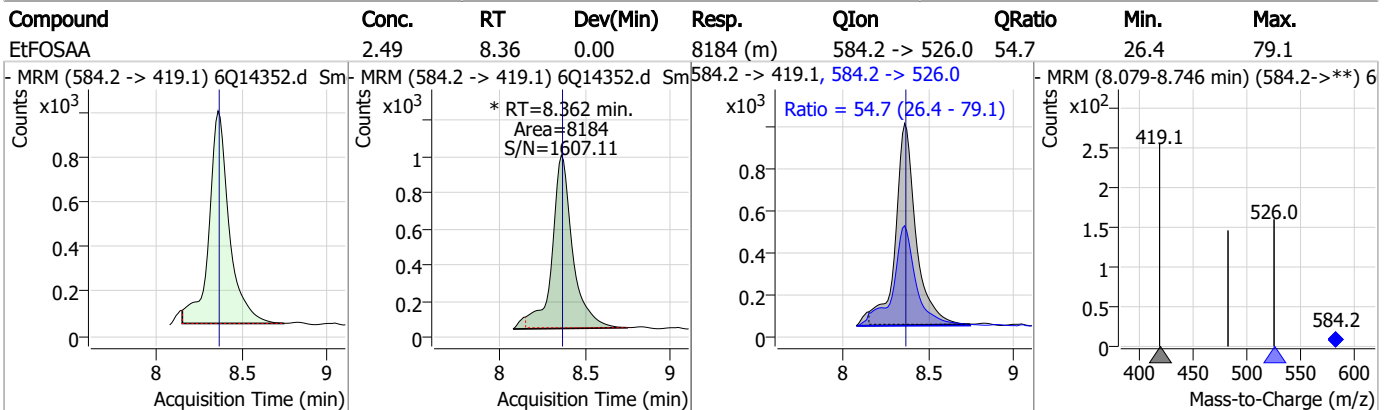
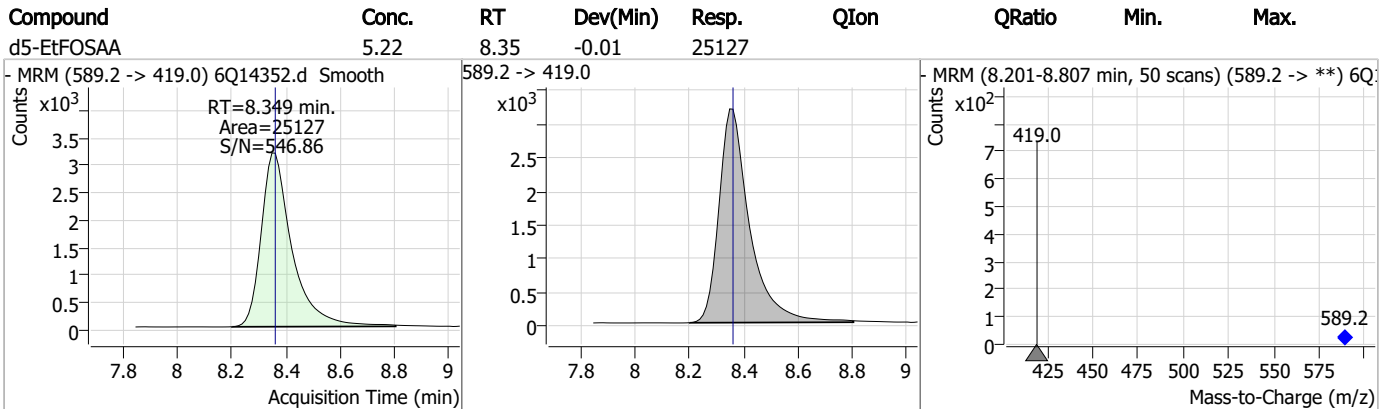
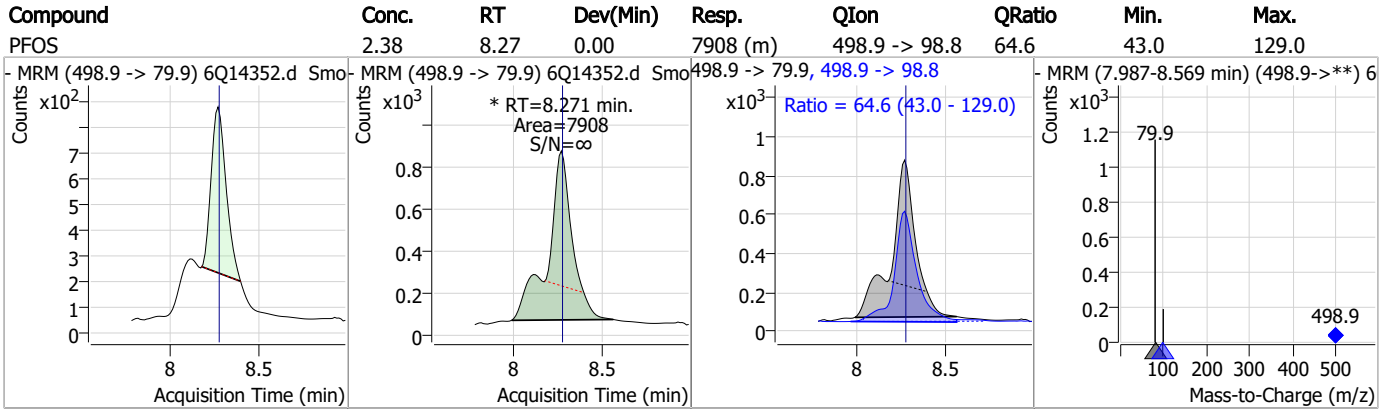
Perfluorinated Compounds by LC/MS/MS



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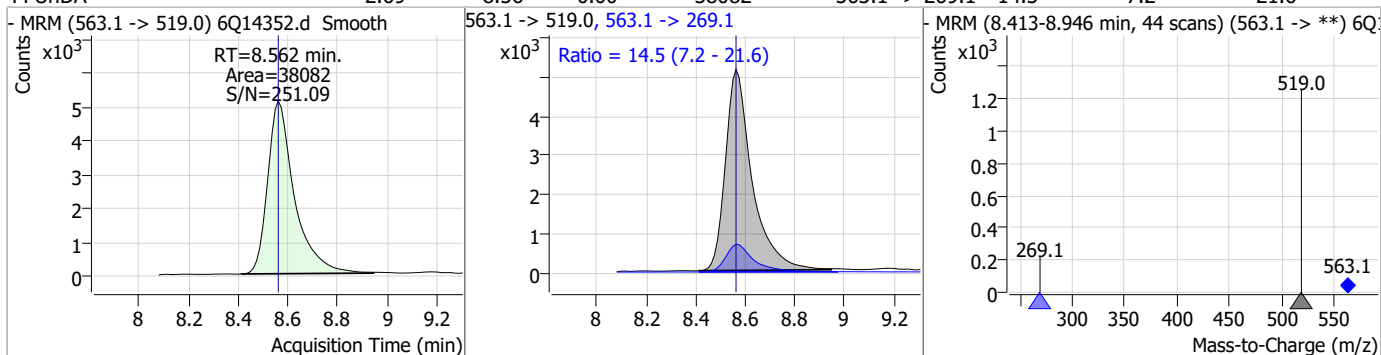
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Perfluorinated Compounds by LC/MS/MS

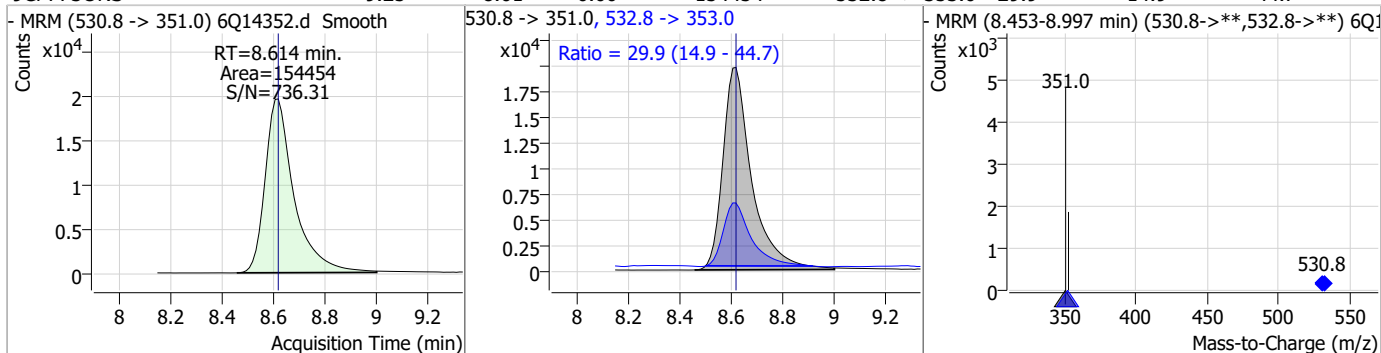


Perfluorinated Compounds by LC/MS/MS

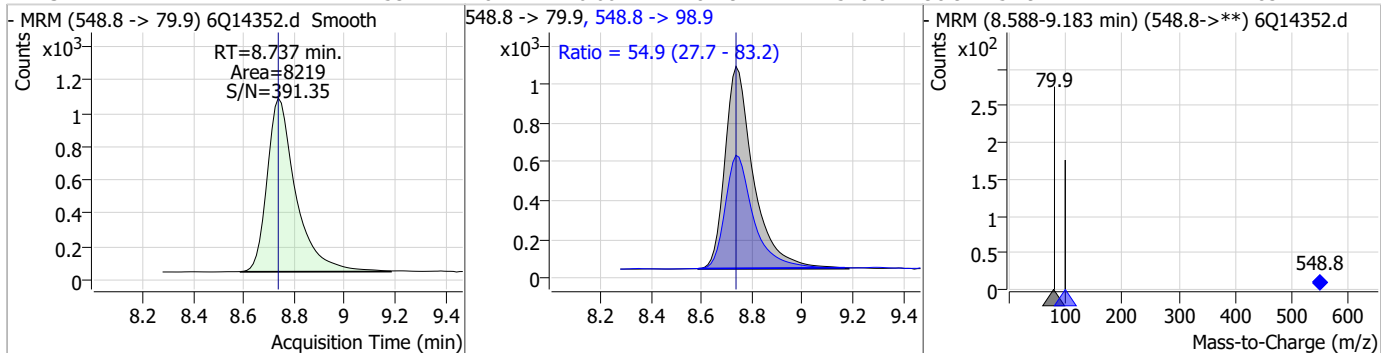
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.69	8.56	0.00	38082	563.1 -> 269.1	14.5	7.2	21.6



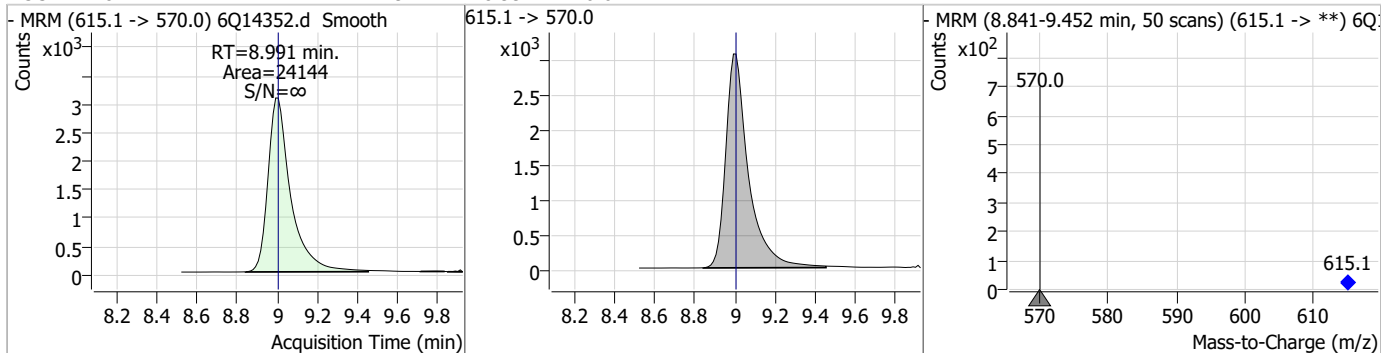
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	9.25	8.61	0.00	154454	532.8 -> 353.0	29.9	14.9	44.7



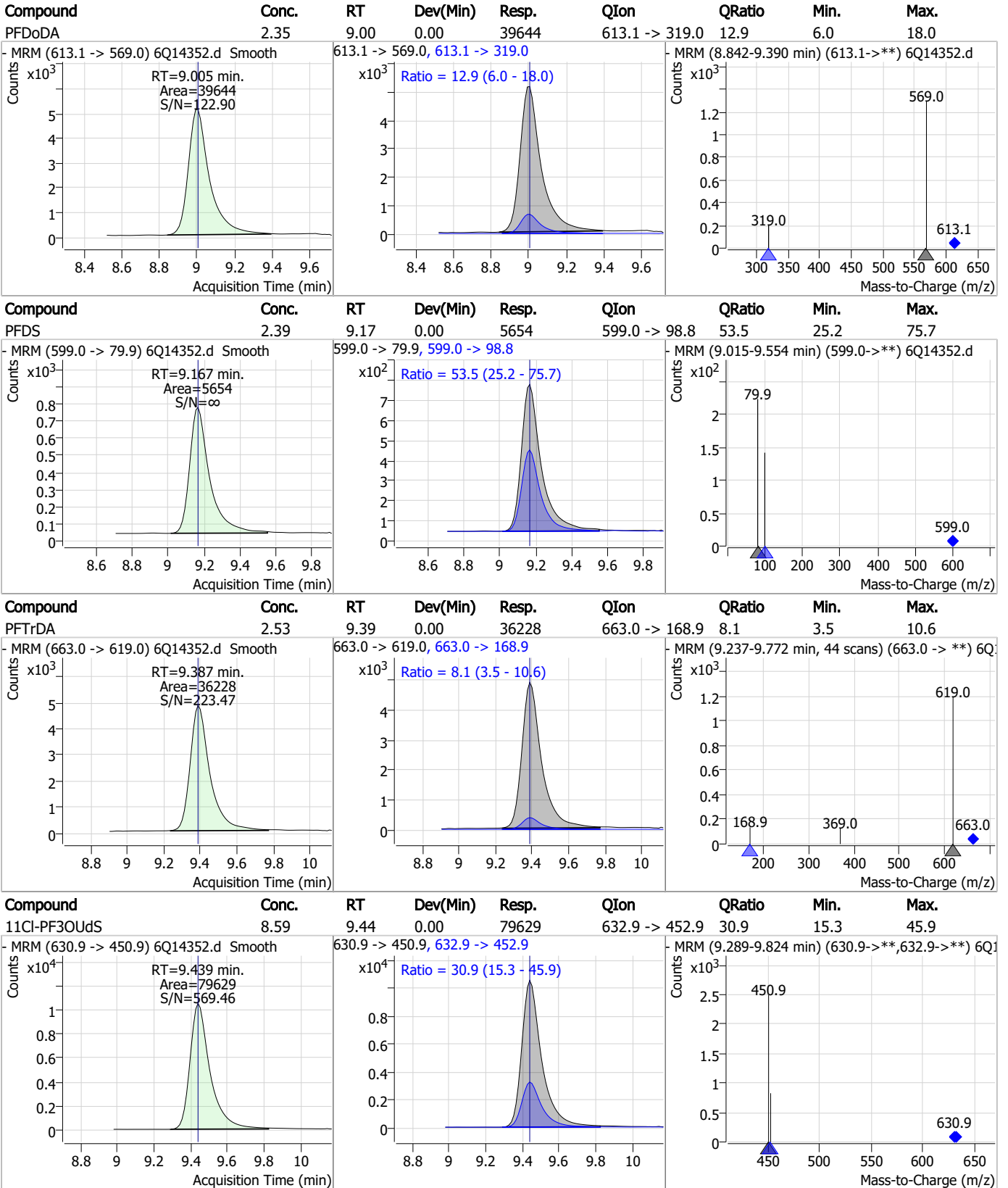
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.53	8.74	0.00	8219	548.8 -> 98.9	54.9	27.7	83.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	8.99	-0.01	24144	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS



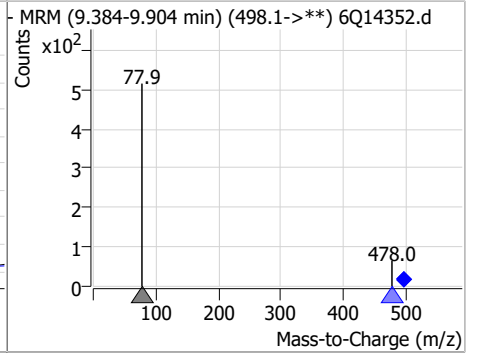
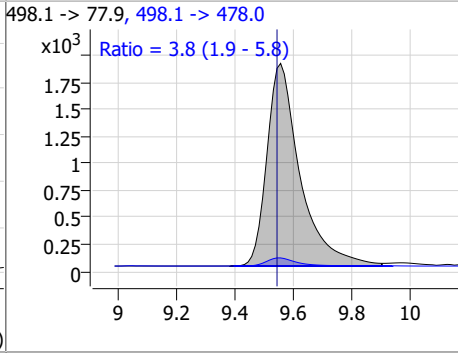
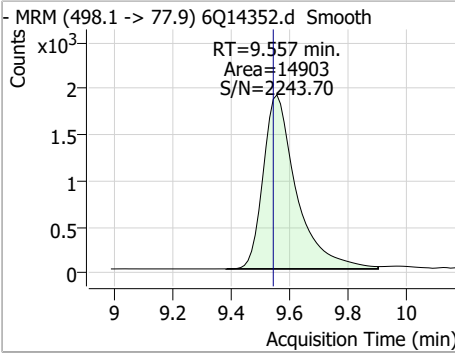
7.7.14

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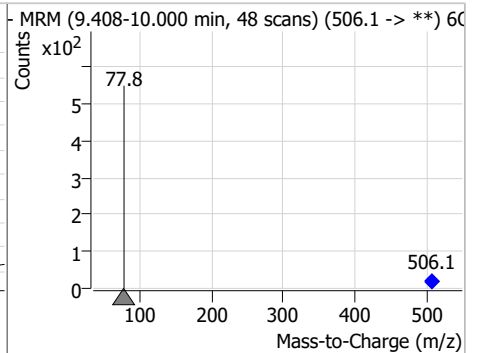
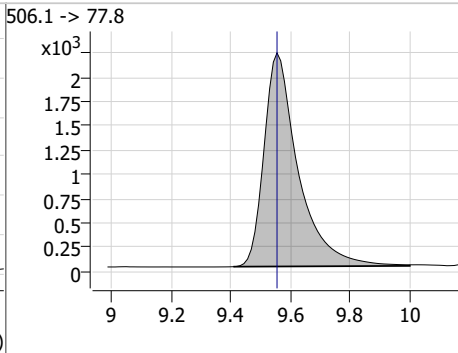
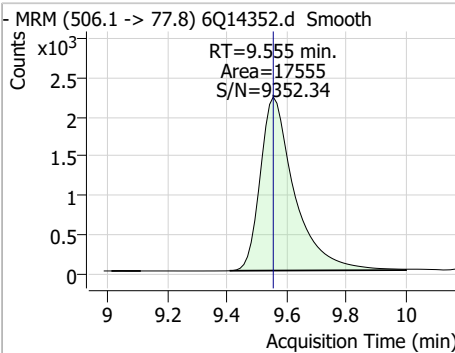


Perfluorinated Compounds by LC/MS/MS

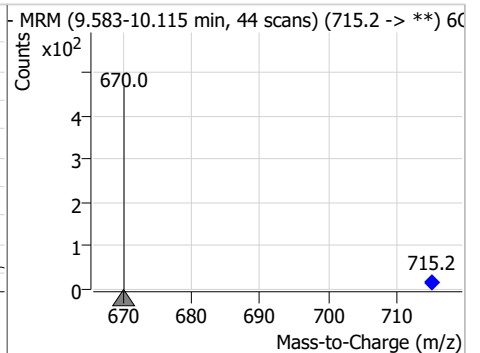
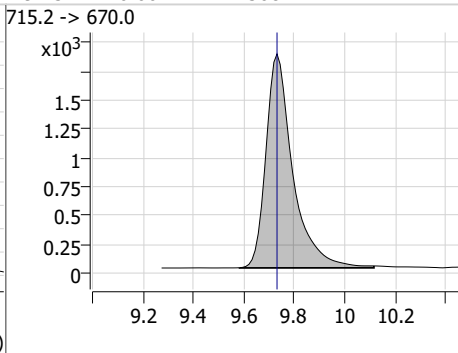
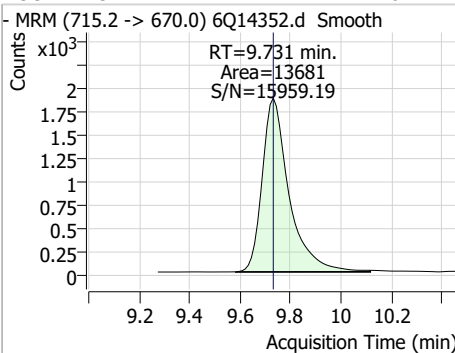
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.50	9.56	0.01	14903	498.1 -> 478.0	3.8	1.9	5.8



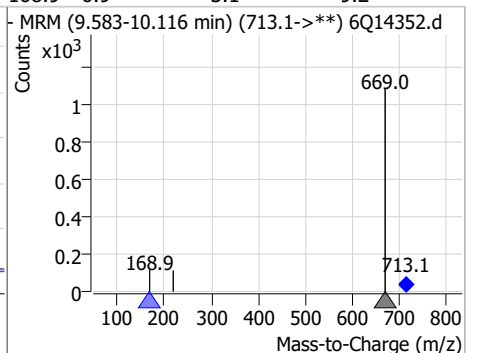
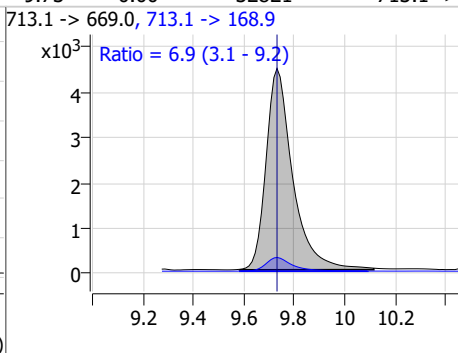
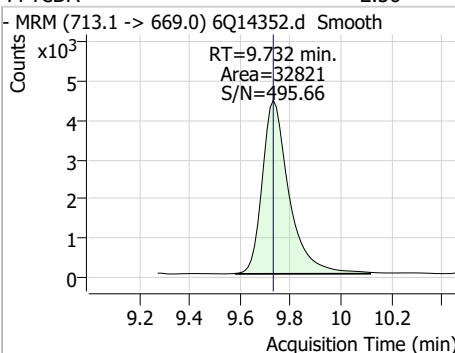
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.48	9.55	0.00	17555				



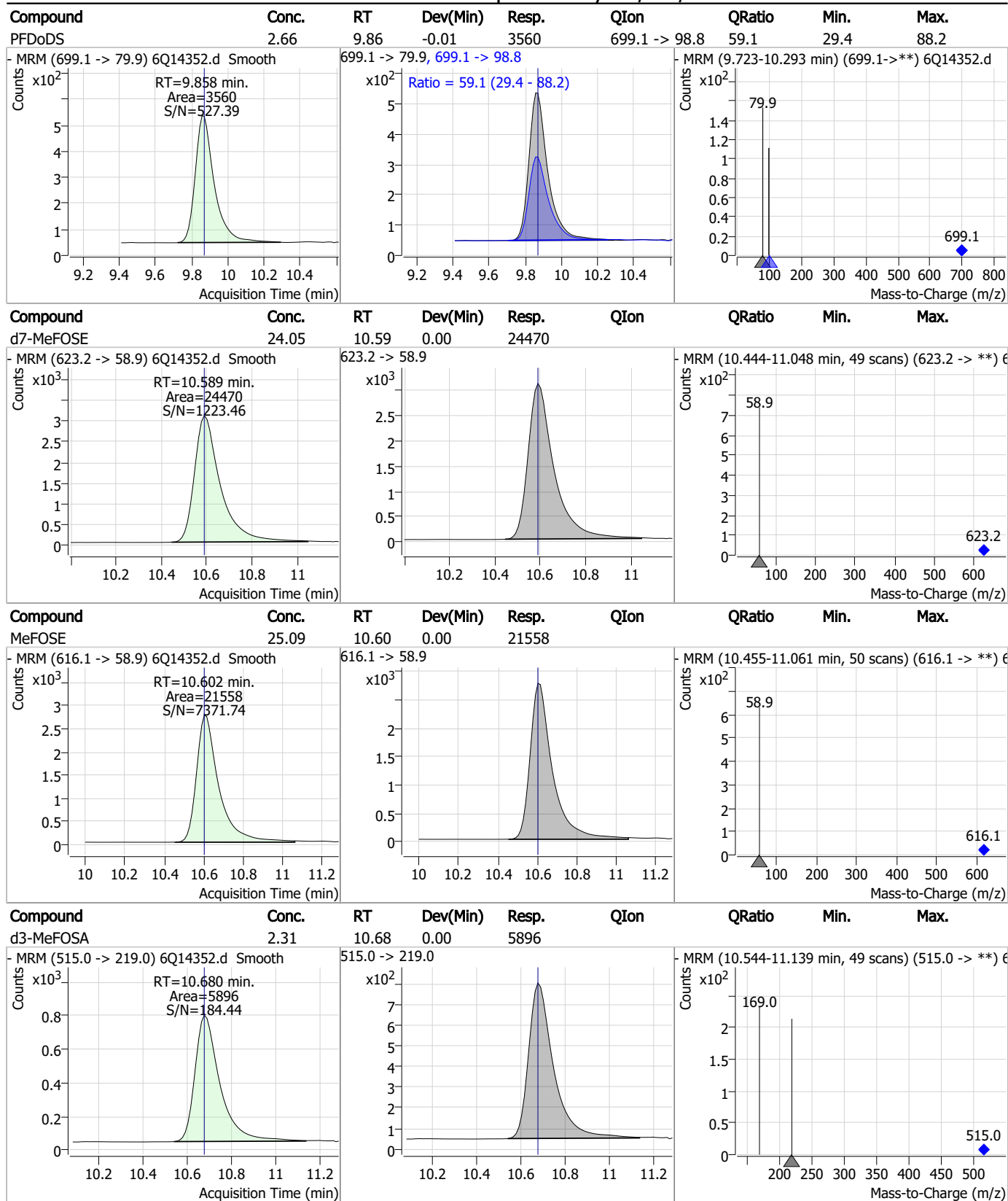
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.16	9.73	0.00	13681				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.56	9.73	0.00	32821	713.1 -> 168.9	6.9	3.1	9.2



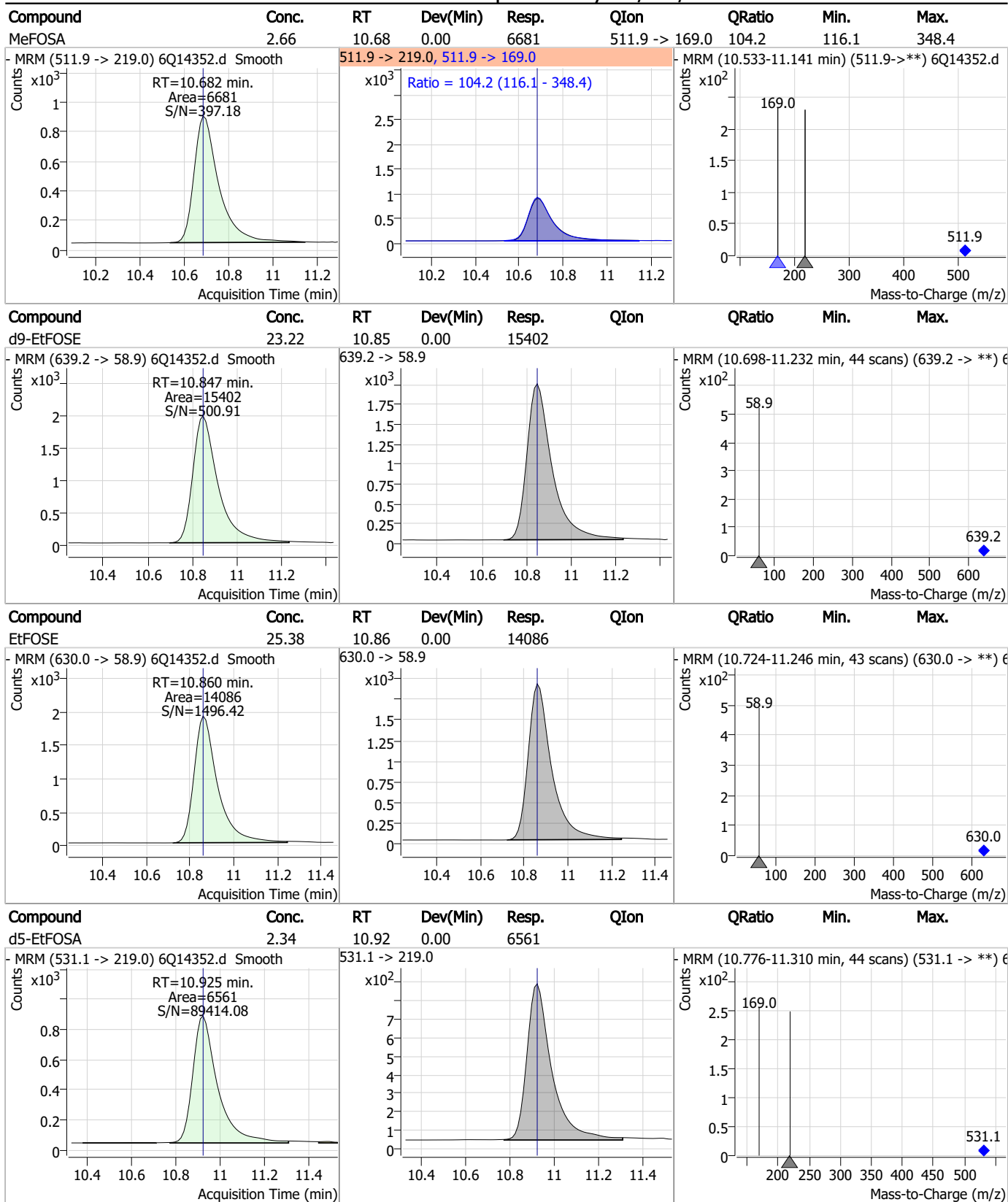
Perfluorinated Compounds by LC/MS/MS



7.7.14

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Perfluorinated Compounds by LC/MS/MS

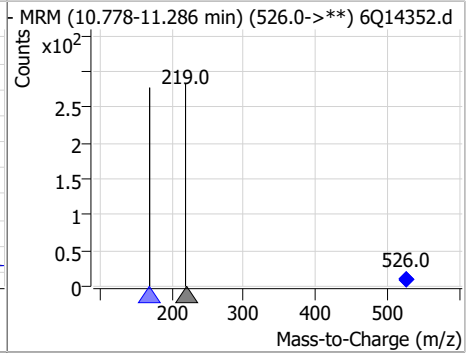
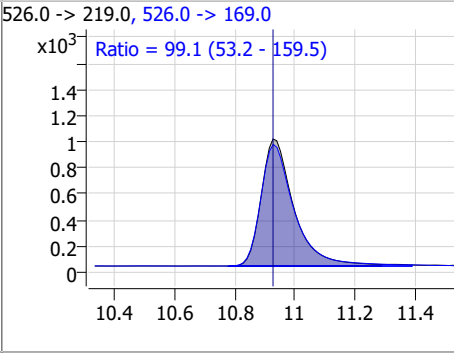
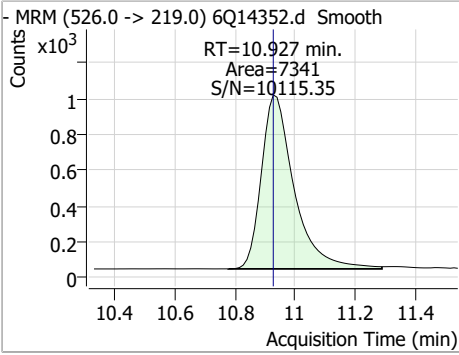


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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.61	10.93	0.00	7341	526.0 -> 169.0	99.1	53.2	159.5



7.7.14
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Manual Integration Approval Summary

Sample Number: S6Q218-CC217 Method: EPA DRAFT 1633
Lab FileID: 6Q14352.D Analyst approved: 02/27/23 11:07 Martha Valls
Injection Time: 02/24/23 23:58 Supervisor approved: 02/27/23 17:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.36	Split peak

7.7.14.1

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SGS ORLANDO

DATE:	02/23/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_022323_S6Q217
CAL DATE:	02/23/23
ANALYST:	M. Valls / L. Ritner
RUN BATCH:	S6Q217

ELUENT A LOT #:	AGN 220228
ELUENT B LOT #:	LCMS 2057
IC/CC STD LOT #:	LCMS 2073D
ICV STD LOT #:	LCMS 2073D/2071
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q14200.d	P1-A1	CCB	1633full.m	Sample		OP95480,S6Q217,500,,,5.0,1,water	✓
2	6Q14201.d	P1-A1	CCB	1633full.m	Sample		OP95480,S6Q217,500,,,5.0,1,water	✓
3	6Q14202.d	P1-B3	RT TDCA	1633full.m	Sample		OP95480,S6Q217,500,,,5.0,1,water	✓
4	6Q14203.d	P1-B4	RT BR-LN	1633full.m	Sample		OP95480,S6Q217,500,,,5.0,1,water	✓
5	6Q14204.d	P1-A1	ic217-0	1633full.m	Sample		OP95480,S6Q217,500,,,5.0,1,water	✓
6	6Q14205.d	P1-A2	ic217-1	1633full.m	Calibration	1.6/500	OP95480,S6Q217,500,,,5.0,1,water	✓
7	6Q14206.d	P1-A3	ic217-2	1633full.m	Calibration	4/500	OP95480,S6Q217,500,,,5.0,1,water	✓
8	6Q14207.d	P1-A4	ic217-3	1633full.m	Calibration	10/500	OP95480,S6Q217,500,,,5.0,1,water	✓
9	6Q14208.d	P1-A5	icc217-4	1633full.m	Calibration	20/500	OP95480,S6Q217,500,,,5.0,1,water	✓
10	6Q14209.d	P1-A6	ic217-5	1633full.m	Calibration	40/500	OP95480,S6Q217,500,,,5.0,1,water	✓
11	6Q14210.d	P1-A7	ic217-6	1633full.m	Calibration	100/500	OP95480,S6Q217,500,,,5.0,1,water	✓
12	6Q14211.d	P1-A8	ic217-7	1633full.m	Calibration	200/500	OP95480,S6Q217,500,,,5.0,1,water	✓
13	6Q14212.d	P1-A9	ic217-8	1633full.m	Calibration	1x	OP95480,S6Q217,500,,,5.0,1,water	✓
14	6Q14213.d	P1-A1	IBLK	1633full.m	Sample		OP95480,S6Q217,500,,,5.0,1,water	✓
15	6Q14214.d	P1-B1	icv217-4	1633full.m	QC		OP95480,S6Q217,500,,,5.0,1,water	✓
16	6Q14215.d	P1-B2	icv217-20	1633full.m	QC	100/500	OP95480,S6Q217,500,,,5.0,1,water	✓
17	6Q14216.d	P1-A5	cc217-4	1633full.m	QC	20/500	OP95480,S6Q217,500,,,5.0,1,water	✓
18	6Q14217.d	P1-A2	cc217-1,0LL	1633full.m	QC	1.6/500	OP95480,S6Q217,500,,,5.0,1,water	✓
19	6Q14218.d	P2-A1	op95496-bs	1633full.m	Sample		OP95496,S6Q217,5.00,,,5.0,1,soil	✓
20	6Q14219.d	P2-A2	op95496-llbs:2	1633full.m	Sample		OP95496,S6Q217,5.00,,,5.0,1,soil	✓
21	6Q14220.d	P2-A3	op95496-mb	1633full.m	Sample		OP95496,S6Q217,5.00,,,5.0,1,soil	✓
22	6Q14221.d	P2-A4	JD60059-22	1633full.m	Sample		OP95496,S6Q217,5.03,,,5.0,1,soil	✓
23	6Q14222.d	P2-A5	JD60059-23	1633full.m	Sample		OP95496,S6Q217,4.97,,,5.0,1,soil	✓
24	6Q14223.d	P2-A6	JD60059-24	1633full.m	Sample		OP95496,S6Q217,4.96,,,5.0,1,soil	✓
25	6Q14224.d	P2-A7	JD60059-25	1633full.m	Sample		OP95496,S6Q217,4.97,,,5.0,1,soil	✓
26	6Q14225.d	P2-A8	JD60059-26	1633full.m	Sample		OP95496,S6Q217,5.01,,,5.0,1,soil	✓
27	6Q14226.d	P2-A9	op95496-ms	1633full.m	Sample		OP95496,S6Q217,4.97,,,5.0,1,soil	✓
28	6Q14227.d	P2-B1	op95496-msd	1633full.m	Sample		OP95496,S6Q217,5.03,,,5.0,1,soil	✓
29	6Q14228.d	P1-A5	cc217-4	1633full.m	QC	20/500	OP95480,S6Q217,500,,,5.0,1,water	✓
30	6Q14229.d	P1-A1	iccb	1633full.m	Sample		OP95496,S6Q217,5.00,,,5.0,1,soil	✓
31	6Q14230.d	P2-B2	JD60059-27	1633full.m	Sample		OP95496,S6Q217,5.01,,,5.0,1,soil	✓
32	6Q14231.d	P2-B3	JD60059-28	1633full.m	Sample		OP95496,S6Q217,4.95,,,5.0,1,soil	✓
33	6Q14232.d	P2-B4	JD60059-29	1633full.m	Sample		OP95496,S6Q217,5.05,,,5.0,1,soil	✓
34	6Q14233.d	P2-B5	JD60059-30	1633full.m	Sample		OP95496,S6Q217,4.99,,,5.0,1,soil	✓
35	6Q14234.d	P2-B6	JD60059-31	1633full.m	Sample		OP95496,S6Q217,4.95,,,5.0,1,soil	1/2



LCMS6-6Q ANALYSIS LOG

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36	6Q14235.d	P2-B7	JD60059-5A	1633full.m	Sample	OP95496,S6Q217,4.97,,5.0,1,soil	✓
37	6Q14236.d	P2-B8	JD60059-20A	1633full.m	Sample	OP95496,S6Q217,5.04,,5.0,1,soil	✓
38	6Q14237.d	P2-B9	FC2645-20	1633full.m	Sample	OP95496,S6Q217,5.03,,5.0,1,soil	✓
39	6Q14238.d	P2-C1	FC2645-21	1633full.m	Sample	OP95496,S6Q217,4.97,,5.0,1,soil	✓
40	6Q14239.d	P2-C2	FC2645-22	1633full.m	Sample	OP95496,S6Q217,5.02,,5.0,1,soil	✓
41	6Q14240.d	P1-A5	cc217-4	1633full.m	QC	OP95480,S6Q217,500,,5.0,1,water	✓
42	6Q14241.d	P1-A1	iccb	1633full.m	Sample	OP95496,S6Q217,5.00,,5.0,1,soil	✓
43	6Q14242.d	P2-C3	op95480-bs	1633full.m	Sample	OP95480,S6Q217,500,,5.0,1,water	✓
44	6Q14243.d	P2-C4	op95480-llbs:3	1633full.m	Sample	OP95480,S6Q217,500,,5.0,1,water	✓
45	6Q14244.d	P2-C5	op95480-mb	1633full.m	Sample	OP95480,S6Q217,500,,5.0,1,water	✓
46	6Q14245.d	P2-C6	FC2451-1	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
47	6Q14246.d	P2-C7	FC2451-2	1633full.m	Sample	OP95480,S6Q217,525,,5.0,1,water	✓
48	6Q14247.d	P2-C8	op95480-ms	1633full.m	Sample	OP95480,S6Q217,525,,5.0,1,water	✓
49	6Q14248.d	P2-C9	op95480-msd	1633full.m	Sample	OP95480,S6Q217,525,,5.0,1,water	✓
50	6Q14249.d	P2-D1	FC2451-3	1633full.m	Sample	OP95480,S6Q217,560,,5.0,1,water	✓
51	6Q14250.d	P2-D2	FC2451-4	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	rr5x, HXS E flag
52	6Q14251.d	P2-D3	FC2451-5	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	rr5x, HXS E flag
53	6Q14252.d	P1-A5	cc217-4	1633full.m	QC	OP95480,S6Q217,500,,5.0,1,water	✓
54	6Q14253.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q217,500,,5.0,1,water	✓
55	6Q14254.d	P2-D4	FC2452-1	1633full.m	Sample	OP95480,S6Q217,560,,5.0,1,water	✓
56	6Q14255.d	P2-D5	FC2452-2	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
57	6Q14256.d	P2-D6	FC2452-3	1633full.m	Sample	OP95480,S6Q217,525,,5.0,1,water	✓
58	6Q14257.d	P2-D7	FC2452-4	1633full.m	Sample	OP95480,S6Q217,560,,5.0,1,water	✓
59	6Q14258.d	P2-D8	FC2452-5	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
60	6Q14259.d	P2-D9	FC2452-6	1633full.m	Sample	OP95480,S6Q217,560,,5.0,1,water	✓
61	6Q14260.d	P2-E1	FC2452-7	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
62	6Q14261.d	P2-E2	FC2452-8	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
63	6Q14262.d	P2-E3	FC2452-9	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
64	6Q14263.d	P2-E4	FC2452-10	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
65	6Q14264.d	P1-A5	cc217-4	1633full.m	QC	OP95480,S6Q217,500,,5.0,1,water	✓
66	6Q14265.d	P1-A2	cc217-1,0LL	1633full.m	QC	OP95480,S6Q217,500,,5.0,1,water	✓
67	6Q14266.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q217,500,,5.0,1,water	✓
68	6Q14267.d	P2-E5	FC2452-11	1633full.m	Sample	OP95480,S6Q217,560,,5.0,1,water	✓
69	6Q14268.d	P2-E6	FC2452-12	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
70	6Q14269.d	P2-E7	FC2452-13	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
71	6Q14270.d	P2-E8	FC2452-14	1633full.m	Sample	OP95480,S6Q217,570,,5.0,1,water	✓
72	6Q14271.d	P1-F9	FC2521-4	1633full.m	Sample	OP95521,S6Q217,570,,5.0,5,water	E-combine ✓
73	6Q14272.d	P1-F8	JD60059-31	1633full.m	Sample	OP95496,S6Q217,4.95,,5.0,1,soil	2/2
74	6Q14273.d	P1-B3	RT TDCA	1633full.m	Sample	OP95480,S6Q217,500,,5.0,1,water	✓
75	6Q14274.d	P1-B4	RT BR-LN	1633full.m	Sample	OP95480,S6Q217,500,,5.0,1,water	✓
76	6Q14275.d	P1-A9	High Std	1633full.m	Sample	OP95480,S6Q217,500,,5.0,1,water	✓
77	6Q14276.d	P1-A1	IBLK	1633full.m	Sample	OP95480,S6Q217,500,,5.0,1,water	✓
78	6Q14277.d	P1-A5	cc217-4	1633full.m	QC	OP95480,S6Q217,500,,5.0,1,water	✓

SGS ORLANDO LCMS6-6Q ANALYSIS LOG

79	6Q14278.d	P2-E9	op95540-bs	1633full.m	Sample	OP95540,S6Q217,500,,,5.0,1,water	✓
80	6Q14279.d	P2-F1	op95540-llbs:3	1633full.m	Sample	OP95540,S6Q217,500,,,5.0,1,water	8:2, NFDHA↑
81	6Q14280.d	P2-F2	op95540-mb	1633full.m	Sample	OP95540,S6Q217,500,,,5.0,1,water	✓
82	6Q14281.d	P2-F3	FC2631-1	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	Redo to confirm hit
83	6Q14282.d	P2-F4	FC2631-2	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
84	6Q14283.d	P2-F5	op95540-ms	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
85	6Q14284.d	P2-F6	op95540-mnsd	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
86	6Q14285.d	P2-F7	FC2631-3	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
87	6Q14286.d	P2-F8	FC2631-4	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
88	6Q14287.d	P2-F9	FC2631-5	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
89	6Q14288.d	P1-A5	cc217-4	1633full.m	QC	20/500	✓
90	6Q14289.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q217,500,,,5.0,1,water	✓
91	6Q14290.d	P3-A1	FC2631-6	1633full.m	Sample	OP95480,S6Q217,500,,,5.0,1,water	✓
92	6Q14291.d	P3-A2	FC2631-7	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
93	6Q14292.d	P3-A3	FC2631-8	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
94	6Q14293.d	P3-A4	FC2631-9	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
95	6Q14294.d	P3-A5	FC2631-10	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
96	6Q14295.d	P3-A6	FC2631-11	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
97	6Q14296.d	P3-A7	FC2631-12	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
98	6Q14297.d	P3-A8	FC2631-13	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
99	6Q14298.d	P3-A9	FC2631-14	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
100	6Q14299.d	P3-B1	FC2631-15	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	Redo to confirm hit
101	6Q14300.d	P1-A5	cc217-4	1633full.m	QC	20/500	✓
102	6Q14301.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q217,500,,,5.0,1,water	✓
103	6Q14302.d	P3-B2	FC2631-16	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
104	6Q14303.d	P3-B3	FC2631-17	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
105	6Q14304.d	P3-B4	FC2631-18	1633full.m	Sample	OP95540,S6Q217,580,,,5.0,1,water	✓
106	6Q14305.d	P3-B5	op95539-bs	1633full.m	Sample	OP95539,S6Q217,500,,,5.0,1,water	✓
107	6Q14306.d	P3-B6	op95539-llbs:3	1633full.m	Sample	OP95539,S6Q217,500,,,5.0,1,water	✓
108	6Q14307.d	P3-B7	op95539-mb	1633full.m	Sample	OP95539,S6Q217,500,,,5.0,1,water	✓
109	6Q14308.d	P3-B8	FC2576-1	1633full.m	Sample	OP95539,S6Q217,565,,,5.0,1,water	Redo to confirm hit
110	6Q14309.d	P3-B9	FC2576-2	1633full.m	Sample	OP95539,S6Q217,565,,,5.0,1,water	✓
111	6Q14310.d	P3-C1	FC2576-3	1633full.m	Sample	OP95539,S6Q217,540,,,5.0,1,water	✓
112	6Q14311.d	P3-C2	FC2576-4	1633full.m	Sample	OP95539,S6Q217,545,,,5.0,1,water	✓
113	6Q14312.d	P1-A5	cc217-4	1633full.m	QC	20/500	✓
114	6Q14313.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q217,500,,,5.0,1,water	✓
115	6Q14314.d	P3-C3	FC2576-5	1633full.m	Sample	OP95539,S6Q217,565,,,5.0,1,water	✓
116	6Q14315.d	P3-C4	FC2576-6	1633full.m	Sample	OP95539,S6Q217,565,,,5.0,1,water	✓
117	6Q14316.d	P3-C5	FC2576-7	1633full.m	Sample	OP95539,S6Q217,565,,,5.0,1,water	✓
118	6Q14317.d	P3-C6	FC2576-8	1633full.m	Sample	OP95539,S6Q217,565,,,5.0,1,water	✓
119	6Q14318.d	P3-C7	FC2576-9	1633full.m	Sample	OP95539,S6Q217,545,,,5.0,1,water	✓
120	6Q14319.d	P3-C8	FC2576-10	1633full.m	Sample	OP95539,S6Q217,545,,,5.0,1,water	✓
121	6Q14320.d	P3-C9	FC2576-11	1633full.m	Sample	OP95539,S6Q217,535,,,5.0,1,water	✓



SGS ORLANDO LCMS6-6Q ANALYSIS LOG

122	6Q14321.d	P3-D1	FC2576-12	1633full.m	Sample	OP95539,S6Q217,560,,,5.0,1,water	✓
123	6Q14322.d	P3-D2	FC2576-13	1633full.m	Sample	OP95539,S6Q217,560,,,5.0,1,water	✓
124	6Q14323.d	P3-D3	op95539-ms	1633full.m	Sample	OP95539,S6Q217,560,,,5.0,1,water	✓
125	6Q14324.d	P1-A5	cc217-4	1633full.m	QC	20/500	✓
126	6Q14325.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q217,500,,,5.0,1,water	✓
127	6Q14326.d	P3-D4	FC2576-14	1633full.m	Sample	OP95539,S6Q217,540,,,5.0,1,water	✓
128	6Q14327.d	P3-D5	op95539-dup	1633full.m	Sample	OP95539,S6Q217,540,,,5.0,1,water	✓
129	6Q14328.d	P3-D6	FC2576-15	1633full.m	Sample	OP95539,S6Q217,565,,,5.0,1,water	✓
130	6Q14329.d	P3-D7	FC2576-16	1633full.m	Sample	OP95539,S6Q217,565,,,5.0,1,water	✓
131	6Q14330.d	P3-D8	FC2576-17	1633full.m	Sample	OP95539,S6Q217,535,,,5.0,1,water	rr2x E flag HxS
132	6Q14331.d	P3-D9	FC2576-18	1633full.m	Sample	OP95539,S6Q217,540,,,5.0,1,water	rr2x E flag HxS
133	6Q14332.d	P1-A5	ecc217-4	1633full.m	QC	20/500	✓
134	6Q14333.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q217,500,,,5.0,1,water	✓

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DATE:	02/24/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_022323_S6Q217
CAL DATE:	02/23/23
ANALYST:	M. Valls
RUN BATCH:	S6Q218

ELUENT A LOT #:	AGN 220228
ELUENT B LOT #:	LCMS 2057
IC/CC STD LOT #:	LCMS 2073D
ICV STD LOT #:	LCMS 2073D/2071
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
135	6Q14334.d	P1-A1	CCB	1633full.m	Sample		OP95581,S6Q218,500,,,5.0,1,,water	✓
136	6Q14335.d	P1-A1	CCB	1633full.m	Sample		OP95581,S6Q218,500,,,5.0,1,,water	✓
137	6Q14336.d	P1-B3	RT TDCA	1633full.m	Sample		OP95581,S6Q218,500,,,5.0,1,,water	✓
138	6Q14337.d	P1-B4	RT BR-LN	1633full.m	Sample		OP95581,S6Q218,500,,,5.0,1,,water	✓
139	6Q14338.d	P1-A9	High Std	1633full.m	Sample		OP95581,S6Q218,500,,,5.0,1,,water	✓
140	6Q14339.d	P1-A1	IBLK	1633full.m	Sample		OP95581,S6Q218,500,,,5.0,1,,water	✓
141	6Q14340.d	P1-A5	cc217-4	1633full.m	QC	20/500	OP95581,S6Q218,500,,,5.0,1,,water	✓
142	6Q14341.d	P1-A2	cc217-1,0LL	1633full.m	QC	1.6/500	OP95581,S6Q218,500,,,5.0,1,,water	✓
143	6Q14342.d	P3-E1	op95581-bs	1633full.m	Sample		OP95581,S6Q218,500,,,5.0,1,,water	✓
144	6Q14343.d	P3-E2	op95581-llbs:3	1633full.m	Sample		OP95581,S6Q218,500,,,5.0,1,,water	✓
145	6Q14344.d	P3-E3	op95581-mb	1633full.m	Sample		OP95581,S6Q218,500,,,5.0,1,,water	✓
146	6Q14345.d	P3-E4	FC2799-1	1633full.m	Sample		OP95581,S6Q218,570,,,5.0,1,,water	✓
147	6Q14346.d	P3-E5	op95581-ms	1633full.m	Sample		OP95581,S6Q218,550,,,5.0,1,,water	✓
148	6Q14347.d	P3-E6	FC2799-2	1633full.m	Sample		OP95581,S6Q218,570,,,5.0,1,,water	✓
149	6Q14348.d	P3-E7	FC2833-1	1633full.m	Sample		OP95581,S6Q218,540,,,5.0,1,,water	rf5x 4:2 high
150	6Q14349.d	P3-E8	FC2833-2	1633full.m	Sample		OP95581,S6Q218,560,,,5.0,1,,water	✓
151	6Q14350.d	P3-E9	FC2833-3	1633full.m	Sample		OP95581,S6Q218,550,,,5.0,1,,water	✓
152	6Q14351.d	P3-F1	op95581-dup	1633full.m	Sample		OP95581,S6Q218,570,,,5.0,1,,water	✓
153	6Q14352.d	P1-A5	cc217-4	1633full.m	QC	20/500	OP95480,S6Q218,500,,,5.0,1,,water	✓
154	6Q14353.d	P1-A1	iccb	1633full.m	Sample		OP95480,S6Q218,500,,,5.0,1,,water	✓
155	6Q14354.d	P3-F2	op95546-bs	1633full.m	Sample		OP95546,S6Q218,500,,,5.0,1,,water	✓
156	6Q14355.d	P3-F3	op95546-llbs:3	1633full.m	Sample		OP95546,S6Q218,500,,,5.0,1,,water	✓
157	6Q14356.d	P3-F4	op95546-mb	1633full.m	Sample		OP95546,S6Q218,500,,,5.0,1,,water	✓
158	6Q14357.d	P3-F5	FC2153-1	1633full.m	Sample		OP95546,S6Q218,550,,,5.0,1,,water	✓
159	6Q14358.d	P3-F6	FC2153-2	1633full.m	Sample		OP95546,S6Q218,570,,,5.0,1,,water	✓
160	6Q14359.d	P3-F7	FC2153-3	1633full.m	Sample		OP95546,S6Q218,570,,,5.0,1,,water	✓
161	6Q14360.d	P3-F8	FC2153-4	1633full.m	Sample		OP95546,S6Q218,540,,,5.0,1,,water	✓
162	6Q14361.d	P3-F9	FC2153-5	1633full.m	Sample		OP95546,S6Q218,570,,,5.0,1,,water	✓
163	6Q14362.d	P4-A1	FC2153-6	1633full.m	Sample		OP95546,S6Q218,560,,,5.0,1,,water	✓
164	6Q14363.d	P1-A5	cc217-4	1633full.m	QC	20/500	OP95480,S6Q218,500,,,5.0,1,,water	✓
165	6Q14364.d	P1-A1	iccb	1633full.m	Sample		OP95480,S6Q218,500,,,5.0,1,,water	✓
166	6Q14365.d	P4-A2	FC2153-7	1633full.m	Sample		OP95546,S6Q218,560,,,5.0,1,,water	✓
167	6Q14366.d	P4-A3	op95546-ms	1633full.m	Sample		OP95546,S6Q218,570,,,5.0,1,,water	✓
168	6Q14367.d	P4-A4	op95546-msd	1633full.m	Sample		OP95546,S6Q218,560,,,5.0,1,,water	✓
169	6Q14368.d	P4-A5	FC2153-8	1633full.m	Sample		OP95546,S6Q218,530,,,5.0,1,,water	✓

LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

170	6Q14369.d	P4-A6	FC2153-9	1633full.m	Sample	OP95546,S6Q218,570,,,5.0,1,water	✓
171	6Q14370.d	P4-A7	FC2153-10	1633full.m	Sample	OP95546,S6Q218,560,,,5.0,1,water	✓
172	6Q14371.d	P4-A8	FC2153-11	1633full.m	Sample	OP95546,S6Q218,560,,,5.0,1,water	✓
173	6Q14372.d	P4-A9	FC2153-12	1633full.m	Sample	OP95546,S6Q218,570,,,5.0,1,water	✓
174	6Q14373.d	P4-B1	FC2153-13	1633full.m	Sample	OP95546,S6Q218,570,,,5.0,1,water	✓
175	6Q14374.d	P4-B2	FC2153-14	1633full.m	Sample	OP95546,S6Q218,530,,,5.0,1,water	✓
176	6Q14375.d	P1-A5	cc217-4	1633full.m	QC	20/500	✓
177	6Q14376.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q218,500,,,5.0,1,water	✓
178	6Q14377.d	P4-B3	FC2153-15	1633full.m	Sample	OP95480,S6Q218,500,,,5.0,1,water	✓
179	6Q14378.d	P4-B4	FC2153-16	1633full.m	Sample	OP95546,S6Q218,570,,,5.0,1,water	✓
180	6Q14379.d	P4-B5	FC2153-17	1633full.m	Sample	OP95546,S6Q218,570,,,5.0,1,water	✓
181	6Q14380.d	P4-B6	FC2153-18	1633full.m	Sample	OP95546,S6Q218,570,,,5.0,1,water	✓
182	6Q14381.d	P1-A5	cc217-4	1633full.m	QC	20/500	✓
183	6Q14382.d	P1-A2	cc217-1.0LL	1633full.m	QC	1.6/500	✓
184	6Q14383.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q218,500,,,5.0,1,water	✓
185	6Q14384.d	P4-B7	op95583-bs	1633full.m	Sample	OP95583,S6Q218,500,,,5.0,1,water	✓
186	6Q14385.d	P4-B8	op95583-llbs:3	1633full.m	Sample	OP95583,S6Q218,500,,,5.0,1,water	✓
187	6Q14386.d	P4-B9	op95583-mb	1633full.m	Sample	OP95583,S6Q218,500,,,5.0,1,water	✓
188	6Q14387.d	P4-C1	FC2545-1	1633full.m	Sample	OP95583,S6Q218,510,,,5.0,1,water	✓
189	6Q14388.d	P4-C2	op95583-ms	1633full.m	Sample	OP95583,S6Q218,510,,,5.0,1,water	✓
190	6Q14389.d	P4-C3	FC2545-2	1633full.m	Sample	OP95583,S6Q218,530,,,5.0,1,water	✓
191	6Q14390.d	P4-C4	op95583-dup	1633full.m	Sample	OP95583,S6Q218,530,,,5.0,1,water	✓
192	6Q14391.d	P4-C5	FC2545-3	1633full.m	Sample	OP95583,S6Q218,565,,,5.0,1,water	✓
193	6Q14392.d	P4-C6	FC2545-4	1633full.m	Sample	OP95583,S6Q218,565,,,5.0,1,water	rr2x E HXS
194	6Q14393.d	P4-C7	FC2545-5	1633full.m	Sample	OP95583,S6Q218,560,,,5.0,1,water	rr1x co
195	6Q14394.d	P1-A5	cc217-4	1633full.m	QC	20/500	✓
196	6Q14395.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q218,500,,,5.0,1,water	✓
197	6Q14396.d	P4-C8	FC2545-6	1633full.m	Sample	OP95583,S6Q218,565,,,5.0,1,water	✓
198	6Q14397.d	P4-C9	FC2545-7	1633full.m	Sample	OP95583,S6Q218,565,,,5.0,1,water	✓
199	6Q14398.d	P4-D1	FC2545-8	1633full.m	Sample	OP95583,S6Q218,565,,,5.0,1,water	✓
200	6Q14399.d	P4-D2	FC2662-1	1633full.m	Sample	OP95583,S6Q218,565,,,5.0,1,water	rr1x to confirm hits
201	6Q14400.d	P4-D3	FC2662-2	1633full.m	Sample	OP95583,S6Q218,565,,,5.0,1,water	rr1x to confirm hits
202	6Q14401.d	P4-D4	FC2662-3	1633full.m	Sample	OP95583,S6Q218,565,,,5.0,1,water	✓
203	6Q14402.d	P4-D5	FC2662-4	1633full.m	Sample	OP95583,S6Q218,565,,,5.0,1,water	✓
204	6Q14403.d	P1-A5	ecc217-4	1633full.m	QC	20/500	✓
205	6Q14404.d	P1-A1	iccb	1633full.m	Sample	OP95480,S6Q218,500,,,5.0,1,water	✓

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 02/22/23 09:00
Started (mm/dd/yy, 24:00)

Method: EPA 1633 Draft (QSM)

Date/Time: 2/23/23 11:30
Finished (mm/dd/yy, 24:00)

Balance ID: _____

Batch#: OP95581 Ext. By: GH

Conc. By: _____ Viald By: _____

* GH
02/22/23

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP 95581 MB	/	500	7	N/A	25		5	E	
OP 95581 BS	/	500				200		E	
OP 95581 LLBS	/	500				80		E	
FC2799-1	2	570						F	2022A
	2	570	✓	↓				F	
FC2833-1	2	540	7	N/A				F	
	2	560	8	N/A	↓			↓	
	3	550	7	N/A	25		5	F	
OPFC2799-1 MS	3	550	7	N/A	25	200	5	F	
OP MSD									
OPFC2833-2 DUP	3	570	8	N/A	25		5	F	

Comments:

EIS (SURR) ID: 11636 F-G Conc: 2500ug/ml Exp. Date: 02/20/24 Inj. By: GH Ver. By: AG
 SPIKE 1 ID: LEMS2022A Conc: VARIED Exp. Date: 08/20/23 Inj. By: GH Ver. By: AG
 SPIKE 2 ID: LEMS2022B Conc: VARIED Exp. Date: 08/20/23 Inj. By: GH Ver. By: AG
 NIS (ISTD) ID: 11037 H-J Conc: 250-1000 ng/ml Exp. Date: 2/21/24 Inj. By: FS Ver. By: UV

TurboVap Temp (Therm ID): _____ N-Evap Temp (Therm ID): _____
 Observed Temp °C: _____ Corr. Temp °C: _____ Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 224267 1% NH4OH MeOH PF 285 SPE Lot # 6064244-03
 Water Lot# OP95448 0.3M Formic Acid PF 280 Syringe filter Lot # _____
 Acetic Acid# 194003 3% NH4OH Sol pH paper Lot# 215322
 0.1M Formic PF 287 5% Formic Acid PF 203 Carbon Lot# 160898

Relinquished By: Malcolm H. Probst
 Accepted By: UV

Date: 02/22/23
 Date: 2/23/23

7.9.1
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