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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC6278

Sampling Date: 05/22/23



Report to:

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Total number of pages in report: 1082



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

Norm Farmer
Technical Director

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Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
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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: FC6278

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC6278-1	05/22/23	09:40 RS	05/23/23	AQ	Ground Water	AF-RHMW12A-WGN01LF-2305W4
FC6278-2	05/22/23	09:40 RS	05/23/23	AQ	Ground Water	AF-RHMW12A-WGFD01LF-2305W4
FC6278-3	05/22/23	09:55 JVJV	05/23/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2305W4
FC6278-4	05/22/23	11:15 AY	05/23/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2305W4
FC6278-5	05/22/23	12:41 RSCP	05/23/23	AQ	Ground Water	AF-RHMW16-WGN01LF-2305W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC6278

Site: N6274223F0104 RH Fire Suppression System

Report Date: 6/1/2023 5:56:36 PM

On 05/23/2023, 5 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 2.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC6278 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: OP97070

Sample(s) FC6278-1MS, FC6278-3DUP were used as the QC samples indicated.

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

Narrative prepared by:

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

Summary of Hits

Job Number: FC6278
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/22/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC6278-1 **AF-RHMW12A-WGN01LF-2305W4**

Perfluoropentanoic acid	3.4 J	7.4	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	1.0 J	3.7	1.9	ng/l	EPA DRAFT 1633

FC6278-2 **AF-RHMW12A-WGFD01LF-2305W4**

Perfluoropentanoic acid	3.4 J	7.0	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	0.94 J	3.5	1.8	ng/l	EPA DRAFT 1633

FC6278-3 **AF-RHMW04-WGN01LF-2305W4**

No hits reported in this sample.

FC6278-4 **AF-RHMW06-WGN01LF-2305W4**

No hits reported in this sample.

FC6278-5 **AF-RHMW16-WGN01LF-2305W4**

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW12A-WGN01LF-2305W4		
Lab Sample ID:	FC6278-1	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
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	6Q18602.D	1	05/31/23 21:08	MV	05/25/23 13:00	OP97070	S6Q279
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	3.4	7.4	1.9	0.87	ng/l	J
307-24-4	Perfluorohexanoic acid	1.0	3.7	1.9	0.46	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	3.7	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2305W4		
Lab Sample ID:	FC6278-1	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	56%		20-150%
	13C5-PFPeA	104%		20-150%
	13C5-PFHxA	100%		20-150%
	13C4-PFHpA	106%		20-150%
	13C8-PFOA	107%		20-150%
	13C9-PFNA	103%		20-150%
	13C6-PFDA	99%		20-150%
	13C7-PFUnDA	98%		20-150%
	13C2-PFDoDA	93%		20-150%
	13C2-PFTeDA	85%		20-150%
	13C3-PFBS	106%		20-150%
	13C3-PFHxS	105%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2305W4		
Lab Sample ID:	FC6278-1	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
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	91%		20-150%
	13C8-FOSA	82%		20-150%
	d3-MeFOSA	84%		20-150%
	d5-EtFOSA	91%		20-150%
	d3-MeFOSAA	98%		20-150%
	d5-EtFOSAA	92%		20-150%
	d7-MeFOSE	76%		20-150%
	d9-EtFOSE	89%		20-150%
	13C2-4:2FTS	108%		20-180%
	13C2-6:2FTS	113%		20-180%
	13C2-8:2FTS	105%		20-180%
	13C3-HFPO-DA	105%		20-150%

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW12A-WGFD01LF-2305W4		
Lab Sample ID:	FC6278-2	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
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	6Q18604.D	1	05/31/23 21:37	MV	05/25/23 13:00	OP97070	S6Q279
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	3.4	7.0	1.8	0.82	ng/l	J
307-24-4	Perfluorohexanoic acid	0.94	3.5	1.8	0.44	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	3.5	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.5	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.5	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2305W4		
Lab Sample ID:	FC6278-2	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

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

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

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

PER and POLYFLUOROETHER SULFONIC ACIDS

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

FLUOROTELOMER CARBOXYLIC ACIDS

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

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	52%		20-150%
	13C5-PFPeA	108%		20-150%
	13C5-PFHxA	108%		20-150%
	13C4-PFHpA	105%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	100%		20-150%
	13C6-PFDA	105%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	93%		20-150%
	13C2-PFTeDA	91%		20-150%
	13C3-PFBS	106%		20-150%
	13C3-PFHxS	100%		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-RHMW12A-WGFD01LF-2305W4	
Lab Sample ID:	FC6278-2	Date Sampled: 05/22/23
Matrix:	AQ - Ground Water	Date Received: 05/23/23
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	99%		20-150%
	13C8-FOSA	87%		20-150%
	d3-MeFOSA	90%		20-150%
	d5-EtFOSA	95%		20-150%
	d3-MeFOSAA	99%		20-150%
	d5-EtFOSAA	96%		20-150%
	d7-MeFOSE	79%		20-150%
	d9-EtFOSE	89%		20-150%
	13C2-4:2FTS	108%		20-180%
	13C2-6:2FTS	107%		20-180%
	13C2-8:2FTS	102%		20-180%
	13C3-HFPO-DA	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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW04-WGN01LF-2305W4		
Lab Sample ID:	FC6278-3	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
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	6Q18605.D	1	05/31/23 21:51	MV	05/25/23 13:00	OP97070	S6Q279
Run #2							

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

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

375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.4	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	3.7	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

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

FLUOROTELOMER SULFONIC ACIDS

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

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2305W4		
Lab Sample ID:	FC6278-3	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	101%		20-150%
	13C5-PFPeA	102%		20-150%
	13C5-PFHxA	101%		20-150%
	13C4-PFHpA	99%		20-150%
	13C8-PFOA	109%		20-150%
	13C9-PFNA	103%		20-150%
	13C6-PFDA	98%		20-150%
	13C7-PFUnDA	98%		20-150%
	13C2-PFDoDA	88%		20-150%
	13C2-PFTeDA	87%		20-150%
	13C3-PFBS	99%		20-150%
	13C3-PFHxS	102%		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-RHMW04-WGN01LF-2305W4	
Lab Sample ID:	FC6278-3	Date Sampled: 05/22/23
Matrix:	AQ - Ground Water	Date Received: 05/23/23
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	108%		20-150%
	13C8-FOSA	89%		20-150%
	d3-MeFOSA	91%		20-150%
	d5-EtFOSA	98%		20-150%
	d3-MeFOSAA	103%		20-150%
	d5-EtFOSAA	97%		20-150%
	d7-MeFOSE	83%		20-150%
	d9-EtFOSE	93%		20-150%
	13C2-4:2FTS	104%		20-180%
	13C2-6:2FTS	105%		20-180%
	13C2-8:2FTS	97%		20-180%
	13C3-HFPO-DA	101%		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-RHMW06-WGN01LF-2305W4		
Lab Sample ID:	FC6278-4	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
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	6Q18607.D	1	05/31/23 22:20	MV	05/25/23 13:00	OP97070	S6Q279
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
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.5 U	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.0	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	3.5	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.5	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.5	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2305W4		Date Sampled:	05/22/23
Lab Sample ID:	FC6278-4	Date Received:	05/23/23	
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	18 U	35	18	3.8	ng/l	
1691-99-2	EtFOSE	18 U	35	18	6.5	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

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

PER and POLYFLUOROETHER SULFONIC ACIDS

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

FLUOROTELOMER CARBOXYLIC ACIDS

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

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	99%		20-150%
	13C5-PFPeA	101%		20-150%
	13C5-PFHxA	99%		20-150%
	13C4-PFHpA	101%		20-150%
	13C8-PFOA	102%		20-150%
	13C9-PFNA	98%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	100%		20-150%
	13C2-PFDoDA	97%		20-150%
	13C2-PFTeDA	89%		20-150%
	13C3-PFBS	104%		20-150%
	13C3-PFHxS	95%		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

4.4
4

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2305W4	
Lab Sample ID:	FC6278-4	Date Sampled: 05/22/23
Matrix:	AQ - Ground Water	Date Received: 05/23/23
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	93%		20-150%
	13C8-FOSA	88%		20-150%
	d3-MeFOSA	80%		20-150%
	d5-EtFOSA	87%		20-150%
	d3-MeFOSAA	94%		20-150%
	d5-EtFOSAA	90%		20-150%
	d7-MeFOSE	85%		20-150%
	d9-EtFOSE	92%		20-150%
	13C2-4:2FTS	101%		20-180%
	13C2-6:2FTS	103%		20-180%
	13C2-8:2FTS	97%		20-180%
	13C3-HFPO-DA	102%		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-RHMW16-WGN01LF-2305W4		
Lab Sample ID:	FC6278-5	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
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	6Q18611.D	1	05/31/23 23:18	MV	05/25/23 13:00	OP97070	S6Q279
Run #2							

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

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

375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.4	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	3.7	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

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

FLUOROTELOMER SULFONIC ACIDS

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

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2305W4		
Lab Sample ID:	FC6278-5	Date Sampled:	05/22/23
Matrix:	AQ - Ground Water	Date Received:	05/23/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	109%		20-150%
	13C8-PFOA	107%		20-150%
	13C9-PFNA	111%		20-150%
	13C6-PFDA	113%		20-150%
	13C7-PFUnDA	104%		20-150%
	13C2-PFDoDA	96%		20-150%
	13C2-PFTeDA	96%		20-150%
	13C3-PFBS	111%		20-150%
	13C3-PFHxS	107%		20-150%

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

4.5
4

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2305W4	
Lab Sample ID:	FC6278-5	Date Sampled: 05/22/23
Matrix:	AQ - Ground Water	Date Received: 05/23/23
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	102%		20-150%
	13C8-FOSA	84%		20-150%
	d3-MeFOSA	78%		20-150%
	d5-EtFOSA	84%		20-150%
	d3-MeFOSAA	103%		20-150%
	d5-EtFOSAA	101%		20-150%
	d7-MeFOSE	78%		20-150%
	d9-EtFOSE	90%		20-150%
	13C2-4:2FTS	112%		20-180%
	13C2-6:2FTS	116%		20-180%
	13C2-8:2FTS	110%		20-180%
	13C3-HFPO-DA	107%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



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FC6278

COC #: 2305W4AFSG05

SGS - ORLANDO JOB # :

PAGE 1 OF 1

Client / Reporting Information		Project Information		Analytical Information													Matrix Codes
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		<div style="position: relative; width: 100%; height: 100%; border: 1px solid black;"> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; border: 1px solid black; opacity: 0.5;"></div> <div style="position: absolute; top: 10%; left: 10%; font-size: 2em; color: blue;">NO</div> <div style="position: absolute; top: 15%; left: 40%; font-size: 1.5em; color: blue;">5/22/23</div> <div style="position: absolute; bottom: 10%; right: 10%; font-size: 1.5em; color: blue;">SP</div> <div style="position: absolute; top: 30%; left: 30%; font-size: 0.8em; color: blue;">INITIAL ASSESSMENT</div> <div style="position: absolute; top: 33%; left: 33%; font-size: 0.8em; color: blue;">LABEL VERIFICATION</div> </div>													DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe
Address: 1001 Bishop St. ste 1600		Street															
City: Honolulu State: HI Zip: 96813		City: Honolulu State: Hawaii															
Project Contact: Katie Abbott Email: katie.abbott@aecom.com Project Manager: Watson Tanji Email: watson.tanji@aecom.com Phone #: 303-796-4624 / 800-954-4512		Project # 60697810 Fax #															
Sampler(s) Name(s) (Printed) Sampler 1: <i>Yuan Shun</i> Sampler 2: <i>Cynthia Pierce</i>		Client Purchase Order #															
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	PC	NACH	PACS	PESCH	NACH-ZN/C	D. WATER	MECH	LAB USE ONLY	
1	AF-RHMW12A-WGN01LF-2305W4	5/22/23	0940	RS	GW	3		X								X	
2	AF-RHMW12A-WGFD01LF-2305W4	5/22/23	0940	RS	GW	3		X								X	
Turnaround Time (Business days)		Approved By / Date:		Data Deliverable Information											Comments / Remarks		
<input type="checkbox"/> 10 Day (Business) <input type="checkbox"/> 7 Day <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH <input type="checkbox"/> Other				<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S											EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United ANWB 016-94667591		
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 1 <i>Yuan Shun</i>	Date Time: 5/22/23 1400	Received By/Affiliation 2 <i>Miranda DeGarmo / AECOM</i>	Relinquished By/Affiliation 3 <i>Miranda DeGarmo / AECOM</i>	Date Time: 5/22/23 1400	Received By/Affiliation 4 <i>United Cargo</i>												
Relinquished by Affiliation 5 <i>United Cargo</i>	Date Time: 5/22/23 1400	Received By/Affiliation 6 <i>ALC - 05/23/23</i>	Relinquished By/Affiliation 7 <i>ALC - 05/23/23</i>	Date Time: 5/22/23 1400	Received By/Affiliation 8 <i>United Cargo</i>												
Lab Use Only: Cooler Temperature (s) Celsius (corrected): 2.0													http://www.sgs.com/en/terms-and-conditions				

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FC6278: Chain of Custody

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FC6278
SGS - ORLANDO JOB # :

COC #: 2305W4AFSG08
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="text-align: center;"> </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 #															
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order #		PFAS EPA Draft 163										LAB USE ONLY			
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	PTWES	POE	ICD	ANOH	INCO3	PERCH	NO3-N/NO2-N	PH-WATER	MEDH		
5	AF-RHMW04-WGN01LF-2305W4	5/22/23	0955	JV JND	GW	3		X									
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks									
10 Day (Business) Approved By: / Date: 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other				<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S				EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United ANB 016-94167591									
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		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation		Date Time:			
1 Andy Young / AECOM		5/22/23		2 Miranda DeGarmo / AECOM		5/22/23		3 Miranda DeGarmo / AECOM		5/22/23 1500		4 United Cargo		5/22/23			
5 United Cargo				6 [Signature] / [Affiliation]		05/23/23 1400		7				8					
Lab Use Only : Cooler Temperature (s) Celsius (corrected):																	
http://www.sgs.com/en/terms-and-conditions																	

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FC6278: Chain of Custody

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COC #: 2305W4AFSG09

SGS - ORLANDO JOB #:

PAGE 1 OF 1

Client / Reporting Information		Project Information		Analytical Information												Matrix Codes					
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		<div style="position: absolute; top: 10px; right: 10px; border: 1px solid black; padding: 5px;"> 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 </div>												LAB USE ONLY					
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 #		PFAS EPA Draft 163																	
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order #																			
Sampler(s) Name(s) (Printed) Sampler 1: Jv, AY, JVO Sampler 2:																					
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION				CONTAINER INFORMATION												LAB USE ONLY			
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	ACE	NaOH	HNO3	SSO4	NaOH-ZnAc	DI WATER	MICH						
4	AF-RHMW06-WGN01LF-2305W4	05/22/23	1115	AY	GW	3		X													
						Jv AY JVO 05/22/23															
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 016-94667591													
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		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation									
1 Jv/AY/JVO/AECOM		05/22/23 12:30		2 Miranda DeGarmo/AECOM		05/22/23 15:00		3 Miranda DeGarmo/AECOM		05/22/23 15:00		4 United Cargo									
5 United Cargo				6 Jv/C		05/23/23 14:00		7				8									
Lab Use Only: Cooler Temperature (e) Celsius (corrected):																					

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FC6278

COC #: 2305W4AFSG06

SGS - ORLANDO JOB #:

PAGE 1 OF 1

Client / Reporting Information			Project Information			Analytical Information												Matrix Codes
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System			<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">PFAS EPA Draft 1633</div> <div style="text-align: center;"> <p style="font-size: 2em; color: blue;">M.D. 5/22/23</p> </div> </div>												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe
Address: 1001 Bishop St. ste 1600			Street															
City: Honolulu State: HI Zip: 96813			City: Honolulu State: Hawaii															
Project Contact: Katie Abbott Email: katie.abbott@aecom.com			Project # 60697810															
Project Manager: Watson Tanji Email: watson.tanji@aecom.com			Fax #															
Phone #: 303-796-4624 / 800-954-4512			Client Purchase Order #															
Sampler(s) Name(s) (Printed) Sampler 1: Ryan Jennings Sampler 2: Cynthia Perez																		
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NOVE	KCI	NOH	INCO3	PFSCA	NOCH-ZINC	DI WATER	MECH	PFAS EPA Draft 1633	LAB USE ONLY	
5	AF-RHMW16-WGN01LF-2305W4	5/22/23	12:41	PSJP	GW	3		X								X		
<p style="color: blue; font-size: 1.5em;">M.D. 5/22/23</p>																		
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks										
<input type="checkbox"/> 10 Day (Business) <input type="checkbox"/> 7 Day <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 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 <p style="color: blue; font-size: 1.2em;">United ANB 016-941667591</p>										
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 1 Ryan Jennings AECOM		Date Time: 5/22/23 1400		Received By/Affiliation 2 Miranda Decarmo AECOM			Date Time: 5/22/23 1400		Relinquished By/Affiliation 3 Miranda Decarmo/AECOM		Date Time: 5/22/23 1400		Received By/Affiliation 4 United Cargo					
Relinquished by/Affiliation 5 United Cargo		Date Time:		Received By/Affiliation 6 [Signature] 05/23/23 1400			Date Time:		Relinquished By/Affiliation 7		Date Time:		Received By/Affiliation 8					
Lab Use Only : Cooler Temperature (s) Celsius (corrected):																		
http://www.sgs.com/en/terms-and-conditions																		

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FC6278: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC6278

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 5/23/2023 2:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-94667591

Therm ID: IR 1;

Therm CF: -0.1;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.7);

Cooler Temps (Corrected) °C: Cooler 1: (2.6);

Cooler Information

Y or N

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

Trip Blank Information

Y or N

N/A

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

Sample Information

Y or N

N/A

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

Misc. Information

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

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230320

pH 10-12 _____

Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP

Date: 5/23/2023 2:00:00 PM

Reviewer: SP

Date: 5/25/2023

FC6278: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC6278
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/22/23

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

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

* Sample used for QC is not from job FC6278

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MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Instrument Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q279-IBLK	6Q18594.D	1	05/31/23	MV	n/a	n/a	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

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

Instrument Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q279-IBLK	6Q18594.D	1	05/31/23	MV	n/a	n/a	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	103% 20-150%
	13C5-PFHxA	103% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	98% 20-150%
	13C9-PFNA	92% 20-150%
	13C6-PFDA	89% 20-150%
	13C7-PFUnDA	97% 20-150%
	13C2-PFDoDA	97% 20-150%
	13C2-PFTeDA	89% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	103% 20-150%
	13C8-PFOS	96% 20-150%
	13C8-FOSA	105% 20-150%
	d3-MeFOSA	100% 20-150%
	d5-EtFOSA	102% 20-150%
	d3-MeFOSAA	99% 20-150%
	d5-EtFOSAA	102% 20-150%
	d7-MeFOSE	102% 20-150%
	d9-EtFOSE	103% 20-150%
	13C2-4:2FTS	107% 20-180%
	13C2-6:2FTS	104% 20-180%
	13C2-8:2FTS	111% 20-180%
	13C3-HFPO-DA	100% 20-150%

6.1.1
6

Continuing Calibration Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q279-ICCB	6Q18610.D	1	05/31/23	MV	n/a	n/a	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-5

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

Continuing Calibration Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q279-ICCB	6Q18610.D	1	05/31/23	MV	n/a	n/a	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-5

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	104% 20-150%
	13C5-PFHxA	100% 20-150%
	13C4-PFHpA	107% 20-150%
	13C8-PFOA	97% 20-150%
	13C9-PFNA	93% 20-150%
	13C6-PFDA	99% 20-150%
	13C7-PFUnDA	102% 20-150%
	13C2-PFDoDA	98% 20-150%
	13C2-PFTeDA	103% 20-150%
	13C3-PFBS	96% 20-150%
	13C3-PFHxS	94% 20-150%
	13C8-PFOS	94% 20-150%
	13C8-FOSA	97% 20-150%
	d3-MeFOSA	95% 20-150%
	d5-EtFOSA	101% 20-150%
	d3-MeFOSAA	102% 20-150%
	d5-EtFOSAA	95% 20-150%
	d7-MeFOSE	101% 20-150%
	d9-EtFOSE	101% 20-150%
	13C2-4:2FTS	107% 20-180%
	13C2-6:2FTS	100% 20-180%
	13C2-8:2FTS	103% 20-180%
	13C3-HFPO-DA	103% 20-150%

Method Blank Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-MB	6Q18544.D	1	05/30/23	MV	05/25/23	OP97070	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

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

Method Blank Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-MB	6Q18544.D	1	05/30/23	MV	05/25/23	OP97070	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	102% 20-150%
	13C5-PFPeA	98% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	100% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	100% 20-150%
	13C7-PFUnDA	105% 20-150%
	13C2-PFDoDA	100% 20-150%
	13C2-PFTeDA	94% 20-150%
	13C3-PFBS	99% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	96% 20-150%
	13C8-FOSA	75% 20-150%
	d3-MeFOSA	77% 20-150%
	d5-EtFOSA	84% 20-150%
	d3-MeFOSAA	116% 20-150%
	d5-EtFOSAA	103% 20-150%
	d7-MeFOSE	70% 20-150%
	d9-EtFOSE	77% 20-150%
	13C2-4:2FTS	117% 20-180%
	13C2-6:2FTS	116% 20-180%
	13C2-8:2FTS	114% 20-180%
	13C3-HFPO-DA	97% 20-150%

6.1.3
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Method Blank Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-MB	6Q18601.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

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

Method Blank Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-MB	6Q18601.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	103% 20-150%
	13C5-PFPeA	103% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	107% 20-150%
	13C8-PFOA	103% 20-150%
	13C9-PFNA	98% 20-150%
	13C6-PFDA	104% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	97% 20-150%
	13C2-PFTeDA	102% 20-150%
	13C3-PFBS	98% 20-150%
	13C3-PFHxS	94% 20-150%
	13C8-PFOS	90% 20-150%
	13C8-FOSA	75% 20-150%
	d3-MeFOSA	75% 20-150%
	d5-EtFOSA	83% 20-150%
	d3-MeFOSAA	96% 20-150%
	d5-EtFOSAA	88% 20-150%
	d7-MeFOSE	68% 20-150%
	d9-EtFOSE	80% 20-150%
	13C2-4:2FTS	109% 20-180%
	13C2-6:2FTS	105% 20-180%
	13C2-8:2FTS	102% 20-180%
	13C3-HFPO-DA	101% 20-150%

Instrument Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q278-IBLK	6Q18522.D	1	05/30/23	MV	n/a	n/a	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97070-BS, OP97070-LLBS

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

Instrument Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q278-IBLK	6Q18522.D	1	05/30/23	MV	n/a	n/a	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97070-BS, OP97070-LLBS

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	99% 20-150%
	13C5-PFHxA	100% 20-150%
	13C4-PFHpA	98% 20-150%
	13C8-PFOA	99% 20-150%
	13C9-PFNA	109% 20-150%
	13C6-PFDA	102% 20-150%
	13C7-PFUnDA	95% 20-150%
	13C2-PFDoDA	97% 20-150%
	13C2-PFTeDA	98% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	105% 20-150%
	13C8-PFOS	98% 20-150%
	13C8-FOSA	101% 20-150%
	d3-MeFOSA	97% 20-150%
	d5-EtFOSA	103% 20-150%
	d3-MeFOSAA	109% 20-150%
	d5-EtFOSAA	104% 20-150%
	d7-MeFOSE	104% 20-150%
	d9-EtFOSE	101% 20-150%
	13C2-4:2FTS	104% 20-180%
	13C2-6:2FTS	102% 20-180%
	13C2-8:2FTS	100% 20-180%
	13C3-HFPO-DA	98% 20-150%

6.1.5
6

Continuing Calibration Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q278-ICCB	6Q18536.D	1	05/30/23	MV	n/a	n/a	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97070-BS, OP97070-LLBS, OP97070-MB

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

Continuing Calibration Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q278-ICCB	6Q18536.D	1	05/30/23	MV	n/a	n/a	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97070-BS, OP97070-LLBS, OP97070-MB

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	99% 20-150%
	13C5-PFHxA	98% 20-150%
	13C4-PFHpA	100% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	100% 20-150%
	13C7-PFUnDA	99% 20-150%
	13C2-PFDoDA	101% 20-150%
	13C2-PFTeDA	96% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	104% 20-150%
	13C8-FOSA	109% 20-150%
	d3-MeFOSA	102% 20-150%
	d5-EtFOSA	101% 20-150%
	d3-MeFOSAA	103% 20-150%
	d5-EtFOSAA	105% 20-150%
	d7-MeFOSE	103% 20-150%
	d9-EtFOSE	91% 20-150%
	13C2-4:2FTS	111% 20-180%
	13C2-6:2FTS	114% 20-180%
	13C2-8:2FTS	121% 20-180%
	13C3-HFPO-DA	92% 20-150%

Continuing Calibration Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q278-ICCB	6Q18547.D	1	05/30/23	MV	n/a	n/a	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97070-BS, OP97070-LLBS, OP97070-MB

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

Continuing Calibration Blank

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q278-ICCB	6Q18547.D	1	05/30/23	MV	n/a	n/a	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97070-BS, OP97070-LLBS, OP97070-MB

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	101% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	95% 20-150%
	13C9-PFNA	101% 20-150%
	13C6-PFDA	100% 20-150%
	13C7-PFUnDA	106% 20-150%
	13C2-PFDoDA	101% 20-150%
	13C2-PFTeDA	100% 20-150%
	13C3-PFBS	102% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	102% 20-150%
	13C8-FOSA	101% 20-150%
	d3-MeFOSA	93% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	104% 20-150%
	d5-EtFOSAA	109% 20-150%
	d7-MeFOSE	93% 20-150%
	d9-EtFOSE	92% 20-150%
	13C2-4:2FTS	124% 20-180%
	13C2-6:2FTS	126% 20-180%
	13C2-8:2FTS	132% 20-180%
	13C3-HFPO-DA	100% 20-150%

6.1.7

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Blank Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-LLBS	6Q18543.D	1	05/30/23	MV	05/25/23	OP97070	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0315	105	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0154	103	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0076	101	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0074	99	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0078	104	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0081	108	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0078	104	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0081	108	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0080	107	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0082	109	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0078	104	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0068	102	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0074	105	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0069	101	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0081	113	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0076	109	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0078	108	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0079	109	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0077	106	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0298	106	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0313	110	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0308	107	40-150
754-91-6	PFOSA	0.0075	0.0076	101	40-150
31506-32-8	MeFOSA	0.015	0.0150	100	40-150
4151-50-2	EtFOSA	0.015	0.0143	95	40-150
2355-31-9	MeFOSAA	0.0075	0.0089	119	40-150
2991-50-6	EtFOSAA	0.0075	0.0080	107	40-150
24448-09-7	MeFOSE	0.0375	0.0360	96	40-150
1691-99-2	EtFOSE	0.0375	0.0374	100	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0159	106	40-150
919005-14-4	ADONA	0.0142	0.0156	110	40-150
377-73-1	PFMPA	0.015	0.0152	101	40-150
863090-89-5	PFMBA	0.015	0.0156	104	40-150
151772-58-6	NFDHA	0.015	0.0156	104	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0151	108	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0149	105	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-LLBS	6Q18543.D	1	05/30/23	MV	05/25/23	OP97070	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0133	100	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0310	83	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.176	94	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.189	101	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	111%	20-150%
	13C5-PFPeA	114%	20-150%
	13C5-PFHxA	115%	20-150%
	13C4-PFHpA	116%	20-150%
	13C8-PFOA	117%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	104%	20-150%
	13C7-PFUnDA	103%	20-150%
	13C2-PFDoDA	101%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	110%	20-150%
	13C3-PFHxS	110%	20-150%
	13C8-PFOS	113%	20-150%
	13C8-FOSA	105%	20-150%
	d3-MeFOSA	101%	20-150%
	d5-EtFOSA	105%	20-150%
	d3-MeFOSAA	123%	20-150%
	d5-EtFOSAA	121%	20-150%
	d7-MeFOSE	90%	20-150%
	d9-EtFOSE	98%	20-150%
	13C2-4:2FTS	129%	20-180%
	13C2-6:2FTS	128%	20-180%
	13C2-8:2FTS	131%	20-180%
	13C3-HFPO-DA	107%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-LLBS	6Q18600.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0312	104	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0160	107	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0074	99	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0080	107	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0079	105	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0076	101	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0080	107	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0073	97	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0081	108	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0077	103	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0084	112	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0069	104	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0071	101	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0071	104	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0075	105	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0074	106	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0073	101	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0070	97	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0066	91	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0284	101	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0314	110	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0319	111	40-150
754-91-6	PFOSA	0.0075	0.0077	103	40-150
31506-32-8	MeFOSA	0.015	0.0155	103	40-150
4151-50-2	EtFOSA	0.015	0.0136	91	40-150
2355-31-9	MeFOSAA	0.0075	0.0086	115	40-150
2991-50-6	EtFOSAA	0.0075	0.0082	109	40-150
24448-09-7	MeFOSE	0.0375	0.0369	98	40-150
1691-99-2	EtFOSE	0.0375	0.0376	100	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0158	105	40-150
919005-14-4	ADONA	0.0142	0.0149	105	40-150
377-73-1	PFMPA	0.015	0.0156	104	40-150
863090-89-5	PFMBA	0.015	0.0156	104	40-150
151772-58-6	NFDHA	0.015	0.0152	101	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0145	103	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0142	100	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-LLBS	6Q18600.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0136	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0317	85	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.180	96	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.191	102	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	112%	20-150%
	13C5-PFPeA	117%	20-150%
	13C5-PFHxA	121%	20-150%
	13C4-PFHpA	116%	20-150%
	13C8-PFOA	117%	20-150%
	13C9-PFNA	114%	20-150%
	13C6-PFDA	113%	20-150%
	13C7-PFUnDA	116%	20-150%
	13C2-PFDoDA	113%	20-150%
	13C2-PFTeDA	103%	20-150%
	13C3-PFBS	109%	20-150%
	13C3-PFHxS	111%	20-150%
	13C8-PFOS	111%	20-150%
	13C8-FOSA	94%	20-150%
	d3-MeFOSA	93%	20-150%
	d5-EtFOSA	104%	20-150%
	d3-MeFOSAA	113%	20-150%
	d5-EtFOSAA	108%	20-150%
	d7-MeFOSE	90%	20-150%
	d9-EtFOSE	96%	20-150%
	13C2-4:2FTS	116%	20-180%
	13C2-6:2FTS	116%	20-180%
	13C2-8:2FTS	112%	20-180%
	13C3-HFPO-DA	115%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-BS	6Q18542.D	1	05/30/23	MV	05/25/23	OP97070	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.105	105	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0525	105	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0261	104	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0265	106	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0257	103	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0255	102	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0274	110	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0236	94	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0272	109	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0260	104	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0256	102	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0223	101	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0262	111	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0260	114	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0235	99	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0231	100	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0234	97	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0231	96	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0236	97	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.102	109	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0985	104	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.100	104	40-150
754-91-6	PFOSA	0.025	0.0256	102	40-150
31506-32-8	MeFOSA	0.05	0.0505	101	40-150
4151-50-2	EtFOSA	0.05	0.0481	96	40-150
2355-31-9	MeFOSAA	0.025	0.0254	102	40-150
2991-50-6	EtFOSAA	0.025	0.0265	106	40-150
24448-09-7	MeFOSE	0.125	0.121	97	40-150
1691-99-2	EtFOSE	0.125	0.122	98	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0532	106	40-150
919005-14-4	ADONA	0.0473	0.0510	108	40-150
377-73-1	PFMPA	0.05	0.0242	48	40-150
863090-89-5	PFMBA	0.05	0.0550	110	40-150
151772-58-6	NFDHA	0.05	0.0512	102	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0503	108	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0491	104	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-BS	6Q18542.D	1	05/30/23	MV	05/25/23	OP97070	S6Q278

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0456	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0560	45	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.584	93	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.592	95	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	24%	20-150%
	13C5-PFPeA	96%	20-150%
	13C5-PFHxA	106%	20-150%
	13C4-PFHpA	99%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	102%	20-150%
	13C7-PFUnDA	106%	20-150%
	13C2-PFDoDA	95%	20-150%
	13C2-PFTeDA	93%	20-150%
	13C3-PFBS	108%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	119%	20-150%
	13C8-FOSA	104%	20-150%
	d3-MeFOSA	100%	20-150%
	d5-EtFOSA	106%	20-150%
	d3-MeFOSAA	125%	20-150%
	d5-EtFOSAA	120%	20-150%
	d7-MeFOSE	87%	20-150%
	d9-EtFOSE	98%	20-150%
	13C2-4:2FTS	119%	20-180%
	13C2-6:2FTS	129%	20-180%
	13C2-8:2FTS	134%	20-180%
	13C3-HFPO-DA	99%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-BS	6Q18599.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.106	106	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0531	106	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0244	98	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0255	102	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0259	104	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0259	104	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0256	102	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0238	95	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0258	103	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0258	103	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0271	108	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0233	105	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0248	105	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0241	105	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0246	103	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0247	106	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0253	105	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0253	105	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0251	104	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0981	105	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.107	113	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.109	114	40-150
754-91-6	PFOSA	0.025	0.0261	104	40-150
31506-32-8	MeFOSA	0.05	0.0486	97	40-150
4151-50-2	EtFOSA	0.05	0.0457	91	40-150
2355-31-9	MeFOSAA	0.025	0.0288	115	40-150
2991-50-6	EtFOSAA	0.025	0.0270	108	40-150
24448-09-7	MeFOSE	0.125	0.123	98	40-150
1691-99-2	EtFOSE	0.125	0.118	94	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0501	100	40-150
919005-14-4	ADONA	0.0473	0.0497	105	40-150
377-73-1	PFMPA	0.05	0.0241	48	40-150
863090-89-5	PFMBA	0.05	0.0555	111	40-150
151772-58-6	NFDHA	0.05	0.0505	101	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0466	100	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0464	98	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-BS	6Q18599.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0454	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0562	45	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.600	96	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.614	98	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	24%	20-150%
	13C5-PFPeA	99%	20-150%
	13C5-PFHxA	109%	20-150%
	13C4-PFHpA	104%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	103%	20-150%
	13C6-PFDA	109%	20-150%
	13C7-PFUnDA	114%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	100%	20-150%
	13C3-PFBS	105%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	100%	20-150%
	13C8-FOSA	89%	20-150%
	d3-MeFOSA	95%	20-150%
	d5-EtFOSA	103%	20-150%
	d3-MeFOSAA	101%	20-150%
	d5-EtFOSAA	103%	20-150%
	d7-MeFOSE	84%	20-150%
	d9-EtFOSE	93%	20-150%
	13C2-4:2FTS	105%	20-180%
	13C2-6:2FTS	107%	20-180%
	13C2-8:2FTS	106%	20-180%
	13C3-HFPO-DA	106%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-MS	6Q18603.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279
FC6278-1	6Q18602.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	FC6278-1 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.015 U		0.0943	0.101	107	40-150
2706-90-3	Perfluoropentanoic acid	0.0034 J		0.0472	0.0527	105	40-150
307-24-4	Perfluorohexanoic acid	0.0010 J		0.0236	0.0237	96	40-150
375-85-9	Perfluoroheptanoic acid	0.0037 U		0.0236	0.0246	104	40-150
335-67-1	Perfluorooctanoic acid	0.0037 U		0.0236	0.0252	107	40-150
375-95-1	Perfluorononanoic acid	0.0037 U		0.0236	0.0256	109	40-150
335-76-2	Perfluorodecanoic acid	0.0037 U		0.0236	0.0251	106	40-150
2058-94-8	Perfluoroundecanoic acid	0.0037 U		0.0236	0.0246	104	40-150
307-55-1	Perfluorododecanoic acid	0.0037 U		0.0236	0.0258	109	40-150
72629-94-8	Perfluorotridecanoic acid	0.0037 U		0.0236	0.0248	105	40-150
376-06-7	Perfluorotetradecanoic acid	0.0037 U		0.0236	0.0267	113	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0037 U		0.0209	0.0209	100	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0046 U		0.0222	0.0238	107	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0037 U		0.0216	0.0227	105	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0037 U		0.0225	0.0243	108	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0037 U		0.0219	0.0238	109	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0037 U		0.0227	0.0219	97	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0037 U		0.0228	0.0210	92	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0046 U		0.0229	0.0212	93	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.019 U		0.0884	0.0957	108	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U		0.0896	0.0992	111	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U		0.0906	0.0920	102	40-150
754-91-6	PFOSA	0.0037 U		0.0236	0.0236	100	40-150
31506-32-8	MeFOSA	0.0074 U		0.0472	0.0475	101	40-150
4151-50-2	EtFOSA	0.0074 U		0.0472	0.0434	92	40-150
2355-31-9	MeFOSAA	0.0046 U		0.0236	0.0254	108	40-150
2991-50-6	EtFOSAA	0.0046 U		0.0236	0.0266	113	40-150
24448-09-7	MeFOSE	0.037 U		0.118	0.114	97	40-150
1691-99-2	EtFOSE	0.037 U		0.118	0.111	94	40-150
13252-13-6	HFPO-DA (GenX)	0.0037 U		0.0472	0.0510	108	40-150
919005-14-4	ADONA	0.0074 U		0.0446	0.0497	111	40-150
377-73-1	PFMPA	0.0074 U		0.0472	0.0308	65	40-150
863090-89-5	PFMBA	0.0074 U		0.0472	0.0503	107	40-150
151772-58-6	NFDHA	0.0074 U		0.0472	0.0479	102	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0074 U		0.0441	0.0459	104	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0074 U		0.0446	0.0413	93	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-MS	6Q18603.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279
FC6278-1	6Q18602.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	FC6278-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0074 U	0.042	0.0428	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	0.118	0.0658	56	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.093 U	0.59	0.534	91	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.093 U	0.59	0.570	97	40-150

CAS No.	ID Standard Recoveries	MS	FC6278-1	Limits
	13C4-PFBA	31%	56%	20-150%
	13C5-PFPeA	106%	104%	20-150%
	13C5-PFHxA	114%	100%	20-150%
	13C4-PFHpA	109%	106%	20-150%
	13C8-PFOA	111%	107%	20-150%
	13C9-PFNA	105%	103%	20-150%
	13C6-PFDA	105%	99%	20-150%
	13C7-PFUnDA	100%	98%	20-150%
	13C2-PFDoDA	91%	93%	20-150%
	13C2-PFTeDA	85%	85%	20-150%
	13C3-PFBS	111%	106%	20-150%
	13C3-PFHxS	104%	105%	20-150%
	13C8-PFOS	107%	91%	20-150%
	13C8-FOSA	90%	82%	20-150%
	d3-MeFOSA	92%	84%	20-150%
	d5-EtFOSA	101%	91%	20-150%
	d3-MeFOSAA	109%	98%	20-150%
	d5-EtFOSAA	100%	92%	20-150%
	d7-MeFOSE	83%	76%	20-150%
	d9-EtFOSE	95%	89%	20-150%
	13C2-4:2FTS	110%	108%	20-180%
	13C2-6:2FTS	107%	113%	20-180%
	13C2-8:2FTS	106%	105%	20-180%
	13C3-HFPO-DA	104%	105%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-DUP	6Q18606.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279
FC6278-3	6Q18605.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	FC6278-3 ug/l	DUP Q ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.015 U	ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0074 U	ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0037 U	ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0037 U	ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0037 U	ND		nc	30
375-95-1	Perfluorononanoic acid	0.0037 U	ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0037 U	ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0037 U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0037 U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0037 U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0037 U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0037 U	ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0046 U	ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0037 U	ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0037 U	ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0037 U	ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0037 U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0037 U	ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0046 U	ND		nc	30
757124-72-44:2	Fluorotelomer sulfonate	0.019 U	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U	ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U	ND		nc	30
754-91-6	PFOSA	0.0037 U	ND		nc	30
31506-32-8	MeFOSA	0.0074 U	ND		nc	30
4151-50-2	EtFOSA	0.0074 U	ND		nc	30
2355-31-9	MeFOSAA	0.0046 U	ND		nc	30
2991-50-6	EtFOSAA	0.0046 U	ND		nc	30
24448-09-7	MeFOSE	0.037 U	ND		nc	30
1691-99-2	EtFOSE	0.037 U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0037 U	ND		nc	30
919005-14-4	ADONA	0.0074 U	ND		nc	30
377-73-1	PFMPA	0.0074 U	ND		nc	30
863090-89-5	PFMBA	0.0074 U	ND		nc	30
151772-58-6	NFDHA	0.0074 U	ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0074 U	ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0074 U	ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97070-DUP	6Q18606.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279
FC6278-3	6Q18605.D	1	05/31/23	MV	05/25/23	OP97070	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6278-1, FC6278-2, FC6278-3, FC6278-4, FC6278-5

CAS No.	Compound	FC6278-3 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7PFEESA		0.0074 U	ND			nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	ND			nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.093 U	ND			nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.093 U	ND			nc	30

CAS No.	ID Standard Recoveries	DUP	FC6278-3	Limits
	13C4-PFBA	94%	101%	20-150%
	13C5-PFPeA	99%	102%	20-150%
	13C5-PFHxA	99%	101%	20-150%
	13C4-PFHpA	99%	99%	20-150%
	13C8-PFOA	97%	109%	20-150%
	13C9-PFNA	98%	103%	20-150%
	13C6-PFDA	100%	98%	20-150%
	13C7-PFUnDA	97%	98%	20-150%
	13C2-PFDoDA	92%	88%	20-150%
	13C2-PFTeDA	84%	87%	20-150%
	13C3-PFBS	102%	99%	20-150%
	13C3-PFHxS	98%	102%	20-150%
	13C8-PFOS	99%	108%	20-150%
	13C8-FOSA	75%	89%	20-150%
	d3-MeFOSA	84%	91%	20-150%
	d5-EtFOSA	90%	98%	20-150%
	d3-MeFOSAA	94%	103%	20-150%
	d5-EtFOSAA	103%	97%	20-150%
	d7-MeFOSE	70%	83%	20-150%
	d9-EtFOSE	83%	93%	20-150%
	13C2-4:2FTS	108%	104%	20-180%
	13C2-6:2FTS	102%	105%	20-180%
	13C2-8:2FTS	109%	97%	20-180%
	13C3-HFPO-DA	98%	101%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q278-CC278	Injection Date:	05/30/23
Lab File ID:	6Q18535.D	Injection Time:	20:25
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	70857	2.83	57272	5.42	89465	7.03	44387	7.56	29692	8.04
Check Std ^c	76015	2.83	61261	5.42	94176	7.03	48745	7.56	32898	8.03
Upper Limit ^d	141714	3.23	114544	5.82	178930	7.43	88774	7.96	59384	8.43
Lower Limit ^e	21257	2.43	17182	5.02	26840	6.63	13316	7.16	8908	7.63

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
S6Q278-ICCB	71763	2.83	58306	5.42	89659	7.03	44690	7.54	29934	8.03	1
OP97094-BS	63674	2.84	49750	5.42	75079	7.03	39214	7.56	25345	8.03	1
OP97094-LLBS	64596	2.85	51345	5.42	80266	7.03	39390	7.56	25833	8.03	1
OP97094-MB	64452	2.84	52109	5.42	78167	7.03	40587	7.56	25617	8.04	1
ZZZZZZ	73510	2.86	58590	5.42	89870	7.03	45050	7.54	33220	8.03	10
OP97070-BS	65026	2.88	51330	5.42	76056	7.03	38798	7.56	27024	8.03	1
OP97070-LLBS	61418	2.88	47029	5.43	72152	7.03	37453	7.56	25784	8.03	1
OP97070-MB	63802	2.88	51143	5.42	77113	7.03	38122	7.56	25518	8.04	1
S6Q278-ECC278	76521	2.83	61761	5.42	97577	7.03	47044	7.56	31773	8.03	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: S6Q278-ICC278 6Q18517.D 05/30/23 16:04. 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

Injection Standard Area Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q278-CC278	Injection Date:	05/30/23
Lab File ID:	6Q18535.D	Injection Time:	20:25
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	10524	7.13	17054	8.19
Check Std ^c	11167	7.13	17402	8.18
Upper Limit ^d	21048	7.53	34108	8.58
Lower Limit ^e	3157	6.73	5116	7.78

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q278-ICCB	10308	7.13	16477	8.18	1
OP97094-BS	9259	7.13	14728	8.18	1
OP97094-LLBS	9040	7.13	15518	8.18	1
OP97094-MB	8982	7.14	15055	8.18	1
ZZZZZZ	12200	7.13	15920	8.18	10
OP97070-BS	8921	7.13	13319	8.18	1
OP97070-LLBS	8823	7.14	13218	8.19	1
OP97070-MB	9416	7.14	15106	8.18	1
S6Q278-ECC278	10699	7.14	17808	8.18	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q278-ICC278 6Q18517.D 05/30/23 16:04. 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

Injection Standard Area Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q279-CC279	Injection Date:	05/31/23
Lab File ID:	6Q18597.D	Injection Time:	19:55
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	76326	2.81	63211	5.41	101509	7.03	52533	7.54	35697	8.03
Check Std ^c	78746	2.81	63422	5.41	101542	7.03	53844	7.54	37779	8.01
Upper Limit ^d	152652	3.21	126422	5.81	203018	7.43	105066	7.94	71394	8.41
Lower Limit ^e	22898	2.41	18963	5.01	30453	6.63	15760	7.14	10709	7.61

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
OP97070-BS	66739	2.86	52506	5.42	84420	7.03	43690	7.54	28394	8.03	1
OP97070-LLBS	63432	2.86	48044	5.42	78269	7.03	40796	7.54	27194	8.03	1
OP97070-MB	65562	2.86	52394	5.41	84351	7.03	45160	7.54	29138	8.03	1
FC6278-1	67441	2.86	54600	5.42	85568	7.01	45628	7.54	29930	8.01	1
OP97070-MS	66112	2.86	51778	5.42	81618	7.03	42740	7.54	28919	8.03	1
FC6278-2	63946	2.86	49904	5.42	80242	7.03	43265	7.56	27949	8.03	1
FC6278-3	68371	2.86	56379	5.42	84772	7.03	44558	7.56	30872	8.03	1
OP97070-DUP	65407	2.86	53731	5.42	87176	7.03	42641	7.54	28988	8.03	1
FC6278-4	62637	2.86	50953	5.42	81226	7.03	42974	7.54	27457	8.03	1
ZZZZZZ	64291	2.86	50994	5.42	77444	7.03	42216	7.54	27623	8.03	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: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.2
6

Injection Standard Area Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q279-CC279	Injection Date:	05/31/23
Lab File ID:	6Q18597.D	Injection Time:	19:55
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	10927	7.13	18109	8.16
Check Std ^c	11240	7.13	19062	8.18
Upper Limit ^d	21854	7.53	36218	8.58
Lower Limit ^e	3278	6.73	5433	7.78

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
OP97070-BS	9043	7.13	15031	8.18	1
OP97070-LLBS	8835	7.13	14269	8.18	1
OP97070-MB	9404	7.13	15929	8.18	1
FC6278-1	9201	7.13	15832	8.16	1
OP97070-MS	9077	7.13	14444	8.18	1
FC6278-2	8870	7.13	14381	8.18	1
FC6278-3	9762	7.13	15027	8.18	1
OP97070-DUP	8922	7.13	14684	8.18	1
FC6278-4	8992	7.13	14611	8.18	1
ZZZZZZ	8494	7.13	14968	8.18	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. 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: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q279-CC279	Injection Date:	05/31/23
Lab File ID:	6Q18609.D	Injection Time:	22:49
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal ^b	76326	2.81	63211	5.41	101509	7.03	52533	7.54	35697	8.03
Check Std ^c	79698	2.81	63935	5.41	100167	7.03	53643	7.54	37268	8.03
Upper Limit ^d	152652	3.21	126422	5.81	203018	7.43	105066	7.94	71394	8.43
Lower Limit ^e	22898	2.41	18963	5.01	30453	6.63	15760	7.14	10709	7.63

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
S6Q279-ICCB	75147	2.81	59556	5.41	100948	7.03	53033	7.54	34624	8.01	1
S6Q279-ICCB	75147	2.81	59556	5.41	100948	7.03	53033	7.54	34624	8.01	1
FC6278-5	63474	2.88	51661	5.42	81139	7.03	41243	7.54	27666	8.03	1
OP97024-BS	76965	2.86	61391	5.42	95430	7.03	50308	7.54	33537	8.03	1
OP97024-LLBS	76421	2.86	61125	5.42	95047	7.03	50509	7.54	34655	8.03	1
OP97024-MB	77288	2.86	61244	5.42	95801	7.03	50795	7.54	34625	8.03	1
FC6086-1	75178	2.86	59255	5.41	92322	7.03	51653	7.54	35291	8.03	1
OP97024-MS	72679	2.86	58663	5.42	89495	7.03	48907	7.54	33525	8.03	1
OP97024-MSD	70637	2.86	53485	5.42	86202	7.03	46433	7.54	30013	8.03	1
ZZZZZZ	72090	2.86	57686	5.42	88426	7.03	51559	7.54	32189	8.03	1
ZZZZZZ	76837	2.86	59596	5.42	96892	7.03	53583	7.54	33952	8.03	1
ZZZZZZ	77719	2.86	62188	5.42	97733	7.03	50949	7.54	33244	8.03	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: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.3
6

Injection Standard Area Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q279-CC279	Injection Date:	05/31/23
Lab File ID:	6Q18609.D	Injection Time:	22:49
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	10927	7.13	18109	8.16
Check Std ^c	11296	7.13	18384	8.18
Upper Limit ^d	21854	7.53	36218	8.58
Lower Limit ^e	3278	6.73	5433	7.78

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q279-ICCB	10969	7.13	17908	8.18	1
S6Q279-ICCB	10969	7.13	17908	8.18	1
FC6278-5	8774	7.13	15041	8.18	1
OP97024-BS	10861	7.13	17920	8.18	1
OP97024-LLBS	10630	7.13	17170	8.18	1
OP97024-MB	10957	7.13	16609	8.18	1
FC6086-1	10594	7.13	16263	8.18	1
OP97024-MS	10040	7.13	16736	8.18	1
OP97024-MSD	9919	7.13	15743	8.18	1
ZZZZZZ	10117	7.13	16066	8.18	1
ZZZZZZ	11037	7.13	17090	8.18	1
ZZZZZZ	10668	7.13	17423	8.18	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to + 100% of initial cal area.
- (d) Upper Limit = + 100% of initial standard area; Retention time + 0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.3
6

TDCA Retention Time Check

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q278-RT	Injection Date:	05/30/23
Lab File ID:	6Q18511.D	Injection Time:	14:37
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.191	--	--
TDCA	6.762	1.429	1.000
TCDCA	6.613	1.578	1.000
TUDCA	5.748	2.443	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
S6Q278-IC278	6Q18513.D	05/30/23	15:06	00:29	Mass Calibration Verification
S6Q278-IC278	6Q18514.D	05/30/23	15:21	00:44	Initial cal 1
S6Q278-IC278	6Q18515.D	05/30/23	15:35	00:58	Initial cal 2
S6Q278-IC278	6Q18516.D	05/30/23	15:49	01:12	Initial cal 3
S6Q278-ICC278	6Q18517.D	05/30/23	16:04	01:27	Initial cal 4
S6Q278-IC278	6Q18518.D	05/30/23	16:18	01:41	Initial cal 5
S6Q278-IC278	6Q18519.D	05/30/23	16:33	01:56	Initial cal 6
S6Q278-IC278	6Q18520.D	05/30/23	16:47	02:10	Initial cal 7
S6Q278-IC278	6Q18521.D	05/30/23	17:02	02:25	Initial cal 8
S6Q278-IBLK	6Q18522.D	05/30/23	17:16	02:39	Instrument Blank
S6Q278-IBLK	6Q18522.D	05/30/23	17:16	02:39	Instrument Blank
S6Q278-ICV278	6Q18523.D	05/30/23	17:31	02:54	Initial cal verification 4
S6Q278-ICV278	6Q18524.D	05/30/23	17:45	03:08	Initial cal verification 20
S6Q278-CC278	6Q18525.D	05/30/23	18:00	03:23	Continuing cal 4
S6Q278-CC278	6Q18526.D	05/30/23	18:14	03:37	Continuing cal 1.0LL
ZZZZZZ	6Q18527.D	05/30/23	18:29	03:52	(unrelated sample)
ZZZZZZ	6Q18528.D	05/30/23	18:43	04:06	(unrelated sample)
FC6114-3	6Q18529.D	05/30/23	18:58	04:21	(used for QC only; not part of job FC6278)
OP96957-MS	6Q18530.D	05/30/23	19:12	04:35	Matrix Spike
OP96957-MSD	6Q18531.D	05/30/23	19:27	04:50	Matrix Spike Duplicate
ZZZZZZ	6Q18532.D	05/30/23	19:41	05:04	(unrelated sample)
ZZZZZZ	6Q18533.D	05/30/23	19:56	05:19	(unrelated sample)
ZZZZZZ	6Q18534.D	05/30/23	20:10	05:33	(unrelated sample)
S6Q278-CC278	6Q18535.D	05/30/23	20:25	05:48	Continuing cal 4
S6Q278-ICCB	6Q18536.D	05/30/23	20:39	06:02	Continuing Calibration Blank
OP97094-BS	6Q18537.D	05/30/23	20:54	06:17	Blank Spike
OP97094-LLBS	6Q18538.D	05/30/23	21:08	06:31	Blank Spike
OP97094-MB	6Q18539.D	05/30/23	21:23	06:46	Method Blank
ZZZZZZ	6Q18541.D	05/30/23	21:52	07:15	(unrelated sample)
OP97070-BS	6Q18542.D	05/30/23	22:06	07:29	Blank Spike
OP97070-LLBS	6Q18543.D	05/30/23	22:21	07:44	Blank Spike
OP97070-MB	6Q18544.D	05/30/23	22:35	07:58	Method Blank
S6Q278-ECC278	6Q18546.D	05/30/23	23:04	08:27	Ending cal 4
S6Q278-ICCB	6Q18547.D	05/30/23	23:19	08:42	Continuing Calibration Blank

TDCA Retention Time Check

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q279-RT	Injection Date:	05/31/23
Lab File ID:	6Q18583.D	Injection Time:	16:32
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.178	--	--
TDCA	6.762	1.416	1.000
TCDCA	6.601	1.577	1.000
TUDCA	5.735	2.443	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
S6Q279-IC279	6Q18585.D	05/31/23	17:01	00:29	Mass Calibration Verification
S6Q279-IC279	6Q18586.D	05/31/23	17:16	00:44	Initial cal 1
S6Q279-IC279	6Q18587.D	05/31/23	17:30	00:58	Initial cal 2
S6Q279-IC279	6Q18588.D	05/31/23	17:45	01:13	Initial cal 3
S6Q279-ICC279	6Q18589.D	05/31/23	17:59	01:27	Initial cal 4
S6Q279-IC279	6Q18590.D	05/31/23	18:14	01:42	Initial cal 5
S6Q279-IC279	6Q18591.D	05/31/23	18:28	01:56	Initial cal 6
S6Q279-IC279	6Q18592.D	05/31/23	18:43	02:11	Initial cal 7
S6Q279-IC279	6Q18593.D	05/31/23	18:57	02:25	Initial cal 8
S6Q279-IBLK	6Q18594.D	05/31/23	19:12	02:40	Instrument Blank
S6Q279-IBLK	6Q18594.D	05/31/23	19:12	02:40	Instrument Blank
S6Q279-ICV279	6Q18595.D	05/31/23	19:26	02:54	Initial cal verification 4
S6Q279-ICV279	6Q18596.D	05/31/23	19:41	03:09	Initial cal verification 20
S6Q279-CC279	6Q18597.D	05/31/23	19:55	03:23	Continuing cal 4
S6Q279-CC279	6Q18598.D	05/31/23	20:10	03:38	Continuing cal 1.0LL
OP97070-BS	6Q18599.D	05/31/23	20:24	03:52	Blank Spike
OP97070-LLBS	6Q18600.D	05/31/23	20:39	04:07	Blank Spike
OP97070-MB	6Q18601.D	05/31/23	20:53	04:21	Method Blank
FC6278-1	6Q18602.D	05/31/23	21:08	04:36	AF-RHMW12A-WGN01LF-2305W4
OP97070-MS	6Q18603.D	05/31/23	21:22	04:50	Matrix Spike
FC6278-2	6Q18604.D	05/31/23	21:37	05:05	AF-RHMW12A-WGFD01LF-2305W4
FC6278-3	6Q18605.D	05/31/23	21:51	05:19	AF-RHMW04-WGN01LF-2305W4
OP97070-DUP	6Q18606.D	05/31/23	22:06	05:34	Duplicate
FC6278-4	6Q18607.D	05/31/23	22:20	05:48	AF-RHMW06-WGN01LF-2305W4
ZZZZZZ	6Q18608.D	05/31/23	22:35	06:03	(unrelated sample)
S6Q279-CC279	6Q18609.D	05/31/23	22:49	06:17	Continuing cal 4
S6Q279-ICCB	6Q18610.D	05/31/23	23:04	06:32	Continuing Calibration Blank
S6Q279-ICCB	6Q18610.D	05/31/23	23:04	06:32	Continuing Calibration Blank
FC6278-5	6Q18611.D	05/31/23	23:18	06:46	AF-RHMW16-WGN01LF-2305W4
OP97024-BS	6Q18612.D	05/31/23	23:32	07:00	Blank Spike
OP97024-LLBS	6Q18613.D	05/31/23	23:47	07:15	Blank Spike
OP97024-MB	6Q18614.D	06/01/23	00:01	07:29	Method Blank
FC6086-1	6Q18615.D	06/01/23	00:16	07:44	(used for QC only; not part of job FC6278)
OP97024-MS	6Q18616.D	06/01/23	00:30	07:58	Matrix Spike

TDCA Retention Time Check

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q279-RT	Injection Date:	05/31/23
Lab File ID:	6Q18583.D	Injection Time:	16:32
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP97024-MSD	6Q18617.D	06/01/23	00:45	08:13	Matrix Spike Duplicate
ZZZZZZ	6Q18618.D	06/01/23	00:59	08:27	(unrelated sample)
ZZZZZZ	6Q18619.D	06/01/23	01:14	08:42	(unrelated sample)
ZZZZZZ	6Q18620.D	06/01/23	01:28	08:56	(unrelated sample)
S6Q279-CC279	6Q18621.D	06/01/23	01:43	09:11	Continuing cal 4
S6Q279-ICCB	6Q18622.D	06/01/23	01:57	09:25	Continuing Calibration Blank
S6Q279-ICCB	6Q18622.D	06/01/23	01:57	09:25	Continuing Calibration Blank
ZZZZZZ	6Q18623.D	06/01/23	02:12	09:40	(unrelated sample)
ZZZZZZ	6Q18624.D	06/01/23	02:26	09:54	(unrelated sample)
ZZZZZZ	6Q18625.D	06/01/23	02:41	10:09	(unrelated sample)
ZZZZZZ	6Q18626.D	06/01/23	02:55	10:23	(unrelated sample)
ZZZZZZ	6Q18627.D	06/01/23	03:10	10:38	(unrelated sample)
ZZZZZZ	6Q18628.D	06/01/23	03:24	10:52	(unrelated sample)
ZZZZZZ	6Q18629.D	06/01/23	03:39	11:07	(unrelated sample)
ZZZZZZ	6Q18630.D	06/01/23	03:53	11:21	(unrelated sample)
ZZZZZZ	6Q18631.D	06/01/23	04:08	11:36	(unrelated sample)
ZZZZZZ	6Q18632.D	06/01/23	04:22	11:50	(unrelated sample)
S6Q279-CC279	6Q18633.D	06/01/23	04:37	12:05	Continuing cal 4
S6Q279-ICCB	6Q18634.D	06/01/23	04:51	12:19	Continuing Calibration Blank
S6Q279-ICCB	6Q18634.D	06/01/23	04:51	12:19	Continuing Calibration Blank
ZZZZZZ	6Q18635.D	06/01/23	05:06	12:34	(unrelated sample)
ZZZZZZ	6Q18636.D	06/01/23	05:20	12:48	(unrelated sample)
ZZZZZZ	6Q18637.D	06/01/23	05:35	13:03	(unrelated sample)
ZZZZZZ	6Q18638.D	06/01/23	05:49	13:17	(unrelated sample)
ZZZZZZ	6Q18639.D	06/01/23	06:04	13:32	(unrelated sample)
S6Q279-CC279	6Q18641.D	06/01/23	06:20	13:48	Continuing cal 4
S6Q279-CC279	6Q18642.D	06/01/23	06:35	14:03	Continuing cal 1.0LL
S6Q279-ICCB	6Q18643.D	06/01/23	06:49	14:17	Continuing Calibration Blank
S6Q279-ICCB	6Q18643.D	06/01/23	06:49	14:17	Continuing Calibration Blank
OP97092-BS	6Q18644.D	06/01/23	07:03	14:31	Blank Spike
OP97092-LLBS	6Q18645.D	06/01/23	07:18	14:46	Blank Spike
OP97092-MB	6Q18646.D	06/01/23	07:32	15:00	Method Blank
ZZZZZZ	6Q18647.D	06/01/23	07:47	15:15	(unrelated sample)
ZZZZZZ	6Q18648.D	06/01/23	08:01	15:29	(unrelated sample)
FC5963-8	6Q18650.D	06/01/23	08:30	15:58	(used for QC only; not part of job FC6278)
OP97092-DUP2	6Q18651.D	06/01/23	08:45	16:13	Duplicate
ZZZZZZ	6Q18652.D	06/01/23	08:59	16:27	(unrelated sample)
S6Q279-CC279	6Q18653.D	06/01/23	09:14	16:42	Continuing cal 4
S6Q279-ICCB	6Q18654.D	06/01/23	09:28	16:56	Continuing Calibration Blank
FC6325-1	6Q18655.D	06/01/23	09:43	17:11	(used for QC only; not part of job FC6278)
OP97092-MS	6Q18656.D	06/01/23	09:57	17:25	Matrix Spike
FC6325-2	6Q18657.D	06/01/23	10:12	17:40	(used for QC only; not part of job FC6278)
OP97092-DUP1	6Q18658.D	06/01/23	10:26	17:54	Duplicate
ZZZZZZ	6Q18659.D	06/01/23	10:41	18:09	(unrelated sample)

TDCA Retention Time Check

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q279-RT	Injection Date:	05/31/23
Lab File ID:	6Q18583.D	Injection Time:	16:32
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q18660.D	06/01/23	10:55	18:23	(unrelated sample)
ZZZZZZ	6Q18661.D	06/01/23	11:10	18:38	(unrelated sample)
ZZZZZZ	6Q18662.D	06/01/23	11:24	18:52	(unrelated sample)
ZZZZZZ	6Q18663.D	06/01/23	11:39	19:07	(unrelated sample)
S6Q279-CC279	6Q18665.D	06/01/23	12:08	19:36	Continuing cal 4
S6Q279-ICCB	6Q18666.D	06/01/23	12:22	19:50	Continuing Calibration Blank
S6Q279-ICCB	6Q18666.D	06/01/23	12:22	19:50	Continuing Calibration Blank
ZZZZZZ	6Q18667.D	06/01/23	12:37	20:05	(unrelated sample)
ZZZZZZ	6Q18668.D	06/01/23	12:51	20:19	(unrelated sample)
ZZZZZZ	6Q18669.D	06/01/23	13:06	20:34	(unrelated sample)
S6Q279-ECC279	6Q18670.D	06/01/23	13:20	20:48	Ending cal 4
S6Q279-ICCB	6Q18671.D	06/01/23	13:35	21:03	Continuing Calibration Blank
S6Q279-ICCB	6Q18671.D	06/01/23	13:35	21:03	Continuing Calibration Blank

6.6.2
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Ion Ratio Summary

Job Number: FC6278
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q279	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios	
		PFPeA	PFHxA
S6Q279-ICC279	6Q18589.D	0	5.1
FC6278-1	6Q18602.D	0	5.3
FC6278-2	6Q18604.D	0	5.5
FC6278-3	6Q18605.D		
FC6278-4	6Q18607.D		
FC6278-5	6Q18611.D		

Isotope Dilution Standard Recovery Summary

Job Number: FC6278
 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
FC6278-1	6Q18602.D	56	104	100	106	107	103	99	98
FC6278-2	6Q18604.D	52	108	108	105	106	100	105	99
FC6278-3	6Q18605.D	101	102	101	99	109	103	98	98
FC6278-4	6Q18607.D	99	101	99	101	102	98	102	100
FC6278-5	6Q18611.D	87	110	110	109	107	111	113	104
OP97070-BS	6Q18542.D	24	96	106	99	110	107	102	106
OP97070-BS	6Q18599.D	24	99	109	104	102	103	109	114
OP97070-DUP	6Q18606.D	94	99	99	99	97	98	100	97
OP97070-LLBS	6Q18543.D	111	114	115	116	117	109	104	103
OP97070-LLBS	6Q18600.D	112	117	121	116	117	114	113	116
OP97070-MB	6Q18544.D	102	98	102	100	102	102	100	105
OP97070-MB	6Q18601.D	103	103	102	107	103	98	104	100
OP97070-MS	6Q18603.D	31	106	114	109	111	105	105	100
S6Q279-IBLK	6Q18594.D	100	103	103	102	98	92	89	97
S6Q279-ICCB	6Q18610.D	100	104	100	107	97	93	99	102
S6Q278-IBLK	6Q18522.D	100	99	100	98	99	109	102	95
S6Q278-ICCB	6Q18536.D	100	99	98	100	102	102	100	99
S6Q278-ICCB	6Q18547.D	100	100	101	102	95	101	100	106

Isotope Dilution Standards

Recovery Limits

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

6.8.1
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Isotope Dilution Standard Recovery Summary

Job Number: FC6278
 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
FC6278-1	6Q18602.D	93	85	106	105	91	82	84	91
FC6278-2	6Q18604.D	93	91	106	100	99	87	90	95
FC6278-3	6Q18605.D	88	87	99	102	108	89	91	98
FC6278-4	6Q18607.D	97	89	104	95	93	88	80	87
FC6278-5	6Q18611.D	96	96	111	107	102	84	78	84
OP97070-BS	6Q18542.D	95	93	108	102	119	104	100	106
OP97070-BS	6Q18599.D	105	100	105	103	100	89	95	103
OP97070-DUP	6Q18606.D	92	84	102	98	99	75	84	90
OP97070-LLBS	6Q18543.D	101	97	110	110	113	105	101	105
OP97070-LLBS	6Q18600.D	113	103	109	111	111	94	93	104
OP97070-MB	6Q18544.D	100	94	99	101	96	75	77	84
OP97070-MB	6Q18601.D	97	102	98	94	90	75	75	83
OP97070-MS	6Q18603.D	91	85	111	104	107	90	92	101
S6Q279-IBLK	6Q18594.D	97	89	103	103	96	105	100	102
S6Q279-ICCB	6Q18610.D	98	103	96	94	94	97	95	101
S6Q278-IBLK	6Q18522.D	97	98	103	105	98	101	97	103
S6Q278-ICCB	6Q18536.D	101	96	101	101	104	109	102	101
S6Q278-ICCB	6Q18547.D	101	100	102	101	102	101	93	99

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: FC6278
 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
FC6278-1	6Q18602.D	98	92	76	89	108	113	105	105
FC6278-2	6Q18604.D	99	96	79	89	108	107	102	106
FC6278-3	6Q18605.D	103	97	83	93	104	105	97	101
FC6278-4	6Q18607.D	94	90	85	92	101	103	97	102
FC6278-5	6Q18611.D	103	101	78	90	112	116	110	107
OP97070-BS	6Q18542.D	125	120	87	98	119	129	134	99
OP97070-BS	6Q18599.D	101	103	84	93	105	107	106	106
OP97070-DUP	6Q18606.D	94	103	70	83	108	102	109	98
OP97070-LLBS	6Q18543.D	123	121	90	98	129	128	131	107
OP97070-LLBS	6Q18600.D	113	108	90	96	116	116	112	115
OP97070-MB	6Q18544.D	116	103	70	77	117	116	114	97
OP97070-MB	6Q18601.D	96	88	68	80	109	105	102	101
OP97070-MS	6Q18603.D	109	100	83	95	110	107	106	104
S6Q279-IBLK	6Q18594.D	99	102	102	103	107	104	111	100
S6Q279-ICCB	6Q18610.D	102	95	101	101	107	100	103	103
S6Q278-IBLK	6Q18522.D	109	104	104	101	104	102	100	98
S6Q278-ICCB	6Q18536.D	103	105	103	91	111	114	121	92
S6Q278-ICCB	6Q18547.D	104	109	93	92	124	126	132	100

Isotope Dilution Standards

Recovery Limits

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

Initial Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ICC278
 Lab FileID: 6Q18517.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods	Level Name	Level Last Update Time								
Method File	1633_053023_S6Q278.quantmethod.xml	1	5/30/2023 3:21:01 PM								
Batch Name	D:\MassHunter\Data\053023_1633_S6Q278\QuantResults\s6q278.batch.bin	2	5/30/2023 8:24:14 PM								
Last Calib Update	5/30/2023 8:24:14 PM	3	5/30/2023 8:24:14 PM								
		4	5/30/2023 8:24:14 PM								
		5	5/30/2023 8:24:14 PM								
		6	5/30/2023 8:24:14 PM								
		7	5/30/2023 8:24:14 PM								
		8	5/30/2023 8:24:14 PM								
Calibration Files	Acq. Date-Time	8	Avg RF	%RSD							
D:\MassHunter\Data\053023_1633_S6Q278\6Q18514.d	5/30/2023 3:21:01 PM	0.3247	0.3153	0.3166	5.264						
D:\MassHunter\Data\053023_1633_S6Q278\6Q18515.d	5/30/2023 3:35:30 PM	0.6428	0.6331	0.6192	5.153						
D:\MassHunter\Data\053023_1633_S6Q278\6Q18516.d	5/30/2023 3:49:59 PM	0.0757	0.0734	0.0725	6.611						
D:\MassHunter\Data\053023_1633_S6Q278\6Q18517.d	5/30/2023 4:04:29 PM	1.2205	1.1629	1.1497	6.915						
D:\MassHunter\Data\053023_1633_S6Q278\6Q18518.d	5/30/2023 4:18:59 PM	0.8295	0.8064	0.7945	6.092						
D:\MassHunter\Data\053023_1633_S6Q278\6Q18519.d	5/30/2023 4:33:27 PM										
D:\MassHunter\Data\053023_1633_S6Q278\6Q18520.d	5/30/2023 4:47:58 PM										
D:\MassHunter\Data\053023_1633_S6Q278\6Q18521.d	5/30/2023 5:02:27 PM										
Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFBA	Avg RF	0.3689	0.3311	0.3247	0.3153	0.3166	0.3249	0.3356	0.3193	0.3295	5.264
T PFBA											
I M5-PFPeA	Avg RF	0.7277	0.6565	0.6428	0.6331	0.6192	0.6469	0.6700	0.6333	0.6537	5.153
T PFMPA											
T 3:3FTCA	Avg RF	0.0884	0.0807	0.0757	0.0734	0.0725	0.0750	0.0782	0.0760	0.0775	6.611
T PFPeA	Avg RF	1.4169	1.2279	1.2205	1.1629	1.1497	1.1991	1.2320	1.1706	1.2225	6.915
T PFMBa	Avg RF	0.9558	0.8333	0.8295	0.8064	0.7945	0.8174	0.8525	0.8111	0.8375	6.092
I M5-PFHxA	Avg RF	0.1111	0.1078	0.0970	0.0993	0.0968	0.1020	0.1067	0.0992	0.1025	5.264
T NFDHA											
T PFHxA	Avg RF	0.9606	0.8707	0.8629	0.8179	0.7817	0.8426	0.8643	0.8390	0.8550	6.046
T PFEEsA	Avg RF	1.2629	1.1350	1.0604	1.0835	1.0532	1.1429	1.1594	1.1408	1.1297	5.960
T 5:3FTCA	Avg RF	0.1751	0.1530	0.1438	0.1436	0.1358	0.1475	0.1444	0.1427	0.1482	7.995
T 7:3FTCA	Avg RF	0.1125	0.0956	0.0912	0.0941	0.0867	0.0917	0.0948	0.0912	0.0947	8.154
I M4-PFHpA	Avg RF	1.2452	1.0901	1.0874	1.0597	1.0580	1.1383	1.1139	1.1024	1.1119	5.404
T PFHpA											
I M8-PFOA	Avg RF	1.1520	0.9673	1.1315	1.0082	1.0546	1.0576	1.0712	1.0335	1.0595	5.722
T PFOA											
I M9-PFNA	Avg RF	1.0020	0.9324	0.8303	0.8669	0.8883	0.9079	0.9435	0.9001	0.9089	5.712
T PFNA											
I M6-PFDA	Avg RF	1.6952	1.2454	1.4330	1.4045	1.4595	1.3987	1.3860	1.4362	1.4323	8.706
T PFDA											
I M7-PFUnDA	Avg RF	0.9707	0.7954	0.7397	0.8102	0.7571	0.7733	0.8107	0.7843	0.8052	8.858
T PFUnDA											
I M2-PFDODA											

Initial Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ICC278
 Lab FileID: 6Q18517.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	1.0315	0.8581	0.8393	0.7851	0.7978	0.8664	0.8789	0.7691	0.8533	9.666
T PFTfDA	Avg RF	1.0730	0.8358	0.8560	0.7997	0.7905	0.8415	0.8350	0.7156	0.8434	12.196
I M2-PFTeDA	Avg RF	1.6181	1.2908	1.1924	1.2179	1.1907	1.2228	1.2392	1.1185	1.2613	12.067
T PFTeDA	Avg RF					ISTD					
I M8-FOSA	Avg RF	1.0509	0.8178	0.8070	0.8159	0.8190	0.8327	0.8946	0.7799	0.8522	10.164
T FOSA	Avg RF					ISTD					
I M3-PFBS	Avg RF	1.0250	0.8550	0.8570	0.8164	0.8172	0.8231	0.8891	0.8320	0.8643	8.042
T PFBS	Avg RF					ISTD					
I M3-PFHxS	Avg RF	1.2880	1.2654	1.1510	1.0836	1.1318	1.1049	1.1610	1.0777	1.1579	6.846
T PFPeS	Avg RF	1.3717	1.2545	1.2040	1.0619	1.0978	1.1283	1.1455	1.1095	1.1717	8.646
T PFHxS	Avg RF					ISTD					
I M8-PFOS	Avg RF	1.3795	1.2231	1.1956	1.1394	1.1385	1.2024	1.2535	1.0211	1.1941	8.659
T PFHpS	Avg RF	1.3300	1.2282	1.2203	1.0827	1.1097	1.1782	1.1683	1.0499	1.1709	7.725
T PFOS	Avg RF	1.3079	1.1005	1.0325	0.9571	0.9748	1.0344	0.9727	0.9132	1.0367	11.936
T PFNS	Avg RF	0.7577	0.6602	0.6197	0.5505	0.5739	0.6096	0.6182	0.5557	0.6182	10.893
T PFDS	Avg RF	0.2978	0.2856	0.2777	0.2545	0.2476	0.2680	0.2720	0.2286	0.2665	8.317
T PFDoDS	Avg RF					ISTD					
I M2-4:2FTS	Avg RF	8.4149	6.6138	7.2097	7.1124	6.6305	7.5013	6.6031	6.3313	7.0521	9.555
T 4:2FTS	Avg RF					ISTD					
I M2-6:2FTS	Avg RF	4.9093	5.2299	4.7927	4.5221	4.7629	4.9381	4.5726	4.2204	4.7435	6.457
T 6:2FTS	Avg RF					ISTD					
I M2-8:2FTS	Avg RF	3.2890	2.7763	2.4790	2.6620	2.4415	2.6829	2.5354	2.3098	2.6470	11.306
T 8:2FTS	Avg RF					ISTD					
I M3-MeFOSAA	Avg RF	1.3215	1.0531	1.0914	1.0913	1.0256	0.9762	1.1359	1.1071	1.1003	9.320
T MeFOSAA	Avg RF					ISTD					
I M3-HFO-DA	Avg RF	0.9303	0.9066	0.8080	0.8203	0.7774	0.8212	0.8450	0.8015	0.8388	6.335
T HFO-DA	Avg RF	15.10	13.54	12.39	12.37	11.70	12.49	12.51	11.78	12.74	8.713
T ADONA	Avg RF	6.2432	5.8379	5.4556	5.3189	5.0207	5.3264	5.5540	5.0832	5.4800	7.347
T 9Cl-PF3ONS	Avg RF	3.9344	3.5053	3.3581	3.2290	3.1670	3.2858	3.2840	3.1943	3.3697	7.469
T 11Cl-PF3OUds	Avg RF					ISTD					
I M5-EFOSAA	Avg RF	0.8404	0.6373	0.6252	0.6582	0.6376	0.6402	0.7386	0.6927	0.6838	10.761
T EFOSAA	Avg RF					ISTD					
I M7-MeFOSE	Avg RF	1.1628	0.9885	0.9627	0.9781	0.9879	1.0456	1.0163	0.9427	1.0106	6.835
T MeFOSE	Avg RF					ISTD					
I M9-EFOSE	Avg RF	1.2272	1.1274	1.0746	1.0372	1.0753	1.0858	1.1077	1.0701	1.1007	5.240
T EFOSE	Avg RF					ISTD					

Page 2 of 4
 Generated at 8:24 PM on 5/30/2023

Initial Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ICC278
 Lab FileID: 6Q18517.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA	Linear	1.2928	1.1783	1.1028	1.0842	1.1375	1.1328	1.1922	1.1170	1.1547	5.754
T EFOSA						ISTD					
I M3-MeFOSA	Avg RF	1.1217	1.0042	0.9218	0.9489	0.8993	0.9340	0.9126	0.8133	0.9445	9.460
T MeFOSA						ISTD					
I 13C4-PFOS	Linear	0.6316	0.6074	0.6468	0.6344	0.6886	0.6813	0.6649	0.5667	0.6402	6.268
S d3-MeFOSAA	Linear	0.7570	0.7337	0.7548	0.7929	0.8037	0.7473	0.8241	0.8254	0.7799	4.627
S 13C8-PFOS	Linear	0.5981	0.5579	0.6160	0.5807	0.6116	0.5910	0.5945	0.5555	0.5882	3.808
S d5-EFOSAA	Linear	1.7274	1.6610	1.7417	1.6984	1.7417	1.6910	1.7225	1.7246	1.7135	1.632
S 13C8-FOSA	Linear	0.6078	0.5830	0.6160	0.5777	0.5934	0.5661	0.6031	0.5549	0.5877	3.600
S d7-MeFOSE	Linear	0.6881	0.6526	0.6994	0.6802	0.7090	0.6886	0.7612	0.7619	0.7051	5.456
S d3-MeFOSA	Linear	0.8119	0.7757	0.8070	0.7764	0.7853	0.7629	0.7998	0.6980	0.7771	4.653
S d9-EFOSE	Linear	0.7025	0.6404	0.7093	0.6908	0.6848	0.6679	0.7028	0.6588	0.6822	3.570
S d5-EFOSA						ISTD					
I 13C3-PFBA	Linear	1.2024	1.1982	1.2055	1.1987	1.2015	1.2030	1.1800	1.1867	1.1970	0.746
S 13C4-PFBA						ISTD					
I 1802-PFHxS	Linear	0.1294	0.1314	0.1225	0.1238	0.1323	0.1165	0.1297	0.1175	0.1254	4.960
S 13C2-4:2FTS	Linear	2.2542	2.1839	2.1962	2.2581	2.3000	2.2257	2.2125	2.1272	2.2197	2.383
S 13C3-PFBS	Linear	0.1800	0.1668	0.1714	0.1758	0.1768	0.1622	0.1766	0.1639	0.1717	3.883
S 13C2-6:2FTS	Linear	1.3327	1.2681	1.3272	1.4177	1.3825	1.3708	1.3692	1.3368	1.3506	3.327
S 13C3-PFHxS	Linear	0.1586	0.1539	0.1717	0.1593	0.1747	0.1587	0.1750	0.1687	0.1651	5.071
S 13C2-8:2FTS						ISTD					
I 13C4-PFOA	Linear	0.9483	0.9831	0.9138	0.9690	0.9819	0.9722	0.9286	0.9648	0.9577	2.643
S 13C8-PFOA						ISTD					
I 13C2-PFDA	Linear	0.7604	0.7909	0.7857	0.7184	0.7770	0.7707	0.7539	0.7015	0.7573	4.222
S 13C6-PFDA	Linear	0.9735	0.9499	1.0178	0.9280	0.9933	0.9638	0.9350	0.8818	0.9554	4.394
S 13C7-PFUDA	Linear	0.8619	0.8653	0.8905	0.8456	0.8965	0.8550	0.8500	0.8856	0.8688	2.245
S 13C2-PFDODA	Linear	0.4560	0.4404	0.4830	0.4503	0.4723	0.4443	0.4360	0.4451	0.4534	3.610
S 13C2-PFEDA						ISTD					
I 13C5-PFNA	Linear	0.8268	0.8011	0.8423	0.8025	0.7331	0.7781	0.7931	0.7794	0.7945	4.178
S 13C9-PFNA						ISTD					
I 13C2-PFHxA	Linear	0.4925	0.5115	0.4882	0.5089	0.4921	0.4940	0.4969	0.4861	0.4963	1.859
S 13C5-PPeA	Linear	1.0711	1.0892	1.0650	1.0796	1.0710	1.0488	1.0613	1.0263	1.0640	1.822
S 13C5-PFHxA	Linear	0.1712	0.1763	0.1743	0.1789	0.1777	0.1765	0.1815	0.1784	0.1769	1.759
S 13C3-HPOD-A	Linear	0.9756	1.0278	0.9741	1.0138	0.9632	0.9506	1.0049	0.9571	0.9834	2.896
S 13C4-PFHpA						ISTD					

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

Initial Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ICC278
 Lab FileID: 6Q18517.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 = 1.197016 * x	
S 13C5-PFPeA	Linear	y = 0.496286 * x	
S 13C2-4:2FTS	Linear	y = 0.125385 * x	
S 13C3-PFBS	Linear	y = 2.219734 * x	
S 13C5-PFHxA	Linear	y = 1.064050 * x	
S 13C3-HFPO-DA	Linear	y = 0.176853 * x	
S 13C4-PFHpA	Linear	y = 0.983385 * x	
S 13C2-6:2FTS	Linear	y = 0.171695 * x	
S 13C8-PFOA	Linear	y = 0.957704 * x	
S 13C3-PFHxS	Linear	y = 1.350623 * x	
S 13C9-PFNA	Linear	y = 0.794547 * x	
S 13C2-8:2FTS	Linear	y = 0.165069 * x	
S 13C6-PEDA	Linear	y = 0.757300 * x	
S d3-MeFOSAA	Linear	y = 0.640221 * x	
S 13C8-PFOS	Linear	y = 0.779867 * x	
S d5-EFOSAA	Linear	y = 0.588159 * x	
S 13C7-PFUInDA	Linear	y = 0.955396 * x	
S 13C2-PFDODA	Linear	y = 0.868790 * x	
S 13C8-FOSA	Linear	y = 1.713529 * x	
S 13C2-PFTeDA	Linear	y = 0.453419 * x	
S d7-MeFOSE	Linear	y = 0.587743 * x	
S d3-MeFOSA	Linear	y = 0.705120 * x	
S d9-EFOSE	Linear	y = 0.777113 * x	
S d5-EFOSA	Linear	y = 0.682164 * x	

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

Initial Calibration Verification

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ICV278
 Lab FileID: 6Q18523.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053023_1633_S6Q278\s6q278.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053023_1633_S6Q278\6Q18514.d
 2:D:\MassHunter\Data\053023_1633_S6Q278\6Q18515.d
 3:D:\MassHunter\Data\053023_1633_S6Q278\6Q18516.d
 4:D:\MassHunter\Data\053023_1633_S6Q278\6Q18517.d
 5:D:\MassHunter\Data\053023_1633_S6Q278\6Q18518.d
 6:D:\MassHunter\Data\053023_1633_S6Q278\6Q18519.d
 7:D:\MassHunter\Data\053023_1633_S6Q278\6Q18520.d
 8:D:\MassHunter\Data\053023_1633_S6Q278\6Q18521.d

Data File: 6Q18523
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.341	6.8	106.8
13C2-6:2FTS	5.000	4.691	-6.2	93.8
13C2-8:2FTS	5.000	5.031	0.6	100.6
13C2-PFDoDA	1.250	1.316	5.3	105.3
13C2-PFTeDA	1.250	1.321	5.7	105.7
13C3-PFBS	2.500	2.437	-2.5	97.5
13C3-PFHxS	2.500	2.465	-1.4	98.6
13C4-PFBA	10.000	9.932	-0.7	99.3
13C4-PFHpA	2.500	2.453	-1.9	98.1
13C5-PFHxA	2.500	2.524	1.0	101.0
13C5-PFPeA	5.000	5.071	1.4	101.4
13C6-PFDA	1.250	1.296	3.7	103.7
13C7-PFUnDA	1.250	1.291	3.2	103.2
13C8-FOSA	2.500	2.488	-0.5	99.5
13C8-PFOA	2.500	2.473	-1.1	98.9
13C8-PFOS	2.500	2.705	8.2	108.2
13C9-PFNA	1.250	1.329	6.3	106.3
4:2FTS	9.375	9.385	0.1	100.1
6:2FTS	9.500	10.737	13.0	113.0
8:2FTS	9.600	11.084	15.5	115.5
d3-MeFOSAA	5.000	5.275	5.5	105.5
EtFOSAA	2.500	2.557	2.3	102.3
FOSA	2.500	2.742	9.7	109.7
MeFOSAA	2.500	2.621	4.8	104.8
PFBA	10.000	10.527	5.3	105.3
PFBS	2.218	2.379	7.3	107.3
PFDA	2.500	2.593	3.7	103.7
PFDoDA	2.500	2.494	-0.3	99.7
PFDS	2.413	2.274	-5.7	94.3
PFHpA	2.500	2.703	8.1	108.1
PFHpS	2.383	2.377	-0.2	99.8
PFHxA	2.500	2.462	-1.5	98.5
PFHxS	2.285	2.367	3.6	103.6
PFNA	2.500	2.616	4.6	104.6
PFNS	2.405	2.380	-1.0	99.0
PFOA	2.500	2.741	9.7	109.7
PFOS	2.320	2.224	-4.1	95.9

Initial Calibration Verification

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ICV278
 Lab FileID: 6Q18523.D

PFPeA	5.000	5.205	4.1	104.1
PFPeS	2.353	2.420	2.8	102.8
PFTeDA	2.500	2.514	0.6	100.6
PFTTrDA	2.500	2.547	1.9	101.9
PFUnDA	2.500	2.556	2.3	102.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.852	2.7	102.7
13C3-HFPO-DA	10.000	10.044	0.4	100.4
9C1-PF3ONS	4.675	4.931	5.5	105.5
ADONA	4.725	4.871	3.1	103.1
HFPO-DA	5.000	5.088	1.8	101.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.946	3.7	103.7
5:3FTCA	62.400	64.798	3.8	103.8
7:3FTCA	62.400	63.661	2.0	102.0
d3-MeFOSA	2.500	2.573	2.9	102.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.267	5.3	105.3
EtFOSE	12.500	12.940	3.5	103.5
MeFOSA	5.000	5.113	2.3	102.3
MeFOSE	12.500	13.106	4.8	104.8
PFDoDS	2.425	2.330	-3.9	96.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.137	2.7	102.7
d7-MeFOSE	25.000	25.898	3.6	103.6
d9-EtFOSE	25.000	26.022	4.1	104.1
d5-EtFOSA	2.500	2.513	0.5	100.5
NFDHA	5.000	5.245	4.9	104.9
PFMBA	5.000	5.306	6.1	106.1
PFMPA	5.000	5.266	5.3	105.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.861	9.2	109.2

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ICV278
 Lab FileID: 6Q18524.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053023_1633_S6Q278\s6q278.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053023_1633_S6Q278\6Q18514.d
 2:D:\MassHunter\Data\053023_1633_S6Q278\6Q18515.d
 3:D:\MassHunter\Data\053023_1633_S6Q278\6Q18516.d
 4:D:\MassHunter\Data\053023_1633_S6Q278\6Q18517.d
 5:D:\MassHunter\Data\053023_1633_S6Q278\6Q18518.d
 6:D:\MassHunter\Data\053023_1633_S6Q278\6Q18519.d
 7:D:\MassHunter\Data\053023_1633_S6Q278\6Q18520.d
 8:D:\MassHunter\Data\053023_1633_S6Q278\6Q18521.d

Data File: 6Q18524
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.397	7.9	107.9
13C2-6:2FTS	5.000	5.601	12.0	112.0
13C2-8:2FTS	5.000	5.474	9.5	109.5
13C2-PFDoDA	1.250	1.244	-0.4	99.6
13C2-PFTeDA	1.250	1.229	-1.7	98.3
13C3-PFBS	2.500	2.595	3.8	103.8
13C3-PFHxS	2.500	2.500	0.0	100.0
13C4-PFBA	10.000	10.016	0.2	100.2
13C4-PFHpA	2.500	2.429	-2.8	97.2
13C5-PFHxA	2.500	2.508	0.3	100.3
13C5-PFPeA	5.000	4.927	-1.5	98.5
13C6-PFDA	1.250	1.280	2.4	102.4
13C7-PFUnDA	1.250	1.252	0.2	100.2
13C8-FOSA	2.500	2.410	-3.6	96.4
13C8-PFOA	2.500	2.541	1.7	101.7
13C8-PFOS	2.500	2.414	-3.4	96.6
13C9-PFNA	1.250	1.159	-7.3	92.7
4:2FTS	20.000	20.086	0.4	100.4
6:2FTS	20.000	19.149	-4.3	95.7
8:2FTS	20.000	18.722	-6.4	93.6
d3-MeFOSAA	5.000	5.156	3.1	103.1
EtFOSAA	20.000	18.961	-5.2	94.8
FOSA	20.000	19.283	-3.6	96.4
MeFOSAA	20.000	18.890	-5.6	94.4
PFBA	20.000	18.935	-5.3	94.7
PFBS	20.000	19.461	-2.7	97.3
PFDA	20.000	20.010	0.0	100.0
PFDoDA	20.000	17.763	-11.2	88.8
PFDS	20.000	18.995	-5.0	95.0
PFHpA	20.000	19.281	-3.6	96.4
PFHpS	20.000	19.306	-3.5	96.5
PFHxA	20.000	19.316	-3.4	96.6
PFHxS	20.000	21.371	6.9	106.9
PFNA	20.000	20.414	2.1	102.1
PFNS	20.000	19.414	-2.9	97.1
PFOA	20.000	17.842	-10.8	89.2
PFOS	20.000	18.090	-9.5	90.5

Initial Calibration Verification

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ICV278
 Lab FileID: 6Q18524.D

PFPeA	20.000	19.659	-1.7	98.3
PFPeS	20.000	19.659	-1.7	98.3
PFTeDA	20.000	19.473	-2.6	97.4
PFTrDA	20.000	16.478	-17.6	82.4
PFUnDA	20.000	18.356	-8.2	91.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	19.992	0.0	100.0
13C3-HFPO-DA	10.000	9.642	-3.6	96.4
9C1-PF3ONS	20.000	20.768	3.8	103.8
ADONA	20.000	18.005	-10.0	90.0
HFPO-DA	20.000	18.723	-6.4	93.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	18.502	-7.5	92.5
5:3FTCA	20.000	19.232	-3.8	96.2
7:3FTCA	20.000	18.547	-7.3	92.7
d3-MeFOSA	2.500	2.488	-0.5	99.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	18.682	-6.6	93.4
EtFOSE	100.000	98.790	-1.2	98.8
MeFOSA	20.000	18.362	-8.2	91.8
MeFOSE	100.000	99.204	-0.8	99.2
PFDoDS	20.000	17.762	-11.2	88.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.943	-1.1	98.9
d7-MeFOSE	25.000	24.496	-2.0	98.0
d9-EtFOSE	25.000	24.649	-1.4	98.6
d5-EtFOSA	2.500	2.454	-1.8	98.2
NFDHA	20.000	19.588	-2.1	97.9
PFMBA	20.000	19.712	-1.4	98.6
PFMPA	20.000	19.666	-1.7	98.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	16.563	-17.2	82.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-CC278
 Lab FileID: 6Q18525.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053023_1633_S6Q278\s6q278.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053023_1633_S6Q278\6Q18514.d
 2:D:\MassHunter\Data\053023_1633_S6Q278\6Q18515.d
 3:D:\MassHunter\Data\053023_1633_S6Q278\6Q18516.d
 4:D:\MassHunter\Data\053023_1633_S6Q278\6Q18517.d
 5:D:\MassHunter\Data\053023_1633_S6Q278\6Q18518.d
 6:D:\MassHunter\Data\053023_1633_S6Q278\6Q18519.d
 7:D:\MassHunter\Data\053023_1633_S6Q278\6Q18520.d
 8:D:\MassHunter\Data\053023_1633_S6Q278\6Q18521.d

Data File: 6Q18525
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.232	4.6	104.6
13C2-6:2FTS	5.000	5.667	13.3	113.3
13C2-8:2FTS	5.000	5.416	8.3	108.3
13C2-PFDoDA	1.250	1.190	-4.8	95.2
13C2-PFTeDA	1.250	1.168	-6.6	93.4
13C3-PFBS	2.500	2.572	2.9	102.9
13C3-PFHxS	2.500	2.652	6.1	106.1
13C4-PFBA	10.000	10.095	0.9	100.9
13C4-PFHpA	2.500	2.596	3.8	103.8
13C5-PFHxA	2.500	2.654	6.2	106.2
13C5-PFPeA	5.000	5.200	4.0	104.0
13C6-PFDA	1.250	1.189	-4.9	95.1
13C7-PFUnDA	1.250	1.216	-2.7	97.3
13C8-FOSA	2.500	2.500	0.0	100.0
13C8-PFOA	2.500	2.412	-3.5	96.5
13C8-PFOS	2.500	2.547	1.9	101.9
13C9-PFNA	1.250	1.190	-4.8	95.2
4:2FTS	9.375	9.662	3.1	103.1
6:2FTS	9.500	8.969	-5.6	94.4
8:2FTS	9.600	9.744	1.5	101.5
d3-MeFOSAA	5.000	5.307	6.1	106.1
EtFOSAA	2.500	2.445	-2.2	97.8
FOSA	2.500	2.394	-4.2	95.8
MeFOSAA	2.500	2.357	-5.7	94.3
PFBA	10.000	9.522	-4.8	95.2
PFBS	2.218	2.068	-6.8	93.2
PFDA	2.500	2.439	-2.4	97.6
PFDoDA	2.500	2.324	-7.0	93.0
PFDS	2.413	2.234	-7.4	92.6
PFHpA	2.500	2.337	-6.5	93.5
PFHpS	2.383	2.125	-10.8	89.2
PFHxA	2.500	2.264	-9.5	90.5
PFHxS	2.285	2.159	-5.5	94.5
PFNA	2.500	2.437	-2.5	97.5
PFNS	2.405	2.217	-7.8	92.2
PFOA	2.500	2.462	-1.5	98.5
PFOS	2.320	2.050	-11.6	88.4

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-CC278
 Lab FileID: 6Q18525.D

PFPeA	5.000	4.701	-6.0	94.0
PFPeS	2.353	2.128	-9.5	90.5
PFTeDA	2.500	2.446	-2.1	97.9
PFTTrDA	2.500	2.474	-1.0	99.0
PFUnDA	2.500	2.243	-10.3	89.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.671	-1.1	98.9
13C3-HFPO-DA	10.000	10.032	0.3	100.3
9C1-PF3ONS	4.675	4.611	-1.4	98.6
ADONA	4.725	4.550	-3.7	96.3
HFPO-DA	5.000	4.871	-2.6	97.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.661	-6.6	93.4
5:3FTCA	62.400	56.674	-9.2	90.8
7:3FTCA	62.400	57.841	-7.3	92.7
d3-MeFOSA	2.500	2.422	-3.1	96.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.872	-2.6	97.4
EtFOSE	12.500	12.563	0.5	100.5
MeFOSA	5.000	5.015	0.3	100.3
MeFOSE	12.500	12.142	-2.9	97.1
PFDoDS	2.425	2.247	-7.4	92.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.029	0.6	100.6
d7-MeFOSE	25.000	24.964	-0.1	99.9
d9-EtFOSE	25.000	24.592	-1.6	98.4
d5-EtFOSA	2.500	2.516	0.7	100.7
NFDHA	5.000	4.577	-8.5	91.5
PFMBA	5.000	4.712	-5.8	94.2
PFMPA	5.000	4.781	-4.4	95.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.116	-7.5	92.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-CC278
 Lab FileID: 6Q18526.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053023_1633_S6Q278\s6q278.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053023_1633_S6Q278\6Q18514.d
 2:D:\MassHunter\Data\053023_1633_S6Q278\6Q18515.d
 3:D:\MassHunter\Data\053023_1633_S6Q278\6Q18516.d
 4:D:\MassHunter\Data\053023_1633_S6Q278\6Q18517.d
 5:D:\MassHunter\Data\053023_1633_S6Q278\6Q18518.d
 6:D:\MassHunter\Data\053023_1633_S6Q278\6Q18519.d
 7:D:\MassHunter\Data\053023_1633_S6Q278\6Q18520.d
 8:D:\MassHunter\Data\053023_1633_S6Q278\6Q18521.d

Data File: 6Q18526
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.542	10.8	110.8
13C2-6:2FTS	5.000	5.381	7.6	107.6
13C2-8:2FTS	5.000	5.436	8.7	108.7
13C2-PFDoDA	1.250	1.187	-5.0	95.0
13C2-PFTeDA	1.250	1.214	-2.9	97.1
13C3-PFBS	2.500	2.556	2.2	102.2
13C3-PFHxS	2.500	2.591	3.7	103.7
13C4-PFBA	10.000	9.979	-0.2	99.8
13C4-PFHpA	2.500	2.531	1.3	101.3
13C5-PFHxA	2.500	2.599	4.0	104.0
13C5-PFPeA	5.000	5.060	1.2	101.2
13C6-PFDA	1.250	1.196	-4.3	95.7
13C7-PFUnDA	1.250	1.183	-5.4	94.6
13C8-FOSA	2.500	2.505	0.2	100.2
13C8-PFOA	2.500	2.526	1.0	101.0
13C8-PFOS	2.500	2.497	-0.1	99.9
13C9-PFNA	1.250	1.379	10.3	110.3
4:2FTS	0.750	0.866	15.5	115.5
6:2FTS	0.760	0.955	25.7	125.7
8:2FTS	0.768	0.874	13.8	113.8
d3-MeFOSAA	5.000	5.159	3.2	103.2
EtFOSAA	0.200	0.222	11.2	111.2
FOSA	0.200	0.235	17.4	117.4
MeFOSAA	0.200	0.227	13.4	113.4
PFBA	0.800	0.908	13.5	113.5
PFBS	0.177	0.187	5.4	105.4
PFDA	0.200	0.238	18.9	118.9
PFDoDA	0.200	0.238	19.0	119.0
PFDS	0.193	0.232	20.3	120.3
PFHpA	0.200	0.235	17.4	117.4
PFHpS	0.191	0.195	2.0	102.0
PFHxA	0.200	0.228	14.1	114.1
PFHxS	0.183	0.208	13.4	113.4
PFNA	0.200	0.211	5.5	105.5
PFNS	0.192	0.221	15.1	115.1
PFOA	0.200	0.237	18.3	118.3
PFOS	0.186	0.206	10.6	110.6

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-CC278
 Lab FileID: 6Q18526.D

PFPeA	0.400	0.457	14.3	114.3
PFPeS	0.188	0.200	6.2	106.2
PFTeDA	0.200	0.233	16.7	116.7
PFTTrDA	0.200	0.235	17.4	117.4
PFUnDA	0.200	0.225	12.7	112.7
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	0.378	0.452	19.5	119.5
13C3-HFPO-DA	10.000	9.913	-0.9	99.1
9C1-PF3ONS	0.367	0.467	27.1	127.1
ADONA	0.378	0.435	15.2	115.2
HFPO-DA	0.400	0.457	14.2	114.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.179	18.0	118.0
5:3FTCA	4.992	5.953	19.2	119.2
7:3FTCA	4.992	6.057	21.3	121.3
d3-MeFOSA	2.500	2.347	-6.1	93.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.487	21.7	121.7
EtFOSE	1.000	1.149	14.9	114.9
MeFOSA	0.400	0.462	15.4	115.4
MeFOSE	1.000	1.186	18.6	118.6
PFDoDS	0.194	0.187	-3.6	96.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.983	-0.3	99.7
d7-MeFOSE	25.000	24.198	-3.2	96.8
d9-EtFOSE	25.000	24.416	-2.3	97.7
d5-EtFOSA	2.500	2.383	-4.7	95.3
NFDHA	0.400	0.413	3.3	103.3
PFMBA	0.400	0.462	15.5	115.5
PFMPA	0.400	0.450	12.5	112.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.380	6.7	106.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-CC278
 Lab FileID: 6Q18535.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053023_1633_S6Q278\s6q278.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053023_1633_S6Q278\6Q18514.d
 2:D:\MassHunter\Data\053023_1633_S6Q278\6Q18515.d
 3:D:\MassHunter\Data\053023_1633_S6Q278\6Q18516.d
 4:D:\MassHunter\Data\053023_1633_S6Q278\6Q18517.d
 5:D:\MassHunter\Data\053023_1633_S6Q278\6Q18518.d
 6:D:\MassHunter\Data\053023_1633_S6Q278\6Q18519.d
 7:D:\MassHunter\Data\053023_1633_S6Q278\6Q18520.d
 8:D:\MassHunter\Data\053023_1633_S6Q278\6Q18521.d

Data File: 6Q18535
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.648	13.0	113.0
13C2-6:2FTS	5.000	5.286	5.7	105.7
13C2-8:2FTS	5.000	6.031	20.6	120.6
13C2-PFDoDA	1.250	1.221	-2.3	97.7
13C2-PFTeDA	1.250	1.266	1.3	101.3
13C3-PFBS	2.500	2.529	1.2	101.2
13C3-PFHxS	2.500	2.494	-0.2	99.8
13C4-PFBA	10.000	9.946	-0.5	99.5
13C4-PFHpA	2.500	2.455	-1.8	98.2
13C5-PFHxA	2.500	2.471	-1.2	98.8
13C5-PFPeA	5.000	4.964	-0.7	99.3
13C6-PFDA	1.250	1.185	-5.2	94.8
13C7-PFUnDA	1.250	1.161	-7.1	92.9
13C8-FOSA	2.500	2.626	5.0	105.0
13C8-PFOA	2.500	2.526	1.0	101.0
13C8-PFOS	2.500	2.556	2.3	102.3
13C9-PFNA	1.250	1.229	-1.7	98.3
4:2FTS	9.375	8.847	-5.6	94.4
6:2FTS	9.500	10.242	7.8	107.8
8:2FTS	9.600	10.109	5.3	105.3
d3-MeFOSAA	5.000	5.991	19.8	119.8
EtFOSAA	2.500	2.502	0.1	100.1
FOSA	2.500	2.414	-3.4	96.6
MeFOSAA	2.500	2.183	-12.7	87.3
PFBA	10.000	9.560	-4.4	95.6
PFBS	2.218	1.996	-10.0	90.0
PFDA	2.500	2.474	-1.1	98.9
PFDoDA	2.500	2.431	-2.7	97.3
PFDS	2.413	2.226	-7.7	92.3
PFHpA	2.500	2.445	-2.2	97.8
PFHpS	2.383	2.289	-4.0	96.0
PFHxA	2.500	2.360	-5.6	94.4
PFHxS	2.285	2.135	-6.6	93.4
PFNA	2.500	2.377	-4.9	95.1
PFNS	2.405	2.227	-7.4	92.6
PFOA	2.500	2.463	-1.5	98.5
PFOS	2.320	2.178	-6.1	93.9

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-CC278
 Lab FileID: 6Q18535.D

PFPeA	5.000	4.719	-5.6	94.4
PFPeS	2.353	2.176	-7.5	92.5
PFTeDA	2.500	2.185	-12.6	87.4
PFTTrDA	2.500	2.371	-5.2	94.8
PFUnDA	2.500	2.515	0.6	100.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.518	-4.4	95.6
13C3-HFPO-DA	10.000	9.898	-1.0	99.0
9C1-PF3ONS	4.675	4.716	0.9	100.9
ADONA	4.725	4.426	-6.3	93.7
HFPO-DA	5.000	4.613	-7.7	92.3
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.609	-7.0	93.0
5:3FTCA	62.400	60.237	-3.5	96.5
7:3FTCA	62.400	60.844	-2.5	97.5
d3-MeFOSA	2.500	2.437	-2.5	97.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.682	-6.4	93.6
EtFOSE	12.500	12.170	-2.6	97.4
MeFOSA	5.000	5.077	1.5	101.5
MeFOSE	12.500	11.640	-6.9	93.1
PFDoDS	2.425	2.367	-2.4	97.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.548	11.0	111.0
d7-MeFOSE	25.000	25.705	2.8	102.8
d9-EtFOSE	25.000	24.371	-2.5	97.5
d5-EtFOSA	2.500	2.621	4.9	104.9
NFDHA	5.000	4.893	-2.1	97.9
PFMBA	5.000	4.724	-5.5	94.5
PFMPA	5.000	4.767	-4.7	95.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.235	-4.8	95.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ECC278
 Lab FileID: 6Q18546.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053023_1633_S6Q278\s6q278.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053023_1633_S6Q278\6Q18514.d
 2:D:\MassHunter\Data\053023_1633_S6Q278\6Q18515.d
 3:D:\MassHunter\Data\053023_1633_S6Q278\6Q18516.d
 4:D:\MassHunter\Data\053023_1633_S6Q278\6Q18517.d
 5:D:\MassHunter\Data\053023_1633_S6Q278\6Q18518.d
 6:D:\MassHunter\Data\053023_1633_S6Q278\6Q18519.d
 7:D:\MassHunter\Data\053023_1633_S6Q278\6Q18520.d
 8:D:\MassHunter\Data\053023_1633_S6Q278\6Q18521.d

Data File: 6Q18546
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.273	25.5	125.5
13C2-6:2FTS	5.000	6.191	23.8	123.8
13C2-8:2FTS	5.000	5.931	18.6	118.6
13C2-PFDoDA	1.250	1.251	0.1	100.1
13C2-PFTeDA	1.250	1.319	5.5	105.5
13C3-PFBS	2.500	2.606	4.2	104.2
13C3-PFHxS	2.500	2.650	6.0	106.0
13C4-PFBA	10.000	10.027	0.3	100.3
13C4-PFHpA	2.500	2.467	-1.3	98.7
13C5-PFHxA	2.500	2.462	-1.5	98.5
13C5-PFPeA	5.000	5.004	0.1	100.1
13C6-PFDA	1.250	1.341	7.2	107.2
13C7-PFUnDA	1.250	1.263	1.1	101.1
13C8-FOSA	2.500	2.554	2.2	102.2
13C8-PFOA	2.500	2.460	-1.6	98.4
13C8-PFOS	2.500	2.430	-2.8	97.2
13C9-PFNA	1.250	1.349	8.0	108.0
4:2FTS	9.375	8.937	-4.7	95.3
6:2FTS	9.500	9.699	2.1	102.1
8:2FTS	9.600	10.301	7.3	107.3
d3-MeFOSAA	5.000	5.969	19.4	119.4
EtFOSAA	2.500	2.201	-12.0	88.0
FOSA	2.500	2.287	-8.5	91.5
MeFOSAA	2.500	2.155	-13.8	86.2
PFBA	10.000	9.580	-4.2	95.8
PFBS	2.218	2.122	-4.3	95.7
PFDA	2.500	2.288	-8.5	91.5
PFDoDA	2.500	2.408	-3.7	96.3
PFDS	2.413	2.393	-0.8	99.2
PFHpA	2.500	2.498	-0.1	99.9
PFHpS	2.383	2.172	-8.9	91.1
PFHxA	2.500	2.252	-9.9	90.1
PFHxS	2.285	2.062	-9.8	90.2
PFNA	2.500	2.227	-10.9	89.1
PFNS	2.405	2.329	-3.2	96.8
PFOA	2.500	2.325	-7.0	93.0
PFOS	2.320	2.310	-0.4	99.6

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q278-ECC278
 Lab FileID: 6Q18546.D

PFPeA	5.000	4.676	-6.5	93.5
PFPeS	2.353	2.159	-8.2	91.8
PFTeDA	2.500	2.289	-8.4	91.6
PFTTrDA	2.500	2.391	-4.4	95.6
PFUnDA	2.500	2.385	-4.6	95.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.628	-2.1	97.9
13C3-HFPO-DA	10.000	9.469	-5.3	94.7
9C1-PF3ONS	4.675	4.942	5.7	105.7
ADONA	4.725	4.600	-2.7	97.3
HFPO-DA	5.000	4.858	-2.8	97.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.609	-7.0	93.0
5:3FTCA	62.400	60.489	-3.1	96.9
7:3FTCA	62.400	62.384	0.0	100.0
d3-MeFOSA	2.500	2.495	-0.2	99.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.740	-5.2	94.8
EtFOSE	12.500	11.798	-5.6	94.4
MeFOSA	5.000	4.887	-2.3	97.7
MeFOSE	12.500	12.078	-3.4	96.6
PFDoDS	2.425	2.379	-1.9	98.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.838	16.8	116.8
d7-MeFOSE	25.000	24.260	-3.0	97.0
d9-EtFOSE	25.000	24.455	-2.2	97.8
d5-EtFOSA	2.500	2.564	2.6	102.6
NFDHA	5.000	4.816	-3.7	96.3
PFMBA	5.000	4.706	-5.9	94.1
PFMPA	5.000	4.747	-5.1	94.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.166	-6.4	93.6

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods											
Method File	1633_053123_S6Q279_quantmethod.xml											
Batch Name	D:\MassHunter\Data\053123_1633_S6Q279\QuantResults\S6Q279_batch.bin											
Last Calib Update	6/1/2023 10:30:25 AM											
Level Name	Calibration Files	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
1	D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d	Avg RF	0.3753	0.3334	0.3219	0.3137	0.3170	0.3291	0.3376	0.3206	0.3311	5.928
2	D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d	Avg RF	0.7081	0.6363	0.6350	0.6089	0.6049	0.6302	0.6425	0.6190	0.6356	5.068
3	D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d	Avg RF	0.0863	0.0769	0.0759	0.0726	0.0726	0.0764	0.0777	0.0764	0.0769	5.562
4	D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d	Avg RF	1.2962	1.2068	1.1733	1.1429	1.1467	1.1930	1.1954	1.1530	1.2009	6.870
5	D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d	Avg RF	0.9475	0.8203	0.8090	0.7809	0.7790	0.8137	0.8106	0.7773	0.8173	6.776
6	D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d	Avg RF	0.1255	0.1045	0.1003	0.0957	0.0984	0.0992	0.0981	0.0958	0.1022	9.605
7	D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d	Avg RF	0.9569	0.8366	0.7860	0.8138	0.8001	0.8241	0.8423	0.8553	0.8394	6.266
8	D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d	Avg RF	1.1788	1.0306	1.0200	1.0337	1.0745	1.0758	1.0553	1.0552	1.0655	4.699
		Avg RF	0.1801	0.1551	0.1462	0.1433	0.1409	0.1457	0.1500	0.1465	0.1510	8.295
		Avg RF	0.1170	0.1068	0.0947	0.1010	0.1022	0.1020	0.1045	0.0991	0.1034	6.340
		Avg RF	1.2923	1.0943	1.0924	1.0209	1.0772	1.0930	1.0798	1.1005	1.1063	7.165
		Avg RF	1.1279	1.0893	1.0165	1.0390	1.0020	1.0999	1.0964	1.0686	1.0674	4.148
		Avg RF	1.0714	0.8740	0.8546	0.7861	0.8477	0.8845	0.8665	0.9012	0.8857	9.309
		Avg RF	1.7245	1.4816	1.2708	1.4351	1.3572	1.4333	1.4380	1.4541	1.4493	8.948
		Avg RF	0.9140	0.8348	0.7848	0.7448	0.8124	0.8179	0.8375	0.7519	0.8122	6.658

Generated at 10:31 AM on 6/1/2023

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Initial Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.9985	0.8696	0.8524	0.8384	0.8018	0.8576	0.8750	0.7732	0.8583	7.747
T PFTfDA	Avg RF	1.0429	0.8646	0.8388	0.8777	0.8411	0.8620	0.8561	0.7527	0.8670	9.326
I M2-PFTeDA	Avg RF	1.4406	1.1849	1.2263	1.2265	1.1335	1.2310	1.2517	1.1424	1.2296	7.768
T PFTeDA	Avg RF					ISTD					
I M8-FOSA	Avg RF	1.0086	0.8973	0.8409	0.8318	0.8197	0.8415	0.8613	0.8220	0.8654	7.284
T FOSA	Avg RF					ISTD					
I M3-PFBS	Avg RF	0.9711	0.8510	0.8226	0.8216	0.7977	0.8209	0.8641	0.8552	0.8505	6.288
T PFBS	Avg RF					ISTD					
I M3-PFHxS	Avg RF	1.3123	1.1962	1.0851	1.0839	1.0466	1.1083	1.1071	1.0743	1.1267	7.703
T PFPeS	Avg RF	1.2945	1.1639	1.1673	1.1064	1.0631	1.1201	1.0969	1.0341	1.1308	7.093
T PFHxS	Avg RF					ISTD					
I M8-PFOS	Avg RF	1.4789	1.2675	1.1993	1.0852	1.1390	1.0672	1.2016	1.1506	1.1987	10.892
T PFHpS	Avg RF	1.3623	1.1070	1.1656	1.0866	1.1021	1.0525	1.1549	1.1102	1.1427	8.378
T PFOS	Avg RF	1.2813	0.9838	1.0179	0.9325	0.9544	0.8893	1.0303	0.9381	1.0034	12.102
T PFNS	Avg RF	0.7640	0.6739	0.6370	0.5956	0.6037	0.5499	0.5985	0.5772	0.6250	10.786
T PFDS	Avg RF	0.3275	0.2854	0.2940	0.2532	0.2608	0.2471	0.2840	0.2696	0.2777	9.364
T PFDoDS	Avg RF					ISTD					
I M2-4:2FTS	Avg RF	8.0870	6.9217	7.4430	7.2990	6.9249	7.3091	7.4912	6.6284	7.2630	6.158
T 4:2FTS	Avg RF					ISTD					
I M2-6:2FTS	Avg RF	5.7336	5.0095	4.7009	4.8193	4.8783	5.1016	4.9196	4.1446	4.9134	8.983
T 6:2FTS	Avg RF					ISTD					
I M2-8:2FTS	Avg RF	3.4484	2.6471	3.0533	2.7503	2.4593	2.7779	2.8341	2.2782	2.7811	12.877
T 8:2FTS	Avg RF					ISTD					
I M3-MeFOSAA	Avg RF	1.0257	1.0983	1.0637	1.0126	0.9408	0.9902	1.0671	1.0266	1.0281	4.794
T MeFOSAA	Avg RF					ISTD					
I M3-HFO-DA	Avg RF	0.9559	0.8428	0.8608	0.8520	0.7887	0.8050	0.8606	0.8148	0.8476	6.060
T HFO-DA	Avg RF	15.27	13.21	13.51	13.30	12.89	12.60	13.06	12.41	13.28	6.642
T ADONA	Avg RF	6.5990	5.6552	6.0195	6.1012	5.7387	5.6701	5.8761	5.6375	5.9122	5.538
T 9Cl-PF3ONS	Avg RF	4.1075	3.7206	3.8988	3.8689	3.5814	3.7069	3.6084	3.5242	3.7521	5.197
T 11Cl-PF3OUds	Avg RF					ISTD					
I M5-EFOSAA	Avg RF	0.7783	0.5873	0.6203	0.6043	0.6320	0.6471	0.6662	0.6107	0.6433	9.316
T EFOSAA	Avg RF					ISTD					
I M7-MeFOSE	Avg RF	1.1693	0.9542	0.9662	0.9575	0.8976	1.0115	1.0020	0.9899	0.9935	7.989
T MeFOSE	Avg RF					ISTD					
I M9-EFOSE	Avg RF	1.2705	1.1375	1.1135	1.0713	1.0794	1.0696	1.1120	1.0687	1.1153	6.068
T EFOSE	Avg RF					ISTD					

Generated at 10:31 AM on 6/1/2023

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Initial Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA		1.2909	1.2385	1.1332	1.1413	1.0935	1.1354	1.1466	1.1429	1.1653	5.386
T EFOSA	Avg RF					ISTD					
I M3-MeFOSA		1.0470	0.9671	0.9071	0.8783	0.9155	0.8916	0.9095	0.8388	0.9193	6.855
T MeFOSA	Avg RF					ISTD					
I 13C4-PFOS		0.8100	0.8287	0.7710	0.7163	0.8928	0.8880	0.7954	0.7540	0.8070	7.677
S d3-MeFOSAA	Linear					ISTD					
S 13C8-PFOS	Linear	0.7359	0.8012	0.7842	0.7648	0.8042	0.9118	0.7903	0.8150	0.8009	6.405
S d5-EFOSAA	Linear	0.7143	0.7249	0.7594	0.6844	0.7348	0.7588	0.7165	0.7772	0.7338	4.113
S 13C8-FOSA	Linear	1.8329	1.9012	1.9605	1.7592	1.9169	2.0451	1.9313	1.8988	1.9057	4.437
S d7-MeFOSE	Linear	0.5998	0.6443	0.6491	0.5895	0.6575	0.6626	0.6213	0.5990	0.6279	4.638
S d3-MeFOSA	Linear	0.7296	0.7511	0.7727	0.7224	0.7553	0.8328	0.7819	0.8328	0.7723	5.464
S d9-EFOSE	Linear	0.8200	0.8092	0.8446	0.7733	0.8314	0.8997	0.8109	0.7807	0.8212	4.826
S d5-EFOSA	Linear	0.7336	0.7115	0.7362	0.6797	0.7540	0.7718	0.7326	0.7305	0.7312	3.741
I 13C3-PFBA		1.1914	1.1940	1.1862	1.2012	1.1945	1.1898	1.1853	1.1841	1.1908	0.482
S 13C4-PFBA	Linear					ISTD					
I 1802-PFHxS		0.1829	0.1808	0.1759	0.1672	0.1717	0.1586	0.1574	0.1396	0.1668	8.653
S 13C2-4:2FTS	Linear	2.2616	2.2535	2.2849	2.2131	2.2673	2.1694	2.2469	2.0037	2.2126	4.148
S 13C3-PFBS	Linear	0.2556	0.2670	0.2617	0.2435	0.2479	0.2221	0.2326	0.2067	0.2421	8.503
S 13C2-6:2FTS	Linear	1.4111	1.4364	1.3855	1.3833	1.4199	1.3438	1.4474	1.3457	1.3966	2.785
S 13C3-PFHxS	Linear	0.2513	0.2680	0.2412	0.2507	0.2682	0.2307	0.2325	0.2222	0.2456	6.935
S 13C2-8:2FTS	Linear					ISTD					
I 13C4-PFOA		0.9443	0.9211	0.9529	0.9481	0.9538	0.9088	0.9525	0.9109	0.9365	2.088
S 13C8-PFOA	Linear					ISTD					
I 13C2-PFDA		0.7319	0.7442	0.7405	0.7276	0.7348	0.7057	0.7585	0.7167	0.7325	2.233
S 13C6-PFDA	Linear	0.9494	0.9427	0.8792	0.9983	0.9496	0.8972	0.9576	0.9015	0.9344	4.175
S 13C7-PFUnDA	Linear	0.8602	0.8799	0.8272	0.8746	0.8934	0.8360	0.8722	0.9015	0.8681	2.990
S 13C2-PFDODA	Linear	0.4778	0.4652	0.4524	0.4759	0.4967	0.4534	0.4810	0.4765	0.4724	3.139
S 13C2-PFTeDA	Linear					ISTD					
I 13C5-PFNA		0.8117	0.8501	0.8290	0.7576	0.8634	0.7797	0.8420	0.8565	0.8238	4.626
S 13C9-PFNA	Linear					ISTD					
I 13C2-PFHxA		0.4878	0.4887	0.4942	0.4761	0.4912	0.4846	0.4891	0.4784	0.4863	1.284
S 13C5-PPeA	Linear	1.0756	1.0822	1.0877	1.0424	1.0526	1.0638	1.0560	1.0063	1.0583	2.464
S 13C5-PFHxA	Linear	0.1681	0.1651	0.1611	0.1558	0.1643	0.1660	0.1674	0.1664	0.1643	2.455
S 13C3-HPOD-A	Linear	0.9719	0.9961	0.9930	0.9741	0.9714	0.9757	0.9993	0.9469	0.9786	1.760
S 13C4-PFHpA	Linear					ISTD					

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

Initial Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PBBA	Linear	y = 1.190803 * x	
S 13C5-PFPeA	Linear	y = 0.486251 * x	
S 13C2-4:2FTS	Linear	y = 0.166755 * x	
S 13C3-PFBS	Linear	y = 2.212557 * x	
S 13C5-PFHxA	Linear	y = 1.058308 * x	
S 13C3-HFPO-DA	Linear	y = 0.164282 * x	
S 13C4-PFHpA	Linear	y = 0.978557 * x	
S 13C8-PFOA	Linear	y = 0.242136 * x	
S 13C3-PFHxS	Linear	y = 0.936537 * x	
S 13C9-PFNA	Linear	y = 1.396640 * x	
S 13C2-8:2FTS	Linear	y = 0.823767 * x	
S 13C6-PEDA	Linear	y = 0.245600 * x	
S d3-MeFOSAA	Linear	y = 0.732501 * x	
S 13C8-PFOS	Linear	y = 0.800922 * x	
S d5-EFOSAA	Linear	y = 0.807010 * x	
S 13C7-PFUInDA	Linear	y = 0.733798 * x	
S 13C2-PFDODA	Linear	y = 0.934423 * x	
S 13C8-FOSA	Linear	y = 0.868119 * x	
S 13C2-PFTeDA	Linear	y = 1.905749 * x	
S d7-MeFOSE	Linear	y = 0.472355 * x	
S d3-MeFOSA	Linear	y = 0.627877 * x	
S d9-EFOSE	Linear	y = 0.772326 * x	
S d5-EFOSA	Linear	y = 0.821228 * x	
S d5-EFOSA	Linear	y = 0.731236 * x	

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

Initial Calibration Verification

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18595.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18595
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.244	4.9	104.9
13C2-6:2FTS	5.000	5.043	0.9	100.9
13C2-8:2FTS	5.000	4.830	-3.4	96.6
13C2-PFDoDA	1.250	1.242	-0.6	99.4
13C2-PFTeDA	1.250	1.207	-3.4	96.6
13C3-PFBS	2.500	2.497	-0.1	99.9
13C3-PFHxS	2.500	2.402	-3.9	96.1
13C4-PFBA	10.000	10.030	0.3	100.3
13C4-PFHpA	2.500	2.556	2.2	102.2
13C5-PFHxA	2.500	2.564	2.6	102.6
13C5-PFPeA	5.000	5.005	0.1	100.1
13C6-PFDA	1.250	1.208	-3.4	96.6
13C7-PFUnDA	1.250	1.319	5.5	105.5
13C8-FOSA	2.500	2.530	1.2	101.2
13C8-PFOA	2.500	2.436	-2.6	97.4
13C8-PFOS	2.500	2.359	-5.7	94.3
13C9-PFNA	1.250	1.216	-2.7	97.3
4:2FTS	9.375	9.353	-0.2	99.8
6:2FTS	9.500	10.523	10.8	110.8
8:2FTS	9.600	10.500	9.4	109.4
d3-MeFOSAA	5.000	4.955	-0.9	99.1
EtFOSAA	2.500	2.553	2.1	102.1
FOSA	2.500	2.593	3.7	103.7
MeFOSAA	2.500	2.732	9.3	109.3
PFBA	10.000	10.538	5.4	105.4
PFBS	2.218	2.208	-0.4	99.6
PFDA	2.500	2.624	5.0	105.0
PFDoDA	2.500	2.513	0.5	100.5
PFDS	2.413	2.631	9.1	109.1
PFHpA	2.500	2.606	4.2	104.2
PFHpS	2.383	2.489	4.5	104.5
PFHxA	2.500	2.609	4.3	104.3
PFHxS	2.285	2.439	6.7	106.7
PFNA	2.500	2.682	7.3	107.3
PFNS	2.405	2.489	3.5	103.5
PFOA	2.500	2.460	-1.6	98.4
PFOS	2.320	2.528	8.9	108.9

Initial Calibration Verification

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18595.D

PFPeA	5.000	5.240	4.8	104.8
PFPeS	2.353	2.646	12.4	112.4
PFTeDA	2.500	2.623	4.9	104.9
PFTTrDA	2.500	2.480	-0.8	99.2
PFUnDA	2.500	2.447	-2.1	97.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.990	5.6	105.6
13C3-HFPO-DA	10.000	10.055	0.6	100.6
9C1-PF3ONS	4.675	5.075	8.5	108.5
ADONA	4.725	4.958	4.9	104.9
HFPO-DA	5.000	5.043	0.9	100.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	13.044	4.5	104.5
5:3FTCA	62.400	65.313	4.7	104.7
7:3FTCA	62.400	63.718	2.1	102.1
d3-MeFOSA	2.500	2.313	-7.5	92.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.247	4.9	104.9
EtFOSE	12.500	13.586	8.7	108.7
MeFOSA	5.000	5.552	11.0	111.0
MeFOSE	12.500	14.017	12.1	112.1
PFDoDS	2.425	2.625	8.3	108.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.241	4.8	104.8
d7-MeFOSE	25.000	23.341	-6.6	93.4
d9-EtFOSE	25.000	23.664	-5.3	94.7
d5-EtFOSA	2.500	2.431	-2.8	97.2
NFDHA	5.000	5.179	3.6	103.6
PFMBA	5.000	5.221	4.4	104.4
PFMPA	5.000	5.272	5.4	105.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.483	0.7	100.7

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18596.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18596
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.060	1.2	101.2
13C2-6:2FTS	5.000	4.998	0.0	100.0
13C2-8:2FTS	5.000	5.235	4.7	104.7
13C2-PFDoDA	1.250	1.343	7.4	107.4
13C2-PFTeDA	1.250	1.348	7.8	107.8
13C3-PFBS	2.500	2.461	-1.5	98.5
13C3-PFHxS	2.500	2.393	-4.3	95.7
13C4-PFBA	10.000	10.011	0.1	100.1
13C4-PFHpA	2.500	2.610	4.4	104.4
13C5-PFHxA	2.500	2.632	5.3	105.3
13C5-PFPeA	5.000	5.264	5.3	105.3
13C6-PFDA	1.250	1.243	-0.6	99.4
13C7-PFUnDA	1.250	1.231	-1.5	98.5
13C8-FOSA	2.500	2.434	-2.7	97.3
13C8-PFOA	2.500	2.524	0.9	100.9
13C8-PFOS	2.500	2.449	-2.0	98.0
13C9-PFNA	1.250	1.238	-1.0	99.0
4:2FTS	20.000	19.446	-2.8	97.2
6:2FTS	20.000	20.311	1.6	101.6
8:2FTS	20.000	18.119	-9.4	90.6
d3-MeFOSAA	5.000	4.725	-5.5	94.5
EtFOSAA	20.000	21.165	5.8	105.8
FOSA	20.000	17.735	-11.3	88.7
MeFOSAA	20.000	20.900	4.5	104.5
PFBA	20.000	19.012	-4.9	95.1
PFBS	20.000	19.907	-0.5	99.5
PFDA	20.000	20.127	0.6	100.6
PFDoDA	20.000	17.291	-13.5	86.5
PFDS	20.000	18.650	-6.8	93.2
PFHpA	20.000	19.314	-3.4	96.6
PFHpS	20.000	19.127	-4.4	95.6
PFHxA	20.000	18.145	-9.3	90.7
PFHxS	20.000	20.599	3.0	103.0
PFNA	20.000	20.844	4.2	104.2
PFNS	20.000	19.768	-1.2	98.8
PFOA	20.000	19.191	-4.0	96.0
PFOS	20.000	16.710	-16.5	83.5

Initial Calibration Verification

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18596.D

PFPeA	20.000	19.672	-1.6	98.4
PFPeS	20.000	19.453	-2.7	97.3
PFTeDA	20.000	18.975	-5.1	94.9
PFTrDA	20.000	15.949	-20.3	79.7
PFUnDA	20.000	18.688	-6.6	93.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	19.529	-2.4	97.6
13C3-HFPO-DA	10.000	10.672	6.7	106.7
9C1-PF3ONS	20.000	20.061	0.3	100.3
ADONA	20.000	17.293	-13.5	86.5
HFPO-DA	20.000	18.531	-7.3	92.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	18.811	-5.9	94.1
5:3FTCA	20.000	19.622	-1.9	98.1
7:3FTCA	20.000	18.808	-6.0	94.0
d3-MeFOSA	2.500	2.344	-6.3	93.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	17.622	-11.9	88.1
EtFOSE	100.000	99.231	-0.8	99.2
MeFOSA	20.000	19.231	-3.8	96.2
MeFOSE	100.000	97.876	-2.1	97.9
PFDODS	20.000	17.693	-11.5	88.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.588	-8.2	91.8
d7-MeFOSE	25.000	24.607	-1.6	98.4
d9-EtFOSE	25.000	24.277	-2.9	97.1
d5-EtFOSA	2.500	2.494	-0.2	99.8
NFDHA	20.000	18.999	-5.0	95.0
PFMBA	20.000	19.590	-2.1	97.9
PFMPA	20.000	19.542	-2.3	97.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	16.821	-15.9	84.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18597.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18597
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.349	7.0	107.0
13C2-6:2FTS	5.000	5.372	7.4	107.4
13C2-8:2FTS	5.000	5.146	2.9	102.9
13C2-PFDoDA	1.250	1.148	-8.2	91.8
13C2-PFTeDA	1.250	1.213	-2.9	97.1
13C3-PFBS	2.500	2.537	1.5	101.5
13C3-PFHxS	2.500	2.417	-3.3	96.7
13C4-PFBA	10.000	9.949	-0.5	99.5
13C4-PFHpA	2.500	2.551	2.0	102.0
13C5-PFHxA	2.500	2.570	2.8	102.8
13C5-PFPeA	5.000	5.086	1.7	101.7
13C6-PFDA	1.250	1.165	-6.8	93.2
13C7-PFUnDA	1.250	1.242	-0.7	99.3
13C8-FOSA	2.500	2.463	-1.5	98.5
13C8-PFOA	2.500	2.541	1.6	101.6
13C8-PFOS	2.500	2.442	-2.3	97.7
13C9-PFNA	1.250	1.184	-5.3	94.7
4:2FTS	9.375	8.679	-7.4	92.6
6:2FTS	9.500	9.189	-3.3	96.7
8:2FTS	9.600	9.191	-4.3	95.7
d3-MeFOSAA	5.000	5.002	0.0	100.0
EtFOSAA	2.500	2.554	2.1	102.1
FOSA	2.500	2.337	-6.5	93.5
MeFOSAA	2.500	2.355	-5.8	94.2
PFBA	10.000	9.597	-4.0	96.0
PFBS	2.218	2.117	-4.5	95.5
PFDA	2.500	2.531	1.3	101.3
PFDoDA	2.500	2.507	0.3	100.3
PFDS	2.413	2.160	-10.5	89.5
PFHpA	2.500	2.325	-7.0	93.0
PFHpS	2.383	2.243	-5.9	94.1
PFHxA	2.500	2.360	-5.6	94.4
PFHxS	2.285	2.227	-2.5	97.5
PFNA	2.500	2.596	3.8	103.8
PFNS	2.405	2.177	-9.5	90.5
PFOA	2.500	2.418	-3.3	96.7
PFOS	2.320	2.149	-7.4	92.6

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18597.D

PFPeA	5.000	4.803	-3.9	96.1
PFPeS	2.353	2.386	1.4	101.4
PFTeDA	2.500	2.348	-6.1	93.9
PFTrDA	2.500	2.529	1.2	101.2
PFUnDA	2.500	2.306	-7.8	92.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.645	-1.7	98.3
13C3-HFPO-DA	10.000	9.968	-0.3	99.7
9C1-PF3ONS	4.675	4.776	2.2	102.2
ADONA	4.725	4.622	-2.2	97.8
HFPO-DA	5.000	4.743	-5.1	94.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.793	-5.5	94.5
5:3FTCA	62.400	59.219	-5.1	94.9
7:3FTCA	62.400	60.802	-2.6	97.4
d3-MeFOSA	2.500	2.333	-6.7	93.3
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.586	-8.3	91.7
EtFOSE	12.500	12.021	-3.8	96.2
MeFOSA	5.000	5.049	1.0	101.0
MeFOSE	12.500	11.924	-4.6	95.4
PFDoDS	2.425	2.340	-3.5	96.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.729	-5.4	94.6
d7-MeFOSE	25.000	24.447	-2.2	97.8
d9-EtFOSE	25.000	24.396	-2.4	97.6
d5-EtFOSA	2.500	2.489	-0.4	99.6
NFDHA	5.000	4.649	-7.0	93.0
PFMBA	5.000	4.733	-5.3	94.7
PFMPA	5.000	4.792	-4.2	95.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.246	-4.6	95.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18598.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18598
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.495	9.9	109.9
13C2-6:2FTS	5.000	5.184	3.7	103.7
13C2-8:2FTS	5.000	5.048	1.0	101.0
13C2-PFDoDA	1.250	1.242	-0.7	99.3
13C2-PFTeDA	1.250	1.226	-1.9	98.1
13C3-PFBS	2.500	2.606	4.2	104.2
13C3-PFHxS	2.500	2.569	2.7	102.7
13C4-PFBA	10.000	9.952	-0.5	99.5
13C4-PFHpA	2.500	2.542	1.7	101.7
13C5-PFHxA	2.500	2.466	-1.3	98.7
13C5-PFPeA	5.000	4.999	0.0	100.0
13C6-PFDA	1.250	1.198	-4.1	95.9
13C7-PFUnDA	1.250	1.222	-2.3	97.7
13C8-FOSA	2.500	2.479	-0.8	99.2
13C8-PFOA	2.500	2.408	-3.7	96.3
13C8-PFOS	2.500	2.444	-2.2	97.8
13C9-PFNA	1.250	1.276	2.1	102.1
4:2FTS	0.750	0.888	18.5	118.5
6:2FTS	0.760	0.915	20.4	120.4
8:2FTS	0.768	0.846	10.2	110.2
d3-MeFOSAA	5.000	4.735	-5.3	94.7
EtFOSAA	0.200	0.258	29.2	129.2
FOSA	0.200	0.227	13.3	113.3
MeFOSAA	0.200	0.235	17.7	117.7
PFBA	0.800	0.909	13.7	113.7
PFBS	0.177	0.207	17.0	117.0
PFDA	0.200	0.222	11.0	111.0
PFDoDA	0.200	0.228	14.2	114.2
PFDS	0.193	0.227	17.6	117.6
PFHpA	0.200	0.224	11.8	111.8
PFHpS	0.191	0.221	15.8	115.8
PFHxA	0.200	0.228	13.8	113.8
PFHxS	0.183	0.224	22.5	122.5
PFNA	0.200	0.204	1.9	101.9
PFNS	0.192	0.219	13.9	113.9
PFOA	0.200	0.211	5.3	105.3
PFOS	0.186	0.224	20.2	120.2

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18598.D

PFPeA	0.400	0.458	14.6	114.6
PFPeS	0.188	0.218	16.1	116.1
PFTeDA	0.200	0.229	14.3	114.3
PFTTrDA	0.200	0.247	23.6	123.6
PFUnDA	0.200	0.245	22.3	122.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.378	0.401	6.1	106.1
13C3-HFPO-DA	10.000	10.046	0.5	100.5
9C1-PF3ONS	0.367	0.432	17.7	117.7
ADONA	0.378	0.429	13.5	113.5
HFPO-DA	0.400	0.455	13.7	113.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.143	14.5	114.5
5:3FTCA	4.992	5.882	17.8	117.8
7:3FTCA	4.992	6.104	22.3	122.3
d3-MeFOSA	2.500	2.387	-4.5	95.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.471	17.7	117.7
EtFOSE	1.000	1.109	10.9	110.9
MeFOSA	0.400	0.483	20.7	120.7
MeFOSE	1.000	1.191	19.1	119.1
PFDoDS	0.194	0.225	15.9	115.9
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.745	-5.1	94.9
d7-MeFOSE	25.000	24.126	-3.5	96.5
d9-EtFOSE	25.000	24.519	-1.9	98.1
d5-EtFOSA	2.500	2.363	-5.5	94.5
NFDHA	0.400	0.457	14.1	114.1
PFMBA	0.400	0.447	11.8	111.8
PFMPA	0.400	0.450	12.5	112.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.409	14.9	114.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18609.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18609
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.112	2.2	102.2
13C2-6:2FTS	5.000	5.326	6.5	106.5
13C2-8:2FTS	5.000	5.166	3.3	103.3
13C2-PFDoDA	1.250	1.219	-2.5	97.5
13C2-PFTeDA	1.250	1.209	-3.3	96.7
13C3-PFBS	2.500	2.573	2.9	102.9
13C3-PFHxS	2.500	2.422	-3.1	96.9
13C4-PFBA	10.000	10.011	0.1	100.1
13C4-PFHpA	2.500	2.541	1.6	101.6
13C5-PFHxA	2.500	2.582	3.3	103.3
13C5-PFPeA	5.000	5.170	3.4	103.4
13C6-PFDA	1.250	1.230	-1.6	98.4
13C7-PFUnDA	1.250	1.314	5.1	105.1
13C8-FOSA	2.500	2.536	1.5	101.5
13C8-PFOA	2.500	2.651	6.0	106.0
13C8-PFOS	2.500	2.621	4.9	104.9
13C9-PFNA	1.250	1.269	1.5	101.5
4:2FTS	9.375	9.349	-0.3	99.7
6:2FTS	9.500	9.245	-2.7	97.3
8:2FTS	9.600	9.264	-3.5	96.5
d3-MeFOSAA	5.000	5.352	7.0	107.0
EtFOSAA	2.500	2.462	-1.5	98.5
FOSA	2.500	2.297	-8.1	91.9
MeFOSAA	2.500	2.333	-6.7	93.3
PFBA	10.000	9.524	-4.8	95.2
PFBS	2.218	1.946	-12.3	87.7
PFDA	2.500	2.493	-0.3	99.7
PFDoDA	2.500	2.382	-4.7	95.3
PFDS	2.413	2.208	-8.5	91.5
PFHpA	2.500	2.407	-3.7	96.3
PFHpS	2.383	2.142	-10.1	89.9
PFHxA	2.500	2.330	-6.8	93.2
PFHxS	2.285	2.301	0.7	100.7
PFNA	2.500	2.403	-3.9	96.1
PFNS	2.405	2.230	-7.3	92.7
PFOA	2.500	2.499	0.0	100.0
PFOS	2.320	1.986	-14.4	85.6

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18609.D

PFPeA	5.000	4.787	-4.3	95.7
PFPeS	2.353	2.397	1.9	101.9
PFTeDA	2.500	2.457	-1.7	98.3
PFTTrDA	2.500	2.294	-8.2	91.8
PFUnDA	2.500	2.333	-6.7	93.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.459	-5.6	94.4
13C3-HFPO-DA	10.000	10.069	0.7	100.7
9C1-PF3ONS	4.675	4.575	-2.1	97.9
ADONA	4.725	4.607	-2.5	97.5
HFPO-DA	5.000	4.660	-6.8	93.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.893	-4.7	95.3
5:3FTCA	62.400	57.502	-7.9	92.1
7:3FTCA	62.400	60.090	-3.7	96.3
d3-MeFOSA	2.500	2.404	-3.8	96.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.786	-4.3	95.7
EtFOSE	12.500	11.162	-10.7	89.3
MeFOSA	5.000	5.042	0.8	100.8
MeFOSE	12.500	12.081	-3.4	96.6
PFDoDS	2.425	2.213	-8.7	91.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.887	-2.3	97.7
d7-MeFOSE	25.000	25.254	1.0	101.0
d9-EtFOSE	25.000	26.575	6.3	106.3
d5-EtFOSA	2.500	2.531	1.2	101.2
NFDHA	5.000	4.932	-1.4	98.6
PFMBA	5.000	4.734	-5.3	94.7
PFMPA	5.000	4.797	-4.1	95.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.238	-4.8	95.2

CC Criteria: +/- 30%

6.9.13

6

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18621.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18621
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.010	0.2	100.2
13C2-6:2FTS	5.000	5.061	1.2	101.2
13C2-8:2FTS	5.000	4.875	-2.5	97.5
13C2-PFDoDA	1.250	1.241	-0.7	99.3
13C2-PFTeDA	1.250	1.309	4.7	104.7
13C3-PFBS	2.500	2.476	-1.0	99.0
13C3-PFHxS	2.500	2.346	-6.2	93.8
13C4-PFBA	10.000	9.980	-0.2	99.8
13C4-PFHpA	2.500	2.516	0.6	100.6
13C5-PFHxA	2.500	2.551	2.0	102.0
13C5-PFPeA	5.000	5.110	2.2	102.2
13C6-PFDA	1.250	1.250	0.0	100.0
13C7-PFUnDA	1.250	1.303	4.2	104.2
13C8-FOSA	2.500	2.563	2.5	102.5
13C8-PFOA	2.500	2.556	2.2	102.2
13C8-PFOS	2.500	2.578	3.1	103.1
13C9-PFNA	1.250	1.177	-5.8	94.2
4:2FTS	9.375	9.028	-3.7	96.3
6:2FTS	9.500	9.120	-4.0	96.0
8:2FTS	9.600	9.482	-1.2	98.8
d3-MeFOSAA	5.000	5.405	8.1	108.1
EtFOSAA	2.500	2.461	-1.6	98.4
FOSA	2.500	2.298	-8.1	91.9
MeFOSAA	2.500	2.317	-7.3	92.7
PFBA	10.000	9.550	-4.5	95.5
PFBS	2.218	2.024	-8.7	91.3
PFDA	2.500	2.534	1.4	101.4
PFDoDA	2.500	2.344	-6.3	93.7
PFDS	2.413	2.187	-9.4	90.6
PFHpA	2.500	2.337	-6.5	93.5
PFHpS	2.383	2.162	-9.3	90.7
PFHxA	2.500	2.400	-4.0	96.0
PFHxS	2.285	2.263	-1.0	99.0
PFNA	2.500	2.484	-0.6	99.4
PFNS	2.405	2.193	-8.8	91.2
PFOA	2.500	2.411	-3.6	96.4
PFOS	2.320	2.126	-8.4	91.6

Continuing Calibration Summary

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18621.D

PFPeA	5.000	4.765	-4.7	95.3
PFPeS	2.353	2.239	-4.9	95.1
PFTeDA	2.500	2.329	-6.8	93.2
PFTTrDA	2.500	2.412	-3.5	96.5
PFUnDA	2.500	2.395	-4.2	95.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.685	-0.8	99.2
13C3-HFPO-DA	10.000	9.628	-3.7	96.3
9C1-PF3ONS	4.675	4.977	6.5	106.5
ADONA	4.725	4.714	-0.2	99.8
HFPO-DA	5.000	4.938	-1.2	98.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.722	-6.1	93.9
5:3FTCA	62.400	59.165	-5.2	94.8
7:3FTCA	62.400	58.226	-6.7	93.3
d3-MeFOSA	2.500	2.508	0.3	100.3
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.615	-7.7	92.3
EtFOSE	12.500	12.059	-3.5	96.5
MeFOSA	5.000	4.856	-2.9	97.1
MeFOSE	12.500	12.212	-2.3	97.7
PFDODS	2.425	2.179	-10.2	89.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.101	2.0	102.0
d7-MeFOSE	25.000	25.385	1.5	101.5
d9-EtFOSE	25.000	25.717	2.9	102.9
d5-EtFOSA	2.500	2.583	3.3	103.3
NFDHA	5.000	4.691	-6.2	93.8
PFMBA	5.000	4.703	-5.9	94.1
PFMPA	5.000	4.726	-5.5	94.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.241	-4.7	95.3

CC Criteria: +/- 30%

6.9.14
6

Run Sequence Report

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q278	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
S6Q278-RT	6Q18511.D	05/30/23 14:37	n/a	Retention Time Marker
S6Q278-RT	6Q18512.D	05/30/23 14:52	n/a	Retention Time Marker
S6Q278-IC278	6Q18513.D	05/30/23 15:06	n/a	Mass Calibration Verification
S6Q278-IC278	6Q18514.D	05/30/23 15:21	n/a	Initial cal 1
S6Q278-IC278	6Q18515.D	05/30/23 15:35	n/a	Initial cal 2
S6Q278-IC278	6Q18516.D	05/30/23 15:49	n/a	Initial cal 3
S6Q278-ICC278	6Q18517.D	05/30/23 16:04	n/a	Initial cal 4
S6Q278-IC278	6Q18518.D	05/30/23 16:18	n/a	Initial cal 5
S6Q278-IC278	6Q18519.D	05/30/23 16:33	n/a	Initial cal 6
S6Q278-IC278	6Q18520.D	05/30/23 16:47	n/a	Initial cal 7
S6Q278-IC278	6Q18521.D	05/30/23 17:02	n/a	Initial cal 8
S6Q278-IBLK	6Q18522.D	05/30/23 17:16	n/a	Instrument Blank
S6Q278-IBLK	6Q18522.D	05/30/23 17:16	n/a	Instrument Blank
S6Q278-ICV278	6Q18523.D	05/30/23 17:31	n/a	Initial cal verification 4
S6Q278-ICV278	6Q18524.D	05/30/23 17:45	n/a	Initial cal verification 20
S6Q278-CC278	6Q18525.D	05/30/23 18:00	n/a	Continuing cal 4
S6Q278-CC278	6Q18526.D	05/30/23 18:14	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q18527.D	05/30/23 18:29	OP96957	(unrelated sample)
ZZZZZZ	6Q18528.D	05/30/23 18:43	OP96957	(unrelated sample)
FC6114-3	6Q18529.D	05/30/23 18:58	OP96957	(used for QC only; not part of job FC6278)
OP96957-MS	6Q18530.D	05/30/23 19:12	OP96957	Matrix Spike
OP96957-MSD	6Q18531.D	05/30/23 19:27	OP96957	Matrix Spike Duplicate
ZZZZZZ	6Q18532.D	05/30/23 19:41	OP97049	(unrelated sample)
ZZZZZZ	6Q18533.D	05/30/23 19:56	OP96978	(unrelated sample)
ZZZZZZ	6Q18534.D	05/30/23 20:10	OP96978	(unrelated sample)
S6Q278-CC278	6Q18535.D	05/30/23 20:25	n/a	Continuing cal 4
S6Q278-ICCB	6Q18536.D	05/30/23 20:39	n/a	Continuing Calibration Blank
OP97094-BS	6Q18537.D	05/30/23 20:54	OP97094	Blank Spike
OP97094-LLBS	6Q18538.D	05/30/23 21:08	OP97094	Blank Spike
OP97094-MB	6Q18539.D	05/30/23 21:23	OP97094	Method Blank
ZZZZZZ	6Q18541.D	05/30/23 21:52	OP97094	(unrelated sample)
OP97070-BS	6Q18542.D	05/30/23 22:06	OP97070	Blank Spike
OP97070-LLBS	6Q18543.D	05/30/23 22:21	OP97070	Blank Spike
OP97070-MB	6Q18544.D	05/30/23 22:35	OP97070	Method Blank
S6Q278-ECC278	6Q18546.D	05/30/23 23:04	n/a	Ending cal 4
S6Q278-ICCB	6Q18547.D	05/30/23 23:19	n/a	Continuing Calibration Blank

Run Sequence Report

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q279	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q279-RT	6Q18583.D	05/31/23 16:32	n/a	Retention Time Marker
S6Q279-RT	6Q18584.D	05/31/23 16:47	n/a	Retention Time Marker
S6Q279-IC279	6Q18585.D	05/31/23 17:01	n/a	Mass Calibration Verification
S6Q279-IC279	6Q18586.D	05/31/23 17:16	n/a	Initial cal 1
S6Q279-IC279	6Q18587.D	05/31/23 17:30	n/a	Initial cal 2
S6Q279-IC279	6Q18588.D	05/31/23 17:45	n/a	Initial cal 3
S6Q279-ICC279	6Q18589.D	05/31/23 17:59	n/a	Initial cal 4
S6Q279-IC279	6Q18590.D	05/31/23 18:14	n/a	Initial cal 5
S6Q279-IC279	6Q18591.D	05/31/23 18:28	n/a	Initial cal 6
S6Q279-IC279	6Q18592.D	05/31/23 18:43	n/a	Initial cal 7
S6Q279-IC279	6Q18593.D	05/31/23 18:57	n/a	Initial cal 8
S6Q279-IBLK	6Q18594.D	05/31/23 19:12	n/a	Instrument Blank
S6Q279-IBLK	6Q18594.D	05/31/23 19:12	n/a	Instrument Blank
S6Q279-ICV279	6Q18595.D	05/31/23 19:26	n/a	Initial cal verification 4
S6Q279-ICV279	6Q18596.D	05/31/23 19:41	n/a	Initial cal verification 20
S6Q279-CC279	6Q18597.D	05/31/23 19:55	n/a	Continuing cal 4
S6Q279-CC279	6Q18598.D	05/31/23 20:10	n/a	Continuing cal 1.0LL
OP97070-BS	6Q18599.D	05/31/23 20:24	OP97070	Blank Spike
OP97070-LLBS	6Q18600.D	05/31/23 20:39	OP97070	Blank Spike
OP97070-MB	6Q18601.D	05/31/23 20:53	OP97070	Method Blank
FC6278-1	6Q18602.D	05/31/23 21:08	OP97070	AF-RHMW12A-WGN01LF-2305W4
OP97070-MS	6Q18603.D	05/31/23 21:22	OP97070	Matrix Spike
FC6278-2	6Q18604.D	05/31/23 21:37	OP97070	AF-RHMW12A-WGFD01LF-2305W4
FC6278-3	6Q18605.D	05/31/23 21:51	OP97070	AF-RHMW04-WGN01LF-2305W4
OP97070-DUP	6Q18606.D	05/31/23 22:06	OP97070	Duplicate
FC6278-4	6Q18607.D	05/31/23 22:20	OP97070	AF-RHMW06-WGN01LF-2305W4
ZZZZZZ	6Q18608.D	05/31/23 22:35	OP97070	(unrelated sample)
S6Q279-CC279	6Q18609.D	05/31/23 22:49	n/a	Continuing cal 4
S6Q279-ICCB	6Q18610.D	05/31/23 23:04	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18610.D	05/31/23 23:04	n/a	Continuing Calibration Blank
FC6278-5	6Q18611.D	05/31/23 23:18	OP97070	AF-RHMW16-WGN01LF-2305W4
OP97024-BS	6Q18612.D	05/31/23 23:32	OP97024	Blank Spike
OP97024-LLBS	6Q18613.D	05/31/23 23:47	OP97024	Blank Spike
OP97024-MB	6Q18614.D	06/01/23 00:01	OP97024	Method Blank
FC6086-1	6Q18615.D	06/01/23 00:16	OP97024	(used for QC only; not part of job FC6278)
OP97024-MS	6Q18616.D	06/01/23 00:30	OP97024	Matrix Spike
OP97024-MSD	6Q18617.D	06/01/23 00:45	OP97024	Matrix Spike Duplicate
ZZZZZZ	6Q18618.D	06/01/23 00:59	OP97024	(unrelated sample)
ZZZZZZ	6Q18619.D	06/01/23 01:14	OP97024	(unrelated sample)
ZZZZZZ	6Q18620.D	06/01/23 01:28	OP97024	(unrelated sample)
S6Q279-CC279	6Q18621.D	06/01/23 01:43	n/a	Continuing cal 4
S6Q279-ICCB	6Q18622.D	06/01/23 01:57	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18622.D	06/01/23 01:57	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18623.D	06/01/23 02:12	OP97024	(unrelated sample)
ZZZZZZ	6Q18624.D	06/01/23 02:26	OP97024	(unrelated sample)
ZZZZZZ	6Q18625.D	06/01/23 02:41	OP97024	(unrelated sample)

Run Sequence Report

Job Number: FC6278
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q279	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	6Q18626.D	06/01/23 02:55	OP97024	(unrelated sample)
ZZZZZZ	6Q18627.D	06/01/23 03:10	OP97024	(unrelated sample)
ZZZZZZ	6Q18628.D	06/01/23 03:24	OP97024	(unrelated sample)
ZZZZZZ	6Q18629.D	06/01/23 03:39	OP97024	(unrelated sample)
ZZZZZZ	6Q18630.D	06/01/23 03:53	OP97024	(unrelated sample)
ZZZZZZ	6Q18631.D	06/01/23 04:08	OP97024	(unrelated sample)
ZZZZZZ	6Q18632.D	06/01/23 04:22	OP97024	(unrelated sample)
S6Q279-CC279	6Q18633.D	06/01/23 04:37	n/a	Continuing cal 4
S6Q279-ICCB	6Q18634.D	06/01/23 04:51	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18634.D	06/01/23 04:51	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18635.D	06/01/23 05:06	OP97024	(unrelated sample)
ZZZZZZ	6Q18636.D	06/01/23 05:20	OP97024	(unrelated sample)
ZZZZZZ	6Q18637.D	06/01/23 05:35	OP97024	(unrelated sample)
ZZZZZZ	6Q18638.D	06/01/23 05:49	OP97024	(unrelated sample)
ZZZZZZ	6Q18639.D	06/01/23 06:04	OP97024	(unrelated sample)
S6Q279-CC279	6Q18641.D	06/01/23 06:20	n/a	Continuing cal 4
S6Q279-CC279	6Q18642.D	06/01/23 06:35	n/a	Continuing cal 1.0LL
S6Q279-ICCB	6Q18643.D	06/01/23 06:49	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18643.D	06/01/23 06:49	n/a	Continuing Calibration Blank
OP97092-BS	6Q18644.D	06/01/23 07:03	OP97092	Blank Spike
OP97092-LLBS	6Q18645.D	06/01/23 07:18	OP97092	Blank Spike
OP97092-MB	6Q18646.D	06/01/23 07:32	OP97092	Method Blank
ZZZZZZ	6Q18647.D	06/01/23 07:47	OP97092	(unrelated sample)
ZZZZZZ	6Q18648.D	06/01/23 08:01	OP97092	(unrelated sample)
FC5963-8	6Q18650.D	06/01/23 08:30	OP97092	(used for QC only; not part of job FC6278)
OP97092-DUP2	6Q18651.D	06/01/23 08:45	OP97092	Duplicate
ZZZZZZ	6Q18652.D	06/01/23 08:59	OP97092	(unrelated sample)
S6Q279-CC279	6Q18653.D	06/01/23 09:14	n/a	Continuing cal 4
S6Q279-ICCB	6Q18654.D	06/01/23 09:28	n/a	Continuing Calibration Blank
FC6325-1	6Q18655.D	06/01/23 09:43	OP97092	(used for QC only; not part of job FC6278)
OP97092-MS	6Q18656.D	06/01/23 09:57	OP97092	Matrix Spike
FC6325-2	6Q18657.D	06/01/23 10:12	OP97092	(used for QC only; not part of job FC6278)
OP97092-DUP1	6Q18658.D	06/01/23 10:26	OP97092	Duplicate
ZZZZZZ	6Q18659.D	06/01/23 10:41	OP97092	(unrelated sample)
ZZZZZZ	6Q18660.D	06/01/23 10:55	OP97093	(unrelated sample)
ZZZZZZ	6Q18661.D	06/01/23 11:10	OP97093	(unrelated sample)
ZZZZZZ	6Q18662.D	06/01/23 11:24	OP97093	(unrelated sample)
ZZZZZZ	6Q18663.D	06/01/23 11:39	OP97070	(unrelated sample)
S6Q279-CC279	6Q18665.D	06/01/23 12:08	n/a	Continuing cal 4
S6Q279-ICCB	6Q18666.D	06/01/23 12:22	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18666.D	06/01/23 12:22	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18667.D	06/01/23 12:37	OP97092	(unrelated sample)
ZZZZZZ	6Q18668.D	06/01/23 12:51	OP97092	(unrelated sample)
ZZZZZZ	6Q18669.D	06/01/23 13:06	OP96957	(unrelated sample)
S6Q279-ECC279	6Q18670.D	06/01/23 13:20	n/a	Ending cal 4
S6Q279-ICCB	6Q18671.D	06/01/23 13:35	n/a	Continuing Calibration Blank

Run Sequence Report

Job Number: FC6278
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q279	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
S6Q279-ICCB	6Q18671.D	06/01/23 13:35	n/a	Continuing Calibration Blank

6.10.2
6

MS Semi-volatiles

Raw Data

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 06/01/23 16:14

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18602.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 9:08:08 PM
 Sample Name : FC6278-1
 Vial : P6-B9
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,540,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	89270	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	55232	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	57498	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	56803	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	85981	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	38552	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	21760	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	27441	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	24176	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	12079	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	24862	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	21558	2.50 µg/L	0.000
M3-PFHxS	7.118	402.1 -> 79.9	13443	2.50 µg/L	-0.012
M8-PFOS	8.177	507.1 -> 79.9	11501	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3307	5.00 µg/L	0.000
M2-6:2FTS	6.788	429.1 -> 80.9	5048	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	4744	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	25101	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	37694	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	21294	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	75262	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	115320	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	10546	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10313	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	15832	2.50 µg/L	-0.025
13C3-PFBA	2.864	216.0 -> 172.0	67441	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	9201	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	85568	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	29930	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	45628	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	54600	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3307	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5048	5.66 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4744	5.25 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C2-PFDoDA	8.900	615.1 -> 570.0	24176	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.0%		
13C2-PFTeDA	9.627	715.2 -> 670.0	12079	1.07 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.4%		
13C3-PFBS	5.334	302.1 -> 79.9	21558	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C3-PFHxS	7.118	402.1 -> 79.9	13443	2.62 µg/L	-0.012

7.1.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C4-PFBA	2.860	216.8 -> 171.9	89270	5.56 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 55.6%	
13C4-PFHpA	6.369	367.1 -> 322.0	56803	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	57498	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFPeA	4.222	268.3 -> 223.0	55232	5.20 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C6-PFDA	8.027	519.1 -> 474.1	21760	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	27441	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 29.6%	
13C8-FOSA	9.598	506.1 -> 77.8	24862	0.98 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 82.4%	
13C8-PFOA	7.026	421.1 -> 376.0	85981	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C8-PFOS	8.177	507.1 -> 79.9	11501	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C9-PFNA	7.545	472.1 -> 427.0	38552	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25101	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	37694	10.51 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	10313	2.11 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 84.3%	
d5-EtFOSAA	8.267	589.2 -> 419.0	21294	4.58 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	75262	18.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.7%	
d9-EtFOSE	10.907	639.2 -> 58.9	115320	22.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	10546	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.1%	

Target Compounds

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

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	5.407	449.0 -> 98.9	2128	0.11 µg/L	m	98
		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	4.224	498.9 -> 98.8	4812	0.36 µg/L		100
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.1.1
7

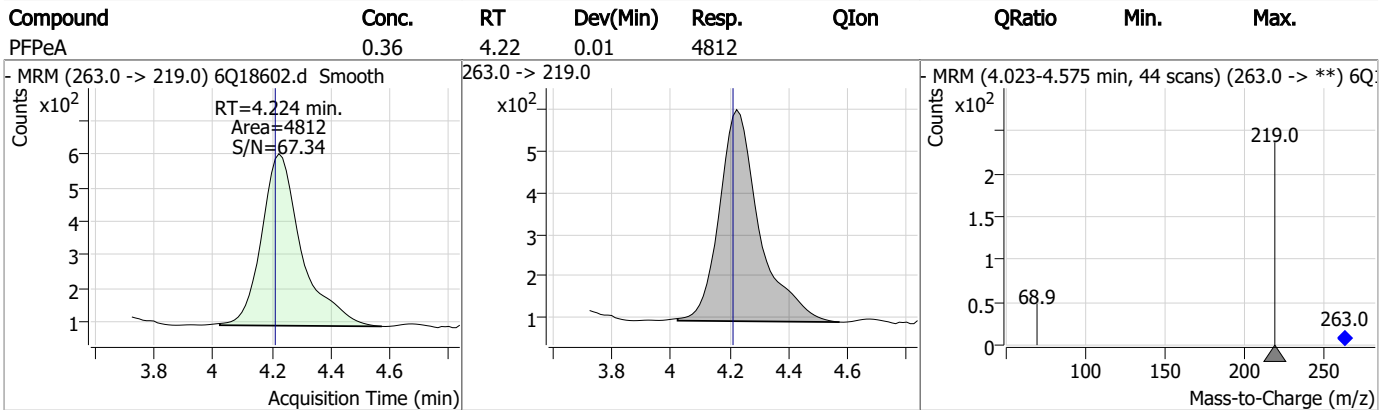
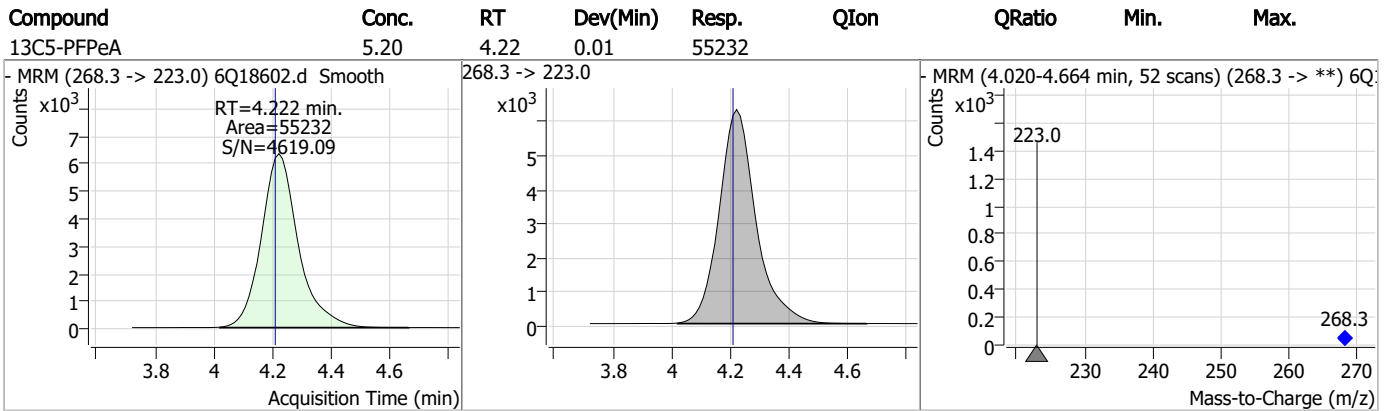
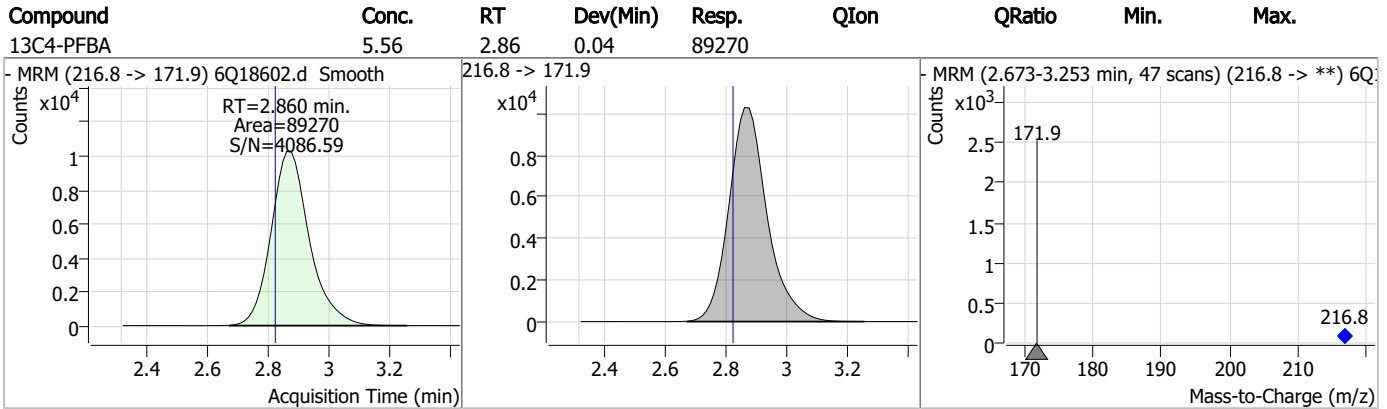
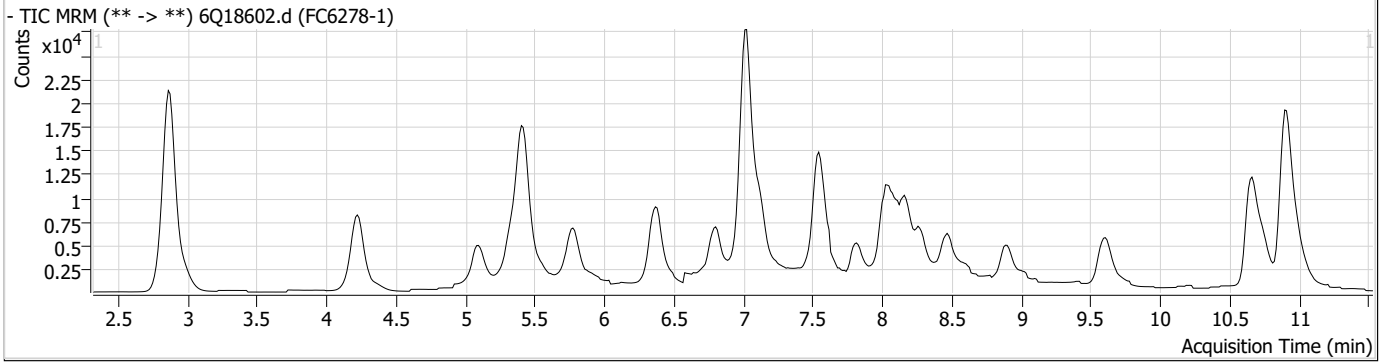
Perfluorinated Compounds by LC/MS/MS

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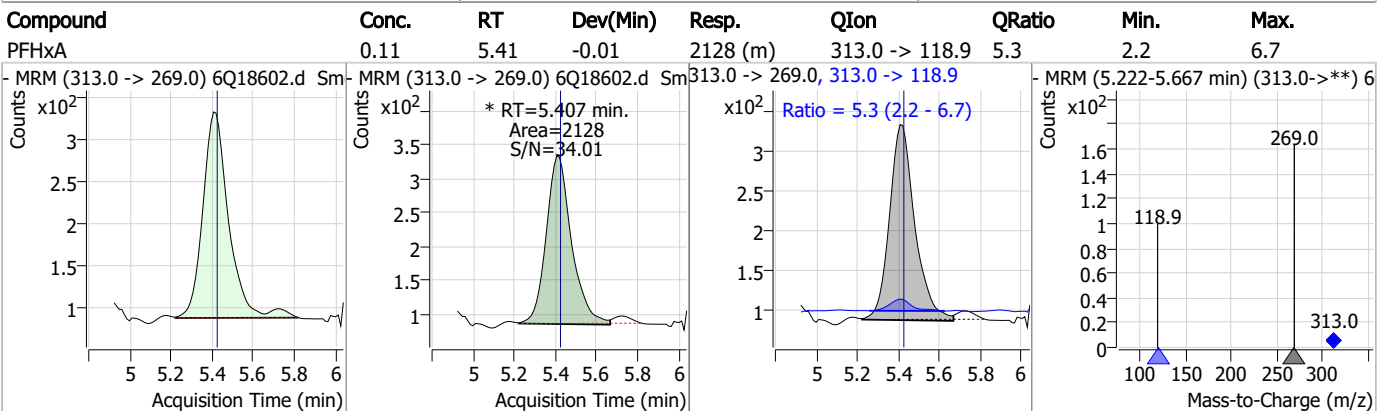
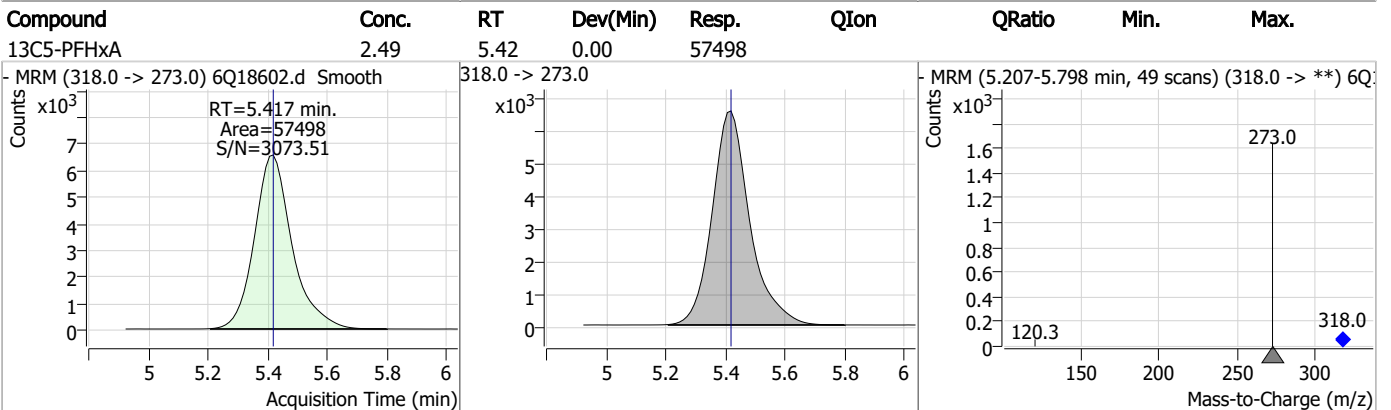
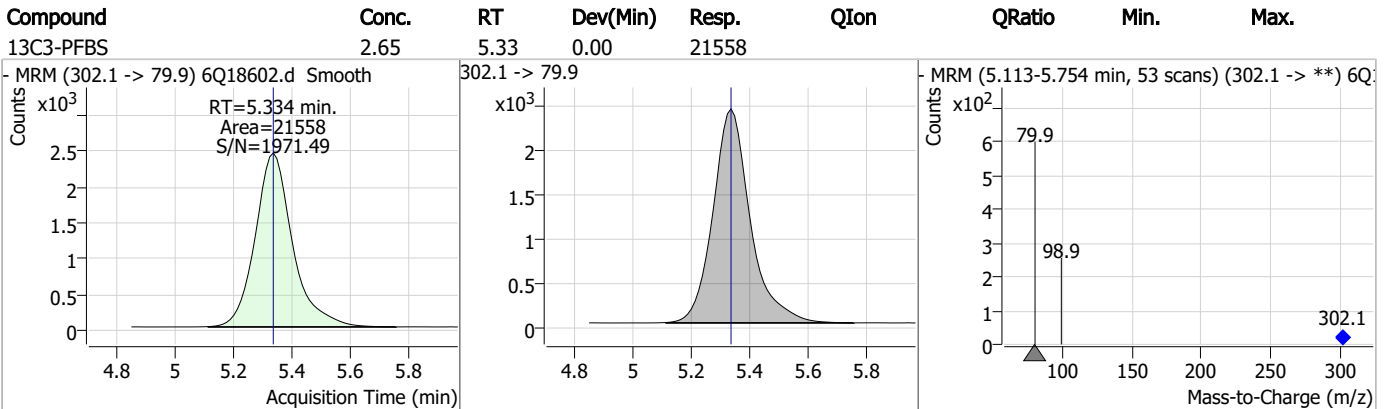
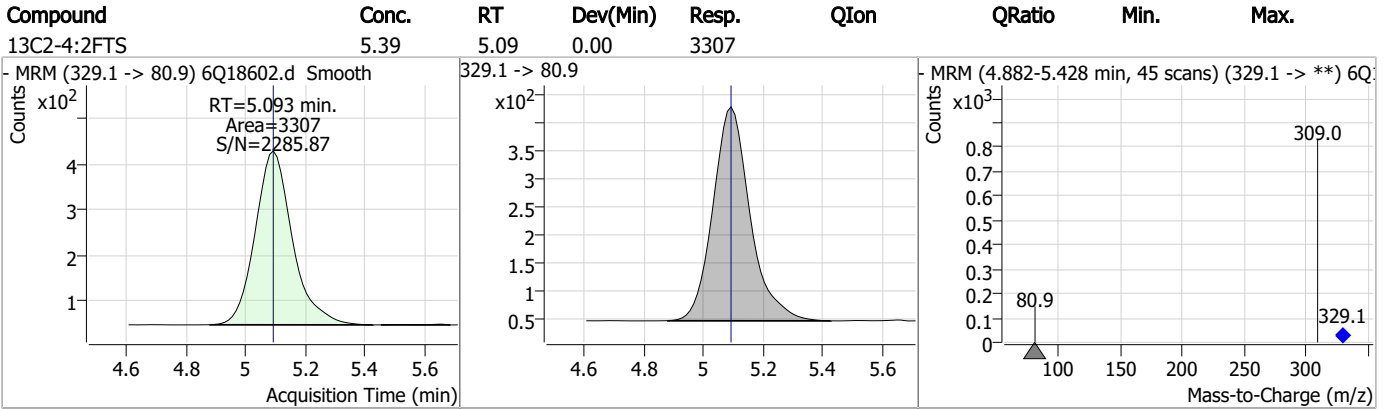
7.1.1
7



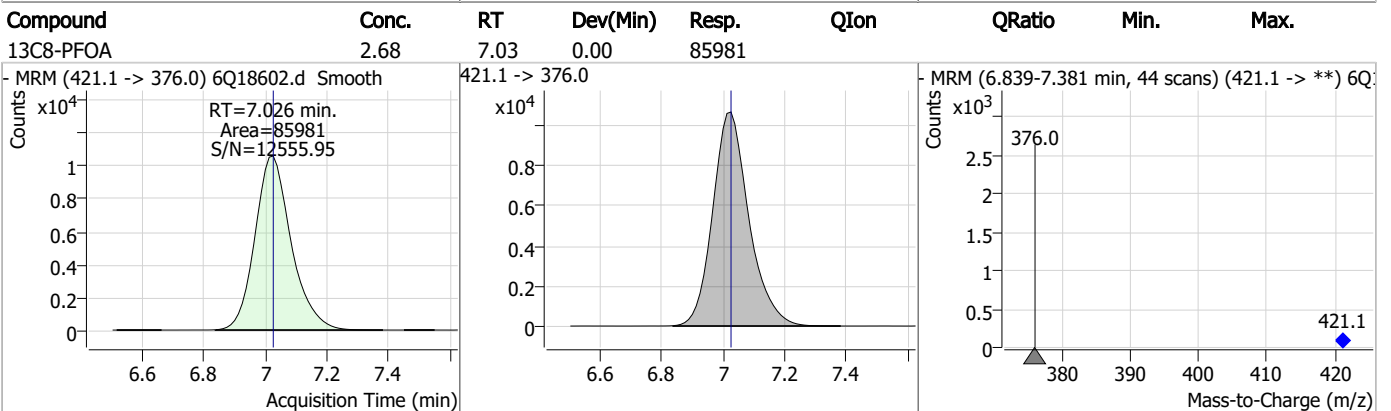
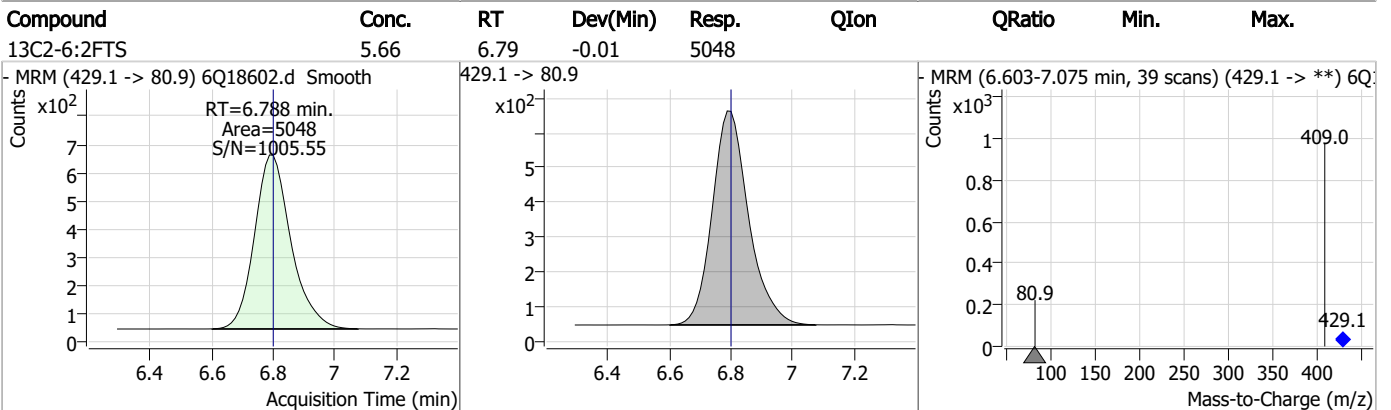
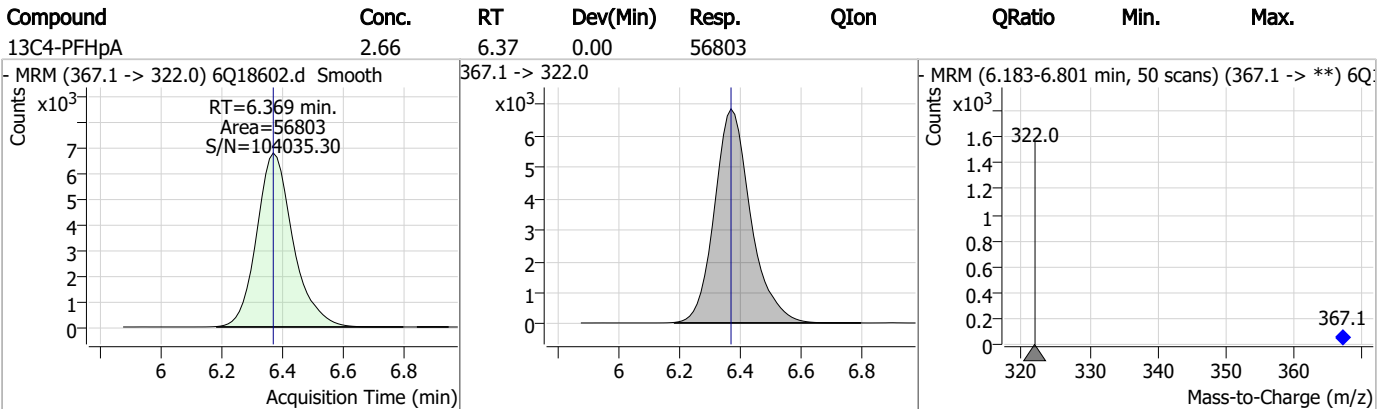
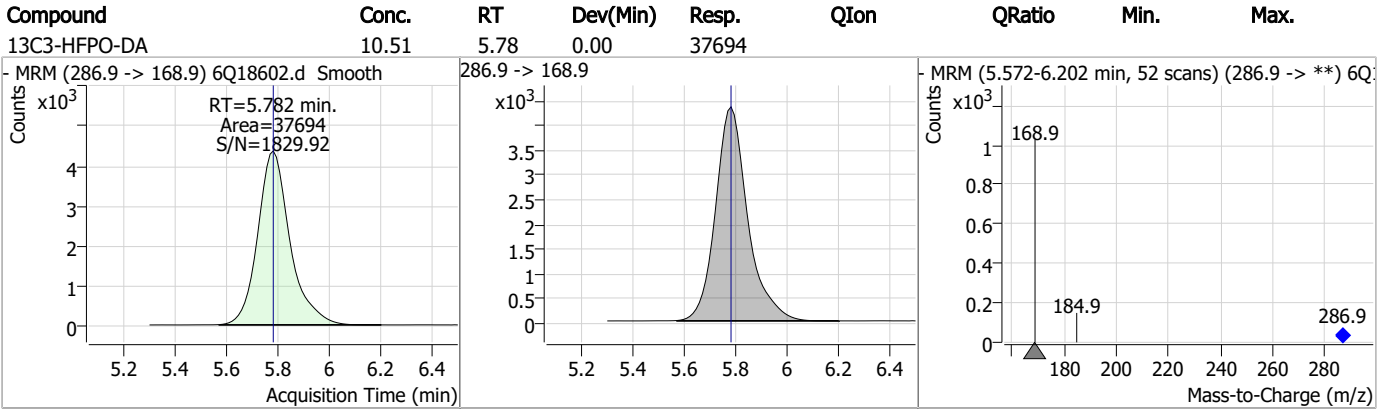
Perfluorinated Compounds by LC/MS/MS



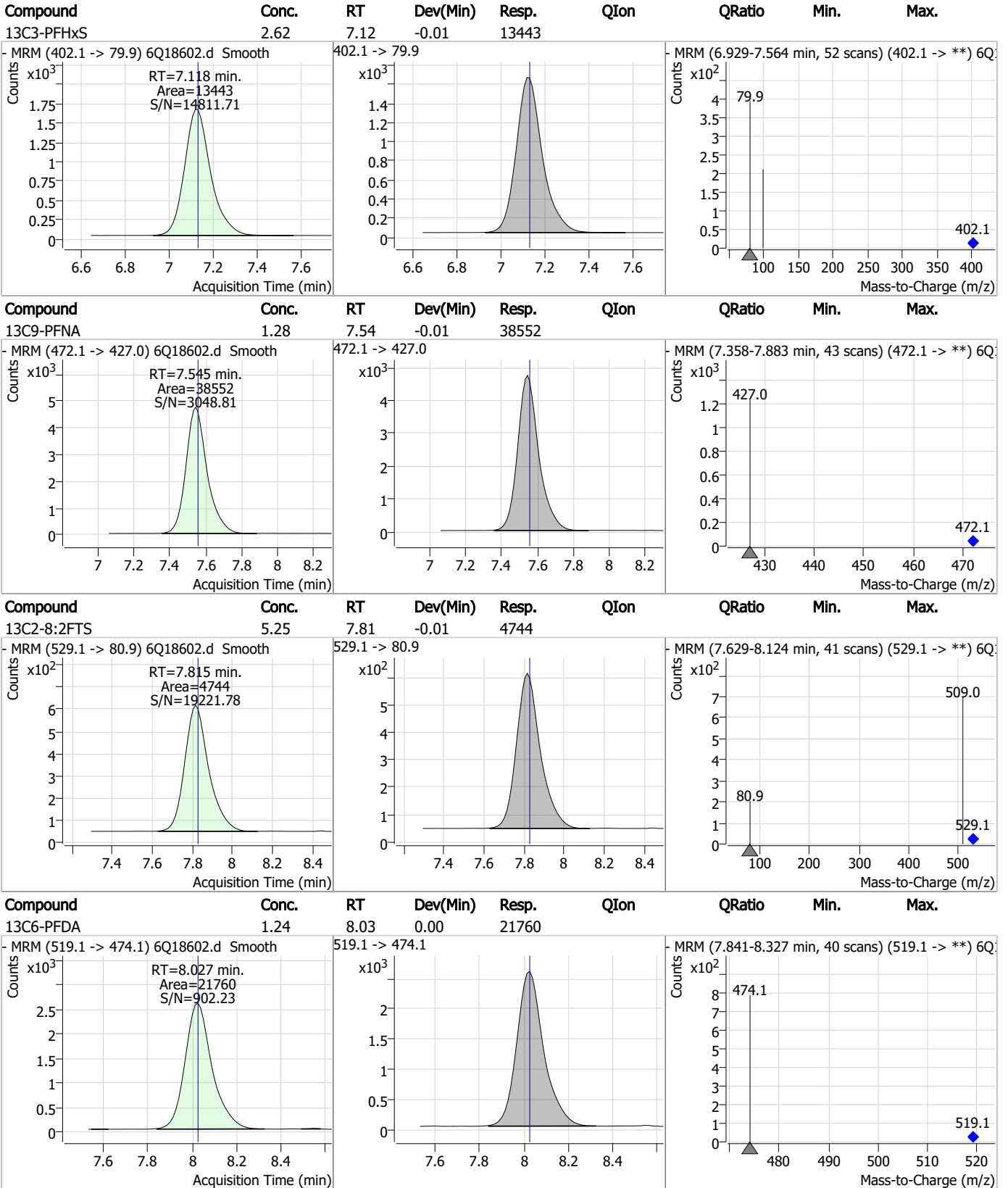
Perfluorinated Compounds by LC/MS/MS



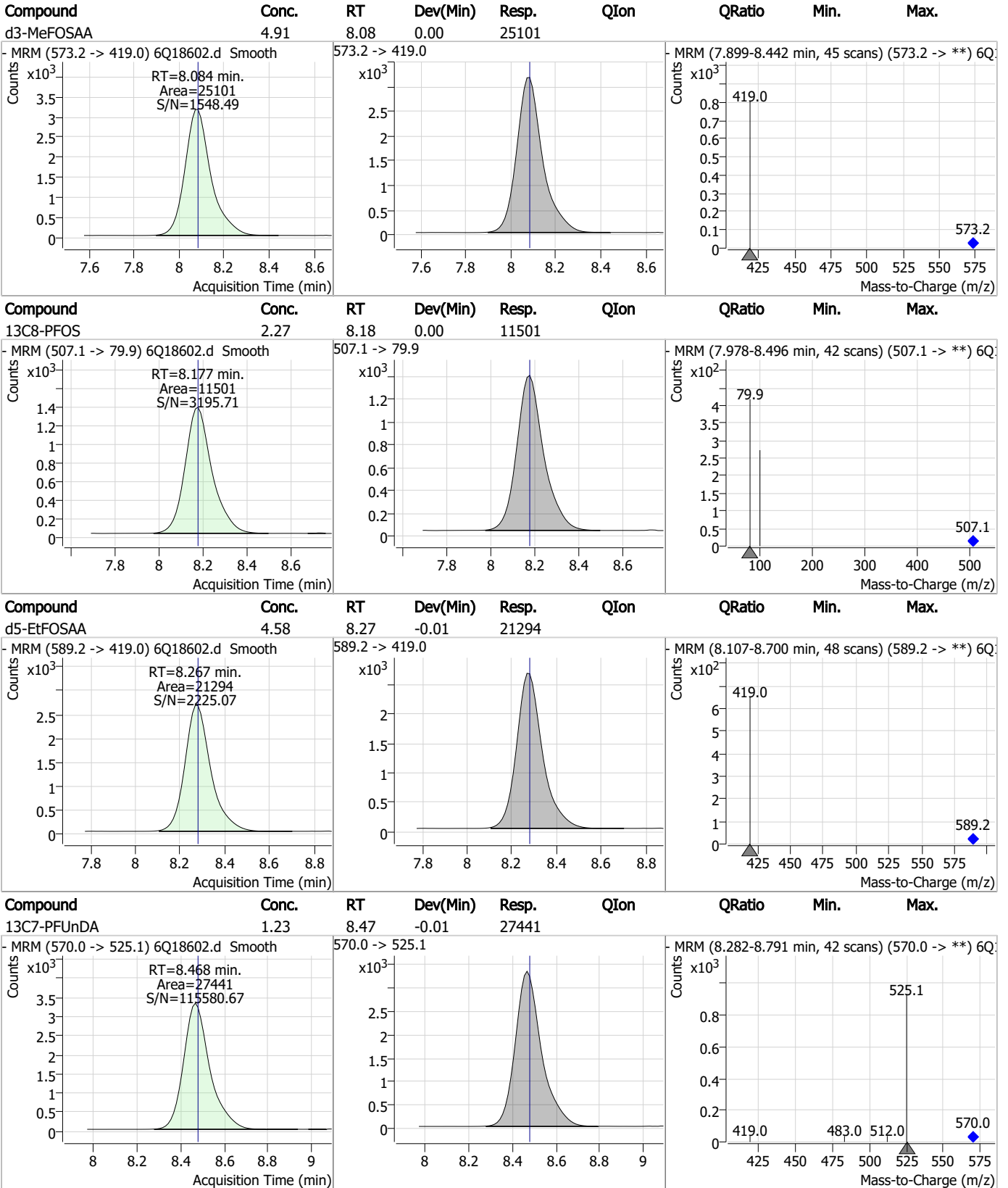
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

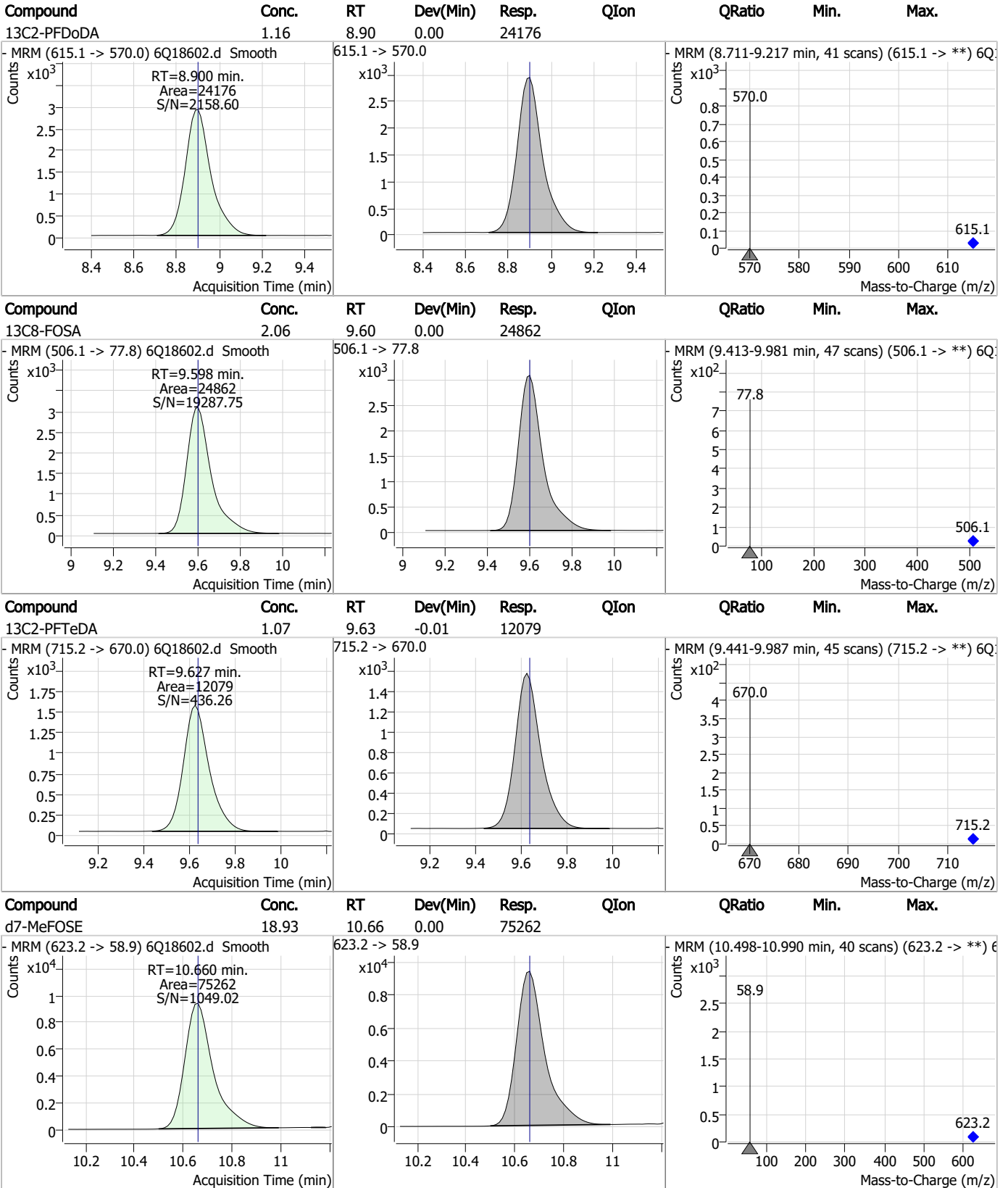


Perfluorinated Compounds by LC/MS/MS



7.1.1
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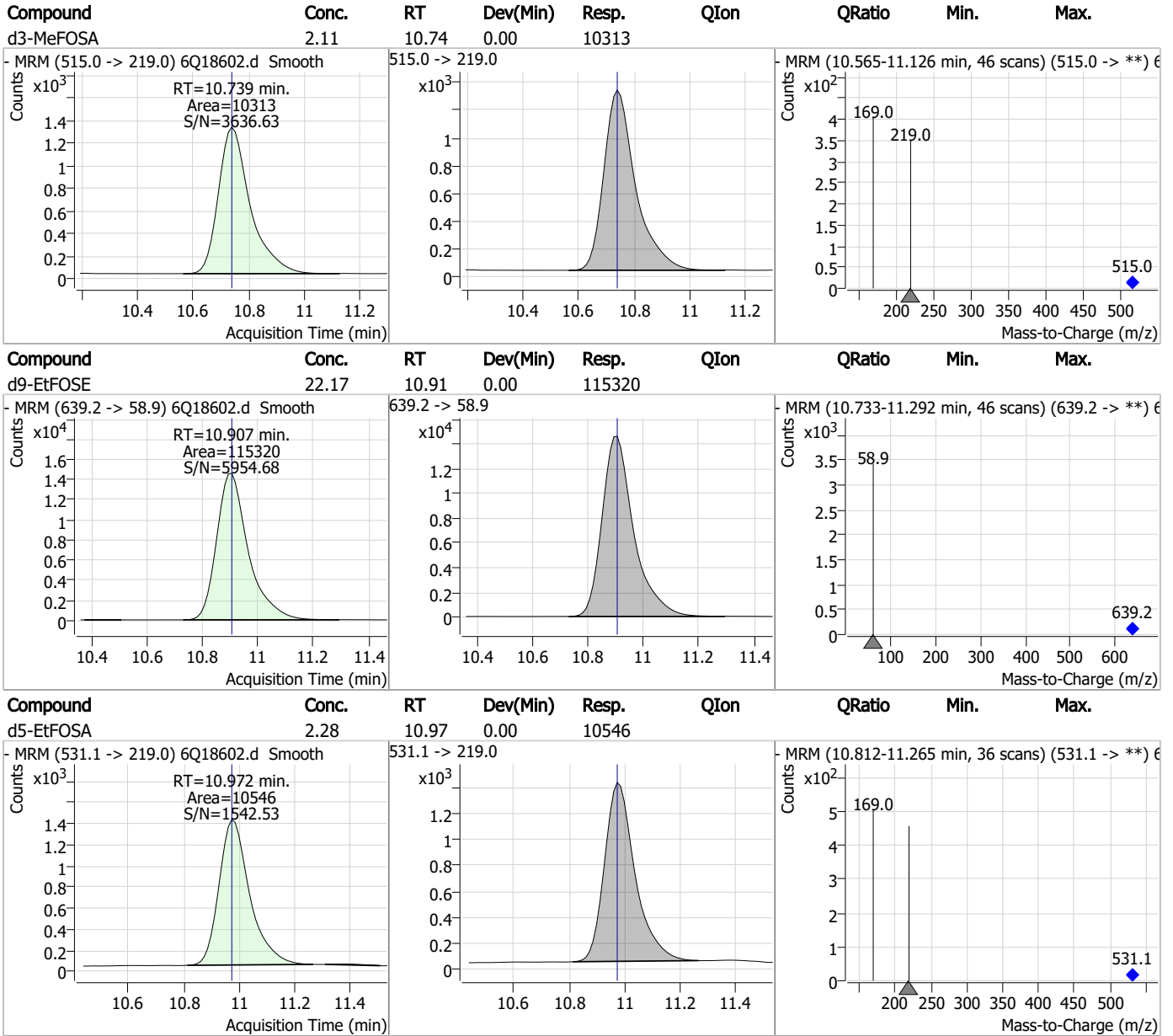
Perfluorinated Compounds by LC/MS/MS



7.1.1

7

Perfluorinated Compounds by LC/MS/MS



7.1.1

7



Manual Integration Approval Summary

Sample Number: FC6278-1 Method: EPA DRAFT 1633
Lab FileID: 6Q18602.D Analyst approved: 06/01/23 11:25 Martha Valls
Injection Time: 05/31/23 21:08 Supervisor approved: 06/01/23 16:14 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		5.41	Split peak

7.1.1.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 06/01/23 16:14

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18604.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 9:37:06 PM
 Sample Name : FC6278-2
 Vial : P6-C2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,570,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	79070	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	52196	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	56954	2.50 µg/L	0.000
M4-PFHpA	6.382	367.1 -> 322.0	51054	2.50 µg/L	0.012
M8-PFOA	7.026	421.1 -> 376.0	79924	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	35472	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	21498	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	25789	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	22468	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	11975	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	23825	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	20897	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	12345	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	11446	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3193	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4589	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4433	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	22961	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	34822	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	20209	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	71197	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	104893	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	9980	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9944	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	14381	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	63946	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8870	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	80242	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	27949	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	43265	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	49904	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3193	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4589	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4433	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	22468	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.6%		
13C2-PFTeDA	9.627	715.2 -> 670.0	11975	1.13 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.7%		
13C3-PFBS	5.334	302.1 -> 79.9	20897	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C3-PFHxS	7.130	402.1 -> 79.9	12345	2.49 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 = 99.7%	
13C4-PFBA	2.876	216.8 -> 171.9	79070	5.19 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 51.9%	
13C4-PFHpA	6.382	367.1 -> 322.0	51054	2.61 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C5-PFHxA	5.417	318.0 -> 273.0	56954	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%	
13C5-PFPeA	4.222	268.3 -> 223.0	52196	5.38 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C6-PFDA	8.027	519.1 -> 474.1	21498	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C7-PFUnDA	8.468	570.0 -> 525.1	25789	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-FOSA	9.598	506.1 -> 77.8	23825	2.17 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.9%	
13C8-PFOA	7.026	421.1 -> 376.0	79924	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C8-PFOS	8.177	507.1 -> 79.9	11446	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C9-PFNA	7.557	472.1 -> 427.0	35472	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.5%	
d3-MeFOSAA	8.084	573.2 -> 419.0	22961	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	34822	10.62 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
d3-MeFOSA	10.739	515.0 -> 219.0	9944	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	20209	4.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	71197	19.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 78.8%	
d9-EtFOSE	10.894	639.2 -> 58.9	104893	22.20 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	9980	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	

Target Compounds

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

7.12

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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	5.420	449.0 -> 98.9	2052	0.11 µg/L	m	97
		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	4.224	498.9 -> 98.8	4872	0.39 µg/L		100
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

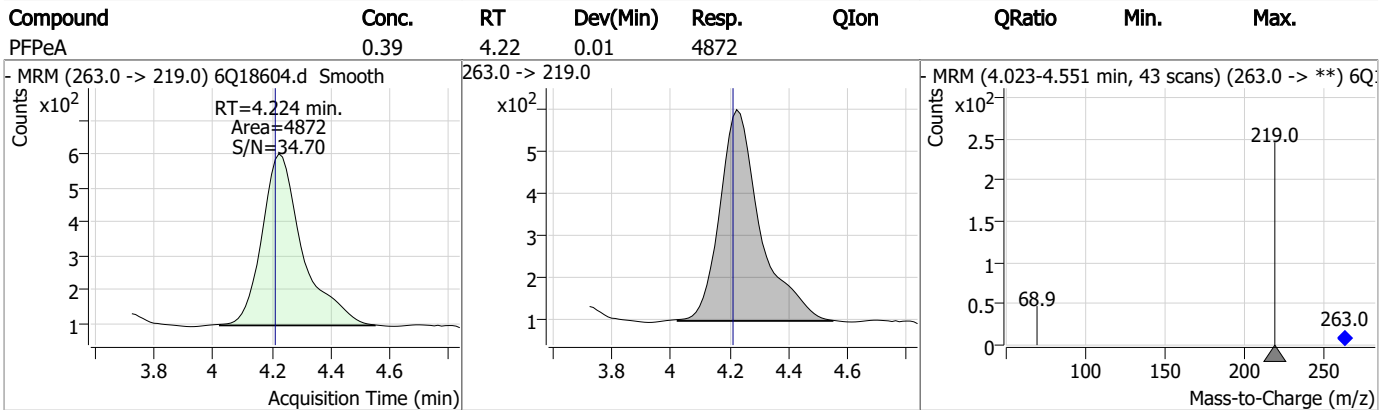
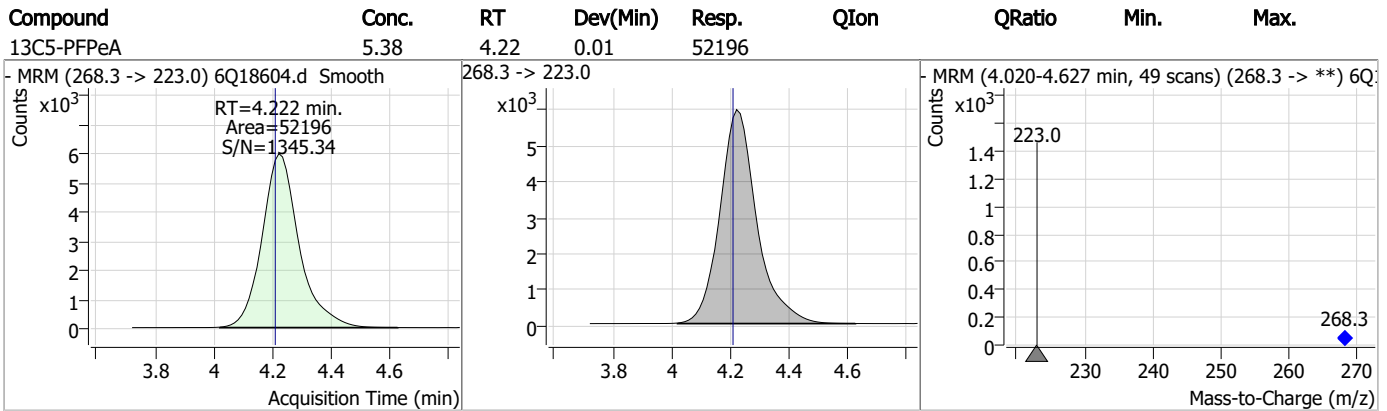
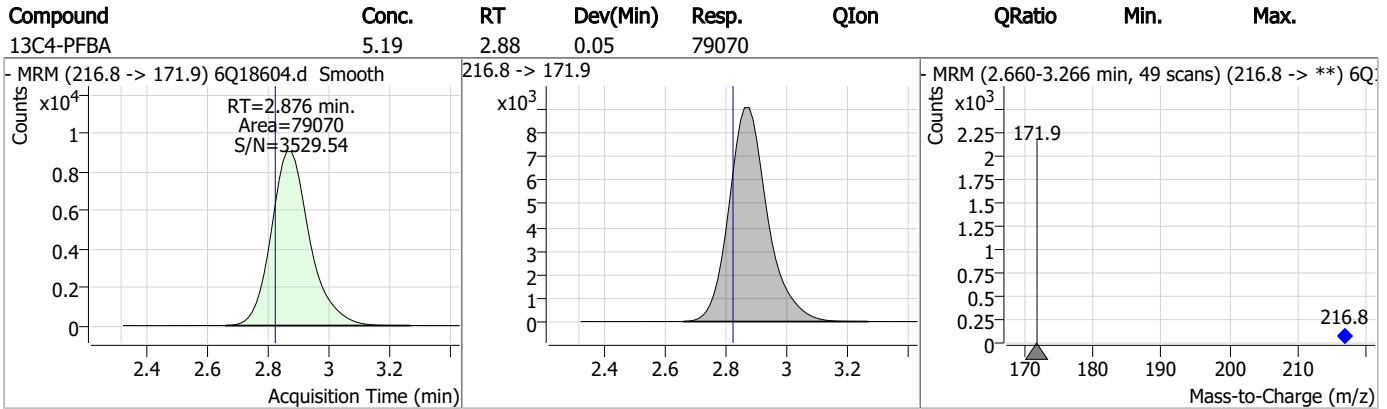
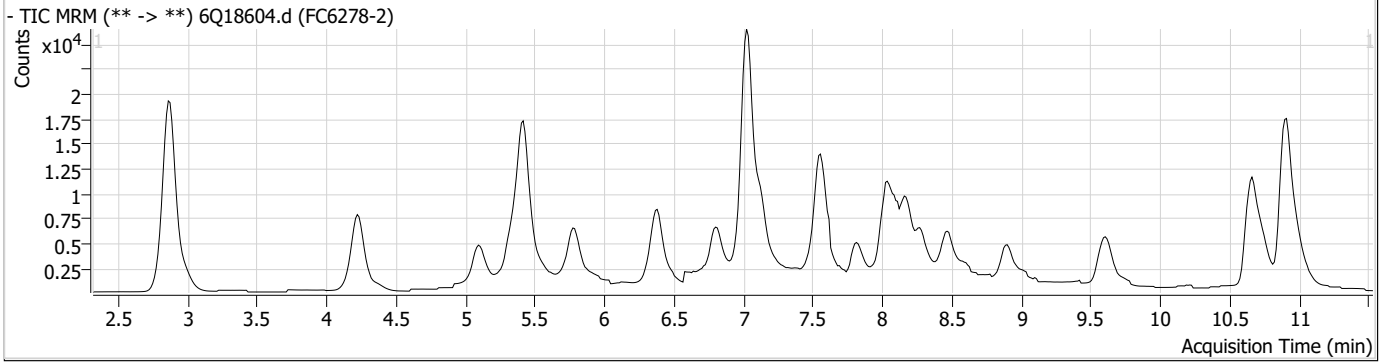
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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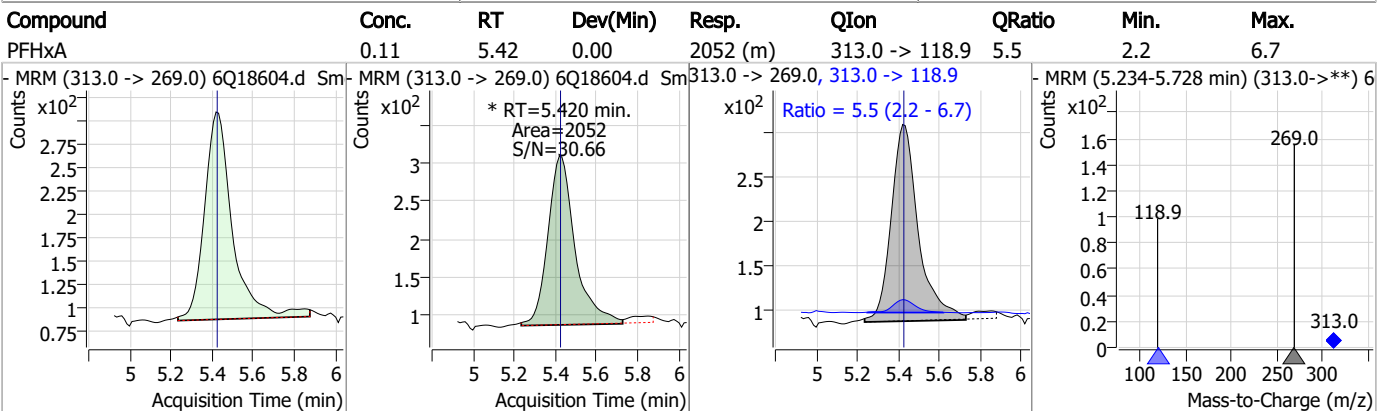
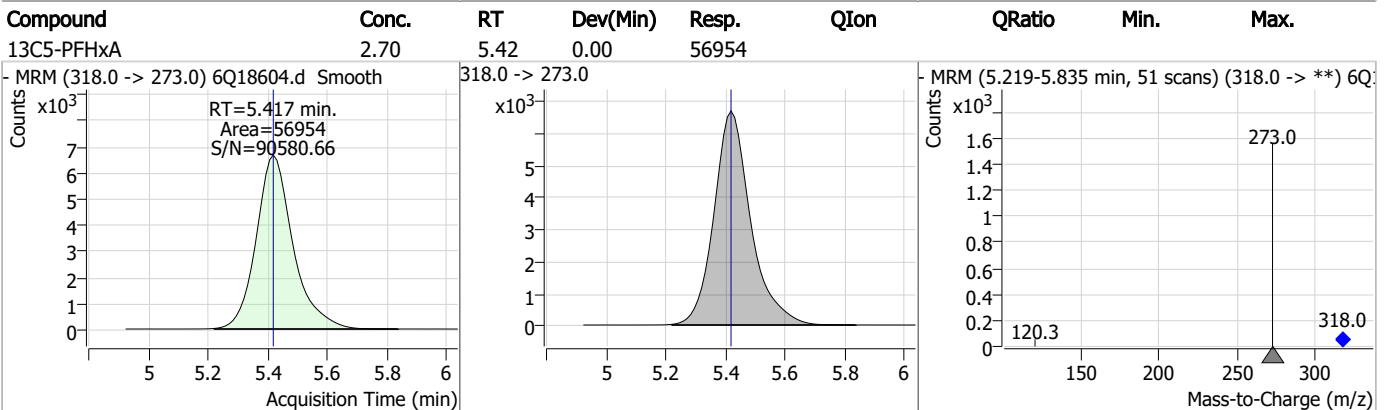
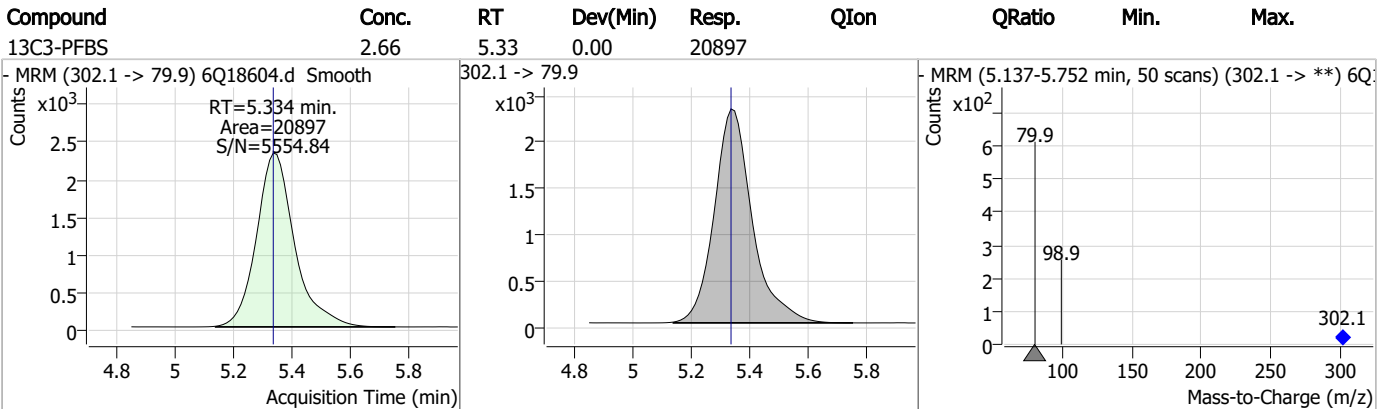
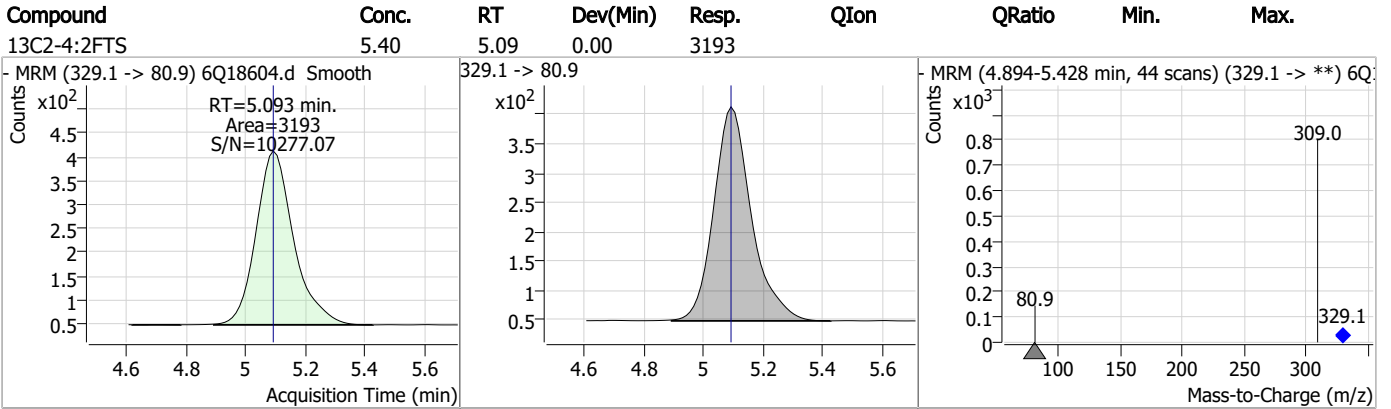
7.1.2
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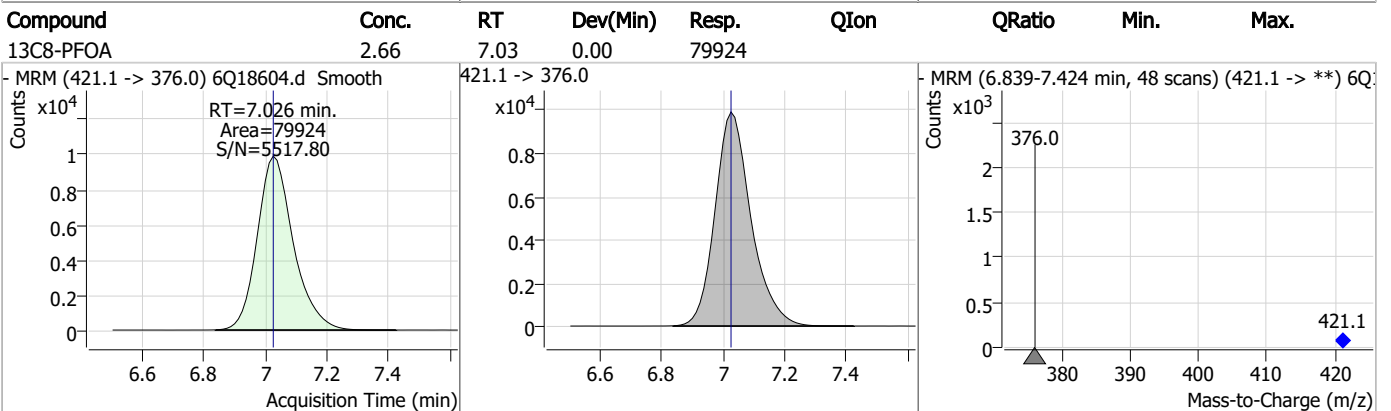
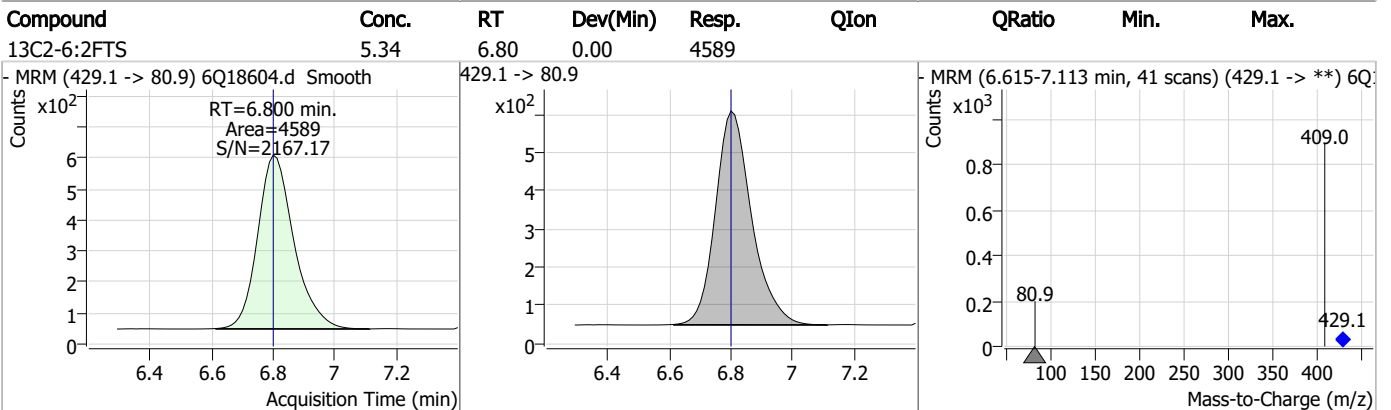
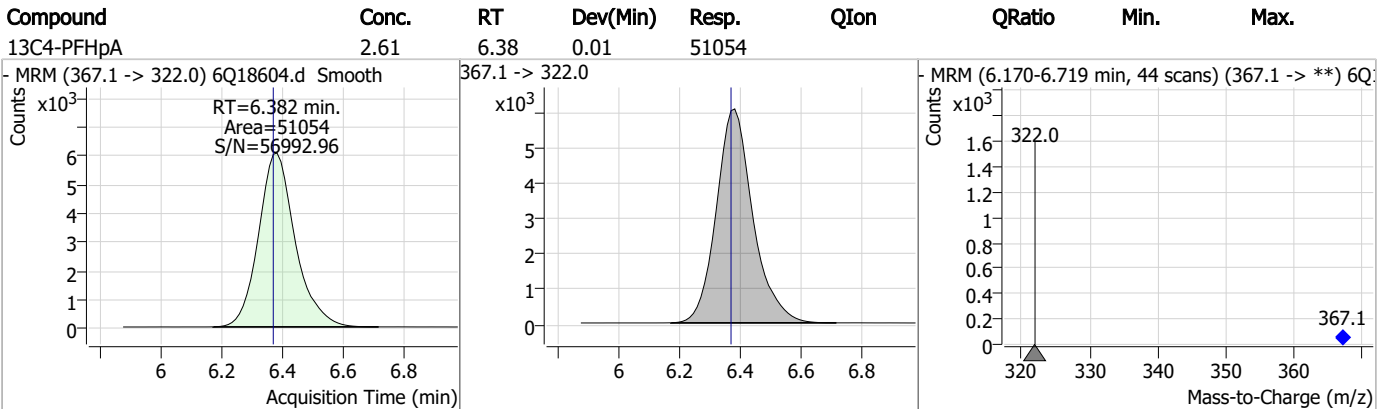
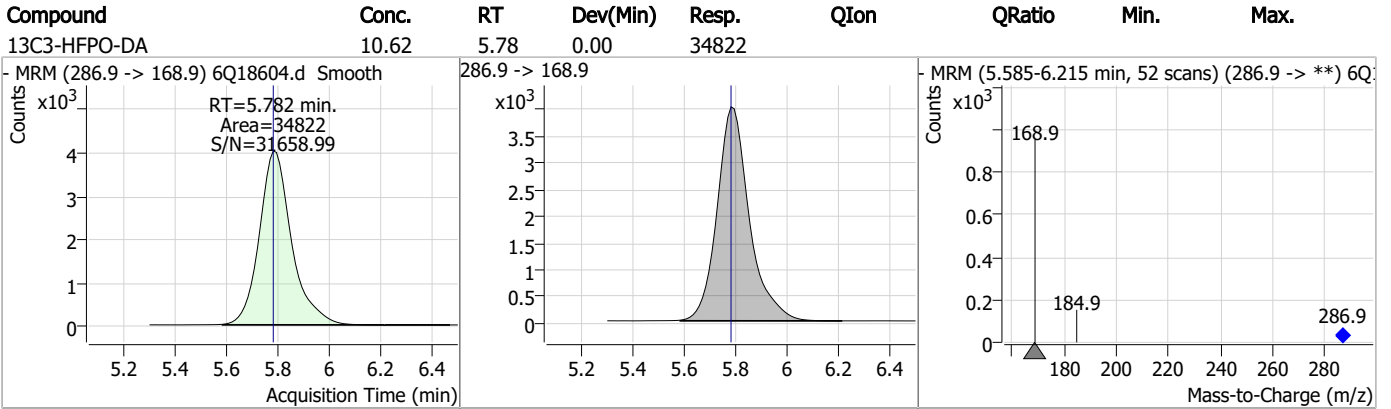
Perfluorinated Compounds by LC/MS/MS



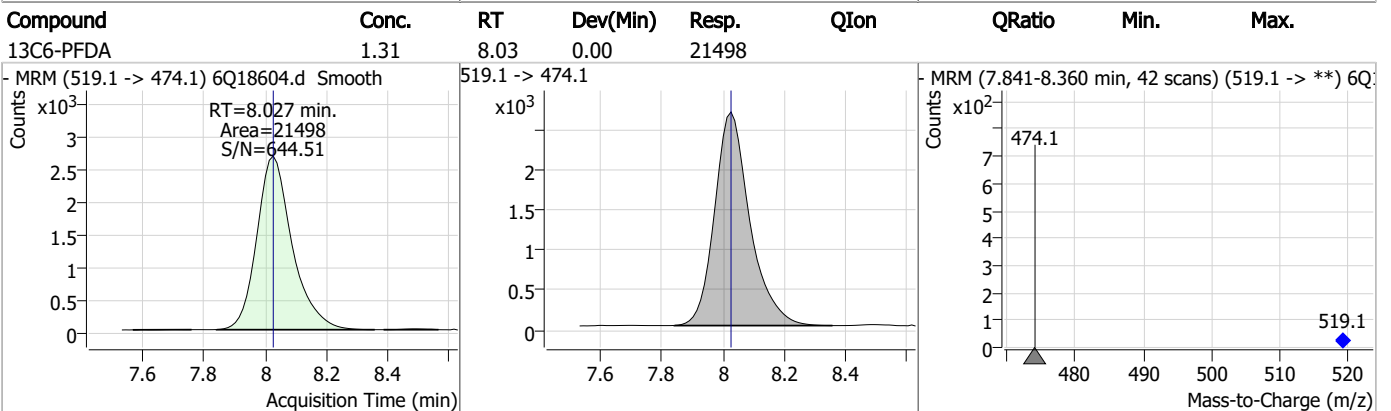
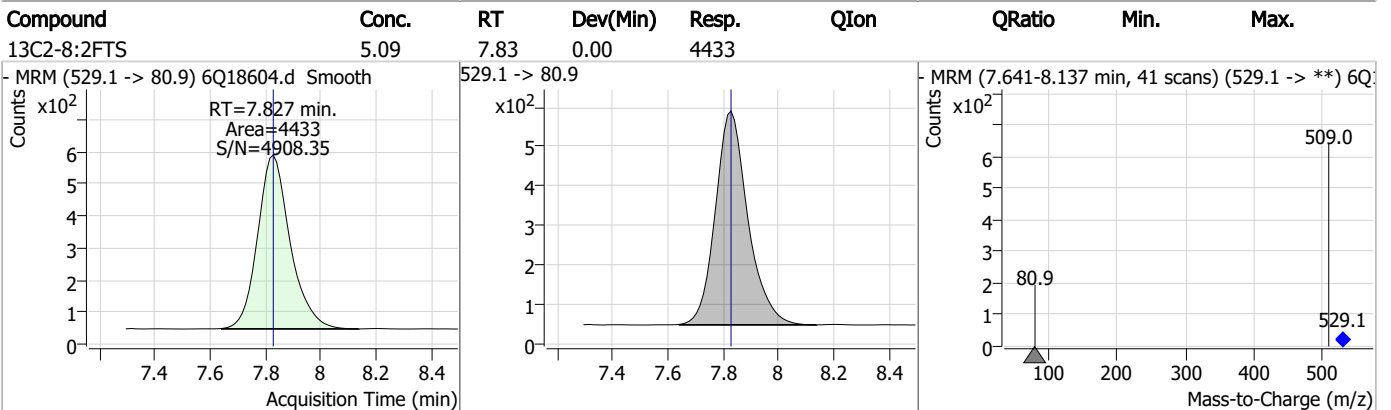
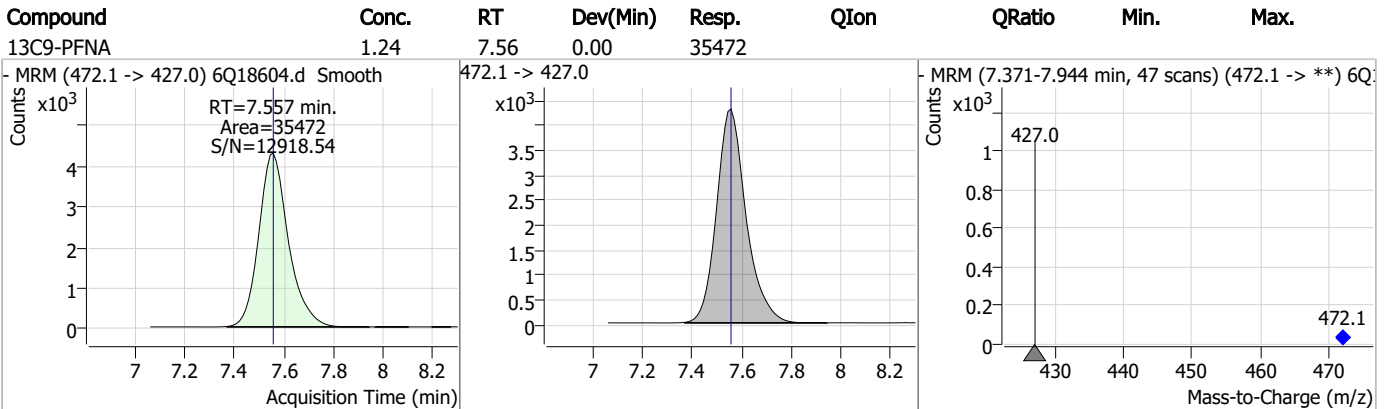
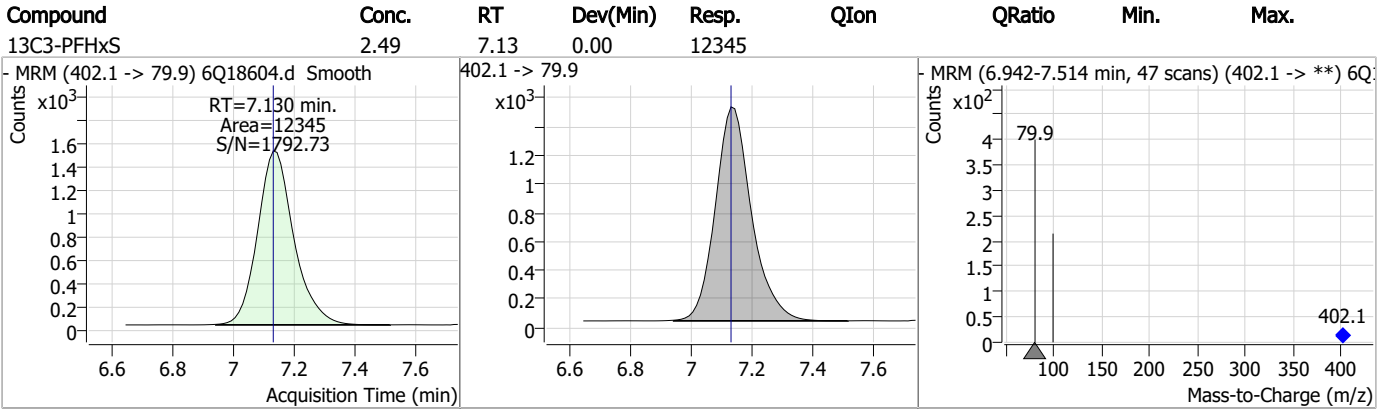
Perfluorinated Compounds by LC/MS/MS



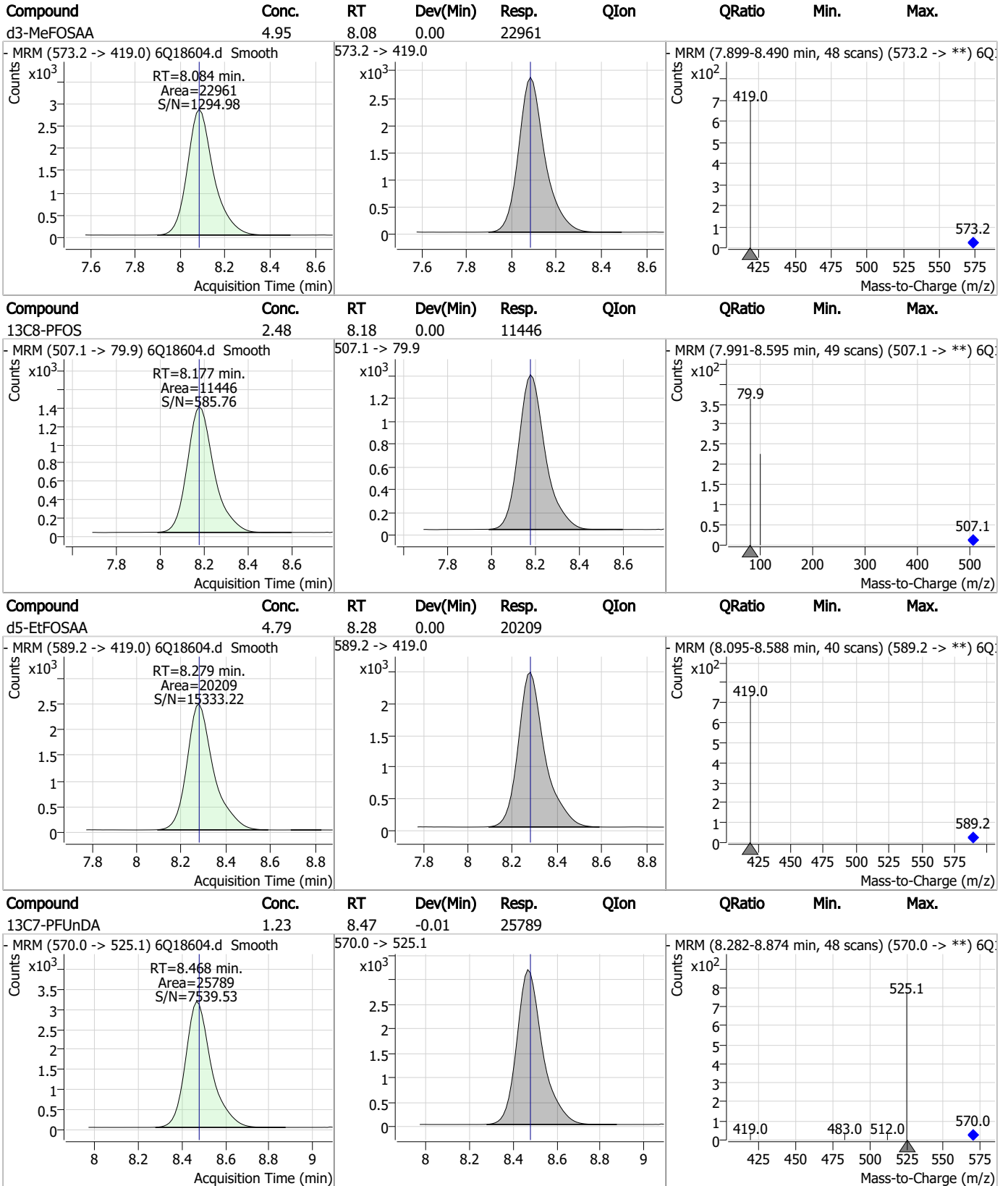
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



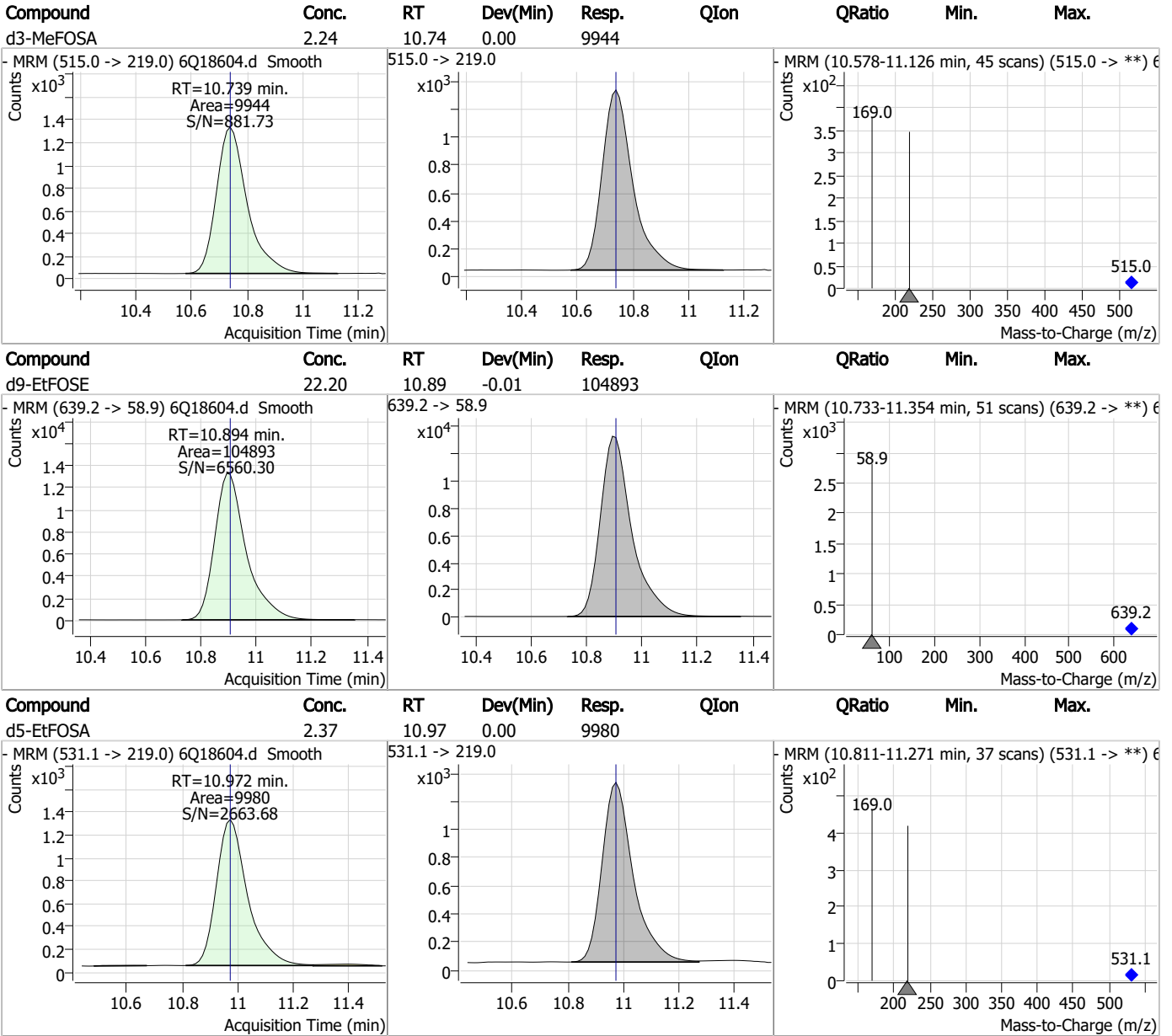
7.1.2

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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.16	8.90	0.00	22468				
13C8-FOSA	2.17	9.60	0.00	23825				
13C2-PFTeDA	1.13	9.63	-0.01	11975				
d7-MeFOSE	19.71	10.66	0.00	71197				

Perfluorinated Compounds by LC/MS/MS



7.1.2

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Manual Integration Approval Summary

Sample Number: FC6278-2 Method: EPA DRAFT 1633
Lab FileID: 6Q18604.D Analyst approved: 06/01/23 11:25 Martha Valls
Injection Time: 05/31/23 21:37 Supervisor approved: 06/01/23 16:14 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		5.42	Split peak

7.1.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18605.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 9:51:34 PM
 Sample Name : FC6278-3
 Vial : P6-C3
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	164042	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	55750	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	60543	2.50 µg/L	0.000
M4-PFHpA	6.382	367.1 -> 322.0	54428	2.50 µg/L	0.012
M8-PFOA	7.026	421.1 -> 376.0	86692	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	37626	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	22257	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	28187	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	23544	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	12639	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	25463	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	21323	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13911	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12957	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3377	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4948	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4665	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	25087	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	37331	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	21312	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	78479	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	114522	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	10734	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10526	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	15027	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	68371	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	9762	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	84772	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	30872	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	44558	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	56379	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3377	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4948	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4665	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C2-PFDoDA	8.900	615.1 -> 570.0	23544	1.10 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 87.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	12639	1.08 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 86.7%		
13C3-PFBS	5.334	302.1 -> 79.9	21323	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFHxS	7.130	402.1 -> 79.9	13911	2.55 µg/L	0.000

7.1.3
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C4-PFBA	2.876	216.8 -> 171.9	164042	10.07 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFHpA	6.382	367.1 -> 322.0	54428	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C5-PFHxA	5.417	318.0 -> 273.0	60543	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFPeA	4.222	268.3 -> 223.0	55750	5.08 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	8.027	519.1 -> 474.1	22257	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C7-PFUnDA	8.468	570.0 -> 525.1	28187	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C8-FOSA	9.598	506.1 -> 77.8	25463	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.9%	
13C8-PFOA	7.026	421.1 -> 376.0	86692	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C8-PFOS	8.177	507.1 -> 79.9	12957	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.7%	
13C9-PFNA	7.557	472.1 -> 427.0	37626	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25087	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	37331	10.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	10526	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.7%	
d5-EtFOSAA	8.279	589.2 -> 419.0	21312	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	78479	20.79 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.2%	
d9-EtFOSE	10.894	639.2 -> 58.9	114522	23.20 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	10734	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	

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



Perfluorinated Compounds by LC/MS/MS

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

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

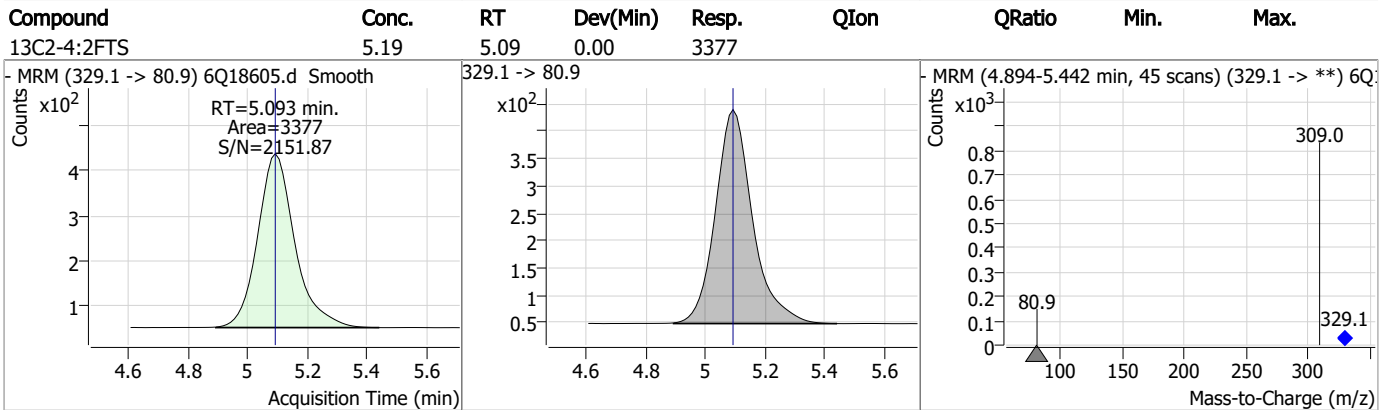
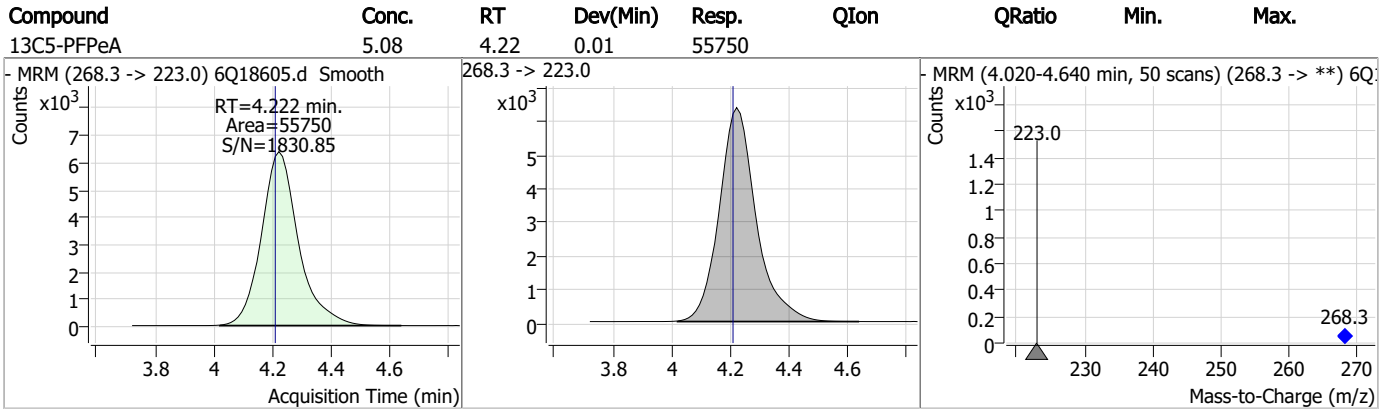
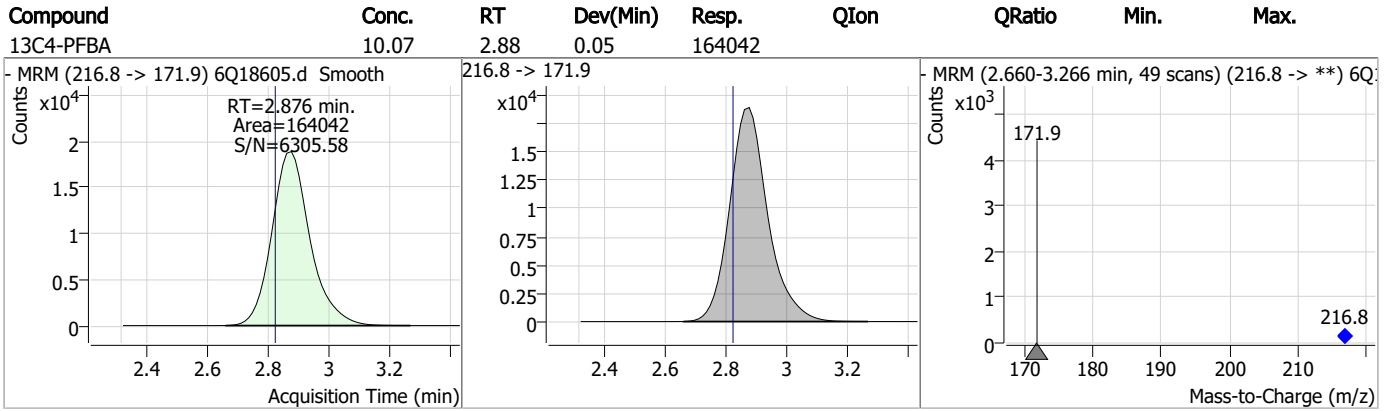
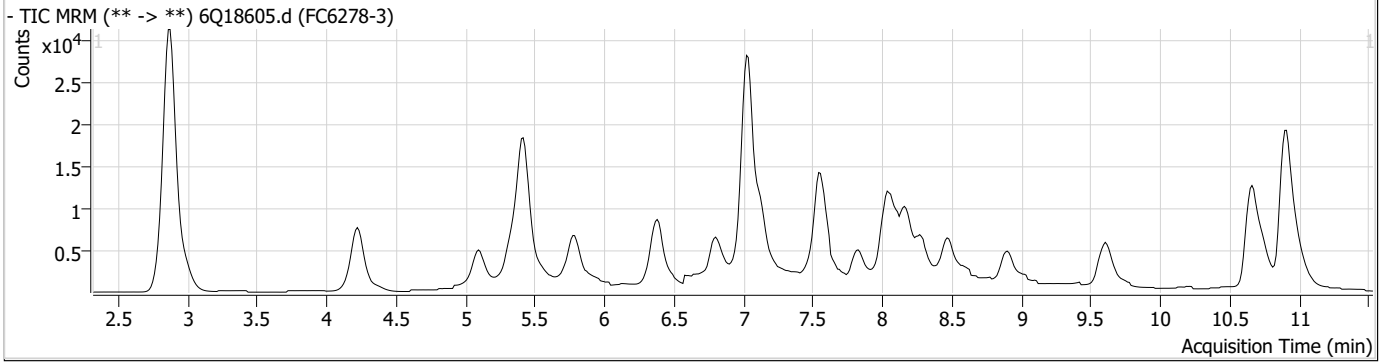
Perfluorinated Compounds by LC/MS/MS

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



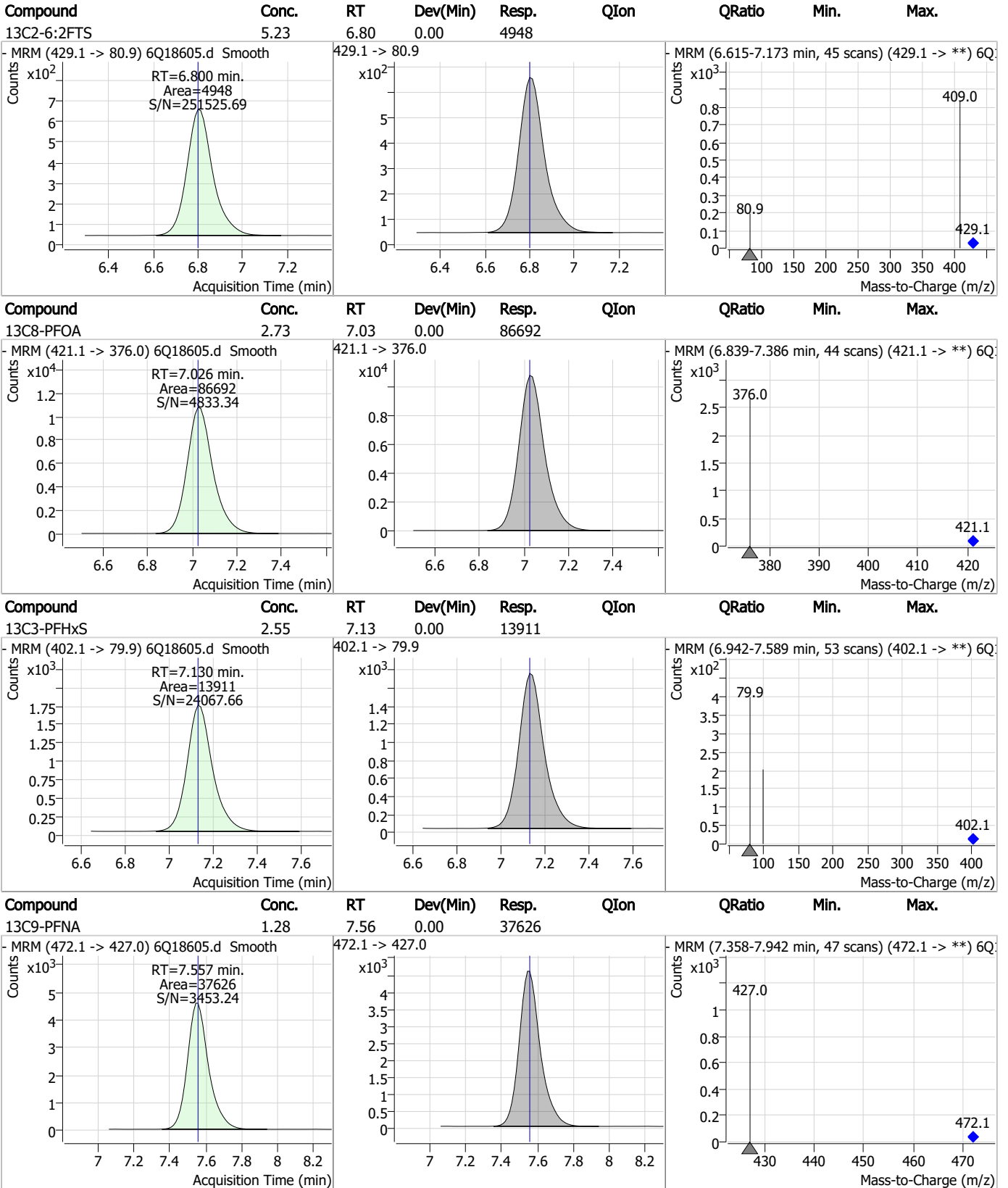
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.47	5.33	0.00	21323				
13C5-PFHxA	2.54	5.42	0.00	60543				
13C3-HFPO-DA	10.08	5.78	0.00	37331				
13C4-PFHpA	2.47	6.38	0.01	54428				

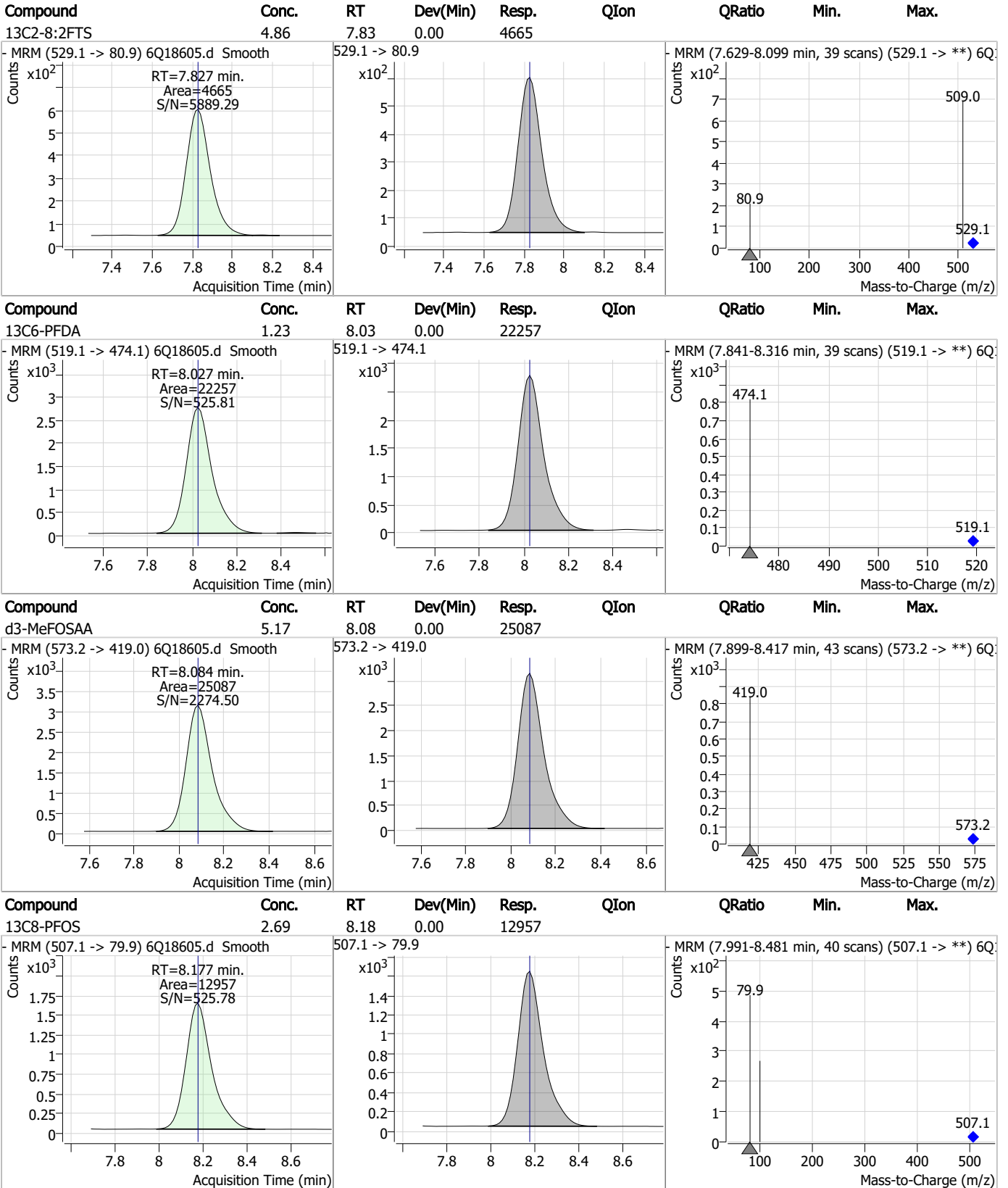
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



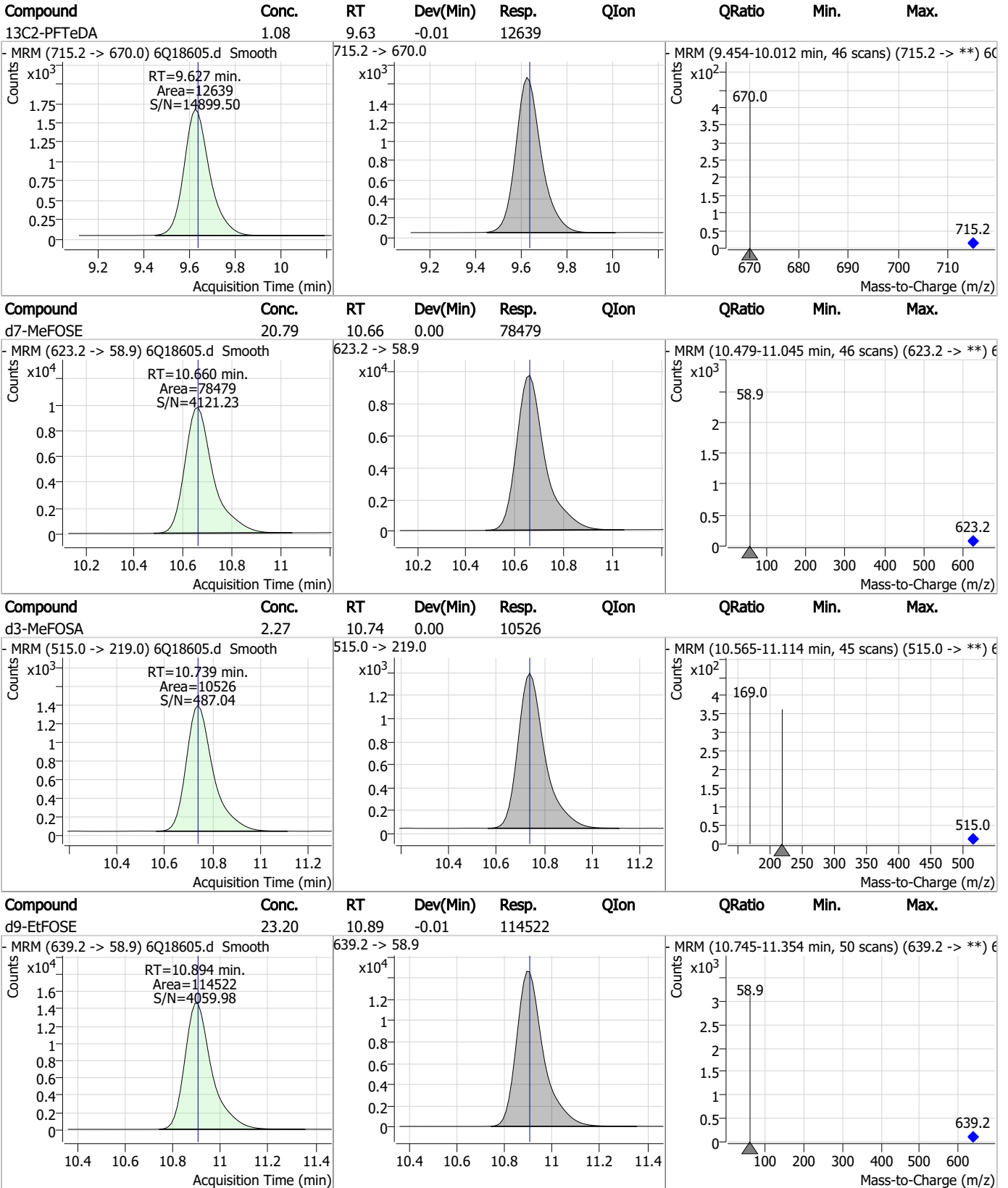
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.83	8.28	0.00	21312				
13C7-PFUnDA	1.22	8.47	-0.01	28187				
13C2-PFDoDA	1.10	8.90	0.00	23544				
13C8-FOSA	2.22	9.60	0.00	25463				

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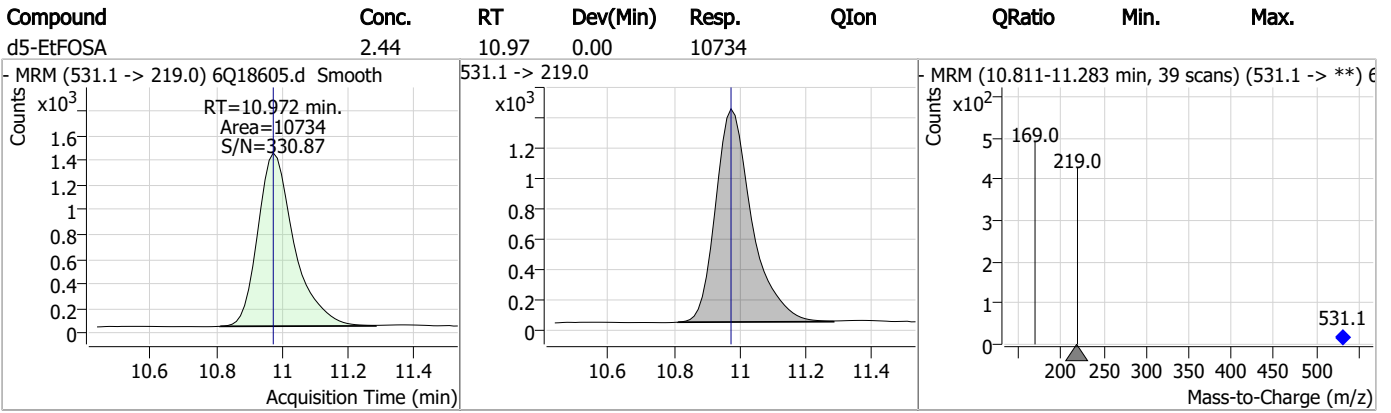
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

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 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 10:20:32 PM
 Sample Name : FC6278-4
 Vial : P6-C5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	147615	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	50078	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	53155	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	50279	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	77928	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	34543	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	20588	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	25778	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	23207	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	11577	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	24604	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	20767	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	11986	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	10897	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3021	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4469	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4272	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	22059	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	34189	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	19337	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	77784	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	109832	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	9340	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9084	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	14611	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	62637	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8992	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	81226	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	27457	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	42974	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	50953	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3021	5.04 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4469	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4272	4.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	23207	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	11577	1.12 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.3%		
13C3-PFBS	5.334	302.1 -> 79.9	20767	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C3-PFHxS	7.130	402.1 -> 79.9	11986	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	2.860	216.8 -> 171.9	147615	9.90 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.369	367.1 -> 322.0	50279	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C5-PFHxA	5.417	318.0 -> 273.0	53155	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFPeA	4.222	268.3 -> 223.0	50078	5.05 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C6-PFDA	8.027	519.1 -> 474.1	20588	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C7-PFUnDA	8.468	570.0 -> 525.1	25778	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-FOSA	9.598	506.1 -> 77.8	24604	2.21 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.4%	
13C8-PFOA	7.026	421.1 -> 376.0	77928	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOS	8.177	507.1 -> 79.9	10897	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C9-PFNA	7.545	472.1 -> 427.0	34543	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
d3-MeFOSAA	8.084	573.2 -> 419.0	22059	4.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	34189	10.21 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	9084	2.01 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	19337	4.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.2%	
d7-MeFOSE	10.660	623.2 -> 58.9	77784	21.20 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	109832	22.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	9340	2.19 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.4%	

Target Compounds

QValue

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

Perfluorinated Compounds by LC/MS/MS

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

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

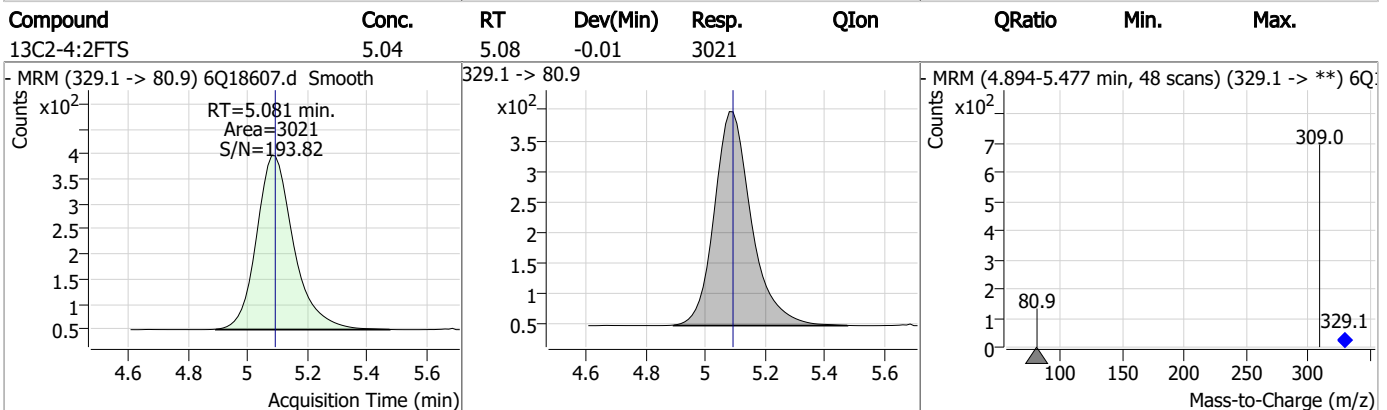
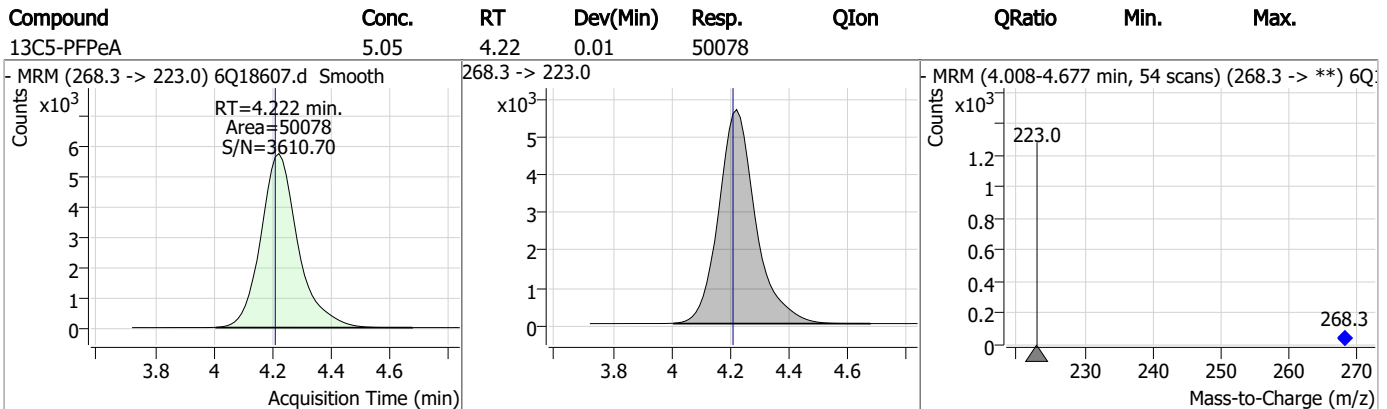
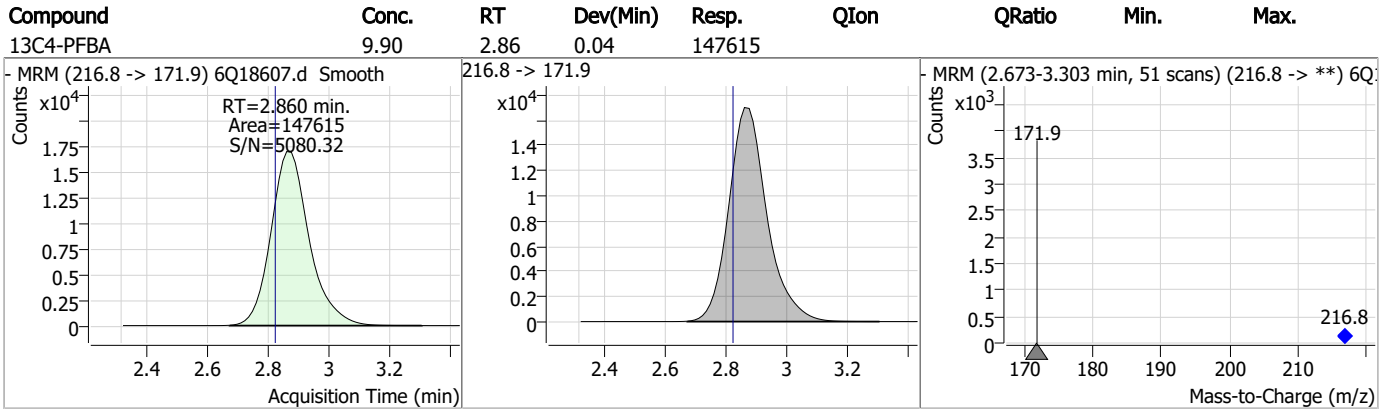
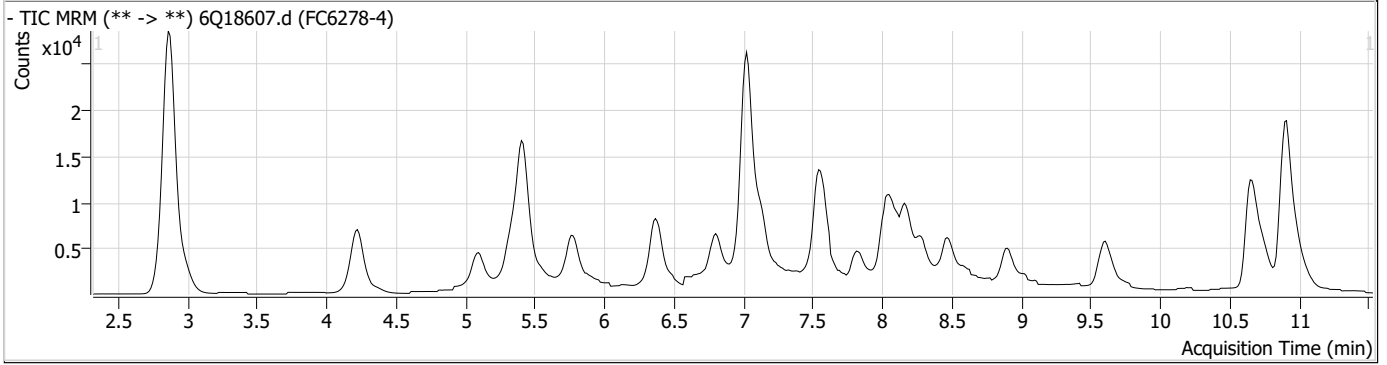
Perfluorinated Compounds by LC/MS/MS

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



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.61	5.33	0.00	20767				
13C5-PFHxA	2.46	5.42	0.00	53155				
13C3-HFPO-DA	10.21	5.78	0.00	34189				
13C4-PFHpA	2.52	6.37	0.00	50279				

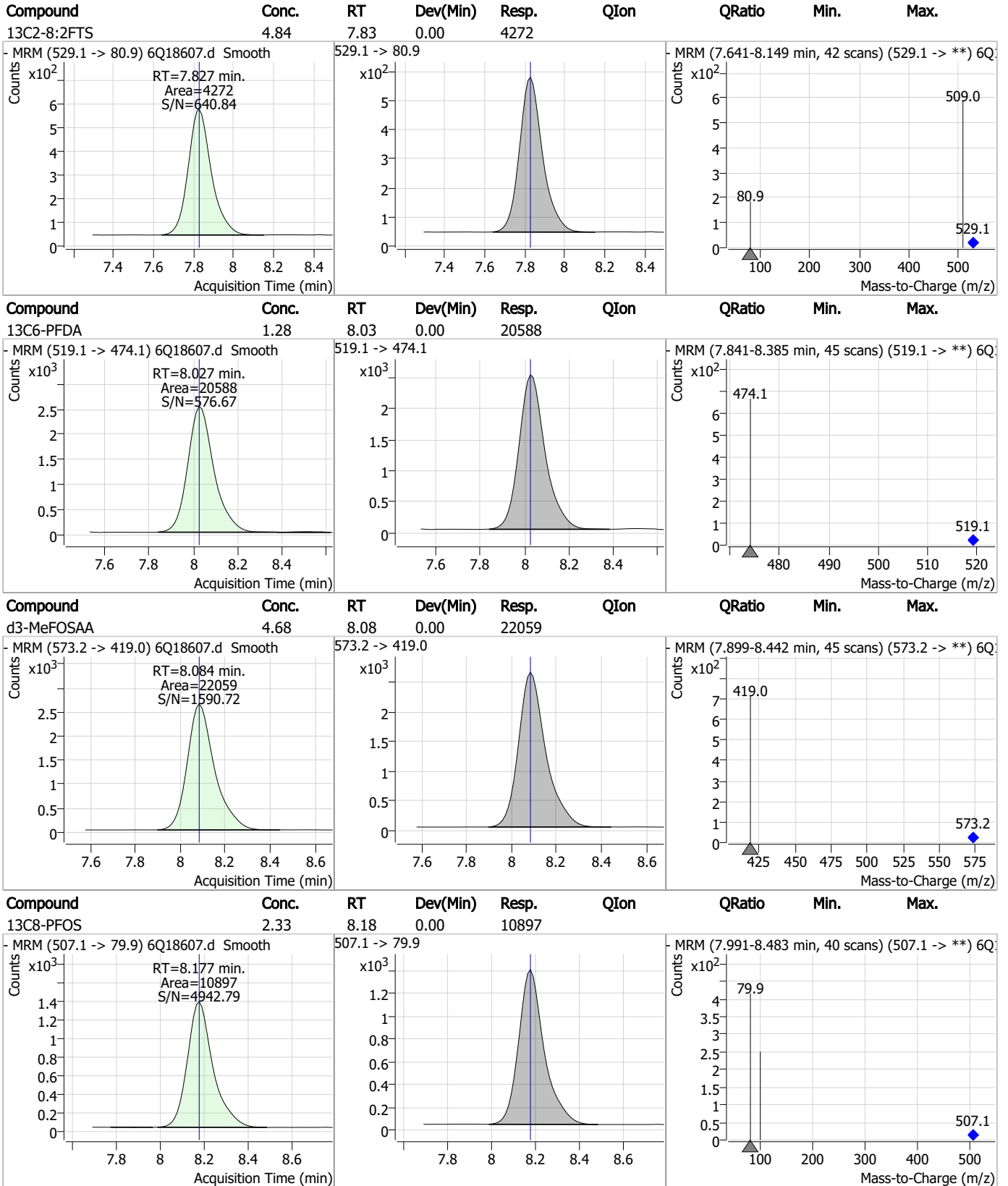
7.1.4

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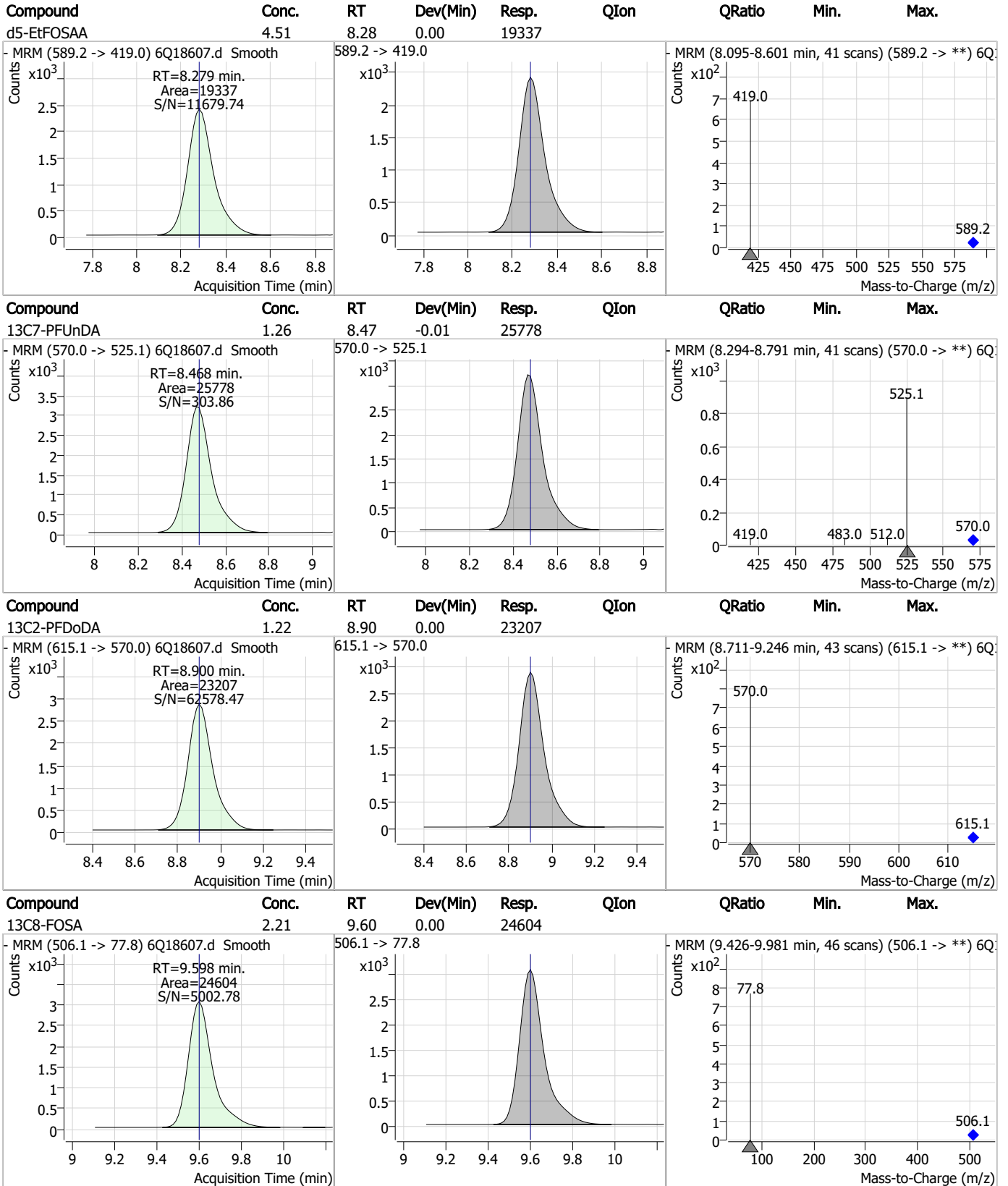
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.13	6.80	0.00	4469				
- MRM (429.1 -> 80.9) 6Q18607.d Smooth			429.1 -> 80.9			- MRM (6.615-7.100 min, 40 scans) (429.1 -> **) 6Q18607.d Smooth		
13C8-PFOA	2.56	7.03	0.00	77928				
- MRM (421.1 -> 376.0) 6Q18607.d Smooth			421.1 -> 376.0			- MRM (6.839-7.412 min, 47 scans) (421.1 -> **) 6Q18607.d Smooth		
13C3-PFHxS	2.39	7.13	0.00	11986				
- MRM (402.1 -> 79.9) 6Q18607.d Smooth			402.1 -> 79.9			- MRM (6.942-7.589 min, 53 scans) (402.1 -> **) 6Q18607.d Smooth		
13C9-PFNA	1.22	7.54	-0.01	34543				
- MRM (472.1 -> 427.0) 6Q18607.d Smooth			472.1 -> 427.0			- MRM (7.371-7.912 min, 44 scans) (472.1 -> **) 6Q18607.d Smooth		

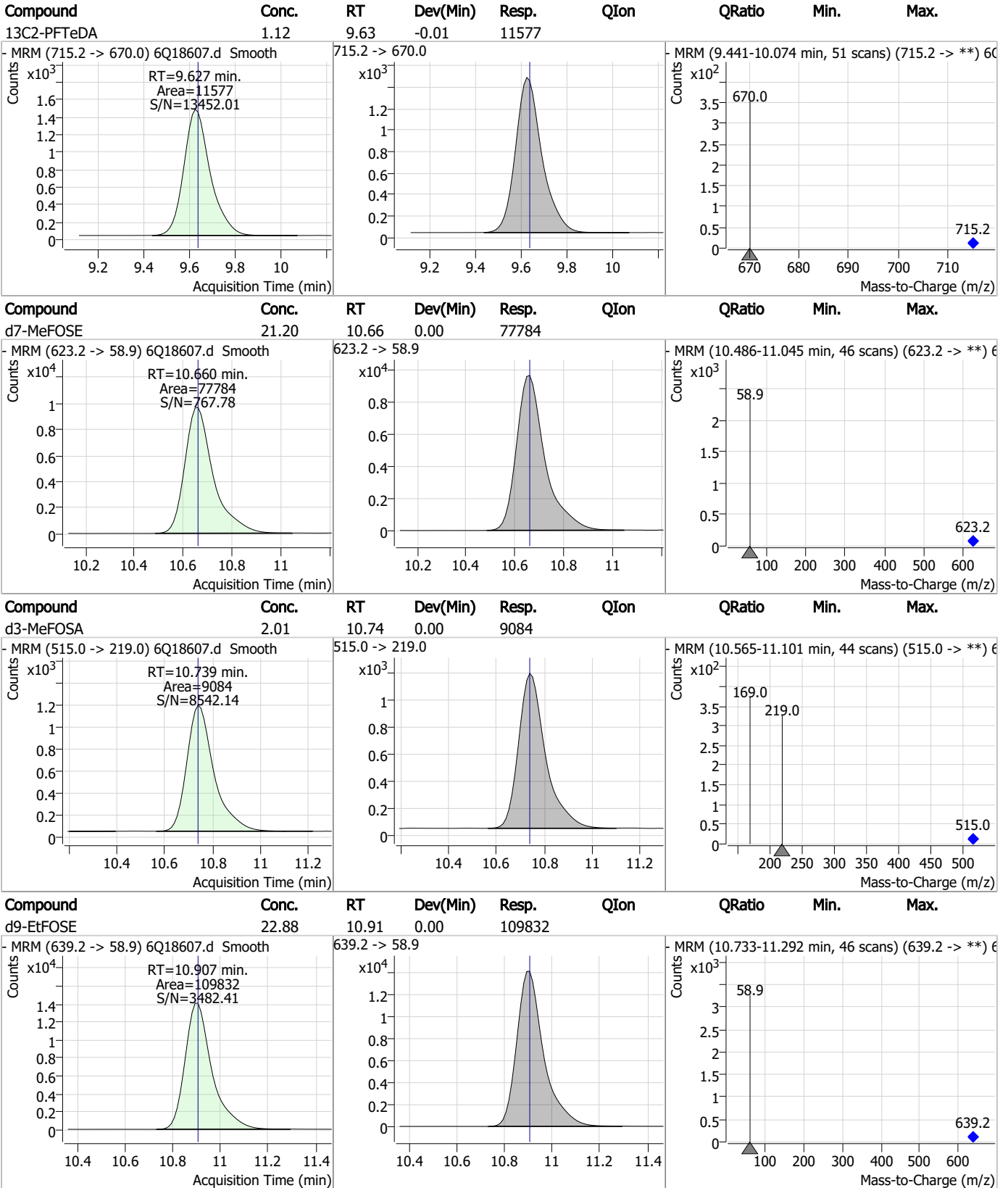
Perfluorinated Compounds by LC/MS/MS



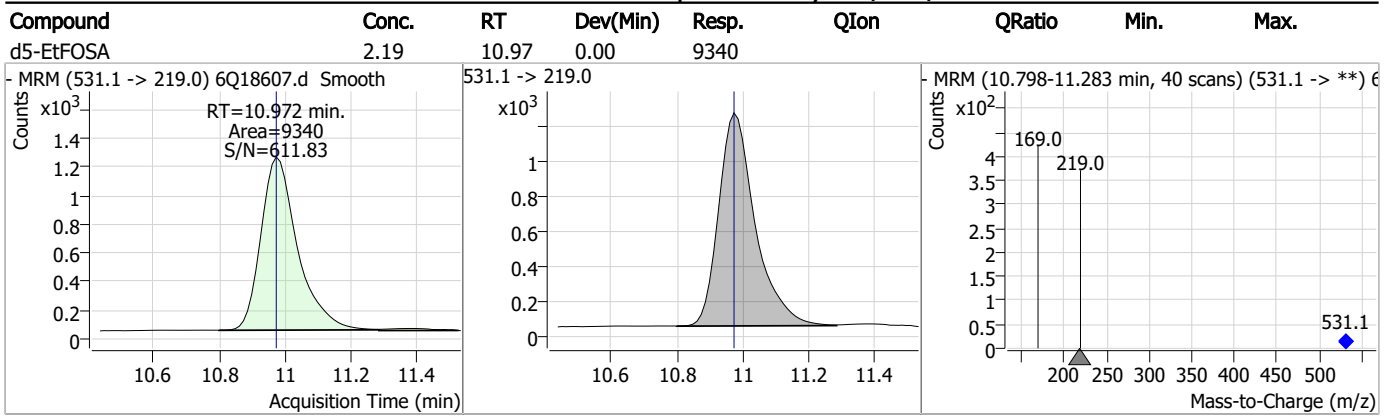
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.4
7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18611.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 11:18:29 PM
 Sample Name : FC6278-5
 Vial : P6-C6
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	131317	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	55073	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	60126	2.50 µg/L	0.000
M4-PFHpA	6.382	367.1 -> 322.0	55114	2.50 µg/L	0.012
M8-PFOA	7.026	421.1 -> 376.0	81398	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	37621	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22977	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	26870	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	22946	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	12497	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	24168	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	21594	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13129	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12252	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3283	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4924	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4732	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	25042	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	36372	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	22195	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	74106	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	110985	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	9200	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9075	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	15041	2.50 µg/L	-0.012
13C3-PFBA	2.879	216.0 -> 172.0	63474	5.00 µg/L	0.052
18O2-PFHxS	7.129	403.0 -> 83.9	8774	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	81139	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	27666	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	41243	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	51661	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3283	5.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4924	5.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.9%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4732	5.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.8%		
13C2-PFDoDA	8.900	615.1 -> 570.0	22946	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C2-PFTeDA	9.627	715.2 -> 670.0	12497	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C3-PFBS	5.334	302.1 -> 79.9	21594	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	13129	2.68 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 = 107.1%	
13C4-PFBA	2.876	216.8 -> 171.9	131317	8.69 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.9%	
13C4-PFHpA	6.382	367.1 -> 322.0	55114	2.73 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.0%	
13C5-PFHxA	5.417	318.0 -> 273.0	60126	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C5-PFPeA	4.222	268.3 -> 223.0	55073	5.48 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.6%	
13C6-PFDA	8.027	519.1 -> 474.1	22977	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.4%	
13C7-PFUnDA	8.468	570.0 -> 525.1	26870	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C8-FOSA	9.598	506.1 -> 77.8	24168	2.11 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 84.3%	
13C8-PFOA	7.026	421.1 -> 376.0	81398	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C8-PFOS	8.177	507.1 -> 79.9	12252	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C9-PFNA	7.545	472.1 -> 427.0	37621	1.38 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.7%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25042	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	36372	10.71 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	9075	1.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 78.1%	
d5-EtFOSAA	8.279	589.2 -> 419.0	22195	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	74106	19.62 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 78.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	110985	22.46 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	9200	2.09 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 83.6%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.571	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

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

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

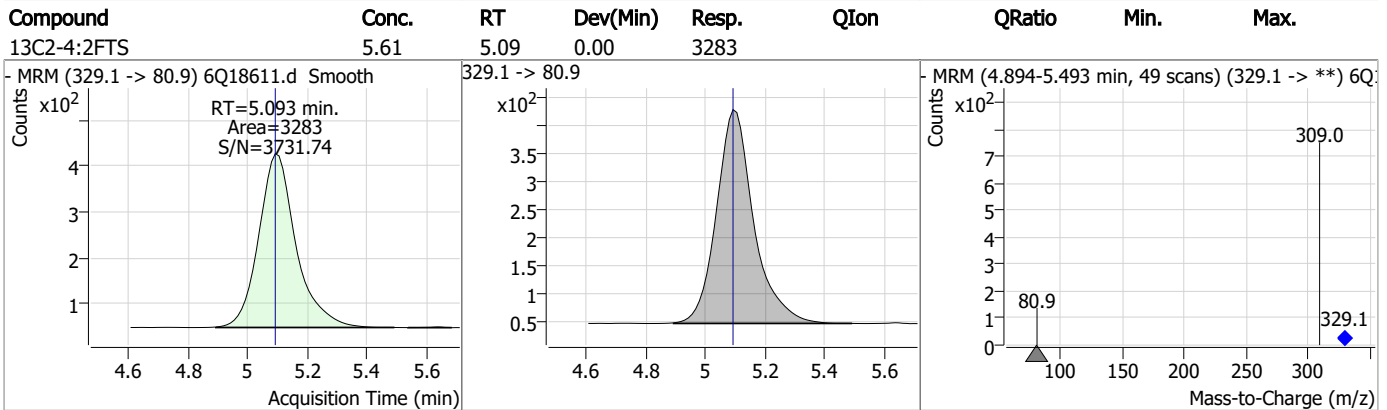
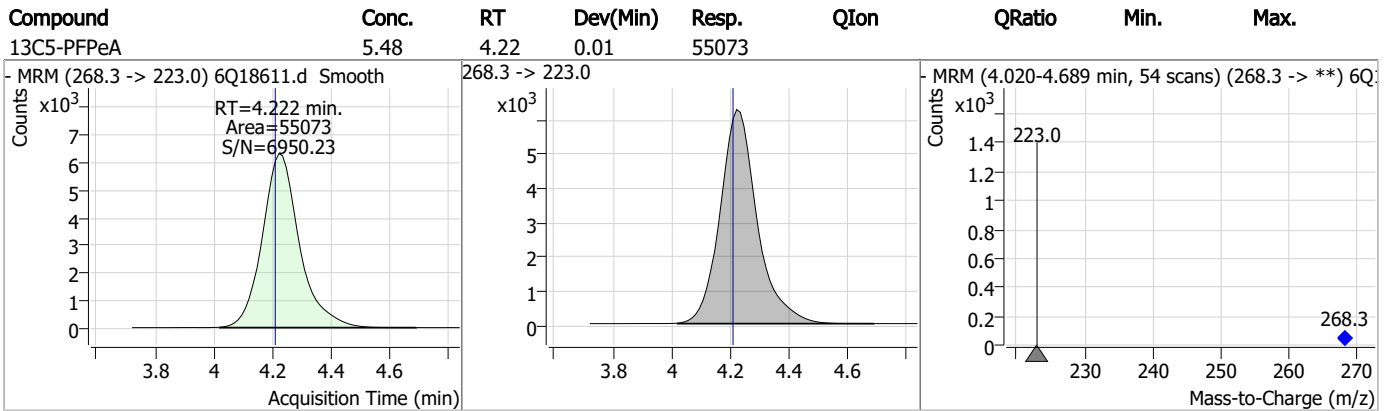
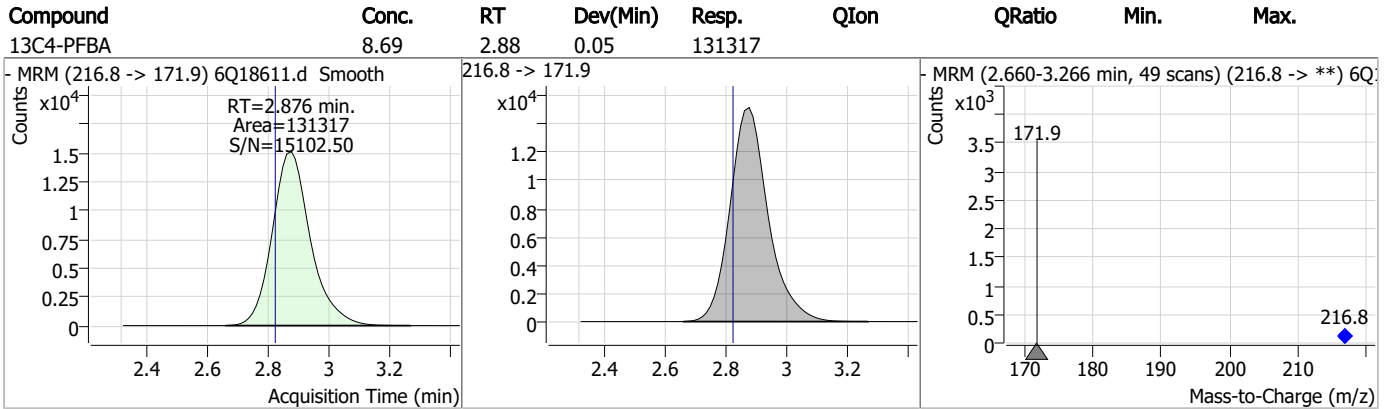
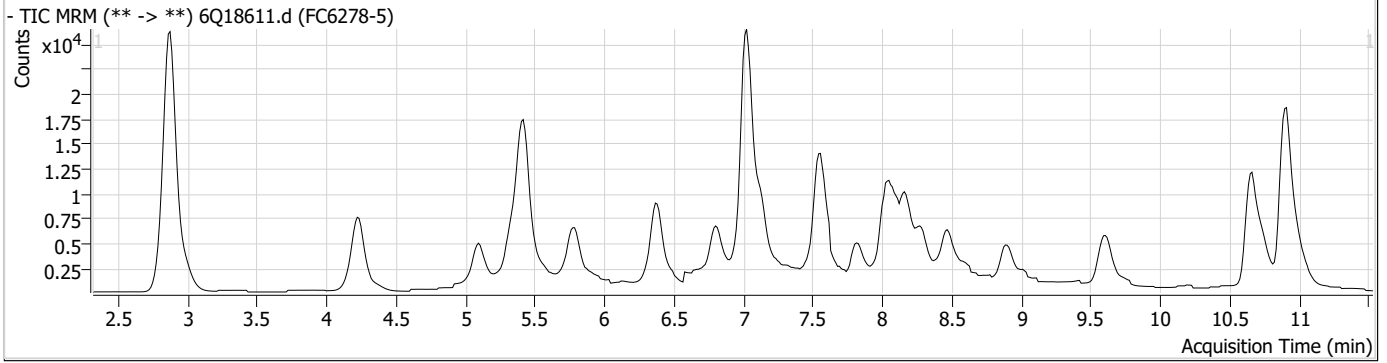
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.1.5

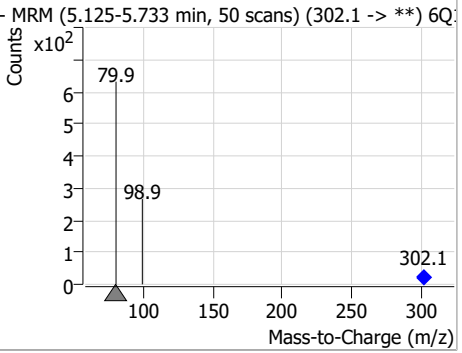
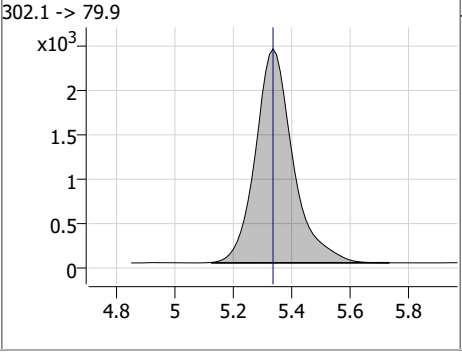
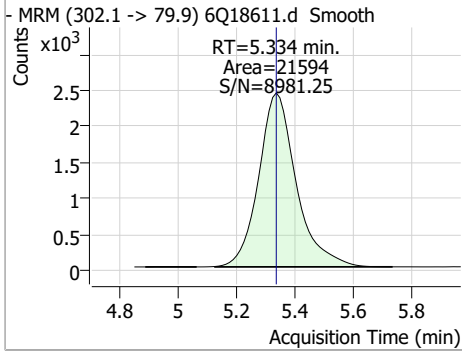
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Perfluorinated Compounds by LC/MS/MS

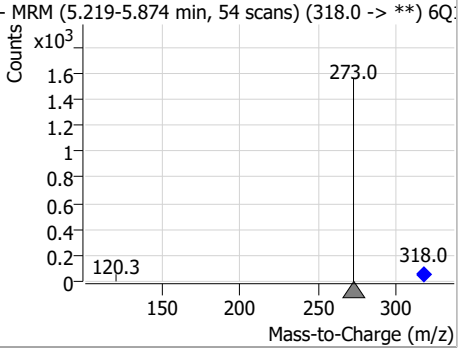
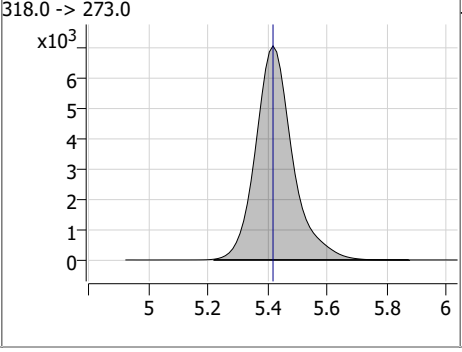
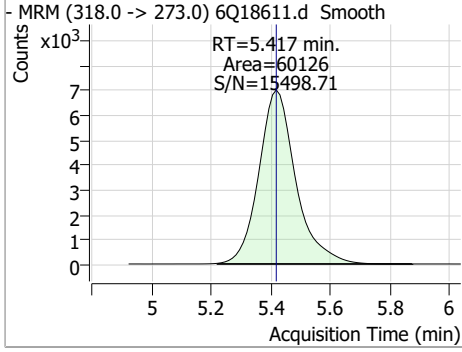


Perfluorinated Compounds by LC/MS/MS

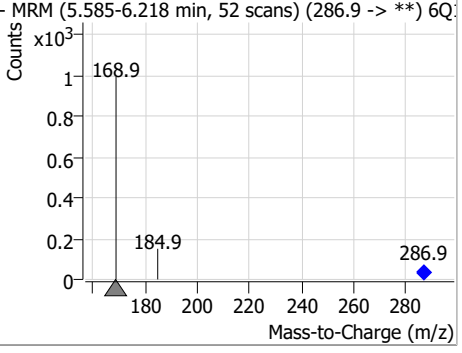
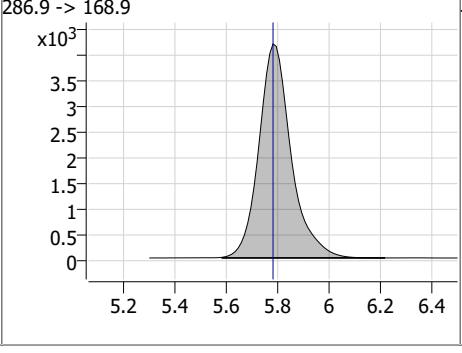
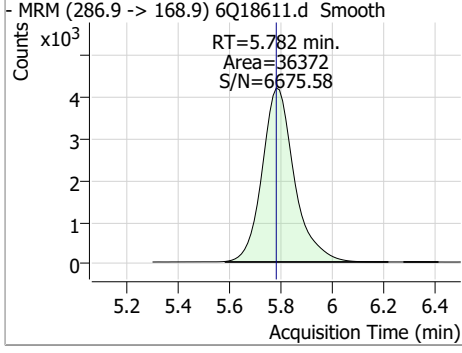
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.78	5.33	0.00	21594				



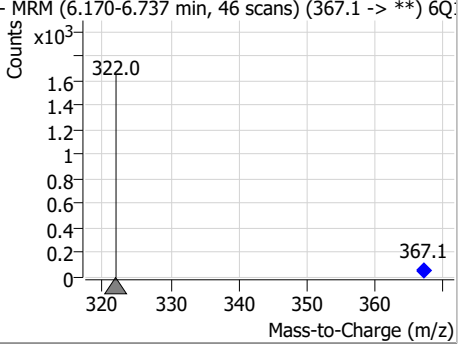
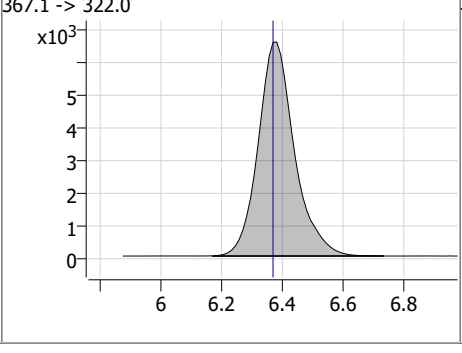
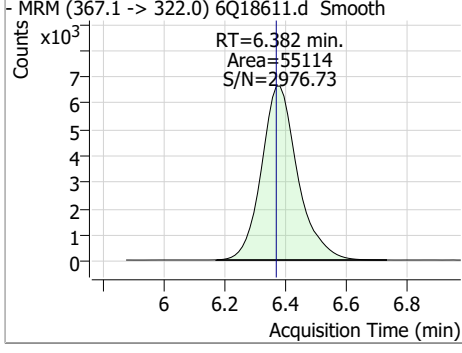
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.75	5.42	0.00	60126				



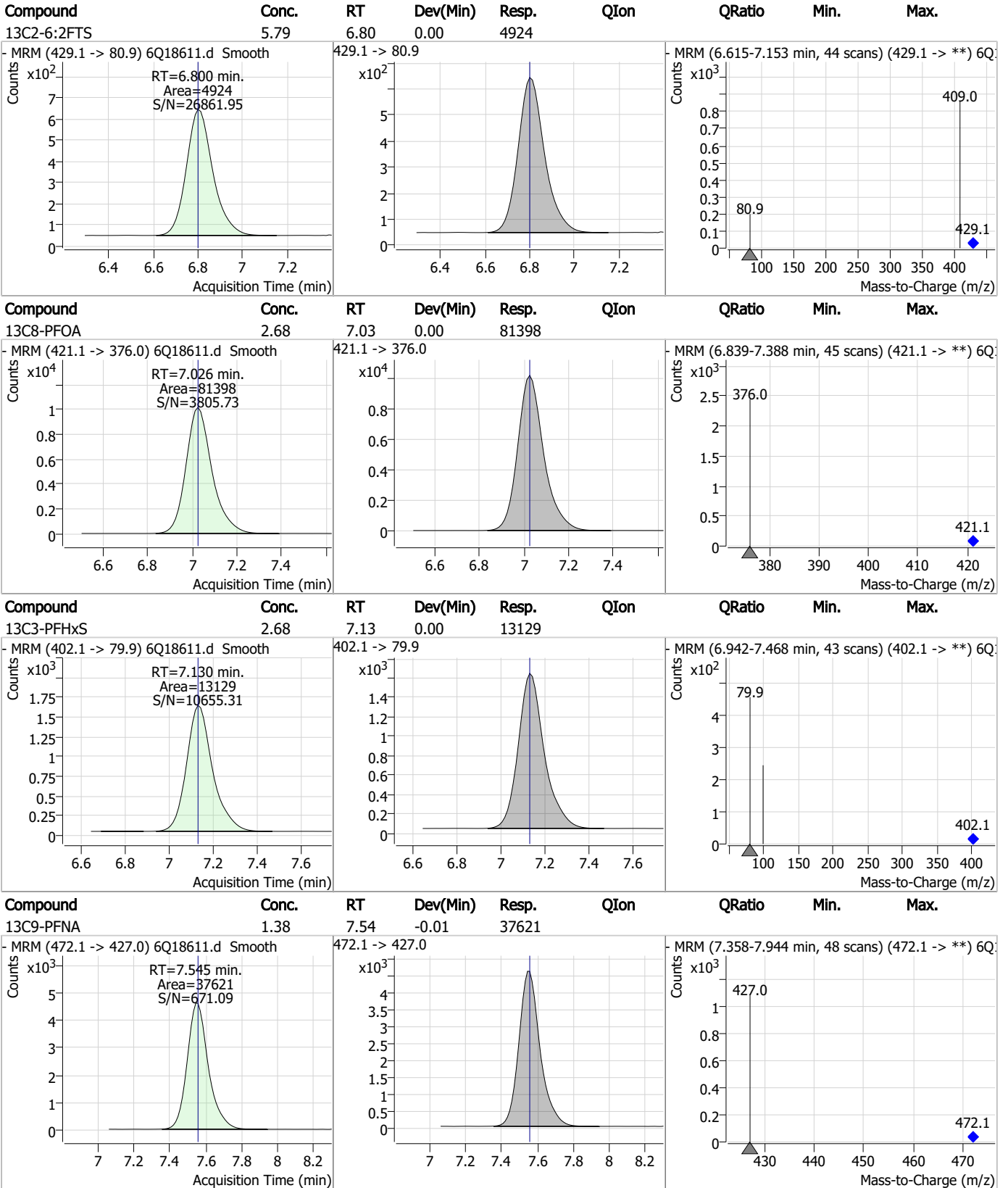
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.71	5.78	0.00	36372				



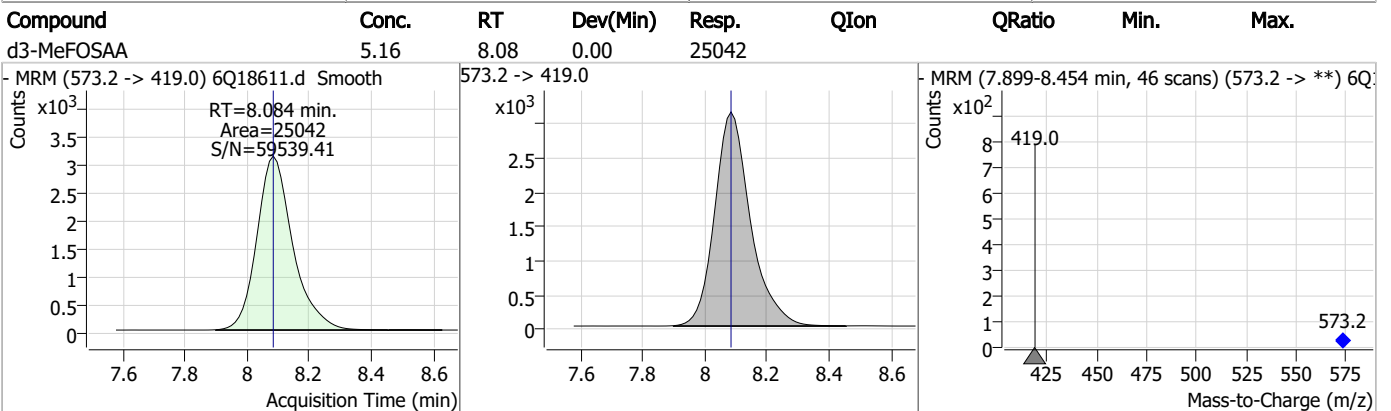
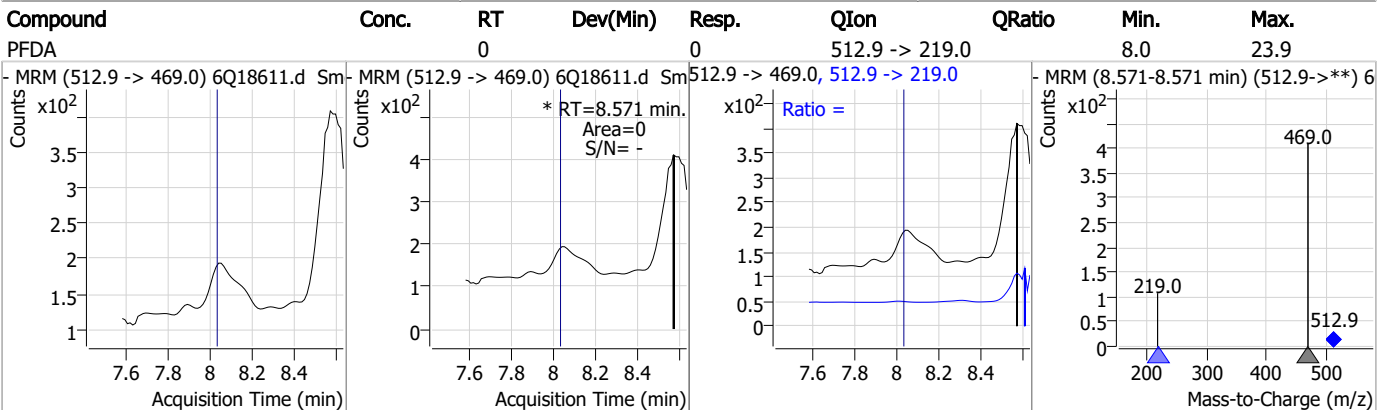
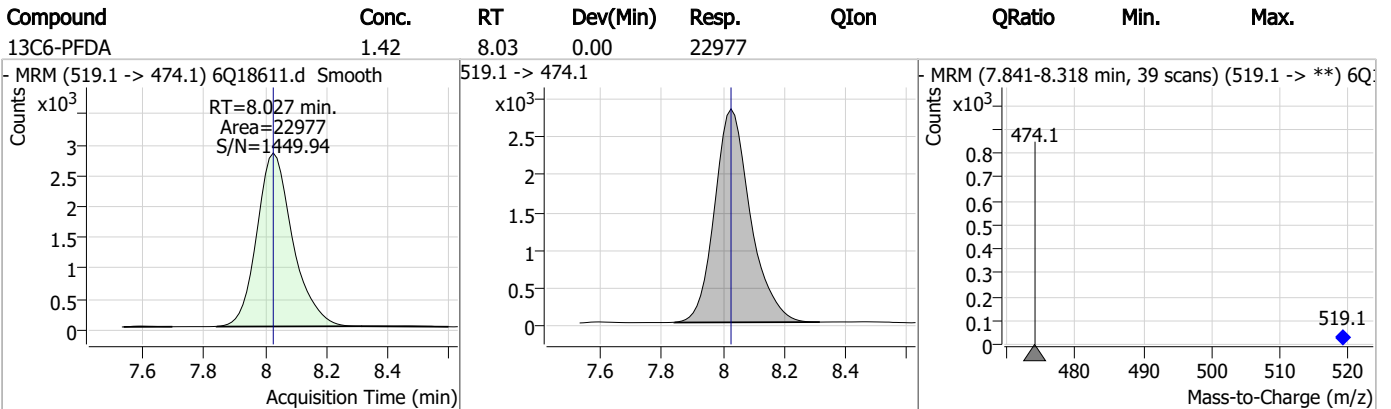
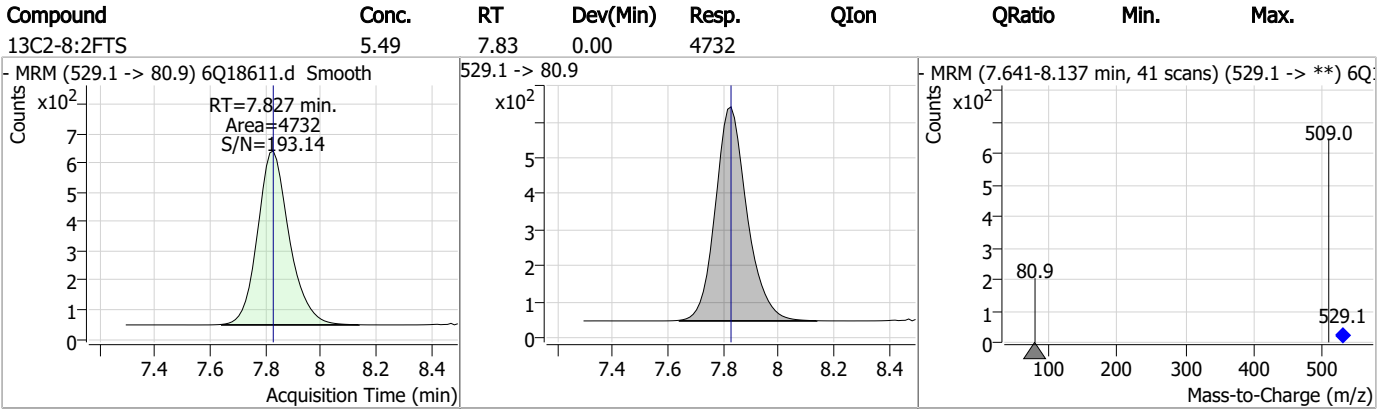
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.73	6.38	0.01	55114				



Perfluorinated Compounds by LC/MS/MS



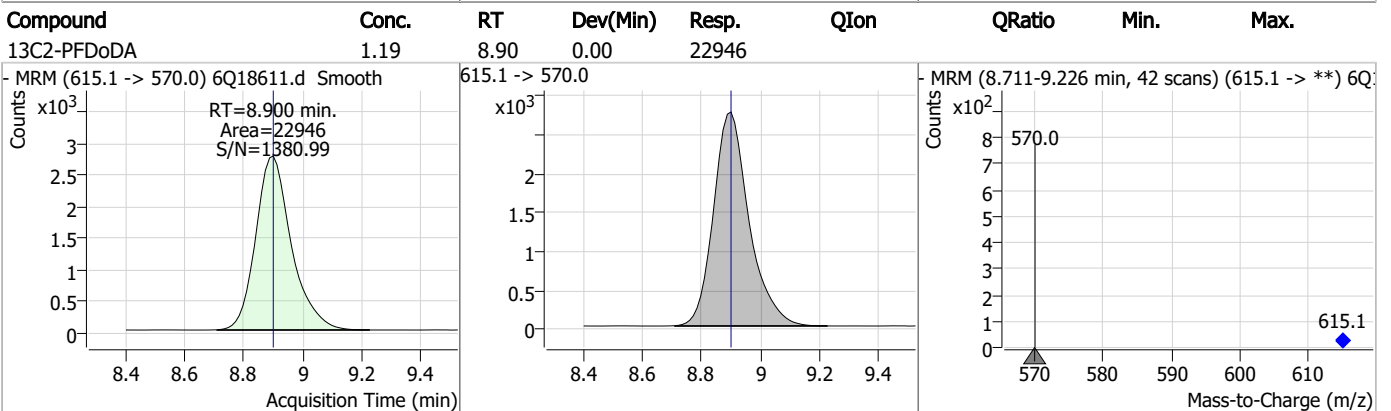
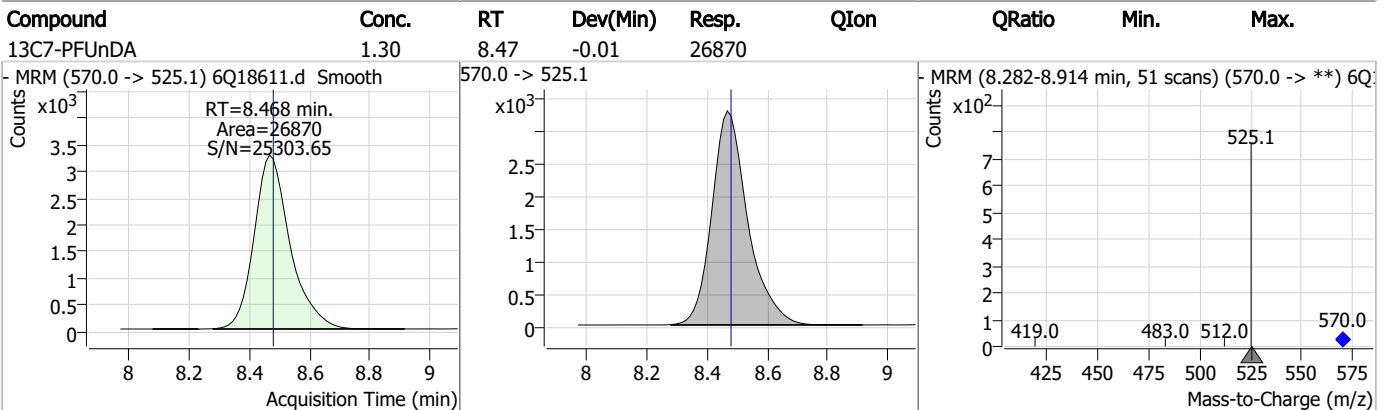
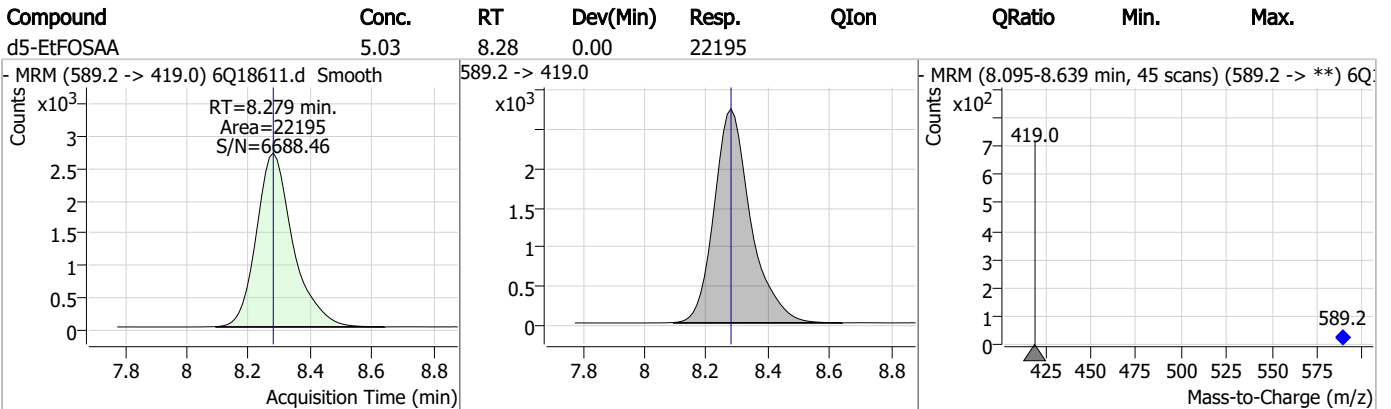
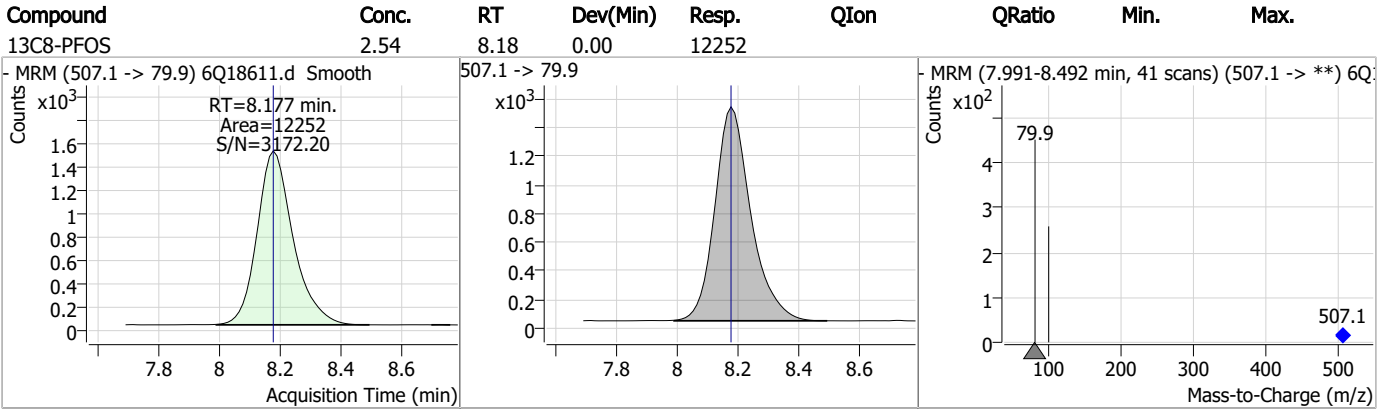
Perfluorinated Compounds by LC/MS/MS



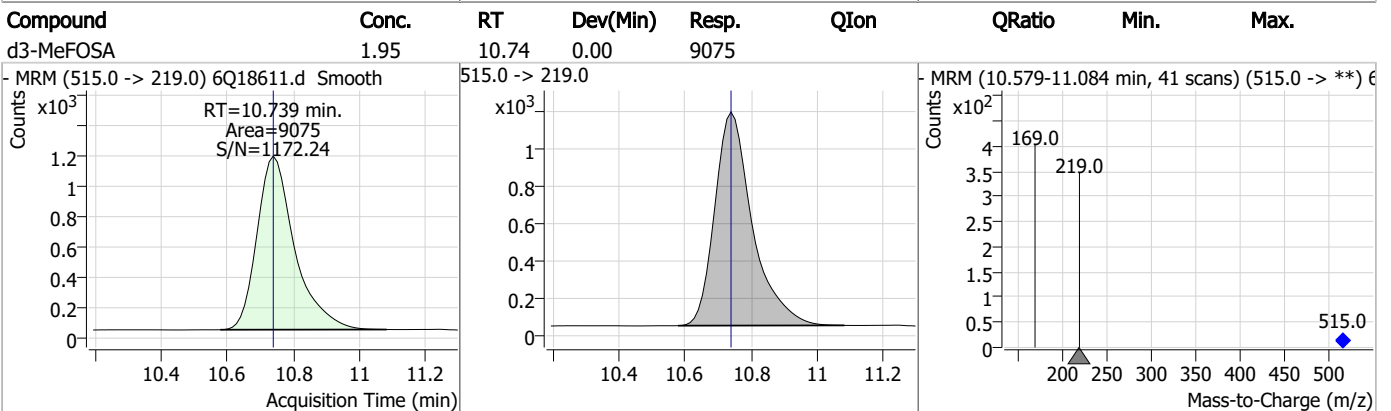
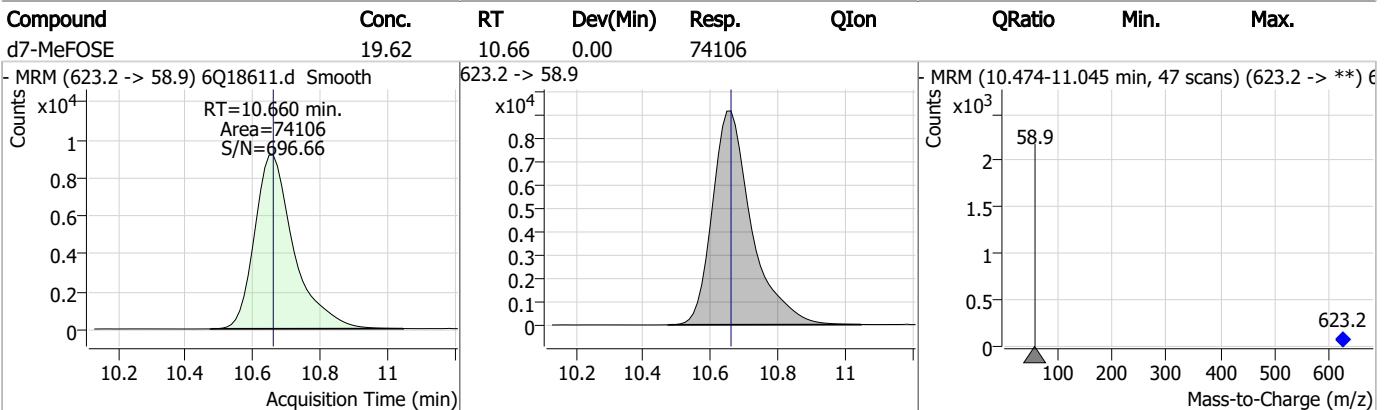
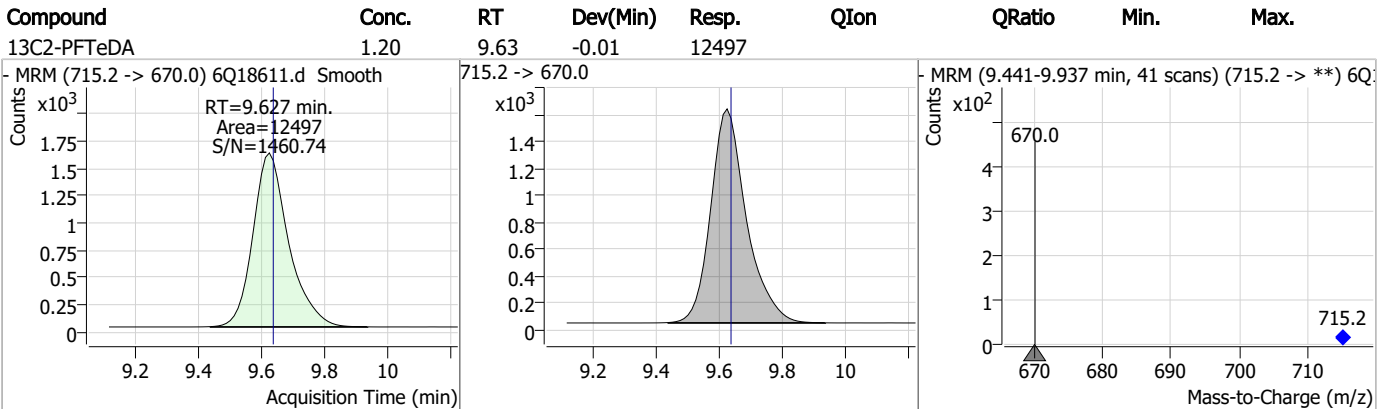
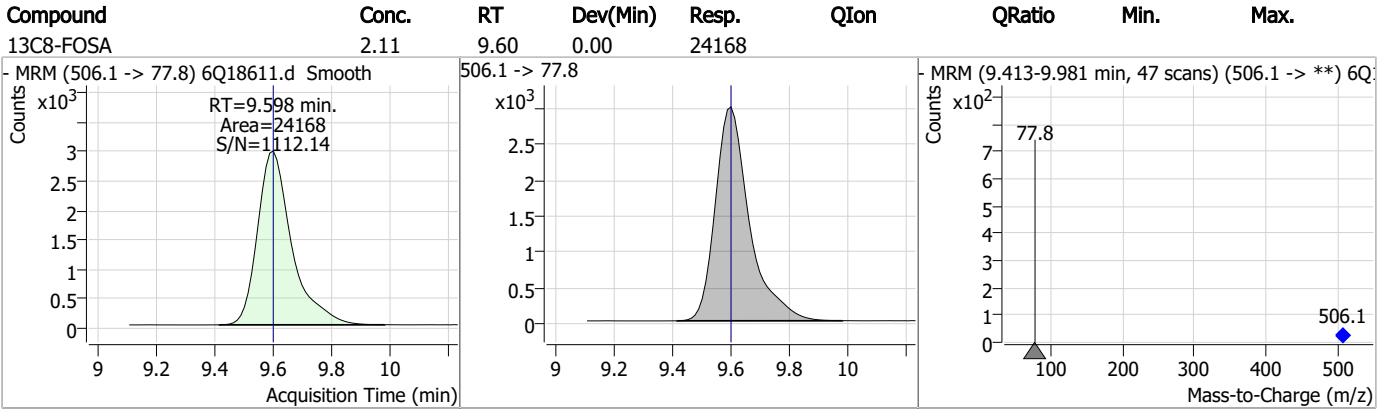
7.1.5

7

Perfluorinated Compounds by LC/MS/MS

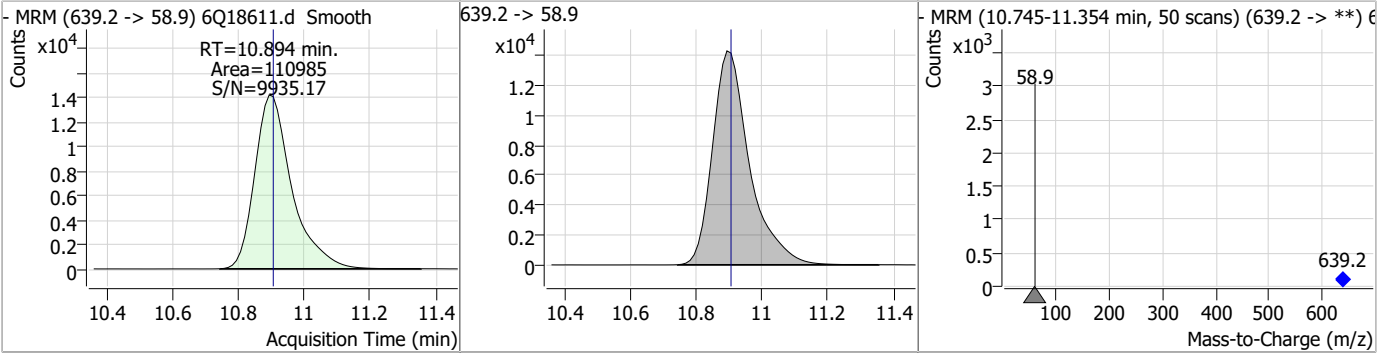


Perfluorinated Compounds by LC/MS/MS

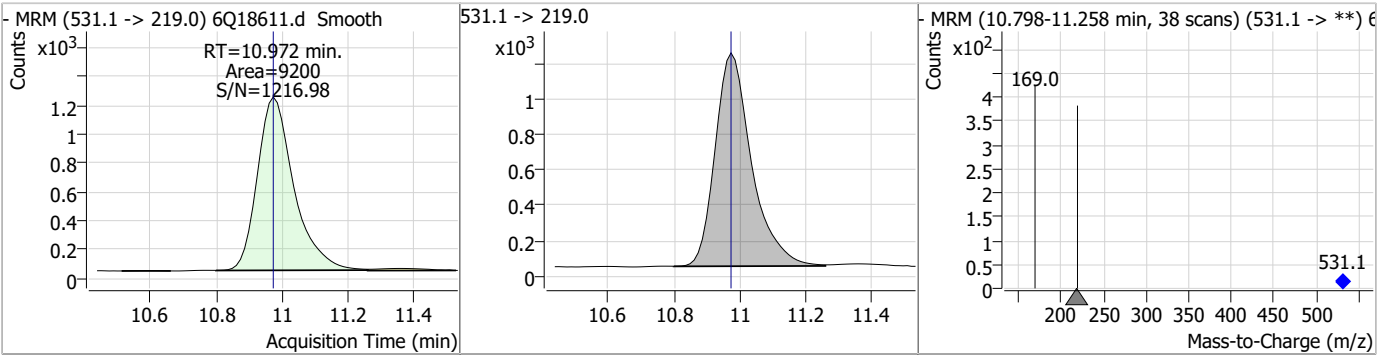


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.46	10.89	-0.01	110985				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.09	10.97	0.00	9200				



7.1.5

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18544.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 10:35:40 PM
 Sample Name : op97070-mb
 Vial : P6-B7
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP97070,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	155730	10.00 µg/L	0.053
M5-PFPeA	4.235	268.3 -> 223.0	49972	5.00 µg/L	0.025
M5-PFHxA	5.417	318.0 -> 273.0	55339	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	50184	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	75491	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	30968	1.25 µg/L	0.000
M6-PFDA	8.039	519.1 -> 474.1	19357	1.25 µg/L	0.012
M7-PFUnDA	8.480	570.0 -> 525.1	25638	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	22143	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	10819	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	19381	2.50 µg/L	0.000
M3-PFBS	5.347	302.1 -> 79.9	20660	2.50 µg/L	0.012
M3-PFHxS	7.142	402.1 -> 79.9	12820	2.50 µg/L	0.012
M8-PFOS	8.189	507.1 -> 79.9	11315	2.50 µg/L	0.000
M2-4:2FTS	5.106	329.1 -> 80.9	2755	5.00 µg/L	0.013
M2-6:2FTS	6.813	429.1 -> 80.9	3757	5.00 µg/L	0.012
M2-8:2FTS	7.827	529.1 -> 80.9	3547	5.00 µg/L	0.000
M3-MeFOSAA	8.096	573.2 -> 419.0	22459	5.00 µg/L	0.000
M3-HFPO-DA	5.794	286.9 -> 168.9	35011	10.00 µg/L	0.012
M5-EtFOSAA	8.292	589.2 -> 419.0	18385	5.00 µg/L	0.012
M7-MeFOSE	10.660	623.2 -> 58.9	62057	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	89903	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	8661	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	8251	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	15106	2.50 µg/L	-0.012
13C3-PFBA	2.879	216.0 -> 172.0	63802	5.00 µg/L	0.052
18O2-PFHxS	7.141	403.0 -> 83.9	9416	2.50 µg/L	0.012
13C4-PFOA	7.027	417.1 -> 372.0	77113	2.50 µg/L	0.000
13C2-PFDA	8.039	515.1 -> 470.1	25518	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	38122	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	51143	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.106	329.1 -> 80.9	2755	5.83 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.7%		
13C2-6:2FTS	6.813	429.1 -> 80.9	3757	5.81 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.2%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3547	5.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.1%		
13C2-PFDoDA	8.912	615.1 -> 570.0	22143	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C2-PFTeDA	9.639	715.2 -> 670.0	10819	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.5%		
13C3-PFBS	5.347	302.1 -> 79.9	20660	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFHxS	7.142	402.1 -> 79.9	12820	2.52 µg/L	0.012

7.2.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFBA	2.876	216.8 -> 171.9	155730	10.20 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C4-PFHpA	6.382	367.1 -> 322.0	50184	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFHxA	5.417	318.0 -> 273.0	55339	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFPeA	4.235	268.3 -> 223.0	49972	4.92 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C6-PFDA	8.039	519.1 -> 474.1	19357	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C7-PFUnDA	8.480	570.0 -> 525.1	25638	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C8-FOSA	9.598	506.1 -> 77.8	19381	1.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.9%	
13C8-PFOA	7.026	421.1 -> 376.0	75491	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C8-PFOS	8.189	507.1 -> 79.9	11315	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C9-PFNA	7.557	472.1 -> 427.0	30968	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSAA	8.096	573.2 -> 419.0	22459	5.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.1%	
13C3-HFPO-DA	5.794	286.9 -> 168.9	35011	9.68 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	8251	1.94 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.5%	
d5-EtFOSAA	8.292	589.2 -> 419.0	18385	5.17 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
d7-MeFOSE	10.660	623.2 -> 58.9	62057	17.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 69.9%	
d9-EtFOSE	10.907	639.2 -> 58.9	89903	19.15 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 76.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	8661	2.10 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 84.0%	

Target Compounds

QValue

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

7.2.1
7

Perfluorinated Compounds by LC/MS/MS

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

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

7.2.1
7

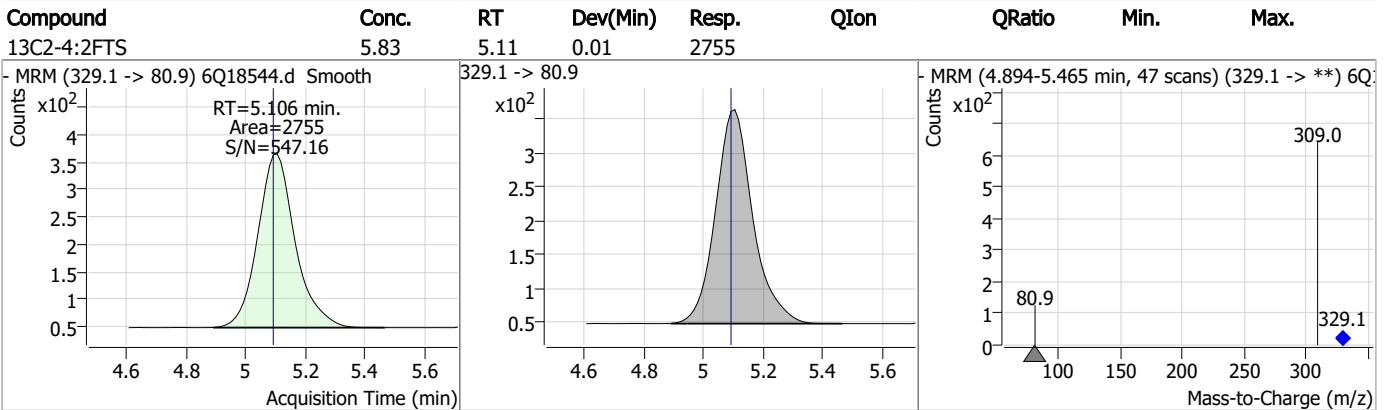
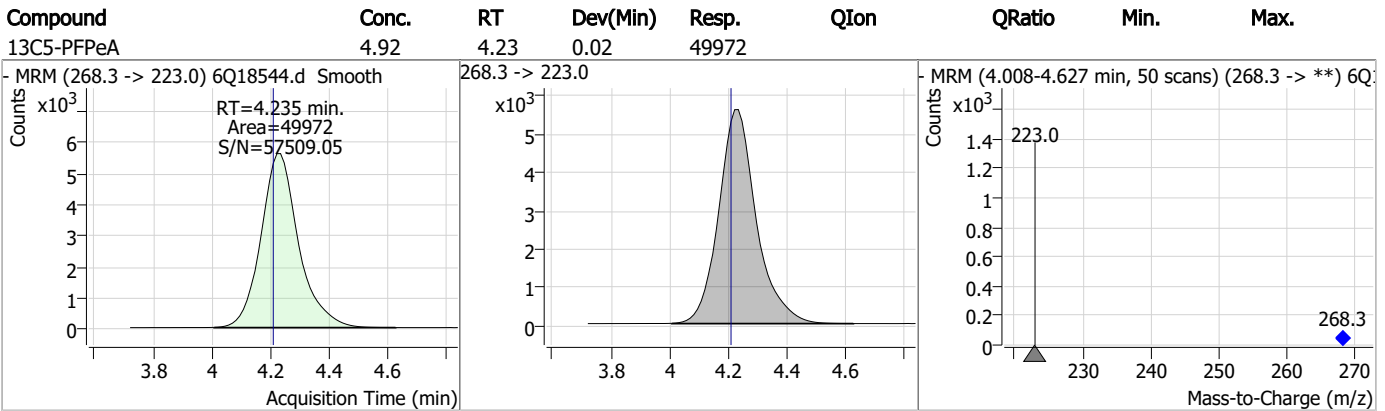
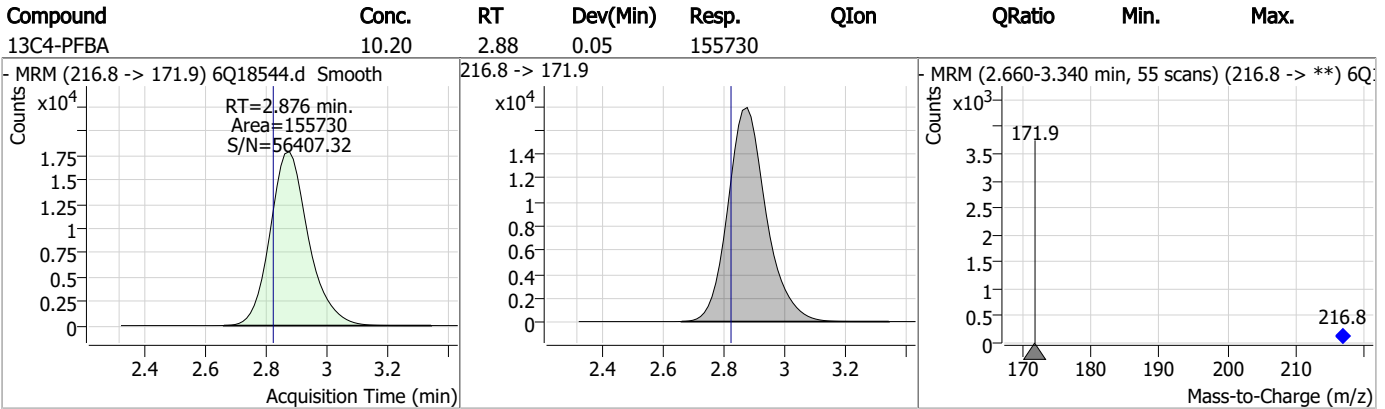
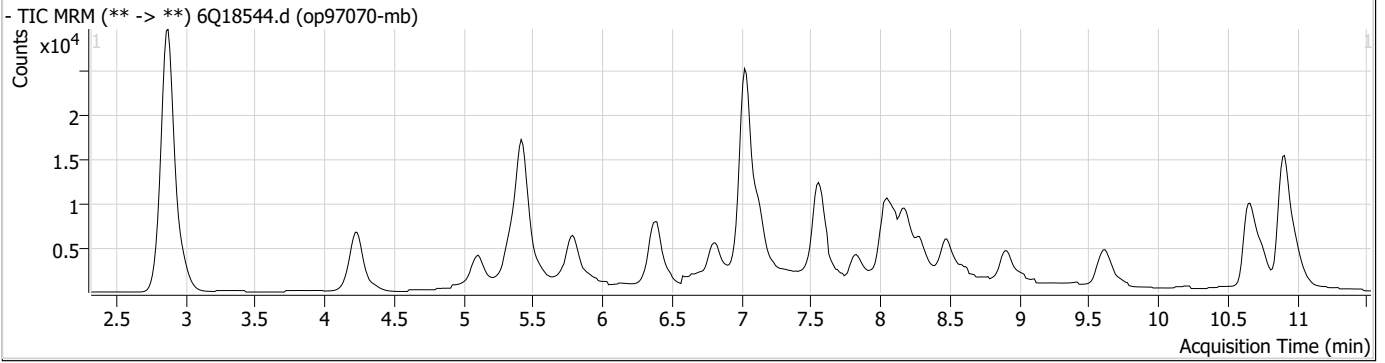
Perfluorinated Compounds by LC/MS/MS

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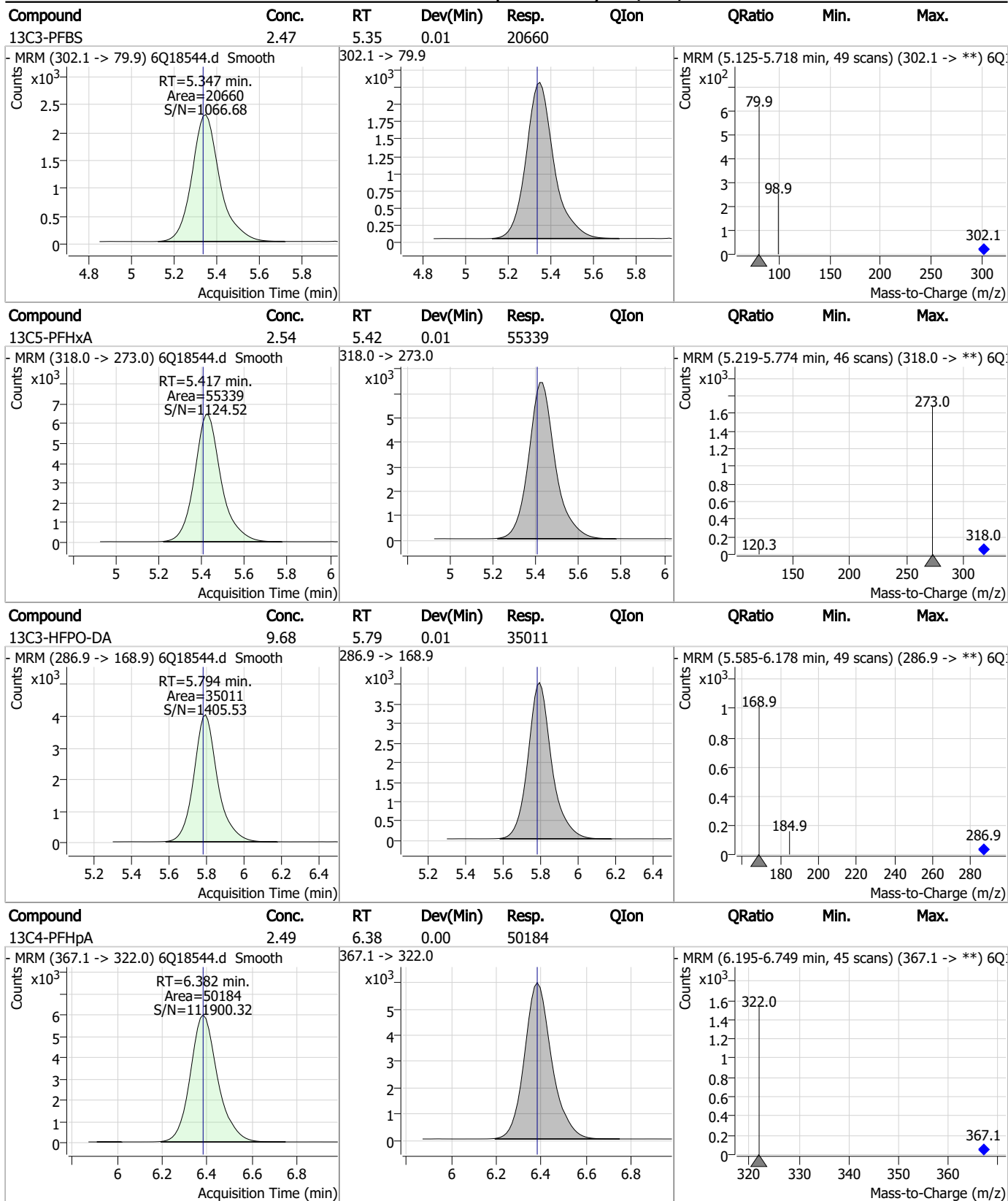
7.2.1

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Perfluorinated Compounds by LC/MS/MS

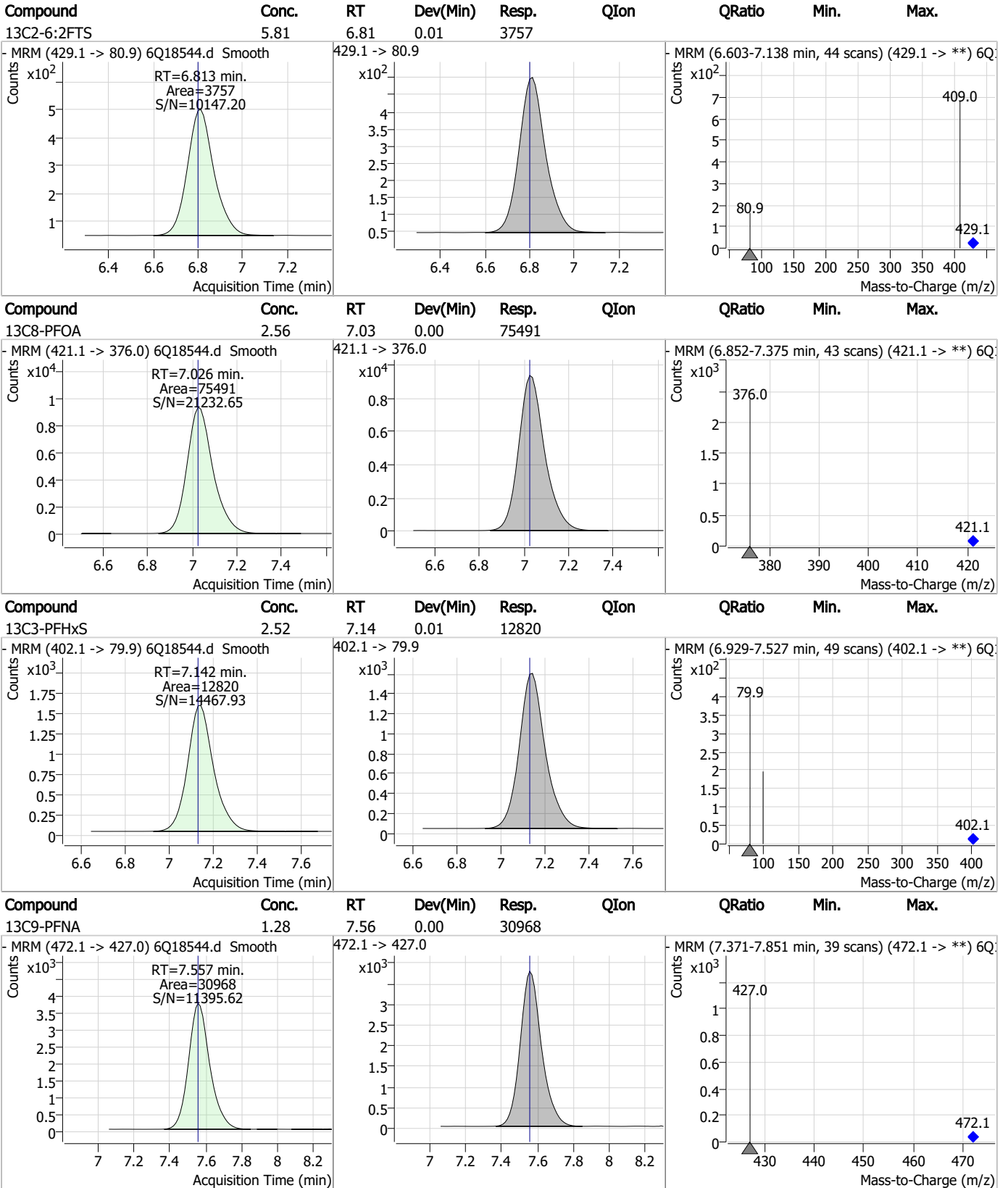


Perfluorinated Compounds by LC/MS/MS



7.2.1
7

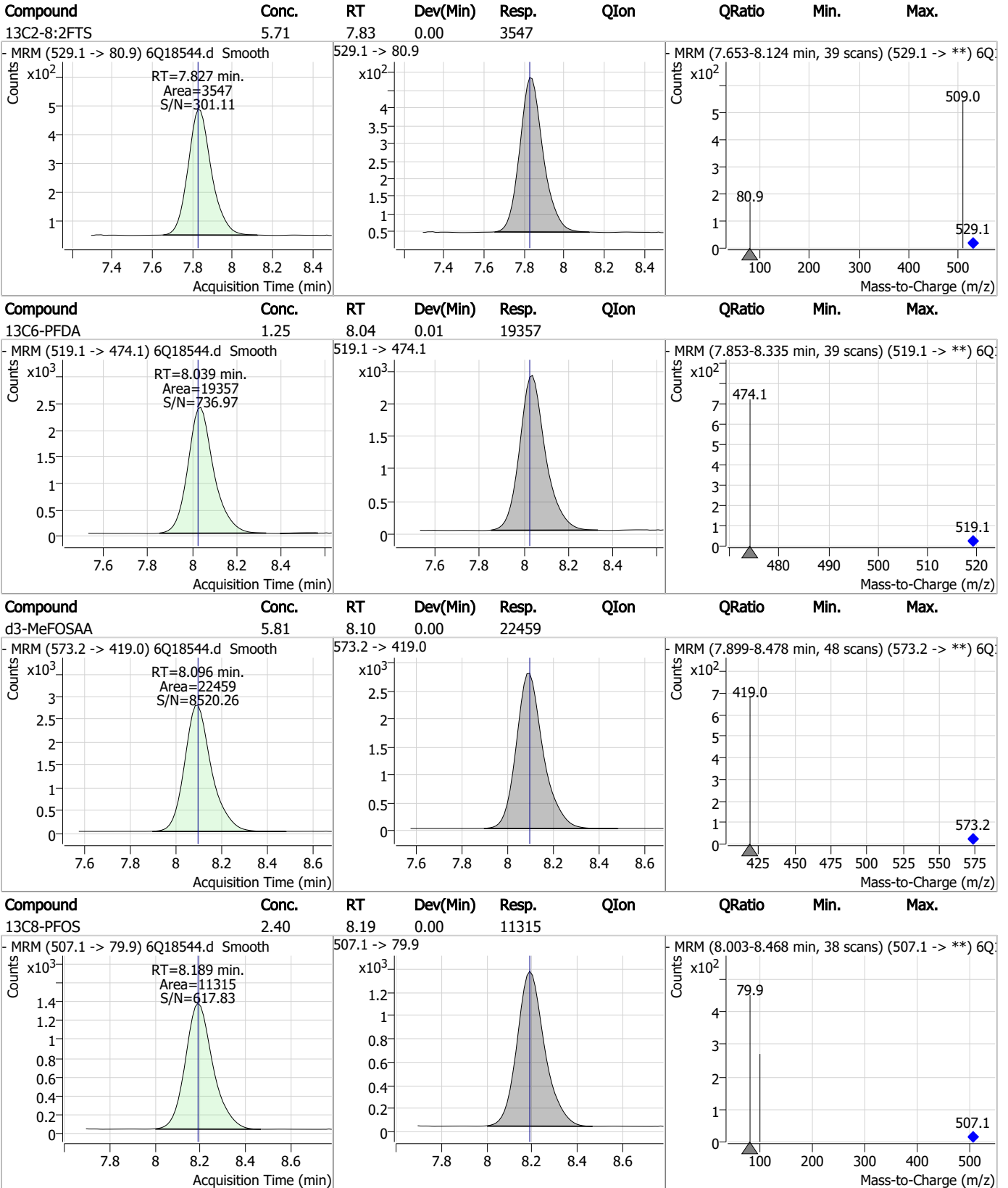
Perfluorinated Compounds by LC/MS/MS



7.2.1

7

Perfluorinated Compounds by LC/MS/MS

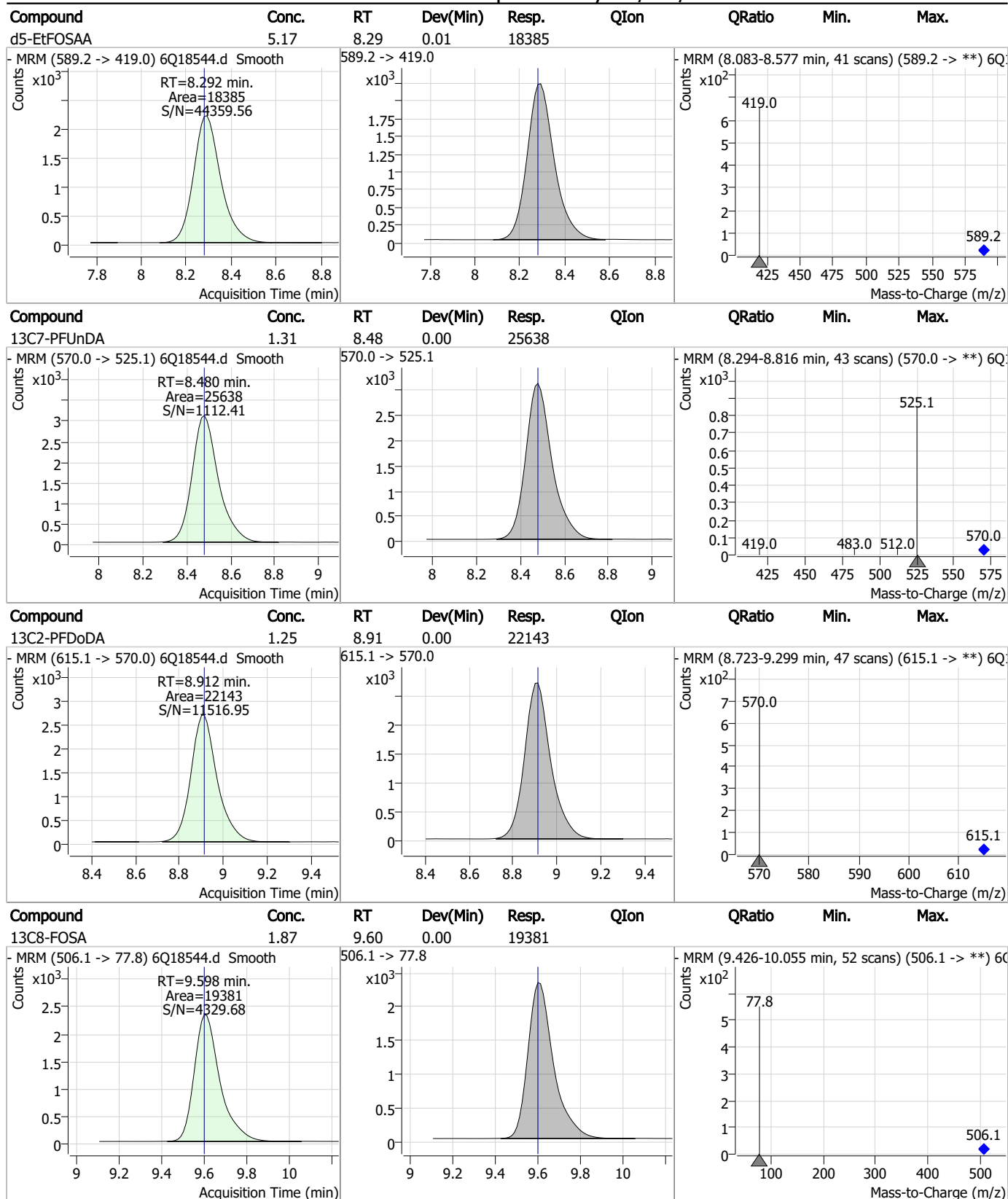


7.2.1

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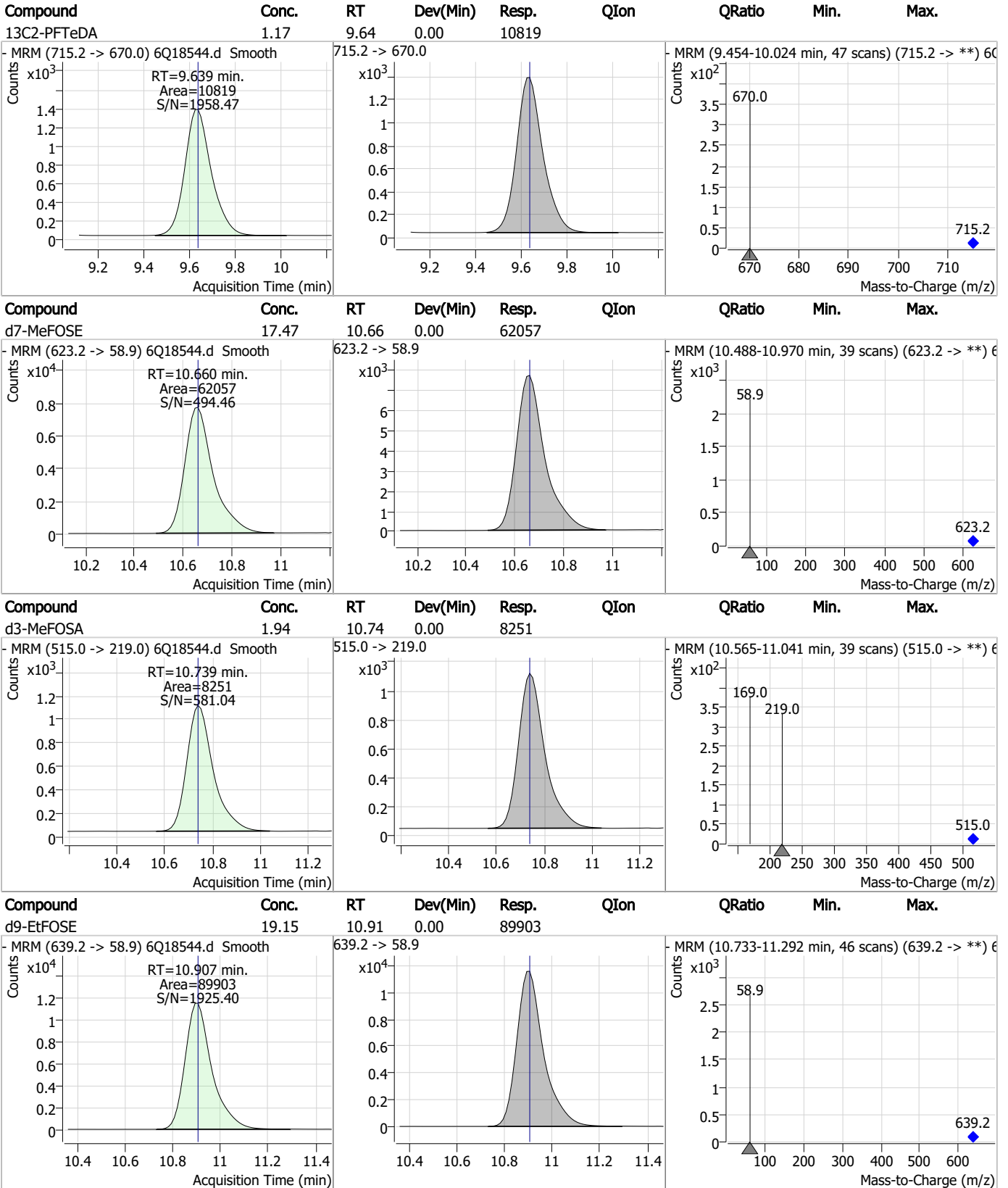


Perfluorinated Compounds by LC/MS/MS



7.2.1
7

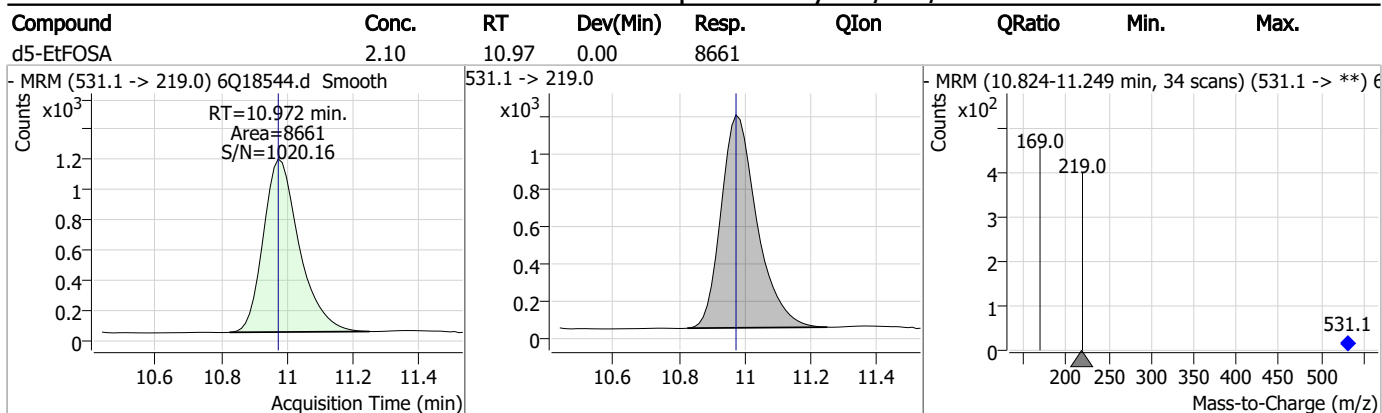
Perfluorinated Compounds by LC/MS/MS



7.2.1

7

Perfluorinated Compounds by LC/MS/MS



7.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18601.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 8:53:40 PM
 Sample Name : op97070-mb
 Vial : P6-B7
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	161490	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	52232	5.00 µg/L	0.012
M5-PFHxA	5.404	318.0 -> 273.0	56693	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	54606	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	81158	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	36517	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22158	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	27257	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	24555	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	14095	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	22683	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	20301	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	12291	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	11433	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3426	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4789	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4709	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	24581	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	34852	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	20531	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	68508	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	104023	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	9696	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9223	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	15929	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	65562	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	9404	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	84351	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	29138	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	45160	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	52394	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3426	5.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4789	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4709	5.10 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C2-PFDoDA	8.900	615.1 -> 570.0	24555	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	14095	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C3-PFBS	5.334	302.1 -> 79.9	20301	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	12291	2.34 µg/L	0.000

7.2.2
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 = 93.6%	
13C4-PFBA	2.860	216.8 -> 171.9	161490	10.34 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFHpA	6.369	367.1 -> 322.0	54606	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C5-PFHxA	5.404	318.0 -> 273.0	56693	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFPeA	4.222	268.3 -> 223.0	52232	5.13 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C6-PFDA	8.027	519.1 -> 474.1	22158	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C7-PFUnDA	8.468	570.0 -> 525.1	27257	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C8-FOSA	9.598	506.1 -> 77.8	22683	1.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.7%	
13C8-PFOA	7.013	421.1 -> 376.0	81158	2.57 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-PFOS	8.177	507.1 -> 79.9	11433	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.6%	
13C9-PFNA	7.545	472.1 -> 427.0	36517	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	24581	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	34852	10.12 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
d3-MeFOSA	10.739	515.0 -> 219.0	9223	1.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.0%	
d5-EtFOSAA	8.279	589.2 -> 419.0	20531	4.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 87.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	68508	17.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 68.5%	
d9-EtFOSE	10.907	639.2 -> 58.9	104023	19.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 79.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	9696	2.08 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 83.2%	

Target Compounds

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

7.2.2
7

Perfluorinated Compounds by LC/MS/MS

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

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

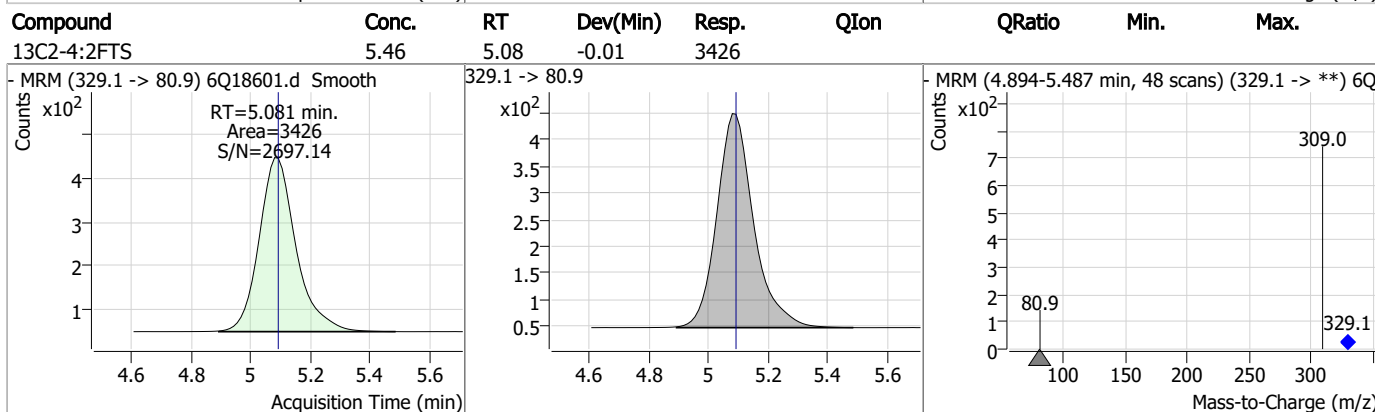
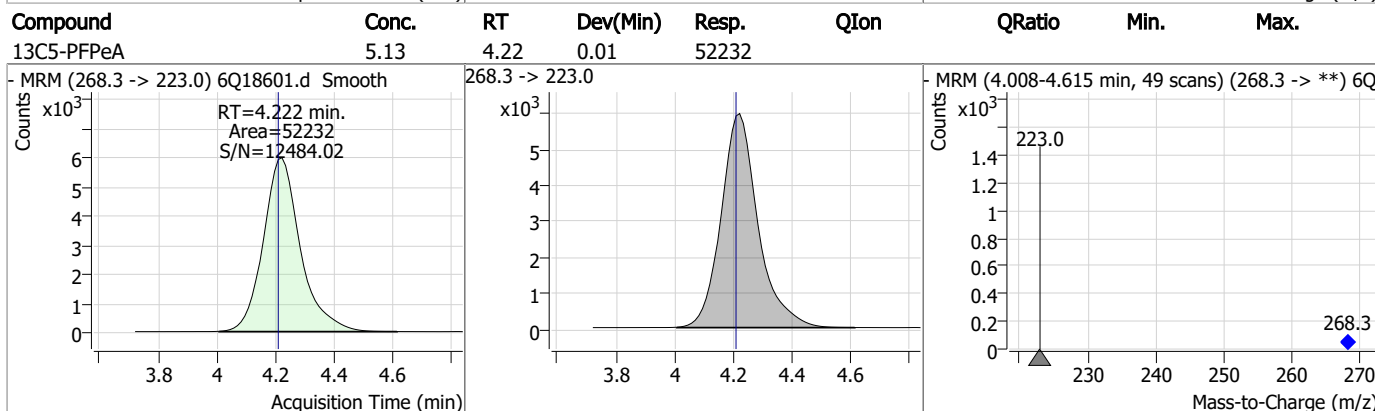
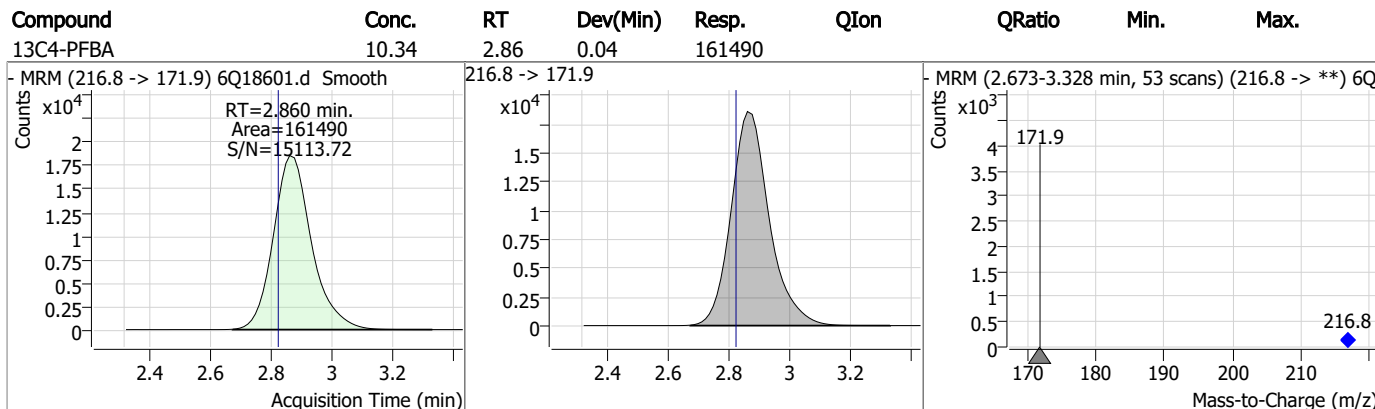
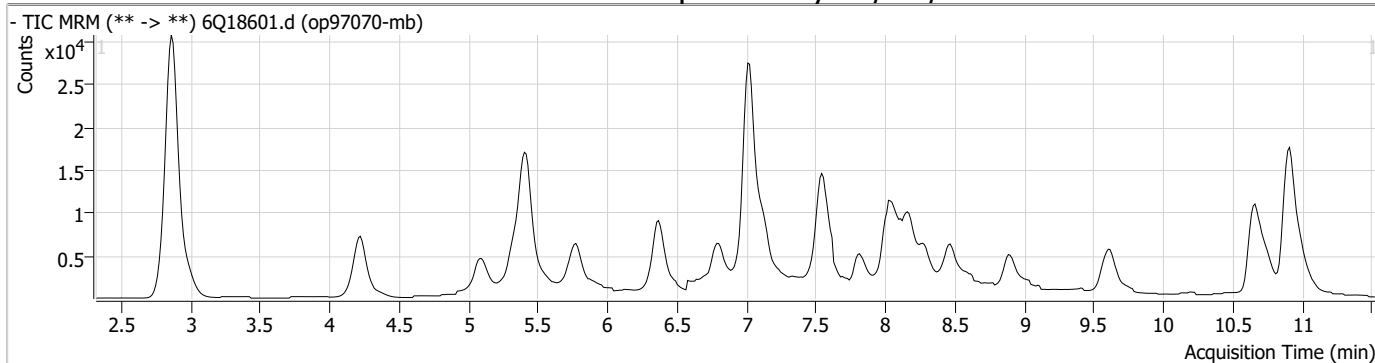
Perfluorinated Compounds by LC/MS/MS

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

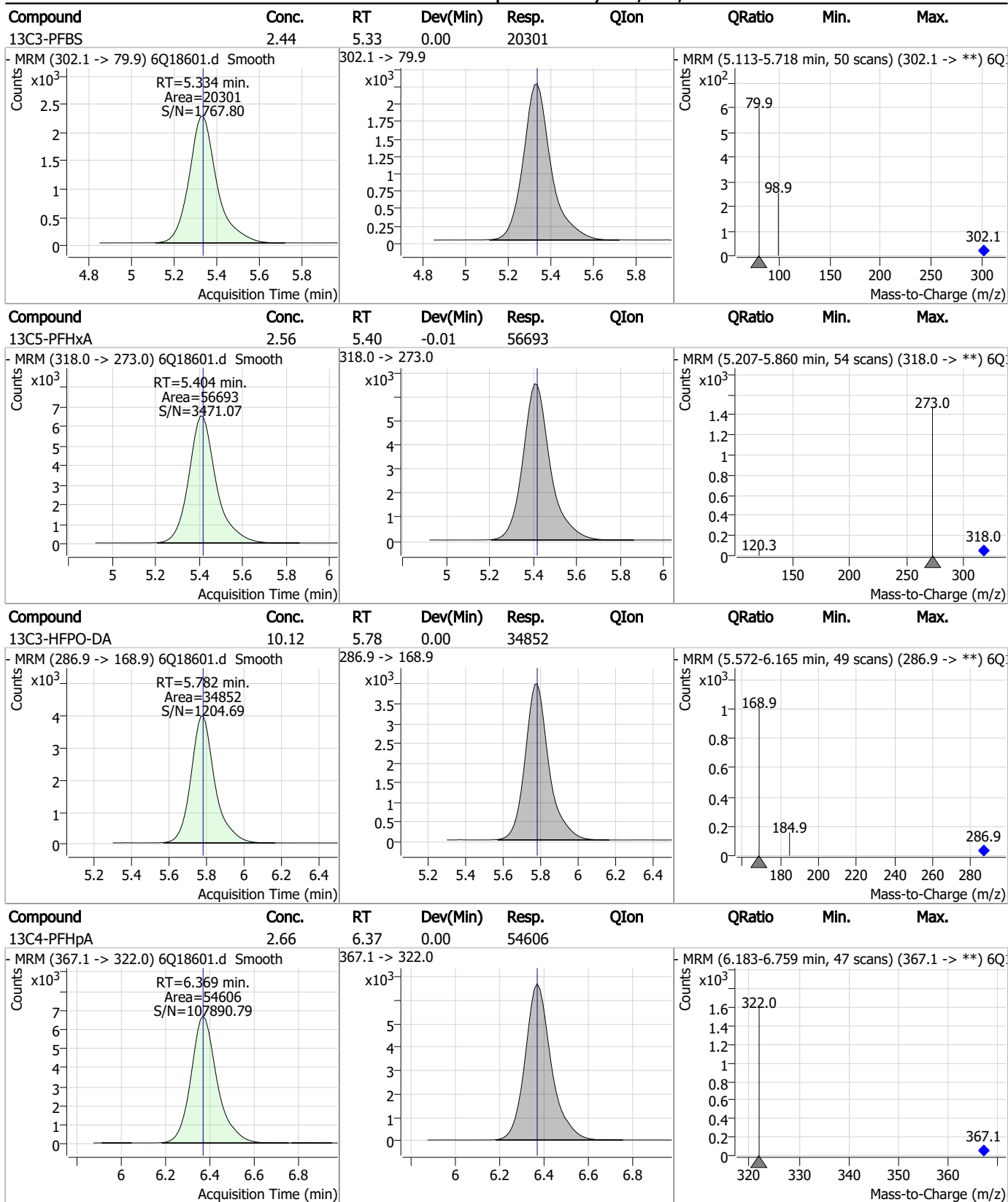
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Perfluorinated Compounds by LC/MS/MS



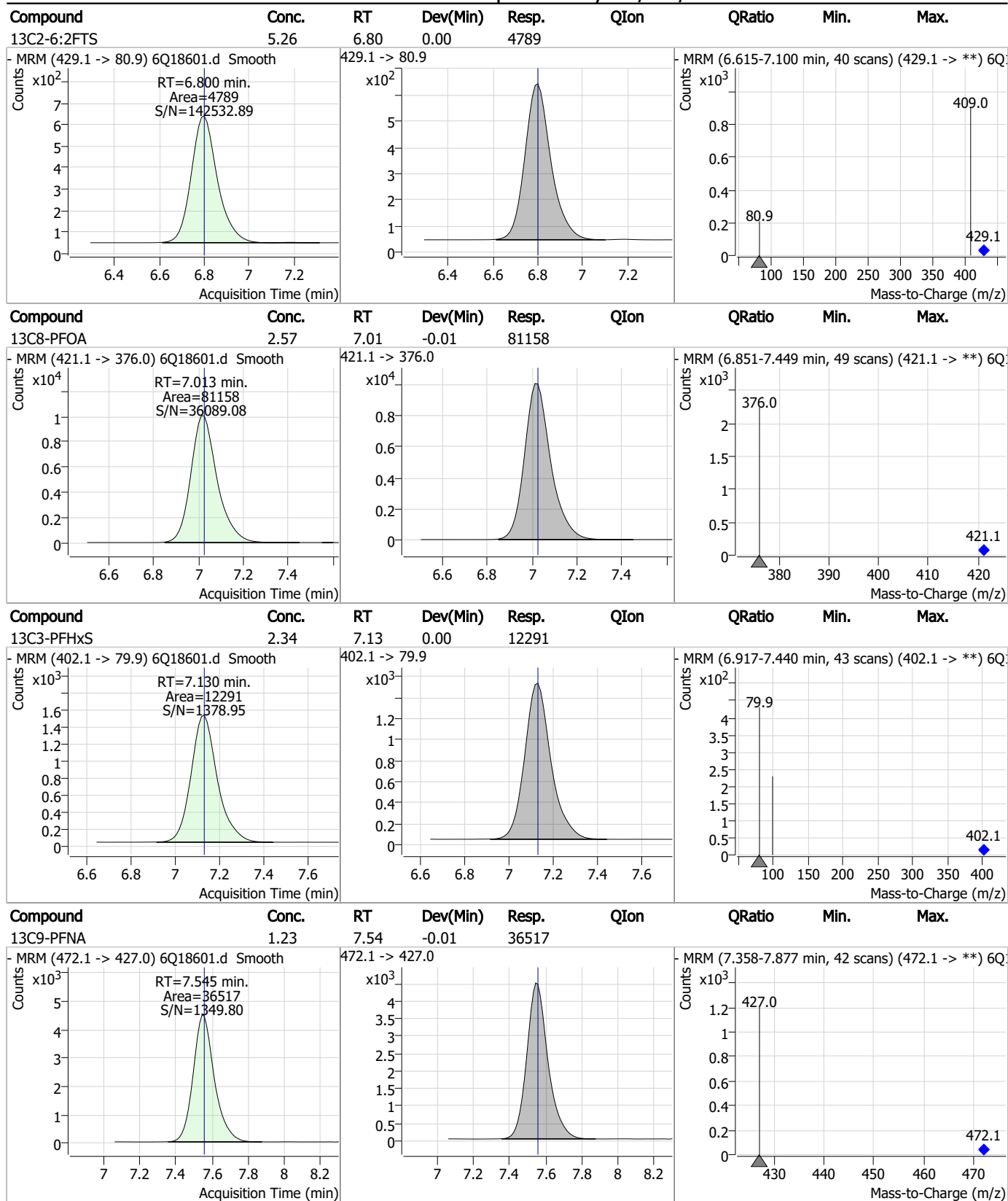
7.2.2
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Perfluorinated Compounds by LC/MS/MS



7.22
7

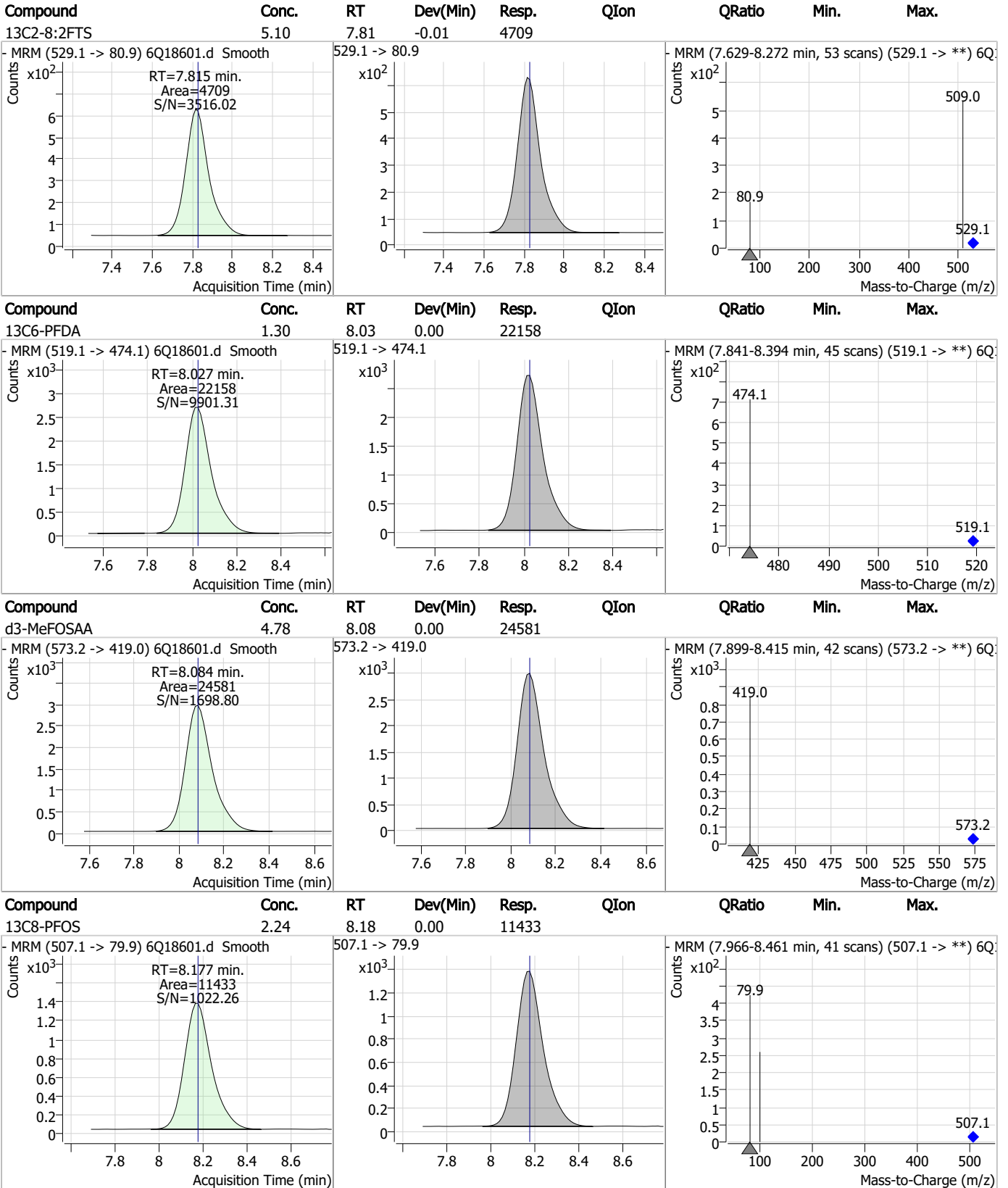
Perfluorinated Compounds by LC/MS/MS



7.2.2
7



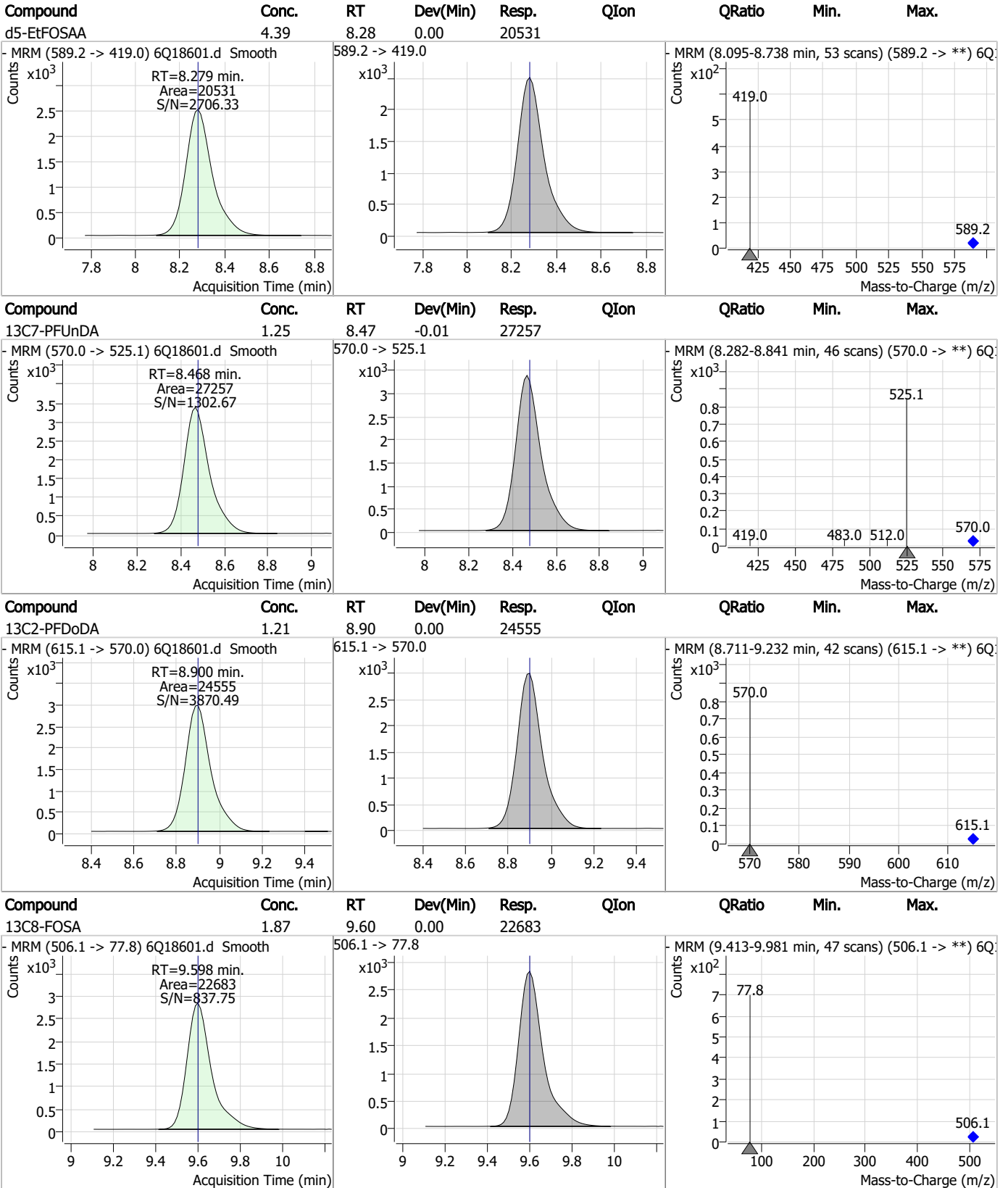
Perfluorinated Compounds by LC/MS/MS



7.2.2

7

Perfluorinated Compounds by LC/MS/MS



7.2.2

7

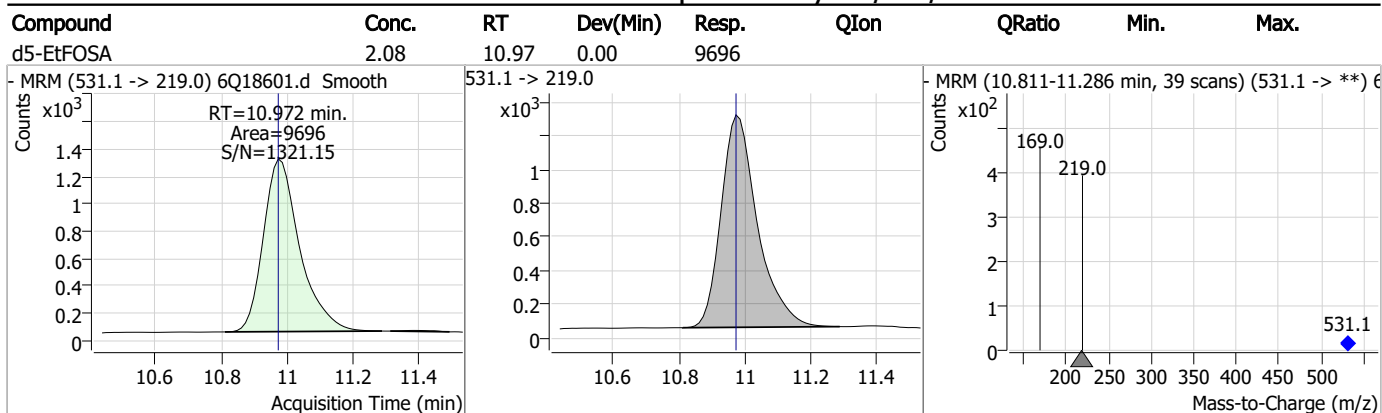
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.28	9.63	-0.01	14095				
d7-MeFOSE	17.12	10.66	0.00	68508				
d3-MeFOSA	1.87	10.74	0.00	9223				
d9-EtFOSE	19.88	10.91	0.00	104023				

7.22
7



Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18594.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:12:17 PM
 Sample Name : iblk
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.810	216.8 -> 171.9	176076	10.00 µg/L	-0.012
M5-PFPeA	4.210	268.3 -> 223.0	59176	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	64334	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	58800	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	89528	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	41427	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	23595	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	32728	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	30564	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	15240	1.25 µg/L	-0.012
M8-FOSA	9.586	506.1 -> 77.8	34223	2.50 µg/L	-0.012
M3-PFBS	5.322	302.1 -> 79.9	23754	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	14962	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13248	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3737	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5275	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	5690	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	27469	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	38767	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25600	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	109771	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	144772	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12768	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13247	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17146	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	73621	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10439	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	97872	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	36246	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	54548	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	59107	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3737	5.37 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5275	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-8:2FTS	7.827	529.1 -> 80.9	5690	5.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.0%		
13C2-PFDoDA	8.900	615.1 -> 570.0	30564	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15240	1.11 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.0%		
13C3-PFBS	5.322	302.1 -> 79.9	23754	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C3-PFHxS	7.130	402.1 -> 79.9	14962	2.57 µg/L	0.000

7.2.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C4-PFBA	2.810	216.8 -> 171.9	176076	10.04 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.369	367.1 -> 322.0	58800	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFHxA	5.404	318.0 -> 273.0	64334	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	59176	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C6-PFDA	8.027	519.1 -> 474.1	23595	1.11 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	32728	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C8-FOSA	9.586	506.1 -> 77.8	34223	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C8-PFOA	7.026	421.1 -> 376.0	89528	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C8-PFOS	8.177	507.1 -> 79.9	13248	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C9-PFNA	7.545	472.1 -> 427.0	41427	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27469	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38767	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	13247	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25600	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	109771	25.49 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	144772	25.70 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	12768	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	

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

Perfluorinated Compounds by LC/MS/MS

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

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

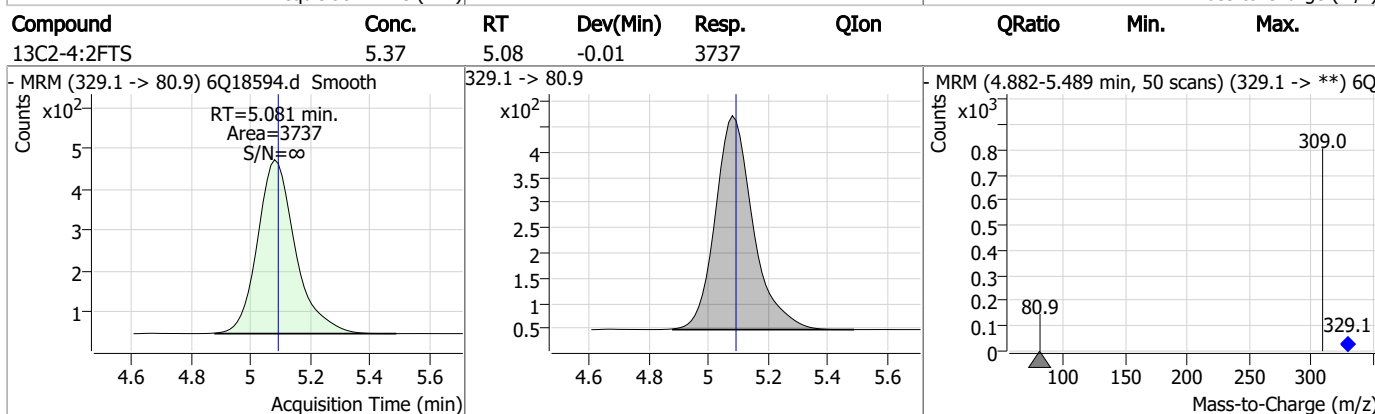
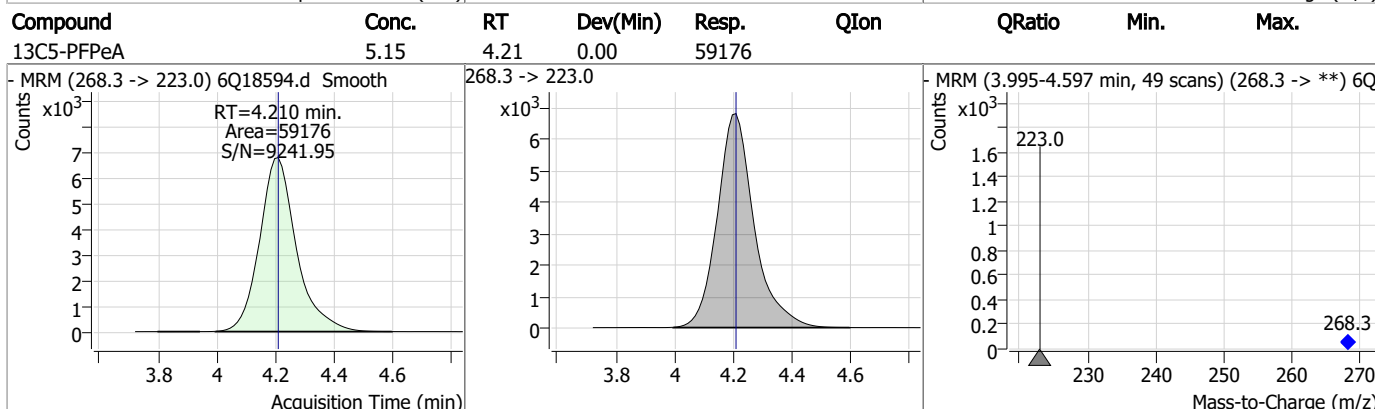
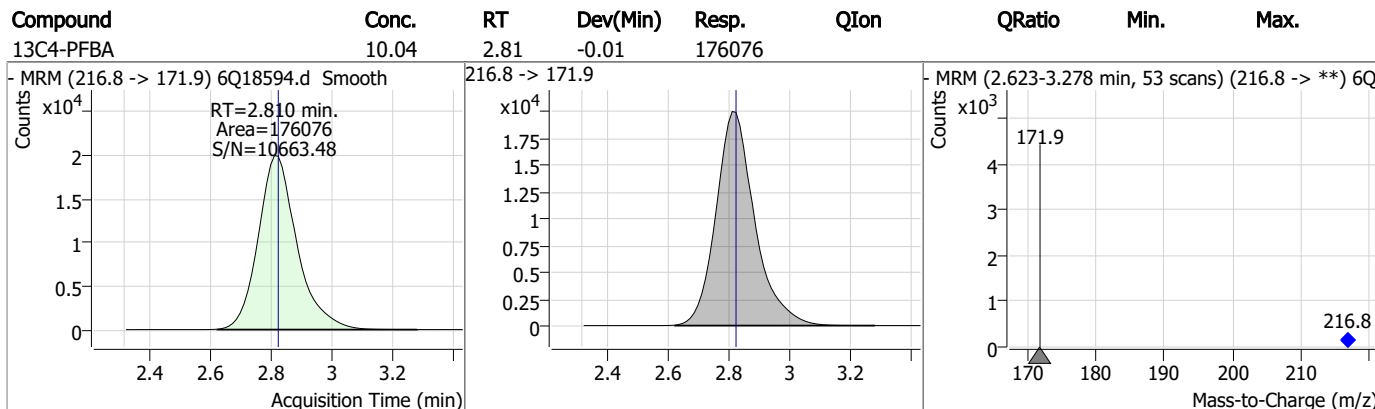
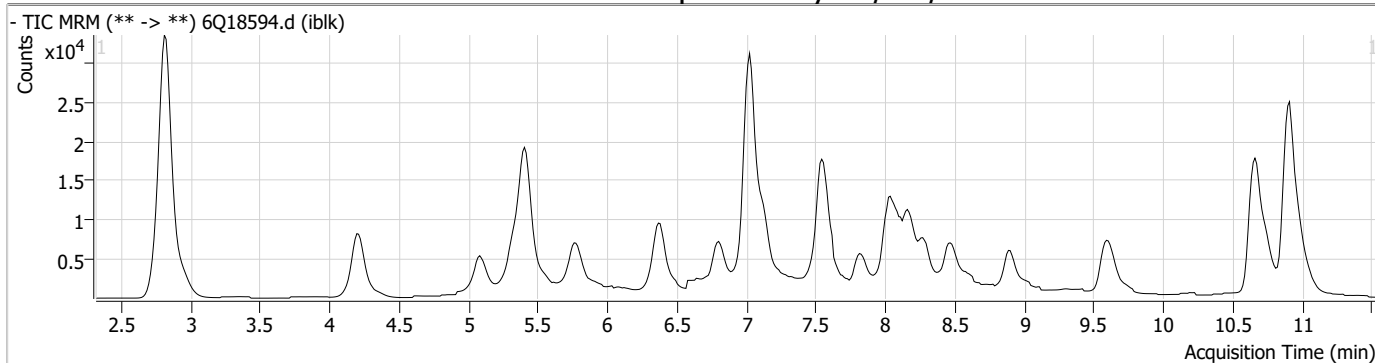
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS



7.2.3
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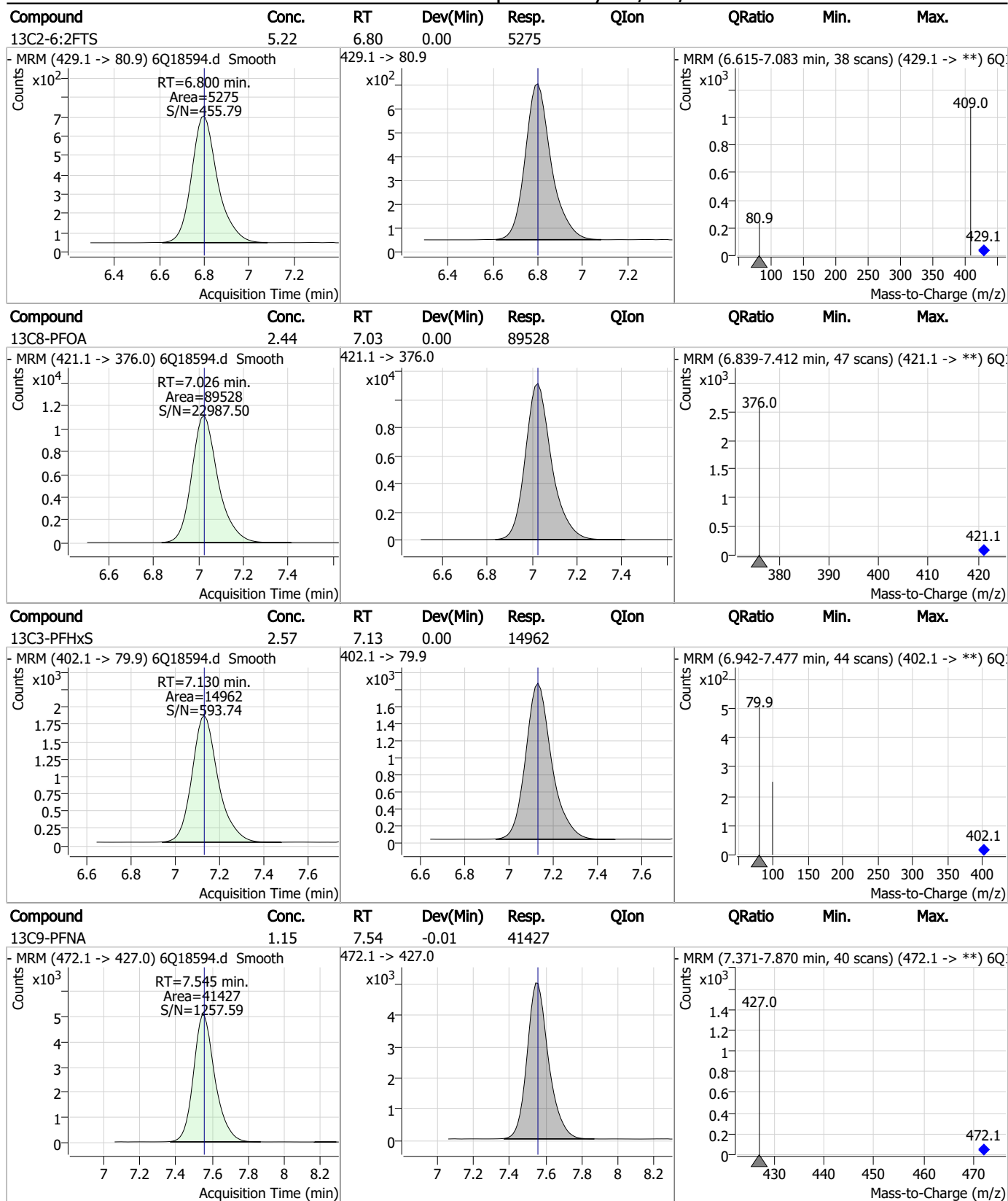
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.57	5.32	-0.01	23754				
13C5-PFHxA	2.57	5.40	-0.01	64334				
13C3-HFPO-DA	9.98	5.78	0.00	38767				
13C4-PFHpA	2.54	6.37	0.00	58800				

7.2.3
7

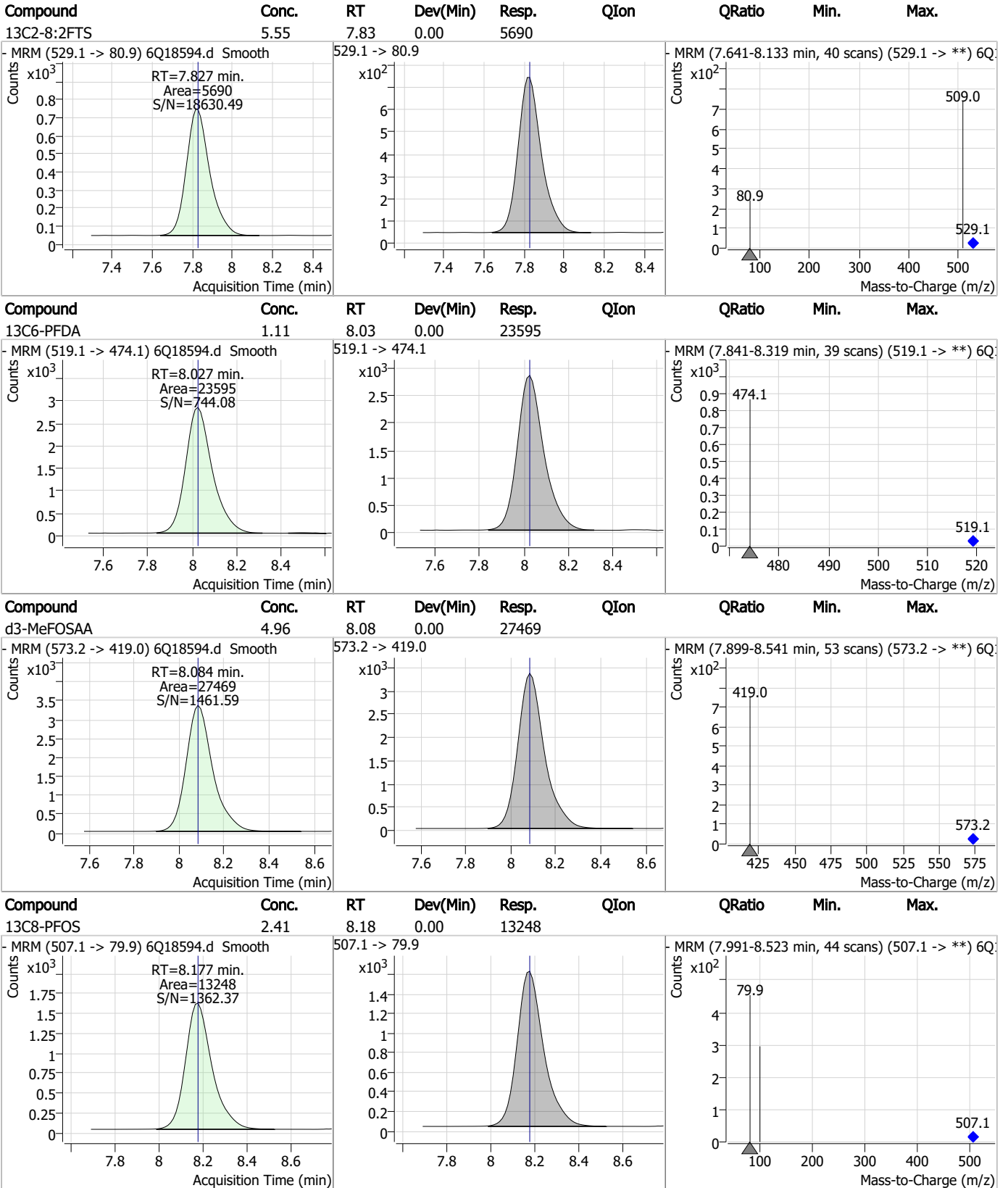


Perfluorinated Compounds by LC/MS/MS



7.2.3
7

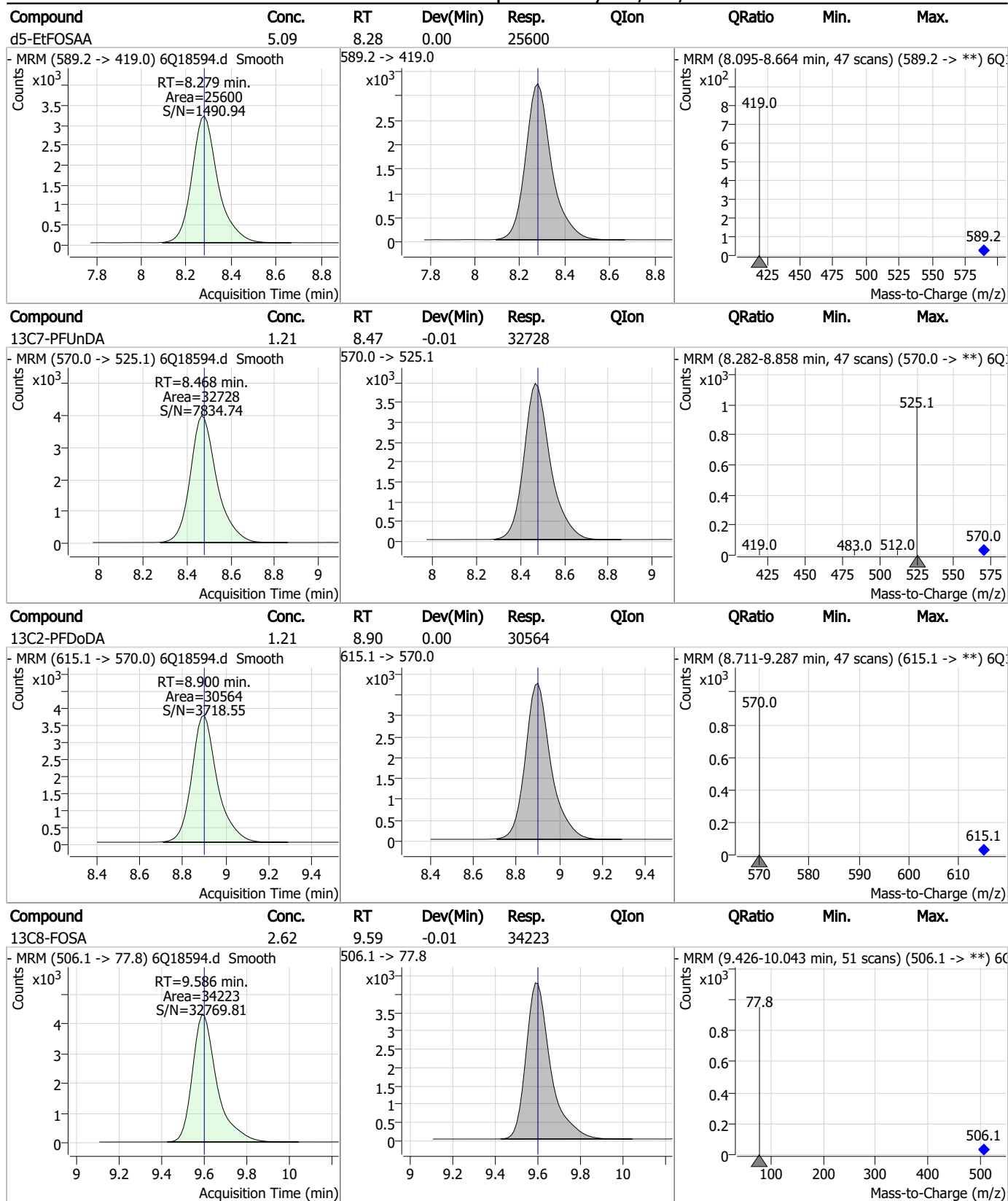
Perfluorinated Compounds by LC/MS/MS



7.2.3

7

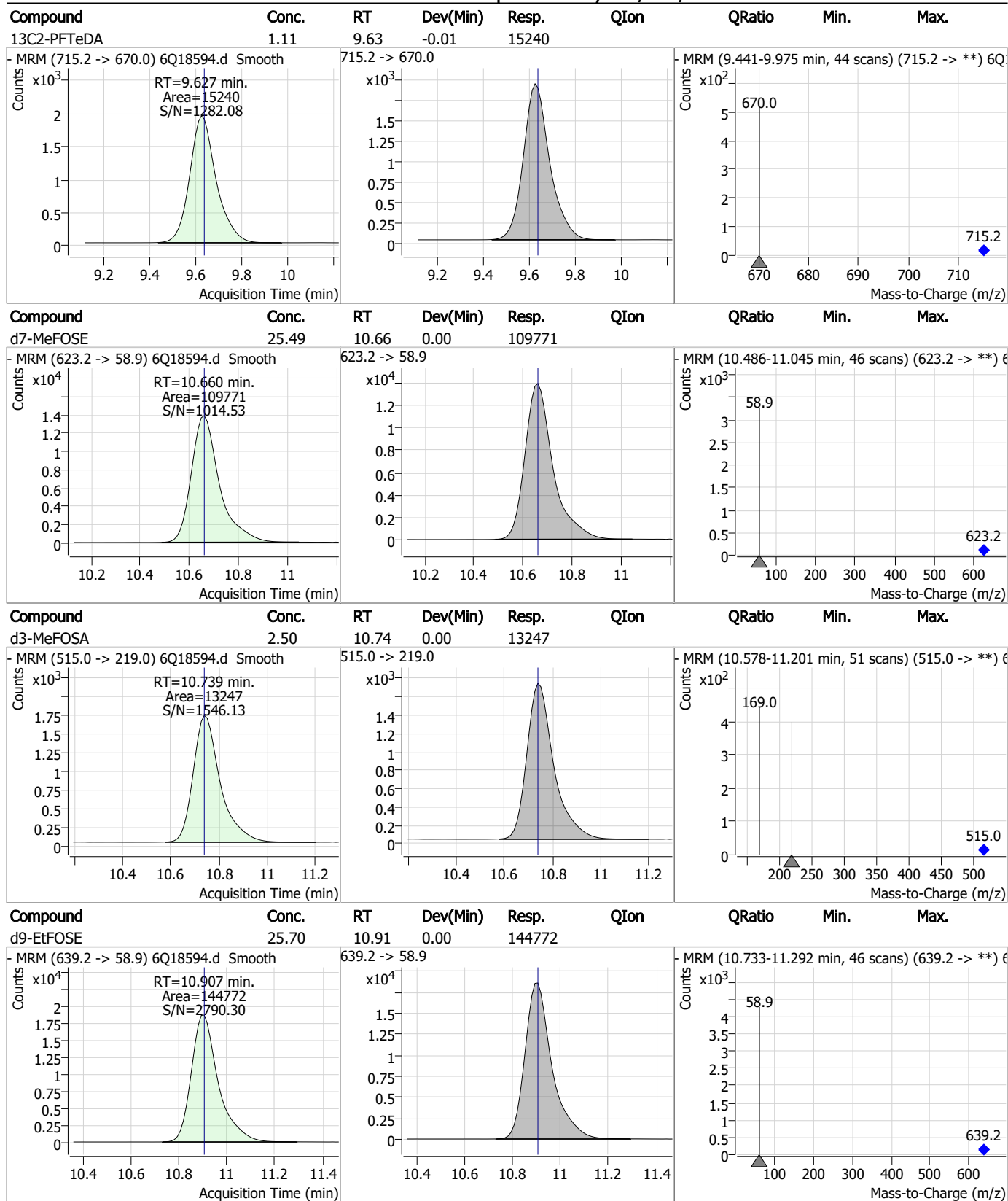
Perfluorinated Compounds by LC/MS/MS



7.2.3
7



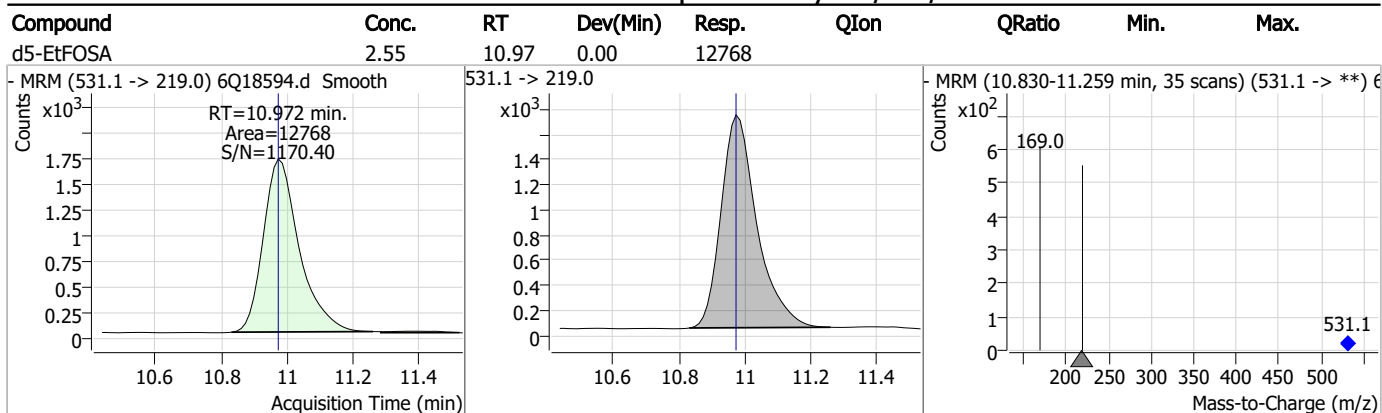
Perfluorinated Compounds by LC/MS/MS



7.2.3

7

Perfluorinated Compounds by LC/MS/MS



7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18610.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 11:04:01 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	178353	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	60064	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	63144	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	62125	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	91773	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	40816	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	25104	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	33059	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	29599	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16786	1.25 µg/L	-0.012
M8-FOSA	9.586	506.1 -> 77.8	33212	2.50 µg/L	-0.012
M3-PFBS	5.322	302.1 -> 79.9	23257	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	14391	2.50 µg/L	-0.012
M8-PFOS	8.177	507.1 -> 79.9	13430	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3903	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5307	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5542	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	29605	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	40504	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	25098	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	113866	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	148925	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13257	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13183	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17908	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	75147	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10969	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	100948	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	34624	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	53033	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	59556	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3903	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5307	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5542	5.14 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFDoDA	8.900	615.1 -> 570.0	29599	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16786	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C3-PFBS	5.322	302.1 -> 79.9	23257	2.40 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C3-PFHxS	7.118	402.1 -> 79.9	14391	2.35 µg/L	-0.012

7.2.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.9%	
13C4-PFBA	2.822	216.8 -> 171.9	178353	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.369	367.1 -> 322.0	62125	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.6%	
13C5-PFHxA	5.404	318.0 -> 273.0	63144	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFPeA	4.210	268.3 -> 223.0	60064	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C6-PFDA	8.014	519.1 -> 474.1	25104	1.24 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33059	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C8-FOSA	9.586	506.1 -> 77.8	33212	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOA	7.013	421.1 -> 376.0	91773	2.43 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C8-PFOS	8.177	507.1 -> 79.9	13430	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C9-PFNA	7.545	472.1 -> 427.0	40816	1.17 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.4%	
d3-MeFOSAA	8.072	573.2 -> 419.0	29605	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40504	10.35 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	13183	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
d5-EtFOSAA	8.267	589.2 -> 419.0	25098	4.77 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
d7-MeFOSE	10.660	623.2 -> 58.9	113866	25.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d9-EtFOSE	10.894	639.2 -> 58.9	148925	25.32 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d5-EtFOSA	10.972	531.1 -> 219.0	13257	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	

Target Compounds

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

7.2.4
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Perfluorinated Compounds by LC/MS/MS

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

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

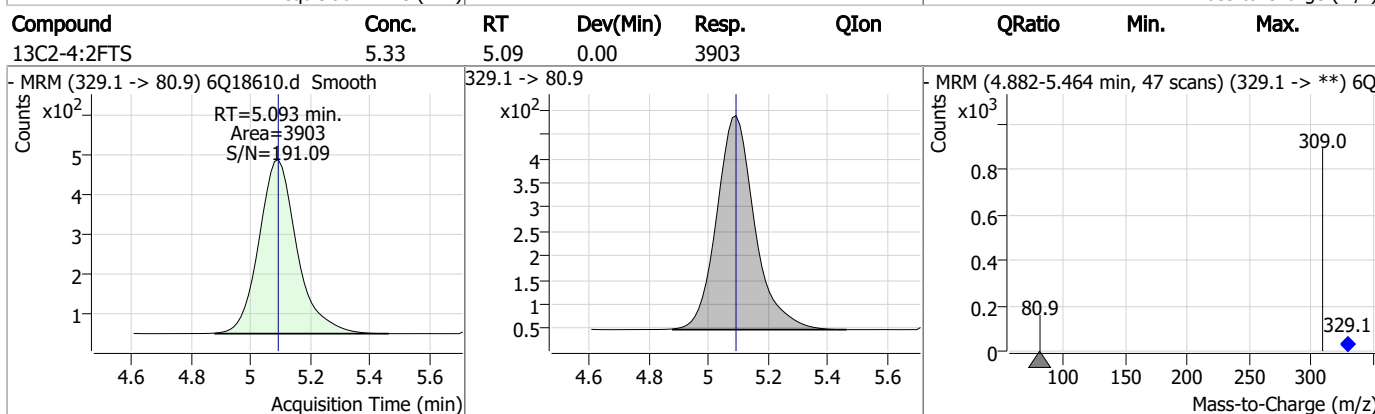
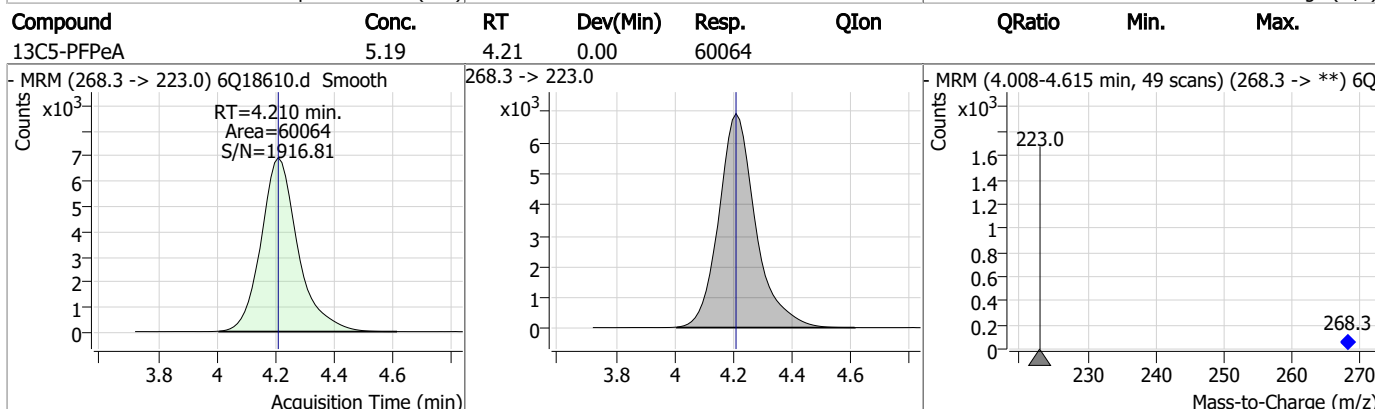
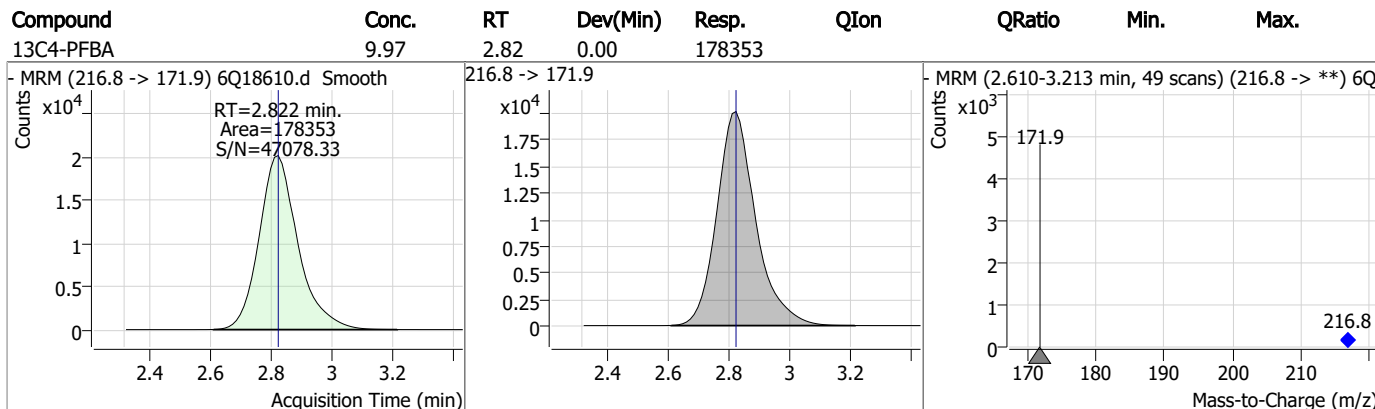
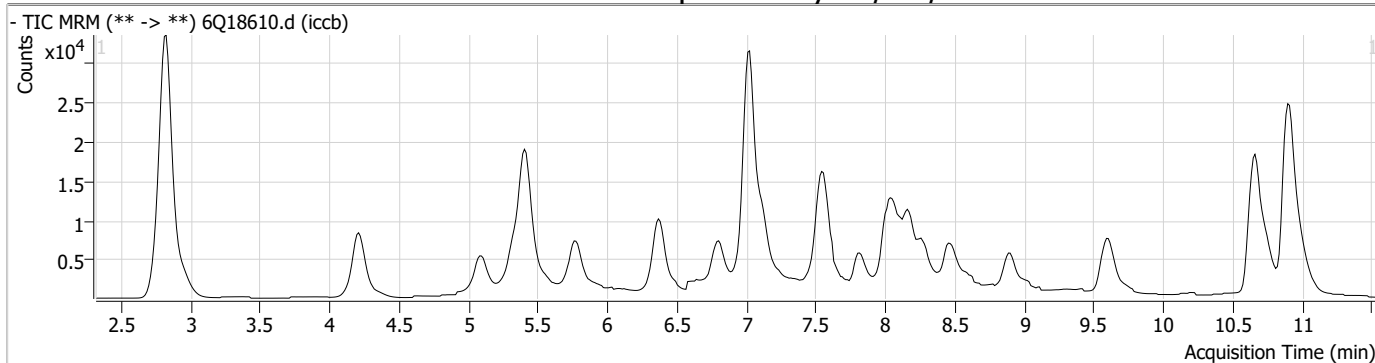
Perfluorinated Compounds by LC/MS/MS

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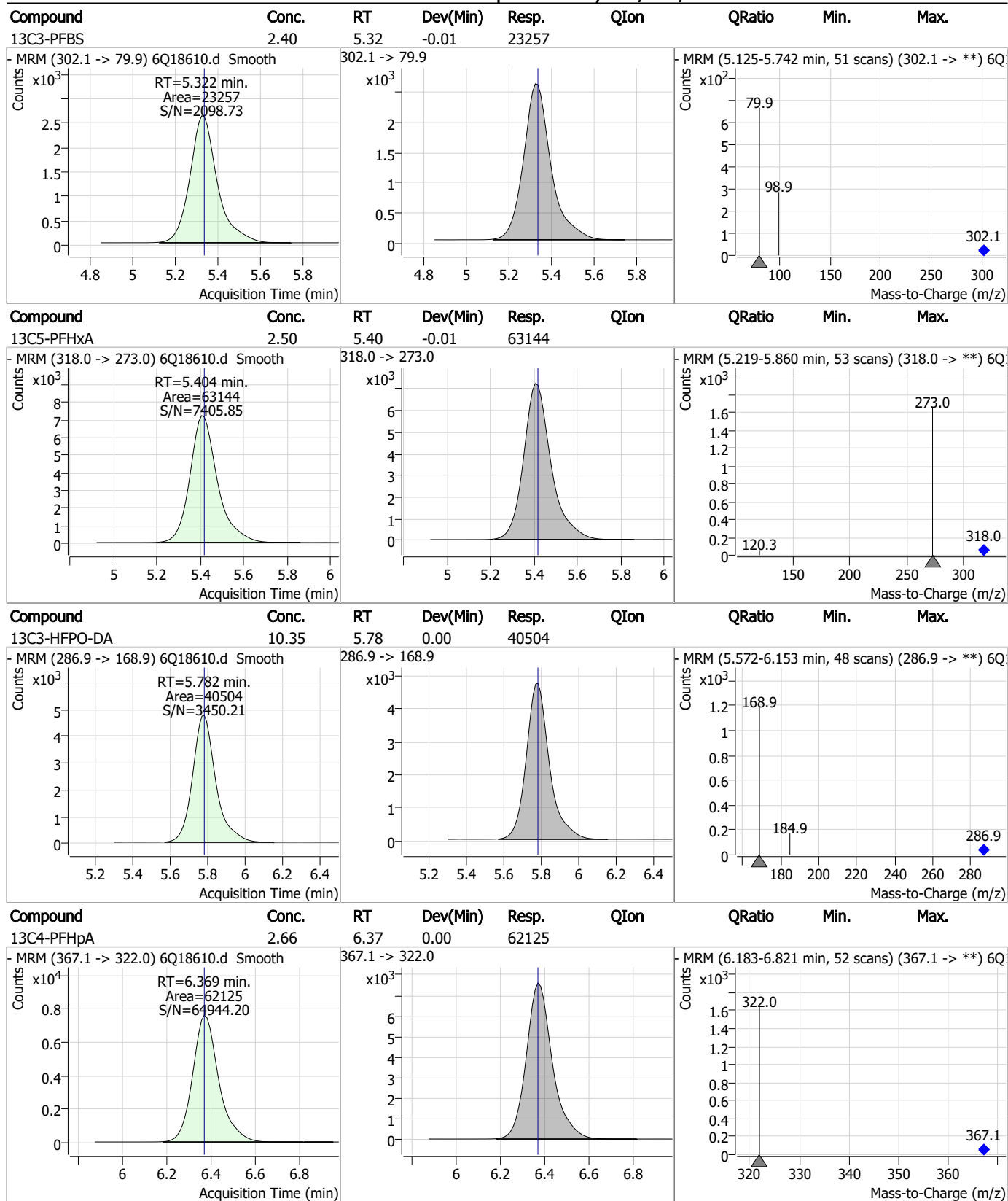
7.2.4

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Perfluorinated Compounds by LC/MS/MS



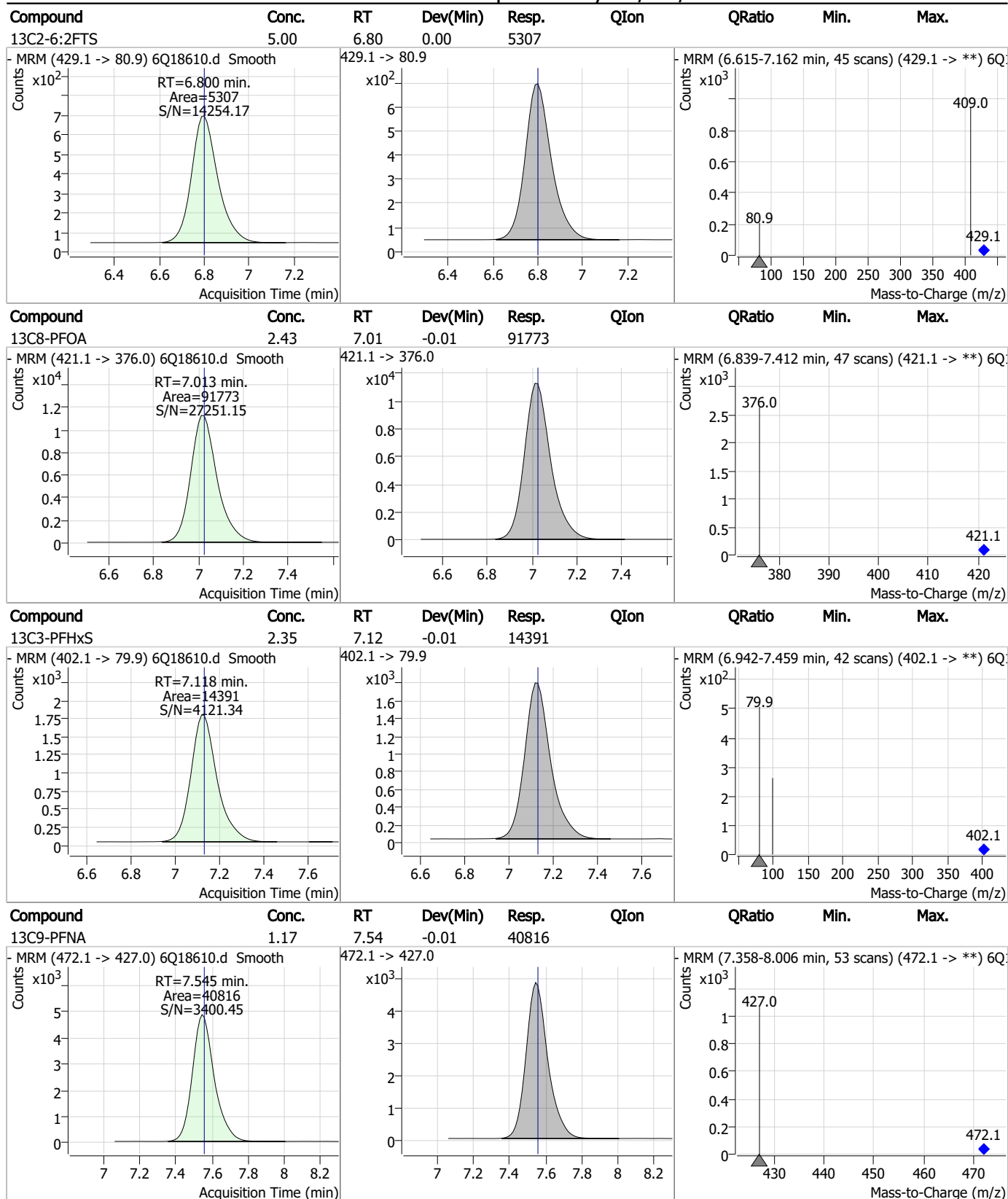
Perfluorinated Compounds by LC/MS/MS



7.2.4

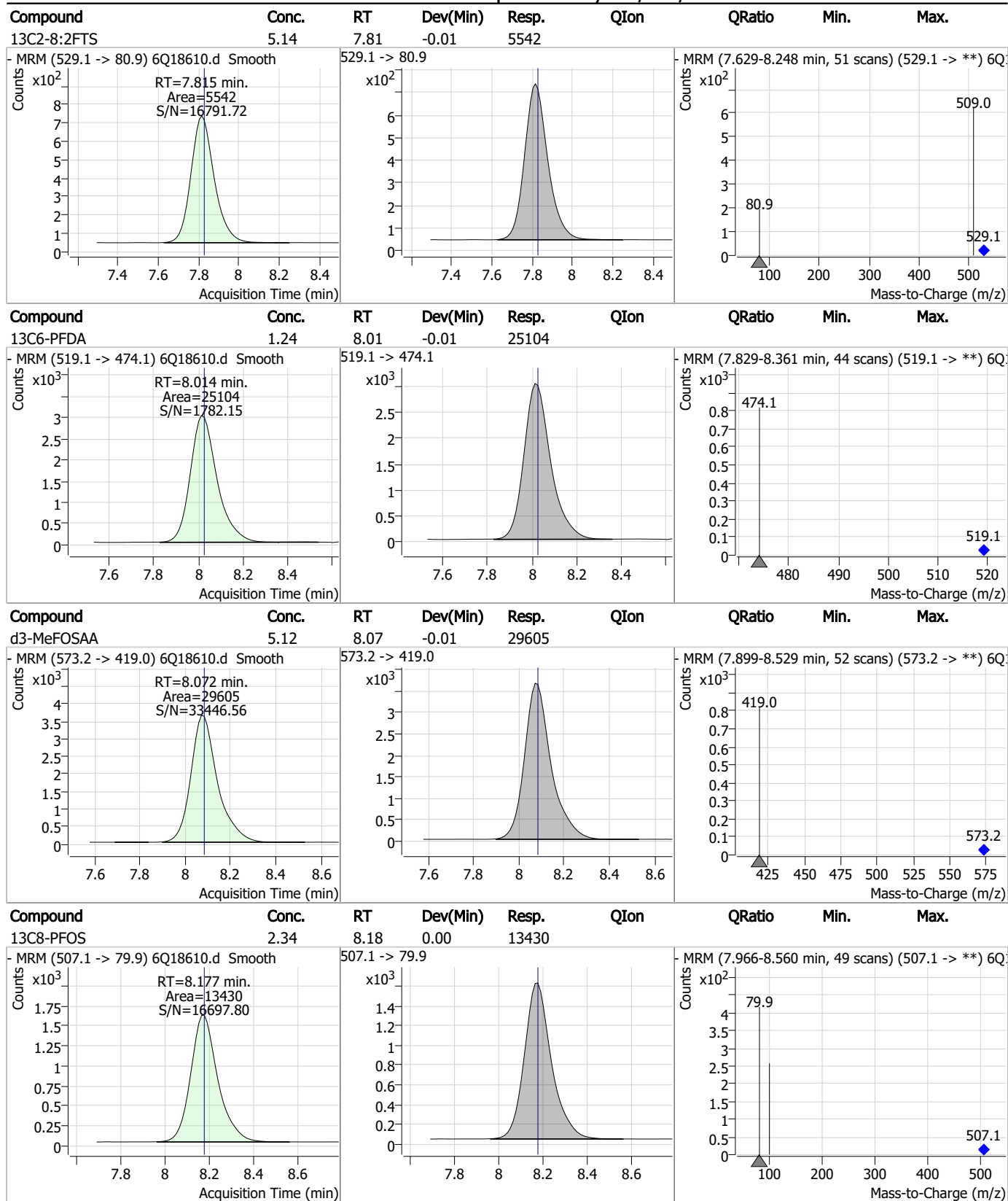
7

Perfluorinated Compounds by LC/MS/MS



7.2.4

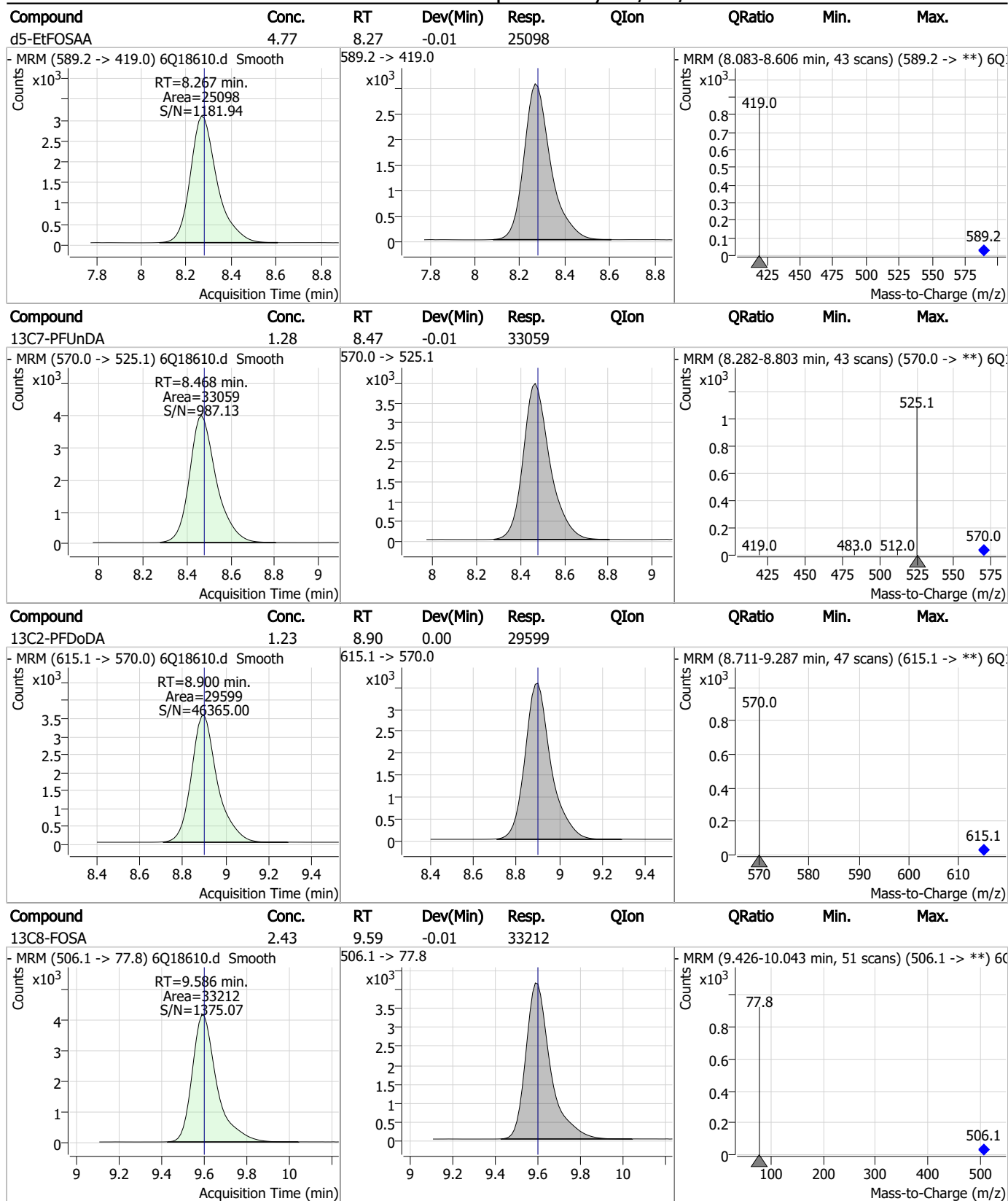
Perfluorinated Compounds by LC/MS/MS



7.2.4
7



Perfluorinated Compounds by LC/MS/MS



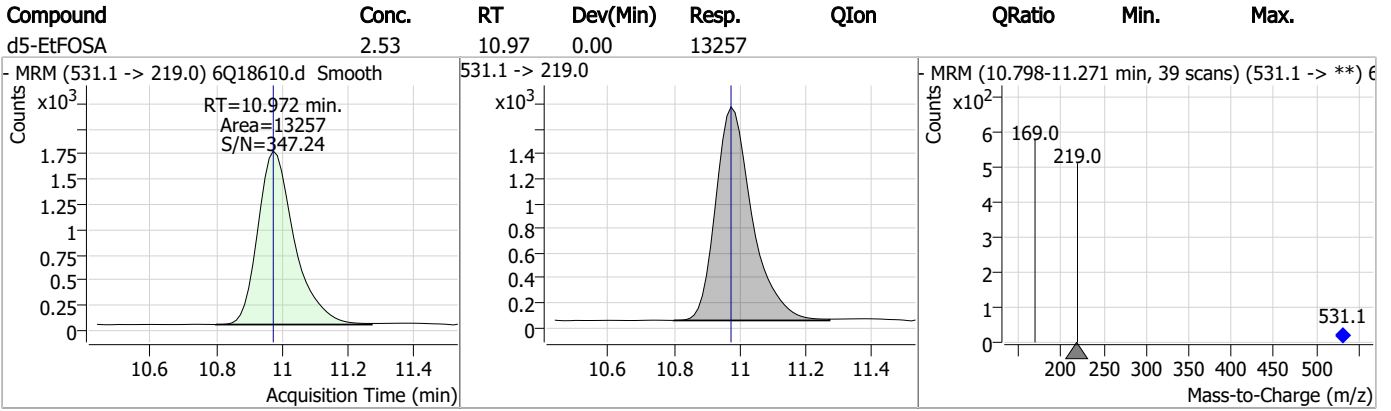
7.2.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.28	9.63	-0.01	16786				
- MRM (715.2 -> 670.0) 6Q18610.d Smooth			715.2 -> 670.0		- MRM (9.441-9.987 min, 45 scans) (715.2 -> **) 6Q18610.d Smooth			
d7-MeFOSE	25.32	10.66	0.00	113866				
- MRM (623.2 -> 58.9) 6Q18610.d Smooth			623.2 -> 58.9		- MRM (10.474-11.045 min, 47 scans) (623.2 -> **) 6Q18610.d Smooth			
d3-MeFOSA	2.38	10.74	0.00	13183				
- MRM (515.0 -> 219.0) 6Q18610.d Smooth			515.0 -> 219.0		- MRM (10.565-11.126 min, 46 scans) (515.0 -> **) 6Q18610.d Smooth			
d9-EtFOSE	25.32	10.89	-0.01	148925				
- MRM (639.2 -> 58.9) 6Q18610.d Smooth			639.2 -> 58.9		- MRM (10.745-11.354 min, 50 scans) (639.2 -> **) 6Q18610.d Smooth			

7.2.4
7

Perfluorinated Compounds by LC/MS/MS



7.24

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18522.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 5:16:56 PM
 Sample Name : iblk
 Vial : P1-A1
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	166774	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	55194	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	59692	2.50 µg/L	0.012
M4-PFHpA	6.369	367.1 -> 322.0	54150	2.50 µg/L	-0.012
M8-PFOA	7.026	421.1 -> 376.0	84749	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	36104	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22827	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	26823	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	24828	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	13074	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	28350	2.50 µg/L	0.012
M3-PFBS	5.322	302.1 -> 79.9	23249	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	14368	2.50 µg/L	0.000
M8-PFOS	8.189	507.1 -> 79.9	12453	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	2645	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	3580	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3342	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	22716	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	38909	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	19939	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	99563	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	127672	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	11443	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11225	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	16337	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	69487	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10173	2.50 µg/L	0.000
13C4-PFOA	7.027	417.1 -> 372.0	89489	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	29526	1.25 µg/L	-0.012
13C5-PFNA	7.545	468.0 -> 423.0	41511	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	56133	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	2645	5.18 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3580	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3342	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C2-PFDoDA	8.912	615.1 -> 570.0	24828	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C2-PFTeDA	9.639	715.2 -> 670.0	13074	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C3-PFBS	5.322	302.1 -> 79.9	23249	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C3-PFHxS	7.130	402.1 -> 79.9	14368	2.61 µg/L	0.000

7.2.5
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 = 104.6%	
13C4-PFBA	2.822	216.8 -> 171.9	166774	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	54150	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C5-PFHxA	5.417	318.0 -> 273.0	59692	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C5-PFPeA	4.210	268.3 -> 223.0	55194	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C6-PFDA	8.027	519.1 -> 474.1	22827	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C7-PFUnDA	8.480	570.0 -> 525.1	26823	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C8-FOSA	9.611	506.1 -> 77.8	28350	2.53 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-PFOA	7.026	421.1 -> 376.0	84749	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C8-PFOS	8.189	507.1 -> 79.9	12453	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C9-PFNA	7.545	472.1 -> 427.0	36104	1.37 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.5%	
d3-MeFOSAA	8.084	573.2 -> 419.0	22716	5.43 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38909	9.80 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	11225	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
d5-EtFOSAA	8.279	589.2 -> 419.0	19939	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	99563	25.92 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d9-EtFOSE	10.907	639.2 -> 58.9	127672	25.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	11443	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	

7.25
7

Target Compounds

QValue

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

Perfluorinated Compounds by LC/MS/MS

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

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

7.2.5
7

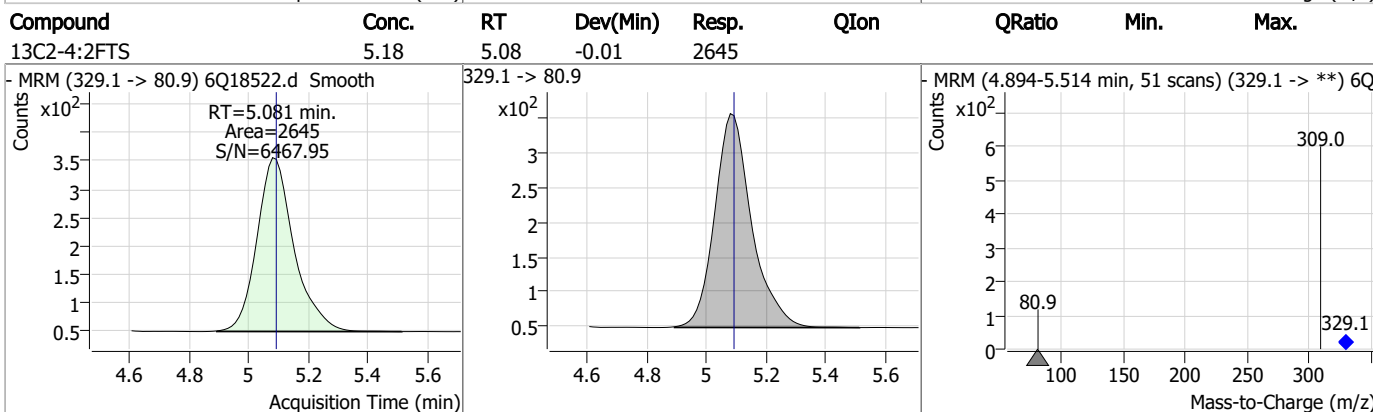
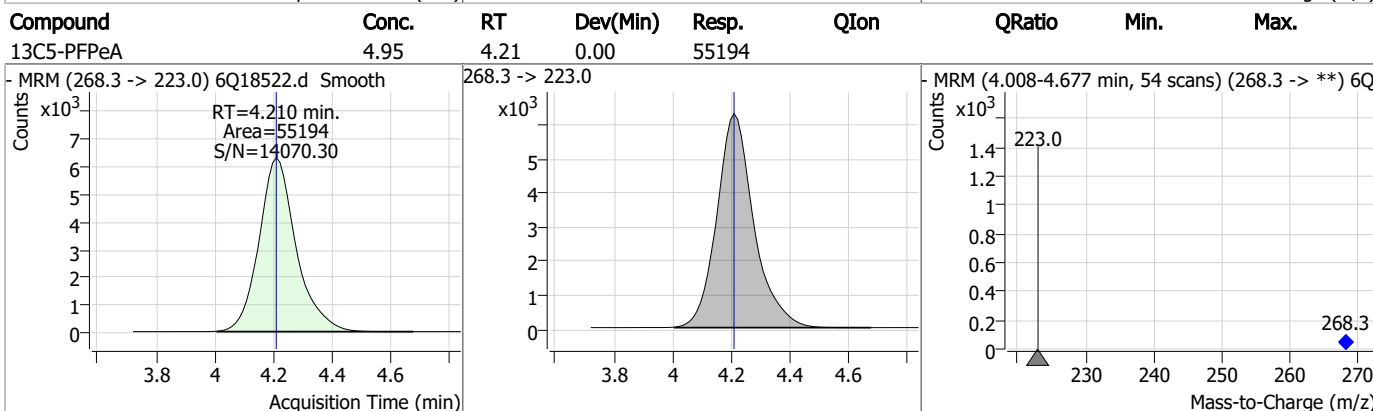
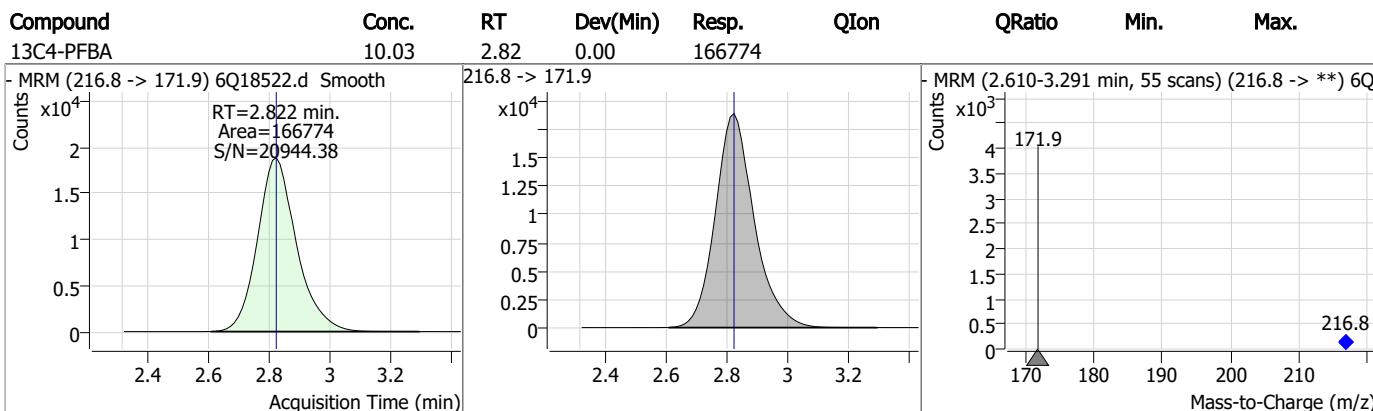
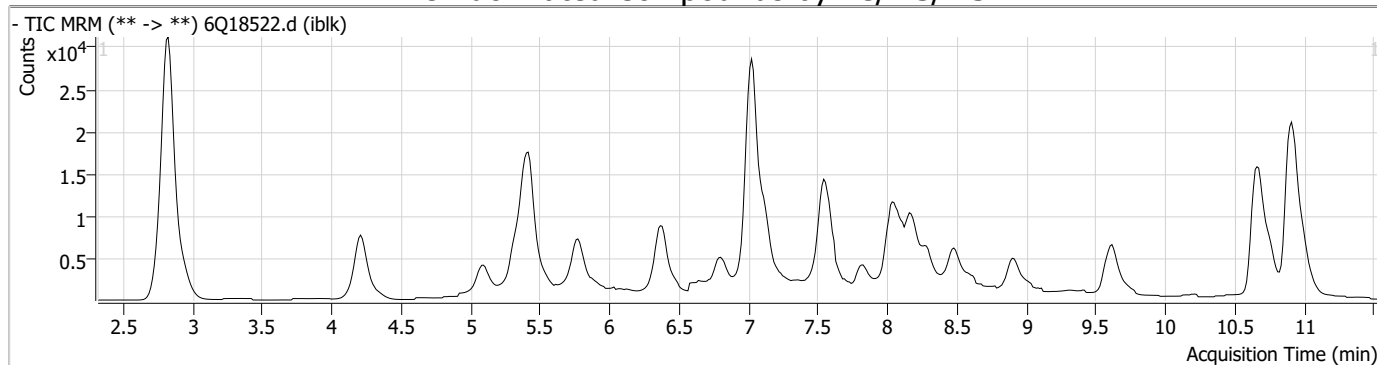
Perfluorinated Compounds by LC/MS/MS

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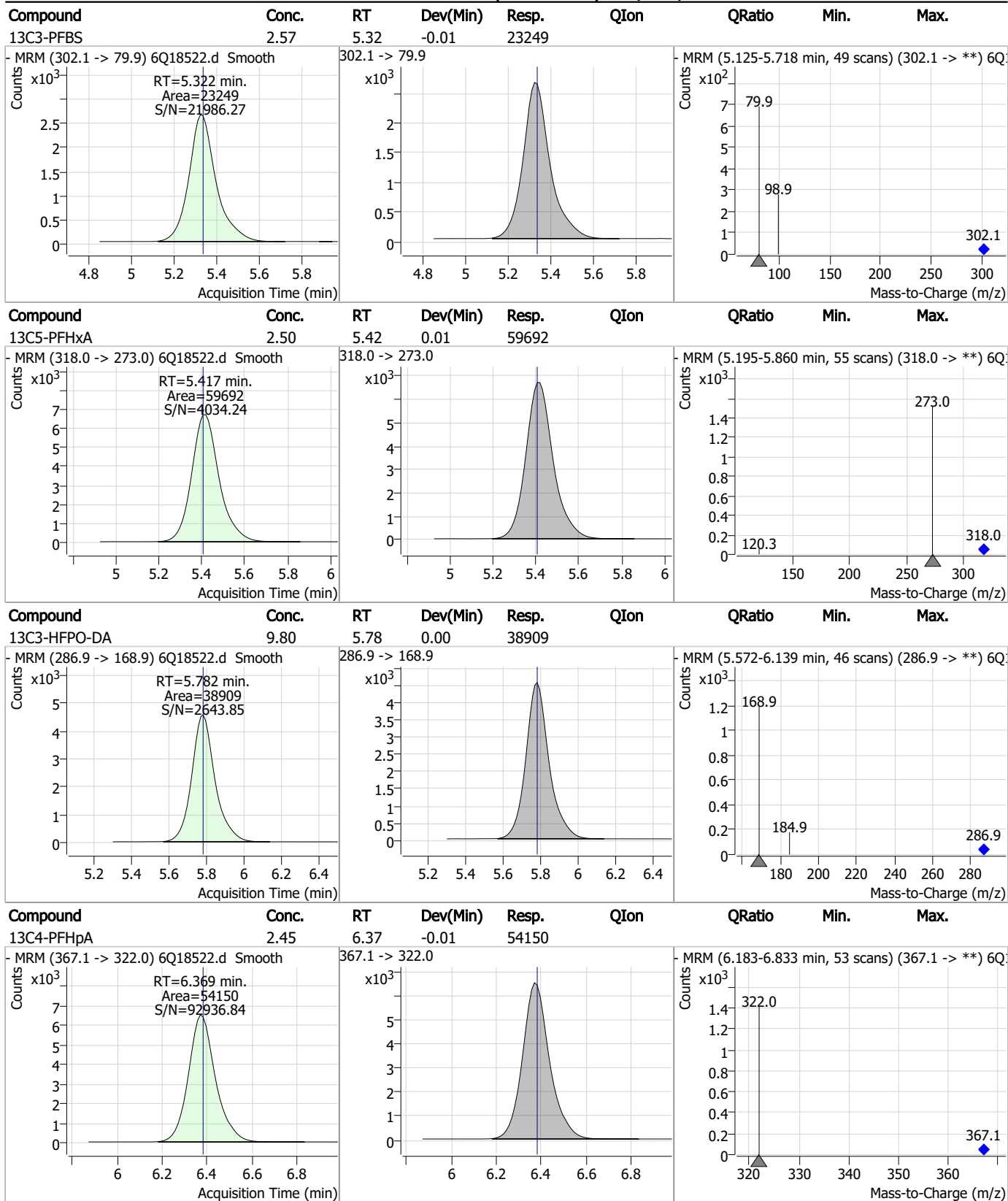
7.2.5

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Perfluorinated Compounds by LC/MS/MS

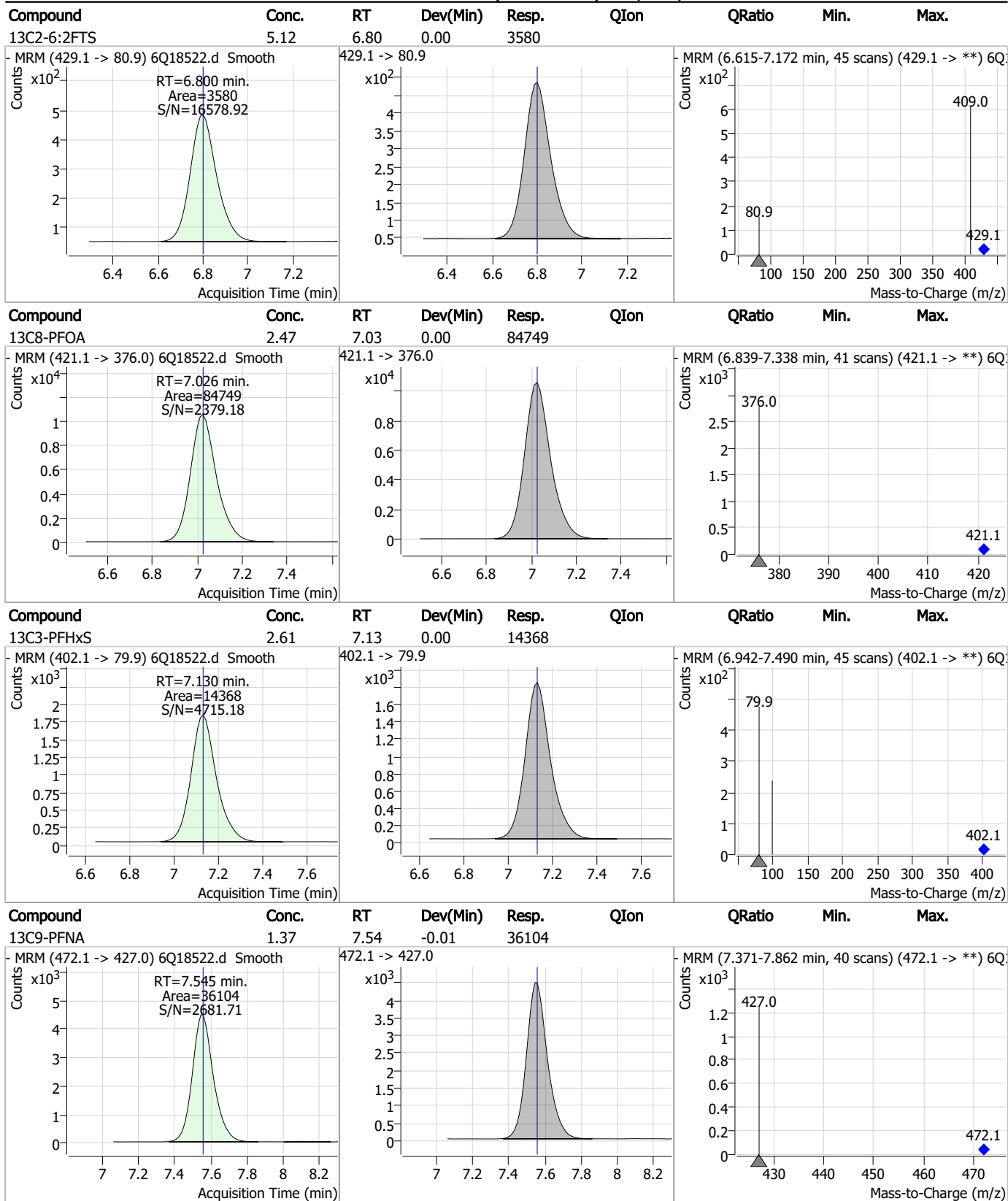


Perfluorinated Compounds by LC/MS/MS



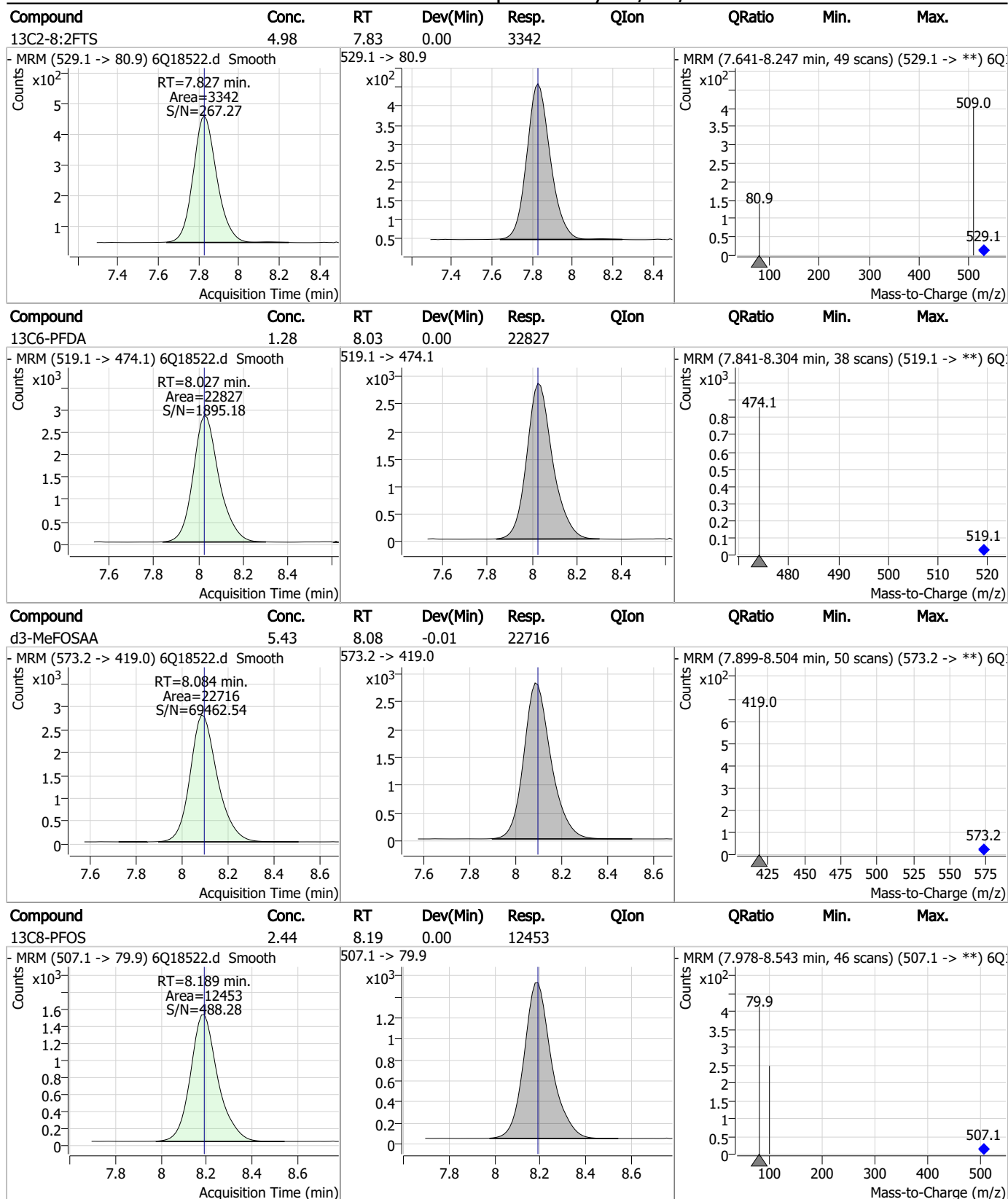
7.2.5
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Perfluorinated Compounds by LC/MS/MS



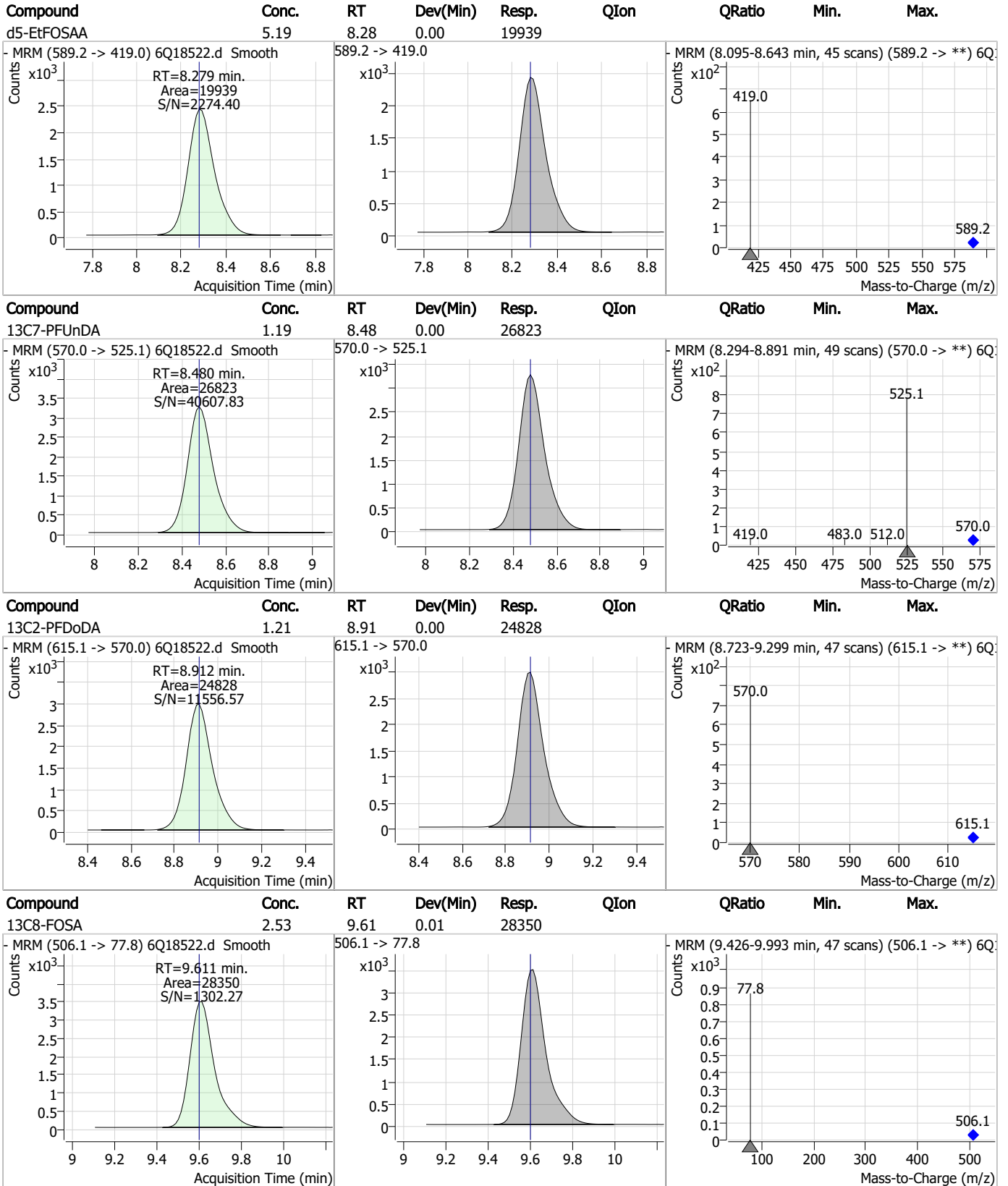
7.25
7

Perfluorinated Compounds by LC/MS/MS



7.25
7

Perfluorinated Compounds by LC/MS/MS

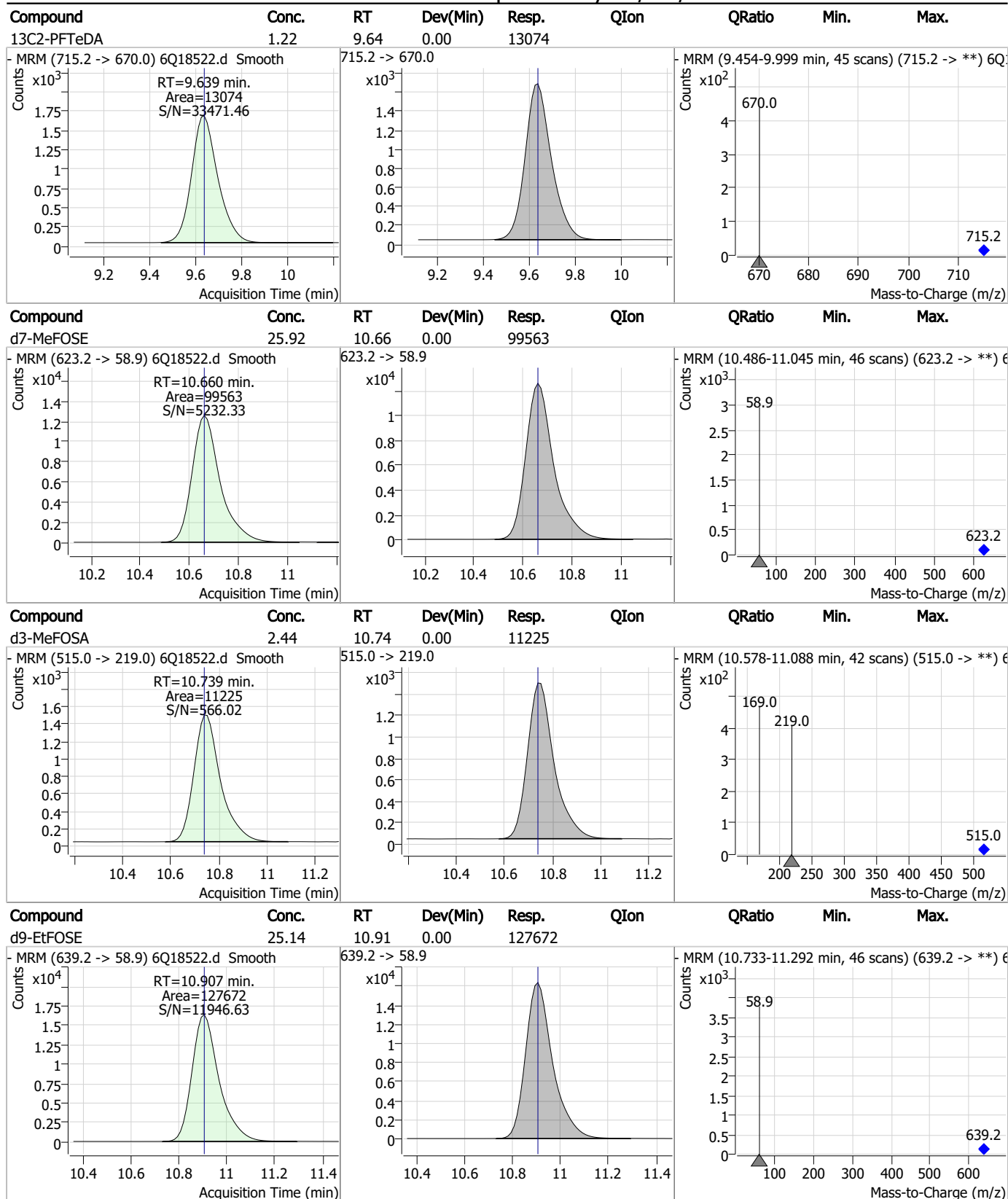


7.2.5

7

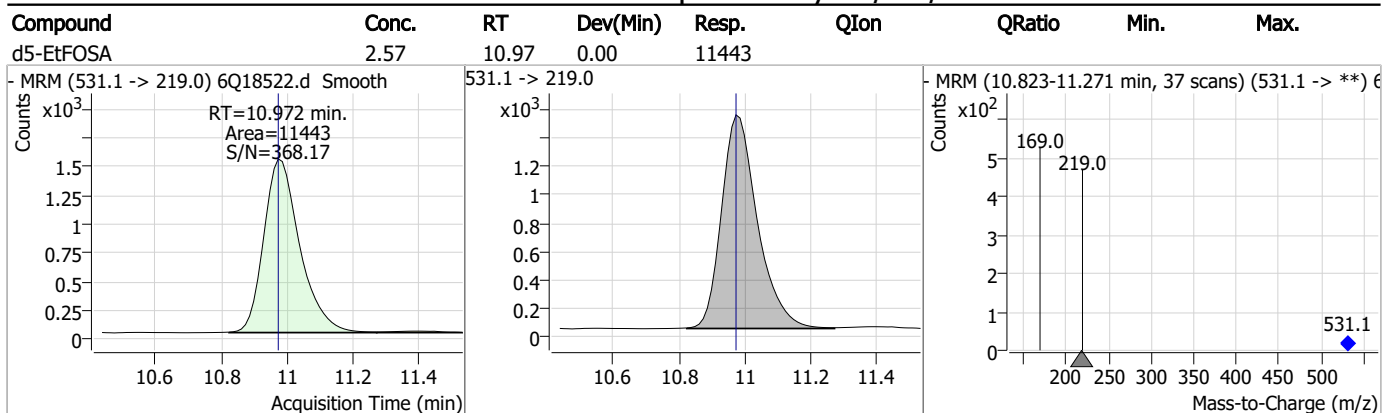


Perfluorinated Compounds by LC/MS/MS



7.2.5
7

Perfluorinated Compounds by LC/MS/MS



7.2.5

7

Perfluorinated Compounds by LC/MS/MS

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 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 8:39:45 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	171125	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	57142	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	60956	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	57119	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	87512	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	36366	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	22632	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	28226	1.25 µg/L	0.000
M2-PFDoDA	8.900	615.1 -> 570.0	26242	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	12992	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	30634	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	23058	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14036	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13324	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	2881	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4039	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4127	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	21728	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	38070	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	20341	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	99830	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	116762	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	11331	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11816	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	16477	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	71763	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10308	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	89659	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	29934	1.25 µg/L	-0.012
13C5-PFNA	7.545	468.0 -> 423.0	44690	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	58306	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2881	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4039	5.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.1%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4127	6.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.3%		
13C2-PFDoDA	8.900	615.1 -> 570.0	26242	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-PFTeDA	9.627	715.2 -> 670.0	12992	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C3-PFBS	5.334	302.1 -> 79.9	23058	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFHxS	7.130	402.1 -> 79.9	14036	2.52 µg/L	0.000

7.2.6
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFBA	2.822	216.8 -> 171.9	171125	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.382	367.1 -> 322.0	57119	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFHxA	5.417	318.0 -> 273.0	60956	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C5-PFPeA	4.210	268.3 -> 223.0	57142	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C6-PFDA	8.027	519.1 -> 474.1	22632	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C7-PFUnDA	8.480	570.0 -> 525.1	28226	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-FOSA	9.598	506.1 -> 77.8	30634	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C8-PFOA	7.026	421.1 -> 376.0	87512	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C8-PFOS	8.177	507.1 -> 79.9	13324	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C9-PFNA	7.557	472.1 -> 427.0	36366	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSAA	8.084	573.2 -> 419.0	21728	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38070	9.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	11816	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
d5-EtFOSAA	8.279	589.2 -> 419.0	20341	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
d7-MeFOSE	10.660	623.2 -> 58.9	99830	25.77 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
d9-EtFOSE	10.907	639.2 -> 58.9	116762	22.80 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	11331	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	

7.2.6
7

Target Compounds

QValue

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



Perfluorinated Compounds by LC/MS/MS

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

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

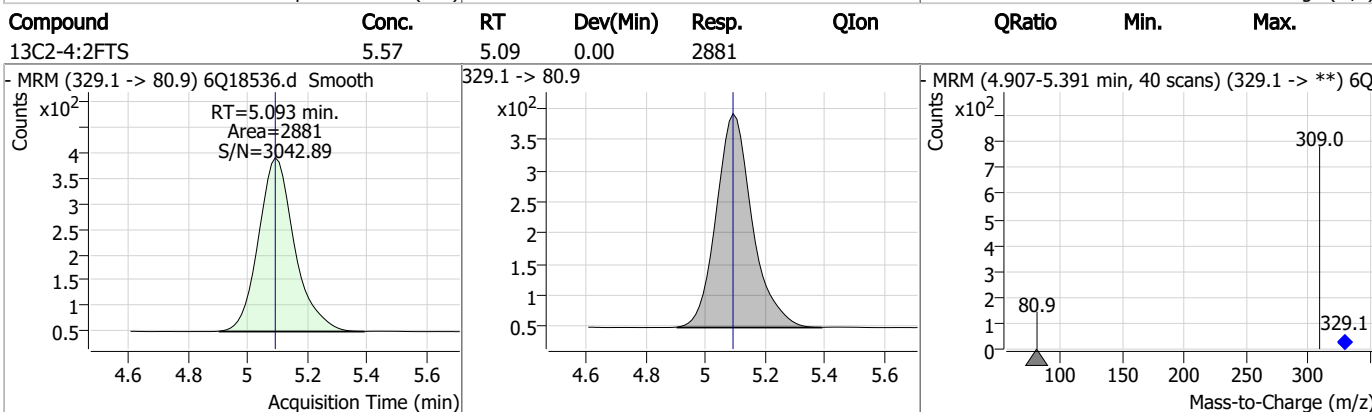
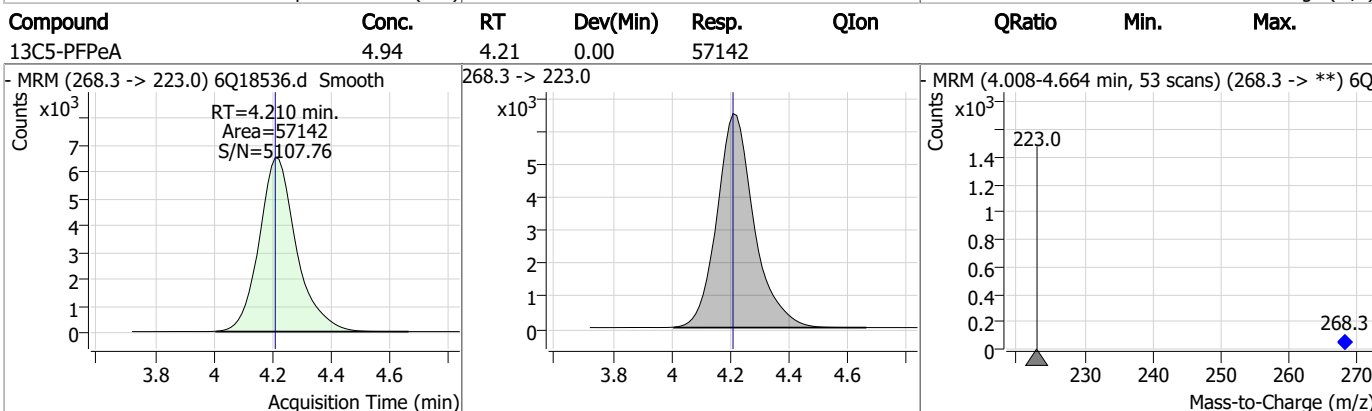
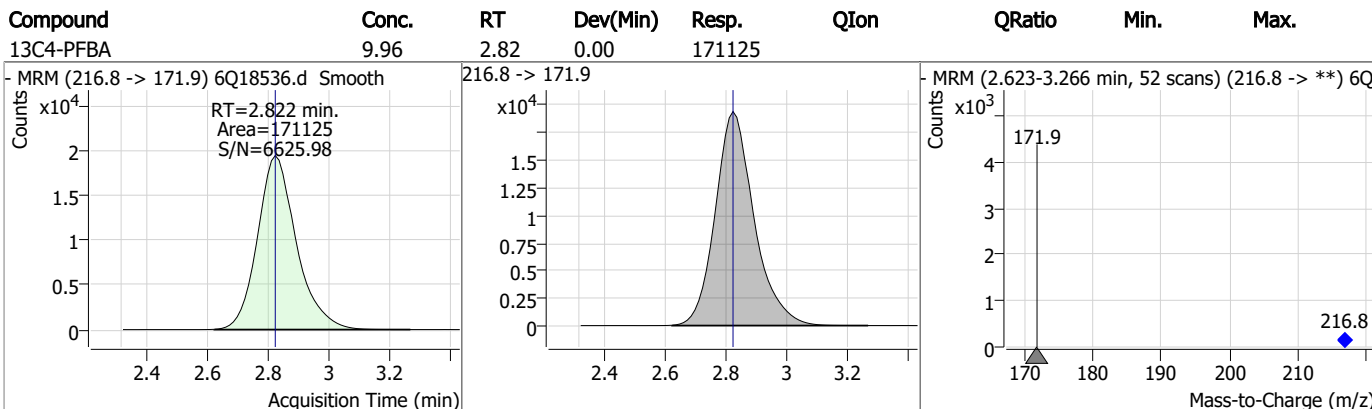
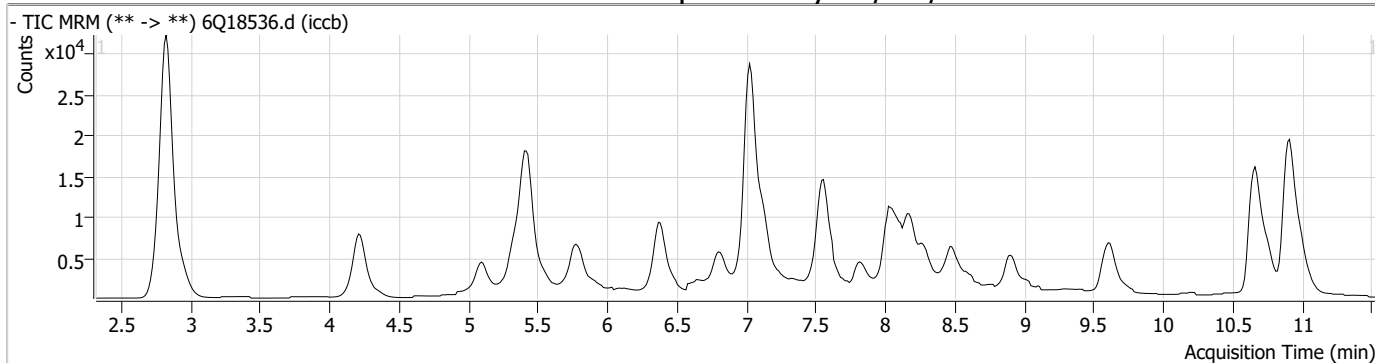
Perfluorinated Compounds by LC/MS/MS

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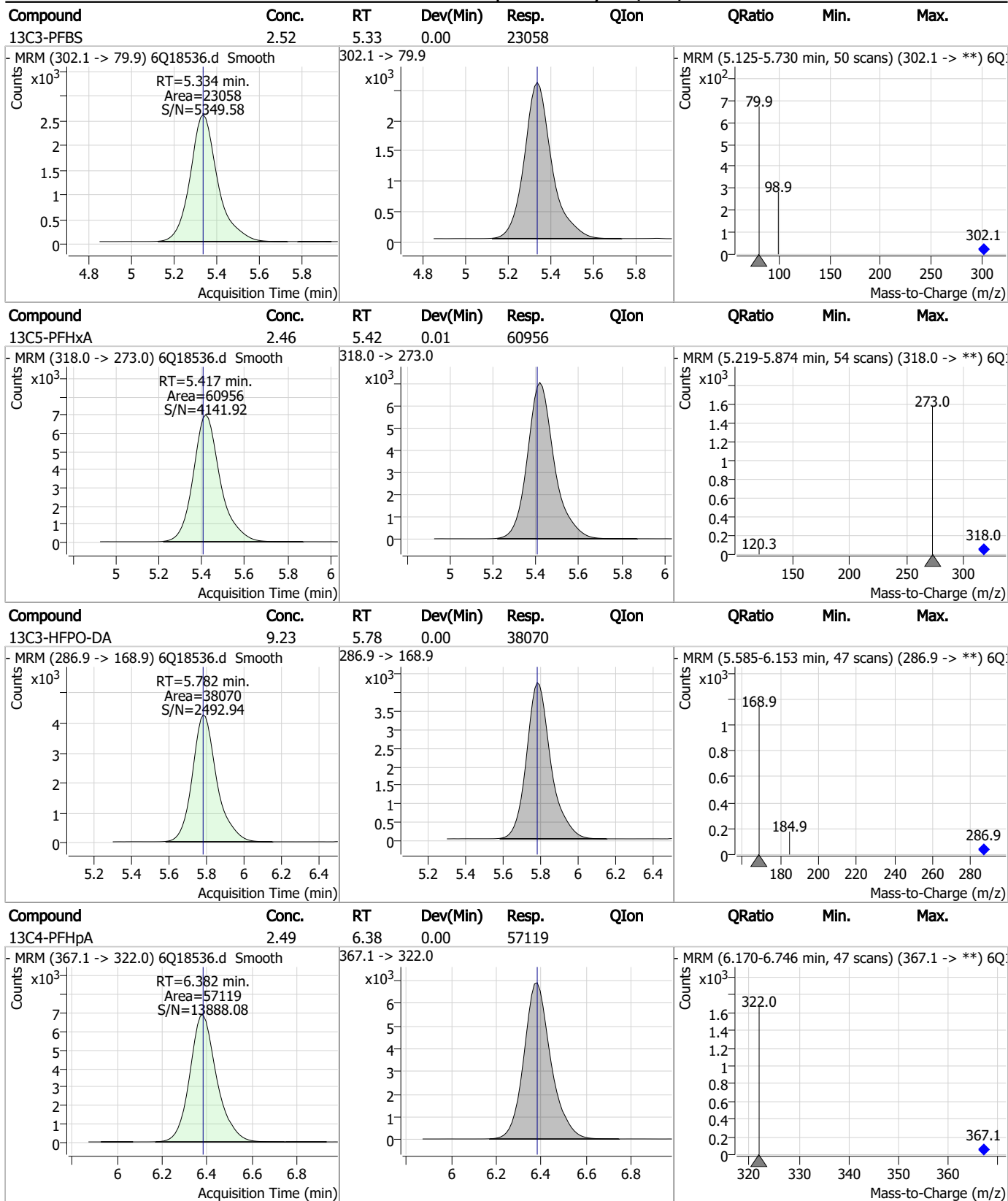
7.2.6

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Perfluorinated Compounds by LC/MS/MS

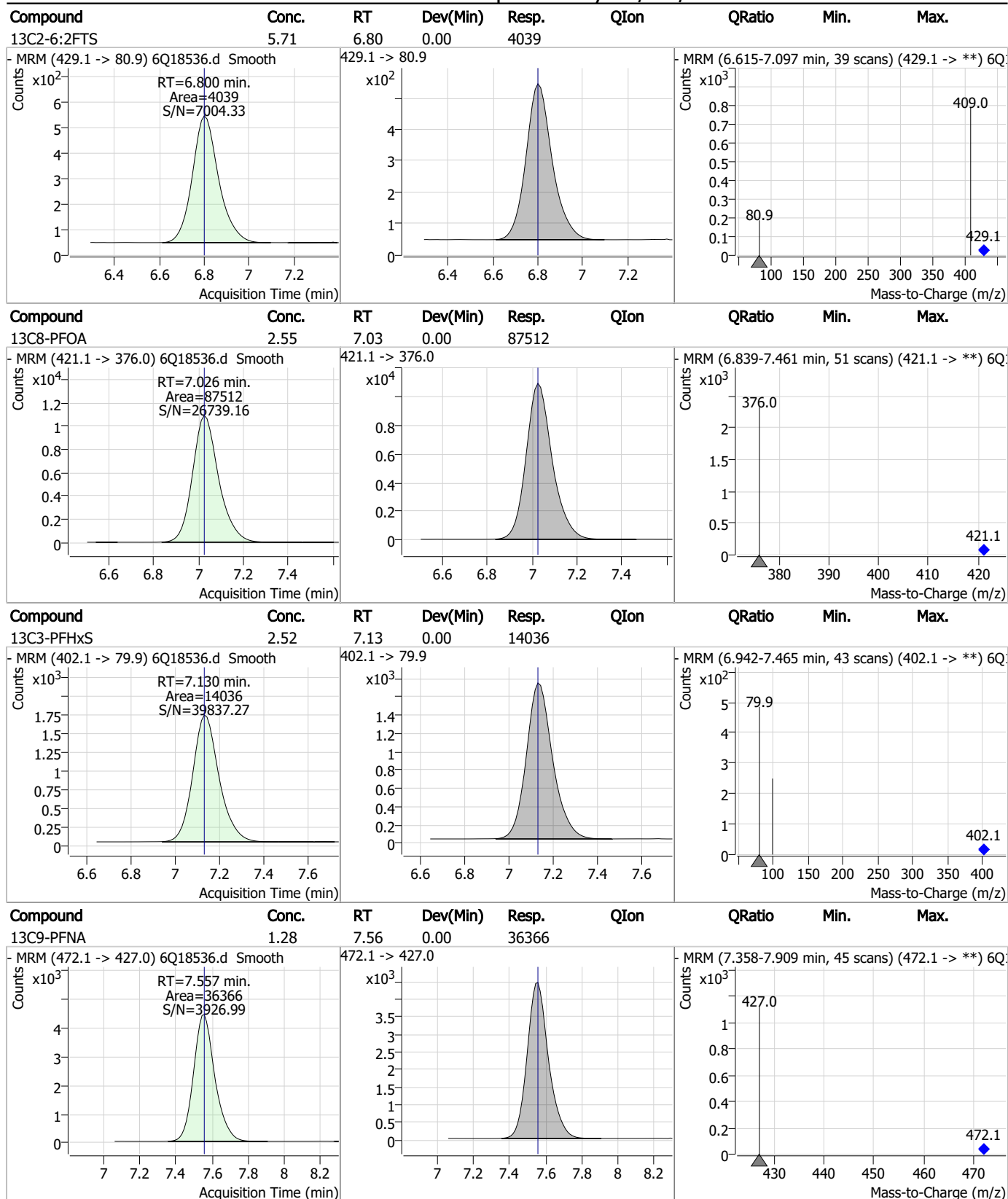


Perfluorinated Compounds by LC/MS/MS



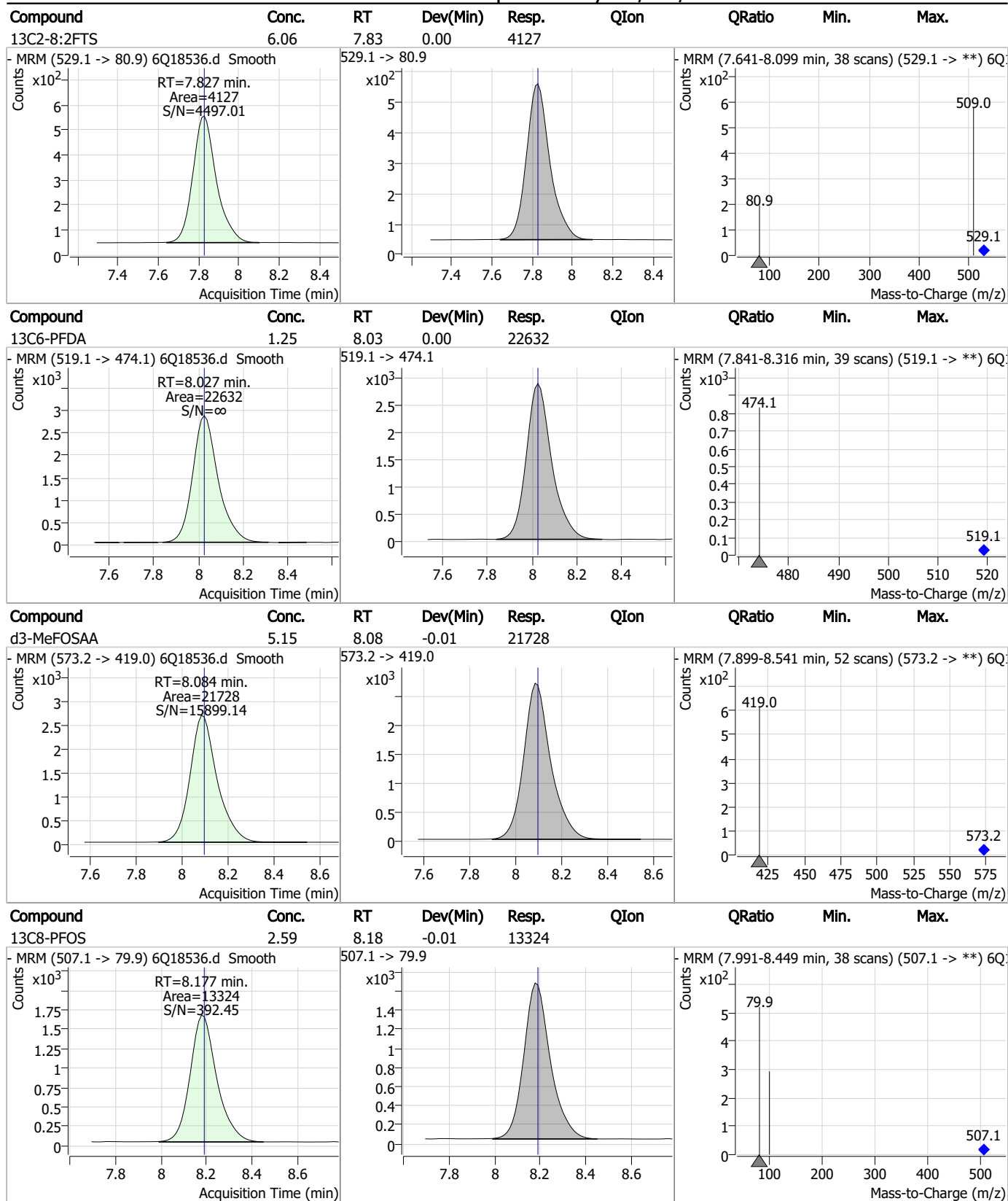
7.2.6
7

Perfluorinated Compounds by LC/MS/MS



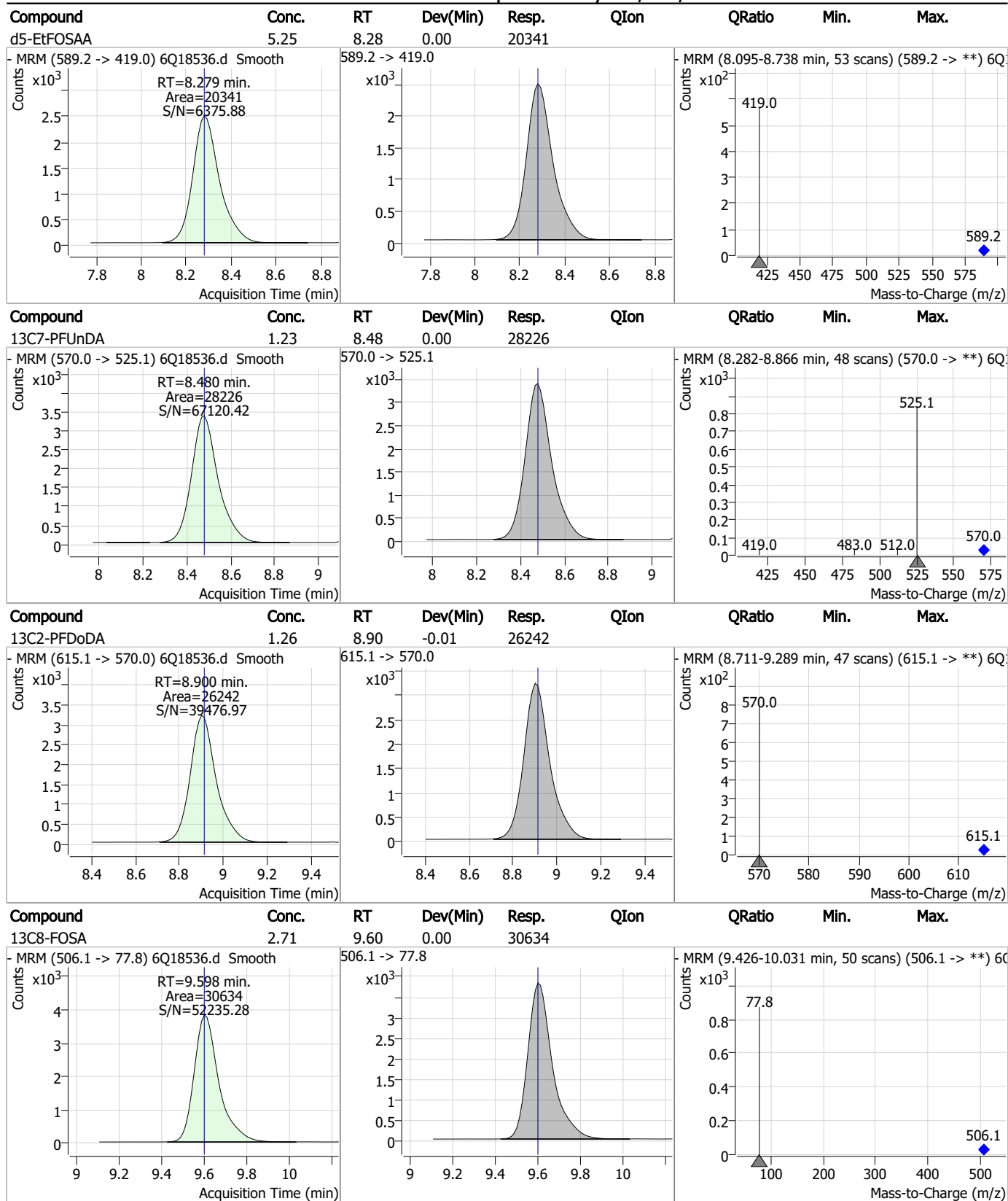
7.2.6
7

Perfluorinated Compounds by LC/MS/MS



7.2.6
7

Perfluorinated Compounds by LC/MS/MS



7.2.6
7

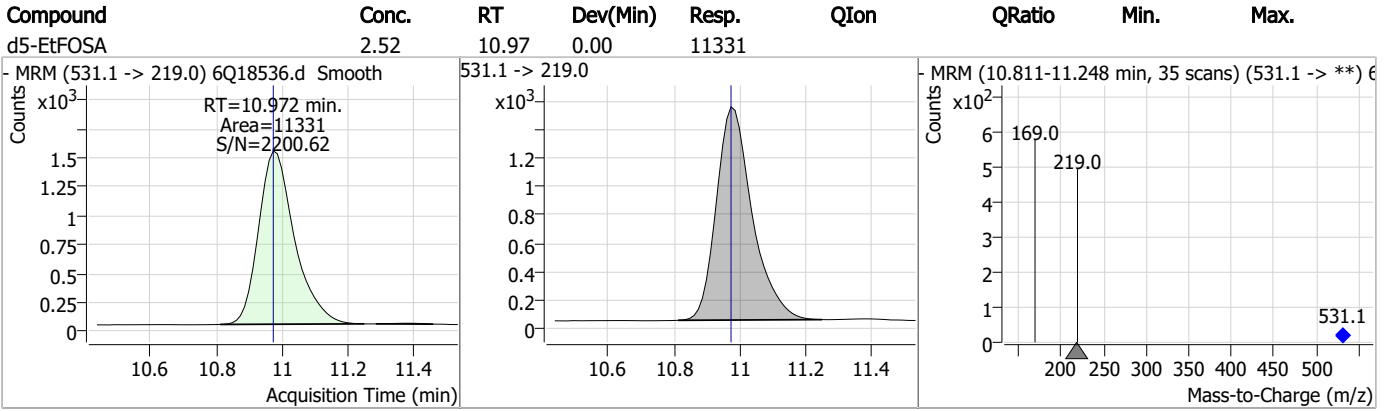
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.20	9.63	-0.01	12992				
d7-MeFOSE	25.77	10.66	0.00	99830				
d3-MeFOSA	2.54	10.74	0.00	11816				
d9-EtFOSE	22.80	10.91	0.00	116762				

7.2.6

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Perfluorinated Compounds by LC/MS/MS



7.2.6

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18547.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 11:19:08 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	173874	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58044	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	62774	2.50 µg/L	0.012
M4-PFHpA	6.369	367.1 -> 322.0	58635	2.50 µg/L	-0.012
M8-PFOA	7.026	421.1 -> 376.0	86722	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	37330	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	23295	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	31226	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	27036	1.25 µg/L	-0.012
M2-PFTeDA	9.639	715.2 -> 670.0	14043	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	30542	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	23896	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14444	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14115	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	3290	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4567	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4605	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	23685	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	41403	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	22743	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	96628	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	126961	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12015	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11591	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17724	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	72534	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10568	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	95697	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	30820	1.25 µg/L	-0.012
13C5-PFNA	7.545	468.0 -> 423.0	46721	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	58673	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3290	6.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4567	6.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.9%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4605	6.60 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 132.0%		
13C2-PFDoDA	8.900	615.1 -> 570.0	27036	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C2-PFTeDA	9.639	715.2 -> 670.0	14043	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C3-PFBS	5.334	302.1 -> 79.9	23896	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	14444	2.53 µg/L	0.000

7.27
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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 = 101.2%	
13C4-PFBA	2.822	216.8 -> 171.9	173874	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	58635	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFHxA	5.417	318.0 -> 273.0	62774	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	58044	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	8.027	519.1 -> 474.1	23295	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31226	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C8-FOSA	9.598	506.1 -> 77.8	30542	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C8-PFOA	7.026	421.1 -> 376.0	86722	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C8-PFOS	8.177	507.1 -> 79.9	14115	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C9-PFNA	7.545	472.1 -> 427.0	37330	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%	
d3-MeFOSAA	8.084	573.2 -> 419.0	23685	5.22 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41403	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	11591	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%	
d5-EtFOSAA	8.279	589.2 -> 419.0	22743	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
d7-MeFOSE	10.660	623.2 -> 58.9	96628	23.19 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	126961	23.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	12015	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	

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Target Compounds

QValue

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

Perfluorinated Compounds by LC/MS/MS

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

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

7.27
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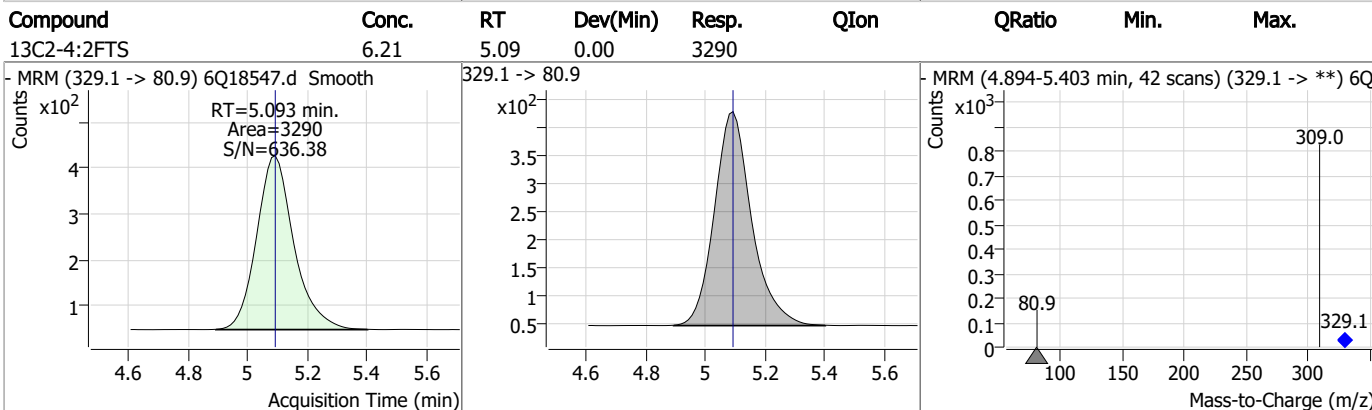
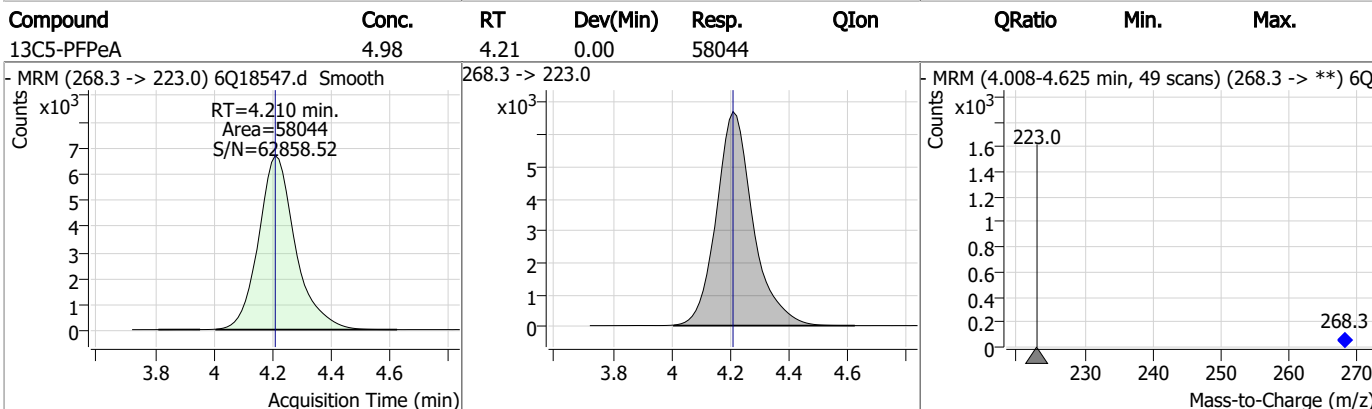
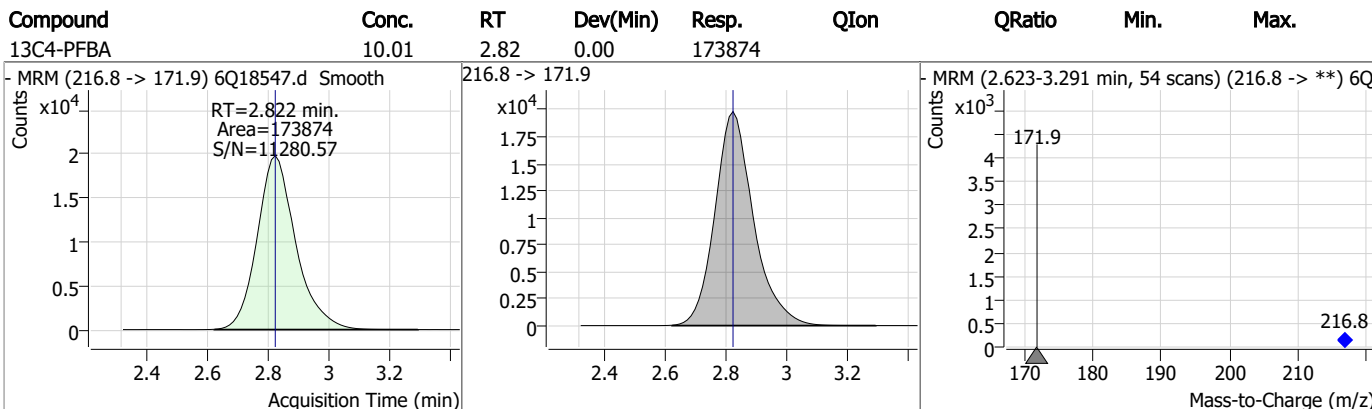
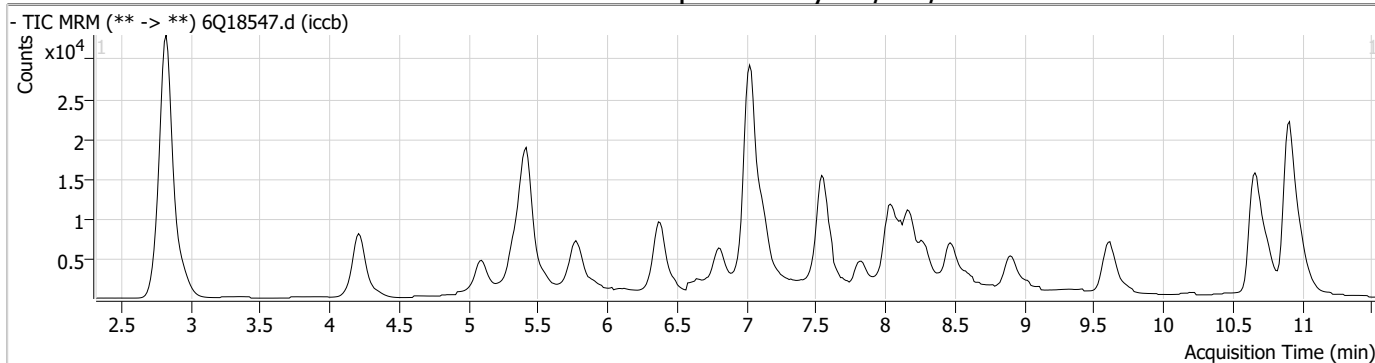
Perfluorinated Compounds by LC/MS/MS

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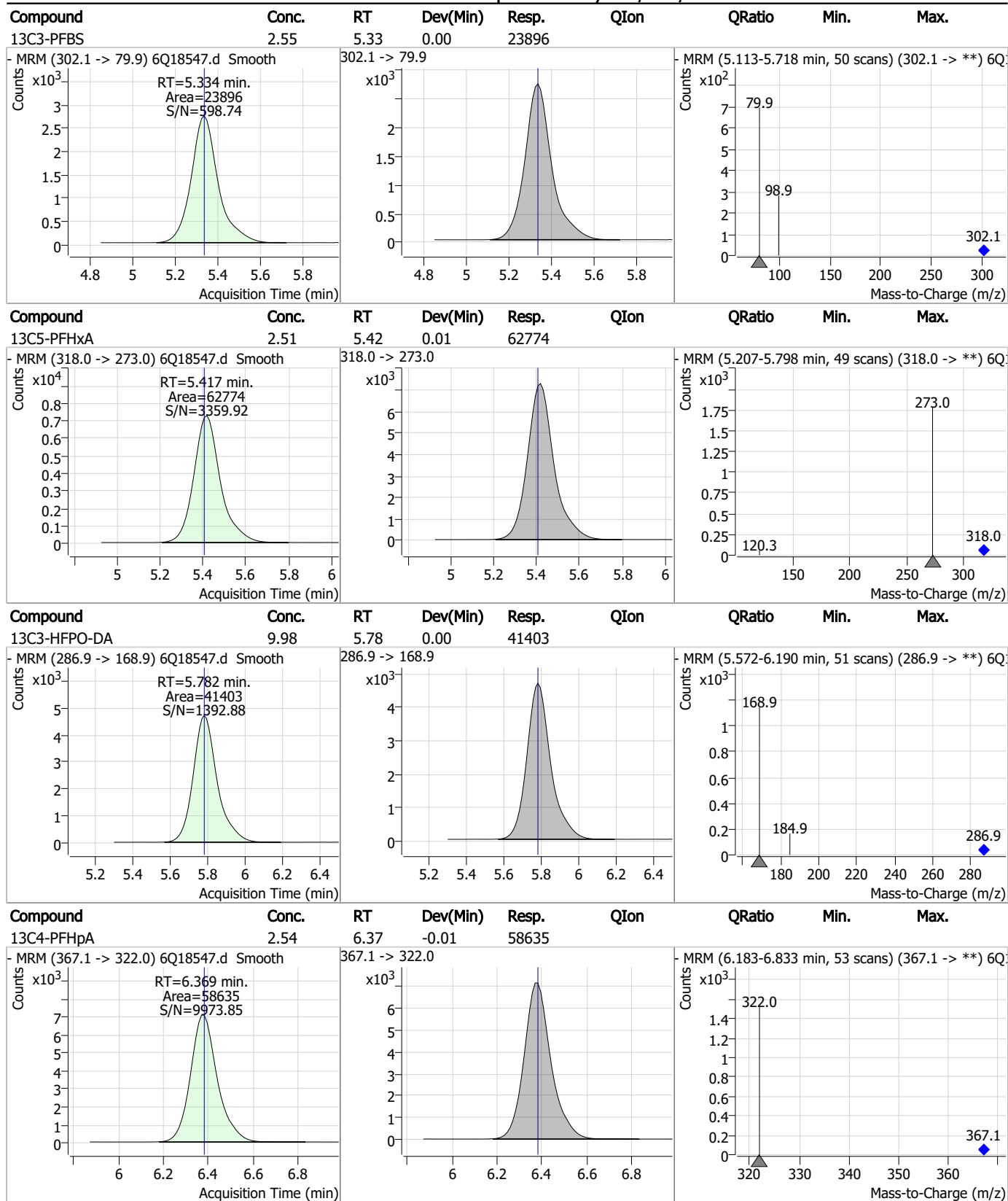
7.2.7

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Perfluorinated Compounds by LC/MS/MS

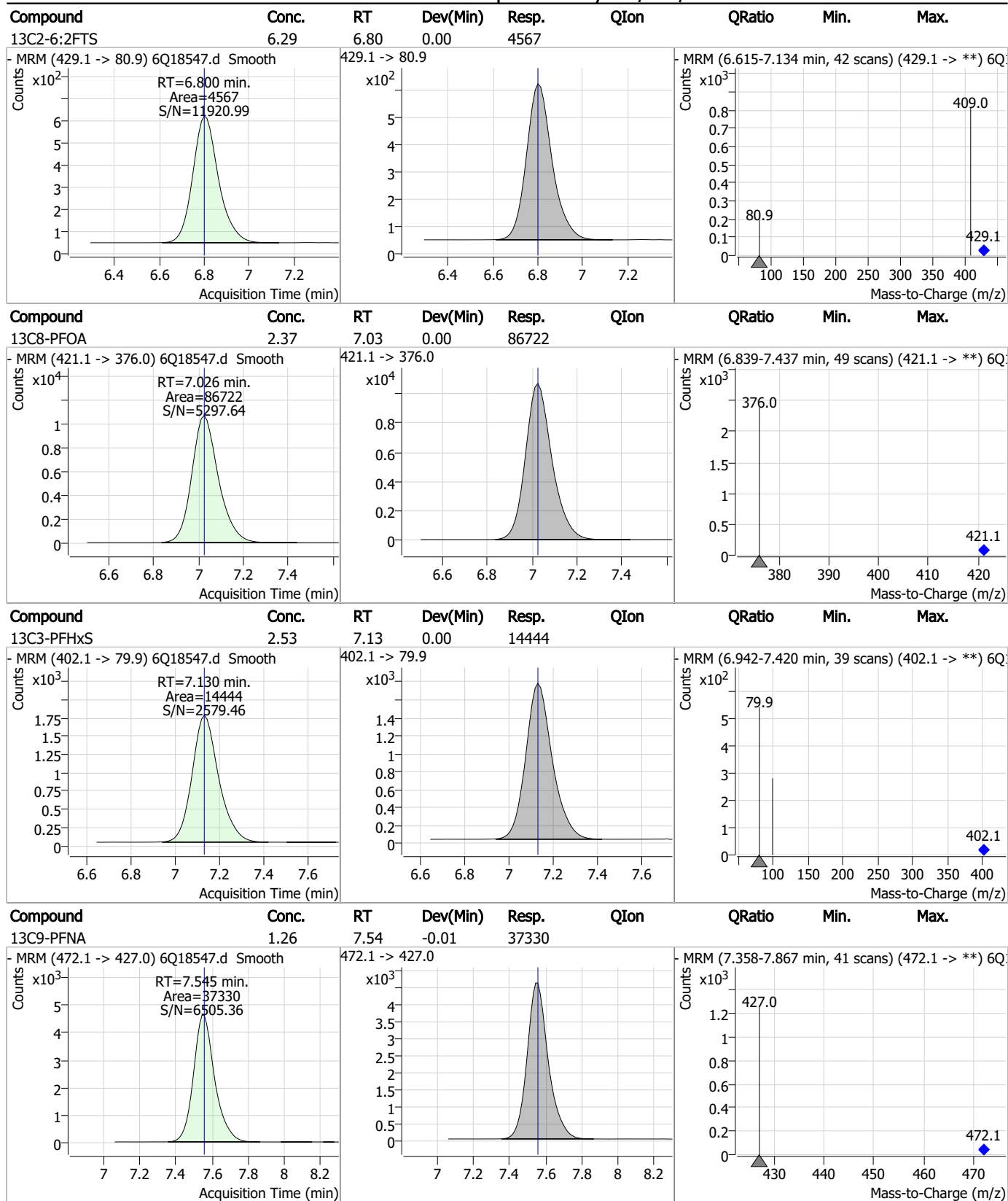


Perfluorinated Compounds by LC/MS/MS



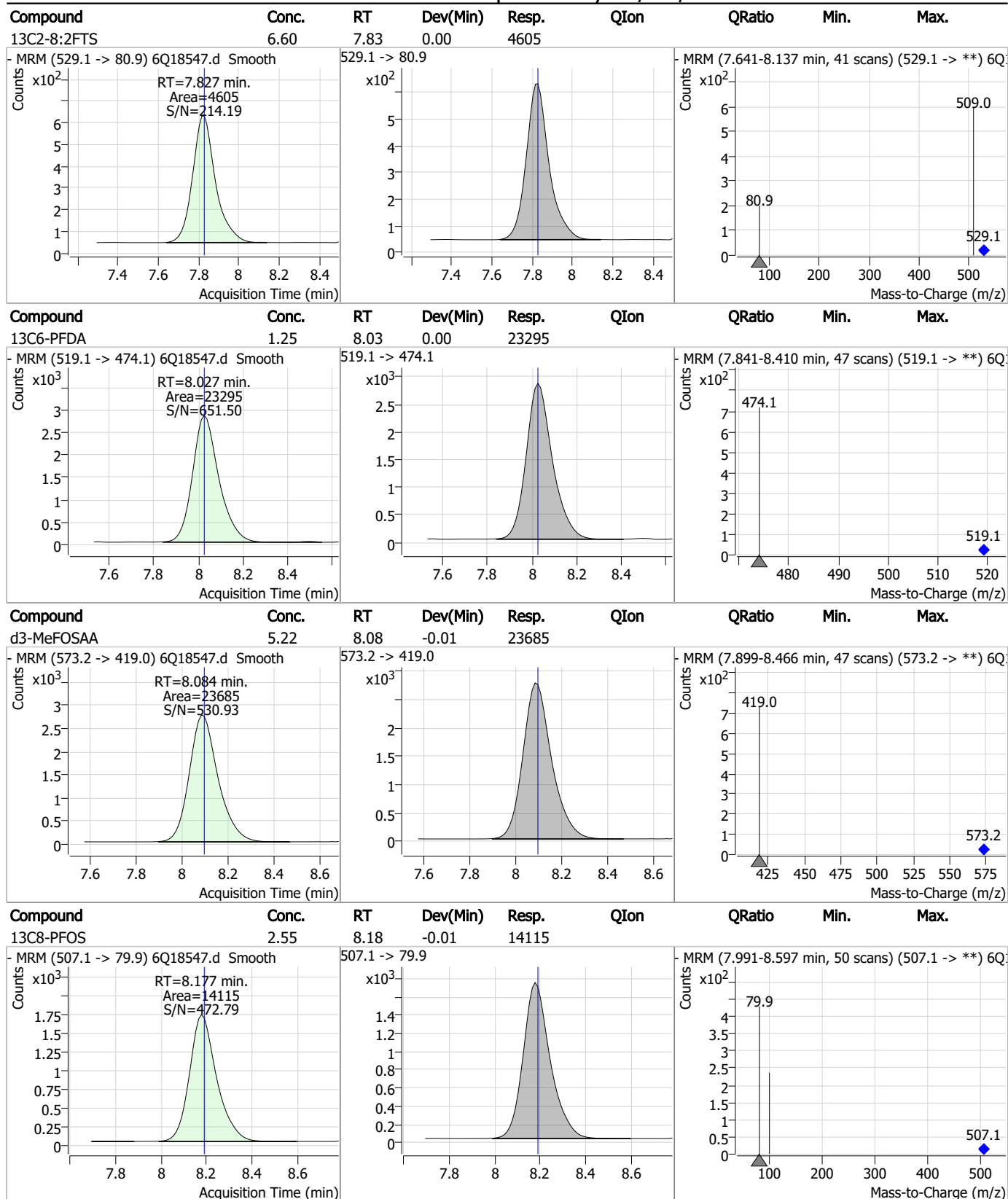
7.27
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Perfluorinated Compounds by LC/MS/MS



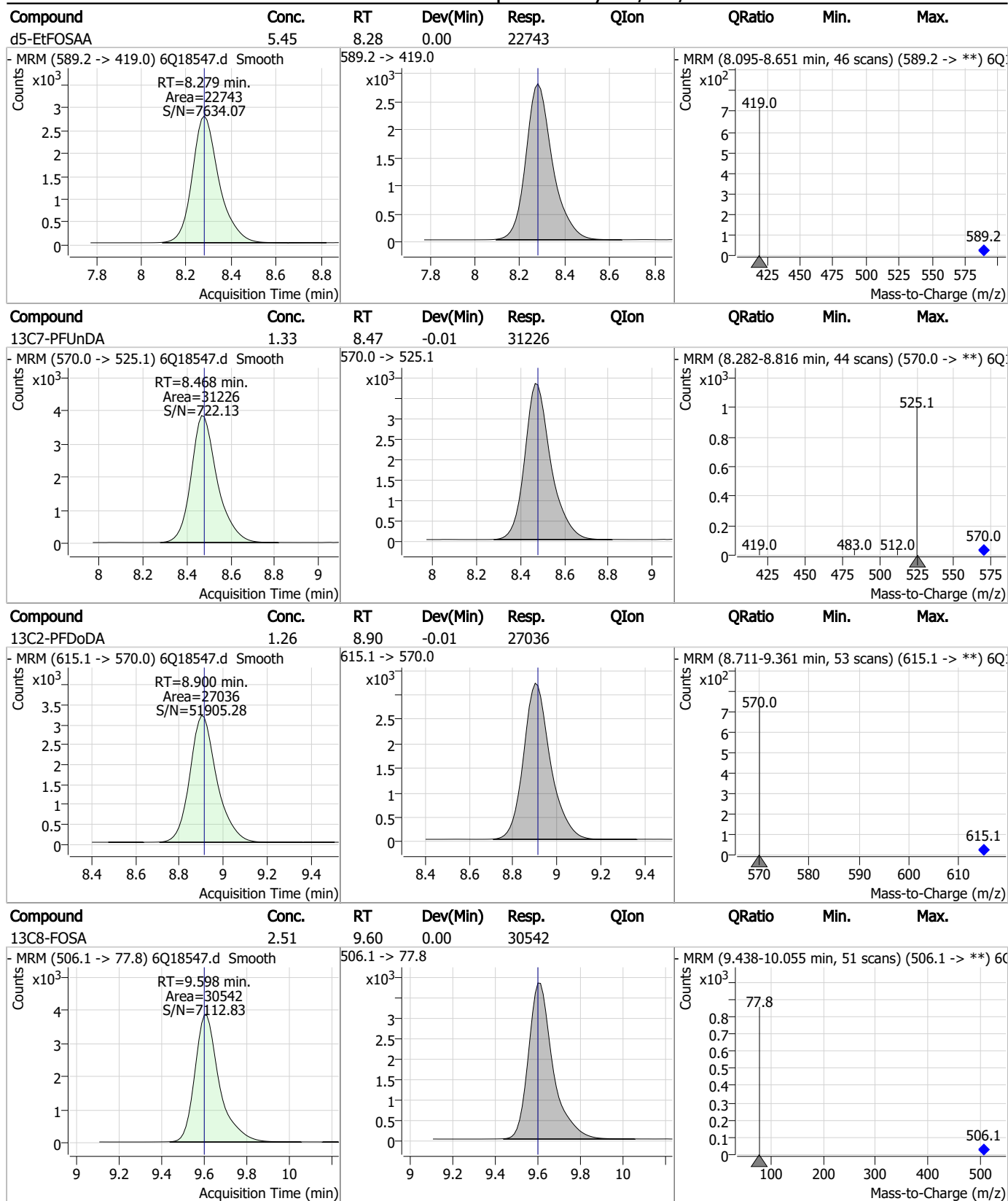
7.27
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Perfluorinated Compounds by LC/MS/MS



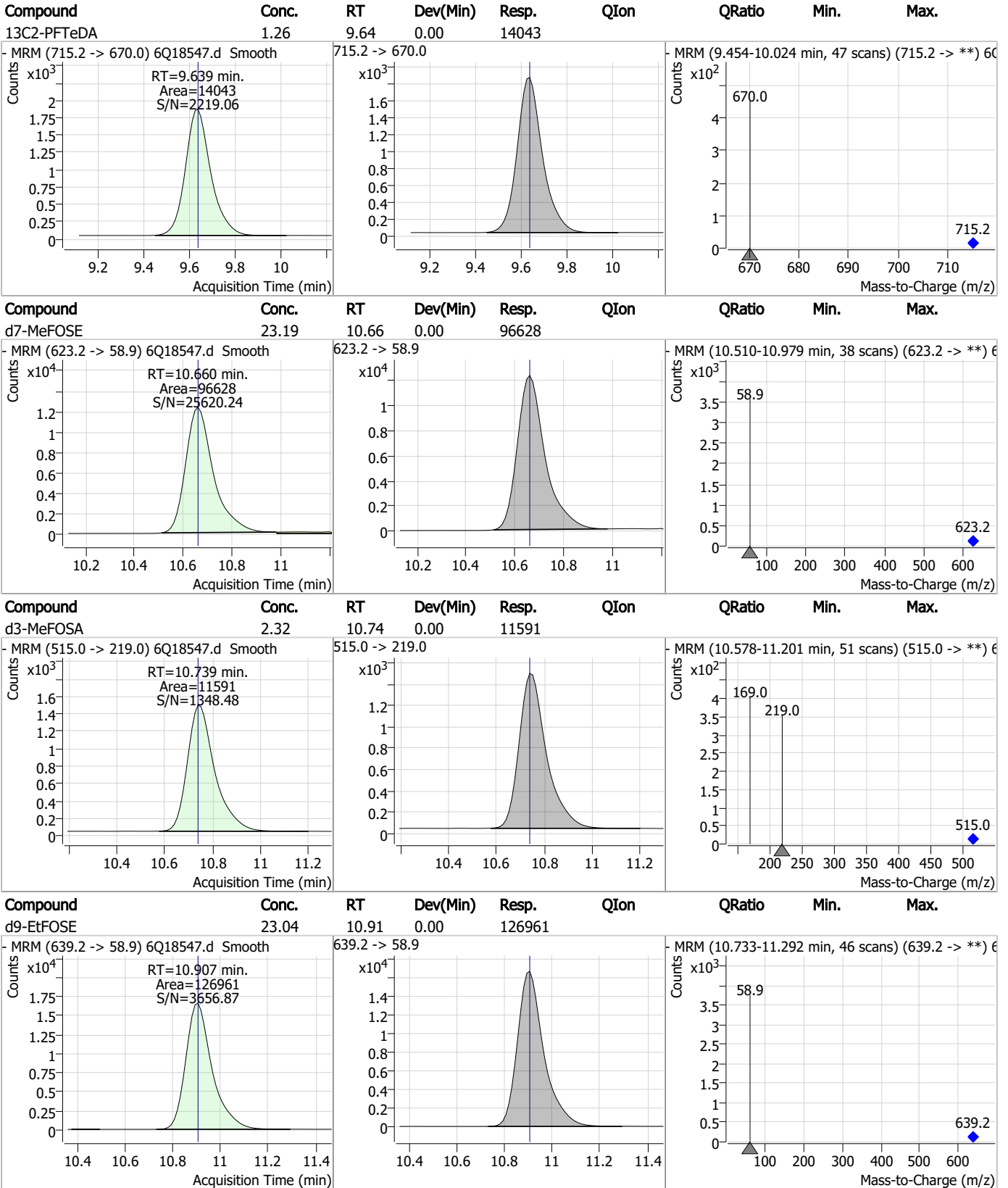
7.27

Perfluorinated Compounds by LC/MS/MS



7.27
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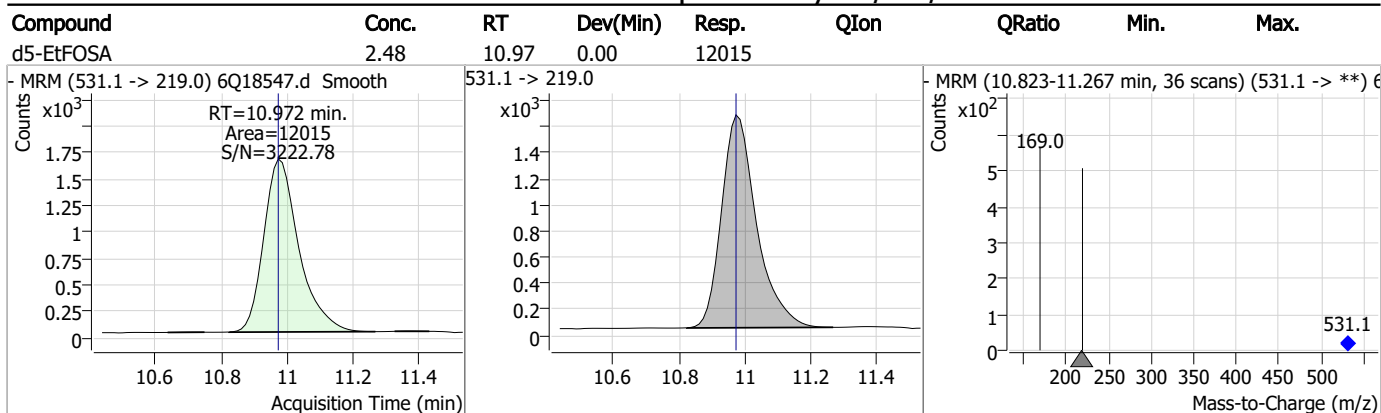
Perfluorinated Compounds by LC/MS/MS



7.27

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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18542.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 10:06:39 PM
 Sample Name : op97070-bs
 Vial : P6-B5
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP97070,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	37459	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	48703	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	57620	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	50180	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	80071	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	33034	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	20863	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	27485	1.25 µg/L	0.000
M2-PFDoDA	8.900	615.1 -> 570.0	22214	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	11343	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	23747	2.50 µg/L	0.000
M3-PFBS	5.347	302.1 -> 79.9	21370	2.50 µg/L	0.012
M3-PFHxS	7.130	402.1 -> 79.9	12291	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12356	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	2673	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	3945	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	3937	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	21280	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	35965	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	18739	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	68266	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	101855	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	9670	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9384	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13319	2.50 µg/L	-0.012
13C3-PFBA	2.879	216.0 -> 172.0	65026	5.00 µg/L	0.052
18O2-PFHxS	7.129	403.0 -> 83.9	8921	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	76056	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	27024	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	38798	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	51330	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2673	5.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.5%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3945	6.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.8%		
13C2-8:2FTS	7.815	529.1 -> 80.9	3937	6.68 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 133.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	22214	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C2-PFTeDA	9.627	715.2 -> 670.0	11343	1.16 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.6%		
13C3-PFBS	5.347	302.1 -> 79.9	21370	2.70 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	12291	2.55 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C4-PFBA	2.876	216.8 -> 171.9	37459	2.41 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 24.1%	
13C4-PFHpA	6.382	367.1 -> 322.0	50180	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C5-PFHxA	5.417	318.0 -> 273.0	57620	2.64 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C5-PFPeA	4.222	268.3 -> 223.0	48703	4.78 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C6-PFDA	8.027	519.1 -> 474.1	20863	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C7-PFUnDA	8.480	570.0 -> 525.1	27485	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C8-FOSA	9.598	506.1 -> 77.8	23747	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C8-PFOA	7.026	421.1 -> 376.0	80071	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C8-PFOS	8.177	507.1 -> 79.9	12356	2.97 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.0%	
13C9-PFNA	7.557	472.1 -> 427.0	33034	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	21280	6.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 124.8%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	35965	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	9384	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
d5-EtFOSAA	8.279	589.2 -> 419.0	18739	5.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	68266	21.80 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.2%	
d9-EtFOSE	10.907	639.2 -> 58.9	101855	24.60 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d5-EtFOSA	10.972	531.1 -> 219.0	9670	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	38570	10.23 µg/L	96
		327.1 -> 80.9	14293		
6:2FTS	6.801	427.1 -> 407.0	36881	9.85 µg/L	98
		427.1 -> 80.9	12931		
8:2FTS	7.828	527.1 -> 507.0	20849	10.00 µg/L	94
		527.1 -> 80.8	8167		
EtFOSAA	8.280	584.2 -> 419.1	6799	2.65 µg/L	94
		584.2 -> 526.0	3966		
FOSA	9.602	498.1 -> 77.9	20760	2.56 µg/L	99
		498.1 -> 478.0	694		
MeFOSAA	8.085	570.1 -> 419.0	11916	2.54 µg/L	98
		570.1 -> 483.0	2379		
PFBA	2.868	212.8 -> 168.9	12916	10.46 µg/L	100
PFBS	5.335	298.7 -> 79.9	16488	2.23 µg/L	95
		298.7 -> 98.8	6478		
PFDA	8.027	512.9 -> 469.0	65439	2.74 µg/L	98
		512.9 -> 219.0	9981		
PFDoDA	8.900	613.1 -> 569.0	41174	2.72 µg/L	95
		613.1 -> 319.0	6426		
PFDS	9.064	599.0 -> 79.9	7053	2.31 µg/L	98

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7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3545		
PFHpA	6.382	363.1 -> 319.0	59129	2.65 µg/L	97
		363.1 -> 169.0	9643		
PFHpS	7.685	449.0 -> 79.9	13848	2.35 µg/L	98
		449.0 -> 98.9	7054		
PFHxA	5.420	313.0 -> 269.0	51442	2.61 µg/L	99
		313.0 -> 118.9	2554		
PFHxS	7.131	398.7 -> 79.9	14959	2.60 µg/L	98
		398.7 -> 98.9	6947		
PFNA	7.558	463.0 -> 419.0	61315	2.55 µg/L	99
		463.0 -> 219.0	12127		
PFNS	8.631	548.8 -> 79.9	11988	2.34 µg/L	97
		548.8 -> 98.9	6067		
PFOA	7.028	413.0 -> 369.0	87125	2.57 µg/L	97
		413.0 -> 169.0	16213		
PFOS	8.178	498.9 -> 79.9	13372	2.31 µg/L	m 97
		498.9 -> 98.8	6844		
PFPeA	4.224	263.0 -> 219.0	62473	5.25 µg/L	100
PFPeS	6.434	349.1 -> 79.9	14888	2.62 µg/L	96
		349.1 -> 98.9	6629		
PFTeDA	9.628	713.1 -> 669.0	29340	2.56 µg/L	94
		713.1 -> 168.9	2798		
PFTrDA	9.296	663.0 -> 619.0	38986	2.60 µg/L	94
		663.0 -> 168.9	4507		
PFUnDA	8.468	563.1 -> 519.0	41710	2.36 µg/L	95
		563.1 -> 269.1	7308		
11CI-PF3OUdS	9.336	630.9 -> 450.9	59459	4.91 µg/L	100
		632.9 -> 452.9	18548		
9CI-PF3ONS	8.508	530.8 -> 351.0	99208	5.03 µg/L	95
		532.8 -> 353.0	29730		
ADONA	6.632	376.9 -> 250.9	233382	5.10 µg/L	99
		376.9 -> 84.8	63799		
HFPO-DA	5.795	284.9 -> 168.9	16059	5.32 µg/L	95
		284.9 -> 184.9	1870		
3:3FTCA	3.727	241.0 -> 177.0	4227	5.60 µg/L	94
		241.0 -> 117.0	714		
5:3FTCA	6.099	341.0 -> 237.1	199694	58.45 µg/L	94
		341.0 -> 217.0	151084		
7:3FTCA	7.523	441.0 -> 316.9	129252	59.21 µg/L	96
		441.0 -> 336.9	293181		
EtFOSA	10.974	526.0 -> 219.0	21480	4.81 µg/L	92
		526.0 -> 169.0	28602		
EtFOSE	10.920	630.0 -> 58.9	54750	12.21 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	17896	5.05 µg/L	95
		511.9 -> 169.0	24888		
MeFOSE	10.673	616.1 -> 58.9	33375	12.09 µg/L	100
PFDoDS	9.767	699.1 -> 79.9	3102	2.36 µg/L	100
		699.1 -> 98.8	1664		
NFDHA	5.299	295.0 -> 201.0	12094	5.12 µg/L	99
		295.0 -> 84.9	3219		
PFMBA	4.638	279.0 -> 85.1	44839	5.50 µg/L	100
PFMPA	3.388	229.0 -> 84.9	15379	2.42 µg/L	100
PFEESA	5.875	314.8 -> 134.9	118664	4.56 µg/L	98
		314.8 -> 82.9	3995		

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

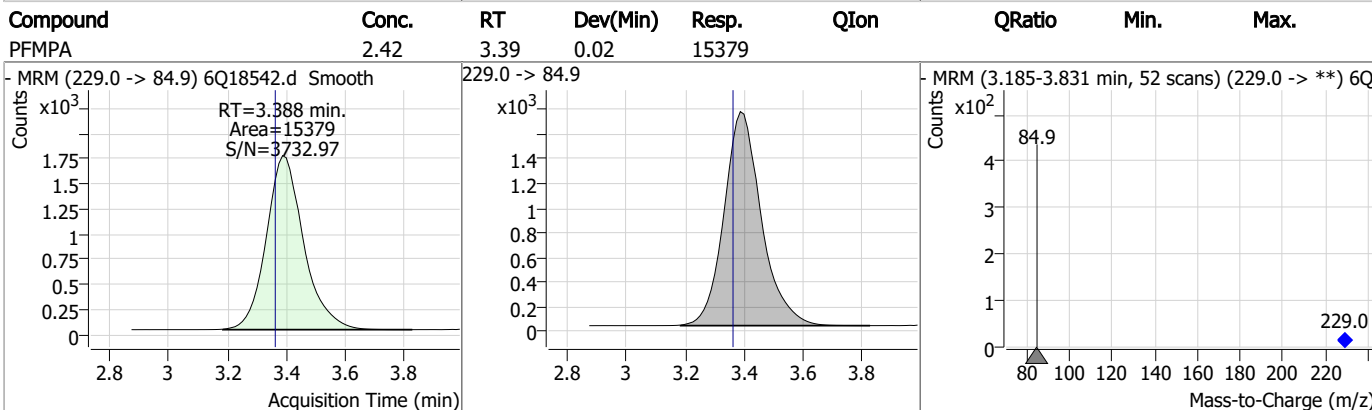
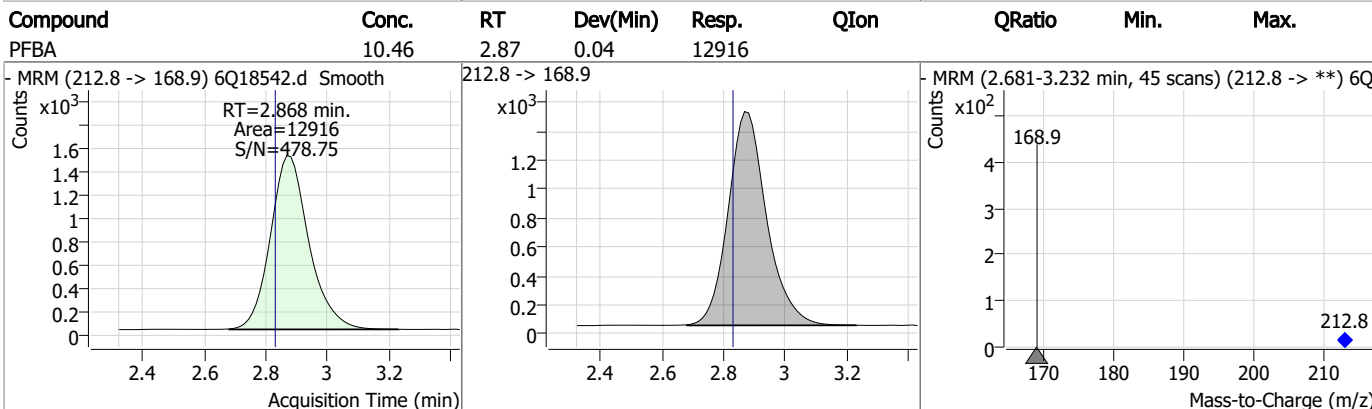
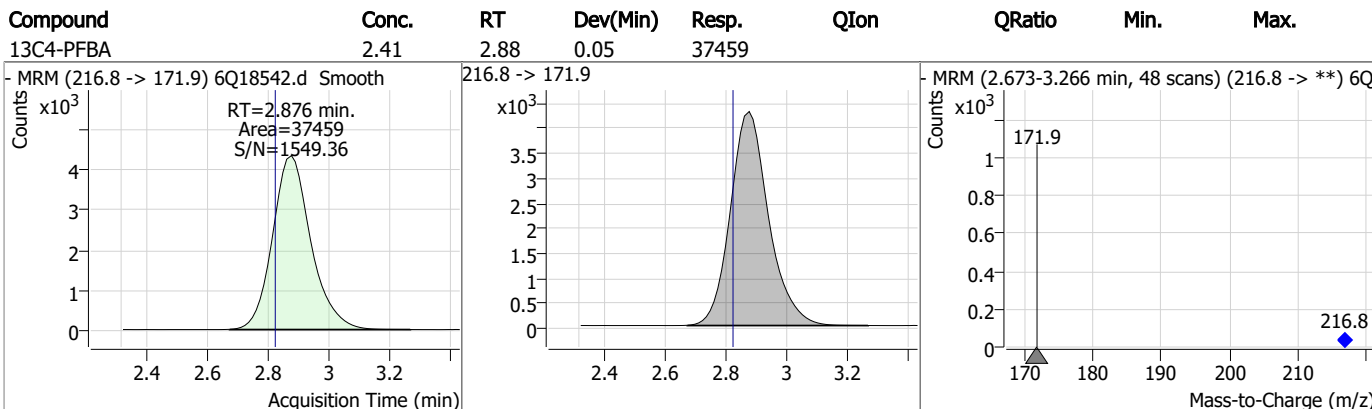
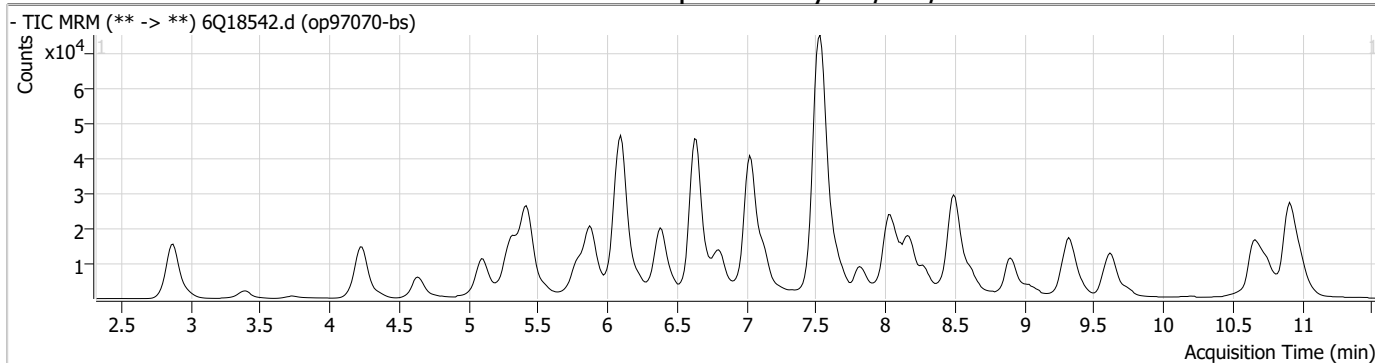
Perfluorinated Compounds by LC/MS/MS

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

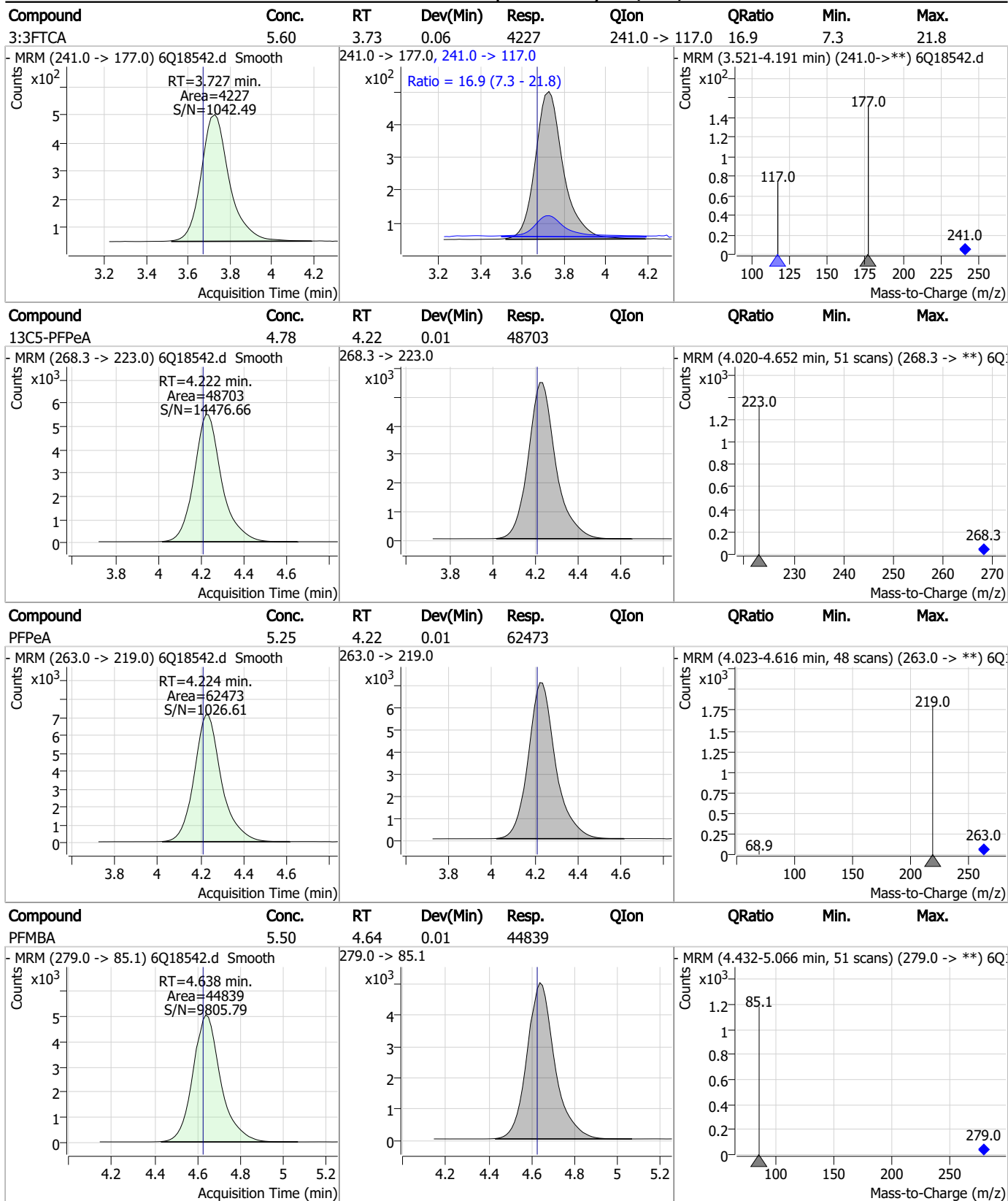
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Perfluorinated Compounds by LC/MS/MS



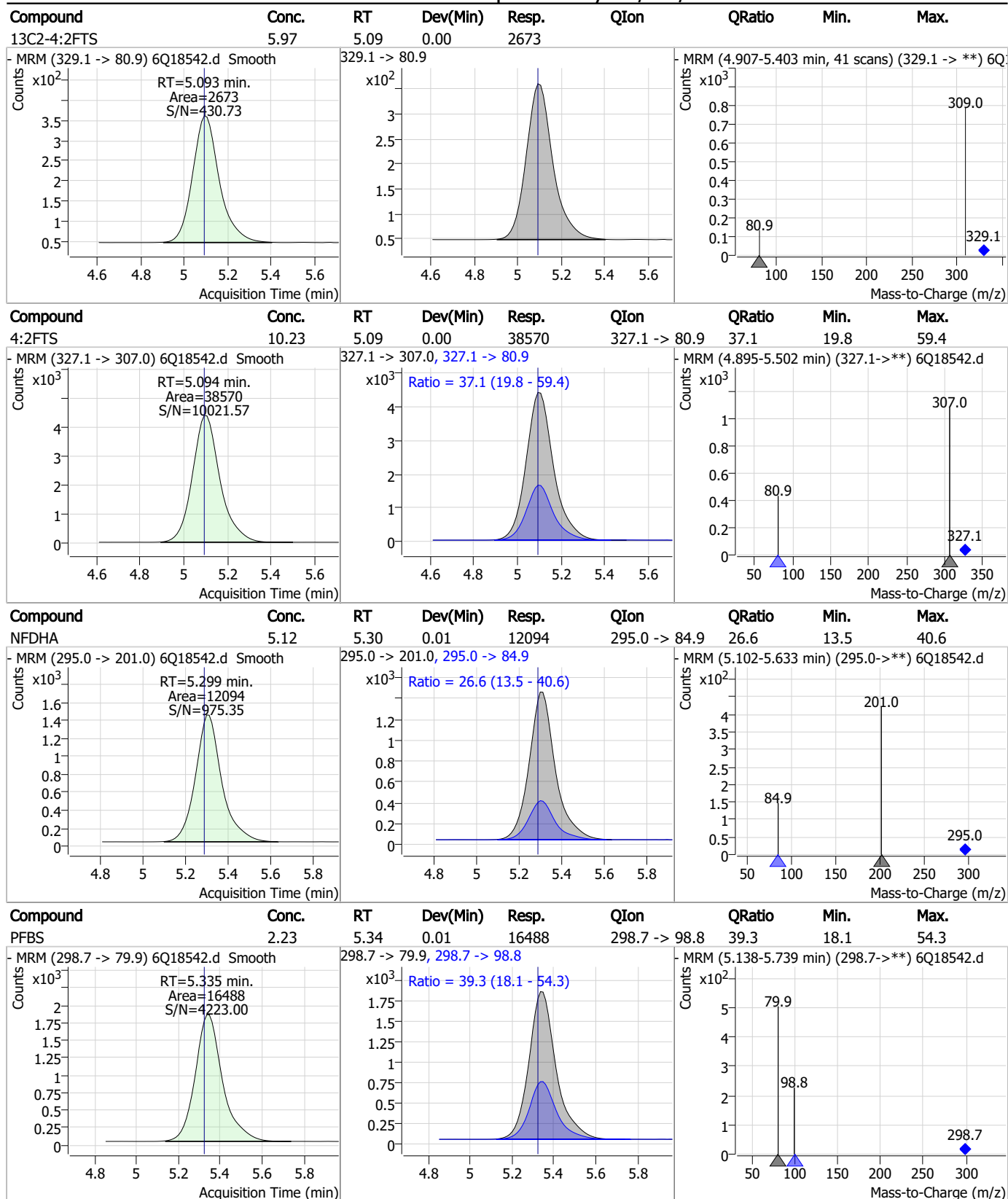
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Perfluorinated Compounds by LC/MS/MS



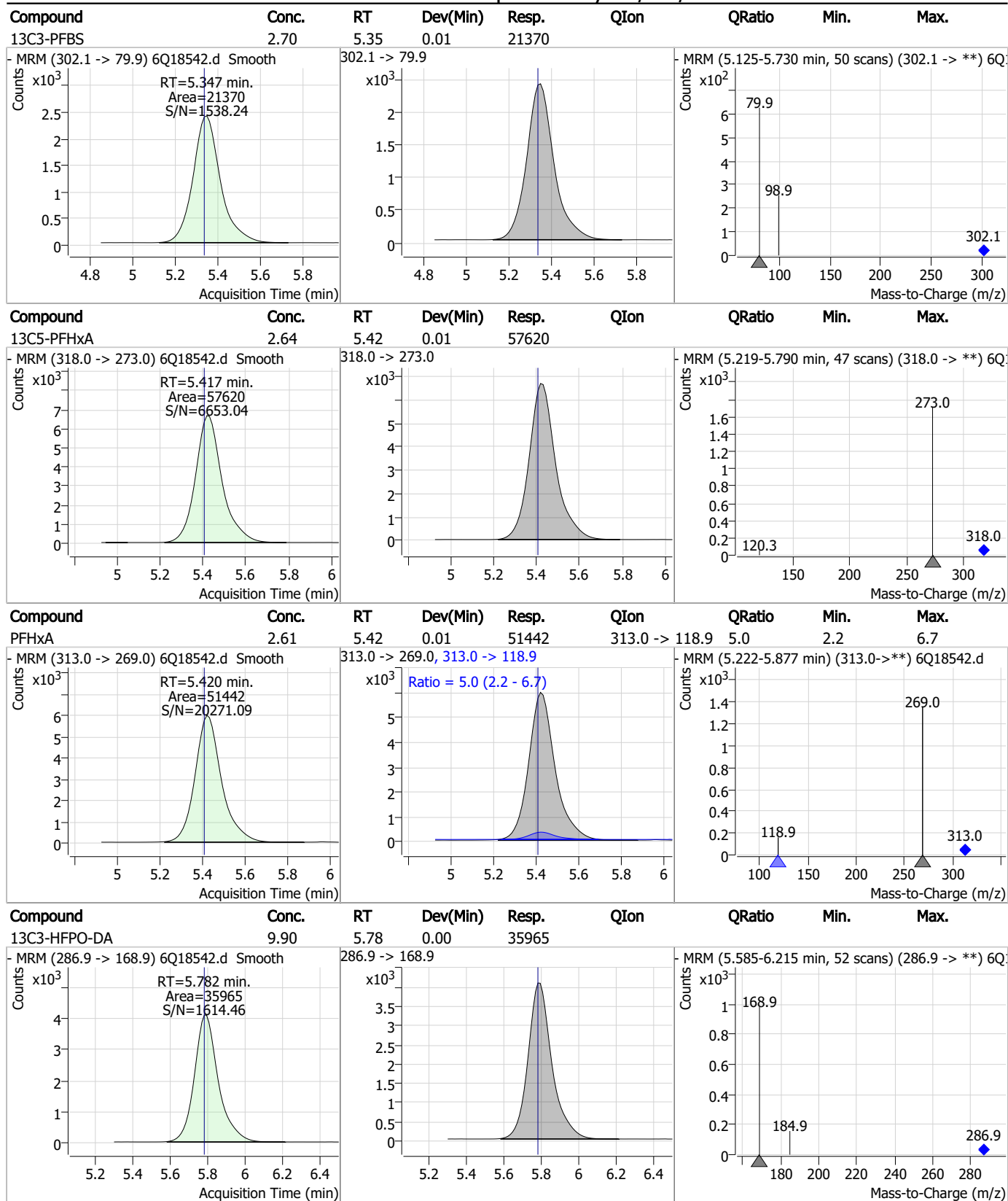
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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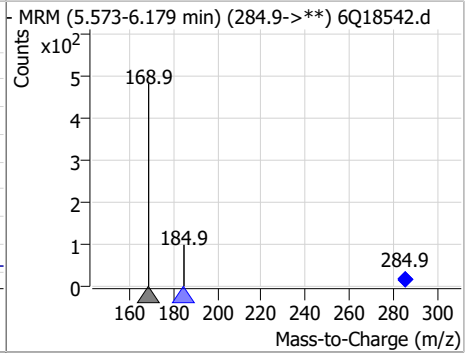
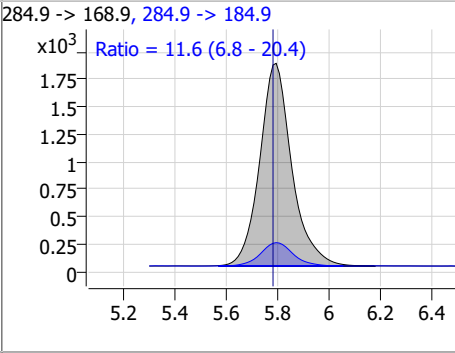
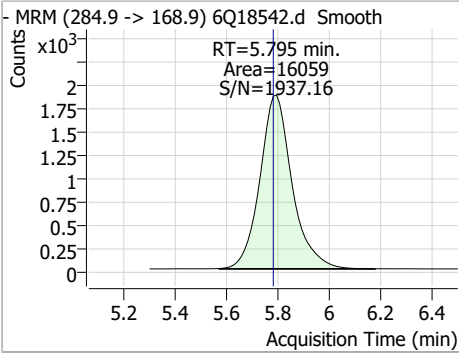
Perfluorinated Compounds by LC/MS/MS



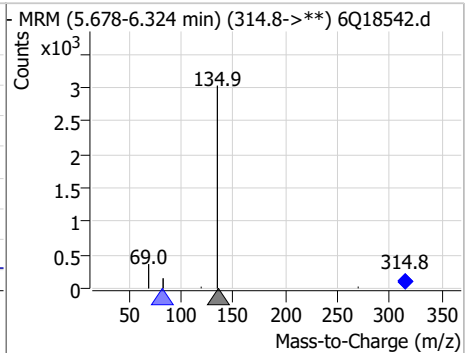
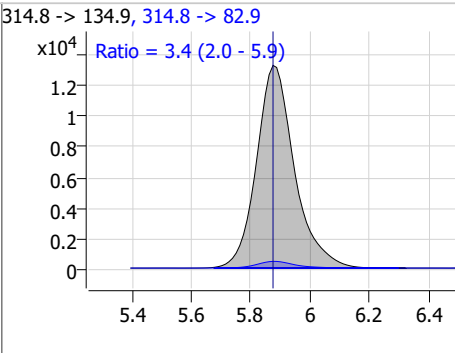
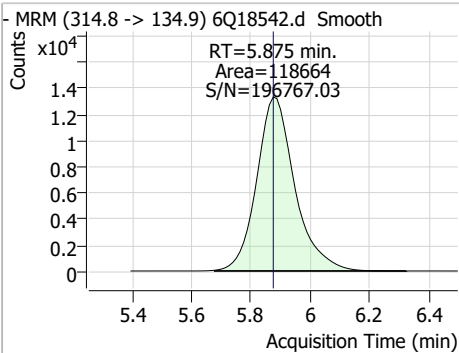
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Perfluorinated Compounds by LC/MS/MS

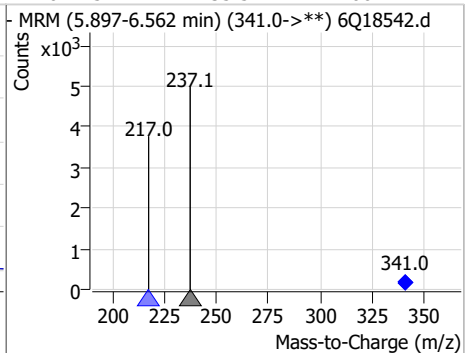
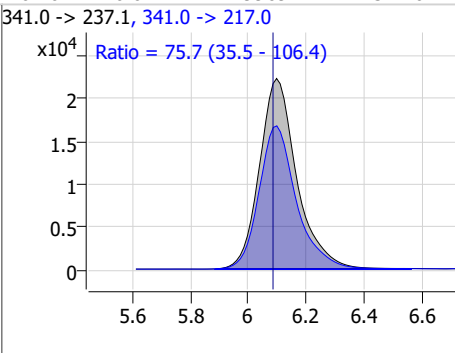
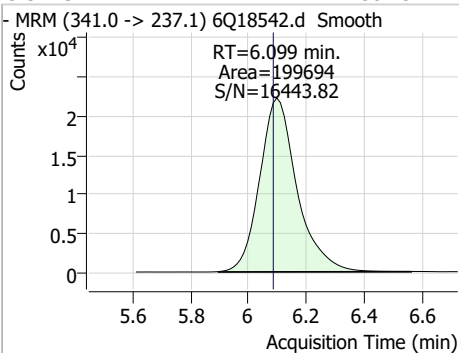
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.32	5.80	0.01	16059	284.9 -> 184.9	11.6	6.8	20.4



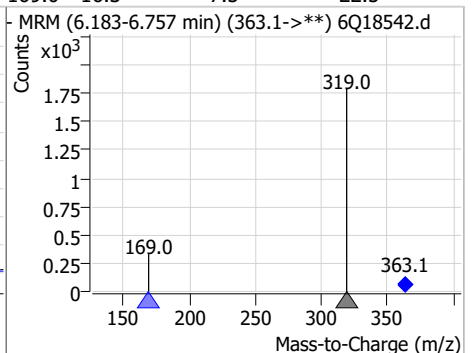
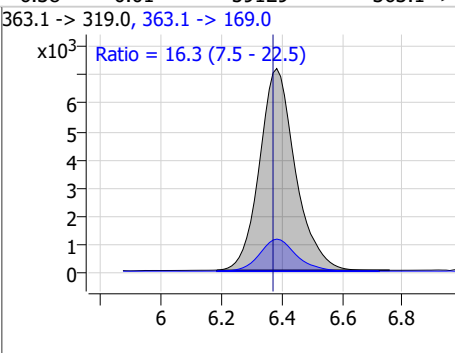
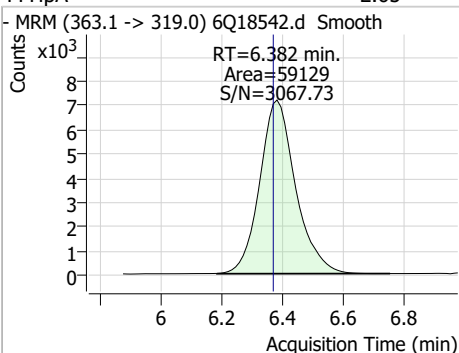
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.56	5.88	0.00	118664	314.8 -> 82.9	3.4	2.0	5.9



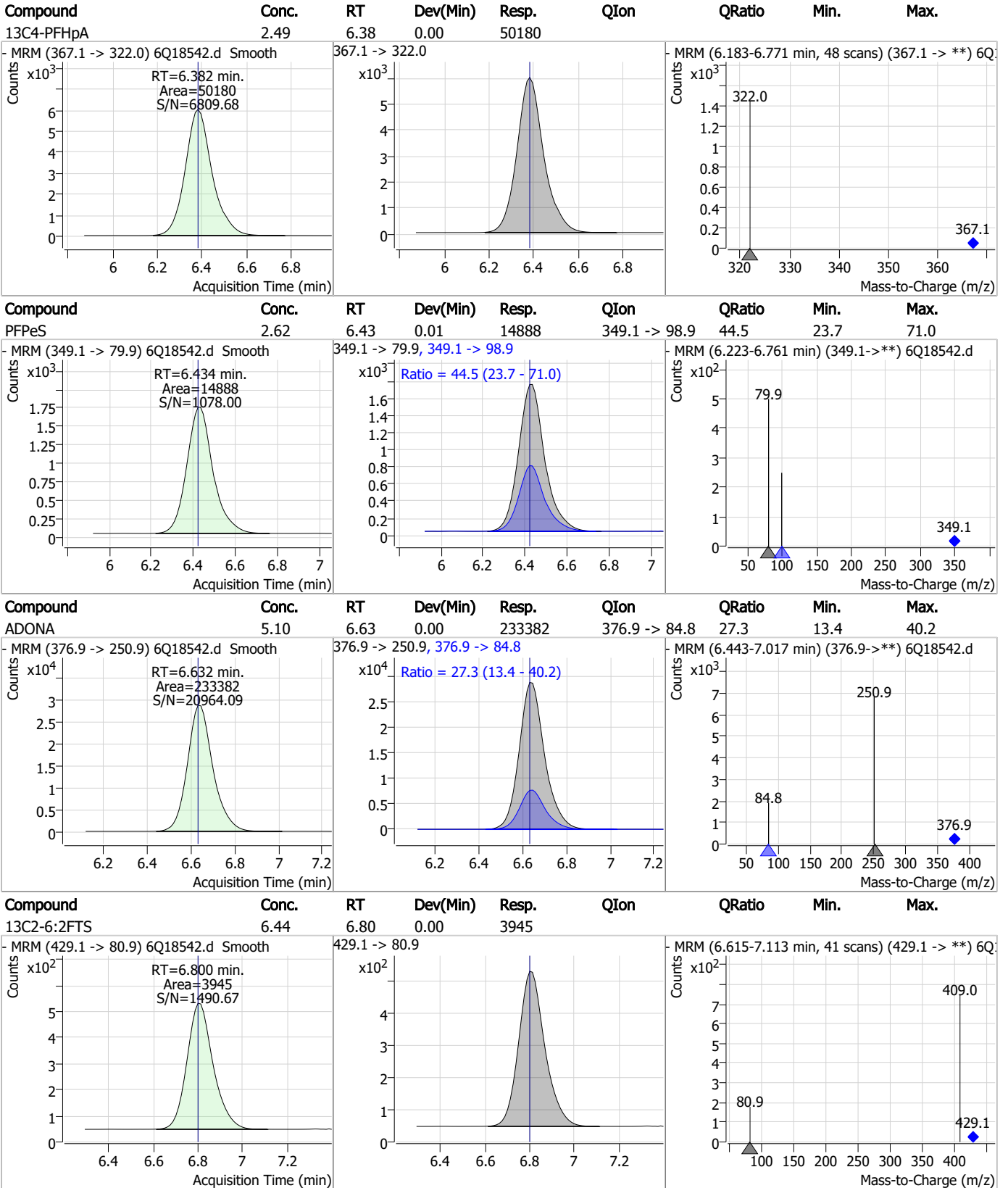
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	58.45	6.10	0.01	199694	341.0 -> 217.0	75.7	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.65	6.38	0.01	59129	363.1 -> 169.0	16.3	7.5	22.5



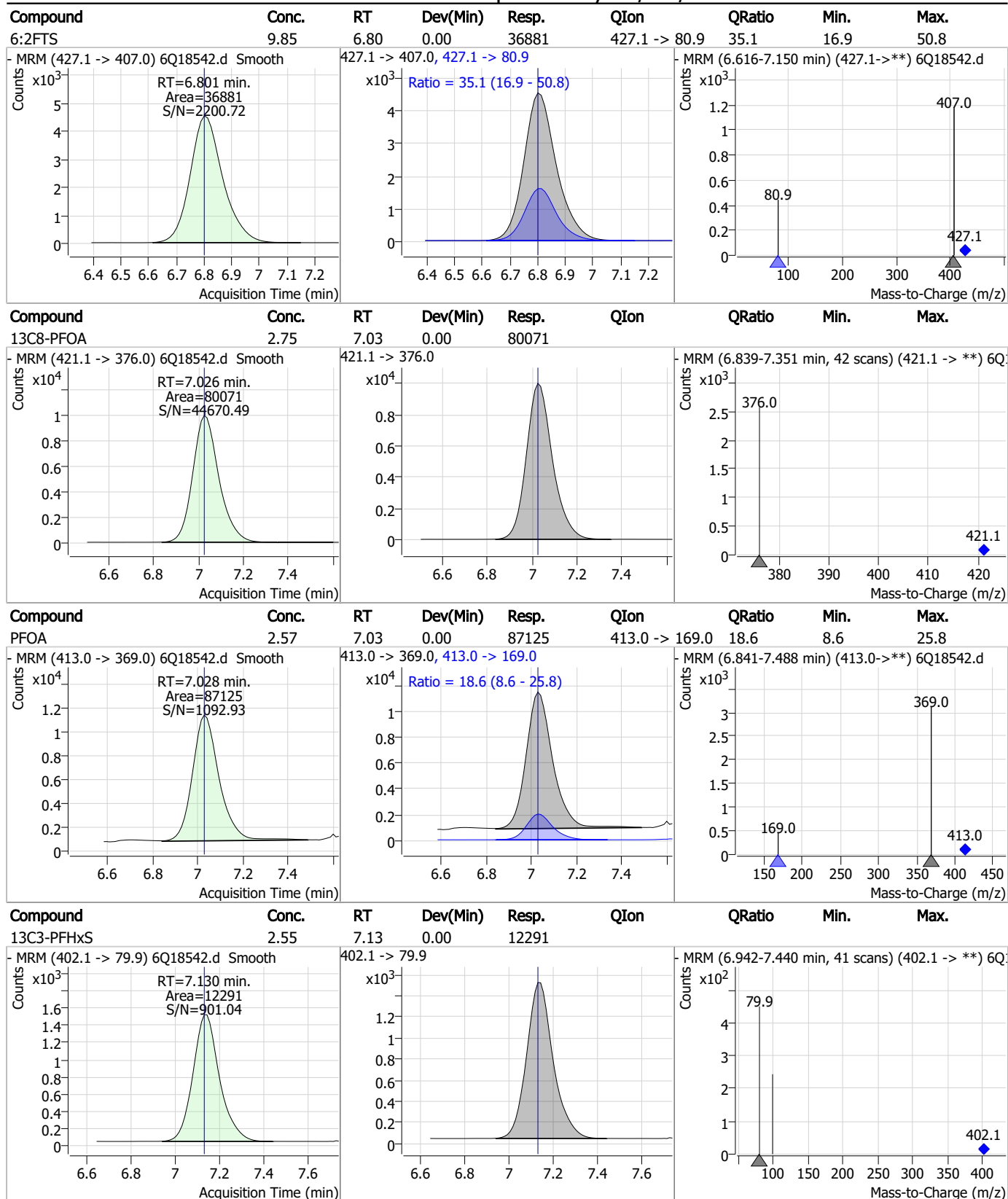
Perfluorinated Compounds by LC/MS/MS



7.3.1

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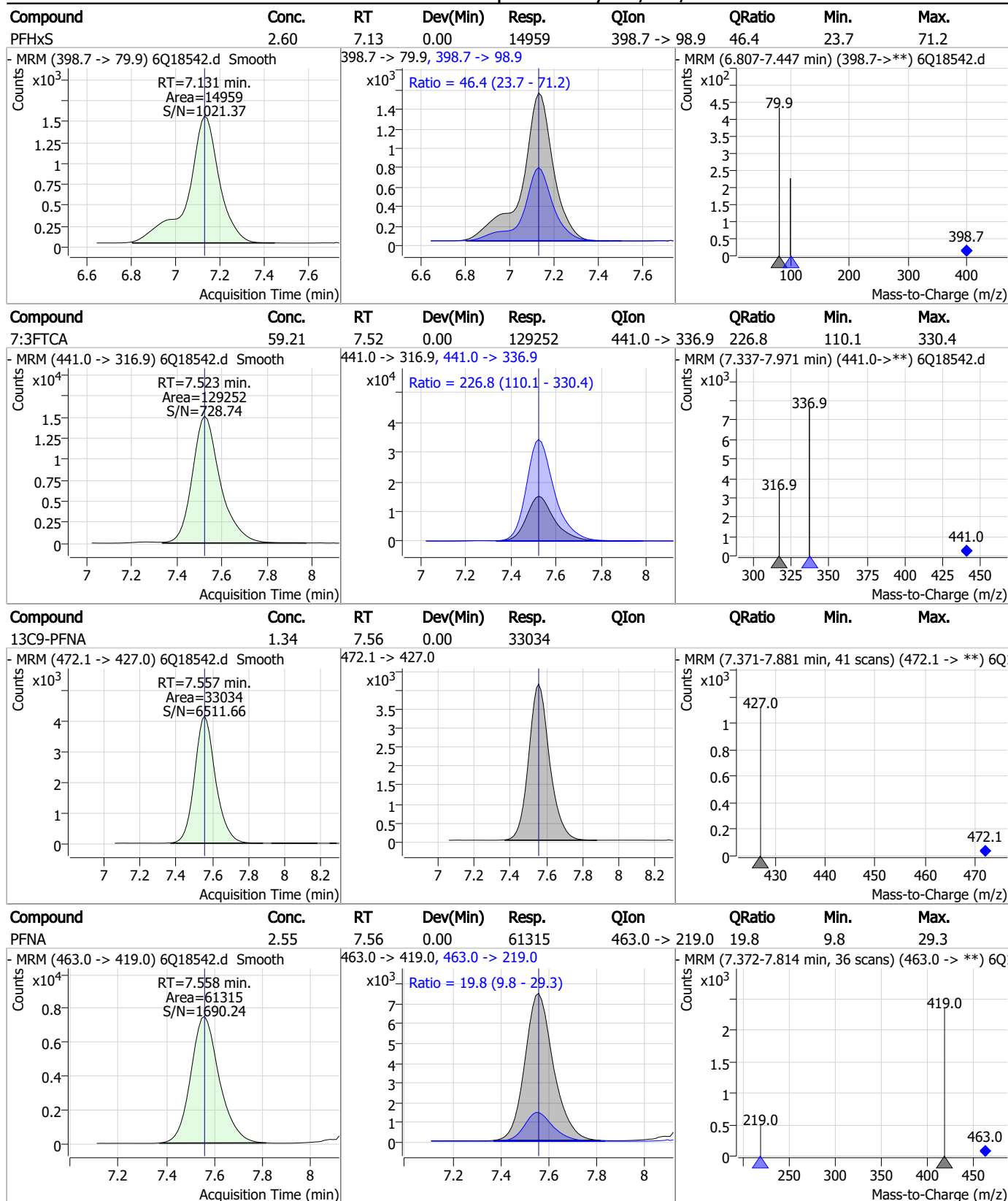
Perfluorinated Compounds by LC/MS/MS



7.3.1
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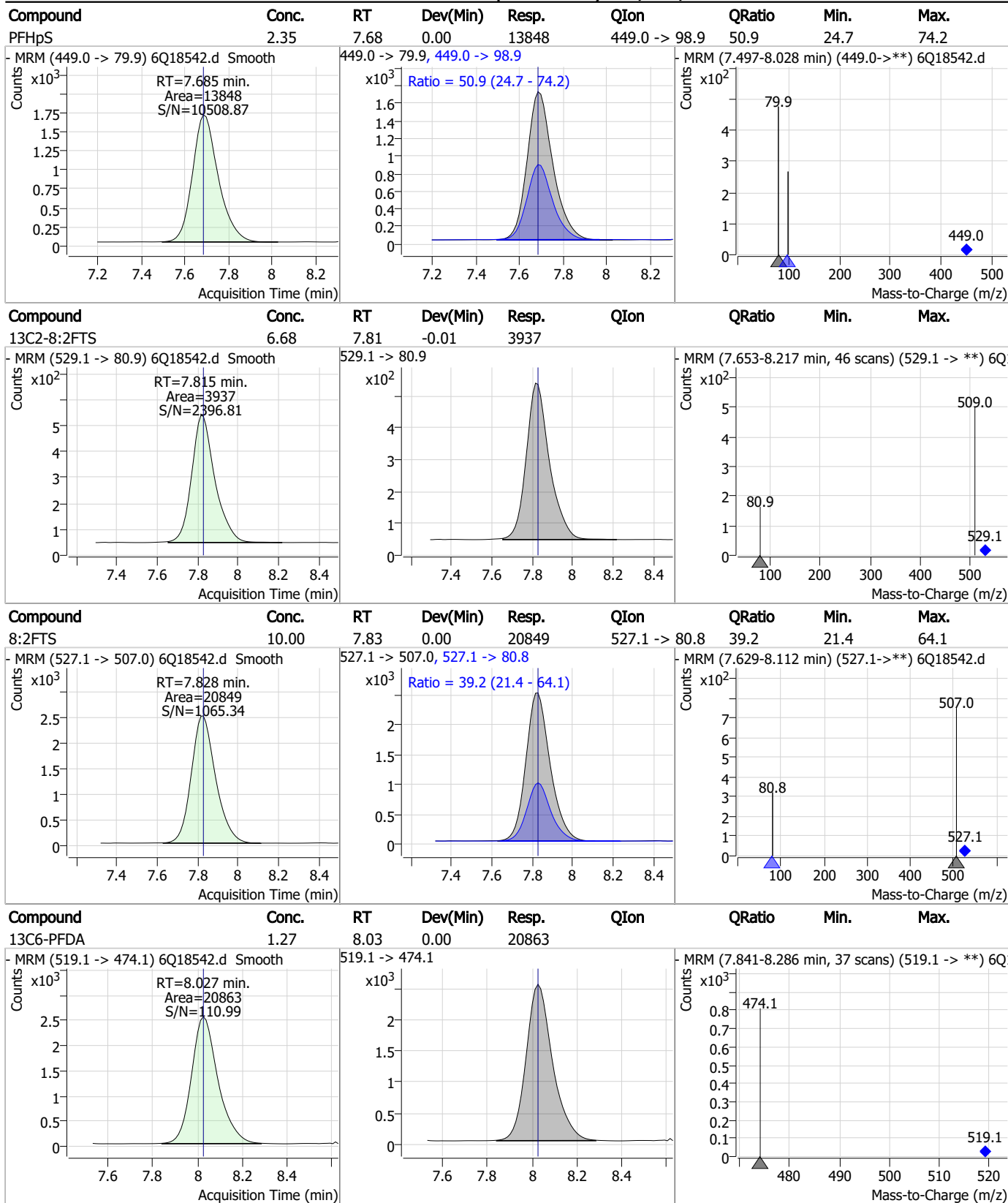


Perfluorinated Compounds by LC/MS/MS



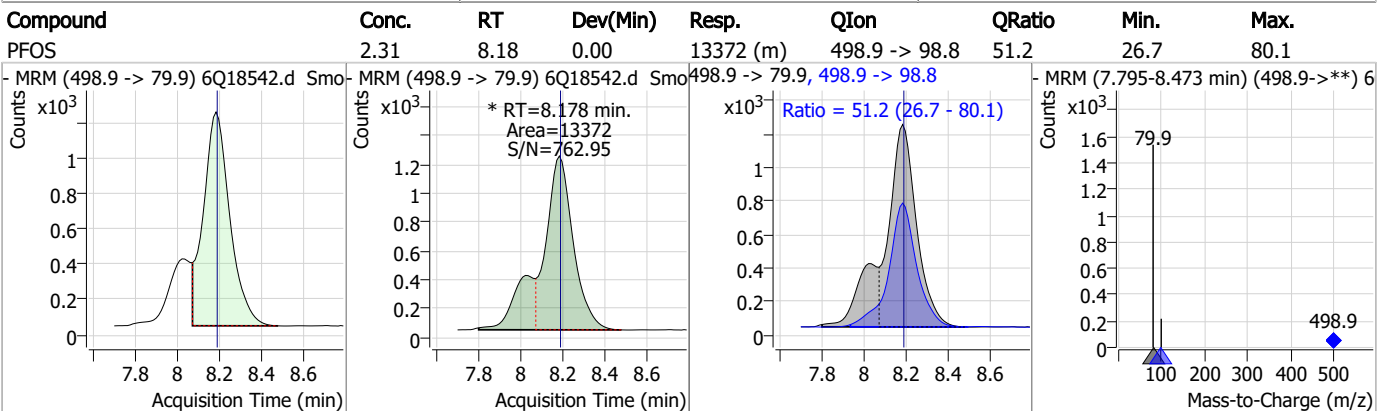
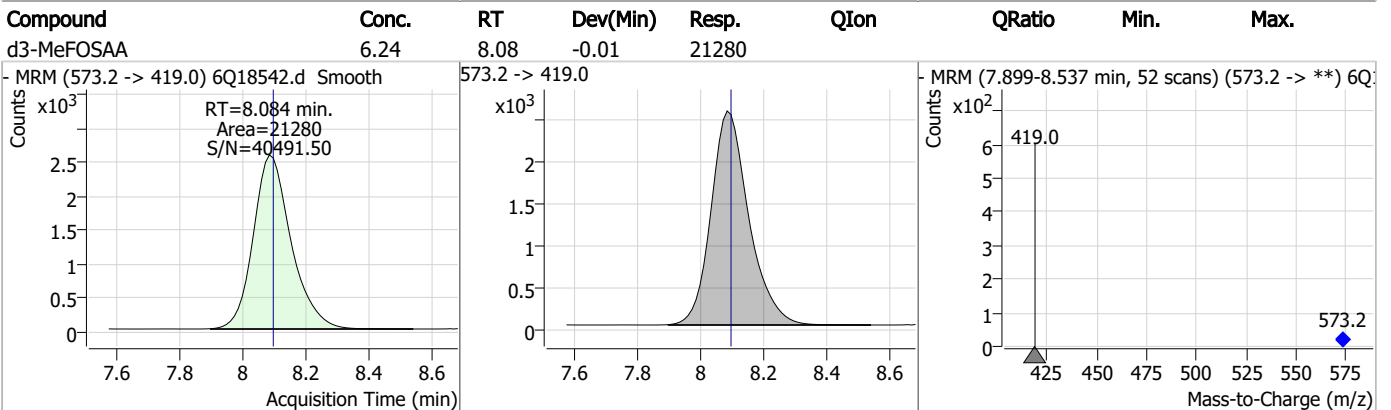
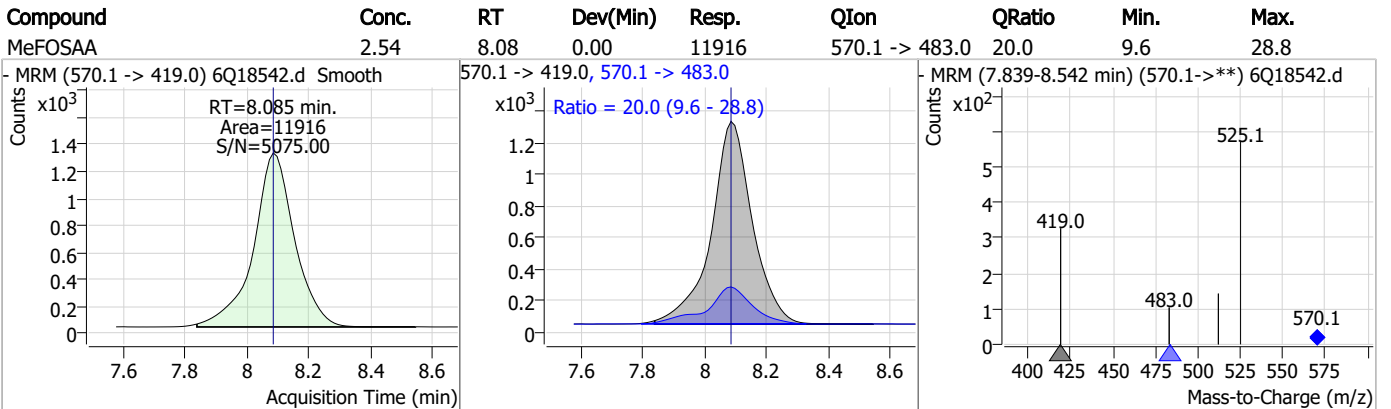
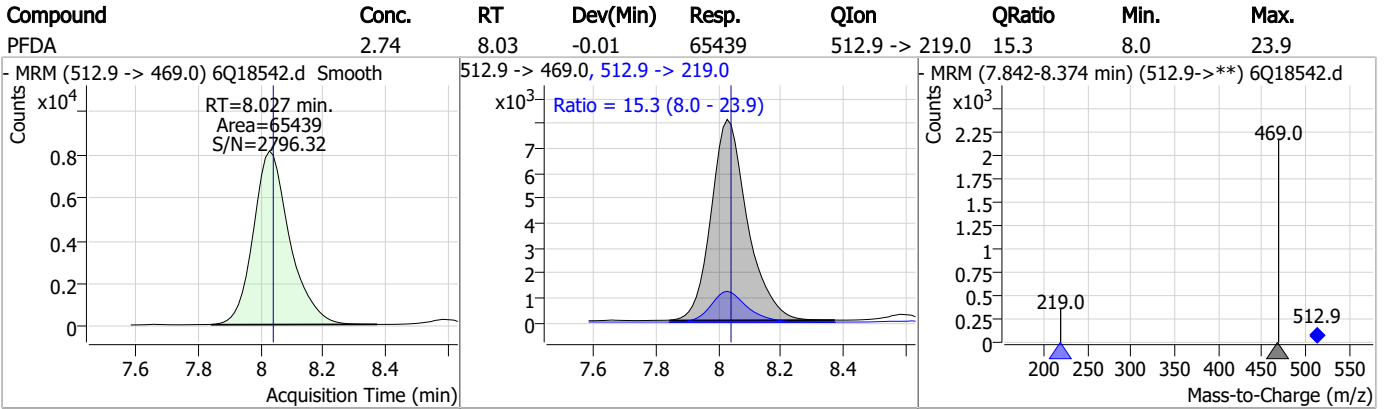
7.3.1
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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Perfluorinated Compounds by LC/MS/MS

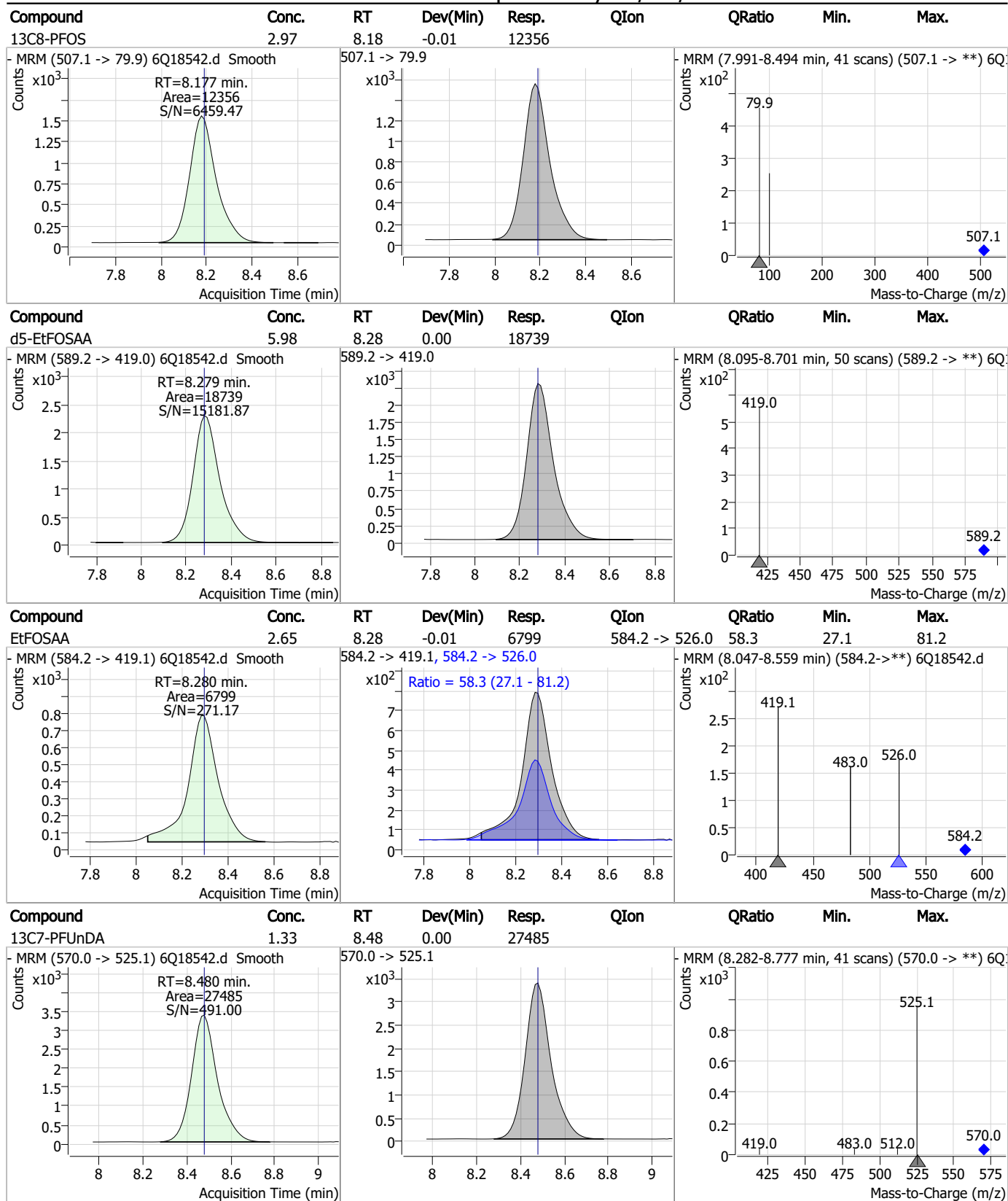


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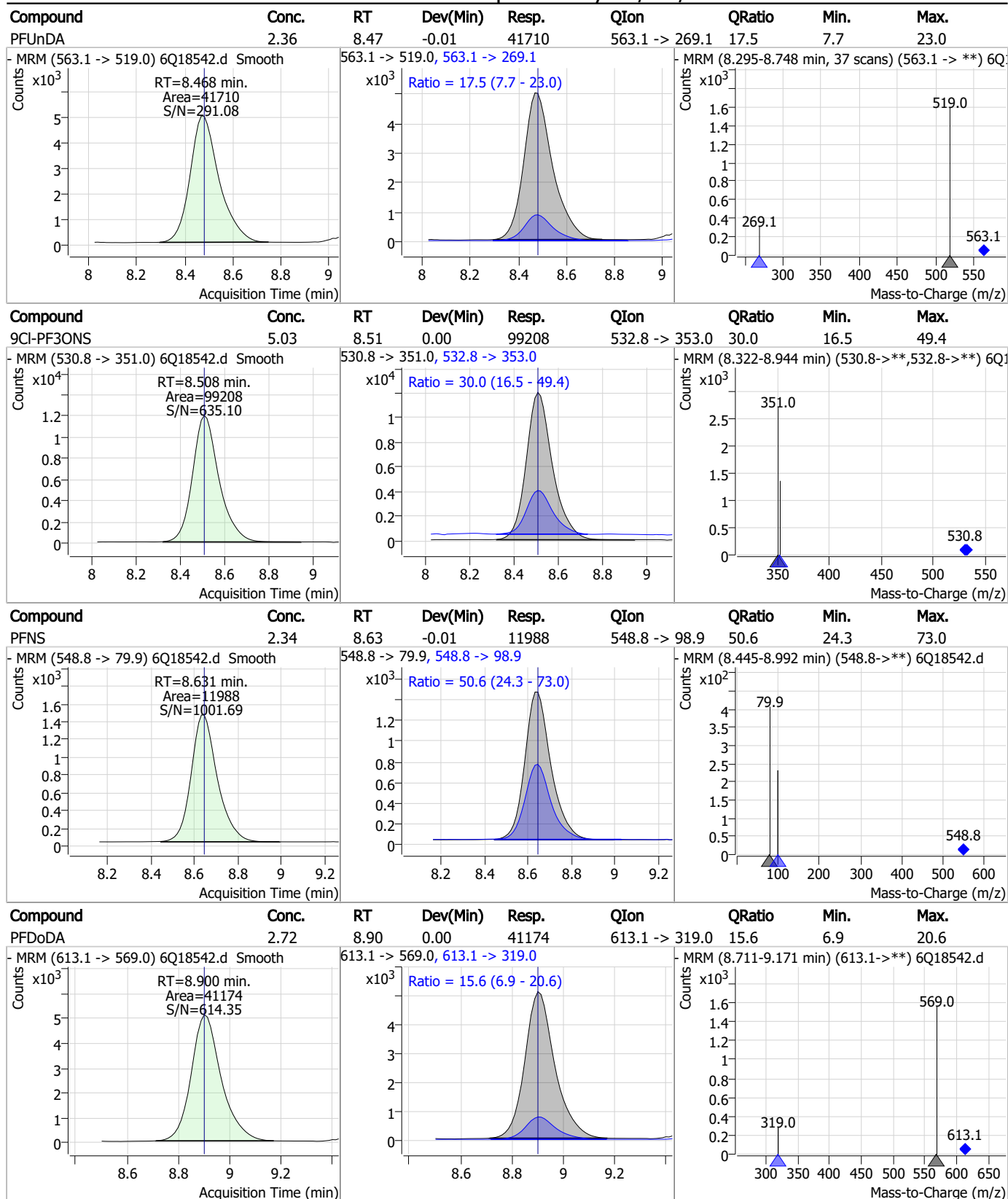


Perfluorinated Compounds by LC/MS/MS



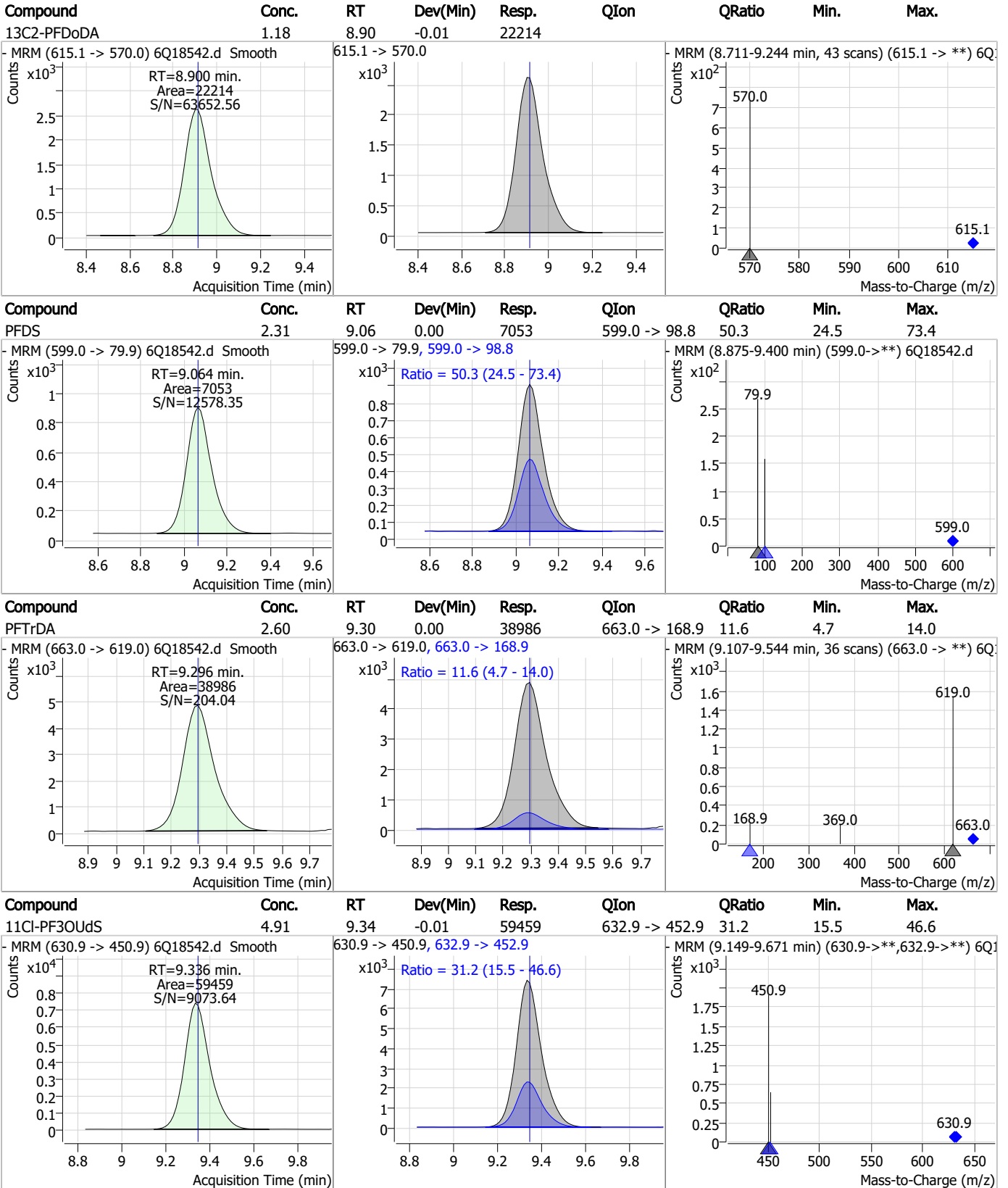
7.3.1
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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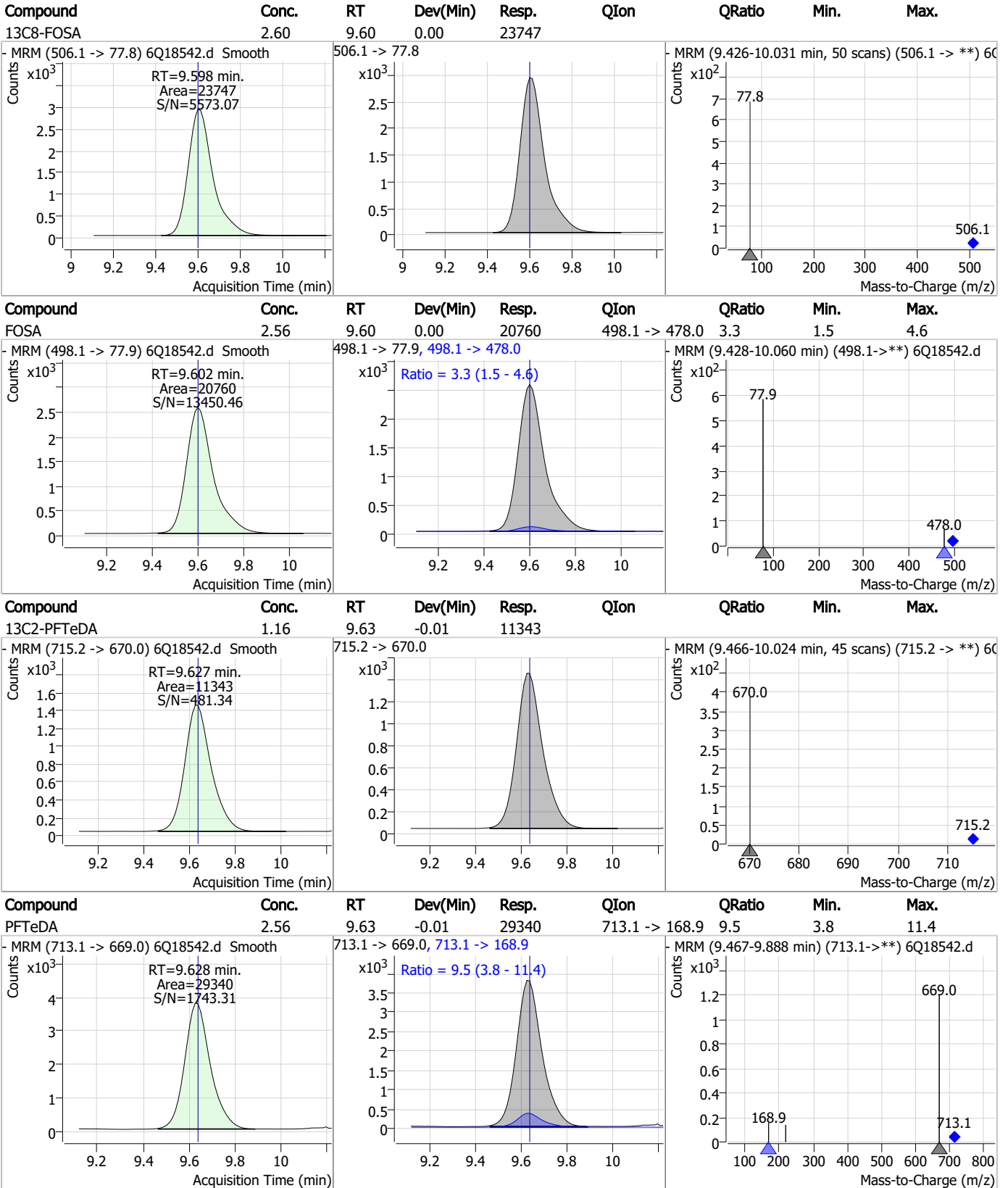
Perfluorinated Compounds by LC/MS/MS



7.3.1

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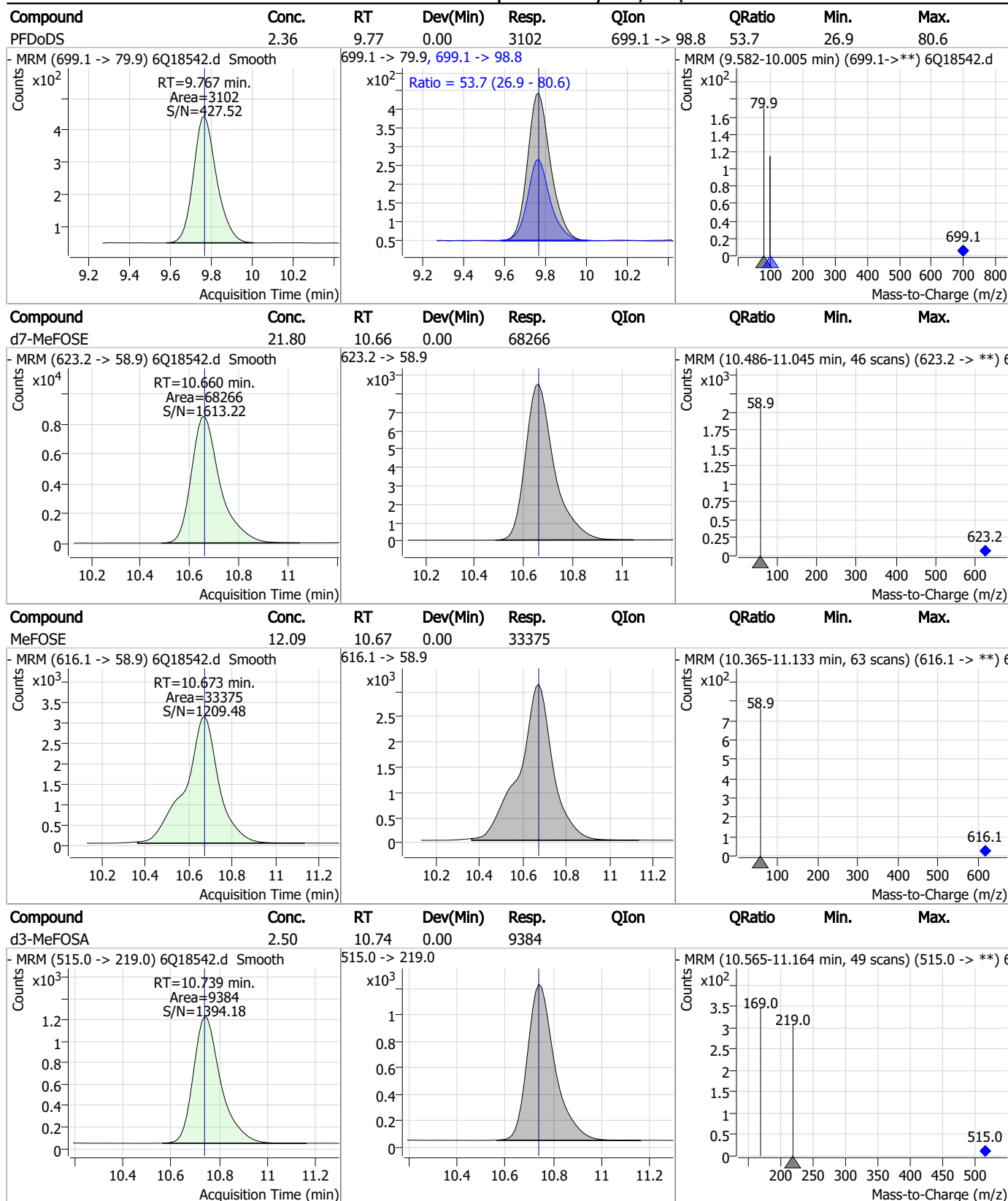
Perfluorinated Compounds by LC/MS/MS



7.3.1

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Perfluorinated Compounds by LC/MS/MS

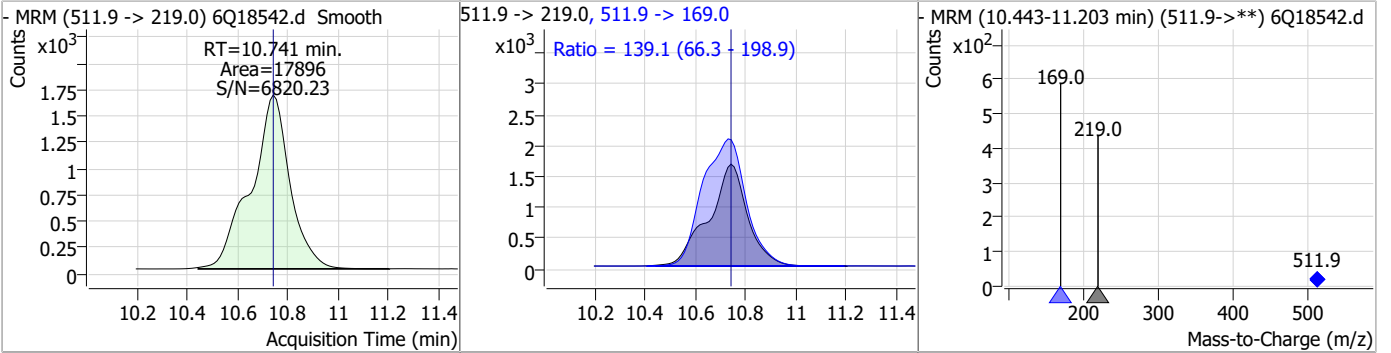


7.3.1

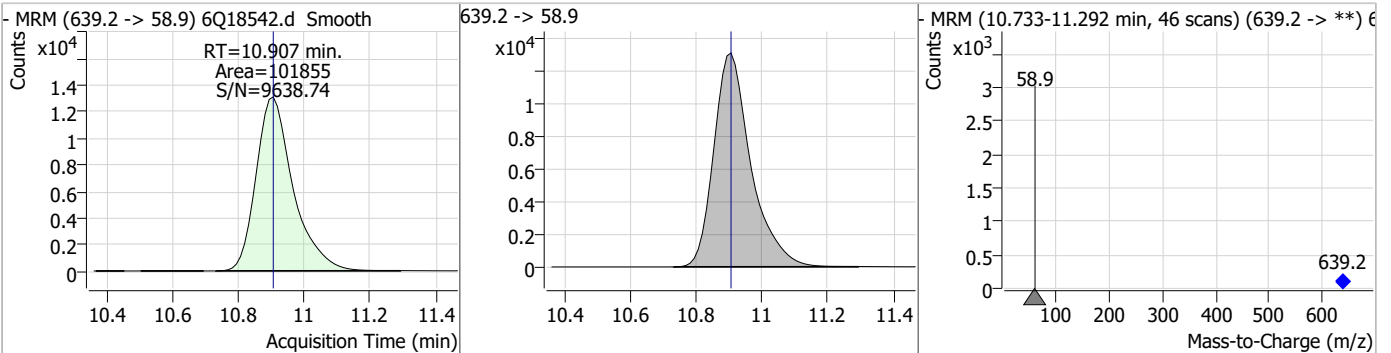
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Perfluorinated Compounds by LC/MS/MS

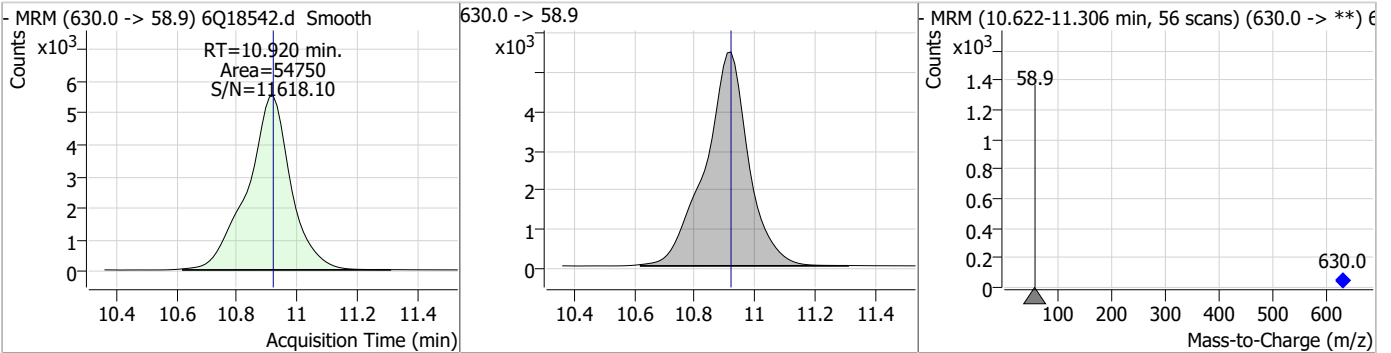
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.05	10.74	0.00	17896	511.9 -> 169.0	139.1	66.3	198.9



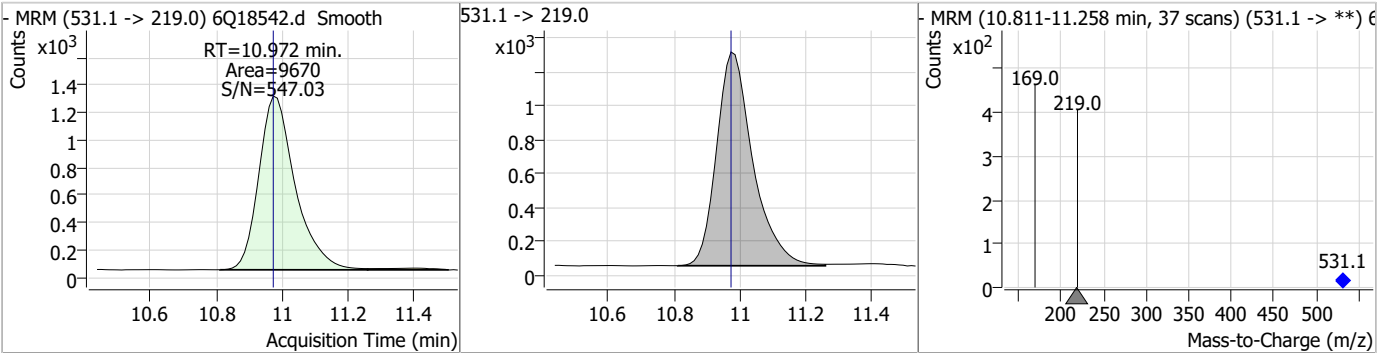
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.60	10.91	0.00	101855				



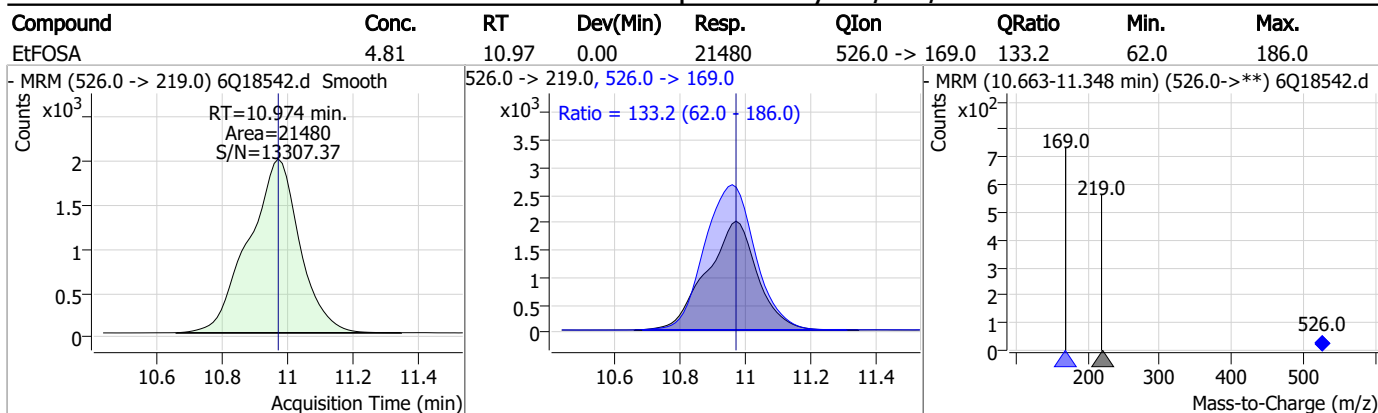
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.21	10.92	0.00	54750				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.66	10.97	0.00	9670				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: OP97070-BS Method: EPA DRAFT 1633
Lab FileID: 6Q18542.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 22:06 Supervisor approved: 05/31/23 21:25 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18543.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 10:21:10 PM
 Sample Name : op97070-llbs:3
 Vial : P6-B6
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP97070,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	162818	10.00 µg/L	0.053
M5-PFPeA	4.235	268.3 -> 223.0	53058	5.00 µg/L	0.025
M5-PFHxA	5.429	318.0 -> 273.0	57547	2.50 µg/L	0.025
M4-PFHpA	6.382	367.1 -> 322.0	53687	2.50 µg/L	0.000
M8-PFOA	7.038	421.1 -> 376.0	80564	2.50 µg/L	0.012
M9-PFNA	7.557	472.1 -> 427.0	32559	1.25 µg/L	0.000
M6-PFDA	8.039	519.1 -> 474.1	20367	1.25 µg/L	0.012
M7-PFUnDA	8.480	570.0 -> 525.1	25370	1.25 µg/L	0.000
M2-PFDoDA	8.900	615.1 -> 570.0	22714	1.25 µg/L	-0.012
M2-PFTeDA	9.639	715.2 -> 670.0	11332	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	23792	2.50 µg/L	0.000
M3-PFBS	5.347	302.1 -> 79.9	21590	2.50 µg/L	0.012
M3-PFHxS	7.142	402.1 -> 79.9	13160	2.50 µg/L	0.012
M8-PFOS	8.189	507.1 -> 79.9	11682	2.50 µg/L	0.000
M2-4:2FTS	5.106	329.1 -> 80.9	2845	5.00 µg/L	0.013
M2-6:2FTS	6.813	429.1 -> 80.9	3887	5.00 µg/L	0.012
M2-8:2FTS	7.827	529.1 -> 80.9	3821	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	20896	5.00 µg/L	-0.012
M3-HFPO-DA	5.794	286.9 -> 168.9	35676	10.00 µg/L	0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	18839	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	69807	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	100165	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	9487	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9401	2.50 µg/L	0.000
13C4-PFOS	8.190	502.8 -> 79.9	13218	2.50 µg/L	0.000
13C3-PFBA	2.879	216.0 -> 172.0	61418	5.00 µg/L	0.052
18O2-PFHxS	7.141	403.0 -> 83.9	8823	2.50 µg/L	0.012
13C4-PFOA	7.027	417.1 -> 372.0	72152	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	25784	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	37453	1.25 µg/L	0.000
13C2-PFHxA	5.430	315.1 -> 270.0	47029	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.106	329.1 -> 80.9	2845	6.43 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.6%		
13C2-6:2FTS	6.813	429.1 -> 80.9	3887	6.42 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.3%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3821	6.56 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 131.2%		
13C2-PFDoDA	8.900	615.1 -> 570.0	22714	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-PFTeDA	9.639	715.2 -> 670.0	11332	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFBS	5.347	302.1 -> 79.9	21590	2.76 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.2%		
13C3-PFHxS	7.142	402.1 -> 79.9	13160	2.76 µg/L	0.012

7.3.2
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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 = 110.4%	
13C4-PFBA	2.876	216.8 -> 171.9	162818	11.07 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.7%	
13C4-PFHpA	6.382	367.1 -> 322.0	53687	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.1%	
13C5-PFHxA	5.429	318.0 -> 273.0	57547	2.87 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.0%	
13C5-PFPeA	4.235	268.3 -> 223.0	53058	5.68 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C6-PFDA	8.039	519.1 -> 474.1	20367	1.30 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C7-PFUnDA	8.480	570.0 -> 525.1	25370	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C8-FOSA	9.598	506.1 -> 77.8	23792	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C8-PFOA	7.038	421.1 -> 376.0	80564	2.91 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.6%	
13C8-PFOS	8.189	507.1 -> 79.9	11682	2.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.3%	
13C9-PFNA	7.557	472.1 -> 427.0	32559	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.4%	
d3-MeFOSAA	8.084	573.2 -> 419.0	20896	6.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 123.5%	
13C3-HFPO-DA	5.794	286.9 -> 168.9	35676	10.72 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
d3-MeFOSA	10.739	515.0 -> 219.0	9401	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
d5-EtFOSAA	8.279	589.2 -> 419.0	18839	6.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.2%	
d7-MeFOSE	10.660	623.2 -> 58.9	69807	22.46 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.9%	
d9-EtFOSE	10.907	639.2 -> 58.9	100165	24.38 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	9487	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	11937	2.98 µg/L	97
		327.1 -> 80.9	4490		
6:2FTS	6.801	427.1 -> 407.0	11553	3.13 µg/L	98
		427.1 -> 80.9	4065		
8:2FTS	7.828	527.1 -> 507.0	6226	3.08 µg/L	100
		527.1 -> 80.8	2665		
EtFOSAA	8.293	584.2 -> 419.1	2062	0.80 µg/L	99
		584.2 -> 526.0	1131		
FOSA	9.602	498.1 -> 77.9	6178	0.76 µg/L	100
		498.1 -> 478.0	178		
MeFOSAA	8.097	570.1 -> 419.0	4071	0.89 µg/L	100
		570.1 -> 483.0	788		
PFBA	2.882	212.8 -> 168.9	16909	3.15 µg/L	100
PFBS	5.335	298.7 -> 79.9	5077	0.68 µg/L	99
		298.7 -> 98.8	1859		
PFDA	8.027	512.9 -> 469.0	18199	0.78 µg/L	100
		512.9 -> 219.0	2911		
PFDODA	8.900	613.1 -> 569.0	12365	0.80 µg/L	95
		613.1 -> 319.0	1966		
PFDS	9.064	599.0 -> 79.9	2284	0.79 µg/L	91

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	971	0.74 µg/L	96
		363.1 -> 319.0	17627		
PFHpS	7.685	363.1 -> 169.0	2902	0.81 µg/L	97
		449.0 -> 79.9	4496		
PFHxA	5.420	449.0 -> 98.9	2134	0.76 µg/L	98
		313.0 -> 269.0	15025		
PFHxS	7.143	313.0 -> 118.9	800	0.69 µg/L	95
		398.7 -> 79.9	4277		
PFNA	7.558	398.7 -> 98.9	2187	0.81 µg/L	100
		463.0 -> 419.0	19115		
PFNS	8.644	463.0 -> 219.0	3735	0.78 µg/L	94
		548.8 -> 79.9	3782		
PFOA	7.028	548.8 -> 98.9	1994	0.78 µg/L	97
		413.0 -> 369.0	26739		
PFOS	8.178	413.0 -> 169.0	4891	0.76 µg/L	95
		498.9 -> 79.9	4138		
PFPeA	4.237	498.9 -> 98.8	2070	1.54 µg/L	100
		263.0 -> 219.0	19951		
PFPeS	6.434	349.1 -> 79.9	4527	0.74 µg/L	98
		349.1 -> 98.9	2078		
PFTeDA	9.640	713.1 -> 669.0	8910	0.78 µg/L	96
		713.1 -> 168.9	800		
PFTrDA	9.296	663.0 -> 619.0	12629	0.82 µg/L	94
		663.0 -> 168.9	1448		
PFUnDA	8.480	563.1 -> 519.0	13218	0.81 µg/L	96
		563.1 -> 269.1	2254		
11CI-PF3OUdS	9.336	630.9 -> 450.9	17904	1.49 µg/L	98
		632.9 -> 452.9	5761		
9CI-PF3ONS	8.508	530.8 -> 351.0	29485	1.51 µg/L	100
		532.8 -> 353.0	9672		
ADONA	6.646	376.9 -> 250.9	70834	1.56 µg/L	99
		376.9 -> 84.8	19264		
HFPO-DA	5.795	284.9 -> 168.9	4749	1.59 µg/L	99
		284.9 -> 184.9	669		
3:3FTCA	3.727	241.0 -> 177.0	2546	3.10 µg/L	97
		241.0 -> 117.0	405		
5:3FTCA	6.099	341.0 -> 237.1	60129	17.62 µg/L	94
		341.0 -> 217.0	45705		
7:3FTCA	7.523	441.0 -> 316.9	41101	18.85 µg/L	94
		441.0 -> 336.9	86886		
EtFOSA	10.974	526.0 -> 219.0	6258	1.43 µg/L	92
		526.0 -> 169.0	8315		
EtFOSE	10.907	630.0 -> 58.9	16473	3.74 µg/L	100
		511.9 -> 219.0	5321		
MeFOSA	10.741	511.9 -> 169.0	7086	1.50 µg/L	100
		616.1 -> 58.9	10168		
MeFOSE	10.673	699.1 -> 79.9	957	3.60 µg/L	100
		699.1 -> 98.8	469		
PFDoDS	9.767	295.0 -> 201.0	3680	0.77 µg/L	93
		295.0 -> 84.9	936		
NFDHA	5.299	279.0 -> 85.1	13846	1.56 µg/L	97
		229.0 -> 84.9	10542		
PFMBA	4.638	314.8 -> 134.9	34576	1.52 µg/L	100
		314.8 -> 82.9	1360		
PFMPA	3.388			1.33 µg/L	100
PFEESA	5.888				

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

7.3.2
7

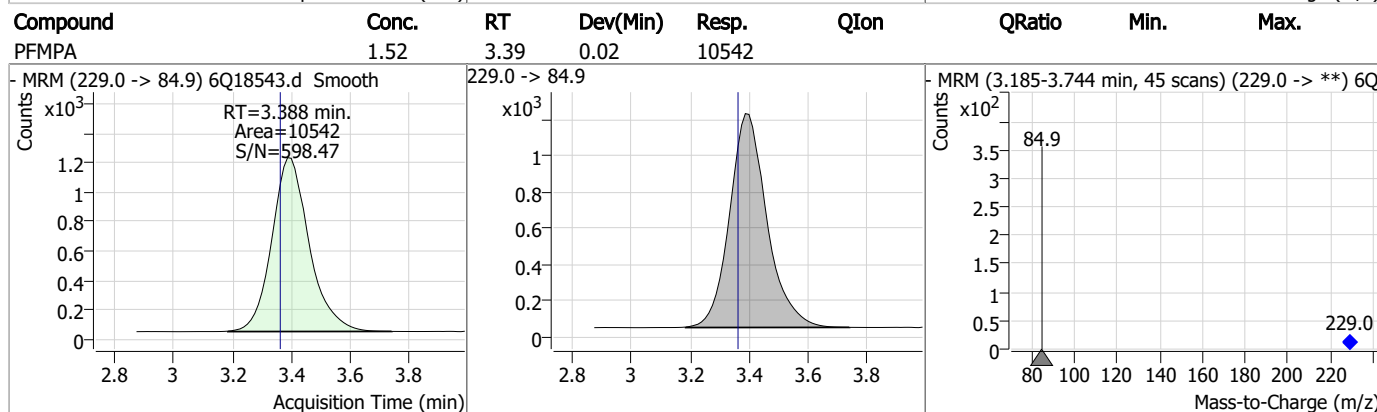
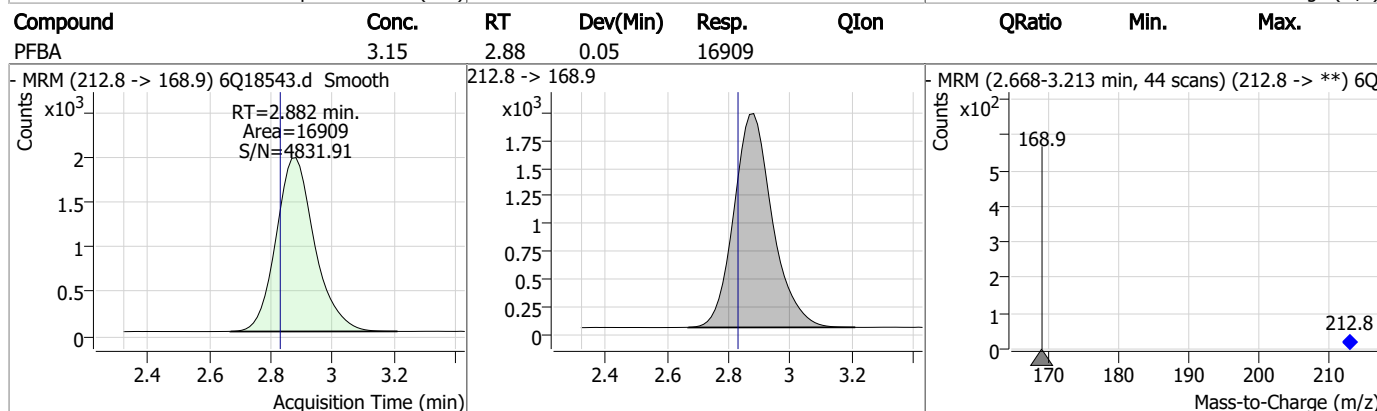
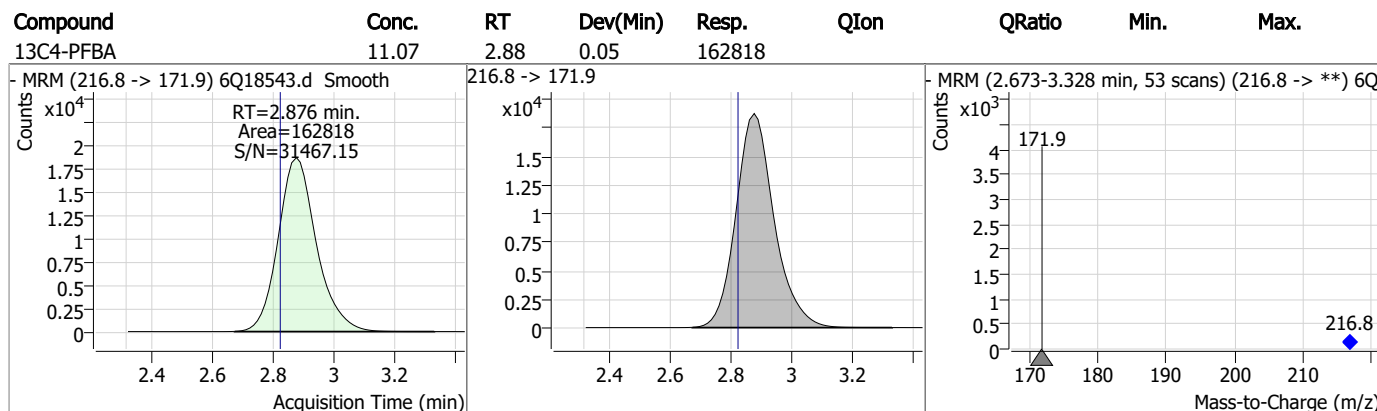
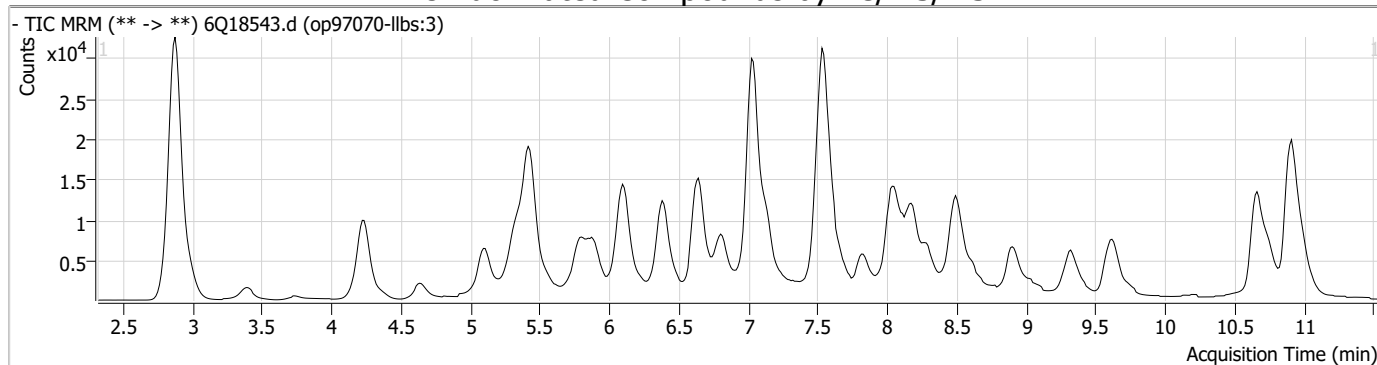
Perfluorinated Compounds by LC/MS/MS

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

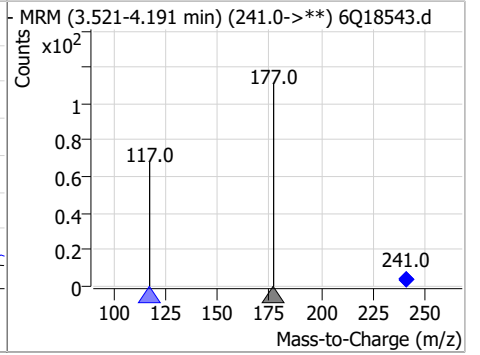
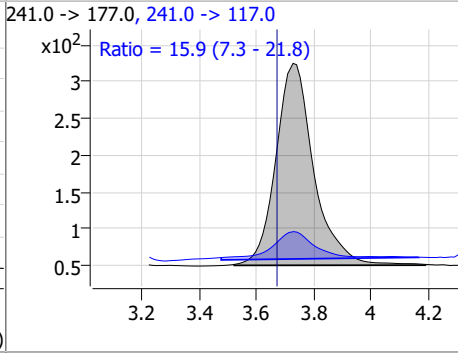
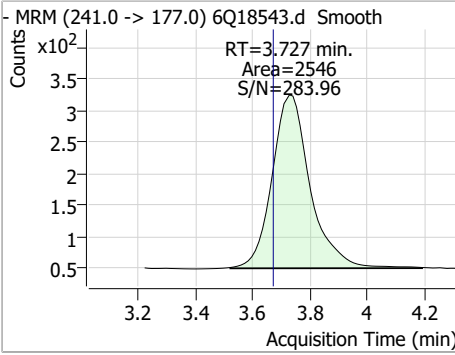
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Perfluorinated Compounds by LC/MS/MS

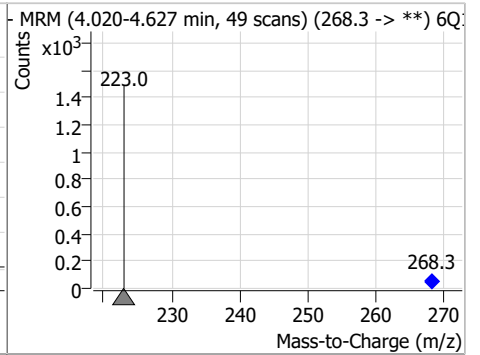
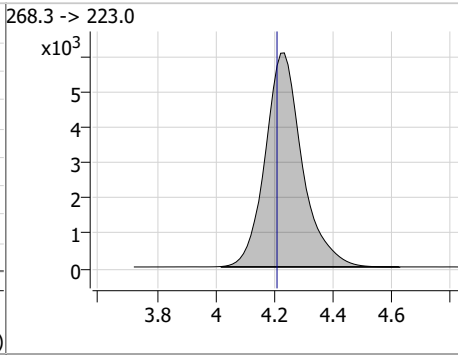
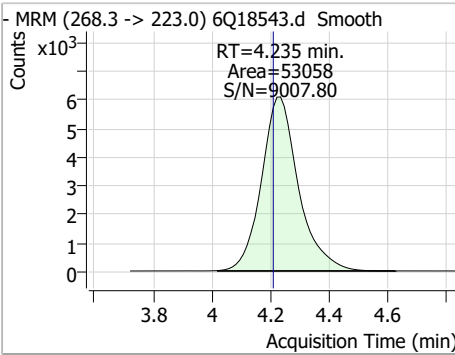


Perfluorinated Compounds by LC/MS/MS

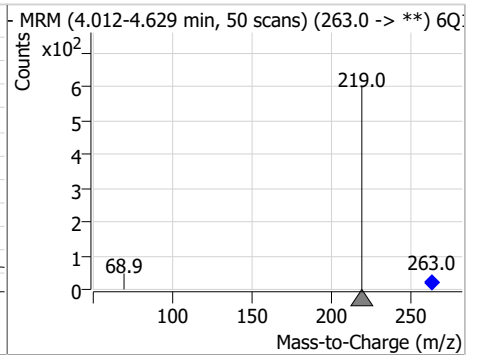
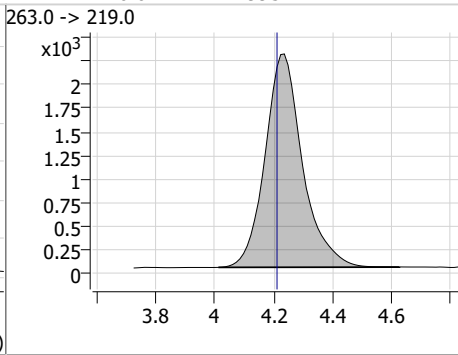
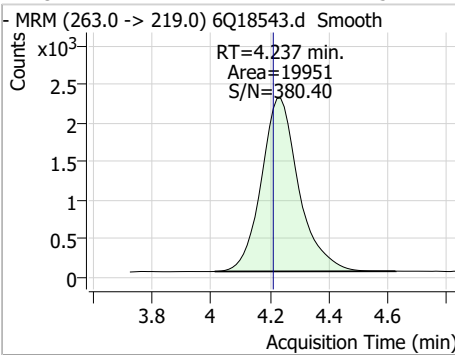
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	3.10	3.73	0.06	2546	241.0 -> 117.0	15.9	7.3	21.8



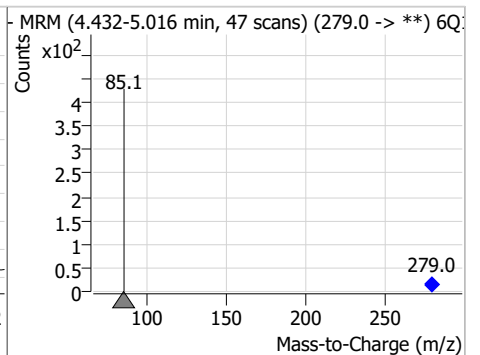
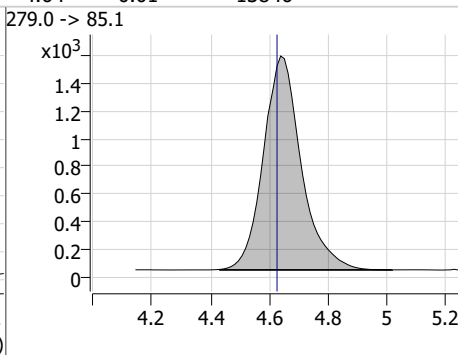
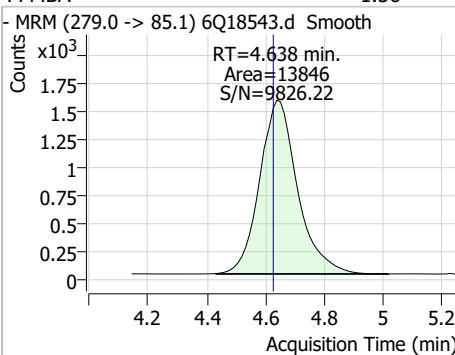
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.68	4.23	0.02	53058	268.3 -> 223.0			



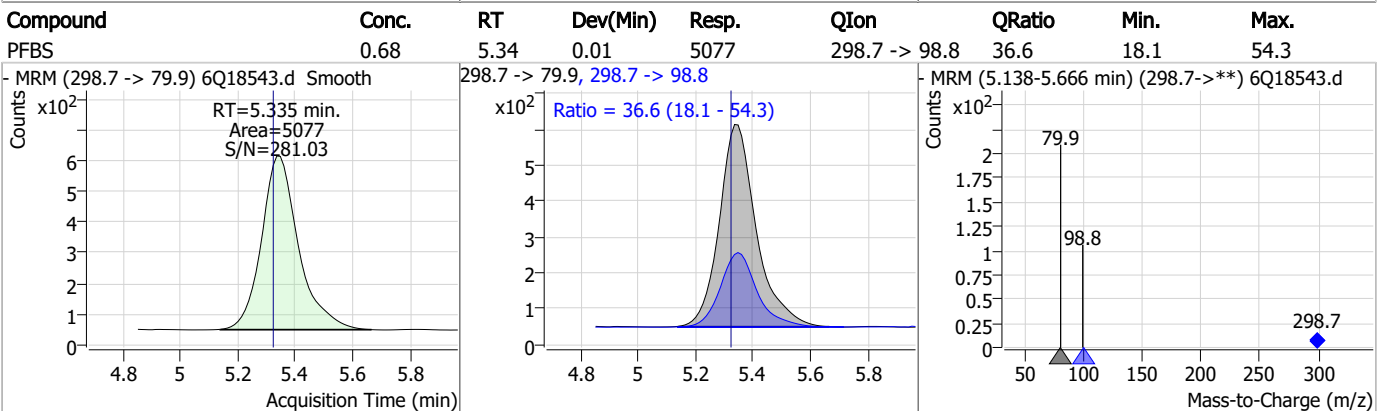
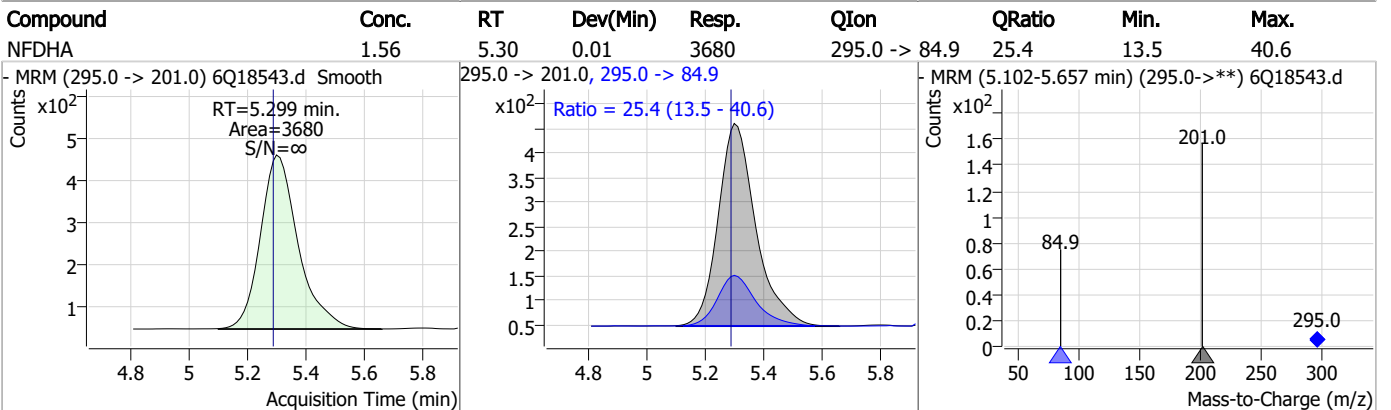
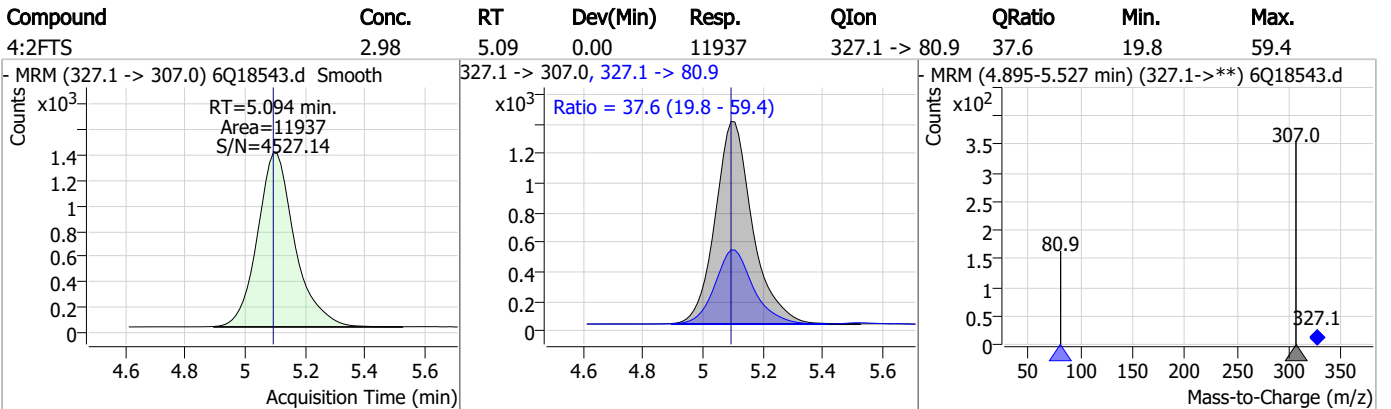
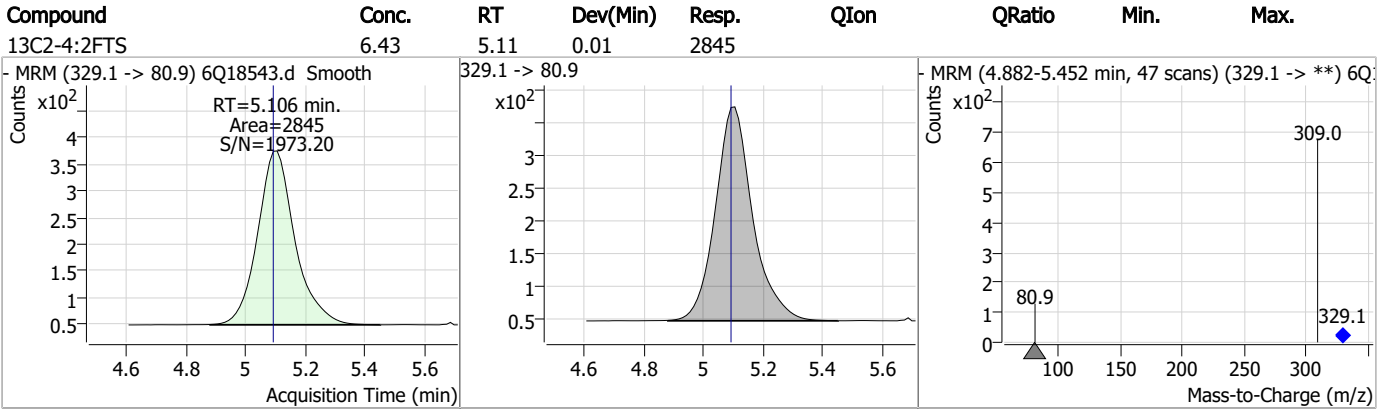
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.54	4.24	0.02	19951	263.0 -> 219.0			



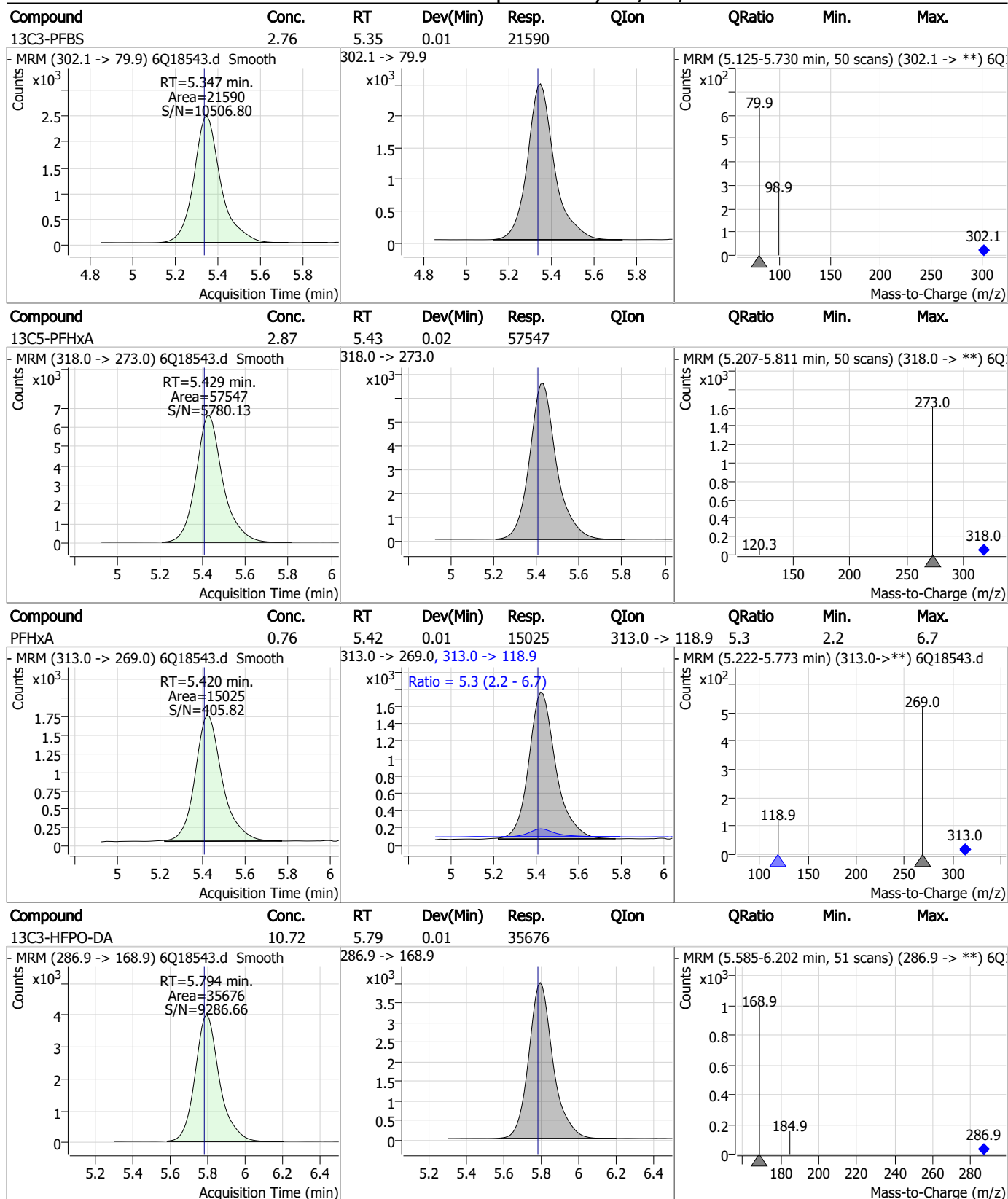
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.56	4.64	0.01	13846	279.0 -> 85.1			



Perfluorinated Compounds by LC/MS/MS



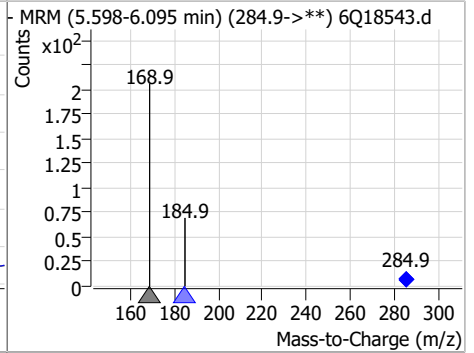
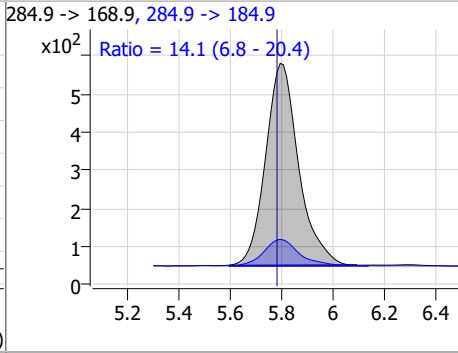
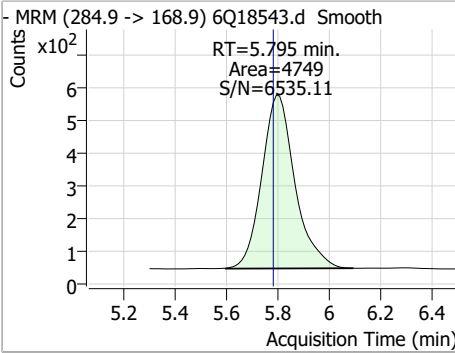
Perfluorinated Compounds by LC/MS/MS



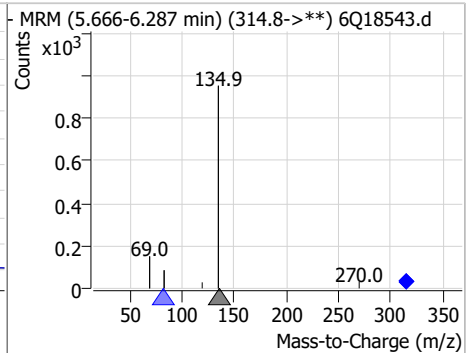
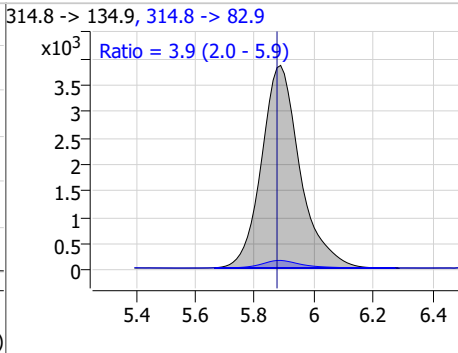
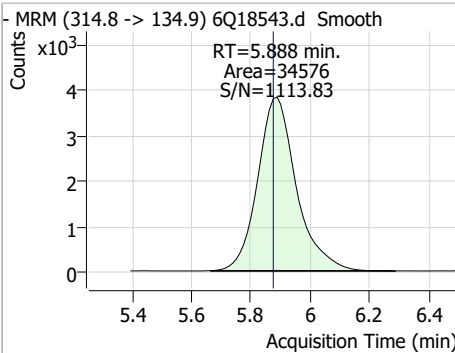
7.3.2
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Perfluorinated Compounds by LC/MS/MS

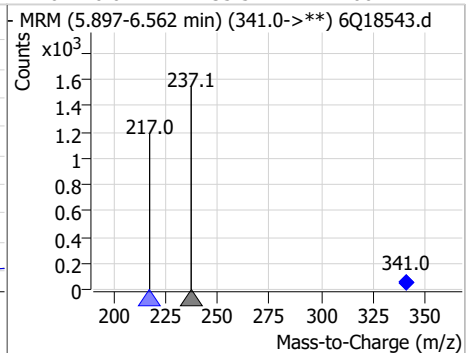
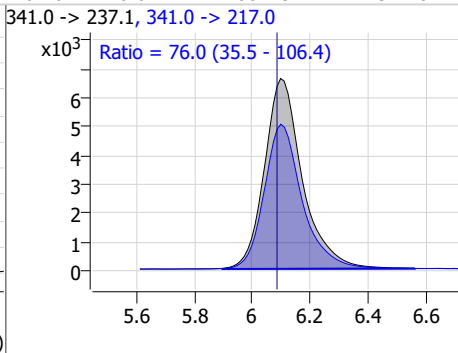
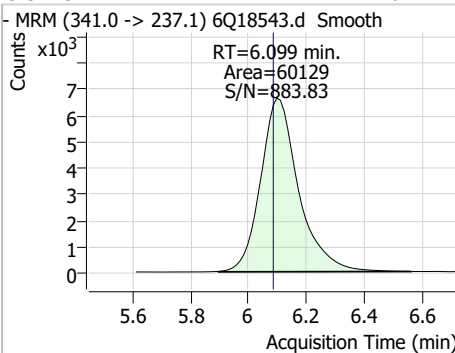
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.59	5.80	0.01	4749	284.9 -> 184.9	14.1	6.8	20.4



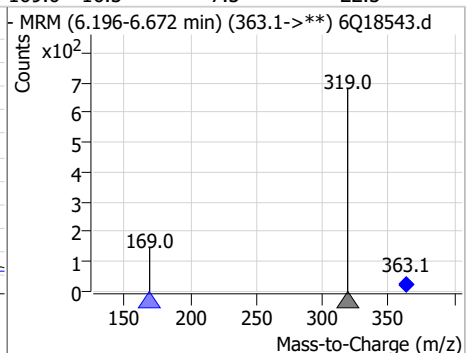
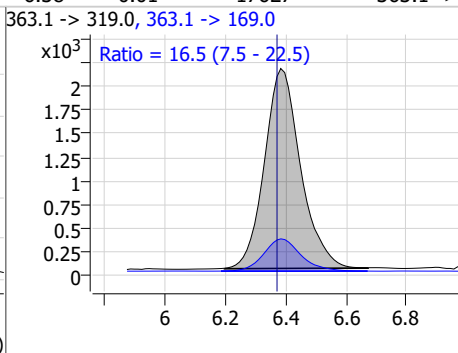
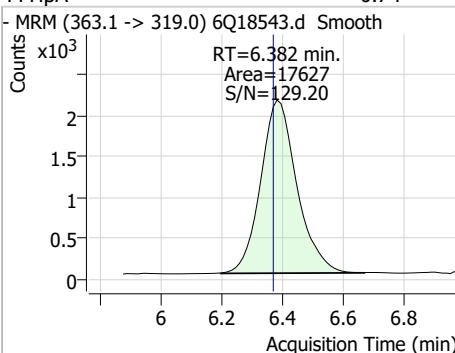
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.33	5.89	0.01	34576	314.8 -> 82.9	3.9	2.0	5.9



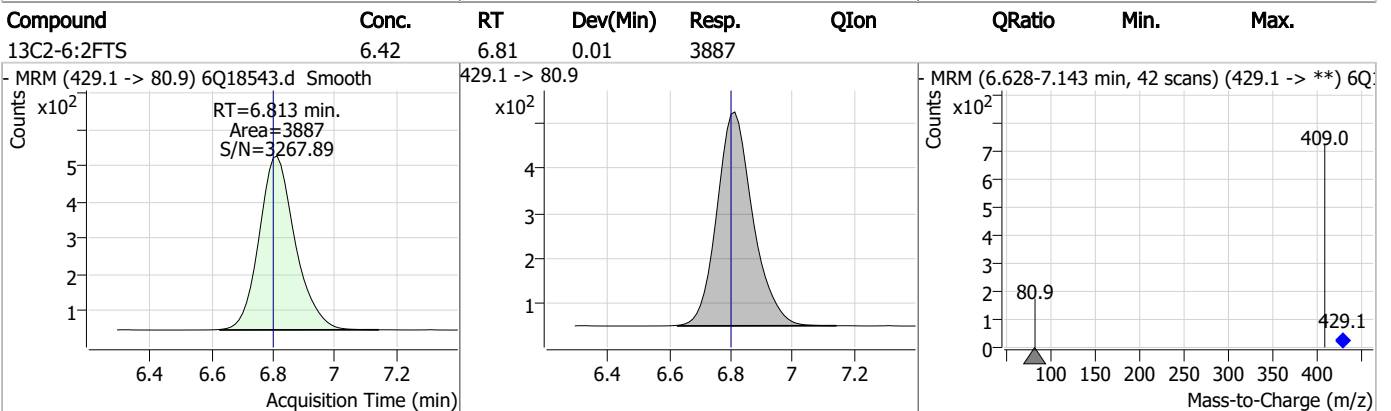
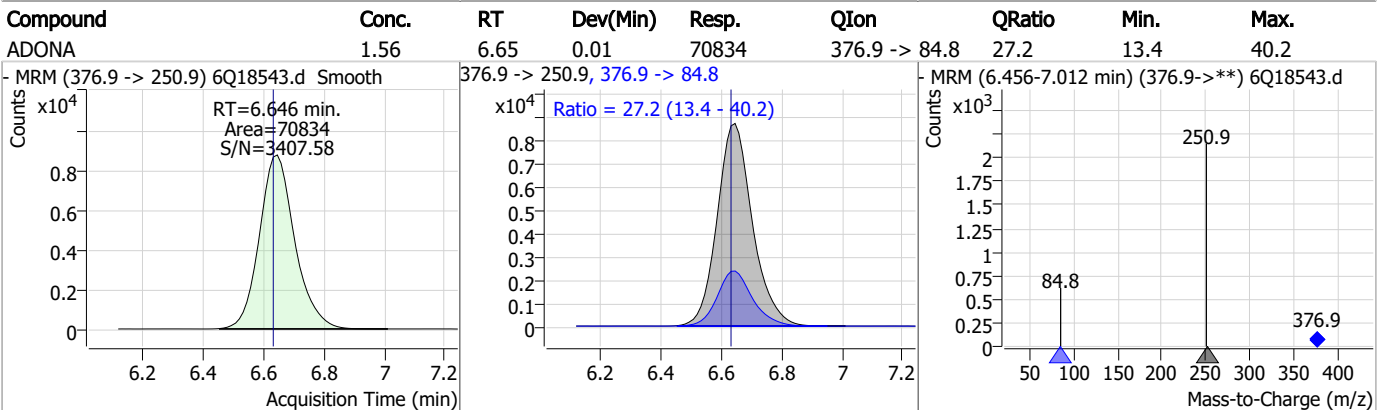
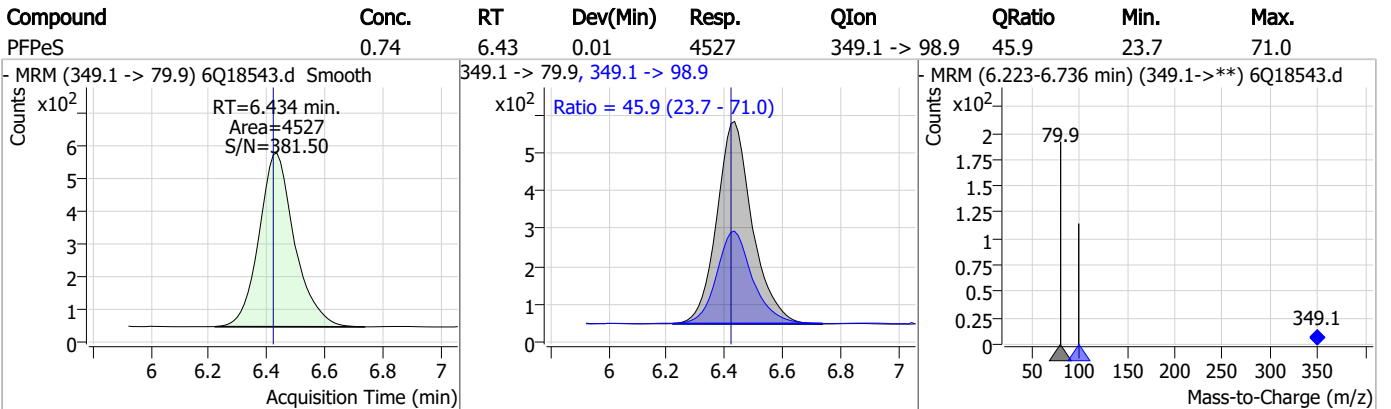
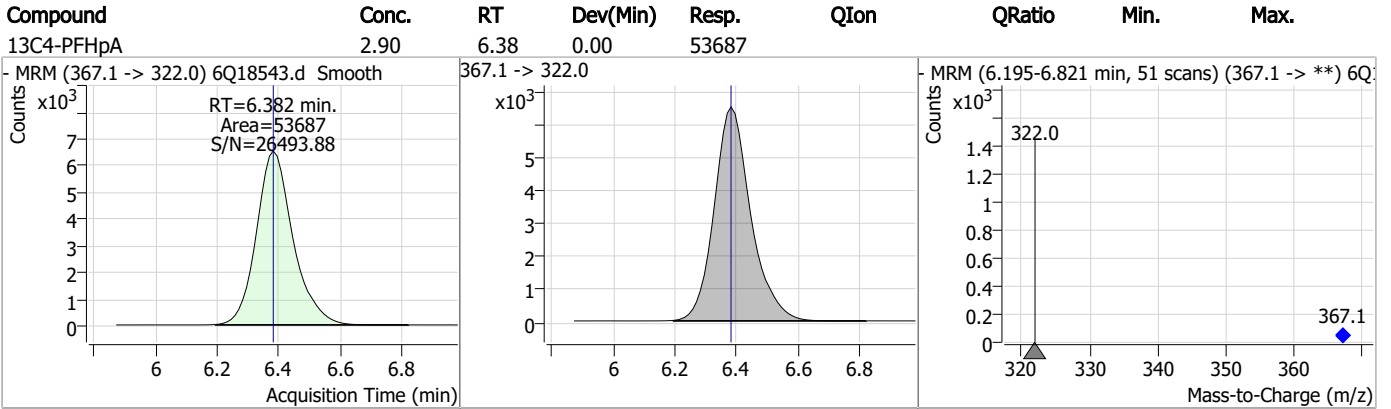
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	17.62	6.10	0.01	60129	341.0 -> 217.0	76.0	35.5	106.4



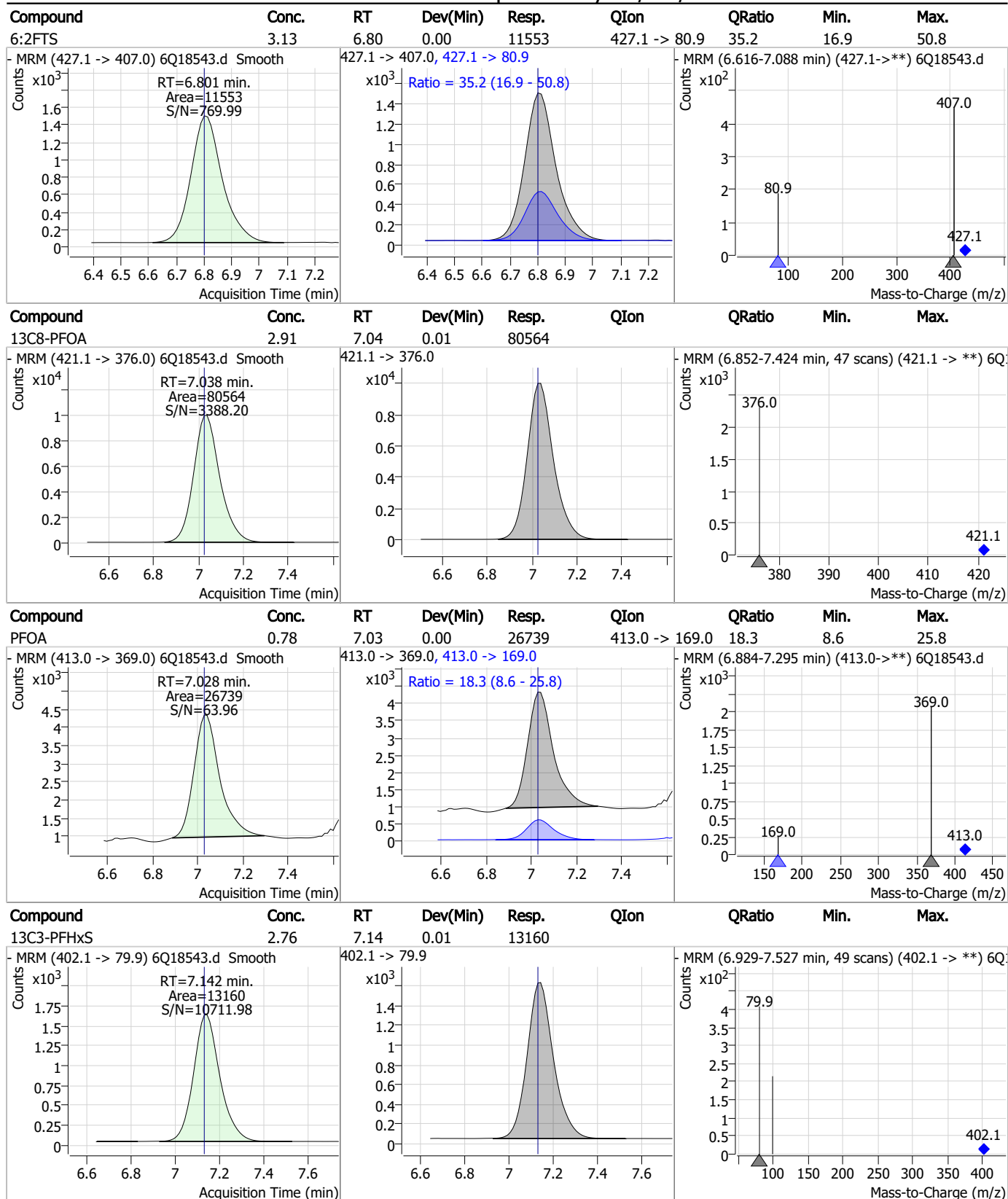
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.74	6.38	0.01	17627	363.1 -> 169.0	16.5	7.5	22.5



Perfluorinated Compounds by LC/MS/MS

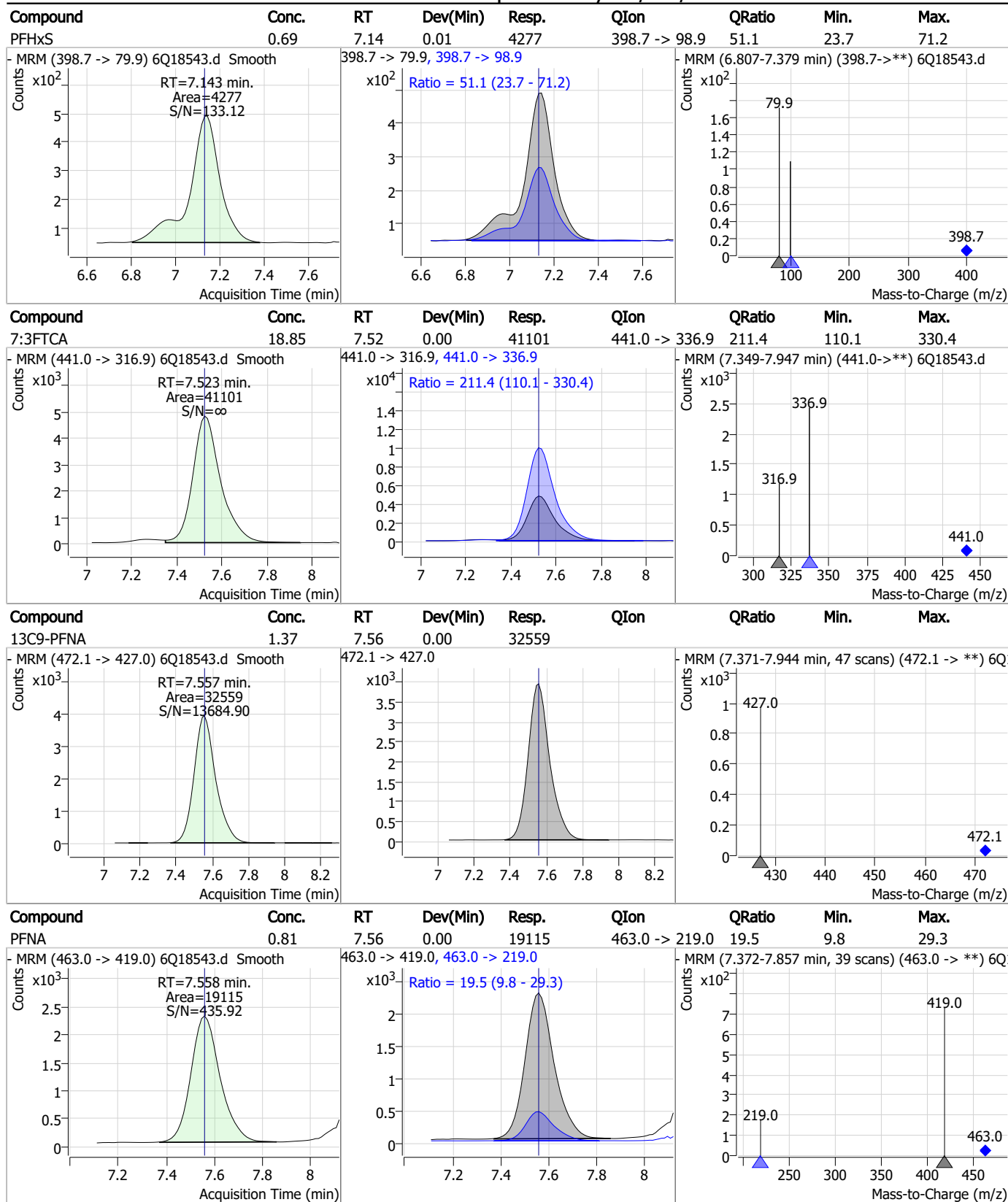


Perfluorinated Compounds by LC/MS/MS



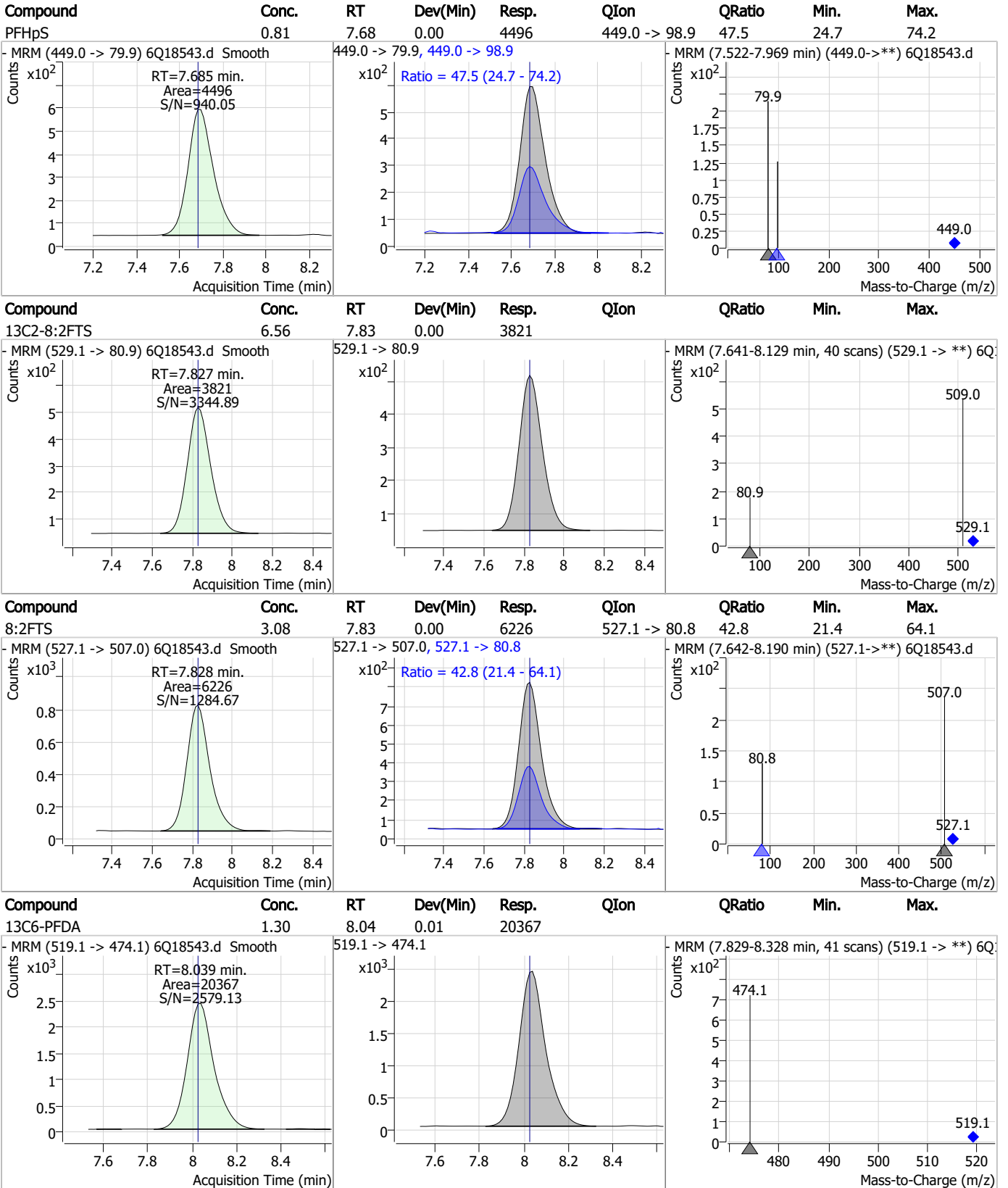
7.3.2
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

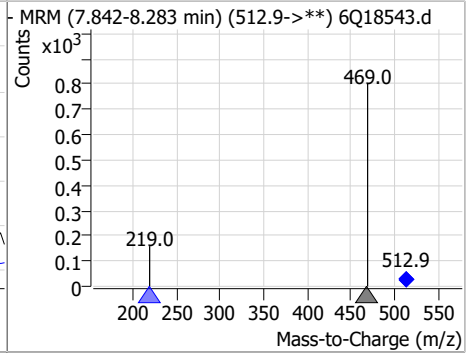
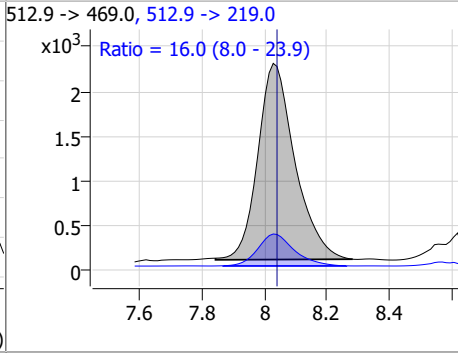
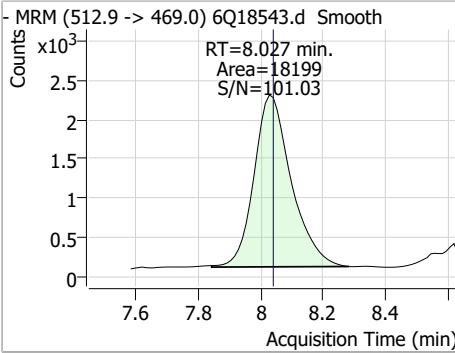


7.3.2

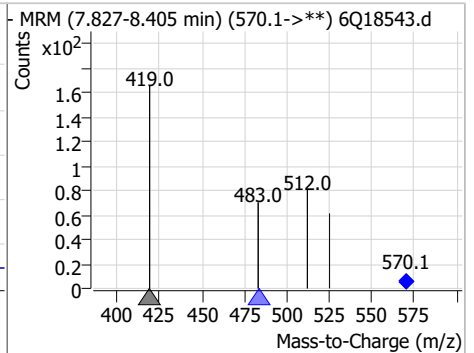
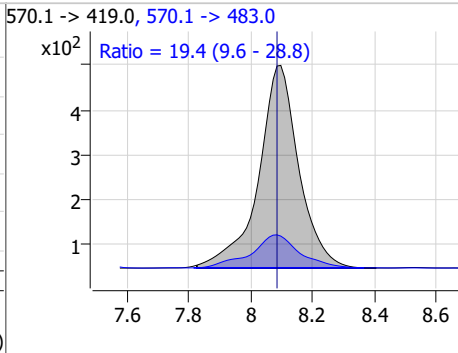
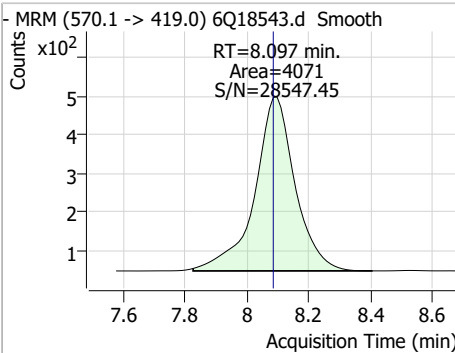
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Perfluorinated Compounds by LC/MS/MS

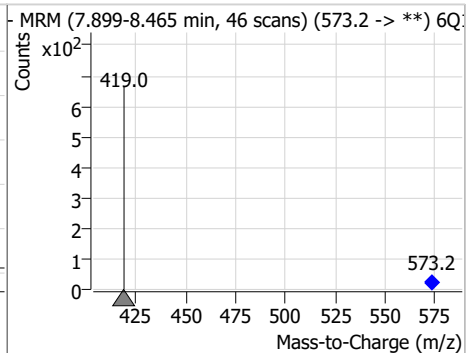
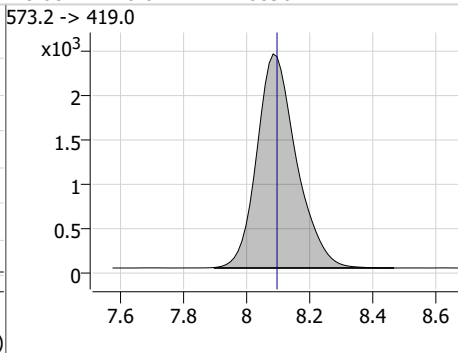
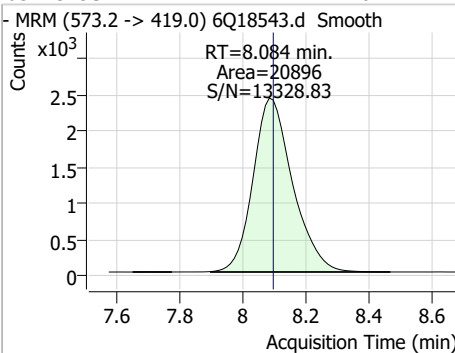
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.78	8.03	-0.01	18199	512.9 -> 219.0	16.0	8.0	23.9



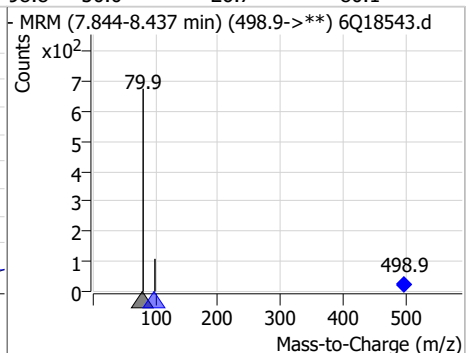
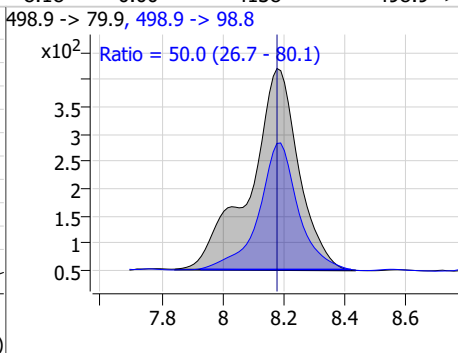
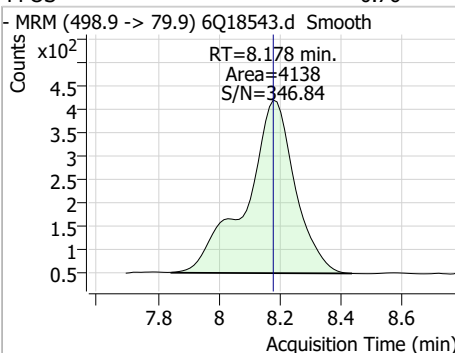
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.89	8.10	0.01	4071	570.1 -> 483.0	19.4	9.6	28.8



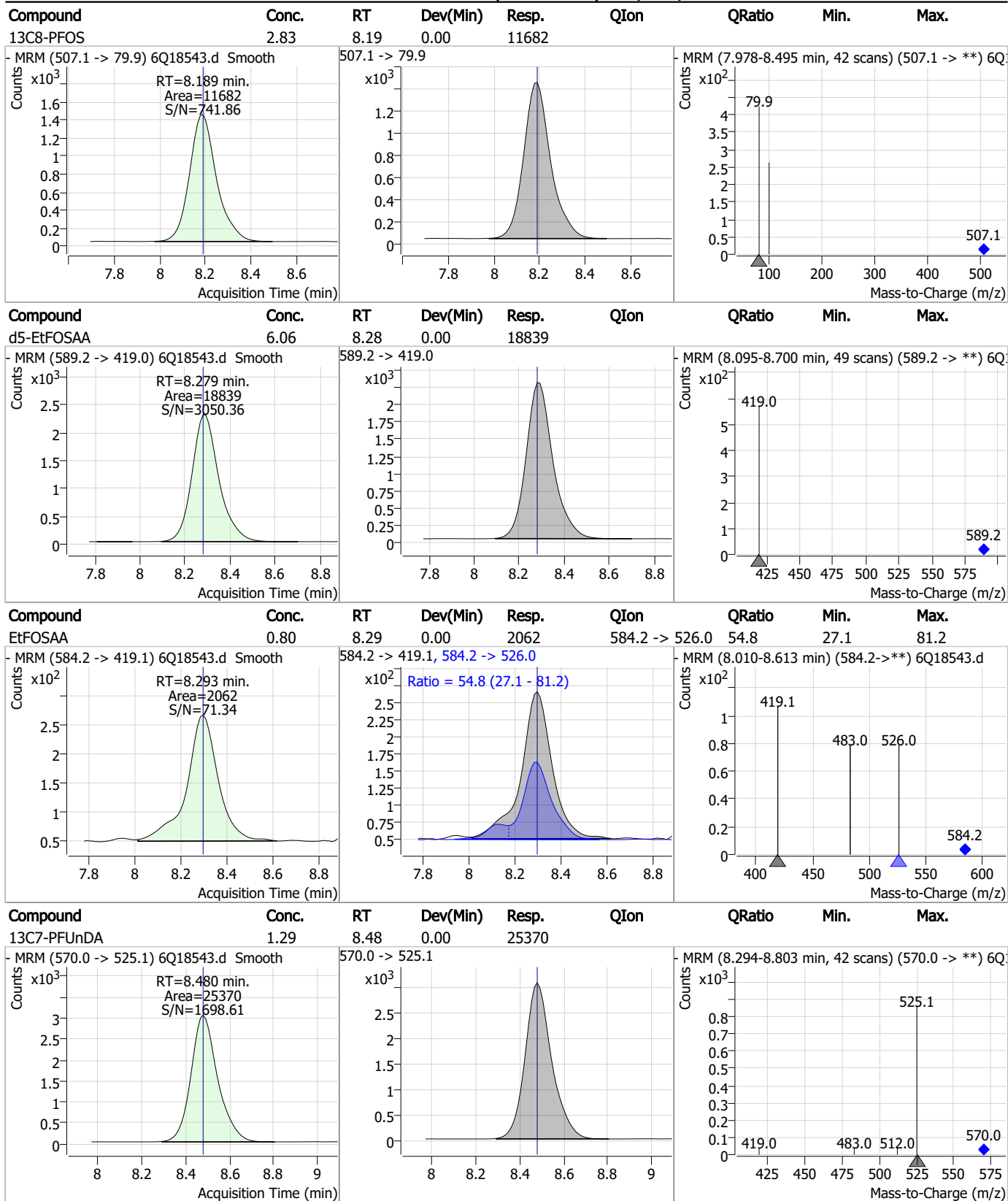
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.17	8.08	-0.01	20896	573.2 -> 419.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.76	8.18	0.00	4138	498.9 -> 98.8	50.0	26.7	80.1

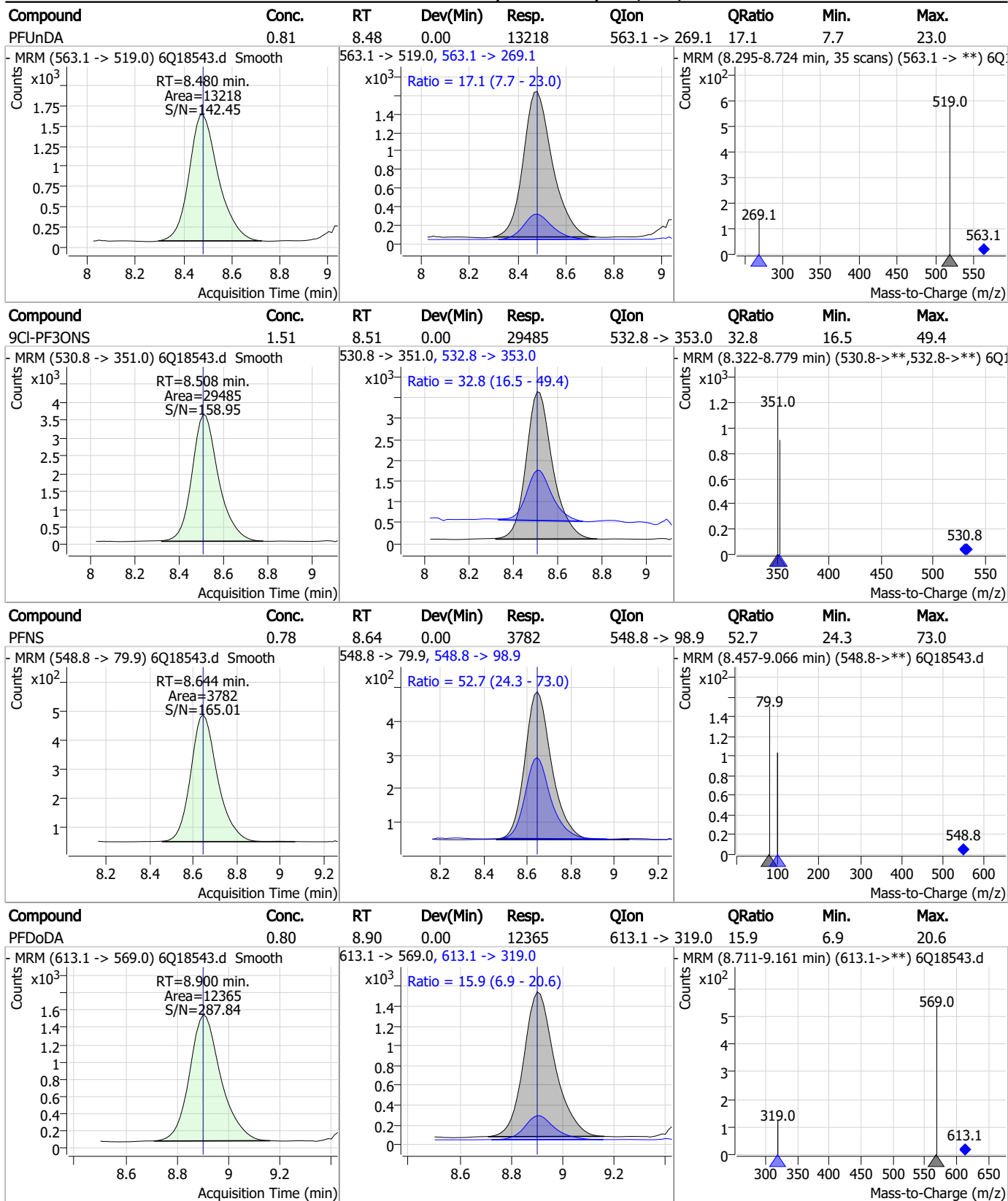


Perfluorinated Compounds by LC/MS/MS



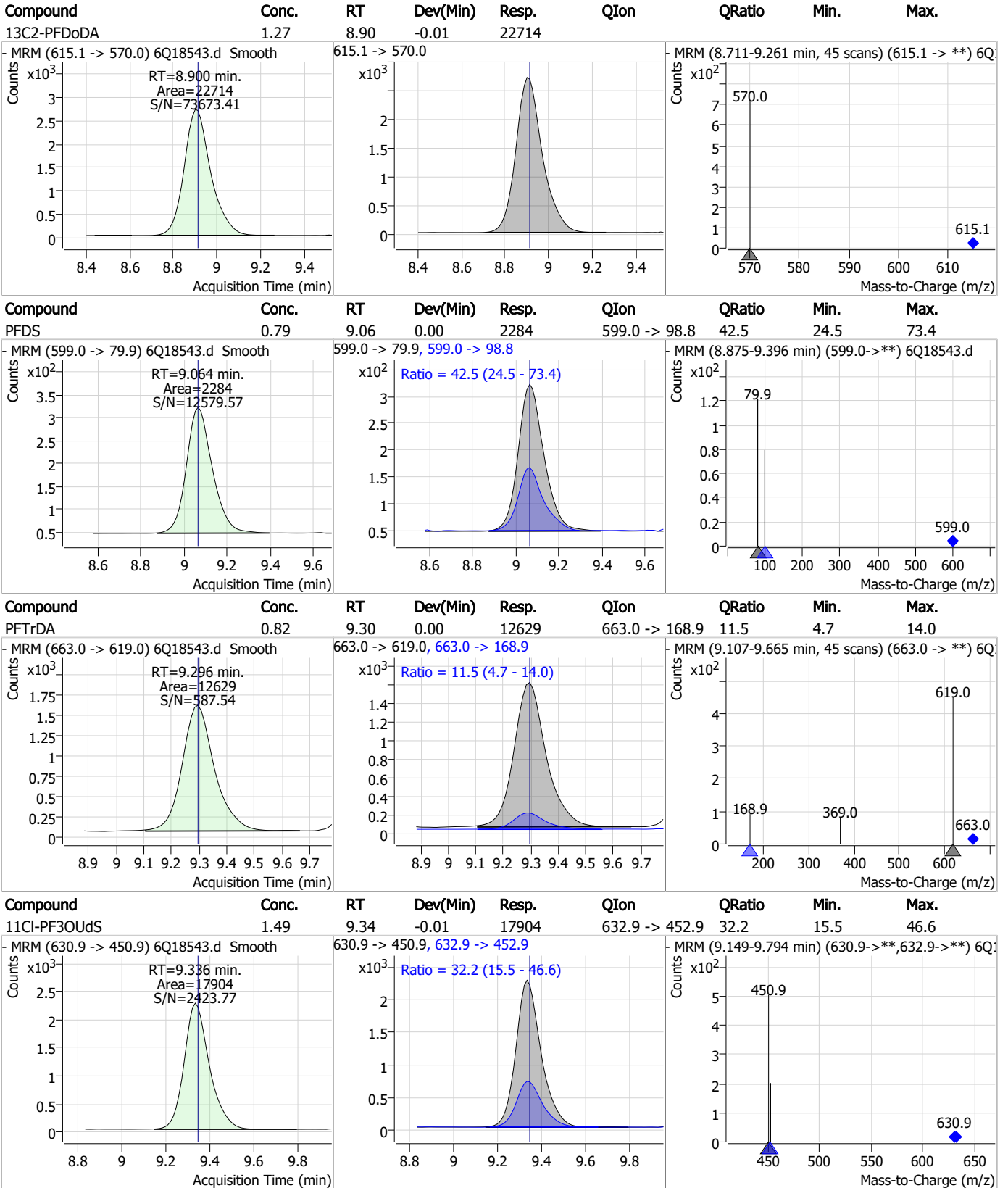
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

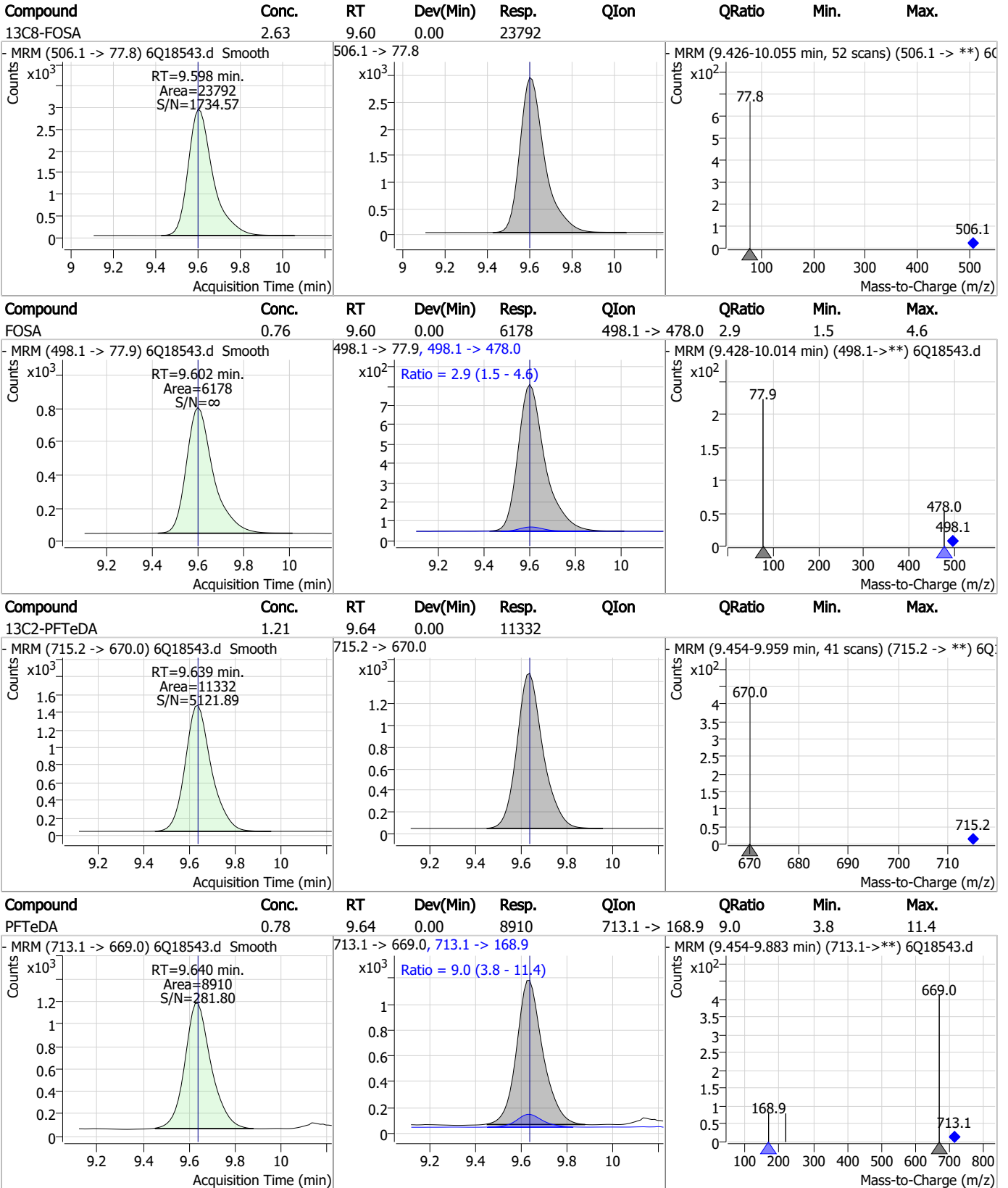
Perfluorinated Compounds by LC/MS/MS



7.3.2

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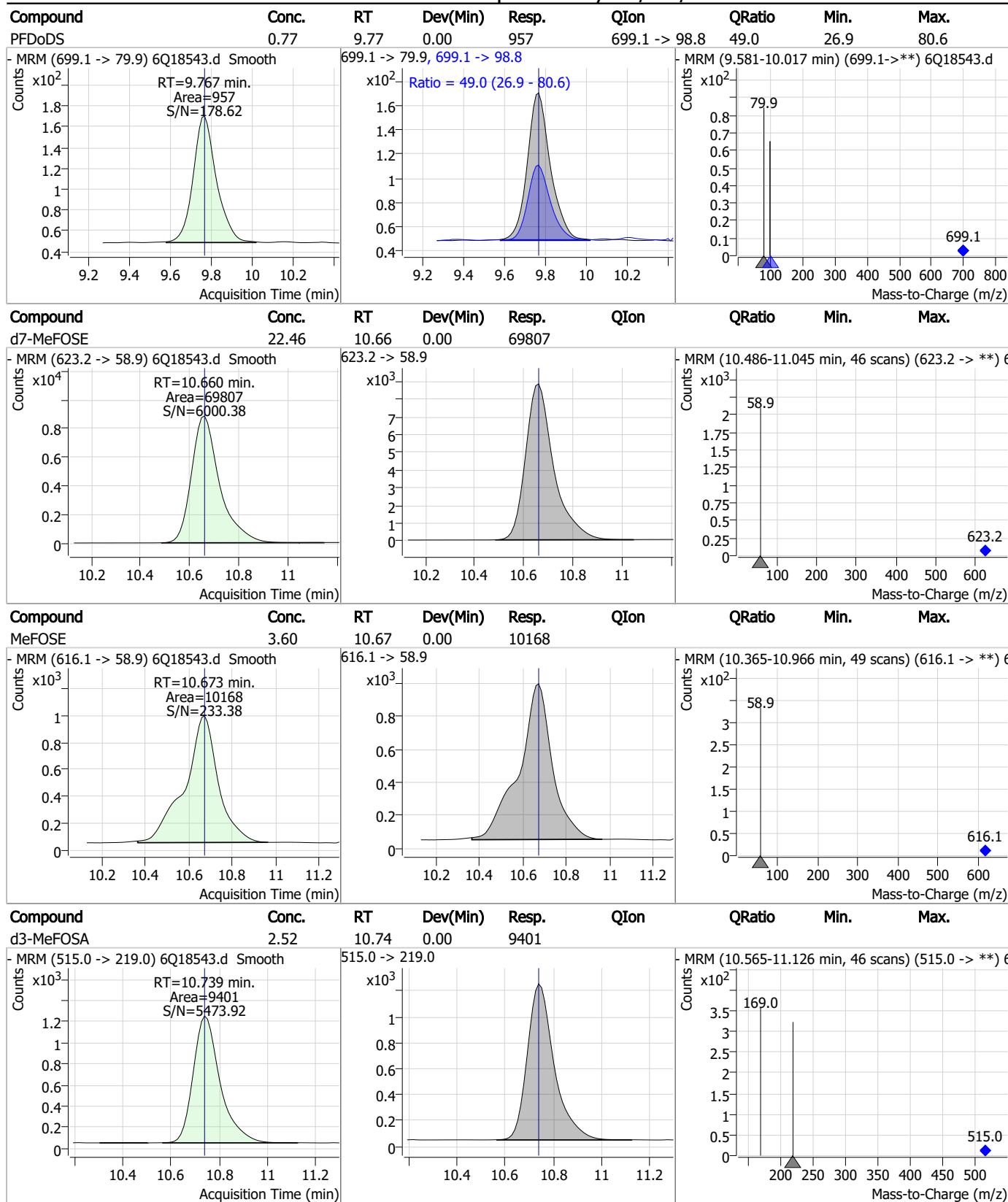
Perfluorinated Compounds by LC/MS/MS



7.3.2

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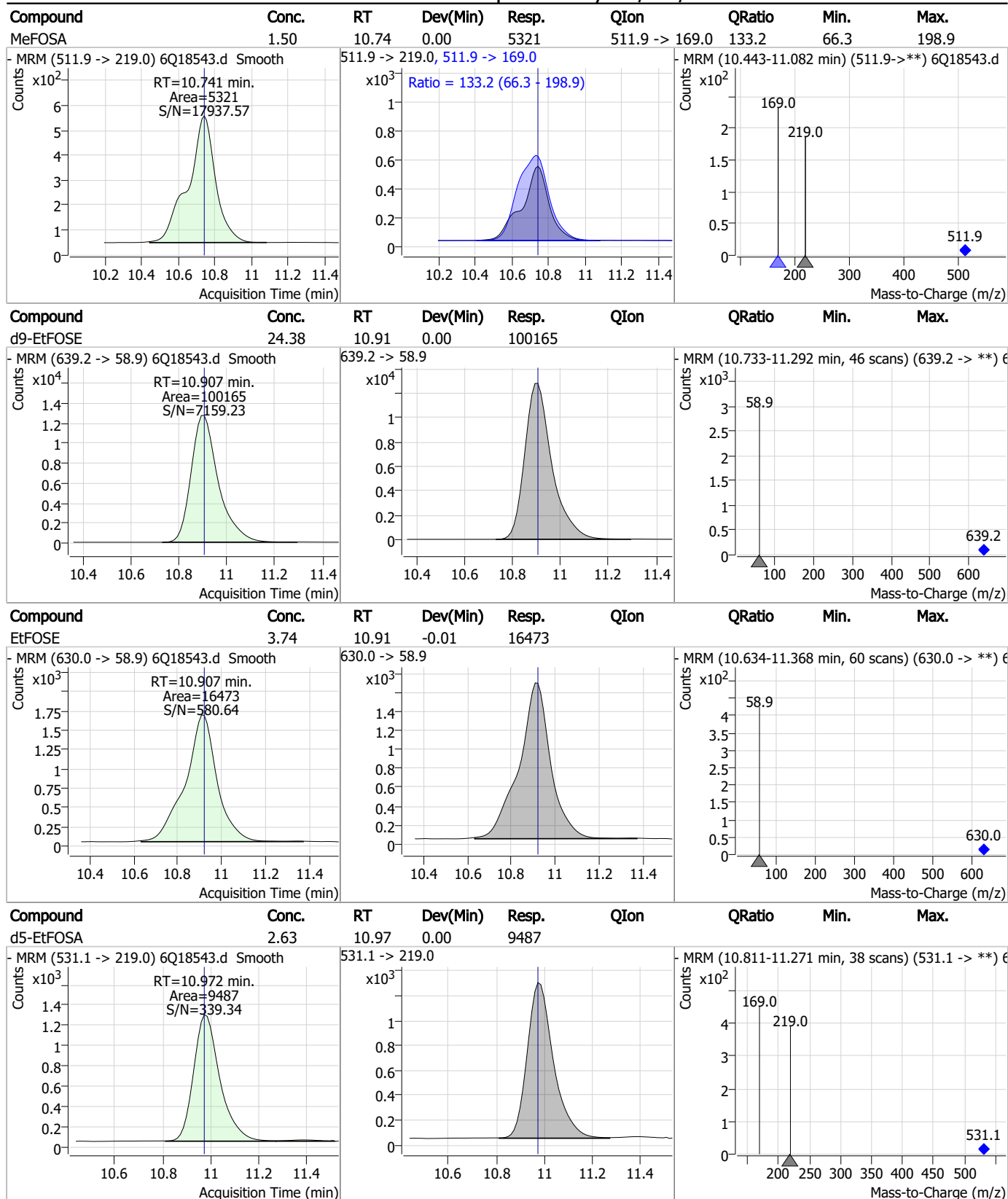
Perfluorinated Compounds by LC/MS/MS



7.3.2
7



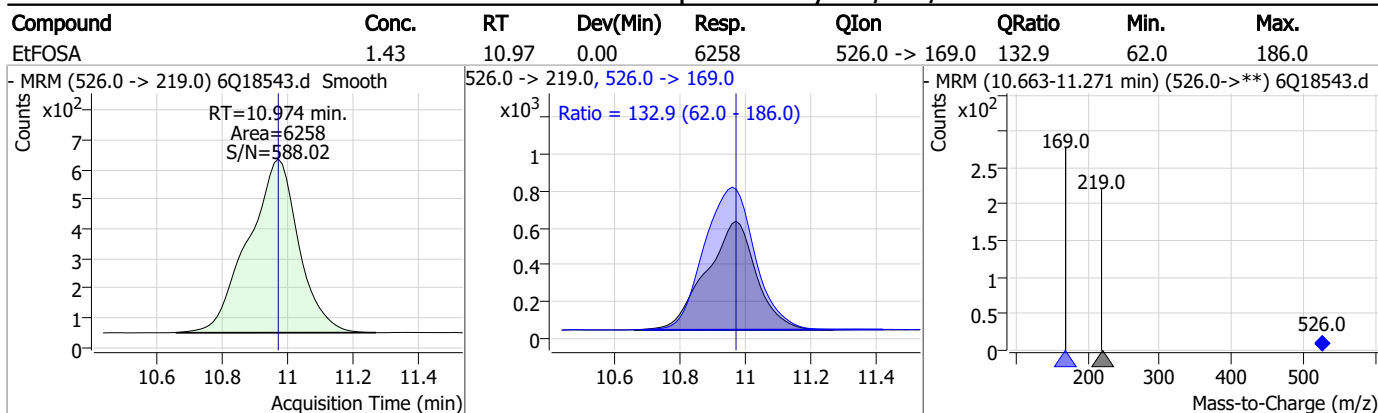
Perfluorinated Compounds by LC/MS/MS



7.3.2
7



Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18599.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 8:24:42 PM
 Sample Name : op97070-bs
 Vial : P6-B5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	38242	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	50377	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	60493	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	53385	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	80928	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	37076	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22593	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	30241	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	25932	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	13422	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	25449	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	20912	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	12990	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12056	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3181	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4698	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4727	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	24535	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	36636	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	22699	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	79130	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	115338	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	11284	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10990	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	15031	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	66739	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	9043	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	84420	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	28394	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	43690	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	52506	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3181	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4698	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4727	5.32 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C2-PFDoDA	8.900	615.1 -> 570.0	25932	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C2-PFTeDA	9.627	715.2 -> 670.0	13422	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C3-PFBS	5.334	302.1 -> 79.9	20912	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C3-PFHxS	7.130	402.1 -> 79.9	12990	2.57 µg/L	0.000

7.3.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C4-PFBA	2.860	216.8 -> 171.9	38242	2.41 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 24.1%		
13C4-PFHpA	6.369	367.1 -> 322.0	53385	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C5-PFHxA	5.417	318.0 -> 273.0	60493	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C5-PFPeA	4.222	268.3 -> 223.0	50377	4.93 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C6-PFDA	8.027	519.1 -> 474.1	22593	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C7-PFUnDA	8.468	570.0 -> 525.1	30241	1.42 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 114.0%		
13C8-FOSA	9.598	506.1 -> 77.8	25449	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 88.8%		
13C8-PFOA	7.026	421.1 -> 376.0	80928	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C8-PFOS	8.177	507.1 -> 79.9	12056	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C9-PFNA	7.545	472.1 -> 427.0	37076	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.0%		
d3-MeFOSAA	8.084	573.2 -> 419.0	24535	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C3-HFPO-DA	5.782	286.9 -> 168.9	36636	10.62 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 106.2%		
d3-MeFOSA	10.739	515.0 -> 219.0	10990	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.7%		
d5-EtFOSAA	8.279	589.2 -> 419.0	22699	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
d7-MeFOSE	10.660	623.2 -> 58.9	79130	20.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 83.8%		
d9-EtFOSE	10.894	639.2 -> 58.9	115338	23.36 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 93.4%		
d5-EtFOSA	10.972	531.1 -> 219.0	11284	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.7%		
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	45325	9.81 µg/L	99
		327.1 -> 80.9	17672		
6:2FTS	6.801	427.1 -> 407.0	49171	10.65 µg/L	96
		427.1 -> 80.9	15653		
8:2FTS	7.816	527.1 -> 507.0	28652	10.90 µg/L	93
		527.1 -> 80.8	10940		
EtFOSAA	8.280	584.2 -> 419.1	7884	2.70 µg/L	99
		584.2 -> 526.0	4307		
FOSA	9.602	498.1 -> 77.9	22958	2.61 µg/L	100
		498.1 -> 478.0	661		
MeFOSAA	8.085	570.1 -> 419.0	14523	2.88 µg/L	100
		570.1 -> 483.0	2794		
PFBA	2.868	212.8 -> 168.9	13384	10.57 µg/L	100
PFBS	5.335	298.7 -> 79.9	16567	2.33 µg/L	97
		298.7 -> 98.8	6302		
PFDA	8.027	512.9 -> 469.0	67165	2.56 µg/L	100
		512.9 -> 219.0	10871		
PFDoDA	8.900	613.1 -> 569.0	46002	2.58 µg/L	94
		613.1 -> 319.0	7422		
PFDS	9.052	599.0 -> 79.9	7620	2.53 µg/L	99

7.3.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	3671	2.55 µg/L	95
		363.1 -> 319.0	60302		
PFHpS	7.685	363.1 -> 169.0	10207	2.46 µg/L	98
		449.0 -> 79.9	14240		
PFHxA	5.420	449.0 -> 98.9	7275	2.44 µg/L	97
		313.0 -> 269.0	49484		
PFHxS	7.131	313.0 -> 118.9	2722	2.41 µg/L	100
		398.7 -> 79.9	14184		
PFNA	7.545	398.7 -> 98.9	6761	2.59 µg/L	99
		463.0 -> 419.0	68017		
PFNS	8.631	463.0 -> 219.0	13651	2.53 µg/L	92
		548.8 -> 79.9	12256		
PFOA	7.028	548.8 -> 98.9	6655	2.59 µg/L	95
		413.0 -> 369.0	89489		
PFOS	8.178	413.0 -> 169.0	17288	2.47 µg/L	95
		498.9 -> 79.9	13600		
PFPeA	4.224	498.9 -> 98.8	6825	5.31 µg/L	100
		263.0 -> 219.0	64210		
PFPeS	6.422	349.1 -> 79.9	14547	2.48 µg/L	97
		349.1 -> 98.9	6604		
PFTeDA	9.628	713.1 -> 669.0	35778	2.71 µg/L	98
		713.1 -> 168.9	2985		
PFTrDA	9.284	663.0 -> 619.0	46349	2.58 µg/L	95
		663.0 -> 168.9	5086		
PFUnDA	8.468	563.1 -> 519.0	46729	2.38 µg/L	96
		563.1 -> 269.1	7898		
11CI-PF3OUdS	9.336	630.9 -> 450.9	63740	4.64 µg/L	99
		632.9 -> 452.9	20291		
9CI-PF3ONS	8.508	530.8 -> 351.0	100987	4.66 µg/L	98
		532.8 -> 353.0	34363		
ADONA	6.632	376.9 -> 250.9	241899	4.97 µg/L	100
		376.9 -> 84.8	64591		
HFPO-DA	5.783	284.9 -> 168.9	15545	5.01 µg/L	96
		284.9 -> 184.9	1888		
3:3FTCA	3.709	241.0 -> 177.0	4352	5.62 µg/L	99
		241.0 -> 117.0	611		
5:3FTCA	6.086	341.0 -> 237.1	219192	59.99 µg/L	99
		341.0 -> 217.0	156526		
7:3FTCA	7.510	441.0 -> 316.9	153596	61.38 µg/L	98
		441.0 -> 336.9	333447		
EtFOSA	10.974	526.0 -> 219.0	24051	4.57 µg/L	94
		526.0 -> 169.0	31497		
EtFOSE	10.907	630.0 -> 58.9	60958	11.85 µg/L	100
		511.9 -> 219.0	19633		
MeFOSA	10.741	511.9 -> 169.0	28059	4.86 µg/L	91
		616.1 -> 58.9	38586		
MeFOSE	10.673	699.1 -> 79.9	3367	12.27 µg/L	100
		699.1 -> 98.8	1726		
PFDoDS	9.755	295.0 -> 201.0	12483	2.51 µg/L	97
		295.0 -> 84.9	3211		
NFDHA	5.299	279.0 -> 85.1	45671	5.05 µg/L	97
		229.0 -> 84.9	15433		
PFMBA	4.638	314.8 -> 134.9	117066	2.41 µg/L	100
		314.8 -> 82.9	4125		
PFMPA	3.388			4.54 µg/L	99
PFEESA	5.875				

7.3.3
7

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

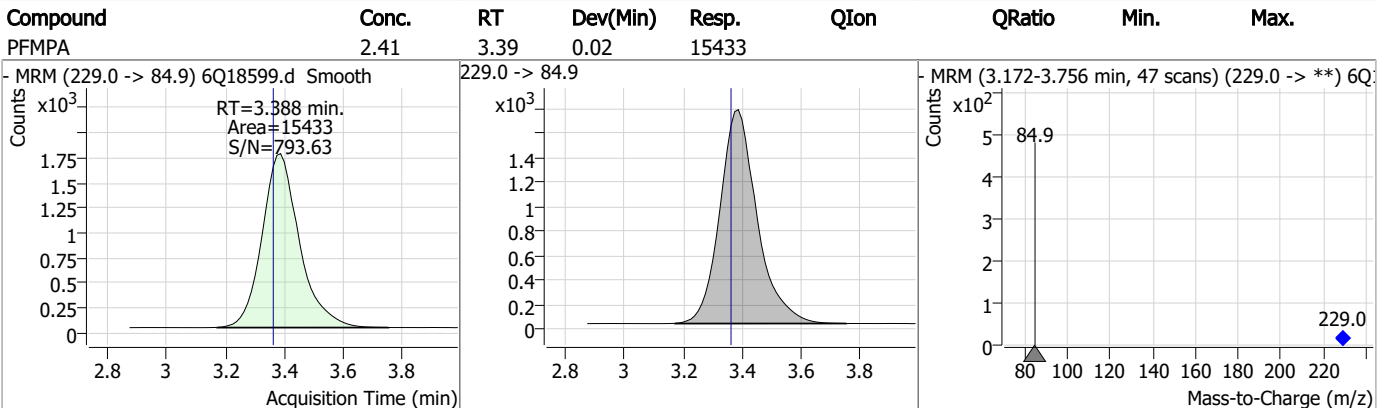
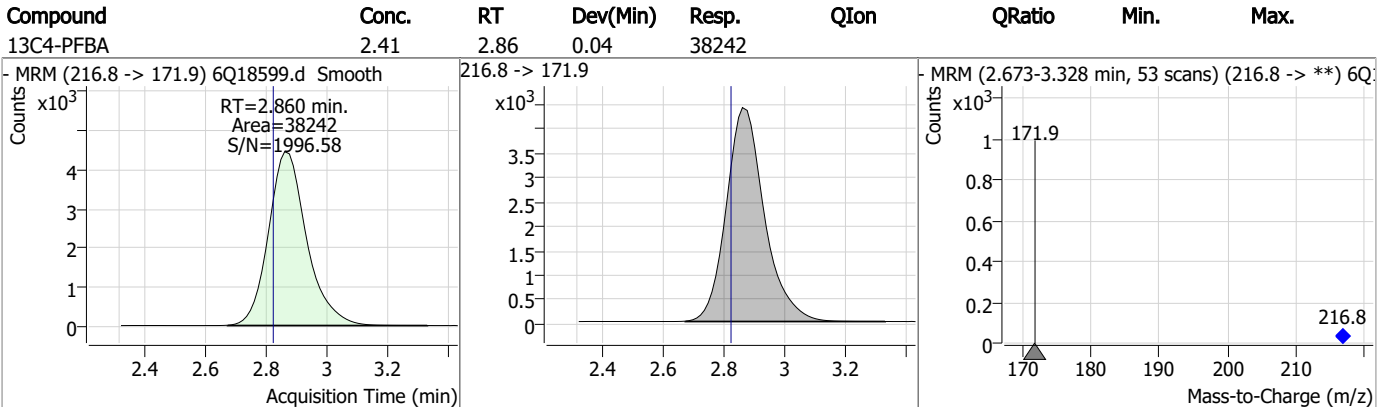
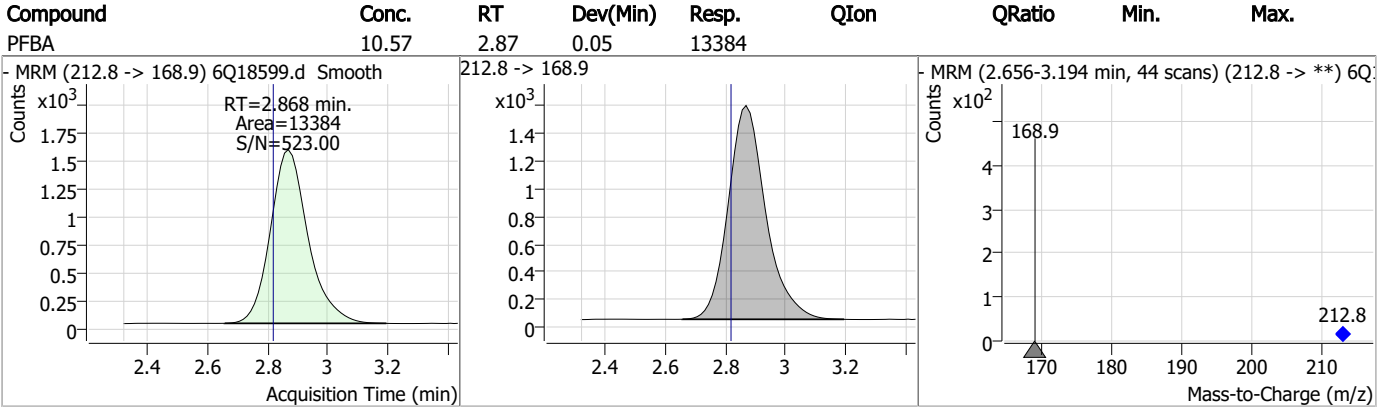
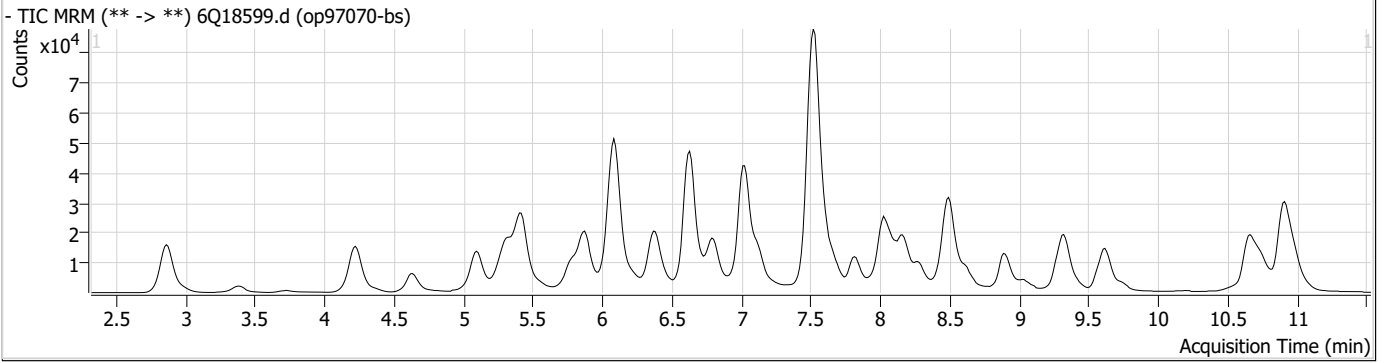
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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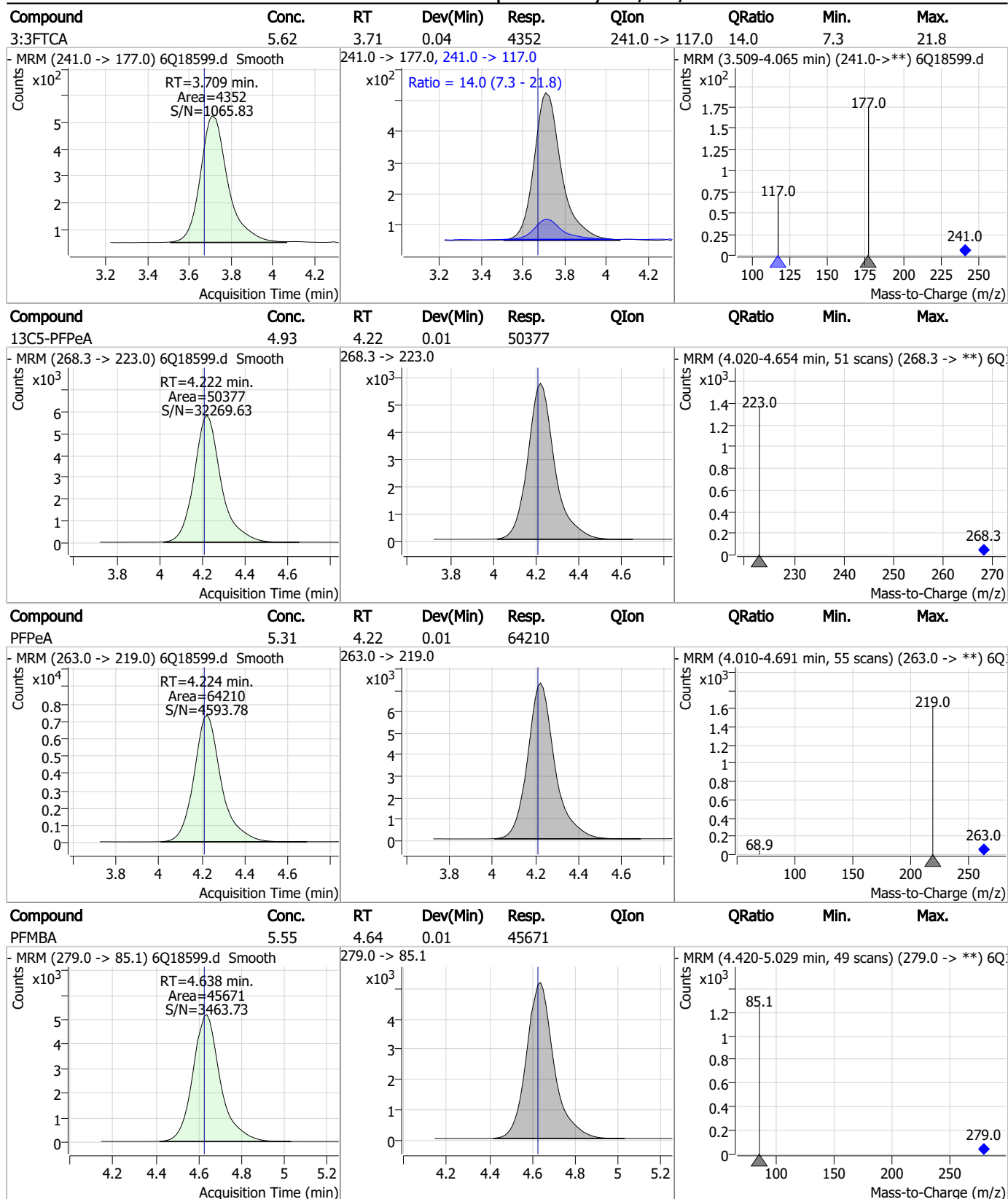
7.3.3

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Perfluorinated Compounds by LC/MS/MS

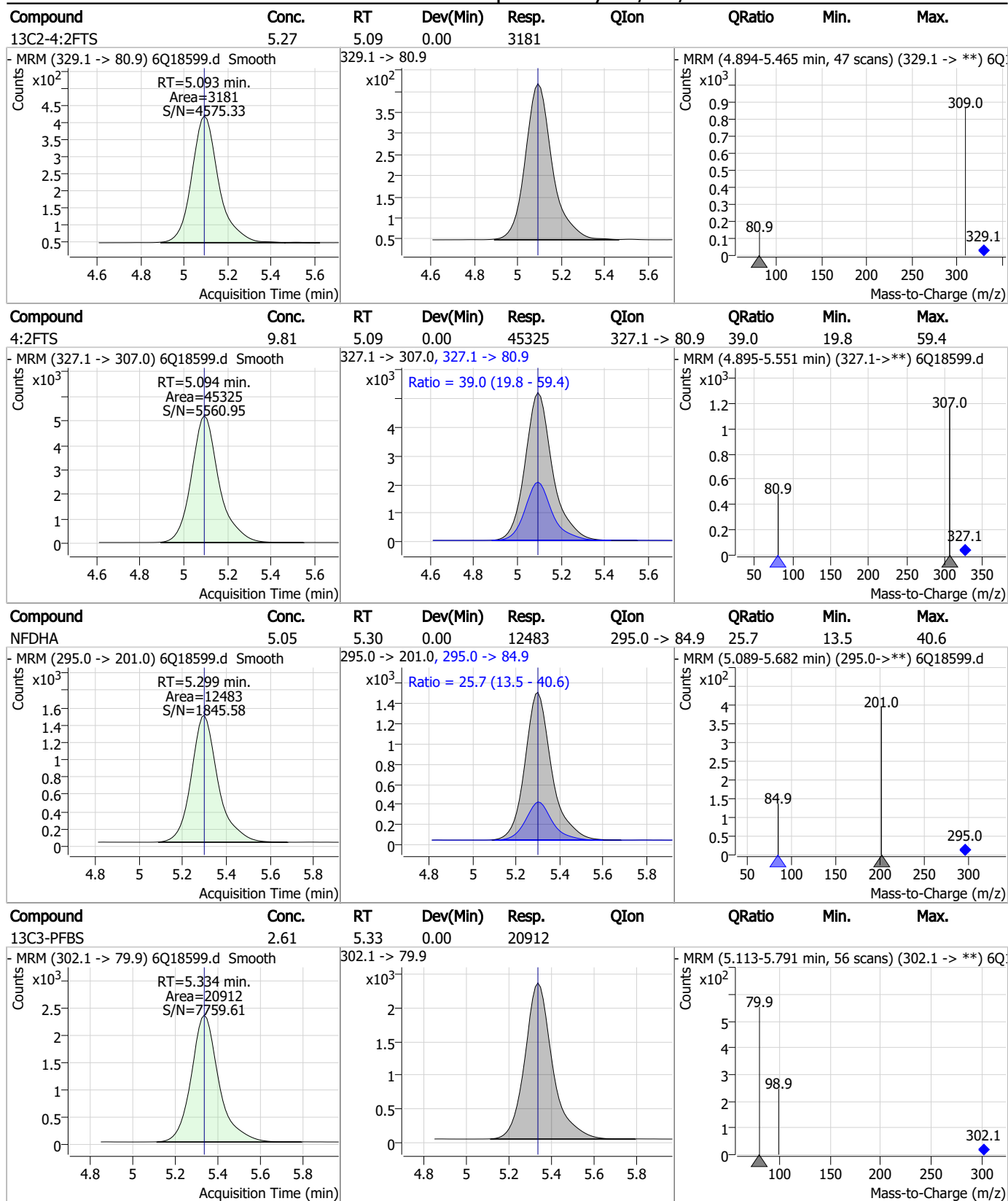


Perfluorinated Compounds by LC/MS/MS



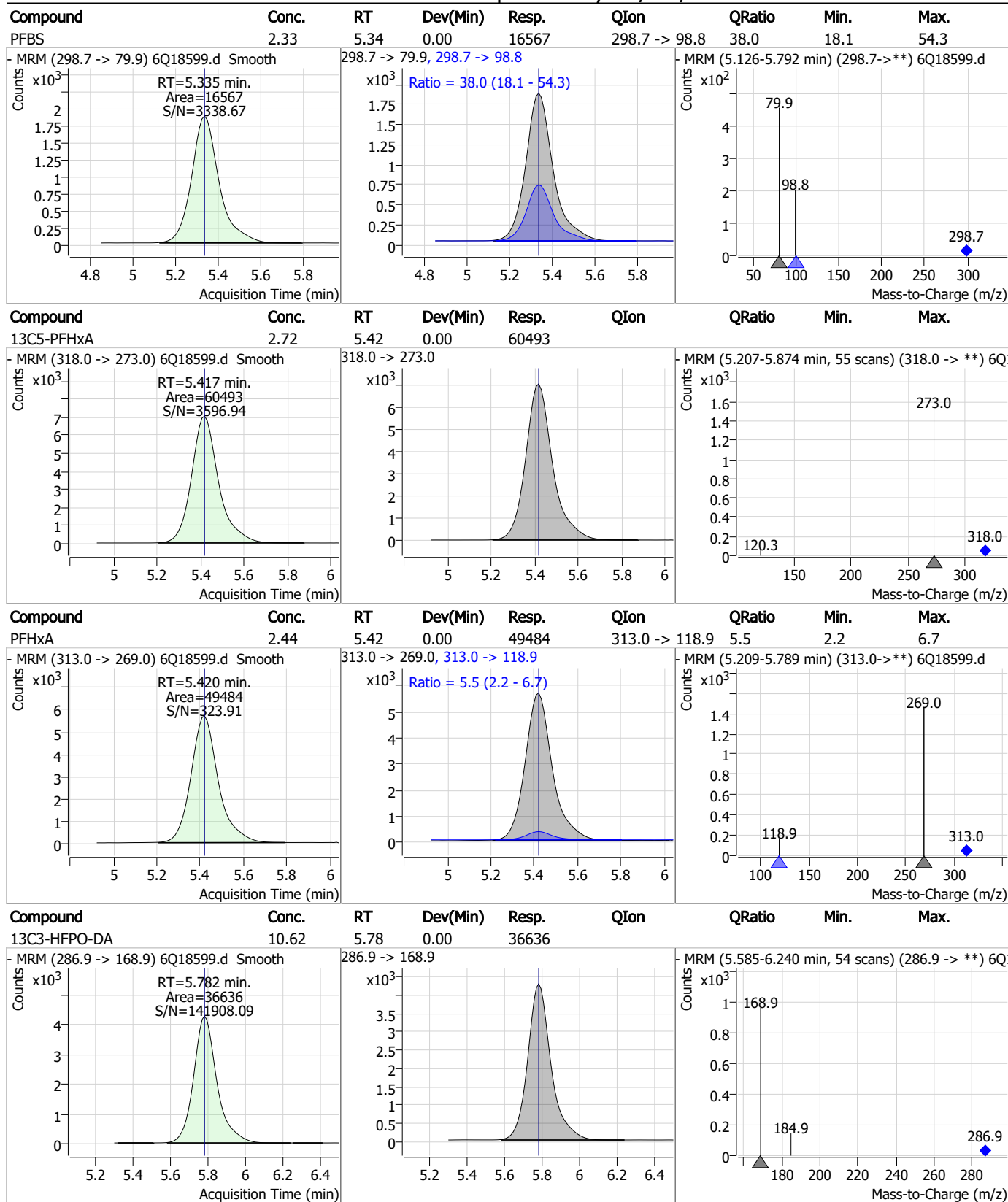
7.3.3
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Perfluorinated Compounds by LC/MS/MS



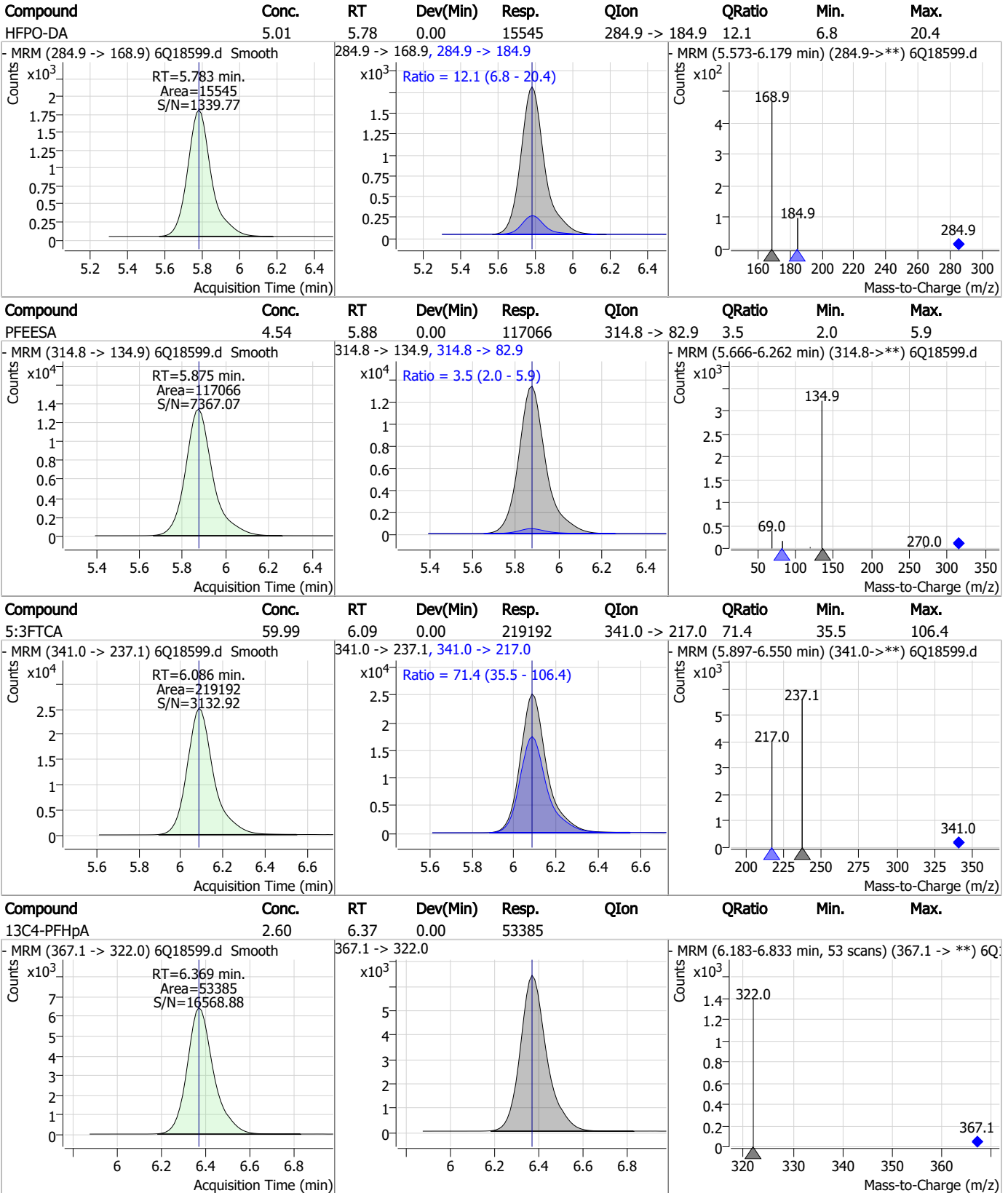
7.3.3
7

Perfluorinated Compounds by LC/MS/MS



7.3.3
7

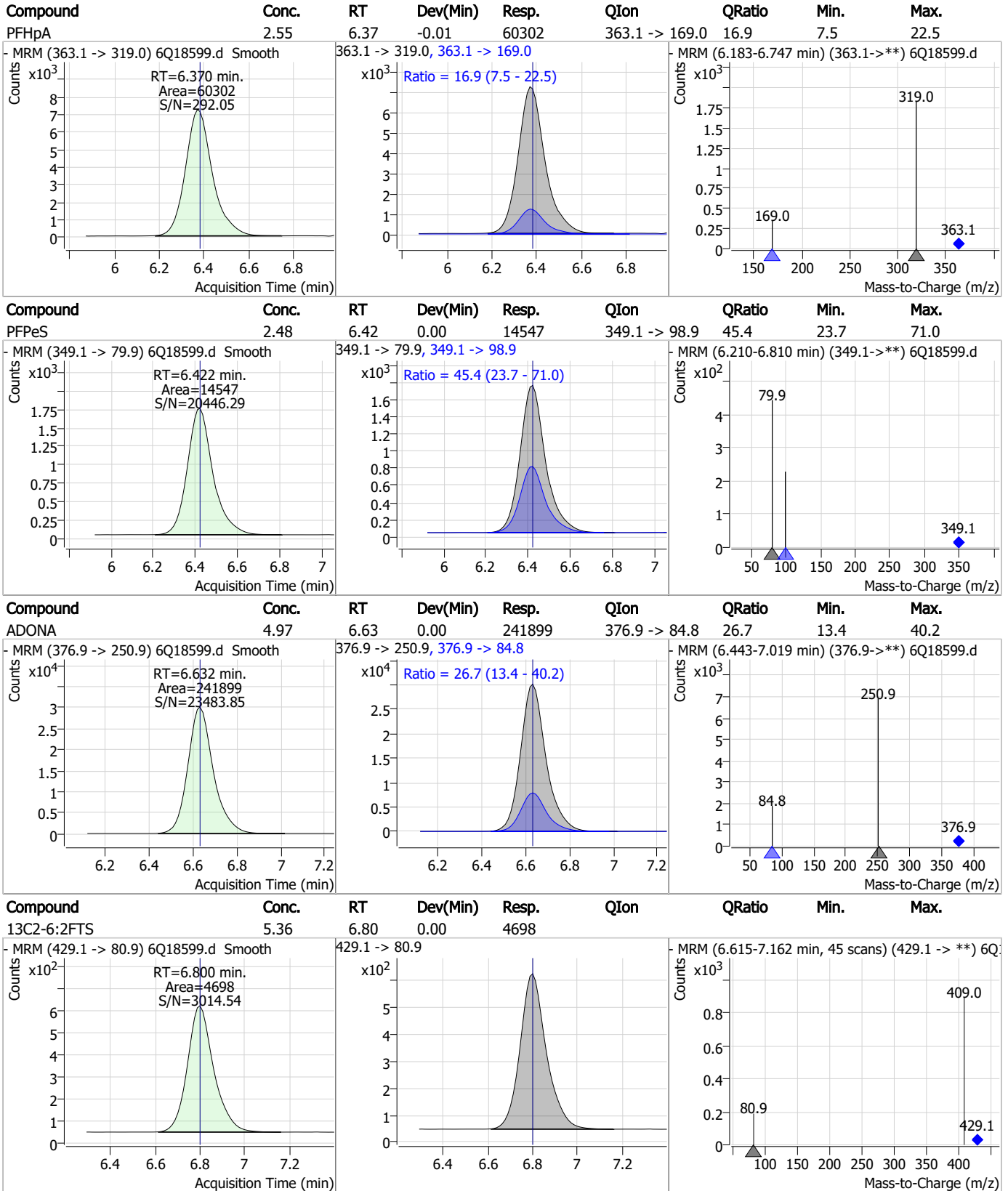
Perfluorinated Compounds by LC/MS/MS



7.3.3

7

Perfluorinated Compounds by LC/MS/MS

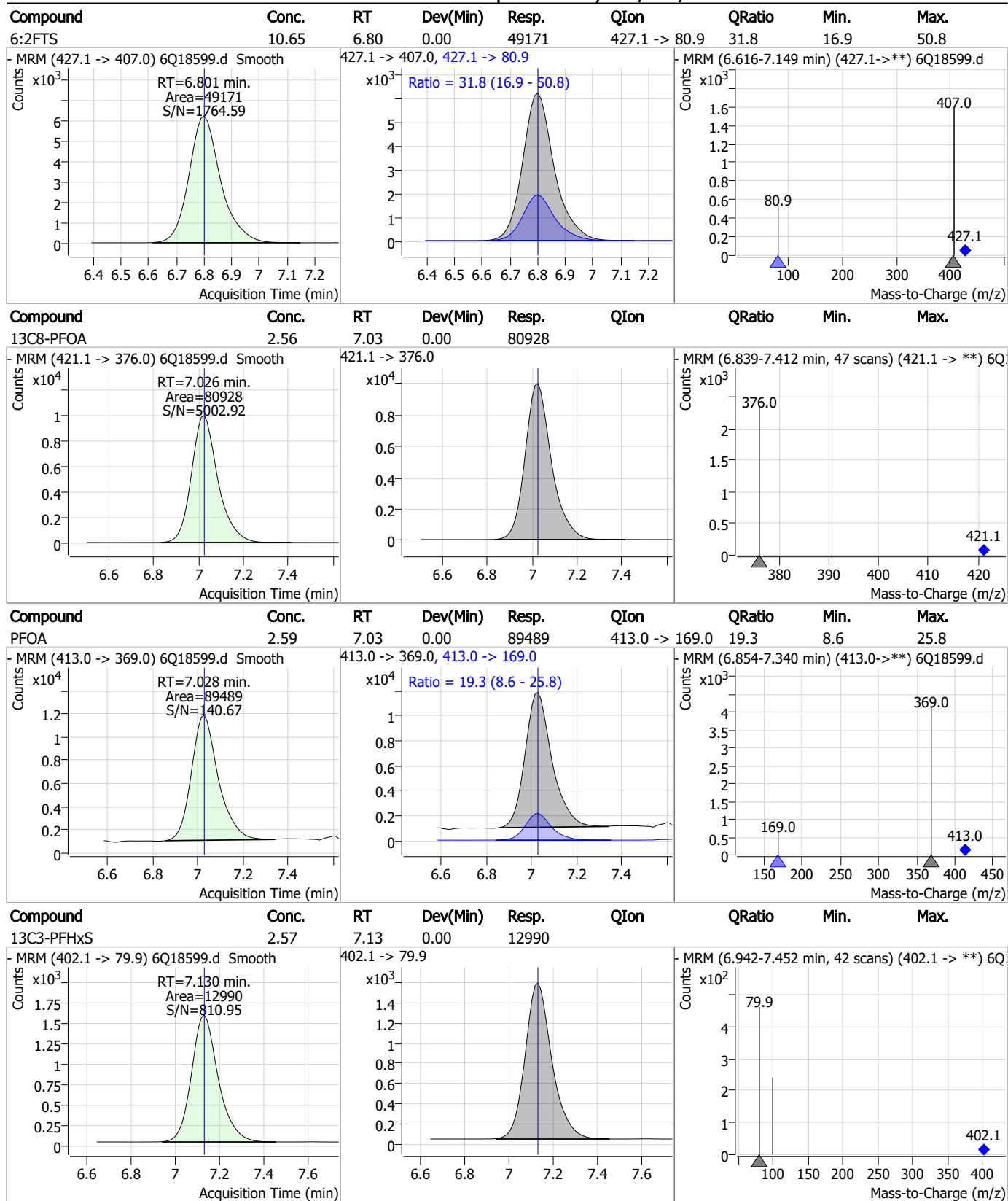


7.3.3

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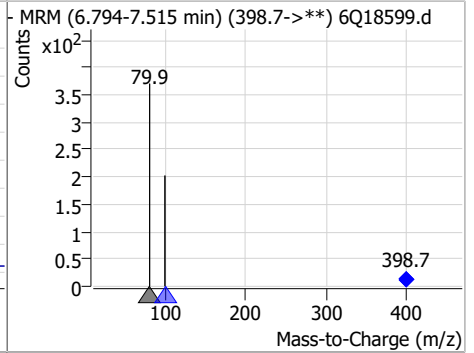
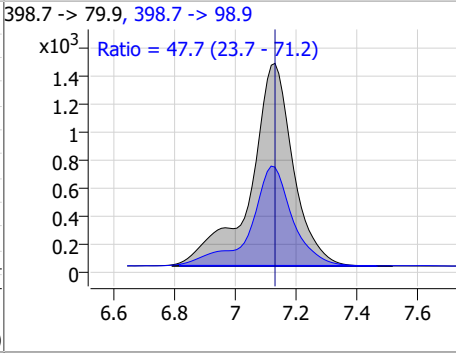
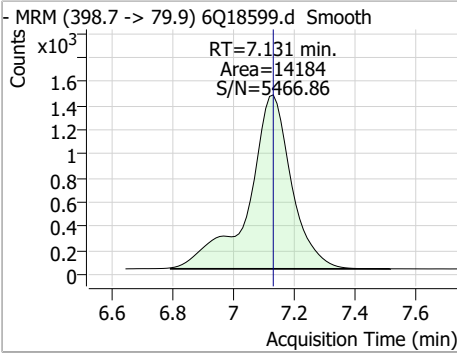
Perfluorinated Compounds by LC/MS/MS



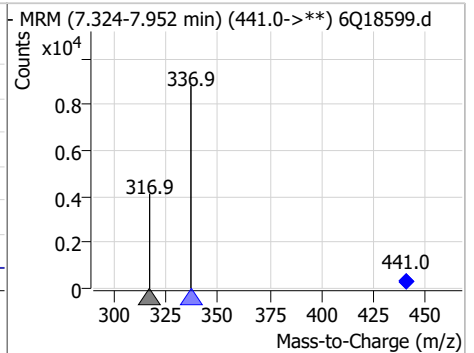
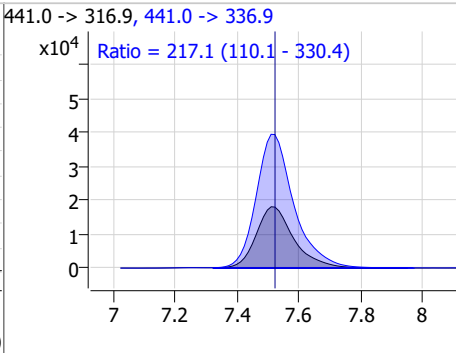
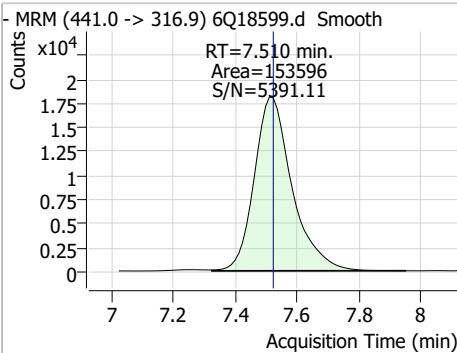
7.3.3
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Perfluorinated Compounds by LC/MS/MS

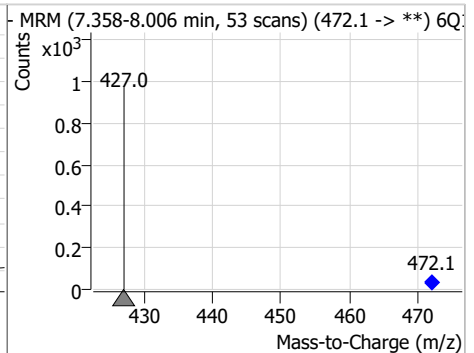
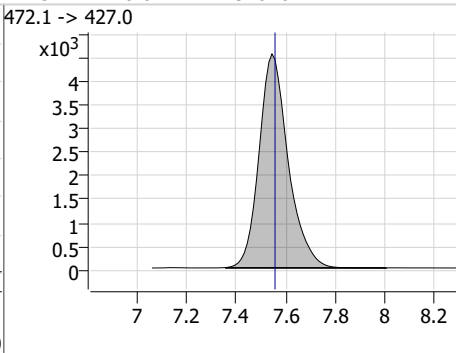
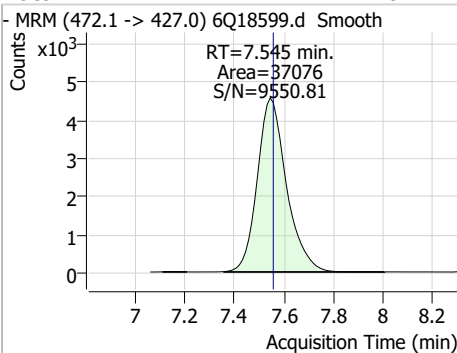
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.41	7.13	0.00	14184	398.7 -> 98.9	47.7	23.7	71.2



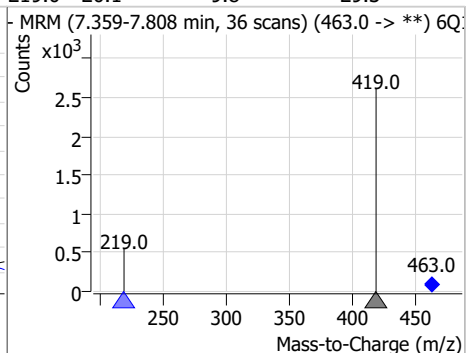
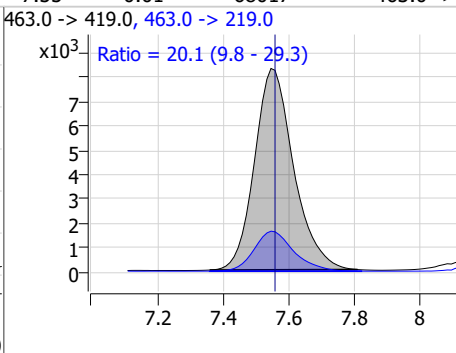
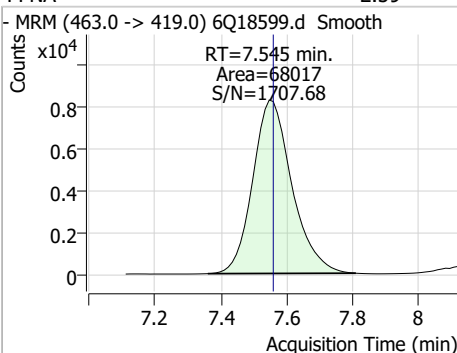
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	61.38	7.51	-0.01	153596	441.0 -> 336.9	217.1	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.29	7.54	-0.01	37076	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.59	7.55	-0.01	68017	463.0 -> 219.0	20.1	9.8	29.3



Perfluorinated Compounds by LC/MS/MS

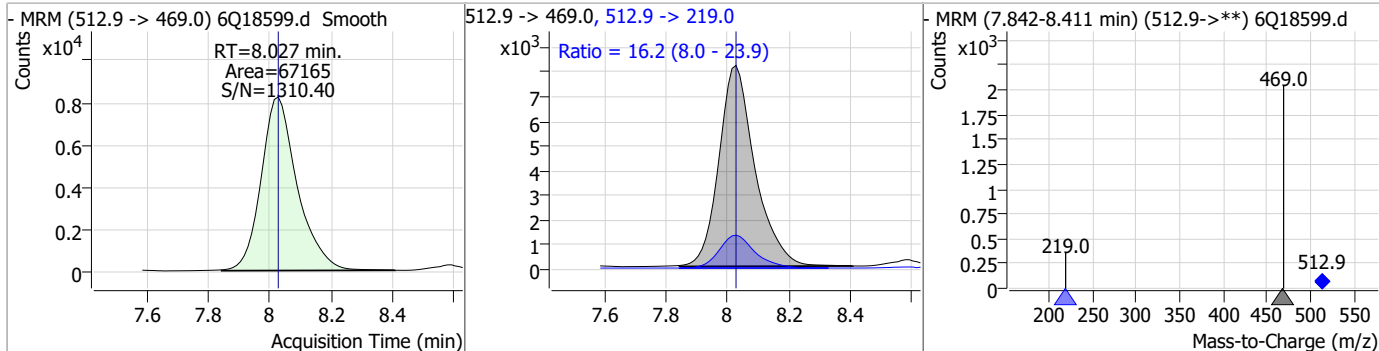
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.46	7.68	0.00	14240	449.0 -> 98.9	51.1	24.7	74.2
13C2-8:2FTS	5.32	7.81	-0.01	4727				
8:2FTS	10.90	7.82	-0.01	28652	527.1 -> 80.8	38.2	21.4	64.1
13C6-PFDA	1.36	8.03	0.00	22593				

7.3.3

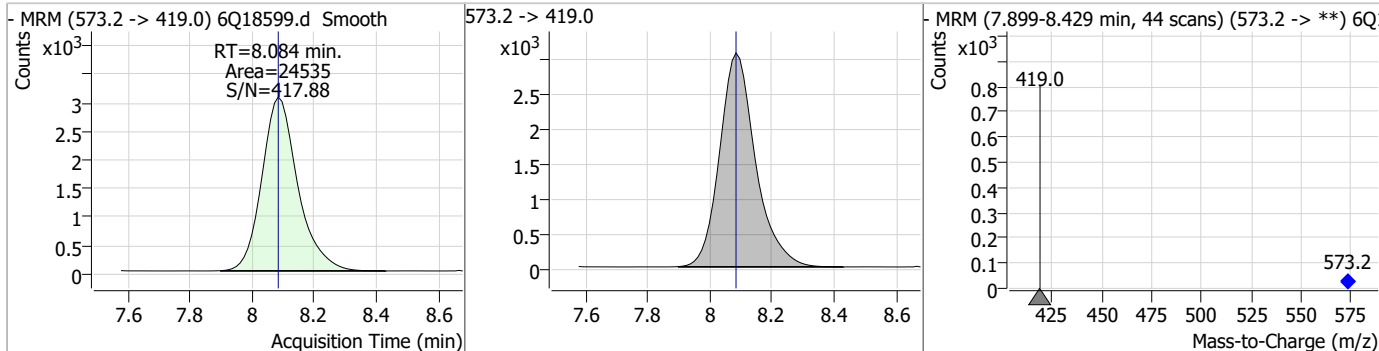
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Perfluorinated Compounds by LC/MS/MS

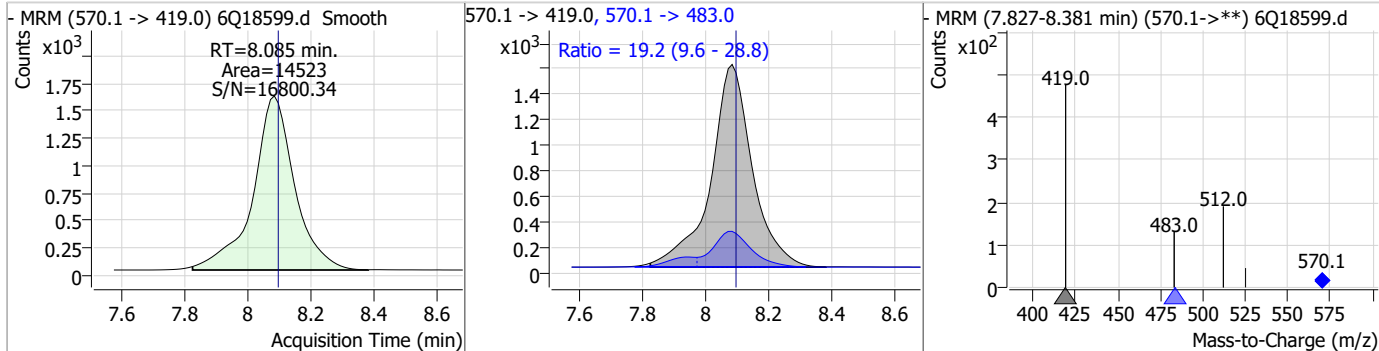
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.56	8.03	0.00	67165	512.9 -> 219.0	16.2	8.0	23.9



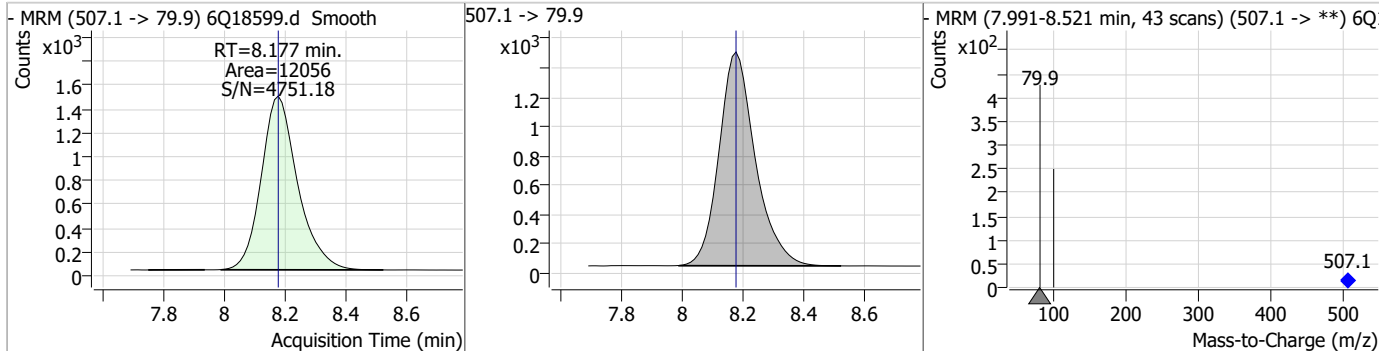
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.06	8.08	0.00	24535	573.2 -> 419.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.88	8.08	-0.01	14523	570.1 -> 483.0	19.2	9.6	28.8

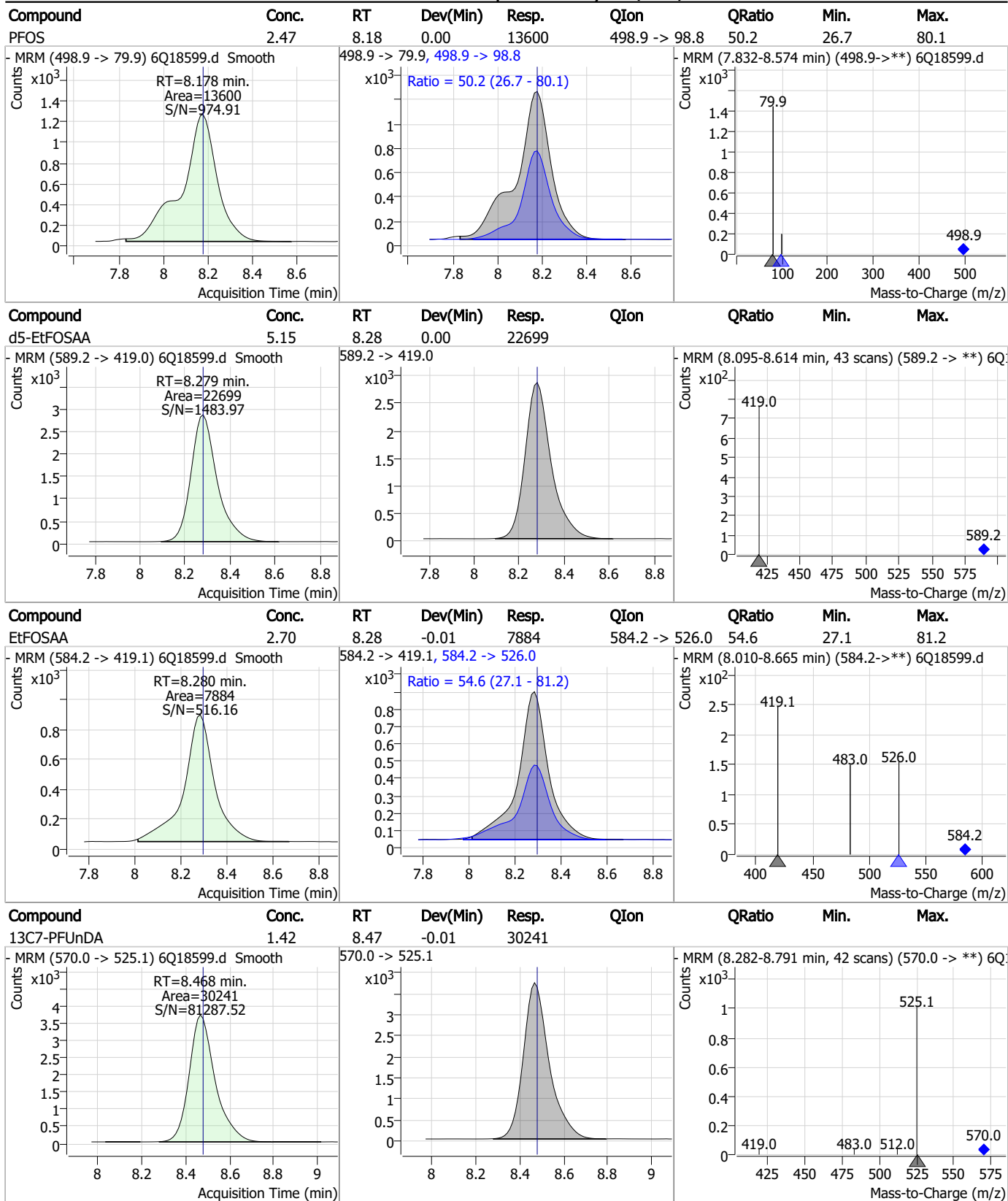


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.50	8.18	0.00	12056	507.1 -> 79.9			



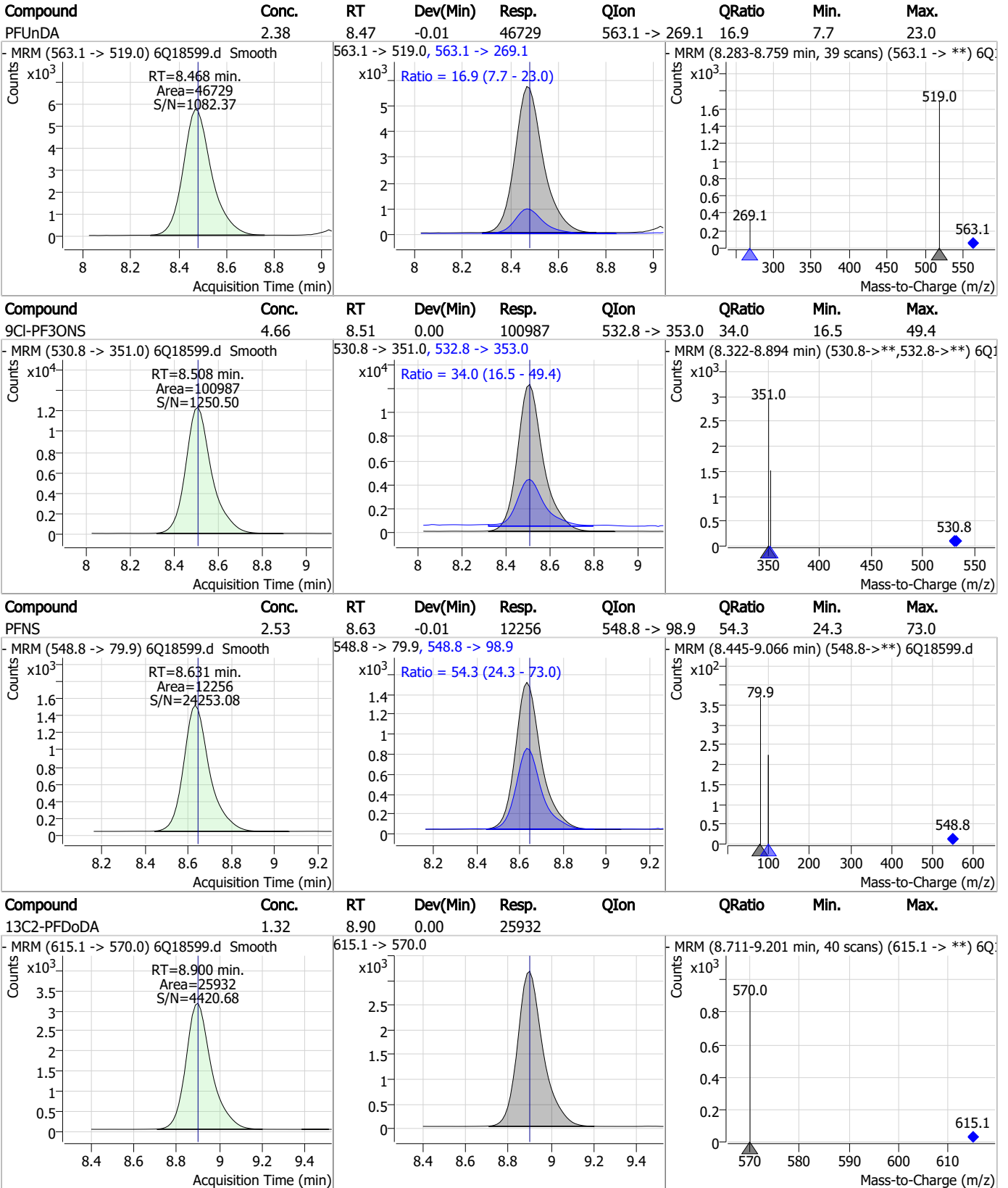
7.3.3
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Perfluorinated Compounds by LC/MS/MS



7.3.3
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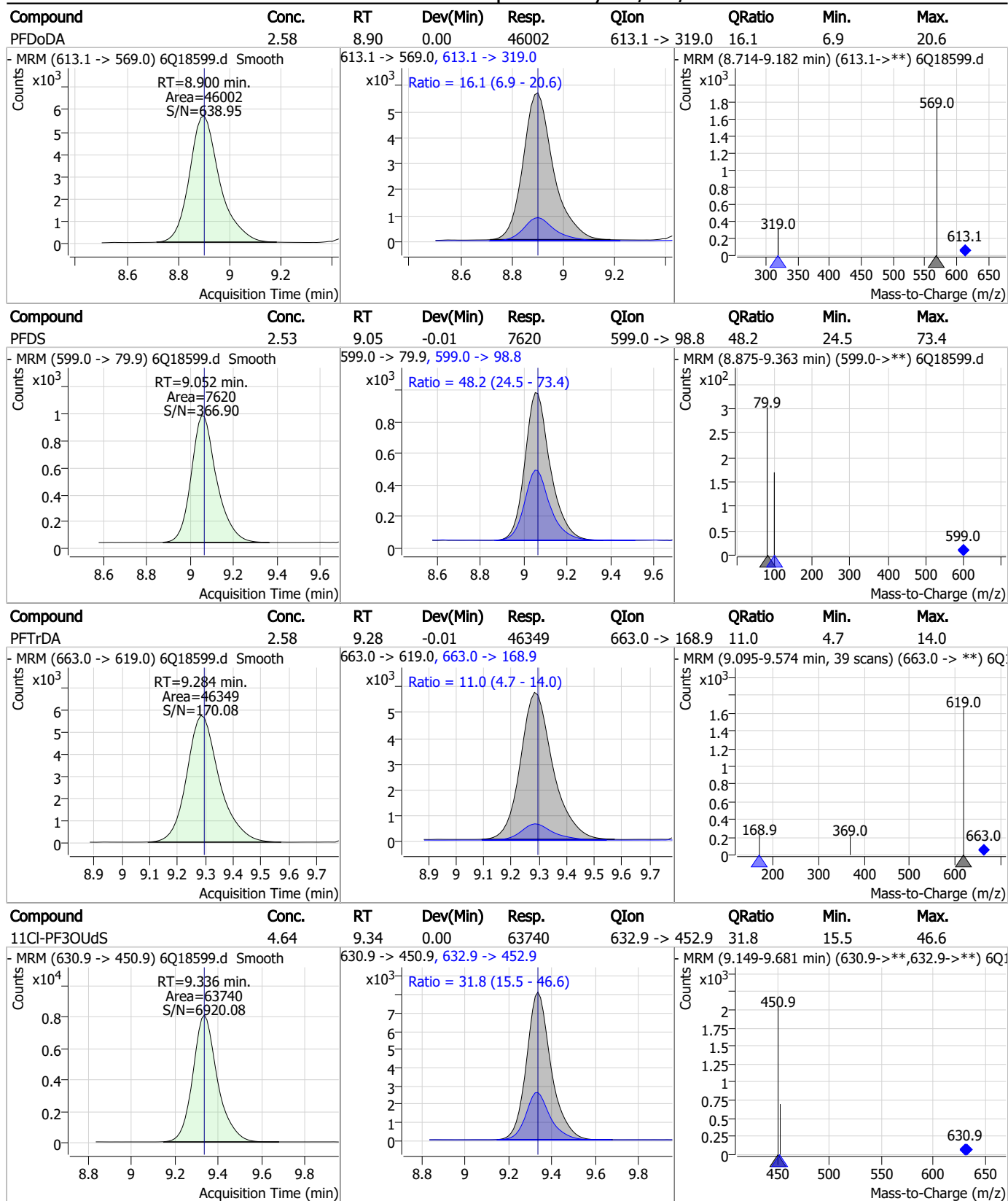
Perfluorinated Compounds by LC/MS/MS



7.3.3

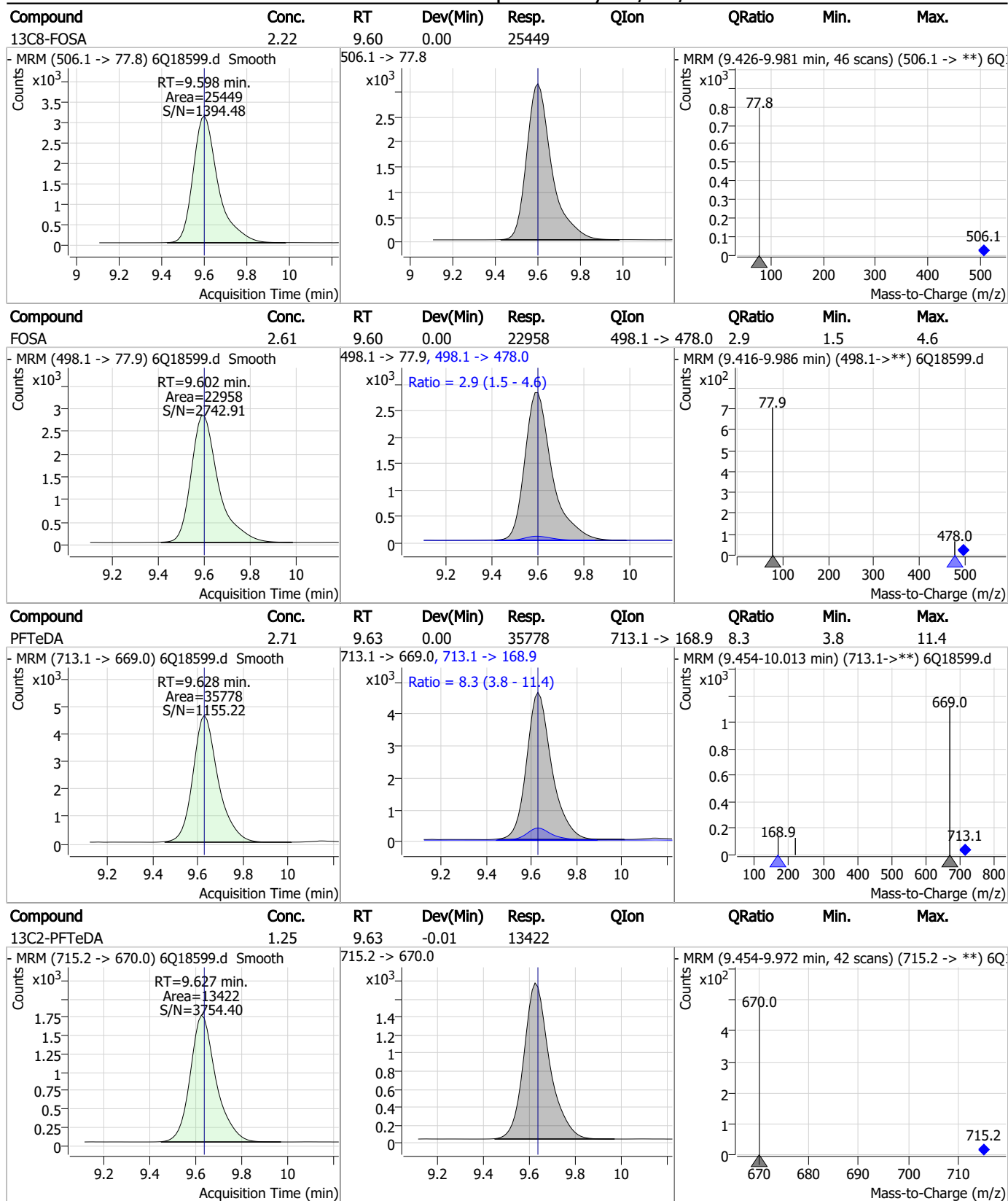
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Perfluorinated Compounds by LC/MS/MS



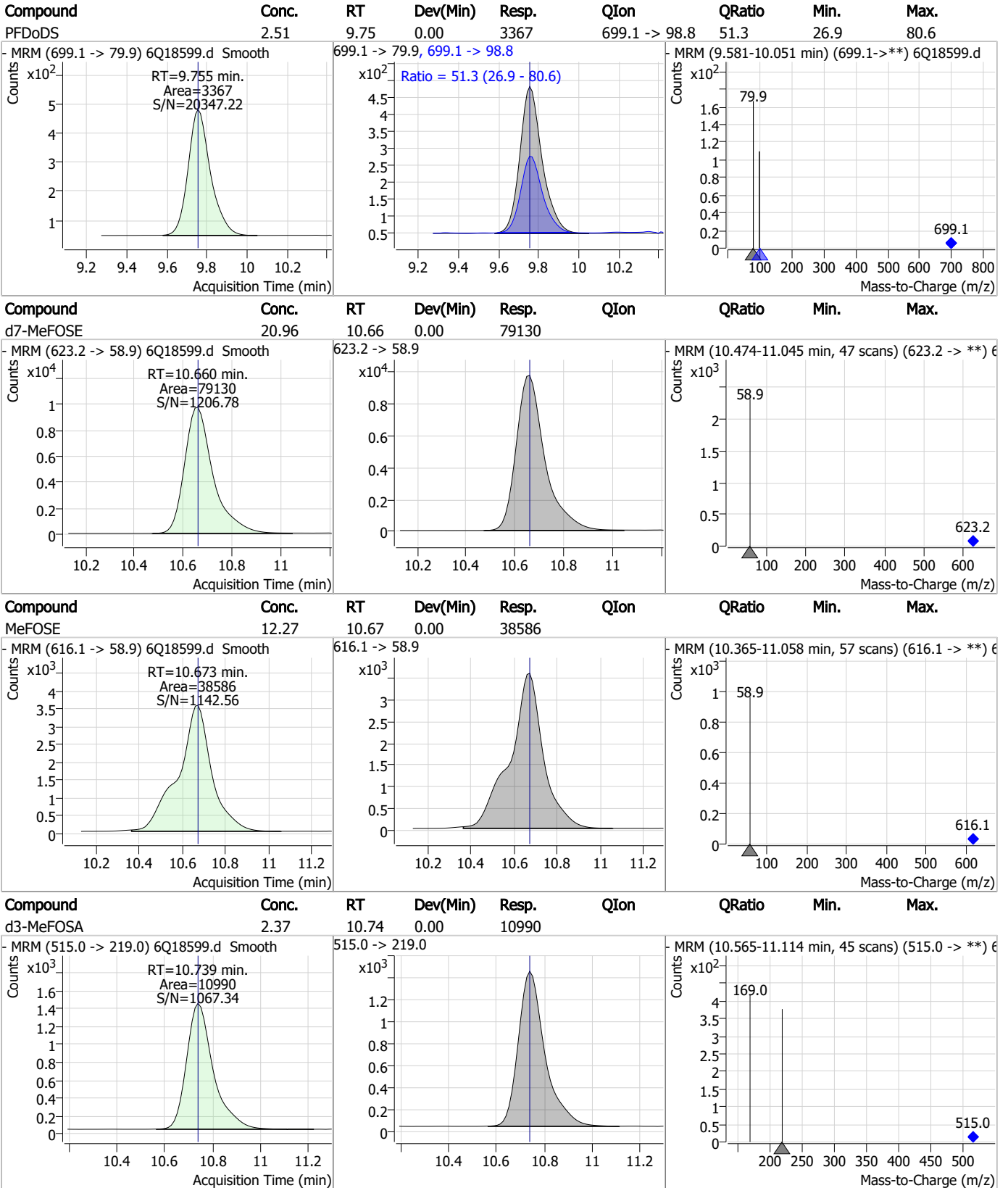
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Perfluorinated Compounds by LC/MS/MS



7.3.3
7

Perfluorinated Compounds by LC/MS/MS

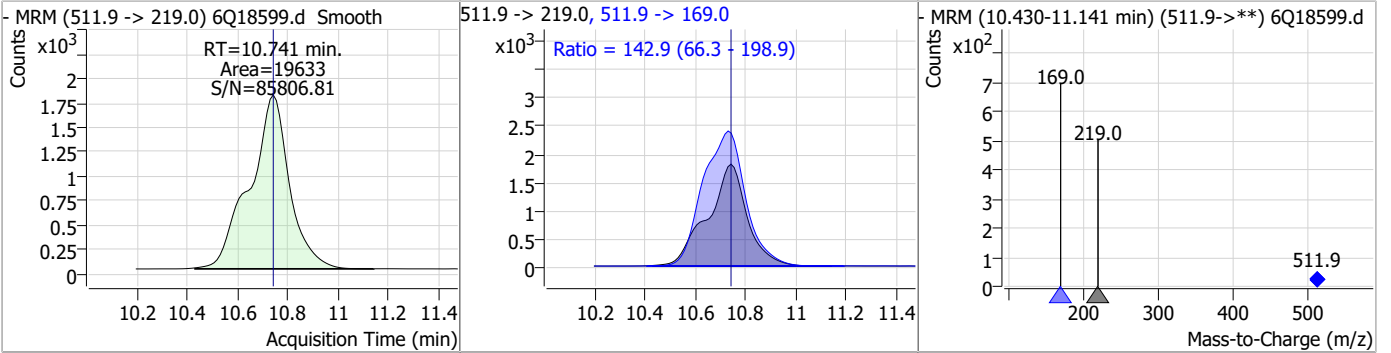


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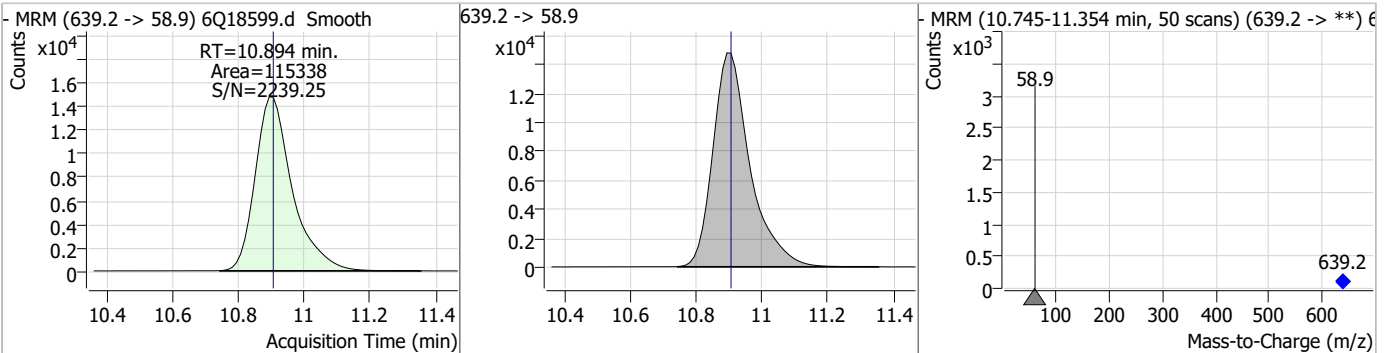
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Perfluorinated Compounds by LC/MS/MS

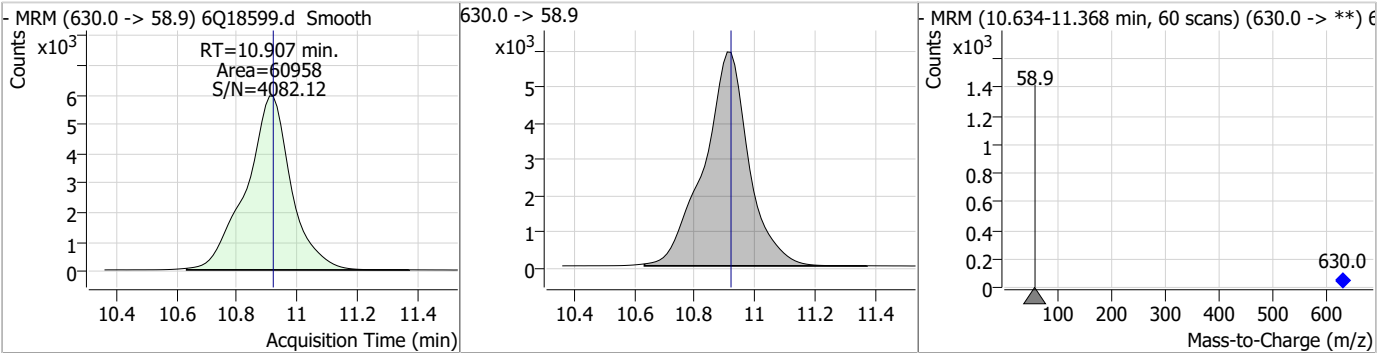
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.86	10.74	0.00	19633	511.9 -> 169.0	142.9	66.3	198.9



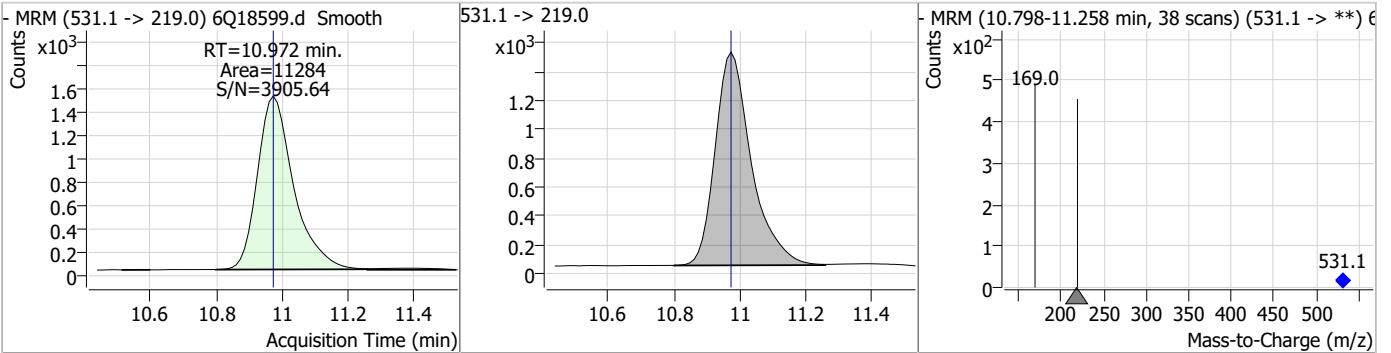
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.36	10.89	-0.01	115338				



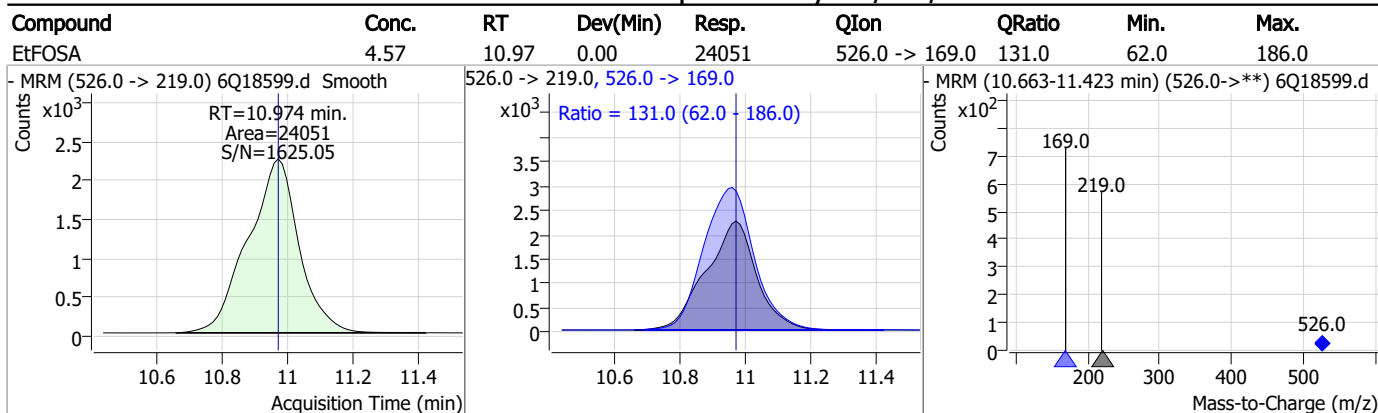
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.85	10.91	-0.01	60958				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.57	10.97	0.00	11284				



Perfluorinated Compounds by LC/MS/MS



7.3.3

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18600.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 8:39:10 PM
 Sample Name : op97070-llbs:3
 Vial : P6-B6
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	169178	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	54780	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	61740	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	54611	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	85679	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	38368	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22487	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	29535	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	26666	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	13209	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	25442	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	21335	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13724	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12704	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3429	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4962	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4845	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	26027	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	36187	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	22697	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	80493	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	112724	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	10893	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10240	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	14269	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	63432	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8835	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	78269	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	27194	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	40796	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	48044	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3429	5.82 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4962	5.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.0%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4845	5.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	26666	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.0%		
13C2-PFTeDA	9.627	715.2 -> 670.0	13209	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C3-PFBS	5.334	302.1 -> 79.9	21335	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C3-PFHxS	7.130	402.1 -> 79.9	13724	2.78 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.2%	
13C4-PFBA	2.860	216.8 -> 171.9	169178	11.20 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C4-PFHpA	6.369	367.1 -> 322.0	54611	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.2%	
13C5-PFHxA	5.417	318.0 -> 273.0	61740	3.04 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 121.4%	
13C5-PFPeA	4.222	268.3 -> 223.0	54780	5.86 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.2%	
13C6-PFDA	8.027	519.1 -> 474.1	22487	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	29535	1.45 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.2%	
13C8-FOSA	9.598	506.1 -> 77.8	25442	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C8-PFOA	7.026	421.1 -> 376.0	85679	2.92 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.9%	
13C8-PFOS	8.177	507.1 -> 79.9	12704	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.2%	
13C9-PFNA	7.545	472.1 -> 427.0	38368	1.43 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	26027	5.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	36187	11.46 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	10240	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%	
d5-EtFOSAA	8.279	589.2 -> 419.0	22697	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	80493	22.46 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	112724	24.05 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	10893	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	14168	2.84 µg/L	98
		327.1 -> 80.9	5453		
6:2FTS	6.801	427.1 -> 407.0	15296	3.14 µg/L	98
		427.1 -> 80.9	5022		
8:2FTS	7.816	527.1 -> 507.0	8594	3.19 µg/L	97
		527.1 -> 80.8	3822		
EtFOSAA	8.280	584.2 -> 419.1	2380	0.82 µg/L	92
		584.2 -> 526.0	1429		
FOSA	9.602	498.1 -> 77.9	6820	0.77 µg/L	99
		498.1 -> 478.0	237		
MeFOSAA	8.085	570.1 -> 419.0	4618	0.86 µg/L	94
		570.1 -> 483.0	762		
PFBA	2.868	212.8 -> 168.9	17464	3.12 µg/L	100
PFBS	5.335	298.7 -> 79.9	4989	0.69 µg/L	93
		298.7 -> 98.8	2004		
PFDA	8.027	512.9 -> 469.0	20958	0.80 µg/L	98
		512.9 -> 219.0	3496		
PFDODA	8.900	613.1 -> 569.0	14898	0.81 µg/L	95
		613.1 -> 319.0	2354		
PFDS	9.064	599.0 -> 79.9	2215	0.70 µg/L	98

7.3.4
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	1113	0.80 µg/L	96
		363.1 -> 319.0	19316		
PFHpS	7.685	363.1 -> 169.0	3224	0.75 µg/L	99
		449.0 -> 79.9	4560		
PFHxA	5.407	449.0 -> 98.9	2226	0.74 µg/L	97
		313.0 -> 269.0	15441		
PFHxS	7.131	313.0 -> 118.9	848	0.71 µg/L	96
		398.7 -> 79.9	4405		
PFNA	7.545	398.7 -> 98.9	2223	0.76 µg/L	96
		463.0 -> 419.0	20598		
PFNS	8.631	463.0 -> 219.0	4424	0.73 µg/L	91
		548.8 -> 79.9	3743		
PFOA	7.028	548.8 -> 98.9	2050	0.79 µg/L	99
		413.0 -> 369.0	28981		
PFOS	8.178	413.0 -> 169.0	4879	0.74 µg/L	97
		498.9 -> 79.9	4285		
PFPeA	4.224	498.9 -> 98.8	2202	1.60 µg/L	100
		263.0 -> 219.0	21052		
PFPeS	6.422	349.1 -> 79.9	4388	0.71 µg/L	97
		349.1 -> 98.9	2172		
PFTeDA	9.628	713.1 -> 669.0	10903	0.84 µg/L	96
		713.1 -> 168.9	991		
PFTrDA	9.284	663.0 -> 619.0	14282	0.77 µg/L	95
		663.0 -> 168.9	1602		
PFUnDA	8.480	563.1 -> 519.0	14029	0.73 µg/L	92
		563.1 -> 269.1	2606		
11CI-PF3OUdS	9.336	630.9 -> 450.9	19237	1.42 µg/L	96
		632.9 -> 452.9	6456		
9CI-PF3ONS	8.508	530.8 -> 351.0	30951	1.45 µg/L	99
		532.8 -> 353.0	10017		
ADONA	6.632	376.9 -> 250.9	71394	1.49 µg/L	99
		376.9 -> 84.8	19548		
HFPO-DA	5.783	284.9 -> 168.9	4831	1.58 µg/L	95
		284.9 -> 184.9	565		
3:3FTCA	3.709	241.0 -> 177.0	2669	3.17 µg/L	97
		241.0 -> 117.0	357		
5:3FTCA	6.086	341.0 -> 237.1	66954	17.95 µg/L	95
		341.0 -> 217.0	49981		
7:3FTCA	7.523	441.0 -> 316.9	48667	19.06 µg/L	97
		441.0 -> 336.9	104962		
EtFOSA	10.974	526.0 -> 219.0	6918	1.36 µg/L	90
		526.0 -> 169.0	9386		
EtFOSE	10.920	630.0 -> 58.9	18901	3.76 µg/L	100
		511.9 -> 219.0	5830		
MeFOSA	10.741	511.9 -> 169.0	8346	1.55 µg/L	91
		616.1 -> 58.9	11814		
MeFOSE	10.673	699.1 -> 79.9	936	3.69 µg/L	100
		699.1 -> 98.8	505		
PFDoDS	9.755	295.0 -> 201.0	3835	0.66 µg/L	100
		295.0 -> 84.9	986		
NFDHA	5.288	279.0 -> 85.1	13978	1.56 µg/L	100
		229.0 -> 84.9	10841		
PFMBA	4.638	314.8 -> 134.9	35892	1.56 µg/L	100
		314.8 -> 82.9	1275		
PFMPA	3.388			1.36 µg/L	99
PFEESA	5.875				

7.3.4
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= Qualifier out of range, m = manually integrated, + = Area summed

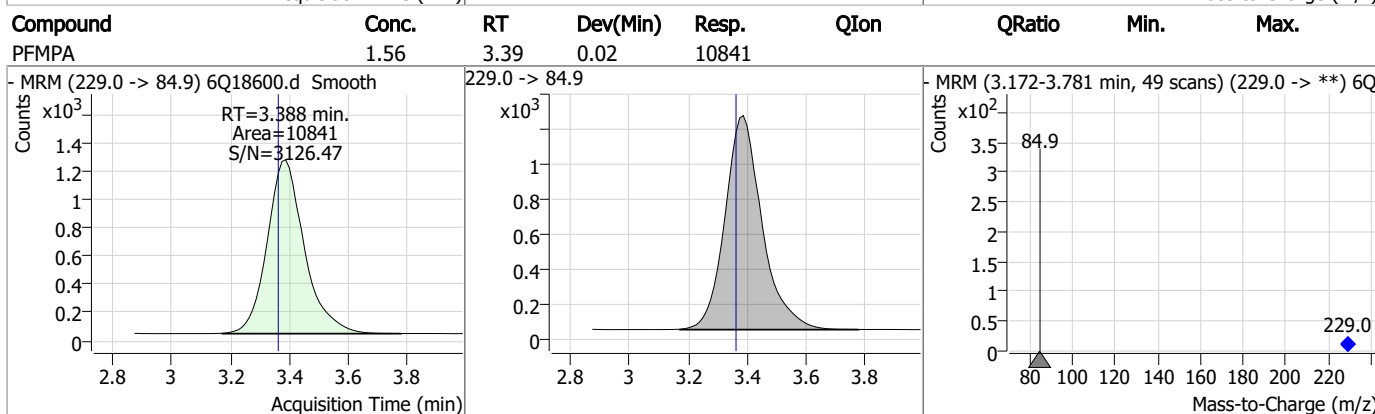
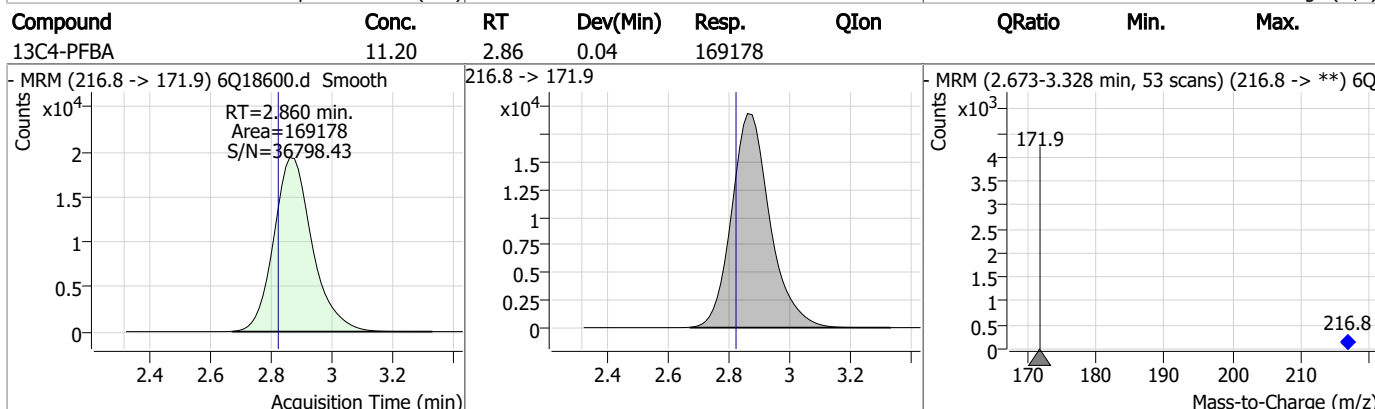
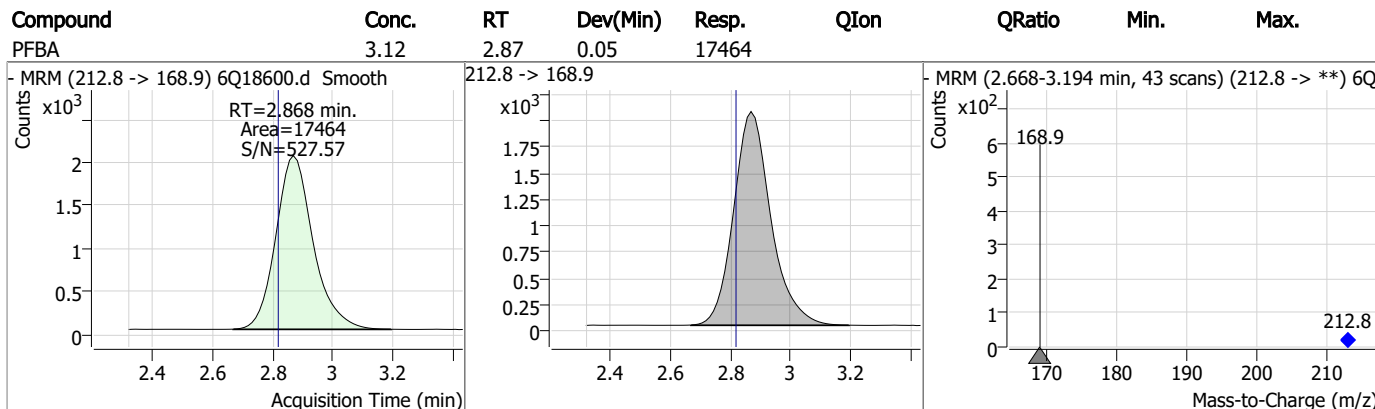
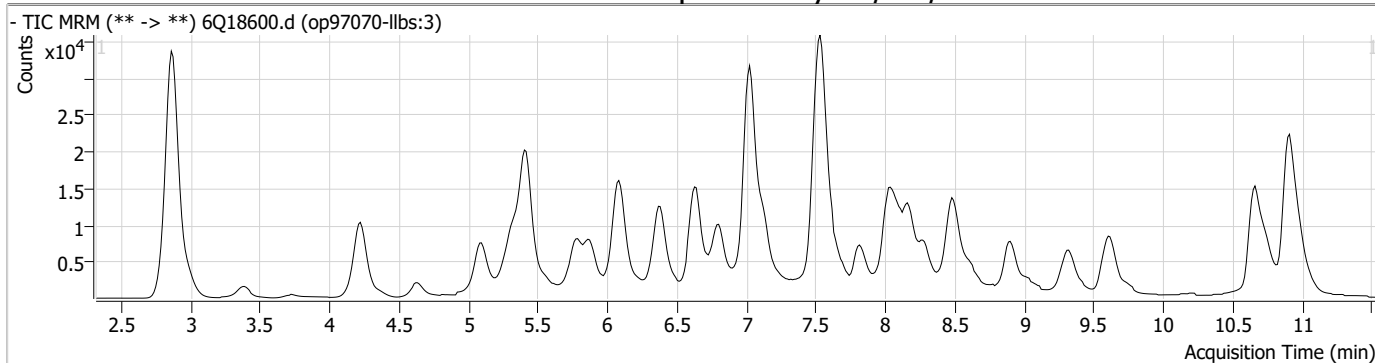
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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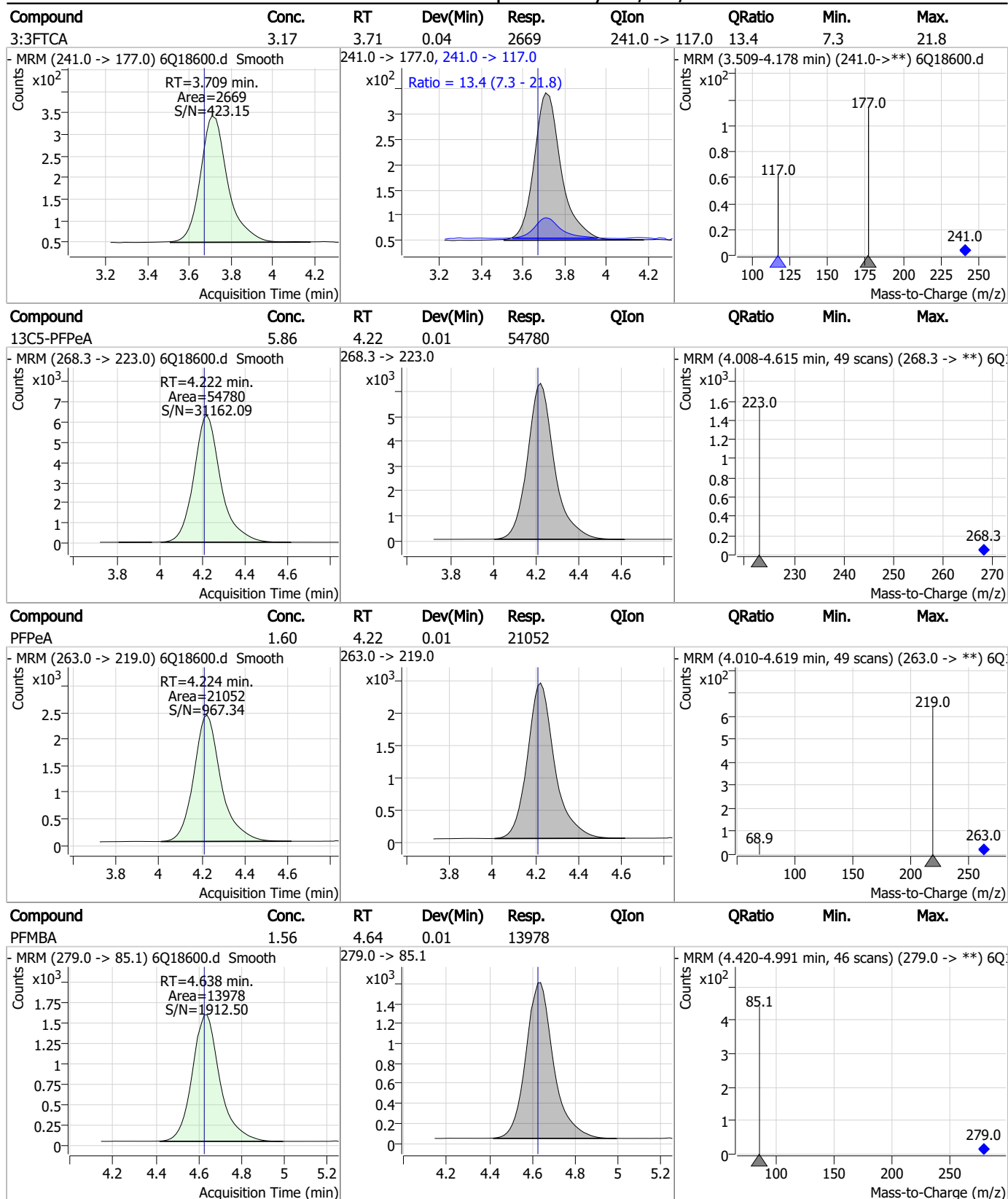
7.3.4

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Perfluorinated Compounds by LC/MS/MS

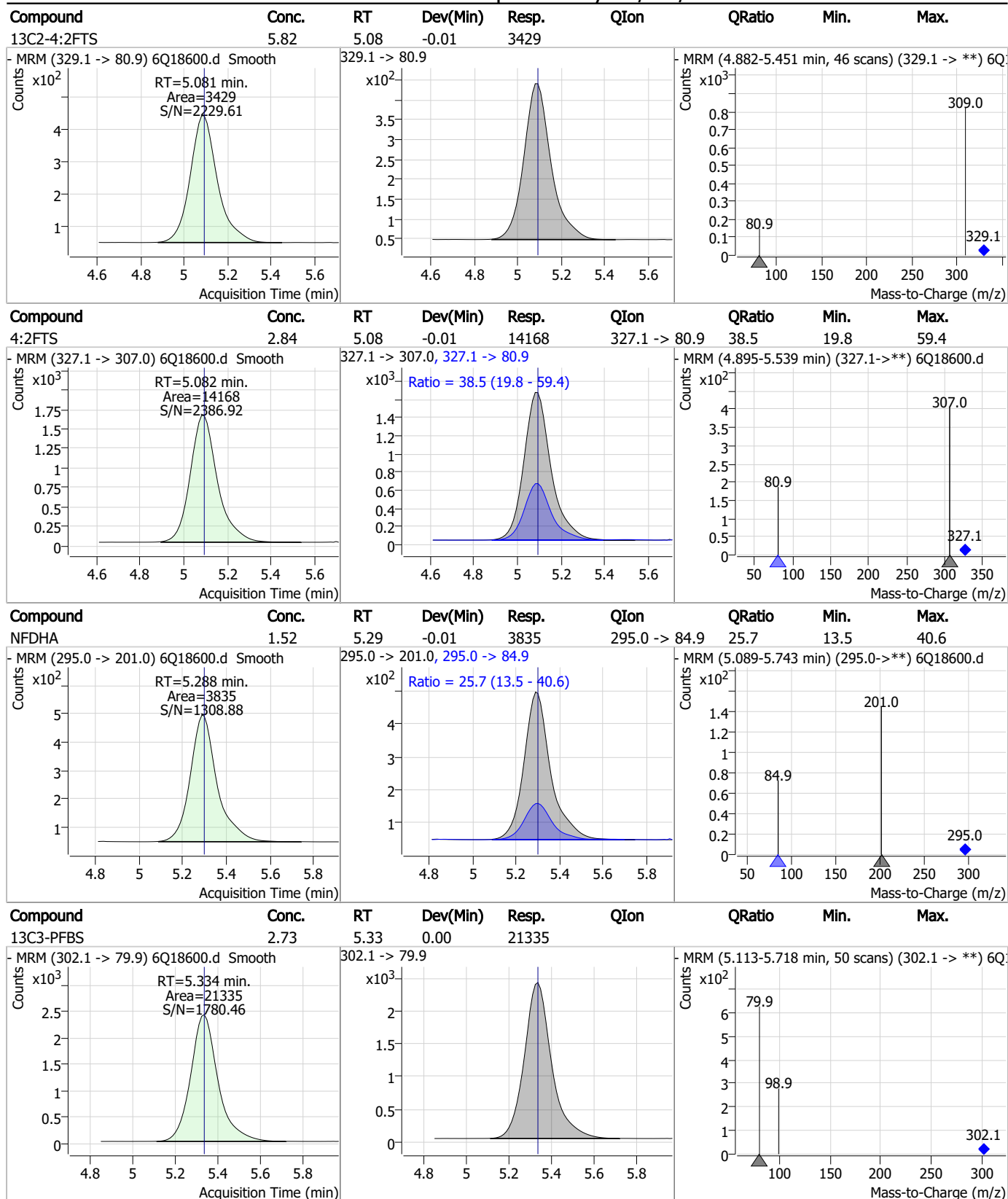


Perfluorinated Compounds by LC/MS/MS



7.3.4
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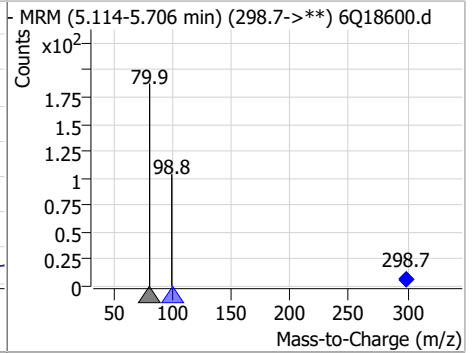
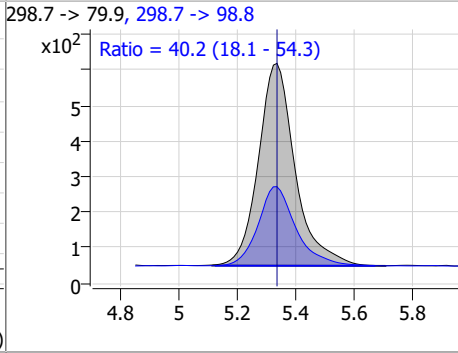
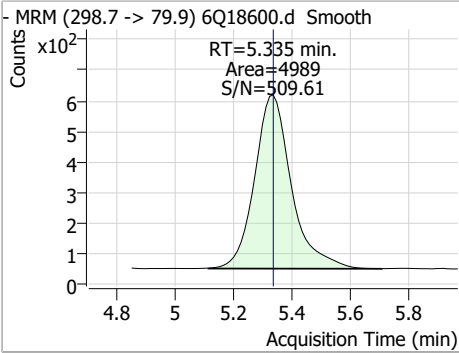
Perfluorinated Compounds by LC/MS/MS



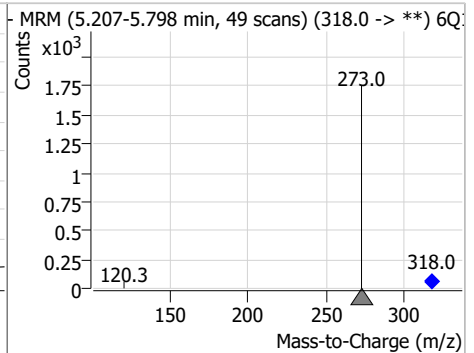
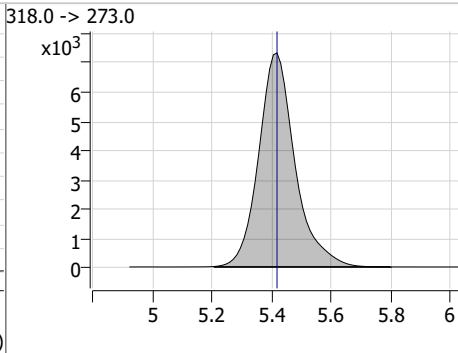
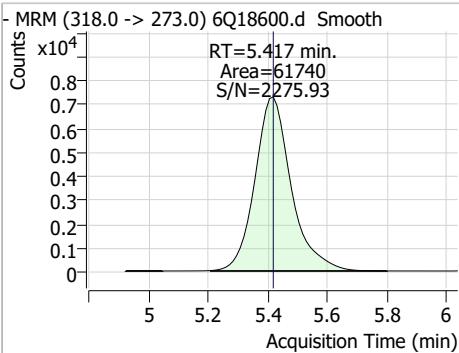
7.3.4
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Perfluorinated Compounds by LC/MS/MS

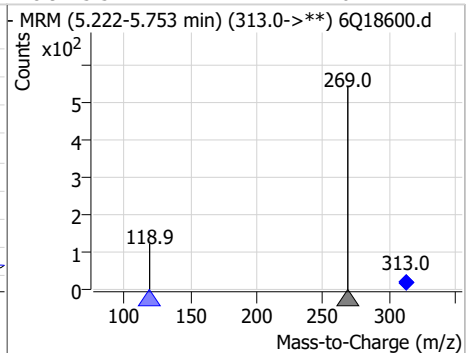
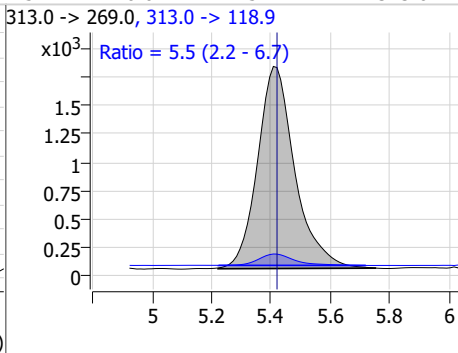
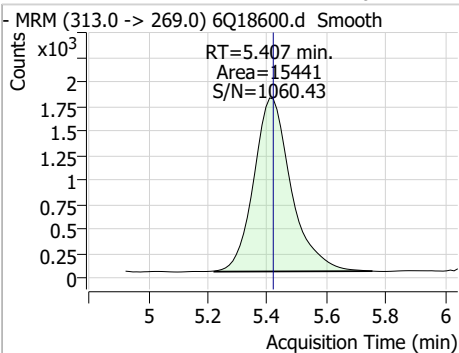
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.69	5.34	0.00	4989	298.7 -> 98.8	40.2	18.1	54.3



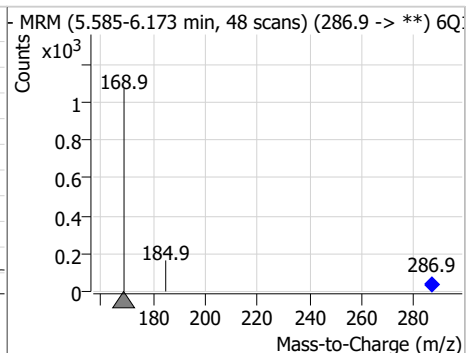
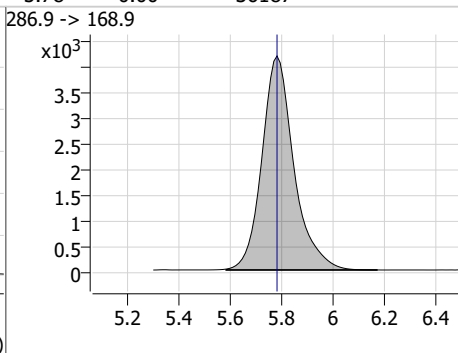
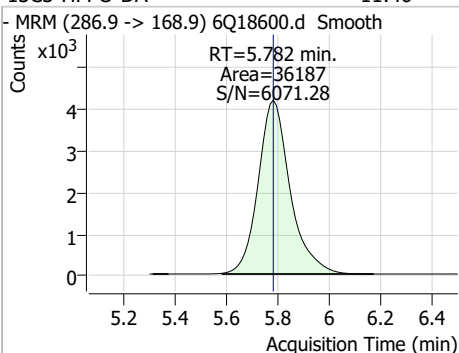
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.04	5.42	0.00	61740				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.74	5.41	-0.01	15441	313.0 -> 118.9	5.5	2.2	6.7

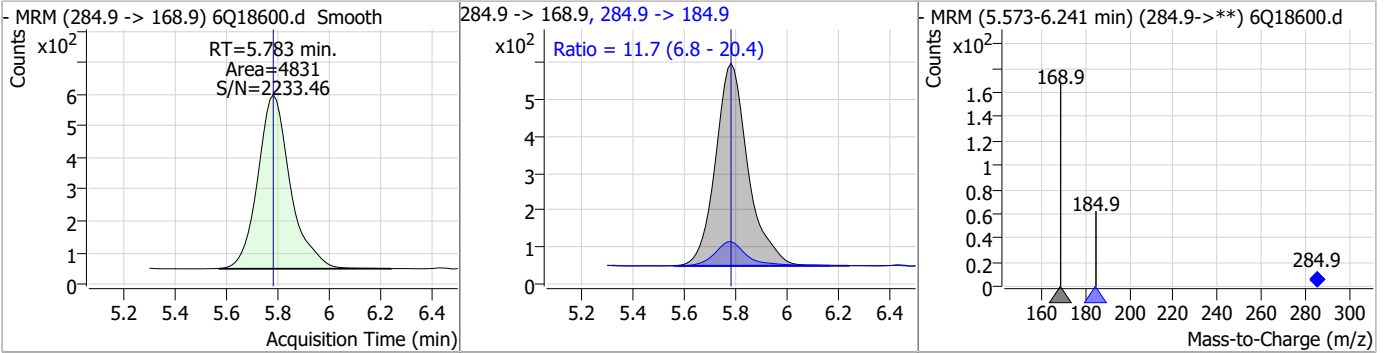


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.46	5.78	0.00	36187				

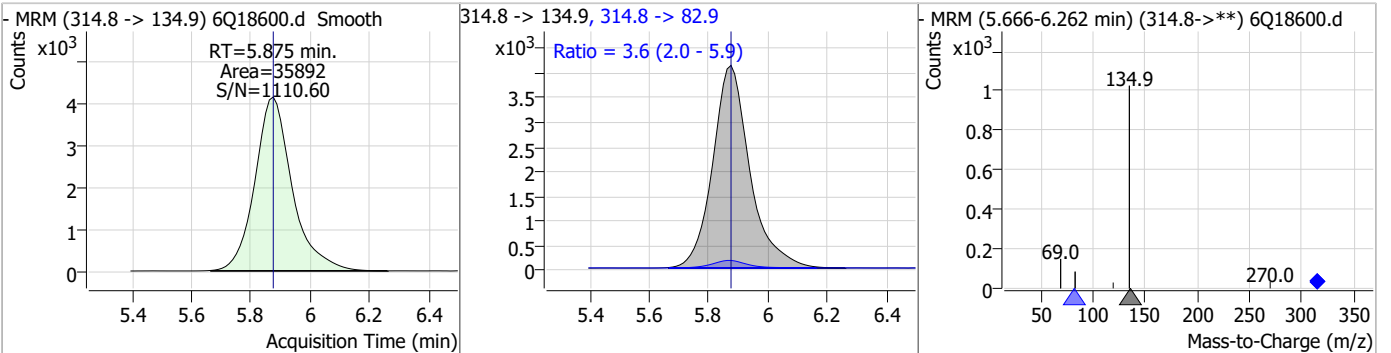


Perfluorinated Compounds by LC/MS/MS

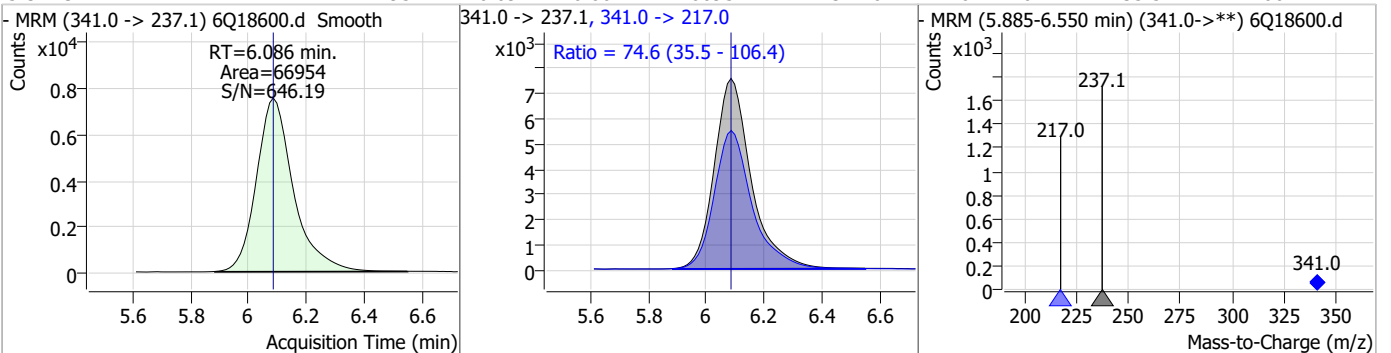
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.58	5.78	0.00	4831	284.9 -> 184.9	11.7	6.8	20.4



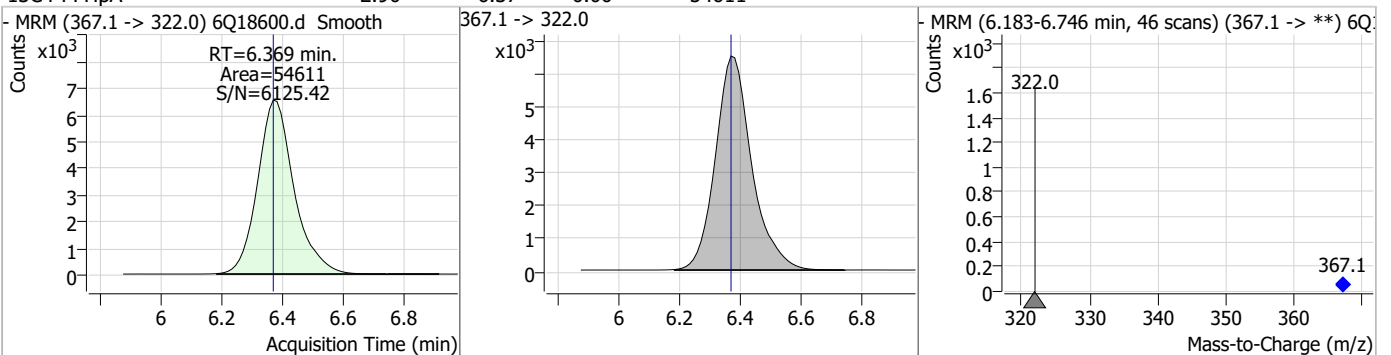
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.36	5.88	0.00	35892	314.8 -> 82.9	3.6	2.0	5.9



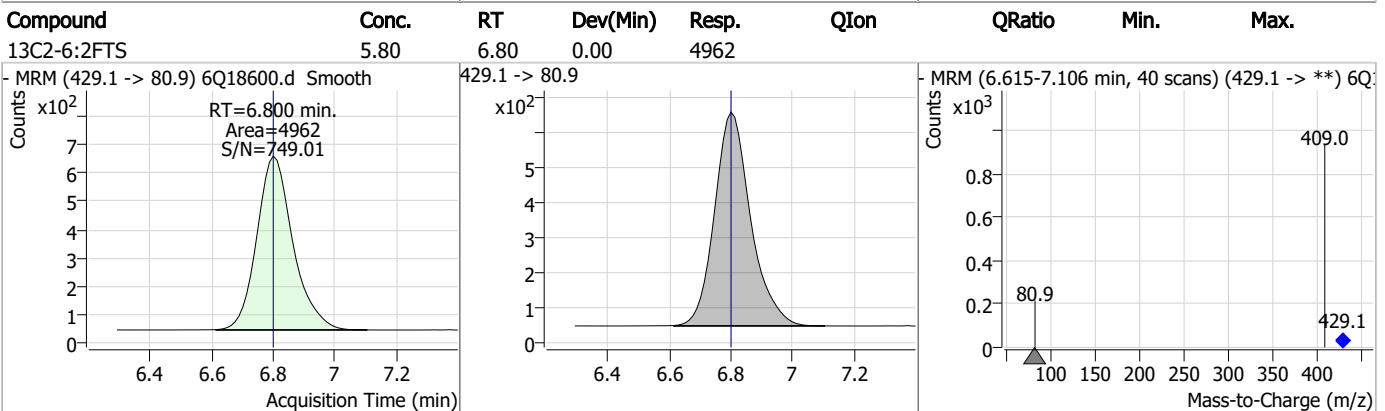
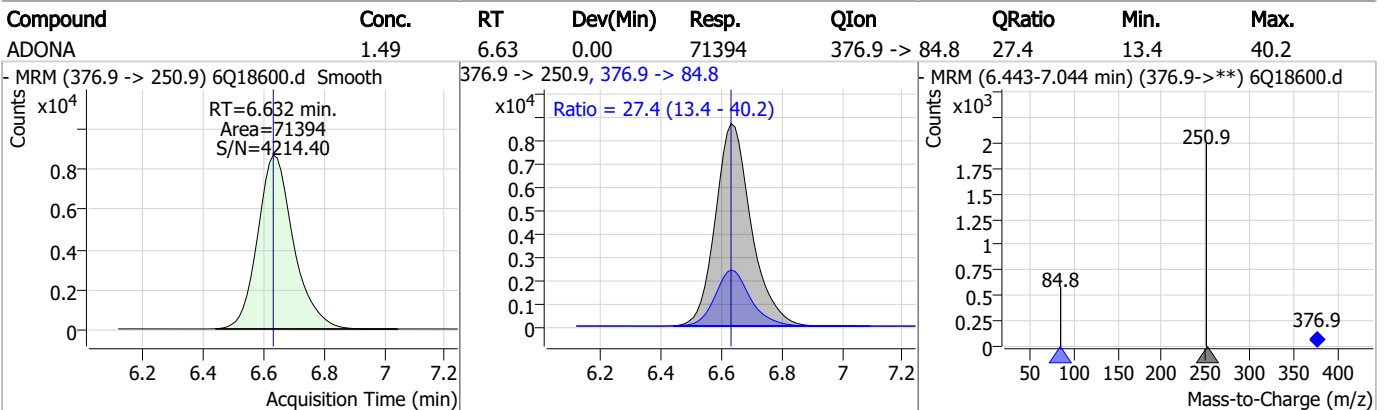
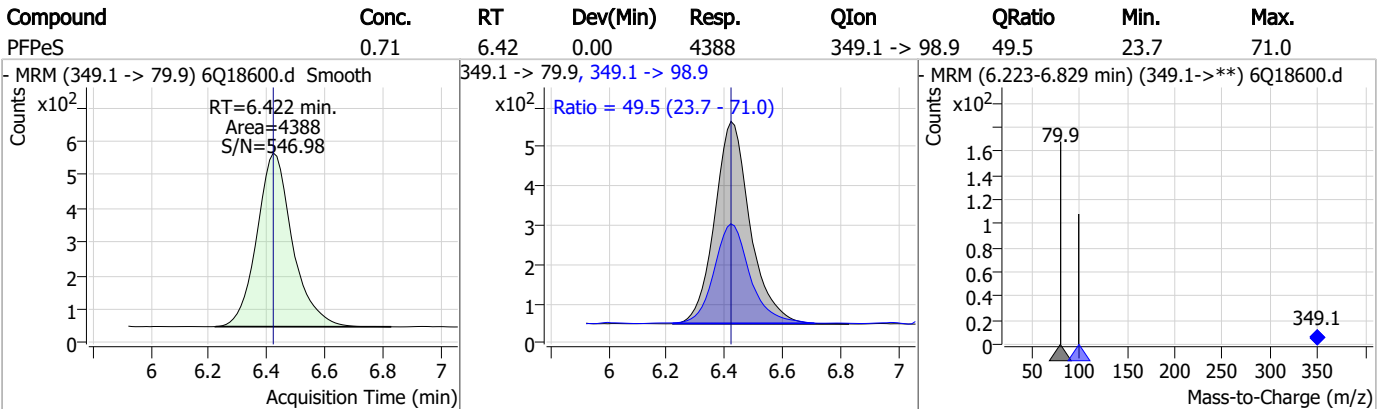
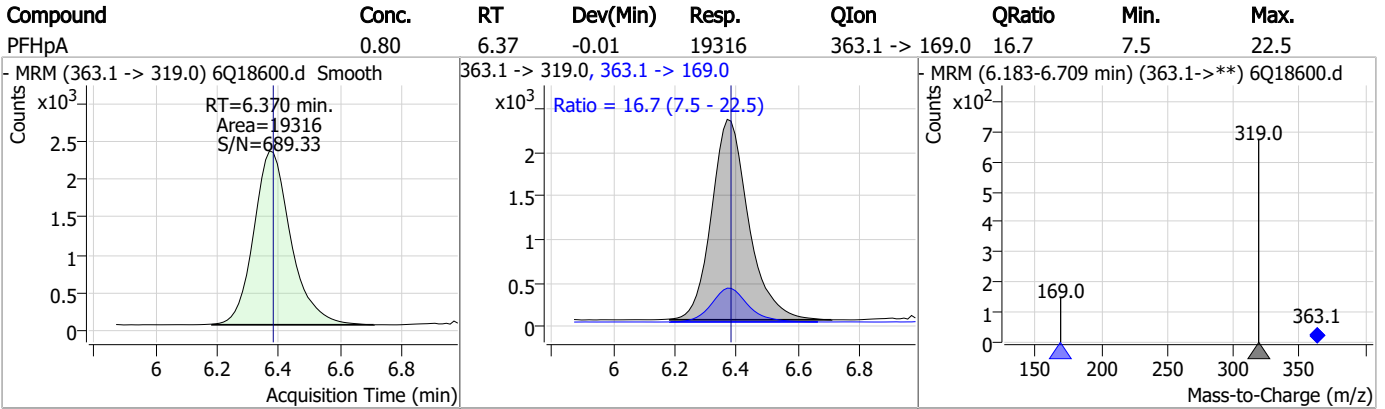
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	17.95	6.09	0.00	66954	341.0 -> 217.0	74.6	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.90	6.37	0.00	54611	367.1 -> 322.0	-	-	-



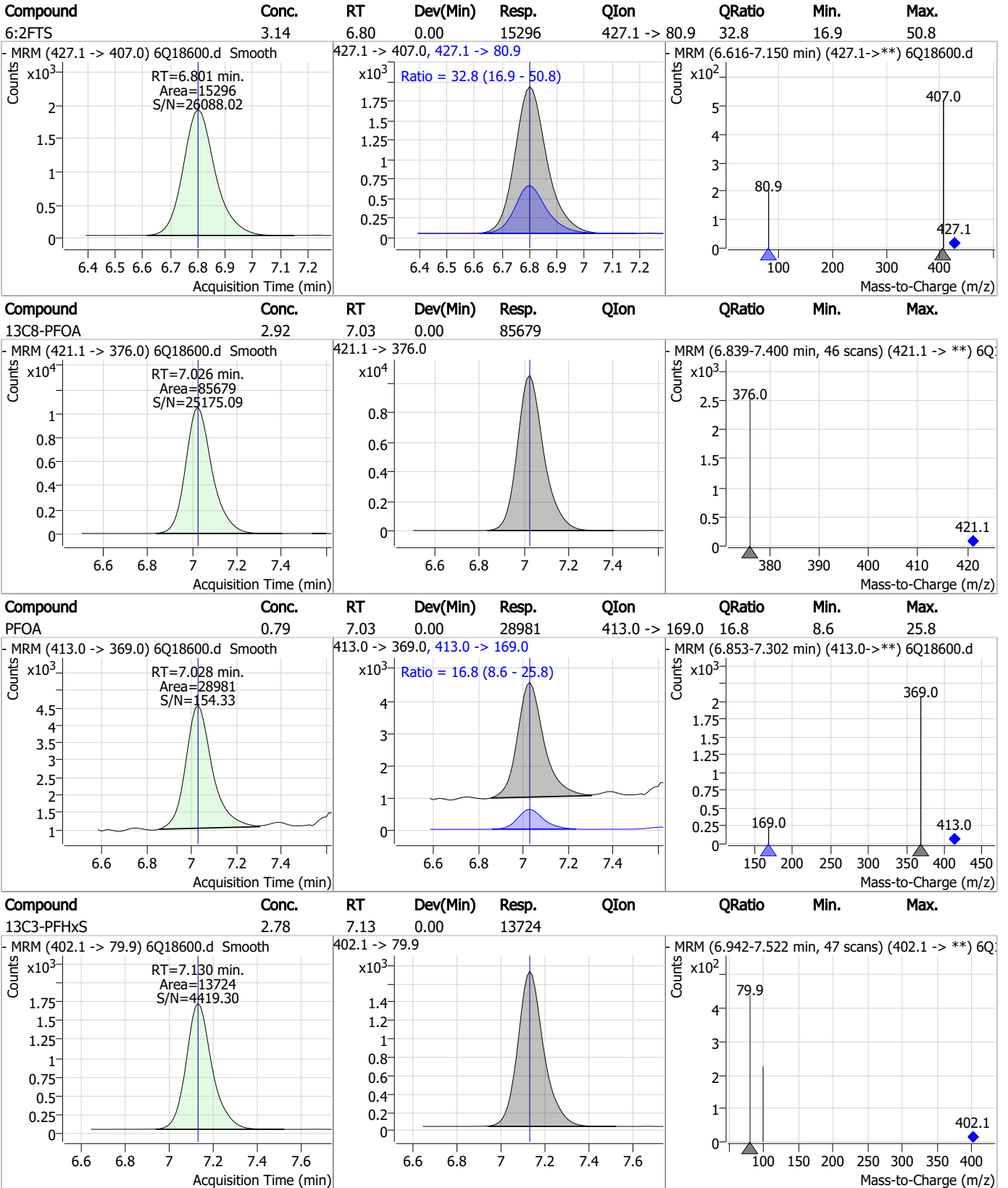
Perfluorinated Compounds by LC/MS/MS



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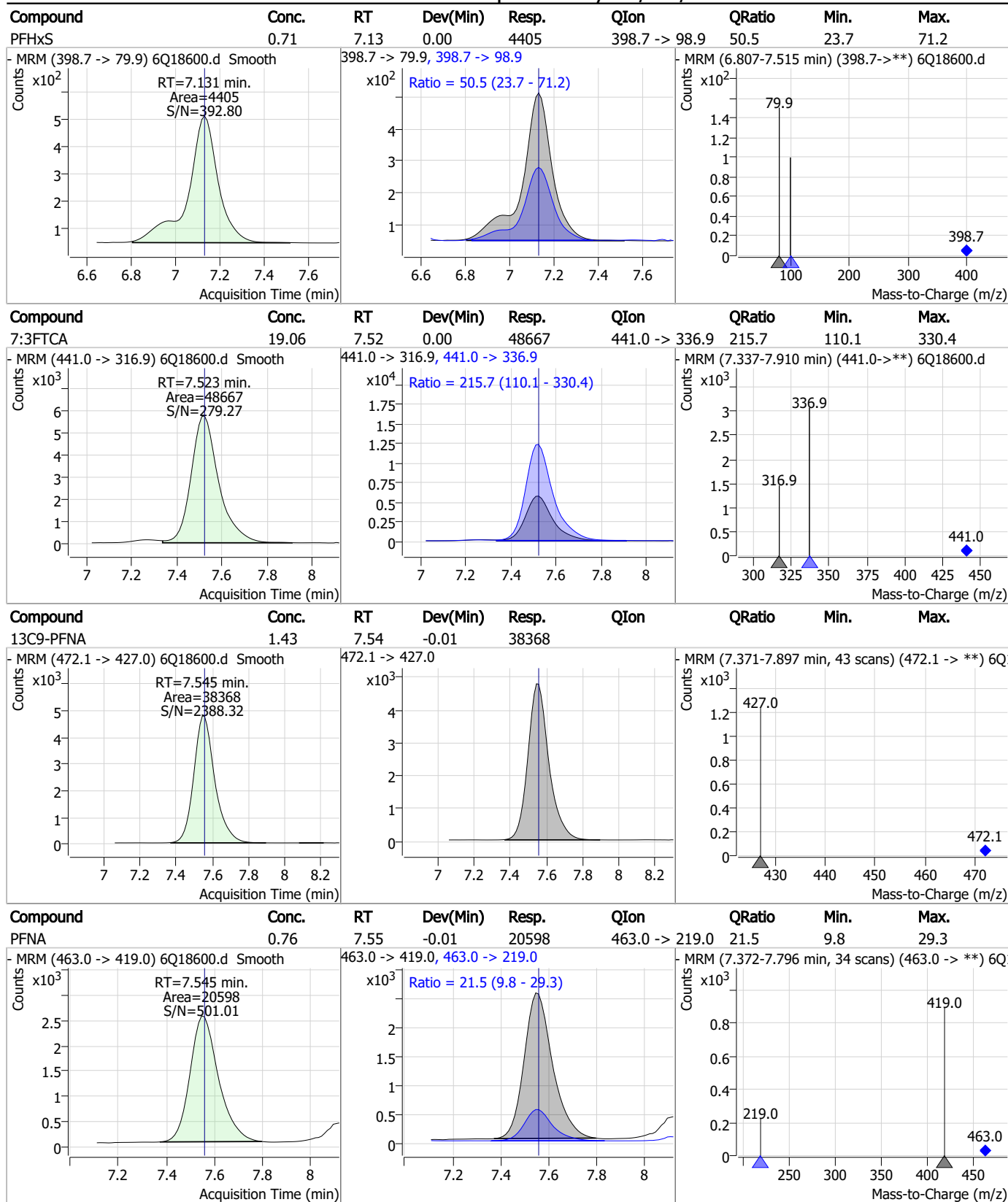
Perfluorinated Compounds by LC/MS/MS



7.3.4

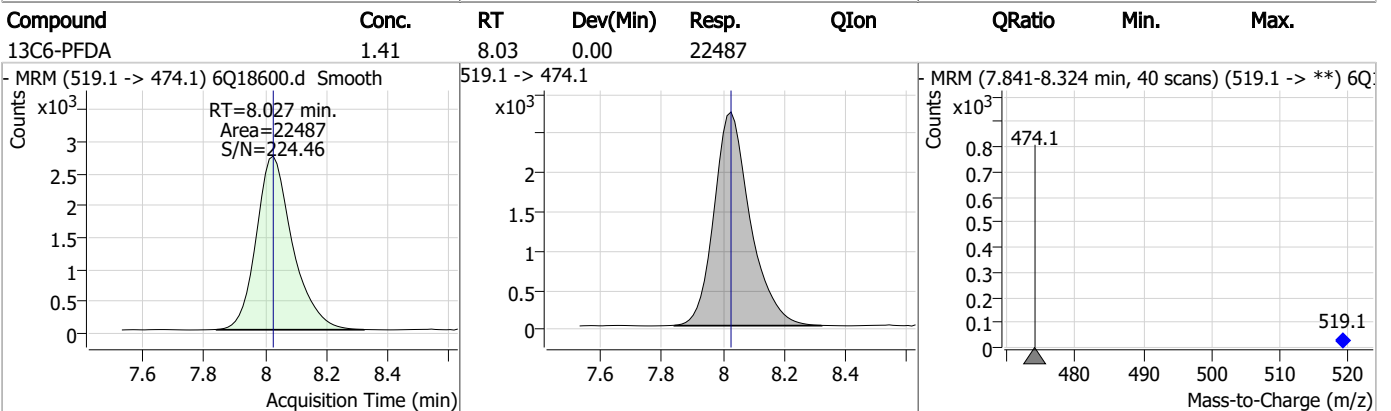
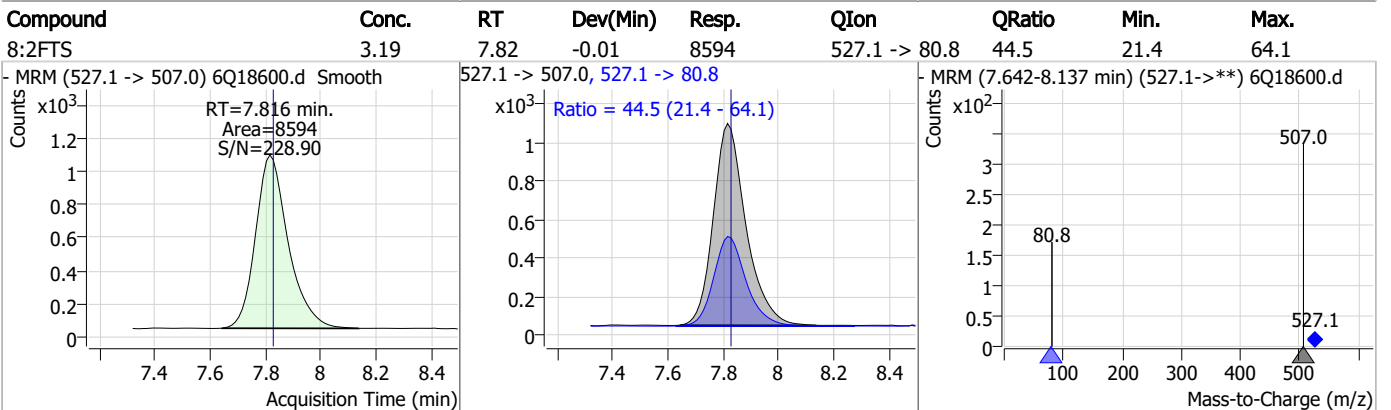
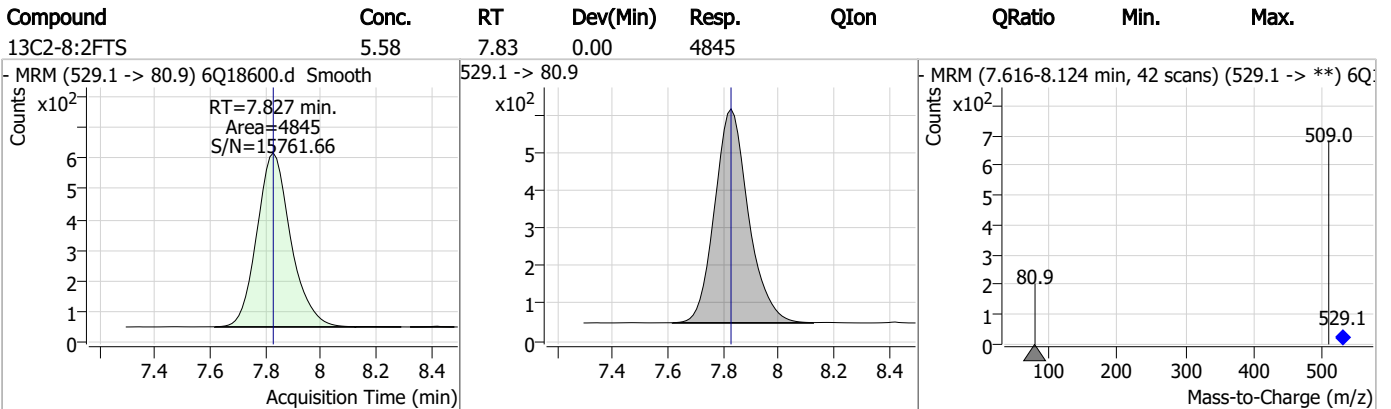
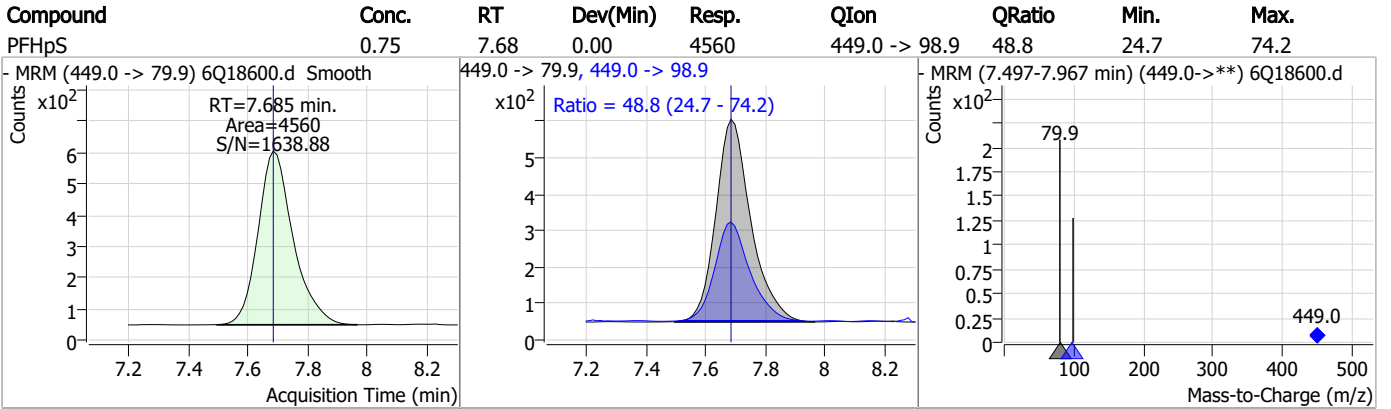
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Perfluorinated Compounds by LC/MS/MS



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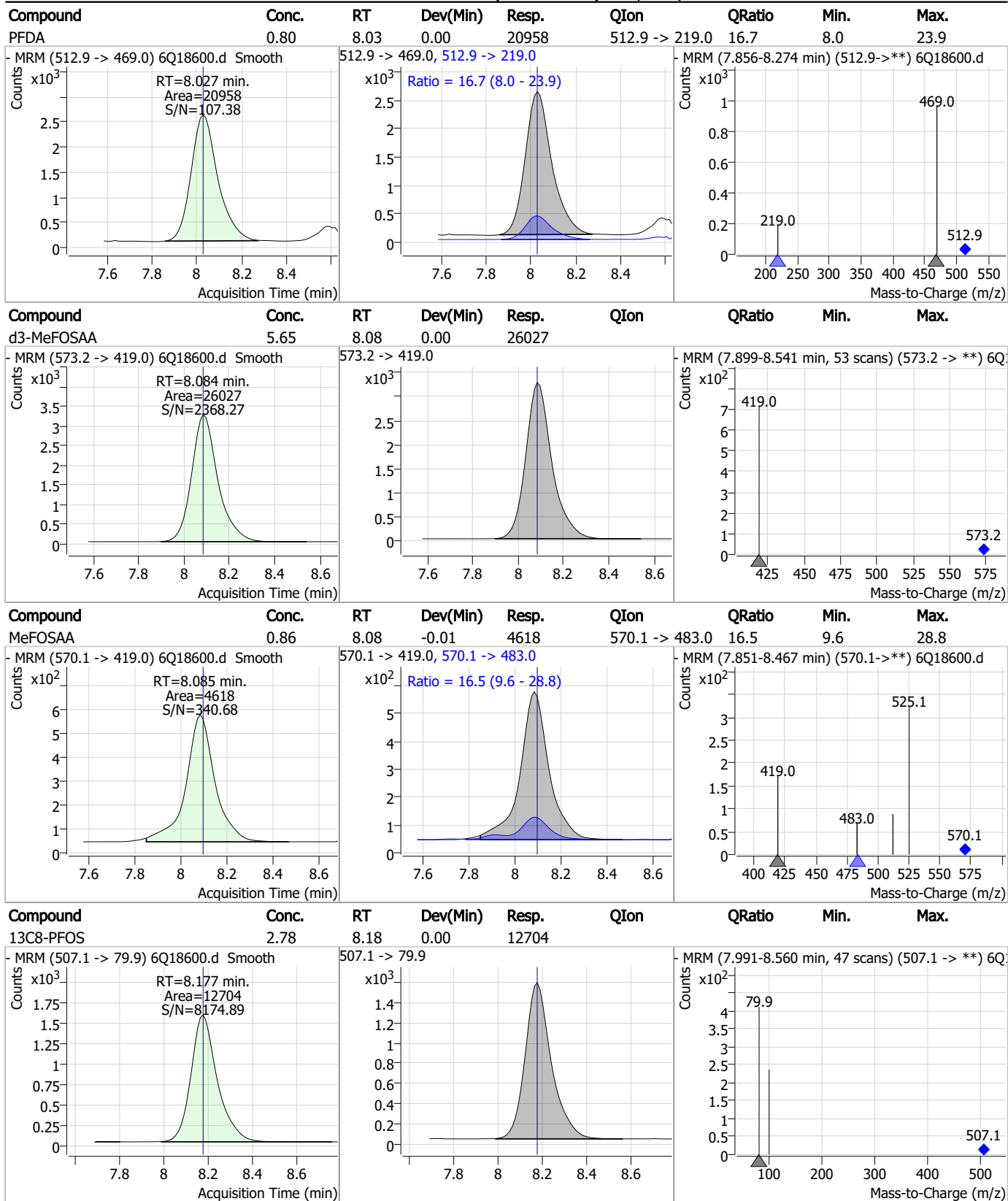
Perfluorinated Compounds by LC/MS/MS



7.3.4

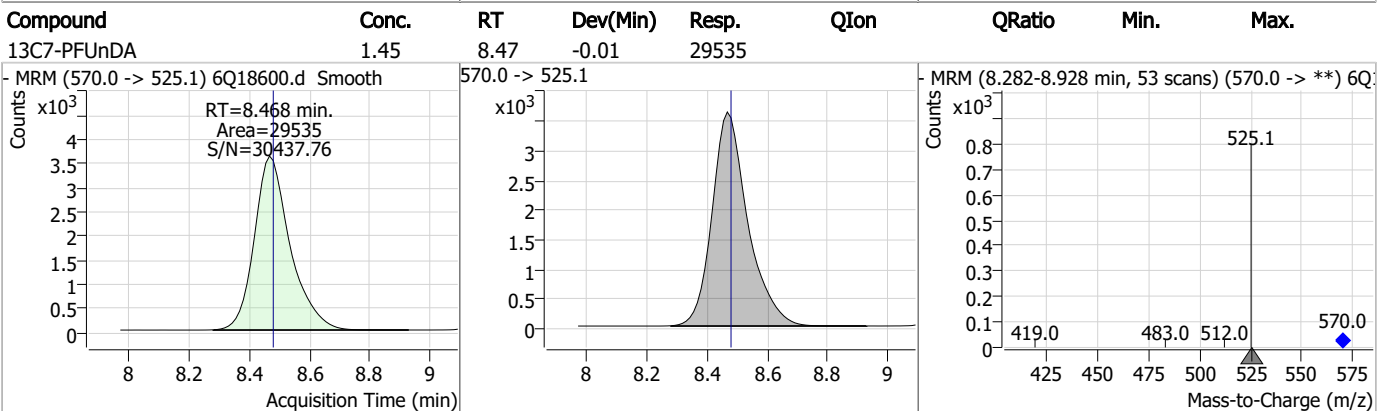
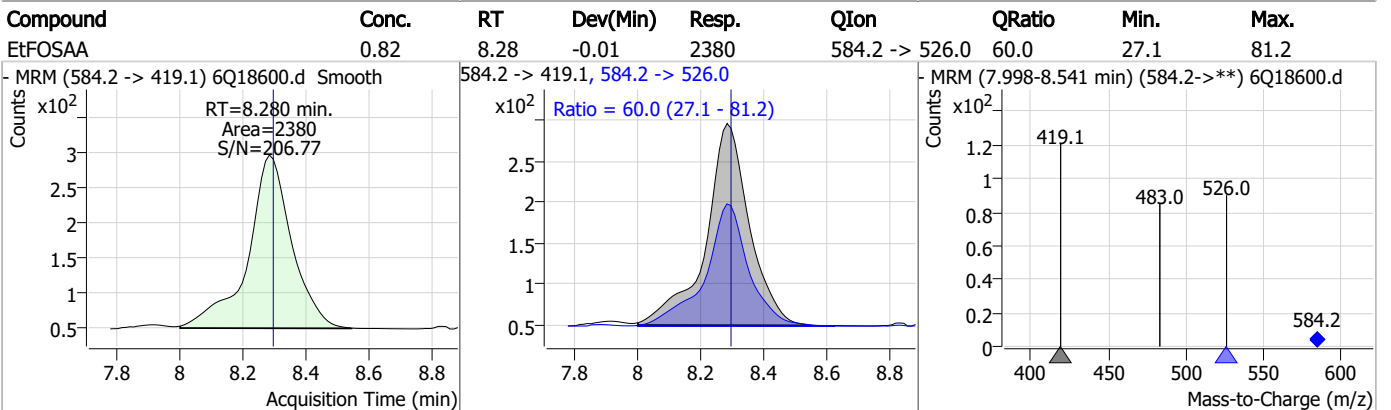
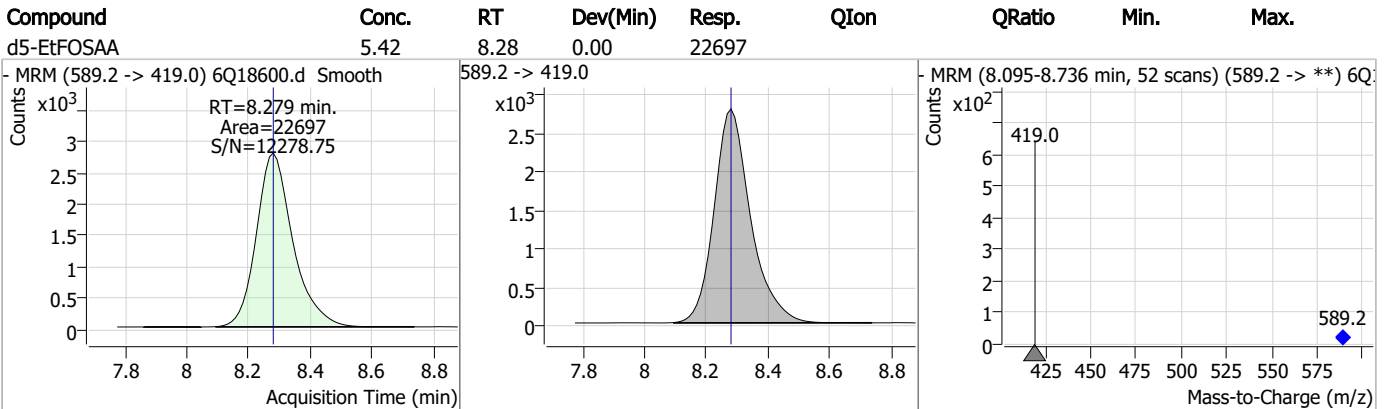
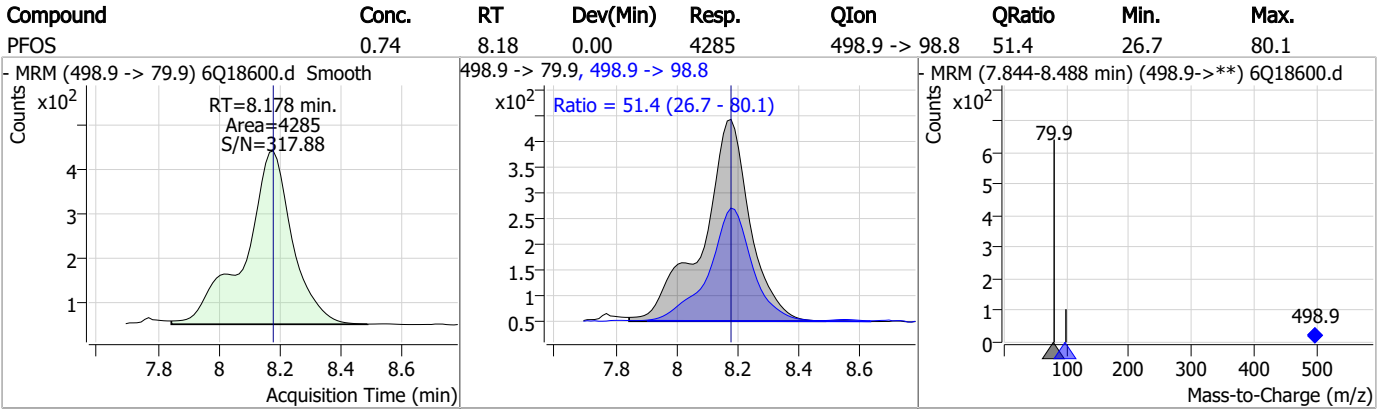
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Perfluorinated Compounds by LC/MS/MS

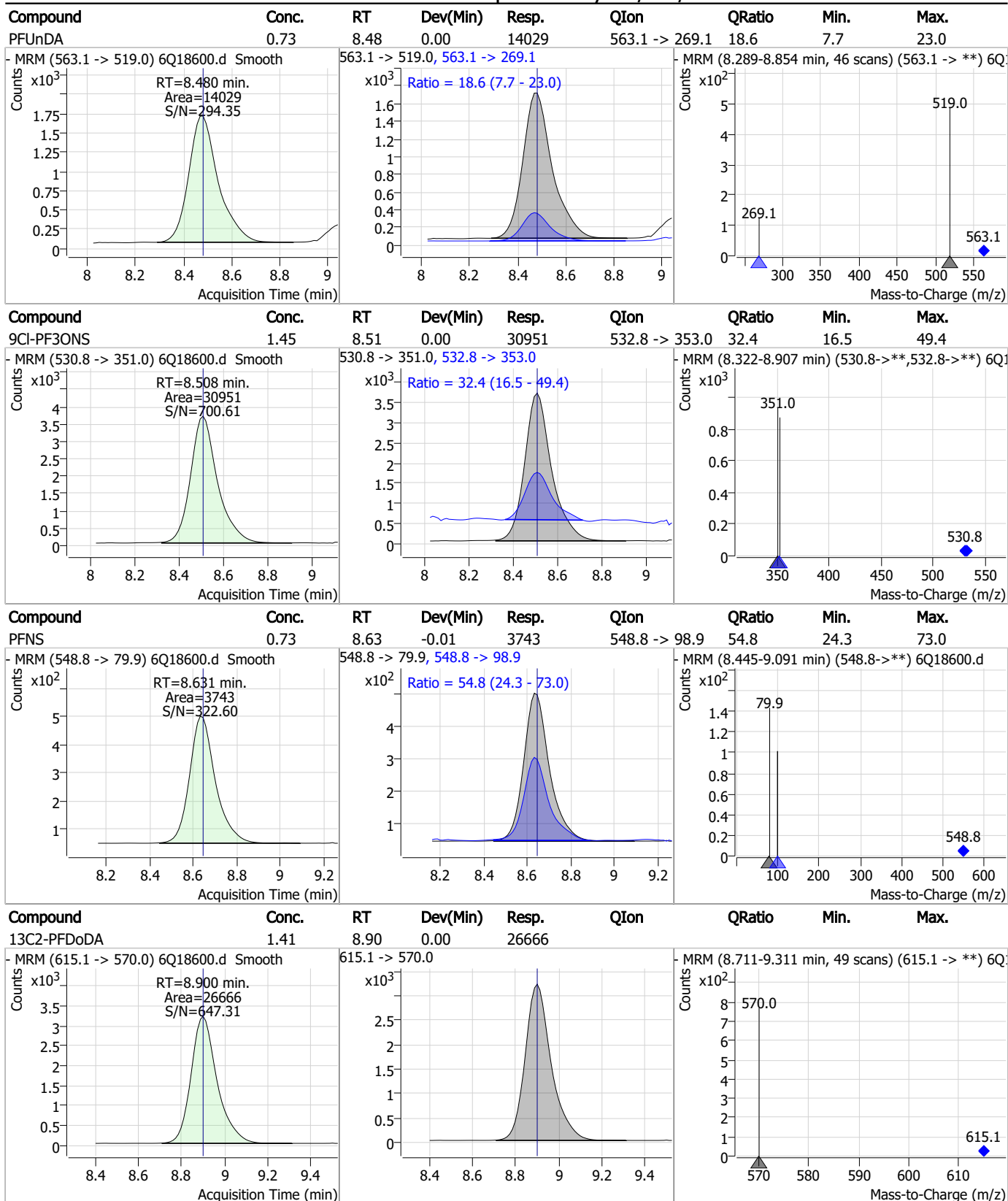


7.3.4
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Perfluorinated Compounds by LC/MS/MS

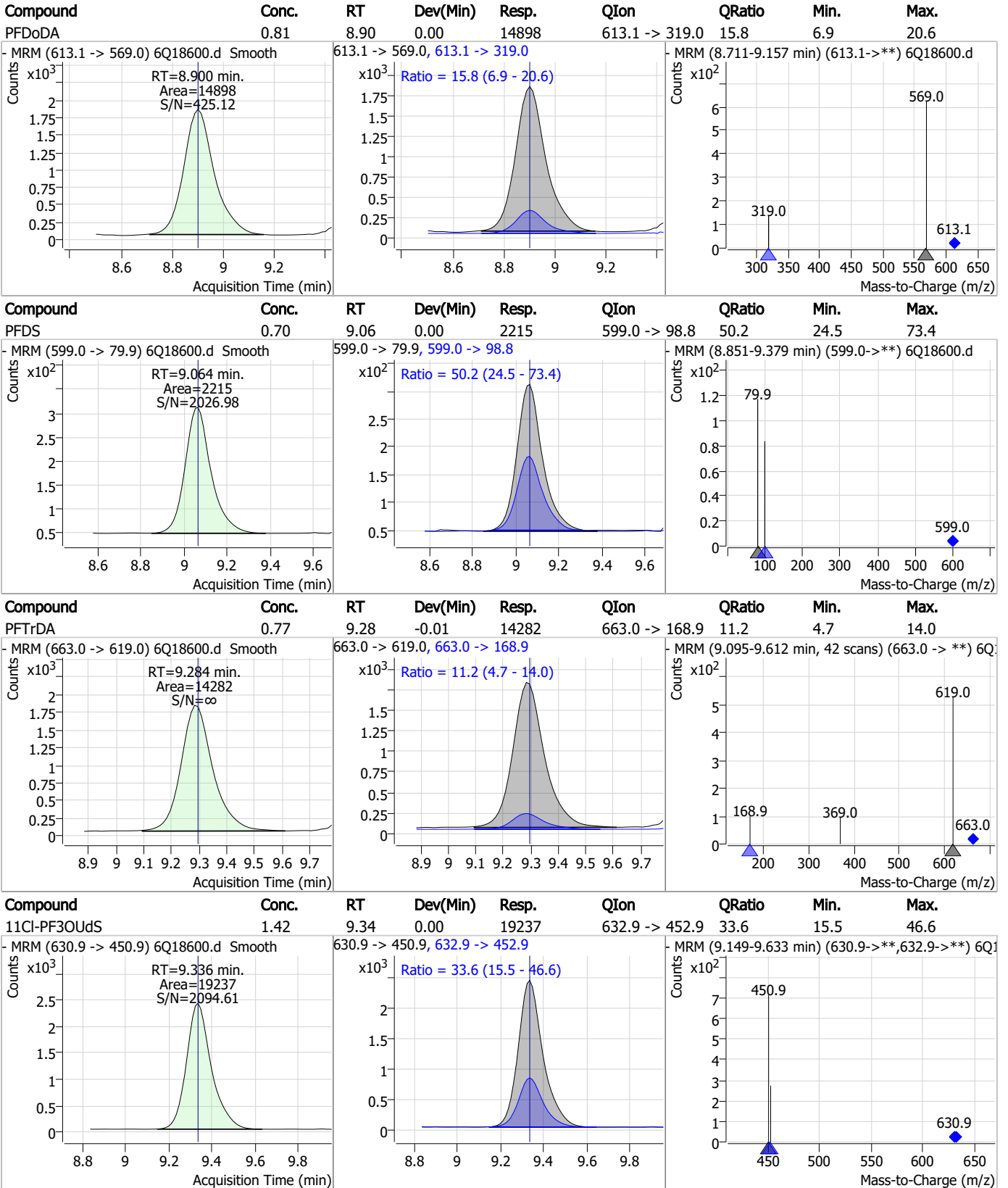


Perfluorinated Compounds by LC/MS/MS



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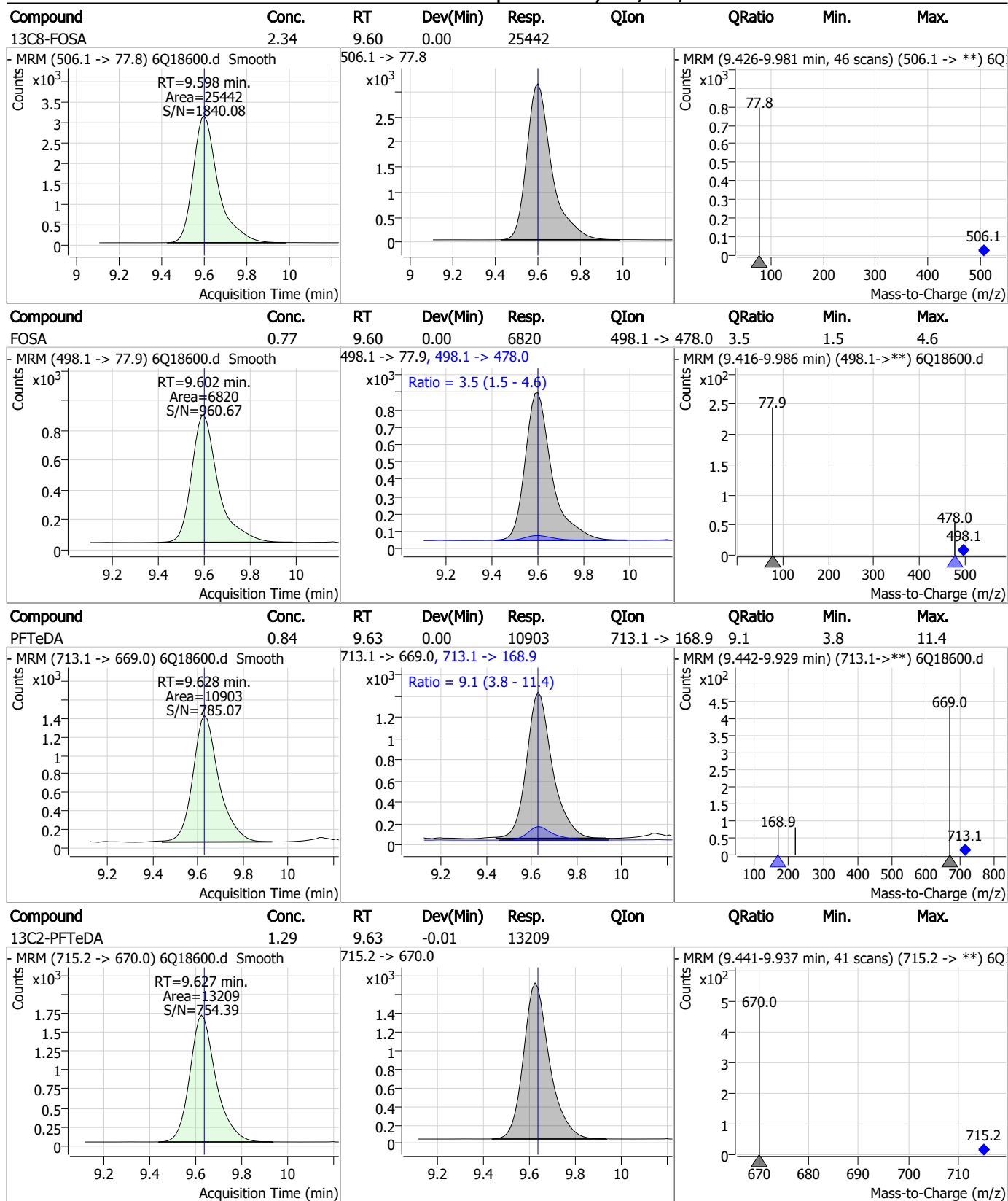
Perfluorinated Compounds by LC/MS/MS



7.3.4

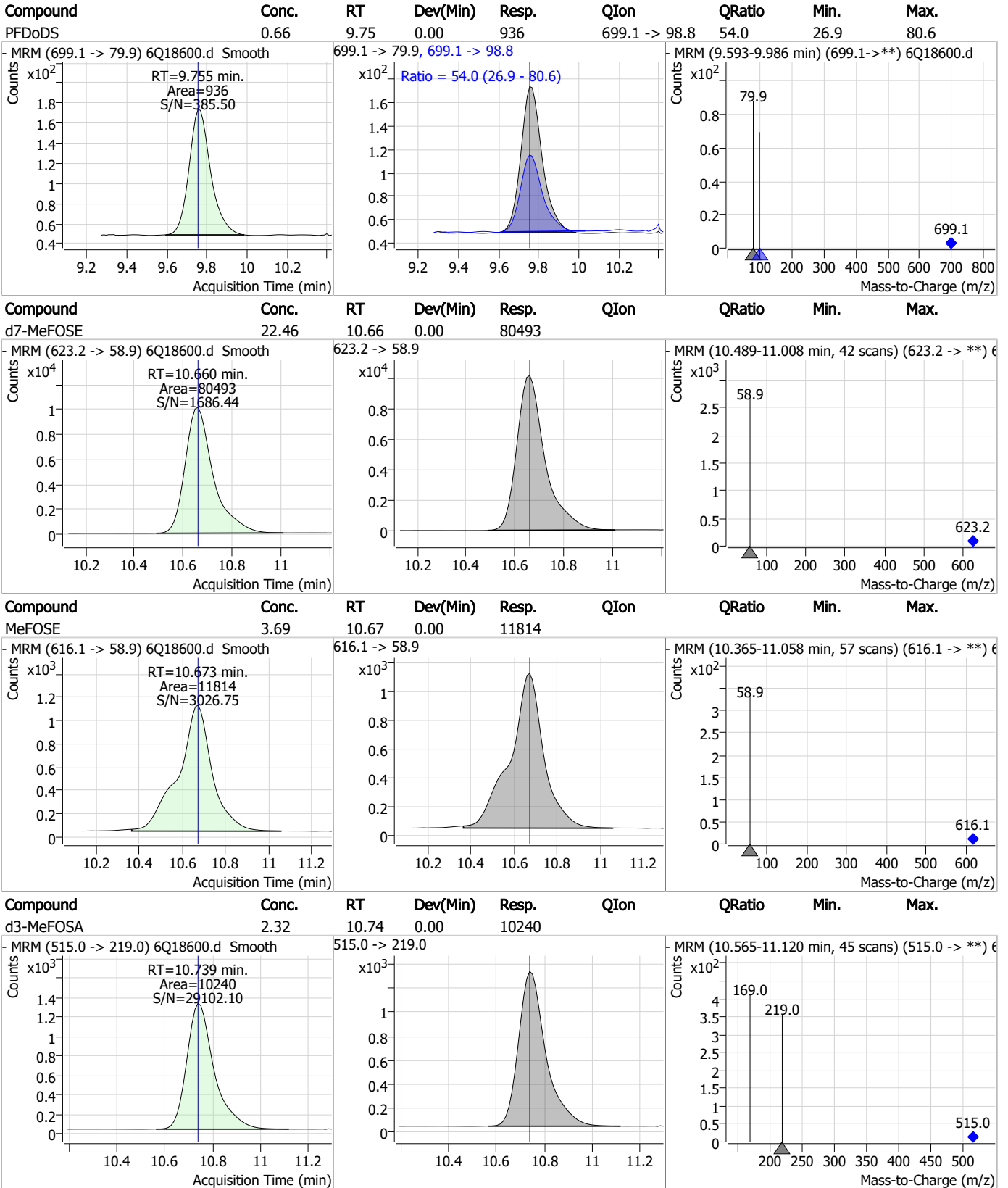
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Perfluorinated Compounds by LC/MS/MS



7.3.4
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Perfluorinated Compounds by LC/MS/MS

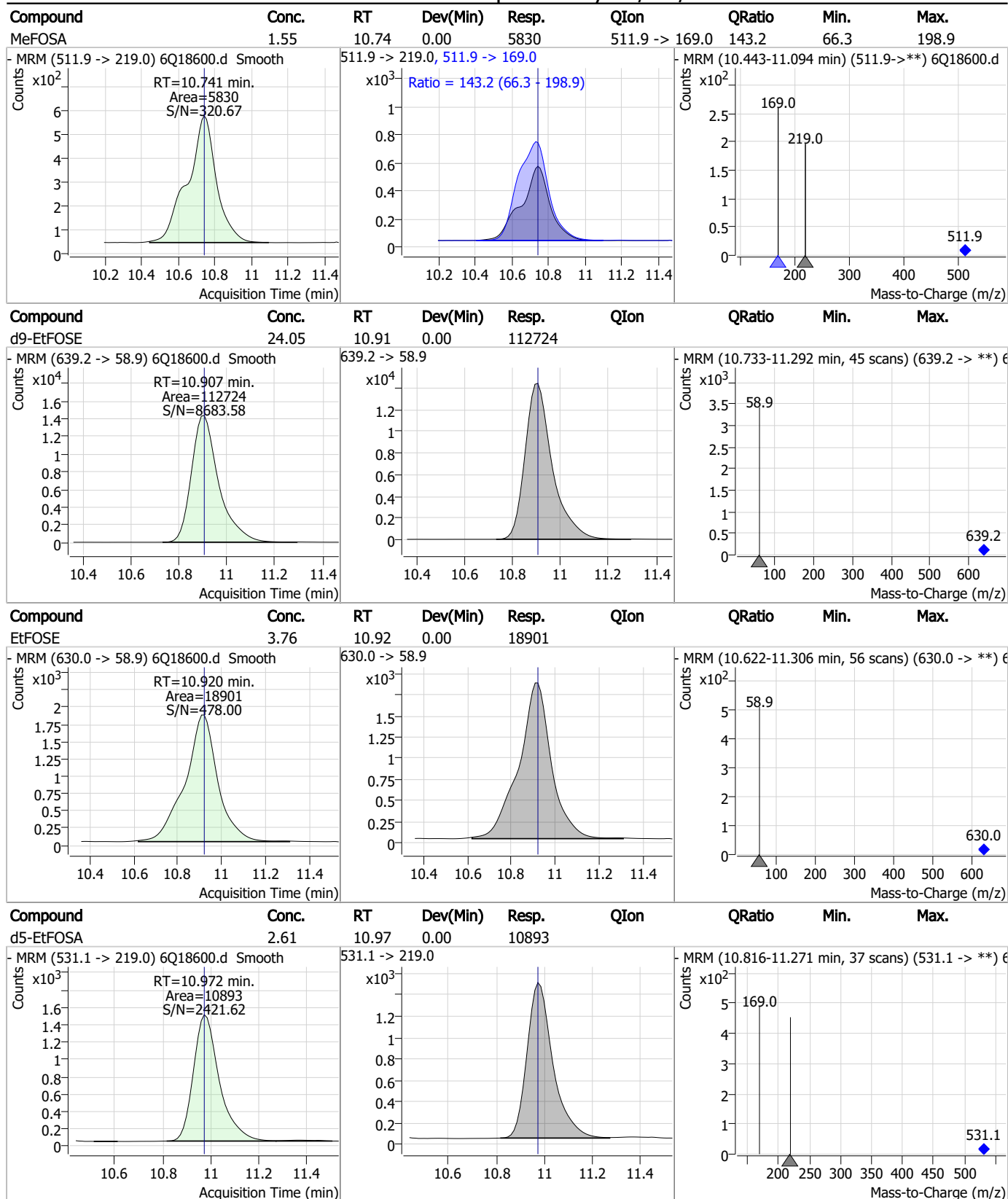


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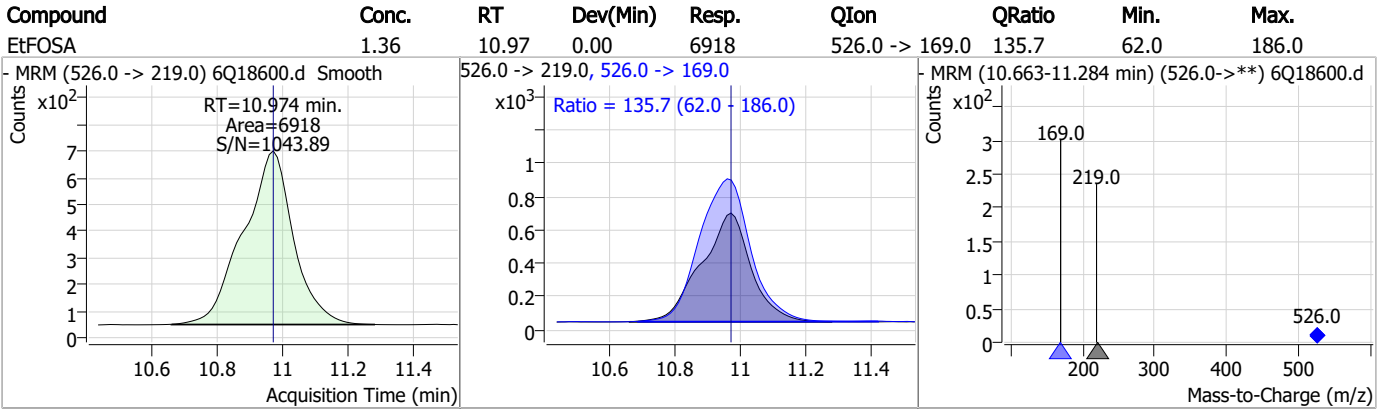
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18603.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 9:22:38 PM
 Sample Name : op97070-ms
 Vial : P6-C1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,530,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	48787	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	53460	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	62725	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	55312	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	84942	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	36980	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22138	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	27024	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	22850	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	11607	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	24748	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	22263	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13195	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12402	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3332	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4712	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4717	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	25476	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	35380	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	21145	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	75032	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	112182	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	10717	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10261	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	14444	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	66112	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	9077	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	81618	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	28919	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	42740	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	51778	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3332	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.1%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4712	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4717	5.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C2-PFDoDA	8.887	615.1 -> 570.0	22850	1.14 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.0%		
13C2-PFTeDA	9.627	715.2 -> 670.0	11607	1.06 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.0%		
13C3-PFBS	5.334	302.1 -> 79.9	22263	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	13195	2.60 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C4-PFBA	2.860	216.8 -> 171.9	48787	3.10 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 31.0%		
13C4-PFHpA	6.369	367.1 -> 322.0	55312	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C5-PFHxA	5.417	318.0 -> 273.0	62725	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 114.5%		
13C5-PFPeA	4.222	268.3 -> 223.0	53460	5.31 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C6-PFDA	8.027	519.1 -> 474.1	22138	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C7-PFUnDA	8.468	570.0 -> 525.1	27024	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C8-FOSA	9.598	506.1 -> 77.8	24748	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 89.9%		
13C8-PFOA	7.026	421.1 -> 376.0	84942	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.1%		
13C8-PFOS	8.177	507.1 -> 79.9	12402	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C9-PFNA	7.545	472.1 -> 427.0	36980	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.0%		
d3-MeFOSAA	8.084	573.2 -> 419.0	25476	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.3%		
13C3-HFPO-DA	5.782	286.9 -> 168.9	35380	10.40 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 104.0%		
d3-MeFOSA	10.739	515.0 -> 219.0	10261	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.0%		
d5-EtFOSAA	8.279	589.2 -> 419.0	21145	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
d7-MeFOSE	10.647	623.2 -> 58.9	75032	20.68 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 82.7%		
d9-EtFOSE	10.894	639.2 -> 58.9	112182	23.64 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.6%		
d5-EtFOSA	10.972	531.1 -> 219.0	10717	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	49089	10.14 µg/L	95
		327.1 -> 80.9	17782		
6:2FTS	6.801	427.1 -> 407.0	48674	10.51 µg/L	99
		427.1 -> 80.9	16133		
8:2FTS	7.816	527.1 -> 507.0	25579	9.75 µg/L	99
		527.1 -> 80.8	11110		
EtFOSAA	8.280	584.2 -> 419.1	7668	2.82 µg/L	96
		584.2 -> 526.0	3953		
FOSA	9.589	498.1 -> 77.9	21386	2.50 µg/L	99
		498.1 -> 478.0	710		
MeFOSAA	8.085	570.1 -> 419.0	14130	2.70 µg/L	99
		570.1 -> 483.0	2664		
PFBA	2.868	212.8 -> 168.9	17300	10.71 µg/L	100
PFBS	5.335	298.7 -> 79.9	16750	2.21 µg/L	97
		298.7 -> 98.8	6362		
PFDA	8.027	512.9 -> 469.0	68382	2.66 µg/L	99
		512.9 -> 219.0	11312		
PFDODA	8.900	613.1 -> 569.0	42883	2.73 µg/L	93
		613.1 -> 319.0	7035		
PFDS	9.052	599.0 -> 79.9	6906	2.23 µg/L	93

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3048			
PFHpA	6.370	363.1 -> 319.0	63806	2.61	µg/L	98
		363.1 -> 169.0	10163			
PFHpS	7.685	449.0 -> 79.9	15319	2.58	µg/L	94
		449.0 -> 98.9	6979			
PFHxA	5.420	313.0 -> 269.0	53000	2.52	µg/L	98
		313.0 -> 118.9	2813			
PFHxS	7.131	398.7 -> 79.9	14330	2.40	µg/L	m 96
		398.7 -> 98.9	7185			
PFNA	7.545	463.0 -> 419.0	71161	2.72	µg/L	99
		463.0 -> 219.0	14207			
PFNS	8.631	548.8 -> 79.9	11571	2.32	µg/L	95
		548.8 -> 98.9	6053			
PFOA	7.028	413.0 -> 369.0	96984	2.67	µg/L	99
		413.0 -> 169.0	16993			
PFOS	8.178	498.9 -> 79.9	14291	2.52	µg/L	m 95
		498.9 -> 98.8	7147			
PFPeA	4.224	263.0 -> 219.0	71692	5.58	µg/L	100
PFPeS	6.422	349.1 -> 79.9	15028	2.53	µg/L	100
		349.1 -> 98.9	7087			
PFTeDA	9.628	713.1 -> 669.0	32369	2.83	µg/L	99
		713.1 -> 168.9	2554			
PFTrDA	9.284	663.0 -> 619.0	41702	2.63	µg/L	95
		663.0 -> 168.9	4613			
PFUnDA	8.468	563.1 -> 519.0	45861	2.61	µg/L	96
		563.1 -> 269.1	7761			
11CI-PF3OUdS	9.336	630.9 -> 450.9	58098	4.38	µg/L	99
		632.9 -> 452.9	17645			
9CI-PF3ONS	8.508	530.8 -> 351.0	101665	4.86	µg/L	96
		532.8 -> 353.0	31035			
ADONA	6.632	376.9 -> 250.9	247475	5.27	µg/L	98
		376.9 -> 84.8	63490			
HFPO-DA	5.783	284.9 -> 168.9	16205	5.40	µg/L	97
		284.9 -> 184.9	1994			
3:3FTCA	3.709	241.0 -> 177.0	5733	6.98	µg/L	97
		241.0 -> 117.0	772			
5:3FTCA	6.086	341.0 -> 237.1	214431	56.60	µg/L	99
		341.0 -> 217.0	153856			
7:3FTCA	7.510	441.0 -> 316.9	156813	60.44	µg/L	97
		441.0 -> 336.9	351841			
EtFOSA	10.974	526.0 -> 219.0	22984	4.60	µg/L	91
		526.0 -> 169.0	30775			
EtFOSE	10.907	630.0 -> 58.9	58994	11.79	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	19017	5.04	µg/L	93
		511.9 -> 169.0	26758			
MeFOSE	10.673	616.1 -> 58.9	36186	12.14	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	3097	2.25	µg/L	99
		699.1 -> 98.8	1643			
NFDHA	5.299	295.0 -> 201.0	13031	5.08	µg/L	98
		295.0 -> 84.9	3378			
PFMBA	4.638	279.0 -> 85.1	46605	5.33	µg/L	100
PFMPA	3.388	229.0 -> 84.9	22194	3.27	µg/L	100
PFEESA	5.875	314.8 -> 134.9	121155	4.53	µg/L	99
		314.8 -> 82.9	4268			

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

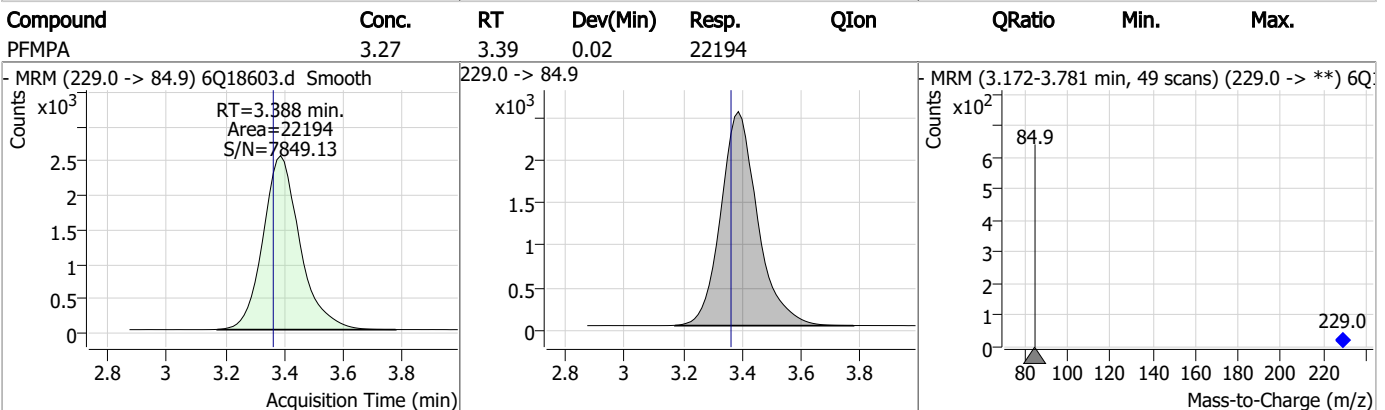
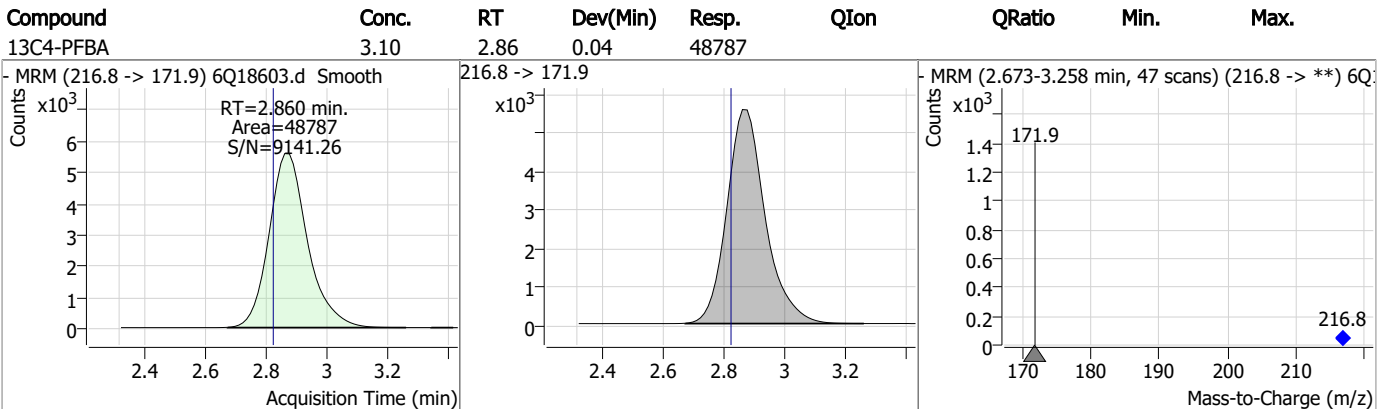
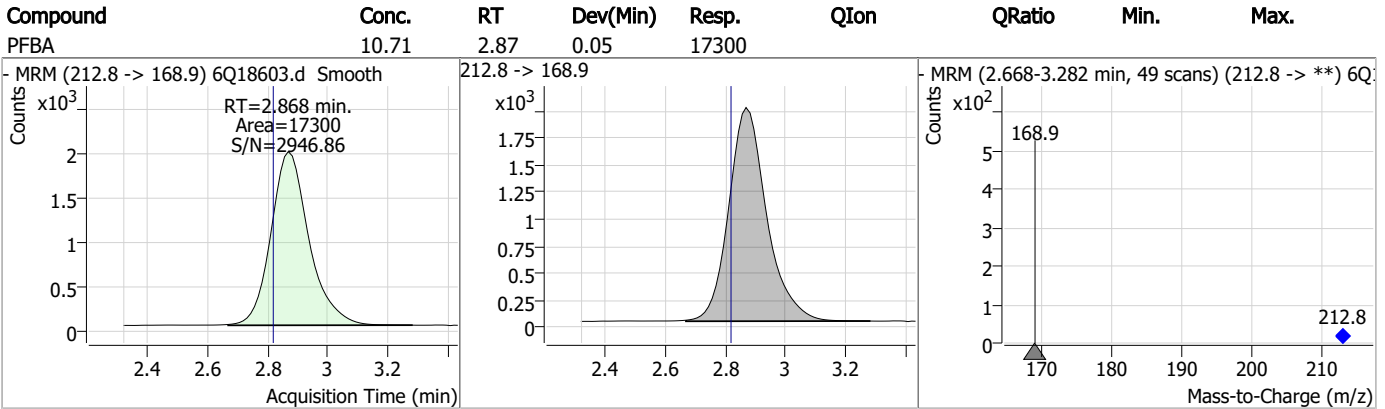
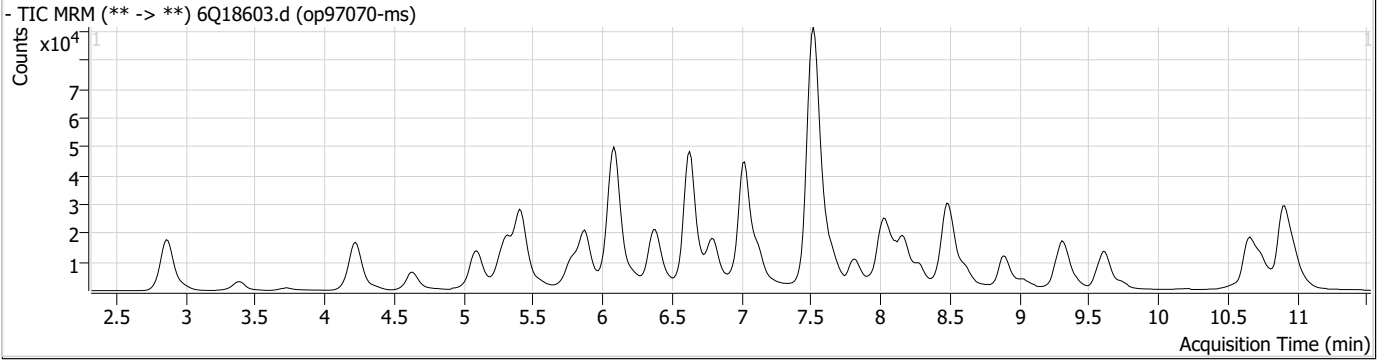
Perfluorinated Compounds by LC/MS/MS

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

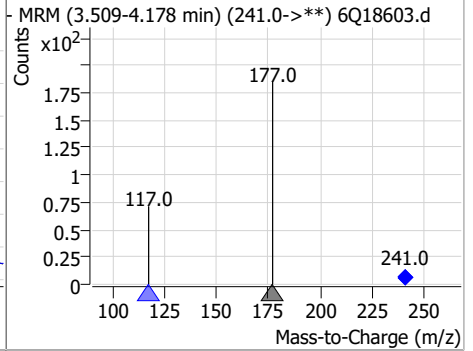
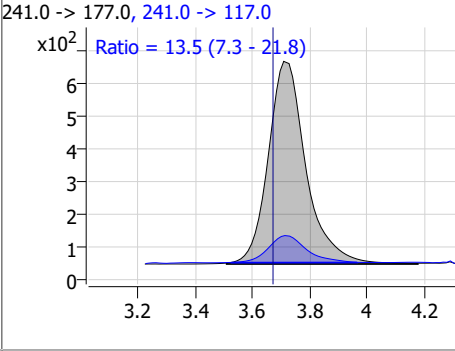
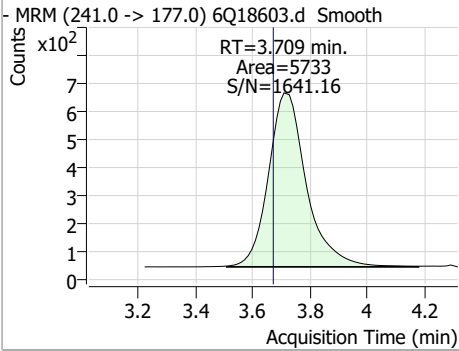
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Perfluorinated Compounds by LC/MS/MS

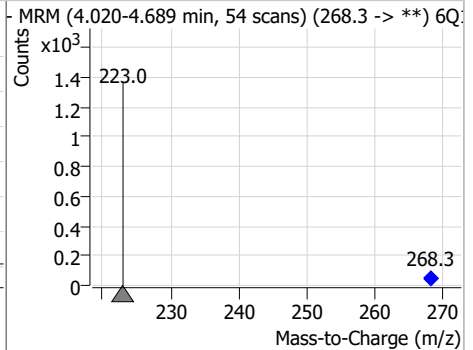
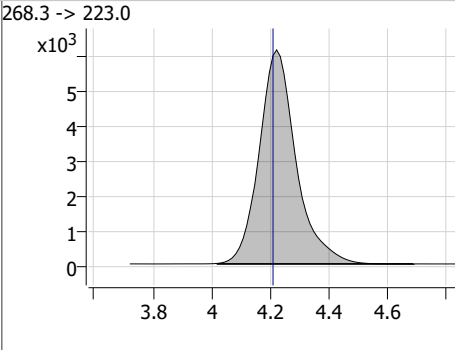
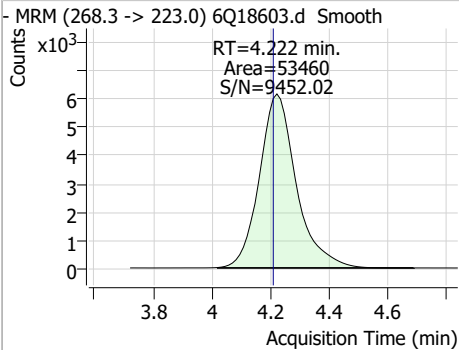


Perfluorinated Compounds by LC/MS/MS

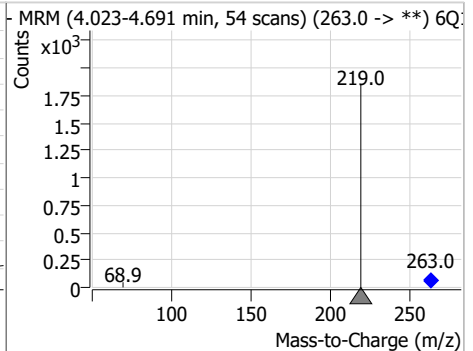
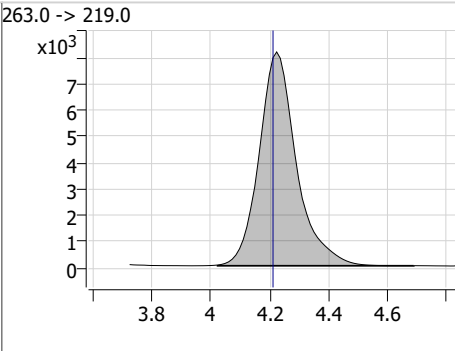
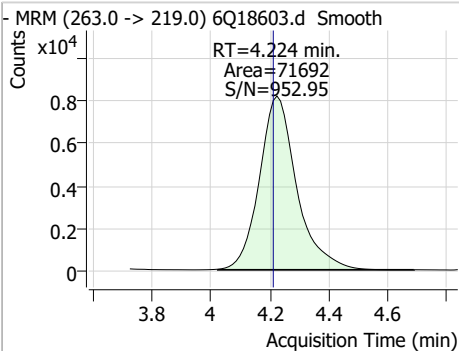
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	6.98	3.71	0.04	5733	241.0 -> 117.0	13.5	7.3	21.8



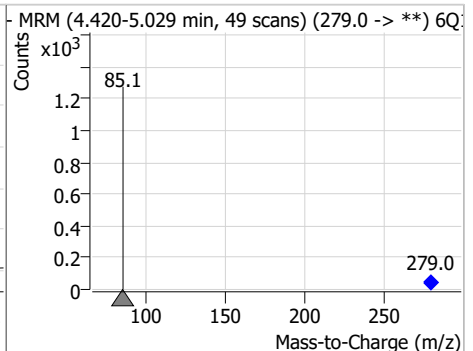
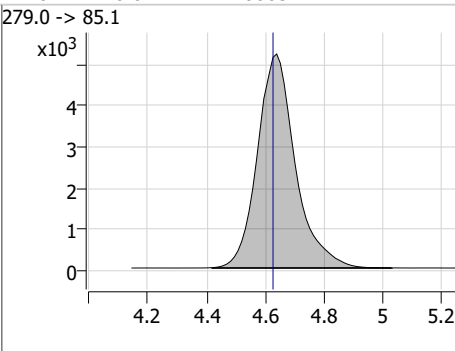
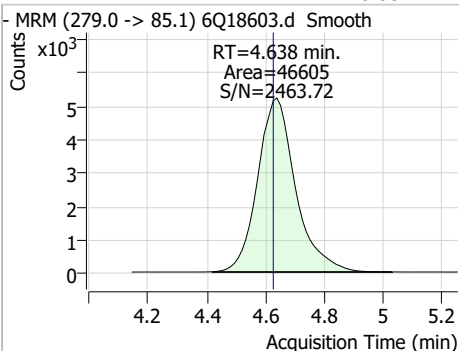
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.31	4.22	0.01	53460				



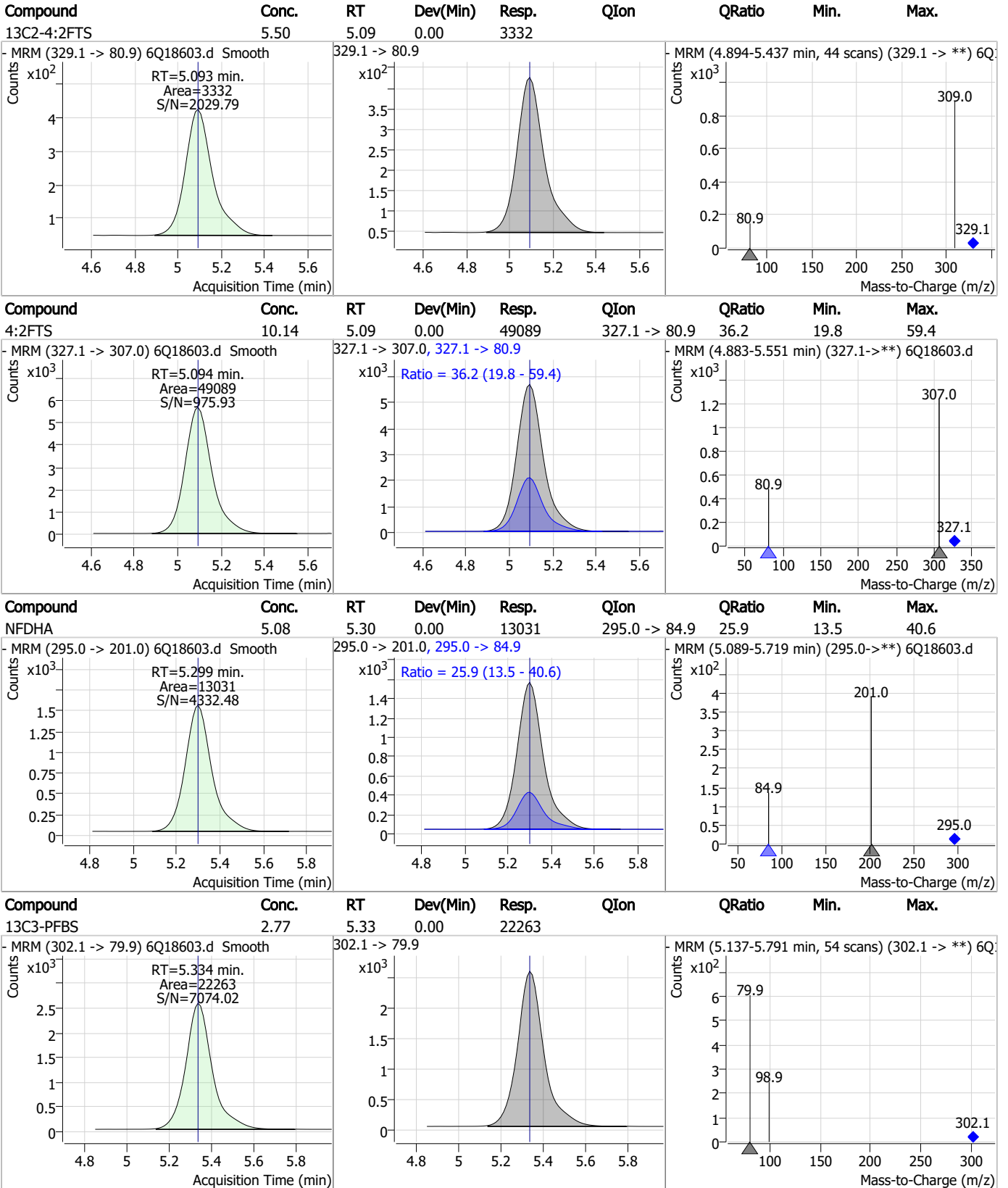
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.58	4.22	0.01	71692				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.33	4.64	0.01	46605				



Perfluorinated Compounds by LC/MS/MS

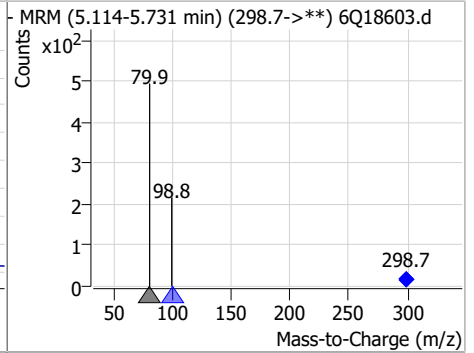
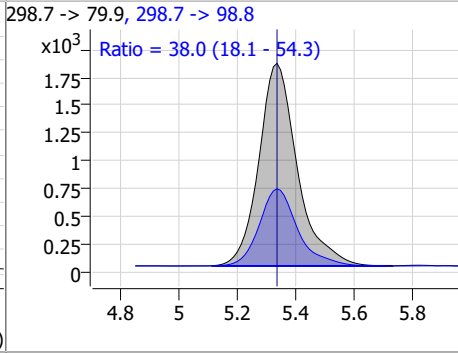
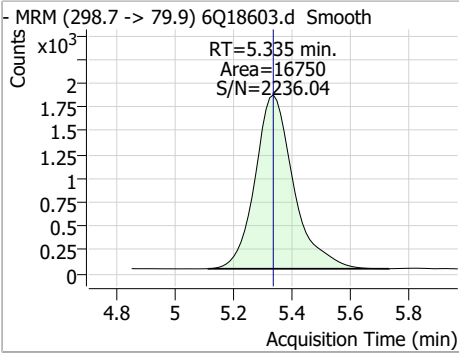


7.4.1

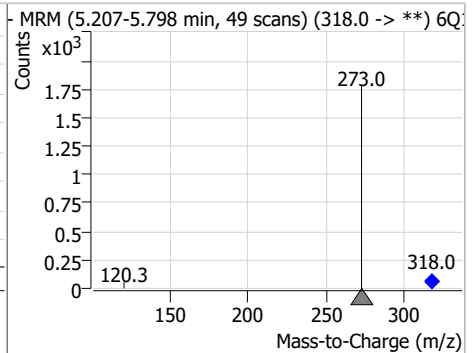
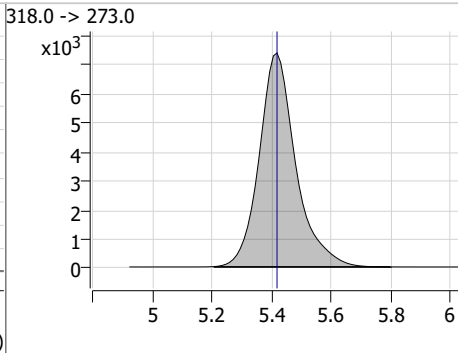
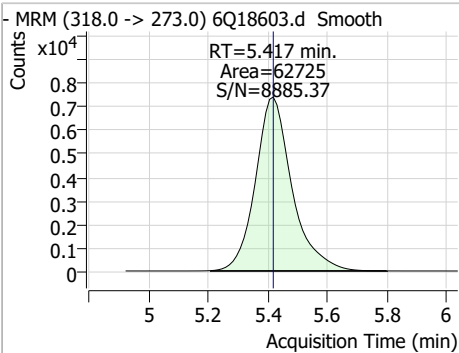
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Perfluorinated Compounds by LC/MS/MS

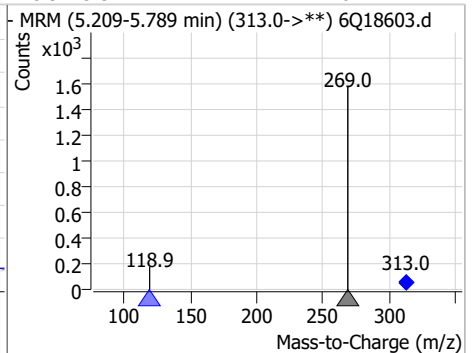
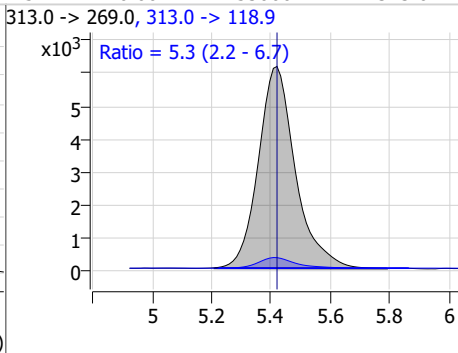
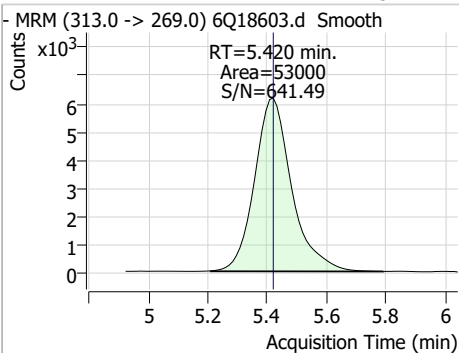
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.21	5.34	0.00	16750	298.7 -> 98.8	38.0	18.1	54.3



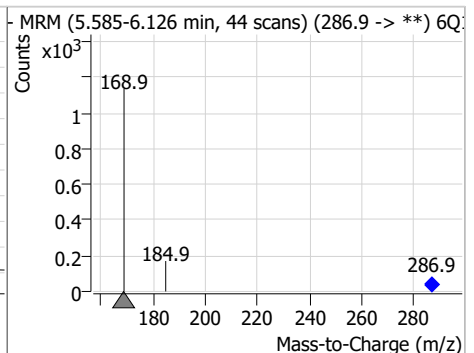
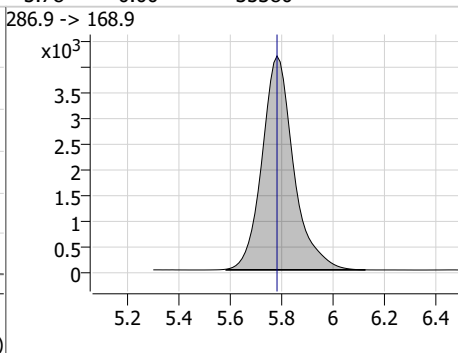
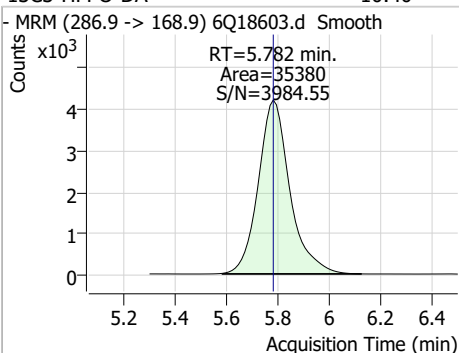
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.86	5.42	0.00	62725	318.0 -> 273.0	5.3	2.2	6.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.52	5.42	0.00	53000	313.0 -> 118.9	5.3	2.2	6.7

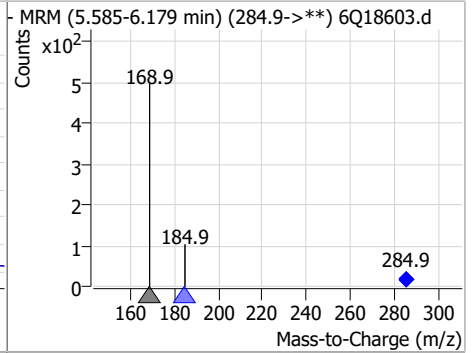
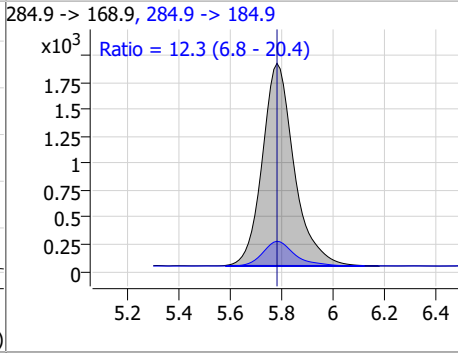
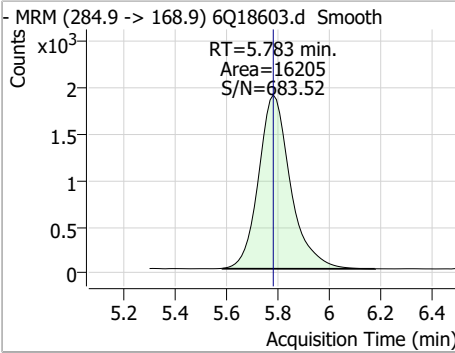


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.40	5.78	0.00	35380	286.9 -> 168.9	5.3	2.2	6.7

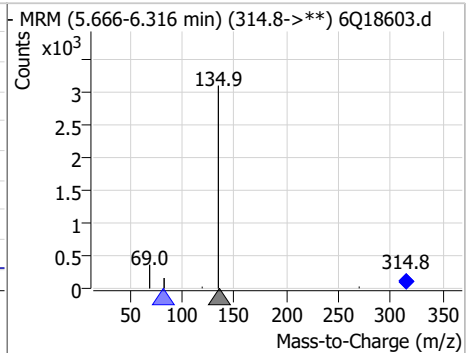
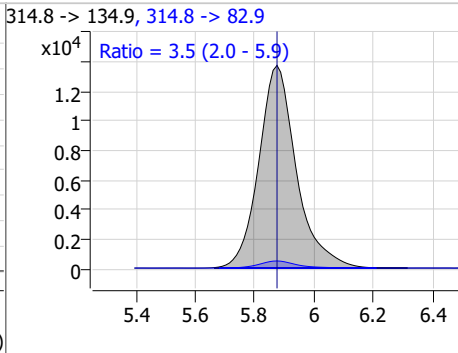
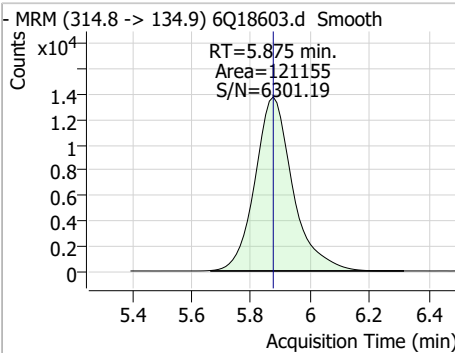


Perfluorinated Compounds by LC/MS/MS

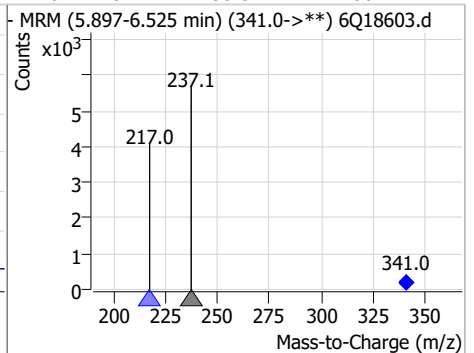
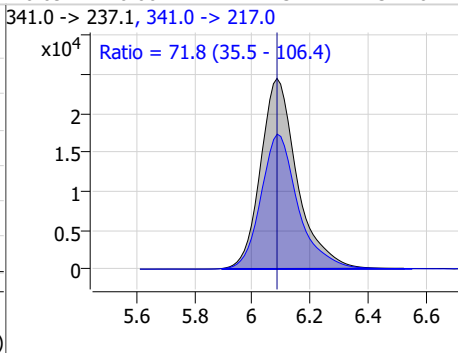
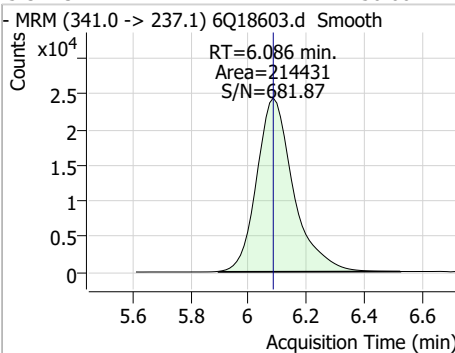
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.40	5.78	0.00	16205	284.9 -> 184.9	12.3	6.8	20.4



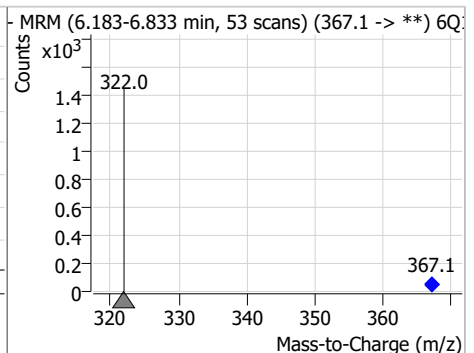
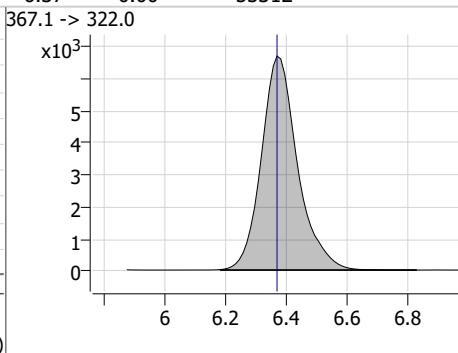
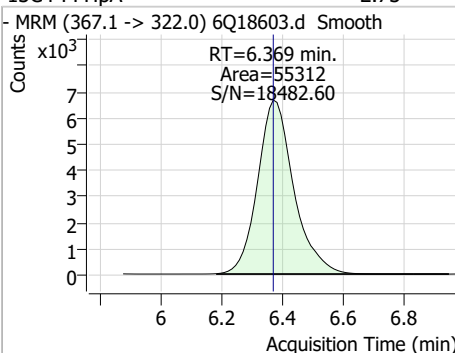
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.53	5.88	0.00	121155	314.8 -> 82.9	3.5	2.0	5.9



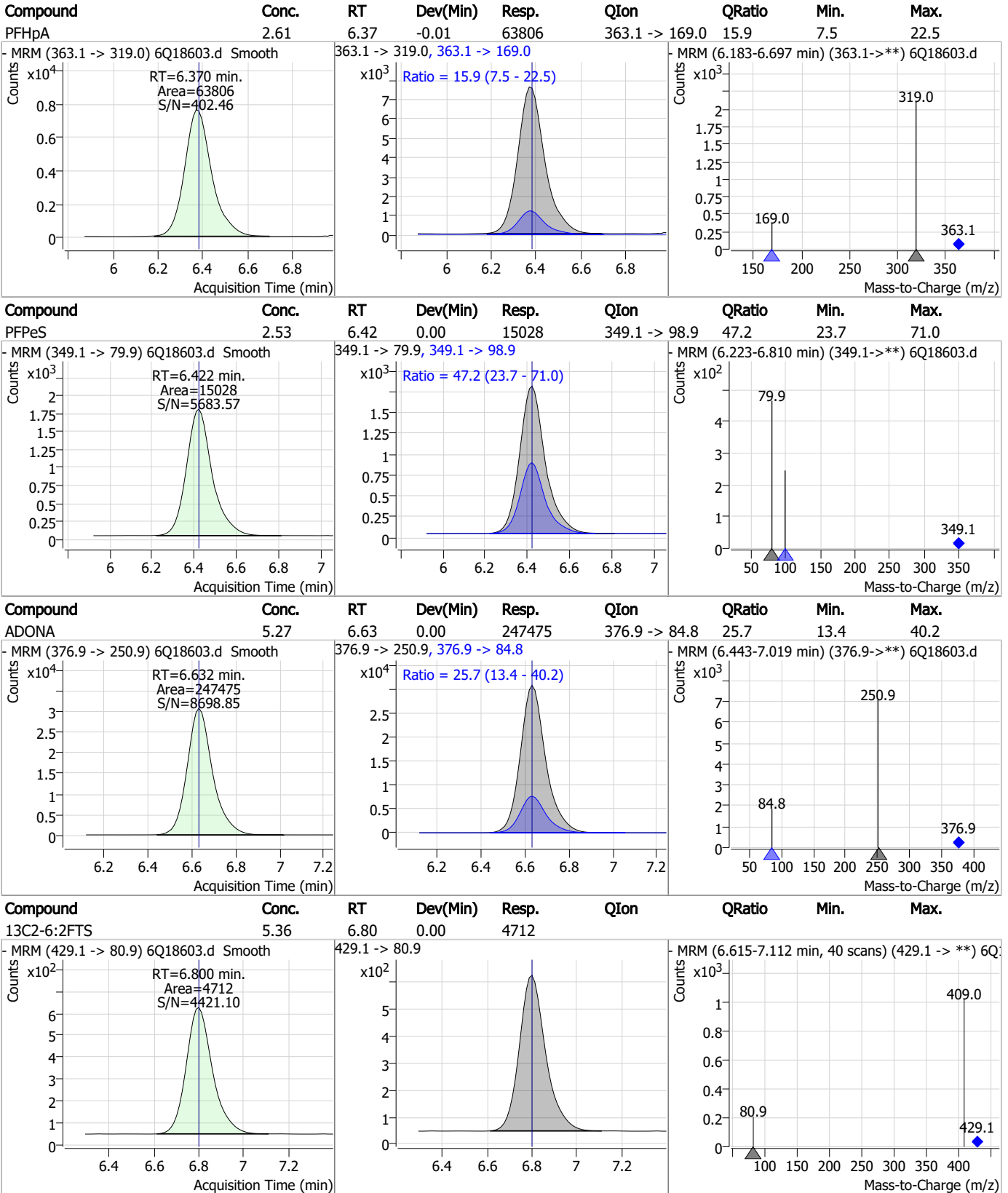
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	56.60	6.09	0.00	214431	341.0 -> 217.0	71.8	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.73	6.37	0.00	55312	367.1 -> 322.0			



Perfluorinated Compounds by LC/MS/MS

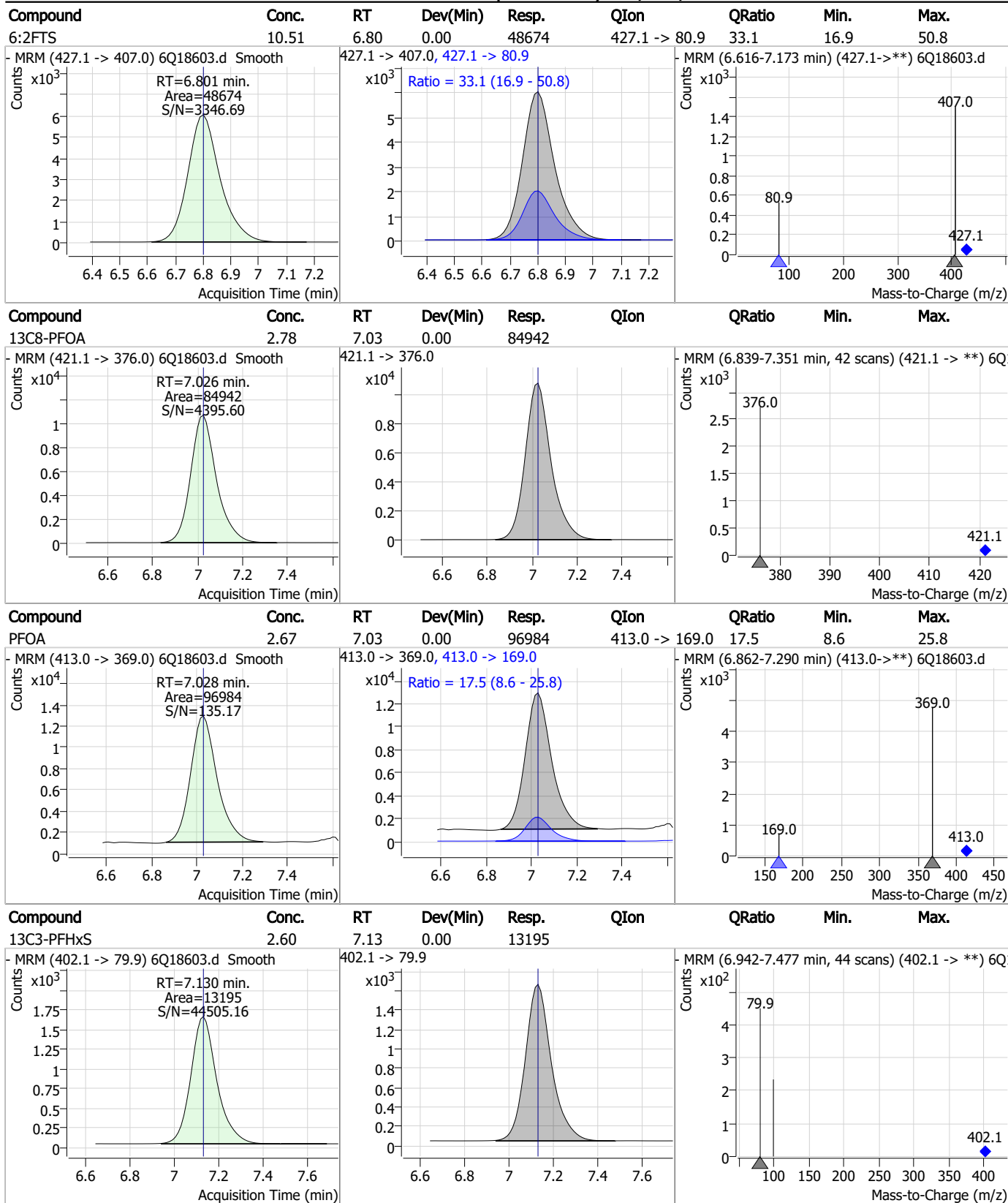


7.4.1

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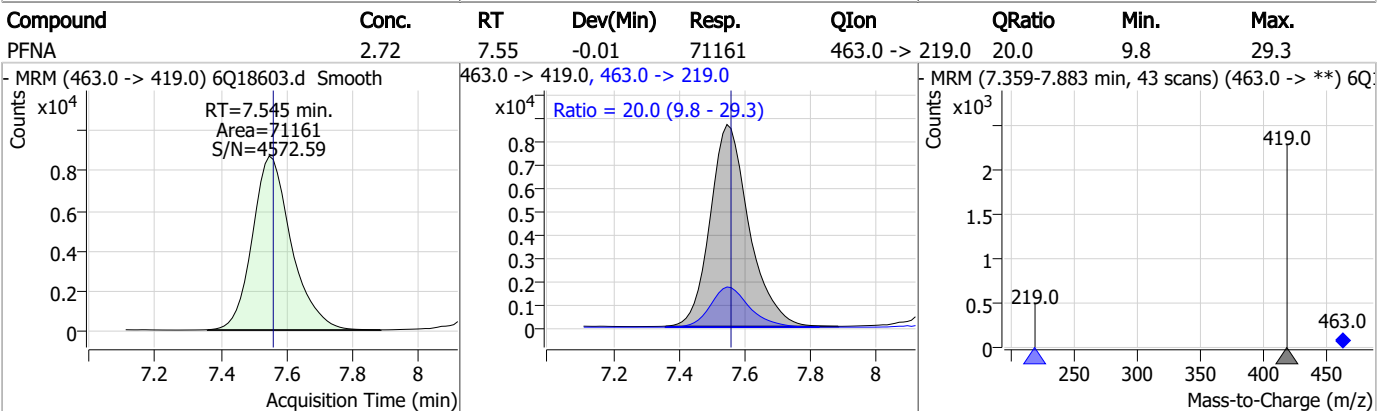
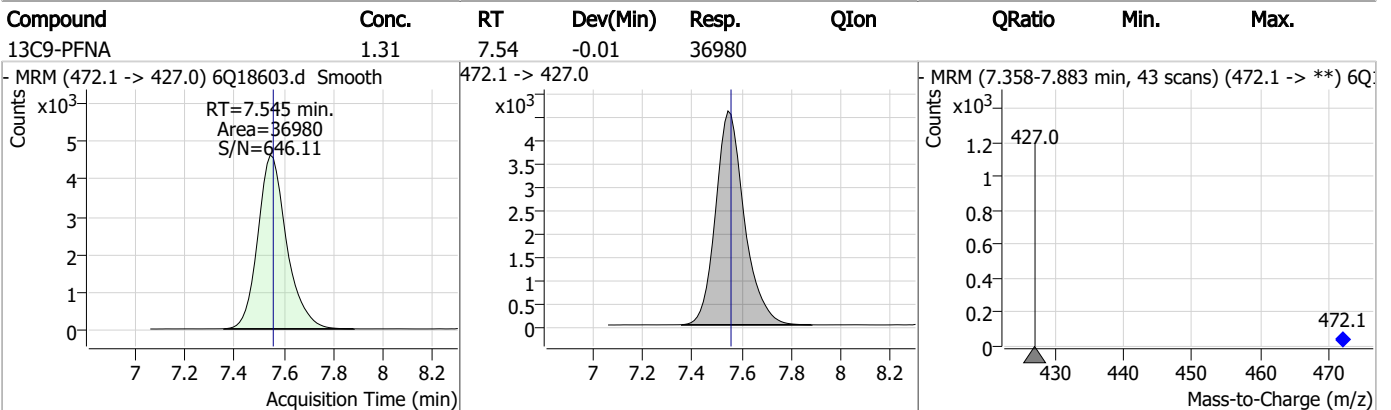
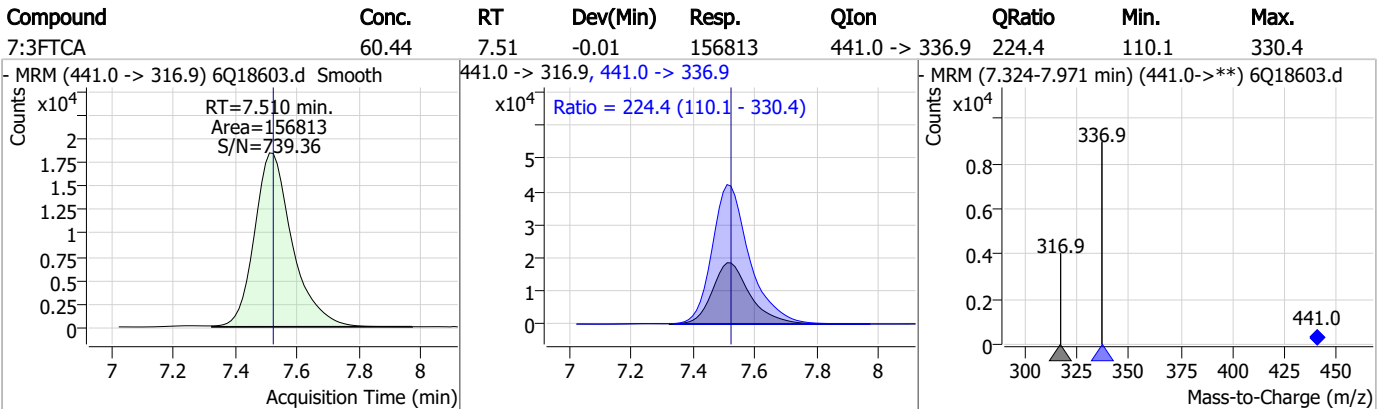
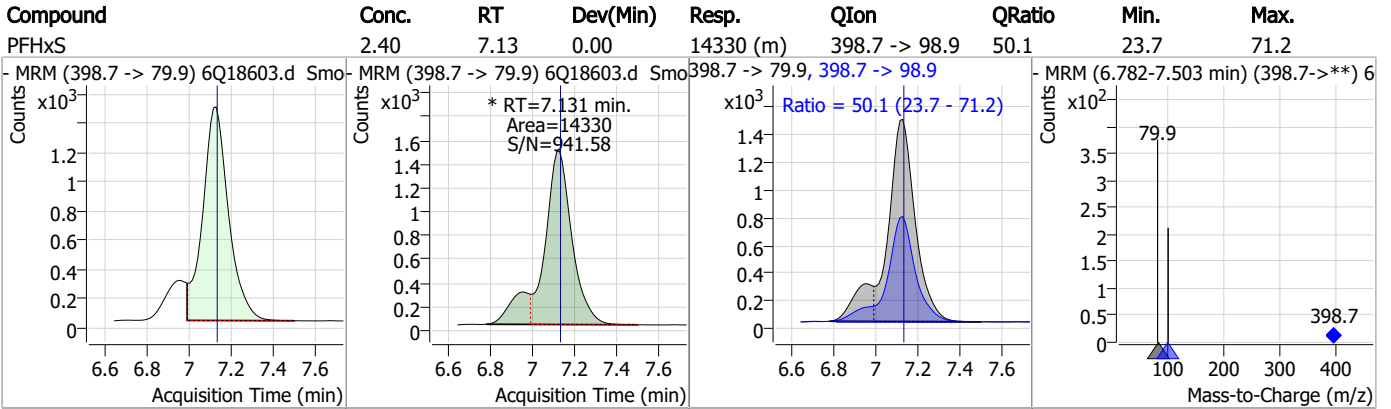


Perfluorinated Compounds by LC/MS/MS



7.4.1
7

Perfluorinated Compounds by LC/MS/MS



7.4.1

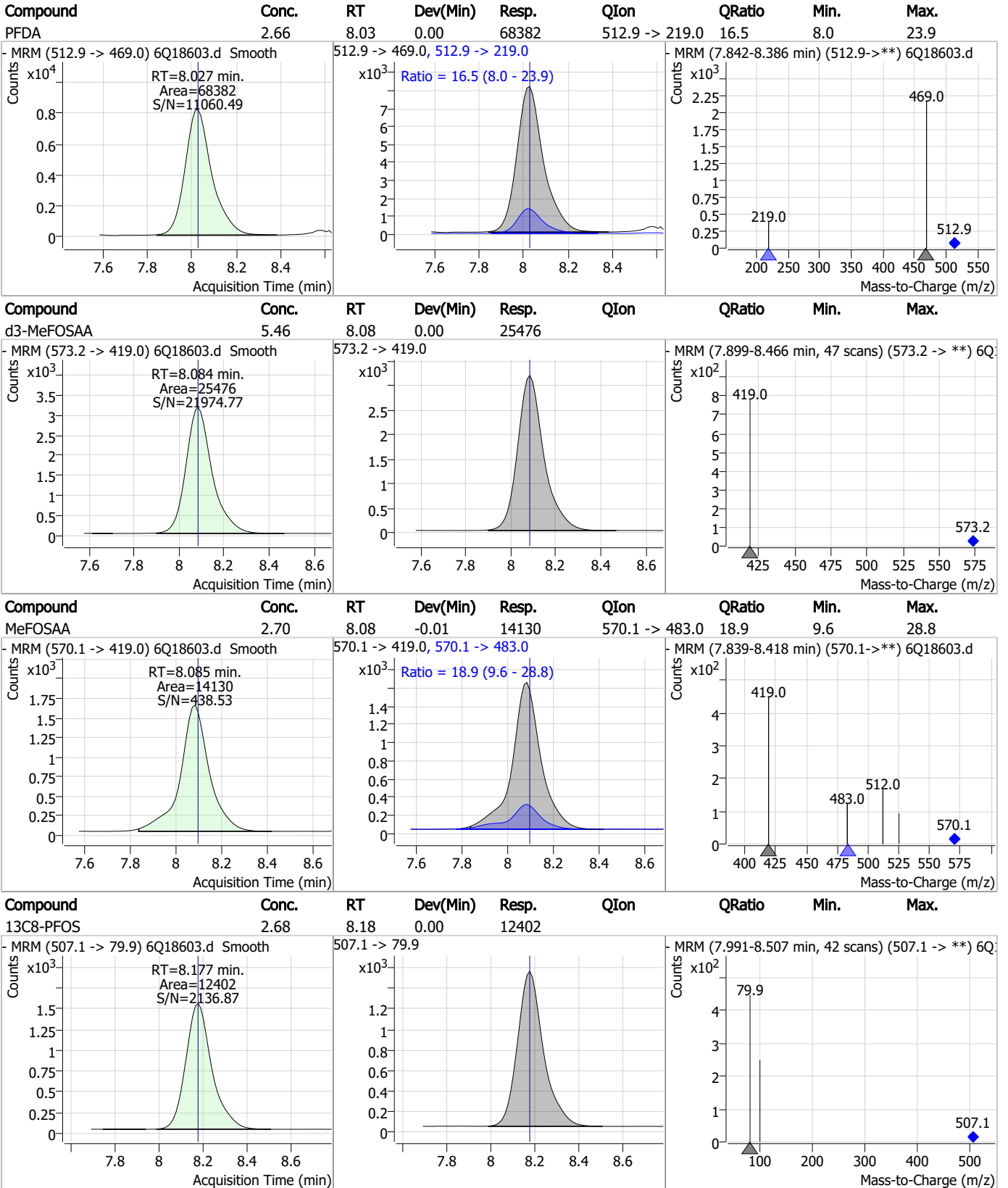
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.58	7.68	0.00	15319	449.0 -> 98.9	45.6	24.7	74.2
13C2-8:2FTS	5.29	7.81	-0.01	4717				
8:2FTS	9.75	7.82	-0.01	25579	527.1 -> 80.8	43.4	21.4	64.1
13C6-PFDA	1.31	8.03	0.00	22138				

7.4.1
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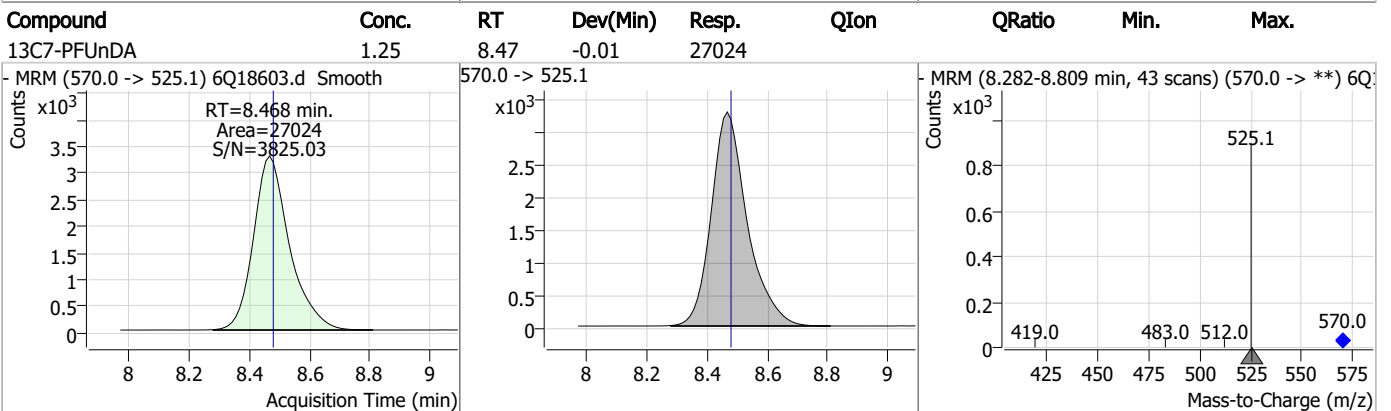
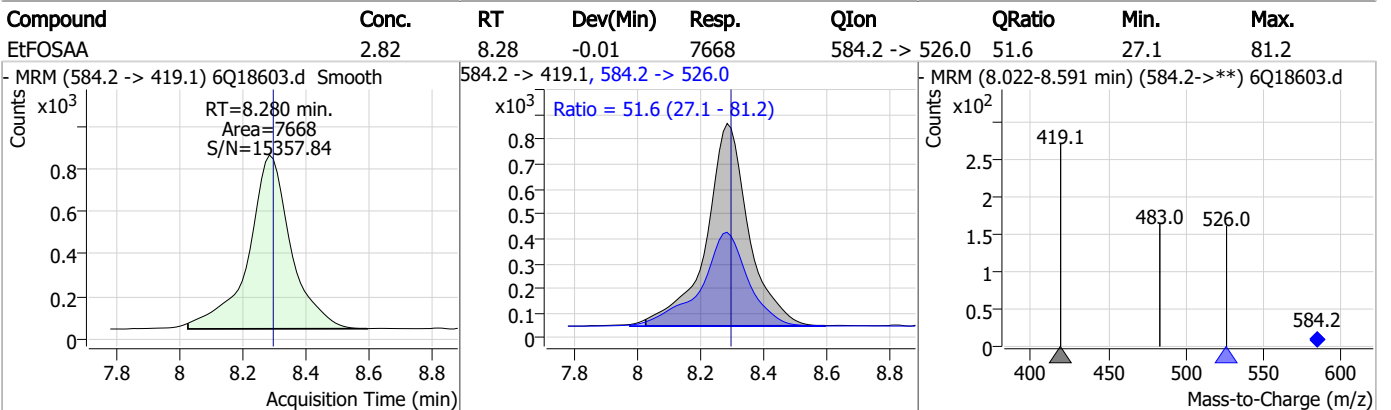
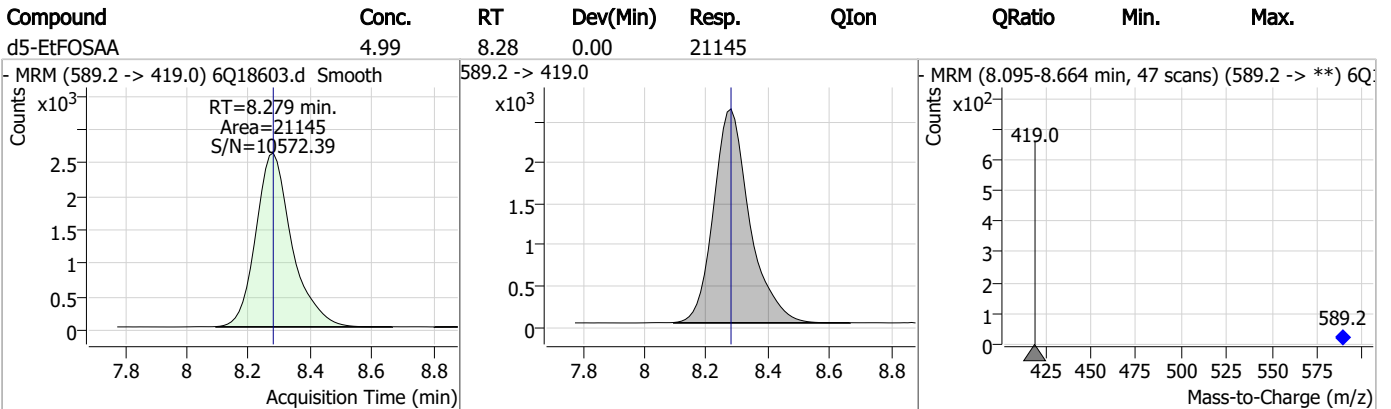
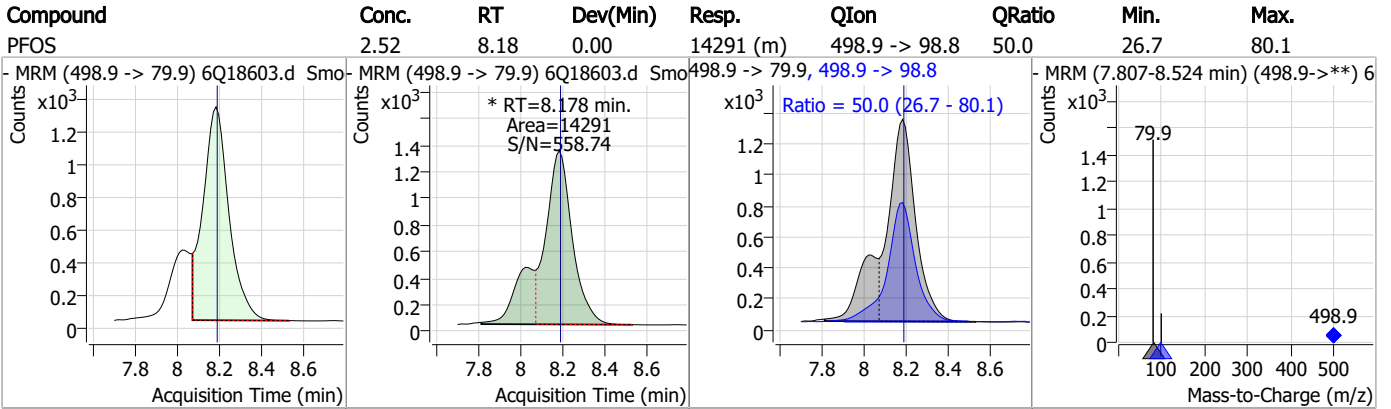
Perfluorinated Compounds by LC/MS/MS



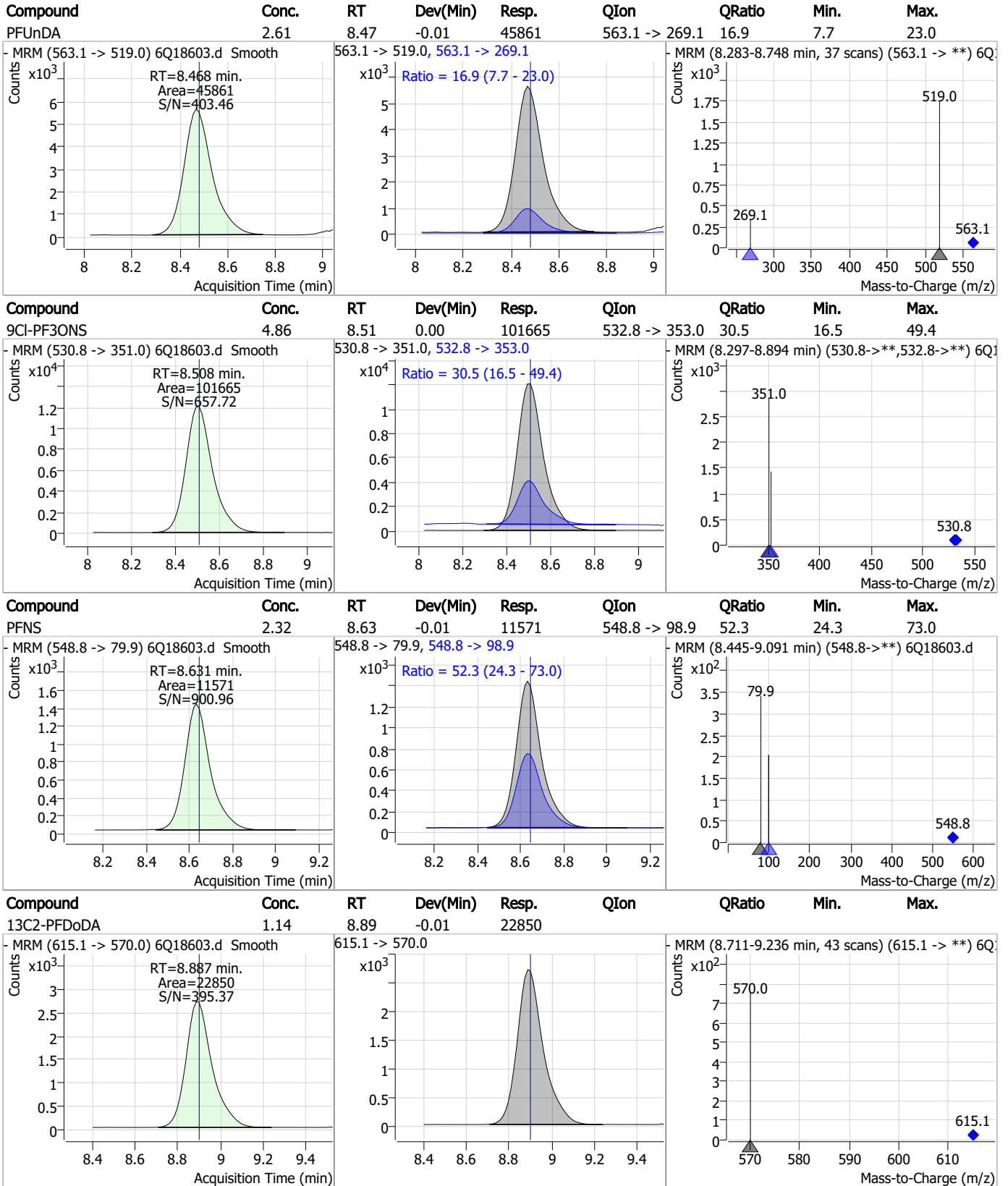
7.4.1

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Perfluorinated Compounds by LC/MS/MS



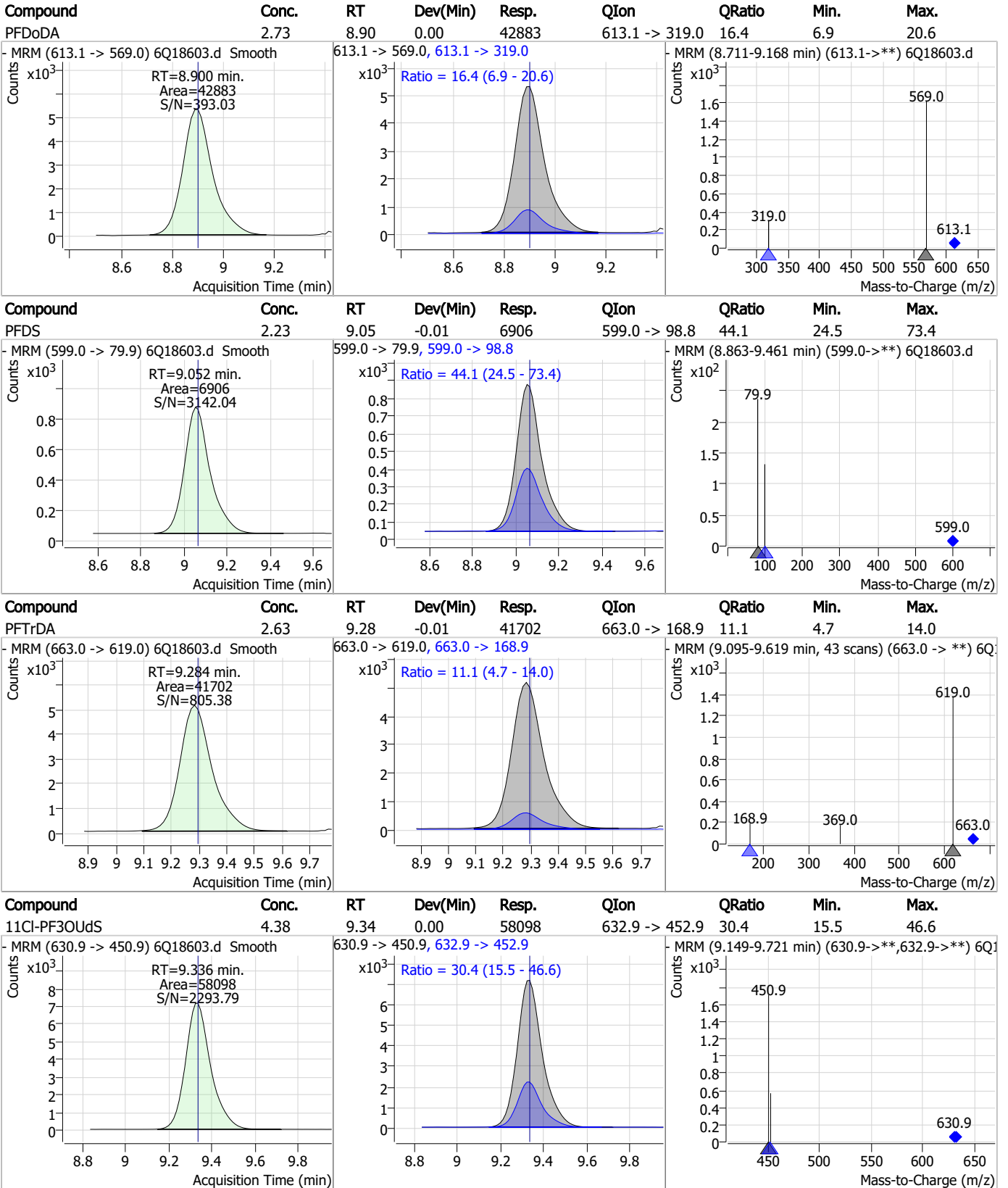
Perfluorinated Compounds by LC/MS/MS



7.4.1

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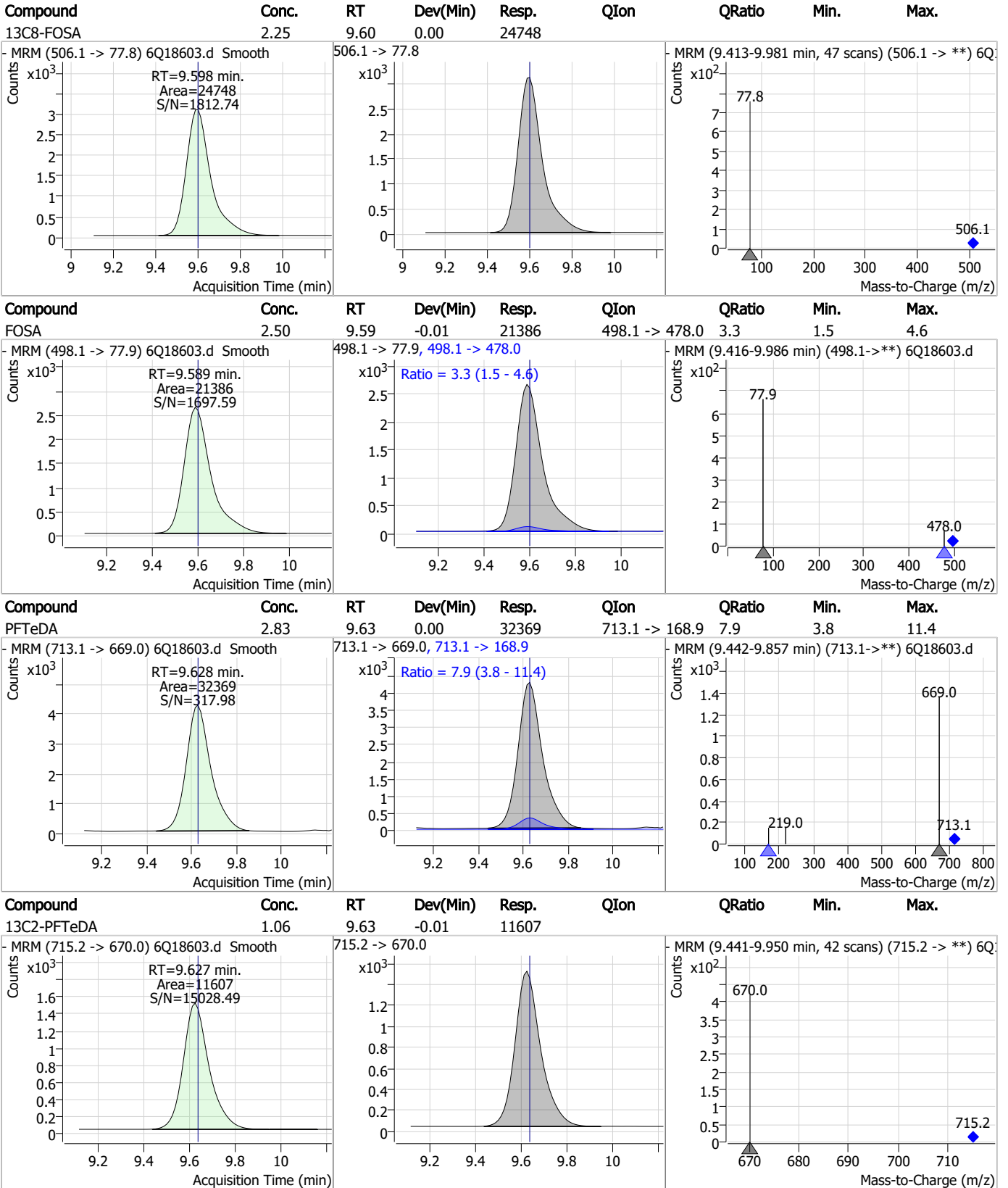
Perfluorinated Compounds by LC/MS/MS



7.4.1

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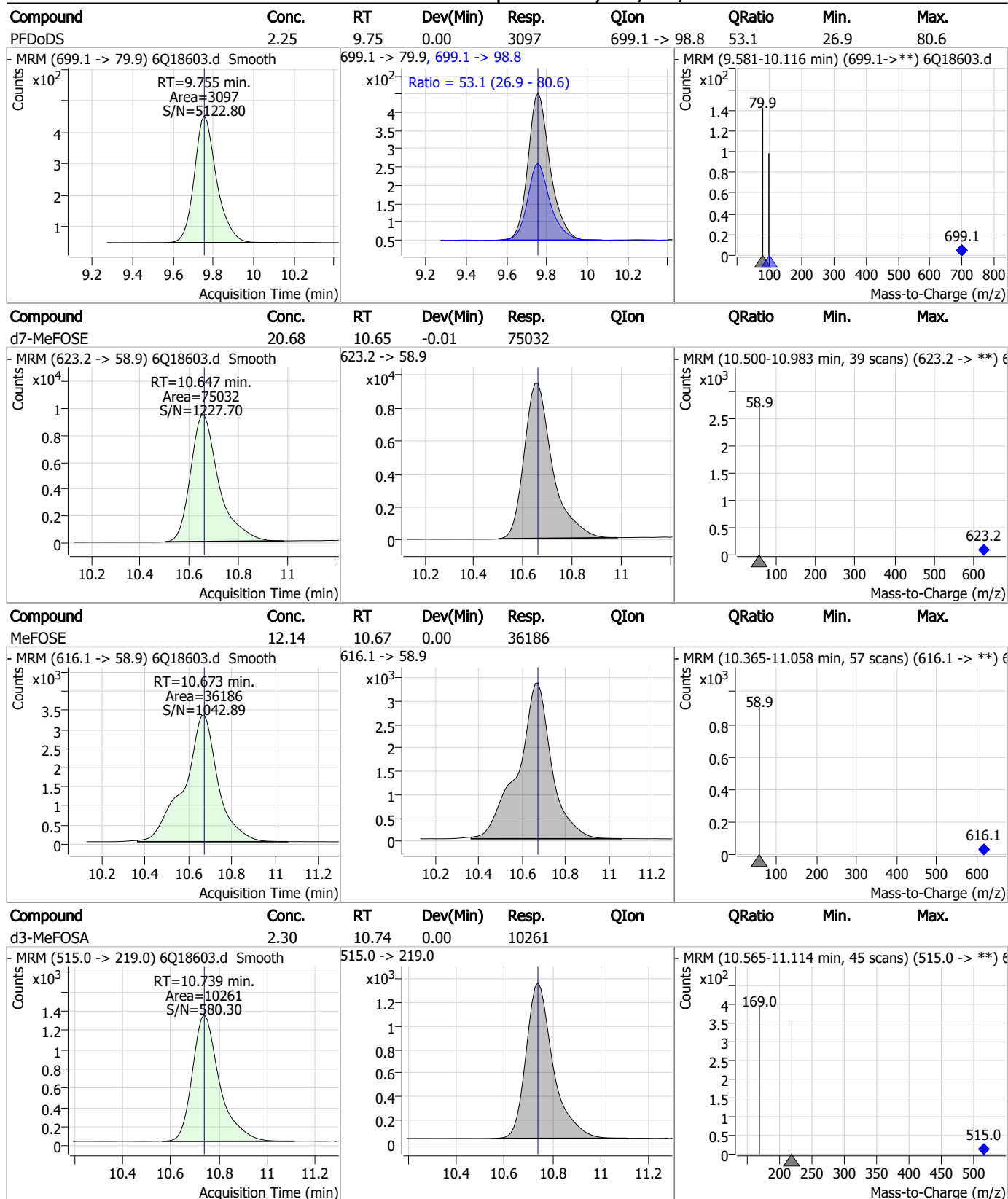
Perfluorinated Compounds by LC/MS/MS



7.4.1

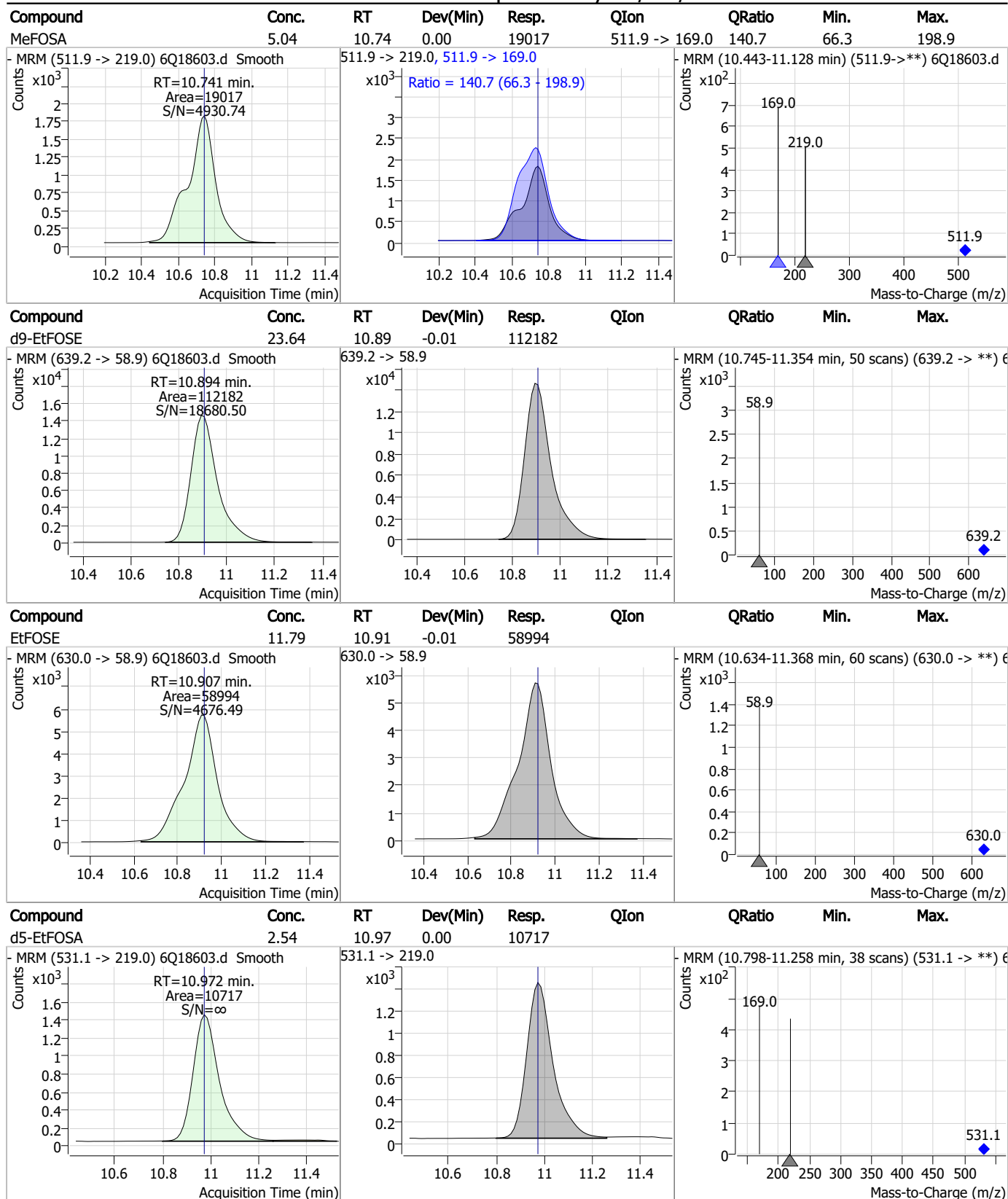
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Perfluorinated Compounds by LC/MS/MS



7.4.1
7

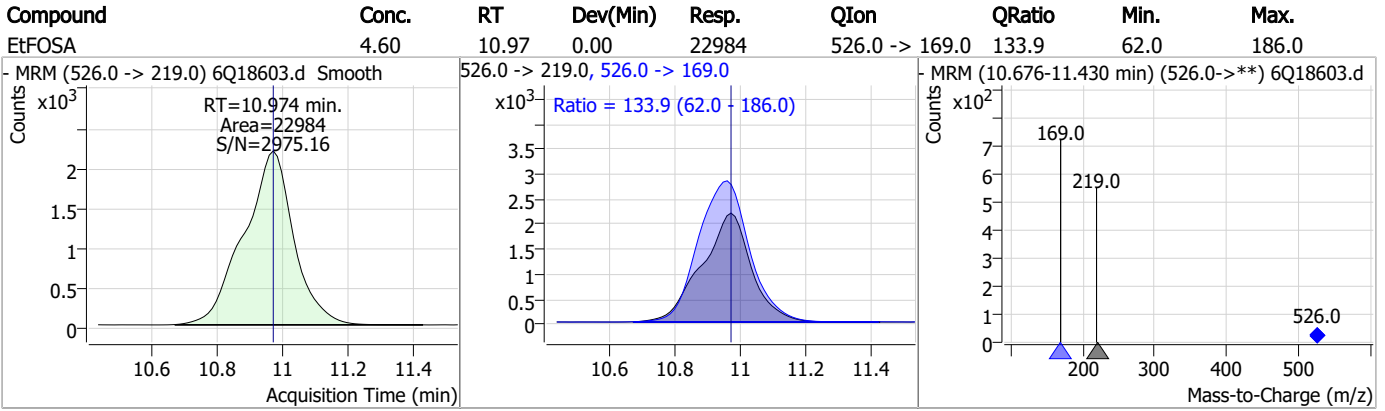
Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Manual Integration Approval Summary

Sample Number: OP97070-MS Method: EPA DRAFT 1633
Lab FileID: 6Q18603.D Analyst approved: 06/01/23 11:25 Martha Valls
Injection Time: 05/31/23 21:22 Supervisor approved: 06/01/23 16:14 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.4.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18606.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 10:06:04 PM
 Sample Name : op97070-dup
 Vial : P6-C4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97070,S6Q279,520,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	146817	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	51837	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	56189	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	52021	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	79536	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	34474	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	21241	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	26261	1.25 µg/L	0.000
M2-PFDoDA	8.900	615.1 -> 570.0	23064	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	11439	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	21087	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	20176	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	12194	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	11601	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3219	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4393	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4765	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	22371	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	34440	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	22266	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	64946	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	100132	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	9612	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9537	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	14684	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	65407	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8922	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	87176	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	28988	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	42641	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	53731	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3219	5.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4393	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4765	5.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	23064	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	11439	1.04 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 83.5%		
13C3-PFBS	5.334	302.1 -> 79.9	20176	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	12194	2.45 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 = 97.9%	
13C4-PFBA	2.876	216.8 -> 171.9	146817	9.42 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C4-PFHpA	6.369	367.1 -> 322.0	52021	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C5-PFHxA	5.417	318.0 -> 273.0	56189	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C5-PFPeA	4.222	268.3 -> 223.0	51837	4.96 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C6-PFDA	8.027	519.1 -> 474.1	21241	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C7-PFUnDA	8.480	570.0 -> 525.1	26261	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-FOSA	9.598	506.1 -> 77.8	21087	1.88 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.4%	
13C8-PFOA	7.026	421.1 -> 376.0	79536	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOS	8.177	507.1 -> 79.9	11601	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C9-PFNA	7.545	472.1 -> 427.0	34474	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.1%	
d3-MeFOSAA	8.084	573.2 -> 419.0	22371	4.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	34440	9.75 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	9537	2.10 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 84.1%	
d5-EtFOSAA	8.279	589.2 -> 419.0	22266	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d7-MeFOSE	10.660	623.2 -> 58.9	64946	17.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 70.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	100132	20.76 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.0%	
d5-EtFOSA	10.972	531.1 -> 219.0	9612	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.5%	

Target Compounds

QValue

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

Perfluorinated Compounds by LC/MS/MS

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

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

7.5.1
7

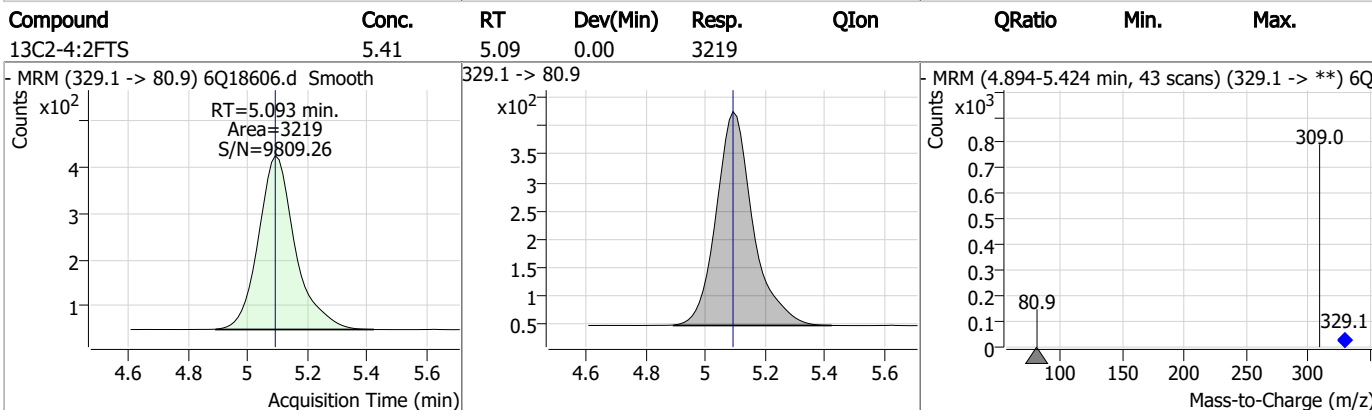
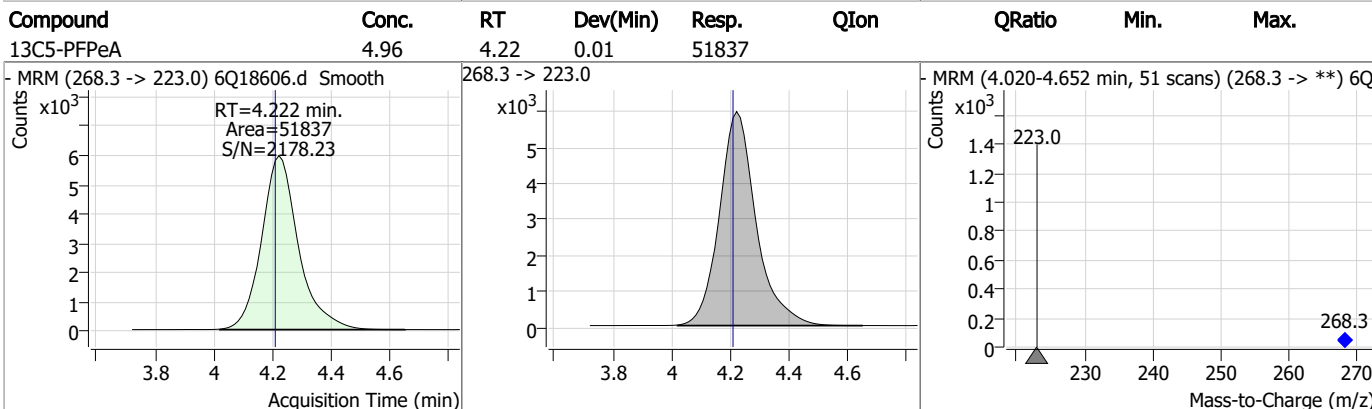
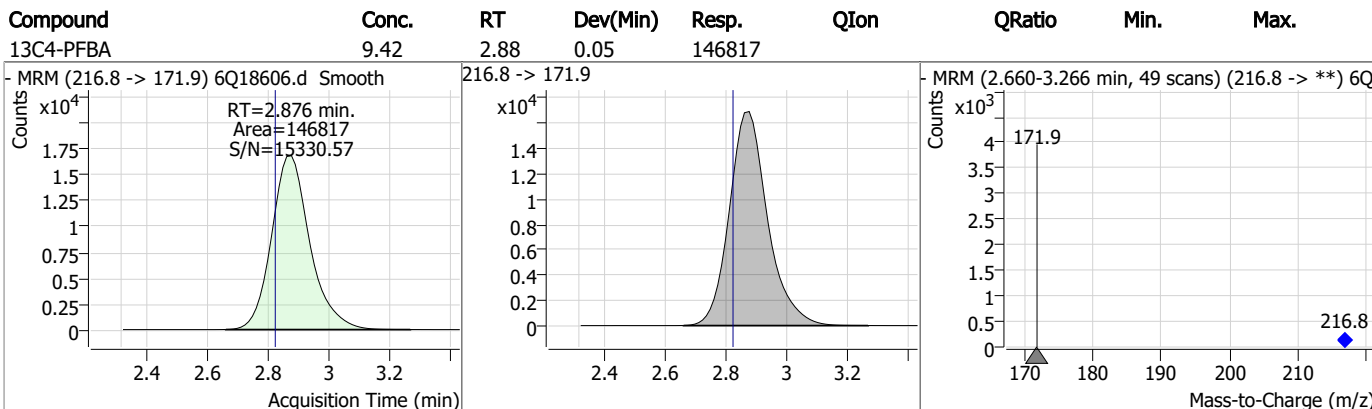
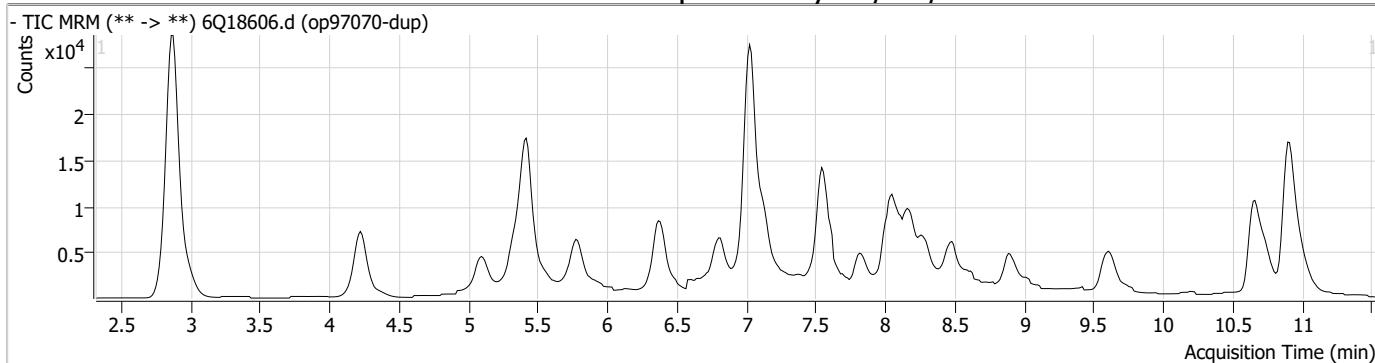
Perfluorinated Compounds by LC/MS/MS

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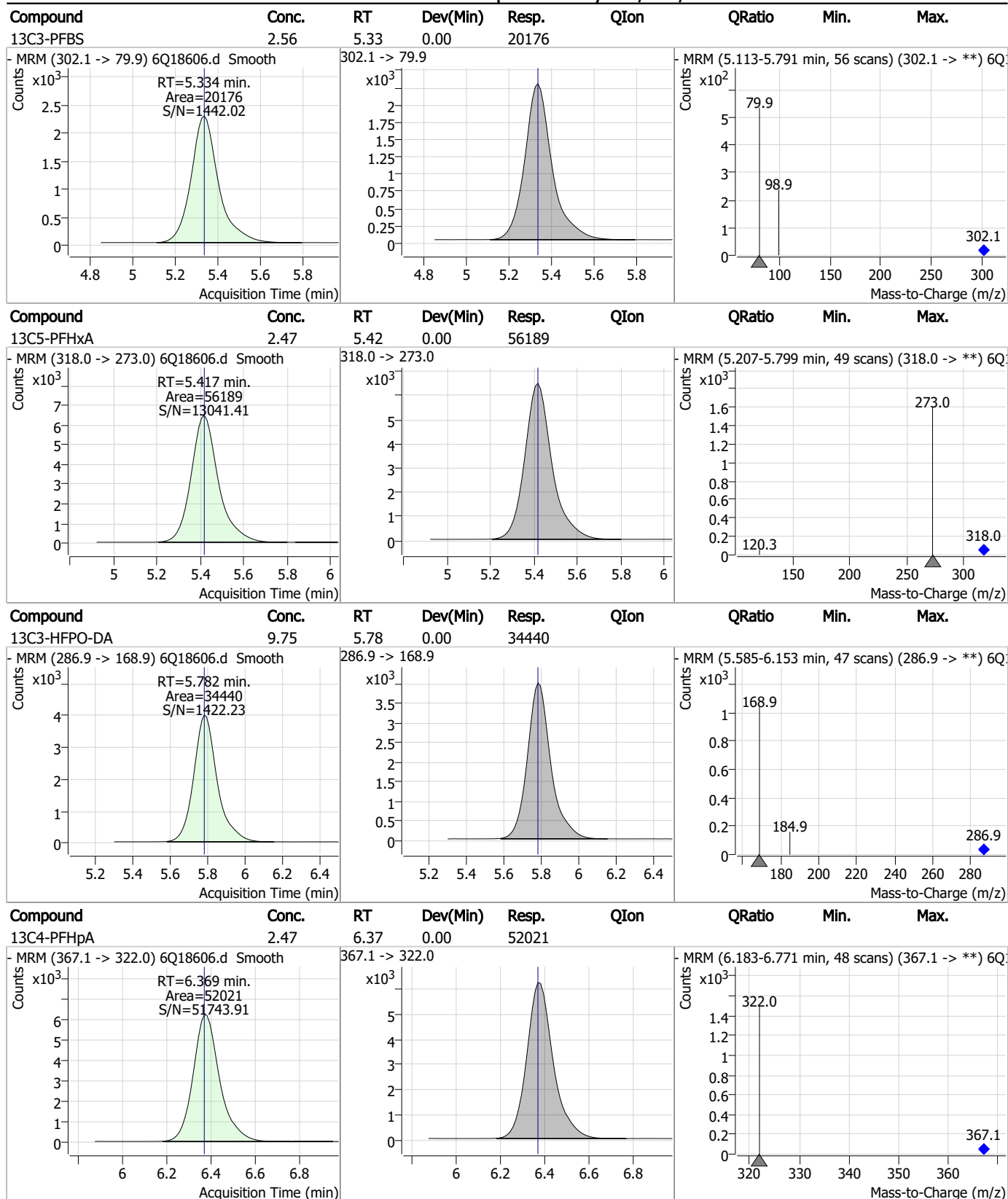
7.5.1

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Perfluorinated Compounds by LC/MS/MS

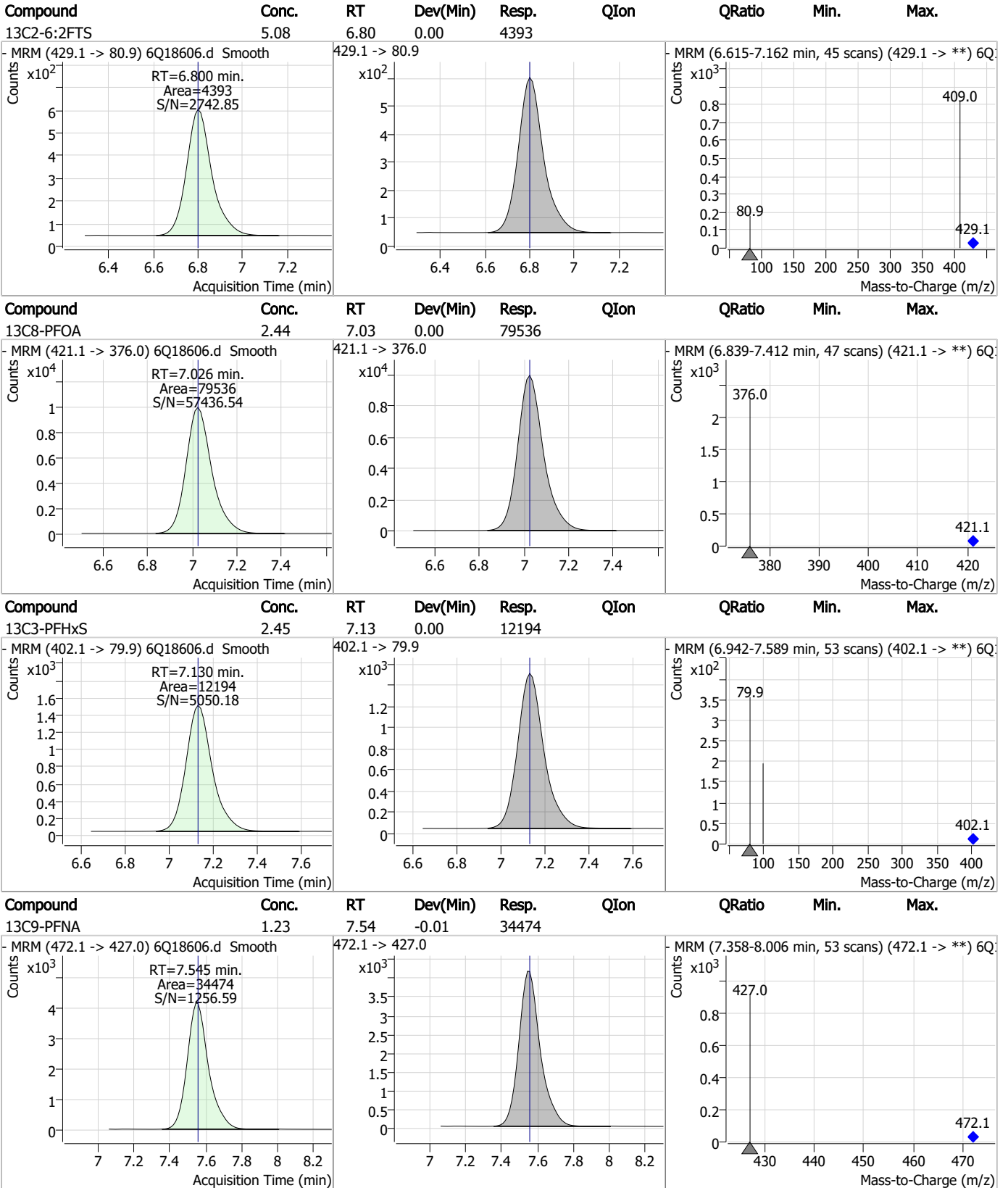


Perfluorinated Compounds by LC/MS/MS



7.5.1
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Perfluorinated Compounds by LC/MS/MS

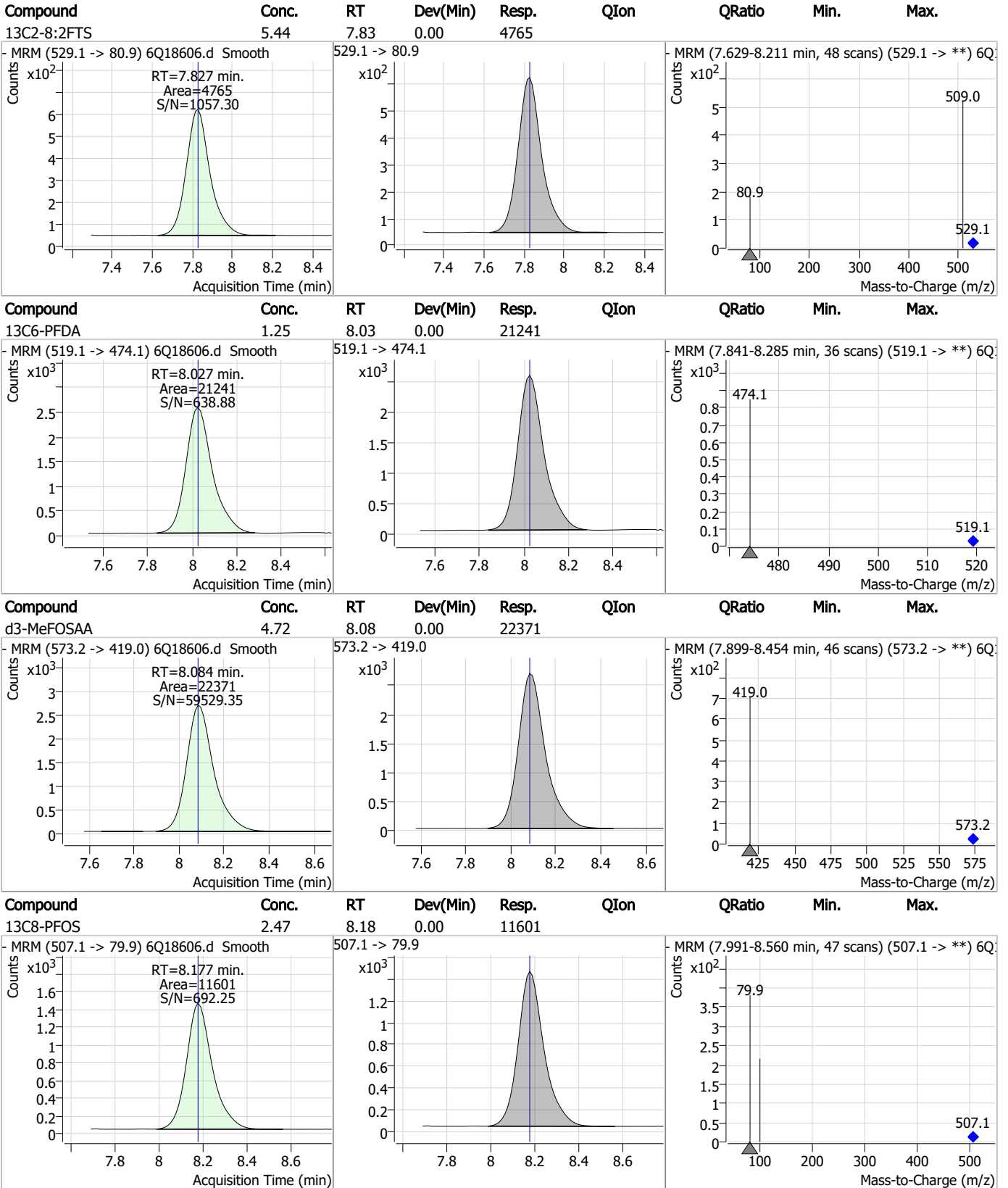


7.5.1

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Perfluorinated Compounds by LC/MS/MS



7.5.1

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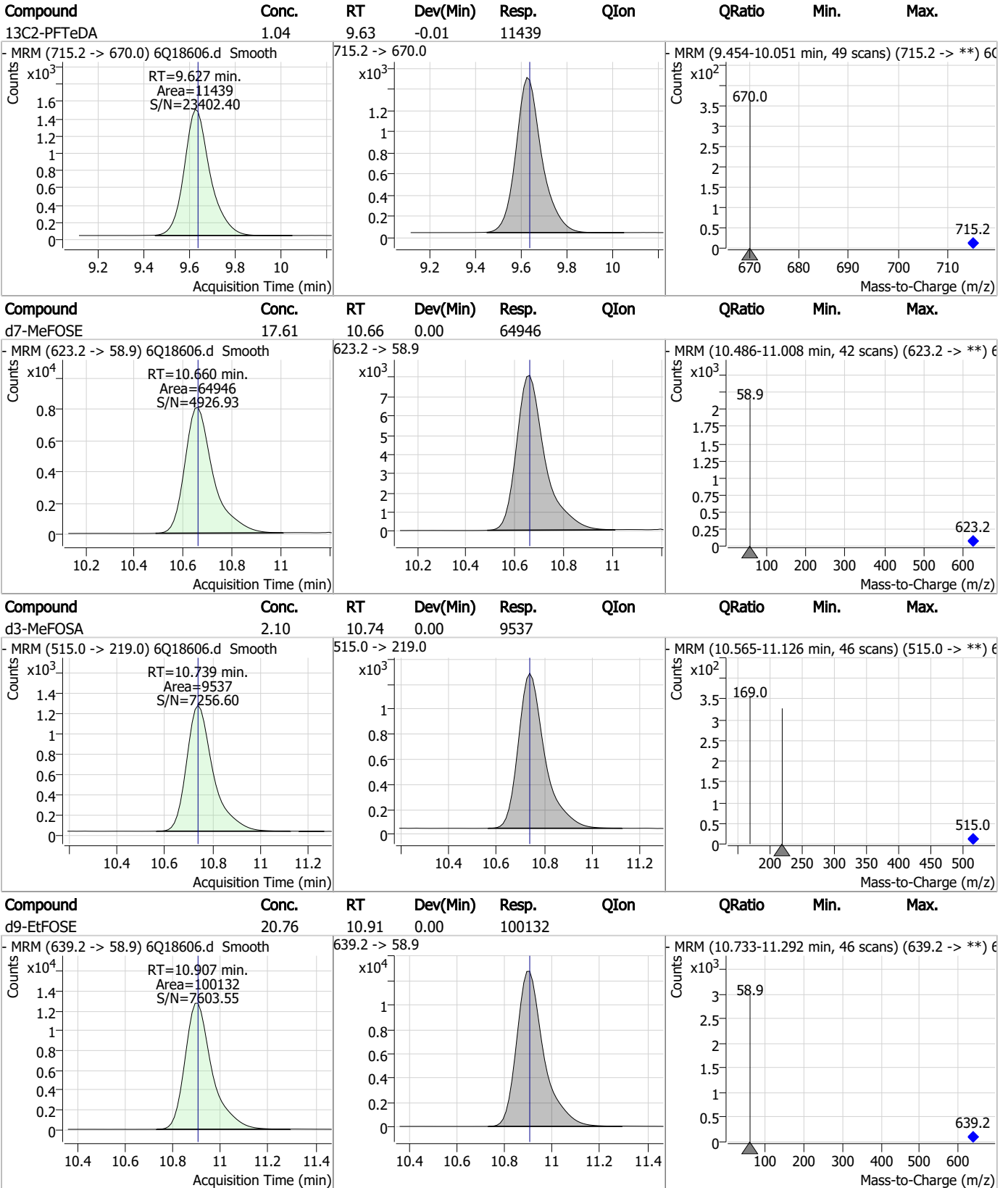
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.17	8.28	0.00	22266				
13C7-PFUnDA	1.21	8.48	0.00	26261				
13C2-PFDoDA	1.15	8.90	0.00	23064				
13C8-FOSA	1.88	9.60	0.00	21087				

7.5.1

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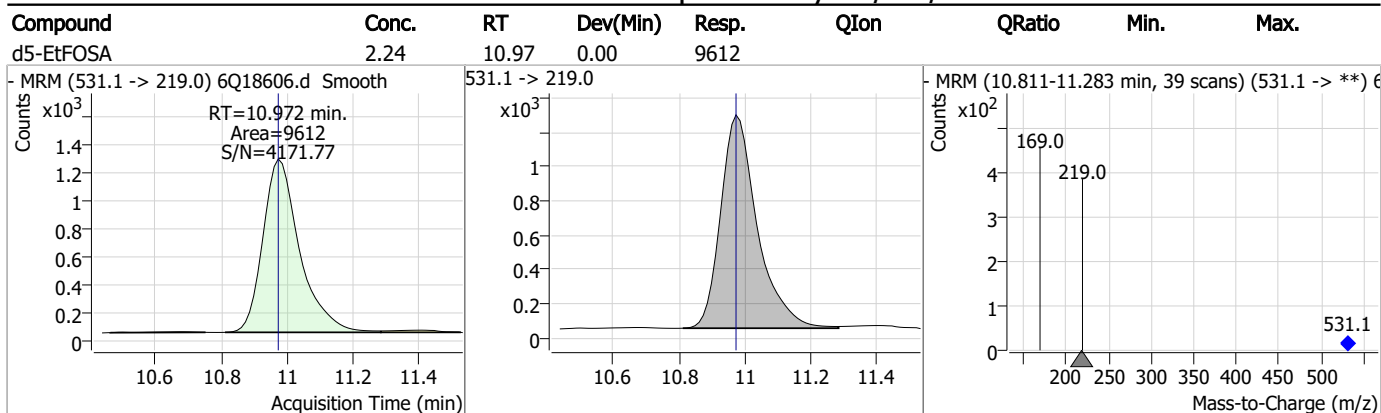
Perfluorinated Compounds by LC/MS/MS



7.5.1

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Perfluorinated Compounds by LC/MS/MS



7.5.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18511.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 2:37:33 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q278 TDCA.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

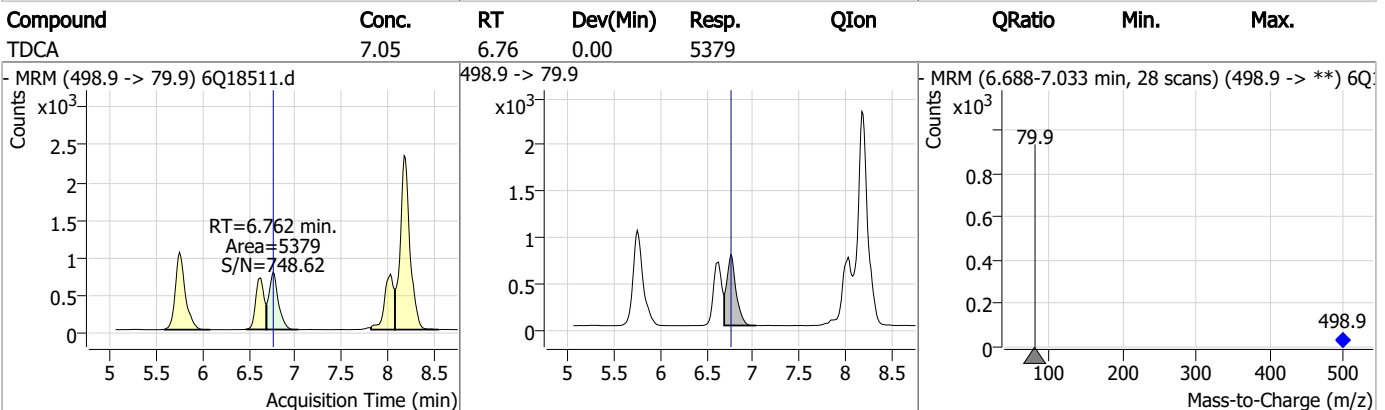
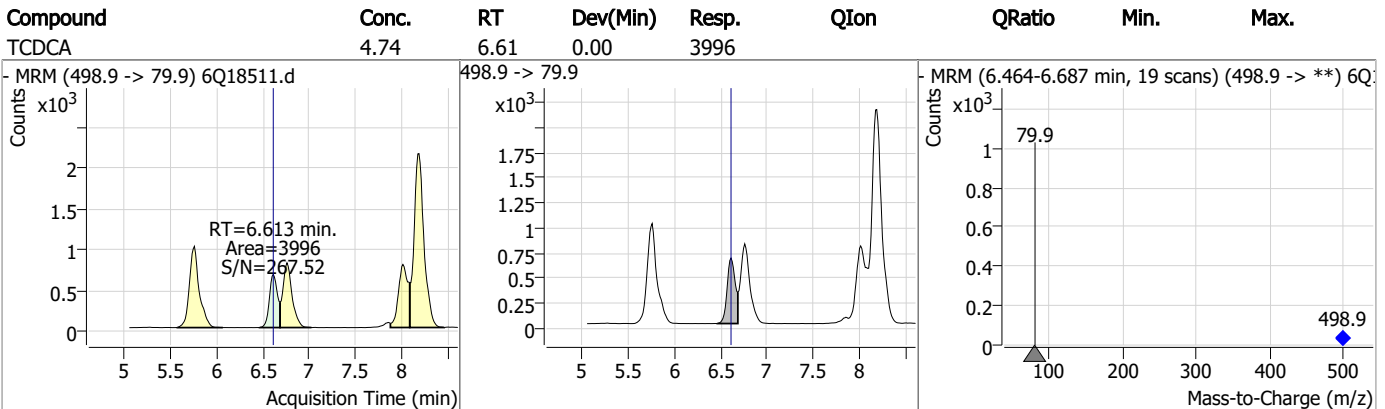
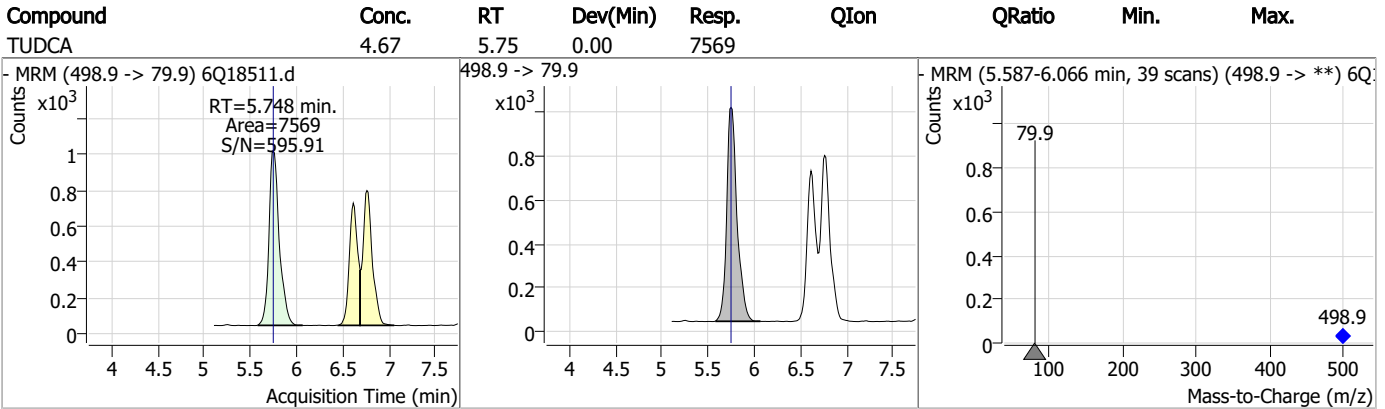
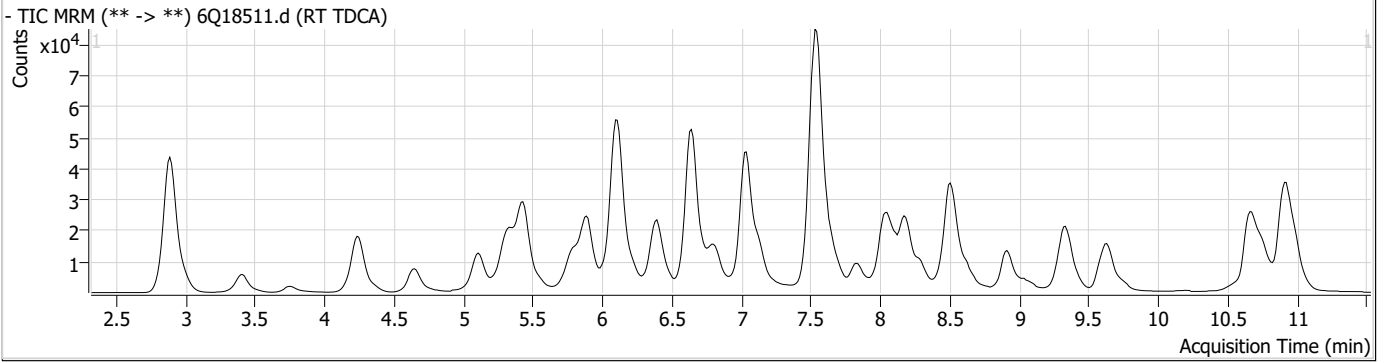
Compound	RT	Transition	Response	Conc. Units	Dev(Min)	QValue
Internal Standards						
M8-PFOS	8.189	507.1 -> 79.9	18264	2.50 µg/L	-0.012	
13C4-PFOS	8.190	502.8 -> 79.9	23964	2.50 µg/L	-0.012	
System Monitoring Compounds						
13C8-PFOS	8.189	507.1 -> 79.9	18264	1.93 µg/L	-0.012	
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.3%		
Target Compounds						
PFOS	8.191	498.9 -> 79.9 498.9 -> 98.8	21203 10239	3.40 µg/L		78
TCDCa	6.613	498.9 -> 79.9	3996	4.74 ng/ml		100
TDCA	6.762	498.9 -> 79.9	5379	7.05 ng/ml		100
TUDCA	5.748	498.9 -> 79.9	7569	4.67 ng/ml		100

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

7.6.1

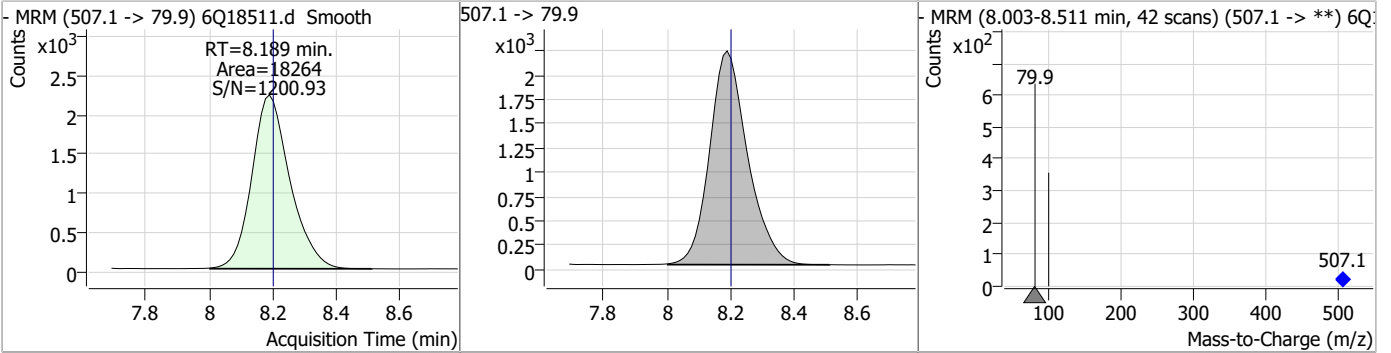
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Perfluorinated Compounds by LC/MS/MS

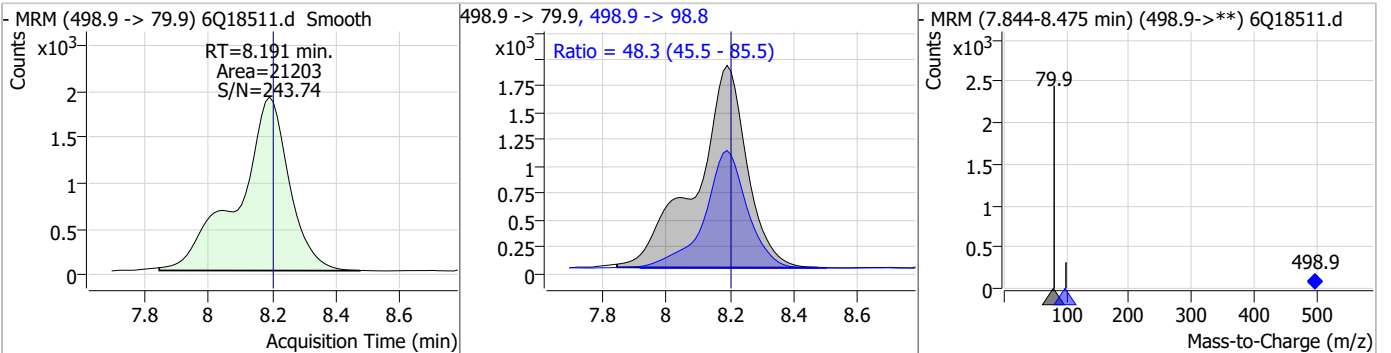


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.93	8.19	-0.01	18264				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.40	8.19	-0.01	21203	498.9 -> 98.8	48.3	45.5	85.5



7.6.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18512.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 2:52:01 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	171471	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	56581	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	59874	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	55177	2.50 µg/L	0.000
M8-PFOA	7.038	421.1 -> 376.0	83088	2.50 µg/L	0.012
M9-PFNA	7.557	472.1 -> 427.0	34764	1.25 µg/L	0.000
M6-PFDA	8.039	519.1 -> 474.1	20723	1.25 µg/L	0.012
M7-PFUnDA	8.480	570.0 -> 525.1	26126	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	25859	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	13123	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	29089	2.50 µg/L	0.012
M3-PFBS	5.334	302.1 -> 79.9	23077	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13940	2.50 µg/L	0.000
M8-PFOS	8.189	507.1 -> 79.9	13354	2.50 µg/L	0.000
M2-4:2FTS	5.094	329.1 -> 80.9	2569	5.00 µg/L	0.000
M2-6:2FTS	6.801	429.1 -> 80.9	3613	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3661	5.00 µg/L	0.000
M3-MeFOSAA	8.096	573.2 -> 419.0	20896	5.00 µg/L	0.000
M3-HFPO-DA	5.794	286.9 -> 168.9	38773	10.00 µg/L	0.012
M5-EtFOSAA	8.292	589.2 -> 419.0	19534	5.00 µg/L	0.012
M7-MeFOSE	10.660	623.2 -> 58.9	102587	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	135526	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	11288	2.50 µg/L	0.012
M3-MeFOSA	10.752	515.0 -> 219.0	12785	2.50 µg/L	0.012
13C4-PFOS	8.190	502.8 -> 79.9	16705	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	71421	5.00 µg/L	0.037
18O2-PFHxS	7.141	403.0 -> 83.9	10082	2.50 µg/L	0.012
13C4-PFOA	7.027	417.1 -> 372.0	88047	2.50 µg/L	0.000
13C2-PFDA	8.039	515.1 -> 470.1	30244	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	43066	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	56438	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.094	329.1 -> 80.9	2569	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C2-6:2FTS	6.801	429.1 -> 80.9	3613	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3661	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.0%		
13C2-PFDoDA	8.912	615.1 -> 570.0	25859	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C2-PFTeDA	9.639	715.2 -> 670.0	13123	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C3-PFBS	5.334	302.1 -> 79.9	23077	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFHxS	7.130	402.1 -> 79.9	13940	2.56 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 = 102.4%	
13C4-PFBA	2.876	216.8 -> 171.9	171471	10.03 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.382	367.1 -> 322.0	55177	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C5-PFHxA	5.417	318.0 -> 273.0	59874	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFPeA	4.222	268.3 -> 223.0	56581	5.05 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C6-PFDA	8.039	519.1 -> 474.1	20723	1.13 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.5%	
13C7-PFUnDA	8.480	570.0 -> 525.1	26126	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.4%	
13C8-FOSA	9.611	506.1 -> 77.8	29089	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-PFOA	7.038	421.1 -> 376.0	83088	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-PFOS	8.189	507.1 -> 79.9	13354	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C9-PFNA	7.557	472.1 -> 427.0	34764	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
d3-MeFOSAA	8.096	573.2 -> 419.0	20896	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C3-HFPO-DA	5.794	286.9 -> 168.9	38773	9.71 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d3-MeFOSA	10.752	515.0 -> 219.0	12785	2.71 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
d5-EtFOSAA	8.292	589.2 -> 419.0	19534	4.97 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	102587	26.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
d9-EtFOSE	10.907	639.2 -> 58.9	135526	26.10 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
d5-EtFOSA	10.984	531.1 -> 219.0	11288	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	192203	53.05 µg/L	96
		327.1 -> 80.9	71252		
6:2FTS	6.801	427.1 -> 407.0	171413	50.02 µg/L	96
		427.1 -> 80.9	61724		
8:2FTS	7.828	527.1 -> 507.0	97146	50.13 µg/L	97
		527.1 -> 80.8	39546		
EtFOSAA	8.293	584.2 -> 419.1	36572	13.69 µg/L	96
		584.2 -> 526.0	18816		
FOSA	9.602	498.1 -> 77.9	318725	32.14 µg/L	100
		498.1 -> 478.0	9465		
MeFOSAA	8.097	570.1 -> 419.0	65571	14.26 µg/L	99
		570.1 -> 483.0	12893		
PFBA	2.868	212.8 -> 168.9	316535	56.02 µg/L	100
PFBS	5.348	298.7 -> 79.9	98719	12.37 µg/L	98
		298.7 -> 98.8	37024		
PFDA	8.040	512.9 -> 469.0	352040	14.83 µg/L	99
		512.9 -> 219.0	55440		
PFDoDA	8.913	613.1 -> 569.0	242416	13.73 µg/L	95
		613.1 -> 319.0	38092		
PFDS	9.064	599.0 -> 79.9	43124	13.06 µg/L	99

7.6.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	20731	14.45	µg/L	98
		363.1 -> 319.0	354539			
PFHpS	7.698	363.1 -> 169.0	56590	13.24	µg/L	94
		449.0 -> 79.9	84420			
PFHxA	5.420	449.0 -> 98.9	38226	13.67	µg/L	98
		313.0 -> 269.0	279982			
PFHxS	7.143	313.0 -> 118.9	14479	12.49	µg/L	98
		398.7 -> 79.9	81590			
PFNA	7.434	398.7 -> 98.9	39690	31.43	µg/L	98
		463.0 -> 419.0	794600			
PFNS	8.644	463.0 -> 219.0	161919	12.77	µg/L	96
		548.8 -> 79.9	70704			
PFOA	7.028	548.8 -> 98.9	36304	31.18	µg/L	97
		413.0 -> 369.0	1098057			
PFOS	8.191	413.0 -> 169.0	202521	12.35	µg/L	91
		498.9 -> 79.9	77242			
PFPeA	4.224	498.9 -> 98.8	36472	27.08	µg/L	100
		263.0 -> 219.0	374625			
PFPeS	6.422	349.1 -> 79.9	85382	13.22	µg/L	95
		349.1 -> 98.9	37333			
PFTeDA	9.640	713.1 -> 669.0	186753	14.10	µg/L	99
		713.1 -> 168.9	15112			
PFTrDA	9.296	663.0 -> 619.0	234371	13.43	µg/L	95
		663.0 -> 168.9	25904			
PFUnDA	8.480	563.1 -> 519.0	248690	14.78	µg/L	98
		563.1 -> 269.1	40057			
11CI-PF3OUdS	9.348	630.9 -> 450.9	364004	27.86	µg/L	98
		632.9 -> 452.9	108827			
9CI-PF3ONS	8.520	530.8 -> 351.0	612438	28.82	µg/L	94
		532.8 -> 353.0	181159			
ADONA	6.632	376.9 -> 250.9	1290016	26.13	µg/L	98
		376.9 -> 84.8	360289			
HFPO-DA	5.795	284.9 -> 168.9	92225	28.36	µg/L	96
		284.9 -> 184.9	11224			
3:3FTCA	3.709	241.0 -> 177.0	60592	69.10	µg/L	97
		241.0 -> 117.0	8101			
5:3FTCA	6.099	341.0 -> 237.1	1193239	336.10	µg/L	98
		341.0 -> 217.0	869618			
7:3FTCA	7.523	441.0 -> 316.9	781851	344.67	µg/L	96
		441.0 -> 336.9	1769182			
EtFOSA	10.974	526.0 -> 219.0	246413	47.26	µg/L	89
		526.0 -> 169.0	335232			
EtFOSE	10.920	630.0 -> 58.9	504965	84.63	µg/L	100
		511.9 -> 219.0	210394			
MeFOSA	10.741	511.9 -> 169.0	296059	43.56	µg/L	93
		616.1 -> 58.9	353781			
MeFOSE	10.673	699.1 -> 79.9	18696	85.31	µg/L	100
		699.1 -> 98.8	9781			
PFDoDS	9.767	295.0 -> 201.0	66785	13.13	µg/L	98
		295.0 -> 84.9	18354			
NFDHA	5.299	279.0 -> 85.1	271268	27.21	µg/L	99
		229.0 -> 84.9	211440			
PFMBA	4.638	314.8 -> 134.9	696086	28.62	µg/L	100
		314.8 -> 82.9	23213			
PFMPA	3.388			28.58	µg/L	100
PFEESA	5.875			25.73	µg/L	98

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

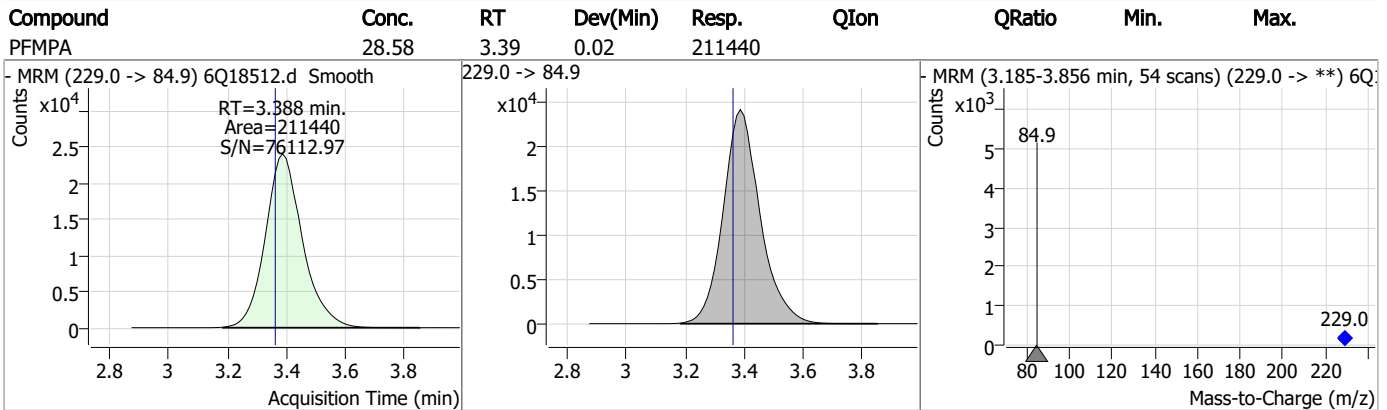
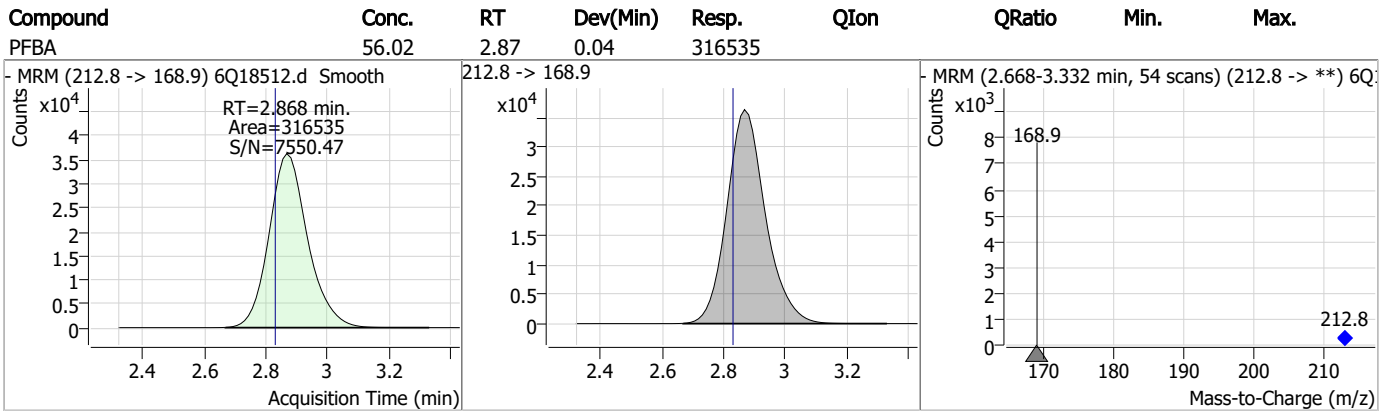
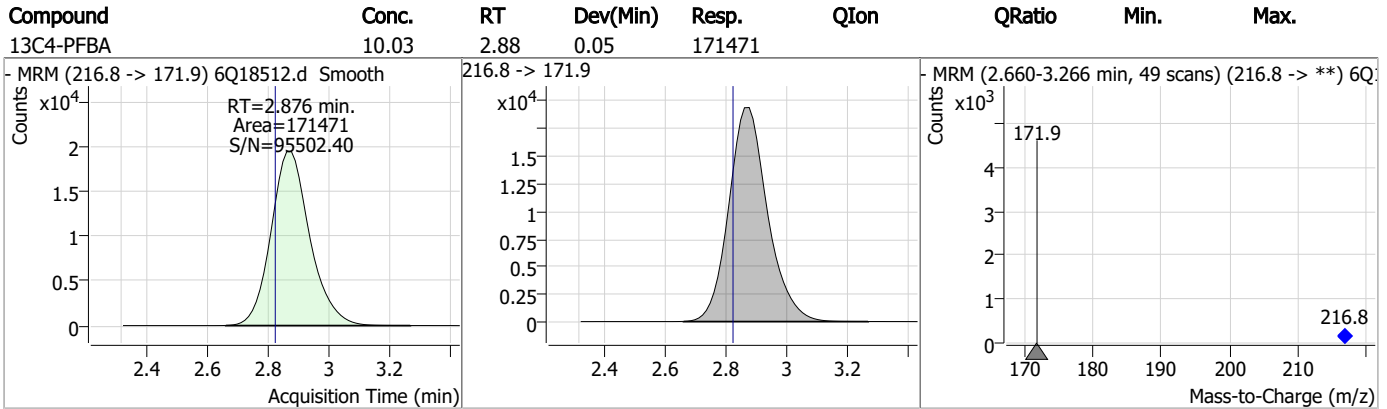
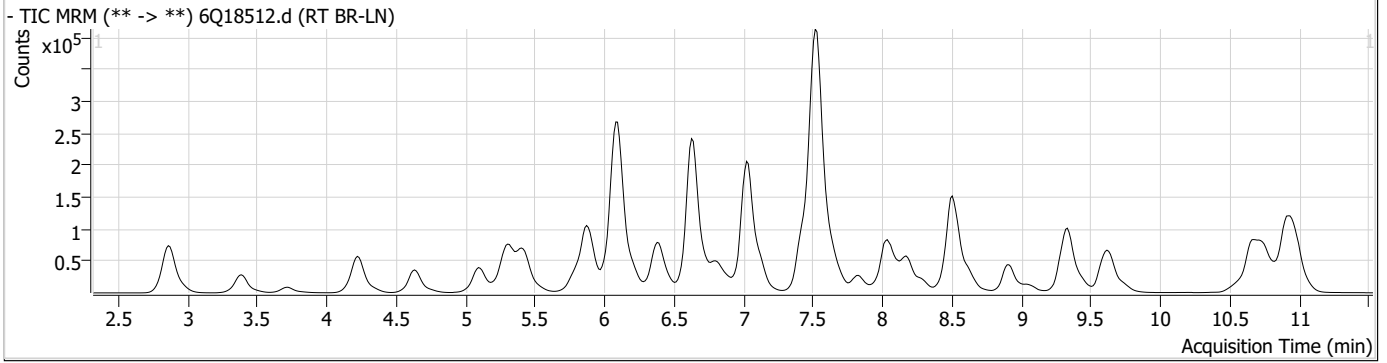
Perfluorinated Compounds by LC/MS/MS

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

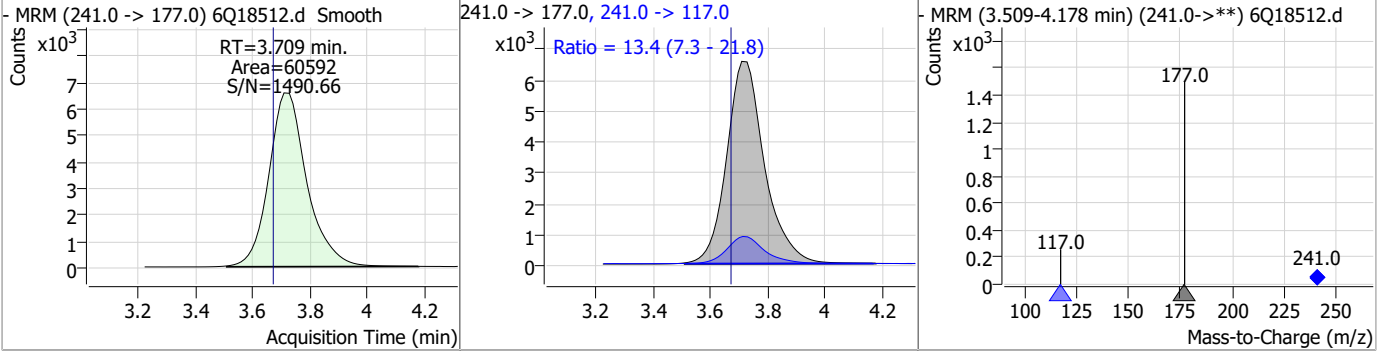
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Perfluorinated Compounds by LC/MS/MS

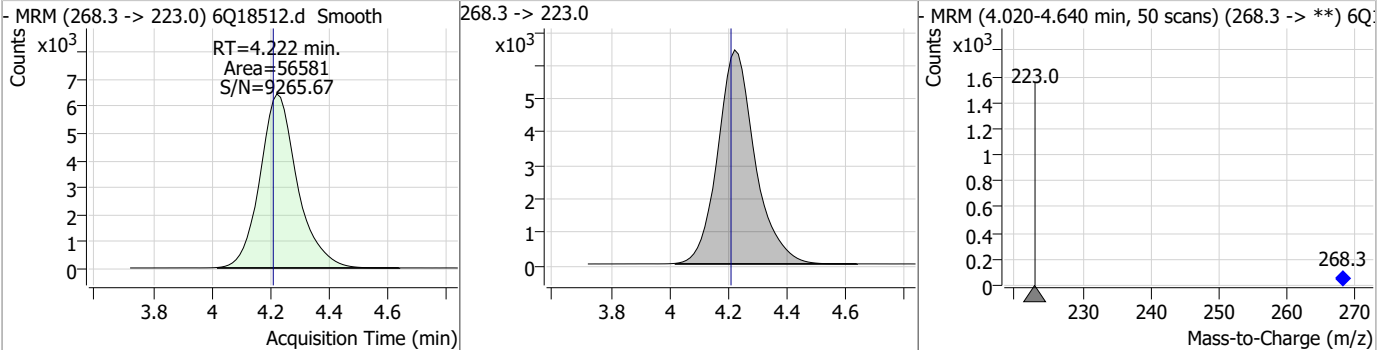


Perfluorinated Compounds by LC/MS/MS

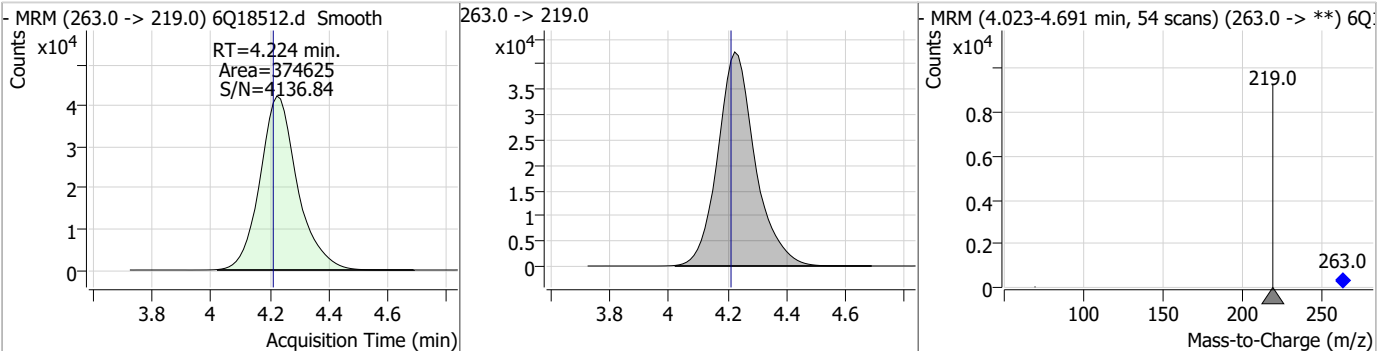
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	69.10	3.71	0.04	60592	241.0 -> 117.0	13.4	7.3	21.8



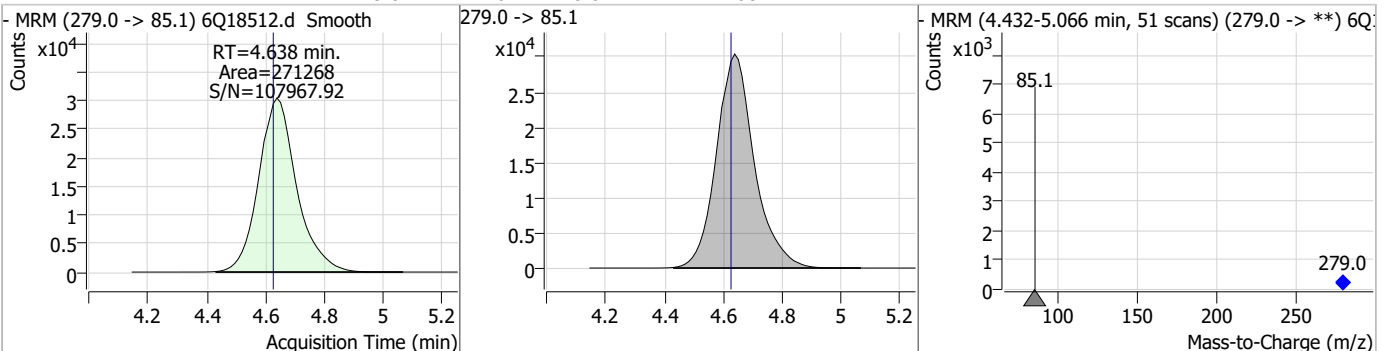
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.05	4.22	0.01	56581				



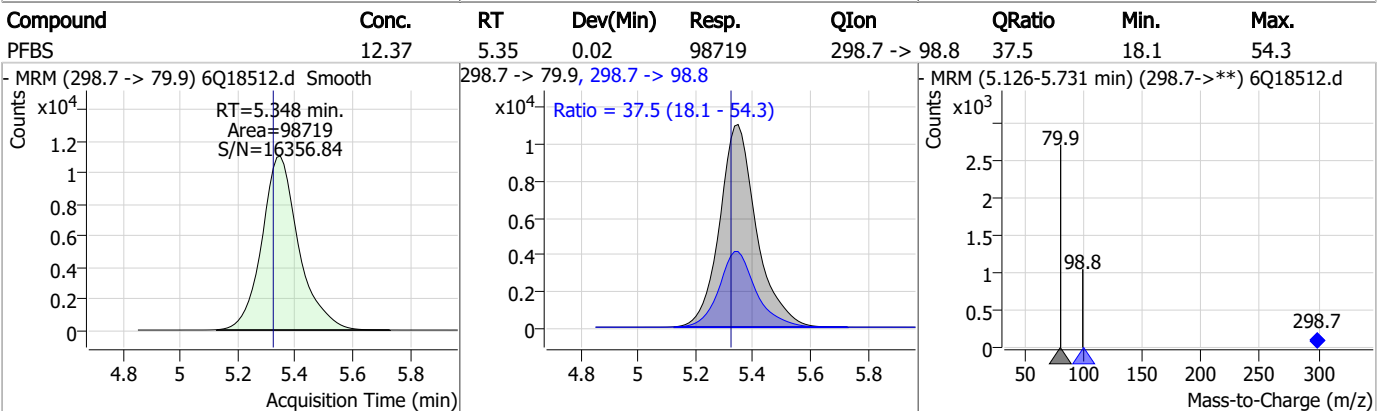
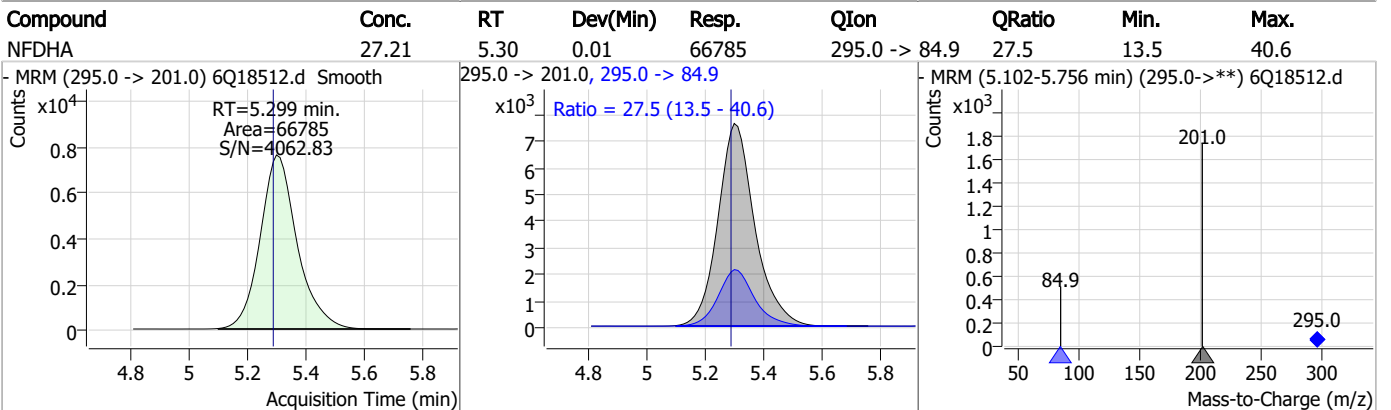
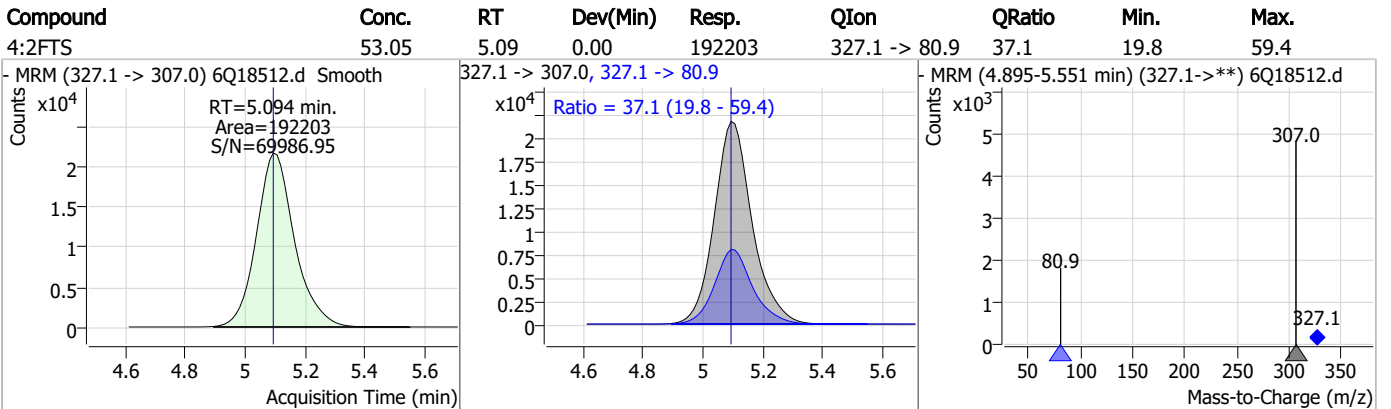
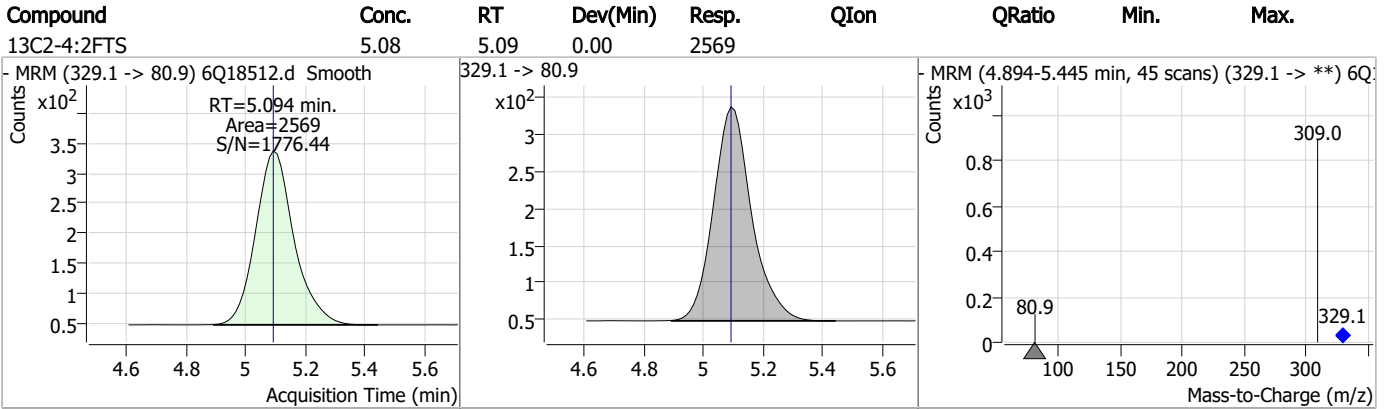
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	27.08	4.22	0.01	374625				



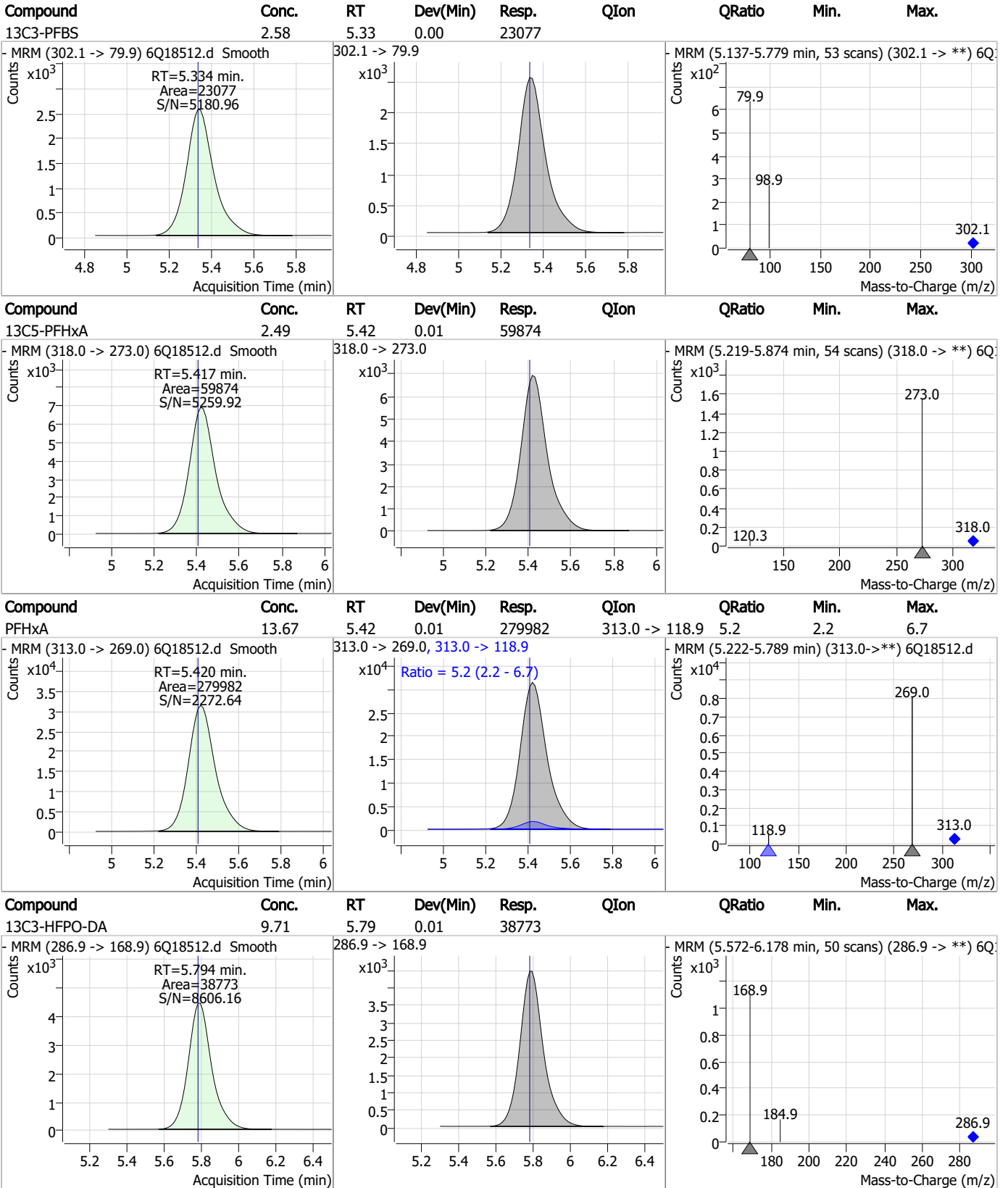
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	28.62	4.64	0.01	271268				



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

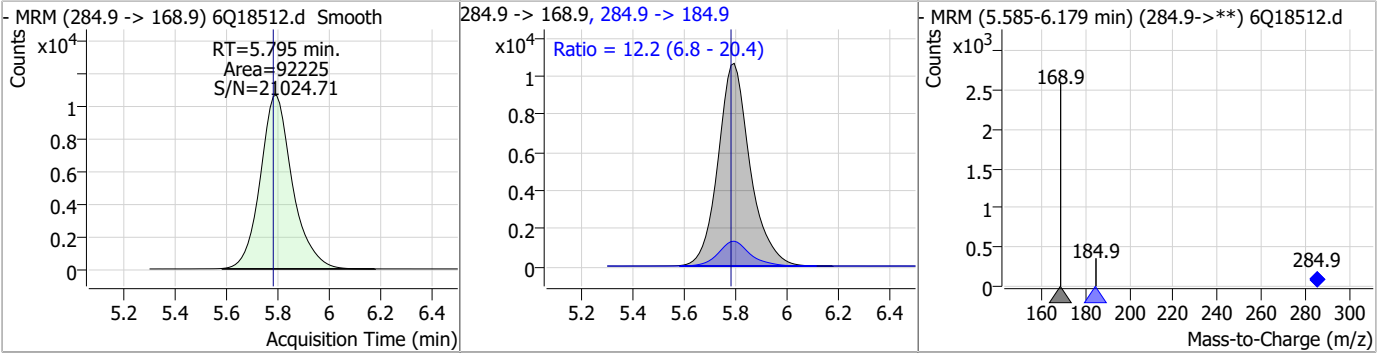


7.6.2

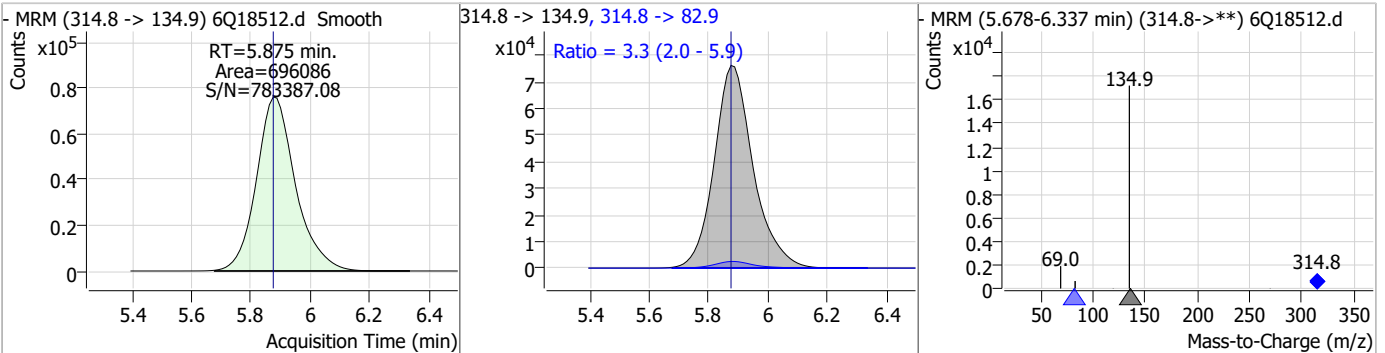
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Perfluorinated Compounds by LC/MS/MS

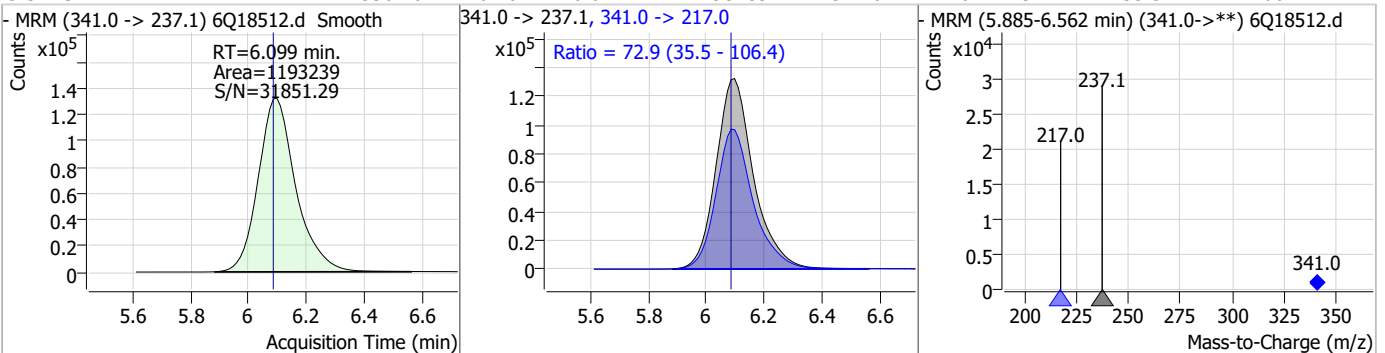
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	28.36	5.80	0.01	92225	284.9 -> 184.9	12.2	6.8	20.4



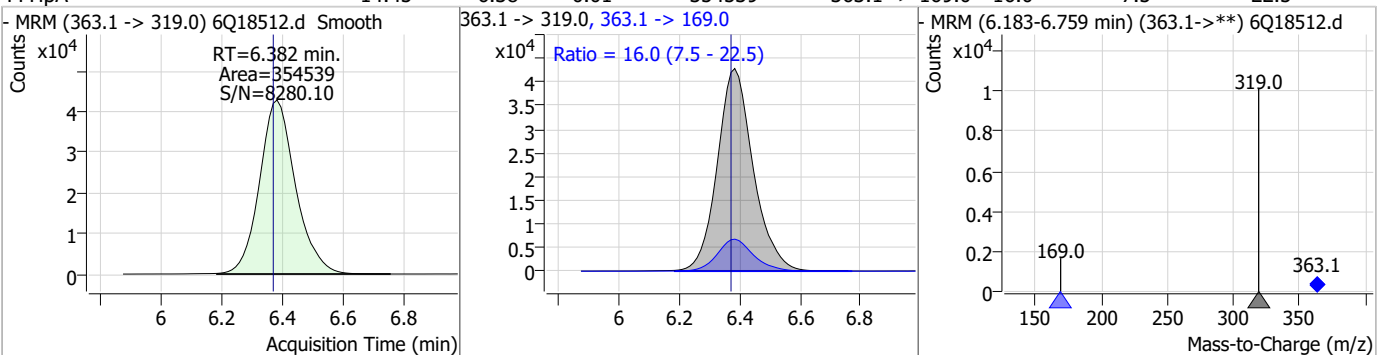
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	25.73	5.88	0.00	696086	314.8 -> 82.9	3.3	2.0	5.9



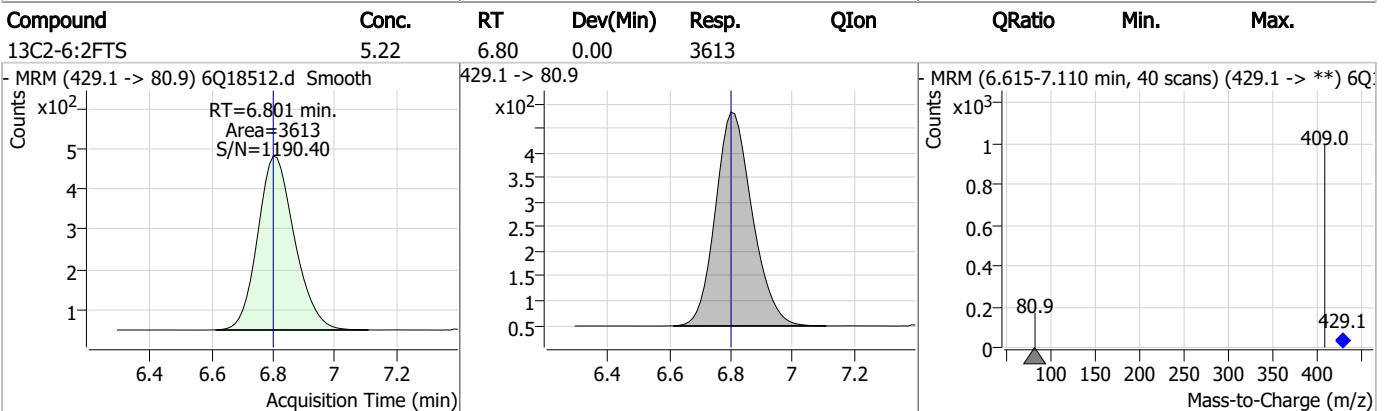
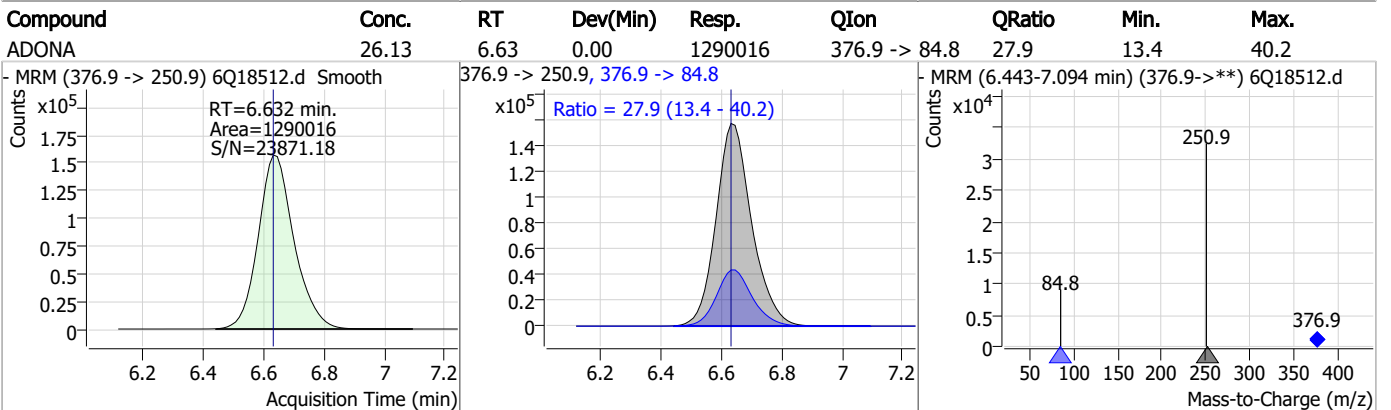
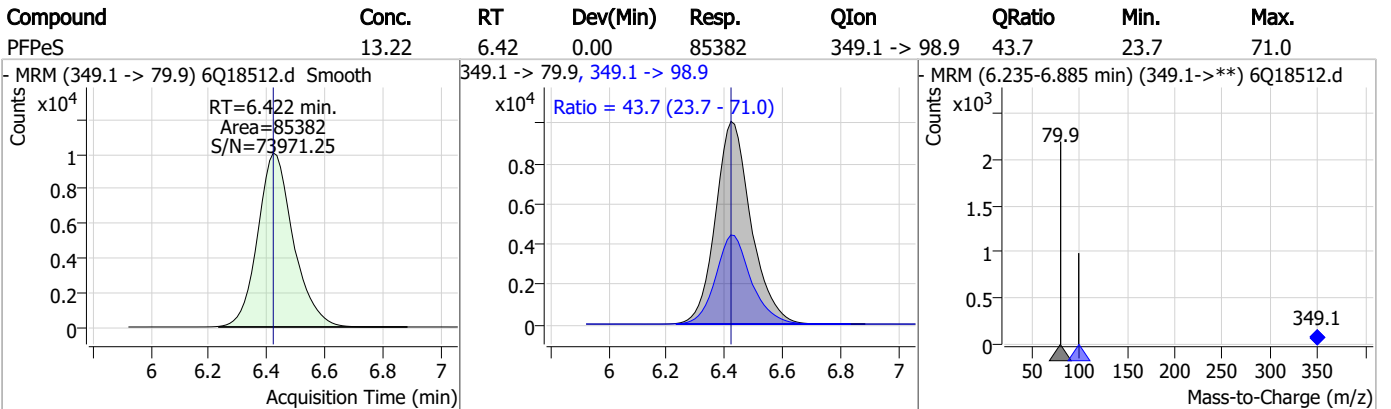
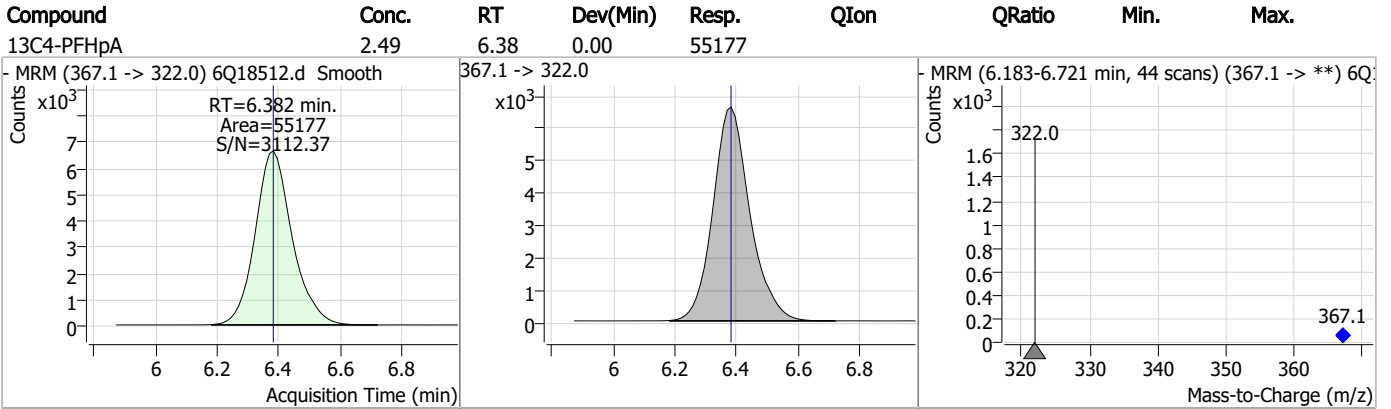
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	336.10	6.10	0.01	1193239	341.0 -> 217.0	72.9	35.5	106.4



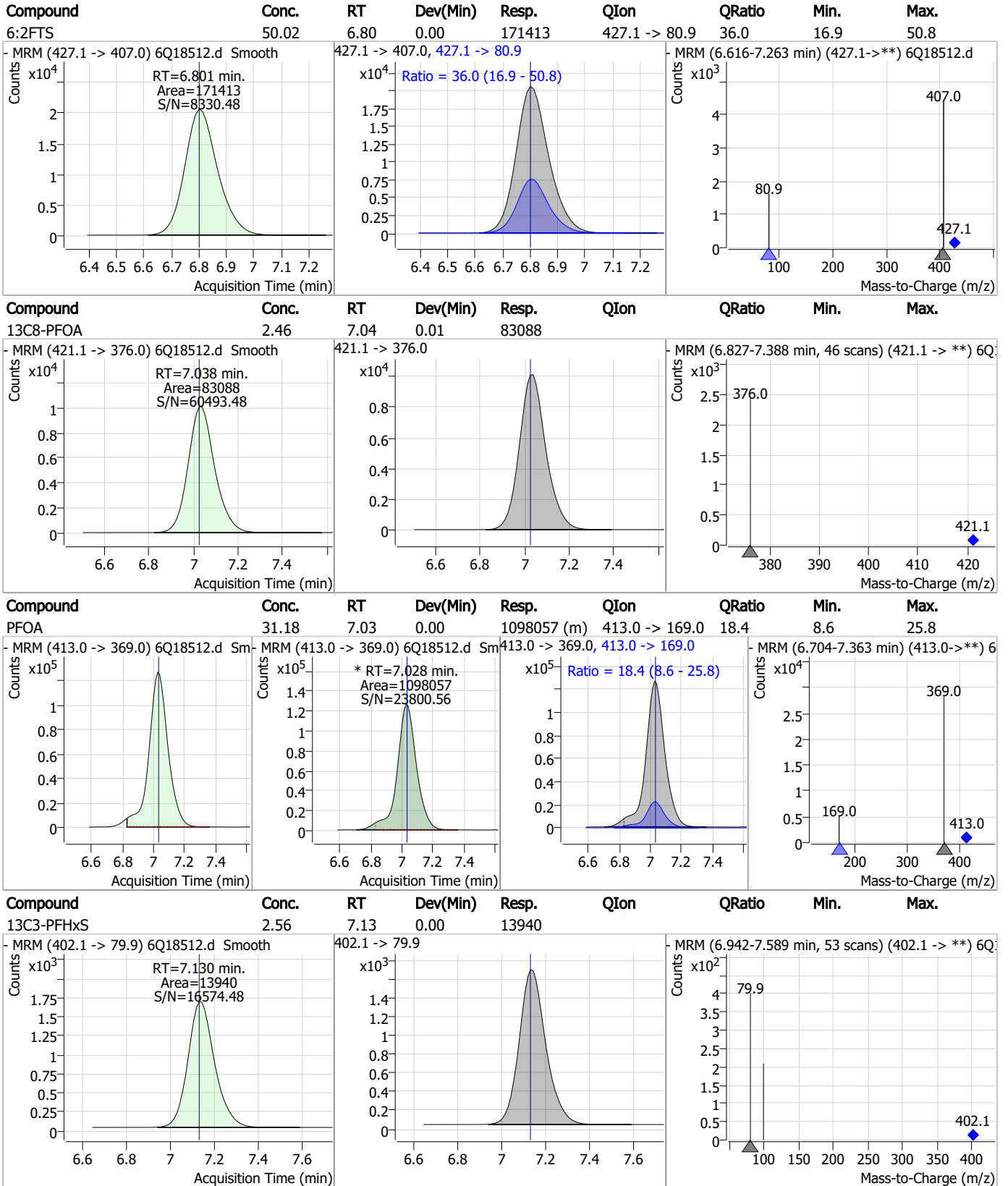
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	14.45	6.38	0.01	354539	363.1 -> 169.0	16.0	7.5	22.5



Perfluorinated Compounds by LC/MS/MS



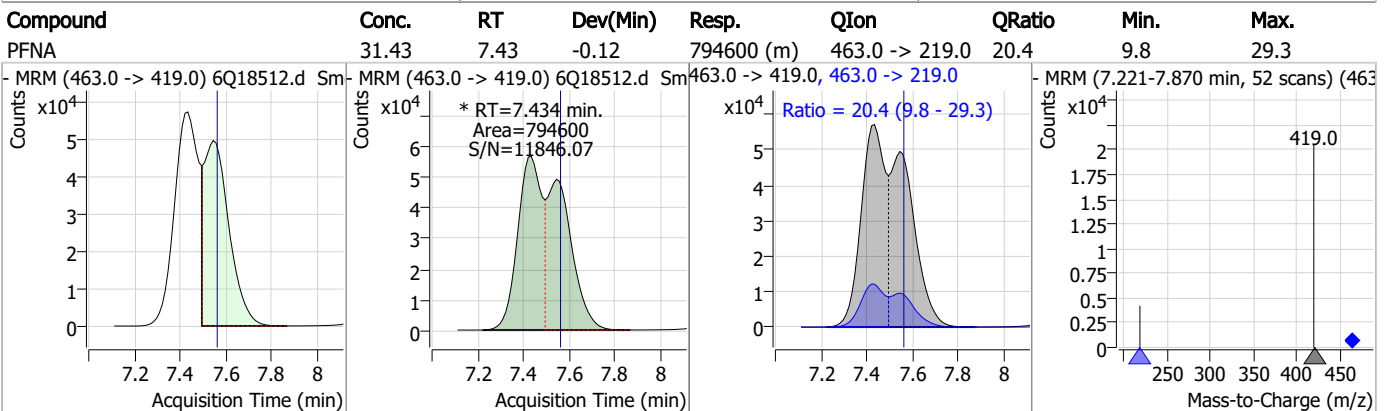
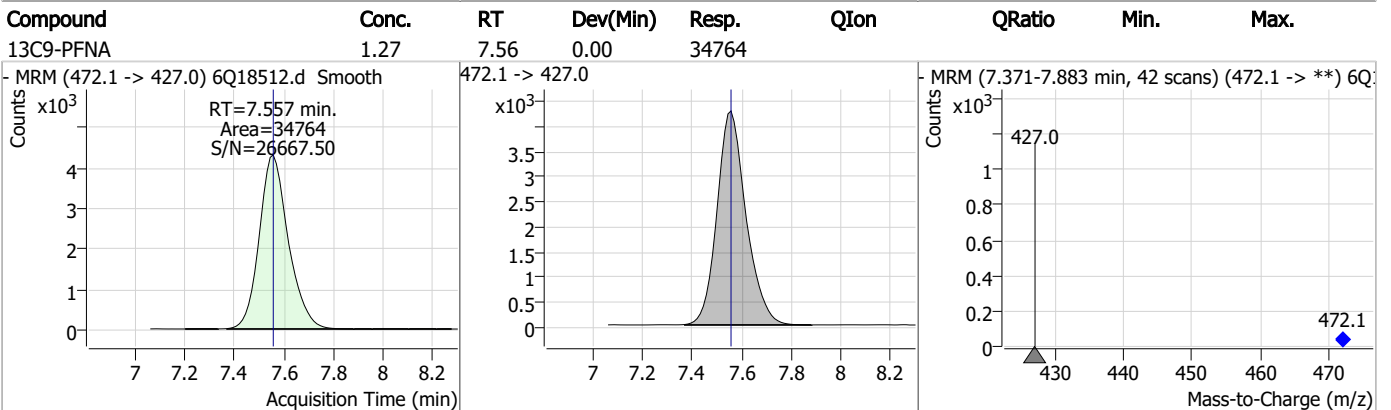
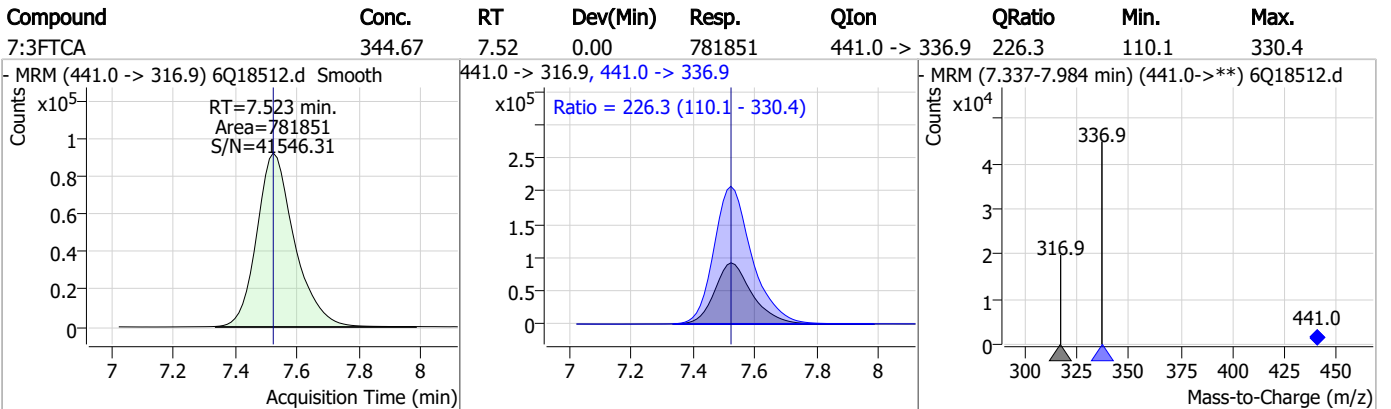
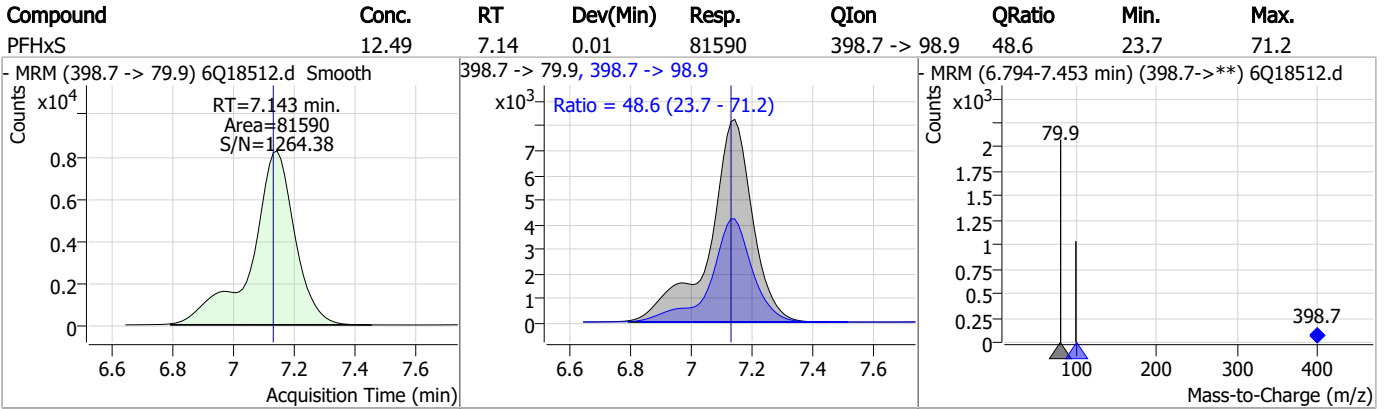
Perfluorinated Compounds by LC/MS/MS



7.6.2

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Perfluorinated Compounds by LC/MS/MS



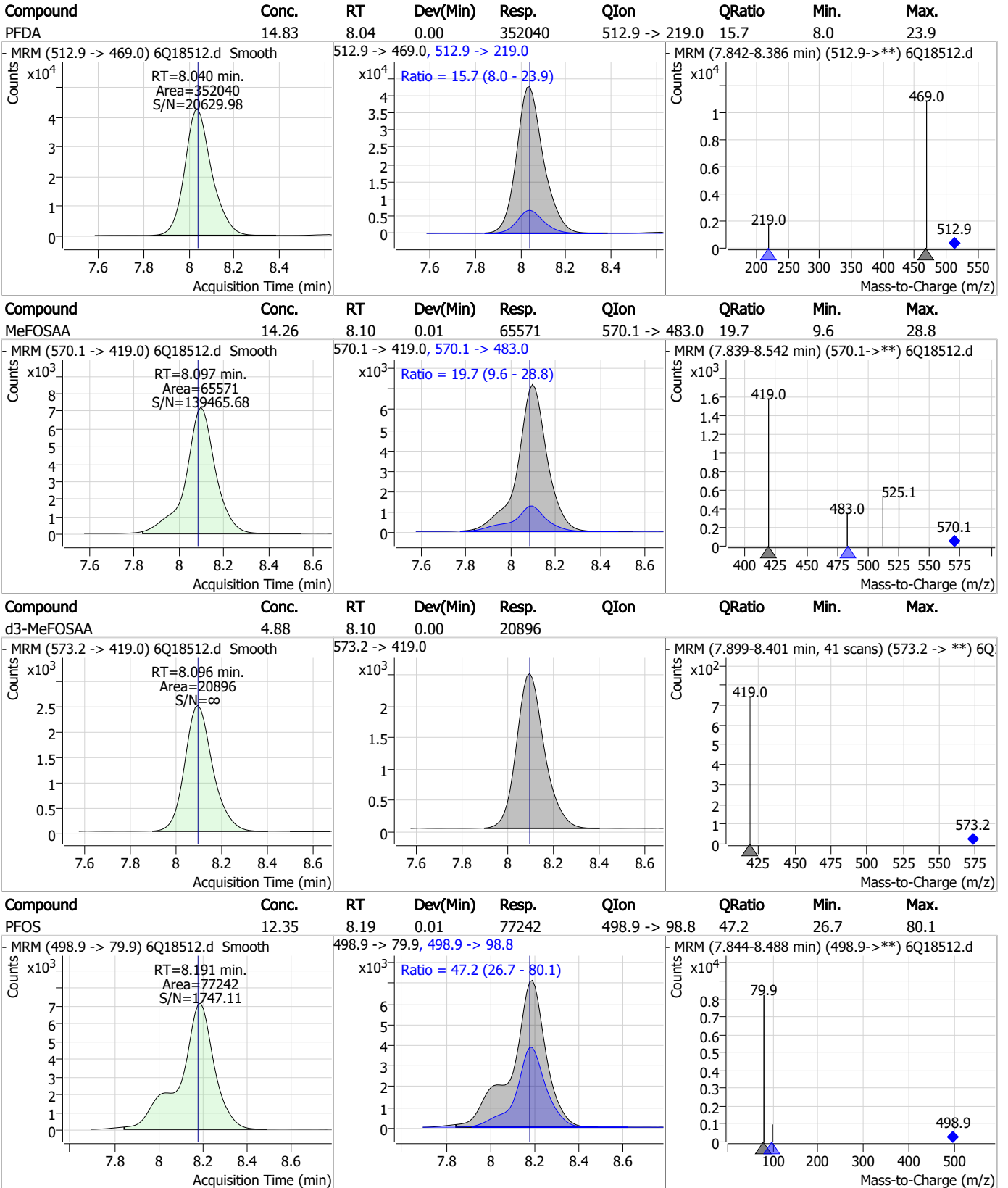
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	13.24	7.70	0.01	84420	449.0 -> 98.9	45.3	24.7	74.2
13C2-8:2FTS	5.50	7.83	0.00	3661				
8:2FTS	50.13	7.83	0.00	97146	527.1 -> 80.8	40.7	21.4	64.1
13C6-PFDA	1.13	8.04	0.01	20723				

7.6.2

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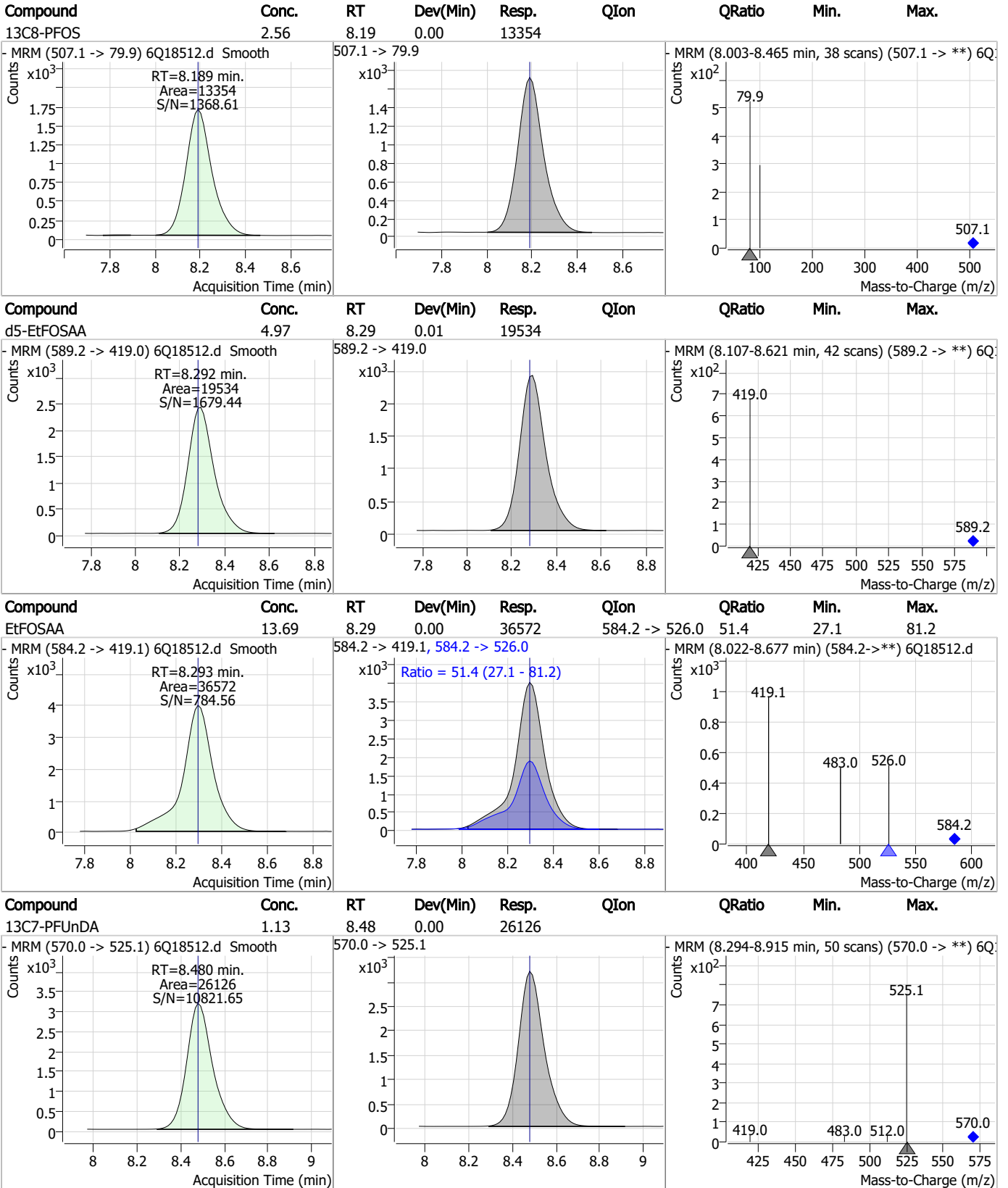
Perfluorinated Compounds by LC/MS/MS



7.6.2

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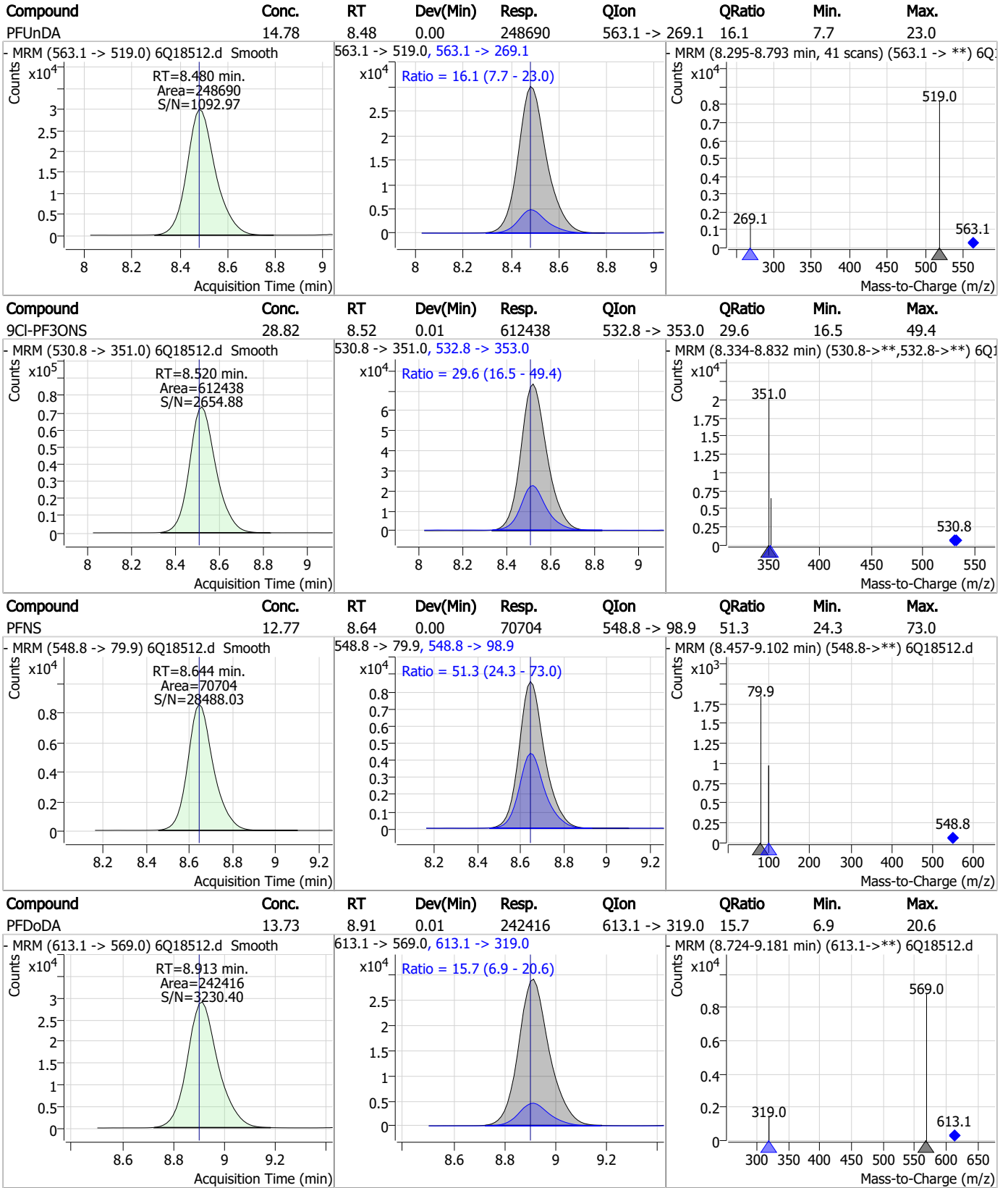
Perfluorinated Compounds by LC/MS/MS



7.6.2

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Perfluorinated Compounds by LC/MS/MS



7.6.2

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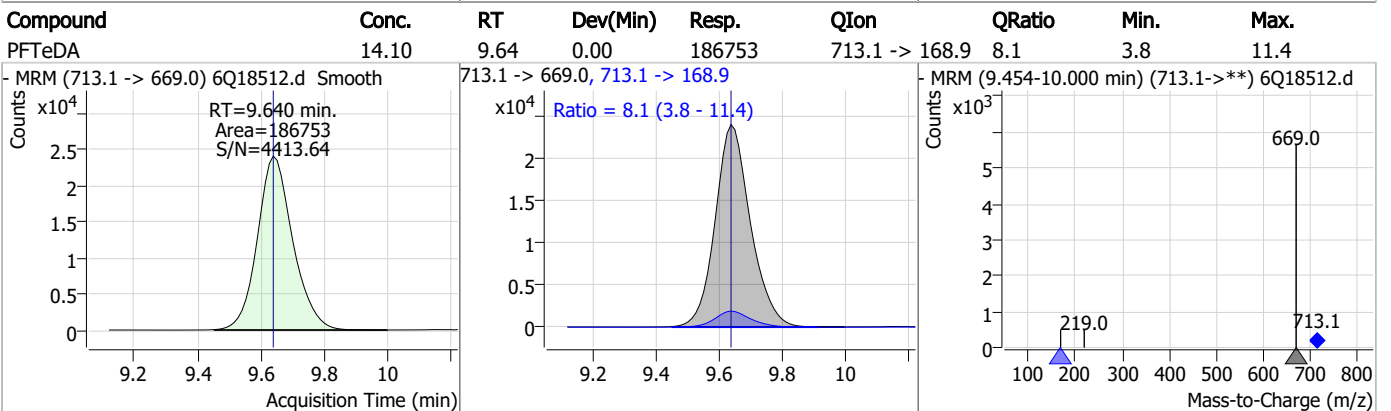
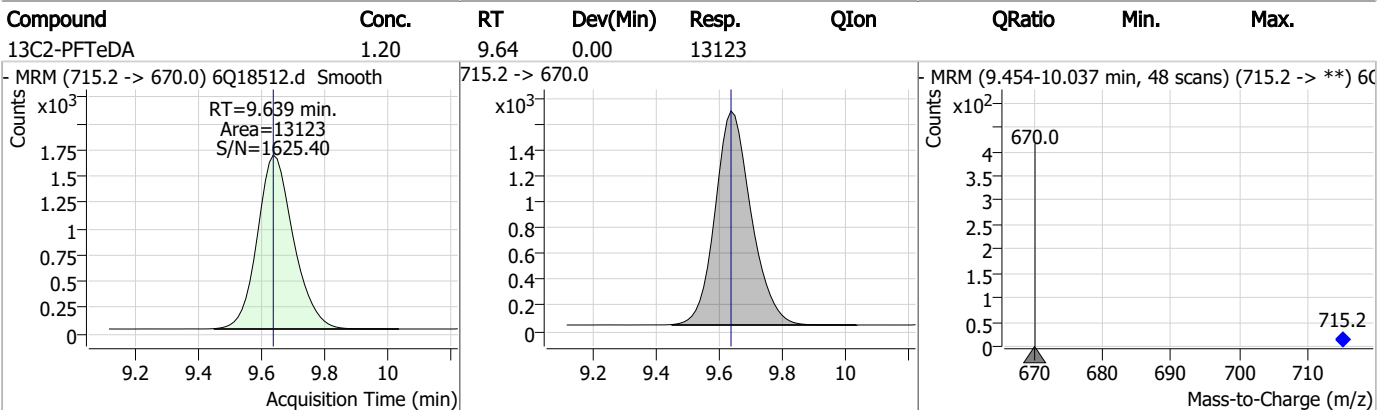
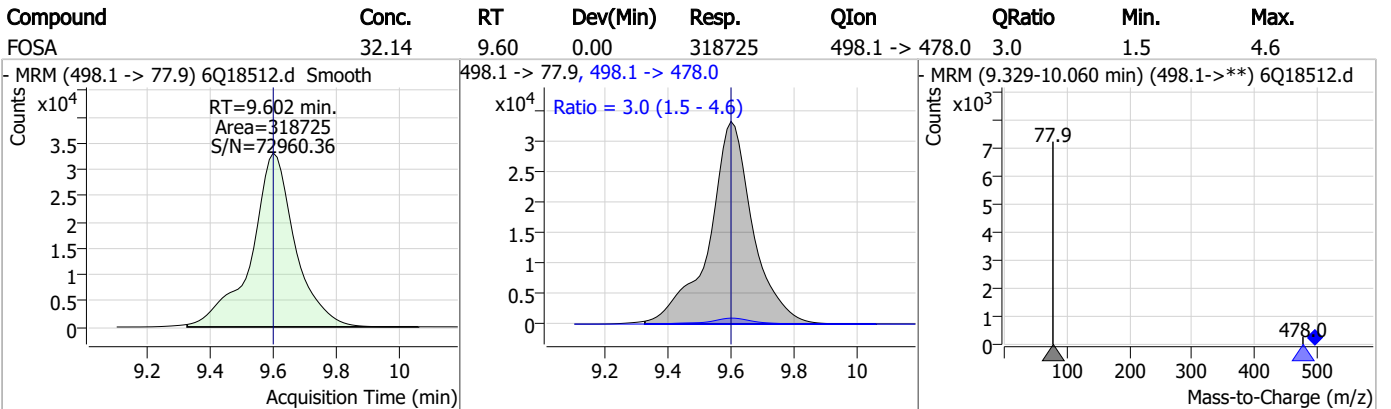
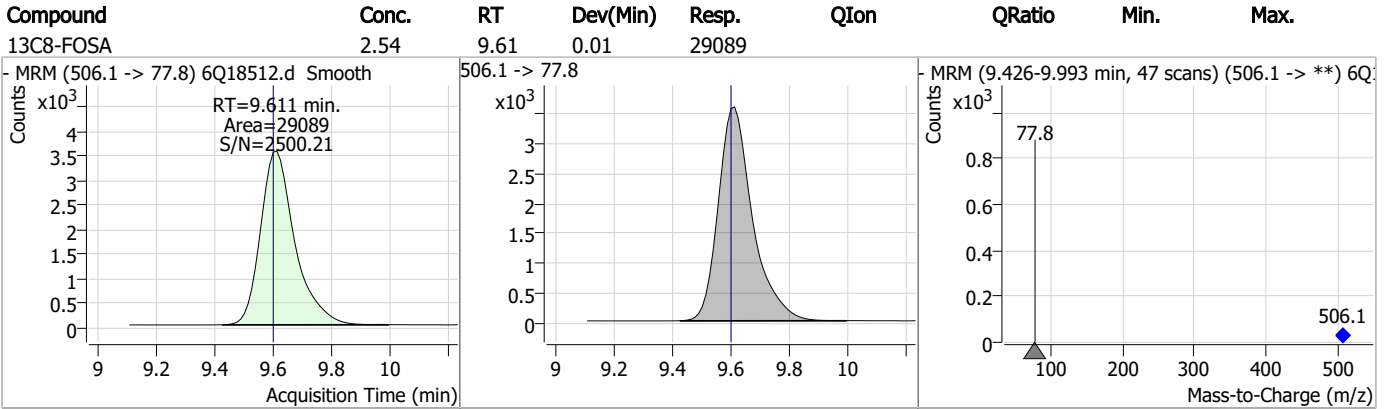
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.23	8.91	0.00	25859				
PFDS	13.06	9.06	0.00	43124	599.0 -> 98.8	48.1	24.5	73.4
PFTrDA	13.43	9.30	0.00	234371	663.0 -> 168.9	11.1	4.7	14.0
11Cl-PF3OUds	27.86	9.35	0.00	364004	632.9 -> 452.9	29.9	15.5	46.6

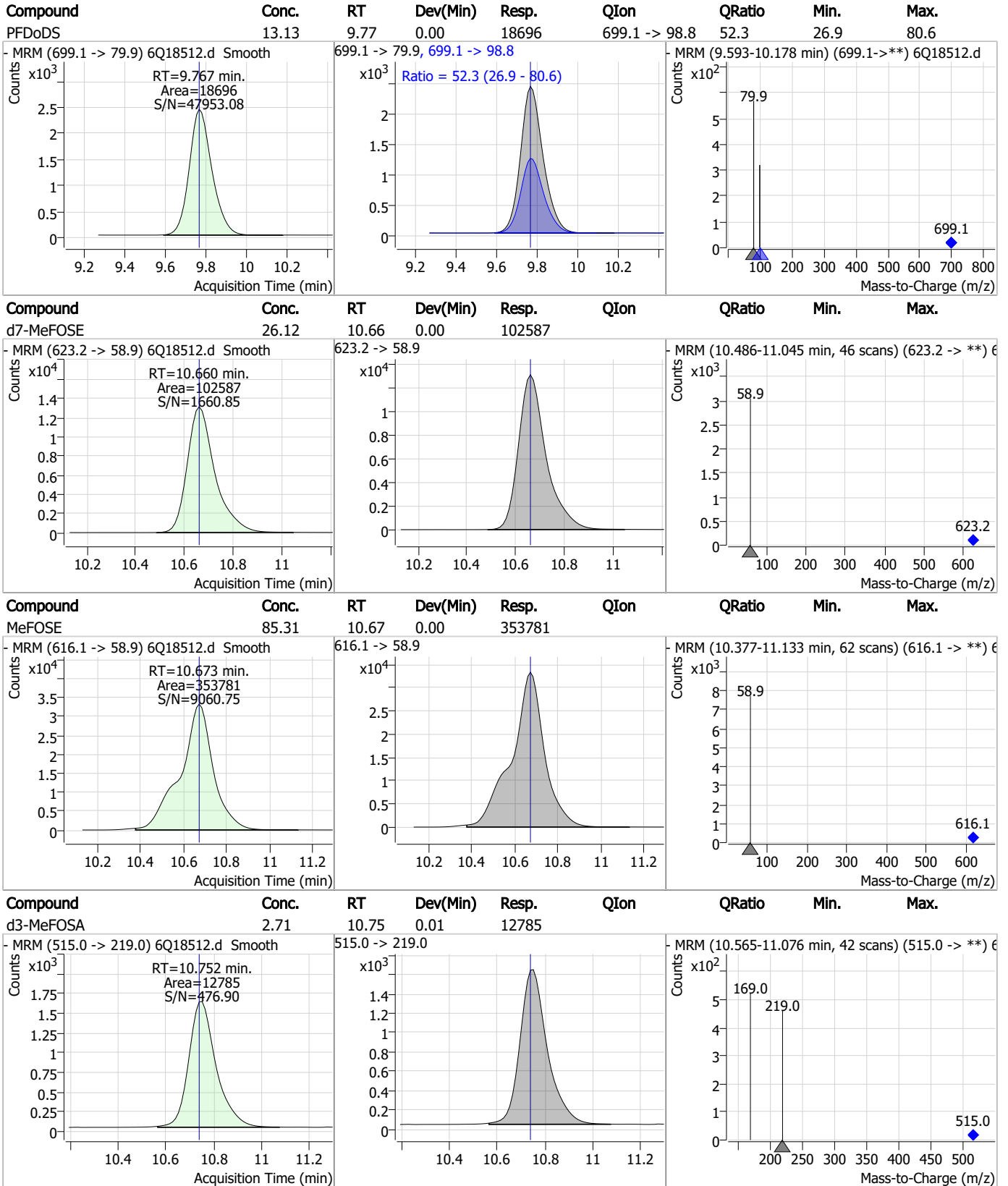
7.6.2

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Perfluorinated Compounds by LC/MS/MS



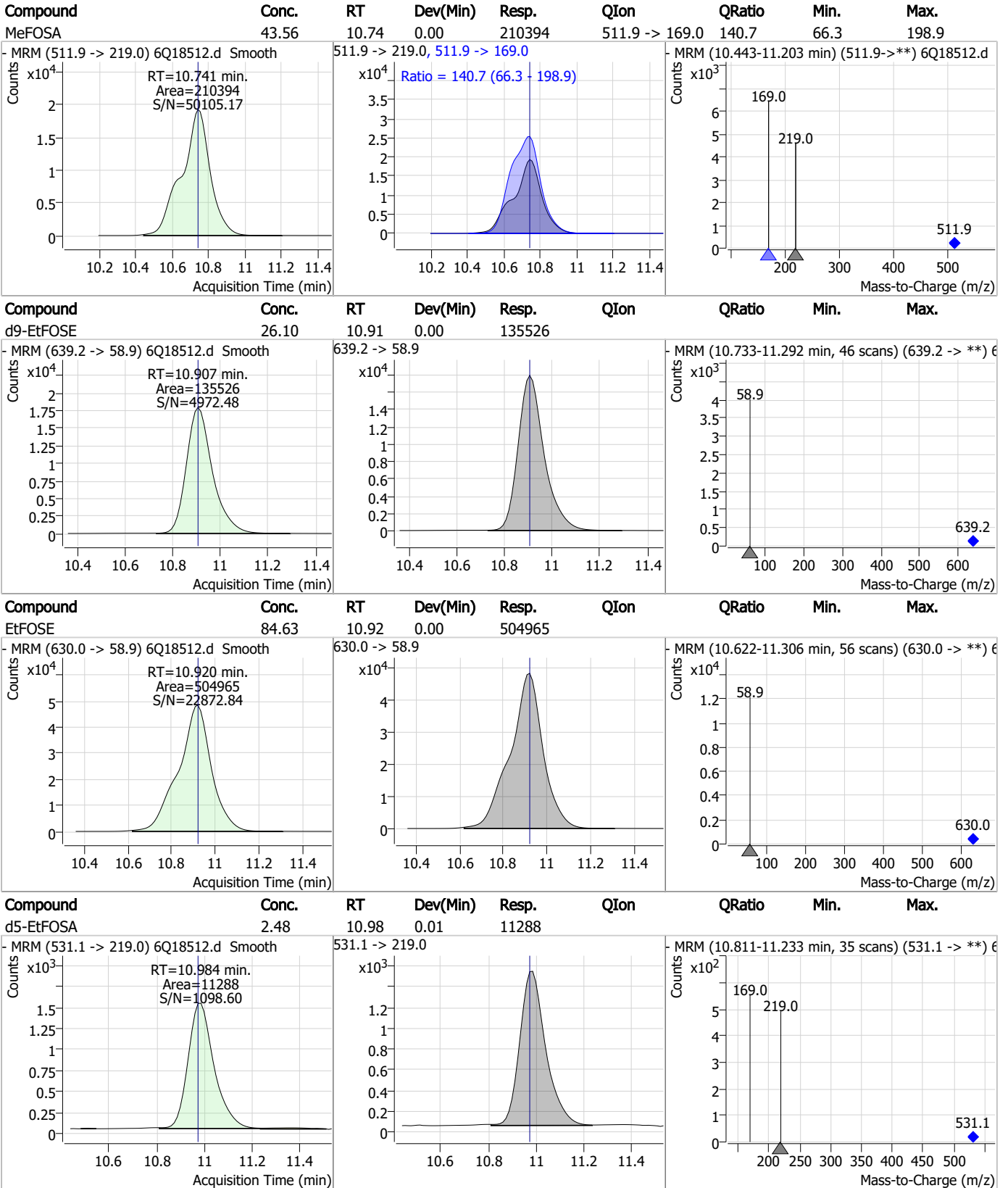
Perfluorinated Compounds by LC/MS/MS



7.6.2

7

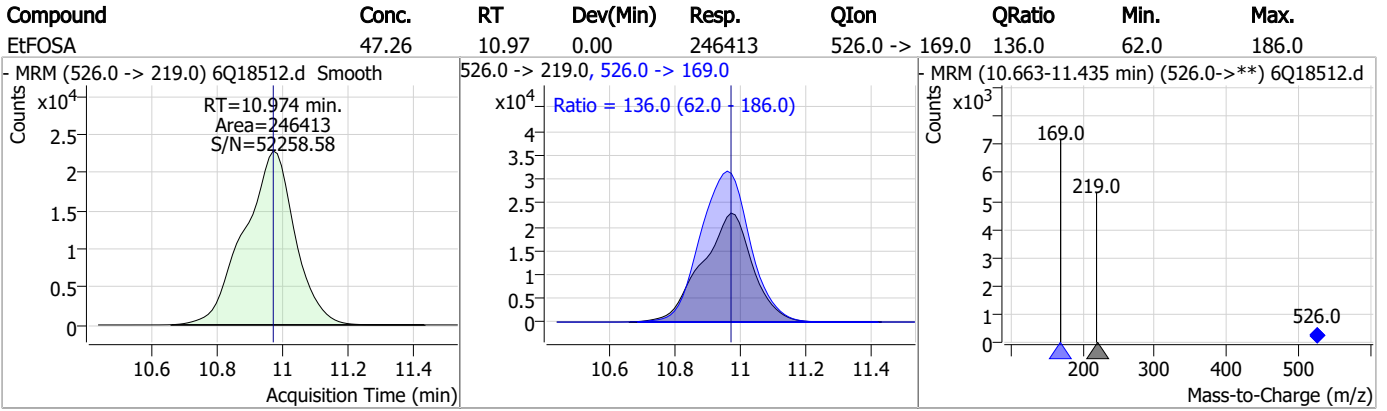
Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

Sample Number: S6Q278-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18512.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 14:52 Supervisor approved: 05/31/23 20:58 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.03	Split peak
Perfluorononanoic acid	375-95-1		7.43	Split peak

7.6.2.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 06/01/23 14:43

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18583.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 4:32:54 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q279 TDCA.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M8-PFOS	8.177	507.1 -> 79.9	19278	2.50 µg/L	-0.025
13C4-PFOS	8.190	502.8 -> 79.9	25303	2.50 µg/L	-0.012
System Monitoring Compounds					
13C8-PFOS	8.177	507.1 -> 79.9	19278	1.93 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 77.3%		
Target Compounds					
PFOS	8.178	498.9 -> 79.9 498.9 -> 98.8	24044 10818	3.65 µg/L #m	74
TCDCa	6.601	498.9 -> 79.9	5088	5.72 ng/ml	100
TDCA	6.762	498.9 -> 79.9	6980	8.67 ng/ml	100
TUDCA	5.735	498.9 -> 79.9	9654	5.65 ng/ml	100

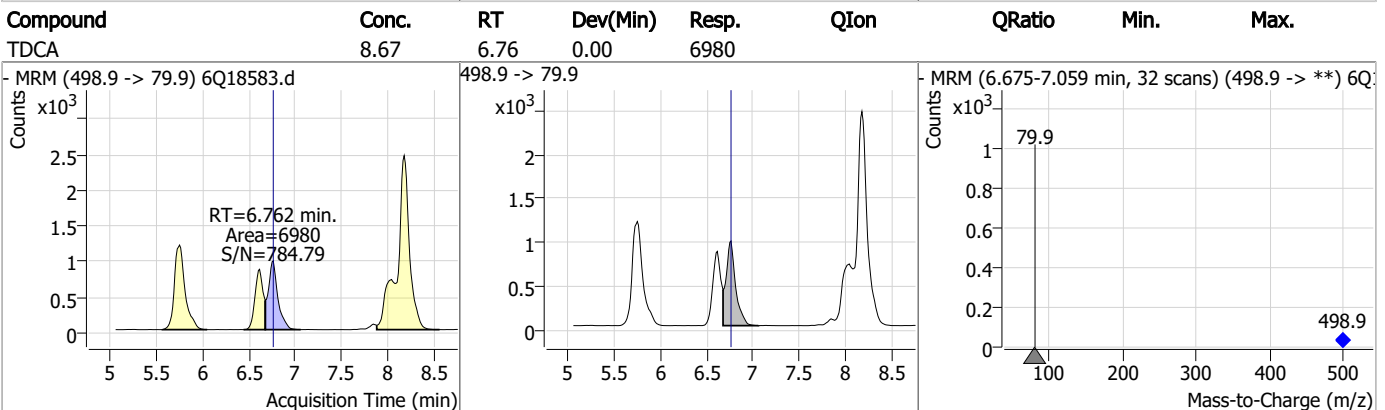
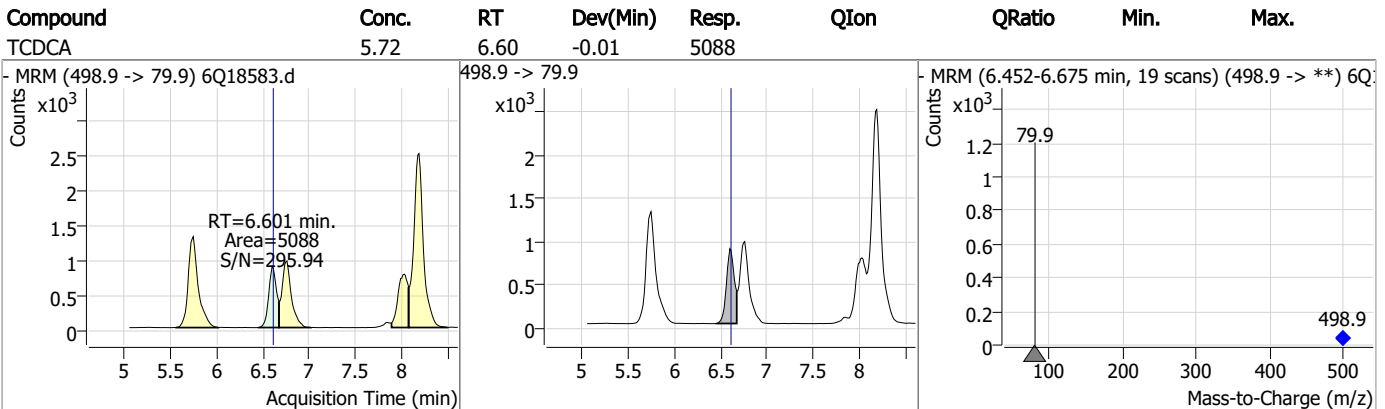
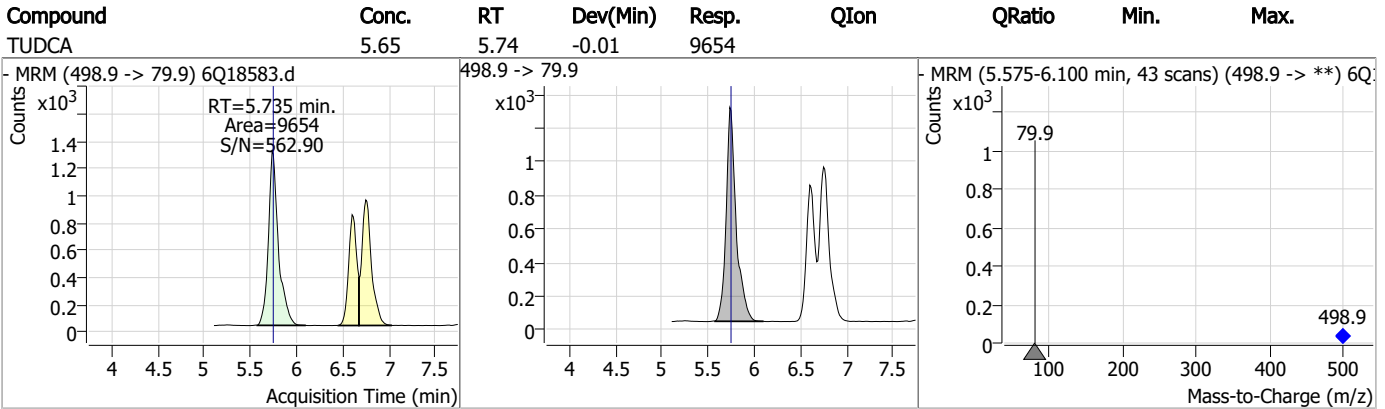
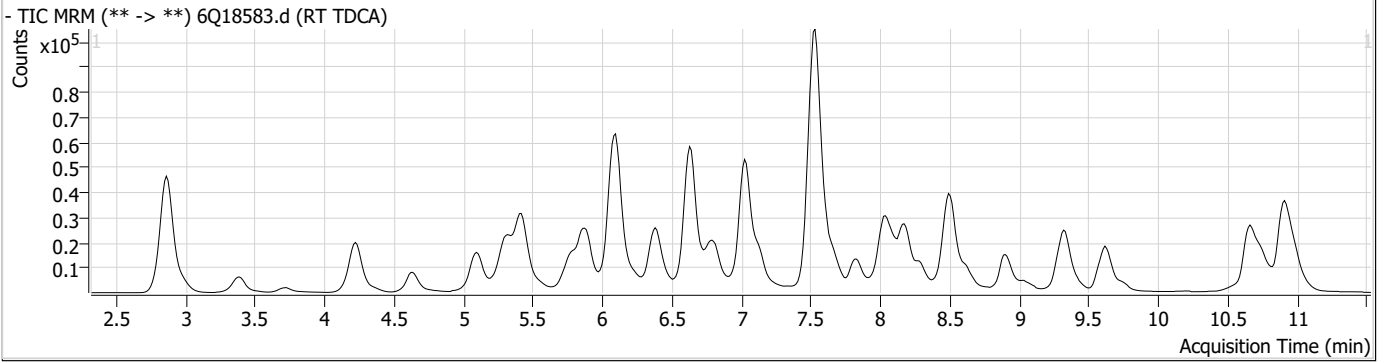
= Qualifier out of range, m = manually integrated, + = Area summed

7.6.3

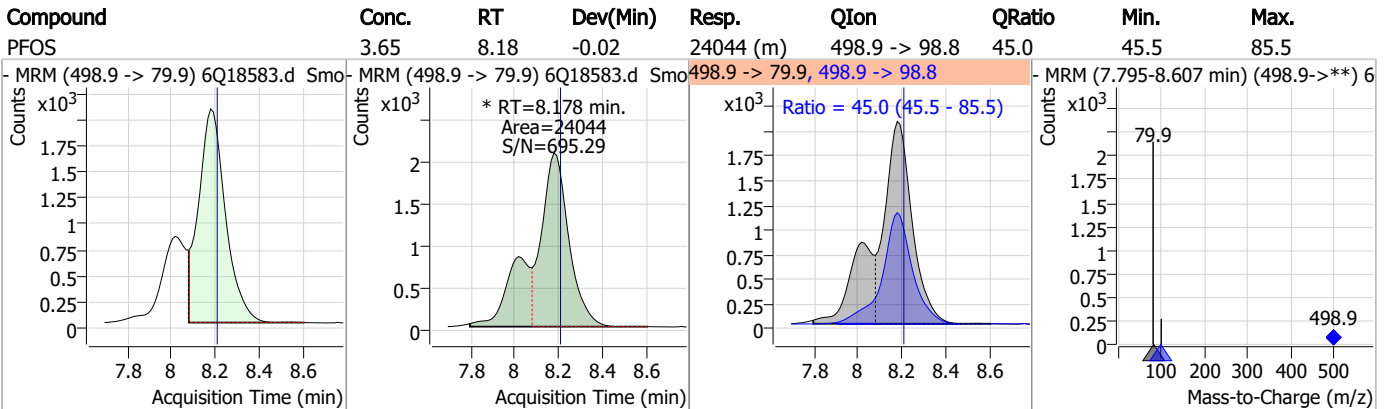
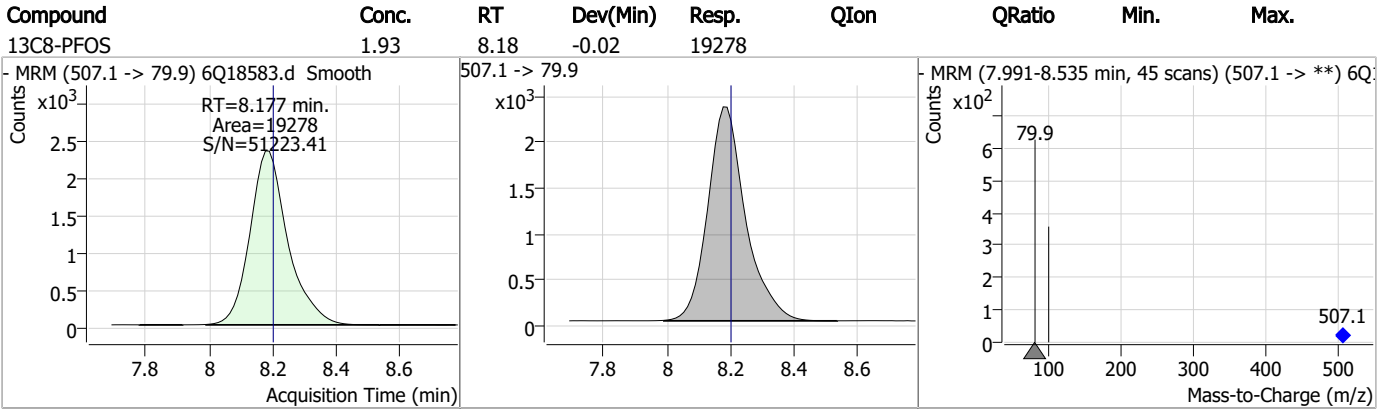
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.3

7



Manual Integration Approval Summary

Sample Number: S6Q279-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18583.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 16:32 Supervisor approved: 06/01/23 14:43 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.6.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18584.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 4:47:23 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	184317	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	59764	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	64248	2.50 µg/L	0.000
M4-PFHpA	6.382	367.1 -> 322.0	59302	2.50 µg/L	0.012
M8-PFOA	7.026	421.1 -> 376.0	92001	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	37990	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	25438	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	29427	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	29037	1.25 µg/L	0.012
M2-PFTeDA	9.639	715.2 -> 670.0	16093	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	31533	2.50 µg/L	0.012
M3-PFBS	5.334	302.1 -> 79.9	24390	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	15405	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13670	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3284	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5069	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4764	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	27275	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	41907	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25666	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	106437	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	133388	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12888	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13977	2.50 µg/L	0.000
13C4-PFOS	8.190	502.8 -> 79.9	16948	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	78242	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	11045	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	93299	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	32534	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	49070	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	62936	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3284	4.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5069	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.8%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4764	4.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.8%		
13C2-PFDoDA	8.912	615.1 -> 570.0	29037	1.29 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C2-PFTeDA	9.639	715.2 -> 670.0	16093	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFBS	5.334	302.1 -> 79.9	24390	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFHxS	7.130	402.1 -> 79.9	15405	2.50 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFBA	2.860	216.8 -> 171.9	184317	9.89 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	6.382	367.1 -> 322.0	59302	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	64248	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C5-PFPeA	4.222	268.3 -> 223.0	59764	4.88 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C6-PFDA	8.027	519.1 -> 474.1	25438	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C7-PFUnDA	8.480	570.0 -> 525.1	29427	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C8-FOSA	9.611	506.1 -> 77.8	31533	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOA	7.026	421.1 -> 376.0	92001	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C8-PFOS	8.177	507.1 -> 79.9	13670	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C9-PFNA	7.557	472.1 -> 427.0	37990	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27275	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41907	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	13977	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25666	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
d7-MeFOSE	10.660	623.2 -> 58.9	106437	25.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	133388	23.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	12888	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	258816	54.25 µg/L	96
		327.1 -> 80.9	95733		
6:2FTS	6.801	427.1 -> 407.0	256685	51.53 µg/L	100
		427.1 -> 80.9	87375		
8:2FTS	7.828	527.1 -> 507.0	148544	56.06 µg/L	95
		527.1 -> 80.8	58928		
EtFOSAA	8.293	584.2 -> 419.1	46640	14.12 µg/L	97
		584.2 -> 526.0	24113		
FOSA	9.602	498.1 -> 77.9	359973	32.98 µg/L	100
		498.1 -> 478.0	10498		
MeFOSAA	8.097	570.1 -> 419.0	82143	14.65 µg/L	99
		570.1 -> 483.0	16064		
PFBA	2.868	212.8 -> 168.9	346074	56.71 µg/L	100
PFBS	5.335	298.7 -> 79.9	98352	11.85 µg/L	94
		298.7 -> 98.8	39061		
PFDA	8.027	512.9 -> 469.0	392824	13.32 µg/L	100
		512.9 -> 219.0	63646		
PFDoDA	8.900	613.1 -> 569.0	270018	13.54 µg/L	95
		613.1 -> 319.0	42654		
PFDS	9.064	599.0 -> 79.9	44655	13.07 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	21835	14.40	µg/L	96
		363.1 -> 319.0	377962			
PFHpS	7.685	363.1 -> 169.0	63431	13.47	µg/L	99
		449.0 -> 79.9	88264			
PFHxA	5.420	449.0 -> 98.9	43121	13.82	µg/L	98
		313.0 -> 269.0	298167			
PFHxS	7.131	313.0 -> 118.9	15638	12.28	µg/L	99
		398.7 -> 79.9	85596			
PFNA	7.421	398.7 -> 98.9	41074	31.68	µg/L	m
		463.0 -> 419.0	852890			
PFNS	8.644	463.0 -> 219.0	177688	13.84	µg/L	98
		548.8 -> 79.9	75961			
PFOA	7.028	548.8 -> 98.9	38180	31.05	µg/L	m
		413.0 -> 369.0	1219762			
PFOS	8.178	413.0 -> 169.0	223458	13.47	µg/L	m
		498.9 -> 79.9	84152			
PFPeA	4.224	498.9 -> 98.8	40831	28.17	µg/L	100
		263.0 -> 219.0	404414			
PFPeS	6.422	349.1 -> 79.9	85668	12.34	µg/L	96
		349.1 -> 98.9	38425			
PFTeDA	9.628	713.1 -> 669.0	211277	13.35	µg/L	96
		713.1 -> 168.9	19042			
PFTrDA	9.296	663.0 -> 619.0	280949	13.95	µg/L	97
		663.0 -> 168.9	28727			
PFUnDA	8.480	563.1 -> 519.0	286066	14.96	µg/L	99
		563.1 -> 269.1	45475			
11CI-PF3OUdS	9.336	630.9 -> 450.9	397806	25.30	µg/L	99
		632.9 -> 452.9	121214			
9CI-PF3ONS	8.508	530.8 -> 351.0	636777	25.70	µg/L	97
		532.8 -> 353.0	197077			
ADONA	6.632	376.9 -> 250.9	1431492	25.72	µg/L	100
		376.9 -> 84.8	381084			
HFPO-DA	5.783	284.9 -> 168.9	96682	27.22	µg/L	98
		284.9 -> 184.9	12230			
3:3FTCA	3.709	241.0 -> 177.0	64579	70.30	µg/L	97
		241.0 -> 117.0	8590			
5:3FTCA	6.099	341.0 -> 237.1	1272409	327.88	µg/L	96
		341.0 -> 217.0	944163			
7:3FTCA	7.523	441.0 -> 316.9	849719	319.72	µg/L	100
		441.0 -> 336.9	1871272			
EtFOSA	10.974	526.0 -> 219.0	283011	47.11	µg/L	96
		526.0 -> 169.0	363370			
EtFOSE	10.920	630.0 -> 58.9	534275	89.78	µg/L	100
		511.9 -> 219.0	230564			
MeFOSA	10.741	511.9 -> 169.0	323092	44.86	µg/L	94
		616.1 -> 58.9	380421			
MeFOSE	10.673	699.1 -> 79.9	20577	89.94	µg/L	100
		699.1 -> 98.8	10652			
PFDoDS	9.767	295.0 -> 201.0	75790	13.55	µg/L	97
		295.0 -> 84.9	19804			
NFDHA	5.299	279.0 -> 85.1	281574	28.85	µg/L	98
		229.0 -> 84.9	222270			
PFMBA	4.638	314.8 -> 134.9	712861	26.03	µg/L	99
		314.8 -> 82.9	25054			

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

7.6.4
7

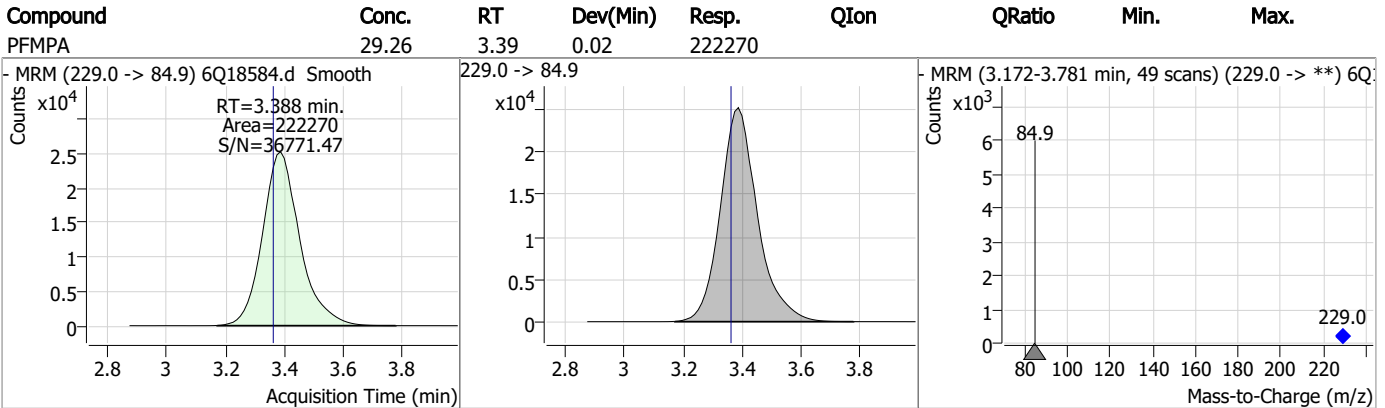
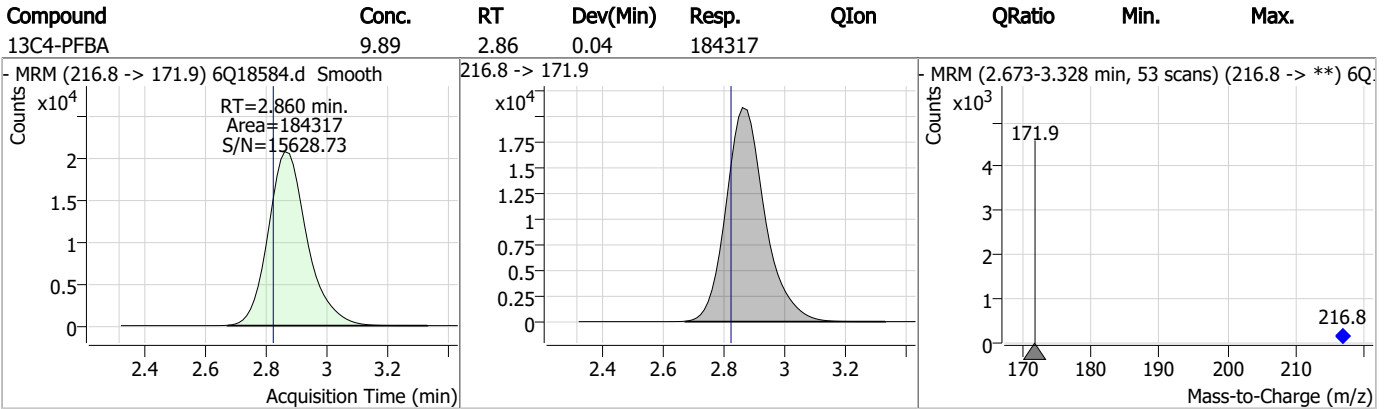
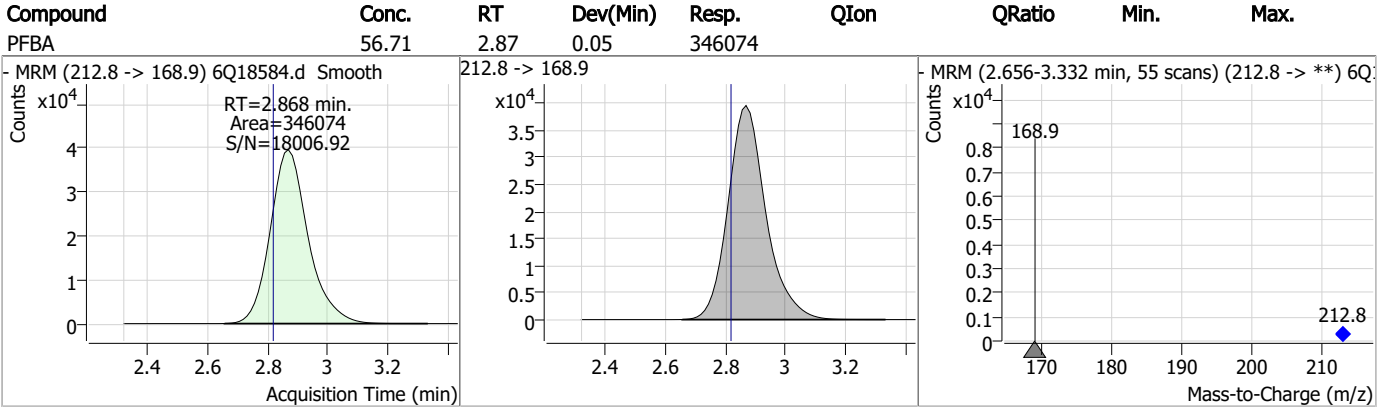
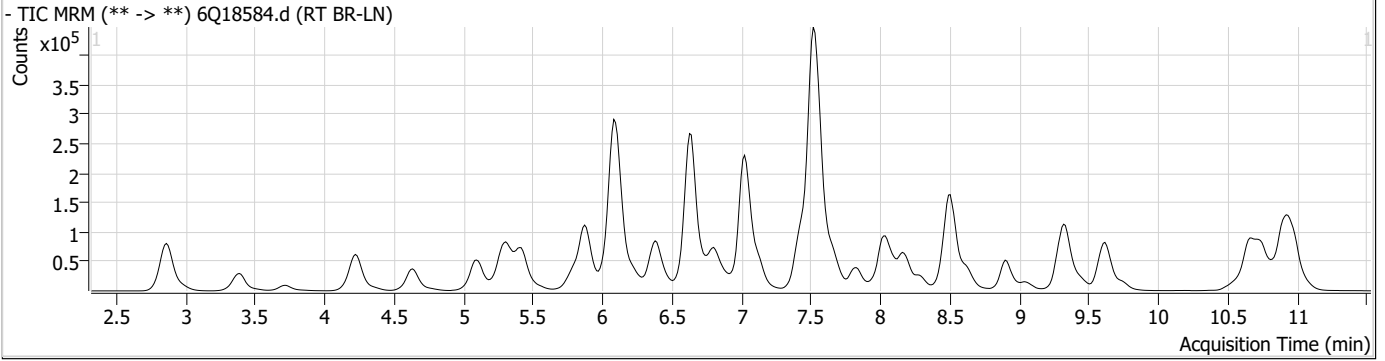
Perfluorinated Compounds by LC/MS/MS

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

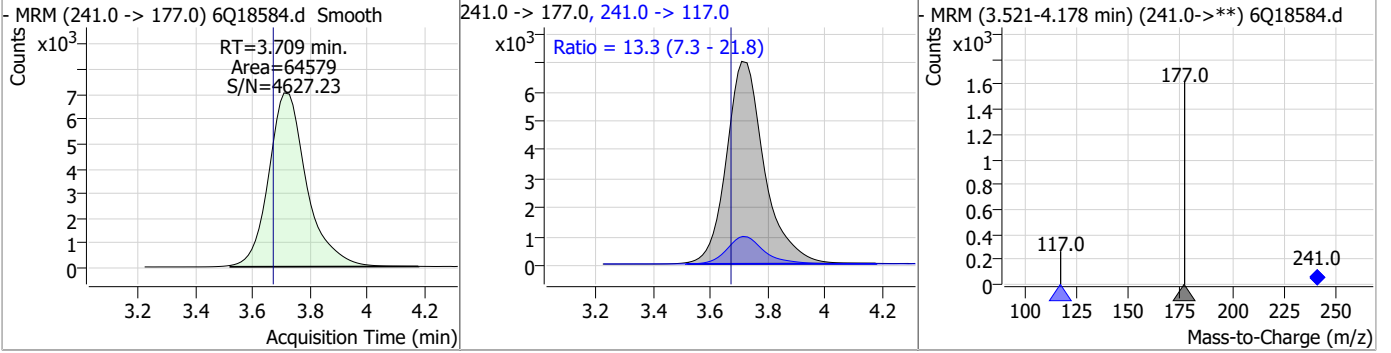
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Perfluorinated Compounds by LC/MS/MS

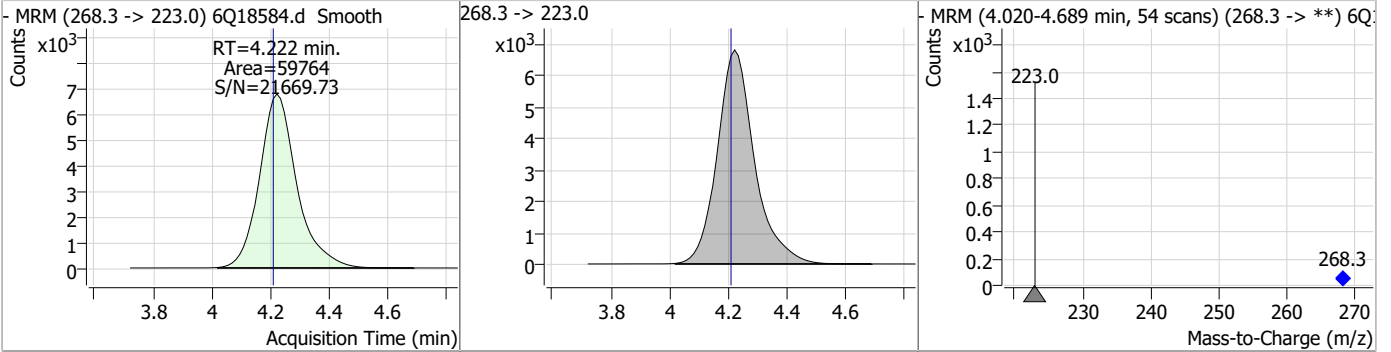


Perfluorinated Compounds by LC/MS/MS

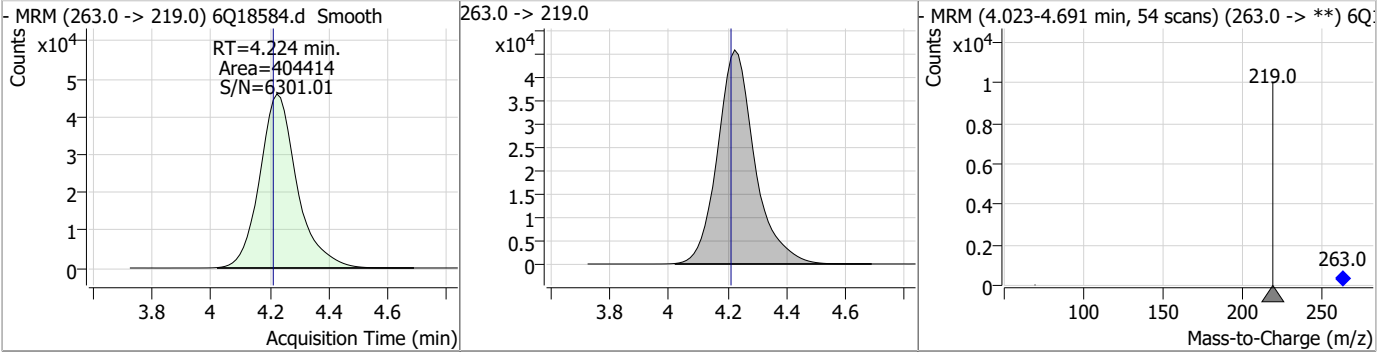
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	70.30	3.71	0.04	64579	241.0 -> 117.0	13.3	7.3	21.8



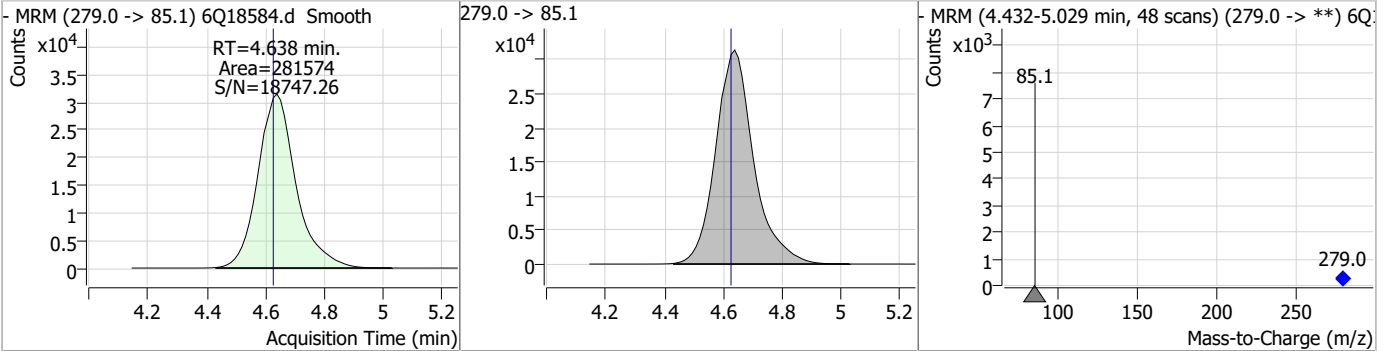
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.88	4.22	0.01	59764				



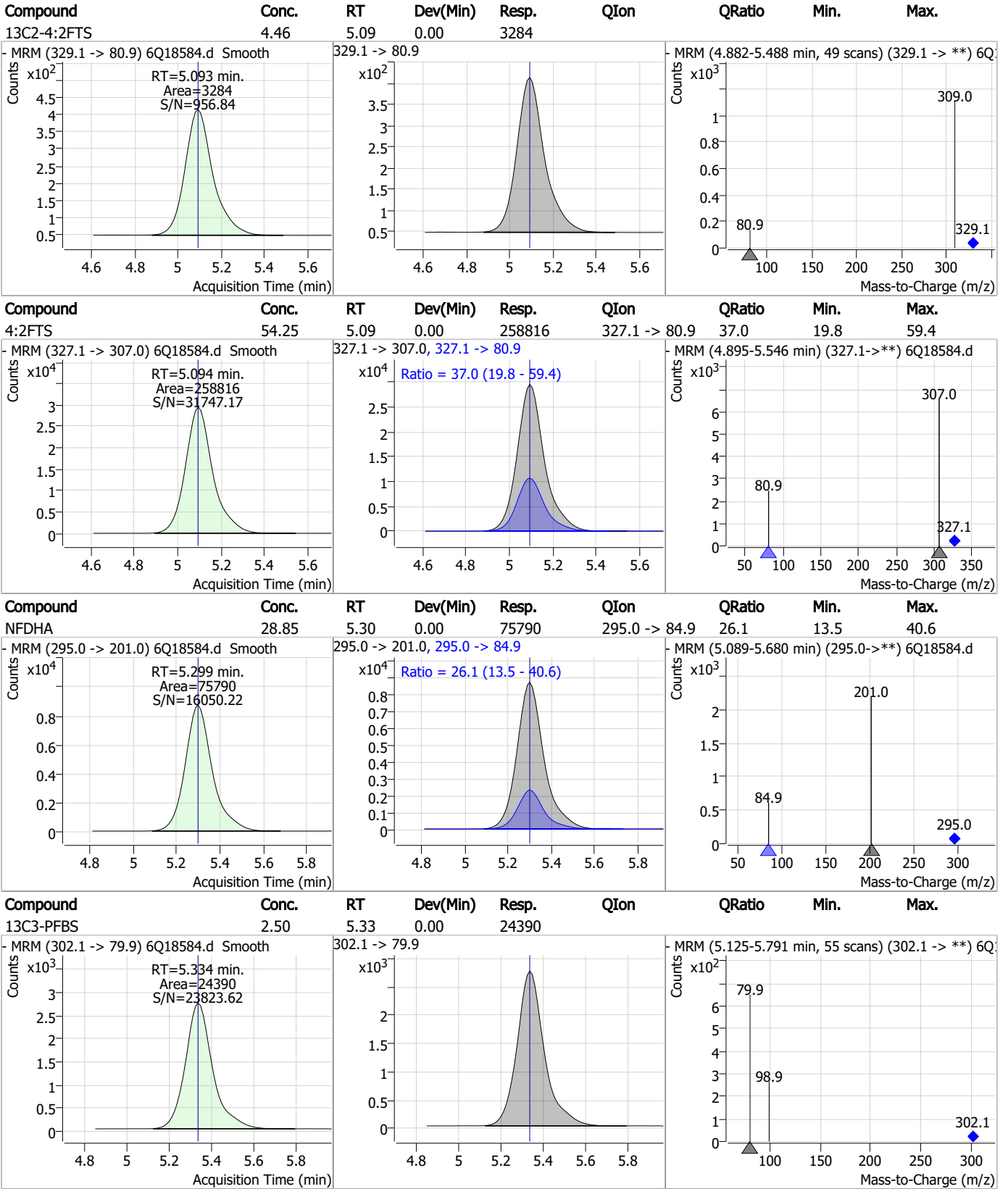
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	28.17	4.22	0.01	404414				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	28.82	4.64	0.01	281574				



Perfluorinated Compounds by LC/MS/MS

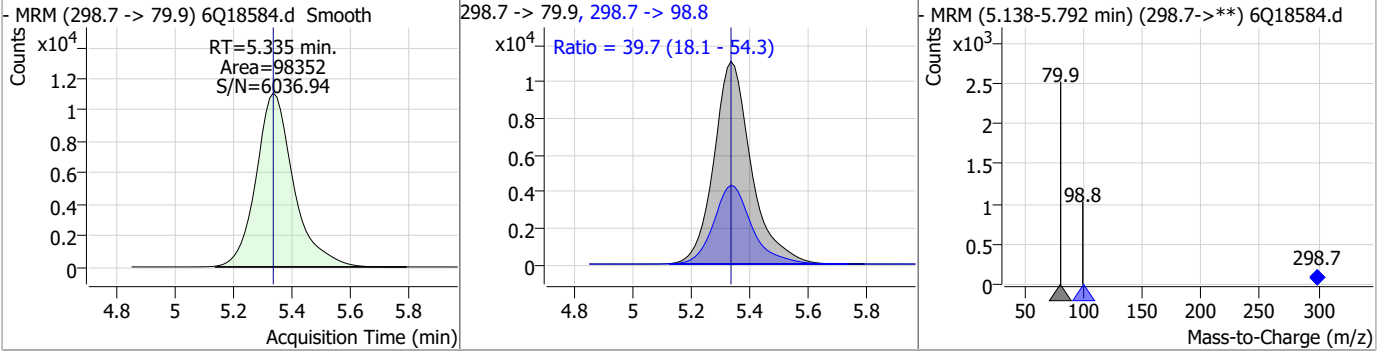


7.6.4

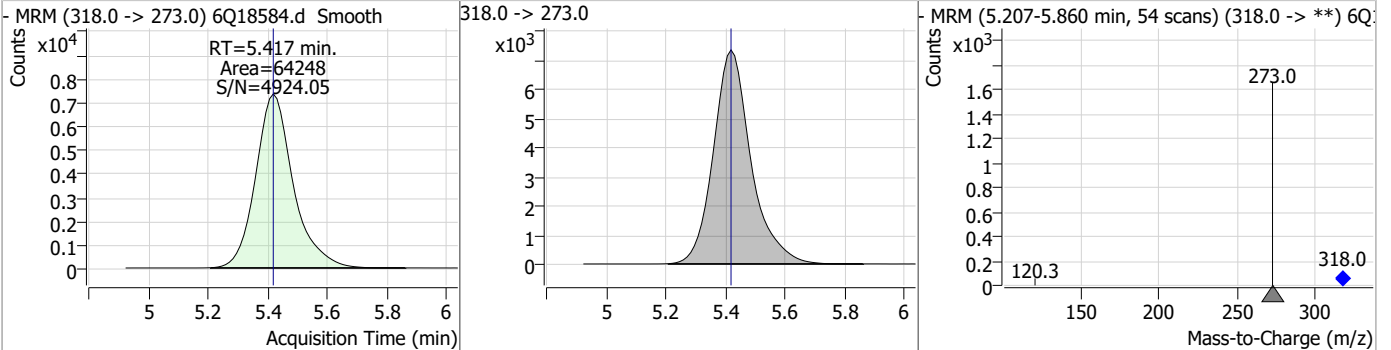
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Perfluorinated Compounds by LC/MS/MS

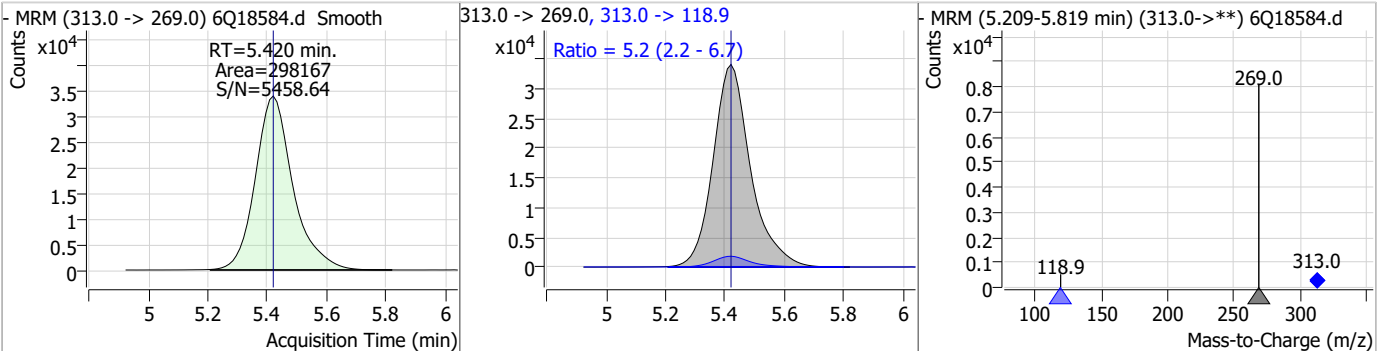
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.85	5.34	0.00	98352	298.7 -> 98.8	39.7	18.1	54.3



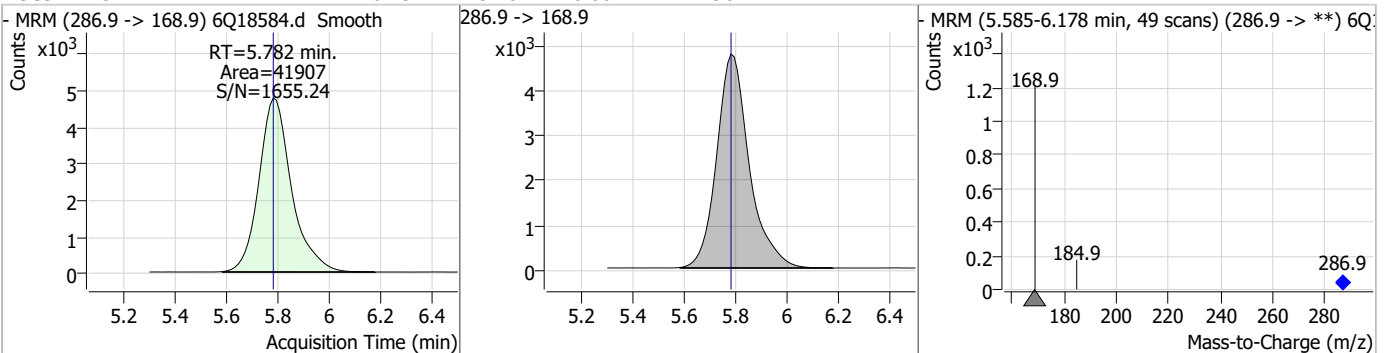
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.41	5.42	0.00	64248				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.82	5.42	0.00	298167	313.0 -> 118.9	5.2	2.2	6.7

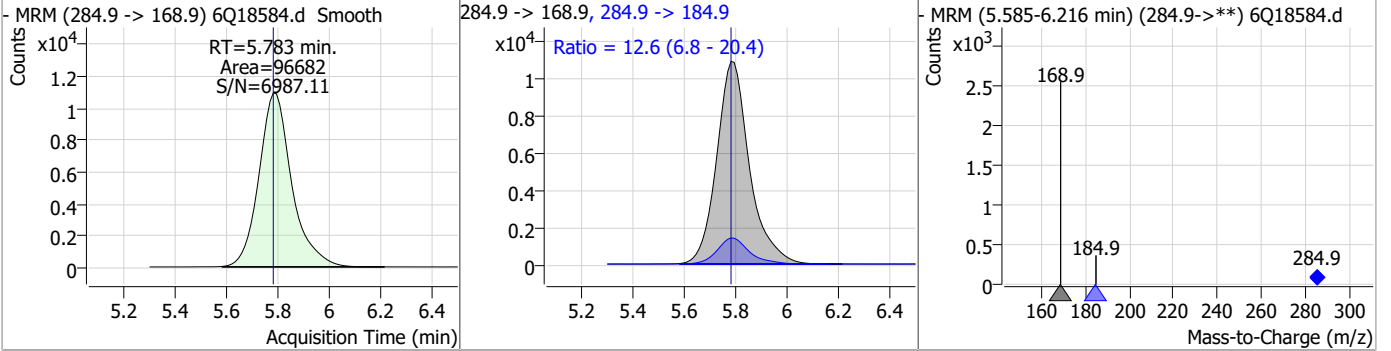


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.13	5.78	0.00	41907				

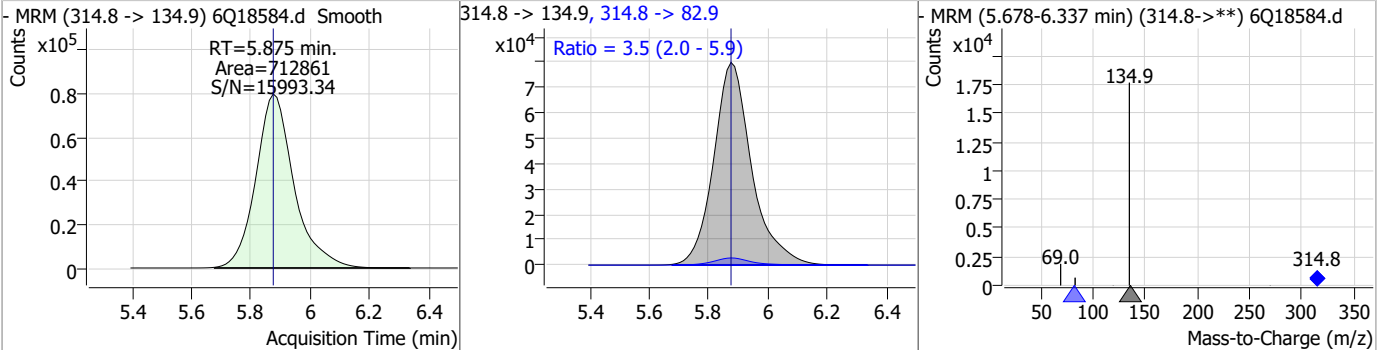


Perfluorinated Compounds by LC/MS/MS

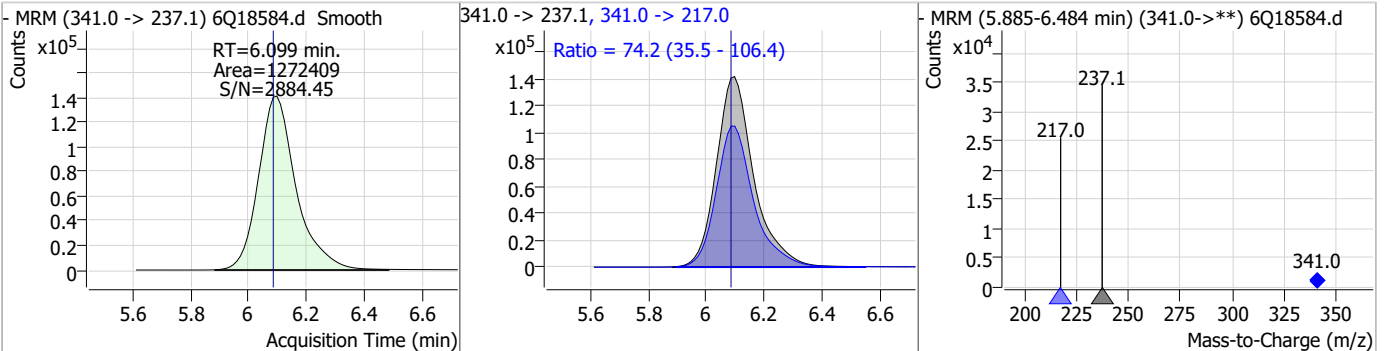
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	27.22	5.78	0.00	96682	284.9 -> 184.9	12.6	6.8	20.4



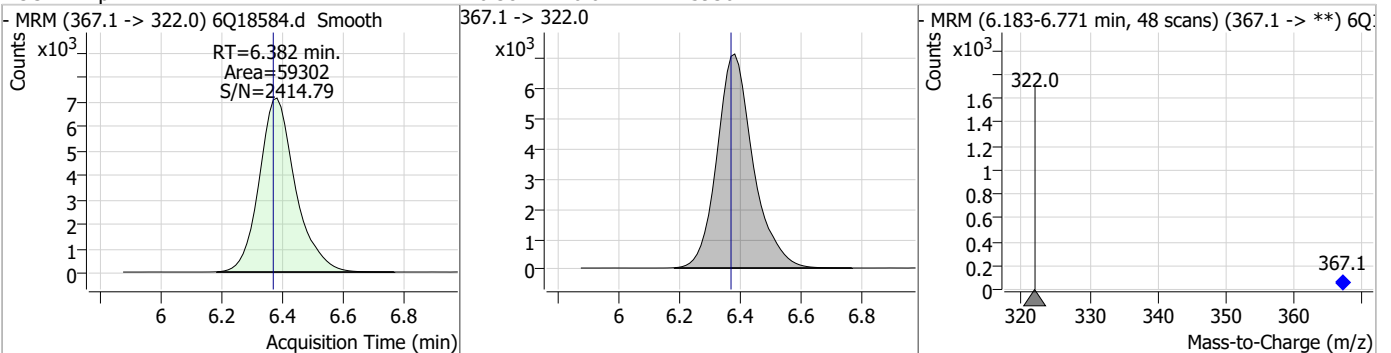
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	26.03	5.88	0.00	712861	314.8 -> 82.9	3.5	2.0	5.9



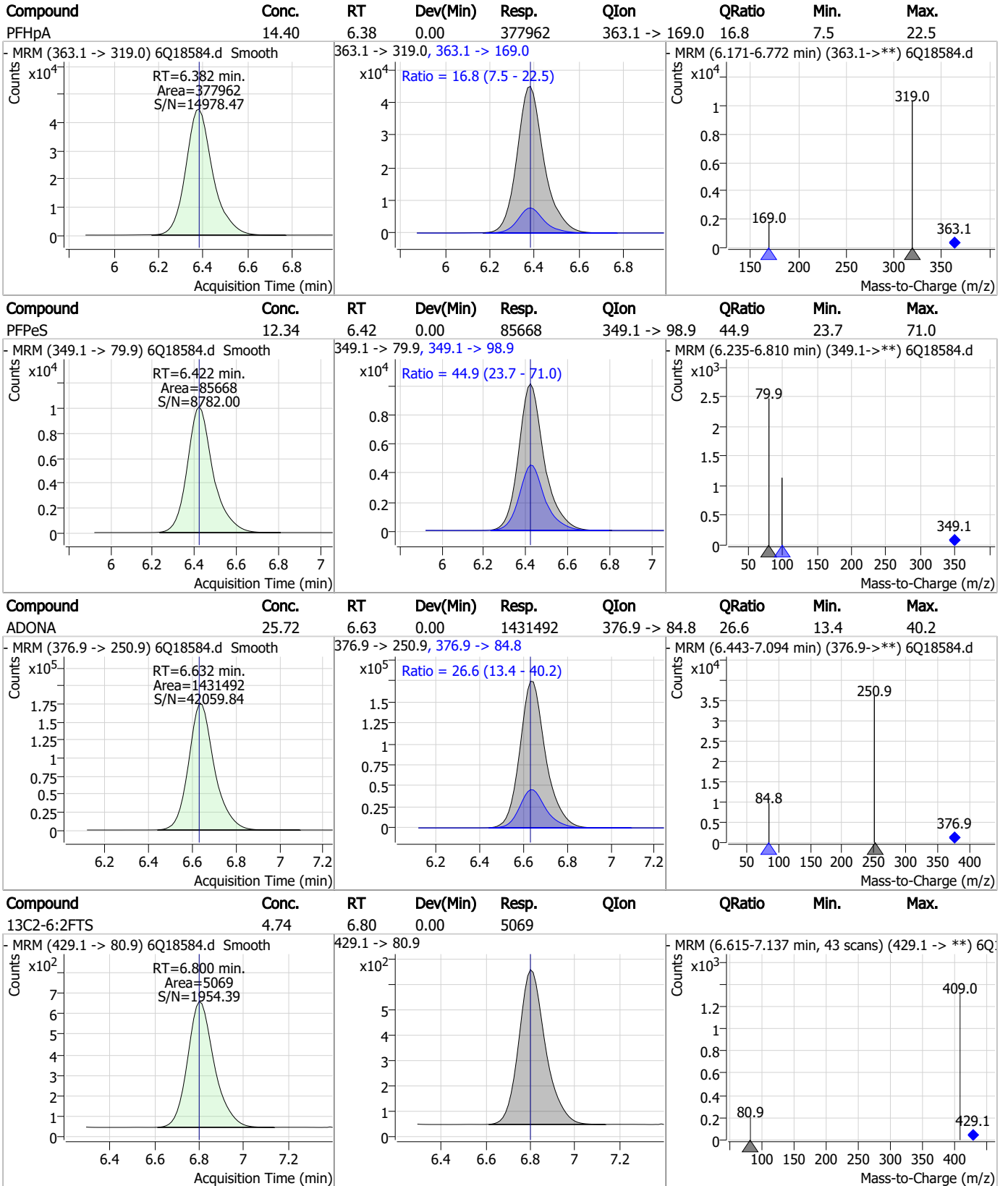
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	327.88	6.10	0.01	1272409	341.0 -> 217.0	74.2	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.41	6.38	0.01	59302	367.1 -> 322.0			



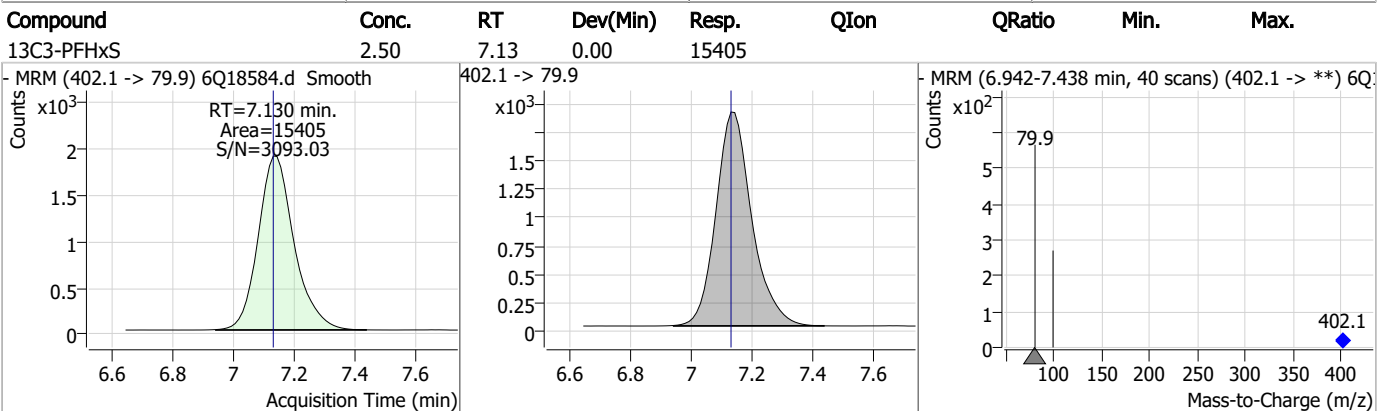
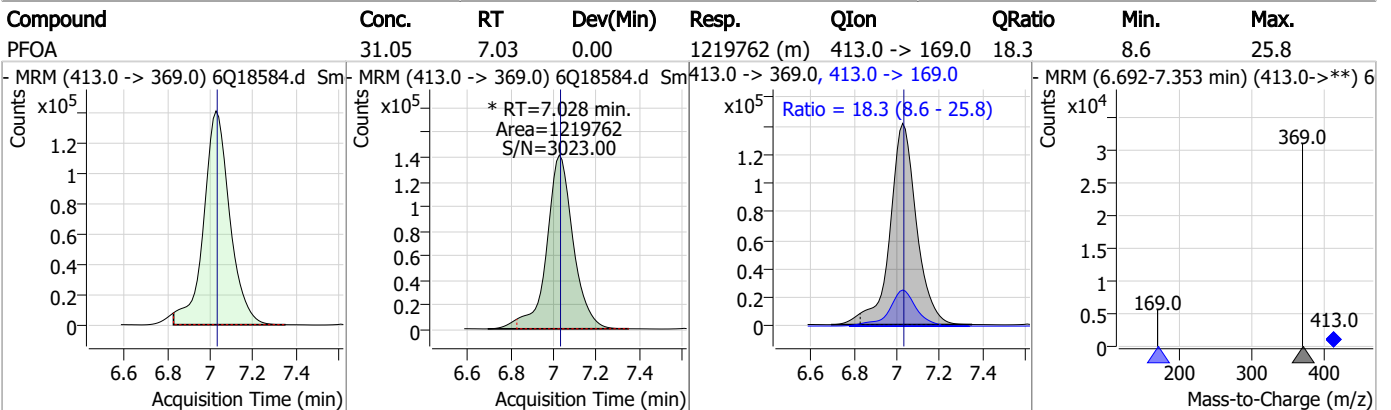
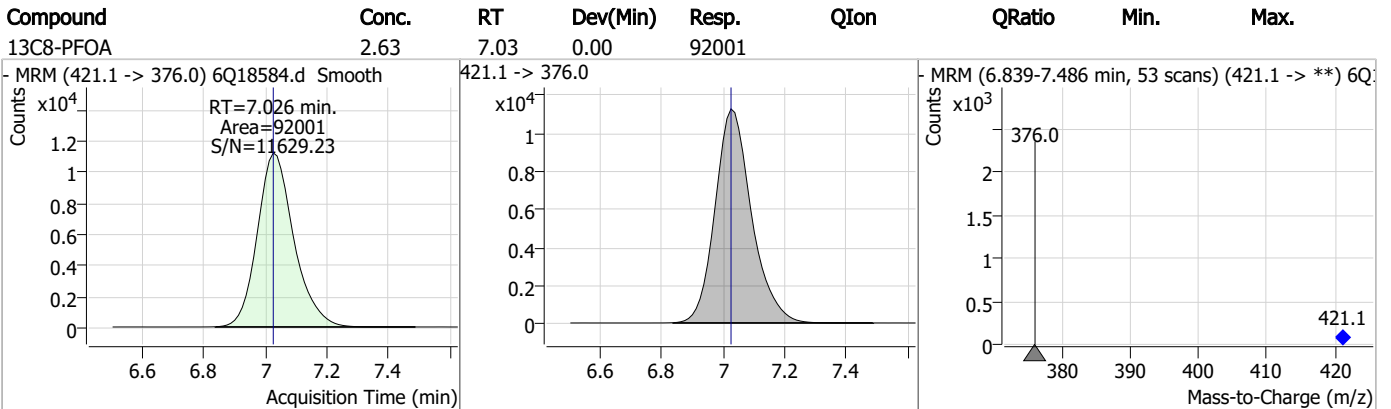
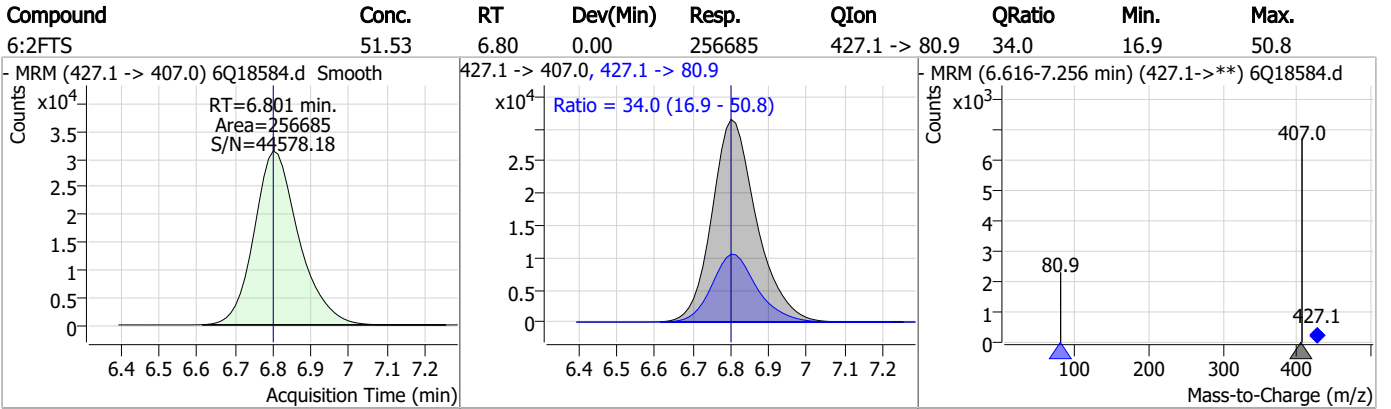
Perfluorinated Compounds by LC/MS/MS



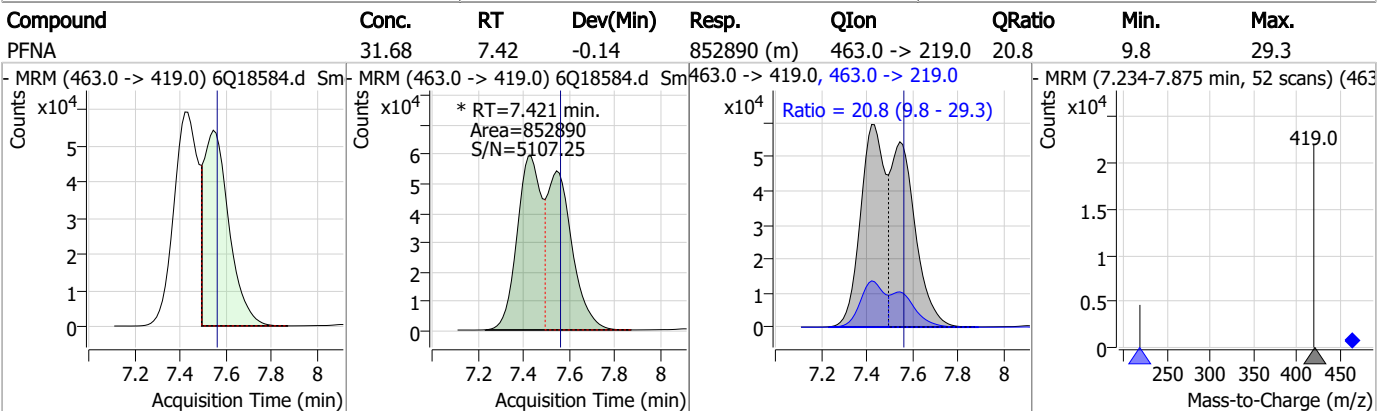
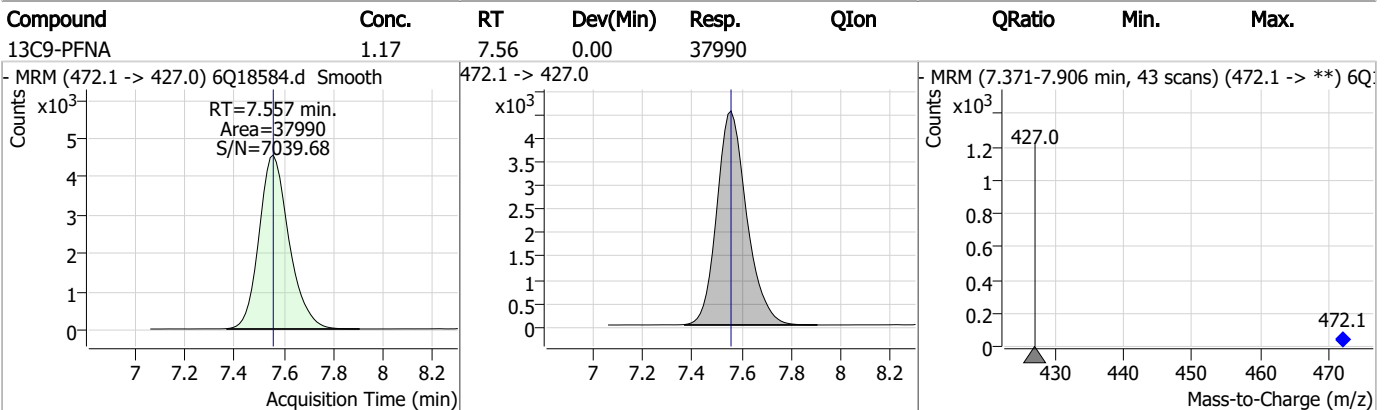
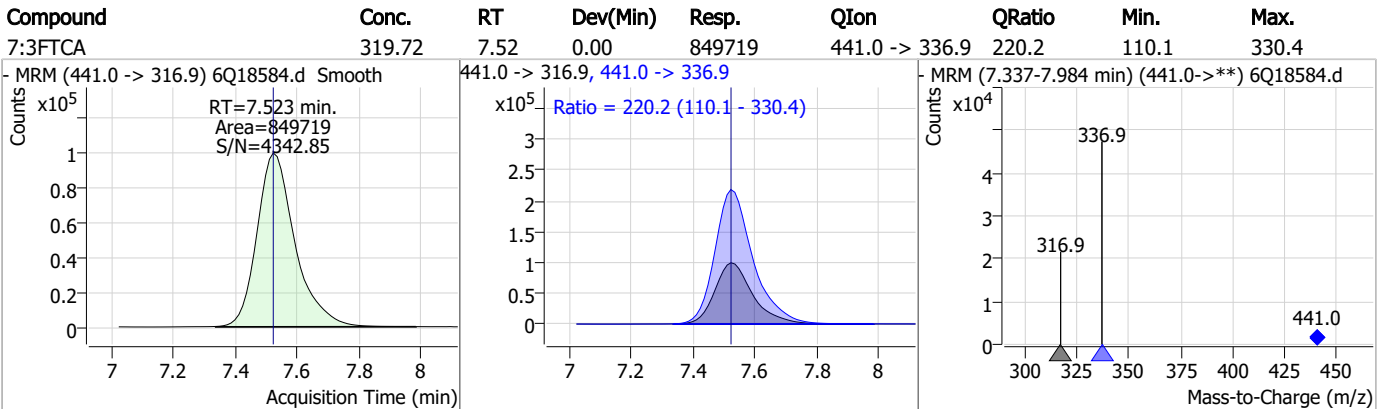
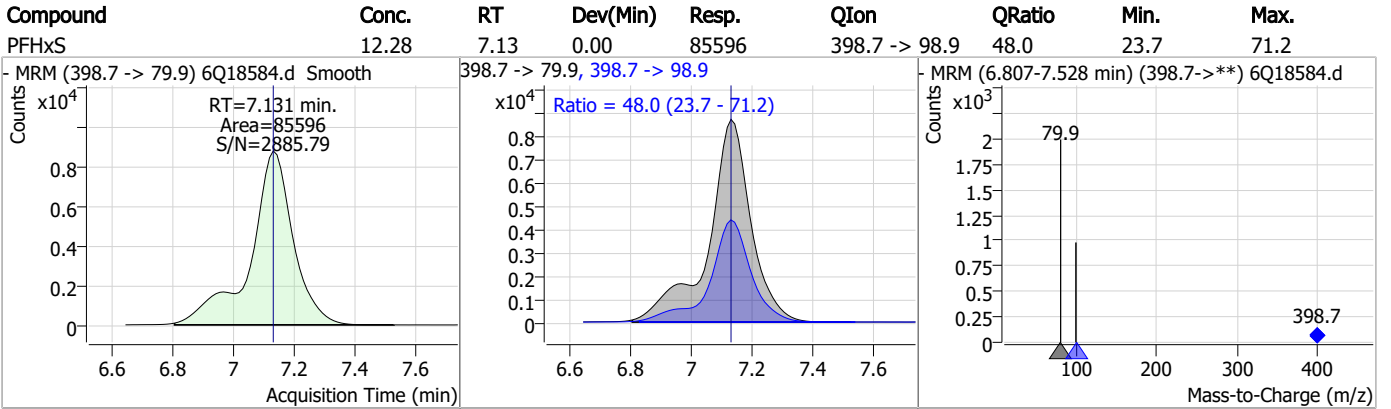
7.6.4

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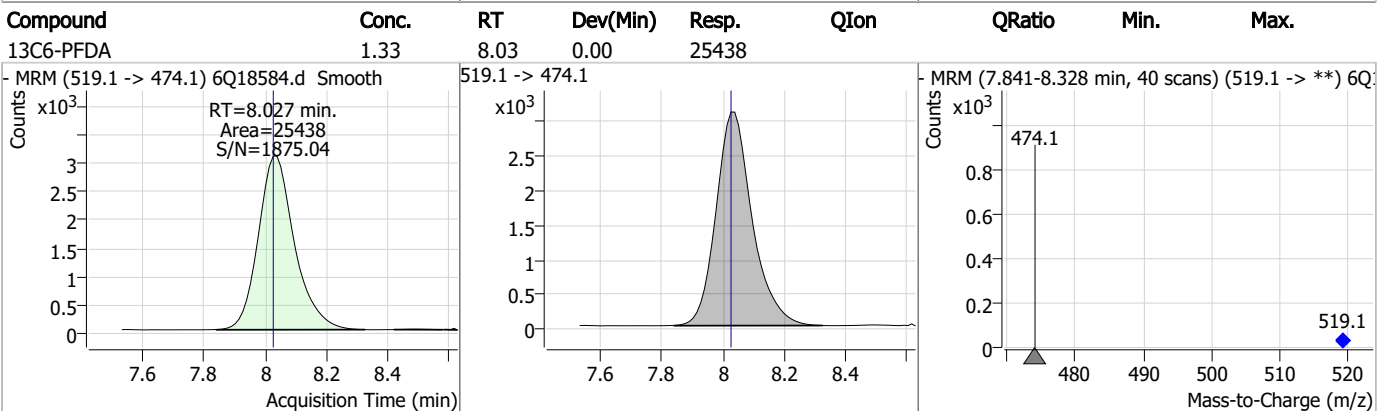
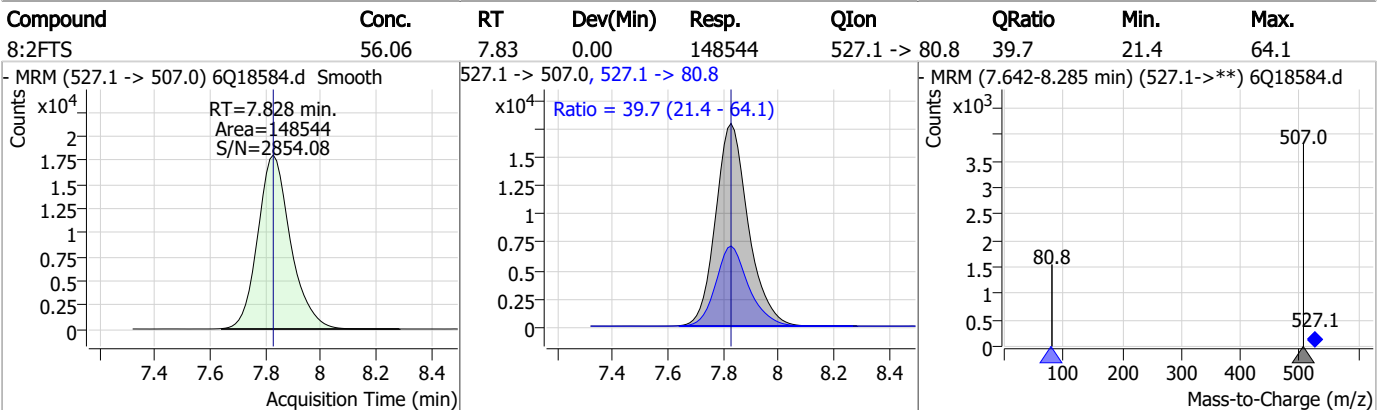
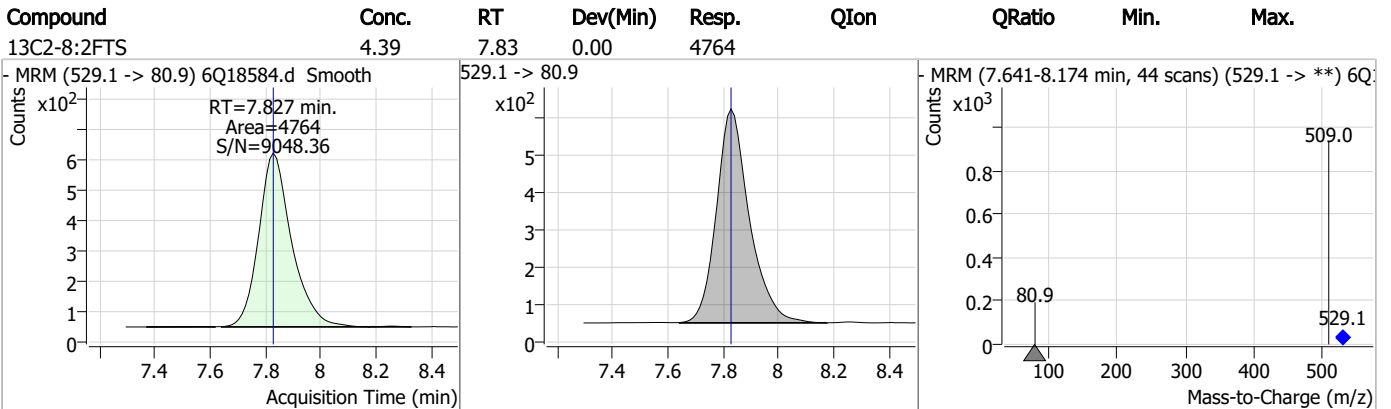
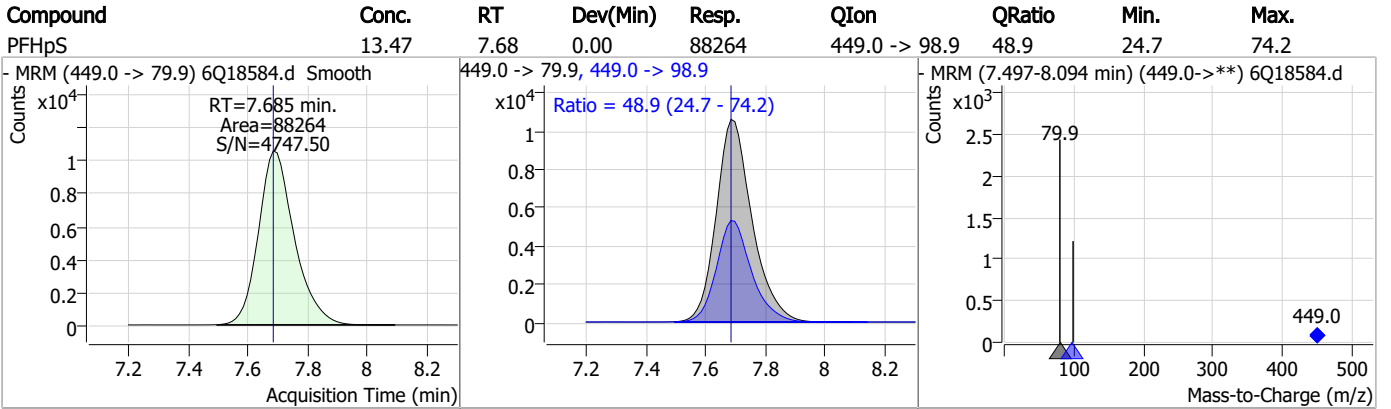
Perfluorinated Compounds by LC/MS/MS



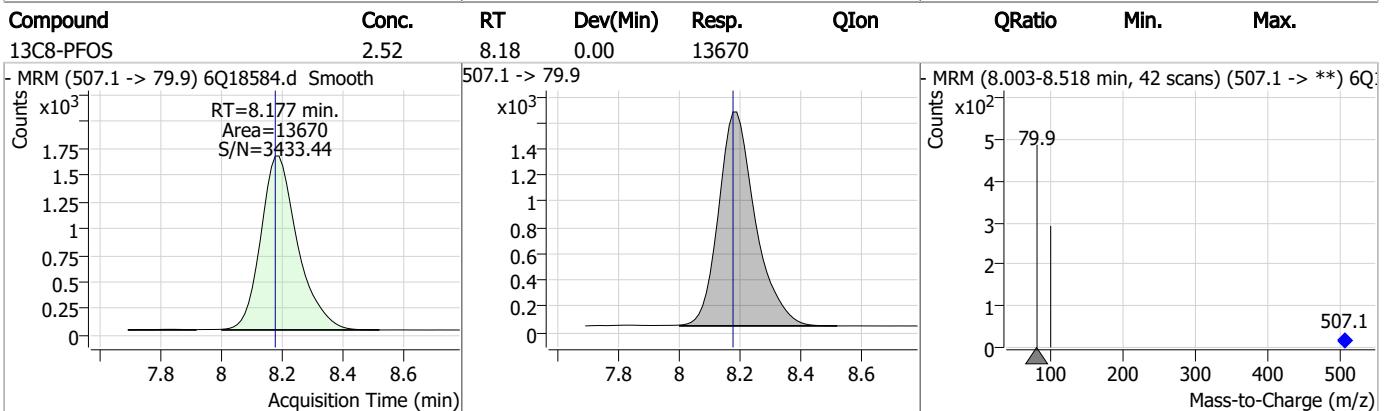
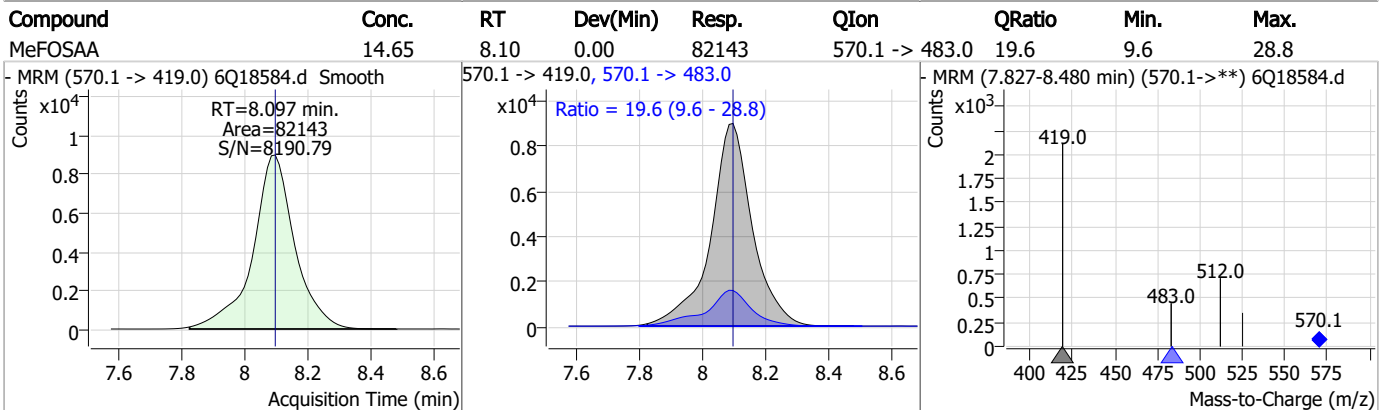
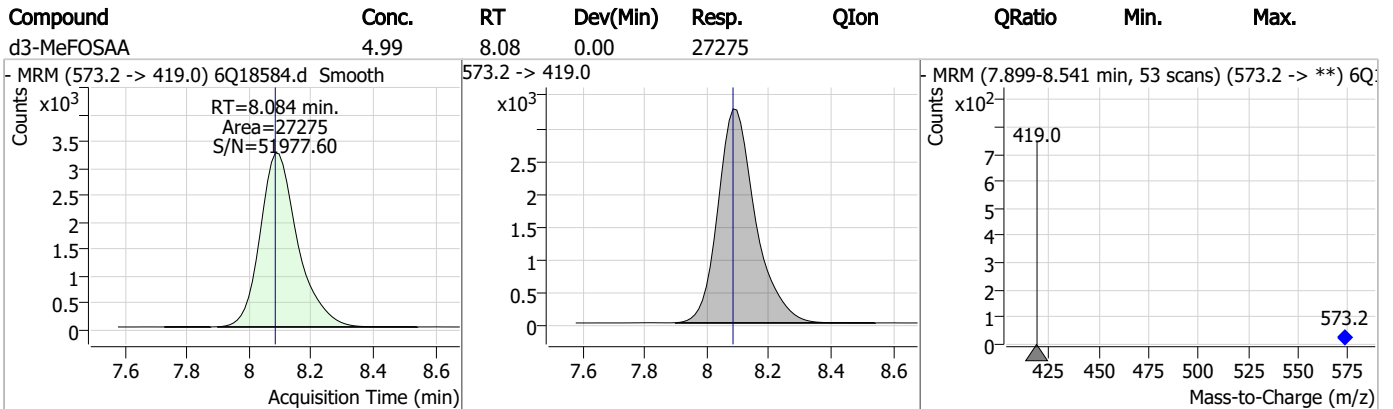
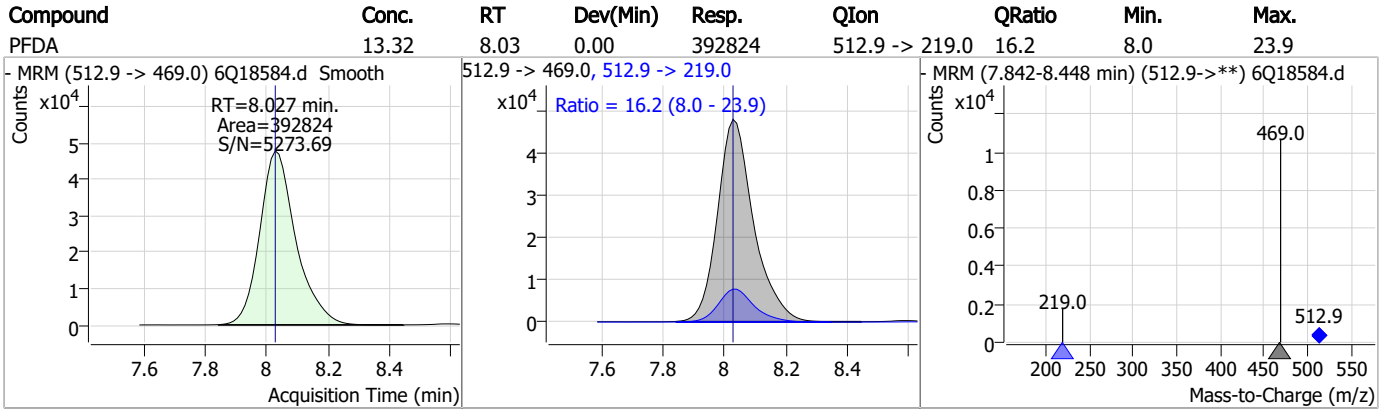
Perfluorinated Compounds by LC/MS/MS



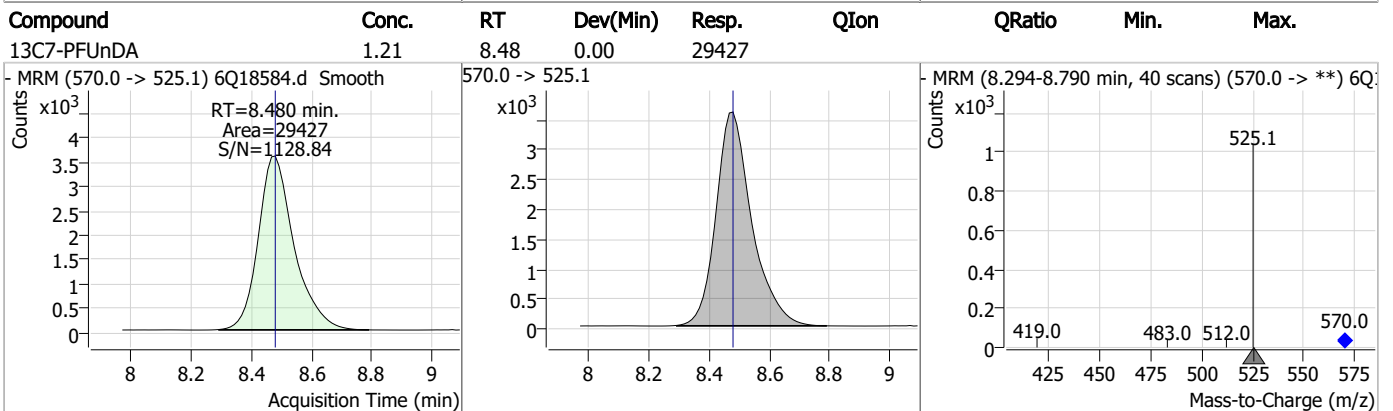
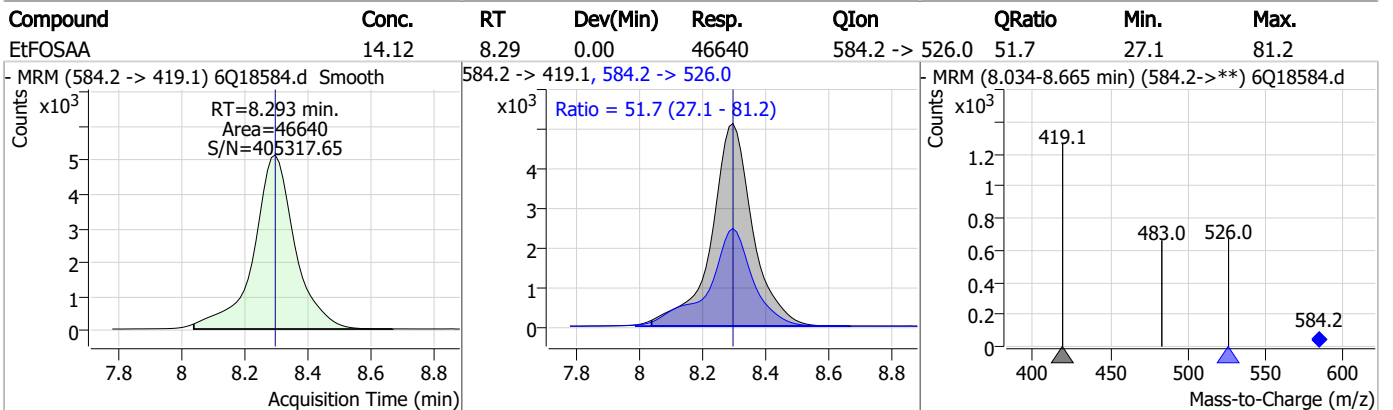
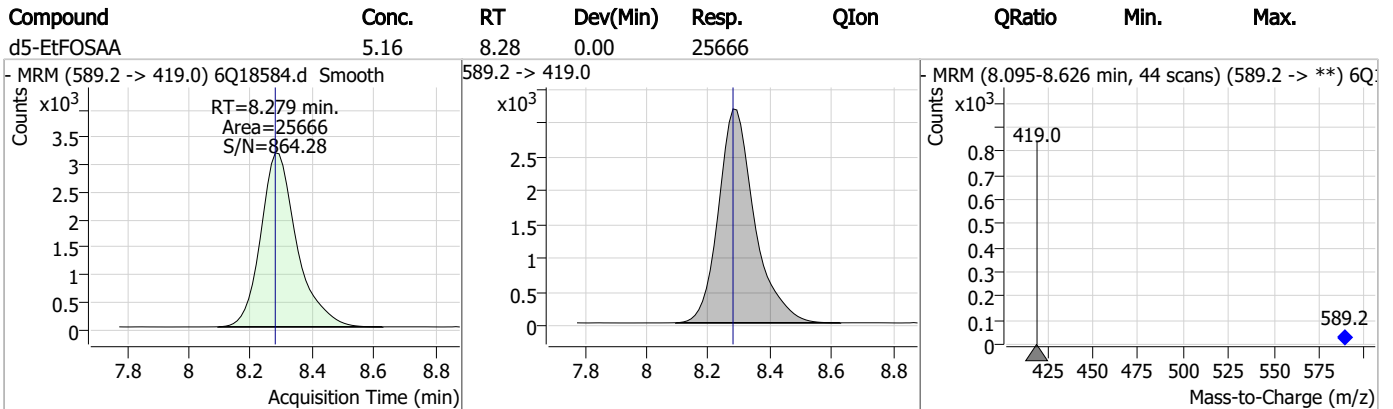
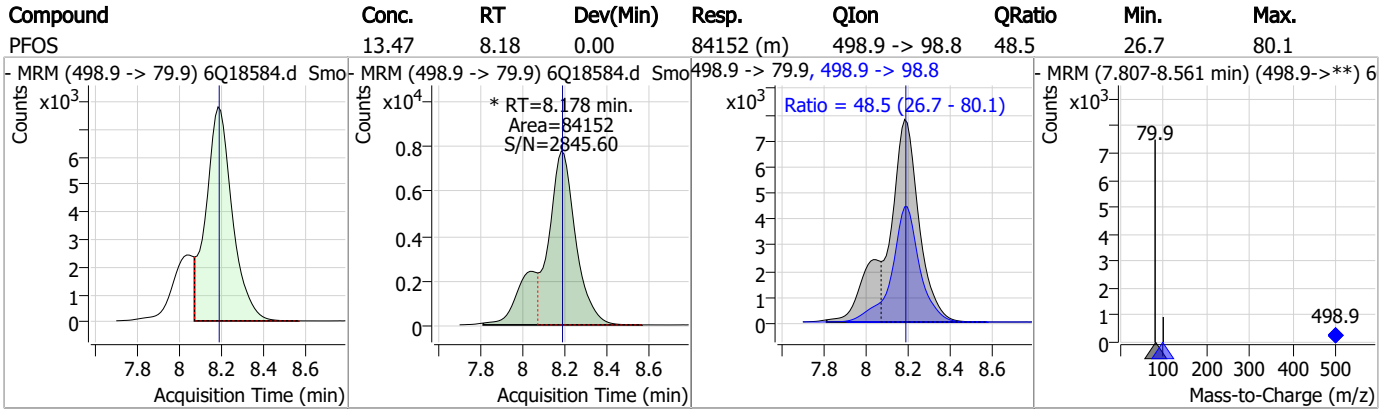
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

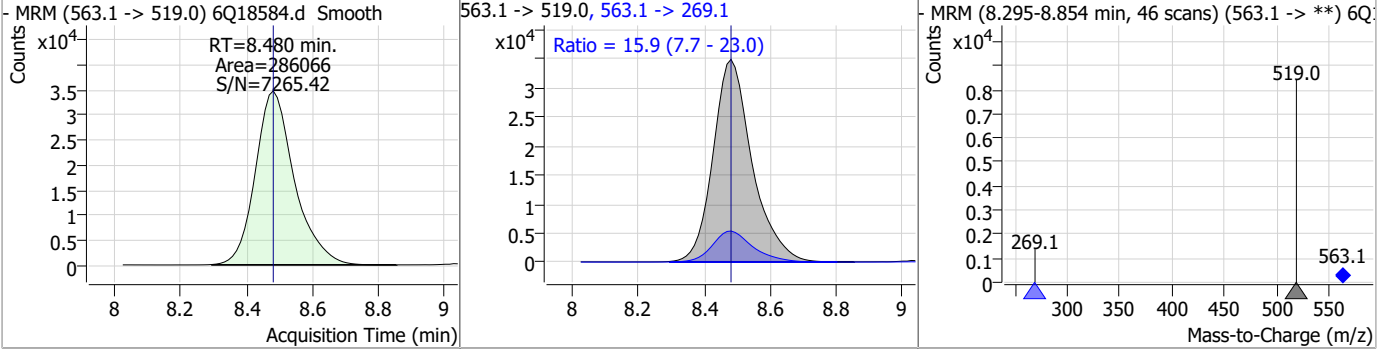


Perfluorinated Compounds by LC/MS/MS

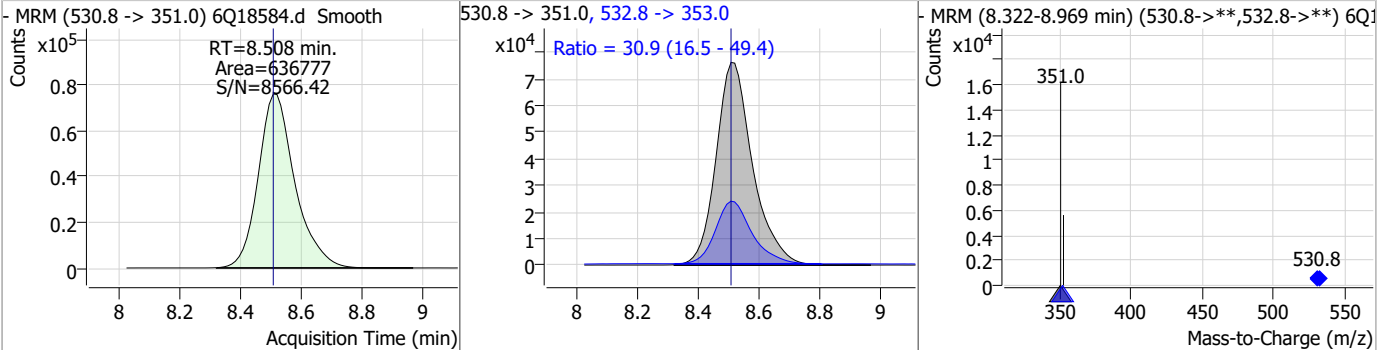


Perfluorinated Compounds by LC/MS/MS

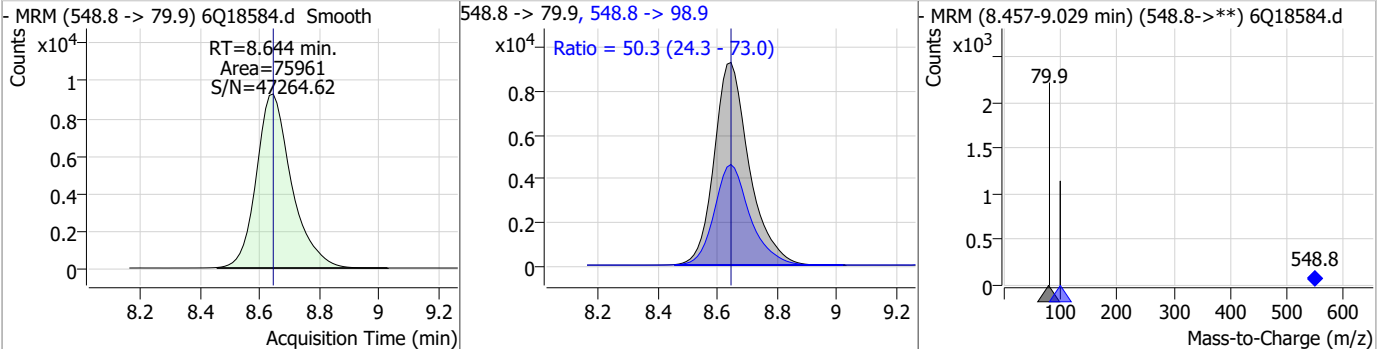
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	14.96	8.48	0.00	286066	563.1 -> 269.1	15.9	7.7	23.0



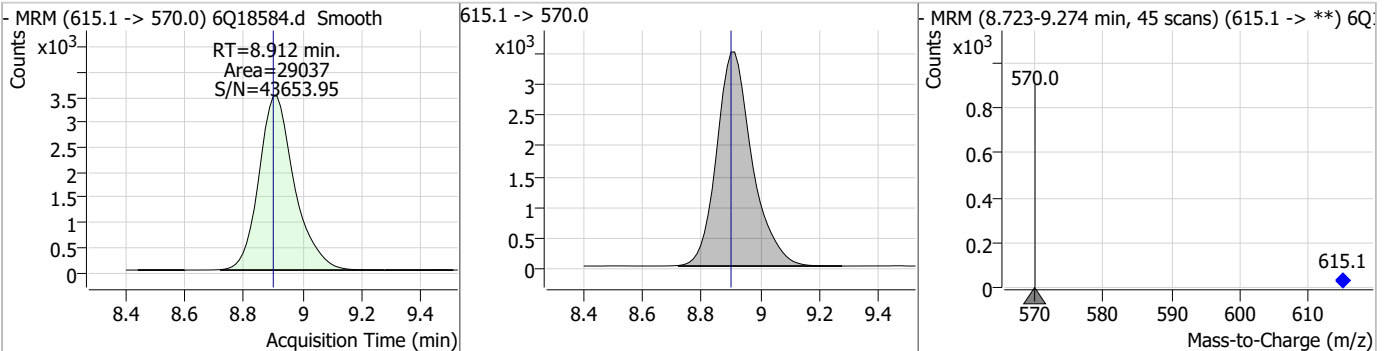
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	25.70	8.51	0.00	636777	532.8 -> 353.0	30.9	16.5	49.4



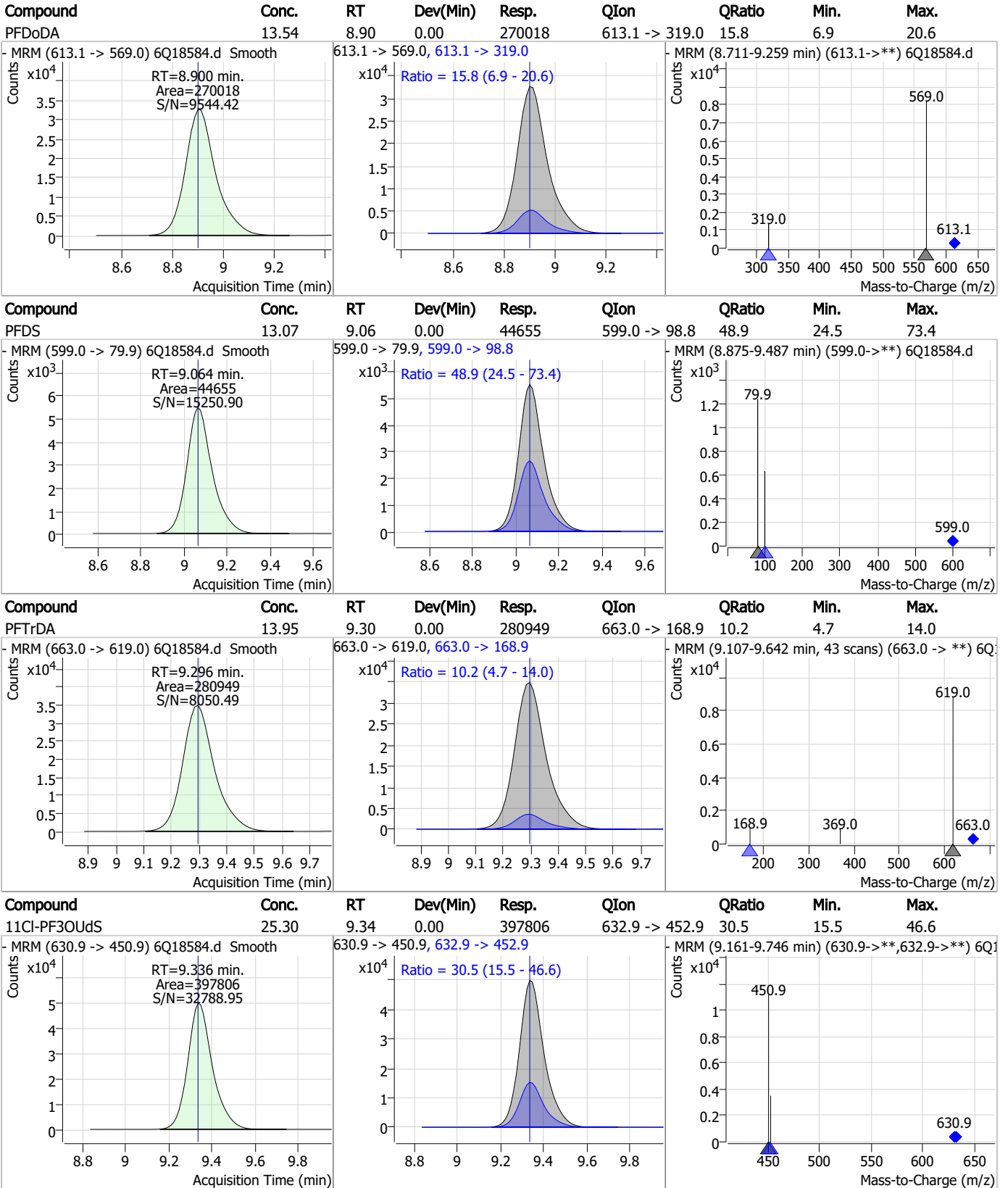
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	13.84	8.64	0.00	75961	548.8 -> 98.9	50.3	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	8.91	0.01	29037	615.1 -> 570.0	-	-	-



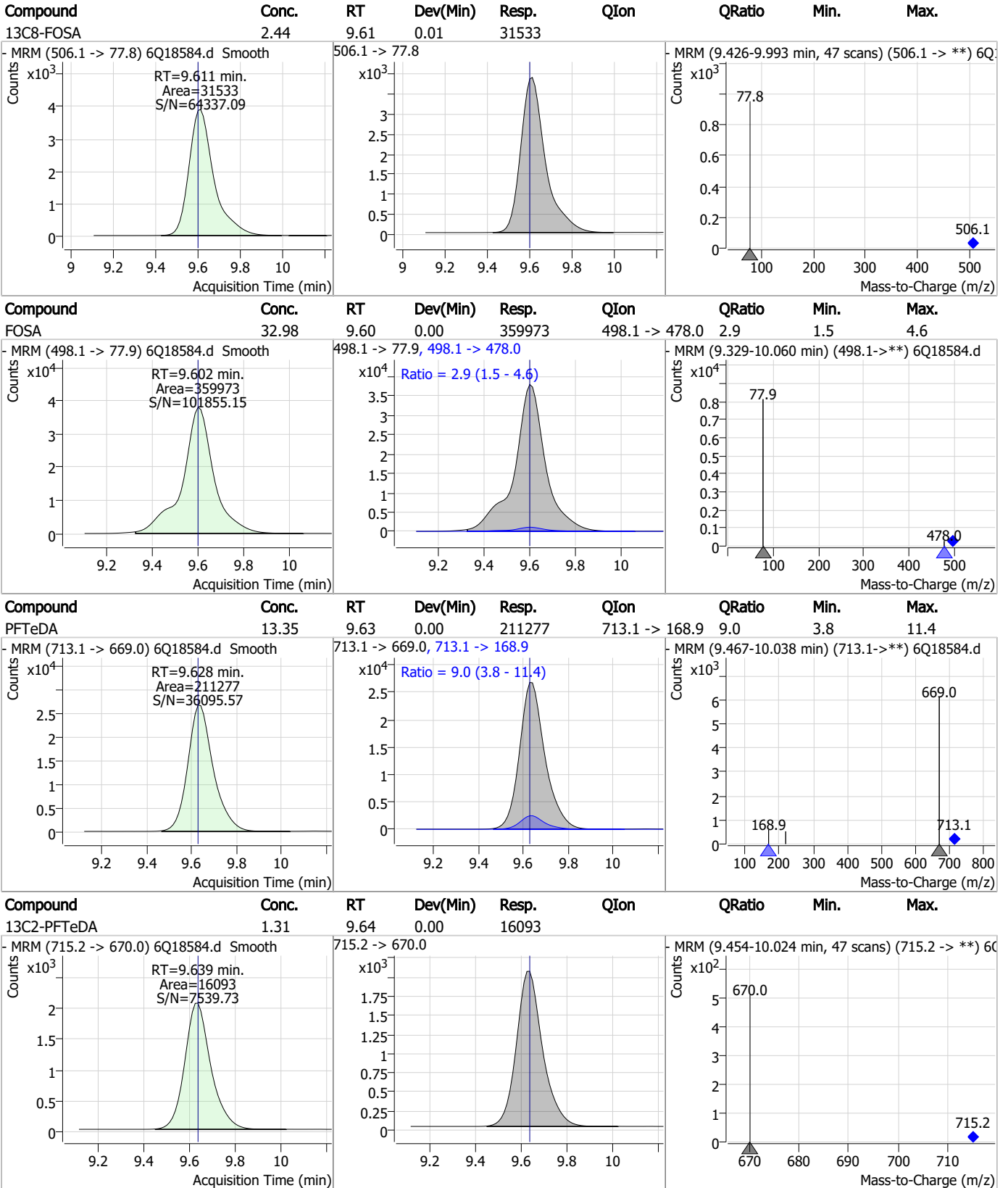
Perfluorinated Compounds by LC/MS/MS



7.6.4

7

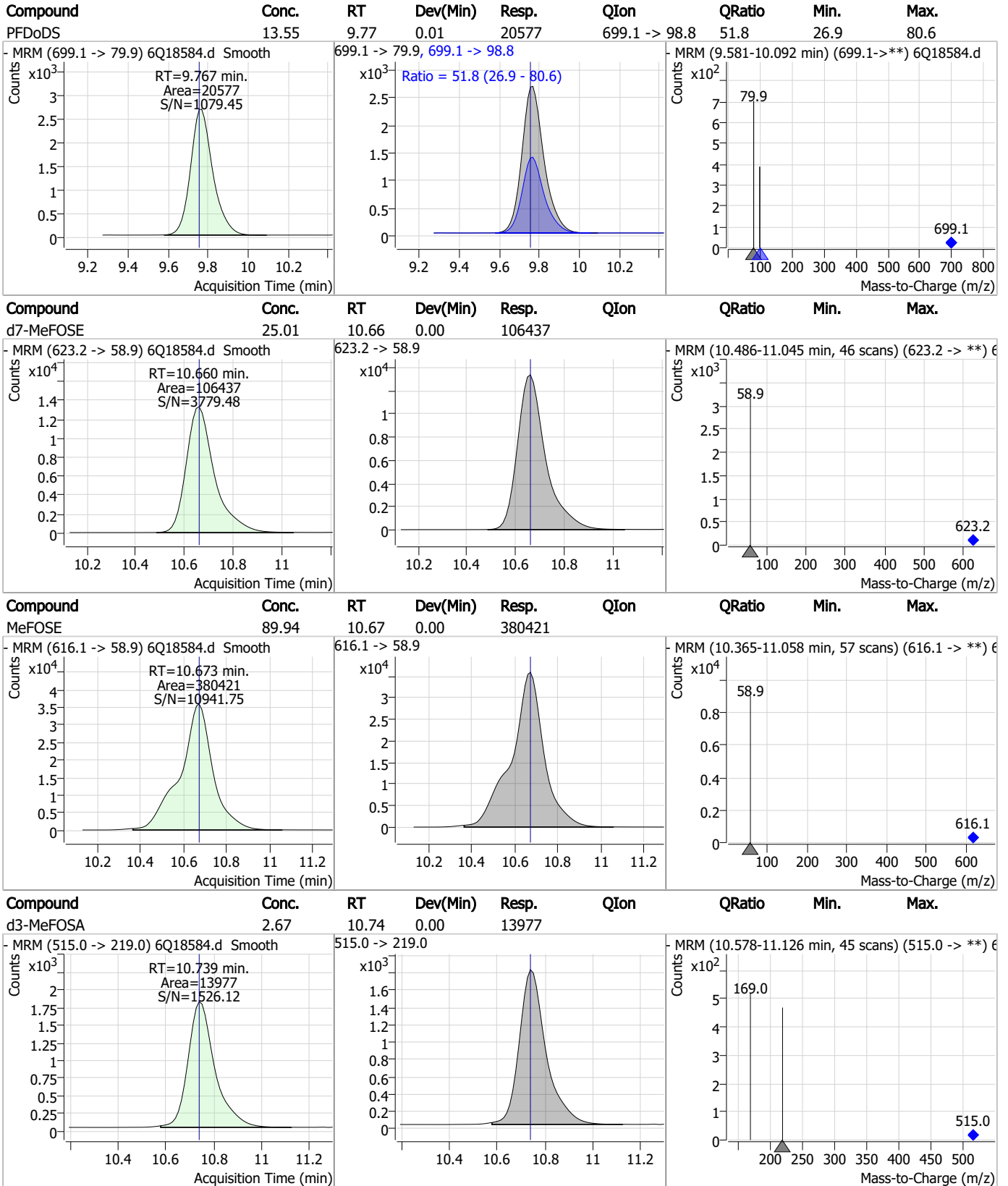
Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Perfluorinated Compounds by LC/MS/MS

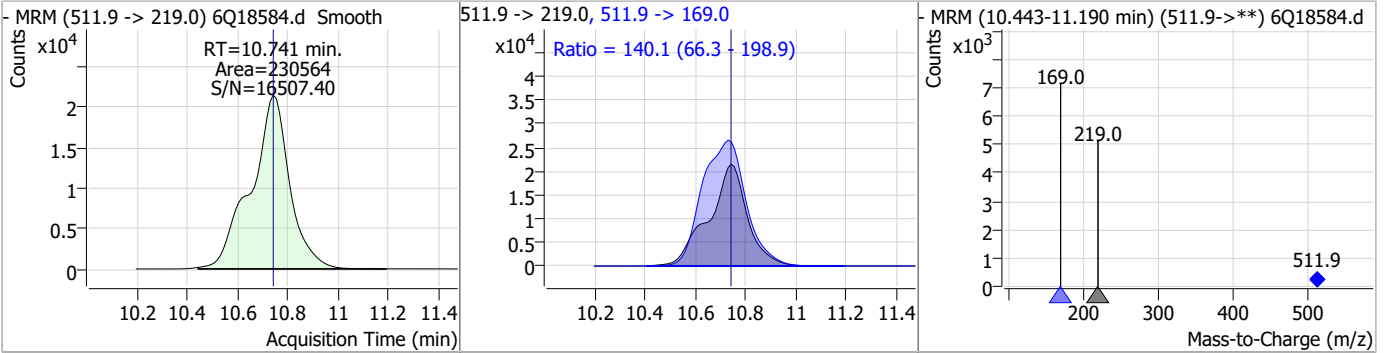


7.6.4

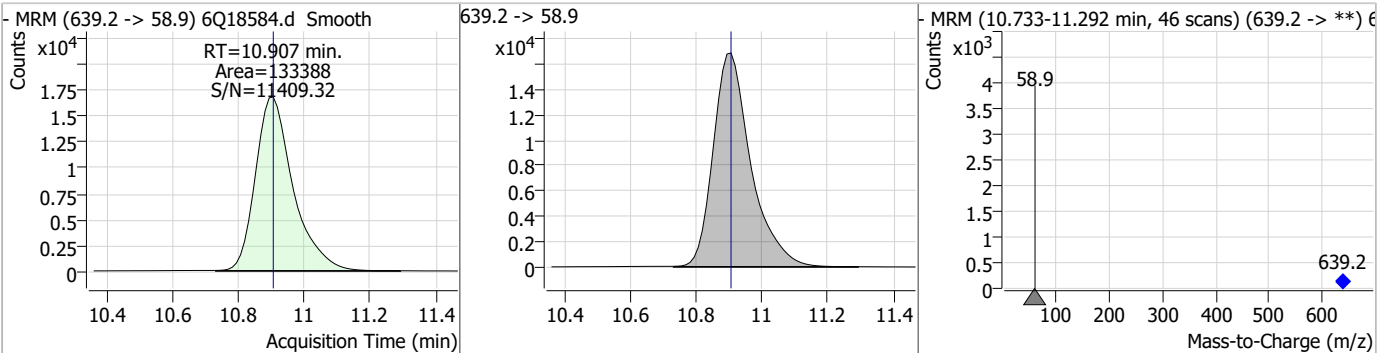
7

Perfluorinated Compounds by LC/MS/MS

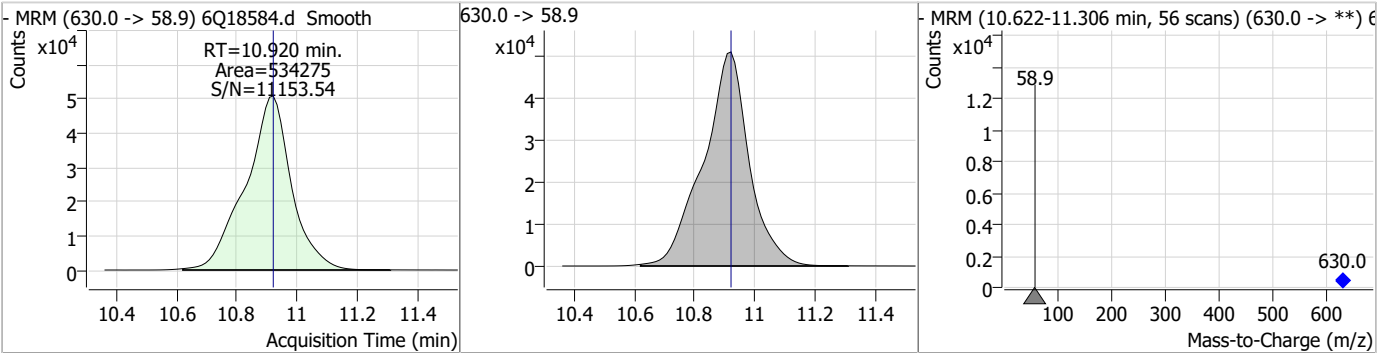
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	44.86	10.74	0.00	230564	511.9 -> 169.0	140.1	66.3	198.9



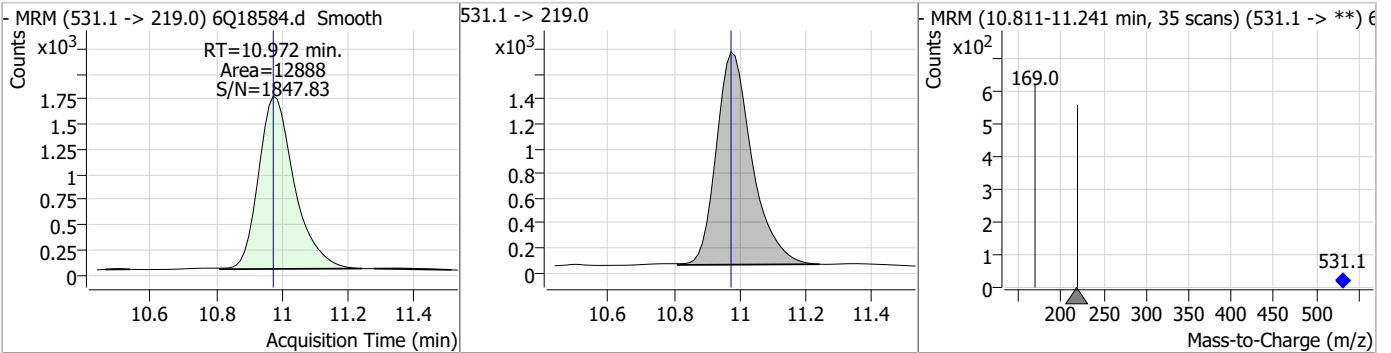
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.96	10.91	0.00	133388				



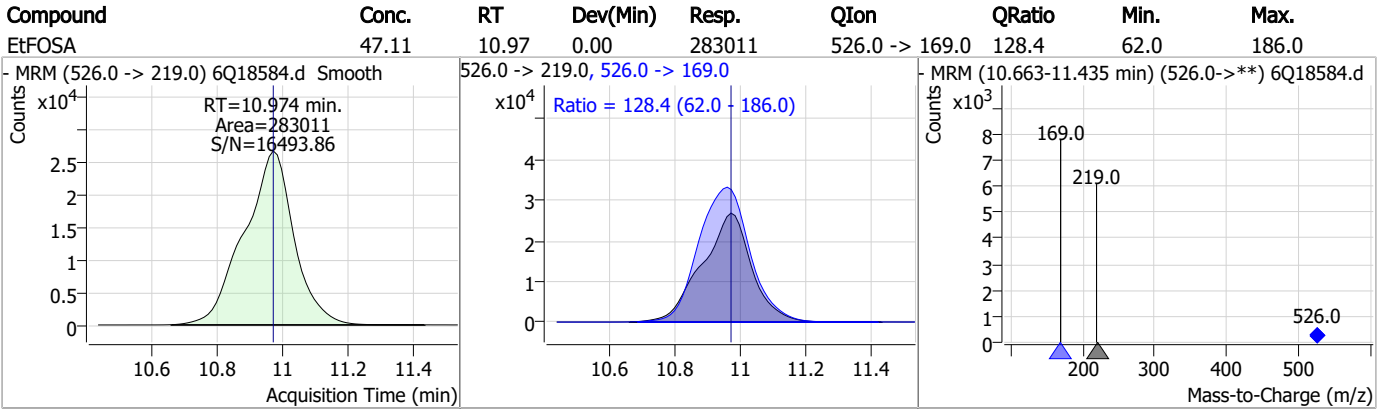
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	89.78	10.92	0.00	534275				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.60	10.97	0.00	12888				



Perfluorinated Compounds by LC/MS/MS



7.6.4

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Manual Integration Approval Summary

Sample Number: S6Q279-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18584.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 16:47 Supervisor approved: 06/01/23 14:43 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.03	Split peak
Perfluorononanoic acid	375-95-1		7.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.6.4.1

7

QQQ Check Tune Report



Instrument Name LCMS Q6
MS Model G6495B
MS Instrument Serial SG1752D103
Software_Firmware Version 10.1.67, FW: A.00.08.112
Tune Date & Time 30 May 2023 10:49:21
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.78E+0 [R] (Torr); 2.89E-5 [H] (Torr)

Source Parameters

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

7.7.1

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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	112.95	-0.04	Pass	0.70	0.65	-0.05	Pass	455038
302.00	301.98	-0.02	Pass	0.70	0.68	-0.02	Pass	1143761
601.98	601.92	-0.06	Pass	0.70	0.60	-0.10	Pass	2118549
1033.99	1033.82	-0.17	Pass	0.70	0.59	-0.11	Pass	1683143
1633.95	1633.69	-0.26	Adjust	0.70	0.64	-0.06	Pass	1158862
2233.91	2233.43	-0.48	Adjust	0.70	0.70	0.00	Pass	440499

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.03	0.03	Pass	0.70	0.70	0.00	Pass	142184
112.99	112.96	-0.03	Pass	0.70	0.76	0.06	Pass	581275
302.00	301.97	-0.03	Pass	0.70	0.63	-0.07	Pass	1512926
601.98	601.97	-0.01	Pass	0.70	0.68	-0.02	Pass	1340144
1033.99	1033.86	-0.13	Pass	0.70	0.69	-0.01	Pass	900417
1633.95	1633.75	-0.20	Pass	0.70	0.74	0.04	Pass	690843
2233.91	2233.62	-0.29	Pass	0.70	0.69	-0.01	Pass	267882

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.94	-0.05	Pass	1.20	1.20	0.00	Pass	527677
302.00	301.90	-0.10	Pass	1.20	1.35	0.15	Pass	1480594
601.98	601.94	-0.04	Pass	1.20	1.48	0.28	Pass	3006683
1033.99	1033.77	-0.22	Pass	1.20	1.45	0.25	Pass	2687346
1633.95	1633.65	-0.30	Pass	1.20	1.44	0.24	Pass	1828520
2233.91	2233.52	-0.39	Pass	1.20	1.38	0.18	Pass	851214

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	1.20	1.08	-0.12	Pass	175167
112.99	112.96	-0.03	Pass	1.20	1.13	-0.07	Pass	723223
302.00	301.91	-0.09	Pass	1.20	1.12	-0.08	Pass	1714873
601.98	601.88	-0.10	Pass	1.20	1.30	0.10	Pass	2021470
1033.99	1033.82	-0.17	Pass	1.20	1.32	0.12	Pass	1614259
1633.95	1633.70	-0.25	Pass	1.20	1.21	0.01	Pass	1644467
2233.91	2233.55	-0.36	Pass	1.20	1.08	-0.12	Pass	660835

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.92	-0.07	Pass	2.50	2.42	-0.08	Pass	572643
302.00	301.78	-0.22	Pass	2.50	2.58	0.08	Pass	1936780
601.98	601.85	-0.13	Pass	2.50	2.68	0.18	Pass	3673966
1033.99	1033.77	-0.22	Pass	2.50	2.66	0.16	Pass	4191544
1633.95	1633.55	-0.40	Pass	2.50	2.61	0.11	Pass	3493161
2233.91	2233.42	-0.49	Pass	2.50	2.17	-0.33	Pass	2051281

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.93	-0.07	Pass	2.50	2.52	0.02	Pass	203780
112.99	112.93	-0.06	Pass	2.50	2.53	0.03	Pass	984576
302.00	301.95	-0.05	Pass	2.50	2.55	0.05	Pass	2407993
601.98	601.85	-0.13	Pass	2.50	2.70	0.20	Pass	3235376
1033.99	1033.89	-0.10	Pass	2.50	2.83	0.33	Pass	3164989
1633.95	1633.60	-0.35	Pass	2.50	2.42	-0.08	Pass	3058922
2233.91	2233.65	-0.26	Pass	2.50	2.33	-0.17	Pass	1539250

7.7.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18514.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 3:21:01 PM
 Sample Name : ic278-1
 Vial : P1-A2
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	162794	10.00 µg/L	0.000
M5-PFPeA	4.222	268.3 -> 223.0	54151	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	58883	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	53632	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	82213	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	34747	1.25 µg/L	0.000
M6-PFDA	8.039	519.1 -> 474.1	20814	1.25 µg/L	0.012
M7-PFUnDA	8.480	570.0 -> 525.1	26647	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	23593	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	12482	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	27840	2.50 µg/L	0.012
M3-PFBS	5.334	302.1 -> 79.9	22517	2.50 µg/L	0.000
M3-PFHxS	7.142	402.1 -> 79.9	13312	2.50 µg/L	0.012
M8-PFOS	8.189	507.1 -> 79.9	12201	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	2586	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	3597	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3169	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	20360	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	37646	10.00 µg/L	0.000
M5-EtFOSAA	8.292	589.2 -> 419.0	19278	5.00 µg/L	0.012
M7-MeFOSE	10.660	623.2 -> 58.9	97953	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	130852	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	11323	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11090	2.50 µg/L	0.000
13C4-PFOS	8.190	502.8 -> 79.9	16117	2.50 µg/L	0.000
13C3-PFBA	2.827	216.0 -> 172.0	67693	5.00 µg/L	0.000
18O2-PFHxS	7.141	403.0 -> 83.9	9989	2.50 µg/L	0.012
13C4-PFOA	7.039	417.1 -> 372.0	86695	2.50 µg/L	0.012
13C2-PFDA	8.039	515.1 -> 470.1	27374	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	42028	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	54974	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2586	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3597	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3169	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C2-PFDoDA	8.912	615.1 -> 570.0	23593	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C2-PFTeDA	9.639	715.2 -> 670.0	12482	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C3-PFBS	5.334	302.1 -> 79.9	22517	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C3-PFHxS	7.142	402.1 -> 79.9	13312	2.47 µg/L	0.012

7.7.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C4-PFBA	2.822	216.8 -> 171.9	162794	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.382	367.1 -> 322.0	53632	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFHxA	5.417	318.0 -> 273.0	58883	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C5-PFPeA	4.222	268.3 -> 223.0	54151	4.96 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C6-PFDA	8.039	519.1 -> 474.1	20814	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C7-PFUnDA	8.480	570.0 -> 525.1	26647	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C8-FOSA	9.611	506.1 -> 77.8	27840	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-PFOA	7.026	421.1 -> 376.0	82213	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-PFOS	8.189	507.1 -> 79.9	12201	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C9-PFNA	7.557	472.1 -> 427.0	34747	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.1%	
d3-MeFOSAA	8.084	573.2 -> 419.0	20360	4.93 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	37646	9.68 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	11090	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
d5-EtFOSAA	8.292	589.2 -> 419.0	19278	5.08 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	97953	25.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	130852	26.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	11323	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	3264	0.89 µg/L	93
		327.1 -> 80.9	1159		
6:2FTS	6.801	427.1 -> 407.0	2684	0.79 µg/L	96
		427.1 -> 80.9	965		
8:2FTS	7.828	527.1 -> 507.0	1601	0.95 µg/L	91
		527.1 -> 80.8	778		
EtFOSAA	8.293	584.2 -> 419.1	648	0.25 µg/L	m 85
		584.2 -> 526.0	282		
FOSA	9.602	498.1 -> 77.9	2341	0.25 µg/L	99
		498.1 -> 478.0	63		
MeFOSAA	8.085	570.1 -> 419.0	1076	0.24 µg/L	97
		570.1 -> 483.0	193		
PFBA	2.831	212.8 -> 168.9	4804	0.90 µg/L	100
PFBS	5.335	298.7 -> 79.9	1634	0.21 µg/L	95
		298.7 -> 98.8	547		
PFDA	8.040	512.9 -> 469.0	5645	0.24 µg/L	96
		512.9 -> 219.0	988		
PFDODA	8.900	613.1 -> 569.0	3894	0.24 µg/L	98
		613.1 -> 319.0	560		
PFDS	9.076	599.0 -> 79.9	714	0.24 µg/L	95

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	327		
PFHpA	6.382	363.1 -> 319.0	5343	0.22 µg/L	91
		363.1 -> 169.0	1010		
PFHpS	7.698	449.0 -> 79.9	1286	0.22 µg/L	91
		449.0 -> 98.9	715		
PFHxA	5.420	313.0 -> 269.0	4525	0.22 µg/L	97
		313.0 -> 118.9	246		
PFHxS	7.131	398.7 -> 79.9	1337	0.21 µg/L	92
		398.7 -> 98.9	564		
PFNA	7.558	463.0 -> 419.0	5571	0.22 µg/L	95
		463.0 -> 219.0	1222		
PFNS	8.644	548.8 -> 79.9	1226	0.24 µg/L	93
		548.8 -> 98.9	653		
PFOA	7.028	413.0 -> 369.0	7577	0.22 µg/L	97
		413.0 -> 169.0	1386		
PFOS	8.178	498.9 -> 79.9	1207	0.21 µg/L	96
		498.9 -> 98.8	677		
PFPeA	4.212	263.0 -> 219.0	6138	0.46 µg/L	100
PFPeS	6.422	349.1 -> 79.9	1289	0.21 µg/L	99
		349.1 -> 98.9	614		
PFTeDA	9.640	713.1 -> 669.0	3231	0.26 µg/L	97
		713.1 -> 168.9	283		
PFTrDA	9.296	663.0 -> 619.0	4051	0.25 µg/L	97
		663.0 -> 168.9	426		
PFUnDA	8.480	563.1 -> 519.0	4139	0.24 µg/L	99
		563.1 -> 269.1	617		
11Cl-PF3OUdS	9.348	630.9 -> 450.9	5599	0.44 µg/L	98
		632.9 -> 452.9	1813		
9Cl-PF3ONS	8.520	530.8 -> 351.0	8635	0.42 µg/L	93
		532.8 -> 353.0	3171		
ADONA	6.632	376.9 -> 250.9	21492	0.45 µg/L	100
		376.9 -> 84.8	5778		
HFPO-DA	5.795	284.9 -> 168.9	1401	0.44 µg/L	m 98
		284.9 -> 184.9	181		
3:3FTCA	3.671	241.0 -> 177.0	956	1.14 µg/L	90
		241.0 -> 117.0	178		
5:3FTCA	6.086	341.0 -> 237.1	20583	5.90 µg/L	96
		341.0 -> 217.0	15304		
7:3FTCA	7.523	441.0 -> 316.9	13232	5.93 µg/L	93
		441.0 -> 336.9	27653		
EtFOSA	10.974	526.0 -> 219.0	2342	0.45 µg/L	95
		526.0 -> 169.0	3025		
EtFOSE	10.920	630.0 -> 58.9	6423	1.11 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	1990	0.48 µg/L	90
		511.9 -> 169.0	2885		
MeFOSE	10.673	616.1 -> 58.9	4556	1.15 µg/L	100
PFDoDS	9.767	699.1 -> 79.9	282	0.22 µg/L	91
		699.1 -> 98.8	170		
NFDHA	5.299	295.0 -> 201.0	1047	0.43 µg/L	95
		295.0 -> 84.9	312		
PFMBA	4.638	279.0 -> 85.1	4141	0.46 µg/L	100
PFMPA	3.363	229.0 -> 84.9	3152	0.45 µg/L	100
PFEESA	5.875	314.8 -> 134.9	10589	0.40 µg/L	99
		314.8 -> 82.9	375		

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

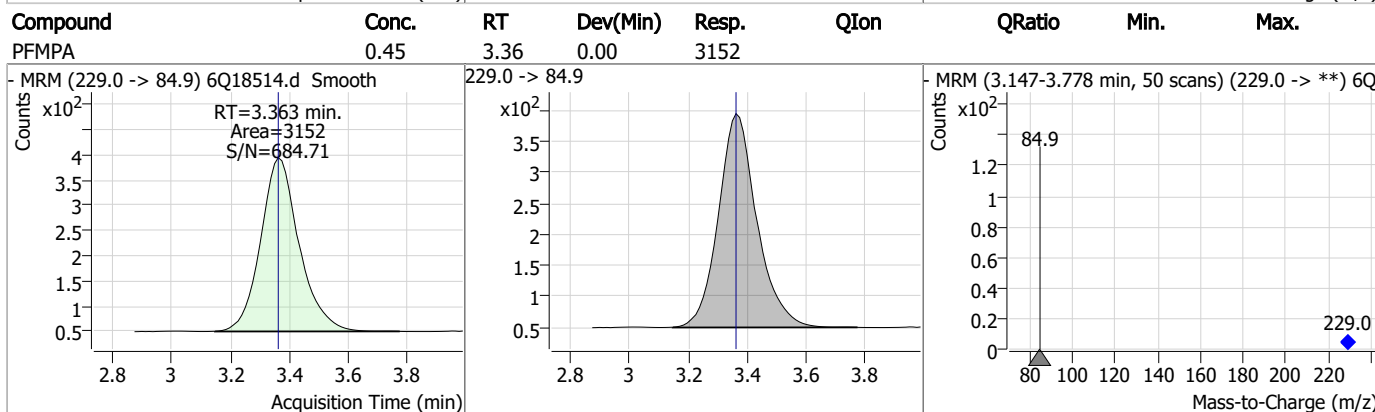
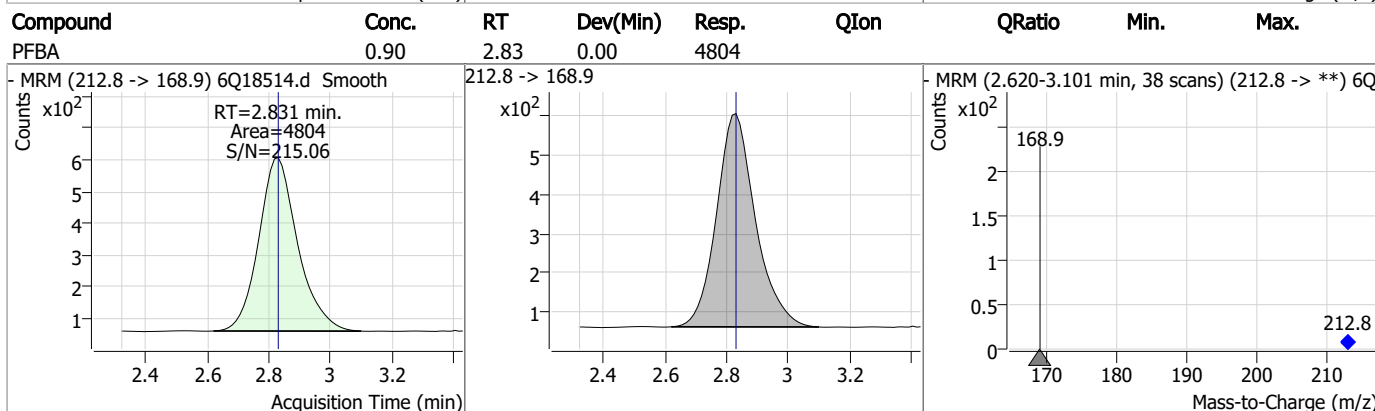
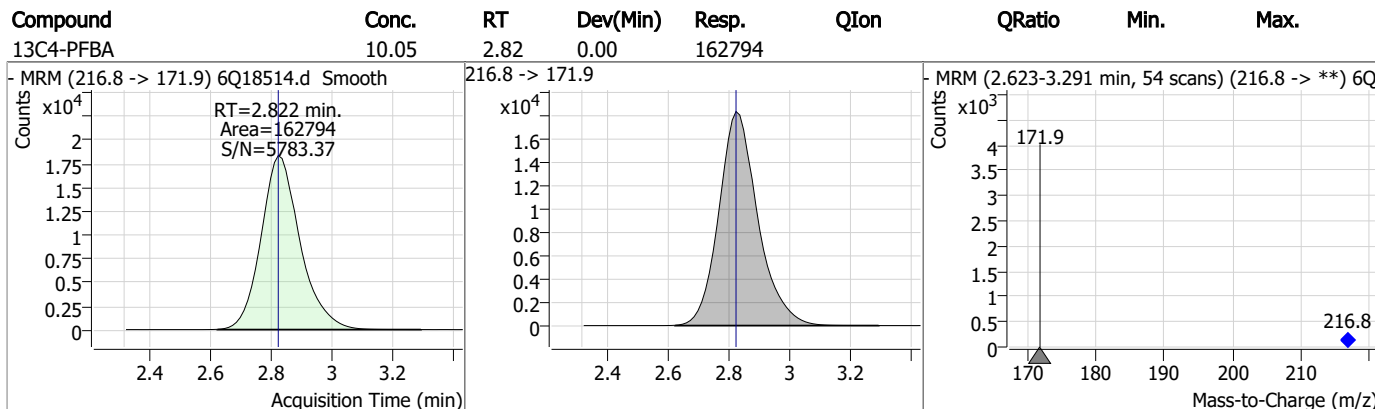
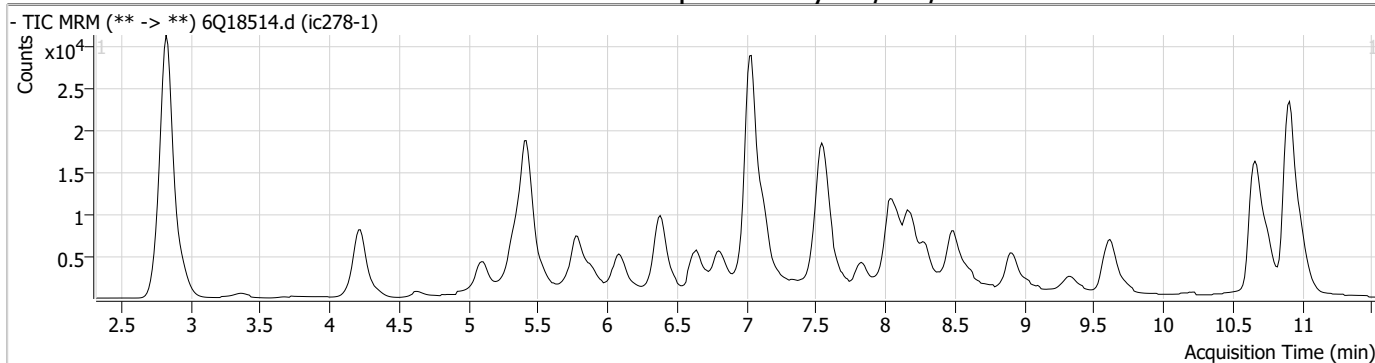
Perfluorinated Compounds by LC/MS/MS

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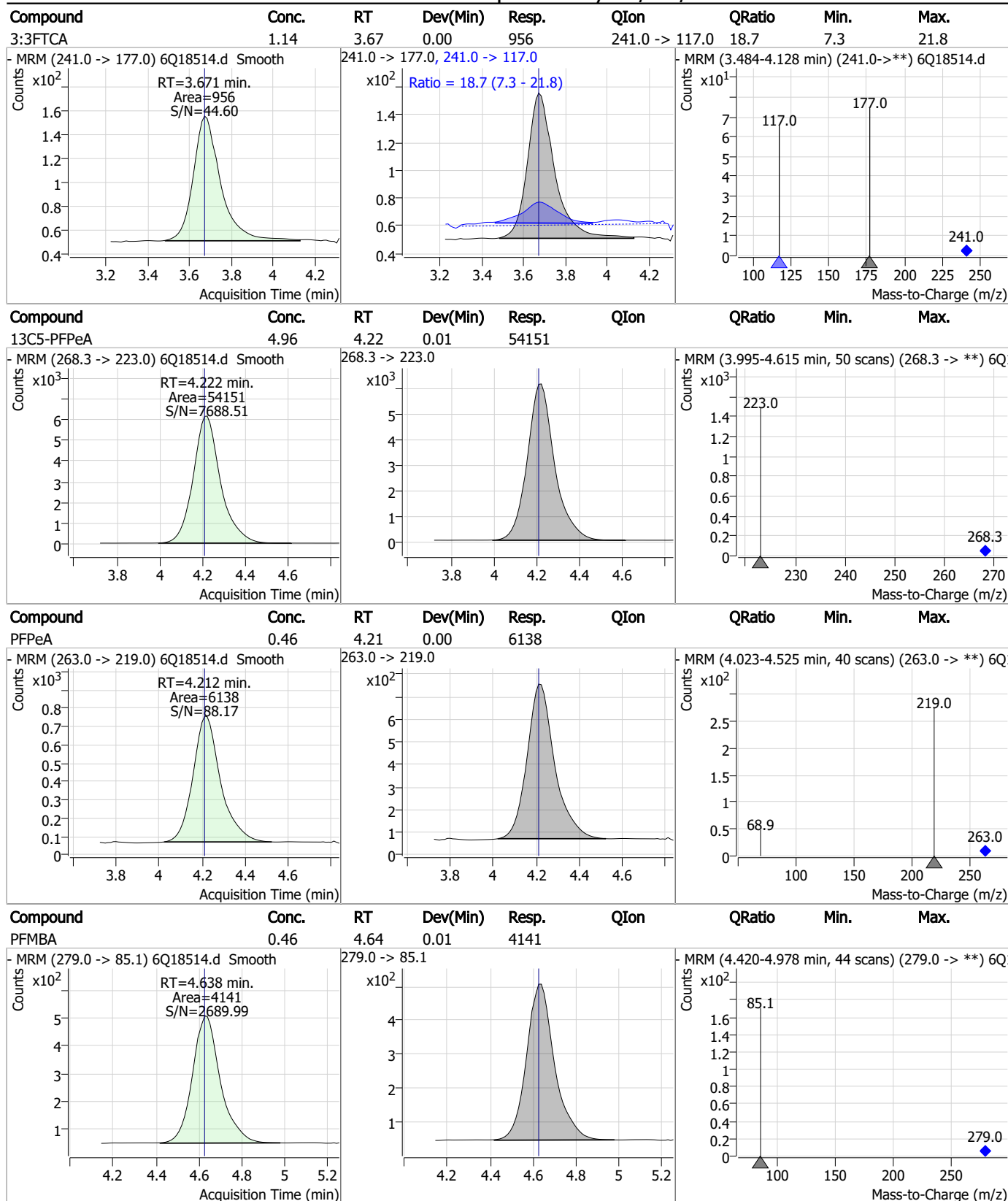


Perfluorinated Compounds by LC/MS/MS



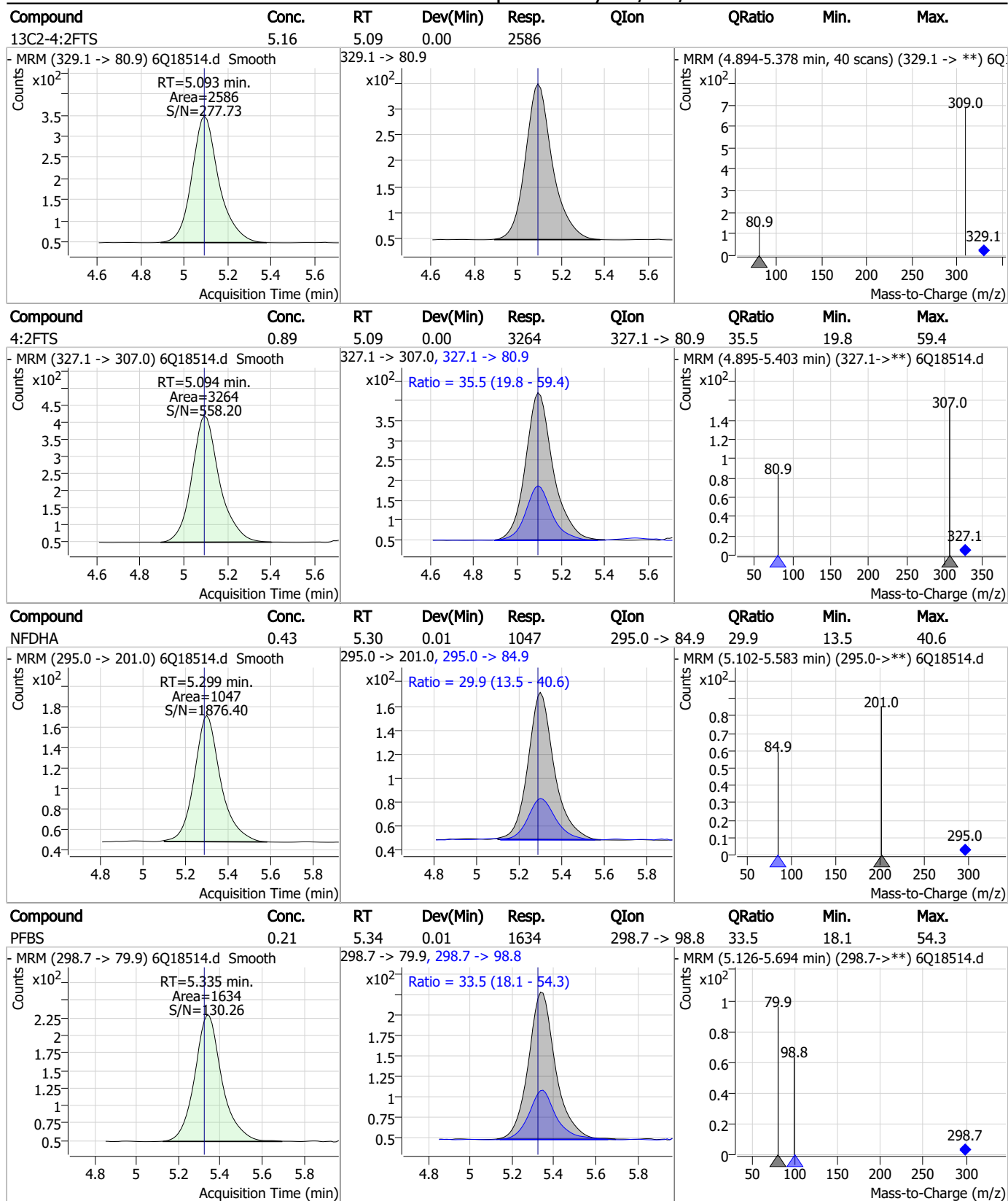
7.7.2
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Perfluorinated Compounds by LC/MS/MS



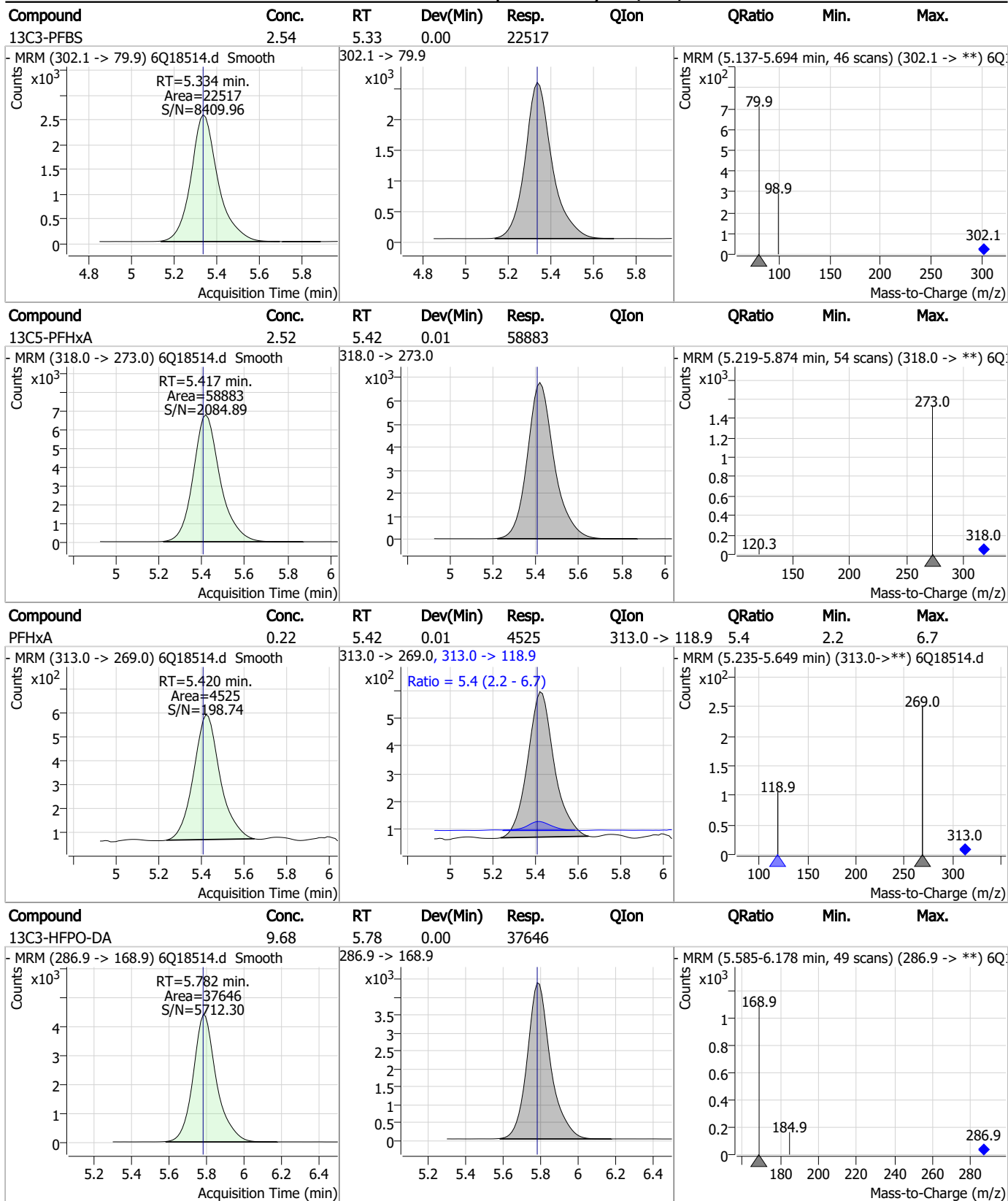
7.7.2
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Perfluorinated Compounds by LC/MS/MS



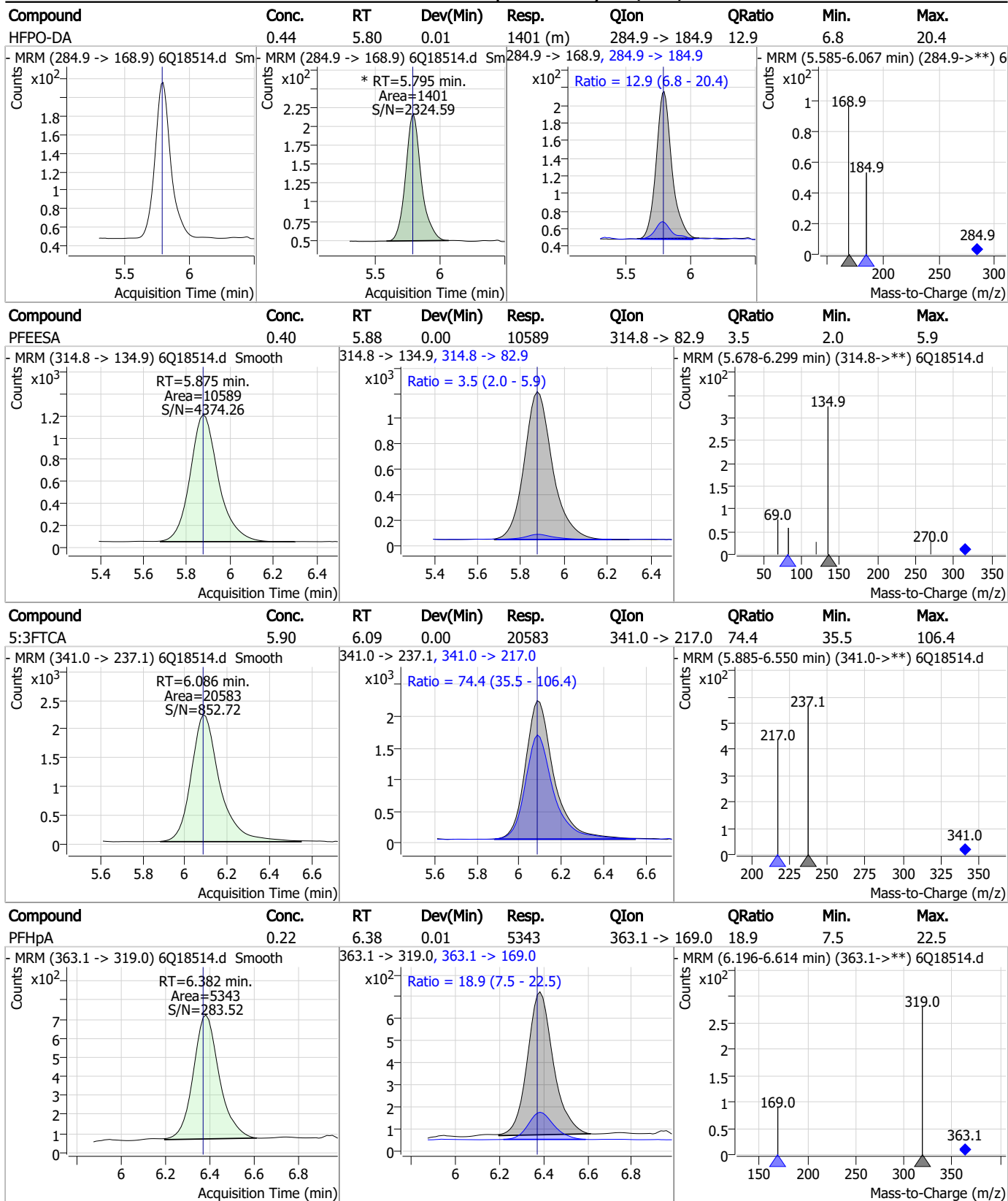
7.7.2
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Perfluorinated Compounds by LC/MS/MS



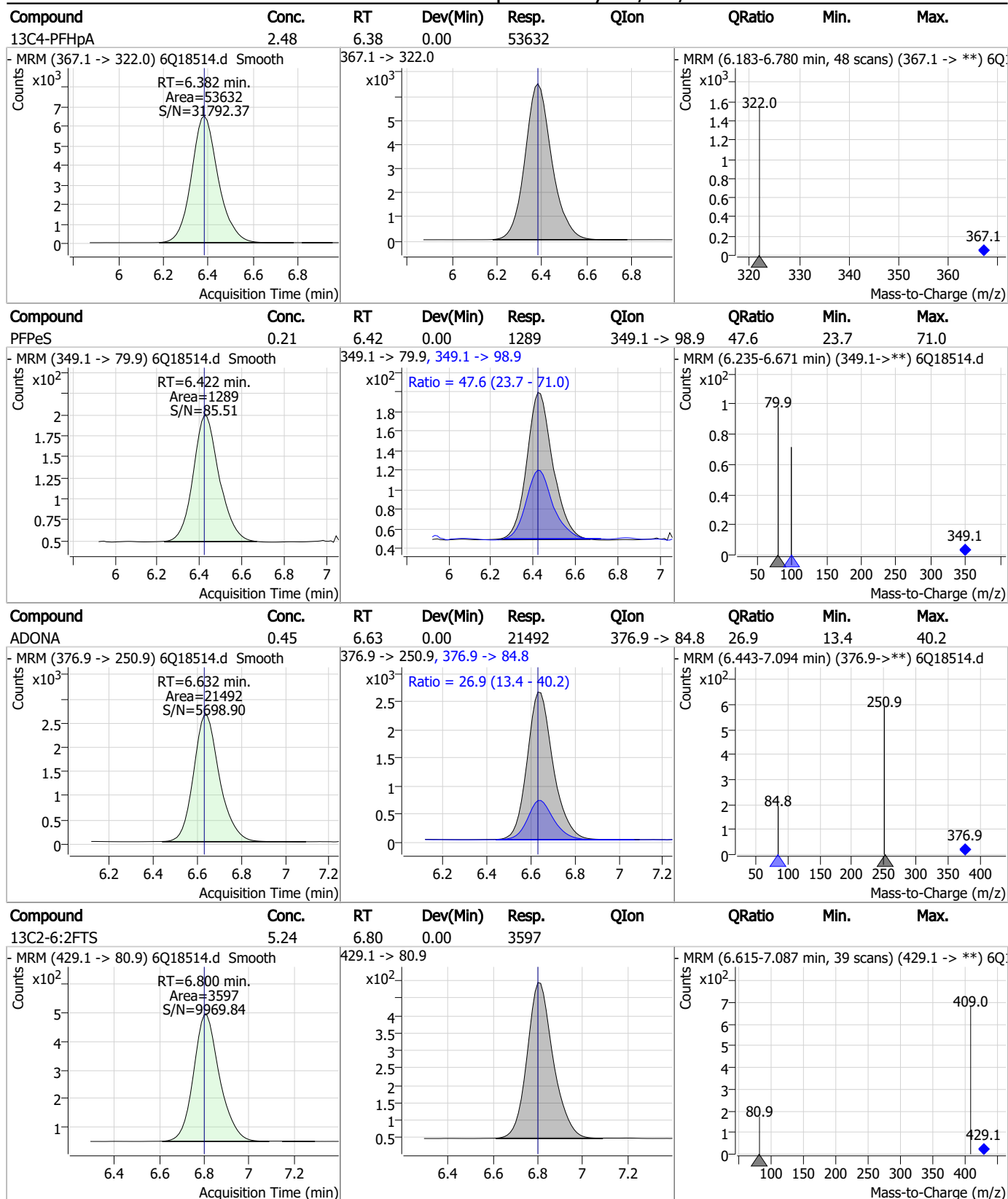
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
7

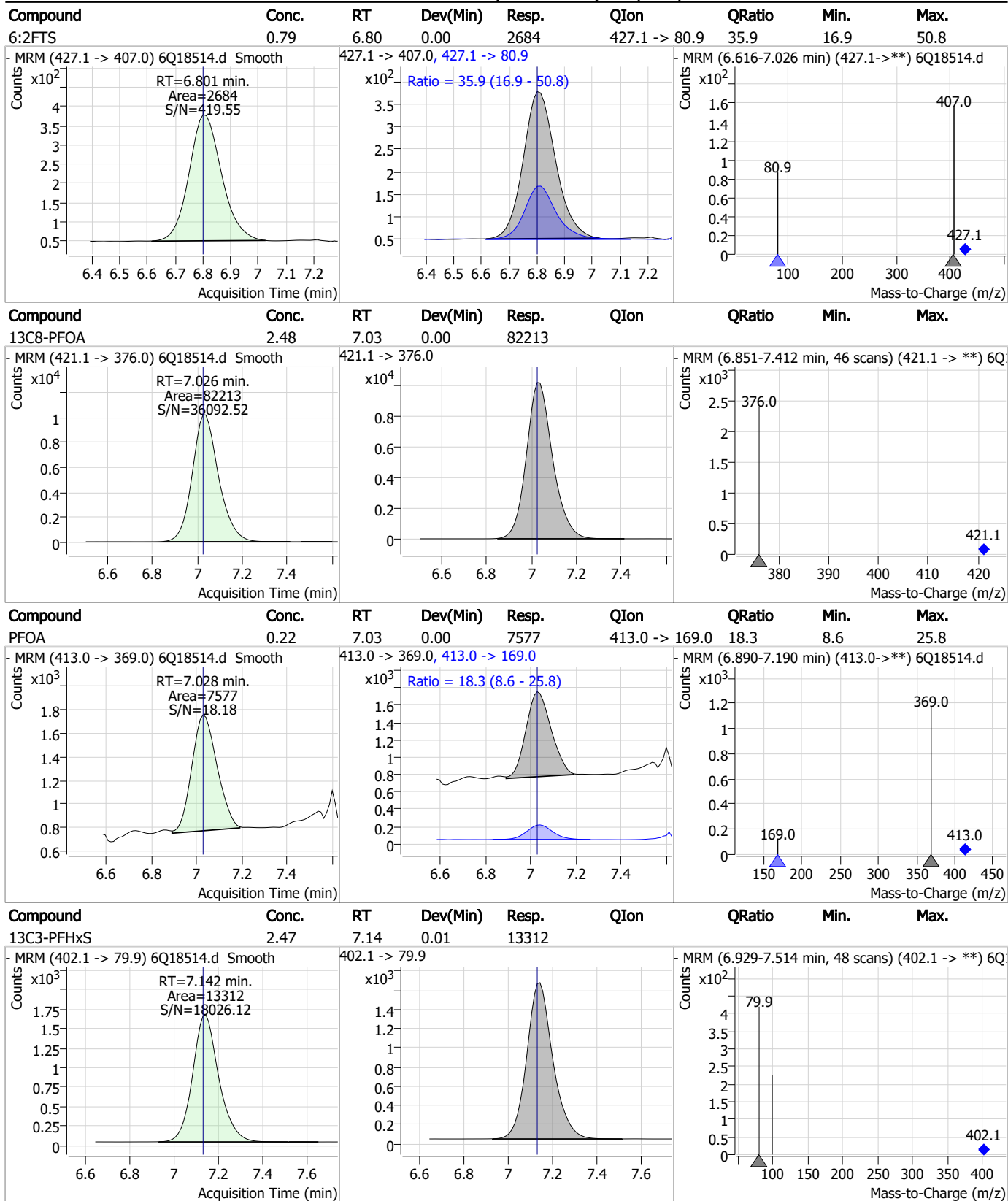
Perfluorinated Compounds by LC/MS/MS



7.7.2
7



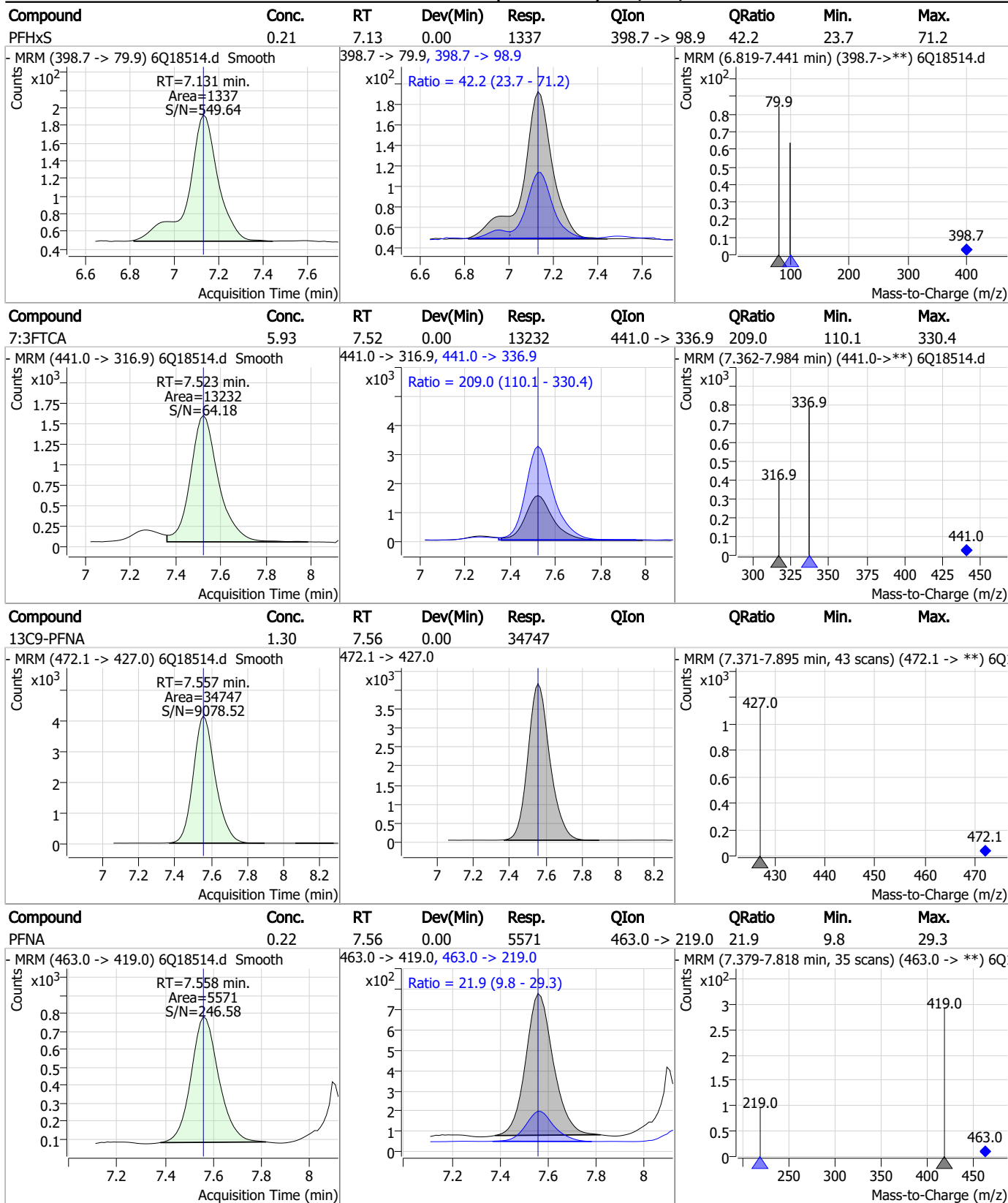
Perfluorinated Compounds by LC/MS/MS



7.7.2
7

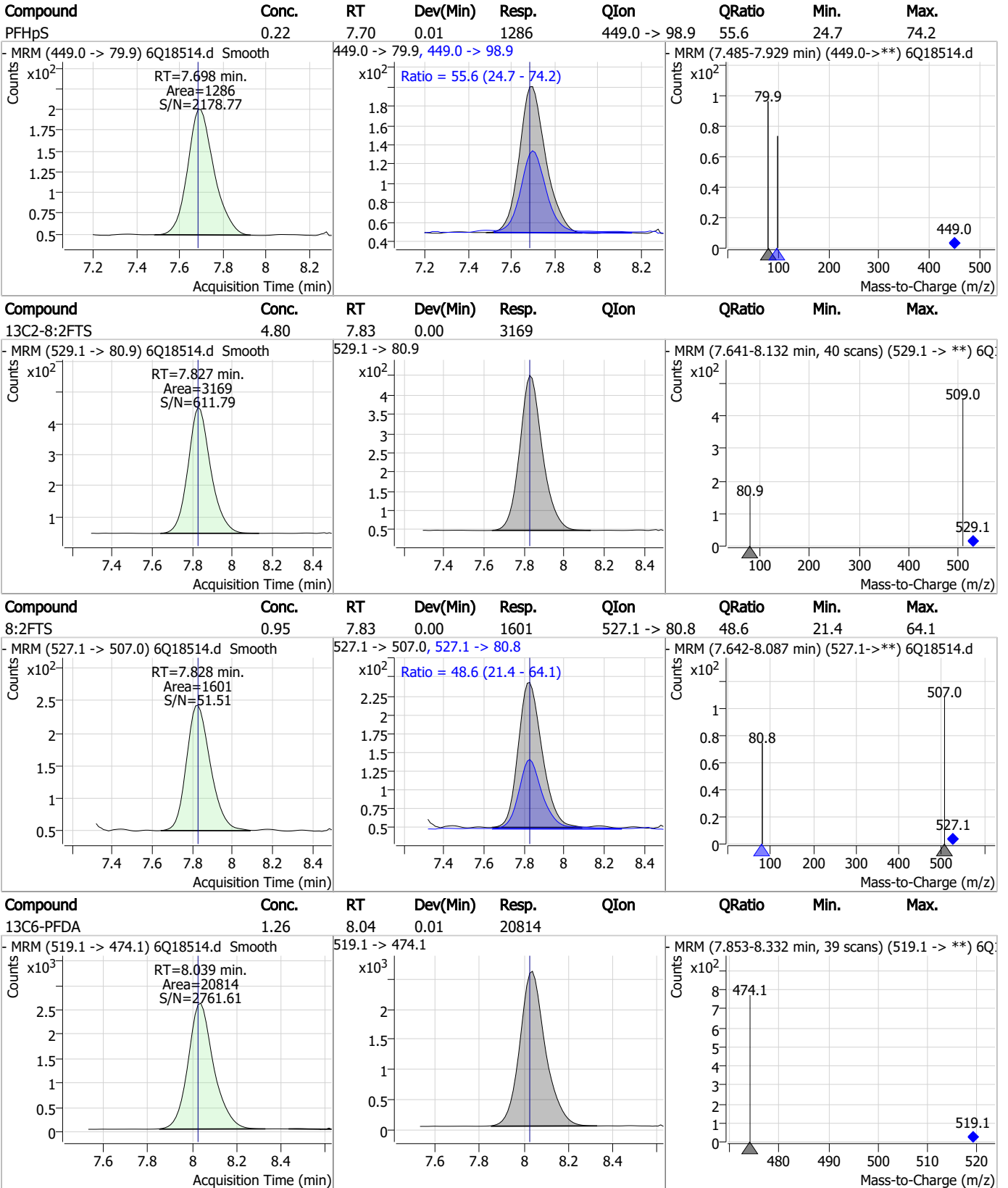


Perfluorinated Compounds by LC/MS/MS



7.7.2
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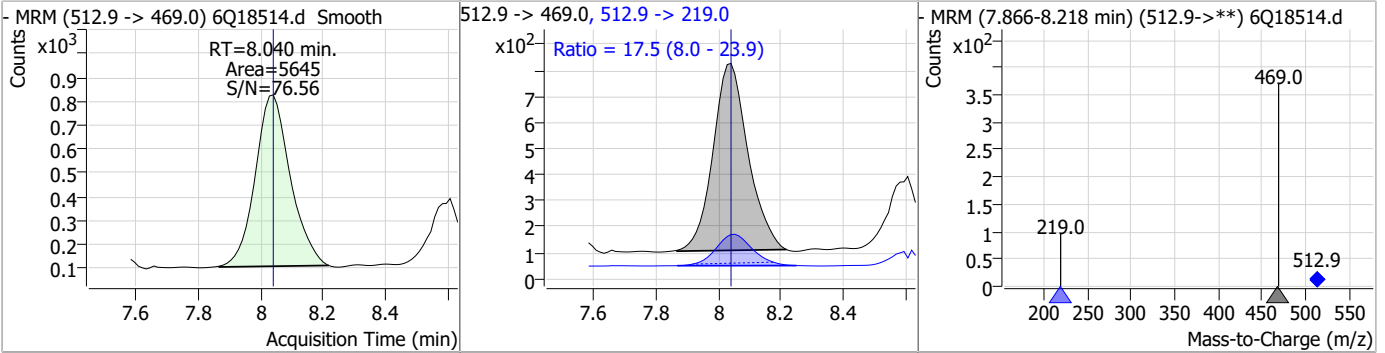
Perfluorinated Compounds by LC/MS/MS



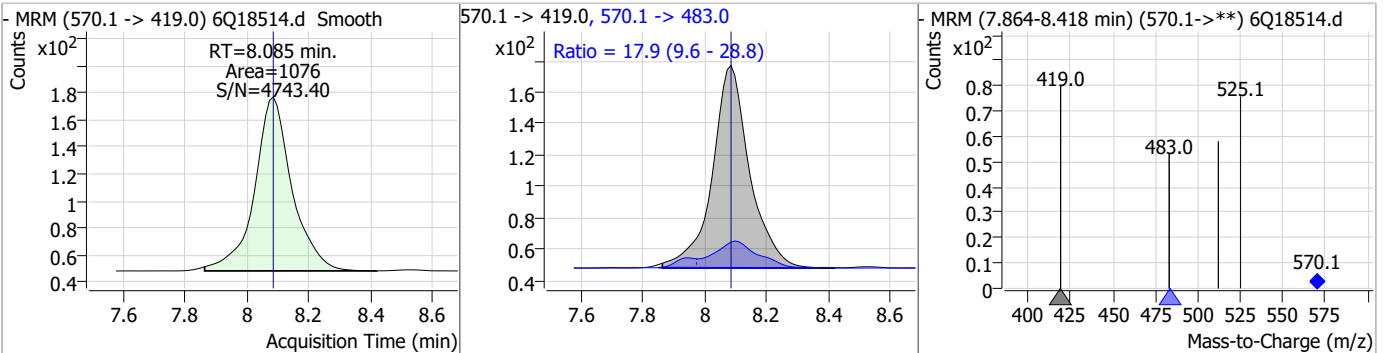
7.7.2
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Perfluorinated Compounds by LC/MS/MS

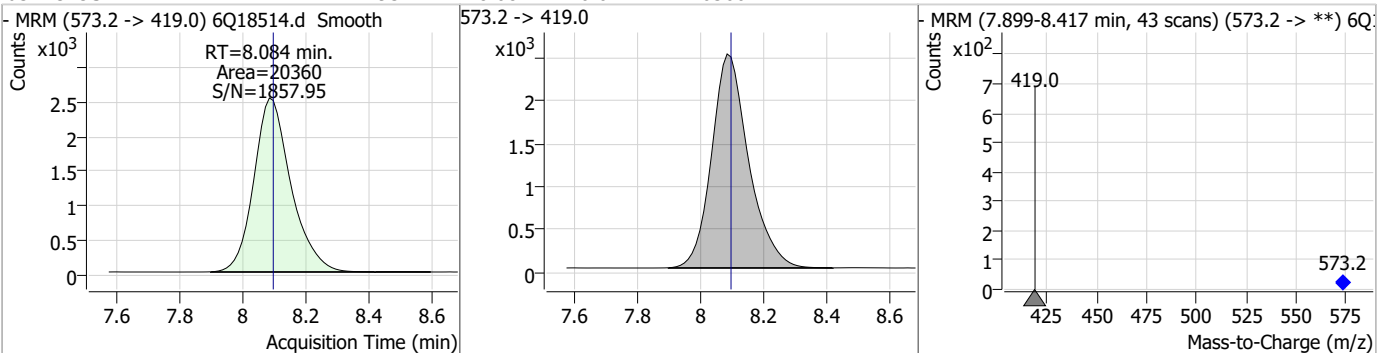
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.24	8.04	0.00	5645	512.9 -> 219.0	17.5	8.0	23.9



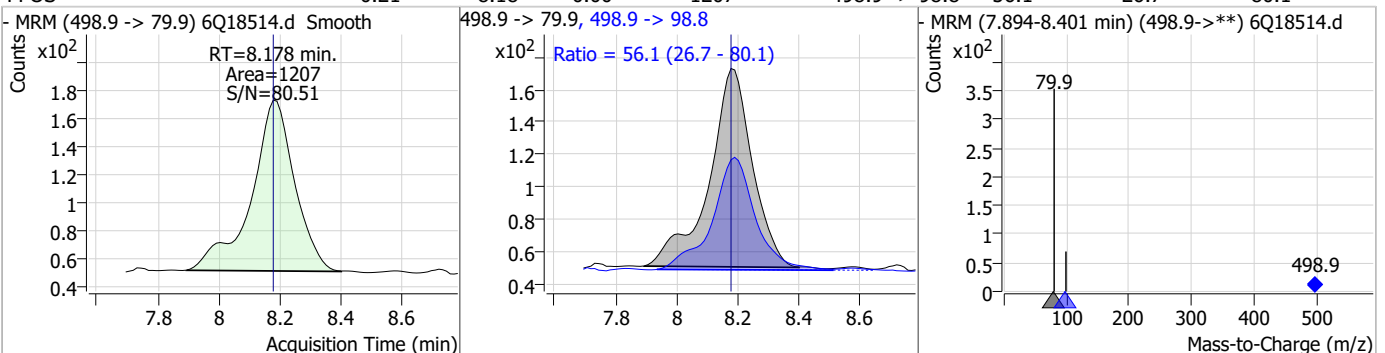
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.24	8.08	0.00	1076	570.1 -> 483.0	17.9	9.6	28.8



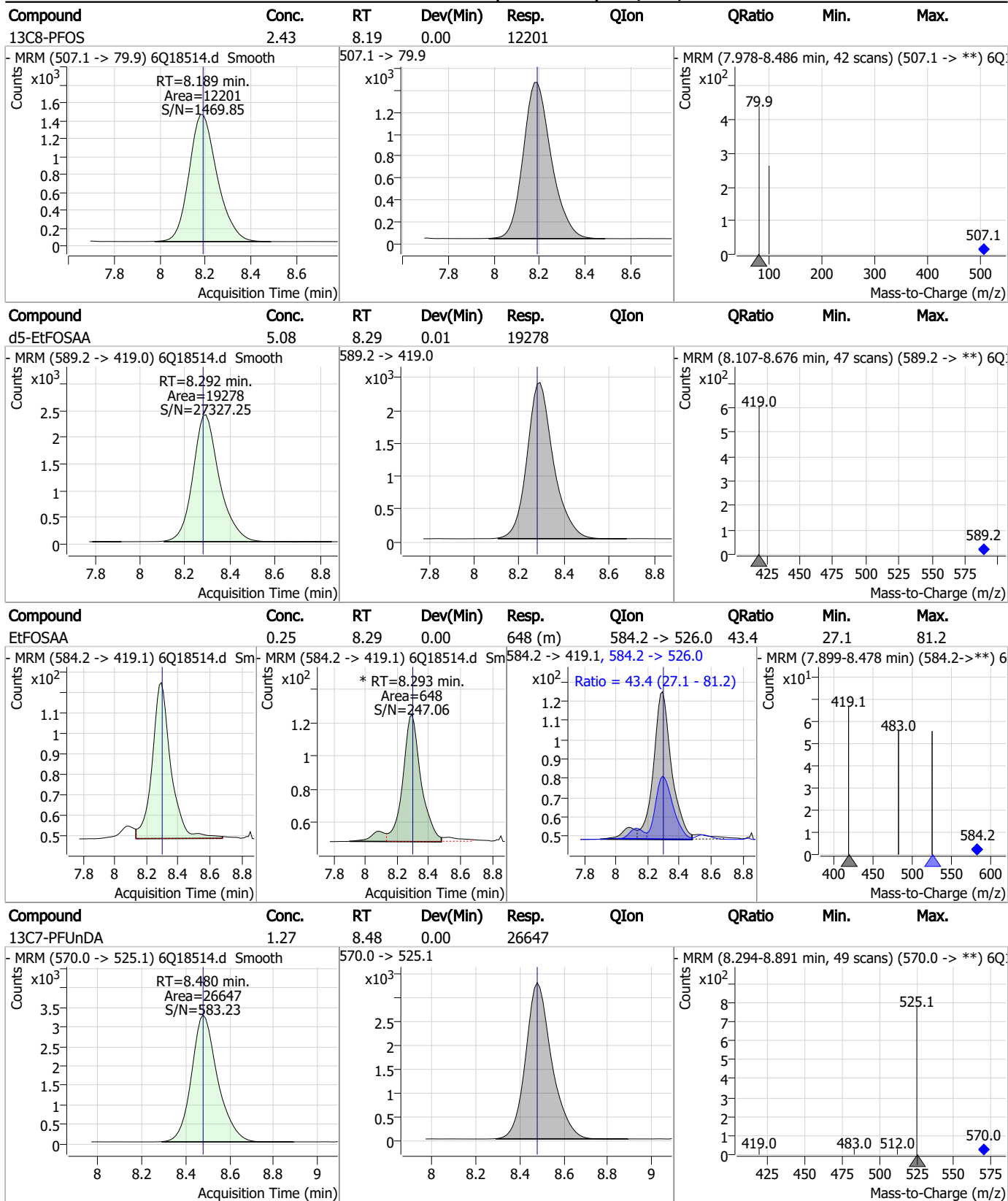
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.93	8.08	-0.01	20360				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.21	8.18	0.00	1207	498.9 -> 98.8	56.1	26.7	80.1

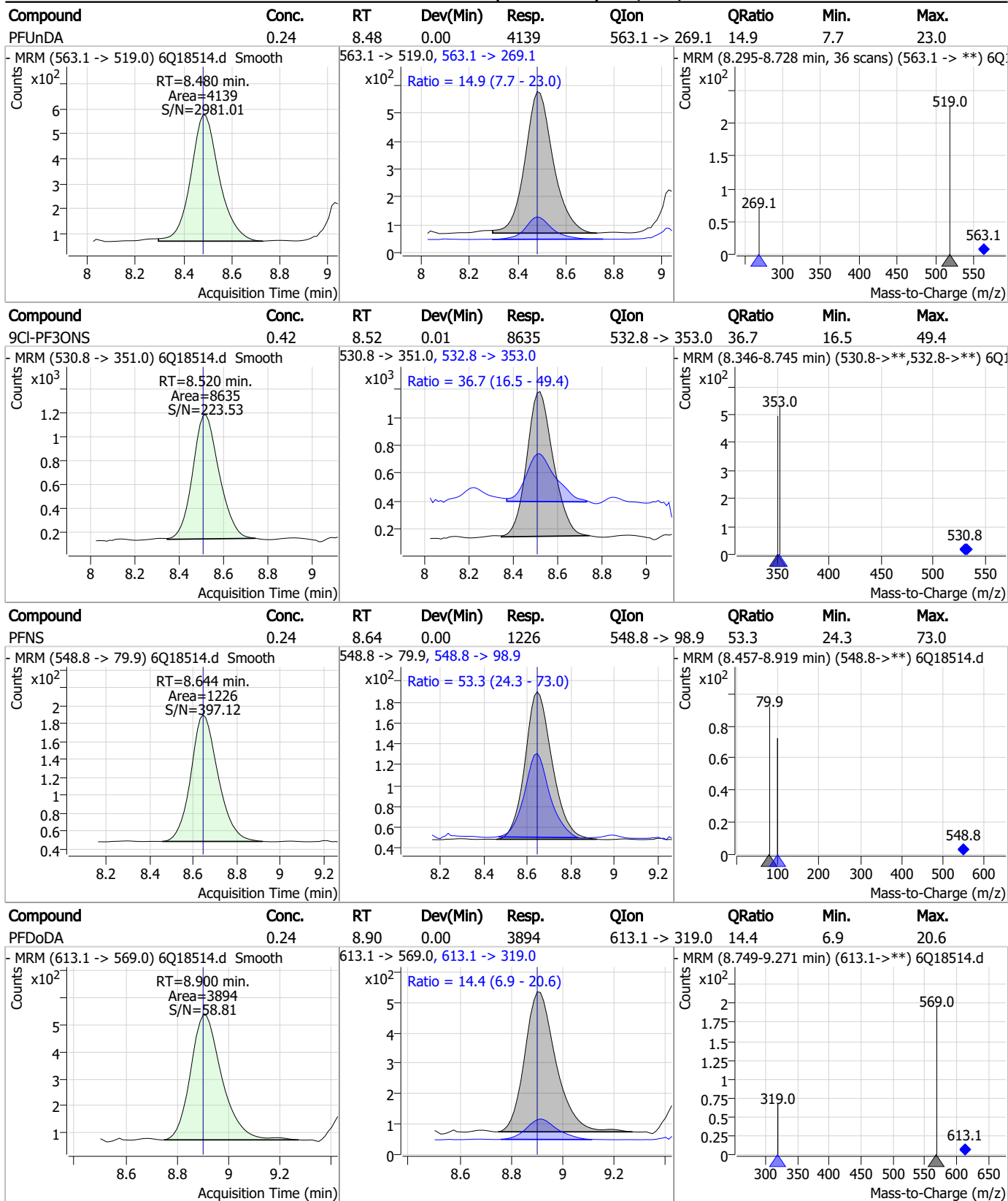


Perfluorinated Compounds by LC/MS/MS



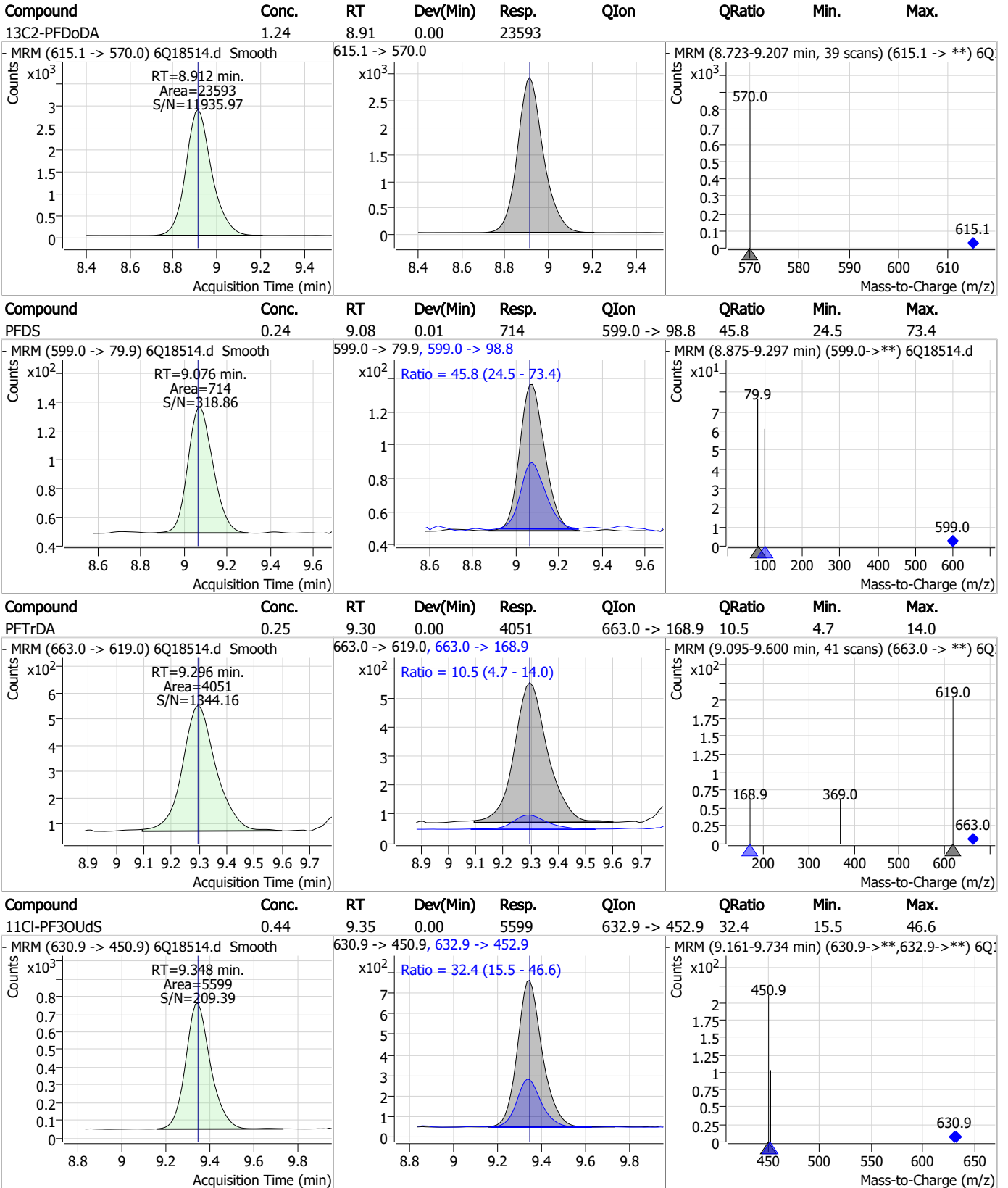
7.7.2
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Perfluorinated Compounds by LC/MS/MS

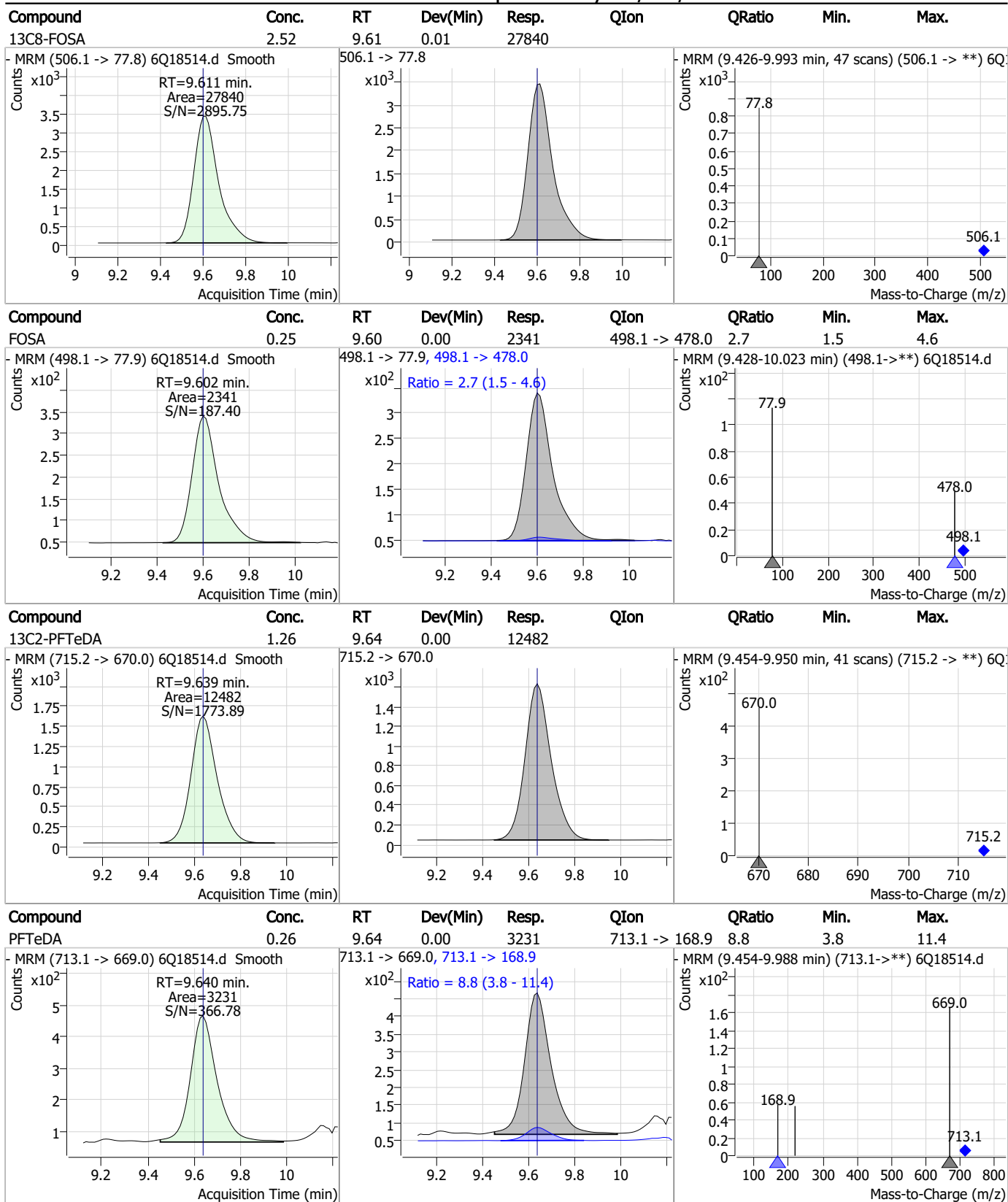


7.7.2
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Perfluorinated Compounds by LC/MS/MS

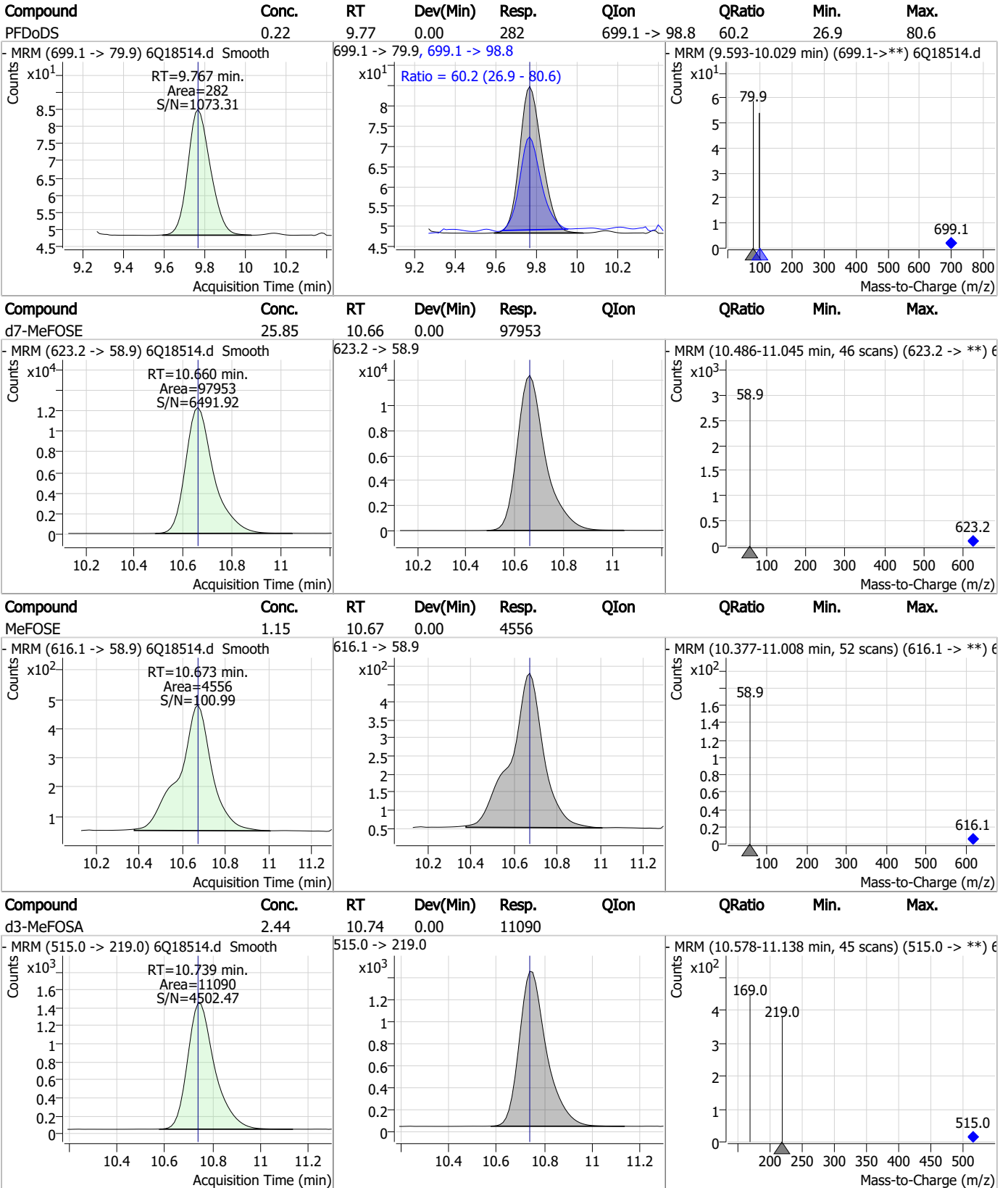


Perfluorinated Compounds by LC/MS/MS



7.7.2
7

Perfluorinated Compounds by LC/MS/MS

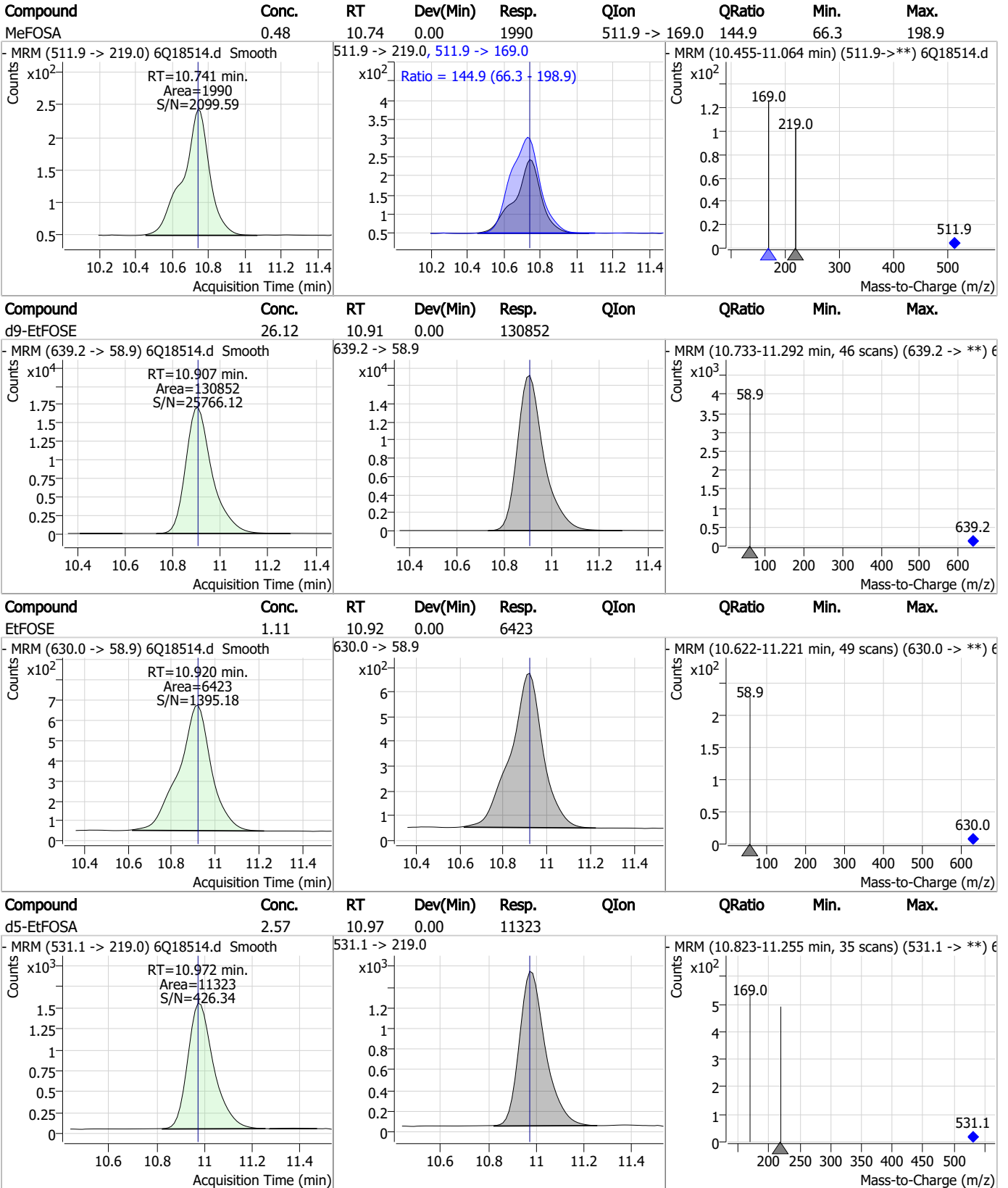


7.7.2

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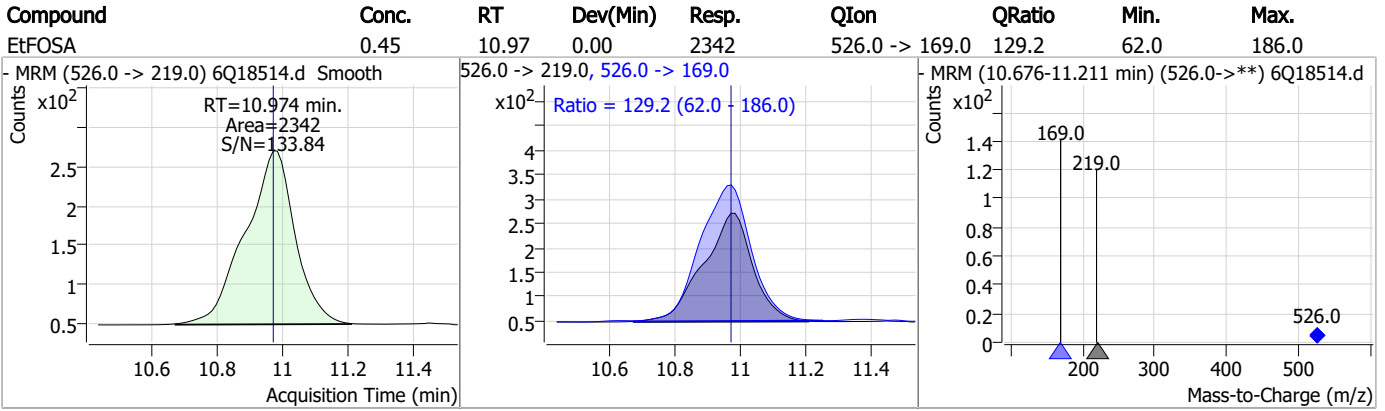
Perfluorinated Compounds by LC/MS/MS



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: S6Q278-IC278 Method: EPA DRAFT 1633
Lab FileID: 6Q18514.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 15:21 Supervisor approved: 05/31/23 20:58 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
HFPO-DA (GenX)	13252-13-6		5.79	Missed peak
EtFOSAA	2991-50-6		8.29	Split peak

7.7.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18515.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 3:35:30 PM
 Sample Name : ic278-2
 Vial : P1-A3
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	174475	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58455	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	62240	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	58732	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	87855	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	35469	1.25 µg/L	0.000
M6-PFDA	8.039	519.1 -> 474.1	24489	1.25 µg/L	0.012
M7-PFUnDA	8.480	570.0 -> 525.1	29414	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	26792	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	13637	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	29824	2.50 µg/L	0.012
M3-PFBS	5.334	302.1 -> 79.9	23958	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13911	2.50 µg/L	0.000
M8-PFOS	8.189	507.1 -> 79.9	13173	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	2882	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	3659	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3376	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	21812	5.00 µg/L	-0.012
M3-HFPO-DA	5.794	286.9 -> 168.9	40306	10.00 µg/L	0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	20034	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	104670	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	139279	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	11499	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11717	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17955	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	72804	5.00 µg/L	0.000
18O2-PFHxS	7.141	403.0 -> 83.9	10970	2.50 µg/L	0.012
13C4-PFOA	7.039	417.1 -> 372.0	89367	2.50 µg/L	0.012
13C2-PFDA	8.027	515.1 -> 470.1	30964	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	44276	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	57146	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2882	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3659	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3376	4.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C2-PFDoDA	8.912	615.1 -> 570.0	26792	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-PFTeDA	9.639	715.2 -> 670.0	13637	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C3-PFBS	5.334	302.1 -> 79.9	23958	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C3-PFHxS	7.130	402.1 -> 79.9	13911	2.35 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 = 93.9%	
13C4-PFBA	2.822	216.8 -> 171.9	174475	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.382	367.1 -> 322.0	58732	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C5-PFHxA	5.417	318.0 -> 273.0	62240	2.56 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C5-PFPeA	4.210	268.3 -> 223.0	58455	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C6-PFDA	8.039	519.1 -> 474.1	24489	1.31 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C7-PFUnDA	8.480	570.0 -> 525.1	29414	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C8-FOSA	9.611	506.1 -> 77.8	29824	2.42 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C8-PFOA	7.026	421.1 -> 376.0	87855	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-PFOS	8.189	507.1 -> 79.9	13173	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%	
13C9-PFNA	7.557	472.1 -> 427.0	35469	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
d3-MeFOSAA	8.084	573.2 -> 419.0	21812	4.74 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C3-HFPO-DA	5.794	286.9 -> 168.9	40306	9.97 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	11717	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	20034	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d7-MeFOSE	10.660	623.2 -> 58.9	104670	24.80 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
d9-EtFOSE	10.907	639.2 -> 58.9	139279	24.95 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	11499	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.9%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	5719	1.41 µg/L	99
		327.1 -> 80.9	2303		
6:2FTS	6.813	427.1 -> 407.0	5818	1.68 µg/L	98
		427.1 -> 80.9	1920		
8:2FTS	7.828	527.1 -> 507.0	2879	1.61 µg/L	95
		527.1 -> 80.8	1314		
EtFOSAA	8.293	584.2 -> 419.1	1021	0.37 µg/L	93
		584.2 -> 526.0	602		
FOSA	9.602	498.1 -> 77.9	3903	0.38 µg/L	100
		498.1 -> 478.0	121		
MeFOSAA	8.097	570.1 -> 419.0	1838	0.38 µg/L	97
		570.1 -> 483.0	382		
PFBA	2.831	212.8 -> 168.9	9244	1.61 µg/L	100
PFBS	5.335	298.7 -> 79.9	2909	0.35 µg/L	92
		298.7 -> 98.8	1194		
PFDA	8.040	512.9 -> 469.0	9759	0.35 µg/L	94
		512.9 -> 219.0	1808		
PFDODA	8.913	613.1 -> 569.0	7357	0.40 µg/L	95
		613.1 -> 319.0	1143		
PFDS	9.064	599.0 -> 79.9	1343	0.41 µg/L	98

7.7.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	672		
PFHpA	6.382	363.1 -> 319.0	10244	0.39 µg/L	95
		363.1 -> 169.0	1739		
PFHpS	7.685	449.0 -> 79.9	2456	0.39 µg/L	98
		449.0 -> 98.9	1242		
PFHxA	5.420	313.0 -> 269.0	8671	0.41 µg/L	98
		313.0 -> 118.9	453		
PFHxS	7.131	398.7 -> 79.9	2555	0.39 µg/L	100
		398.7 -> 98.9	1210		
PFNA	7.558	463.0 -> 419.0	10583	0.41 µg/L	97
		463.0 -> 219.0	2213		
PFNS	8.644	548.8 -> 79.9	2233	0.41 µg/L	92
		548.8 -> 98.9	1216		
PFOA	7.028	413.0 -> 369.0	13597	0.37 µg/L	95
		413.0 -> 169.0	2636		
PFOS	8.178	498.9 -> 79.9	2401	0.39 µg/L	m 88
		498.9 -> 98.8	1072		
PFPeA	4.212	263.0 -> 219.0	11484	0.80 µg/L	100
PFPeS	6.422	349.1 -> 79.9	2647	0.41 µg/L	97
		349.1 -> 98.9	1196		
PFTeDA	9.640	713.1 -> 669.0	5633	0.41 µg/L	100
		713.1 -> 168.9	436		
PFTrDA	9.296	663.0 -> 619.0	7166	0.40 µg/L	96
		663.0 -> 168.9	773		
PFUnDA	8.480	563.1 -> 519.0	7486	0.40 µg/L	97
		563.1 -> 269.1	1234		
11CI-PF3OUdS	9.348	630.9 -> 450.9	10681	0.79 µg/L	98
		632.9 -> 452.9	3197		
9CI-PF3ONS	8.520	530.8 -> 351.0	17601	0.80 µg/L	85
		532.8 -> 353.0	7239		
ADONA	6.632	376.9 -> 250.9	41271	0.80 µg/L	100
		376.9 -> 84.8	11131		
HFPO-DA	5.783	284.9 -> 168.9	2923	0.86 µg/L	97
		284.9 -> 184.9	359		
3:3FTCA	3.671	241.0 -> 177.0	1883	2.08 µg/L	98
		241.0 -> 117.0	291		
5:3FTCA	6.086	341.0 -> 237.1	37791	10.24 µg/L	96
		341.0 -> 217.0	28109		
7:3FTCA	7.523	441.0 -> 316.9	23611	10.01 µg/L	100
		441.0 -> 336.9	52112		
EtFOSA	10.974	526.0 -> 219.0	4336	0.82 µg/L	85
		526.0 -> 169.0	6109		
EtFOSE	10.920	630.0 -> 58.9	12562	2.05 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	3765	0.85 µg/L	96
		511.9 -> 169.0	5192		
MeFOSE	10.673	616.1 -> 58.9	8278	1.96 µg/L	100
PFDoDS	9.767	699.1 -> 79.9	584	0.42 µg/L	97
		699.1 -> 98.8	303		
NFDHA	5.299	295.0 -> 201.0	2147	0.84 µg/L	97
		295.0 -> 84.9	553		
PFMBA	4.638	279.0 -> 85.1	7794	0.80 µg/L	100
PFMPA	3.363	229.0 -> 84.9	6140	0.80 µg/L	100
PFEESA	5.875	314.8 -> 134.9	20119	0.72 µg/L	99
		314.8 -> 82.9	744		

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

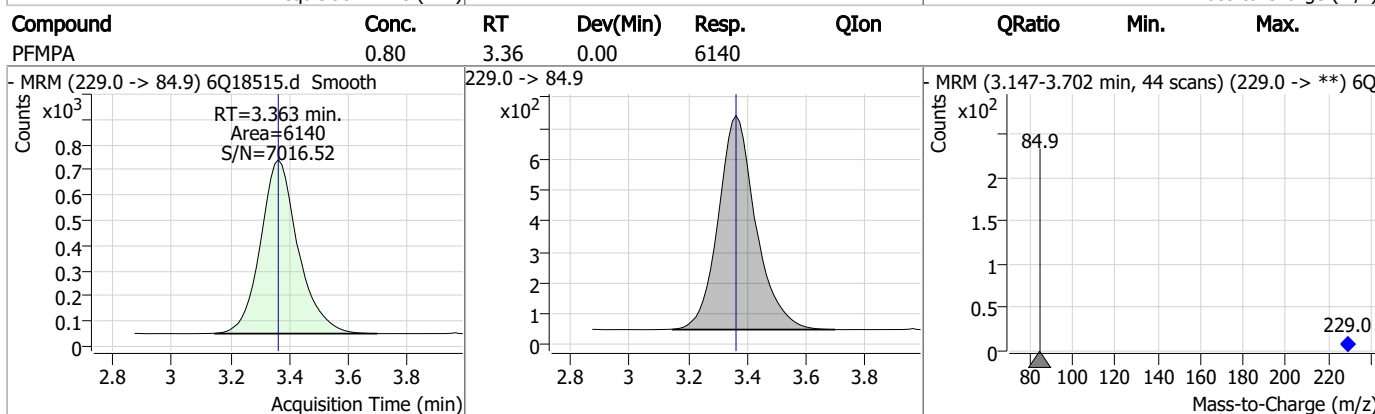
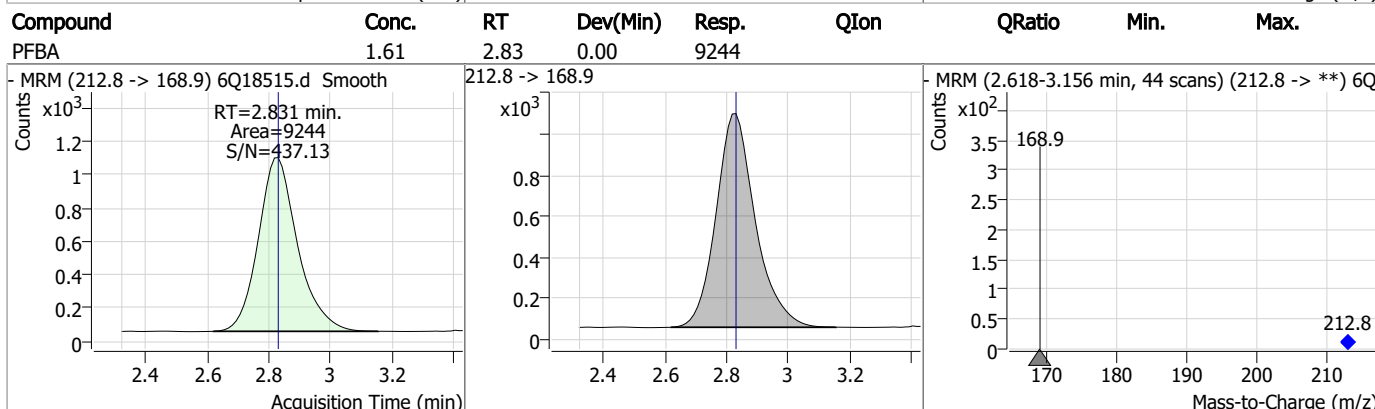
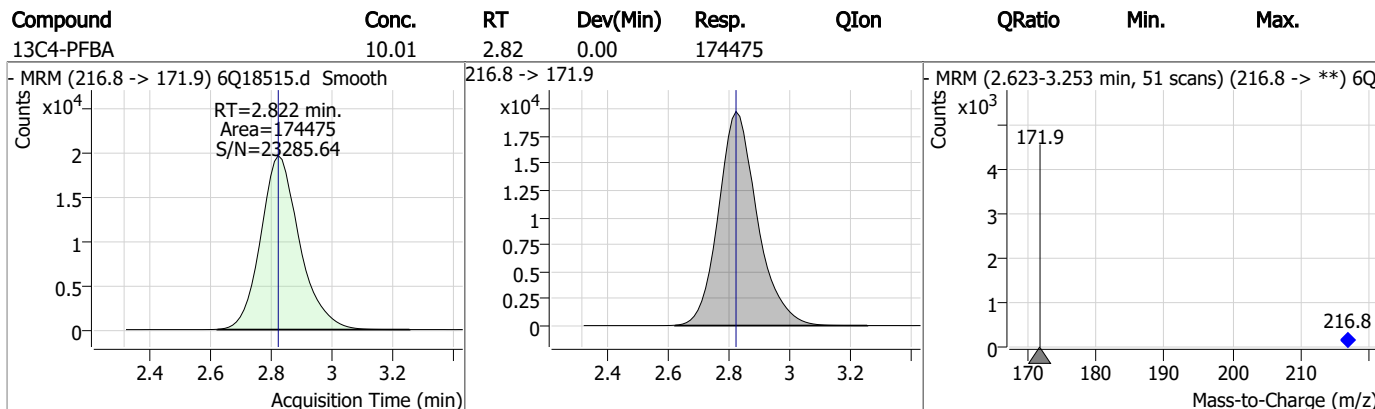
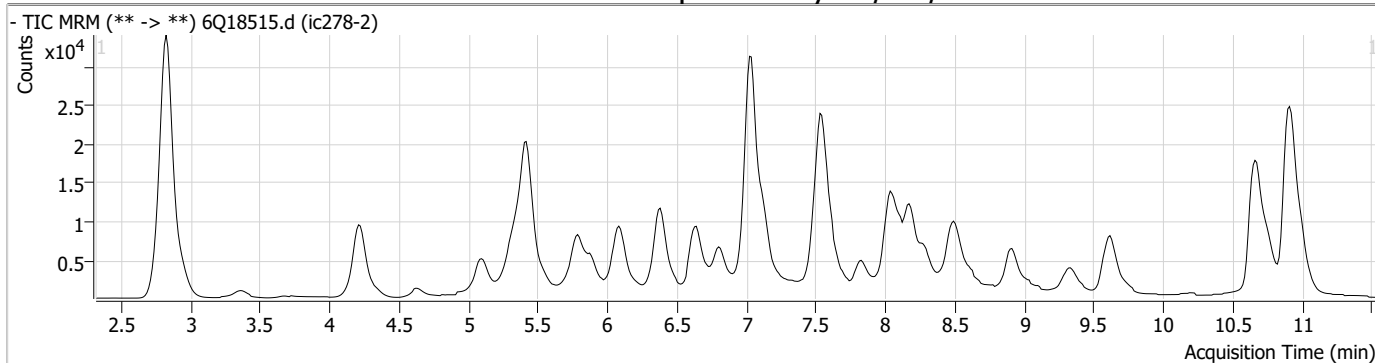
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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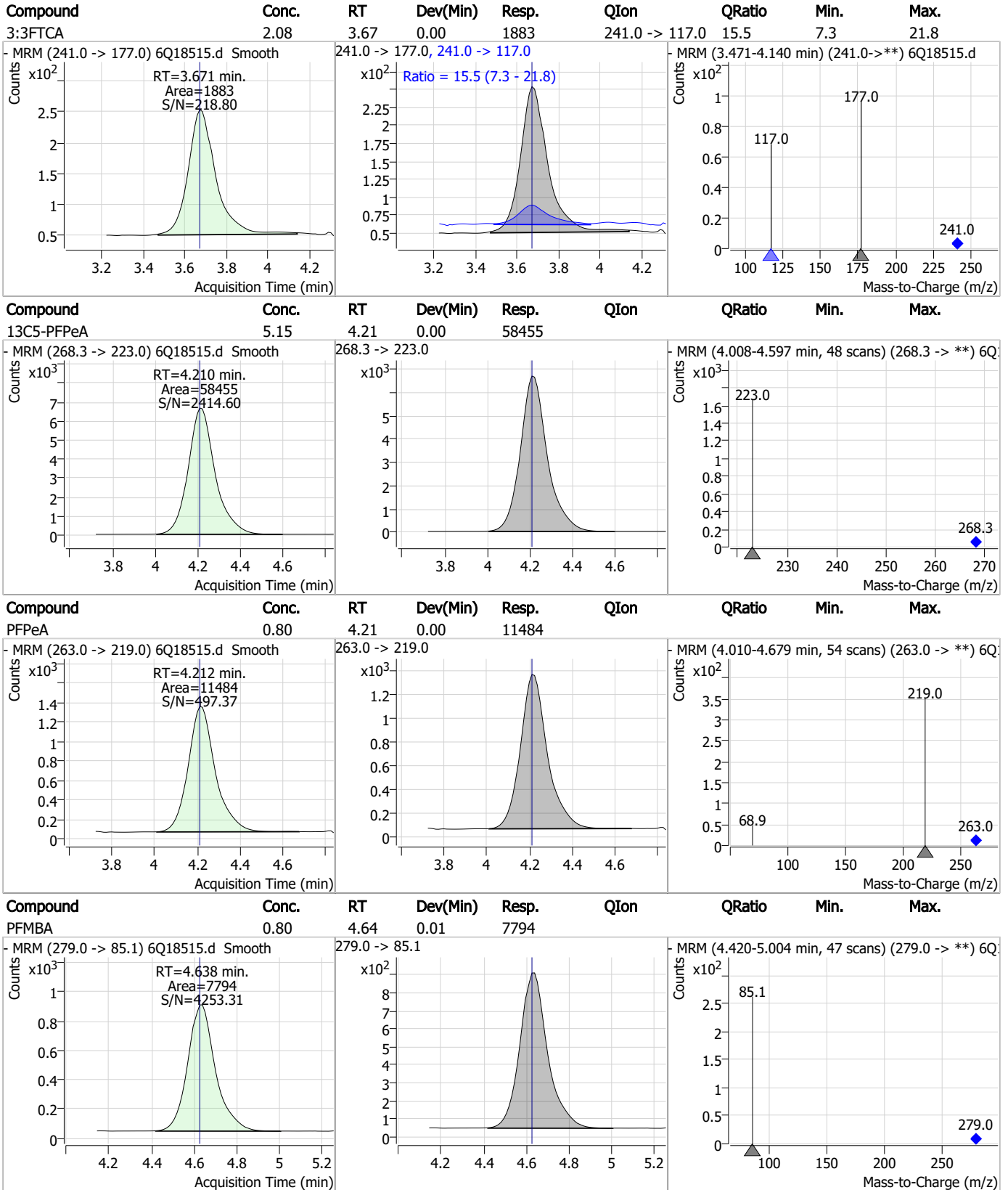
7.7.3
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Perfluorinated Compounds by LC/MS/MS



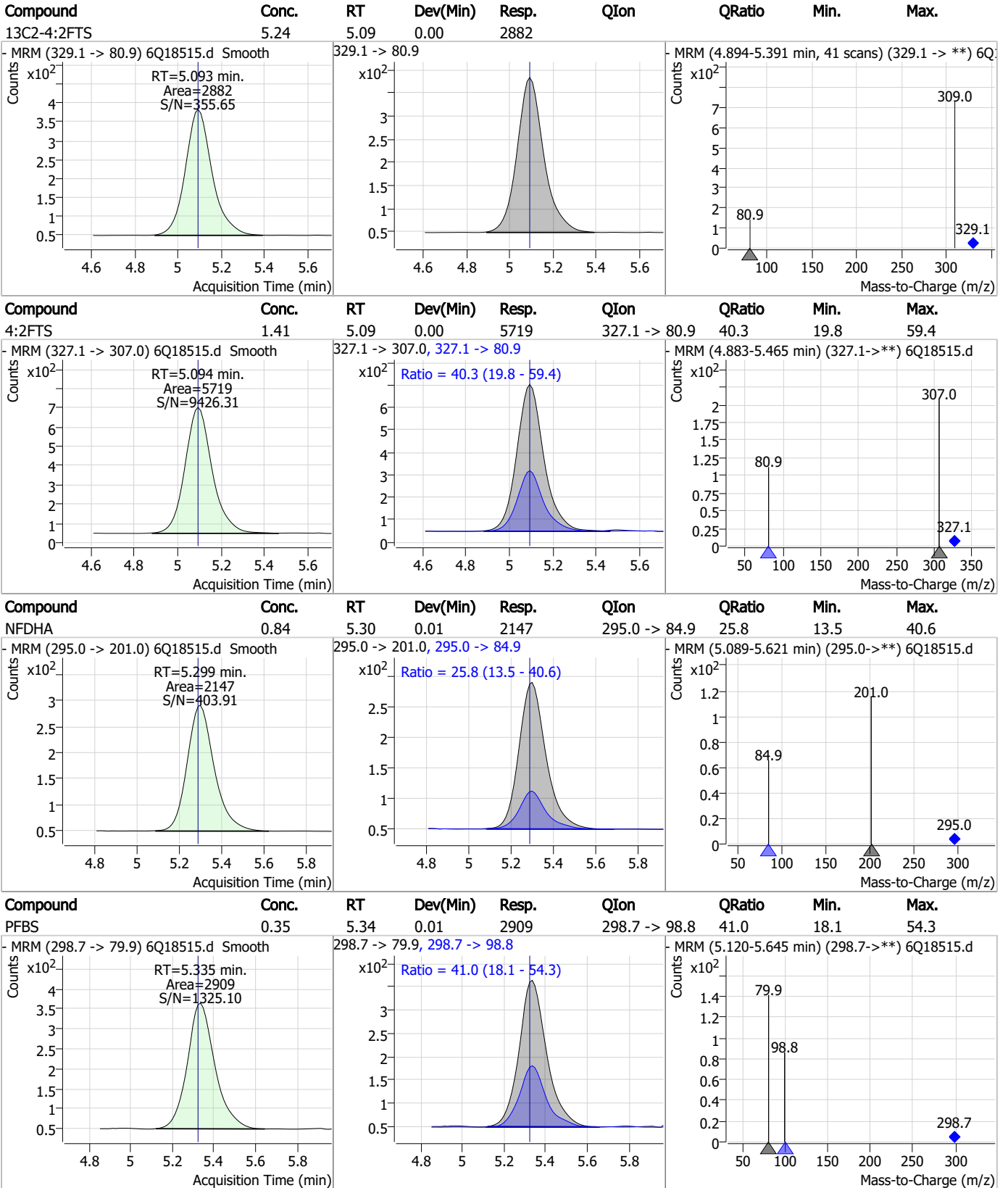
Perfluorinated Compounds by LC/MS/MS



7.7.3

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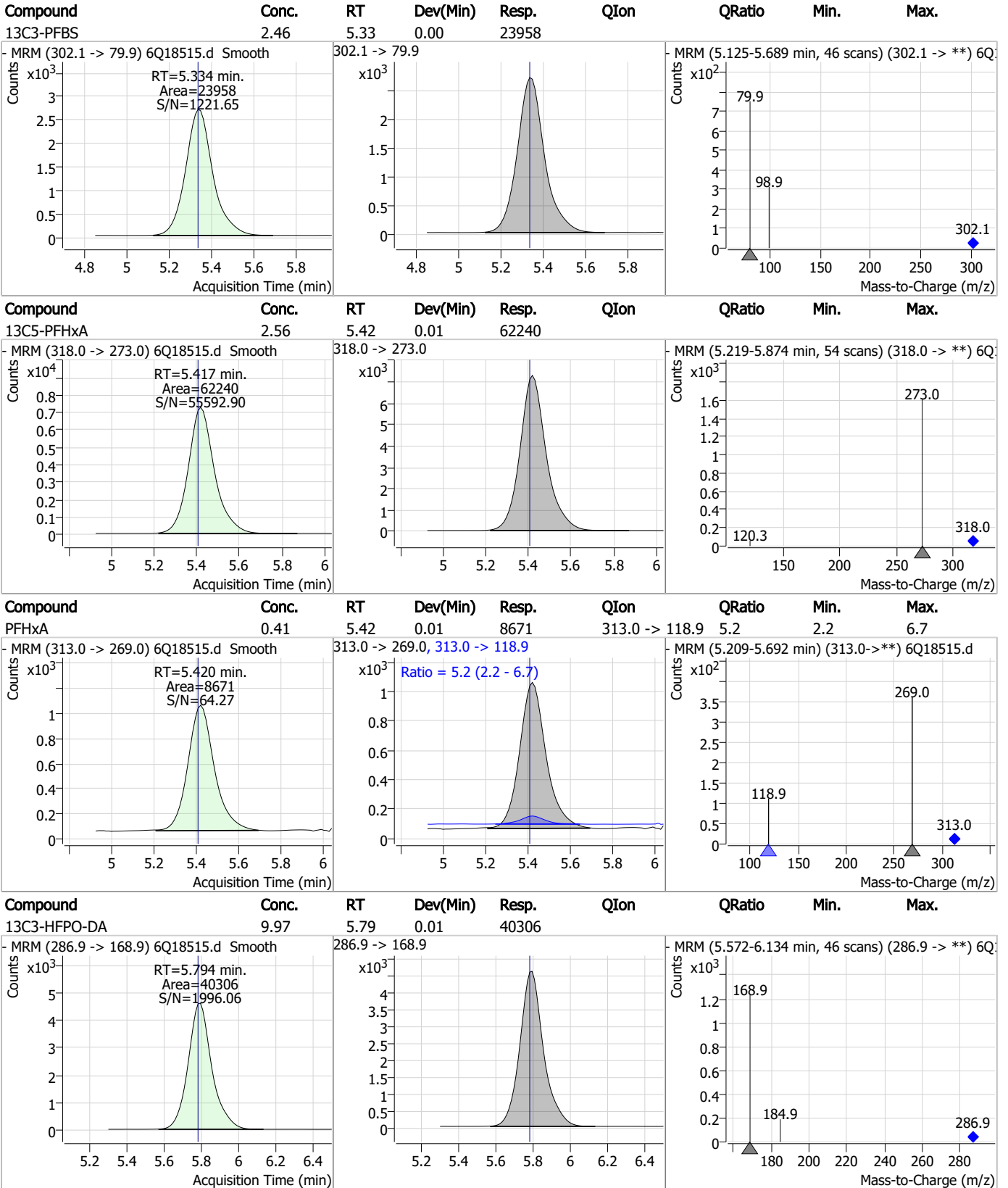
Perfluorinated Compounds by LC/MS/MS



7.7.3

7

Perfluorinated Compounds by LC/MS/MS

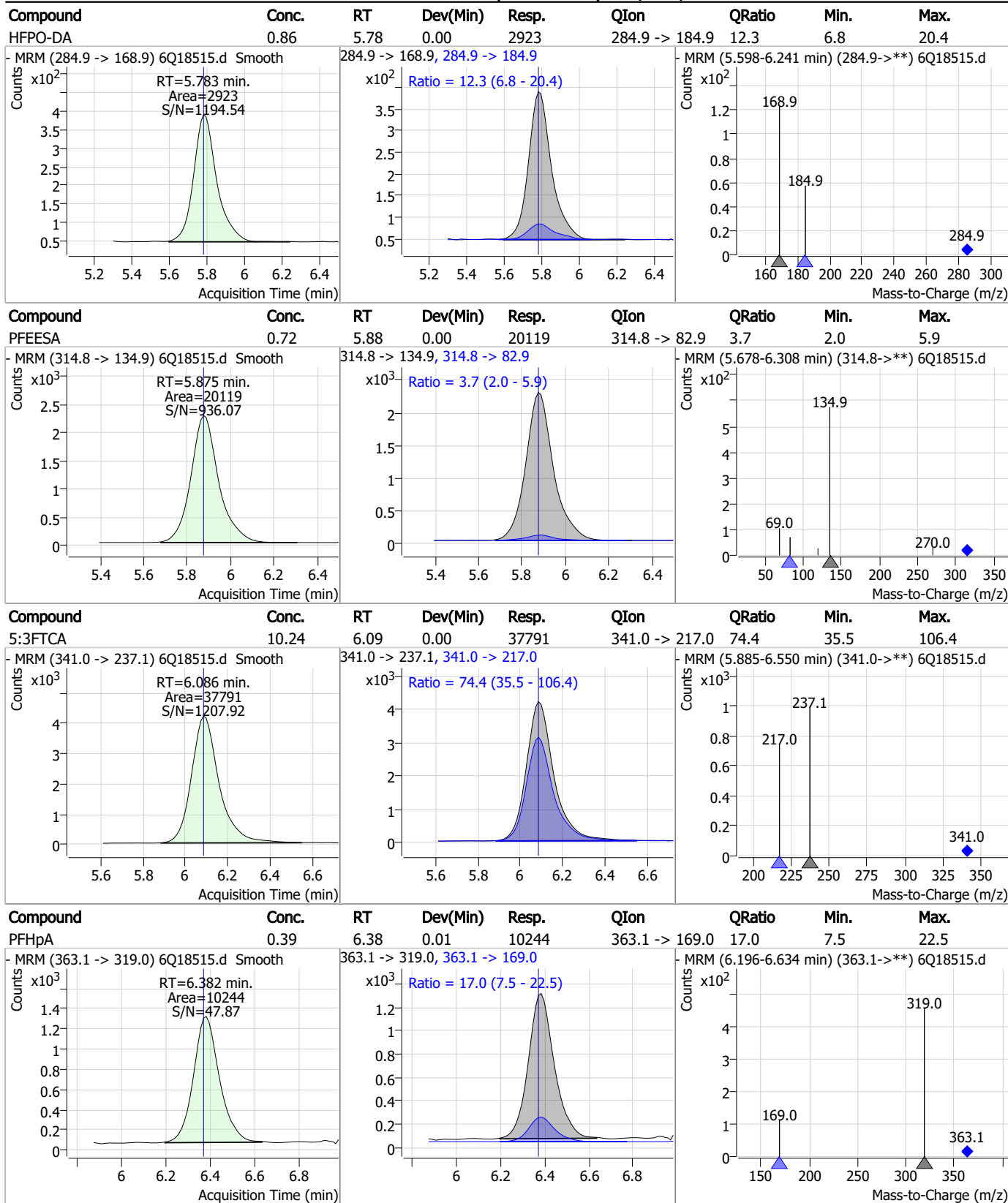


7.7.3

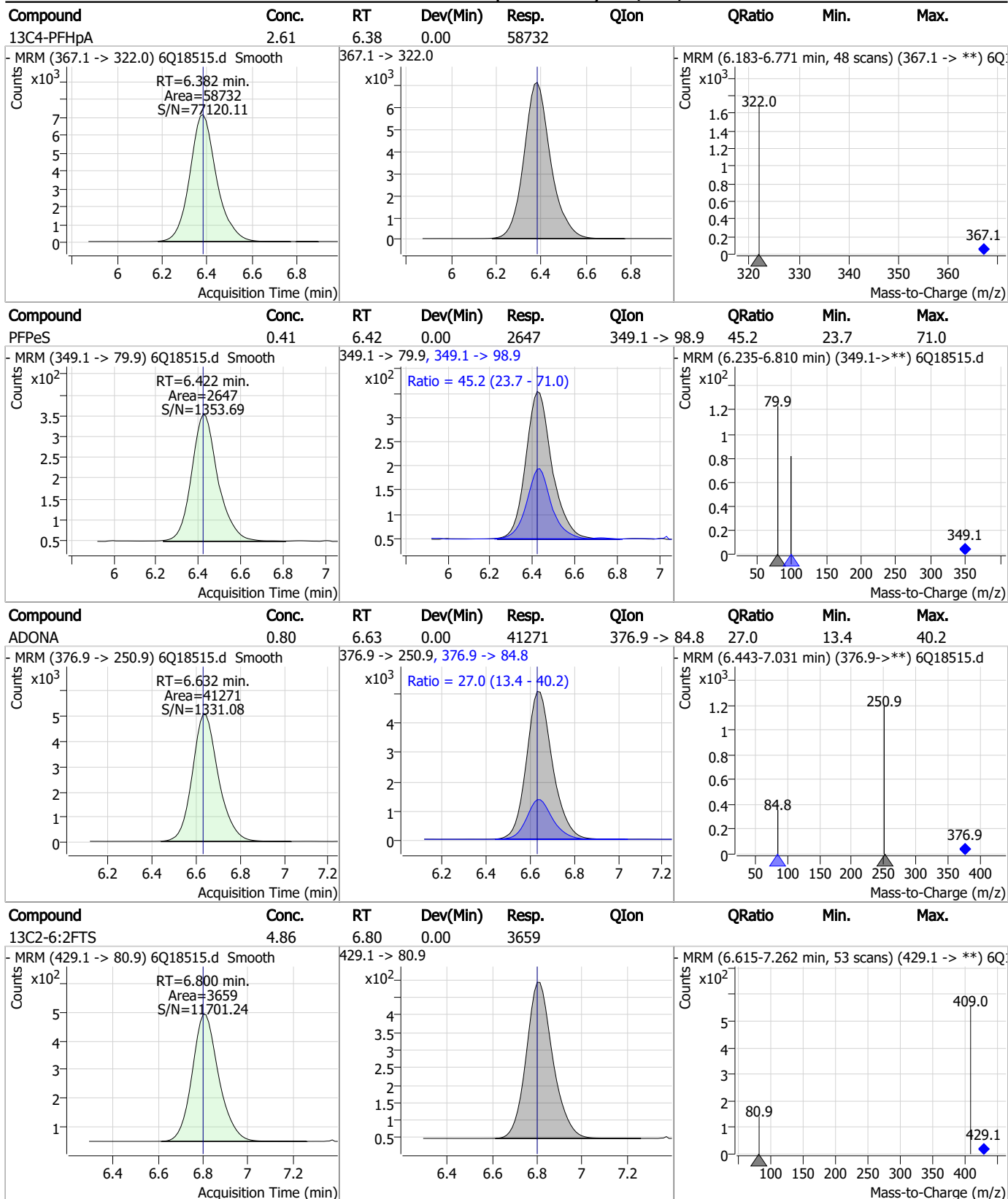
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Perfluorinated Compounds by LC/MS/MS

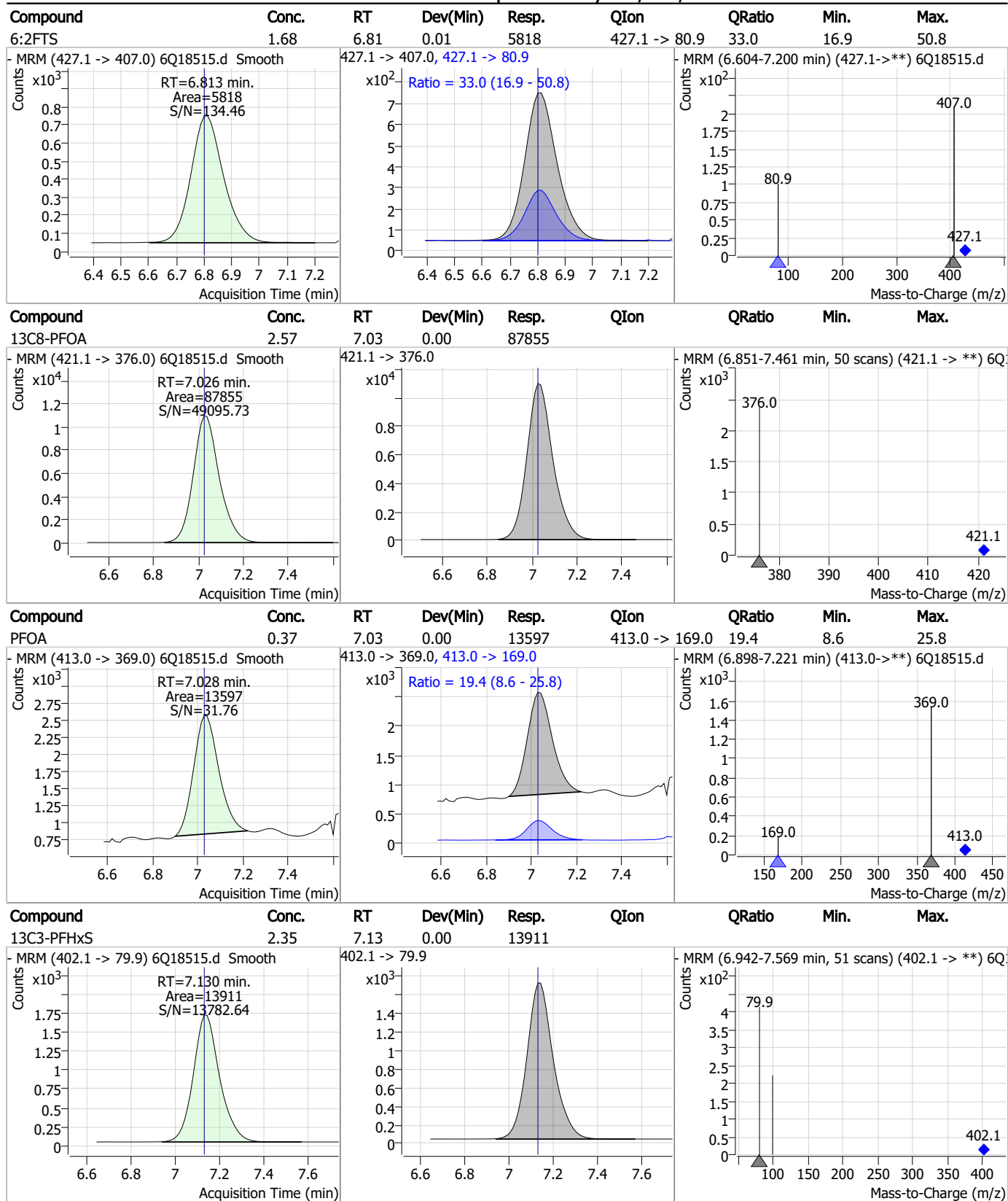


Perfluorinated Compounds by LC/MS/MS



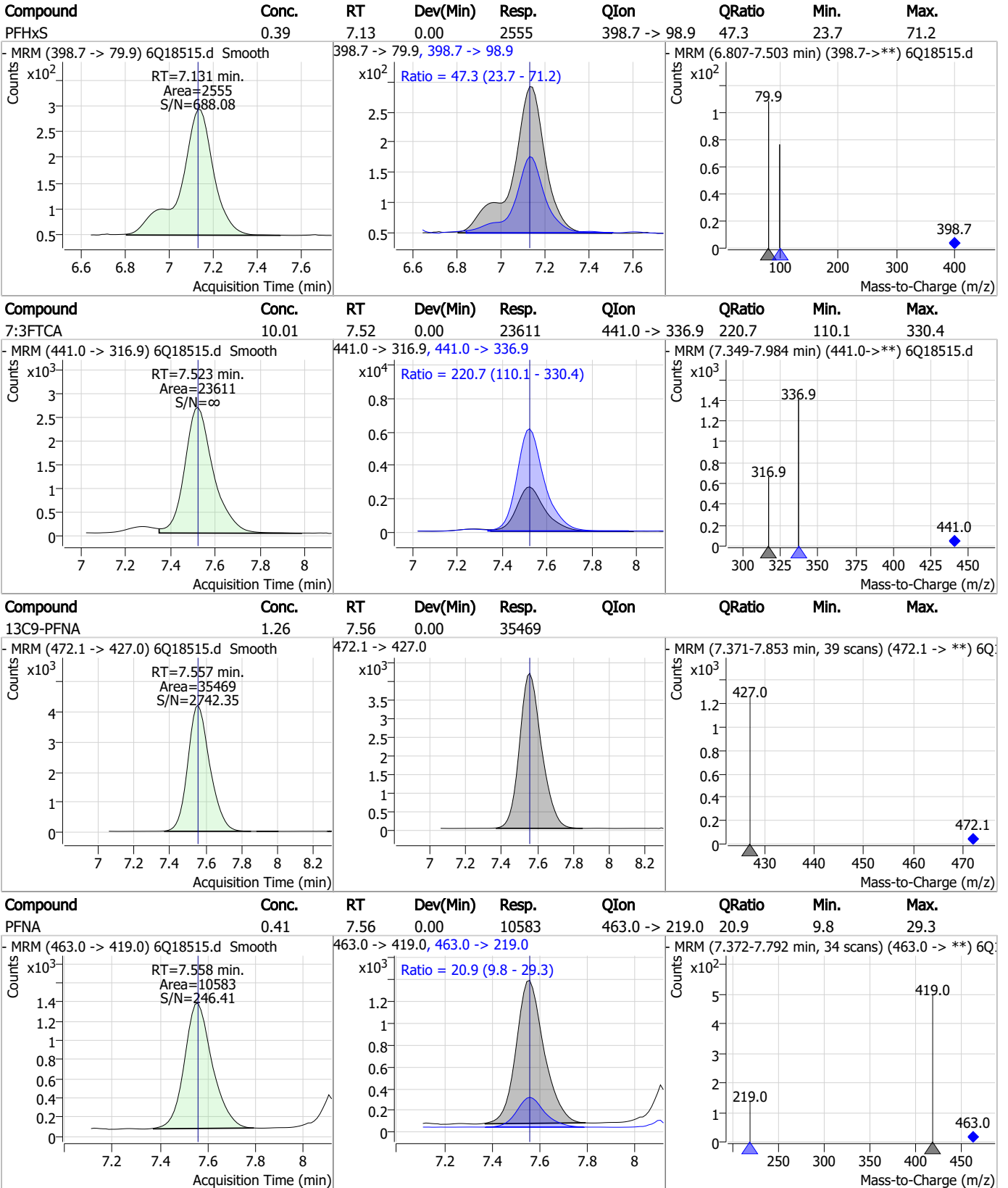
7.7.3
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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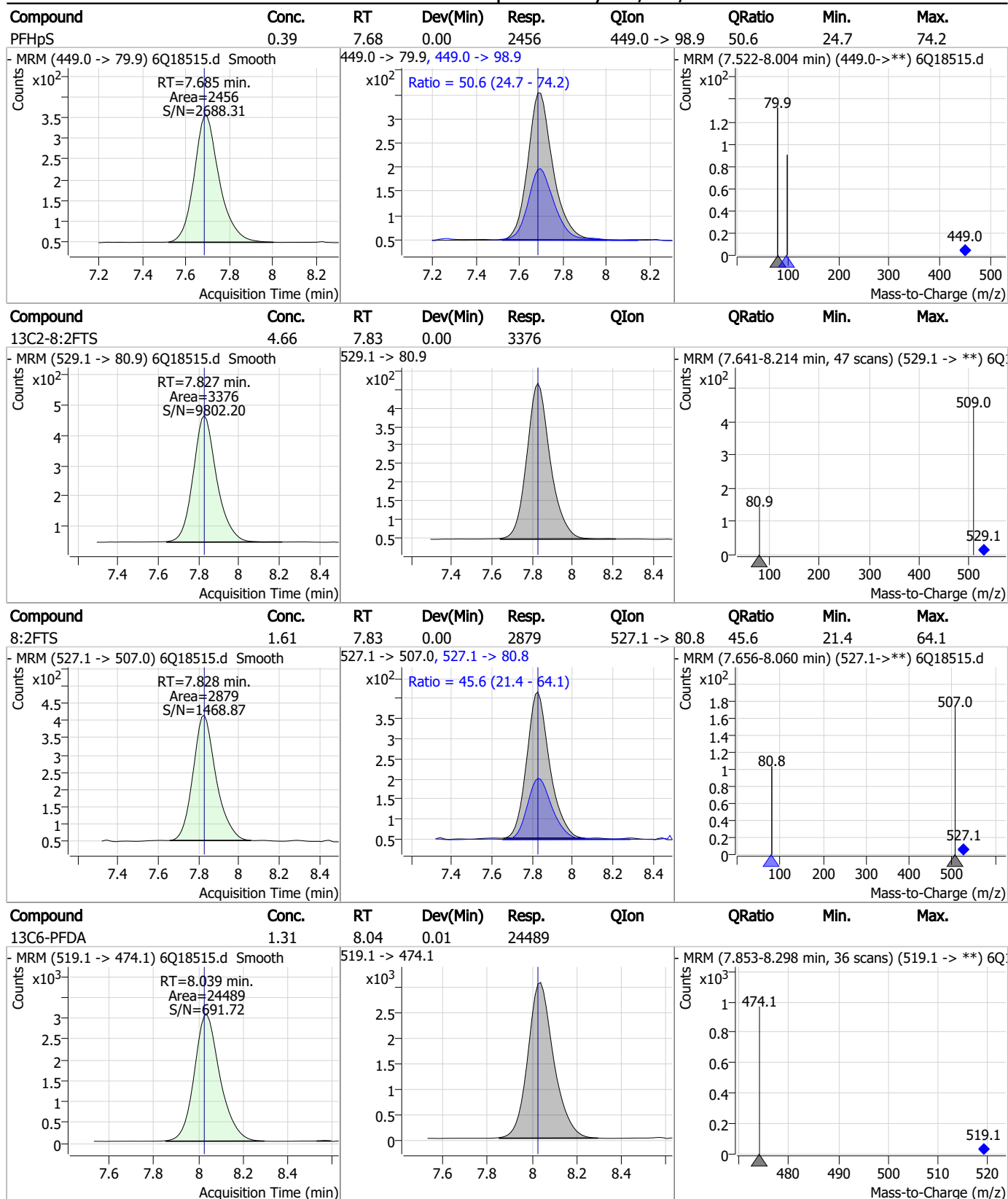
Perfluorinated Compounds by LC/MS/MS



7.7.3

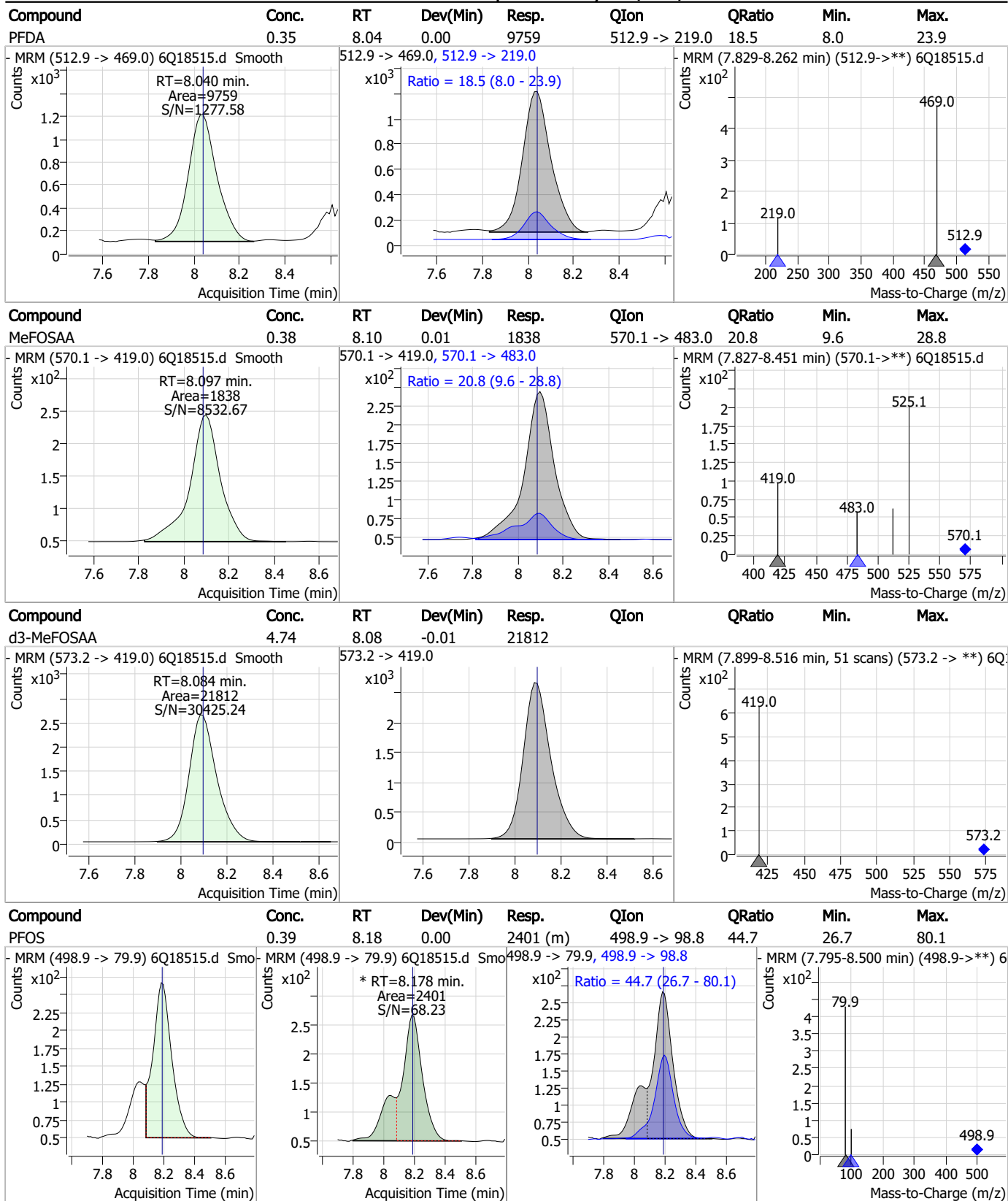
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Perfluorinated Compounds by LC/MS/MS



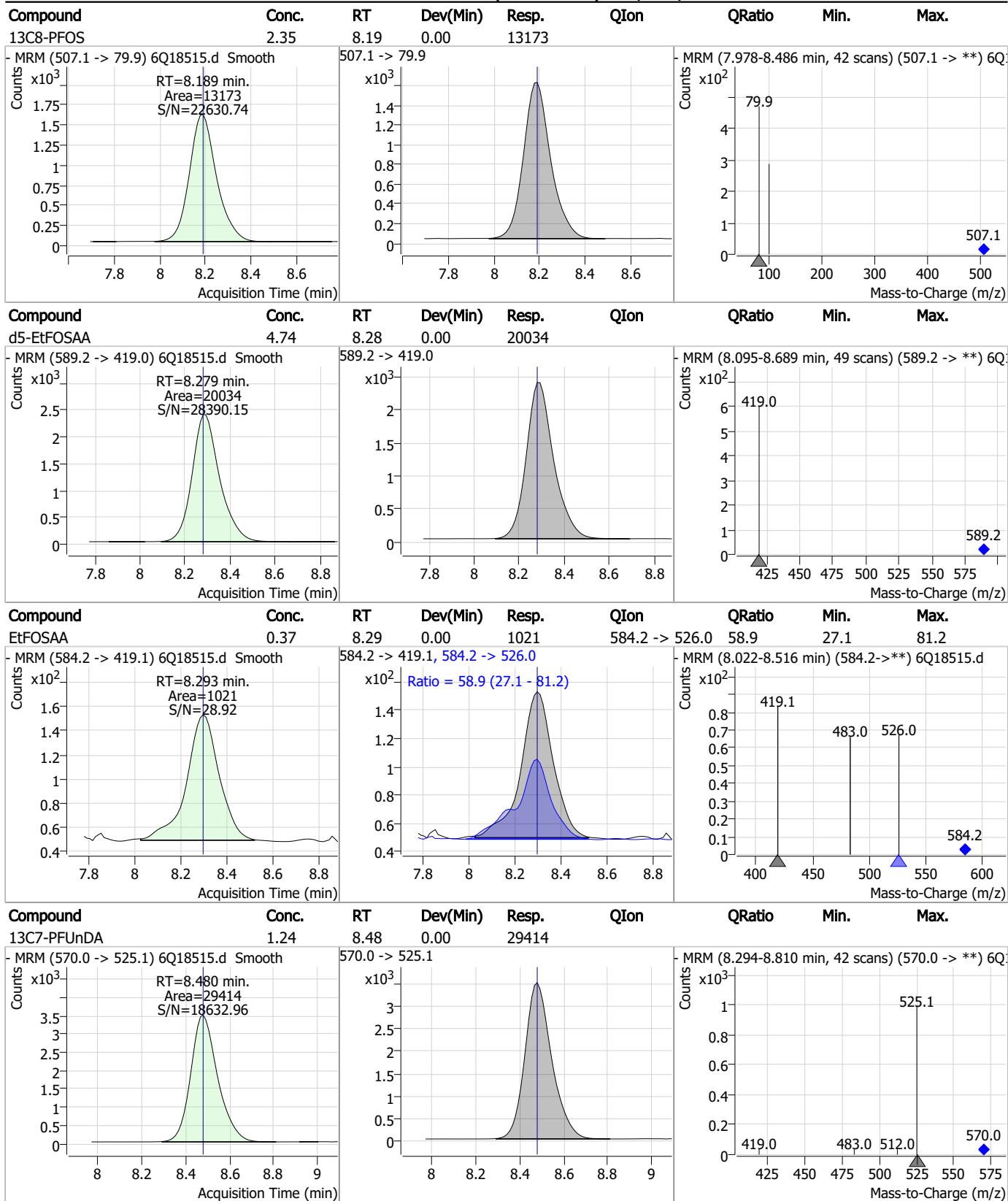
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Perfluorinated Compounds by LC/MS/MS



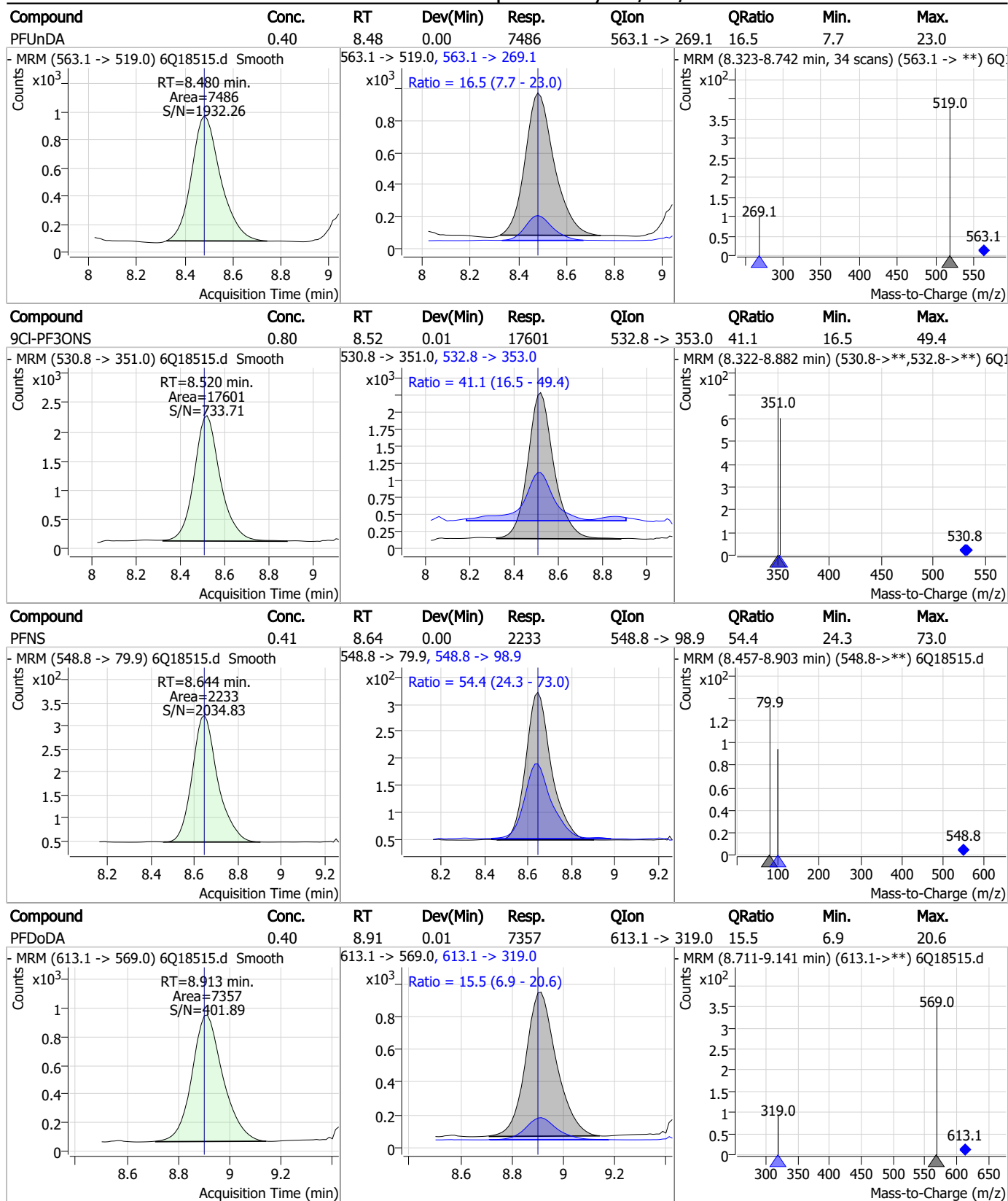
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Perfluorinated Compounds by LC/MS/MS



7.7.3
7

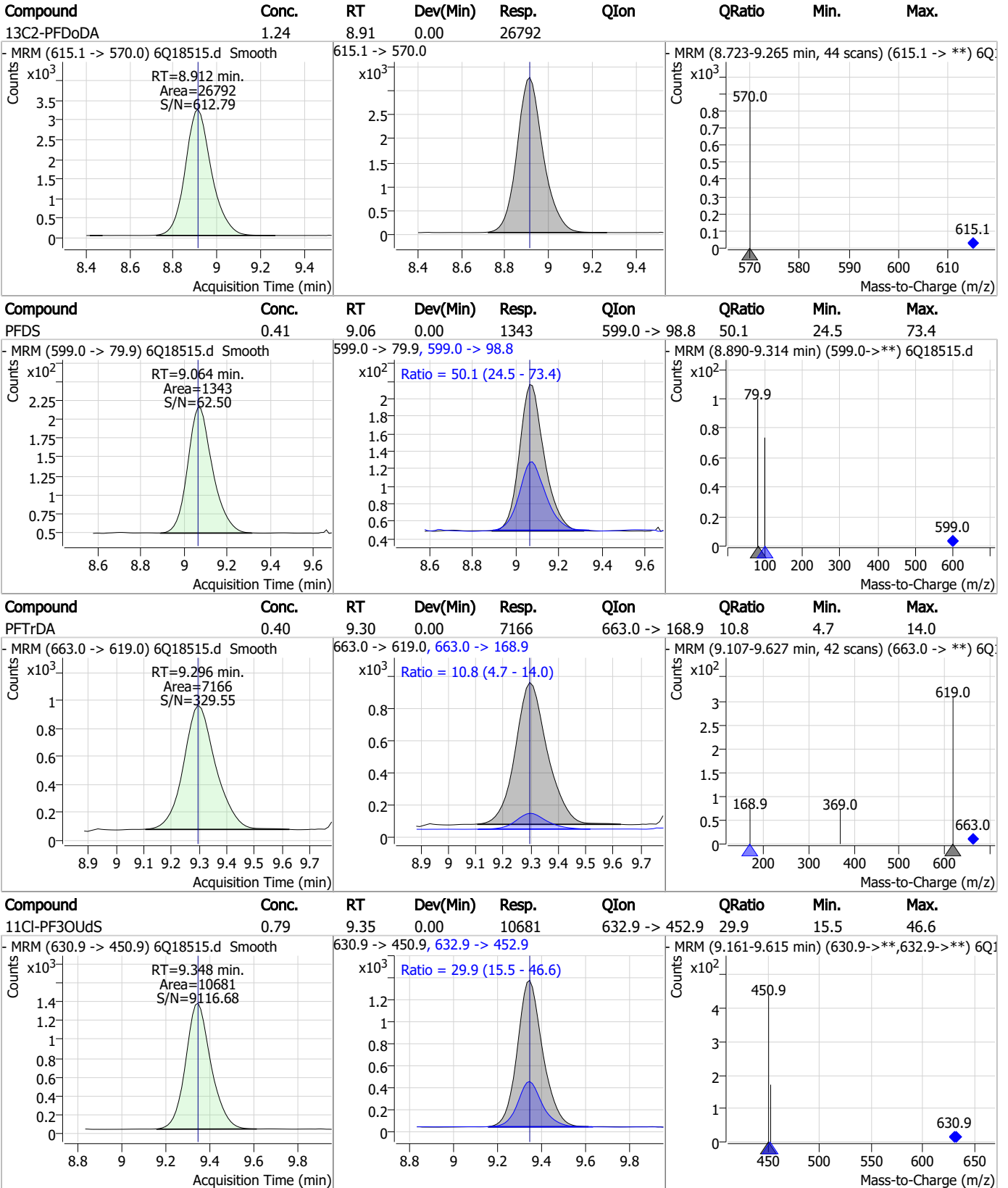
Perfluorinated Compounds by LC/MS/MS



7.7.3

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Perfluorinated Compounds by LC/MS/MS

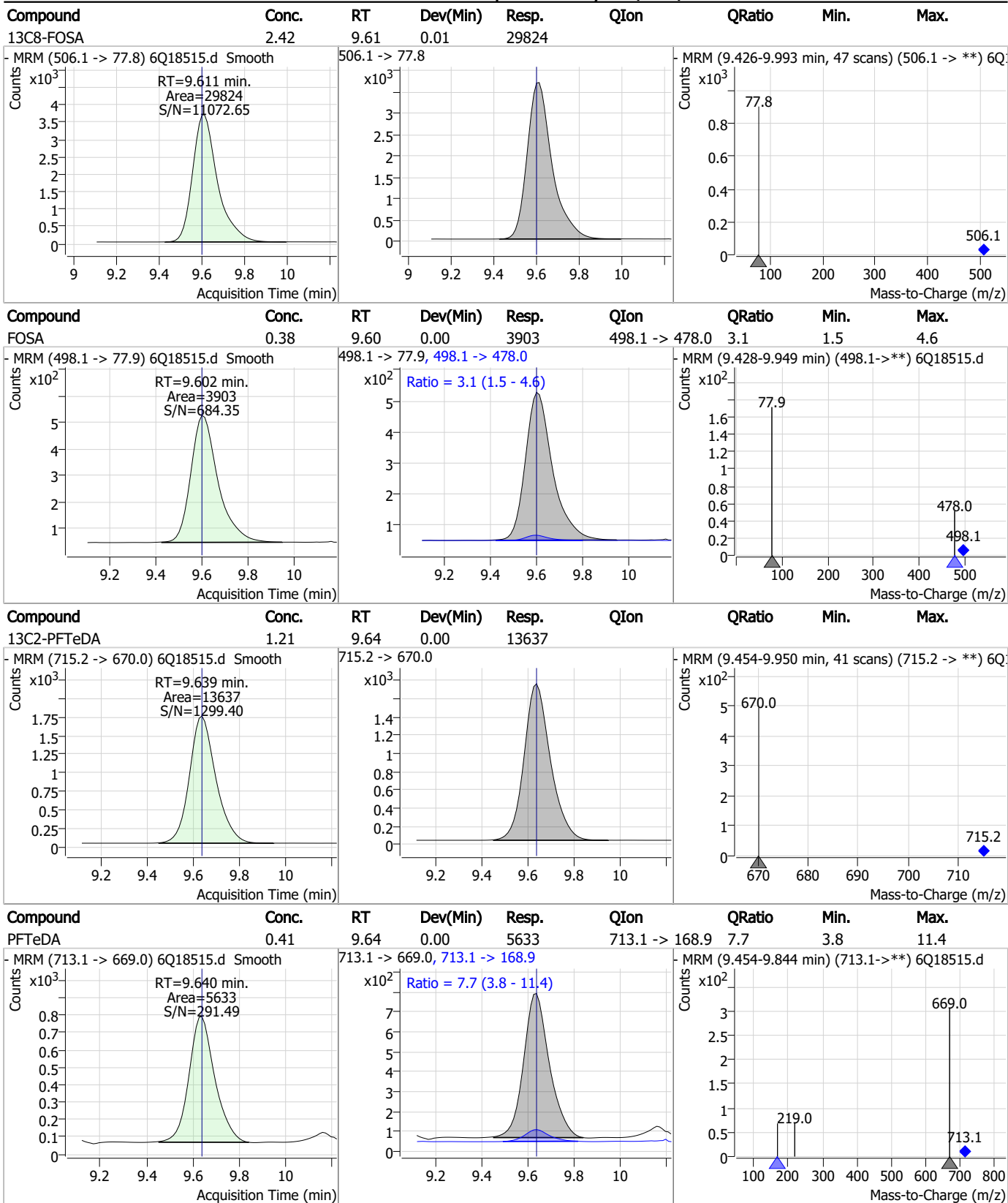


7.7.3

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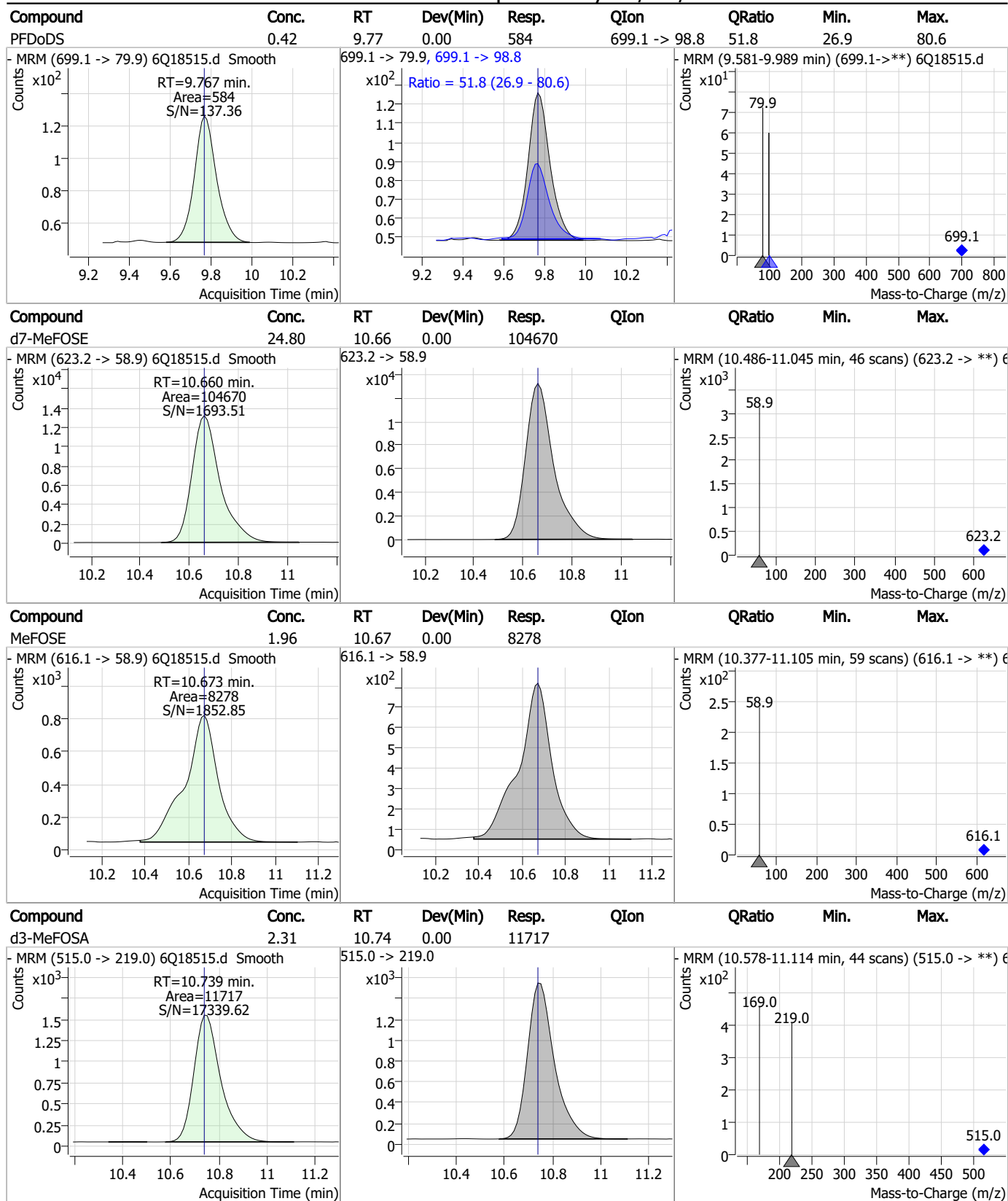


Perfluorinated Compounds by LC/MS/MS



7.7.3
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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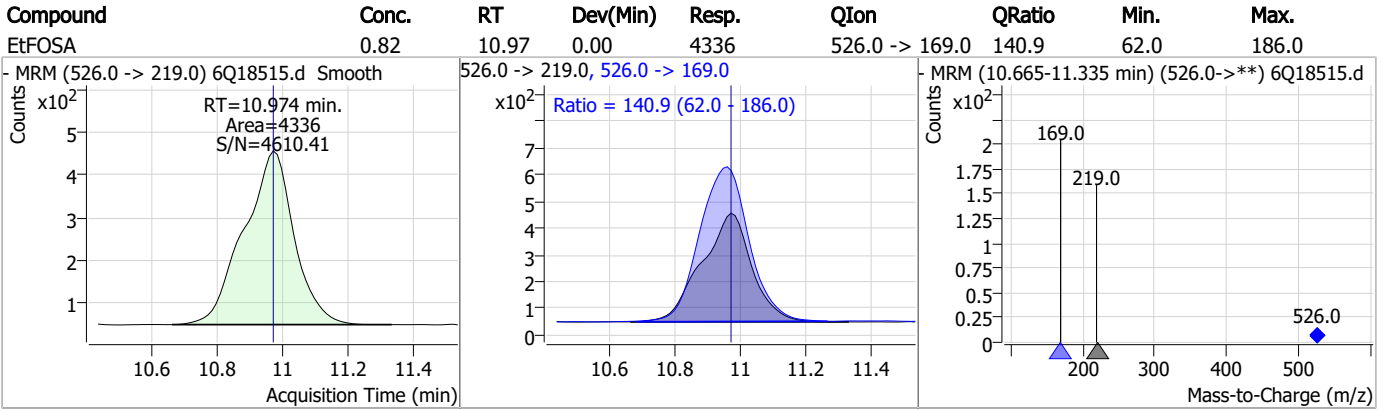
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.85	10.74	0.00	3765	511.9 -> 169.0	137.9	66.3	198.9
- MRM (511.9 -> 219.0) 6Q18515.d Smooth			511.9 -> 219.0, 511.9 -> 169.0			- MRM (10.455-11.153 min) (511.9->**) 6Q18515.d		
d9-EtFOSE	24.95	10.91	0.00	139279				
- MRM (639.2 -> 58.9) 6Q18515.d Smooth			639.2 -> 58.9			- MRM (10.733-11.292 min, 46 scans) (639.2 -> **) 6Q18515.d		
EtFOSE	2.05	10.92	0.00	12562				
- MRM (630.0 -> 58.9) 6Q18515.d Smooth			630.0 -> 58.9			- MRM (10.622-11.306 min, 56 scans) (630.0 -> **) 6Q18515.d		
d5-EtFOSA	2.35	10.97	0.00	11499				
- MRM (531.1 -> 219.0) 6Q18515.d Smooth			531.1 -> 219.0			- MRM (10.823-11.258 min, 36 scans) (531.1 -> **) 6Q18515.d		

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: S6Q278-IC278 Method: EPA DRAFT 1633
Lab FileID: 6Q18515.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 15:35 Supervisor approved: 05/31/23 20:58 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.7.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18516.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 3:49:59 PM
 Sample Name : ic278-3
 Vial : P1-A4
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	174615	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	57692	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	62925	2.50 µg/L	0.012
M4-PFHpA	6.369	367.1 -> 322.0	57554	2.50 µg/L	-0.012
M8-PFOA	7.026	421.1 -> 376.0	83719	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	36718	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	22789	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	29521	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	25830	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	14010	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	29788	2.50 µg/L	0.012
M3-PFBS	5.334	302.1 -> 79.9	23618	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14273	2.50 µg/L	0.000
M8-PFOS	8.189	507.1 -> 79.9	12909	2.50 µg/L	0.000
M2-4:2FTS	5.094	329.1 -> 80.9	2634	5.00 µg/L	0.000
M2-6:2FTS	6.801	429.1 -> 80.9	3686	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3692	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	22124	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	41194	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	21070	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	105344	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	138016	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12131	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11961	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17103	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	72425	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10754	2.50 µg/L	0.000
13C4-PFOA	7.027	417.1 -> 372.0	91621	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	29005	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	43590	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	59084	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.094	329.1 -> 80.9	2634	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C2-6:2FTS	6.801	429.1 -> 80.9	3686	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3692	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C2-PFDoDA	8.912	615.1 -> 570.0	25830	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C2-PFTeDA	9.639	715.2 -> 670.0	14010	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C3-PFBS	5.334	302.1 -> 79.9	23618	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	14273	2.46 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C4-PFBA	2.822	216.8 -> 171.9	174615	10.07 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFHpA	6.369	367.1 -> 322.0	57554	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C5-PFHxA	5.417	318.0 -> 273.0	62925	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFPeA	4.210	268.3 -> 223.0	57692	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C6-PFDA	8.027	519.1 -> 474.1	22789	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C7-PFUnDA	8.480	570.0 -> 525.1	29521	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C8-FOSA	9.611	506.1 -> 77.8	29788	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-PFOA	7.026	421.1 -> 376.0	83719	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C8-PFOS	8.189	507.1 -> 79.9	12909	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C9-PFNA	7.557	472.1 -> 427.0	36718	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	22124	5.05 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41194	9.86 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	11961	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
d5-EtFOSAA	8.279	589.2 -> 419.0	21070	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	105344	26.20 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	138016	25.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	12131	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	17806	4.79 µg/L	98
		327.1 -> 80.9	6792		
6:2FTS	6.801	427.1 -> 407.0	16782	4.80 µg/L	99
		427.1 -> 80.9	5752		
8:2FTS	7.828	527.1 -> 507.0	8787	4.50 µg/L	99
		527.1 -> 80.8	3715		
EtFOSAA	8.293	584.2 -> 419.1	3293	1.14 µg/L	99
		584.2 -> 526.0	1763		
FOSA	9.602	498.1 -> 77.9	12020	1.18 µg/L	99
		498.1 -> 478.0	389		
MeFOSAA	8.085	570.1 -> 419.0	6037	1.24 µg/L	97
		570.1 -> 483.0	1240		
PFBA	2.818	212.8 -> 168.9	28347	4.93 µg/L	100
PFBS	5.335	298.7 -> 79.9	8978	1.10 µg/L	99
		298.7 -> 98.8	3173		
PFDA	8.027	512.9 -> 469.0	32655	1.25 µg/L	100
		512.9 -> 219.0	5224		
PFDODA	8.913	613.1 -> 569.0	21679	1.23 µg/L	96
		613.1 -> 319.0	3321		
PFDS	9.064	599.0 -> 79.9	3859	1.21 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1894			
PFHpA	6.382	363.1 -> 319.0	31291	1.22	µg/L	94
		363.1 -> 169.0	5425			
PFHpS	7.685	449.0 -> 79.9	7353	1.19	µg/L	92
		449.0 -> 98.9	4023			
PFHxA	5.420	313.0 -> 269.0	27149	1.26	µg/L	99
		313.0 -> 118.9	1279			
PFHxS	7.131	398.7 -> 79.9	7857	1.17	µg/L	m 99
		398.7 -> 98.9	3668			
PFNA	7.558	463.0 -> 419.0	30487	1.14	µg/L	94
		463.0 -> 219.0	6747			
PFNS	8.644	548.8 -> 79.9	6414	1.20	µg/L	94
		548.8 -> 98.9	3402			
PFOA	7.028	413.0 -> 369.0	47365	1.33	µg/L	98
		413.0 -> 169.0	8539			
PFOS	8.191	498.9 -> 79.9	7310	1.21	µg/L	m 90
		498.9 -> 98.8	3383			
PFPeA	4.212	263.0 -> 219.0	35206	2.50	µg/L	100
PFPeS	6.422	349.1 -> 79.9	7728	1.17	µg/L	96
		349.1 -> 98.9	3464			
PFTeDA	9.640	713.1 -> 669.0	16706	1.18	µg/L	94
		713.1 -> 168.9	1625			
PFTrDA	9.296	663.0 -> 619.0	22111	1.27	µg/L	95
		663.0 -> 168.9	2447			
PFUnDA	8.480	563.1 -> 519.0	21836	1.15	µg/L	95
		563.1 -> 269.1	3762			
11CI-PF3OUdS	9.348	630.9 -> 450.9	32681	2.35	µg/L	99
		632.9 -> 452.9	10282			
9CI-PF3ONS	8.508	530.8 -> 351.0	52532	2.33	µg/L	92
		532.8 -> 353.0	14776			
ADONA	6.632	376.9 -> 250.9	120590	2.30	µg/L	99
		376.9 -> 84.8	32657			
HFPO-DA	5.783	284.9 -> 168.9	8321	2.41	µg/L	98
		284.9 -> 184.9	1080			
3:3FTCA	3.671	241.0 -> 177.0	5452	6.10	µg/L	100
		241.0 -> 117.0	781			
5:3FTCA	6.086	341.0 -> 237.1	112929	30.27	µg/L	98
		341.0 -> 217.0	82206			
7:3FTCA	7.510	441.0 -> 316.9	71588	30.03	µg/L	100
		441.0 -> 336.9	157197			
EtFOSA	10.974	526.0 -> 219.0	13378	2.39	µg/L	94
		526.0 -> 169.0	17573			
EtFOSE	10.920	630.0 -> 58.9	37077	6.10	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	11026	2.44	µg/L	91
		511.9 -> 169.0	15821			
MeFOSE	10.673	616.1 -> 58.9	25353	5.95	µg/L	100
PFDoDS	9.767	699.1 -> 79.9	1739	1.26	µg/L	96
		699.1 -> 98.8	888			
NFDHA	5.299	295.0 -> 201.0	6103	2.37	µg/L	99
		295.0 -> 84.9	1635			
PFMBA	4.626	279.0 -> 85.1	23927	2.48	µg/L	100
PFMPA	3.363	229.0 -> 84.9	18543	2.46	µg/L	100
PFEESA	5.875	314.8 -> 134.9	59387	2.09	µg/L	100
		314.8 -> 82.9	2262			

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

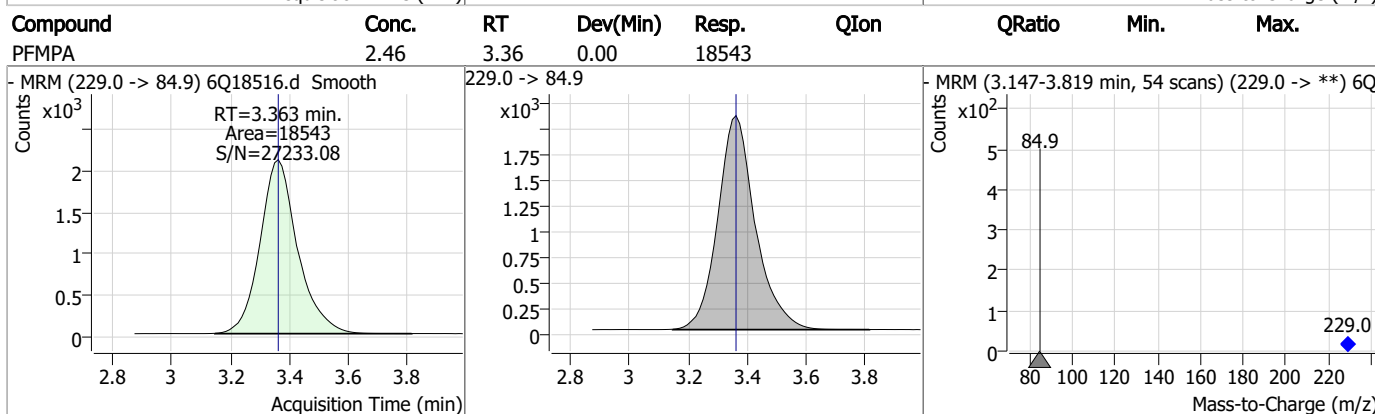
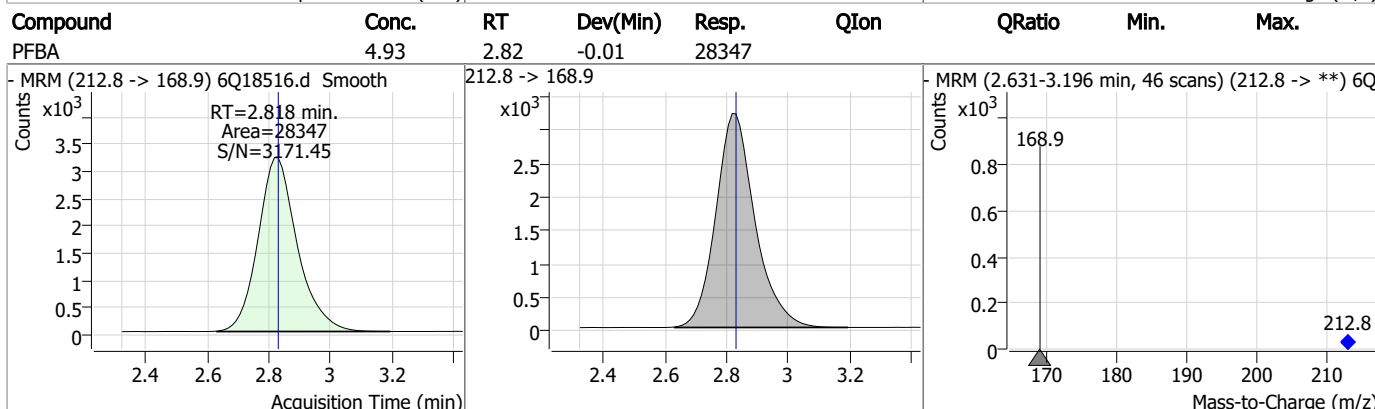
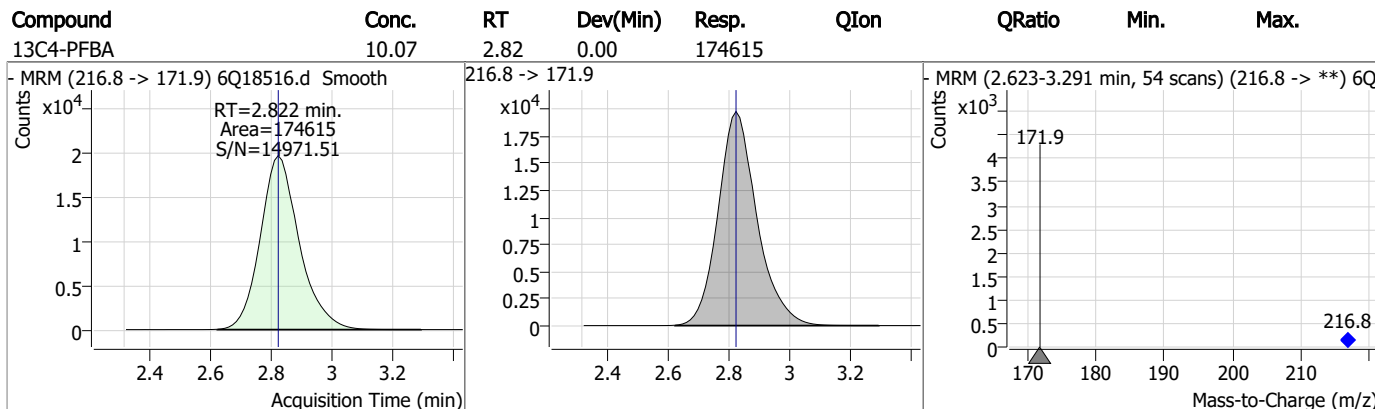
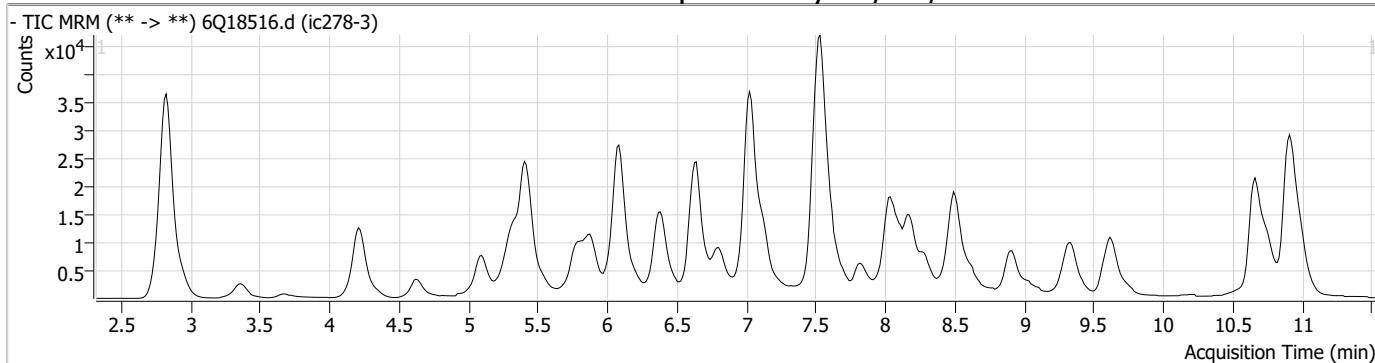
Perfluorinated Compounds by LC/MS/MS

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

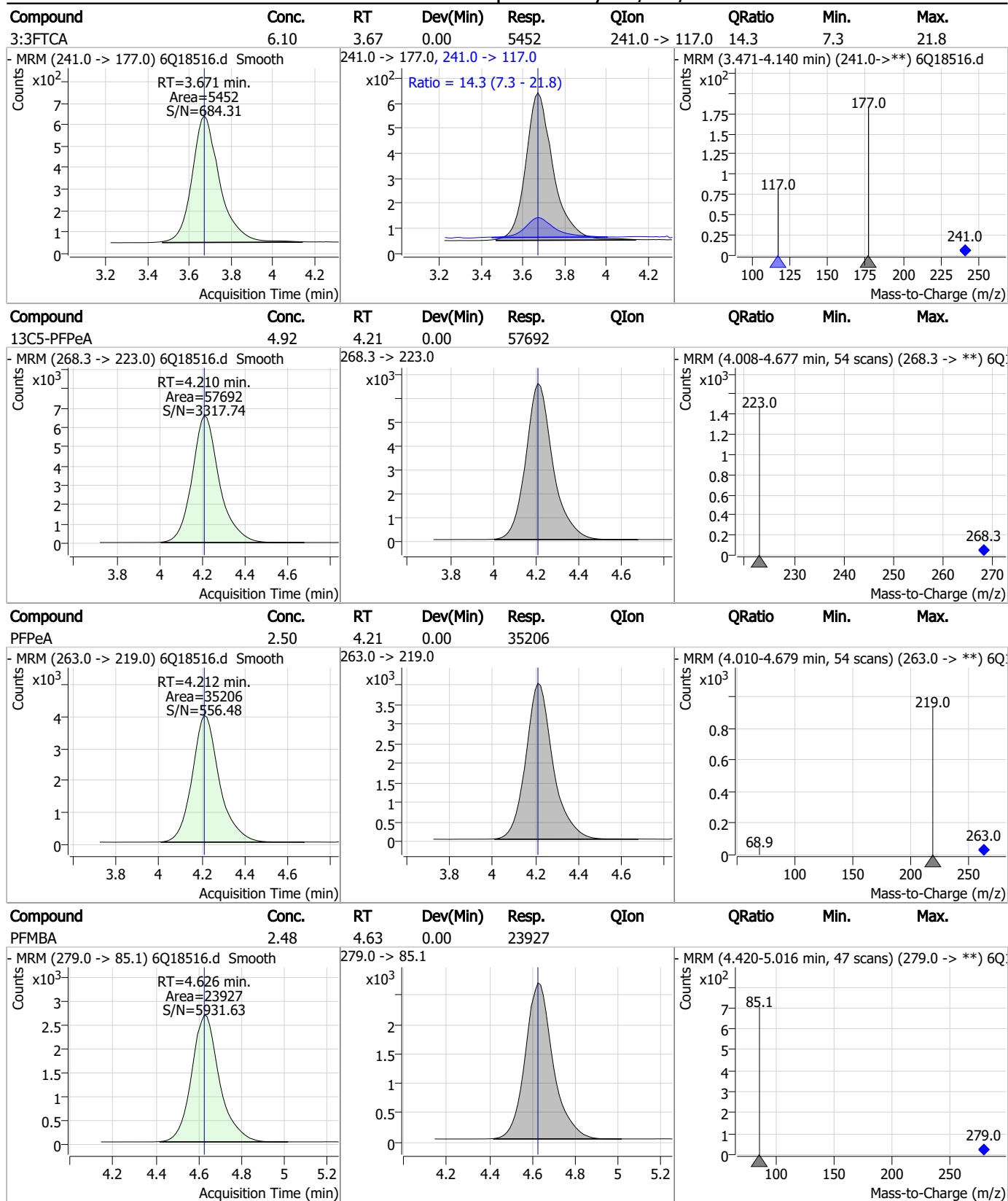
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Perfluorinated Compounds by LC/MS/MS



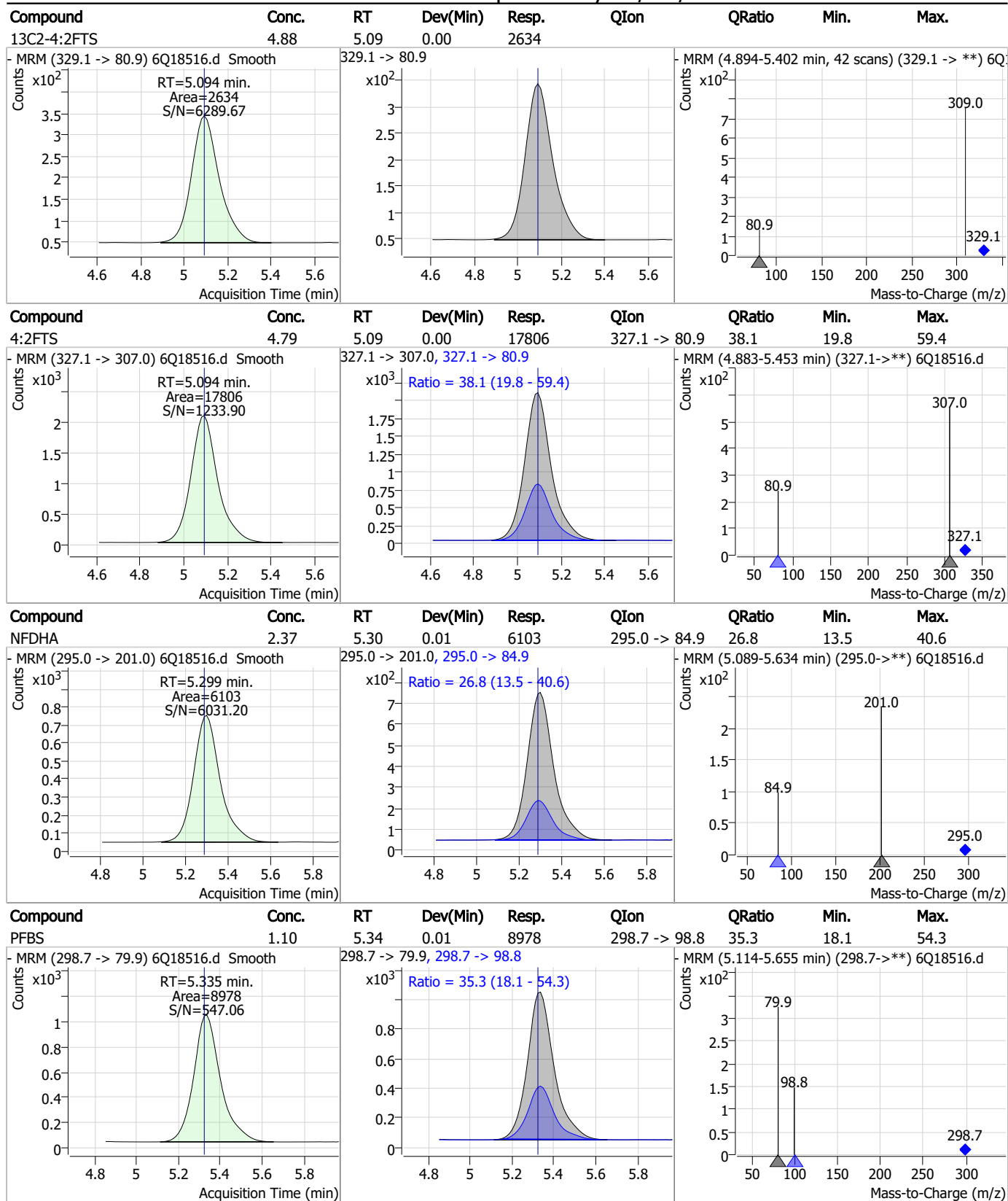
7.7.4
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Perfluorinated Compounds by LC/MS/MS



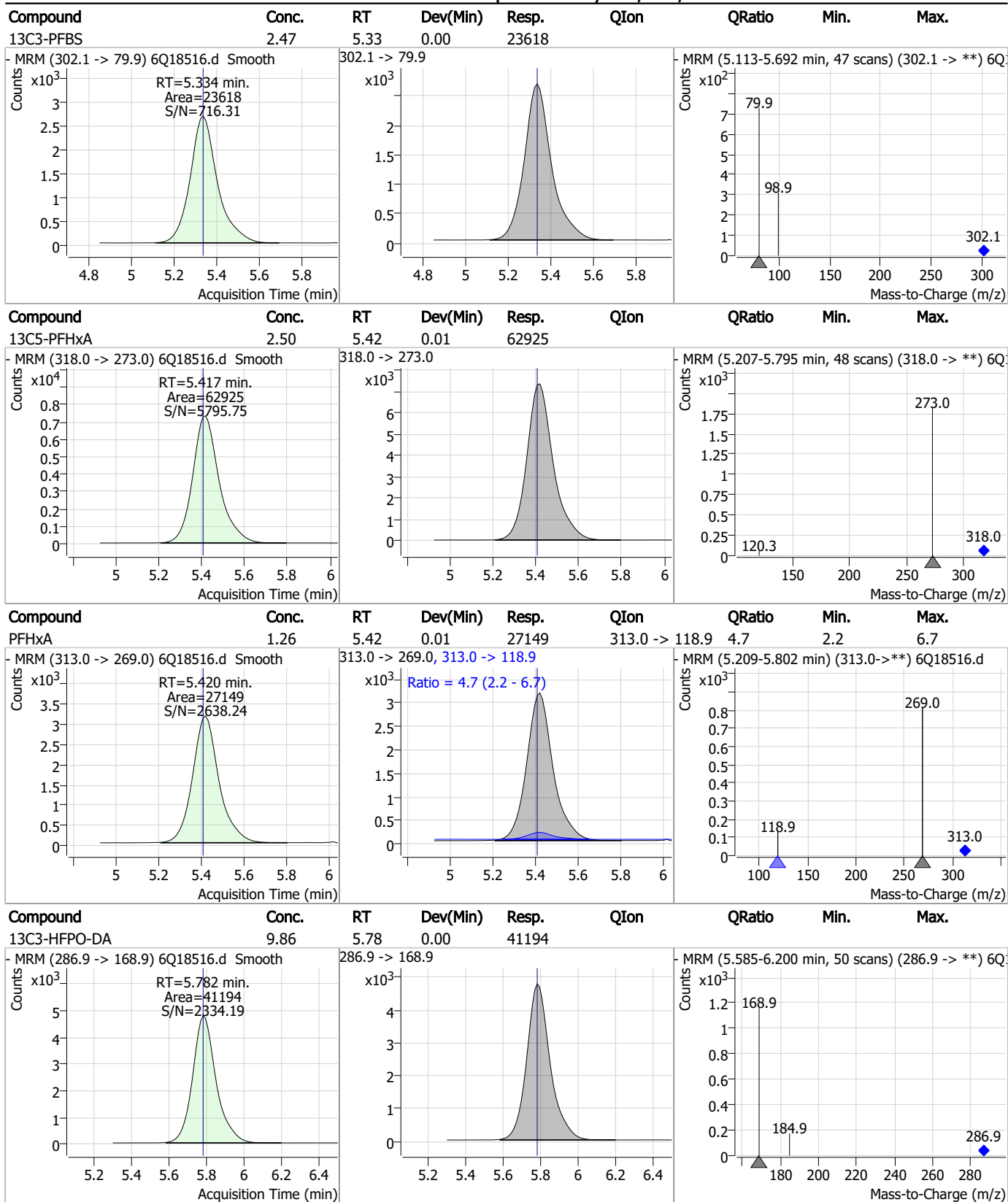
7.7.4
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Perfluorinated Compounds by LC/MS/MS



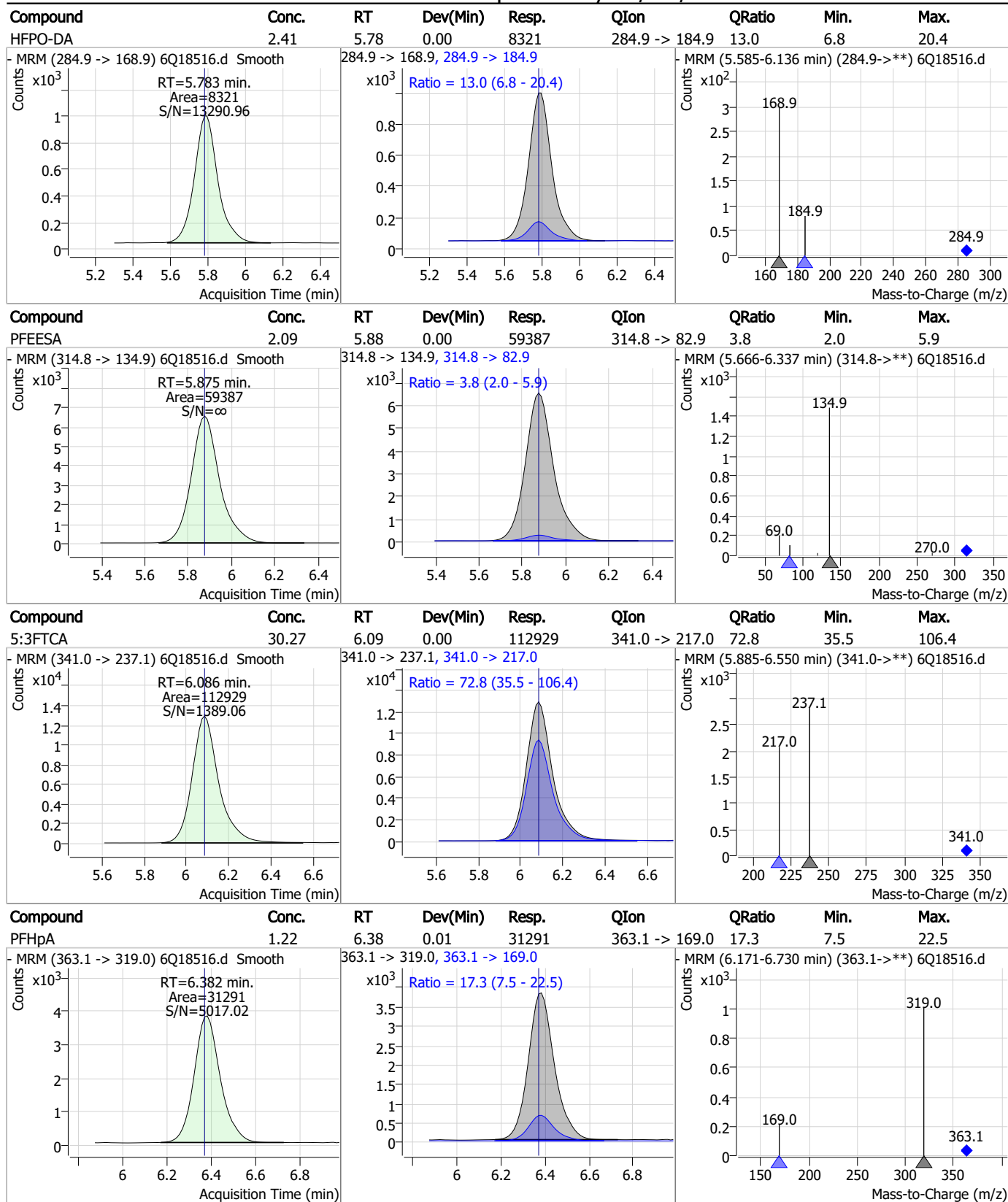
7.7.4
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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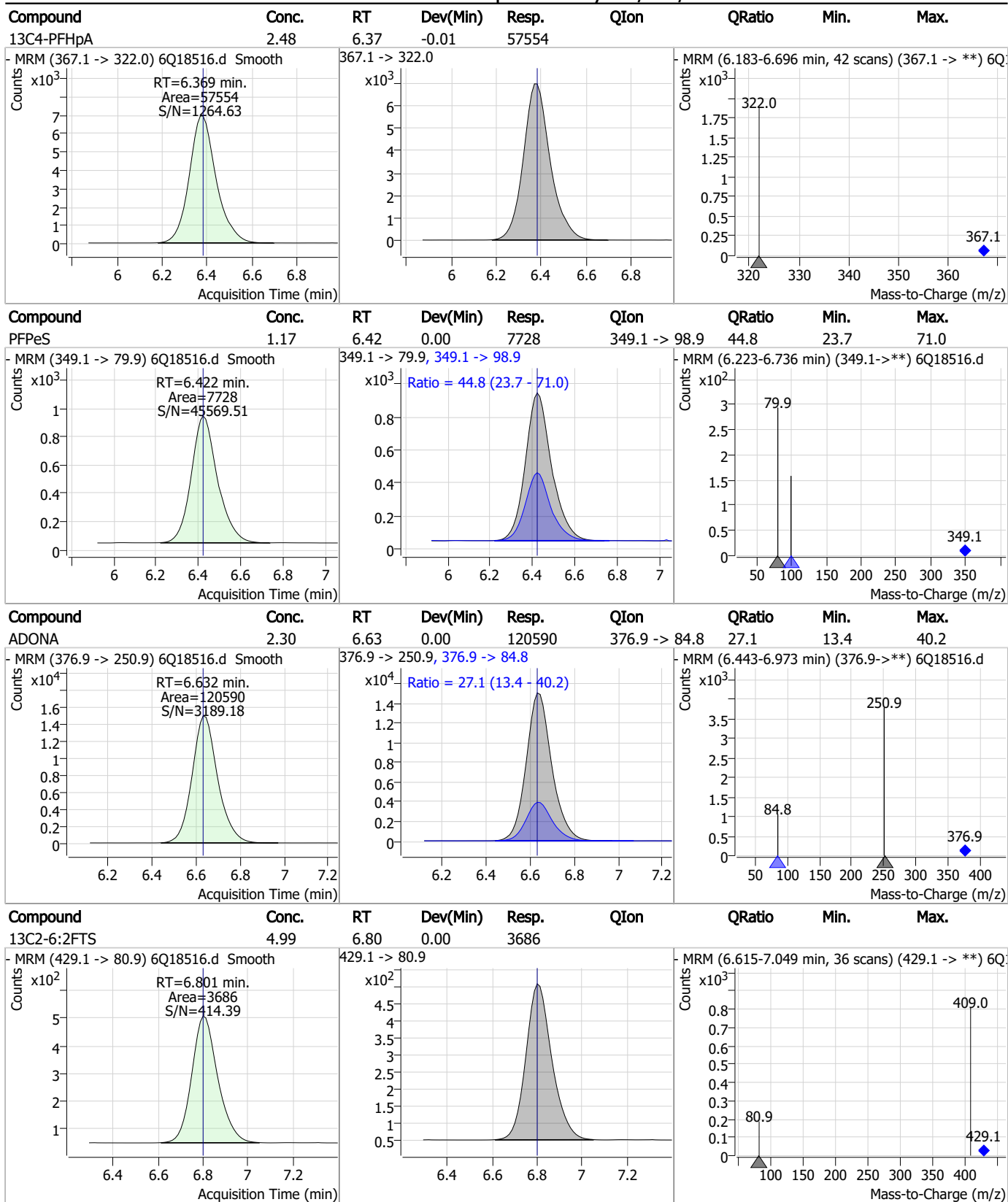
Perfluorinated Compounds by LC/MS/MS



7.7.4

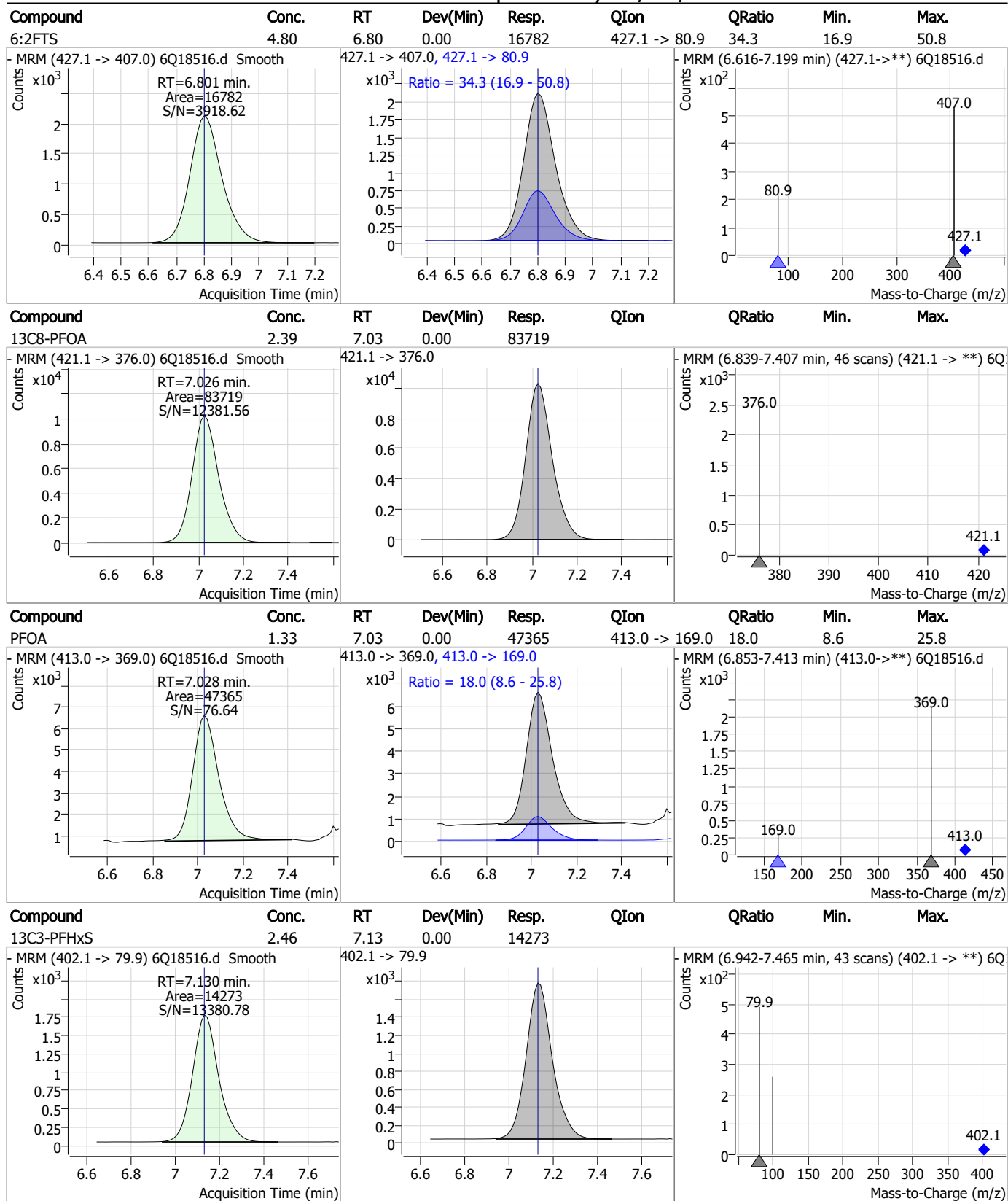
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Perfluorinated Compounds by LC/MS/MS



7.7.4
7

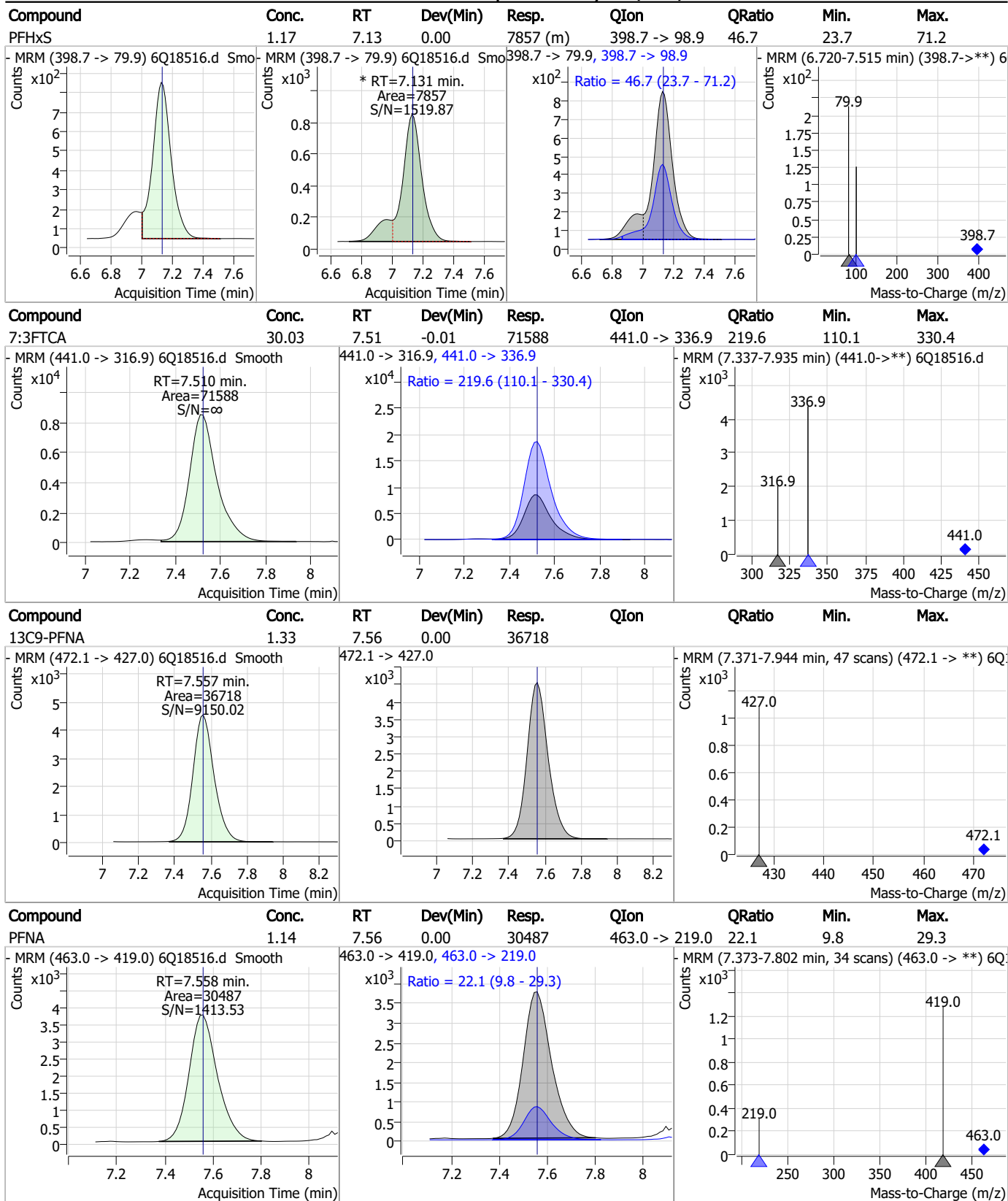
Perfluorinated Compounds by LC/MS/MS



7.7.4

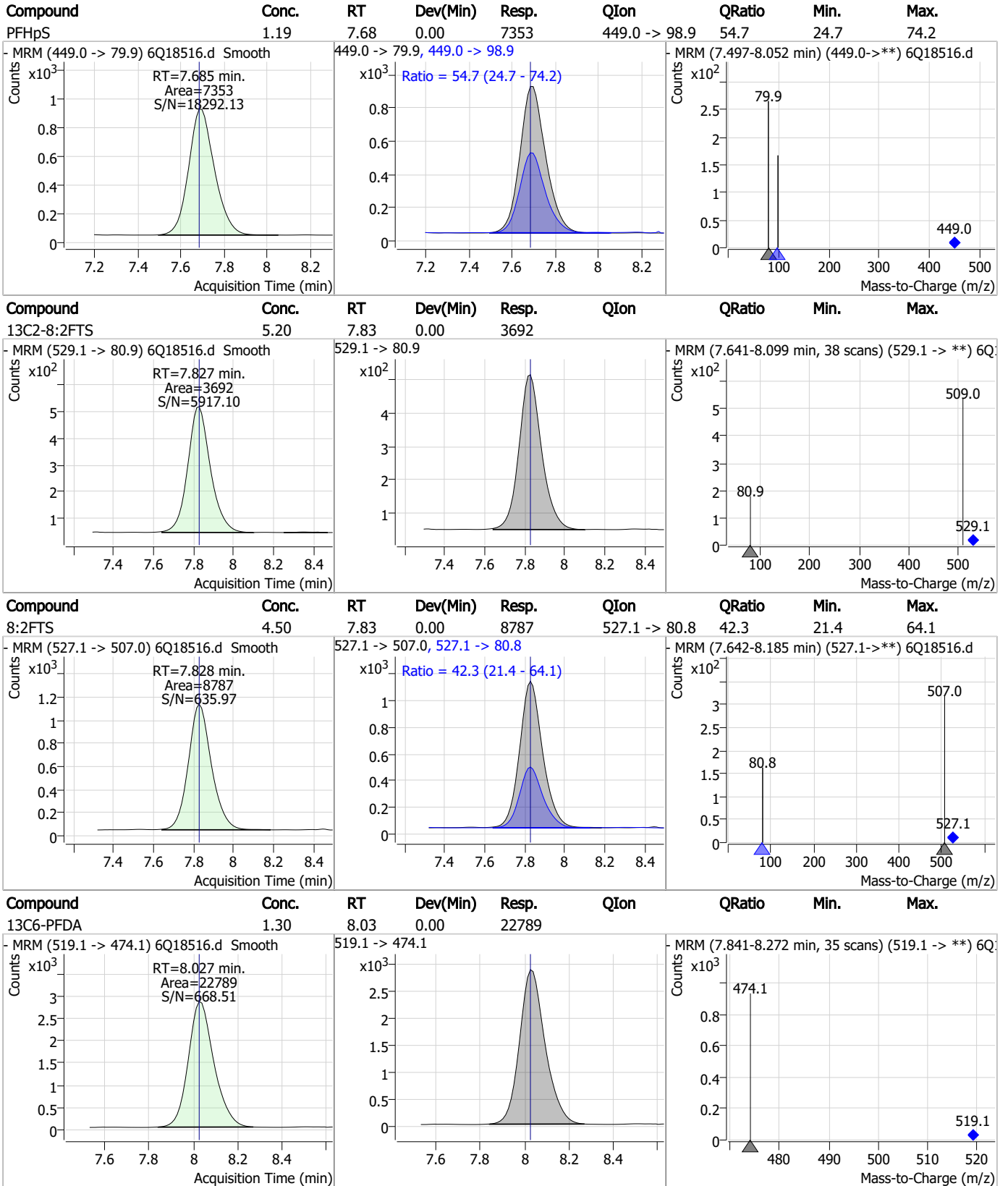
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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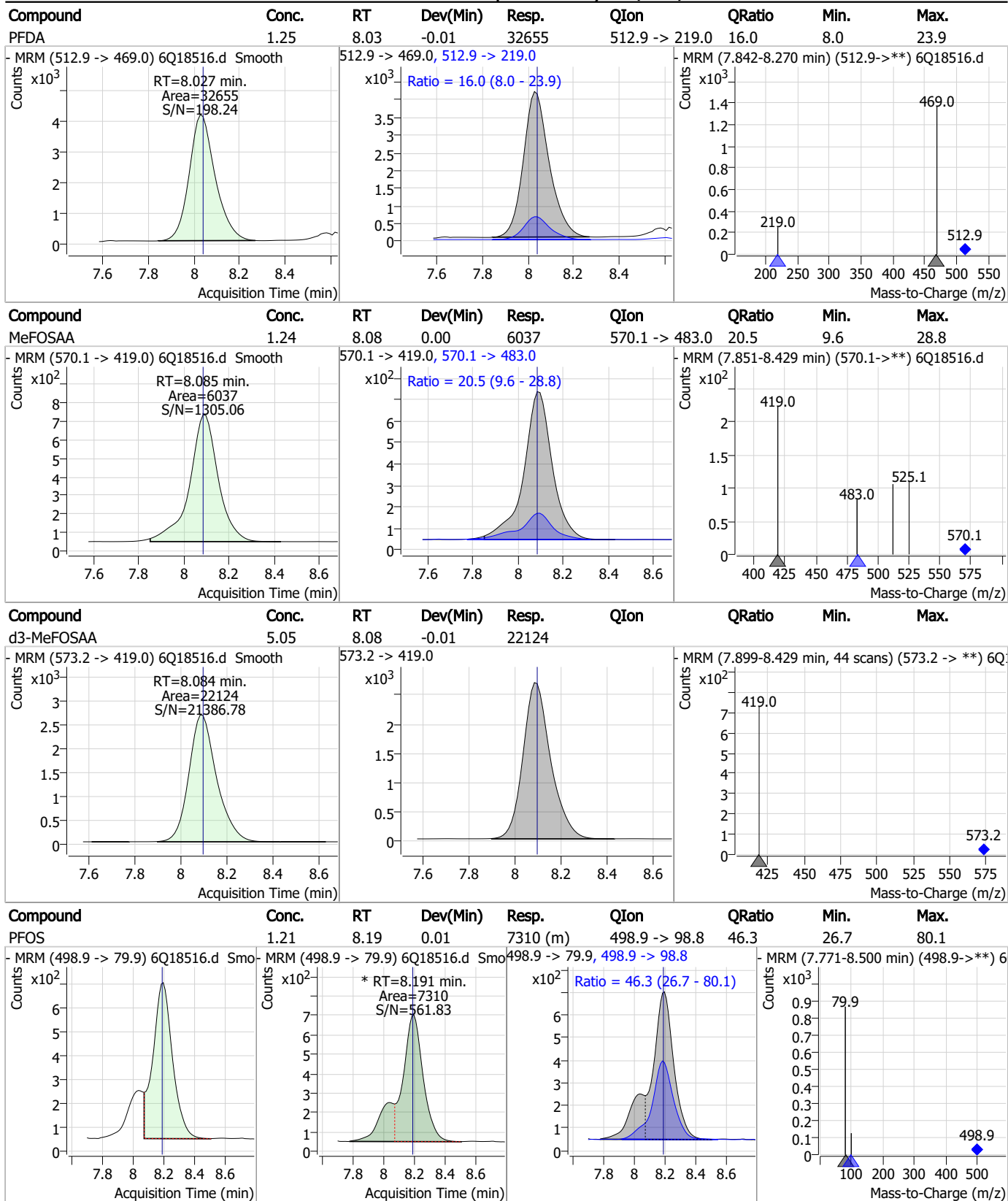
Perfluorinated Compounds by LC/MS/MS



7.7.4

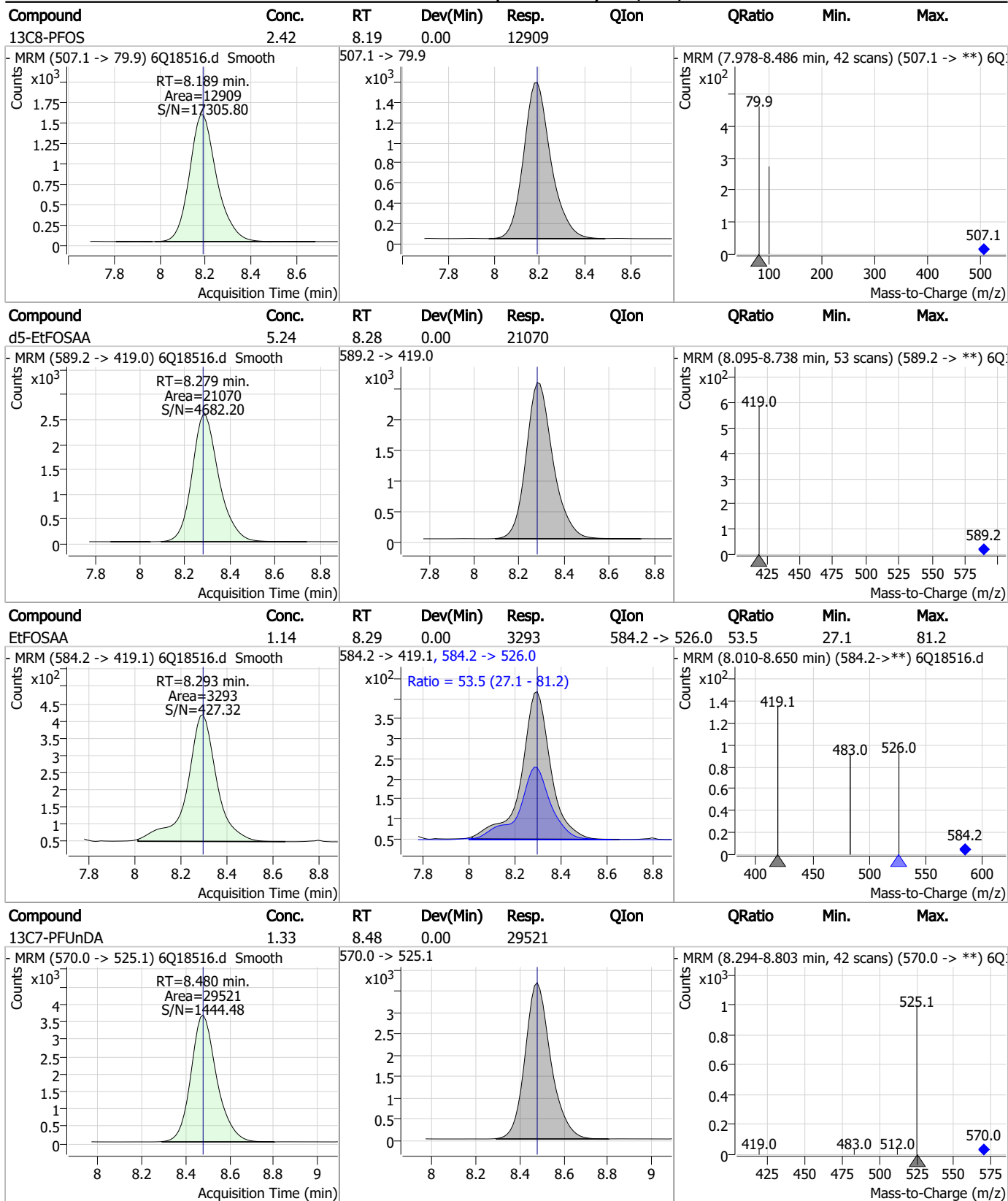
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Perfluorinated Compounds by LC/MS/MS



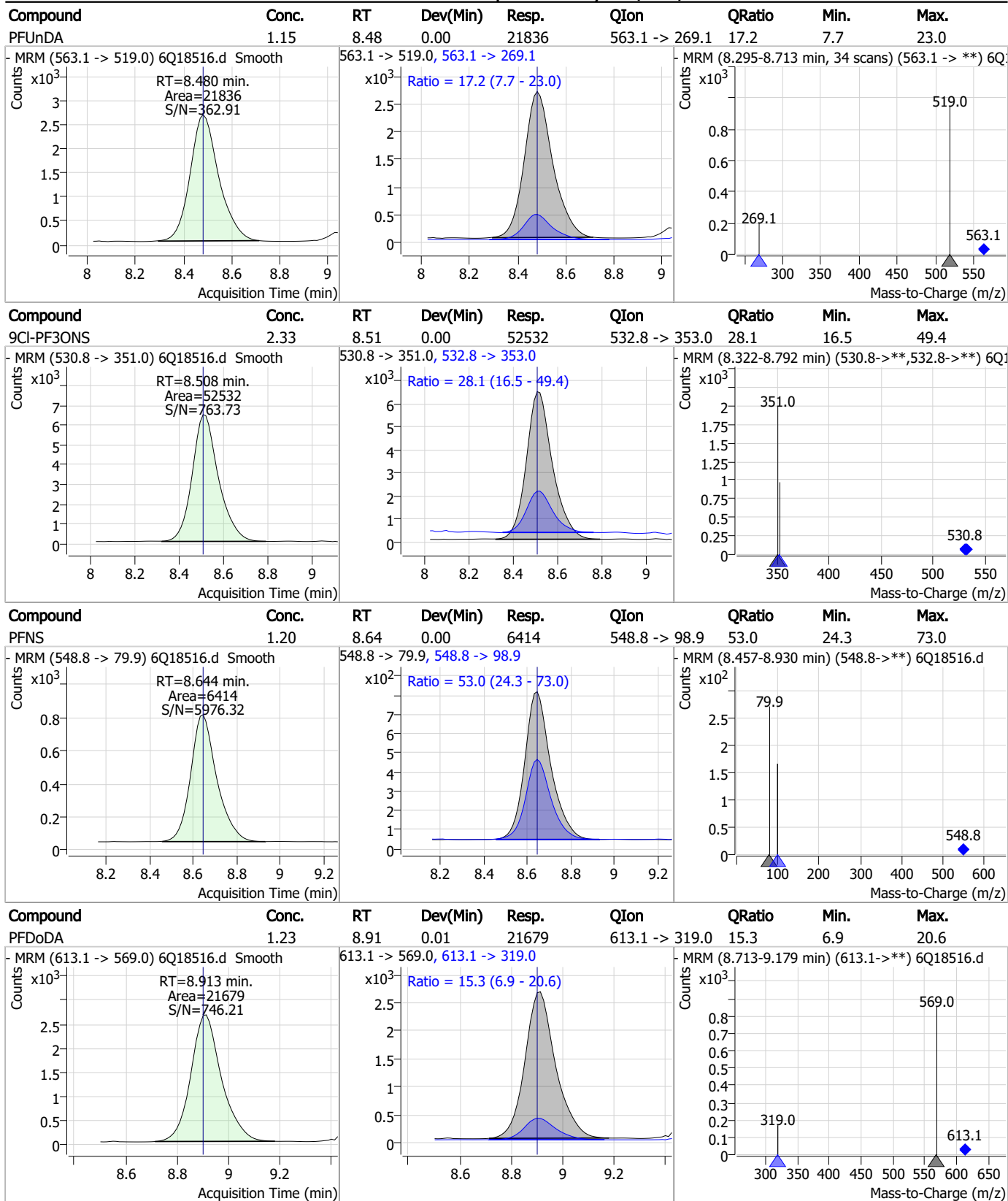
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Perfluorinated Compounds by LC/MS/MS



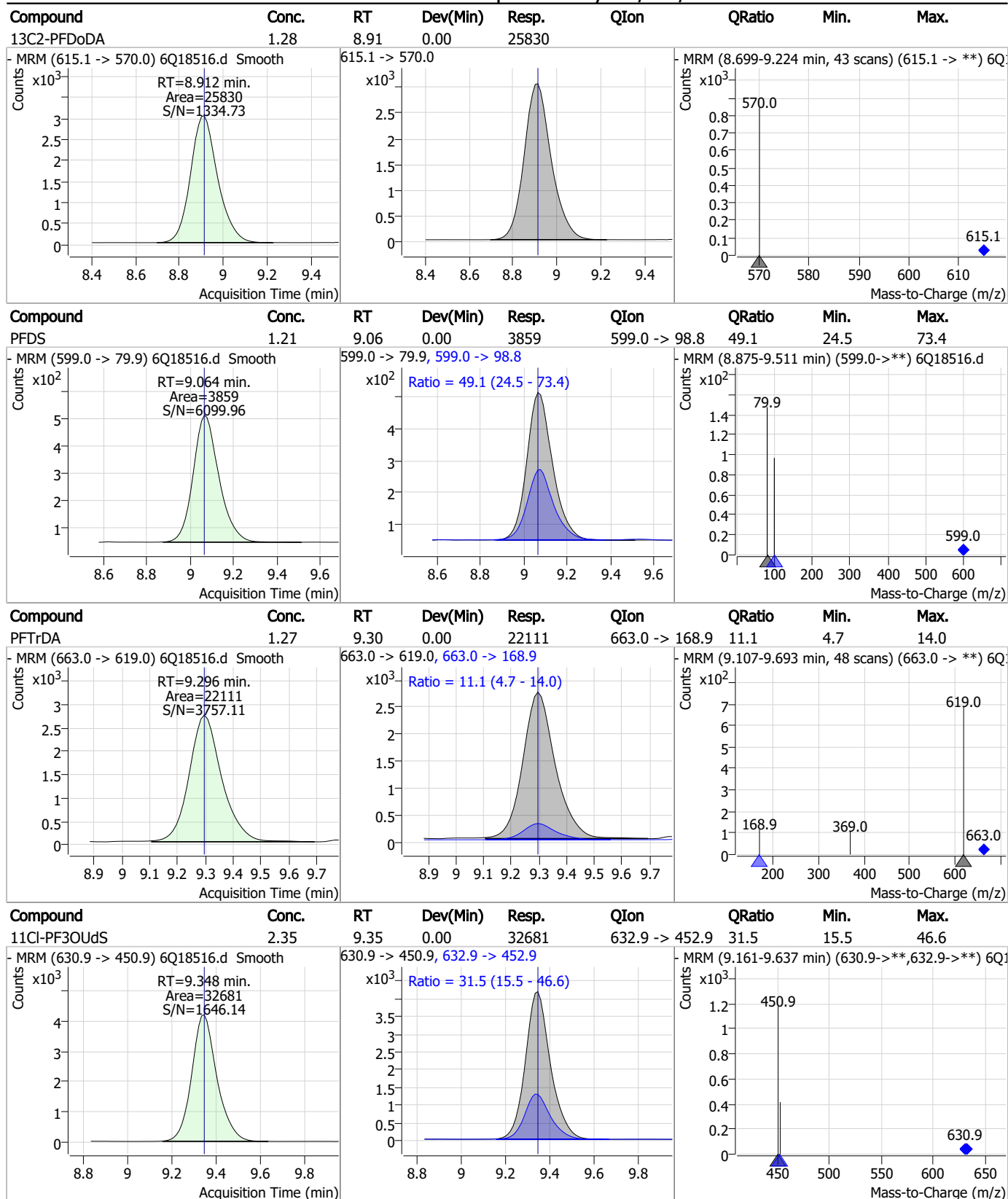
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Perfluorinated Compounds by LC/MS/MS



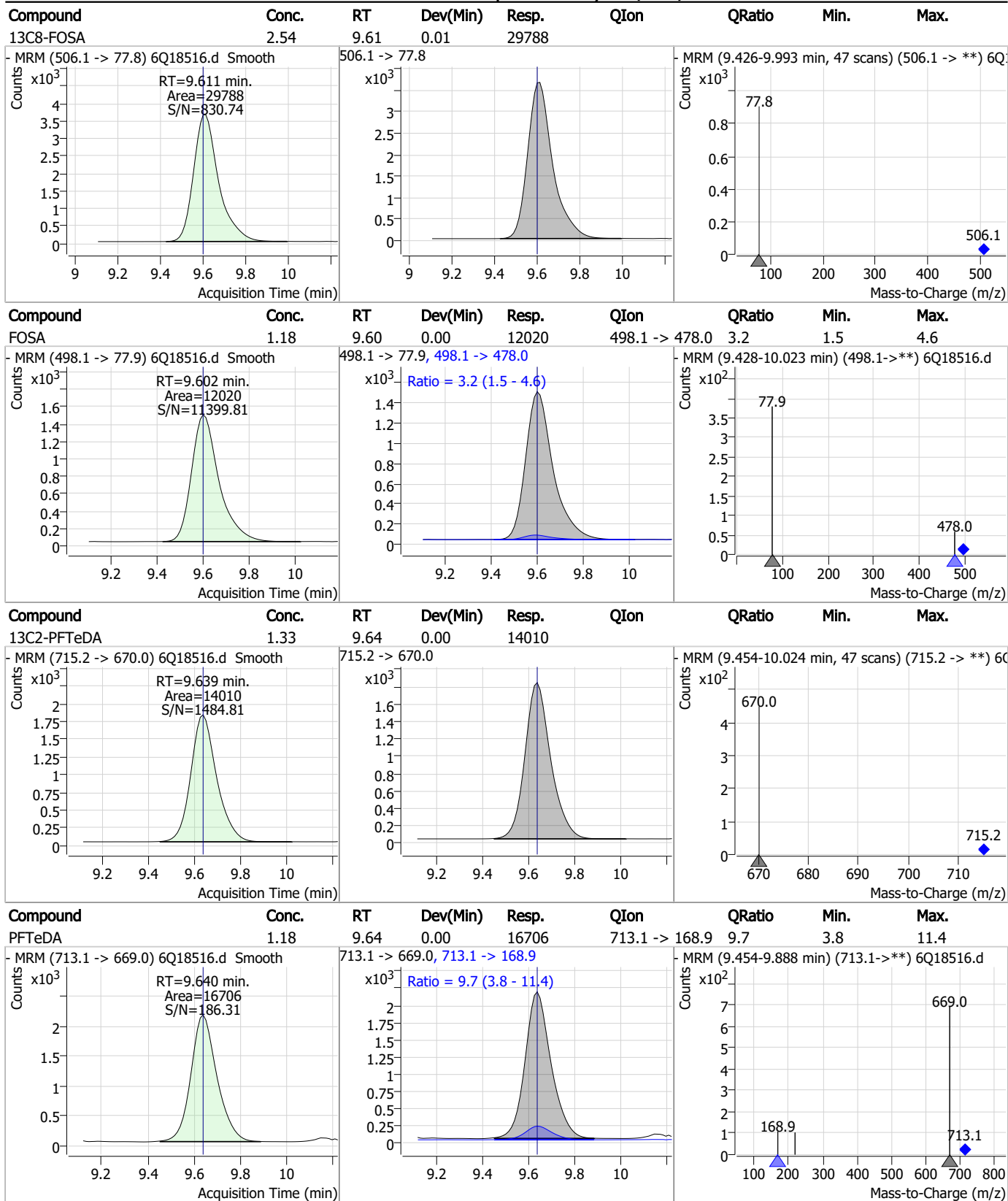
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Perfluorinated Compounds by LC/MS/MS



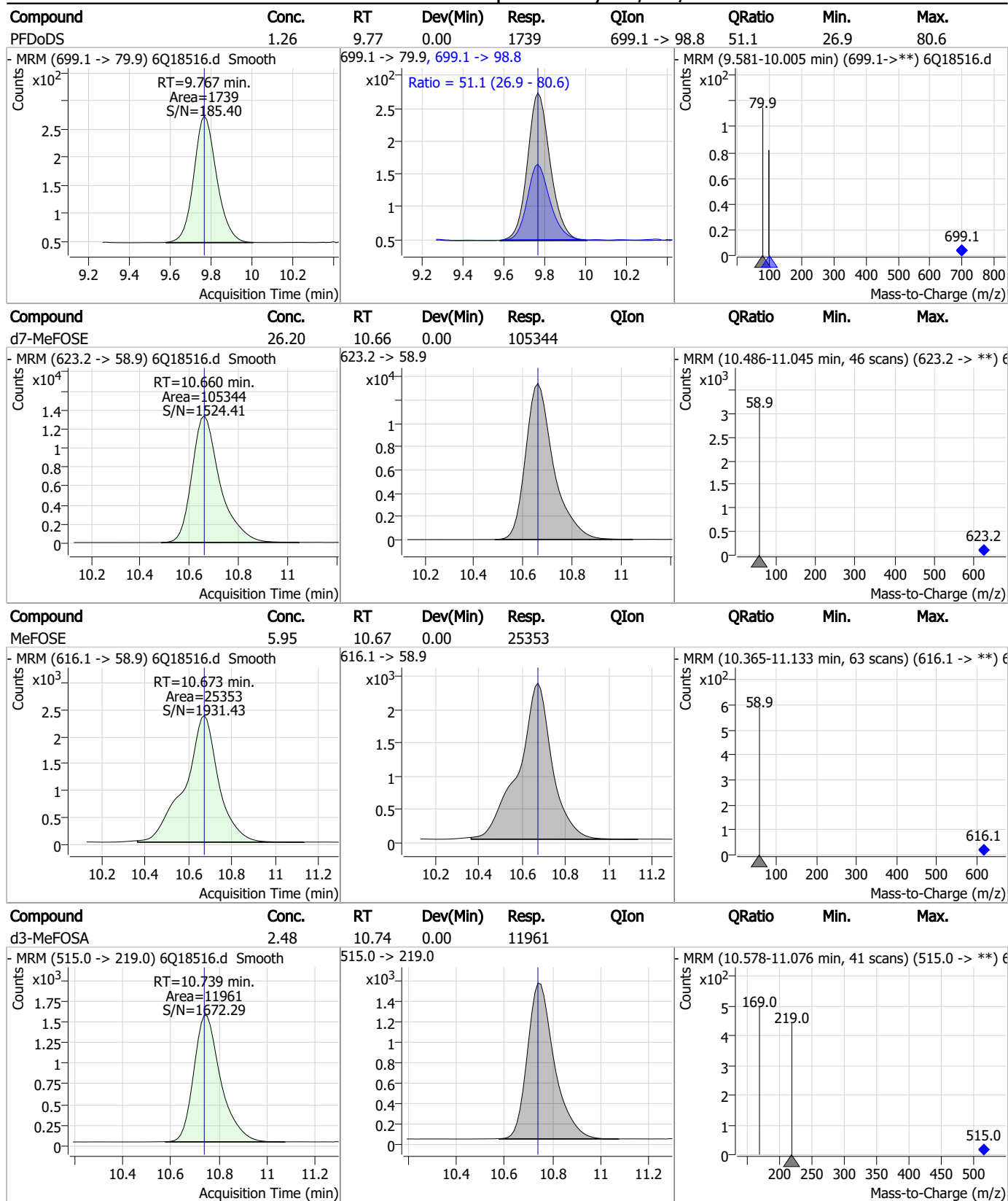
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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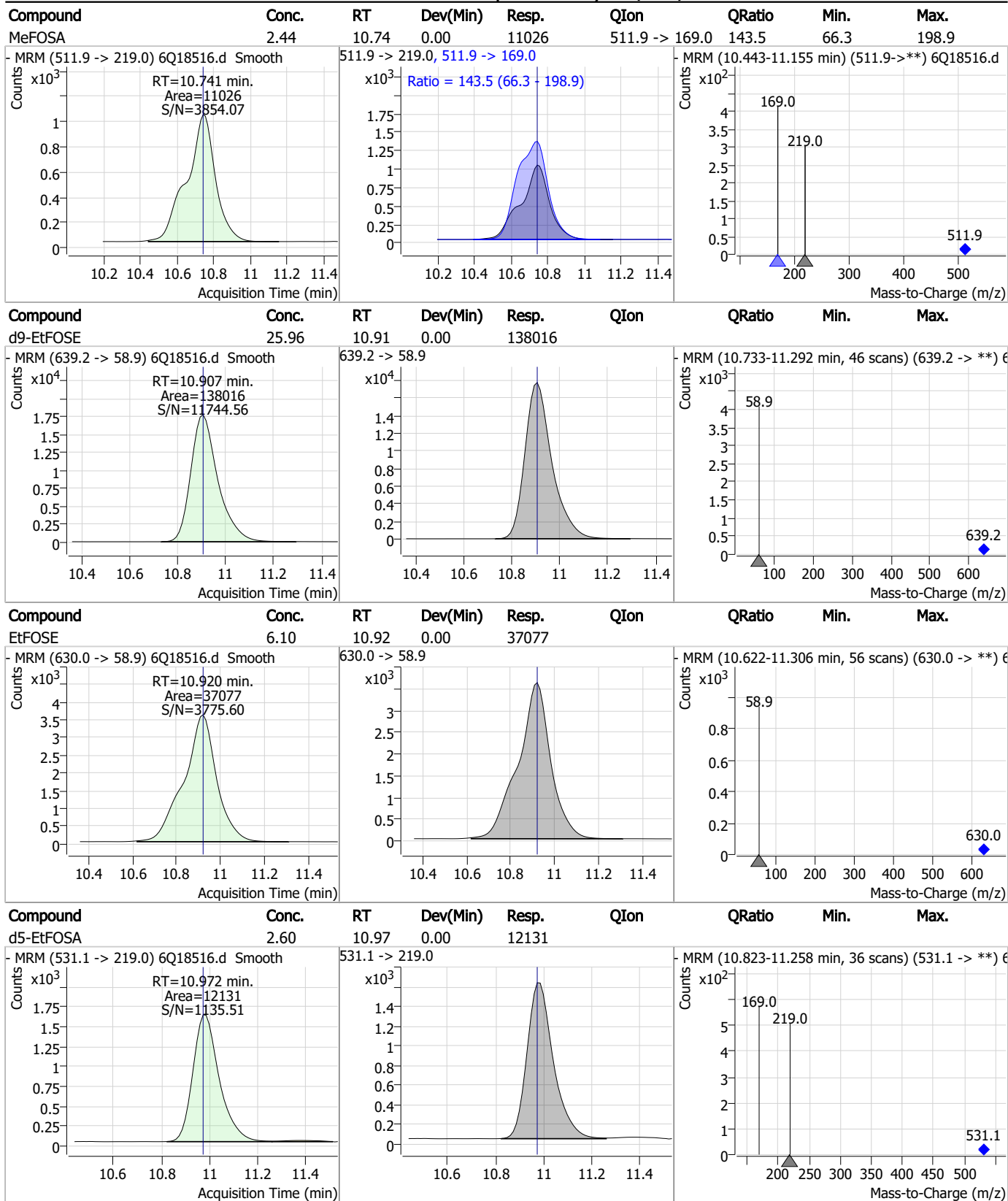
Perfluorinated Compounds by LC/MS/MS



7.7.4

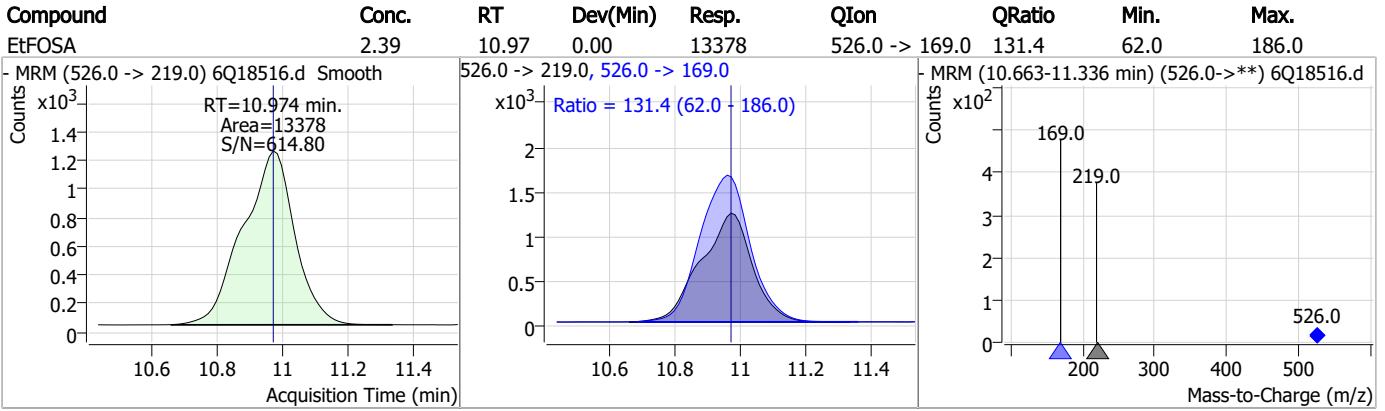
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Perfluorinated Compounds by LC/MS/MS



7.7.4
7

Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Manual Integration Approval Summary

Sample Number: S6Q278-IC278 Method: EPA DRAFT 1633
Lab FileID: 6Q18516.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 15:49 Supervisor approved: 05/31/23 21:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

7.7.4.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18517.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 4:04:29 PM
 Sample Name : icc278-4
 Vial : P1-A5
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	176352	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58298	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	61835	2.50 µg/L	0.000
M4-PFHpA	6.382	367.1 -> 322.0	58065	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	89468	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	37033	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	22009	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	28433	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	25907	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	13795	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	29964	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	24033	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	15089	2.50 µg/L	0.000
M8-PFOS	8.189	507.1 -> 79.9	13989	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	2635	5.00 µg/L	0.000
M2-6:2FTS	6.801	429.1 -> 80.9	3742	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3390	5.00 µg/L	0.000
M3-MeFOSAA	8.096	573.2 -> 419.0	22384	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40979	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	20490	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	101924	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	136972	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12187	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12001	2.50 µg/L	0.000
13C4-PFOS	8.190	502.8 -> 79.9	17643	2.50 µg/L	0.000
13C3-PFBA	2.827	216.0 -> 172.0	73560	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10643	2.50 µg/L	0.000
13C4-PFOA	7.027	417.1 -> 372.0	92333	2.50 µg/L	0.000
13C2-PFDA	8.039	515.1 -> 470.1	30637	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	46146	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	57275	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2635	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C2-6:2FTS	6.801	429.1 -> 80.9	3742	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3390	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C2-PFDoDA	8.912	615.1 -> 570.0	25907	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C2-PFTeDA	9.639	715.2 -> 670.0	13795	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C3-PFBS	5.334	302.1 -> 79.9	24033	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C3-PFHxS	7.130	402.1 -> 79.9	15089	2.62 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 = 105.0%	
13C4-PFBA	2.822	216.8 -> 171.9	176352	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.382	367.1 -> 322.0	58065	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C5-PFHxA	5.404	318.0 -> 273.0	61835	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	58298	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C6-PFDA	8.027	519.1 -> 474.1	22009	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C7-PFUnDA	8.480	570.0 -> 525.1	28433	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C8-FOSA	9.598	506.1 -> 77.8	29964	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C8-PFOA	7.026	421.1 -> 376.0	89468	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.189	507.1 -> 79.9	13989	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C9-PFNA	7.557	472.1 -> 427.0	37033	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSAA	8.096	573.2 -> 419.0	22384	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40979	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	12001	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	20490	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	101924	24.57 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
d9-EtFOSE	10.907	639.2 -> 58.9	136972	24.98 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	12187	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	35143	9.46 µg/L	97
		327.1 -> 80.9	13364		
6:2FTS	6.801	427.1 -> 407.0	32151	9.06 µg/L	96
		427.1 -> 80.9	11606		
8:2FTS	7.828	527.1 -> 507.0	17328	9.65 µg/L	99
		527.1 -> 80.8	7264		
EtFOSAA	8.293	584.2 -> 419.1	6743	2.41 µg/L	98
		584.2 -> 526.0	3575		
FOSA	9.602	498.1 -> 77.9	24447	2.39 µg/L	100
		498.1 -> 478.0	706		
MeFOSAA	8.085	570.1 -> 419.0	12214	2.48 µg/L	98
		570.1 -> 483.0	2244		
PFBA	2.831	212.8 -> 168.9	55598	9.57 µg/L	100
PFBS	5.323	298.7 -> 79.9	17407	2.09 µg/L	94
		298.7 -> 98.8	6913		
PFDA	8.040	512.9 -> 469.0	61822	2.45 µg/L	97
		512.9 -> 219.0	10643		
PFDoDA	8.900	613.1 -> 569.0	40679	2.30 µg/L	93
		613.1 -> 319.0	6739		
PFDS	9.064	599.0 -> 79.9	7433	2.15 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3766		
PFHpA	6.370	363.1 -> 319.0	61535	2.38 µg/L	96
		363.1 -> 169.0	10169		
PFHpS	7.685	449.0 -> 79.9	15193	2.27 µg/L	99
		449.0 -> 98.9	7375		
PFHxA	5.407	313.0 -> 269.0	50575	2.39 µg/L	97
		313.0 -> 118.9	2719		
PFHxS	7.131	398.7 -> 79.9	14645	2.07 µg/L	99
		398.7 -> 98.9	7048		
PFNA	7.558	463.0 -> 419.0	64206	2.38 µg/L	100
		463.0 -> 219.0	12603		
PFNS	8.644	548.8 -> 79.9	12880	2.22 µg/L	97
		548.8 -> 98.9	6547		
PFOA	7.028	413.0 -> 369.0	90204	2.38 µg/L	98
		413.0 -> 169.0	16221		
PFOS	8.178	498.9 -> 79.9	14055	2.15 µg/L	91
		498.9 -> 98.8	6654		
PFPeA	4.212	263.0 -> 219.0	67792	4.76 µg/L	100
PFPeS	6.422	349.1 -> 79.9	15388	2.20 µg/L	95
		349.1 -> 98.9	6807		
PFTeDA	9.640	713.1 -> 669.0	33602	2.41 µg/L	97
		713.1 -> 168.9	2899		
PFTrDA	9.296	663.0 -> 619.0	41437	2.37 µg/L	93
		663.0 -> 168.9	4880		
PFUnDA	8.480	563.1 -> 519.0	46070	2.52 µg/L	96
		563.1 -> 269.1	7790		
11CI-PF3OUdS	9.348	630.9 -> 450.9	62520	4.53 µg/L	99
		632.9 -> 452.9	19790		
9CI-PF3ONS	8.508	530.8 -> 351.0	101897	4.54 µg/L	97
		532.8 -> 353.0	31750		
ADONA	6.632	376.9 -> 250.9	239458	4.59 µg/L	99
		376.9 -> 84.8	63518		
HFPO-DA	5.783	284.9 -> 168.9	16808	4.89 µg/L	95
		284.9 -> 184.9	1940		
3:3FTCA	3.671	241.0 -> 177.0	10676	11.82 µg/L	97
		241.0 -> 117.0	1429		
5:3FTCA	6.086	341.0 -> 237.1	221657	60.45 µg/L	100
		341.0 -> 217.0	157890		
7:3FTCA	7.523	441.0 -> 316.9	145179	61.97 µg/L	91
		441.0 -> 336.9	299822		
EtFOSA	10.974	526.0 -> 219.0	26426	4.69 µg/L	97
		526.0 -> 169.0	33544		
EtFOSE	10.920	630.0 -> 58.9	71032	11.78 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	22775	5.02 µg/L	96
		511.9 -> 169.0	31344		
MeFOSE	10.673	616.1 -> 58.9	49847	12.10 µg/L	100
PFDoDS	9.767	699.1 -> 79.9	3453	2.32 µg/L	93
		699.1 -> 98.8	2022		
NFDHA	5.288	295.0 -> 201.0	12280	4.84 µg/L	98
		295.0 -> 84.9	3212		
PFMBA	4.626	279.0 -> 85.1	47012	4.81 µg/L	100
PFMPA	3.363	229.0 -> 84.9	36909	4.84 µg/L	100
PFEESA	5.875	314.8 -> 134.9	119251	4.27 µg/L	99
		314.8 -> 82.9	4328		

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

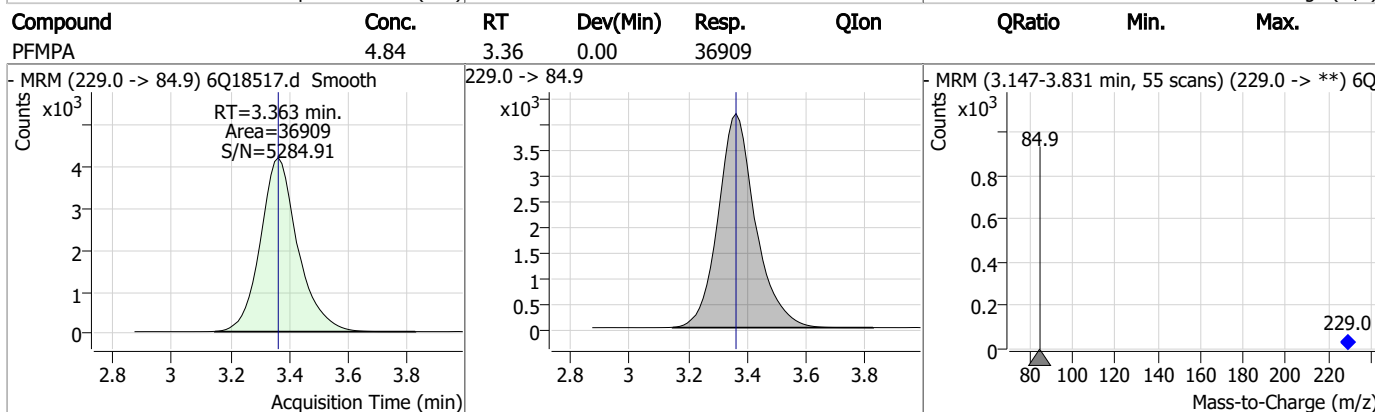
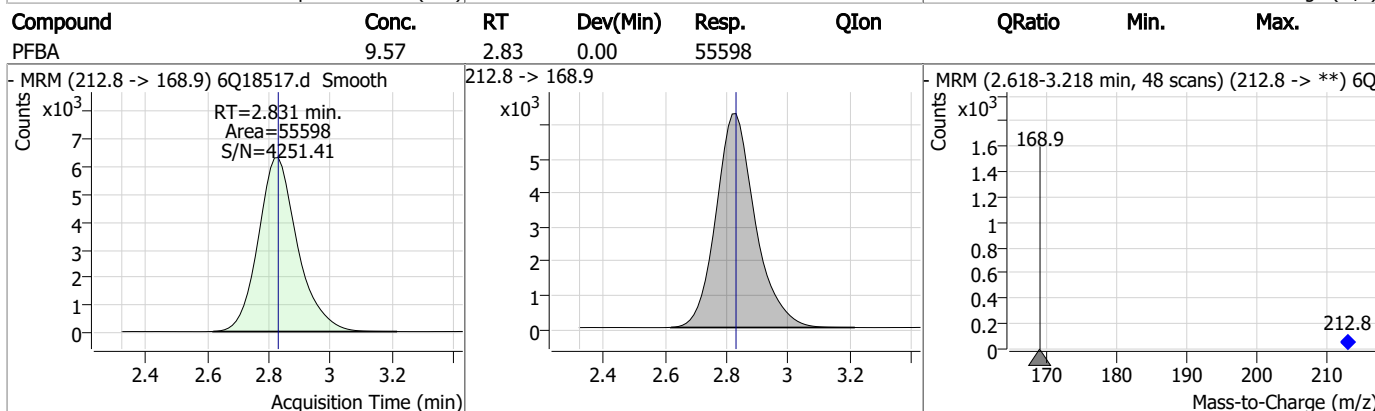
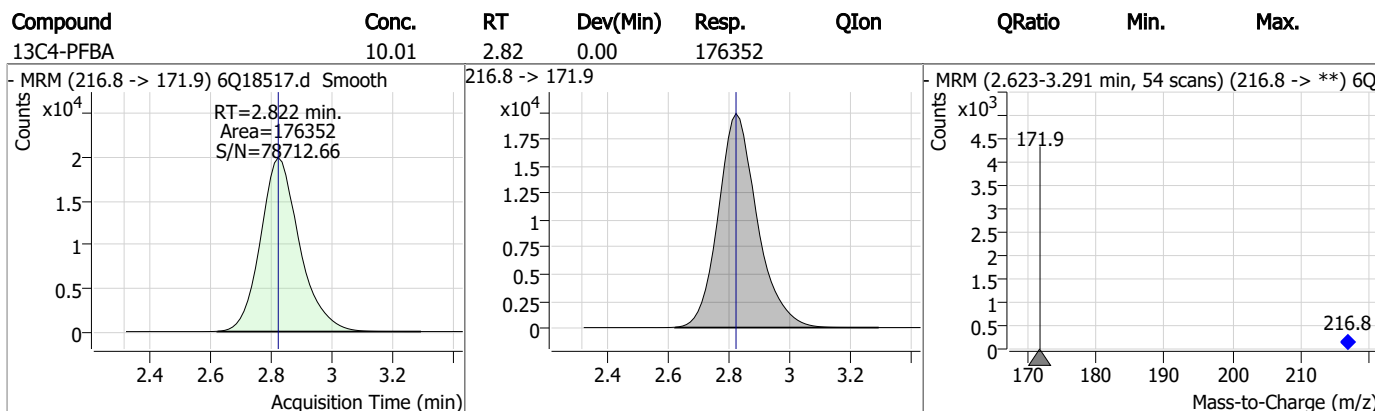
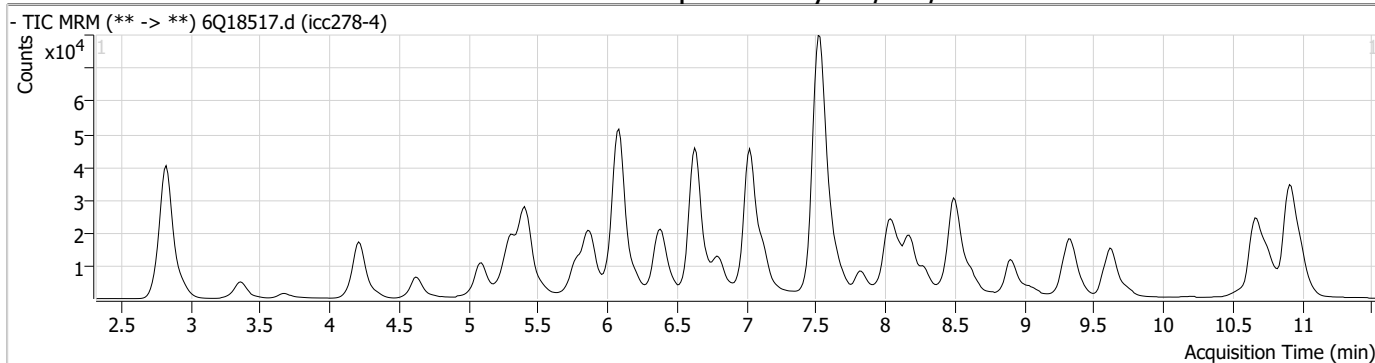
Perfluorinated Compounds by LC/MS/MS

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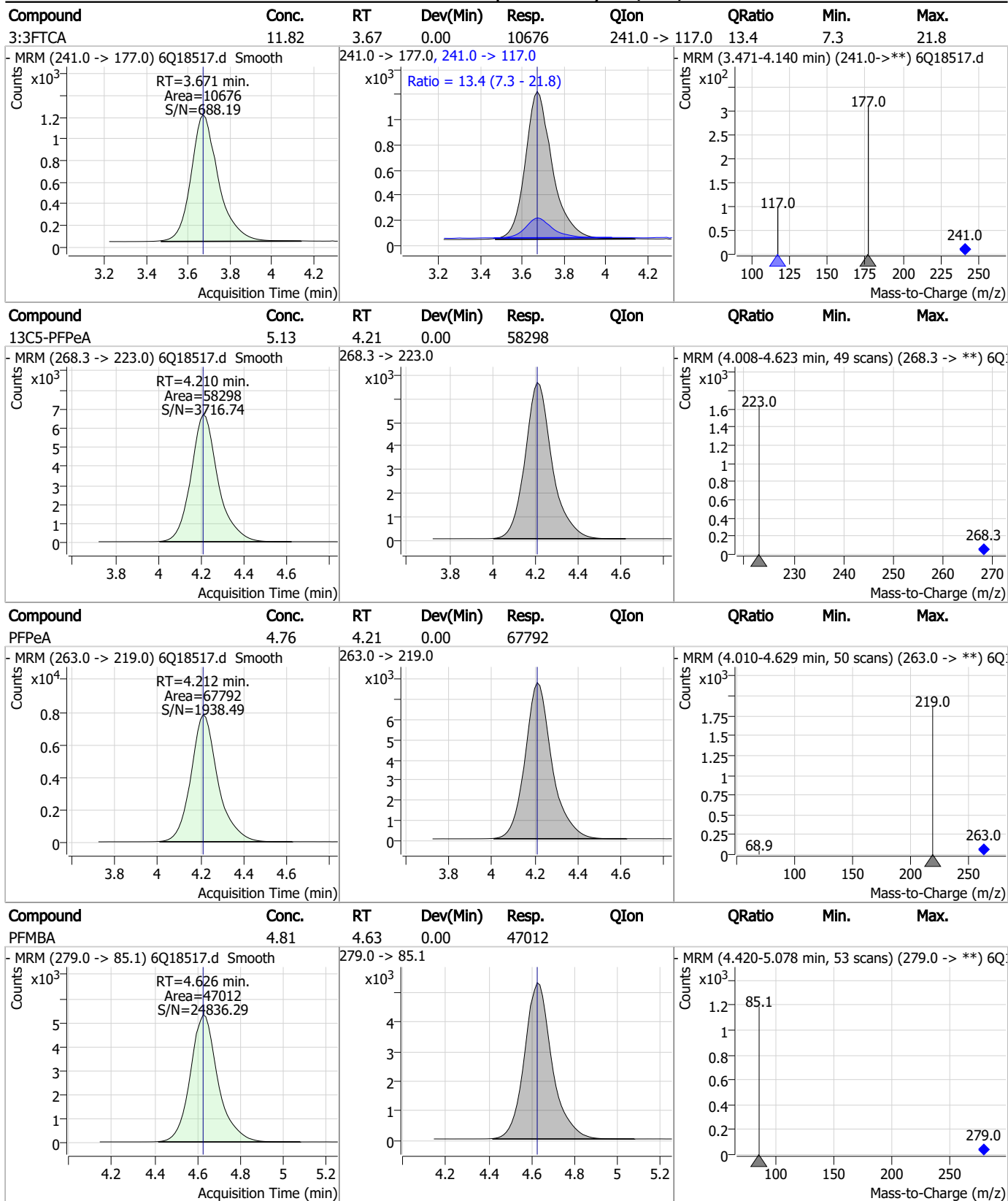
7.7.5
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Perfluorinated Compounds by LC/MS/MS

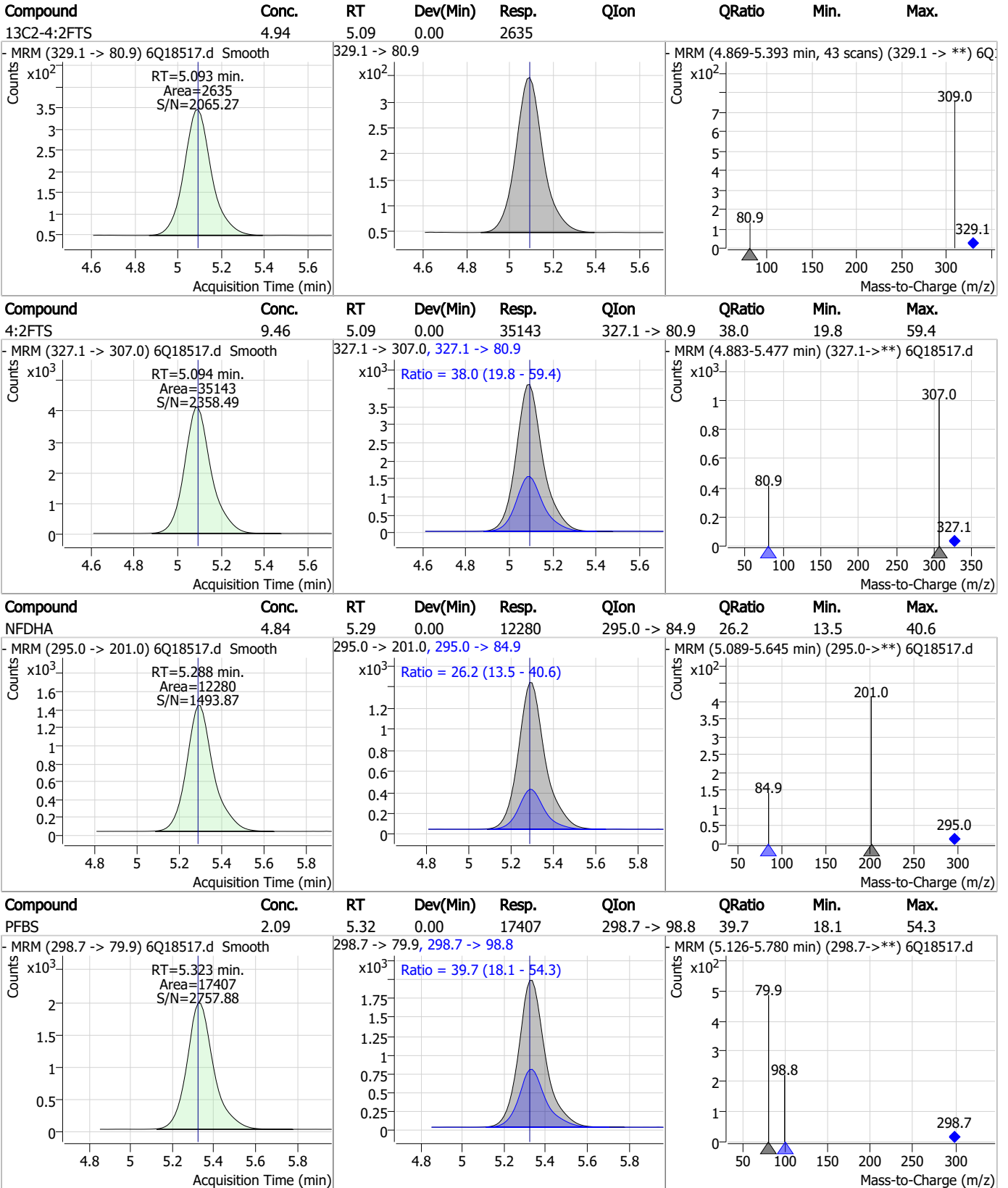


Perfluorinated Compounds by LC/MS/MS



7.7.5
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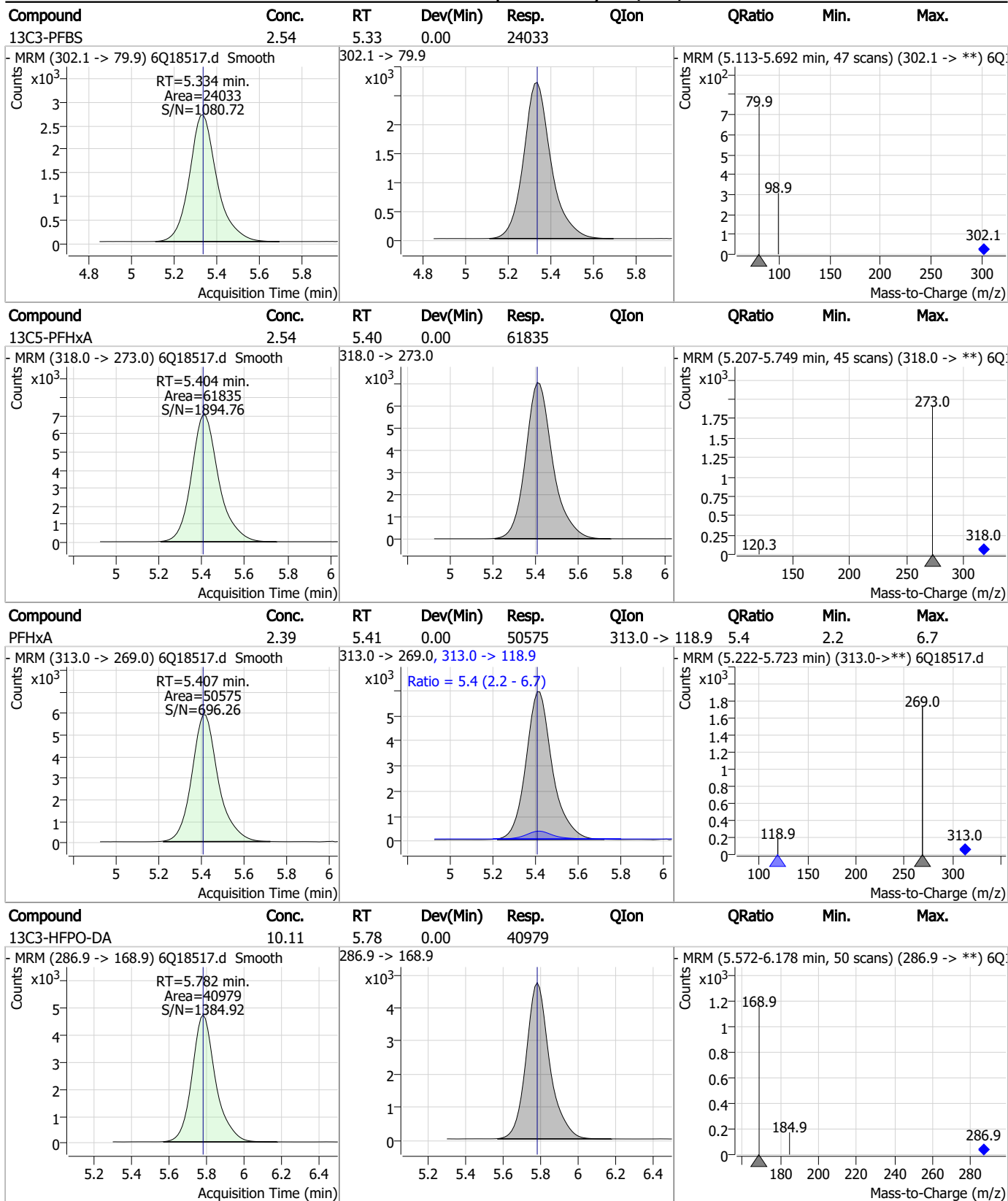
Perfluorinated Compounds by LC/MS/MS



7.7.5

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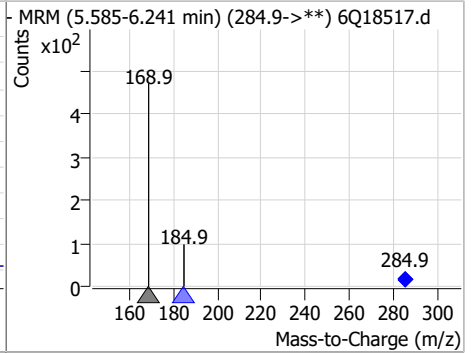
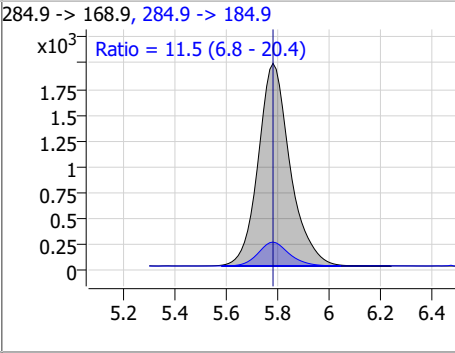
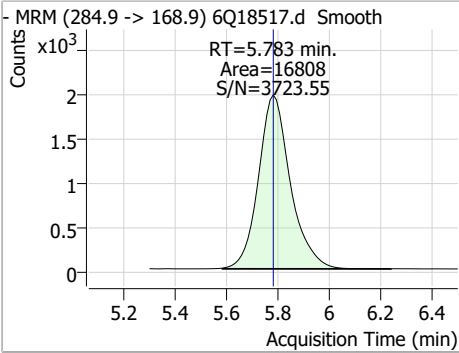
Perfluorinated Compounds by LC/MS/MS



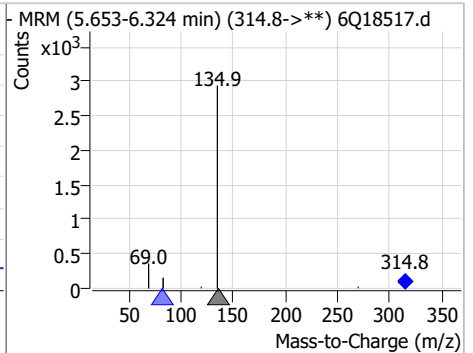
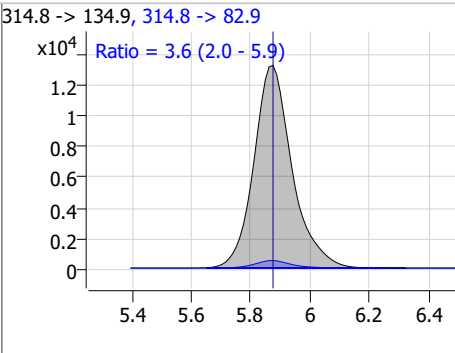
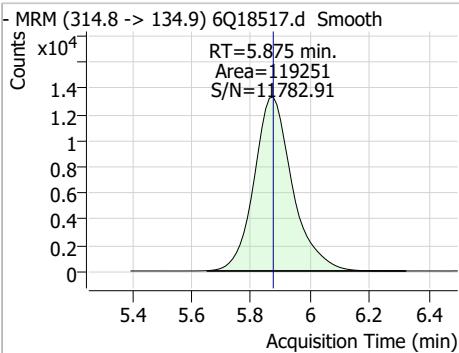
7.7.5
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Perfluorinated Compounds by LC/MS/MS

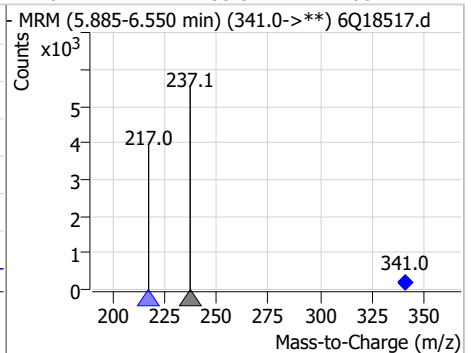
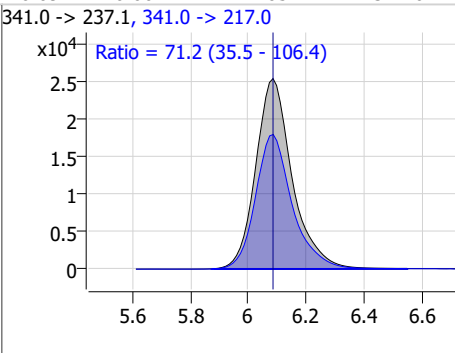
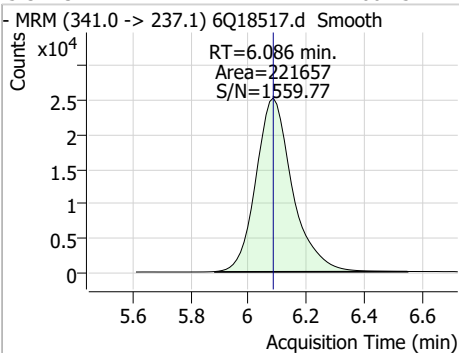
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.89	5.78	0.00	16808	284.9 -> 184.9	11.5	6.8	20.4



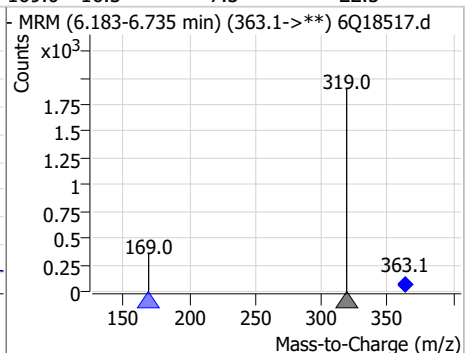
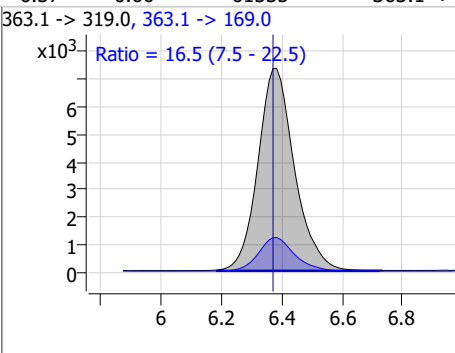
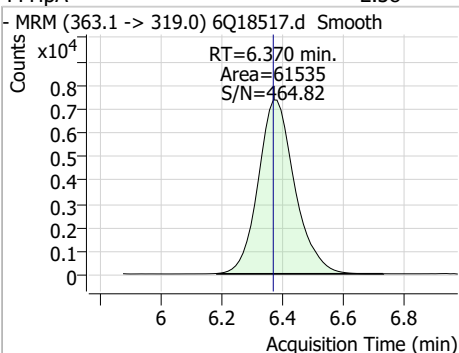
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.27	5.88	0.00	119251	314.8 -> 82.9	3.6	2.0	5.9



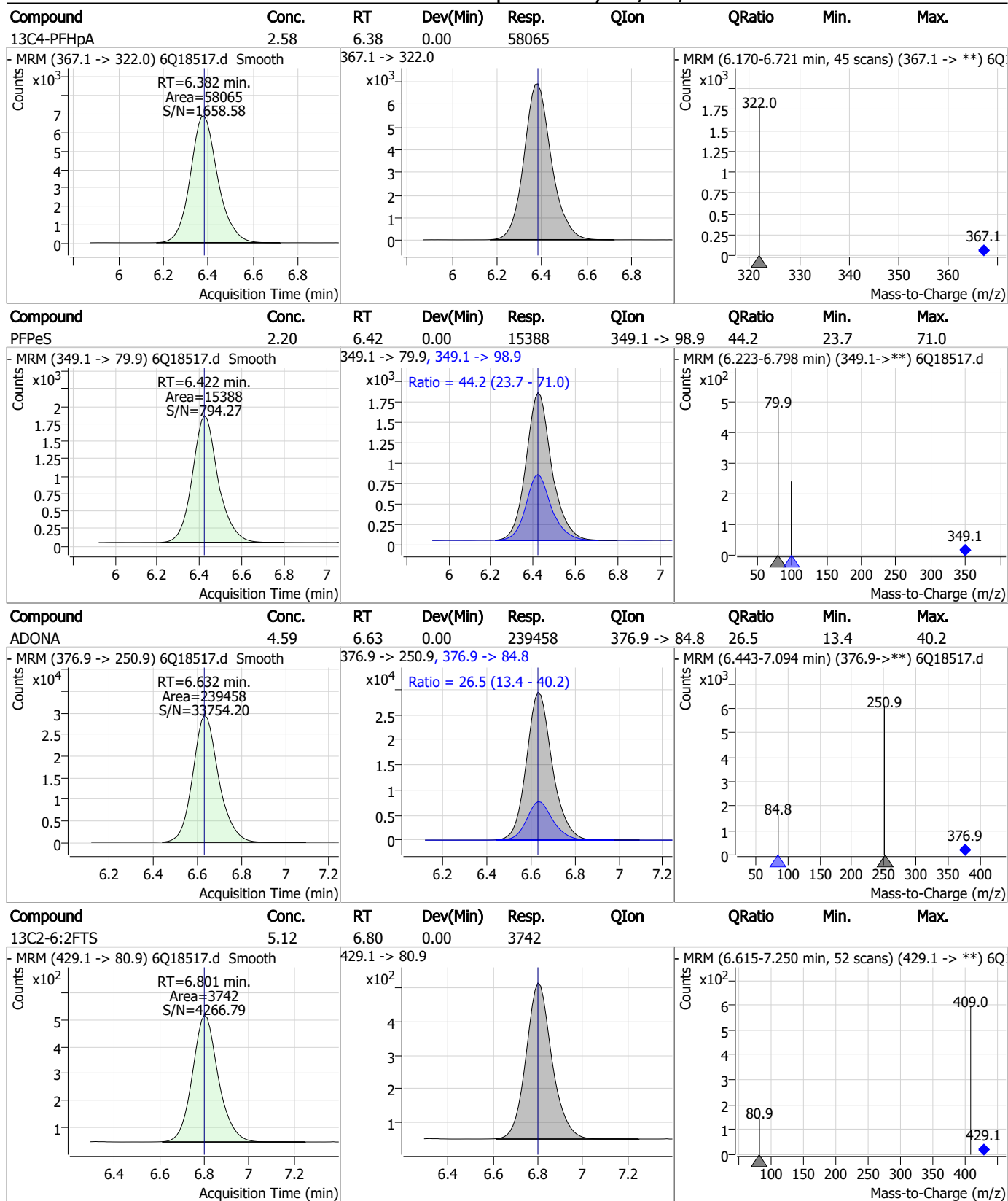
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	60.45	6.09	0.00	221657	341.0 -> 217.0	71.2	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.38	6.37	0.00	61535	363.1 -> 169.0	16.5	7.5	22.5

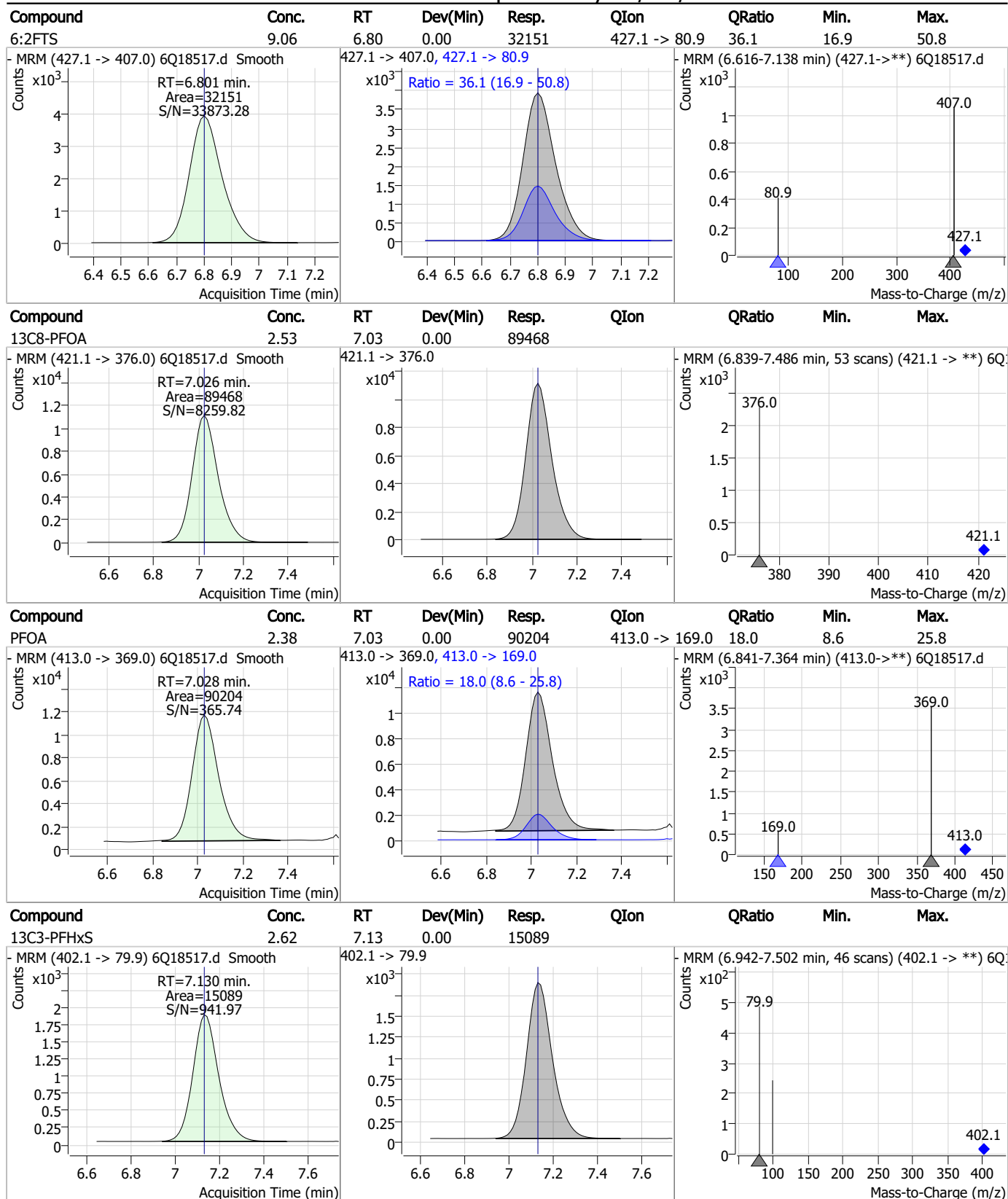


Perfluorinated Compounds by LC/MS/MS



7.7.5
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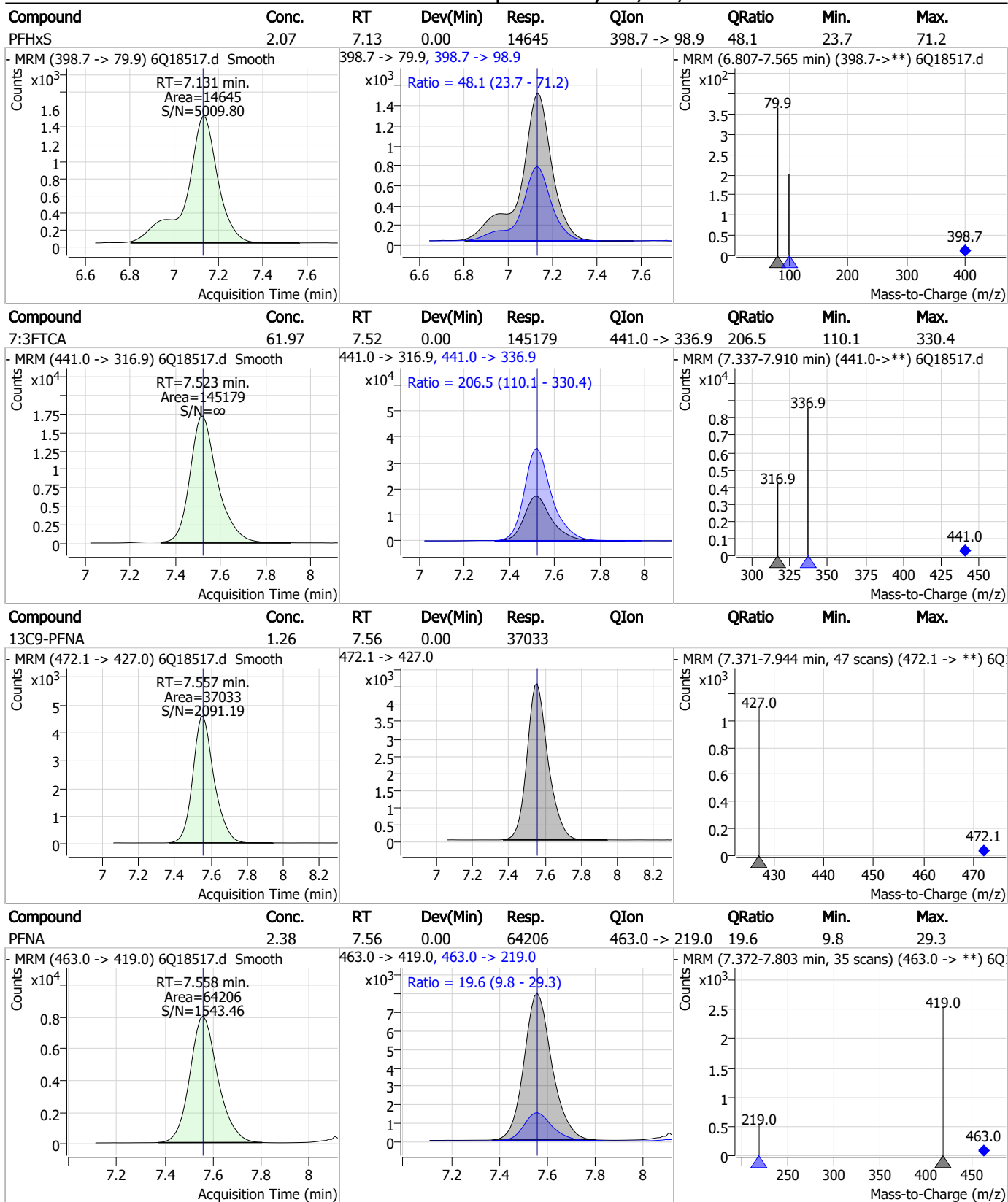
Perfluorinated Compounds by LC/MS/MS



7.7.5

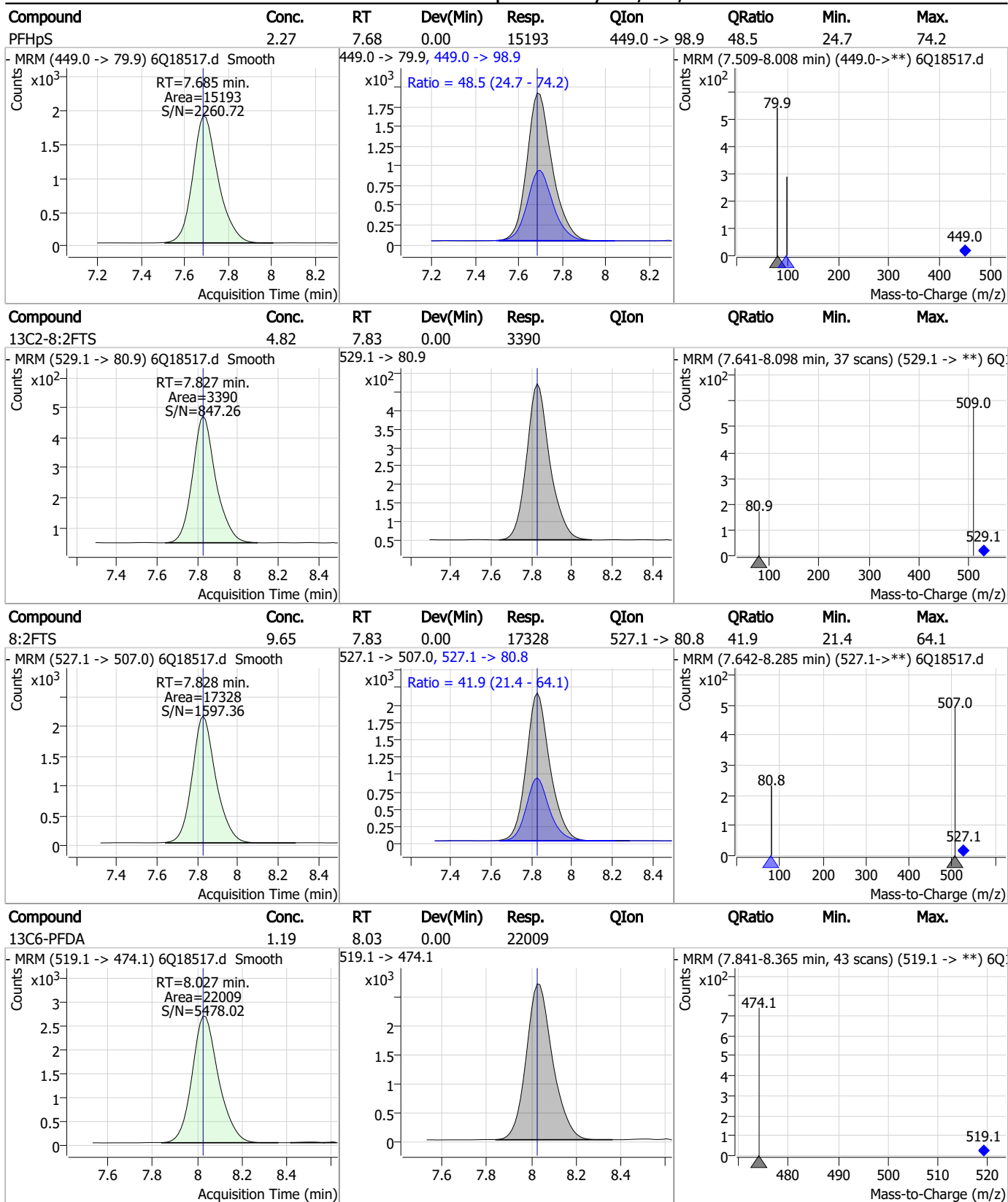
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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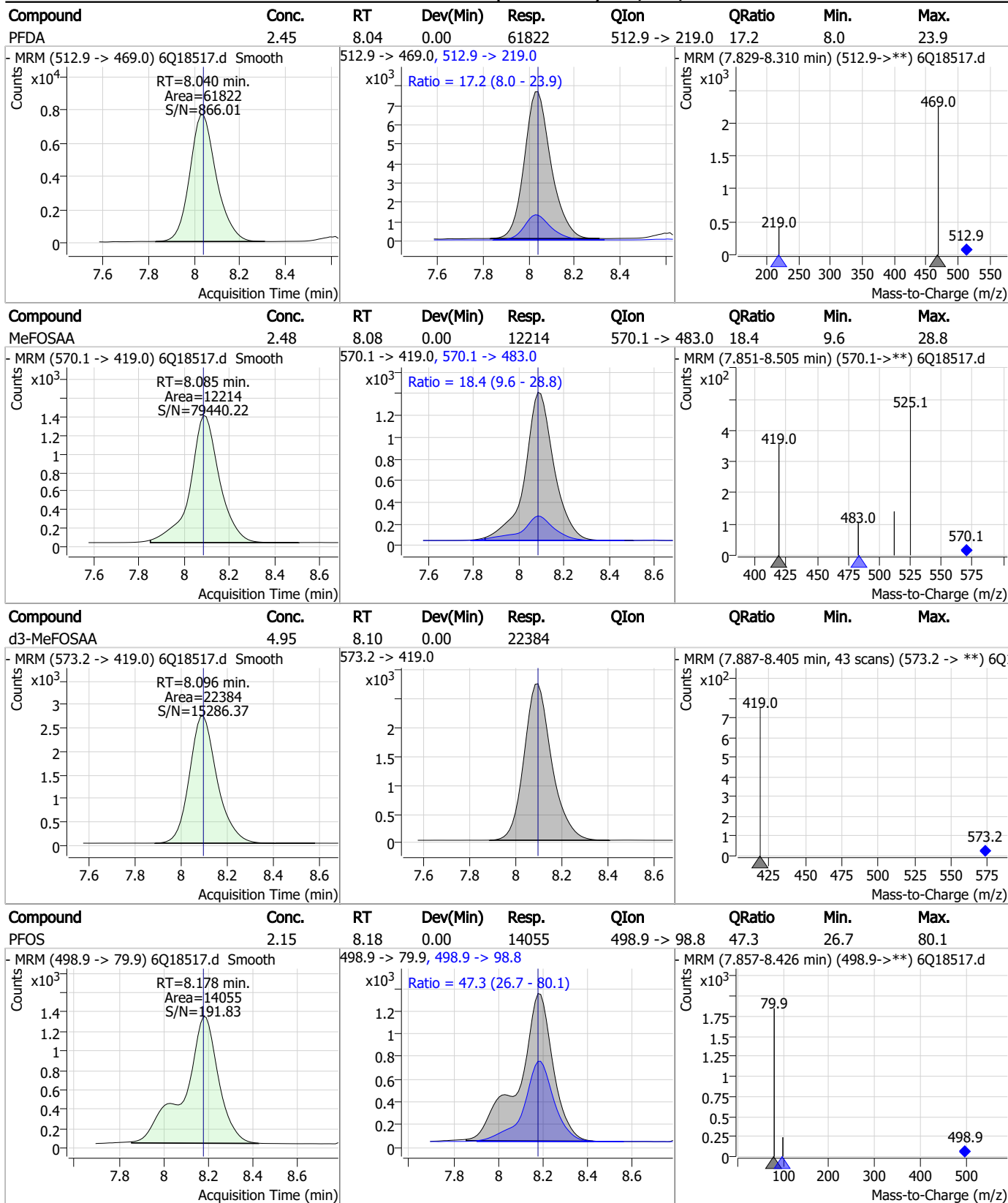
Perfluorinated Compounds by LC/MS/MS



7.7.5

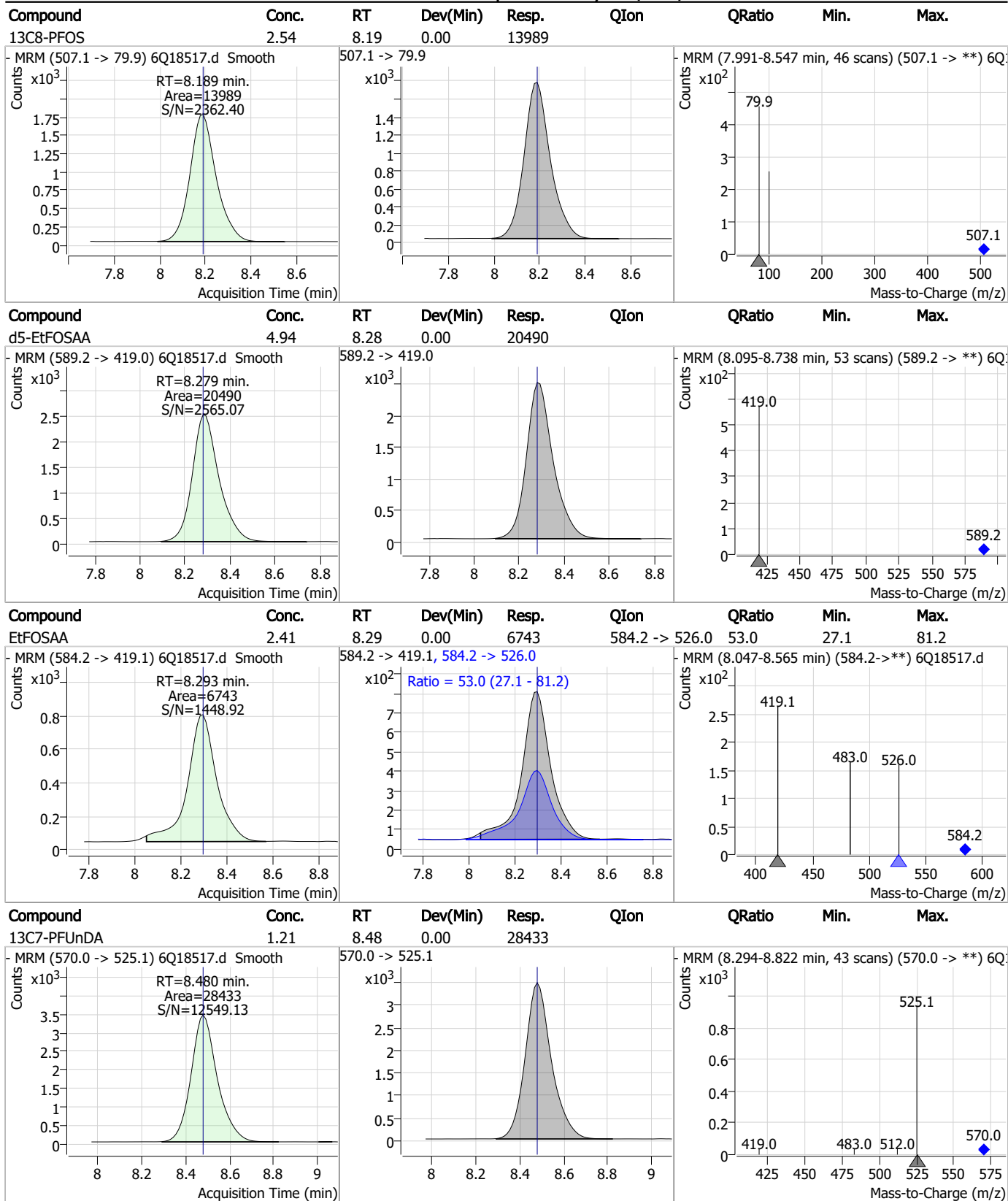
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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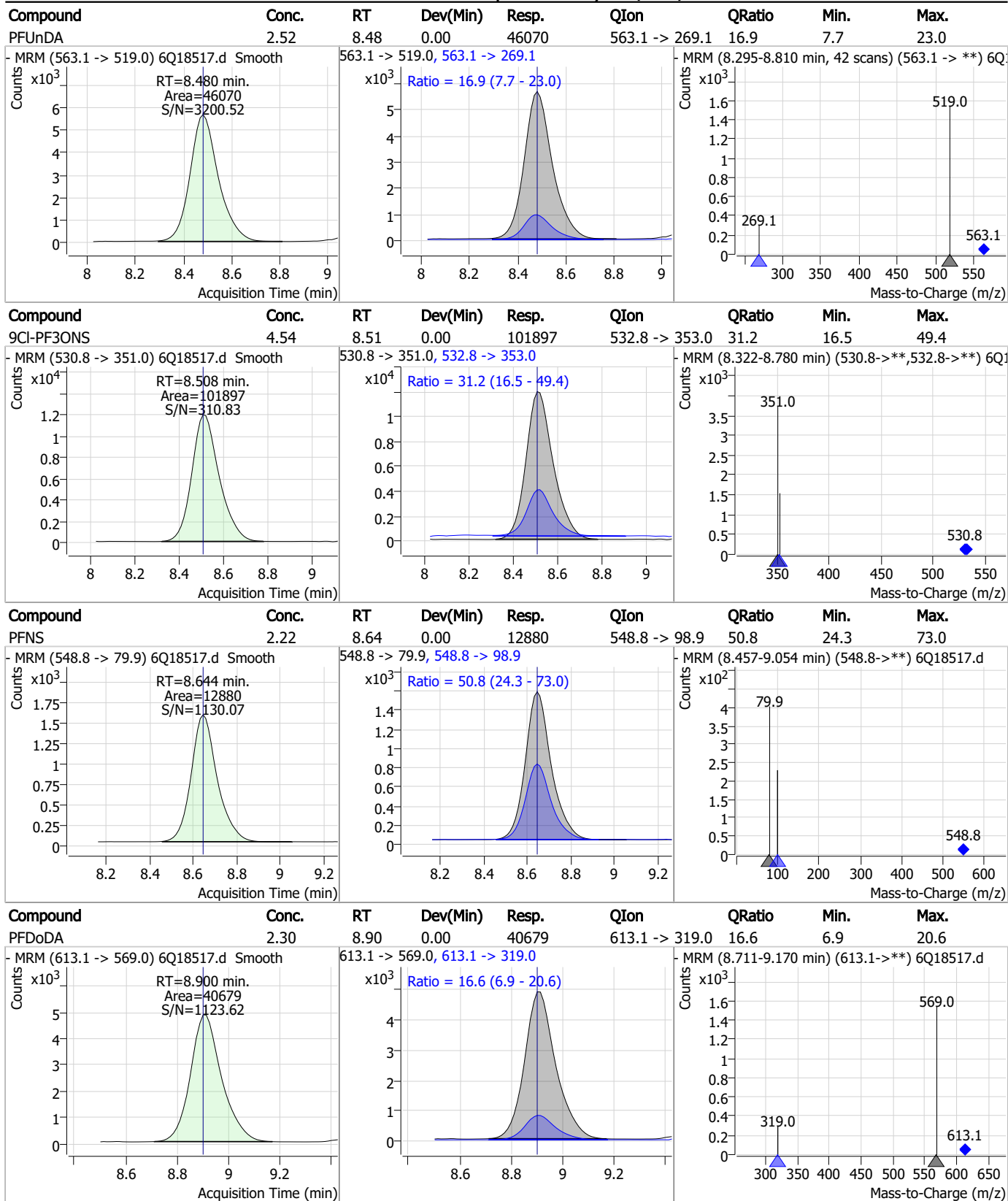
Perfluorinated Compounds by LC/MS/MS



7.7.5

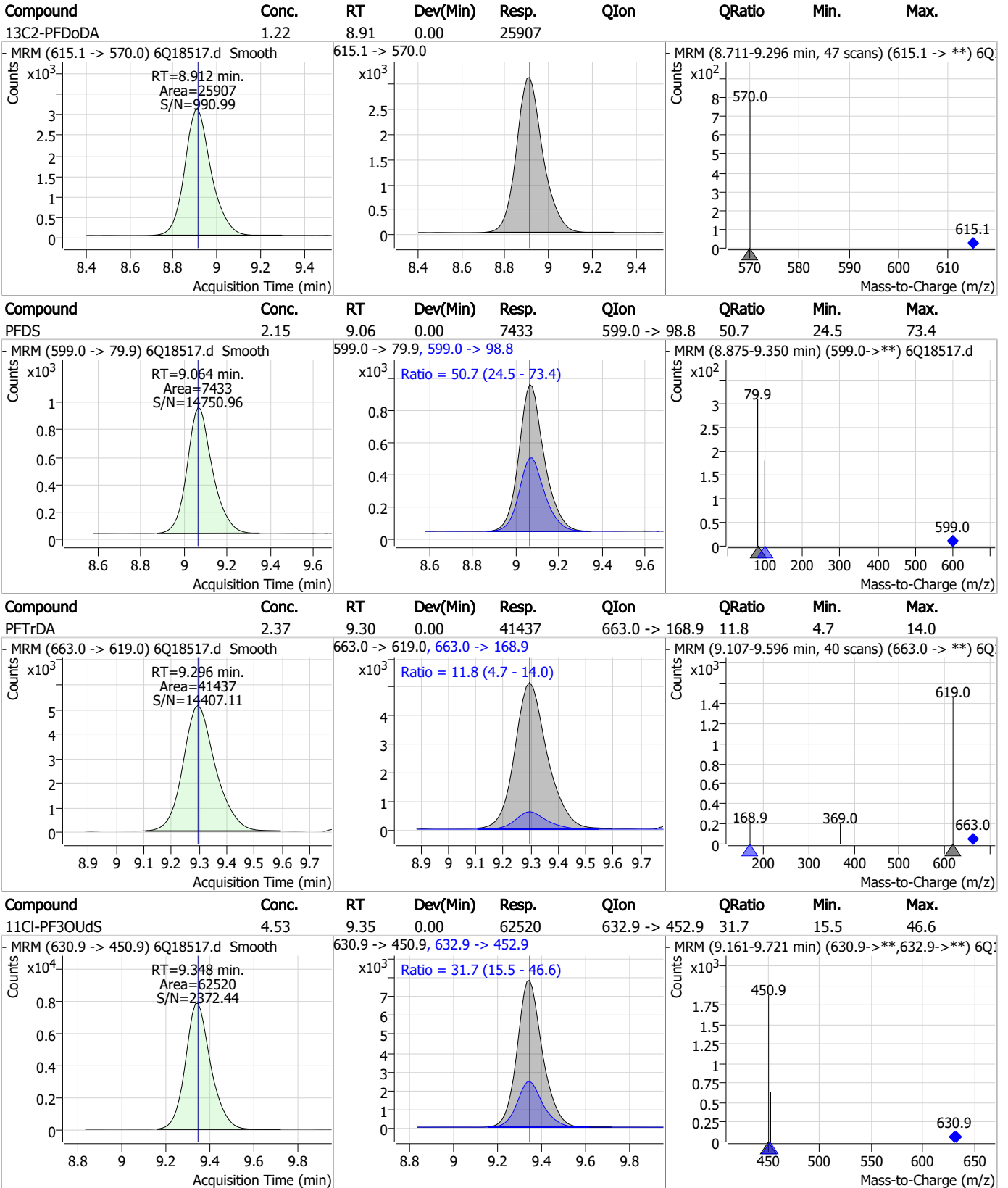
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Perfluorinated Compounds by LC/MS/MS

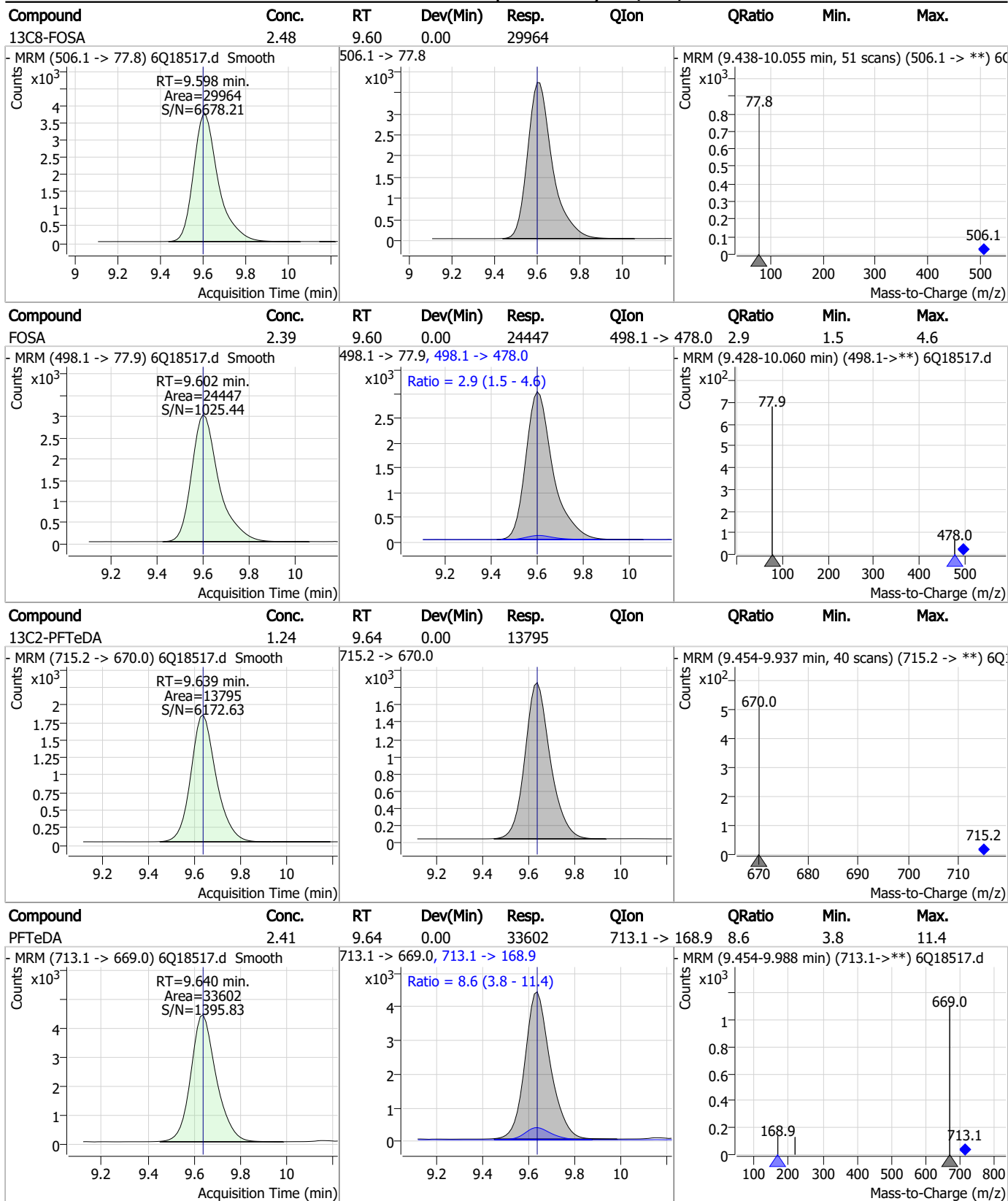


7.7.5
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Perfluorinated Compounds by LC/MS/MS

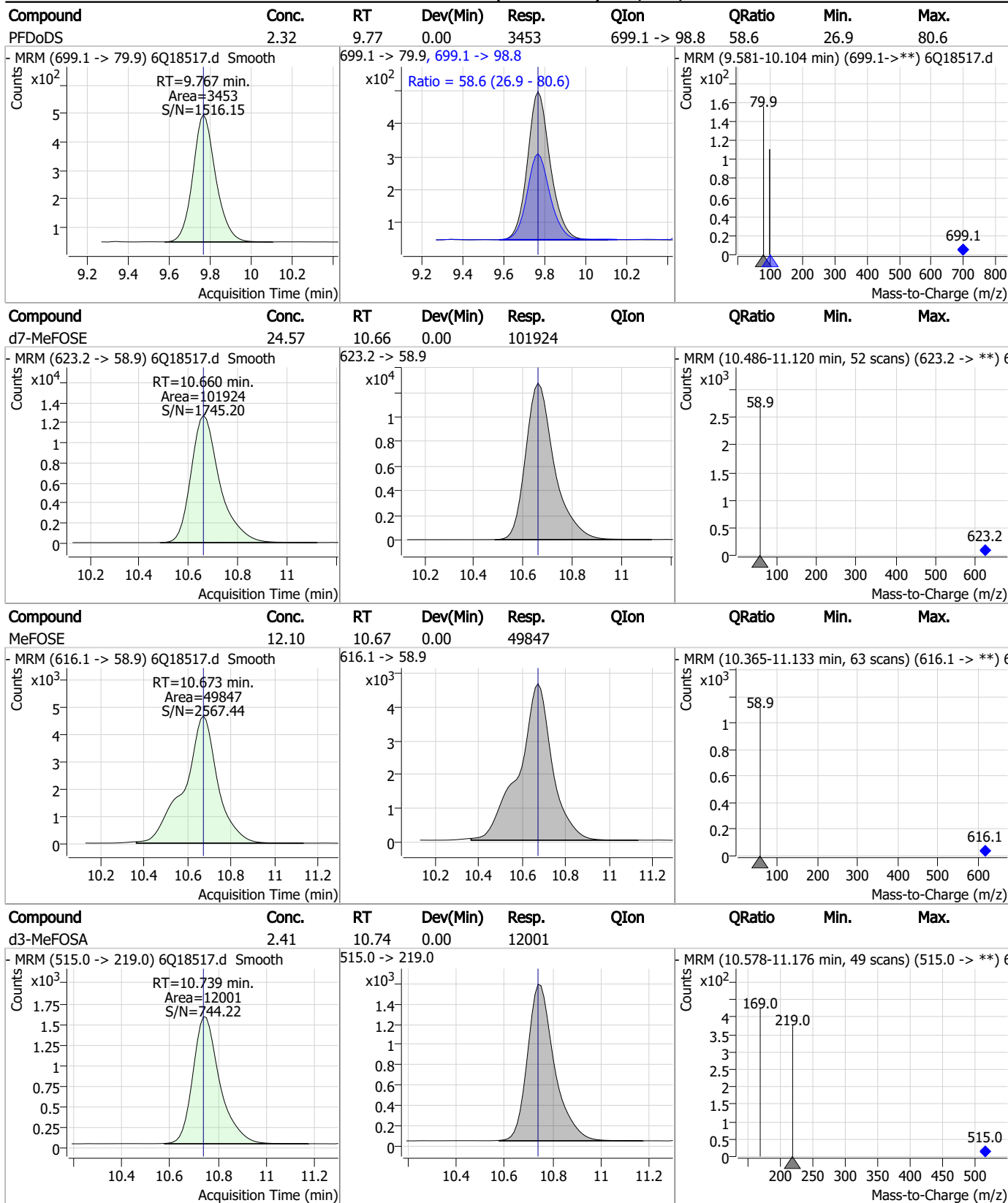


Perfluorinated Compounds by LC/MS/MS



7.7.5
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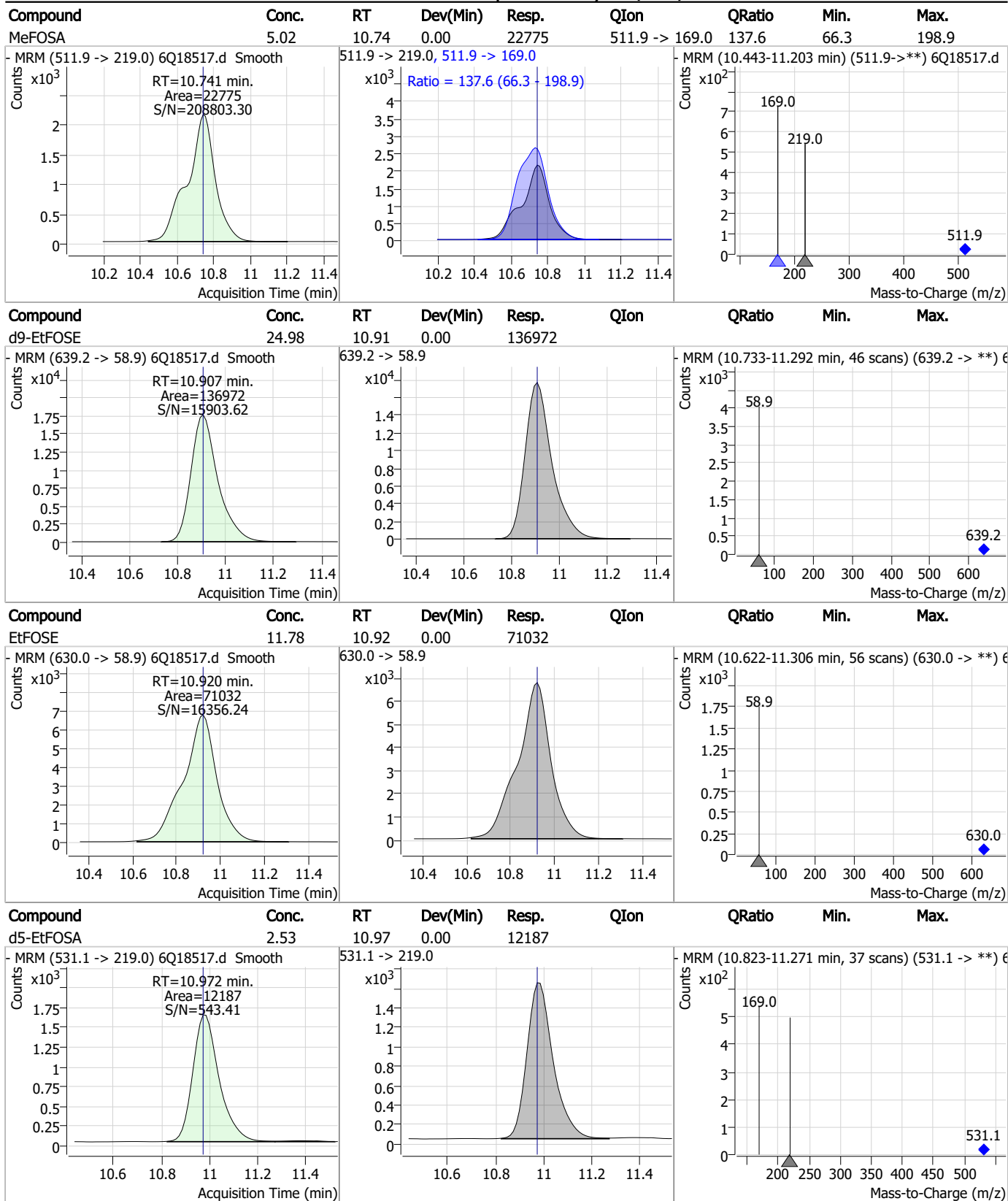
Perfluorinated Compounds by LC/MS/MS



7.7.5

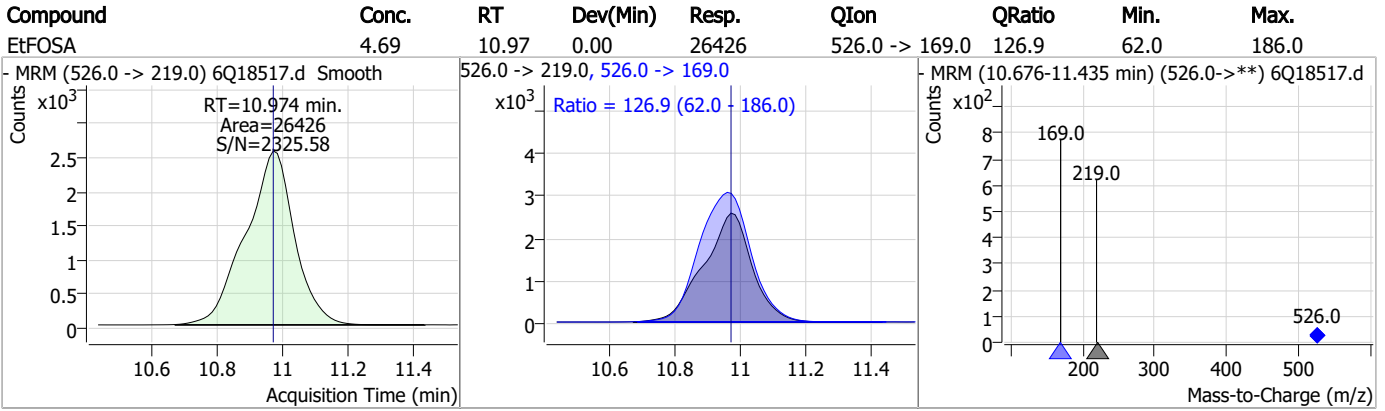
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Perfluorinated Compounds by LC/MS/MS



7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18518.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 4:18:59 PM
 Sample Name : ic278-5
 Vial : P1-A6
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	176938	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	59166	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	64388	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	57907	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	89173	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	35011	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	23037	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	29451	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	26580	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	14003	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	30083	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	24385	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14657	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13882	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	2805	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	3749	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3705	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	23787	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	42722	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	21128	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	102487	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	135640	25.00 µg/L	0.000
M5-EtFOSA	10.985	531.1 -> 219.0	11828	2.50 µg/L	0.012
M3-MeFOSA	10.752	515.0 -> 219.0	12246	2.50 µg/L	0.012
13C4-PFOS	8.178	502.8 -> 79.9	17272	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	73631	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10602	2.50 µg/L	0.000
13C4-PFOA	7.027	417.1 -> 372.0	90812	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	29649	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	47760	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	60117	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2805	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3749	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3705	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C2-PFDoDA	8.912	615.1 -> 570.0	26580	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C2-PFTeDA	9.639	715.2 -> 670.0	14003	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C3-PFBS	5.334	302.1 -> 79.9	24385	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	14657	2.56 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 = 102.4%	
13C4-PFBA	2.822	216.8 -> 171.9	176938	10.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.382	367.1 -> 322.0	57907	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C5-PFHxA	5.417	318.0 -> 273.0	64388	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C5-PFPeA	4.210	268.3 -> 223.0	59166	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C6-PFDA	8.027	519.1 -> 474.1	23037	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C7-PFUnDA	8.480	570.0 -> 525.1	29451	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-FOSA	9.598	506.1 -> 77.8	30083	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-PFOA	7.026	421.1 -> 376.0	89173	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-PFOS	8.177	507.1 -> 79.9	13882	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C9-PFNA	7.545	472.1 -> 427.0	35011	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.3%	
d3-MeFOSAA	8.084	573.2 -> 419.0	23787	5.38 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42722	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d3-MeFOSA	10.752	515.0 -> 219.0	12246	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	21128	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
d7-MeFOSE	10.660	623.2 -> 58.9	102487	25.24 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	135640	25.26 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d5-EtFOSA	10.985	531.1 -> 219.0	11828	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	69741	17.63 µg/L	97
		327.1 -> 80.9	26537		
6:2FTS	6.801	427.1 -> 407.0	67856	19.08 µg/L	97
		427.1 -> 80.9	21929		
8:2FTS	7.828	527.1 -> 507.0	34735	17.71 µg/L	100
		527.1 -> 80.8	14884		
EtFOSAA	8.293	584.2 -> 419.1	13472	4.66 µg/L	97
		584.2 -> 526.0	7049		
FOSA	9.602	498.1 -> 77.9	49279	4.81 µg/L	99
		498.1 -> 478.0	1345		
MeFOSAA	8.085	570.1 -> 419.0	24395	4.66 µg/L	99
		570.1 -> 483.0	4519		
PFBA	2.831	212.8 -> 168.9	112044	19.22 µg/L	100
PFBS	5.335	298.7 -> 79.9	35351	4.19 µg/L	100
		298.7 -> 98.8	12885		
PFDA	8.027	512.9 -> 469.0	134491	5.09 µg/L	97
		512.9 -> 219.0	19918		
PFDoDA	8.913	613.1 -> 569.0	84825	4.67 µg/L	94
		613.1 -> 319.0	13525		
PFDS	9.064	599.0 -> 79.9	15377	4.48 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	7506		
PFHpA	6.382	363.1 -> 319.0	122535	4.76 µg/L	97
		363.1 -> 169.0	19938		
PFHpS	7.685	449.0 -> 79.9	30124	4.54 µg/L	98
		449.0 -> 98.9	14542		
PFHxA	5.420	313.0 -> 269.0	100668	4.57 µg/L	98
		313.0 -> 118.9	5267		
PFHxS	7.131	398.7 -> 79.9	29413	4.28 µg/L	99
		398.7 -> 98.9	14099		
PFNA	7.558	463.0 -> 419.0	124399	4.89 µg/L	99
		463.0 -> 219.0	24946		
PFNS	8.644	548.8 -> 79.9	26036	4.52 µg/L	98
		548.8 -> 98.9	13007		
PFOA	7.028	413.0 -> 369.0	188092	4.98 µg/L	99
		413.0 -> 169.0	33359		
PFOS	8.178	498.9 -> 79.9	28590	4.40 µg/L	93
		498.9 -> 98.8	13799		
PFPeA	4.212	263.0 -> 219.0	136051	9.41 µg/L	100
PFPeS	6.422	349.1 -> 79.9	31220	4.60 µg/L	94
		349.1 -> 98.9	13491		
PFTeDA	9.640	713.1 -> 669.0	66697	4.72 µg/L	97
		713.1 -> 168.9	5778		
PFTrDA	9.296	663.0 -> 619.0	84051	4.69 µg/L	95
		663.0 -> 168.9	9344		
PFUnDA	8.480	563.1 -> 519.0	89189	4.70 µg/L	97
		563.1 -> 269.1	14828		
11CI-PF3OUdS	9.336	630.9 -> 450.9	127858	8.88 µg/L	99
		632.9 -> 452.9	40503		
9CI-PF3ONS	8.508	530.8 -> 351.0	200554	8.57 µg/L	98
		532.8 -> 353.0	63554		
ADONA	6.632	376.9 -> 250.9	472264	8.68 µg/L	97
		376.9 -> 84.8	133230		
HFPO-DA	5.783	284.9 -> 168.9	33212	9.27 µg/L	95
		284.9 -> 184.9	3895		
3:3FTCA	3.671	241.0 -> 177.0	21399	23.34 µg/L	97
		241.0 -> 117.0	2853		
5:3FTCA	6.086	341.0 -> 237.1	436640	114.37 µg/L	95
		341.0 -> 217.0	329173		
7:3FTCA	7.523	441.0 -> 316.9	278613	114.21 µg/L	99
		441.0 -> 336.9	610015		
EtFOSA	10.974	526.0 -> 219.0	53817	9.85 µg/L	98
		526.0 -> 169.0	67753		
EtFOSE	10.920	630.0 -> 58.9	145851	24.42 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	44051	9.52 µg/L	92
		511.9 -> 169.0	62503		
MeFOSE	10.673	616.1 -> 58.9	101245	24.44 µg/L	100
PFDoDS	9.767	699.1 -> 79.9	6668	4.51 µg/L	93
		699.1 -> 98.8	3898		
NFDHA	5.299	295.0 -> 201.0	24933	9.45 µg/L	98
		295.0 -> 84.9	6485		
PFMBA	4.626	279.0 -> 85.1	94012	9.49 µg/L	100
PFMPA	3.363	229.0 -> 84.9	73270	9.47 µg/L	100
PFEESA	5.875	314.8 -> 134.9	241408	8.30 µg/L	99
		314.8 -> 82.9	8889		

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

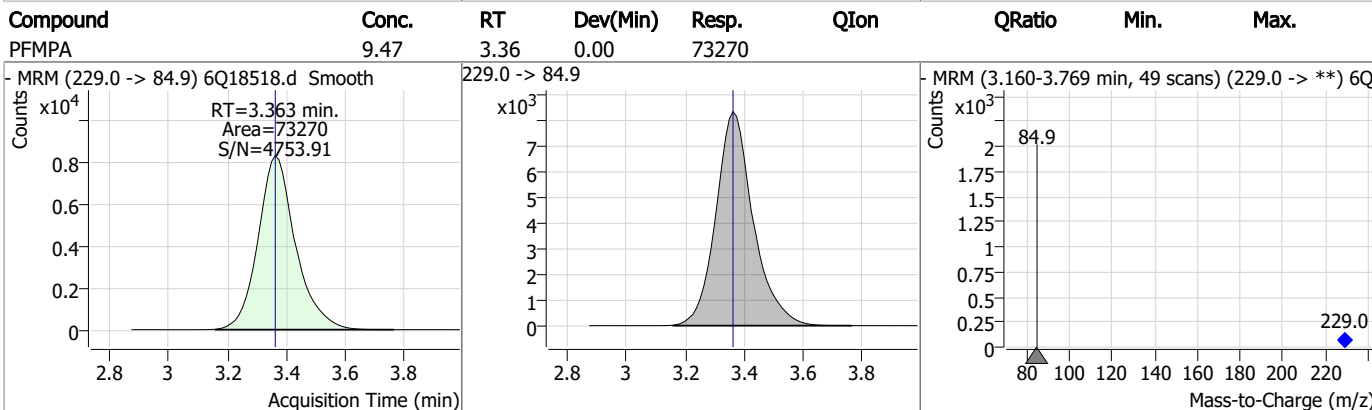
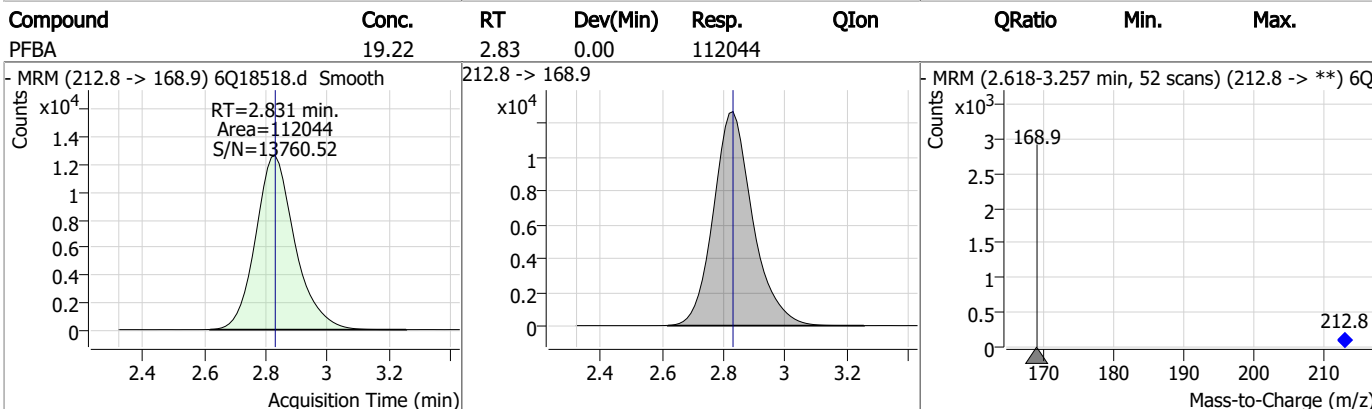
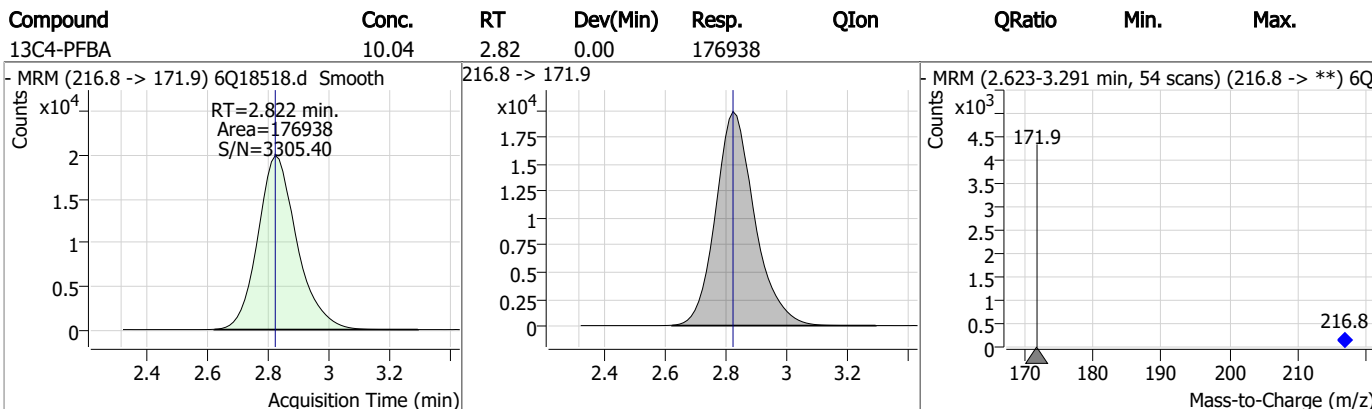
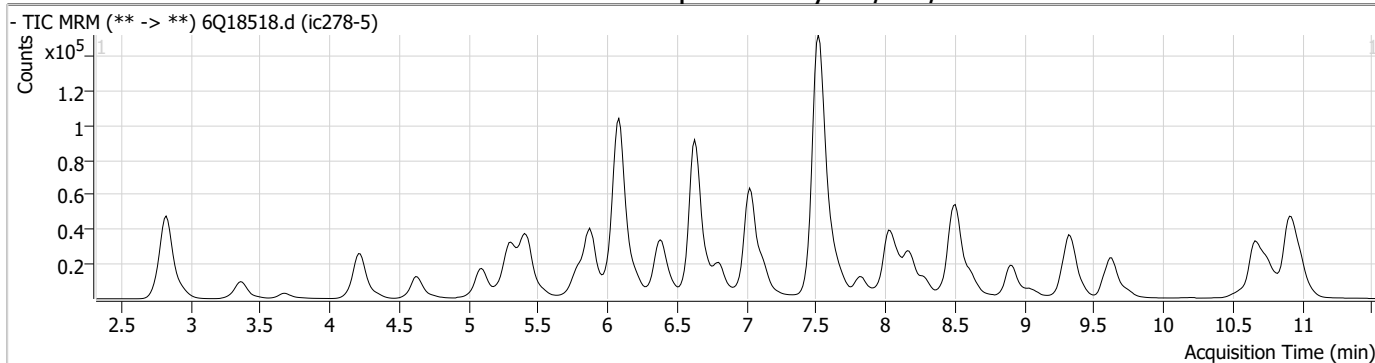
Perfluorinated Compounds by LC/MS/MS

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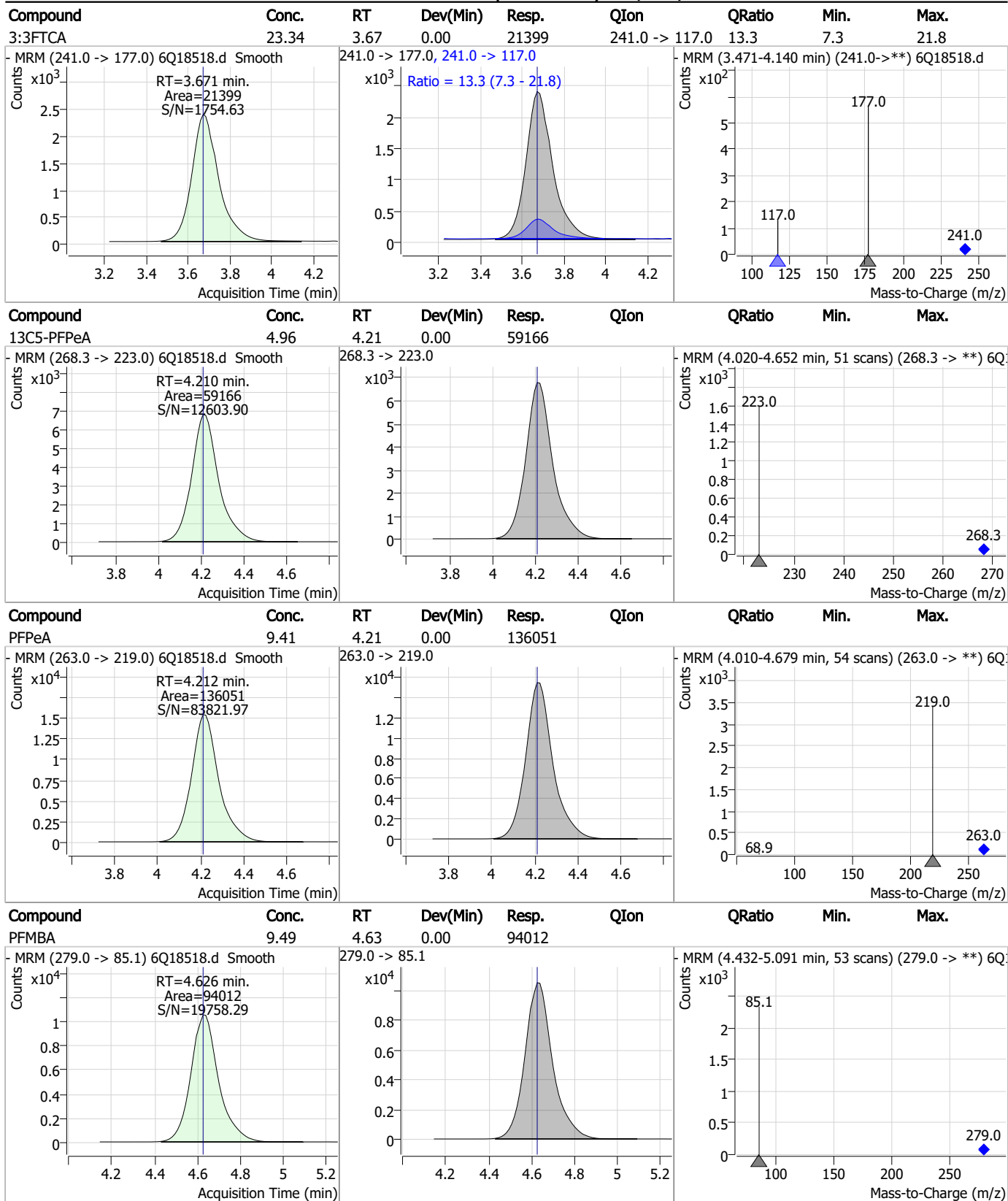
7.7.6

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Perfluorinated Compounds by LC/MS/MS

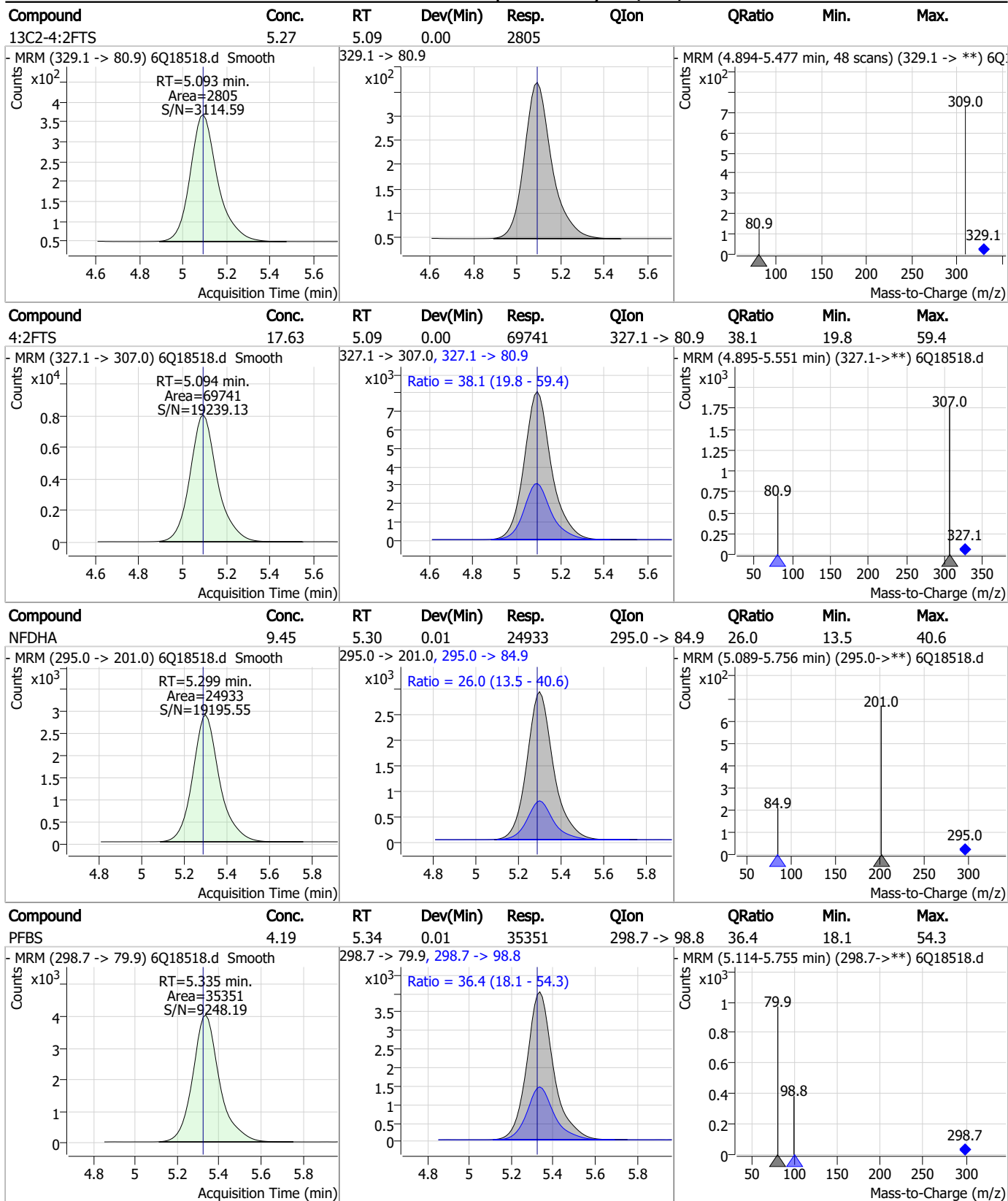


Perfluorinated Compounds by LC/MS/MS



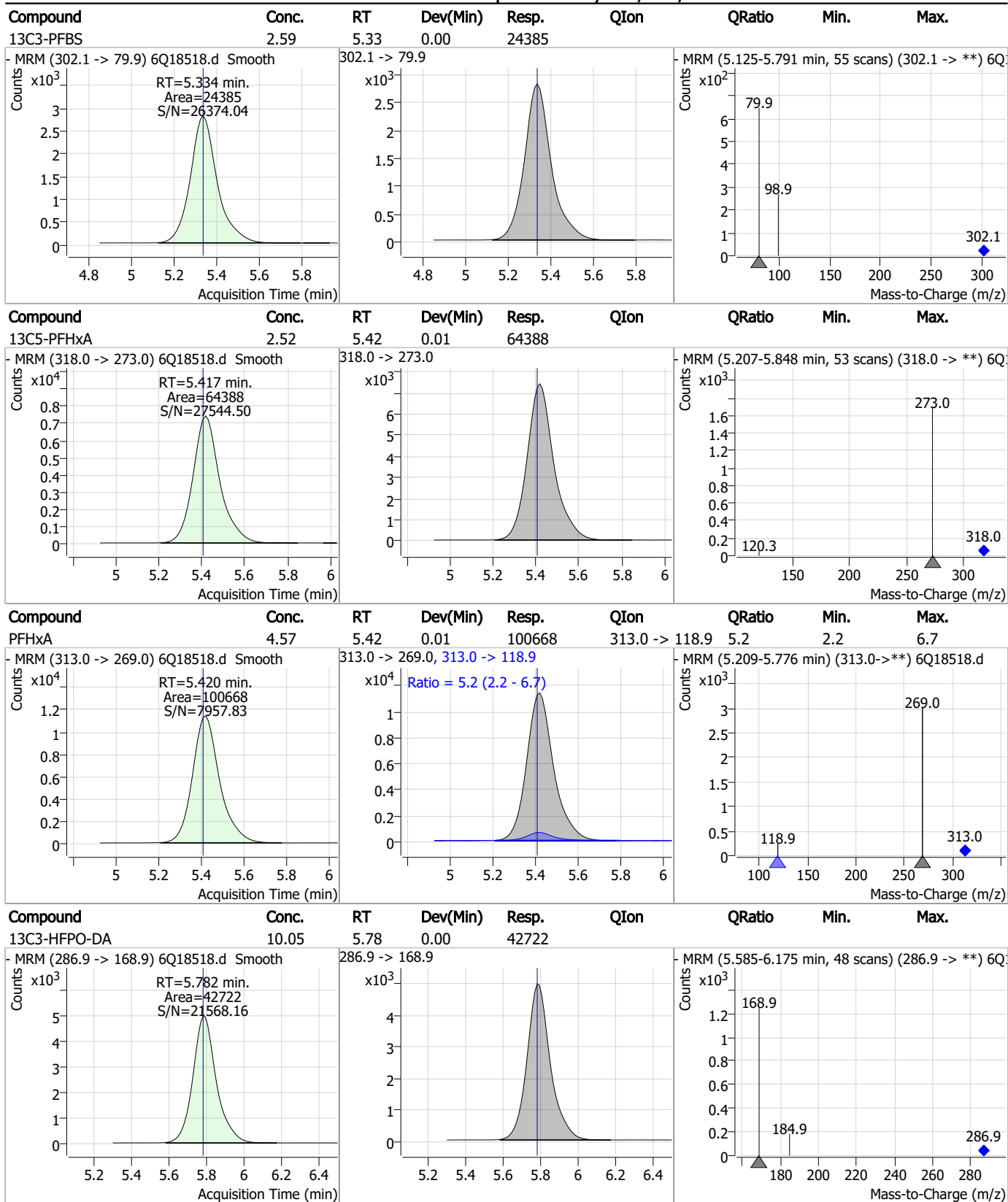
7.7.6
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Perfluorinated Compounds by LC/MS/MS



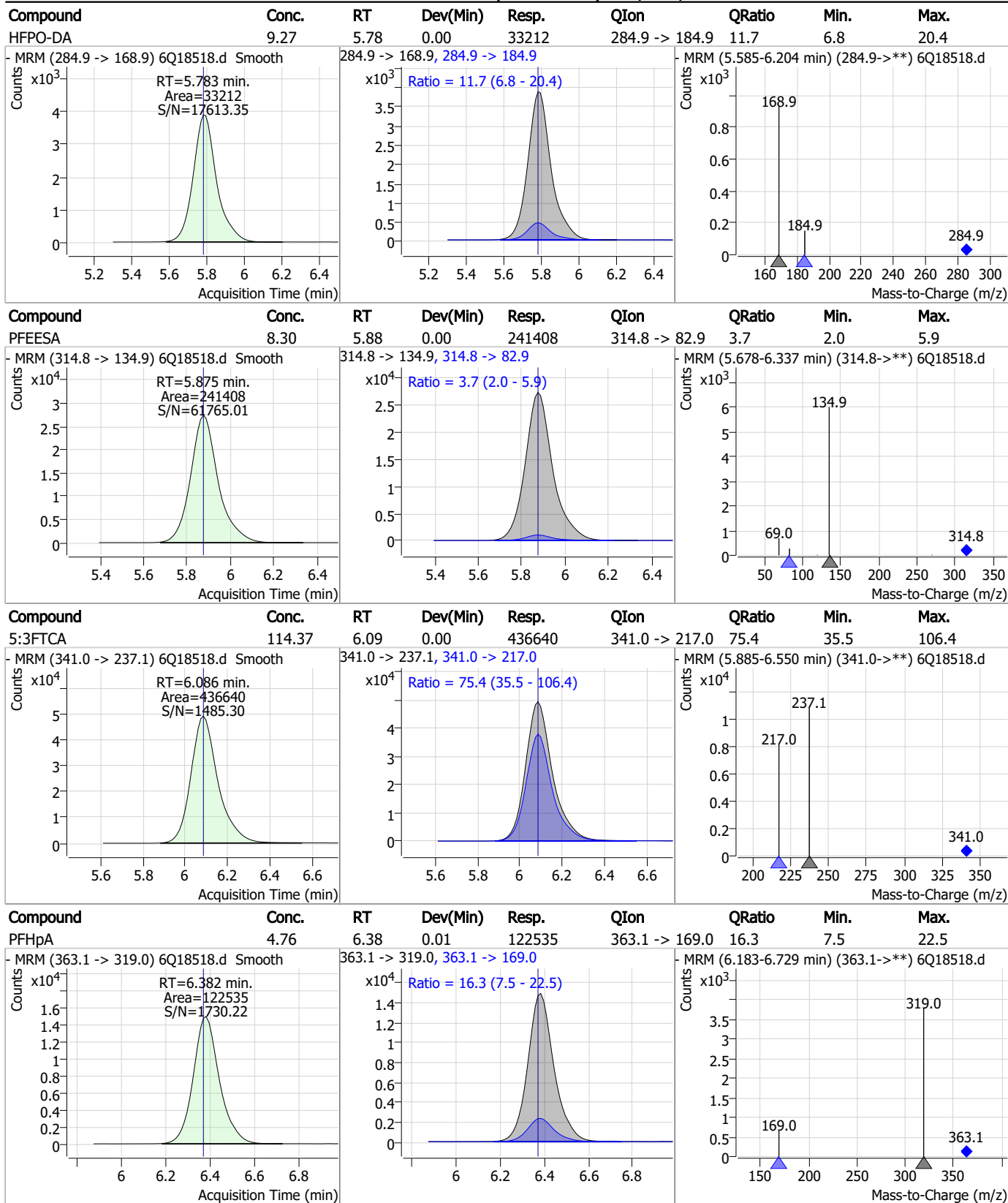
7.7.6
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Perfluorinated Compounds by LC/MS/MS



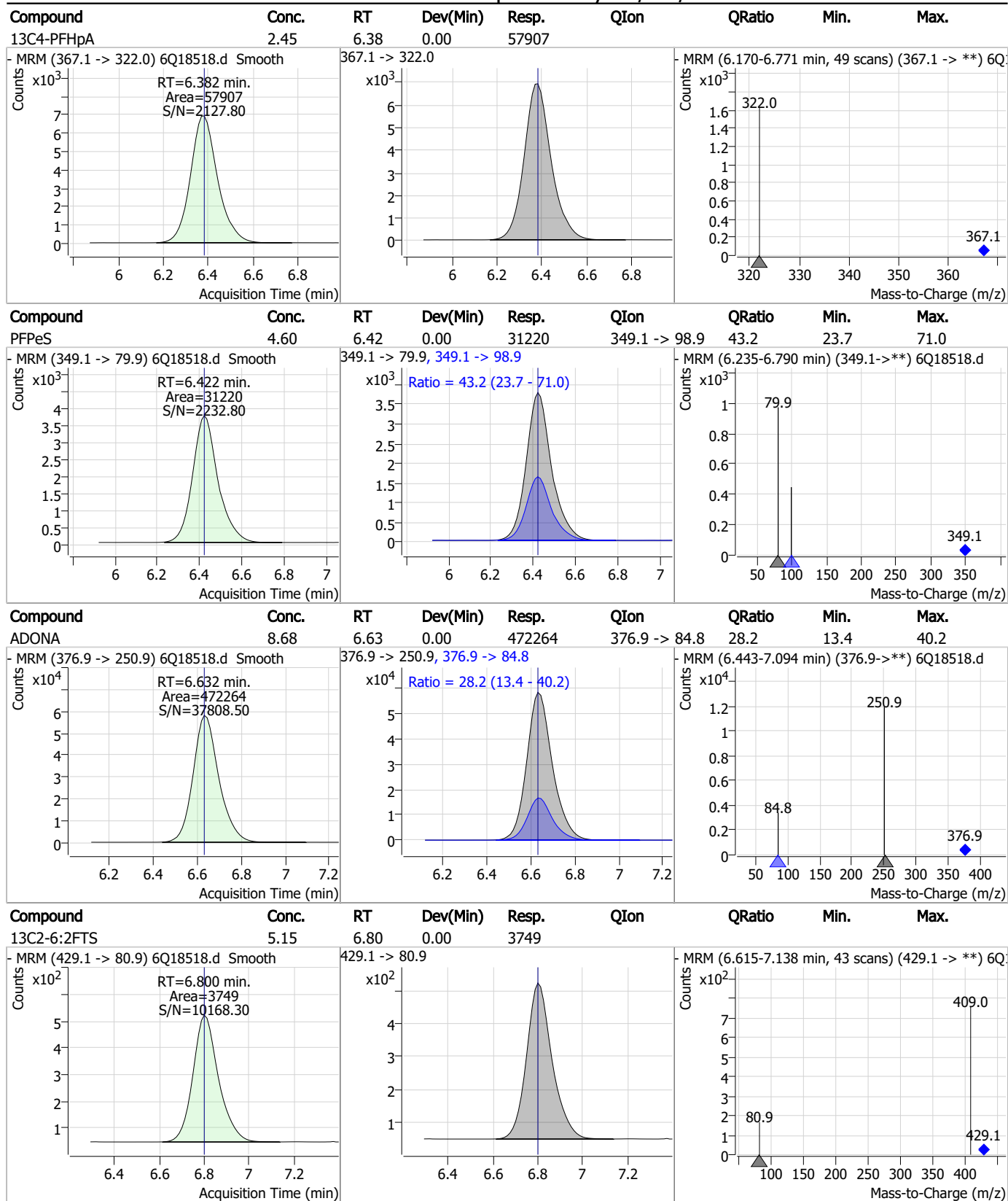
7.7.6
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Perfluorinated Compounds by LC/MS/MS



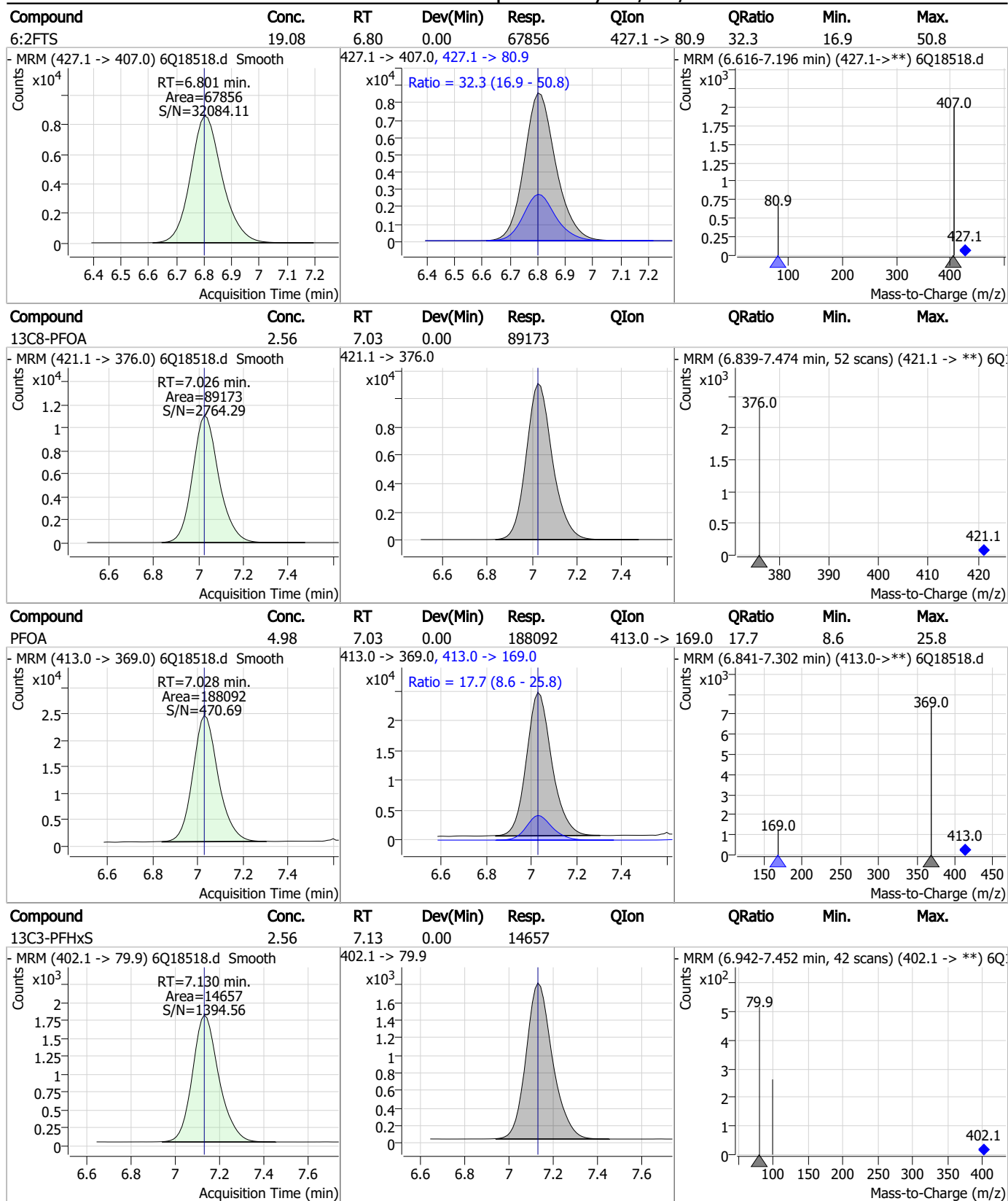
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Perfluorinated Compounds by LC/MS/MS



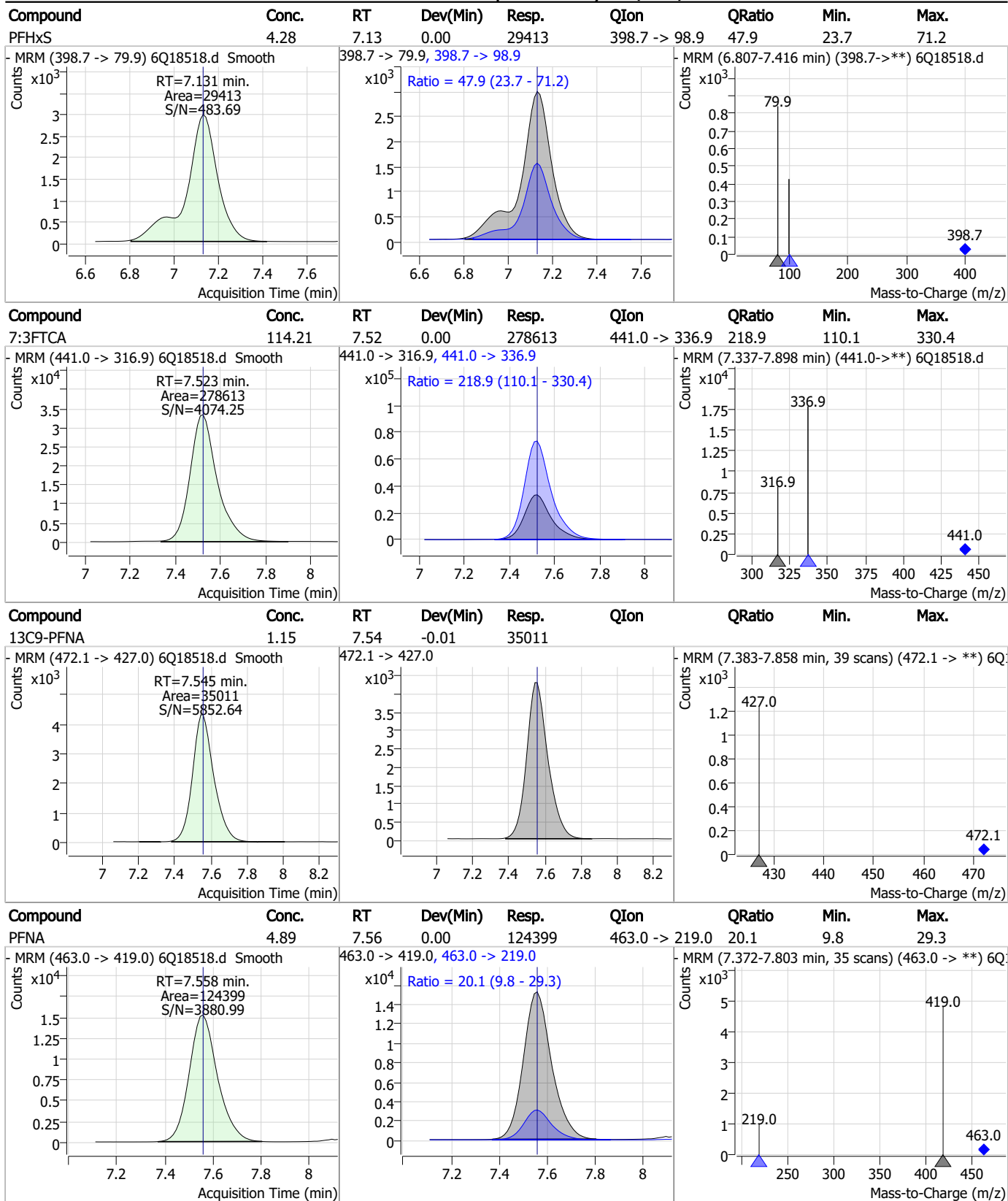
7.7.6
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Perfluorinated Compounds by LC/MS/MS



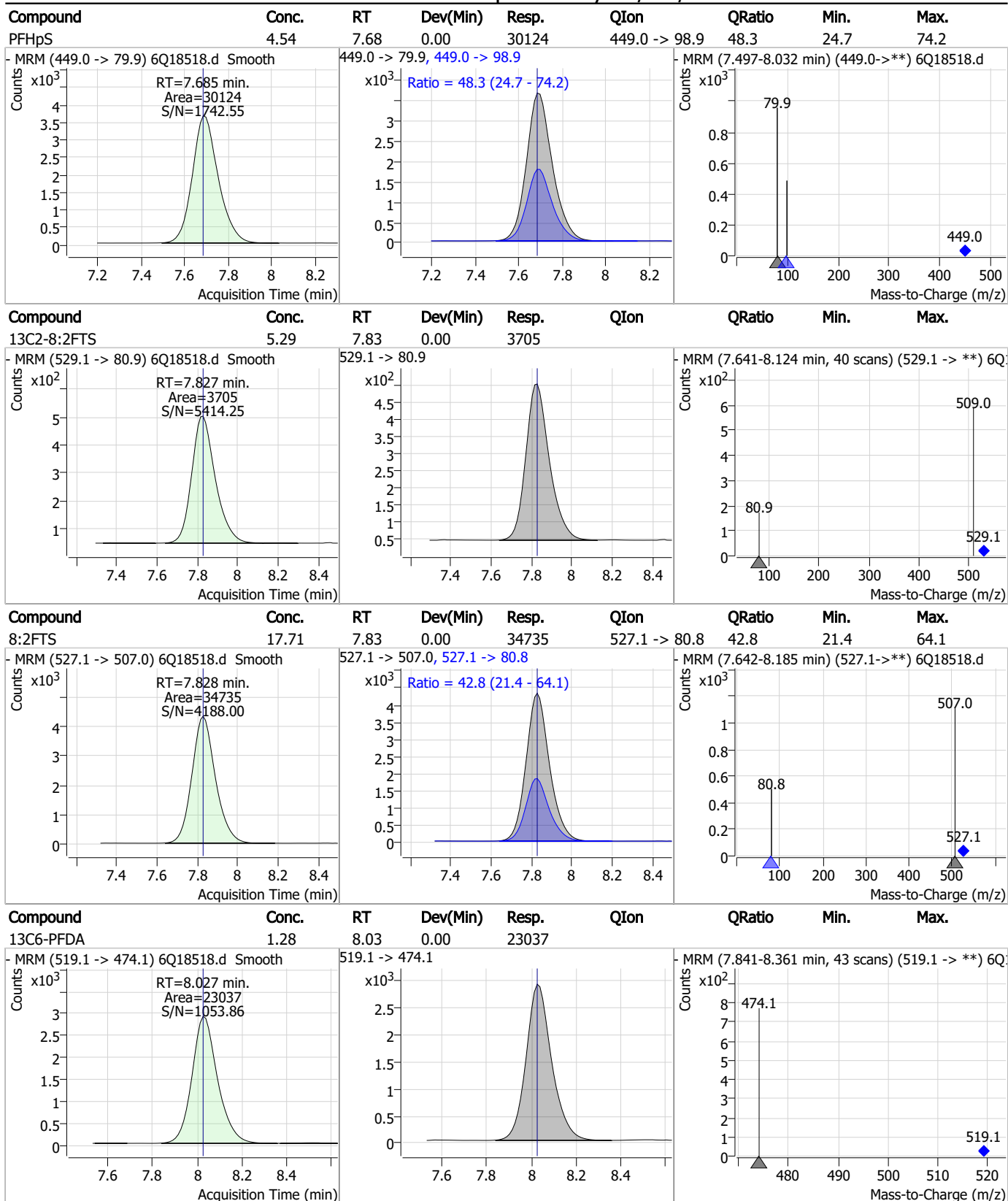
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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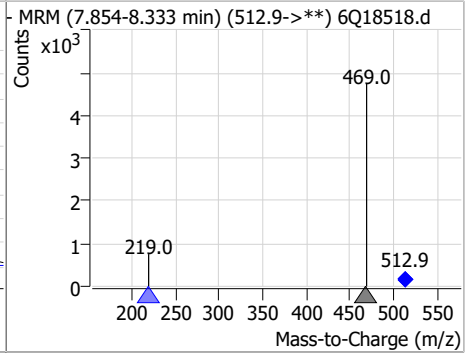
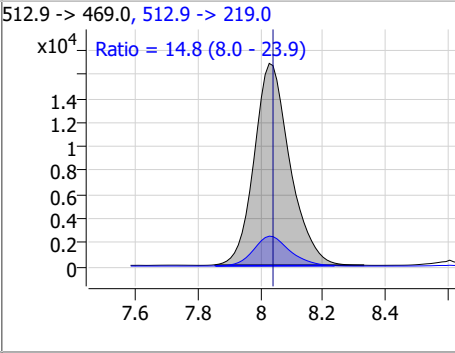
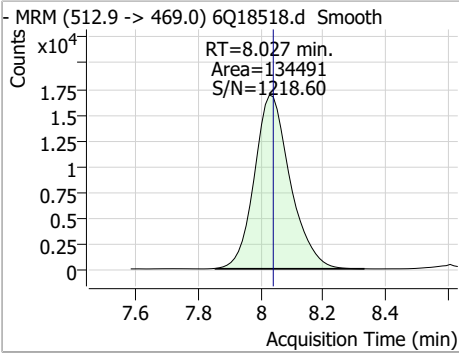
Perfluorinated Compounds by LC/MS/MS



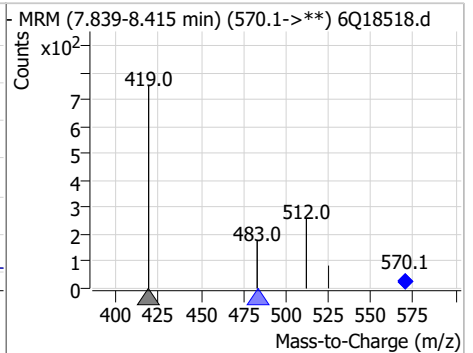
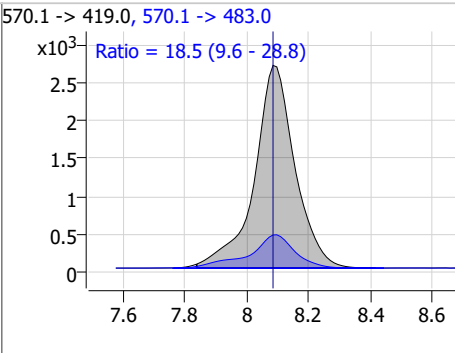
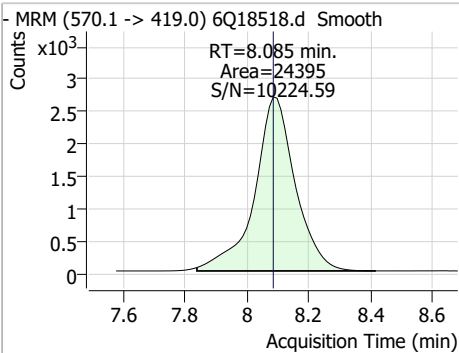
7.7.6
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Perfluorinated Compounds by LC/MS/MS

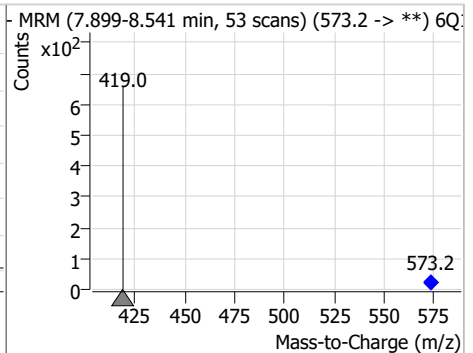
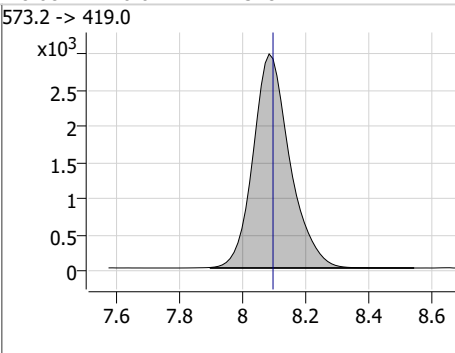
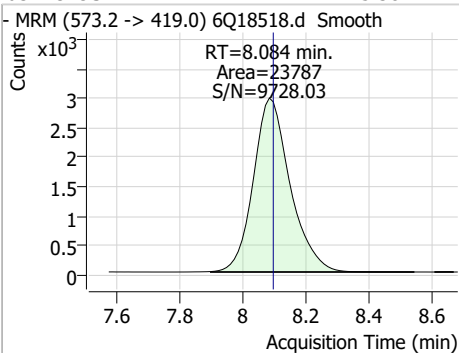
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	5.09	8.03	-0.01	134491	512.9 -> 219.0	14.8	8.0	23.9



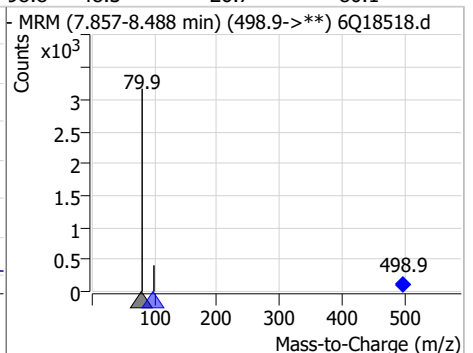
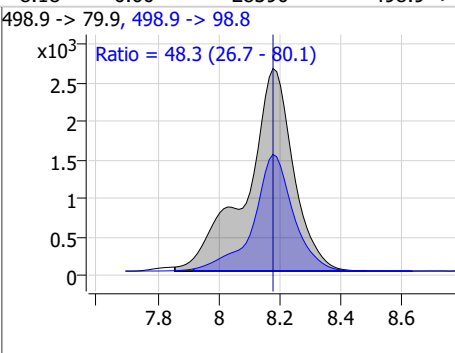
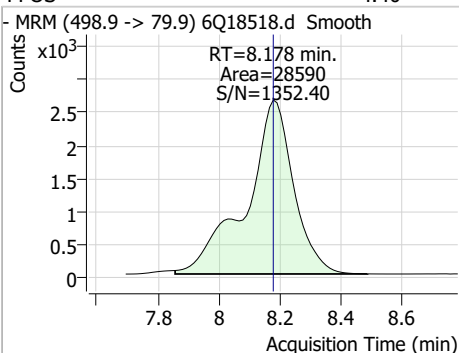
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.66	8.08	0.00	24395	570.1 -> 483.0	18.5	9.6	28.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.38	8.08	-0.01	23787				



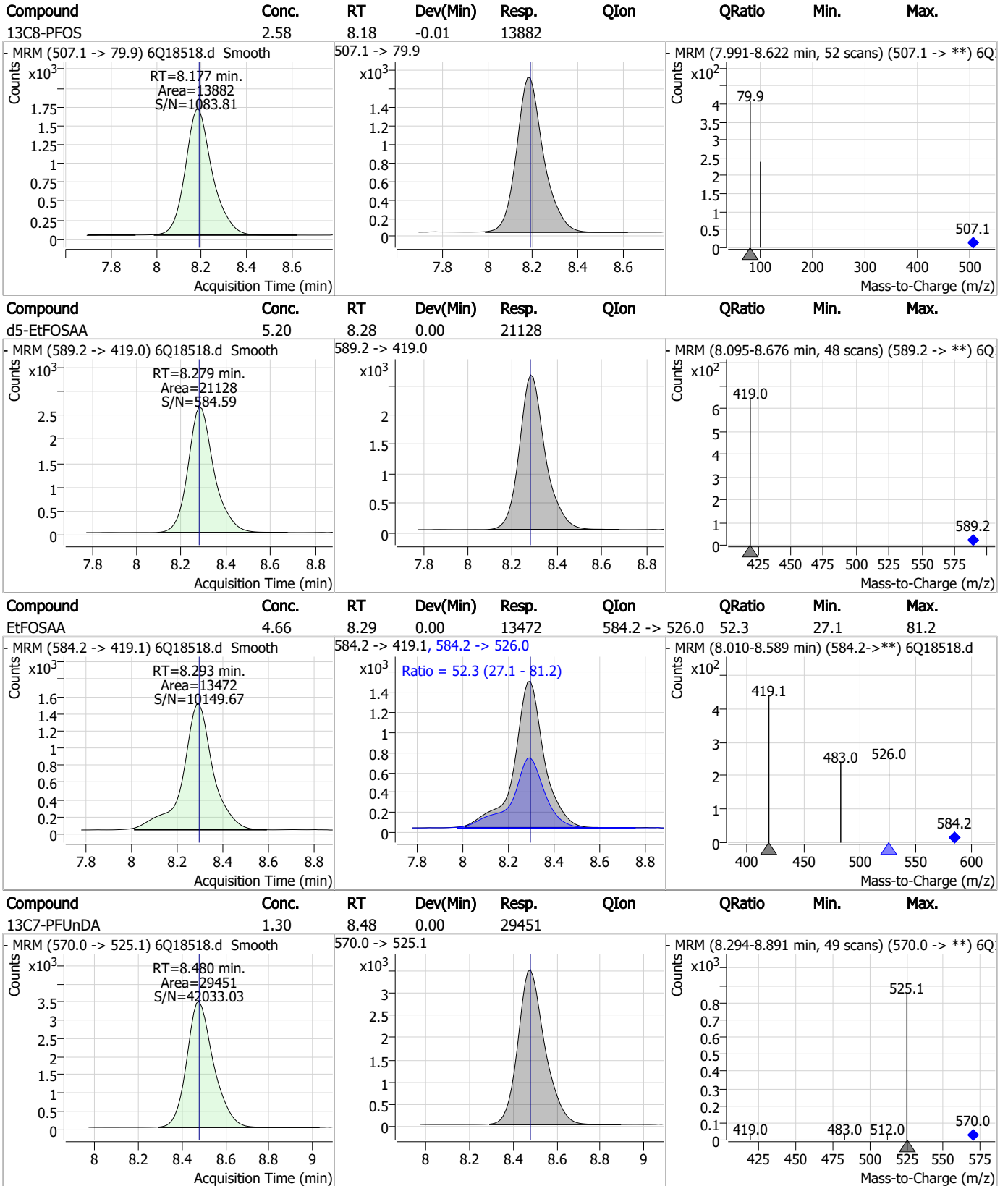
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.40	8.18	0.00	28590	498.9 -> 98.8	48.3	26.7	80.1



7.7.6

7

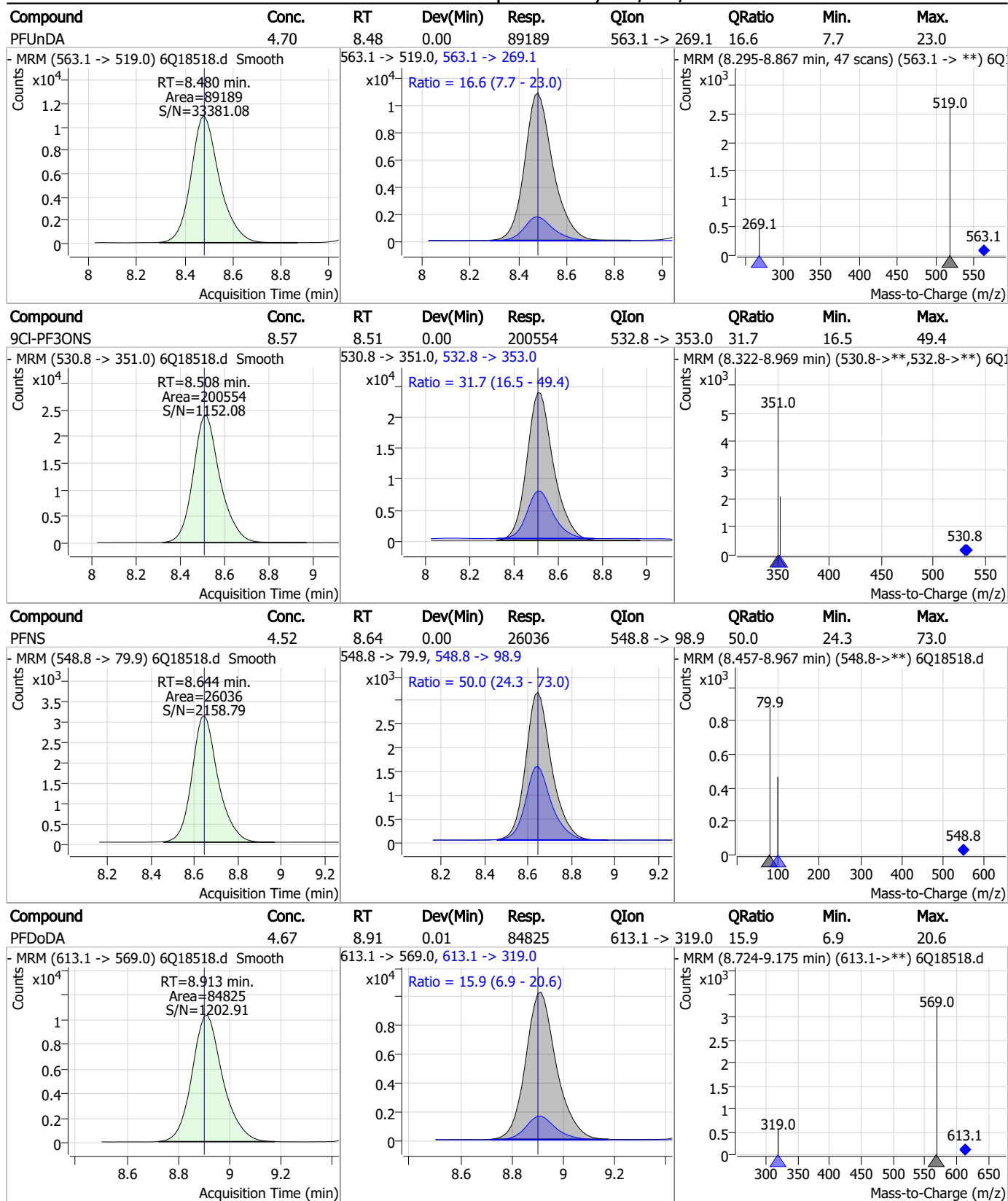
Perfluorinated Compounds by LC/MS/MS



7.7.6

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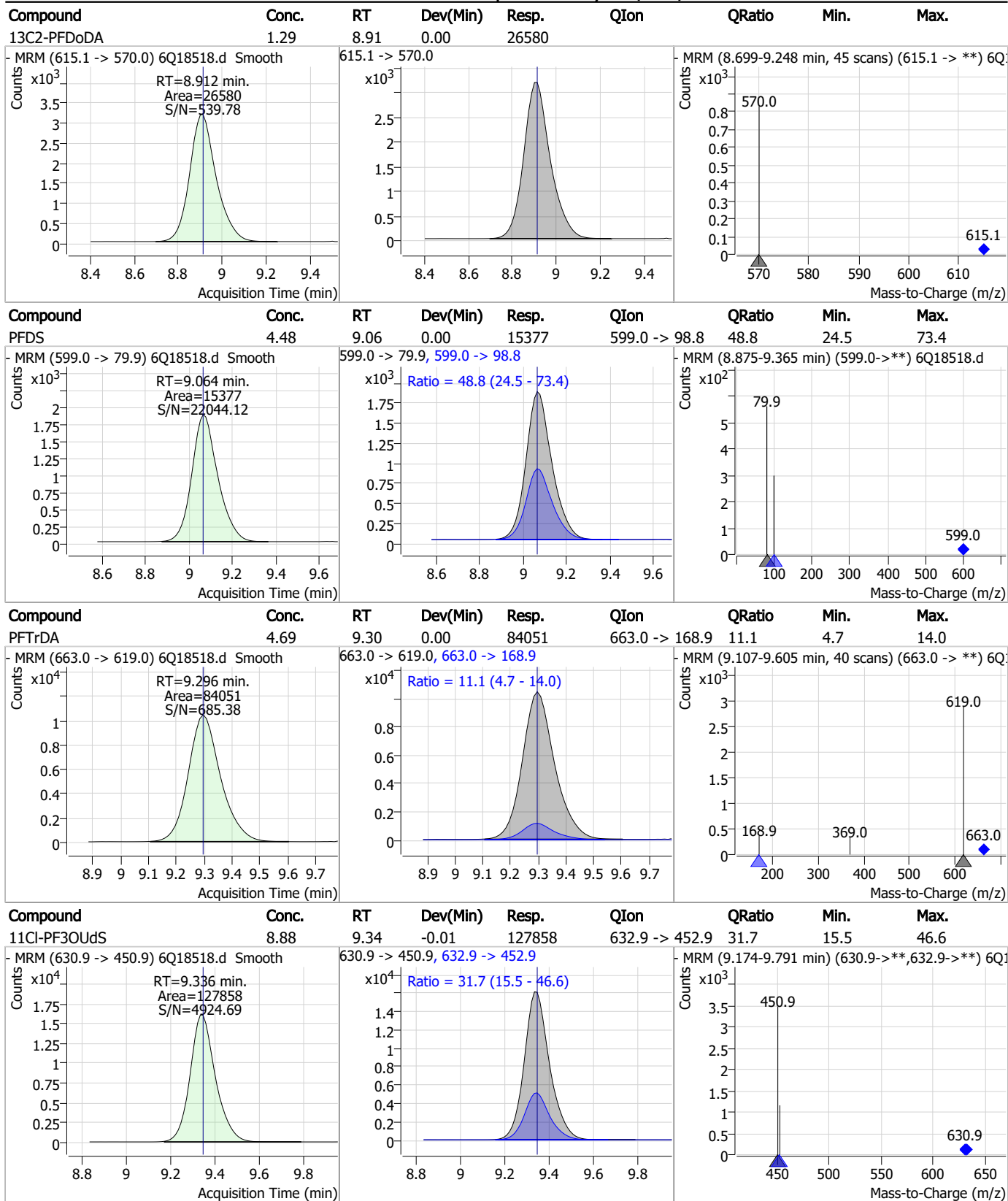
Perfluorinated Compounds by LC/MS/MS



7.7.6

7

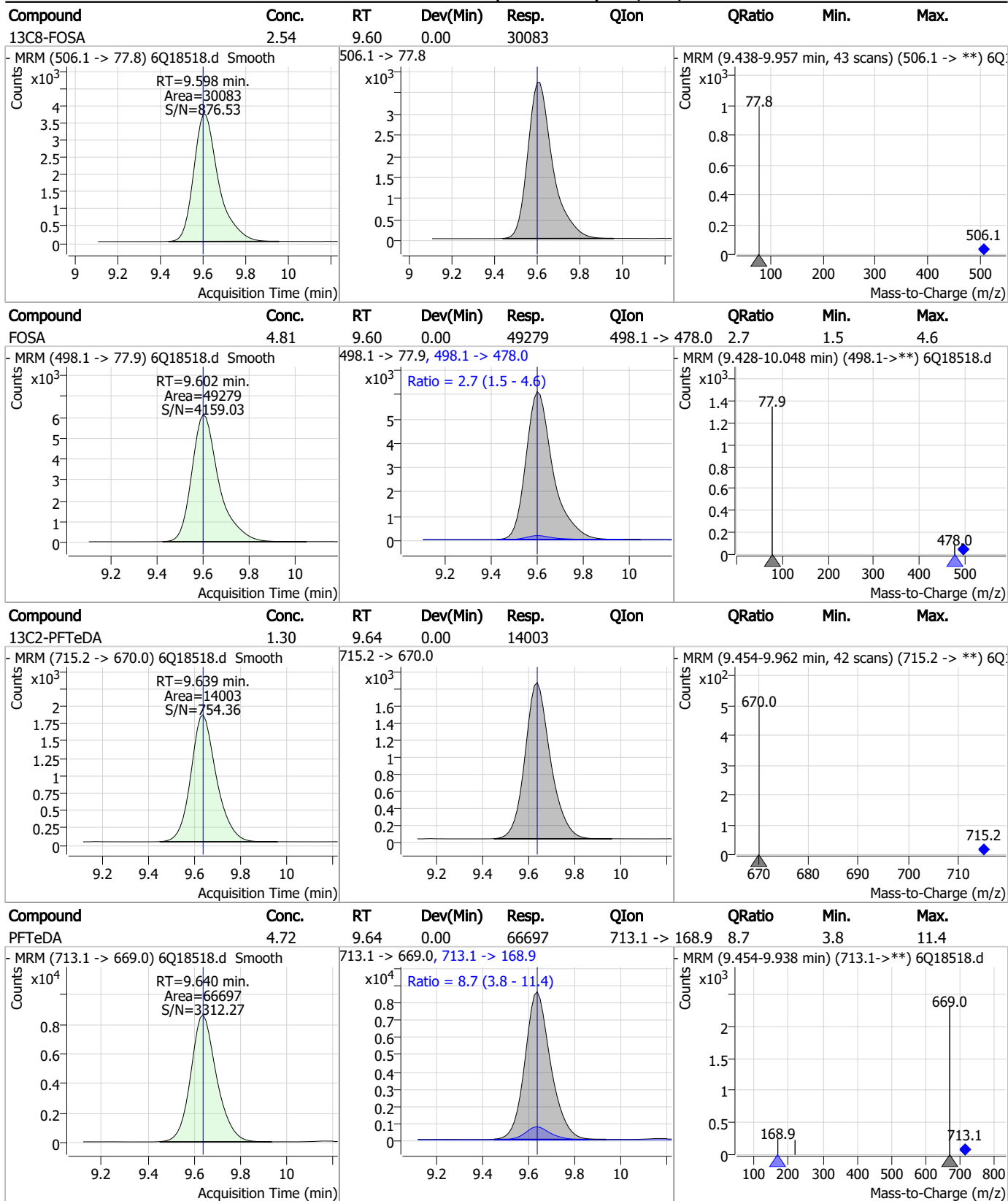
Perfluorinated Compounds by LC/MS/MS



7.7.6
7



Perfluorinated Compounds by LC/MS/MS



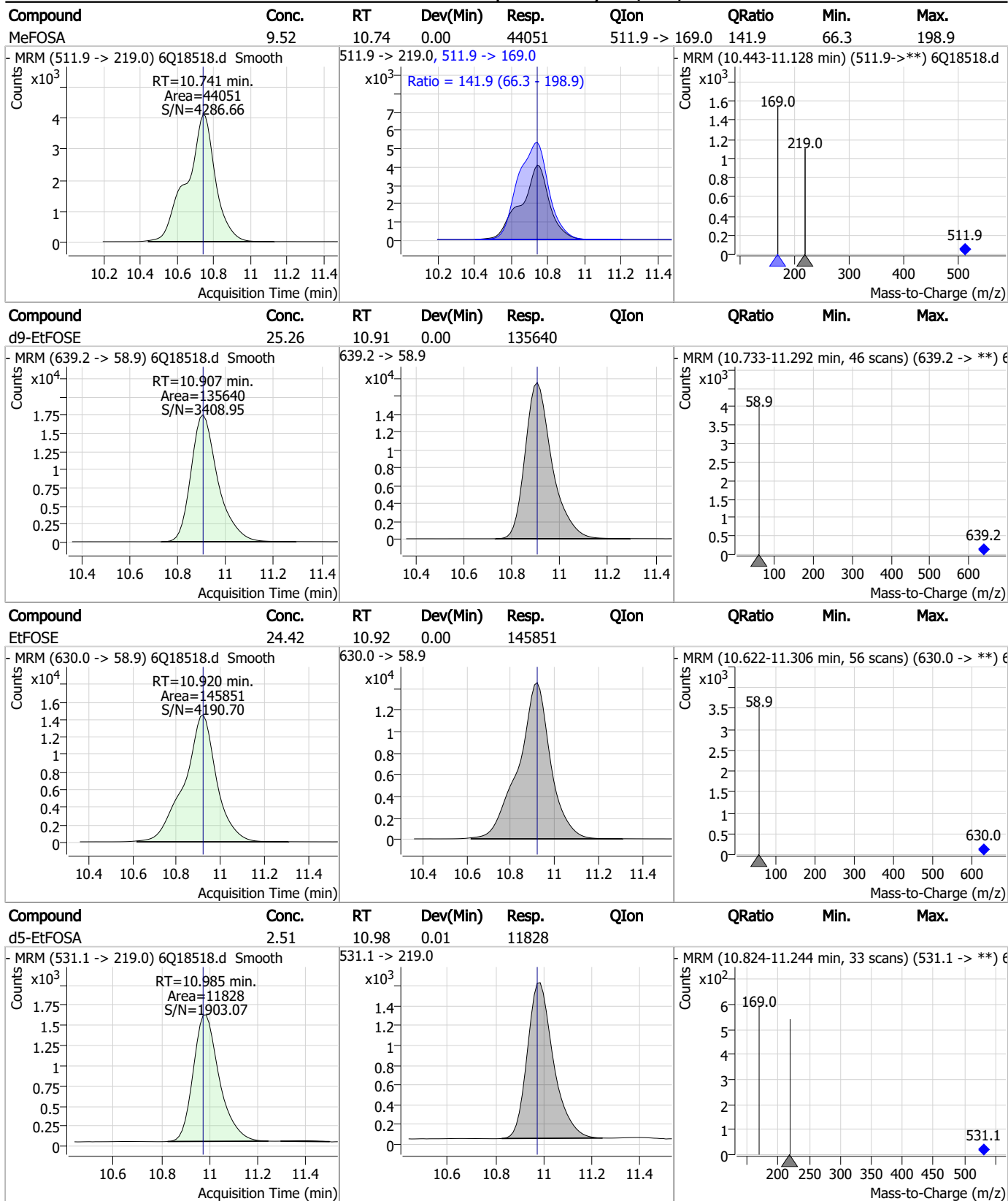
7.7.6
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	4.51	9.77	0.00	6668	699.1 -> 98.8	58.5	26.9	80.6
- MRM (699.1 -> 79.9) 6Q18518.d Smooth			699.1 -> 79.9, 699.1 -> 98.8			- MRM (9.581-10.086 min) (699.1->**) 6Q18518.d		
d7-MeFOSE	25.24	10.66	0.00	102487				
- MRM (623.2 -> 58.9) 6Q18518.d Smooth			623.2 -> 58.9			- MRM (10.486-11.045 min, 46 scans) (623.2 -> **) 6Q18518.d		
MeFOSE	24.44	10.67	0.00	101245				
- MRM (616.1 -> 58.9) 6Q18518.d Smooth			616.1 -> 58.9			- MRM (10.377-11.058 min, 56 scans) (616.1 -> **) 6Q18518.d		
d3-MeFOSA	2.51	10.75	0.01	12246				
- MRM (515.0 -> 219.0) 6Q18518.d Smooth			515.0 -> 219.0			- MRM (10.565-11.139 min, 47 scans) (515.0 -> **) 6Q18518.d		

7.7.6
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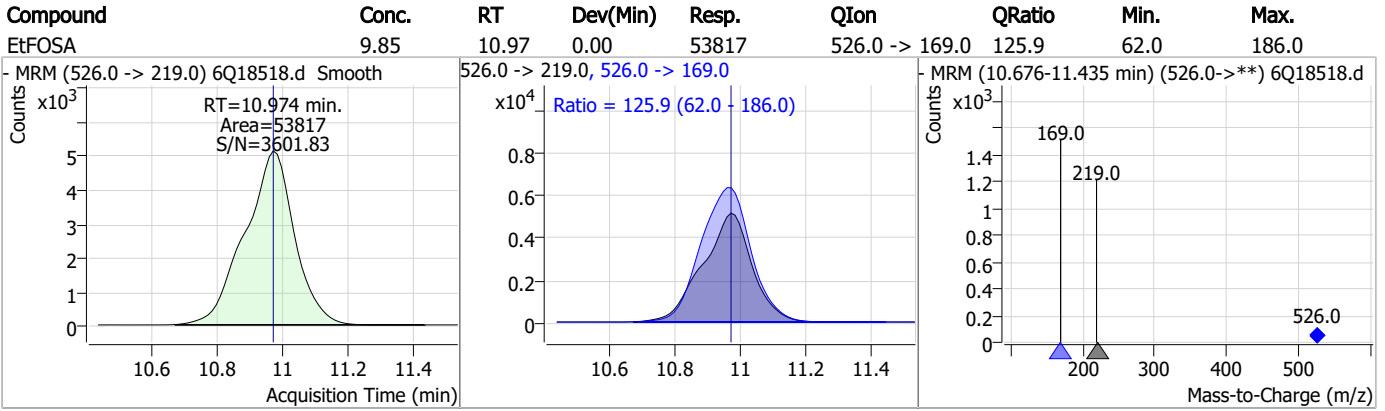
Perfluorinated Compounds by LC/MS/MS



7.7.6

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Perfluorinated Compounds by LC/MS/MS



7.7.6

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 05/31/23 21:17

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18519.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 4:33:27 PM
 Sample Name : ic278-6
 Vial : P1-A7
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	171343	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	57241	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	60765	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	55073	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	87839	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	34899	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	23337	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	29184	1.25 µg/L	0.000
M2-PFDoDA	8.900	615.1 -> 570.0	25888	1.25 µg/L	-0.012
M2-PFTeDA	9.639	715.2 -> 670.0	13453	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	29431	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	23645	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14562	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13007	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	2476	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	3447	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3371	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	23717	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	40906	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	20572	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	98539	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	132776	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	11624	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11985	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17405	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	71214	5.00 µg/L	0.000
18O2-PFHxS	7.141	403.0 -> 83.9	10624	2.50 µg/L	0.012
13C4-PFOA	7.027	417.1 -> 372.0	90349	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	30280	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	44854	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	57935	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2476	4.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3447	4.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.5%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3371	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	25888	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C2-PFTeDA	9.639	715.2 -> 670.0	13453	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFBS	5.334	302.1 -> 79.9	23645	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C3-PFHxS	7.130	402.1 -> 79.9	14562	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	2.822	216.8 -> 171.9	171343	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.382	367.1 -> 322.0	55073	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C5-PFHxA	5.417	318.0 -> 273.0	60765	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	57241	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C6-PFDA	8.027	519.1 -> 474.1	23337	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C7-PFUnDA	8.480	570.0 -> 525.1	29184	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-FOSA	9.598	506.1 -> 77.8	29431	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-PFOA	7.026	421.1 -> 376.0	87839	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C8-PFOS	8.177	507.1 -> 79.9	13007	2.40 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C9-PFNA	7.557	472.1 -> 427.0	34899	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%	
d3-MeFOSAA	8.084	573.2 -> 419.0	23717	5.32 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40906	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	11985	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
d5-EtFOSAA	8.279	589.2 -> 419.0	20572	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d7-MeFOSE	10.660	623.2 -> 58.9	98539	24.08 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
d9-EtFOSE	10.907	639.2 -> 58.9	132776	24.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	11624	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	174134	49.86 µg/L	94
		327.1 -> 80.9	62732		
6:2FTS	6.801	427.1 -> 407.0	161692	49.45 µg/L	100
		427.1 -> 80.9	54550		
8:2FTS	7.828	527.1 -> 507.0	86831	48.65 µg/L	97
		527.1 -> 80.8	35153		
EtFOSAA	8.293	584.2 -> 419.1	32924	11.70 µg/L	96
		584.2 -> 526.0	16996		
FOSA	9.602	498.1 -> 77.9	122534	12.21 µg/L	100
		498.1 -> 478.0	3583		
MeFOSAA	8.085	570.1 -> 419.0	57884	11.09 µg/L	98
		570.1 -> 483.0	11682		
PFBA	2.831	212.8 -> 168.9	278308	49.29 µg/L	100
PFBS	5.335	298.7 -> 79.9	86318	10.56 µg/L	94
		298.7 -> 98.8	34366		
PFDA	8.027	512.9 -> 469.0	326423	12.21 µg/L	99
		512.9 -> 219.0	50673		
PFDoDA	8.900	613.1 -> 569.0	224304	12.69 µg/L	97
		613.1 -> 319.0	33370		
PFDS	9.064	599.0 -> 79.9	38259	11.90 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	17846	12.80	µg/L	98
		363.1 -> 319.0	313438			
PFHpS	7.685	363.1 -> 169.0	49779	12.00	µg/L	97
		449.0 -> 79.9	74522			
PFHxA	5.420	449.0 -> 98.9	35029	12.32	µg/L	98
		313.0 -> 269.0	256014			
PFHxS	7.131	313.0 -> 118.9	13112	11.00	µg/L	m
		398.7 -> 79.9	75091			
PFNA	7.558	398.7 -> 98.9	36014	12.49	µg/L	98
		463.0 -> 419.0	316832			
PFNS	8.644	463.0 -> 219.0	58968	12.00	µg/L	97
		548.8 -> 79.9	64717			
PFOA	7.028	548.8 -> 98.9	32645	12.48	µg/L	99
		413.0 -> 369.0	464476			
PFOS	8.178	413.0 -> 169.0	82535	11.67	µg/L	m
		498.9 -> 79.9	71104			
PFPeA	4.212	498.9 -> 98.8	35070	24.52	µg/L	100
		263.0 -> 219.0	343188			
PFPeS	6.422	349.1 -> 79.9	75707	11.22	µg/L	96
		349.1 -> 98.9	33551			
PFTeDA	9.640	713.1 -> 669.0	164506	12.12	µg/L	96
		713.1 -> 168.9	14610			
PFTrDA	9.296	663.0 -> 619.0	217852	12.47	µg/L	96
		663.0 -> 168.9	23586			
PFUnDA	8.480	563.1 -> 519.0	225676	12.01	µg/L	99
		563.1 -> 269.1	35570			
11Cl-PF3OUdS	9.336	630.9 -> 450.9	317538	23.04	µg/L	99
		632.9 -> 452.9	100374			
9Cl-PF3ONS	8.508	530.8 -> 351.0	509293	22.72	µg/L	98
		532.8 -> 353.0	162656			
ADONA	6.646	376.9 -> 250.9	1206606	23.16	µg/L	100
		376.9 -> 84.8	324460			
HFPO-DA	5.783	284.9 -> 168.9	83978	24.48	µg/L	95
		284.9 -> 184.9	9853			
3:3FTCA	3.671	241.0 -> 177.0	53585	60.40	µg/L	97
		241.0 -> 117.0	7152			
5:3FTCA	6.086	341.0 -> 237.1	1118490	310.43	µg/L	98
		341.0 -> 217.0	812166			
7:3FTCA	7.523	441.0 -> 316.9	695262	302.00	µg/L	93
		441.0 -> 336.9	1611319			
EtFOSA	10.974	526.0 -> 219.0	131680	24.53	µg/L	94
		526.0 -> 169.0	172508			
EtFOSE	10.920	630.0 -> 58.9	360437	61.66	µg/L	100
		511.9 -> 219.0	111933			
MeFOSA	10.741	511.9 -> 169.0	156449	24.72	µg/L	94
		616.1 -> 58.9	257576			
MeFOSE	10.673	699.1 -> 79.9	16907	64.67	µg/L	100
		699.1 -> 98.8	8906			
PFDoDS	9.767	295.0 -> 201.0	61957	12.19	µg/L	99
		295.0 -> 84.9	17179			
NFDHA	5.299	279.0 -> 85.1	233946	24.87	µg/L	99
		229.0 -> 84.9	185150			
PFMBA	4.626	314.8 -> 134.9	618083	24.40	µg/L	100
		314.8 -> 82.9	21794			
PFMPA	3.363			24.74	µg/L	100
PFEESA	5.875			22.51	µg/L	99

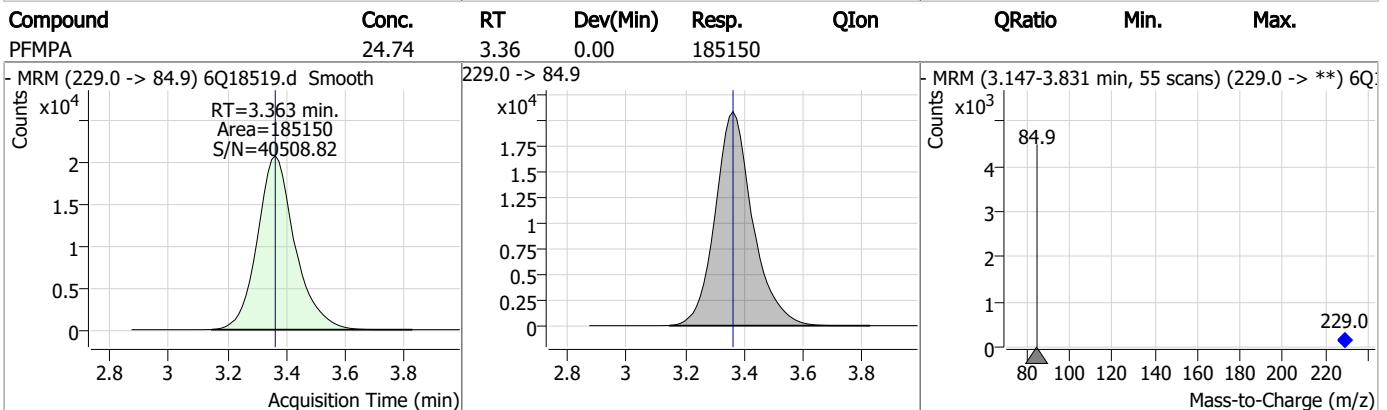
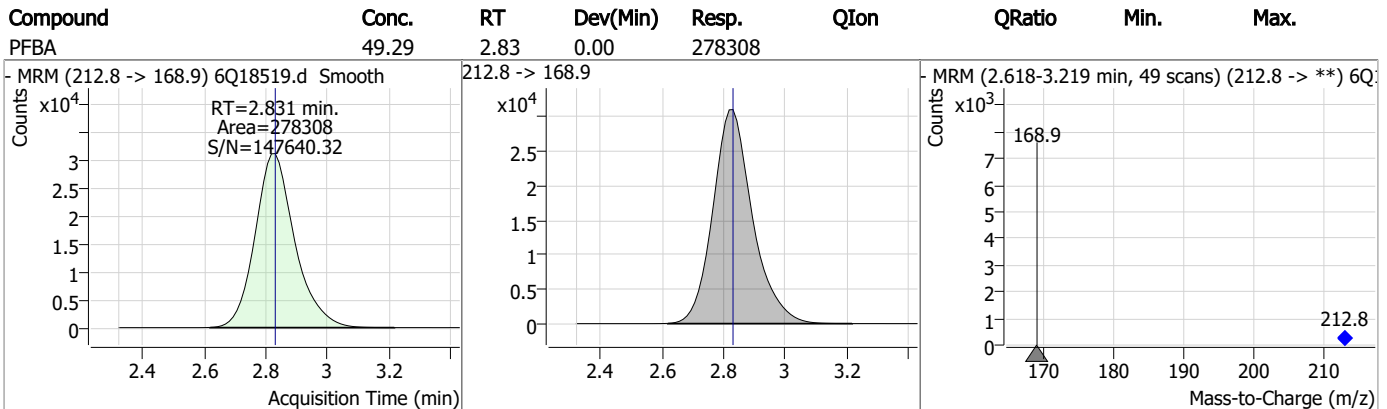
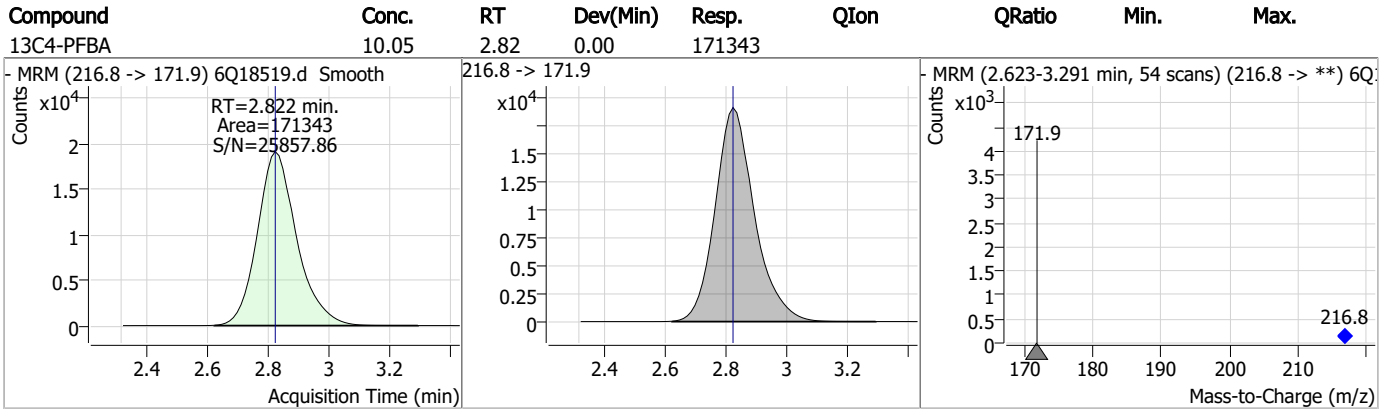
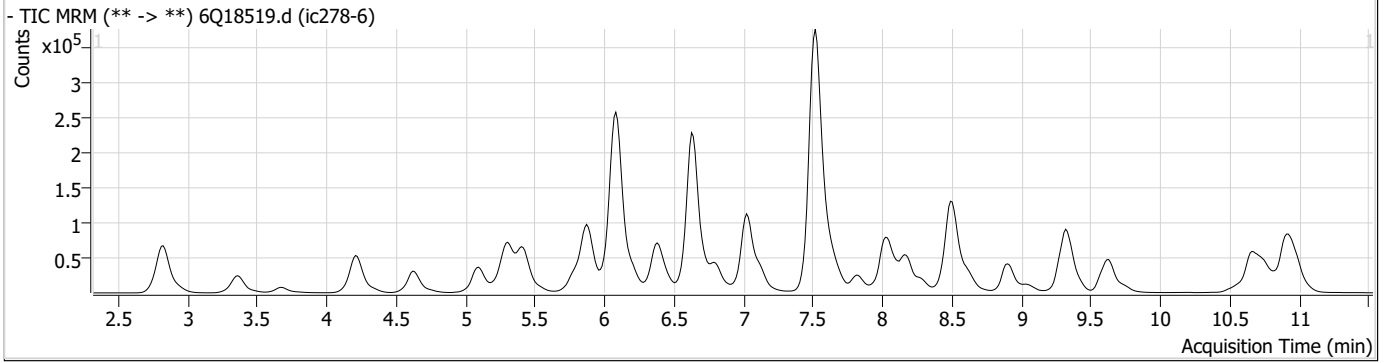
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

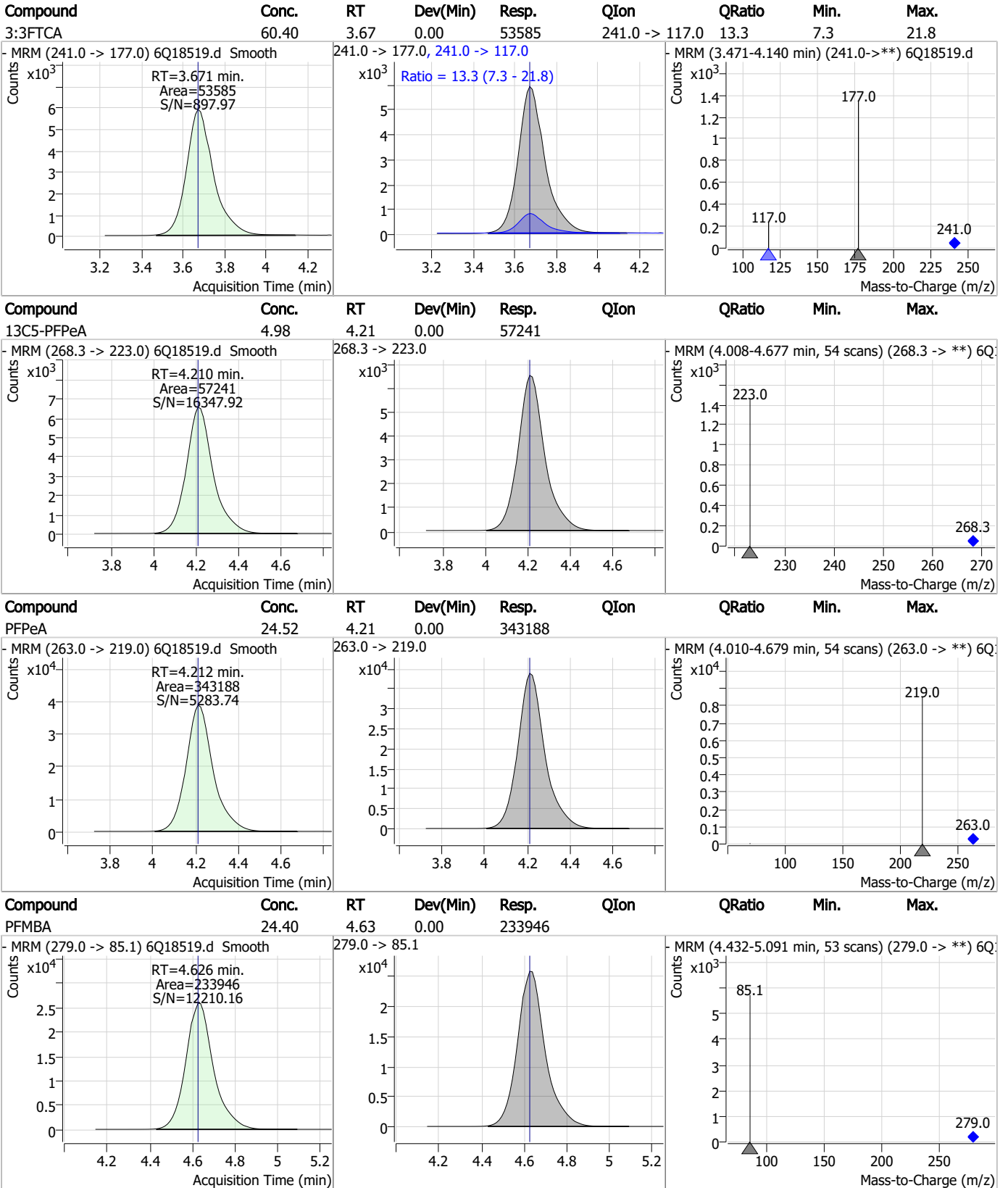
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.7
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Perfluorinated Compounds by LC/MS/MS



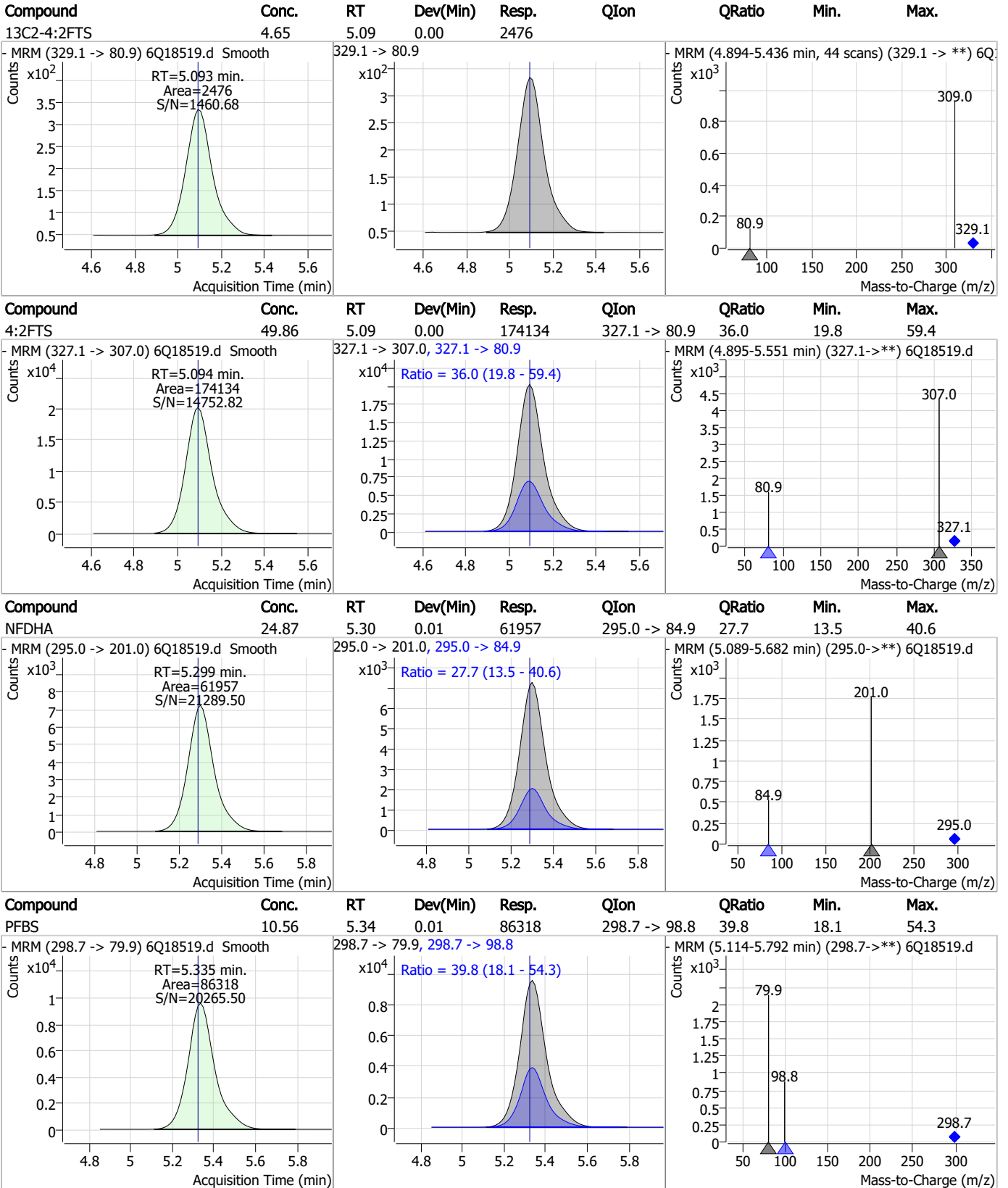
Perfluorinated Compounds by LC/MS/MS



7.7.7

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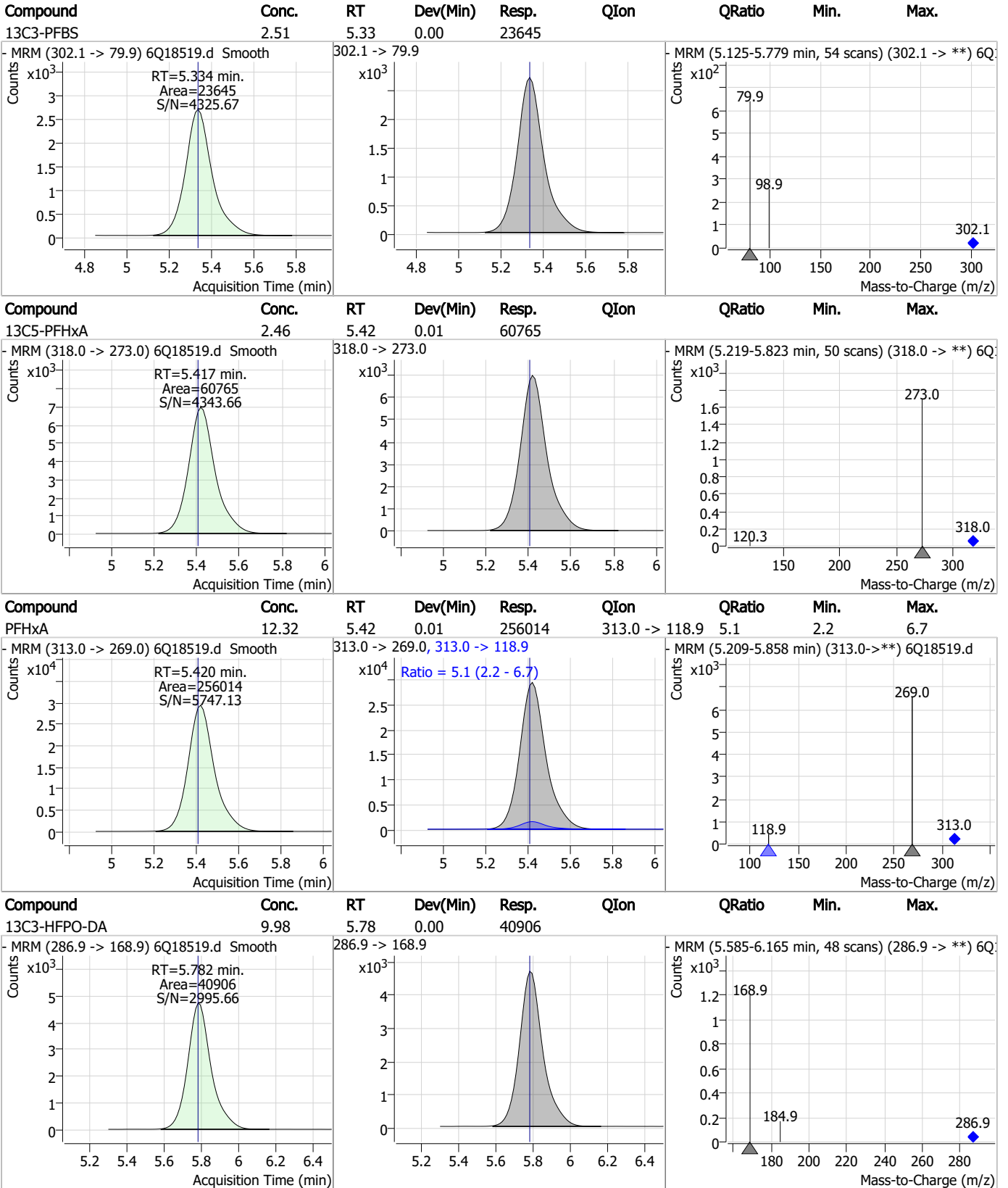
Perfluorinated Compounds by LC/MS/MS



7.7.7

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Perfluorinated Compounds by LC/MS/MS

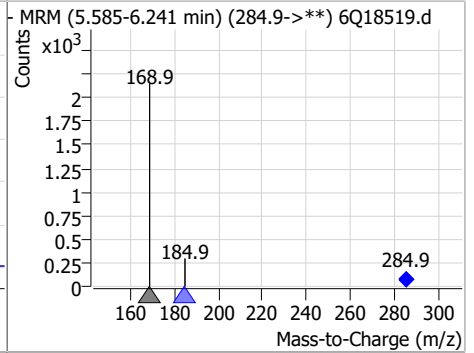
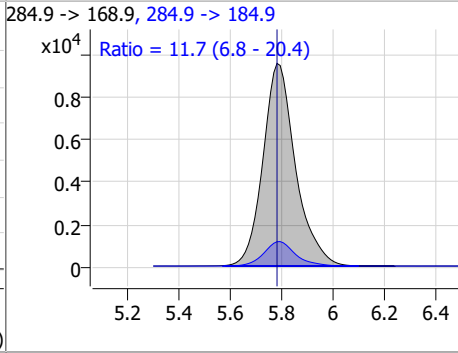
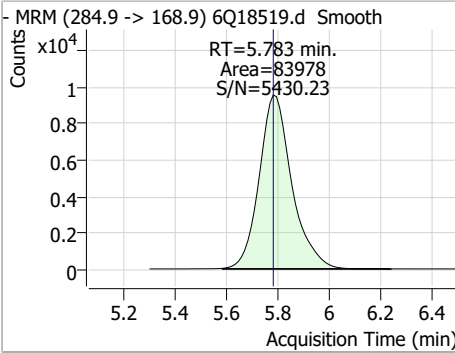


7.7.7

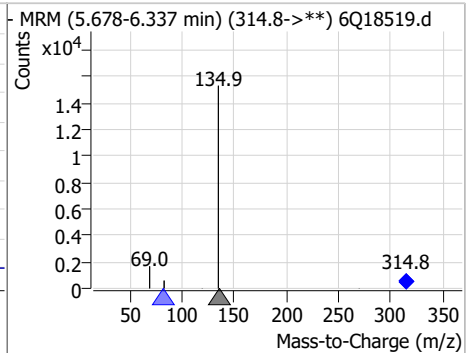
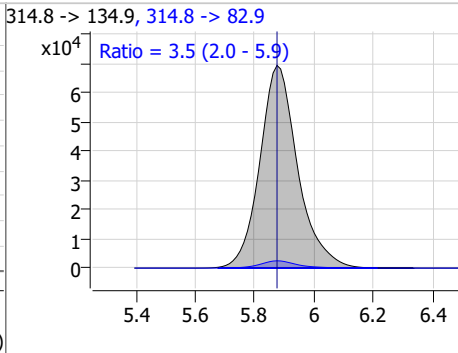
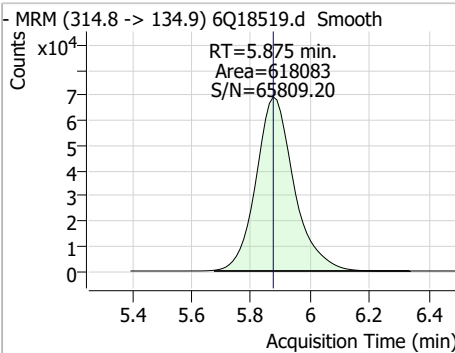
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Perfluorinated Compounds by LC/MS/MS

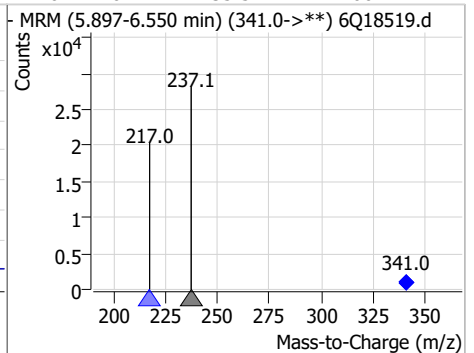
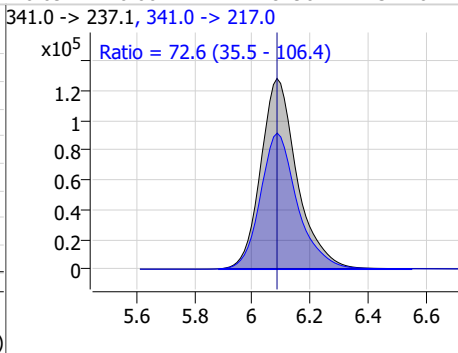
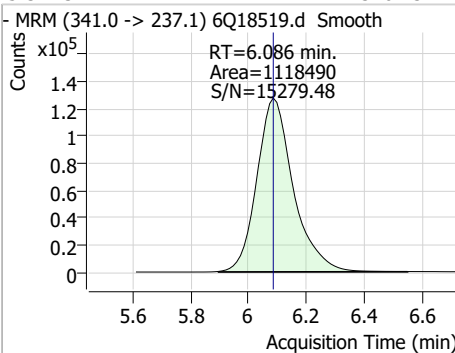
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	24.48	5.78	0.00	83978	284.9 -> 184.9	11.7	6.8	20.4



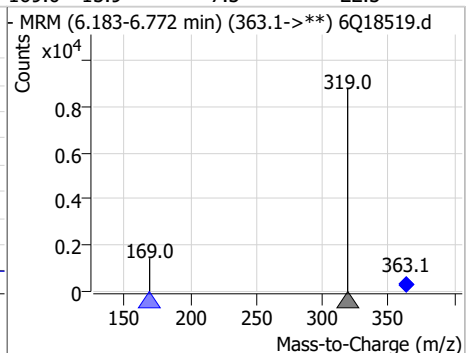
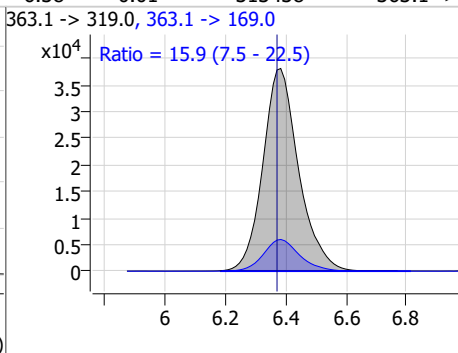
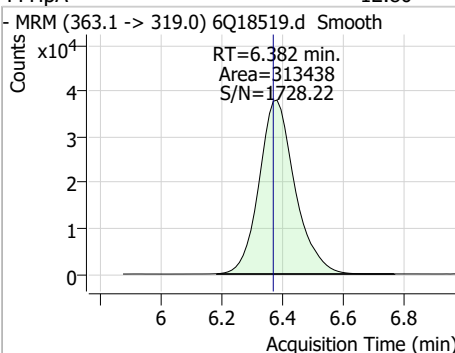
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.51	5.88	0.00	618083	314.8 -> 82.9	3.5	2.0	5.9



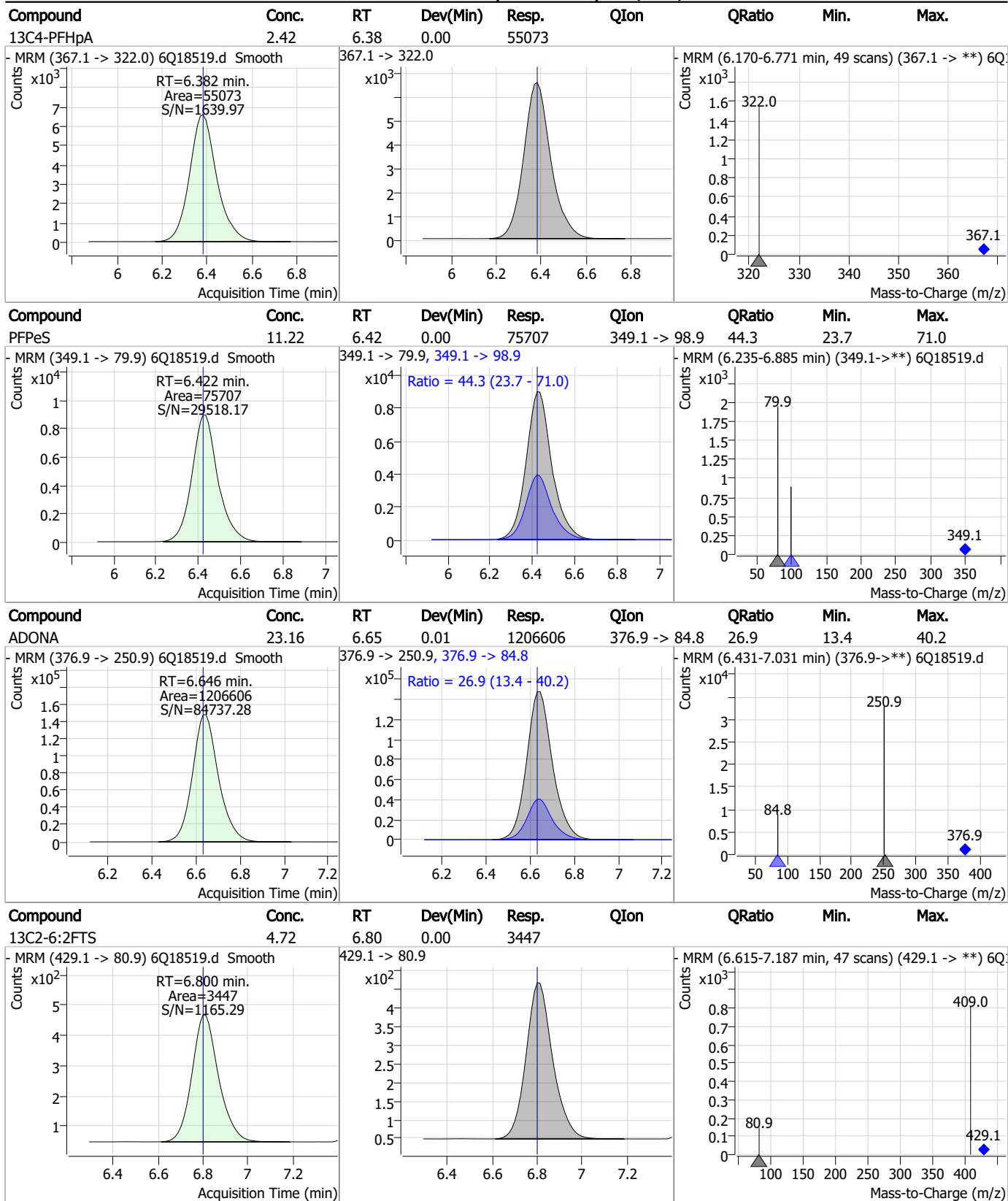
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	310.43	6.09	0.00	1118490	341.0 -> 217.0	72.6	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	12.80	6.38	0.01	313438	363.1 -> 169.0	15.9	7.5	22.5

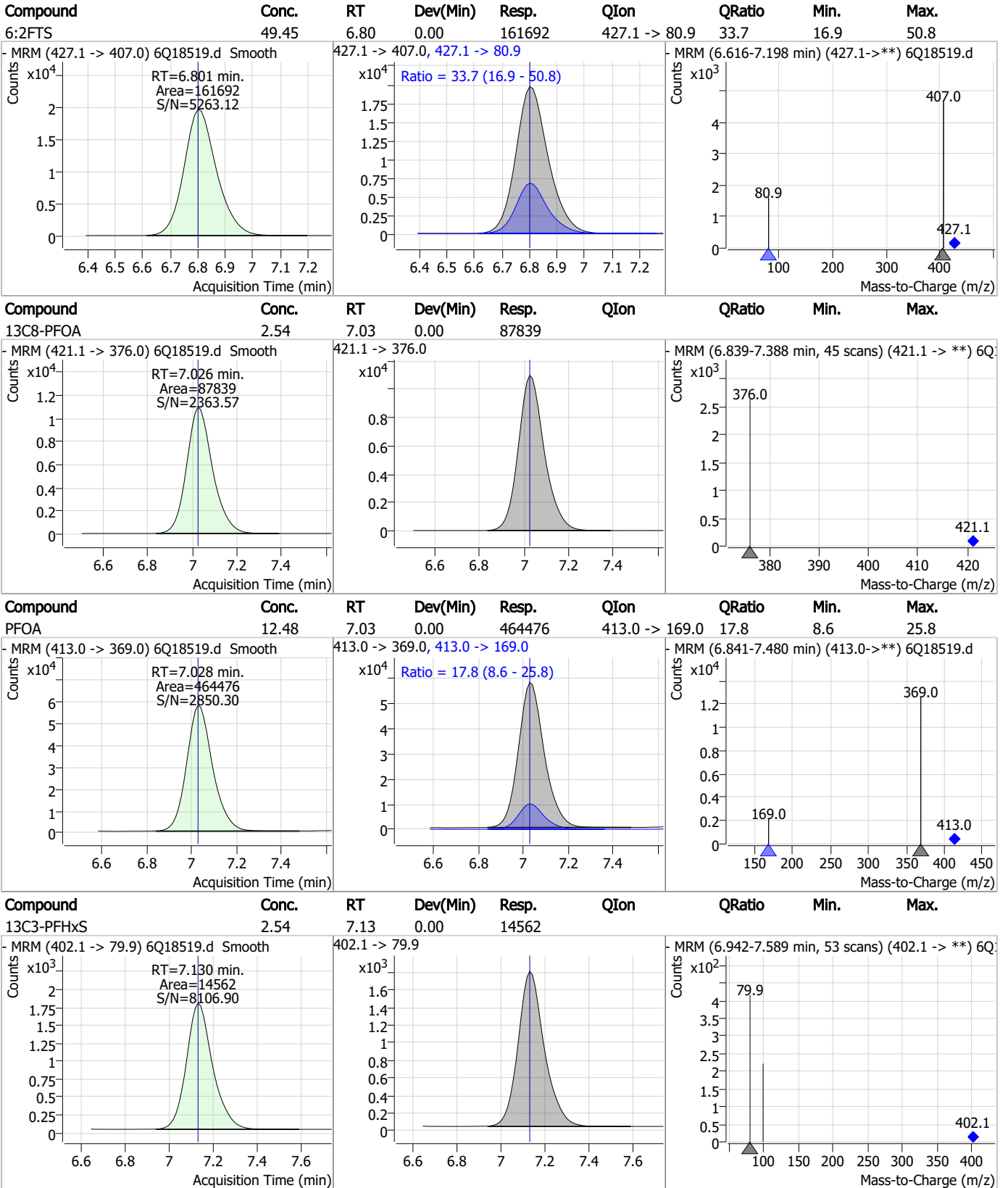


Perfluorinated Compounds by LC/MS/MS



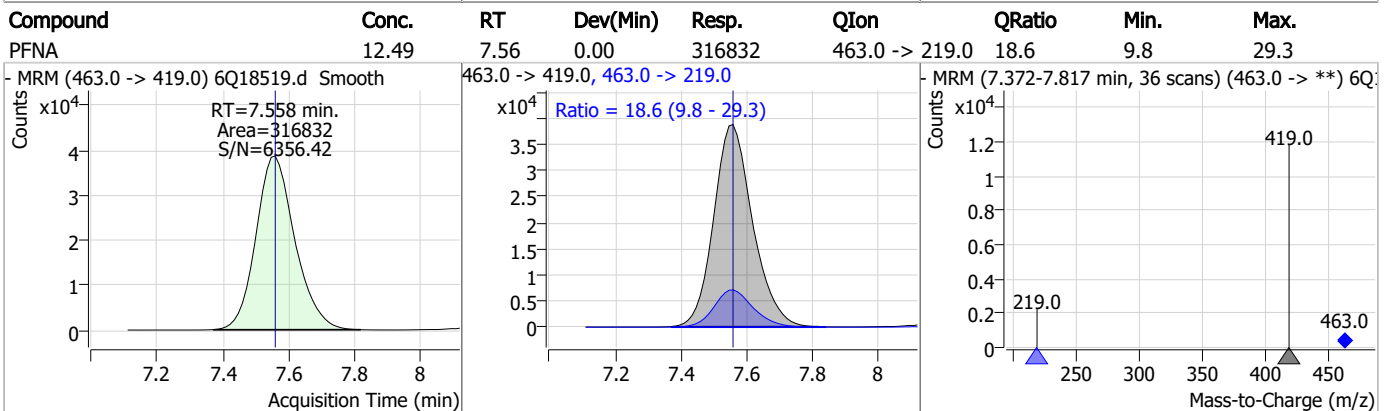
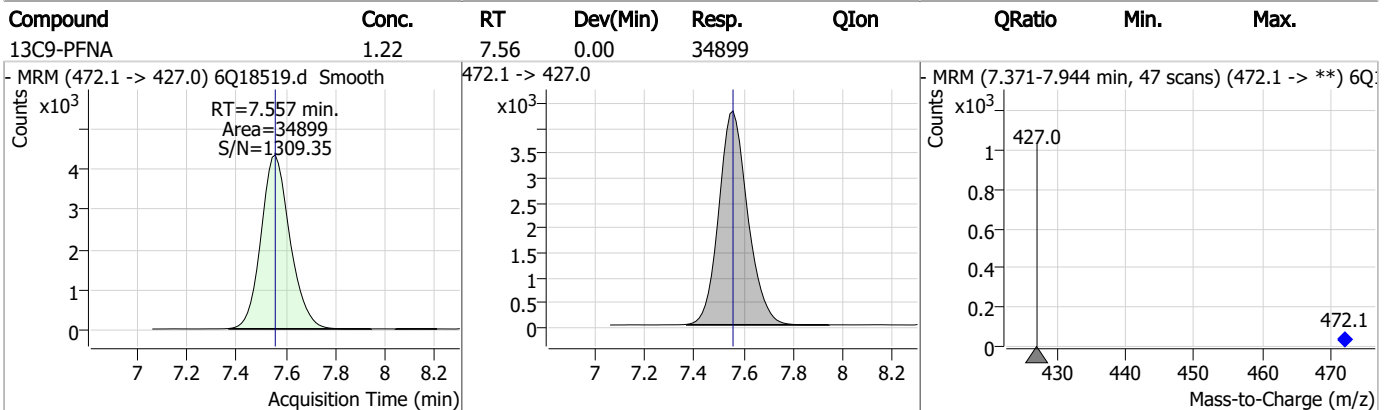
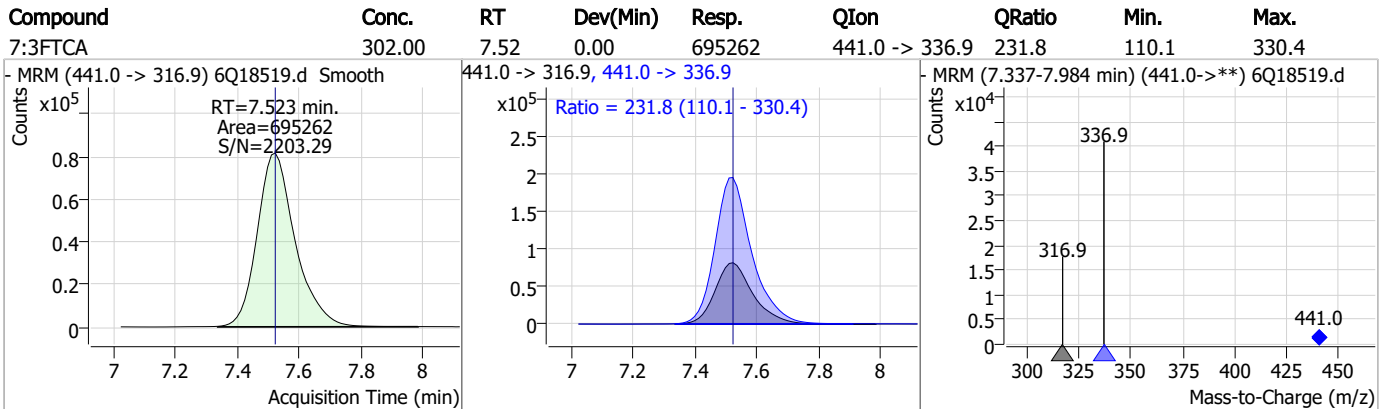
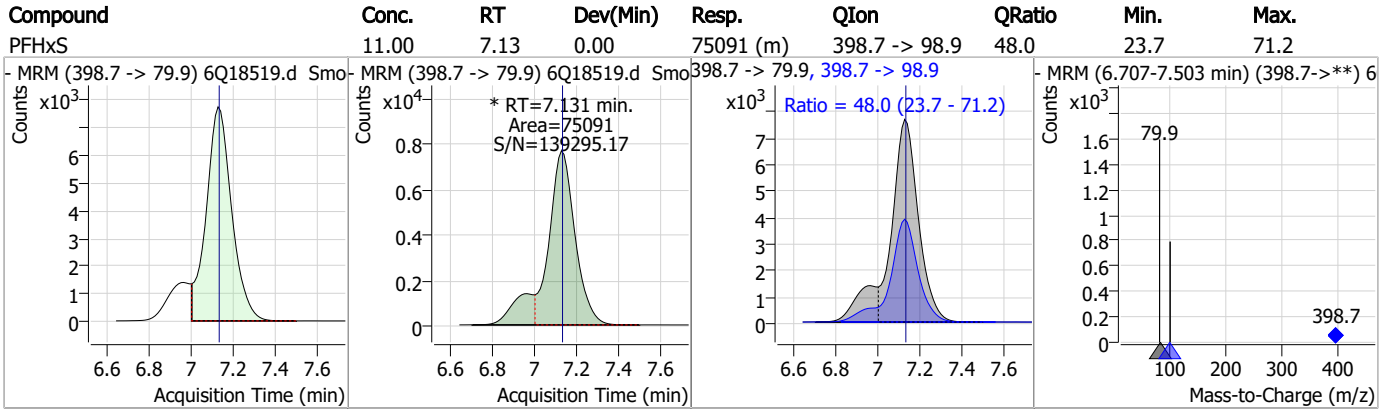
7.7.7
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Perfluorinated Compounds by LC/MS/MS

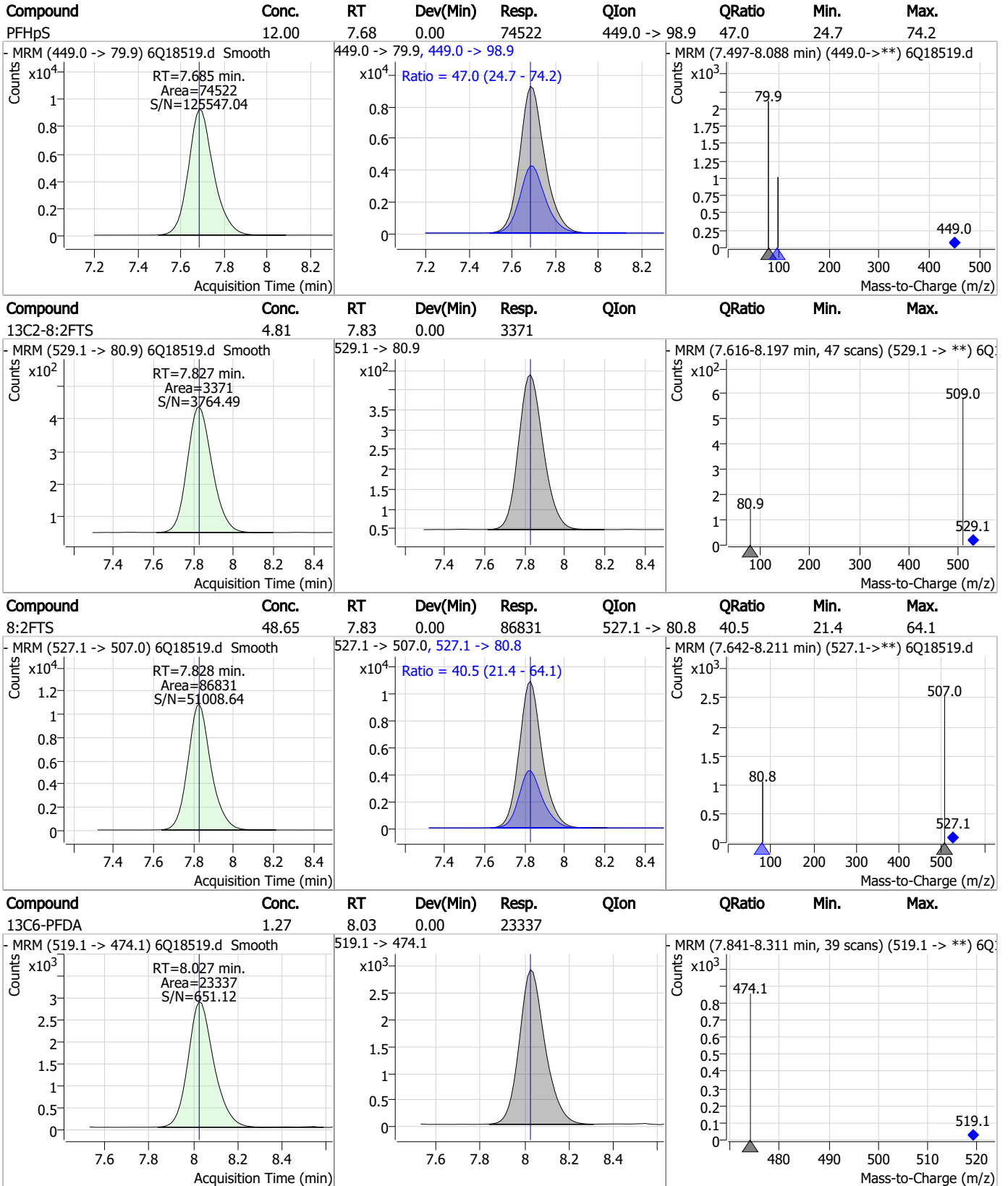


7.7.7
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Perfluorinated Compounds by LC/MS/MS



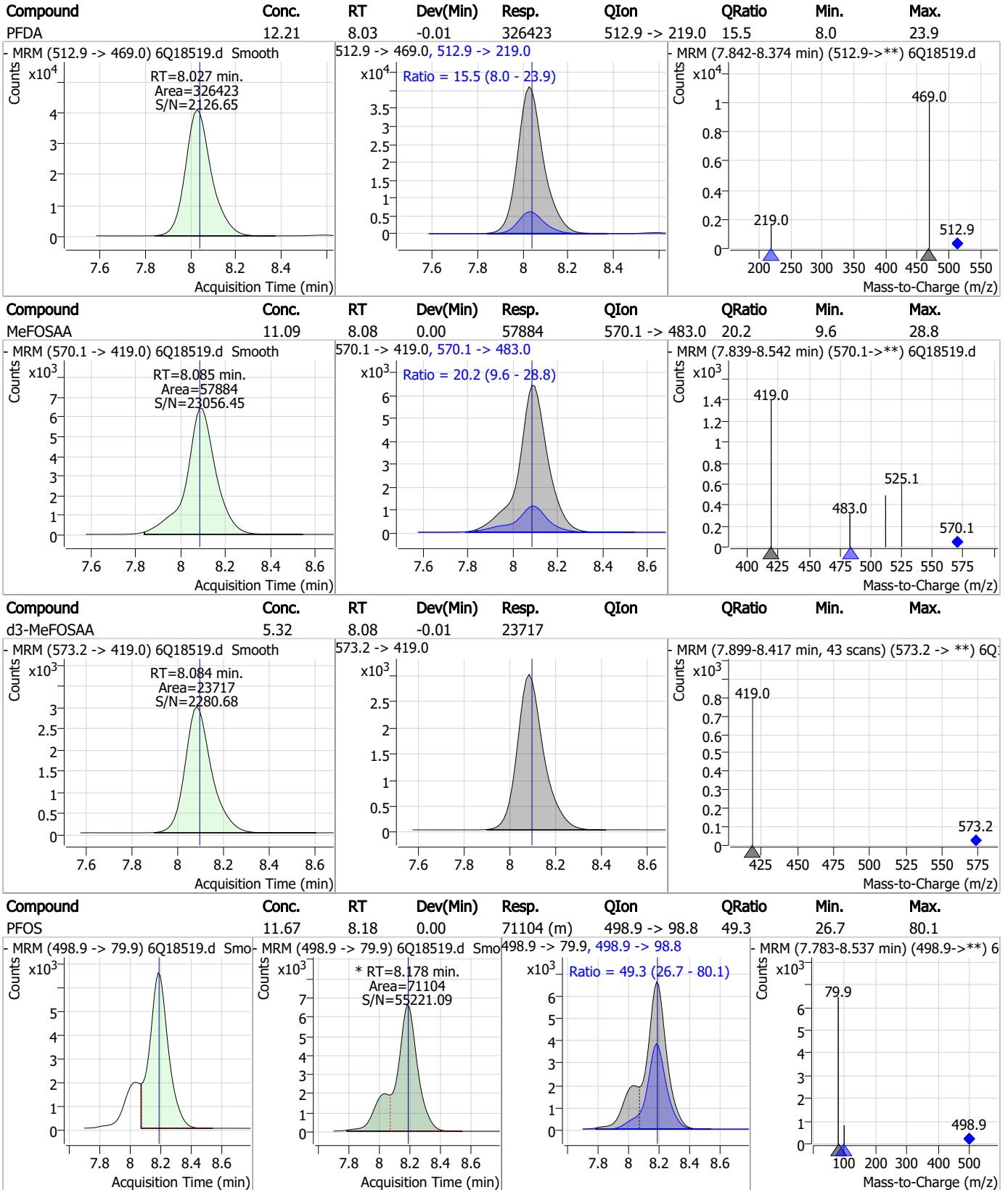
Perfluorinated Compounds by LC/MS/MS



7.7.7

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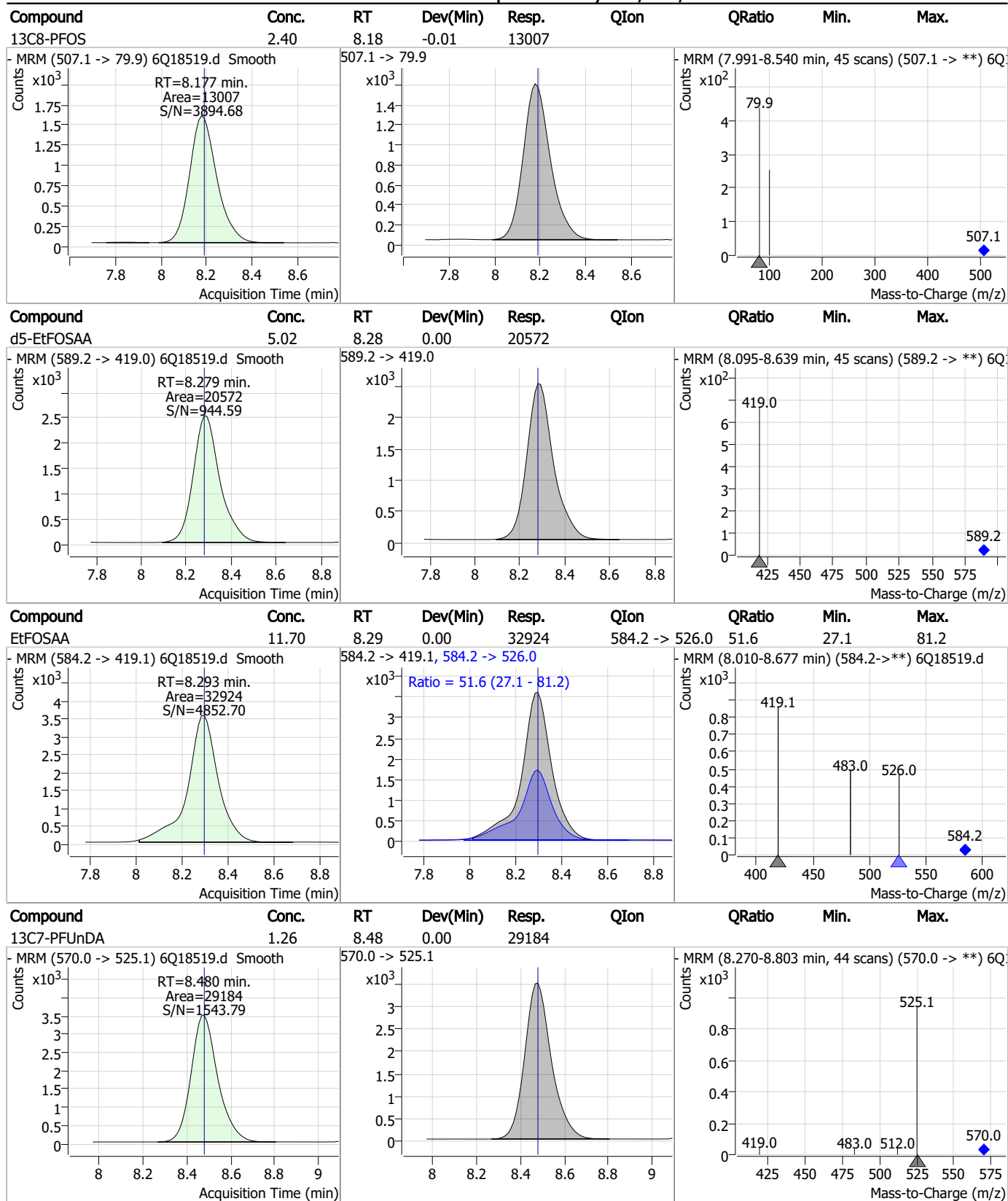
Perfluorinated Compounds by LC/MS/MS



7.7.7

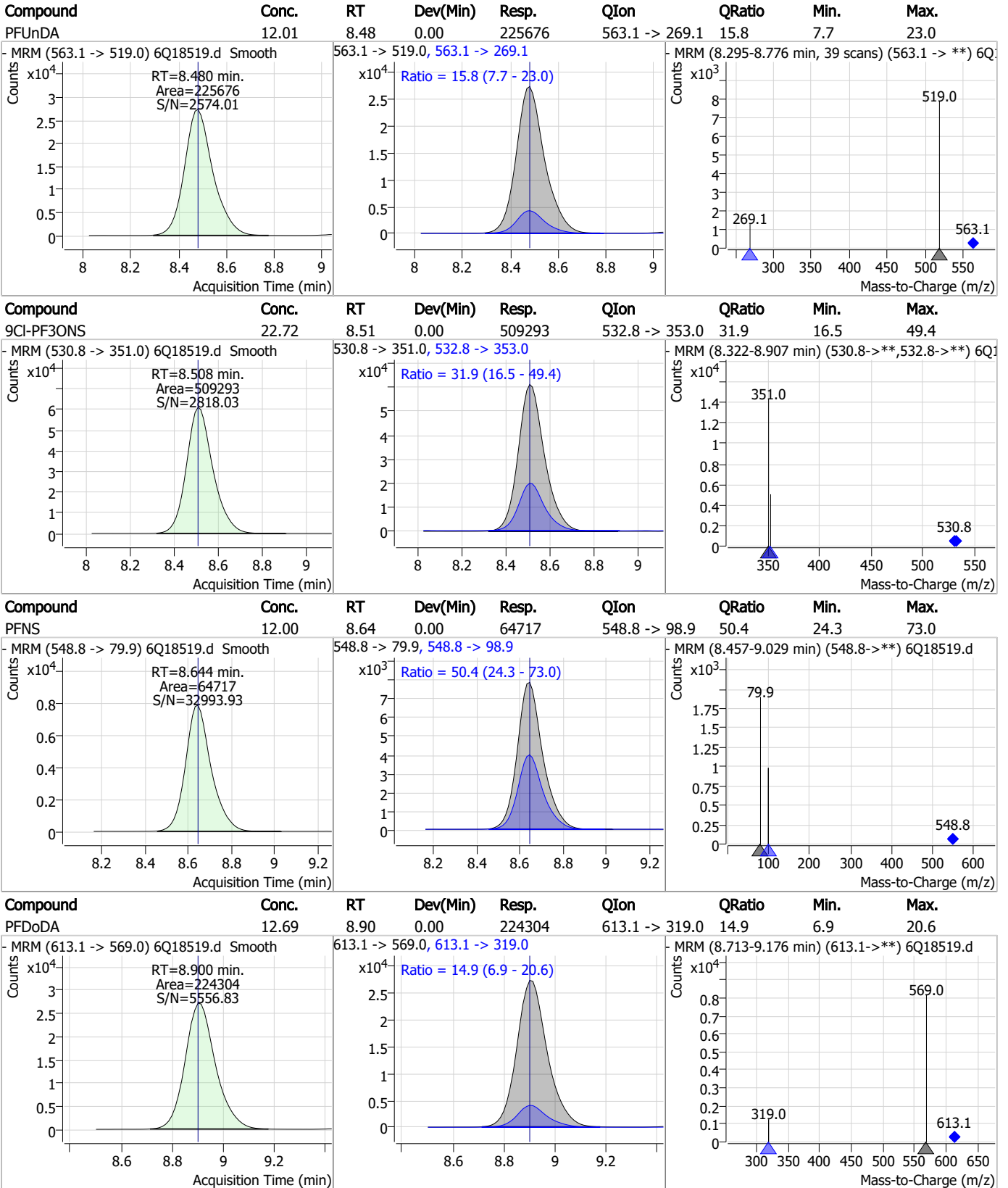
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Perfluorinated Compounds by LC/MS/MS



7.7.7
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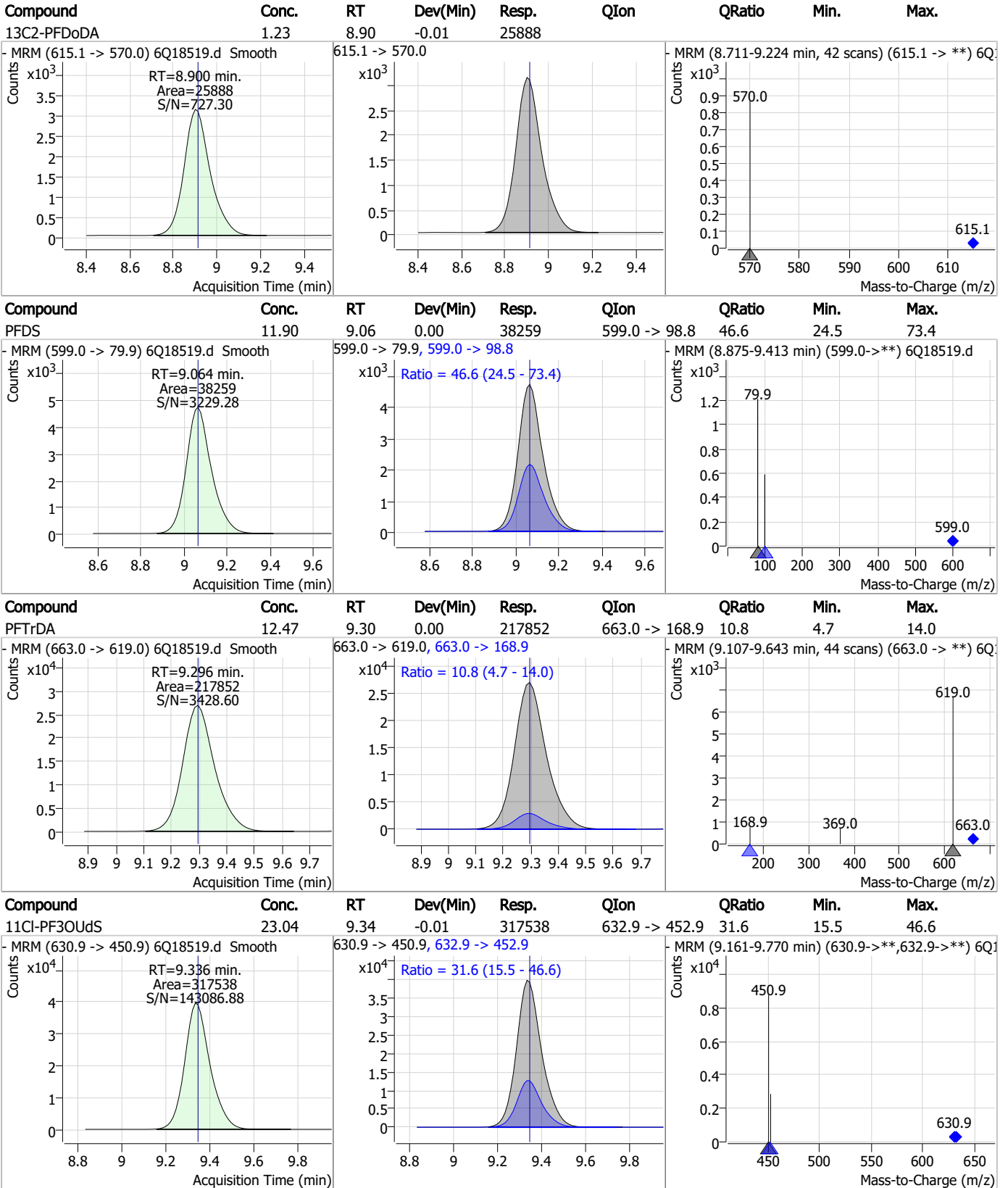
Perfluorinated Compounds by LC/MS/MS



7.7.7

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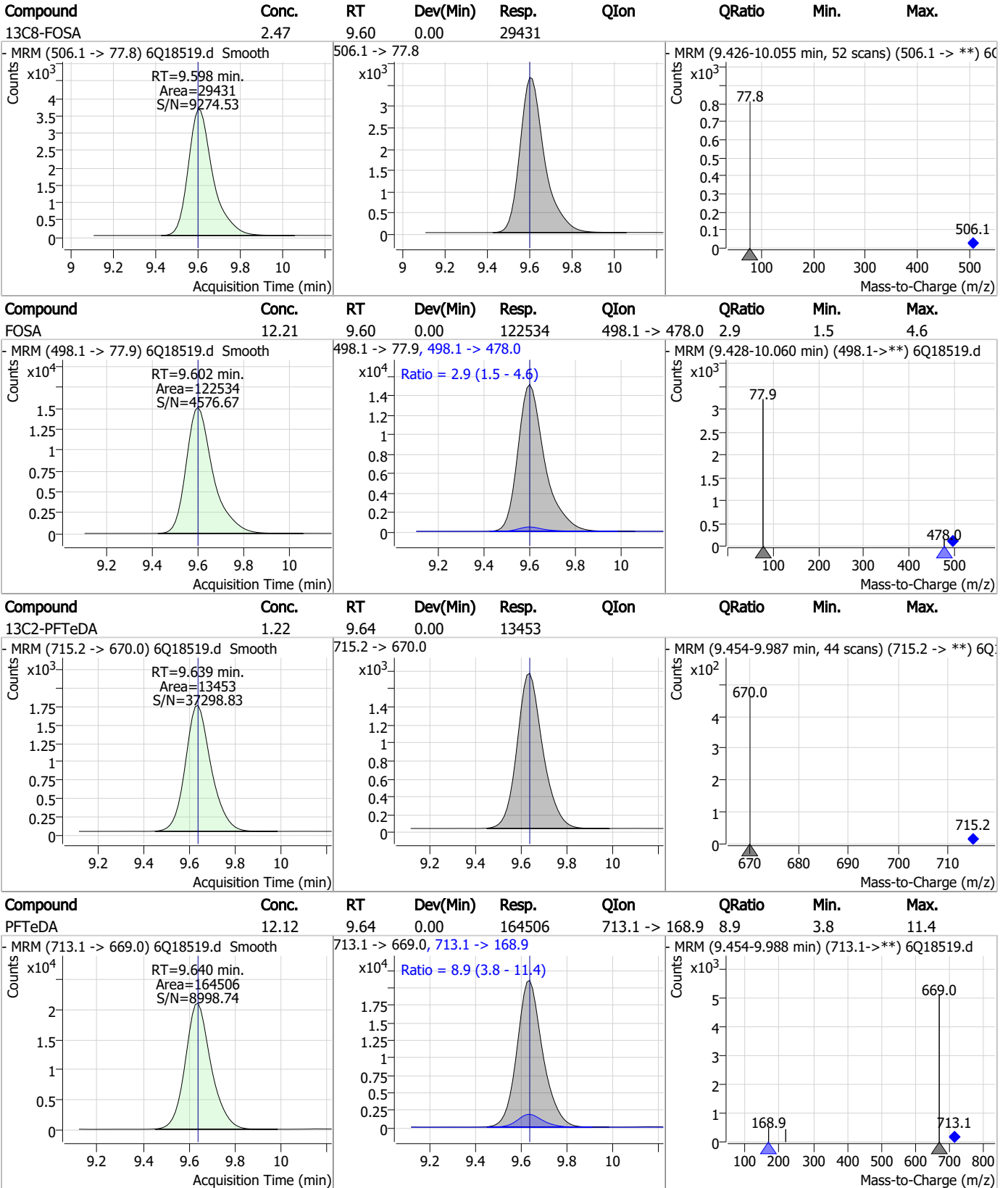
Perfluorinated Compounds by LC/MS/MS



7.7.7

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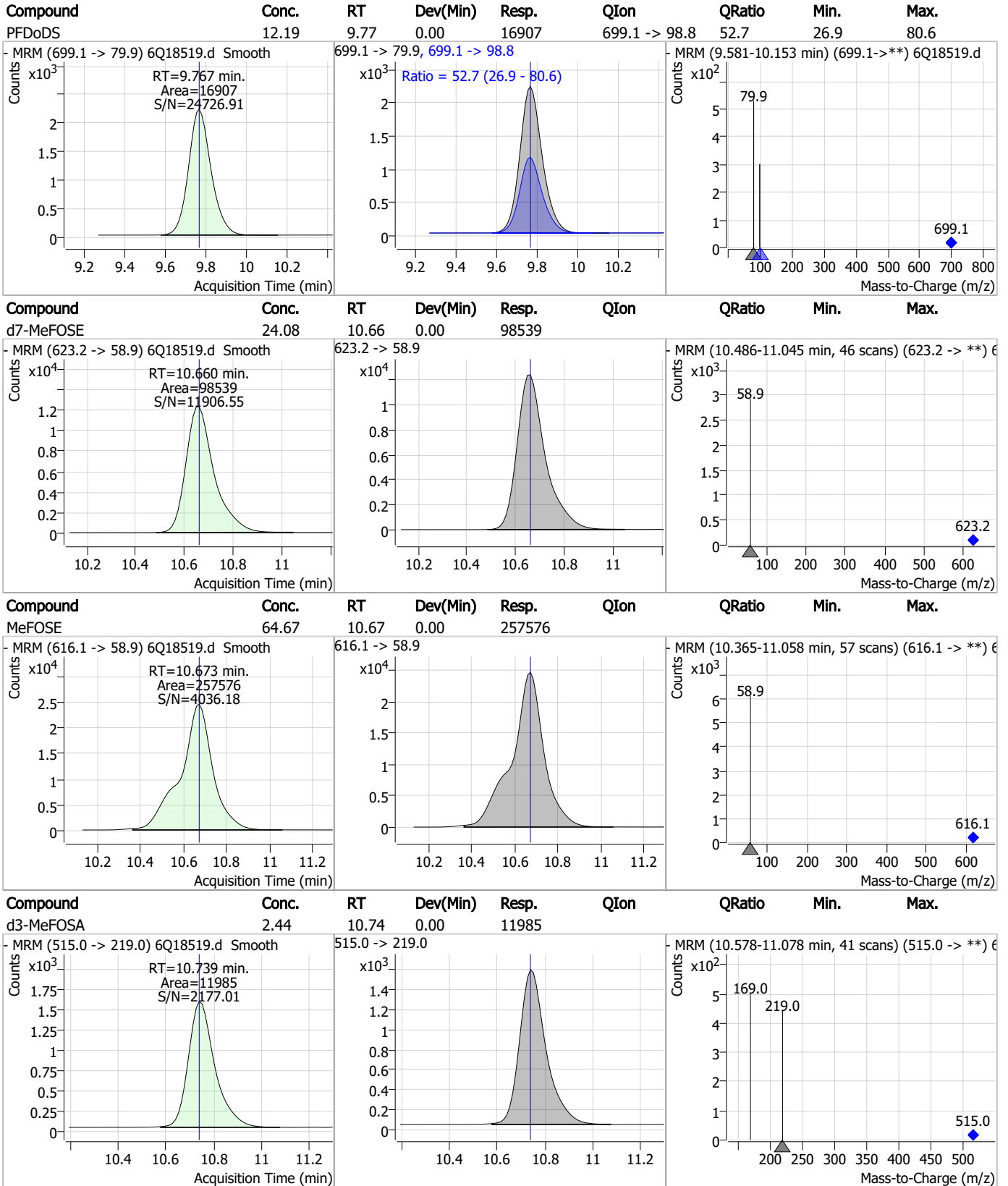
Perfluorinated Compounds by LC/MS/MS



7.7.7

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Perfluorinated Compounds by LC/MS/MS

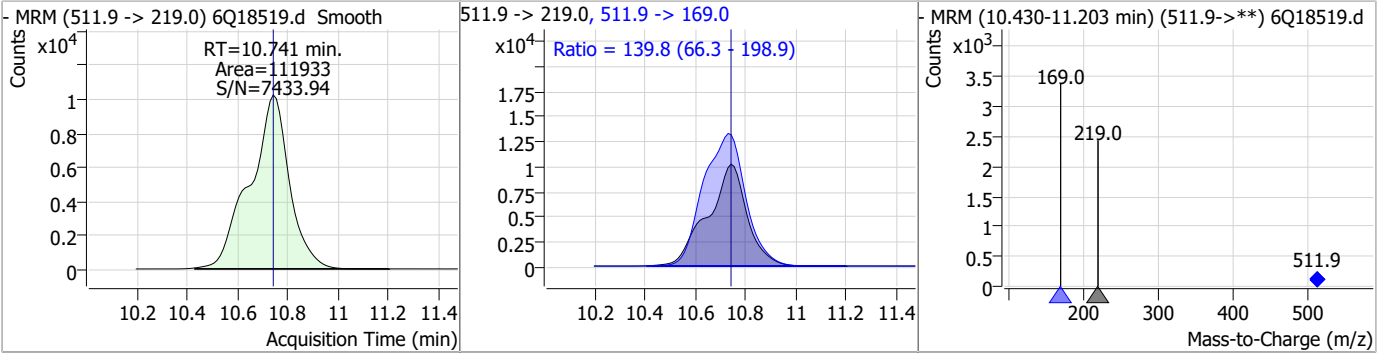


7.7.7

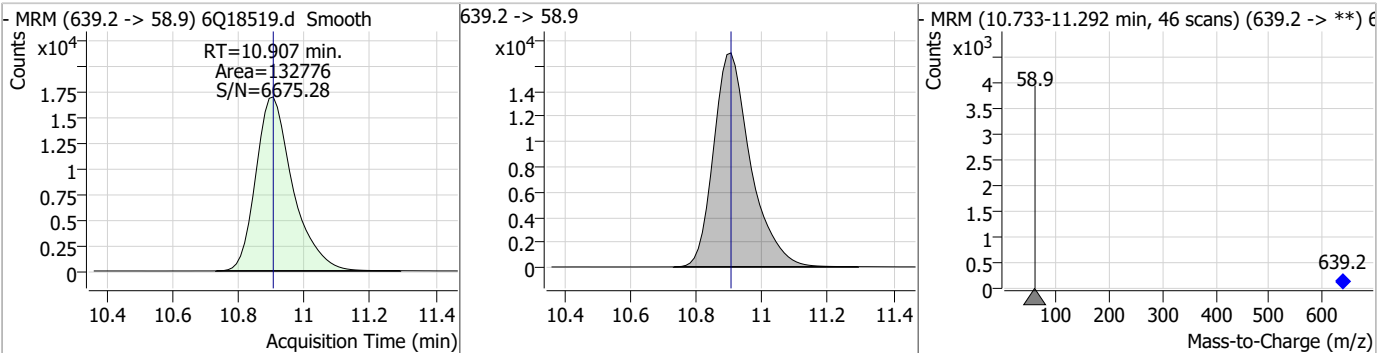
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Perfluorinated Compounds by LC/MS/MS

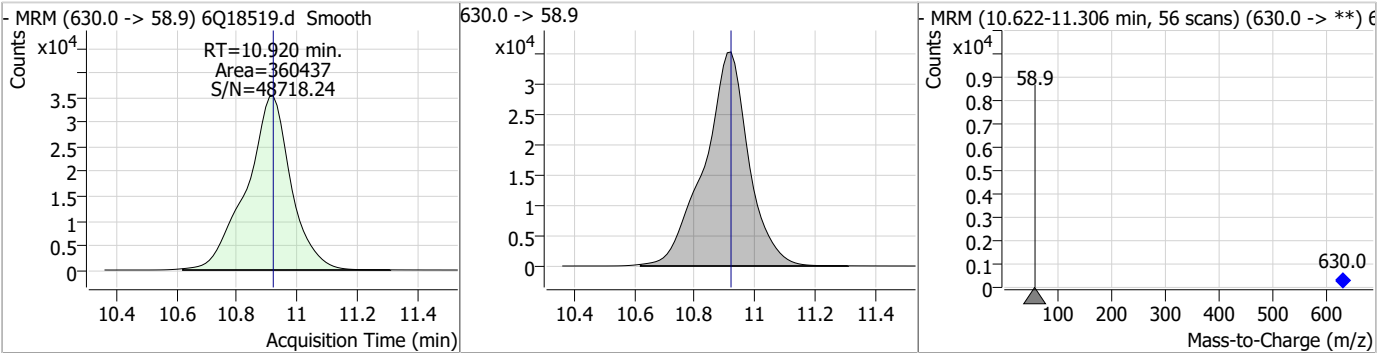
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	24.72	10.74	0.00	111933	511.9 -> 169.0	139.8	66.3	198.9



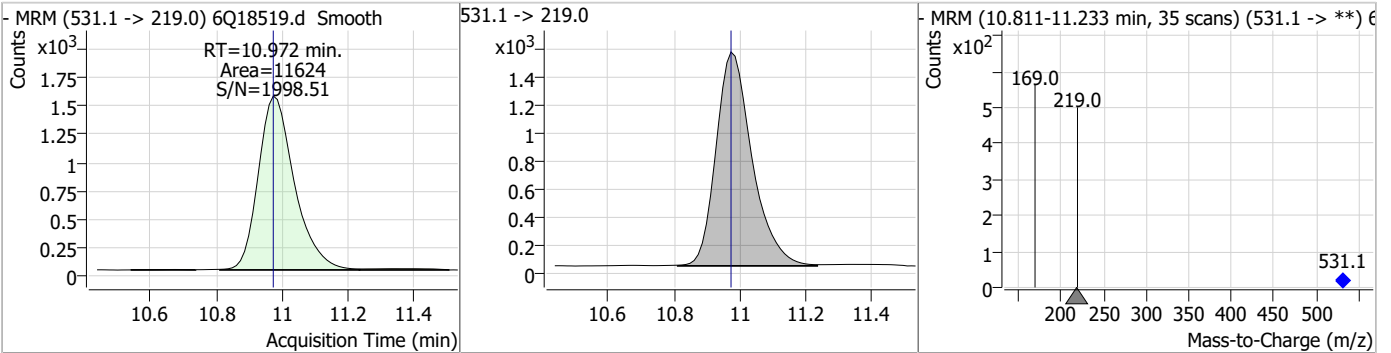
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.54	10.91	0.00	132776				



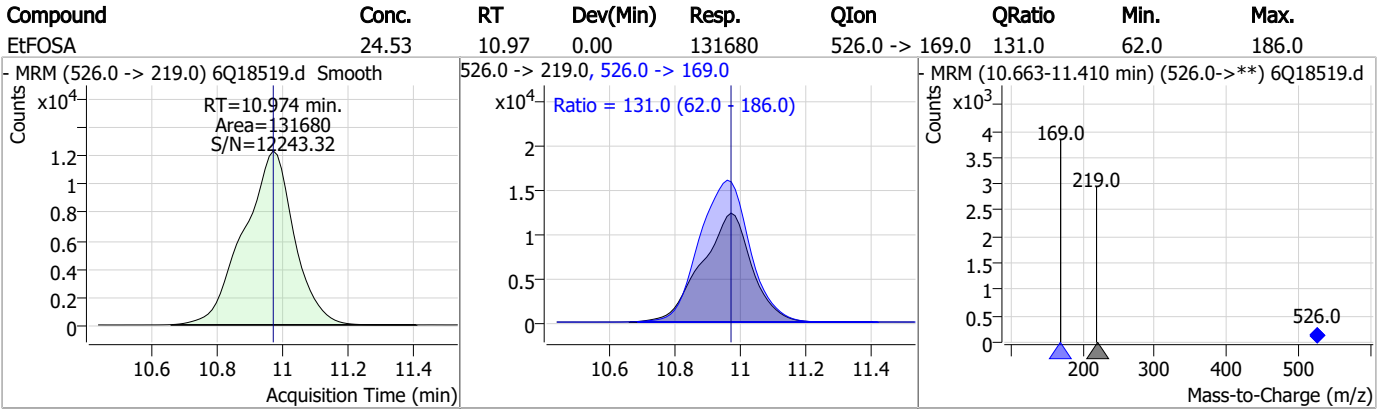
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	61.66	10.92	0.00	360437				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.45	10.97	0.00	11624				



Perfluorinated Compounds by LC/MS/MS



7.7.7

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Manual Integration Approval Summary

Sample Number: S6Q278-IC278 Method: EPA DRAFT 1633
Lab FileID: 6Q18519.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 16:33 Supervisor approved: 05/31/23 21:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

777.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 05/31/23 21:17

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18520.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 4:47:58 PM
 Sample Name : ic278-7
 Vial : P1-A8
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	164005	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	55108	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	58845	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	55720	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	83132	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	34106	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	22430	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	27819	1.25 µg/L	0.000
M2-PFDoDA	8.900	615.1 -> 570.0	25289	1.25 µg/L	-0.012
M2-PFTeDA	9.639	715.2 -> 670.0	12972	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	27288	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	22602	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13987	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13056	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	2651	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	3608	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3576	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	21069	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	40258	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	18838	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	95550	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	126708	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	11134	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12059	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	15843	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	69495	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10216	2.50 µg/L	0.000
13C4-PFOA	7.027	417.1 -> 372.0	89525	2.50 µg/L	0.000
13C2-PFDA	8.039	515.1 -> 470.1	29751	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	43003	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	55447	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2651	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3608	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3576	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C2-PFDoDA	8.900	615.1 -> 570.0	25289	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-PFTeDA	9.639	715.2 -> 670.0	12972	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C3-PFBS	5.334	302.1 -> 79.9	22602	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C3-PFHxS	7.130	402.1 -> 79.9	13987	2.53 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C4-PFBA	2.822	216.8 -> 171.9	164005	9.86 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C4-PFHpA	6.382	367.1 -> 322.0	55720	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFHxA	5.417	318.0 -> 273.0	58845	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFPeA	4.210	268.3 -> 223.0	55108	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C6-PFDA	8.027	519.1 -> 474.1	22430	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C7-PFUnDA	8.480	570.0 -> 525.1	27819	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-FOSA	9.598	506.1 -> 77.8	27288	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-PFOA	7.026	421.1 -> 376.0	83132	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOS	8.177	507.1 -> 79.9	13056	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C9-PFNA	7.557	472.1 -> 427.0	34106	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
d3-MeFOSAA	8.084	573.2 -> 419.0	21069	5.19 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40258	10.26 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	12059	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.9%	
d5-EtFOSAA	8.279	589.2 -> 419.0	18838	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d7-MeFOSE	10.660	623.2 -> 58.9	95550	25.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d9-EtFOSE	10.907	639.2 -> 58.9	126708	25.73 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	11134	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	328173	87.78 µg/L	98
		327.1 -> 80.9	126801		
6:2FTS	6.813	427.1 -> 407.0	313491	91.58 µg/L	98
		427.1 -> 80.9	102114		
8:2FTS	7.828	527.1 -> 507.0	174068	91.95 µg/L	95
		527.1 -> 80.8	68755		
EtFOSAA	8.293	584.2 -> 419.1	69569	27.00 µg/L	93
		584.2 -> 526.0	34453		
FOSA	9.602	498.1 -> 77.9	244126	26.24 µg/L	100
		498.1 -> 478.0	7445		
MeFOSAA	8.097	570.1 -> 419.0	119658	25.81 µg/L	100
		570.1 -> 483.0	23051		
PFBA	2.831	212.8 -> 168.9	550407	101.84 µg/L	100
PFBS	5.335	298.7 -> 79.9	178241	22.81 µg/L	99
		298.7 -> 98.8	63083		
PFDA	8.027	512.9 -> 469.0	621775	24.19 µg/L	99
		512.9 -> 219.0	101245		
PFDoDA	8.900	613.1 -> 569.0	444548	25.75 µg/L	95
		613.1 -> 319.0	69163		
PFDS	9.064	599.0 -> 79.9	77886	24.13 µg/L	96

7.7.8
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	36184			
PFHpA	6.382	363.1 -> 319.0	620689	25.05	µg/L	98
		363.1 -> 169.0	97074			
PFHpS	7.698	449.0 -> 79.9	155965	25.01	µg/L	94
		449.0 -> 98.9	70378			
PFHxA	5.420	313.0 -> 269.0	508627	25.27	µg/L	98
		313.0 -> 118.9	26346			
PFHxS	7.131	398.7 -> 79.9	146448	22.34	µg/L	m 99
		398.7 -> 98.9	70965			
PFNA	7.558	463.0 -> 419.0	643604	25.95	µg/L	100
		463.0 -> 219.0	125553			
PFNS	8.644	548.8 -> 79.9	122169	22.57	µg/L	89
		548.8 -> 98.9	68622			
PFOA	7.028	413.0 -> 369.0	890546	25.28	µg/L	96
		413.0 -> 169.0	170158			
PFOS	8.178	498.9 -> 79.9	141549	23.15	µg/L	m 94
		498.9 -> 98.8	69181			
PFPeA	4.212	263.0 -> 219.0	678960	50.39	µg/L	100
PFPeS	6.422	349.1 -> 79.9	152809	23.59	µg/L	95
		349.1 -> 98.9	67475			
PFTeDA	9.640	713.1 -> 669.0	321488	24.56	µg/L	97
		713.1 -> 168.9	27606			
PFTrDA	9.296	663.0 -> 619.0	422308	24.75	µg/L	95
		663.0 -> 168.9	46676			
PFUnDA	8.480	563.1 -> 519.0	451062	25.17	µg/L	95
		563.1 -> 269.1	78475			
11Cl-PF3OUdS	9.348	630.9 -> 450.9	624674	46.05	µg/L	99
		632.9 -> 452.9	198599			
9Cl-PF3ONS	8.508	530.8 -> 351.0	1045285	47.38	µg/L	99
		532.8 -> 353.0	336878			
ADONA	6.646	376.9 -> 250.9	2380357	46.43	µg/L	99
		376.9 -> 84.8	624254			
HFPO-DA	5.783	284.9 -> 168.9	170081	50.37	µg/L	95
		284.9 -> 184.9	19934			
3:3FTCA	3.671	241.0 -> 177.0	107633	126.02	µg/L	97
		241.0 -> 117.0	14165			
5:3FTCA	6.086	341.0 -> 237.1	2120850	607.82	µg/L	95
		341.0 -> 217.0	1586413			
7:3FTCA	7.523	441.0 -> 316.9	1391970	624.35	µg/L	99
		441.0 -> 336.9	3078194			
EtFOSA	10.974	526.0 -> 219.0	265493	51.62	µg/L	90
		526.0 -> 169.0	359933			
EtFOSE	10.920	630.0 -> 58.9	701801	125.80	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	220104	48.31	µg/L	90
		511.9 -> 169.0	318675			
MeFOSE	10.673	616.1 -> 58.9	485526	125.71	µg/L	100
PFDoDS	9.767	699.1 -> 79.9	34449	24.75	µg/L	100
		699.1 -> 98.8	18400			
NFDHA	5.299	295.0 -> 201.0	125622	52.07	µg/L	97
		295.0 -> 84.9	31896			
PFMBA	4.626	279.0 -> 85.1	469771	50.89	µg/L	100
PFMPA	3.363	229.0 -> 84.9	369226	51.25	µg/L	100
PFEESA	5.875	314.8 -> 134.9	1214427	45.67	µg/L	98
		314.8 -> 82.9	41088			

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

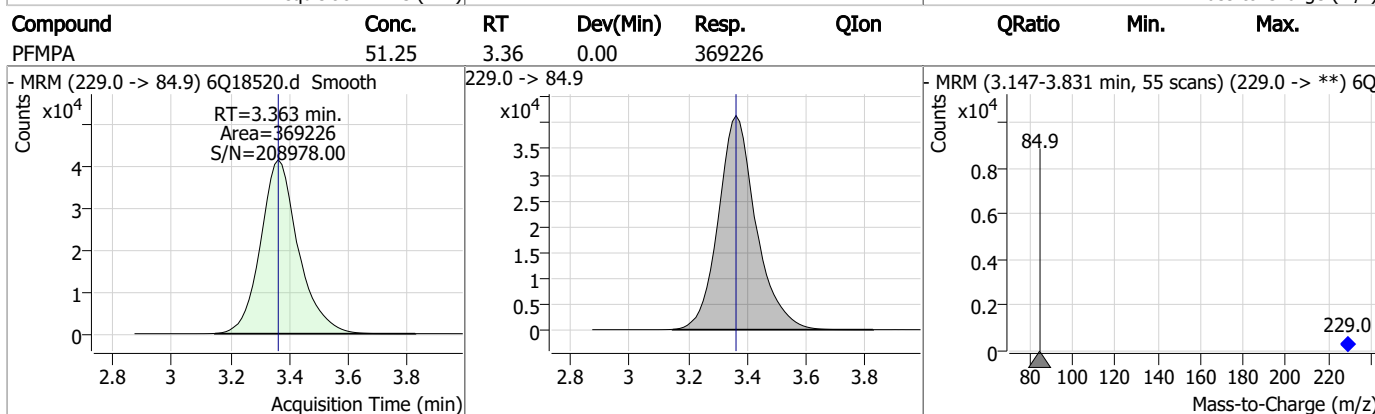
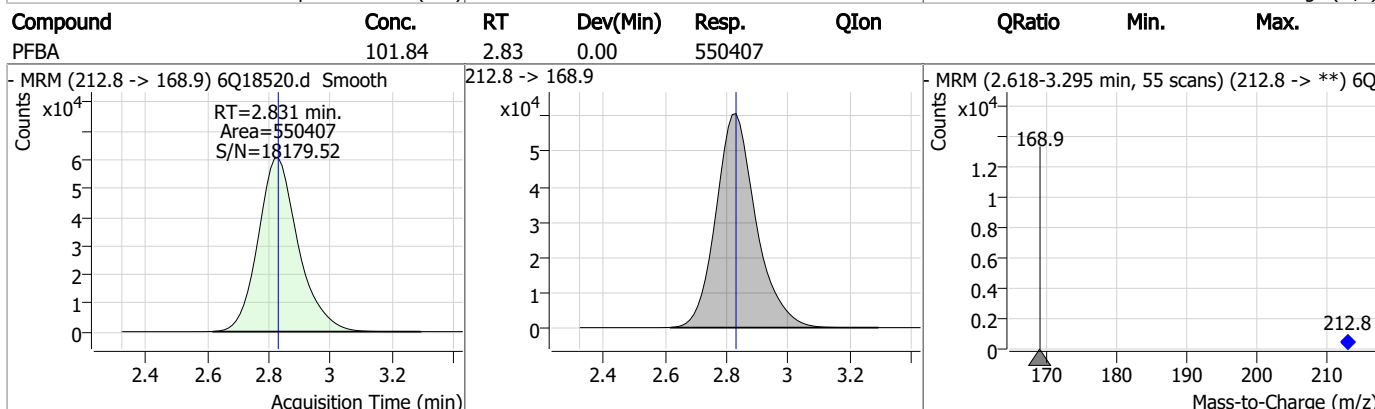
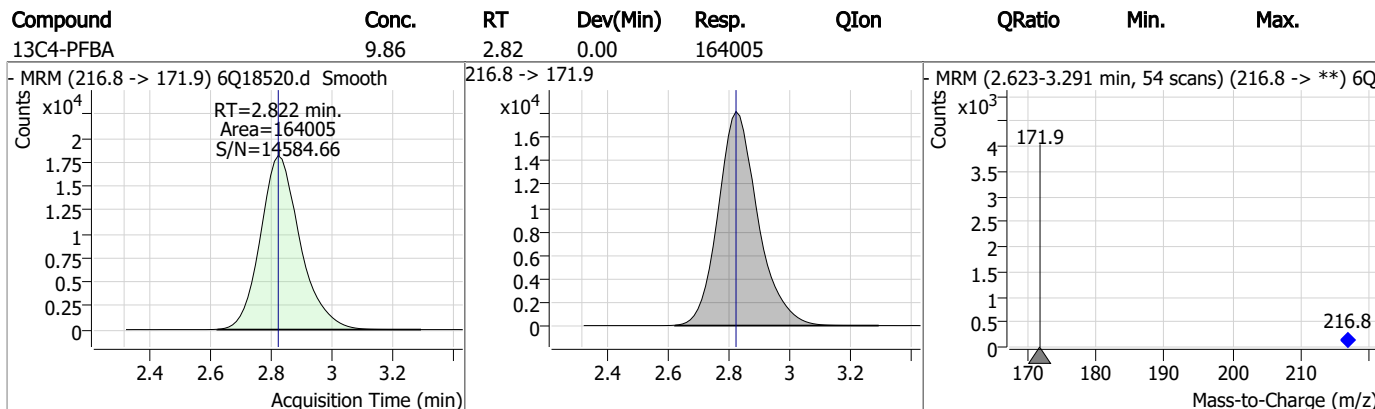
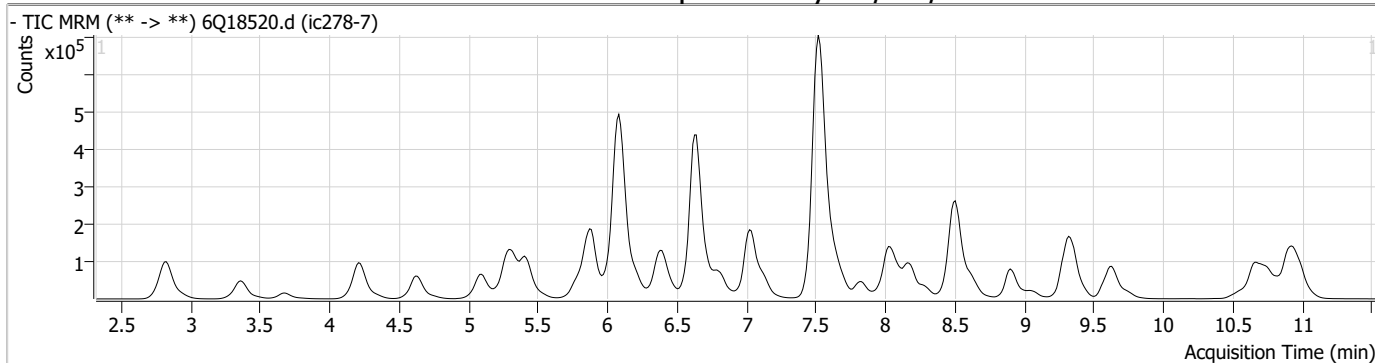
Perfluorinated Compounds by LC/MS/MS

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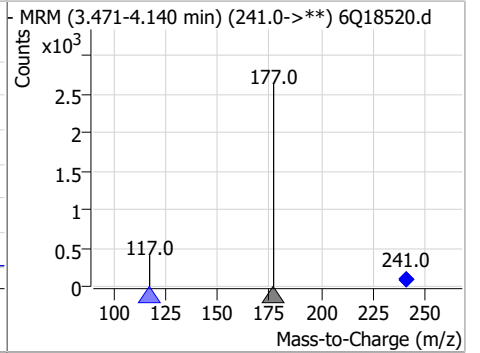
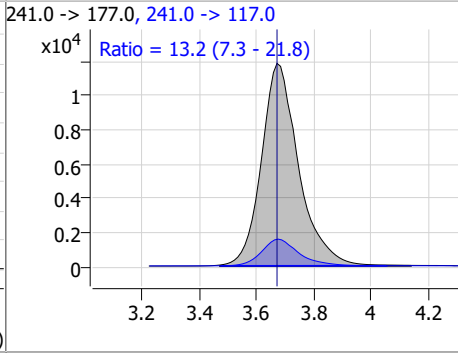
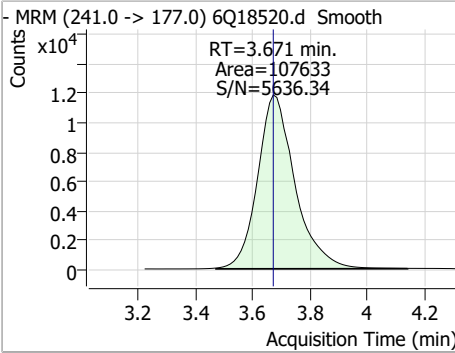


Perfluorinated Compounds by LC/MS/MS

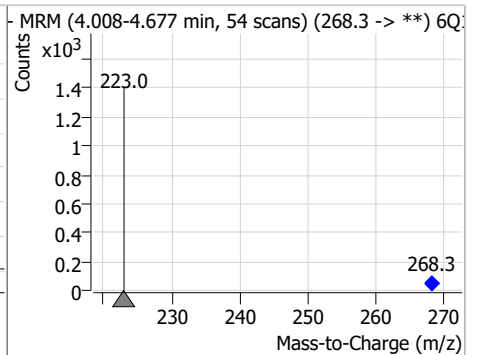
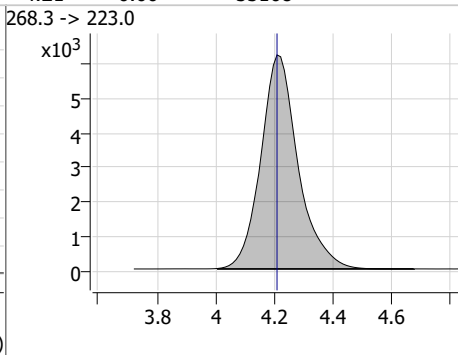
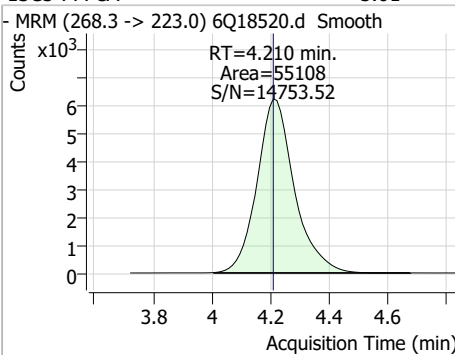


Perfluorinated Compounds by LC/MS/MS

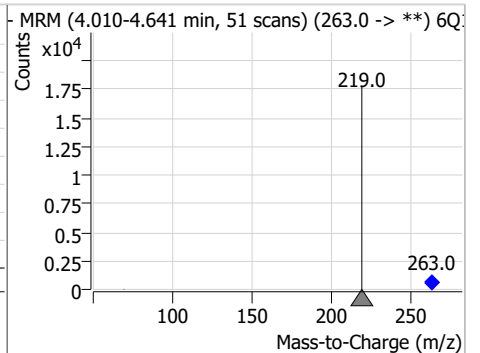
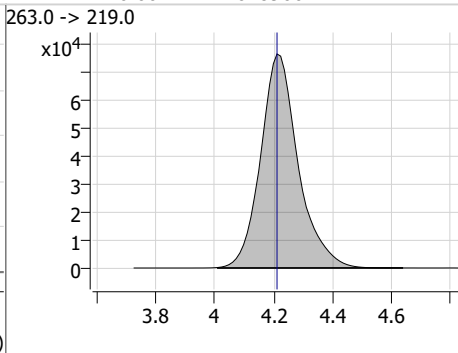
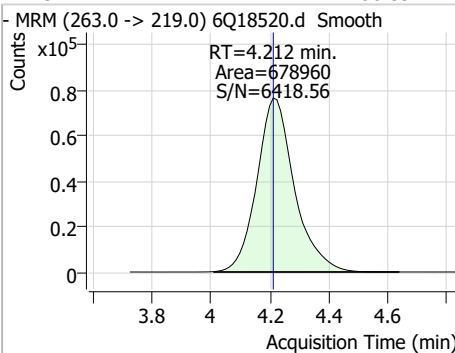
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	126.02	3.67	0.00	107633	241.0 -> 117.0	13.2	7.3	21.8



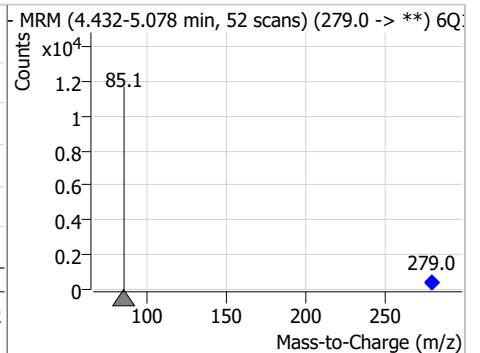
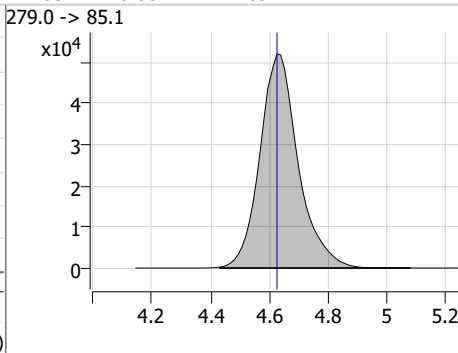
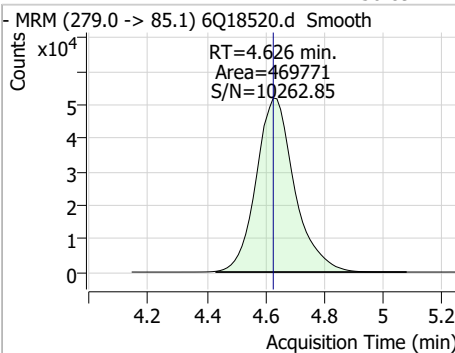
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.01	4.21	0.00	55108				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.39	4.21	0.00	678960				



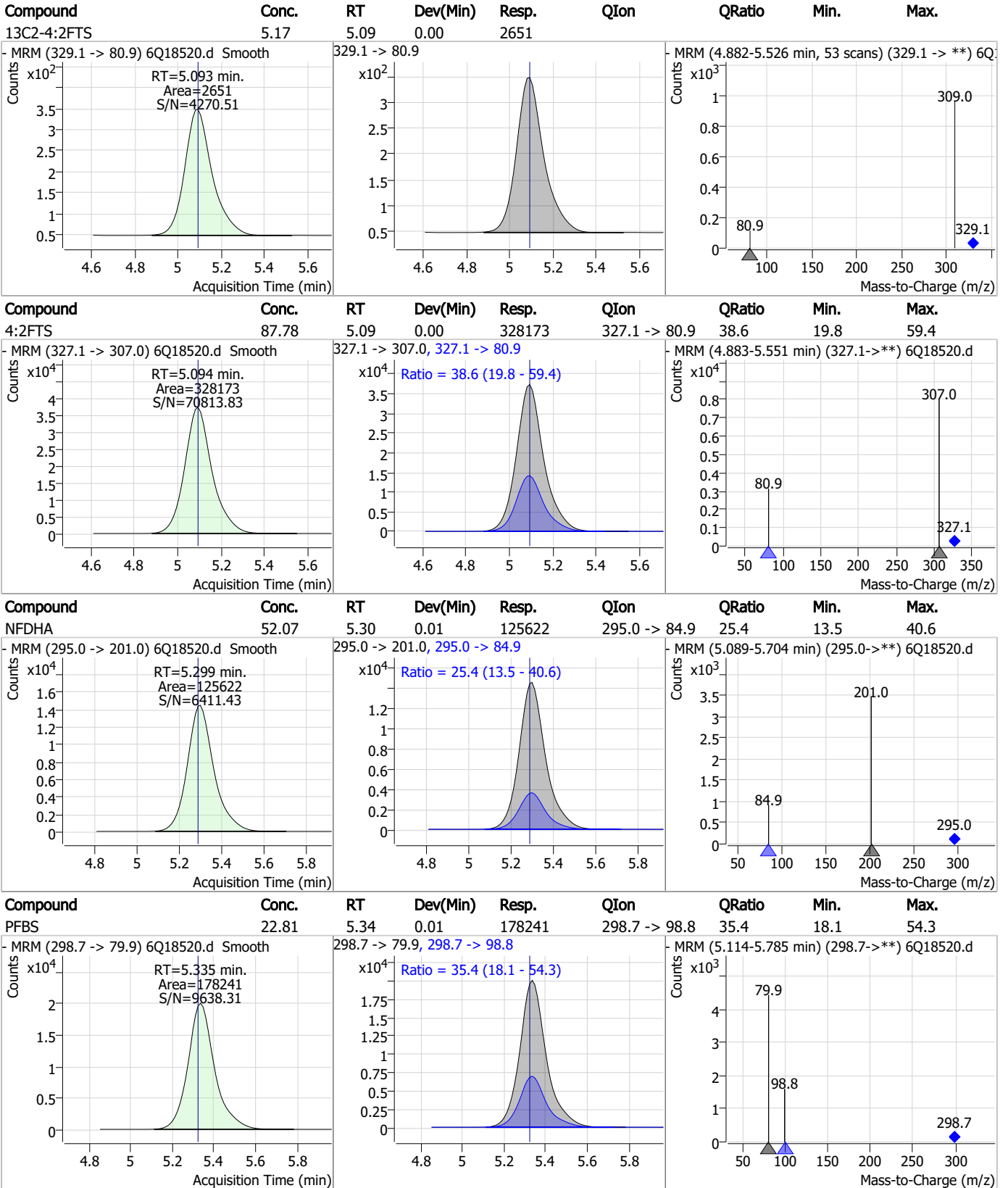
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	50.89	4.63	0.00	469771				



7.7.8

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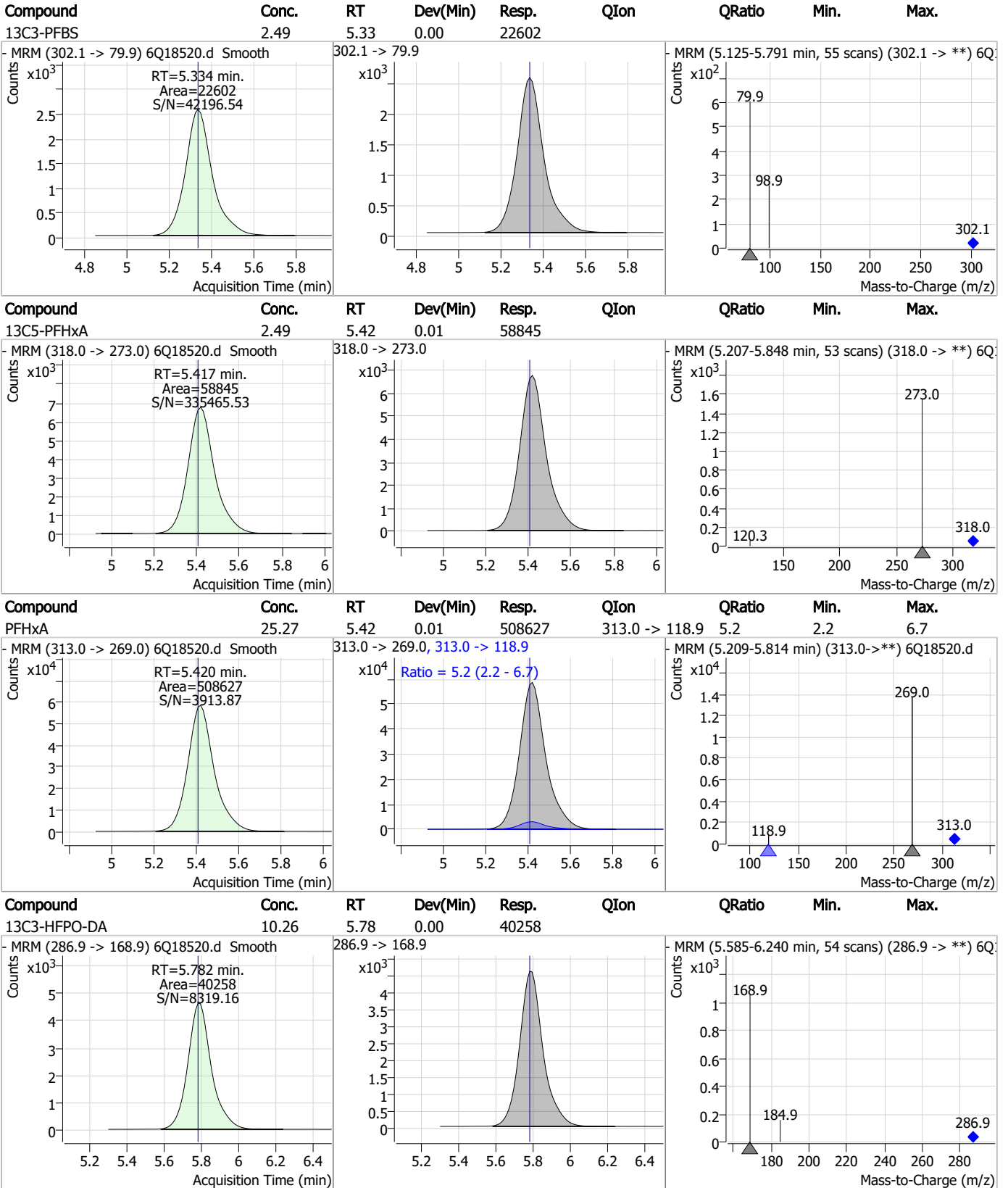
Perfluorinated Compounds by LC/MS/MS



7.7.8

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Perfluorinated Compounds by LC/MS/MS

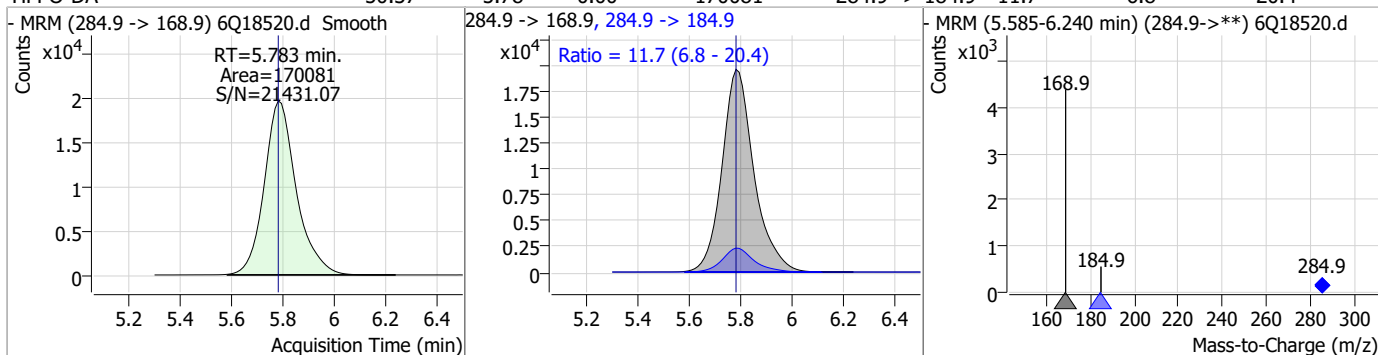


7.7.8

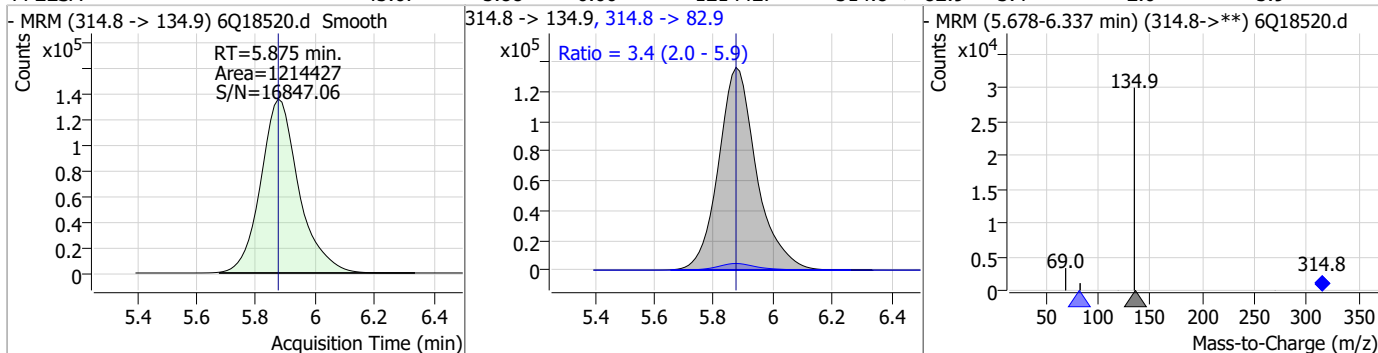
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Perfluorinated Compounds by LC/MS/MS

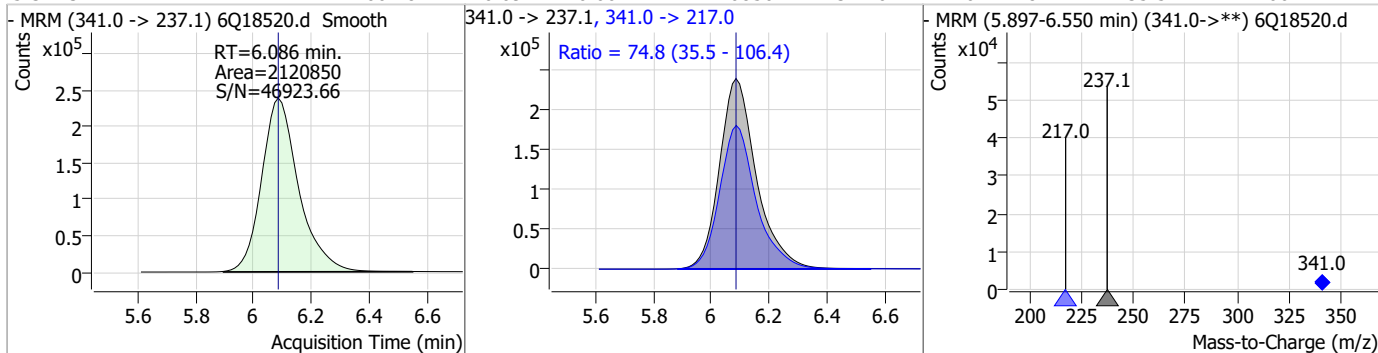
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.37	5.78	0.00	170081	284.9 -> 184.9	11.7	6.8	20.4



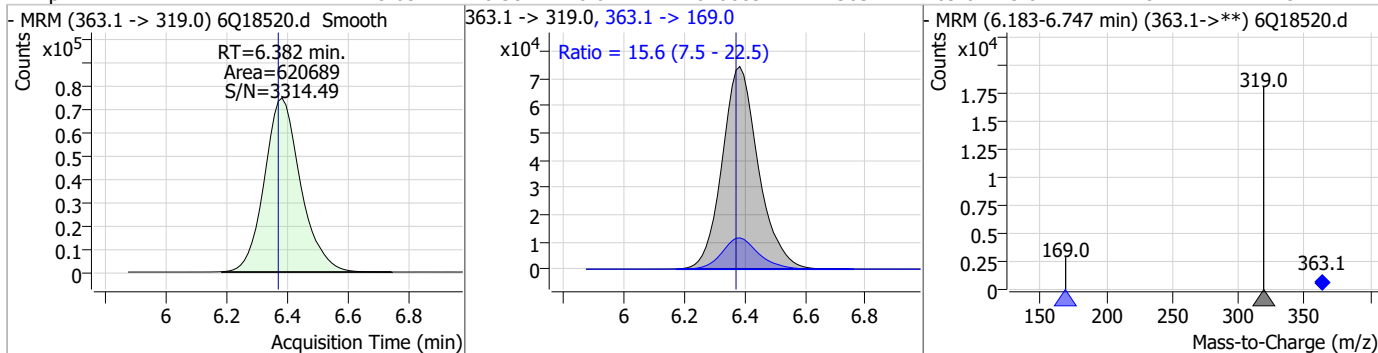
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	45.67	5.88	0.00	1214427	314.8 -> 82.9	3.4	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	607.82	6.09	0.00	2120850	341.0 -> 217.0	74.8	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	25.05	6.38	0.01	620689	363.1 -> 169.0	15.6	7.5	22.5



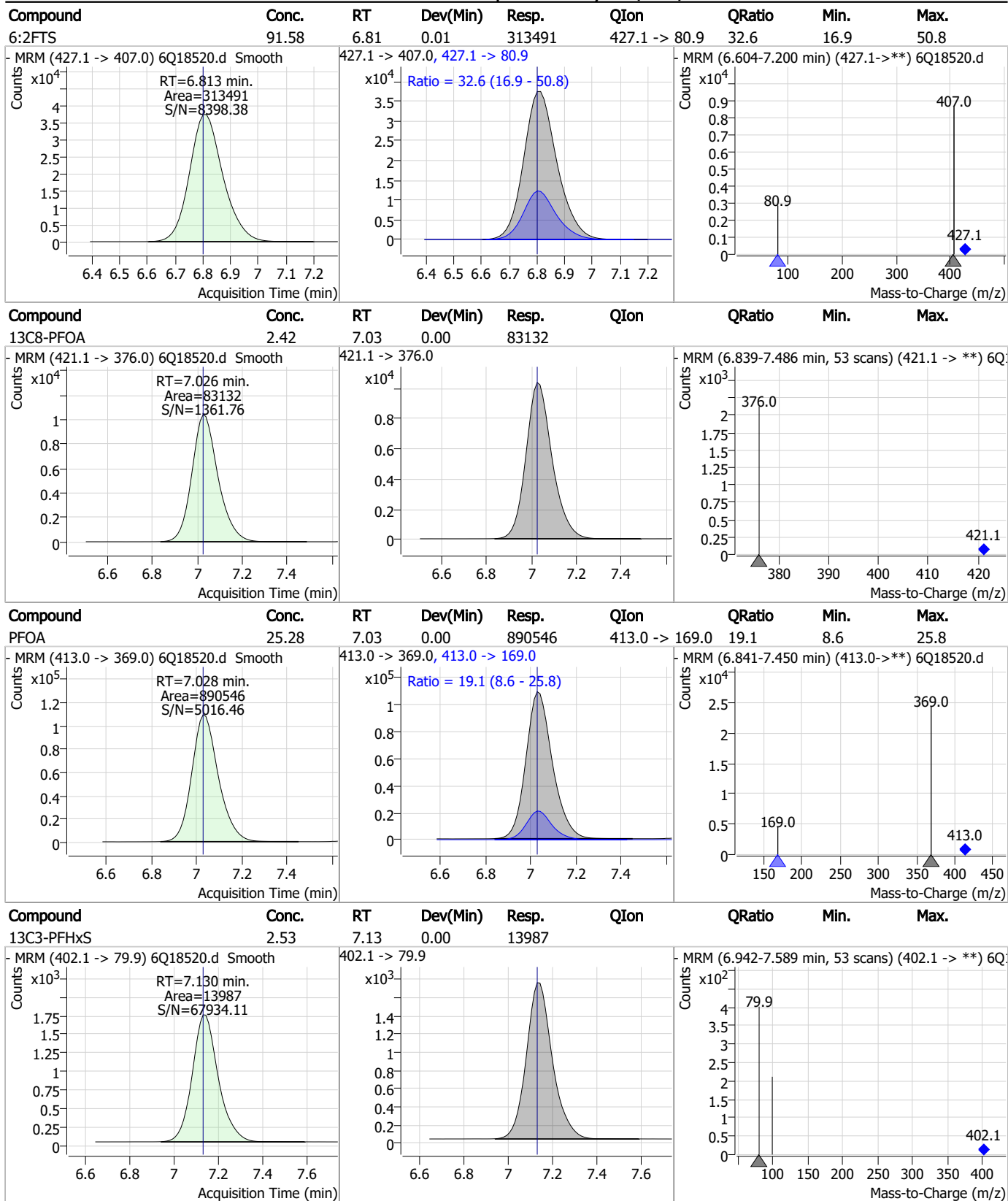
7.7.8
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.55	6.38	0.00	55720				
PFPeS	23.59	6.42	0.00	152809	349.1 -> 98.9	44.2	23.7	71.0
ADONA	46.43	6.65	0.01	2380357	376.9 -> 84.8	26.2	13.4	40.2
13C2-6-2FTS	5.14	6.80	0.00	3608				

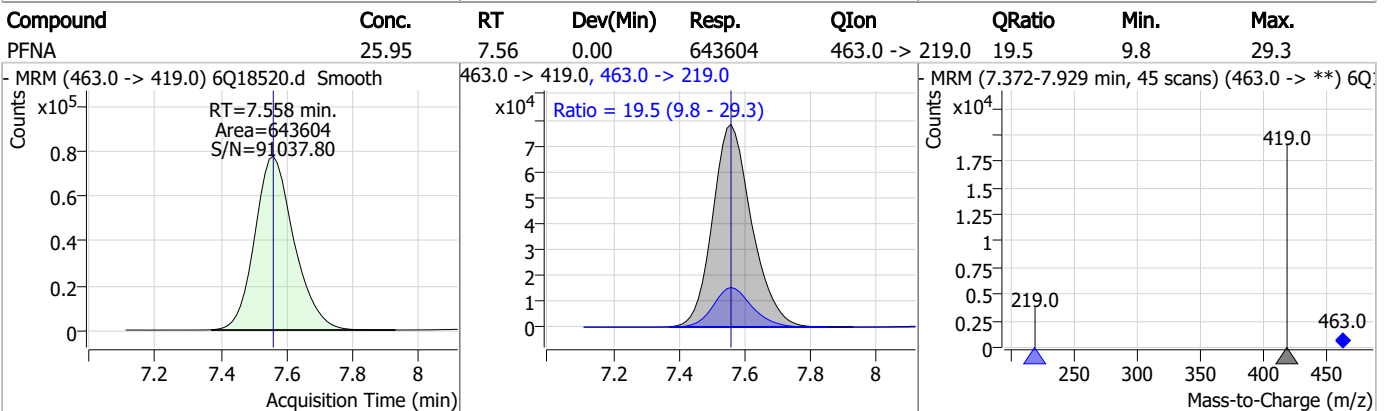
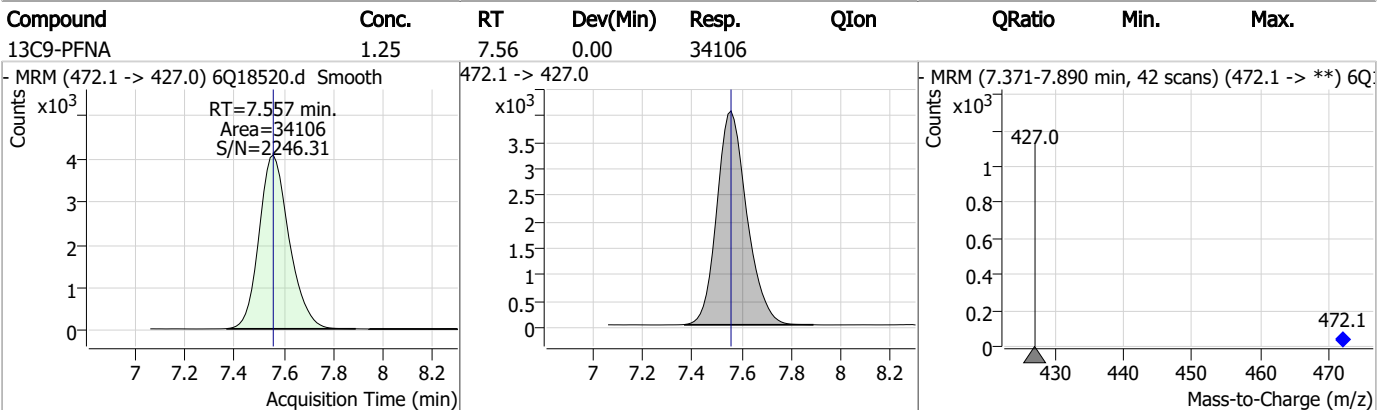
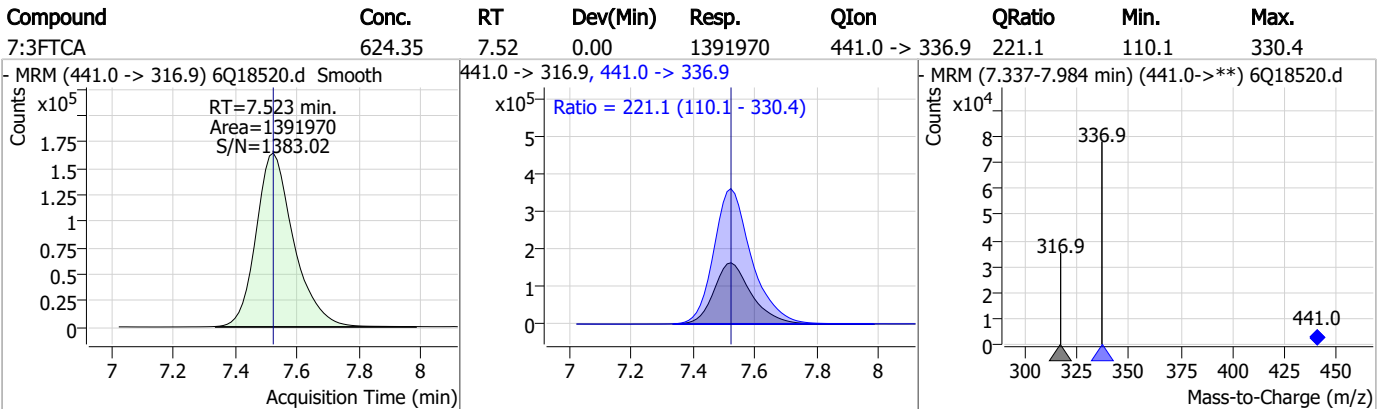
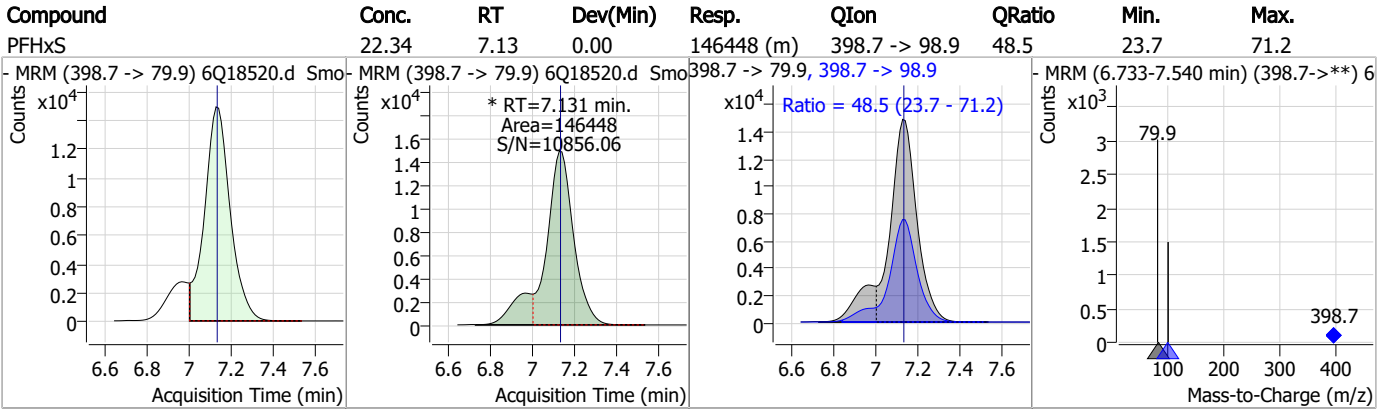
7.7.8
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Perfluorinated Compounds by LC/MS/MS

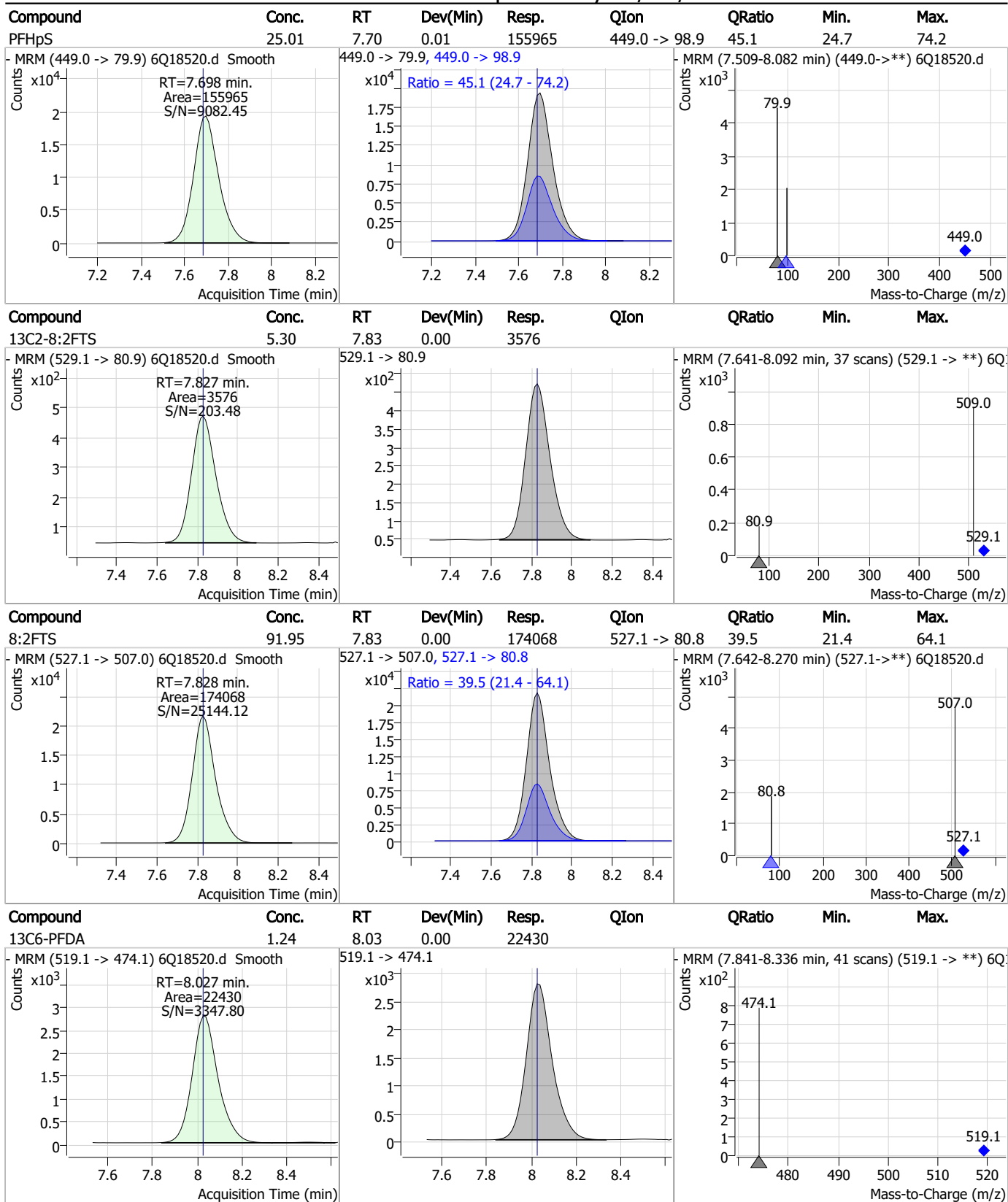


7.7.8
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Perfluorinated Compounds by LC/MS/MS



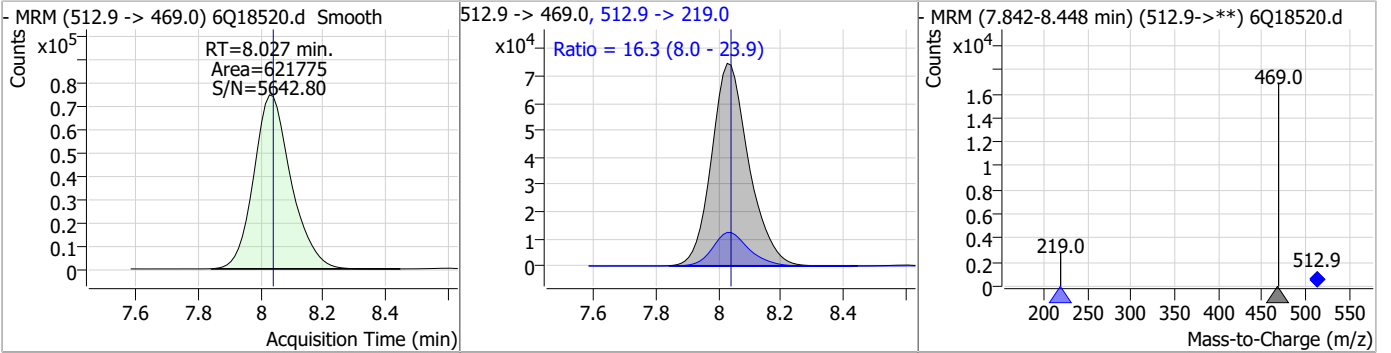
Perfluorinated Compounds by LC/MS/MS



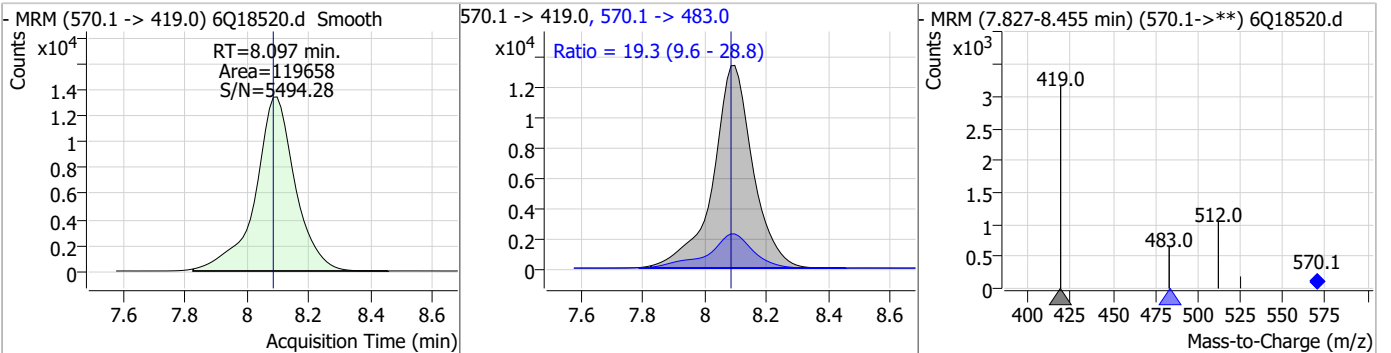
7.7.8
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Perfluorinated Compounds by LC/MS/MS

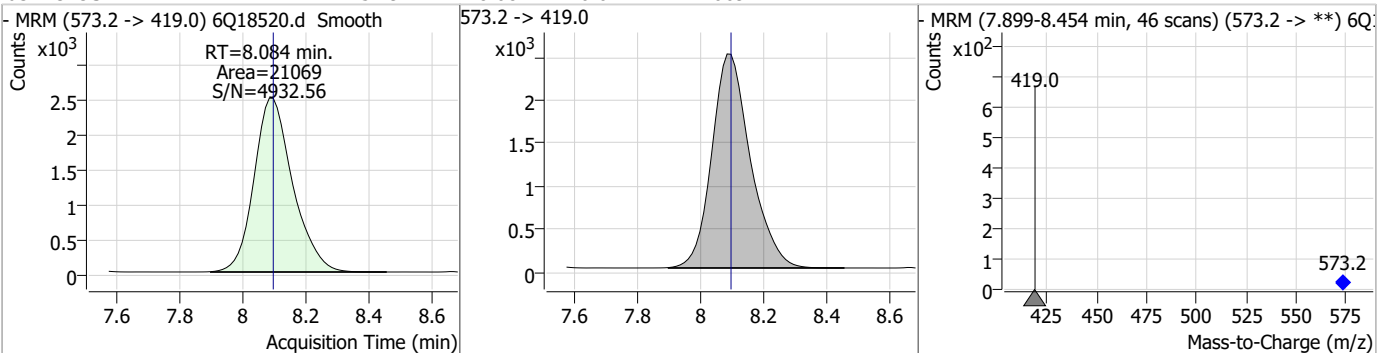
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	24.19	8.03	-0.01	621775	512.9 -> 219.0	16.3	8.0	23.9



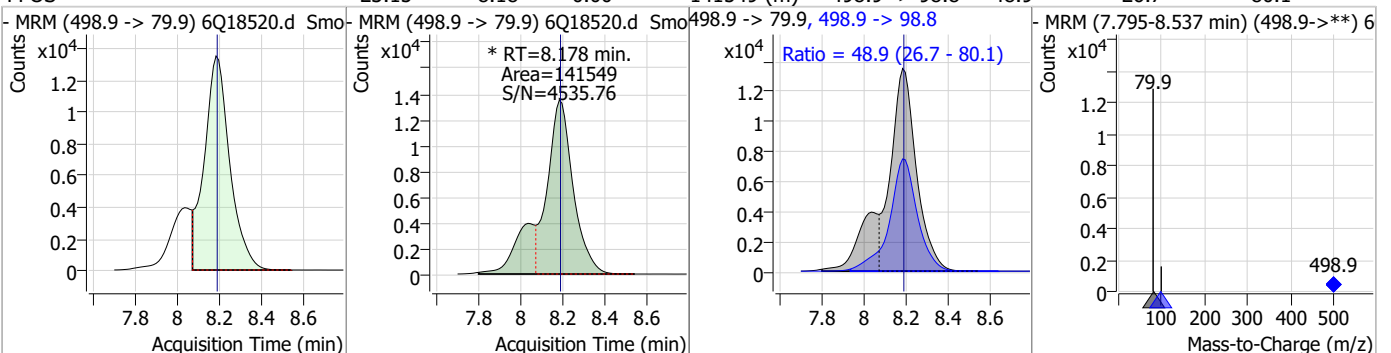
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	25.81	8.10	0.01	119658	570.1 -> 483.0	19.3	9.6	28.8



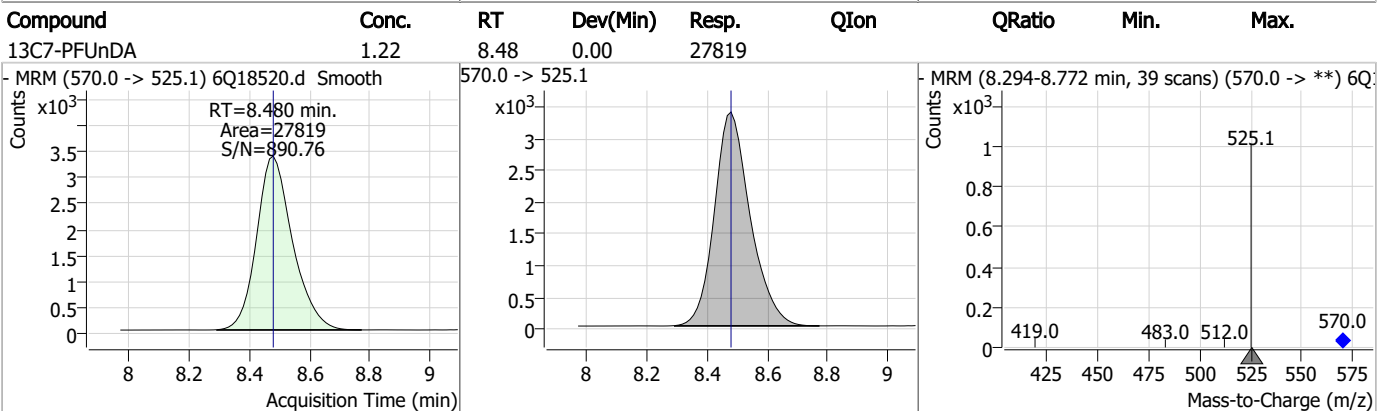
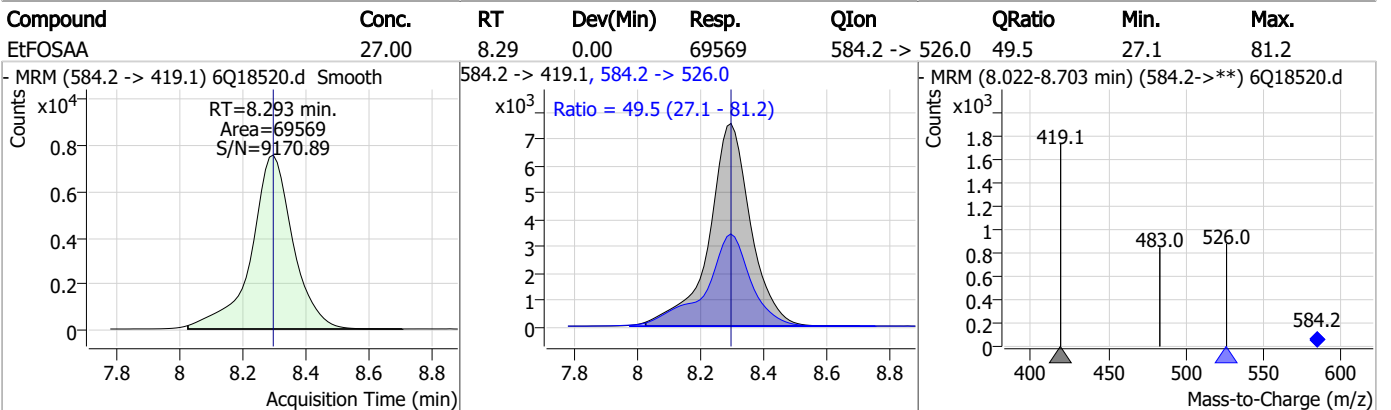
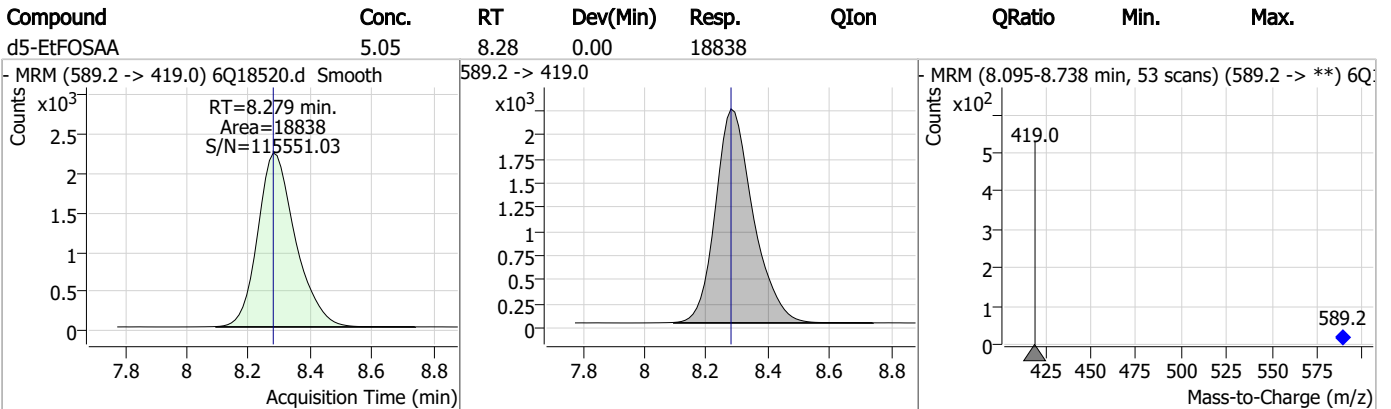
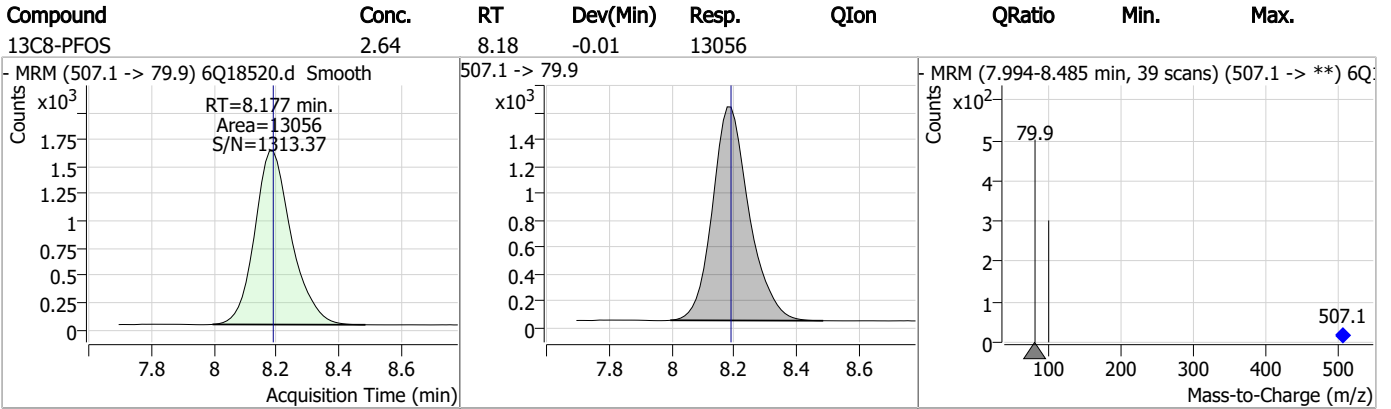
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.19	8.08	-0.01	21069				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.15	8.18	0.00	141549 (m)	498.9 -> 98.8	48.9	26.7	80.1

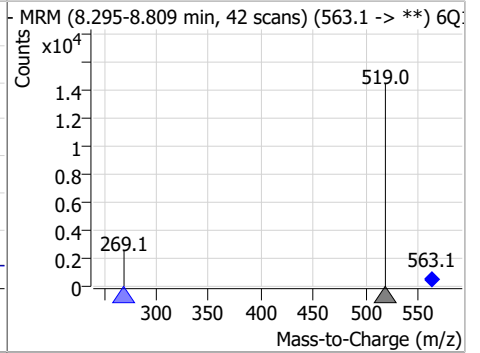
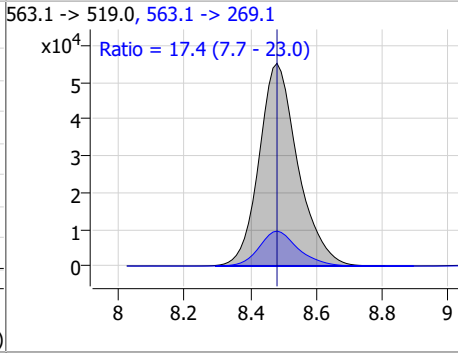
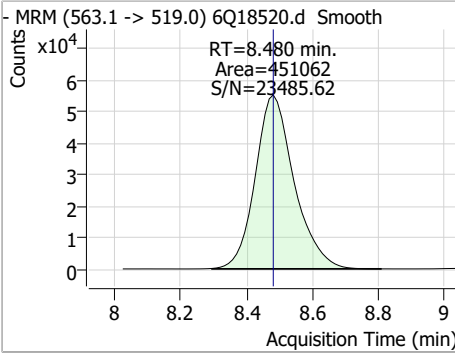


Perfluorinated Compounds by LC/MS/MS

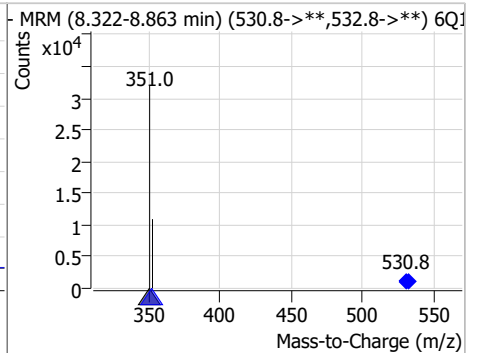
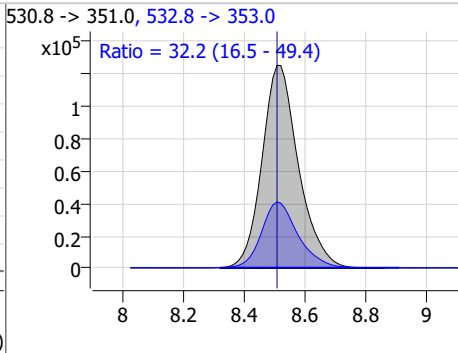
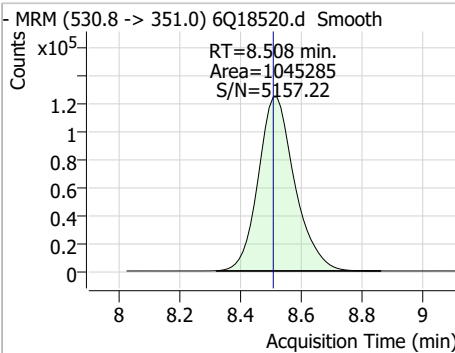


Perfluorinated Compounds by LC/MS/MS

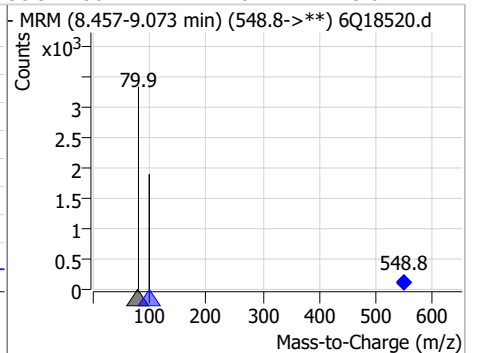
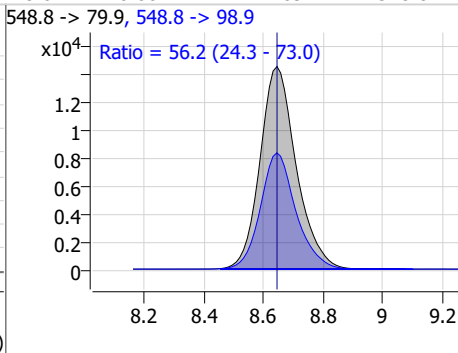
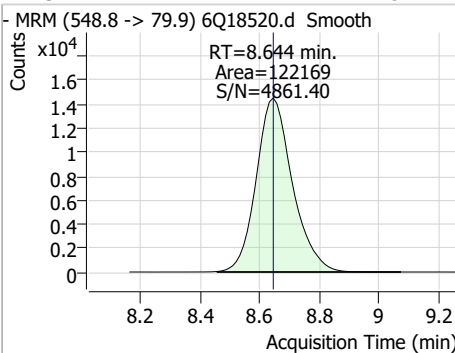
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	25.17	8.48	0.00	451062	563.1 -> 269.1	17.4	7.7	23.0



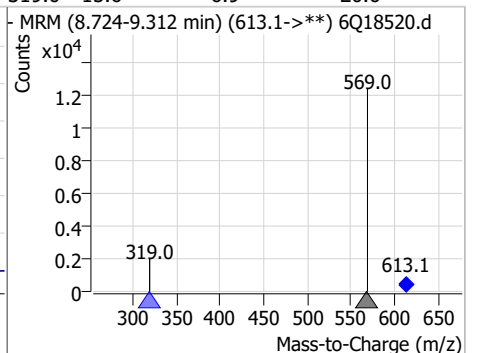
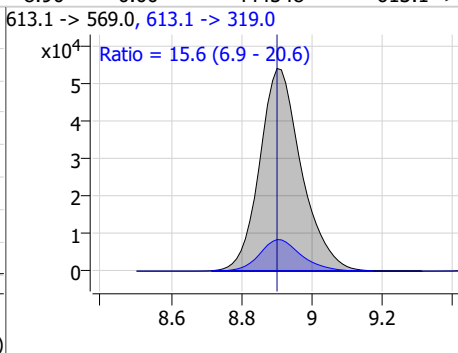
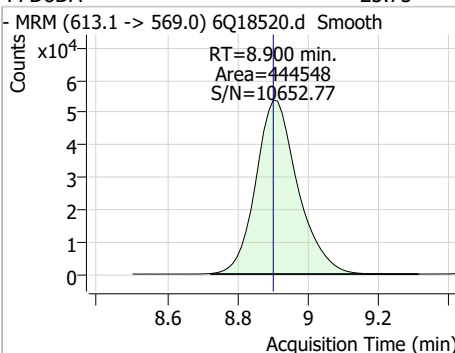
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	47.38	8.51	0.00	1045285	532.8 -> 353.0	32.2	16.5	49.4



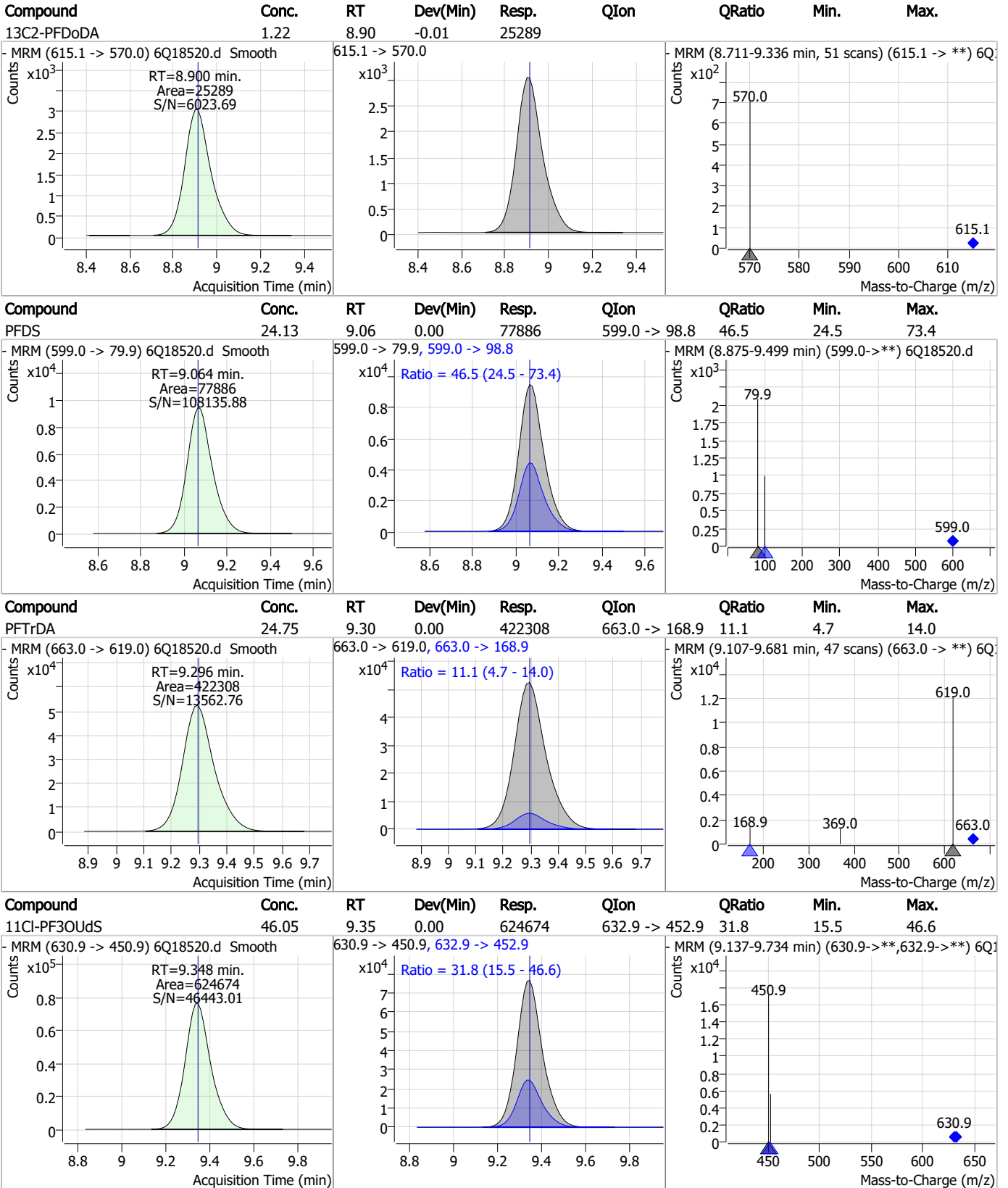
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.57	8.64	0.00	122169	548.8 -> 98.9	56.2	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	25.75	8.90	0.00	444548	613.1 -> 319.0	15.6	6.9	20.6



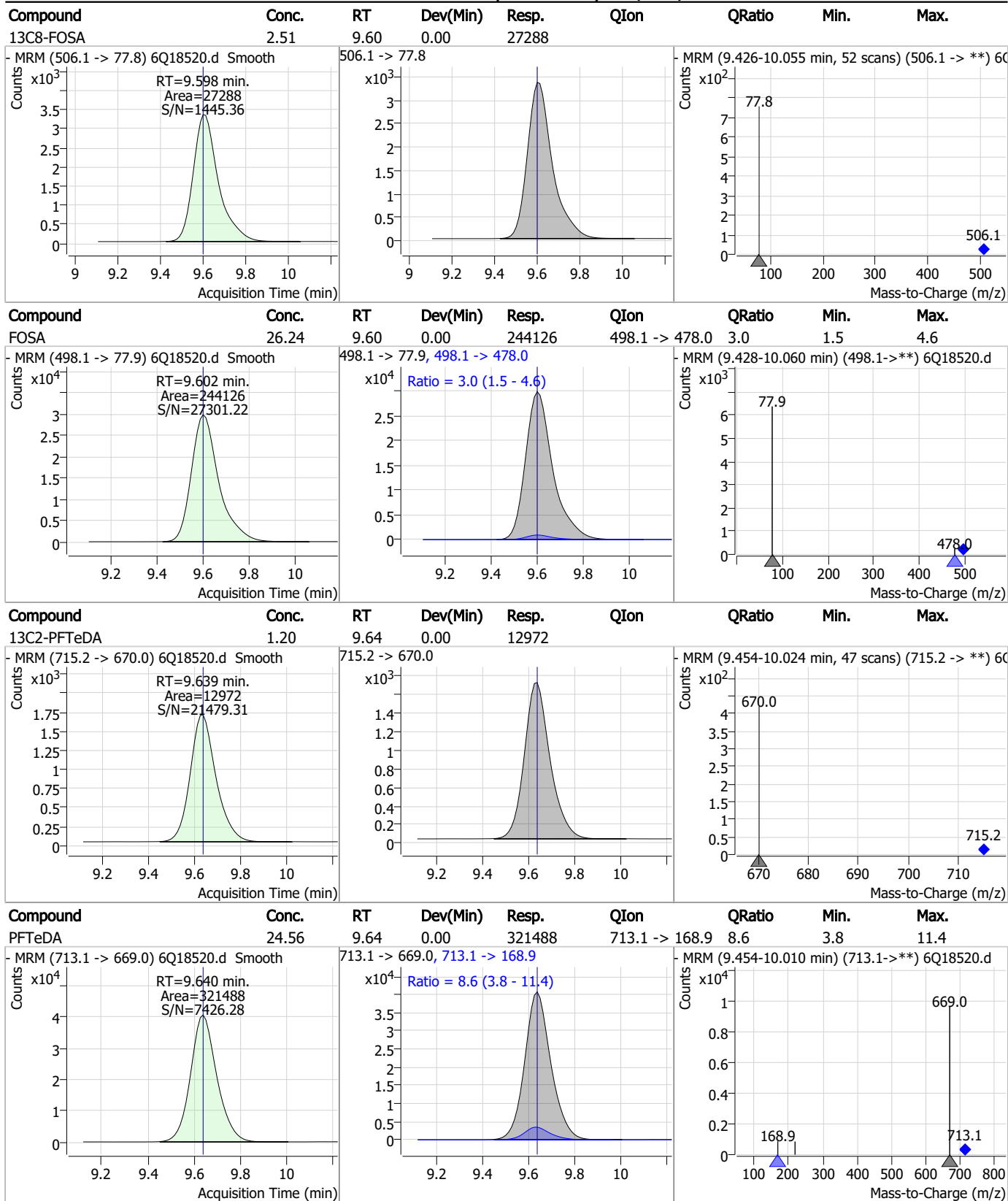
Perfluorinated Compounds by LC/MS/MS



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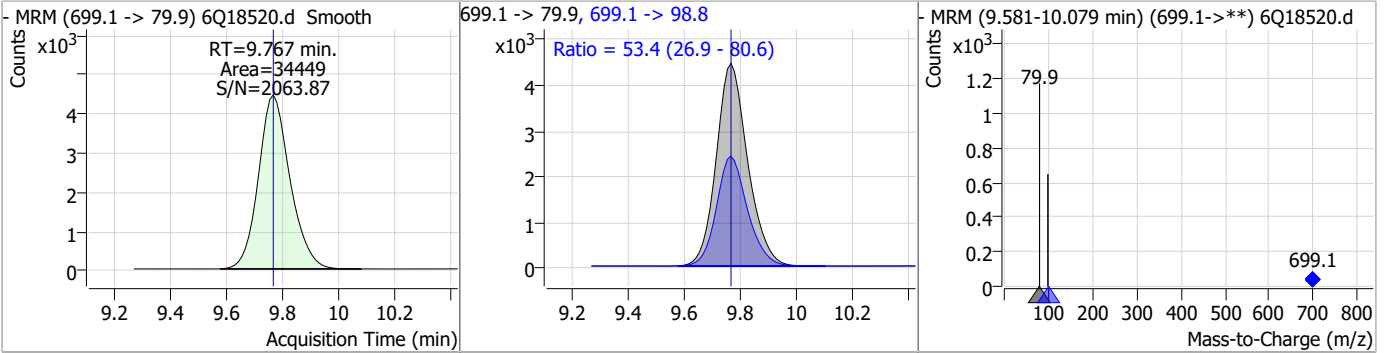
Perfluorinated Compounds by LC/MS/MS



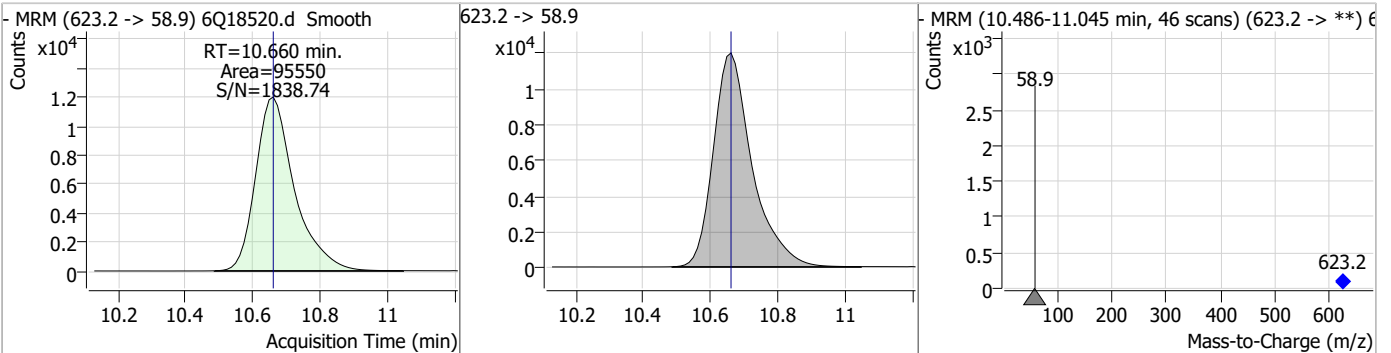
7.7.8
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Perfluorinated Compounds by LC/MS/MS

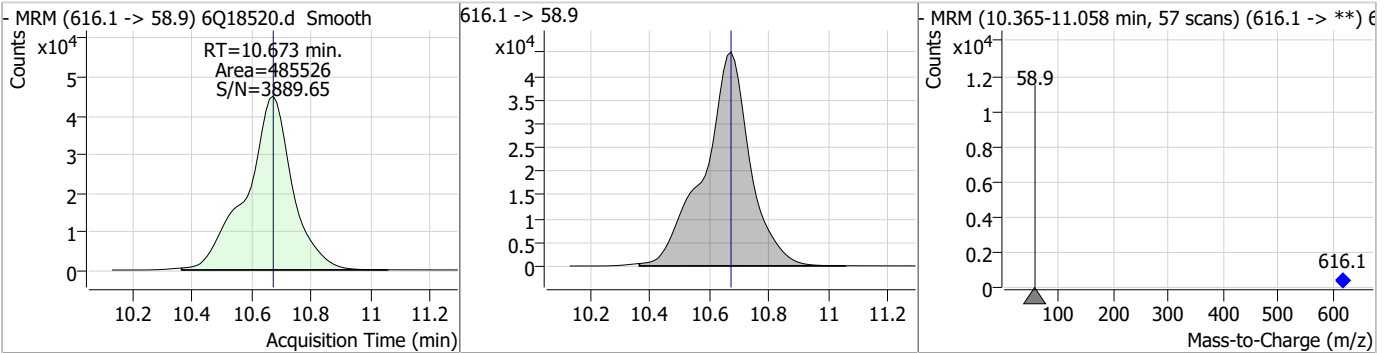
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	24.75	9.77	0.00	34449	699.1 -> 98.8	53.4	26.9	80.6



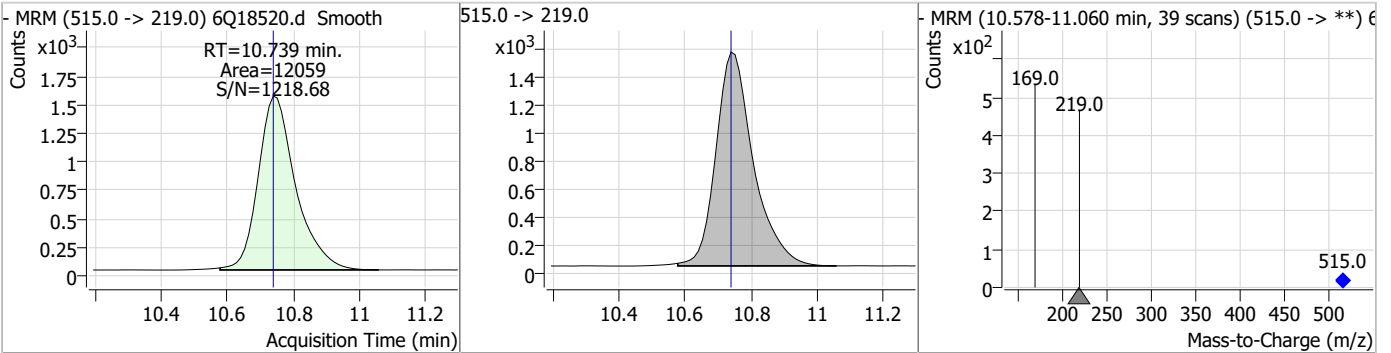
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.65	10.66	0.00	95550				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	125.71	10.67	0.00	485526				

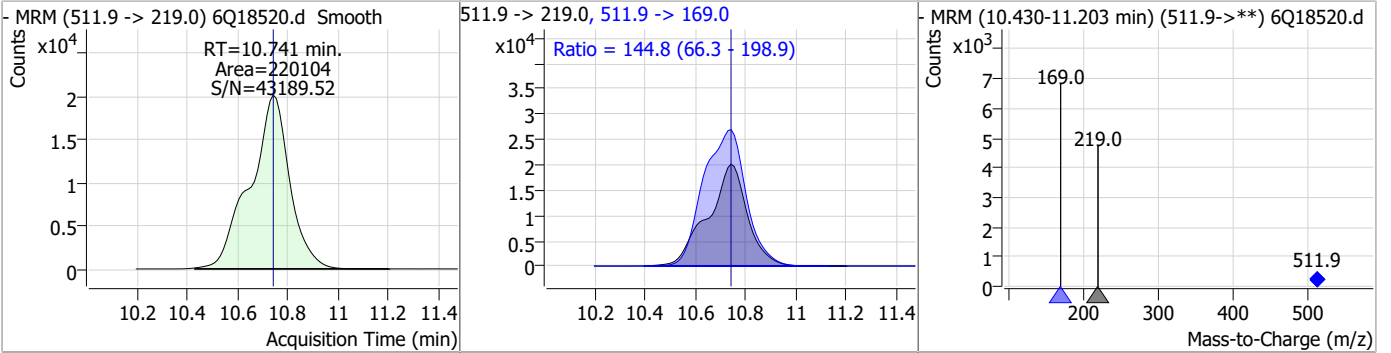


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.70	10.74	0.00	12059				

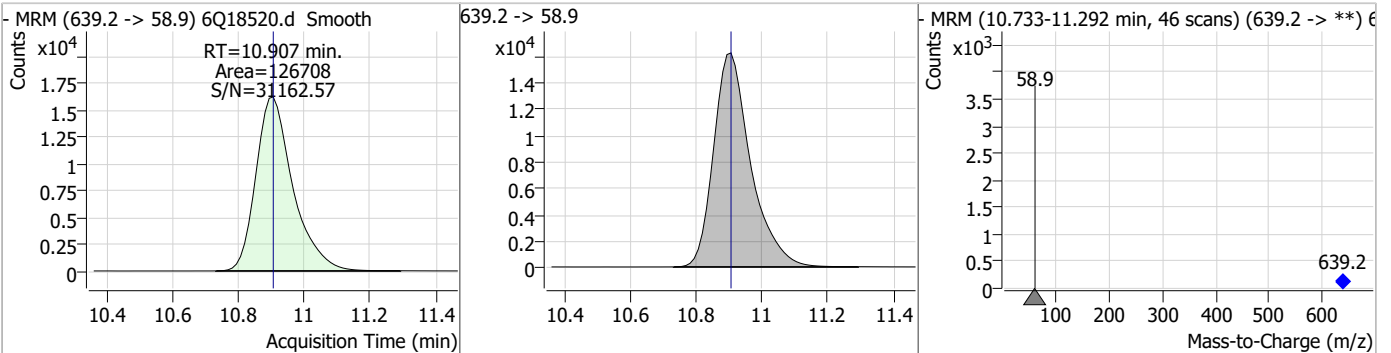


Perfluorinated Compounds by LC/MS/MS

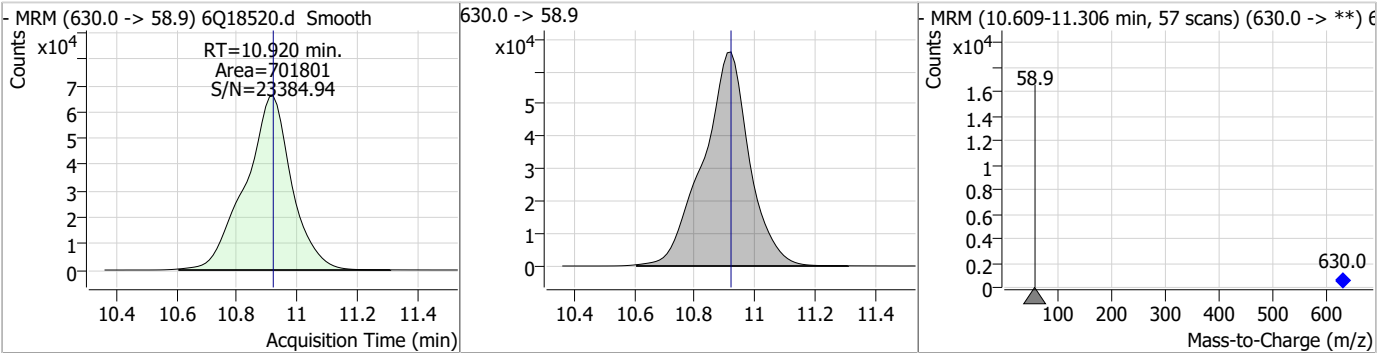
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	48.31	10.74	0.00	220104	511.9 -> 169.0	144.8	66.3	198.9



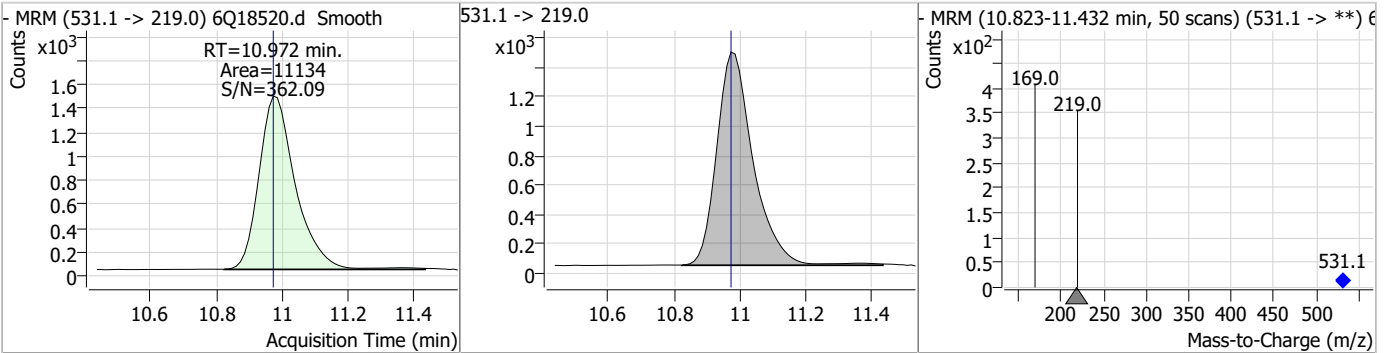
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.73	10.91	0.00	126708				



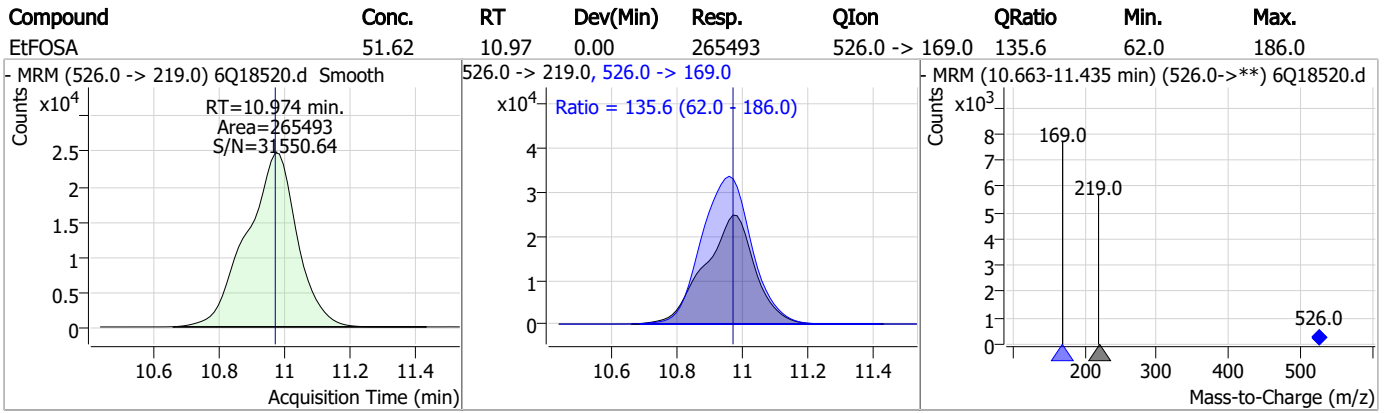
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	125.80	10.92	0.00	701801				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.58	10.97	0.00	11134				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q278-IC278 Method: EPA DRAFT 1633
Lab FileID: 6Q18520.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 16:47 Supervisor approved: 05/31/23 21:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18521.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 5:02:27 PM
 Sample Name : ic278-8
 Vial : P1-A9
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	156733	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	54637	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	57678	2.50 µg/L	0.012
M4-PFHpA	6.369	367.1 -> 322.0	53785	2.50 µg/L	-0.012
M8-PFOA	7.026	421.1 -> 376.0	82022	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	33858	1.25 µg/L	0.000
M6-PFDA	8.039	519.1 -> 474.1	20958	1.25 µg/L	0.012
M7-PFUnDA	8.480	570.0 -> 525.1	26346	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	26458	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	13298	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	29475	2.50 µg/L	0.012
M3-PFBS	5.334	302.1 -> 79.9	22106	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13893	2.50 µg/L	0.000
M8-PFOS	8.189	507.1 -> 79.9	14107	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	2441	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	3407	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3507	5.00 µg/L	0.000
M3-MeFOSAA	8.096	573.2 -> 419.0	19371	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40110	10.00 µg/L	0.000
M5-EtFOSAA	8.292	589.2 -> 419.0	18988	5.00 µg/L	0.012
M7-MeFOSE	10.660	623.2 -> 58.9	94840	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	119291	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	11259	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13022	2.50 µg/L	0.000
13C4-PFOS	8.190	502.8 -> 79.9	17091	2.50 µg/L	0.000
13C3-PFBA	2.827	216.0 -> 172.0	66035	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10392	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	85018	2.50 µg/L	0.000
13C2-PFDA	8.039	515.1 -> 470.1	29878	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	43440	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	56197	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	2441	4.68 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3407	4.77 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3507	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C2-PFDoDA	8.912	615.1 -> 570.0	26458	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C2-PFTeDA	9.639	715.2 -> 670.0	13298	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C3-PFBS	5.334	302.1 -> 79.9	22106	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C3-PFHxS	7.130	402.1 -> 79.9	13893	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 = 99.0%	
13C4-PFBA	2.822	216.8 -> 171.9	156733	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	53785	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	57678	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	54637	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C6-PFDA	8.039	519.1 -> 474.1	20958	1.16 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C7-PFUnDA	8.480	570.0 -> 525.1	26346	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C8-FOSA	9.611	506.1 -> 77.8	29475	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C8-PFOA	7.026	421.1 -> 376.0	82022	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C8-PFOS	8.189	507.1 -> 79.9	14107	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C9-PFNA	7.557	472.1 -> 427.0	33858	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.1%	
d3-MeFOSAA	8.096	573.2 -> 419.0	19371	4.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40110	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
d3-MeFOSA	10.739	515.0 -> 219.0	13022	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.1%	
d5-EtFOSAA	8.292	589.2 -> 419.0	18988	4.72 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	94840	23.60 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	119291	22.45 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	11259	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	724549	210.42 µg/L	98
		327.1 -> 80.9	280176		
6:2FTS	6.801	427.1 -> 407.0	683051	211.31 µg/L	97
		427.1 -> 80.9	218066		
8:2FTS	7.828	527.1 -> 507.0	388776	209.43 µg/L	91
		527.1 -> 80.8	144685		
EtFOSAA	8.293	584.2 -> 419.1	164413	63.32 µg/L	95
		584.2 -> 526.0	83165		
FOSA	9.602	498.1 -> 77.9	574725	57.20 µg/L	100
		498.1 -> 478.0	16858		
MeFOSAA	8.097	570.1 -> 419.0	268081	62.89 µg/L	98
		570.1 -> 483.0	54150		
PFBA	2.818	212.8 -> 168.9	1251013	242.21 µg/L	100
PFBS	5.335	298.7 -> 79.9	407864	53.36 µg/L	96
		298.7 -> 98.8	156135		
PFDA	8.027	512.9 -> 469.0	1504973	62.67 µg/L	99
		512.9 -> 219.0	235403		
PFDoDA	8.913	613.1 -> 569.0	1017445	56.33 µg/L	95
		613.1 -> 319.0	161469		
PFDS	9.064	599.0 -> 79.9	189123	54.21 µg/L	96

7.7.9
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	87277			
PFHpA	6.370	363.1 -> 319.0	1482373	61.97	µg/L	98
		363.1 -> 169.0	237143			
PFHpS	7.685	449.0 -> 79.9	343195	50.93	µg/L	99
		449.0 -> 98.9	171004			
PFHxA	5.420	313.0 -> 269.0	1209798	61.33	µg/L	99
		313.0 -> 118.9	60247			
PFHxS	7.131	398.7 -> 79.9	352215	54.10	µg/L	m 100
		398.7 -> 98.9	167263			
PFNA	7.558	463.0 -> 419.0	1523811	61.89	µg/L	99
		463.0 -> 219.0	289965			
PFNS	8.644	548.8 -> 79.9	309842	52.97	µg/L	96
		548.8 -> 98.9	158270			
PFOA	7.028	413.0 -> 369.0	2119220	60.97	µg/L	98
		413.0 -> 169.0	382909			
PFOS	8.191	498.9 -> 79.9	343636	52.01	µg/L	m 92
		498.9 -> 98.8	162710			
PFPeA	4.212	263.0 -> 219.0	1599009	119.70	µg/L	100
PFPeS	6.422	349.1 -> 79.9	352220	54.74	µg/L	96
		349.1 -> 98.9	157448			
PFTeDA	9.640	713.1 -> 669.0	743670	55.42	µg/L	97
		713.1 -> 168.9	64746			
PFTrDA	9.296	663.0 -> 619.0	946642	53.03	µg/L	95
		663.0 -> 168.9	106504			
PFUnDA	8.480	563.1 -> 519.0	1033120	60.88	µg/L	99
		563.1 -> 269.1	164211			
11Cl-PF3OUdS	9.336	630.9 -> 450.9	1513469	111.98	µg/L	98
		632.9 -> 452.9	487059			
9Cl-PF3ONS	8.520	530.8 -> 351.0	2382904	108.41	µg/L	97
		532.8 -> 353.0	741144			
ADONA	6.632	376.9 -> 250.9	5580478	109.25	µg/L	100
		376.9 -> 84.8	1499432			
HFPO-DA	5.783	284.9 -> 168.9	401872	119.45	µg/L	96
		284.9 -> 184.9	48853			
3:3FTCA	3.671	241.0 -> 177.0	259688	306.68	µg/L	96
		241.0 -> 117.0	33903			
5:3FTCA	6.086	341.0 -> 237.1	5134968	1501.45	µg/L	99
		341.0 -> 217.0	3677619			
7:3FTCA	7.523	441.0 -> 316.9	3283691	1502.68	µg/L	96
		441.0 -> 336.9	7454362			
EtFOSA	10.974	526.0 -> 219.0	628809	120.92	µg/L	93
		526.0 -> 169.0	828151			
EtFOSE	10.907	630.0 -> 58.9	1595663	303.82	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	529526	107.63	µg/L	93
		511.9 -> 169.0	744259			
MeFOSE	10.673	616.1 -> 58.9	1117544	291.51	µg/L	100
PFDoS	9.767	699.1 -> 79.9	78220	52.02	µg/L	98
		699.1 -> 98.8	43073			
NFDHA	5.288	295.0 -> 201.0	286201	121.04	µg/L	98
		295.0 -> 84.9	74193			
PFMBA	4.626	279.0 -> 85.1	1107838	121.05	µg/L	100
PFMPA	3.363	229.0 -> 84.9	864983	121.09	µg/L	100
PFEESA	5.875	314.8 -> 134.9	2927972	112.34	µg/L	98
		314.8 -> 82.9	98087			

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

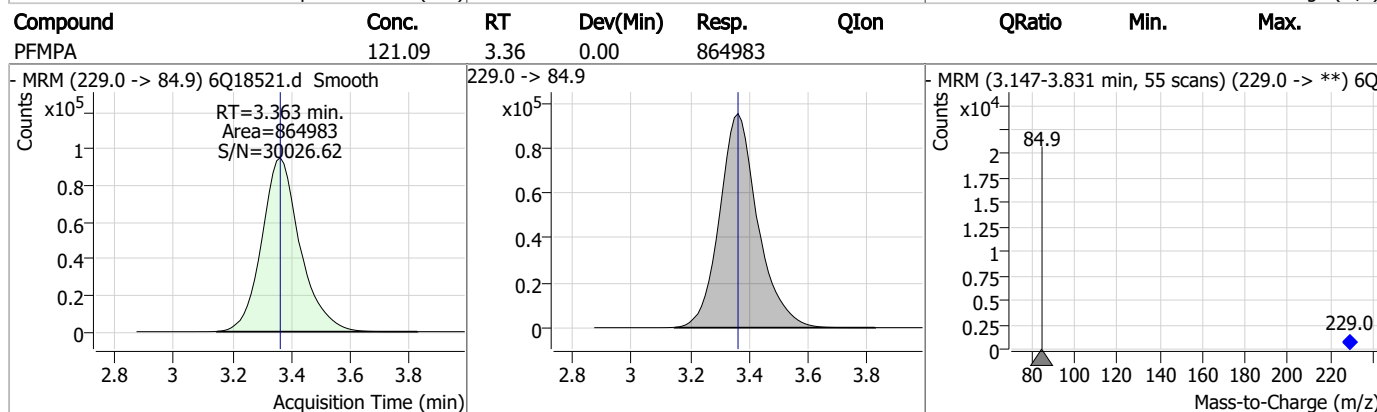
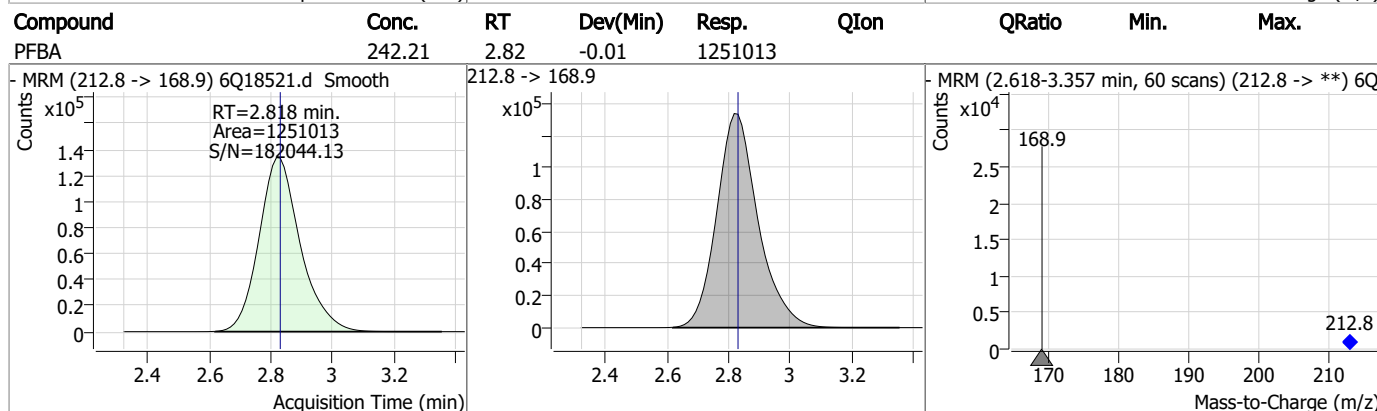
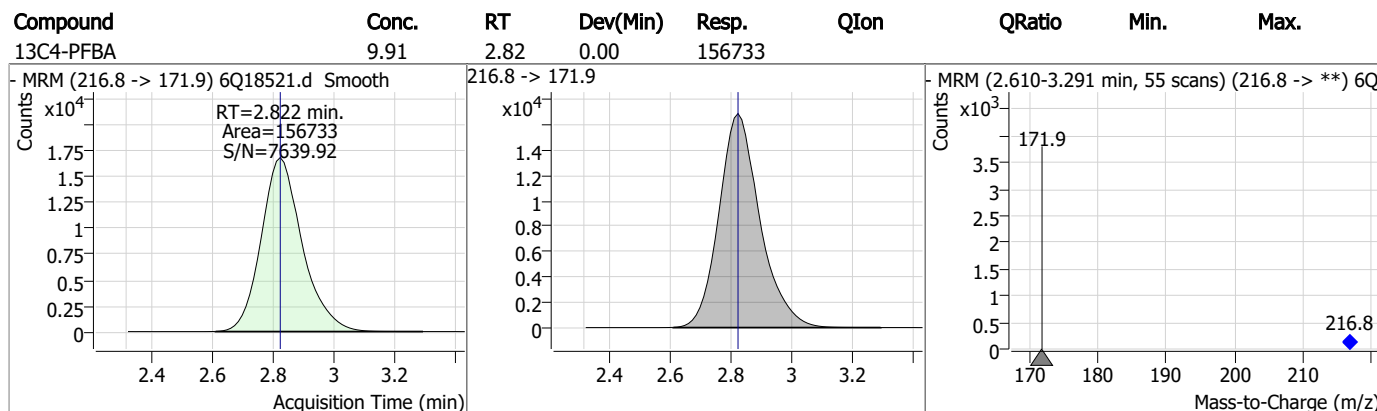
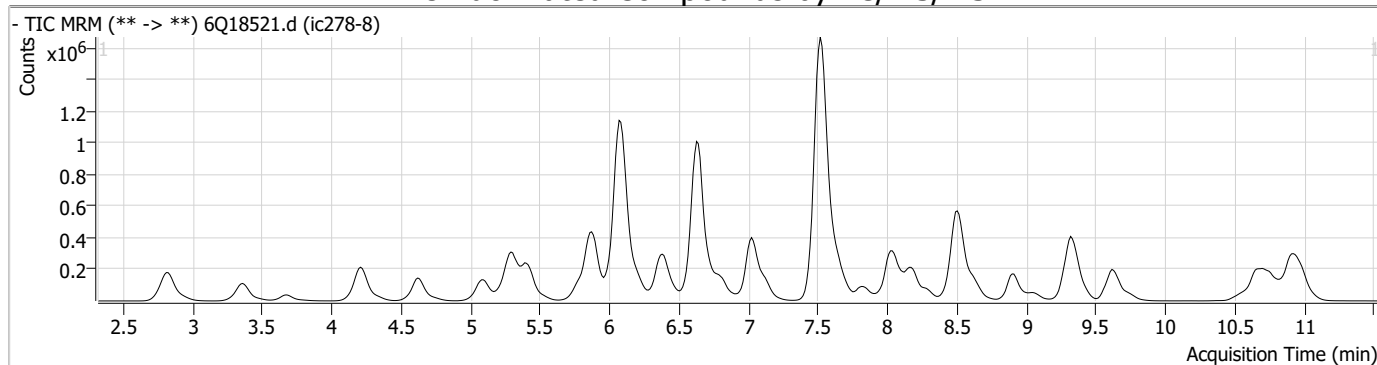
Perfluorinated Compounds by LC/MS/MS

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

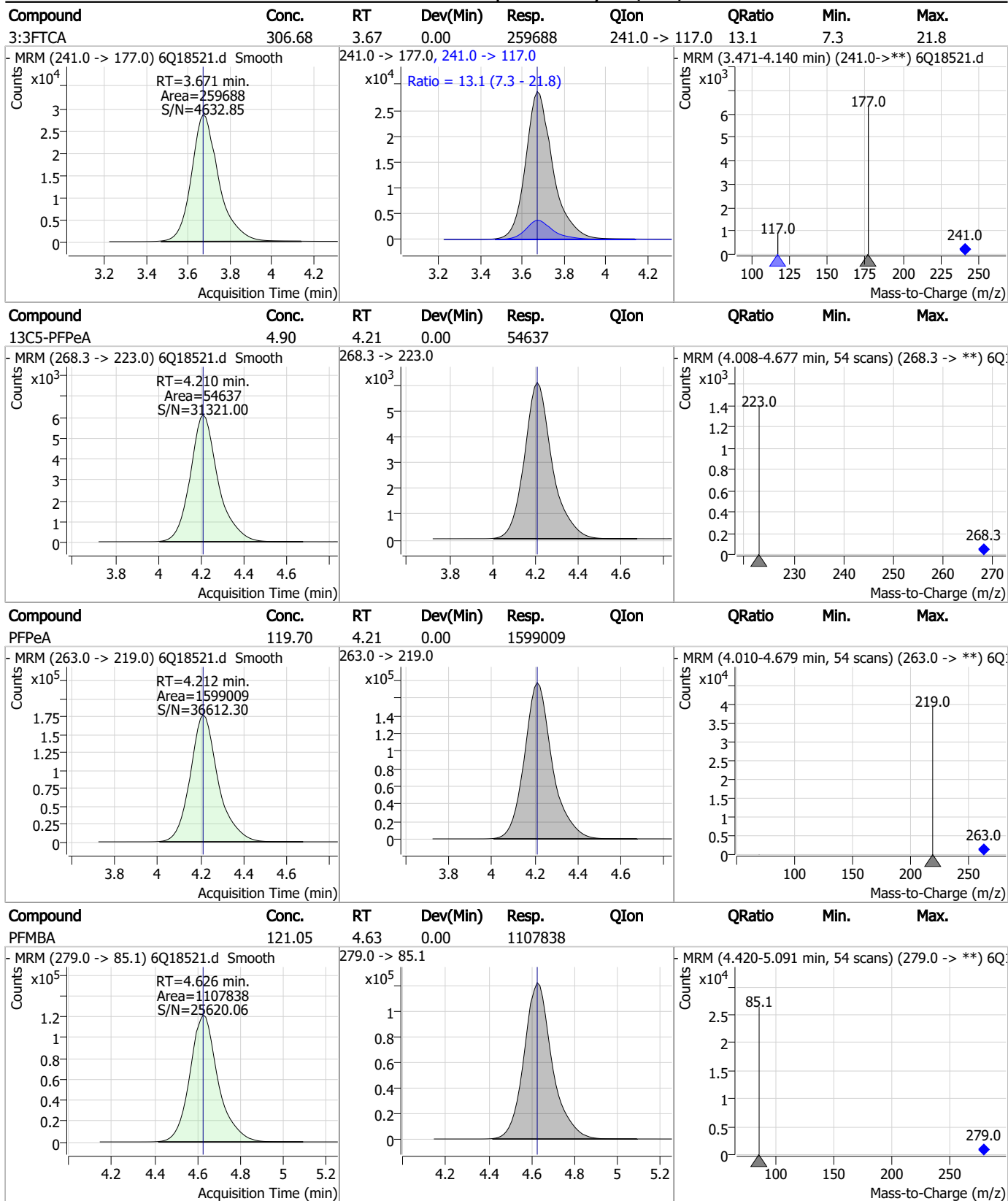
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Perfluorinated Compounds by LC/MS/MS



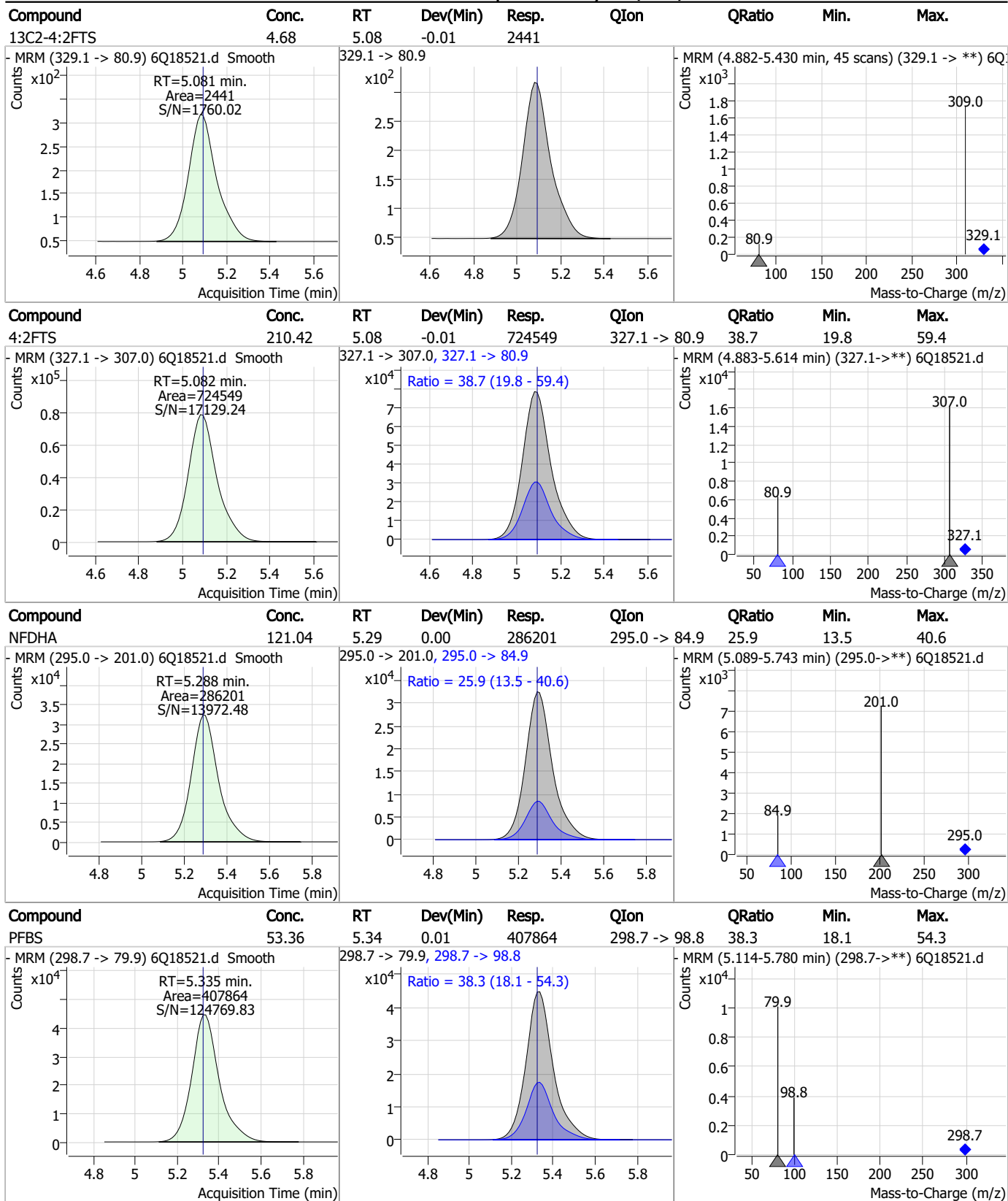
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Perfluorinated Compounds by LC/MS/MS



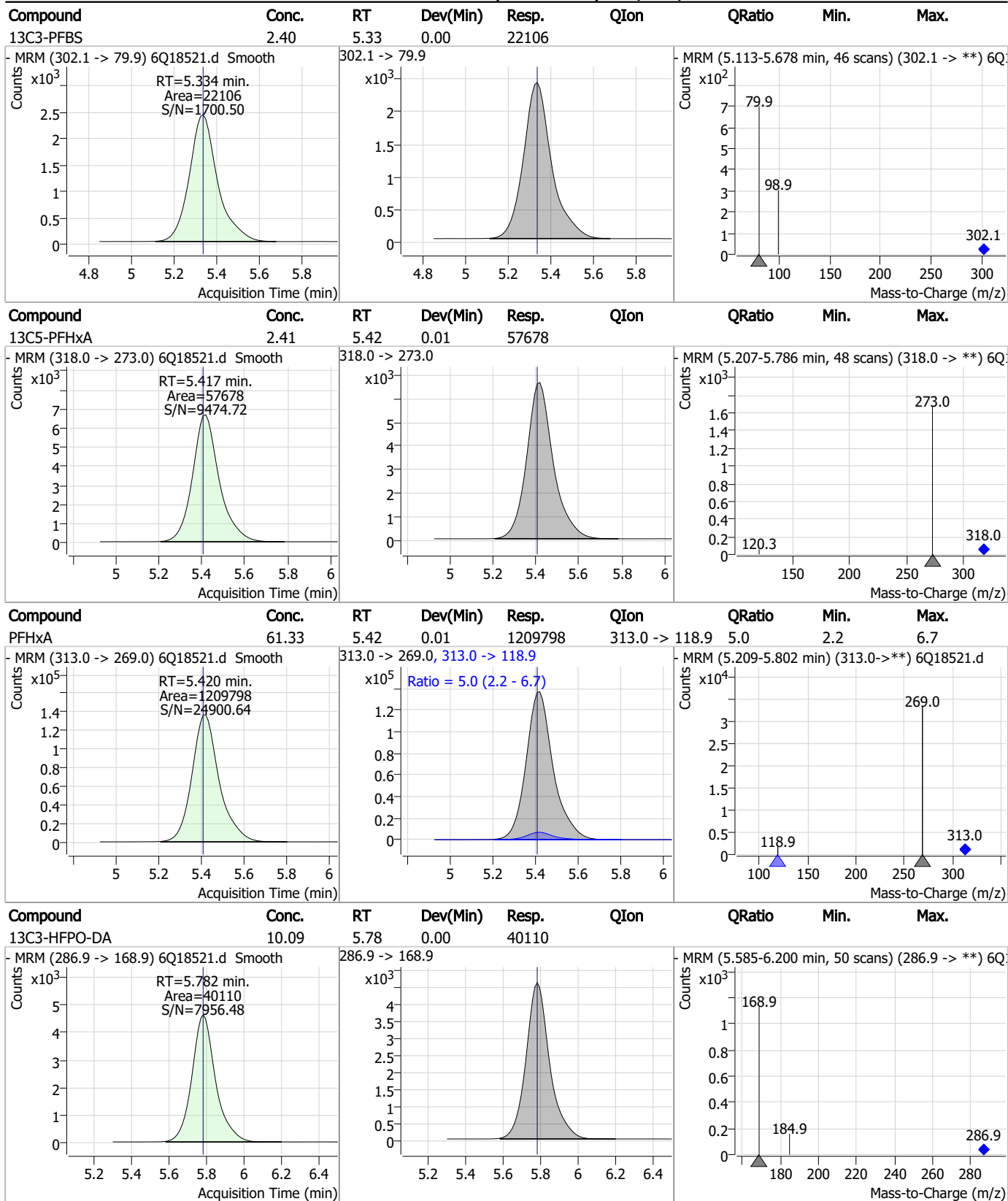
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

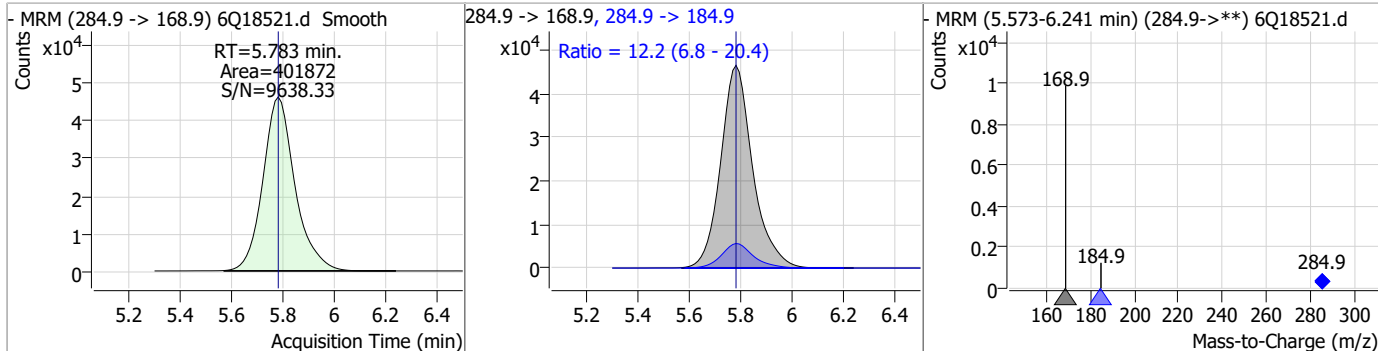


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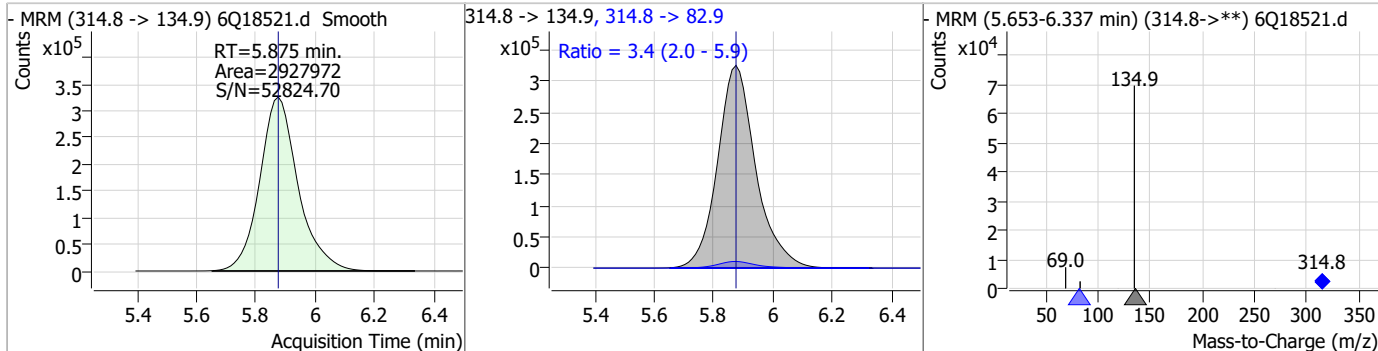


Perfluorinated Compounds by LC/MS/MS

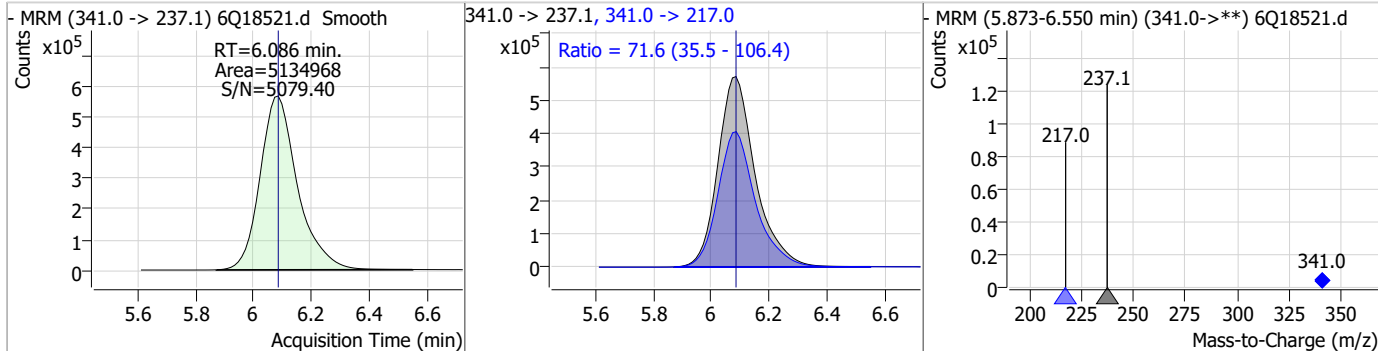
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	119.45	5.78	0.00	401872	284.9 -> 184.9	12.2	6.8	20.4



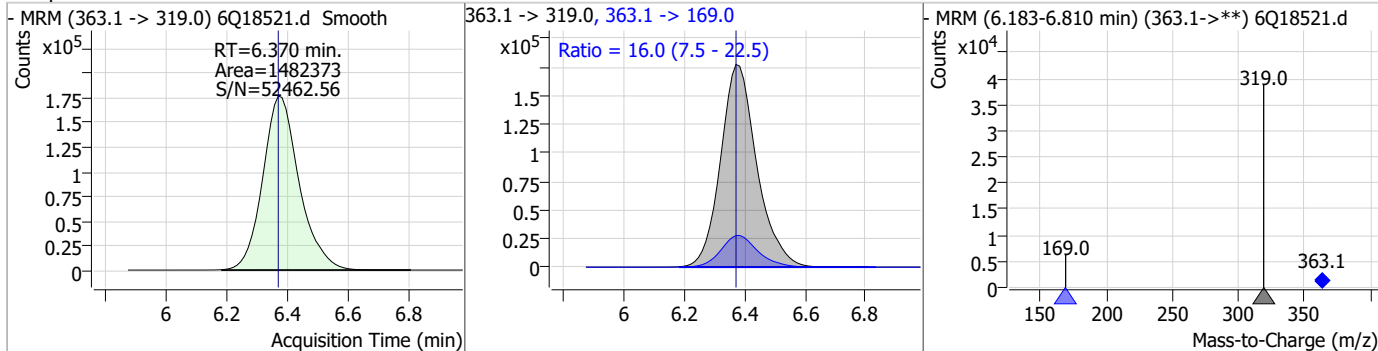
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	112.34	5.88	0.00	2927972	314.8 -> 82.9	3.4	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1501.45	6.09	0.00	5134968	341.0 -> 217.0	71.6	35.5	106.4

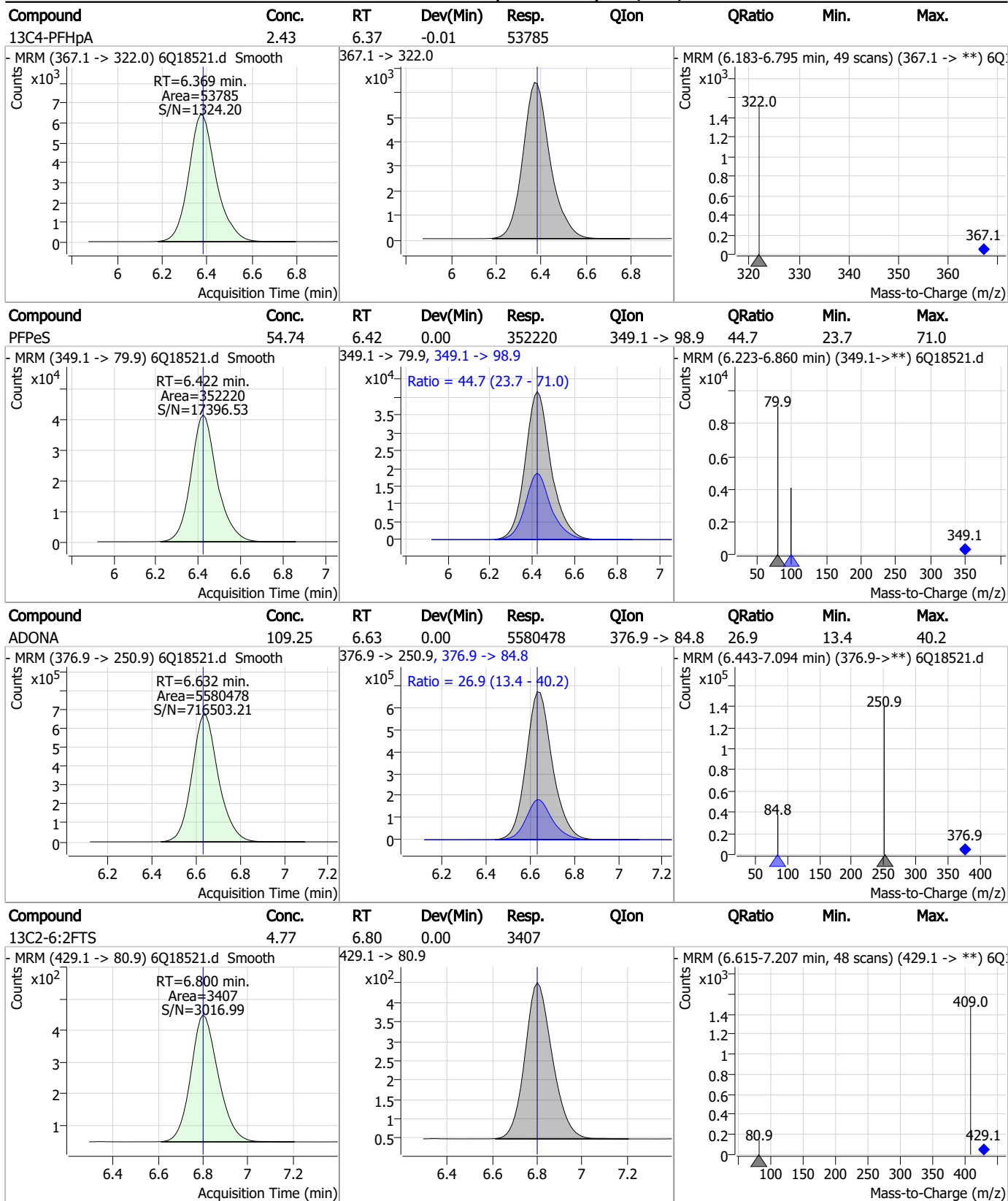


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	61.97	6.37	0.00	1482373	363.1 -> 169.0	16.0	7.5	22.5



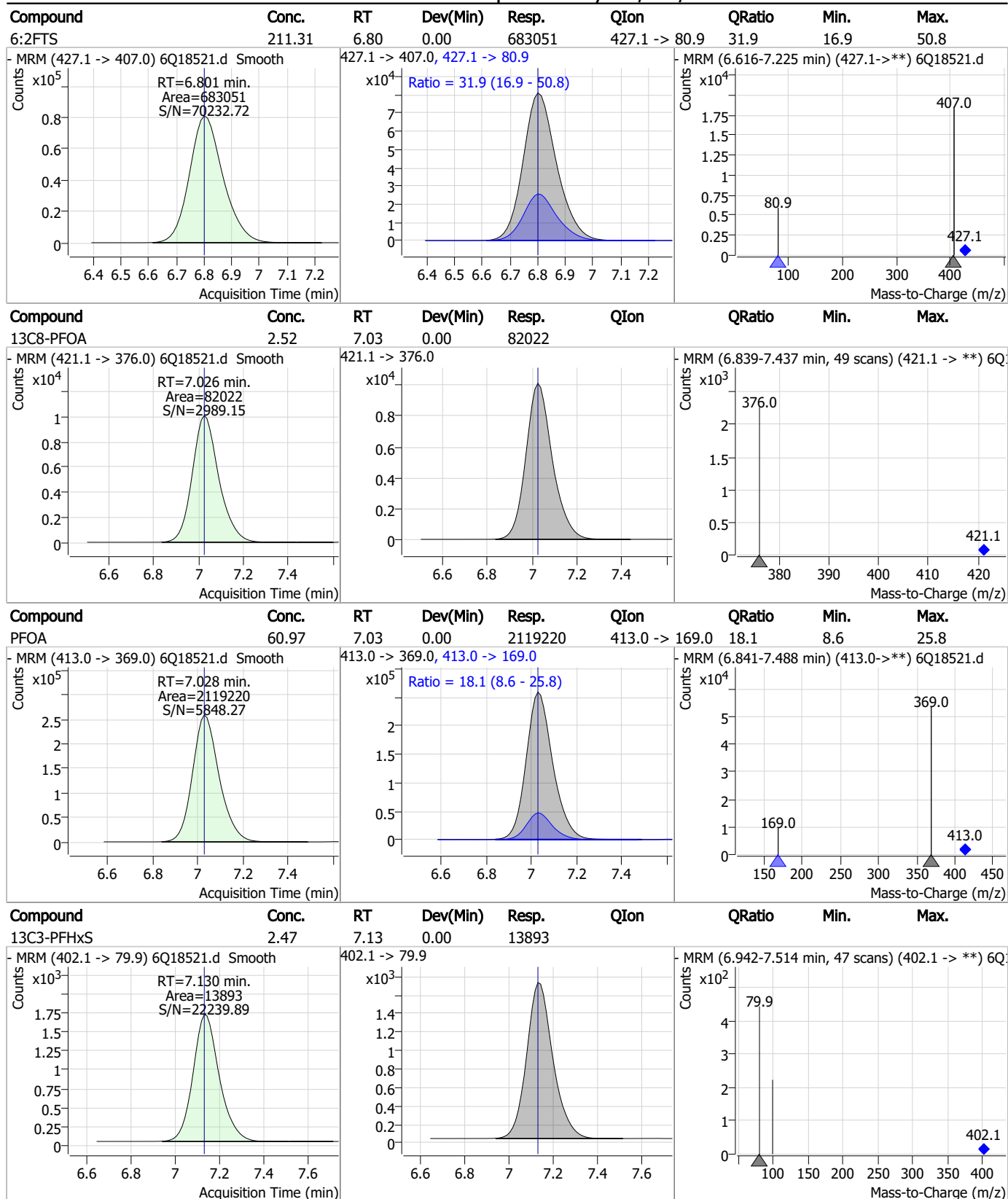
7.7.9
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Perfluorinated Compounds by LC/MS/MS



7.7.9
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Perfluorinated Compounds by LC/MS/MS

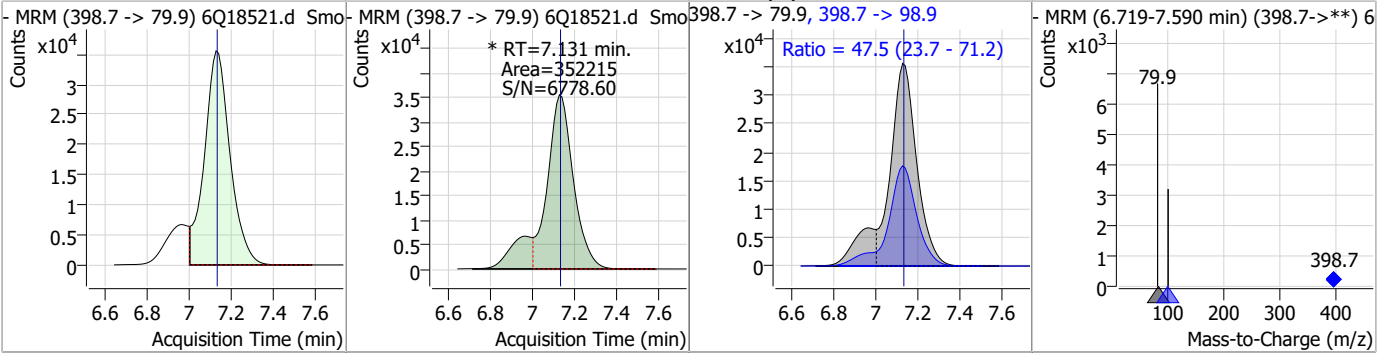


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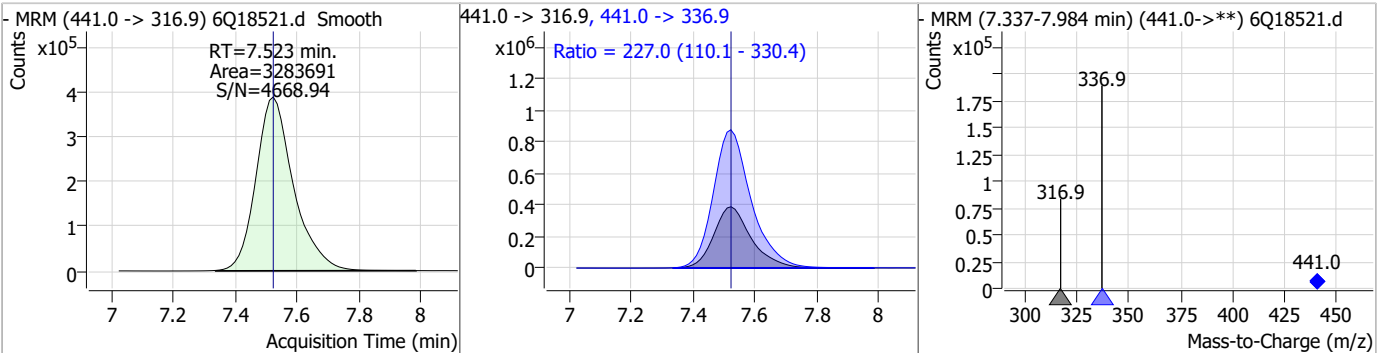


Perfluorinated Compounds by LC/MS/MS

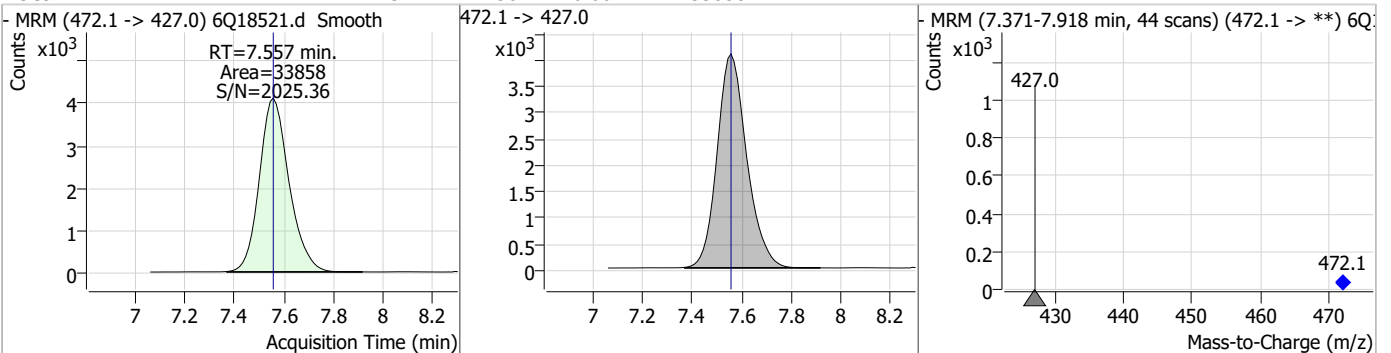
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	54.10	7.13	0.00	352215 (m)	398.7 -> 98.9	47.5	23.7	71.2



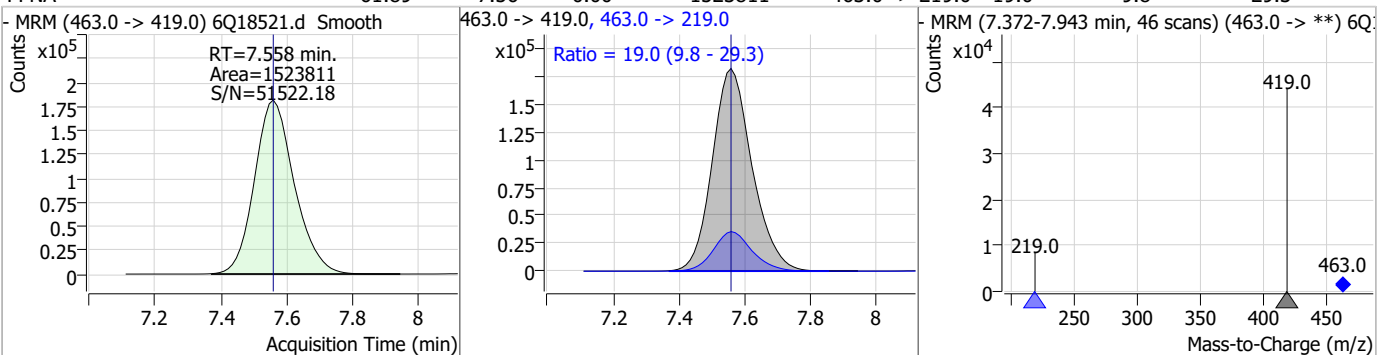
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1502.68	7.52	0.00	3283691	441.0 -> 336.9	227.0	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	7.56	0.00	33858	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	61.89	7.56	0.00	1523811	463.0 -> 219.0	19.0	9.8	29.3



Perfluorinated Compounds by LC/MS/MS

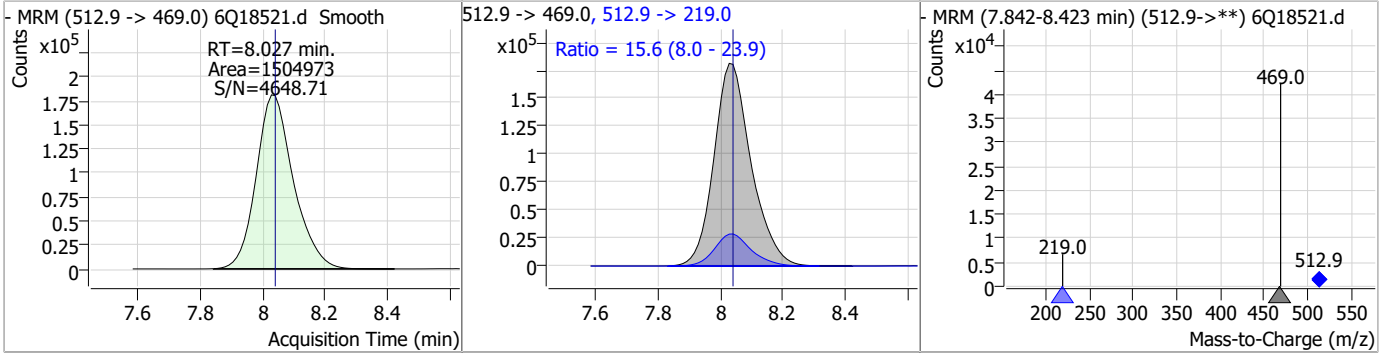
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	50.93	7.68	0.00	343195	449.0 -> 98.9	49.8	24.7	74.2
13C2-8:2FTS	5.11	7.83	0.00	3507				
8:2FTS	209.43	7.83	0.00	388776	527.1 -> 80.8	37.2	21.4	64.1
13C6-PFDA	1.16	8.04	0.01	20958				

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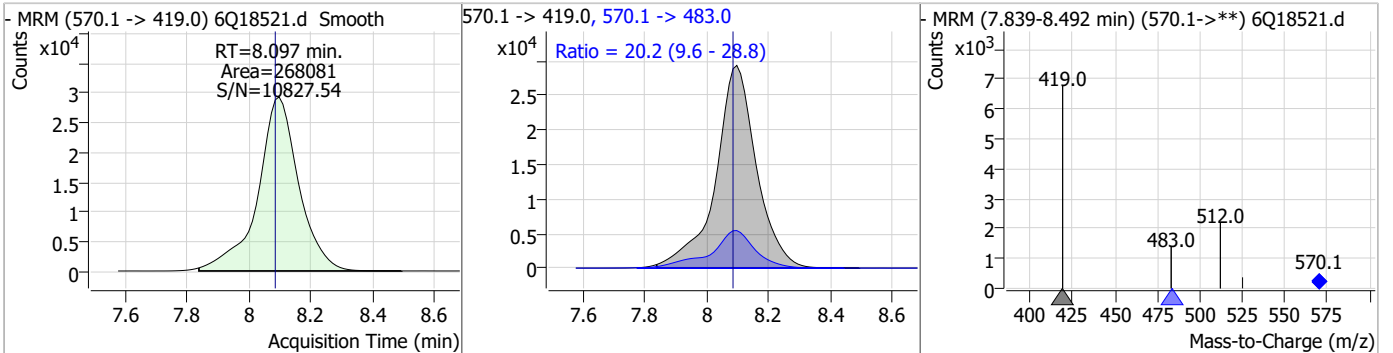


Perfluorinated Compounds by LC/MS/MS

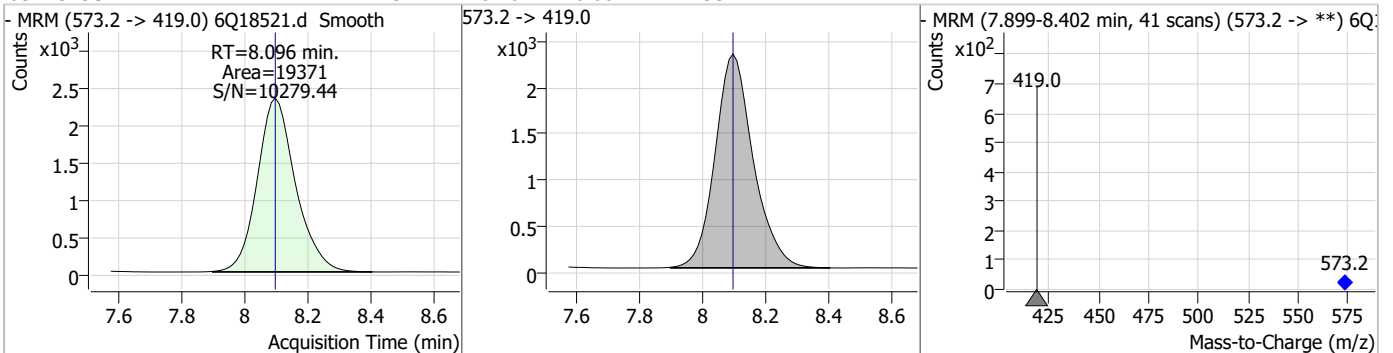
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	62.67	8.03	-0.01	1504973	512.9 -> 219.0	15.6	8.0	23.9



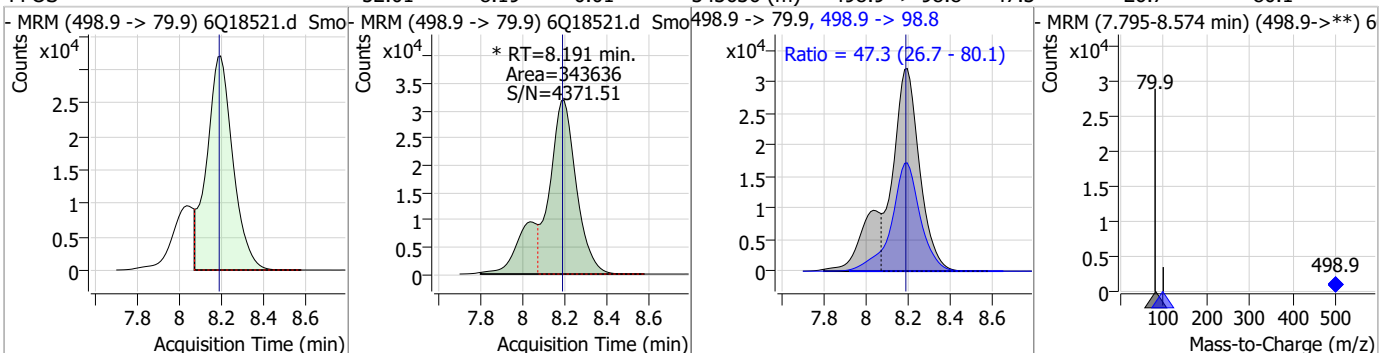
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	62.89	8.10	0.01	268081	570.1 -> 483.0	20.2	9.6	28.8



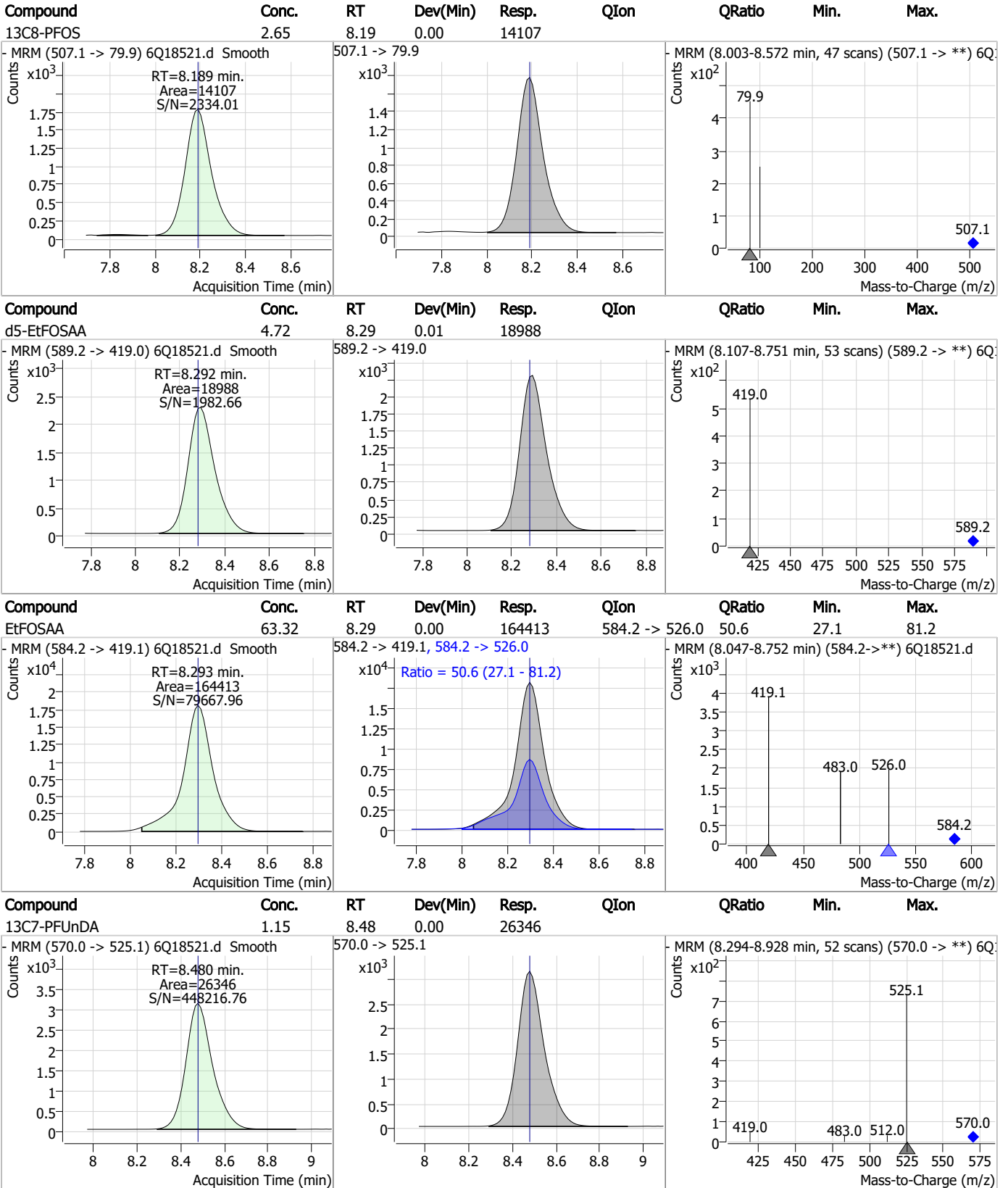
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.43	8.10	0.00	19371				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	52.01	8.19	0.01	343636 (m)	498.9 -> 98.8	47.3	26.7	80.1



Perfluorinated Compounds by LC/MS/MS

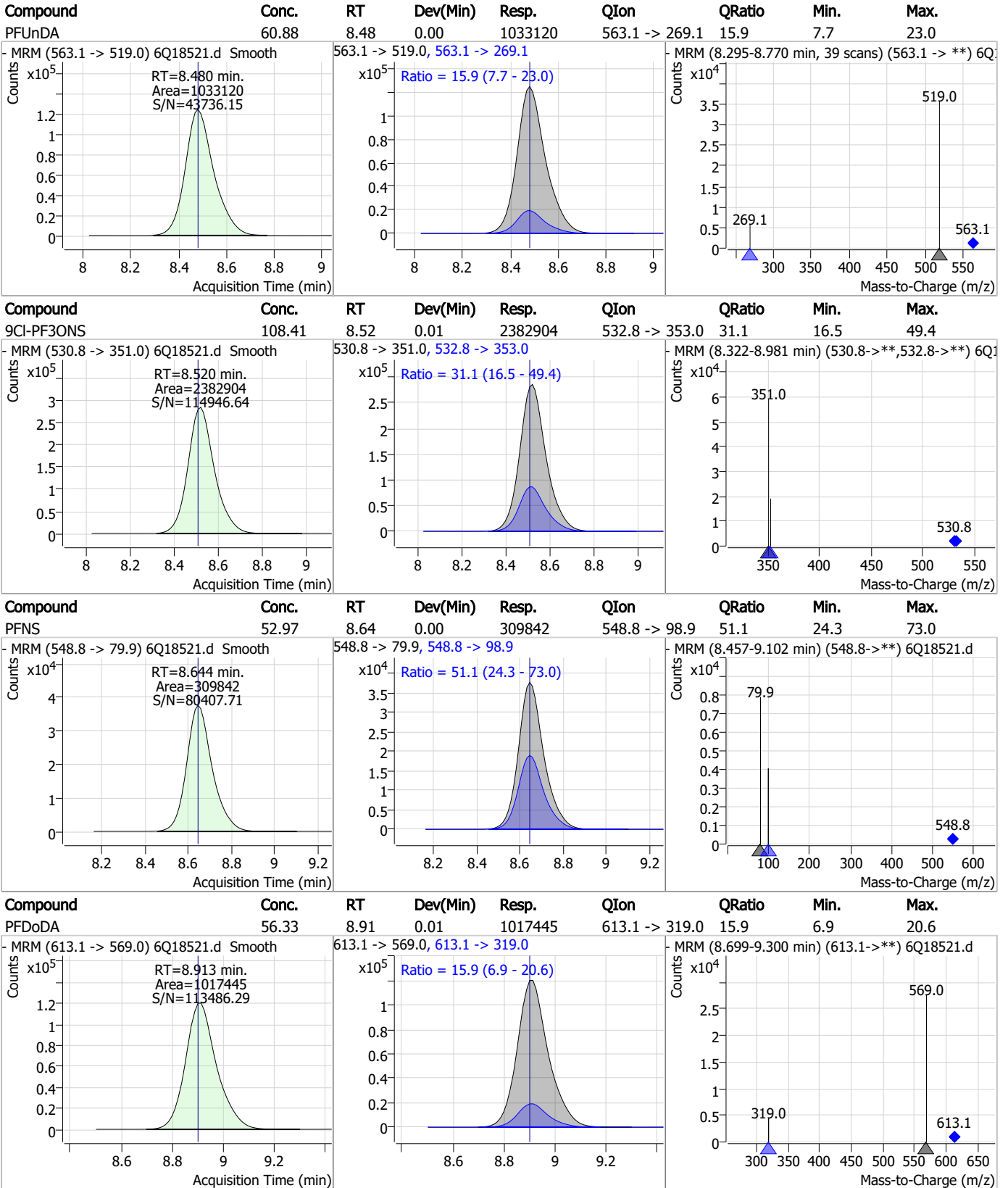


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Perfluorinated Compounds by LC/MS/MS



7.7.9

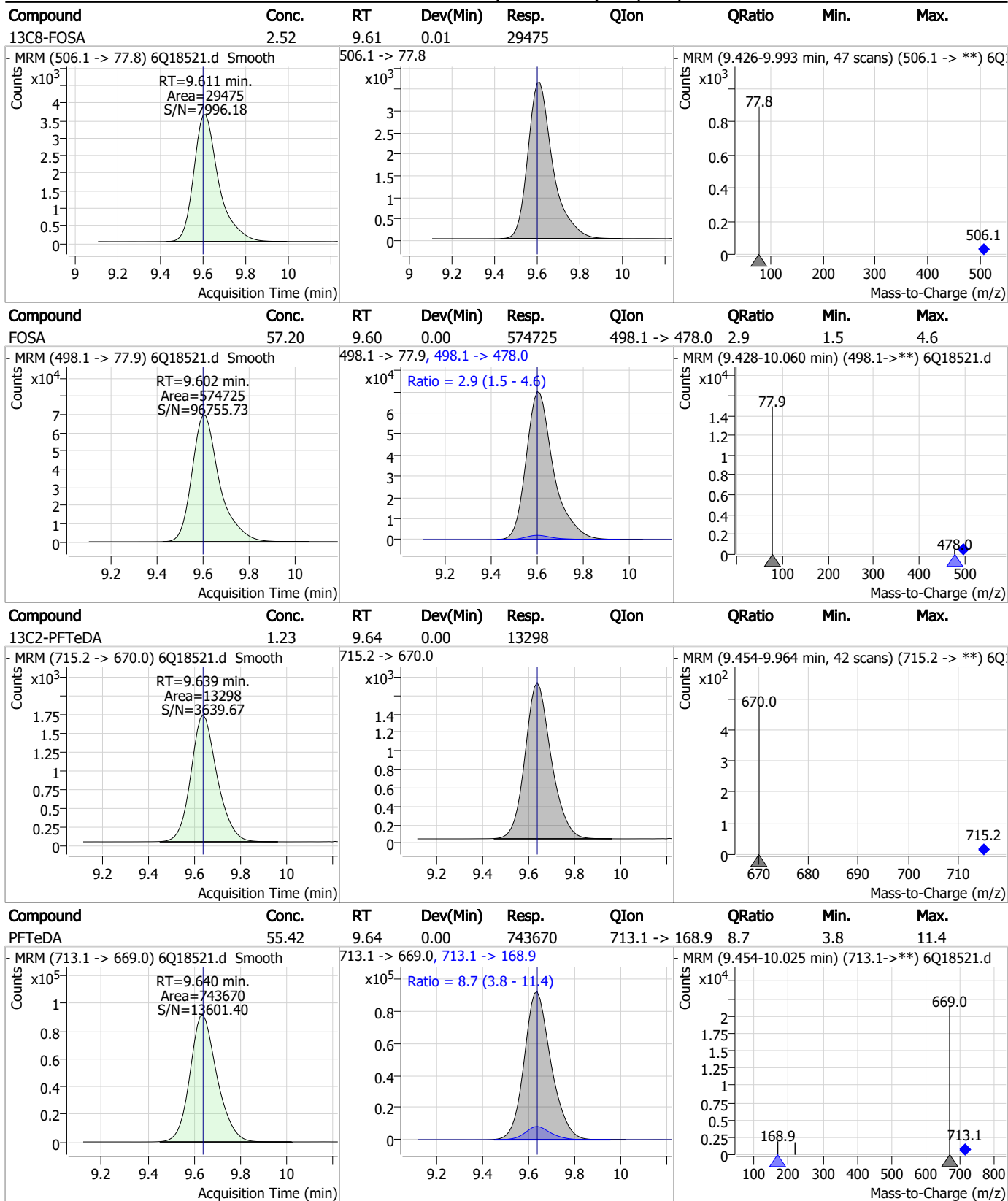
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	8.91	0.00	26458				
PFDS	54.21	9.06	0.00	189123	599.0 -> 98.8	46.1	24.5	73.4
PFTrDA	53.03	9.30	0.00	946642	663.0 -> 168.9	11.3	4.7	14.0
11Cl-PF3OUds	111.98	9.34	-0.01	1513469	632.9 -> 452.9	32.2	15.5	46.6

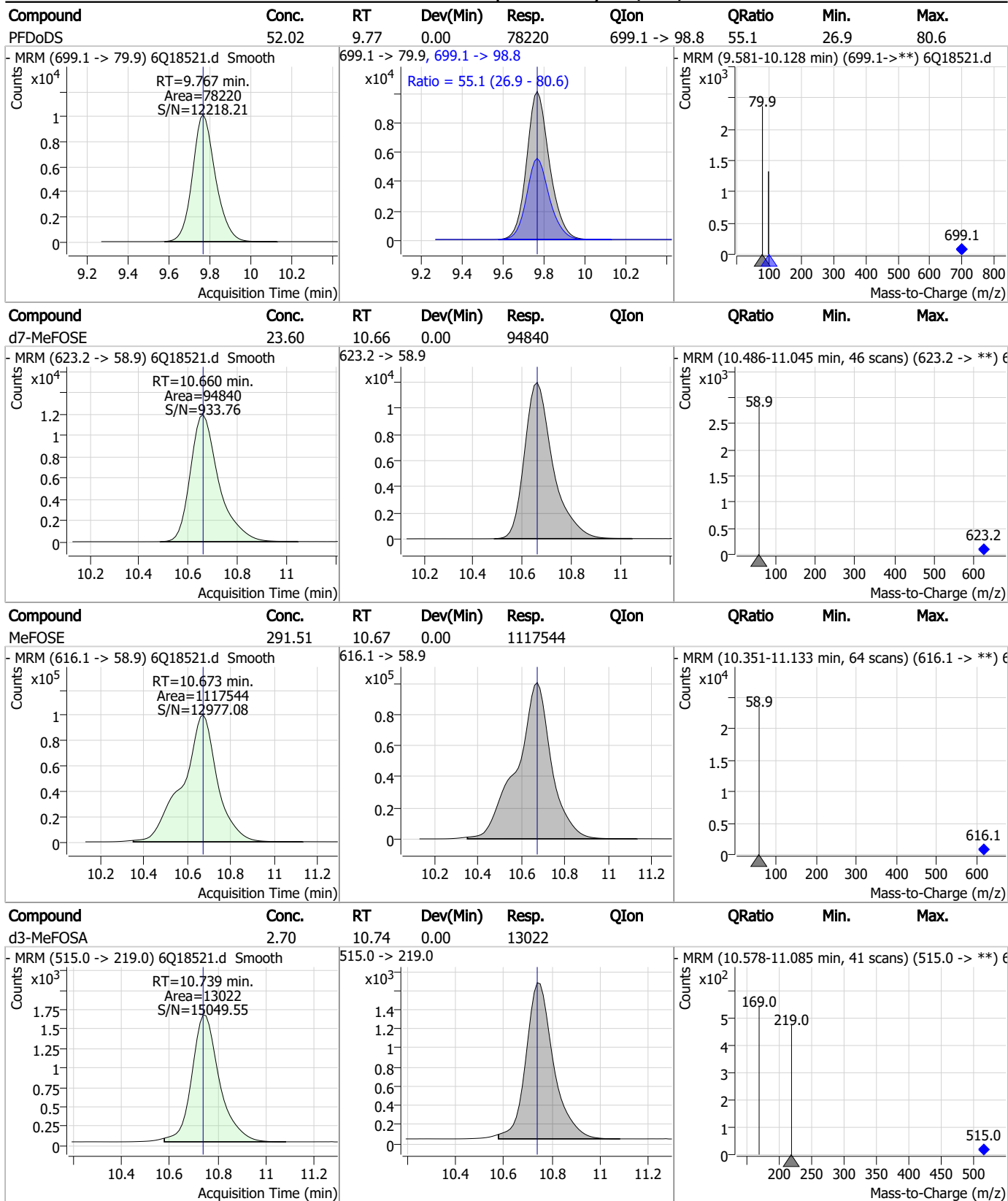
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Perfluorinated Compounds by LC/MS/MS



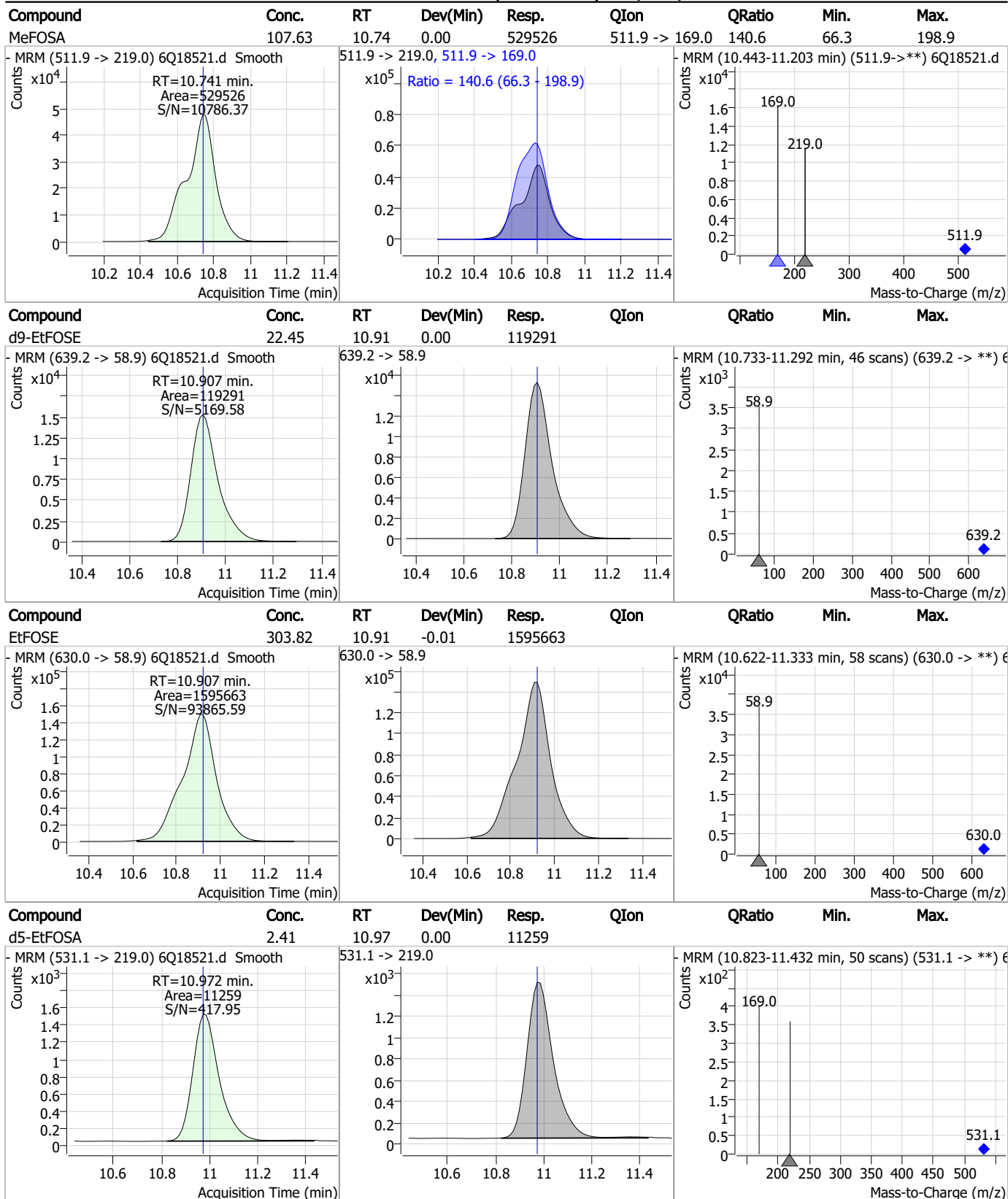
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Perfluorinated Compounds by LC/MS/MS



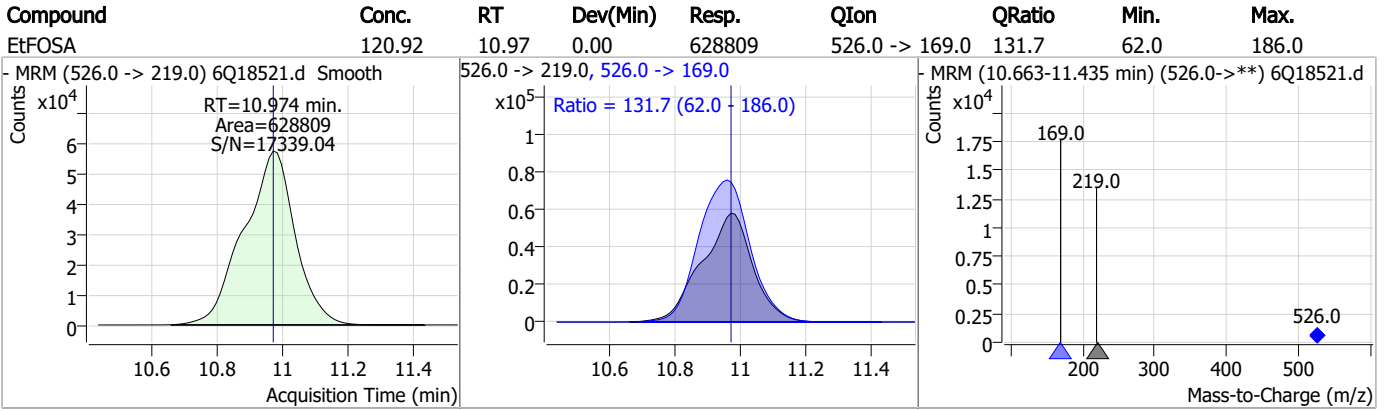
7.7.9
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.9

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Manual Integration Approval Summary

Sample Number: S6Q278-IC278 Method: EPA DRAFT 1633
Lab FileID: 6Q18521.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 17:02 Supervisor approved: 05/31/23 21:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.19	Split peak

7.7.9.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18523.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 5:31:27 PM
 Sample Name : icv278-4
 Vial : P1-B1
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	162603	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	53971	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	57609	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	51726	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	82090	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	34171	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	21706	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	27274	1.25 µg/L	0.000
M2-PFDoDA	8.900	615.1 -> 570.0	25300	1.25 µg/L	-0.012
M2-PFTeDA	9.639	715.2 -> 670.0	13254	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	27036	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	22174	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13646	2.50 µg/L	0.000
M8-PFOS	8.189	507.1 -> 79.9	13378	2.50 µg/L	0.000
M2-4:2FTS	5.094	329.1 -> 80.9	2745	5.00 µg/L	0.000
M2-6:2FTS	6.801	429.1 -> 80.9	3302	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3404	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	21417	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	38094	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	19160	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	96526	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	128240	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	10872	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11507	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	15854	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	68384	5.00 µg/L	0.000
18O2-PFHxS	7.141	403.0 -> 83.9	10247	2.50 µg/L	0.012
13C4-PFOA	7.027	417.1 -> 372.0	86649	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	27651	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	40446	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	53617	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.094	329.1 -> 80.9	2745	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C2-6:2FTS	6.801	429.1 -> 80.9	3302	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.8%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3404	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	25300	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C2-PFTeDA	9.639	715.2 -> 670.0	13254	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C3-PFBS	5.334	302.1 -> 79.9	22174	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C3-PFHxS	7.130	402.1 -> 79.9	13646	2.46 µg/L	0.000

7.7.10
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 = 98.6%	
13C4-PFBA	2.822	216.8 -> 171.9	162603	9.93 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C4-PFHpA	6.382	367.1 -> 322.0	51726	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C5-PFHxA	5.417	318.0 -> 273.0	57609	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C5-PFPeA	4.210	268.3 -> 223.0	53971	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C6-PFDA	8.027	519.1 -> 474.1	21706	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C7-PFUnDA	8.480	570.0 -> 525.1	27274	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C8-FOSA	9.598	506.1 -> 77.8	27036	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C8-PFOA	7.026	421.1 -> 376.0	82090	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C8-PFOS	8.189	507.1 -> 79.9	13378	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C9-PFNA	7.557	472.1 -> 427.0	34171	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.3%	
d3-MeFOSAA	8.084	573.2 -> 419.0	21417	5.28 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38094	10.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d3-MeFOSA	10.739	515.0 -> 219.0	11507	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
d5-EtFOSAA	8.279	589.2 -> 419.0	19160	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	96526	25.90 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
d9-EtFOSE	10.907	639.2 -> 58.9	128240	26.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	10872	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	36334	9.39 µg/L	100
		327.1 -> 80.9	14380		
6:2FTS	6.801	427.1 -> 407.0	33631	10.74 µg/L	98
		427.1 -> 80.9	11879		
8:2FTS	7.828	527.1 -> 507.0	19974	11.08 µg/L	95
		527.1 -> 80.8	7947		
EtFOSAA	8.293	584.2 -> 419.1	6701	2.56 µg/L	98
		584.2 -> 526.0	3708		
FOSA	9.602	498.1 -> 77.9	25270	2.74 µg/L	100
		498.1 -> 478.0	741		
MeFOSAA	8.085	570.1 -> 419.0	12351	2.62 µg/L	98
		570.1 -> 483.0	2479		
PFBA	2.831	212.8 -> 168.9	56410	10.53 µg/L	100
PFBS	5.335	298.7 -> 79.9	18238	2.38 µg/L	99
		298.7 -> 98.8	6499		
PFDA	8.027	512.9 -> 469.0	64482	2.59 µg/L	98
		512.9 -> 219.0	9823		
PFDODA	8.900	613.1 -> 569.0	43065	2.49 µg/L	92
		613.1 -> 319.0	7251		
PFDS	9.064	599.0 -> 79.9	7524	2.27 µg/L	97

7.7.10
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	3840	2.70 µg/L	97
		363.1 -> 319.0	62187		
PFHpS	7.685	363.1 -> 169.0	10204	2.38 µg/L	94
		449.0 -> 79.9	15190		
PFHxA	5.420	449.0 -> 98.9	6895	2.46 µg/L	97
		313.0 -> 269.0	48513		
PFHxS	7.131	313.0 -> 118.9	2693	2.37 µg/L	98
		398.7 -> 79.9	15138		
PFNA	7.546	398.7 -> 98.9	6991	2.62 µg/L	99
		463.0 -> 419.0	64992		
PFNS	8.631	463.0 -> 219.0	12370	2.38 µg/L	100
		548.8 -> 79.9	13203		
PFOA	7.028	548.8 -> 98.9	6392	2.74 µg/L	100
		413.0 -> 369.0	95375		
PFOS	8.178	413.0 -> 169.0	16266	2.22 µg/L	92
		498.9 -> 79.9	13938		
PFPeA	4.212	498.9 -> 98.8	6690	5.21 µg/L	100
		263.0 -> 219.0	68684		
PFPeS	6.422	349.1 -> 79.9	15292	2.42 µg/L	95
		349.1 -> 98.9	6723		
PFTeDA	9.640	713.1 -> 669.0	33626	2.51 µg/L	95
		713.1 -> 168.9	3094		
PFTrDA	9.296	663.0 -> 619.0	43471	2.55 µg/L	95
		663.0 -> 168.9	4887		
PFUnDA	8.480	563.1 -> 519.0	44910	2.56 µg/L	97
		563.1 -> 269.1	7458		
11CI-PF3OUdS	9.336	630.9 -> 450.9	62288	4.85 µg/L	96
		632.9 -> 452.9	20794		
9CI-PF3ONS	8.508	530.8 -> 351.0	102942	4.93 µg/L	100
		532.8 -> 353.0	34128		
ADONA	6.632	376.9 -> 250.9	236286	4.87 µg/L	99
		376.9 -> 84.8	64900		
HFPO-DA	5.783	284.9 -> 168.9	16257	5.09 µg/L	97
		284.9 -> 184.9	2008		
3:3FTCA	3.671	241.0 -> 177.0	10829	12.95 µg/L	100
		241.0 -> 117.0	1587		
5:3FTCA	6.086	341.0 -> 237.1	221348	64.80 µg/L	94
		341.0 -> 217.0	167410		
7:3FTCA	7.523	441.0 -> 316.9	138950	63.66 µg/L	94
		441.0 -> 336.9	319052		
EtFOSA	10.974	526.0 -> 219.0	26450	5.27 µg/L	89
		526.0 -> 169.0	36094		
EtFOSE	10.920	630.0 -> 58.9	73057	12.94 µg/L	100
		511.9 -> 219.0	22226		
MeFOSA	10.741	511.9 -> 169.0	32096	5.11 µg/L	90
		616.1 -> 58.9	51136		
MeFOSE	10.673	699.1 -> 79.9	3323	13.11 µg/L	100
		699.1 -> 98.8	1968		
PFDoDS	9.767	295.0 -> 201.0	12386	2.33 µg/L	92
		295.0 -> 84.9	3325		
NFDHA	5.299	279.0 -> 85.1	47973	5.24 µg/L	100
		229.0 -> 84.9	37159		
PFMBA	4.626	314.8 -> 134.9	126545	5.31 µg/L	100
		314.8 -> 82.9	4286		
PFMPA	3.363			5.27 µg/L	100
PFEESA	5.875			4.86 µg/L	98

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

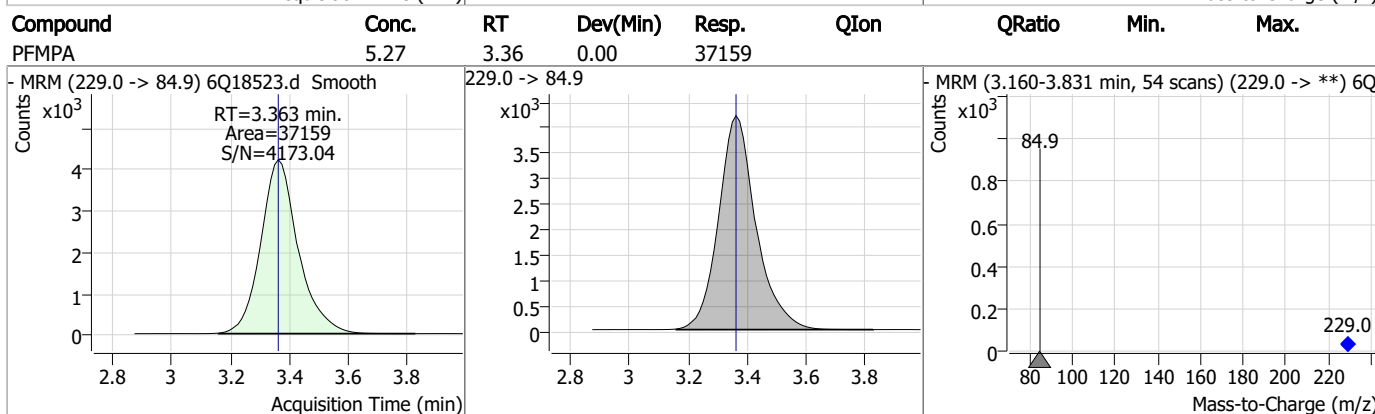
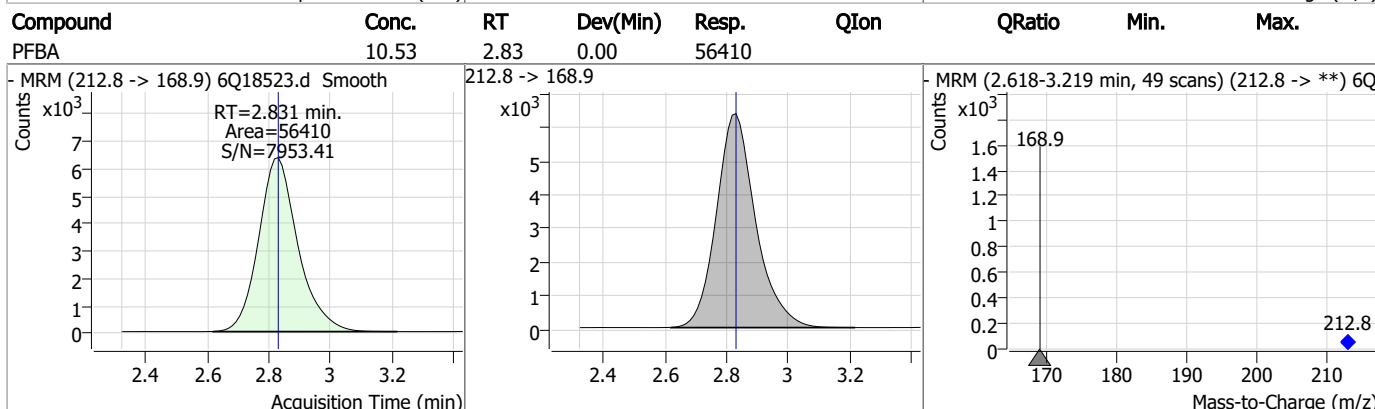
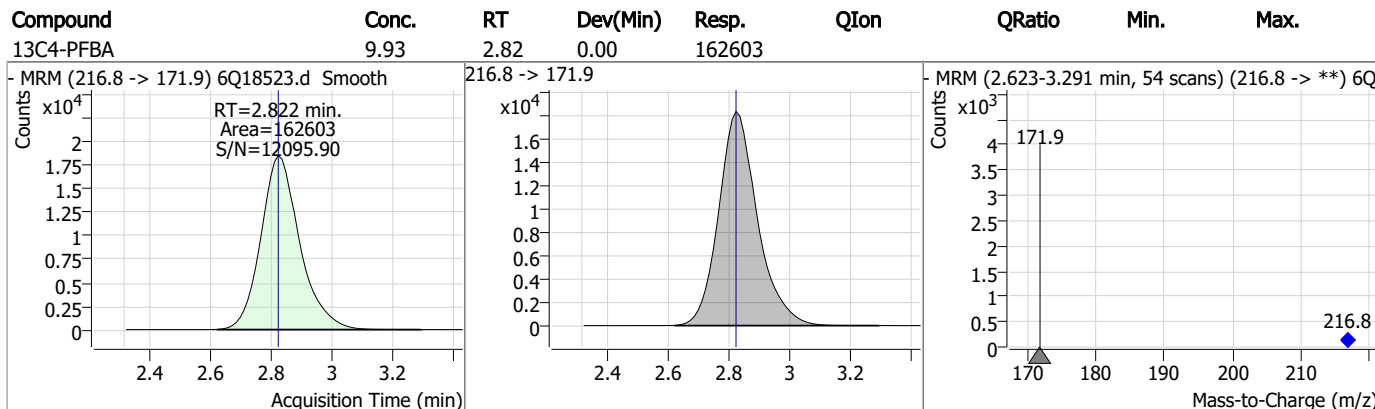
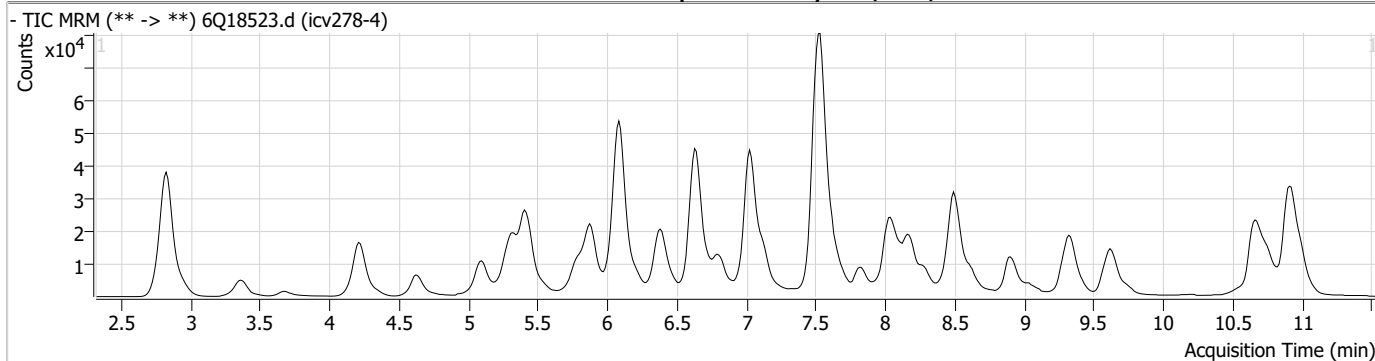
Perfluorinated Compounds by LC/MS/MS

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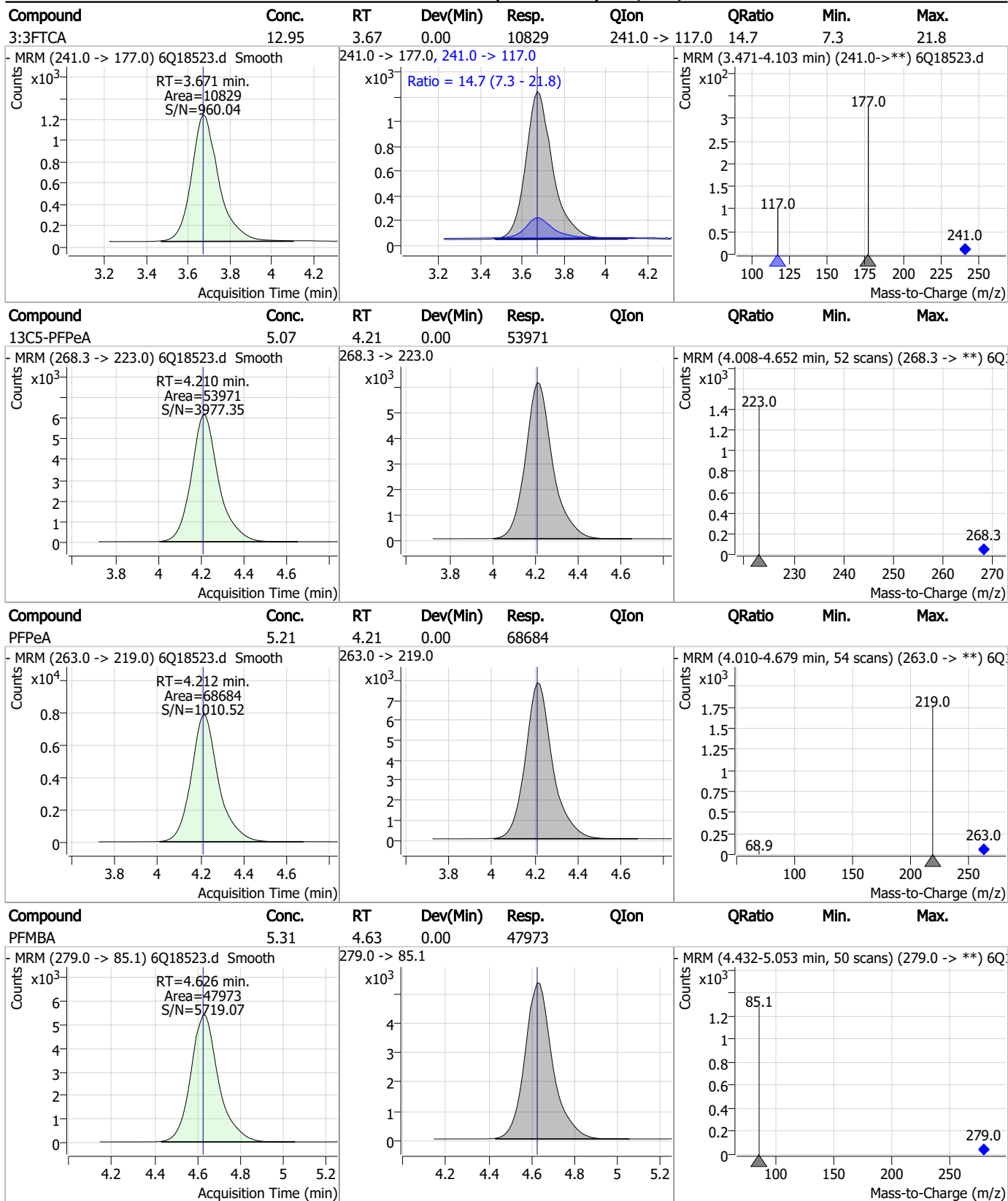
7.7.10

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Perfluorinated Compounds by LC/MS/MS

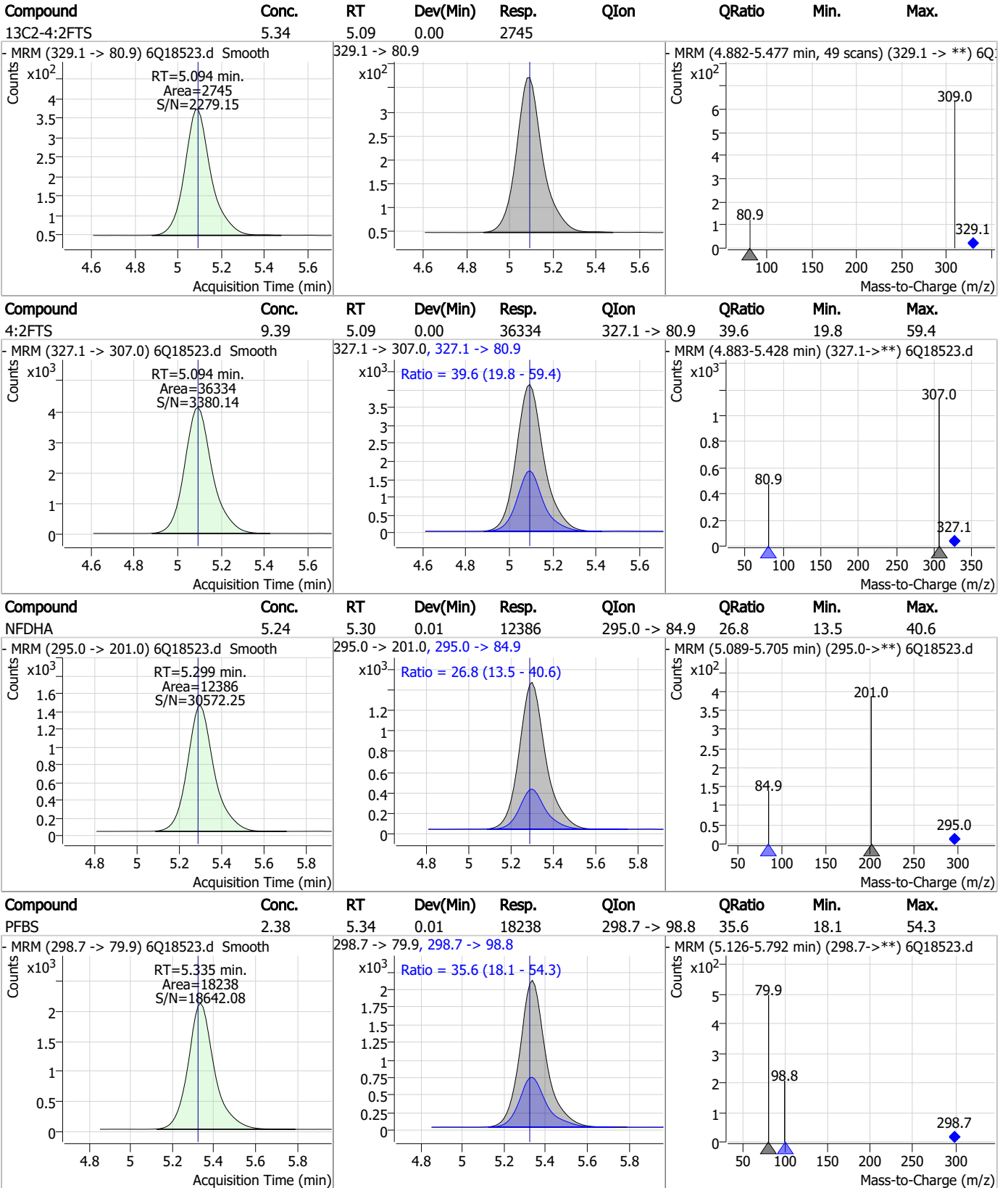


Perfluorinated Compounds by LC/MS/MS



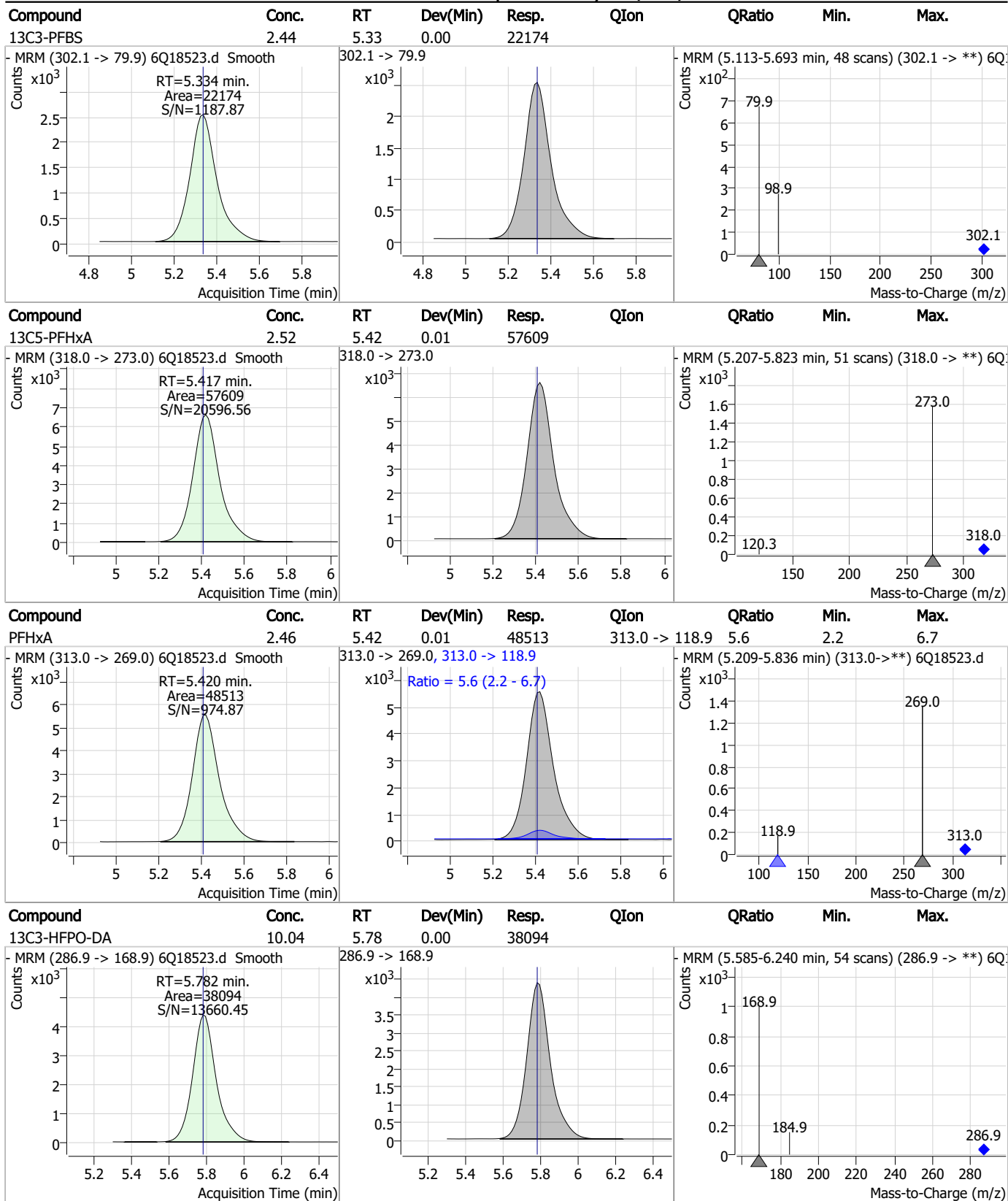
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

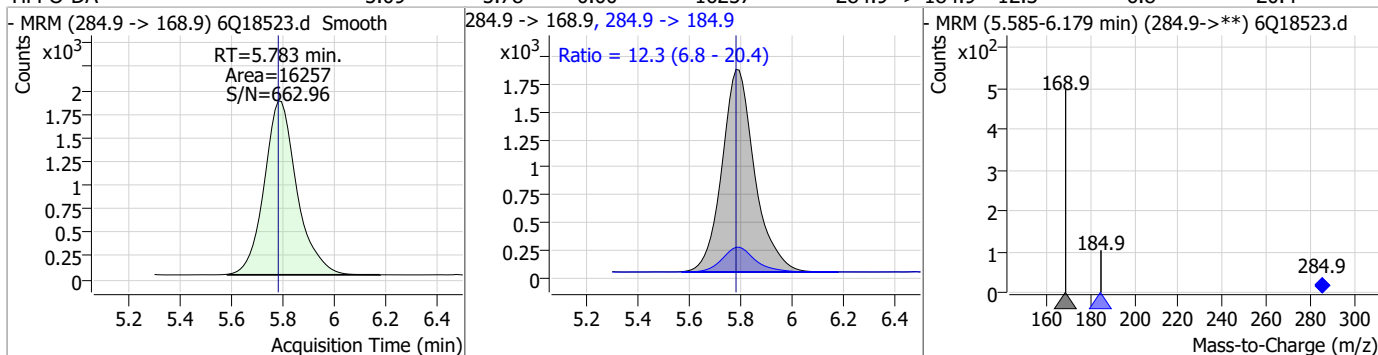
Perfluorinated Compounds by LC/MS/MS



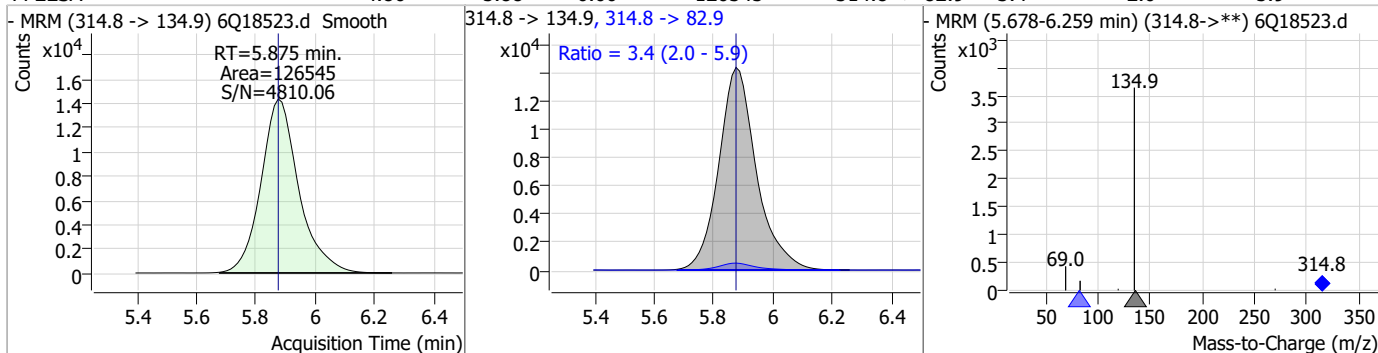
7.7.10
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Perfluorinated Compounds by LC/MS/MS

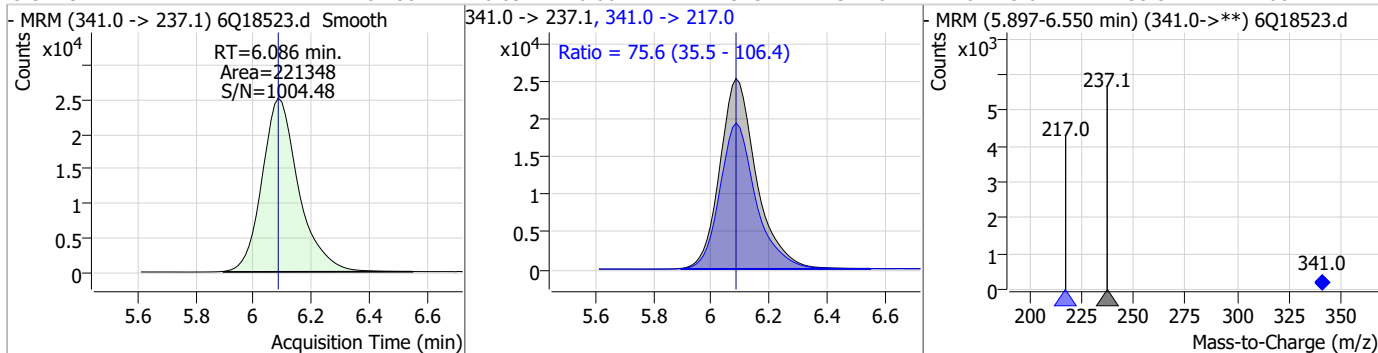
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.09	5.78	0.00	16257	284.9 -> 184.9	12.3	6.8	20.4



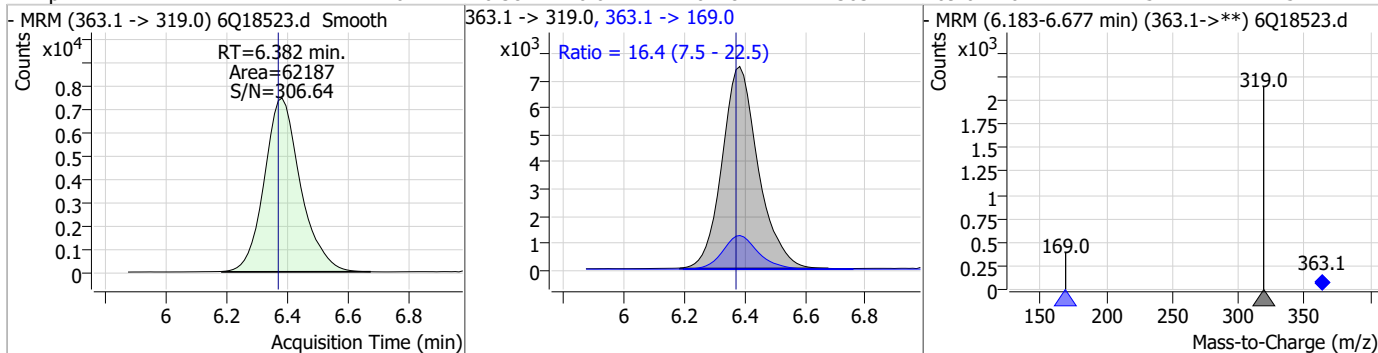
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.86	5.88	0.00	126545	314.8 -> 82.9	3.4	2.0	5.9



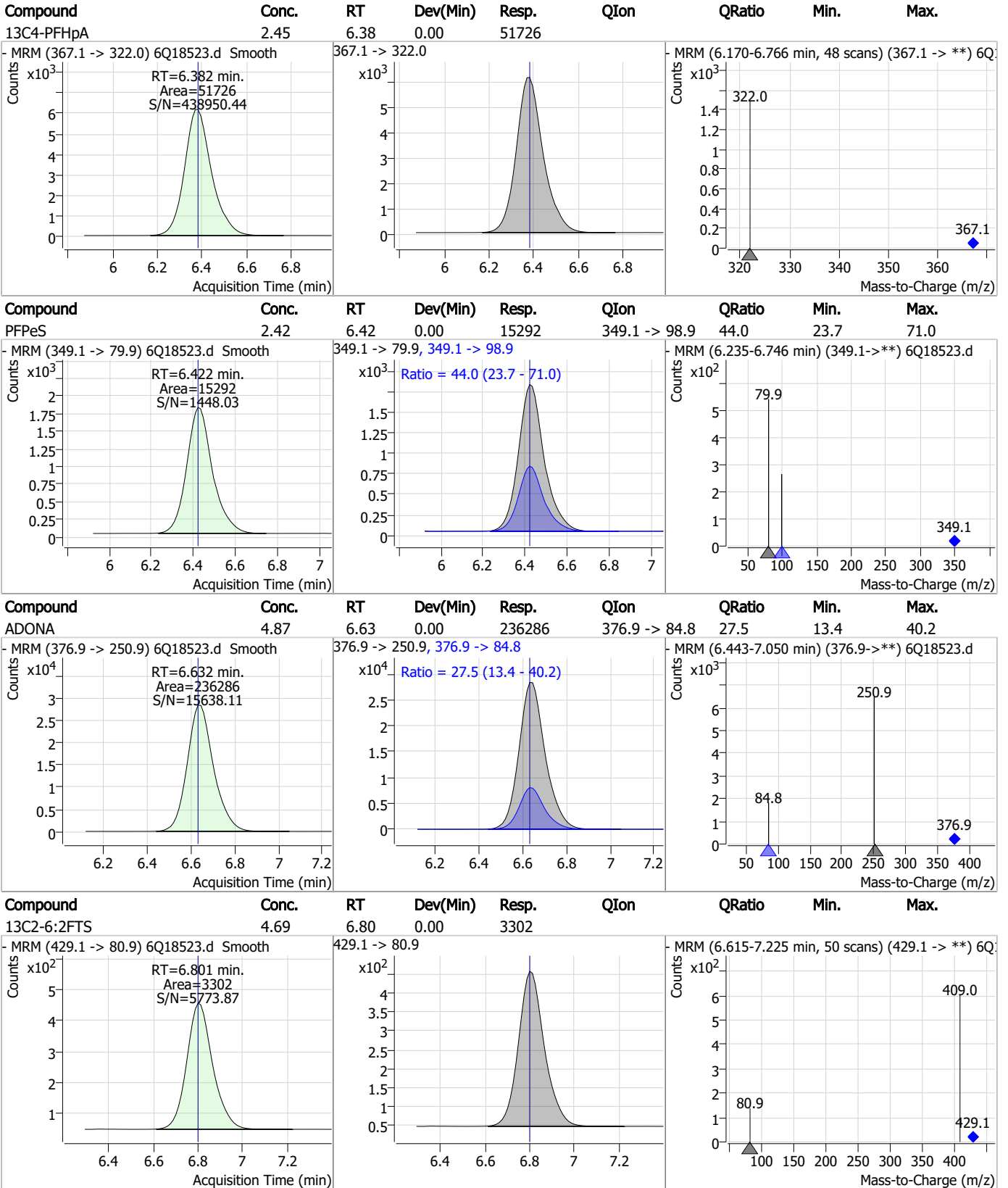
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	64.80	6.09	0.00	221348	341.0 -> 217.0	75.6	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.70	6.38	0.01	62187	363.1 -> 169.0	16.4	7.5	22.5



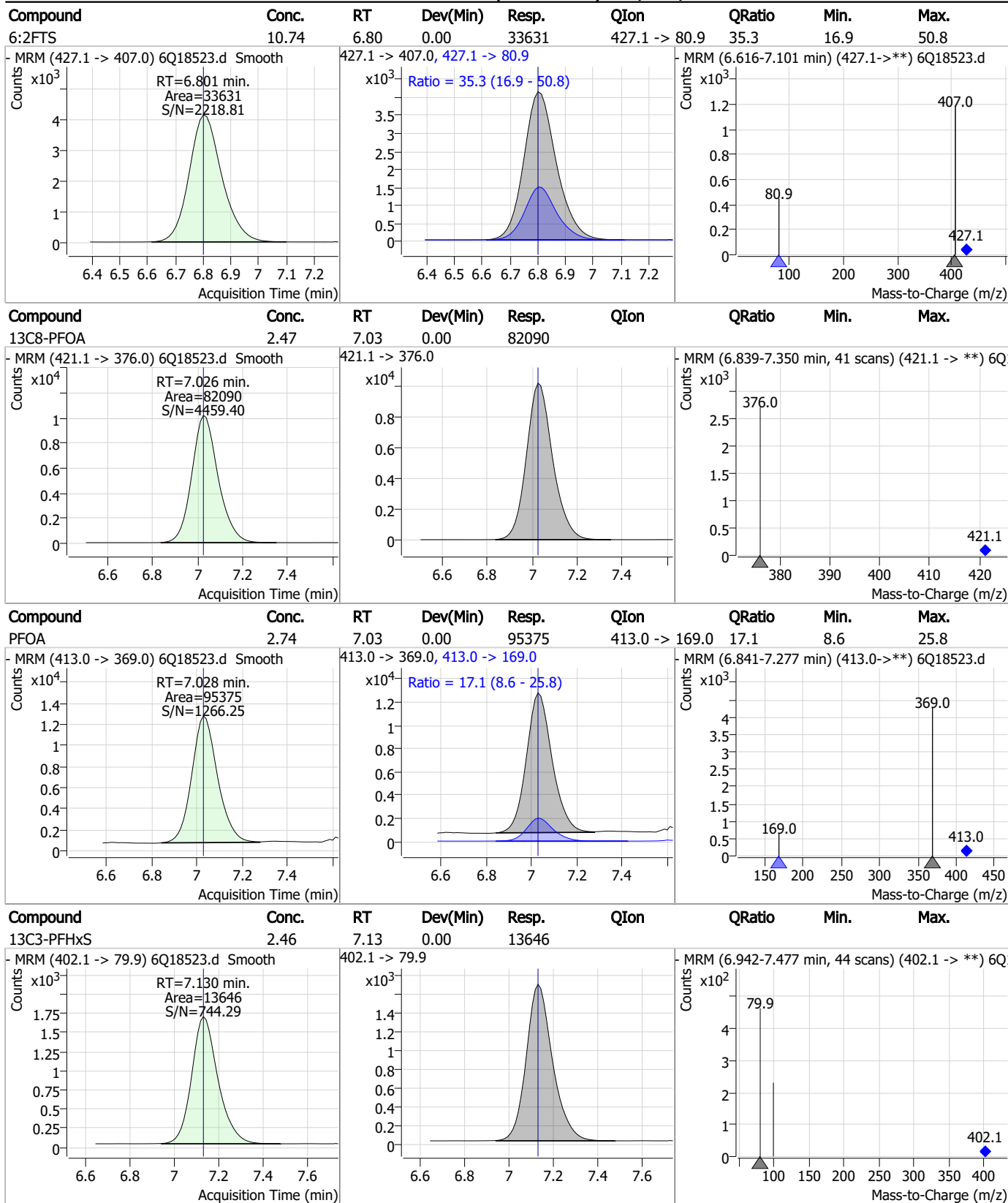
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



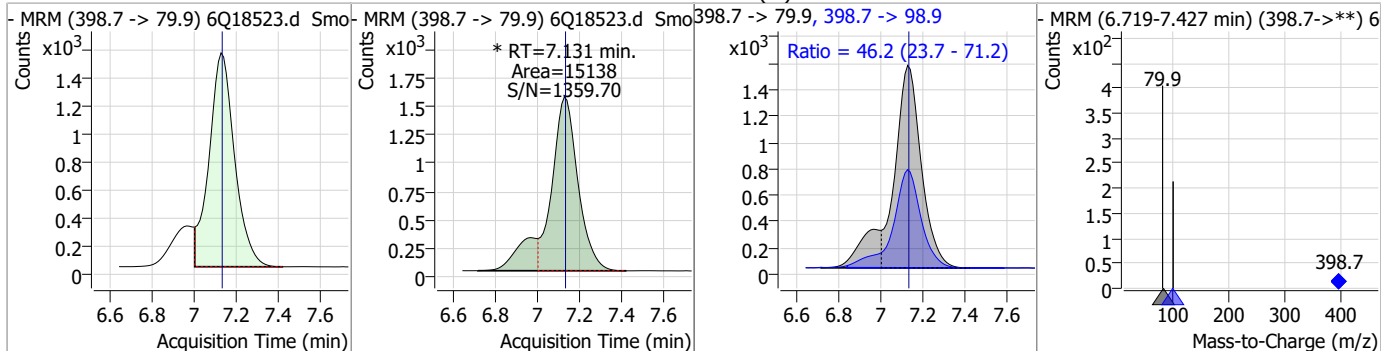
Perfluorinated Compounds by LC/MS/MS



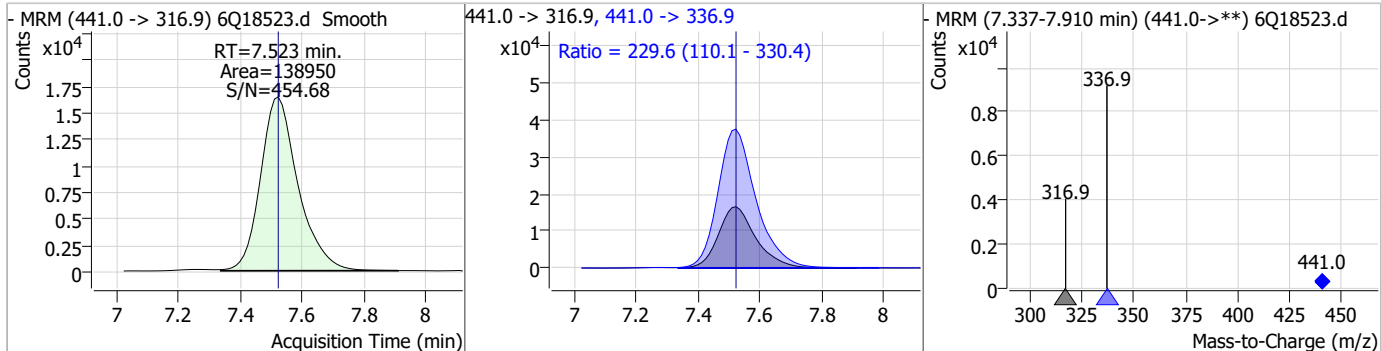
7.7.10
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Perfluorinated Compounds by LC/MS/MS

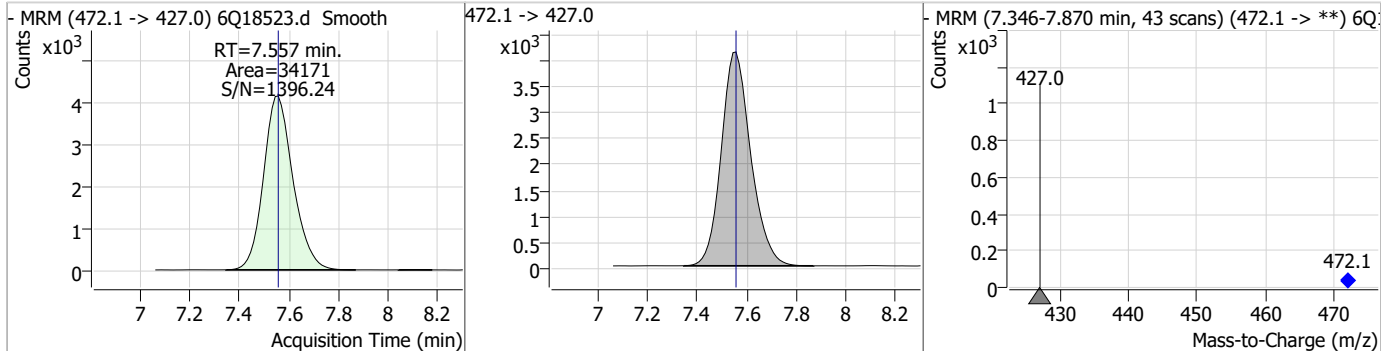
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.37	7.13	0.00	15138 (m)	398.7 -> 98.9	46.2	23.7	71.2



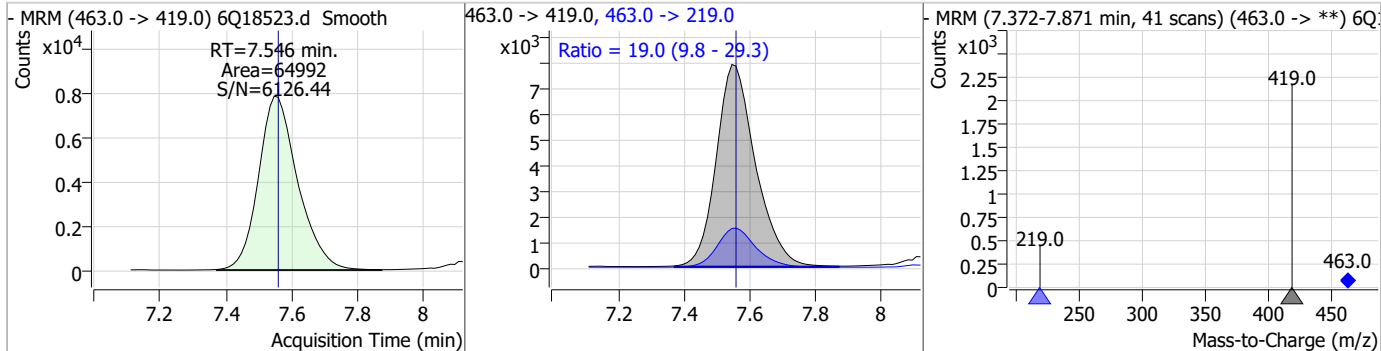
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	63.66	7.52	0.00	138950	441.0 -> 336.9	229.6	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.33	7.56	0.00	34171	472.1 -> 427.0			

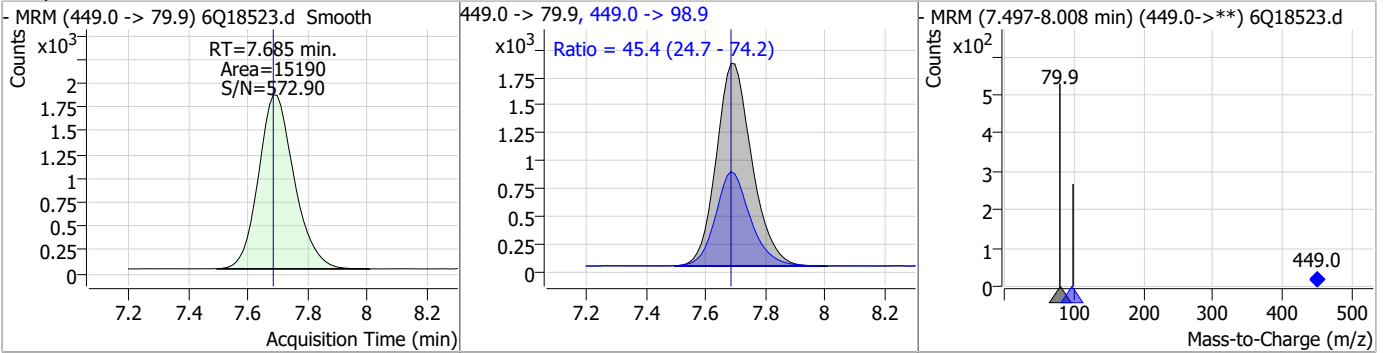


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.62	7.55	-0.01	64992	463.0 -> 219.0	19.0	9.8	29.3

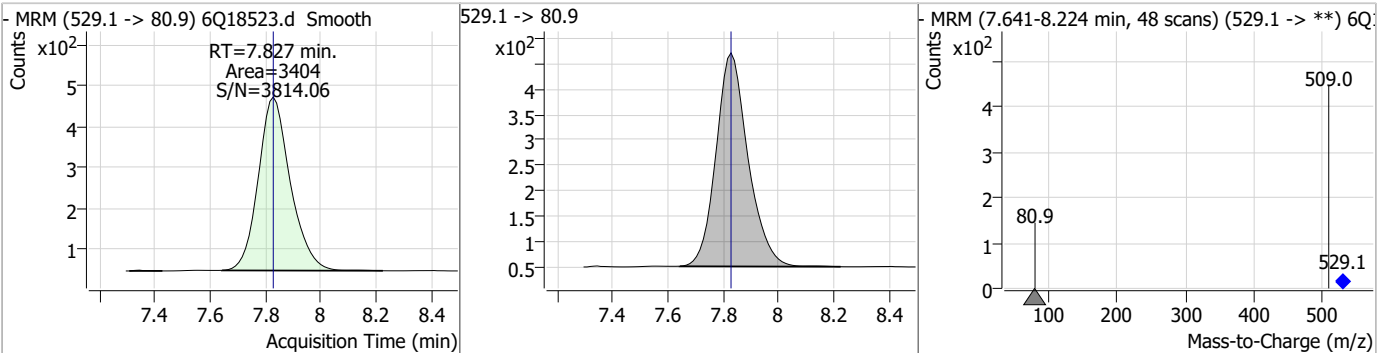


Perfluorinated Compounds by LC/MS/MS

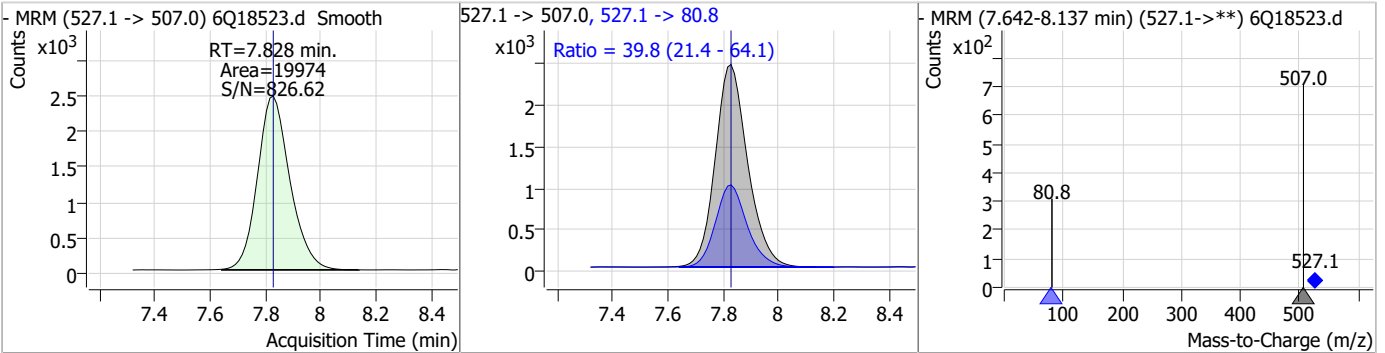
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.38	7.68	0.00	15190	449.0 -> 98.9	45.4	24.7	74.2



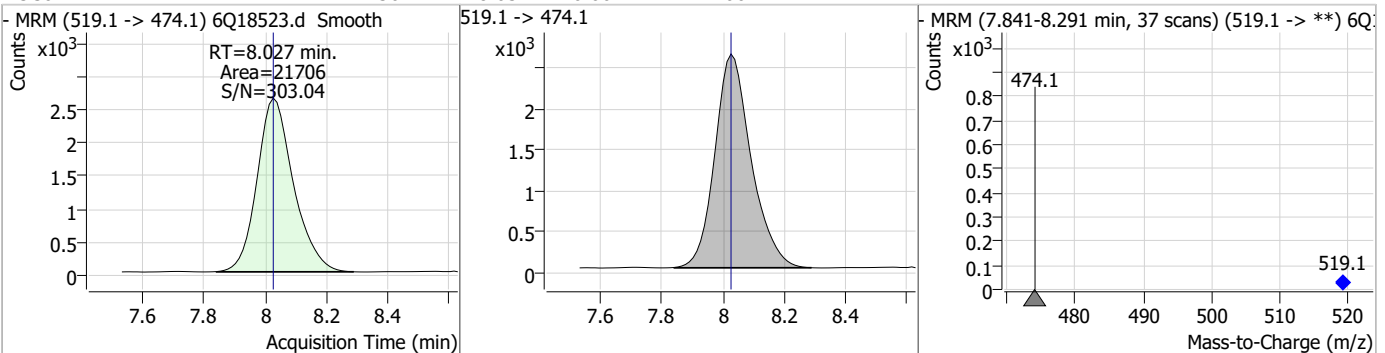
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.03	7.83	0.00	3404				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	11.08	7.83	0.00	19974	527.1 -> 80.8	39.8	21.4	64.1

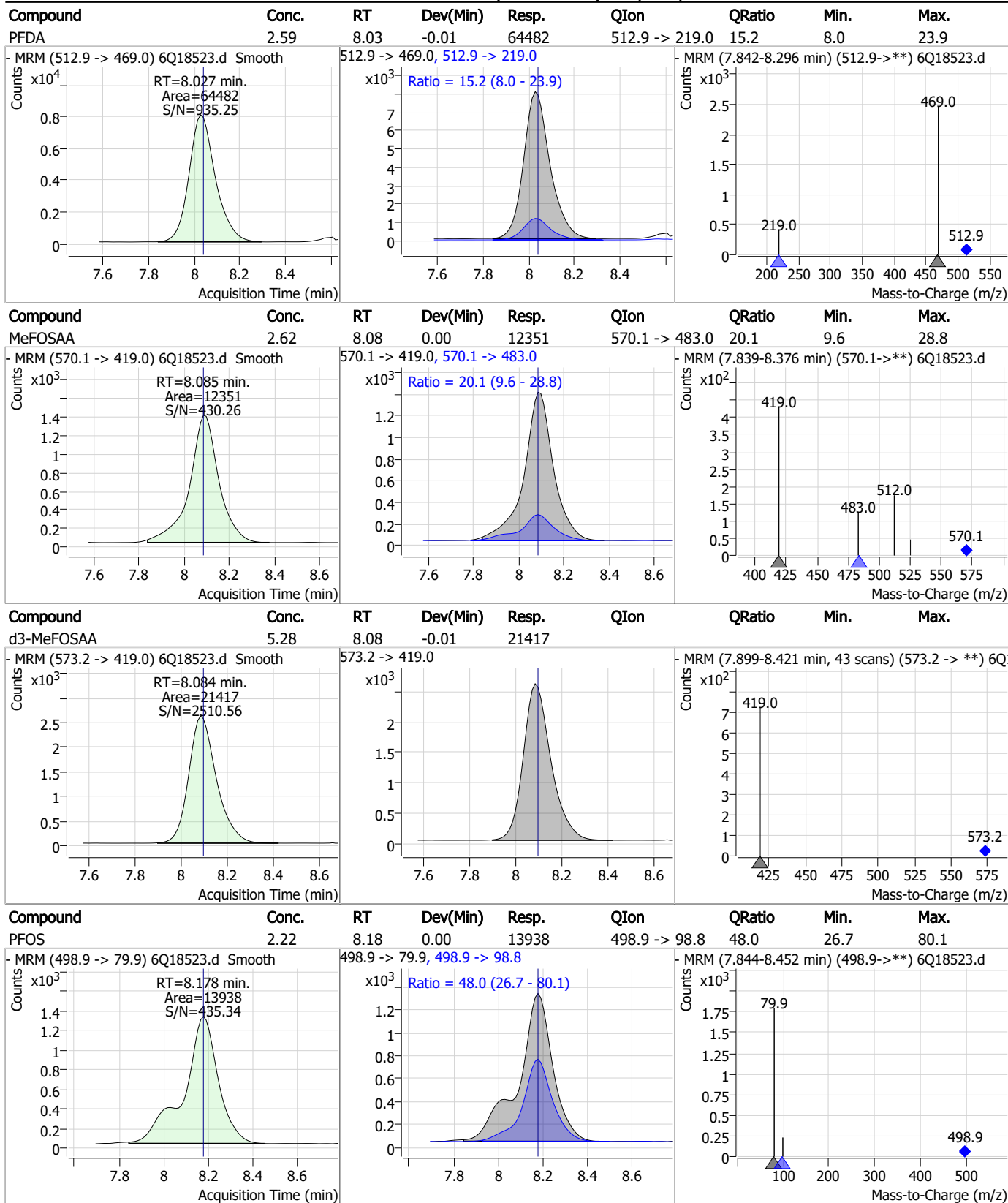


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.30	8.03	0.00	21706				



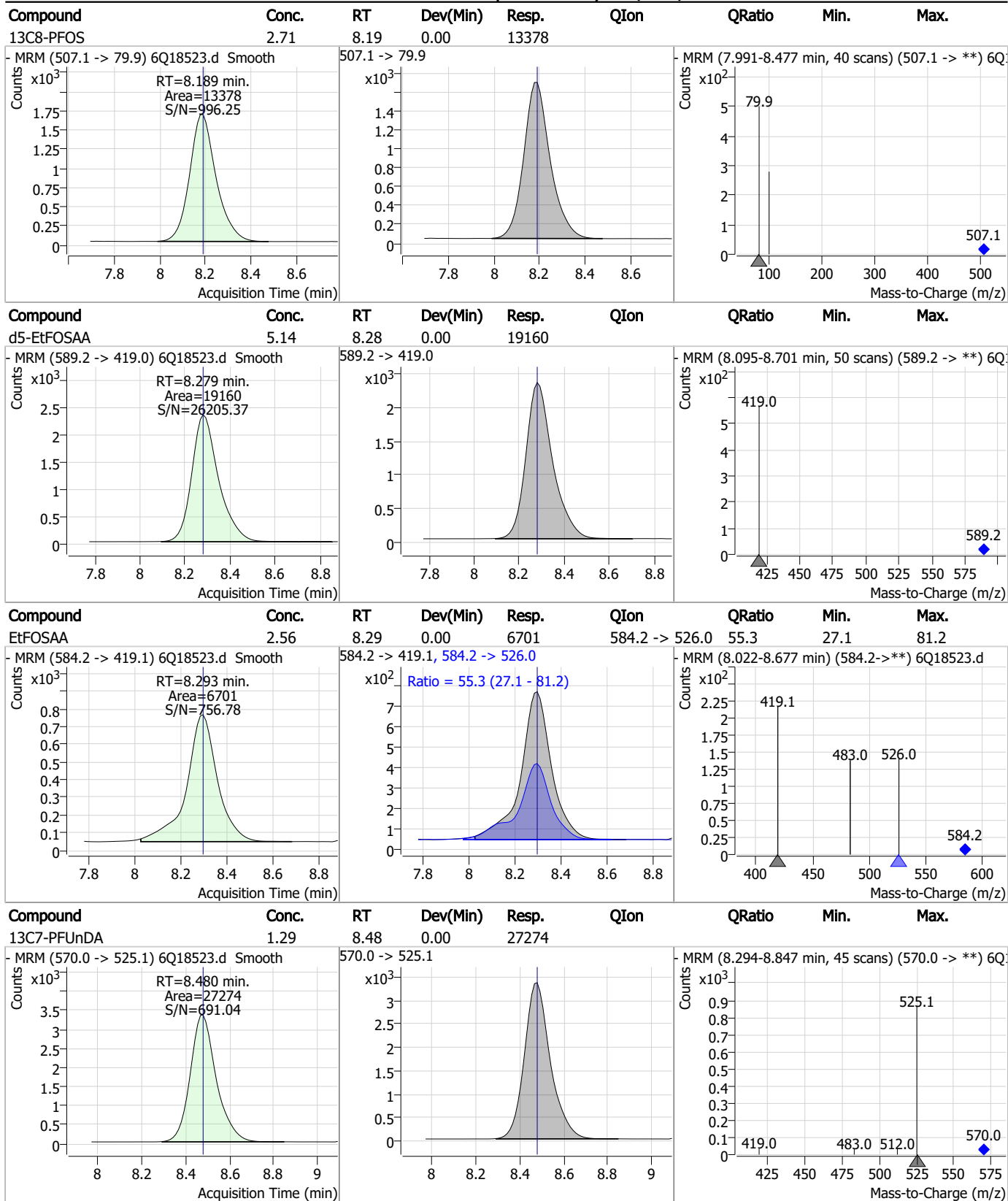
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

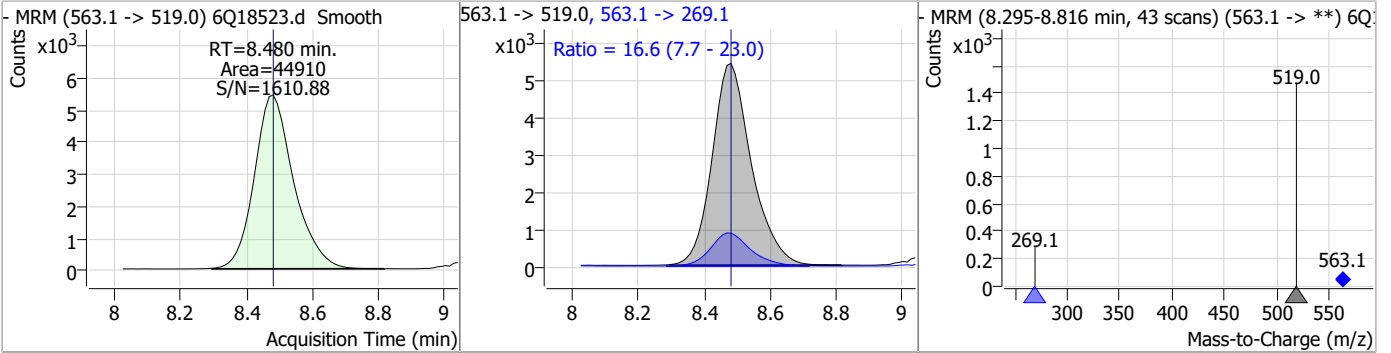
Perfluorinated Compounds by LC/MS/MS



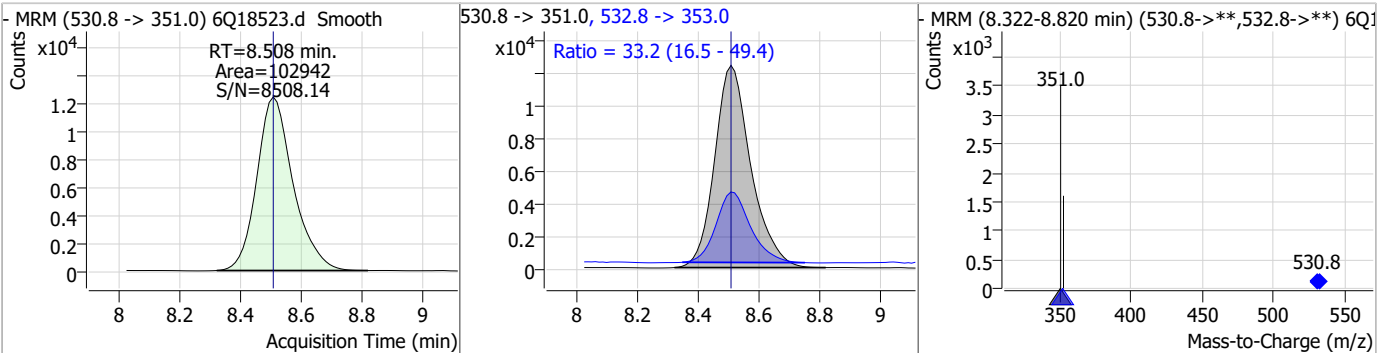
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

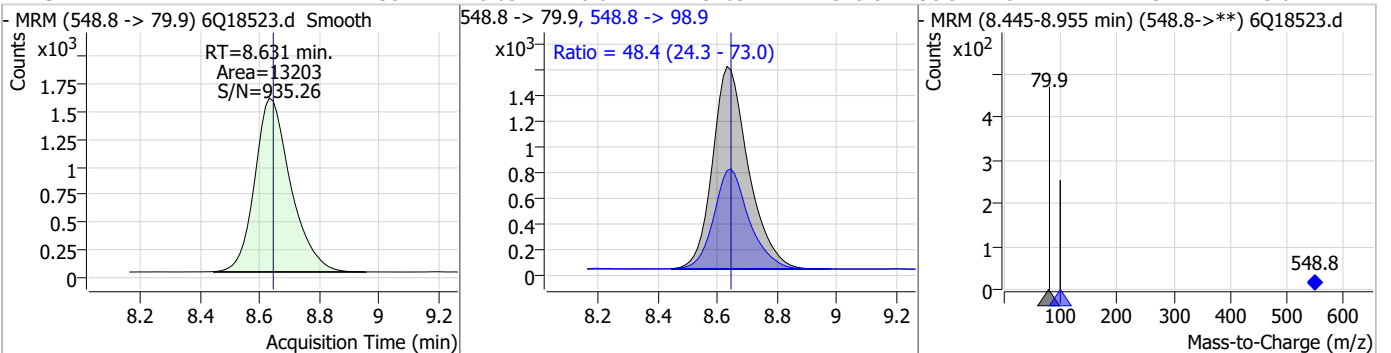
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.56	8.48	0.00	44910	563.1 -> 269.1	16.6	7.7	23.0



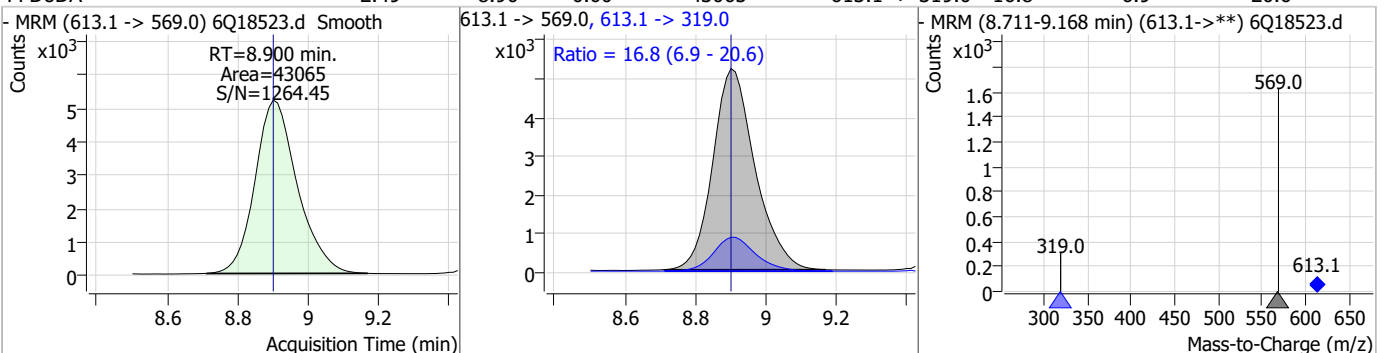
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.93	8.51	0.00	102942	532.8 -> 353.0	33.2	16.5	49.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.38	8.63	-0.01	13203	548.8 -> 98.9	48.4	24.3	73.0

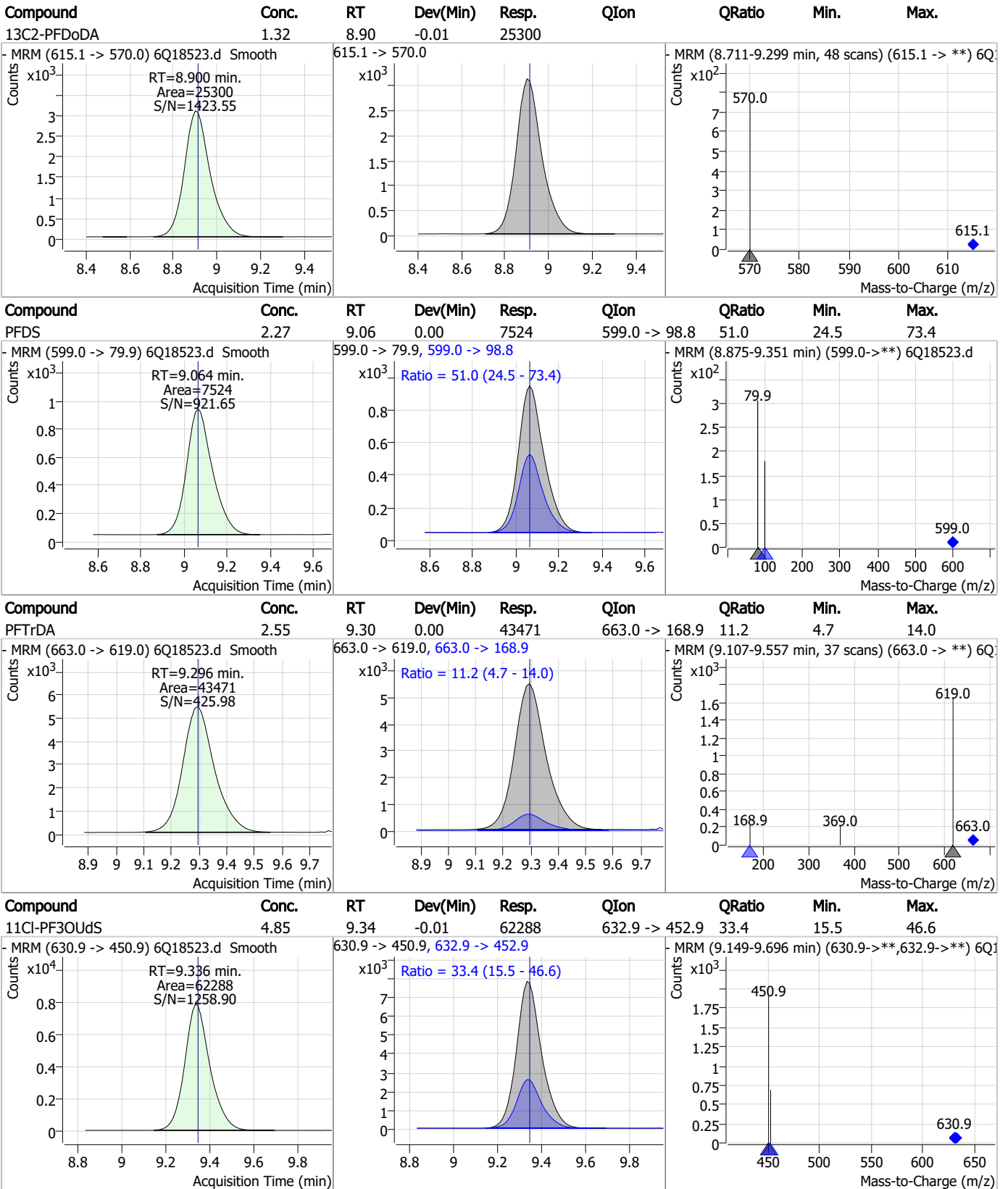


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	2.49	8.90	0.00	43065	613.1 -> 319.0	16.8	6.9	20.6



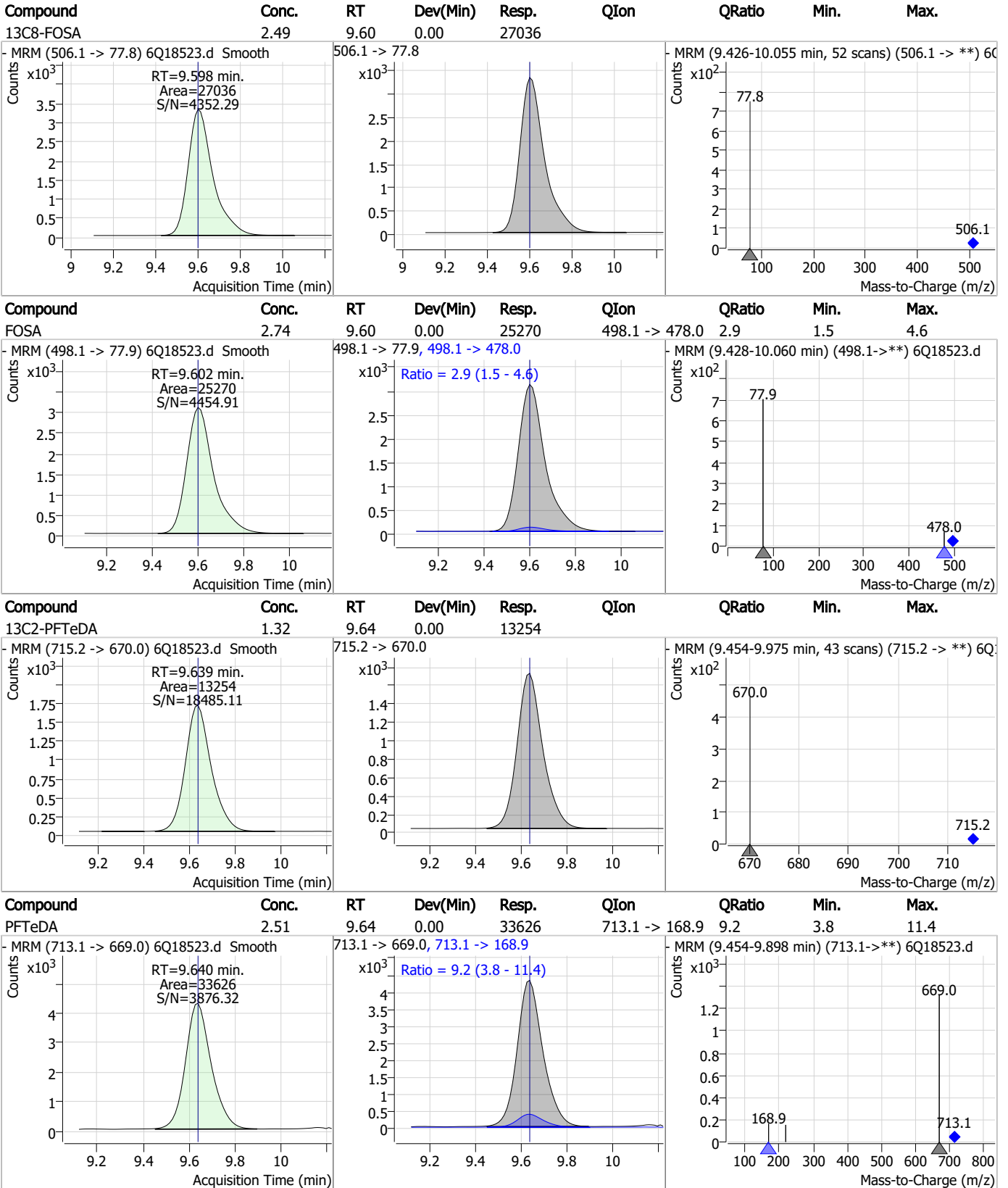
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Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS

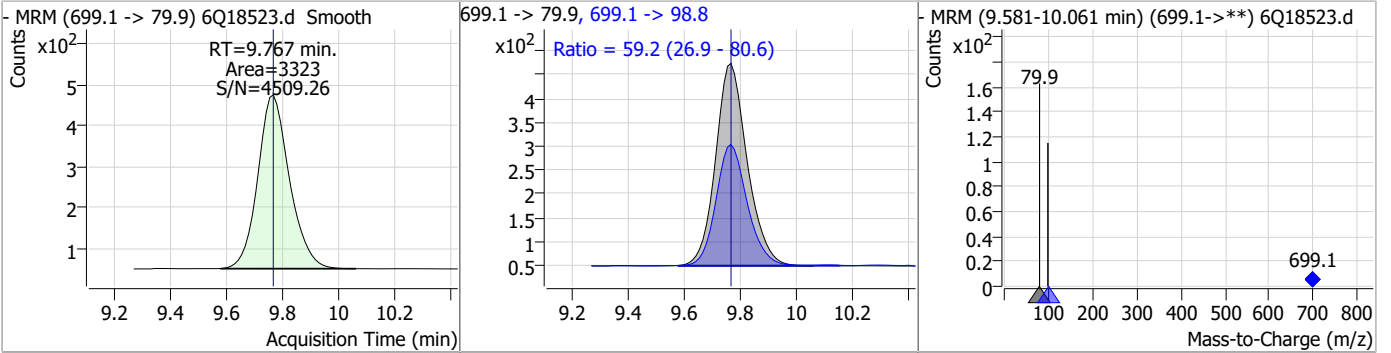


7.7.10 7

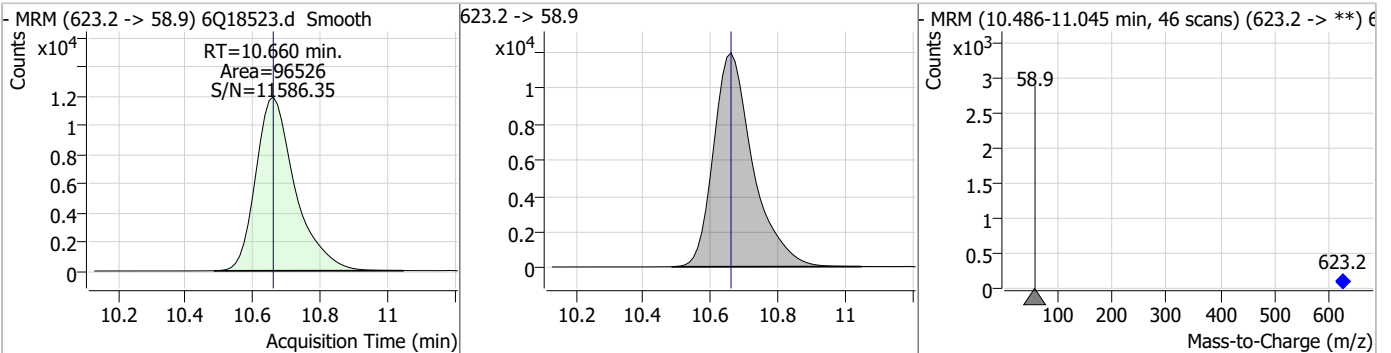


Perfluorinated Compounds by LC/MS/MS

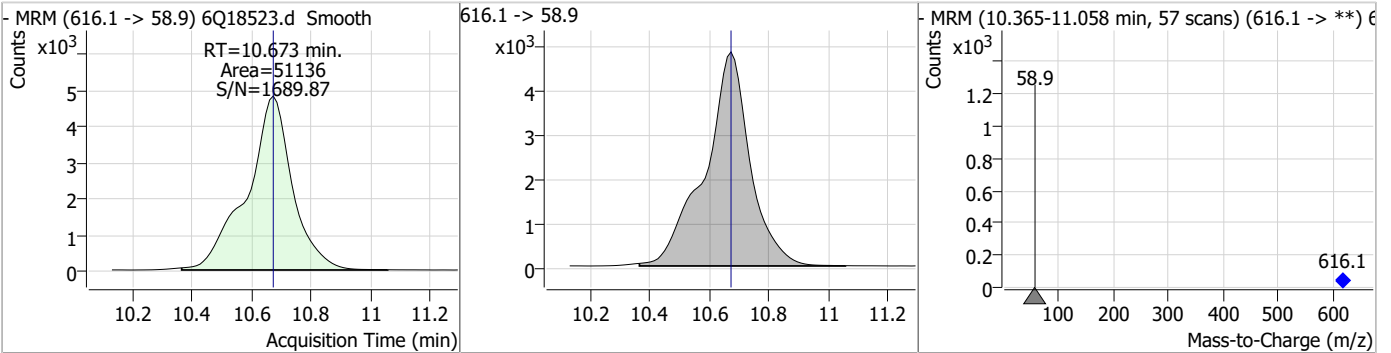
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.33	9.77	0.00	3323	699.1 -> 98.8	59.2	26.9	80.6



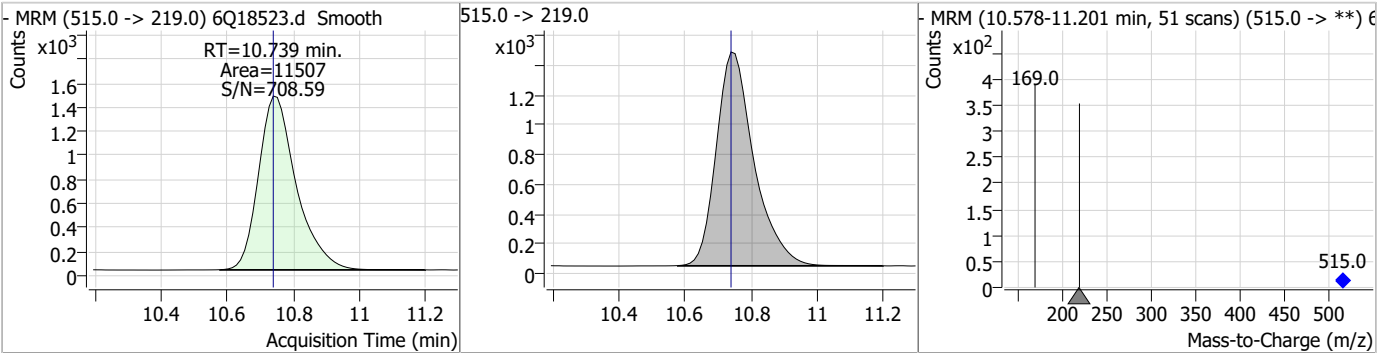
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.90	10.66	0.00	96526				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	13.11	10.67	0.00	51136				

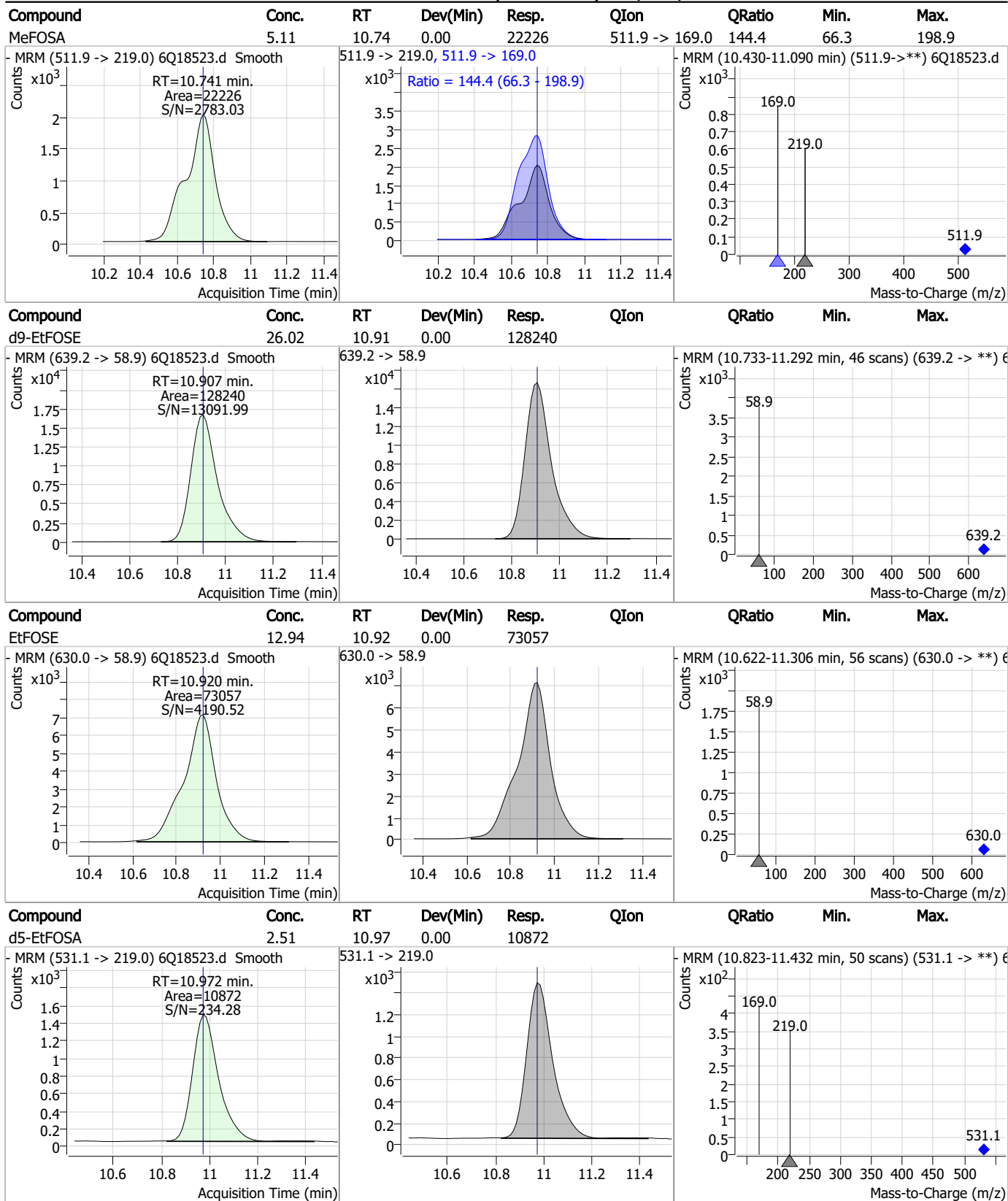


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.57	10.74	0.00	11507				



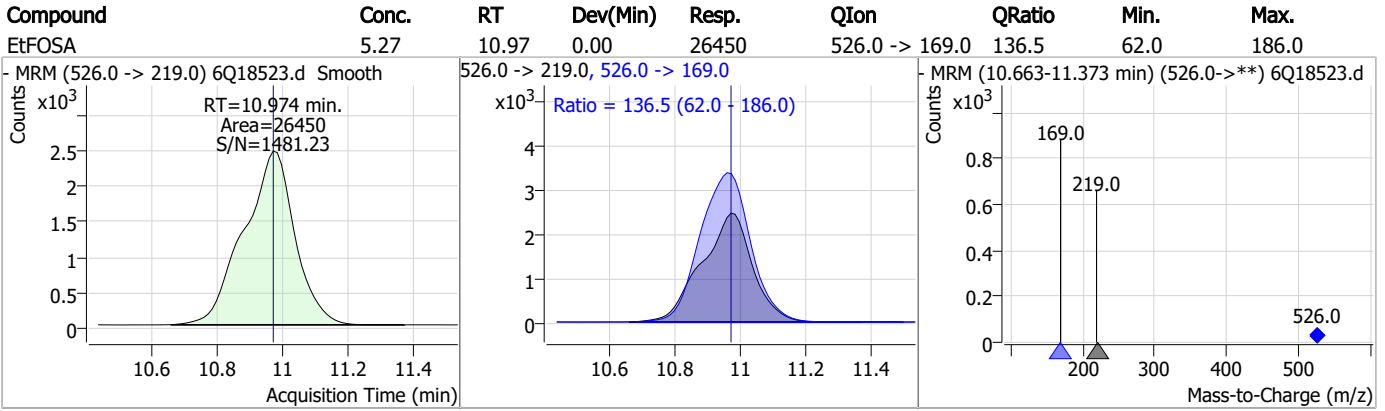
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10
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Manual Integration Approval Summary

Sample Number: S6Q278-ICV278 Method: EPA DRAFT 1633
Lab FileID: 6Q18523.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 17:31 Supervisor approved: 05/31/23 21:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak

7.7.10.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18524.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 5:45:57 PM
 Sample Name : icv278-20
 Vial : P1-B2
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	179187	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58996	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	64397	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	57644	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	88875	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	34999	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	23519	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	29035	1.25 µg/L	0.000
M2-PFDoDA	8.900	615.1 -> 570.0	26241	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	13522	1.25 µg/L	-0.012
M8-FOSA	9.611	506.1 -> 77.8	29039	2.50 µg/L	0.012
M3-PFBS	5.334	302.1 -> 79.9	24181	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14175	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13241	2.50 µg/L	-0.012
M2-4:2FTS	5.094	329.1 -> 80.9	2841	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4037	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3794	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	23216	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	41142	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	20445	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	101247	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	134705	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	11773	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12340	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17581	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	74724	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10496	2.50 µg/L	0.000
13C4-PFOA	7.027	417.1 -> 372.0	91290	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	30338	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	47519	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	60321	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.094	329.1 -> 80.9	2841	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4037	5.60 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.0%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3794	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.5%		
13C2-PFDoDA	8.900	615.1 -> 570.0	26241	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-PFTeDA	9.627	715.2 -> 670.0	13522	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C3-PFBS	5.334	302.1 -> 79.9	24181	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C3-PFHxS	7.130	402.1 -> 79.9	14175	2.50 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFBA	2.822	216.8 -> 171.9	179187	10.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.382	367.1 -> 322.0	57644	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C5-PFHxA	5.417	318.0 -> 273.0	64397	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C5-PFPeA	4.210	268.3 -> 223.0	58996	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C6-PFDA	8.027	519.1 -> 474.1	23519	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C7-PFUnDA	8.480	570.0 -> 525.1	29035	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C8-FOSA	9.611	506.1 -> 77.8	29039	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C8-PFOA	7.026	421.1 -> 376.0	88875	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.177	507.1 -> 79.9	13241	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C9-PFNA	7.557	472.1 -> 427.0	34999	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.7%	
d3-MeFOSAA	8.084	573.2 -> 419.0	23216	5.16 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41142	9.64 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
d3-MeFOSA	10.739	515.0 -> 219.0	12340	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	20445	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
d7-MeFOSE	10.660	623.2 -> 58.9	101247	24.50 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	134705	24.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	11773	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	80484	20.09 µg/L	99
		327.1 -> 80.9	31302		
6:2FTS	6.801	427.1 -> 407.0	73347	19.15 µg/L	100
		427.1 -> 80.9	24848		
8:2FTS	7.828	527.1 -> 507.0	37605	18.72 µg/L	96
		527.1 -> 80.8	15093		
EtFOSAA	8.280	584.2 -> 419.1	53015	18.96 µg/L	97
		584.2 -> 526.0	27419		
FOSA	9.602	498.1 -> 77.9	190885	19.28 µg/L	100
		498.1 -> 478.0	5429		
MeFOSAA	8.085	570.1 -> 419.0	96503	18.89 µg/L	99
		570.1 -> 483.0	18795		
PFBA	2.831	212.8 -> 168.9	111811	18.94 µg/L	100
PFBS	5.335	298.7 -> 79.9	162698	19.46 µg/L	97
		298.7 -> 98.8	61860		
PFDA	8.027	512.9 -> 469.0	539249	20.01 µg/L	96
		512.9 -> 219.0	77629		
PFDoDA	8.900	613.1 -> 569.0	318176	17.76 µg/L	94
		613.1 -> 319.0	50815		
PFDS	9.064	599.0 -> 79.9	62192	19.00 µg/L	100

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	30303	19.28 µg/L	97
		363.1 -> 319.0	494322		
PFHpS	7.685	363.1 -> 169.0	80001	19.31 µg/L	99
		449.0 -> 79.9	122100		
PFHxA	5.420	449.0 -> 98.9	59814	19.32 µg/L	99
		313.0 -> 269.0	425402		
PFHxS	7.131	313.0 -> 118.9	20976	21.37 µg/L	96
		398.7 -> 79.9	141967		
PFNA	7.558	398.7 -> 98.9	63924	20.41 µg/L	98
		463.0 -> 419.0	519526		
PFNS	8.644	463.0 -> 219.0	106500	19.41 µg/L	95
		548.8 -> 79.9	106591		
PFOA	7.028	548.8 -> 98.9	55496	17.84 µg/L	95
		413.0 -> 369.0	672037		
PFOS	8.178	413.0 -> 169.0	131653	18.09 µg/L	92
		498.9 -> 79.9	112185		
PFPeA	4.212	498.9 -> 98.8	53800	19.66 µg/L	100
		263.0 -> 219.0	283556		
PFPeS	6.422	349.1 -> 79.9	129068	19.66 µg/L	99
		349.1 -> 98.9	59786		
PFTeDA	9.640	713.1 -> 669.0	265689	19.47 µg/L	98
		713.1 -> 168.9	22007		
PFTrDA	9.296	663.0 -> 619.0	291738	16.48 µg/L	94
		663.0 -> 168.9	33211		
PFUnDA	8.480	563.1 -> 519.0	343311	18.36 µg/L	96
		563.1 -> 269.1	58704		
11CI-PF3OUdS	9.336	630.9 -> 450.9	277164	19.99 µg/L	100
		632.9 -> 452.9	86945		
9CI-PF3ONS	8.508	530.8 -> 351.0	468238	20.77 µg/L	97
		532.8 -> 353.0	145750		
ADONA	6.646	376.9 -> 250.9	943349	18.00 µg/L	99
		376.9 -> 84.8	259853		
HFPO-DA	5.783	284.9 -> 168.9	64612	18.72 µg/L	97
		284.9 -> 184.9	7880		
3:3FTCA	3.671	241.0 -> 177.0	16917	18.50 µg/L	98
		241.0 -> 117.0	2286		
5:3FTCA	6.086	341.0 -> 237.1	73437	19.23 µg/L	95
		341.0 -> 217.0	54998		
7:3FTCA	7.523	441.0 -> 316.9	45251	18.55 µg/L	97
		441.0 -> 336.9	101957		
EtFOSA	10.986	526.0 -> 219.0	101589	18.68 µg/L	89
		526.0 -> 169.0	113551		
EtFOSE	10.920	630.0 -> 58.9	585883	98.79 µg/L	100
		511.9 -> 219.0	85601		
MeFOSA	10.753	511.9 -> 169.0	95612	18.36 µg/L	82
		616.1 -> 58.9	406009		
MeFOSE	10.673	699.1 -> 79.9	25068	99.20 µg/L	100
		699.1 -> 98.8	14371		
PFDoDS	9.767	295.0 -> 201.0	51713	17.76 µg/L	95
		295.0 -> 84.9	13600		
NFDHA	5.299	279.0 -> 85.1	194796	19.59 µg/L	98
		229.0 -> 84.9	151682		
PFMBA	4.626	314.8 -> 134.9	482013	19.67 µg/L	100
		314.8 -> 82.9	17177		
PFMPA	3.363			16.56 µg/L	99
PFEESA	5.875				

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

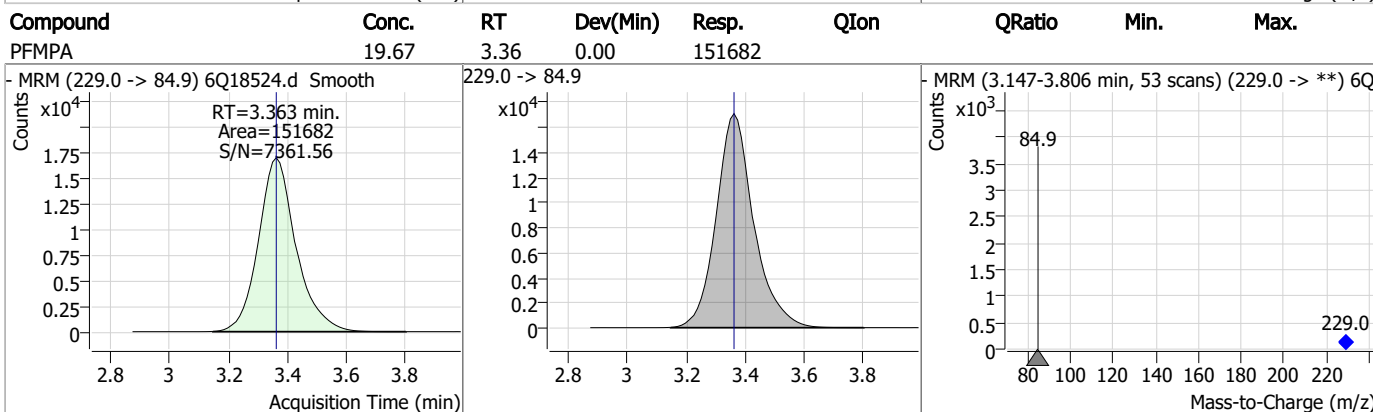
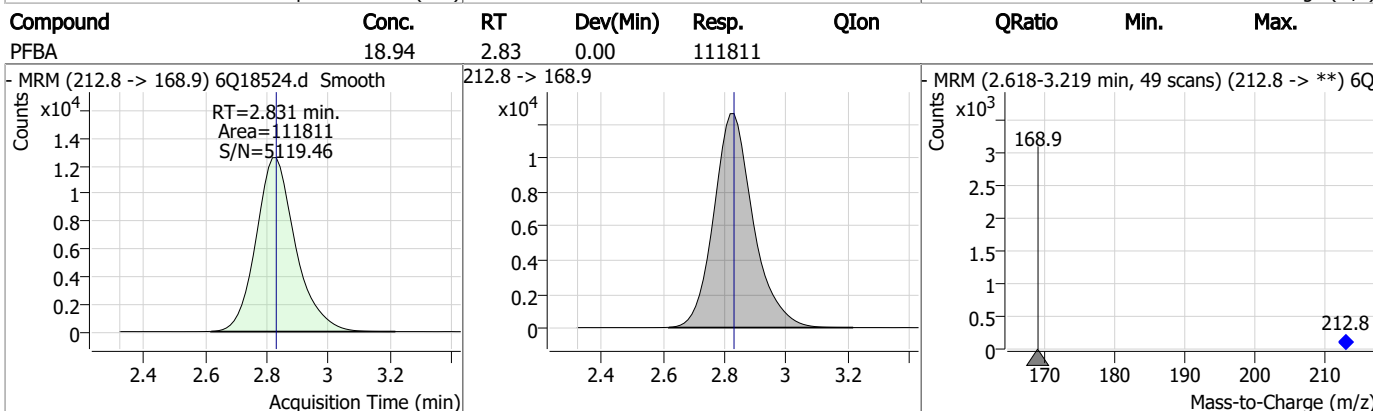
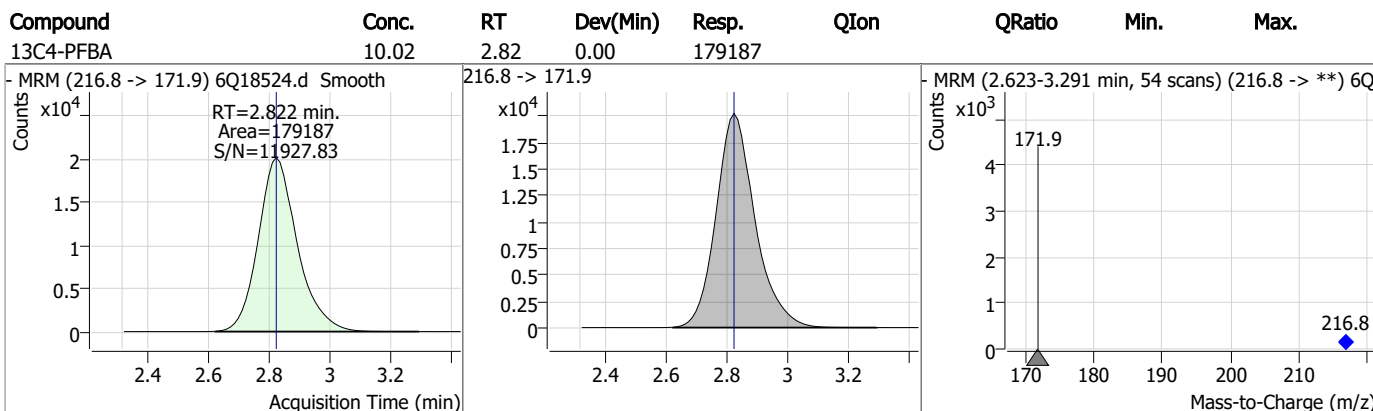
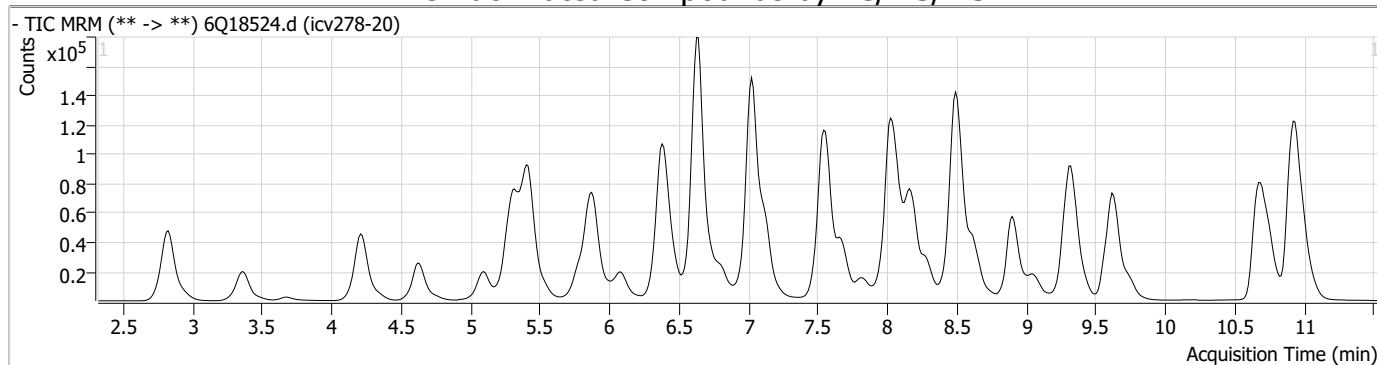
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7:7.11

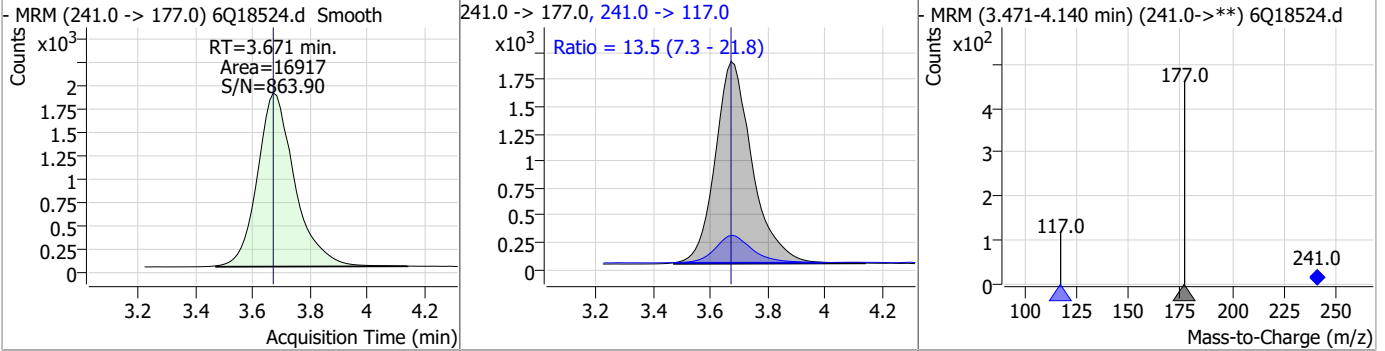
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Perfluorinated Compounds by LC/MS/MS

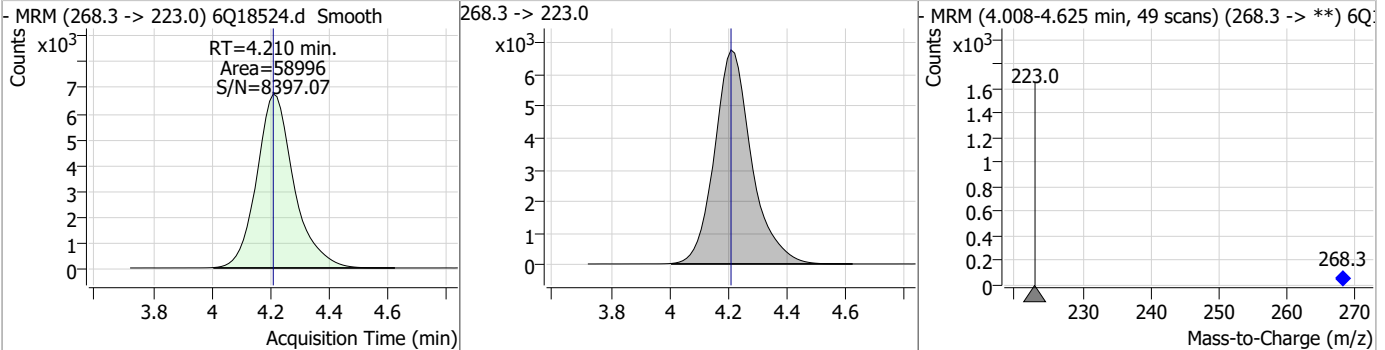


Perfluorinated Compounds by LC/MS/MS

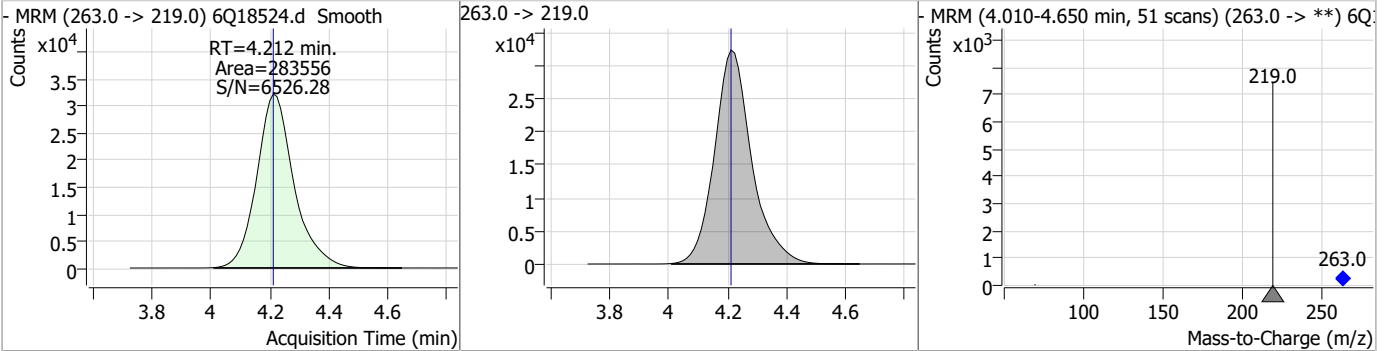
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	18.50	3.67	0.00	16917	241.0 -> 117.0	13.5	7.3	21.8



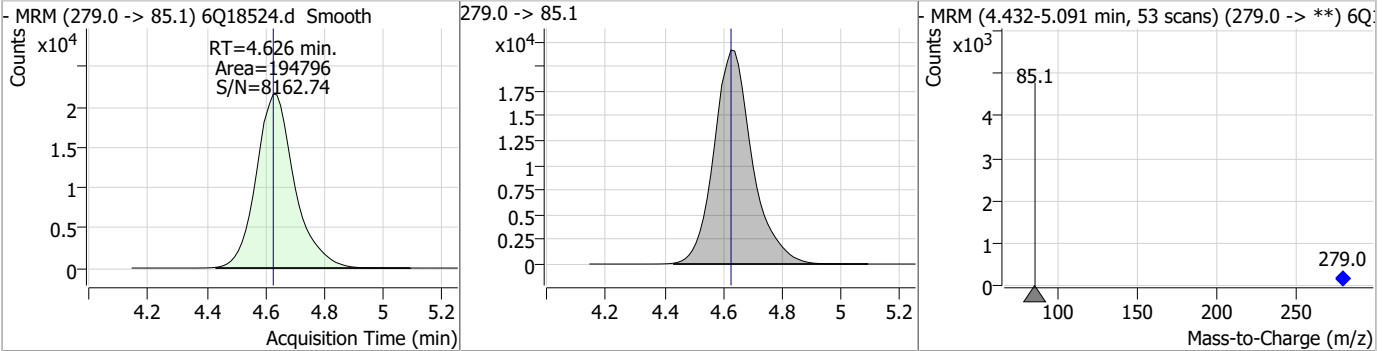
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.93	4.21	0.00	58996				



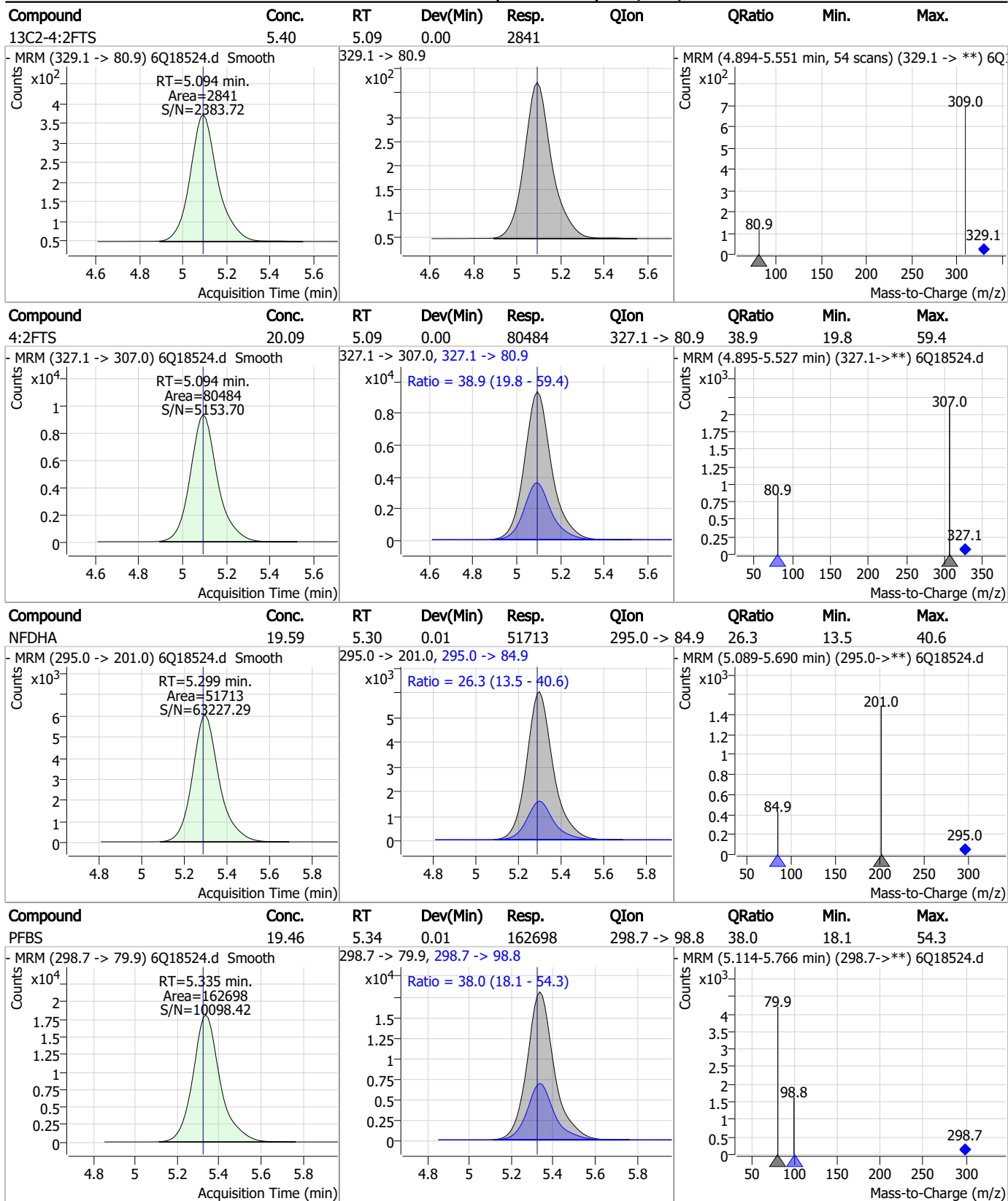
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.66	4.21	0.00	283556				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	19.71	4.63	0.00	194796				



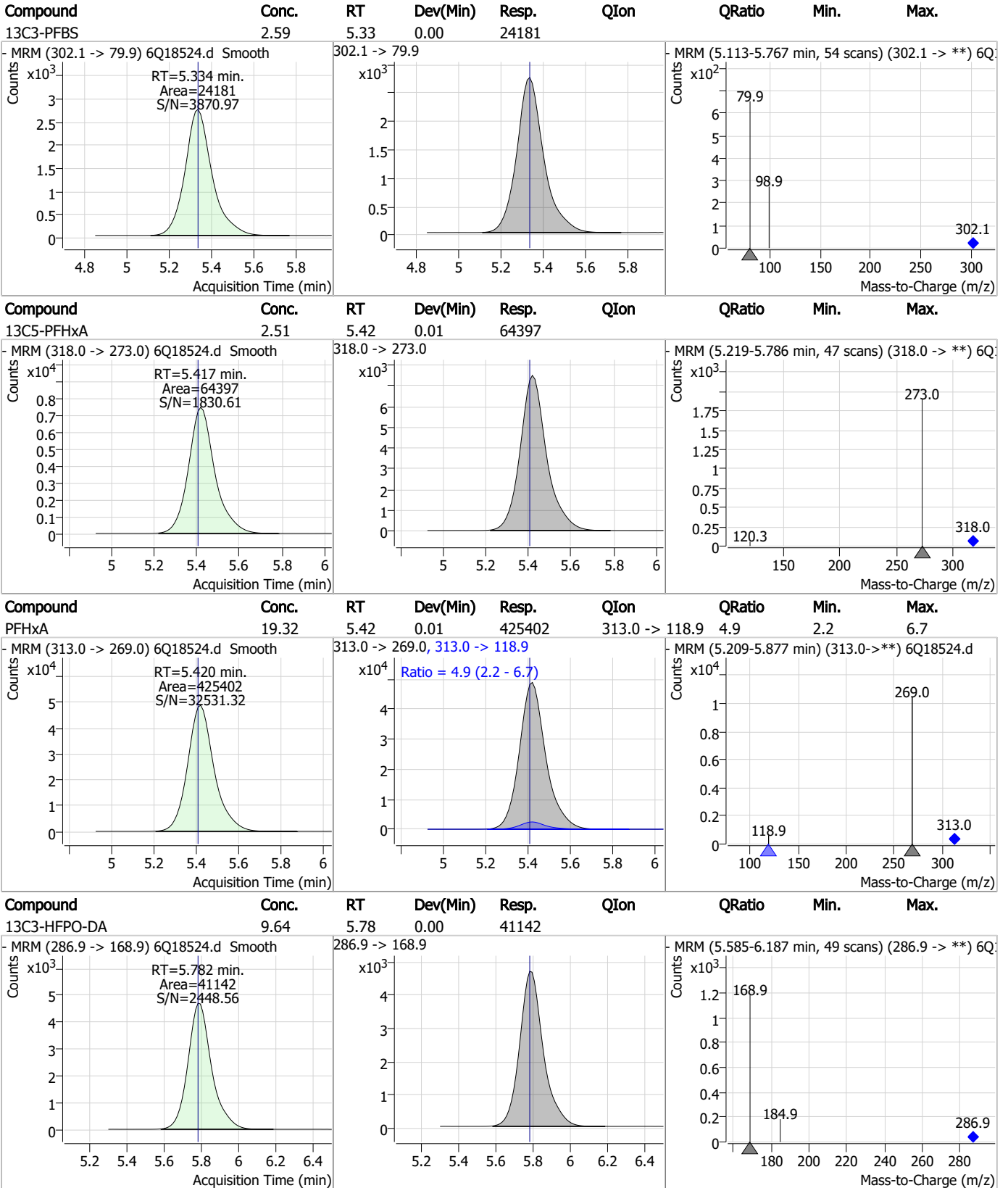
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



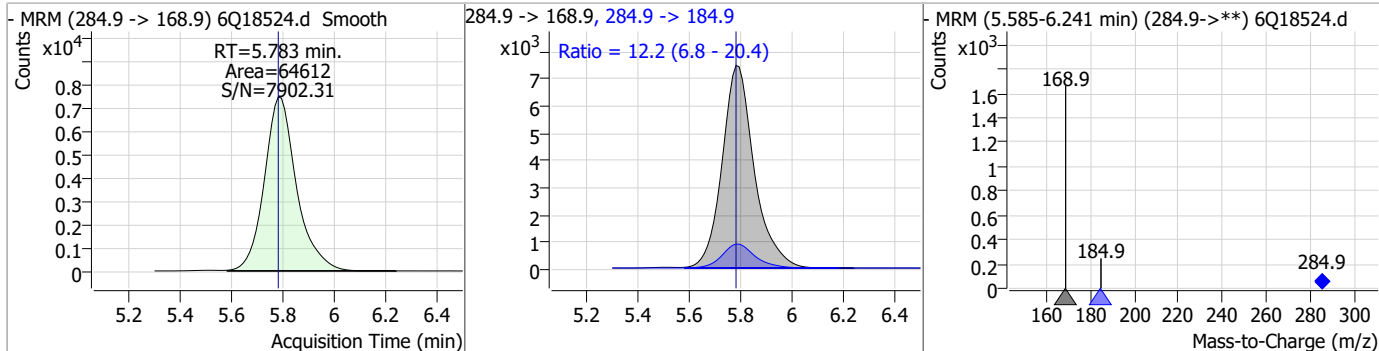
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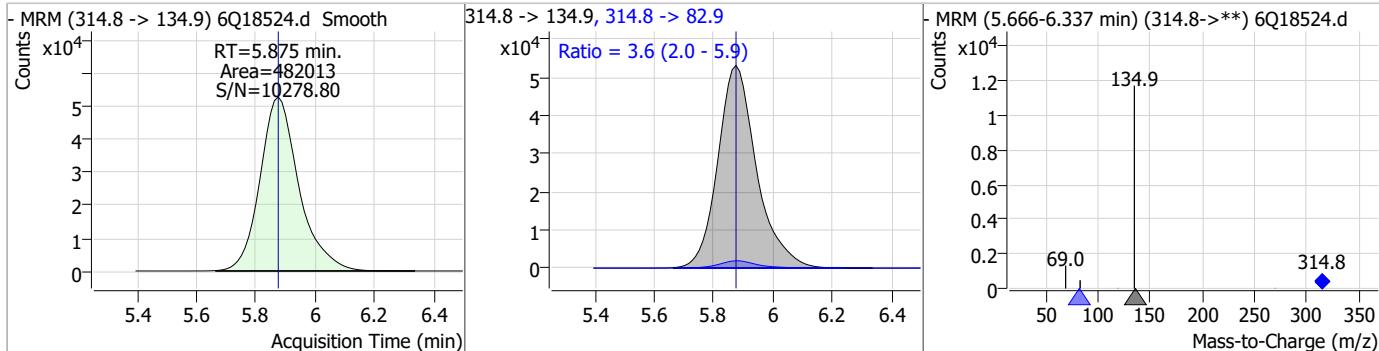


Perfluorinated Compounds by LC/MS/MS

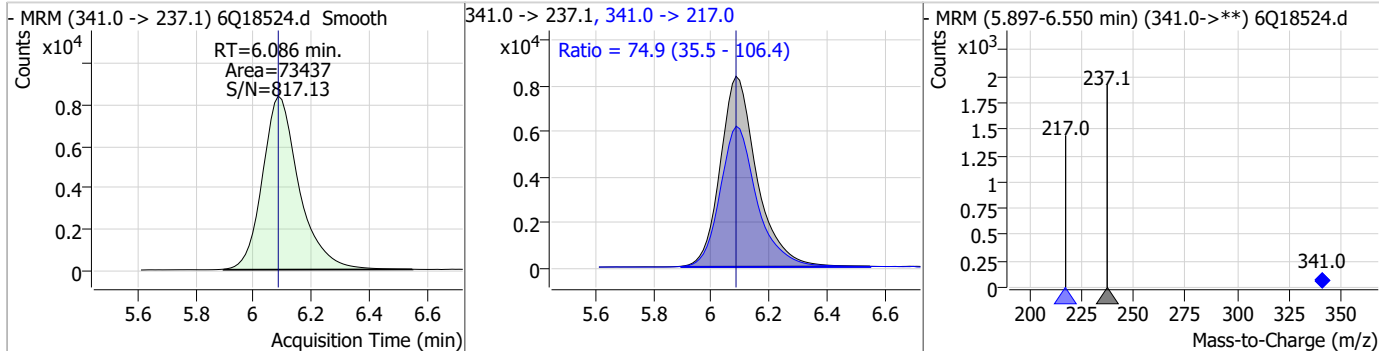
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.72	5.78	0.00	64612	284.9 -> 184.9	12.2	6.8	20.4



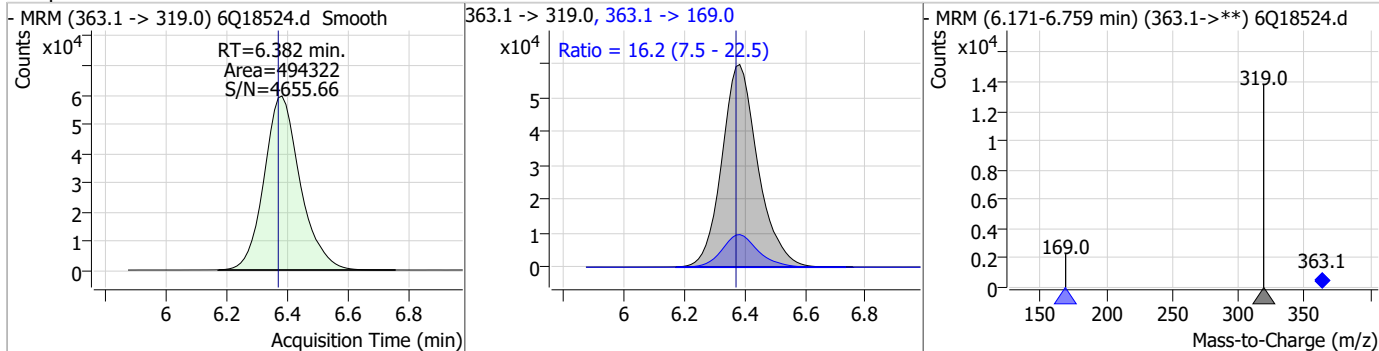
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	16.56	5.88	0.00	482013	314.8 -> 82.9	3.6	2.0	5.9



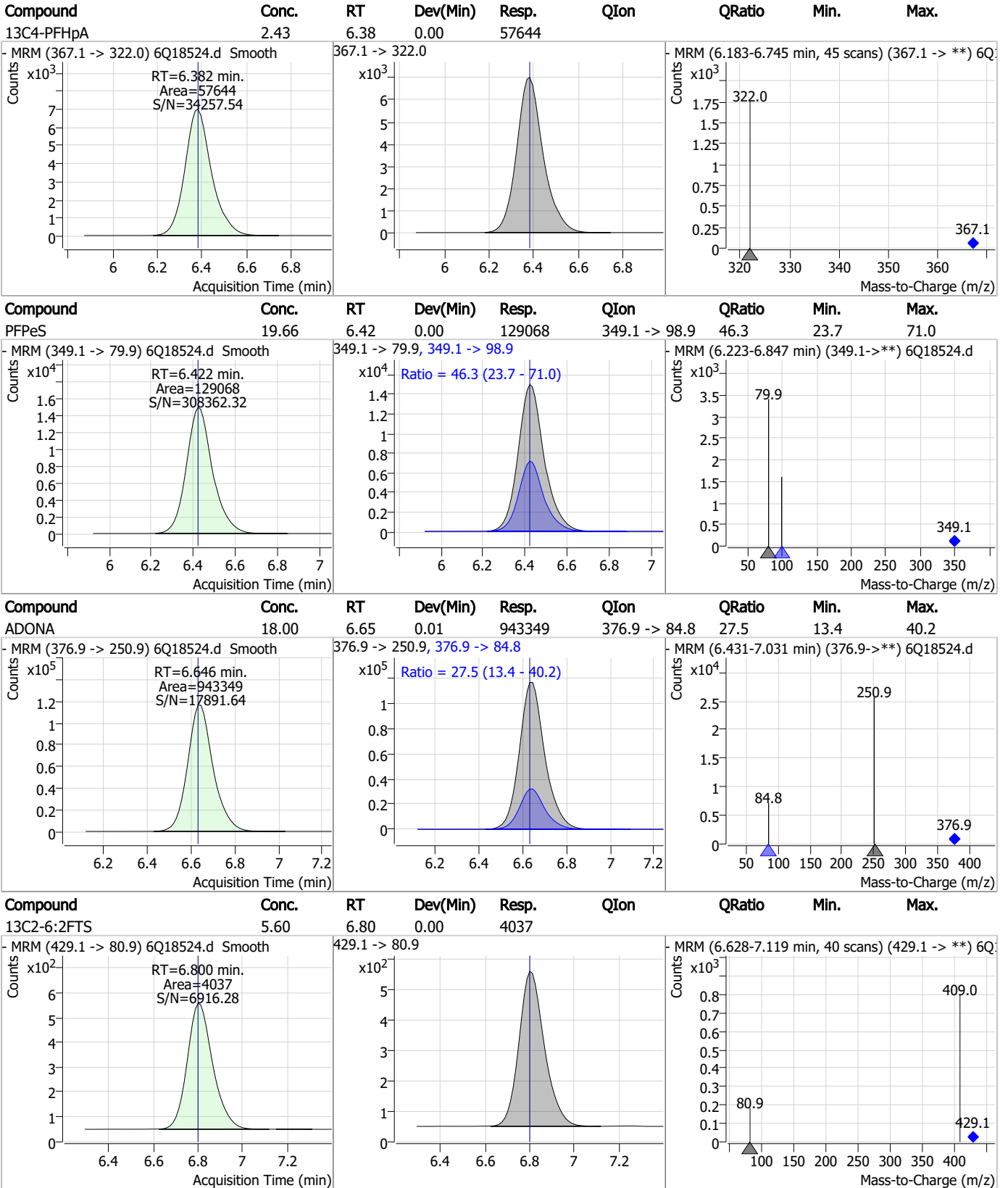
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	19.23	6.09	0.00	73437	341.0 -> 217.0	74.9	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.28	6.38	0.01	494322	363.1 -> 169.0	16.2	7.5	22.5



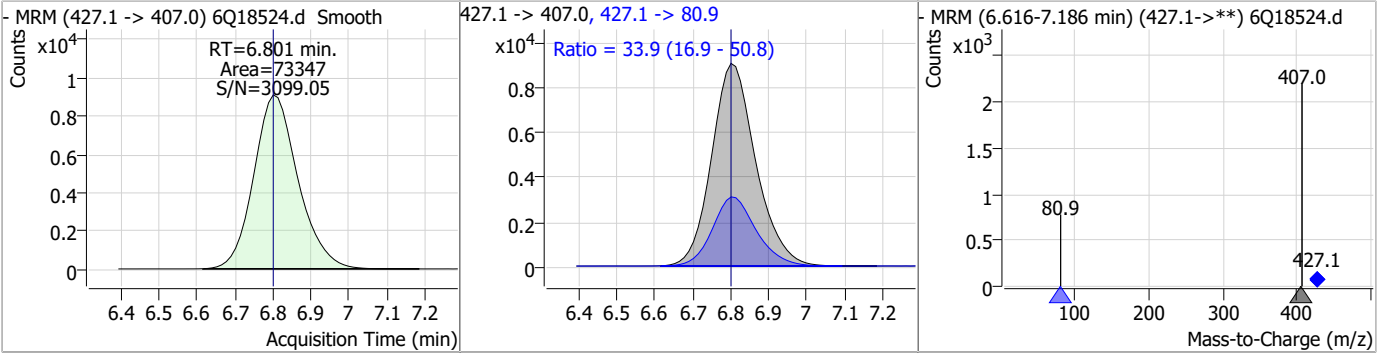
Perfluorinated Compounds by LC/MS/MS



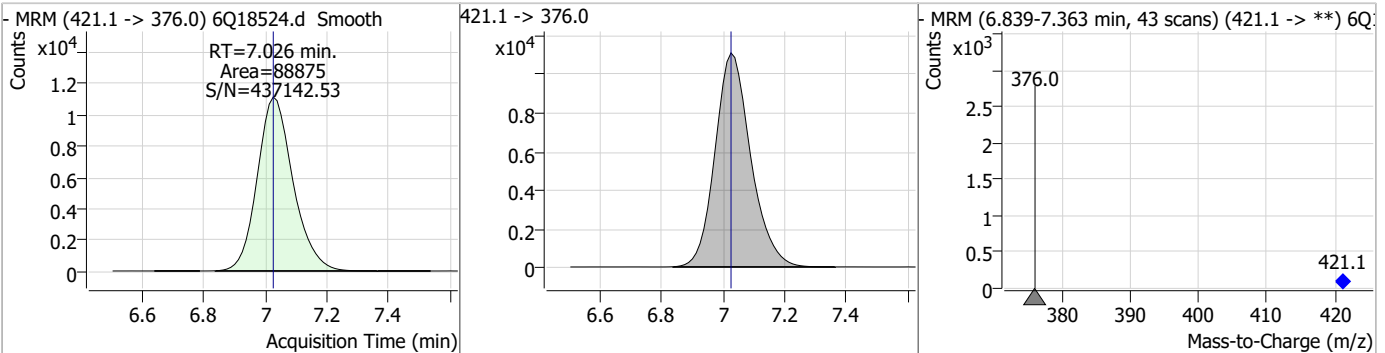
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Perfluorinated Compounds by LC/MS/MS

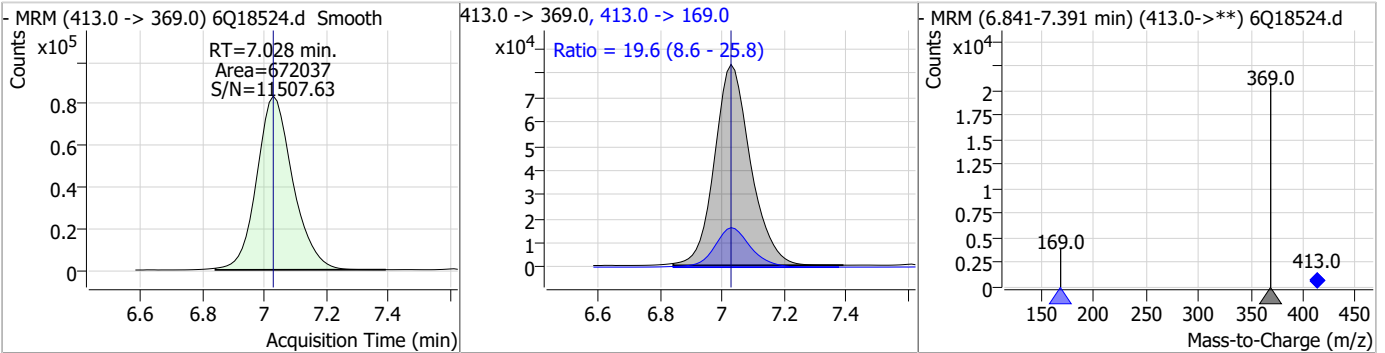
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.15	6.80	0.00	73347	427.1 -> 80.9	33.9	16.9	50.8



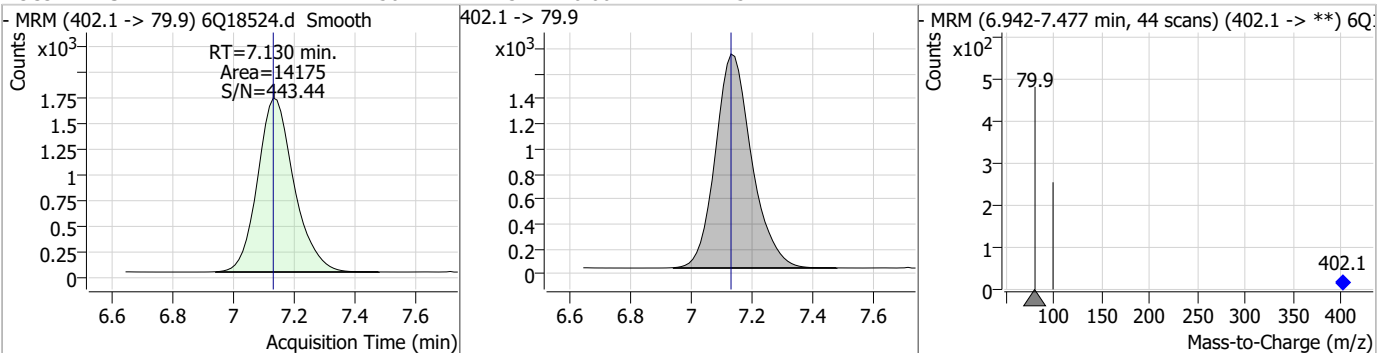
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.54	7.03	0.00	88875	421.1 -> 376.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.84	7.03	0.00	672037	413.0 -> 169.0	19.6	8.6	25.8



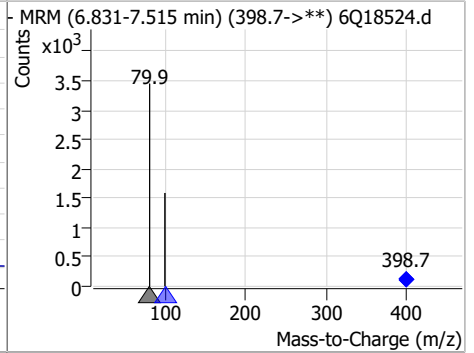
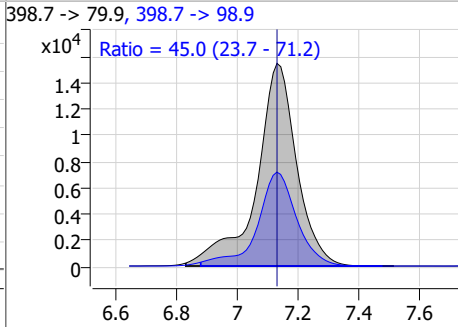
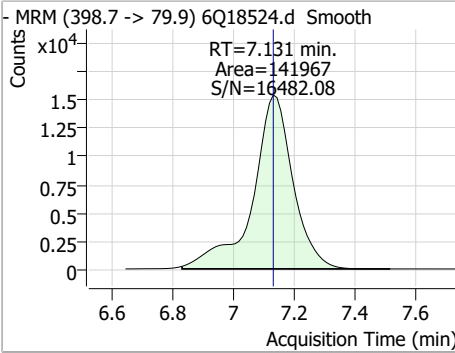
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.50	7.13	0.00	14175	402.1 -> 79.9			



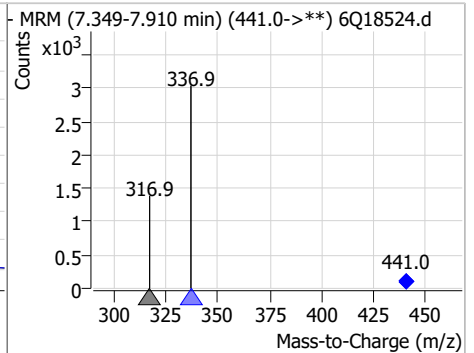
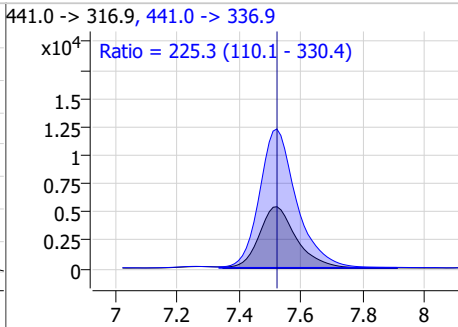
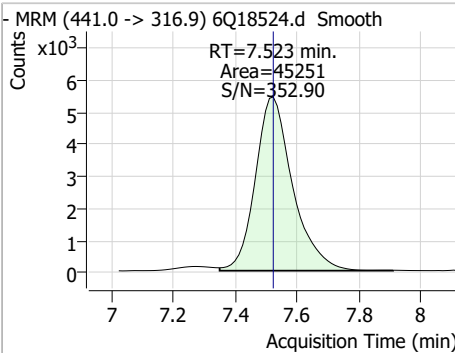
7.7.11
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Perfluorinated Compounds by LC/MS/MS

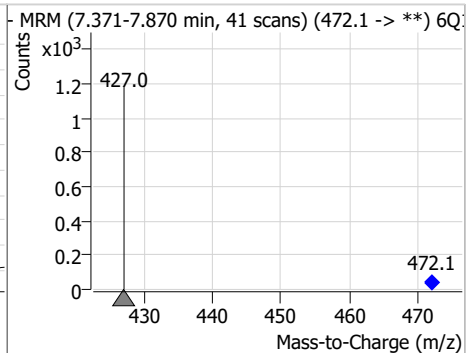
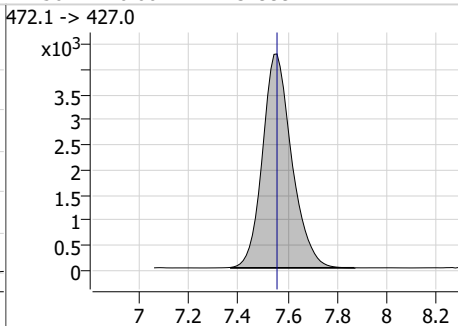
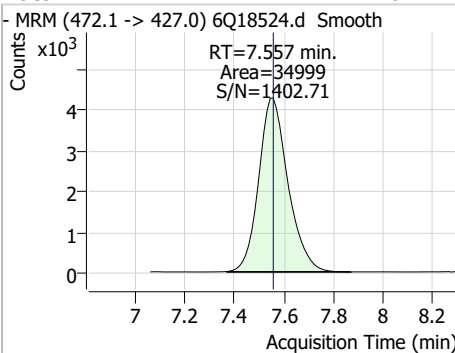
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	21.37	7.13	0.00	141967	398.7 -> 98.9	45.0	23.7	71.2



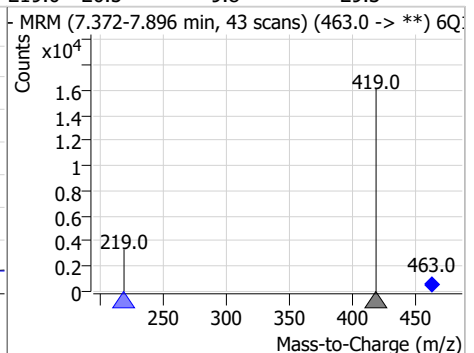
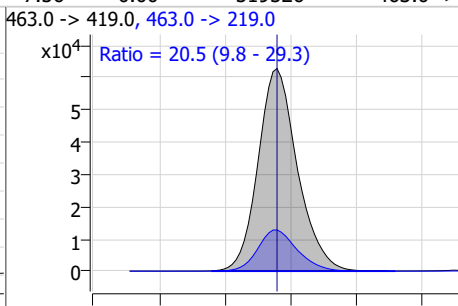
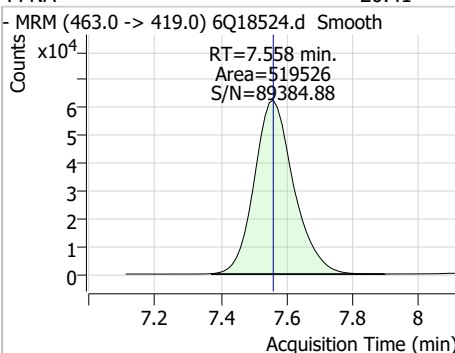
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	18.55	7.52	0.00	45251	441.0 -> 336.9	225.3	110.1	330.4



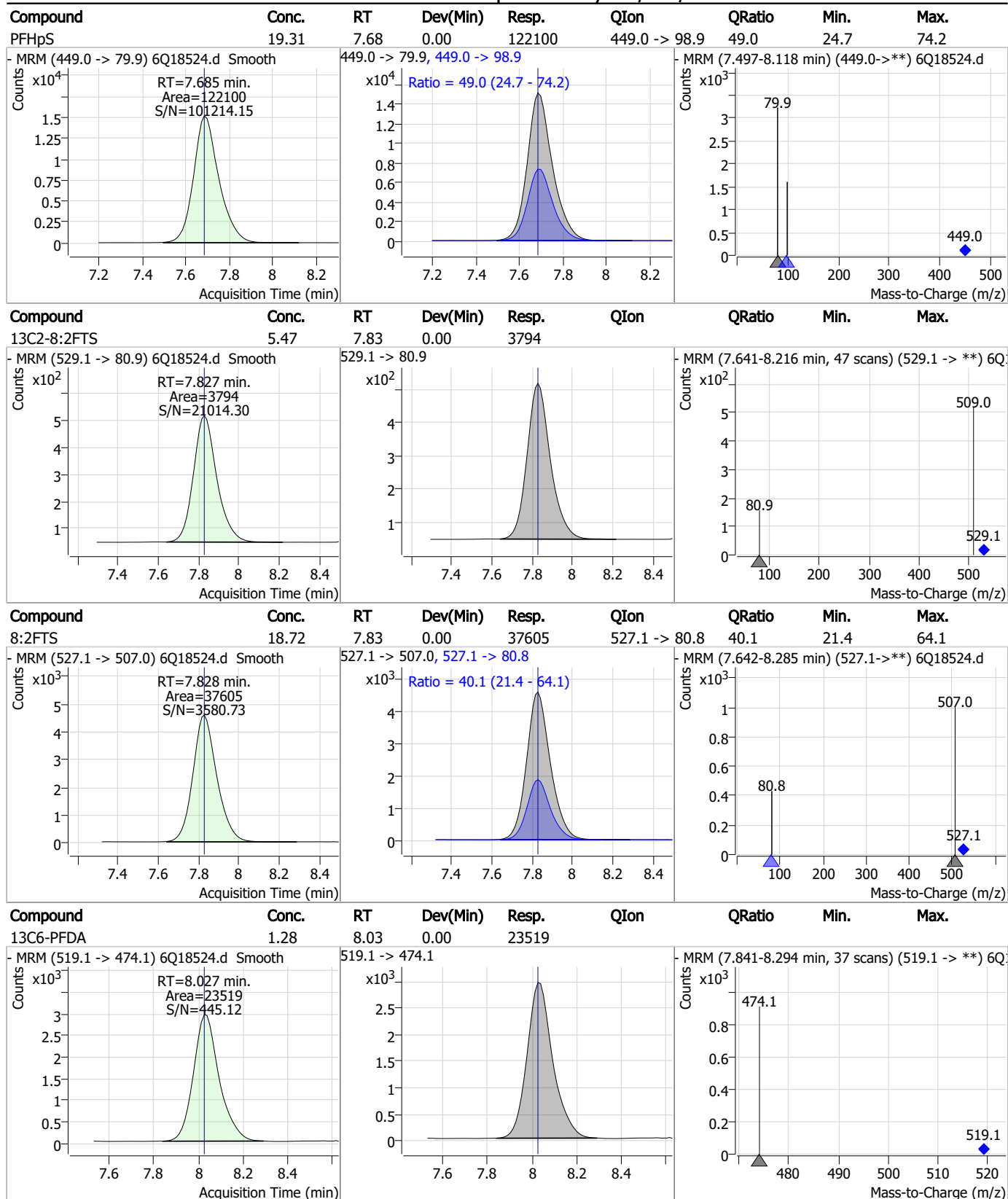
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.16	7.56	0.00	34999	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.41	7.56	0.00	519526	463.0 -> 219.0	20.5	9.8	29.3



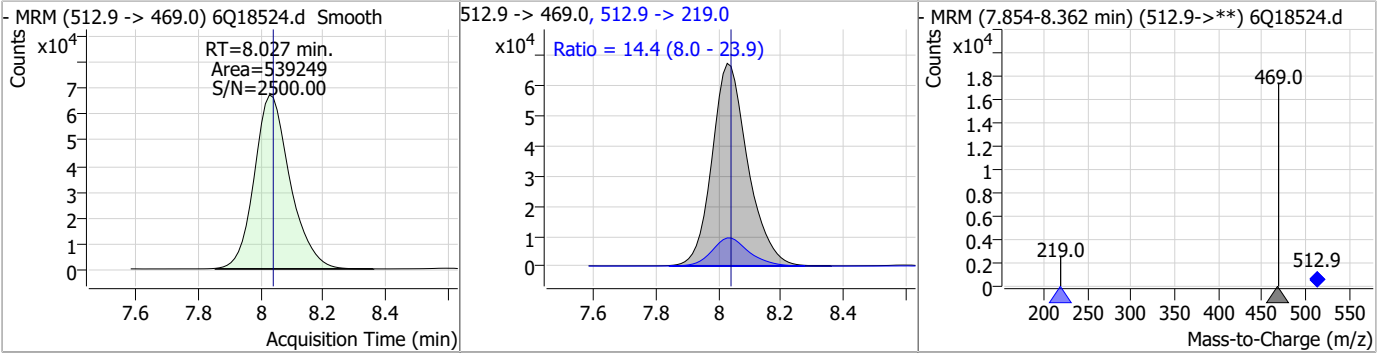
Perfluorinated Compounds by LC/MS/MS



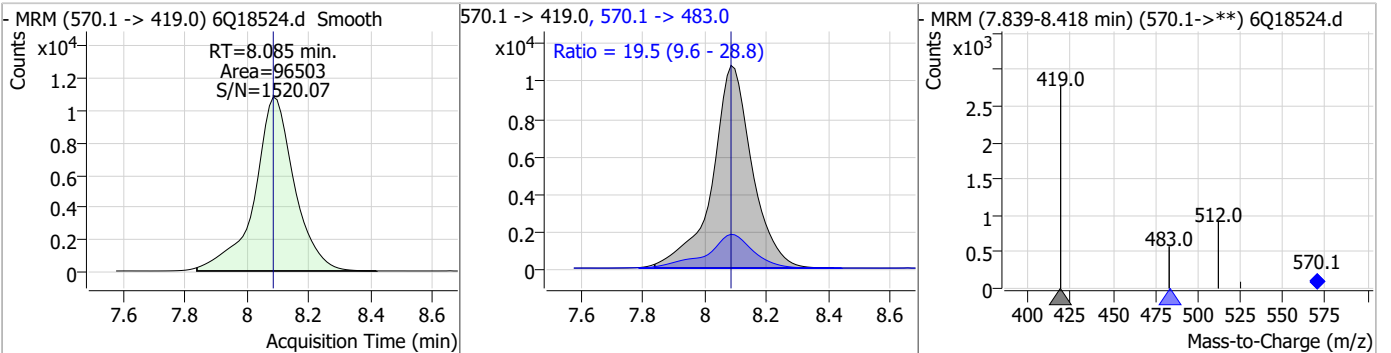
7.7.11
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Perfluorinated Compounds by LC/MS/MS

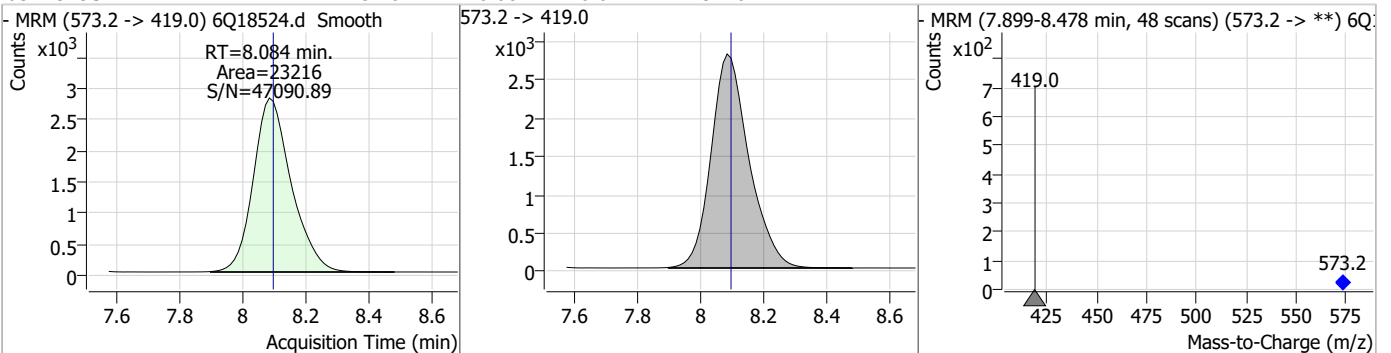
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.01	8.03	-0.01	539249	512.9 -> 219.0	14.4	8.0	23.9



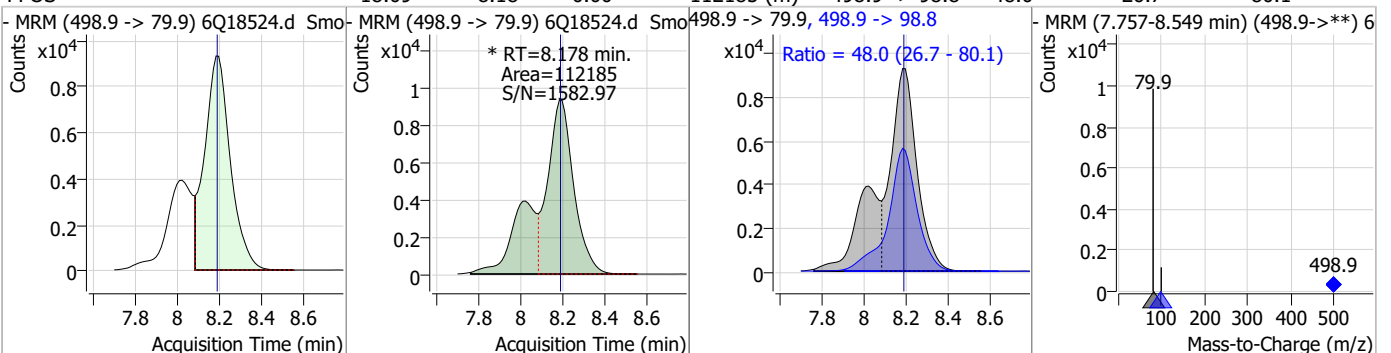
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.89	8.08	0.00	96503	570.1 -> 483.0	19.5	9.6	28.8



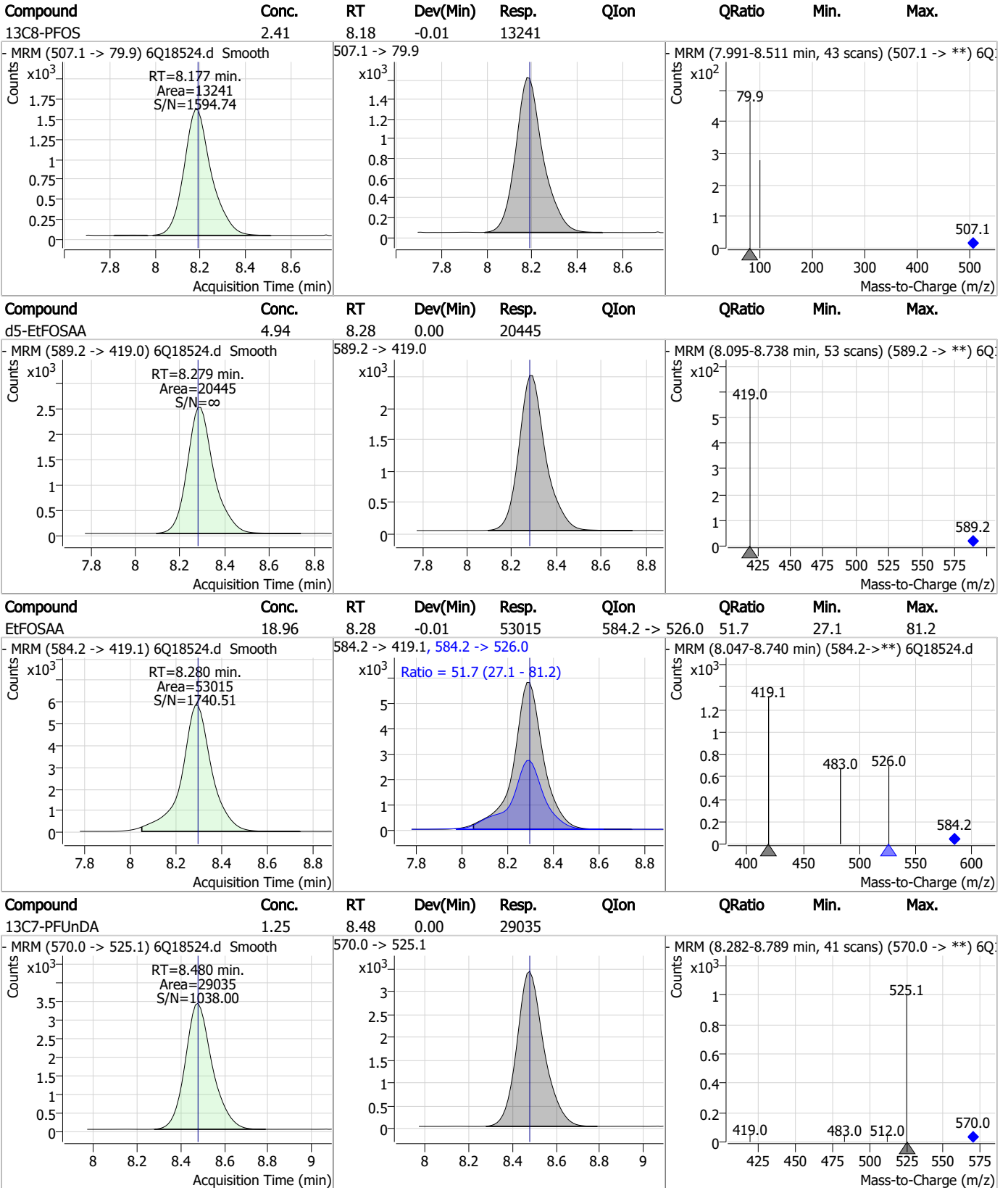
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.16	8.08	-0.01	23216				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.09	8.18	0.00	112185 (m)	498.9 -> 98.8	48.0	26.7	80.1



Perfluorinated Compounds by LC/MS/MS



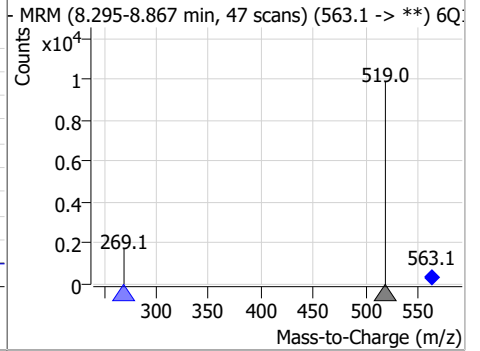
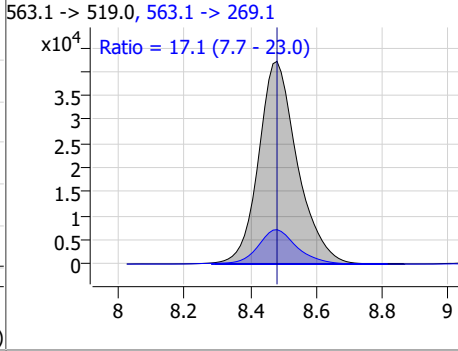
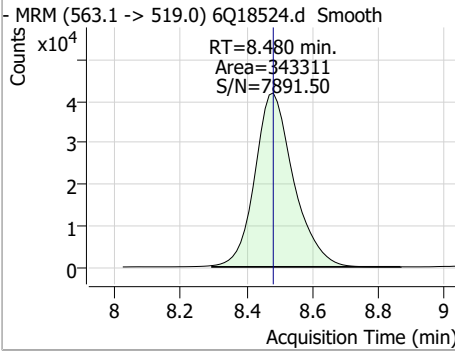
7.7.11

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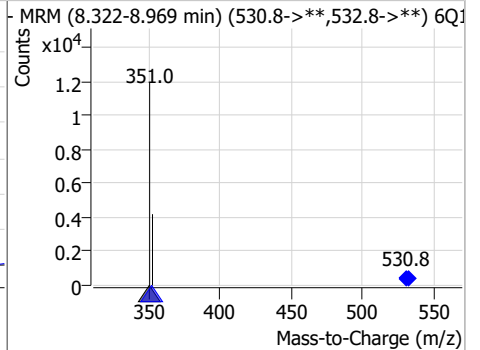
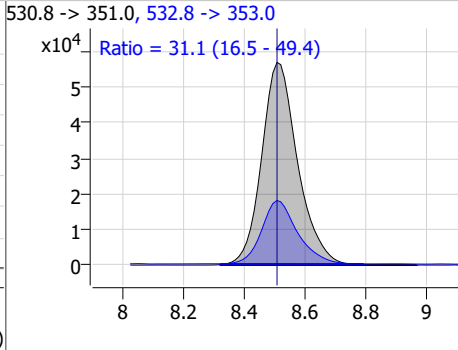
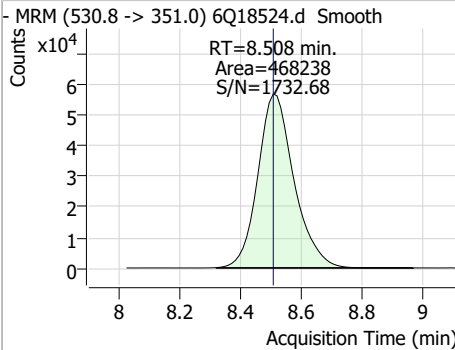


Perfluorinated Compounds by LC/MS/MS

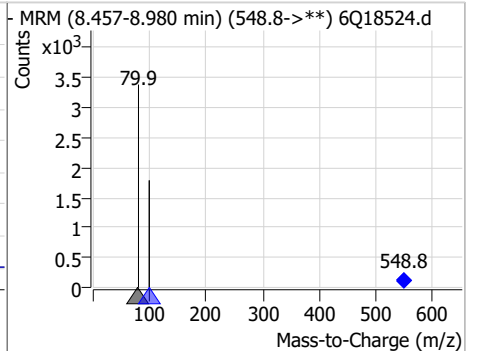
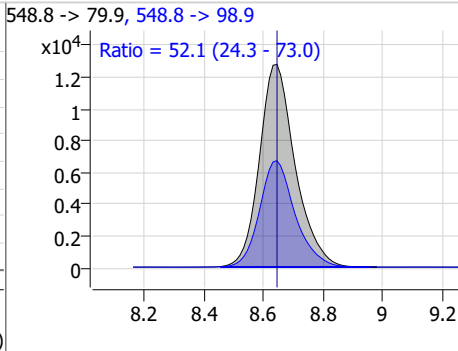
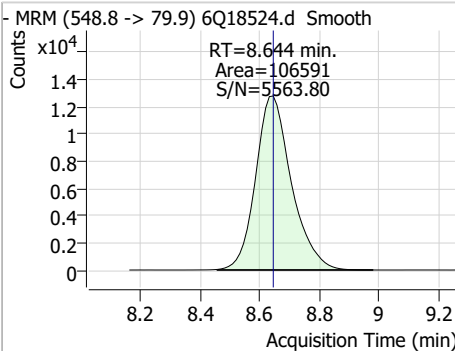
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.36	8.48	0.00	343311	563.1 -> 269.1	17.1	7.7	23.0



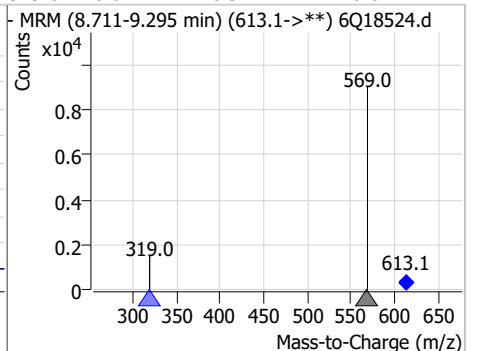
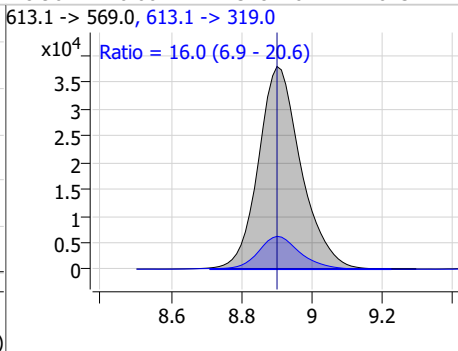
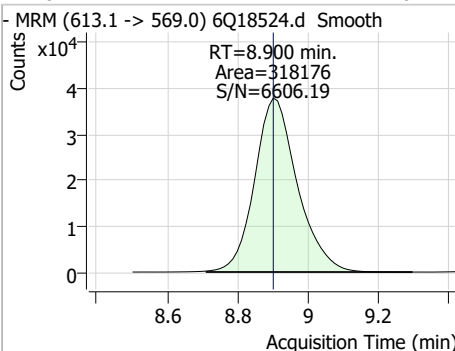
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	20.77	8.51	0.00	468238	532.8 -> 353.0	31.1	16.5	49.4



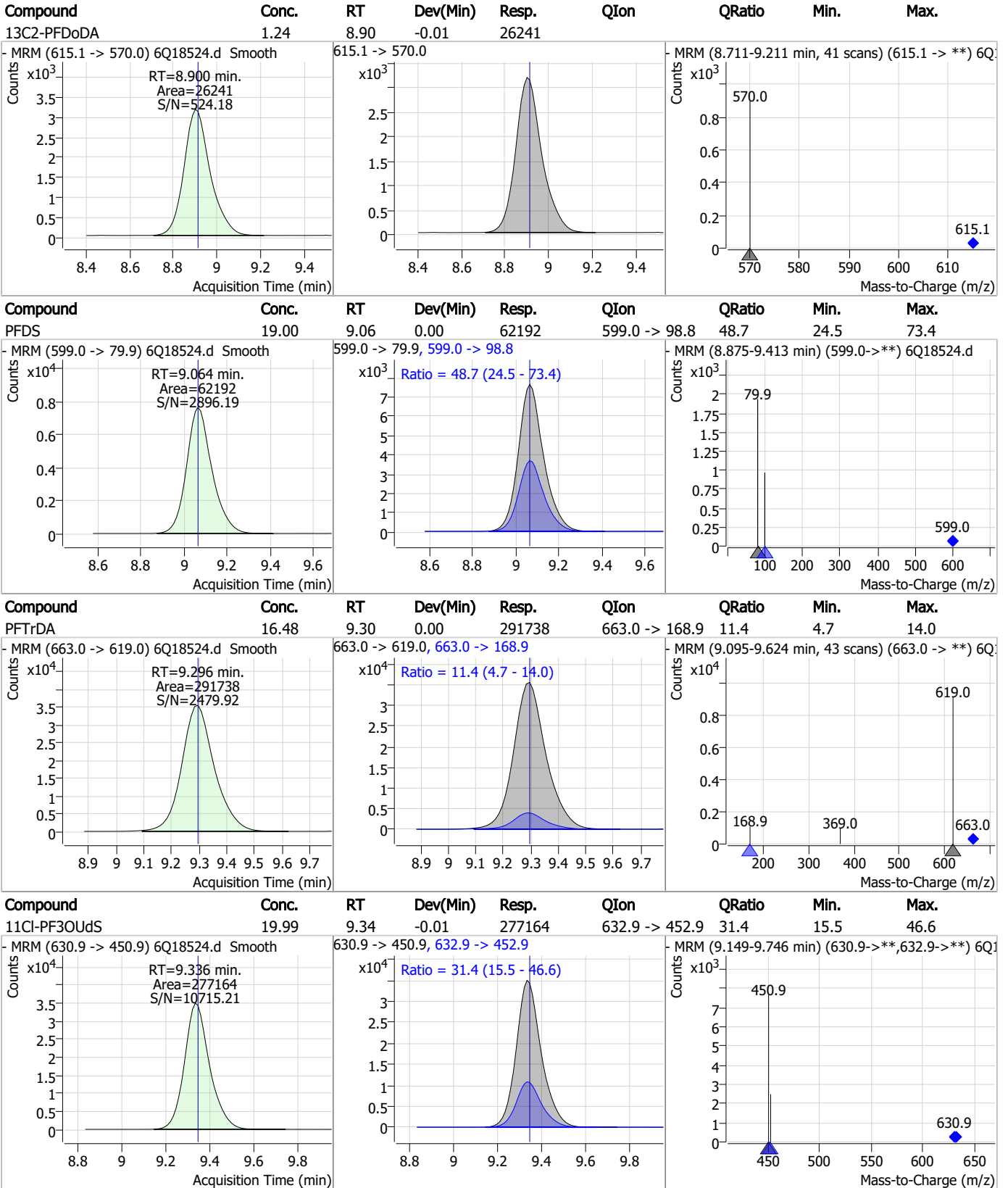
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.41	8.64	0.00	106591	548.8 -> 98.9	52.1	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	17.76	8.90	0.00	318176	613.1 -> 319.0	16.0	6.9	20.6



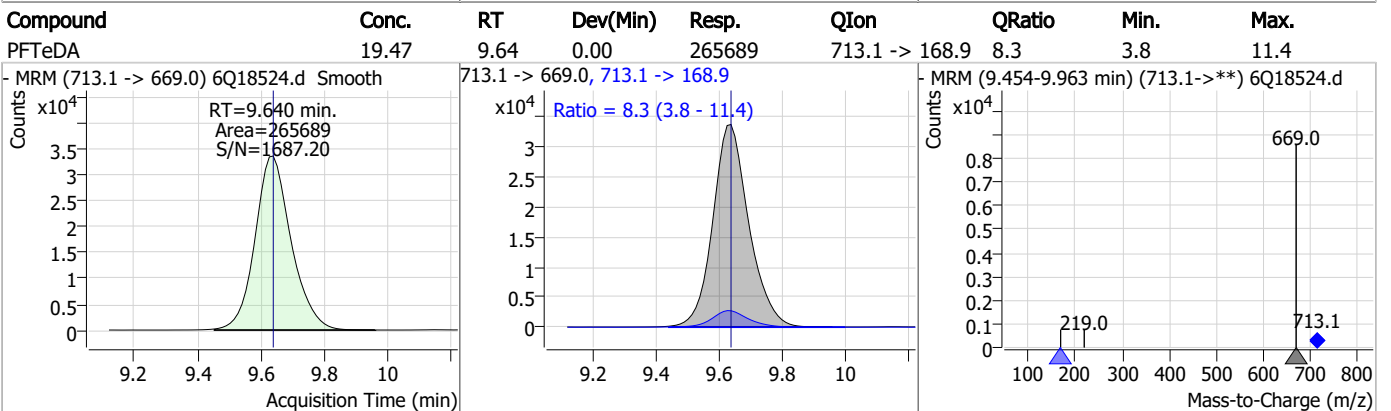
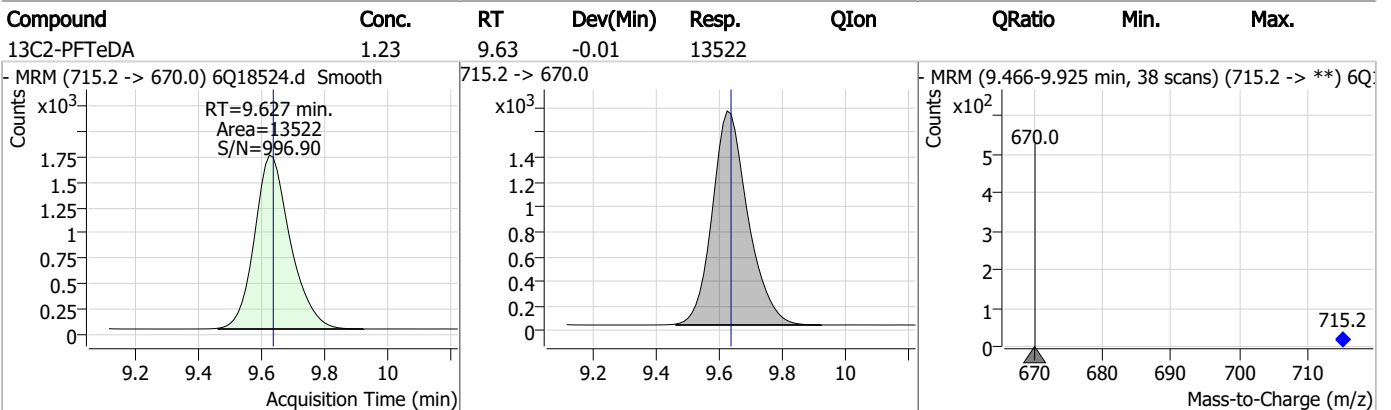
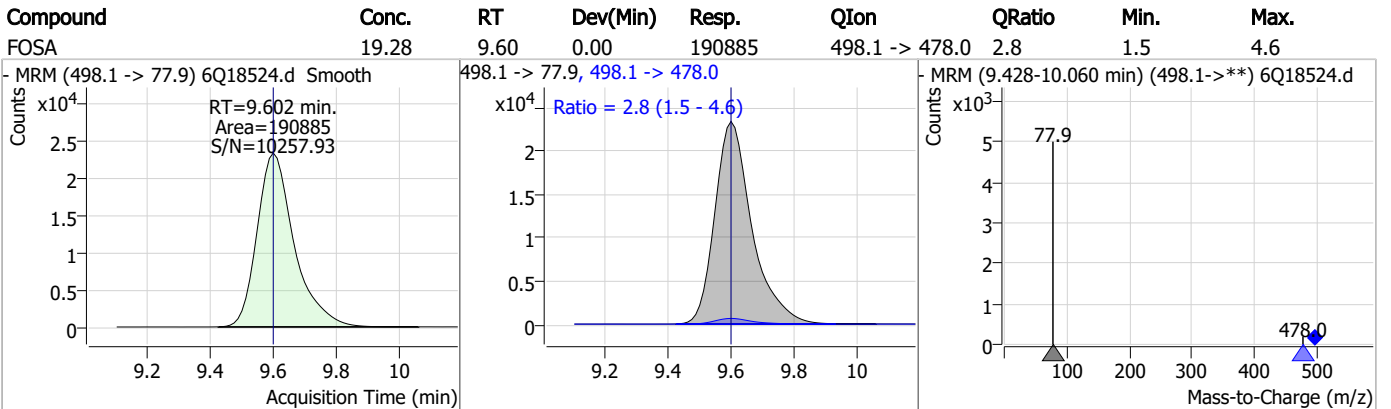
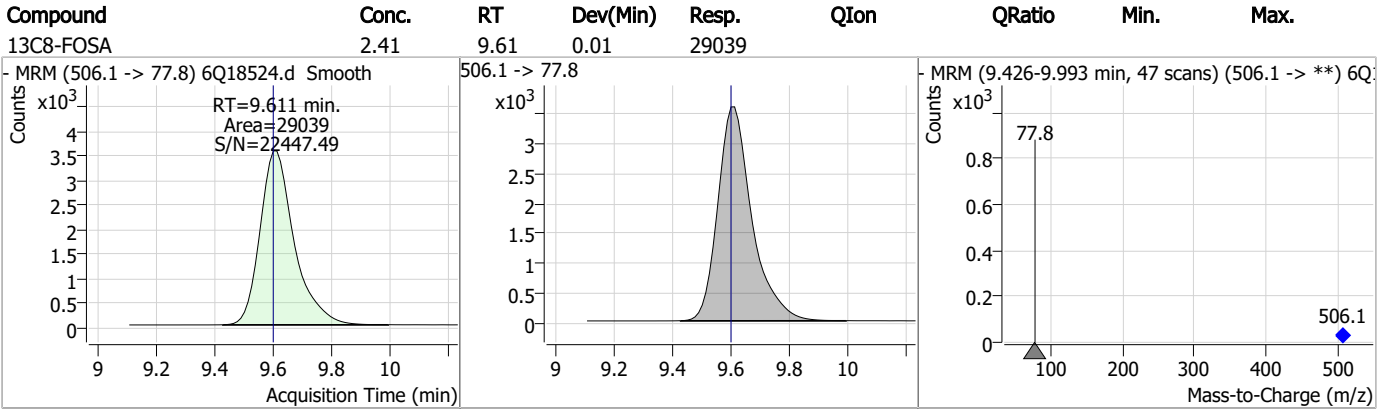
Perfluorinated Compounds by LC/MS/MS



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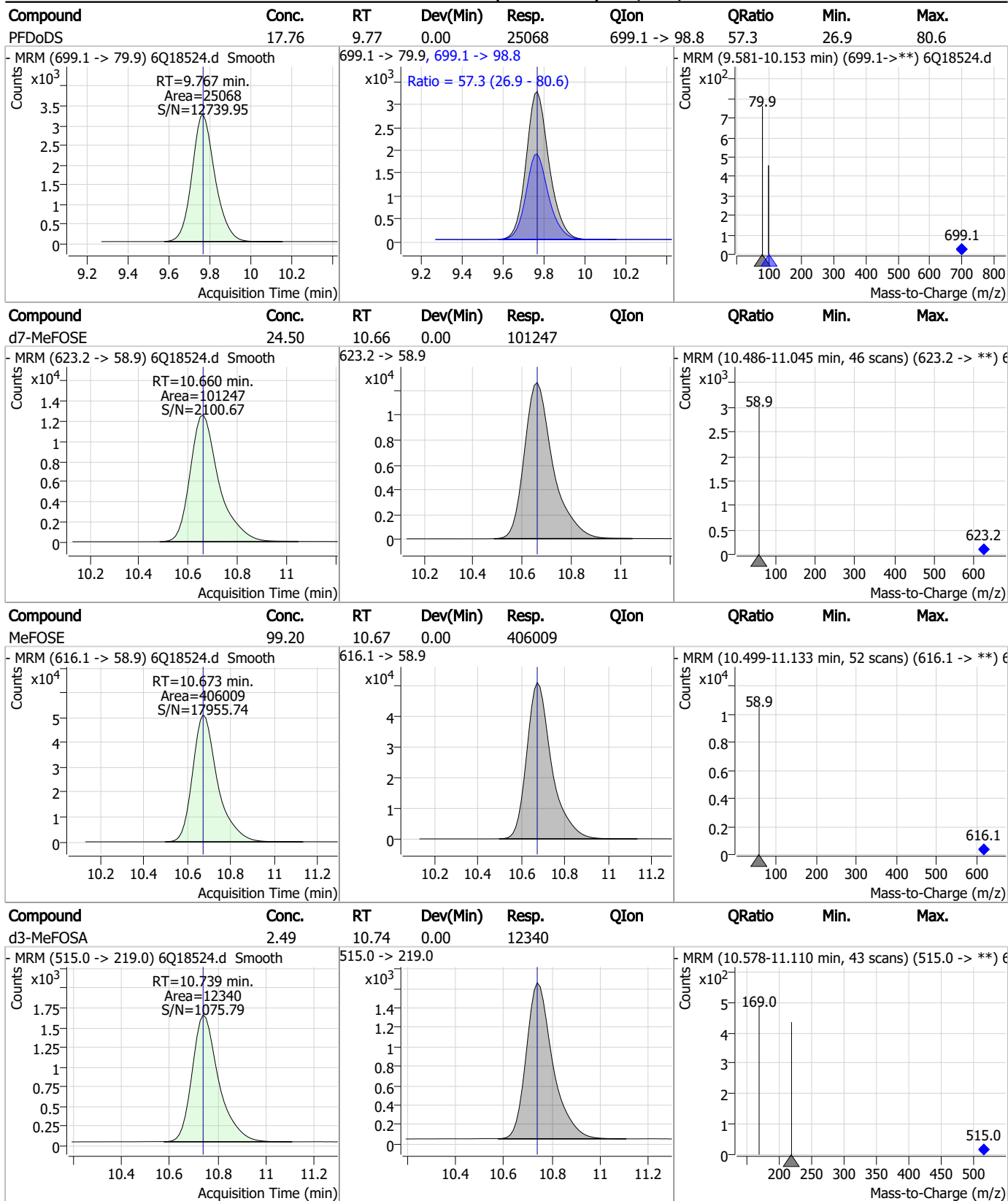
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

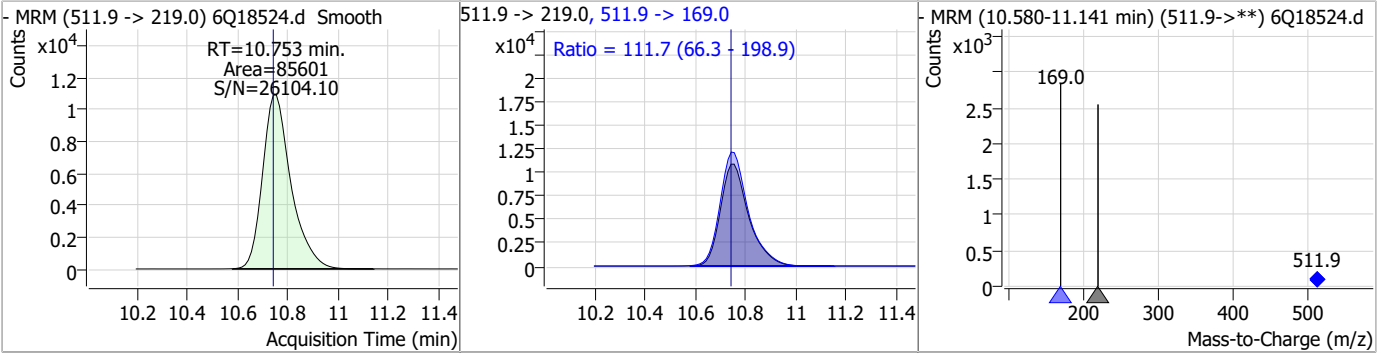


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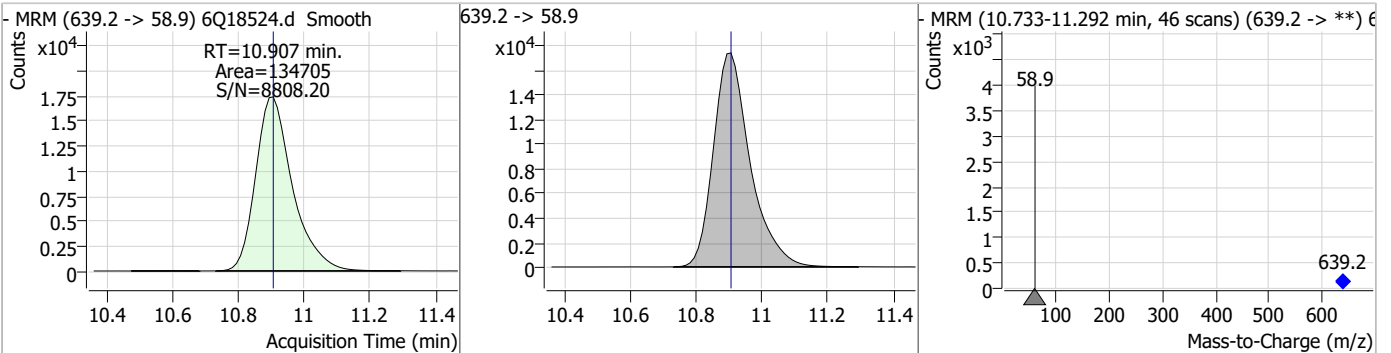
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Perfluorinated Compounds by LC/MS/MS

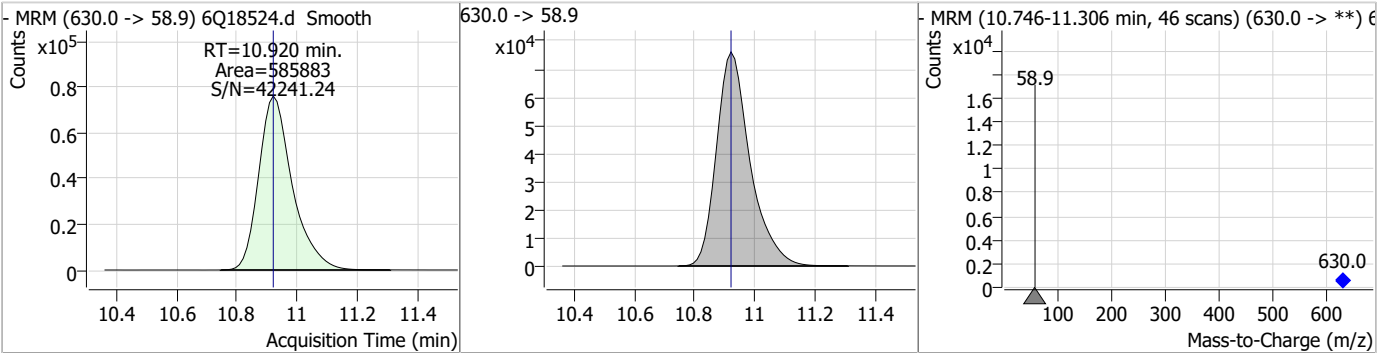
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.36	10.75	0.01	85601	511.9 -> 169.0	111.7	66.3	198.9



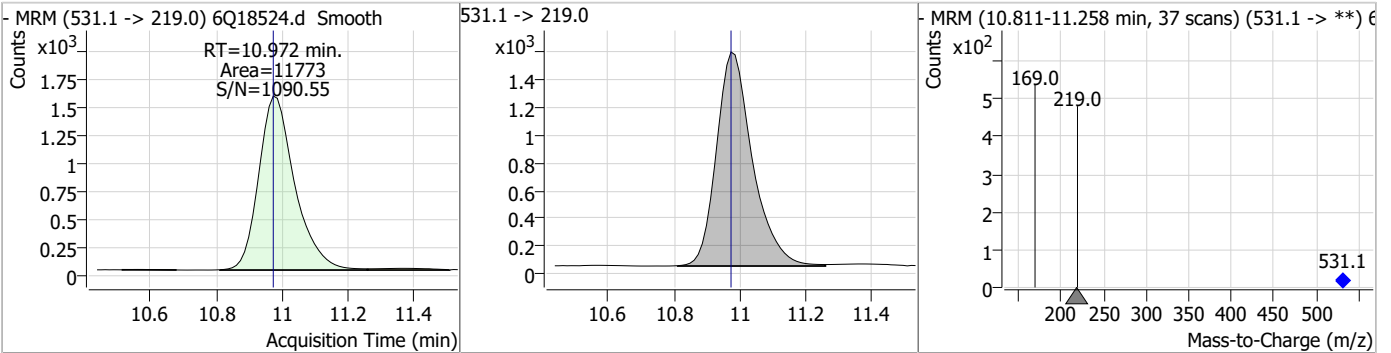
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.65	10.91	0.00	134705				



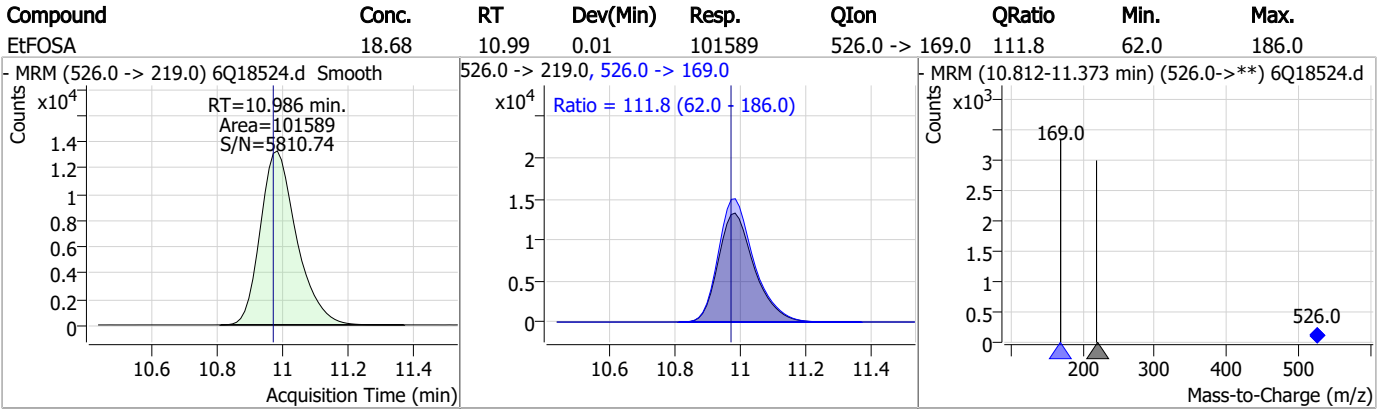
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	98.79	10.92	0.00	585883				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.45	10.97	0.00	11773				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q278-ICV278 Method: EPA DRAFT 1633
Lab FileID: 6Q18524.D Analyst approved: 05/31/23 10:47 Martha Valls
Injection Time: 05/30/23 17:45 Supervisor approved: 05/31/23 21:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18525.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 6:00:25 PM
 Sample Name : cc278-4
 Vial : P1-A5
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	179074	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	59617	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	65243	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	58973	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	88210	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	35874	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	23071	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	29777	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	26494	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	13571	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	30170	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	24012	2.50 µg/L	0.000
M3-PFHxS	7.142	402.1 -> 79.9	15062	2.50 µg/L	0.012
M8-PFOS	8.177	507.1 -> 79.9	13991	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	2759	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4092	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3760	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	23928	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	40988	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	20833	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	103337	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	134596	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12090	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12029	2.50 µg/L	0.000
13C4-PFOS	8.190	502.8 -> 79.9	17607	2.50 µg/L	0.000
13C3-PFBA	2.827	216.0 -> 172.0	74098	5.00 µg/L	0.000
18O2-PFHxS	7.141	403.0 -> 83.9	10513	2.50 µg/L	0.012
13C4-PFOA	7.039	417.1 -> 372.0	95479	2.50 µg/L	0.012
13C2-PFDA	8.027	515.1 -> 470.1	32040	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	47434	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	57753	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2759	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4092	5.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.3%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3760	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C2-PFDoDA	8.912	615.1 -> 570.0	26494	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C2-PFTeDA	9.639	715.2 -> 670.0	13571	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C3-PFBS	5.334	302.1 -> 79.9	24012	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C3-PFHxS	7.142	402.1 -> 79.9	15062	2.65 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C4-PFBA	2.822	216.8 -> 171.9	179074	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C4-PFHpA	6.382	367.1 -> 322.0	58973	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C5-PFHxA	5.417	318.0 -> 273.0	65243	2.65 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C5-PFPeA	4.210	268.3 -> 223.0	59617	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C6-PFDA	8.027	519.1 -> 474.1	23071	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C7-PFUnDA	8.480	570.0 -> 525.1	29777	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-FOSA	9.598	506.1 -> 77.8	30170	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-PFOA	7.026	421.1 -> 376.0	88210	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C8-PFOS	8.177	507.1 -> 79.9	13991	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C9-PFNA	7.557	472.1 -> 427.0	35874	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	23928	5.31 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40988	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	12029	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
d5-EtFOSAA	8.279	589.2 -> 419.0	20833	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	103337	24.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d9-EtFOSE	10.907	639.2 -> 58.9	134596	24.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d5-EtFOSA	10.972	531.1 -> 219.0	12090	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	37591	9.66 µg/L	96
		327.1 -> 80.9	13891		
6:2FTS	6.801	427.1 -> 407.0	34819	8.97 µg/L	99
		427.1 -> 80.9	12054		
8:2FTS	7.828	527.1 -> 507.0	19395	9.74 µg/L	98
		527.1 -> 80.8	8019		
EtFOSAA	8.293	584.2 -> 419.1	6967	2.45 µg/L	93
		584.2 -> 526.0	3441		
FOSA	9.602	498.1 -> 77.9	24622	2.39 µg/L	99
		498.1 -> 478.0	815		
MeFOSAA	8.085	570.1 -> 419.0	12413	2.36 µg/L	96
		570.1 -> 483.0	2170		
PFBA	2.831	212.8 -> 168.9	56191	9.52 µg/L	100
PFBS	5.335	298.7 -> 79.9	17166	2.07 µg/L	94
		298.7 -> 98.8	6822		
PFDA	8.040	512.9 -> 469.0	64489	2.44 µg/L	99
		512.9 -> 219.0	9960		
PFDoDA	8.900	613.1 -> 569.0	42035	2.32 µg/L	94
		613.1 -> 319.0	6706		
PFDS	9.064	599.0 -> 79.9	7727	2.23 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	3838	2.34 µg/L	96
		363.1 -> 319.0	61284		
PFHpS	7.698	363.1 -> 169.0	10158	2.13 µg/L	97
		449.0 -> 79.9	14202		
PFHxA	5.420	449.0 -> 98.9	7274	2.26 µg/L	97
		313.0 -> 269.0	50508		
PFHxS	7.143	313.0 -> 118.9	2707	2.16 µg/L	99
		398.7 -> 79.9	15240		
PFNA	7.558	398.7 -> 98.9	7115	2.44 µg/L	99
		463.0 -> 419.0	63560		
PFNS	8.644	463.0 -> 219.0	12552	2.22 µg/L	96
		548.8 -> 79.9	12864		
PFOA	7.040	548.8 -> 98.9	6581	2.46 µg/L	98
		413.0 -> 369.0	92024		
PFOS	8.178	413.0 -> 169.0	16685	2.05 µg/L	98
		498.9 -> 79.9	13437		
PFPeA	4.212	498.9 -> 98.8	7341	4.70 µg/L	100
		263.0 -> 219.0	68527		
PFPeS	6.422	349.1 -> 79.9	14848	2.13 µg/L	99
		349.1 -> 98.9	6937		
PFTeDA	9.640	713.1 -> 669.0	33501	2.45 µg/L	97
		713.1 -> 168.9	2935		
PFTrDA	9.296	663.0 -> 619.0	44222	2.47 µg/L	97
		663.0 -> 168.9	4606		
PFUnDA	8.480	563.1 -> 519.0	43030	2.24 µg/L	96
		563.1 -> 269.1	7308		
11CI-PF3OUdS	9.336	630.9 -> 450.9	64514	4.67 µg/L	98
		632.9 -> 452.9	19309		
9CI-PF3ONS	8.508	530.8 -> 351.0	103580	4.61 µg/L	95
		532.8 -> 353.0	31436		
ADONA	6.646	376.9 -> 250.9	237496	4.55 µg/L	100
		376.9 -> 84.8	63942		
HFPO-DA	5.795	284.9 -> 168.9	16745	4.87 µg/L	95
		284.9 -> 184.9	1928		
3:3FTCA	3.671	241.0 -> 177.0	10774	11.66 µg/L	96
		241.0 -> 117.0	1381		
5:3FTCA	6.086	341.0 -> 237.1	219250	56.67 µg/L	94
		341.0 -> 217.0	166168		
7:3FTCA	7.523	441.0 -> 316.9	142975	57.84 µg/L	100
		441.0 -> 336.9	314442		
EtFOSA	10.974	526.0 -> 219.0	27206	4.87 µg/L	95
		526.0 -> 169.0	35332		
EtFOSE	10.920	630.0 -> 58.9	74447	12.56 µg/L	100
		511.9 -> 219.0	22789		
MeFOSA	10.741	511.9 -> 169.0	31894	5.01 µg/L	94
		616.1 -> 58.9	50717		
MeFOSE	10.673	699.1 -> 79.9	3351	12.14 µg/L	100
		699.1 -> 98.8	1801		
PFDoDS	9.767	295.0 -> 201.0	12241	2.25 µg/L	100
		295.0 -> 84.9	3200		
NFDHA	5.299	279.0 -> 85.1	47058	4.58 µg/L	98
		229.0 -> 84.9	37267		
PFMBA	4.626	314.8 -> 134.9	121353	4.71 µg/L	100
		314.8 -> 82.9	4376		
PFMPA	3.363			4.78 µg/L	100
PFEESA	5.875			4.12 µg/L	99

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

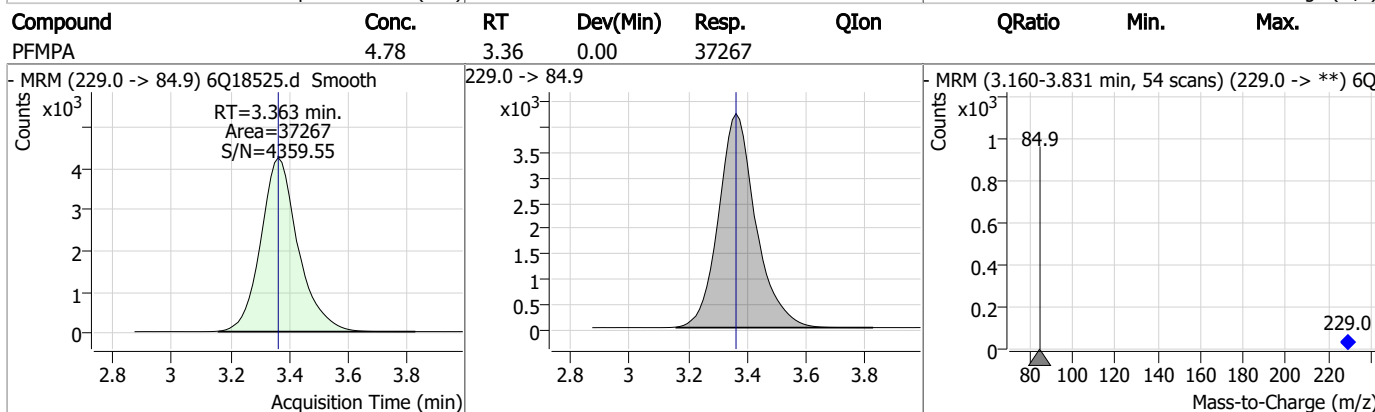
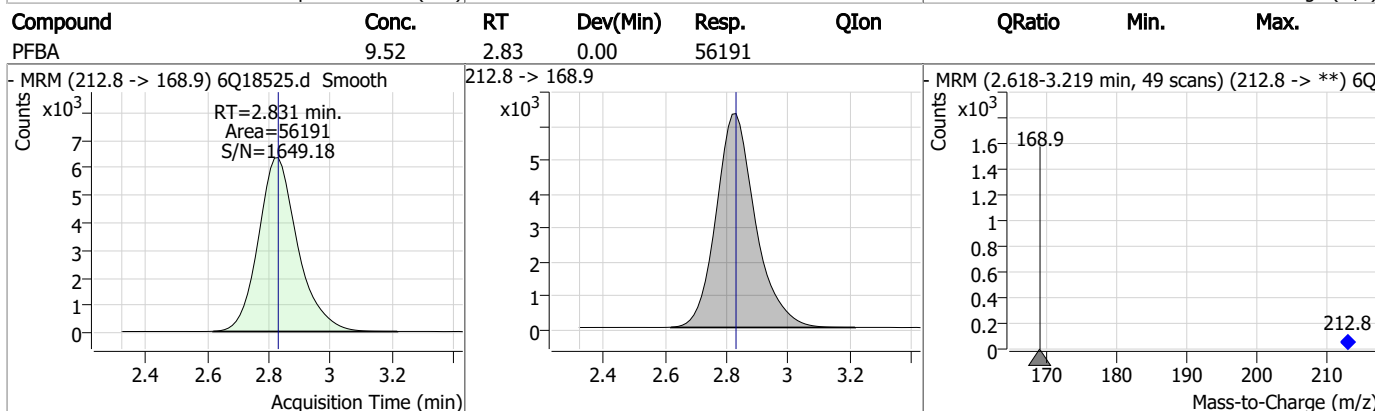
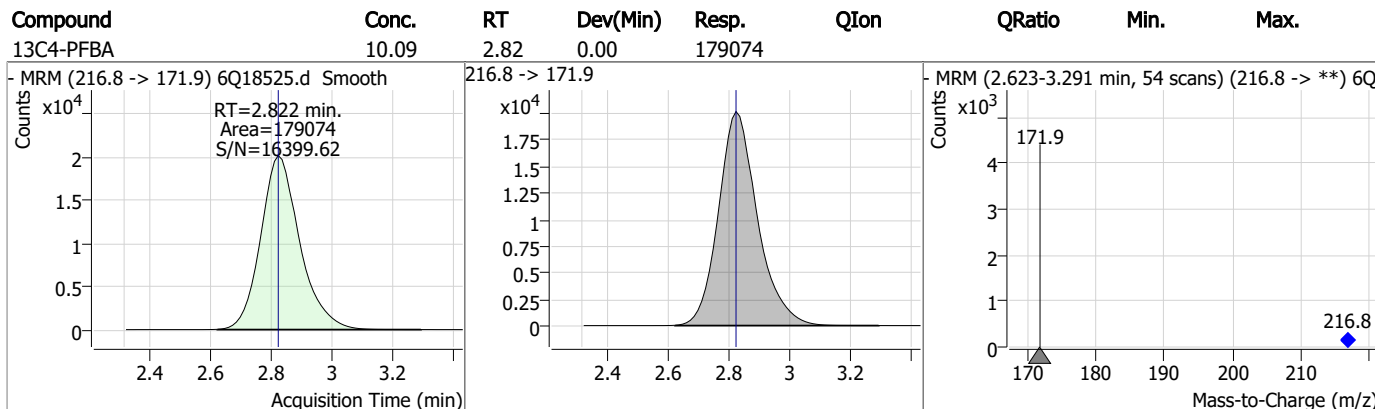
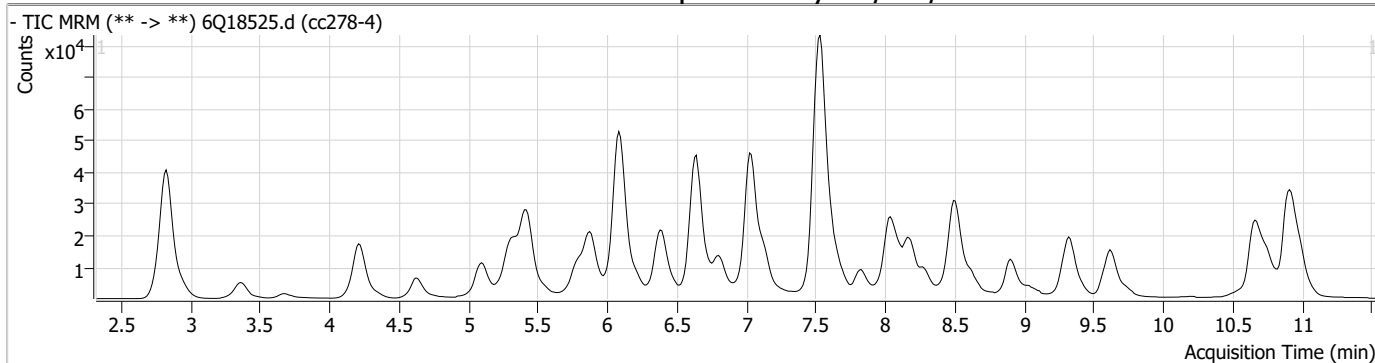
Perfluorinated Compounds by LC/MS/MS

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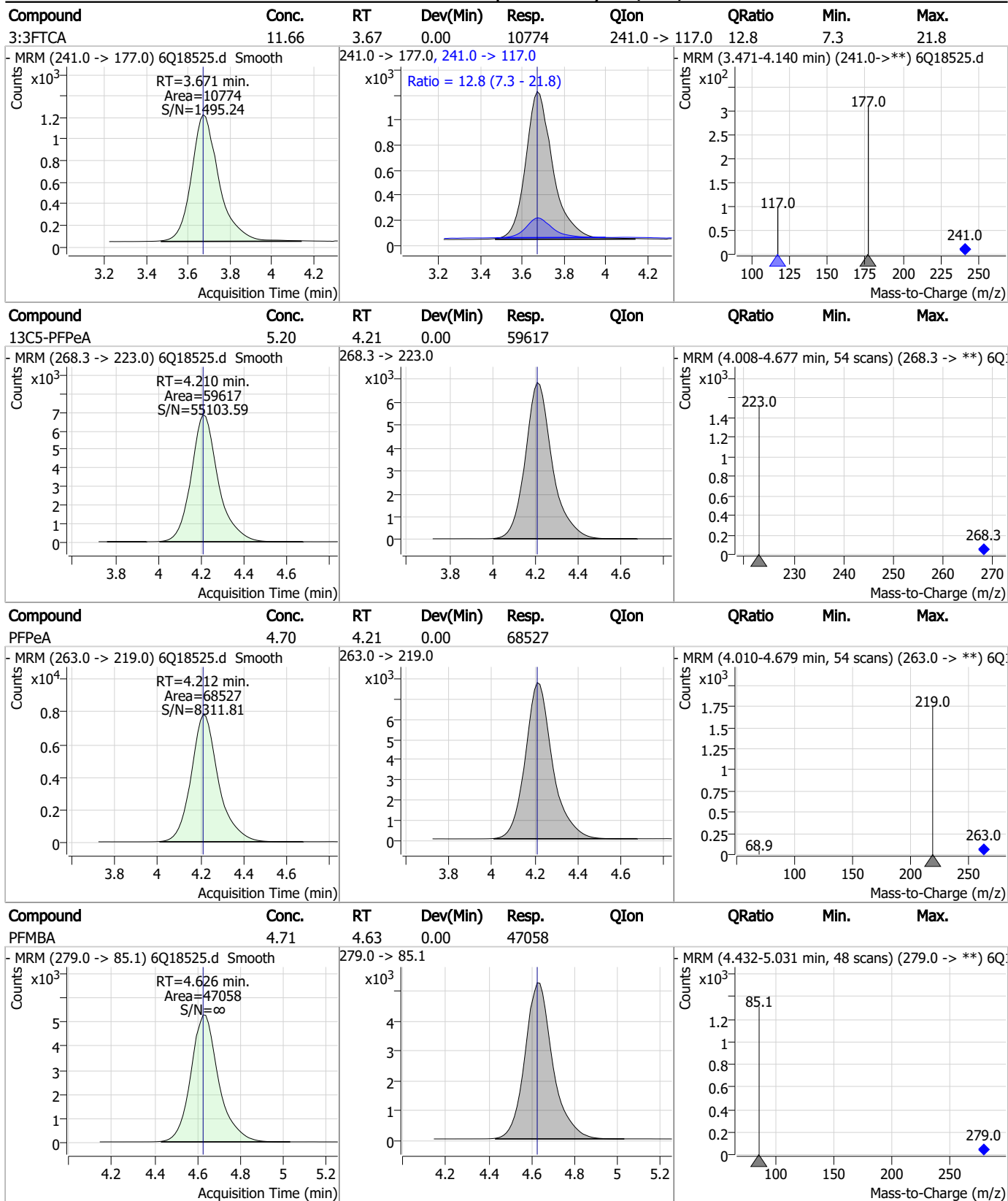
7.7.12

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Perfluorinated Compounds by LC/MS/MS

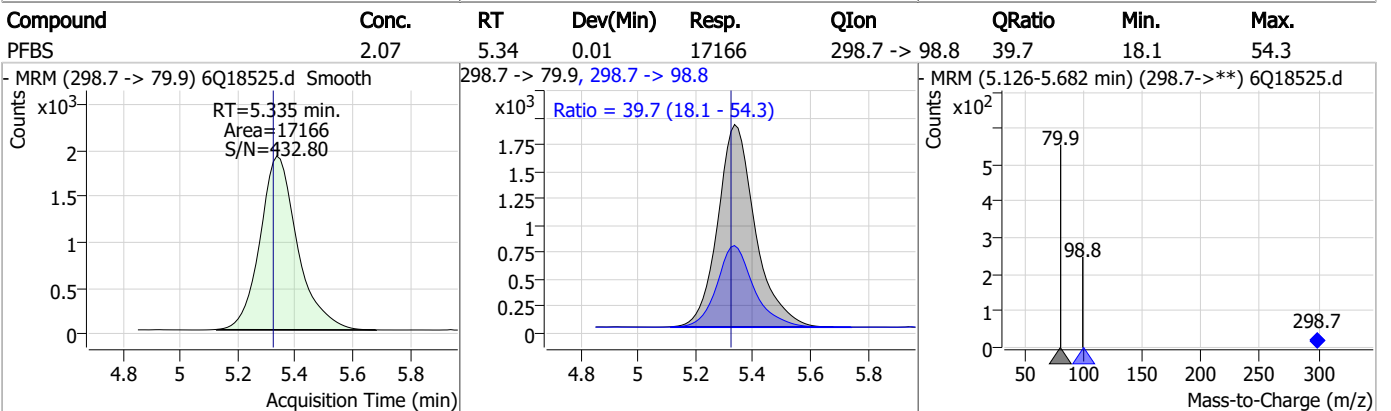
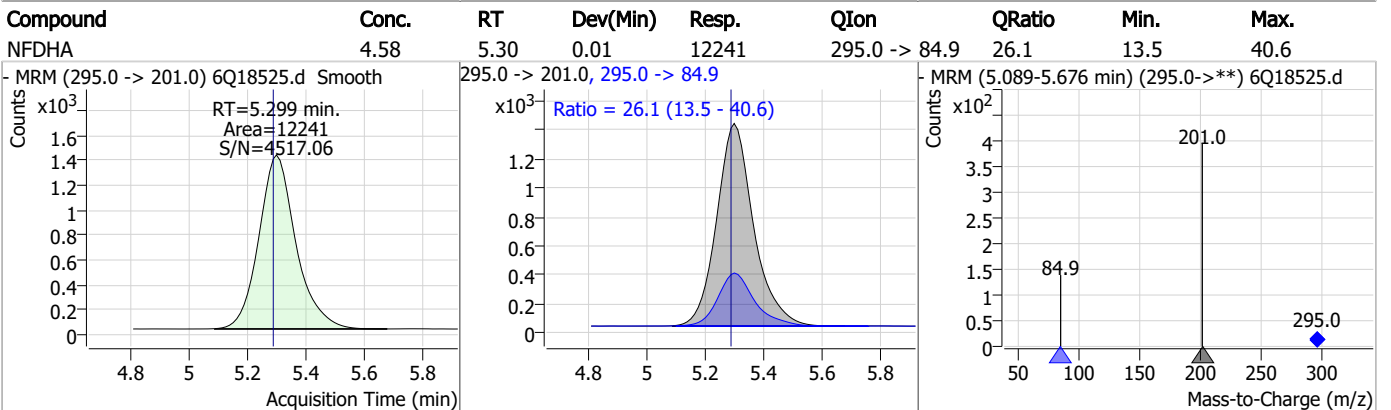
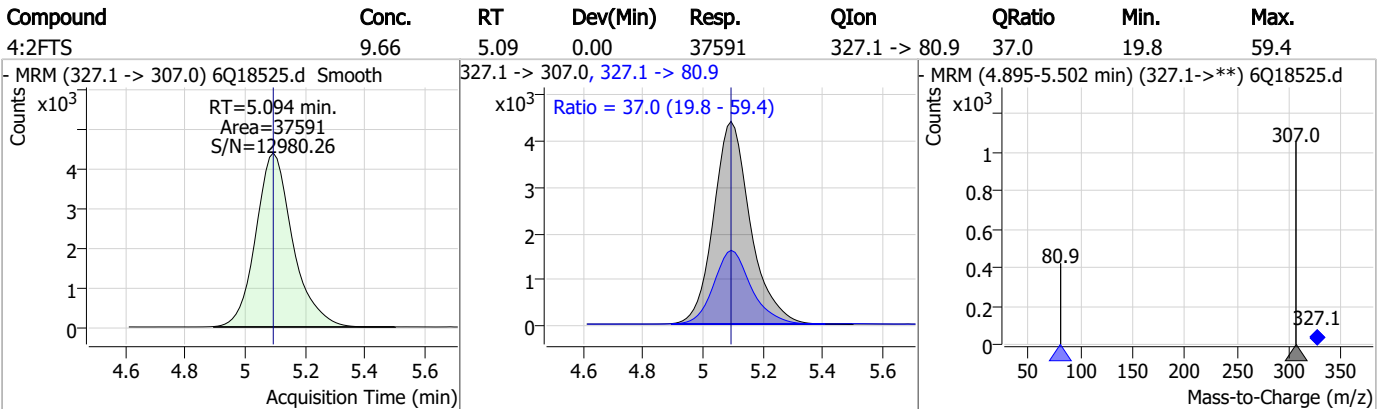
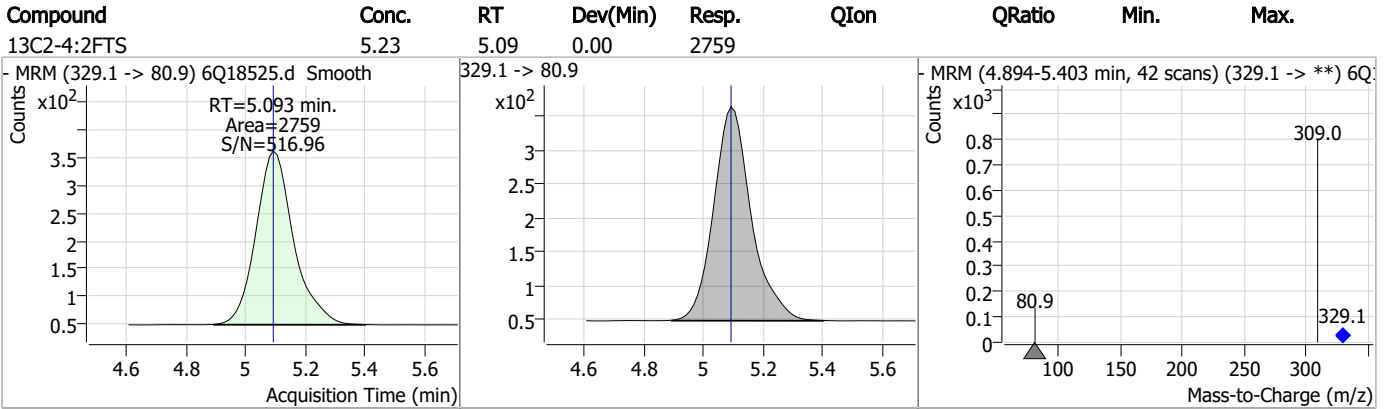


Perfluorinated Compounds by LC/MS/MS

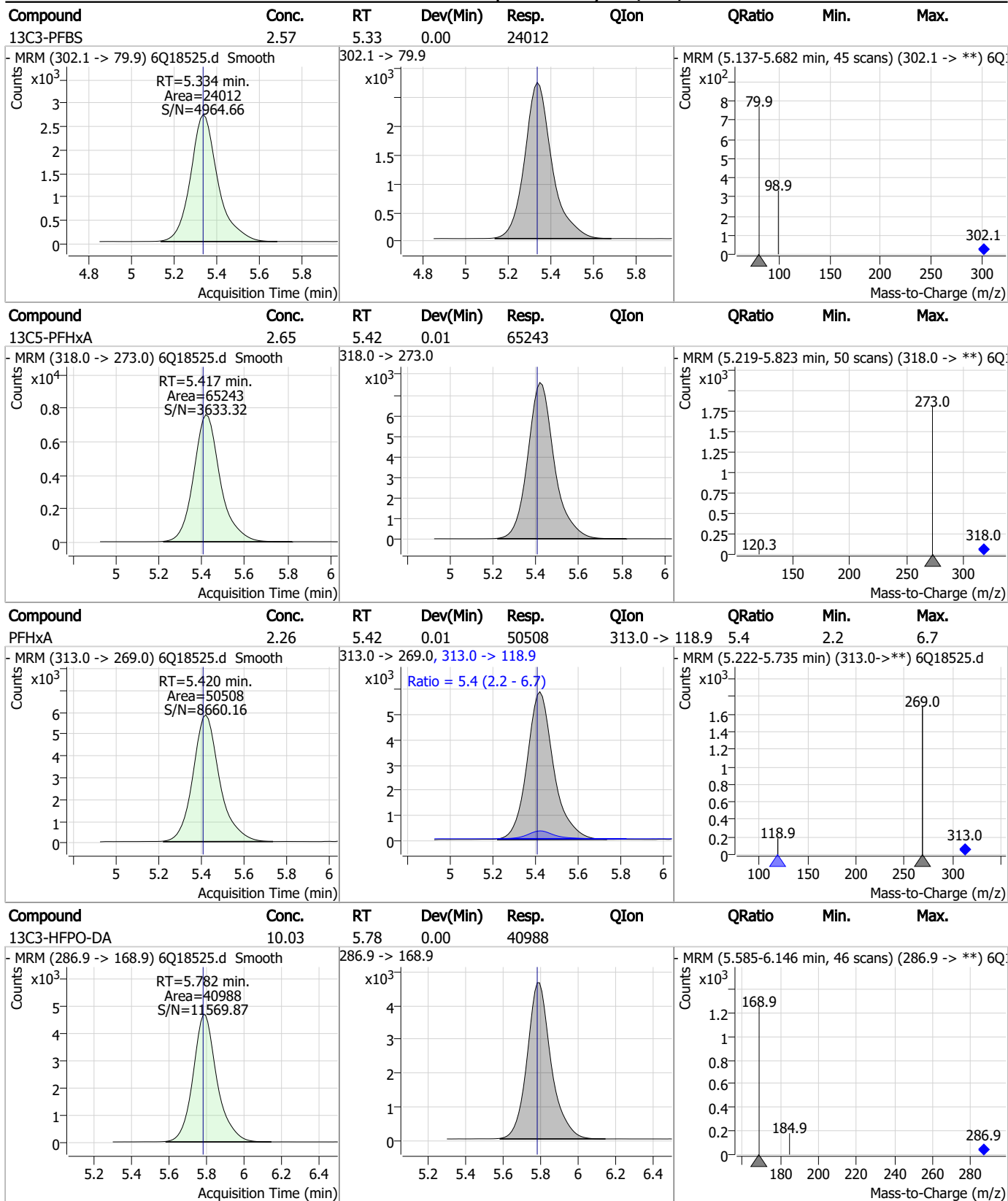


7.7.12

Perfluorinated Compounds by LC/MS/MS

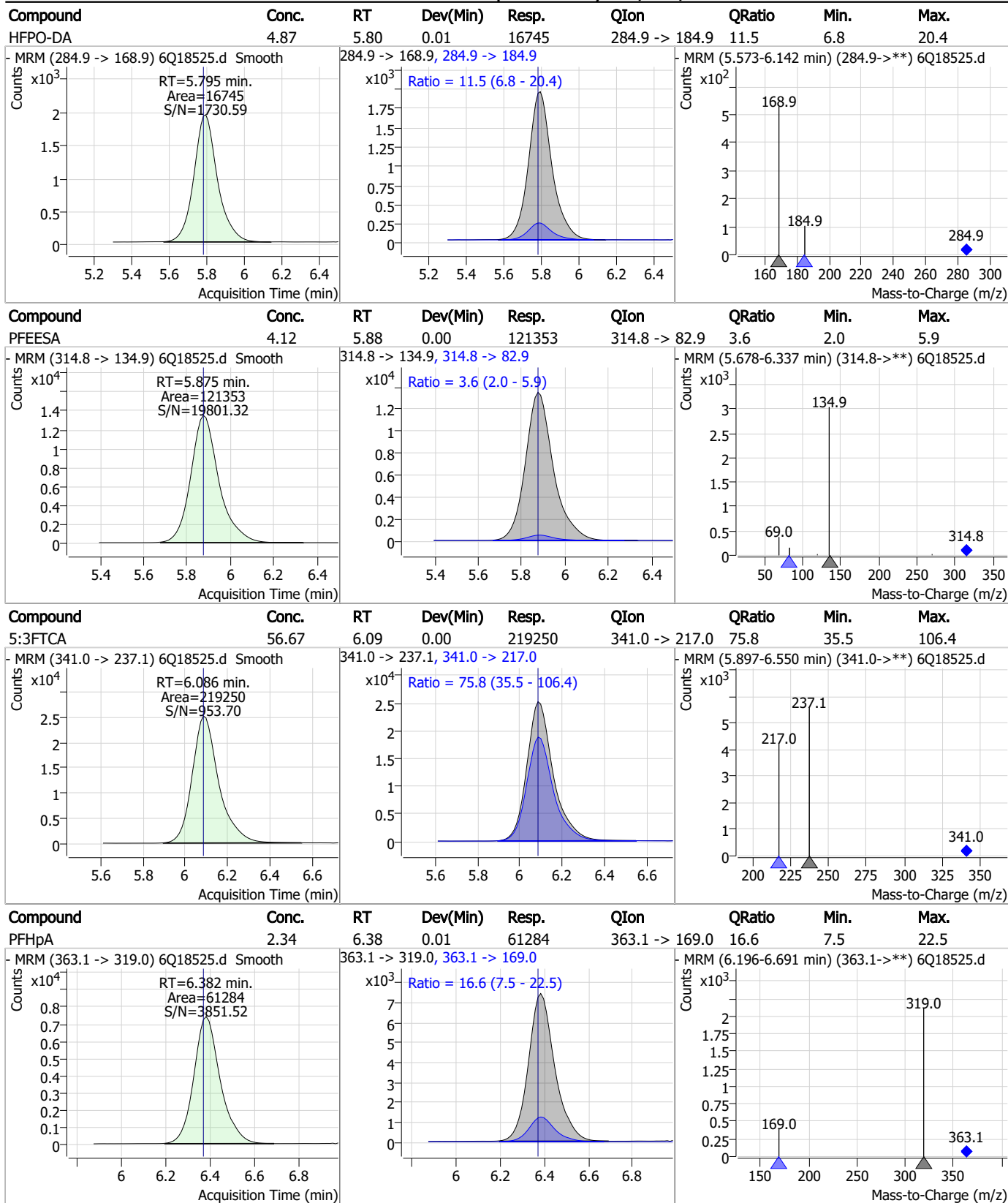


Perfluorinated Compounds by LC/MS/MS



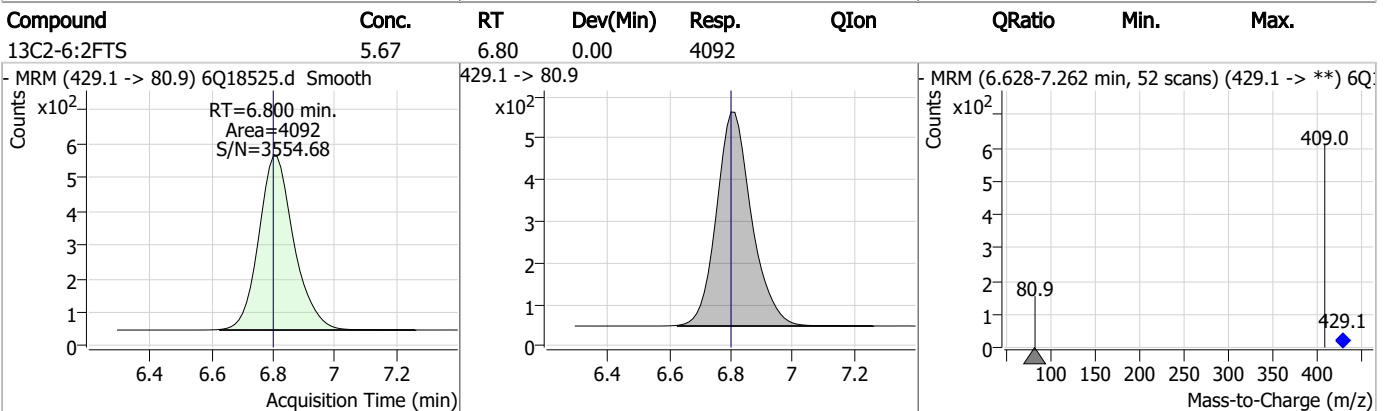
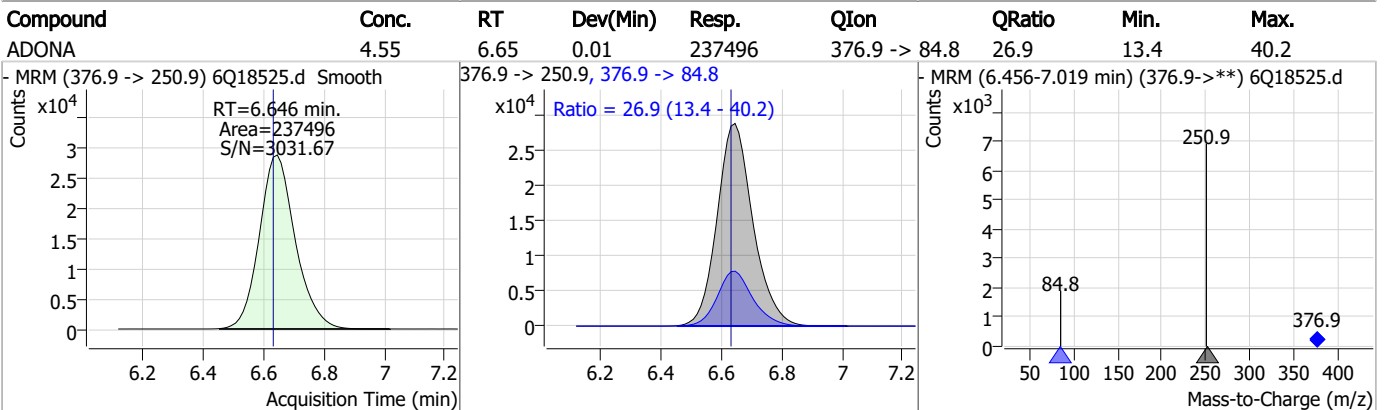
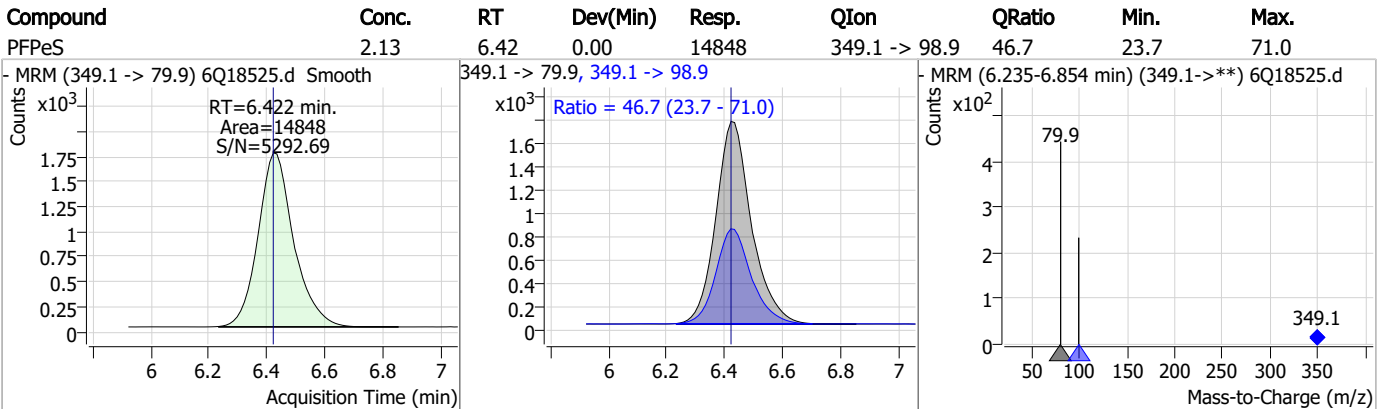
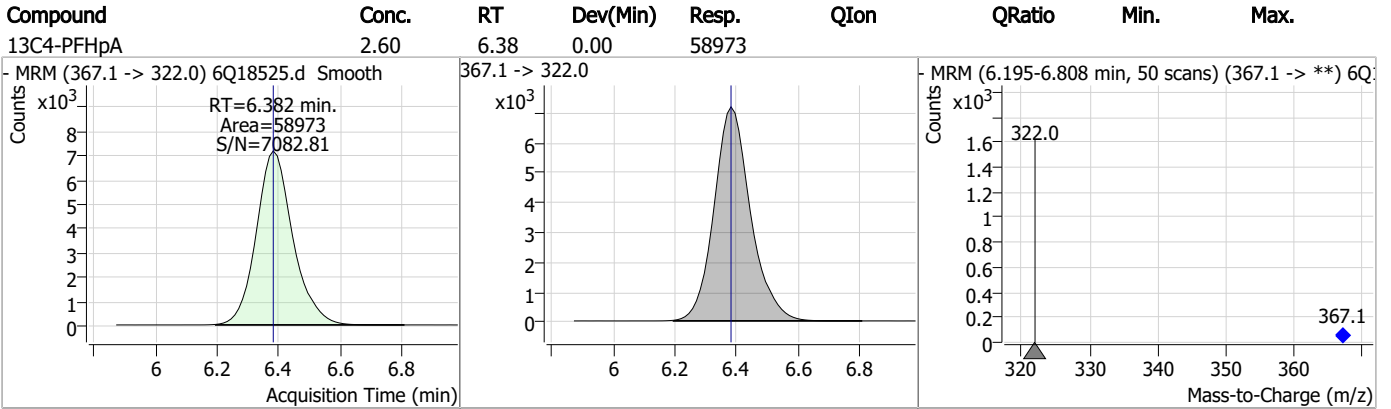
7.7.12
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Perfluorinated Compounds by LC/MS/MS



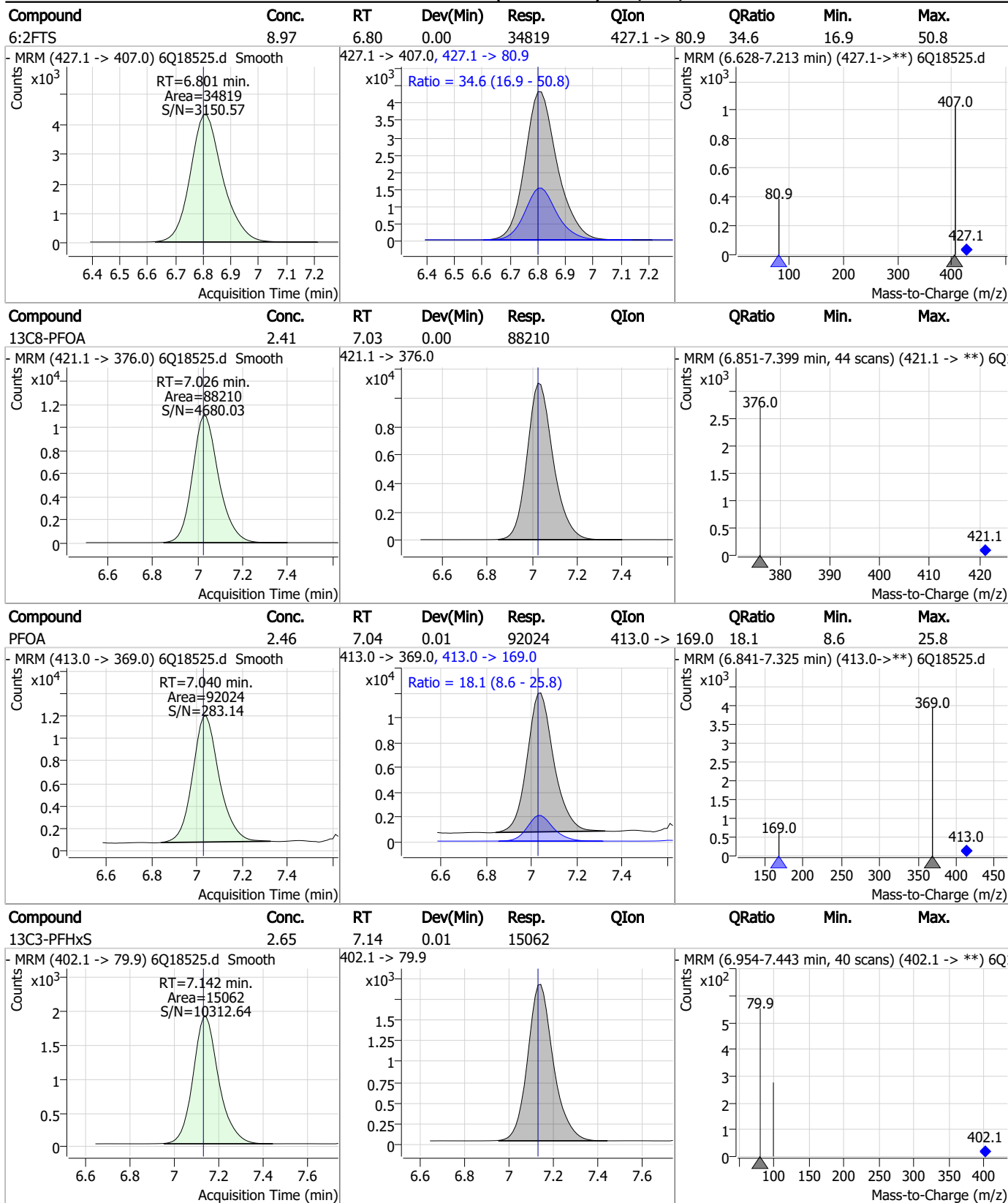
7.7.12
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Perfluorinated Compounds by LC/MS/MS



7.7.12 7

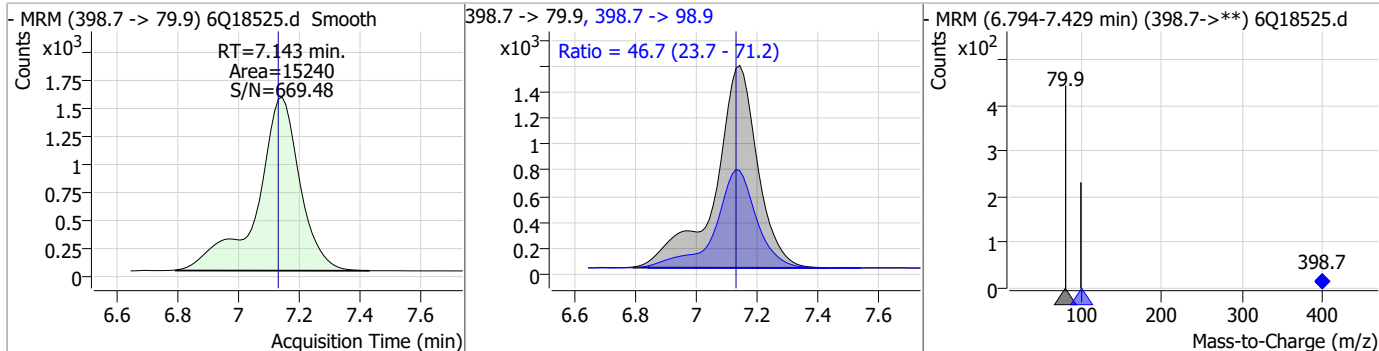
Perfluorinated Compounds by LC/MS/MS



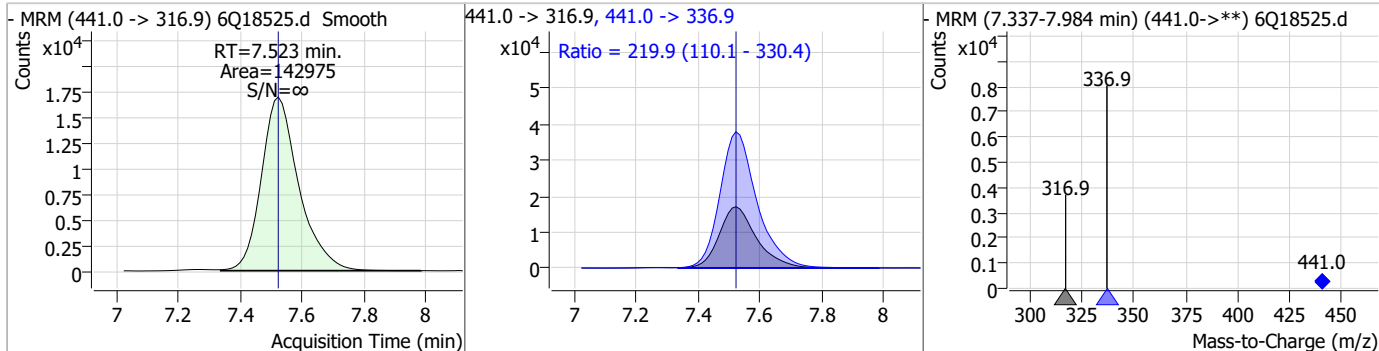
7.7.12 7

Perfluorinated Compounds by LC/MS/MS

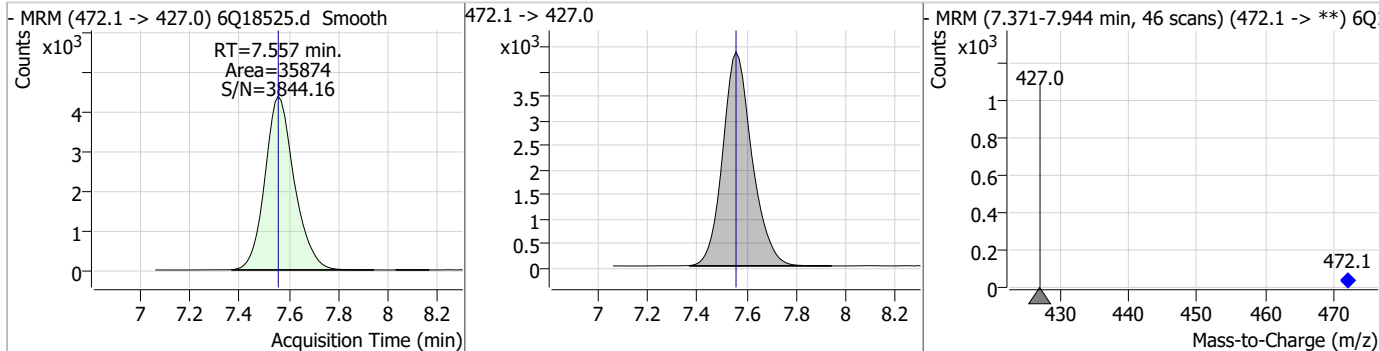
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.16	7.14	0.01	15240	398.7 -> 98.9	46.7	23.7	71.2



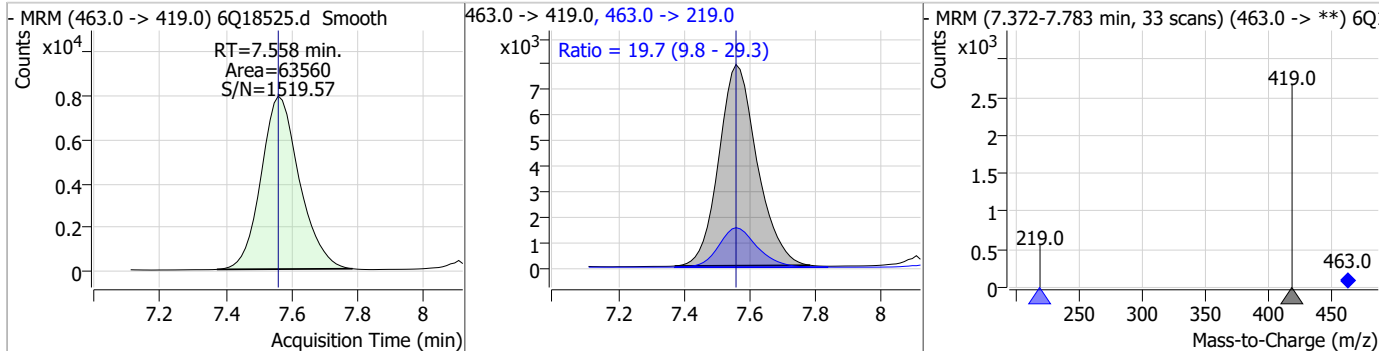
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	57.84	7.52	0.00	142975	441.0 -> 336.9	219.9	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.19	7.56	0.00	35874	472.1 -> 427.0			

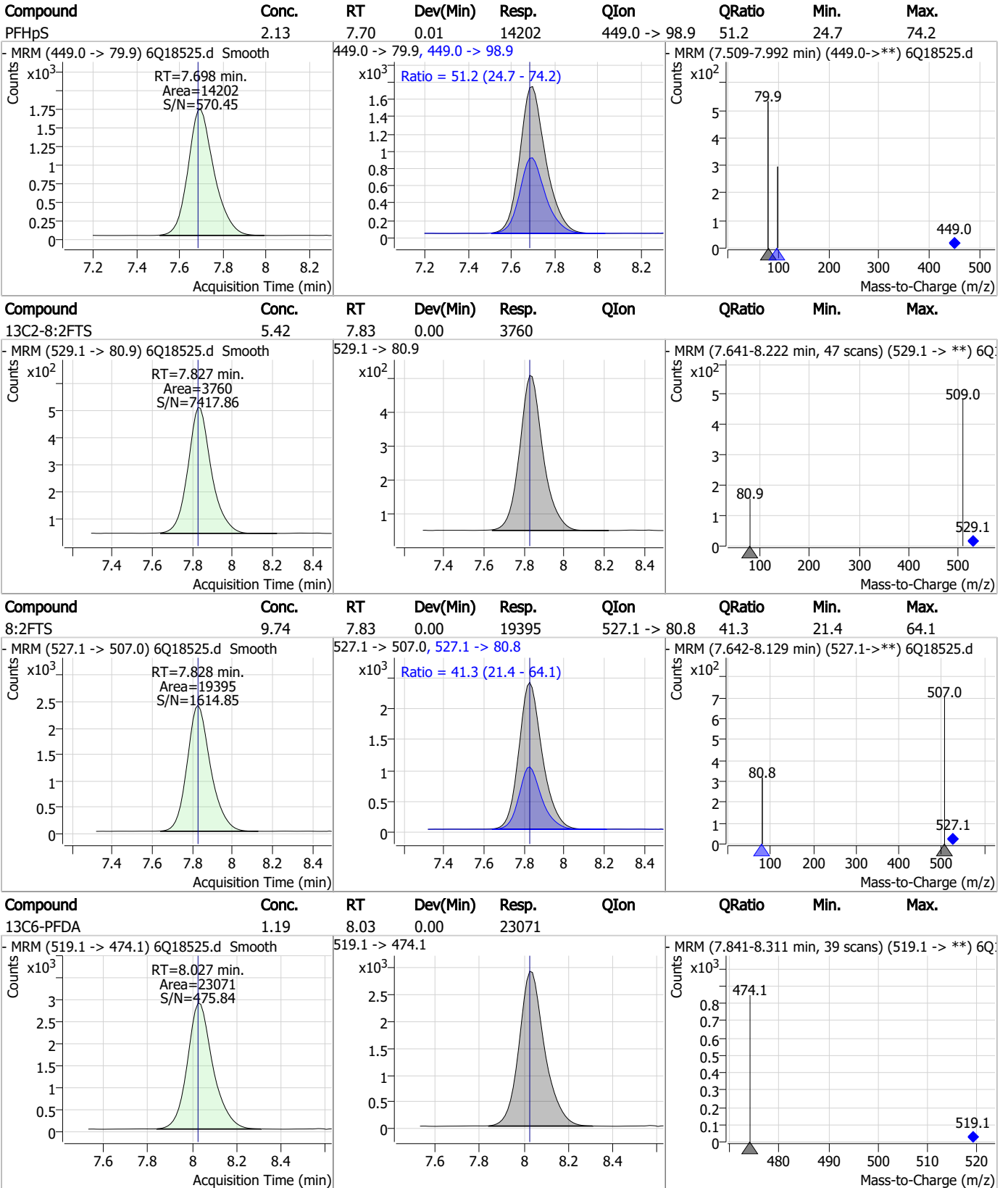


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.44	7.56	0.00	63560	463.0 -> 219.0	19.7	9.8	29.3



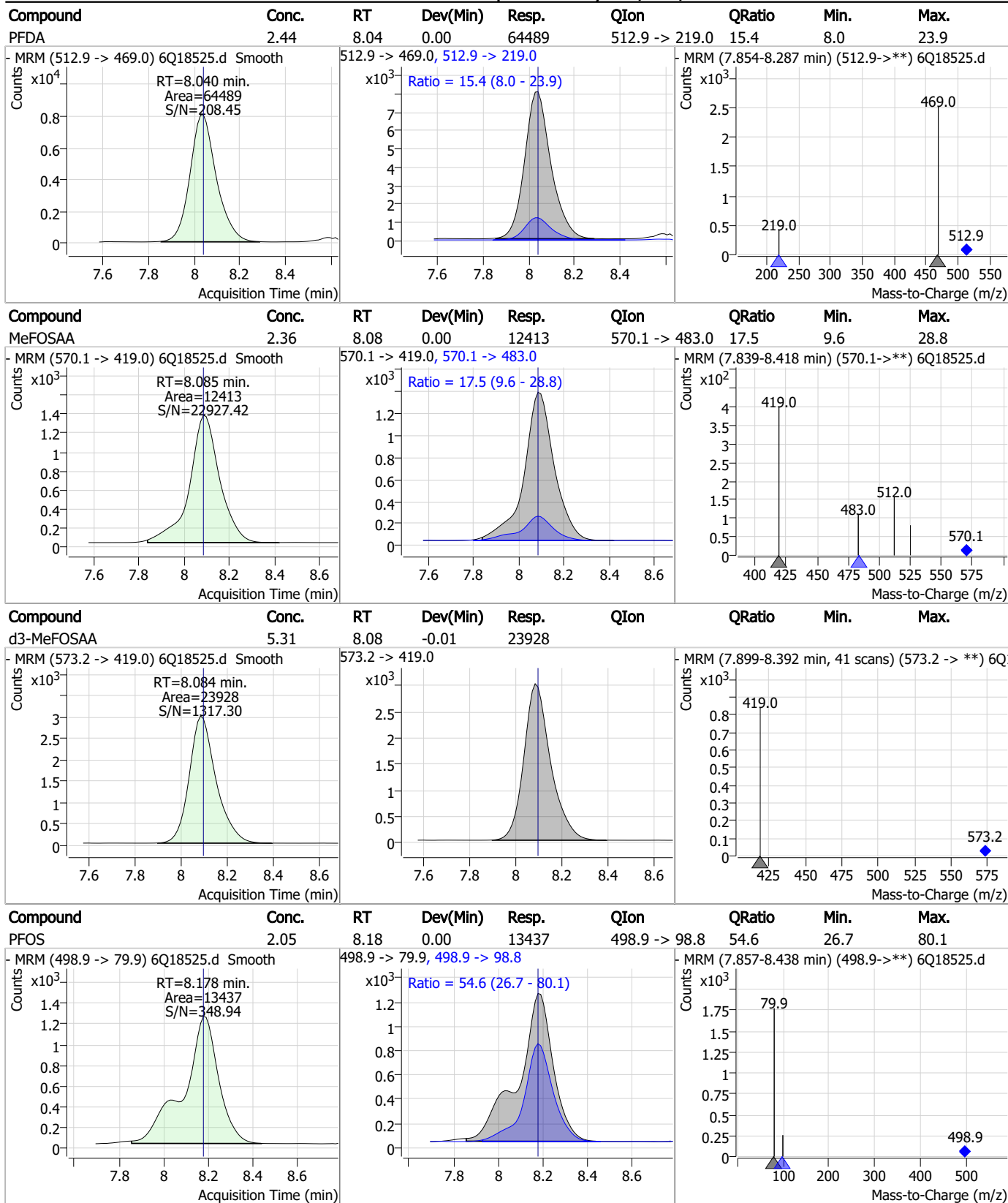
7.7.12 7

Perfluorinated Compounds by LC/MS/MS



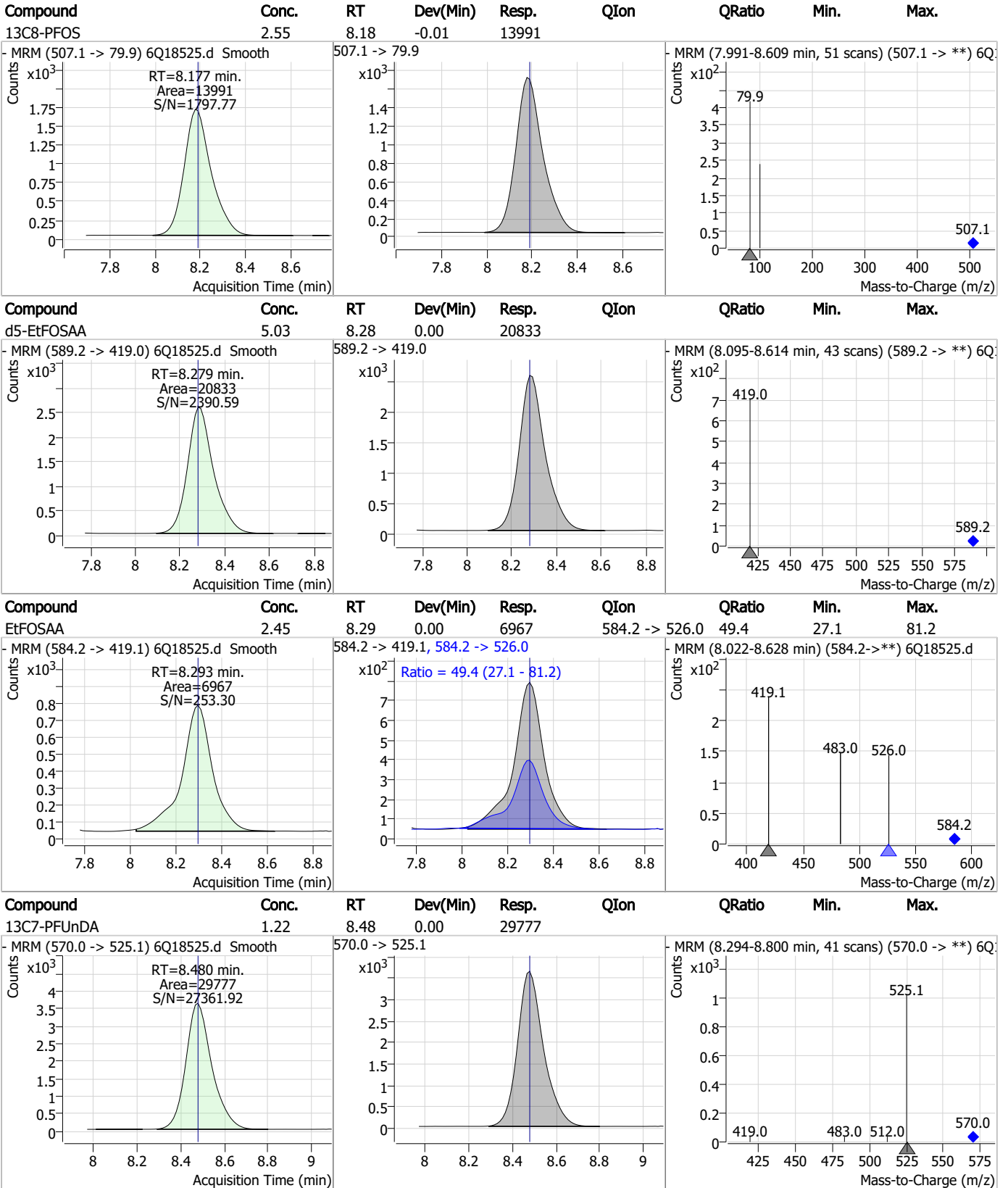
7.7.12 7

Perfluorinated Compounds by LC/MS/MS



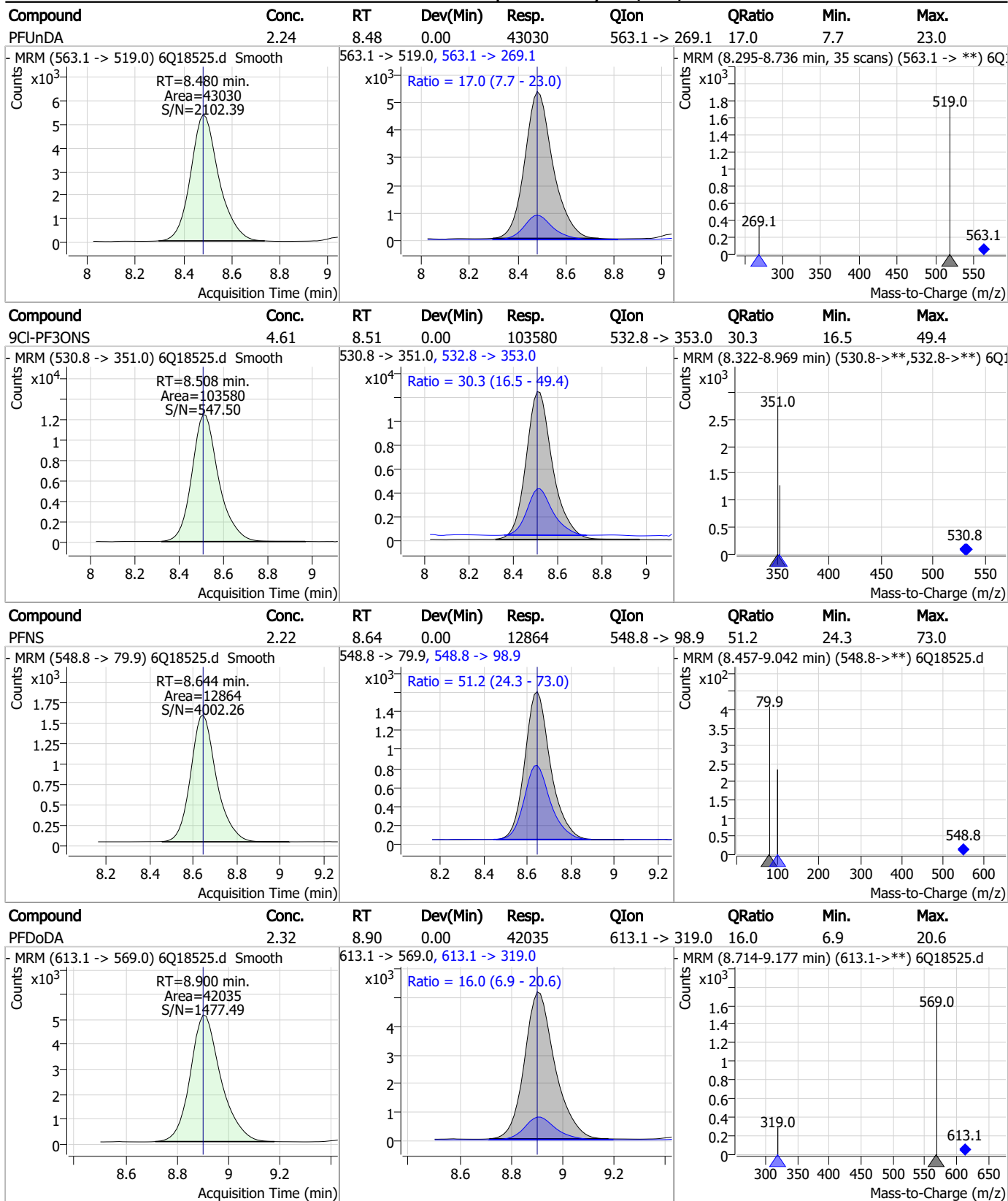
7.7.12
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



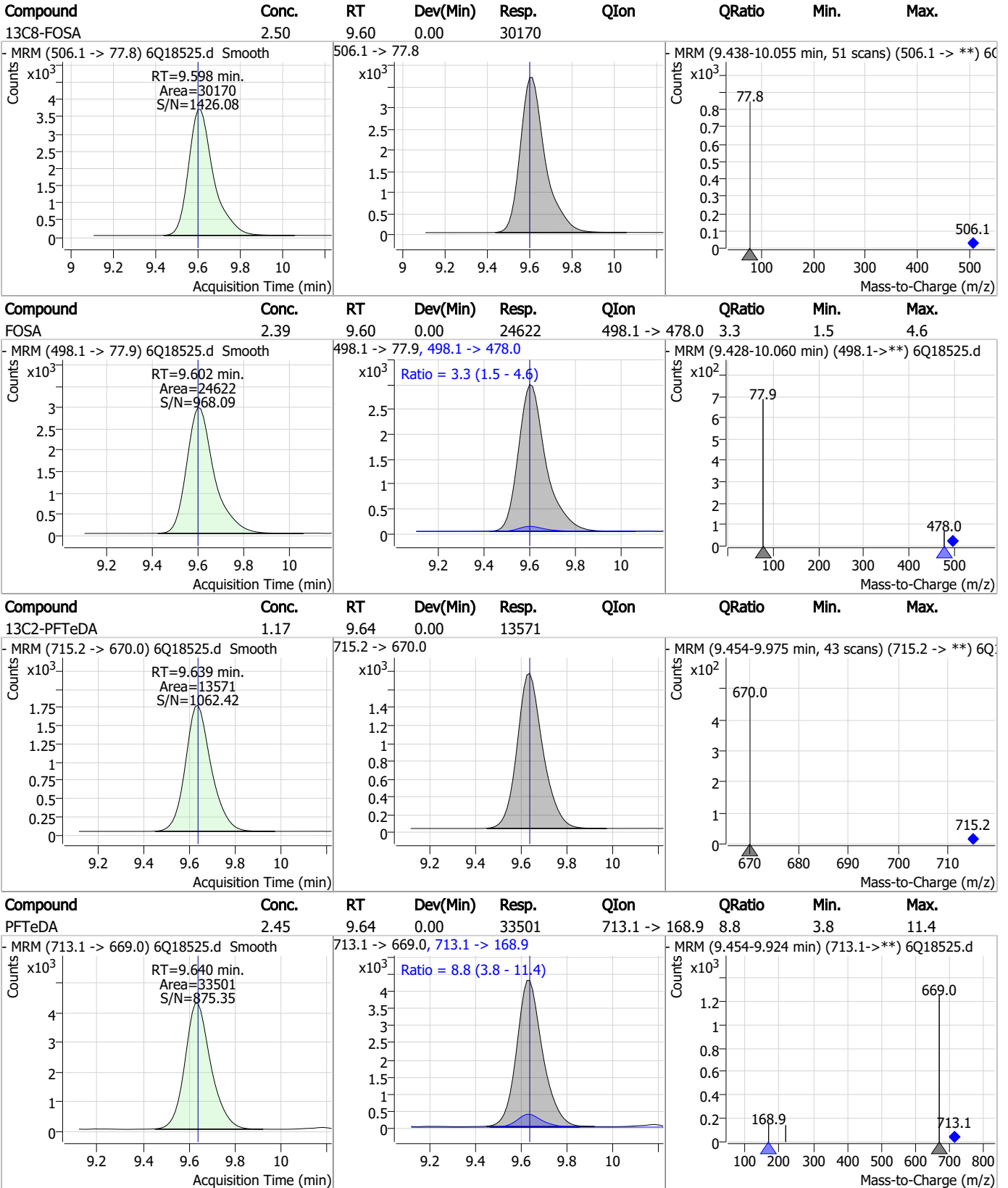
7.7.12

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	8.91	0.00	26494				
PFDS	2.23	9.06	0.00	7727	599.0 -> 98.8	49.7	24.5	73.4
PFTrDA	2.47	9.30	0.00	44222	663.0 -> 168.9	10.4	4.7	14.0
11Cl-PF3OUds	4.67	9.34	-0.01	64514	632.9 -> 452.9	29.9	15.5	46.6

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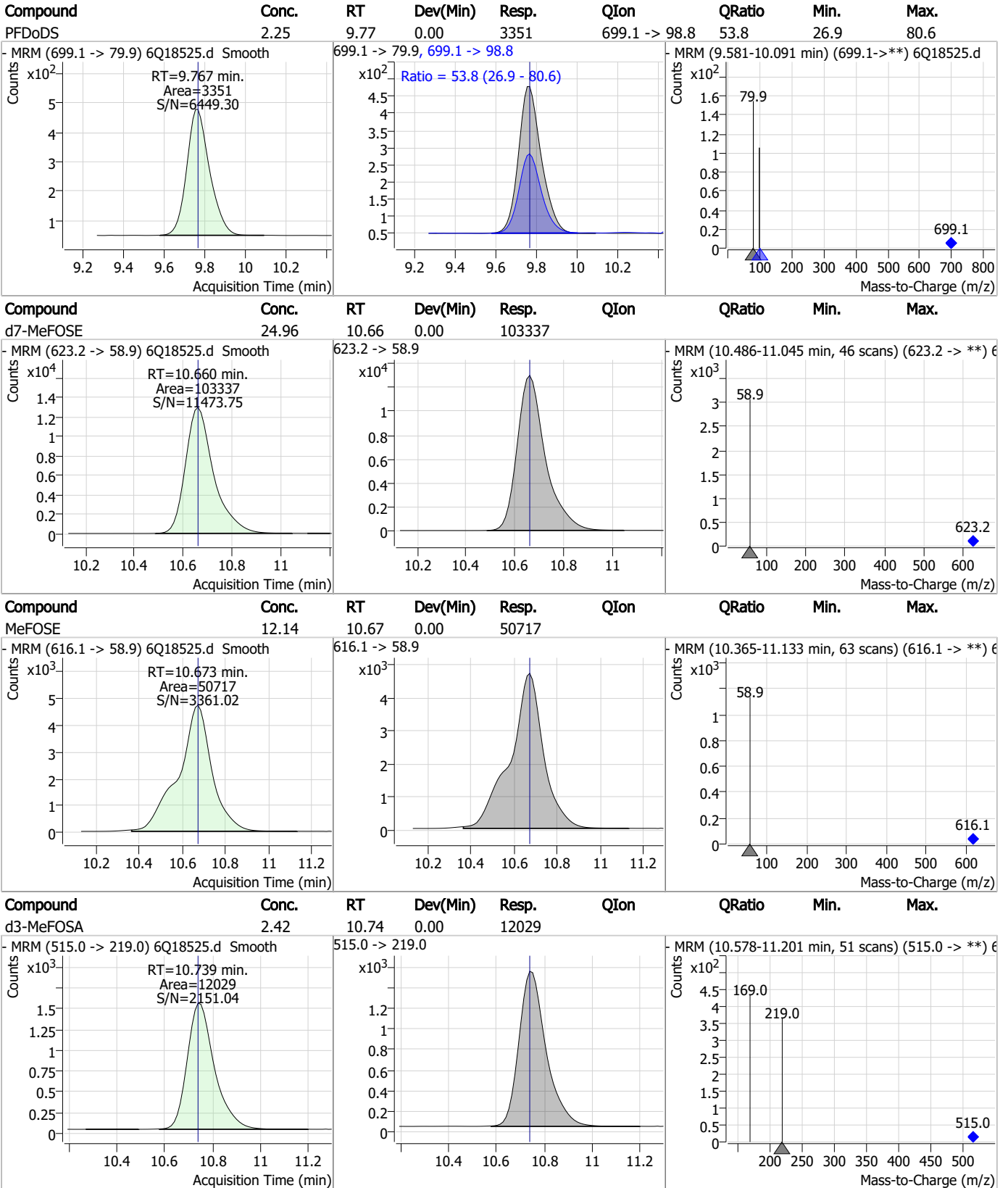
Perfluorinated Compounds by LC/MS/MS



7.7.12 7



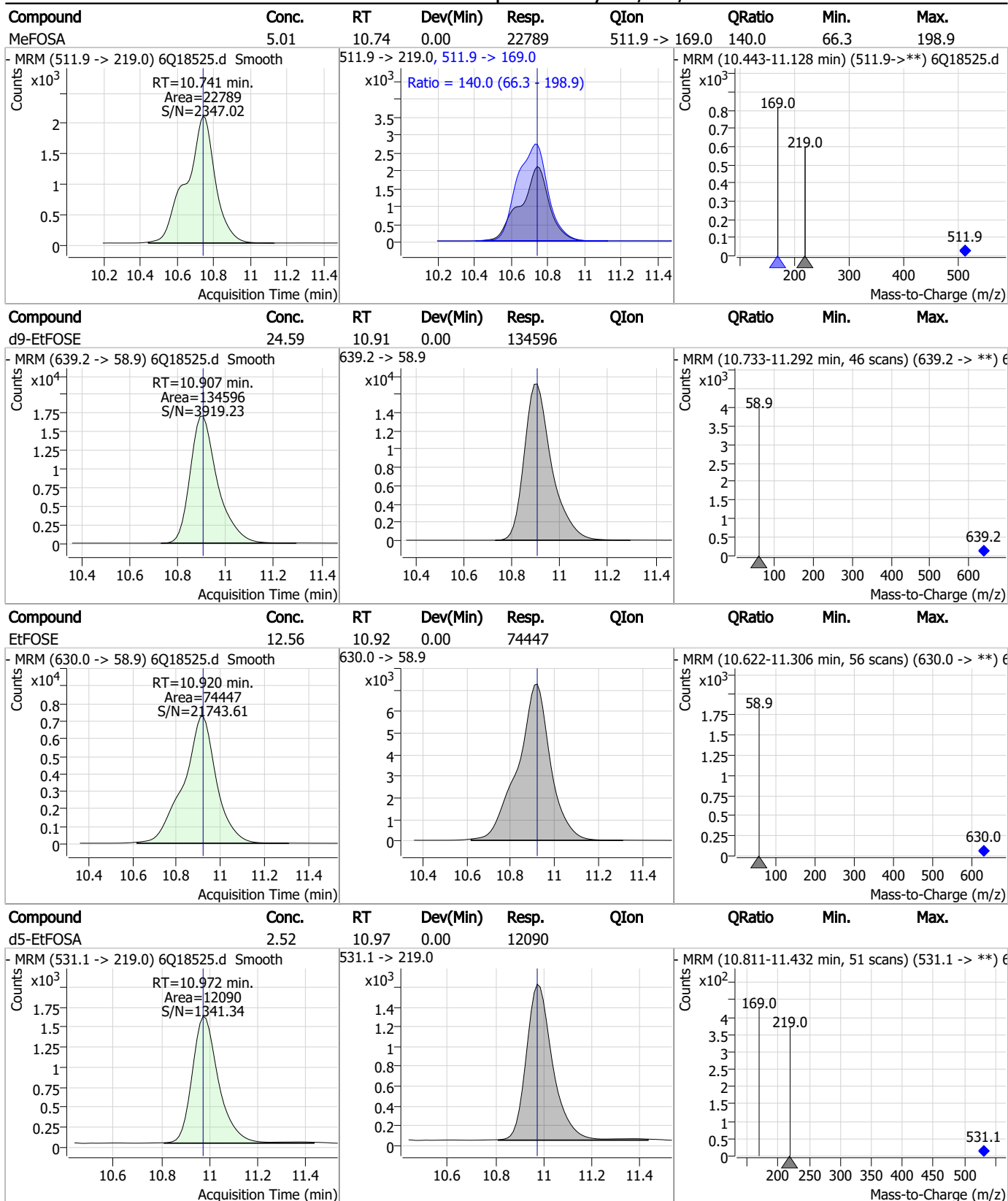
Perfluorinated Compounds by LC/MS/MS



7.7.12 7



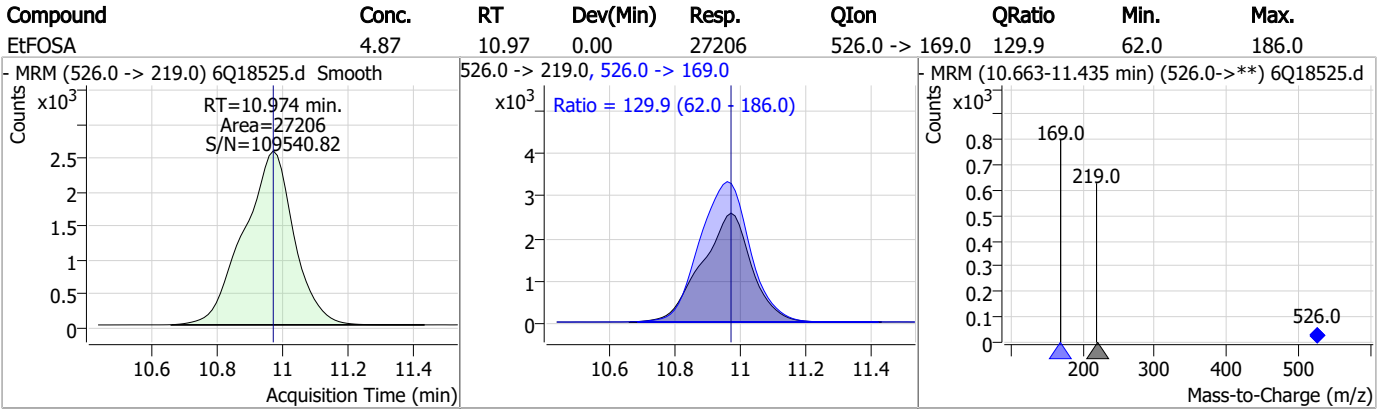
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18526.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 6:14:54 PM
 Sample Name : cc278-1.0LL
 Vial : P1-A2
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	166203	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	55096	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	60679	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	54618	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	82565	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	36589	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	21821	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	27219	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	24835	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	13252	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	29075	2.50 µg/L	0.012
M3-PFBS	5.334	302.1 -> 79.9	22941	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14151	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13189	2.50 µg/L	-0.012
M2-4:2FTS	5.094	329.1 -> 80.9	2809	5.00 µg/L	0.000
M2-6:2FTS	6.801	429.1 -> 80.9	3735	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	3628	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	22370	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	38466	10.00 µg/L	0.000
M5-EtFOSAA	8.292	589.2 -> 419.0	19852	5.00 µg/L	0.012
M7-MeFOSE	10.660	623.2 -> 58.9	96334	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	128517	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	11011	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11209	2.50 µg/L	0.000
13C4-PFOS	8.190	502.8 -> 79.9	16934	2.50 µg/L	0.000
13C3-PFBA	2.827	216.0 -> 172.0	69569	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10108	2.50 µg/L	0.000
13C4-PFOA	7.027	417.1 -> 372.0	85327	2.50 µg/L	0.000
13C2-PFDA	8.039	515.1 -> 470.1	30103	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	41749	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	54851	2.50 µg/L	0.000

System Monitoring Compounds

13C2-4:2FTS	5.094	329.1 -> 80.9	2809	5.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C2-6:2FTS	6.801	429.1 -> 80.9	3735	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C2-8:2FTS	7.827	529.1 -> 80.9	3628	5.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.7%		
13C2-PFDoDA	8.912	615.1 -> 570.0	24835	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.0%		
13C2-PFTeDA	9.639	715.2 -> 670.0	13252	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C3-PFBS	5.334	302.1 -> 79.9	22941	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	14151	2.59 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C4-PFBA	2.822	216.8 -> 171.9	166203	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFHpA	6.382	367.1 -> 322.0	54618	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	60679	2.60 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C5-PFPeA	4.210	268.3 -> 223.0	55096	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C6-PFDA	8.027	519.1 -> 474.1	21821	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C7-PFUnDA	8.480	570.0 -> 525.1	27219	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C8-FOSA	9.611	506.1 -> 77.8	29075	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C8-PFOA	7.026	421.1 -> 376.0	82565	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-PFOS	8.177	507.1 -> 79.9	13189	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C9-PFNA	7.557	472.1 -> 427.0	36589	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.3%	
d3-MeFOSAA	8.084	573.2 -> 419.0	22370	5.16 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38466	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	11209	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.9%	
d5-EtFOSAA	8.292	589.2 -> 419.0	19852	4.98 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	96334	24.20 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	128517	24.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	11011	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	3433	0.87 µg/L	96
		327.1 -> 80.9	1275		
6:2FTS	6.801	427.1 -> 407.0	3386	0.96 µg/L	99
		427.1 -> 80.9	1128		
8:2FTS	7.816	527.1 -> 507.0	1678	0.87 µg/L	89
		527.1 -> 80.8	830		
EtFOSAA	8.280	584.2 -> 419.1	604	0.22 µg/L	100
		584.2 -> 526.0	329		
FOSA	9.602	498.1 -> 77.9	2328	0.23 µg/L	98
		498.1 -> 478.0	89		
MeFOSAA	8.097	570.1 -> 419.0	1117	0.23 µg/L	93
		570.1 -> 483.0	249		
PFBA	2.831	212.8 -> 168.9	4974	0.91 µg/L	100
PFBS	5.335	298.7 -> 79.9	1480	0.19 µg/L	88
		298.7 -> 98.8	640		
PFDA	8.027	512.9 -> 469.0	5945	0.24 µg/L	96
		512.9 -> 219.0	1056		
PFDODA	8.913	613.1 -> 569.0	4035	0.24 µg/L	92
		613.1 -> 319.0	687		
PFDS	9.064	599.0 -> 79.9	757	0.23 µg/L	91

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	321	0.23 µg/L	98
		363.1 -> 319.0	5705		
PFHpS	7.685	363.1 -> 169.0	903	0.19 µg/L	91
		449.0 -> 79.9	1228		
PFHxA	5.420	449.0 -> 98.9	684	0.23 µg/L	95
		313.0 -> 269.0	4736		
PFHxS	7.131	313.0 -> 118.9	286	0.21 µg/L	92
		398.7 -> 79.9	1376		
PFNA	7.558	398.7 -> 98.9	732	0.21 µg/L	99
		463.0 -> 419.0	5614		
PFNS	8.644	463.0 -> 219.0	1073	0.22 µg/L	96
		548.8 -> 79.9	1209		
PFOA	7.028	548.8 -> 98.9	557	0.24 µg/L	99
		413.0 -> 369.0	8278		
PFOS	8.178	413.0 -> 169.0	1448	0.21 µg/L	92
		498.9 -> 79.9	1270		
PFPeA	4.212	498.9 -> 98.8	751	0.46 µg/L	100
		263.0 -> 219.0	6159		
PFPeS	6.422	349.1 -> 79.9	1309	0.20 µg/L	91
		349.1 -> 98.9	697		
PFTeDA	9.640	713.1 -> 669.0	3121	0.23 µg/L	98
		713.1 -> 168.9	255		
PFTrDA	9.296	663.0 -> 619.0	3934	0.23 µg/L	89
		663.0 -> 168.9	529		
PFUnDA	8.480	563.1 -> 519.0	3951	0.23 µg/L	97
		563.1 -> 269.1	660		
11CI-PF3OUdS	9.336	630.9 -> 450.9	5854	0.45 µg/L	100
		632.9 -> 452.9	1812		
9CI-PF3ONS	8.520	530.8 -> 351.0	9842	0.47 µg/L	83
		532.8 -> 353.0	2318		
ADONA	6.632	376.9 -> 250.9	21324	0.44 µg/L	97
		376.9 -> 84.8	6095		
HFPO-DA	5.783	284.9 -> 168.9	1474	0.46 µg/L	92
		284.9 -> 184.9	150		
3:3FTCA	3.671	241.0 -> 177.0	1006	1.18 µg/L	84
		241.0 -> 117.0	210		
5:3FTCA	6.086	341.0 -> 237.1	21418	5.95 µg/L	95
		341.0 -> 217.0	16051		
7:3FTCA	7.523	441.0 -> 316.9	13924	6.06 µg/L	91
		441.0 -> 336.9	28557		
EtFOSA	10.974	526.0 -> 219.0	2475	0.49 µg/L	97
		526.0 -> 169.0	3140		
EtFOSE	10.920	630.0 -> 58.9	6503	1.15 µg/L	100
		511.9 -> 219.0	1955		
MeFOSA	10.753	511.9 -> 169.0	2927	0.46 µg/L	85
		616.1 -> 58.9	4617		
MeFOSE	10.673	699.1 -> 79.9	263	1.19 µg/L	100
		699.1 -> 98.8	187		
PFDoDS	9.767	295.0 -> 201.0	1028	0.19 µg/L	76
		295.0 -> 84.9	313		
NFDHA	5.299	279.0 -> 85.1	4264	0.41 µg/L	94
		229.0 -> 84.9	3241		
PFMBA	4.626	314.8 -> 134.9	10415	0.46 µg/L	100
		314.8 -> 82.9	380		
PFMPA	3.363			0.45 µg/L	100
PFEESA	5.875			0.38 µg/L	99

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

7.7.13
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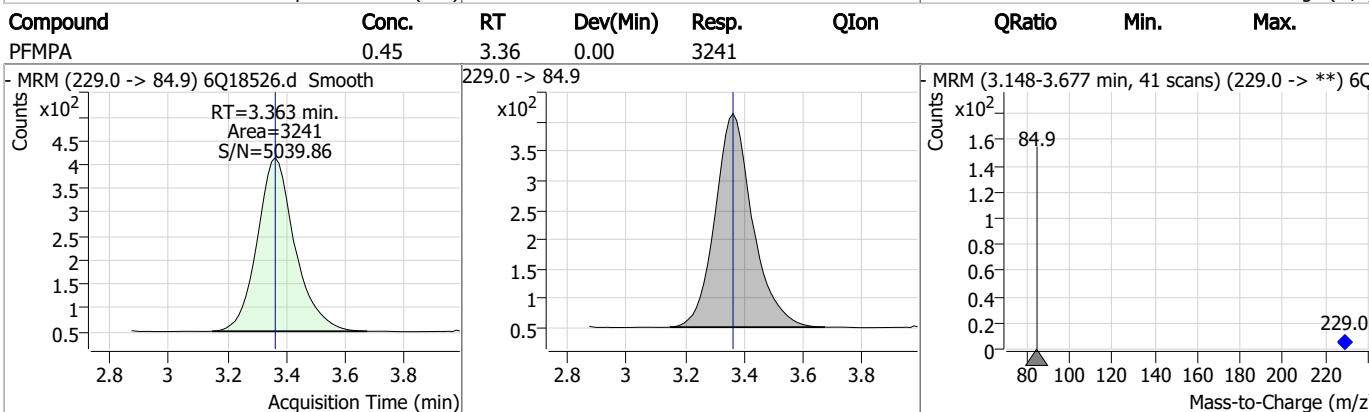
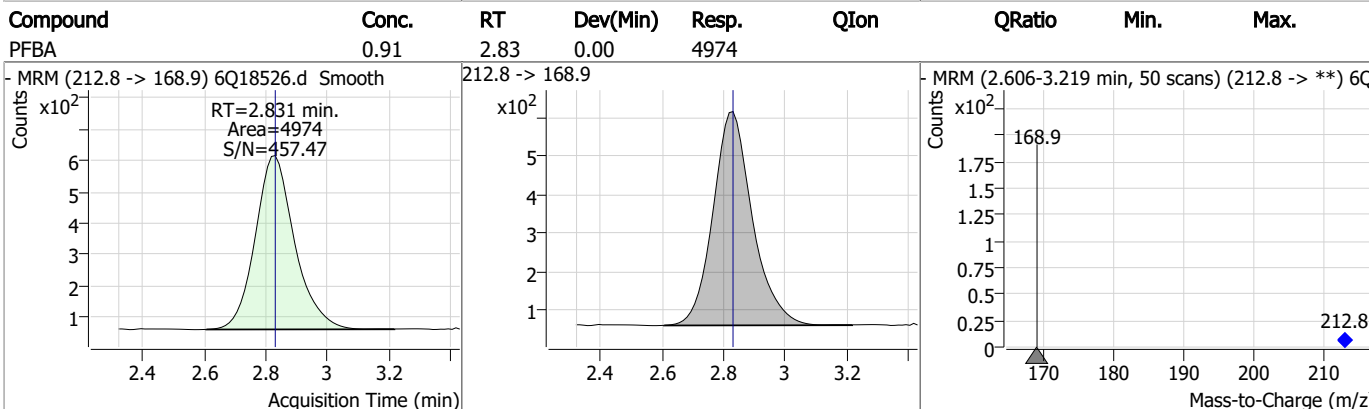
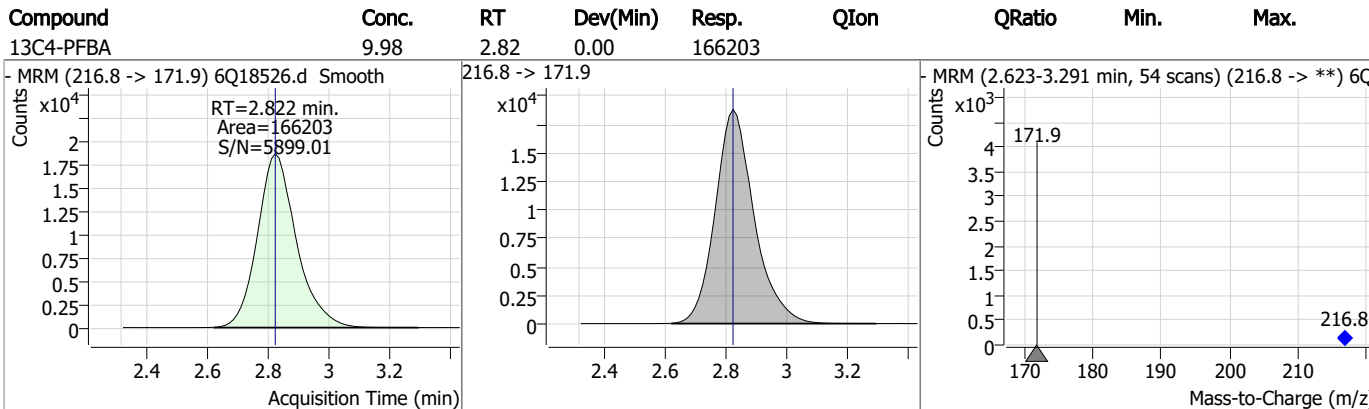
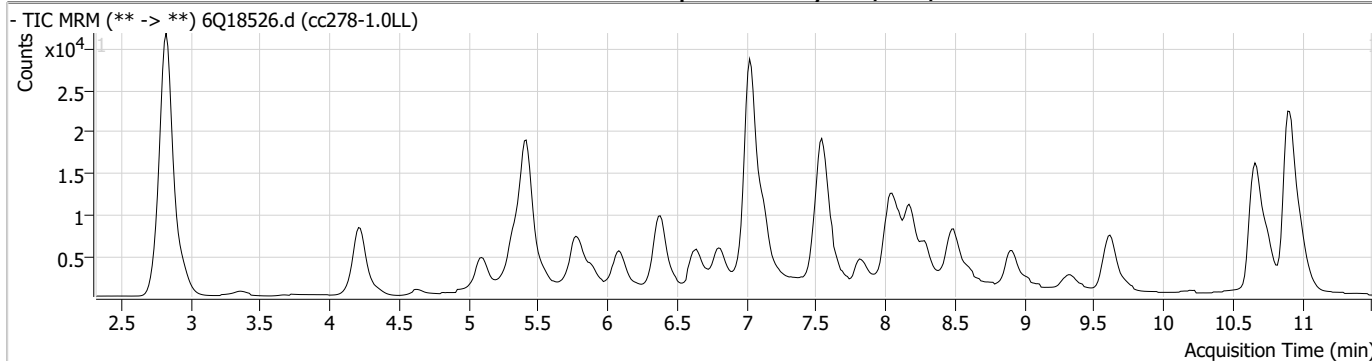
Perfluorinated Compounds by LC/MS/MS

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

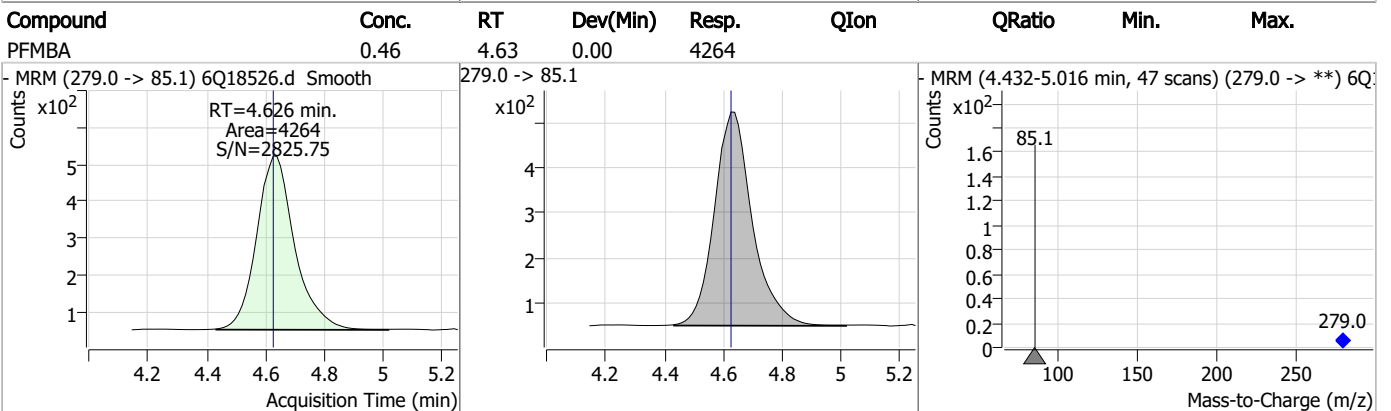
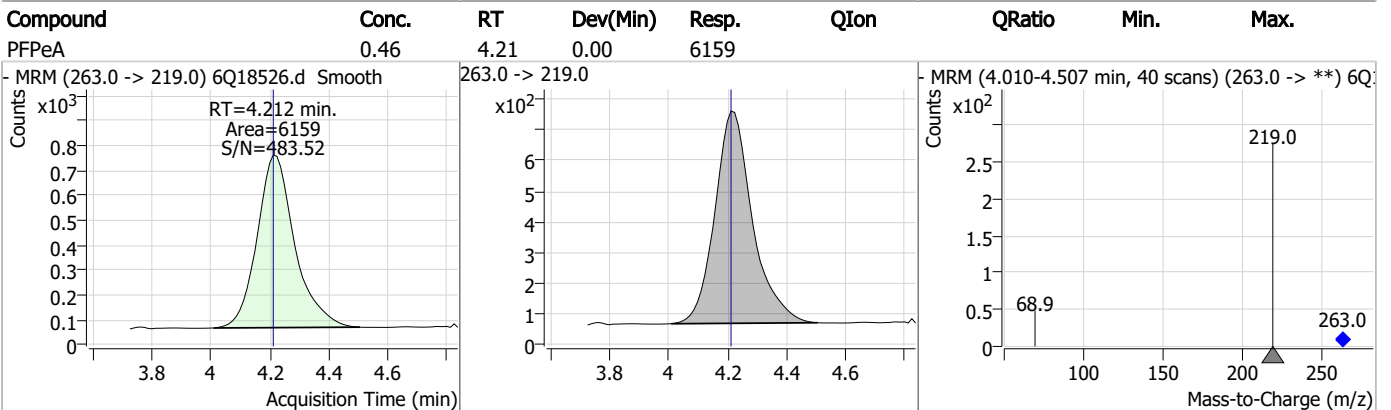
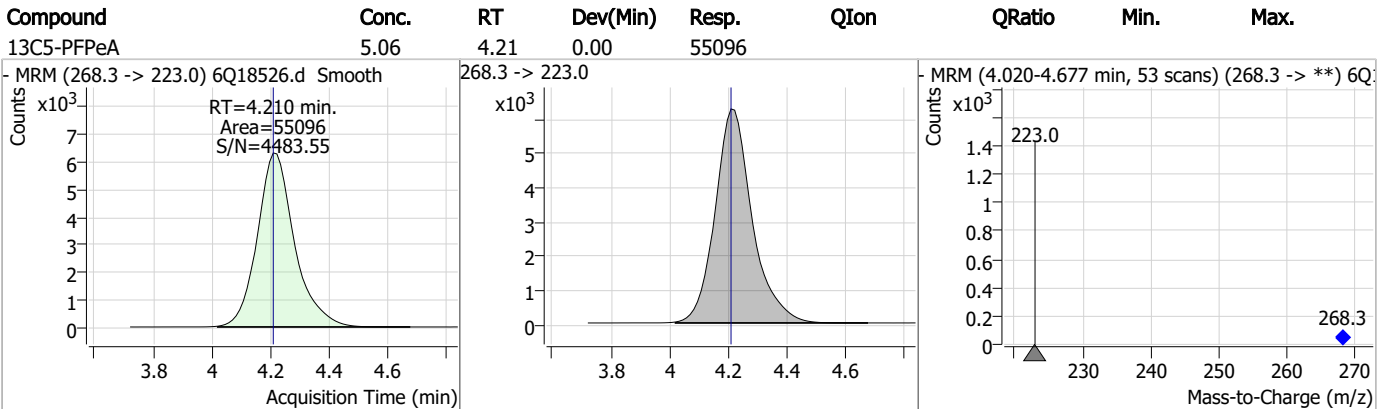
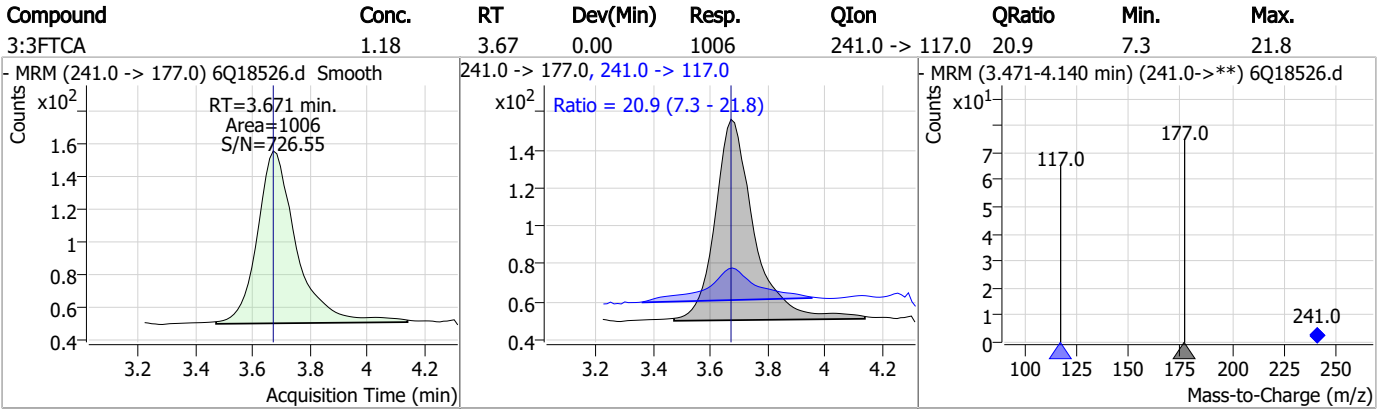
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Perfluorinated Compounds by LC/MS/MS



7.7.13
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Perfluorinated Compounds by LC/MS/MS



7.7.13
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Perfluorinated Compounds by LC/MS/MS

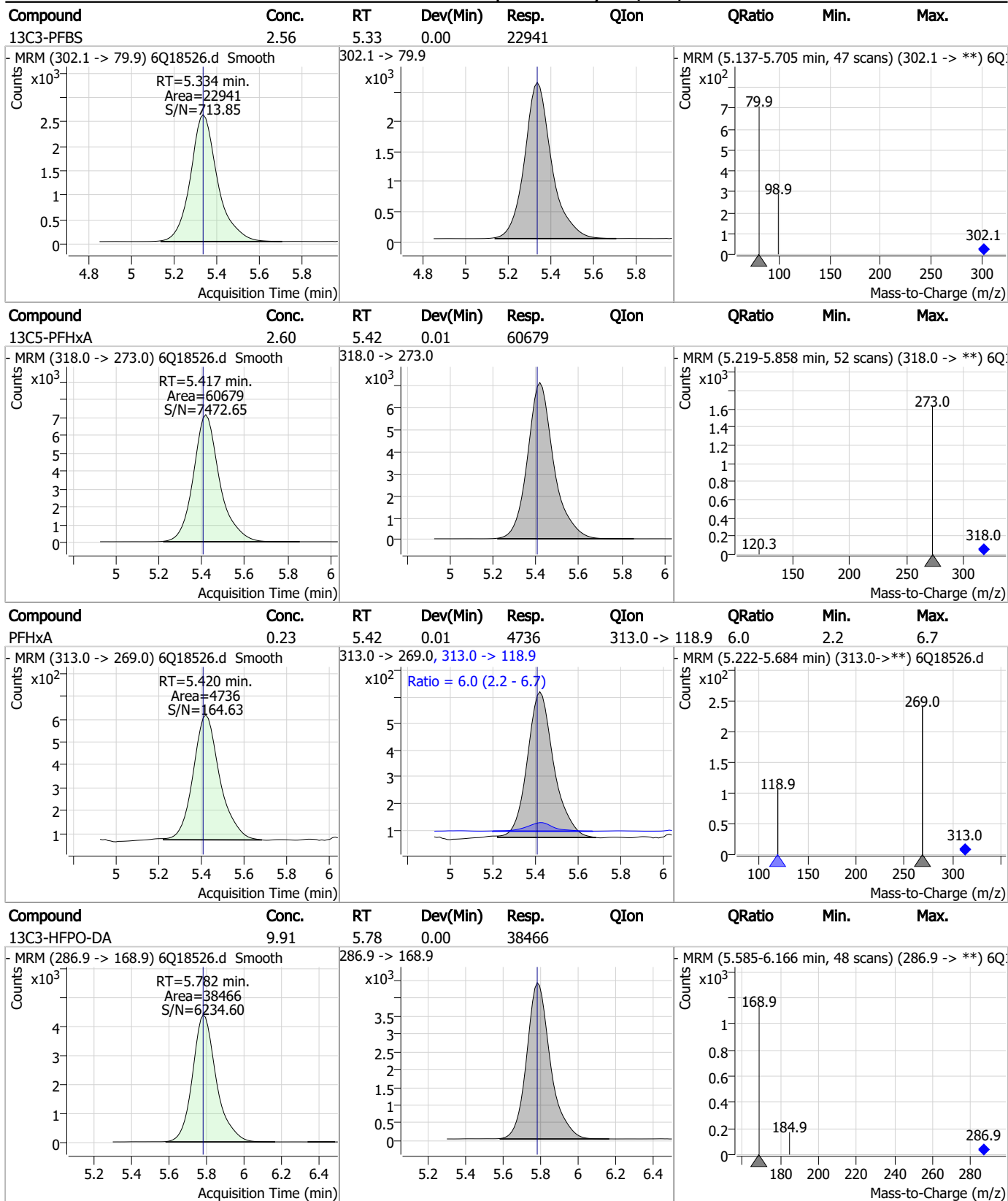
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.54	5.09	0.00	2809				
- MRM (329.1 -> 80.9) 6Q18526.d Smooth Counts x10 ² RT=5.094 min. Area=2809 S/N=1658.22 Acquisition Time (min)			329.1 -> 80.9 x10 ² Acquisition Time (min)			- MRM (4.894-5.378 min, 40 scans) (329.1 -> **) 6Q18526.d Counts x10 ² 80.9 309.0 329.1 Mass-to-Charge (m/z)		
4:2FTS	0.87	5.08	-0.01	3433	327.1 -> 80.9	37.1	19.8	59.4
- MRM (327.1 -> 307.0) 6Q18526.d Smooth Counts x10 ² RT=5.082 min. Area=3433 S/N=121.21 Acquisition Time (min)			327.1 -> 307.0, 327.1 -> 80.9 x10 ² Ratio = 37.1 (19.8 - 59.4) Acquisition Time (min)			- MRM (4.895-5.391 min) (327.1->**) 6Q18526.d Counts x10 ² 80.9 307.0 327.1 Mass-to-Charge (m/z)		
NFDHA	0.41	5.30	0.01	1028	295.0 -> 84.9	30.4	13.5	40.6
- MRM (295.0 -> 201.0) 6Q18526.d Smooth Counts x10 ² RT=5.299 min. Area=1028 S/N=2202.42 Acquisition Time (min)			295.0 -> 201.0, 295.0 -> 84.9 x10 ² Ratio = 30.4 (13.5 - 40.6) Acquisition Time (min)			- MRM (5.102-5.663 min) (295.0->**) 6Q18526.d Counts x10 ² 84.9 201.0 295.0 Mass-to-Charge (m/z)		
PFBS	0.19	5.34	0.01	1480	298.7 -> 98.8	43.2	18.1	54.3
- MRM (298.7 -> 79.9) 6Q18526.d Smooth Counts x10 ² RT=5.335 min. Area=1480 S/N=82.98 Acquisition Time (min)			298.7 -> 79.9, 298.7 -> 98.8 x10 ² Ratio = 43.2 (18.1 - 54.3) Acquisition Time (min)			- MRM (5.114-5.645 min) (298.7->**) 6Q18526.d Counts x10 ² 79.9 98.8 298.7 Mass-to-Charge (m/z)		

7.7.13

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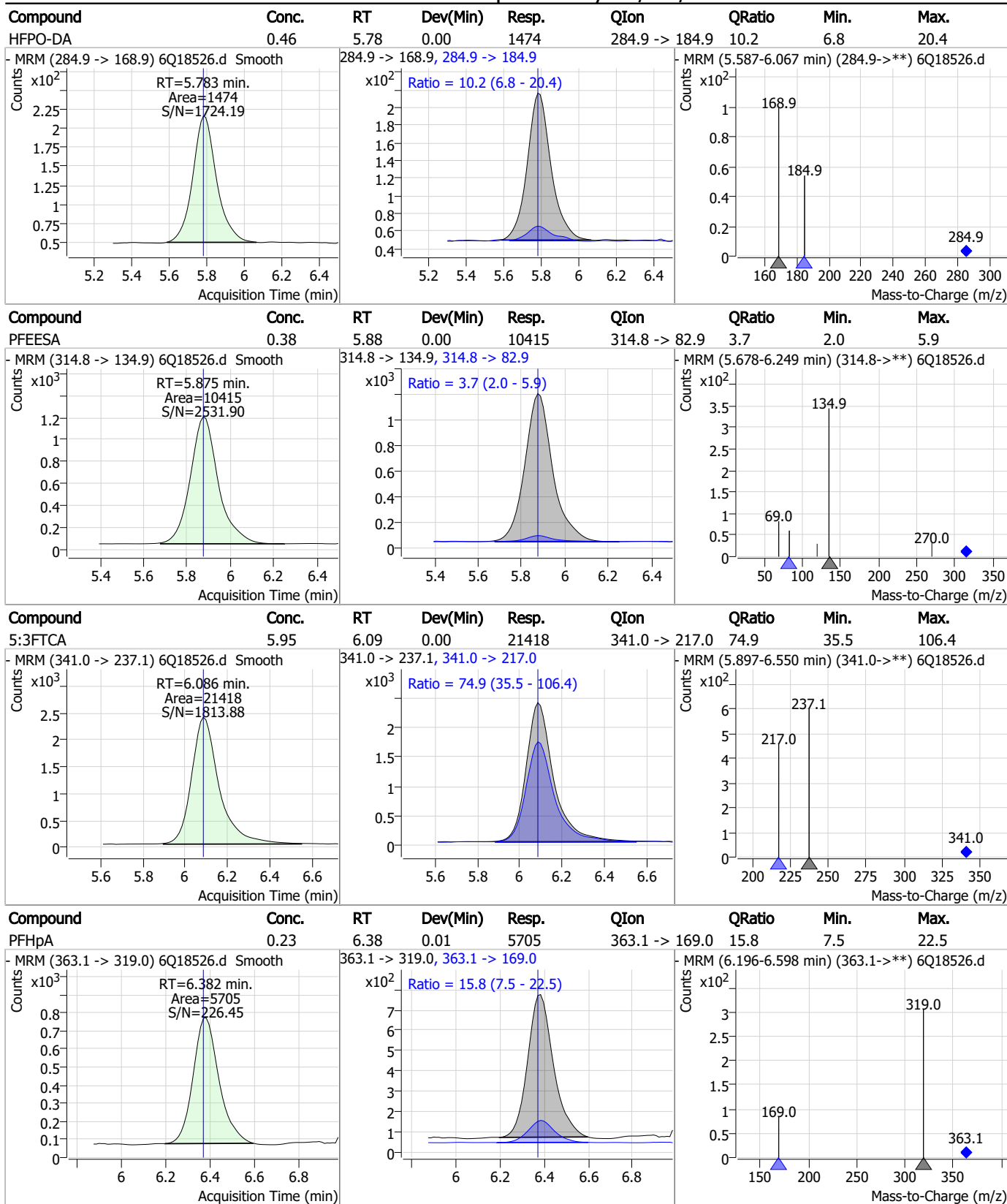


Perfluorinated Compounds by LC/MS/MS



7.7.13
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Perfluorinated Compounds by LC/MS/MS



7.7.13
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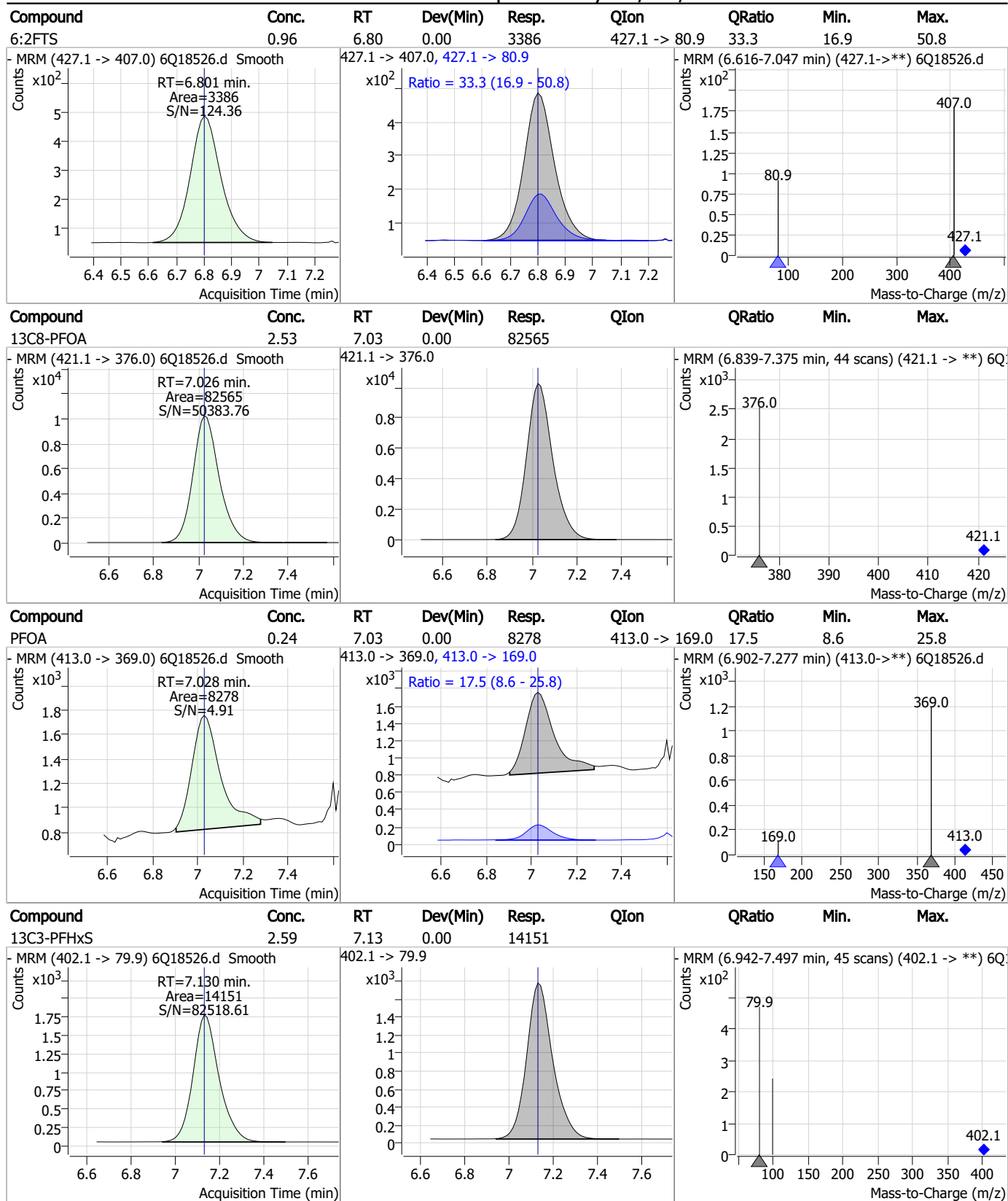
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	6.38	0.00	54618				
- MRM (367.1 -> 322.0) 6Q18526.d Smooth Counts x10 ³ RT=6.382 min. Area=54618 S/N=6628.53 Acquisition Time (min)			367.1 -> 322.0 x10 ³ Acquisition Time (min)			- MRM (6.170-6.771 min, 49 scans) (367.1 -> **) 6Q18526.d Counts x10 ³ 322.0 367.1 Mass-to-Charge (m/z)		
PFPeS	0.20	6.42	0.00	1309	349.1 -> 98.9	53.2	23.7	71.0
- MRM (349.1 -> 79.9) 6Q18526.d Smooth Counts x10 ² RT=6.422 min. Area=1309 S/N=2374.40 Acquisition Time (min)			349.1 -> 79.9, 349.1 -> 98.9 x10 ² Ratio = 53.2 (23.7 - 71.0) Acquisition Time (min)			- MRM (6.223-6.710 min) (349.1->**) 6Q18526.d Counts x10 ² 79.9 349.1 Mass-to-Charge (m/z)		
ADONA	0.44	6.63	0.00	21324	376.9 -> 84.8	28.6	13.4	40.2
- MRM (376.9 -> 250.9) 6Q18526.d Smooth Counts x10 ³ RT=6.632 min. Area=21324 S/N=1068.97 Acquisition Time (min)			376.9 -> 250.9, 376.9 -> 84.8 x10 ³ Ratio = 28.6 (13.4 - 40.2) Acquisition Time (min)			- MRM (6.443-7.019 min) (376.9->**) 6Q18526.d Counts x10 ² 84.8 250.9 376.9 Mass-to-Charge (m/z)		
13C2-6:2FTS	5.38	6.80	0.00	3735				
- MRM (429.1 -> 80.9) 6Q18526.d Smooth Counts x10 ² RT=6.801 min. Area=3735 S/N=13632.27 Acquisition Time (min)			429.1 -> 80.9 x10 ² Acquisition Time (min)			- MRM (6.615-7.162 min, 45 scans) (429.1 -> **) 6Q18526.d Counts x10 ² 80.9 409.0 429.1 Mass-to-Charge (m/z)		

7.7.13
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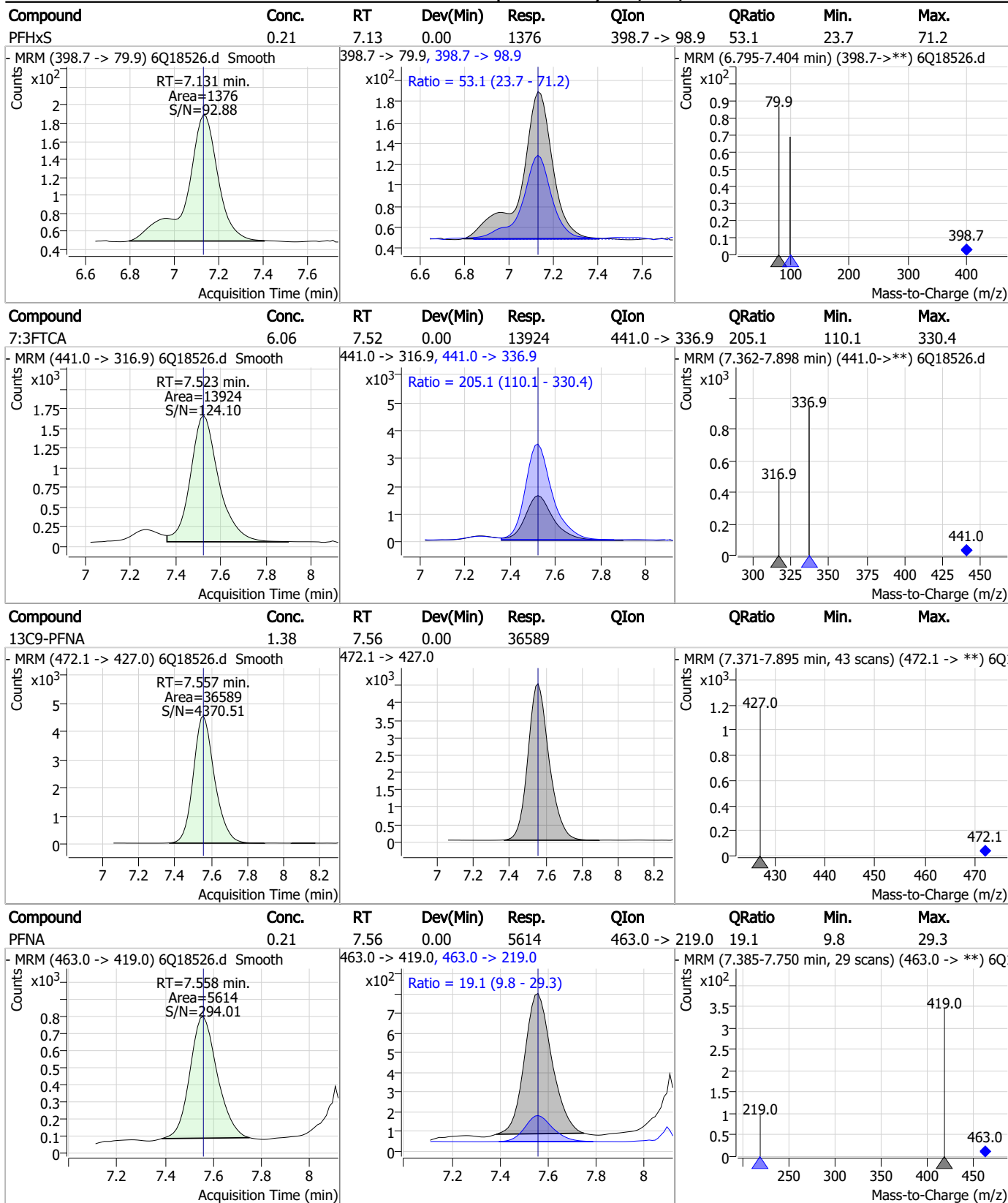
Perfluorinated Compounds by LC/MS/MS



7.7.13

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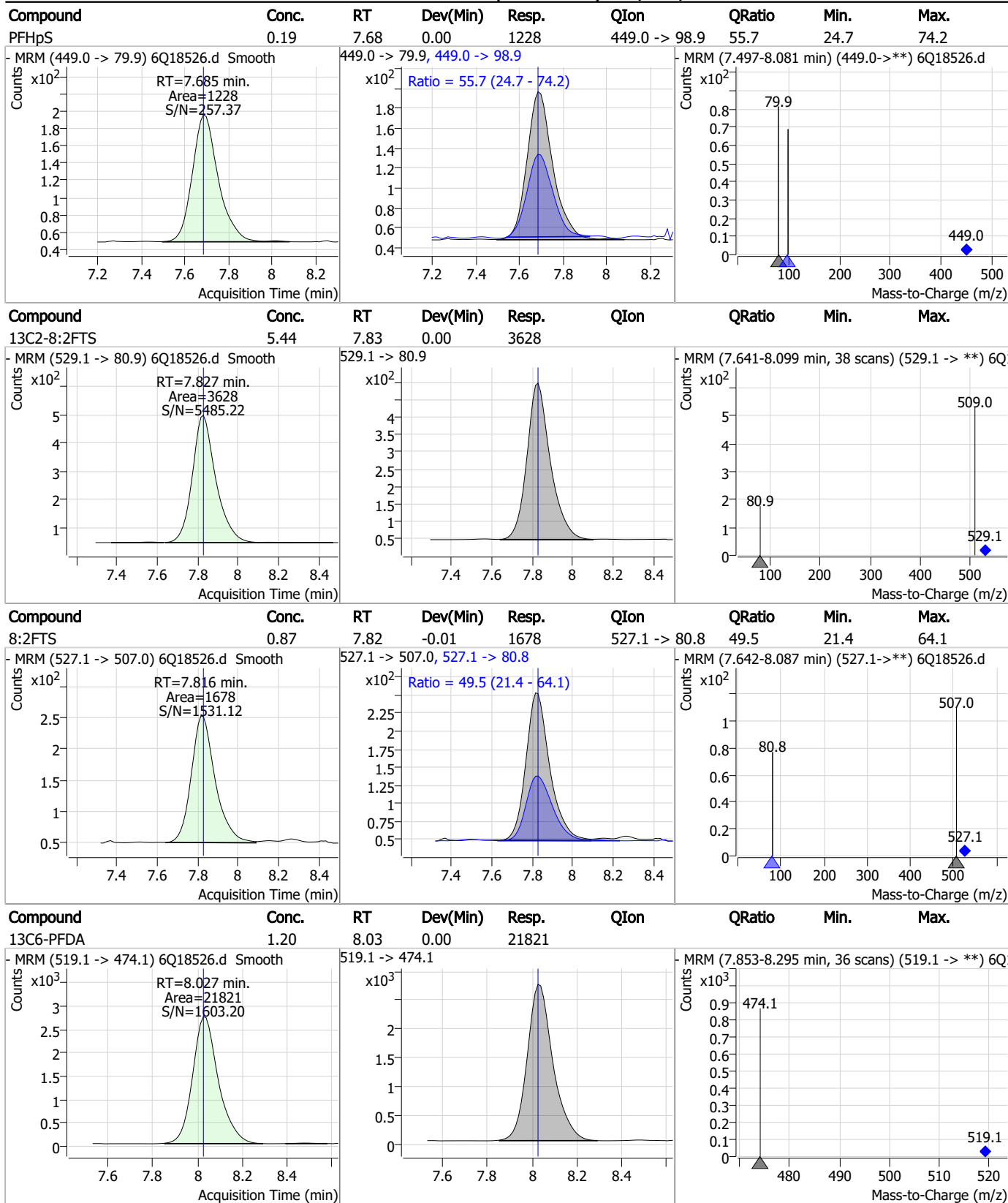
Perfluorinated Compounds by LC/MS/MS



7.7.13

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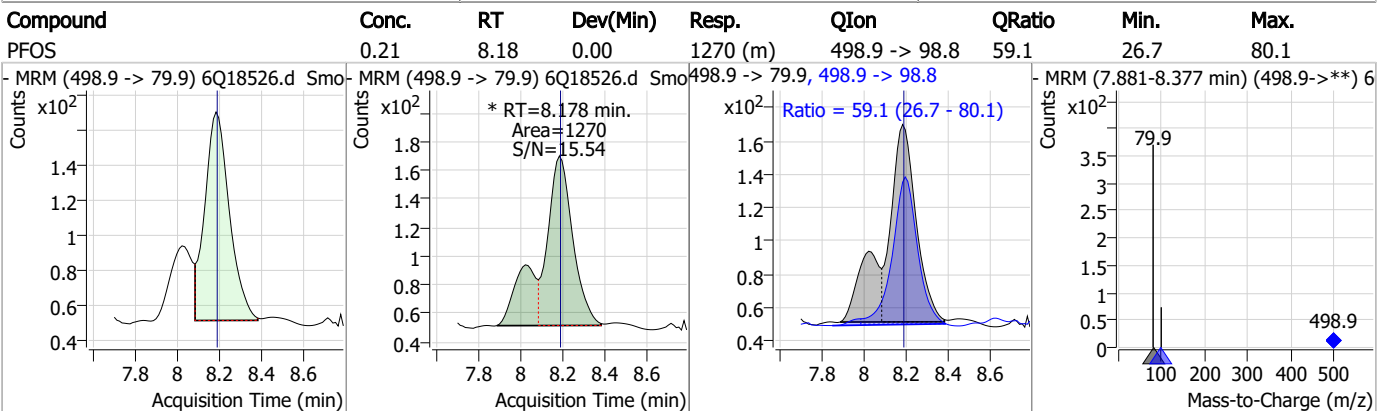
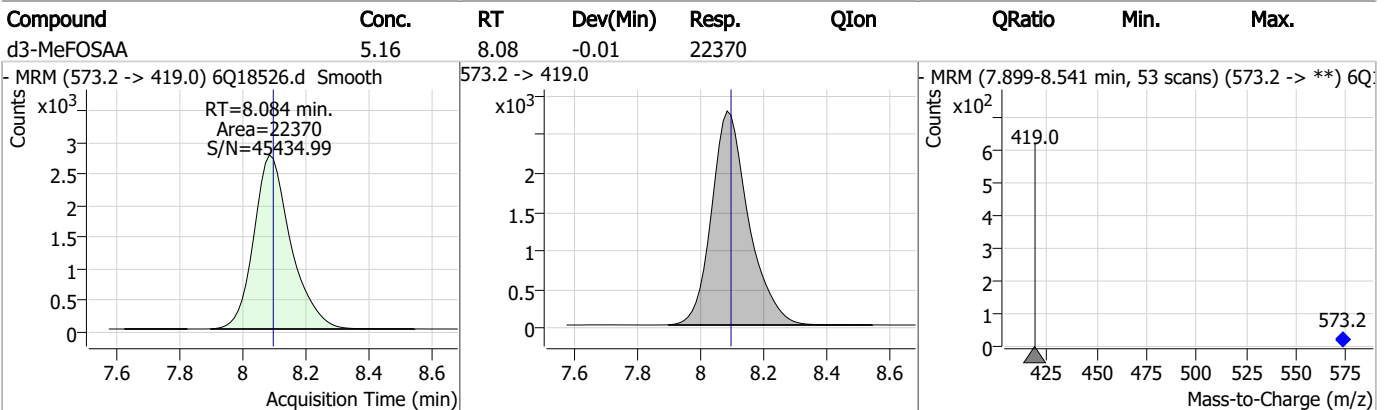
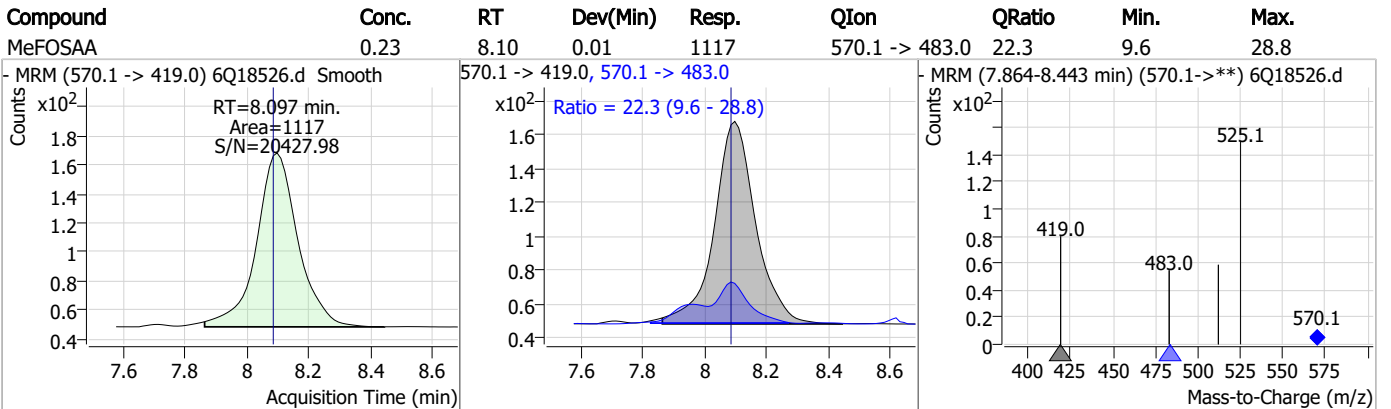
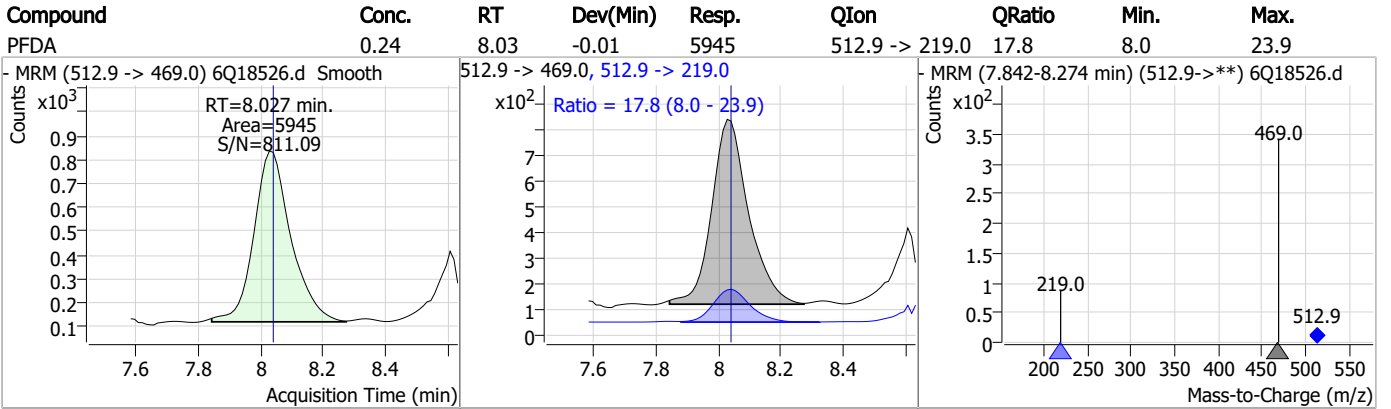
Perfluorinated Compounds by LC/MS/MS



7.7.13



Perfluorinated Compounds by LC/MS/MS



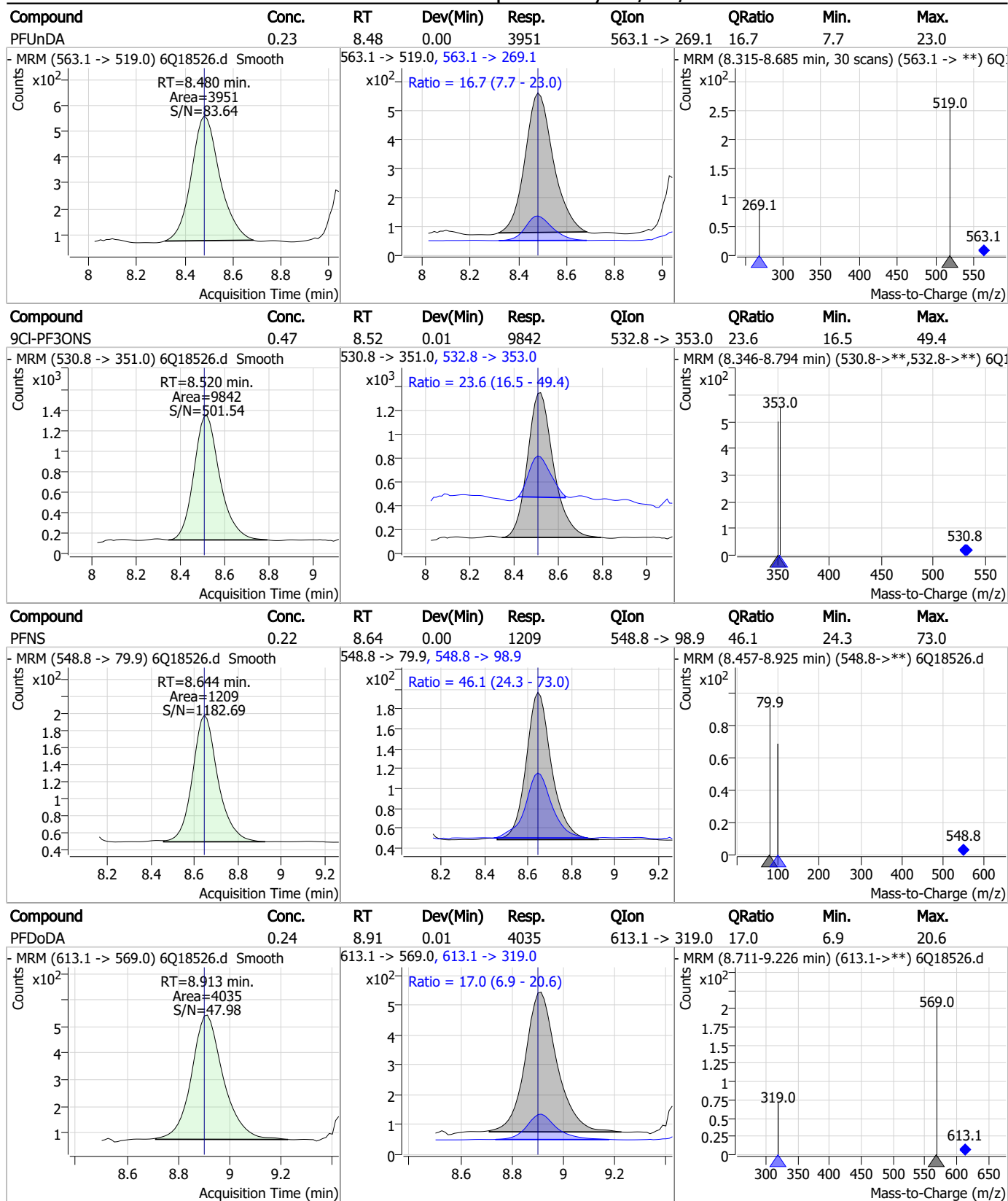
7.7.13 7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.50	8.18	-0.01	13189				
- MRM (507.1 -> 79.9) 6Q18526.d Smooth Counts x10 ³ RT=8.177 min. Area=13189 S/N=1187.18 Acquisition Time (min)			507.1 -> 79.9 Counts x10 ³ Acquisition Time (min)			- MRM (7.991-8.555 min, 46 scans) (507.1 -> **) 6Q18526.d Counts x10 ² 79.9 507.1 Mass-to-Charge (m/z)		
d5-EtFOSAA	4.98	8.29	0.01	19852				
- MRM (589.2 -> 419.0) 6Q18526.d Smooth Counts x10 ³ RT=8.292 min. Area=19852 S/N=449.66 Acquisition Time (min)			589.2 -> 419.0 Counts x10 ³ Acquisition Time (min)			- MRM (8.083-8.651 min, 47 scans) (589.2 -> **) 6Q18526.d Counts x10 ² 419.0 589.2 Mass-to-Charge (m/z)		
EtFOSAA	0.22	8.28	-0.01	604	584.2 -> 526.0	54.4	27.1	81.2
- MRM (584.2 -> 419.1) 6Q18526.d Smooth Counts x10 ² RT=8.280 min. Area=604 S/N=16.40 Acquisition Time (min)			584.2 -> 419.1, 584.2 -> 526.0 Ratio = 54.4 (27.1 - 81.2) Counts x10 ² Acquisition Time (min)			- MRM (8.059-8.504 min) (584.2->**) 6Q18526.d Counts x10 ¹ 419.1 483.0 526.0 584.2 Mass-to-Charge (m/z)		
13C7-PFUnDA	1.18	8.48	0.00	27219				
- MRM (570.0 -> 525.1) 6Q18526.d Smooth Counts x10 ³ RT=8.480 min. Area=27219 S/N=1792.44 Acquisition Time (min)			570.0 -> 525.1 Counts x10 ³ Acquisition Time (min)			- MRM (8.294-8.866 min, 47 scans) (570.0 -> **) 6Q18526.d Counts x10 ³ 419.0 483.0 512.0 525.1 570.0 Mass-to-Charge (m/z)		

7.7.13
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Perfluorinated Compounds by LC/MS/MS



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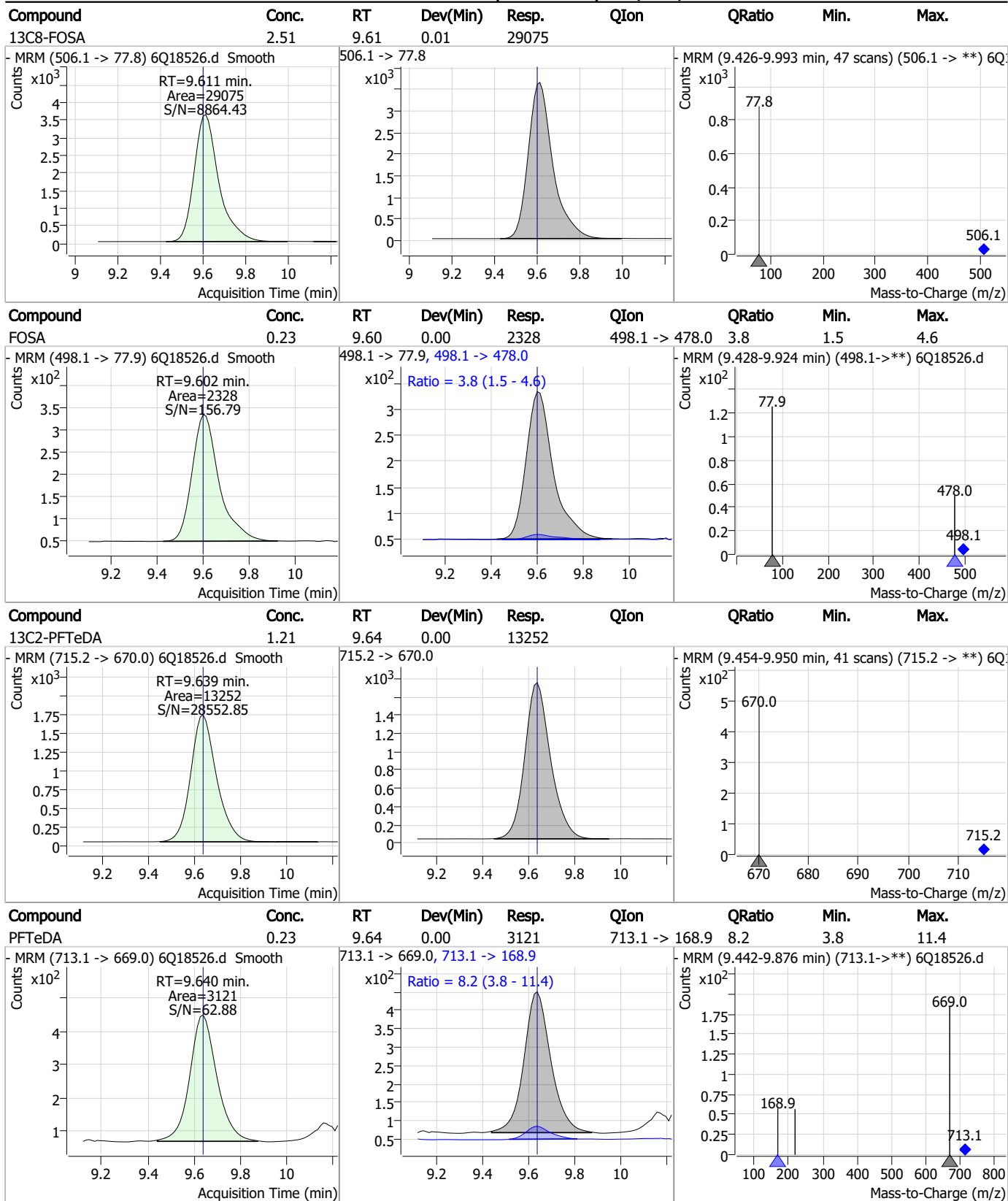
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	8.91	0.00	24835				
PFDS	0.23	9.06	0.00	757	599.0 -> 98.8	42.4	24.5	73.4
PFTrDA	0.23	9.30	0.00	3934	663.0 -> 168.9	13.4	4.7	14.0
11Cl-PF3OUds	0.45	9.34	-0.01	5854	632.9 -> 452.9	30.9	15.5	46.6

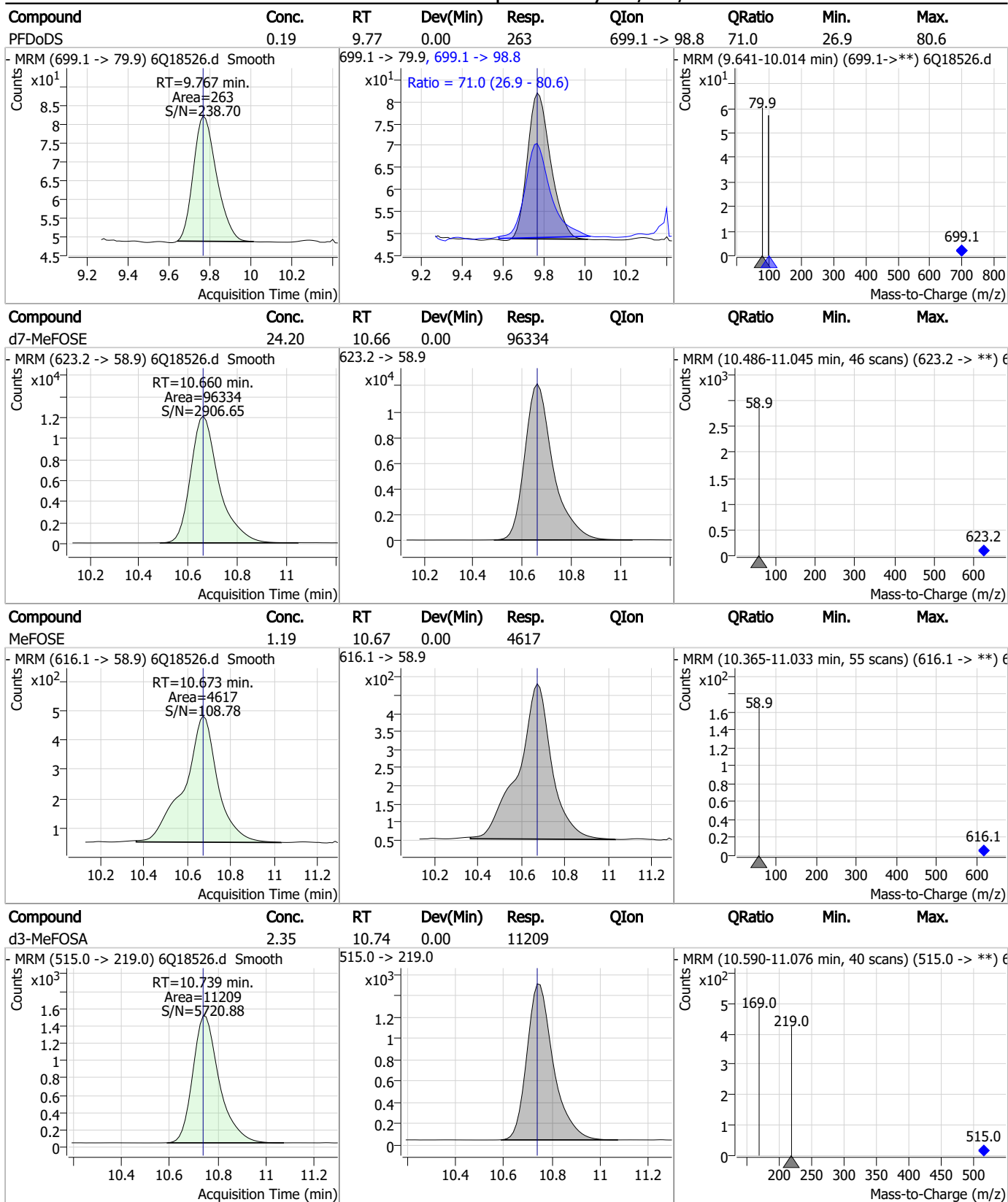
7.7.13
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Perfluorinated Compounds by LC/MS/MS



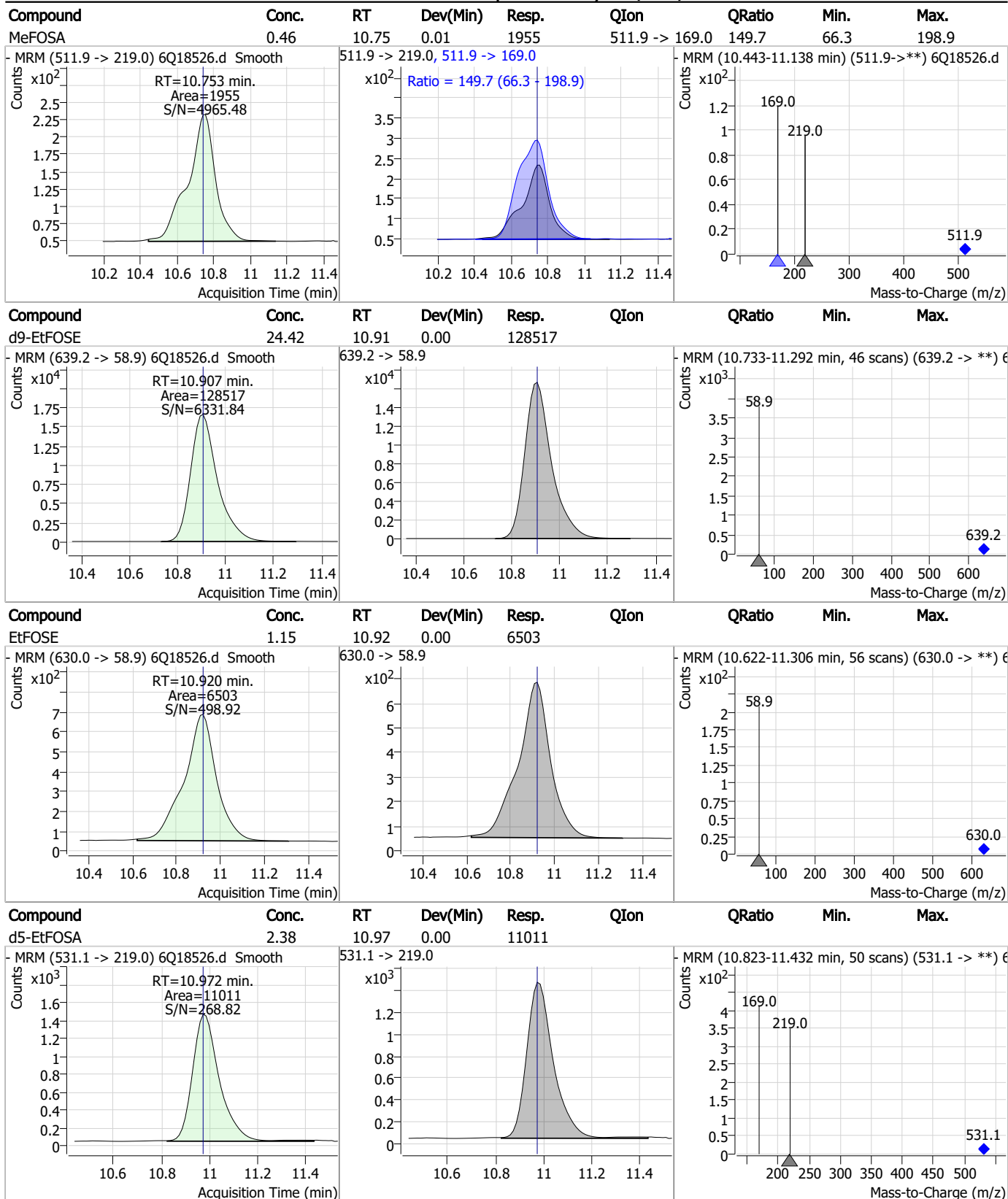
7.7.13 7

Perfluorinated Compounds by LC/MS/MS



7.7.13
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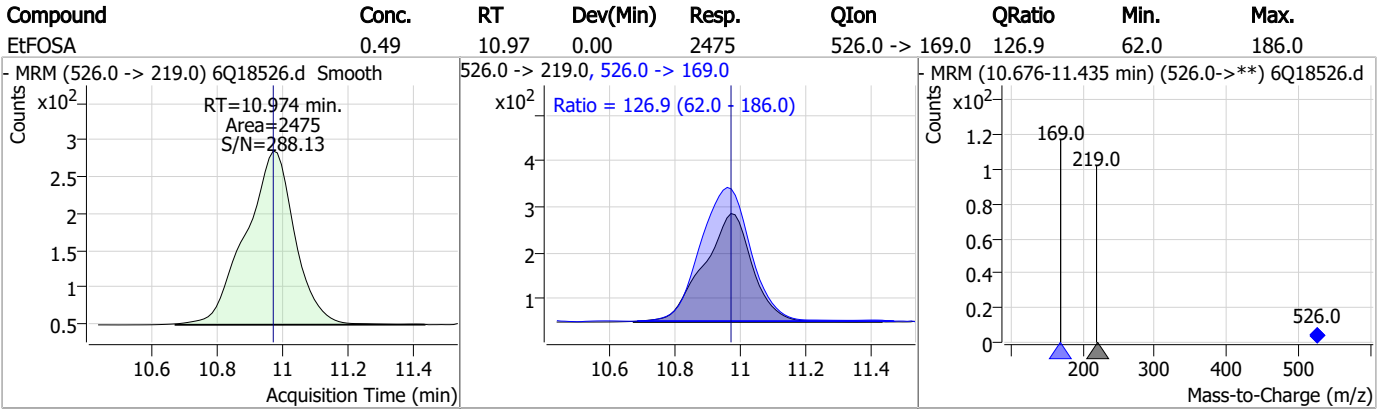
Perfluorinated Compounds by LC/MS/MS



7.7.13

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Perfluorinated Compounds by LC/MS/MS



7.7.13

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Manual Integration Approval Summary

Sample Number: S6Q278-CC278
Lab FileID: 6Q18526.D
Injection Time: 05/30/23 18:14

Method: EPA DRAFT 1633
Analyst approved: 05/31/23 10:47 Martha Valls
Supervisor approved: 05/31/23 21:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.7.13.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18535.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 8:25:17 PM
 Sample Name : cc278-4
 Vial : P1-A5
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	181004	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	60372	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	64426	2.50 µg/L	0.012
M4-PFHpA	6.369	367.1 -> 322.0	59158	2.50 µg/L	-0.012
M8-PFOA	7.026	421.1 -> 376.0	91130	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	38088	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	23624	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	29185	1.25 µg/L	0.000
M2-PFDoDA	8.900	615.1 -> 570.0	27924	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	15111	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	31320	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	25078	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	15047	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13877	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	3163	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4054	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4447	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	26698	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	42897	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	22712	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	105165	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	131834	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12447	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11959	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17402	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	76015	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	11167	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	94176	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	32898	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	48745	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	61261	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3163	5.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.0%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4054	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4447	6.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	27924	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15111	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C3-PFBS	5.334	302.1 -> 79.9	25078	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	15047	2.49 µg/L	0.000

7.7.14
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFBA	2.822	216.8 -> 171.9	181004	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	59158	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFHxA	5.417	318.0 -> 273.0	64426	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	60372	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C6-PFDA	8.027	519.1 -> 474.1	23624	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C7-PFUnDA	8.480	570.0 -> 525.1	29185	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C8-FOSA	9.598	506.1 -> 77.8	31320	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C8-PFOA	7.026	421.1 -> 376.0	91130	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-PFOS	8.177	507.1 -> 79.9	13877	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C9-PFNA	7.545	472.1 -> 427.0	38088	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
d3-MeFOSAA	8.084	573.2 -> 419.0	26698	5.99 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.8%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42897	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	11959	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	22712	5.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.0%	
d7-MeFOSE	10.660	623.2 -> 58.9	105165	25.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	131834	24.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	12447	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	39469	8.85 µg/L	99
		327.1 -> 80.9	15279		
6:2FTS	6.801	427.1 -> 407.0	39392	10.24 µg/L	97
		427.1 -> 80.9	12661		
8:2FTS	7.816	527.1 -> 507.0	23798	10.11 µg/L	93
		527.1 -> 80.8	9072		
EtFOSAA	8.280	584.2 -> 419.1	7770	2.50 µg/L	98
		584.2 -> 526.0	4322		
FOSA	9.602	498.1 -> 77.9	25772	2.41 µg/L	100
		498.1 -> 478.0	811		
MeFOSAA	8.085	570.1 -> 419.0	12825	2.18 µg/L	94
		570.1 -> 483.0	2825		
PFBA	2.831	212.8 -> 168.9	57022	9.56 µg/L	100
PFBS	5.335	298.7 -> 79.9	17302	2.00 µg/L	95
		298.7 -> 98.8	6760		
PFDA	8.027	512.9 -> 469.0	66957	2.47 µg/L	99
		512.9 -> 219.0	11030		
PFDODA	8.900	613.1 -> 569.0	46348	2.43 µg/L	95
		613.1 -> 319.0	7276		
PFDS	9.064	599.0 -> 79.9	7639	2.23 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3857		
PFHpA	6.382	363.1 -> 319.0	64330	2.44 µg/L	97
		363.1 -> 169.0	10461		
PFHpS	7.685	449.0 -> 79.9	15171	2.29 µg/L	99
		449.0 -> 98.9	7440		
PFHxA	5.420	313.0 -> 269.0	52009	2.36 µg/L	98
		313.0 -> 118.9	2709		
PFHxS	7.131	398.7 -> 79.9	15055	2.13 µg/L	98
		398.7 -> 98.9	6915		
PFNA	7.545	463.0 -> 419.0	65836	2.38 µg/L	100
		463.0 -> 219.0	12983		
PFNS	8.644	548.8 -> 79.9	12818	2.23 µg/L	95
		548.8 -> 98.9	6683		
PFOA	7.028	413.0 -> 369.0	95119	2.46 µg/L	98
		413.0 -> 169.0	17070		
PFOS	8.178	498.9 -> 79.9	14156	2.18 µg/L	95
		498.9 -> 98.8	7083		
PFPeA	4.212	263.0 -> 219.0	69655	4.72 µg/L	100
PFPeS	6.422	349.1 -> 79.9	15167	2.18 µg/L	99
		349.1 -> 98.9	7048		
PFTeDA	9.640	713.1 -> 669.0	33308	2.18 µg/L	95
		713.1 -> 168.9	3058		
PFTrDA	9.296	663.0 -> 619.0	44674	2.37 µg/L	94
		663.0 -> 168.9	5182		
PFUnDA	8.480	563.1 -> 519.0	47288	2.52 µg/L	95
		563.1 -> 269.1	8158		
11CI-PF3OUdS	9.336	630.9 -> 450.9	65309	4.52 µg/L	100
		632.9 -> 452.9	20190		
9CI-PF3ONS	8.508	530.8 -> 351.0	110860	4.72 µg/L	94
		532.8 -> 353.0	32606		
ADONA	6.632	376.9 -> 250.9	241787	4.43 µg/L	98
		376.9 -> 84.8	67383		
HFPO-DA	5.783	284.9 -> 168.9	16597	4.61 µg/L	97
		284.9 -> 184.9	2076		
3:3FTCA	3.671	241.0 -> 177.0	10862	11.61 µg/L	100
		241.0 -> 117.0	1564		
5:3FTCA	6.086	341.0 -> 237.1	230116	60.24 µg/L	99
		341.0 -> 217.0	165697		
7:3FTCA	7.523	441.0 -> 316.9	148514	60.84 µg/L	95
		441.0 -> 336.9	315551		
EtFOSA	10.974	526.0 -> 219.0	26915	4.68 µg/L	94
		526.0 -> 169.0	35279		
EtFOSE	10.920	630.0 -> 58.9	70638	12.17 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	22940	5.08 µg/L	97
		511.9 -> 169.0	31283		
MeFOSE	10.673	616.1 -> 58.9	49484	11.64 µg/L	100
PFDoDS	9.767	699.1 -> 79.9	3501	2.37 µg/L	96
		699.1 -> 98.8	1974		
NFDHA	5.299	295.0 -> 201.0	12924	4.89 µg/L	100
		295.0 -> 84.9	3479		
PFMBA	4.626	279.0 -> 85.1	47768	4.72 µg/L	100
PFMPA	3.363	229.0 -> 84.9	37627	4.77 µg/L	100
PFEESA	5.875	314.8 -> 134.9	123312	4.24 µg/L	98
		314.8 -> 82.9	4160		

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

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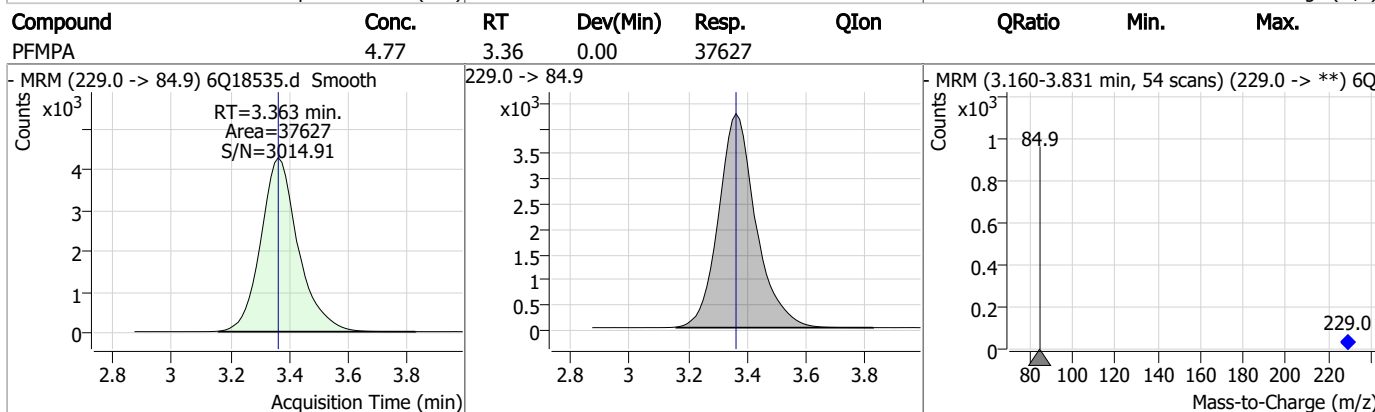
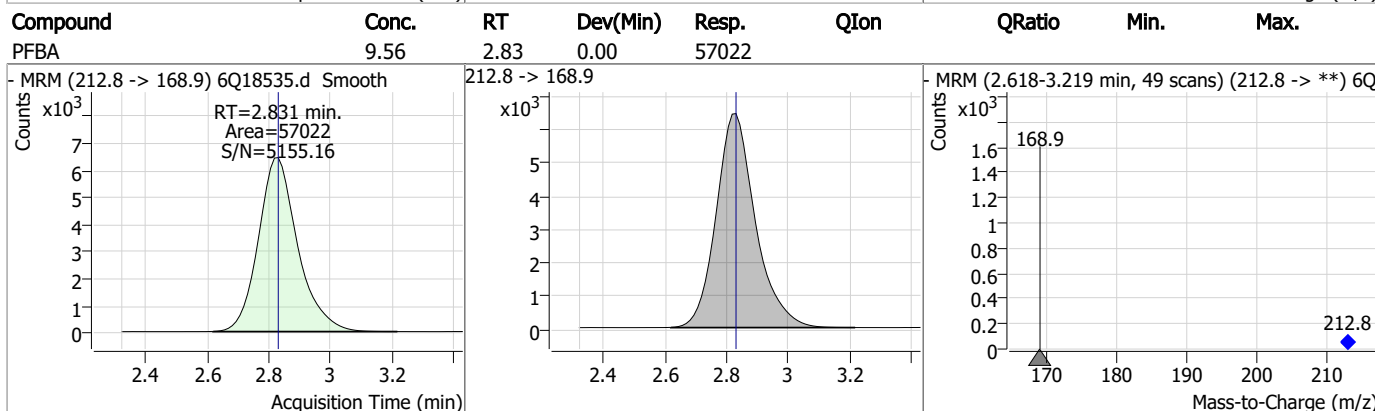
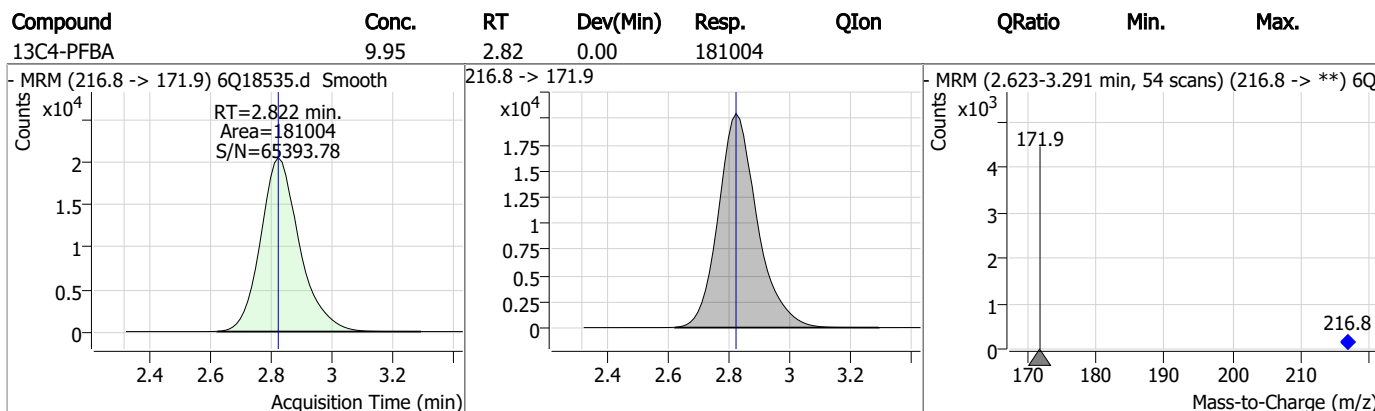
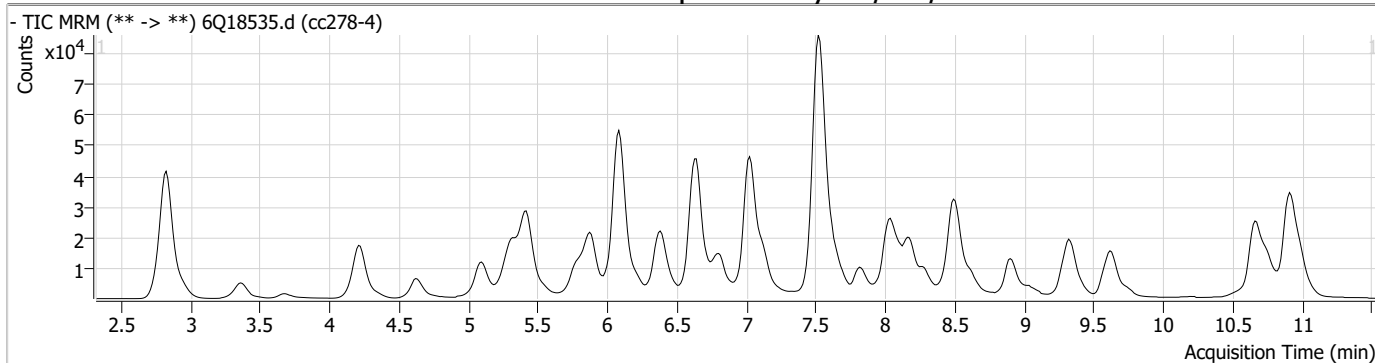
Perfluorinated Compounds by LC/MS/MS

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

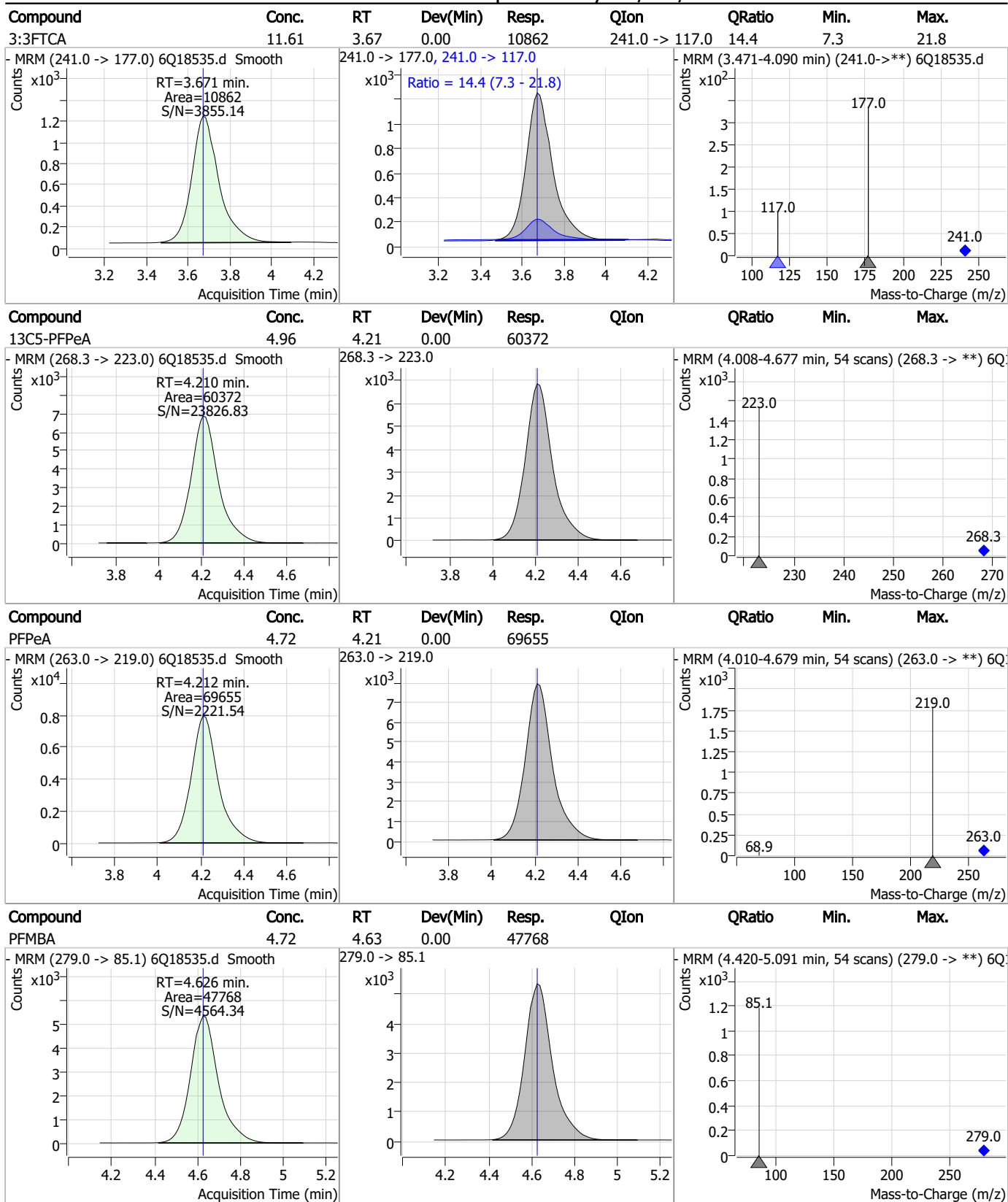
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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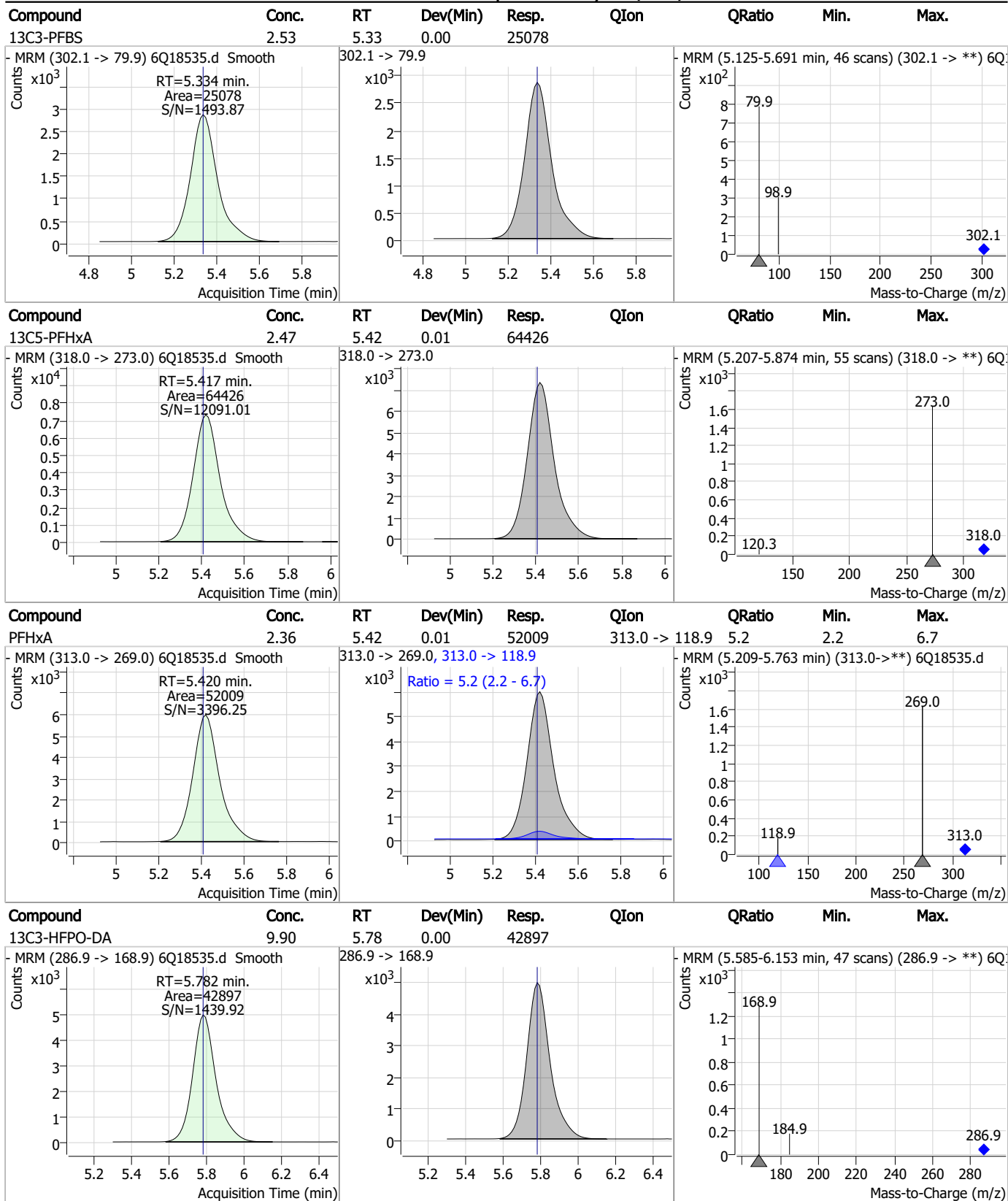
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.65	5.09	0.00	3163				
4:2FTS	8.85	5.09	0.00	39469	327.1 -> 80.9	38.7	19.8	59.4
NFDHA	4.89	5.30	0.01	12924	295.0 -> 84.9	26.9	13.5	40.6
PFBS	2.00	5.34	0.01	17302	298.7 -> 98.8	39.1	18.1	54.3

7.7.14

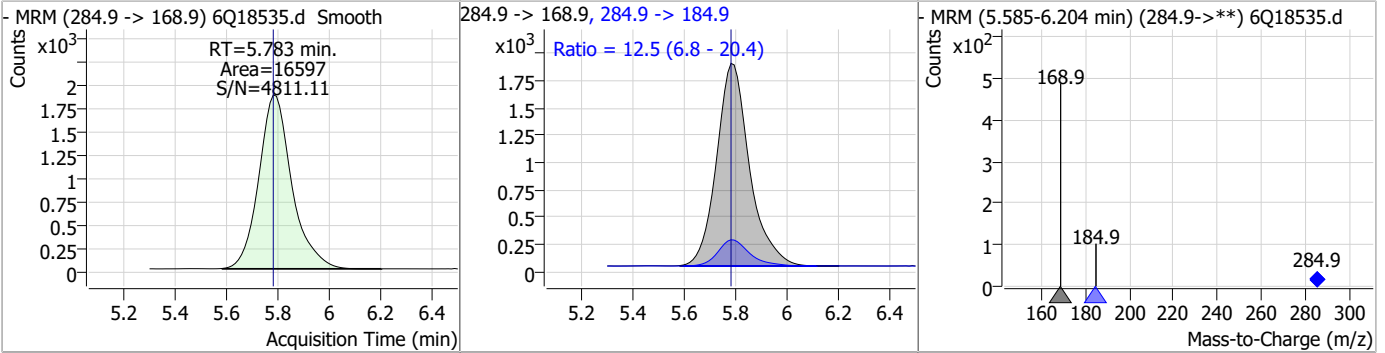
Perfluorinated Compounds by LC/MS/MS



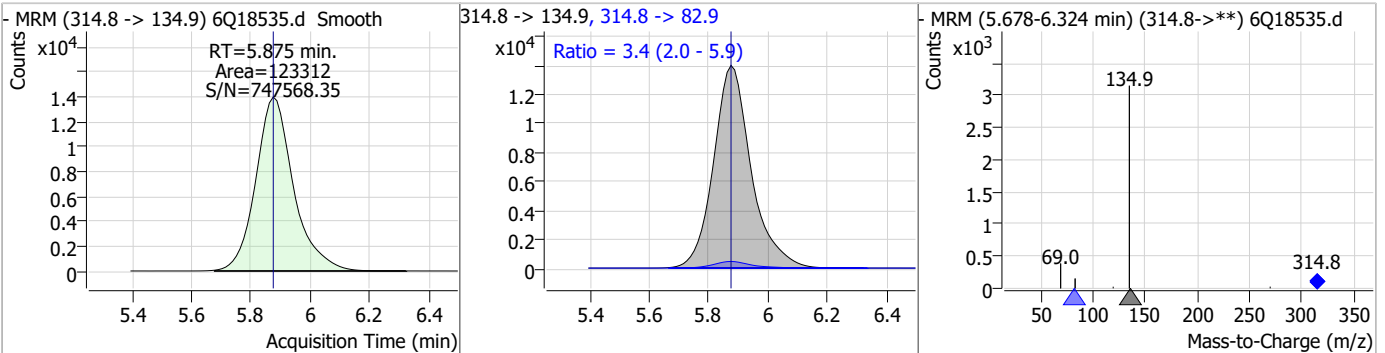
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Perfluorinated Compounds by LC/MS/MS

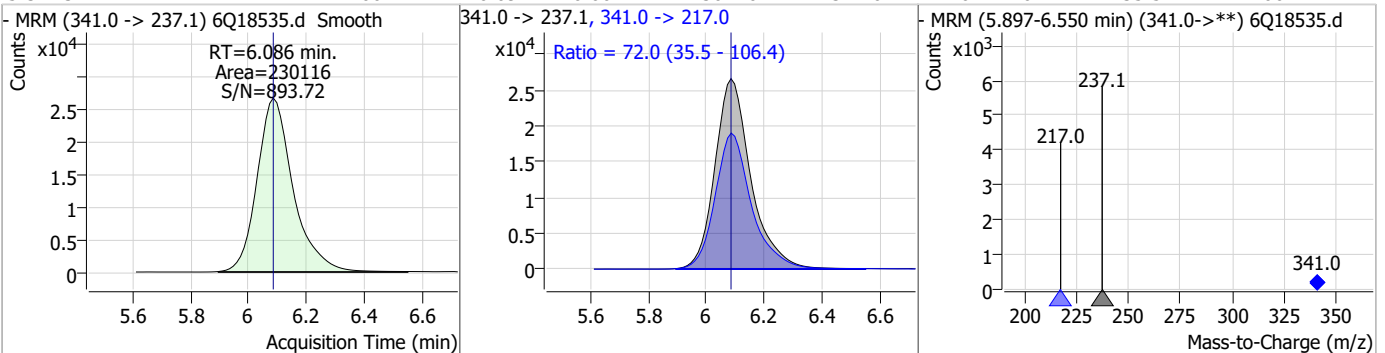
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.61	5.78	0.00	16597	284.9 -> 184.9	12.5	6.8	20.4



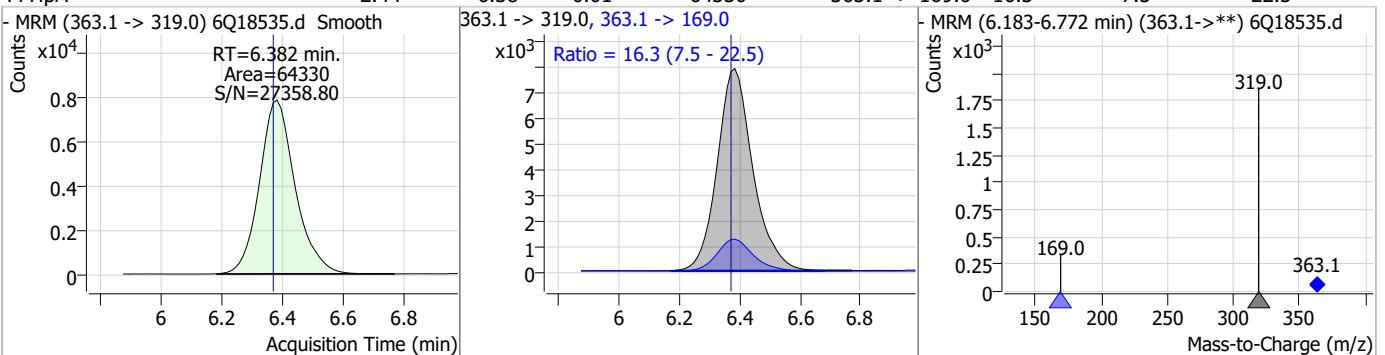
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.24	5.88	0.00	123312	314.8 -> 82.9	3.4	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	60.24	6.09	0.00	230116	341.0 -> 217.0	72.0	35.5	106.4

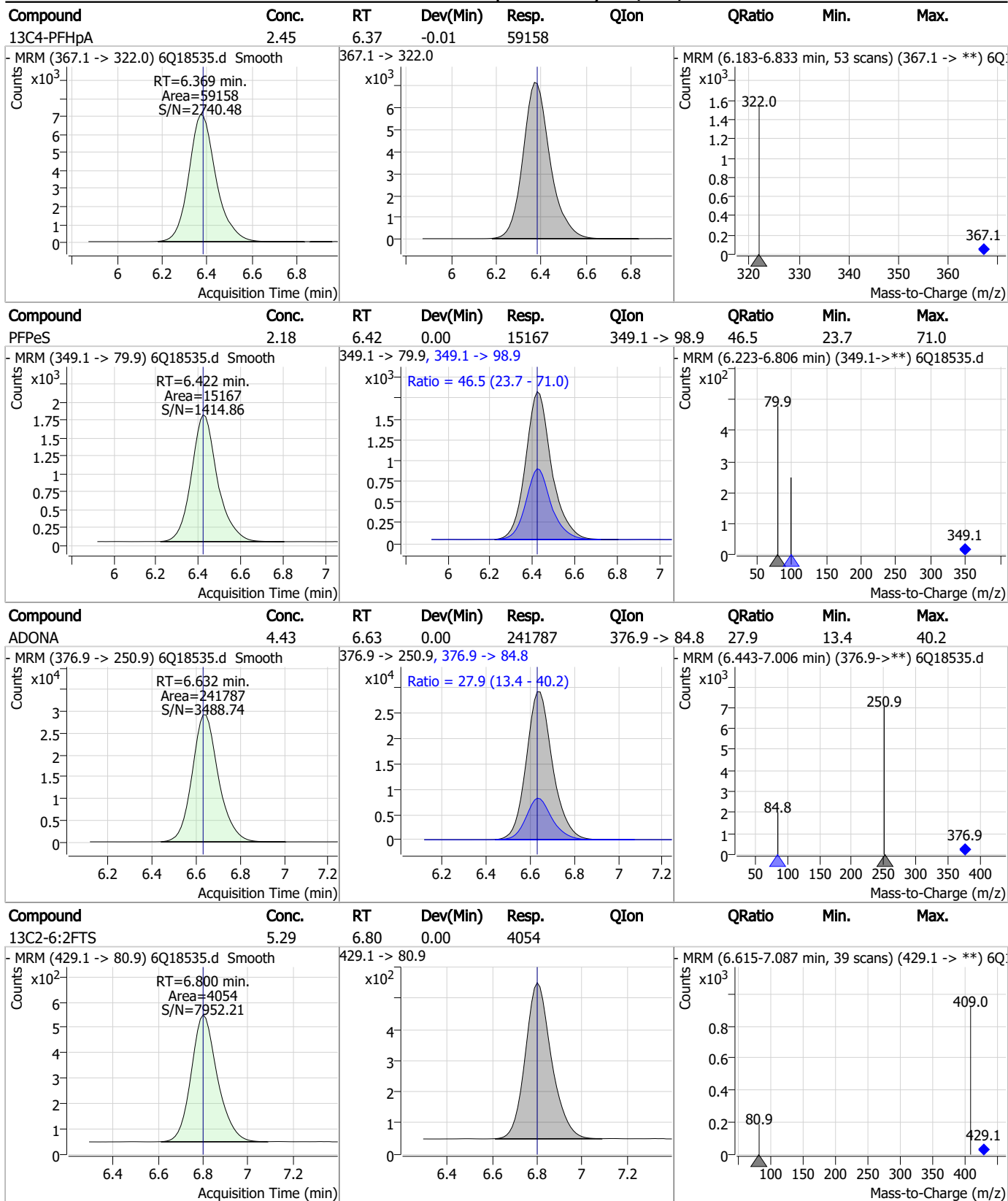


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.44	6.38	0.01	64330	363.1 -> 169.0	16.3	7.5	22.5



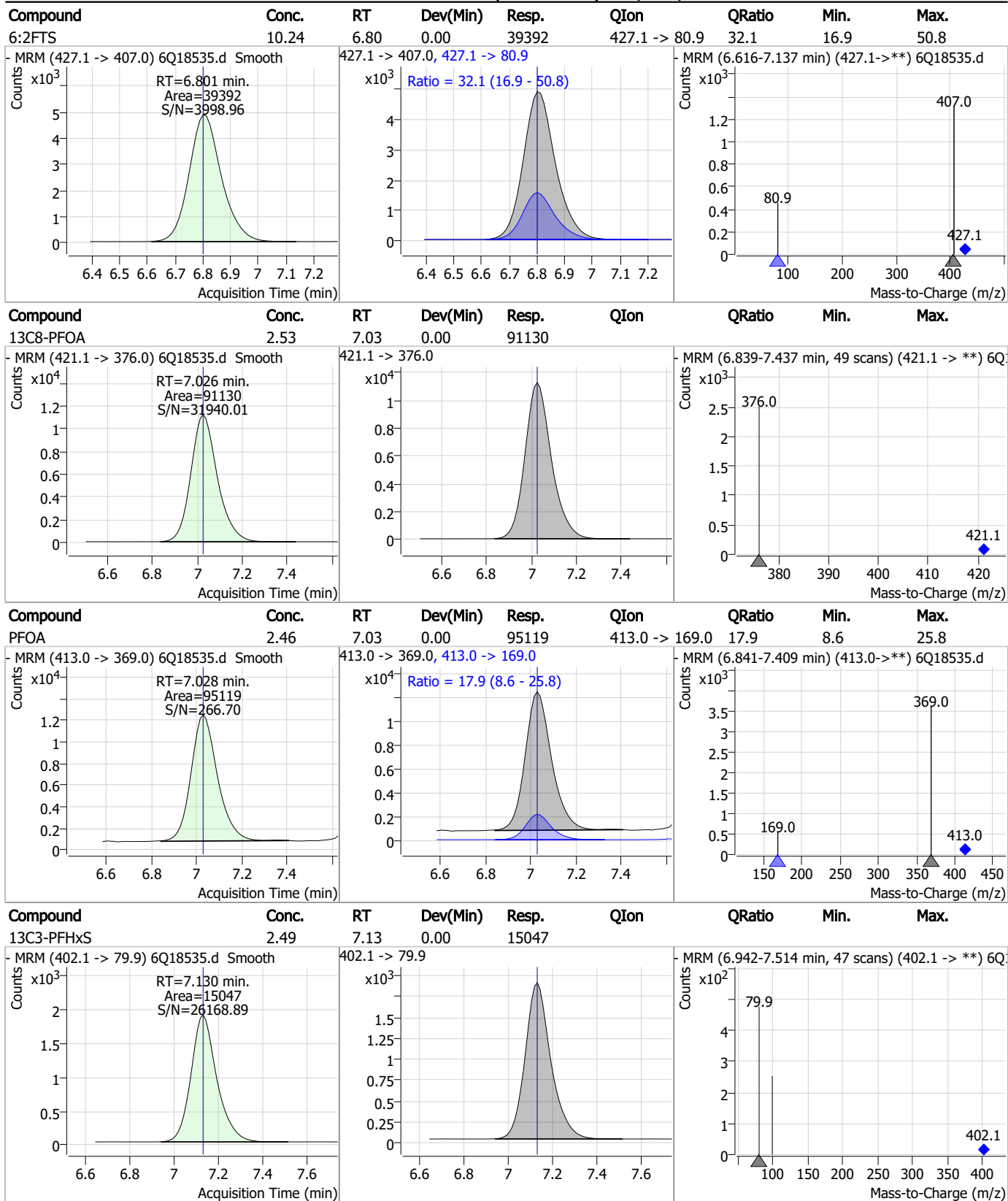
7.7.14 7

Perfluorinated Compounds by LC/MS/MS



7.7.14

Perfluorinated Compounds by LC/MS/MS

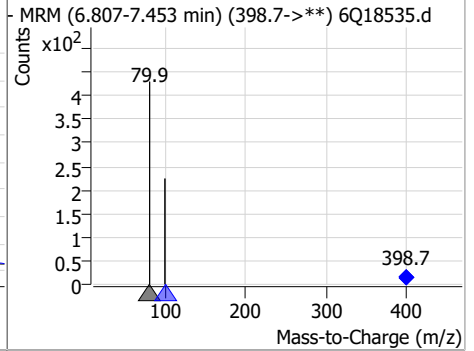
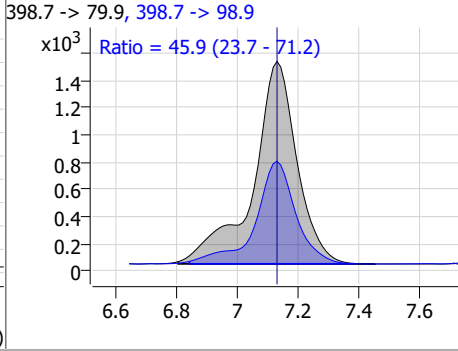
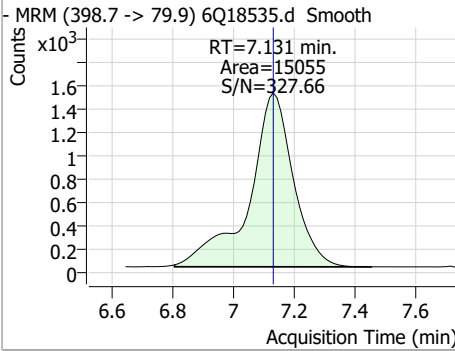


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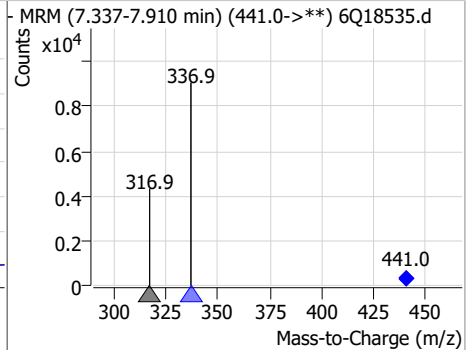
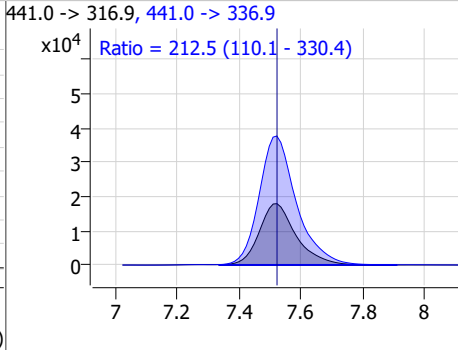
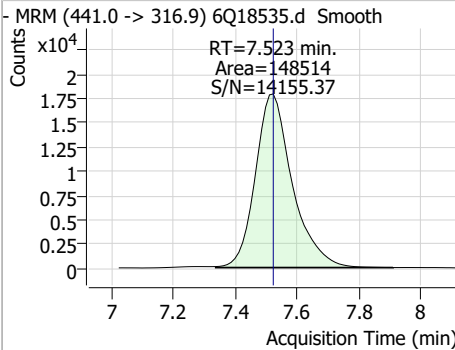


Perfluorinated Compounds by LC/MS/MS

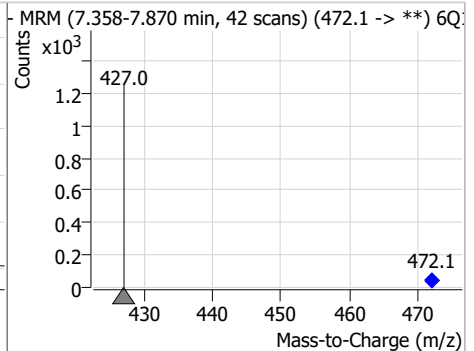
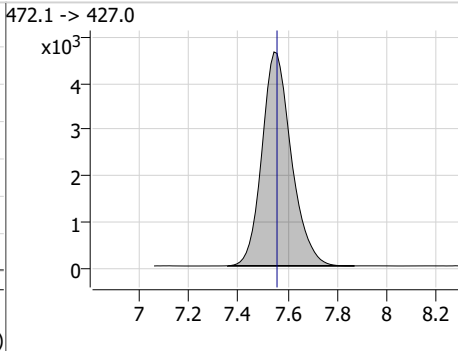
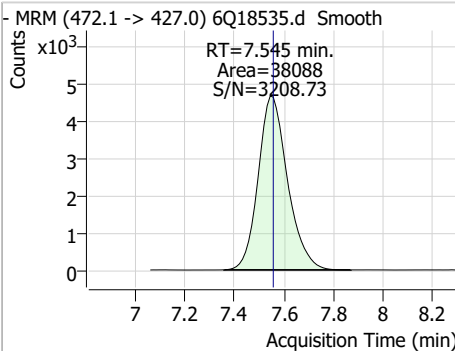
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.13	7.13	0.00	15055	398.7 -> 98.9	45.9	23.7	71.2



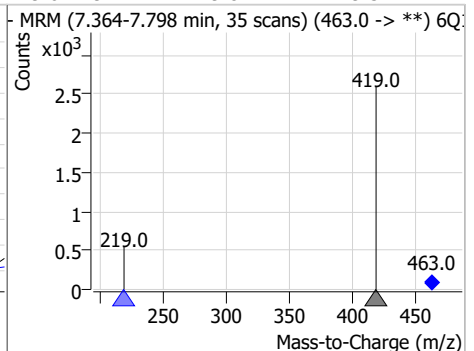
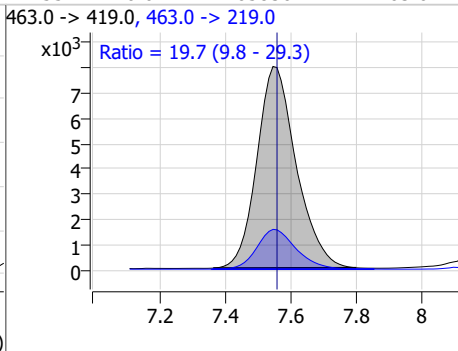
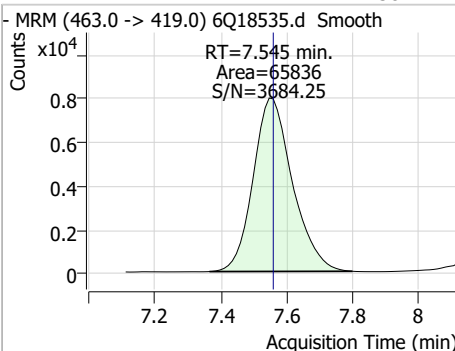
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	60.84	7.52	0.00	148514	441.0 -> 336.9	212.5	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	7.54	-0.01	38088	472.1 -> 427.0	-	-	-



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.38	7.55	-0.01	65836	463.0 -> 219.0	19.7	9.8	29.3



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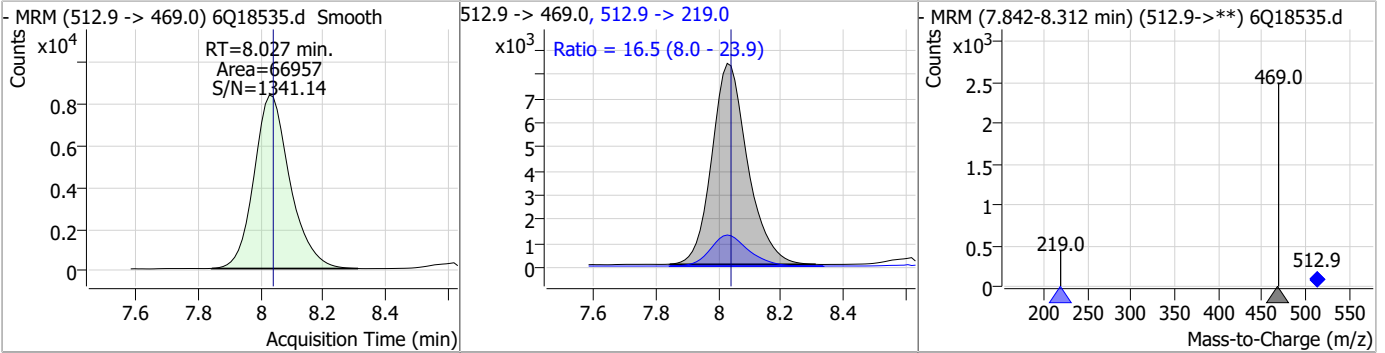
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.29	7.68	0.00	15171	449.0 -> 98.9	49.0	24.7	74.2
13C2-8:2FTS	6.03	7.83	0.00	4447	529.1 -> 80.9	38.1	21.4	64.1
8:2FTS	10.11	7.82	-0.01	23798	527.1 -> 80.8	38.1	21.4	64.1
13C6-PFDA	1.19	8.03	0.00	23624	519.1 -> 474.1	38.1	21.4	64.1

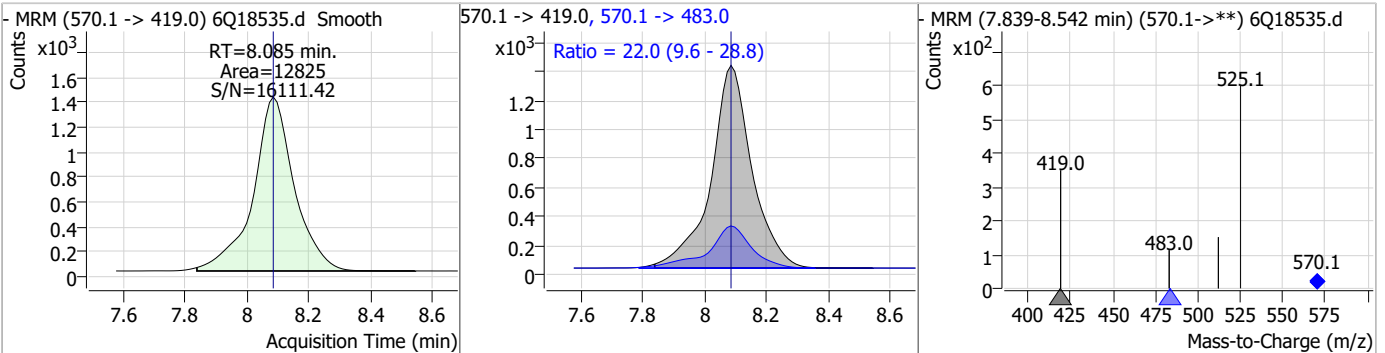
7.7.14

Perfluorinated Compounds by LC/MS/MS

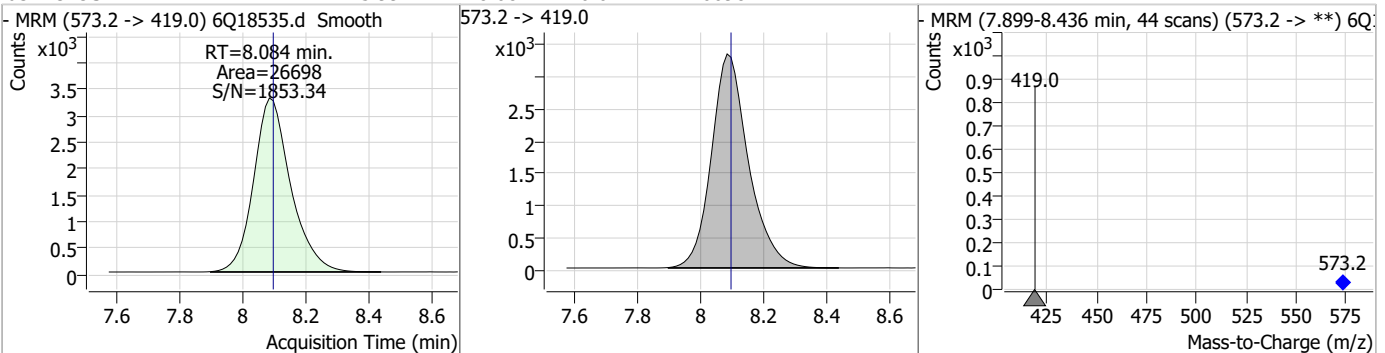
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.47	8.03	-0.01	66957	512.9 -> 219.0	16.5	8.0	23.9



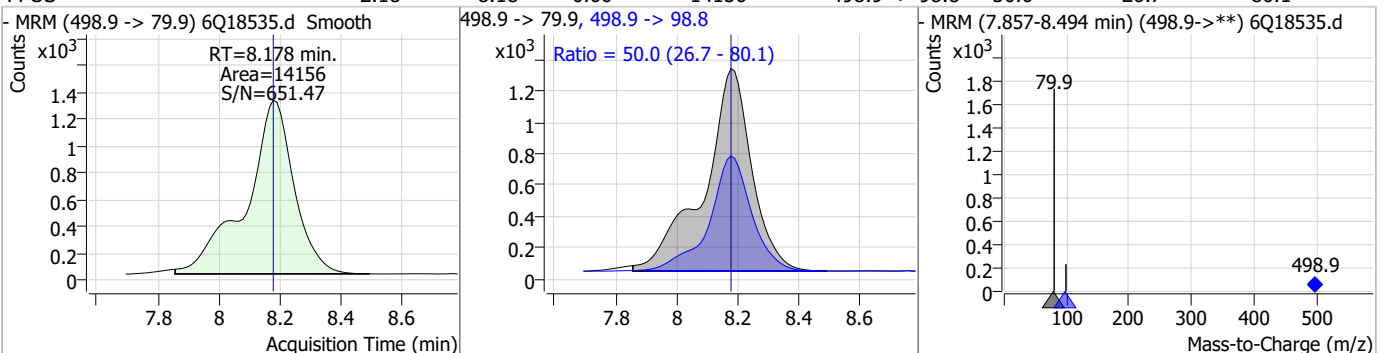
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.18	8.08	0.00	12825	570.1 -> 483.0	22.0	9.6	28.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.99	8.08	-0.01	26698	573.2 -> 419.0	50.0	26.7	80.1

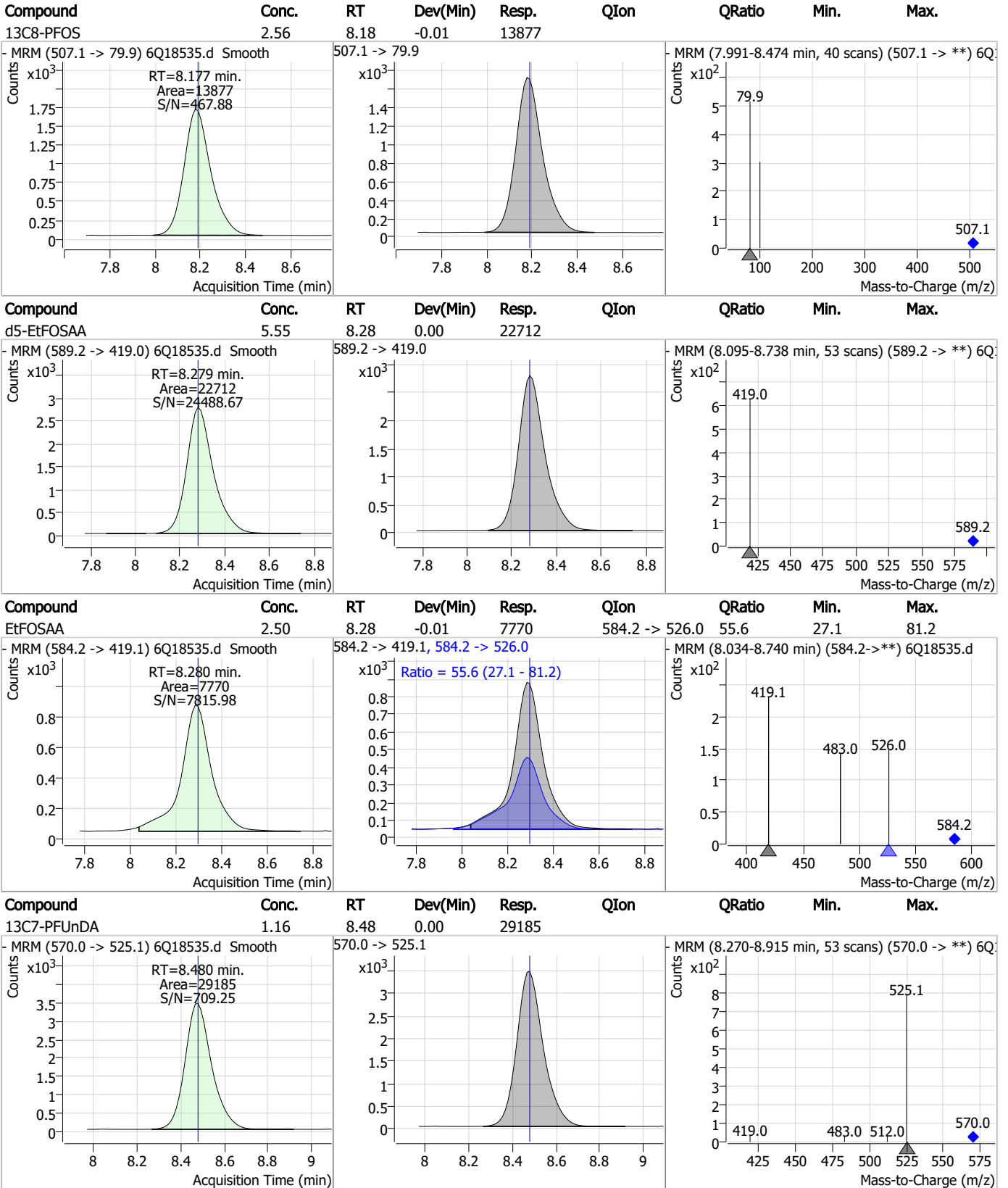


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.18	8.18	0.00	14156	498.9 -> 98.8	50.0	26.7	80.1



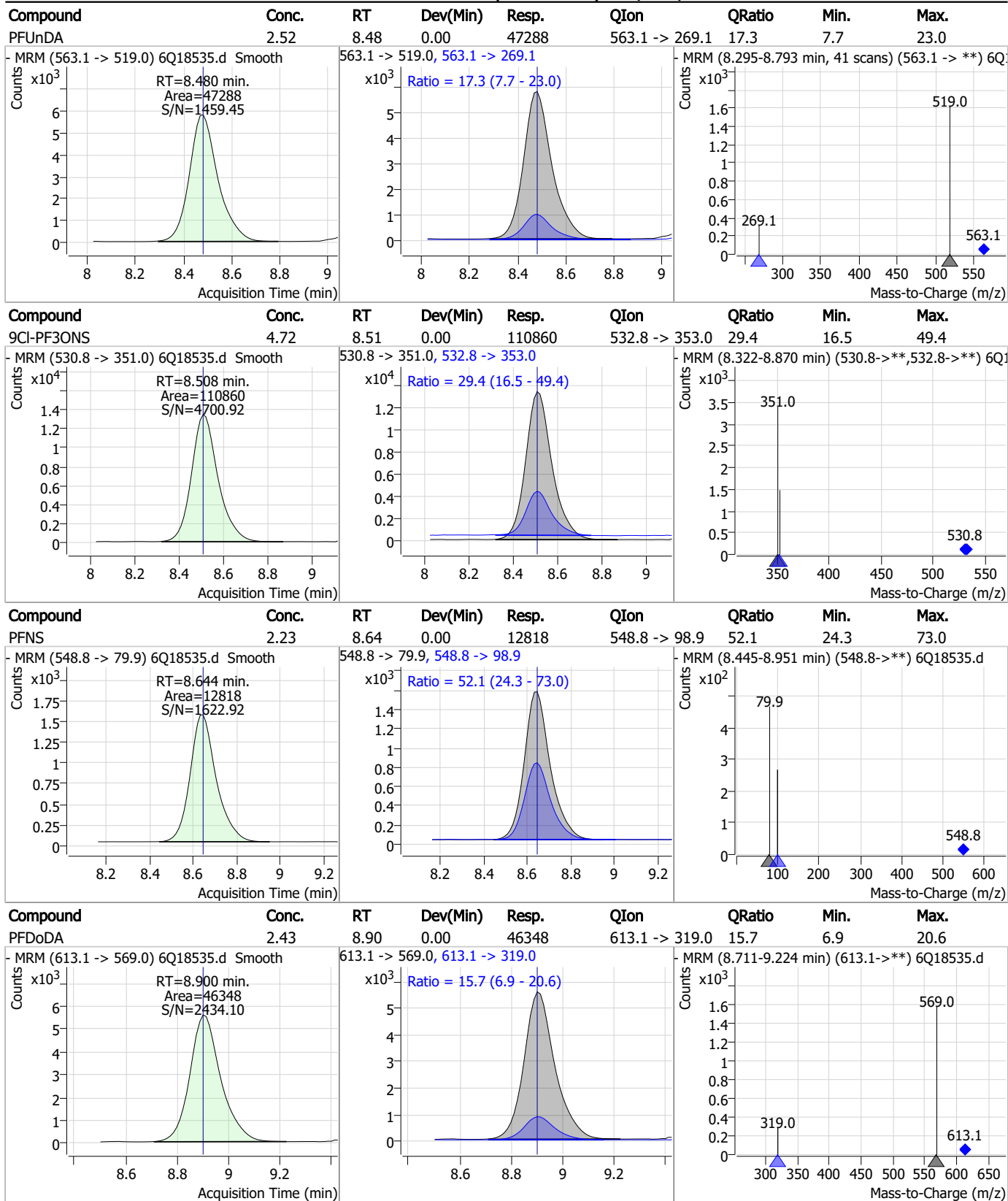
7.7.14
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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7

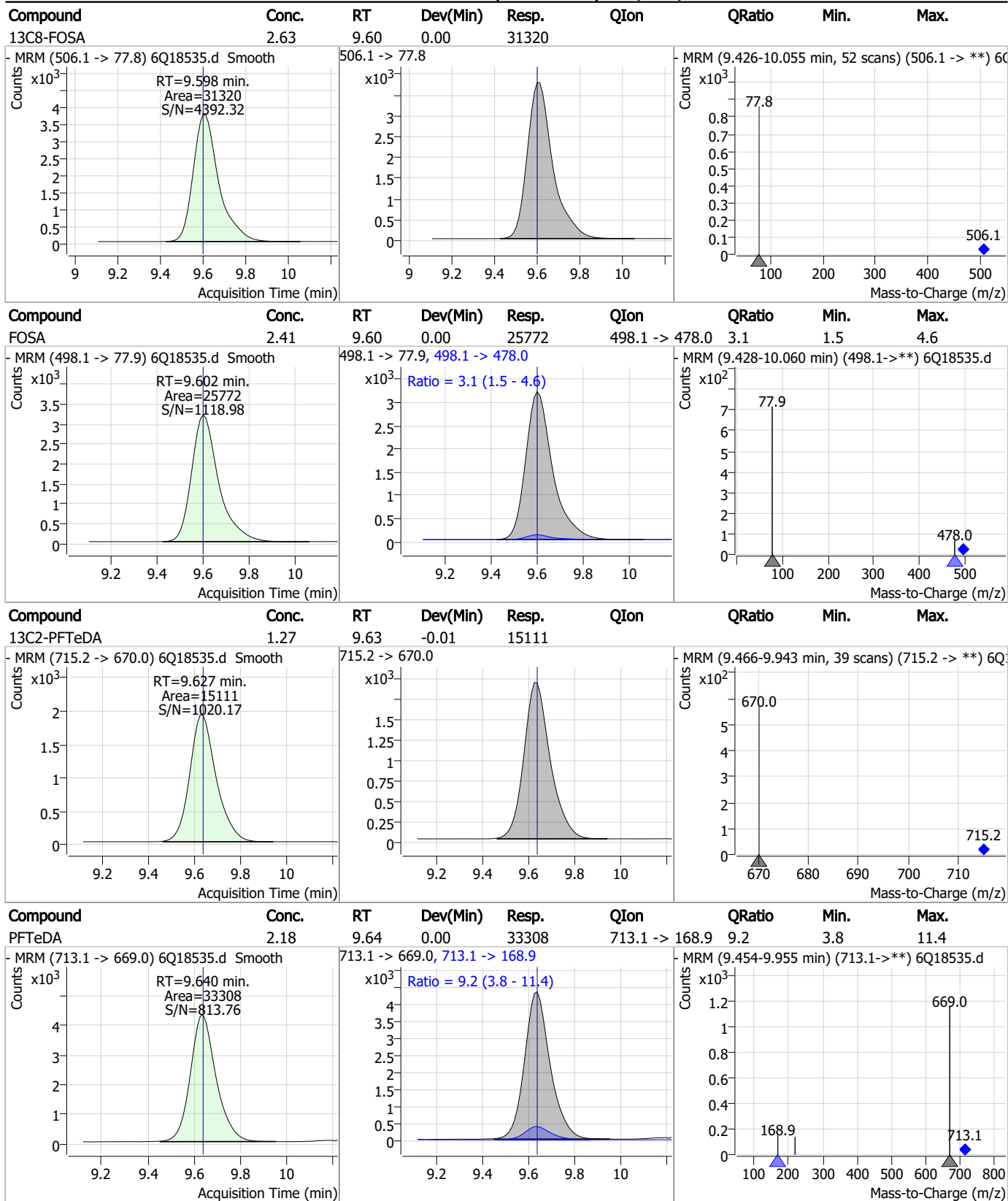
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	8.90	-0.01	27924				
PFDS	2.23	9.06	0.00	7639	599.0 -> 98.8	50.5	24.5	73.4
PFTrDA	2.37	9.30	0.00	44674	663.0 -> 168.9	11.6	4.7	14.0
11Cl-PF3OUds	4.52	9.34	-0.01	65309	632.9 -> 452.9	30.9	15.5	46.6

7.7.14

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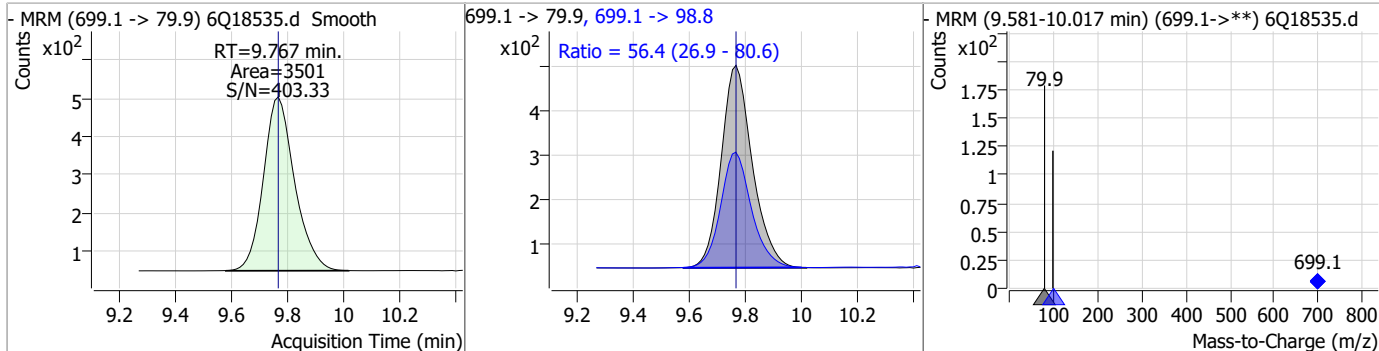
Perfluorinated Compounds by LC/MS/MS



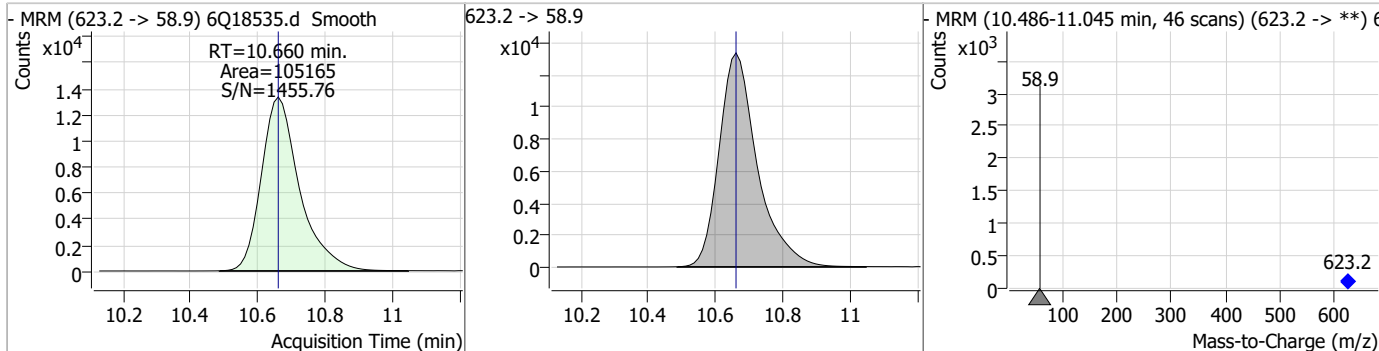
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Perfluorinated Compounds by LC/MS/MS

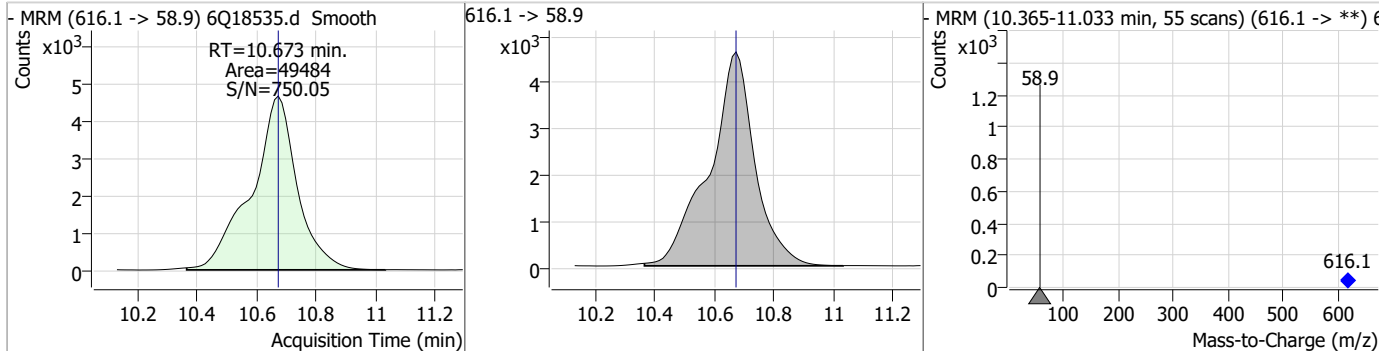
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.37	9.77	0.00	3501	699.1 -> 98.8	56.4	26.9	80.6



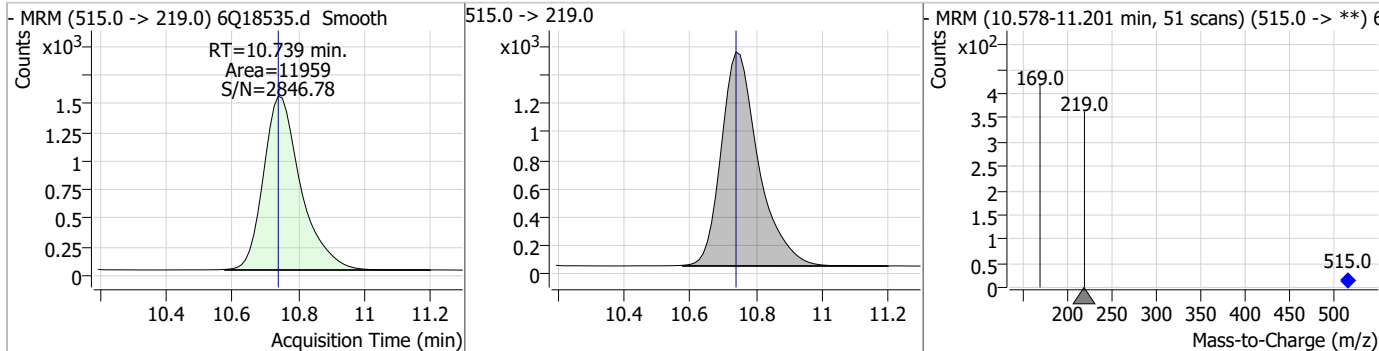
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.71	10.66	0.00	105165				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.64	10.67	0.00	49484				



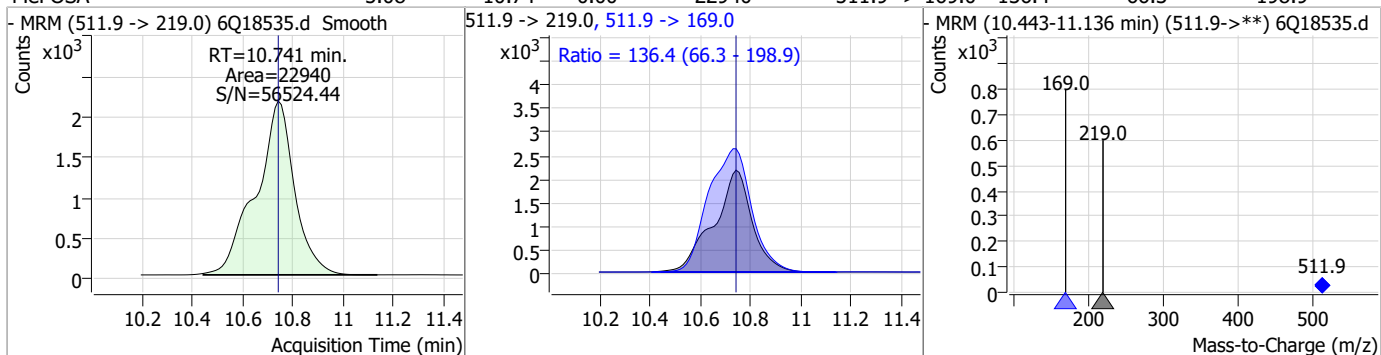
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.44	10.74	0.00	11959				



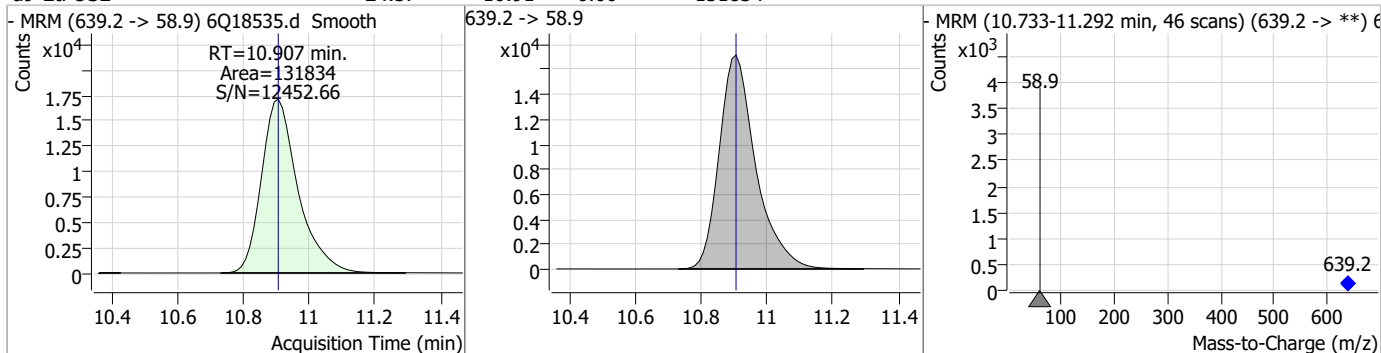
7.7.14
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Perfluorinated Compounds by LC/MS/MS

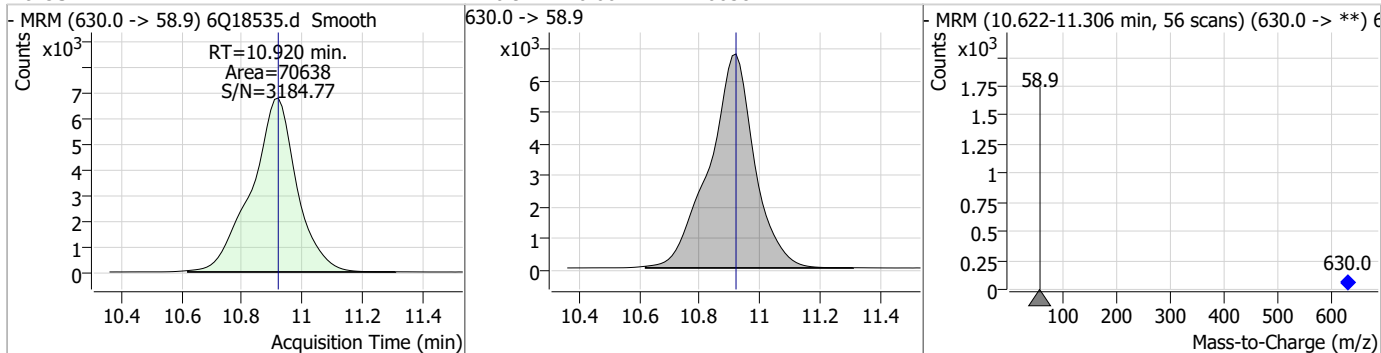
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.08	10.74	0.00	22940	511.9 -> 169.0	136.4	66.3	198.9



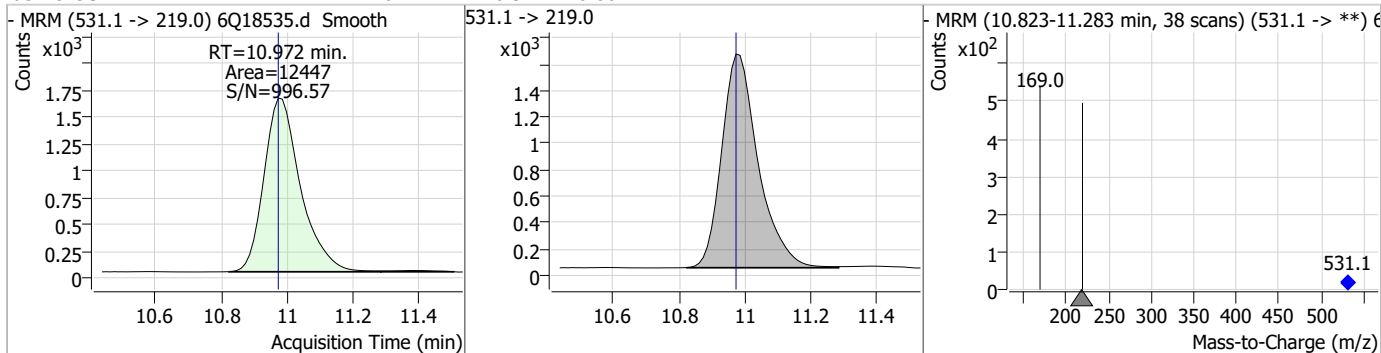
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.37	10.91	0.00	131834				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.17	10.92	0.00	70638				

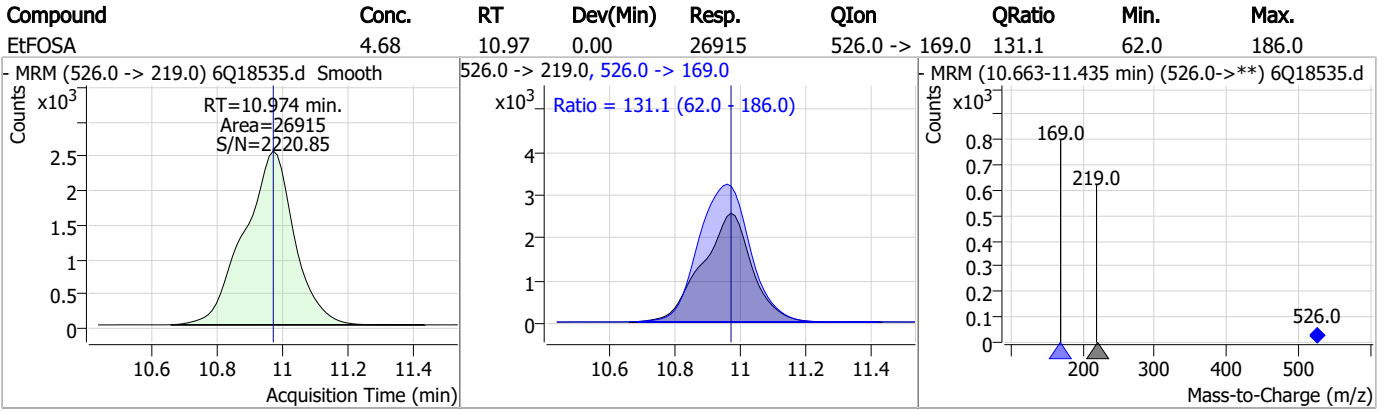


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.62	10.97	0.00	12447				



7.7.14

Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18546.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/30/2023 11:04:39 PM
 Sample Name : ecc278-4
 Vial : P1-A5
 DA Method File : 1633_053023_S6Q278.quantmethod.xml
 Batch Name : s6q278.batch.bin
 Sample Information : OP96663,S6Q278,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	183685	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	61346	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	64719	2.50 µg/L	0.012
M4-PFHpA	6.382	367.1 -> 322.0	59931	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	91958	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	40352	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	25805	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	30678	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	27626	1.25 µg/L	0.000
M2-PFTeDA	9.639	715.2 -> 670.0	15205	1.25 µg/L	0.000
M8-FOSA	9.598	506.1 -> 77.8	31172	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	24755	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	15316	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13499	2.50 µg/L	-0.012
M2-4:2FTS	5.094	329.1 -> 80.9	3366	5.00 µg/L	0.000
M2-6:2FTS	6.801	429.1 -> 80.9	4549	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4190	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	27222	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	41369	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	24456	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	101566	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	135369	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12460	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12534	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17808	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	76521	5.00 µg/L	0.000
18O2-PFHxS	7.141	403.0 -> 83.9	10699	2.50 µg/L	0.012
13C4-PFOA	7.027	417.1 -> 372.0	97577	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	31773	1.25 µg/L	-0.012
13C5-PFNA	7.557	468.0 -> 423.0	47044	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	61761	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.094	329.1 -> 80.9	3366	6.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.5%		
13C2-6:2FTS	6.801	429.1 -> 80.9	4549	6.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.8%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4190	5.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.6%		
13C2-PFDoDA	8.912	615.1 -> 570.0	27626	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C2-PFTeDA	9.639	715.2 -> 670.0	15205	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C3-PFBS	5.334	302.1 -> 79.9	24755	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	15316	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 = 106.0%	
13C4-PFBA	2.822	216.8 -> 171.9	183685	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.382	367.1 -> 322.0	59931	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C5-PFHxA	5.417	318.0 -> 273.0	64719	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	61346	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C6-PFDA	8.027	519.1 -> 474.1	25805	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C7-PFUnDA	8.480	570.0 -> 525.1	30678	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C8-FOSA	9.598	506.1 -> 77.8	31172	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C8-PFOA	7.026	421.1 -> 376.0	91958	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C8-PFOS	8.177	507.1 -> 79.9	13499	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C9-PFNA	7.557	472.1 -> 427.0	40352	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27222	5.97 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41369	9.47 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	12534	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSAA	8.279	589.2 -> 419.0	24456	5.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	101566	24.26 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	135369	24.45 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	12460	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	42435	8.94 µg/L	98
		327.1 -> 80.9	16214		
6:2FTS	6.801	427.1 -> 407.0	41858	9.70 µg/L	100
		427.1 -> 80.9	14121		
8:2FTS	7.828	527.1 -> 507.0	22851	10.30 µg/L	98
		527.1 -> 80.8	9511		
EtFOSAA	8.293	584.2 -> 419.1	7362	2.20 µg/L	99
		584.2 -> 526.0	3940		
FOSA	9.602	498.1 -> 77.9	24300	2.29 µg/L	99
		498.1 -> 478.0	792		
MeFOSAA	8.085	570.1 -> 419.0	12911	2.16 µg/L	100
		570.1 -> 483.0	2478		
PFBA	2.818	212.8 -> 168.9	57989	9.58 µg/L	100
PFBS	5.335	298.7 -> 79.9	18164	2.12 µg/L	98
		298.7 -> 98.8	6825		
PFDA	8.027	512.9 -> 469.0	67645	2.29 µg/L	99
		512.9 -> 219.0	11126		
PFDoDA	8.900	613.1 -> 569.0	45418	2.41 µg/L	96
		613.1 -> 319.0	7008		
PFDS	9.064	599.0 -> 79.9	7989	2.39 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3839			
PFHpA	6.382	363.1 -> 319.0	66589	2.50	µg/L	97
		363.1 -> 169.0	10754			
PFHpS	7.685	449.0 -> 79.9	14004	2.17	µg/L	94
		449.0 -> 98.9	7460			
PFHxA	5.407	313.0 -> 269.0	49840	2.25	µg/L	97
		313.0 -> 118.9	2711			
PFHxS	7.131	398.7 -> 79.9	14801	2.06	µg/L	m 96
		398.7 -> 98.9	7459			
PFNA	7.558	463.0 -> 419.0	65341	2.23	µg/L	97
		463.0 -> 219.0	13715			
PFNS	8.644	548.8 -> 79.9	13037	2.33	µg/L	97
		548.8 -> 98.9	6631			
PFOA	7.028	413.0 -> 369.0	90607	2.32	µg/L	97
		413.0 -> 169.0	16794			
PFOS	8.178	498.9 -> 79.9	14603	2.31	µg/L	94
		498.9 -> 98.8	7163			
PFPeA	4.212	263.0 -> 219.0	70136	4.68	µg/L	100
PFPeS	6.422	349.1 -> 79.9	15317	2.16	µg/L	99
		349.1 -> 98.9	7119			
PFTeDA	9.640	713.1 -> 669.0	35126	2.29	µg/L	97
		713.1 -> 168.9	3024			
PFTrDA	9.296	663.0 -> 619.0	44566	2.39	µg/L	93
		663.0 -> 168.9	5277			
PFUnDA	8.480	563.1 -> 519.0	47133	2.39	µg/L	96
		563.1 -> 269.1	8043			
11CI-PF3OUdS	9.348	630.9 -> 450.9	64515	4.63	µg/L	98
		632.9 -> 452.9	20814			
9CI-PF3ONS	8.508	530.8 -> 351.0	112028	4.94	µg/L	98
		532.8 -> 353.0	35433			
ADONA	6.632	376.9 -> 250.9	242331	4.60	µg/L	98
		376.9 -> 84.8	67156			
HFPO-DA	5.783	284.9 -> 168.9	16858	4.86	µg/L	96
		284.9 -> 184.9	2048			
3:3FTCA	3.671	241.0 -> 177.0	11037	11.61	µg/L	99
		241.0 -> 117.0	1553			
5:3FTCA	6.086	341.0 -> 237.1	232128	60.49	µg/L	98
		341.0 -> 217.0	168160			
7:3FTCA	7.523	441.0 -> 316.9	152967	62.38	µg/L	96
		441.0 -> 336.9	328176			
EtFOSA	10.974	526.0 -> 219.0	27276	4.74	µg/L	99
		526.0 -> 169.0	34233			
EtFOSE	10.920	630.0 -> 58.9	70315	11.80	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	23142	4.89	µg/L	96
		511.9 -> 169.0	31694			
MeFOSE	10.673	616.1 -> 58.9	49588	12.08	µg/L	100
PFDoDS	9.767	699.1 -> 79.9	3423	2.38	µg/L	95
		699.1 -> 98.8	1972			
NFDHA	5.299	295.0 -> 201.0	12779	4.82	µg/L	98
		295.0 -> 84.9	3594			
PFMBA	4.626	279.0 -> 85.1	48354	4.71	µg/L	100
PFMPA	3.363	229.0 -> 84.9	38072	4.75	µg/L	100
PFEESA	5.875	314.8 -> 134.9	121828	4.17	µg/L	99
		314.8 -> 82.9	4280			

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

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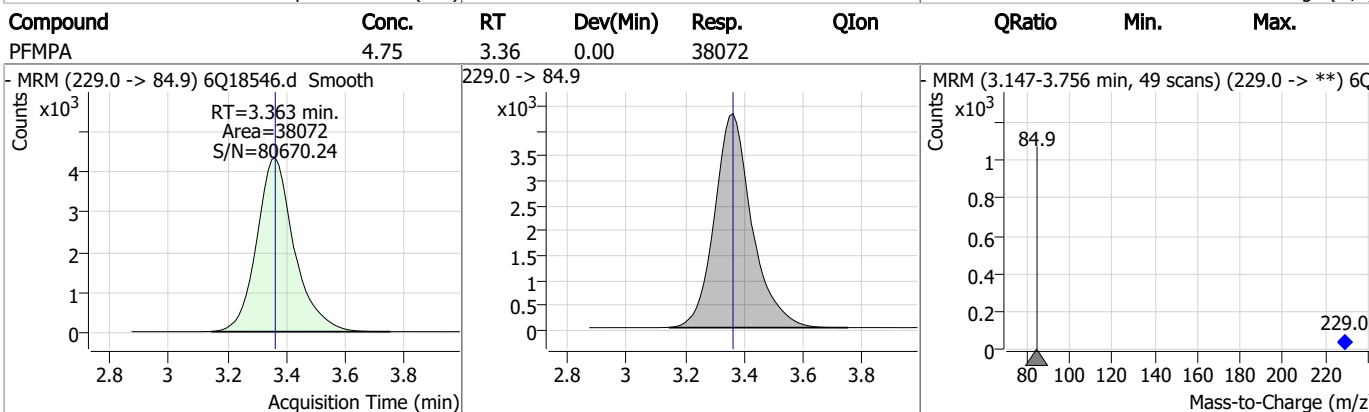
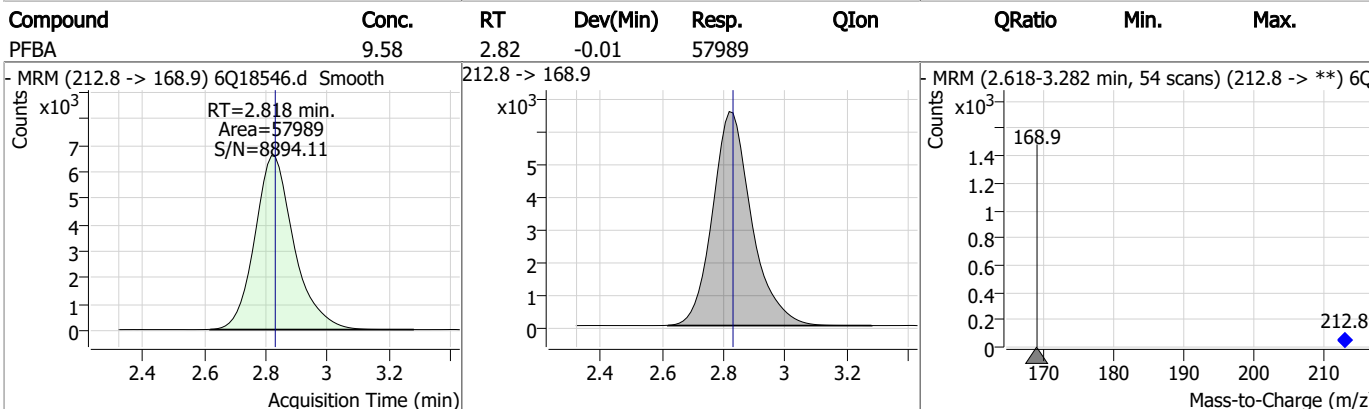
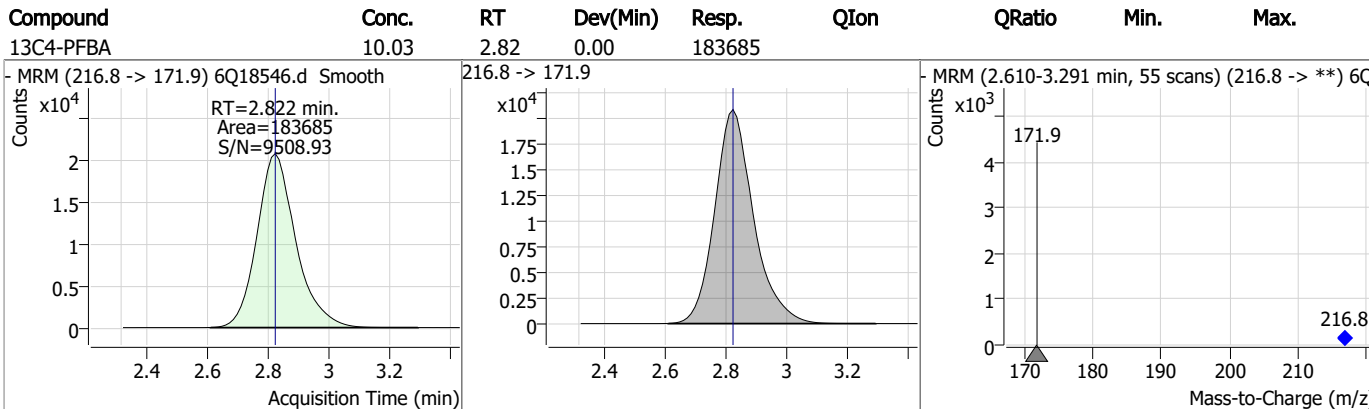
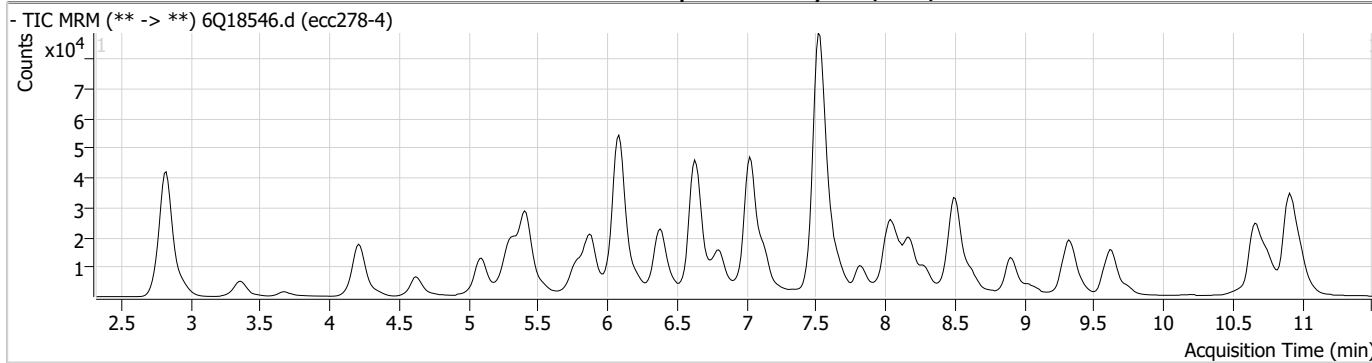
Perfluorinated Compounds by LC/MS/MS

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

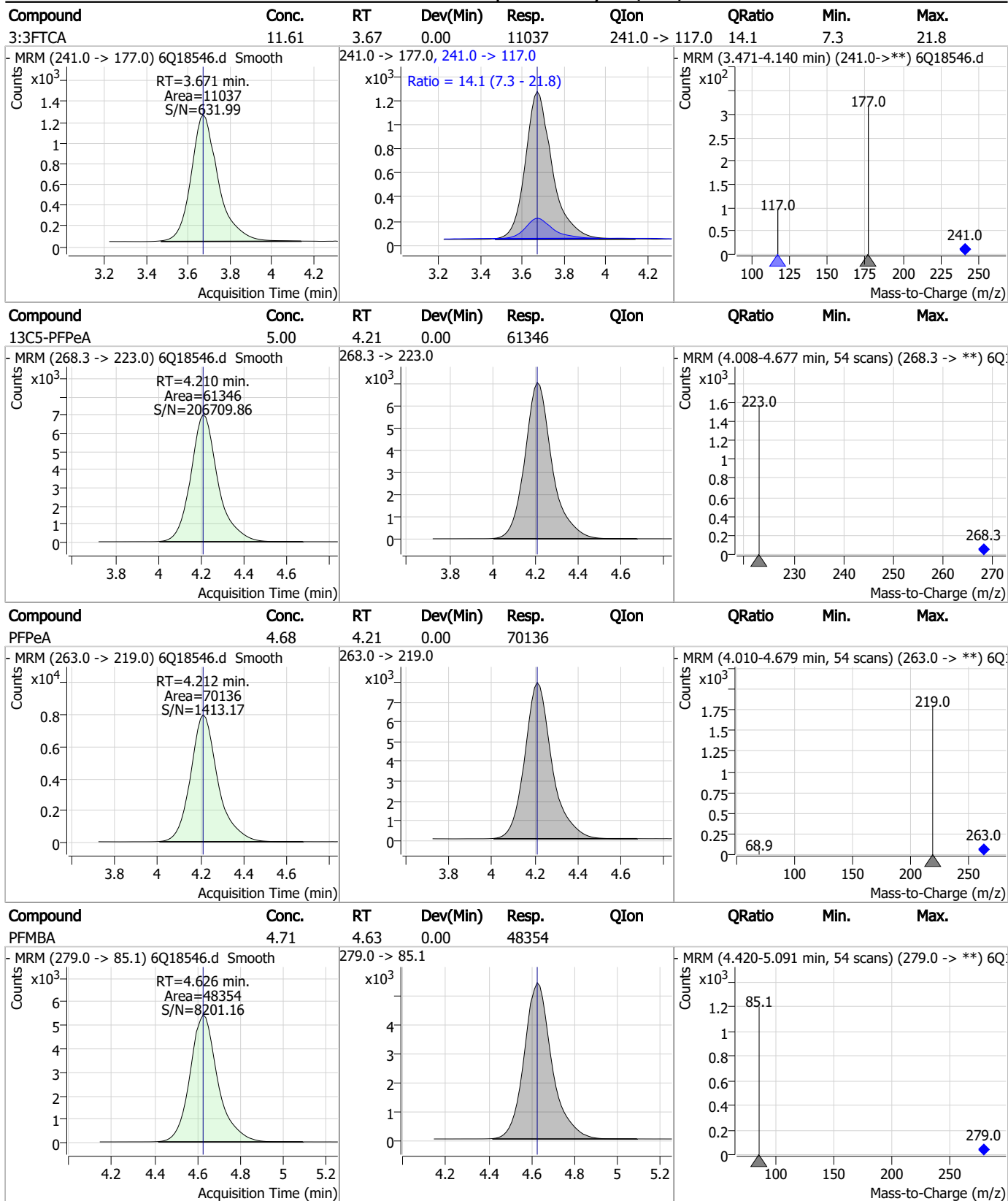
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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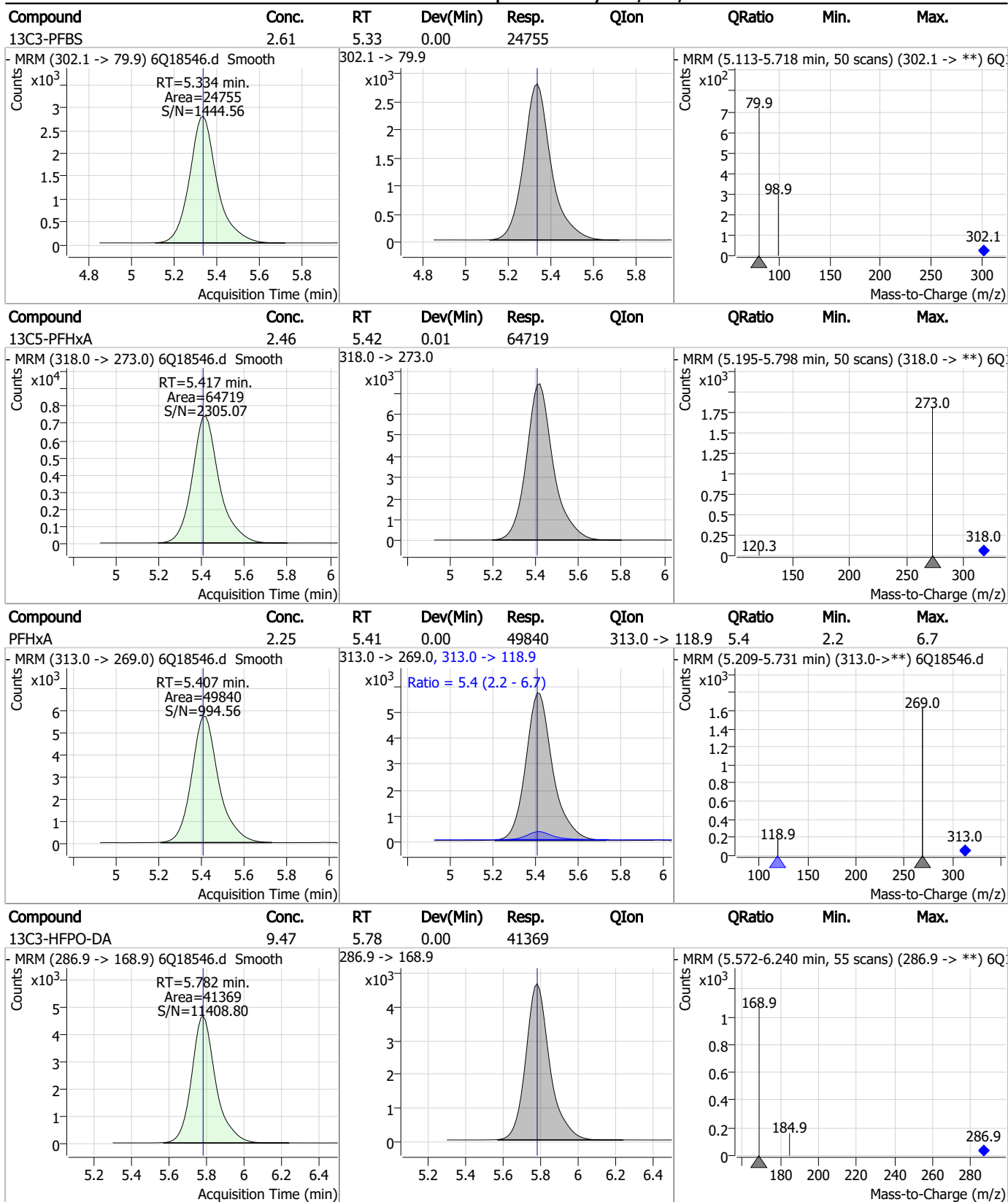
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.27	5.09	0.00	3366				
4:2FTS	8.94	5.09	0.00	42435	327.1 -> 80.9	38.2	19.8	59.4
NFDHA	4.82	5.30	0.01	12779	295.0 -> 84.9	28.1	13.5	40.6
PFBS	2.12	5.34	0.01	18164	298.7 -> 98.8	37.6	18.1	54.3

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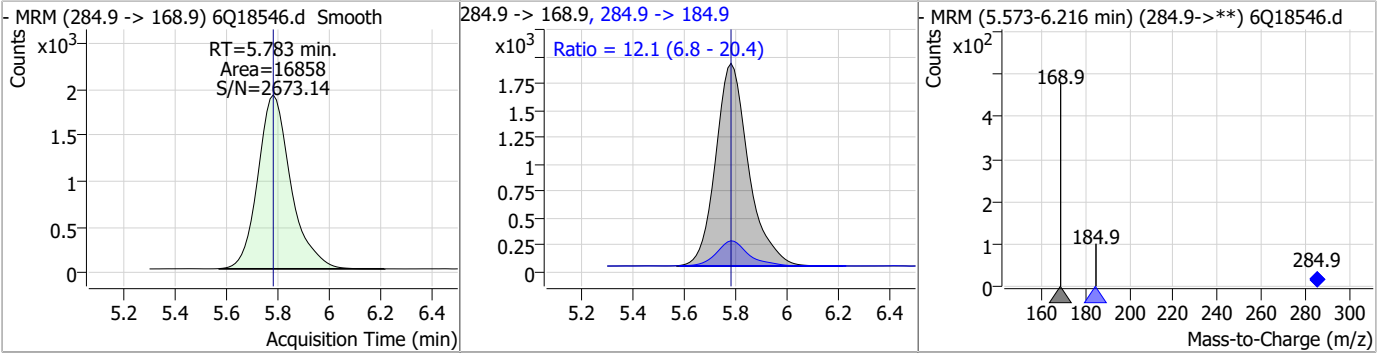
Perfluorinated Compounds by LC/MS/MS



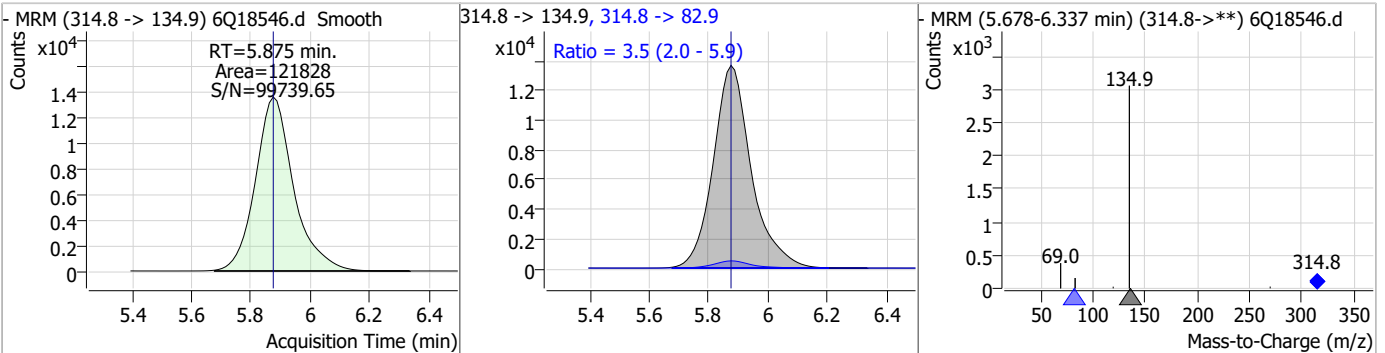
7.7.15
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Perfluorinated Compounds by LC/MS/MS

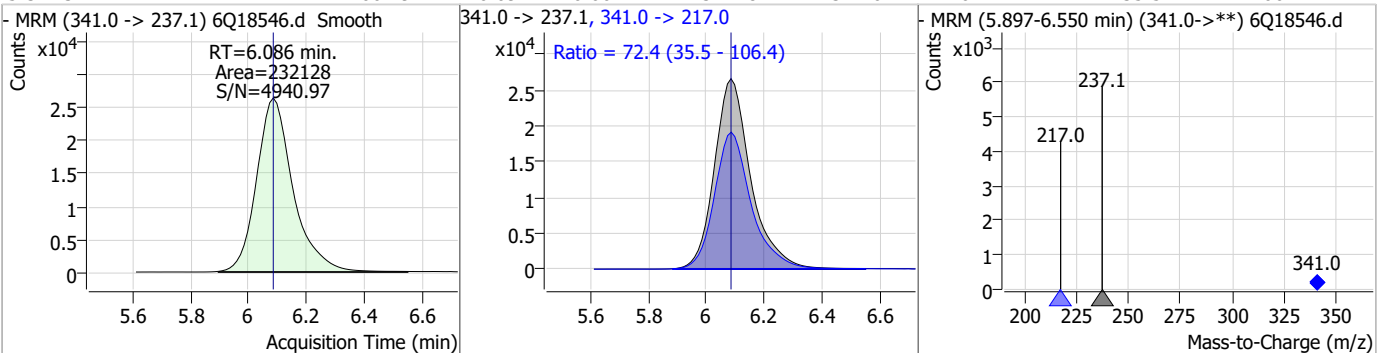
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.86	5.78	0.00	16858	284.9 -> 184.9	12.1	6.8	20.4



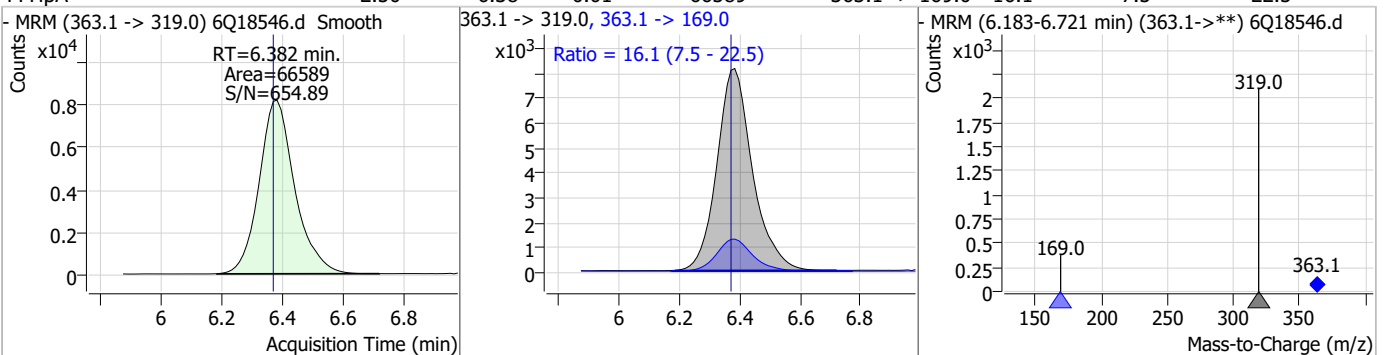
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.17	5.88	0.00	121828	314.8 -> 82.9	3.5	2.0	5.9



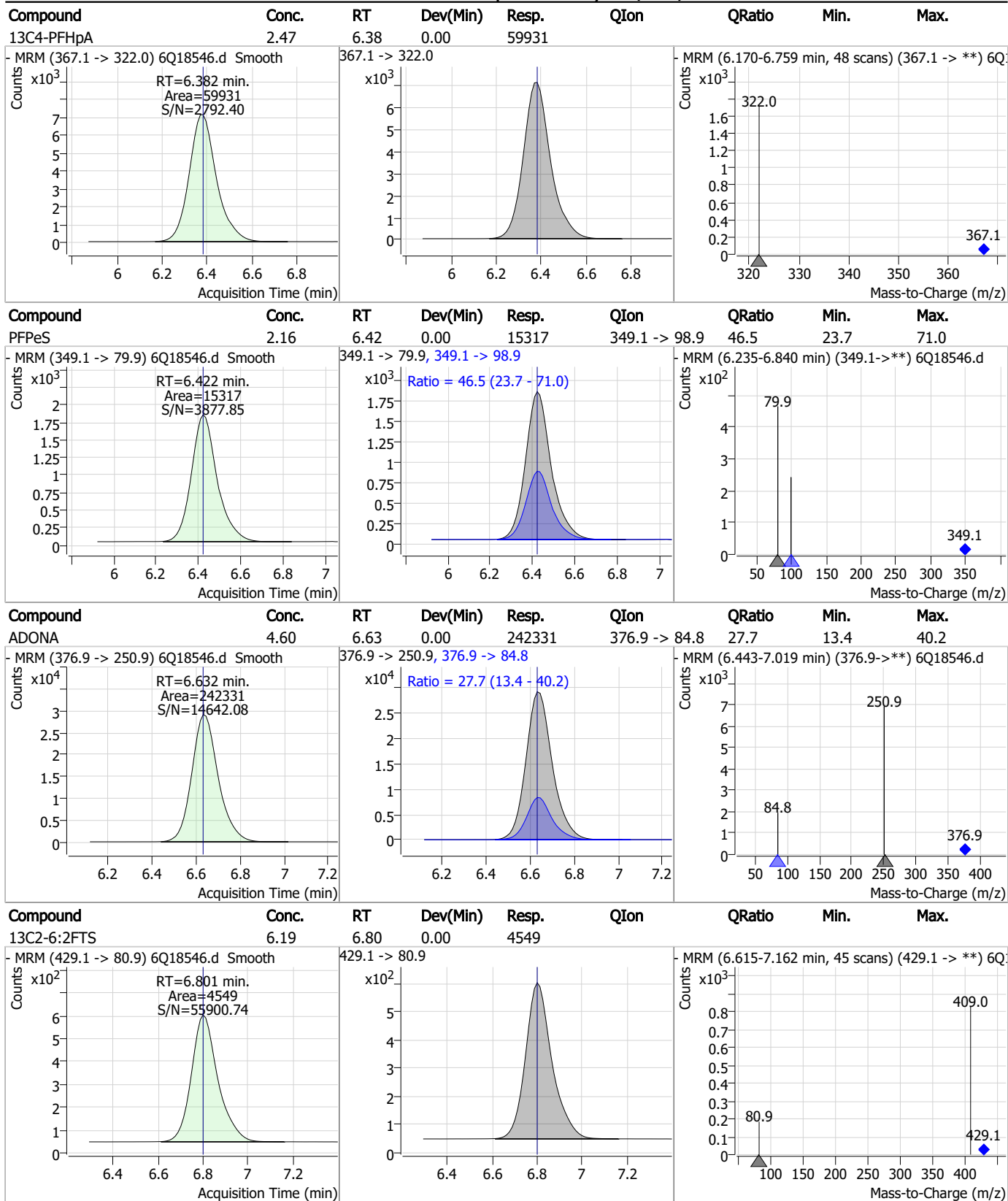
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	60.49	6.09	0.00	232128	341.0 -> 217.0	72.4	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.50	6.38	0.01	66589	363.1 -> 169.0	16.1	7.5	22.5

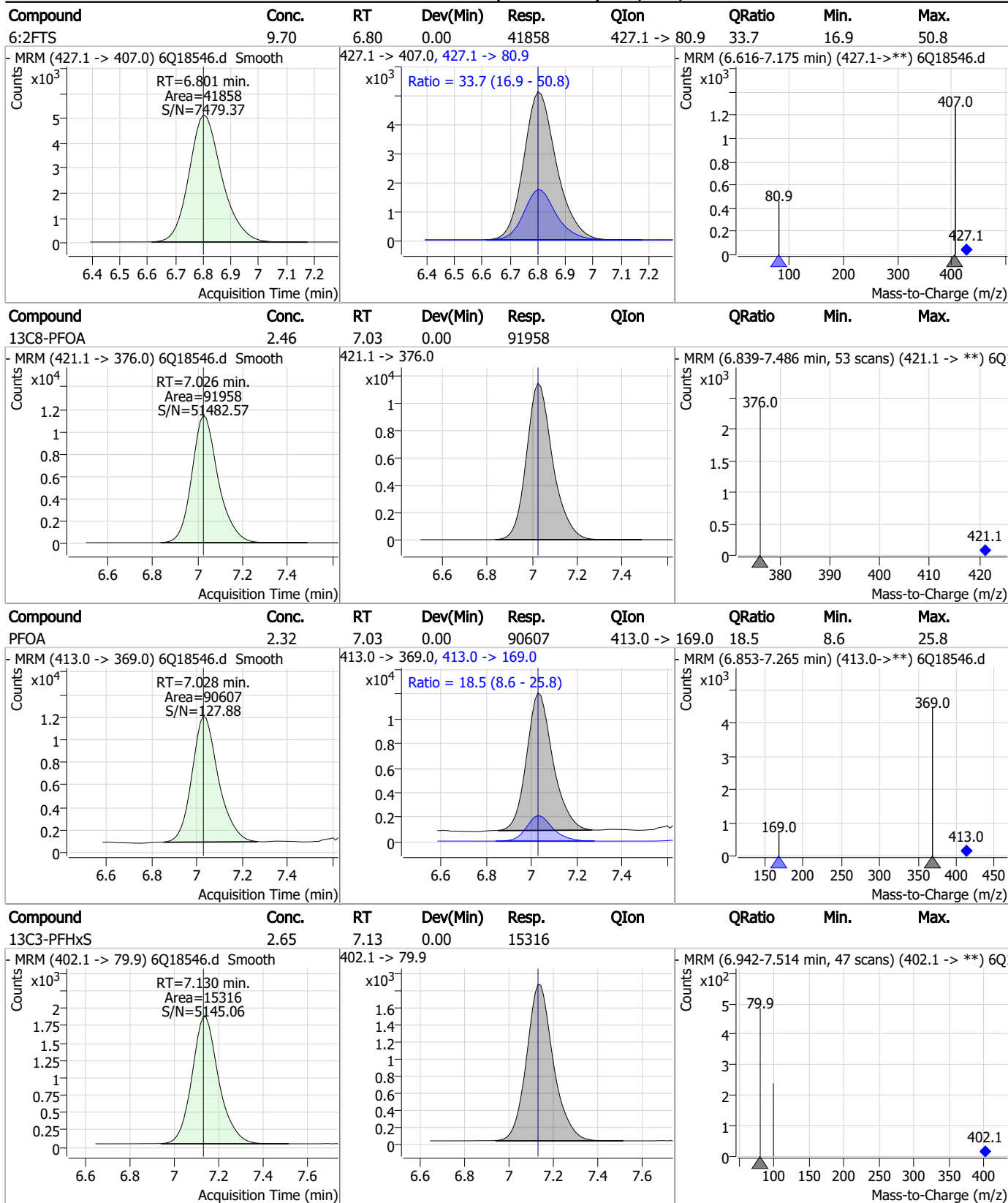


Perfluorinated Compounds by LC/MS/MS



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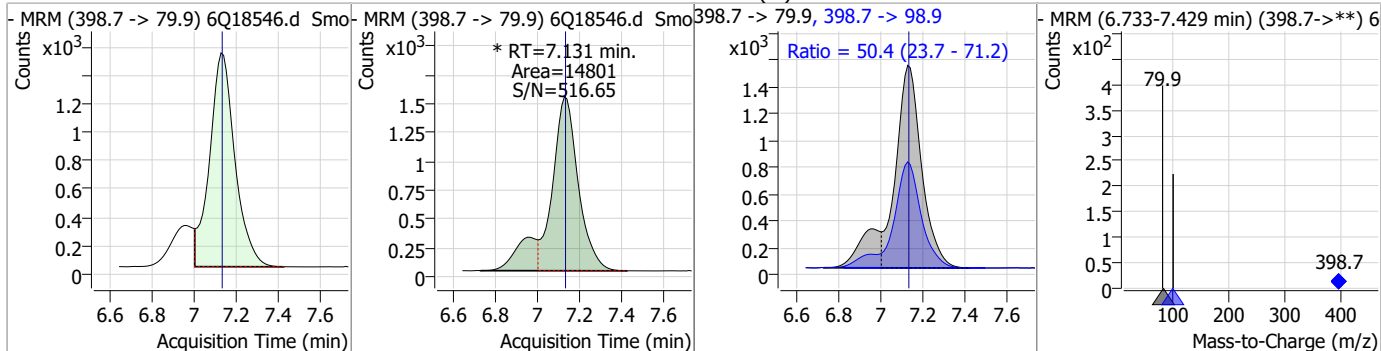
Perfluorinated Compounds by LC/MS/MS



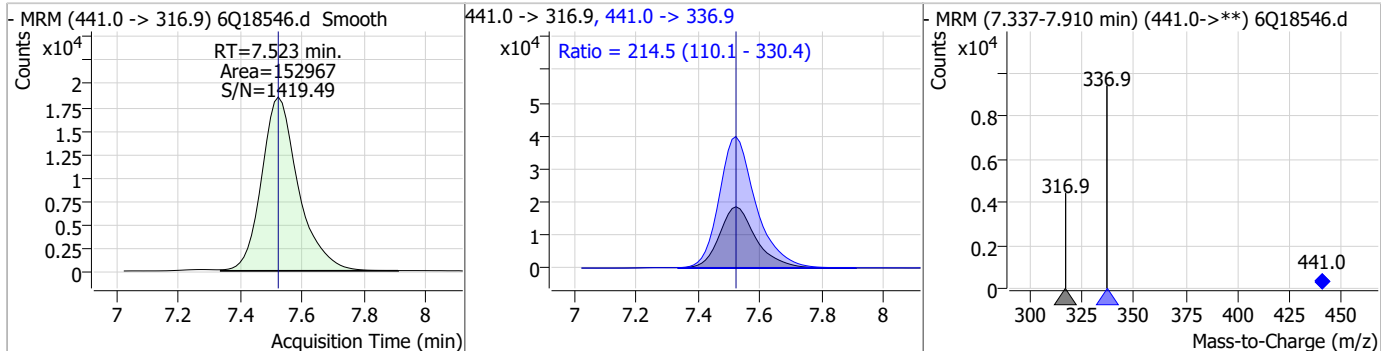
7.7.15

Perfluorinated Compounds by LC/MS/MS

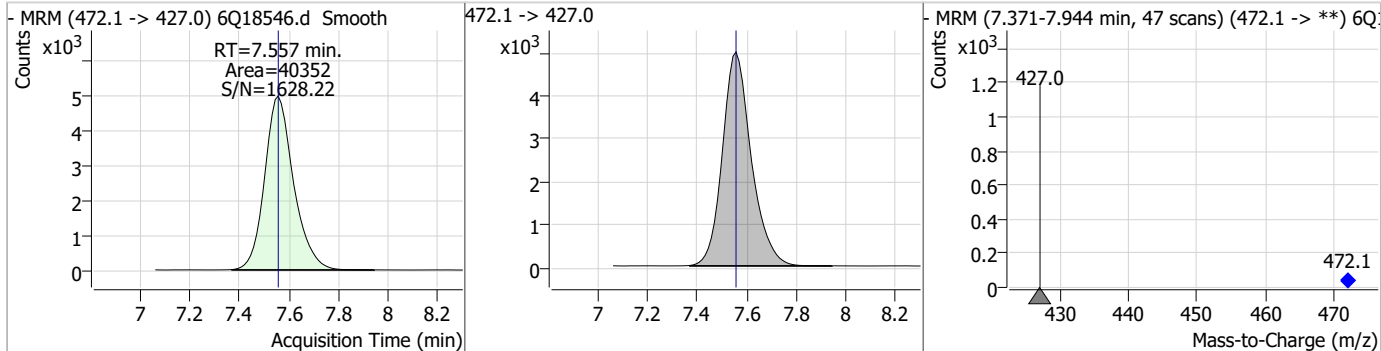
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.06	7.13	0.00	14801 (m)	398.7 -> 98.9	50.4	23.7	71.2



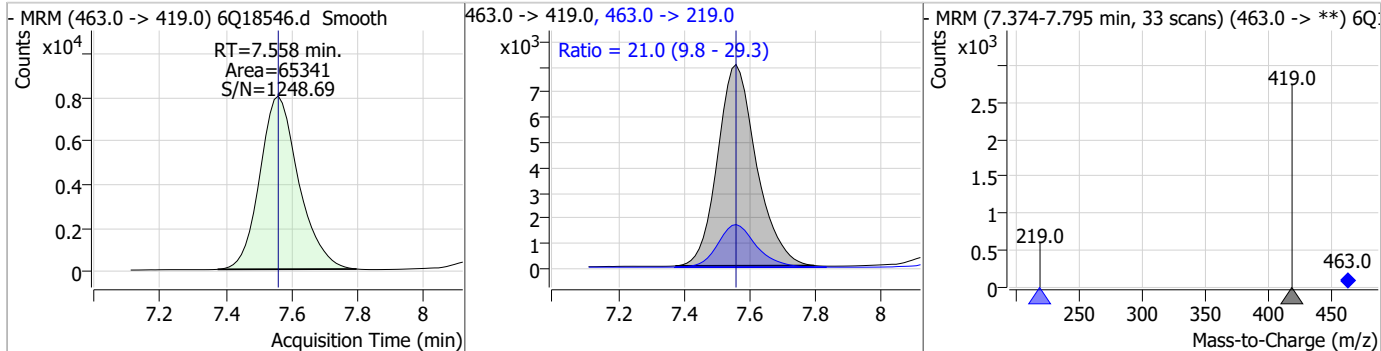
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	62.38	7.52	0.00	152967	441.0 -> 336.9	214.5	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.35	7.56	0.00	40352				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.23	7.56	0.00	65341	463.0 -> 219.0	21.0	9.8	29.3



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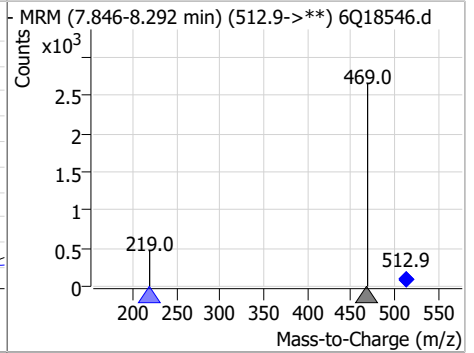
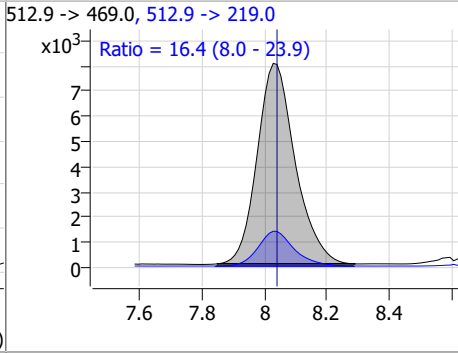
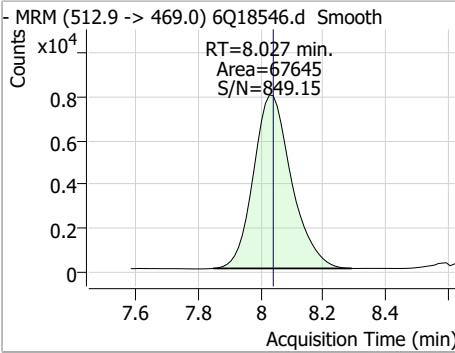
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.17	7.68	0.00	14004	449.0 -> 98.9	53.3	24.7	74.2
13C2-8:2FTS	5.93	7.83	0.00	4190	529.1 -> 80.9	41.6	21.4	64.1
8:2FTS	10.30	7.83	0.00	22851	527.1 -> 80.8	41.6	21.4	64.1
13C6-PFDA	1.34	8.03	0.00	25805	519.1 -> 474.1	41.6	21.4	64.1

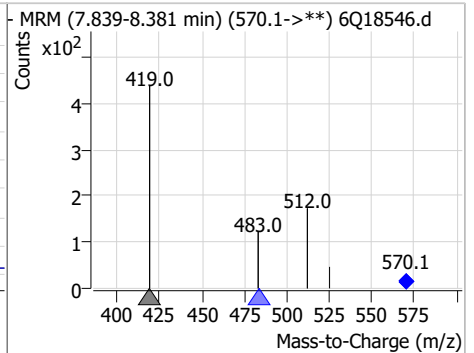
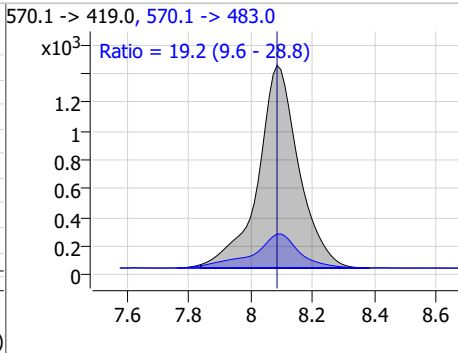
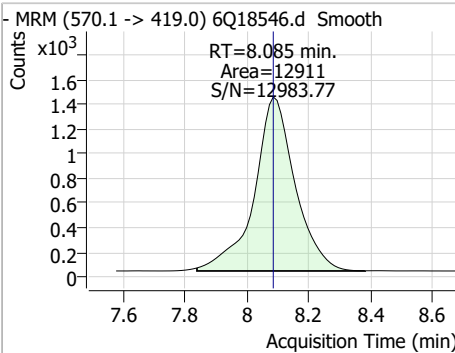
7.7.15 7

Perfluorinated Compounds by LC/MS/MS

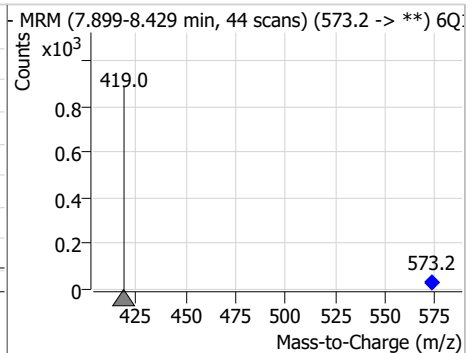
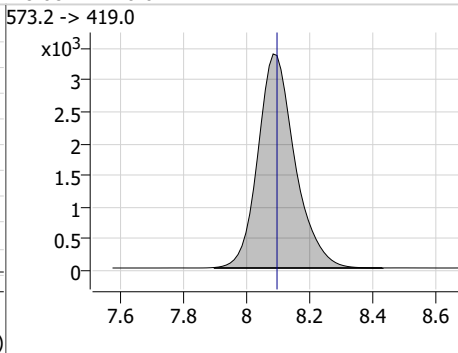
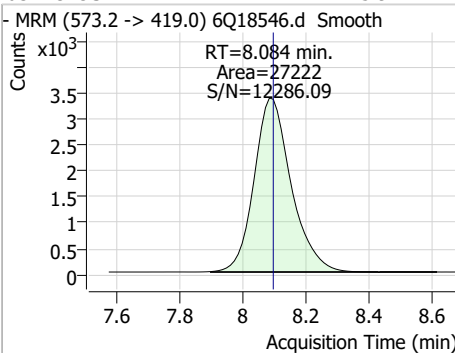
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.29	8.03	-0.01	67645	512.9 -> 219.0	16.4	8.0	23.9



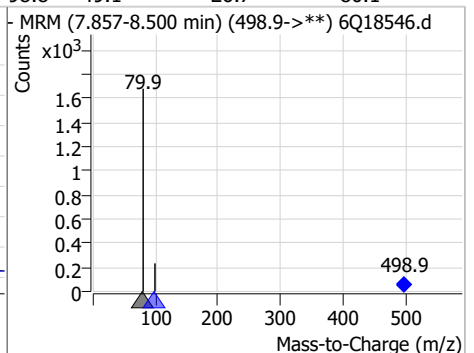
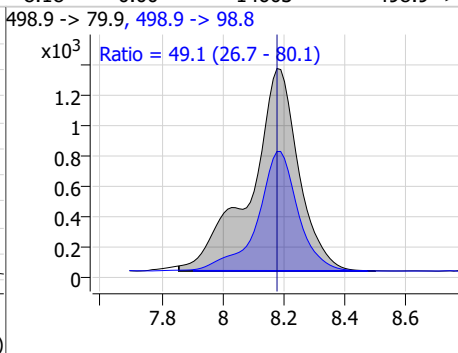
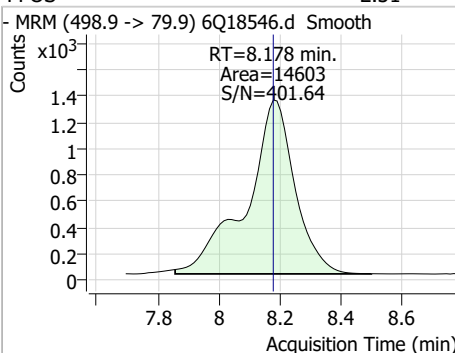
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.16	8.08	0.00	12911	570.1 -> 483.0	19.2	9.6	28.8



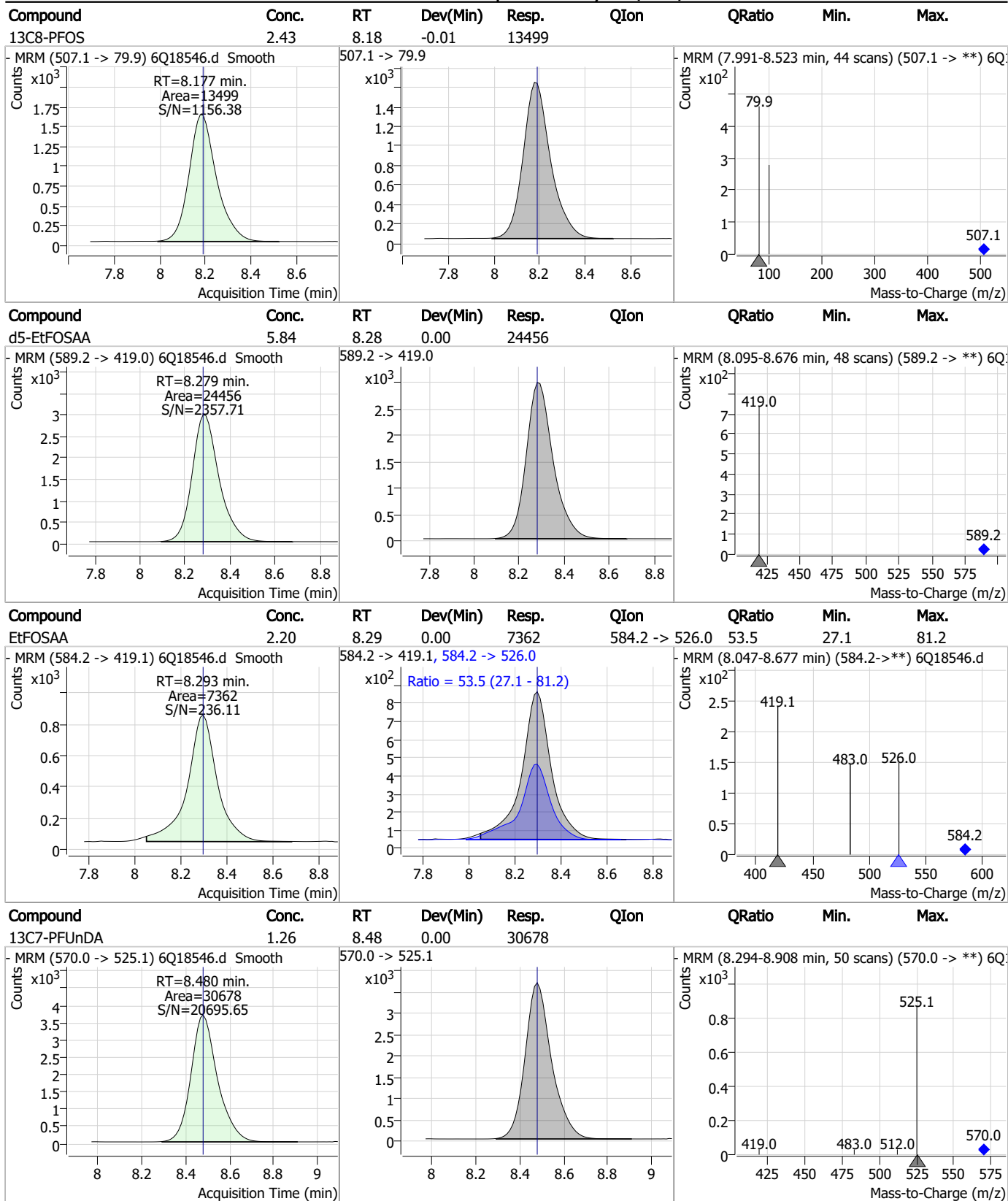
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.97	8.08	-0.01	27222	573.2 -> 419.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.31	8.18	0.00	14603	498.9 -> 98.8	49.1	26.7	80.1



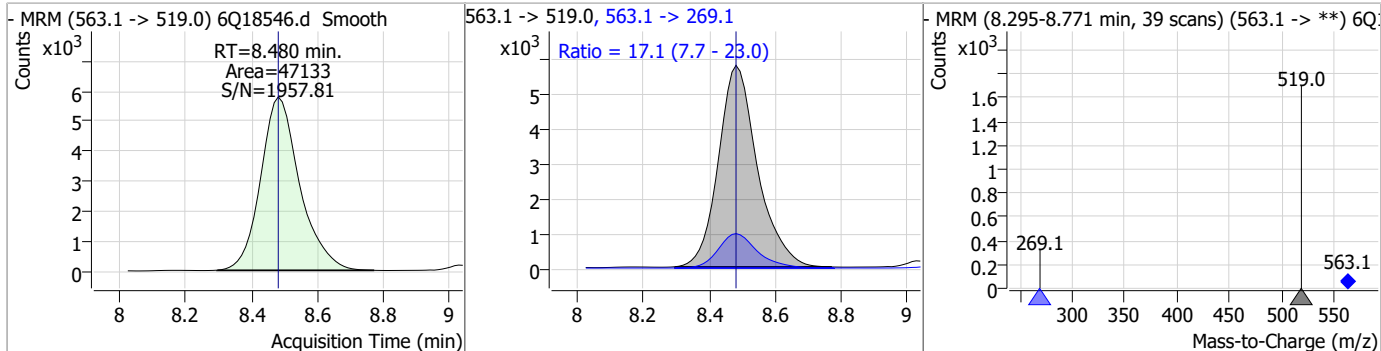
Perfluorinated Compounds by LC/MS/MS



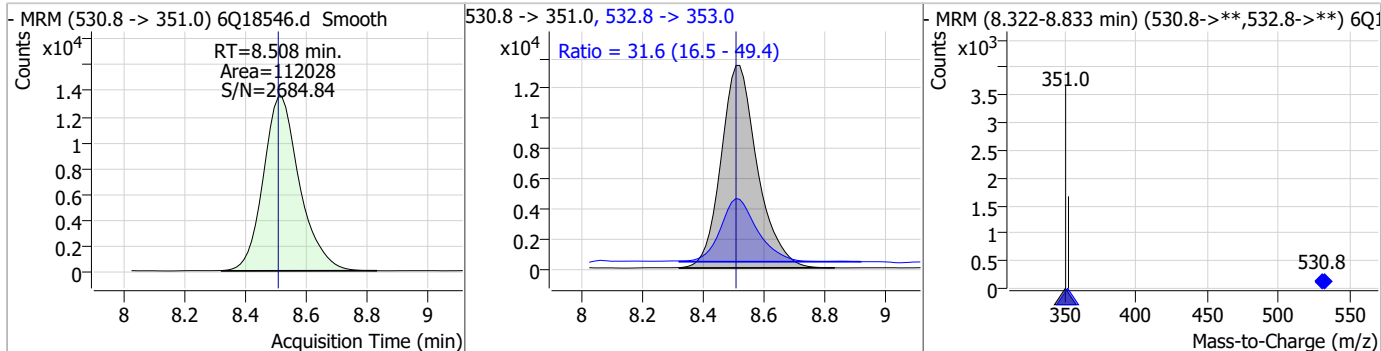
7.7.15
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Perfluorinated Compounds by LC/MS/MS

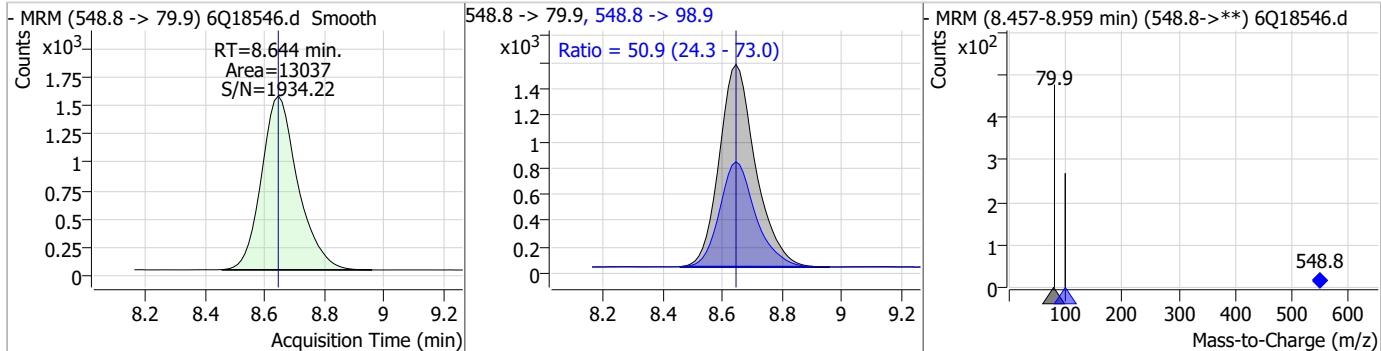
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.39	8.48	0.00	47133	563.1 -> 269.1	17.1	7.7	23.0



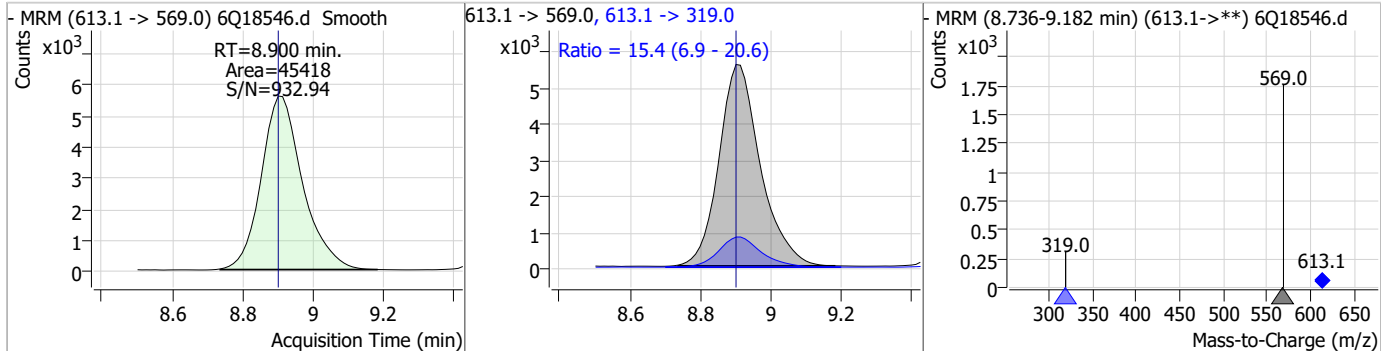
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.94	8.51	0.00	112028	532.8 -> 353.0	31.6	16.5	49.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.33	8.64	0.00	13037	548.8 -> 98.9	50.9	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	2.41	8.90	0.00	45418	613.1 -> 319.0	15.4	6.9	20.6



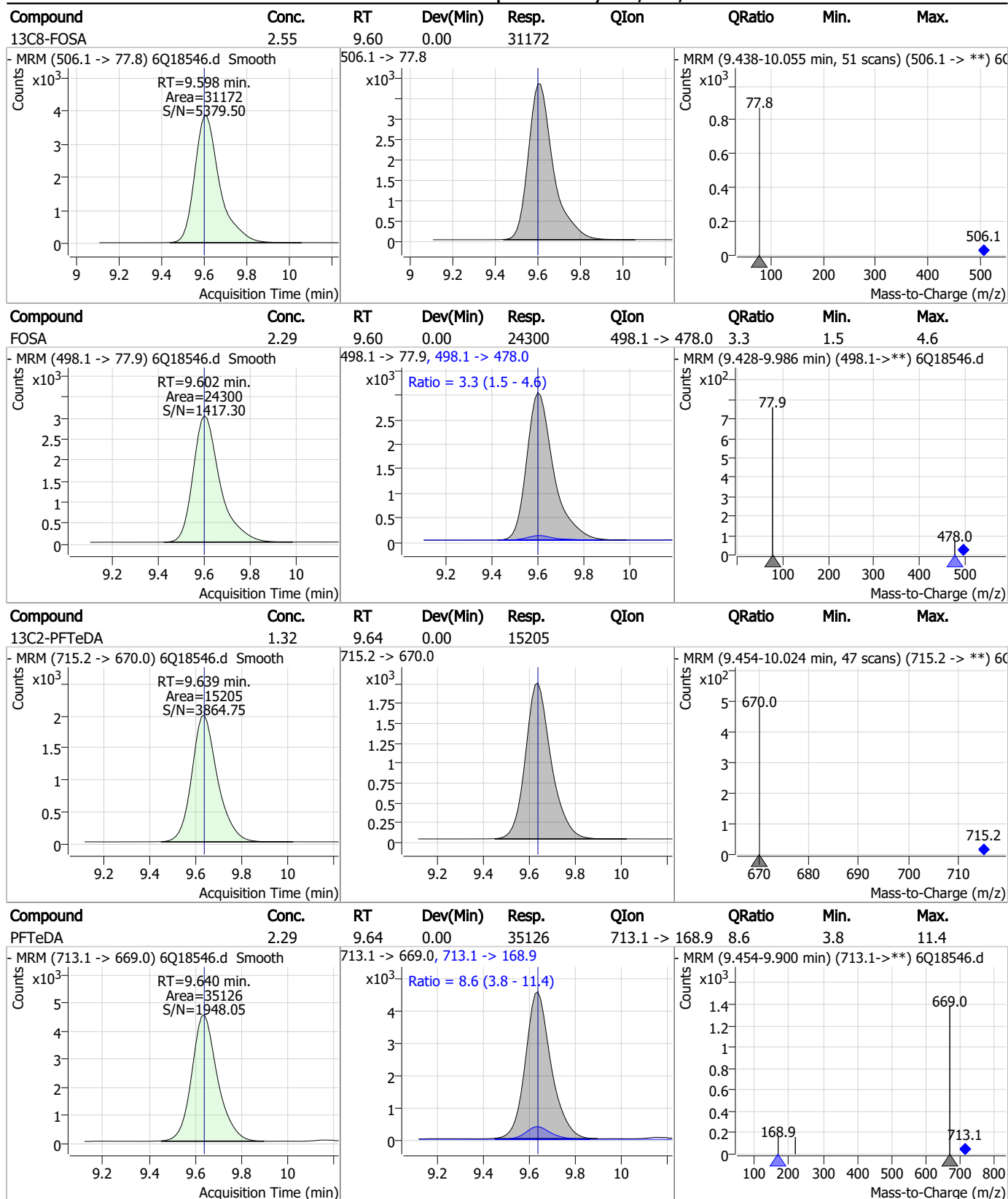
7.7.15
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.25	8.91	0.00	27626				
PFDS	2.39	9.06	0.00	7989	599.0 -> 98.8	48.1	24.5	73.4
PFTrDA	2.39	9.30	0.00	44566	663.0 -> 168.9	11.8	4.7	14.0
11Cl-PF3OUds	4.63	9.35	0.00	64515	632.9 -> 452.9	32.3	15.5	46.6

7.7.15 7

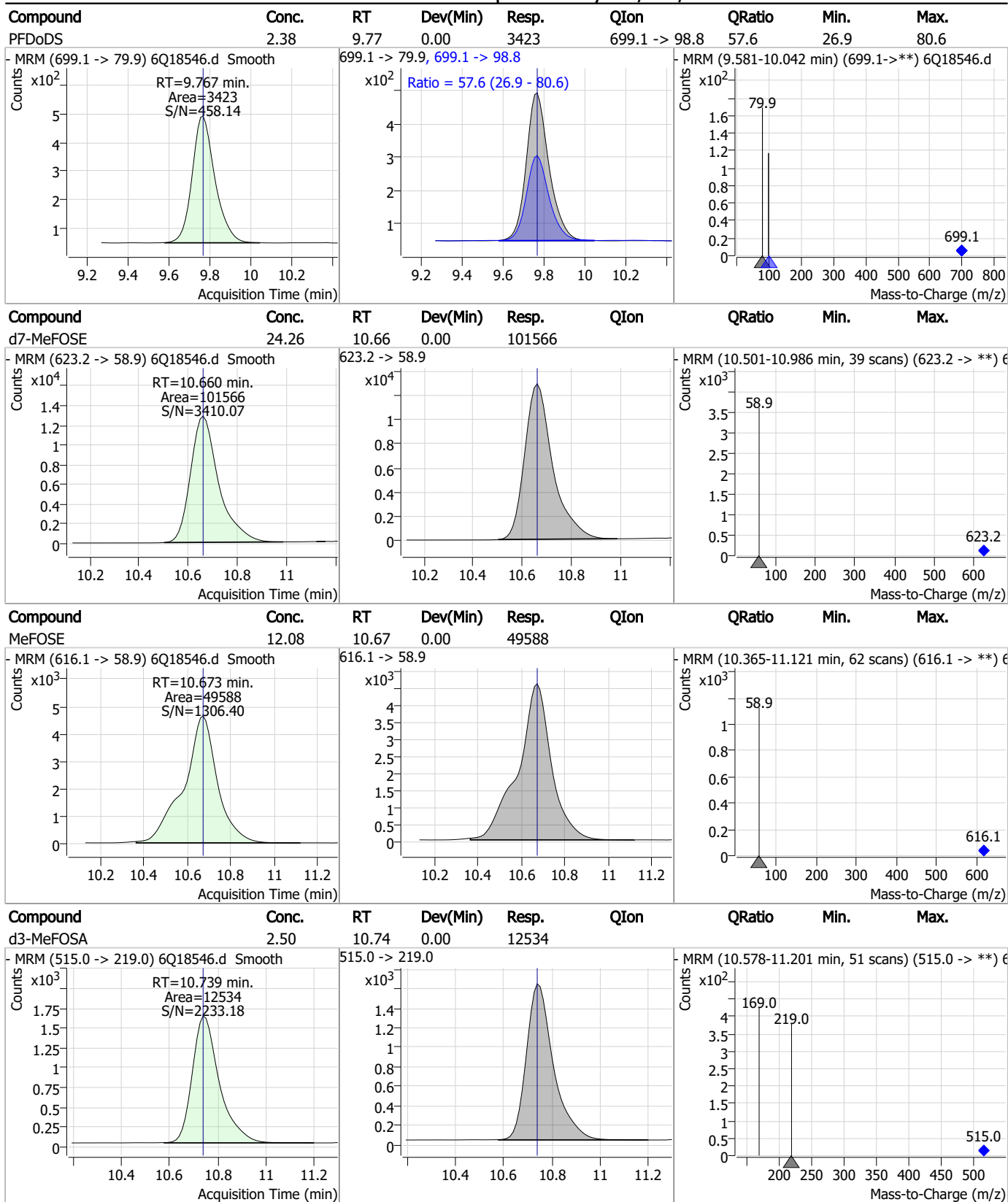
Perfluorinated Compounds by LC/MS/MS



7.7.15

7

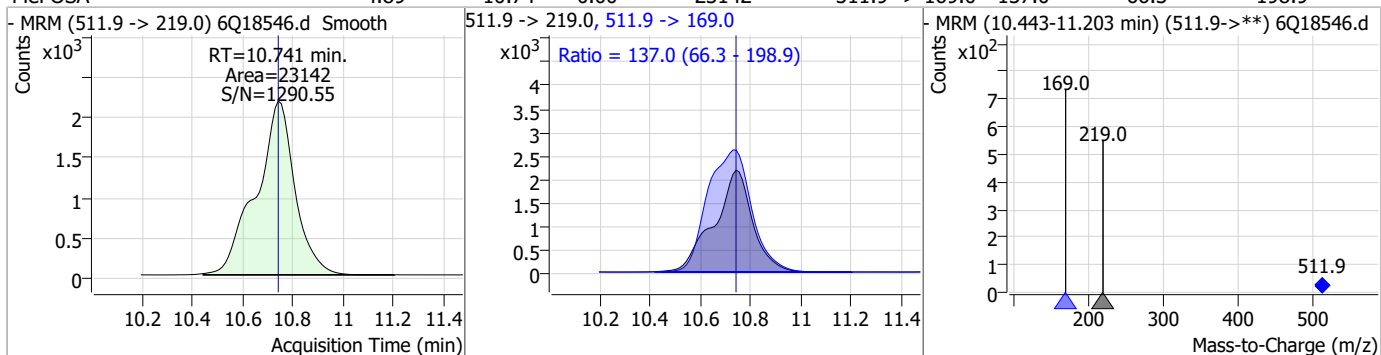
Perfluorinated Compounds by LC/MS/MS



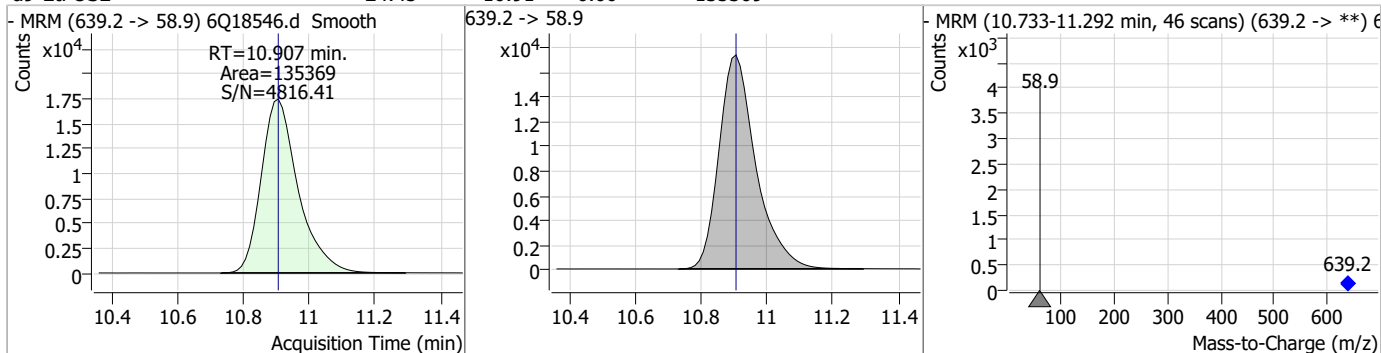
7.7.15
7

Perfluorinated Compounds by LC/MS/MS

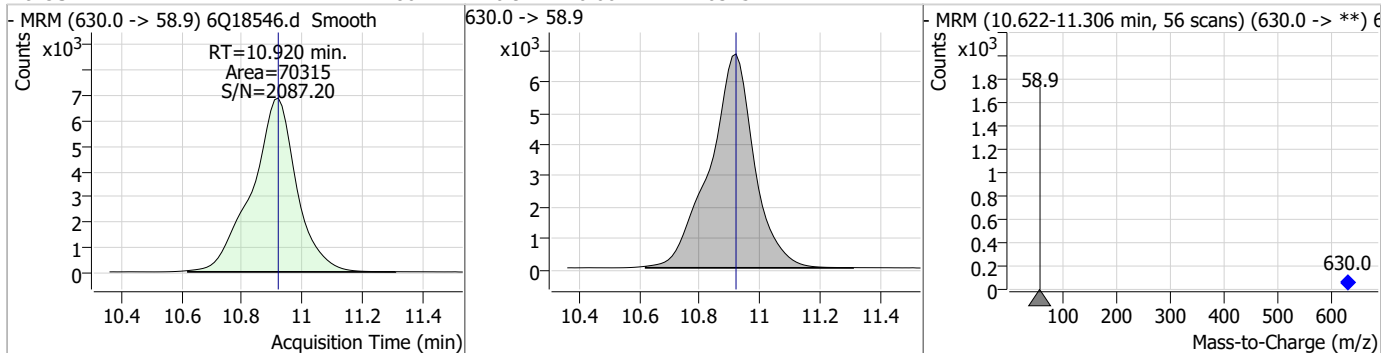
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.89	10.74	0.00	23142	511.9 -> 169.0	137.0	66.3	198.9



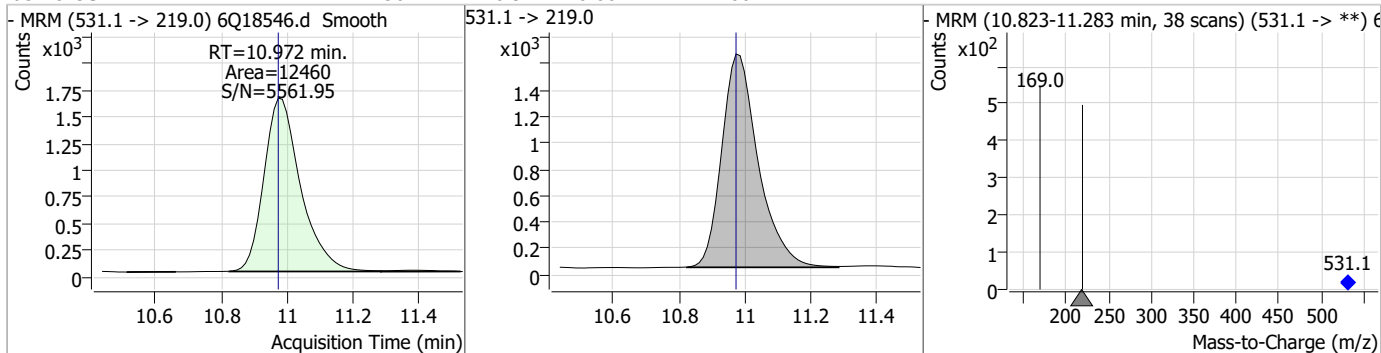
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.45	10.91	0.00	135369	639.2 -> 58.9			



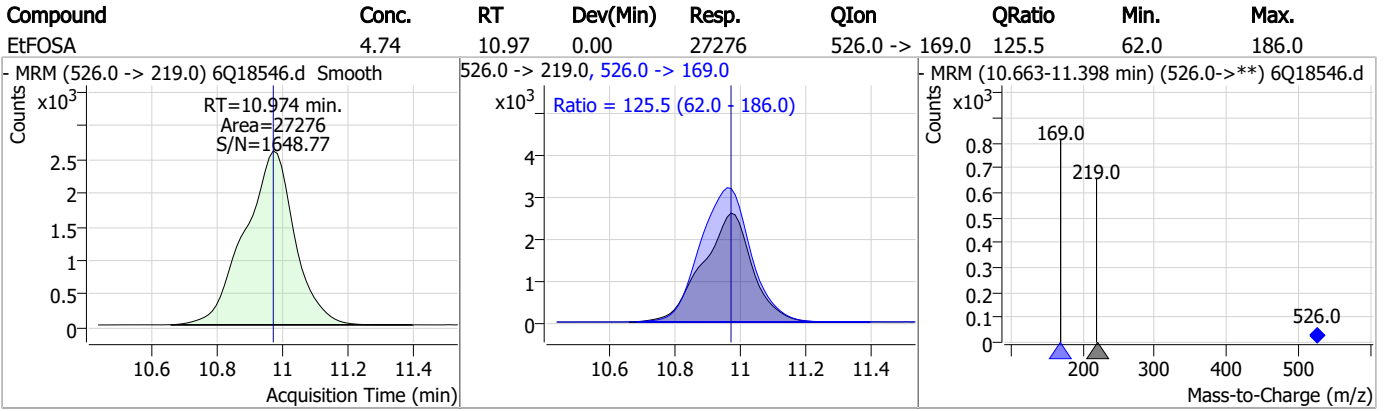
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.80	10.92	0.00	70315	630.0 -> 58.9			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.56	10.97	0.00	12460	531.1 -> 219.0			



Perfluorinated Compounds by LC/MS/MS



7.7.15

7

Manual Integration Approval Summary

Sample Number: S6Q278-ECC278 Method: EPA DRAFT 1633
Lab FileID: 6Q18546.D Analyst approved: 05/31/23 20:50 Martha Valls
Injection Time: 05/30/23 23:04 Supervisor approved: 05/31/23 21:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak

7.7.15.1

7

QQQ Check Tune Report



Instrument Name LCMS Q6
MS Model G6495B
MS Instrument Serial SG1752D103
Software_Firmware Version 10.1.67, FW: A.00.08.112
Tune Date & Time 30 May 2023 10:49:21
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.78E+0 [R] (Torr); 2.89E-5 [H] (Torr)

Source Parameters

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

QQQ Check Tune Report



Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
112.99	112.95	-0.04	Pass	0.70	0.65	-0.05	Pass	455038
302.00	301.98	-0.02	Pass	0.70	0.68	-0.02	Pass	1143761
601.98	601.92	-0.06	Pass	0.70	0.60	-0.10	Pass	2118549
1033.99	1033.82	-0.17	Pass	0.70	0.59	-0.11	Pass	1683143
1633.95	1633.69	-0.26	Adjust	0.70	0.64	-0.06	Pass	1158862
2233.91	2233.43	-0.48	Adjust	0.70	0.70	0.00	Pass	440499

Analyzer: MS2 Polarity: Negative Width: Unit

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
69.00	69.03	0.03	Pass	0.70	0.70	0.00	Pass	142184
112.99	112.96	-0.03	Pass	0.70	0.76	0.06	Pass	581275
302.00	301.97	-0.03	Pass	0.70	0.63	-0.07	Pass	1512926
601.98	601.97	-0.01	Pass	0.70	0.68	-0.02	Pass	1340144
1033.99	1033.86	-0.13	Pass	0.70	0.69	-0.01	Pass	900417
1633.95	1633.75	-0.20	Pass	0.70	0.74	0.04	Pass	690843
2233.91	2233.62	-0.29	Pass	0.70	0.69	-0.01	Pass	267882

Analyzer: MS1 Polarity: Negative Width: Wide

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
112.99	112.94	-0.05	Pass	1.20	1.20	0.00	Pass	527677
302.00	301.90	-0.10	Pass	1.20	1.35	0.15	Pass	1480594
601.98	601.94	-0.04	Pass	1.20	1.48	0.28	Pass	3006683
1033.99	1033.77	-0.22	Pass	1.20	1.45	0.25	Pass	2687346
1633.95	1633.65	-0.30	Pass	1.20	1.44	0.24	Pass	1828520
2233.91	2233.52	-0.39	Pass	1.20	1.38	0.18	Pass	851214

Analyzer: MS2 Polarity: Negative Width: Wide

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
69.00	69.01	0.01	Pass	1.20	1.08	-0.12	Pass	175167
112.99	112.96	-0.03	Pass	1.20	1.13	-0.07	Pass	723223
302.00	301.91	-0.09	Pass	1.20	1.12	-0.08	Pass	1714873
601.98	601.88	-0.10	Pass	1.20	1.30	0.10	Pass	2021470
1033.99	1033.82	-0.17	Pass	1.20	1.32	0.12	Pass	1614259
1633.95	1633.70	-0.25	Pass	1.20	1.21	0.01	Pass	1644467
2233.91	2233.55	-0.36	Pass	1.20	1.08	-0.12	Pass	660835

Analyzer: MS1 Polarity: Negative Width: Widest

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
112.99	112.92	-0.07	Pass	2.50	2.42	-0.08	Pass	572643
302.00	301.78	-0.22	Pass	2.50	2.58	0.08	Pass	1936780
601.98	601.85	-0.13	Pass	2.50	2.68	0.18	Pass	3673966
1033.99	1033.77	-0.22	Pass	2.50	2.66	0.16	Pass	4191544
1633.95	1633.55	-0.40	Pass	2.50	2.61	0.11	Pass	3493161
2233.91	2233.42	-0.49	Pass	2.50	2.17	-0.33	Pass	2051281

Analyzer: MS2 Polarity: Negative Width: Widest

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
69.00	68.93	-0.07	Pass	2.50	2.52	0.02	Pass	203780
112.99	112.93	-0.06	Pass	2.50	2.53	0.03	Pass	984576
302.00	301.95	-0.05	Pass	2.50	2.55	0.05	Pass	2407993
601.98	601.85	-0.13	Pass	2.50	2.70	0.20	Pass	3235376
1033.99	1033.89	-0.10	Pass	2.50	2.83	0.33	Pass	3164989
1633.95	1633.60	-0.35	Pass	2.50	2.42	-0.08	Pass	3058922
2233.91	2233.65	-0.26	Pass	2.50	2.33	-0.17	Pass	1539250

7.7.16
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18586.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:16:21 PM
 Sample Name : ic279-1
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	175926	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58775	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	64804	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	58558	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	92083	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	41065	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24385	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	31631	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	28658	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	15918	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	32460	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	23309	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14544	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13033	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3770	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5269	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5181	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	28690	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40509	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25301	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	106215	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	145212	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12992	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12922	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17710	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	73829	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10307	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	97513	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	33316	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50593	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	60249	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3770	5.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5269	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5181	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C2-PFDoDA	8.900	615.1 -> 570.0	28658	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15918	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C3-PFBS	5.334	302.1 -> 79.9	23309	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	14544	2.53 µg/L	0.000

7.7.17
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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 = 101.0%	
13C4-PFBA	2.822	216.8 -> 171.9	175926	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	58558	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	64804	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	58775	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C6-PFDA	8.027	519.1 -> 474.1	24385	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31631	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-FOSA	9.598	506.1 -> 77.8	32460	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-PFOA	7.026	421.1 -> 376.0	92083	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-PFOS	8.177	507.1 -> 79.9	13033	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C9-PFNA	7.545	472.1 -> 427.0	41065	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSAA	8.084	573.2 -> 419.0	28690	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40509	10.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	12922	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25301	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d7-MeFOSE	10.660	623.2 -> 58.9	106215	23.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	145212	24.96 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	12992	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	4574	0.84 µg/L	96
		327.1 -> 80.9	1710		
6:2FTS	6.801	427.1 -> 407.0	4592	0.89 µg/L	98
		427.1 -> 80.9	1605		
8:2FTS	7.816	527.1 -> 507.0	2744	0.95 µg/L	94
		527.1 -> 80.8	1065		
EtFOSAA	8.280	584.2 -> 419.1	788	0.24 µg/L	96
		584.2 -> 526.0	451		
FOSA	9.589	498.1 -> 77.9	2619	0.23 µg/L	98
		498.1 -> 478.0	94		
MeFOSAA	8.085	570.1 -> 419.0	1177	0.20 µg/L	m 93
		570.1 -> 483.0	191		
PFBA	2.818	212.8 -> 168.9	5281	0.91 µg/L	100
PFBS	5.335	298.7 -> 79.9	1603	0.20 µg/L	96
		298.7 -> 98.8	614		
PFDA	8.027	512.9 -> 469.0	6728	0.24 µg/L	100
		512.9 -> 219.0	1068		
PFDODA	8.900	613.1 -> 569.0	4579	0.23 µg/L	95
		613.1 -> 319.0	724		
PFDS	9.052	599.0 -> 79.9	769	0.24 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	392			
PFHpA	6.382	363.1 -> 319.0	6054	0.23	µg/L	95
		363.1 -> 169.0	1031			
PFHpS	7.685	449.0 -> 79.9	1473	0.24	µg/L	95
		449.0 -> 98.9	778			
PFHxA	5.420	313.0 -> 269.0	4961	0.23	µg/L	98
		313.0 -> 118.9	260			
PFHxS	7.131	398.7 -> 79.9	1378	0.21	µg/L	m 94
		398.7 -> 98.9	709			
PFNA	7.545	463.0 -> 419.0	7040	0.24	µg/L	100
		463.0 -> 219.0	1371			
PFNS	8.631	548.8 -> 79.9	1282	0.25	µg/L	96
		548.8 -> 98.9	661			
PFOA	7.028	413.0 -> 369.0	8309	0.21	µg/L	95
		413.0 -> 169.0	1614			
PFOS	8.178	498.9 -> 79.9	1321	0.22	µg/L	92
		498.9 -> 98.8	627			
PFPeA	4.212	263.0 -> 219.0	6565	0.47	µg/L	100
PFPeS	6.422	349.1 -> 79.9	1435	0.22	µg/L	99
		349.1 -> 98.9	691			
PFTeDA	9.628	713.1 -> 669.0	3669	0.23	µg/L	98
		713.1 -> 168.9	310			
PFTrDA	9.284	663.0 -> 619.0	4782	0.24	µg/L	99
		663.0 -> 168.9	457			
PFUnDA	8.468	563.1 -> 519.0	4625	0.23	µg/L	89
		563.1 -> 269.1	917			
11Cl-PF3OUdS	9.336	630.9 -> 450.9	6290	0.41	µg/L	99
		632.9 -> 452.9	2001			
9Cl-PF3ONS	8.508	530.8 -> 351.0	9821	0.41	µg/L	100
		532.8 -> 353.0	3236			
ADONA	6.632	376.9 -> 250.9	23388	0.43	µg/L	100
		376.9 -> 84.8	6321			
HFPO-DA	5.783	284.9 -> 168.9	1549	0.45	µg/L	100
		284.9 -> 184.9	211			
3:3FTCA	3.671	241.0 -> 177.0	1013	1.12	µg/L	93
		241.0 -> 117.0	174			
5:3FTCA	6.086	341.0 -> 237.1	23311	5.96	µg/L	99
		341.0 -> 217.0	16635			
7:3FTCA	7.510	441.0 -> 316.9	15138	5.65	µg/L	94
		441.0 -> 336.9	34923			
EtFOSA	10.974	526.0 -> 219.0	2683	0.44	µg/L	91
		526.0 -> 169.0	3611			
EtFOSE	10.907	630.0 -> 58.9	7379	1.14	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	2165	0.46	µg/L	80
		511.9 -> 169.0	3384			
MeFOSE	10.661	616.1 -> 58.9	4968	1.18	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	331	0.23	µg/L	97
		699.1 -> 98.8	170			
NFDHA	5.288	295.0 -> 201.0	1301	0.49	µg/L	90
		295.0 -> 84.9	286			
PFMBA	4.626	279.0 -> 85.1	4455	0.46	µg/L	100
PFMPA	3.363	229.0 -> 84.9	3329	0.45	µg/L	100
PFEESA	5.875	314.8 -> 134.9	10878	0.39	µg/L	99
		314.8 -> 82.9	403			

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

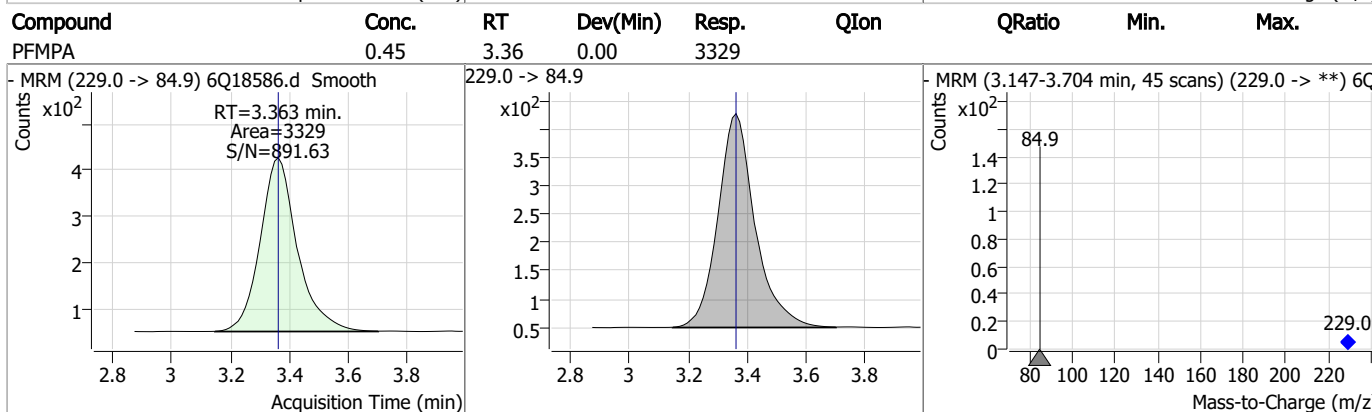
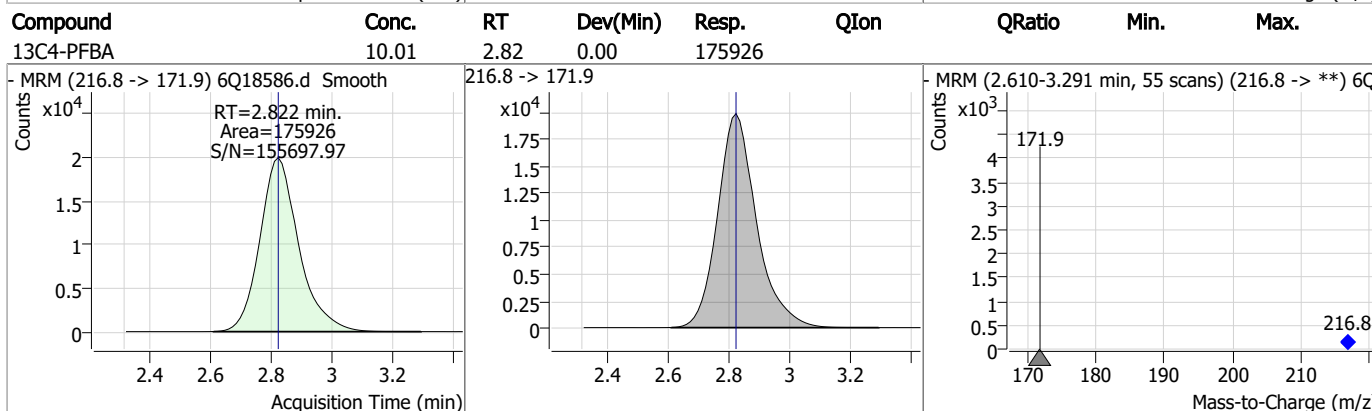
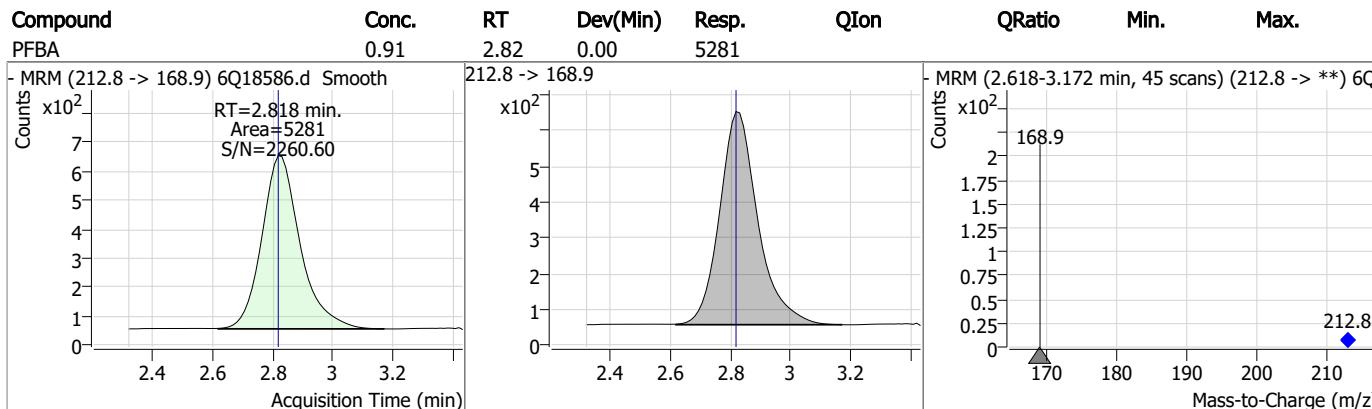
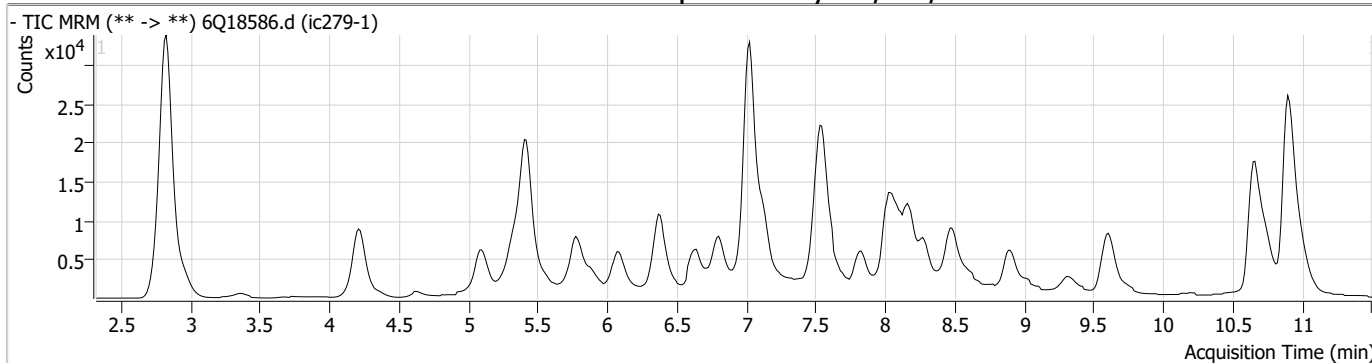
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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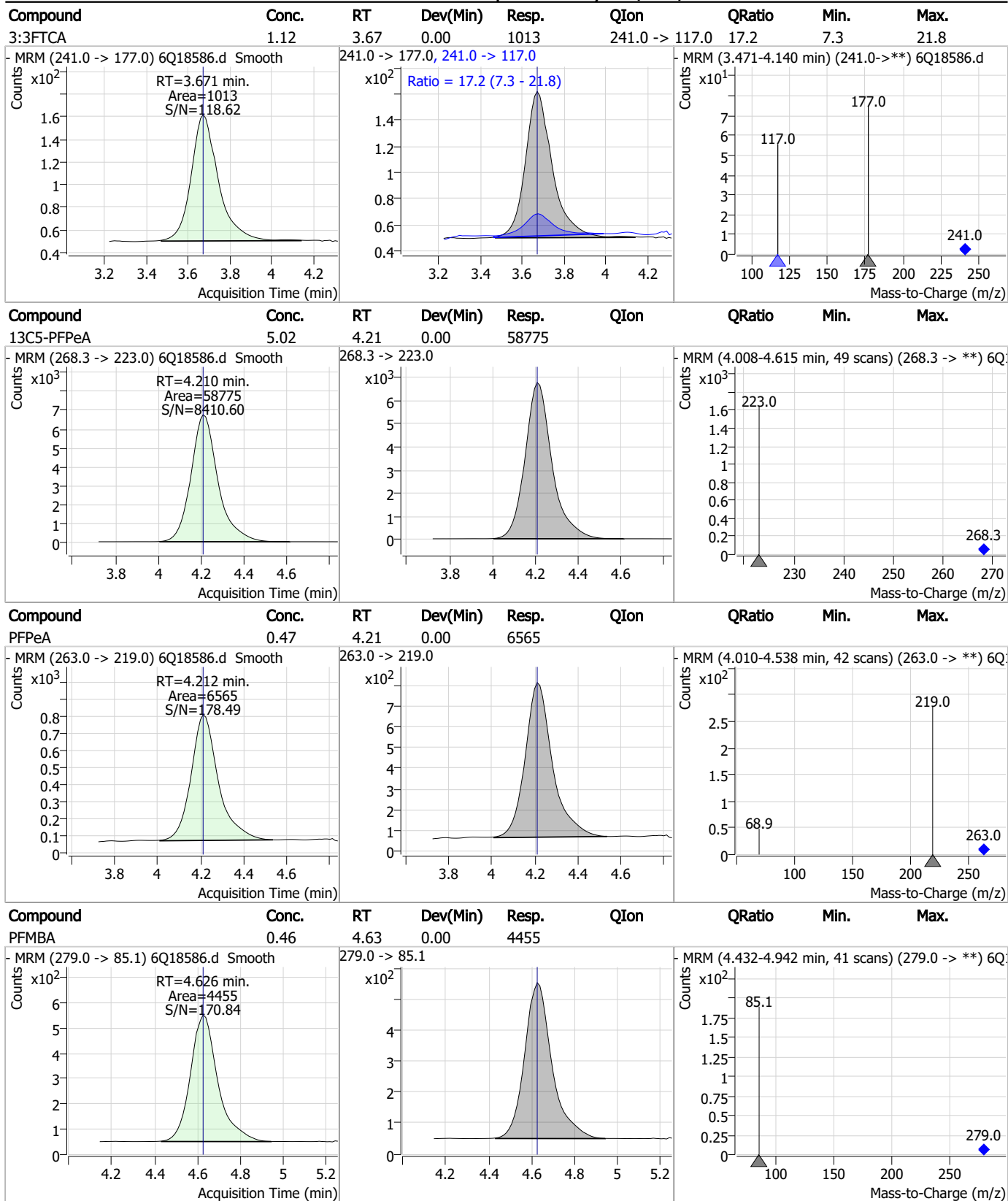
7.7.17
7



Perfluorinated Compounds by LC/MS/MS

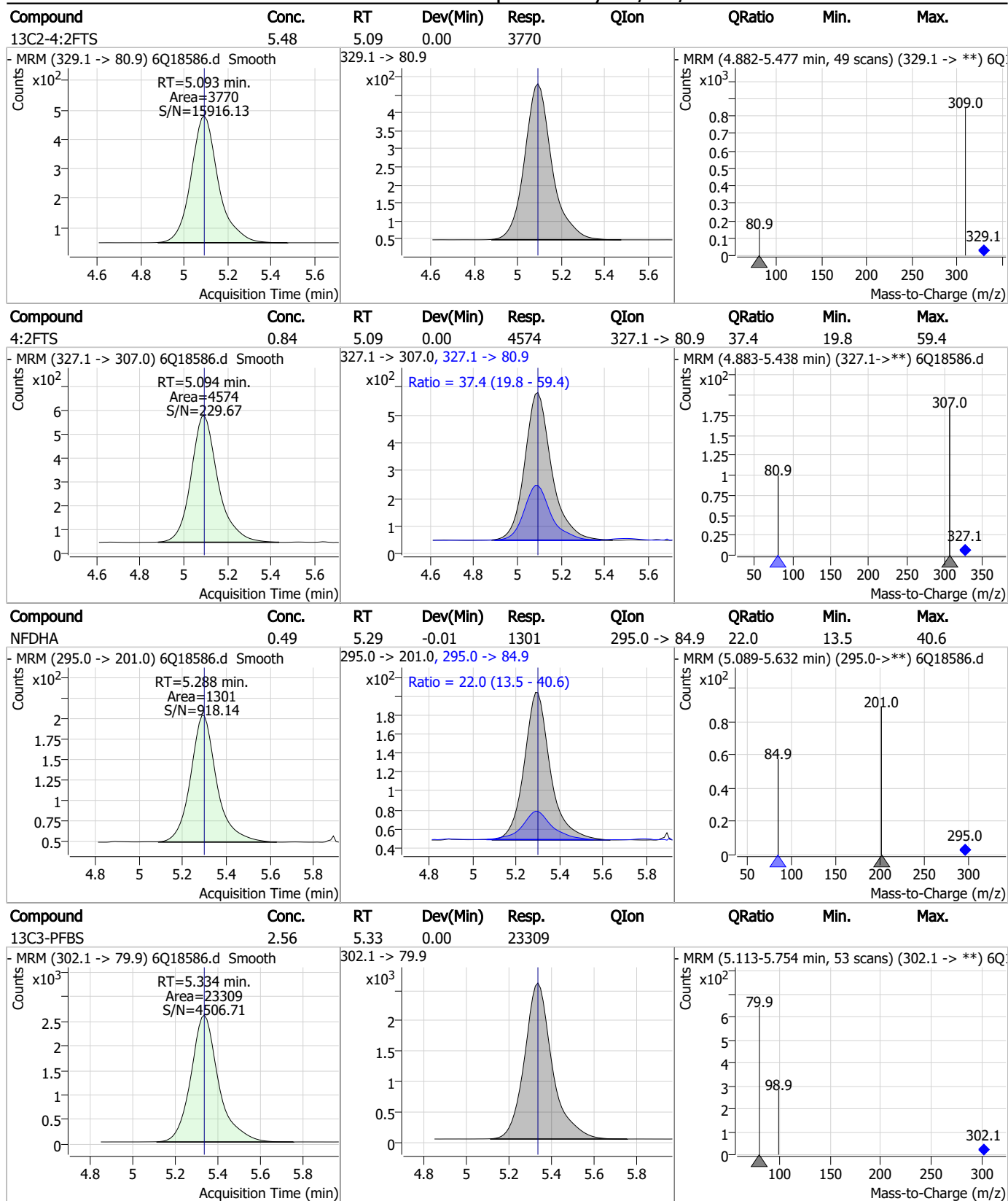


Perfluorinated Compounds by LC/MS/MS



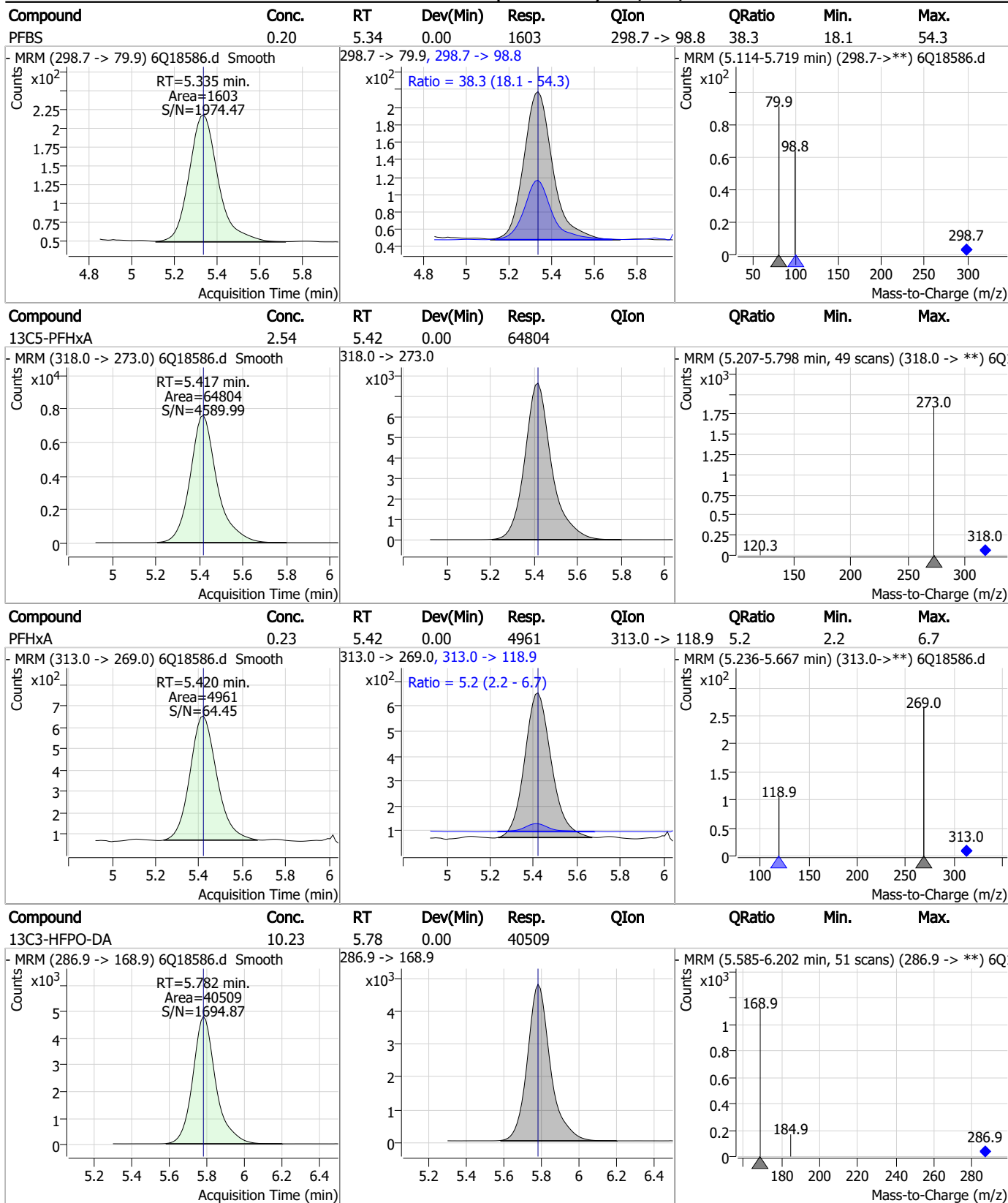
7.7.17

Perfluorinated Compounds by LC/MS/MS



7.7.17

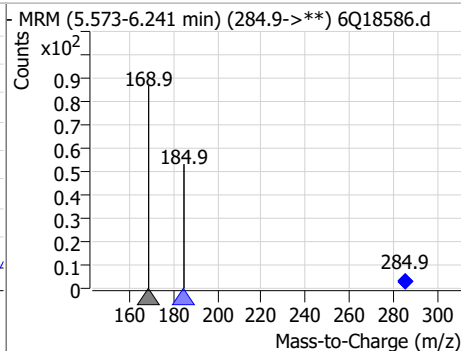
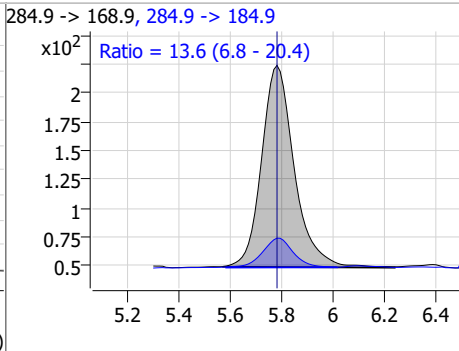
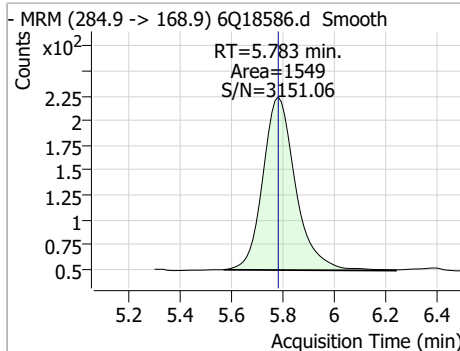
Perfluorinated Compounds by LC/MS/MS



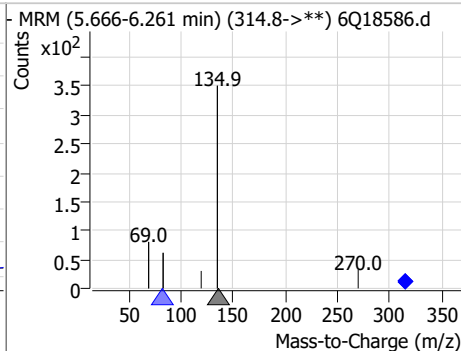
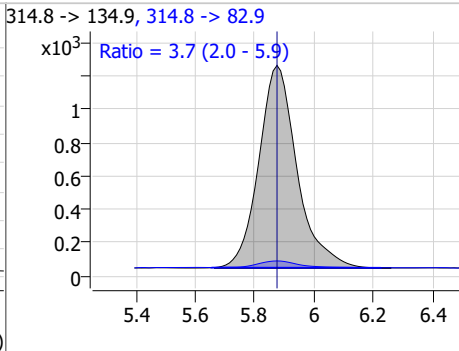
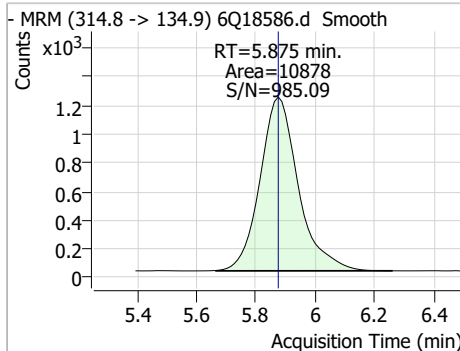
7.7.17

Perfluorinated Compounds by LC/MS/MS

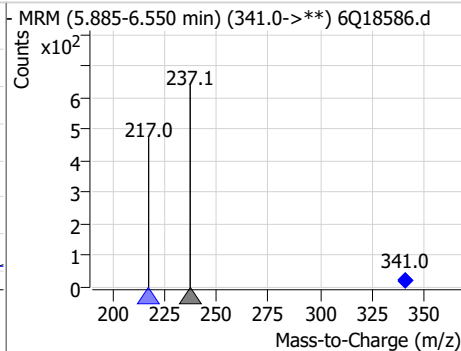
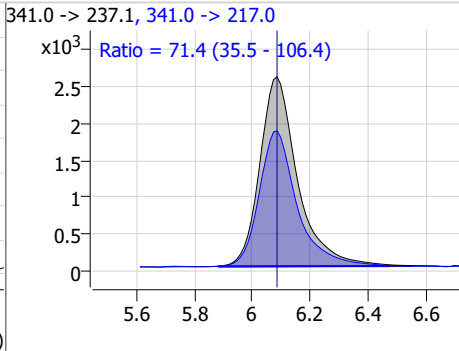
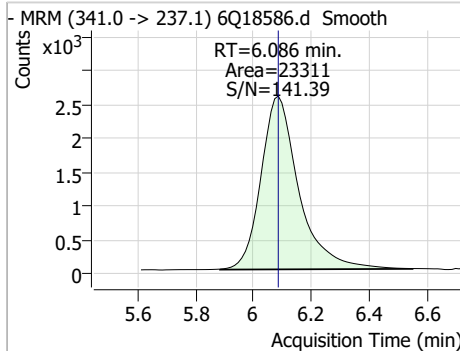
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.45	5.78	0.00	1549	284.9 -> 184.9	13.6	6.8	20.4



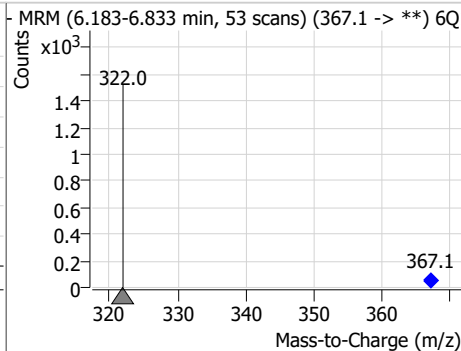
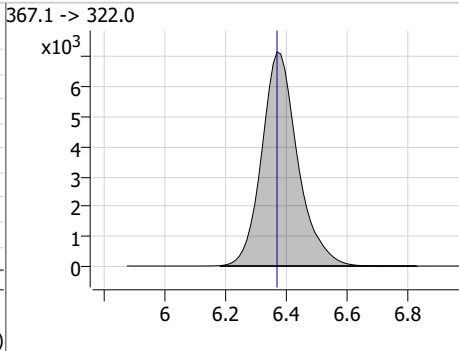
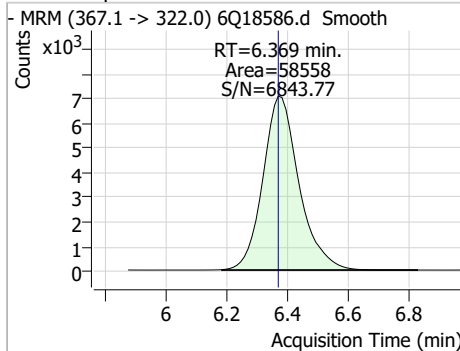
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.39	5.88	0.00	10878	314.8 -> 82.9	3.7	2.0	5.9



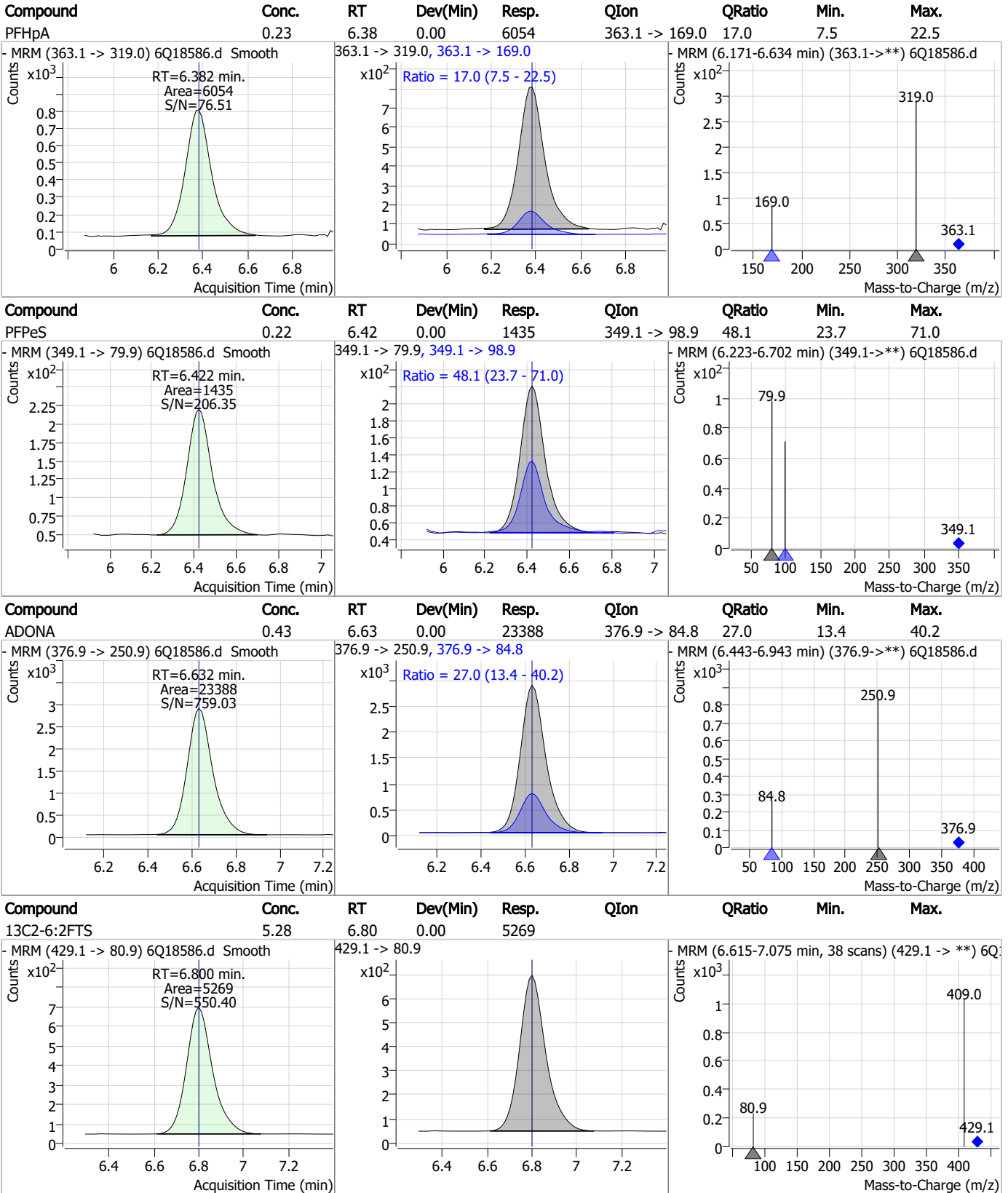
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.96	6.09	0.00	23311	341.0 -> 217.0	71.4	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.48	6.37	0.00	58558	367.1 -> 322.0			

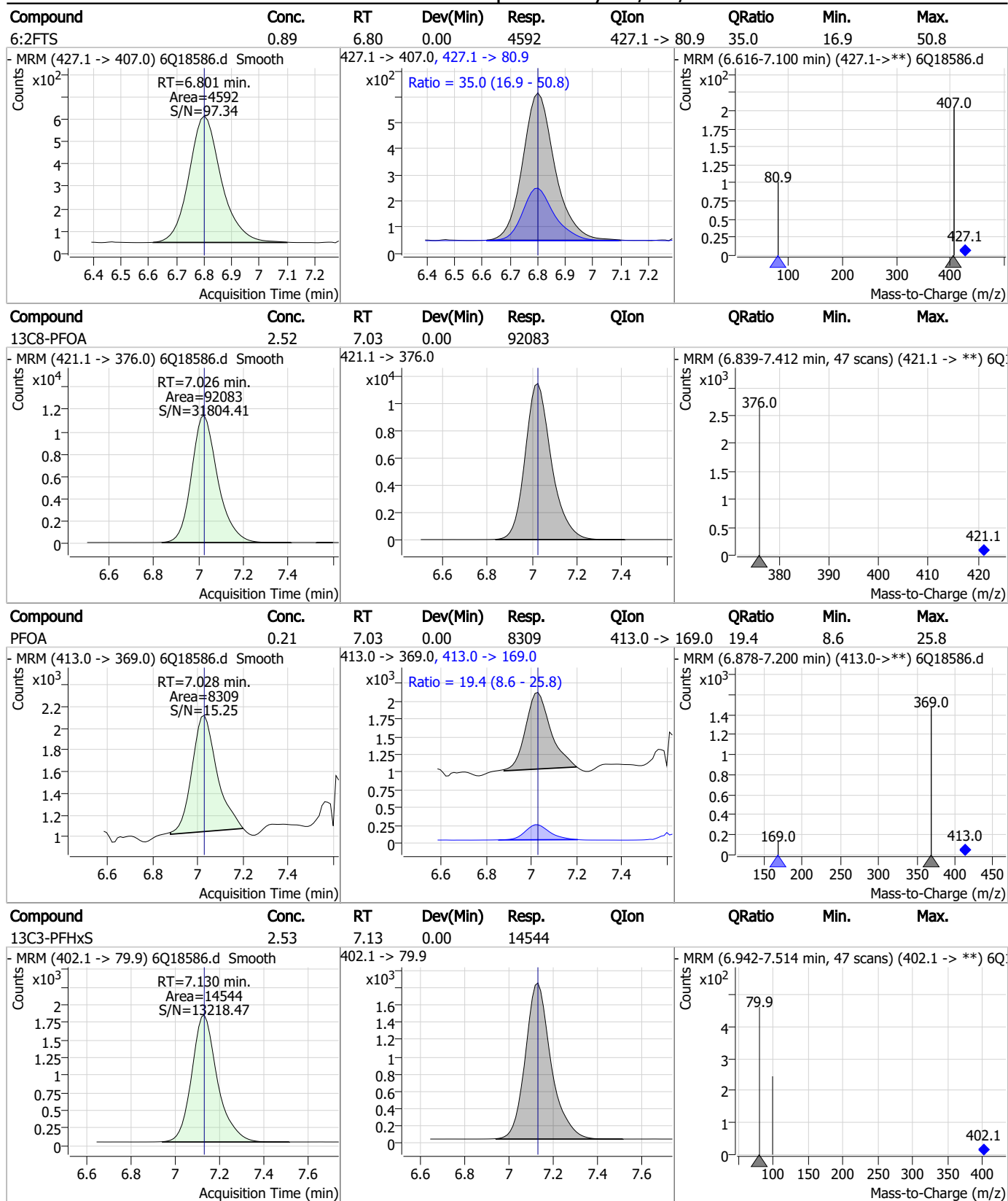


Perfluorinated Compounds by LC/MS/MS



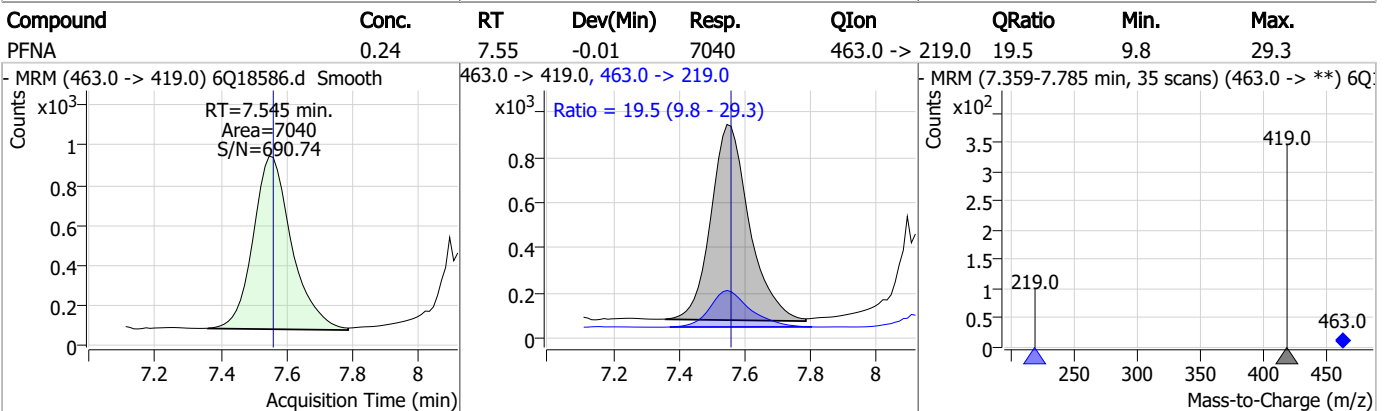
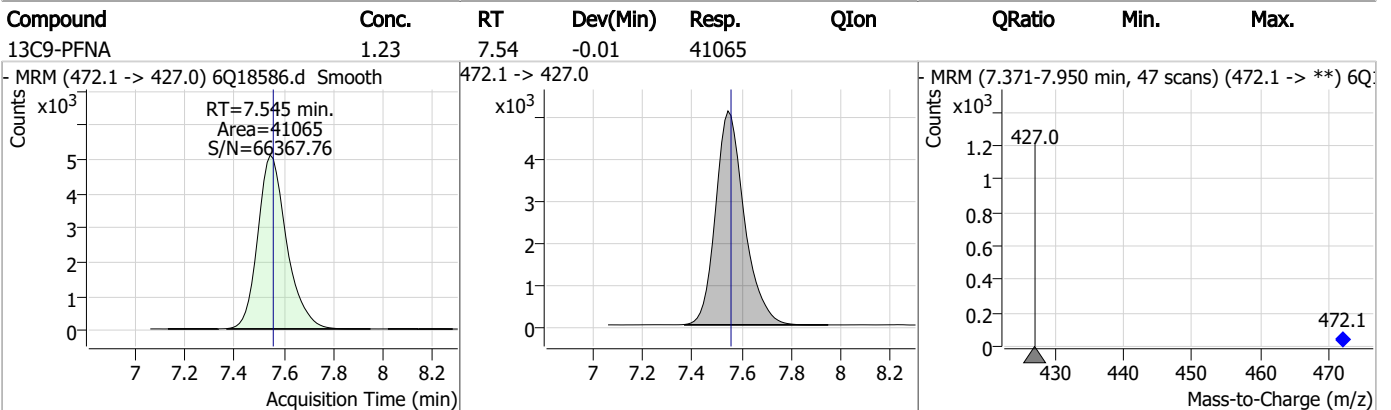
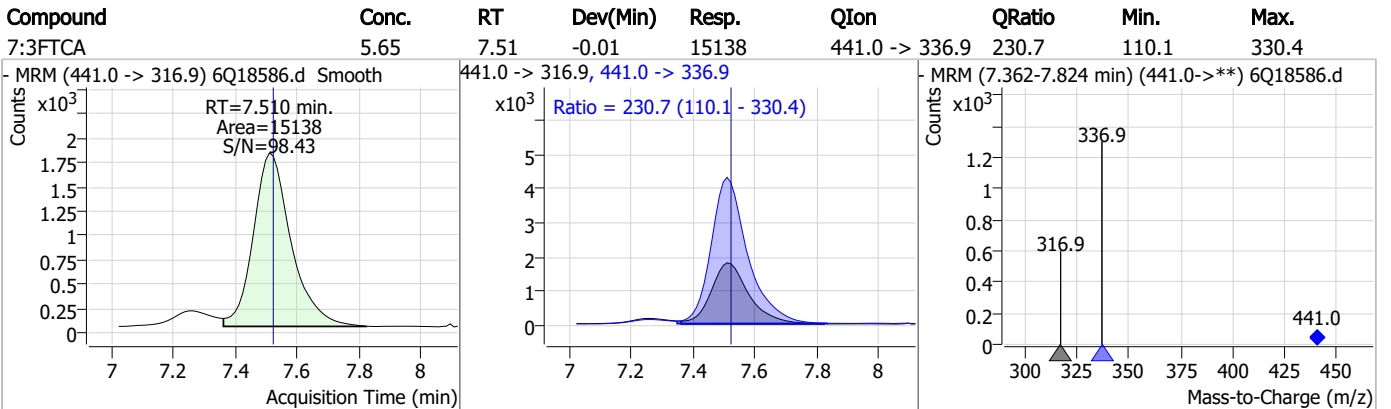
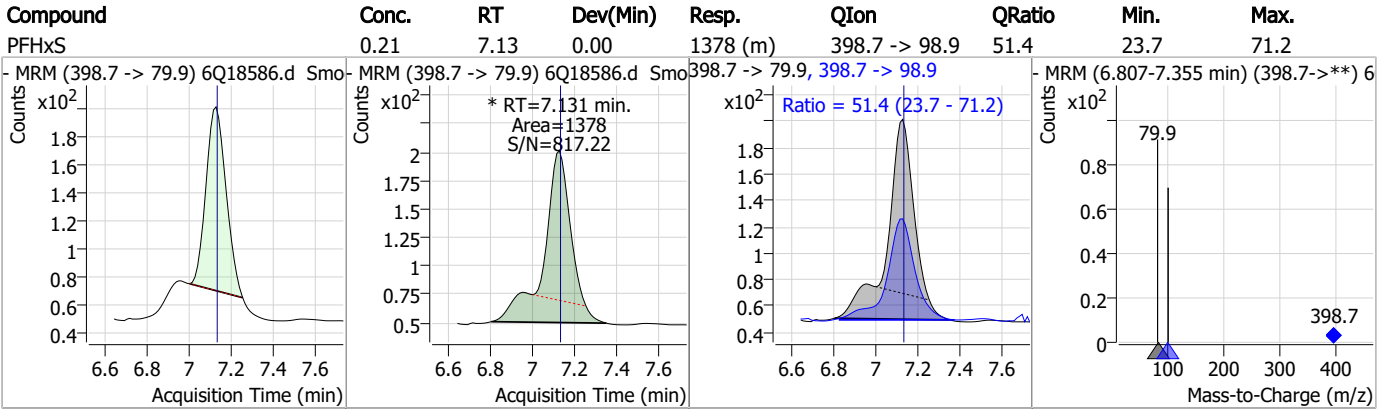
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Perfluorinated Compounds by LC/MS/MS

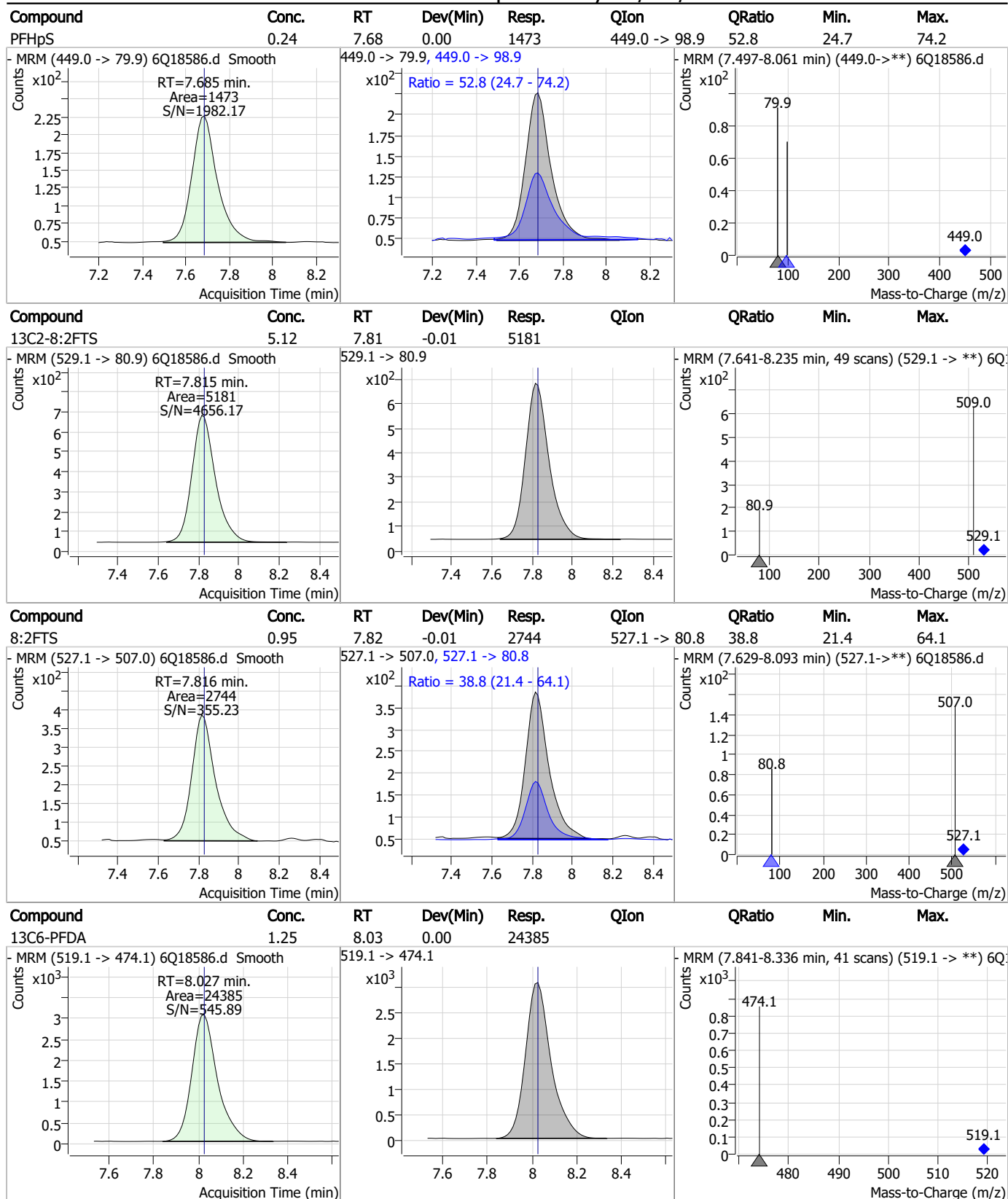


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Perfluorinated Compounds by LC/MS/MS

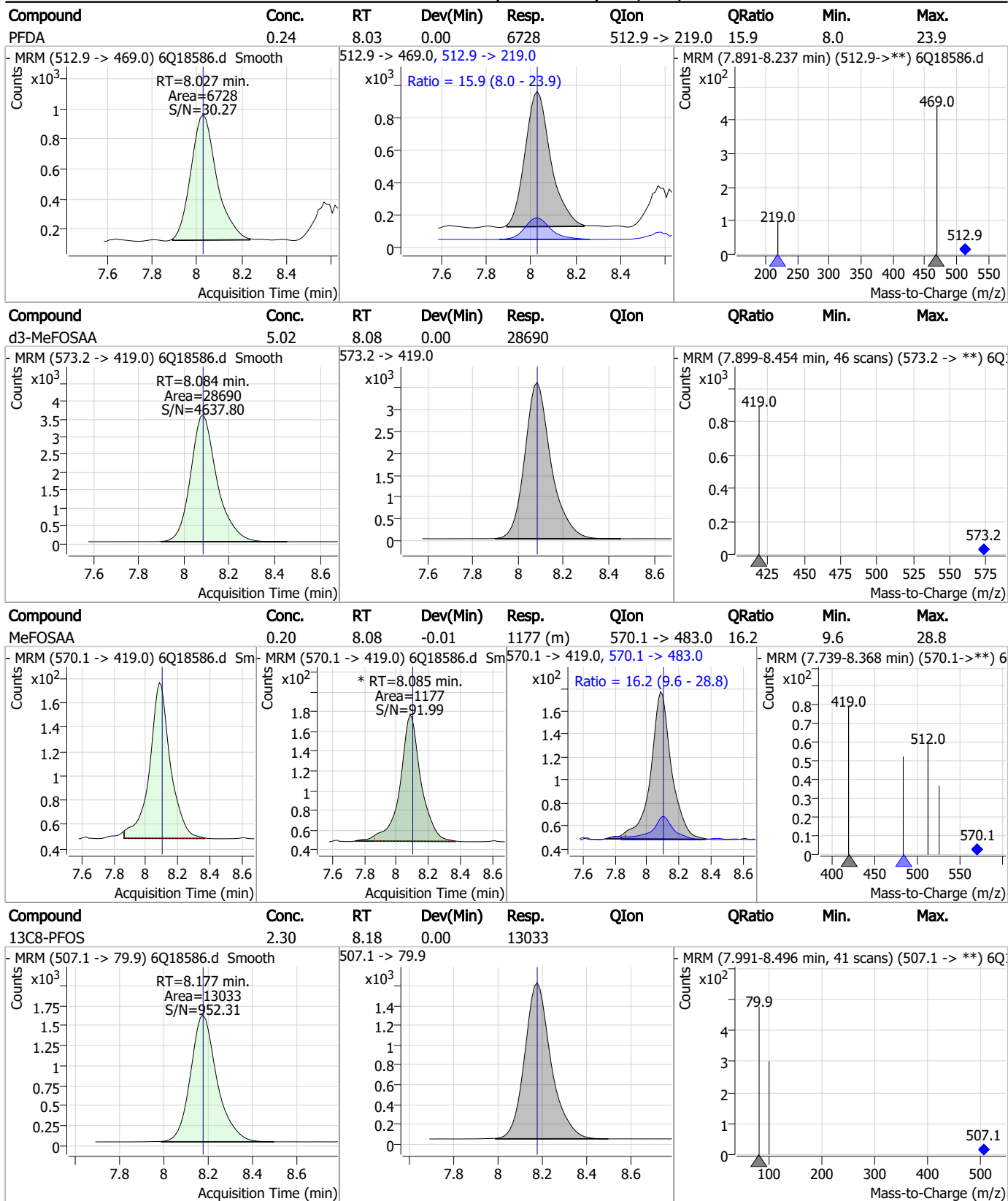


Perfluorinated Compounds by LC/MS/MS



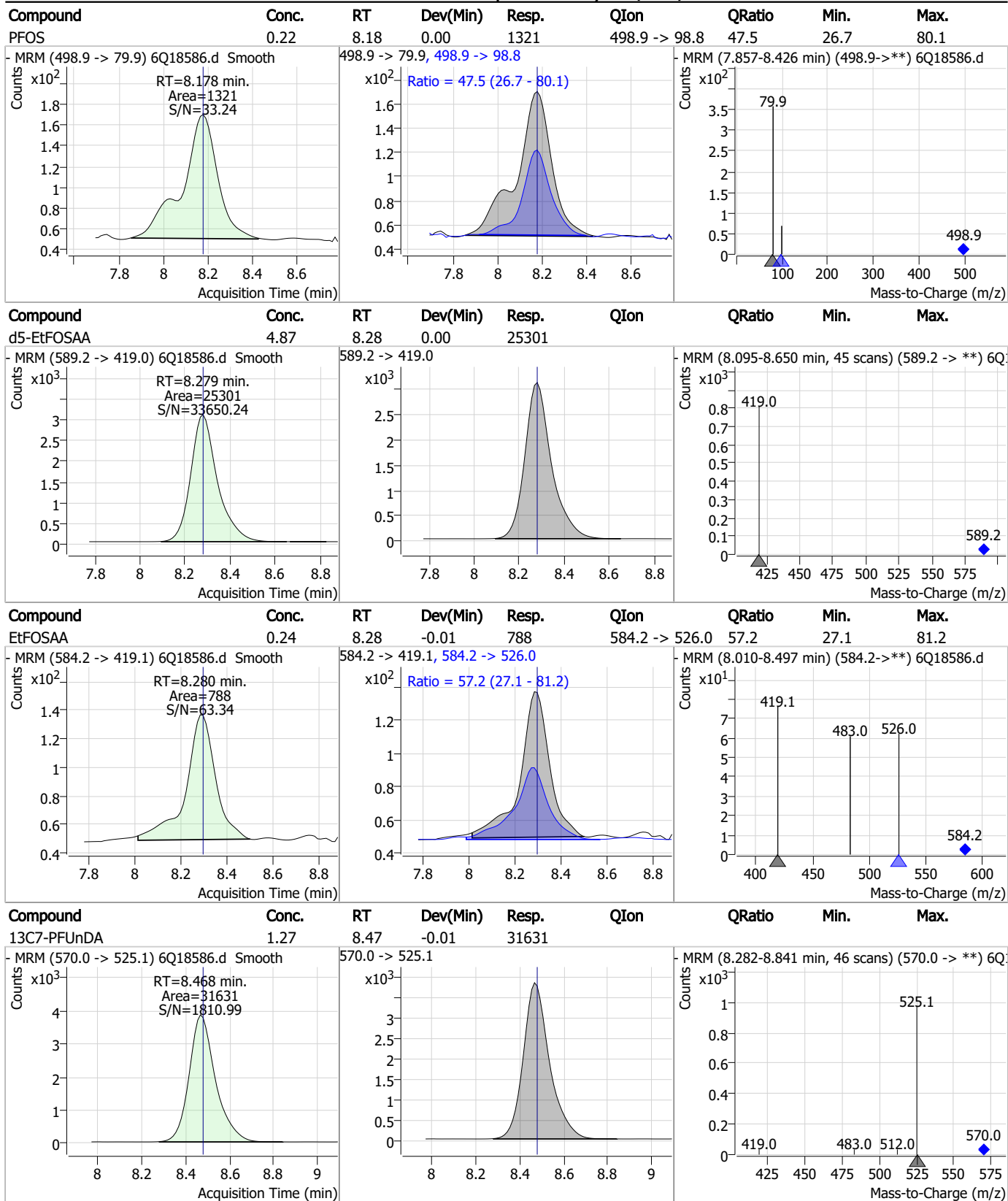
7.7.17

Perfluorinated Compounds by LC/MS/MS



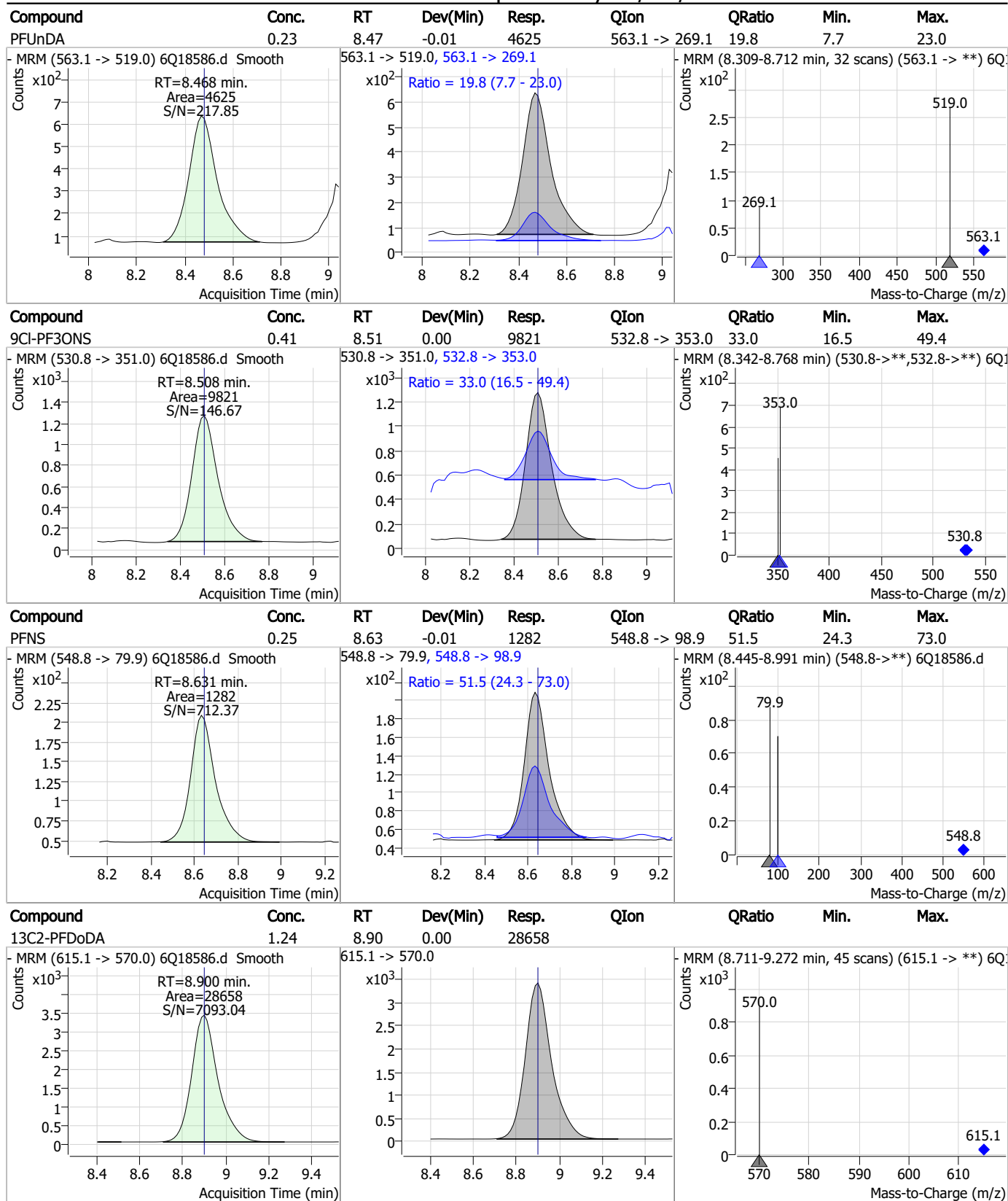
7.7.17

Perfluorinated Compounds by LC/MS/MS



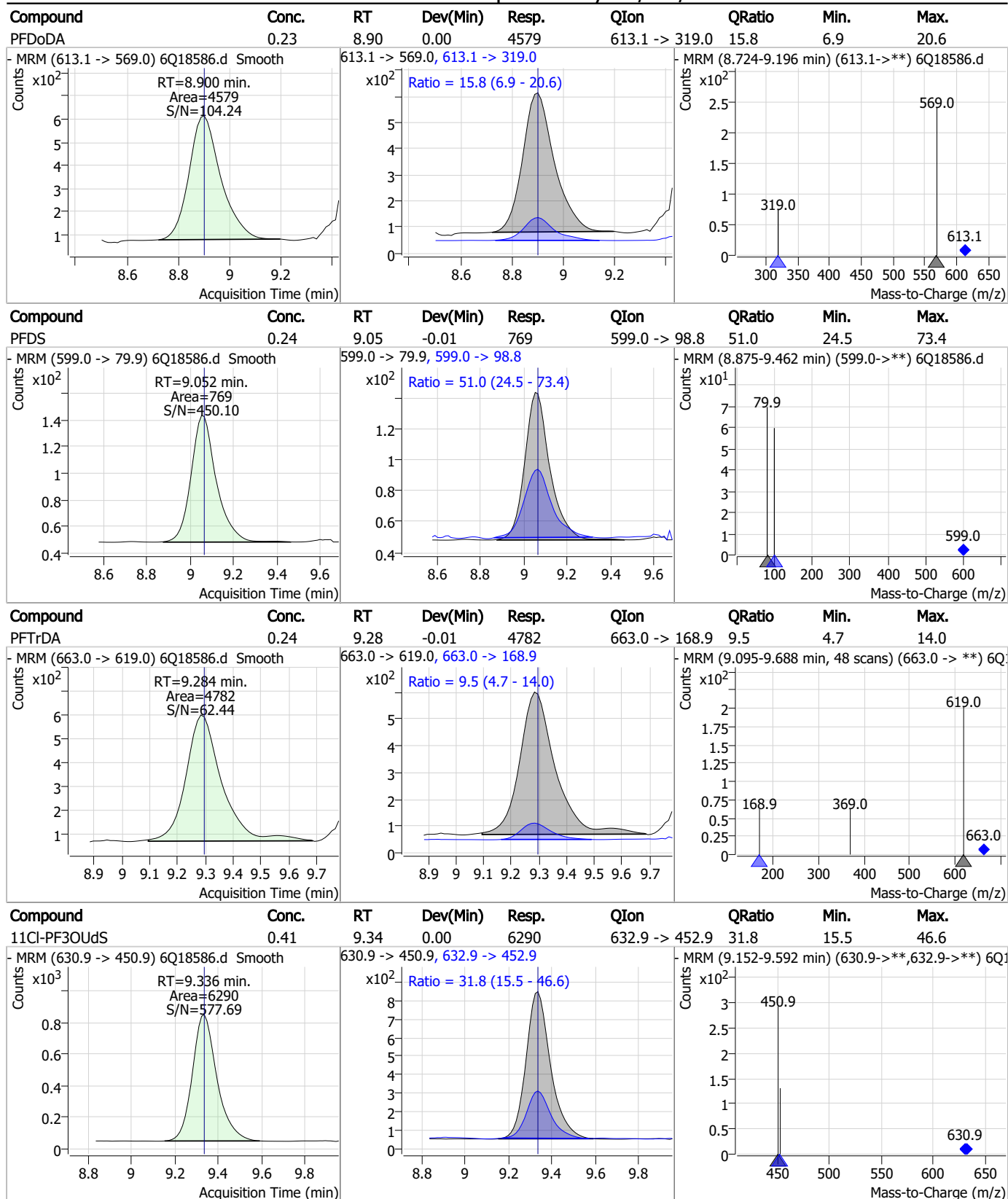
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Perfluorinated Compounds by LC/MS/MS



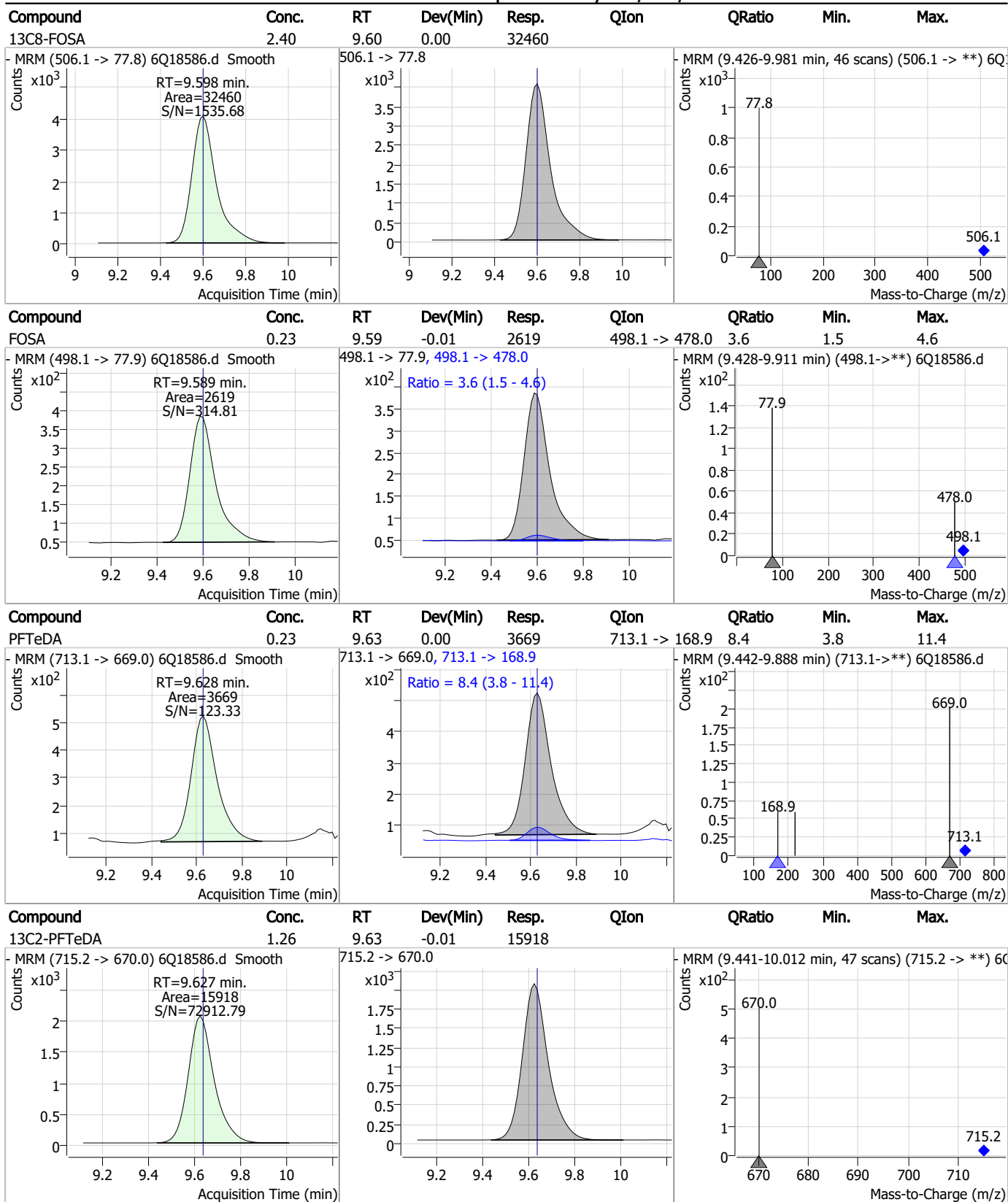
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Perfluorinated Compounds by LC/MS/MS



7.7.17

Perfluorinated Compounds by LC/MS/MS

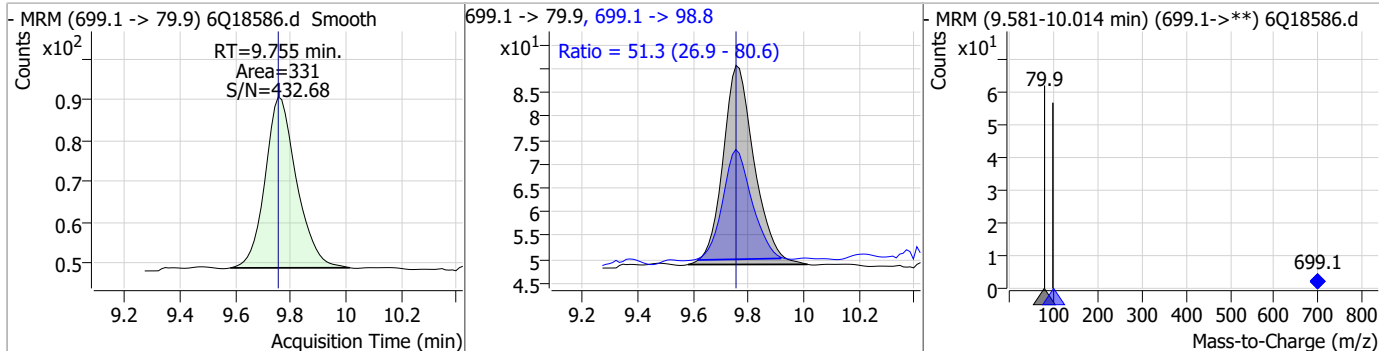


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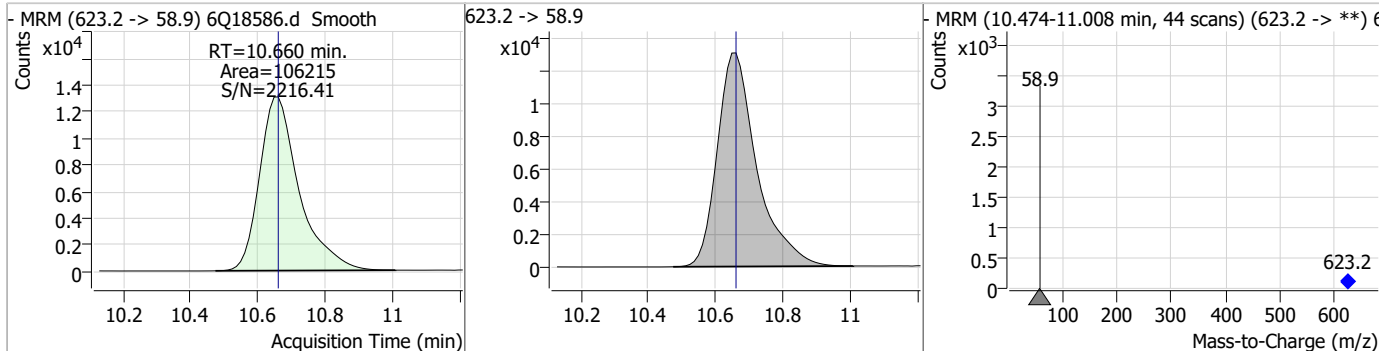
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Perfluorinated Compounds by LC/MS/MS

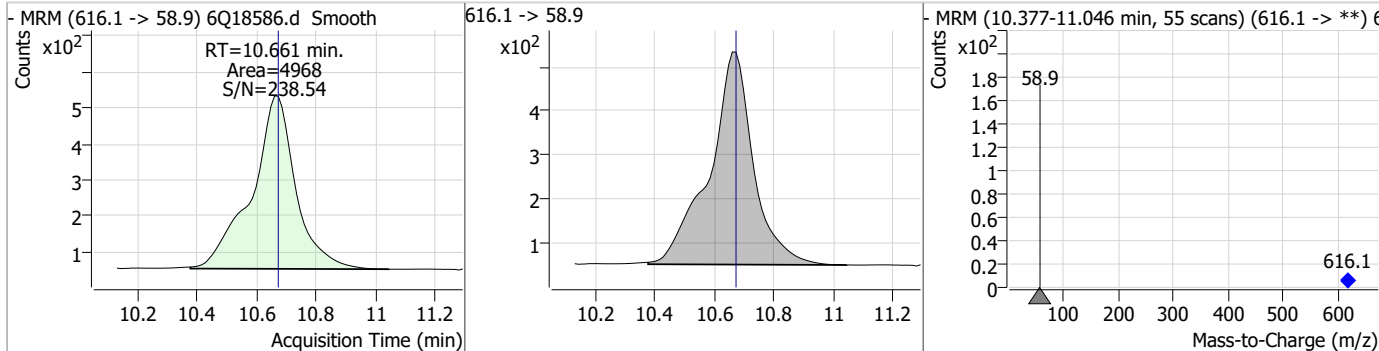
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.23	9.75	0.00	331	699.1 -> 98.8	51.3	26.9	80.6



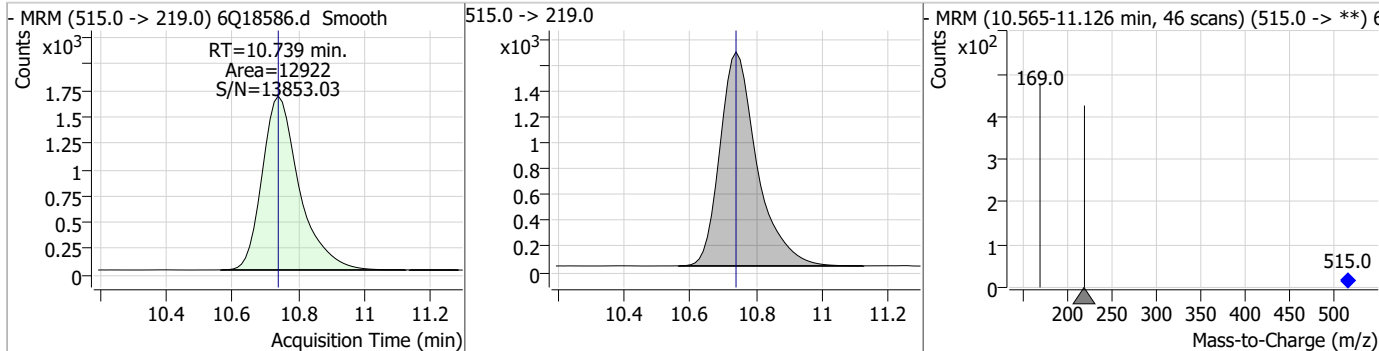
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.88	10.66	0.00	106215				



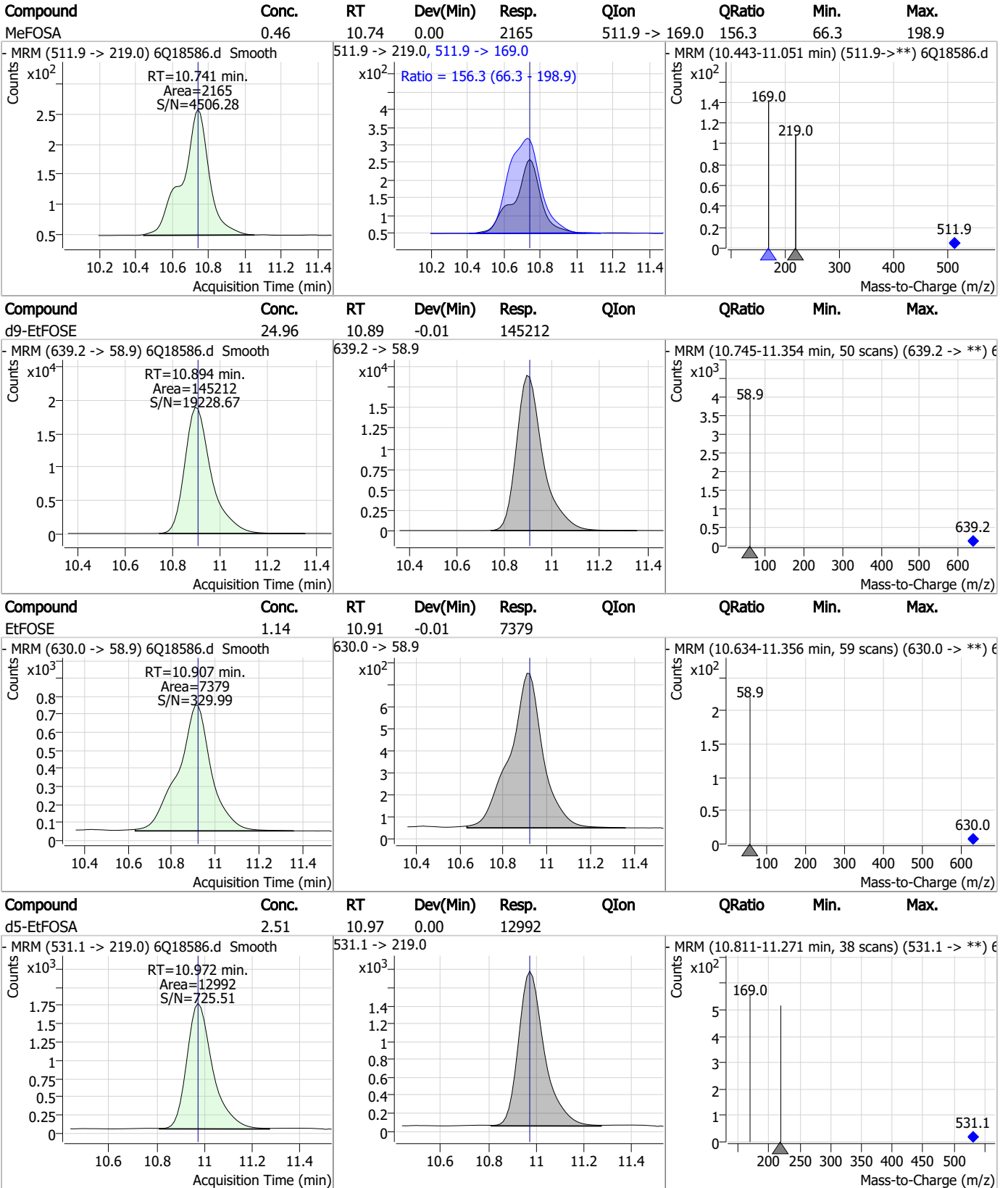
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.18	10.66	-0.01	4968				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.36	10.74	0.00	12922				

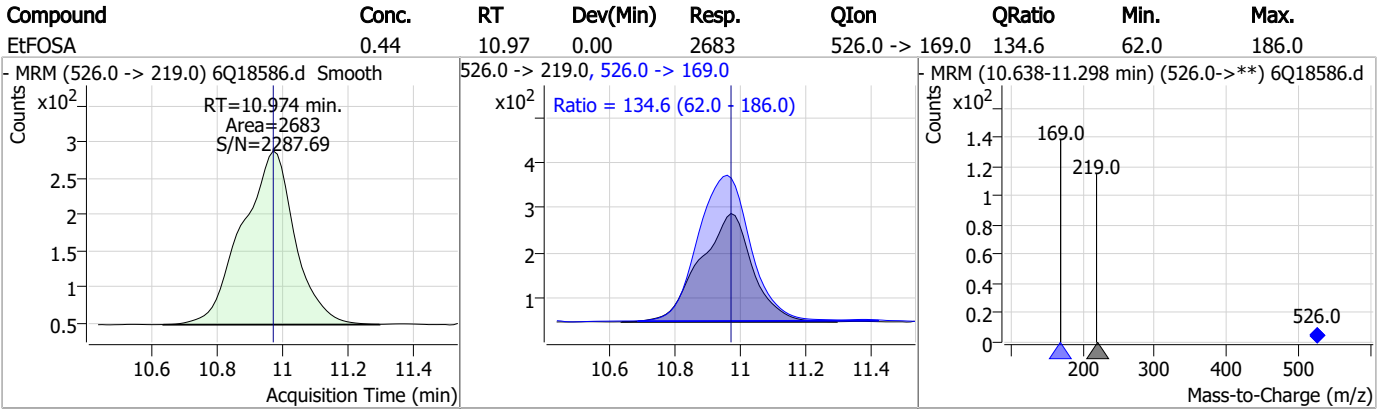


Perfluorinated Compounds by LC/MS/MS



7.7.17

Perfluorinated Compounds by LC/MS/MS



7.7.17
7



Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18586.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:16 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
MeFOSAA	2355-31-9		8.09	Split peak

7.7.17.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18587.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:30:51 PM
 Sample Name : ic279-2
 Vial : P1-A3
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187848	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	63117	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	69879	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	64325	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	96705	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	45166	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	26931	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	34115	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31844	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16834	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35306	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24913	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15879	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14878	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3997	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5904	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5927	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	30777	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	42658	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26923	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	119651	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	150276	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13212	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13947	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18570	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	78663	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11055	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	104993	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	36190	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	53128	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	64575	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3997	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5904	5.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5927	5.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31844	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16834	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C3-PFBS	5.322	302.1 -> 79.9	24913	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	15879	2.57 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 = 102.8%		
13C4-PFBA	2.822	216.8 -> 171.9	187848	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C4-PFHpA	6.369	367.1 -> 322.0	64325	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C5-PFHxA	5.417	318.0 -> 273.0	69879	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C5-PFPeA	4.210	268.3 -> 223.0	63117	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C6-PFDA	8.014	519.1 -> 474.1	26931	1.27 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C7-PFUnDA	8.468	570.0 -> 525.1	34115	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C8-FOSA	9.598	506.1 -> 77.8	35306	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C8-PFOA	7.026	421.1 -> 376.0	96705	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C8-PFOS	8.177	507.1 -> 79.9	14878	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C9-PFNA	7.545	472.1 -> 427.0	45166	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.2%		
d3-MeFOSAA	8.084	573.2 -> 419.0	30777	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C3-HFPO-DA	5.782	286.9 -> 168.9	42658	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
d3-MeFOSA	10.739	515.0 -> 219.0	13947	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.2%		
d5-EtFOSAA	8.279	589.2 -> 419.0	26923	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
d7-MeFOSE	10.660	623.2 -> 58.9	119651	25.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 102.6%		
d9-EtFOSE	10.894	639.2 -> 58.9	150276	24.63 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
d5-EtFOSA	10.972	531.1 -> 219.0	13212	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.3%		
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	8300	1.43 µg/L	100
		327.1 -> 80.9	3305		
6:2FTS	6.801	427.1 -> 407.0	8991	1.55 µg/L	96
		427.1 -> 80.9	2856		
8:2FTS	7.816	527.1 -> 507.0	4819	1.46 µg/L	100
		527.1 -> 80.8	2059		
EtFOSAA	8.280	584.2 -> 419.1	1265	0.37 µg/L	m 72
		584.2 -> 526.0	940		
FOSA	9.589	498.1 -> 77.9	5069	0.41 µg/L	99
		498.1 -> 478.0	143		
MeFOSAA	8.085	570.1 -> 419.0	2704	0.43 µg/L	96
		570.1 -> 483.0	571		
PFBA	2.818	212.8 -> 168.9	10022	1.61 µg/L	100
PFBS	5.323	298.7 -> 79.9	3011	0.36 µg/L	98
		298.7 -> 98.8	1118		
PFDA	8.027	512.9 -> 469.0	12768	0.41 µg/L	94
		512.9 -> 219.0	1732		
PFDODA	8.900	613.1 -> 569.0	8861	0.41 µg/L	97
		613.1 -> 319.0	1333		
PFDS	9.052	599.0 -> 79.9	1548	0.42 µg/L	93

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	679			
PFHpA	6.370	363.1 -> 319.0	11262	0.40	µg/L	94
		363.1 -> 169.0	1971			
PFHpS	7.685	449.0 -> 79.9	2874	0.40	µg/L	90
		449.0 -> 98.9	1232			
PFHxA	5.407	313.0 -> 269.0	9354	0.40	µg/L	99
		313.0 -> 118.9	466			
PFHxS	7.119	398.7 -> 79.9	2706	0.38	µg/L	m 95
		398.7 -> 98.9	1380			
PFNA	7.545	463.0 -> 419.0	12632	0.39	µg/L	98
		463.0 -> 219.0	2580			
PFNS	8.631	548.8 -> 79.9	2254	0.38	µg/L	85
		548.8 -> 98.9	1334			
PFOA	7.015	413.0 -> 369.0	16855	0.41	µg/L	96
		413.0 -> 169.0	3211			
PFOS	8.166	498.9 -> 79.9	2444	0.36	µg/L	m 99
		498.9 -> 98.8	1293			
PFPeA	4.212	263.0 -> 219.0	12188	0.80	µg/L	100
PFPeS	6.410	349.1 -> 79.9	2857	0.40	µg/L	95
		349.1 -> 98.9	1264			
PFTeDA	9.628	713.1 -> 669.0	6383	0.39	µg/L	93
		713.1 -> 168.9	644			
PFTrDA	9.284	663.0 -> 619.0	8810	0.40	µg/L	96
		663.0 -> 168.9	959			
PFUnDA	8.468	563.1 -> 519.0	9113	0.41	µg/L	94
		563.1 -> 269.1	1628			
11CI-PF3OUdS	9.336	630.9 -> 450.9	11999	0.75	µg/L	99
		632.9 -> 452.9	3648			
9CI-PF3ONS	8.508	530.8 -> 351.0	18045	0.72	µg/L	85
		532.8 -> 353.0	7481			
ADONA	6.632	376.9 -> 250.9	42594	0.75	µg/L	99
		376.9 -> 84.8	11674			
HFPO-DA	5.783	284.9 -> 168.9	2876	0.80	µg/L	97
		284.9 -> 184.9	362			
3:3FTCA	3.671	241.0 -> 177.0	1940	2.00	µg/L	99
		241.0 -> 117.0	271			
5:3FTCA	6.086	341.0 -> 237.1	43016	10.19	µg/L	97
		341.0 -> 217.0	31729			
7:3FTCA	7.510	441.0 -> 316.9	29615	10.25	µg/L	97
		441.0 -> 336.9	63812			
EtFOSA	10.974	526.0 -> 219.0	5236	0.85	µg/L	94
		526.0 -> 169.0	6866			
EtFOSE	10.907	630.0 -> 58.9	13675	2.04	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	4316	0.84	µg/L	94
		511.9 -> 169.0	6039			
MeFOSE	10.661	616.1 -> 58.9	9134	1.92	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	659	0.40	µg/L	98
		699.1 -> 98.8	342			
NFDHA	5.288	295.0 -> 201.0	2337	0.82	µg/L	97
		295.0 -> 84.9	599			
PFMBA	4.626	279.0 -> 85.1	8284	0.80	µg/L	100
PFMPA	3.363	229.0 -> 84.9	6426	0.80	µg/L	100
PFEESA	5.875	314.8 -> 134.9	20510	0.69	µg/L	99
		314.8 -> 82.9	704			

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

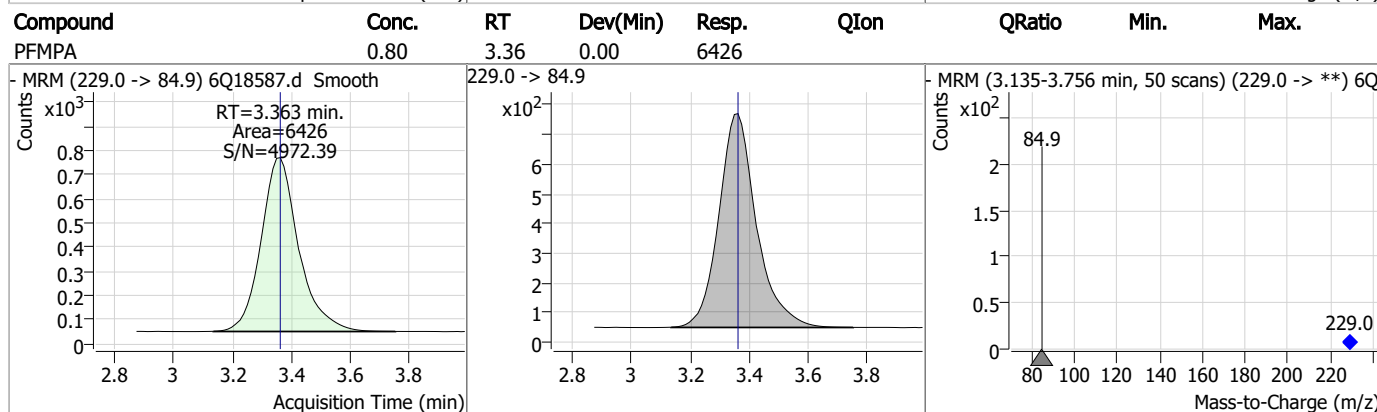
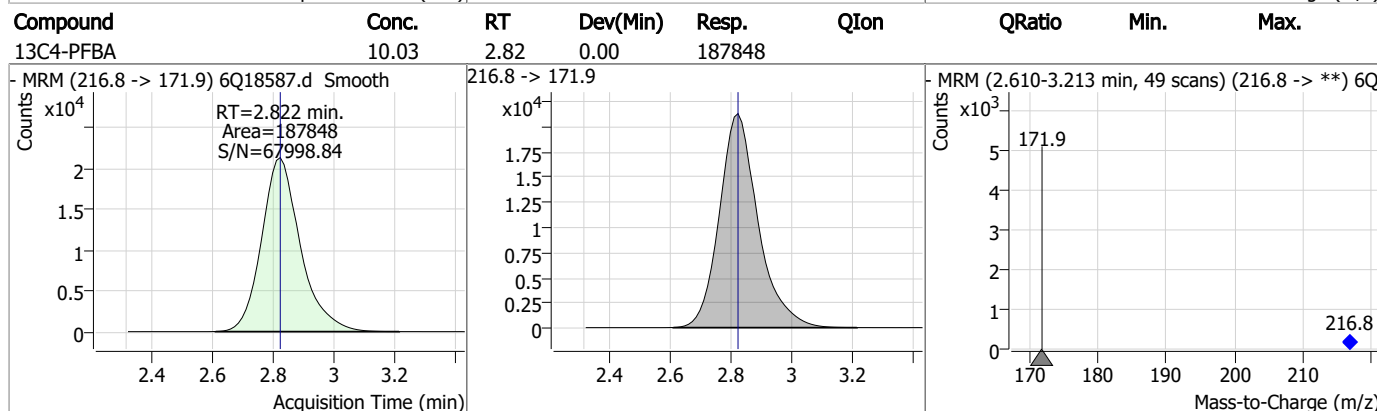
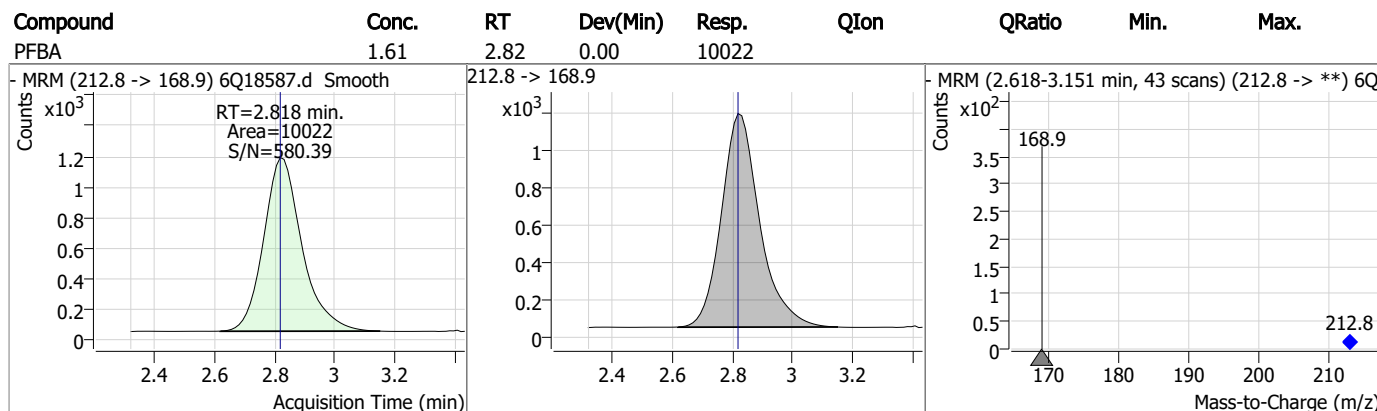
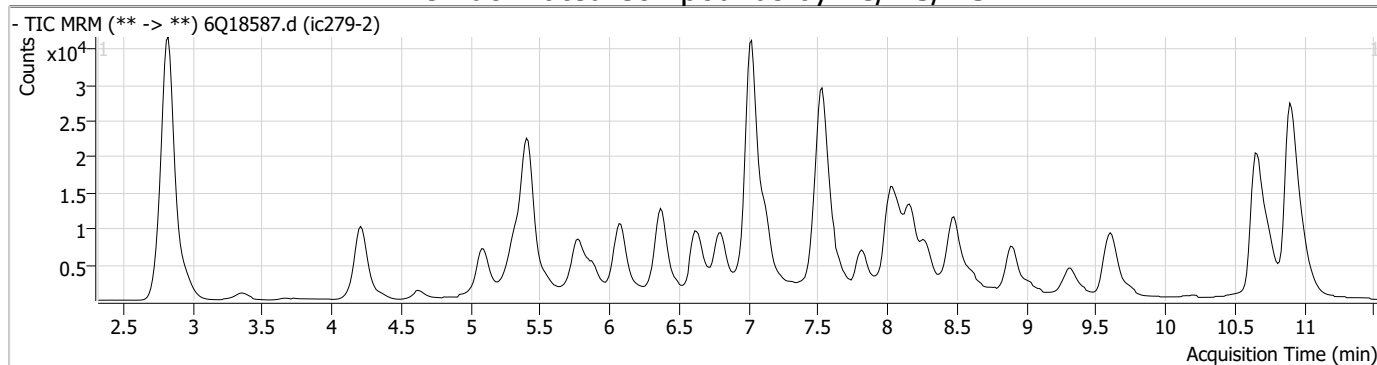
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.18

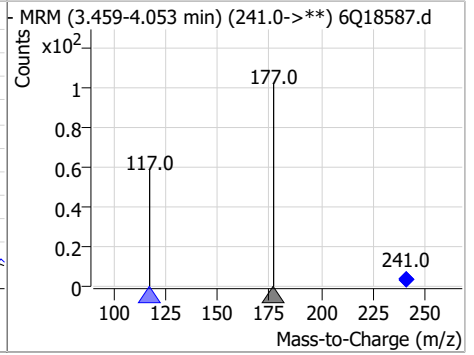
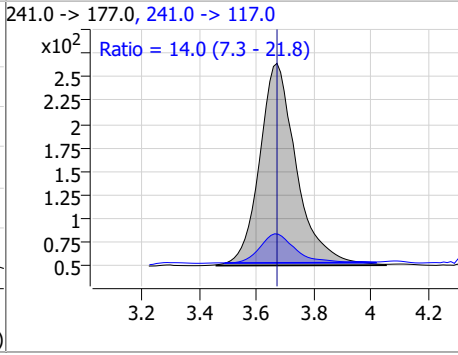
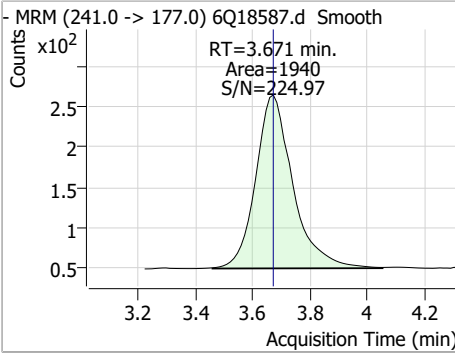
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Perfluorinated Compounds by LC/MS/MS

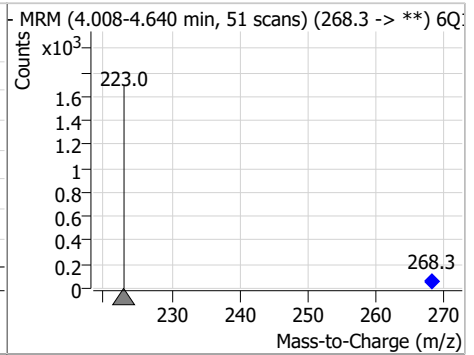
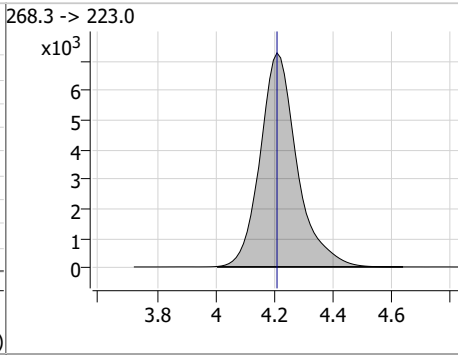
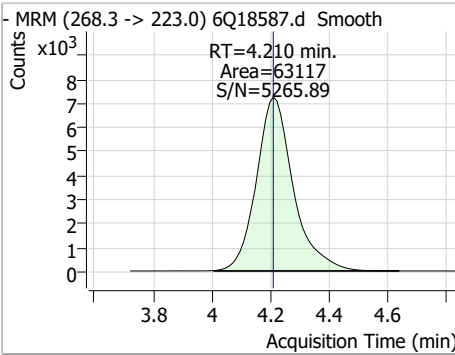


Perfluorinated Compounds by LC/MS/MS

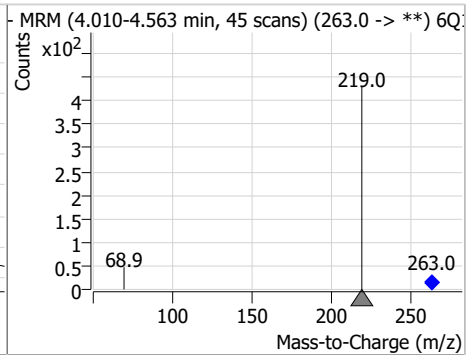
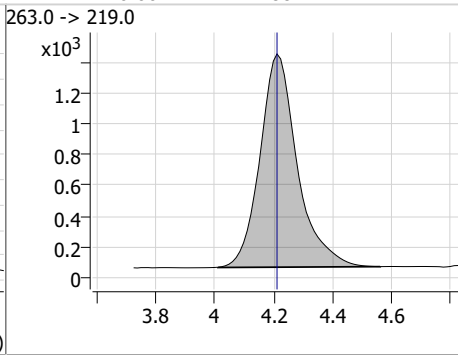
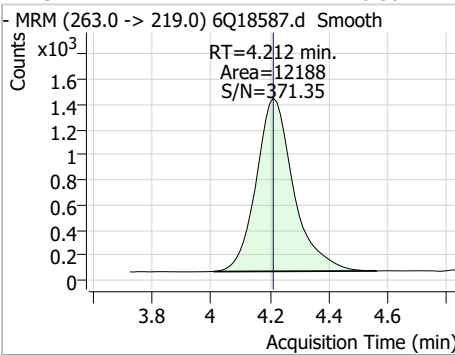
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	2.00	3.67	0.00	1940	241.0 -> 117.0	14.0	7.3	21.8



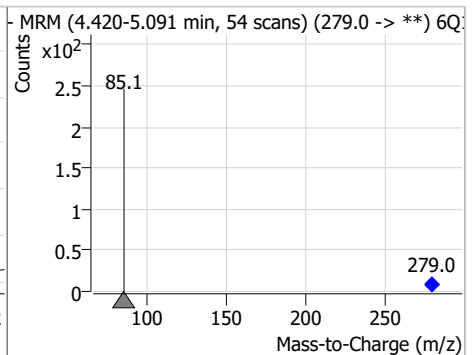
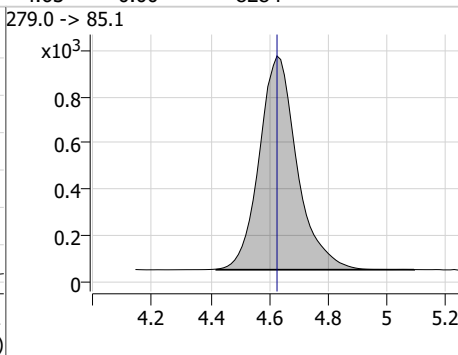
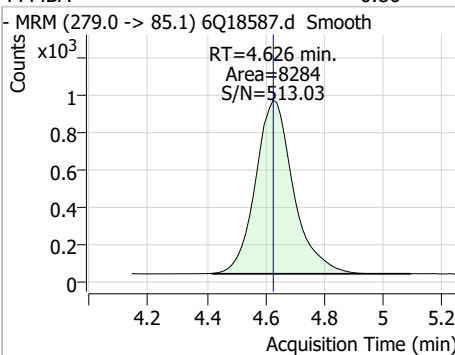
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.03	4.21	0.00	63117				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.80	4.21	0.00	12188				

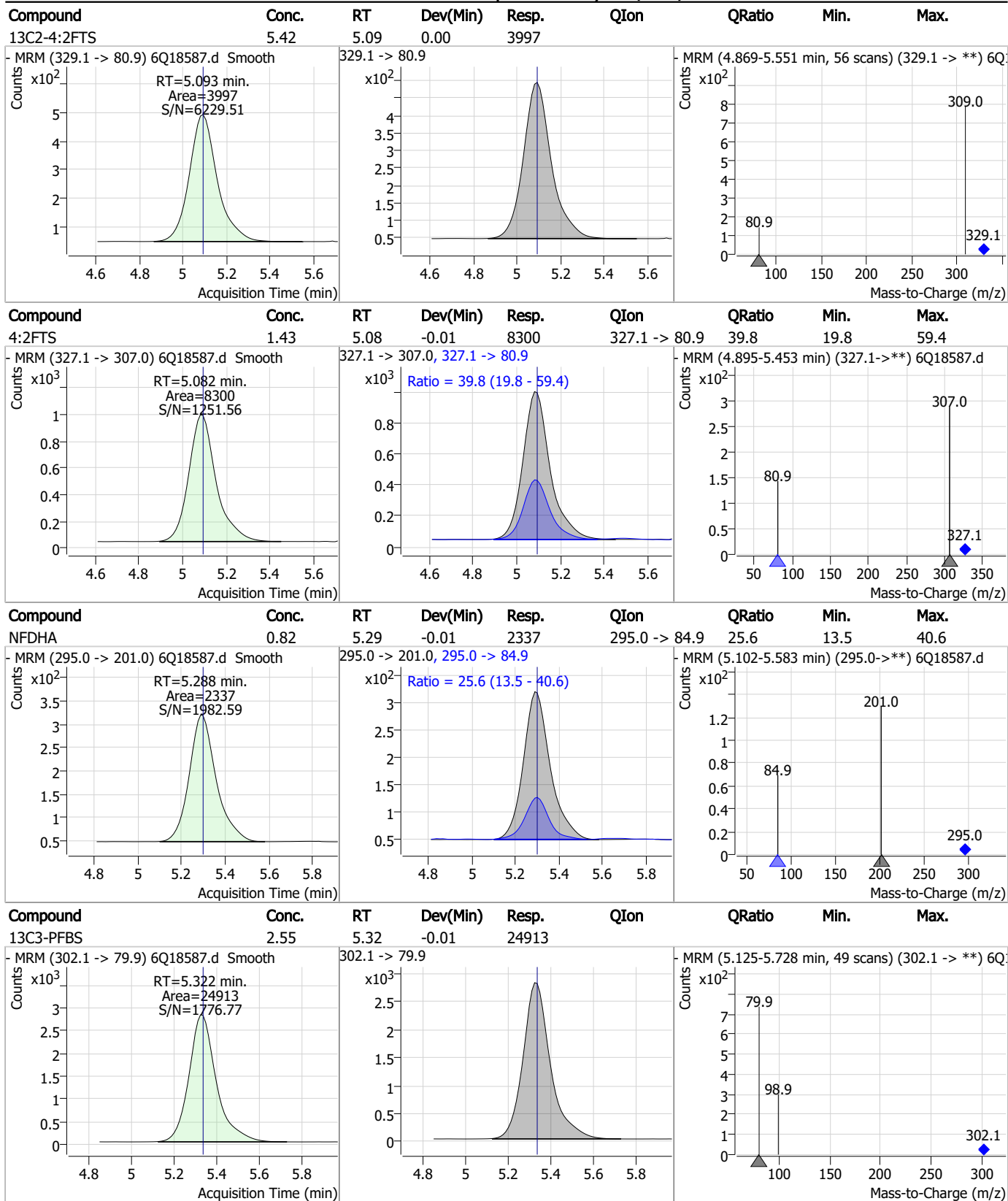


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.80	4.63	0.00	8284				



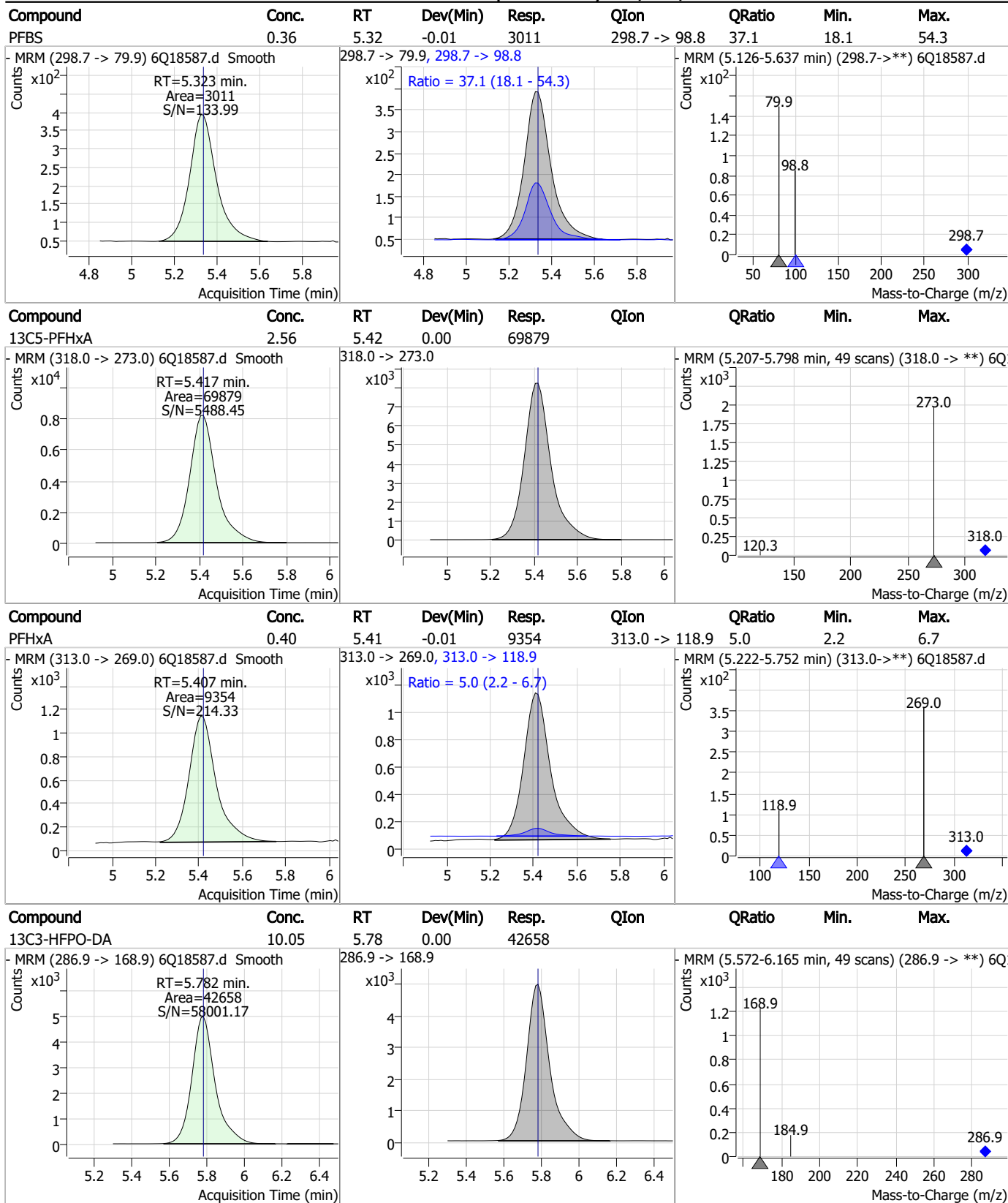
7.7.18 7

Perfluorinated Compounds by LC/MS/MS



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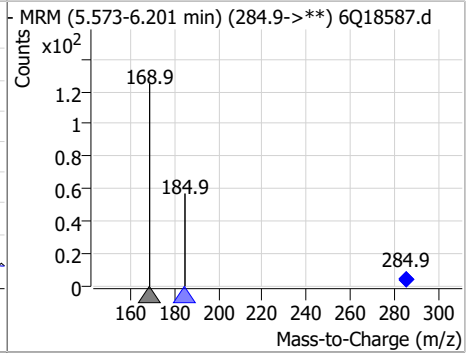
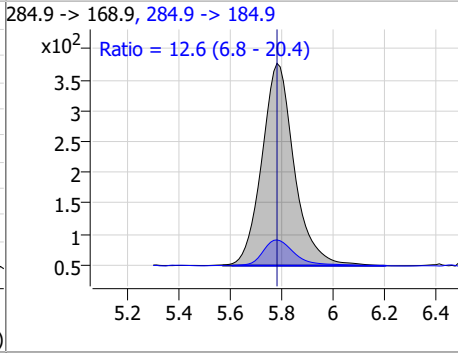
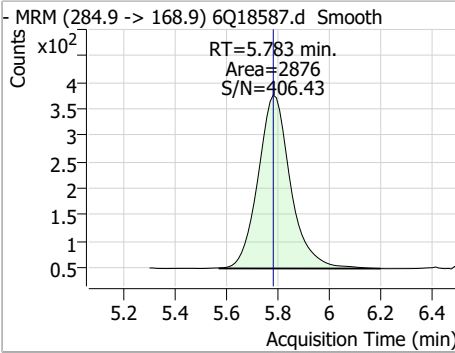
Perfluorinated Compounds by LC/MS/MS



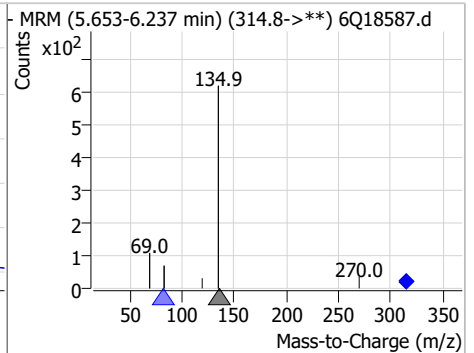
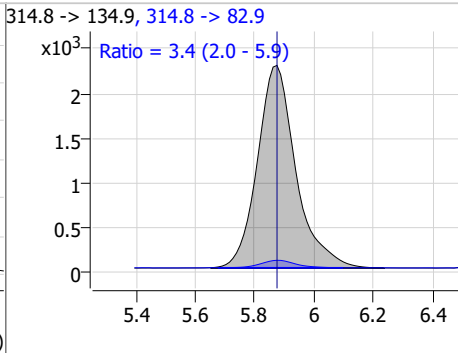
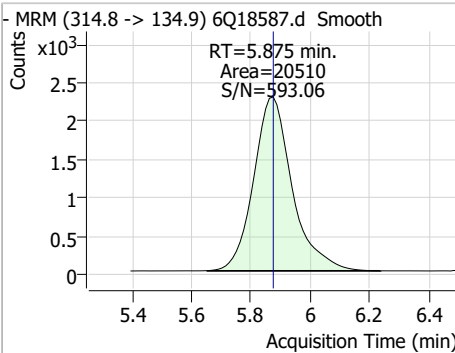
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Perfluorinated Compounds by LC/MS/MS

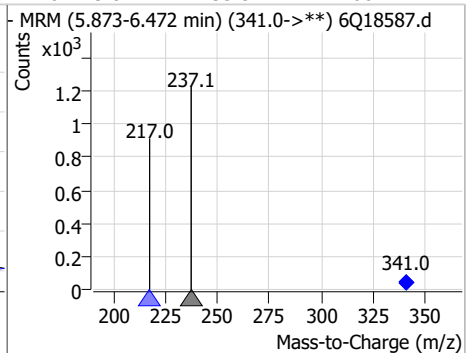
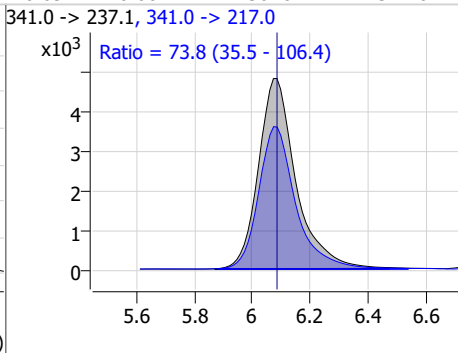
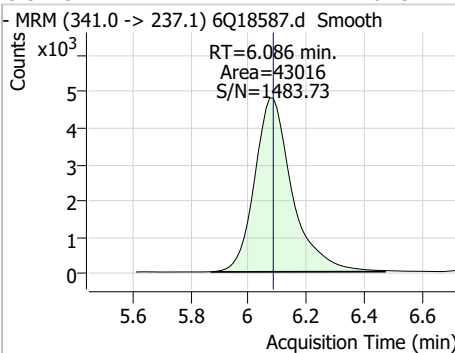
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.80	5.78	0.00	2876	284.9 -> 184.9	12.6	6.8	20.4



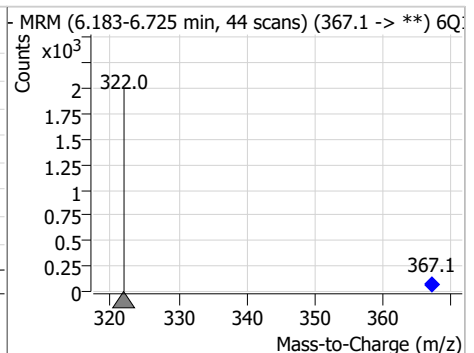
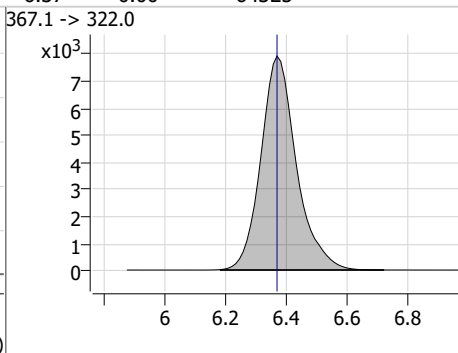
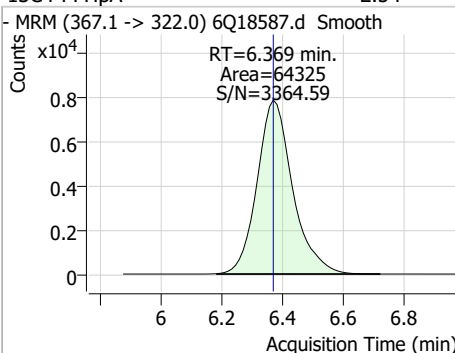
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.69	5.88	0.00	20510	314.8 -> 82.9	3.4	2.0	5.9



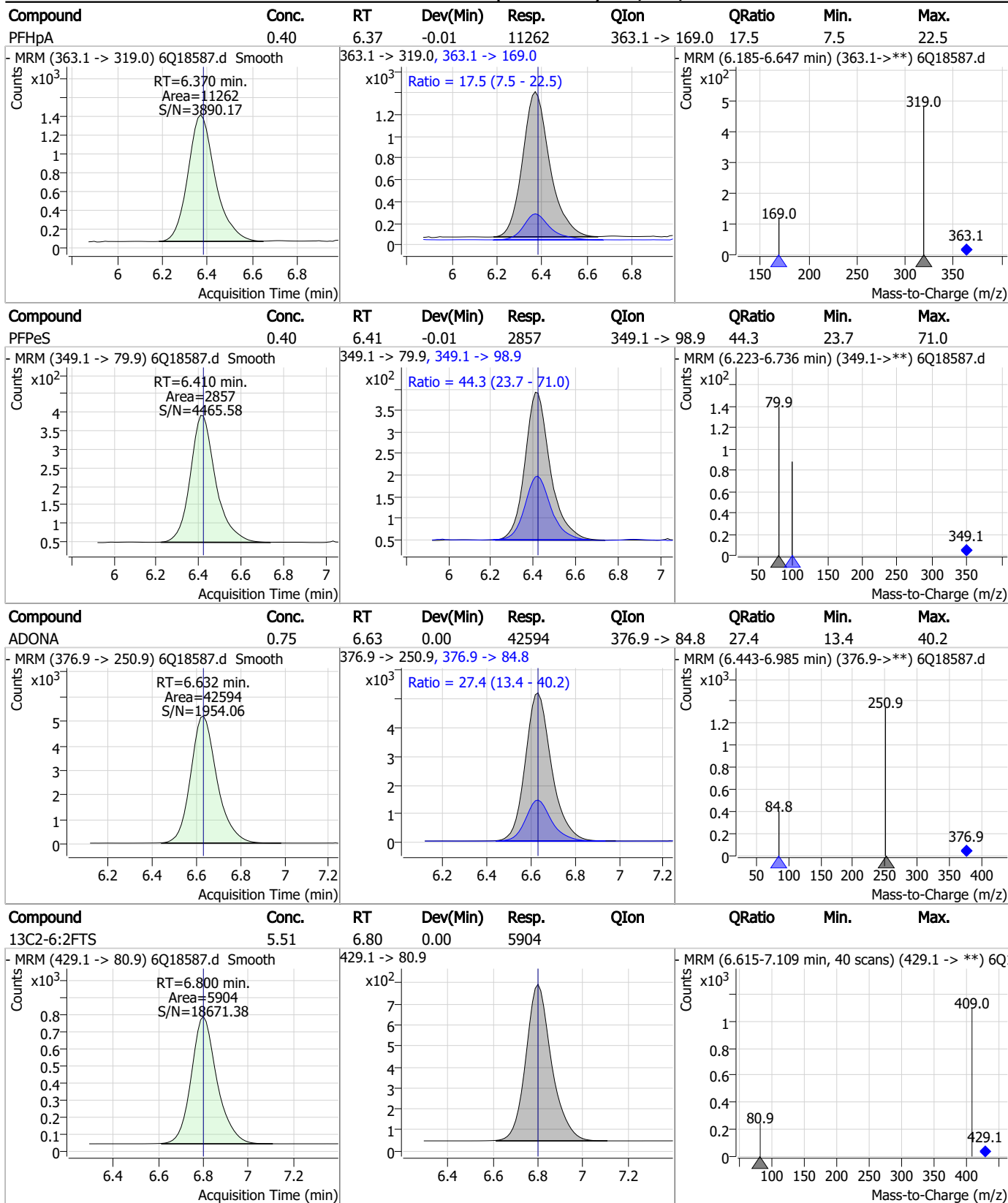
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	10.19	6.09	0.00	43016	341.0 -> 217.0	73.8	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.54	6.37	0.00	64325	367.1 -> 322.0			

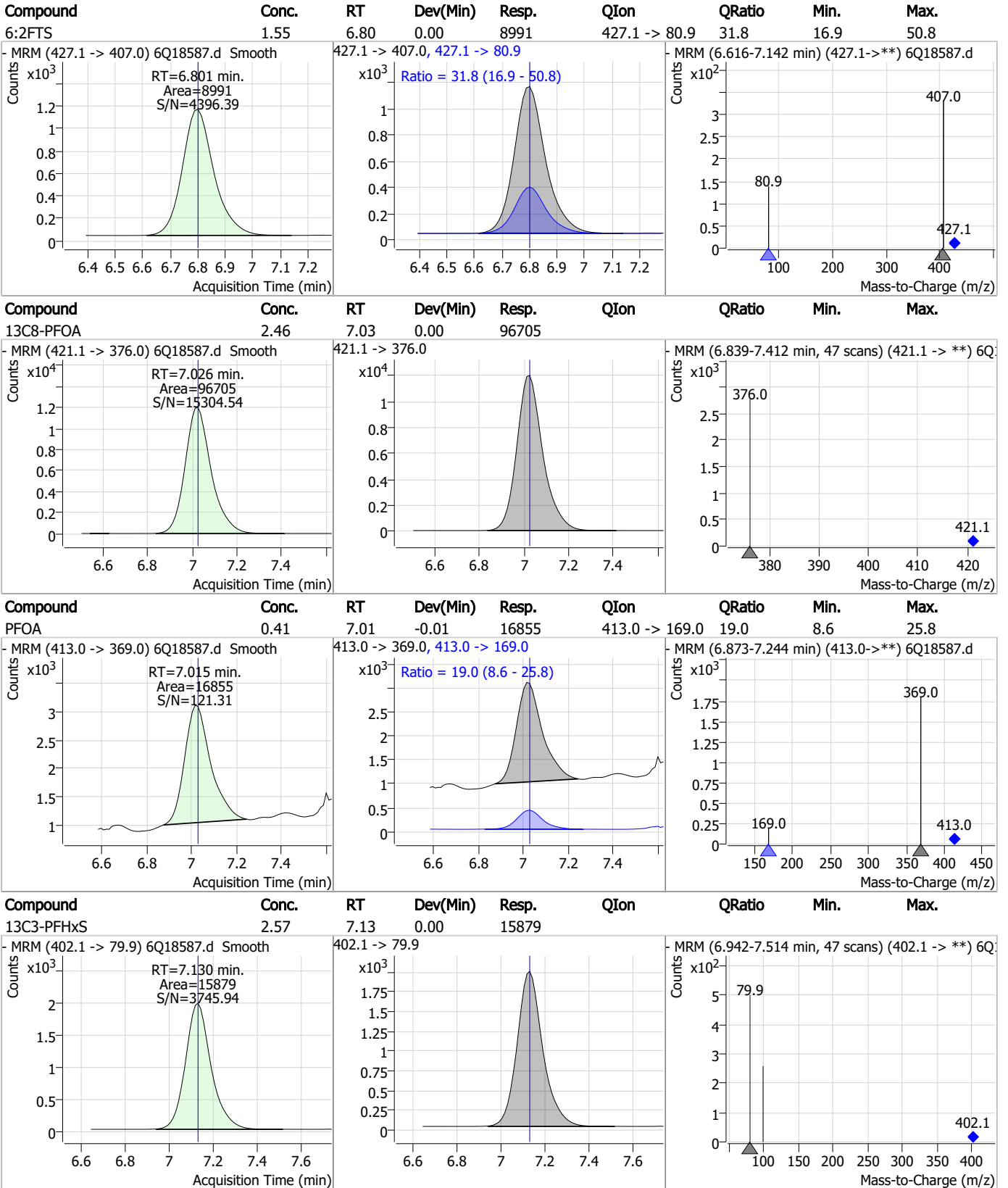


Perfluorinated Compounds by LC/MS/MS



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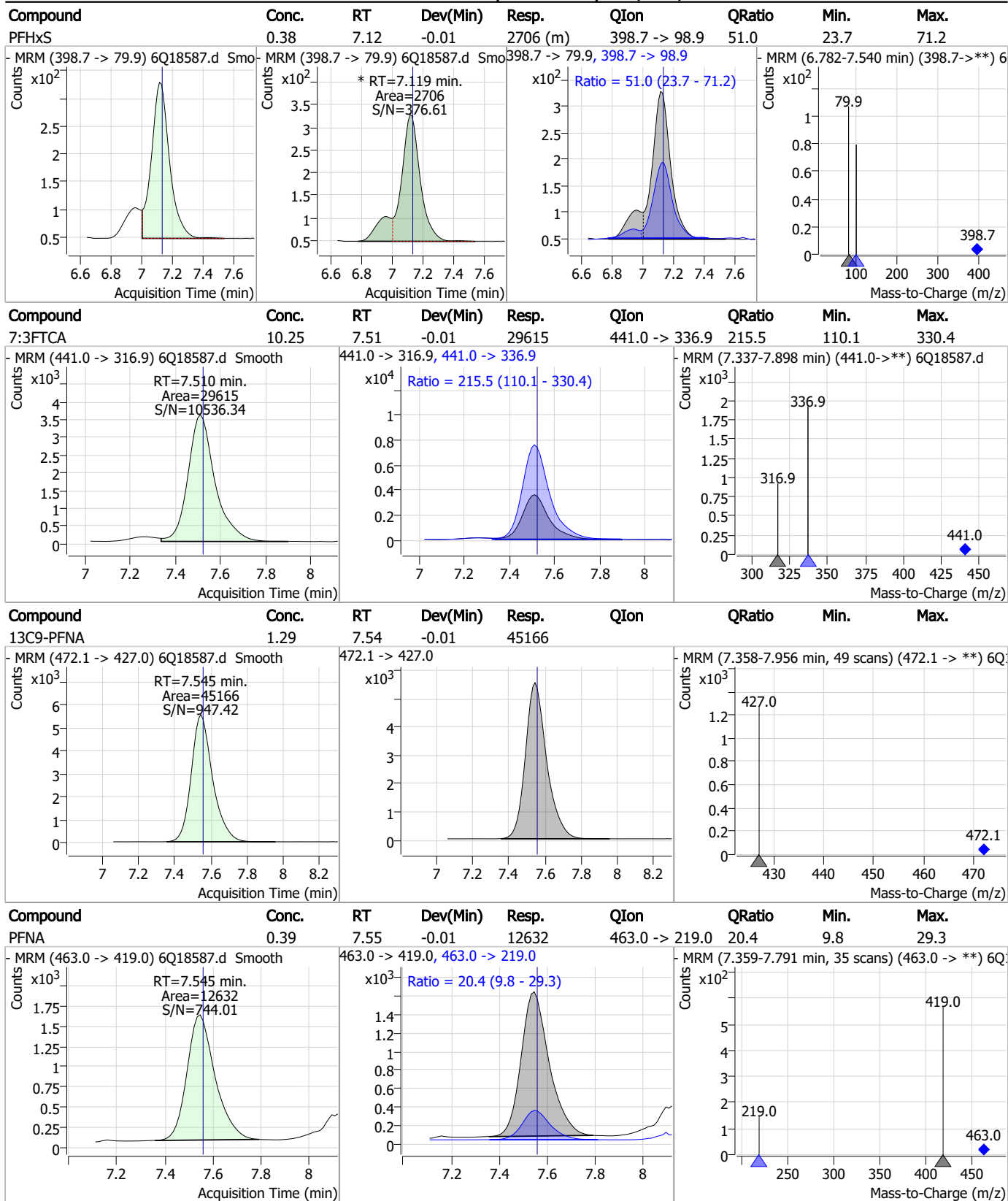
Perfluorinated Compounds by LC/MS/MS



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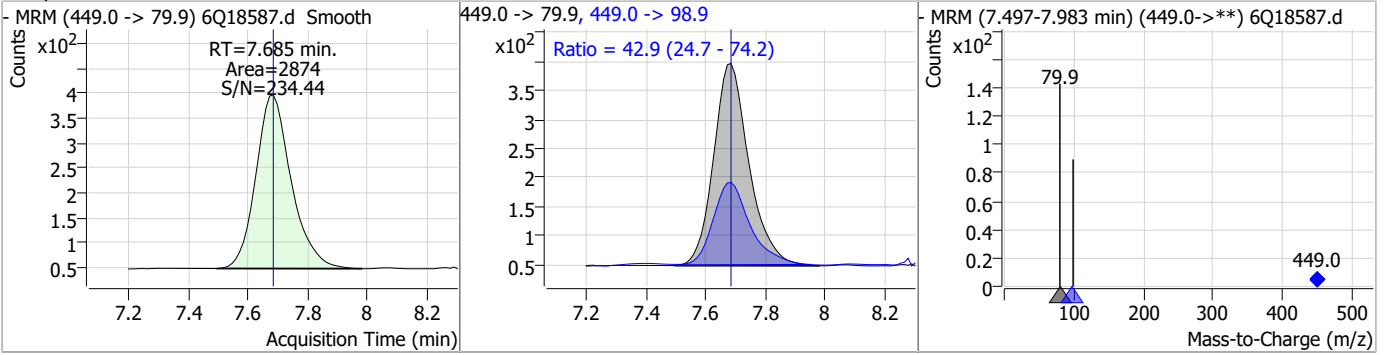
Perfluorinated Compounds by LC/MS/MS



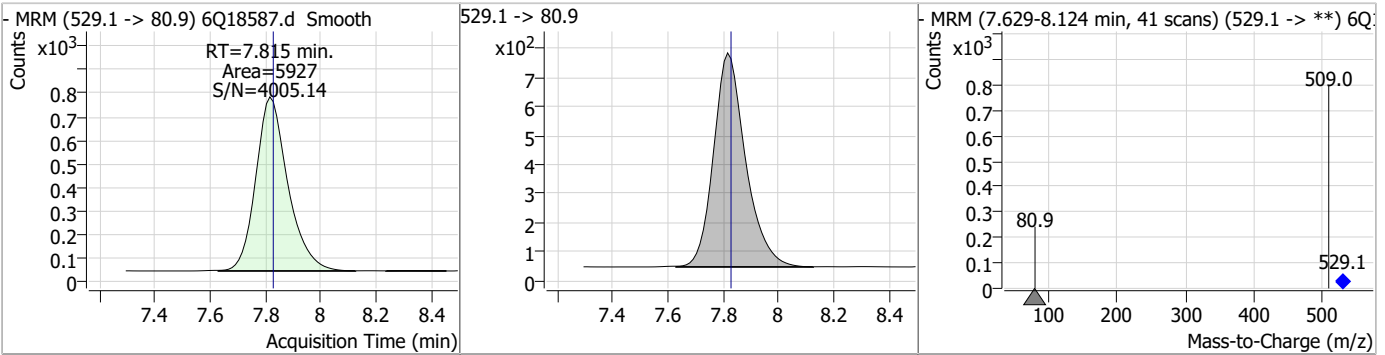
7.7.18
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Perfluorinated Compounds by LC/MS/MS

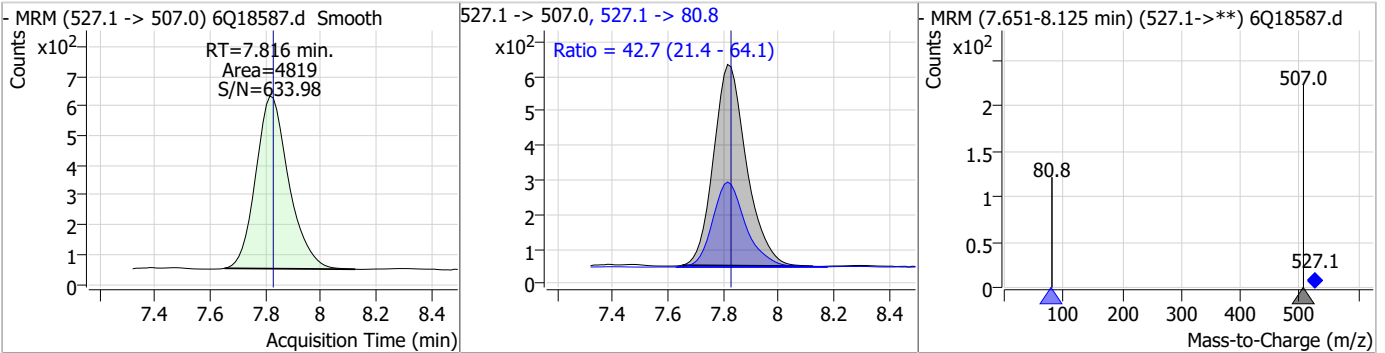
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.40	7.68	0.00	2874	449.0 -> 98.9	42.9	24.7	74.2



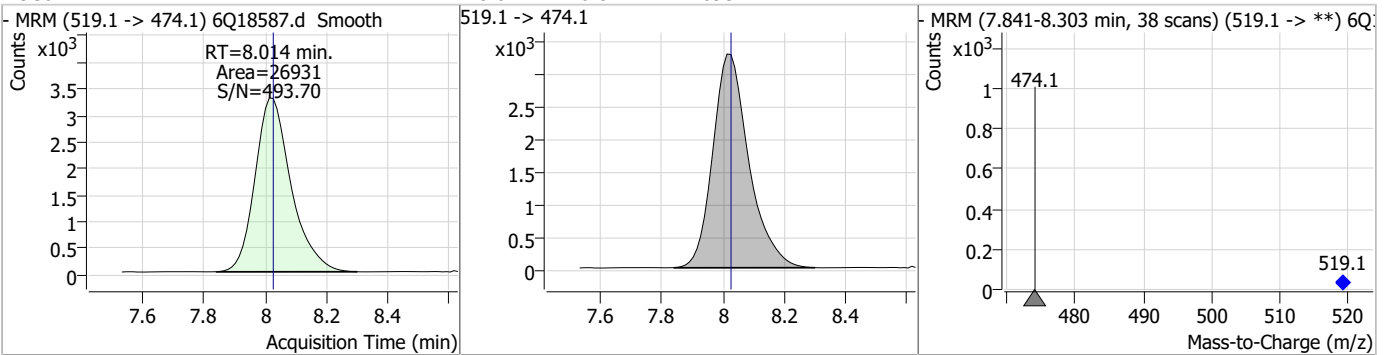
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.46	7.81	-0.01	5927				



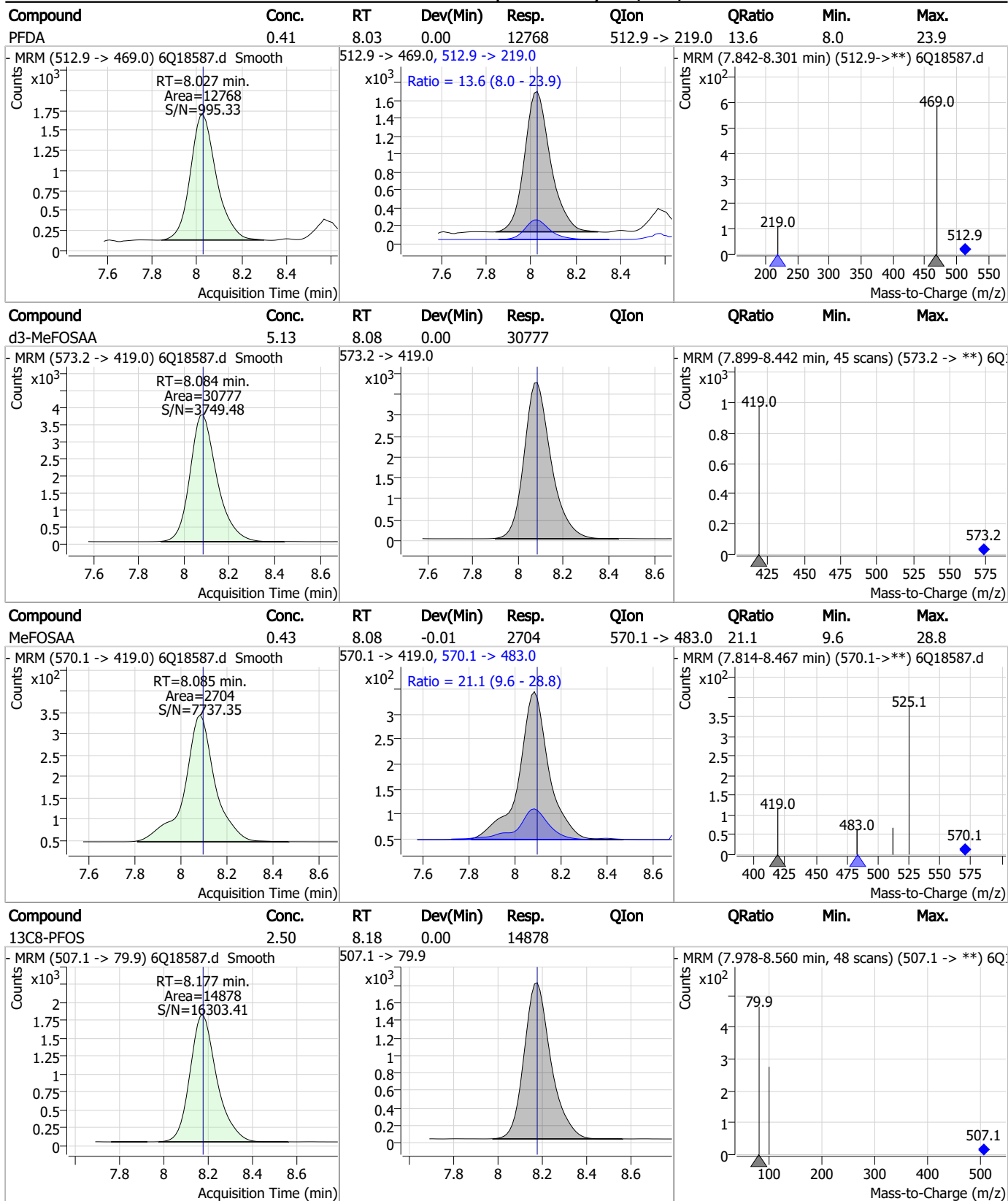
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.46	7.82	-0.01	4819	527.1 -> 80.8	42.7	21.4	64.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.27	8.01	-0.01	26931				

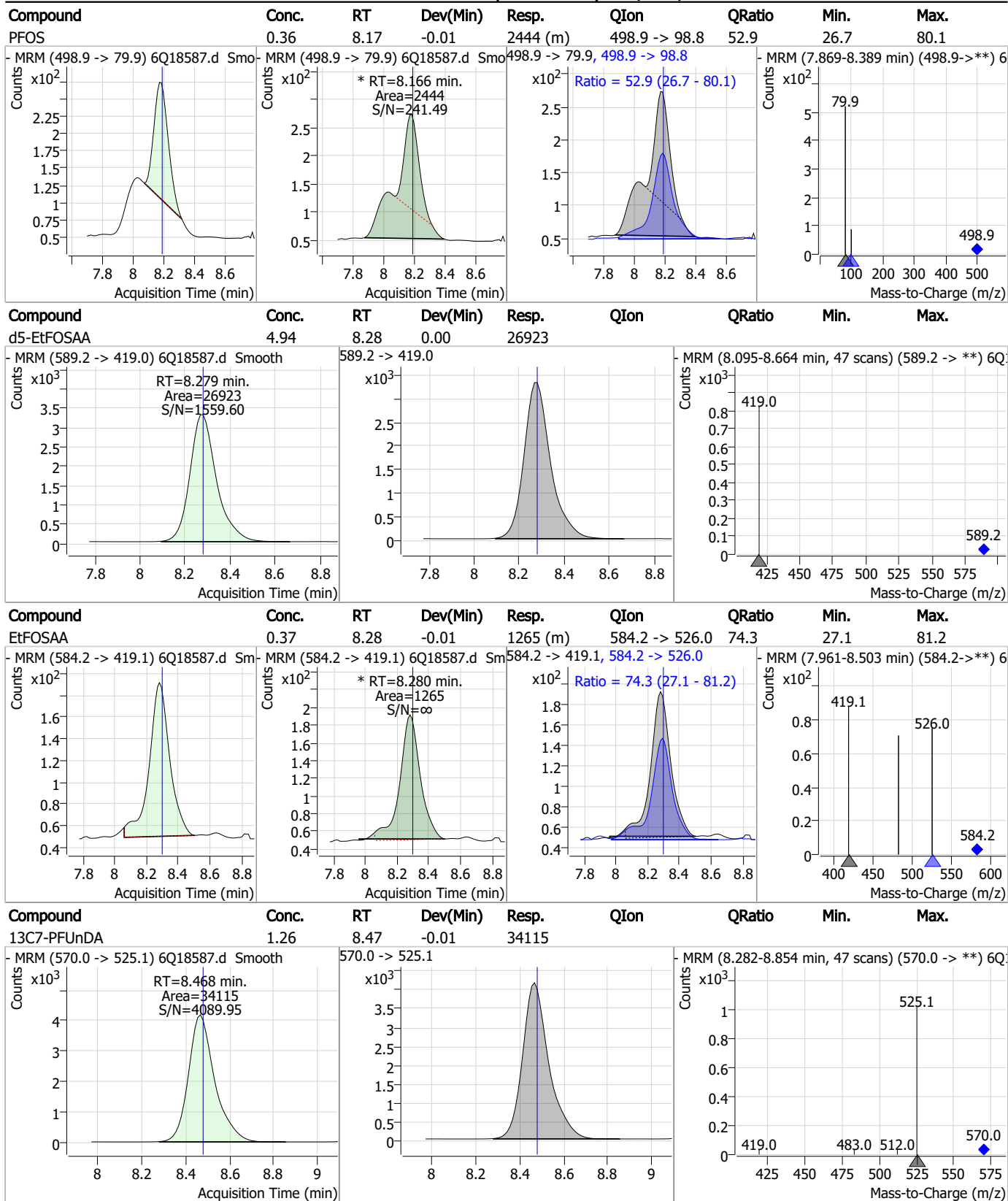


Perfluorinated Compounds by LC/MS/MS



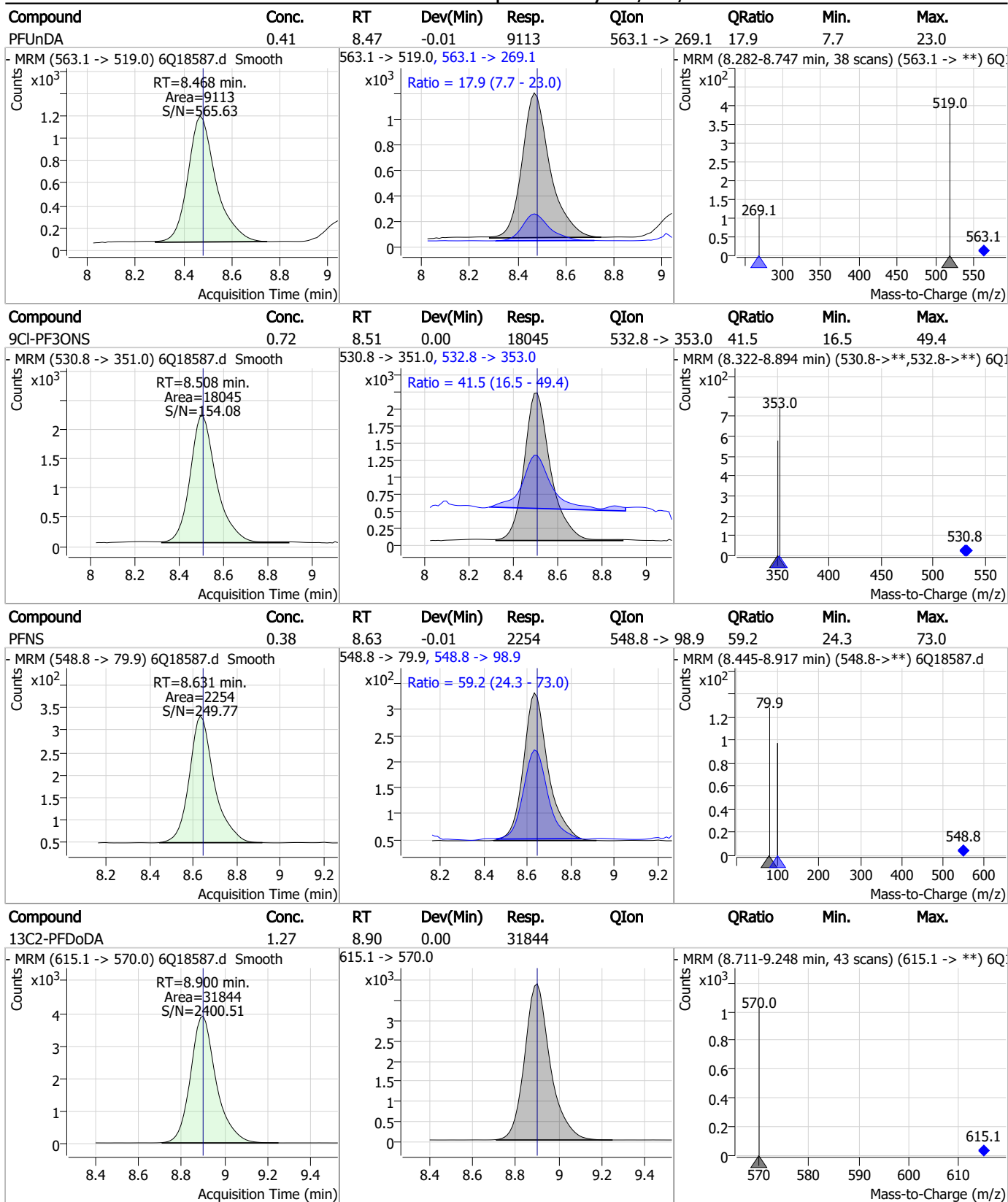
7.7.18
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Perfluorinated Compounds by LC/MS/MS



7.7.18

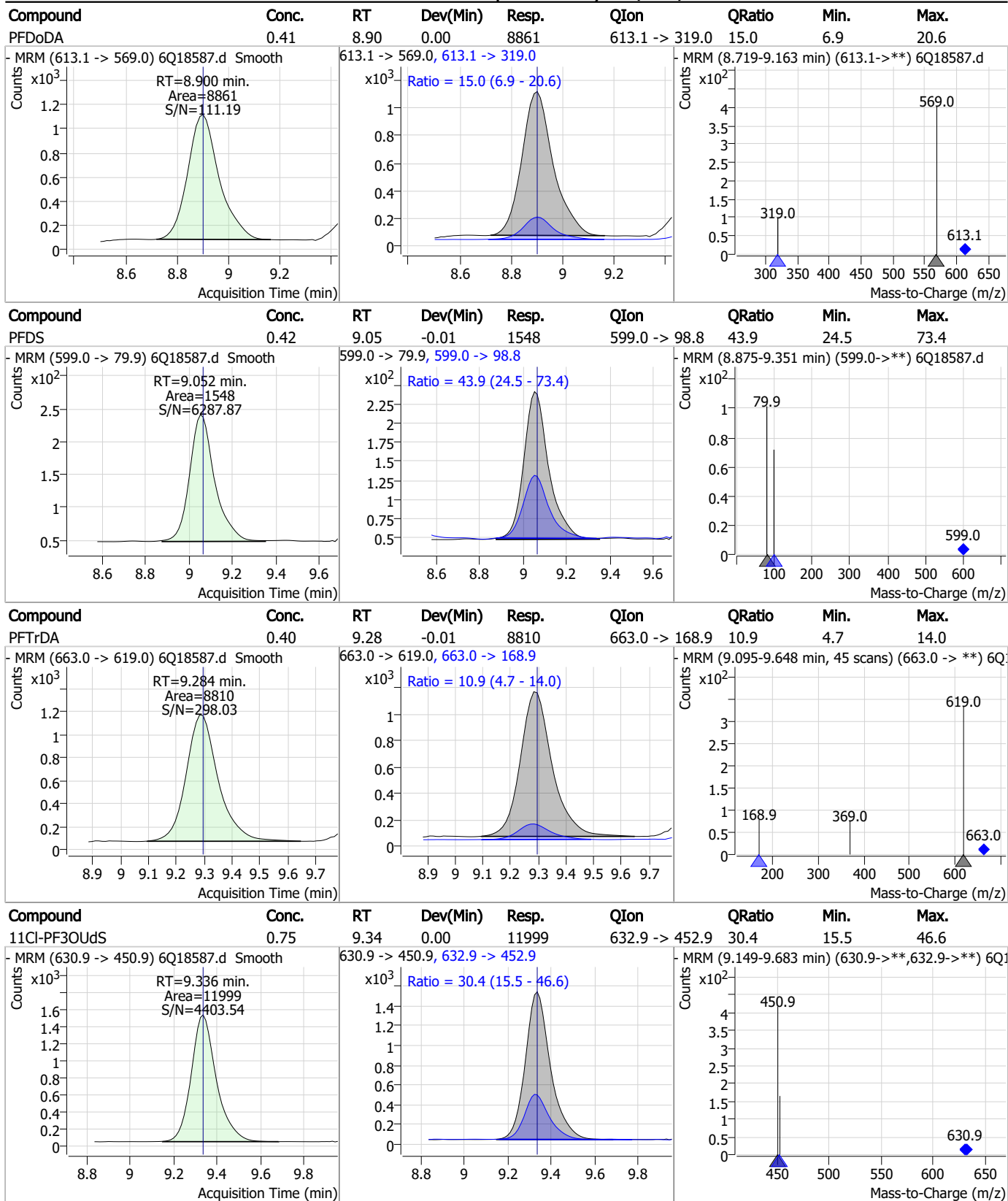
Perfluorinated Compounds by LC/MS/MS



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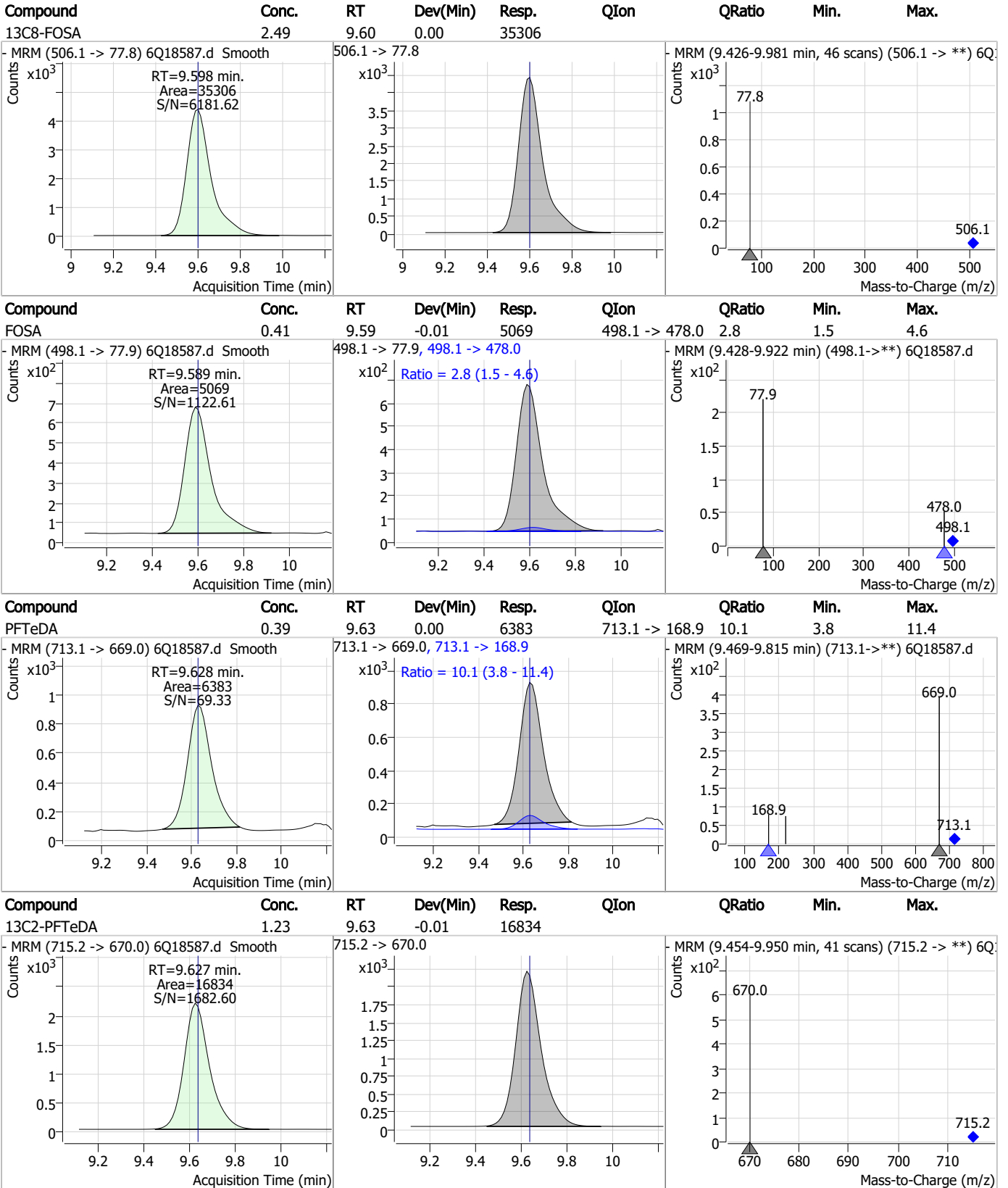
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

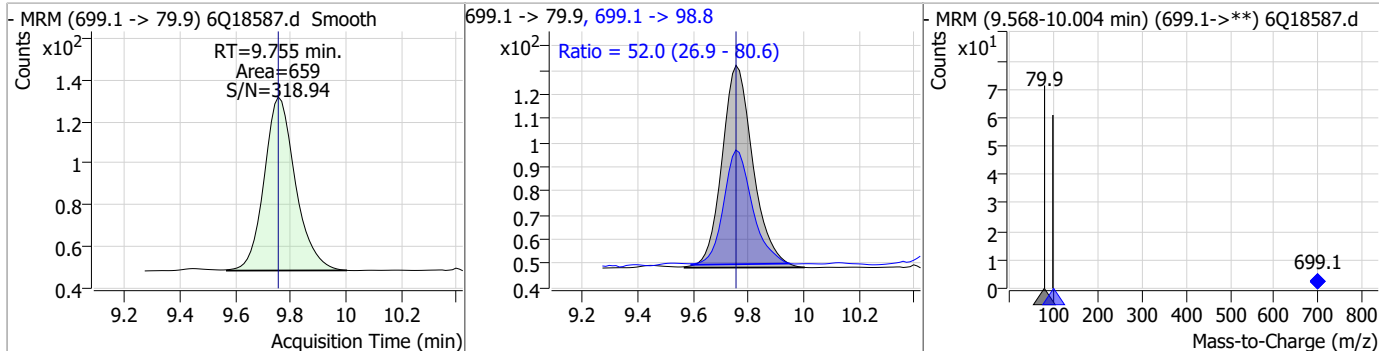


7.7.18 7

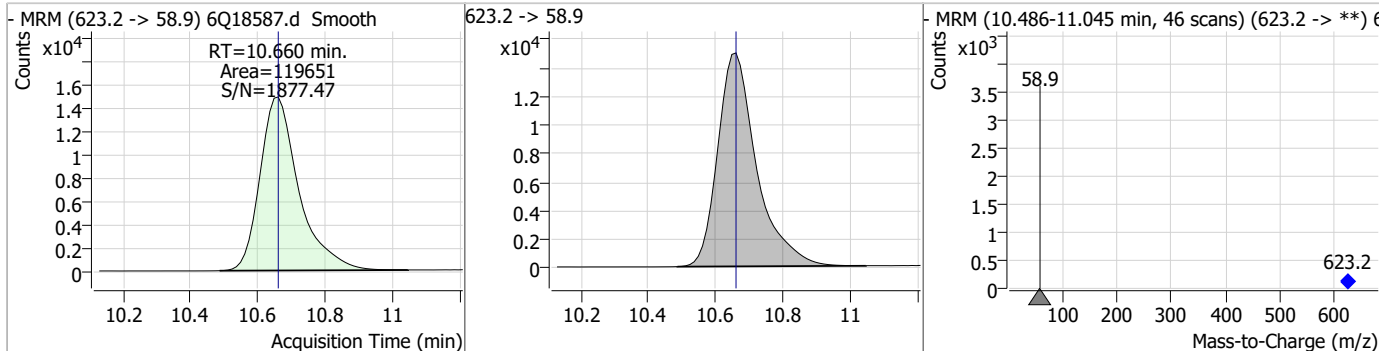


Perfluorinated Compounds by LC/MS/MS

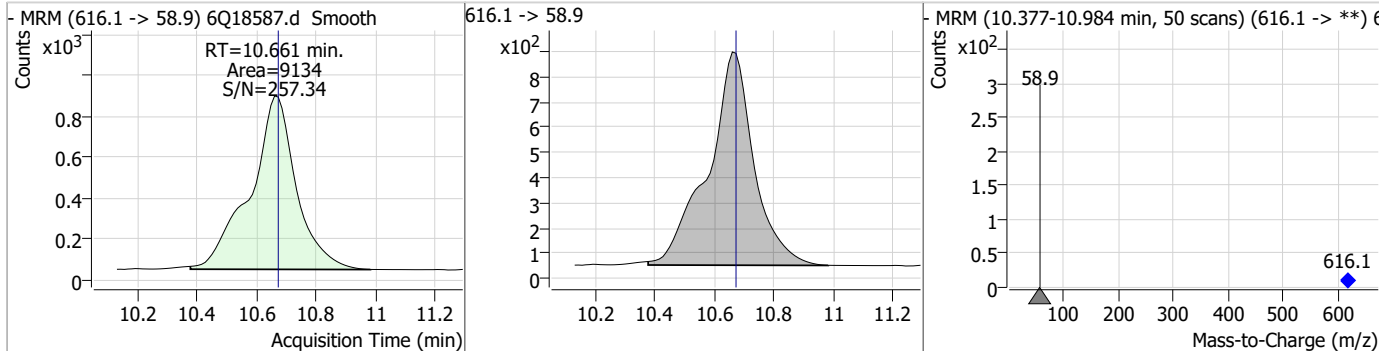
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.40	9.75	0.00	659	699.1 -> 98.8	52.0	26.9	80.6



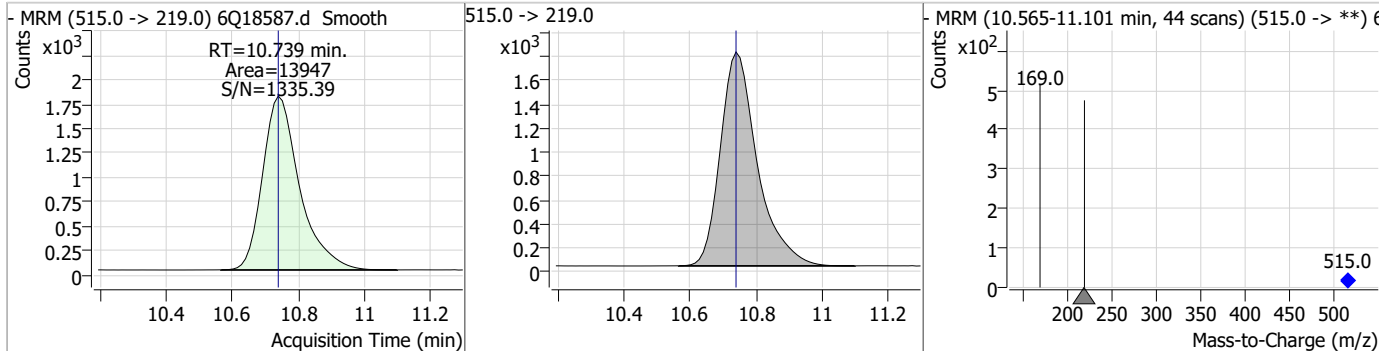
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.65	10.66	0.00	119651				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.92	10.66	-0.01	9134				

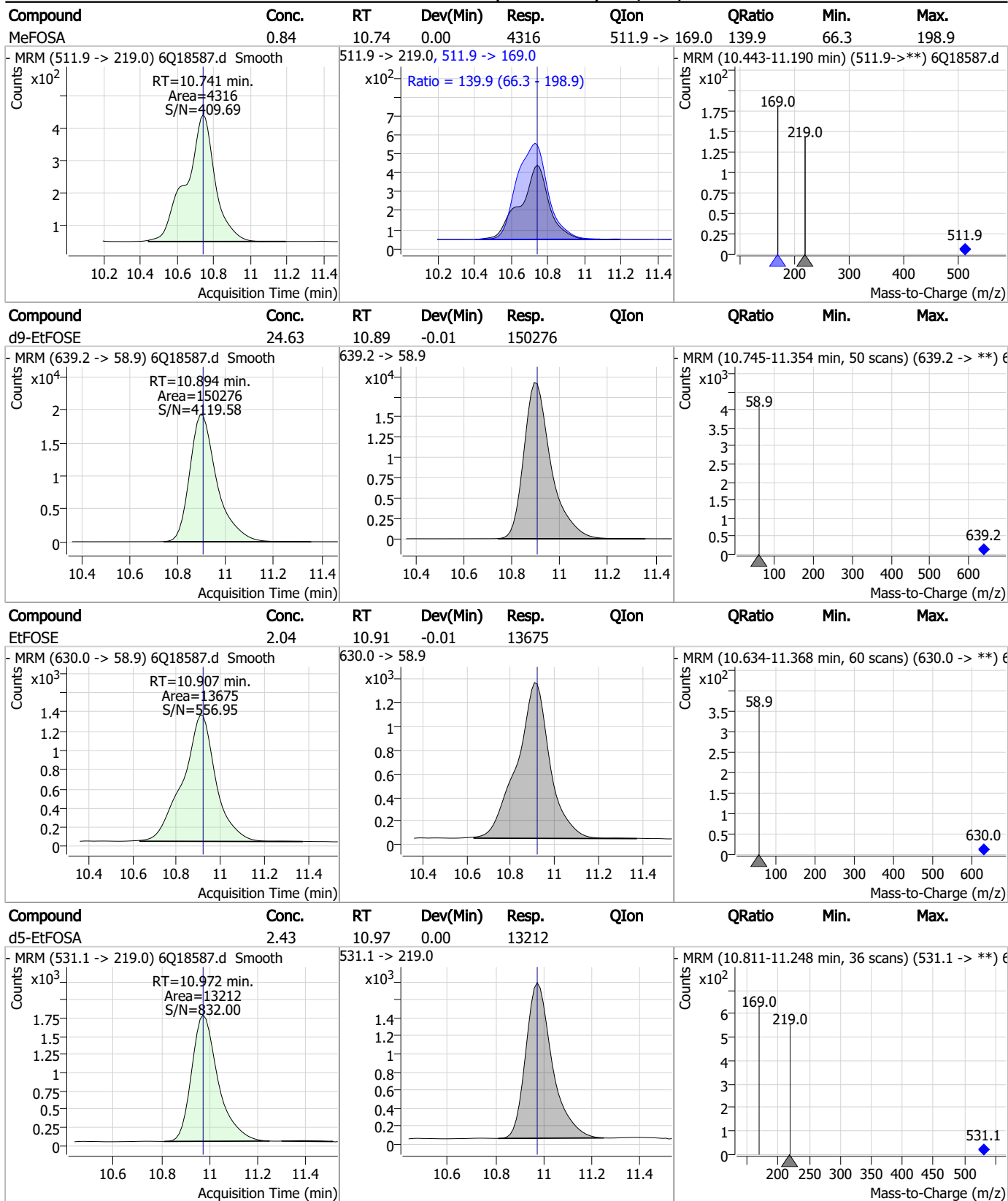


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.43	10.74	0.00	13947				



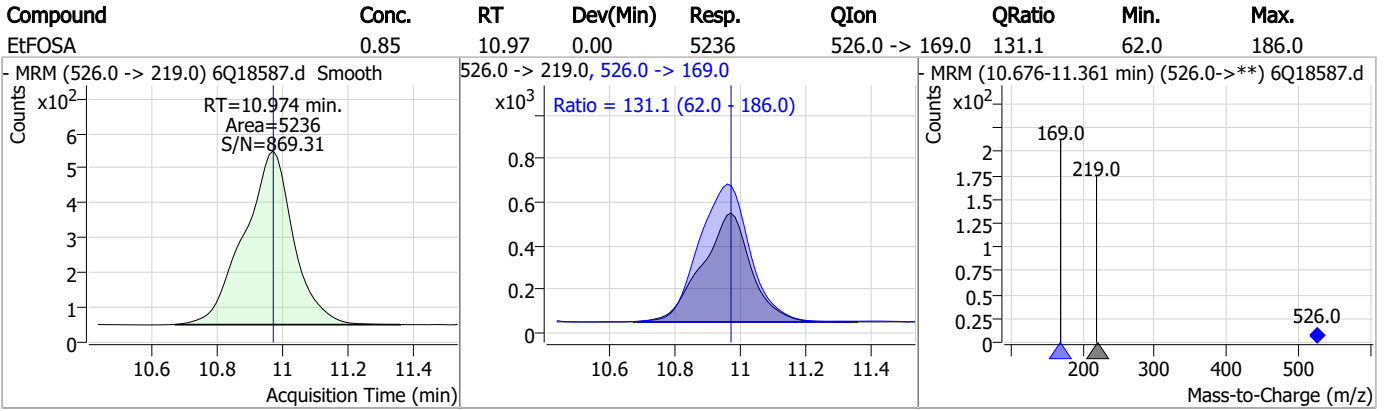
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18587.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:30 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak
EtFOSAA	2991-50-6		8.28	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18588.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:45:22 PM
 Sample Name : ic279-3
 Vial : P1-A4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187370	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62639	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	68931	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	62931	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	98434	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	43906	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	28212	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33495	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31515	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17235	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35552	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24967	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15139	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14222	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3844	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5719	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5271	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	27962	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40832	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	27544	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	117703	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	153171	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13351	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14012	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18134	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	78981	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10927	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	103303	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	38097	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	52961	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	63376	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3844	5.27 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5719	5.40 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5271	4.91 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31515	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17235	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C3-PFBS	5.322	302.1 -> 79.9	24967	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFHxS	7.130	402.1 -> 79.9	15139	2.48 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C4-PFBA	2.822	216.8 -> 171.9	187370	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C4-PFHpA	6.369	367.1 -> 322.0	62931	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C5-PFHxA	5.404	318.0 -> 273.0	68931	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C5-PFPeA	4.210	268.3 -> 223.0	62639	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C6-PFDA	8.027	519.1 -> 474.1	28212	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C7-PFUnDA	8.468	570.0 -> 525.1	33495	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C8-FOSA	9.598	506.1 -> 77.8	35552	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C8-PFOA	7.026	421.1 -> 376.0	98434	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C8-PFOS	8.177	507.1 -> 79.9	14222	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C9-PFNA	7.545	472.1 -> 427.0	43906	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.6%		
d3-MeFOSAA	8.084	573.2 -> 419.0	27962	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C3-HFPO-DA	5.782	286.9 -> 168.9	40832	9.80 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
d3-MeFOSA	10.739	515.0 -> 219.0	14012	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
d5-EtFOSAA	8.279	589.2 -> 419.0	27544	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.5%		
d7-MeFOSE	10.660	623.2 -> 58.9	117703	25.84 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.4%		
d9-EtFOSE	10.907	639.2 -> 58.9	153171	25.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
d5-EtFOSA	10.972	531.1 -> 219.0	13351	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.7%		
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	26825	4.80 µg/L	94
		327.1 -> 80.9	9707		
6:2FTS	6.801	427.1 -> 407.0	25540	4.54 µg/L	98
		427.1 -> 80.9	8914		
8:2FTS	7.816	527.1 -> 507.0	15451	5.27 µg/L	93
		527.1 -> 80.8	5868		
EtFOSAA	8.280	584.2 -> 419.1	4271	1.21 µg/L	97
		584.2 -> 526.0	2412		
FOSA	9.589	498.1 -> 77.9	14948	1.21 µg/L	100
		498.1 -> 478.0	462		
MeFOSAA	8.085	570.1 -> 419.0	7435	1.29 µg/L	99
		570.1 -> 483.0	1461		
PFBA	2.818	212.8 -> 168.9	30157	4.86 µg/L	100
PFBS	5.323	298.7 -> 79.9	9111	1.07 µg/L	97
		298.7 -> 98.8	3443		
PFDA	8.027	512.9 -> 469.0	35852	1.10 µg/L	99
		512.9 -> 219.0	5917		
PFDoDA	8.900	613.1 -> 569.0	26862	1.24 µg/L	95
		613.1 -> 319.0	4178		
PFDS	9.064	599.0 -> 79.9	4370	1.23 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2090			
PFHpA	6.370	363.1 -> 319.0	34372	1.23	µg/L	96
		363.1 -> 169.0	5719			
PFHpS	7.685	449.0 -> 79.9	8125	1.19	µg/L	100
		449.0 -> 98.9	3995			
PFHxA	5.407	313.0 -> 269.0	27090	1.17	µg/L	96
		313.0 -> 118.9	1569			
PFHxS	7.119	398.7 -> 79.9	8079	1.18	µg/L	m 97
		398.7 -> 98.9	3650			
PFNA	7.545	463.0 -> 419.0	37524	1.21	µg/L	100
		463.0 -> 219.0	7401			
PFNS	8.631	548.8 -> 79.9	6966	1.22	µg/L	99
		548.8 -> 98.9	3453			
PFOA	7.028	413.0 -> 369.0	50028	1.19	µg/L	98
		413.0 -> 169.0	8173			
PFOS	8.178	498.9 -> 79.9	7692	1.18	µg/L	m 98
		498.9 -> 98.8	4010			
PFPeA	4.212	263.0 -> 219.0	36747	2.44	µg/L	100
PFPeS	6.410	349.1 -> 79.9	7727	1.13	µg/L	97
		349.1 -> 98.9	3786			
PFTeDA	9.628	713.1 -> 669.0	21136	1.25	µg/L	96
		713.1 -> 168.9	1865			
PFTrDA	9.284	663.0 -> 619.0	26434	1.21	µg/L	97
		663.0 -> 168.9	2776			
PFUnDA	8.468	563.1 -> 519.0	26286	1.21	µg/L	95
		563.1 -> 269.1	4591			
11CI-PF3OUdS	9.336	630.9 -> 450.9	37610	2.45	µg/L	97
		632.9 -> 452.9	11098			
9CI-PF3ONS	8.508	530.8 -> 351.0	57452	2.38	µg/L	100
		532.8 -> 353.0	18801			
ADONA	6.632	376.9 -> 250.9	130357	2.40	µg/L	99
		376.9 -> 84.8	35366			
HFPO-DA	5.770	284.9 -> 168.9	8787	2.54	µg/L	99
		284.9 -> 184.9	1229			
3:3FTCA	3.671	241.0 -> 177.0	5932	6.16	µg/L	99
		241.0 -> 117.0	843			
5:3FTCA	6.074	341.0 -> 237.1	125804	30.22	µg/L	95
		341.0 -> 217.0	94435			
7:3FTCA	7.510	441.0 -> 316.9	81482	28.58	µg/L	84
		441.0 -> 336.9	200432			
EtFOSA	10.974	526.0 -> 219.0	15129	2.43	µg/L	90
		526.0 -> 169.0	20436			
EtFOSE	10.920	630.0 -> 58.9	42639	6.24	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	12710	2.47	µg/L	93
		511.9 -> 169.0	17862			
MeFOSE	10.673	616.1 -> 58.9	28431	6.08	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	2029	1.28	µg/L	95
		699.1 -> 98.8	1015			
NFDHA	5.288	295.0 -> 201.0	6915	2.45	µg/L	93
		295.0 -> 84.9	1612			
PFMBA	4.626	279.0 -> 85.1	25336	2.47	µg/L	100
PFMPA	3.351	229.0 -> 84.9	19888	2.50	µg/L	100
PFEESA	5.862	314.8 -> 134.9	62574	2.13	µg/L	100
		314.8 -> 82.9	2487			

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

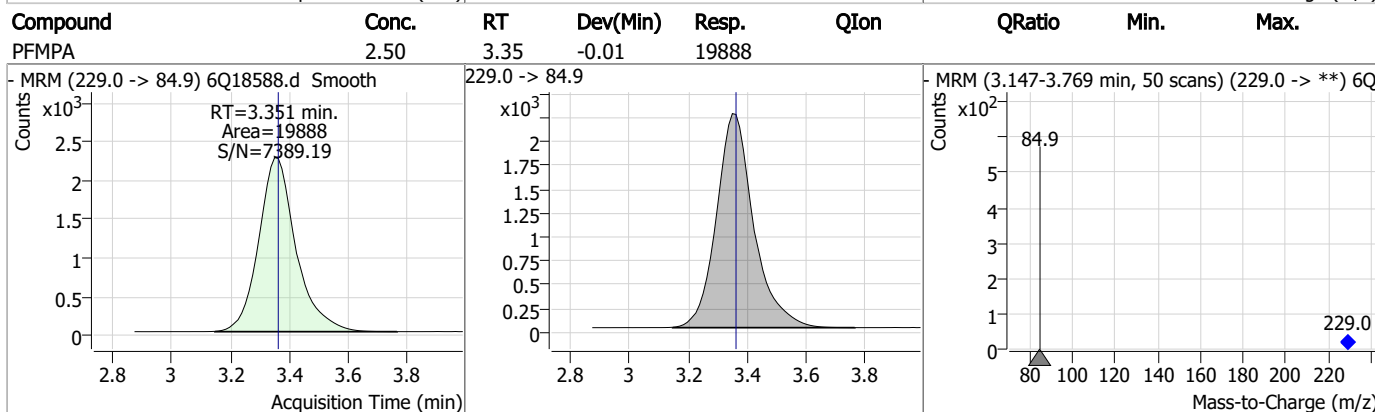
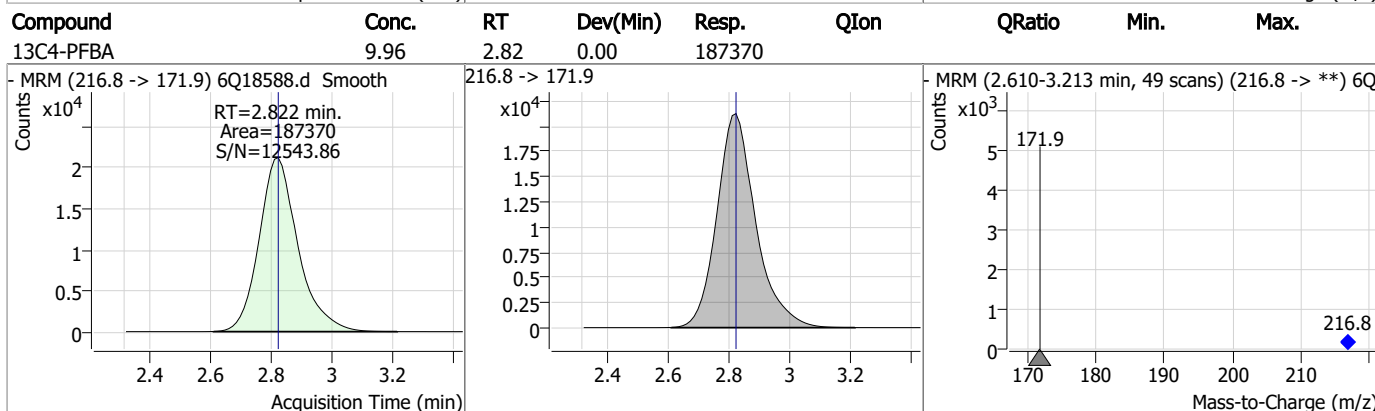
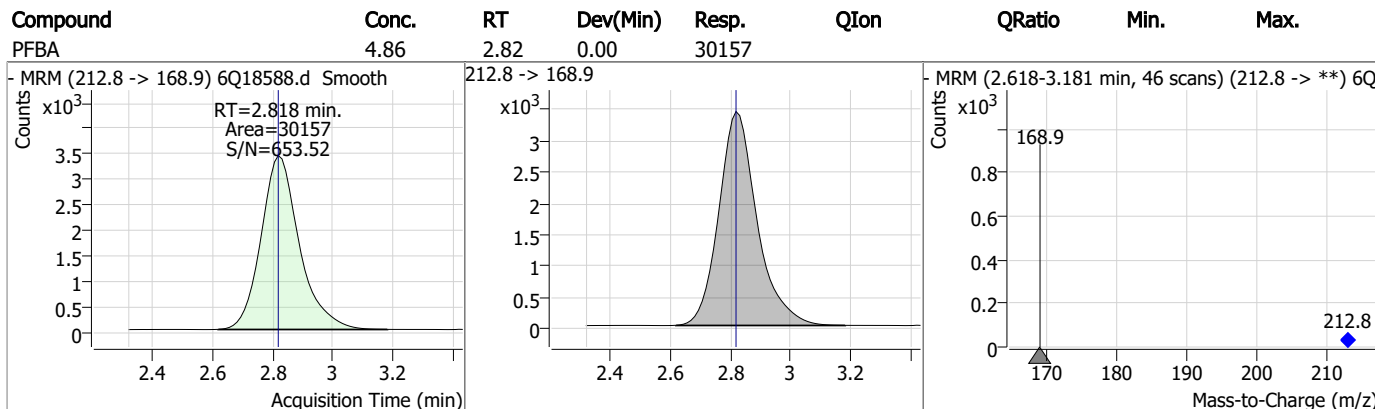
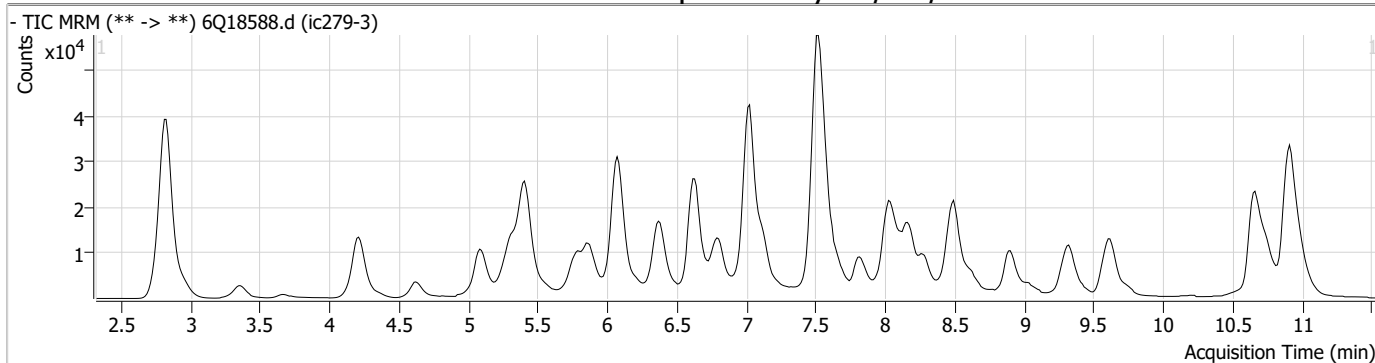
Perfluorinated Compounds by LC/MS/MS

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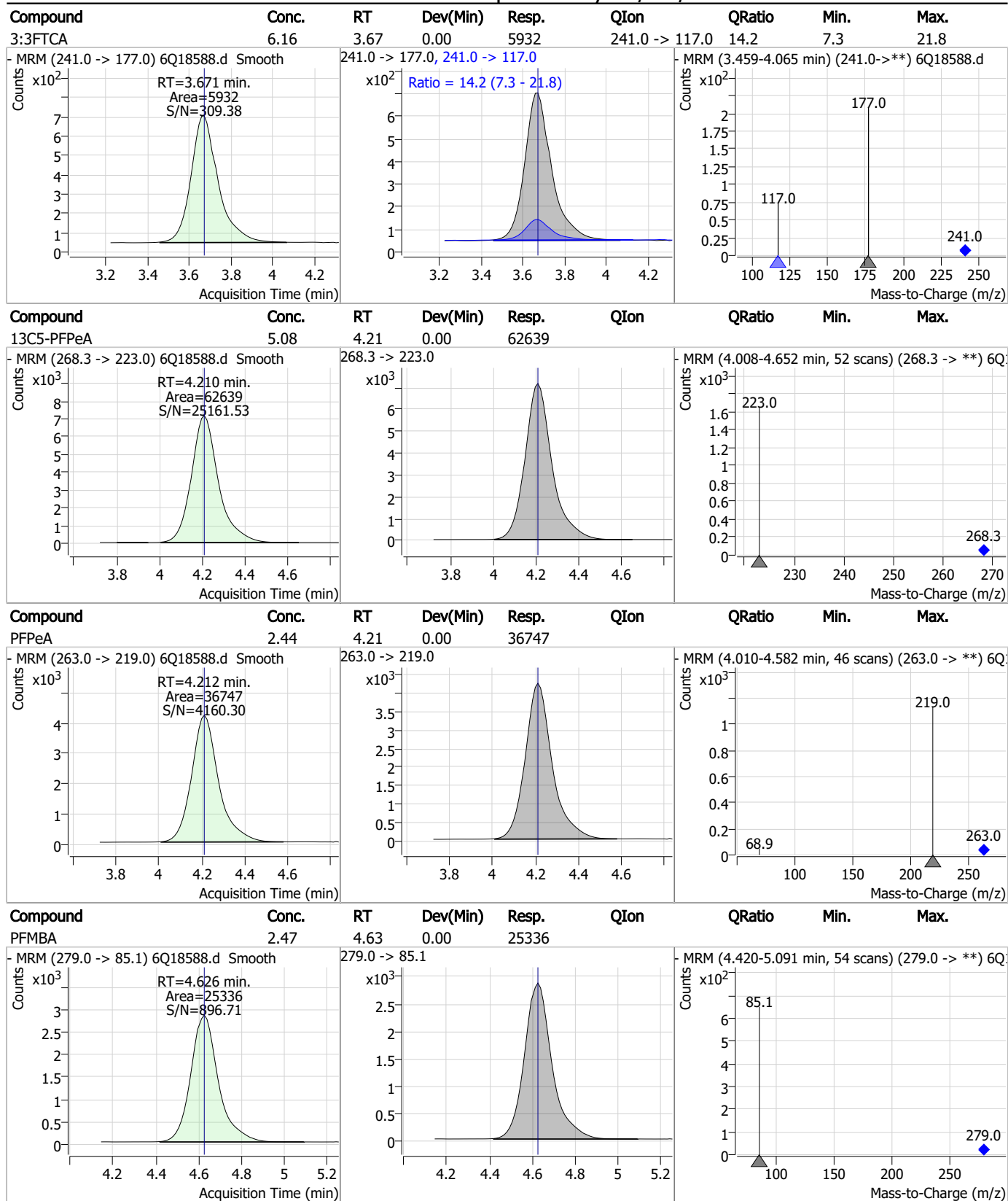
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Perfluorinated Compounds by LC/MS/MS



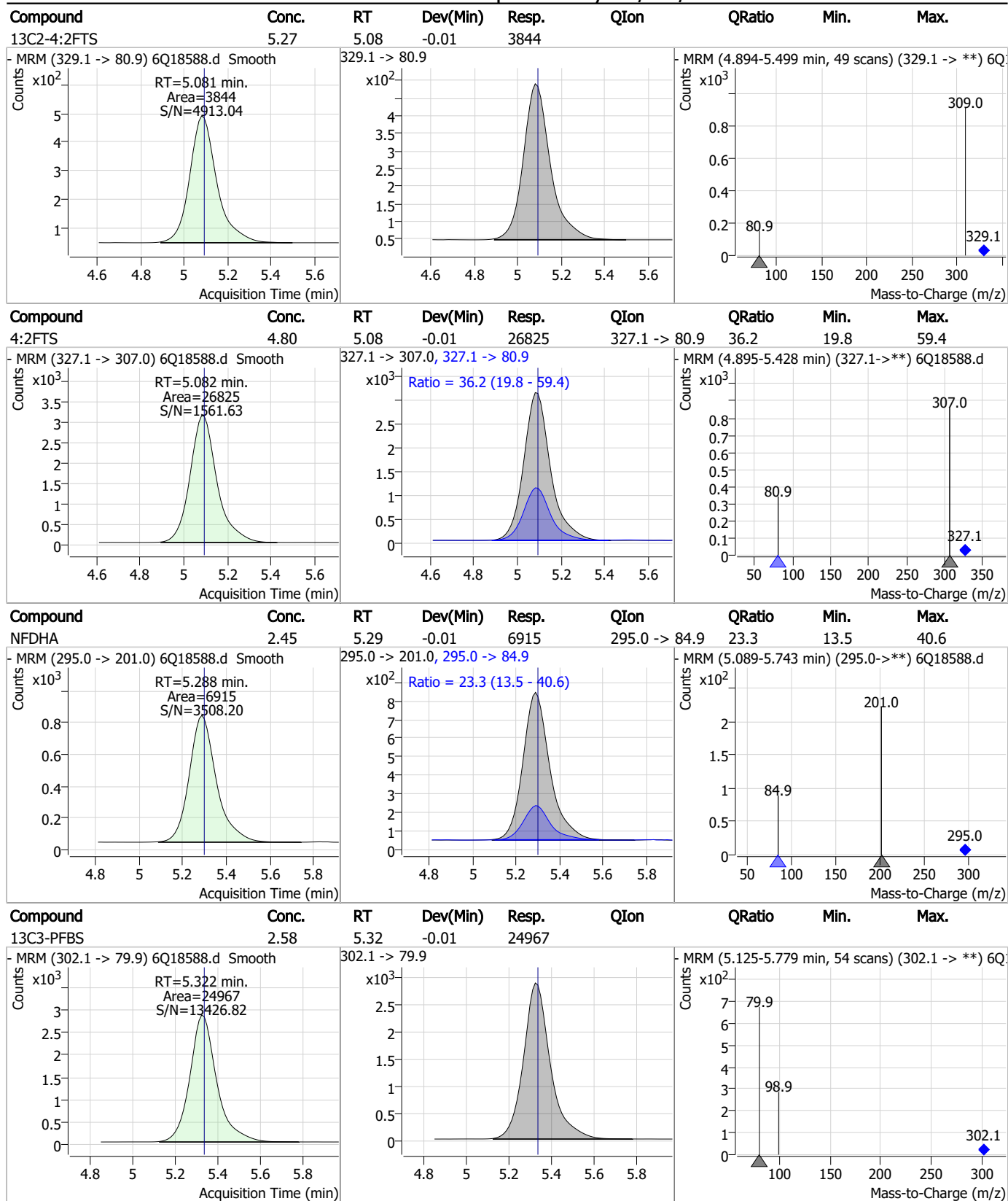
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

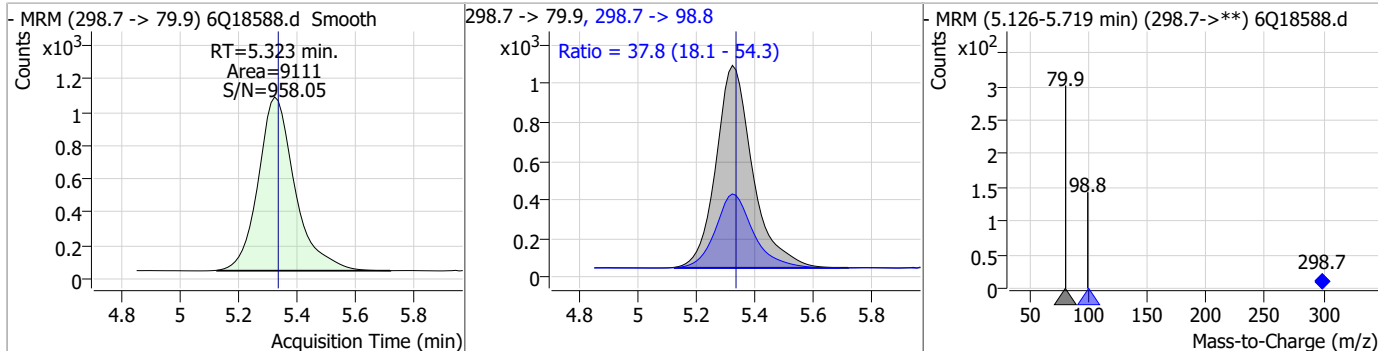


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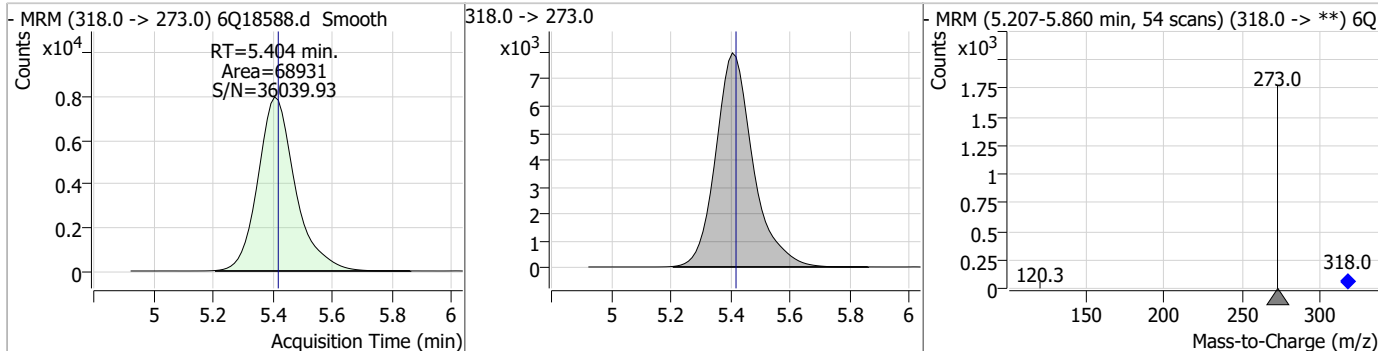
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Perfluorinated Compounds by LC/MS/MS

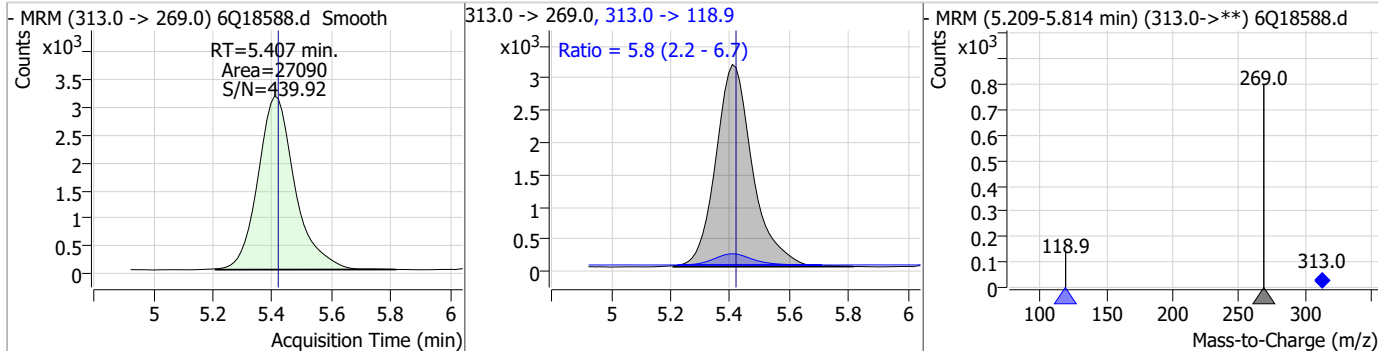
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.07	5.32	-0.01	9111	298.7 -> 98.8	37.8	18.1	54.3



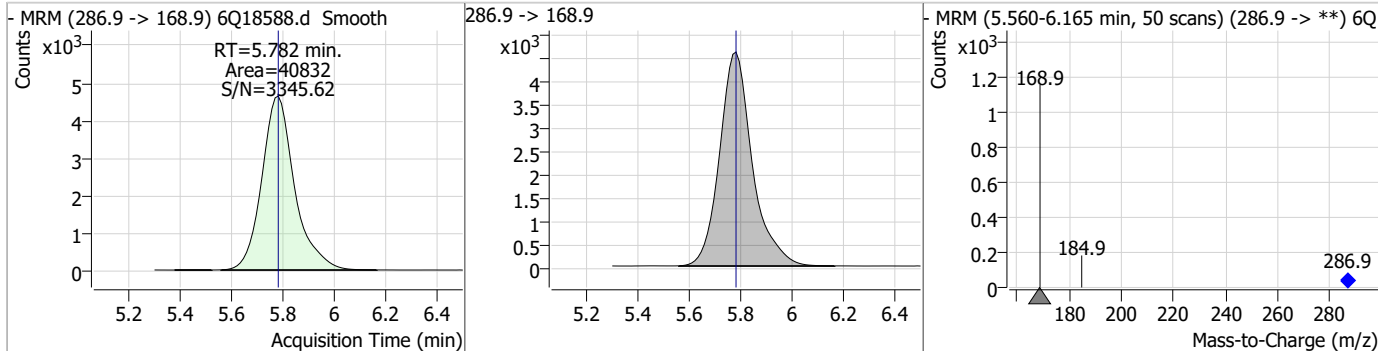
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	5.40	-0.01	68931				



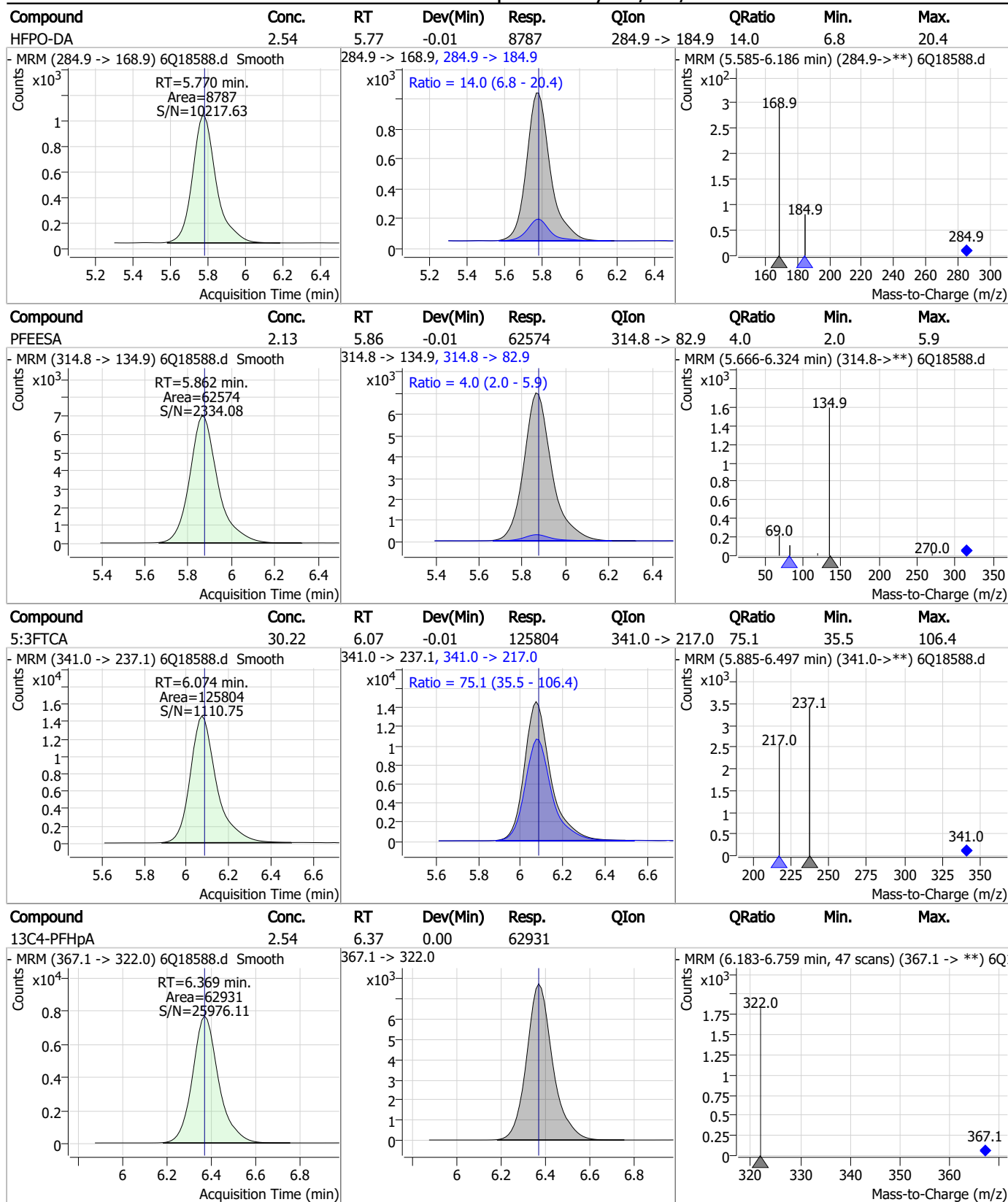
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.17	5.41	-0.01	27090	313.0 -> 118.9	5.8	2.2	6.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.80	5.78	0.00	40832				



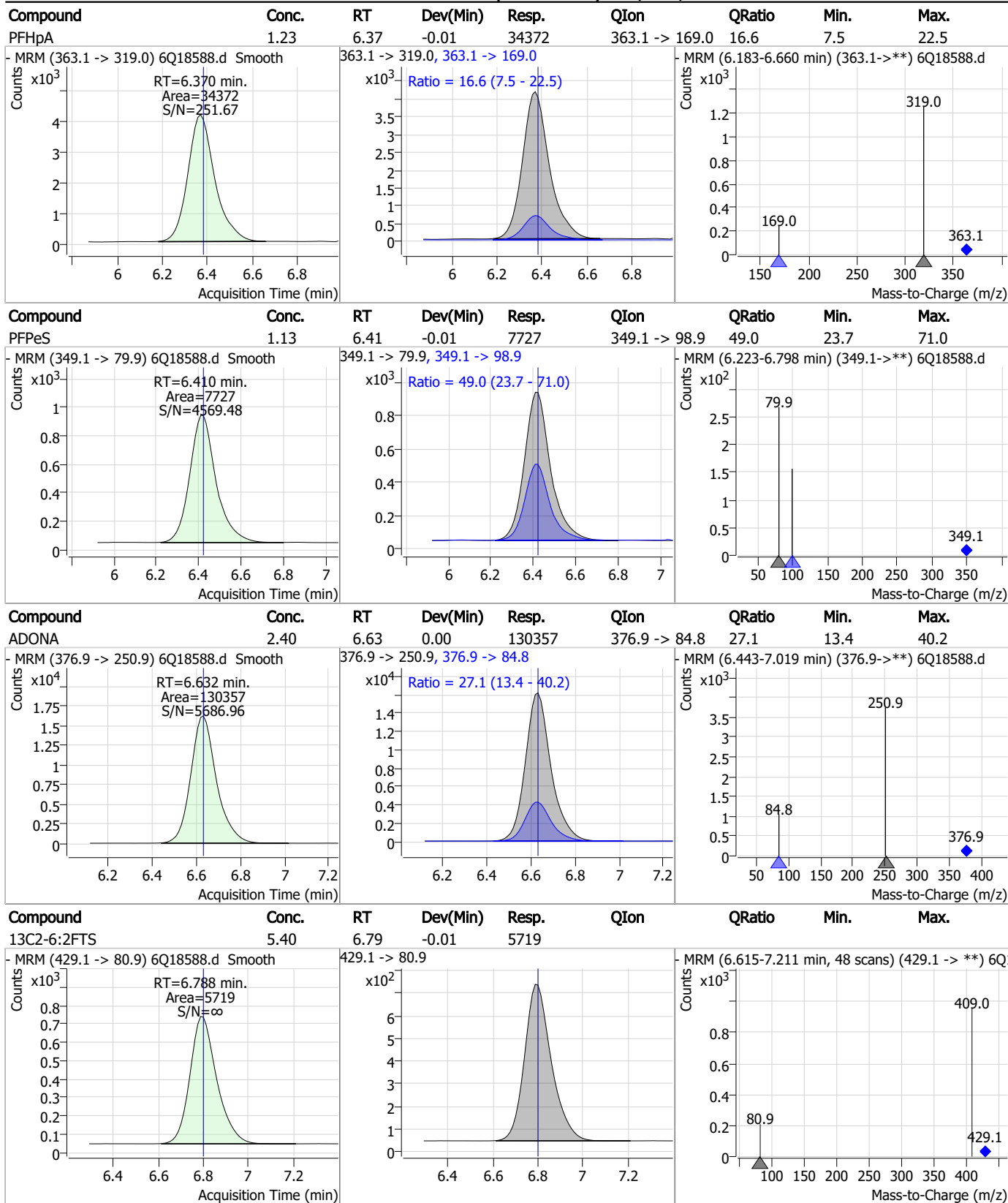
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

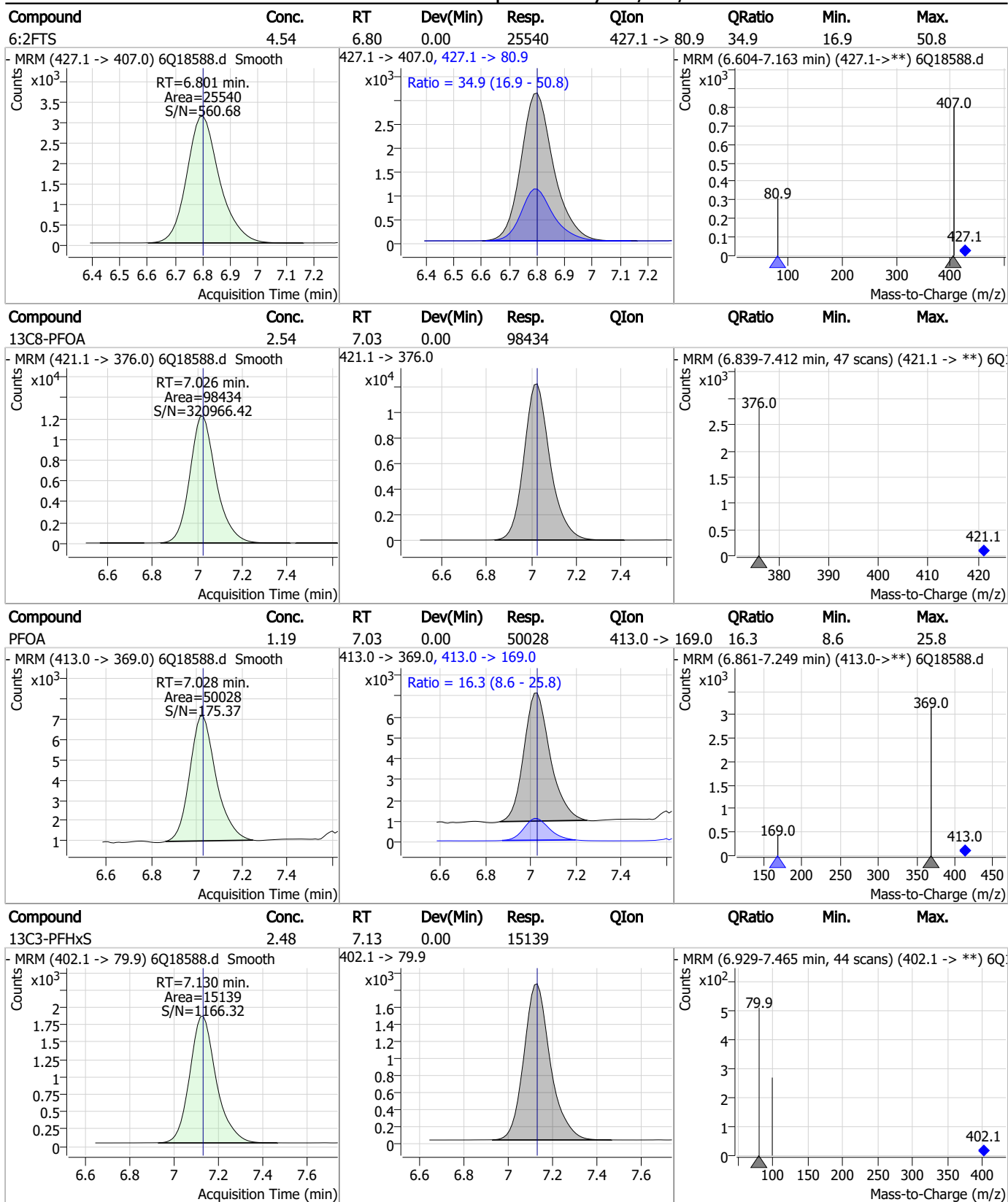


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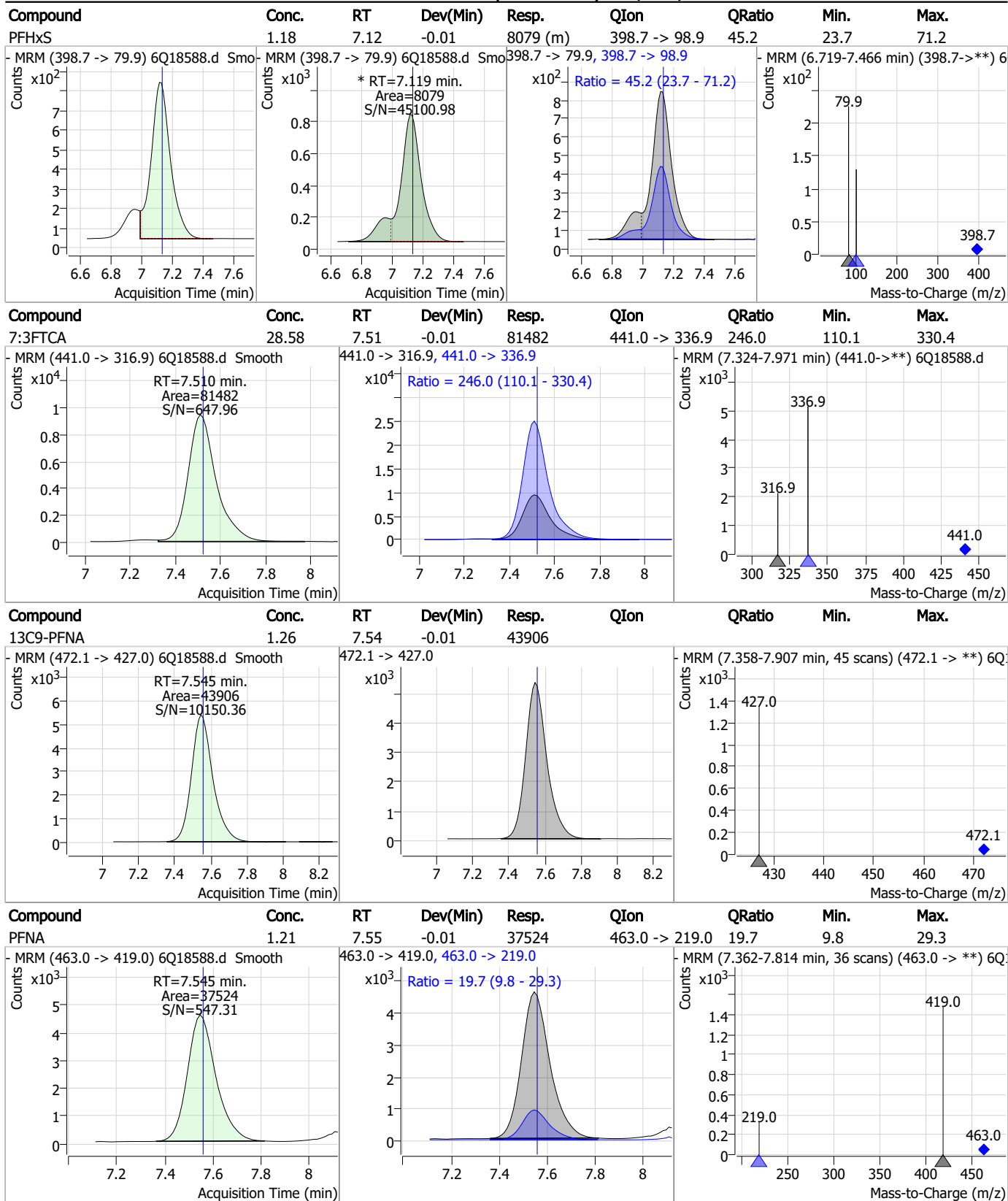
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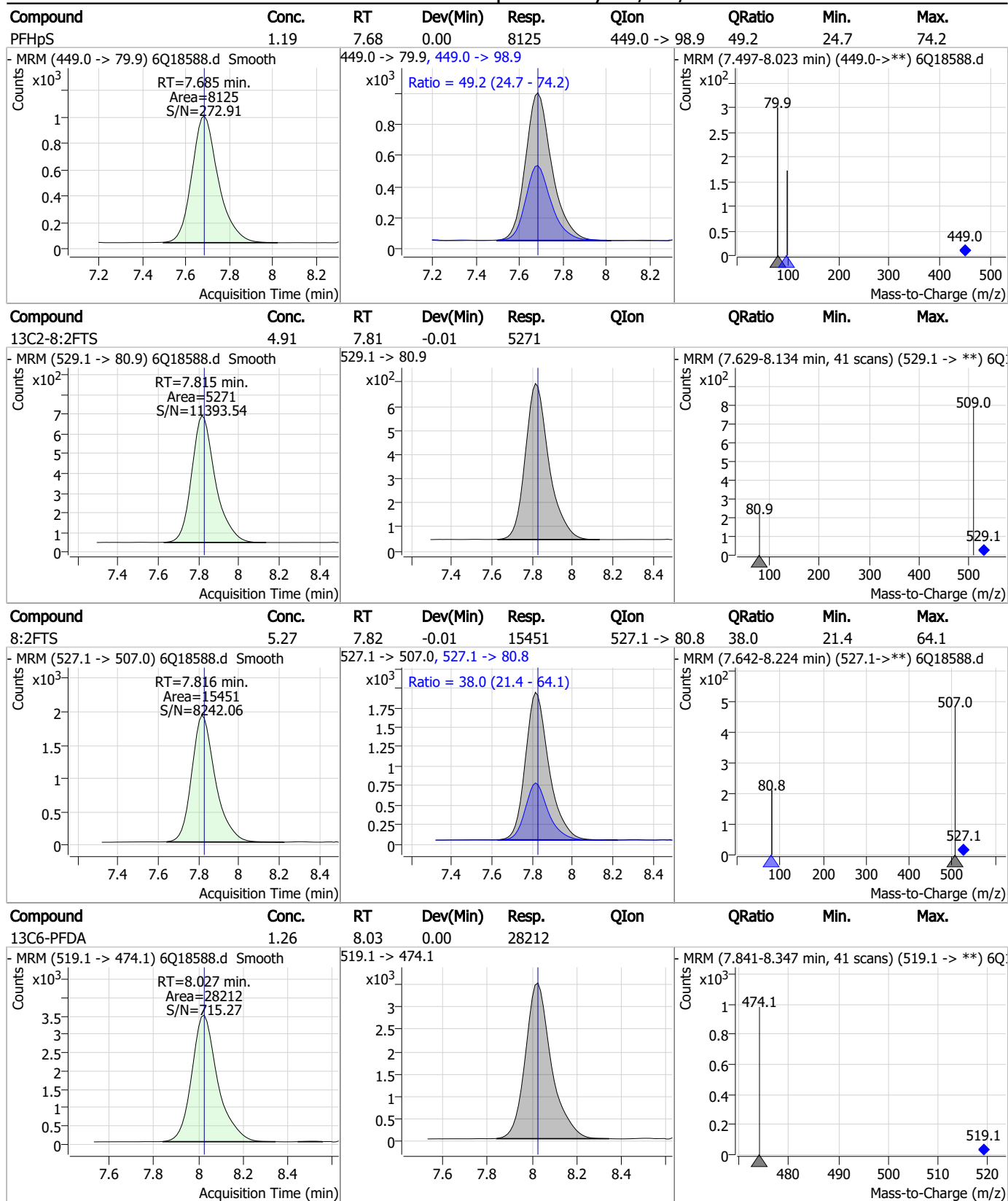
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Perfluorinated Compounds by LC/MS/MS



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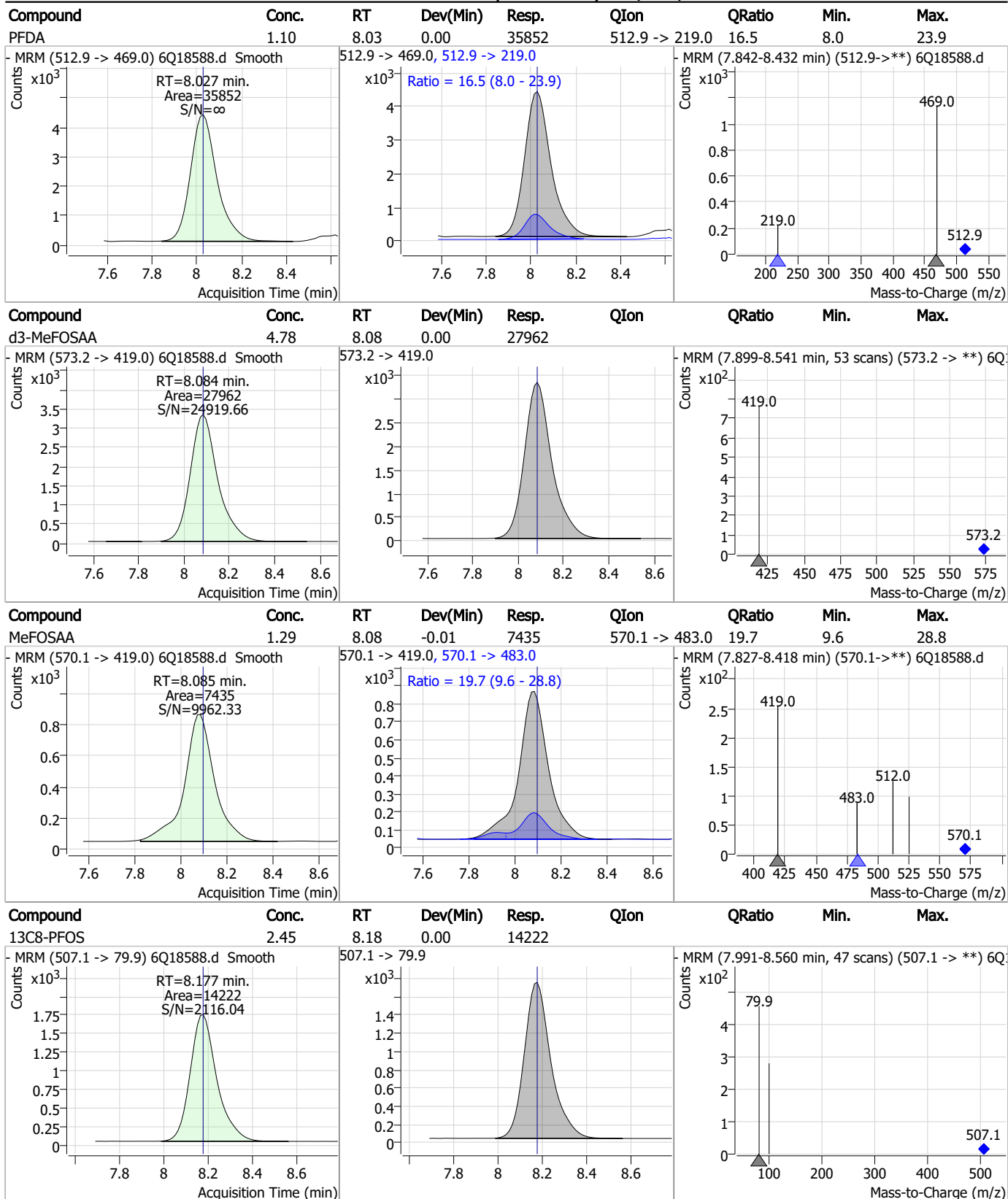
Perfluorinated Compounds by LC/MS/MS



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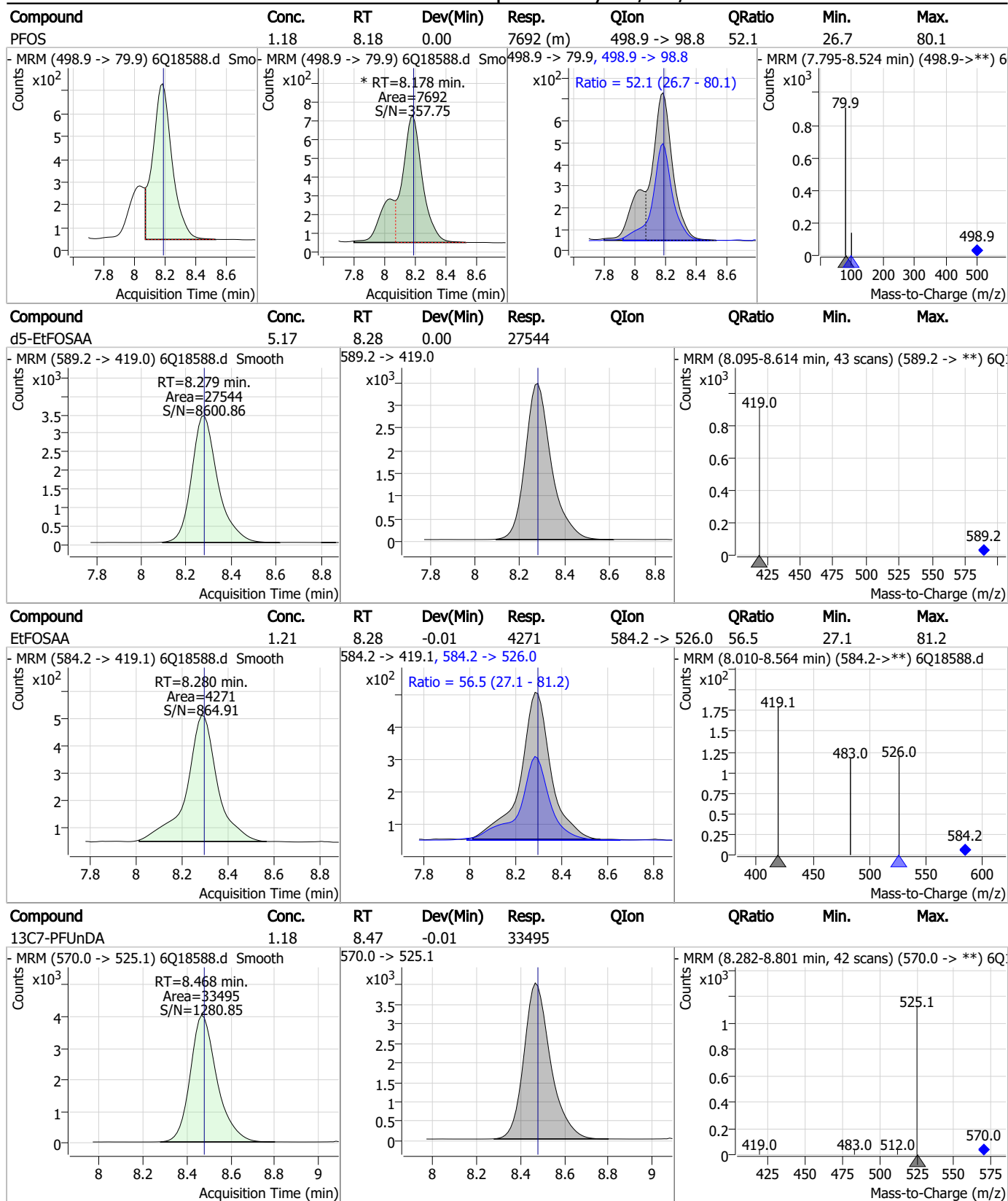
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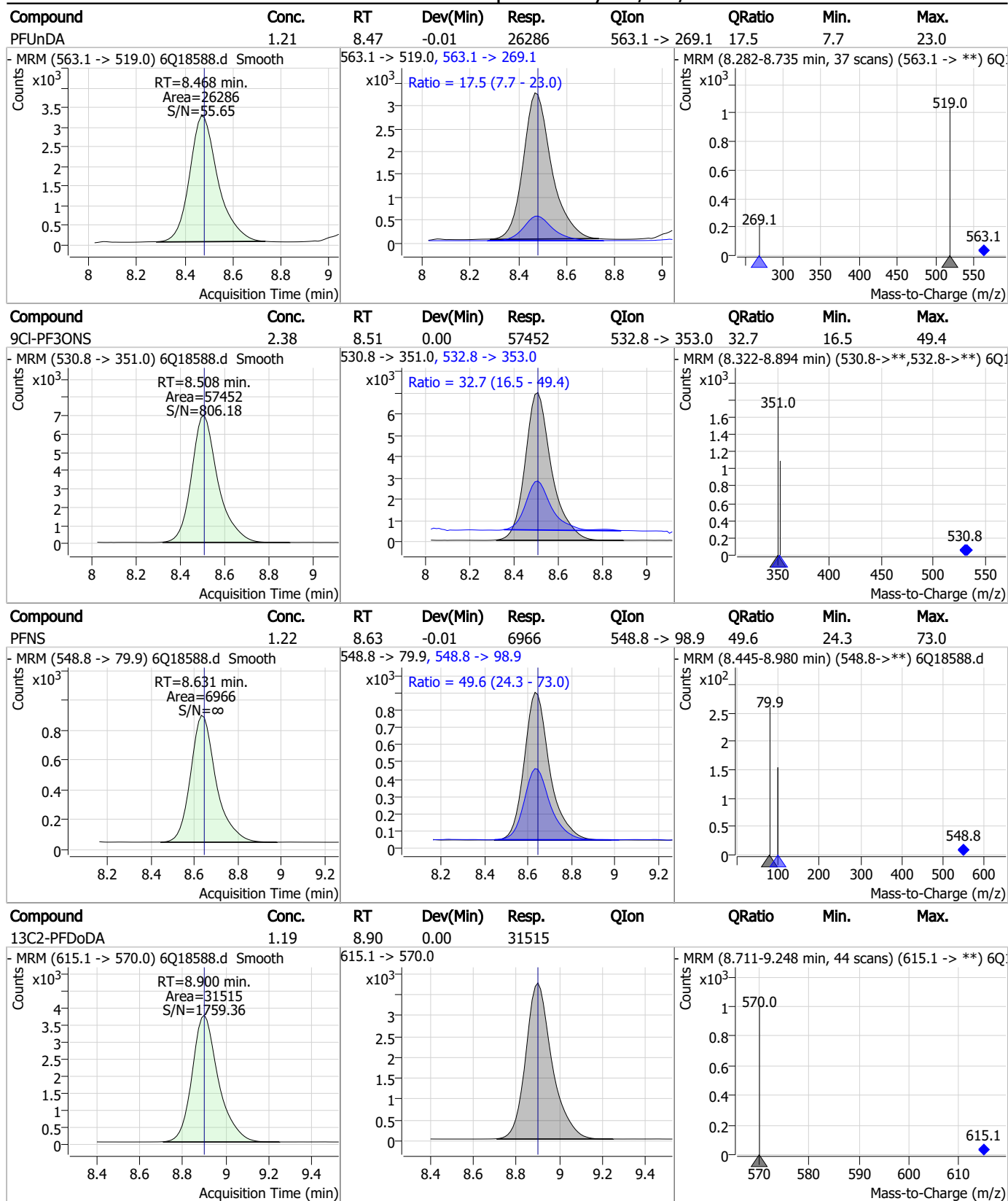
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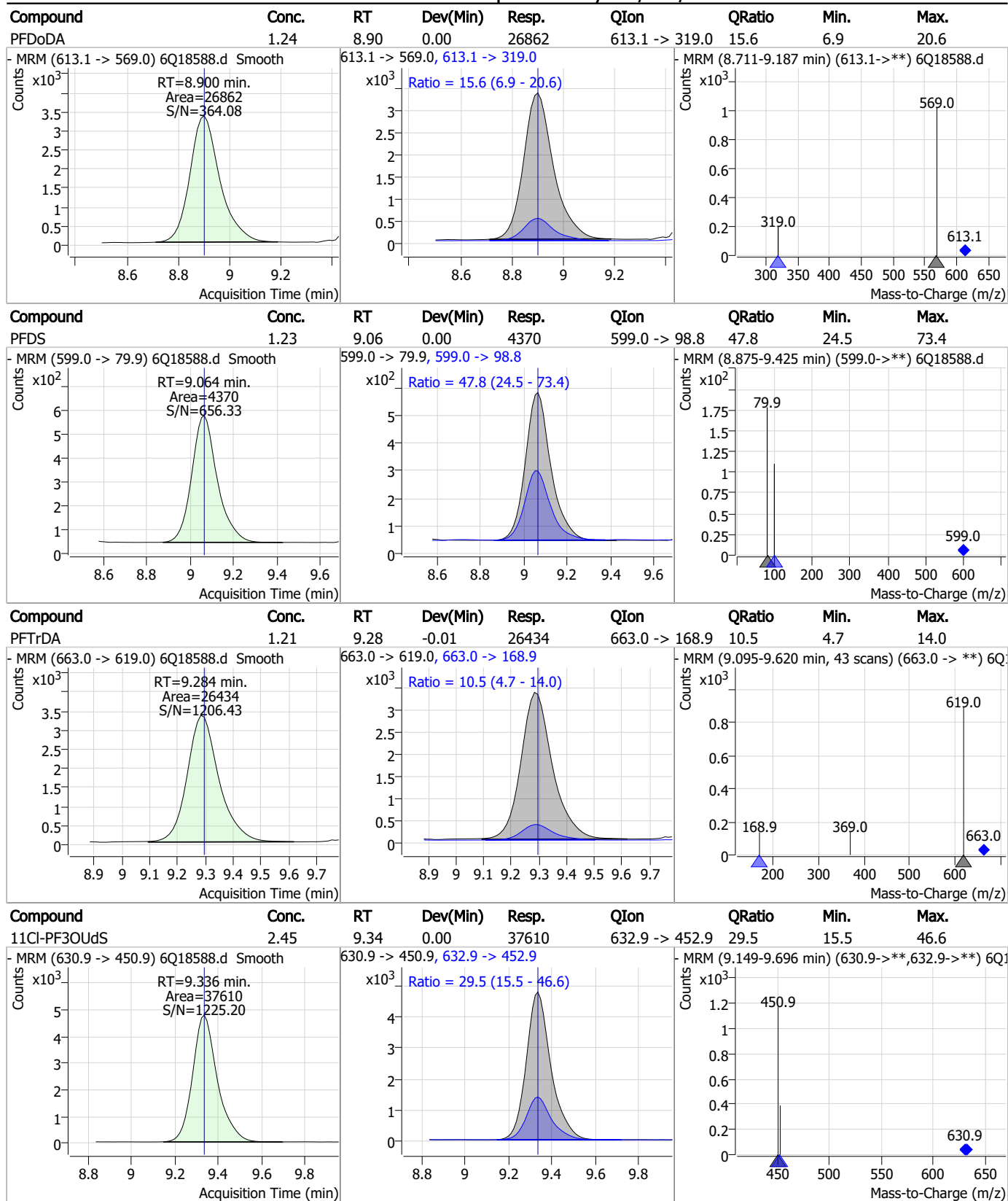
Perfluorinated Compounds by LC/MS/MS



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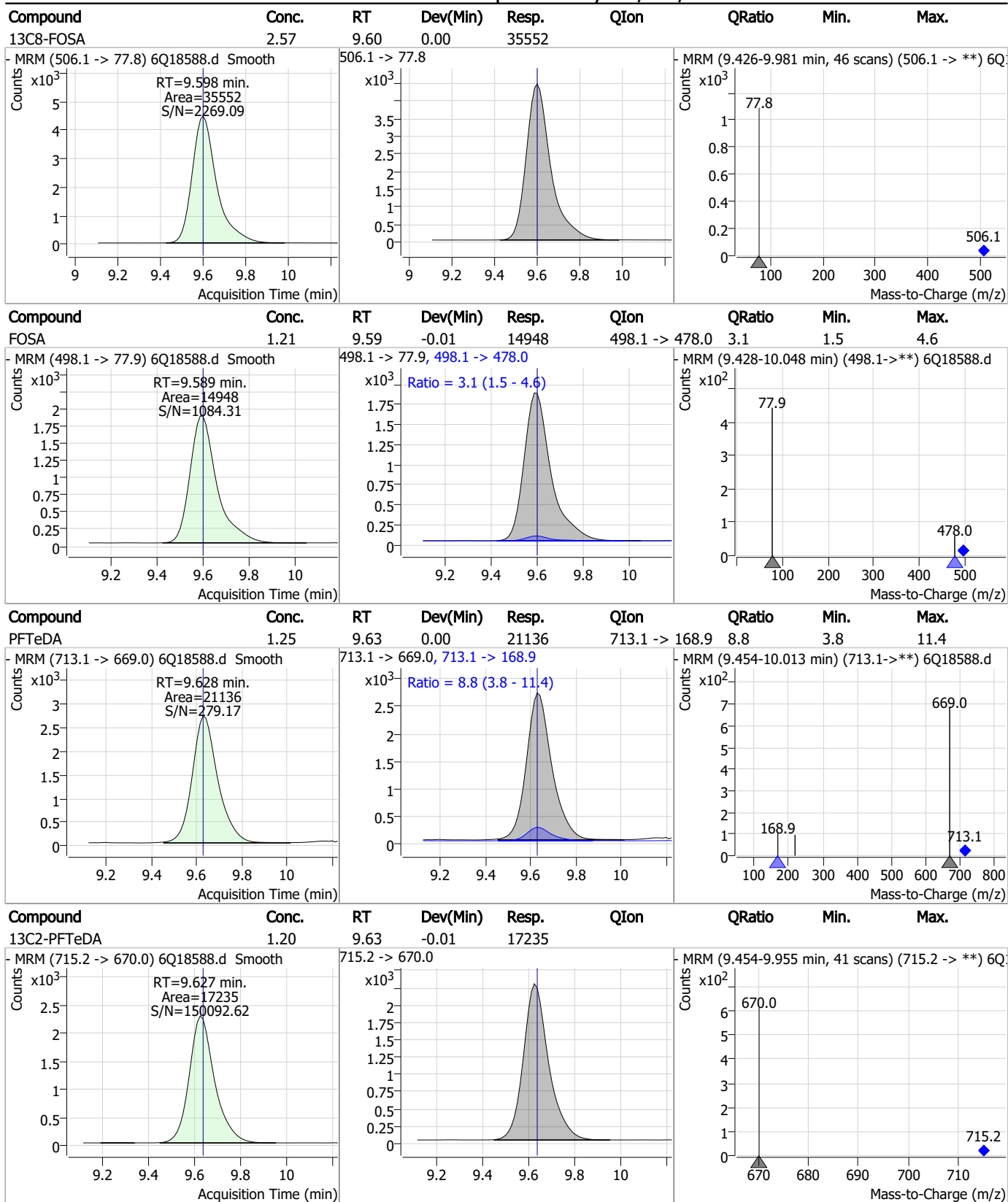
Perfluorinated Compounds by LC/MS/MS



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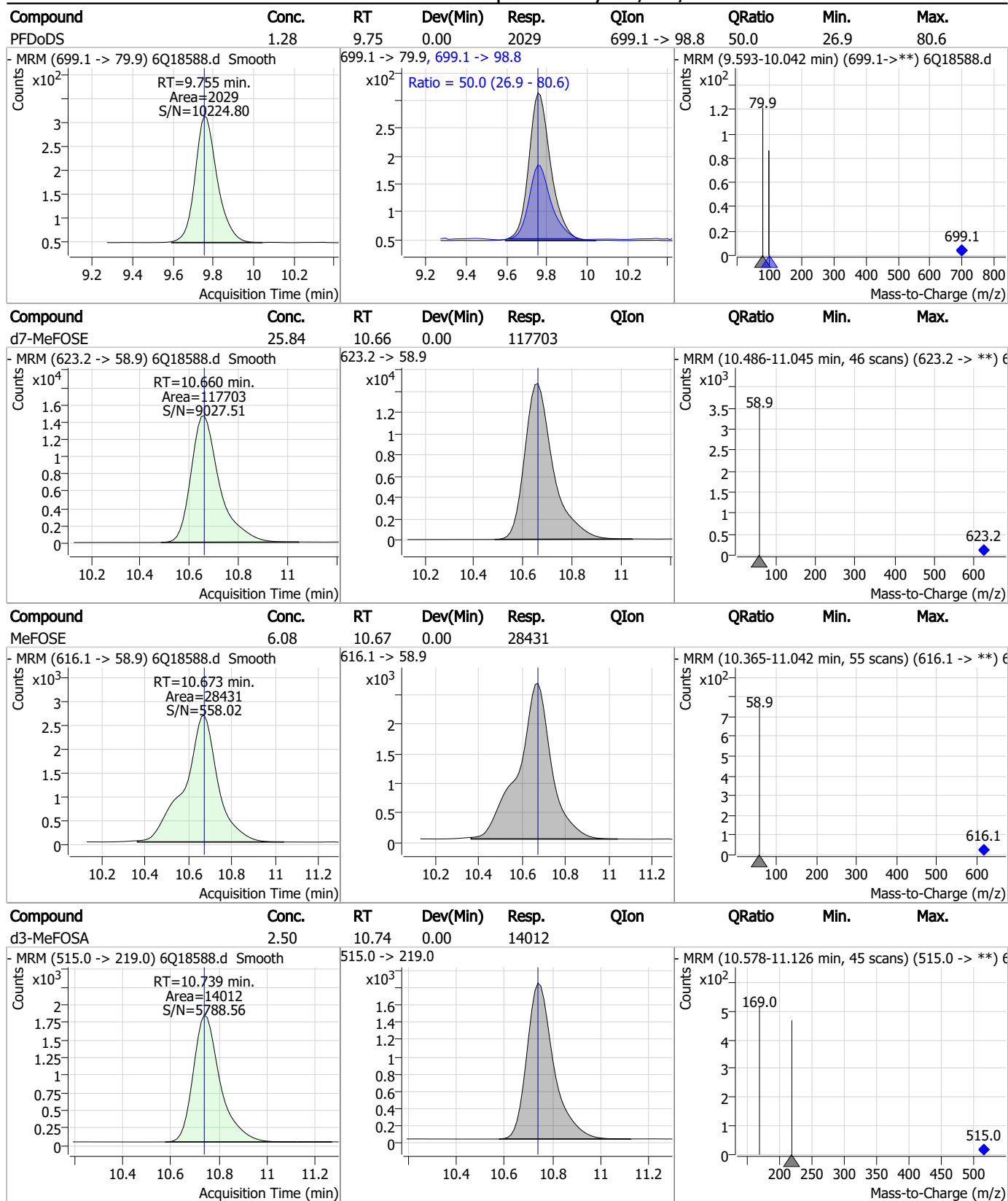
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

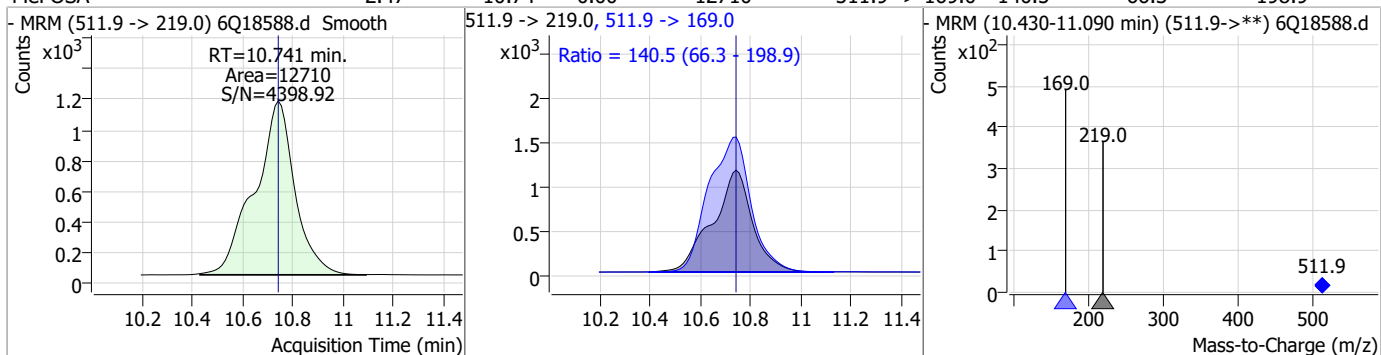


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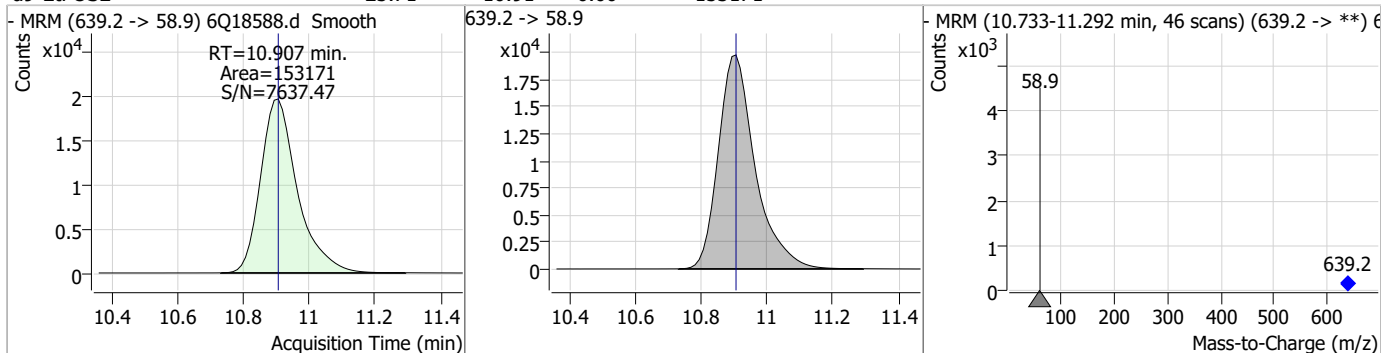
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Perfluorinated Compounds by LC/MS/MS

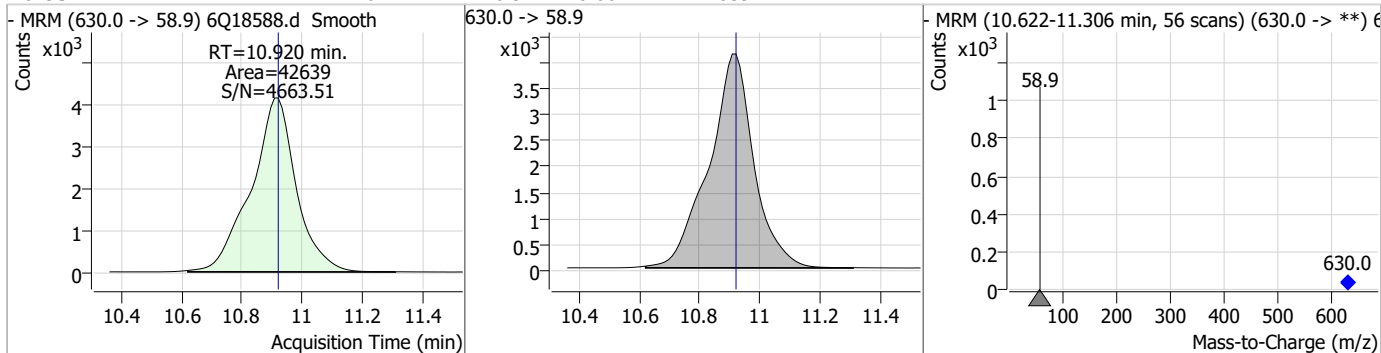
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.47	10.74	0.00	12710	511.9 -> 169.0	140.5	66.3	198.9



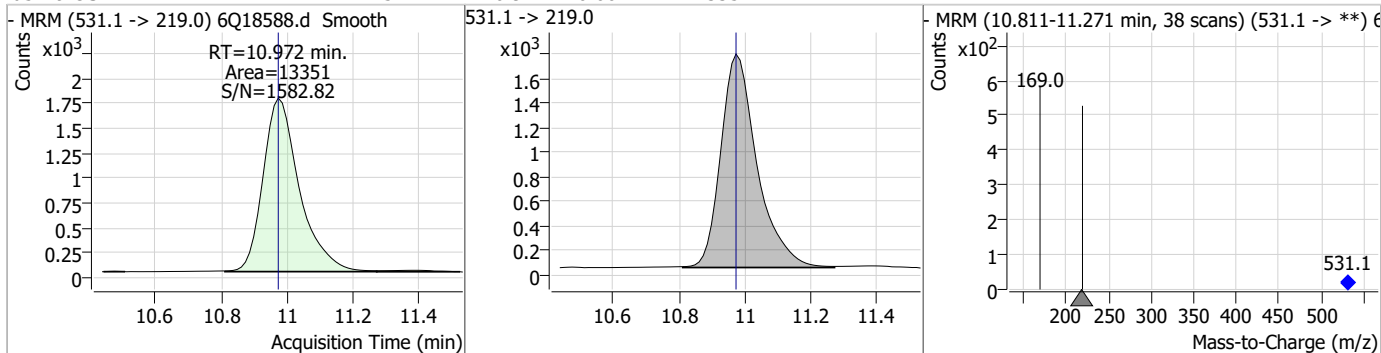
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.71	10.91	0.00	153171				



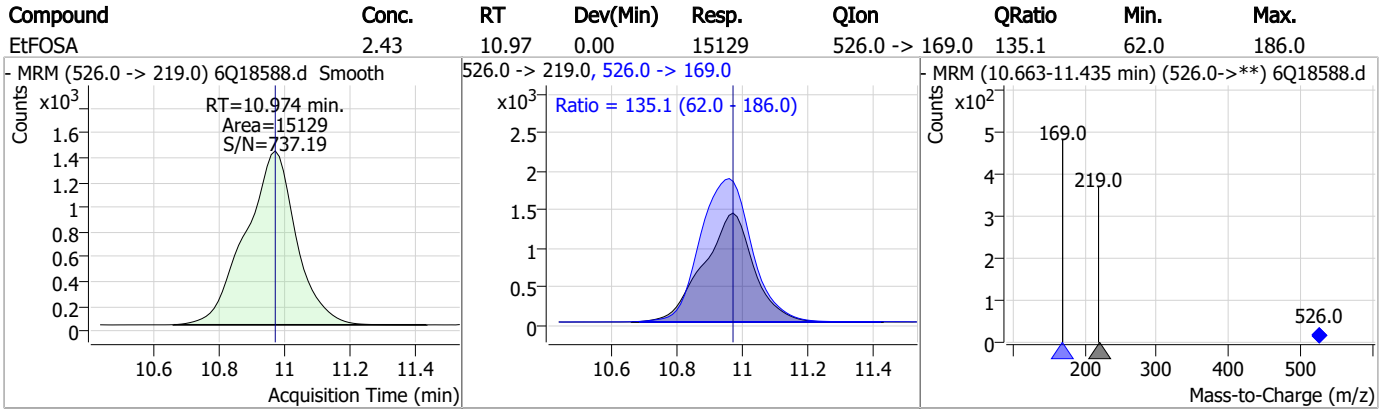
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	6.24	10.92	0.00	42639				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.52	10.97	0.00	13351				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18588.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:45 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.7.19.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18589.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:59:51 PM
 Sample Name : icc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	189555	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	63493	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	69513	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	64957	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	97956	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	44035	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	25820	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	35422	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31033	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16887	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34925	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24869	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15545	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	15184	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3758	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5472	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5633	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	28440	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	41571	10.00 µg/L	-0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	27173	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	117040	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	153531	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13495	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14341	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	19853	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	78902	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11237	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	103323	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	35484	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	58126	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	66686	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3758	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5472	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5633	5.10 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31033	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16887	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFBS	5.322	302.1 -> 79.9	24869	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C3-PFHxS	7.130	402.1 -> 79.9	15545	2.48 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFBA	2.822	216.8 -> 171.9	189555	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C4-PFHpA	6.369	367.1 -> 322.0	64957	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFHxA	5.404	318.0 -> 273.0	69513	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	63493	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C6-PFDA	8.027	519.1 -> 474.1	25820	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	35422	1.34 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C8-FOSA	9.598	506.1 -> 77.8	34925	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C8-PFOA	7.026	421.1 -> 376.0	97956	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.177	507.1 -> 79.9	15184	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C9-PFNA	7.545	472.1 -> 427.0	44035	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.0%	
d3-MeFOSAA	8.072	573.2 -> 419.0	28440	4.44 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.8%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	41571	9.49 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d3-MeFOSA	10.739	515.0 -> 219.0	14341	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	27173	4.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d7-MeFOSE	10.660	623.2 -> 58.9	117040	23.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
d9-EtFOSE	10.907	639.2 -> 58.9	153531	23.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	13495	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.0%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	51425	9.42 µg/L	96
		327.1 -> 80.9	19128		
6:2FTS	6.801	427.1 -> 407.0	50102	9.32 µg/L	98
		427.1 -> 80.9	16529		
8:2FTS	7.816	527.1 -> 507.0	29747	9.49 µg/L	92
		527.1 -> 80.8	11252		
EtFOSAA	8.280	584.2 -> 419.1	8210	2.35 µg/L	98
		584.2 -> 526.0	4591		
FOSA	9.589	498.1 -> 77.9	29050	2.40 µg/L	99
		498.1 -> 478.0	792		
MeFOSAA	8.085	570.1 -> 419.0	14399	2.46 µg/L	95
		570.1 -> 483.0	3104		
PFBA	2.818	212.8 -> 168.9	59471	9.48 µg/L	100
PFBS	5.323	298.7 -> 79.9	18127	2.14 µg/L	97
		298.7 -> 98.8	6865		
PFDA	8.027	512.9 -> 469.0	74108	2.48 µg/L	99
		512.9 -> 219.0	12035		
PFDODA	8.900	613.1 -> 569.0	52039	2.44 µg/L	96
		613.1 -> 319.0	7920		
PFDS	9.052	599.0 -> 79.9	8728	2.30 µg/L	94

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3939		
PFHpA	6.370	363.1 -> 319.0	66315	2.31 µg/L	97
		363.1 -> 169.0	10881		
PFHpS	7.685	449.0 -> 79.9	15706	2.16 µg/L	98
		449.0 -> 98.9	8011		
PFHxA	5.407	313.0 -> 269.0	56570	2.42 µg/L	98
		313.0 -> 118.9	2891		
PFHxS	7.131	398.7 -> 79.9	15719	2.24 µg/L	100
		398.7 -> 98.9	7434		
PFNA	7.545	463.0 -> 419.0	69229	2.22 µg/L	96
		463.0 -> 219.0	14725		
PFNS	8.631	548.8 -> 79.9	13620	2.23 µg/L	96
		548.8 -> 98.9	7016		
PFOA	7.028	413.0 -> 369.0	101772	2.43 µg/L	100
		413.0 -> 169.0	17392		
PFOS	8.178	498.9 -> 79.9	15311	2.21 µg/L	95
		498.9 -> 98.8	7621		
PFPeA	4.212	263.0 -> 219.0	72565	4.76 µg/L	100
PFPeS	6.410	349.1 -> 79.9	15859	2.26 µg/L	99
		349.1 -> 98.9	7345		
PFTeDA	9.628	713.1 -> 669.0	41426	2.49 µg/L	97
		713.1 -> 168.9	3558		
PFTrDA	9.284	663.0 -> 619.0	54476	2.53 µg/L	97
		663.0 -> 168.9	5606		
PFUnDA	8.468	563.1 -> 519.0	52765	2.29 µg/L	95
		563.1 -> 269.1	9210		
11CI-PF3OUdS	9.336	630.9 -> 450.9	75994	4.87 µg/L	98
		632.9 -> 452.9	22667		
9CI-PF3ONS	8.508	530.8 -> 351.0	118573	4.82 µg/L	96
		532.8 -> 353.0	36306		
ADONA	6.632	376.9 -> 250.9	261173	4.73 µg/L	99
		376.9 -> 84.8	68875		
HFPO-DA	5.770	284.9 -> 168.9	17708	5.03 µg/L	94
		284.9 -> 184.9	2012		
3:3FTCA	3.659	241.0 -> 177.0	11513	11.80 µg/L	99
		241.0 -> 117.0	1602		
5:3FTCA	6.074	341.0 -> 237.1	248699	59.23 µg/L	97
		341.0 -> 217.0	182017		
7:3FTCA	7.510	441.0 -> 316.9	175170	60.92 µg/L	97
		441.0 -> 336.9	376547		
EtFOSA	10.974	526.0 -> 219.0	30802	4.90 µg/L	93
		526.0 -> 169.0	40785		
EtFOSE	10.907	630.0 -> 58.9	82238	12.01 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	25190	4.78 µg/L	94
		511.9 -> 169.0	35040		
MeFOSE	10.673	616.1 -> 58.9	56031	12.05 µg/L	100
PFDoDS	9.755	699.1 -> 79.9	3730	2.21 µg/L	97
		699.1 -> 98.8	2084		
NFDHA	5.288	295.0 -> 201.0	13306	4.68 µg/L	98
		295.0 -> 84.9	3439		
PFMBA	4.626	279.0 -> 85.1	49585	4.78 µg/L	100
PFMPA	3.351	229.0 -> 84.9	38660	4.79 µg/L	100
PFEESA	5.862	314.8 -> 134.9	127899	4.32 µg/L	99
		314.8 -> 82.9	4516		

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

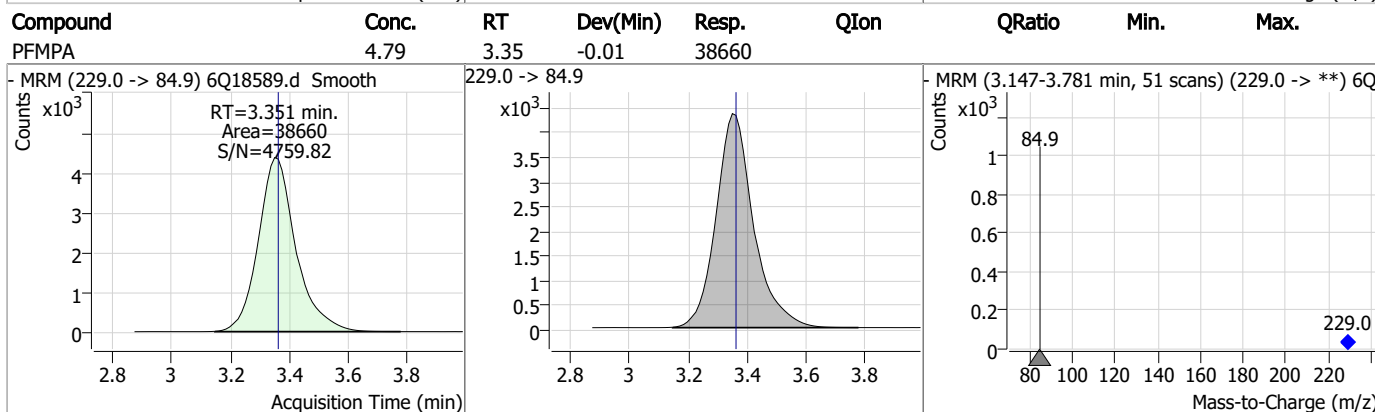
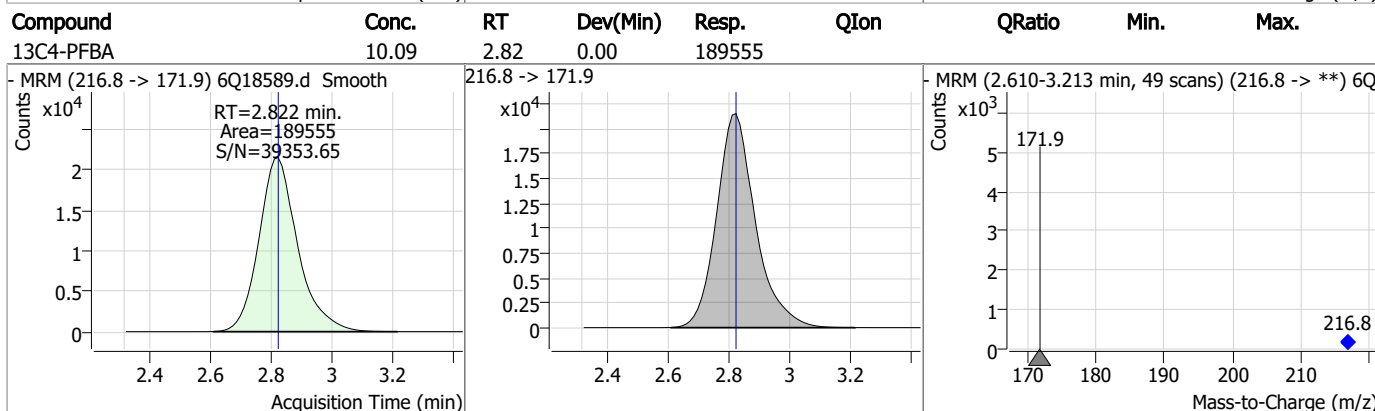
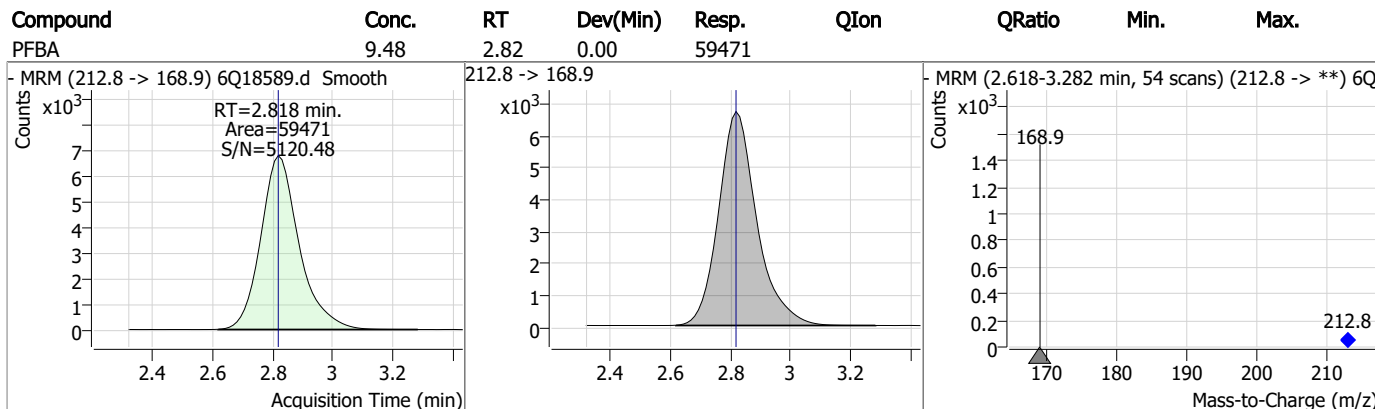
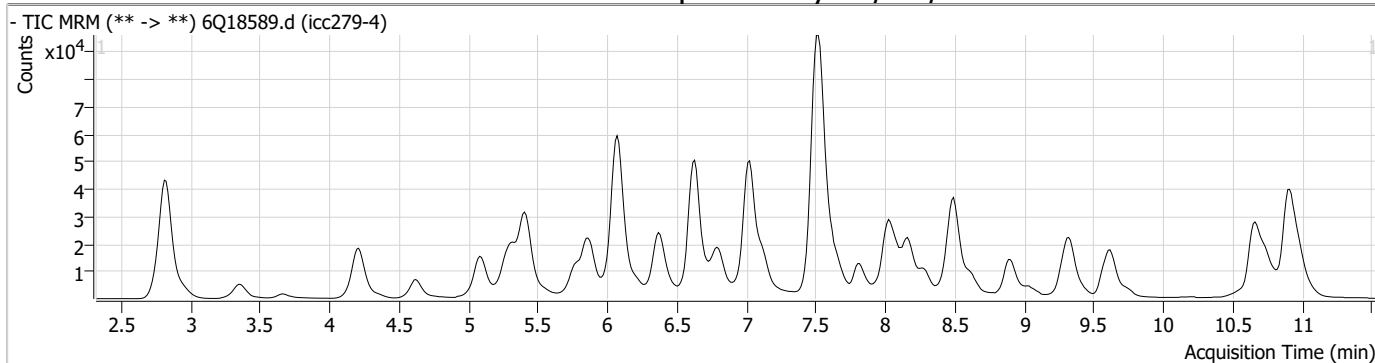
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7:7.20
7



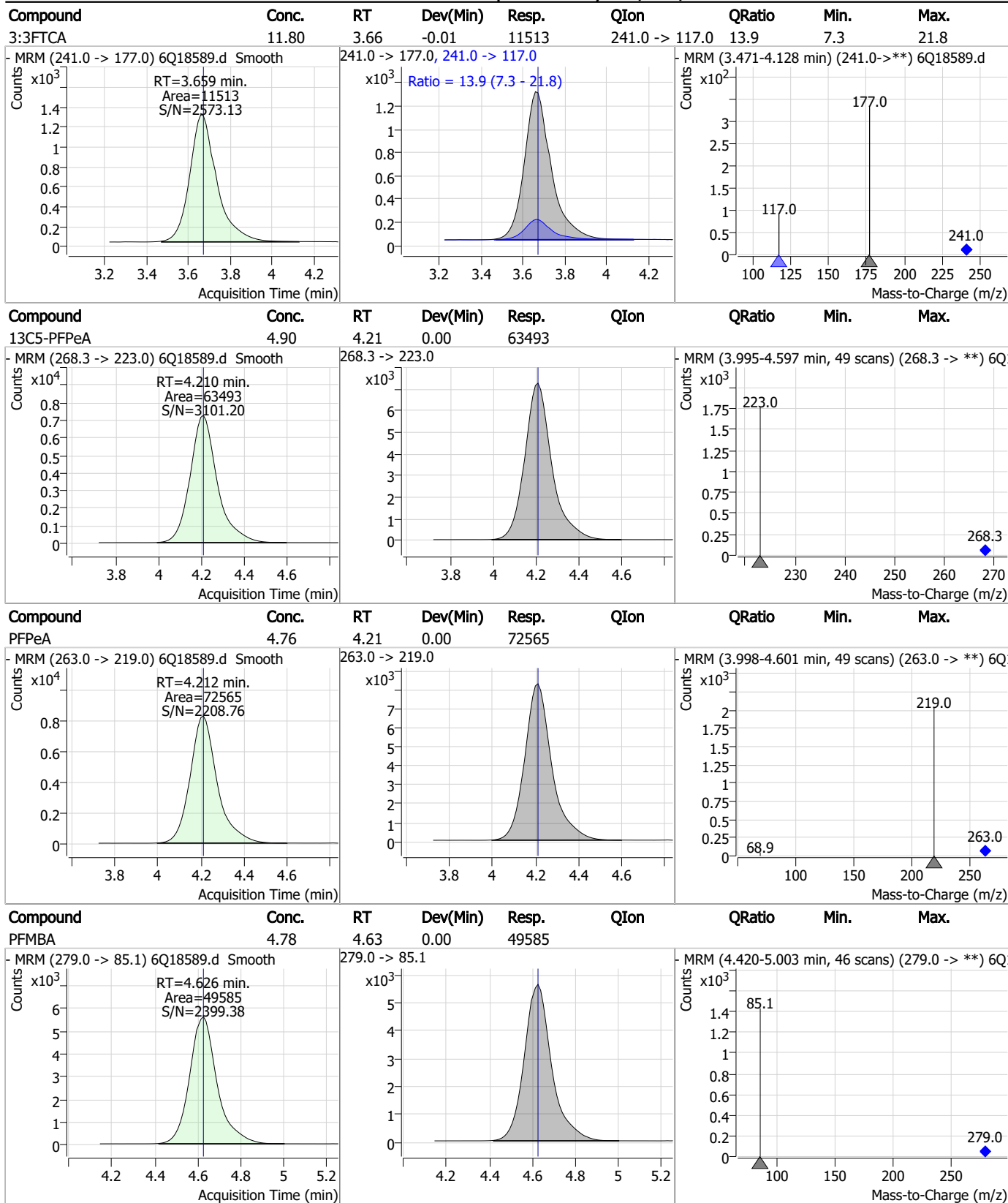
Perfluorinated Compounds by LC/MS/MS



7.7.20
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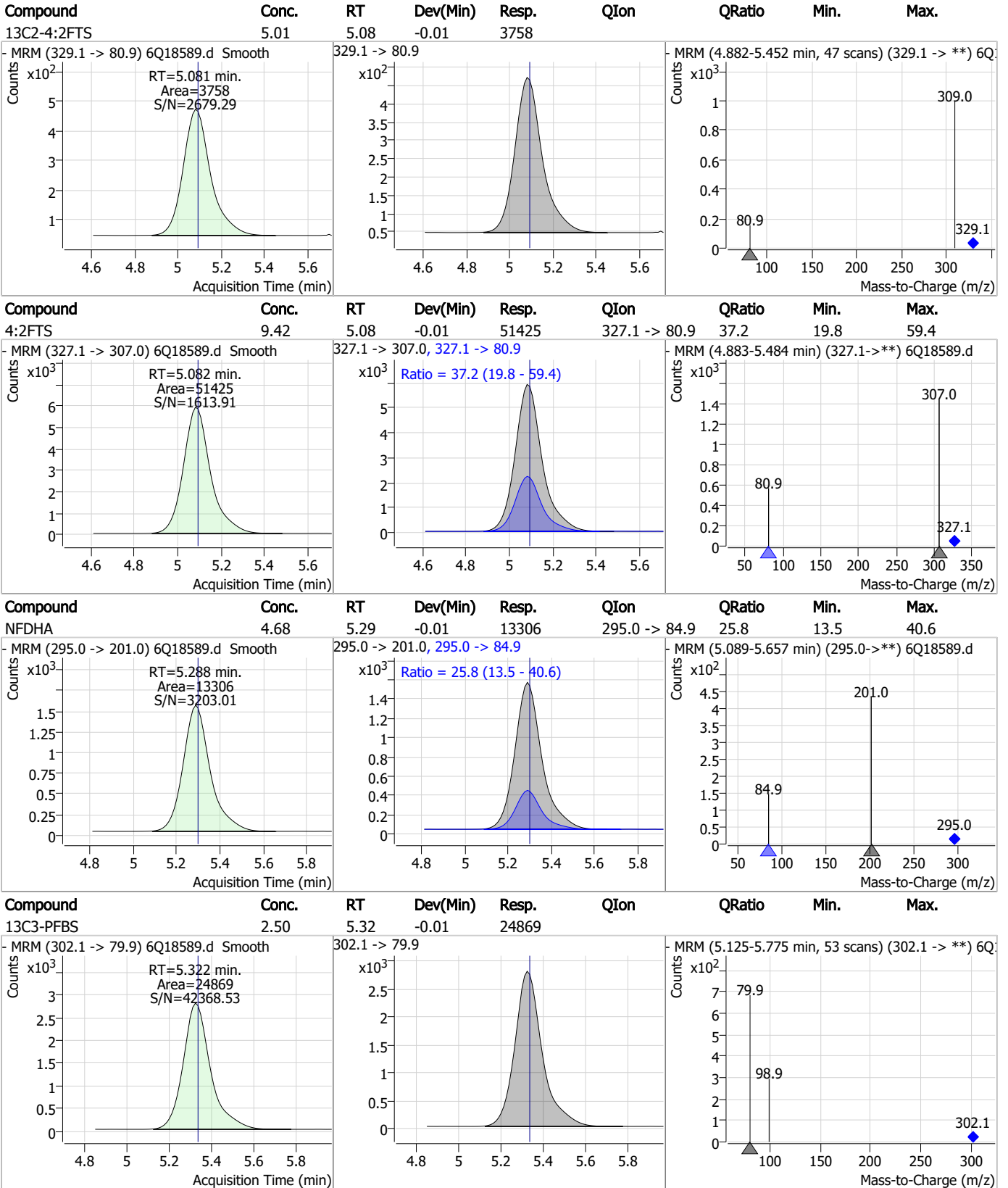
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7.7.20

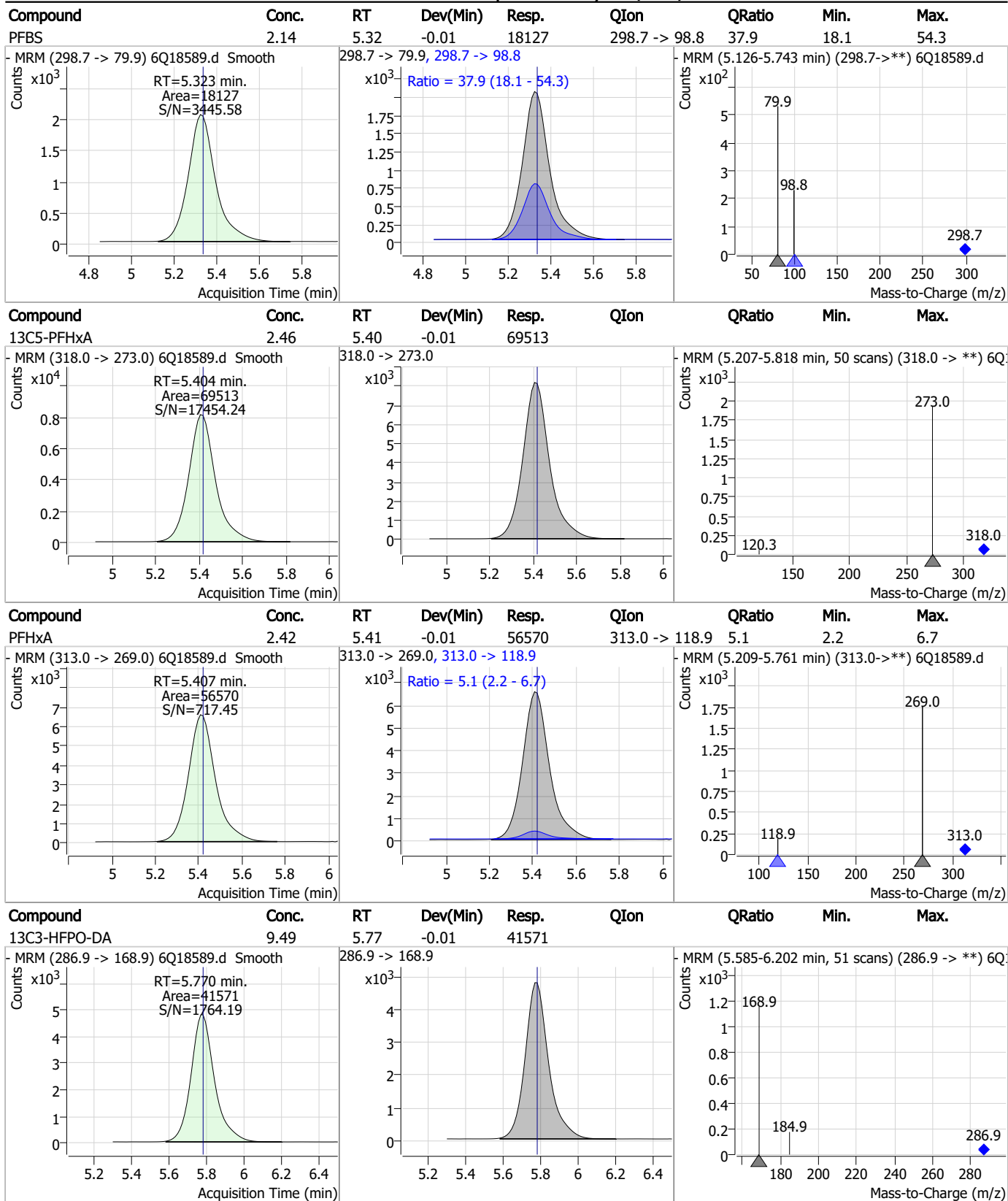
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Perfluorinated Compounds by LC/MS/MS



7.7.20 7

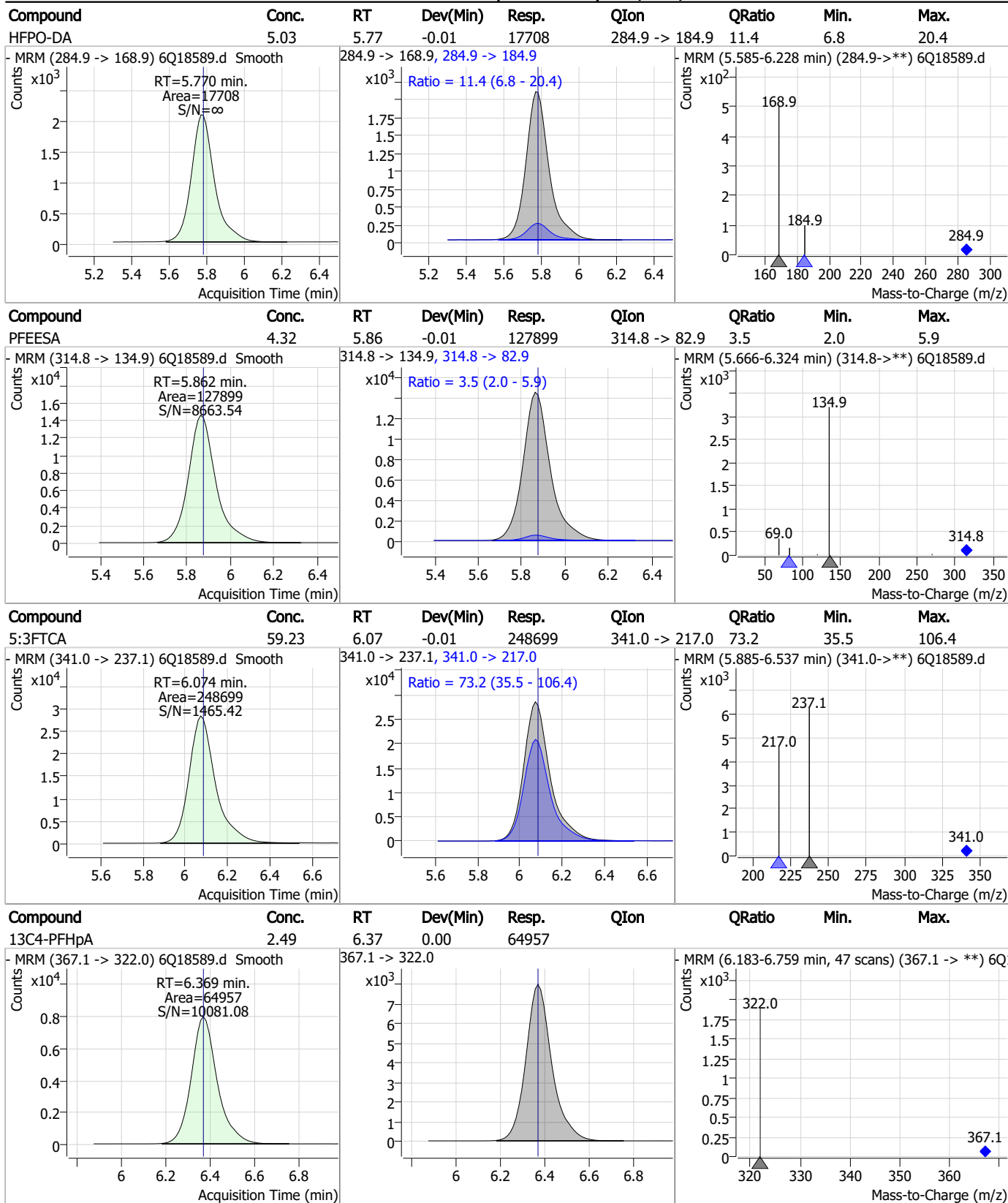
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7.7.20
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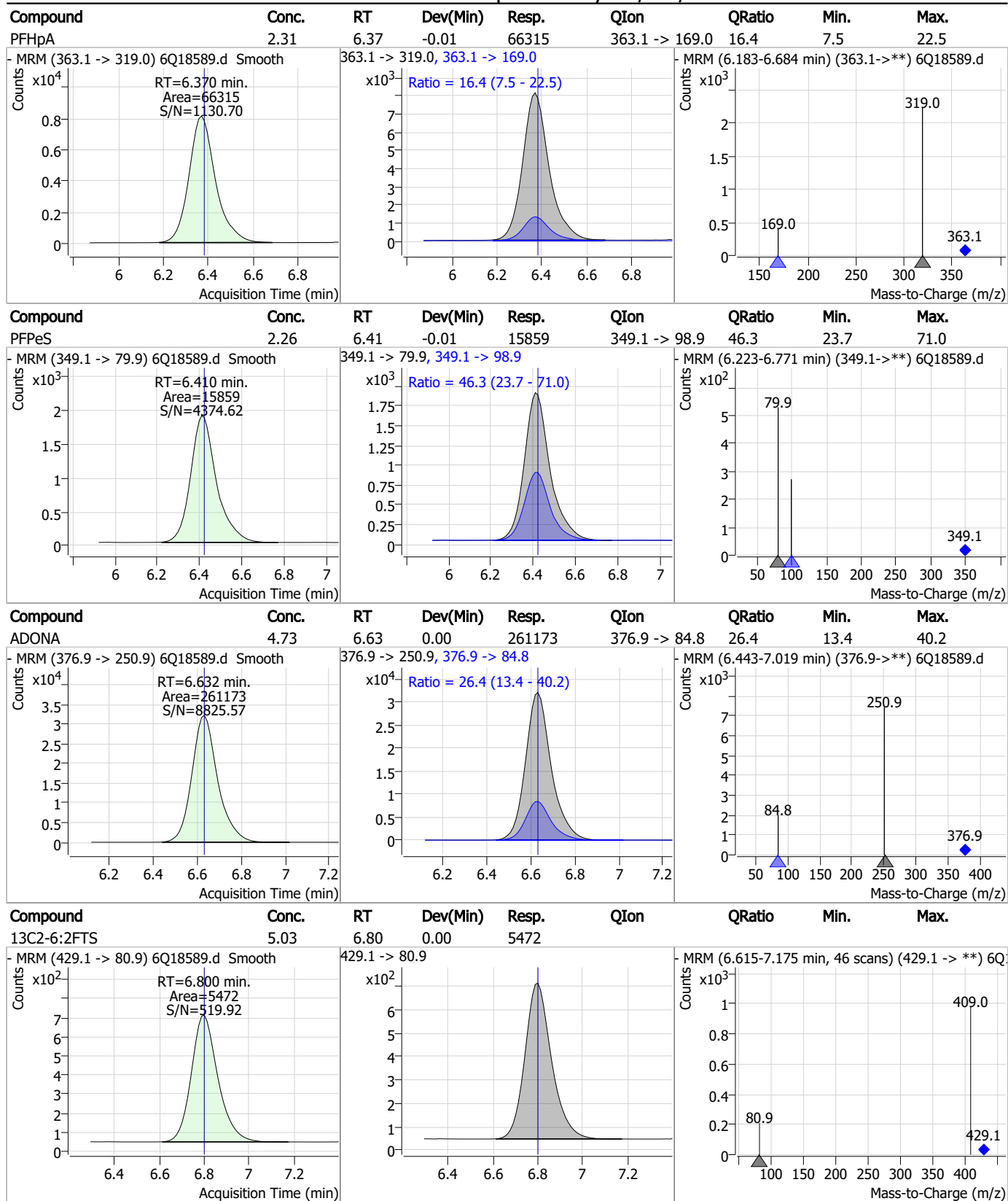
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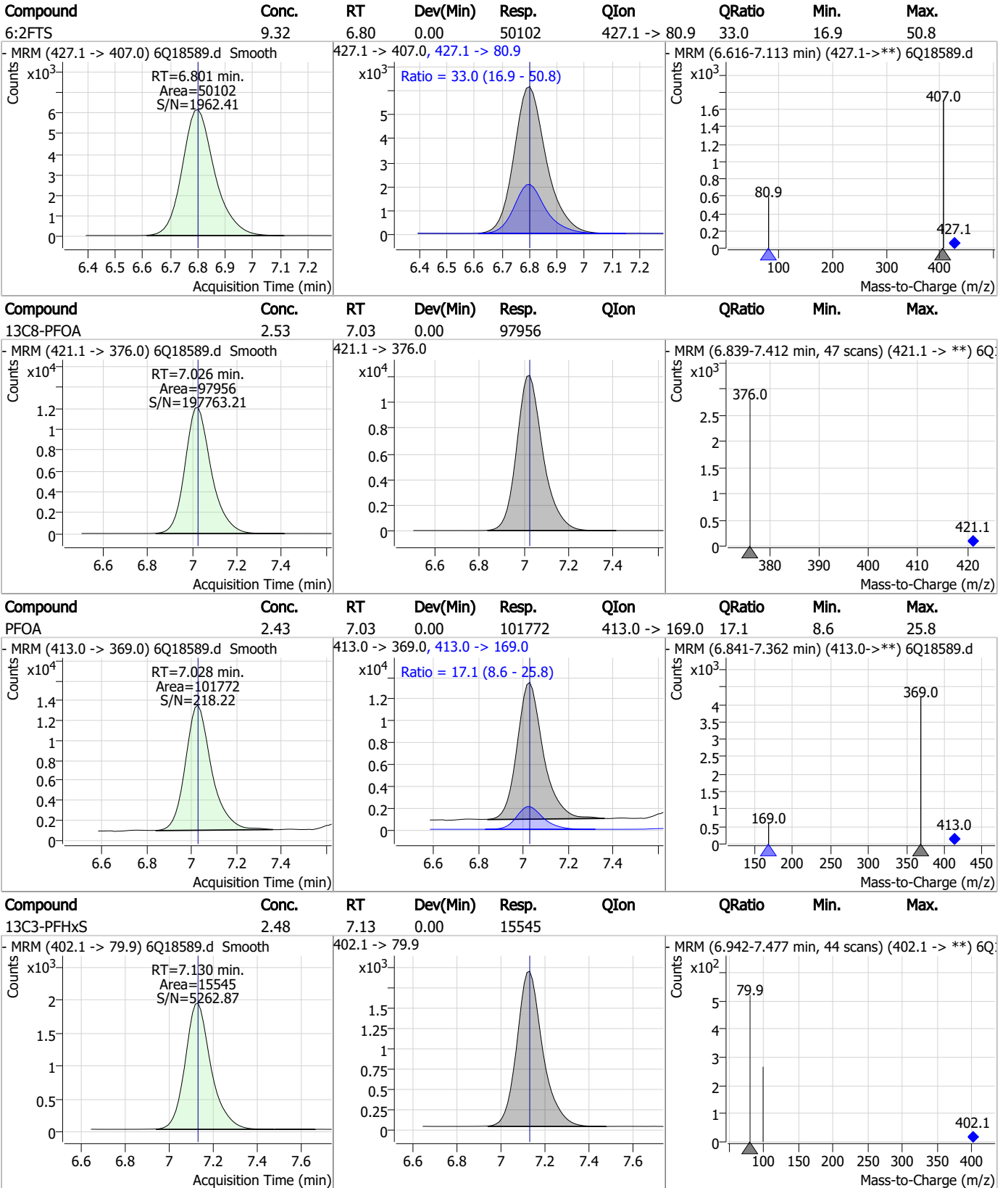
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7.7.20 7

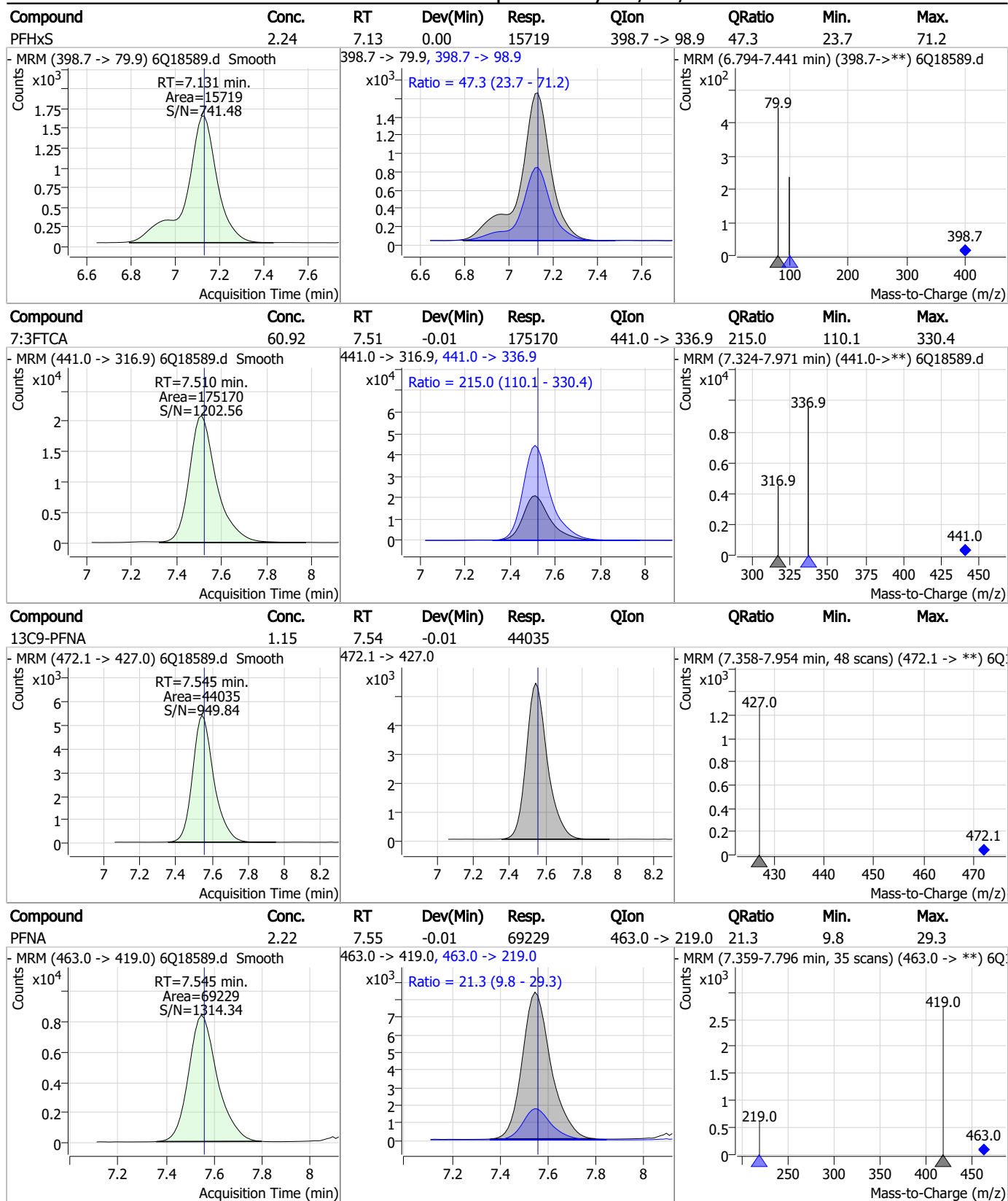
Perfluorinated Compounds by LC/MS/MS



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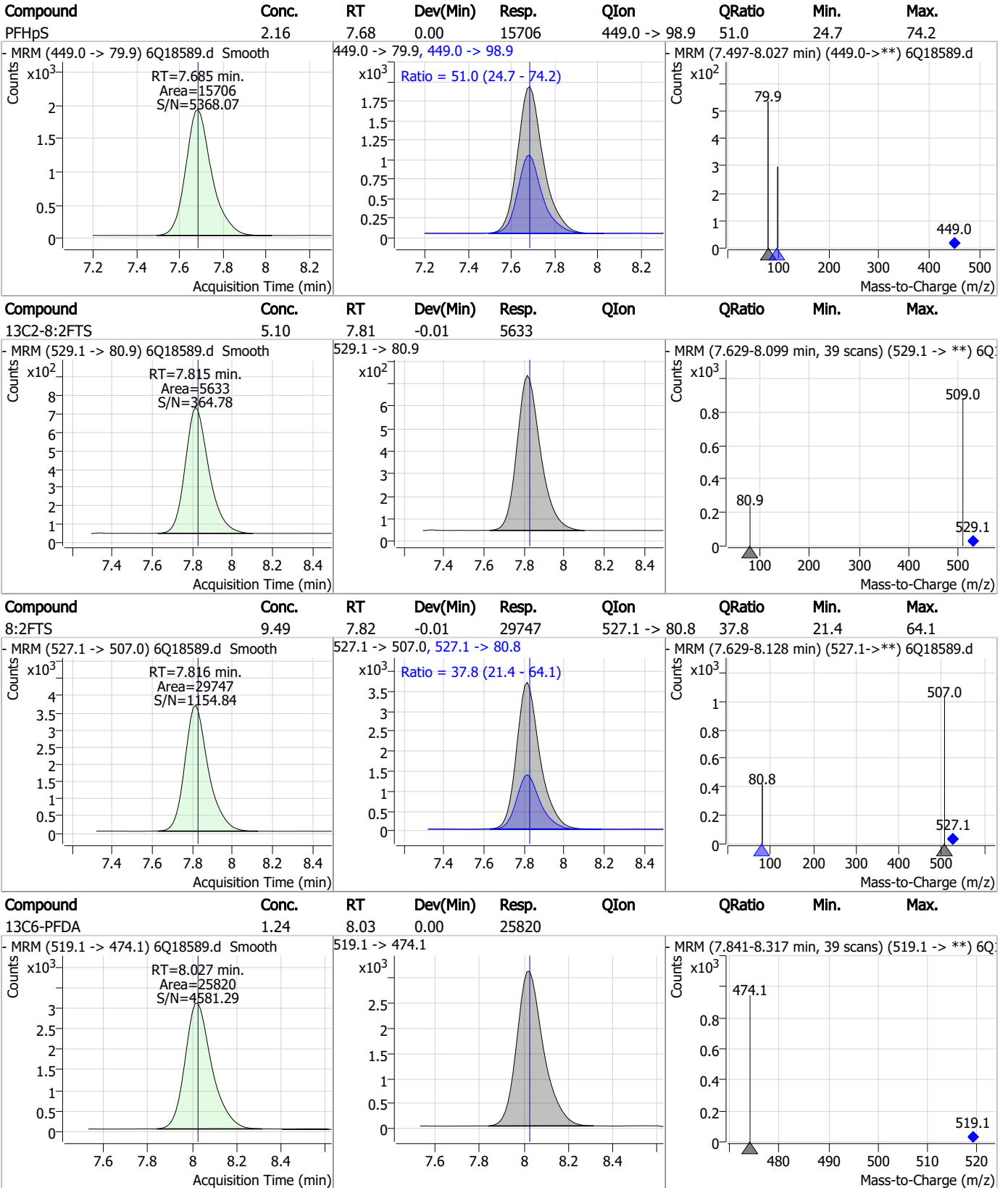
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Perfluorinated Compounds by LC/MS/MS



7.7.20
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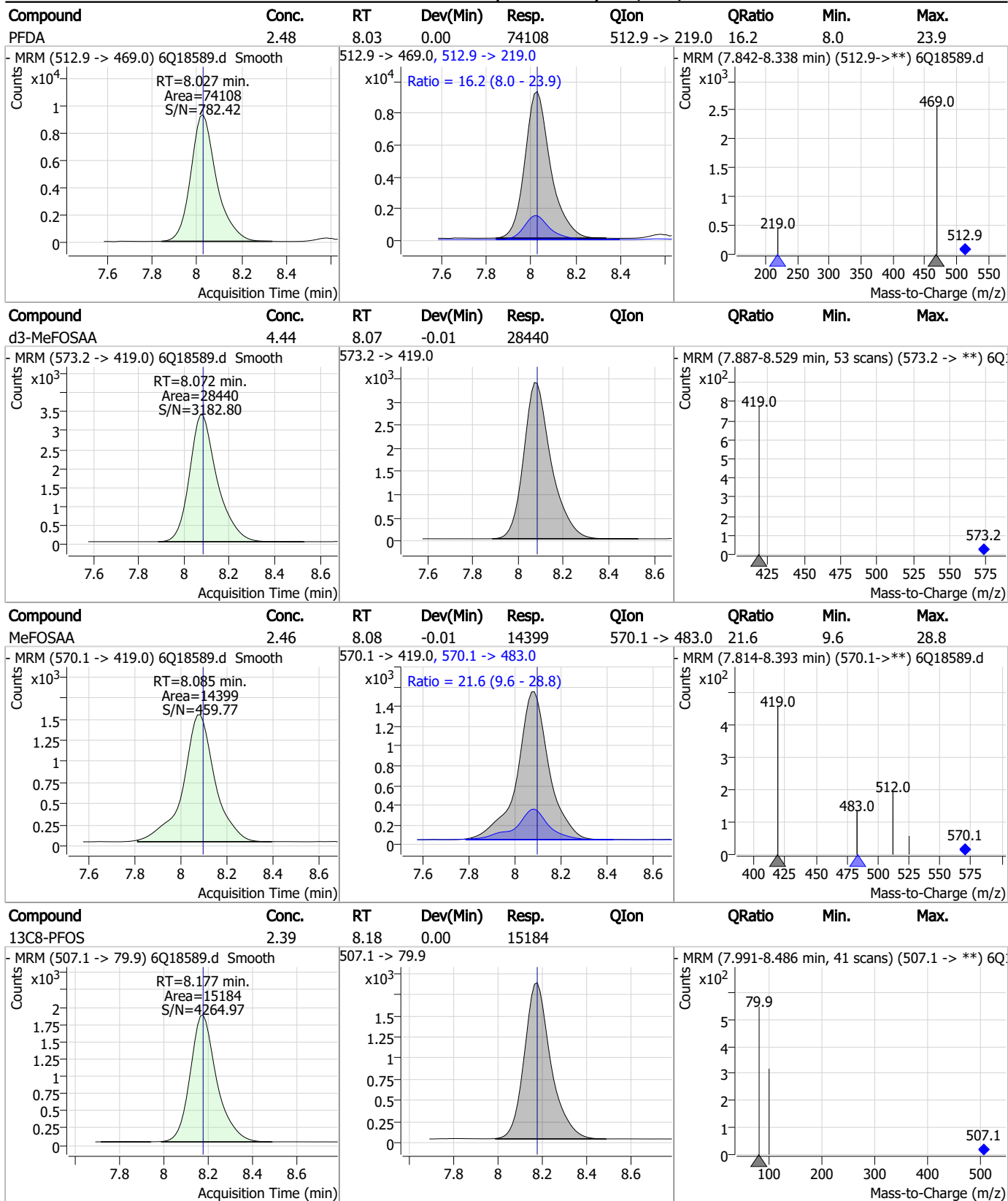
Perfluorinated Compounds by LC/MS/MS



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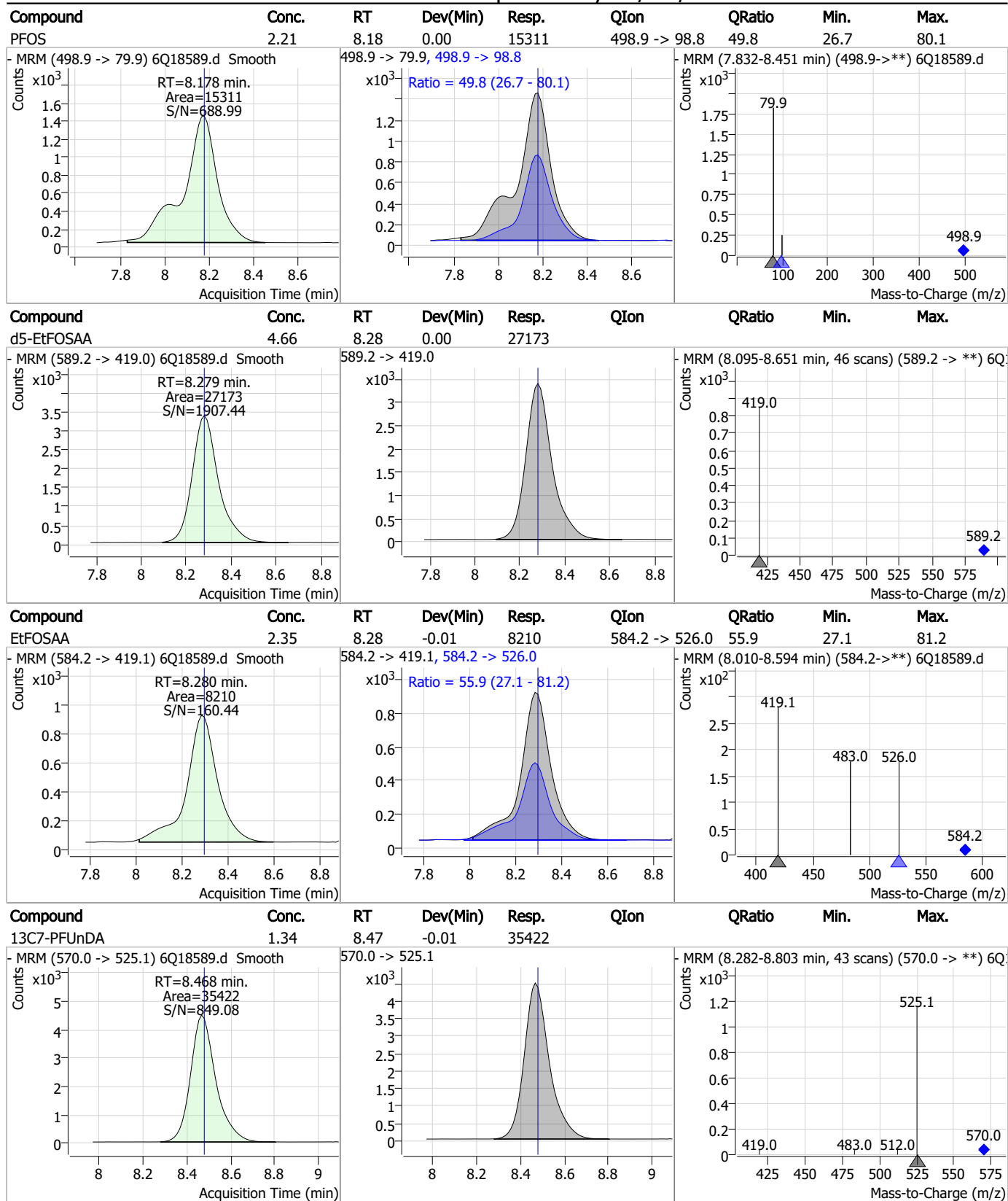
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Perfluorinated Compounds by LC/MS/MS



7.7.20
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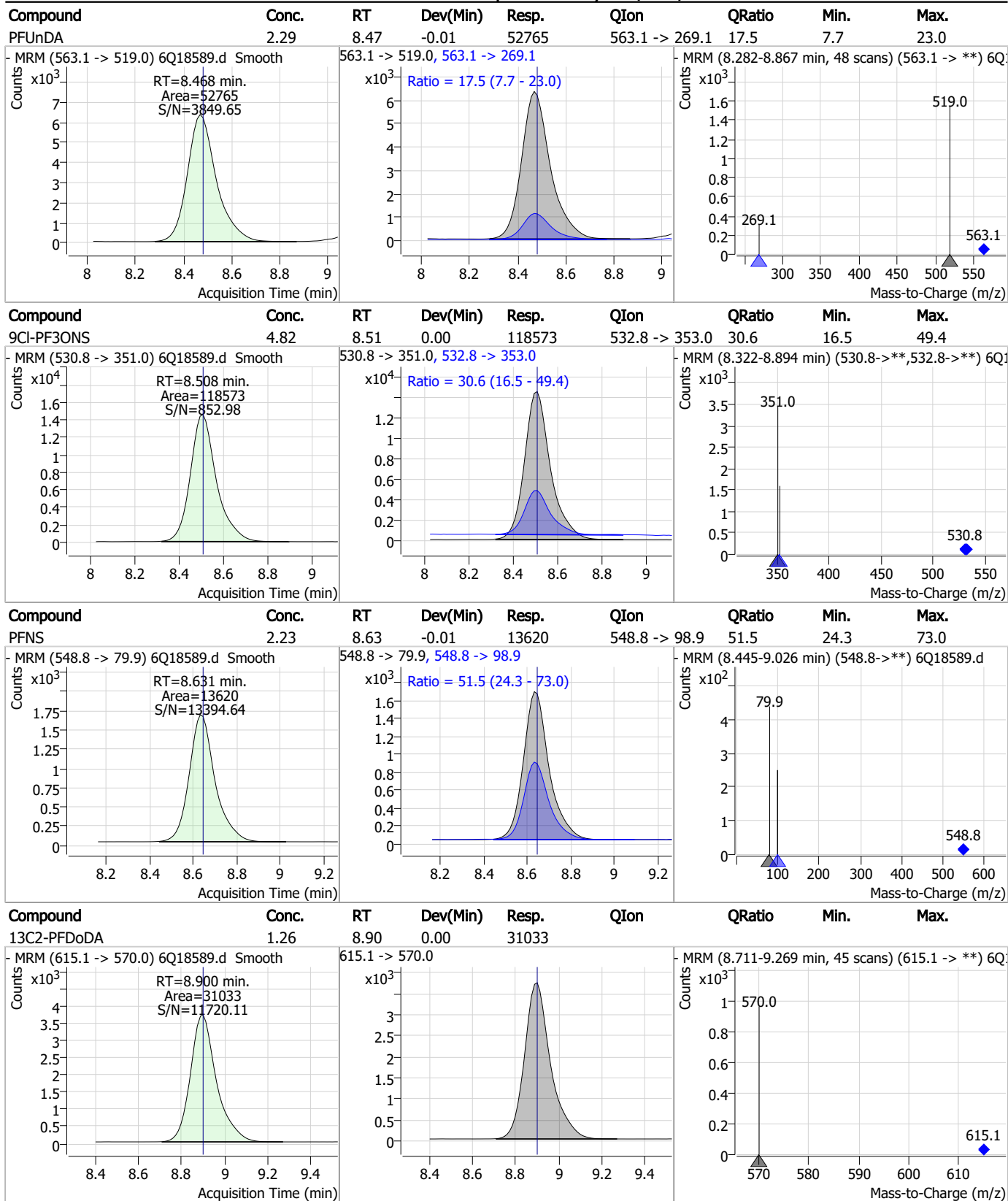
Perfluorinated Compounds by LC/MS/MS



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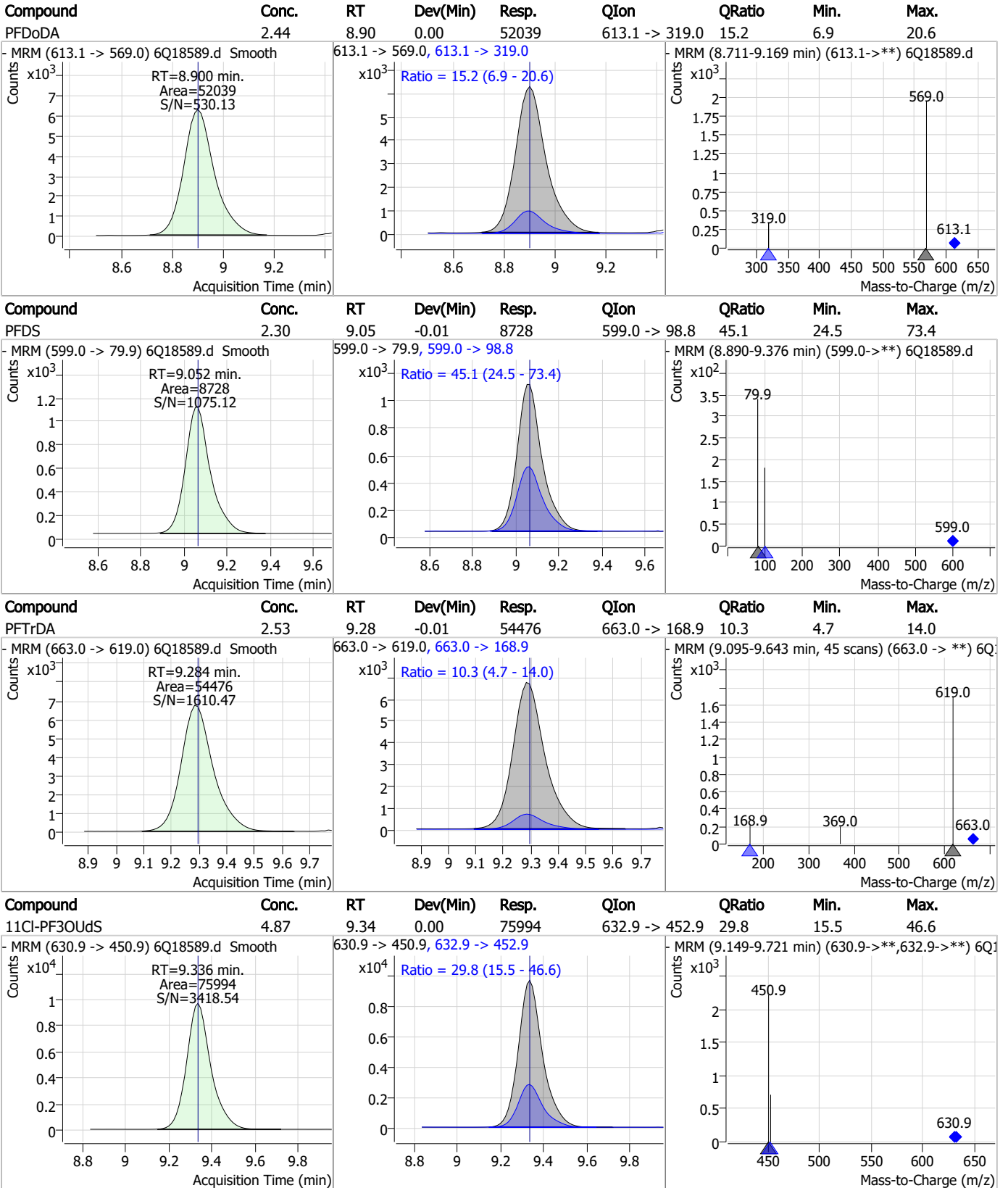
Perfluorinated Compounds by LC/MS/MS



7.7.20

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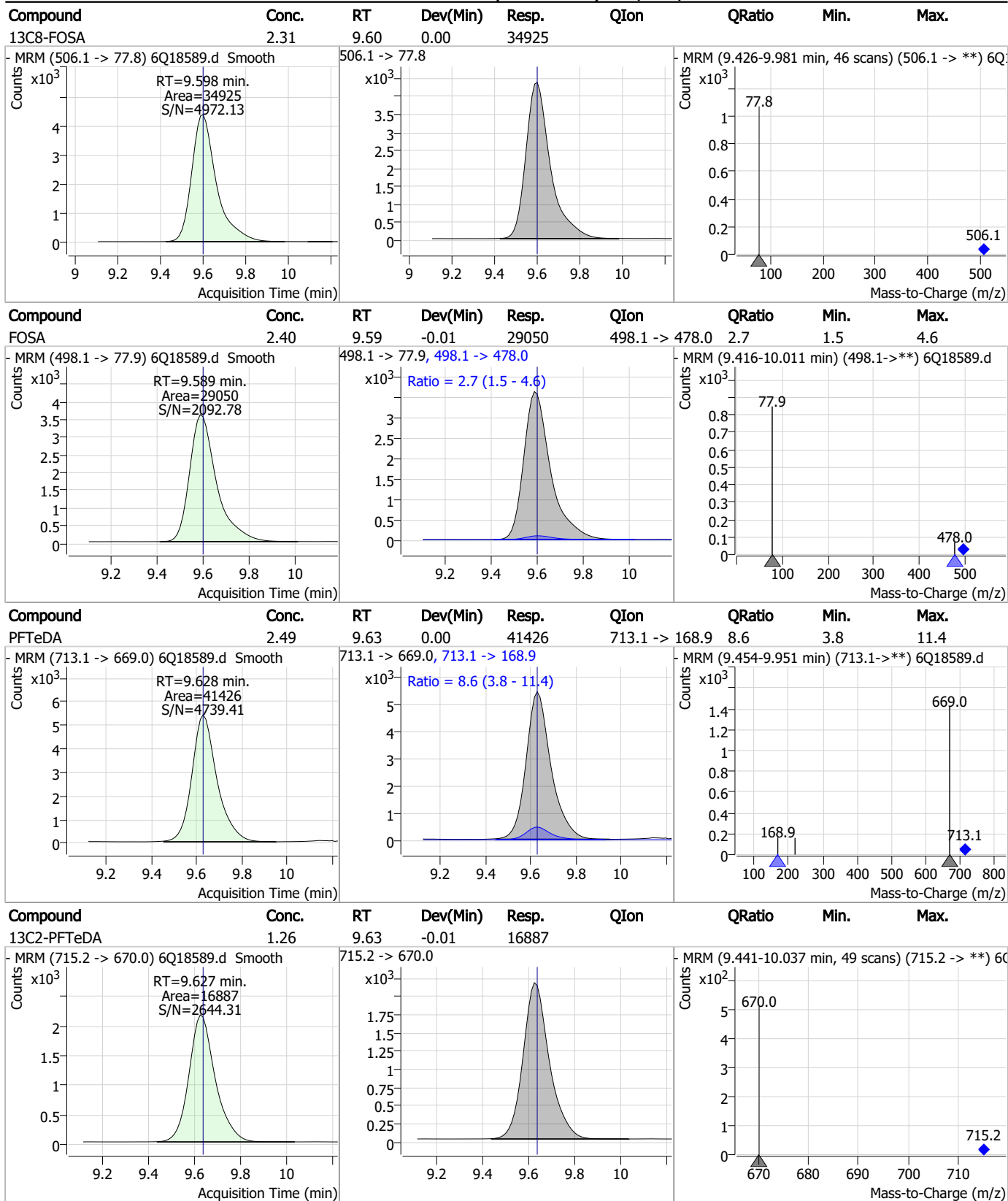
Perfluorinated Compounds by LC/MS/MS



7.7.20 7



Perfluorinated Compounds by LC/MS/MS

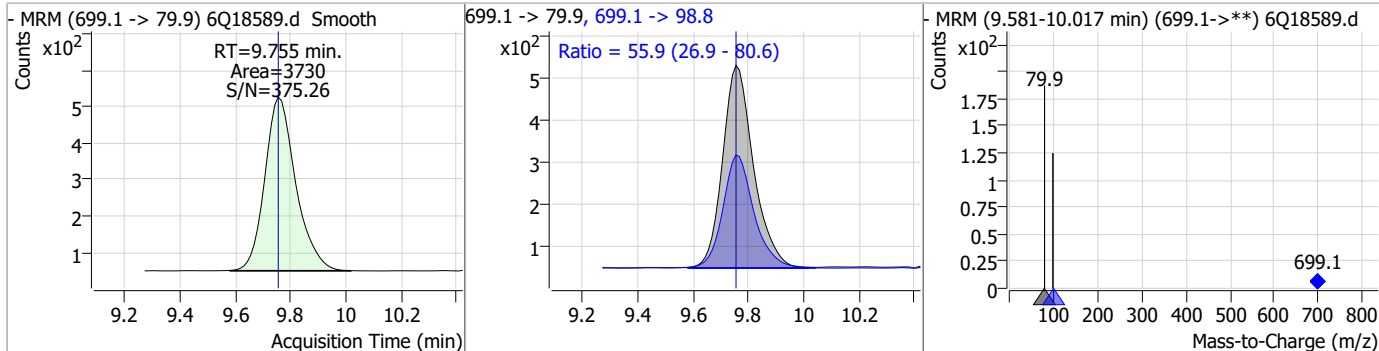


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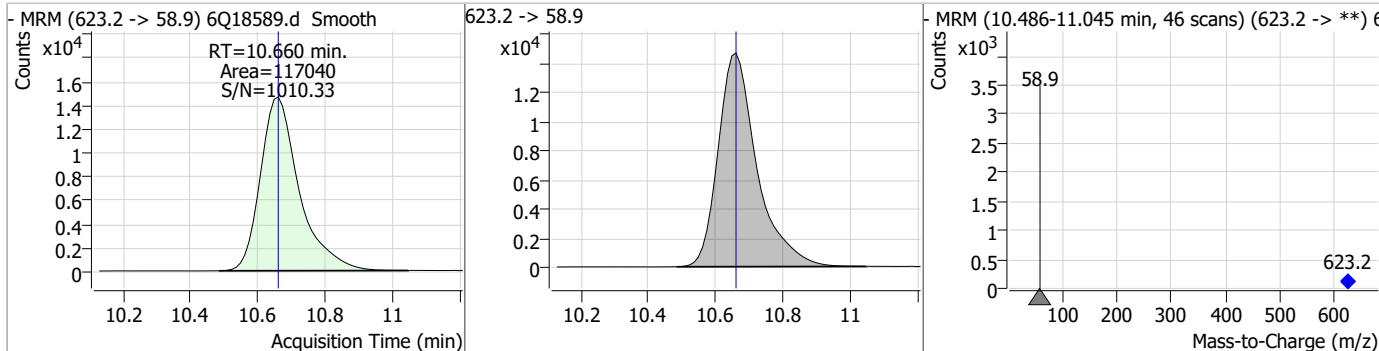
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Perfluorinated Compounds by LC/MS/MS

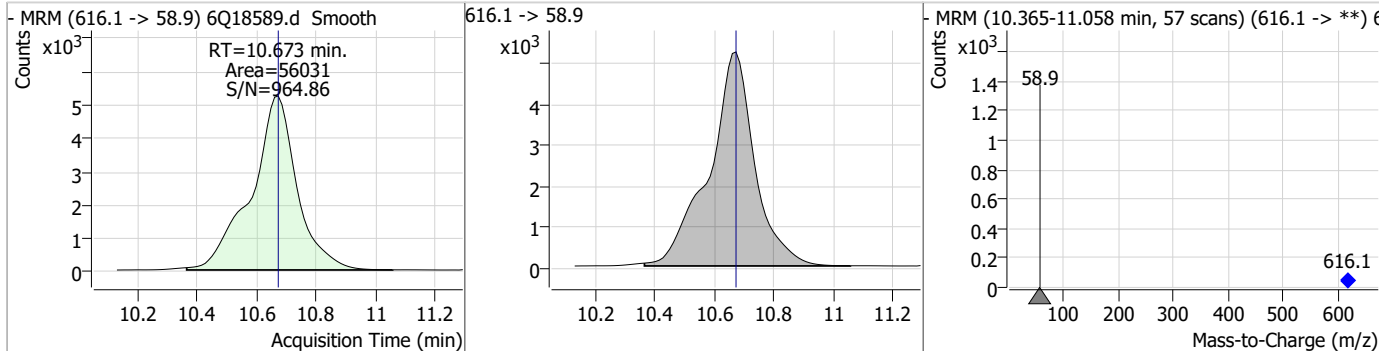
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.21	9.75	0.00	3730	699.1 -> 98.8	55.9	26.9	80.6



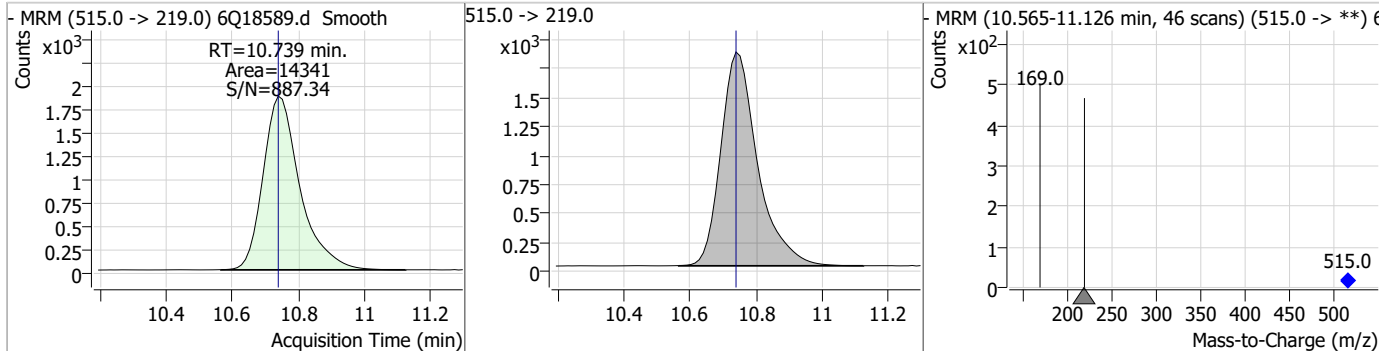
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.47	10.66	0.00	117040				



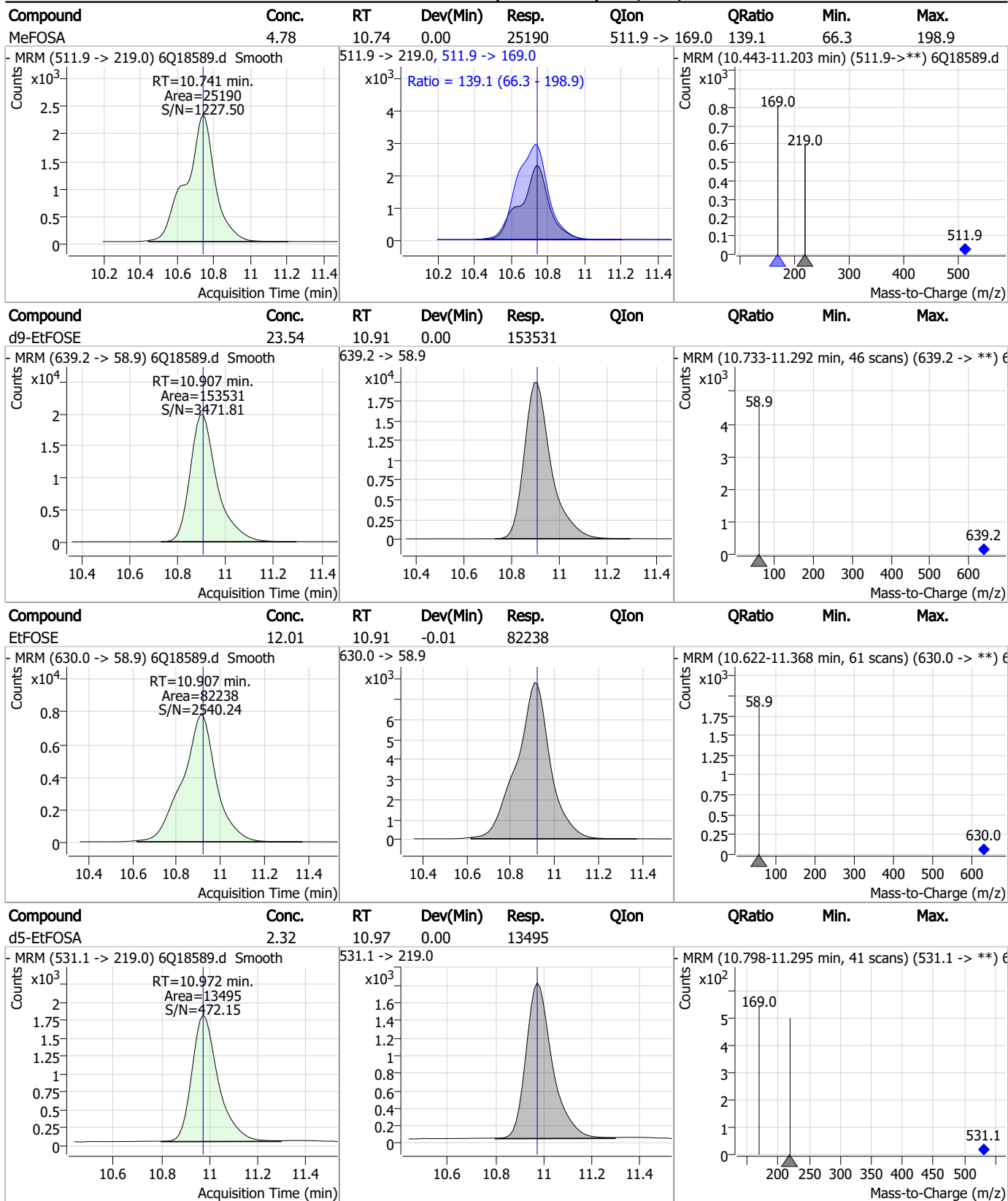
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.05	10.67	0.00	56031				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.34	10.74	0.00	14341				

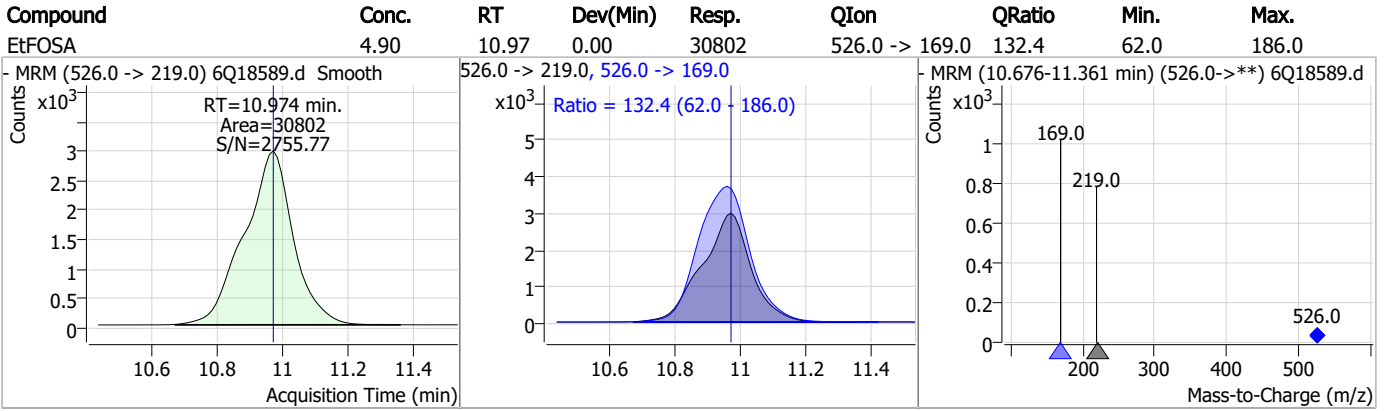


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.20
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18590.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:14:21 PM
 Sample Name : ic279-5
 Vial : P1-A6
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187880	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62954	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	67445	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	62246	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	99446	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	45750	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	26521	1.25 µg/L	-0.013
M7-PFUnDA	8.455	570.0 -> 525.1	34273	1.25 µg/L	-0.025
M2-PFDoDA	8.887	615.1 -> 570.0	32244	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	17929	1.25 µg/L	-0.012
M8-FOSA	9.586	506.1 -> 77.8	35190	2.50 µg/L	-0.012
M3-PFBS	5.322	302.1 -> 79.9	24935	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	15616	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	14763	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3776	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5453	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5898	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	32778	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	42108	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	26979	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	120691	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	152625	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13841	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13866	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	18357	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	78647	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10998	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	104265	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	36093	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	52987	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	64076	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3776	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5453	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5898	5.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C2-PFDoDA	8.887	615.1 -> 570.0	32244	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17929	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C3-PFBS	5.322	302.1 -> 79.9	24935	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C3-PFHxS	7.118	402.1 -> 79.9	15616	2.54 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C4-PFBA	2.822	216.8 -> 171.9	187880	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	62246	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	5.404	318.0 -> 273.0	67445	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	62954	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C6-PFDA	8.014	519.1 -> 474.1	26521	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C7-PFUnDA	8.455	570.0 -> 525.1	34273	1.27 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-FOSA	9.586	506.1 -> 77.8	35190	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C8-PFOA	7.013	421.1 -> 376.0	99446	2.55 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C8-PFOS	8.165	507.1 -> 79.9	14763	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C9-PFNA	7.545	472.1 -> 427.0	45750	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.8%	
d3-MeFOSAA	8.072	573.2 -> 419.0	32778	5.53 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42108	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	13866	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
d5-EtFOSAA	8.267	589.2 -> 419.0	26979	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d7-MeFOSE	10.647	623.2 -> 58.9	120691	26.18 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	152625	25.31 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	13841	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	98060	17.88 µg/L	96
		327.1 -> 80.9	36547		
6:2FTS	6.789	427.1 -> 407.0	101082	18.86 µg/L	97
		427.1 -> 80.9	32468		
8:2FTS	7.816	527.1 -> 507.0	55700	16.98 µg/L	96
		527.1 -> 80.8	22317		
EtFOSAA	8.280	584.2 -> 419.1	17051	4.91 µg/L	98
		584.2 -> 526.0	9540		
FOSA	9.589	498.1 -> 77.9	57690	4.74 µg/L	100
		498.1 -> 478.0	1790		
MeFOSAA	8.073	570.1 -> 419.0	30838	4.58 µg/L	99
		570.1 -> 483.0	6087		
PFBA	2.818	212.8 -> 168.9	119132	19.15 µg/L	100
PFBS	5.323	298.7 -> 79.9	35285	4.16 µg/L	97
		298.7 -> 98.8	13354		
PFDA	8.014	512.9 -> 469.0	143973	4.68 µg/L	99
		512.9 -> 219.0	23728		
PFDoDA	8.888	613.1 -> 569.0	103411	4.67 µg/L	96
		613.1 -> 319.0	16004		
PFDS	9.052	599.0 -> 79.9	17202	4.66 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	7926		
PFHpA	6.370	363.1 -> 319.0	134100	4.87 µg/L	97
		363.1 -> 169.0	21692		
PFHpS	7.673	449.0 -> 79.9	32049	4.53 µg/L	98
		449.0 -> 98.9	16285		
PFHxA	5.407	313.0 -> 269.0	107925	4.77 µg/L	98
		313.0 -> 118.9	5659		
PFHxS	7.119	398.7 -> 79.9	30346	4.30 µg/L	100
		398.7 -> 98.9	14465		
PFNA	7.545	463.0 -> 419.0	155123	4.79 µg/L	97
		463.0 -> 219.0	28167		
PFNS	8.631	548.8 -> 79.9	27107	4.57 µg/L	96
		548.8 -> 98.9	13999		
PFOA	7.015	413.0 -> 369.0	199283	4.69 µg/L	99
		413.0 -> 169.0	35542		
PFOS	8.166	498.9 -> 79.9	30197	4.48 µg/L	91
		498.9 -> 98.8	14141		
PFPeA	4.212	263.0 -> 219.0	144374	9.55 µg/L	100
PFPeS	6.410	349.1 -> 79.9	30757	4.37 µg/L	98
		349.1 -> 98.9	14232		
PFTeDA	9.628	713.1 -> 669.0	81291	4.61 µg/L	97
		713.1 -> 168.9	7055		
PFTrDA	9.284	663.0 -> 619.0	108478	4.85 µg/L	97
		663.0 -> 168.9	11146		
PFUnDA	8.468	563.1 -> 519.0	111368	5.00 µg/L	98
		563.1 -> 269.1	16291		
11Cl-PF3OUdS	9.336	630.9 -> 450.9	142513	9.02 µg/L	100
		632.9 -> 452.9	44315		
9Cl-PF3ONS	8.495	530.8 -> 351.0	225942	9.08 µg/L	99
		532.8 -> 353.0	72959		
ADONA	6.632	376.9 -> 250.9	513058	9.17 µg/L	98
		376.9 -> 84.8	141815		
HFPO-DA	5.783	284.9 -> 168.9	33213	9.31 µg/L	98
		284.9 -> 184.9	4234		
3:3FTCA	3.671	241.0 -> 177.0	22809	23.57 µg/L	98
		241.0 -> 117.0	3091		
5:3FTCA	6.074	341.0 -> 237.1	474474	116.47 µg/L	93
		341.0 -> 217.0	364763		
7:3FTCA	7.510	441.0 -> 316.9	344194	123.37 µg/L	99
		441.0 -> 336.9	761300		
EtFOSA	10.974	526.0 -> 219.0	60538	9.38 µg/L	97
		526.0 -> 169.0	77131		
EtFOSE	10.907	630.0 -> 58.9	164750	24.20 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	50777	9.96 µg/L	95
		511.9 -> 169.0	70280		
MeFOSE	10.673	616.1 -> 58.9	108332	22.59 µg/L	100
PFDoDS	9.755	699.1 -> 79.9	7468	4.55 µg/L	98
		699.1 -> 98.8	3886		
NFDHA	5.288	295.0 -> 201.0	26552	9.63 µg/L	98
		295.0 -> 84.9	6879		
PFMBA	4.626	279.0 -> 85.1	98078	9.53 µg/L	100
PFMPA	3.363	229.0 -> 84.9	76163	9.52 µg/L	100
PFEESA	5.862	314.8 -> 134.9	257995	8.98 µg/L	99
		314.8 -> 82.9	9081		

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

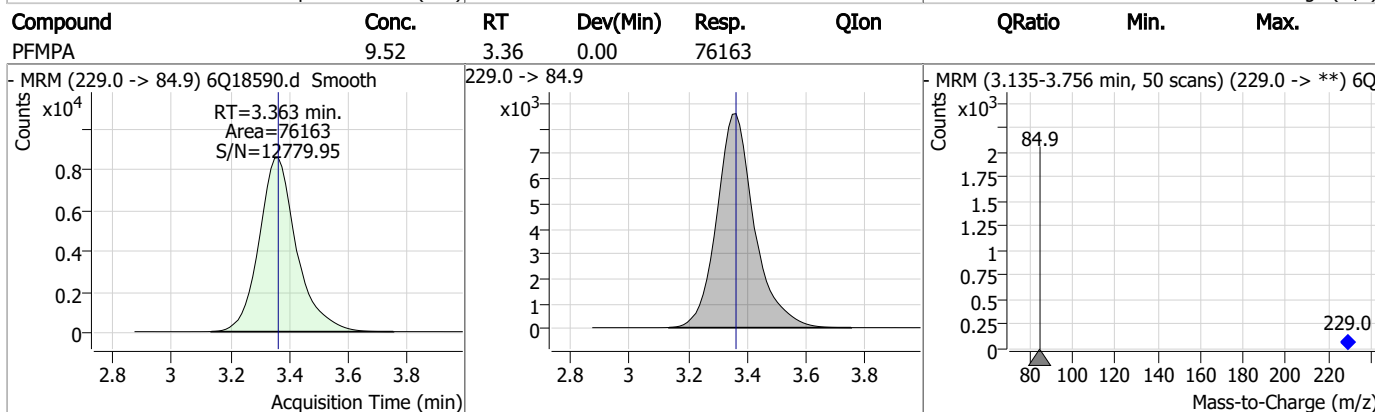
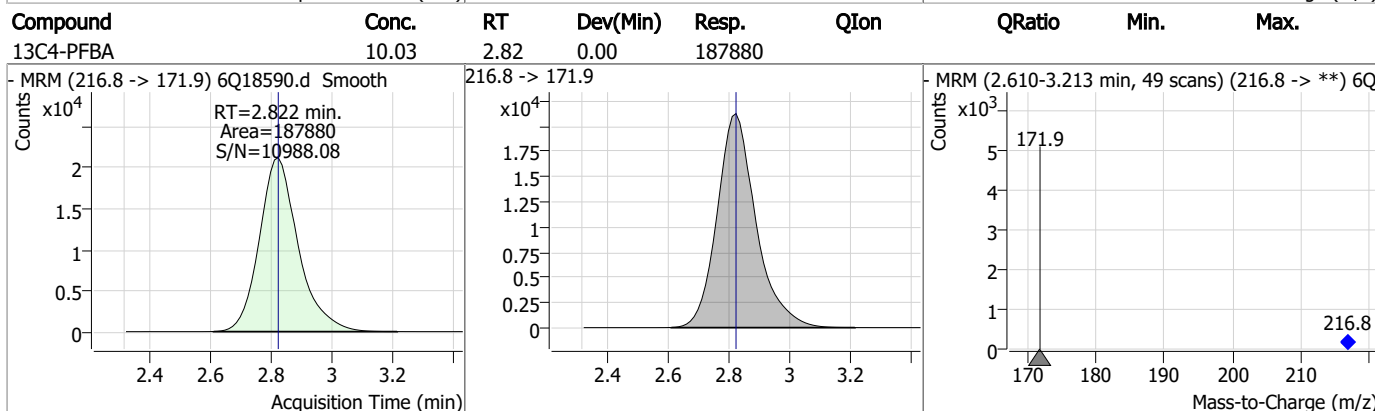
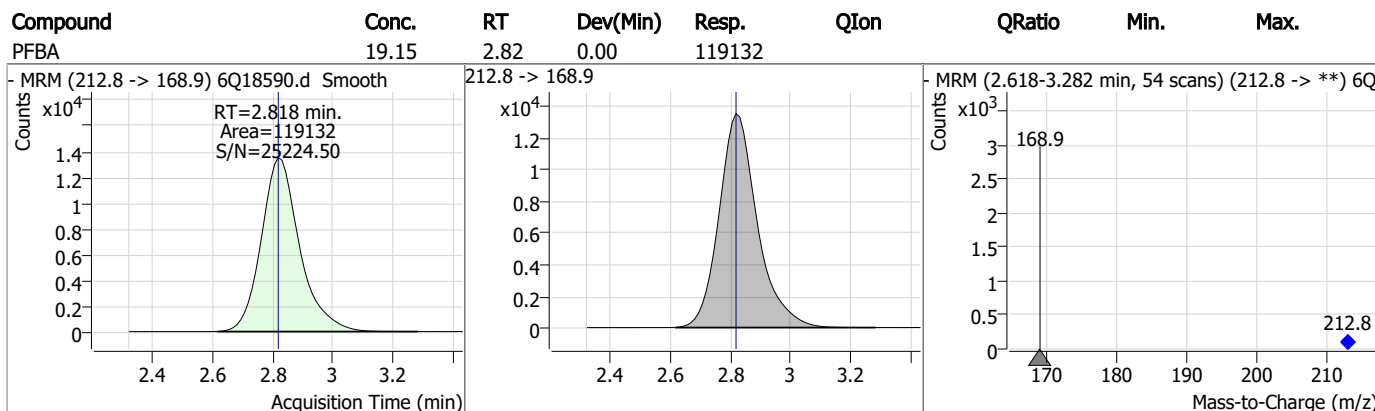
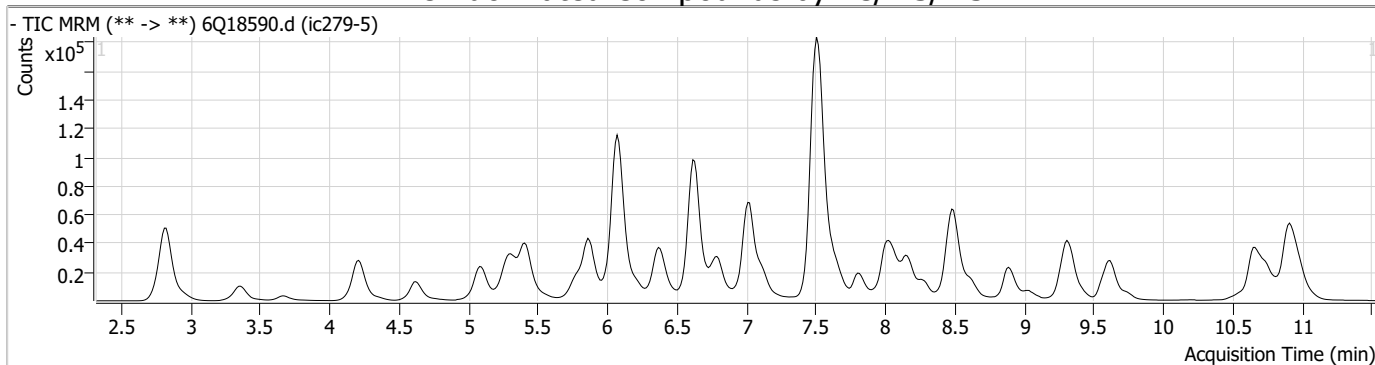
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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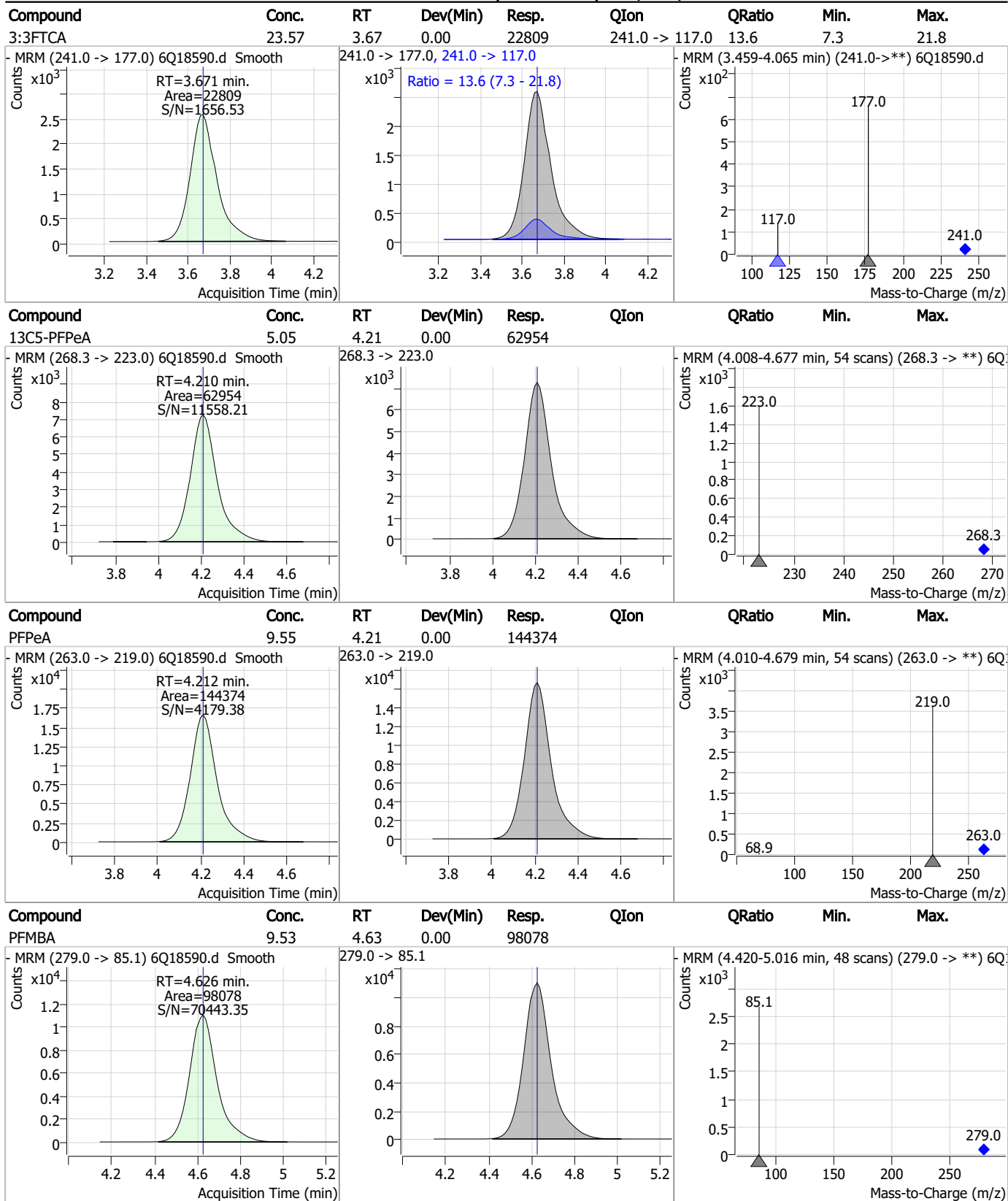
7.7.21

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Perfluorinated Compounds by LC/MS/MS

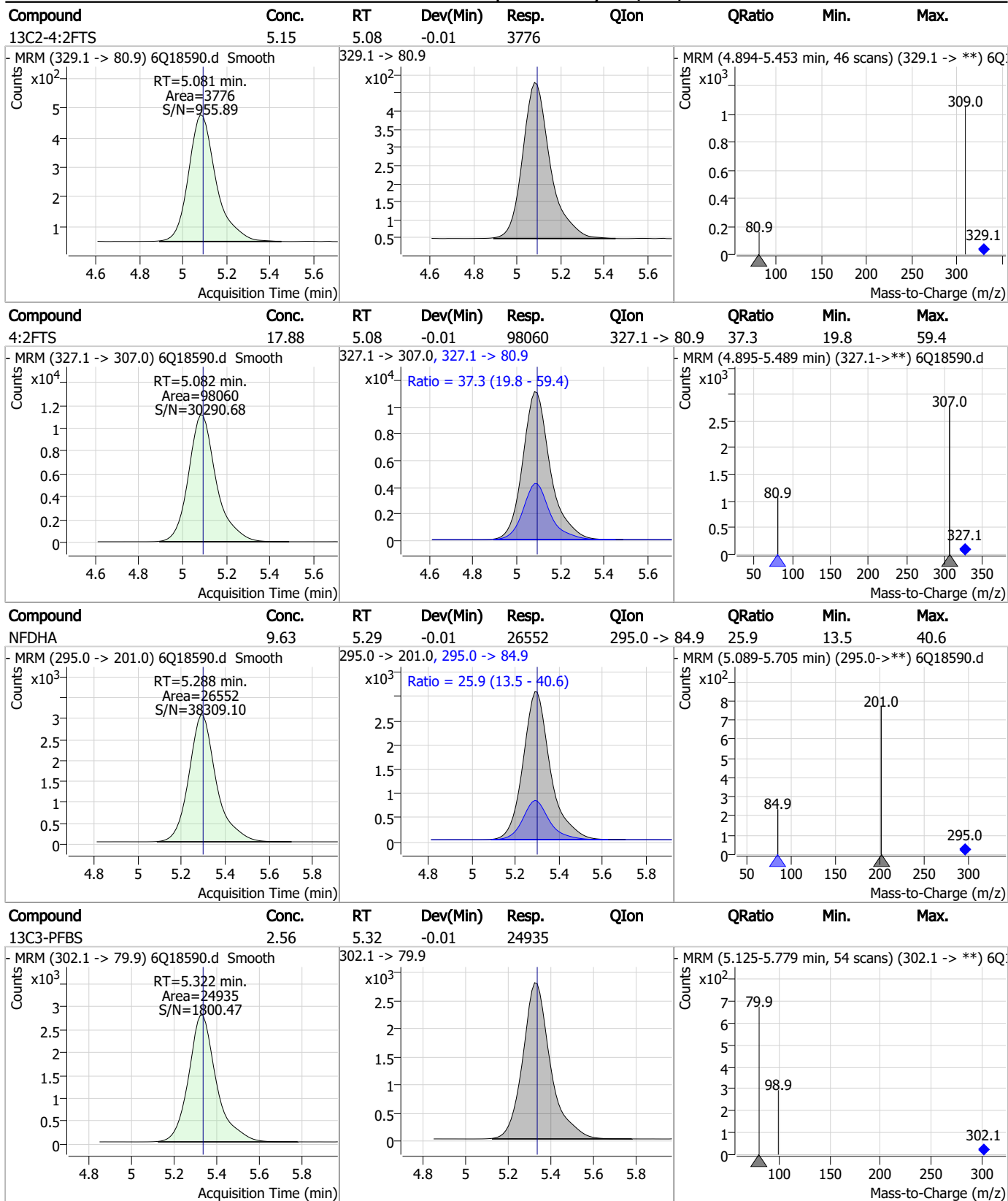


Perfluorinated Compounds by LC/MS/MS



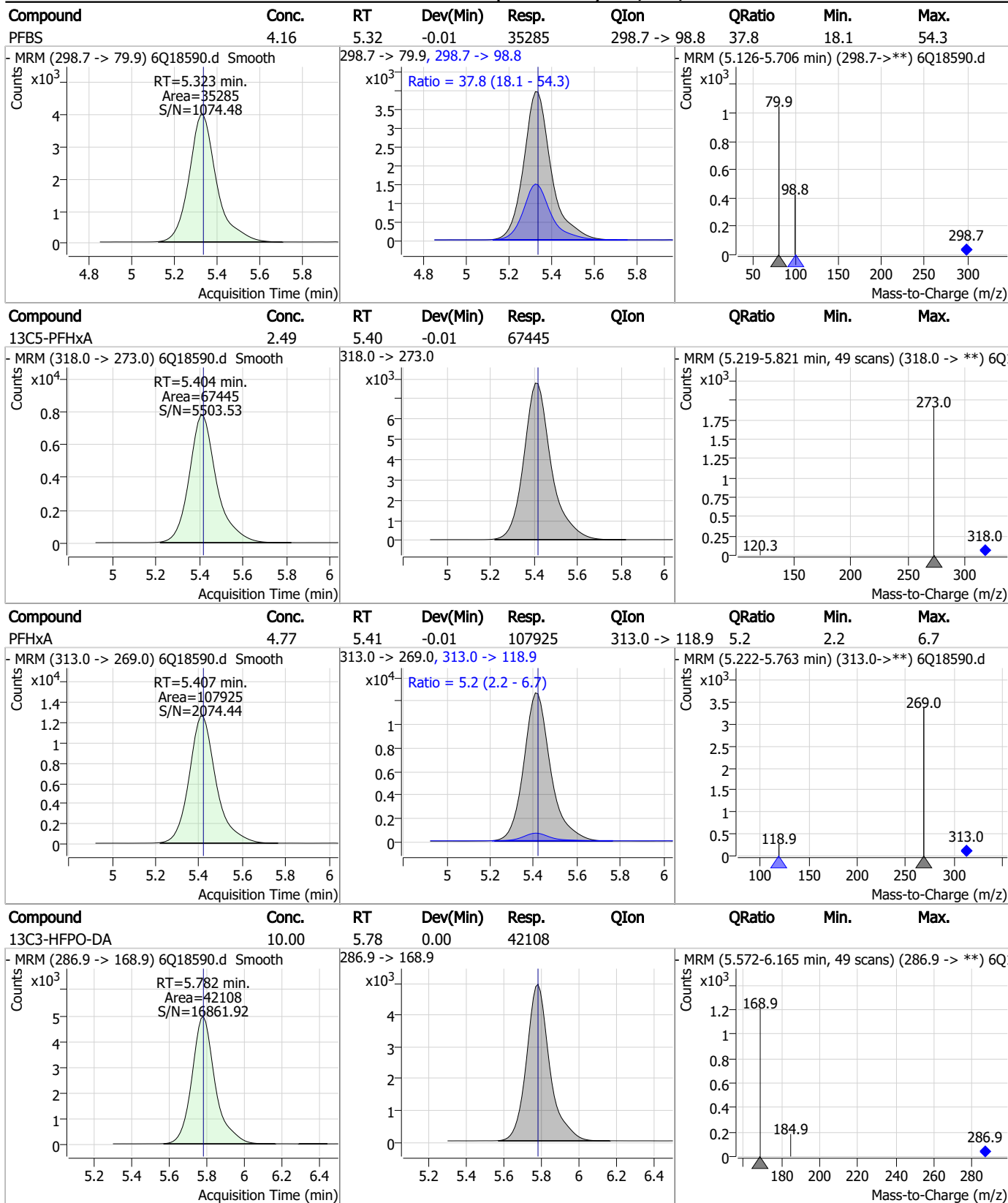
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Perfluorinated Compounds by LC/MS/MS



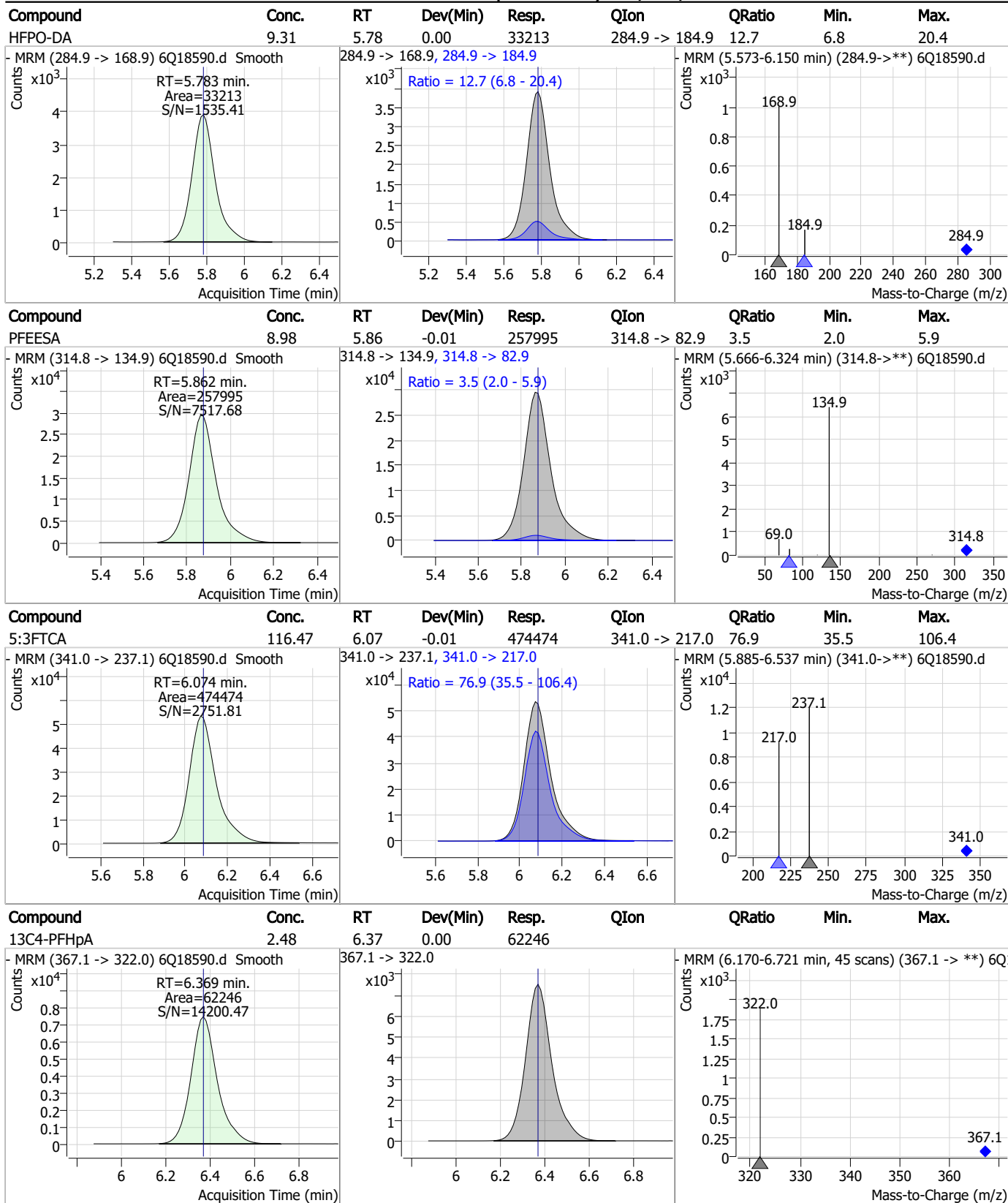
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Perfluorinated Compounds by LC/MS/MS



7.7.21

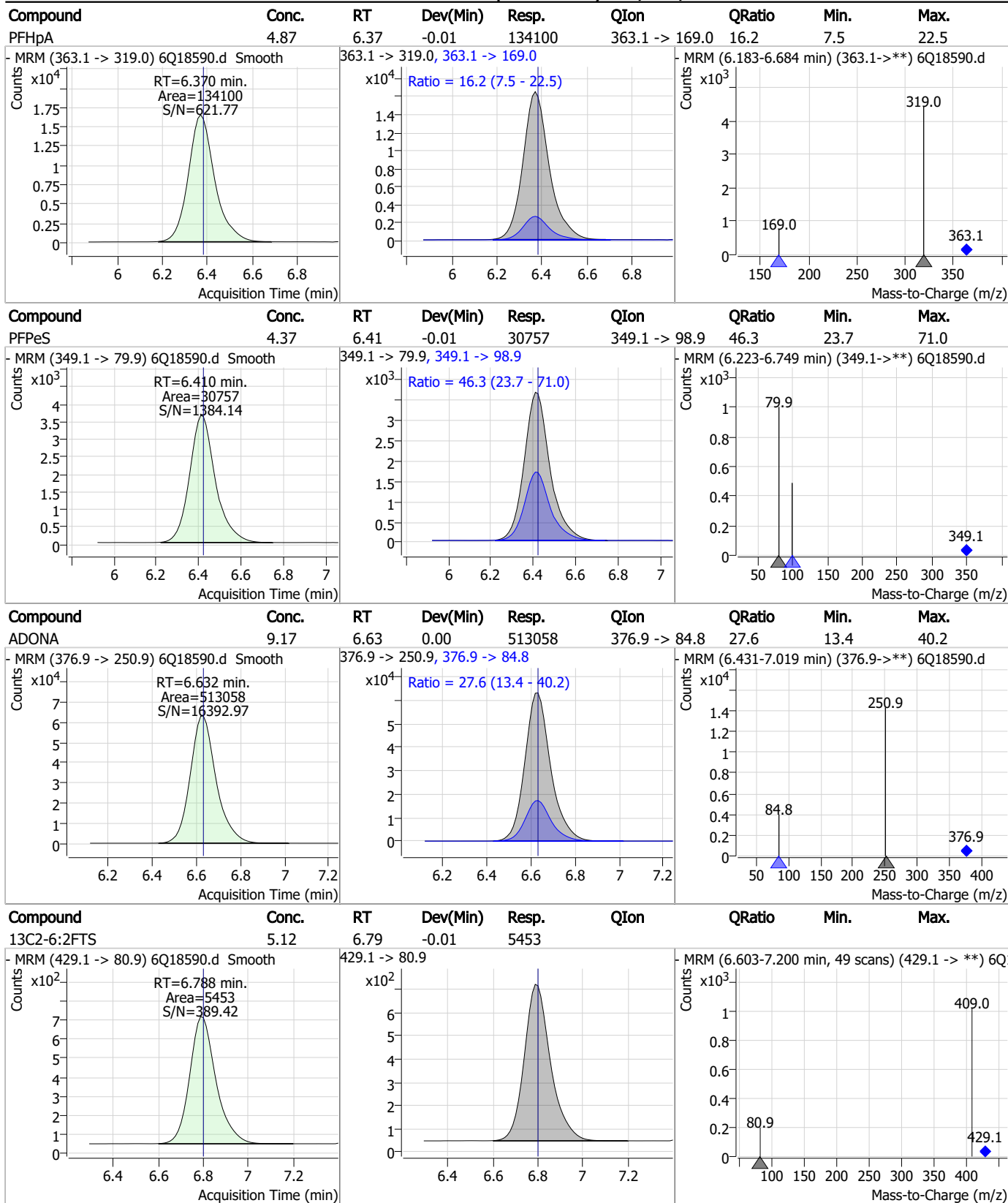
Perfluorinated Compounds by LC/MS/MS



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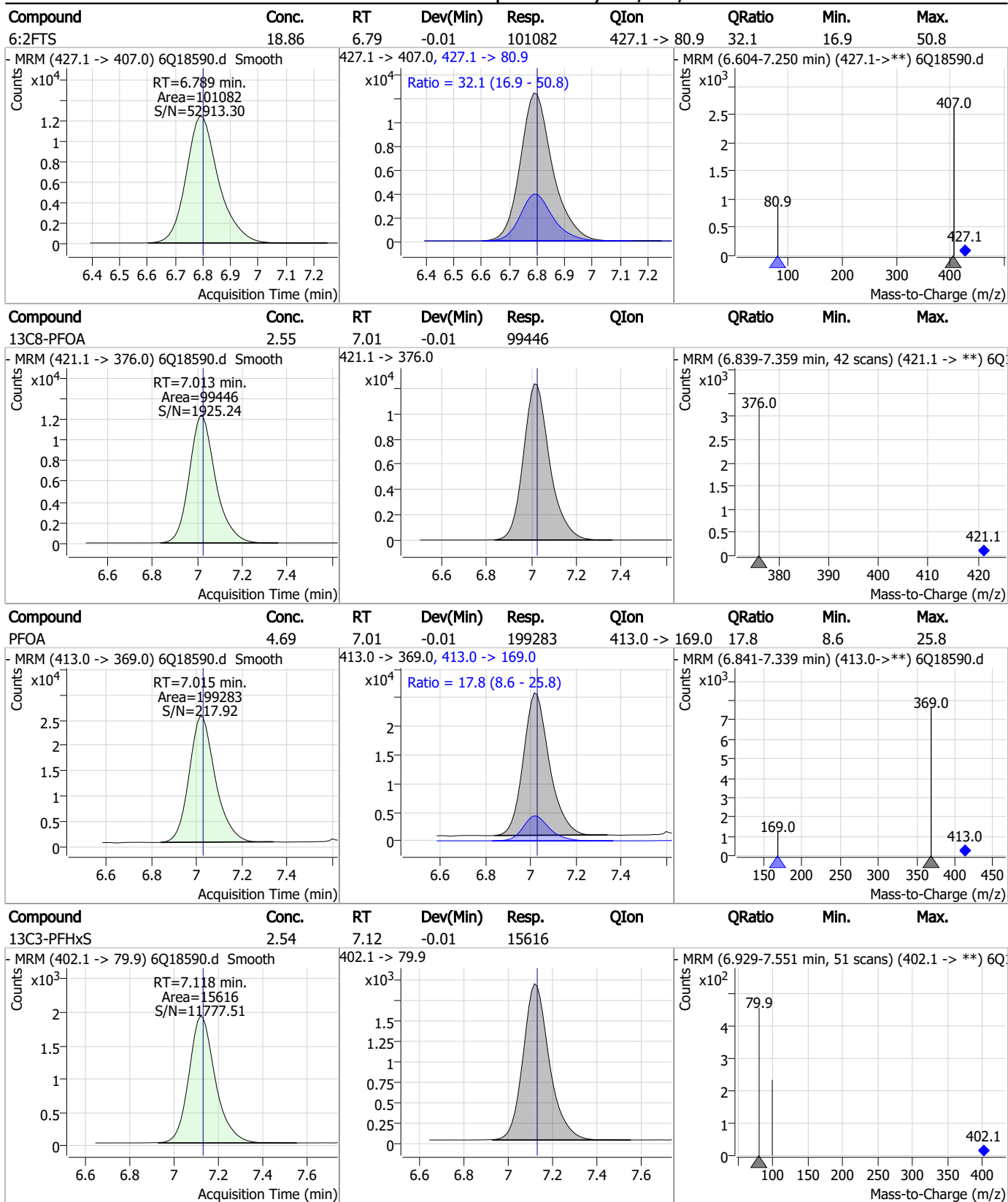
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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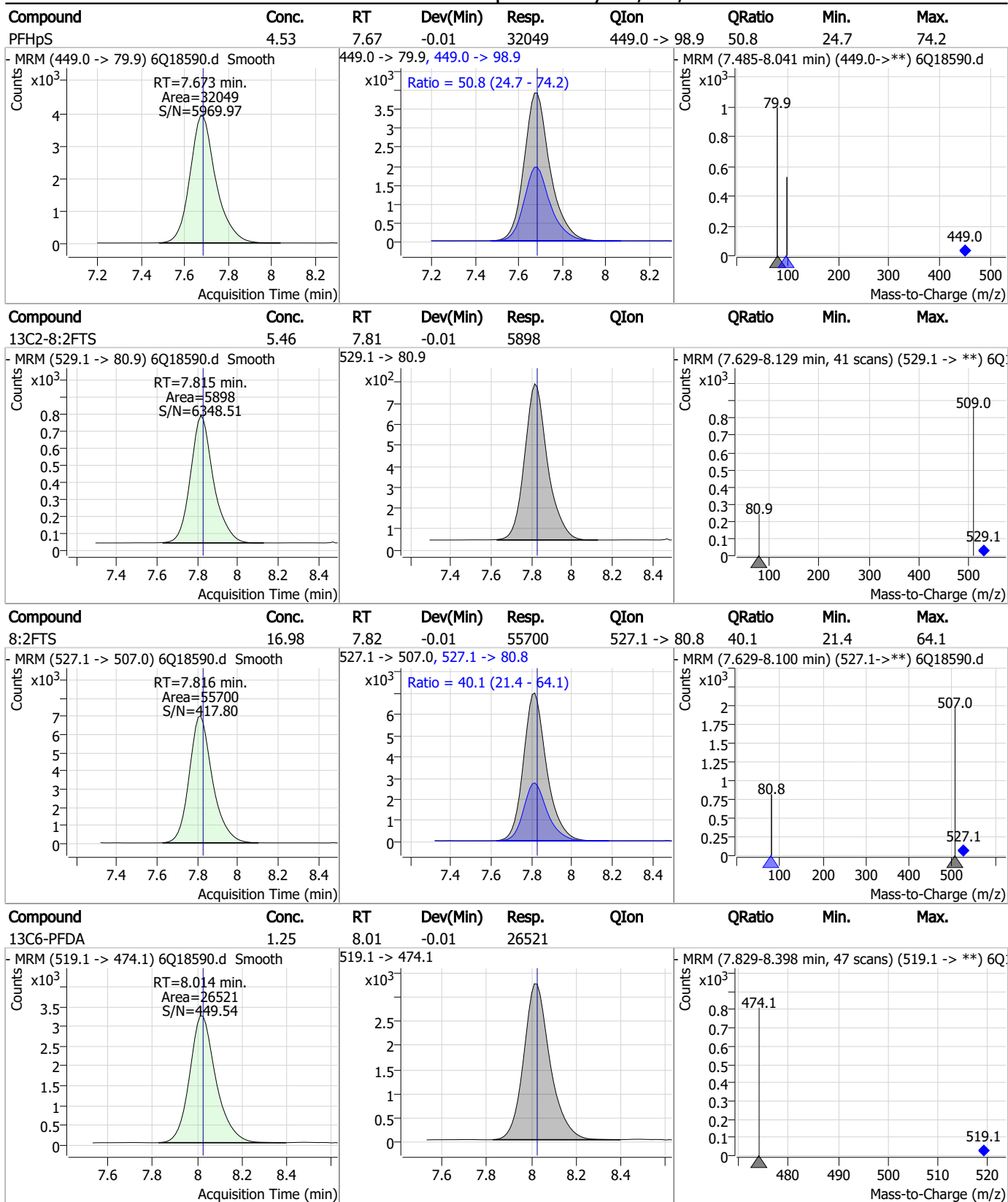
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.30	7.12	-0.01	30346	398.7 -> 98.9	47.7	23.7	71.2
- MRM (398.7 -> 79.9) 6Q18590.d Smooth			398.7 -> 79.9, 398.7 -> 98.9			- MRM (6.807-7.453 min) (398.7->**) 6Q18590.d		
7:3FTCA	123.37	7.51	-0.01	344194	441.0 -> 336.9	221.2	110.1	330.4
- MRM (441.0 -> 316.9) 6Q18590.d Smooth			441.0 -> 316.9, 441.0 -> 336.9			- MRM (7.324-7.898 min) (441.0->**) 6Q18590.d		
13C9-PFNA	1.31	7.54	-0.01	45750	472.1 -> 427.0			
- MRM (472.1 -> 427.0) 6Q18590.d Smooth			472.1 -> 427.0			- MRM (7.358-7.932 min, 47 scans) (472.1 -> **) 6Q18590.d		
PFNA	4.79	7.55	-0.01	155123	463.0 -> 219.0	18.2	9.8	29.3
- MRM (463.0 -> 419.0) 6Q18590.d Smooth			463.0 -> 419.0, 463.0 -> 219.0			- MRM (7.359-7.883 min, 43 scans) (463.0 -> **) 6Q18590.d		

7.7.21

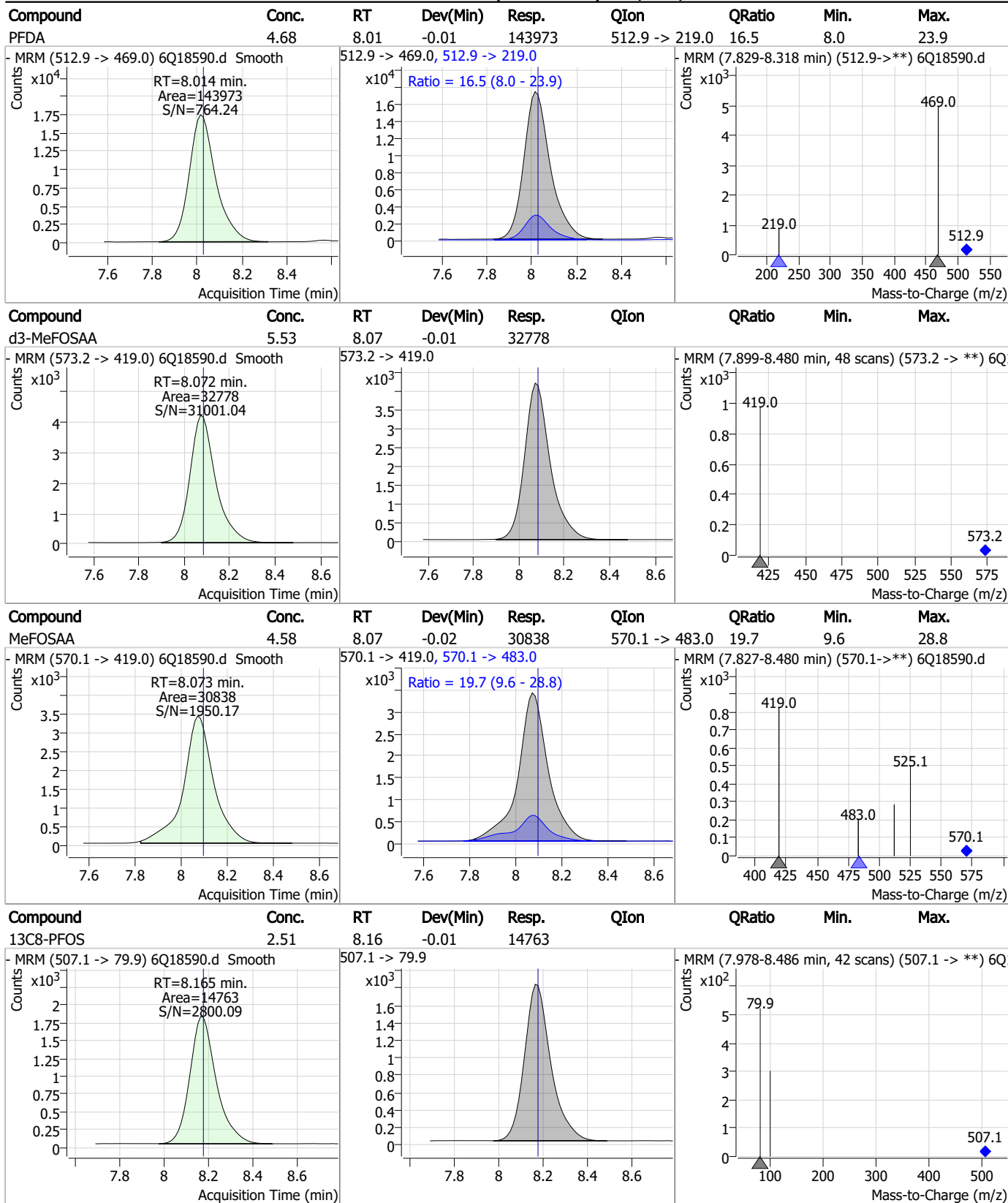
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Perfluorinated Compounds by LC/MS/MS



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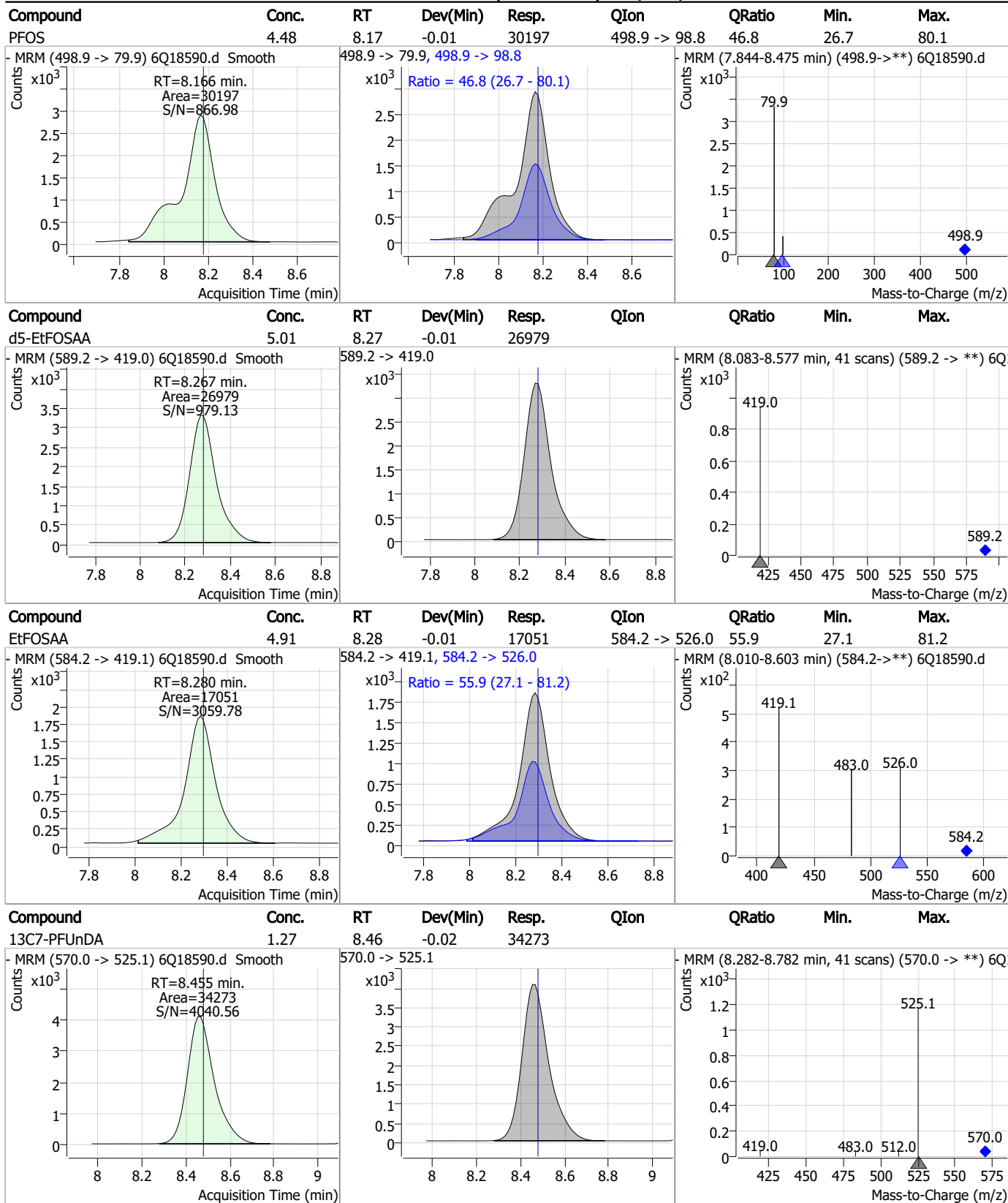
Perfluorinated Compounds by LC/MS/MS



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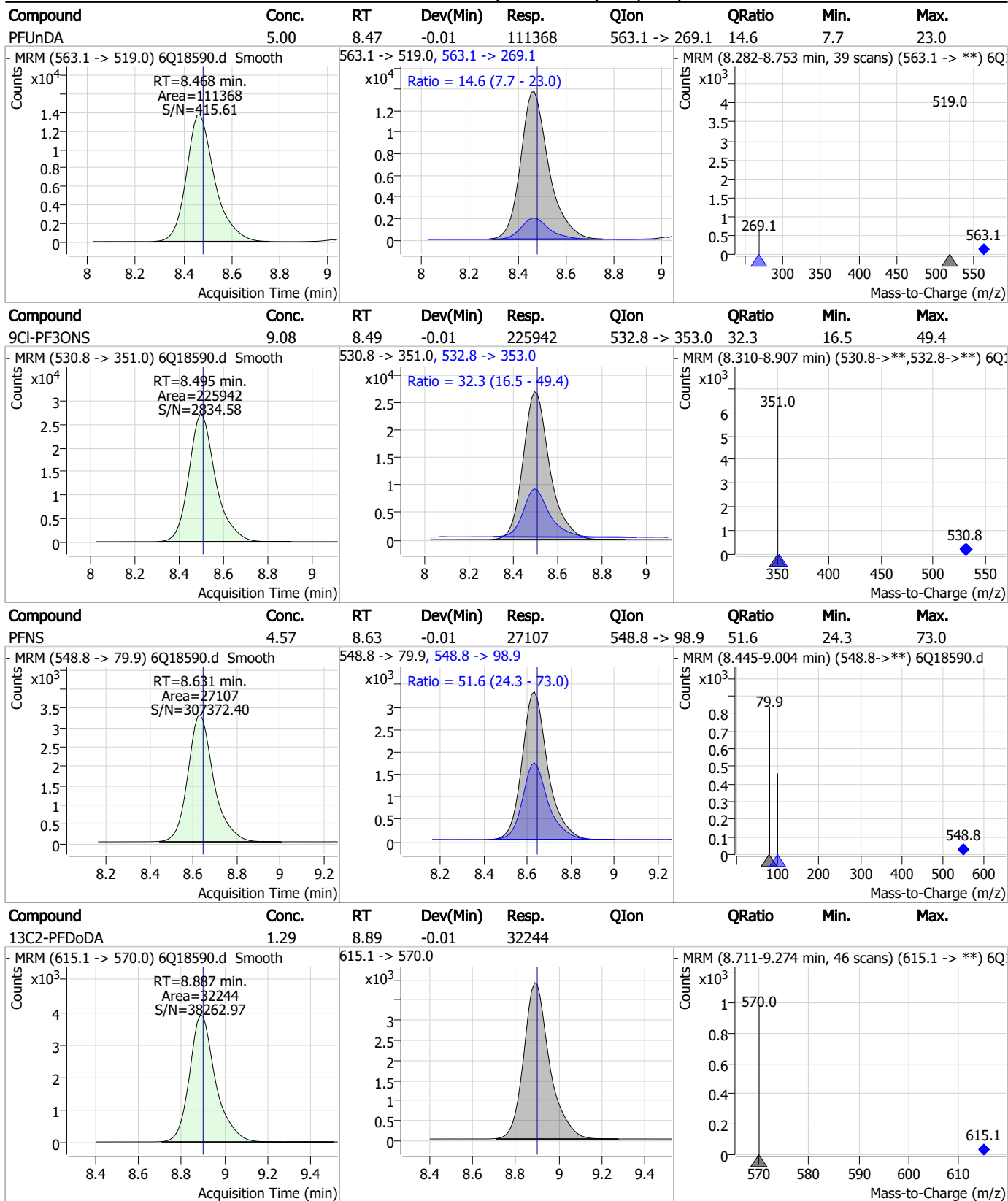
Perfluorinated Compounds by LC/MS/MS



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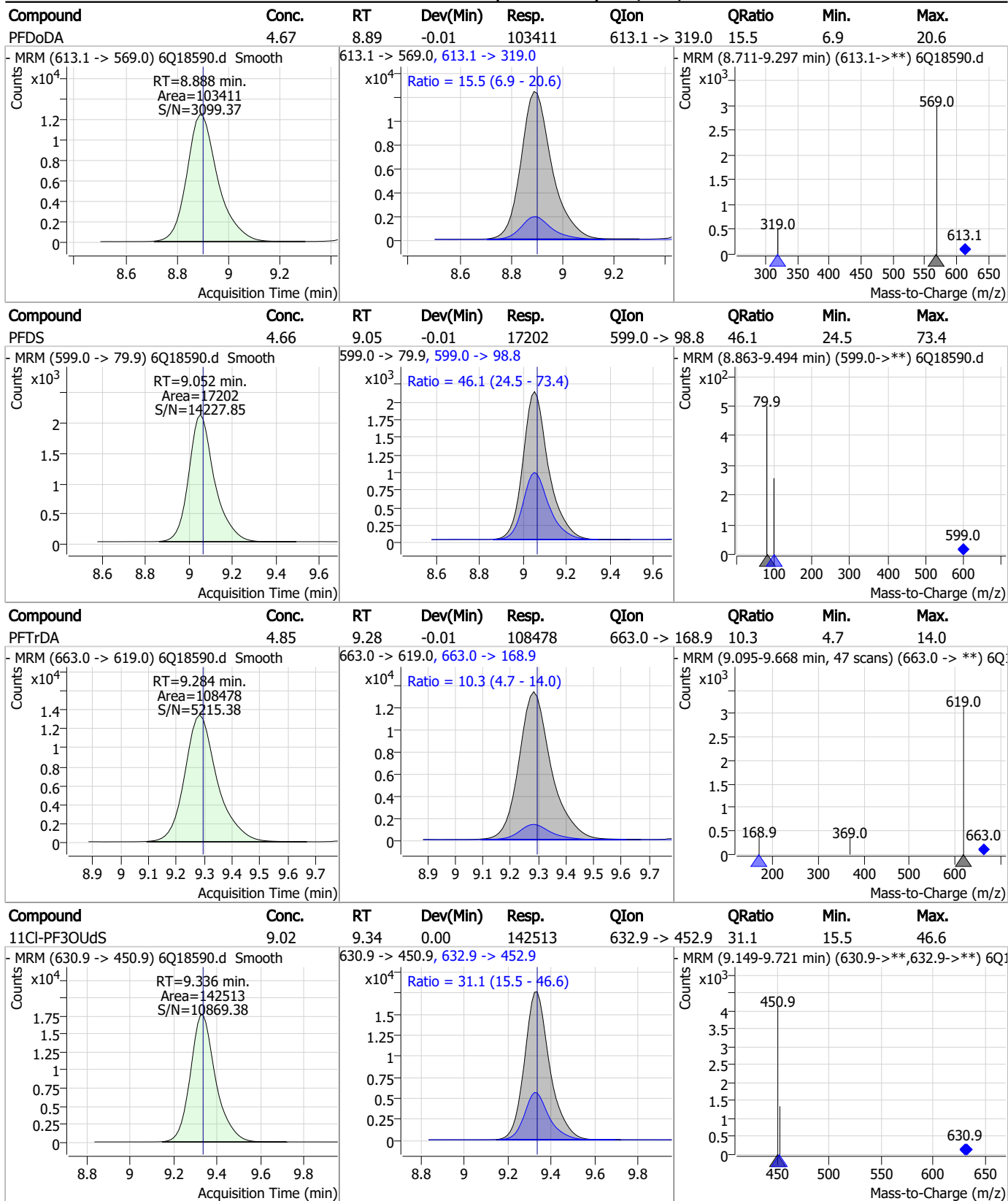
Perfluorinated Compounds by LC/MS/MS



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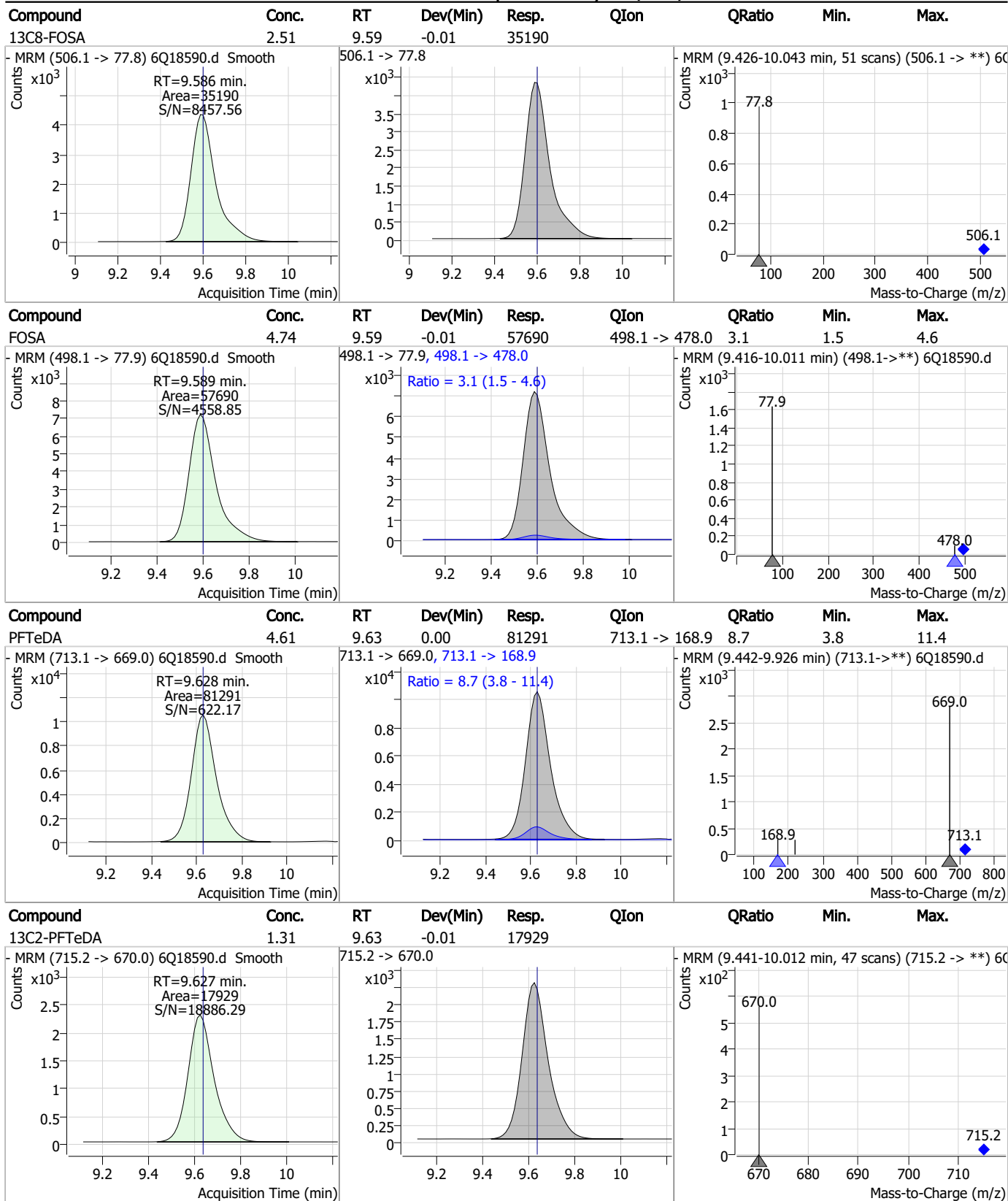
Perfluorinated Compounds by LC/MS/MS



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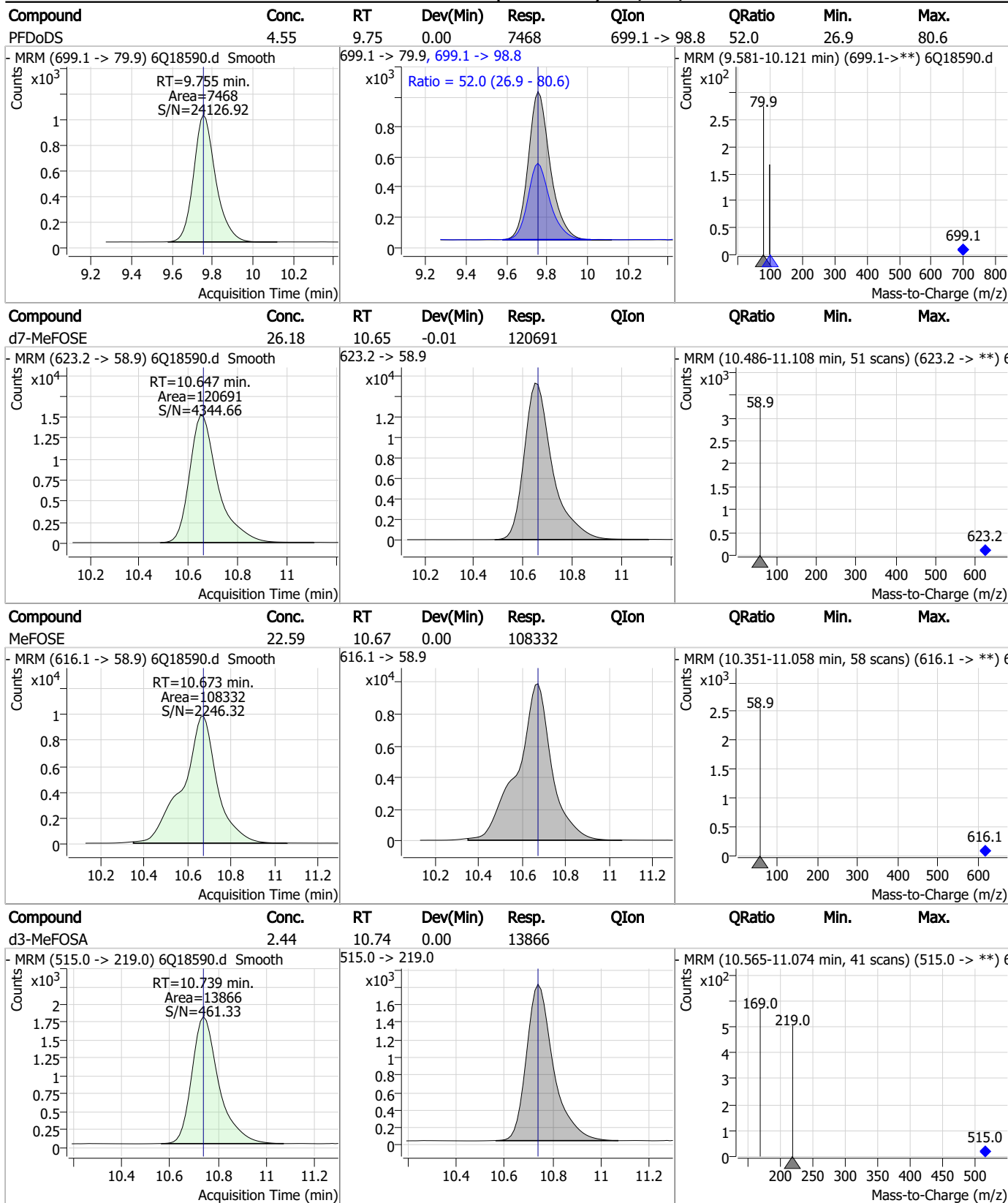
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

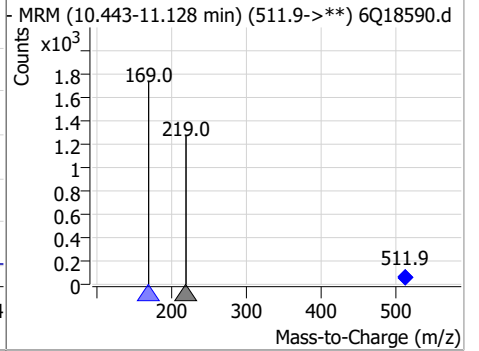
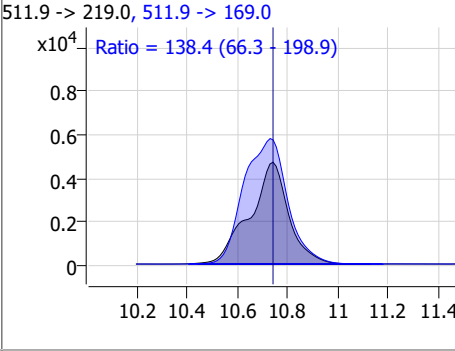
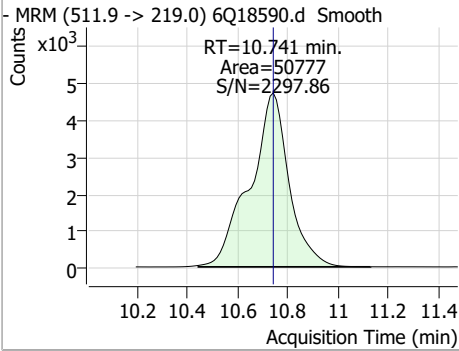


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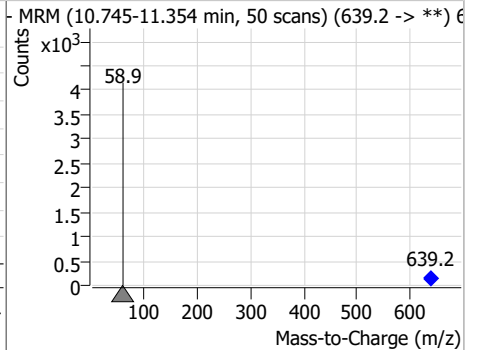
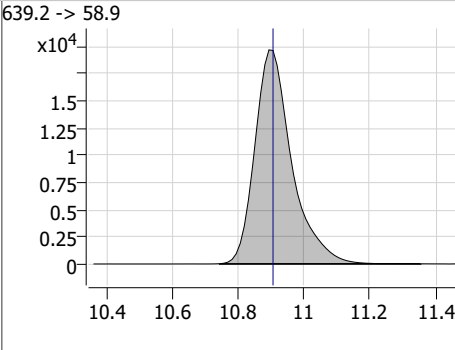
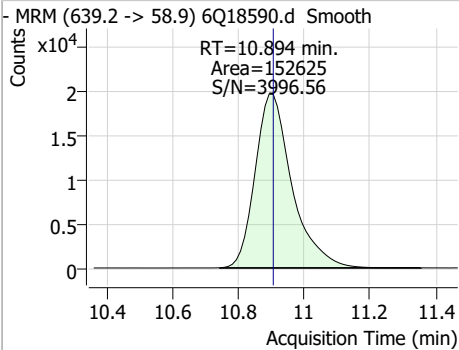
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Perfluorinated Compounds by LC/MS/MS

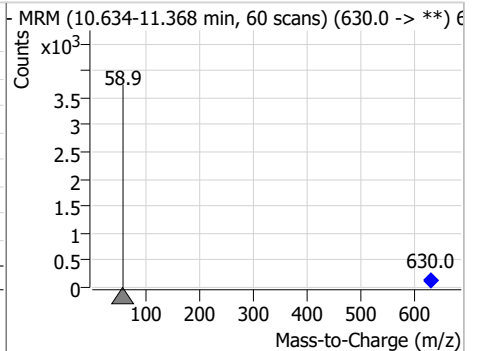
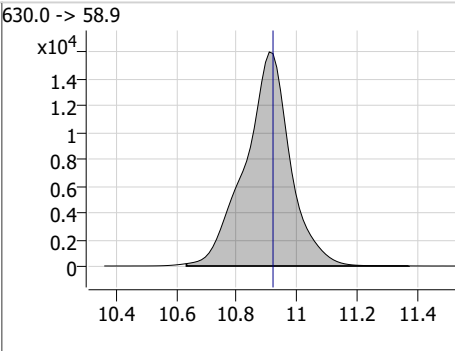
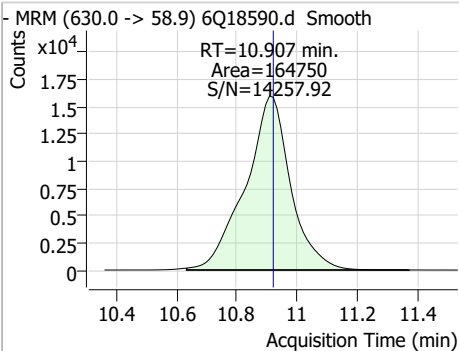
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	9.96	10.74	0.00	50777	511.9 -> 169.0	138.4	66.3	198.9



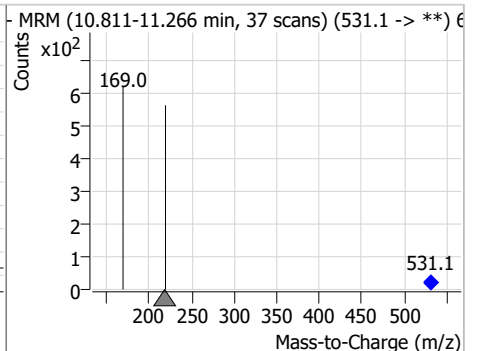
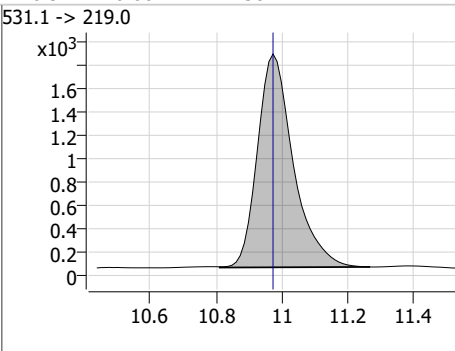
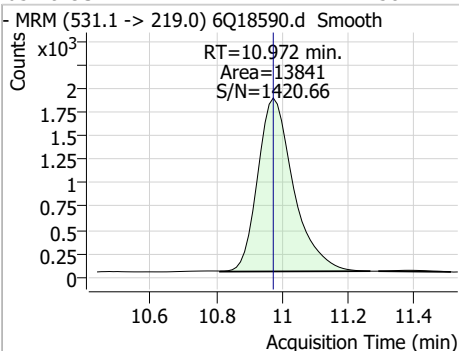
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.31	10.89	-0.01	152625				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.20	10.91	-0.01	164750				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.58	10.97	0.00	13841				

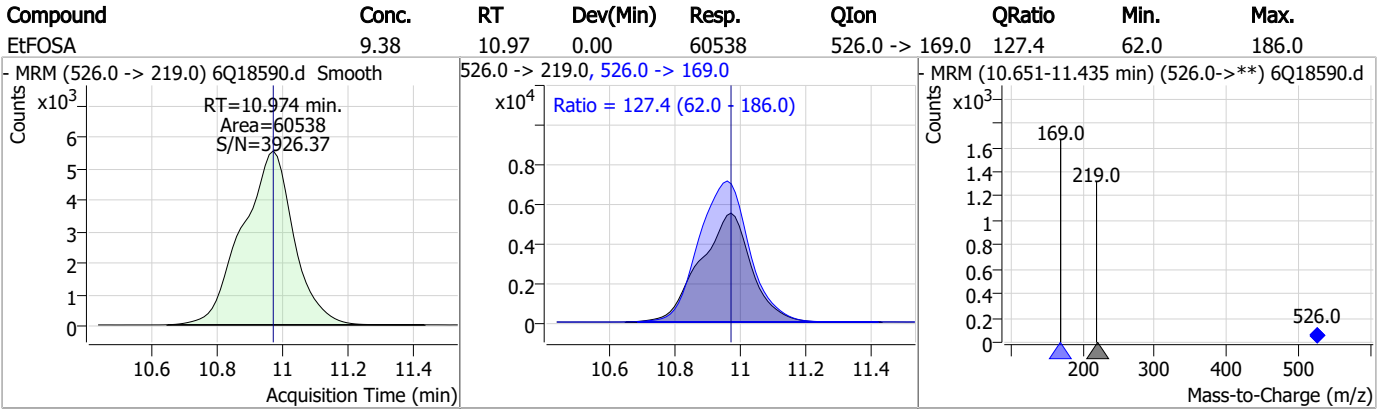


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Perfluorinated Compounds by LC/MS/MS



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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 06/01/23 14:56

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18591.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:28:50 PM
 Sample Name : ic279-6
 Vial : P1-A7
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187223	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62656	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	68771	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	63077	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	95236	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	43575	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	26462	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33640	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	31346	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	16999	1.25 µg/L	-0.012
M8-FOSA	9.586	506.1 -> 77.8	35644	2.50 µg/L	-0.012
M3-PFBS	5.334	302.1 -> 79.9	24809	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	15368	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	15892	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3628	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5079	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	5275	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	30953	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	42934	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	26452	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	115482	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	156806	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13452	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14515	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17429	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	78677	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	11436	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	104791	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	37496	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	55883	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	64647	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3628	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5079	4.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.7%		
13C2-8:2FTS	7.827	529.1 -> 80.9	5275	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.9%		
13C2-PFDoDA	8.887	615.1 -> 570.0	31346	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16999	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C3-PFBS	5.334	302.1 -> 79.9	24809	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFHxS	7.130	402.1 -> 79.9	15368	2.41 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C4-PFBA	2.822	216.8 -> 171.9	187223	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.369	367.1 -> 322.0	63077	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFHxA	5.404	318.0 -> 273.0	68771	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	62656	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	8.027	519.1 -> 474.1	26462	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33640	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-FOSA	9.586	506.1 -> 77.8	35644	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C8-PFOA	7.026	421.1 -> 376.0	95236	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOS	8.177	507.1 -> 79.9	15892	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C9-PFNA	7.545	472.1 -> 427.0	43575	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.7%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30953	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42934	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	14515	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%	
d5-EtFOSAA	8.267	589.2 -> 419.0	26452	5.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
d7-MeFOSE	10.647	623.2 -> 58.9	115482	26.38 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	156806	27.39 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	13452	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	248579	47.17 µg/L	96
		327.1 -> 80.9	92560		
6:2FTS	6.801	427.1 -> 407.0	246153	49.32 µg/L	99
		427.1 -> 80.9	82513		
8:2FTS	7.816	527.1 -> 507.0	140681	47.95 µg/L	97
		527.1 -> 80.8	57259		
EtFOSAA	8.280	584.2 -> 419.1	42790	12.57 µg/L	96
		584.2 -> 526.0	24496		
FOSA	9.589	498.1 -> 77.9	149971	12.15 µg/L	100
		498.1 -> 478.0	4666		
MeFOSAA	8.085	570.1 -> 419.0	76629	12.04 µg/L	98
		570.1 -> 483.0	15562		
PFBA	2.818	212.8 -> 168.9	308042	49.70 µg/L	100
PFBS	5.323	298.7 -> 79.9	90329	10.70 µg/L	95
		298.7 -> 98.8	35360		
PFDA	8.027	512.9 -> 469.0	379279	12.36 µg/L	100
		512.9 -> 219.0	60207		
PFDoDA	8.888	613.1 -> 569.0	268807	12.49 µg/L	96
		613.1 -> 319.0	40976		
PFDS	9.052	599.0 -> 79.9	42166	10.61 µg/L	98

7.7.22
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	20128			
PFHpA	6.370	363.1 -> 319.0	344728	12.35	µg/L	98
		363.1 -> 169.0	55086			
PFHpS	7.685	449.0 -> 79.9	80819	10.61	µg/L	97
		449.0 -> 98.9	38330			
PFHxA	5.420	313.0 -> 269.0	283376	12.27	µg/L	98
		313.0 -> 118.9	14200			
PFHxS	7.131	398.7 -> 79.9	78663	11.32	µg/L	m 99
		398.7 -> 98.9	36605			
PFNA	7.545	463.0 -> 419.0	385428	12.48	µg/L	100
		463.0 -> 219.0	75050			
PFNS	8.631	548.8 -> 79.9	67979	10.66	µg/L	93
		548.8 -> 98.9	36354			
PFOA	7.028	413.0 -> 369.0	523746	12.88	µg/L	99
		413.0 -> 169.0	92825			
PFOS	8.166	498.9 -> 79.9	77612	10.69	µg/L	m 93
		498.9 -> 98.8	37321			
PFPeA	4.212	263.0 -> 219.0	373747	24.84	µg/L	100
PFPeS	6.422	349.1 -> 79.9	80140	11.57	µg/L	97
		349.1 -> 98.9	36129			
PFTeDA	9.628	713.1 -> 669.0	209256	12.51	µg/L	98
		713.1 -> 168.9	17688			
PFTrDA	9.284	663.0 -> 619.0	270193	12.43	µg/L	96
		663.0 -> 168.9	29476			
PFUnDA	8.468	563.1 -> 519.0	275143	12.59	µg/L	98
		563.1 -> 269.1	44300			
11CI-PF3OUdS	9.323	630.9 -> 450.9	376001	23.34	µg/L	97
		632.9 -> 452.9	110095			
9CI-PF3ONS	8.495	530.8 -> 351.0	569045	22.42	µg/L	99
		532.8 -> 353.0	191583			
ADONA	6.632	376.9 -> 250.9	1278083	22.41	µg/L	100
		376.9 -> 84.8	340840			
HFPO-DA	5.783	284.9 -> 168.9	86401	23.74	µg/L	97
		284.9 -> 184.9	10545			
3:3FTCA	3.671	241.0 -> 177.0	59768	62.06	µg/L	97
		241.0 -> 117.0	7931			
5:3FTCA	6.086	341.0 -> 237.1	1250433	301.02	µg/L	97
		341.0 -> 217.0	922064			
7:3FTCA	7.510	441.0 -> 316.9	875743	307.84	µg/L	98
		441.0 -> 336.9	1962989			
EtFOSA	10.974	526.0 -> 219.0	152729	24.36	µg/L	88
		526.0 -> 169.0	210391			
EtFOSE	10.907	630.0 -> 58.9	419307	59.94	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	129419	24.25	µg/L	90
		511.9 -> 169.0	187451			
MeFOSE	10.661	616.1 -> 58.9	292024	63.63	µg/L	100
PFDoS	9.755	699.1 -> 79.9	19043	10.79	µg/L	99
		699.1 -> 98.8	10316			
NFDHA	5.288	295.0 -> 201.0	68239	24.27	µg/L	98
		295.0 -> 84.9	17621			
PFMBA	4.626	279.0 -> 85.1	254903	24.89	µg/L	100
PFMPA	3.363	229.0 -> 84.9	197427	24.79	µg/L	100
PFEESA	5.875	314.8 -> 134.9	658465	22.47	µg/L	98
		314.8 -> 82.9	22317			

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

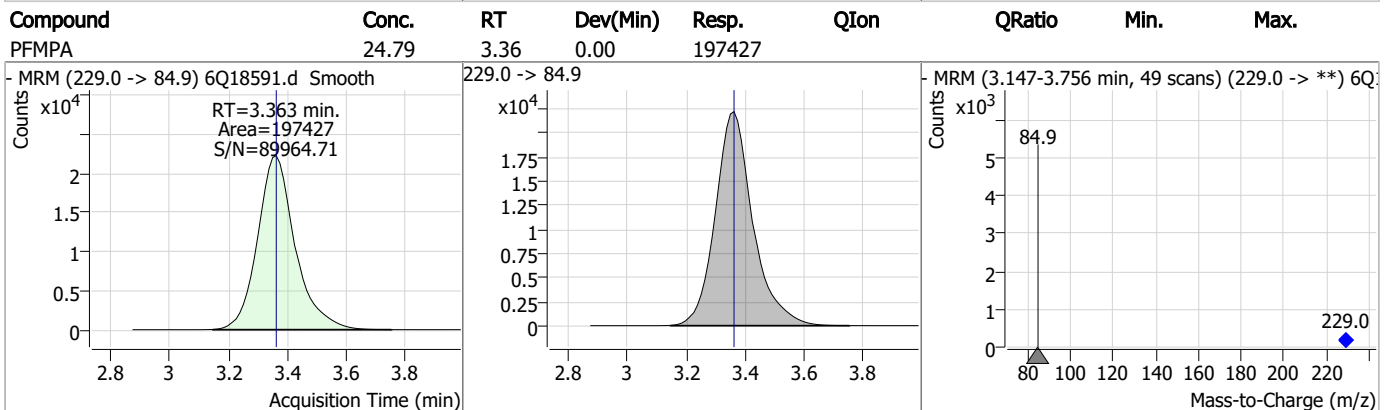
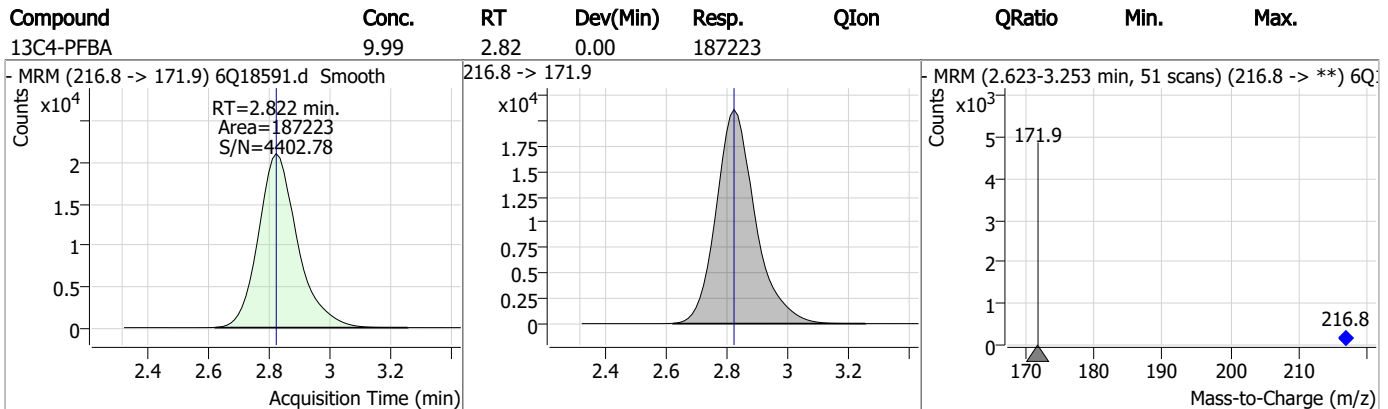
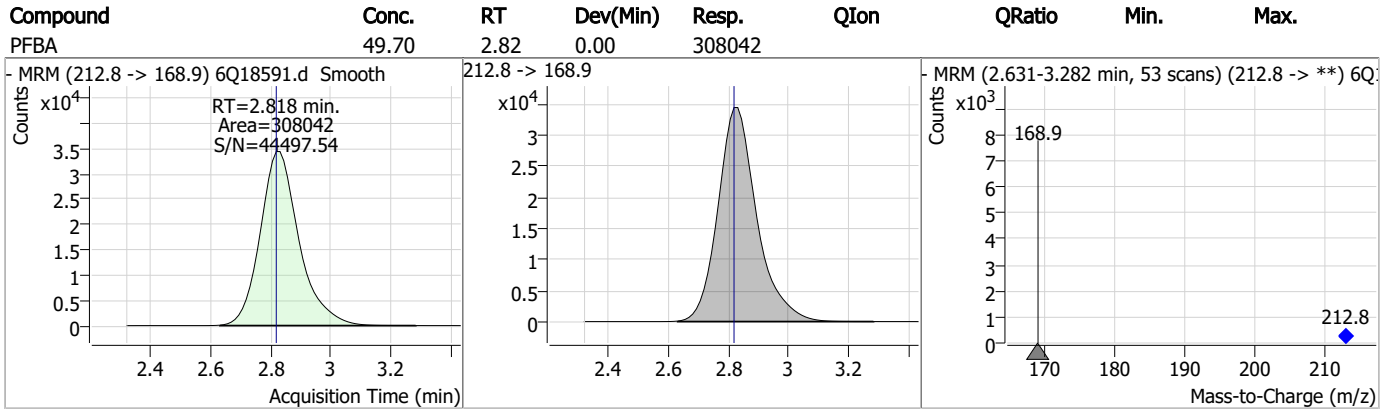
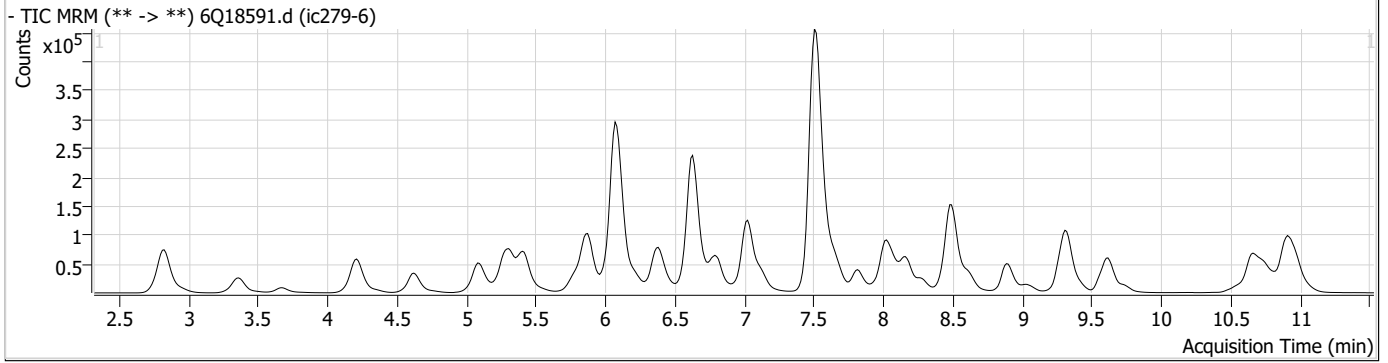
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.22

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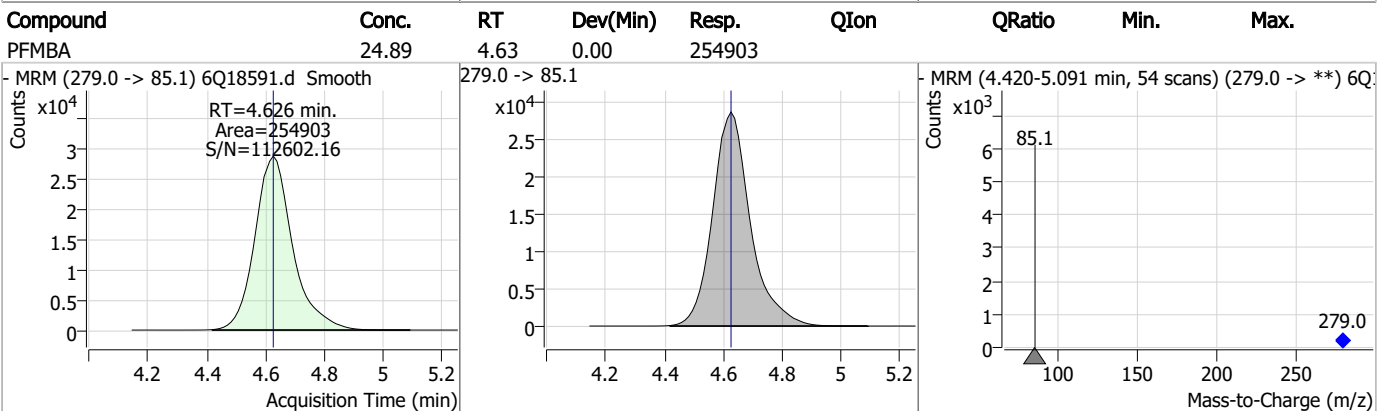
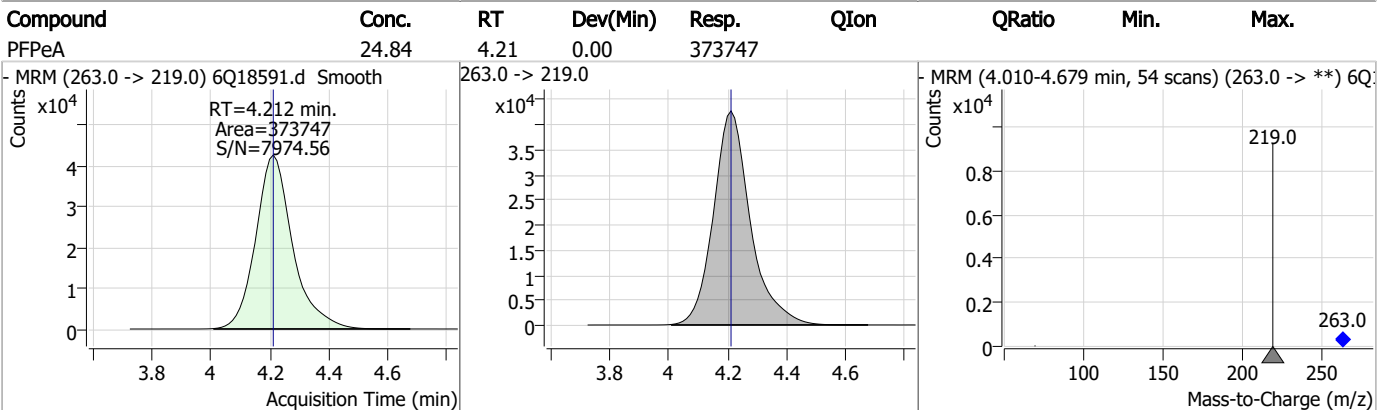
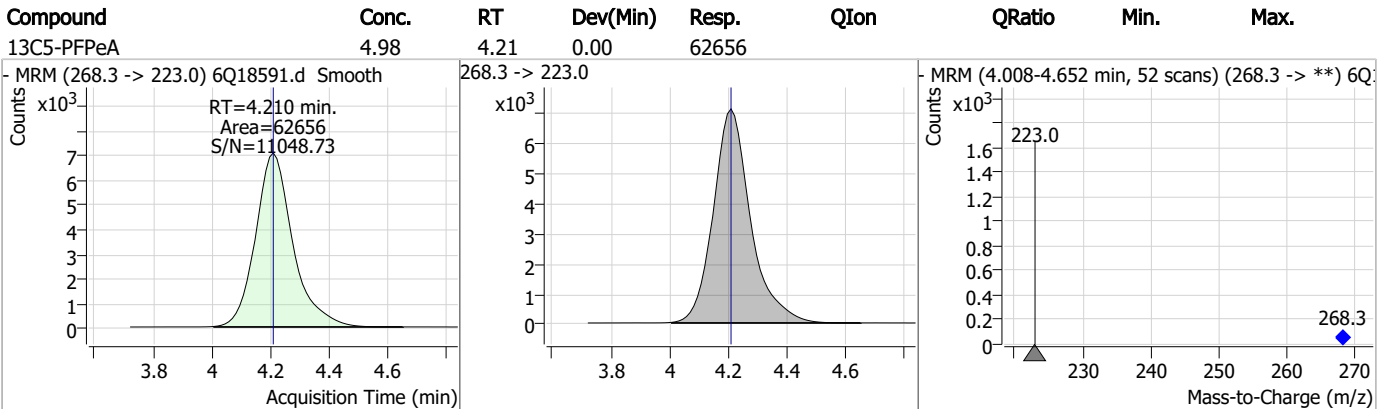
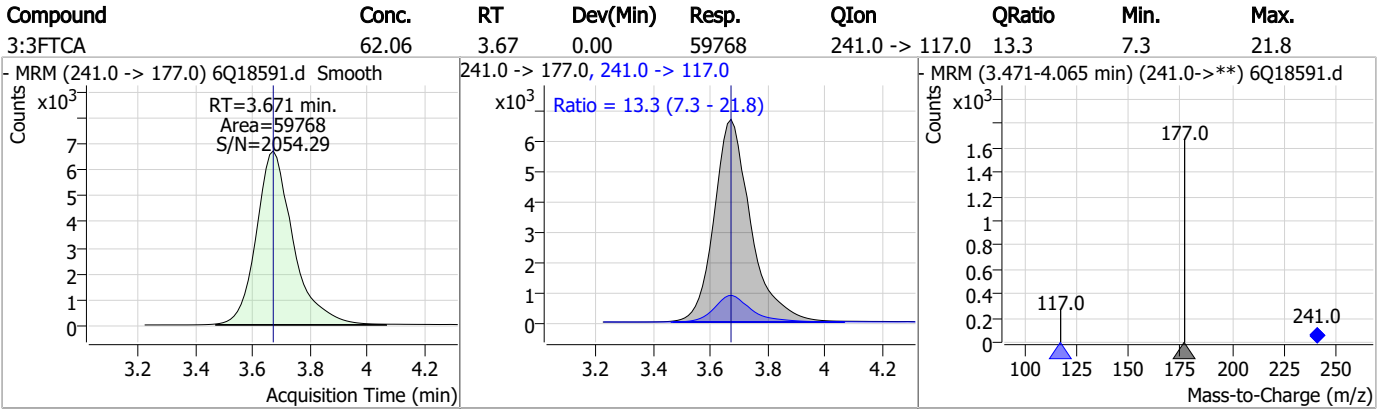
Perfluorinated Compounds by LC/MS/MS



7.7.22

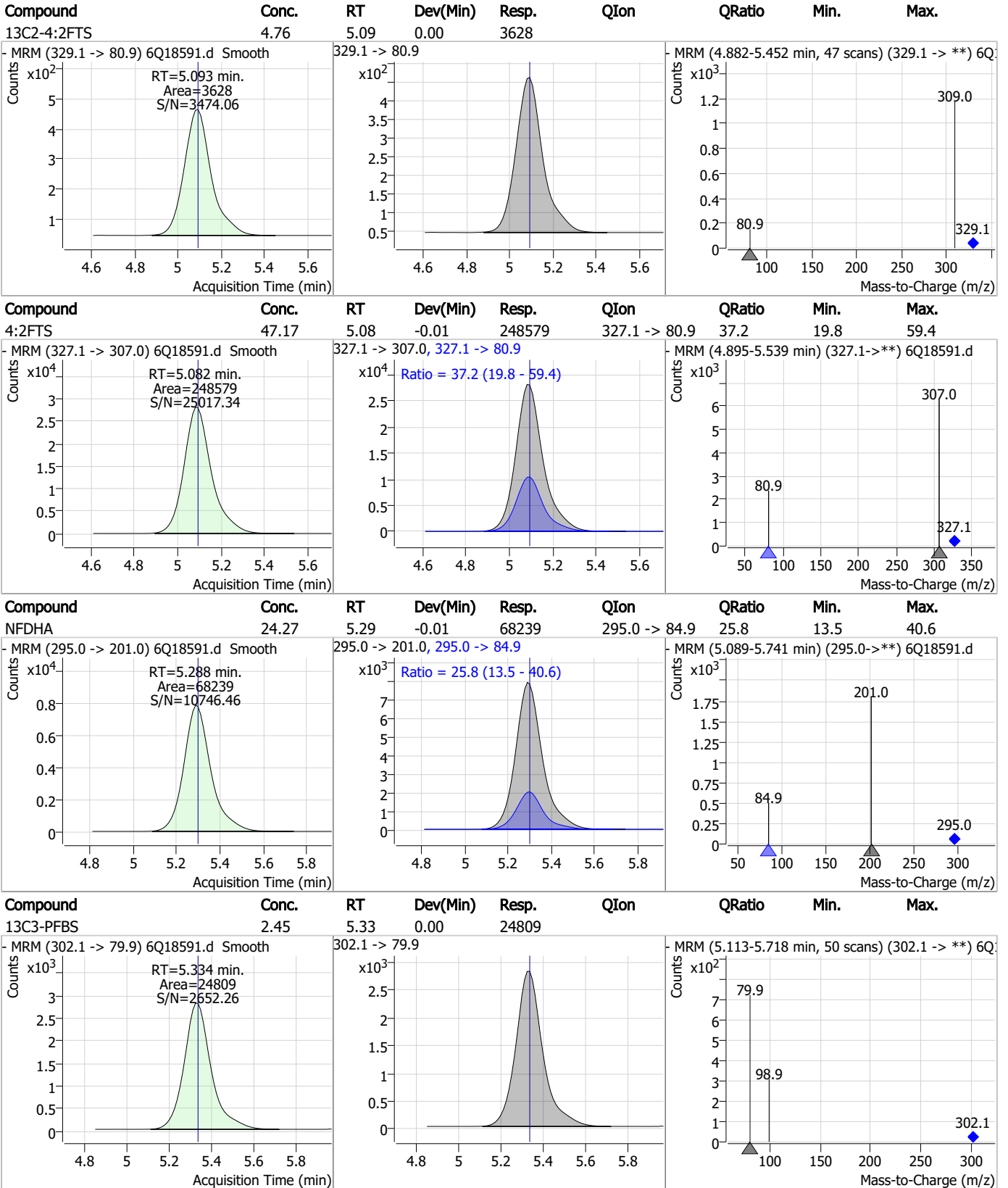
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Perfluorinated Compounds by LC/MS/MS



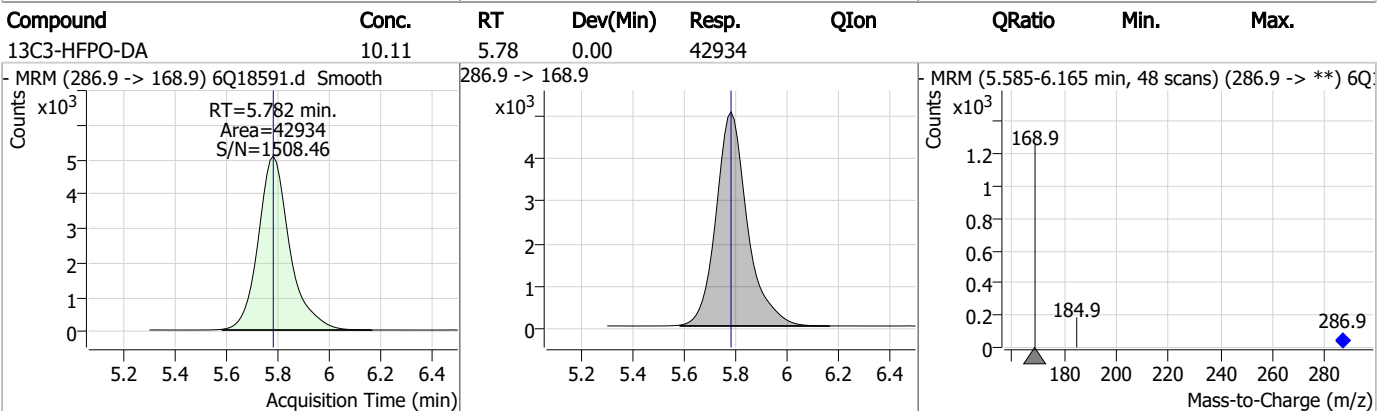
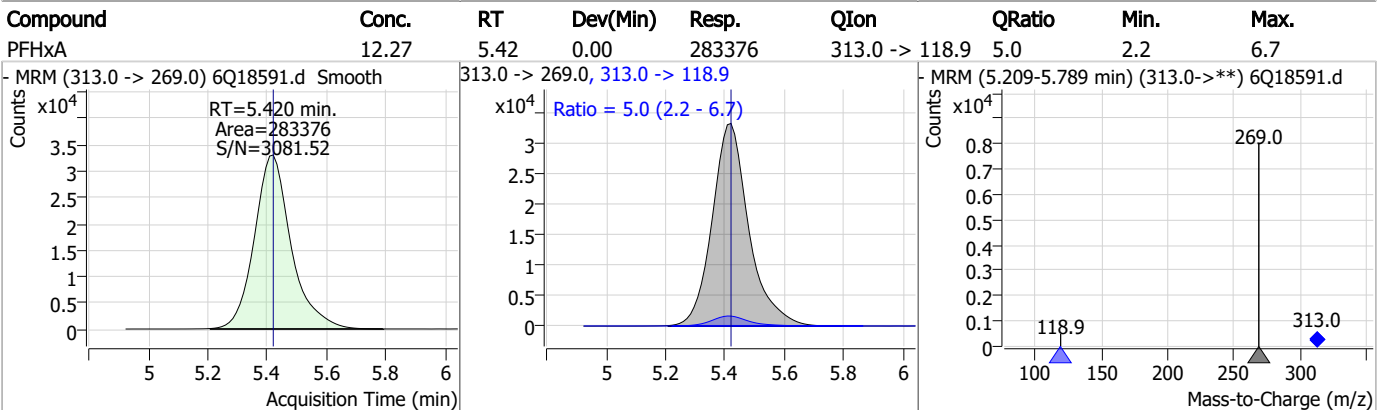
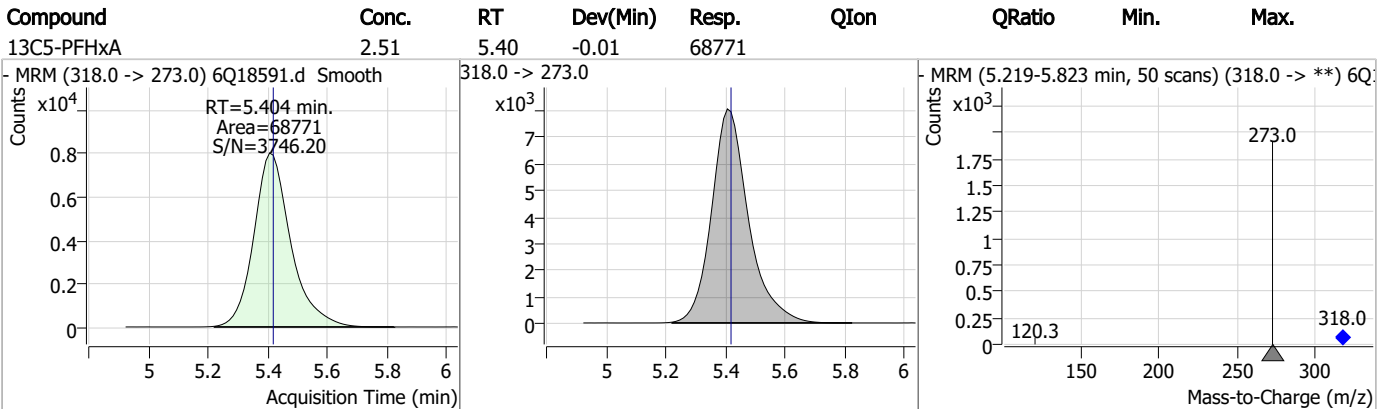
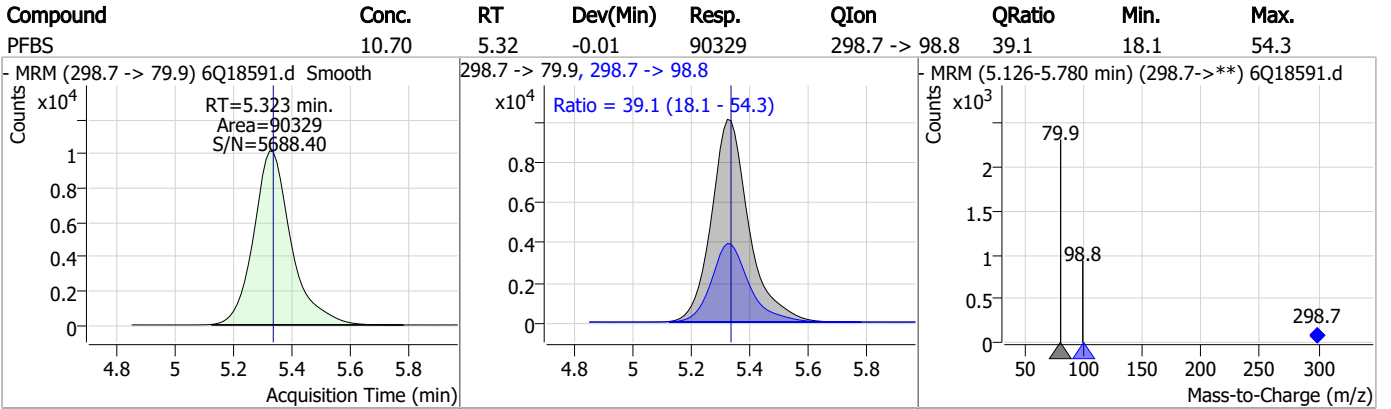
7.7.22 7

Perfluorinated Compounds by LC/MS/MS



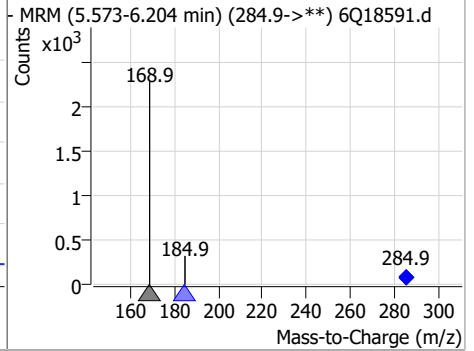
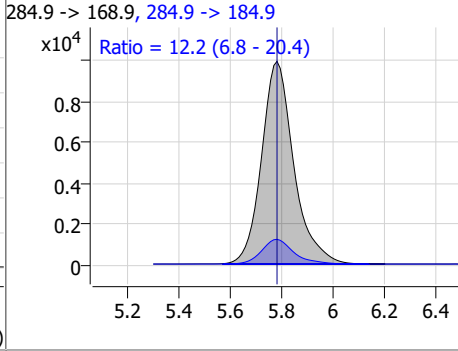
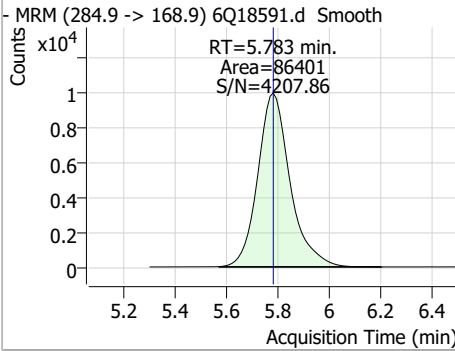
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Perfluorinated Compounds by LC/MS/MS

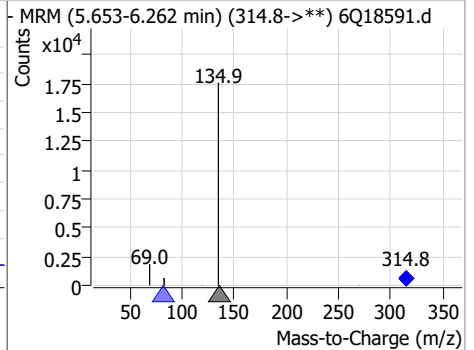
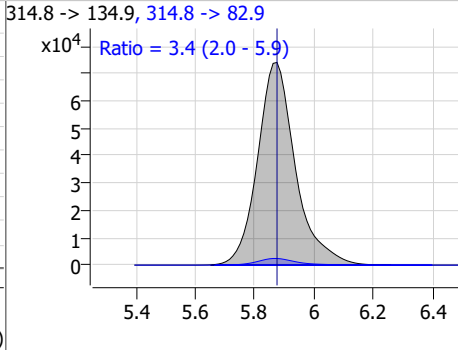
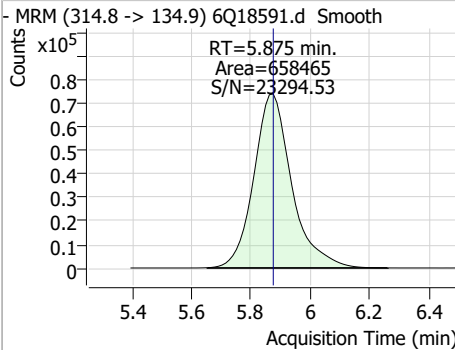


Perfluorinated Compounds by LC/MS/MS

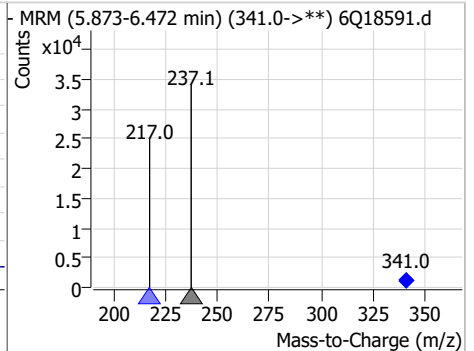
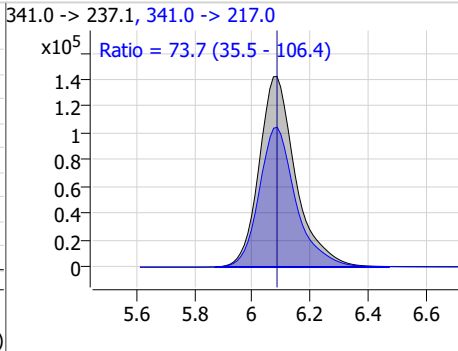
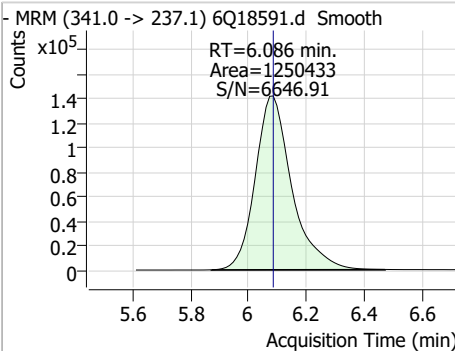
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	23.74	5.78	0.00	86401	284.9 -> 184.9	12.2	6.8	20.4



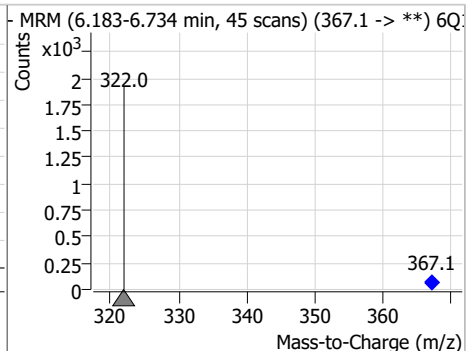
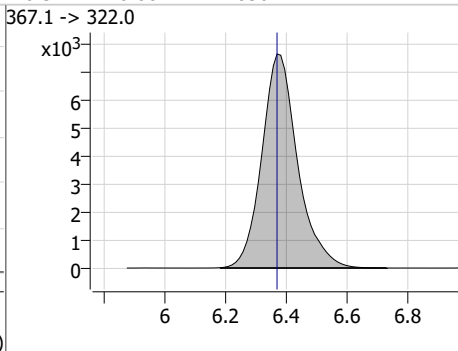
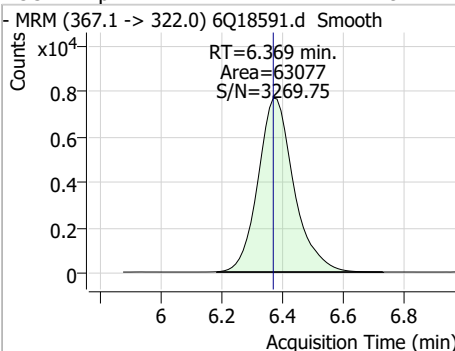
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.47	5.88	0.00	658465	314.8 -> 82.9	3.4	2.0	5.9



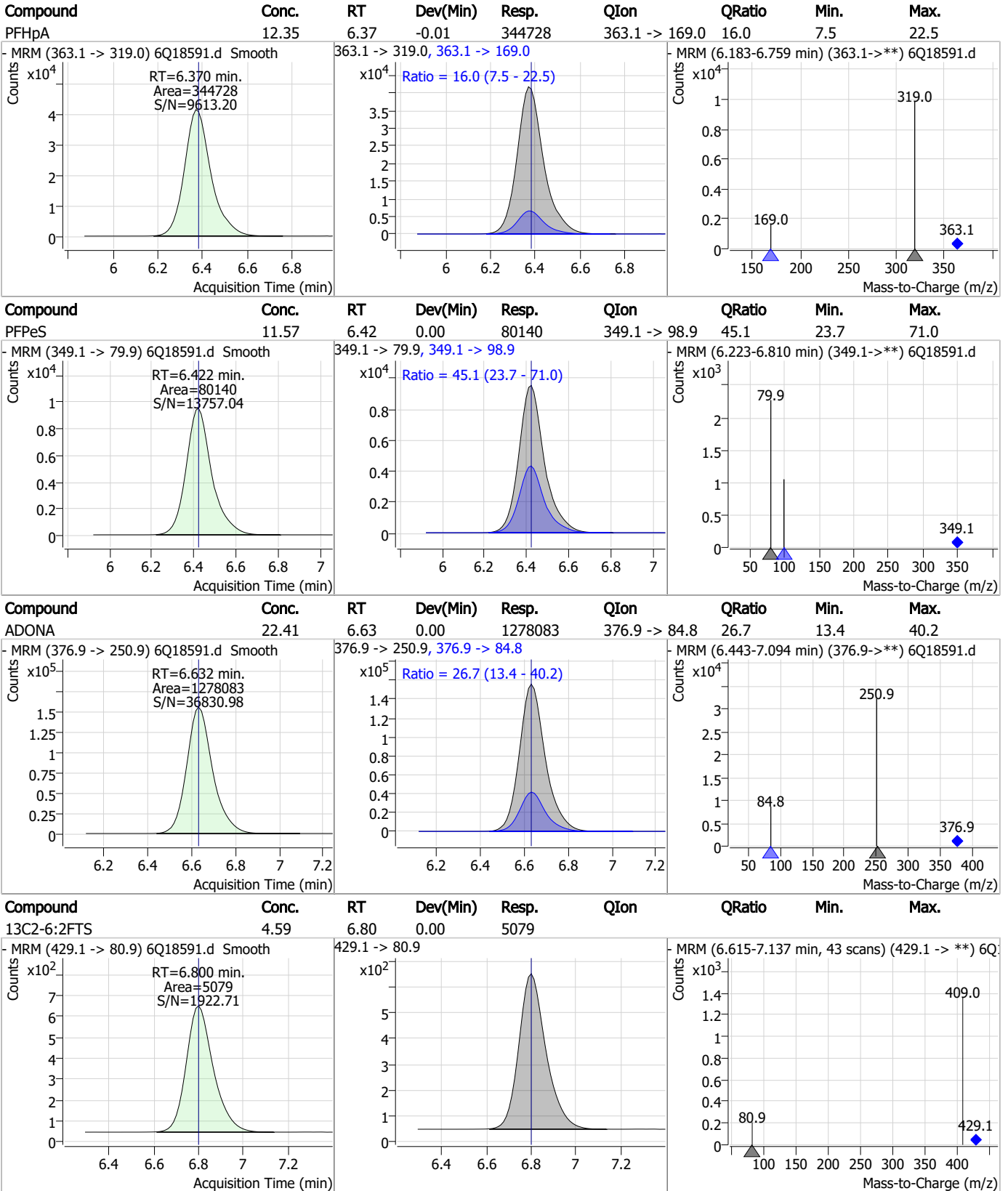
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	301.02	6.09	0.00	1250433	341.0 -> 217.0	73.7	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.37	0.00	63077	367.1 -> 322.0			



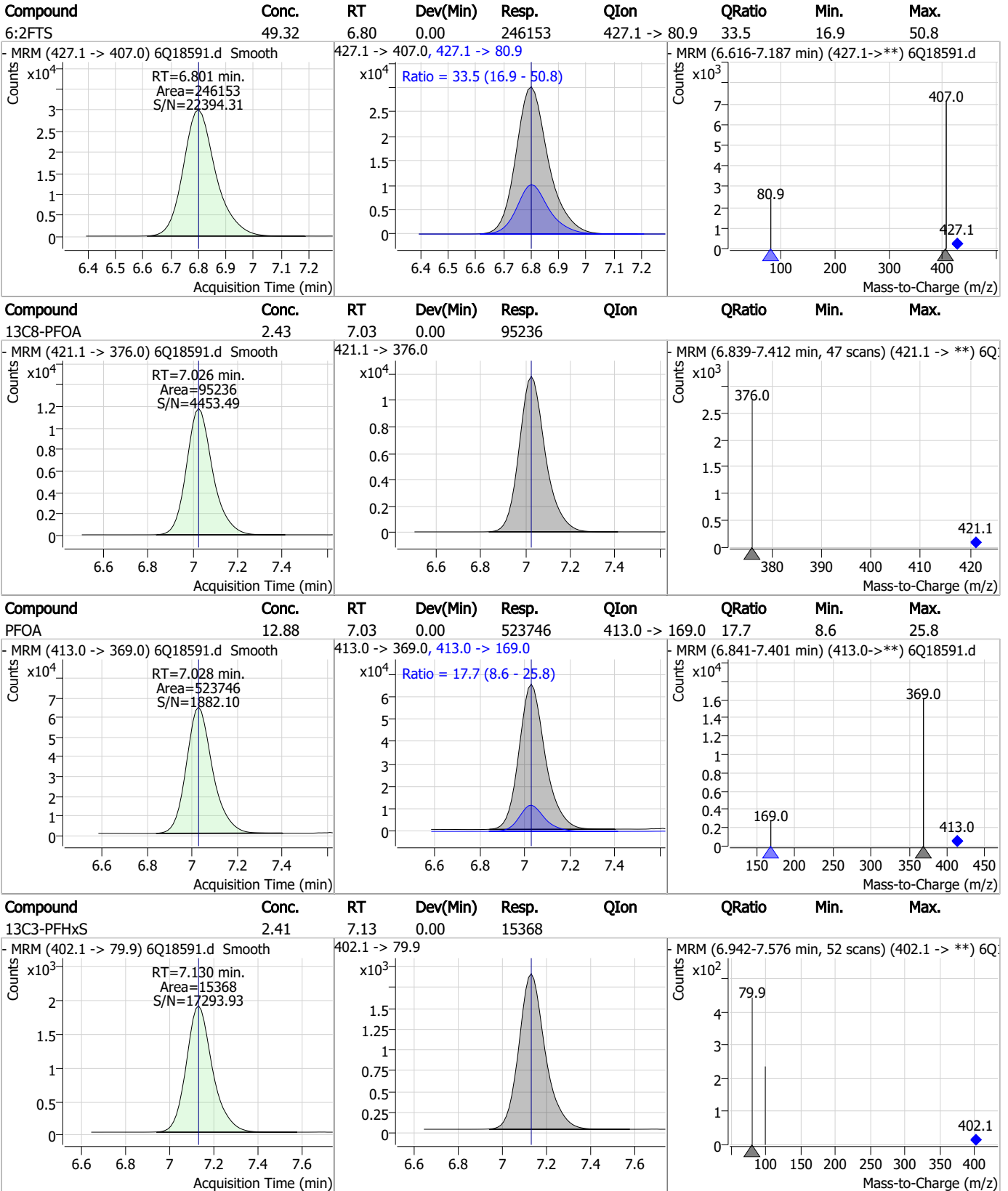
Perfluorinated Compounds by LC/MS/MS



7.7.22 7

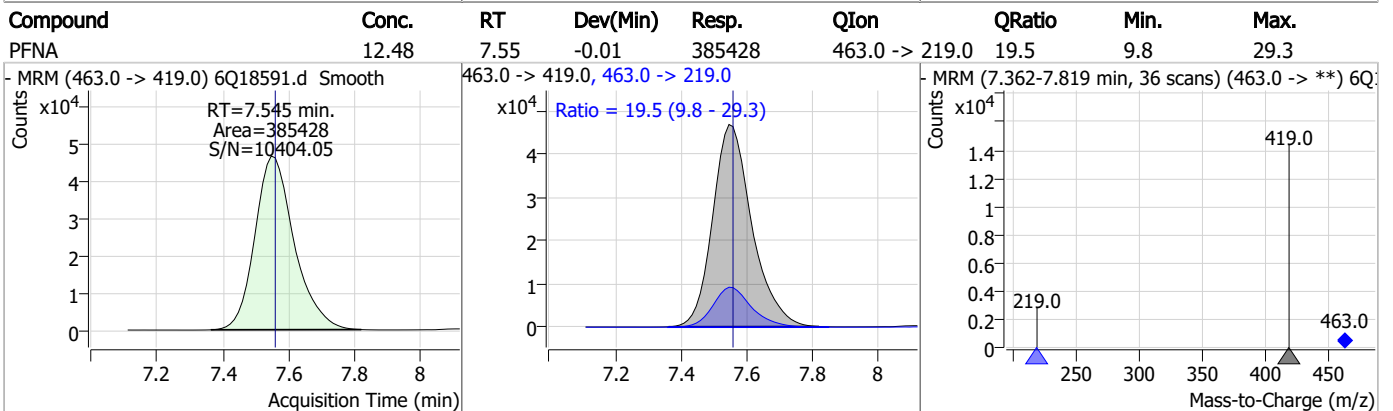
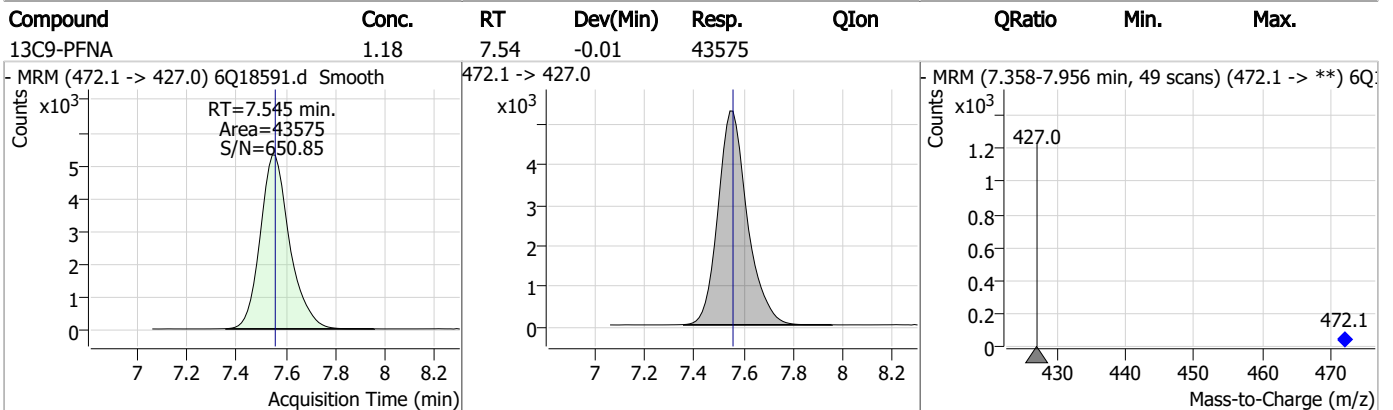
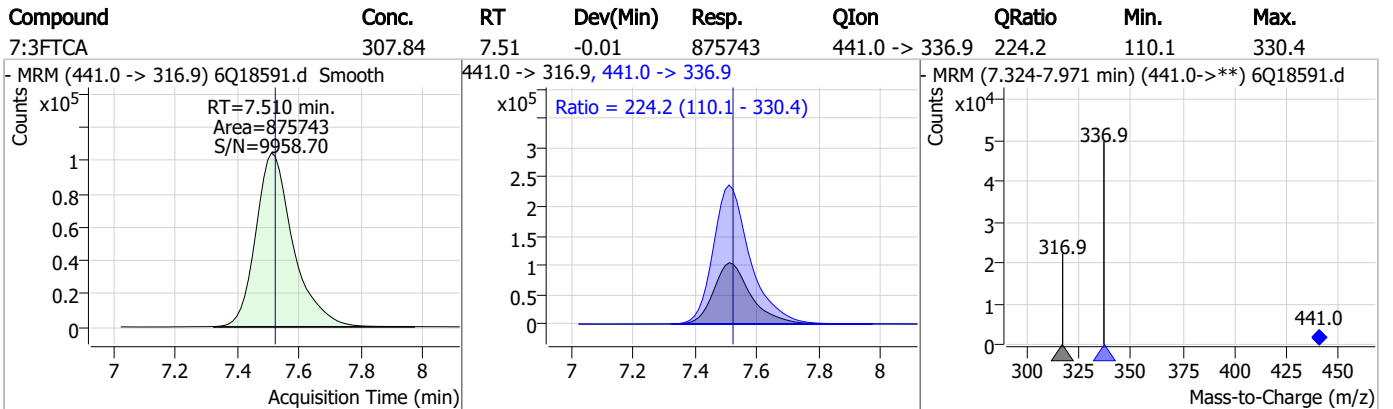
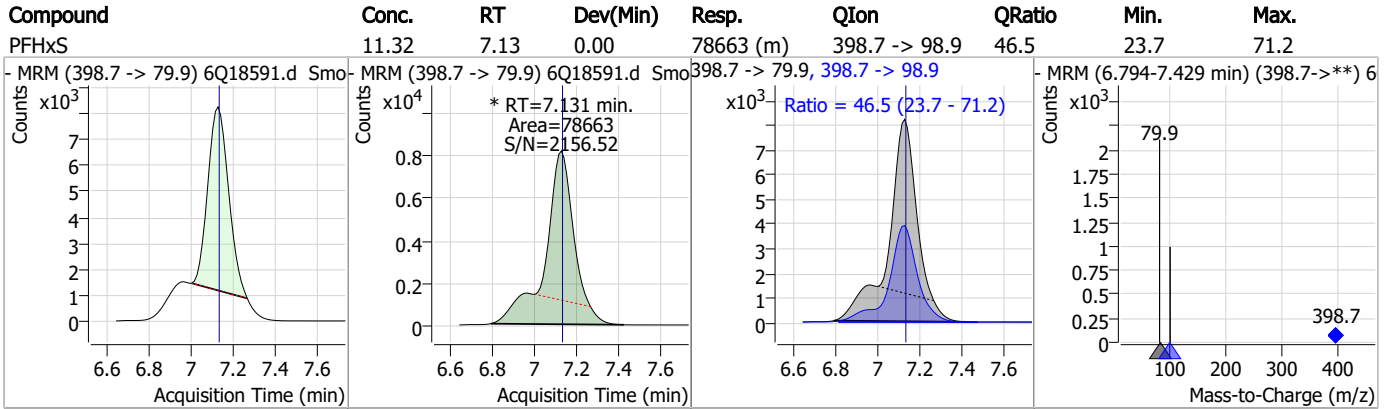


Perfluorinated Compounds by LC/MS/MS



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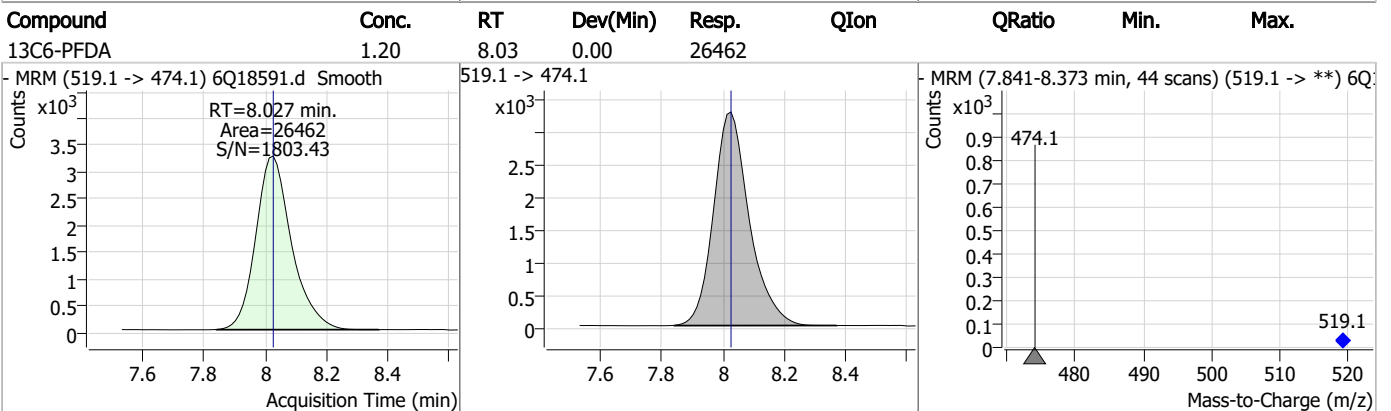
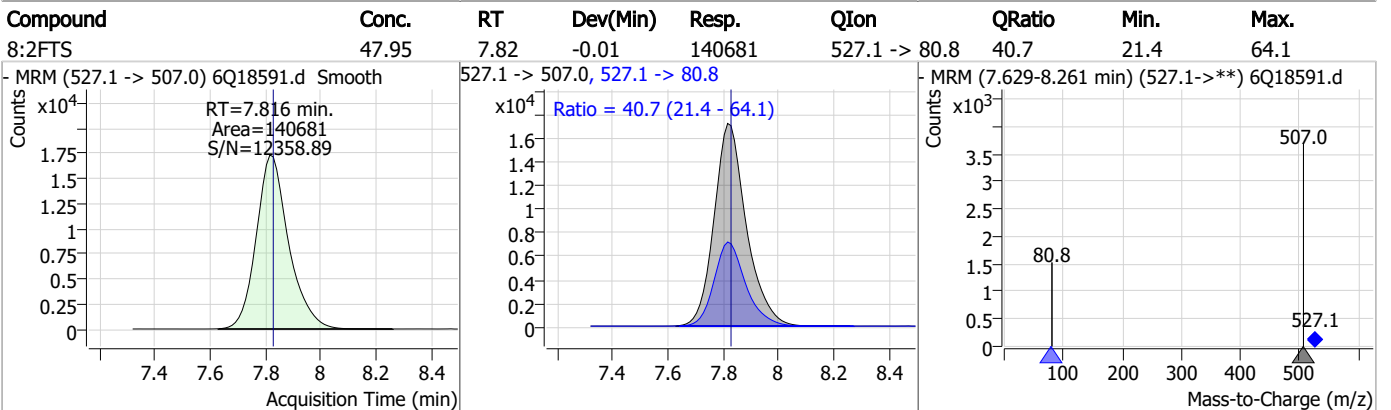
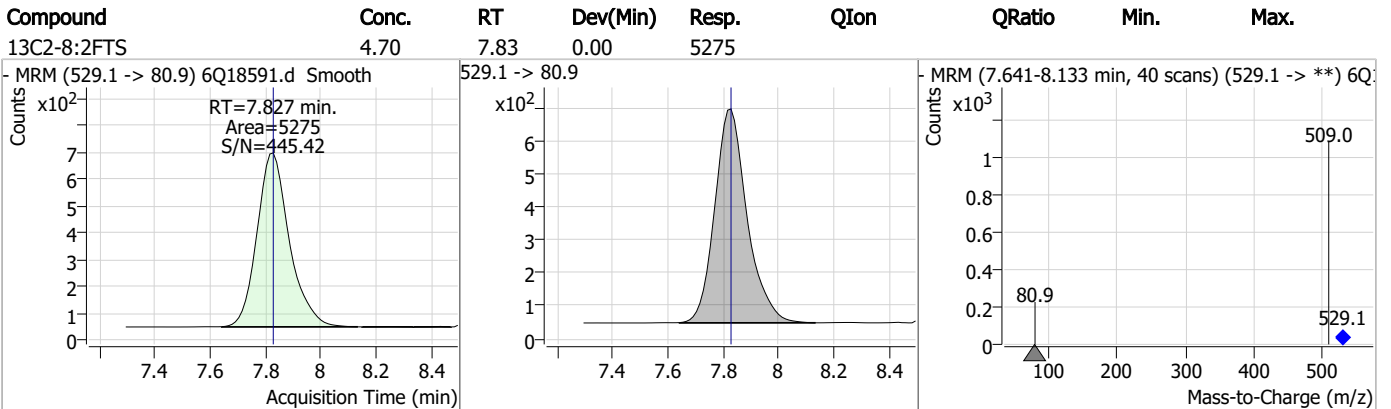
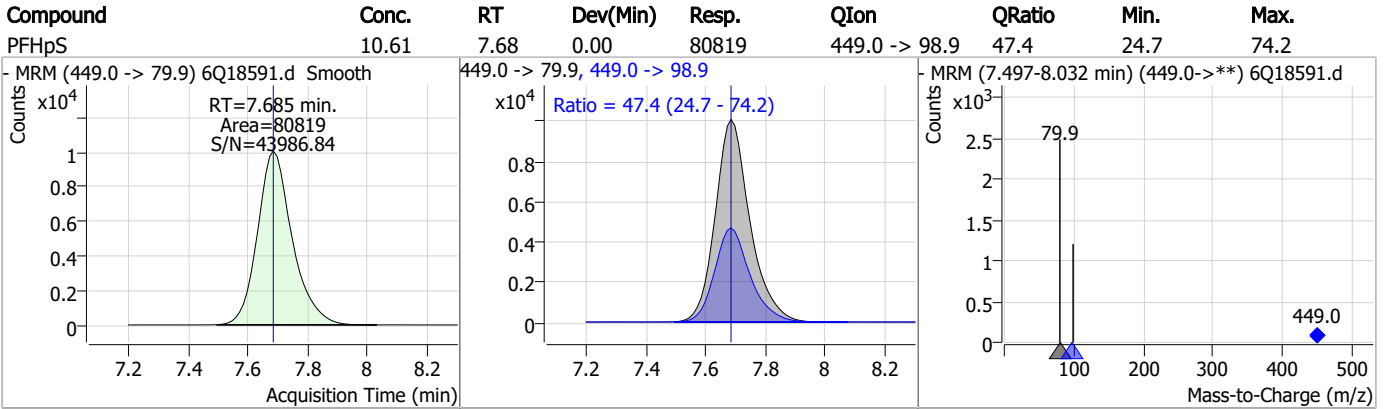
Perfluorinated Compounds by LC/MS/MS



7.7.22

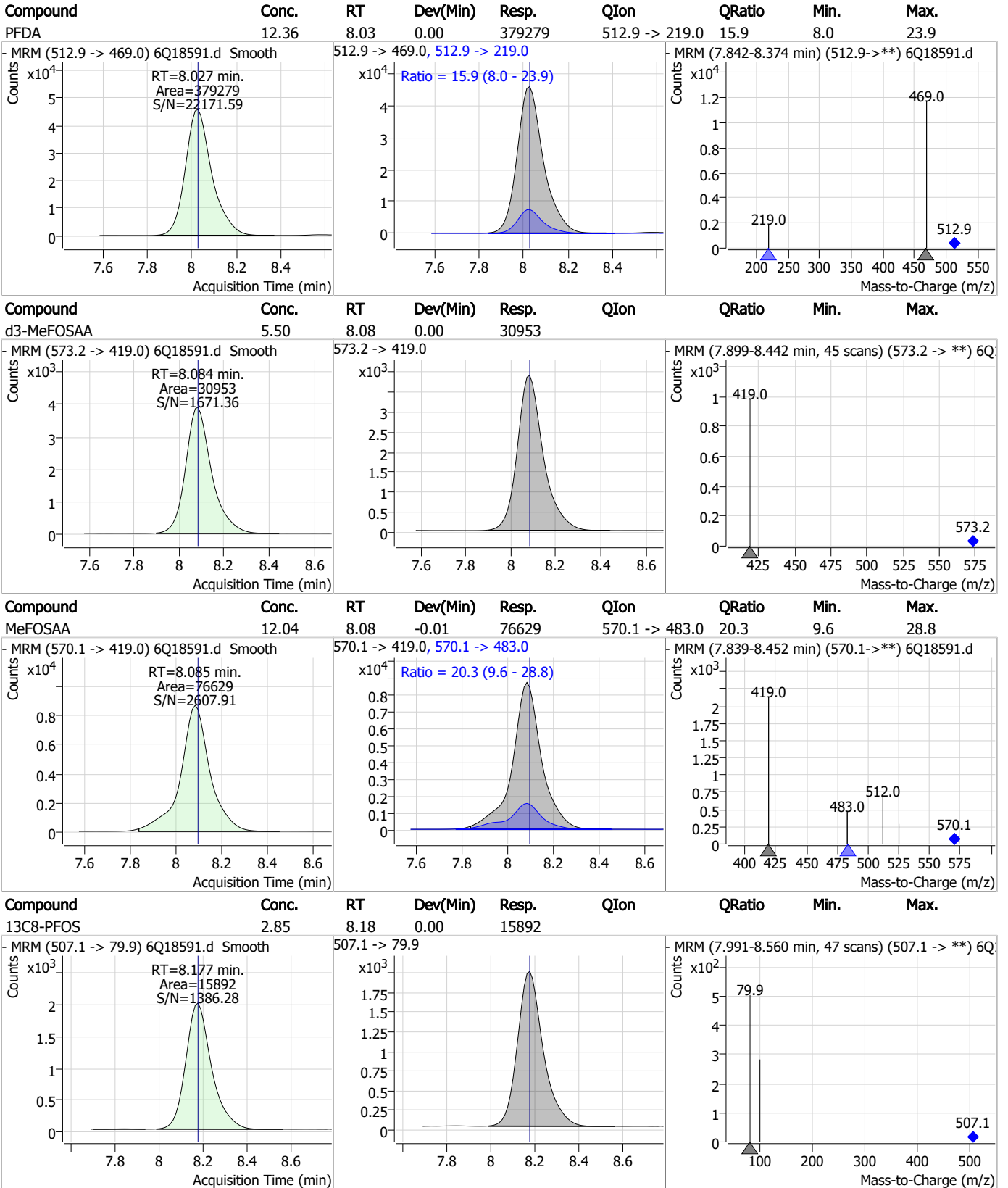
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Perfluorinated Compounds by LC/MS/MS



7.7.22 7

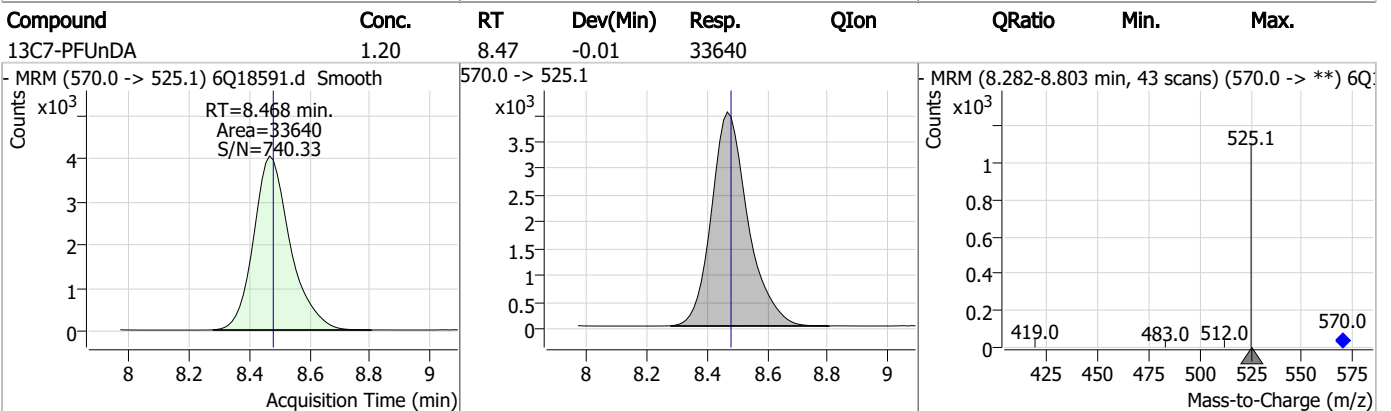
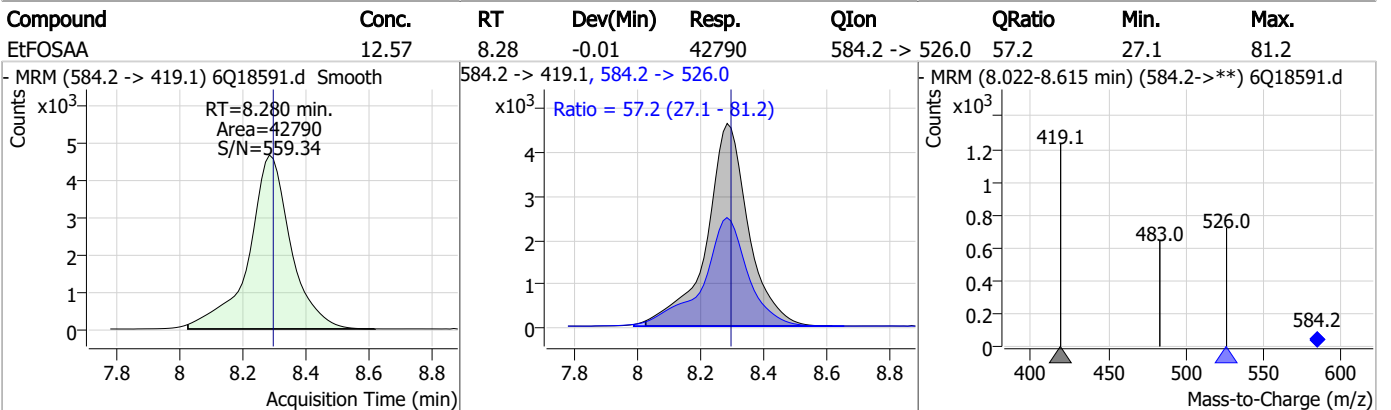
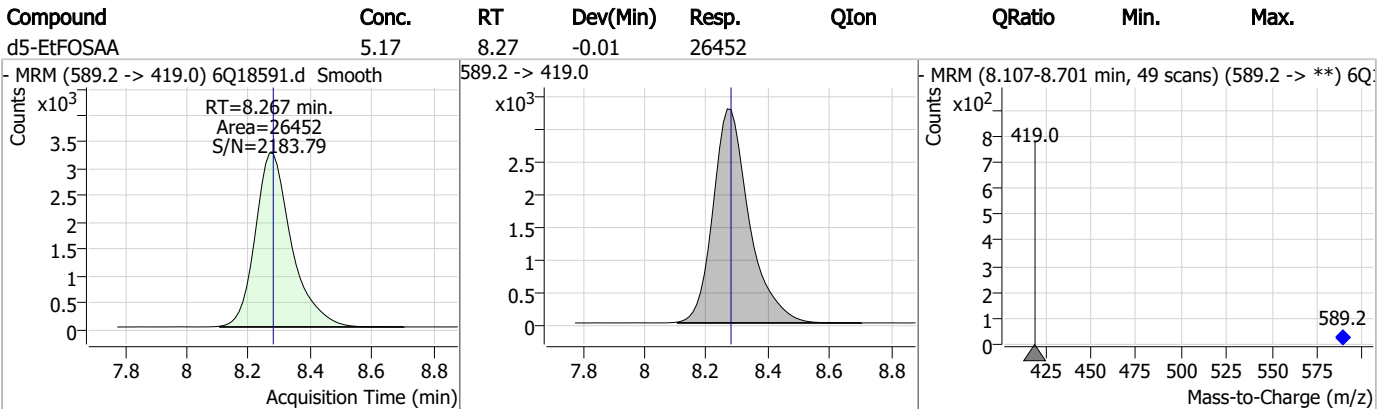
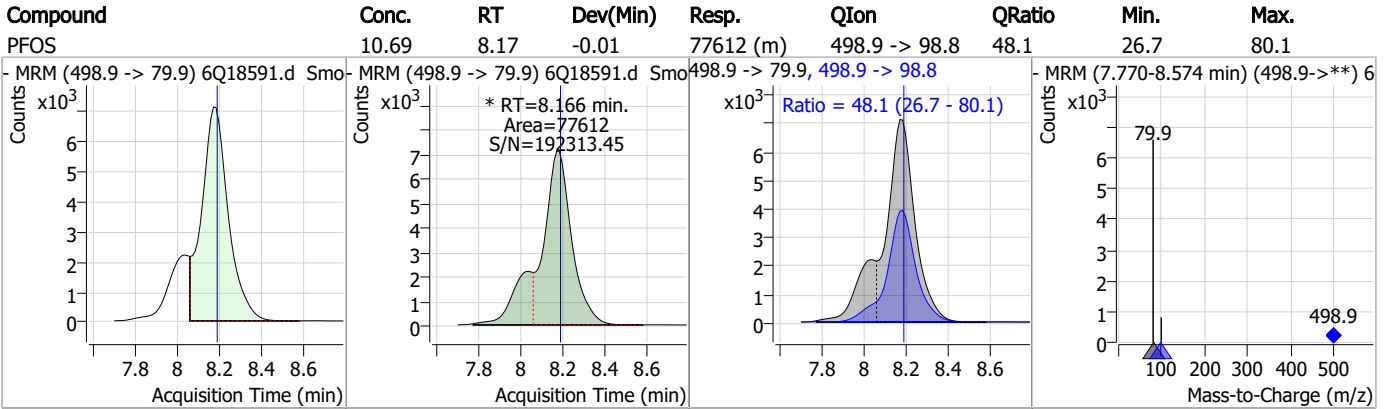
Perfluorinated Compounds by LC/MS/MS



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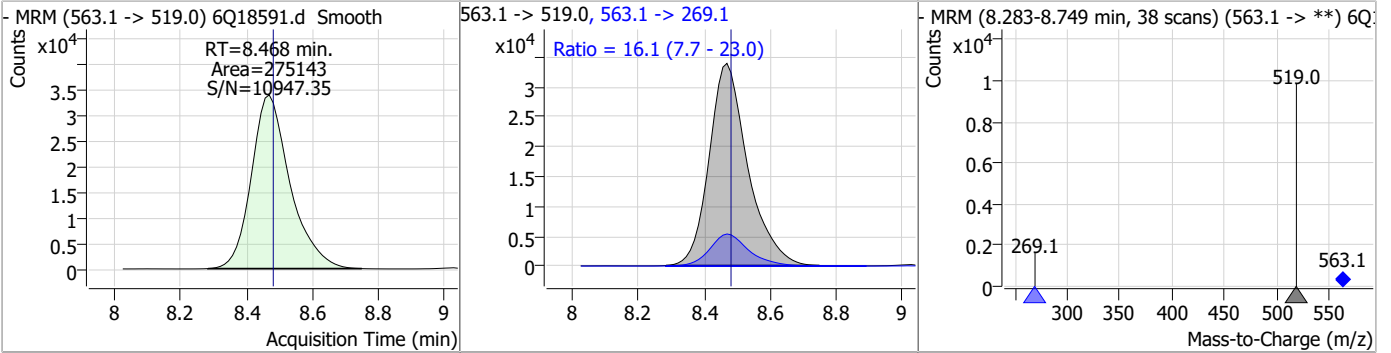
Perfluorinated Compounds by LC/MS/MS



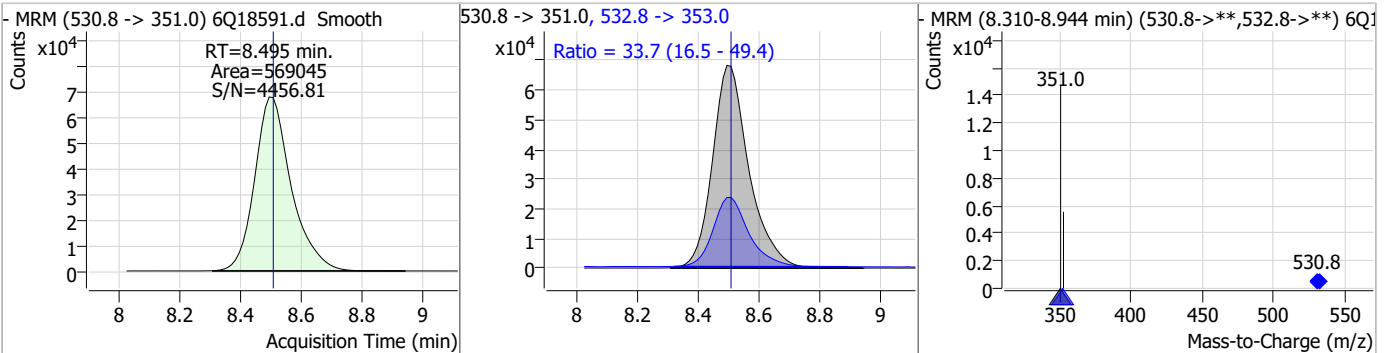
7.7.22 7

Perfluorinated Compounds by LC/MS/MS

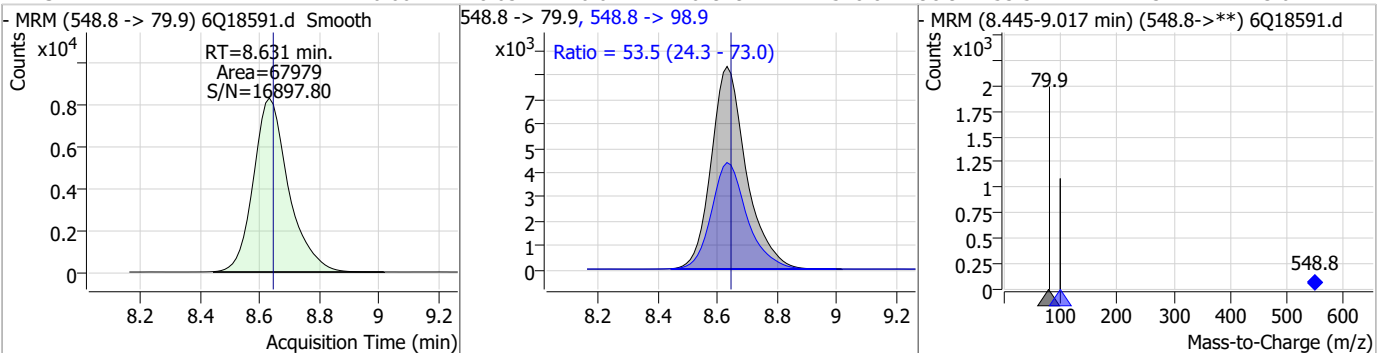
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	12.59	8.47	-0.01	275143	563.1 -> 269.1	16.1	7.7	23.0



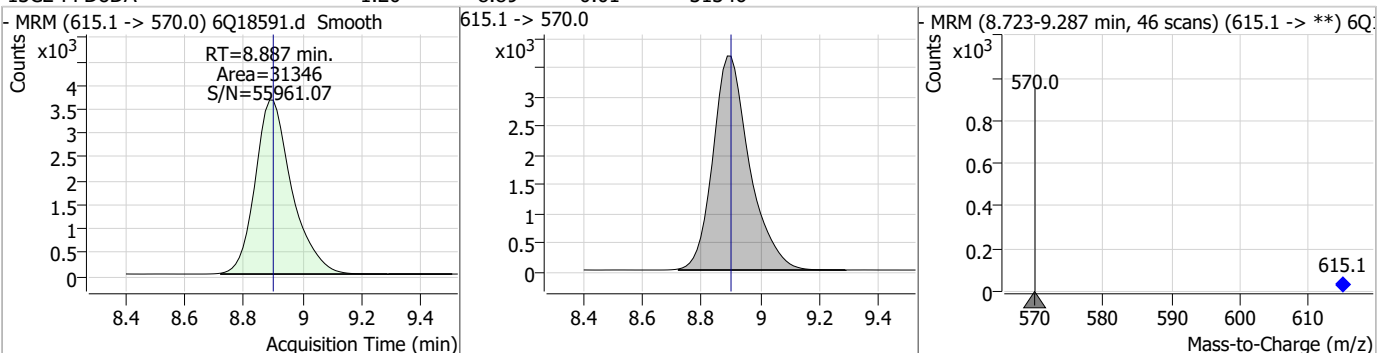
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	22.42	8.49	-0.01	569045	532.8 -> 353.0	33.7	16.5	49.4



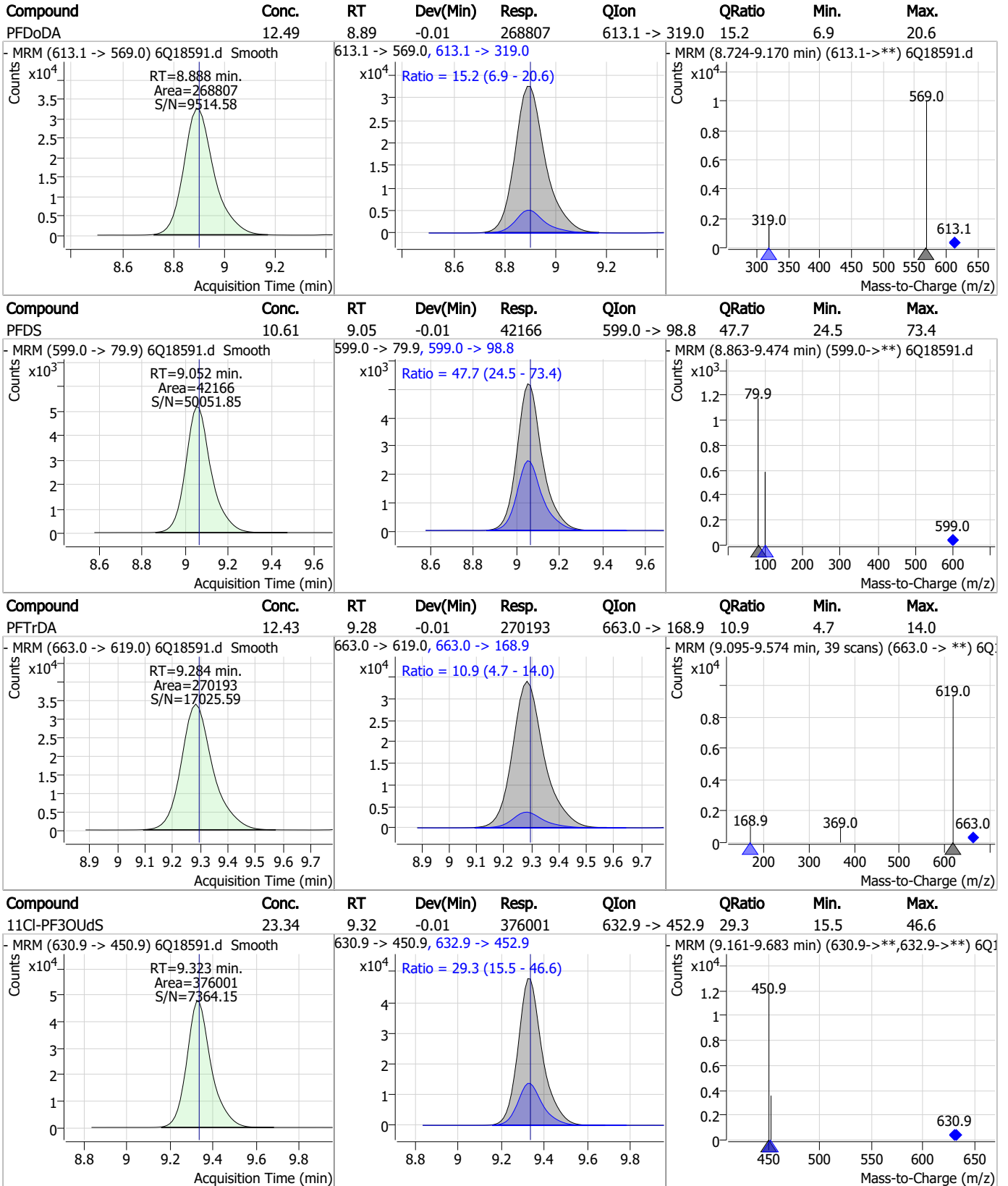
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.66	8.63	-0.01	67979	548.8 -> 98.9	53.5	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	8.89	-0.01	31346	615.1 -> 570.0			

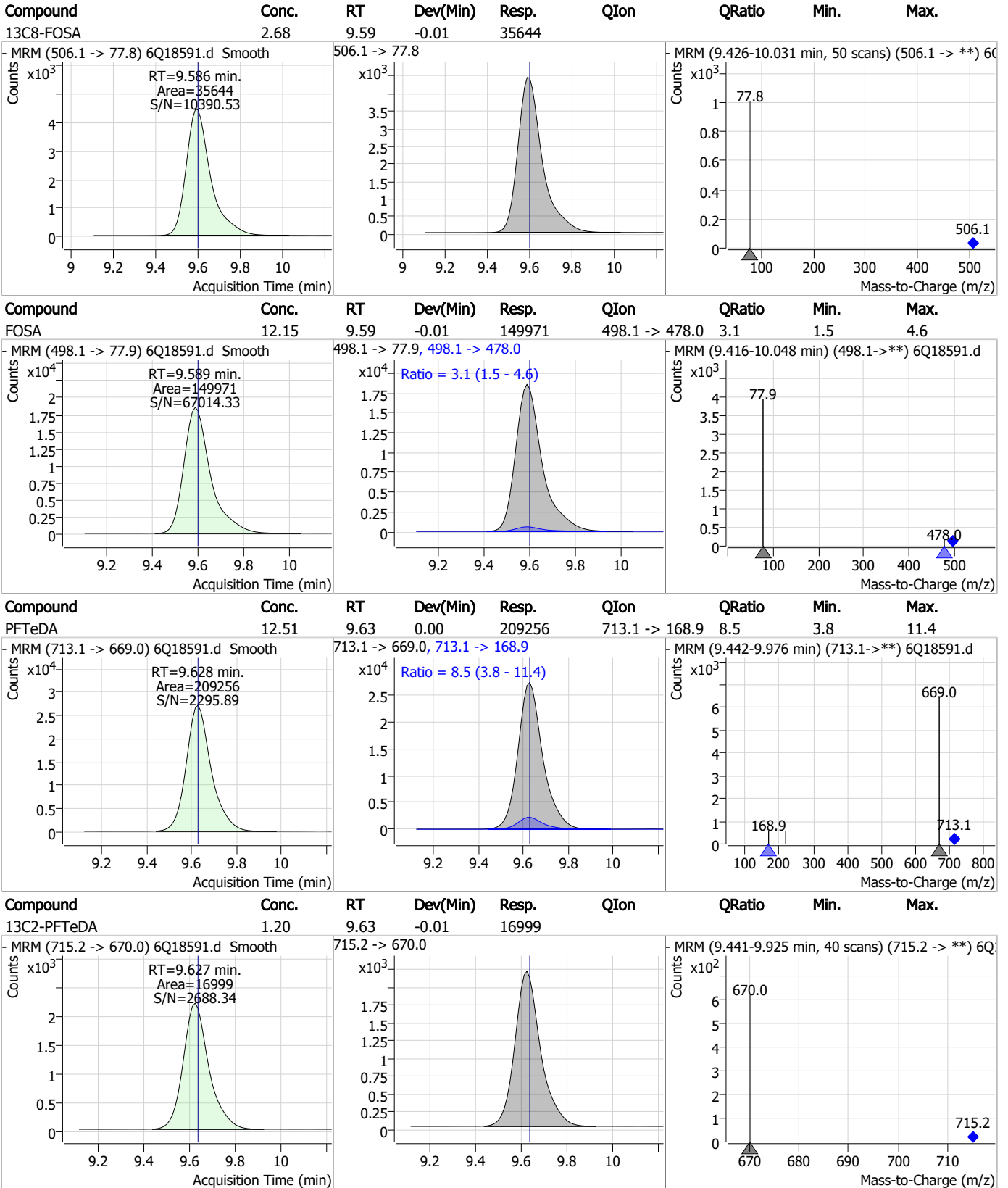


Perfluorinated Compounds by LC/MS/MS



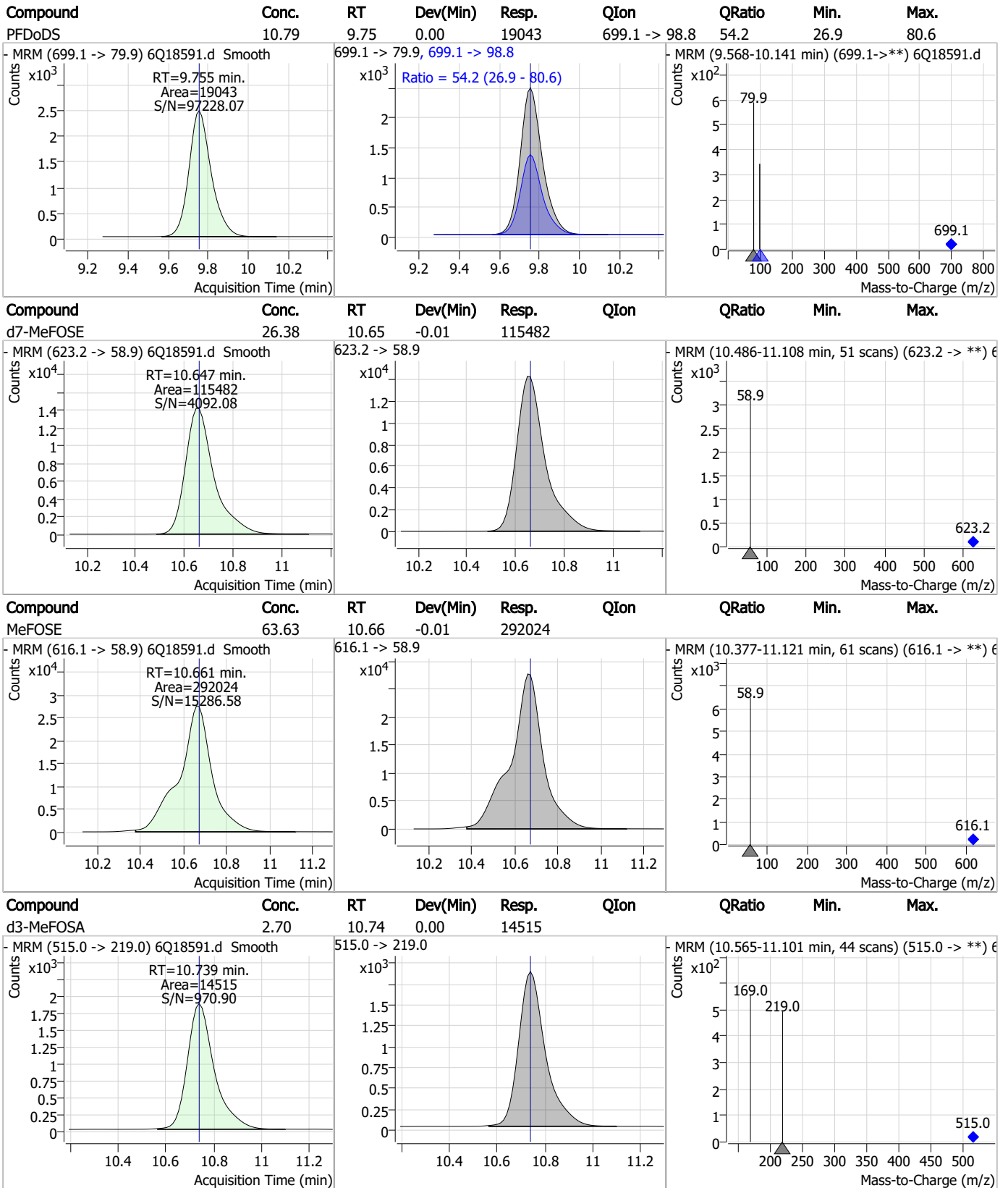
7.7.22 7

Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

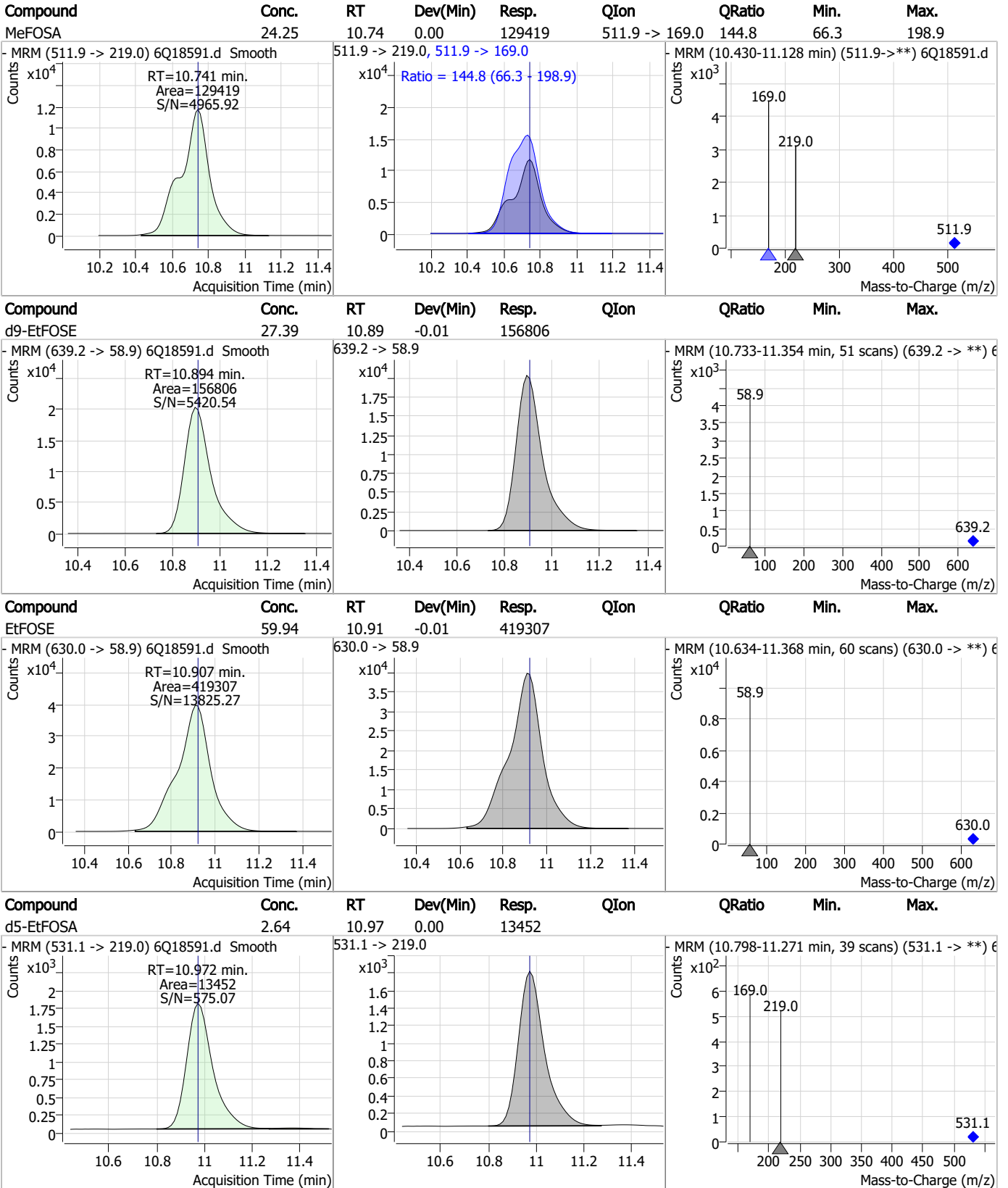


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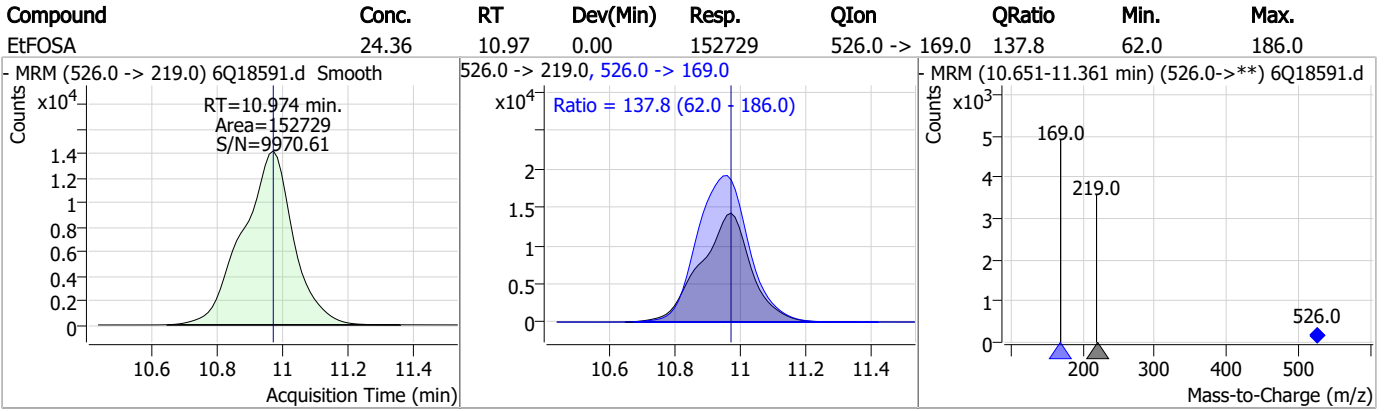


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18591.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:28 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.7.22.1

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Manual Integrations
APPROVED
(compounds with "m" flag)

Norman Farmer
06/01/23 14:56

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18592.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 5/31/2023 6:43:19 PM
Sample Name : ic279-7
Vial : P1-A8
DA Method File : 1633_053123_S6Q279.quantmethod.xml
Batch Name : S6Q279.batch.bin
Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	173909	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	59923	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	64695	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	61221	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	92604	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	41267	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	26149	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33011	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	30068	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16581	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34285	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23470	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15119	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14029	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3287	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4859	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4858	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	28241	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	41014	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25438	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	110296	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	143947	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13006	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13881	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17752	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	73362	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10445	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	97223	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34474	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	49011	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	61263	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3287	4.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4859	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4858	4.73 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	30068	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16581	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C3-PFBS	5.322	302.1 -> 79.9	23470	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	15119	2.59 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C4-PFBA	2.822	216.8 -> 171.9	173909	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	61221	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C5-PFHxA	5.404	318.0 -> 273.0	64695	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	59923	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.027	519.1 -> 474.1	26149	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33011	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-FOSA	9.598	506.1 -> 77.8	34285	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-PFOA	7.026	421.1 -> 376.0	92604	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.177	507.1 -> 79.9	14029	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C9-PFNA	7.545	472.1 -> 427.0	41267	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	28241	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41014	10.19 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSA	10.739	515.0 -> 219.0	13881	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25438	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	110296	24.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d9-EtFOSE	10.894	639.2 -> 58.9	143947	24.68 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	13006	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	461734	96.69 µg/L	96
		327.1 -> 80.9	170644		
6:2FTS	6.801	427.1 -> 407.0	454138	95.12 µg/L	97
		427.1 -> 80.9	145960		
8:2FTS	7.816	527.1 -> 507.0	264319	97.83 µg/L	92
		527.1 -> 80.8	99847		
EtFOSAA	8.280	584.2 -> 419.1	84735	25.89 µg/L	97
		584.2 -> 526.0	44261		
FOSA	9.589	498.1 -> 77.9	295311	24.88 µg/L	100
		498.1 -> 478.0	8483		
MeFOSAA	8.085	570.1 -> 419.0	150677	25.95 µg/L	100
		570.1 -> 483.0	29222		
PFBA	2.818	212.8 -> 168.9	587033	101.96 µg/L	100
PFBS	5.323	298.7 -> 79.9	179888	22.53 µg/L	100
		298.7 -> 98.8	65061		
PFDA	8.027	512.9 -> 469.0	752039	24.80 µg/L	99
		512.9 -> 219.0	115710		
PFDoDA	8.900	613.1 -> 569.0	526213	25.49 µg/L	97
		613.1 -> 319.0	79479		
PFDS	9.052	599.0 -> 79.9	81025	23.10 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	40858			
PFHpA	6.370	363.1 -> 319.0	661062	24.40	µg/L	98
		363.1 -> 169.0	105903			
PFHpS	7.685	449.0 -> 79.9	160648	23.88	µg/L	100
		449.0 -> 98.9	79054			
PFHxA	5.407	313.0 -> 269.0	544910	25.09	µg/L	98
		313.0 -> 118.9	27606			
PFHxS	7.131	398.7 -> 79.9	151573	22.16	µg/L	m 98
		398.7 -> 98.9	73693			
PFNA	7.545	463.0 -> 419.0	715129	24.46	µg/L	99
		463.0 -> 219.0	144309			
PFNS	8.631	548.8 -> 79.9	139044	24.69	µg/L	99
		548.8 -> 98.9	68535			
PFOA	7.028	413.0 -> 369.0	1015265	25.68	µg/L	99
		413.0 -> 169.0	178898			
PFOS	8.178	498.9 -> 79.9	150352	23.45	µg/L	91
		498.9 -> 98.8	70289			
PFPeA	4.212	263.0 -> 219.0	716320	49.77	µg/L	100
PFPeS	6.422	349.1 -> 79.9	157507	23.11	µg/L	96
		349.1 -> 98.9	70365			
PFTeDA	9.628	713.1 -> 669.0	415094	25.45	µg/L	99
		713.1 -> 168.9	33581			
PFTrDA	9.284	663.0 -> 619.0	514804	24.69	µg/L	95
		663.0 -> 168.9	57093			
PFUnDA	8.468	563.1 -> 519.0	552916	25.78	µg/L	100
		563.1 -> 269.1	85701			
11CI-PF3OUdS	9.336	630.9 -> 450.9	699278	45.44	µg/L	99
		632.9 -> 452.9	220802			
9CI-PF3ONS	8.508	530.8 -> 351.0	1126698	46.47	µg/L	97
		532.8 -> 353.0	352413			
ADONA	6.632	376.9 -> 250.9	2530342	46.45	µg/L	99
		376.9 -> 84.8	662153			
HFPO-DA	5.783	284.9 -> 168.9	176481	50.77	µg/L	95
		284.9 -> 184.9	20631			
3:3FTCA	3.659	241.0 -> 177.0	116182	126.13	µg/L	96
		241.0 -> 117.0	15056			
5:3FTCA	6.074	341.0 -> 237.1	2422580	619.95	µg/L	100
		341.0 -> 217.0	1724946			
7:3FTCA	7.510	441.0 -> 316.9	1687899	630.71	µg/L	96
		441.0 -> 336.9	3600820			
EtFOSA	10.974	526.0 -> 219.0	298243	49.20	µg/L	91
		526.0 -> 169.0	399918			
EtFOSE	10.907	630.0 -> 58.9	800380	124.63	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	252486	49.46	µg/L	94
		511.9 -> 169.0	353674			
MeFOSE	10.661	616.1 -> 58.9	552583	126.07	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	38653	24.80	µg/L	98
		699.1 -> 98.8	20250			
NFDHA	5.288	295.0 -> 201.0	126994	48.02	µg/L	98
		295.0 -> 84.9	33424			
PFMBA	4.626	279.0 -> 85.1	485738	49.59	µg/L	100
PFMPA	3.351	229.0 -> 84.9	385009	50.54	µg/L	100
PFEESA	5.862	314.8 -> 134.9	1215259	44.07	µg/L	99
		314.8 -> 82.9	42433			

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

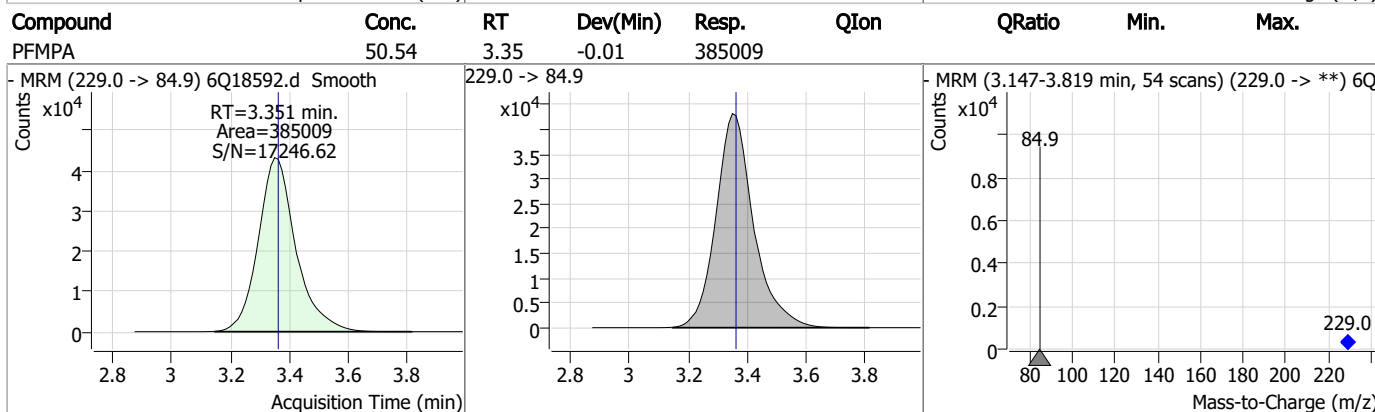
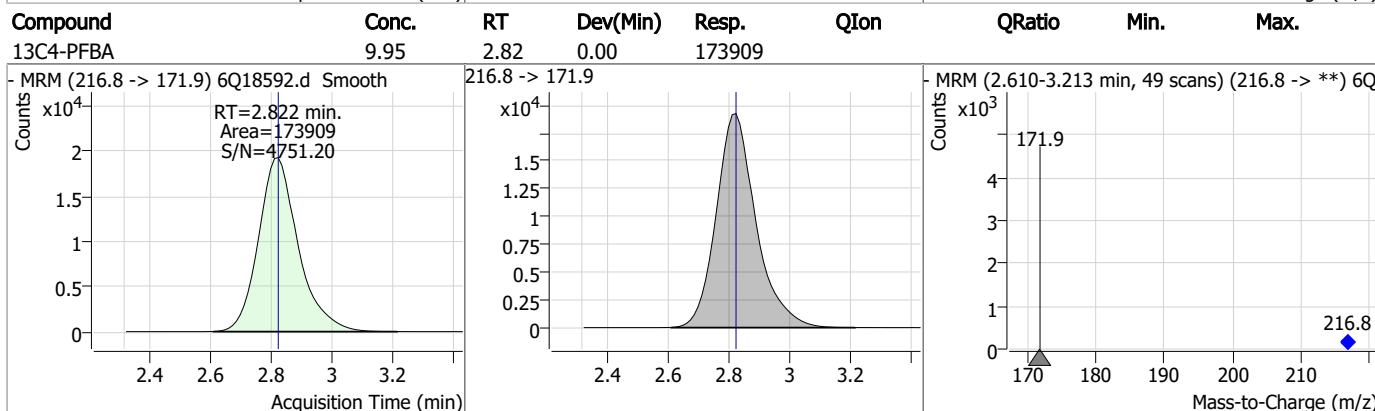
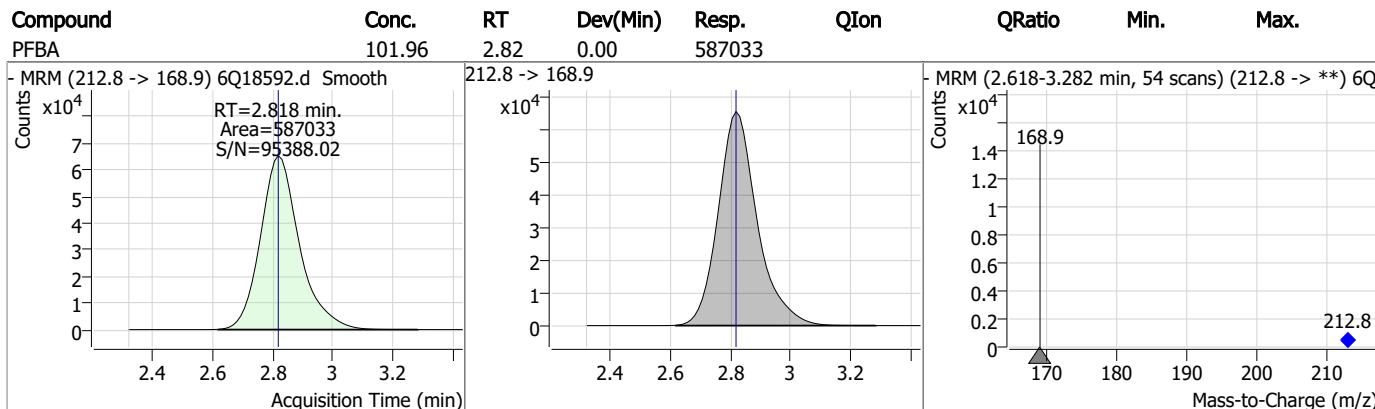
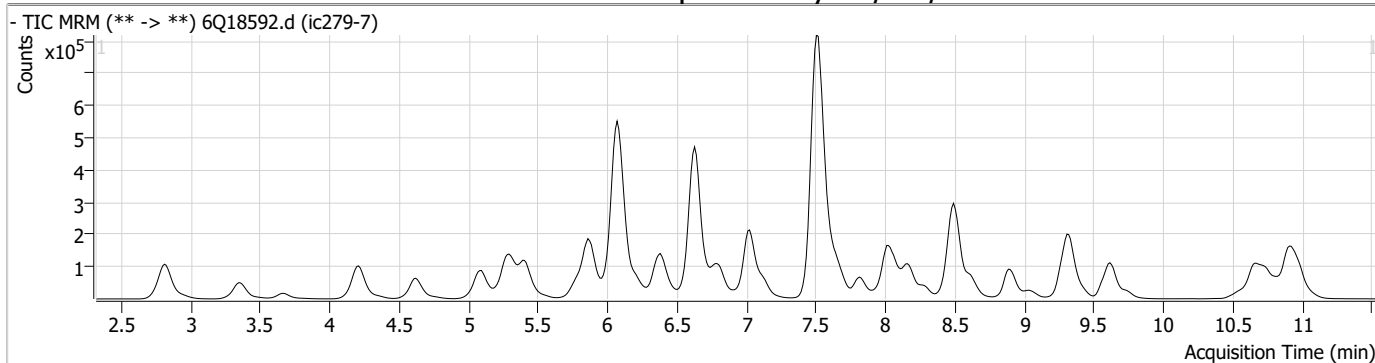
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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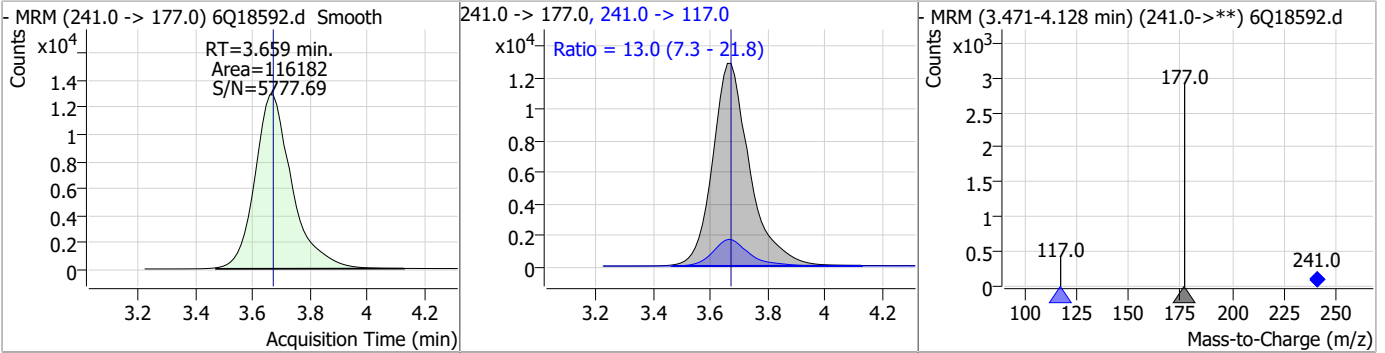


Perfluorinated Compounds by LC/MS/MS

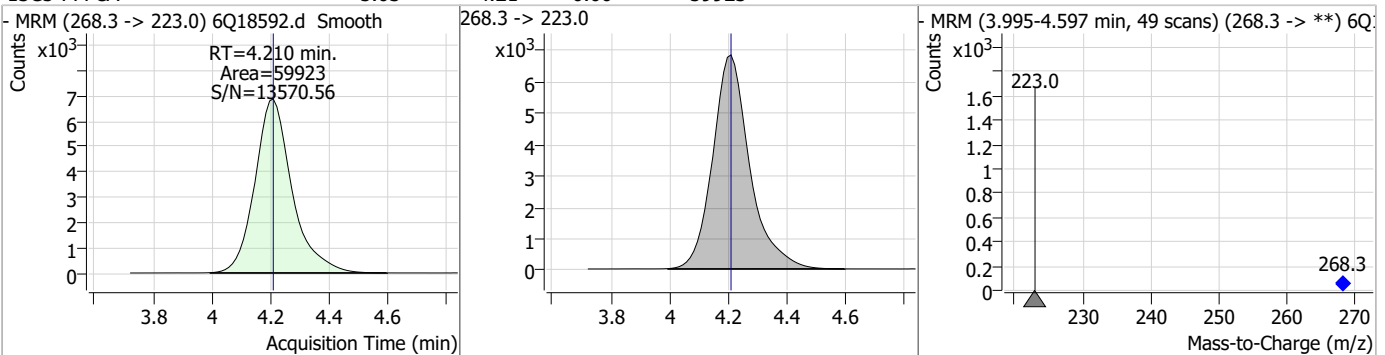


Perfluorinated Compounds by LC/MS/MS

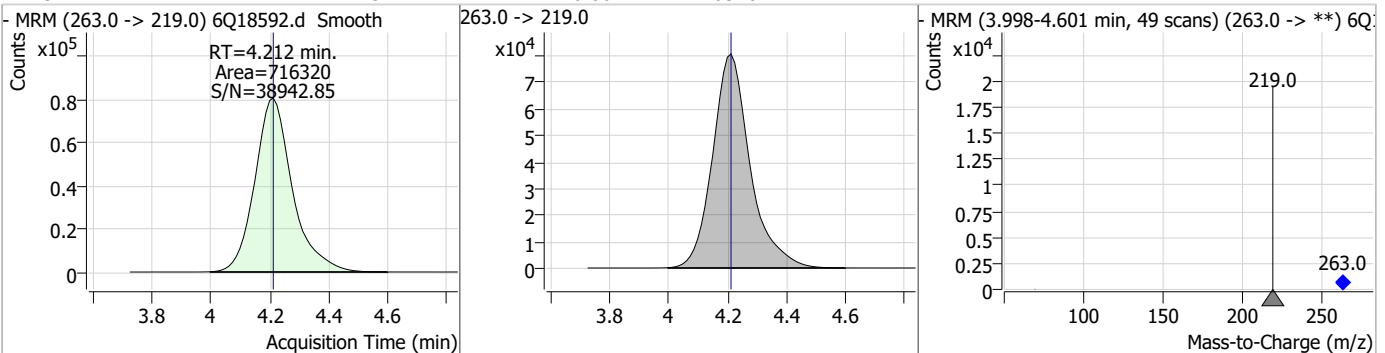
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	126.13	3.66	-0.01	116182	241.0 -> 117.0	13.0	7.3	21.8



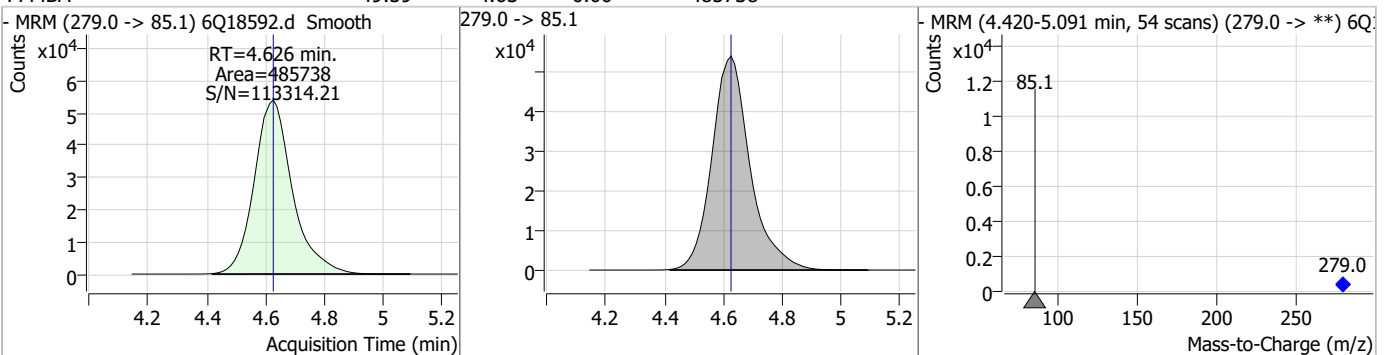
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.03	4.21	0.00	59923				



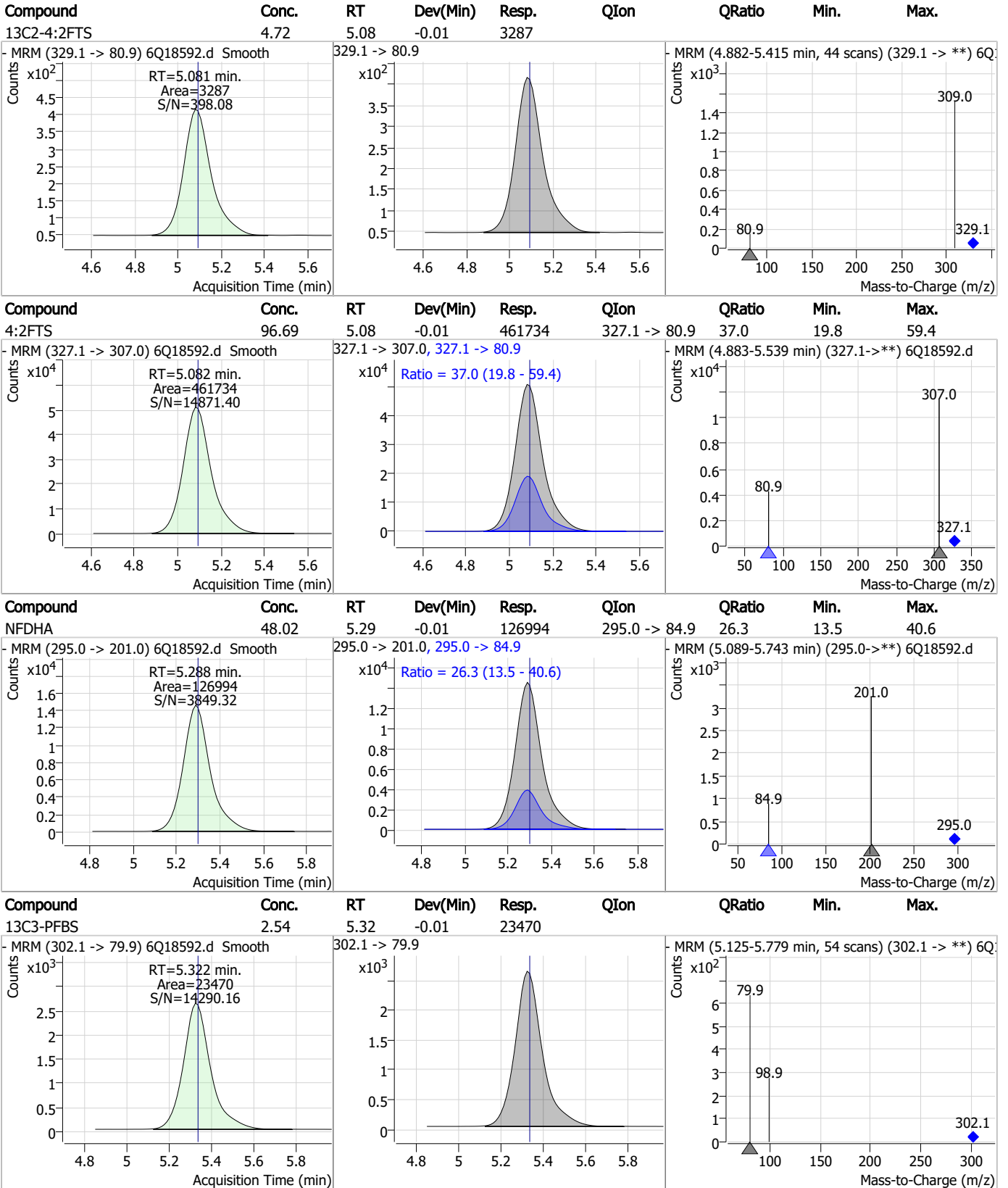
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	49.77	4.21	0.00	716320				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	49.59	4.63	0.00	485738				

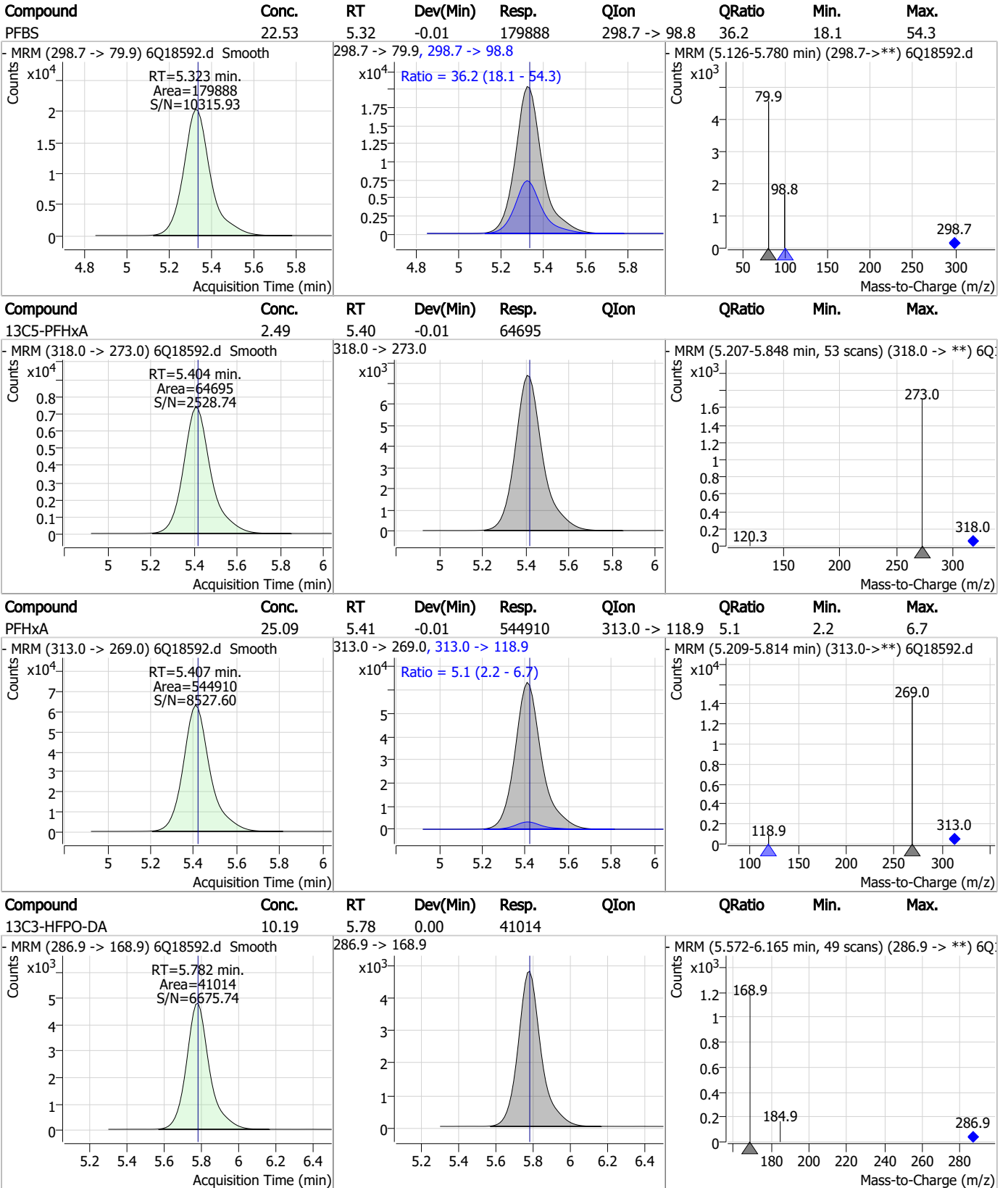


Perfluorinated Compounds by LC/MS/MS



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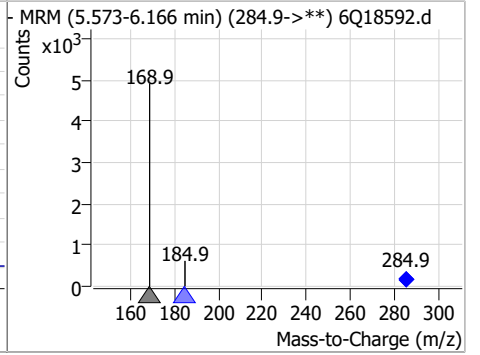
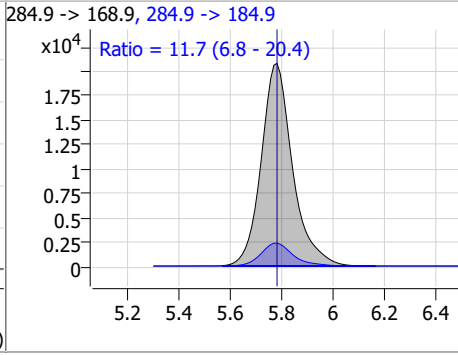
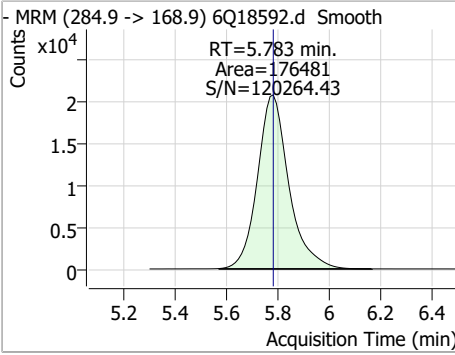
Perfluorinated Compounds by LC/MS/MS



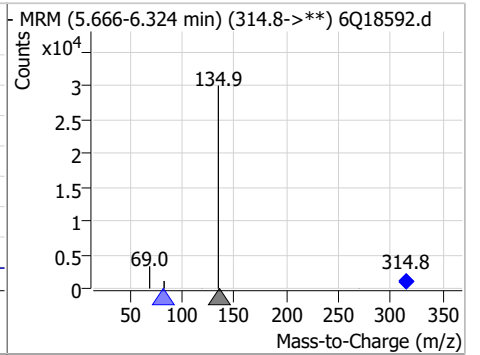
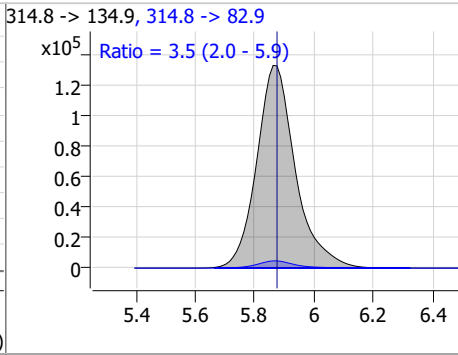
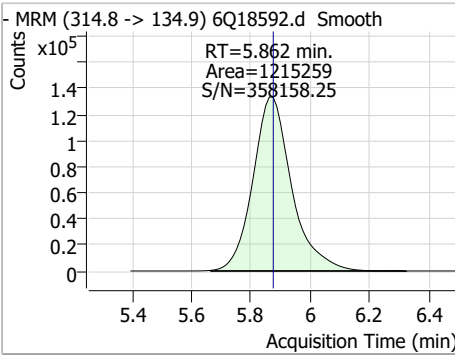
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Perfluorinated Compounds by LC/MS/MS

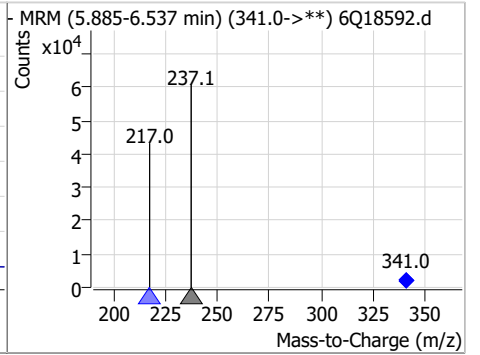
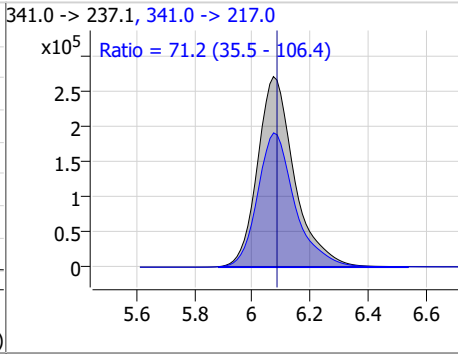
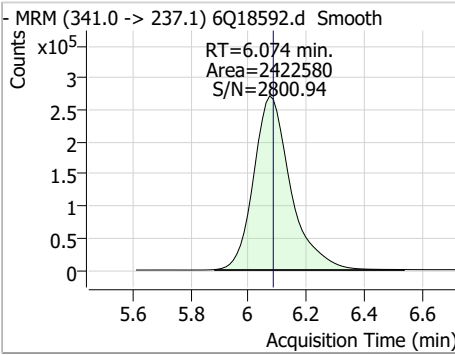
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.77	5.78	0.00	176481	284.9 -> 184.9	11.7	6.8	20.4



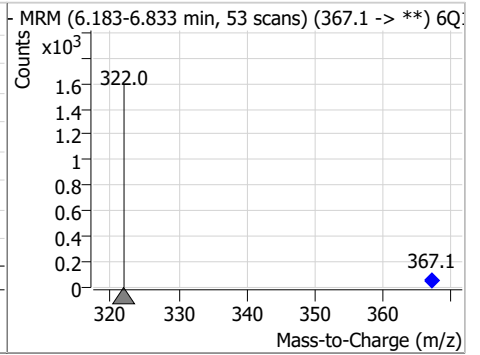
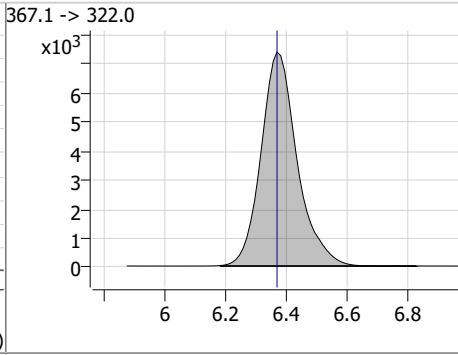
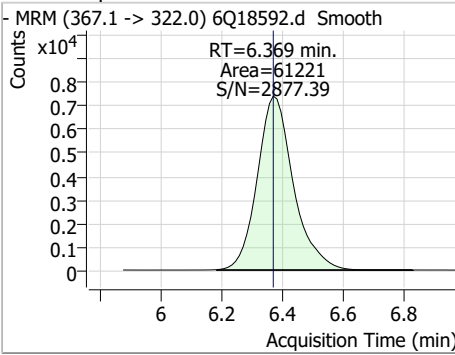
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	44.07	5.86	-0.01	1215259	314.8 -> 82.9	3.5	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	619.95	6.07	-0.01	2422580	341.0 -> 217.0	71.2	35.5	106.4

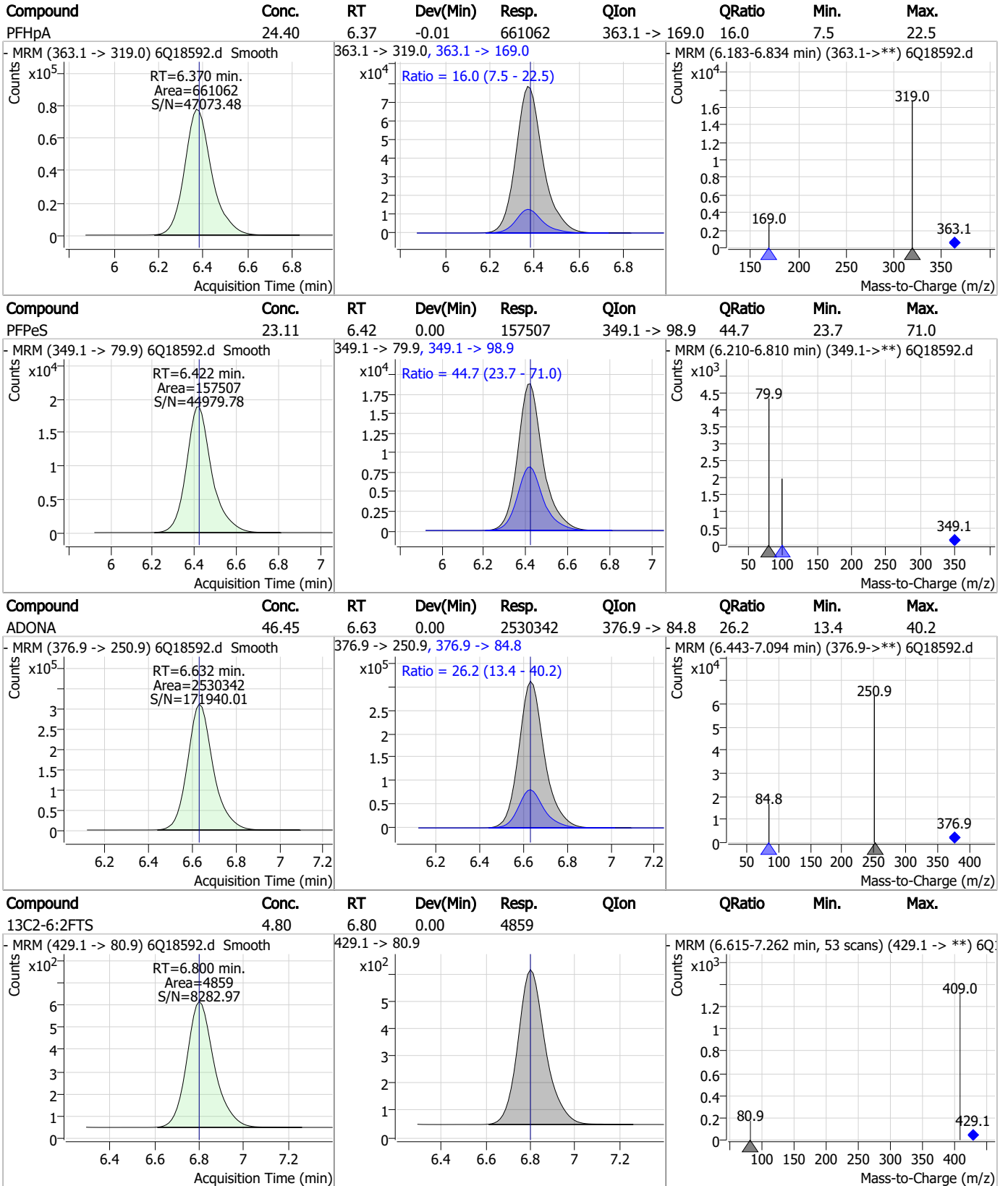


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	6.37	0.00	61221	367.1 -> 322.0			



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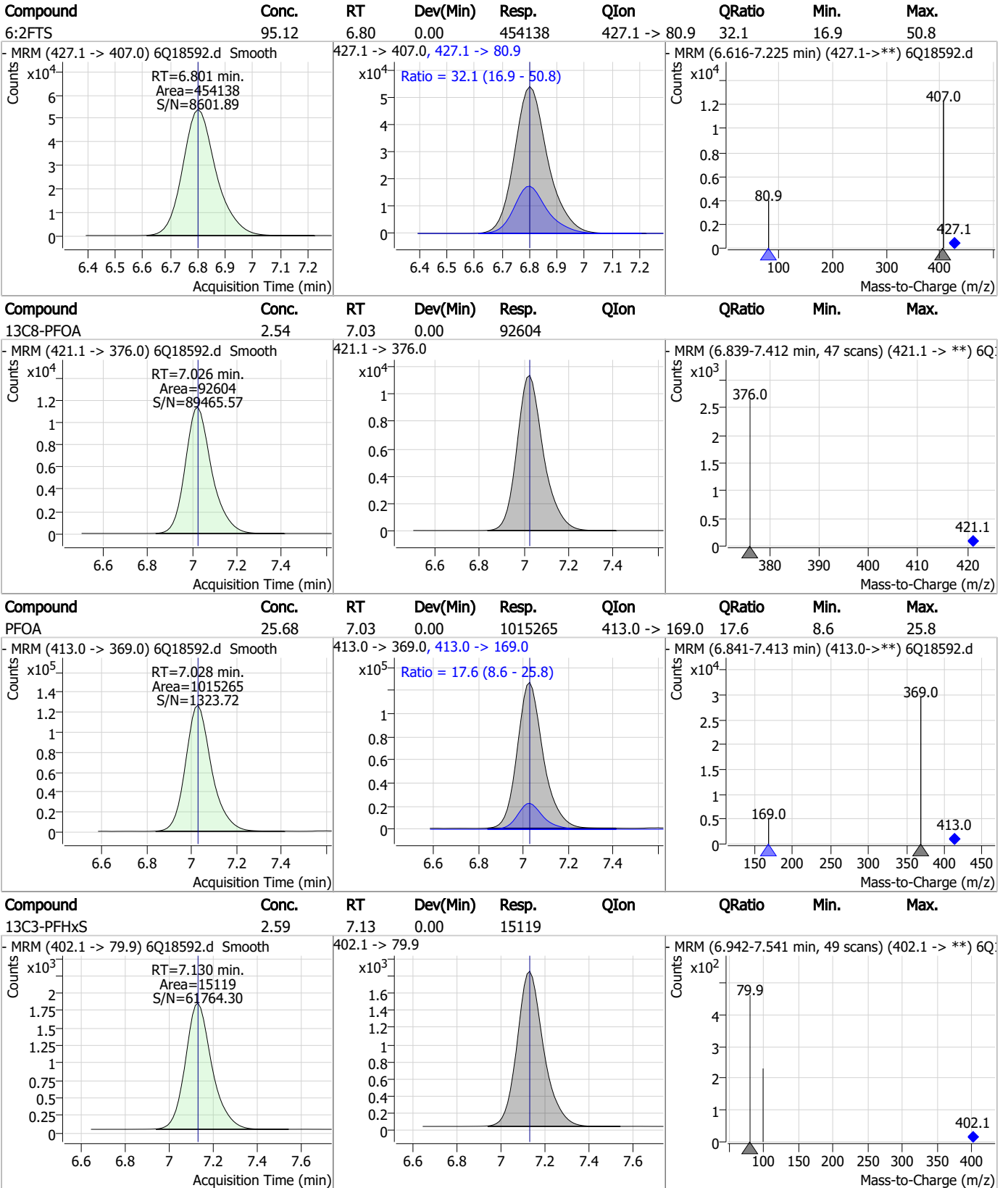
Perfluorinated Compounds by LC/MS/MS



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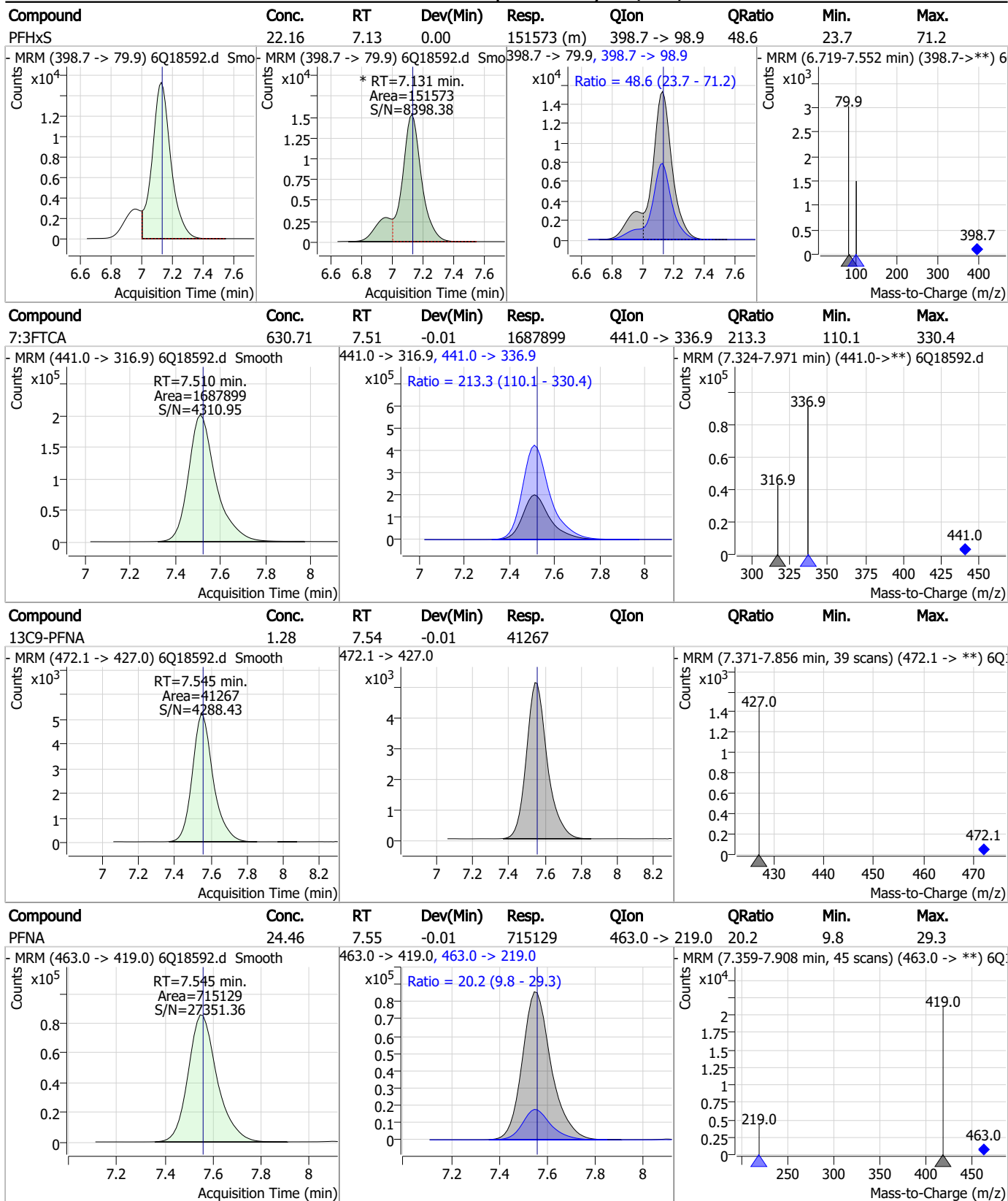


Perfluorinated Compounds by LC/MS/MS



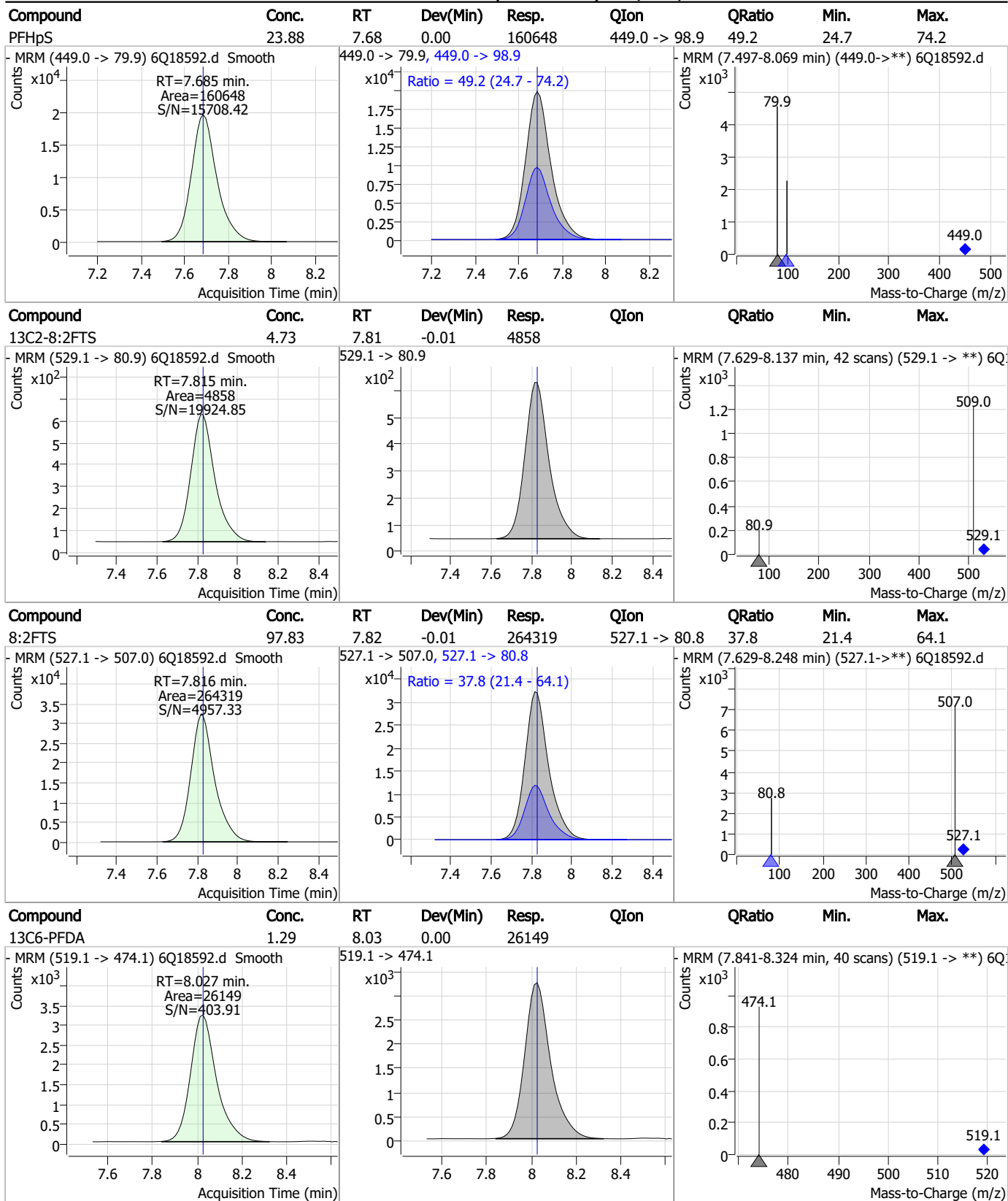
7.7.23 7

Perfluorinated Compounds by LC/MS/MS



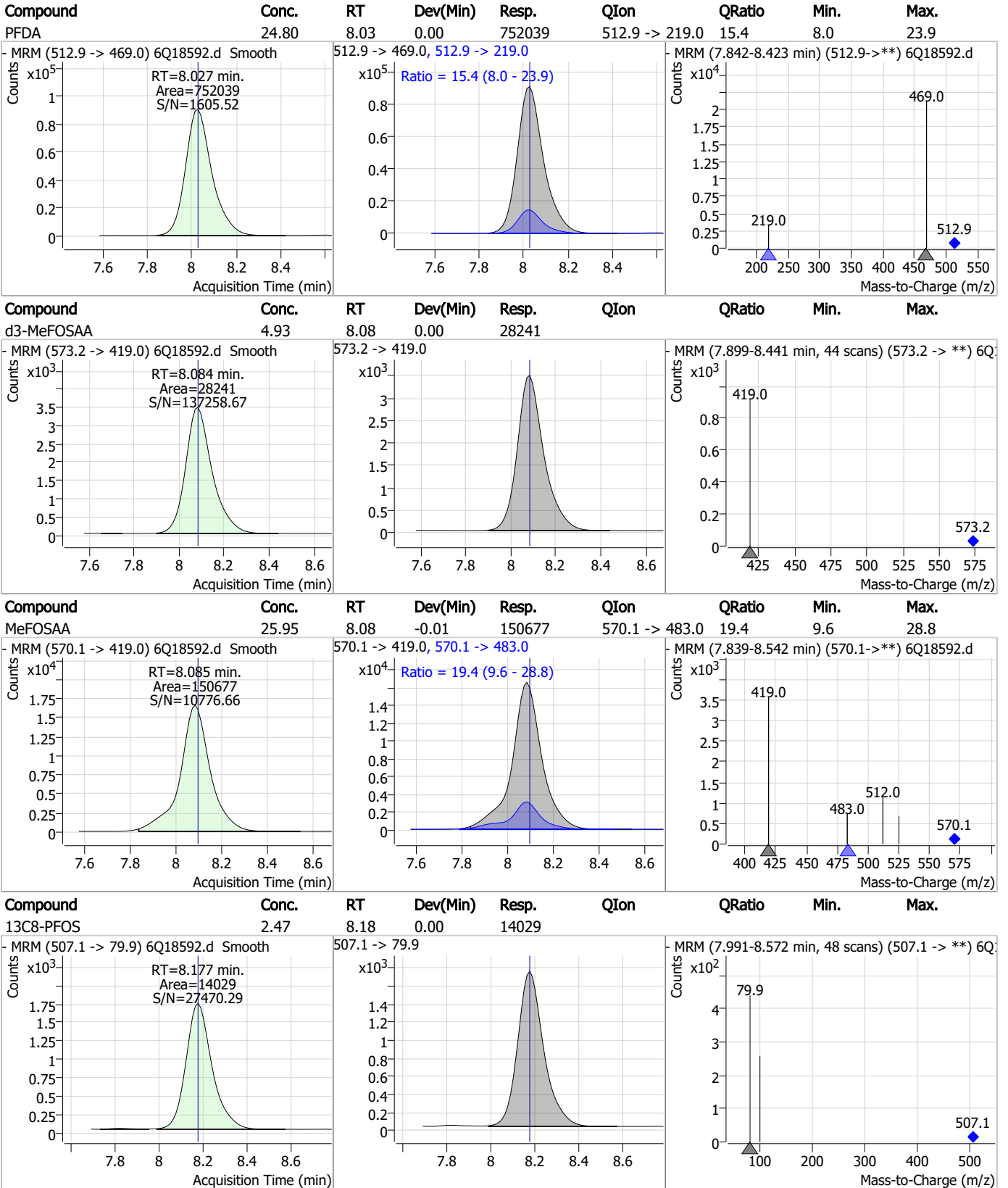
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Perfluorinated Compounds by LC/MS/MS



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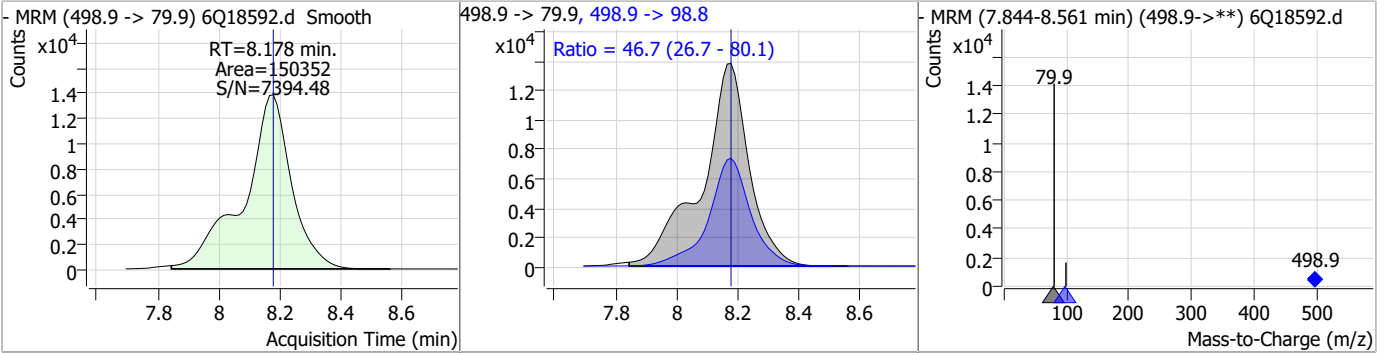
Perfluorinated Compounds by LC/MS/MS



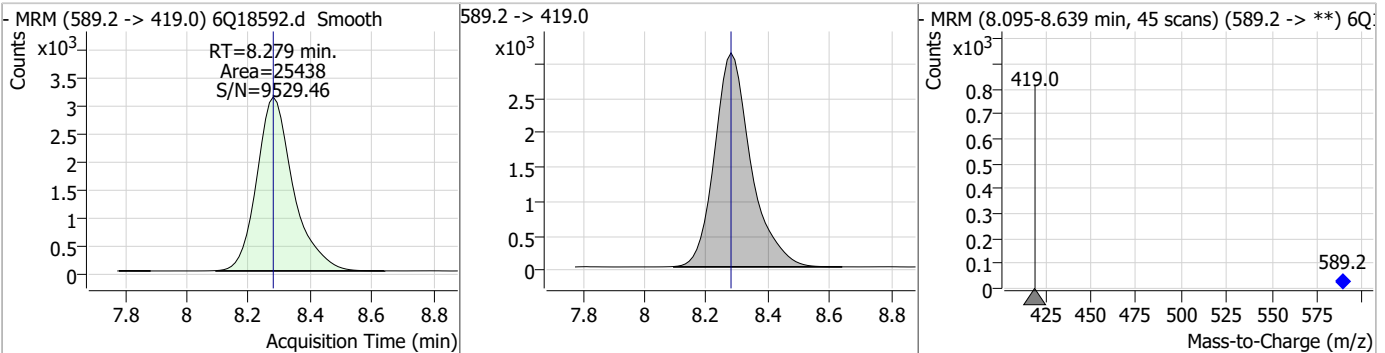
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Perfluorinated Compounds by LC/MS/MS

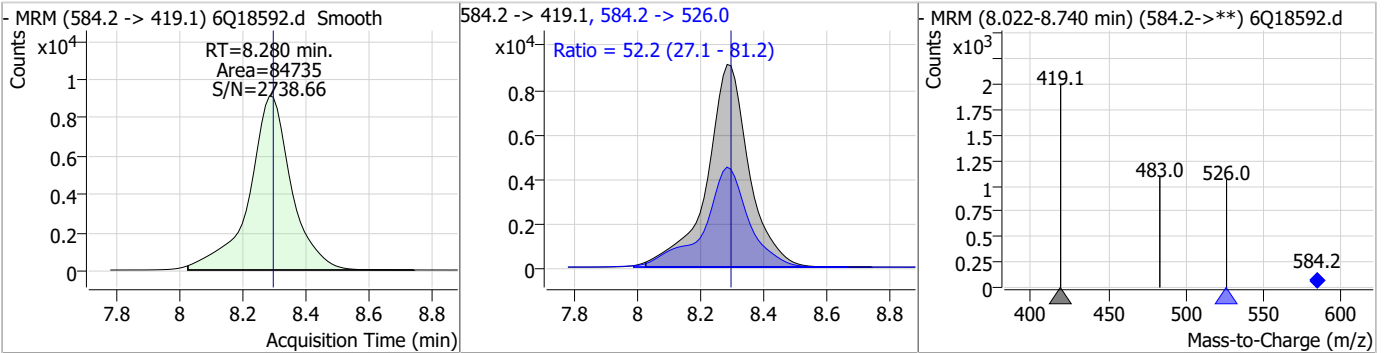
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.45	8.18	0.00	150352	498.9 -> 98.8	46.7	26.7	80.1



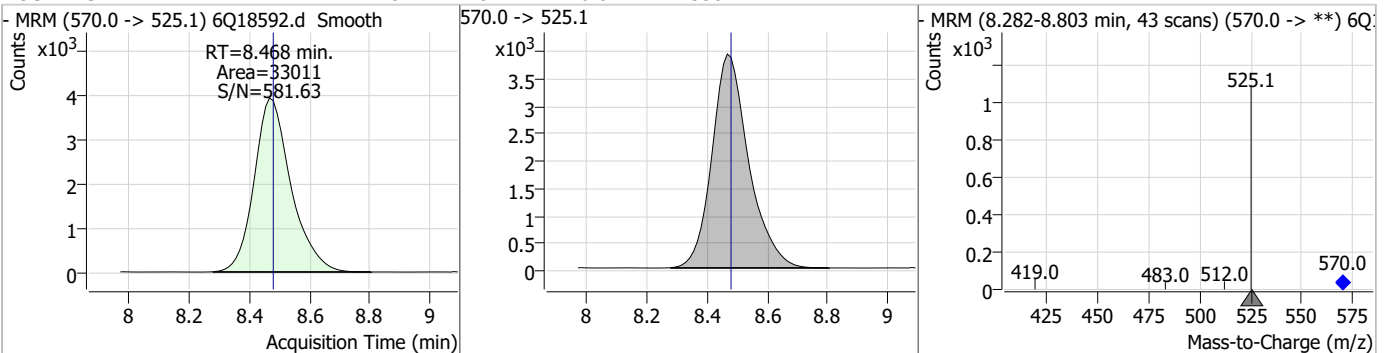
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.88	8.28	0.00	25438				



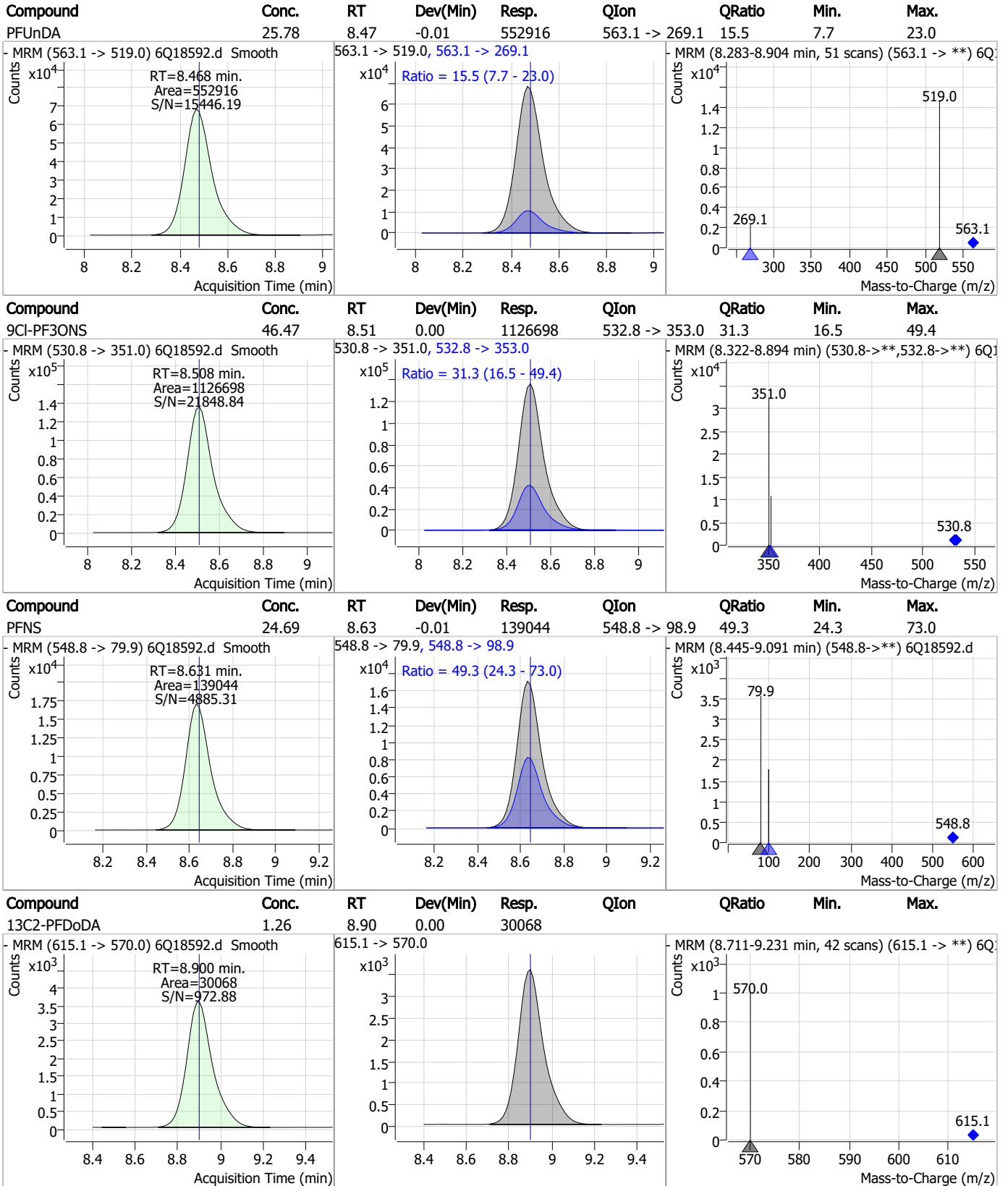
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	25.89	8.28	-0.01	84735	584.2 -> 526.0	52.2	27.1	81.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.47	-0.01	33011				



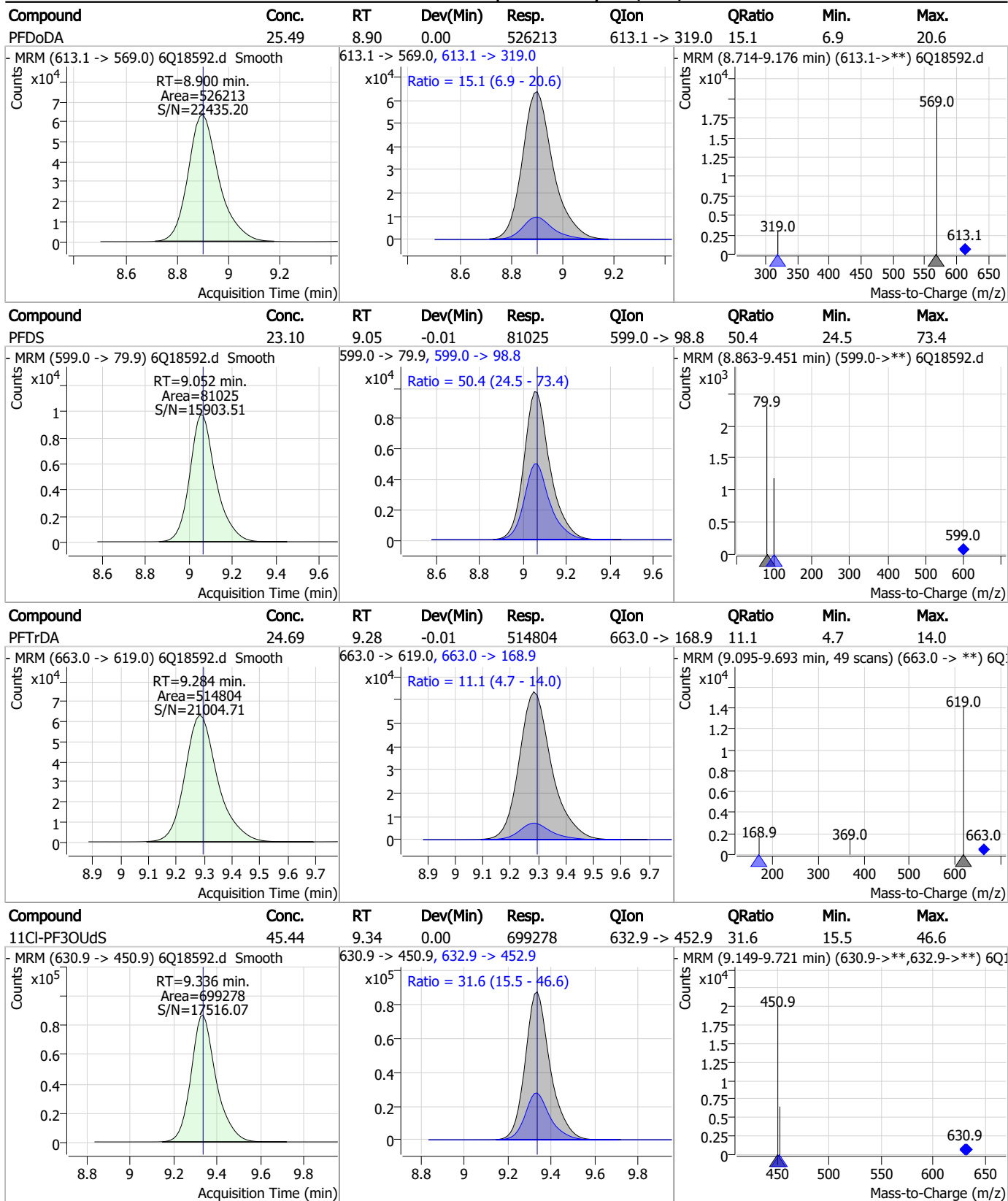
Perfluorinated Compounds by LC/MS/MS



7.7.23 7

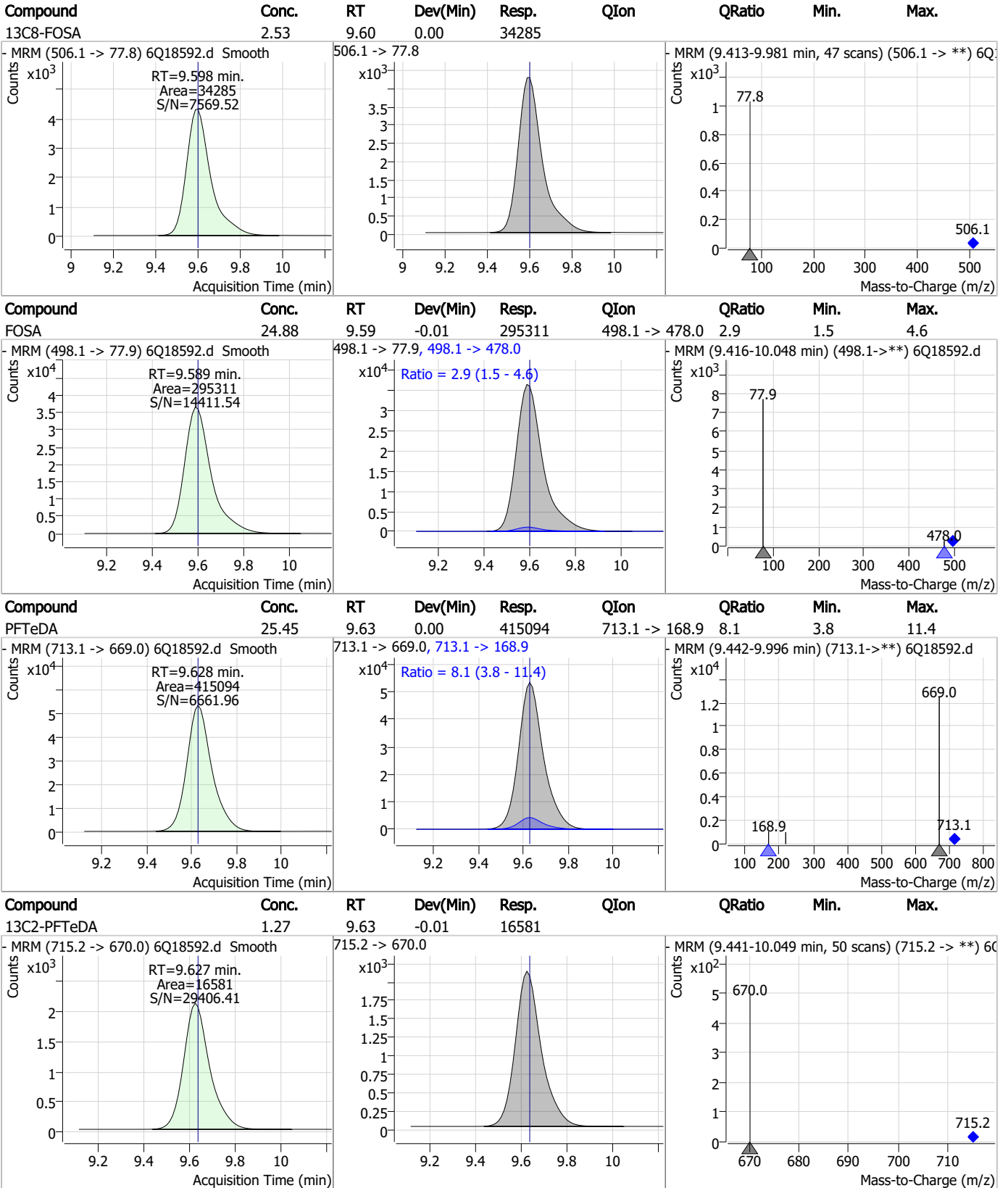


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

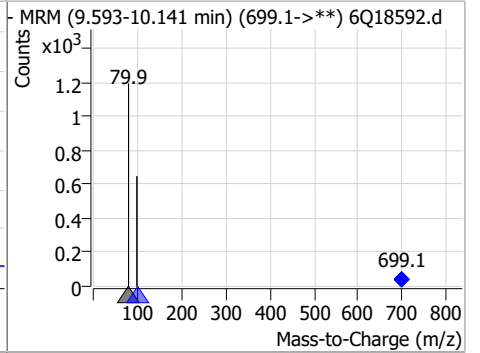
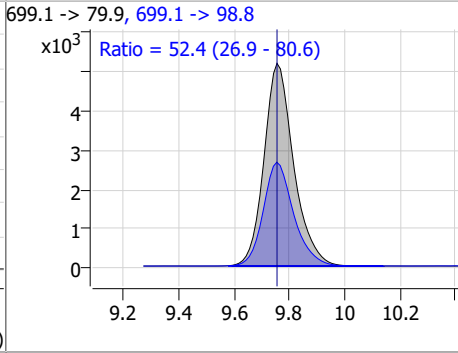
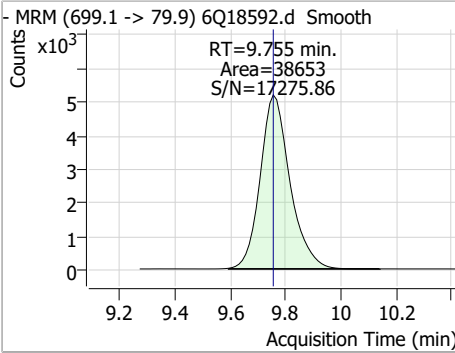


7.7.23 7

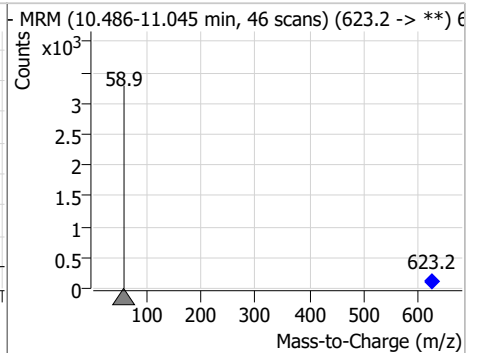
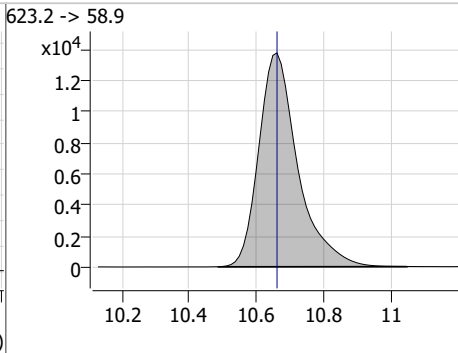
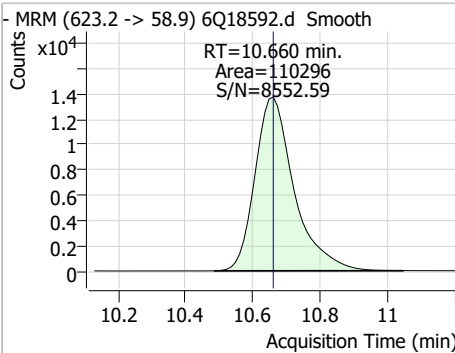


Perfluorinated Compounds by LC/MS/MS

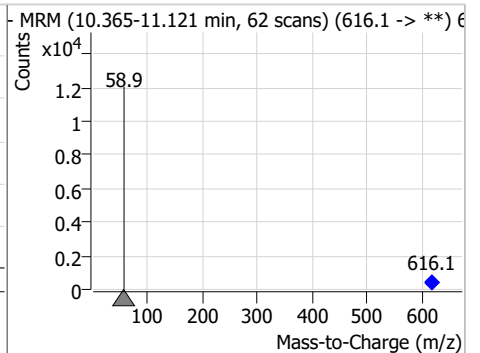
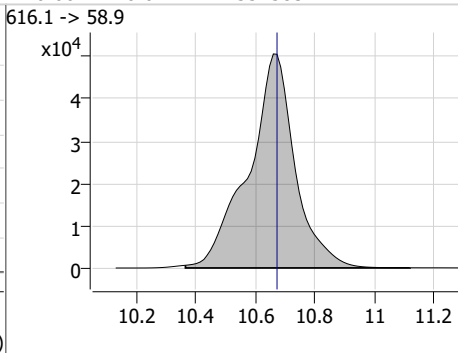
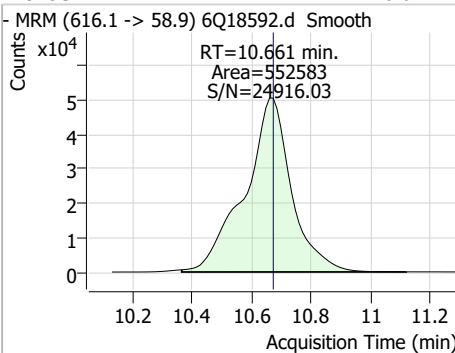
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	24.80	9.75	0.00	38653	699.1 -> 98.8	52.4	26.9	80.6



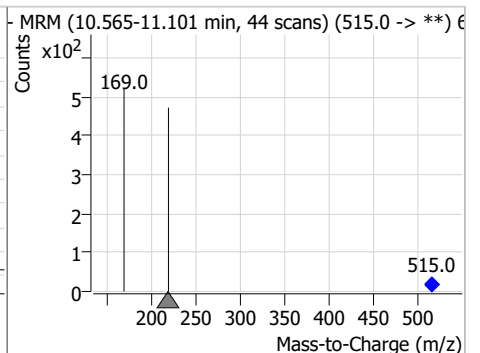
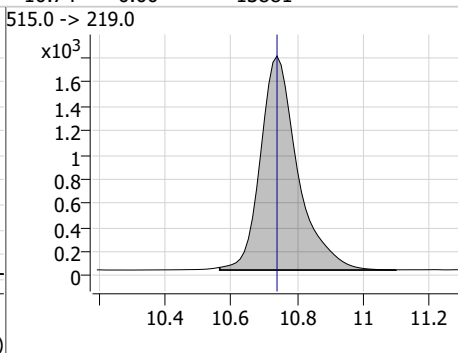
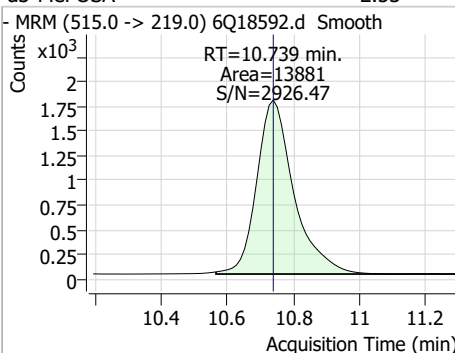
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.74	10.66	0.00	110296				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	126.07	10.66	-0.01	552583				



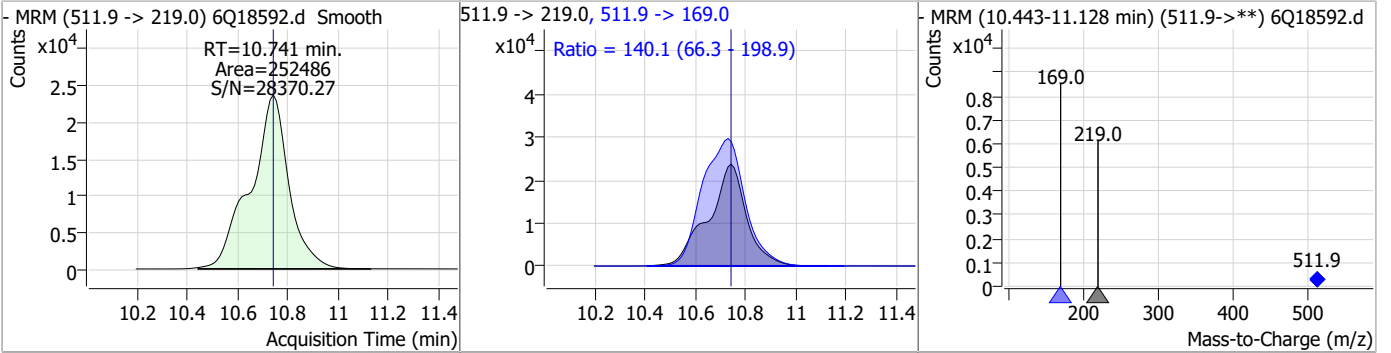
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.53	10.74	0.00	13881				



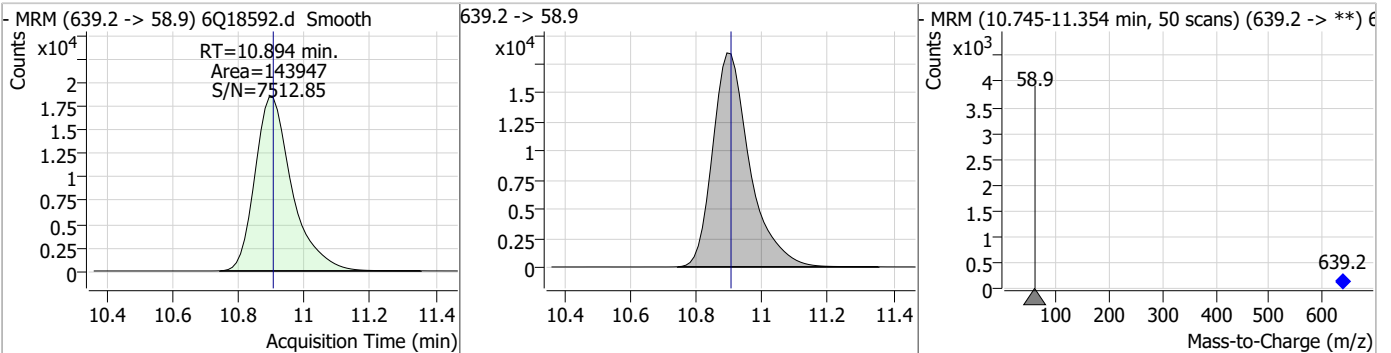
7.7.23
7

Perfluorinated Compounds by LC/MS/MS

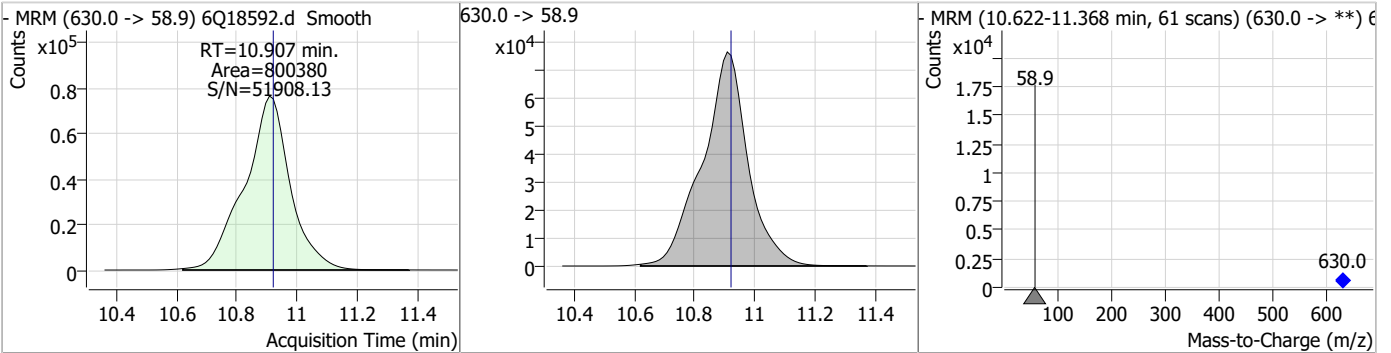
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.46	10.74	0.00	252486	511.9 -> 169.0	140.1	66.3	198.9



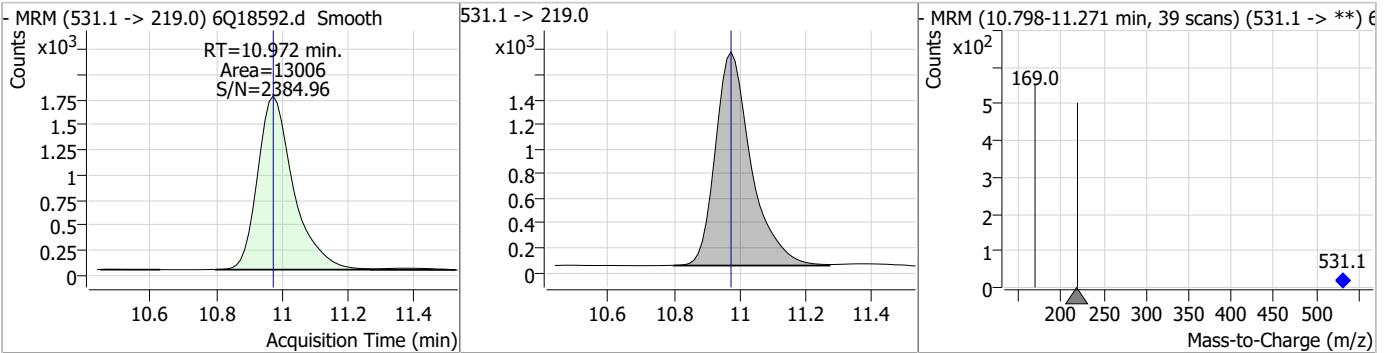
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.68	10.89	-0.01	143947				



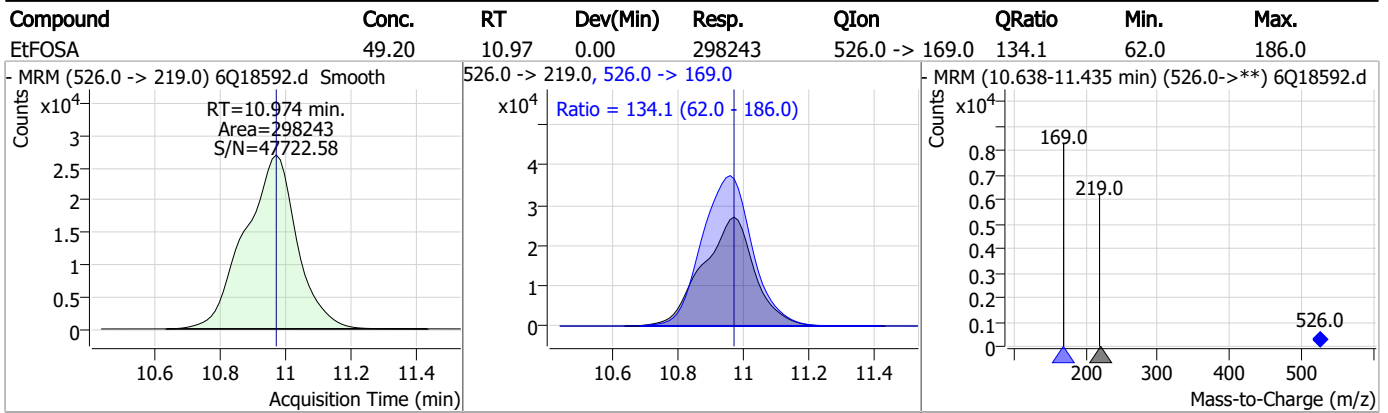
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	124.63	10.91	-0.01	800380				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.50	10.97	0.00	13006				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18592.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:43 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18593.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:57:48 PM
 Sample Name : ic279-8
 Vial : P1-A9
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	164700	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58183	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	61194	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	57581	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	88048	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	40750	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24672	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	31035	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31036	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16403	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	32407	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	22054	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	14812	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13909	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3073	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4551	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4892	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	25736	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40478	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26530	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	102229	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	133237	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12467	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14213	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17067	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	69548	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11007	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	96660	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34426	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	47576	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	60813	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3073	4.19 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 83.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4551	4.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.4%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4892	4.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.5%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31036	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16403	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C3-PFBS	5.322	302.1 -> 79.9	22054	2.26 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 90.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	14812	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 = 96.4%	
13C4-PFBA	2.822	216.8 -> 171.9	164700	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFHpA	6.369	367.1 -> 322.0	57581	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C5-PFHxA	5.404	318.0 -> 273.0	61194	2.38 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C5-PFPeA	4.210	268.3 -> 223.0	58183	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C6-PFDA	8.027	519.1 -> 474.1	24672	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31035	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C8-FOSA	9.598	506.1 -> 77.8	32407	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOA	7.026	421.1 -> 376.0	88048	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOS	8.177	507.1 -> 79.9	13909	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C9-PFNA	7.545	472.1 -> 427.0	40750	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25736	4.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40478	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	14213	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26530	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
d7-MeFOSE	10.660	623.2 -> 58.9	102229	23.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	133237	23.77 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	12467	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	954876	213.90 µg/L	95
		327.1 -> 80.9	348699		
6:2FTS	6.801	427.1 -> 407.0	895923	200.34 µg/L	99
		427.1 -> 80.9	310885		
8:2FTS	7.816	527.1 -> 507.0	534956	196.60 µg/L	94
		527.1 -> 80.8	208860		
EtFOSAA	8.280	584.2 -> 419.1	202511	59.33 µg/L	96
		584.2 -> 526.0	103330		
FOSA	9.589	498.1 -> 77.9	665967	59.37 µg/L	100
		498.1 -> 478.0	20420		
MeFOSAA	8.085	570.1 -> 419.0	330253	62.41 µg/L	100
		570.1 -> 483.0	63777		
PFBA	2.818	212.8 -> 168.9	1319896	242.06 µg/L	100
PFBS	5.323	298.7 -> 79.9	418240	55.74 µg/L	99
		298.7 -> 98.8	153640		
PFDA	8.027	512.9 -> 469.0	1793791	62.71 µg/L	98
		512.9 -> 219.0	270042		
PFDoDA	8.900	613.1 -> 569.0	1199772	56.30 µg/L	96
		613.1 -> 319.0	183508		
PFDS	9.064	599.0 -> 79.9	193689	55.70 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	97226			
PFHpA	6.370	363.1 -> 319.0	1584265	62.17	µg/L	97
		363.1 -> 169.0	256962			
PFHpS	7.685	449.0 -> 79.9	381288	57.18	µg/L	98
		449.0 -> 98.9	182291			
PFHxA	5.407	313.0 -> 269.0	1308494	63.69	µg/L	99
		313.0 -> 118.9	64395			
PFHxS	7.131	398.7 -> 79.9	349987	52.24	µg/L	m 97
		398.7 -> 98.9	174081			
PFNA	7.545	463.0 -> 419.0	1836171	63.59	µg/L	98
		463.0 -> 219.0	338668			
PFNS	8.631	548.8 -> 79.9	313808	56.21	µg/L	90
		548.8 -> 98.9	173944			
PFOA	7.028	413.0 -> 369.0	2352092	62.57	µg/L	100
		413.0 -> 169.0	408702			
PFOS	8.178	498.9 -> 79.9	358245	56.35	µg/L	93
		498.9 -> 98.8	173832			
PFPeA	4.212	263.0 -> 219.0	1677106	120.01	µg/L	100
PFPeS	6.422	349.1 -> 79.9	374345	56.08	µg/L	95
		349.1 -> 98.9	164186			
PFTeDA	9.628	713.1 -> 669.0	936983	58.07	µg/L	97
		713.1 -> 168.9	82003			
PFTrDA	9.284	663.0 -> 619.0	1167971	54.26	µg/L	96
		663.0 -> 168.9	124493			
PFUnDA	8.468	563.1 -> 519.0	1166697	57.85	µg/L	97
		563.1 -> 269.1	193233			
11CI-PF3OUdS	9.336	630.9 -> 450.9	1685097	110.95	µg/L	99
		632.9 -> 452.9	516091			
9CI-PF3ONS	8.508	530.8 -> 351.0	2667025	111.44	µg/L	95
		532.8 -> 353.0	808397			
ADONA	6.632	376.9 -> 250.9	5935424	110.40	µg/L	99
		376.9 -> 84.8	1547138			
HFPO-DA	5.783	284.9 -> 168.9	412278	120.17	µg/L	96
		284.9 -> 184.9	48712			
3:3FTCA	3.671	241.0 -> 177.0	277738	310.54	µg/L	96
		241.0 -> 117.0	36199			
5:3FTCA	6.074	341.0 -> 237.1	5595577	1513.86	µg/L	96
		341.0 -> 217.0	4166787			
7:3FTCA	7.510	441.0 -> 316.9	3782443	1494.24	µg/L	90
		441.0 -> 336.9	8936470			
EtFOSA	10.974	526.0 -> 219.0	712424	122.60	µg/L	99
		526.0 -> 169.0	891954			
EtFOSE	10.907	630.0 -> 58.9	1779906	299.44	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	596067	114.04	µg/L	96
		511.9 -> 169.0	818238			
MeFOSE	10.673	616.1 -> 58.9	1264982	311.37	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	90931	58.86	µg/L	98
		699.1 -> 98.8	47551			
NFDHA	5.288	295.0 -> 201.0	293121	117.17	µg/L	98
		295.0 -> 84.9	76201			
PFMBA	4.626	279.0 -> 85.1	1130590	118.88	µg/L	100
PFMPA	3.351	229.0 -> 84.9	900418	121.74	µg/L	100
PFEESA	5.875	314.8 -> 134.9	2873554	110.18	µg/L	99
		314.8 -> 82.9	98610			

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

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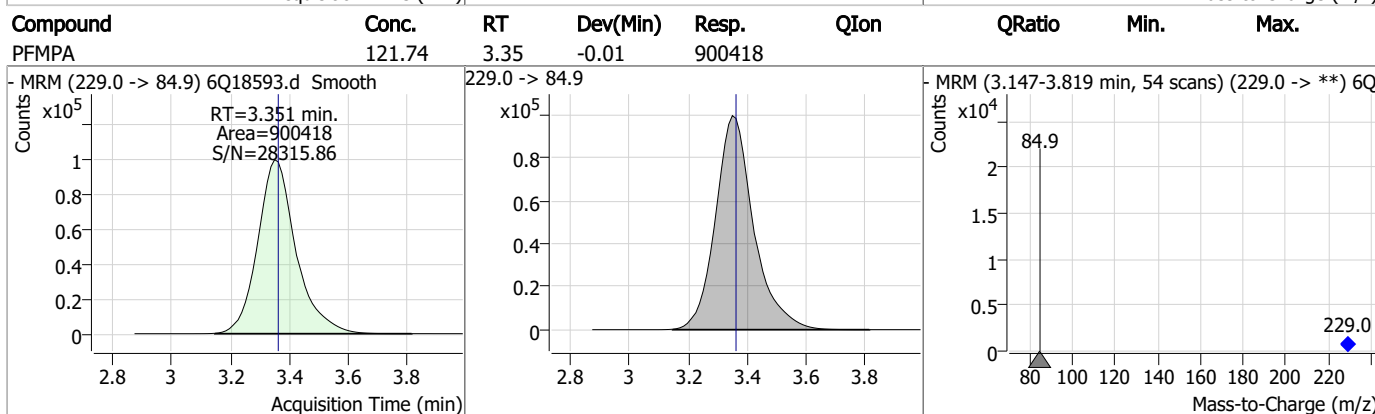
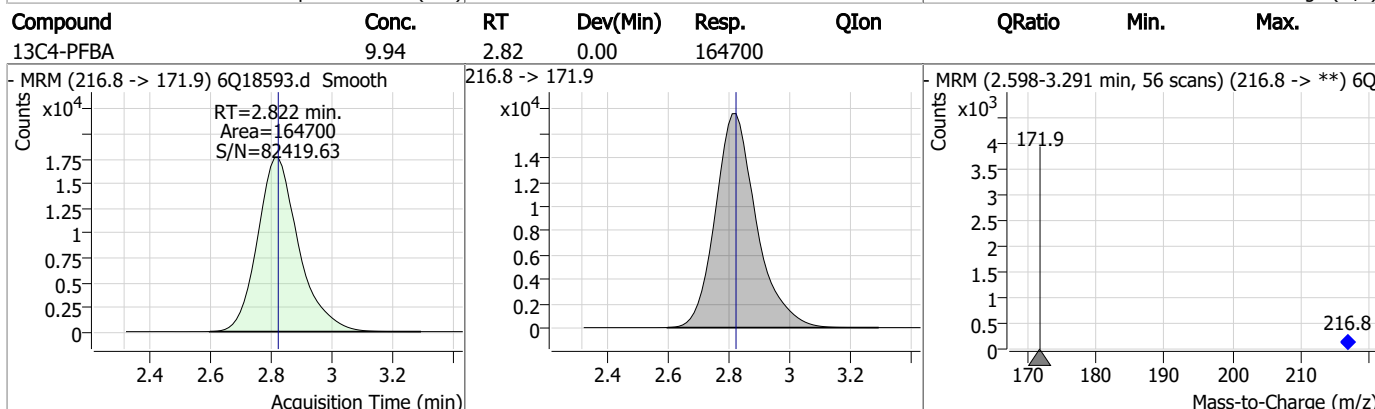
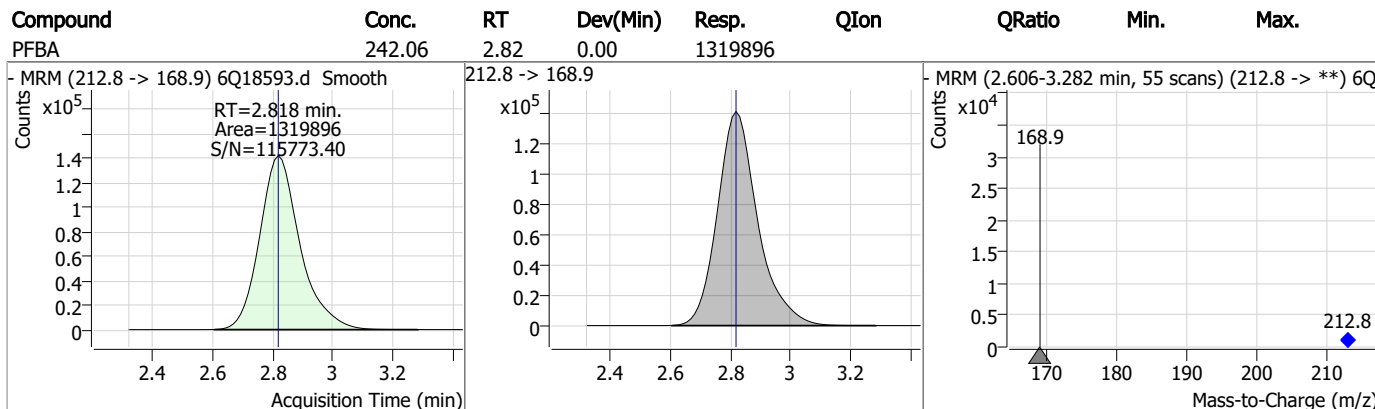
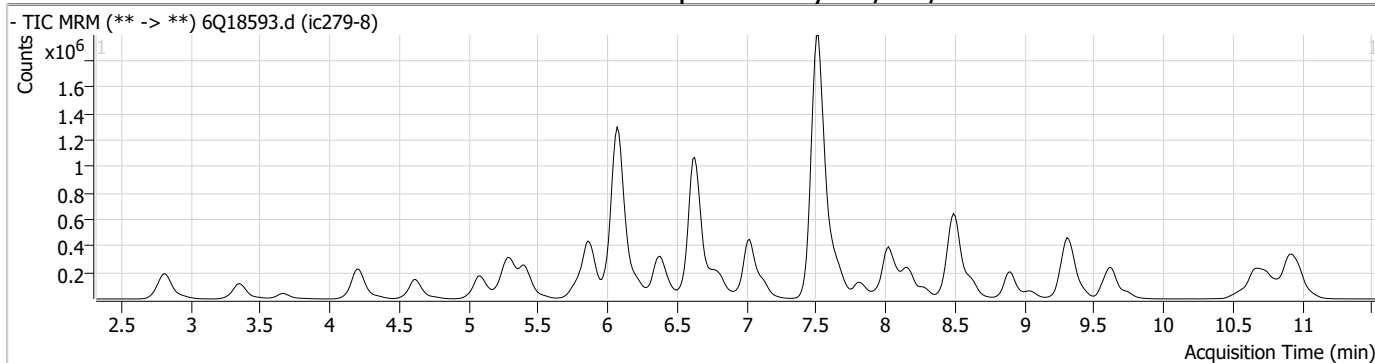
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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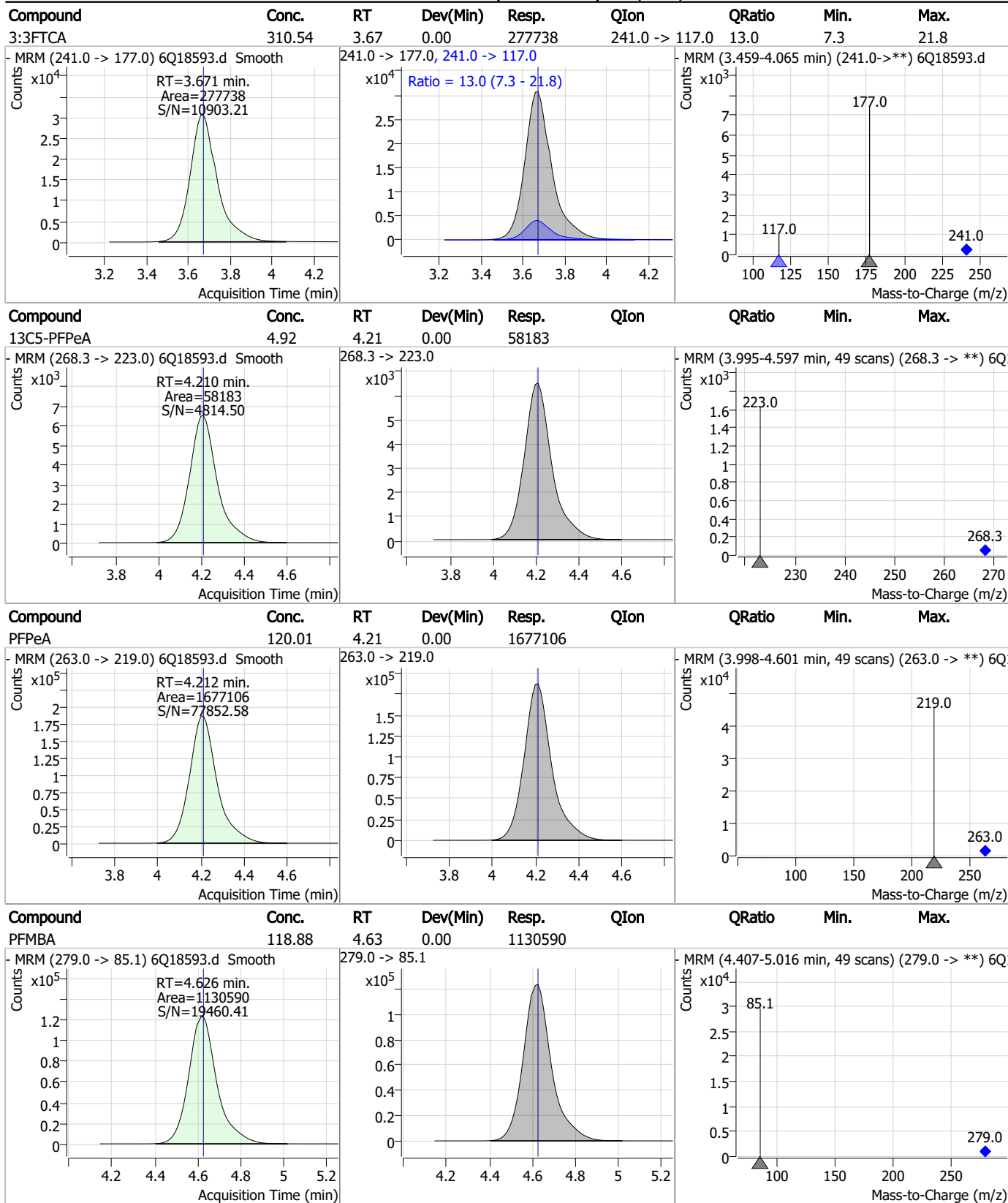
7.7.24

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Perfluorinated Compounds by LC/MS/MS



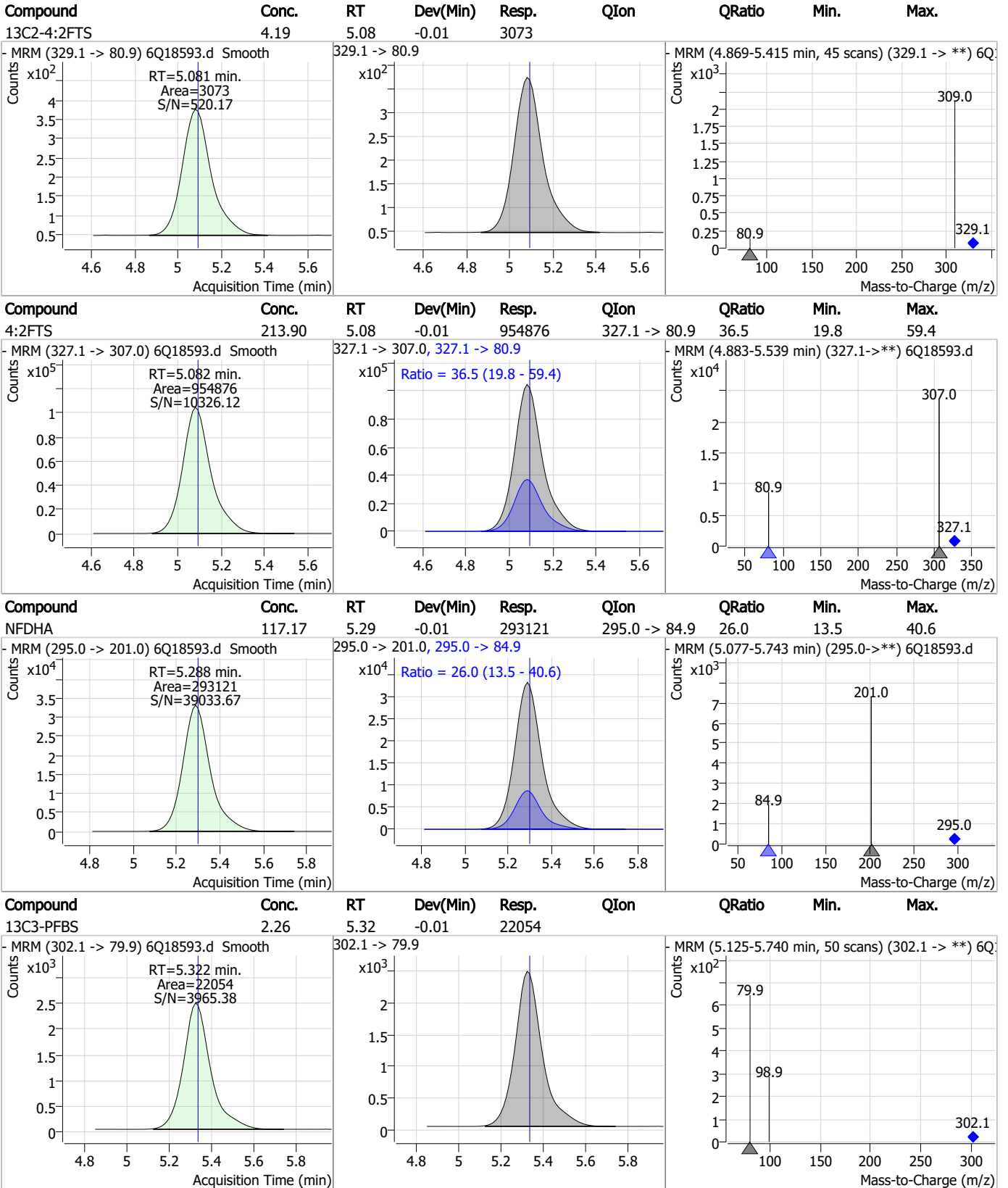
Perfluorinated Compounds by LC/MS/MS



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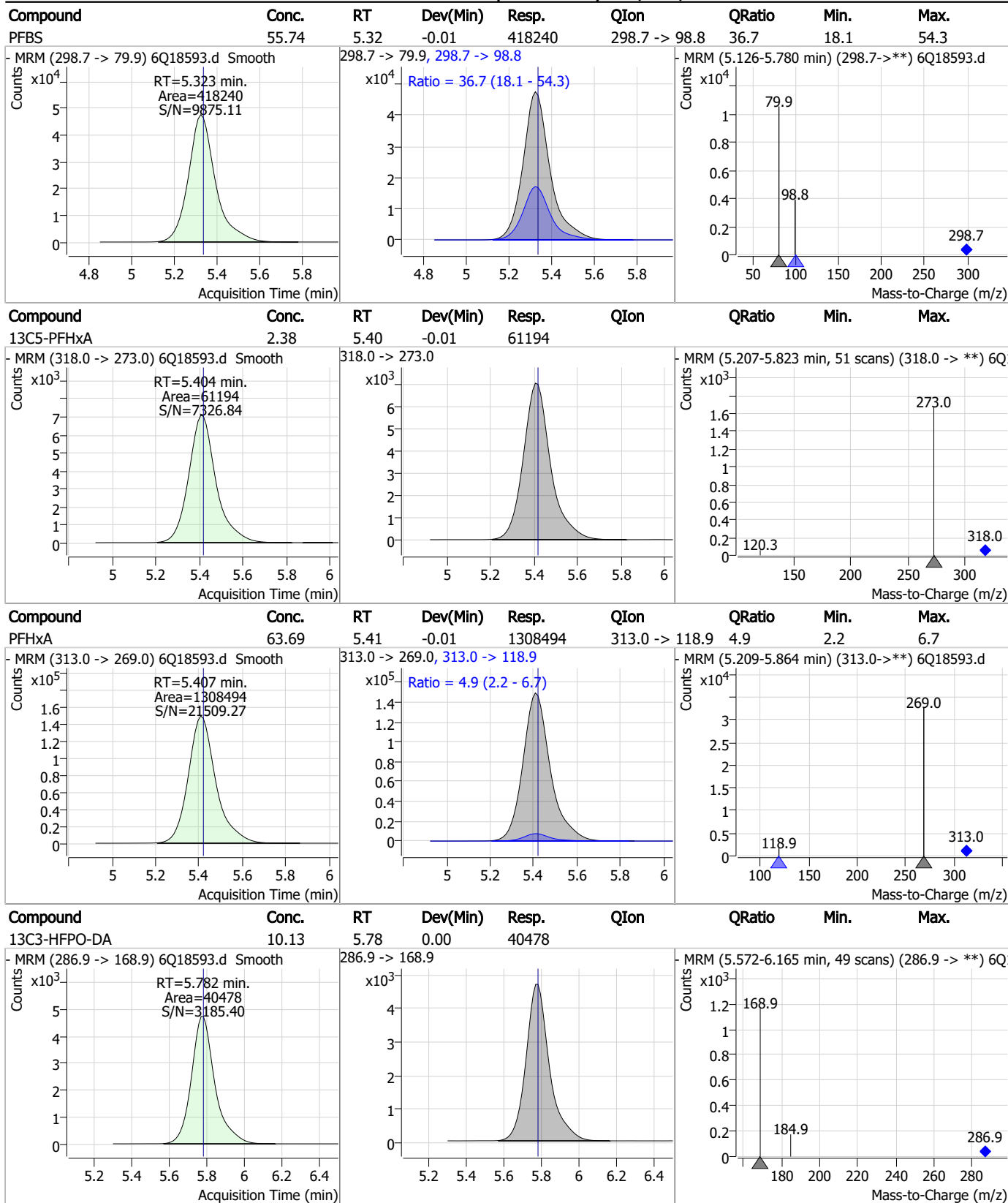
7

Perfluorinated Compounds by LC/MS/MS



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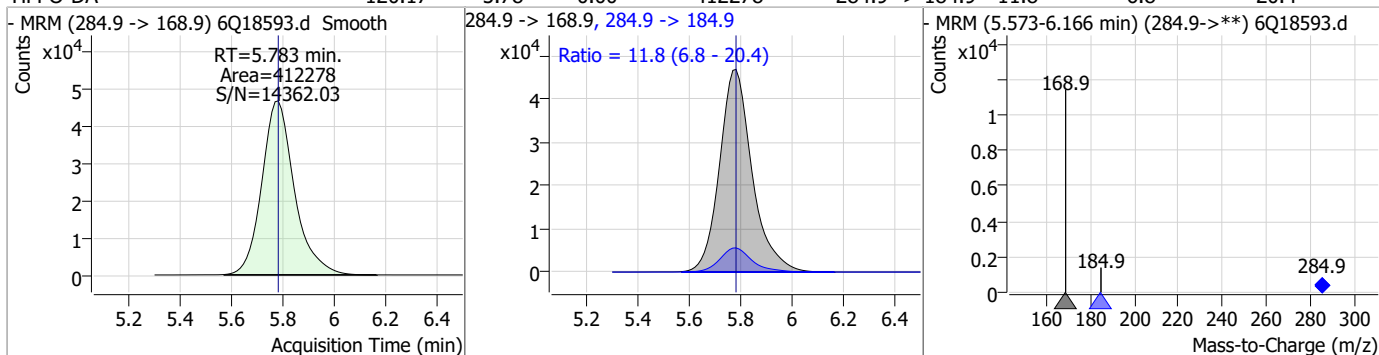
Perfluorinated Compounds by LC/MS/MS



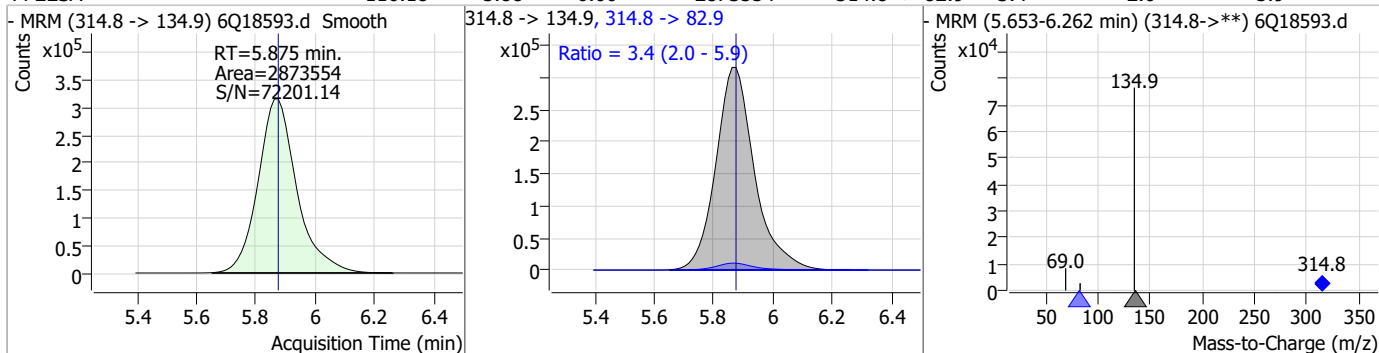
7.7.24
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Perfluorinated Compounds by LC/MS/MS

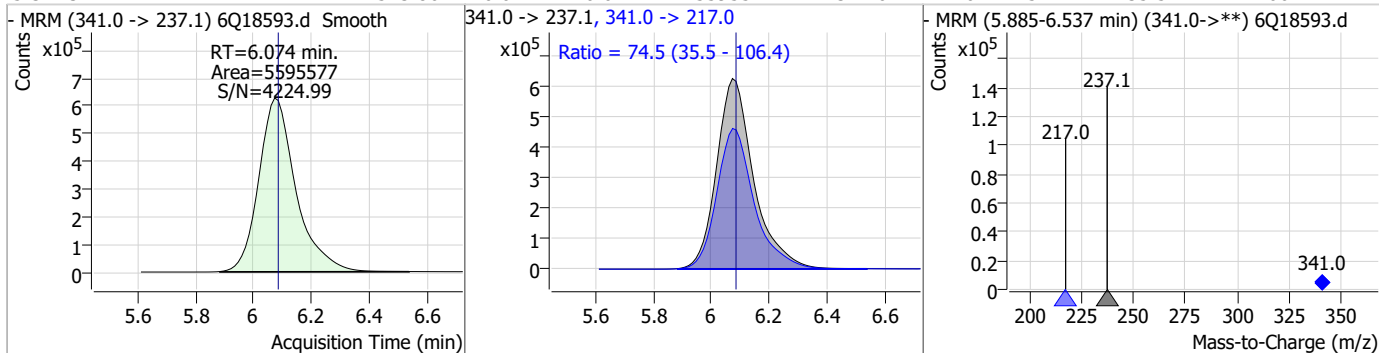
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	120.17	5.78	0.00	412278	284.9 -> 184.9	11.8	6.8	20.4



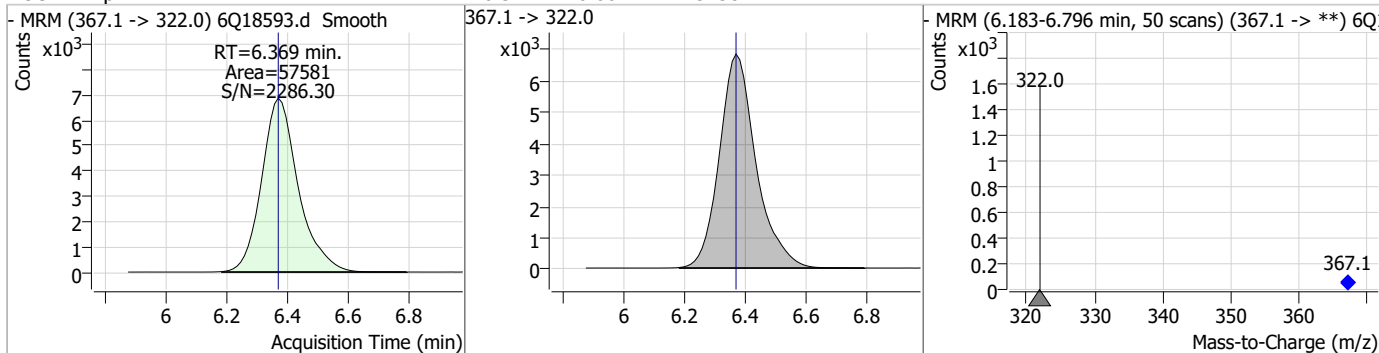
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	110.18	5.88	0.00	2873554	314.8 -> 82.9	3.4	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1513.86	6.07	-0.01	5595577	341.0 -> 217.0	74.5	35.5	106.4

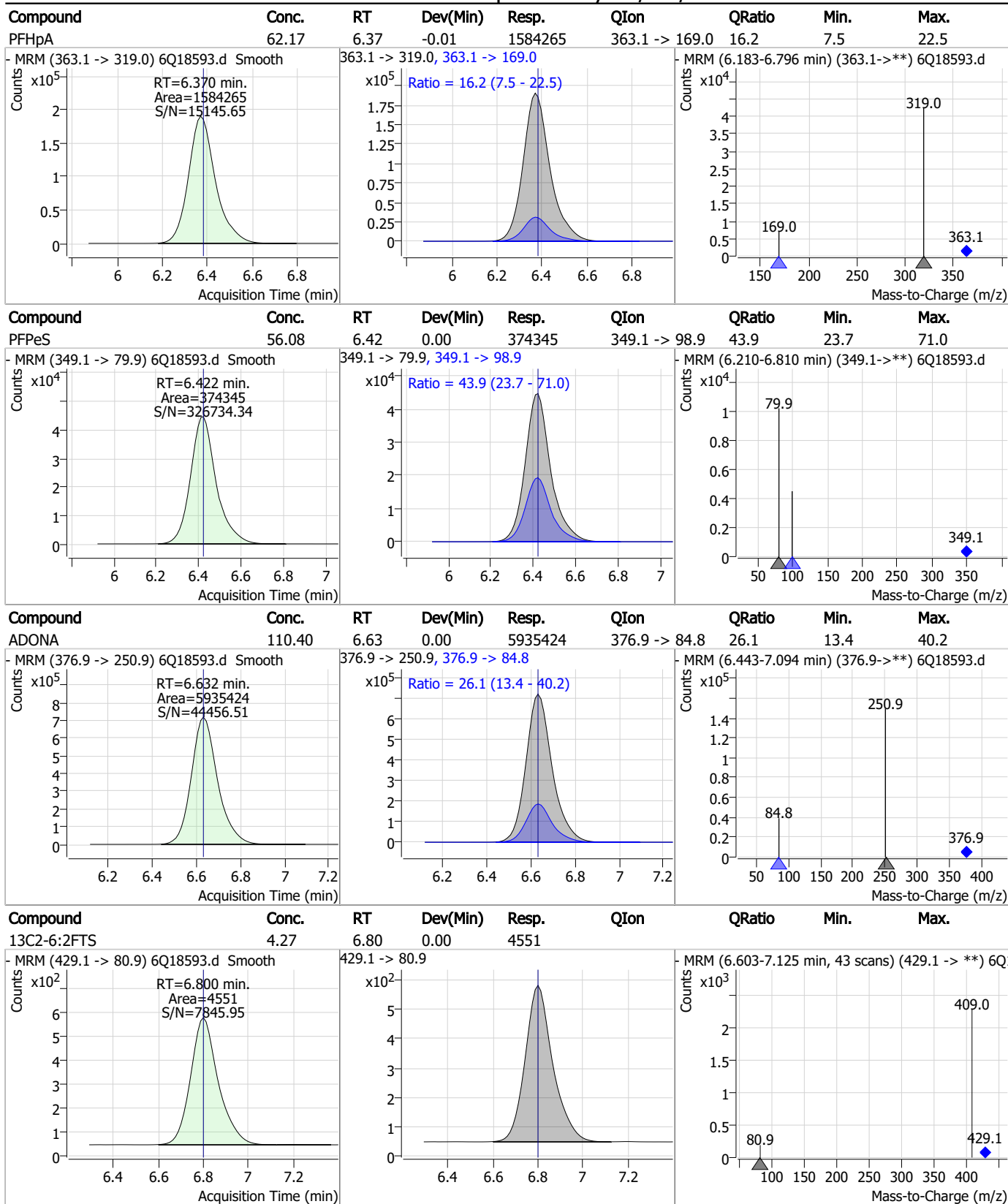


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.42	6.37	0.00	57581	367.1 -> 322.0			



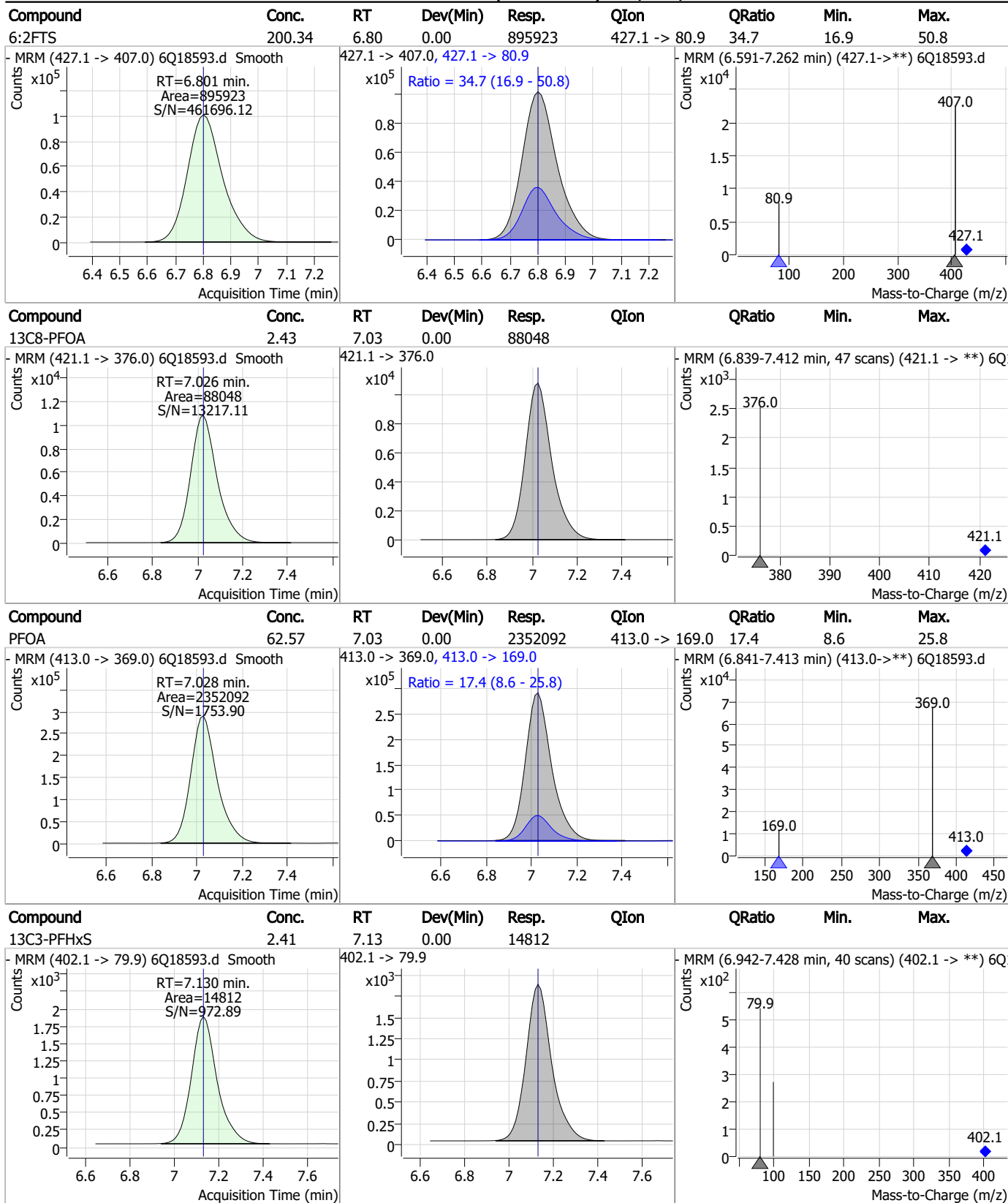
7.7.24 7

Perfluorinated Compounds by LC/MS/MS



7.7.24
7

Perfluorinated Compounds by LC/MS/MS

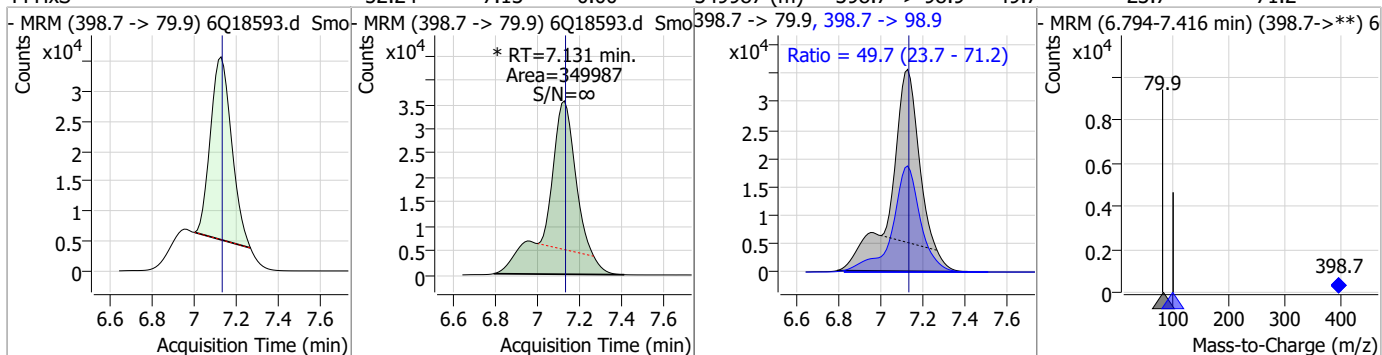


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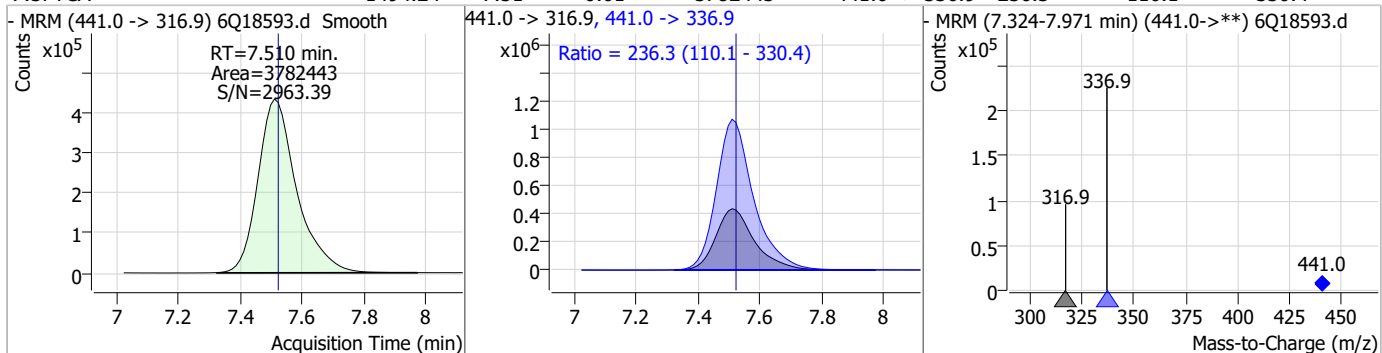
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Perfluorinated Compounds by LC/MS/MS

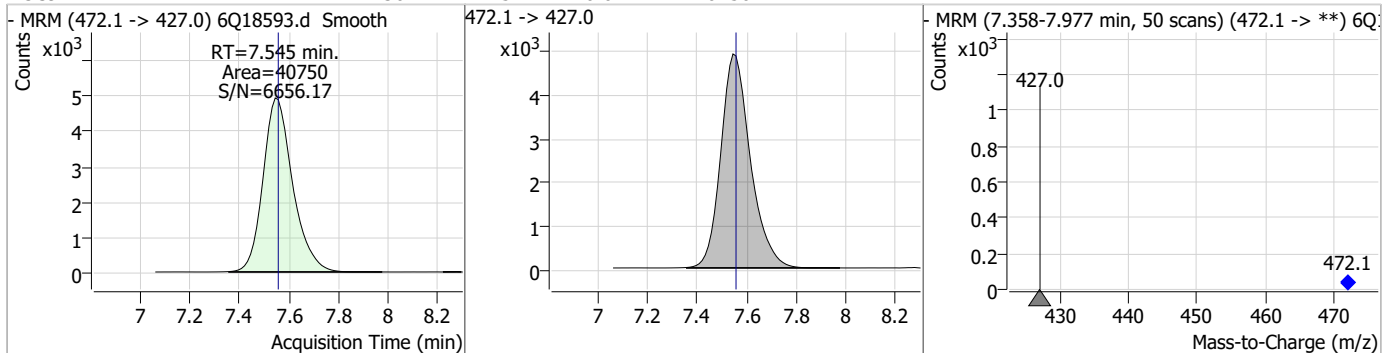
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	52.24	7.13	0.00	349987 (m)	398.7 -> 98.9	49.7	23.7	71.2



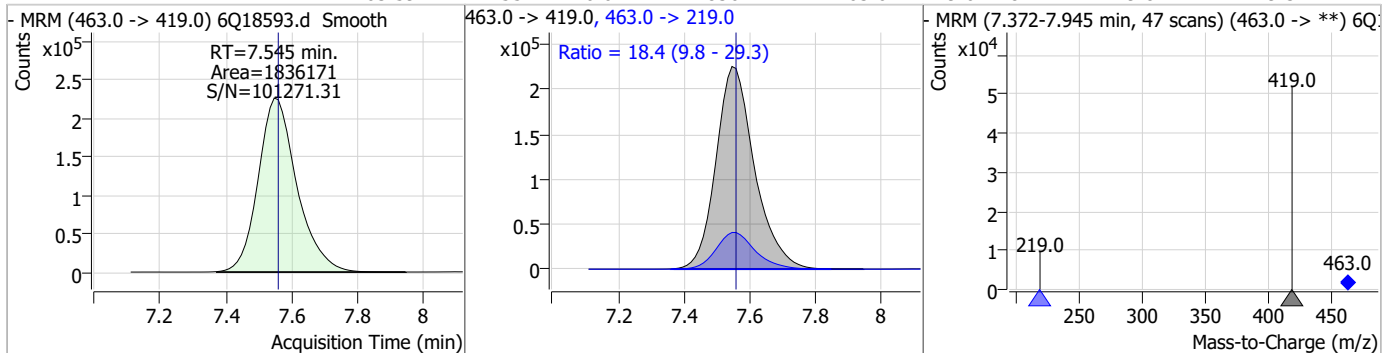
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1494.24	7.51	-0.01	3782443	441.0 -> 336.9	236.3	110.1	330.4



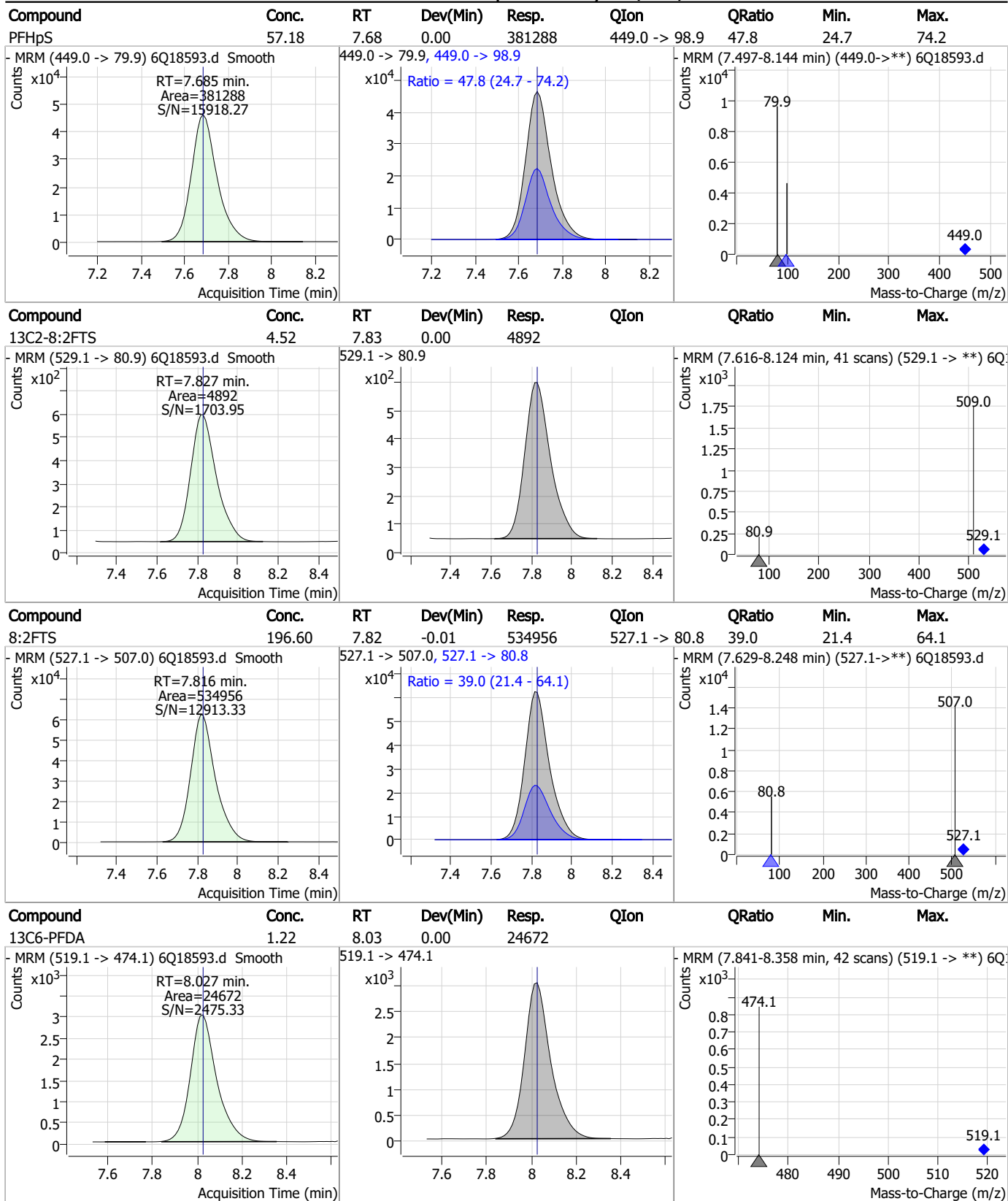
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.30	7.54	-0.01	40750				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	63.59	7.55	-0.01	1836171	463.0 -> 219.0	18.4	9.8	29.3

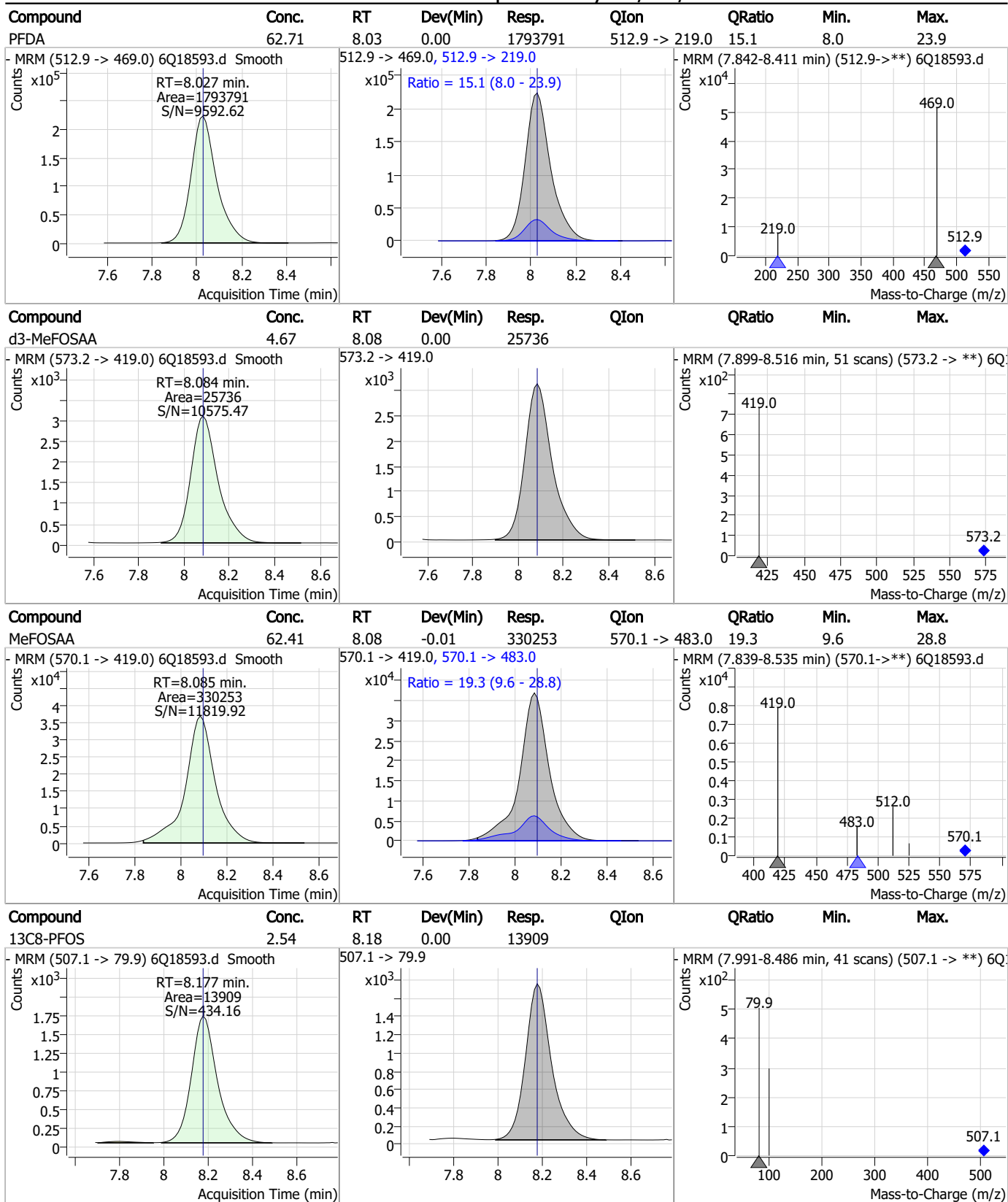


Perfluorinated Compounds by LC/MS/MS



7.7.24

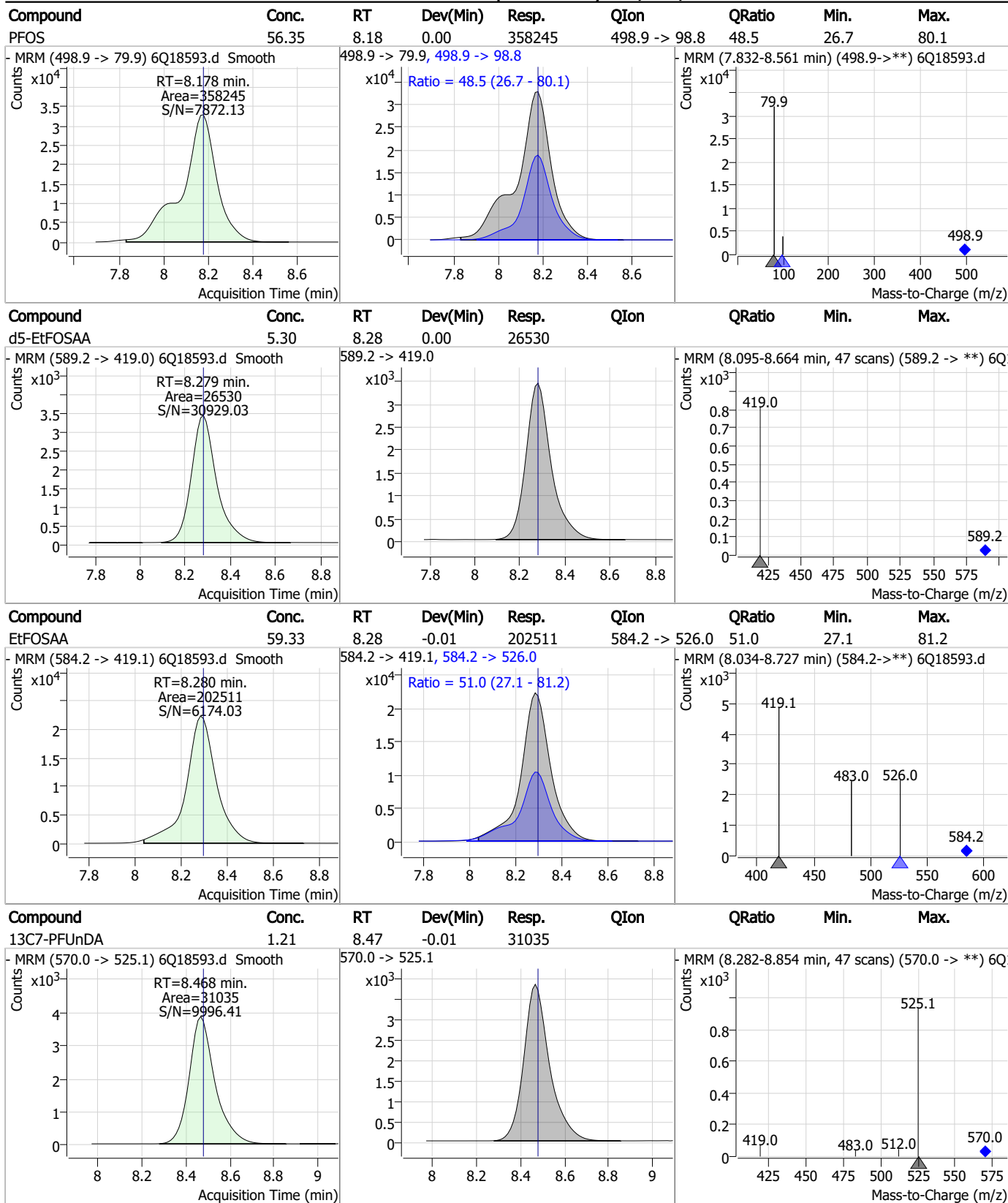
Perfluorinated Compounds by LC/MS/MS



7.7.24

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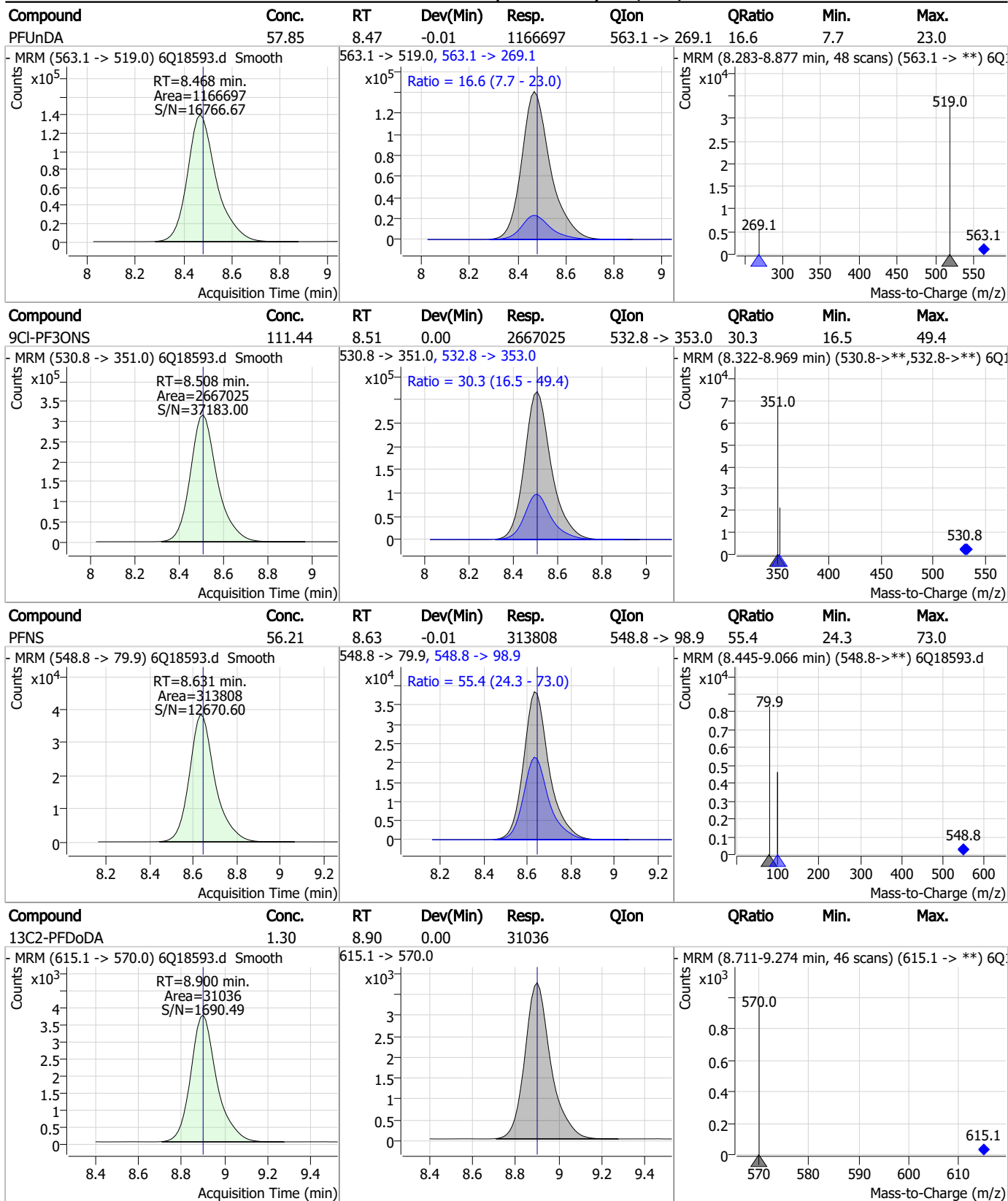
Perfluorinated Compounds by LC/MS/MS



7.7.24
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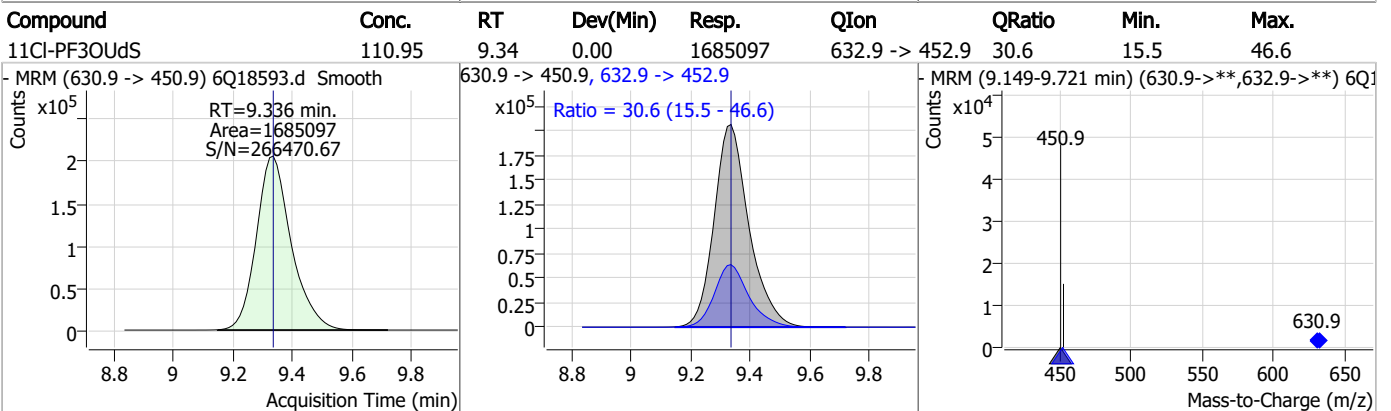
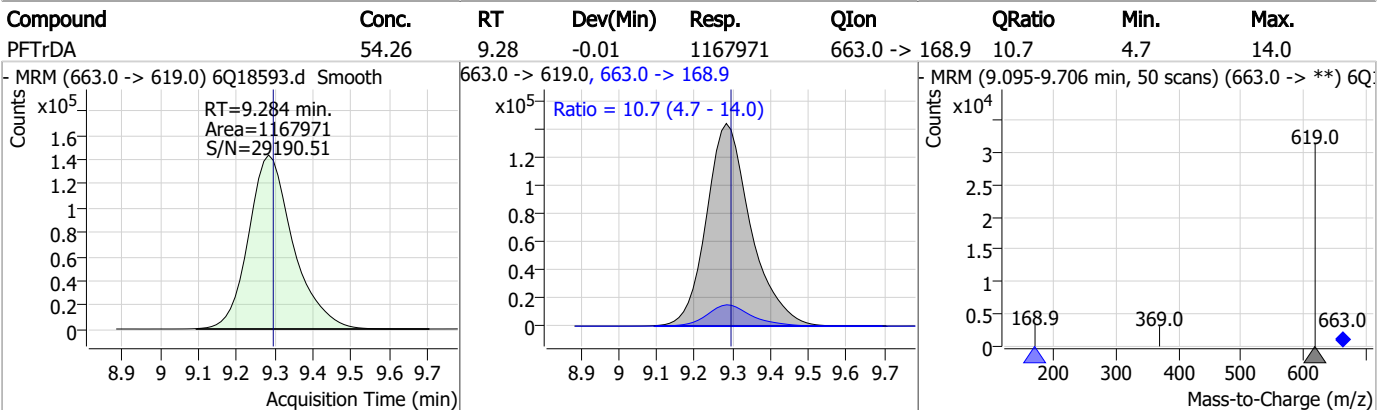
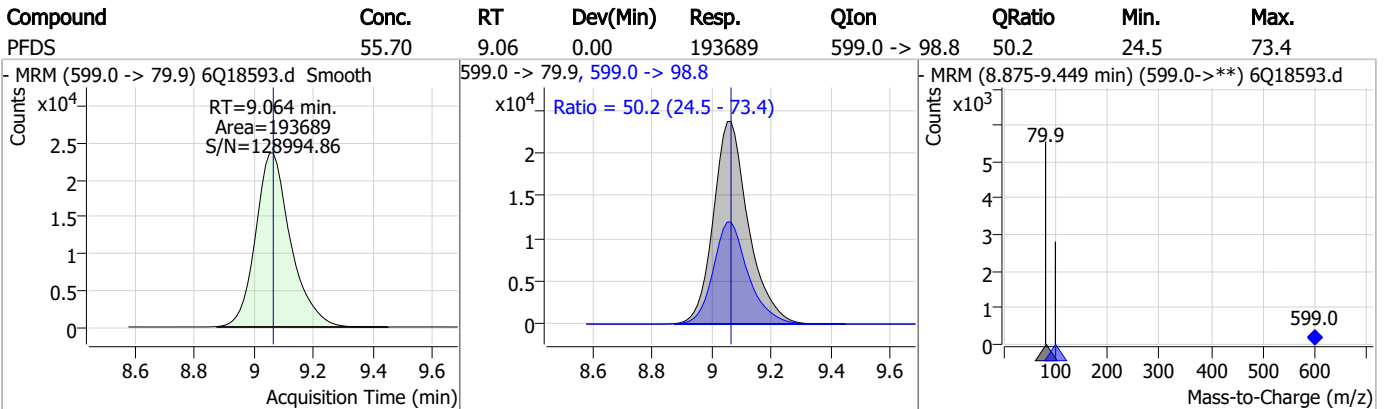
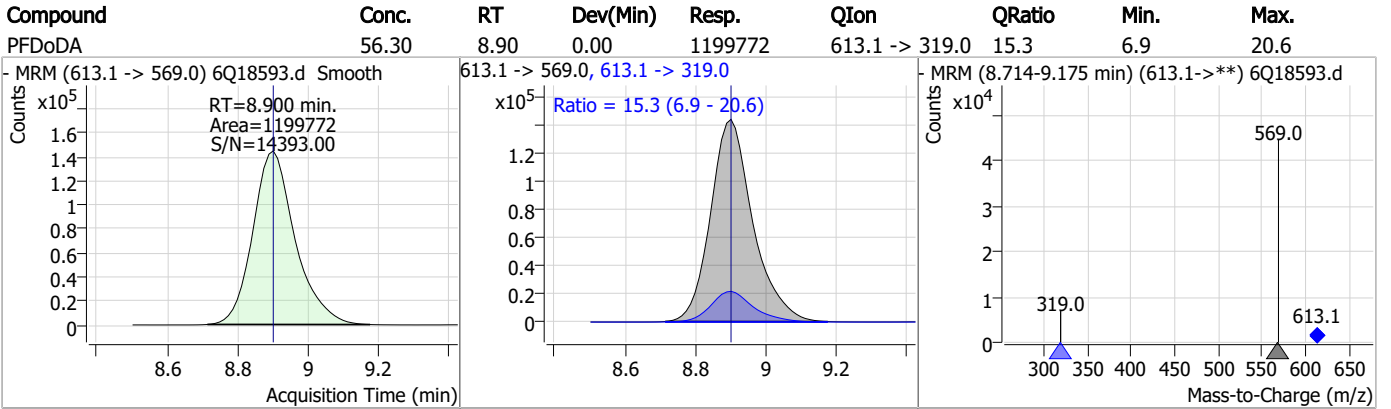


Perfluorinated Compounds by LC/MS/MS



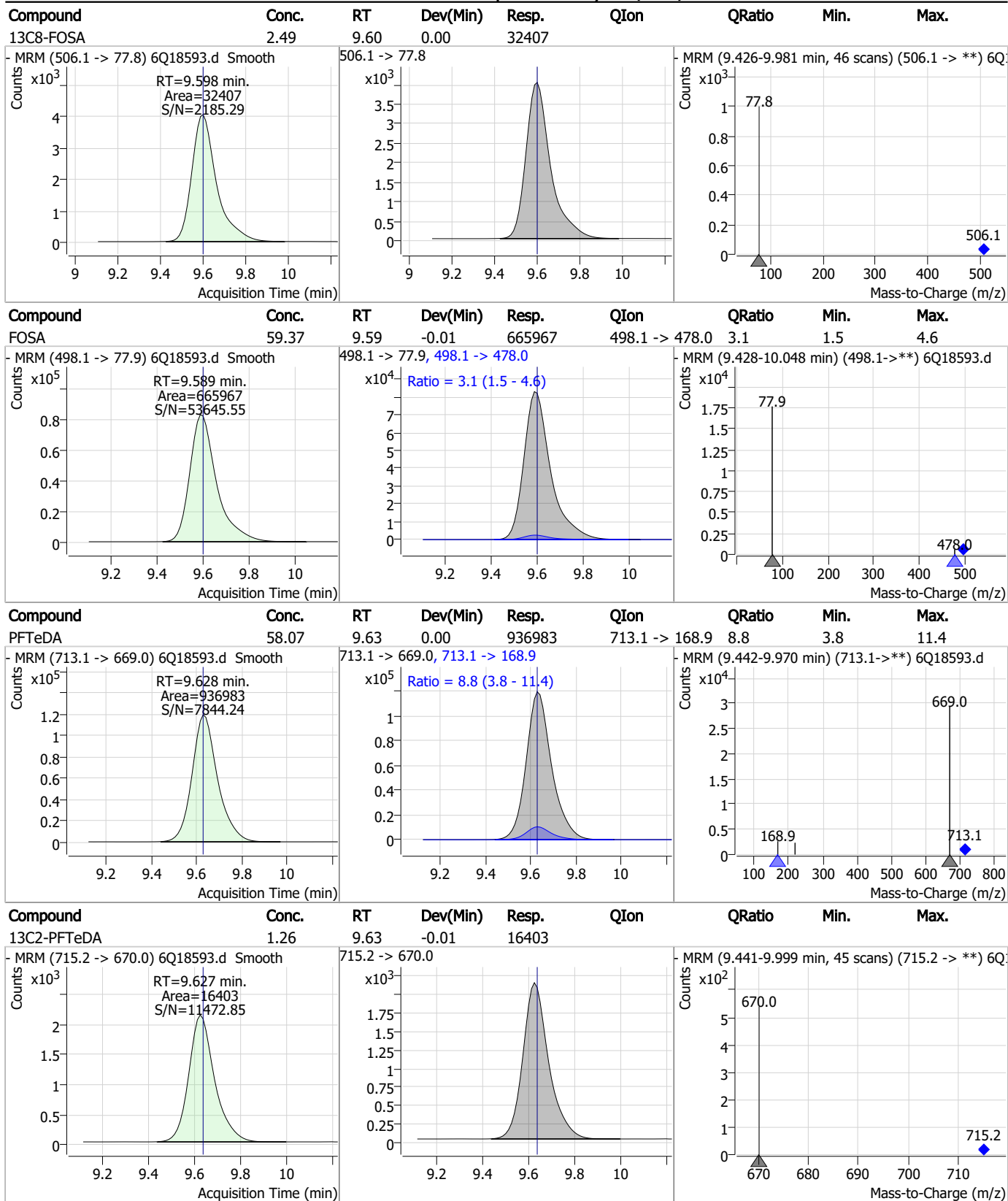
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Perfluorinated Compounds by LC/MS/MS



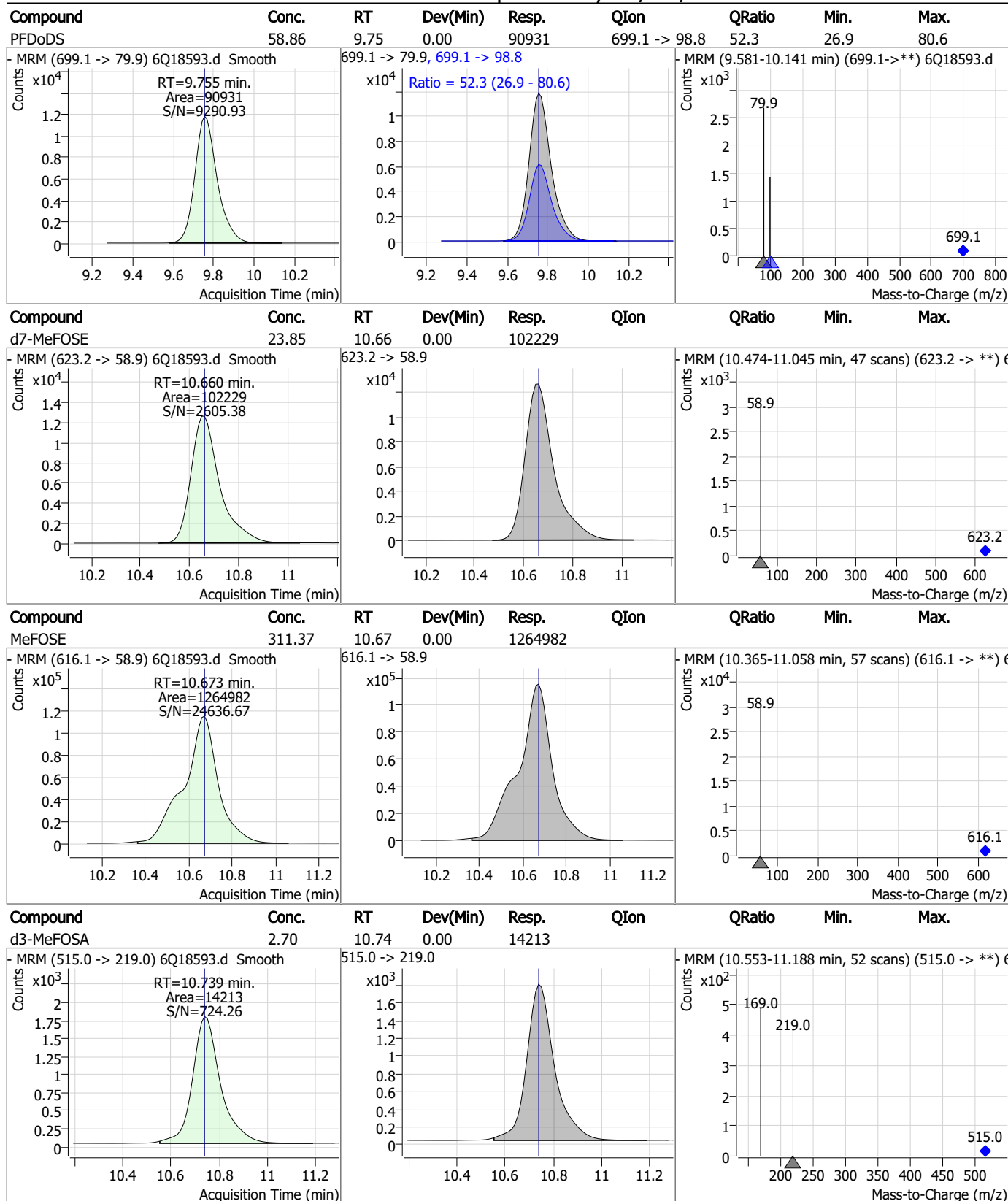
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Perfluorinated Compounds by LC/MS/MS



7.7.24

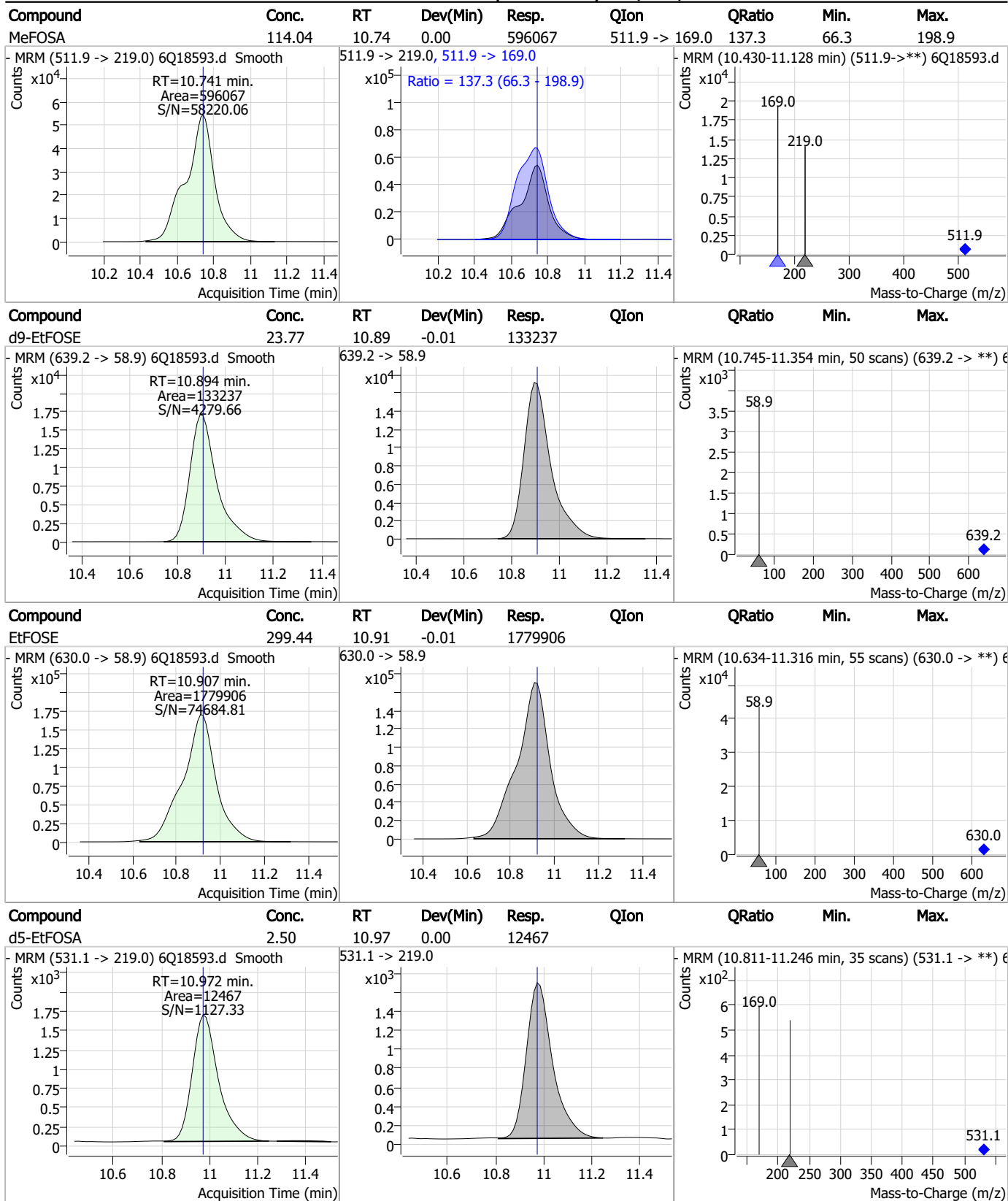
Perfluorinated Compounds by LC/MS/MS



7.7.24

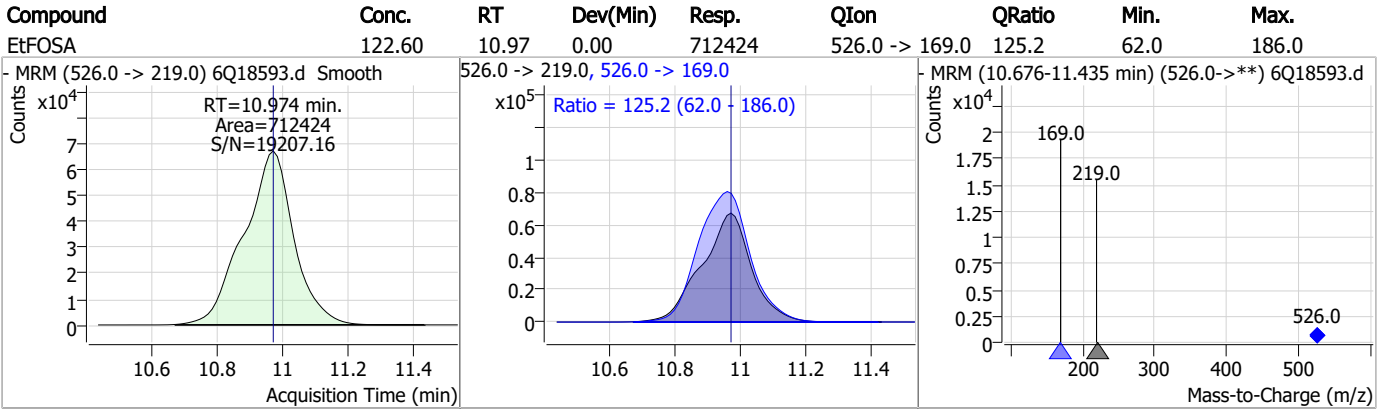
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Perfluorinated Compounds by LC/MS/MS



7.7.24
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Perfluorinated Compounds by LC/MS/MS



7.7.24

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Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18593.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:57 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak

7.7.24.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18595.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:26:45 PM
 Sample Name : icv279-4
 Vial : P1-B1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	170457	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	57026	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	63595	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	58610	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	89653	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	40289	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24134	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33620	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	29418	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	15555	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	33177	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	22744	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	13810	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12998	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3600	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5027	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4884	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	27516	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	38707	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26462	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	100839	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	133717	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12229	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12293	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17202	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	71357	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10292	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	98236	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34106	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50284	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	58580	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3600	5.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5027	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4884	4.83 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	29418	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15555	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C3-PFBS	5.322	302.1 -> 79.9	22744	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	13810	2.40 µg/L	0.000

7.7.25
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C4-PFBA	2.822	216.8 -> 171.9	170457	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	58610	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFHxA	5.404	318.0 -> 273.0	63595	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	57026	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C6-PFDA	8.027	519.1 -> 474.1	24134	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33620	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C8-FOSA	9.598	506.1 -> 77.8	33177	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOA	7.026	421.1 -> 376.0	89653	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOS	8.177	507.1 -> 79.9	12998	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C9-PFNA	7.545	472.1 -> 427.0	40289	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.3%	
d3-MeFOSAA	8.072	573.2 -> 419.0	27516	4.96 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38707	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	12293	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26462	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	100839	23.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	133717	23.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	12229	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	48916	9.35 µg/L	99
		327.1 -> 80.9	19622		
6:2FTS	6.801	427.1 -> 407.0	51987	10.52 µg/L	99
		427.1 -> 80.9	17303		
8:2FTS	7.816	527.1 -> 507.0	28525	10.50 µg/L	96
		527.1 -> 80.8	11388		
EtFOSAA	8.280	584.2 -> 419.1	8691	2.55 µg/L	100
		584.2 -> 526.0	4733		
FOSA	9.589	498.1 -> 77.9	29778	2.59 µg/L	99
		498.1 -> 478.0	815		
MeFOSAA	8.085	570.1 -> 419.0	15457	2.73 µg/L	99
		570.1 -> 483.0	2869		
PFBA	2.818	212.8 -> 168.9	59467	10.54 µg/L	100
PFBS	5.323	298.7 -> 79.9	17085	2.21 µg/L	94
		298.7 -> 98.8	6838		
PFDA	8.027	512.9 -> 469.0	73429	2.62 µg/L	98
		512.9 -> 219.0	12351		
PFDODA	8.900	613.1 -> 569.0	50767	2.51 µg/L	94
		613.1 -> 319.0	8133		
PFDS	9.052	599.0 -> 79.9	8551	2.63 µg/L	99

7.7.25
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	4094	2.61	µg/L	98
		363.1 -> 319.0	67586			
PFHpS	7.685	363.1 -> 169.0	10768	2.49	µg/L	93
		449.0 -> 79.9	15515			
PFHxA	5.407	449.0 -> 98.9	8412	2.61	µg/L	99
		313.0 -> 269.0	55703			
PFHxS	7.131	313.0 -> 118.9	2729	2.44	µg/L	98
		398.7 -> 79.9	15232			
PFNA	7.545	398.7 -> 98.9	7474	2.68	µg/L	99
		463.0 -> 419.0	76579			
PFNS	8.631	463.0 -> 219.0	14717	2.49	µg/L	93
		548.8 -> 79.9	12985			
PFOA	7.028	548.8 -> 98.9	6937	2.46	µg/L	96
		413.0 -> 369.0	94175			
PFOS	8.166	413.0 -> 169.0	17844	2.53	µg/L	96
		498.9 -> 79.9	15016			
PFPeA	4.212	498.9 -> 98.8	7539	5.24	µg/L	100
		263.0 -> 219.0	71774			
PFPeS	6.410	349.1 -> 79.9	16466	2.65	µg/L	92
		349.1 -> 98.9	6942			
PFTeDA	9.628	713.1 -> 669.0	40144	2.62	µg/L	97
		713.1 -> 168.9	3528			
PFTrDA	9.284	663.0 -> 619.0	50595	2.48	µg/L	94
		663.0 -> 168.9	5843			
PFUnDA	8.468	563.1 -> 519.0	53459	2.45	µg/L	96
		563.1 -> 269.1	8997			
11CI-PF3OUdS	9.336	630.9 -> 450.9	72474	4.99	µg/L	100
		632.9 -> 452.9	22415			
9CI-PF3ONS	8.508	530.8 -> 351.0	116131	5.07	µg/L	94
		532.8 -> 353.0	34208			
ADONA	6.632	376.9 -> 250.9	254905	4.96	µg/L	98
		376.9 -> 84.8	70354			
HFPO-DA	5.783	284.9 -> 168.9	16543	5.04	µg/L	97
		284.9 -> 184.9	2036			
3:3FTCA	3.659	241.0 -> 177.0	11434	13.04	µg/L	98
		241.0 -> 117.0	1565			
5:3FTCA	6.074	341.0 -> 237.1	250883	65.31	µg/L	99
		341.0 -> 217.0	180428			
7:3FTCA	7.510	441.0 -> 316.9	167621	63.72	µg/L	97
		441.0 -> 336.9	378472			
EtFOSA	10.974	526.0 -> 219.0	29907	5.25	µg/L	94
		526.0 -> 169.0	39103			
EtFOSE	10.907	630.0 -> 58.9	81046	13.59	µg/L	100
		511.9 -> 219.0	25097			
MeFOSA	10.741	511.9 -> 169.0	34435	5.55	µg/L	96
		616.1 -> 58.9	56174			
MeFOSE	10.673	699.1 -> 79.9	3790	14.02	µg/L	100
		699.1 -> 98.8	1984			
PFDoDS	9.755	295.0 -> 201.0	13465	2.63	µg/L	98
		295.0 -> 84.9	3401			
NFDHA	5.288	279.0 -> 85.1	48666	5.18	µg/L	96
		229.0 -> 84.9	38219			
PFMBA	4.626	314.8 -> 134.9	121513	5.27	µg/L	100
		314.8 -> 82.9	4672			
PFMPA	3.351			4.48	µg/L	100
PFEESA	5.862					

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

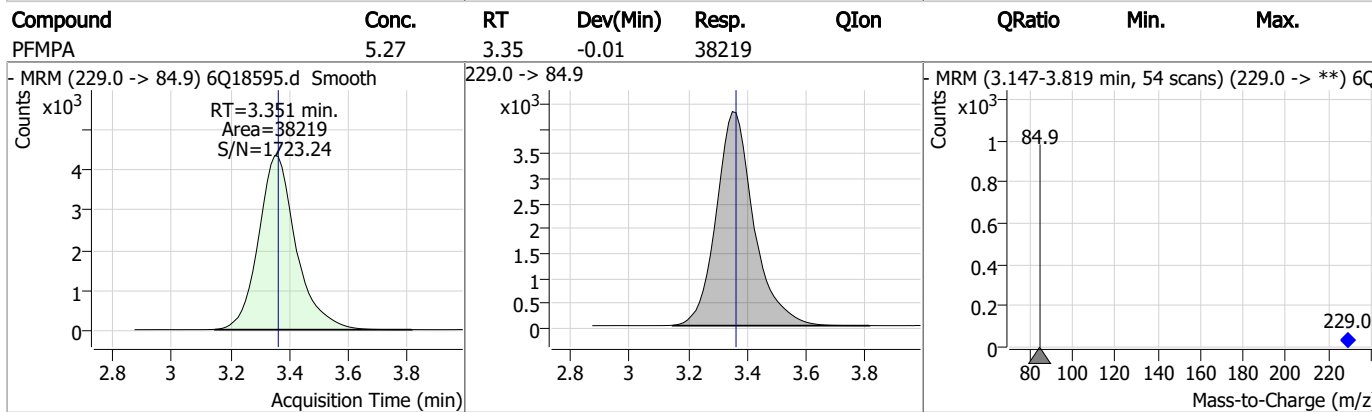
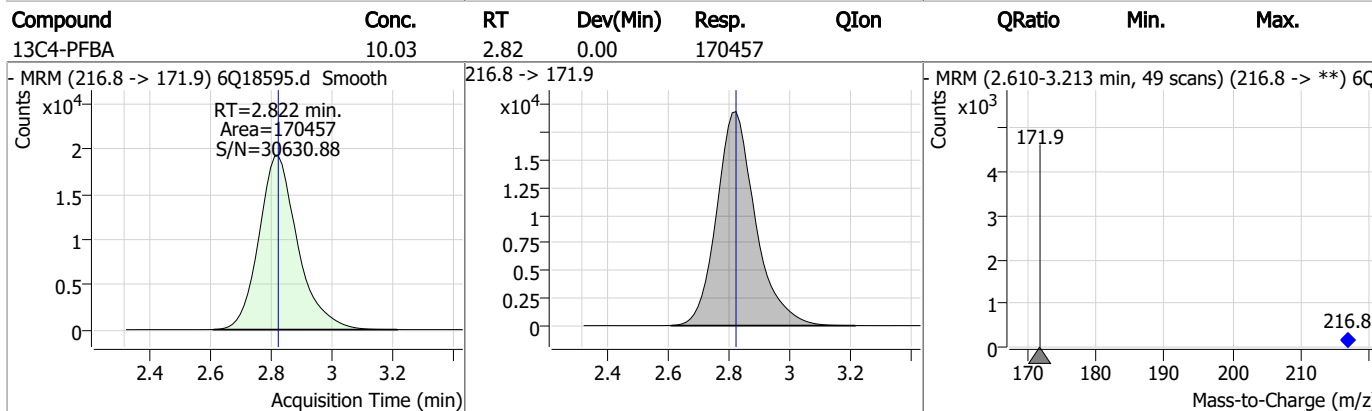
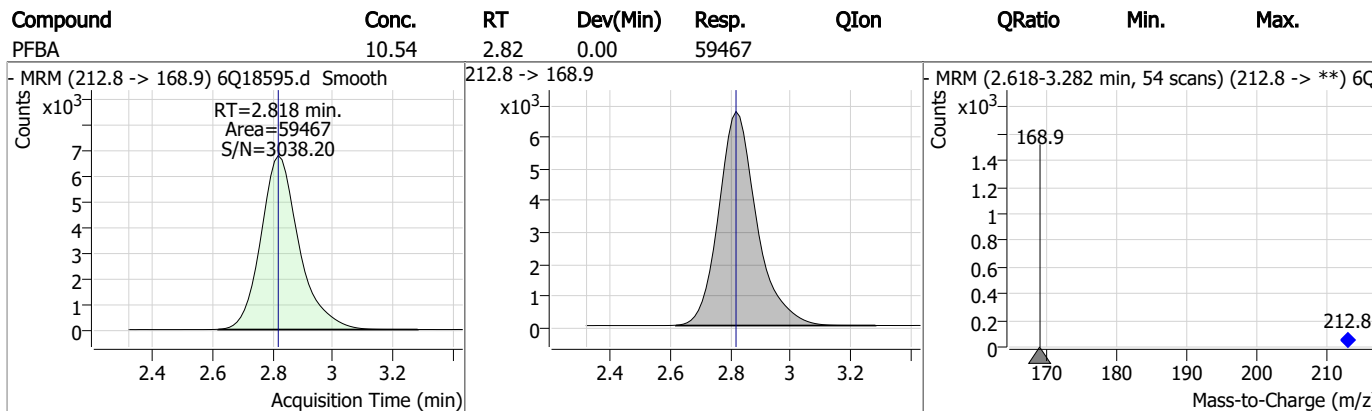
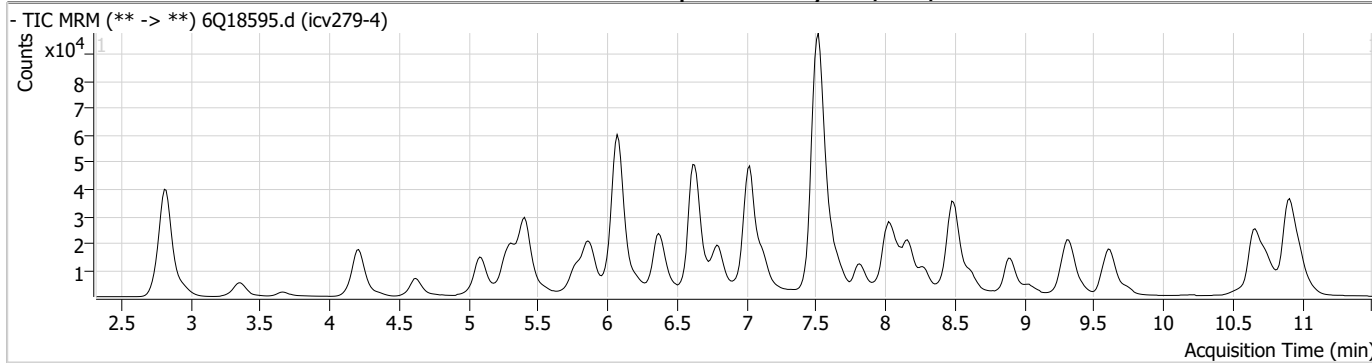
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.25

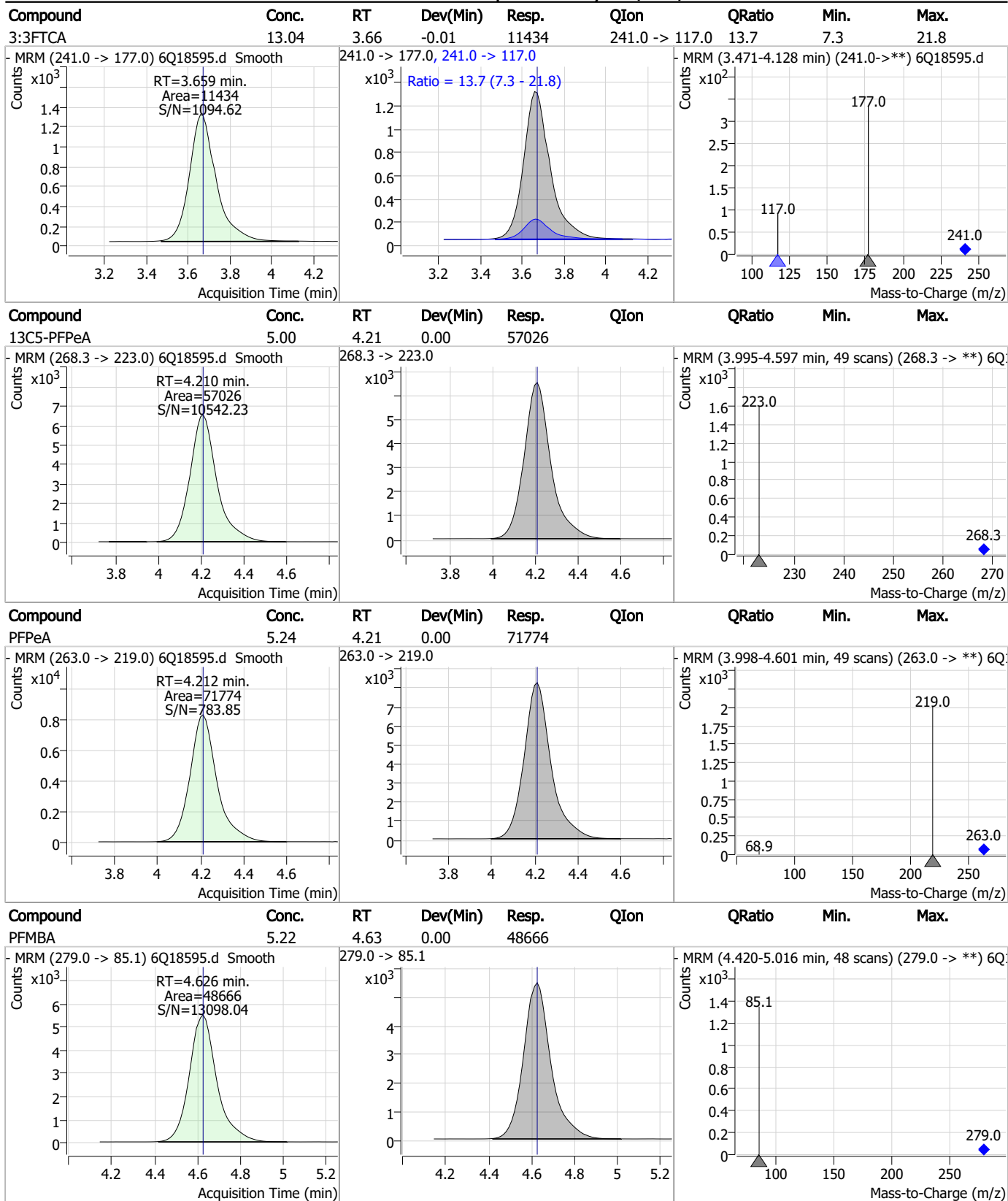
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Perfluorinated Compounds by LC/MS/MS



7.7.25
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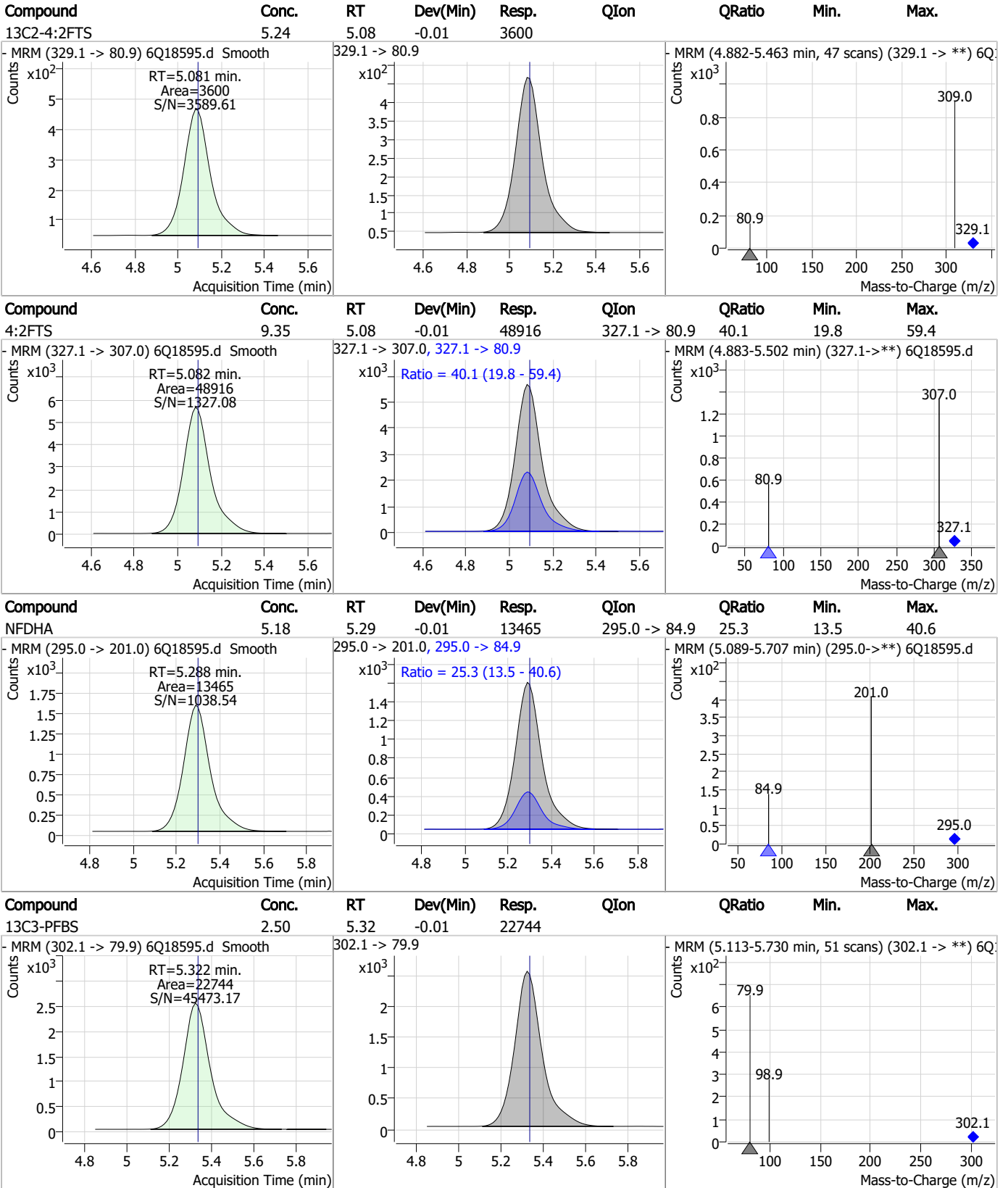
Perfluorinated Compounds by LC/MS/MS



7.7.25

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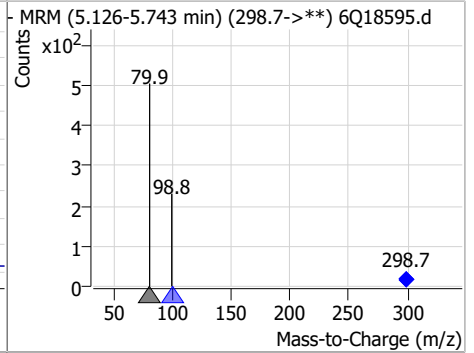
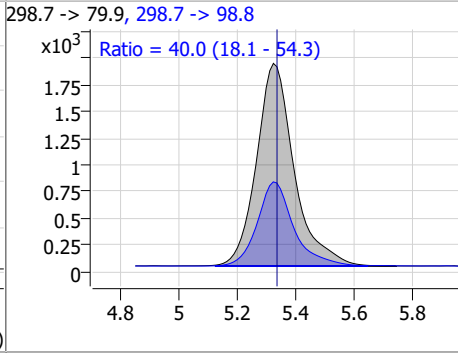
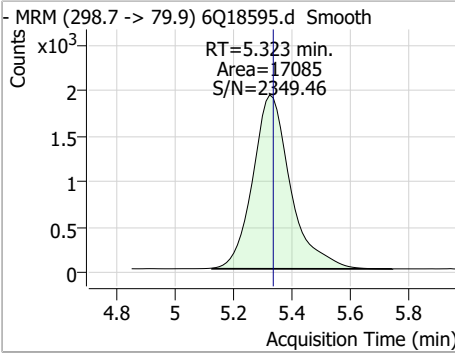
Perfluorinated Compounds by LC/MS/MS



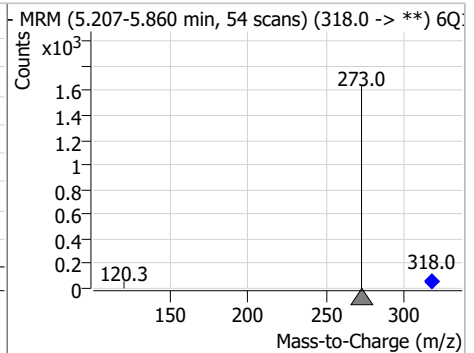
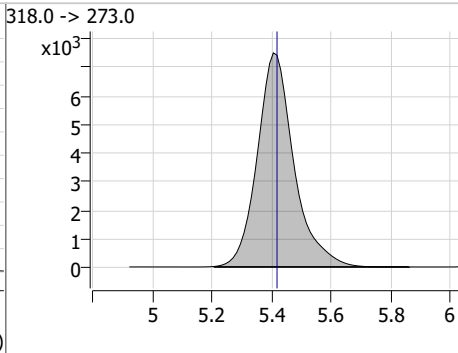
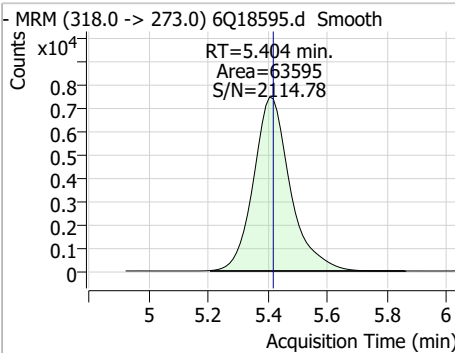
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Perfluorinated Compounds by LC/MS/MS

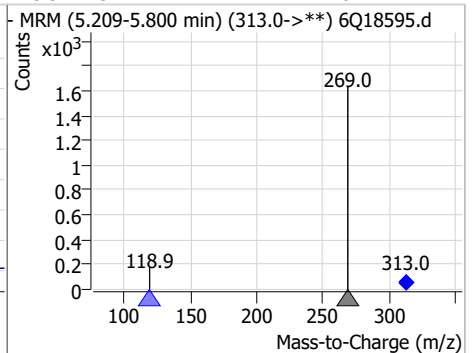
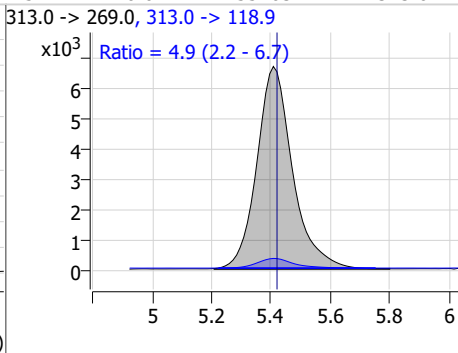
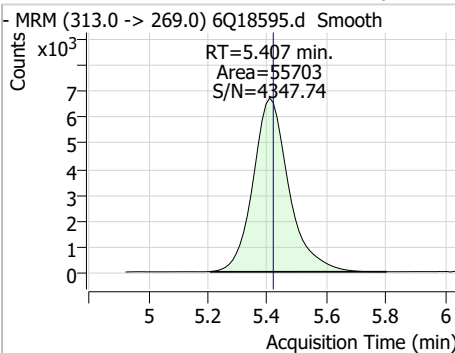
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.21	5.32	-0.01	17085	298.7 -> 98.8	40.0	18.1	54.3



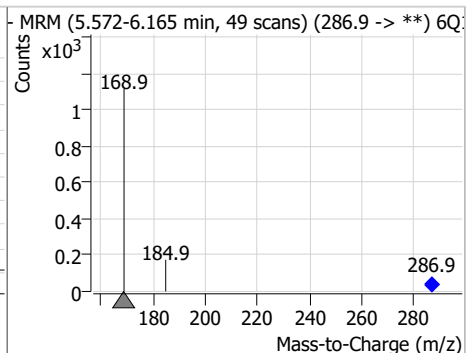
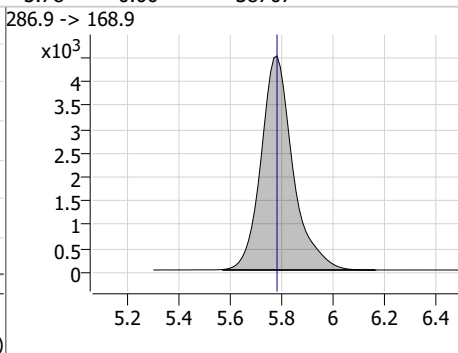
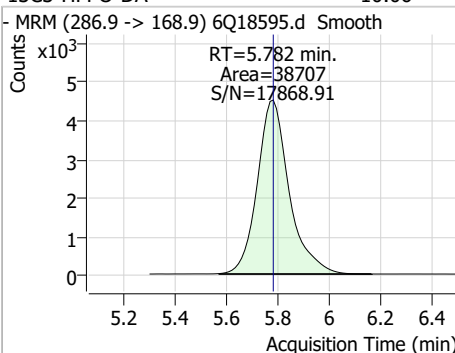
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	5.40	-0.01	63595				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.61	5.41	-0.01	55703	313.0 -> 118.9	4.9	2.2	6.7

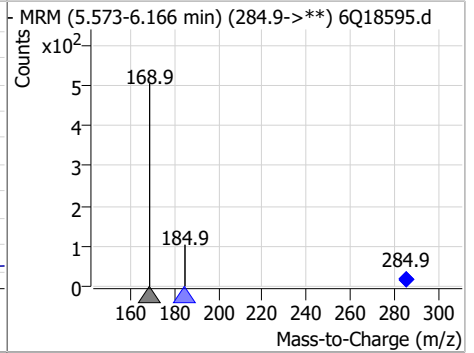
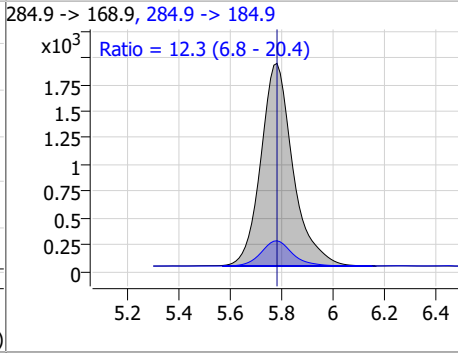
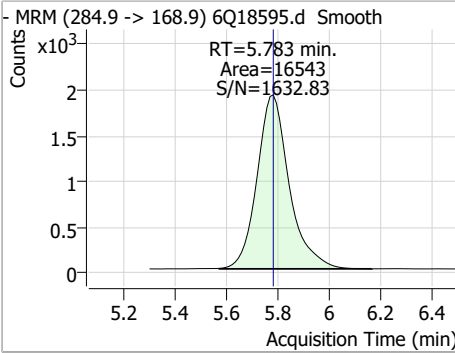


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.06	5.78	0.00	38707				

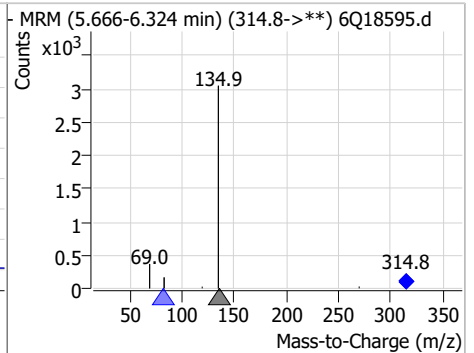
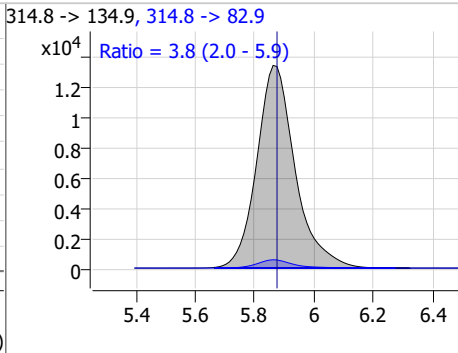
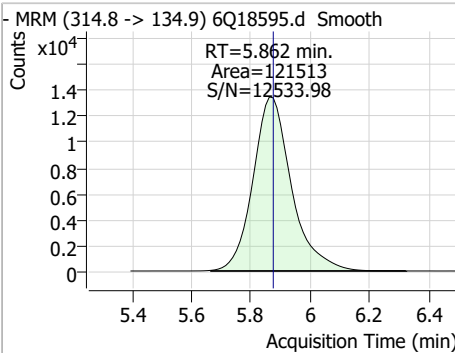


Perfluorinated Compounds by LC/MS/MS

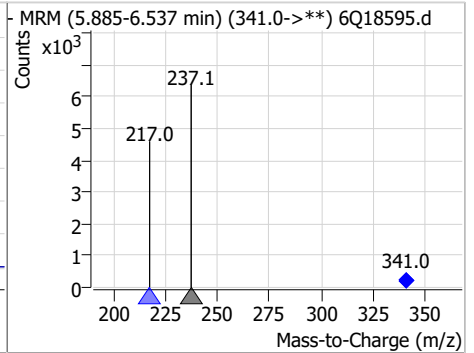
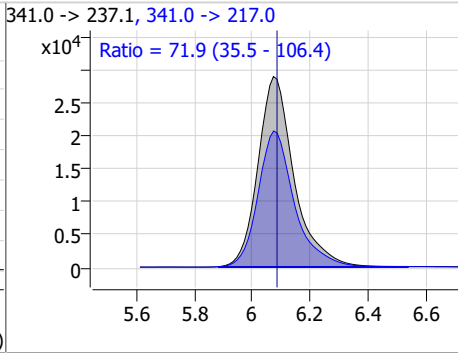
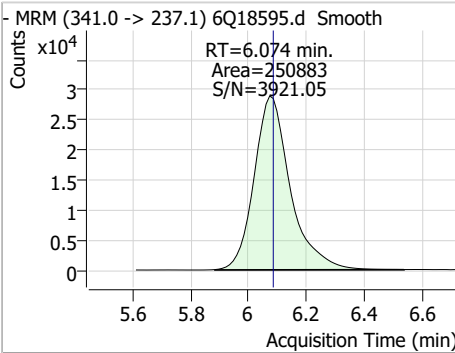
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.04	5.78	0.00	16543	284.9 -> 184.9	12.3	6.8	20.4



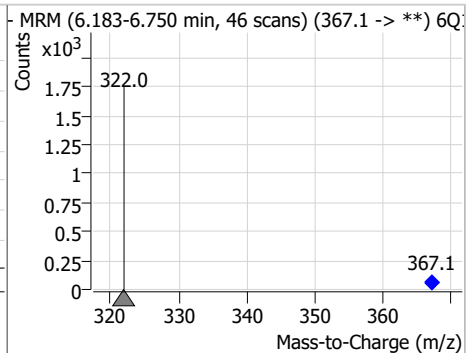
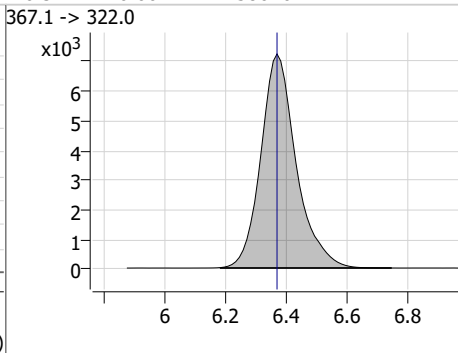
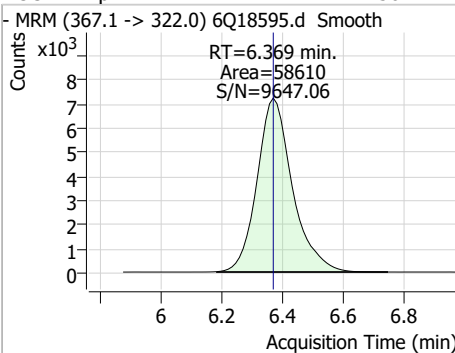
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.48	5.86	-0.01	121513	314.8 -> 82.9	3.8	2.0	5.9



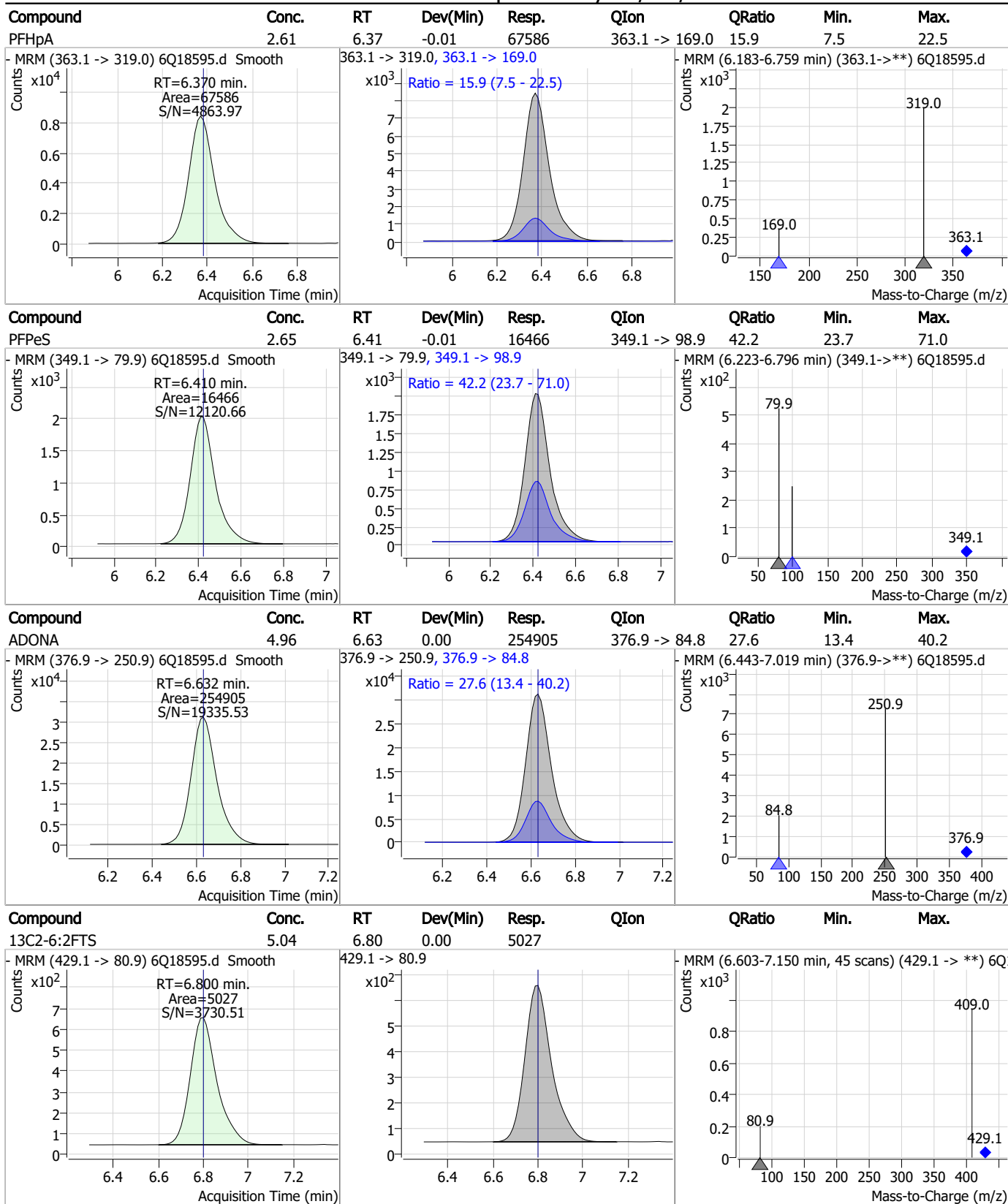
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	65.31	6.07	-0.01	250883	341.0 -> 217.0	71.9	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.37	0.00	58610	367.1 -> 322.0			



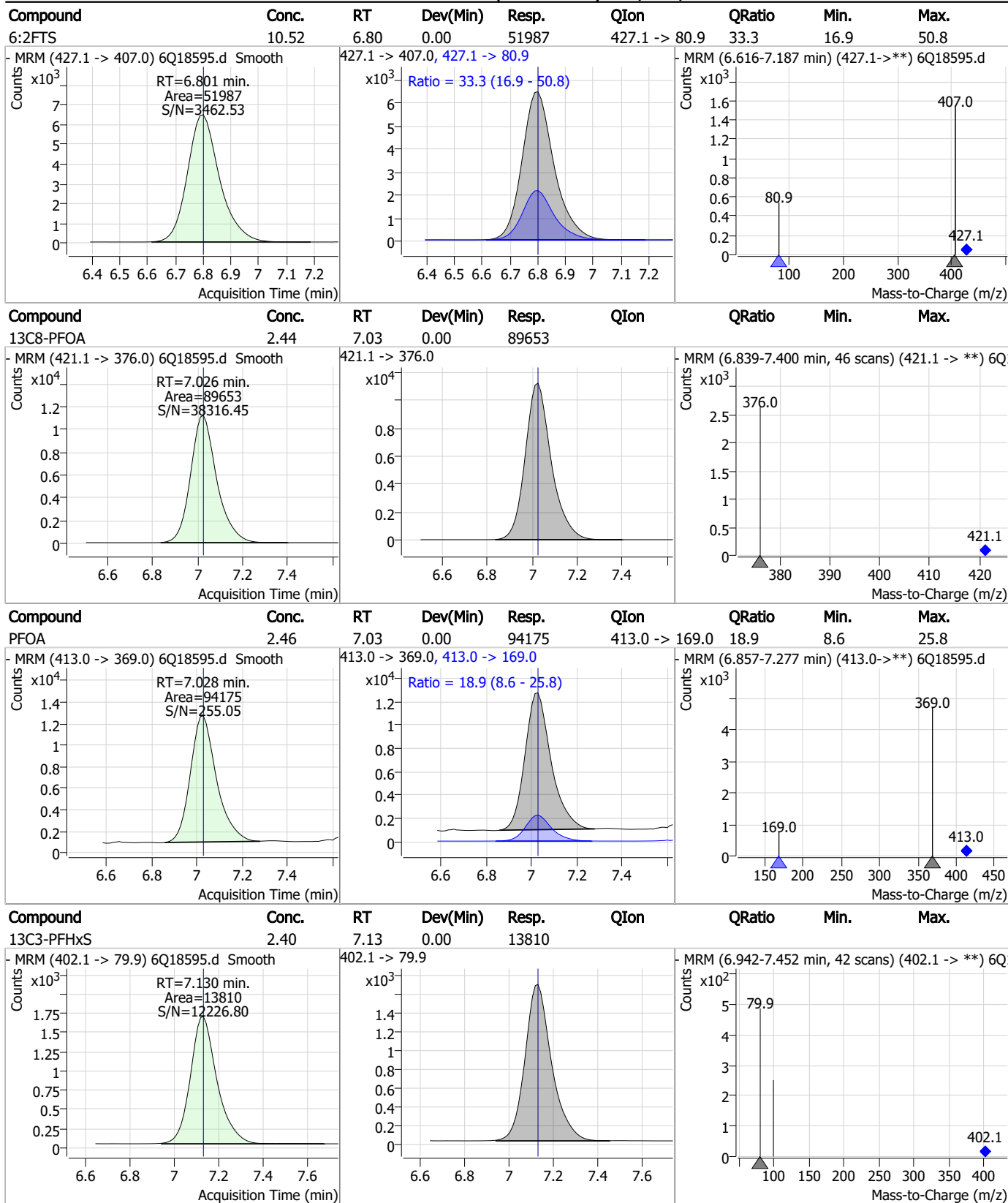
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

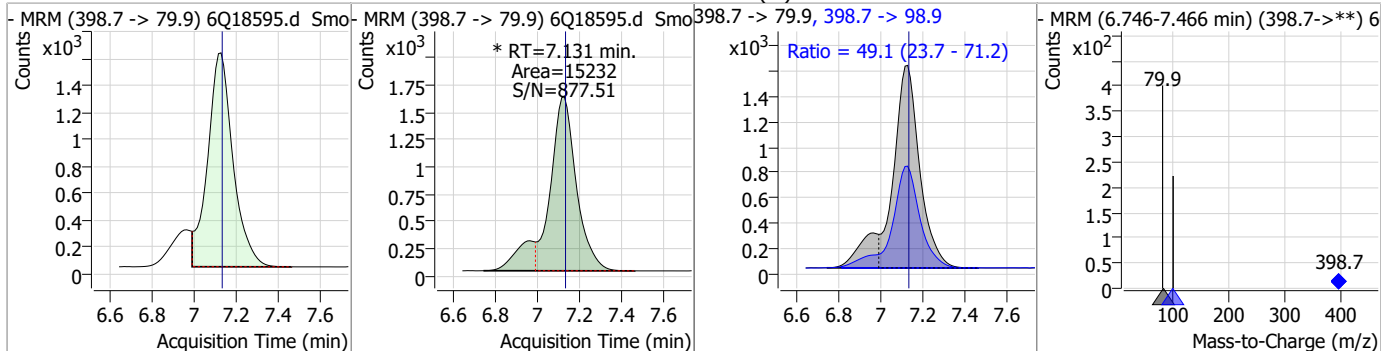


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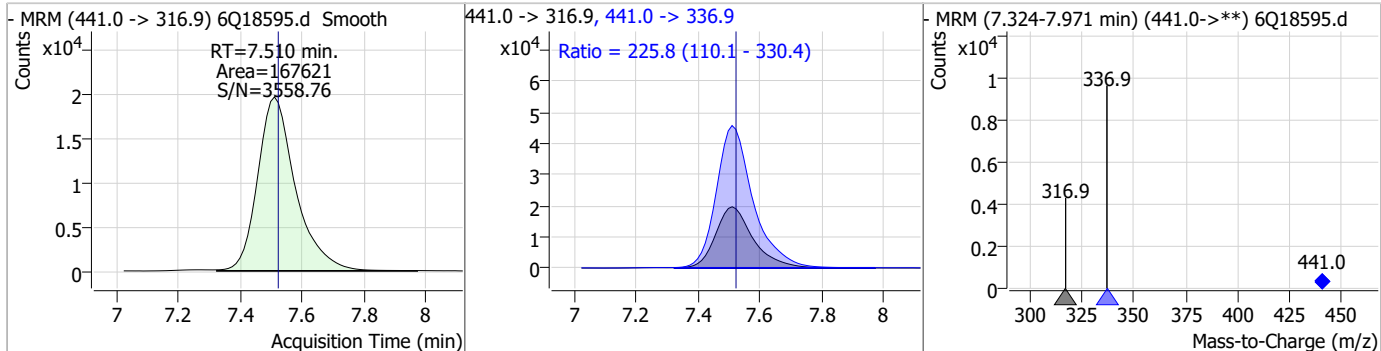


Perfluorinated Compounds by LC/MS/MS

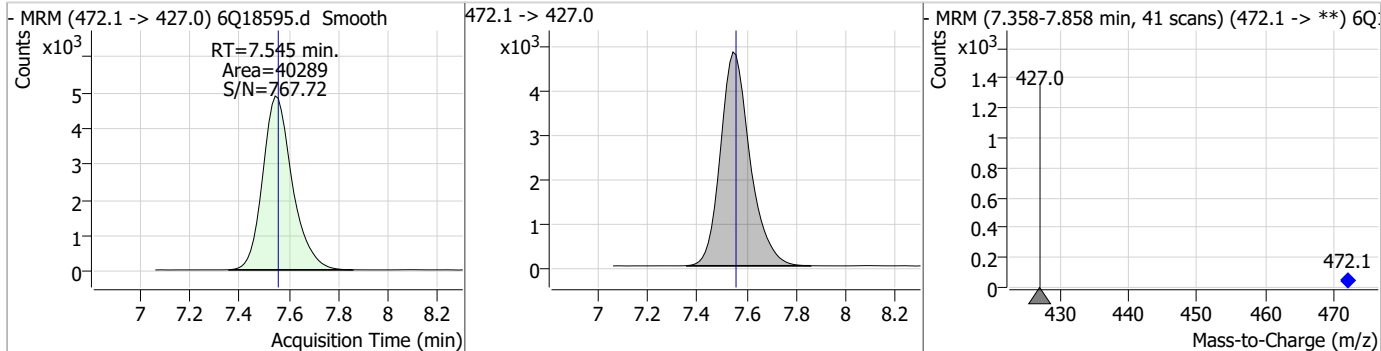
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.44	7.13	0.00	15232 (m)	398.7 -> 98.9	49.1	23.7	71.2



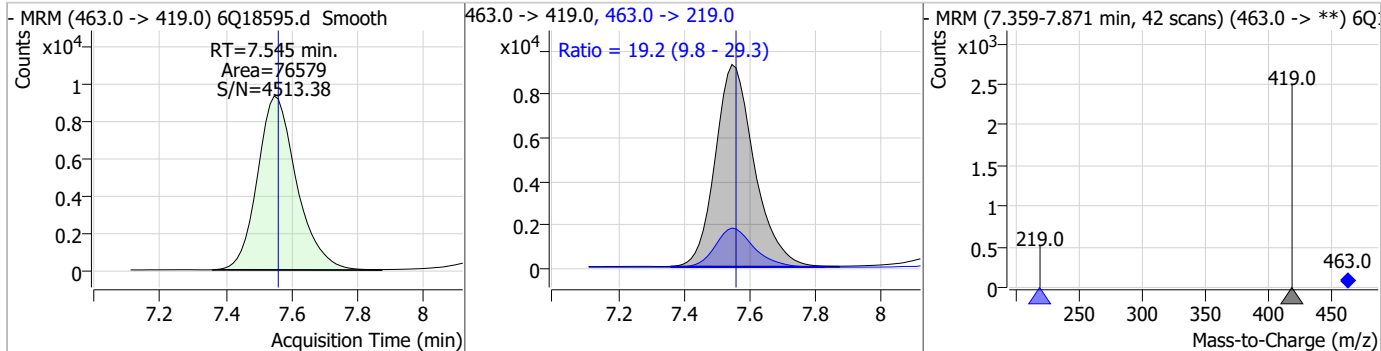
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	63.72	7.51	-0.01	167621	441.0 -> 336.9	225.8	110.1	330.4



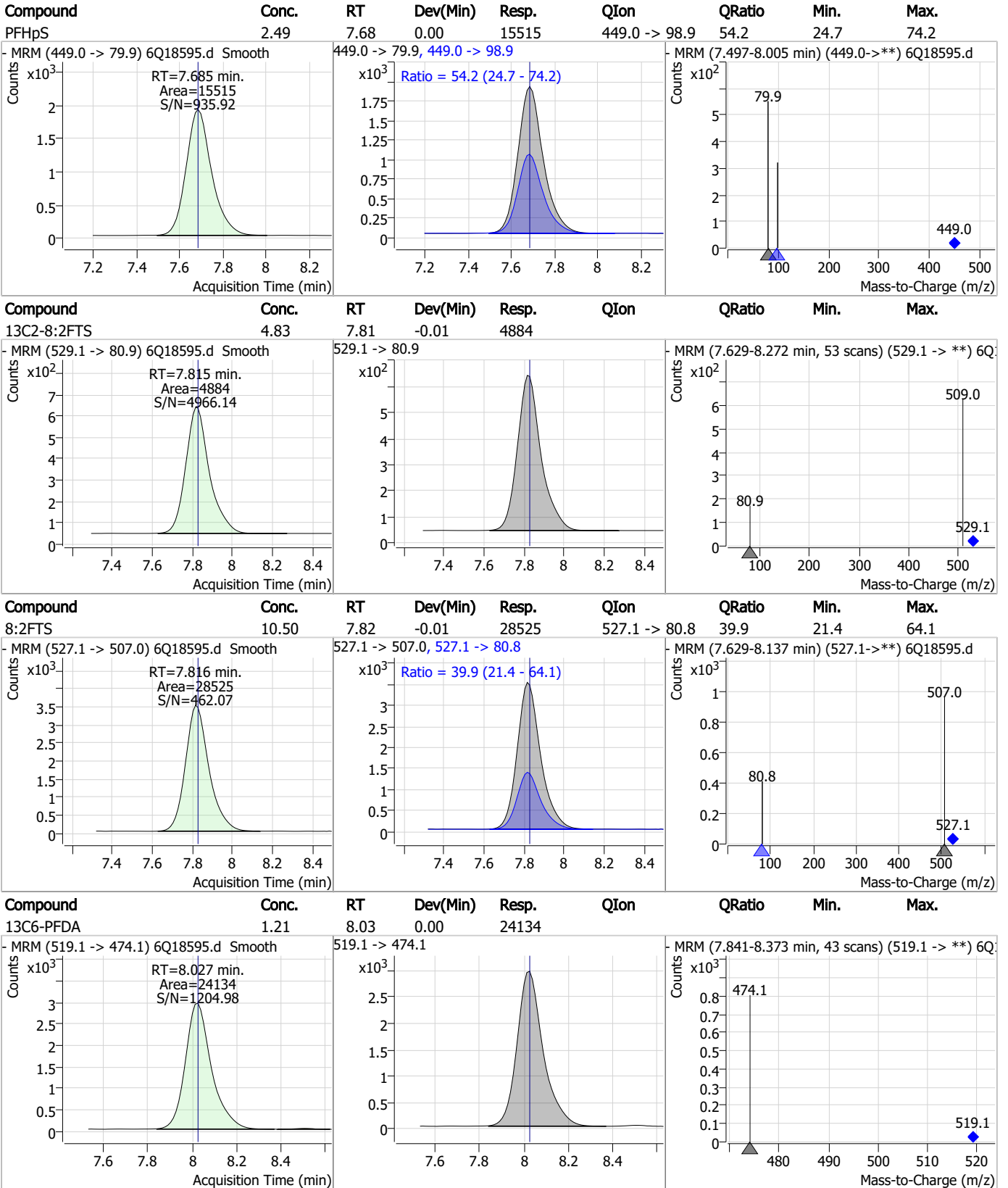
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.22	7.54	-0.01	40289				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.68	7.55	-0.01	76579	463.0 -> 219.0	19.2	9.8	29.3



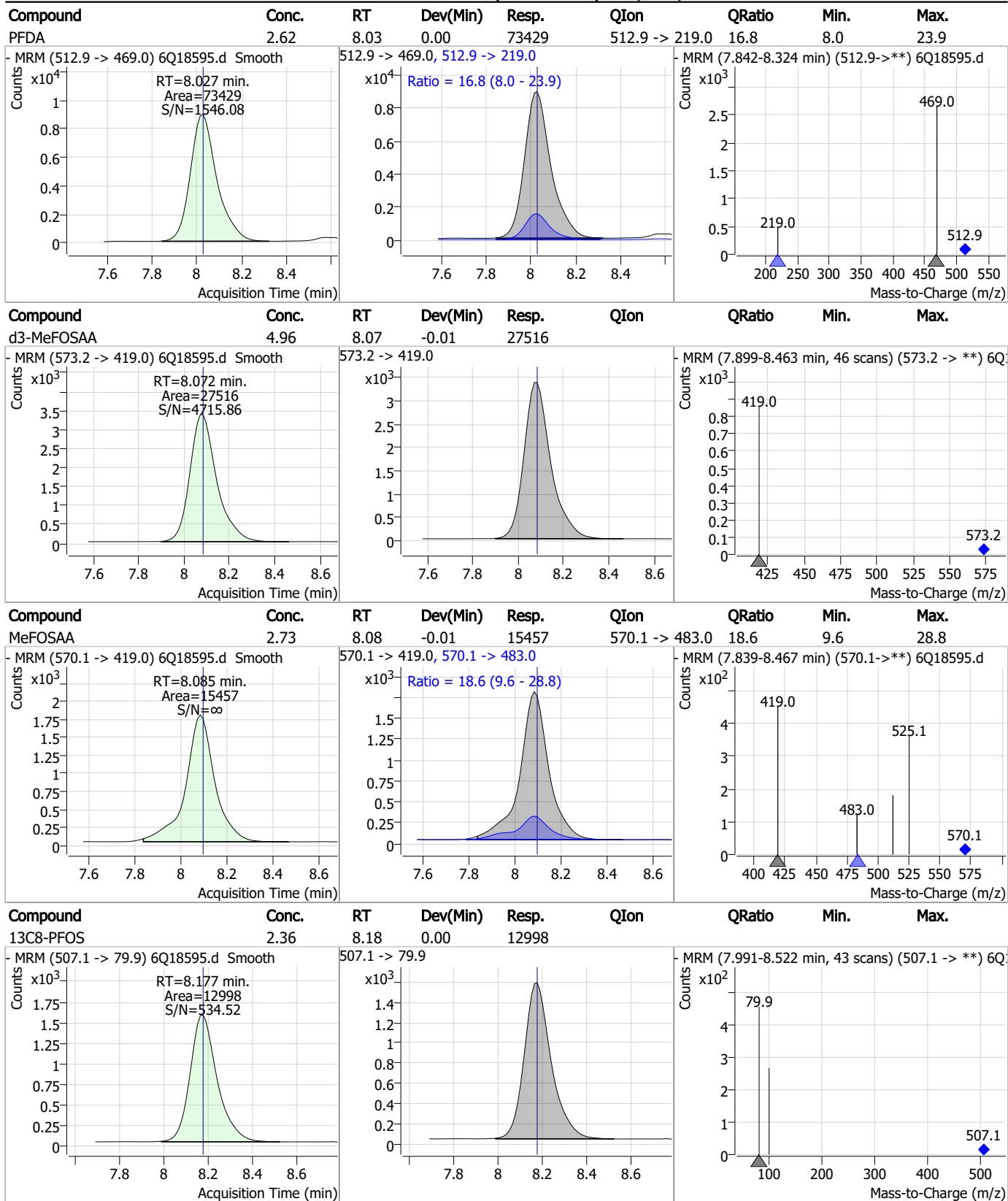
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

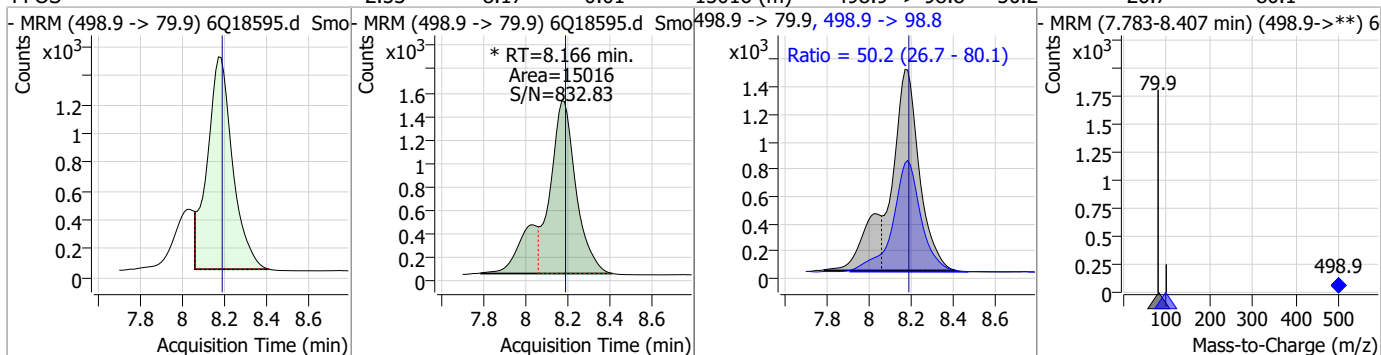


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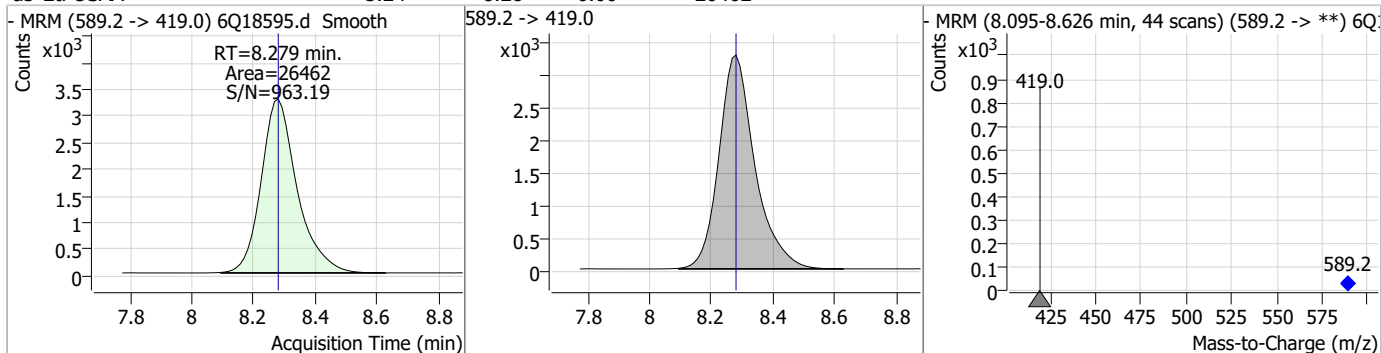


Perfluorinated Compounds by LC/MS/MS

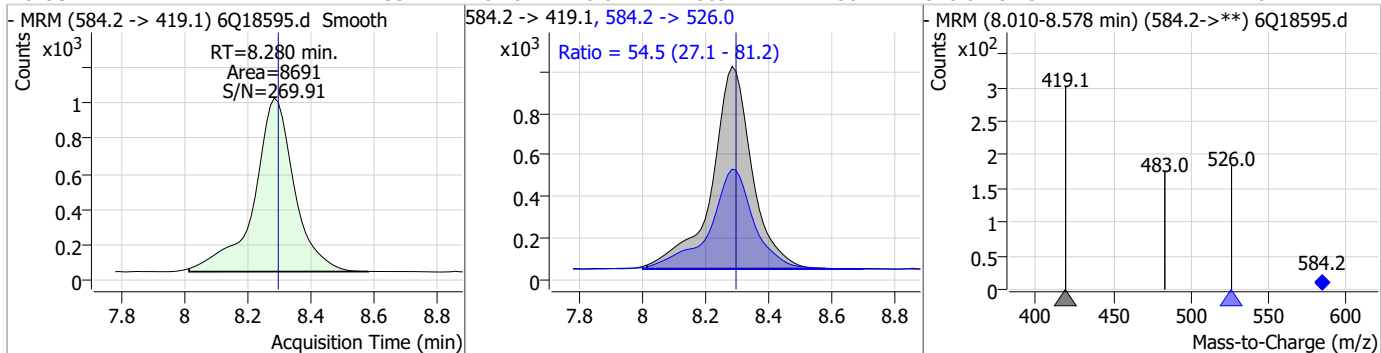
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.53	8.17	-0.01	15016 (m)	498.9 -> 98.8	50.2	26.7	80.1



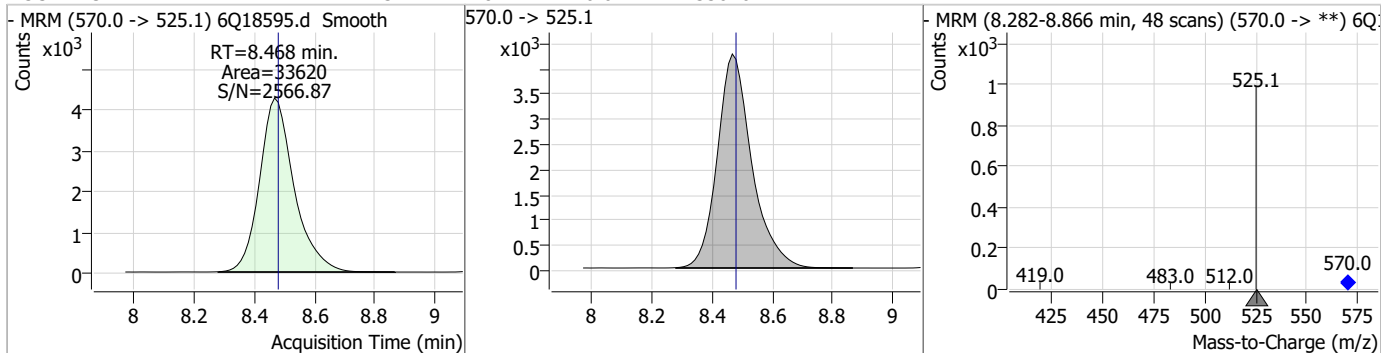
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.24	8.28	0.00	26462				



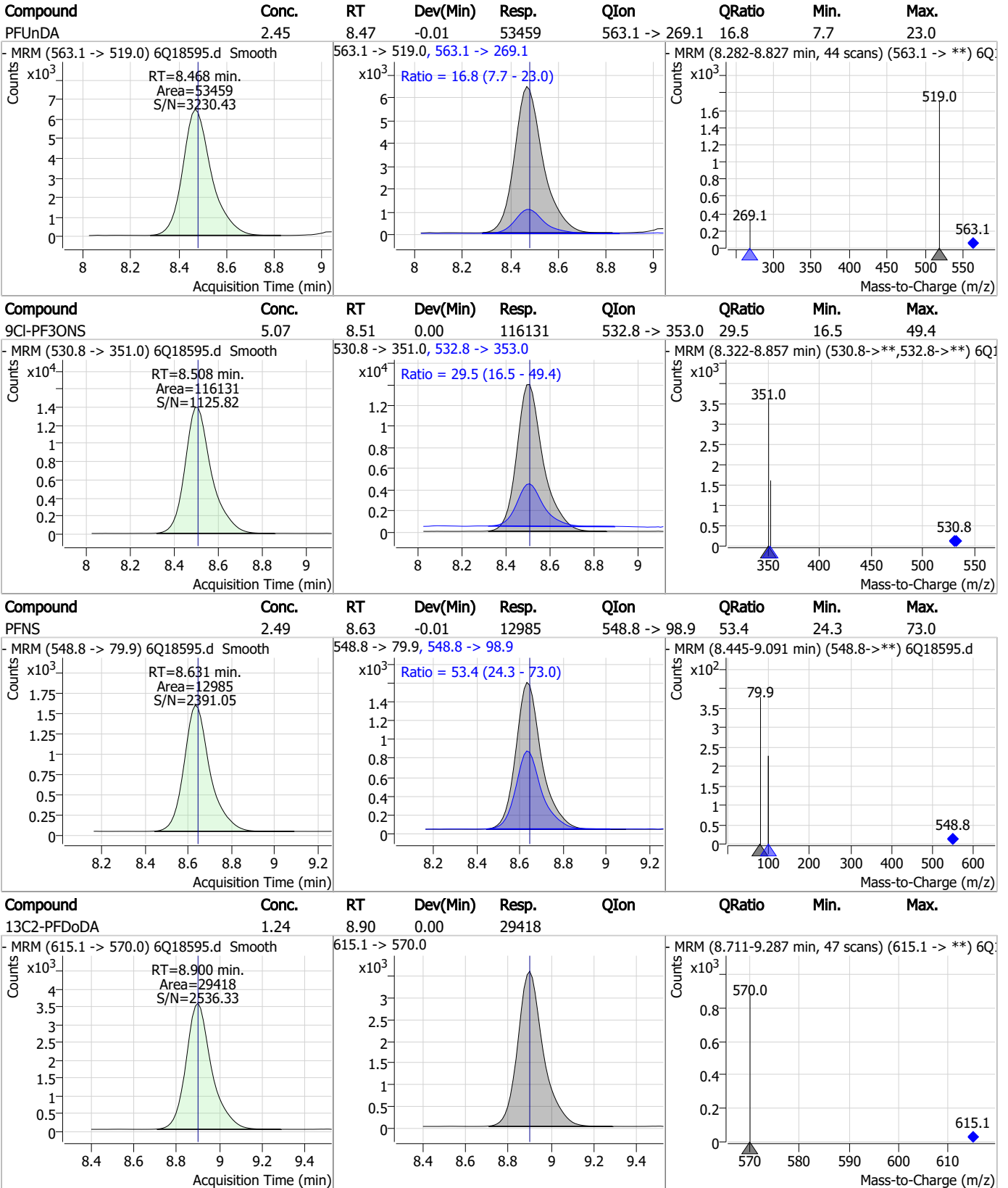
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.55	8.28	-0.01	8691	584.2 -> 526.0	54.5	27.1	81.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.47	-0.01	33620				

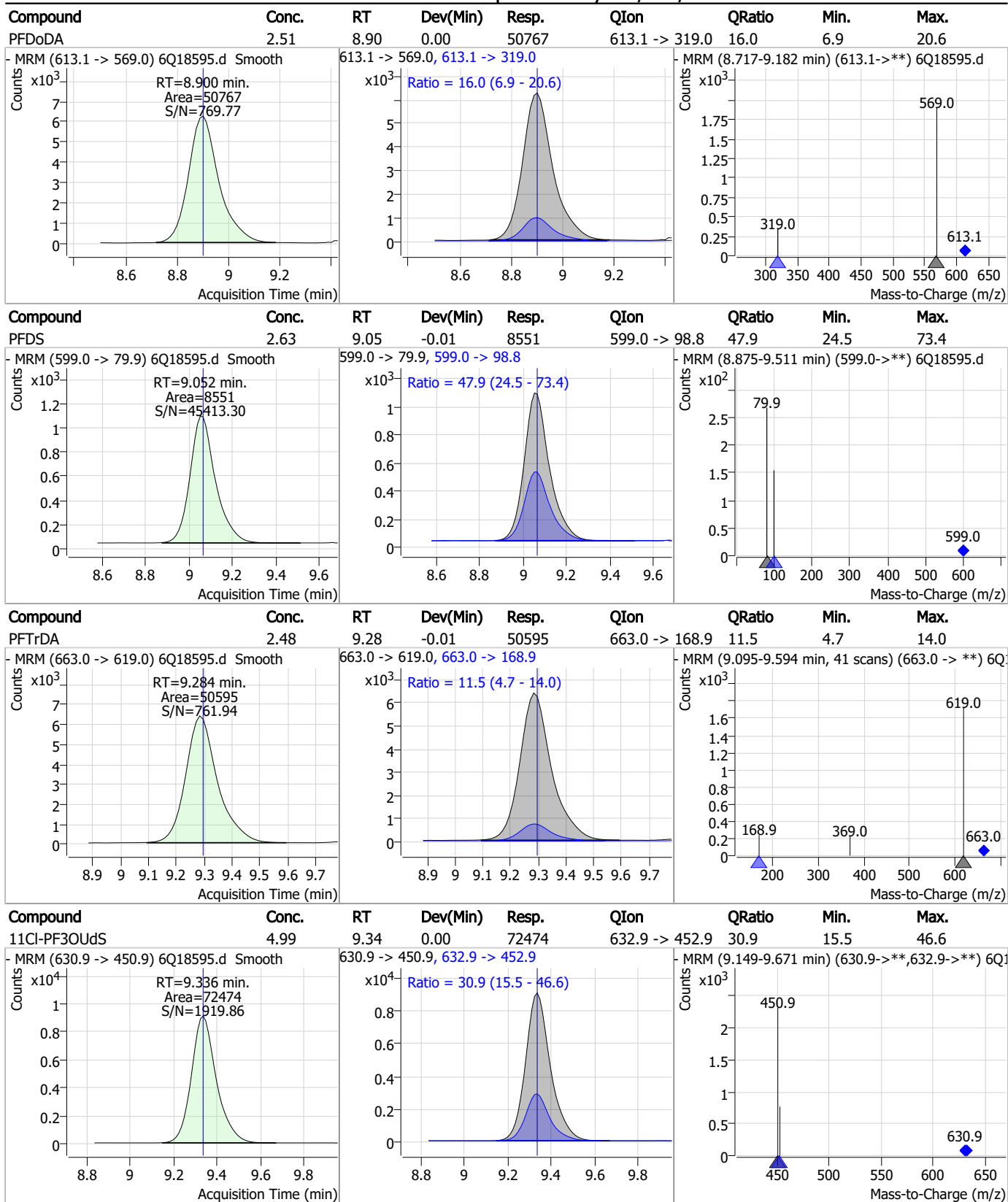


Perfluorinated Compounds by LC/MS/MS



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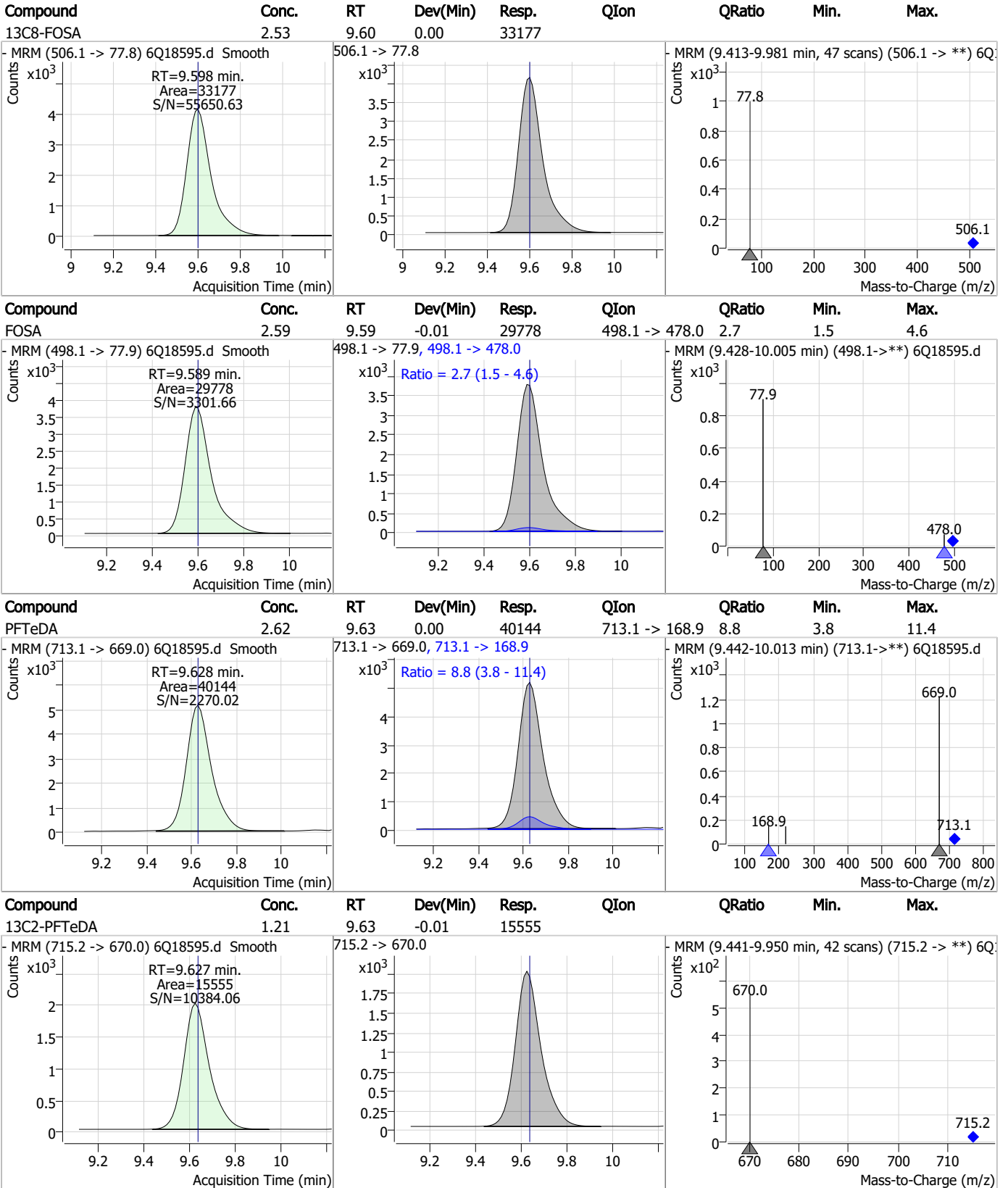
Perfluorinated Compounds by LC/MS/MS



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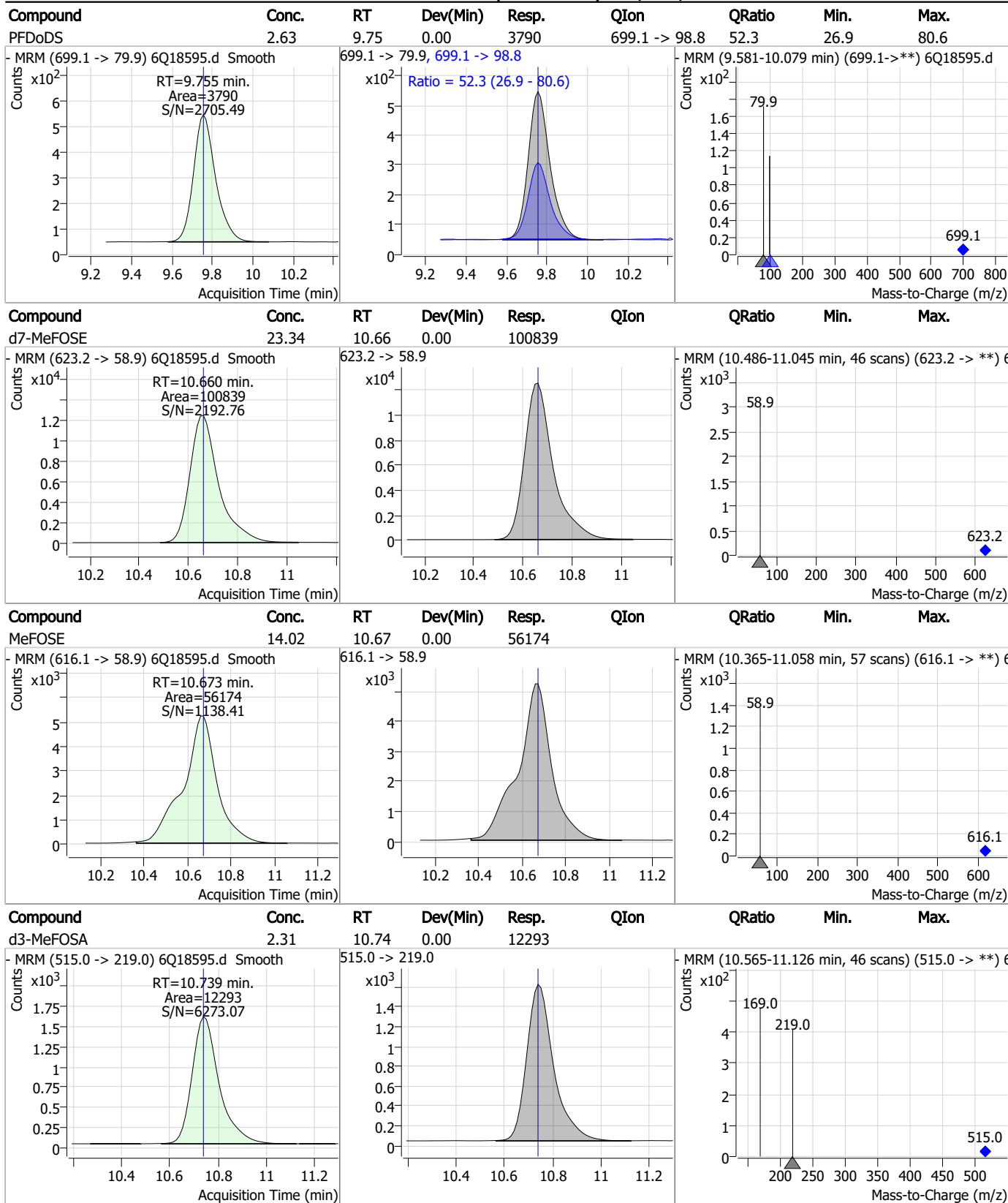
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Perfluorinated Compounds by LC/MS/MS



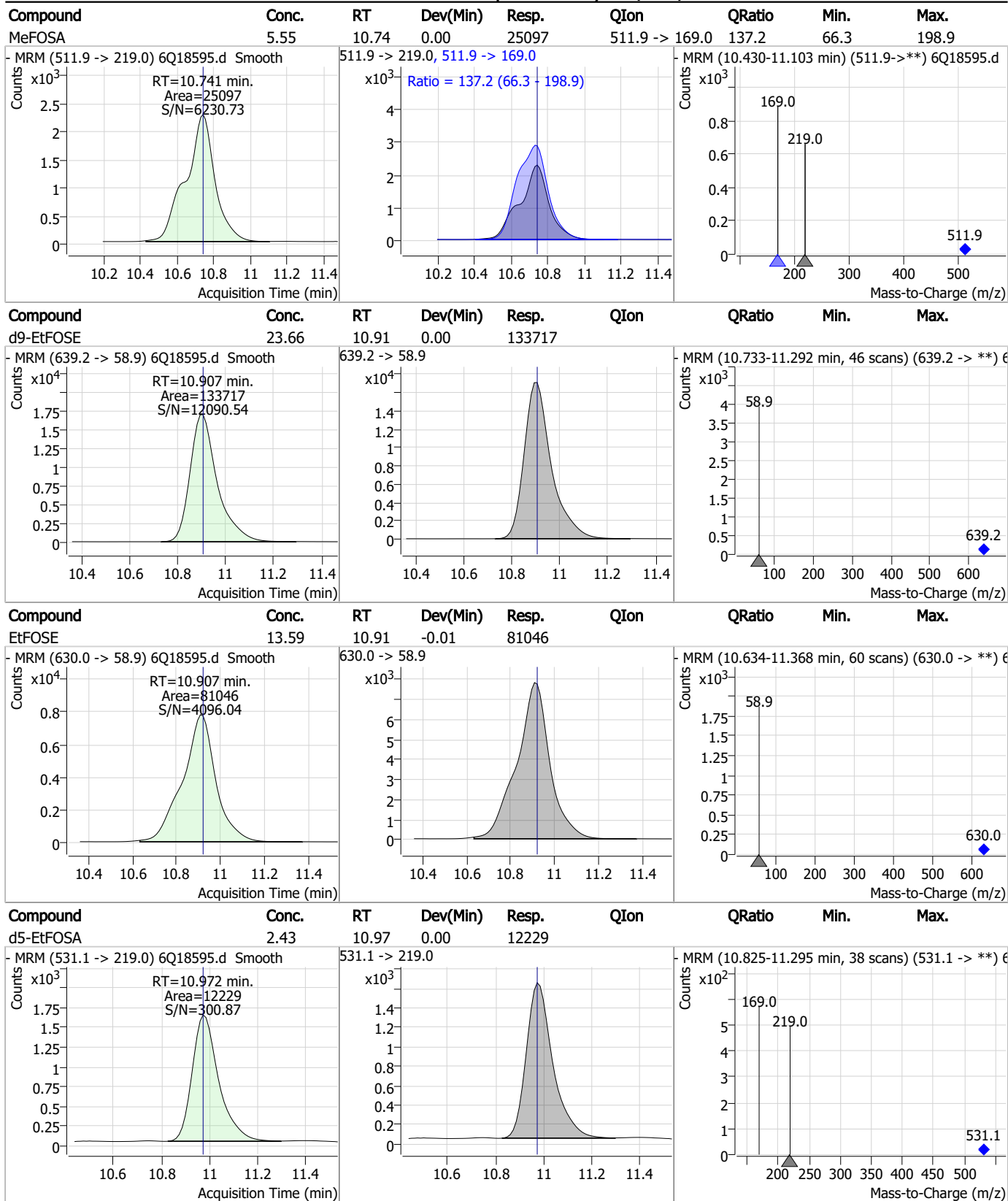
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Perfluorinated Compounds by LC/MS/MS



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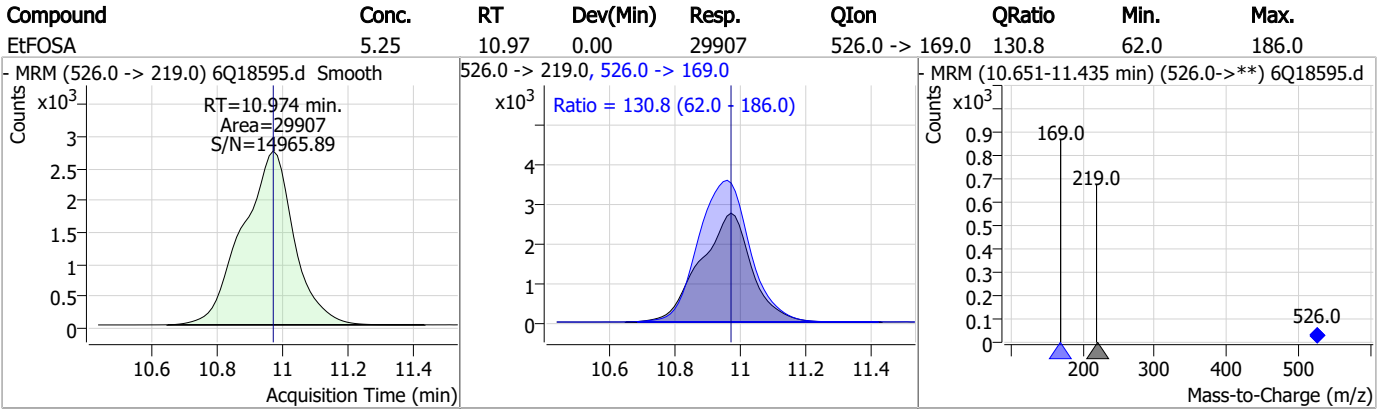
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-ICV279 Method: EPA DRAFT 1633
Lab FileID: 6Q18595.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:26 Supervisor approved: 06/01/23 15:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18596.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:41:13 PM
 Sample Name : icv279-20
 Vial : P1-B2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	186962	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62853	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	68388	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	62709	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	94819	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	43451	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	25438	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	32143	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	32578	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17789	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34684	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	24348	2.50 µg/L	0.000
M3-PFHxS	7.118	402.1 -> 79.9	14940	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	14671	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3772	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5411	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5749	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	28514	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	43052	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	25180	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	115543	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	149096	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13637	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13536	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	18696	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	78415	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11177	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	100296	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	34929	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	53262	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	61388	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3772	5.06 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5411	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5749	5.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	32578	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17789	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C3-PFBS	5.334	302.1 -> 79.9	24348	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C3-PFHxS	7.118	402.1 -> 79.9	14940	2.39 µg/L	-0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C4-PFBA	2.822	216.8 -> 171.9	186962	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	62709	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C5-PFHxA	5.417	318.0 -> 273.0	68388	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C5-PFPeA	4.210	268.3 -> 223.0	62853	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C6-PFDA	8.014	519.1 -> 474.1	25438	1.24 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C7-PFUnDA	8.468	570.0 -> 525.1	32143	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-FOSA	9.598	506.1 -> 77.8	34684	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOA	7.013	421.1 -> 376.0	94819	2.52 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-PFOS	8.165	507.1 -> 79.9	14671	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C9-PFNA	7.545	472.1 -> 427.0	43451	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSAA	8.072	573.2 -> 419.0	28514	4.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	43052	10.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	13536	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
d5-EtFOSAA	8.267	589.2 -> 419.0	25180	4.59 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	115543	24.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	149096	24.28 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	13637	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	106559	19.45 µg/L	99
		327.1 -> 80.9	41236		
6:2FTS	6.789	427.1 -> 407.0	108000	20.31 µg/L	98
		427.1 -> 80.9	35107		
8:2FTS	7.816	527.1 -> 507.0	57936	18.12 µg/L	96
		527.1 -> 80.8	23329		
EtFOSAA	8.280	584.2 -> 419.1	68565	21.17 µg/L	95
		584.2 -> 526.0	34564		
FOSA	9.589	498.1 -> 77.9	212928	17.73 µg/L	99
		498.1 -> 478.0	6898		
MeFOSAA	8.085	570.1 -> 419.0	122540	20.90 µg/L	98
		570.1 -> 483.0	22605		
PFBA	2.818	212.8 -> 168.9	117681	19.01 µg/L	100
PFBS	5.323	298.7 -> 79.9	164900	19.91 µg/L	100
		298.7 -> 98.8	60156		
PFDA	8.014	512.9 -> 469.0	593616	20.13 µg/L	99
		512.9 -> 219.0	93514		
PFDoDA	8.900	613.1 -> 569.0	386783	17.29 µg/L	97
		613.1 -> 319.0	57188		
PFDS	9.052	599.0 -> 79.9	68402	18.65 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	34080	19.31 µg/L	99
		363.1 -> 319.0	535964		
PFHpS	7.673	363.1 -> 169.0	83630	19.13 µg/L	97
		449.0 -> 79.9	134544		
PFHxA	5.407	449.0 -> 98.9	64128	18.15 µg/L	98
		313.0 -> 269.0	416654		
PFHxS	7.119	313.0 -> 118.9	22162	20.60 µg/L	99
		398.7 -> 79.9	139202		
PFNA	7.545	398.7 -> 98.9	65641	20.84 µg/L	100
		463.0 -> 419.0	641763		
PFNS	8.631	463.0 -> 219.0	125644	19.77 µg/L	100
		548.8 -> 79.9	116407		
PFOA	7.028	548.8 -> 98.9	56297	19.19 µg/L	100
		413.0 -> 369.0	776954		
PFOS	8.166	413.0 -> 169.0	134705	16.71 µg/L	95
		498.9 -> 79.9	112048		
PFPeA	4.212	498.9 -> 98.8	55641	19.67 µg/L	100
		263.0 -> 219.0	296977		
PFPeS	6.422	349.1 -> 79.9	130985	19.45 µg/L	99
		349.1 -> 98.9	62624		
PFTeDA	9.628	713.1 -> 669.0	332044	18.97 µg/L	97
		713.1 -> 168.9	28380		
PFTrDA	9.284	663.0 -> 619.0	360376	15.95 µg/L	94
		663.0 -> 168.9	41925		
PFUnDA	8.468	563.1 -> 519.0	390329	18.69 µg/L	96
		563.1 -> 269.1	66877		
11CI-PF3OUdS	9.336	630.9 -> 450.9	315465	19.53 µg/L	98
		632.9 -> 452.9	94491		
9CI-PF3ONS	8.495	530.8 -> 351.0	510603	20.06 µg/L	97
		532.8 -> 353.0	158372		
ADONA	6.632	376.9 -> 250.9	988864	17.29 µg/L	99
		376.9 -> 84.8	270258		
HFPO-DA	5.783	284.9 -> 168.9	67617	18.53 µg/L	95
		284.9 -> 184.9	7725		
3:3FTCA	3.659	241.0 -> 177.0	18175	18.81 µg/L	97
		241.0 -> 117.0	2385		
5:3FTCA	6.074	341.0 -> 237.1	81054	19.62 µg/L	95
		341.0 -> 217.0	61014		
7:3FTCA	7.510	441.0 -> 316.9	53207	18.81 µg/L	90
		441.0 -> 336.9	125849		
EtFOSA	10.974	526.0 -> 219.0	112015	17.62 µg/L	89
		526.0 -> 169.0	125550		
EtFOSE	10.920	630.0 -> 58.9	660042	99.23 µg/L	100
		511.9 -> 219.0	95732		
MeFOSA	10.741	511.9 -> 169.0	105640	19.23 µg/L	81
		616.1 -> 58.9	449429		
MeFOSE	10.673	699.1 -> 79.9	28833	97.88 µg/L	100
		699.1 -> 98.8	15285		
PFDoDS	9.755	295.0 -> 201.0	53119	17.69 µg/L	99
		295.0 -> 84.9	13945		
NFDHA	5.288	279.0 -> 85.1	201256	19.00 µg/L	98
		229.0 -> 84.9	156145		
PFMBA	4.626	314.8 -> 134.9	490283	19.54 µg/L	100
		314.8 -> 82.9	16928		
PFMPA	3.351			16.82 µg/L	99
PFEESA	5.862				

7.7.26
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= Qualifier out of range, m = manually integrated, + = Area summed

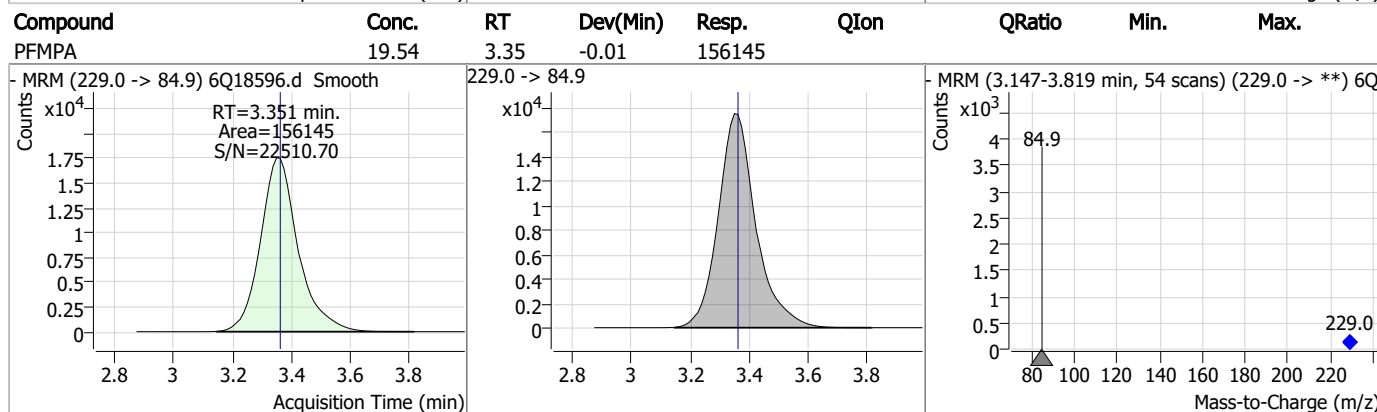
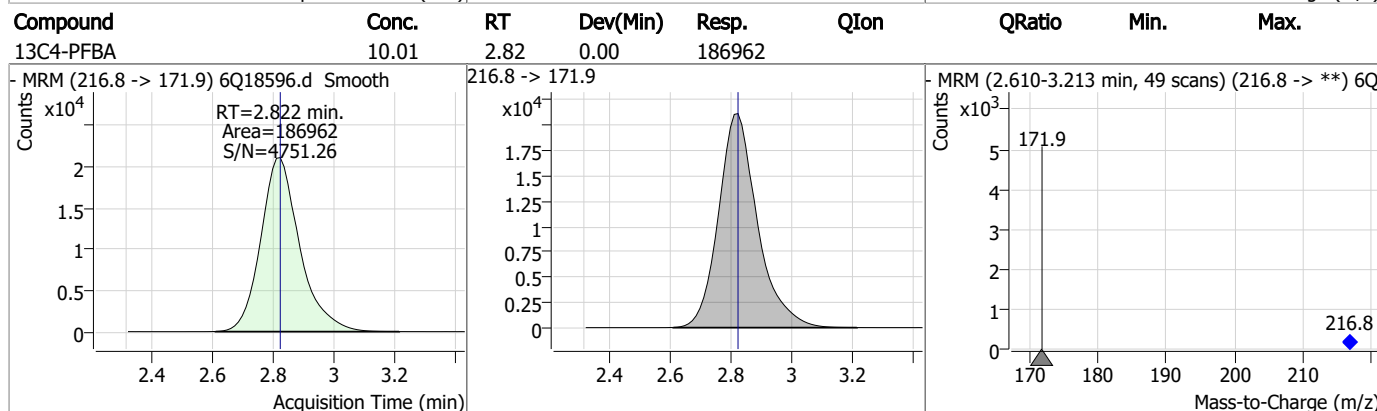
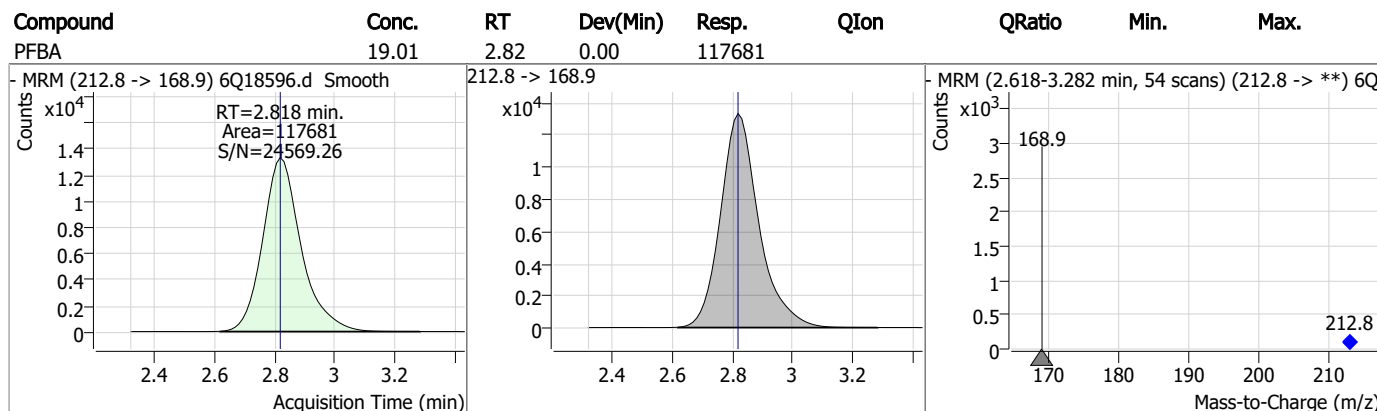
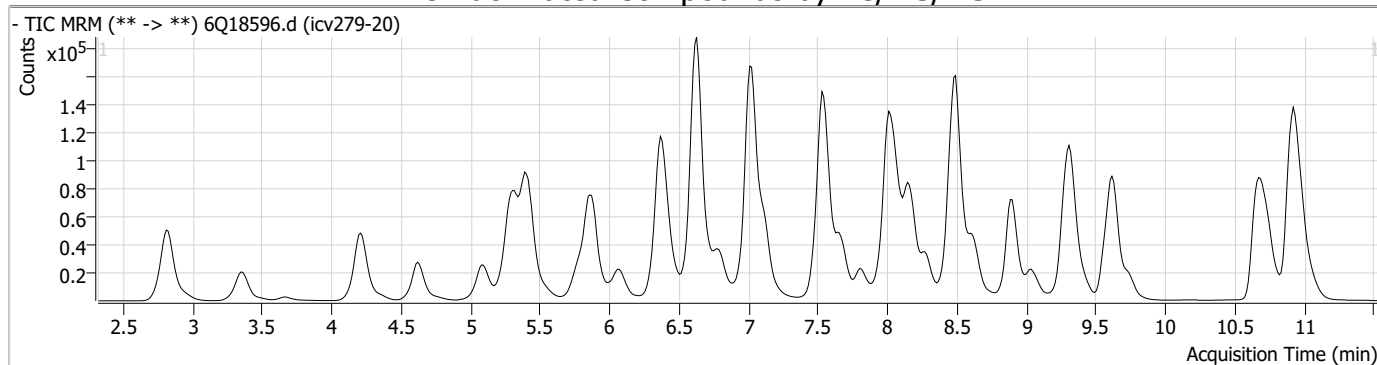
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.26

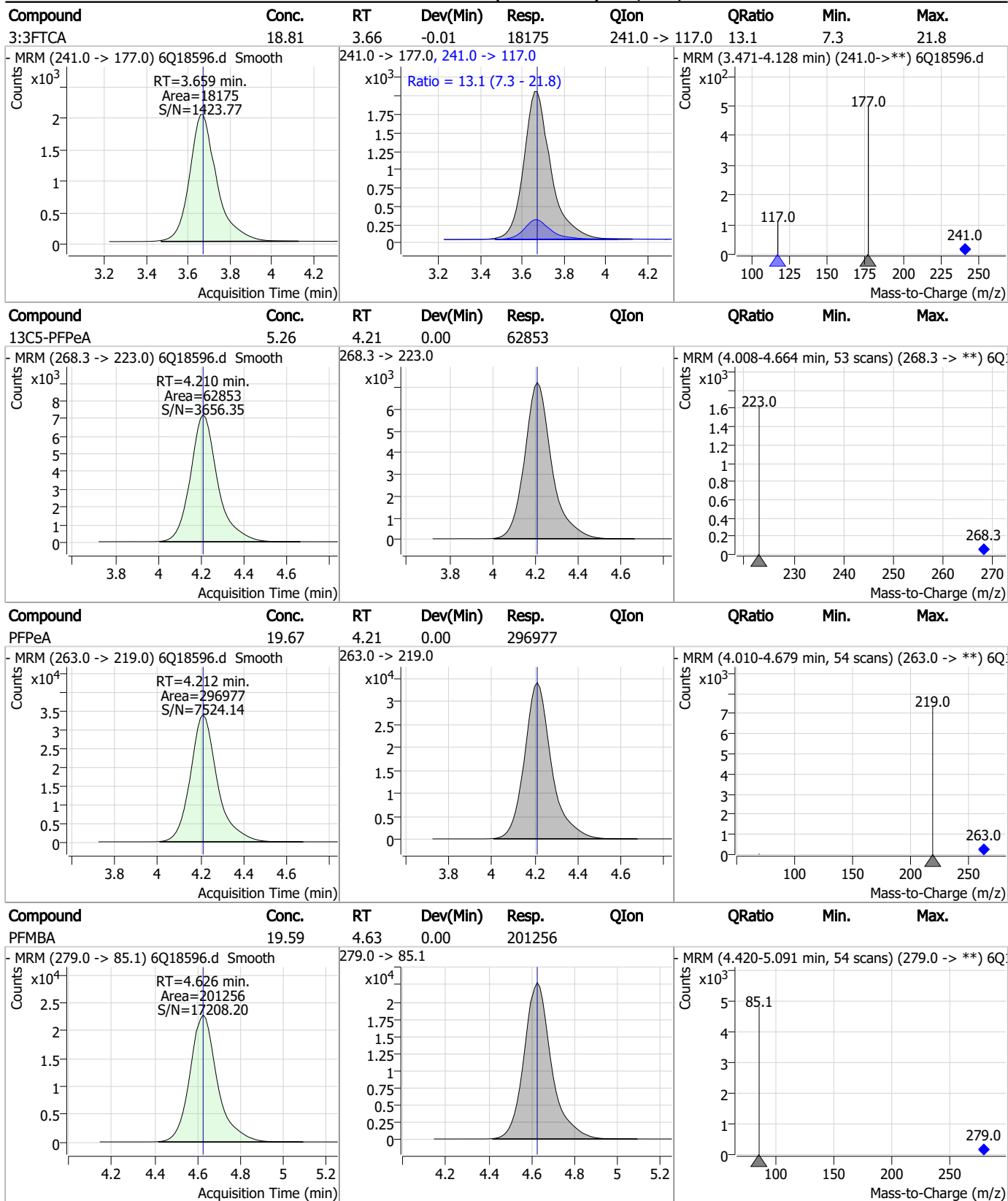
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Perfluorinated Compounds by LC/MS/MS



7.7.26
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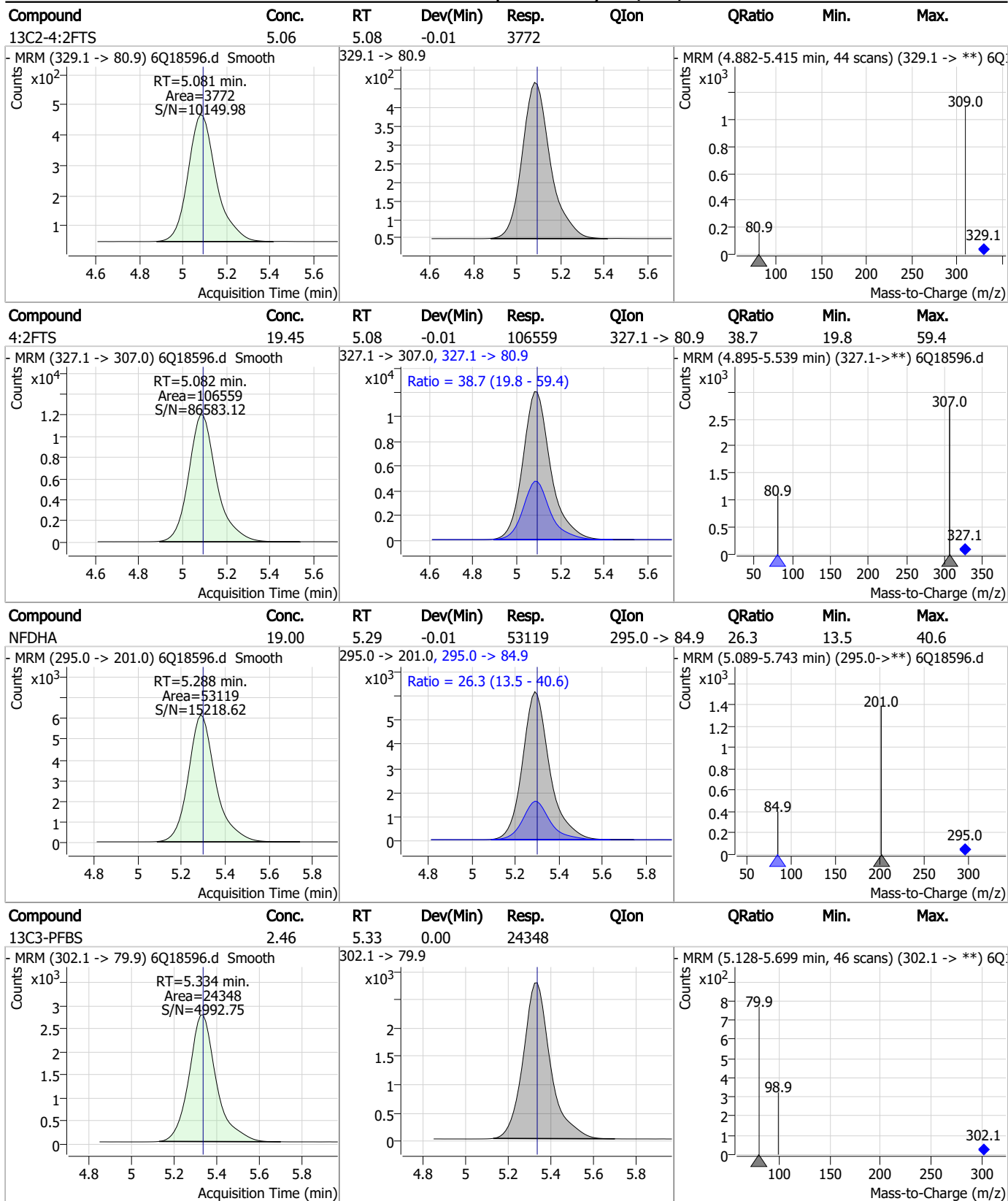
Perfluorinated Compounds by LC/MS/MS



7.7.26

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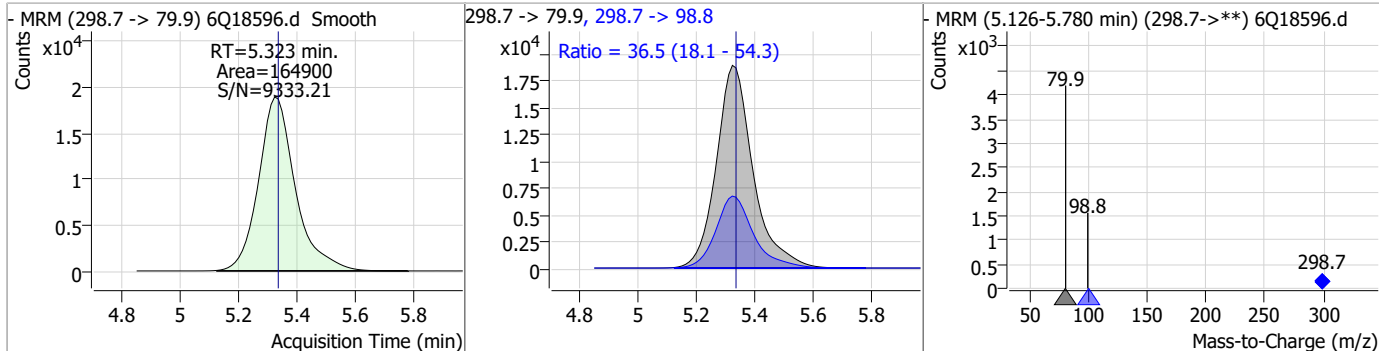
Perfluorinated Compounds by LC/MS/MS



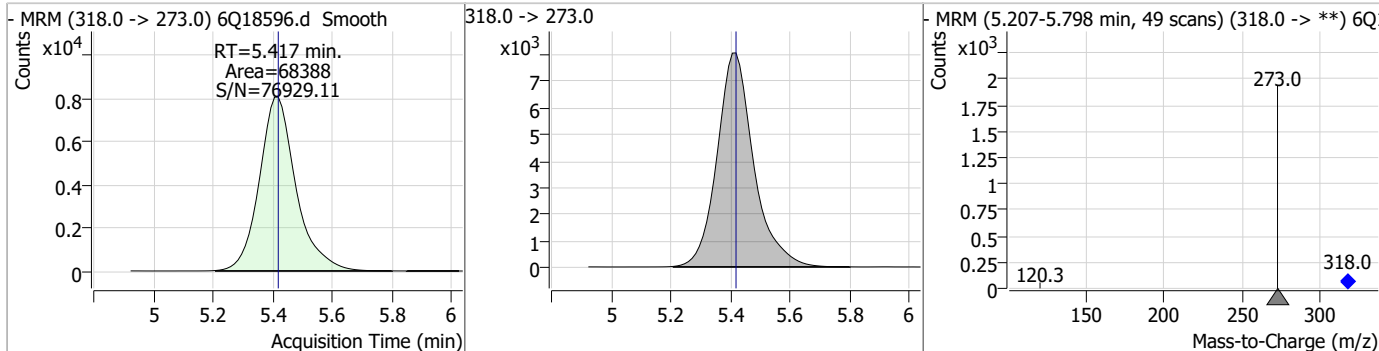
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Perfluorinated Compounds by LC/MS/MS

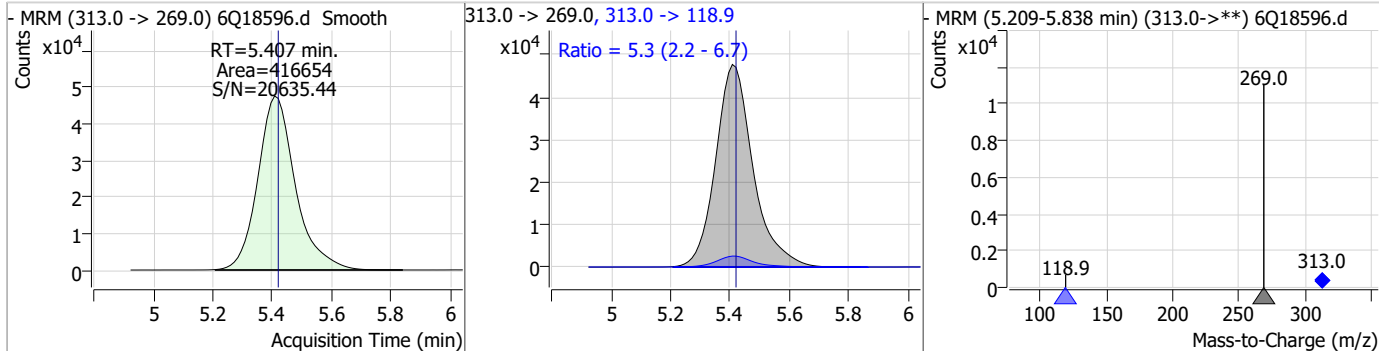
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.91	5.32	-0.01	164900	298.7 -> 98.8	36.5	18.1	54.3



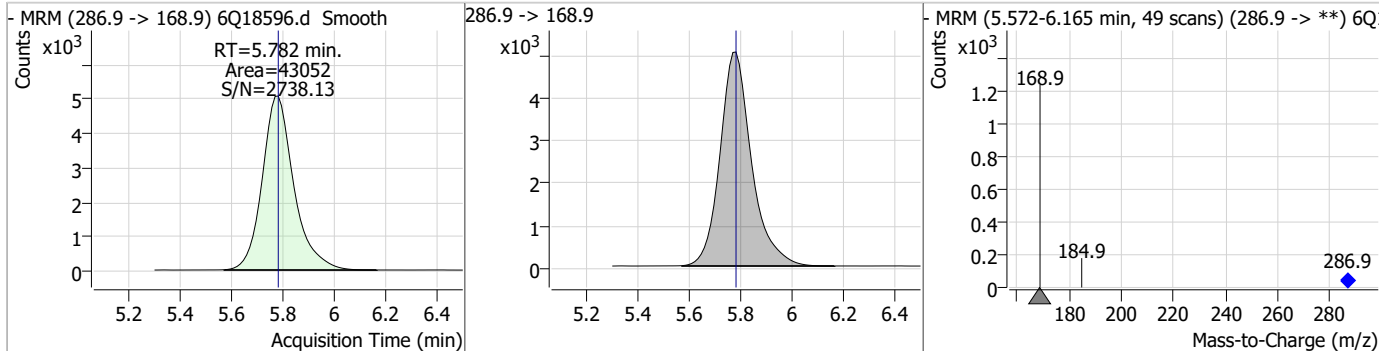
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.63	5.42	0.00	68388	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.15	5.41	-0.01	416654	313.0 -> 118.9	5.3	2.2	6.7

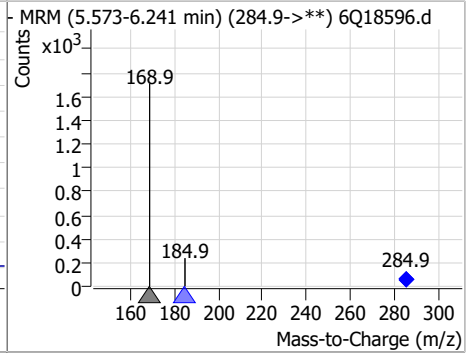
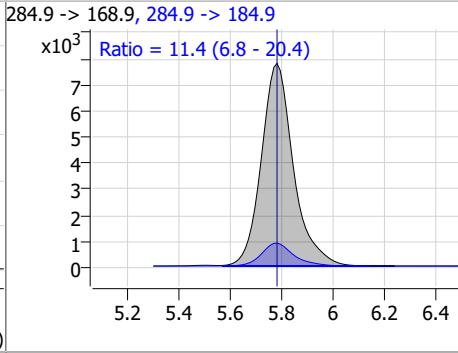
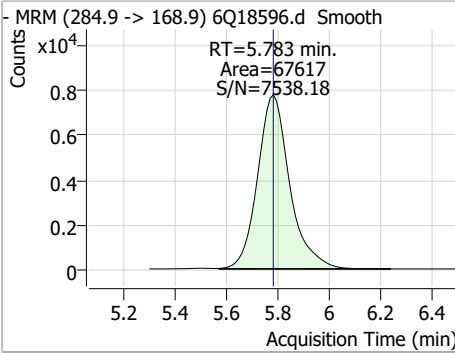


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.67	5.78	0.00	43052	286.9 -> 168.9			

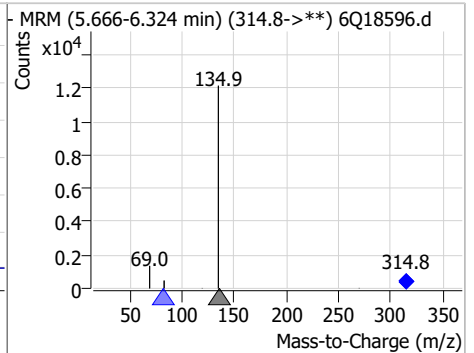
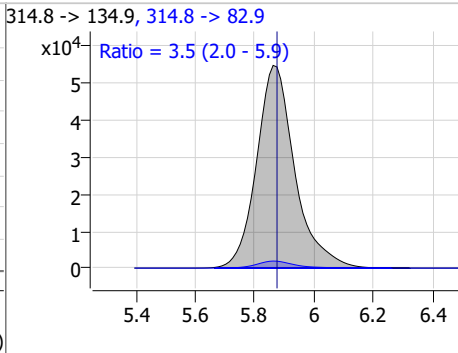
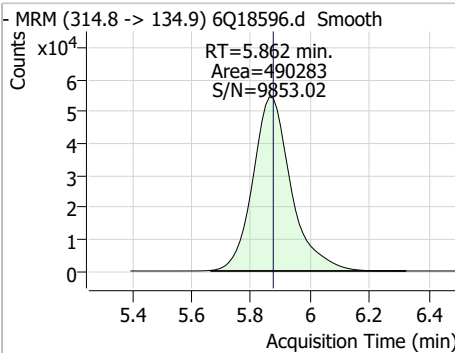


Perfluorinated Compounds by LC/MS/MS

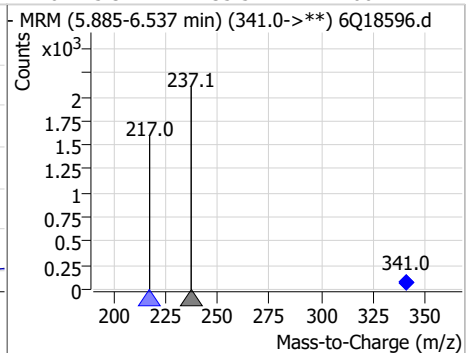
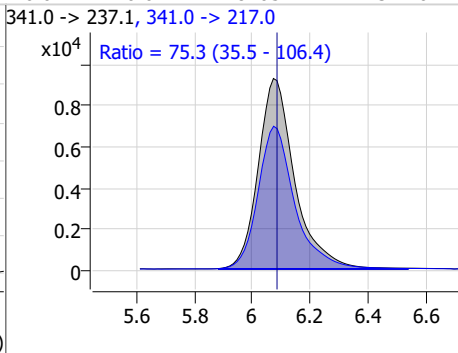
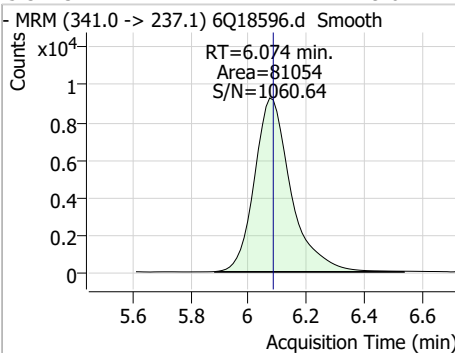
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.53	5.78	0.00	67617	284.9 -> 184.9	11.4	6.8	20.4



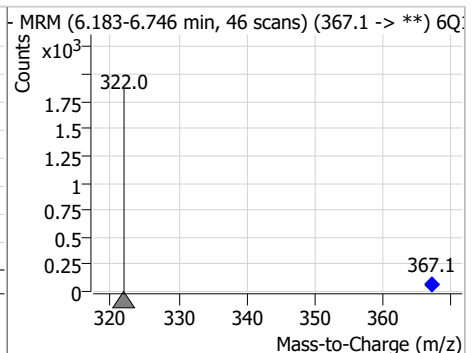
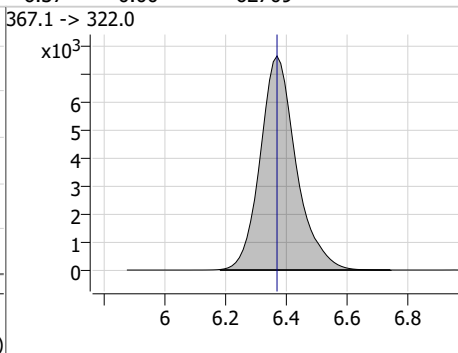
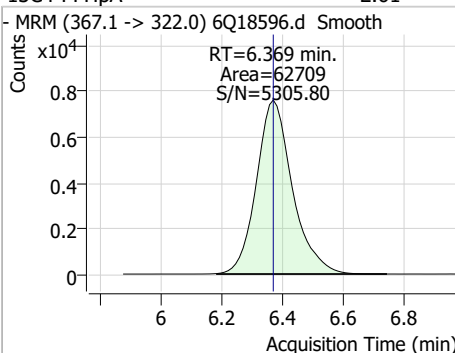
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	16.82	5.86	-0.01	490283	314.8 -> 82.9	3.5	2.0	5.9



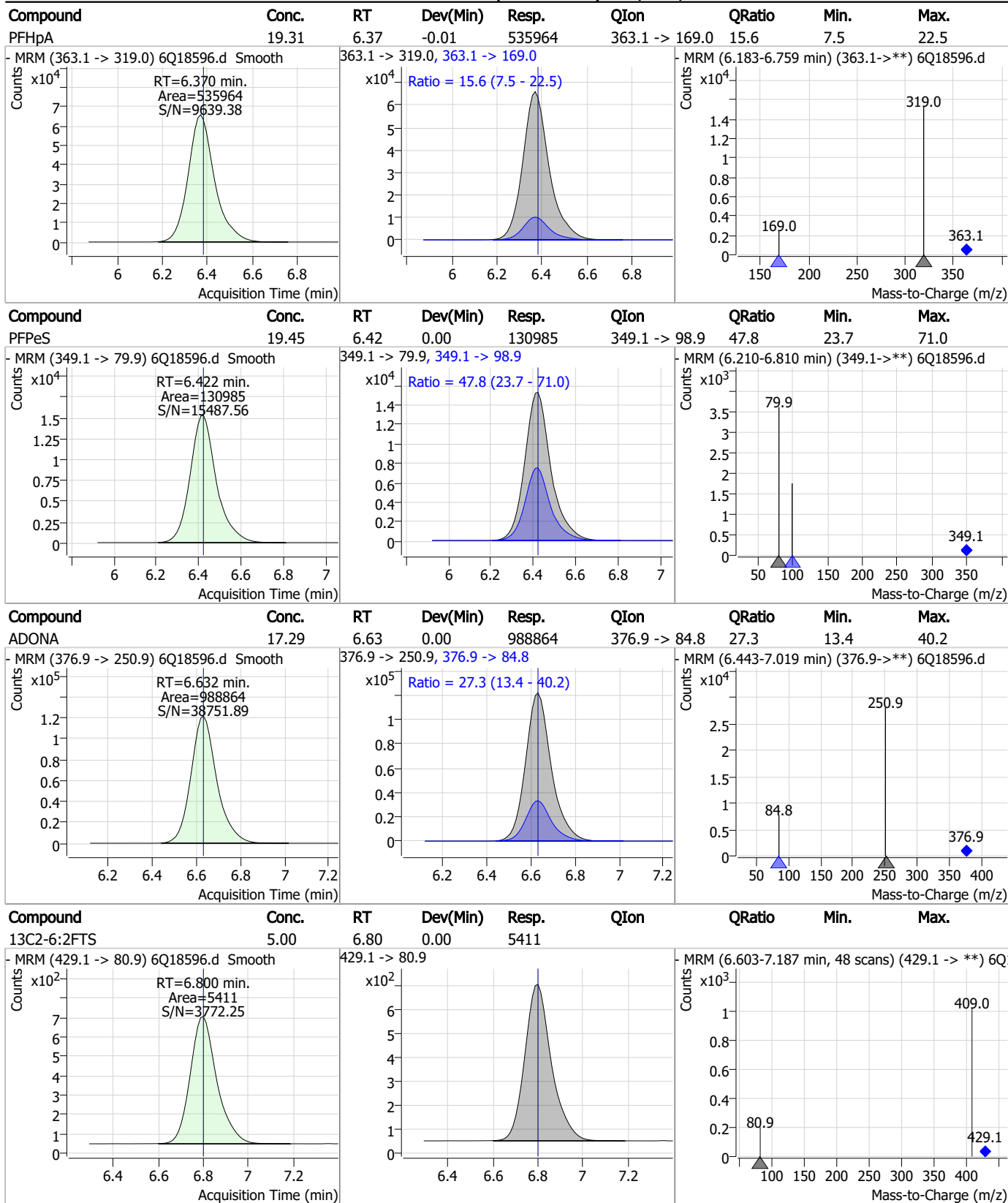
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	19.62	6.07	-0.01	81054	341.0 -> 217.0	75.3	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.61	6.37	0.00	62709	367.1 -> 322.0			



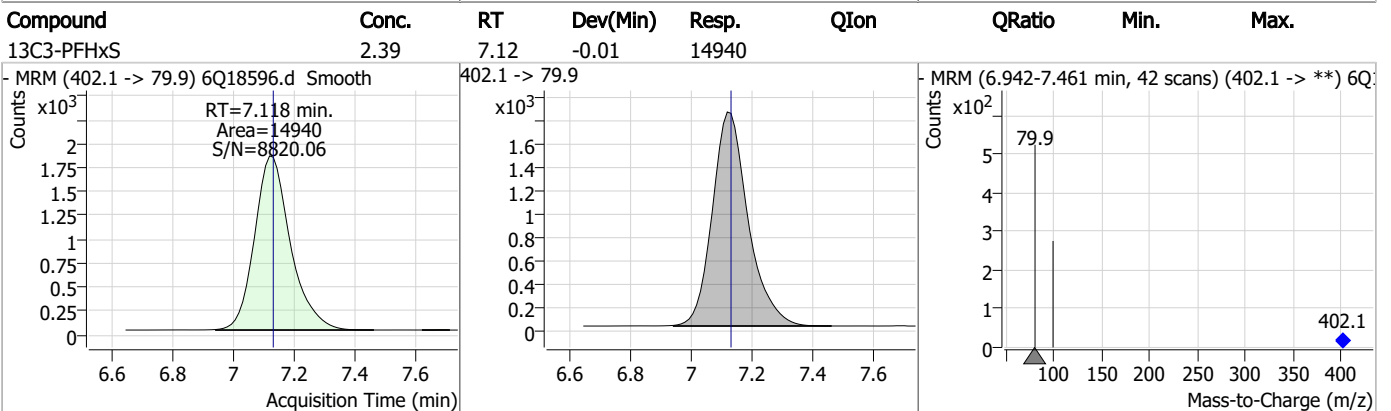
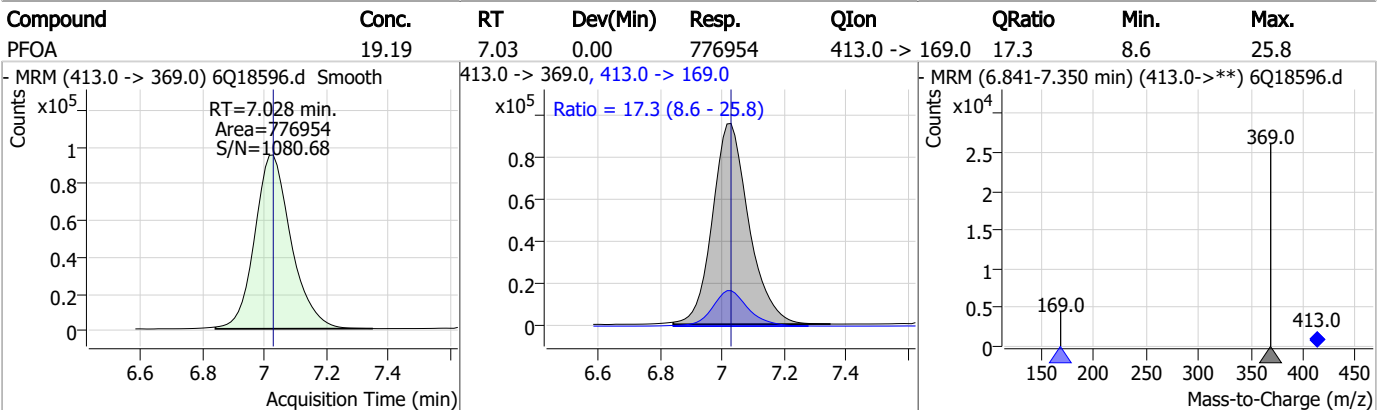
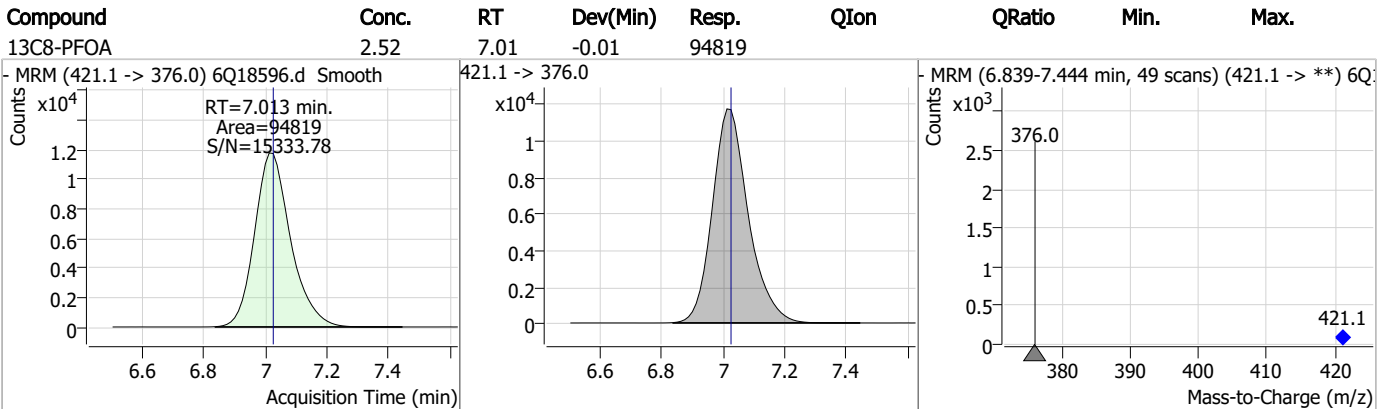
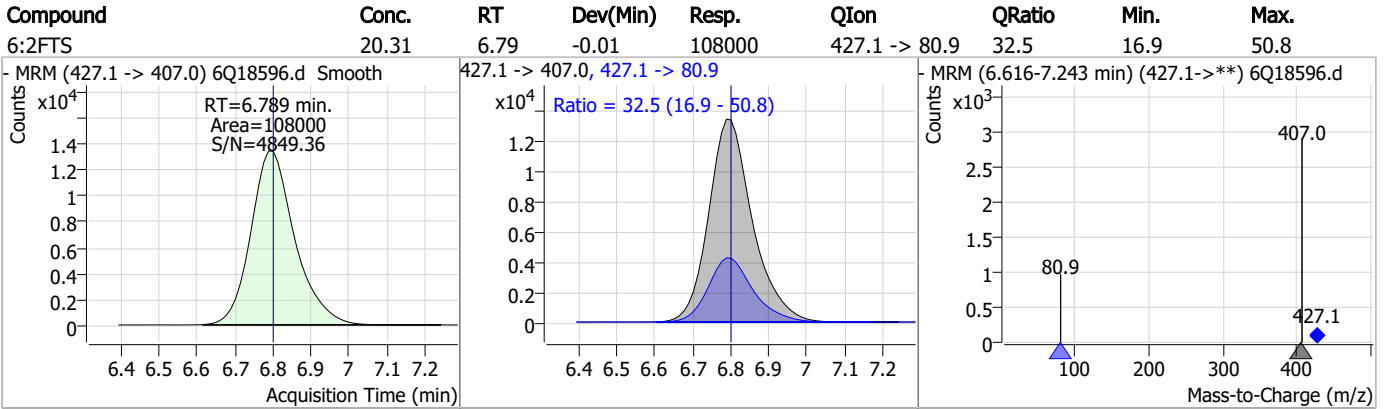
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

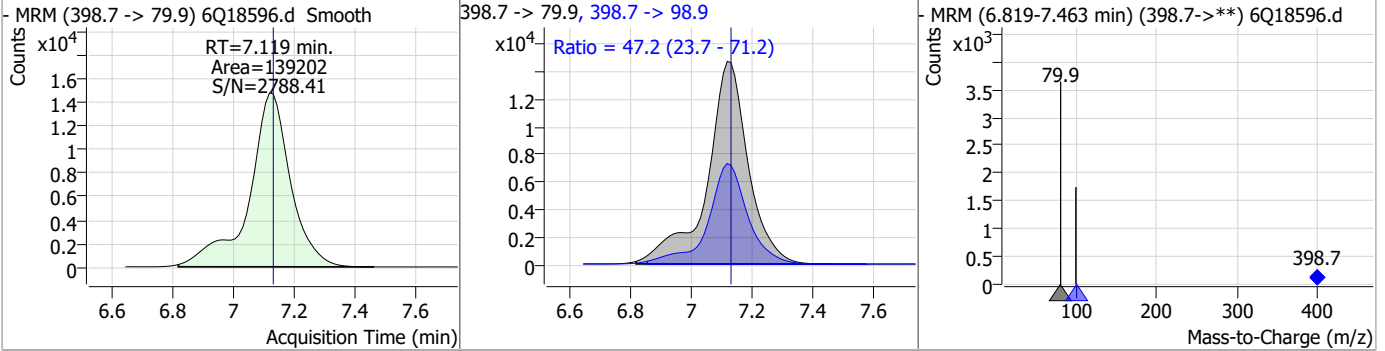


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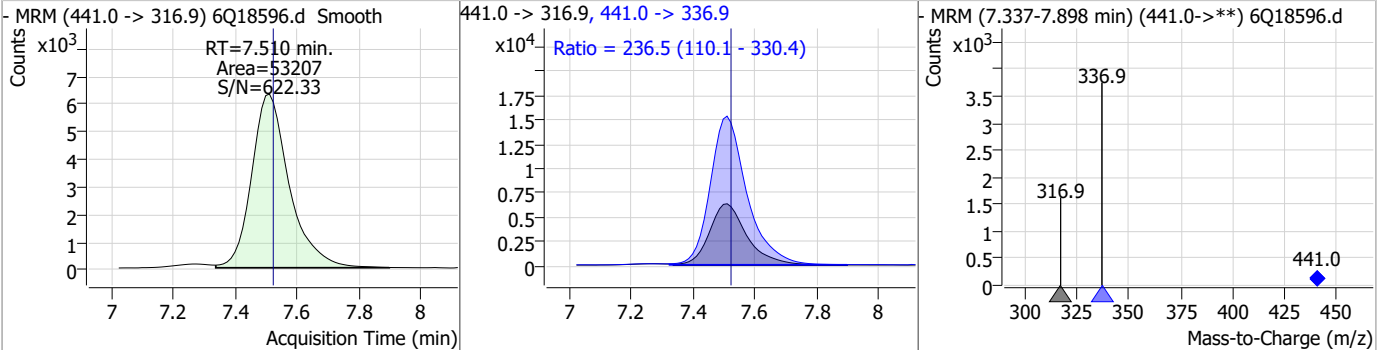


Perfluorinated Compounds by LC/MS/MS

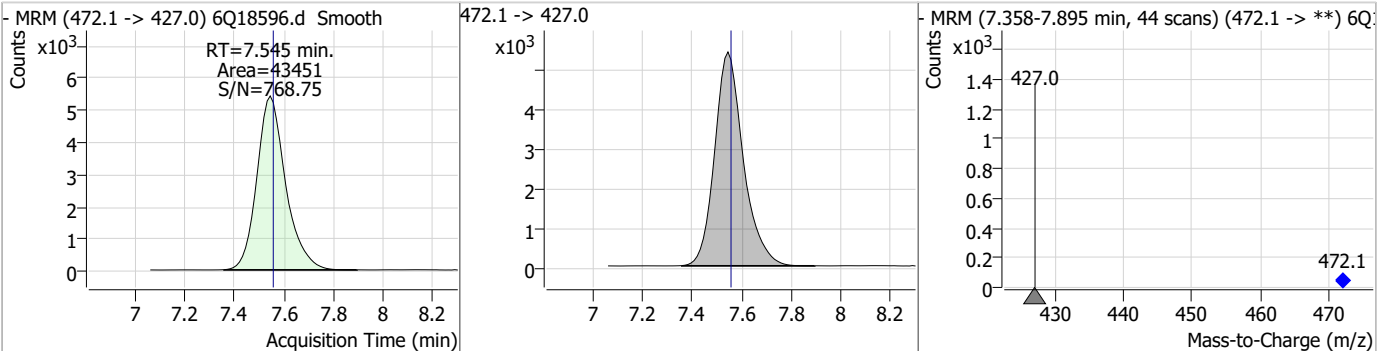
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.60	7.12	-0.01	139202	398.7 -> 98.9	47.2	23.7	71.2



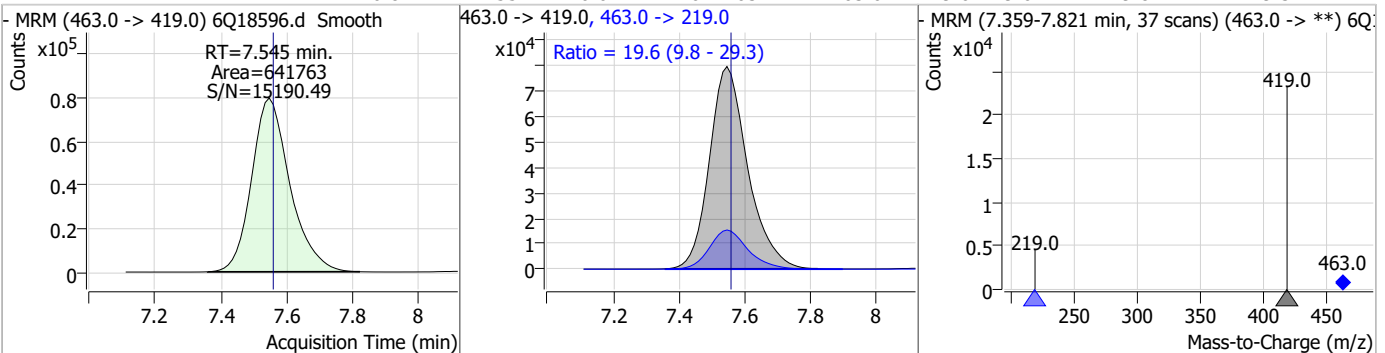
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	18.81	7.51	-0.01	53207	441.0 -> 336.9	236.5	110.1	330.4



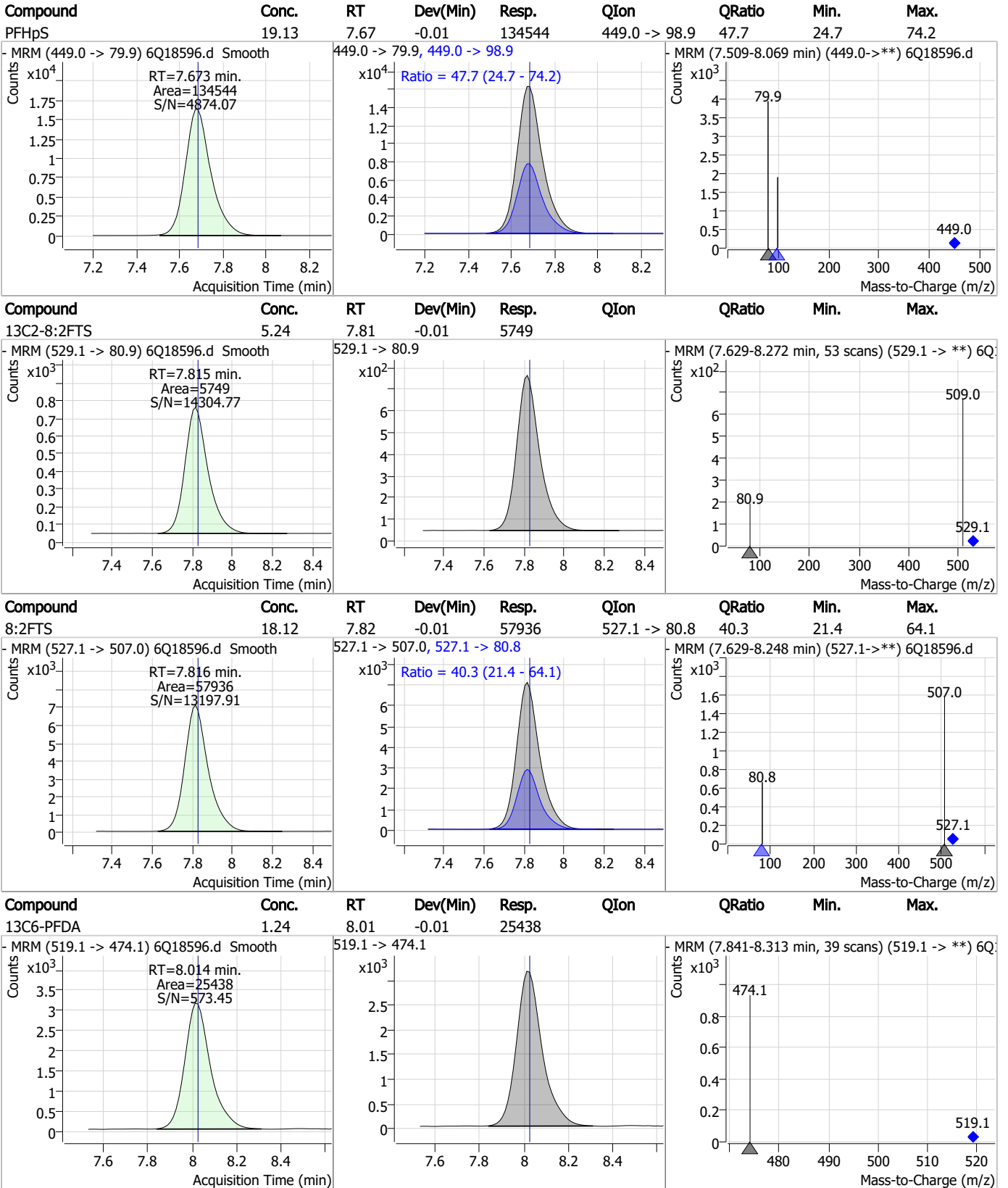
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	7.54	-0.01	43451	472.1 -> 427.0	472.1	427.0	472.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.84	7.55	-0.01	641763	463.0 -> 219.0	19.6	9.8	29.3



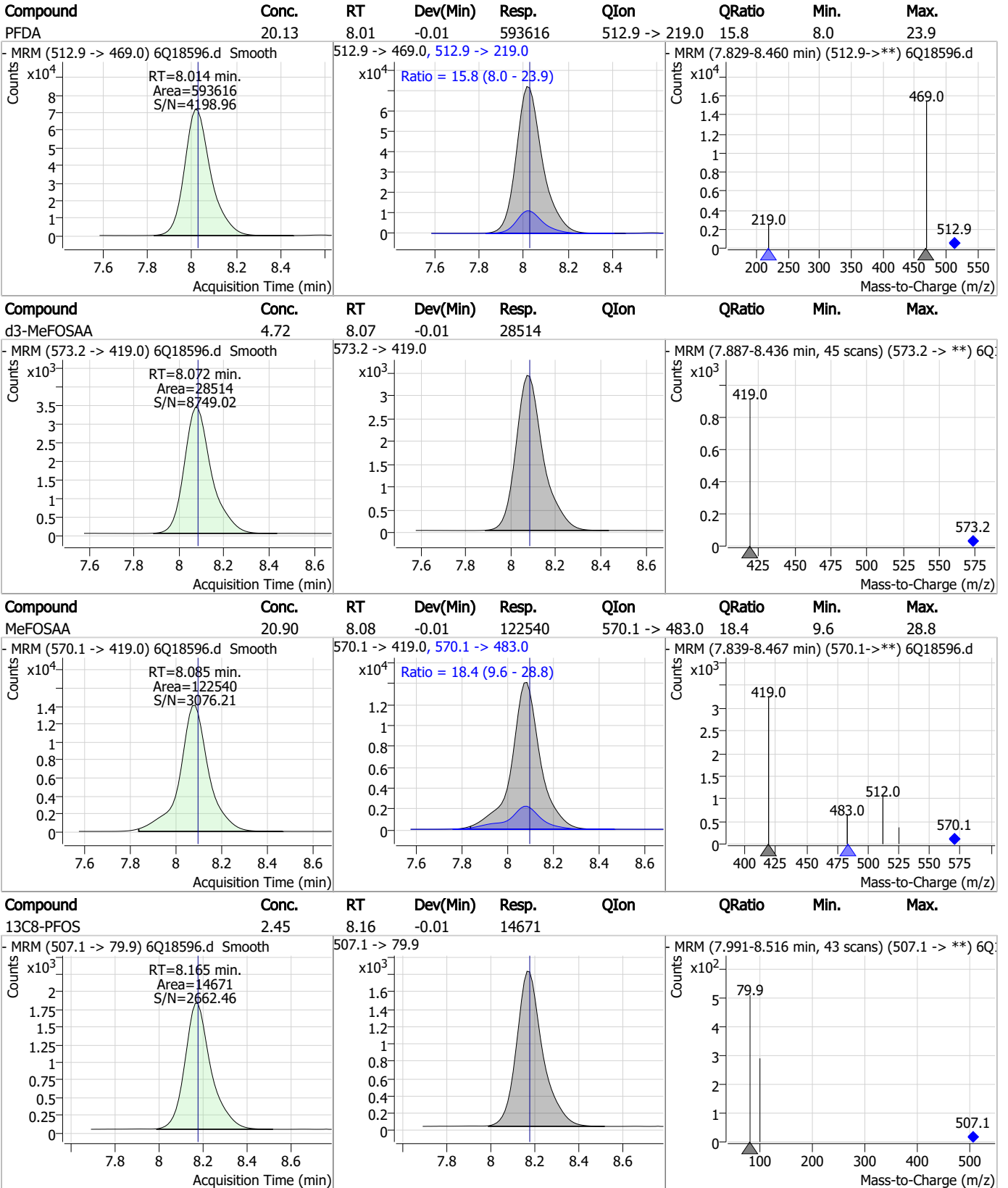
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

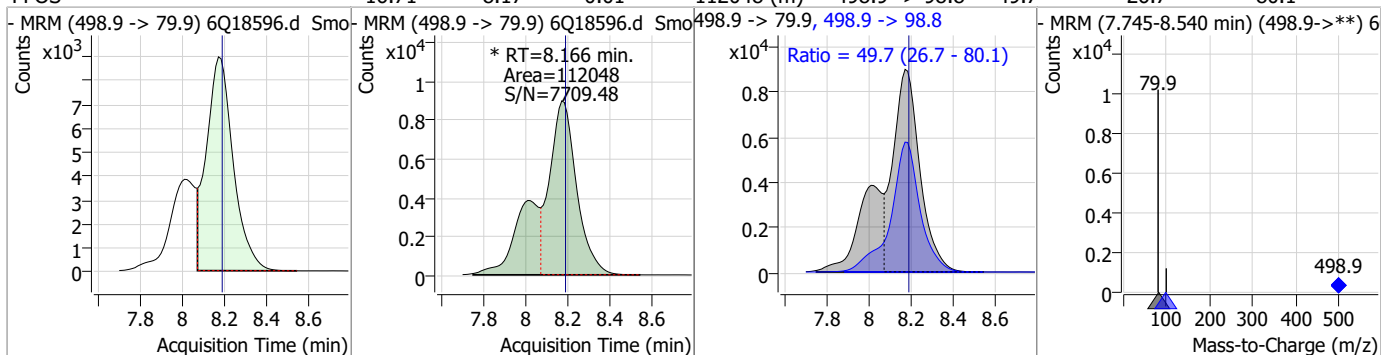


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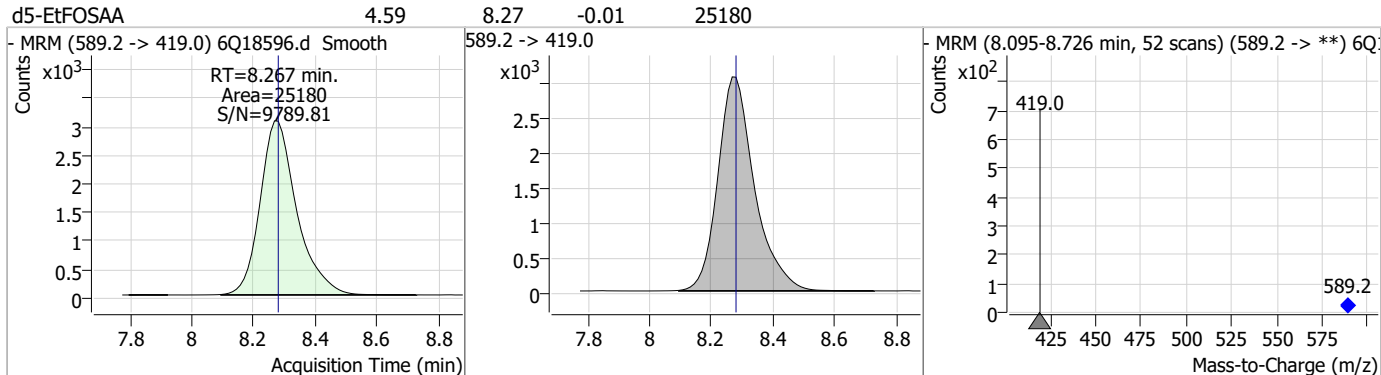
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Perfluorinated Compounds by LC/MS/MS

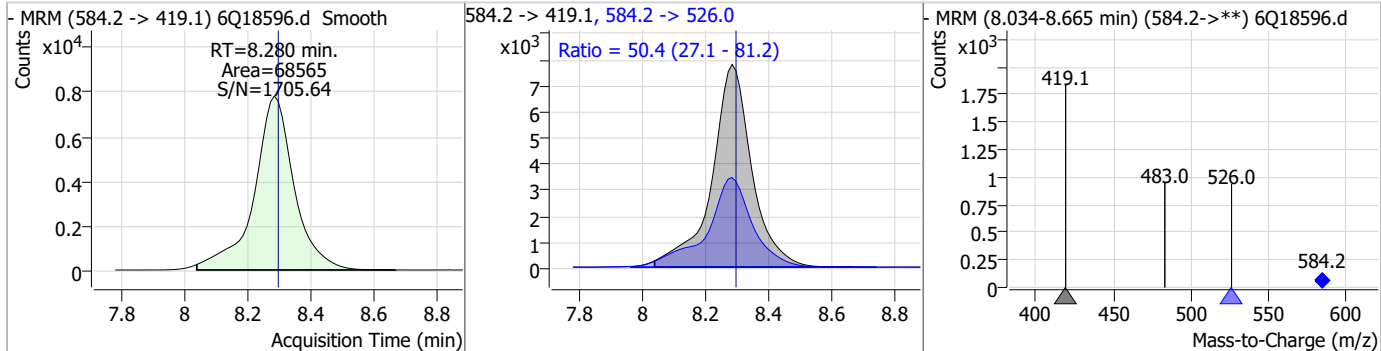
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.71	8.17	-0.01	112048 (m)	498.9 -> 98.8	49.7	26.7	80.1



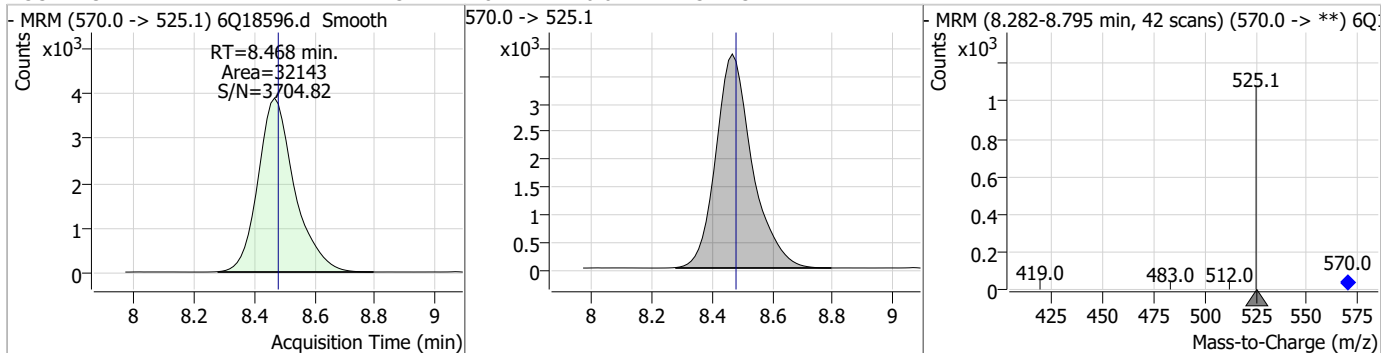
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.59	8.27	-0.01	25180				



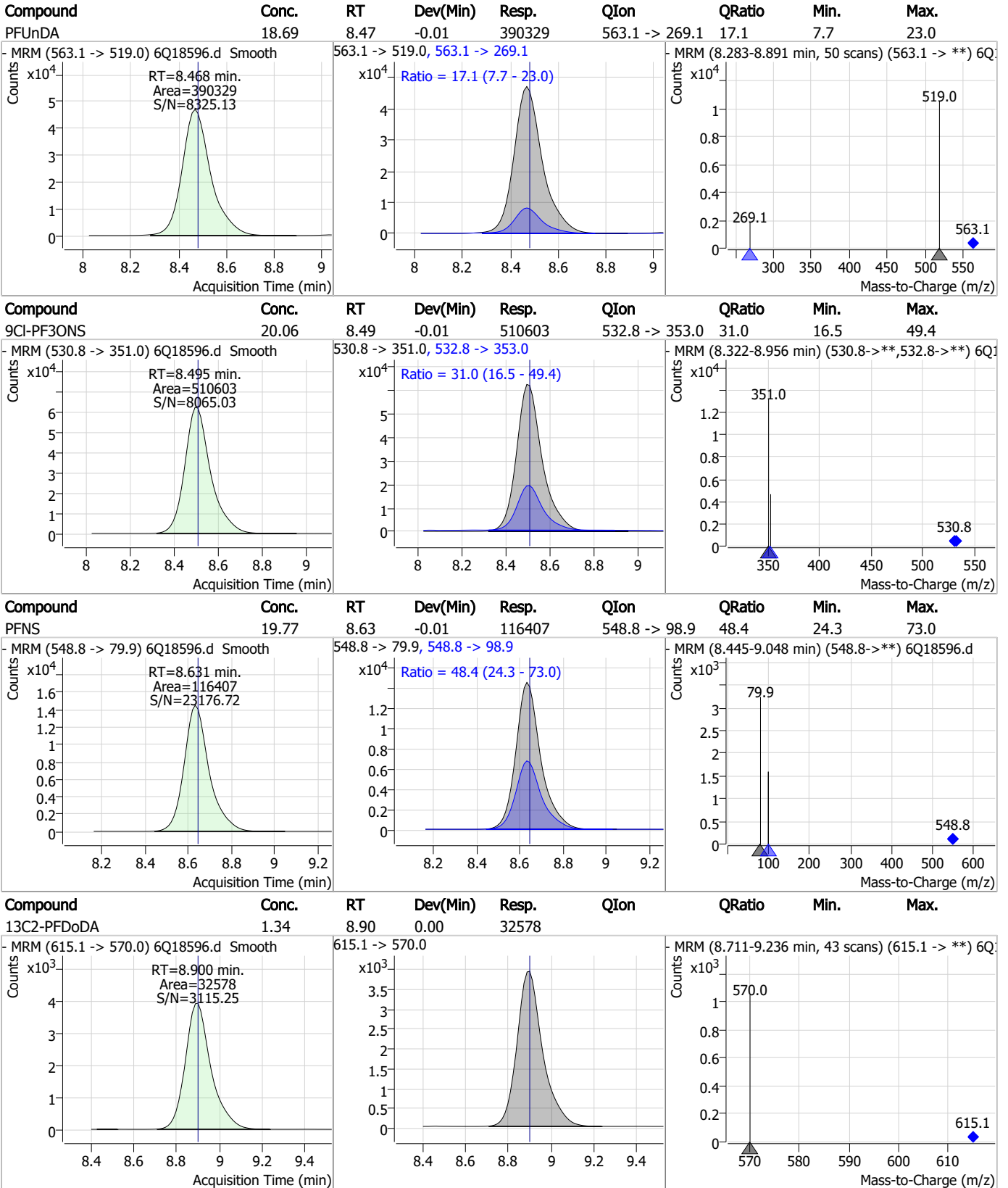
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.17	8.28	-0.01	68565	584.2 -> 526.0	50.4	27.1	81.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.23	8.47	-0.01	32143				



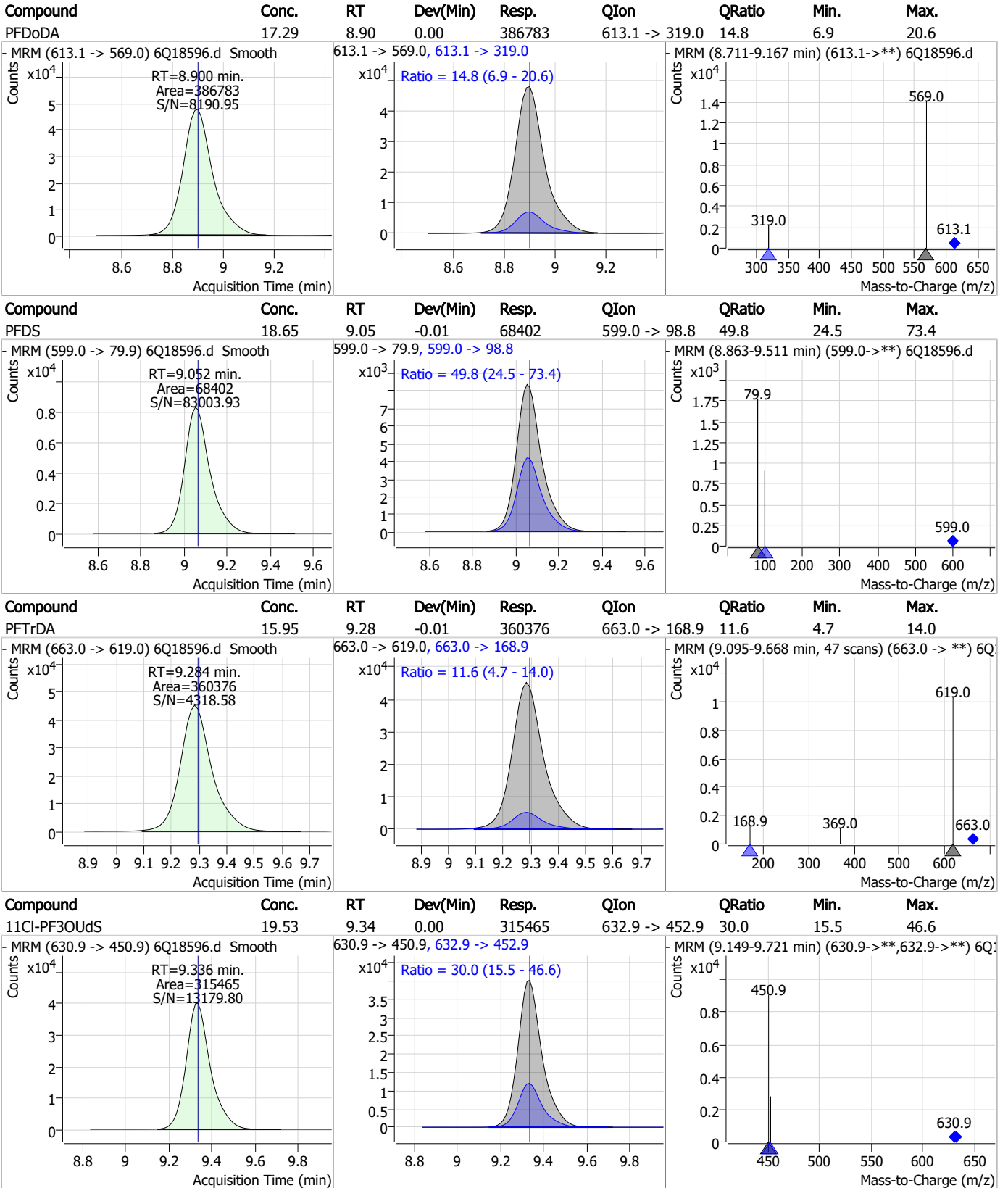
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

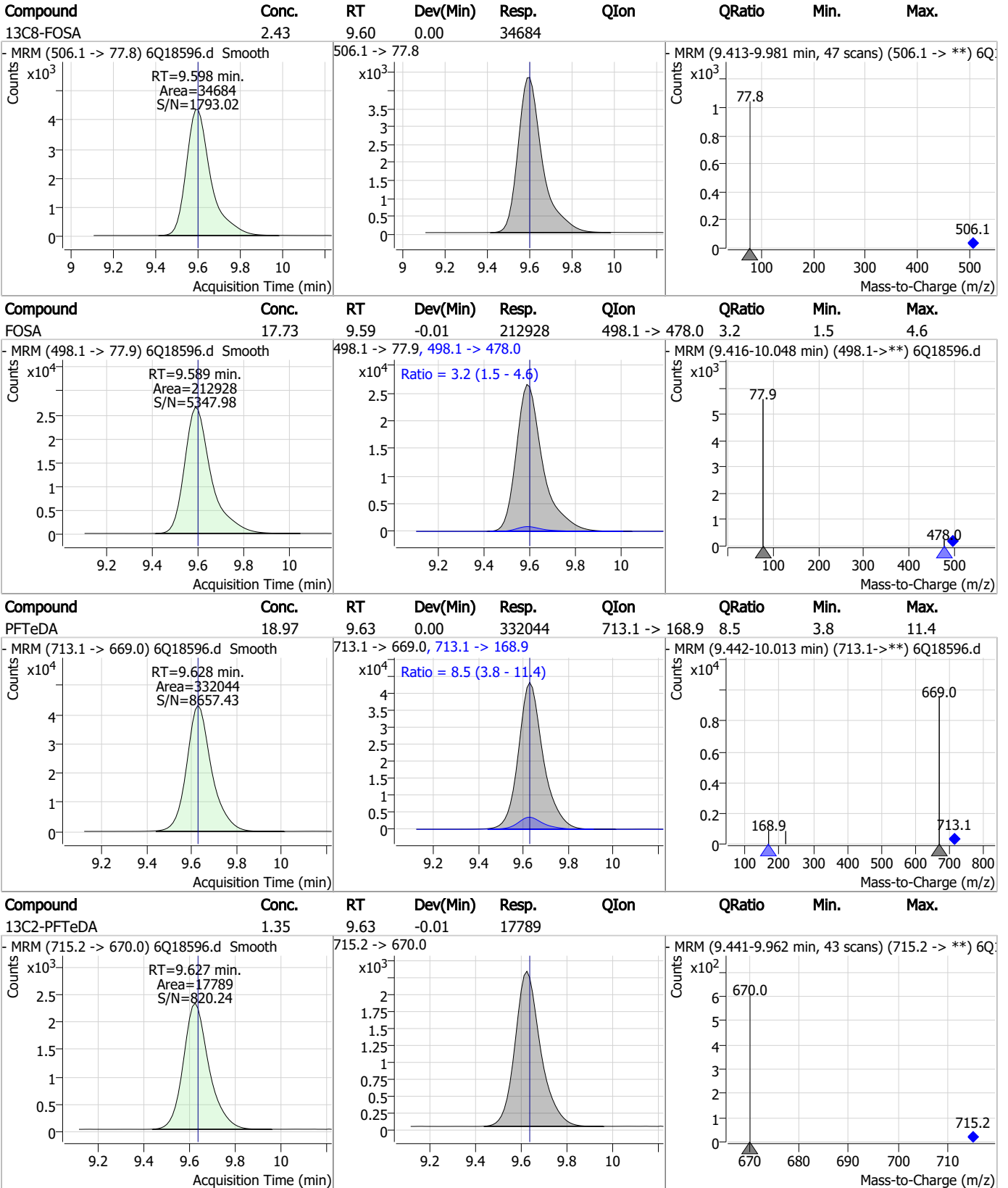


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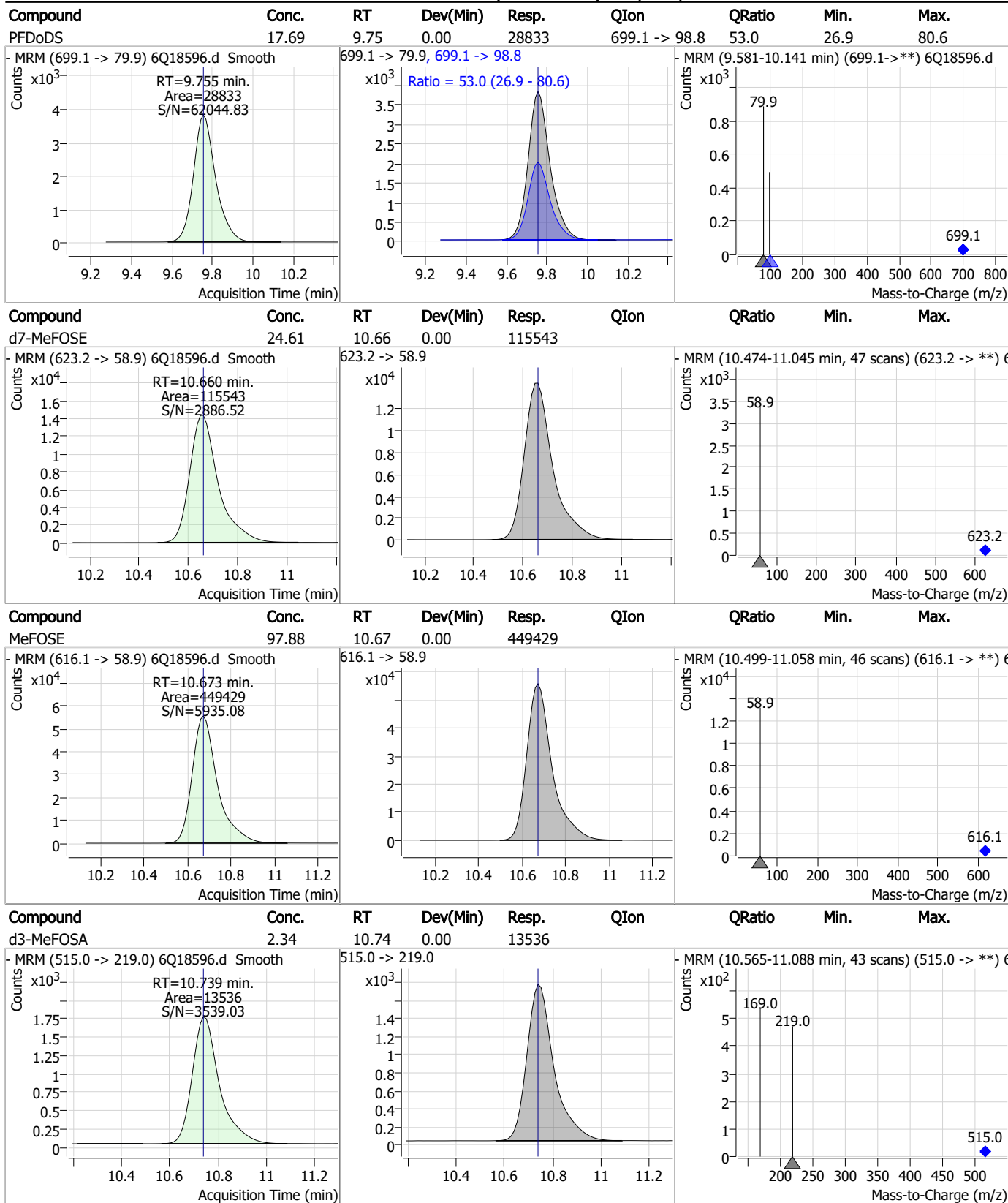
Perfluorinated Compounds by LC/MS/MS



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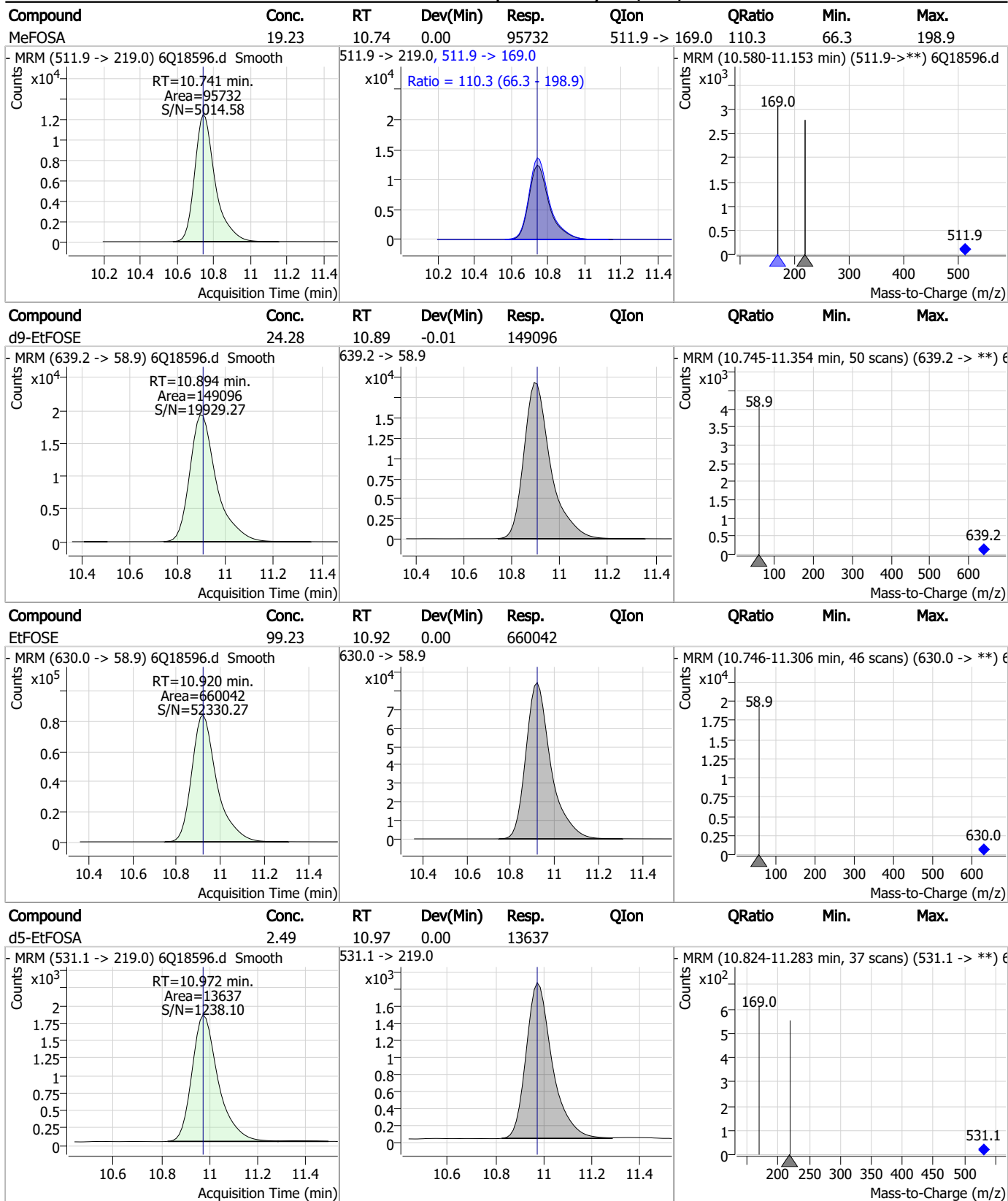
Perfluorinated Compounds by LC/MS/MS



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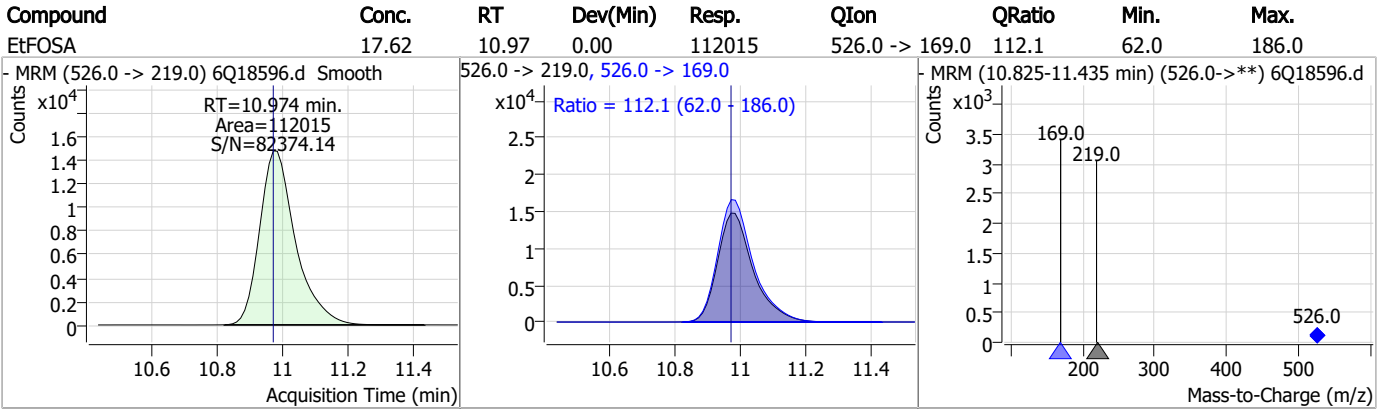
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-ICV279 Method: EPA DRAFT 1633
Lab FileID: 6Q18596.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:41 Supervisor approved: 06/01/23 15:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18597.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:55:42 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	186588	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62736	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	68986	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	63323	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	96661	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	42011	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	25785	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	35066	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	30113	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	17321	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35797	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	25233	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15176	2.50 µg/L	0.000
M8-PFOS	8.165	507.1 -> 79.9	14913	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	4010	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5848	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5682	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	30779	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	41544	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26459	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	117042	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	152765	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13878	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13737	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	19062	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	78746	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11240	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	101542	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	37779	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	53844	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	63422	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	4010	5.35 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5848	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5682	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFDoDA	8.887	615.1 -> 570.0	30113	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17321	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C3-PFBS	5.322	302.1 -> 79.9	25233	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.130	402.1 -> 79.9	15176	2.42 µg/L	0.000

7.7.27
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 = 96.7%	
13C4-PFBA	2.822	216.8 -> 171.9	186588	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	63323	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFHxA	5.404	318.0 -> 273.0	68986	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	62736	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	8.027	519.1 -> 474.1	25785	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C7-PFUnDA	8.468	570.0 -> 525.1	35066	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-FOSA	9.598	506.1 -> 77.8	35797	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-PFOA	7.026	421.1 -> 376.0	96661	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-PFOS	8.165	507.1 -> 79.9	14913	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C9-PFNA	7.545	472.1 -> 427.0	42011	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.7%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30779	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41544	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	13737	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.3%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26459	4.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
d7-MeFOSE	10.647	623.2 -> 58.9	117042	24.45 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
d9-EtFOSE	10.894	639.2 -> 58.9	152765	24.40 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	13878	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	50559	8.68 µg/L	98
		327.1 -> 80.9	19390		
6:2FTS	6.801	427.1 -> 407.0	52810	9.19 µg/L	97
		427.1 -> 80.9	16999		
8:2FTS	7.816	527.1 -> 507.0	29050	9.19 µg/L	99
		527.1 -> 80.8	12222		
EtFOSAA	8.280	584.2 -> 419.1	8693	2.55 µg/L	95
		584.2 -> 526.0	5034		
FOSA	9.589	498.1 -> 77.9	28963	2.34 µg/L	99
		498.1 -> 478.0	959		
MeFOSAA	8.085	570.1 -> 419.0	14902	2.35 µg/L	96
		570.1 -> 483.0	3109		
PFBA	2.818	212.8 -> 168.9	59285	9.60 µg/L	100
PFBS	5.323	298.7 -> 79.9	18176	2.12 µg/L	100
		298.7 -> 98.8	6576		
PFDA	8.027	512.9 -> 469.0	75675	2.53 µg/L	99
		512.9 -> 219.0	11784		
PFDODA	8.900	613.1 -> 569.0	51834	2.51 µg/L	95
		613.1 -> 319.0	8244		
PFDS	9.052	599.0 -> 79.9	8054	2.16 µg/L	96

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7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	4150	2.33 µg/L	96
		363.1 -> 319.0	65164		
PFHpS	7.685	363.1 -> 169.0	10978	2.24 µg/L	97
		449.0 -> 79.9	16037		
PFHxA	5.407	449.0 -> 98.9	8276	2.36 µg/L	97
		313.0 -> 269.0	54674		
PFHxS	7.119	313.0 -> 118.9	2997	2.23 µg/L	98
		398.7 -> 79.9	15286		
PFNA	7.545	398.7 -> 98.9	7446	2.60 µg/L	99
		463.0 -> 419.0	77276		
PFNS	8.631	463.0 -> 219.0	14652	2.18 µg/L	89
		548.8 -> 79.9	13031		
PFOA	7.028	548.8 -> 98.9	7286	2.42 µg/L	98
		413.0 -> 369.0	99796		
PFOS	8.166	413.0 -> 169.0	17874	2.15 µg/L	98
		498.9 -> 79.9	14645		
PFPeA	4.212	498.9 -> 98.8	7637	4.80 µg/L	100
		263.0 -> 219.0	72367		
PFPeS	6.422	349.1 -> 79.9	16317	2.39 µg/L	92
		349.1 -> 98.9	6890		
PFTeDA	9.628	713.1 -> 669.0	40007	2.35 µg/L	96
		713.1 -> 168.9	3536		
PFTrDA	9.284	663.0 -> 619.0	52821	2.53 µg/L	96
		663.0 -> 168.9	5615		
PFUnDA	8.468	563.1 -> 519.0	52534	2.31 µg/L	97
		563.1 -> 269.1	8663		
11CI-PF3OUdS	9.323	630.9 -> 450.9	72410	4.65 µg/L	98
		632.9 -> 452.9	21524		
9CI-PF3ONS	8.495	530.8 -> 351.0	117295	4.78 µg/L	92
		532.8 -> 353.0	32994		
ADONA	6.632	376.9 -> 250.9	255010	4.62 µg/L	99
		376.9 -> 84.8	66734		
HFPO-DA	5.783	284.9 -> 168.9	16700	4.74 µg/L	96
		284.9 -> 184.9	1992		
3:3FTCA	3.671	241.0 -> 177.0	11373	11.79 µg/L	97
		241.0 -> 117.0	1514		
5:3FTCA	6.074	341.0 -> 237.1	246759	59.22 µg/L	96
		341.0 -> 217.0	182862		
7:3FTCA	7.510	441.0 -> 316.9	173509	60.80 µg/L	93
		441.0 -> 336.9	362606		
EtFOSA	10.974	526.0 -> 219.0	29663	4.59 µg/L	92
		526.0 -> 169.0	39606		
EtFOSE	10.907	630.0 -> 58.9	81929	12.02 µg/L	100
		511.9 -> 219.0	25504		
MeFOSA	10.741	511.9 -> 169.0	34359	5.05 µg/L	98
		616.1 -> 58.9	55465		
MeFOSE	10.673	699.1 -> 79.9	3876	11.92 µg/L	100
		699.1 -> 98.8	1967		
PFDoDS	9.755	295.0 -> 201.0	13110	2.34 µg/L	96
		295.0 -> 84.9	3299		
NFDHA	5.288	279.0 -> 85.1	48531	4.65 µg/L	96
		229.0 -> 84.9	38221		
PFMBA	4.626	314.8 -> 134.9	124838	4.79 µg/L	100
		314.8 -> 82.9	4466		
PFMPA	3.351			4.25 µg/L	99
PFEESA	5.862				

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

7.7.27
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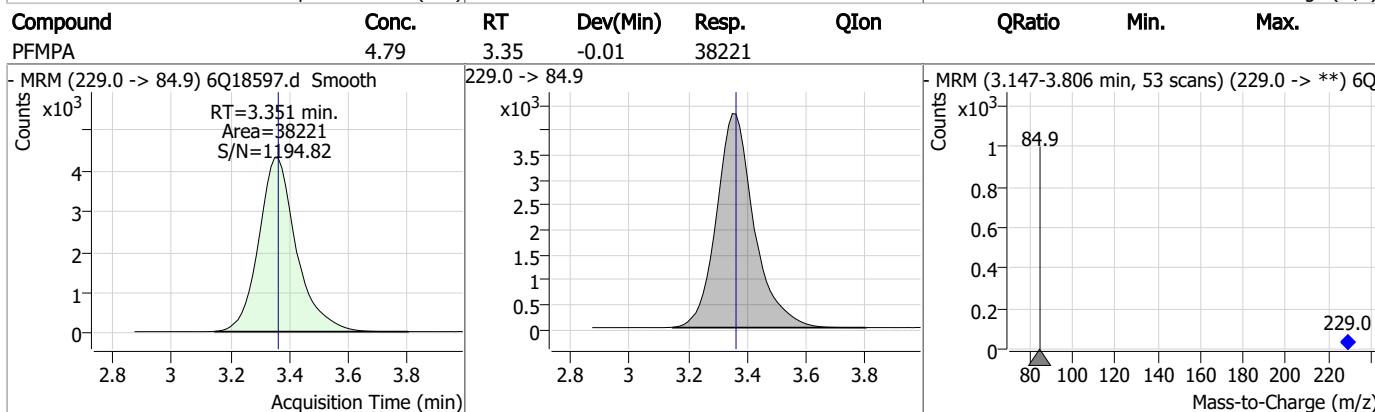
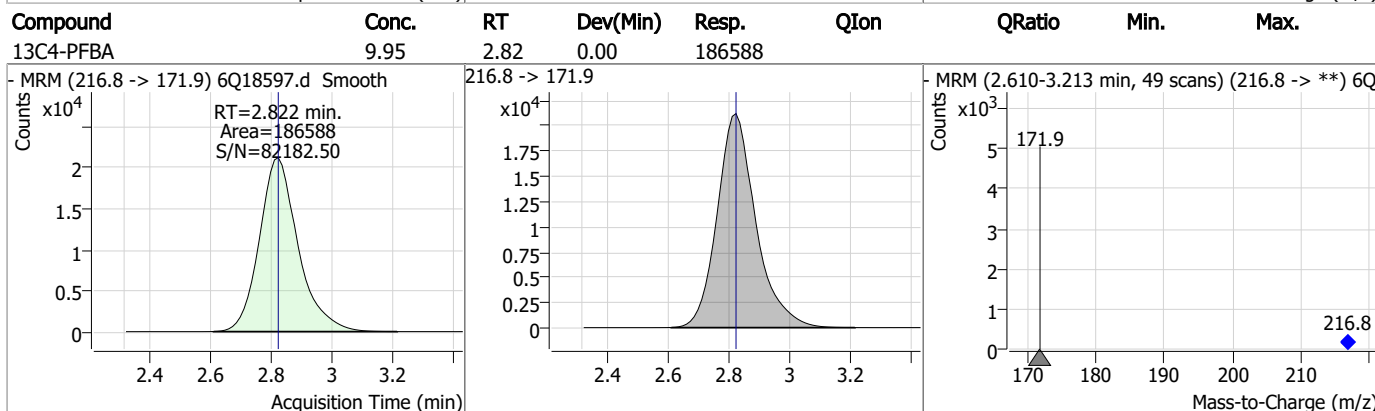
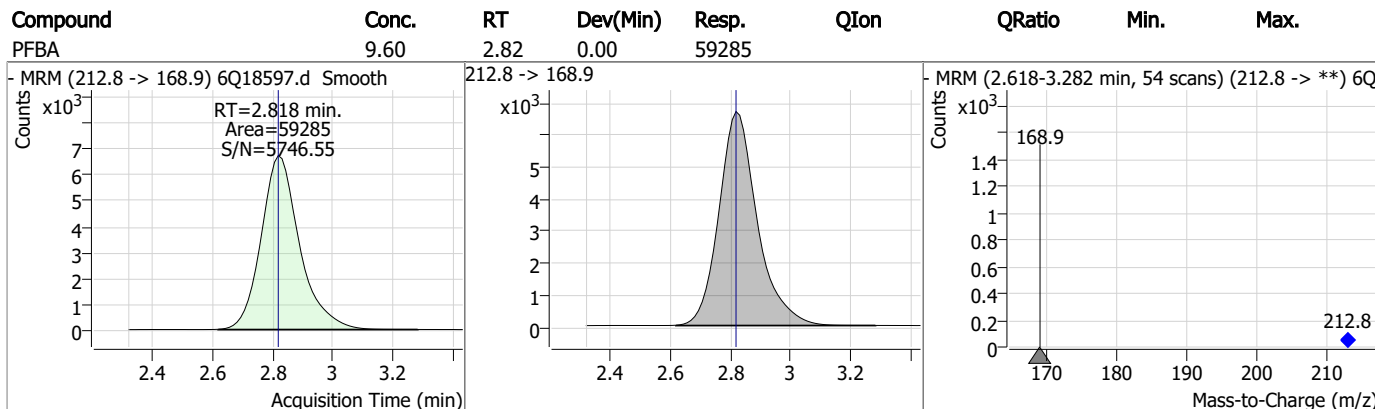
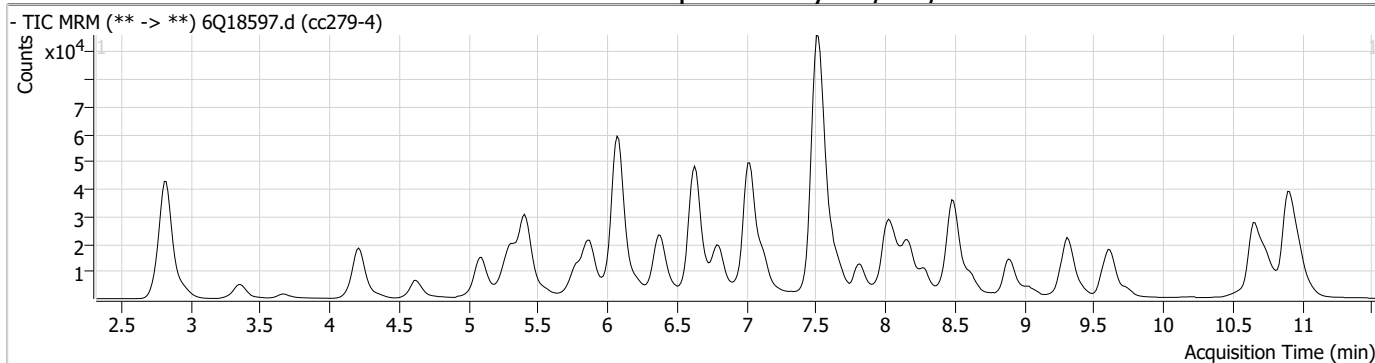
Perfluorinated Compounds by LC/MS/MS

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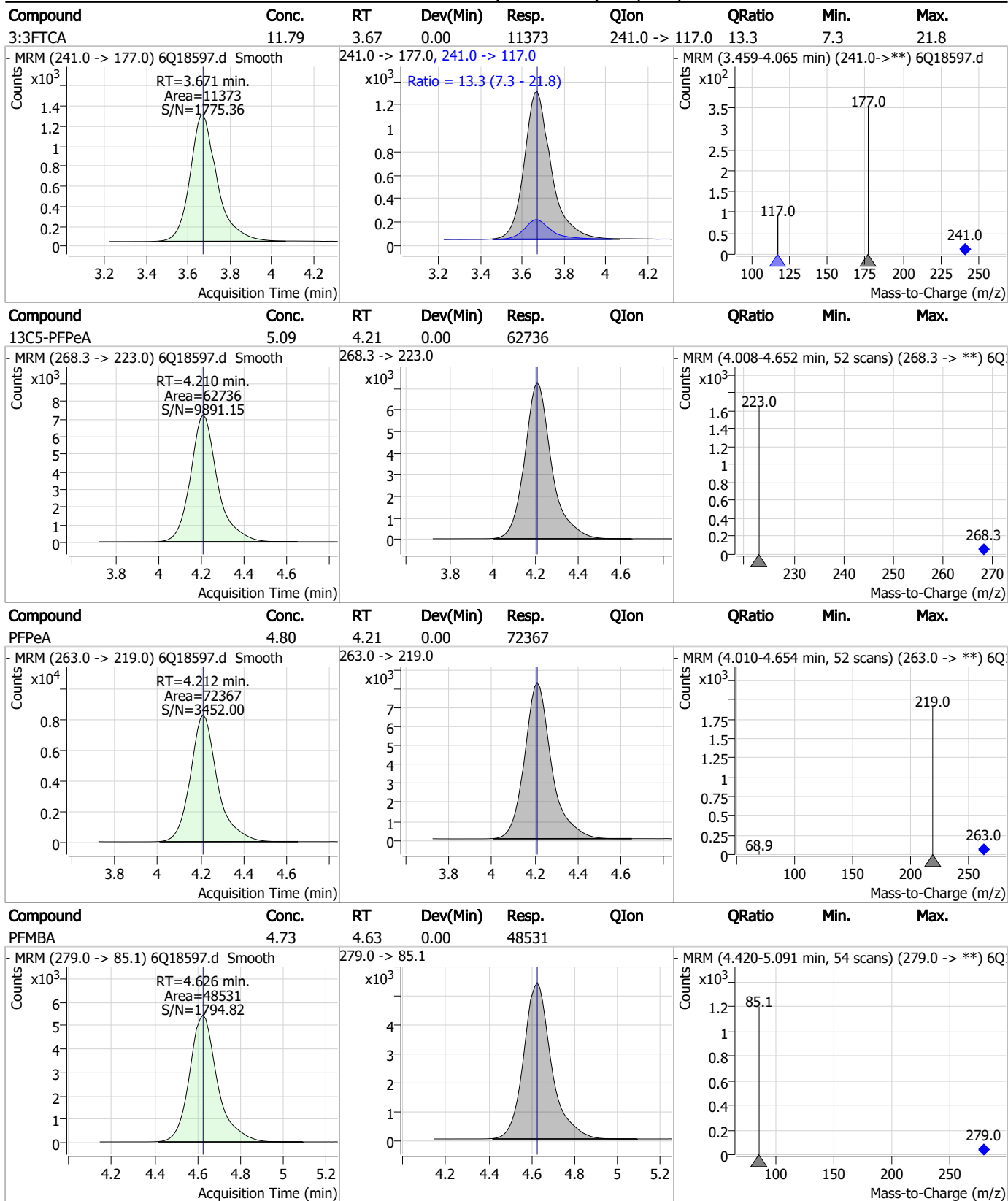
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Perfluorinated Compounds by LC/MS/MS



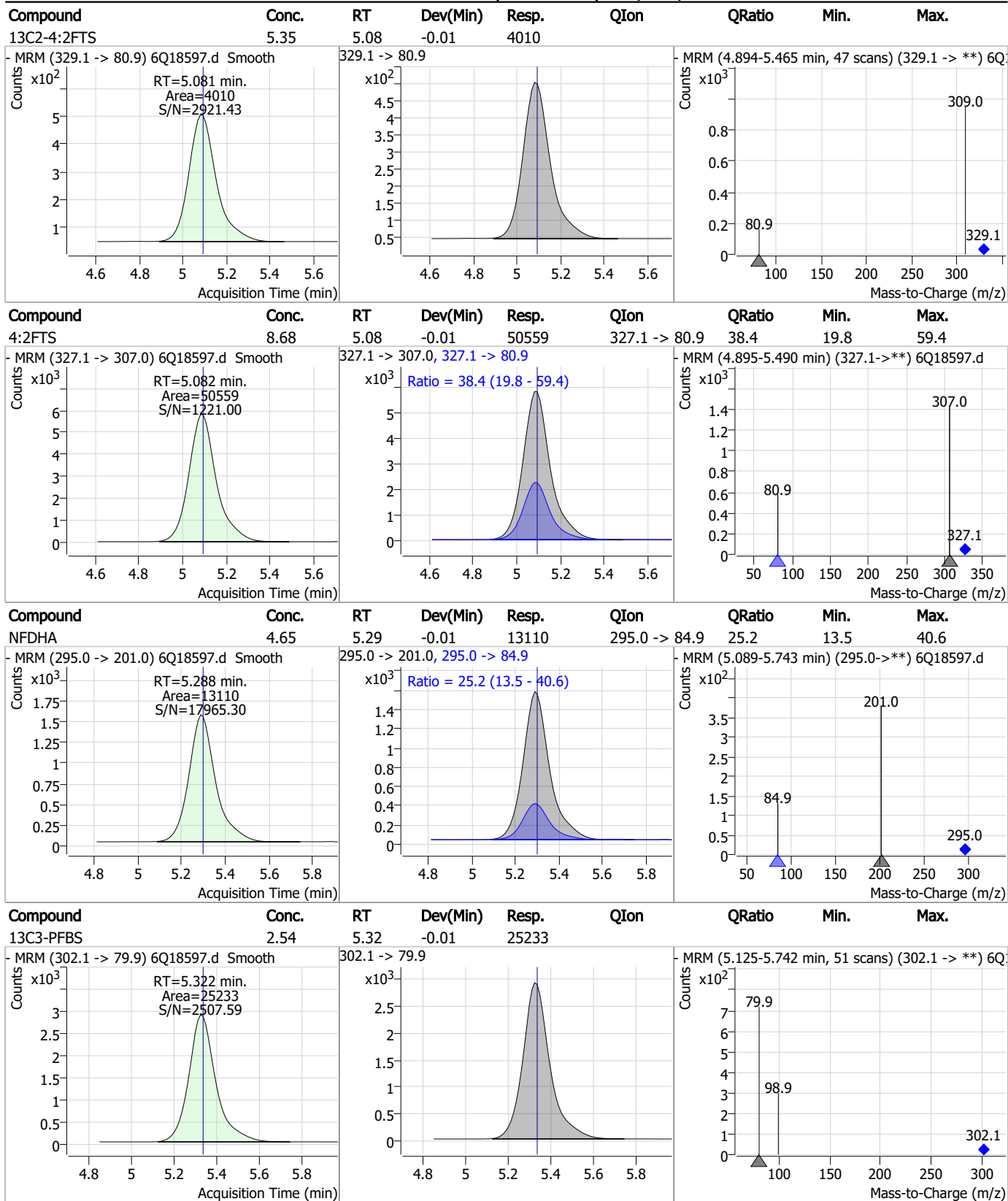
Perfluorinated Compounds by LC/MS/MS



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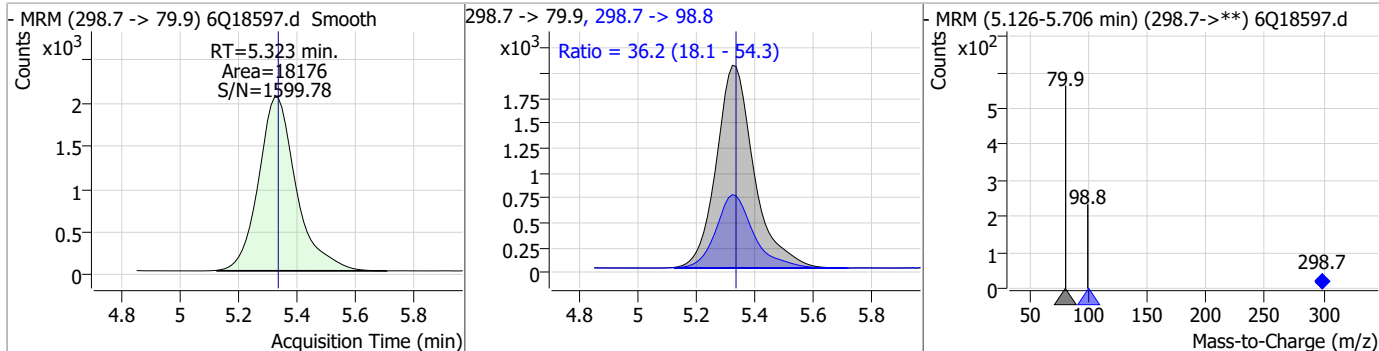
Perfluorinated Compounds by LC/MS/MS



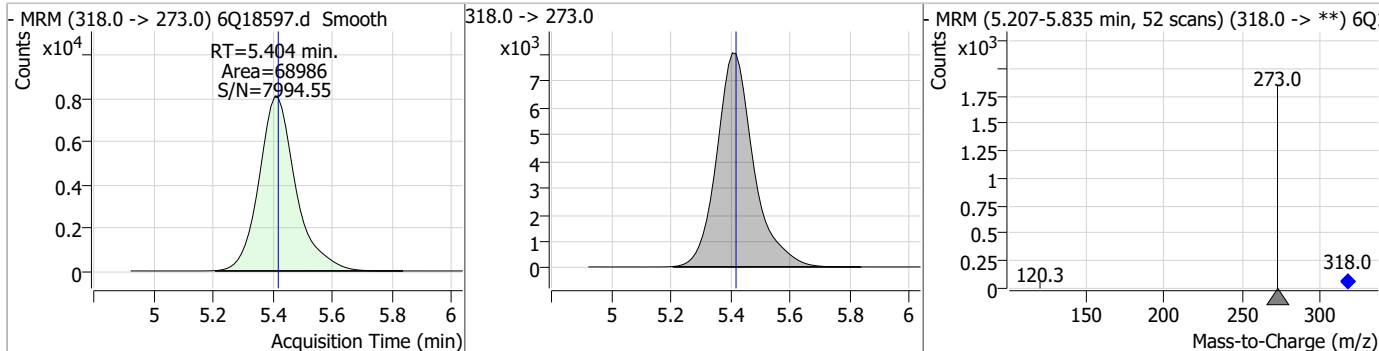
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Perfluorinated Compounds by LC/MS/MS

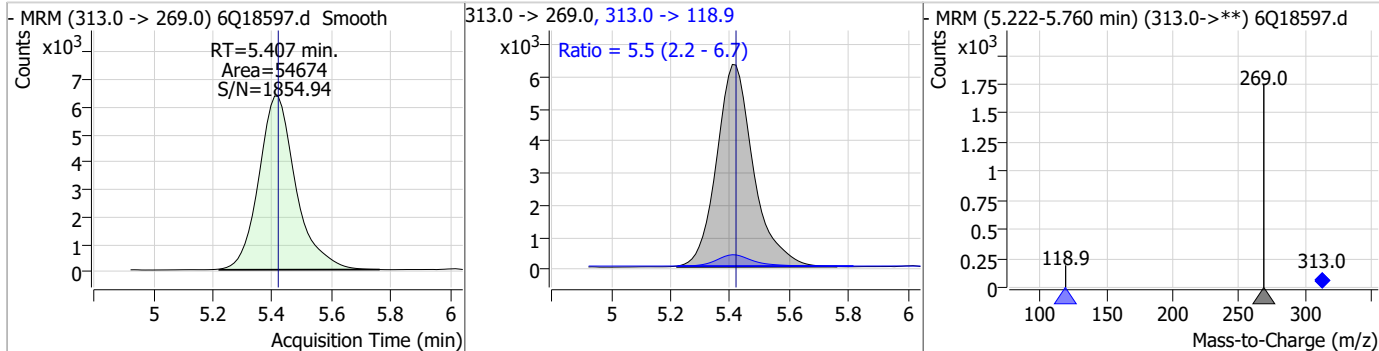
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.12	5.32	-0.01	18176	298.7 -> 98.8	36.2	18.1	54.3



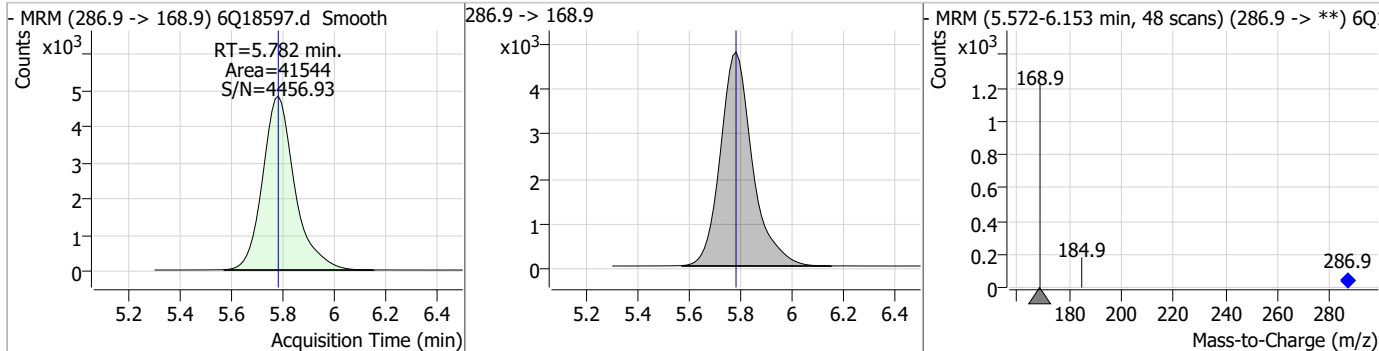
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	5.40	-0.01	68986				



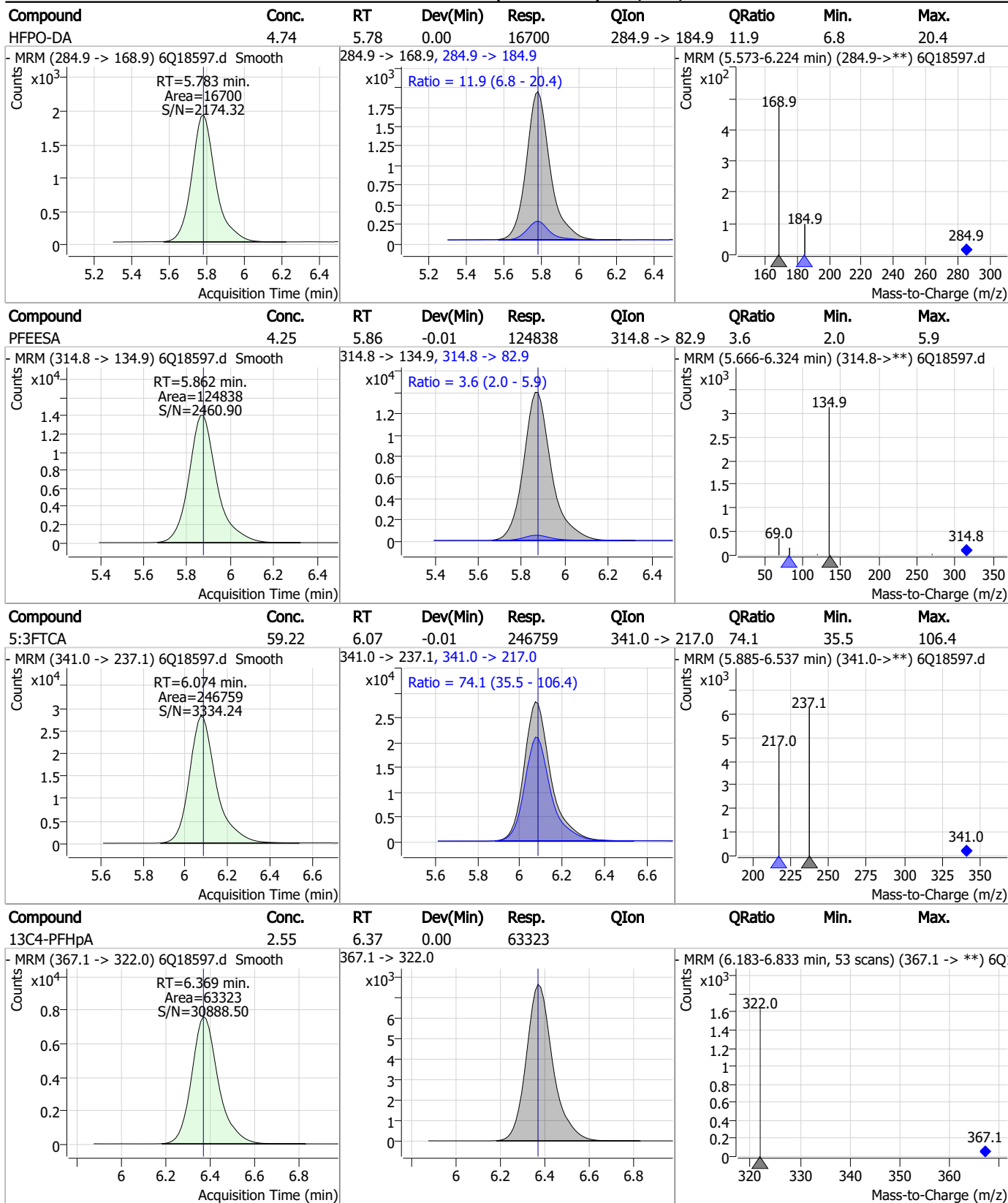
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.36	5.41	-0.01	54674	313.0 -> 118.9	5.5	2.2	6.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.97	5.78	0.00	41544				

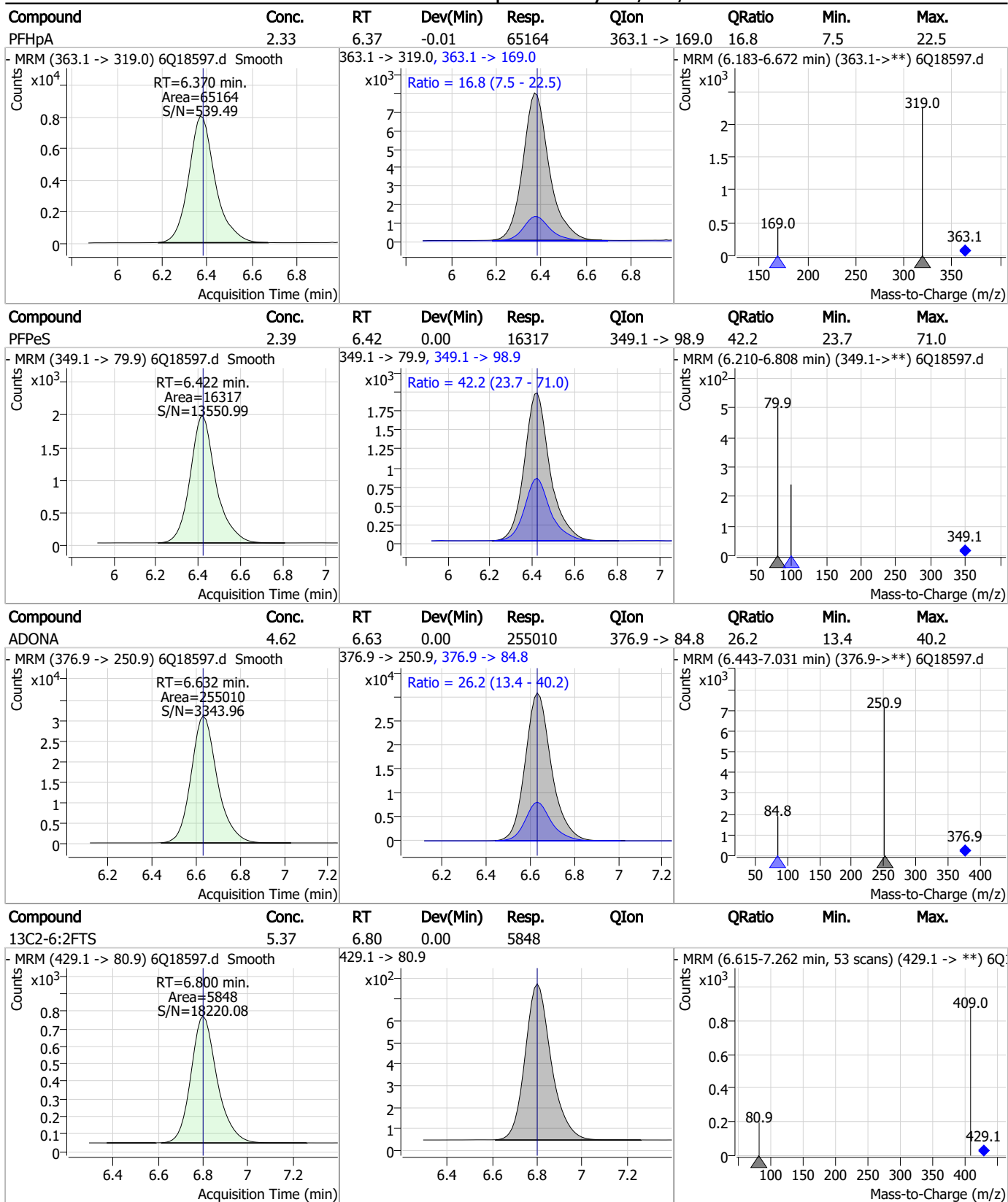


Perfluorinated Compounds by LC/MS/MS



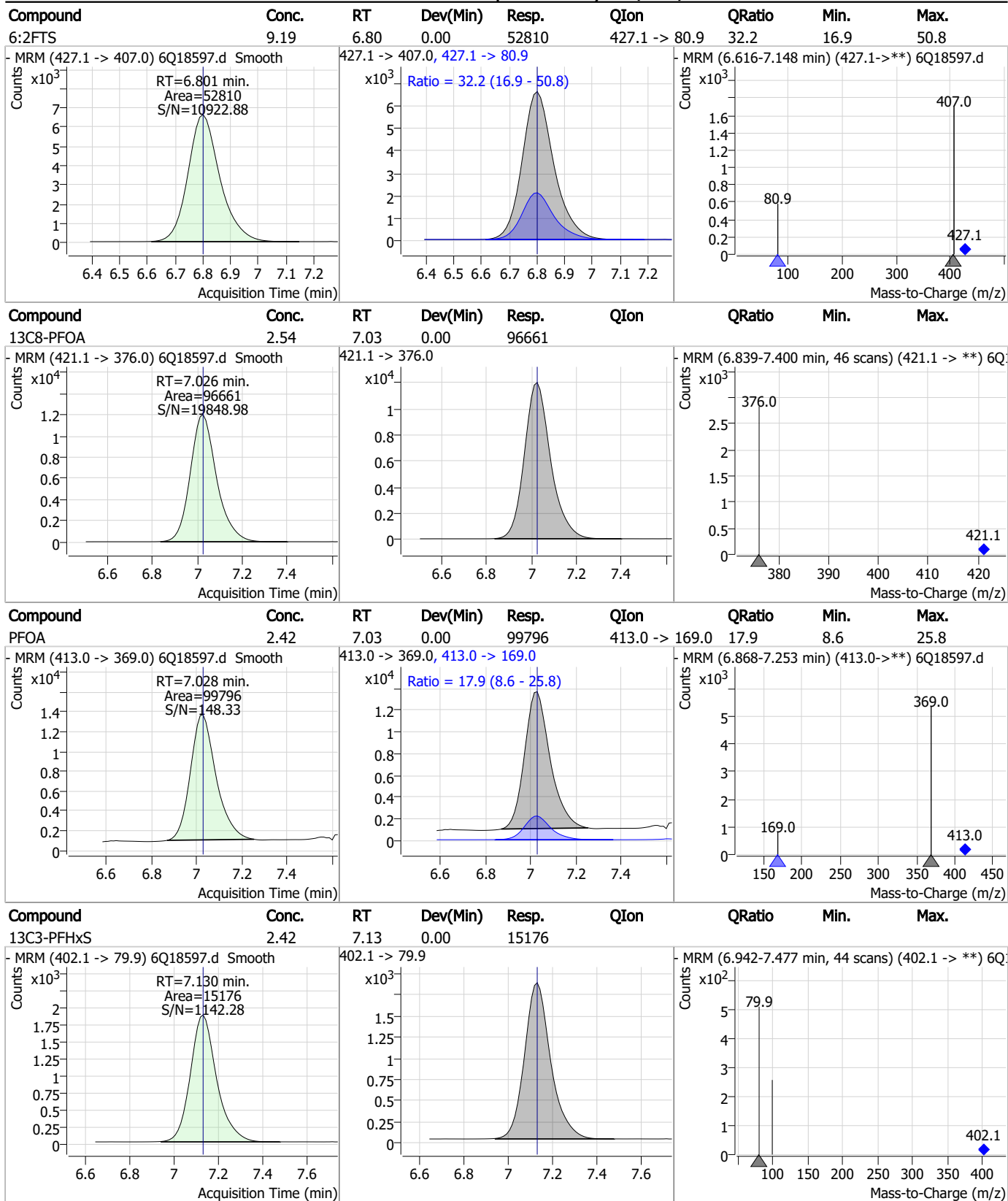
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Perfluorinated Compounds by LC/MS/MS



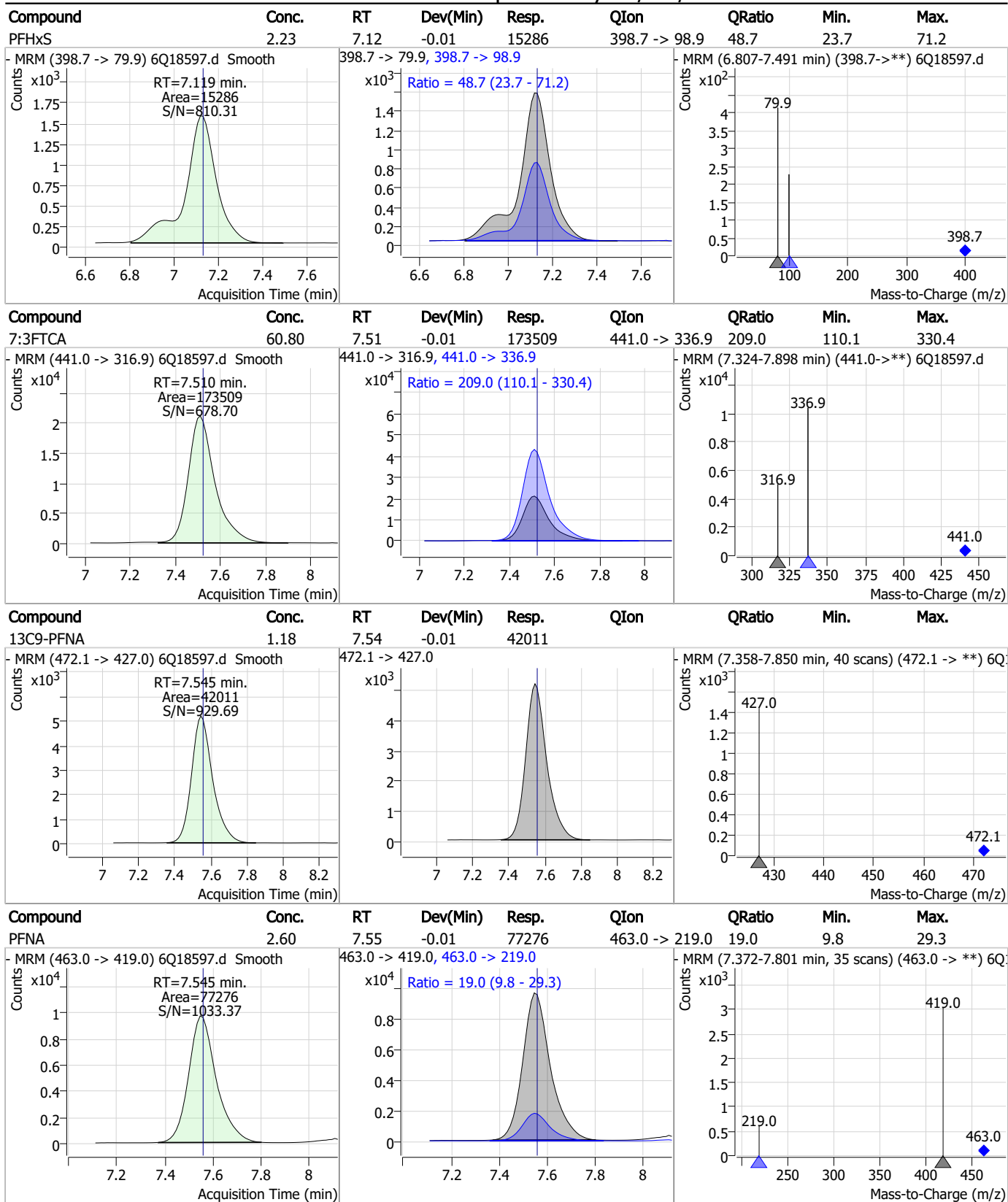
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Perfluorinated Compounds by LC/MS/MS



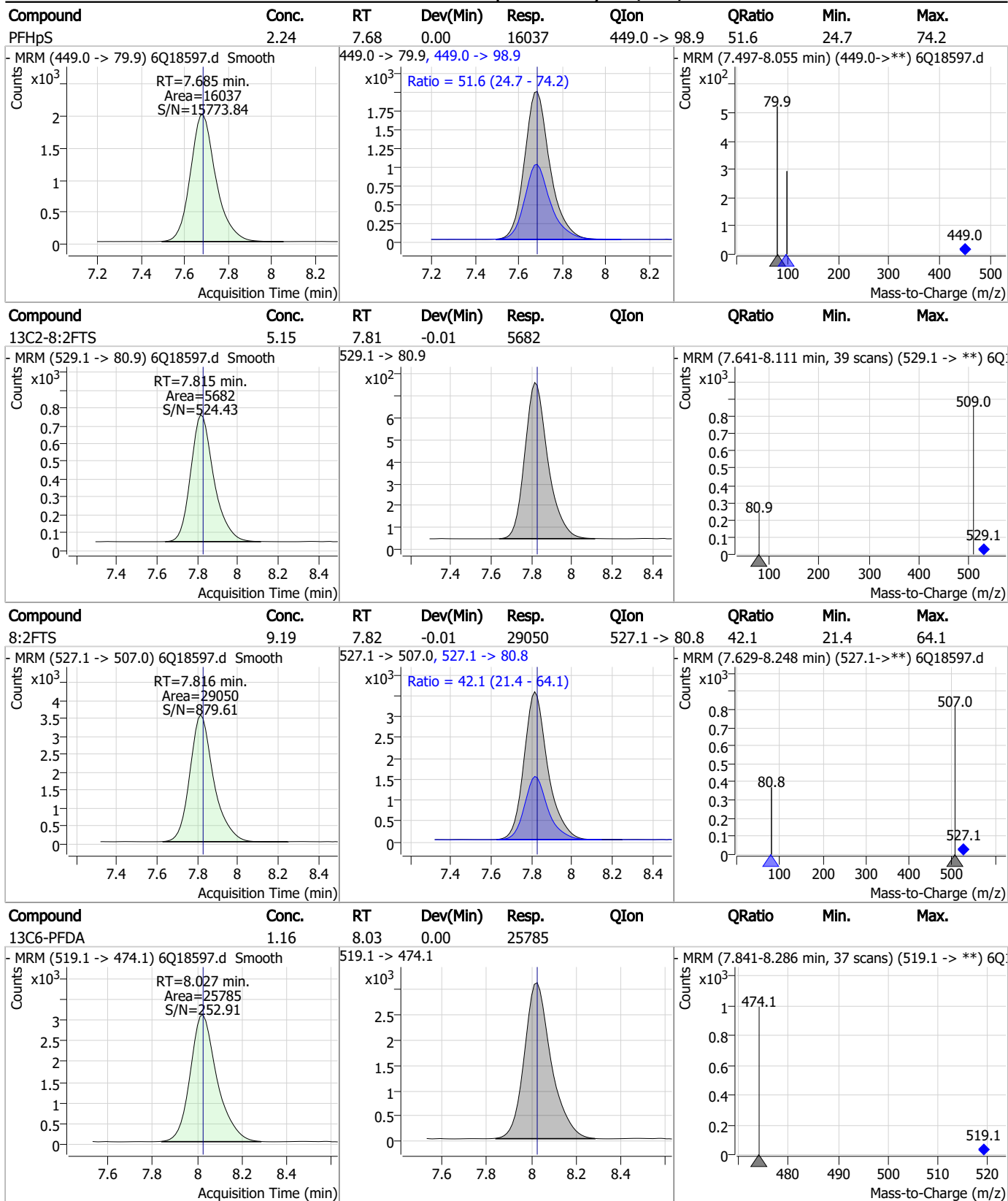
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Perfluorinated Compounds by LC/MS/MS



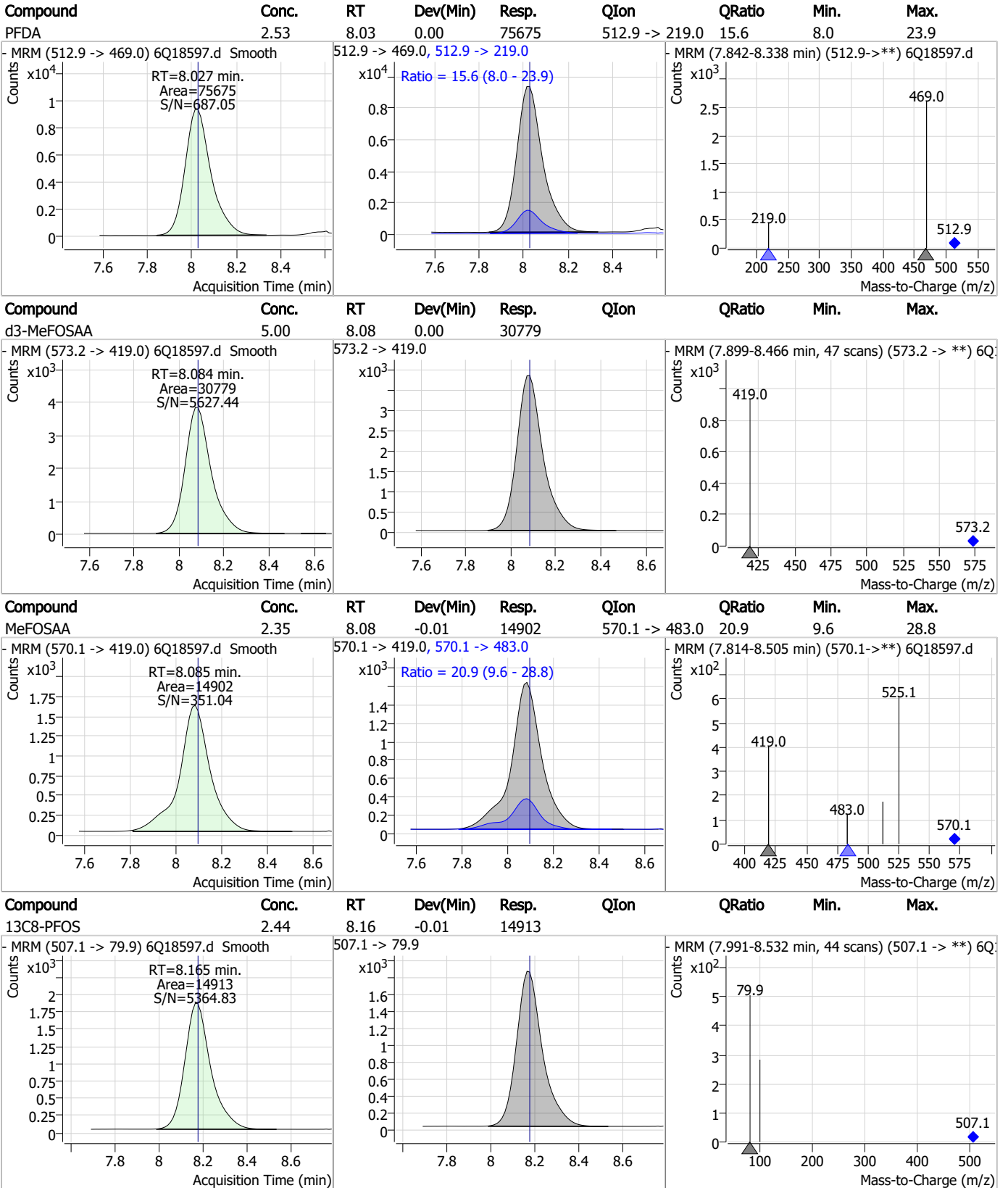
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Perfluorinated Compounds by LC/MS/MS



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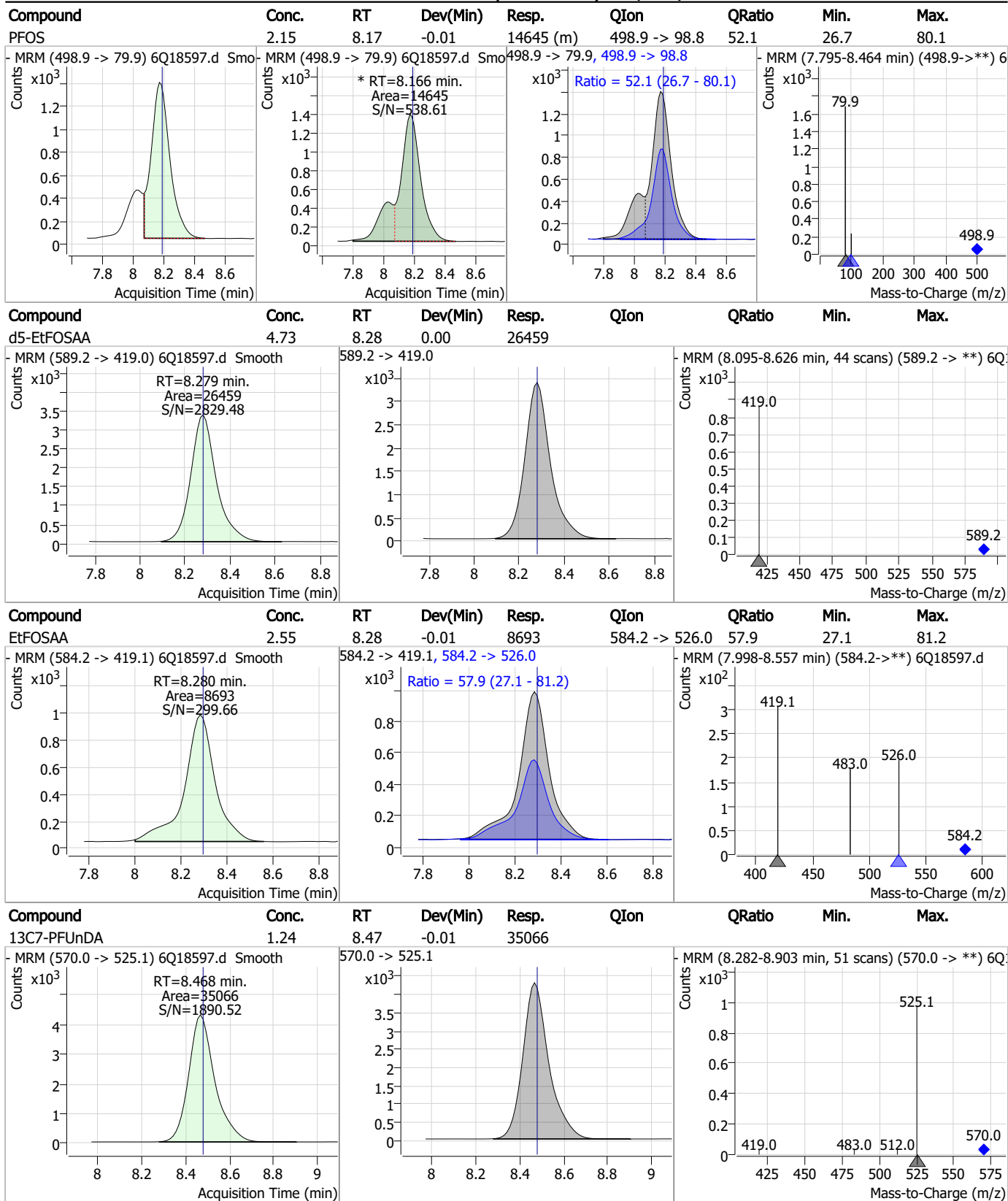
Perfluorinated Compounds by LC/MS/MS



7.7.27 7



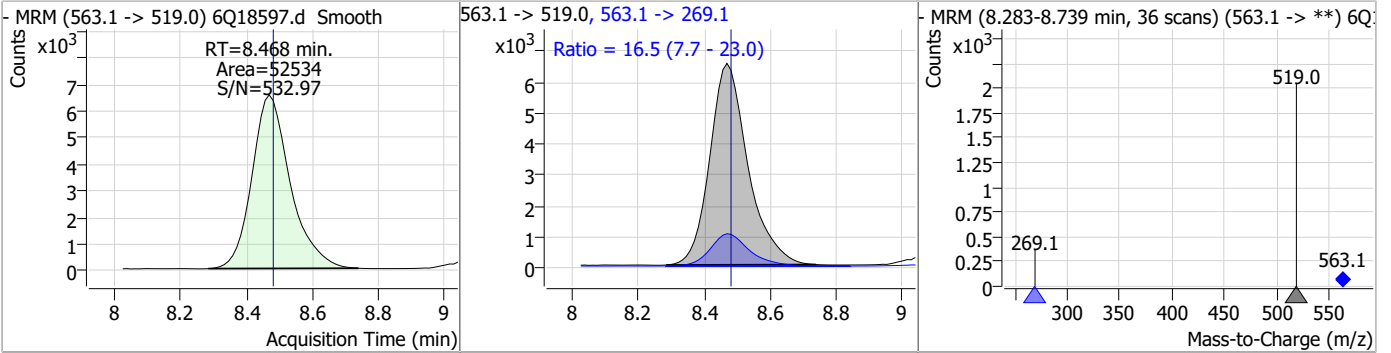
Perfluorinated Compounds by LC/MS/MS



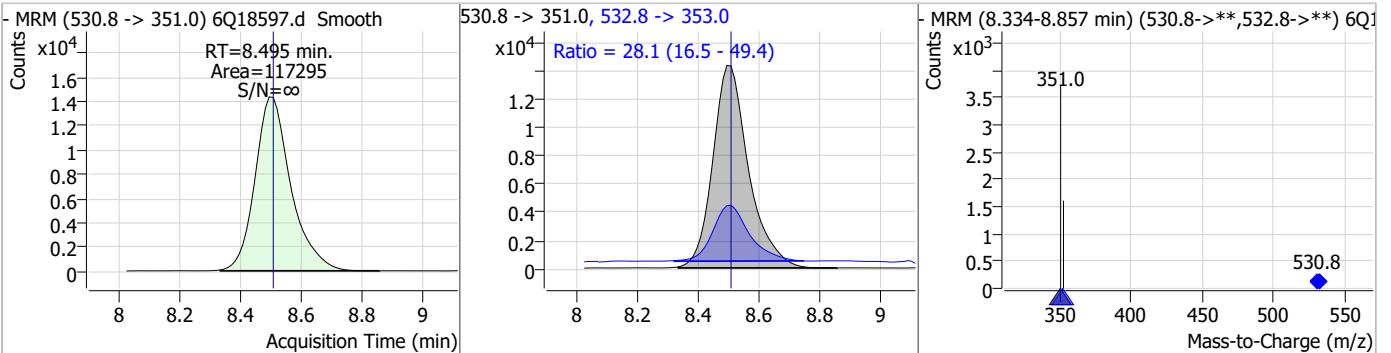
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Perfluorinated Compounds by LC/MS/MS

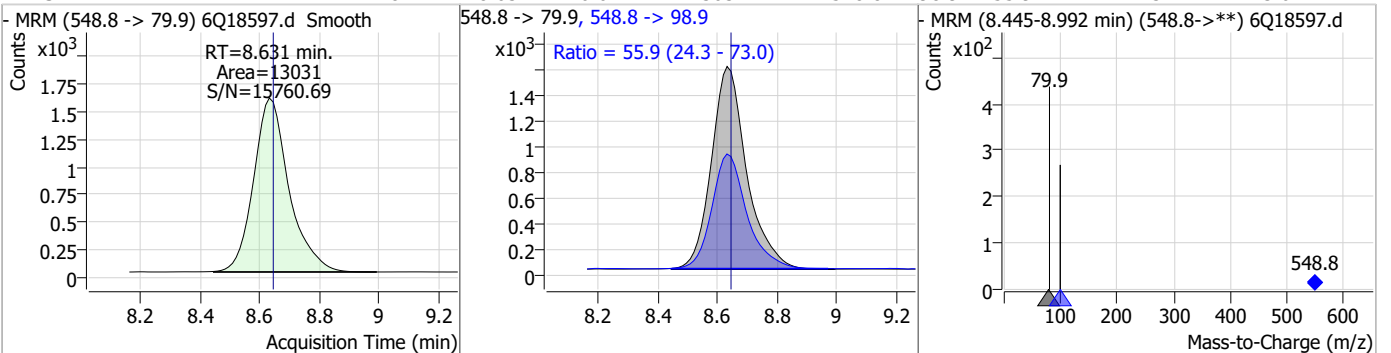
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.31	8.47	-0.01	52534	563.1 -> 269.1	16.5	7.7	23.0



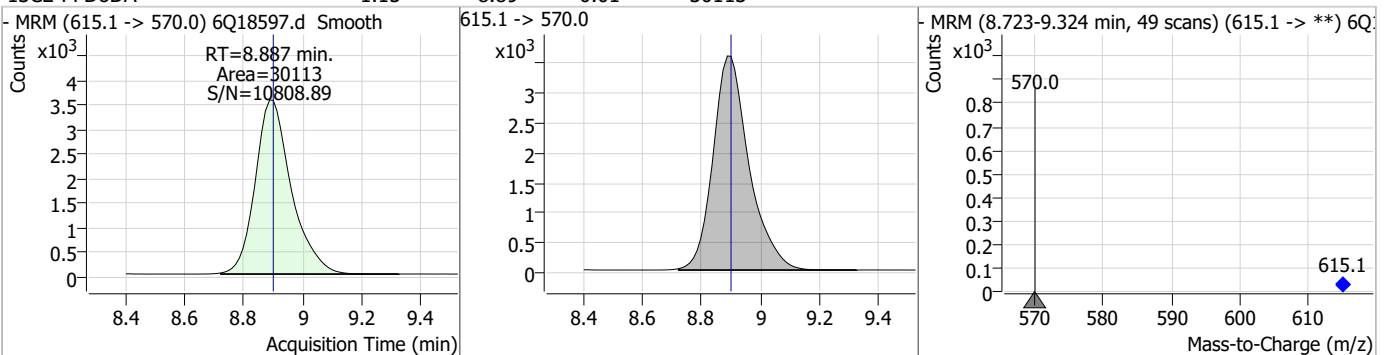
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.78	8.49	-0.01	117295	532.8 -> 353.0	28.1	16.5	49.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.18	8.63	-0.01	13031	548.8 -> 98.9	55.9	24.3	73.0

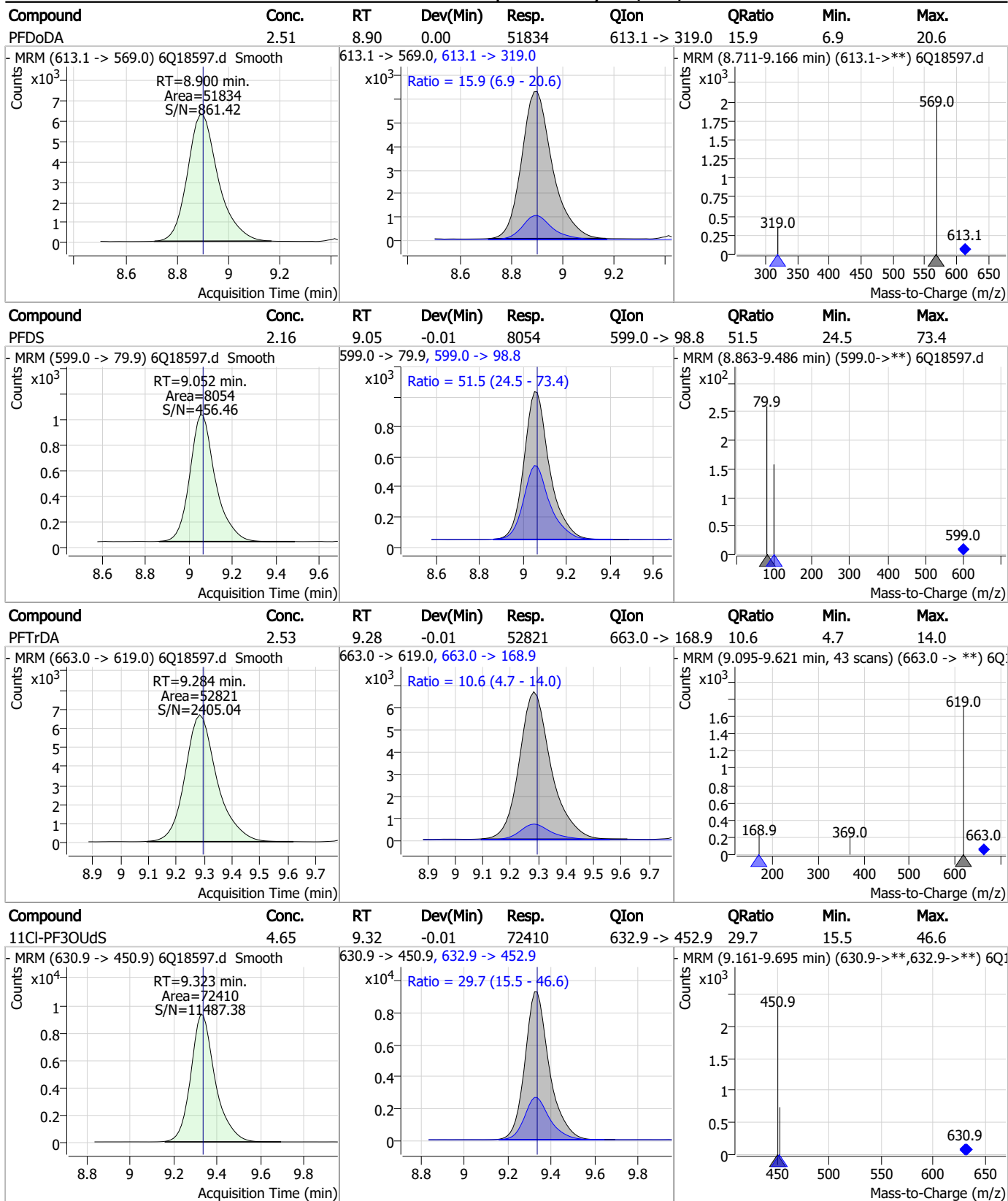


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.15	8.89	-0.01	30113	615.1 -> 570.0	-	-	-



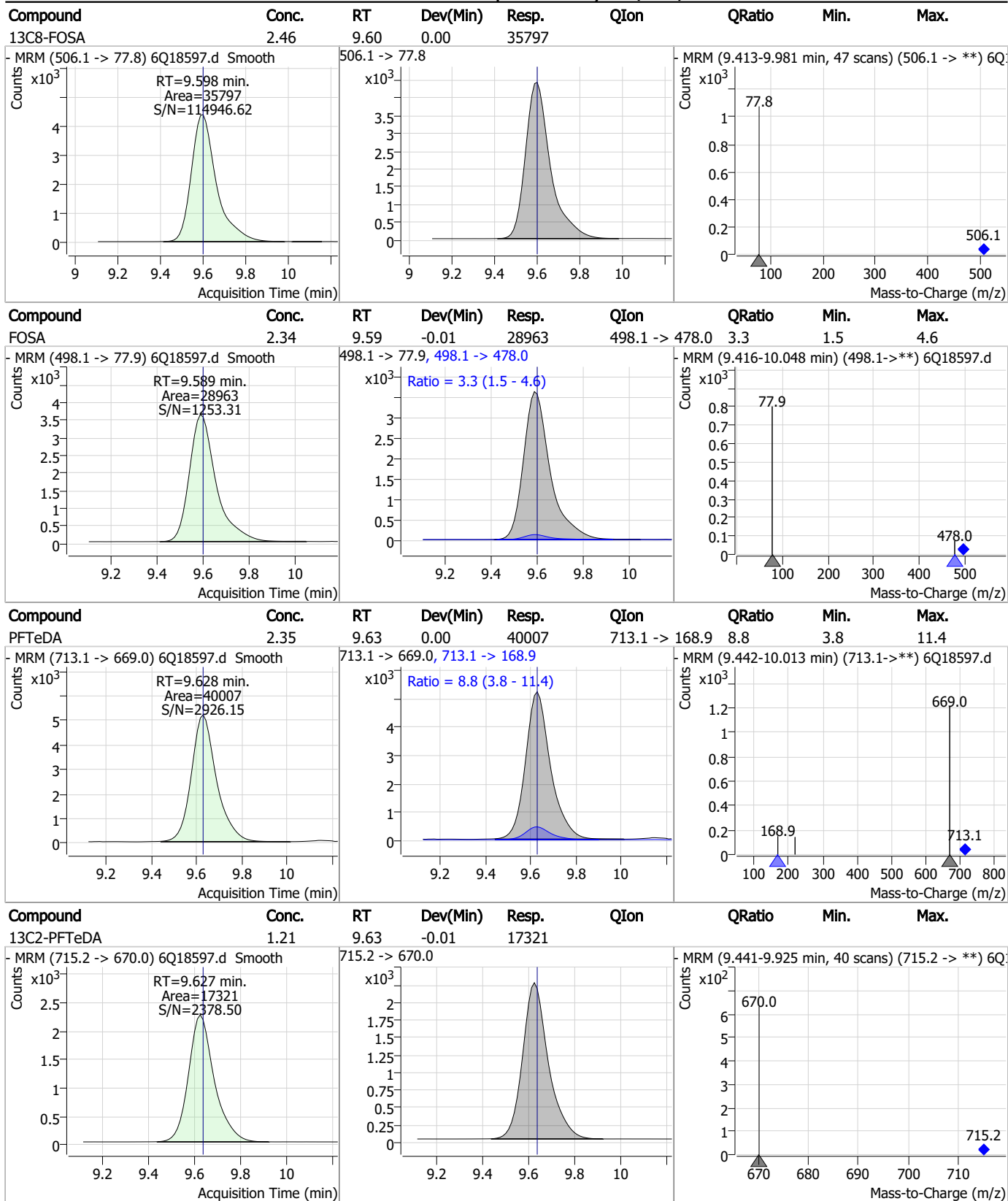
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Perfluorinated Compounds by LC/MS/MS



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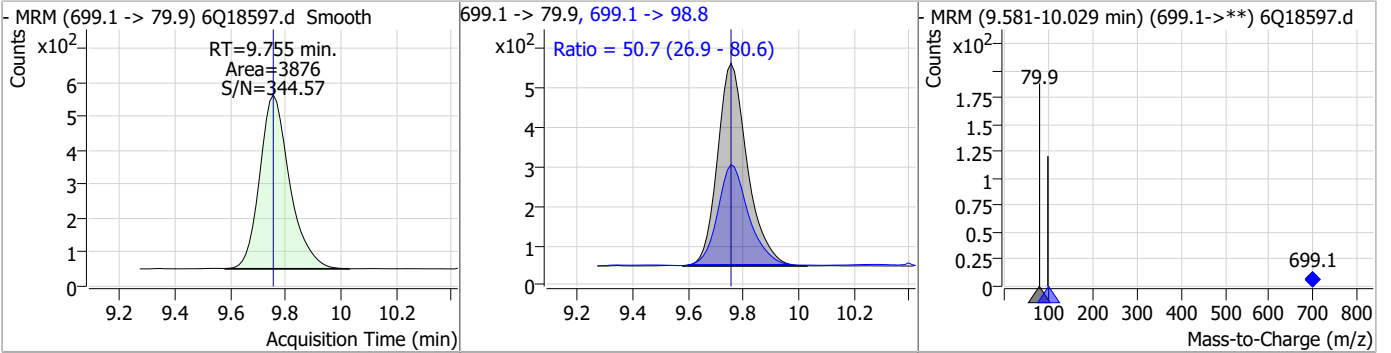
Perfluorinated Compounds by LC/MS/MS



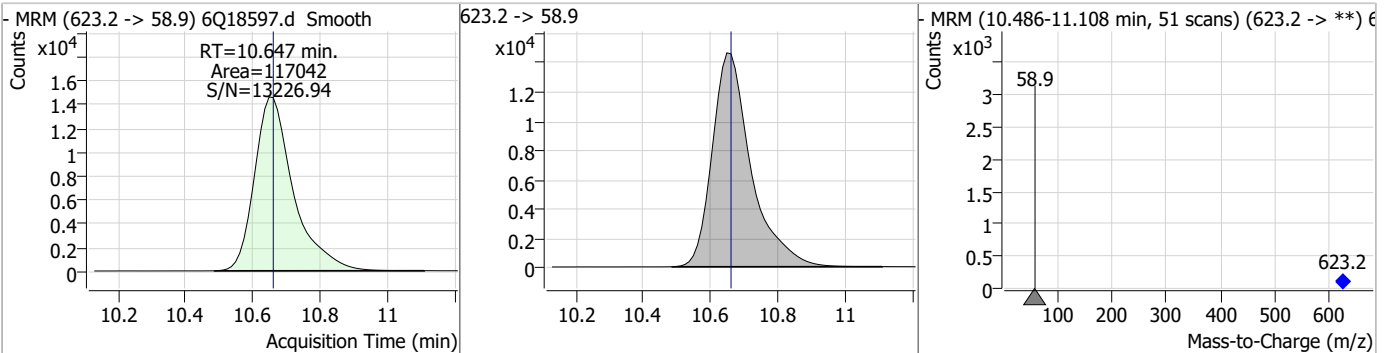
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Perfluorinated Compounds by LC/MS/MS

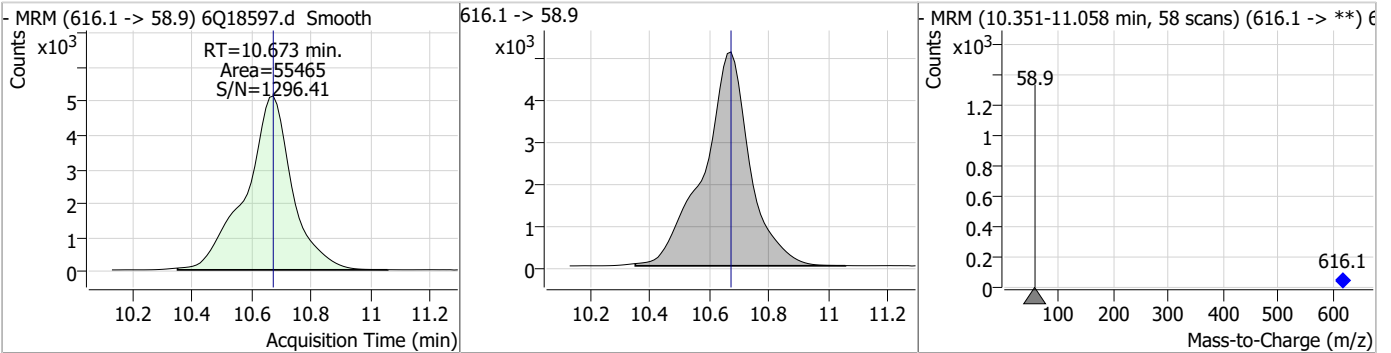
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.34	9.75	0.00	3876	699.1 -> 98.8	50.7	26.9	80.6



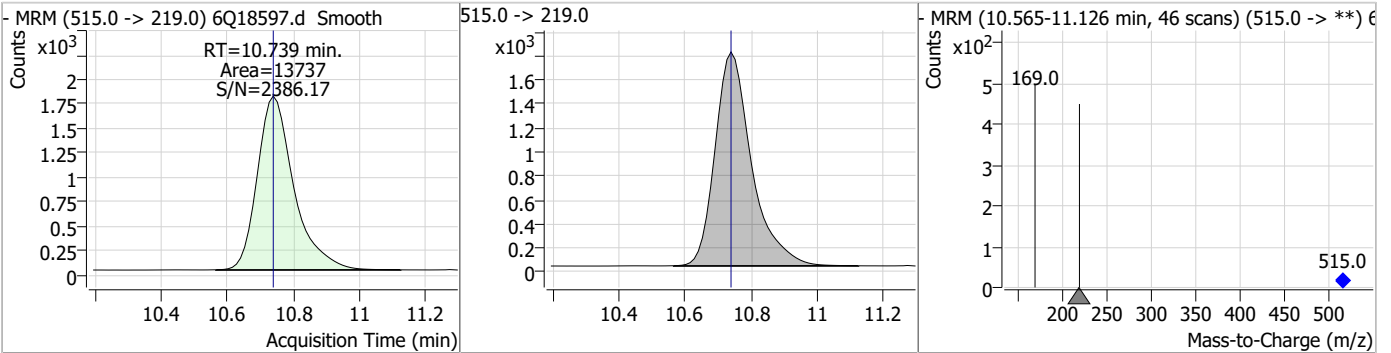
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.45	10.65	-0.01	117042				



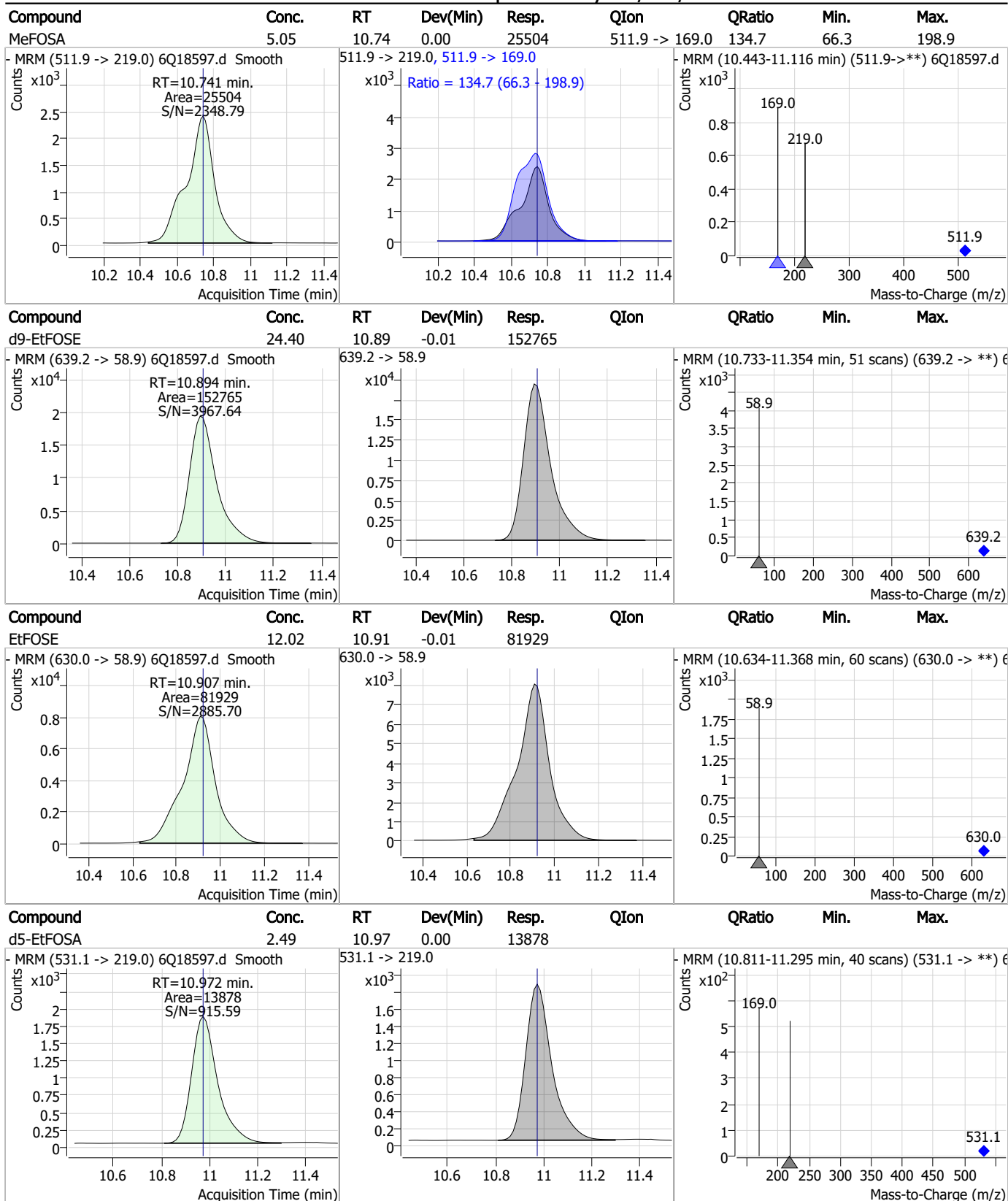
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.92	10.67	0.00	55465				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.33	10.74	0.00	13737				

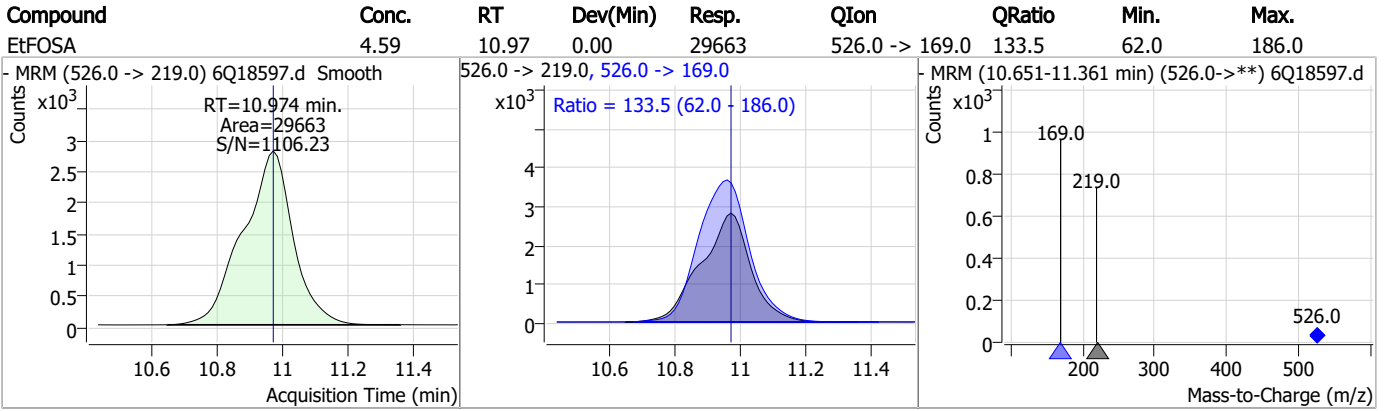


Perfluorinated Compounds by LC/MS/MS



7.7.27
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Perfluorinated Compounds by LC/MS/MS



7.7.27
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Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18597.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:55 Supervisor approved: 06/01/23 16:14 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.7.27.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18598.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 8:10:14 PM
 Sample Name : cc279-1.0LL
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	174414	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58759	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	63091	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	60117	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	88165	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	42242	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	23966	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	31165	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	29424	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	15813	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	33723	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23606	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	14691	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	13974	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3752	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5140	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5077	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	27276	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	39893	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	24853	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	108123	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	143721	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12331	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13156	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17844	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	73590	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10237	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	97722	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34124	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50245	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	60430	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3752	5.49 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5140	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5077	5.05 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C2-PFDoDA	8.900	615.1 -> 570.0	29424	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15813	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C3-PFBS	5.322	302.1 -> 79.9	23606	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C3-PFHxS	7.118	402.1 -> 79.9	14691	2.57 µg/L	-0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C4-PFBA	2.822	216.8 -> 171.9	174414	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	60117	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFHxA	5.417	318.0 -> 273.0	63091	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C5-PFPeA	4.210	268.3 -> 223.0	58759	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C6-PFDA	8.027	519.1 -> 474.1	23966	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31165	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C8-FOSA	9.598	506.1 -> 77.8	33723	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-PFOA	7.026	421.1 -> 376.0	88165	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C8-PFOS	8.165	507.1 -> 79.9	13974	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C9-PFNA	7.545	472.1 -> 427.0	42242	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27276	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	39893	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	13156	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	24853	4.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d7-MeFOSE	10.647	623.2 -> 58.9	108123	24.13 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	143721	24.52 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	12331	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.5%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	4842	0.89 µg/L	95
		327.1 -> 80.9	1755		
6:2FTS	6.789	427.1 -> 407.0	4620	0.91 µg/L	97
		427.1 -> 80.9	1476		
8:2FTS	7.816	527.1 -> 507.0	2389	0.85 µg/L	99
		527.1 -> 80.8	1036		
EtFOSAA	8.280	584.2 -> 419.1	826	0.26 µg/L	m 97
		584.2 -> 526.0	464		
FOSA	9.589	498.1 -> 77.9	2646	0.23 µg/L	97
		498.1 -> 478.0	106		
MeFOSAA	8.073	570.1 -> 419.0	1321	0.24 µg/L	85
		570.1 -> 483.0	346		
PFBA	2.818	212.8 -> 168.9	5251	0.91 µg/L	100
PFBS	5.335	298.7 -> 79.9	1663	0.21 µg/L	94
		298.7 -> 98.8	665		
PFDA	8.027	512.9 -> 469.0	6171	0.22 µg/L	91
		512.9 -> 219.0	756		
PFDODA	8.900	613.1 -> 569.0	4616	0.23 µg/L	89
		613.1 -> 319.0	842		
PFDS	9.052	599.0 -> 79.9	793	0.23 µg/L	95

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	358	0.22	µg/L	92
		363.1 -> 319.0	5949			
PFHpS	7.673	363.1 -> 169.0	1092	0.22	µg/L	91
		449.0 -> 79.9	1481			
PFHxA	5.407	449.0 -> 98.9	825	0.23	µg/L	98
		313.0 -> 269.0	4821			
PFHxS	7.119	313.0 -> 118.9	249	0.22	µg/L	m
		398.7 -> 79.9	1490			
PFNA	7.545	398.7 -> 98.9	755	0.20	µg/L	90
		463.0 -> 419.0	6101			
PFNS	8.631	463.0 -> 219.0	1459	0.22	µg/L	95
		548.8 -> 79.9	1226			
PFOA	7.028	548.8 -> 98.9	637	0.21	µg/L	91
		413.0 -> 369.0	7928			
PFOS	8.166	413.0 -> 169.0	1687	0.22	µg/L	m
		498.9 -> 79.9	1428			
PFPeA	4.212	498.9 -> 98.8	773	0.46	µg/L	100
		263.0 -> 219.0	6468			
PFPeS	6.410	349.1 -> 79.9	1445	0.22	µg/L	99
		349.1 -> 98.9	697			
PFTeDA	9.628	713.1 -> 669.0	3555	0.23	µg/L	97
		713.1 -> 168.9	311			
PFTrDA	9.284	663.0 -> 619.0	5046	0.25	µg/L	96
		663.0 -> 168.9	544			
PFUnDA	8.468	563.1 -> 519.0	4952	0.24	µg/L	95
		563.1 -> 269.1	860			
11Cl-PF3OUdS	9.336	630.9 -> 450.9	6005	0.40	µg/L	93
		632.9 -> 452.9	2115			
9Cl-PF3ONS	8.495	530.8 -> 351.0	10195	0.43	µg/L	99
		532.8 -> 353.0	3300			
ADONA	6.632	376.9 -> 250.9	22740	0.43	µg/L	97
		376.9 -> 84.8	6394			
HFPO-DA	5.783	284.9 -> 168.9	1537	0.45	µg/L	97
		284.9 -> 184.9	193			
3:3FTCA	3.671	241.0 -> 177.0	1032	1.14	µg/L	99
		241.0 -> 117.0	154			
5:3FTCA	6.074	341.0 -> 237.1	22415	5.88	µg/L	92
		341.0 -> 217.0	17292			
7:3FTCA	7.510	441.0 -> 316.9	15932	6.10	µg/L	95
		441.0 -> 336.9	33750			
EtFOSA	10.974	526.0 -> 219.0	2706	0.47	µg/L	91
		526.0 -> 169.0	3635			
EtFOSE	10.907	630.0 -> 58.9	7110	1.11	µg/L	100
		511.9 -> 219.0	2336			
MeFOSA	10.741	511.9 -> 169.0	3130	0.48	µg/L	99
		616.1 -> 58.9	5117			
MeFOSE	10.673	699.1 -> 79.9	349	1.19	µg/L	100
		699.1 -> 98.8	164			
PFDoDS	9.755	295.0 -> 201.0	1178	0.22	µg/L	90
		295.0 -> 84.9	317			
NFDHA	5.288	279.0 -> 85.1	4295	0.46	µg/L	100
		229.0 -> 84.9	3360			
PFMBA	4.626	314.8 -> 134.9	11003	0.45	µg/L	100
		314.8 -> 82.9	394			
PFMPA	3.363			0.41	µg/L	99
PFEESA	5.862					

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

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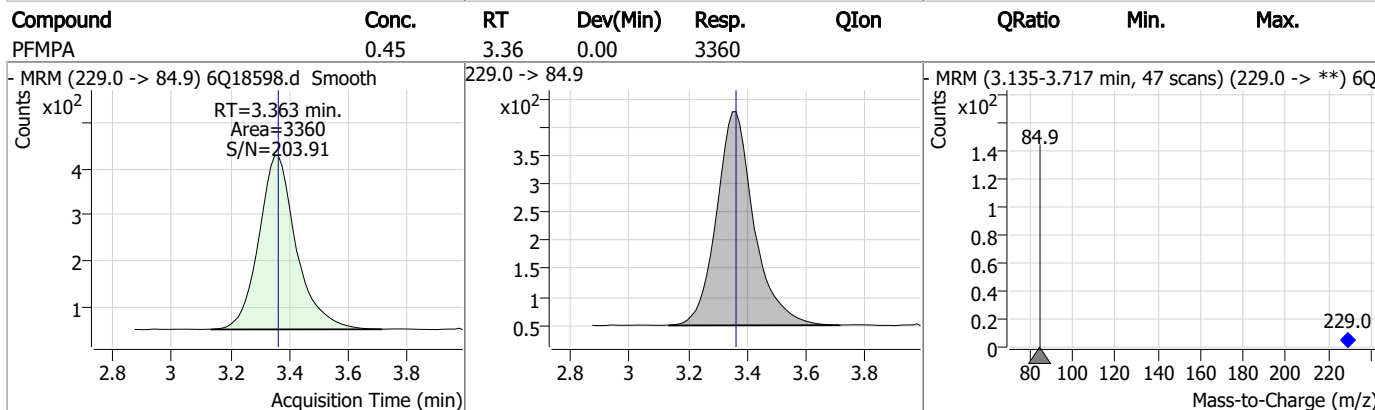
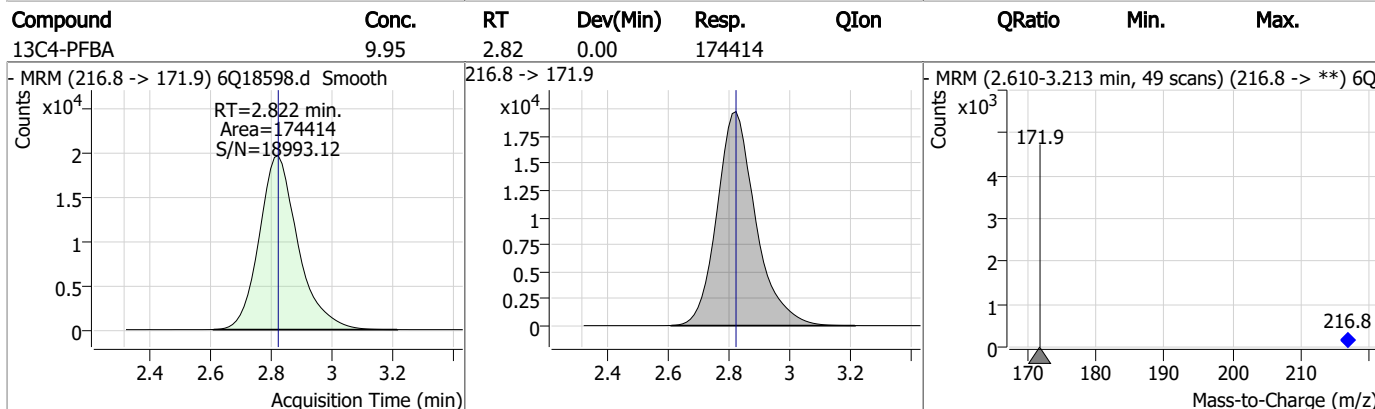
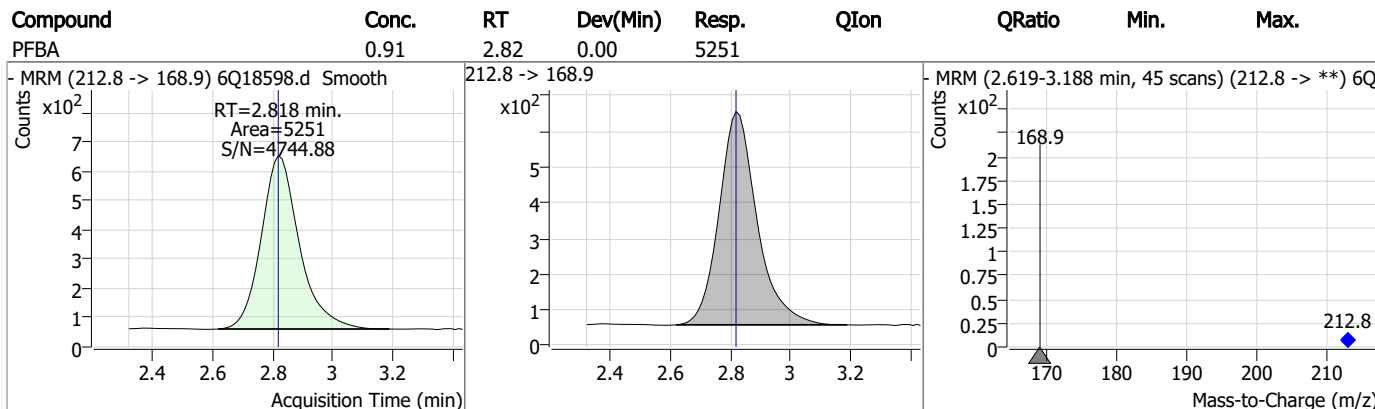
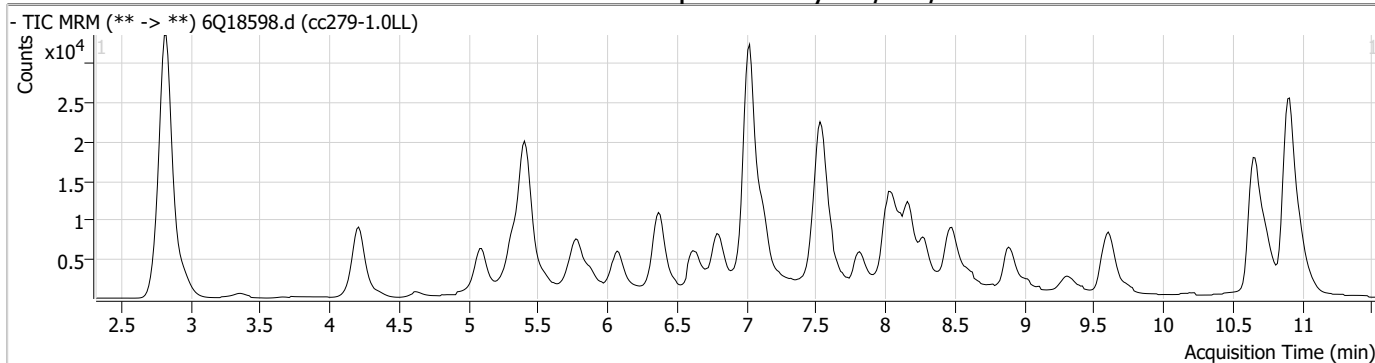
Perfluorinated Compounds by LC/MS/MS

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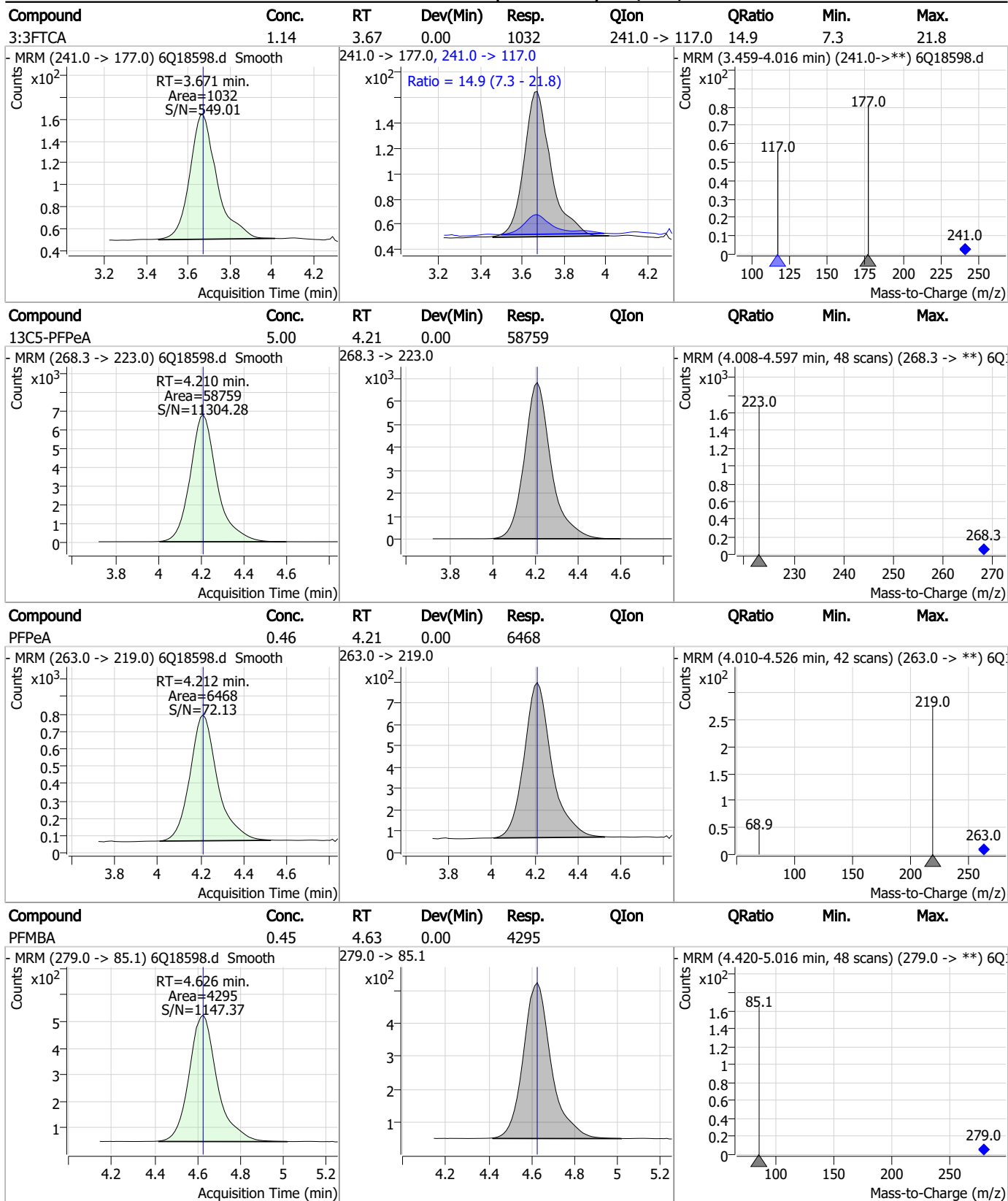
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Perfluorinated Compounds by LC/MS/MS



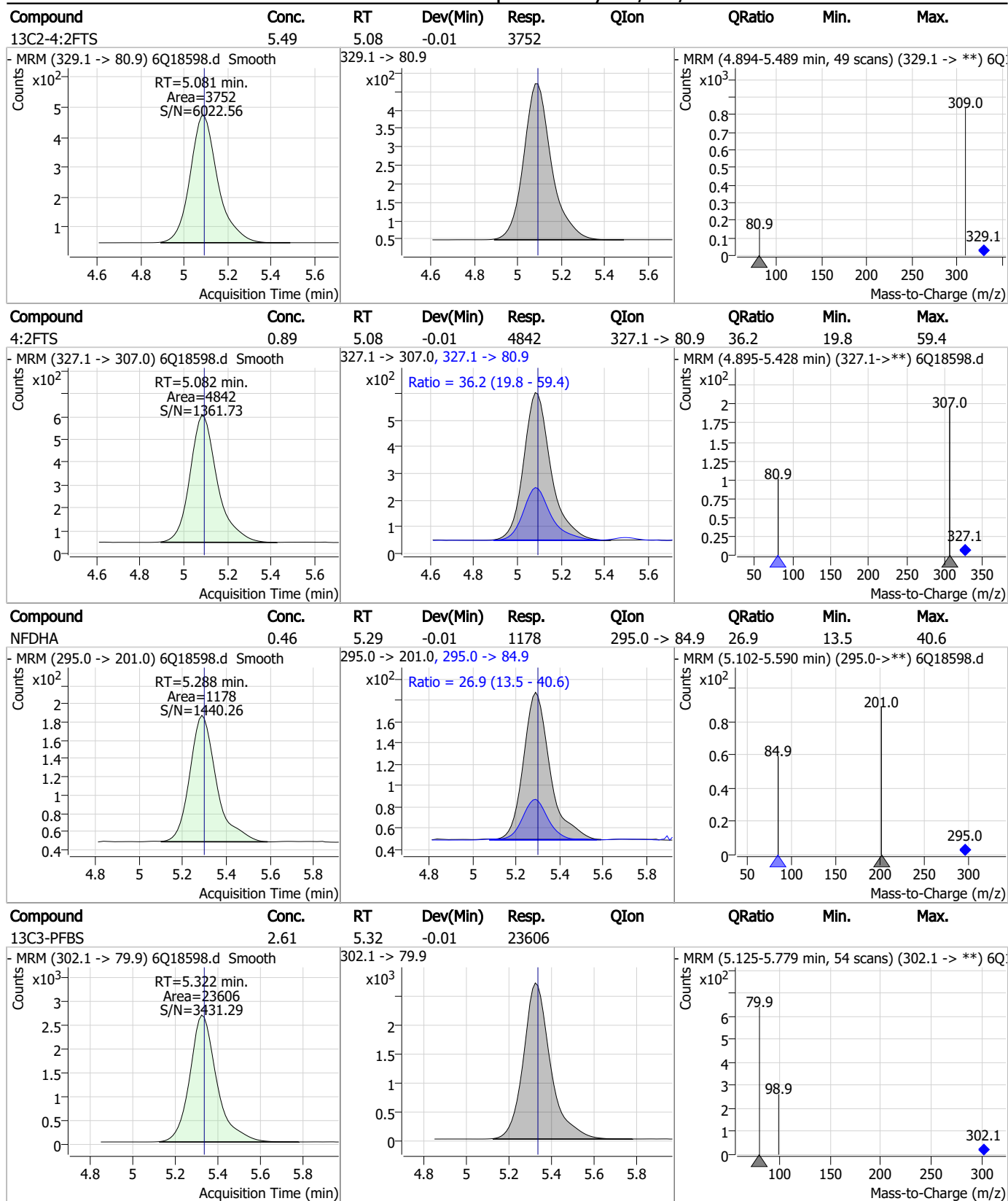
Perfluorinated Compounds by LC/MS/MS



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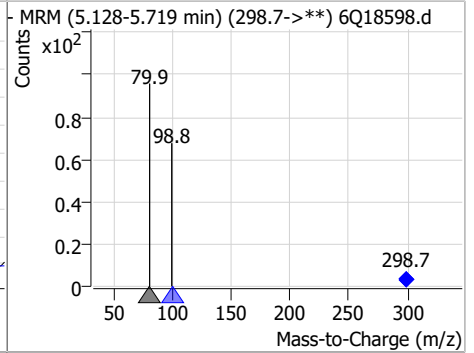
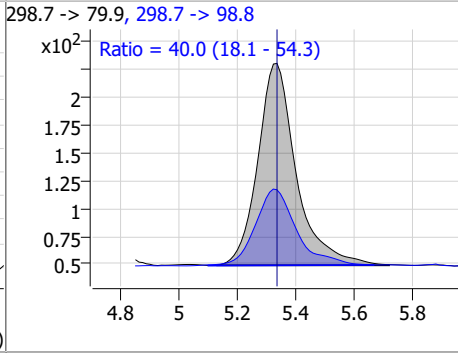
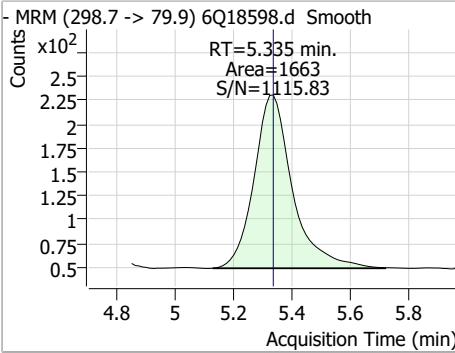
Perfluorinated Compounds by LC/MS/MS



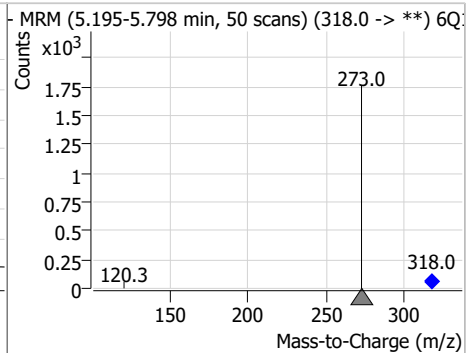
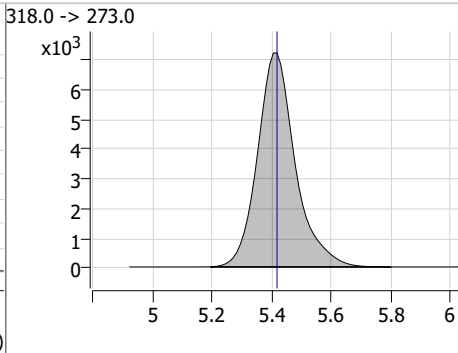
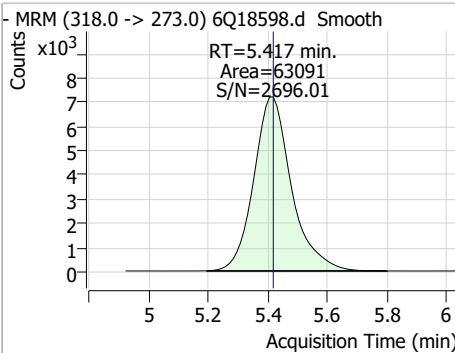
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Perfluorinated Compounds by LC/MS/MS

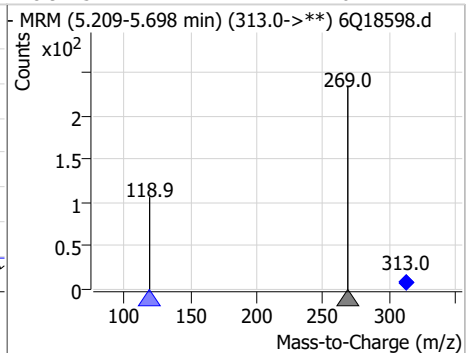
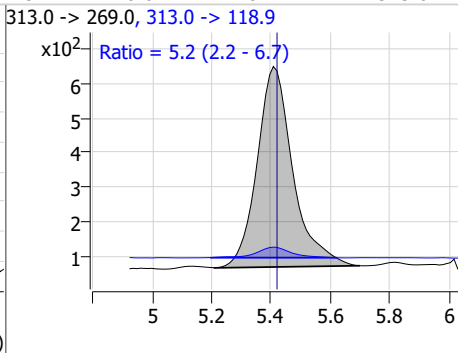
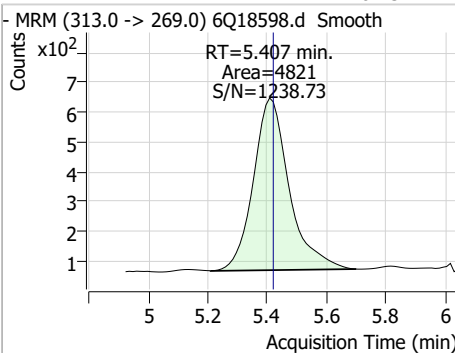
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.21	5.34	0.00	1663	298.7 -> 98.8	40.0	18.1	54.3



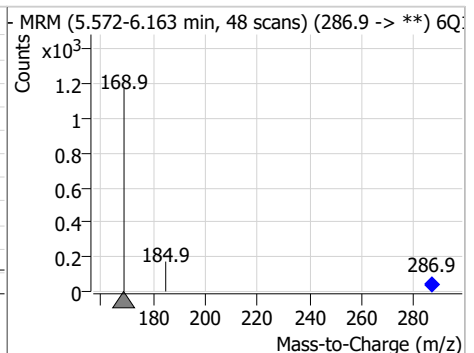
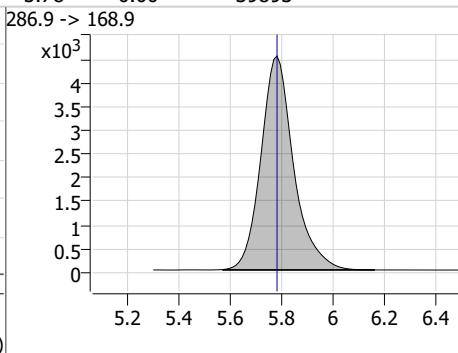
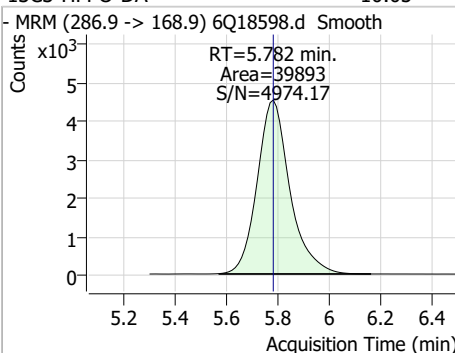
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.47	5.42	0.00	63091				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.23	5.41	-0.01	4821	313.0 -> 118.9	5.2	2.2	6.7

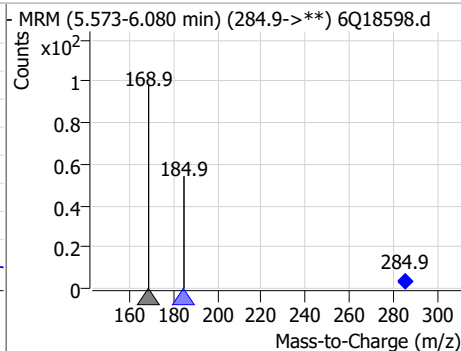
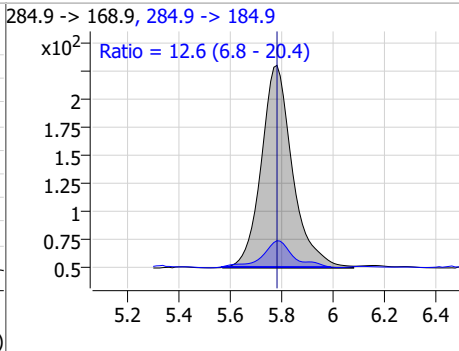
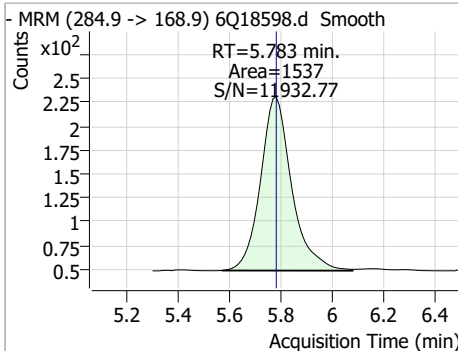


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.05	5.78	0.00	39893				

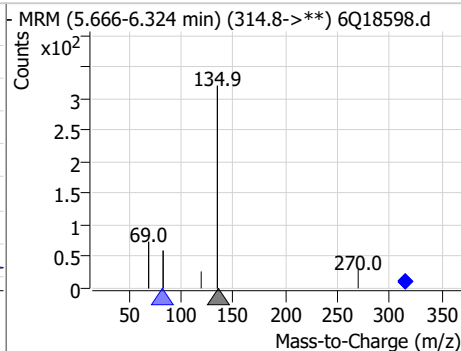
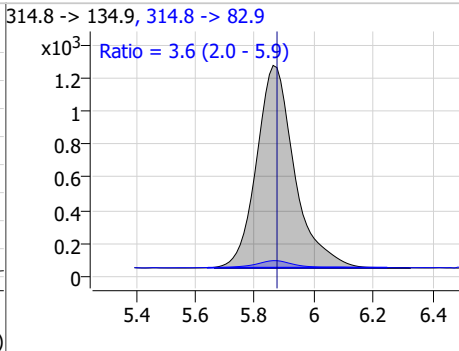
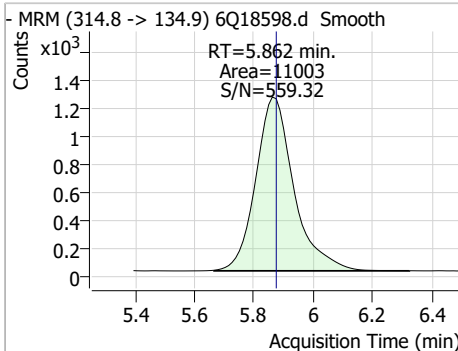


Perfluorinated Compounds by LC/MS/MS

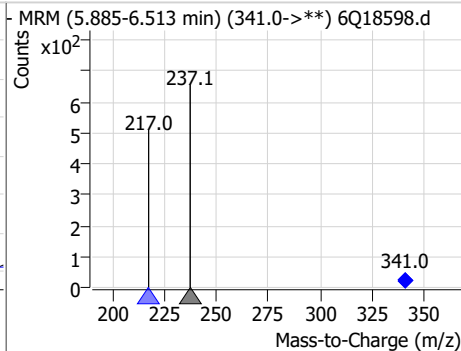
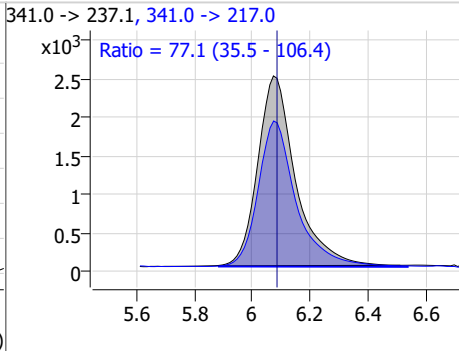
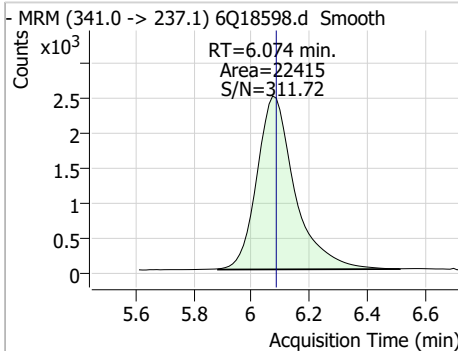
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.45	5.78	0.00	1537	284.9 -> 184.9	12.6	6.8	20.4



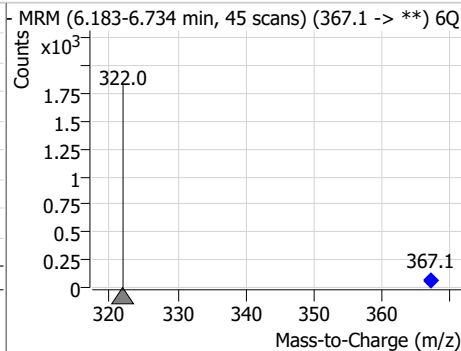
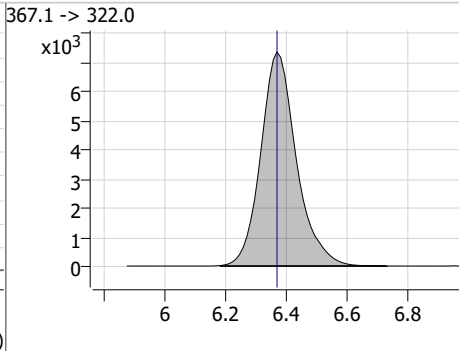
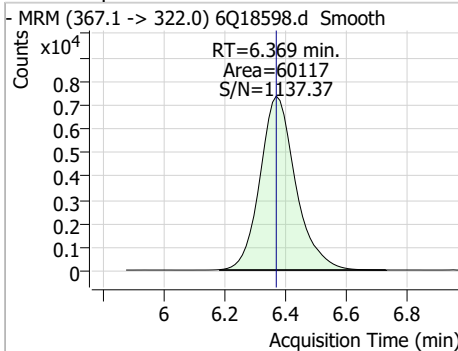
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.41	5.86	-0.01	11003	314.8 -> 82.9	3.6	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.88	6.07	-0.01	22415	341.0 -> 217.0	77.1	35.5	106.4

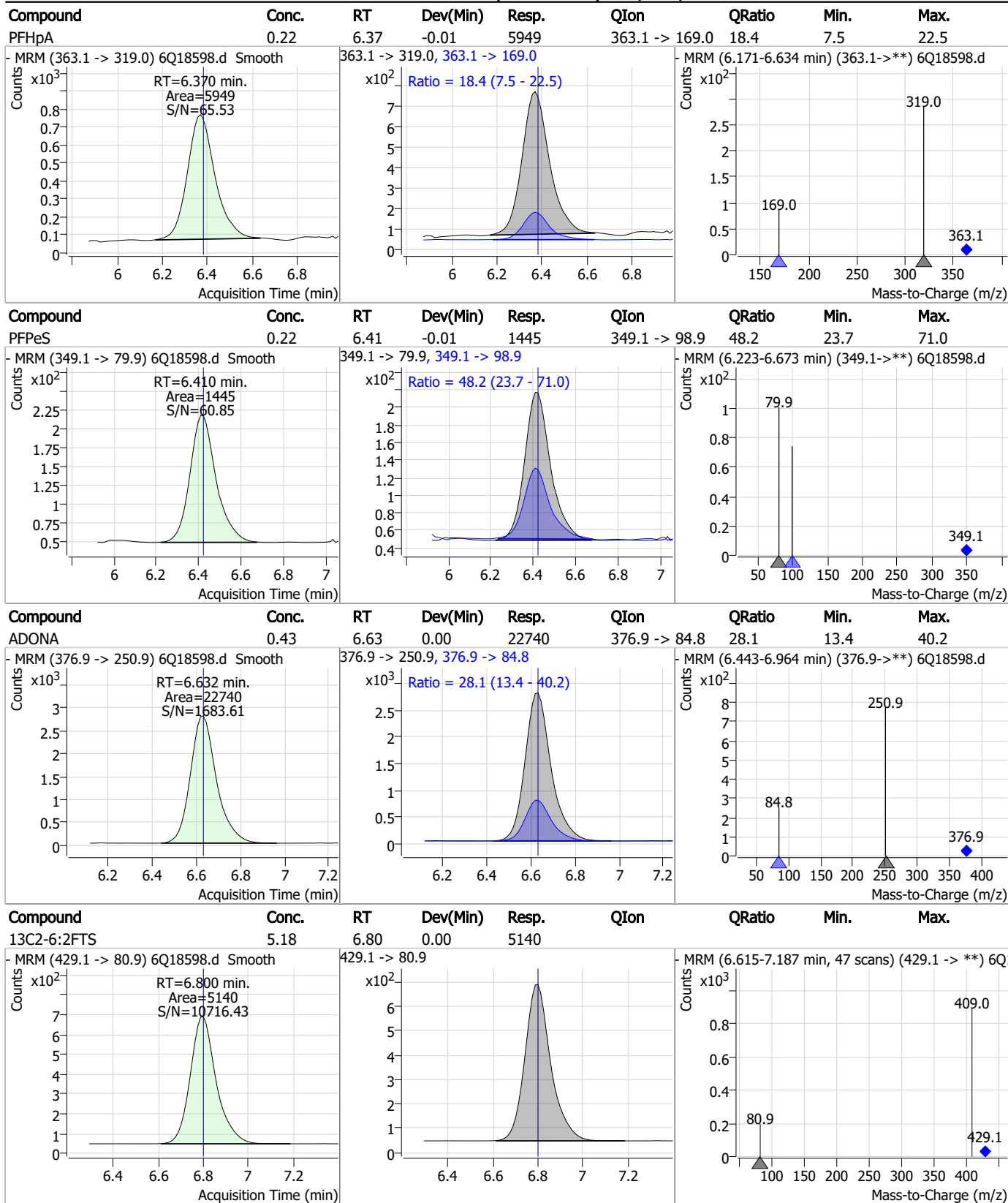


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	6.37	0.00	60117	367.1 -> 322.0			



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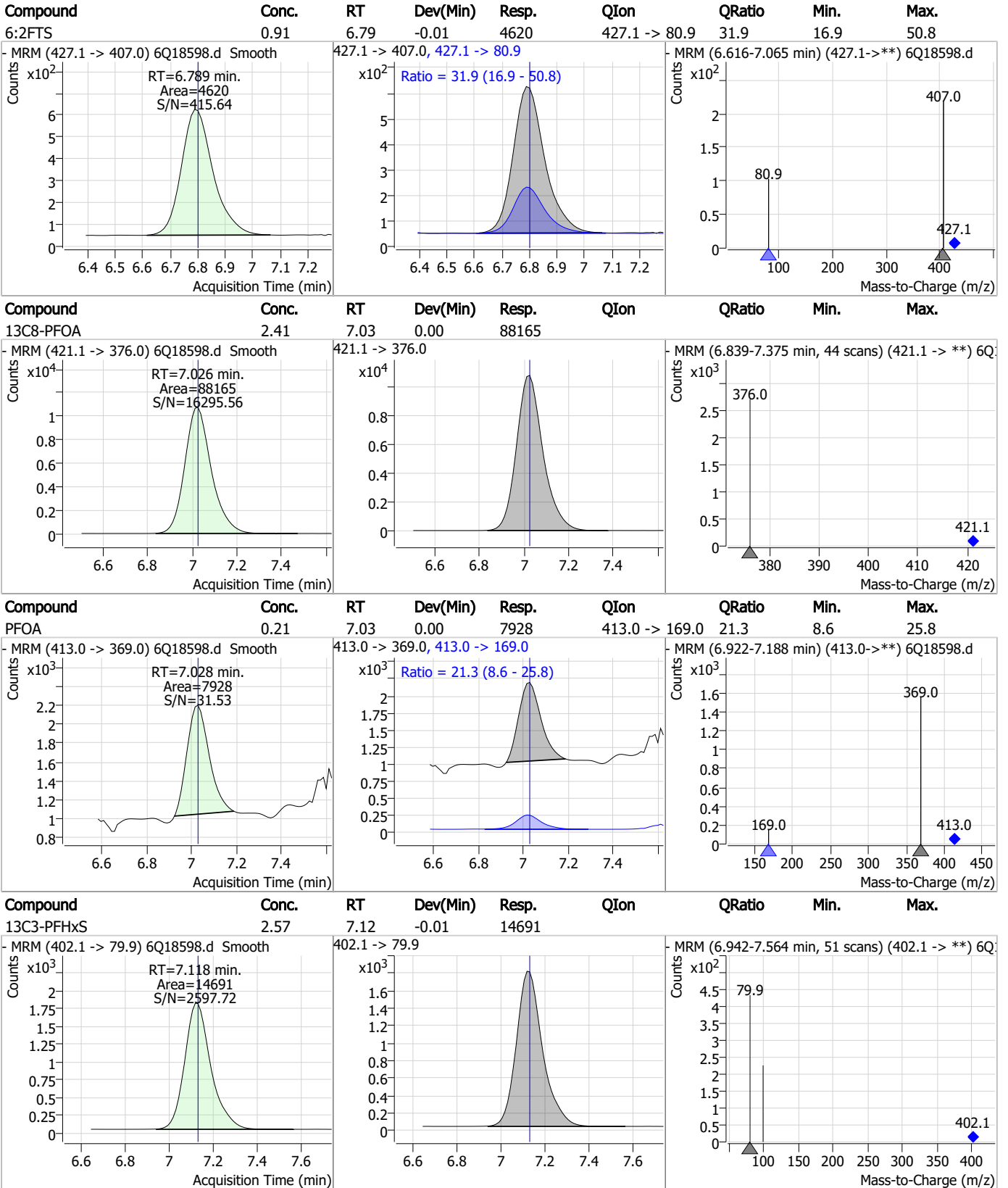
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

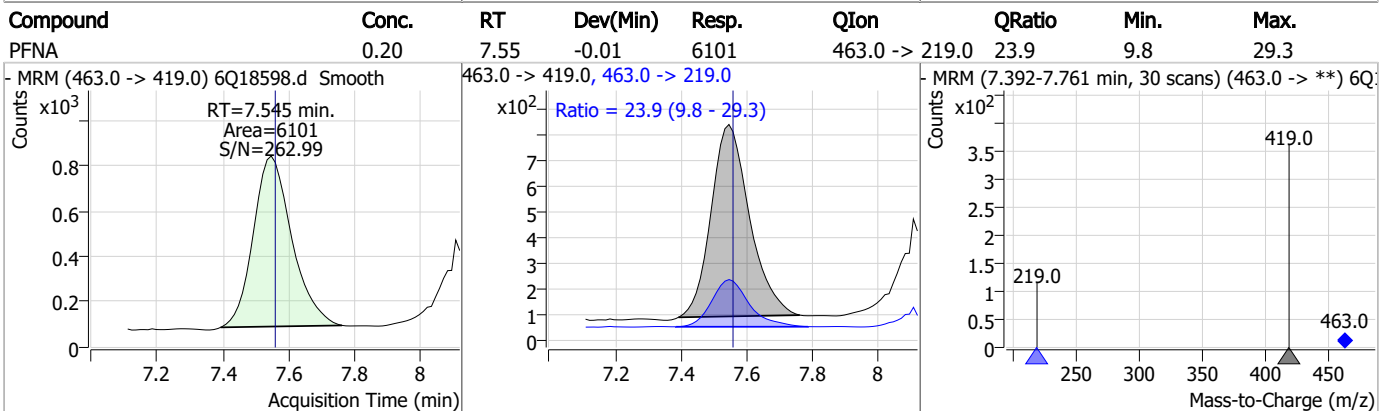
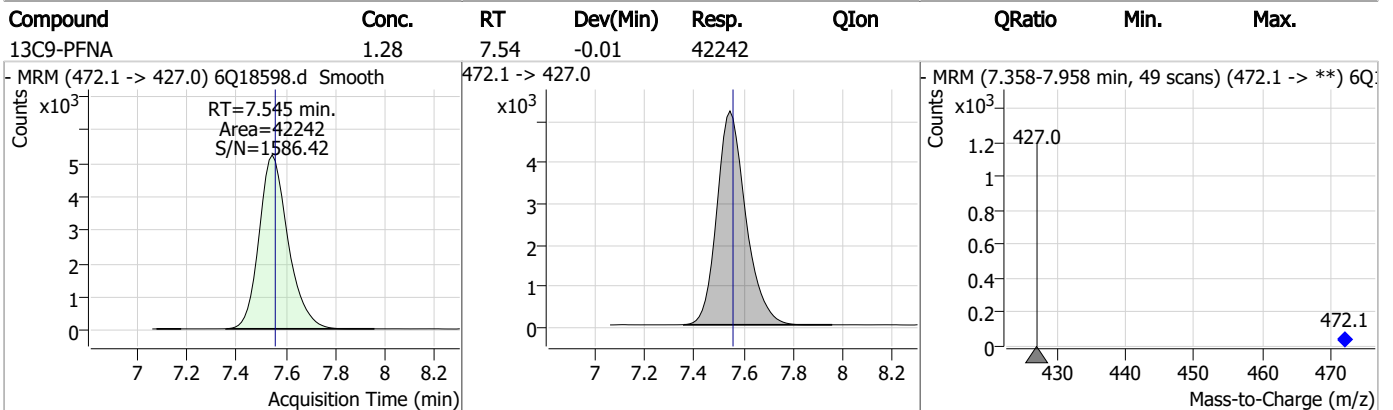
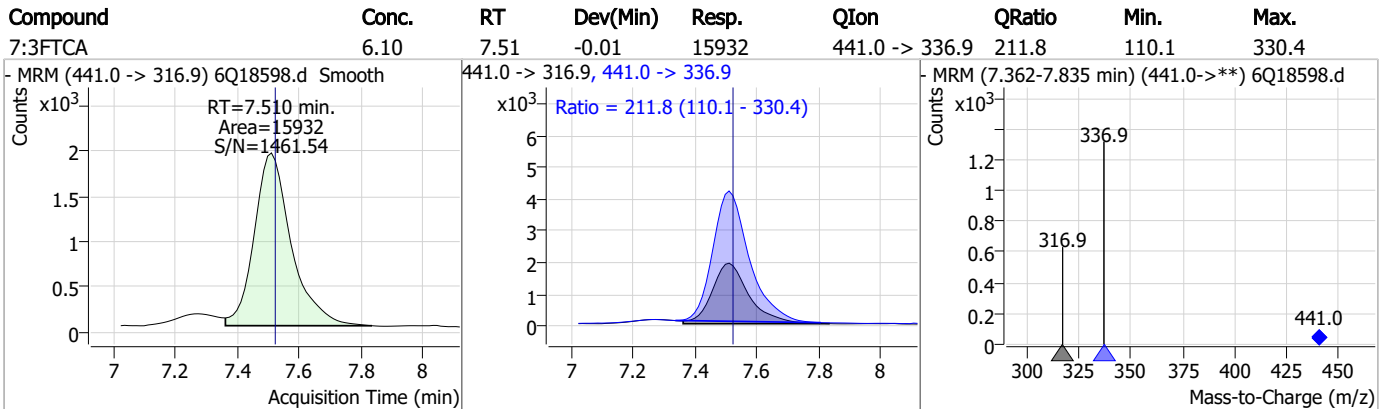
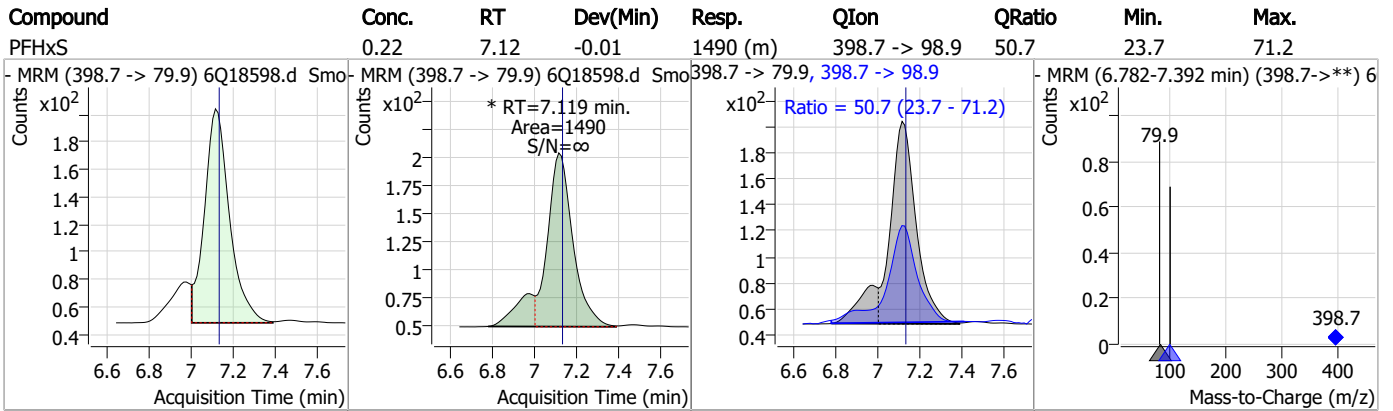


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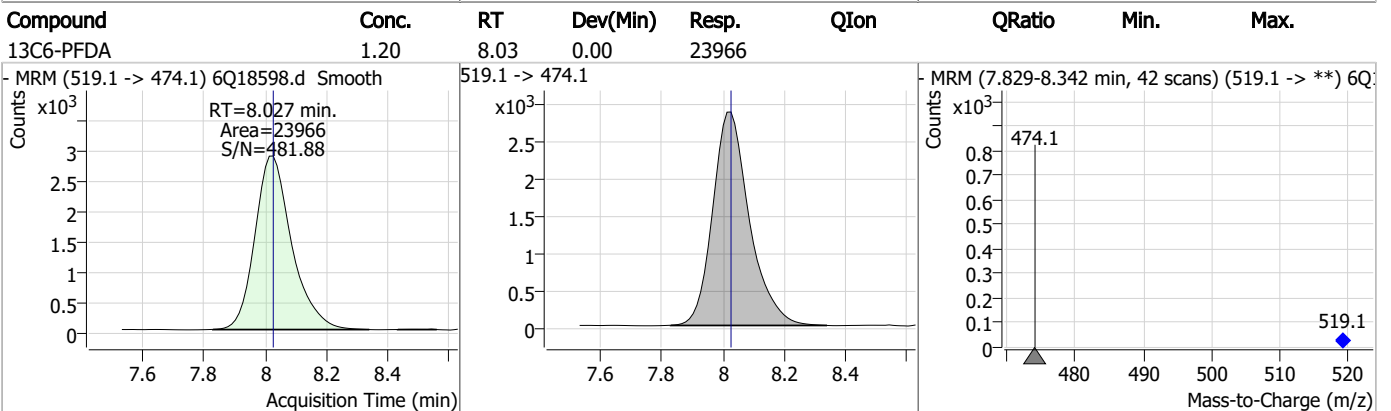
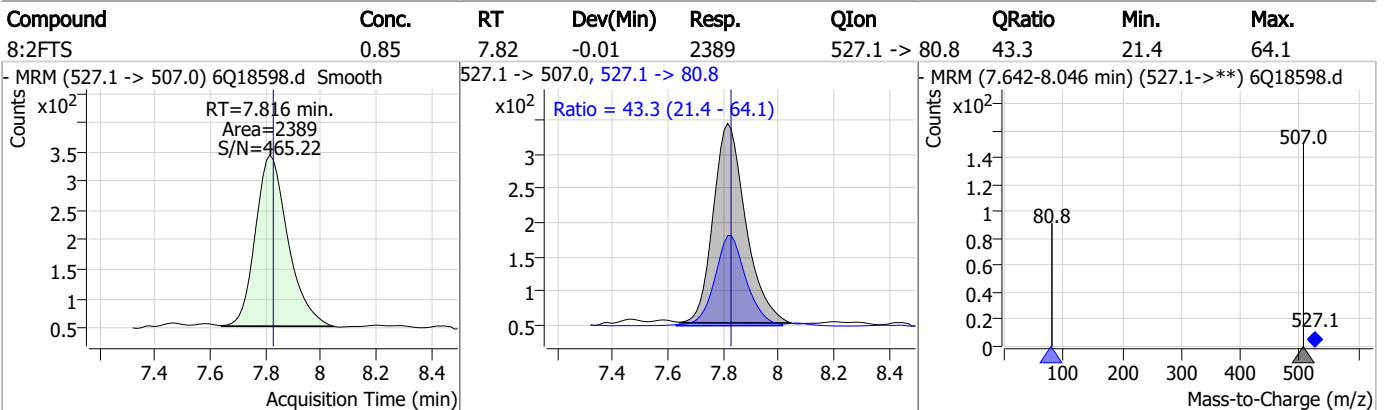
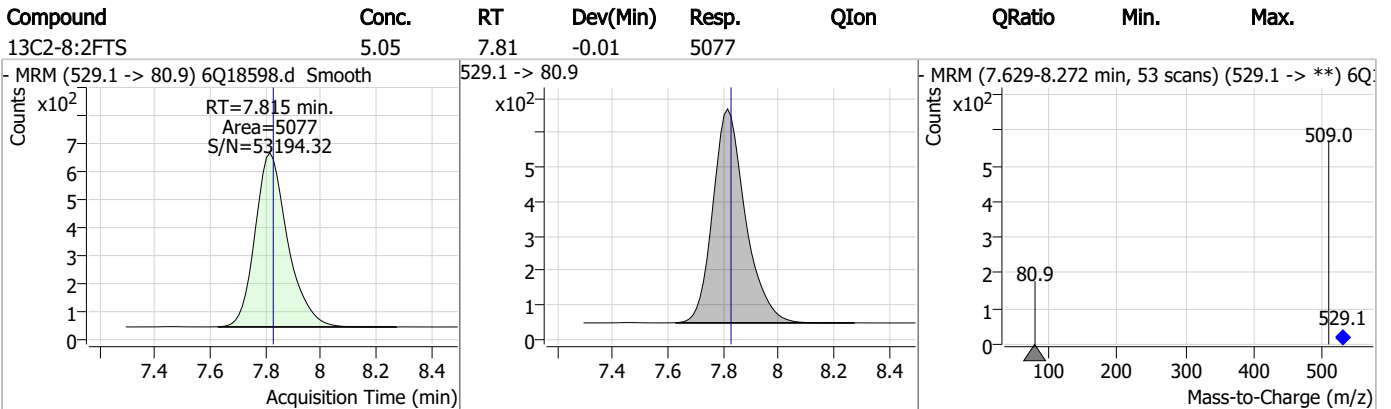
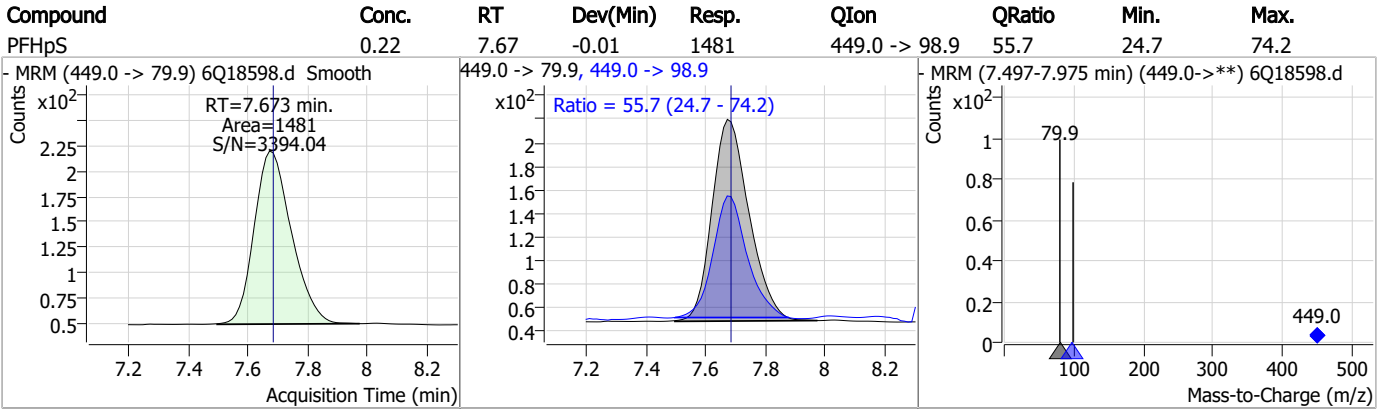


Perfluorinated Compounds by LC/MS/MS



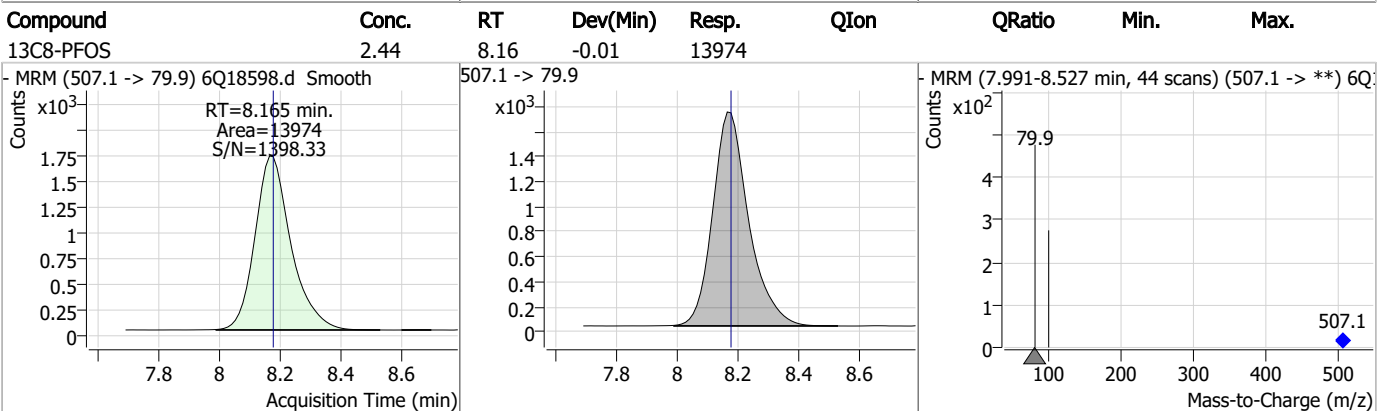
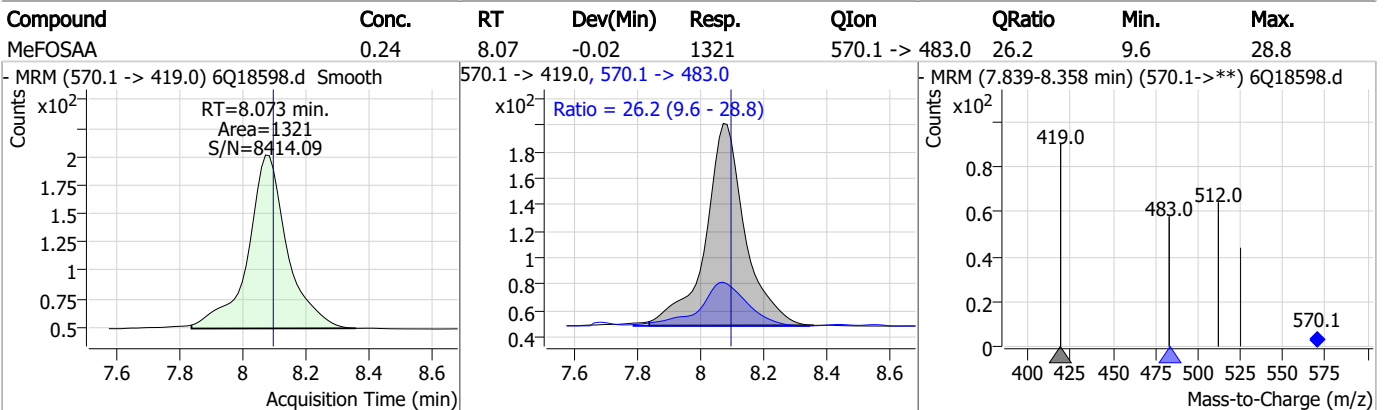
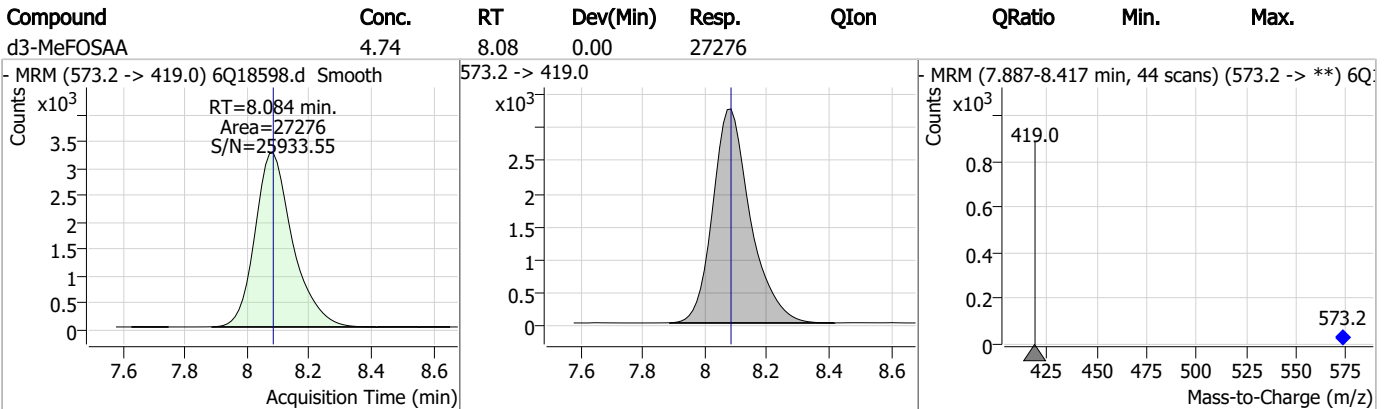
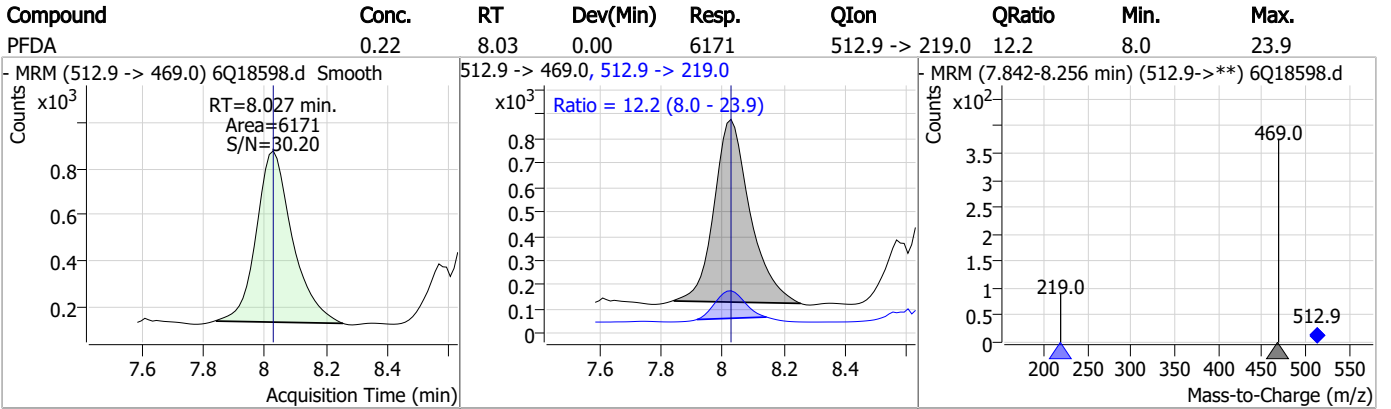
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Perfluorinated Compounds by LC/MS/MS



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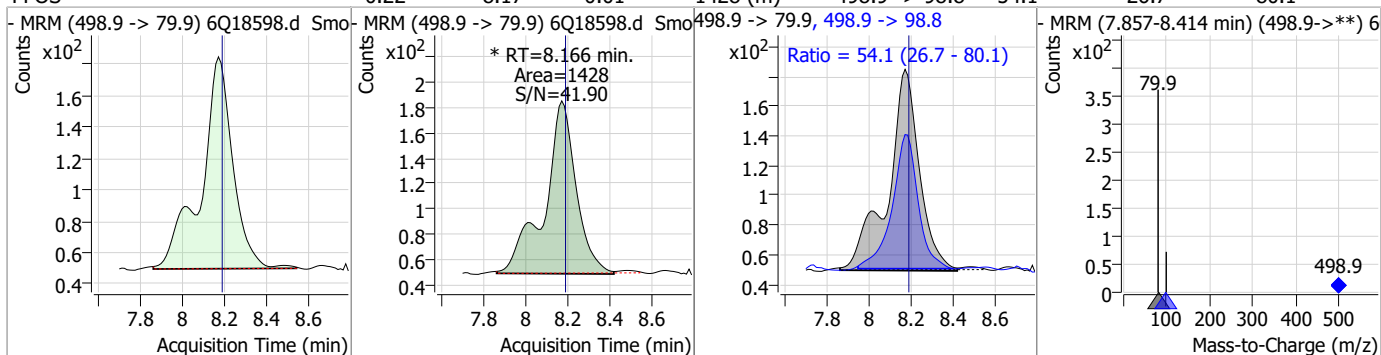
Perfluorinated Compounds by LC/MS/MS



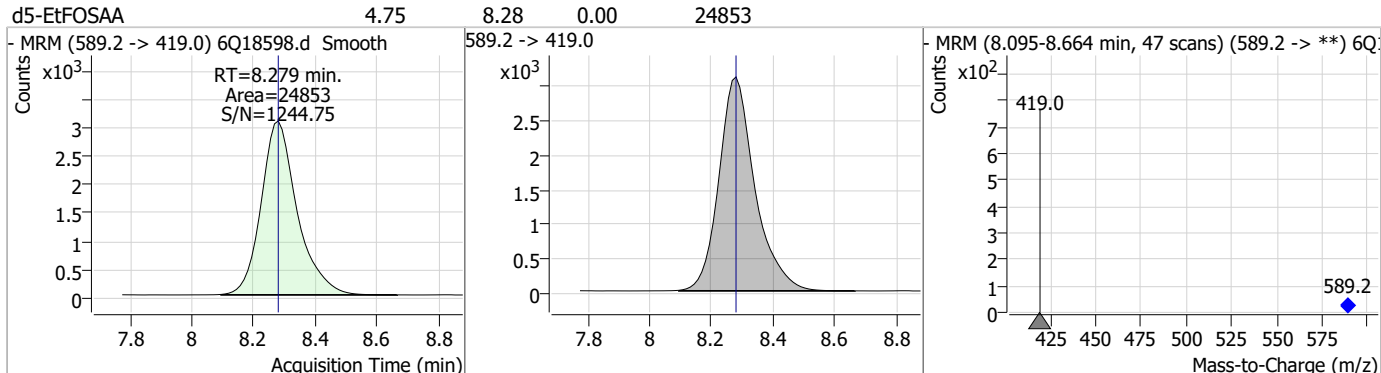
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Perfluorinated Compounds by LC/MS/MS

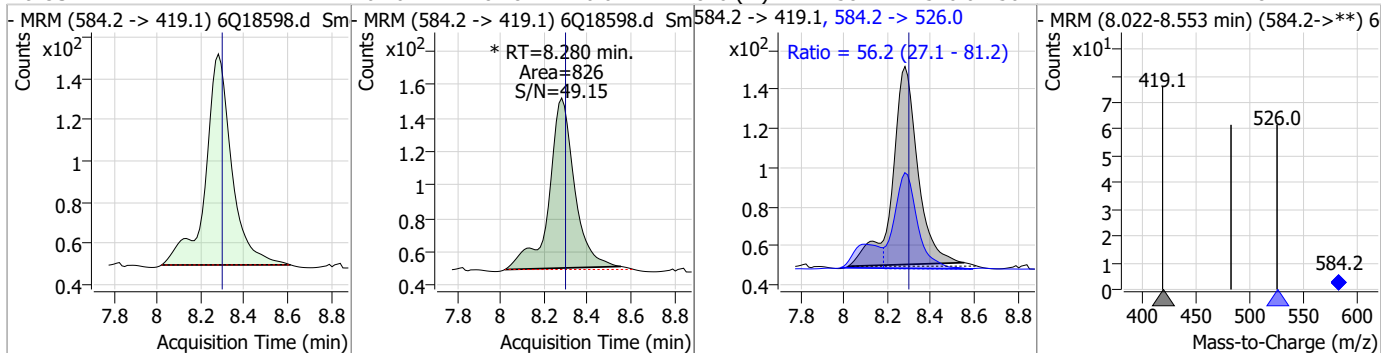
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.22	8.17	-0.01	1428 (m)	498.9 -> 98.8	54.1	26.7	80.1



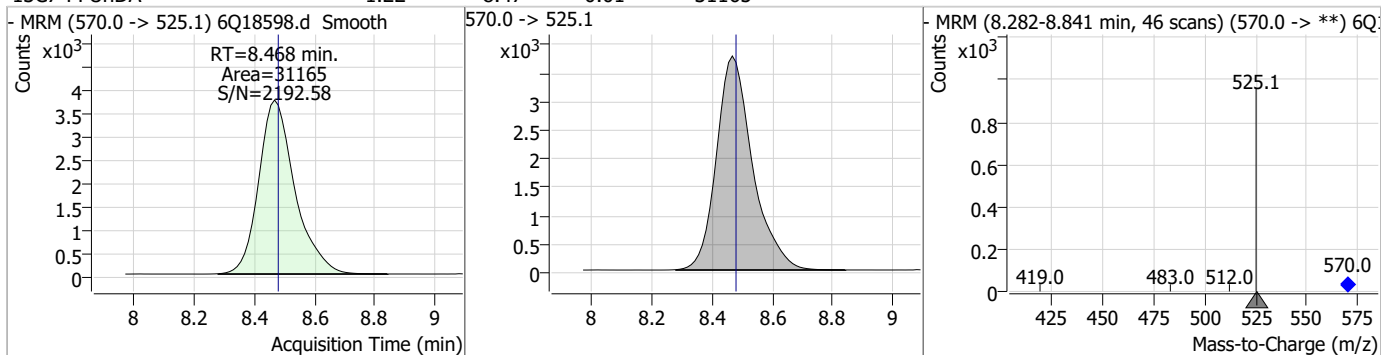
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.75	8.28	0.00	24853				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.26	8.28	-0.01	826 (m)	584.2 -> 526.0	56.2	27.1	81.2

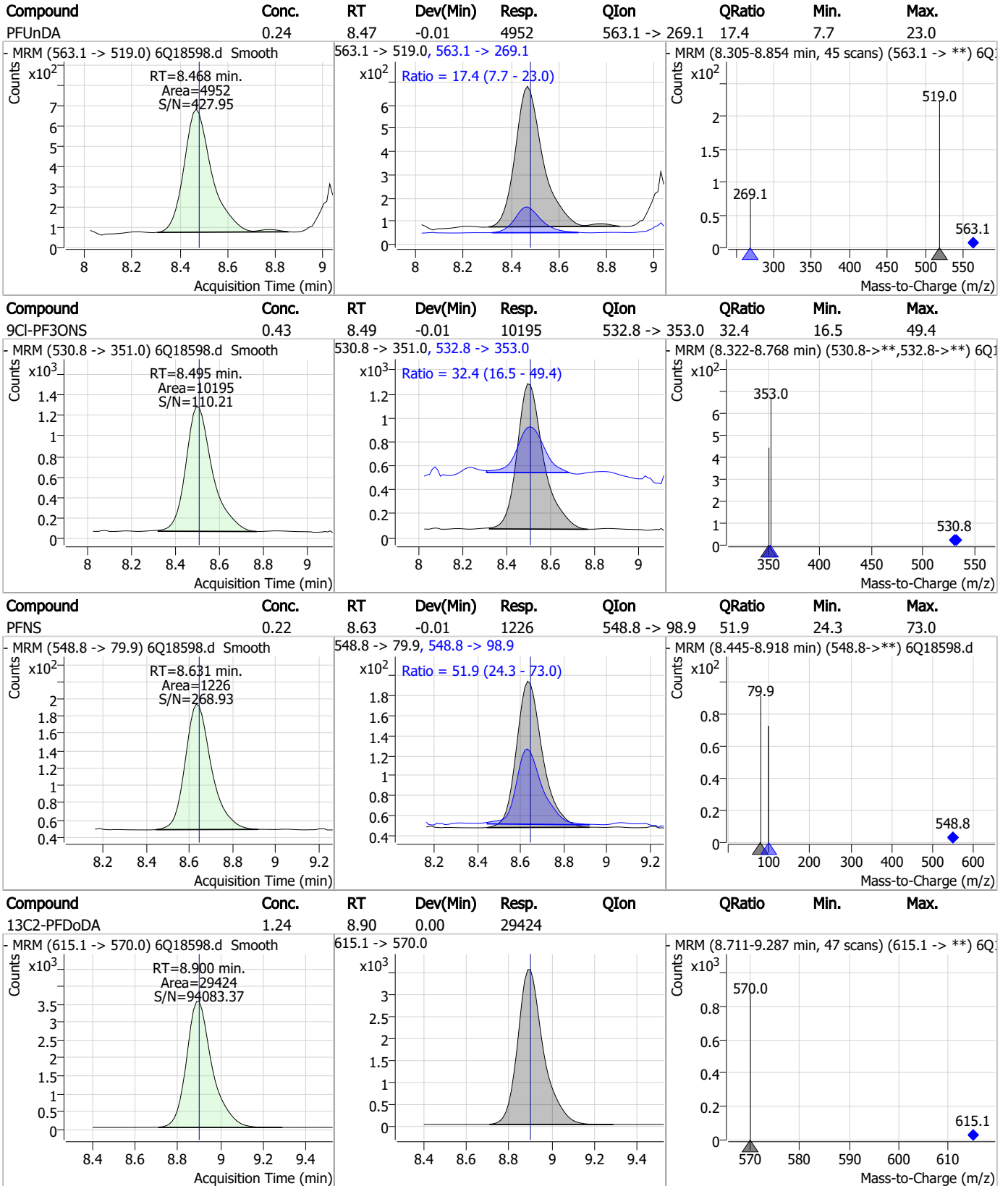


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.47	-0.01	31165				



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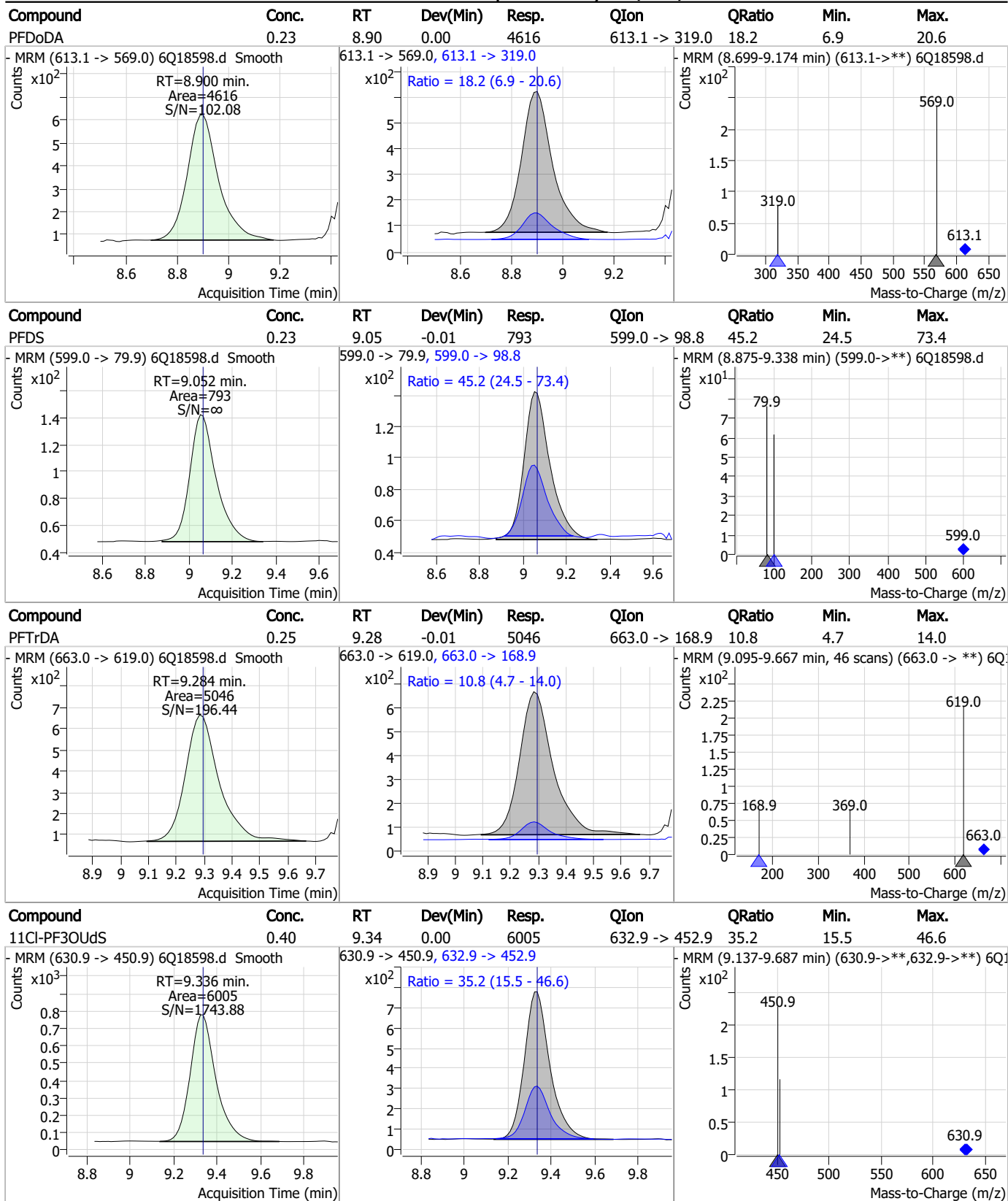
Perfluorinated Compounds by LC/MS/MS



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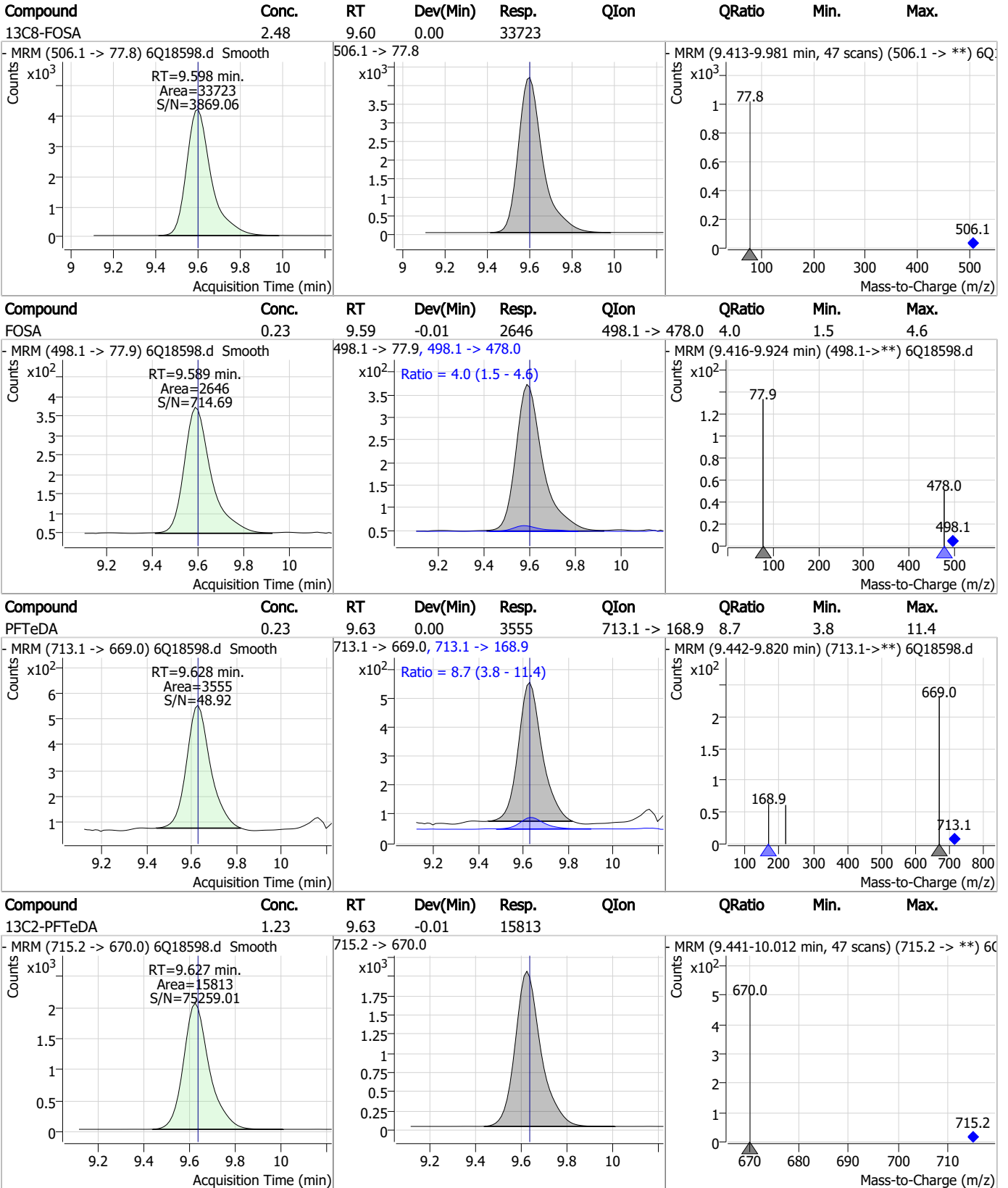
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.28 7

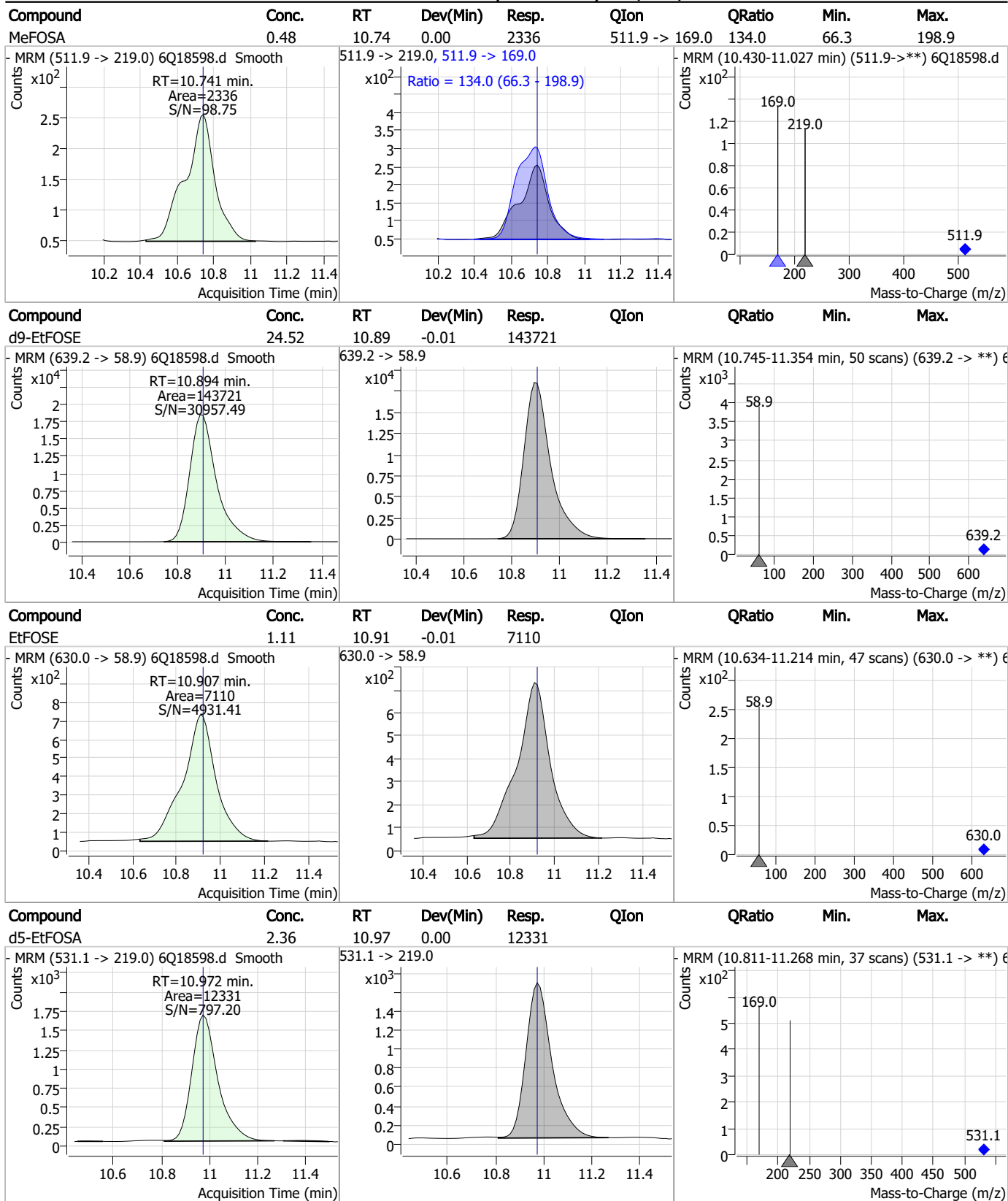


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.22	9.75	0.00	349	699.1 -> 98.8	46.9	26.9	80.6
d7-MeFOSE	24.13	10.65	-0.01	108123				
MeFOSE	1.19	10.67	0.00	5117				
d3-MeFOSA	2.39	10.74	0.00	13156				

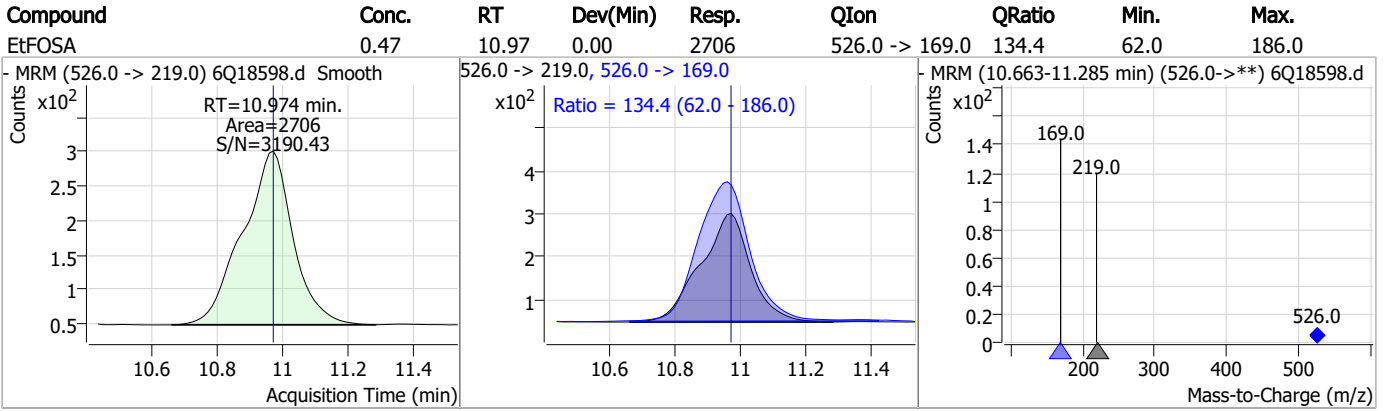
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18598.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 20:10 Supervisor approved: 06/01/23 16:14 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak
EtFOSAA	2991-50-6		8.28	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18609.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 10:49:32 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	190013	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	64286	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	69894	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	63579	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	99466	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	44847	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	26852	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	36597	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	31549	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	17021	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35544	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	25725	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15286	2.50 µg/L	0.000
M8-PFOS	8.165	507.1 -> 79.9	15439	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3852	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5828	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5733	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	31762	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	42302	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26370	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	116598	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	160481	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13610	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13653	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18384	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	79698	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11296	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	100167	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	37268	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	53643	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	63935	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3852	5.11 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5828	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5733	5.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C2-PFDoDA	8.887	615.1 -> 570.0	31549	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17021	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C3-PFBS	5.322	302.1 -> 79.9	25725	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	15286	2.42 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 = 96.9%	
13C4-PFBA	2.822	216.8 -> 171.9	190013	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	63579	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFHxA	5.404	318.0 -> 273.0	69894	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFPeA	4.210	268.3 -> 223.0	64286	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C6-PFDA	8.027	519.1 -> 474.1	26852	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C7-PFUnDA	8.468	570.0 -> 525.1	36597	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C8-FOSA	9.598	506.1 -> 77.8	35544	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C8-PFOA	7.026	421.1 -> 376.0	99466	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C8-PFOS	8.165	507.1 -> 79.9	15439	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C9-PFNA	7.545	472.1 -> 427.0	44847	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.5%	
d3-MeFOSAA	8.084	573.2 -> 419.0	31762	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42302	10.07 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	13653	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26370	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	116598	25.25 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	160481	26.57 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.3%	
d5-EtFOSA	10.972	531.1 -> 219.0	13610	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	52314	9.35 µg/L	94
		327.1 -> 80.9	18715		
6:2FTS	6.801	427.1 -> 407.0	52945	9.25 µg/L	96
		427.1 -> 80.9	16808		
8:2FTS	7.816	527.1 -> 507.0	29541	9.26 µg/L	94
		527.1 -> 80.8	11444		
EtFOSAA	8.280	584.2 -> 419.1	8352	2.46 µg/L	98
		584.2 -> 526.0	4672		
FOSA	9.589	498.1 -> 77.9	28264	2.30 µg/L	99
		498.1 -> 478.0	938		
MeFOSAA	8.073	570.1 -> 419.0	15235	2.33 µg/L	98
		570.1 -> 483.0	3030		
PFBA	2.818	212.8 -> 168.9	59914	9.52 µg/L	100
PFBS	5.323	298.7 -> 79.9	17031	1.95 µg/L	97
		298.7 -> 98.8	6506		
PFDA	8.027	512.9 -> 469.0	77611	2.49 µg/L	97
		512.9 -> 219.0	11481		
PFDODA	8.900	613.1 -> 569.0	51610	2.38 µg/L	95
		613.1 -> 319.0	8075		
PFDS	9.052	599.0 -> 79.9	8520	2.21 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	4017	2.41	µg/L	98
		363.1 -> 319.0	67723			
PFHpS	7.685	363.1 -> 169.0	10718	2.14	µg/L	100
		449.0 -> 79.9	15855			
PFHxA	5.407	449.0 -> 98.9	7859	2.33	µg/L	98
		313.0 -> 269.0	54675			
PFHxS	7.119	313.0 -> 118.9	2874	2.30	µg/L	99
		398.7 -> 79.9	15906			
PFNA	7.545	398.7 -> 98.9	7664	2.40	µg/L	100
		463.0 -> 419.0	76361			
PFNS	8.631	463.0 -> 219.0	14946	2.23	µg/L	96
		548.8 -> 79.9	13822			
PFOA	7.028	548.8 -> 98.9	7091	2.50	µg/L	98
		413.0 -> 369.0	106143			
PFOS	8.166	413.0 -> 169.0	17349	1.99	µg/L	100
		498.9 -> 79.9	14012			
PFPeA	4.212	498.9 -> 98.8	7504	4.79	µg/L	100
		263.0 -> 219.0	73910			
PFPeS	6.422	349.1 -> 79.9	16516	2.40	µg/L	96
		349.1 -> 98.9	7325			
PFTeDA	9.628	713.1 -> 669.0	41141	2.46	µg/L	97
		713.1 -> 168.9	3530			
PFTrDA	9.284	663.0 -> 619.0	50201	2.29	µg/L	92
		663.0 -> 168.9	6088			
PFUnDA	8.468	563.1 -> 519.0	55474	2.33	µg/L	97
		563.1 -> 269.1	9116			
11Cl-PF3OUdS	9.336	630.9 -> 450.9	70776	4.46	µg/L	98
		632.9 -> 452.9	22675			
9Cl-PF3ONS	8.495	530.8 -> 351.0	114416	4.57	µg/L	99
		532.8 -> 353.0	38019			
ADONA	6.632	376.9 -> 250.9	258830	4.61	µg/L	100
		376.9 -> 84.8	68822			
HFPO-DA	5.783	284.9 -> 168.9	16708	4.66	µg/L	100
		284.9 -> 184.9	2256			
3:3FTCA	3.671	241.0 -> 177.0	11753	11.89	µg/L	98
		241.0 -> 117.0	1619			
5:3FTCA	6.074	341.0 -> 237.1	242757	57.50	µg/L	95
		341.0 -> 217.0	181310			
7:3FTCA	7.510	441.0 -> 316.9	173734	60.09	µg/L	95
		441.0 -> 336.9	397218			
EtFOSA	10.974	526.0 -> 219.0	30364	4.79	µg/L	89
		526.0 -> 169.0	41399			
EtFOSE	10.907	630.0 -> 58.9	79916	11.16	µg/L	100
		511.9 -> 219.0	25313			
MeFOSA	10.741	511.9 -> 169.0	35548	5.04	µg/L	93
		616.1 -> 58.9	55979			
MeFOSE	10.673	699.1 -> 79.9	3796	12.08	µg/L	100
		699.1 -> 98.8	2001			
PFDoDS	9.755	295.0 -> 201.0	14093	2.21	µg/L	99
		295.0 -> 84.9	3560			
NFDHA	5.288	279.0 -> 85.1	49749	4.93	µg/L	96
		229.0 -> 84.9	39202			
PFMBA	4.626	314.8 -> 134.9	126257	4.80	µg/L	100
		314.8 -> 82.9	4516			
PFMPA	3.363			4.24	µg/L	99
PFEESA	5.875					

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

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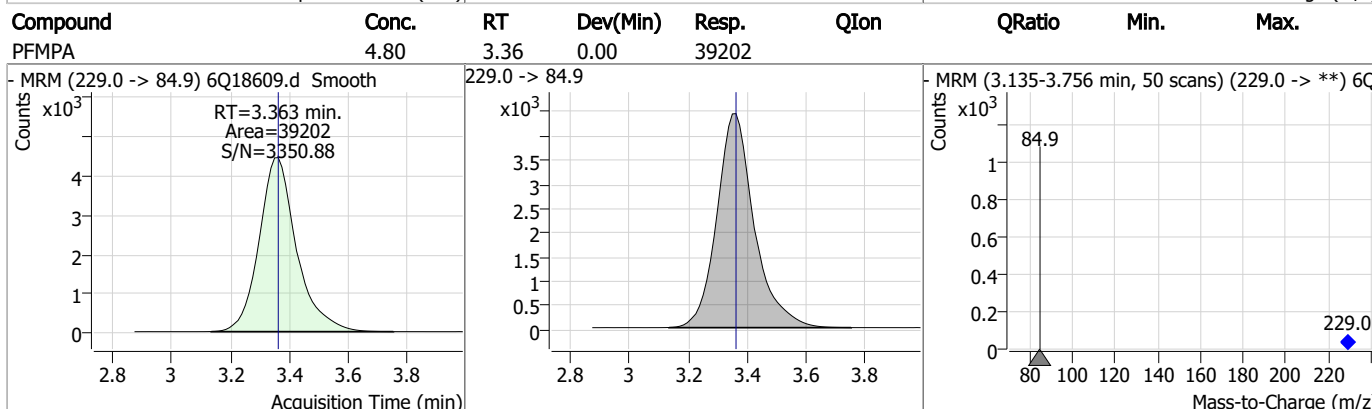
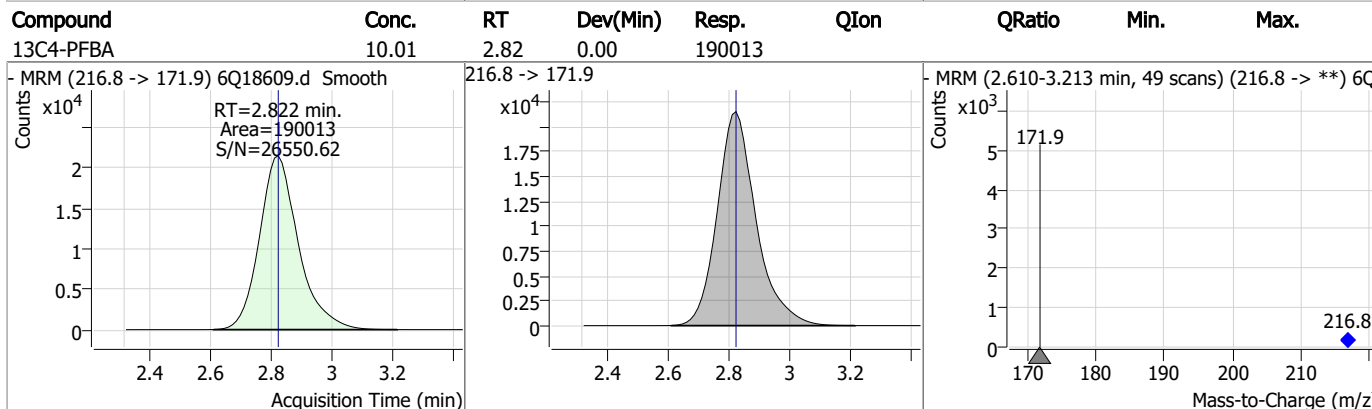
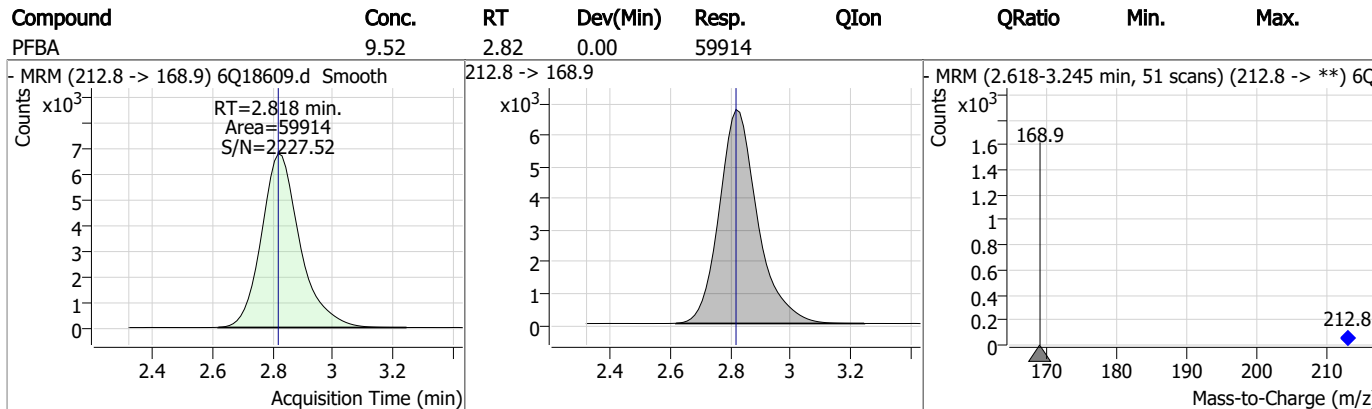
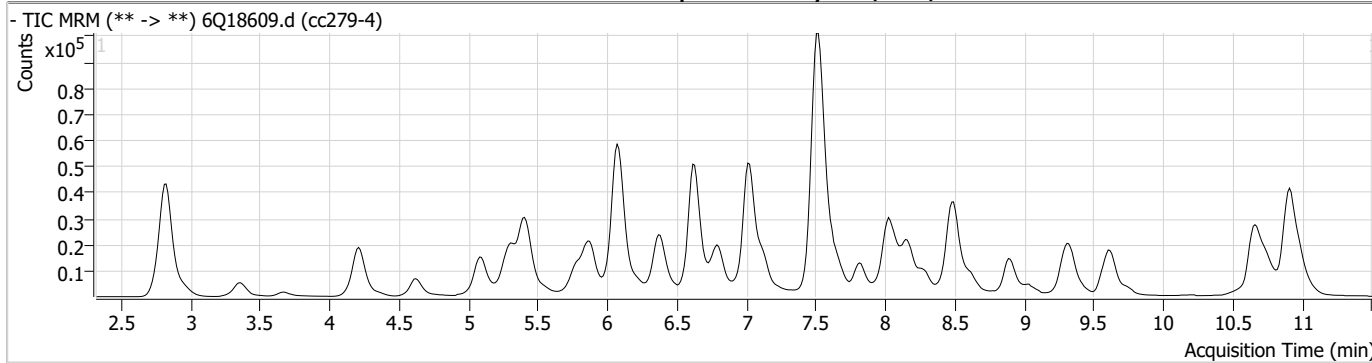
Perfluorinated Compounds by LC/MS/MS

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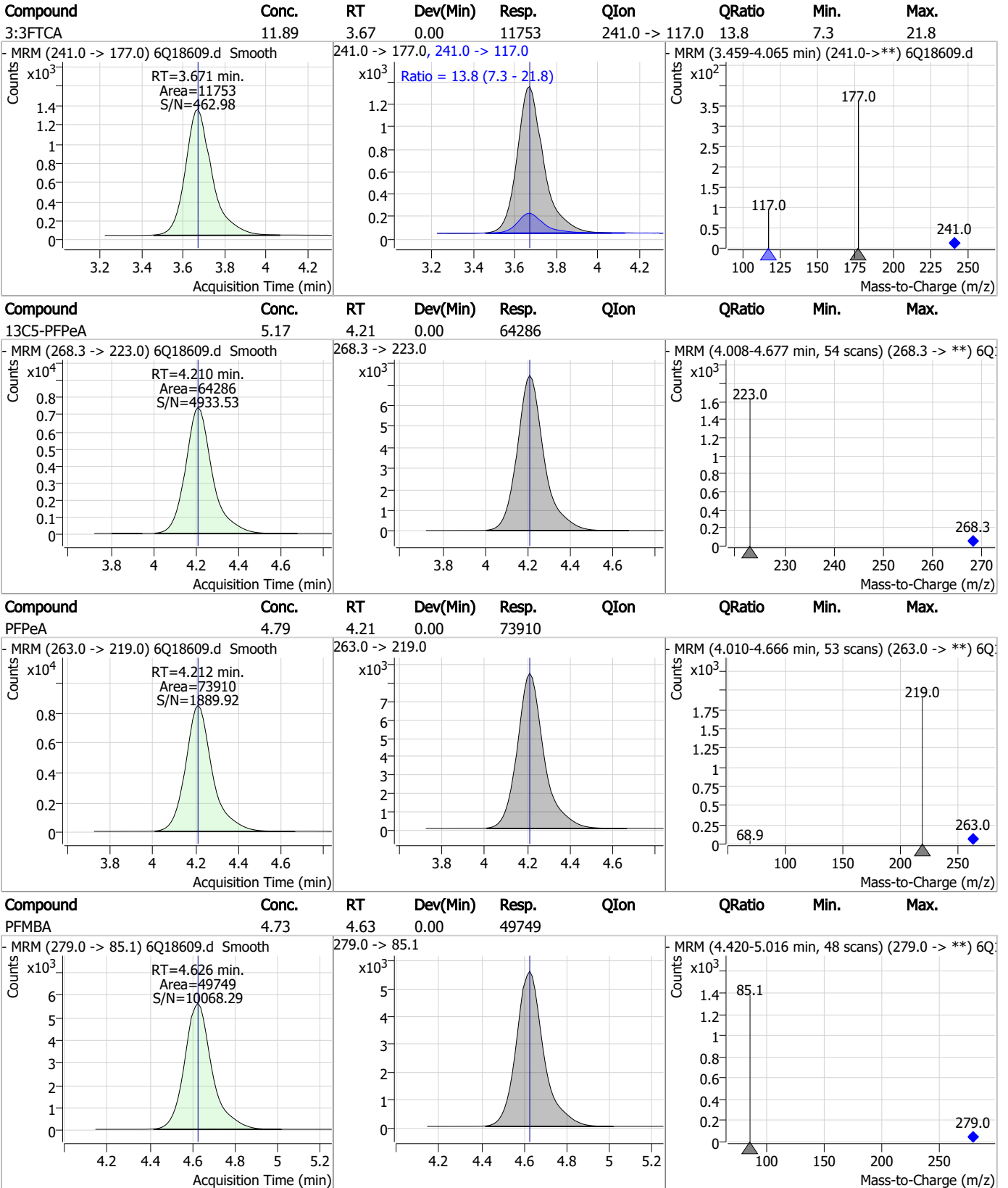
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

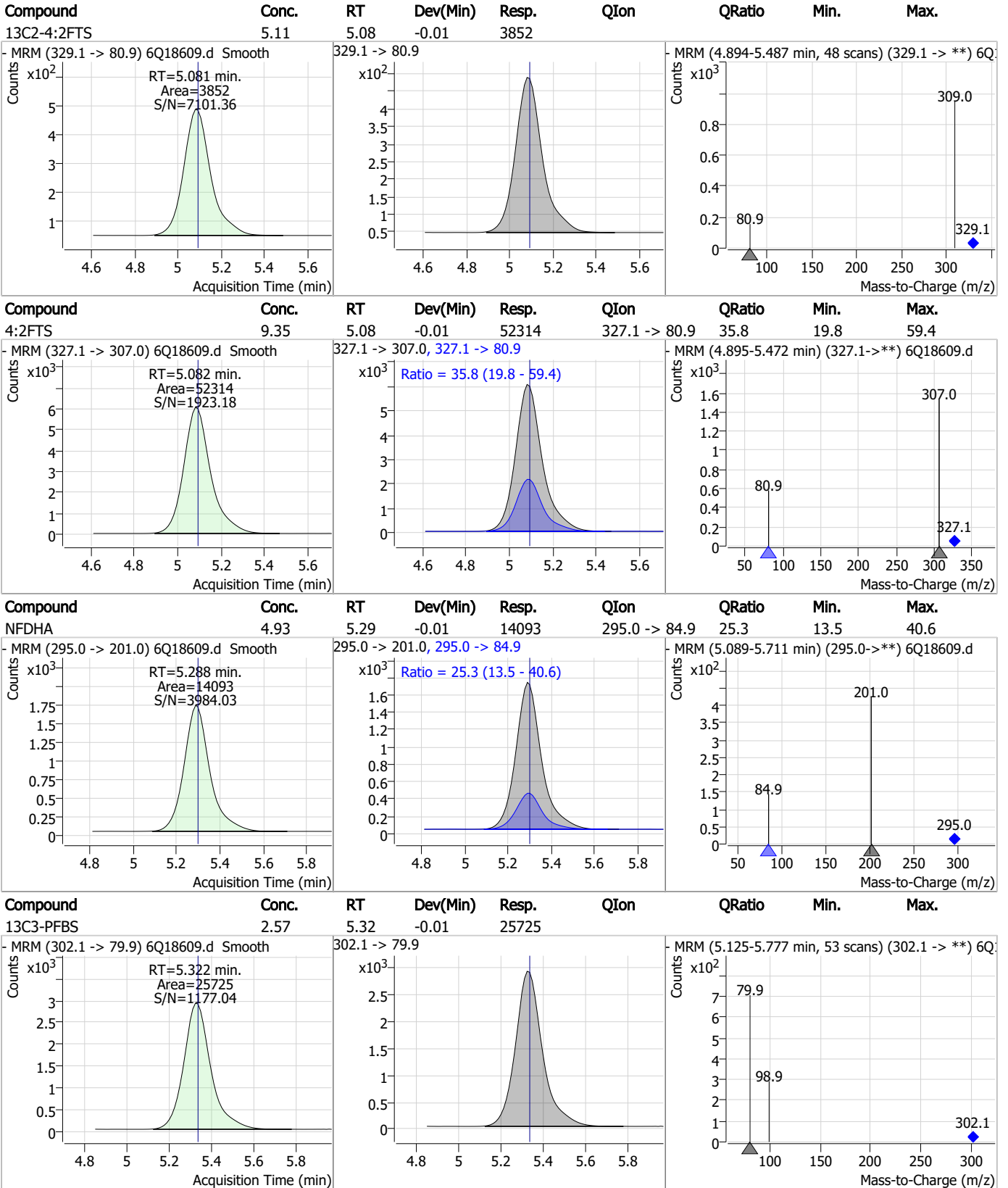


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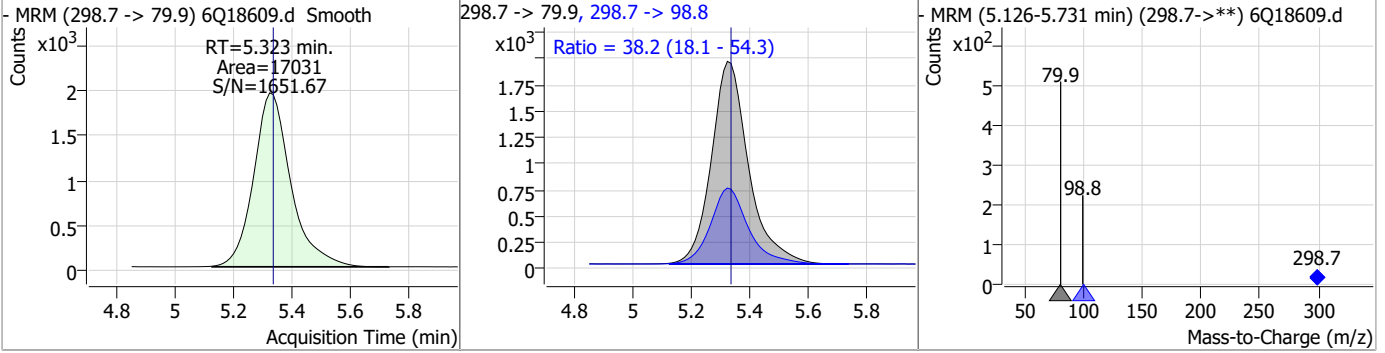
Perfluorinated Compounds by LC/MS/MS



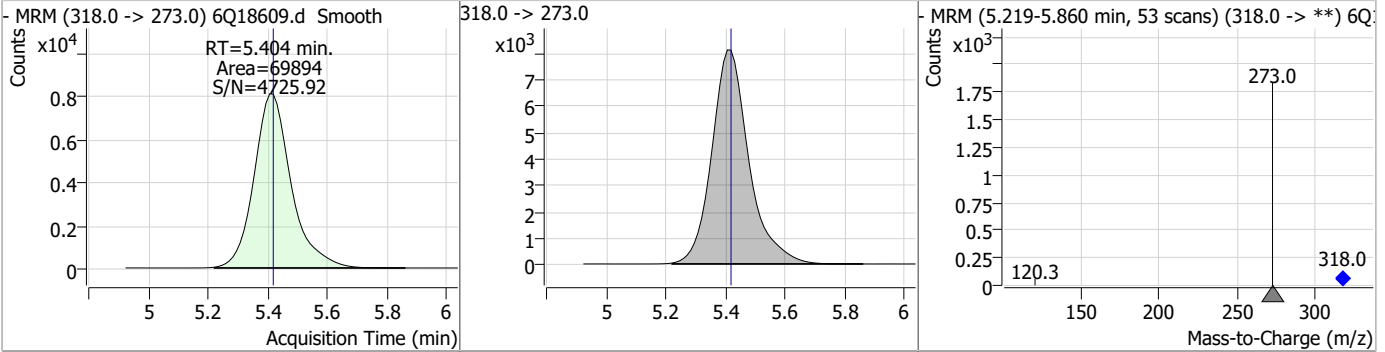
7.7.29
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Perfluorinated Compounds by LC/MS/MS

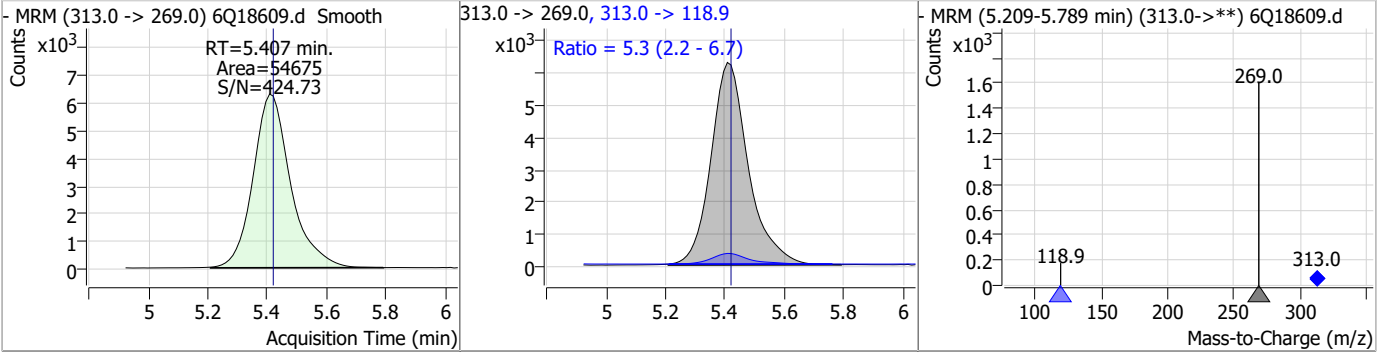
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.95	5.32	-0.01	17031	298.7 -> 98.8	38.2	18.1	54.3



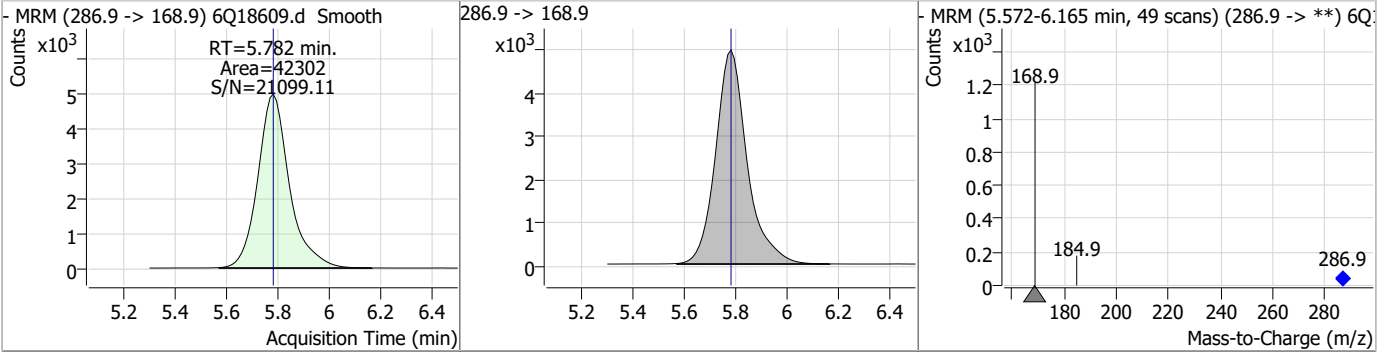
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.58	5.40	-0.01	69894				



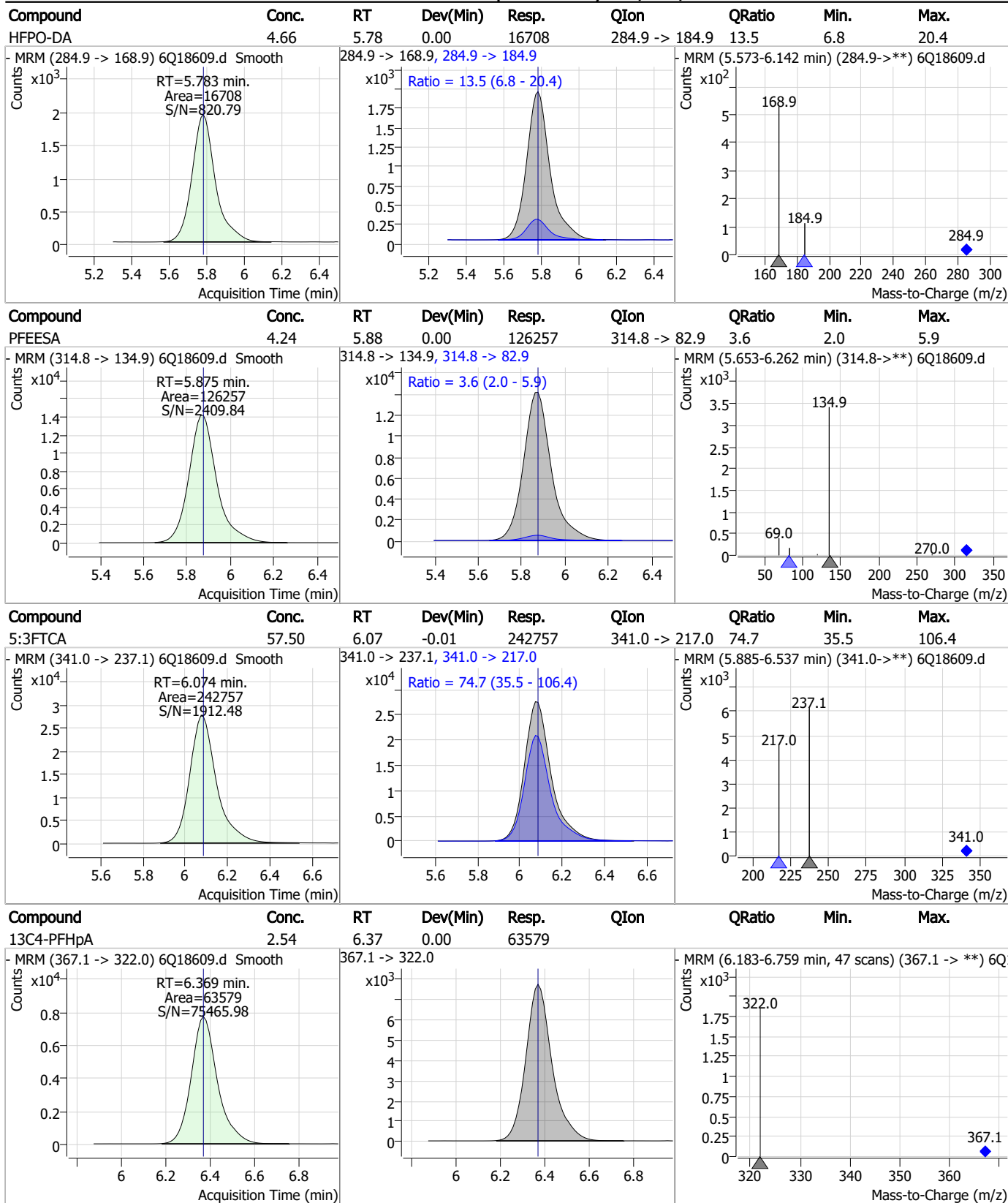
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.33	5.41	-0.01	54675	313.0 -> 118.9	5.3	2.2	6.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.07	5.78	0.00	42302				



Perfluorinated Compounds by LC/MS/MS

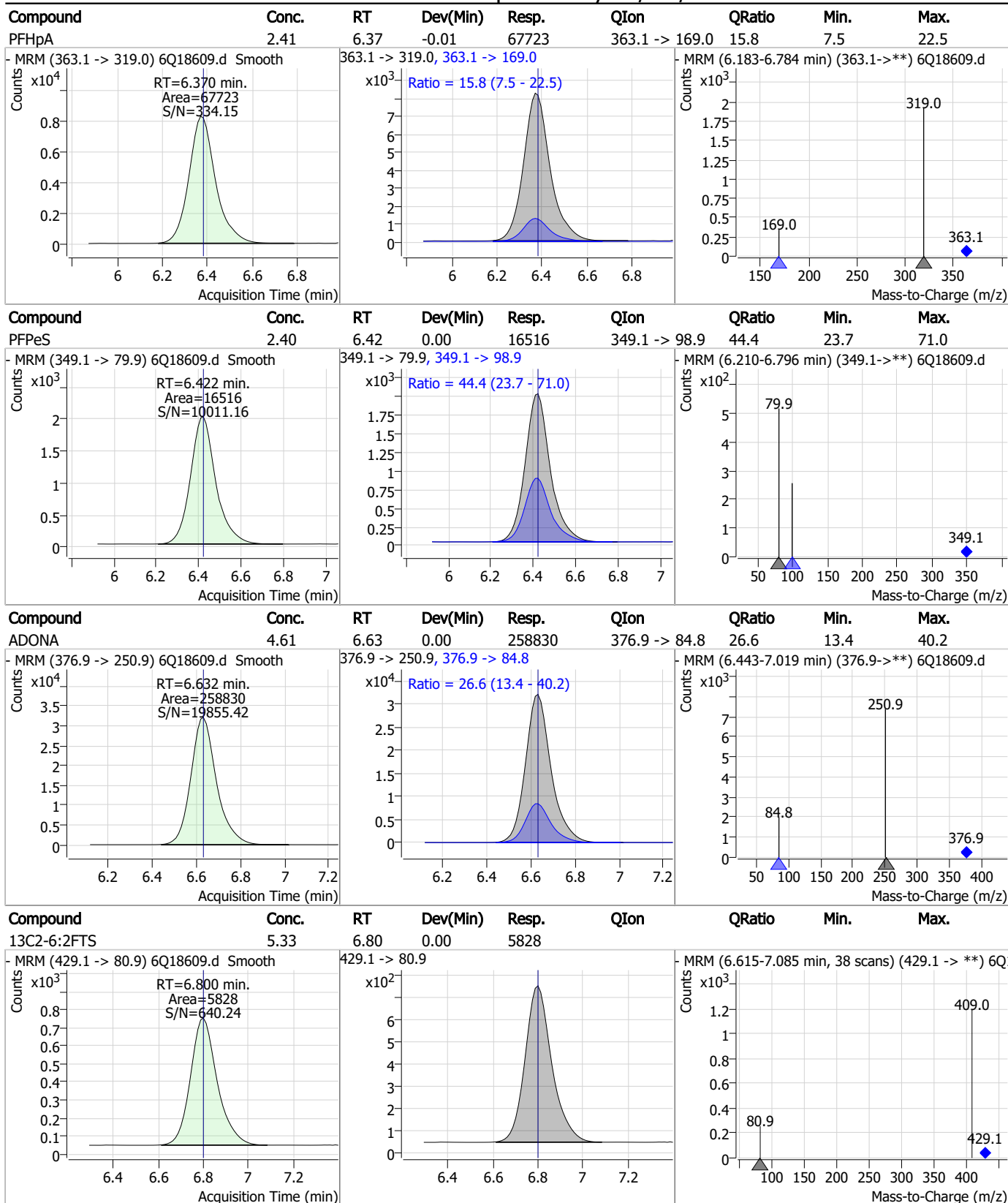


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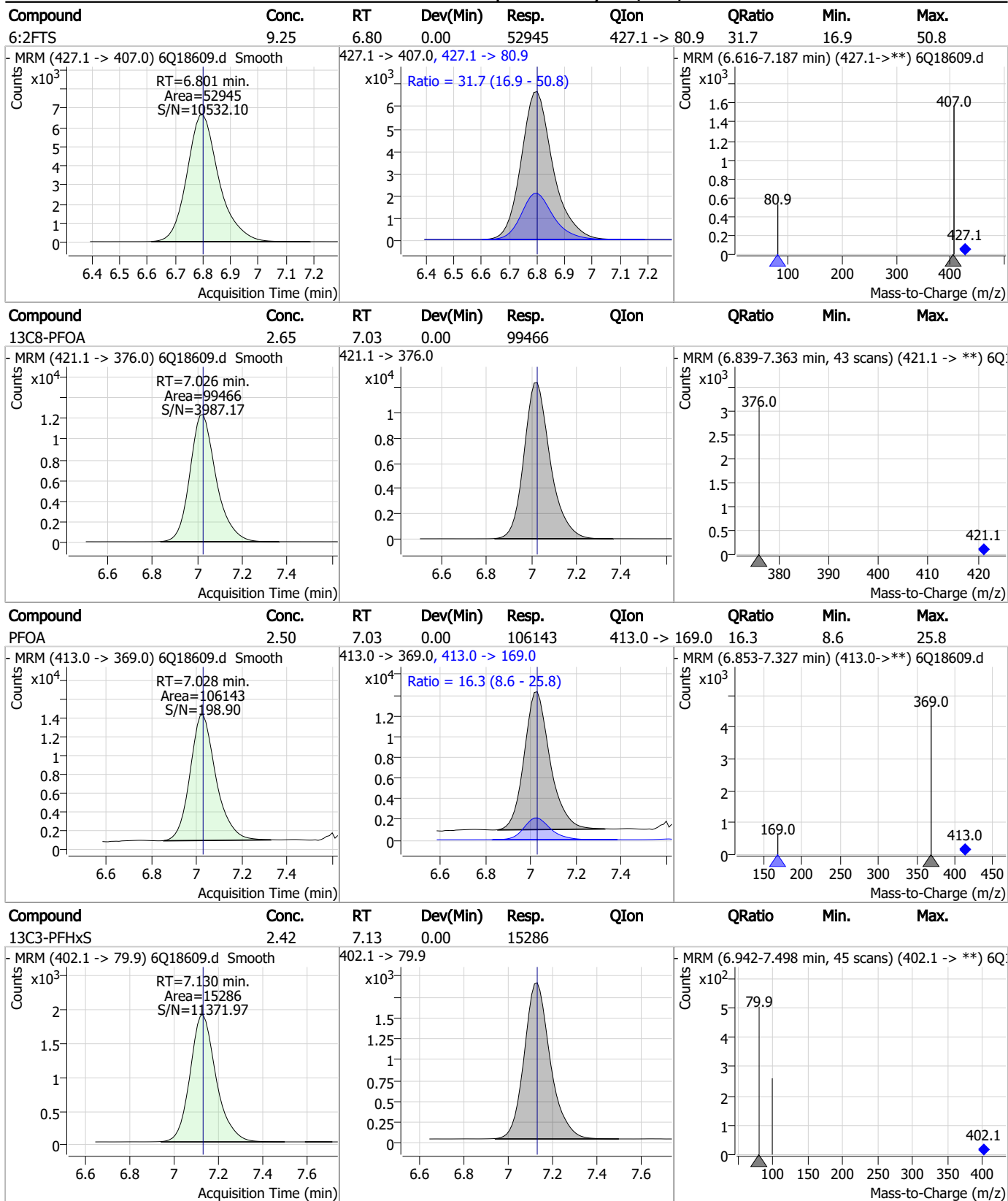
Perfluorinated Compounds by LC/MS/MS



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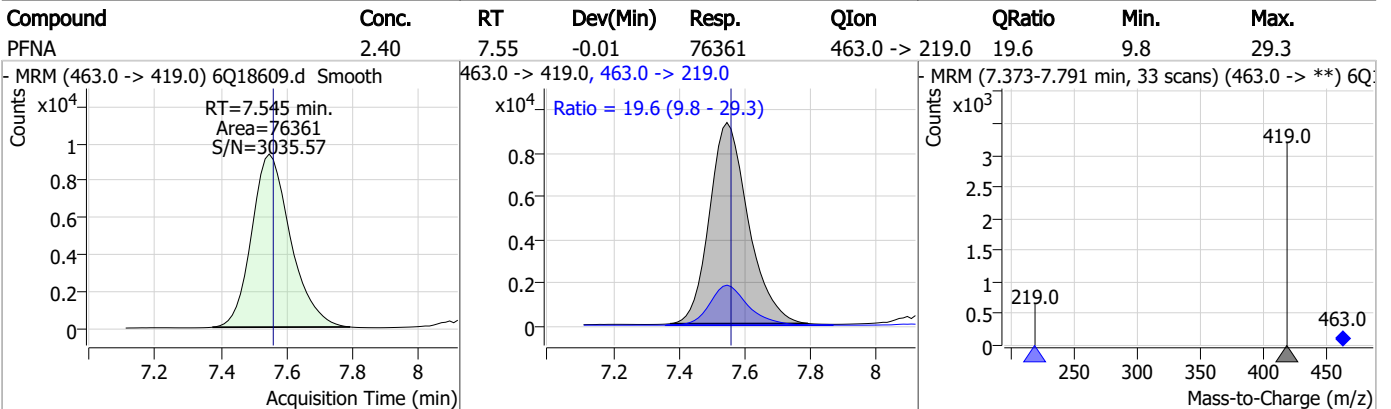
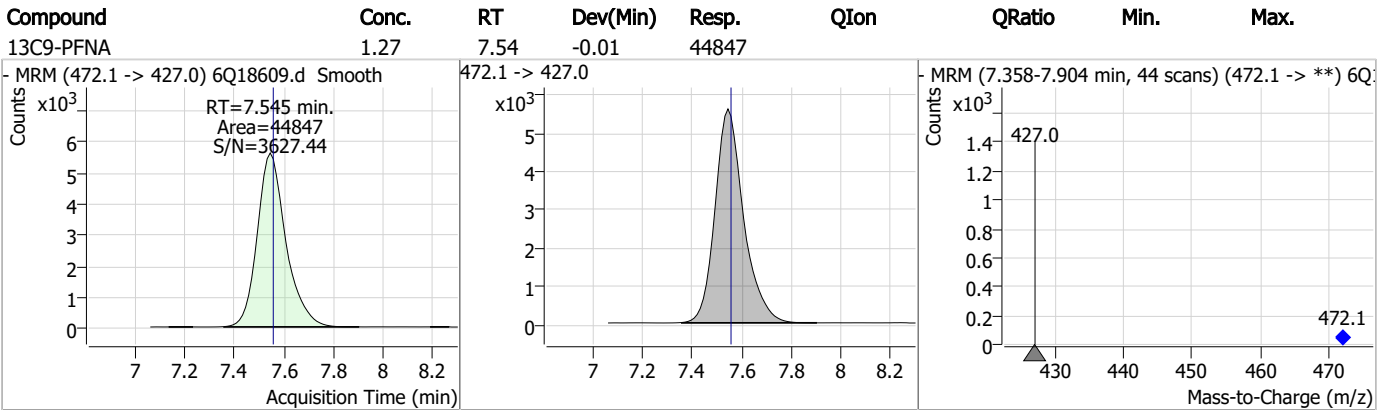
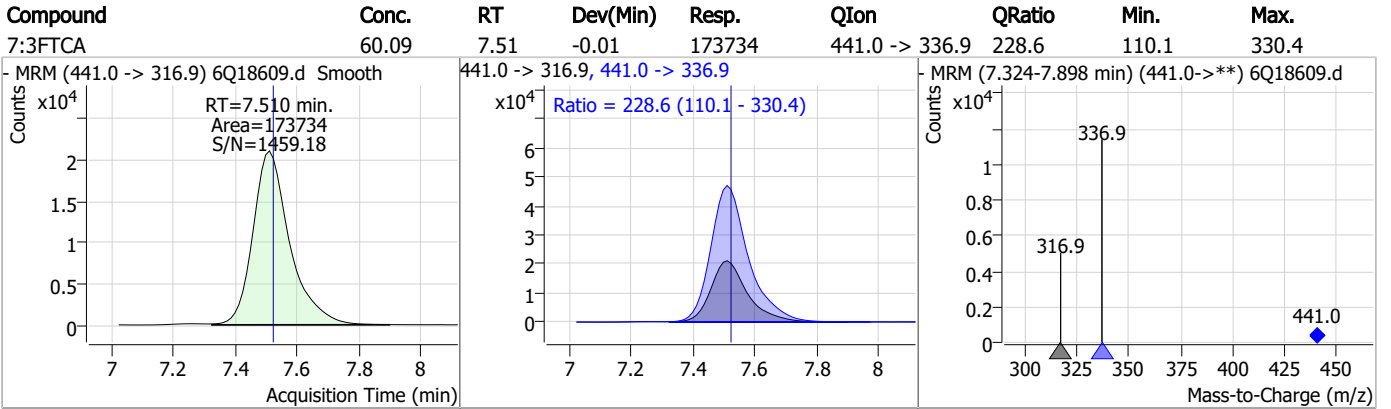
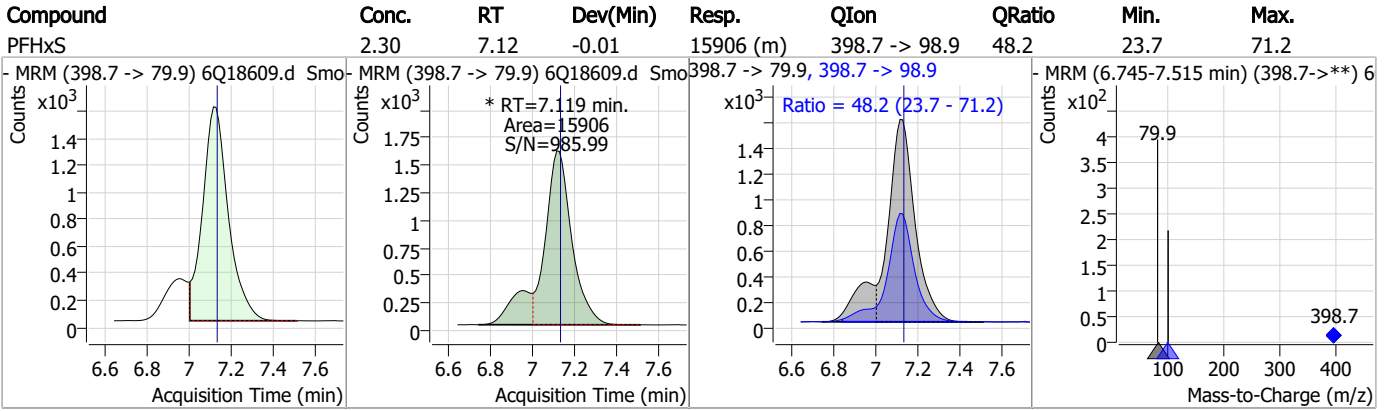
Perfluorinated Compounds by LC/MS/MS



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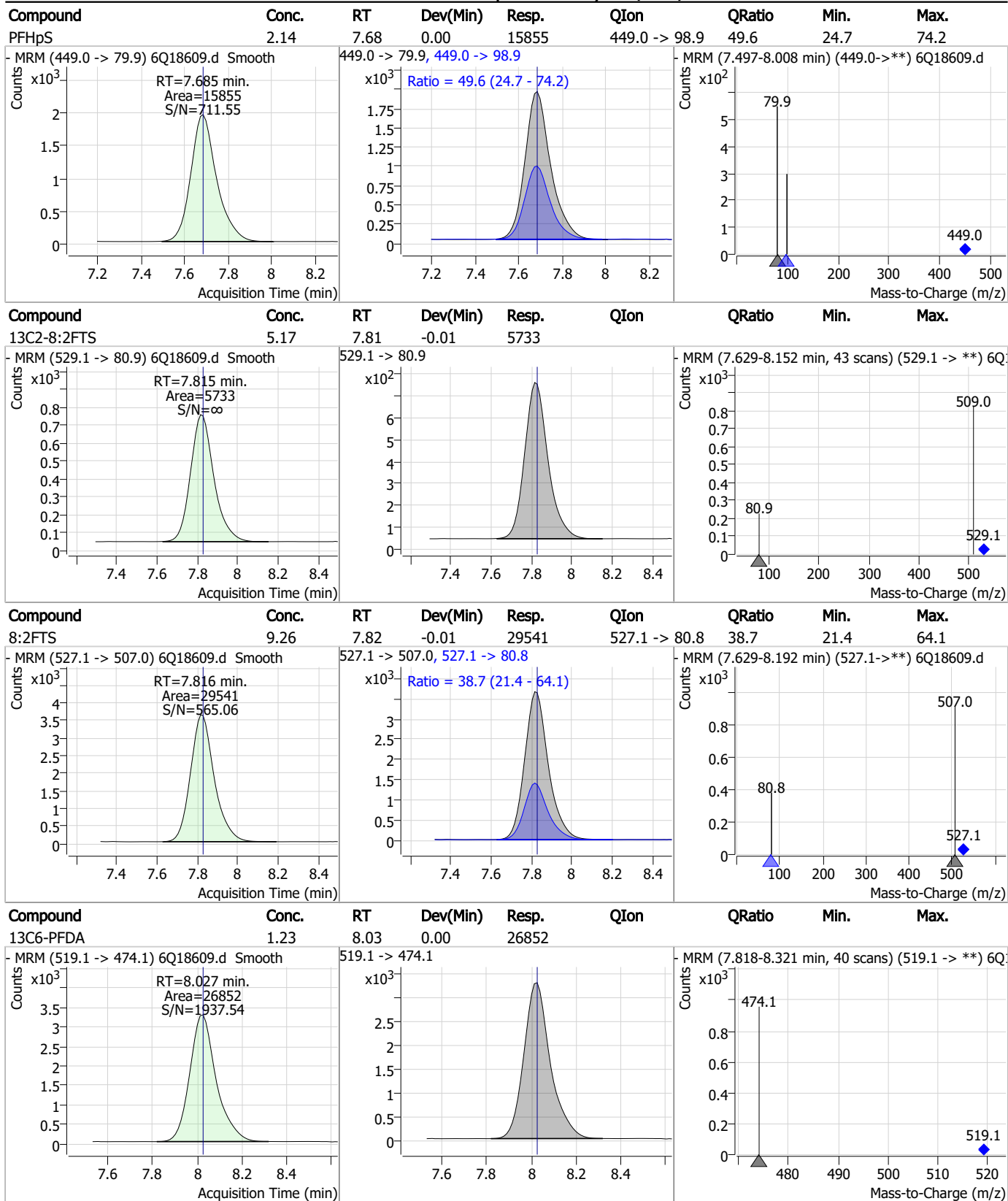
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Perfluorinated Compounds by LC/MS/MS



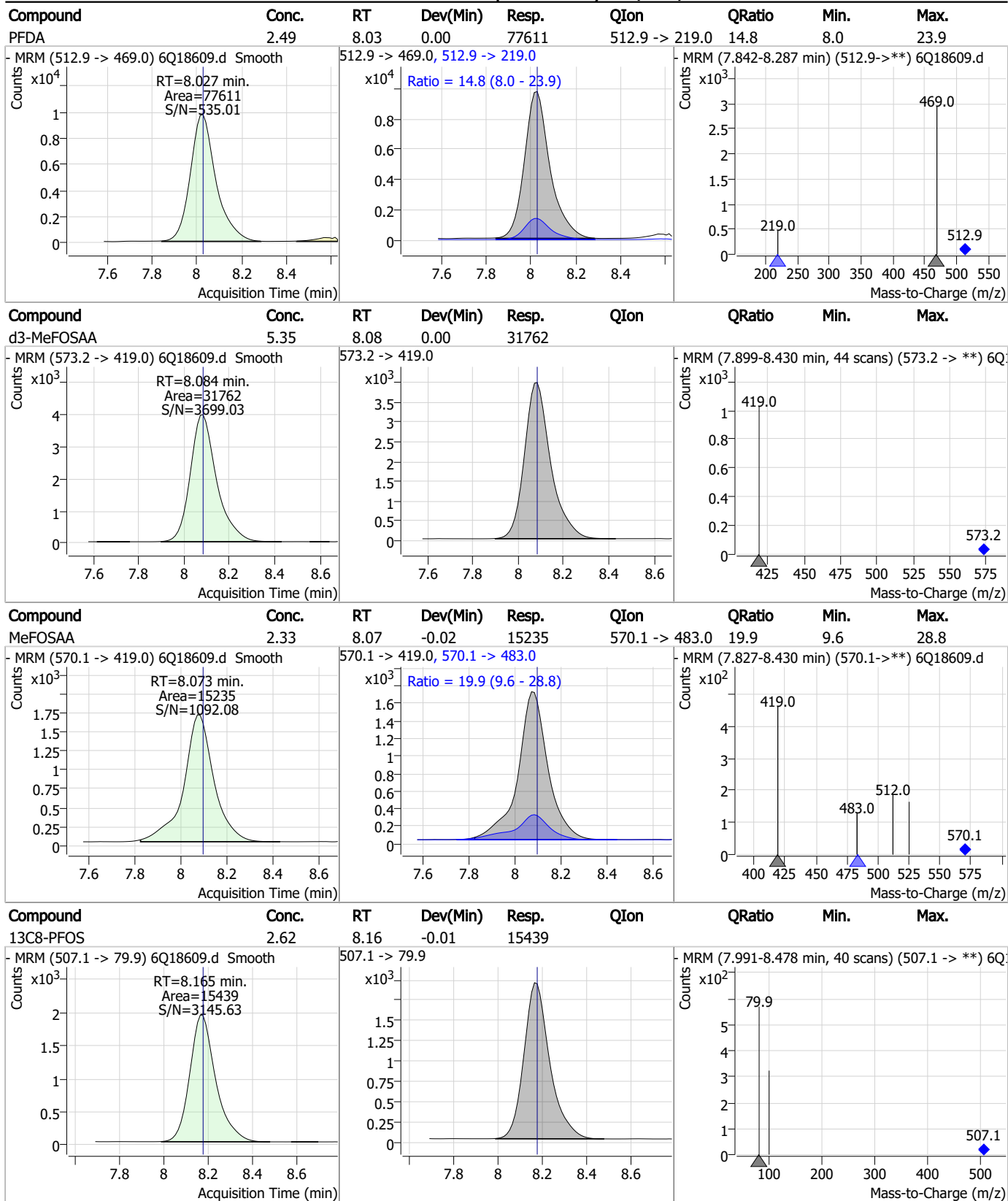
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

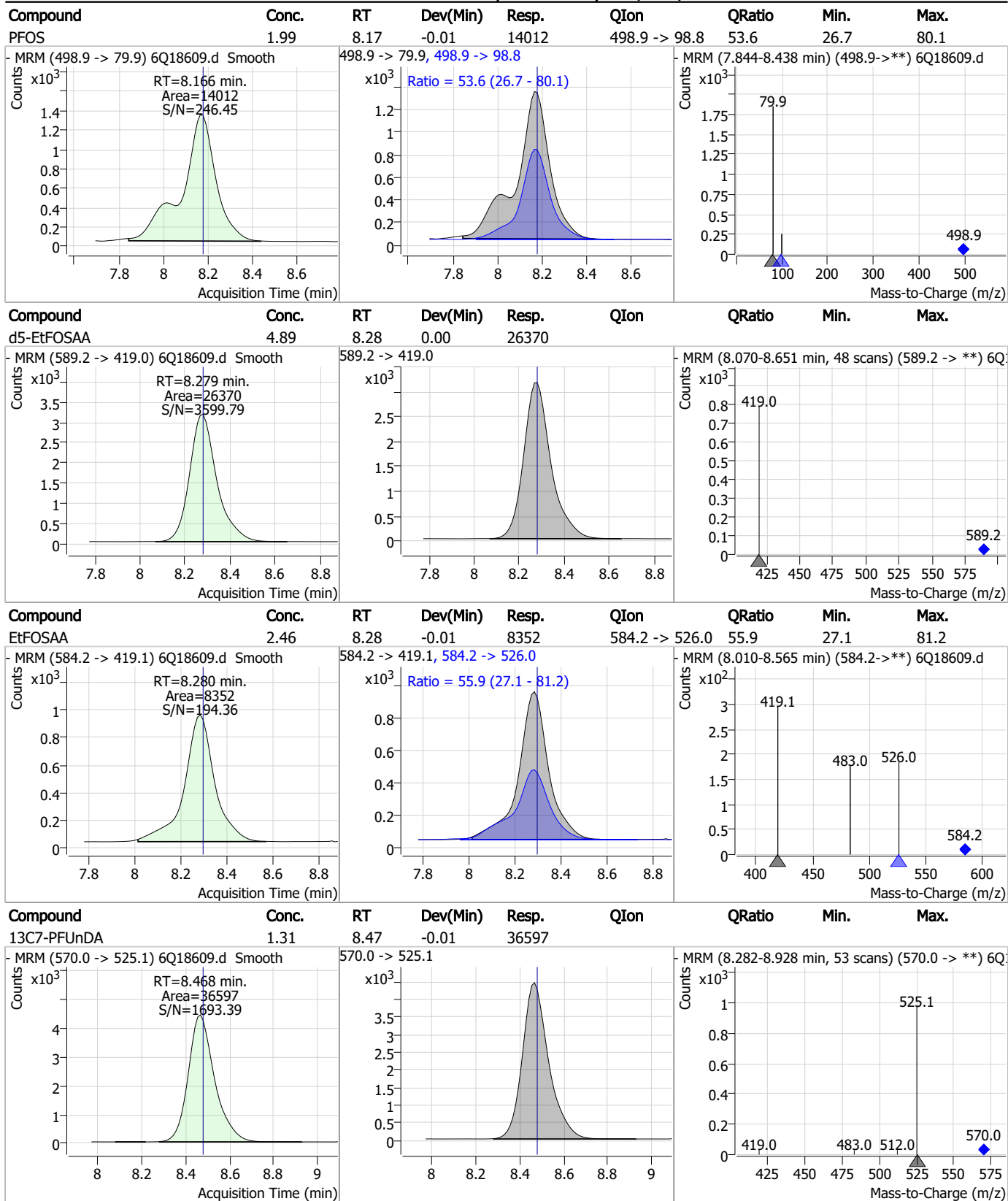


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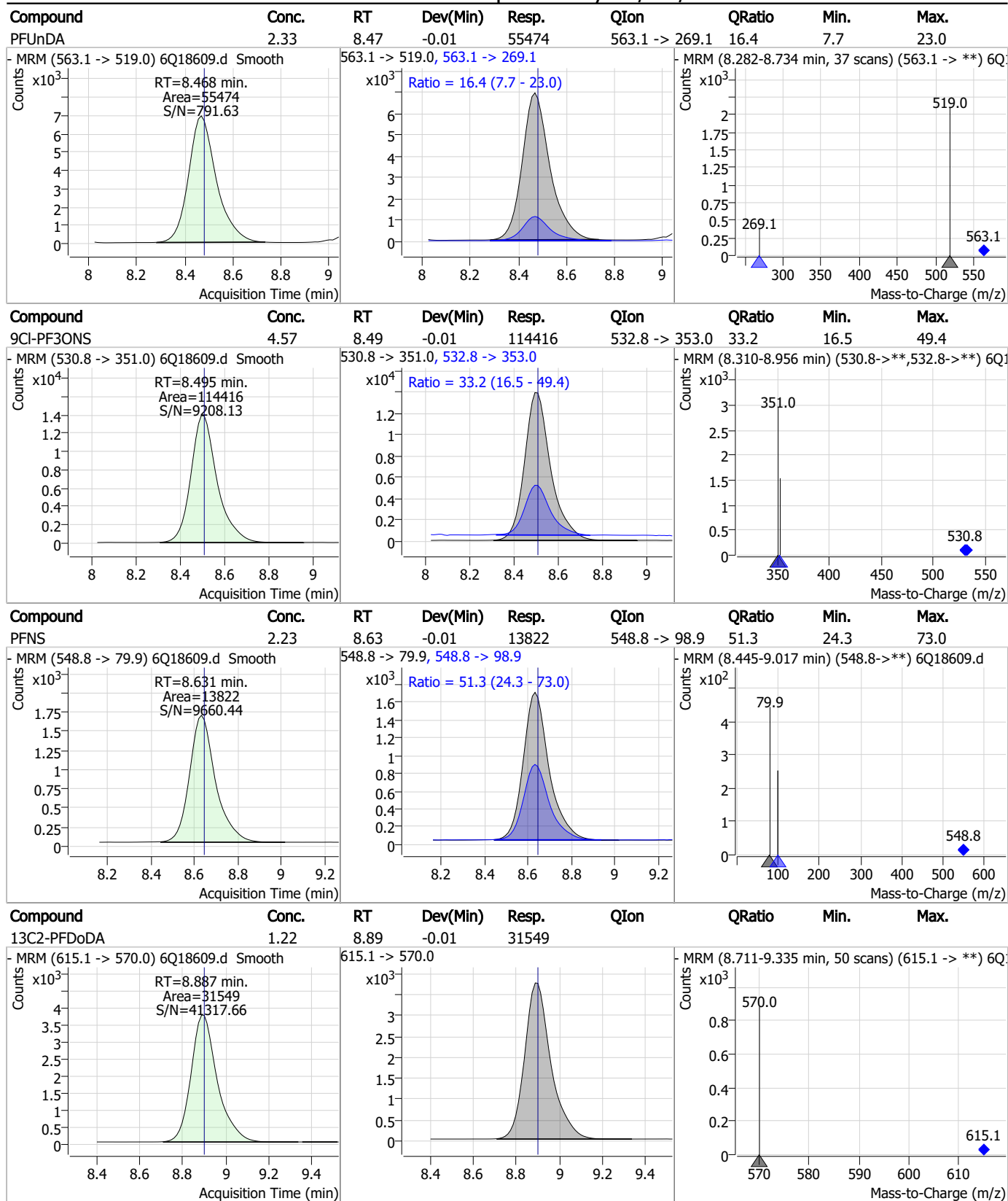


Perfluorinated Compounds by LC/MS/MS



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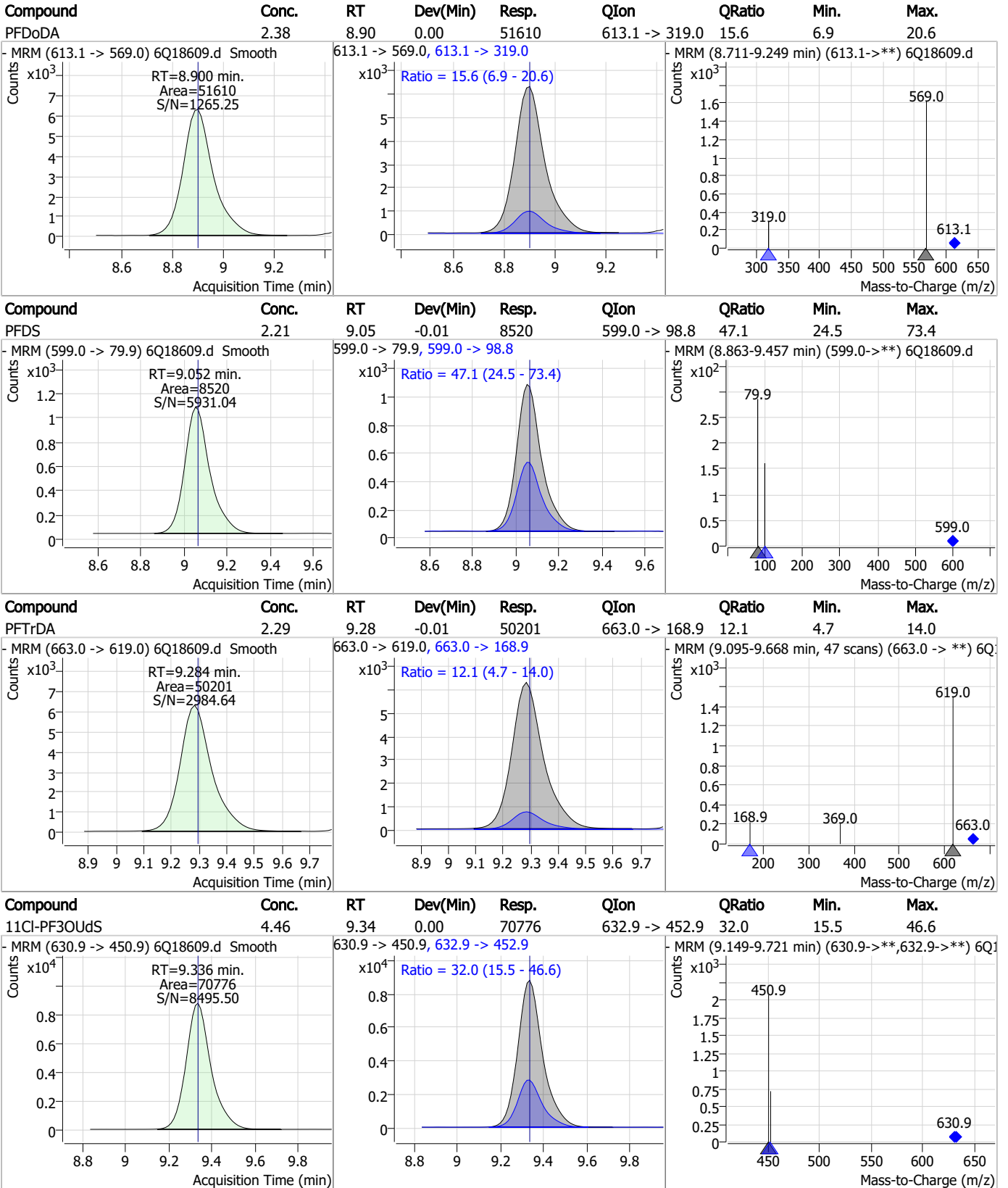
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

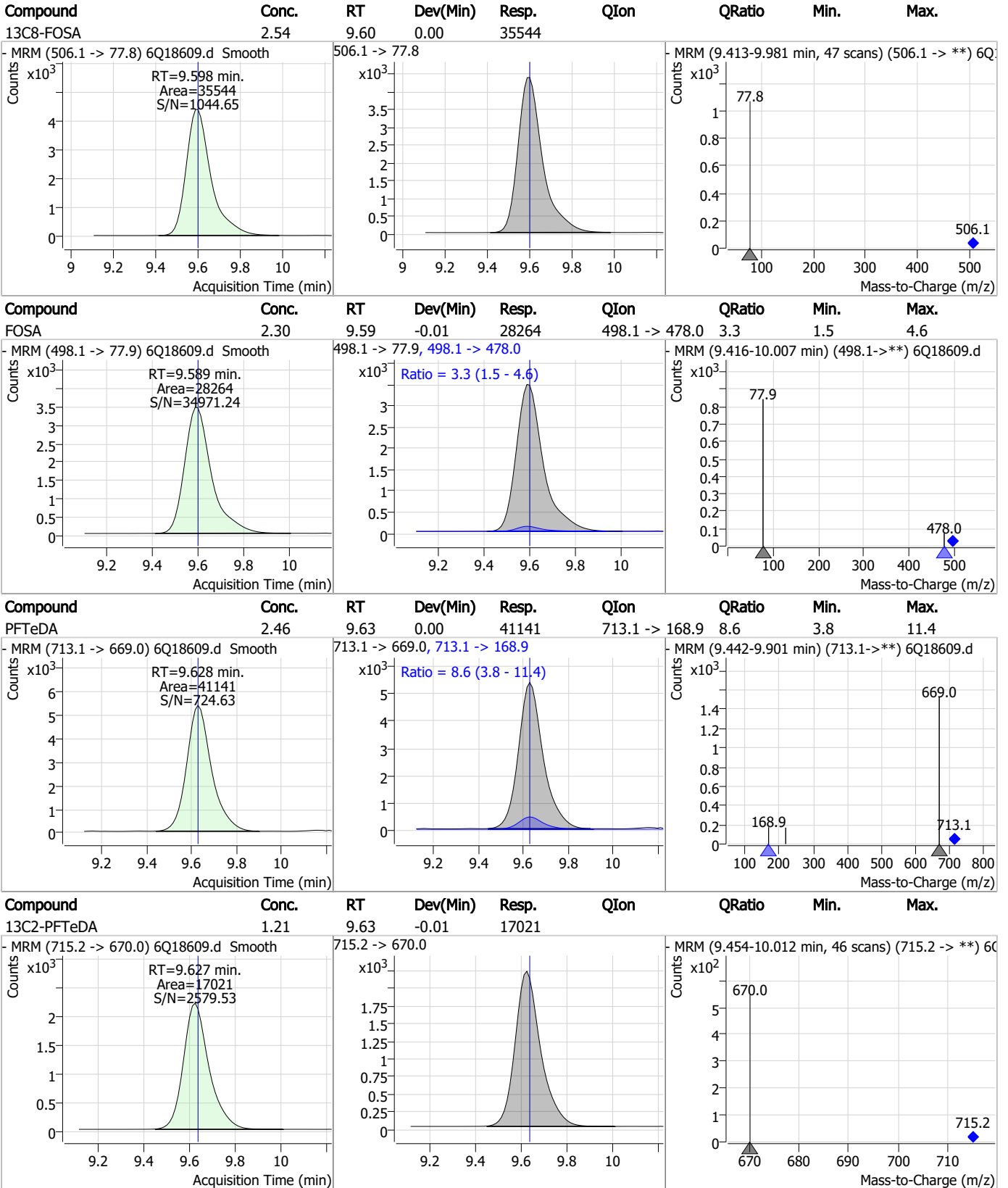


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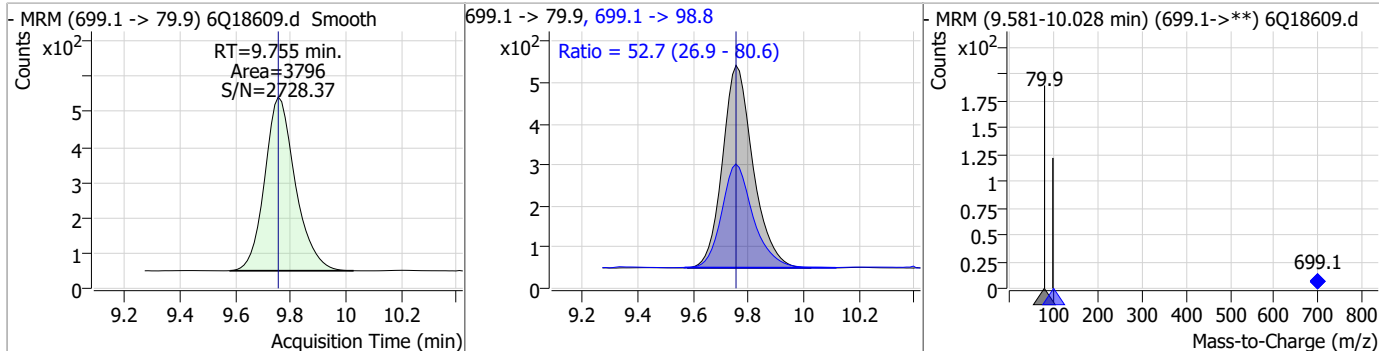
Perfluorinated Compounds by LC/MS/MS



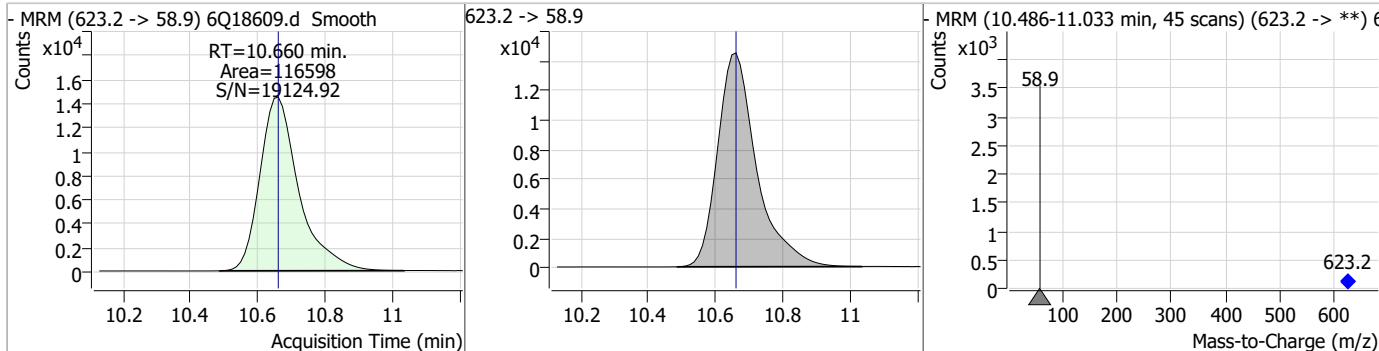
7.7.29 7

Perfluorinated Compounds by LC/MS/MS

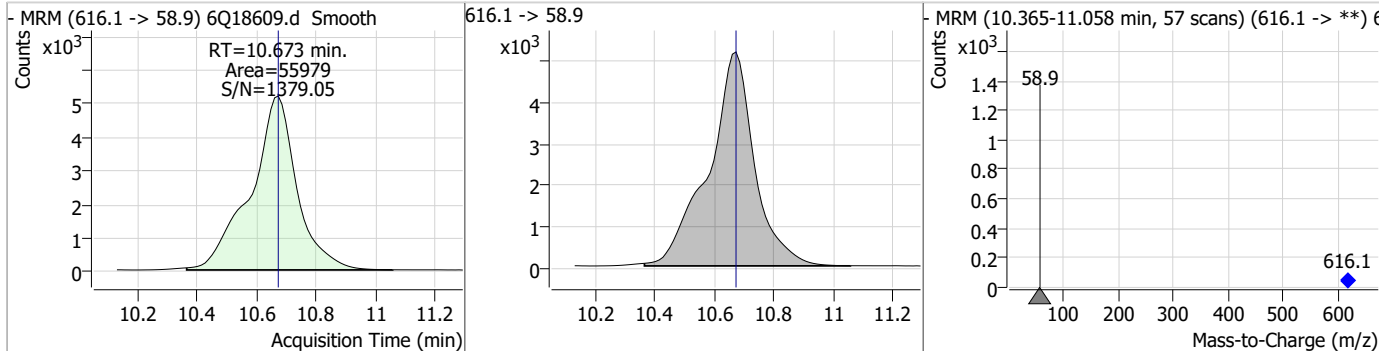
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.21	9.75	0.00	3796	699.1 -> 98.8	52.7	26.9	80.6



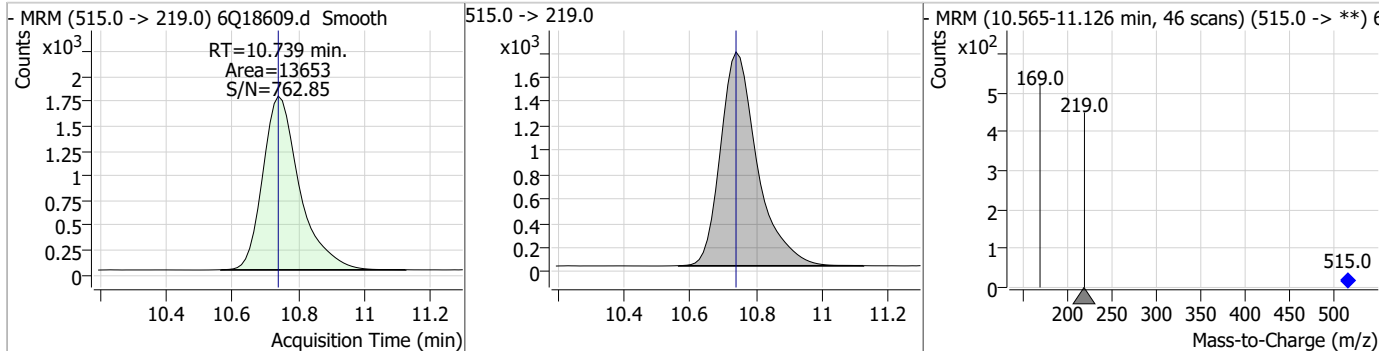
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.25	10.66	0.00	116598				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.08	10.67	0.00	55979				

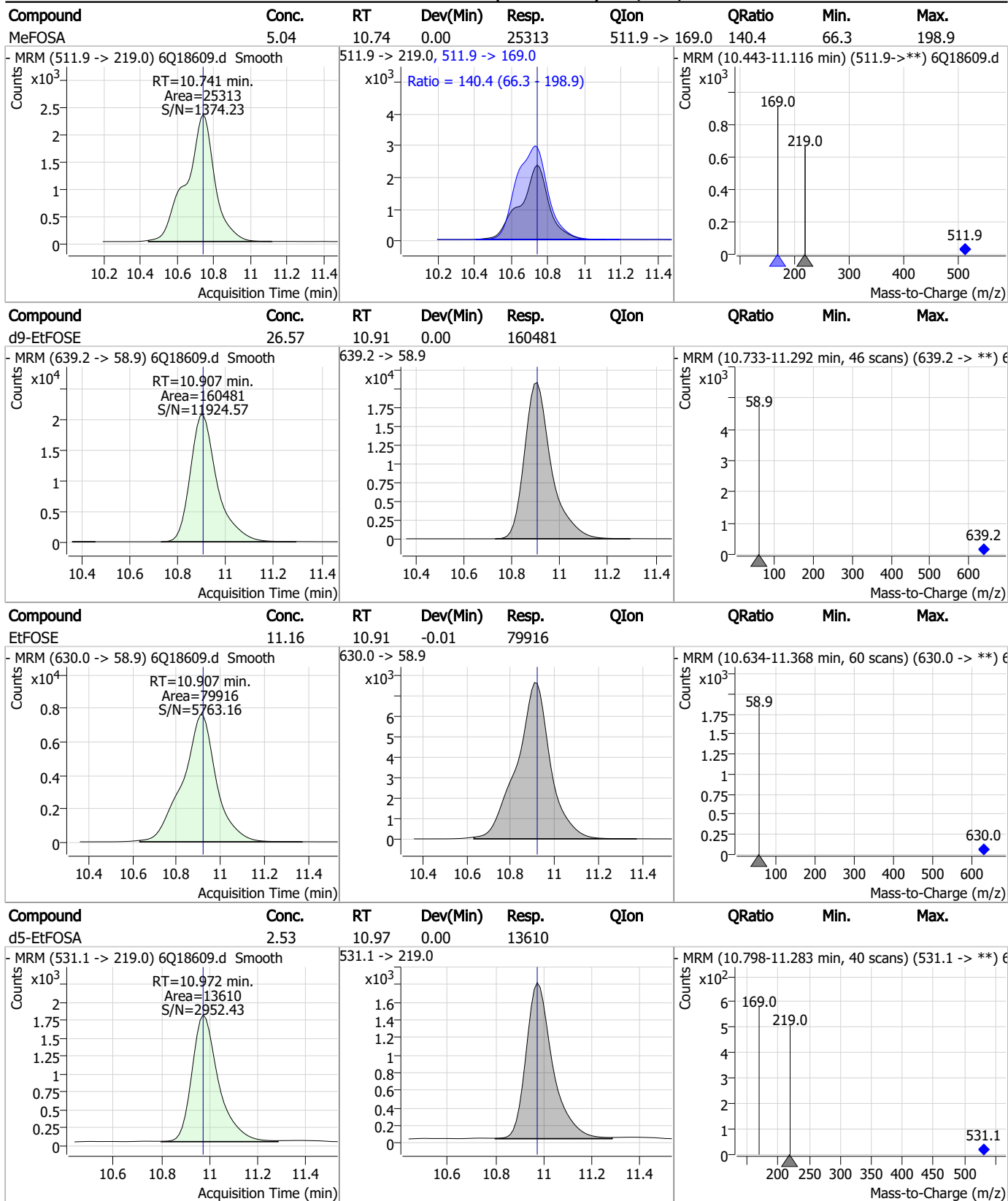


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.40	10.74	0.00	13653				



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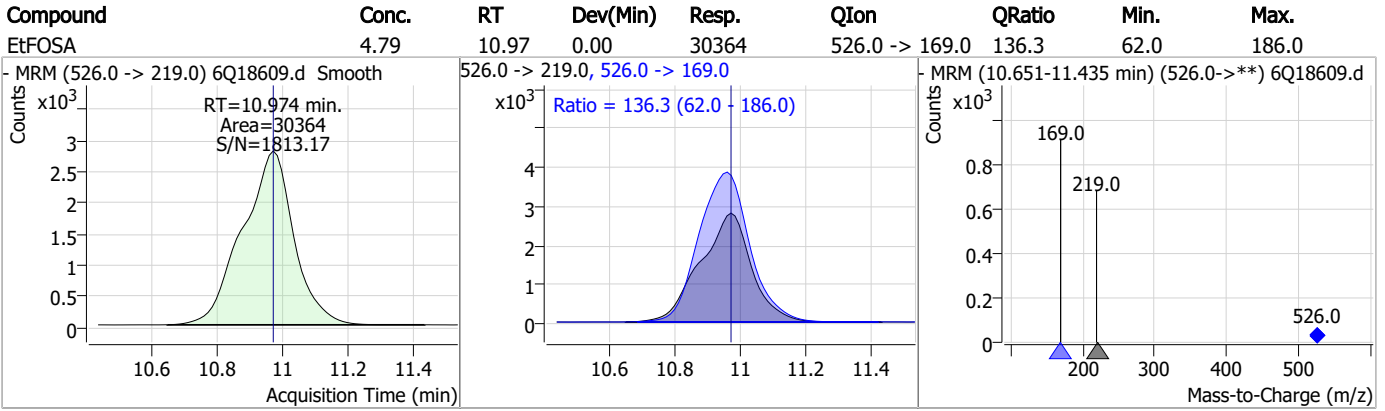
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18609.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 22:49 Supervisor approved: 06/01/23 16:14 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18621.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 1:43:21 AM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	191760	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	64789	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	70388	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	64192	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	99208	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	43480	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	26611	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	35367	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31301	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17960	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	36056	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	25737	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	15394	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	15240	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3925	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5757	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5625	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	32199	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	41243	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	27631	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	117662	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	155907	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13942	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14301	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18455	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	80675	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11745	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	103625	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	36317	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	56045	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	65186	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3925	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5757	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5625	4.87 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31301	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17960	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFBS	5.322	302.1 -> 79.9	25737	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C3-PFHxS	7.118	402.1 -> 79.9	15394	2.35 µg/L	-0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.8%	
13C4-PFBA	2.822	216.8 -> 171.9	191760	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFHpA	6.369	367.1 -> 322.0	64192	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C5-PFHxA	5.404	318.0 -> 273.0	70388	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFPeA	4.210	268.3 -> 223.0	64789	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C6-PFDA	8.014	519.1 -> 474.1	26611	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C7-PFUnDA	8.468	570.0 -> 525.1	35367	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C8-FOSA	9.598	506.1 -> 77.8	36056	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-PFOA	7.026	421.1 -> 376.0	99208	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C8-PFOS	8.165	507.1 -> 79.9	15240	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C9-PFNA	7.545	472.1 -> 427.0	43480	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	32199	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41243	9.63 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	14301	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
d5-EtFOSAA	8.267	589.2 -> 419.0	27631	5.10 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
d7-MeFOSE	10.660	623.2 -> 58.9	117662	25.39 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	155907	25.72 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	13942	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	51476	9.03 µg/L	96
		327.1 -> 80.9	19097		
6:2FTS	6.801	427.1 -> 407.0	51596	9.12 µg/L	99
		427.1 -> 80.9	17740		
8:2FTS	7.816	527.1 -> 507.0	29667	9.48 µg/L	99
		527.1 -> 80.8	12455		
EtFOSAA	8.280	584.2 -> 419.1	8748	2.46 µg/L	98
		584.2 -> 526.0	4898		
FOSA	9.589	498.1 -> 77.9	28676	2.30 µg/L	100
		498.1 -> 478.0	863		
MeFOSAA	8.085	570.1 -> 419.0	15339	2.32 µg/L	97
		570.1 -> 483.0	3145		
PFBA	2.818	212.8 -> 168.9	60627	9.55 µg/L	100
PFBS	5.323	298.7 -> 79.9	17726	2.02 µg/L	97
		298.7 -> 98.8	6725		
PFDA	8.027	512.9 -> 469.0	78182	2.53 µg/L	98
		512.9 -> 219.0	11706		
PFDODA	8.900	613.1 -> 569.0	50369	2.34 µg/L	94
		613.1 -> 319.0	8060		
PFDS	9.052	599.0 -> 79.9	8333	2.19 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	4162	2.34	µg/L	96
		363.1 -> 319.0	66376			
PFHpS	7.685	363.1 -> 169.0	11000	2.16	µg/L	98
		449.0 -> 79.9	15796			
PFHxA	5.407	449.0 -> 98.9	7627	2.40	µg/L	99
		313.0 -> 269.0	56719			
PFHxS	7.131	313.0 -> 118.9	2793	2.26	µg/L	m
		398.7 -> 79.9	15758			
PFNA	7.545	398.7 -> 98.9	7482	2.48	µg/L	99
		463.0 -> 419.0	76534			
PFNS	8.631	463.0 -> 219.0	15108	2.19	µg/L	93
		548.8 -> 79.9	13413			
PFOA	7.015	548.8 -> 98.9	7161	2.41	µg/L	99
		413.0 -> 369.0	102129			
PFOS	8.178	413.0 -> 169.0	17890	2.13	µg/L	m
		498.9 -> 79.9	14808			
PFPeA	4.212	498.9 -> 98.8	7305	4.76	µg/L	100
		263.0 -> 219.0	74142			
PFPeS	6.410	349.1 -> 79.9	15534	2.24	µg/L	98
		349.1 -> 98.9	7175			
PFTeDA	9.628	713.1 -> 669.0	41145	2.33	µg/L	97
		713.1 -> 168.9	3552			
PFTrDA	9.284	663.0 -> 619.0	52366	2.41	µg/L	94
		663.0 -> 168.9	6054			
PFUnDA	8.468	563.1 -> 519.0	55035	2.39	µg/L	98
		563.1 -> 269.1	8822			
11CI-PF3OUdS	9.336	630.9 -> 450.9	72498	4.68	µg/L	99
		632.9 -> 452.9	22774			
9CI-PF3ONS	8.495	530.8 -> 351.0	121352	4.98	µg/L	96
		532.8 -> 353.0	37307			
ADONA	6.632	376.9 -> 250.9	258240	4.71	µg/L	100
		376.9 -> 84.8	69522			
HFPO-DA	5.783	284.9 -> 168.9	17262	4.94	µg/L	95
		284.9 -> 184.9	2009			
3:3FTCA	3.671	241.0 -> 177.0	11674	11.72	µg/L	98
		241.0 -> 117.0	1586			
5:3FTCA	6.074	341.0 -> 237.1	251541	59.16	µg/L	97
		341.0 -> 217.0	185400			
7:3FTCA	7.510	441.0 -> 316.9	169535	58.23	µg/L	92
		441.0 -> 336.9	394806			
EtFOSA	10.974	526.0 -> 219.0	29992	4.62	µg/L	91
		526.0 -> 169.0	40194			
EtFOSE	10.920	630.0 -> 58.9	83878	12.06	µg/L	100
		511.9 -> 219.0	25538			
MeFOSA	10.741	511.9 -> 169.0	35630	4.86	µg/L	94
		616.1 -> 58.9	57102			
MeFOSE	10.673	699.1 -> 79.9	3688	12.21	µg/L	100
		699.1 -> 98.8	2098			
PFDoDS	9.755	295.0 -> 201.0	13498	2.18	µg/L	96
		295.0 -> 84.9	3573			
NFDHA	5.288	279.0 -> 85.1	49808	4.69	µg/L	99
		229.0 -> 84.9	38926			
PFMBA	4.626	314.8 -> 134.9	127218	4.73	µg/L	100
		314.8 -> 82.9	4584			
PFMPA	3.351			4.24	µg/L	99
PFEESA	5.862					

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

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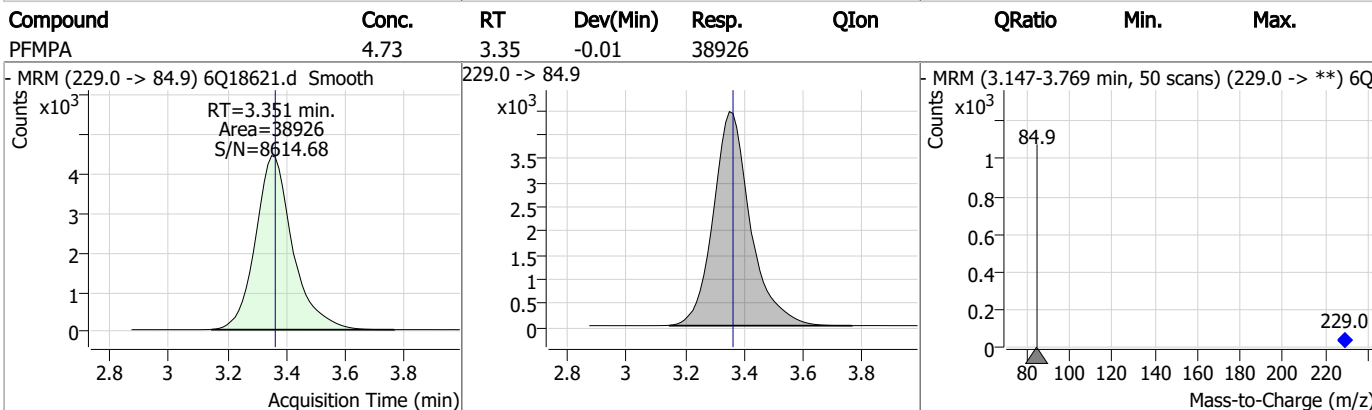
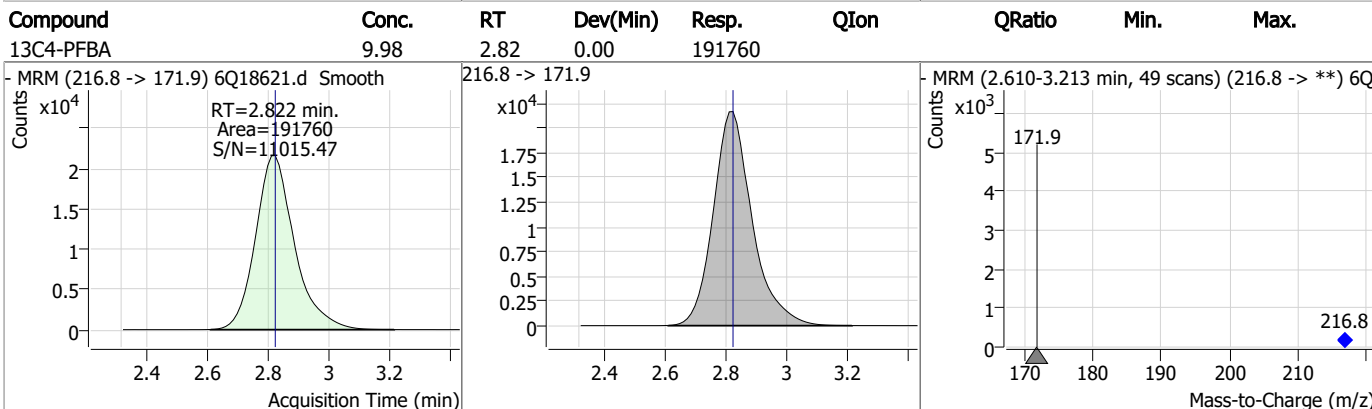
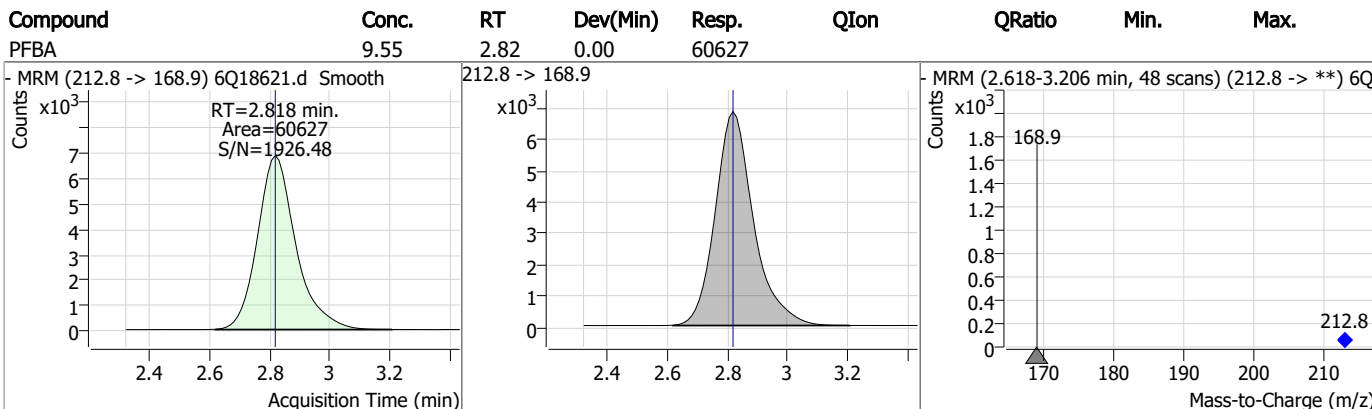
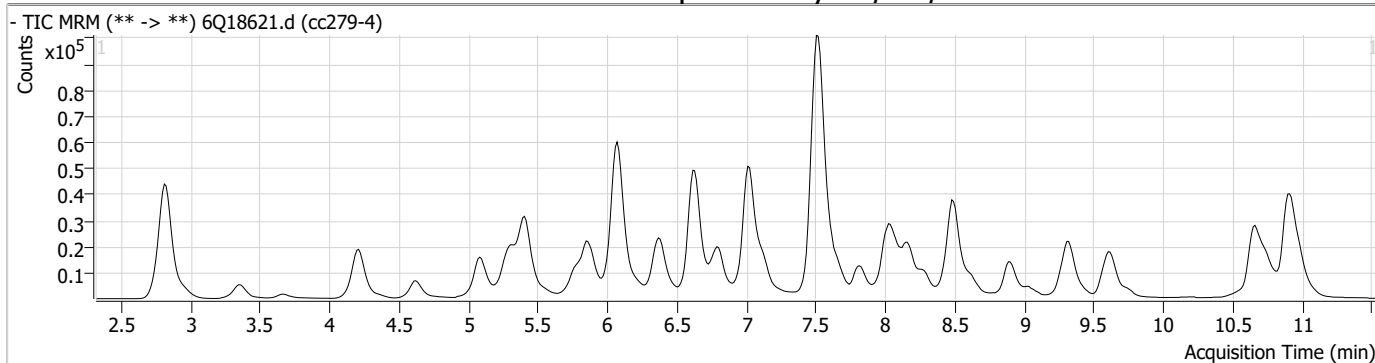
Perfluorinated Compounds by LC/MS/MS

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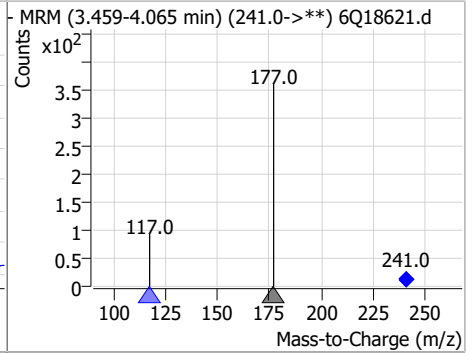
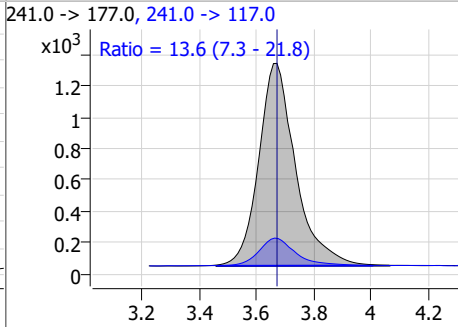
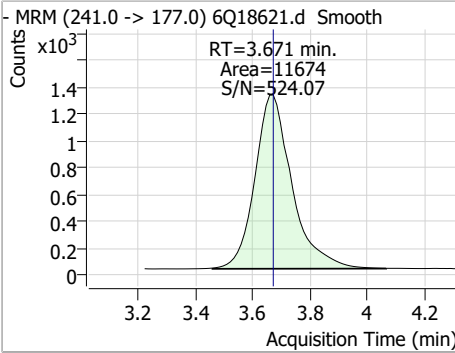
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Perfluorinated Compounds by LC/MS/MS

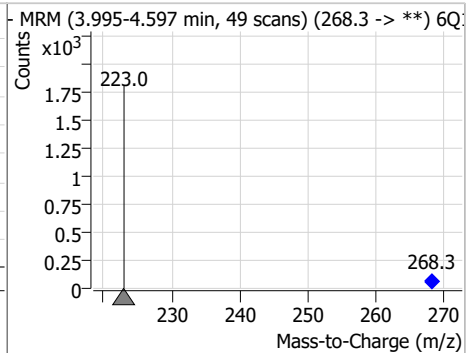
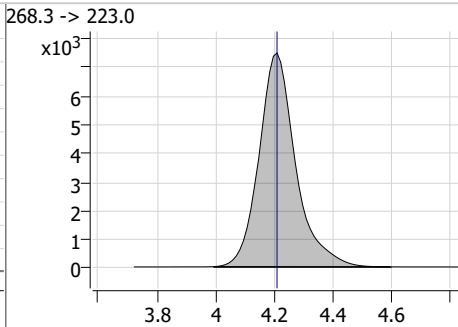
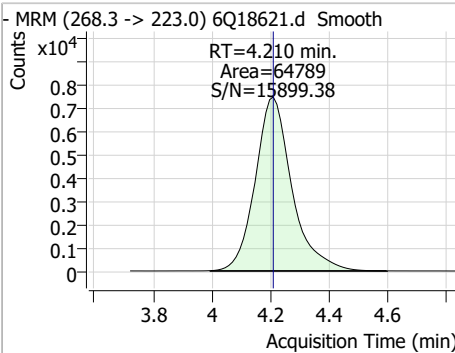


Perfluorinated Compounds by LC/MS/MS

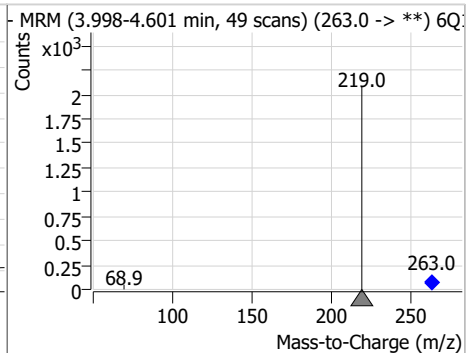
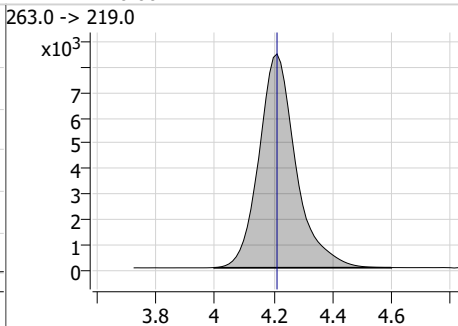
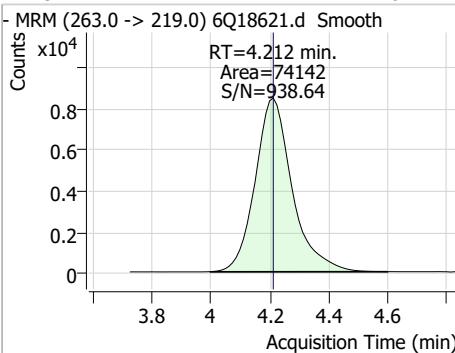
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.72	3.67	0.00	11674	241.0 -> 117.0	13.6	7.3	21.8



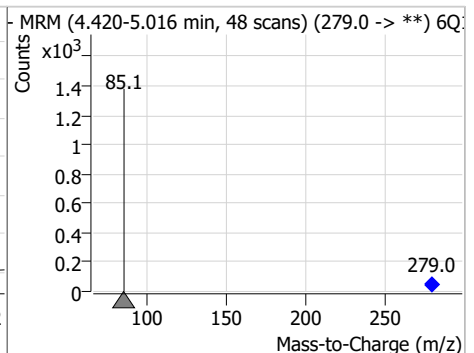
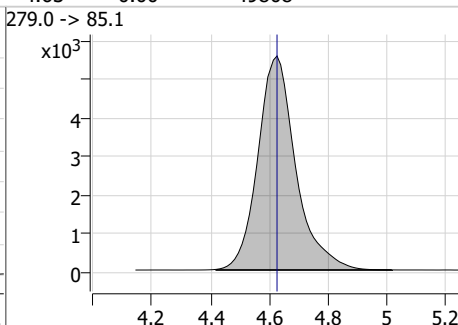
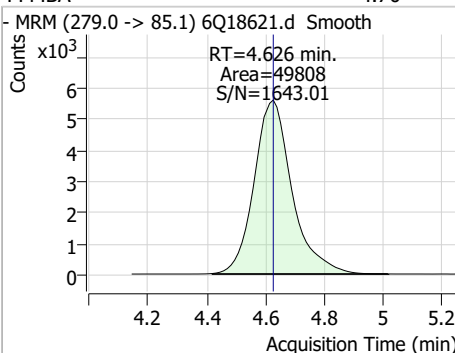
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.11	4.21	0.00	64789	268.3 -> 223.0			



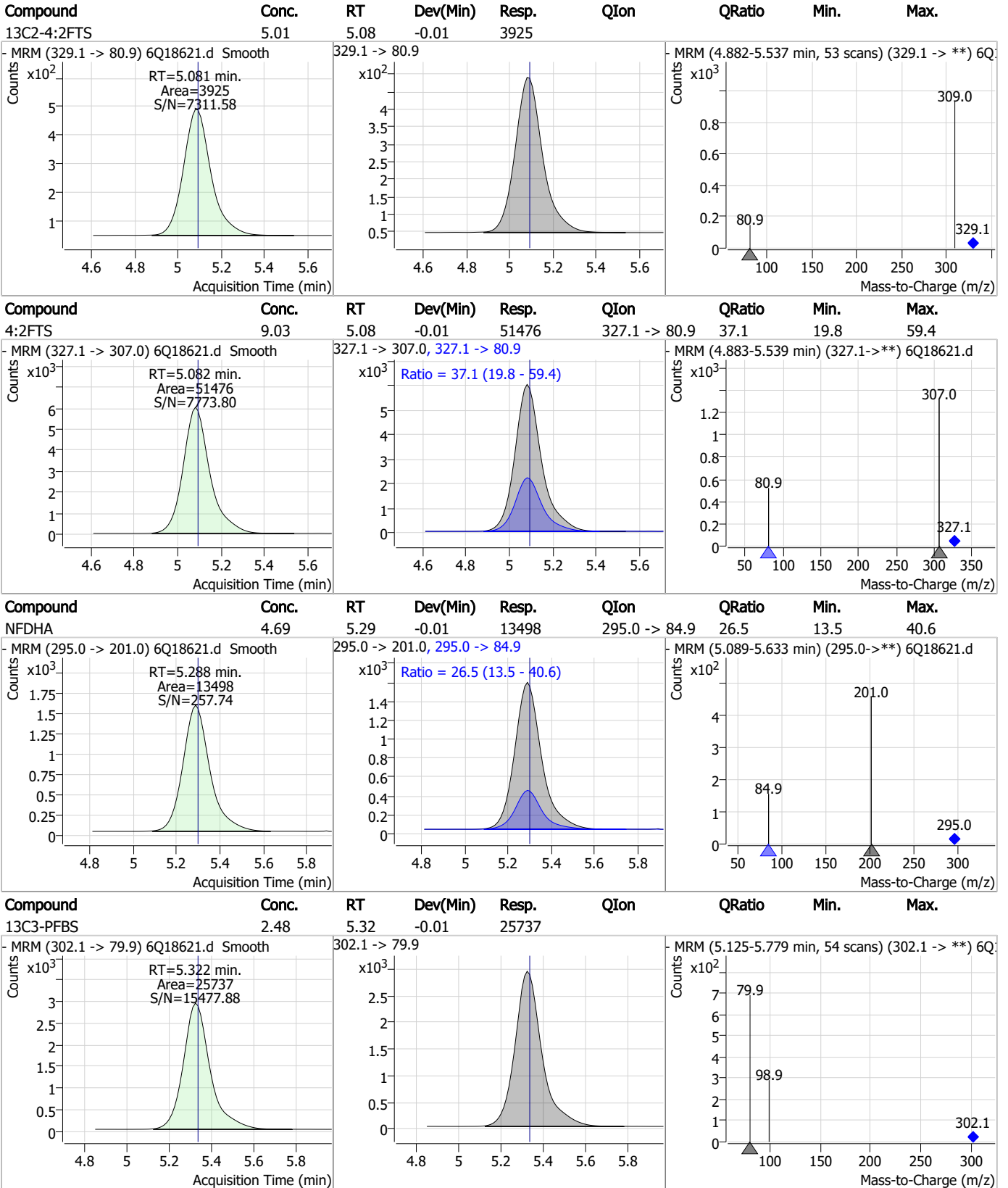
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.76	4.21	0.00	74142	263.0 -> 219.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.70	4.63	0.00	49808	279.0 -> 85.1			

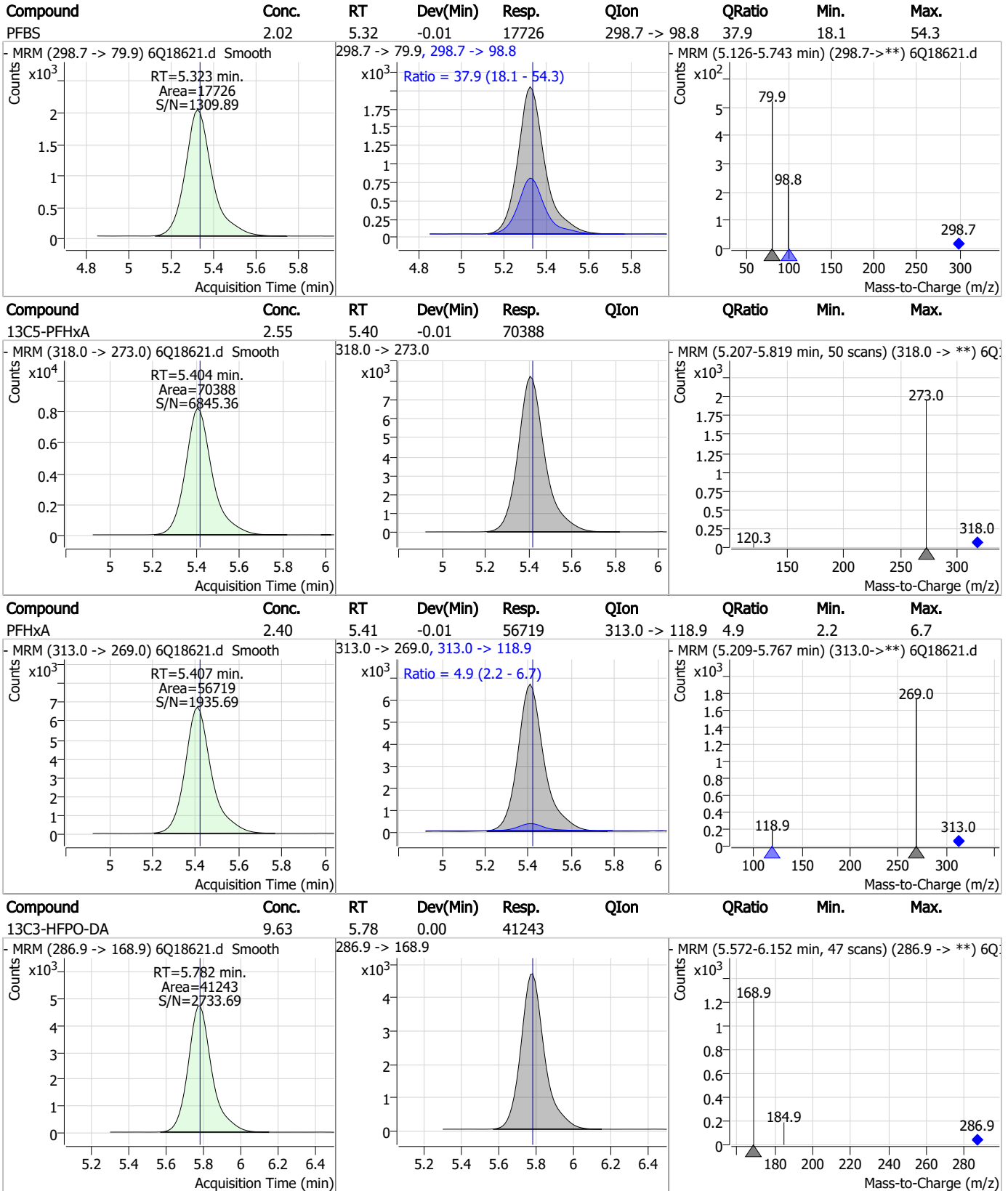


Perfluorinated Compounds by LC/MS/MS



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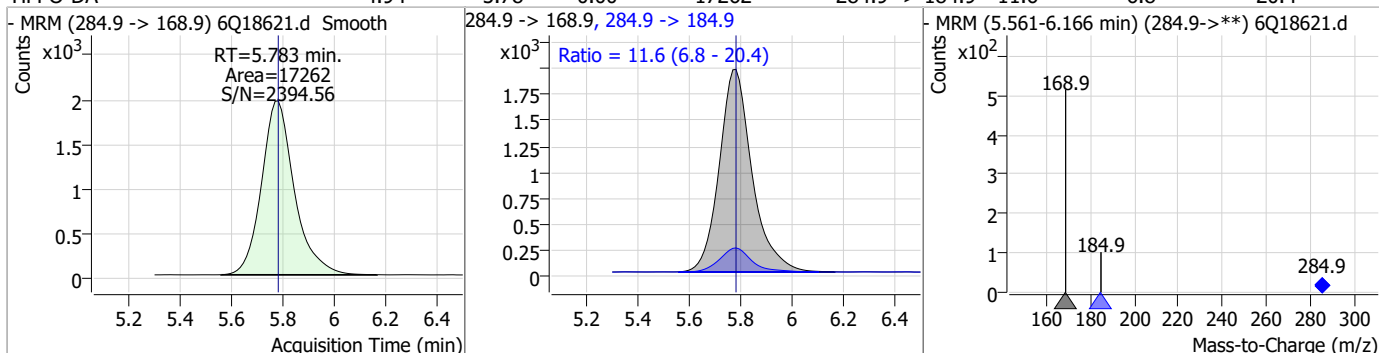
Perfluorinated Compounds by LC/MS/MS



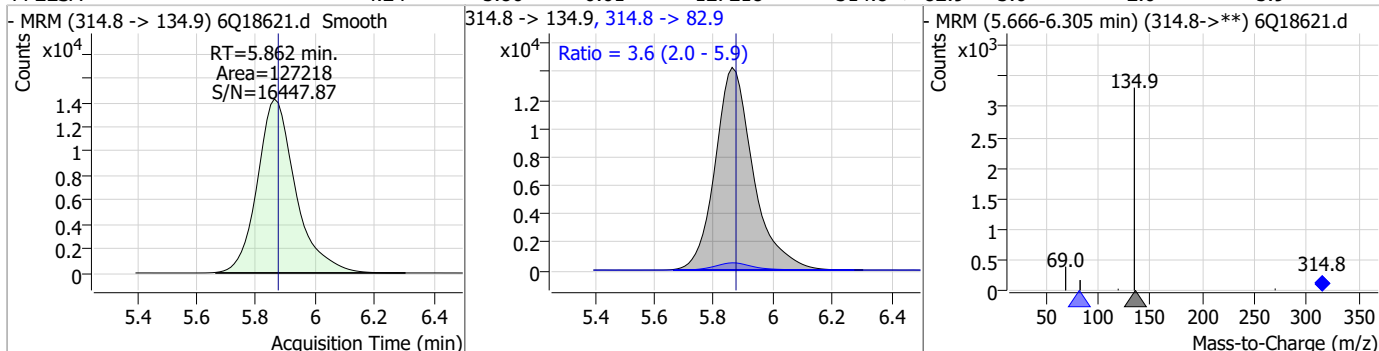
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Perfluorinated Compounds by LC/MS/MS

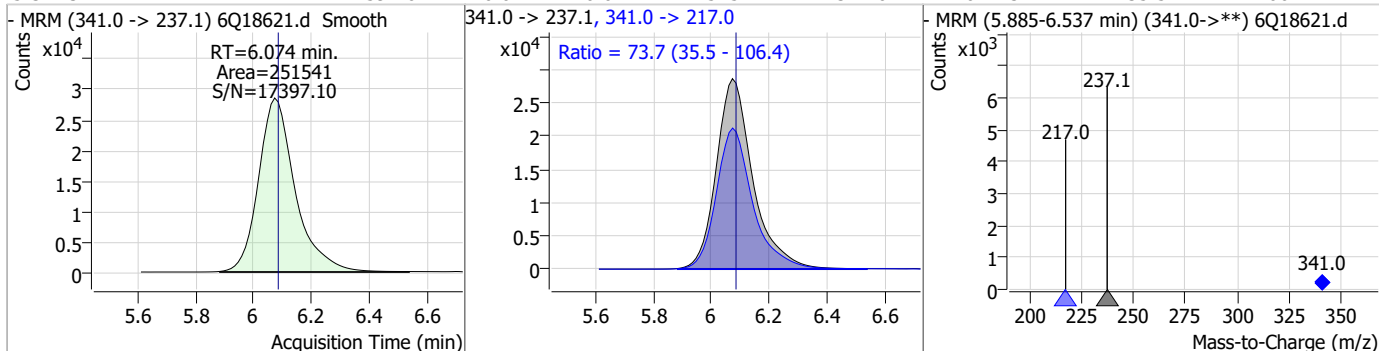
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.94	5.78	0.00	17262	284.9 -> 184.9	11.6	6.8	20.4



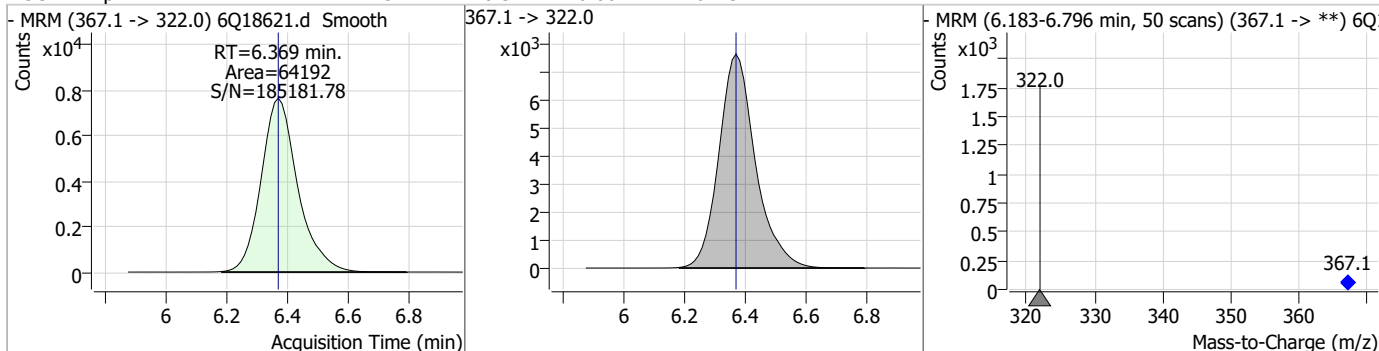
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.24	5.86	-0.01	127218	314.8 -> 82.9	3.6	2.0	5.9



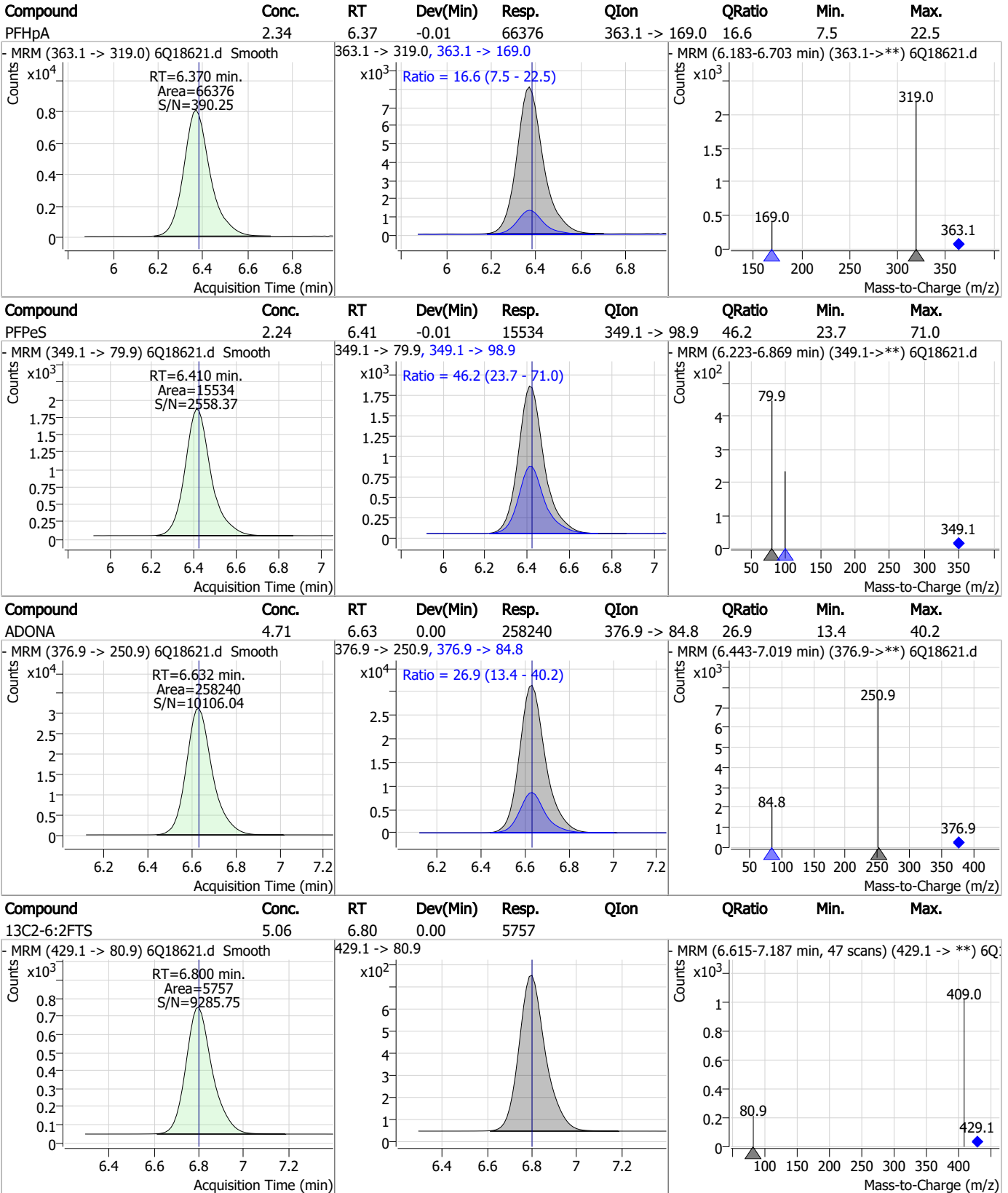
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.16	6.07	-0.01	251541	341.0 -> 217.0	73.7	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	6.37	0.00	64192	367.1 -> 322.0			



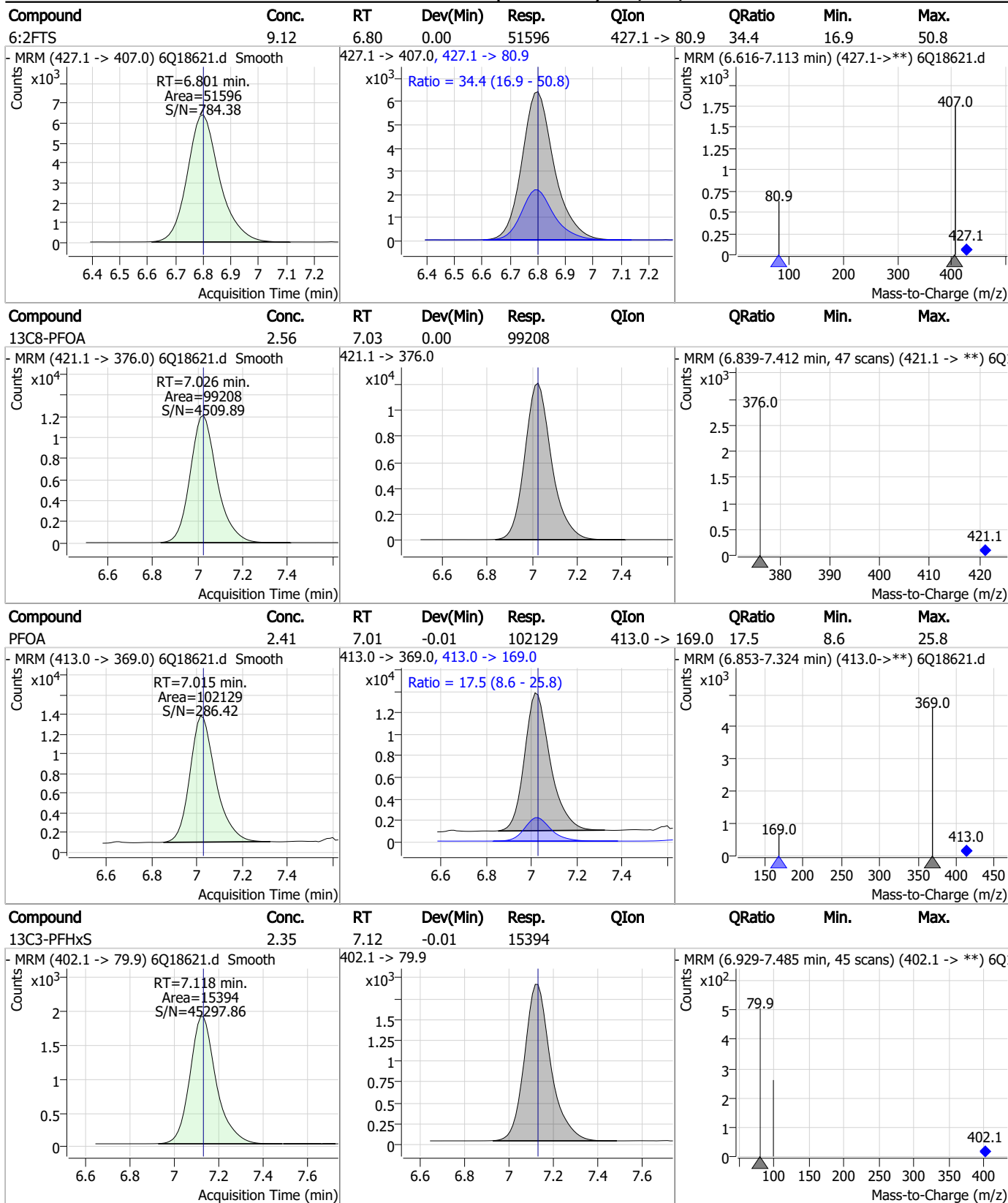
Perfluorinated Compounds by LC/MS/MS



7.7.30
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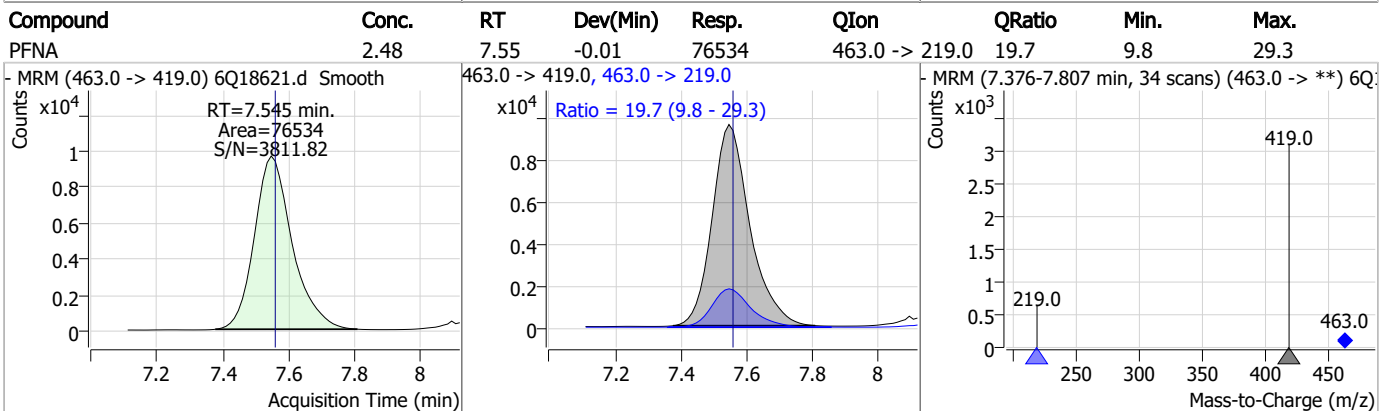
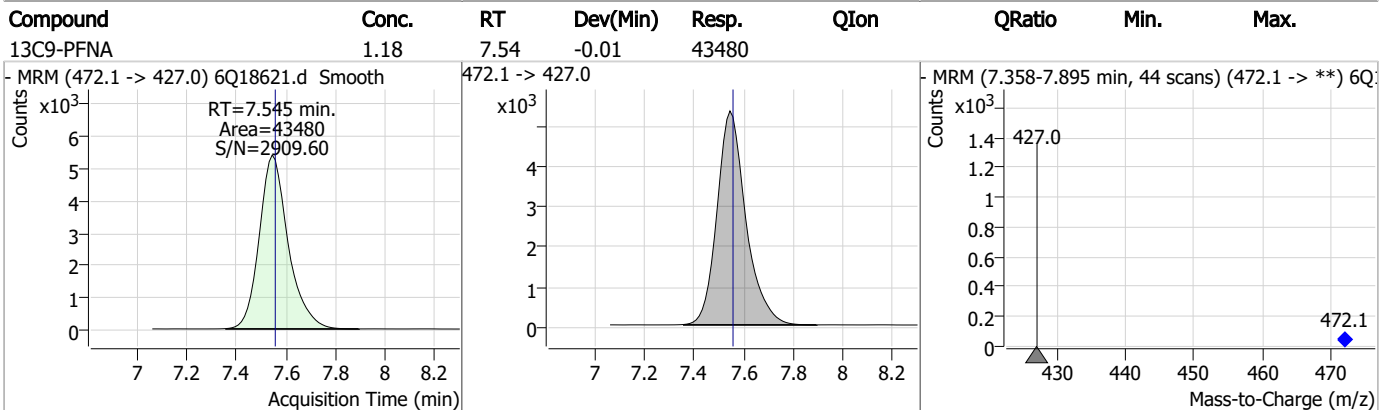
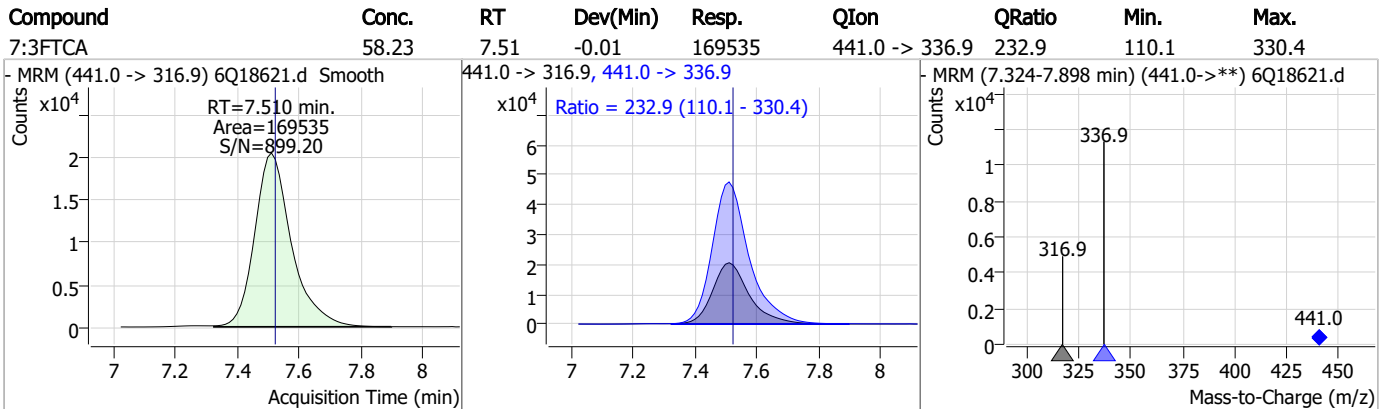
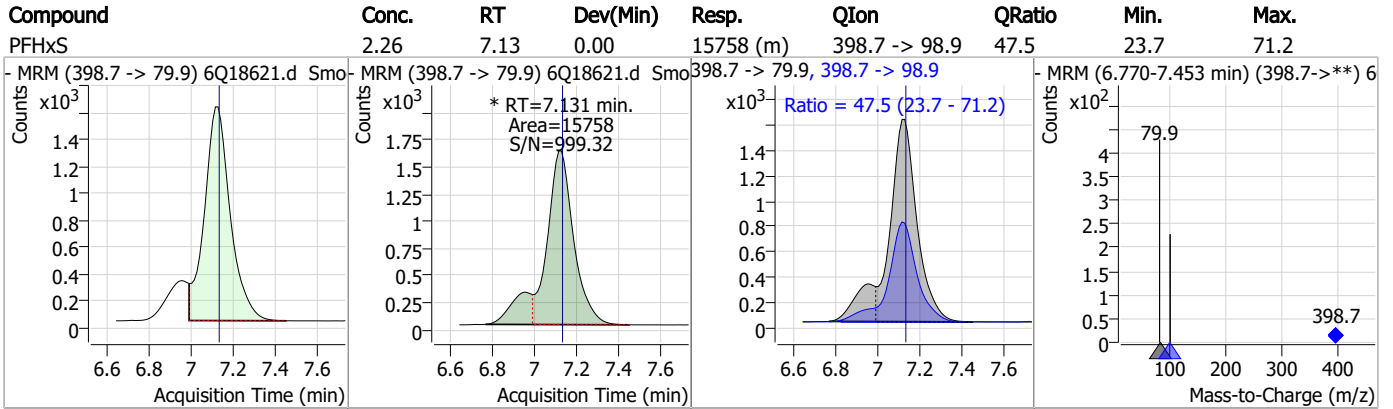


Perfluorinated Compounds by LC/MS/MS



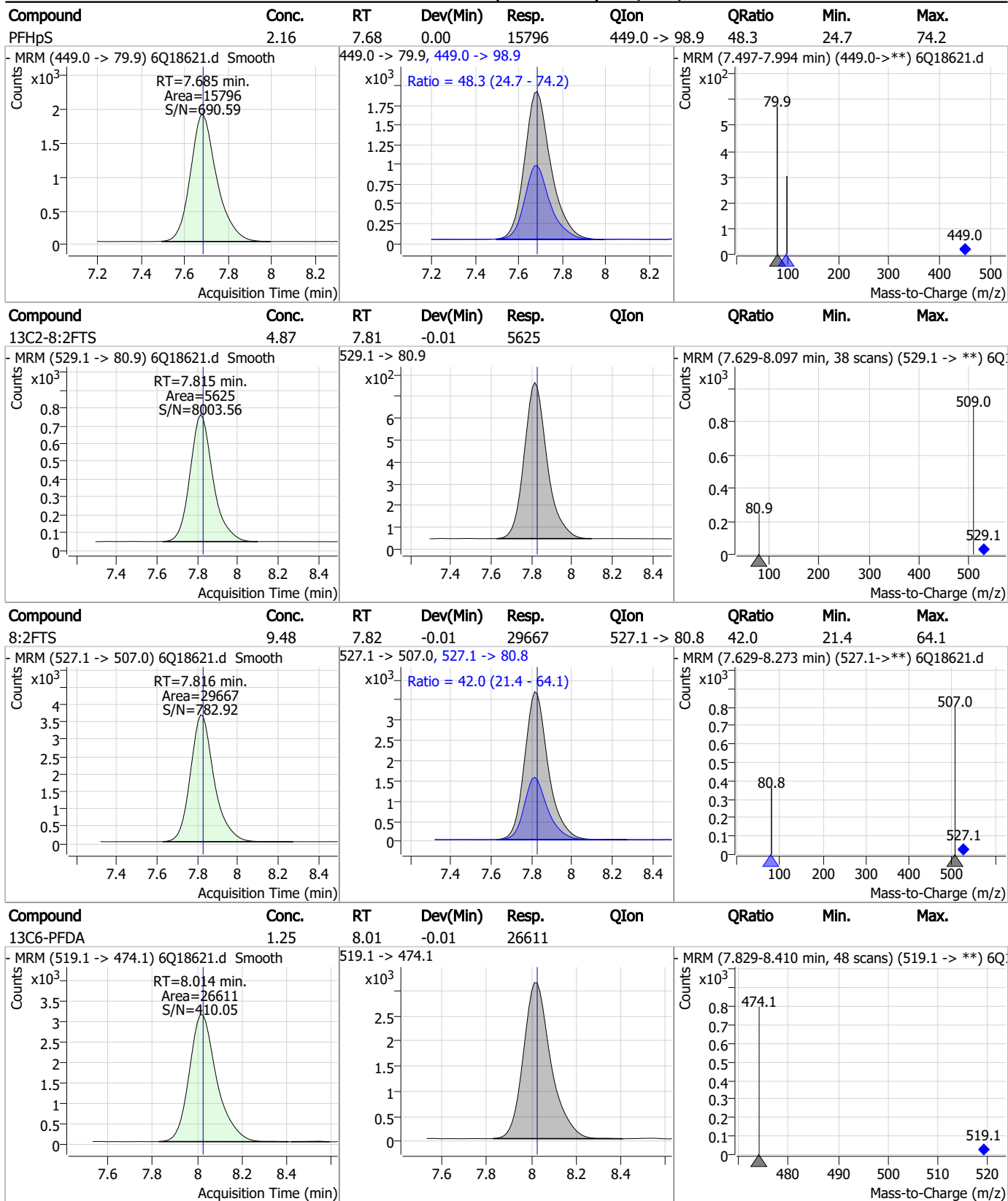
7.7.30
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Perfluorinated Compounds by LC/MS/MS



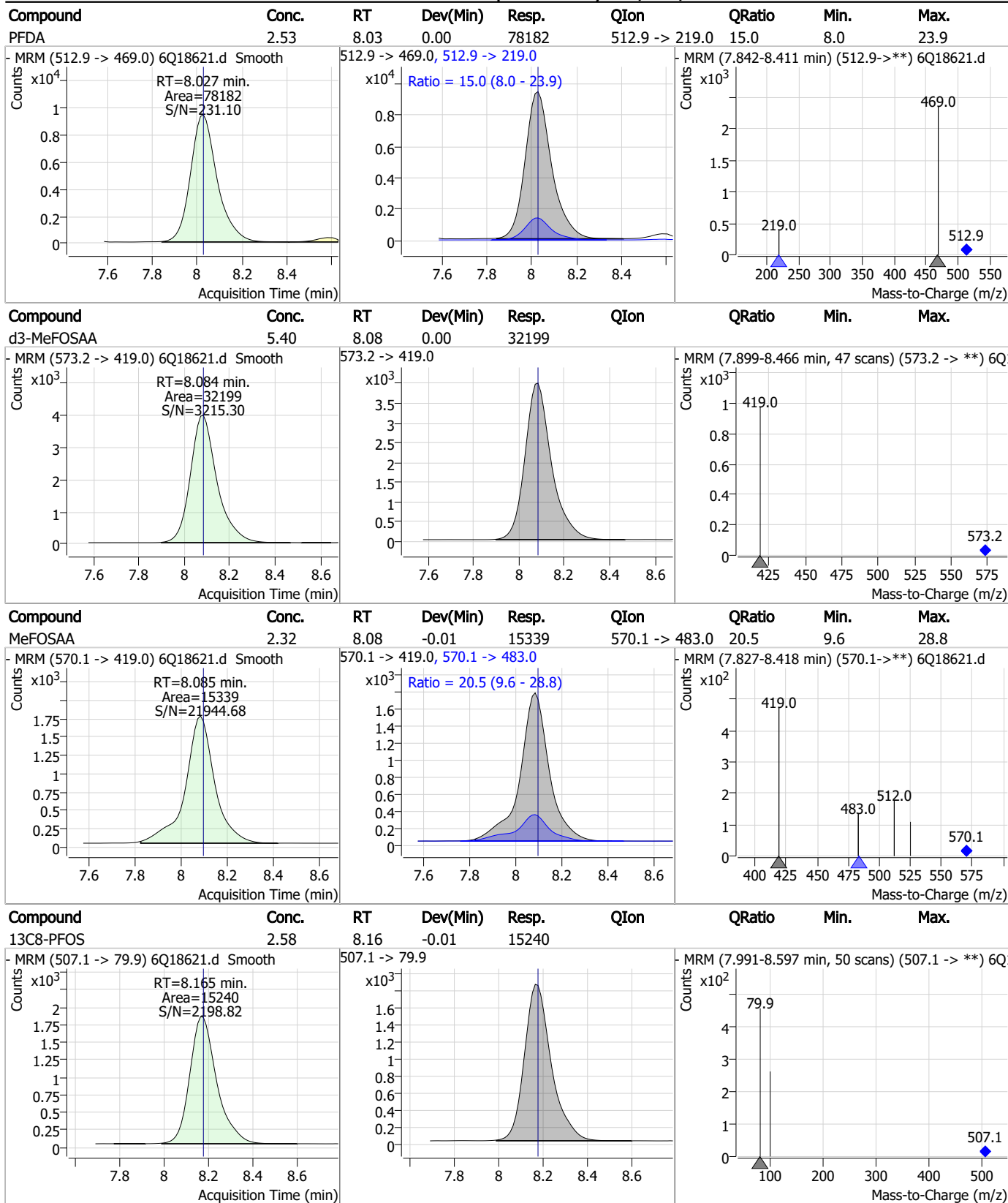
7.7.30
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Perfluorinated Compounds by LC/MS/MS



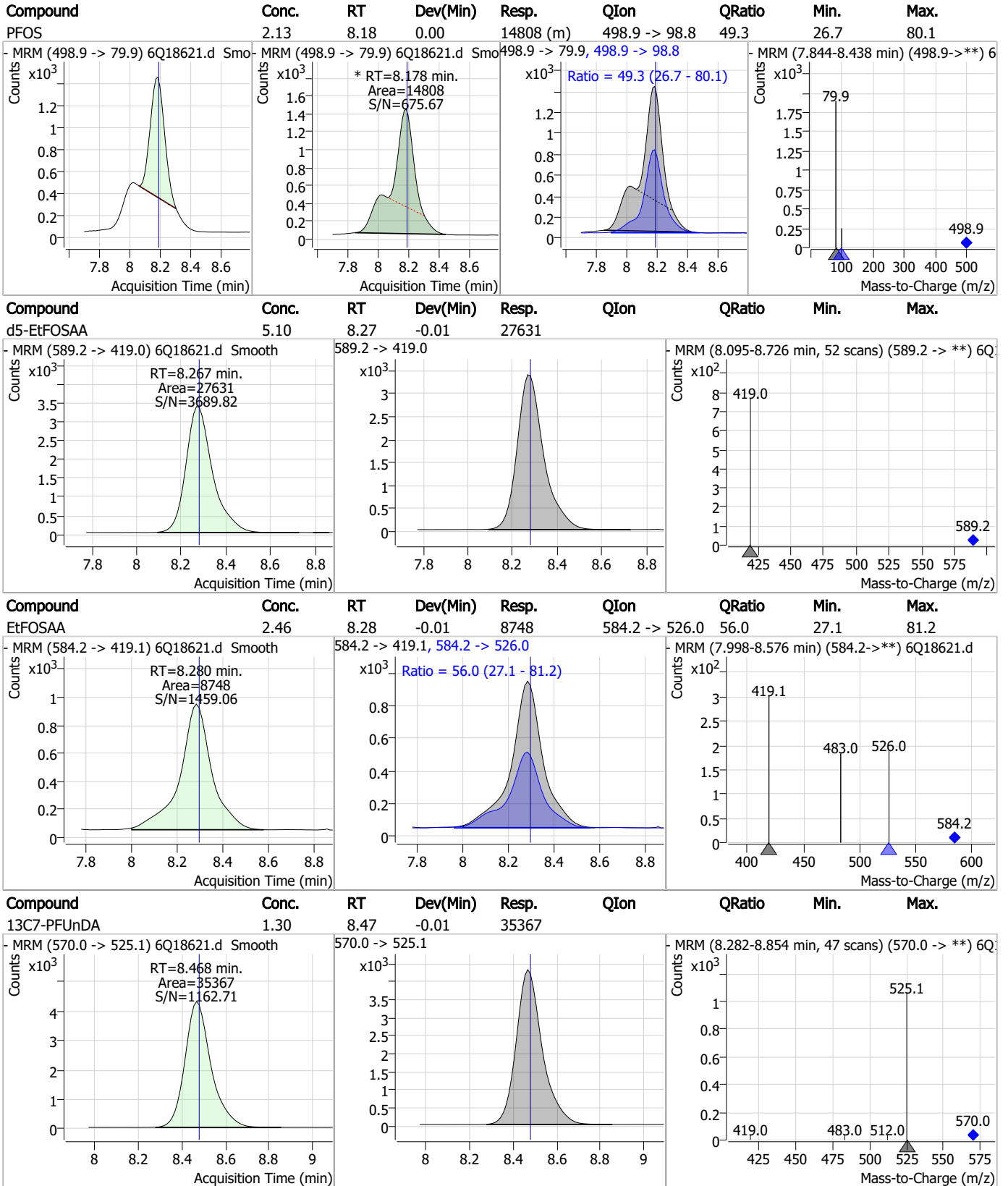
7.7.30
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Perfluorinated Compounds by LC/MS/MS



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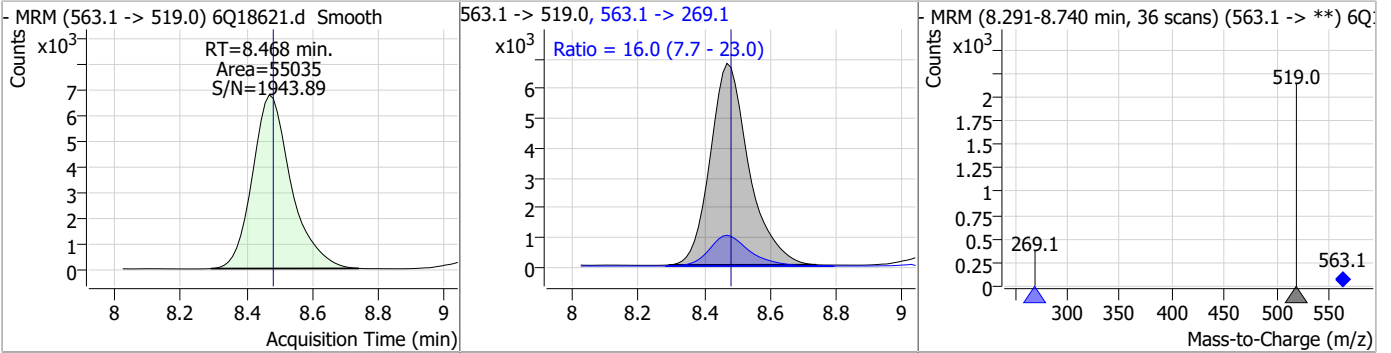
Perfluorinated Compounds by LC/MS/MS



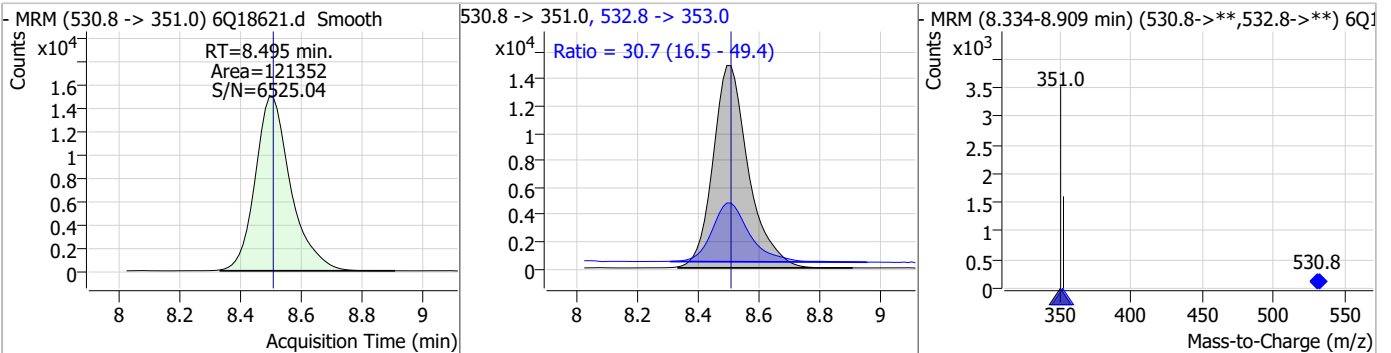
7.7.30
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Perfluorinated Compounds by LC/MS/MS

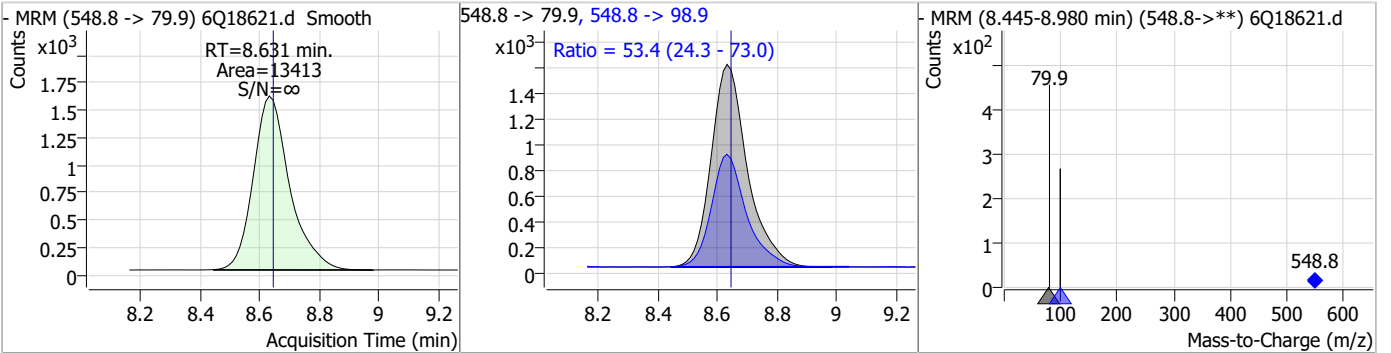
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.39	8.47	-0.01	55035	563.1 -> 269.1	16.0	7.7	23.0



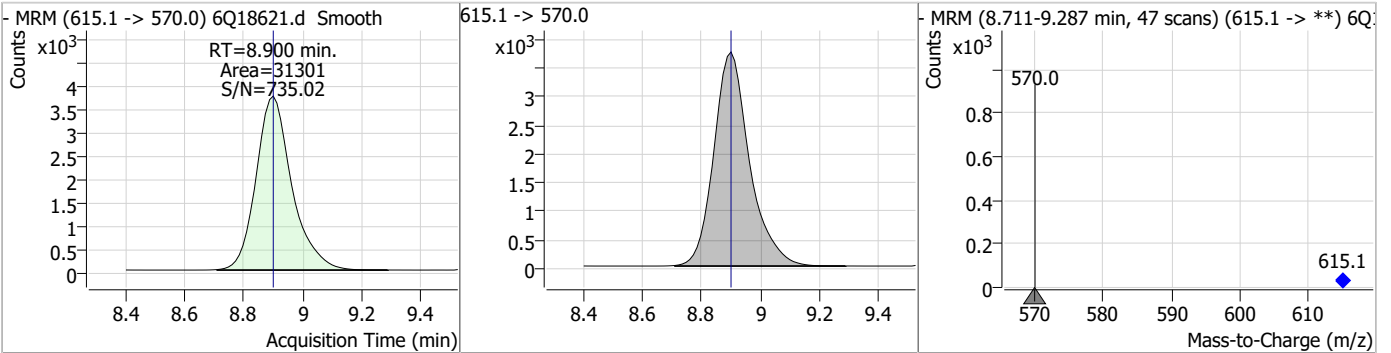
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.98	8.49	-0.01	121352	532.8 -> 353.0	30.7	16.5	49.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.19	8.63	-0.01	13413	548.8 -> 98.9	53.4	24.3	73.0

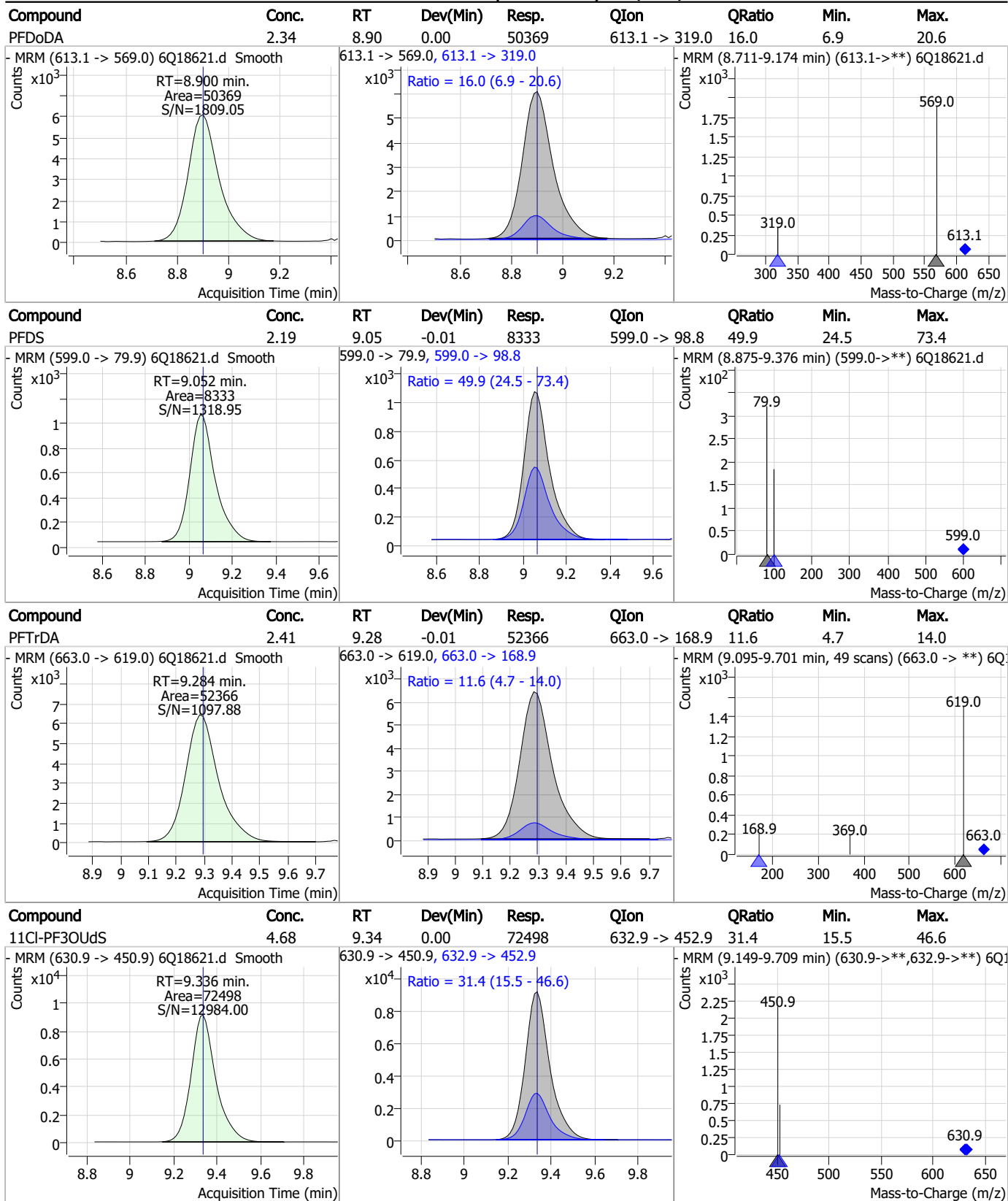


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.24	8.90	0.00	31301	615.1 -> 570.0	-	-	-



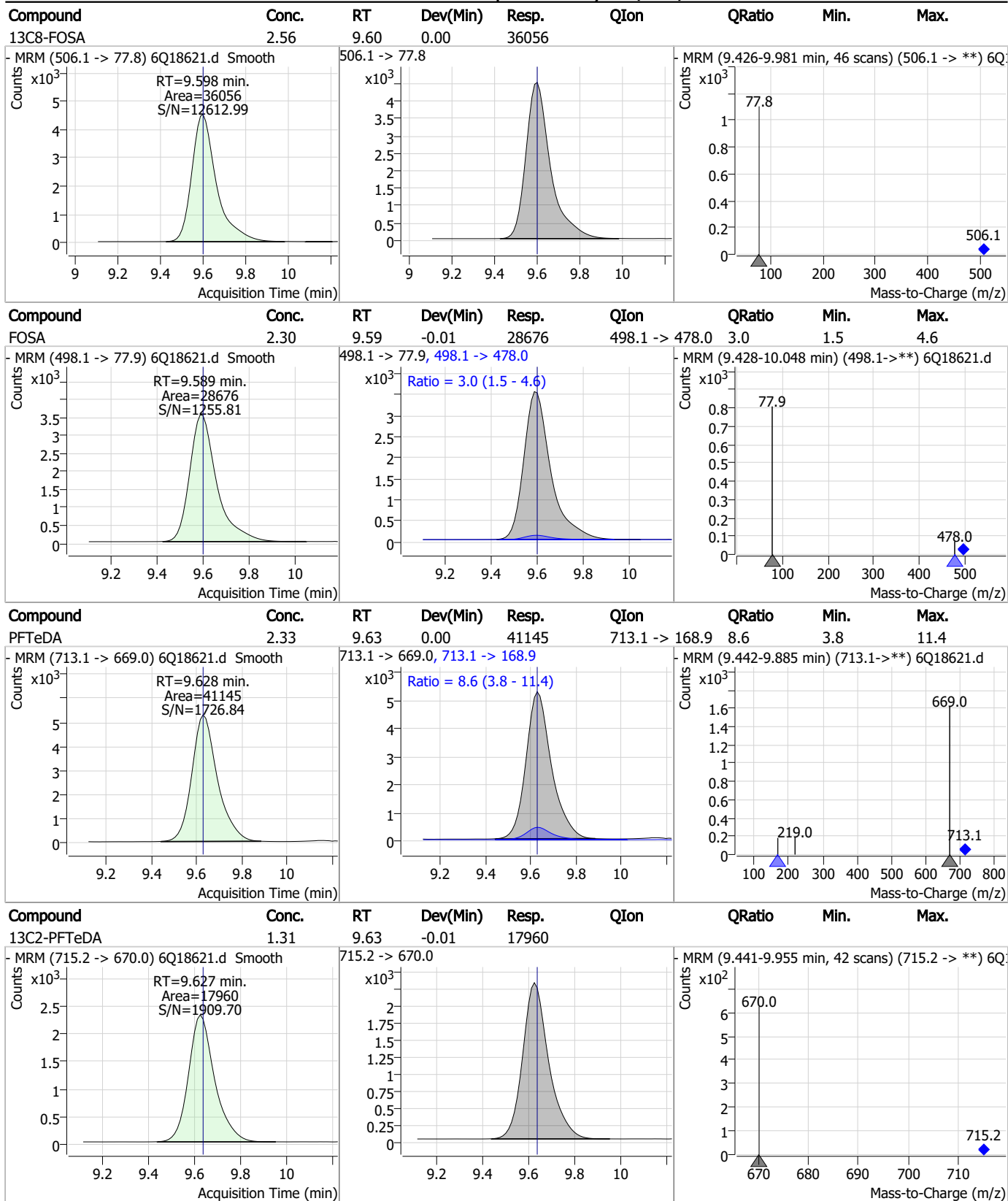
7.7.30
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

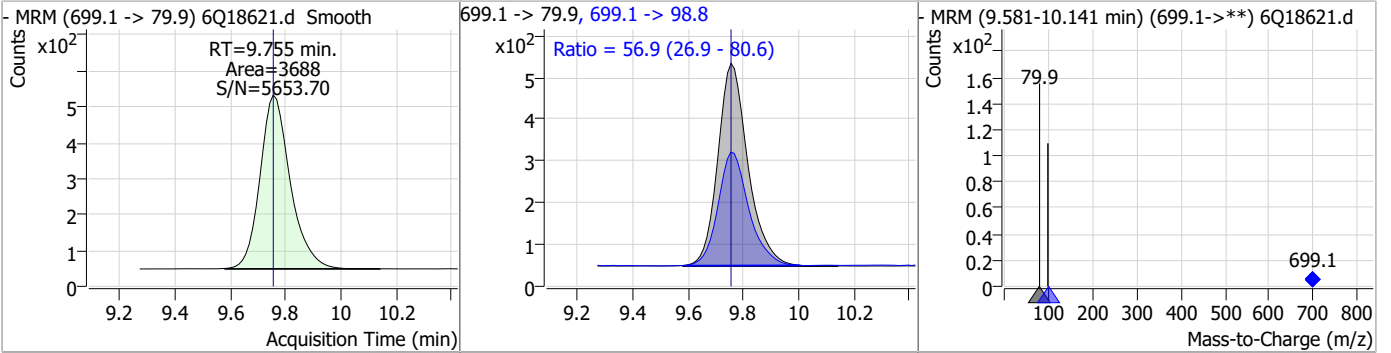


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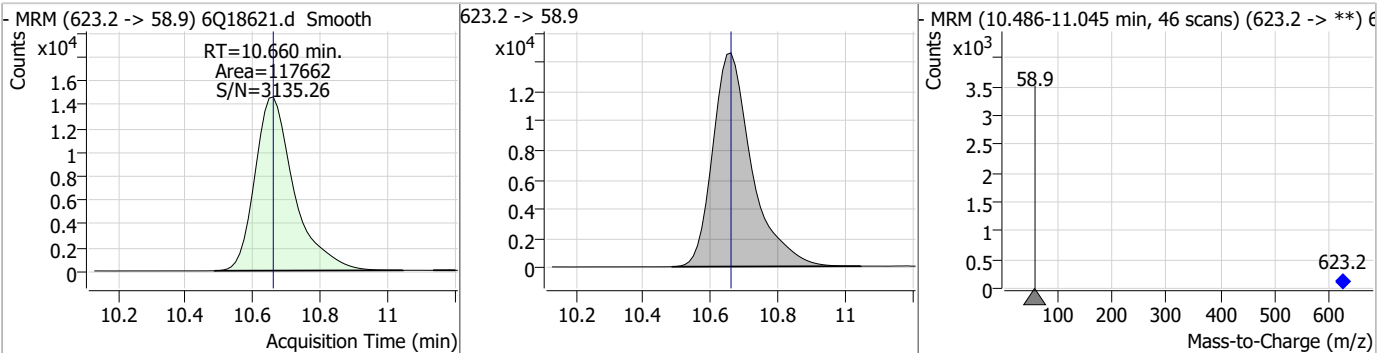


Perfluorinated Compounds by LC/MS/MS

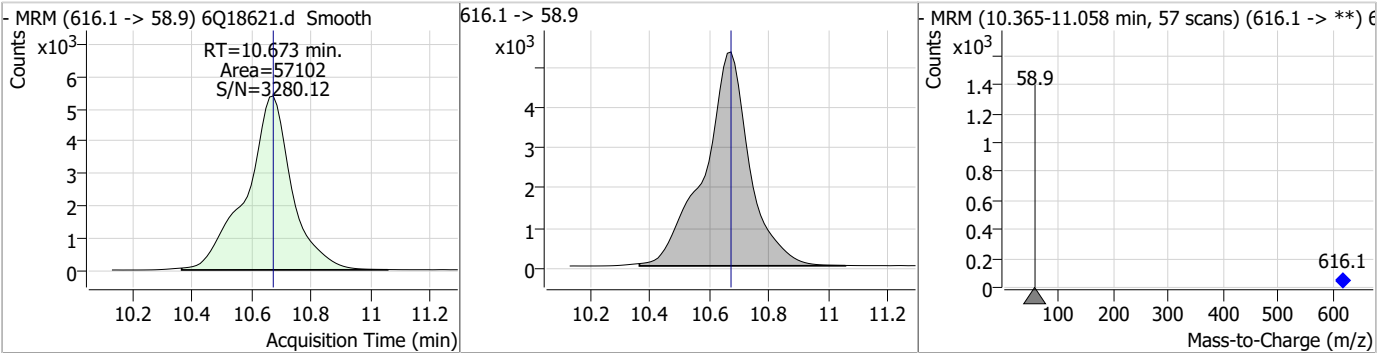
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.18	9.75	0.00	3688	699.1 -> 98.8	56.9	26.9	80.6



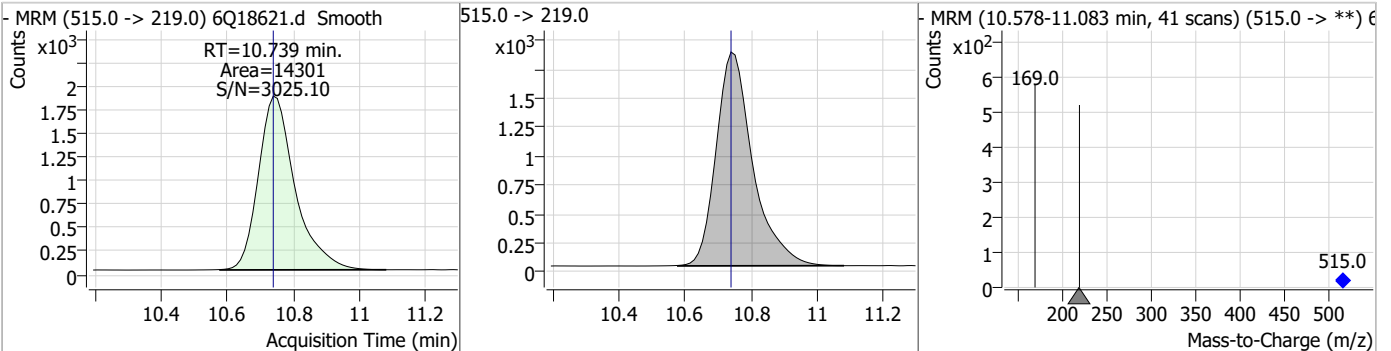
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.39	10.66	0.00	117662				



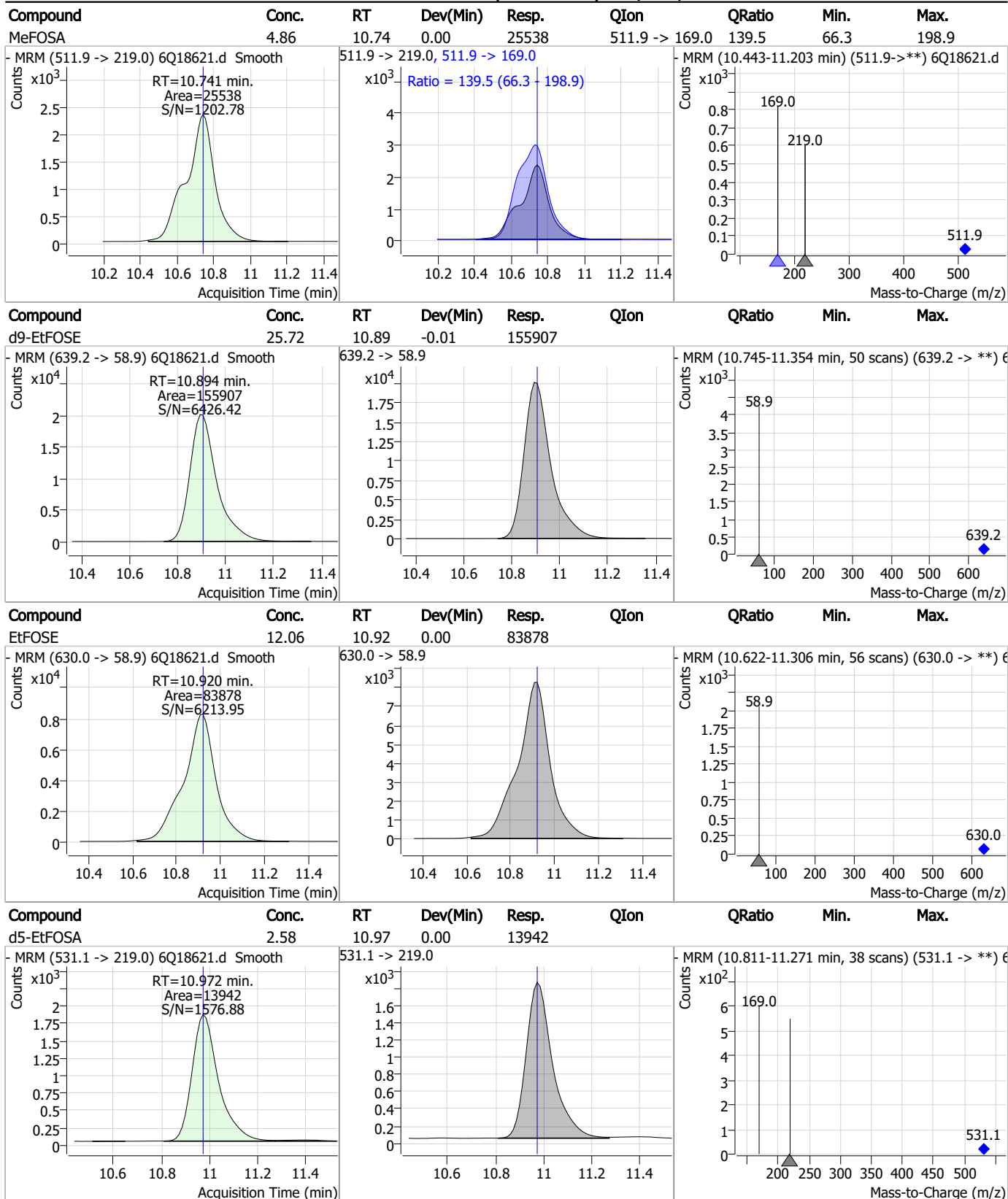
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.21	10.67	0.00	57102				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.51	10.74	0.00	14301				



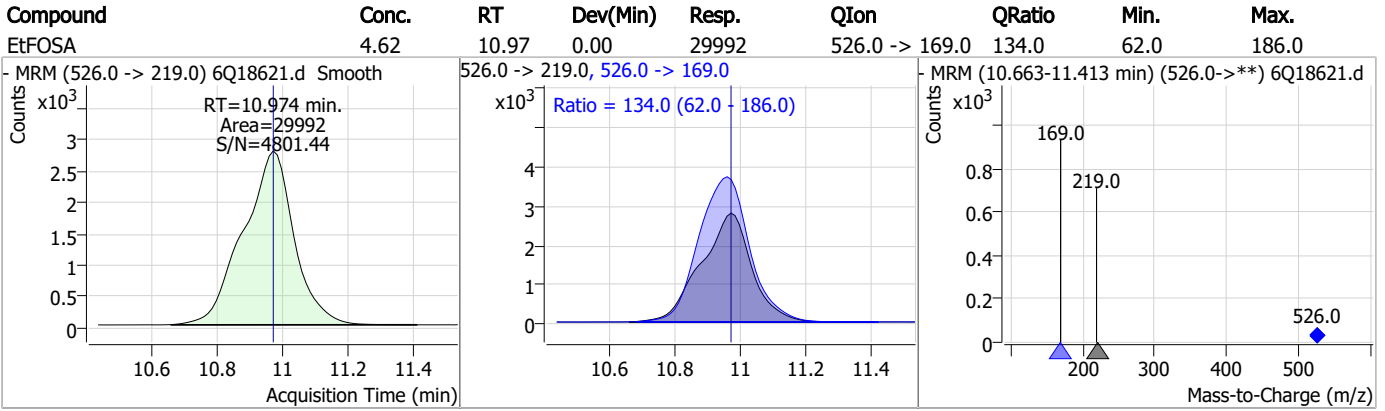
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18621.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 06/01/23 01:43 Supervisor approved: 06/01/23 16:14 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.7.30.1

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SGS ORLANDO

DATE:	05/30/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_053023_S6Q278
CAL DATE:	05/30/23
ANALYST:	M. Valls
RUN BATCH:	S6Q278

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W15% ACN 220225 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2127D
ICV STD LOT #:	LCMS 2127C/2125A
ISTD/ID STD LOT #:	11765/11764

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q18501.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
2	6Q18502.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
3	6Q18503.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
4	6Q18504.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
5	6Q18505.d	P1-A9	High Std	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
6	6Q18506.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
7	6Q18507.d	P1-A5	cc275-4	1633full.m	QC	20/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
8	6Q18508.d	P1-A2	cc275-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
9	6Q18509.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
10	6Q18510.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
11	6Q18511.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
12	6Q18512.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
13	6Q18513.d	P1-A1	ic278-0	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
14	6Q18514.d	P1-A2	ic278-1	1633full.m	Calibration	1.6/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
15	6Q18515.d	P1-A3	ic278-2	1633full.m	Calibration	3.2/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
16	6Q18516.d	P1-A4	ic278-3	1633full.m	Calibration	10/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
17	6Q18517.d	P1-A5	icc278-4	1633full.m	Calibration	20/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
18	6Q18518.d	P1-A6	ic278-5	1633full.m	Calibration	40/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
19	6Q18519.d	P1-A7	ic278-6	1633full.m	Calibration	100/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
20	6Q18520.d	P1-A8	ic278-7	1633full.m	Calibration	200/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
21	6Q18521.d	P1-A9	ic278-8	1633full.m	Calibration	1x	OP96663.S6Q278.500,,,5.0,1.,water	✓
22	6Q18522.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q278.500,,,5.0,1.,water	✓
23	6Q18523.d	P1-B1	icv278-4	1633full.m	QC	20/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
24	6Q18524.d	P1-B2	icv278-20	1633full.m	QC	100/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
25	6Q18525.d	P1-A5	cc278-4	1633full.m	QC	20/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
26	6Q18526.d	P1-A2	cc278-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q278.500,,,5.0,1.,water	✓
27	6Q18527.d	P6-A1	FC6114-1	1633full.m	Sample	50/500	OP96957.S6Q278.4.95,,,5.0,10.,soil	✓
28	6Q18528.d	P6-A2	FC6114-2	1633full.m	Sample	100/500	OP96957.S6Q278.5.01,,,5.0,5.,soil	✓
29	6Q18529.d	P6-A3	FC6114-3	1633full.m	Sample	250/500	OP96957.S6Q278.4.95,,,5.0,2.,soil	✓
30	6Q18530.d	P6-A4	opo96957-ms	1633full.m	Sample	250/500	OP96957.S6Q278.5.03,,,5.0,2.,soil	✓
31	6Q18531.d	P6-A5	opo96957-misd	1633full.m	Sample	250/500	OP96957.S6Q278.5.02,,,5.0,2.,soil	✓
32	6Q18532.d	P6-A6	FC5922-15	1633full.m	Sample	100/500	OP97049.S6Q278.550,,,5.0,5.,water	✓
33	6Q18533.d	P6-A7	FC5808-2	1633full.m	Sample	100/500	OP96978.S6Q278.570,,,5.0,5.,water	Low piba, Redo
34	6Q18534.d	P6-A8	FC5808-4	1633full.m	Sample	100/500	OP96978.S6Q278.550,,,5.0,5.,water	Low surr's, Redo
35	6Q18535.d	P1-A5	cc278-4	1633full.m	QC	20/500	OP96663.S6Q278.500,,,5.0,1.,water	✓

LCMS6-6Q ANALYSIS LOG

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36	6Q18536.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q278,500,,,5.0,1,water	✓
37	6Q18537.d	P6-B1	op97094-bs	1633full.m	Sample	OP97094,S6Q278,125,,,5.0,1,water	✓
38	6Q18538.d	P6-B2	op97094-llbs:2	1633full.m	Sample	OP97094,S6Q278,125,,,5.0,1,water	✓
39	6Q18539.d	P6-B3	op97094-mb	1633full.m	Sample	OP97094,S6Q278,125,,,5.0,1,water	✓
40	6Q18540.d	P6-B4	JD65440-1	1633full.m	Sample	OP97094,S6Q278,60,,,5.0,1,water	✓
41	6Q18541.d	P6-A9	JD65440-1	1633full.m	Sample	OP97094,S6Q278,60,,,5.0,10,water	✓
42	6Q18542.d	P6-B5	op97070-bs	1633full.m	Sample	OP97070,S6Q278,500,,,5.0,1,water	✓
43	6Q18543.d	P6-B6	op97070-llbs:3	1633full.m	Sample	OP97070,S6Q278,500,,,5.0,1,water	✓
44	6Q18544.d	P6-B7	op97070-mb	1633full.m	Sample	OP97070,S6Q278,500,,,5.0,1,water	✓
45	6Q18545.d	P6-B8	FC5956-1	1633full.m	Sample	OP97070,S6Q278,1,,,5.0,1,water	✓
46	6Q18546.d	P1-A5	ecc278-4	1633full.m	QC	OP96663,S6Q278,500,,,5.0,1,water	✓
47	6Q18547.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q278,500,,,5.0,1,water	✓
48	6Q18548.d	P6-B9	FC6278-1	1633full.m	Sample	OP97070,S6Q278,540,,,5.0,1,water	RR samples,computer updated.
49	6Q18549.d	P6-C1	op97070-ms	1633full.m	Sample	OP97070,S6Q278,530,,,5.0,1,water	↓
50	6Q18550.d	P6-C2	FC6278-2	1633full.m	Sample	OP97070,S6Q278,570,,,5.0,1,water	↓
51	6Q18551.d	P6-C3	FC6278-3	1633full.m	Sample	OP97070,S6Q278,540,,,5.0,1,water	↓
52	6Q18552.d	P6-C4	op97070-dup	1633full.m	Sample	OP97070,S6Q278,520,,,5.0,1,water	↓
53	6Q18553.d	P6-C5	FC6278-4	1633full.m	Sample	OP97070,S6Q278,570,,,5.0,1,water	↓
54	6Q18554.d	P6-C6	FC6278-5	1633full.m	Sample	OP97070,S6Q278,540,,,5.0,1,water	↓
55	6Q18555.d	P6-C7	FC5956-1	1633full.m	Sample	OP97070,S6Q278,5,,,5.0,1,water	↓
56	6Q18556.d	P1-A5	cc278-4	1633full.m	QC	OP96663,S6Q278,500,,,5.0,1,water	↓
57	6Q18557.d	P1-A2	cc278-1,0LL	1633full.m	QC	OP96663,S6Q278,500,,,5.0,1,water	↓
58	6Q18558.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q278,500,,,5.0,1,water	↓
59	6Q18559.d	P6-C8	op97024-bs	1633full.m	Sample	OP97024,S6Q278,5.00,,,5.0,1,soil	↓
60	6Q18560.d	P6-C9	op97024-llbs:2	1633full.m	Sample	OP97024,S6Q278,5.00,,,5.0,1,soil	↓
61	6Q18561.d	P6-D1	op97024-mb	1633full.m	Sample	OP97024,S6Q278,5.00,,,5.0,1,soil	↓
62	6Q18562.d	P6-D2	FC6086-1	1633full.m	Sample	OP97024,S6Q278,4.97,,,5.0,1,soil	↓
63	6Q18563.d	P6-D3	op97024-ms	1633full.m	Sample	OP97024,S6Q278,5.01,,,5.0,1,soil	↓
64	6Q18564.d	P6-D4	op97024-msd	1633full.m	Sample	OP97024,S6Q278,4.98,,,5.0,1,soil	↓
65	6Q18565.d	P6-D5	FC6086-2	1633full.m	Sample	OP97024,S6Q278,4.96,,,5.0,1,soil	↓
66	6Q18566.d	P6-D6	FC6086-3	1633full.m	Sample	OP97024,S6Q278,5.01,,,5.0,1,soil	↓
67	6Q18567.d	P6-D7	FC6086-4	1633full.m	Sample	OP97024,S6Q278,5.00,,,5.0,1,soil	↓
68	6Q18568.d	P6-D8	FC6086-5	1633full.m	Sample	OP97024,S6Q278,5.05,,,5.0,1,soil	↓
69	6Q18569.d	P1-A5	cc278-4	1633full.m	QC	OP96663,S6Q278,500,,,5.0,1,water	↓
70	6Q18570.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q278,500,,,5.0,1,water	↓
71	6Q18571.d	P6-D9	FC6086-6	1633full.m	Sample	OP97024,S6Q278,4.98,,,5.0,1,soil	↓
72	6Q18572.d	P6-E1	FC6086-7	1633full.m	Sample	OP97024,S6Q278,4.96,,,5.0,1,soil	↓
73	6Q18573.d	P6-E2	FC6086-8	1633full.m	Sample	OP97024,S6Q278,4.98,,,5.0,1,soil	↓
74	6Q18574.d	P6-E3	FC6086-9	1633full.m	Sample	OP97024,S6Q278,4.99,,,5.0,1,soil	↓
75	6Q18575.d	P6-E4	FC6086-10	1633full.m	Sample	OP97024,S6Q278,5.03,,,5.0,1,soil	↓
76	6Q18576.d	P6-E5	FC6086-11	1633full.m	Sample	OP97024,S6Q278,4.96,,,5.0,1,soil	↓
77	6Q18577.d	P6-E6	FC6086-12	1633full.m	Sample	OP97024,S6Q278,5.02,,,5.0,1,soil	↓
78	6Q18578.d	P6-E7	FC6086-13	1633full.m	Sample	OP97024,S6Q278,5.03,,,5.0,1,soil	↓



SGS ORLANDO LCMS6-6Q ANALYSIS LOG

79	6Q18579.d	P6-E8	FC6086-14	1633full.m	Sample	OP97024,S6Q278.5.03,,,5.0,1,soil	↓
80	6Q18580.d	P6-E9	FC6086-15	1633full.m	Sample	OP97024,S6Q278.5.00,,,5.0,1,soil	↓
81	6Q18581.d	P1-A5	cc278-4	1633full.m	QC	OP96663,S6Q278.500,,,5.0,1,water	↓
82	6Q18582.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q278.500,,,5.0,1,water	↓
83	6Q18583.d	P6-F1	FC6086-16	1633full.m	Sample	OP97024,S6Q278.4.99,,,5.0,1,soil	↓
84	6Q18584.d	P6-F2	FC6086-17	1633full.m	Sample	OP97024,S6Q278.5.04,,,5.0,1,soil	↓
85	6Q18585.d	P6-F3	FC6086-18	1633full.m	Sample	OP97024,S6Q278.4.98,,,5.0,1,soil	↓
86	6Q18586.d	P6-F4	FC6086-19	1633full.m	Sample	OP97024,S6Q278.5.01,,,5.0,1,soil	↓
87	6Q18587.d	P1-A5	ecc278-4	1633full.m	QC	OP96663,S6Q278.500,,,5.0,1,water	↓
88	6Q18588.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q278.500,,,5.0,1,water	↓

SGS ORLANDO

DATE:	05/31/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_053123_S6Q279
CAL DATE:	05/31/23
ANALYST:	M. Valls
RUN BATCH:	S6Q279

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W5% ACN 220225 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2127D
ICV STD LOT #:	LCMS 2127C/2125A
ISTD/ID STD LOT #:	11765/11764

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q18557.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
2	6Q18558.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
3	6Q18559.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
4	6Q18560.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
5	6Q18561.d	P1-A9	High Std	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
6	6Q18562.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
7	6Q18563.d	P1-A5	cc278-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	surr high
8	6Q18564.d	P1-A2	cc278-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	surr failing high, re-calibrate
9	6Q18565.d	P6-B5	op97070-bs	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	rr samples
10	6Q18566.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
11	6Q18567.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
12	6Q18568.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
13	6Q18569.d	P1-A1	ic279-0	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
14	6Q18570.d	P1-A2	ic279-1	1633full.m	Calibration	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	Eitfossa fail high, RR curve
15	6Q18571.d	P1-A3	ic279-2	1633full.m	Calibration	3.2/500	OP96663.S6Q279.500,,,5.0,1,water	↓
16	6Q18572.d	P1-A4	ic279-3	1633full.m	Calibration	10/500	OP96663.S6Q279.500,,,5.0,1,water	↓
17	6Q18573.d	P1-A5	icc279-4	1633full.m	Calibration	20/500	OP96663.S6Q279.500,,,5.0,1,water	↓
18	6Q18574.d	P1-A6	ic279-5	1633full.m	Calibration	40/500	OP96663.S6Q279.500,,,5.0,1,water	↓
19	6Q18575.d	P1-A7	ic279-6	1633full.m	Calibration	100/500	OP96663.S6Q279.500,,,5.0,1,water	↓
20	6Q18576.d	P1-A8	ic279-7	1633full.m	Calibration	200/500	OP96663.S6Q279.500,,,5.0,1,water	↓
21	6Q18577.d	P1-A9	ic279-8	1633full.m	Calibration	1x	OP96663.S6Q279.500,,,5.0,1,water	↓
22	6Q18578.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	rr icv
23	6Q18579.d	P1-B1	icv279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	↓
24	6Q18580.d	P1-B2	icv279-20	1633full.m	QC	100/500	OP96663.S6Q279.500,,,5.0,1,water	↓
25	6Q18581.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
26	6Q18582.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
27	6Q18583.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
28	6Q18584.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
29	6Q18585.d	P1-A1	ic279-0	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
30	6Q18586.d	P1-A2	ic279-1	1633full.m	Calibration	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	✓
31	6Q18587.d	P1-A3	ic279-2	1633full.m	Calibration	3.2/500	OP96663.S6Q279.500,,,5.0,1,water	✓
32	6Q18588.d	P1-A4	ic279-3	1633full.m	Calibration	10/500	OP96663.S6Q279.500,,,5.0,1,water	✓
33	6Q18589.d	P1-A5	icc279-4	1633full.m	Calibration	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
34	6Q18590.d	P1-A6	ic279-5	1633full.m	Calibration	40/500	OP96663.S6Q279.500,,,5.0,1,water	✓
35	6Q18591.d	P1-A7	ic279-6	1633full.m	Calibration	100/500	OP96663.S6Q279.500,,,5.0,1,water	✓

LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

36	6Q18592.d	P1-A8	ic279-7	1633full.m	Calibration	200/500	OP96663.S6Q279.500,,,5.0,1,water	✓
37	6Q18593.d	P1-A9	ic279-8	1633full.m	Calibration	1x	OP96663.S6Q279.500,,,5.0,1,water	✓
38	6Q18594.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
39	6Q18595.d	P1-B1	icv279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
40	6Q18596.d	P1-B2	icv279-20	1633full.m	QC	100/500	OP96663.S6Q279.500,,,5.0,1,water	✓
41	6Q18597.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
42	6Q18598.d	P1-A2	cc279-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	✓
43	6Q18599.d	P6-B5	op97070-bs	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	✓
44	6Q18600.d	P6-B6	op97070-llbs:3	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	✓
45	6Q18601.d	P6-B7	op97070-mb	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	✓
46	6Q18602.d	P6-B9	FC6278-1	1633full.m	Sample		OP97070.S6Q279.540,,,5.0,1,water	✓
47	6Q18603.d	P6-C1	op97070-ms	1633full.m	Sample		OP97070.S6Q279.530,,,5.0,1,water	✓
48	6Q18604.d	P6-C2	FC6278-2	1633full.m	Sample		OP97070.S6Q279.570,,,5.0,1,water	✓
49	6Q18605.d	P6-C3	FC6278-3	1633full.m	Sample		OP97070.S6Q279.540,,,5.0,1,water	✓
50	6Q18606.d	P6-C4	op97070-dup	1633full.m	Sample		OP97070.S6Q279.520,,,5.0,1,water	✓
51	6Q18607.d	P6-C5	FC6278-4	1633full.m	Sample		OP97070.S6Q279.570,,,5.0,1,water	✓
52	6Q18608.d	P6-C7	FC5956-1	1633full.m	Sample		OP97070.S6Q279.5,,,5.0,1,water	rf10x
53	6Q18609.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
54	6Q18610.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
55	6Q18611.d	P6-C6	FC6278-5	1633full.m	Sample		OP97070.S6Q279.540,,,5.0,1,water	✓
56	6Q18612.d	P6-C8	op97024-bs	1633full.m	Sample		OP97024.S6Q279.500,,,5.0,1,soil	✓
57	6Q18613.d	P6-C9	op97024-llbs:2	1633full.m	Sample		OP97024.S6Q279.500,,,5.0,1,soil	✓
58	6Q18614.d	P6-D1	op97024-mb	1633full.m	Sample		OP97024.S6Q279.500,,,5.0,1,soil	✓
59	6Q18615.d	P6-D2	FC6086-1	1633full.m	Sample		OP97024.S6Q279.4.97,,,5.0,1,soil	✓
60	6Q18616.d	P6-D3	op97024-ms	1633full.m	Sample		OP97024.S6Q279.5.01,,,5.0,1,soil	✓
61	6Q18617.d	P6-D4	op97024-mnsd	1633full.m	Sample		OP97024.S6Q279.4.98,,,5.0,1,soil	✓
62	6Q18618.d	P6-D5	FC6086-2	1633full.m	Sample		OP97024.S6Q279.4.96,,,5.0,1,soil	✓
63	6Q18619.d	P6-D6	FC6086-3	1633full.m	Sample		OP97024.S6Q279.5.01,,,5.0,1,soil	✓
64	6Q18620.d	P6-D7	FC6086-4	1633full.m	Sample		OP97024.S6Q279.5.00,,,5.0,1,soil	✓
65	6Q18621.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
66	6Q18622.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
67	6Q18623.d	P6-D8	FC6086-5	1633full.m	Sample		OP97024.S6Q279.5.05,,,5.0,1,soil	✓
68	6Q18624.d	P6-D9	FC6086-6	1633full.m	Sample		OP97024.S6Q279.4.98,,,5.0,1,soil	✓
69	6Q18625.d	P6-E1	FC6086-7	1633full.m	Sample		OP97024.S6Q279.4.96,,,5.0,1,soil	✓
70	6Q18626.d	P6-E2	FC6086-8	1633full.m	Sample		OP97024.S6Q279.4.98,,,5.0,1,soil	✓
71	6Q18627.d	P6-E3	FC6086-9	1633full.m	Sample		OP97024.S6Q279.4.99,,,5.0,1,soil	✓
72	6Q18628.d	P6-E4	FC6086-10	1633full.m	Sample		OP97024.S6Q279.5.03,,,5.0,1,soil	✓
73	6Q18629.d	P6-E5	FC6086-11	1633full.m	Sample		OP97024.S6Q279.4.96,,,5.0,1,soil	Redo due to double NIS
74	6Q18630.d	P6-E6	FC6086-12	1633full.m	Sample		OP97024.S6Q279.5.02,,,5.0,1,soil	↓
75	6Q18631.d	P6-E7	FC6086-13	1633full.m	Sample		OP97024.S6Q279.5.03,,,5.0,1,soil	↓
76	6Q18632.d	P6-E8	FC6086-14	1633full.m	Sample		OP97024.S6Q279.5.03,,,5.0,1,soil	↓
77	6Q18633.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	↓
78	6Q18634.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓

LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

79	6Q18635.d	P6-E9	FC6086-15	1633full.m	Sample	OP97024,S6Q279,5.00,,,5.0,1,soil	↓
80	6Q18636.d	P6-F1	FC6086-16	1633full.m	Sample	OP97024,S6Q279,4.99,,,5.0,1,soil	↓
81	6Q18637.d	P6-F2	FC6086-17	1633full.m	Sample	OP97024,S6Q279,5.04,,,5.0,1,soil	↓
82	6Q18638.d	P6-F3	FC6086-18	1633full.m	Sample	OP97024,S6Q279,4.98,,,5.0,1,soil	↓
83	6Q18639.d	P6-F4	FC6086-19	1633full.m	Sample	OP97024,S6Q279,5.01,,,5.0,1,soil	↓
84	6Q18640.d	P6-F5	FC5956-1	1633full.m	Sample	OP97070,S6Q279,5,,,5.0,5,water	rr, missing vial.
85	6Q18641.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
86	6Q18642.d	P1-A2	cc279-1,0LL	1633full.m	QC	1.6/500	✓
87	6Q18643.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
88	6Q18644.d	P2-A1	op97092-bs	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
89	6Q18645.d	P2-A2	op97092-llbs:3	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
90	6Q18646.d	P2-A3	op97092-mb	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
91	6Q18647.d	P2-A4	FC5851-5	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
92	6Q18648.d	P2-A5	FC5885-4	1633full.m	Sample	OP97092,S6Q279,60,,,5.0,1,water	rr10x
93	6Q18649.d	P2-A6	FC5963-1	1633full.m	Sample	OP97092,S6Q279,526,,,5.0,1,water	rr1x for co
94	6Q18650.d	P2-A7	FC5963-8	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
95	6Q18651.d	P2-A8	op97092-dup2	1633full.m	Sample	OP97092,S6Q279,68,,,5.0,1,water	✓
96	6Q18652.d	P2-A9	FC6238-3	1633full.m	Sample	OP97092,S6Q279,60,,,5.0,1,water	✓
97	6Q18653.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
98	6Q18654.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
99	6Q18655.d	P2-B1	FC6325-1	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
100	6Q18656.d	P2-B2	op97092-ms	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
101	6Q18657.d	P2-B3	FC6325-2	1633full.m	Sample	OP97092,S6Q279,540,,,5.0,1,water	✓
102	6Q18658.d	P2-B4	op97092-dup1	1633full.m	Sample	OP97092,S6Q279,560,,,5.0,1,water	✓
103	6Q18659.d	P2-B5	FC6325-3	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
104	6Q18660.d	P2-B6	FC6006-5	1633full.m	Sample	OP97093,S6Q279,565,,,5.0,5,water	✓
105	6Q18661.d	P2-B7	FC6063-1	1633full.m	Sample	OP97093,S6Q279,500,,,5.0,10,water	Redo, surr fail low
106	6Q18662.d	P2-B8	FC6125-1	1633full.m	Sample	OP97093,S6Q279,545,,,5.0,1,water	✓
107	6Q18663.d	P6-B8	FC5956-1	1633full.m	Sample	OP97070,S6Q279,1,,,5.0,1,water	✓
108	6Q18664.d	P2-B9	FC5956-1	1633full.m	Sample	OP97070,S6Q279,5,,,5.0,5,water	dilution not use.
109	6Q18665.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
110	6Q18666.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
111	6Q18667.d	P2-C1	FC5885-4	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
112	6Q18668.d	P2-C2	FC5963-1	1633full.m	Sample	OP97092,S6Q279,60,,,5.0,10,water	✓
113	6Q18669.d	P2-C3	FC6114-1	1633full.m	Sample	OP97092,S6Q279,526,,,5.0,1,water	✓
114	6Q18670.d	P1-A5	ecc279-4	1633full.m	QC	25/400	✓
115	6Q18671.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
116	6Q18672.d	P1-F1	List 40 surr test	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCN75 2125A-G	FULL 2.5f 40 spike (Cal std)	11750	28 Comp. PFOA	Alcalyte	3/3/28	5/10/24	1.0ppm	400ul	4.0ml	100ppb	955formol 581420	5/22/23	8/23/23	MS
		LCMS 2067	40 2.5f PFOA	595-Std.		8/23/23	1.0ppm	400ul			(2.400ml)			
		LCMS 2117	40 2.5f PFOA			11/8/23	1.0ppm	400ul						
		LCMS 2101	FOSE Std.			7/19/23	5.0ppm	400ul		500ppb				
		11804 A-5	MPKC - GUES	Wellington Labs	01/1/28	05/23/24	1.0ppm	1.2ml	2.5ml	0.5ppm	PS1400H 05123231133123			NS
LCMS 2126A-5	PFC ID SURF (10 ppb)	11635A	H3HPPO-DA		11/6/28	04/14/24	50ppm	40ul						NS
		11431	D-N-NEBASAN		05/6/27	03/15/24	50ppm	40ul						NS
LCMS 2127A-E	1633 op/16 Cal std.	11399B 11807	PERC HxH	Wellington	4/17/28	5/24/24	1.4 ppm	25ul	4ml	6.25 125 250ppb	1633 MW 5/24/23	10/28/23		MS
		LCM75 2097AB	BE LN ET-ME	595 Labs	NA	10/28/23	2 ppm			125 512.5ppb (2.085ml)				
		11801B	PERC MXF	Wellington	3/24/26	5/22/24	2ppm							
		11802B	PERC MXG			5/24/24	2ppm							
		11803B	PERC MXJ		12/1/27	5/22/24	4.30 ppm							
		11810	PERC MXK		3/28/28	5/24/24	3/22ul			312 1160ppb				
LCMS 2128A-5	PFC ID SURF (10 ppb)	11819	MPKC - GUES	Wellington Labs	01/1/28	05/23/24	1.0ppm	1.2ml	2.5ml	0.5ppm	PS1400H 05123231133123			NS
		11635A	H3HPPO-DA		11/6/28	04/14/24	50ppm	24ul						NS
		11584	D-N-NEBASAN		11/1/27	06/10/24	50ppm	24ul						NS
						05/06/23								

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std #	Name Description	Parent Std #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2095A-5	(10ppb) PFC TD SURF	11669	HPAC-2UES	Wellington Labs	01/08/23	03/08/24	1.0ppm	2.4mL	~50mL	0.5ppm	05/10/23	03/08/23	09/08/23	NS
↓	↓	11585	HPAC-2A	↓	11/08/23	01/08/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
↓	↓	11431	d-N-HPAC-2A	↓	05/08/23	03/12/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
LCMS 2096A-B	1633 OPPE End std.	11672	PFC-MXH	Wellington	8/8/23	3/23/24	1-4 ppm	250uL	4mL	0.25 ppm	10/33 MIX	3/09/23	9/09/23	MS
↓	↓	11686	PFC-MXI	↓	2/23/28	3/30/24	1-10 ppm	250uL	↓	0.25 ppm	↓	↓	↓	↓
↓	↓	11074A	PFC-MXF	↓	1/11/25	3/23/24	2ppm	500uL	↓	250ppb	↓	↓	↓	↓
↓	↓	11074B	PFC-MXF	↓	12/1/24	3/10/24	2ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11675	PFC-MXS	↓	9/14/26	3/03/24	4-20 ppm	312uL	↓	312/1100 ppb	↓	↓	↓	↓
LCMS 2097A	BR-LN metel for 1633	11497	br-N metesa	Wellington	08/23/24	10/28/23	50ppm	200uL	5mL	2ppm	10/33 MIX	4/16/23	10/28/23	MS
↓	↓	11498	br-N Effosa	↓	10/10/24	10/28/23	50ppm	200uL	↓	2ppm	↓	↓	↓	↓
↓	↓	11495	br-N metese	↓	10/07/24	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓	11494	br-N Effose	↓	10/17/24	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓

* tested
 10/21
 3/02
 on
 5/02

40 mL

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCM29 2067	40 L1st std. ADD-ON #1	10726A	10:2 FTS	Wellington	3/3/26	3/21/23	50ppm	80uL	4.0mL	1ppm	95% meth 5% H2O	2/8/23	3/21/23 8/23/23	MV
		10840	PF005		7/9/26	10/18/23							8/23/23	
		10829	N- MeTosA		8/3/26	8/23/23								
		10837	N- EFTosA		8/3/26	8/23/23								
		10842	PFHXDA		9/3/26	10/18/23								
		10841	PF00A		5/7/26	10/18/23								
		1116B	3:3FTCA PERPA		2/3/27	2/8/24								
		10685A	5:3FTCA PERPA		11/1/25	8/23/23								
		1116A	7:3FTCA FHPA		11/2/25	2/8/24								
		11332	PFECHS		3/2/27	10/18/23								
		10762B	PFEESA		5/3/25	10/18/23								
		10763B	PMBBA PES0HKA		3/3/25	10/18/23								
		10764	PFMPA PF406A		3/3/25	2/8/24								
		10765B	NEHDA 3.6-08PA		3/3/25	10/18/23								
					NG 02/10/23									

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2115	1.57 40 Scan Add-on 1516 spike mix	11523	d7-N-Metose	Wellington	1/23/27	5/9/24	50ppm	200uL	2ml	50ppm (1/5)	95% MeOH 5% H ₂ O	5/19/23	8/23/23	NV
		11460	d9-N-Etfose		1/23/27	12/6/23		200uL		5ppm				
		11115	M2-PTHXDA		1/23/28	8/23/23		40uL		1ppm				
		10836	D-N-Etfose		12/30/25	8/23/23		40uL		1ppm				
LCMS 2116	Full List (40) Spike (cal mix)	11053	PROA 200 28 Comp.	Absolute	11/9/27	4/18/24	1.0ppm	400uL	4.0ml	100ppb	95% MeOH 5% H ₂ O (2.400ml)	5/19/23	8/23/23	NV
		LCMS 2067	40 List Add on #1	Eqs old.		8/23/23	1.0ppm	400uL						
		LCMS 2117	40 List Add on #2			5/18/23	1.0ppm	400uL						
		LCMS 2054	Fose Std.			7/24/23	5.0ppm	4800uL		500ppb				
LCMS 2117	40 List Add on #2	11250	FB5A-1	Wellington	11/10/26	11/8/23	50ppm	80uL	4.0ml	1ppm	95% MeOH 5% H ₂ O	5/19/23	11/8/23	MV
		11249	FHXSA-1		2/29/26	11/3/23	50ppm	80uL						
		11140B	L-PR5		7/12/26	5/9/24	50ppm	80uL						
		LCMS 2118A	PIC ID Sum (10ppb)		11/8/25	4/24/24	50ppm	48uL						
		11775A	NRFAC 24ES	Wellington	1/18/28	5/10/24	1.0ppm	2.4ml	5.0ml	0.5ppm	95% MeOH 5% H ₂ O	5/10/23	11/10/23	MJ
		1635A	M3-H0-DA		11/8/25	4/24/24	50ppm	48uL						
		11431	d-11 Mehsam		5/16/27	3/13/24	50ppm	48uL						

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2098A	1033 OPike Cal std.	11072A	PFAC MYH	Wellington	8/8/23	3/23/24	1-4 ppm	250ul	4ml	0.25 250ppb	1033 mix	9/10/23	10/10/23	MS
LCMS 2097		11072B	8-1n Et, 4c	Sgs 1stbd	9/9	10/28/23	3ppm	250ul	4ml	125ppb				
LCMS 11075		11074B	PFAC MYE	Wellington	11/1/23	3/30/24	2ppm	250ul	4ml	125ppb				
LCMS 11072B		11075	PFAC MYG	Wellington	12/1/23	3/30/24	2ppm	250ul	4ml	125ppb				
LCMS 11070	(Interim) 537.1 Du std.	11072B	PFAC MYT	Wellington Labs	9/14/20	3/23/24	4-20 ppm	312ul	4ml	312/100 ppb				
LCMS 10436A		10436A	MAVIA ETS		11/05/23	04/06/24	50ppm	80ul	4ml	10ppm				NS
LCMS 10598B		10598B	d3-N-MECSAA		10/29/23	05/15/23	160ul	80ul	4ml	20ppm				NS
LCMS 10498A		10498A	MPFOS		11/02/23	03/29/24	80ul	80ul	4ml	10ppm				NS
LCMS 11069		11069	WARFA		12/01/20	03/29/24	80ul	80ul	4ml	10ppm				NS
LCMS 11026	Full List (40) List 40 spike (S&H)	11026	PF0A 28 Comp.	Absolute	11/9/23	4/11/24	1.0ppm	400ul	4.0ml	100ppb	95% MeOH 5% H2O	4/11/23	7/24/23	MS
LCMS 2067		2067	40 List #2	Sgs std.	8/23/23		1.0ppm	400ul	4.0ml	50ppb	(2.14031)			
LCMS 2070		2070	40 List #2		5/12/23		1.0ppm	400ul	4.0ml	50ppb				
LCMS 2054		2054	FOSG std.		7/24/23		5.0ppm	400ul	4.0ml	50ppb				
LCMS 2101	Fose std.	11336	N-et Fose	Wellington	5/13/23	9/19/23	50ppm	200ul	2.0ml	5ppm	95% MeOH 5% H2O	4/11/23	9/19/23	MS
LCMS 11338		11338	N-me Fose		5/13/23	9/19/23	50ppm	200ul	2.0ml	5ppm				

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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSE

2-(N-Methylperfluorooctanesulfonamido)ethanol Isomeric Mix

PRODUCT CODE: br-NMeFOSE
LOT NUMBER: brNMeFOSE0922
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 09/02/2022
LAST TESTED: (mm/dd/yyyy) 09/07/2022 (HRGC/LRMS)
 10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 10/07/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS Data (SIR)
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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Form#:13, Issued 2004-11-10
 Revision#:9, Revised 2020-12-23

brNMeFOSE0922 (1 of 7)
 rev1

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**WELLINGTON
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**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

br-NEtFOSE

**2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

PRODUCT CODE: br-NEtFOSE
LOT NUMBER: brNEtFOSE1022
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 09/12/2022
LAST TESTED: (mm/dd/yyyy) 09/12/2022 (HRGC/LRMS)
10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 10/07/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS Data (SIR)
Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

br-NMeFOSA

**N-Methylperfluorooctanesulfonamide
Isomeric Mix**

PRODUCT CODE: br-NMeFOSA
LOT NUMBER: brNMeFOSA0822
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 08/18/2022
LAST TESTED: (mm/dd/yyyy) 08/23/2022
EXPIRY DATE: (mm/dd/yyyy) 08/23/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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brNMeFOSA0822 (1 of 6)
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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide Isomeric Mix

PRODUCT CODE:	br-NEtFOSA
LOT NUMBER:	brNEtFOSA0922
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	08/23/2022
LAST TESTED: (mm/dd/yyyy)	10/07/2022
EXPIRY DATE: (mm/dd/yyyy)	10/07/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (SIR)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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Revision#:9, Revised 2020-12-23

brNEtFOSA0922 (1 of 6)
rev1

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11799 A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0423
SOLVENT(S):	Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	04/06/2023
LAST TESTED: (mm/dd/yyyy)	04/19/2023
EXPIRY DATE: (mm/dd/yyyy)	04/19/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Table B: Isomeric Components and Percent Composition of N-MeFOSAA
- Table C: Isomeric Components and Percent Composition of N-EtFOSAA
- Table D: Isomeric Components and Percent Composition of PFHxSK
- Table E: Isomeric Components and Percent Composition of PFOSK
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

PFACMXH0423 (1 of 11)
rev1

7.9.1

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Table A: PFAC-MXH; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUdA	1000		23
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		24
N-Methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-Ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

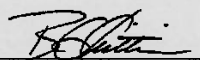
^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 05/11/2023
(mm/dd/yyyy)

11801A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

PRODUCT CODE:

PFAC-MXF

LOT NUMBER:

PFACMXF0323

SOLVENT(S):

Methanol / Water (<1%)

DATE PREPARED: (mm/dd/yyyy)

03/23/2023

LAST TESTED: (mm/dd/yyyy)

03/24/2023

EXPIRY DATE: (mm/dd/yyyy)

03/24/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXF0323 (1 of 5)
rev0

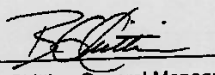
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Table A: PFAC-MXF; Components and Concentrations (ng/mL; \pm 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 03/29/2023
(mm/dd/yyyy)

11802 A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture

PRODUCT CODE:	PFAC-MXG
LOT NUMBER:	PFACMXG1122
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	11/30/2022
LAST TESTED: (mm/dd/yyyy)	12/01/2022
EXPIRY DATE: (mm/dd/yyyy)	12/01/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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PFACMXG1122 (1 of 5)
rev0

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Table A: PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11803 A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:
LOT NUMBER:
SOLVENT(S):
DATE PREPARED: (mm/dd/yyyy)
LAST TESTED: (mm/dd/yyyy)
EXPIRY DATE: (mm/dd/yyyy)
RECOMMENDED STORAGE:

PFAC-MXJ
PFACMXJ0323
Methanol
03/27/2023
03/28/2023
03/28/2028
Refrigerate ampoule

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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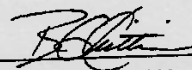
Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
Tel: 519-822-2849 • Fax: 519-822-2849 • info@well-labs.com

Concentrations (µg/mL; ± 5% in methanol)

Table A:

PFAC-MXJ; Components and

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: 
B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

11807
received 11/6/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

PRODUCT CODE: PFAC-MXH
LOT NUMBER: PFACMXH0423
SOLVENT(S): Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 04/06/2023
LAST TESTED: (mm/dd/yyyy) 04/19/2023
EXPIRY DATE: (mm/dd/yyyy) 04/19/2028
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₆, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of N-MeFOSAA
Table C: Isomeric Components and Percent Composition of N-EtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXH0423 (1 of 11)
rev1

**Table A: PFAC-MXH; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUDA	1000		23
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		24
N-Methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-Ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexadisulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctadisulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decadisulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecadisulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexadisulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctadisulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecadisulfonate	8:2FTS	4000	3840	16

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager

Date: 05/11/2023

(mm/dd/yyyy)

11808
rec'd. 05/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXF
<u>LOT NUMBER:</u>	PFACMXF0323
<u>SOLVENT(S):</u>	Methanol / Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	03/23/2023
<u>LAST TESTED:</u> (mm/dd/yyyy)	03/24/2023
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	03/24/2026
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Revision#:9, Revised 2020-12-23

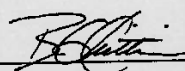
PFACMXF0323 (1 of 5)
rev0

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Table A: PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 03/29/2023
(mm/dd/yyyy)

11809
rec'd: 05/16/23



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

**Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture**

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG1122
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	11/30/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	12/01/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	12/01/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

PFACMXG1122 (1 of 5)
rev0

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Table A: PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11810
rec'd: 05/16/23



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0323
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	03/27/2023
LAST TESTED: (mm/dd/yyyy)	03/28/2023
EXPIRY DATE: (mm/dd/yyyy)	03/28/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

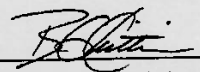
- See page 2 for further details.

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Table A: PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: 
 B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

Form#: 13, Issued 2004-11-10
 Revision#: 9, Revised 2020-12-23

PFACMXJ0323 (3 of 5)
 rev0

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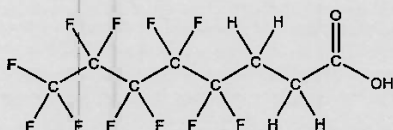
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA1120

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA: $C_8H_5F_{11}O_2$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/11/2020
EXPIRY DATE: (mm/dd/yyyy) 11/11/2025
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 342.11
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

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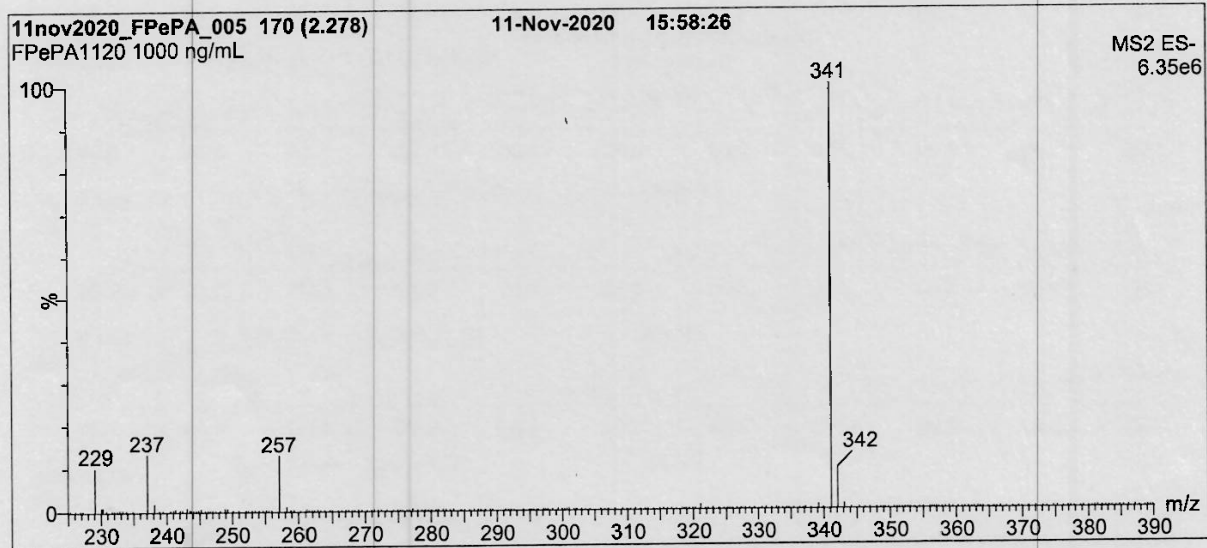
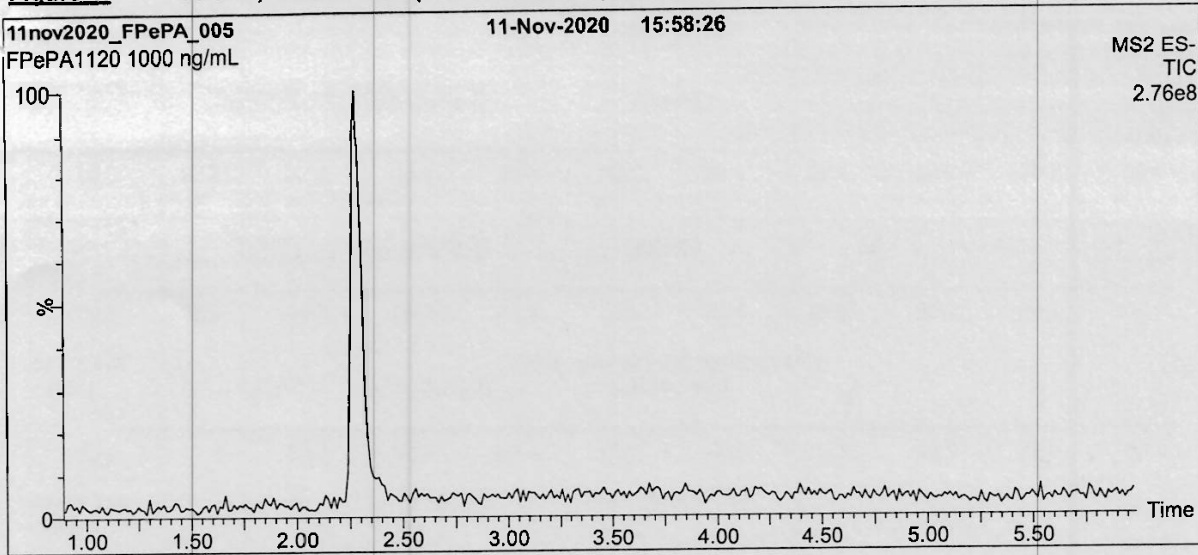
Certified By:

B.G. Chittim, General Manager

Date: 11/27/2020
(mm/dd/yyyy)

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Figure 1: FPePA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{1a}
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

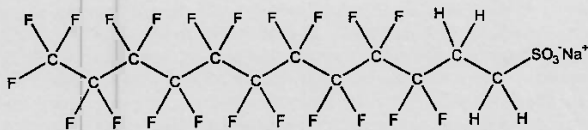
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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate
STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: C₁₂H₄F₂₁SO₃Na **MOLECULAR WEIGHT:** 650.18
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
 48.3 ± 2.4 µg/mL (10:2FTS acid)
 48.2 ± 2.4 µg/mL (10:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/03/2021
EXPIRY DATE: (mm/dd/yyyy) 03/03/2026
RECOMMENDED STORAGE: Refrigerate ampoule

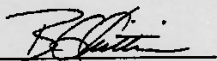
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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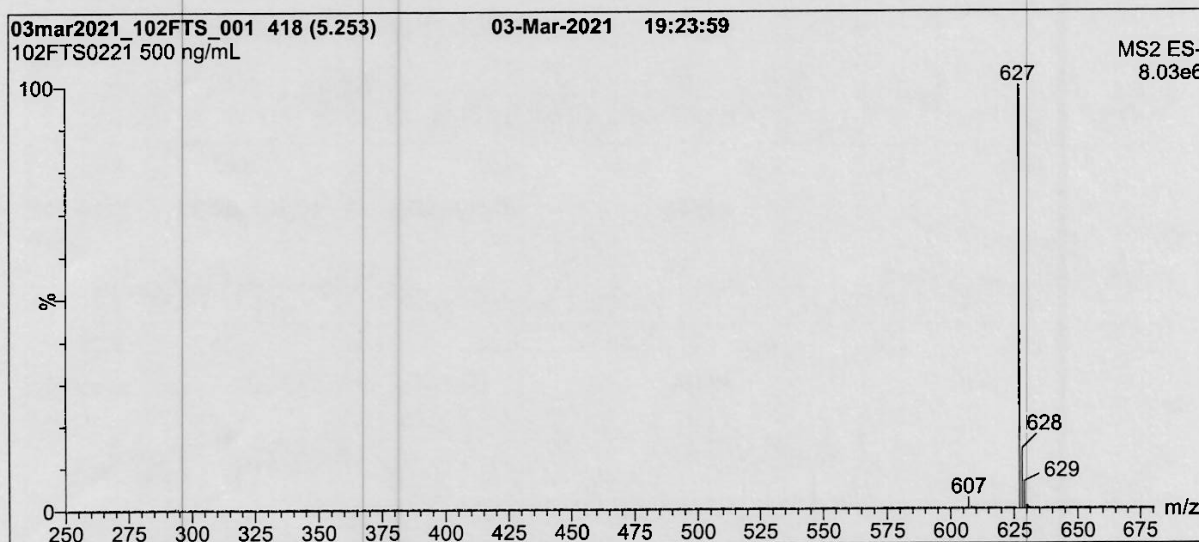
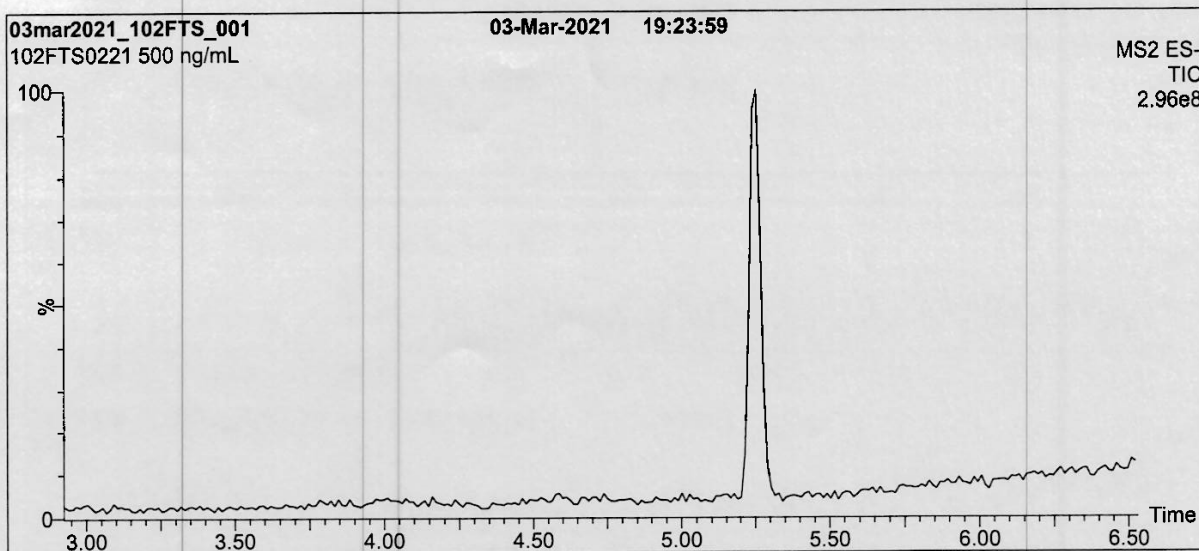
Certified By:  Date: 03/05/2021
(mm/dd/yyyy)
 B.G. Chittim, General Manager

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 Revision#: 9, Revised 2020-12-23

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Figure 1: 10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

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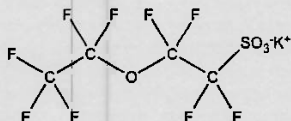


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

rec'd
8/20/21
WPH

PRODUCT CODE: PFEESA **LOT NUMBER:** PFEESA0520
COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate
STRUCTURE: **CAS #:** 117205-07-9



MOLECULAR FORMULA: C₄F₉SO₄K **MOLECULAR WEIGHT:** 354.19
CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt) **SOLVENT(S):** Methanol
44.6 ± 2.2 µg/ml (PFEESA acid)
44.5 ± 2.2 µg/ml (PFEESA anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/13/2020
EXPIRY DATE: (mm/dd/yyyy) 05/13/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

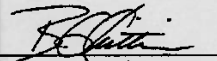
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

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Certified By:  **Date:** 05/29/2020
(mm/dd/yyyy)
B.G. Chittim, General Manager

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Revision#: 7, Revised 2020-01-09

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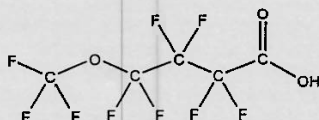
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA *re'id
with
8/20/21* **LOT NUMBER:** PF5OHxA0320

COMPOUND: Perfluoro-5-oxahexanoic acid

SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)

STRUCTURE: **CAS #:** 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃ **MOLECULAR WEIGHT:** 280.05

CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/31/2020

EXPIRY DATE: (mm/dd/yyyy) 03/31/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

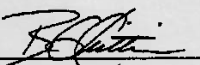
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 12/21/2020
(mm/dd/yyyy)

B.G. Chittim, General Manager

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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

PF5OHxA0320 (1 of 4)
rev1

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10764A-B

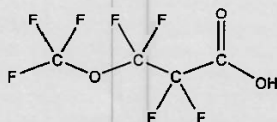


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

rec'd
WPH
8/20/21

PRODUCT CODE: PF4OPeA **LOT NUMBER:** PF4OPeA0320
COMPOUND: Perfluoro-4-oxapentanoic acid
SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA) **CAS #:** 377-73-1
STRUCTURE:



MOLECULAR FORMULA: C₄HF₇O₃ **MOLECULAR WEIGHT:** 230.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/31/2020
EXPIRY DATE: (mm/dd/yyyy) 03/31/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

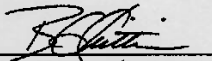
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 12/21/2020
 (mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
 Revision#: 8, Revised 2020-09-10

PF4OPeA0320 (1 of 4)
 rev1

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10765 A-13



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

rec'd
wfu
8/20/21

LOT NUMBER:

36OPFHpA0320

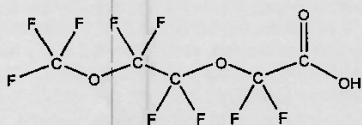
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₅HF₉O₄

MOLECULAR WEIGHT:

296.04

CONCENTRATION:

50.0 ± 2.5 µg/ml

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By:

B.G. Chittim, General Manager

Date: 05/27/2020
(mm/dd/yyyy)

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36OPFHpA0320 (1 of 4)
rev0

Form#: 27, Issued 2004-11-10
Revision#: 7, Revised 2020-01-09



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PRODUCT CODE:

N-EtFOSA-M

10837

LOT NUMBER:

NEtFOSA0821M

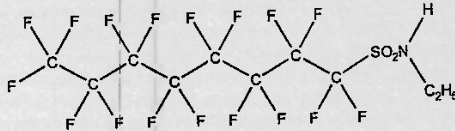
COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:

CAS #:

4151-50-2



MOLECULAR FORMULA:

$C_{10}H_{17}F_{17}NO_2S$

MOLECULAR WEIGHT:

527.20

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/12/2021

EXPIRY DATE: (mm/dd/yyyy)

08/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)


Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:


B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

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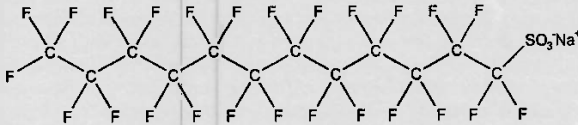
10840

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

LOT NUMBER: LPFDoS0721

STRUCTURE:

CAS #: 1260224-54-1



MOLECULAR FORMULA: C₁₂F₂₅SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
48.5 ± 2.4 µg/mL (PFDoS acid)
48.4 ± 2.4 µg/mL (PFDoS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/09/2021
EXPIRY DATE: (mm/dd/yyyy) 07/09/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 722.14
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 07/16/2021
(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

LPFDoS0721 (1 of 4)
rev0

7.9.1

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CERTIFICATE OF ANALYSIS DOCUMENTATION

10847 NS 01/18/23

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

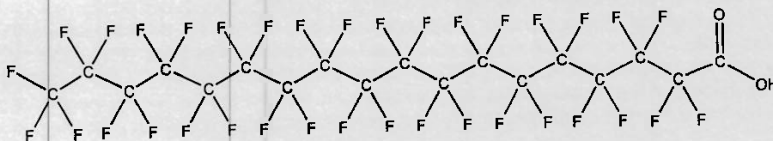
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈H₃₅O₂

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2026

RECOMMENDED STORAGE:

Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 09/28/2021

(mm/dd/yyyy)

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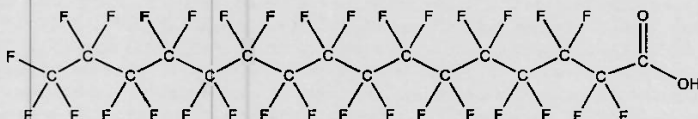
CERTIFICATE OF ANALYSIS
DOCUMENTATION

10842 NG 01/18/23

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0421

COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **MOLECULAR WEIGHT:** 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

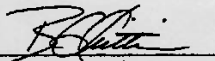
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 05/25/2021
 B.G. Chittim, General Manager (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
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PFHxDA0421 (1 of 4)
 rev0

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHpPA

LOT NUMBER:

FHpPA1020

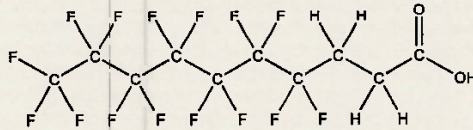
COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #:

812-70-4



MOLECULAR FORMULA:

C₁₀H₅F₁₅O₂

MOLECULAR WEIGHT:

442.12

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date:

11/27/2020

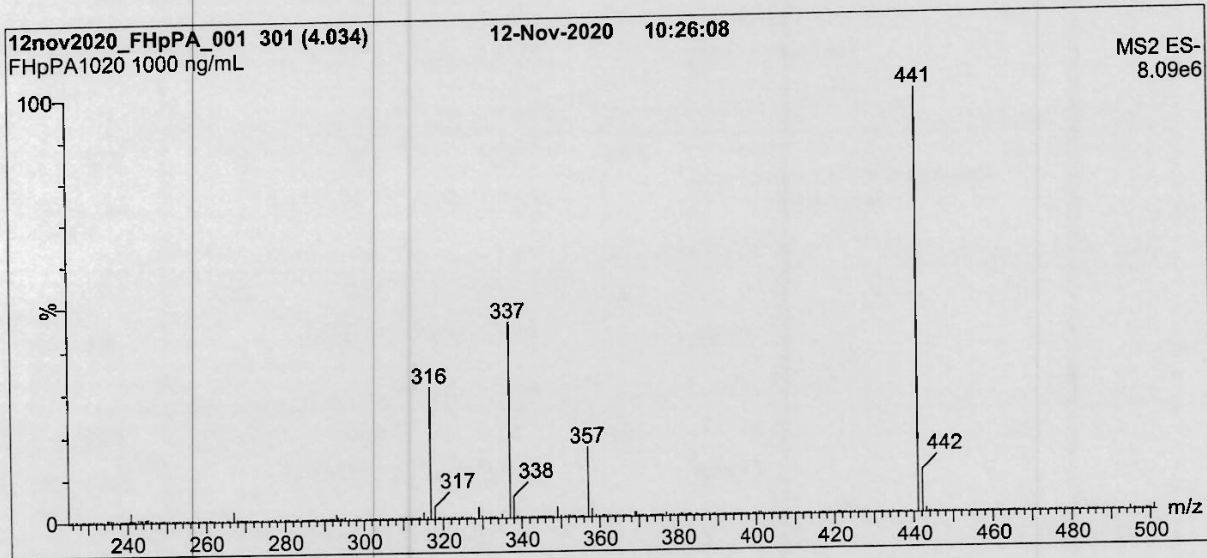
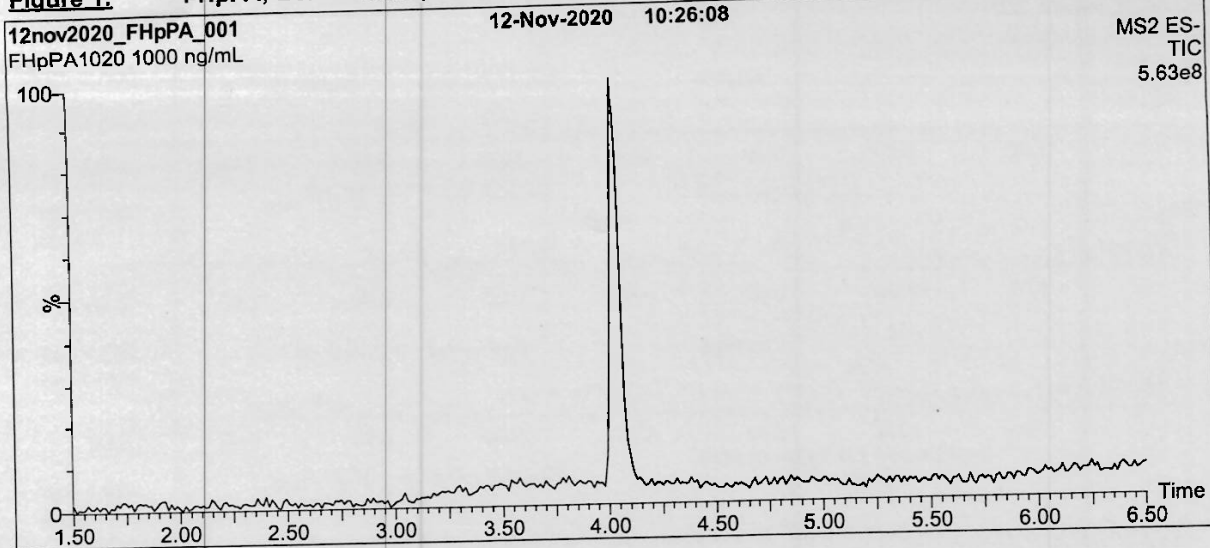
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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

FHpPA1020 (1 of 4)
rev0

Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

FPr PA(3:3 FTA) 1116 B



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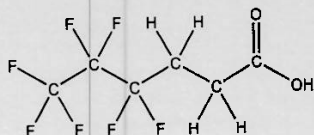
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: C₆H₅F₇O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

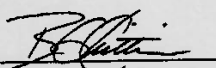
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid (C₈H₃F₉O₂) as an impurity determined by ¹⁹F NMR.

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Certified By: 
B.G. Chittim, General Manager
Date: 02/04/2022
(mm/dd/yyyy)

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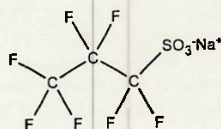
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFPPrS
COMPOUND: Sodium perfluoro-1-propanesulfonate

LOT NUMBER: LPFPPrS0721

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: C₃F₇SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
46.0 ± 2.3 µg/mL (PFPrS acid)
45.8 ± 2.3 µg/mL (PFPrS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/12/2021
EXPIRY DATE: (mm/dd/yyyy) 07/12/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 272.07
SOLVENT(S): Methanol

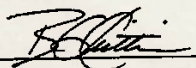
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: 
B.G. Chittim, General Manager
Date: 08/04/2021
(mm/dd/yyyy)

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LPFPPrS0721 (1 of 4)
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Revision#:9, Revised 2020-12-23

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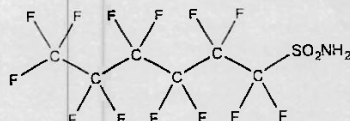
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHxSA-I
COMPOUND: Perfluoro-1-hexanesulfonamide

LOT NUMBER: FHxSA12211

STRUCTURE:

CAS #: 41997-13-1



MOLECULAR FORMULA: C₆H₂F₁₃NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/29/2021
EXPIRY DATE: (mm/dd/yyyy) 12/29/2026
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 399.13
SOLVENT(S): Isopropanol

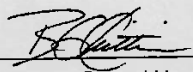
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: 
B.G. Chittim, General Manager
Date: 01/10/2022
(mm/dd/yyyy)

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FHxSA12211 (1 of 4)
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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FBSA-I

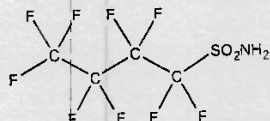
LOT NUMBER: FBSA11211

COMPOUND:

Perfluoro-1-butananesulfonamide

STRUCTURE:

CAS #: 30334-69-1



MOLECULAR FORMULA:

C₄H₂F₁₀NO₂S

MOLECULAR WEIGHT: 299.11

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S): Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/10/2021

EXPIRY DATE: (mm/dd/yyyy)

11/10/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 11/10/2021

(mm/dd/yyyy)

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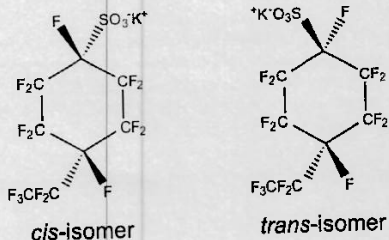
PRODUCT CODE:
COMPOUND:

PFECHS
Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

LOT NUMBER: PFECHS0222

STRUCTURE:

CAS #: 335-24-0



MOLECULAR FORMULA:
CONCENTRATION:

$C_8F_{15}SO_3K$
50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)
>98%

MOLECULAR WEIGHT: 500.22
SOLVENT(S): Methanol

CHEMICAL PURITY:

LAST TESTED: (mm/dd/yyyy)

03/28/2022

EXPIRY DATE: (mm/dd/yyyy)

03/28/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 03/30/2022
(mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSE-M

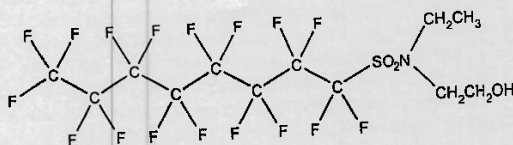
LOT NUMBER: NEtFOSE0622M

COMPOUND:

2-(N-ethylperfluoro-1-octanesulfonamido)ethanol

CAS #: 1691-99-2

STRUCTURE:



MOLECULAR FORMULA:

C₁₂H₁₀F₁₇NO₃S

MOLECULAR WEIGHT: 571.25

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)
05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 07/13/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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NEtFOSE0622M (1 of 5)
rev0

11338



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

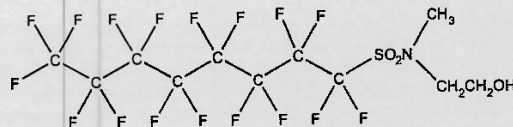
NMeFOSE0522M

COMPOUND:

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:** $C_{11}H_8F_{17}NO_3S$ **MOLECULAR WEIGHT:**

557.22

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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Certified By:

B.G. Chittim, General Manager

Date: 06/14/2022

(mm/dd/yyyy)

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11764 A-5
rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled PFAS Injection
Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-IS
LOT NUMBER: MPFACHIFIS1122
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 11/28/2022
LAST TESTED: (mm/dd/yyyy) 11/29/2022
EXPIRY DATE: (mm/dd/yyyy) 11/29/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄, C₆, C₈-C₁₀) and two mass-labelled (¹⁸O and ¹³C) perfluoroalkanesulfonates (C₆ and C₈). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per ¹³C or >94% per ¹⁸O.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

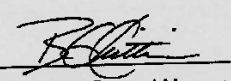
MPFACHIFIS1122 (1 of 5)
rev0

7.9.1
7

Table A: MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(2,3,4- ¹³ C ₃)butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- ¹³ C ₂)hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- ¹³ C ₄)octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- ¹³ C ₅)nonanoic acid	MPFNA	250		5
Perfluoro-n-(1,2- ¹³ C ₂)decanoic acid	MPFDA	250		7
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-hexane(¹⁸ O ₂)sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4- ¹³ C ₄)octanesulfonate	MPFOS	500	479	6

* Concentrations have been rounded to three significant figures.

Certified By: 
R.G. Chittim, General Manager

Date: 12/05/2022
(mm/dd/yyyy)

11765 A-J
Rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-ES
LOT NUMBER: MPFACHIFES1022
SOLVENT(S): Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 10/28/2022
LAST TESTED: (mm/dd/yyyy) 11/23/2022
EXPIRY DATE: (mm/dd/yyyy) 11/23/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄-C₁₂, C₁₄), three mass-labelled (¹³C) perfluoroalkanesulfonates (C₄, C₆, and C₈), three mass-labelled (one ¹³C and two ²H) perfluoro-1-octanesulfonamides, three mass-labelled (¹³C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (²H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (²H) perfluorooctanesulfonamidoethanols, and mass-labelled (¹³C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ¹³C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual ²H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23


MPFACHIFES1022 (1 of 7)
rev0

7.9.1
7

Table A: MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₂)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₃)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₅)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₆)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₇)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₇)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₈)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFD _o A	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₃ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₅ -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 11/24/2022
(mm/dd/yyyy)

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 05/25/23 13:00
Started (mm/dd/yy 24 00)

Method: EPA 1633 Draft (QSM) List 40

Date/Time: 5/30/23 11:00
Finished (mm/dd/yy 24 00)

Balance ID: _____

Batch# OP97070 Ext. By: GH

Conc. By: _____ Viald By: _____

6/5/25/23
GH

7.10.1

7

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP 97070 MB	/	500	7	N/A	25		5	AG	
OP 97070 BS	/	500	7	N/A		200	5	AG	
OP 97070 LLBS	/	500	7	N/A		200	5	AG	
FC 5956-1 Re	5	1*	6	N/A					
FC 6278-1	2	540							low volume
	2	570							
	3	540							
	4	570							
	5	540							
FC 5956-1 Re	5	5	6	N/A	25		5	AG	low volume
					25		5	AG	
OFFFC6278-1 MS	3	530	6	N/A	25	200	5	AG	
OP MSD									
OFFFC6278-3 DUP	3	520	6	N/A	25		5	AG	

Comments:

EIS (SURR) ID: 11806H-J Conc: 250-5000 ng/ml Exp. Date: 05/18/23 Inj. By: GH Ver. By: DBL
 SPIKE 1 ID: LMS2124A Conc: VARIED Exp. Date: 10/28/23 Inj. By: GH Ver. By: DBL
 SPIKE 2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11820A-C Conc: 250-7000 ng/ml Exp. Date: 5/24/24 Inj. By: MV Ver. By: NB

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

Methanol Lot # 224219 1% NH4OH MeOH PF 414 SPE Lot # 6723930-02
 Water Lot# OP97000 0.3M Formic Acid PF 413 Syringe filter Lot #
 Acetic Acid# 194003 3% NH4OH Sol _____ pH paper Lot# 215322
 0.1M Formic PF411 5% Formic Acid _____ Carbon Lot# 99687

Relinquished By: Daniela Pachot
Accepted By: _____

Date: 05/25/23
Date: 5/30/23