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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC2078

Sampling Date: 01/19/23



Report to:

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Total number of pages in report: 753



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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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC2078

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FC2078-1	01/19/23	10:05 NT	01/20/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2301W3
FC2078-2	01/19/23	11:11 NT	01/20/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2301W3

SAMPLE DELIVERY GROUP CASE NARRATIVE

2

Client: AECOM, INC.

Job No: FC2078

Site: N6274223F0104 RH Fire Suppression System

Report Date: 1/31/2023 11:38:17 AM

On 01/20/2023, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 3 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2078 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: OP95096

Sample(s) FC1815-11MS, FC1815-11MSD were used as the QC samples indicated.

Sample(s) FC2078-1 have surrogates outside control limits.

FC2078-1: Confirmation run.

OP95096-BS for 13C2-4:2FTS: Outside control limits.

OP95096-LLBS for 13C2-4:2FTS: Outside control limits.

OP95096-MB for 13C2-4:2FTS: Outside control limits.

FC2078-1 for 4:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits.

FC2078-1 for 13C2-4:2FTS: Outside control limits.

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

Narrative prepared by:

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

Summary of Hits

Job Number: FC2078
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/19/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC2078-1 AF-RHMW04-WGN01LF-2301W3

No hits reported in this sample.

FC2078-2 AF-RHMW06-WGN01LF-2301W3

No hits reported in this sample.



Orlando, FL

Section 4

4

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW04-WGN01LF-2301W3				
Lab Sample ID:	FC2078-1			Date Sampled:	01/19/23
Matrix:	AQ - Ground Water			Date Received:	01/20/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q39712.D	1	01/25/23 18:33	NG	01/23/23 11:00	OP95096	S4Q571
Run #2 ^a	4Q39797.D	10	01/26/23 15:44	NG	01/23/23 11:00	OP95096	S4Q572

	Initial Volume	Final Volume
Run #1	565 ml	5.0 ml
Run #2	565 ml	5.0 ml

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

375-22-4	Perfluorobutanoic acid	3.5 U	18	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.8	1.8	0.83	ng/l	
307-24-4	Perfluorohexanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.4	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.4	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.99	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.4	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.4	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.4	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.4	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic acid	3.5 U	4.4	3.5	1.0	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate ^b	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.6	ng/l	

PERFLUOROOCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	4.4	1.8	0.59	ng/l	
31506-32-8	MeFOSA	1.8 U	4.4	1.8	0.88	ng/l	
4151-50-2	EfOSA	1.8 U	4.4	1.8	0.88	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	AF-RHMW04-WGN01LF-2301W3			Date Sampled:	01/19/23
Lab Sample ID:	FC2078-1			Date Received:	01/20/23
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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PERFLUOROOCTANE 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	

PERFLUOROOCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	8.8 U	44	8.8	3.9	ng/l	
1691-99-2	EtFOSE	18 U	44	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

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

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	18	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	18	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	8.8	1.8	0.69	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

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

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	121%	112%	20-150%
	13C5-PFPeA	122%	120%	20-150%
	13C5-PFHxA	126%	120%	20-150%
	13C4-PFHpA	116%	112%	20-150%
	13C8-PFOA	114%	114%	20-150%
	13C9-PFNA	113%	110%	20-150%
	13C6-PFDA	119%	102%	20-150%
	13C7-PFUnDA	123%	94%	20-150%
	13C2-PFDoDA	113%	103%	20-150%
	13C2-PFTeDA	112%	98%	20-150%
	13C3-PFBS	124%	88%	20-150%
	13C3-PFHxS	122%	107%	20-150%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

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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

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Client Sample ID:	AF-RHMW04-WGN01LF-2301W3			Date Sampled:	01/19/23
Lab Sample ID:	FC2078-1			Date Received:	01/20/23
Matrix:	AQ - Ground Water			Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT				
Project:	N6274223F0104 RH Fire Suppression System				

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	111%	102%	20-150%
	13C8-FOSA	117%	113%	20-150%
	d3-MeFOSA	97%	108%	20-150%
	d5-EtFOSA	98%	114%	20-150%
	d3-MeFOSAA	115%	133%	20-150%
	d5-EtFOSAA	107%	112%	20-150%
	d7-MeFOSE	113%	114%	20-150%
	d9-EtFOSE	107%	111%	20-150%
	13C2-4:2FTS	158% ^c	189% ^c	20-150%
	13C2-6:2FTS	149%	143%	20-150%
	13C2-8:2FTS	127%	116%	20-150%
	13C3-HFPO-DA	122%	126%	20-150%

- (a) Confirmation run.
- (b) Associated ID Standard outside control limits.
- (c) Outside control limits.

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW06-WGN01LF-2301W3				
Lab Sample ID:	FC2078-2			Date Sampled:	01/19/23
Matrix:	AQ - Ground Water			Date Received:	01/20/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q39713.D	1	01/25/23 18:47	NG	01/23/23 11:00	OP95096	S4Q571
Run #2							

	Initial Volume	Final Volume
Run #1	565 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	18	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.8	1.8	0.83	ng/l	
307-24-4	Perfluorohexanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.4	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.4	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.99	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.4	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.4	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.4	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.4	1.8	0.57	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	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.6	ng/l	

PERFLUOROOCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	4.4	1.8	0.59	ng/l	
31506-32-8	MeFOSA	1.8 U	4.4	1.8	0.88	ng/l	
4151-50-2	EtFOSA	1.8 U	4.4	1.8	0.88	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 3

Client Sample ID:	AF-RHMW06-WGN01LF-2301W3			Date Sampled:	01/19/23
Lab Sample ID:	FC2078-2			Date Received:	01/20/23
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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PERFLUOROOCTANE 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	

PERFLUOROOCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	8.8 U	44	8.8	3.9	ng/l	
1691-99-2	EtFOSE	18 U	44	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

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

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	18	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	18	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	8.8	1.8	0.69	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

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

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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13C4-PFBA	108%	20-150%
13C5-PFPeA	110%	20-150%
13C5-PFHxA	113%	20-150%
13C4-PFHpA	102%	20-150%
13C8-PFOA	106%	20-150%
13C9-PFNA	101%	20-150%
13C6-PFDA	106%	20-150%
13C7-PFUnDA	97%	20-150%
13C2-PFDoDA	90%	20-150%
13C2-PFTeDA	97%	20-150%
13C3-PFBS	107%	20-150%
13C3-PFHxS	114%	20-150%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2301W3			Date Sampled:	01/19/23
Lab Sample ID:	FC2078-2			Date Received:	01/20/23
Matrix:	AQ - Ground Water			Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT				
Project:	N6274223F0104 RH Fire Suppression System				

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	100%		20-150%
	13C8-FOSA	108%		20-150%
	d3-MeFOSA	88%		20-150%
	d5-EtFOSA	84%		20-150%
	d3-MeFOSAA	113%		20-150%
	d5-EtFOSAA	105%		20-150%
	d7-MeFOSE	98%		20-150%
	d9-EtFOSE	97%		20-150%
	13C2-4:2FTS	141%		20-150%
	13C2-6:2FTS	123%		20-150%
	13C2-8:2FTS	117%		20-150%
	13C3-HFPO-DA	111%		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

5

Custody Documents and Other Forms

Includes the following where applicable:

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



SGS North America Inc - Orlando

Chain of Custody

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

Feb 2078

COC #: 2301W3AFSG09

SGS - ORLANDO JOB # :

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[illegible]

PFAS COCs ALL.xls Rev 031318

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

FC2078: Chain of Custody

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SGS

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FC2078

SGS Sample Receipt Summary

Job Number: FC2078

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 1/20/2023 4:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #s: United Cargo AWB #: 016-73334026

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.8);

Cooler Temps (Corrected) °C: Cooler 1: (3.0);

Cooler Information

Y or N

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

Trip Blank Information

Y or N

N/A

1. Trip Blank present / cooler ☐ ☐ ☒
2. Trip Blank listed on COC ☐ ☐ ☒

W or S

N/A

3. Type Of TB Received ☐ ☐ ☒

Sample Information

Y or N

N/A

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

Misc. Information

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

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315

pH 10-12 219813A

Other: (Specify) _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS

Date: 1/20/2023 4:00:00 PM

Reviewer: CD

Date: 1/23/2023

FC2078: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC2078
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/19/23

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

* Sample used for QC is not from job FC2078

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
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Page 1 of 2

Job Number: FC2078
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-IBLK	4Q39699.D	1	01/25/23	NG	n/a	n/a	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

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

Instrument Blank

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-IBLK	4Q39699.D	1	01/25/23	NG	n/a	n/a	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

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

CAS No.	ID Standard Recoveries	Limits	
	13C4-PFBA	101%	20-150%
	13C5-PFPeA	103%	20-150%
	13C5-PFHxA	105%	20-150%
	13C4-PFHpA	102%	20-150%
	13C8-PFOA	95%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	107%	20-150%
	13C7-PFUnDA	109%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	105%	20-150%
	13C3-PFBS	96%	20-150%
	13C3-PFHxS	95%	20-150%
	13C8-PFOS	94%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	94%	20-150%
	d5-EtFOSA	100%	20-150%
	d3-MeFOSAA	106%	20-150%
	d5-EtFOSAA	94%	20-150%
	d7-MeFOSE	100%	20-150%
	d9-EtFOSE	102%	20-150%
	13C2-4:2FTS	125%	20-150%
	13C2-6:2FTS	106%	20-150%
	13C2-8:2FTS	108%	20-150%
	13C3-HFPO-DA	100%	20-150%

Method Blank Summary

Page 1 of 2

Job Number: FC2078
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-MB	4Q39711.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.00074	0.0050	0.00054	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic acid	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-MB	4Q39711.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	118% 20-150%
	13C5-PFPeA	119% 20-150%
	13C5-PFHxA	118% 20-150%
	13C4-PFHpA	115% 20-150%
	13C8-PFOA	111% 20-150%
	13C9-PFNA	114% 20-150%
	13C6-PFDA	121% 20-150%
	13C7-PFUnDA	115% 20-150%
	13C2-PFDoDA	98% 20-150%
	13C2-PFTeDA	90% 20-150%
	13C3-PFBS	115% 20-150%
	13C3-PFHxS	118% 20-150%
	13C8-PFOS	105% 20-150%
	13C8-FOSA	103% 20-150%
	d3-MeFOSA	85% 20-150%
	d5-EtFOSA	83% 20-150%
	d3-MeFOSAA	118% 20-150%
	d5-EtFOSAA	103% 20-150%
	d7-MeFOSE	95% 20-150%
	d9-EtFOSE	95% 20-150%
	13C2-4:2FTS	158%* a 20-150%
	13C2-6:2FTS	139% 20-150%
	13C2-8:2FTS	121% 20-150%
	13C3-HFPO-DA	121% 20-150%

(a) Outside control limits.

Continuing Calibration Blank

Page 1 of 2

Job Number: FC2078

Account: AECOMCOD AECOM, INC.

Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-ICCB	4Q39752.D	1	01/26/23	NG	n/a	n/a	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP95096-MS, OP95096-MSD

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

Continuing Calibration Blank

Page 2 of 2

Job Number: FC2078

Account: AECOMCOD AECOM, INC.

Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-ICCB	4Q39752.D	1	01/26/23	NG	n/a	n/a	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP95096-MS, OP95096-MSD

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	98% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	104% 20-150%
	13C8-PFOA	99% 20-150%
	13C9-PFNA	95% 20-150%
	13C6-PFDA	109% 20-150%
	13C7-PFUnDA	112% 20-150%
	13C2-PFDoDA	114% 20-150%
	13C2-PFTeDA	124% 20-150%
	13C3-PFBS	109% 20-150%
	13C3-PFHxS	105% 20-150%
	13C8-PFOS	104% 20-150%
	13C8-FOSA	99% 20-150%
	d3-MeFOSA	101% 20-150%
	d5-EtFOSA	101% 20-150%
	d3-MeFOSAA	123% 20-150%
	d5-EtFOSAA	115% 20-150%
	d7-MeFOSE	100% 20-150%
	d9-EtFOSE	106% 20-150%
	13C2-4:2FTS	136% 20-150%
	13C2-6:2FTS	123% 20-150%
	13C2-8:2FTS	125% 20-150%
	13C3-HFPO-DA	101% 20-150%

Blank Spike Summary

Page 1 of 2

Job Number: FC2078
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-LLBS	4Q39710.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0327	82	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0177	89	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0090	90	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0086	86	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0088	88	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0089	89	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0082	82	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0085	85	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0085	85	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0086	86	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0085	85	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0080	90	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0078	83	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0079	86	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0086	90	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0078	84	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0081	84	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0075	78	40-150
79780-39-5	Perfluorododecanesulfonic acid	0.0097	0.0074	76	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0375	0.0308	82	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0325	86	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0328	85	40-150
754-91-6	PFOSA	0.01	0.0089	89	40-150
31506-32-8	MeFOSA	0.01	0.0082	82	40-150
4151-50-2	EtFOSA	0.01	0.0075	75	40-150
2355-31-9	MeFOSAA	0.01	0.0082	82	40-150
2991-50-6	EtFOSAA	0.01	0.0082	82	40-150
24448-09-7	MeFOSE	0.1	0.0894	89	40-150
1691-99-2	EtFOSE	0.1	0.0913	91	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0326	82	40-150
919005-14-4	ADONA	0.0378	0.0336	89	40-150
377-73-1	PFMPA	0.02	0.0174	87	40-150
863090-89-5	PFMBA	0.02	0.0176	88	40-150
151772-58-6	NFDHA	0.02	0.0156	78	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0374	0.0310	83	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0378	0.0320	85	40-150

* = Outside of Control Limits.

Blank Spike Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-LLBS	4Q39710.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0157	88	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0438	88	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.25	0.217	87	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.211	84	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	119%	20-150%
	13C5-PFPeA	118%	20-150%
	13C5-PFHxA	118%	20-150%
	13C4-PFHpA	109%	20-150%
	13C8-PFOA	113%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	119%	20-150%
	13C7-PFUnDA	120%	20-150%
	13C2-PFDoDA	112%	20-150%
	13C2-PFTeDA	102%	20-150%
	13C3-PFBS	110%	20-150%
	13C3-PFHxS	117%	20-150%
	13C8-PFOS	111%	20-150%
	13C8-FOSA	109%	20-150%
	d3-MeFOSA	95%	20-150%
	d5-EtFOSA	93%	20-150%
	d3-MeFOSAA	119%	20-150%
	d5-EtFOSAA	112%	20-150%
	d7-MeFOSE	104%	20-150%
	d9-EtFOSE	101%	20-150%
	13C2-4:2FTS	166%* a	20-150%
	13C2-6:2FTS	131%	20-150%
	13C2-8:2FTS	122%	20-150%
	13C3-HFPO-DA	119%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Blank Spike Summary

Page 1 of 2

Job Number: FC2078
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-BS	4Q39709.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0936	94	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0516	103	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0260	104	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0263	105	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0265	106	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0243	97	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0263	105	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0235	94	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0263	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0266	106	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0263	105	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0227	102	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0209	89	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0216	95	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0241	101	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0242	104	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0244	101	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0243	101	40-150
79780-39-5	Perfluorododecanesulfonic acid	0.0243	0.0237	98	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0906	97	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.106	112	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0986	103	40-150
754-91-6	PFOSA	0.025	0.0244	98	40-150
31506-32-8	MeFOSA	0.025	0.0223	89	40-150
4151-50-2	EtFOSA	0.025	0.0227	91	40-150
2355-31-9	MeFOSAA	0.025	0.0251	100	40-150
2991-50-6	EtFOSAA	0.025	0.0229	92	40-150
24448-09-7	MeFOSE	0.25	0.256	102	40-150
1691-99-2	EtFOSE	0.25	0.255	102	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.0972	97	40-150
919005-14-4	ADONA	0.0945	0.0962	102	40-150
377-73-1	PFMPA	0.05	0.0493	99	40-150
863090-89-5	PFMBA	0.05	0.0518	104	40-150
151772-58-6	NFDHA	0.05	0.0538	108	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0935	0.0916	98	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0945	0.0951	101	40-150

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: FC2078

Account: AECOMCOD AECOM, INC.

Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-BS	4Q39709.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0465	104	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.125	100	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.627	100	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.632	101	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	67%	20-150%
	13C5-PFPeA	113%	20-150%
	13C5-PFHxA	111%	20-150%
	13C4-PFHpA	108%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	113%	20-150%
	13C6-PFDA	114%	20-150%
	13C7-PFUnDA	123%	20-150%
	13C2-PFDoDA	110%	20-150%
	13C2-PFTeDA	107%	20-150%
	13C3-PFBS	113%	20-150%
	13C3-PFHxS	118%	20-150%
	13C8-PFOS	100%	20-150%
	13C8-FOSA	110%	20-150%
	d3-MeFOSA	100%	20-150%
	d5-EtFOSA	95%	20-150%
	d3-MeFOSAA	119%	20-150%
	d5-EtFOSAA	117%	20-150%
	d7-MeFOSE	101%	20-150%
	d9-EtFOSE	100%	20-150%
	13C2-4:2FTS	152%* a	20-150%
	13C2-6:2FTS	117%	20-150%
	13C2-8:2FTS	117%	20-150%
	13C3-HFPO-DA	113%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: FC2078

Account: AECOMCOD AECOM, INC.

Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-MS	4Q39761.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
OP95096-MSD	4Q39762.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
FC1815-11	4Q39760.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
FC1815-11 ^a	4Q39824.D	10	01/26/23	NG	01/23/23	OP95096	S4Q572

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

CAS No.	Compound	FC1815-11 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.0167	J	0.0885	0.102	96	0.0885	0.104	99	2	40-150/30
2706-90-3	Perfluoropentanoic acid	0.0016	J	0.0442	0.0479	105	0.0442	0.0478	104	0	40-150/30
307-24-4	Perfluorohexanoic acid	0.0044	U	0.0221	0.0230	104	0.0221	0.0223	101	3	40-150/30
375-85-9	Perfluoroheptanoic acid	0.0044	U	0.0221	0.0225	102	0.0221	0.0221	100	2	40-150/30
335-67-1	Perfluorooctanoic acid	0.0044	U	0.0221	0.0223	101	0.0221	0.0227	103	2	40-150/30
375-95-1	Perfluorononanoic acid	0.0044	U	0.0221	0.0213	96	0.0221	0.0216	98	1	40-150/30
335-76-2	Perfluorodecanoic acid	0.0044	U	0.0221	0.0212	96	0.0221	0.0219	99	3	40-150/30
2058-94-8	Perfluoroundecanoic acid	0.0044	U	0.0221	0.0238	108	0.0221	0.0226	102	5	40-150/30
307-55-1	Perfluorododecanoic acid	0.0044	U	0.0221	0.0235	106	0.0221	0.0214	97	9	40-150/30
72629-94-8	Perfluorotridecanoic acid	0.0044	U	0.0221	0.0224	101	0.0221	0.0225	102	0	40-150/30
376-06-7	Perfluorotetradecanoic acid	0.0044	U	0.0221	0.0220	99	0.0221	0.0216	98	2	40-150/30
375-73-5	Perfluorobutanesulfonic acid	0.0044	U	0.0196	0.0189	96	0.0196	0.0200	102	6	40-150/30
2706-91-4	Perfluoropentanesulfonic acid	0.0044	U	0.0208	0.0194	93	0.0208	0.0201	97	4	40-150/30
355-46-4	Perfluorohexanesulfonic acid	0.0044	U	0.0202	0.0184	91	0.0202	0.0208	103	12	40-150/30
375-92-8	Perfluoroheptanesulfonic acid	0.0044	U	0.0211	0.0205	97	0.0211	0.0206	98	0	40-150/30
1763-23-1	Perfluorooctanesulfonic acid	0.0044	U	0.0205	0.0192	94	0.0205	0.0208	101	8	40-150/30
68259-12-1	Perfluorononanesulfonic acid	0.0044	U	0.0213	0.0189	89	0.0213	0.0201	94	6	40-150/30
335-77-3	Perfluorodecanesulfonic acid	0.0044	U	0.0213	0.0215	101	0.0213	0.0203	95	6	40-150/30
79780-39-5	Perfluorododecanesulfonic aci	0.0044	U	0.0215	0.0201	94	0.0215	0.0214	100	6	40-150/30
757124-72-44:2	Fluorotelomer sulfonate	0.018	U	0.083	0.0771	93	0.083	0.0838	101	8	40-150/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018	U	0.0841	0.0950	113	0.0841	0.0968	115	2	40-150/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.085	0.0942	111	0.085	0.0920	108	2	40-150/30
754-91-6	PFOSA	0.0044	U	0.0221	0.0221	100	0.0221	0.0228	103	3	40-150/30
31506-32-8	MeFOSA	0.0044	U	0.0221	0.0203	92	0.0221	0.0199	90	2	40-150/30
4151-50-2	EtFOSA	0.0044	U	0.0221	0.0196	89	0.0221	0.0199	90	2	40-150/30
2355-31-9	MeFOSAA	0.0044	U	0.0221	0.0238	108	0.0221	0.0253	114	6	40-150/30
2991-50-6	EtFOSAA	0.0044	U	0.0221	0.0229	104	0.0221	0.0208	94	10	40-150/30
24448-09-7	MeFOSE	0.044	U	0.221	0.241	109	0.221	0.228	103	6	40-150/30
1691-99-2	EtFOSE	0.044	U	0.221	0.227	103	0.221	0.224	101	1	40-150/30
13252-13-6	HFPO-DA (GenX)	0.018	U	0.0885	0.0888	100	0.0885	0.0893	101	1	40-150/30
919005-14-4	ADONA	0.018	U	0.0836	0.0866	104	0.0836	0.0850	102	2	40-150/30
377-73-1	PFMPA	0.0088	U	0.0442	0.0419	95	0.0442	0.0425	96	1	40-150/30
863090-89-5	PFMBA	0.0088	U	0.0442	0.0448	101	0.0442	0.0438	99	2	40-150/30
151772-58-6	NFDHA	0.0088	U	0.0442	0.0448	101	0.0442	0.0427	97	5	40-150/30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.018	U	0.0827	0.0738	89	0.0827	0.0751	91	2	40-150/30
763051-92-911	Cl-PF3OUdS (F-53B Minor)	0.018	U	0.0836	0.0878	105	0.0836	0.0845	101	4	40-150/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-MS	4Q39761.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
OP95096-MSD	4Q39762.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
FC1815-11	4Q39760.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
FC1815-11 ^a	4Q39824.D	10	01/26/23	NG	01/23/23	OP95096	S4Q572

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2078-1, FC2078-2

CAS No.	Compound	FC1815-11 ug/l	Spike Q	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
113507-82-7	PFEESA	0.0088 U	0.0394	0.0404	103	0.0394	0.0399	101	1	40-150/30
356-02-5	3:3 Fluorotelomer carboxylate	0.022 U	0.111	0.106	96	0.111	0.106	96	0	40-150/30
914637-49-35:3	Fluorotelomer carboxylate	0.11 U	0.553	0.539	97	0.553	0.530	96	2	40-150/30
812-70-4	7:3 Fluorotelomer carboxylate	0.11 U	0.553	0.588	106	0.553	0.525	95	11	40-150/30

CAS No.	ID Standard Recoveries	MS	MSD	FC1815-11	FC1815-11	Limits
	13C4-PFBA	66%	67%	76%	75%	20-150%
	13C5-PFPeA	113%	111%	115%	106%	20-150%
	13C5-PFHxA	112%	112%	117%	116%	20-150%
	13C4-PFHpA	117%	113%	117%	110%	20-150%
	13C8-PFOA	109%	104%	105%	117%	20-150%
	13C9-PFNA	109%	107%	114%	105%	20-150%
	13C6-PFDA	116%	106%	110%	113%	20-150%
	13C7-PFUnDA	104%	106%	104%	109%	20-150%
	13C2-PFDoDA	112%	111%	97%	105%	20-150%
	13C2-PFTeDA	117%	111%	107%	115%	20-150%
	13C3-PFBS	112%	111%	113%	99%	20-150%
	13C3-PFHxS	115%	106%	112%	108%	20-150%
	13C8-PFOS	102%	97%	95%	77%	20-150%
	13C8-FOSA	108%	105%	106%	83%	20-150%
	d3-MeFOSA	95%	94%			20-150%
	d5-EtFOSA	91%	95%			20-150%
	d3-MeFOSAA	119%	118%	112%	97%	20-150%
	d5-EtFOSAA	115%	112%	112%	87%	20-150%
	d7-MeFOSE	94%	96%			20-150%
	d9-EtFOSE	96%	97%			20-150%
	13C2-4:2FTS	154%* b	149%	187%* b	182%* b	20-150%
	13C2-6:2FTS	127%	120%	138%	119%	20-150%
	13C2-8:2FTS	121%	120%	112%	135%	20-150%
	13C3-HFPO-DA	115%	112%			20-150%

(a) Confirmation run.

(b) Outside control limits.

* = Outside of Control Limits.

Injection Standard Area Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q571-CC571	Injection Date:	01/25/23
Lab File ID:	4Q39702.D	Injection Time:	15:48
Instrument ID:	GCMS4Q	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	215633	3.18	160134	6.17	166354	7.79	80796	8.36	51414	8.88
Check Std ^c	250560	3.19	178027	6.18	184242	7.79	91212	8.36	53953	8.89
Upper Limit ^d	431266	3.59	320268	6.58	332708	8.19	161592	8.76	102828	9.29
Lower Limit ^e	64690	2.79	48040	5.78	49906	7.39	24239	7.96	15424	8.49

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
OP95069-BS	210464	3.25	137047	6.17	134894	7.78	65964	8.35	42543	8.88	1
OP95069-LLBS	209813	3.23	132996	6.18	142381	7.79	70518	8.36	43201	8.88	1
OP95069-MB	192774	3.19	128108	6.11	142221	7.75	68081	8.32	43421	8.85	1
ZZZZZZ	211804	3.21	142270	6.18	145283	7.78	72210	8.35	48709	8.87	1
OP95096-BS	232914	3.23	146008	6.18	158475	7.78	74040	8.35	44424	8.88	1
OP95096-LLBS	210349	3.20	141586	6.15	149746	7.76	73324	8.33	44328	8.87	1
OP95096-MB	212816	3.21	139314	6.16	147014	7.76	75745	8.35	45310	8.88	1
FC2078-1	211495	3.21	139531	6.17	148057	7.78	73163	8.35	42583	8.88	1
FC2078-2	214631	3.20	145829	6.15	152641	7.76	75658	8.33	46488	8.87	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: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. 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

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q571-CC571	Injection Date:	01/25/23
Lab File ID:	4Q39702.D	Injection Time:	15:48
Instrument ID:	GCMS4Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	21282	7.92	38281	9.07
Check Std ^c	23539	7.92	41881	9.07
Upper Limit ^d	42564	8.32	76562	9.47
Lower Limit ^e	6385	7.52	11484	8.67

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
OP95069-BS	18128	7.90	34671	9.06	1
OP95069-LLBS	18726	7.92	33918	9.06	1
OP95069-MB	16973	7.88	31614	9.04	1
ZZZZZZ	18500	7.90	34324	9.04	1
OP95096-BS	19269	7.90	36793	9.06	1
OP95096-LLBS	19167	7.89	35035	9.04	1
OP95096-MB	18691	7.90	34714	9.06	1
FC2078-1	18144	7.90	35158	9.06	1
FC2078-2	19467	7.89	35159	9.04	1

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

- (a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. 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

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q571-CC571	Injection Date:	01/26/23
Lab File ID:	4Q39751.D	Injection Time:	03:42
Instrument ID:	GCMS4Q	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	215633	3.18	160134	6.17	166354	7.79	80796	8.36	51414	8.88
Check Std ^c	256161	3.08	192217	6.04	197310	7.68	98802	8.25	61774	8.78
Upper Limit ^d	431266	3.48	320268	6.44	332708	8.08	161592	8.65	102828	9.18
Lower Limit ^e	64690	2.68	48040	5.64	49906	7.28	24239	7.85	15424	8.38

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
S4Q571-ICCB	248106	3.09	181793	6.18	192945	7.74	96858	8.31	57236	8.83	1
ZZZZZZ	216646	3.19	149086	6.10	155482	7.70	78479	8.27	47548	8.79	1
ZZZZZZ	216876	3.13	147571	6.06	155974	7.68	79223	8.26	48661	8.79	1
ZZZZZZ	213992	3.13	148064	6.06	156368	7.69	79431	8.26	52057	8.78	1
ZZZZZZ	213172	3.14	151274	6.06	166980	7.68	80896	8.25	50471	8.78	1
FC1815-11	218086	3.12	154829	6.05	169111	7.68	79748	8.25	50989	8.78	1
OP95096-MS	234098	3.28	145495	6.18	153262	7.81	76923	8.40	47859	8.90	1
OP95096-MSD	207555	3.13	150573	6.05	157556	7.68	78171	8.25	49531	8.78	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: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. 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

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Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q571-CC571	Injection Date:	01/26/23
Lab File ID:	4Q39751.D	Injection Time:	03:42
Instrument ID:	GCMS4Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	21282	7.92	38281	9.07
Check Std ^c	25019	7.80	44631	8.96
Upper Limit ^d	42564	8.20	76562	9.36
Lower Limit ^e	6385	7.40	11484	8.56

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S4Q571-ICCB	22605	7.87	41931	9.01	1
ZZZZZZ	19799	7.83	36927	8.97	1
ZZZZZZ	19545	7.82	38041	8.97	1
ZZZZZZ	18268	7.82	37188	8.97	1
ZZZZZZ	19687	7.80	35745	8.96	1
FC1815-11	19765	7.80	38222	8.96	1
OP95096-MS	19072	7.95	36056	9.07	1
OP95096-MSD	19316	7.80	37082	8.96	1

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

- (a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. 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

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q572-CC571	Injection Date:	01/26/23
Lab File ID:	4Q39794.D	Injection Time:	13:55
Instrument ID:	GCMS4Q	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	215633	3.18	160134	6.17	166354	7.79	80796	8.36	51414	8.88
Check Std ^c	223492	3.09	165602	6.06	171786	7.71	85726	8.30	53827	8.83
Upper Limit ^d	431266	3.49	320268	6.46	332708	8.11	161592	8.70	102828	9.23
Lower Limit ^e	64690	2.69	48040	5.66	49906	7.31	24239	7.90	15424	8.43

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
ZZZZZZ	228180	3.29	127120	6.21	142480	7.78	73590	8.33	51780	8.84	10
FC2078-1 ^f	209610	3.13	145220	6.07	146230	7.71	76520	8.30	53030	8.80	10
ZZZZZZ	102740	3.12	70310	6.07	74780	7.73	30880	8.31	22160	8.84	10
ZZZZZZ	165340	3.12	114980	6.07	119790	7.73	67150	8.31	37400	8.83	10
FC1816-2	159700	3.12	112370	6.07	121950	7.73	68080	8.30	33920	8.84	10
ZZZZZZ	156300	3.13	111720	6.06	106880	7.69	55950	8.26	34890	8.78	10

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: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -70 to + 100% of initial cal area.
(d) Upper Limit = + 100% of initial standard area; Retention time + 0.4 minutes of check standard.
(e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.
(f) Confirmation run.

Injection Standard Area Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q572-CC571	Injection Date:	01/26/23
Lab File ID:	4Q39794.D	Injection Time:	13:55
Instrument ID:	GCMS4Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	21282	7.92	38281	9.07
Check Std ^c	20792	7.84	40607	9.01
Upper Limit ^d	42564	8.24	76562	9.41
Lower Limit ^e	6385	7.44	11484	8.61

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
ZZZZZZ	22890	7.90	43990	9.02	10
FC2078-1 ^f	23130	7.84	36930	8.99	10
ZZZZZZ	11540	7.85	16000	9.02	10
ZZZZZZ	16250	7.85	26200	9.01	10
FC1816-2	14720	7.84	28070	9.02	10
ZZZZZZ	17520	7.82	29470	8.97	10

IS 6 = 18O2-PFHXS

IS 7 = 13C4-PFOS

- (a) Sample areas corrected for dilution where applicable.
 (b) Initial Cal is: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. Area is AVERAGE of initial cal points.
 (c) Check Std Limit = -70 to +100% of initial cal area.
 (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
 (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.
 (f) Confirmation run.

TDCA Retention Time Check

Job Number: FC2078
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q571-RT	Injection Date:	01/25/23
Lab File ID:	4Q39688.D	Injection Time:	12:31
Instrument ID:	GCMS4Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	9.057	--	--
TDCA	7.435	1.622	1.000
TCDCA	7.273	1.784	1.000
TUDCA	6.442	2.615	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
S4Q571-IC571	4Q39690.D	01/25/23	12:59	00:28	Mass Calibration Verification
S4Q571-IC571	4Q39691.D	01/25/23	13:13	00:42	Initial cal 1
S4Q571-IC571	4Q39692.D	01/25/23	13:27	00:56	Initial cal 2
S4Q571-IC571	4Q39693.D	01/25/23	13:41	01:10	Initial cal 3
S4Q571-ICC571	4Q39694.D	01/25/23	13:55	01:24	Initial cal 4
S4Q571-IC571	4Q39695.D	01/25/23	14:09	01:38	Initial cal 5
S4Q571-IC571	4Q39696.D	01/25/23	14:23	01:52	Initial cal 6
S4Q571-IC571	4Q39697.D	01/25/23	14:38	02:07	Initial cal 7
S4Q571-IC571	4Q39698.D	01/25/23	14:52	02:21	Initial cal 8
S4Q571-IBLK	4Q39699.D	01/25/23	15:06	02:35	Instrument Blank
S4Q571-ICV571	4Q39700.D	01/25/23	15:20	02:49	Initial cal verification 4
S4Q571-ICV571	4Q39701.D	01/25/23	15:34	03:03	Initial cal verification 20
S4Q571-CC571	4Q39702.D	01/25/23	15:48	03:17	Continuing cal 4
S4Q571-CC571	4Q39703.D	01/25/23	16:02	03:31	Continuing cal 1.0LL
OP95069-BS	4Q39705.D	01/25/23	16:54	04:23	Blank Spike
OP95069-LLBS	4Q39706.D	01/25/23	17:08	04:37	Blank Spike
OP95069-MB	4Q39707.D	01/25/23	17:22	04:51	Method Blank
ZZZZZZ	4Q39708.D	01/25/23	17:36	05:05	(unrelated sample)
OP95096-BS	4Q39709.D	01/25/23	17:50	05:19	Blank Spike
OP95096-LLBS	4Q39710.D	01/25/23	18:05	05:34	Blank Spike
OP95096-MB	4Q39711.D	01/25/23	18:19	05:48	Method Blank
FC2078-1	4Q39712.D	01/25/23	18:33	06:02	AF-RHMW04-WGN01LF-2301W3
FC2078-2	4Q39713.D	01/25/23	18:47	06:16	AF-RHMW06-WGN01LF-2301W3
S4Q571-CC571	4Q39714.D	01/25/23	19:01	06:30	Continuing cal 4
S4Q571-ICCB	4Q39715.D	01/25/23	19:15	06:44	Continuing Calibration Blank
ZZZZZZ	4Q39716.D	01/25/23	19:29	06:58	(unrelated sample)
ZZZZZZ	4Q39717.D	01/25/23	19:43	07:12	(unrelated sample)
ZZZZZZ	4Q39718.D	01/25/23	19:57	07:26	(unrelated sample)
ZZZZZZ	4Q39719.D	01/25/23	20:11	07:40	(unrelated sample)
ZZZZZZ	4Q39721.D	01/25/23	20:40	08:09	(unrelated sample)
FC1816-2	4Q39722.D	01/25/23	20:54	08:23	(used for QC only; not part of job FC2078)
OP95069-MS	4Q39723.D	01/25/23	21:08	08:37	Matrix Spike
OP95069-MSD	4Q39724.D	01/25/23	21:22	08:51	Matrix Spike Duplicate
ZZZZZZ	4Q39725.D	01/25/23	21:36	09:05	(unrelated sample)

TDCA Retention Time Check

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-RT
Lab File ID: 4Q39688.D
Instrument ID: GCMS4Q
Injection Date: 01/25/23
Injection Time: 12:31

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S4Q571-CC571	4Q39726.D	01/25/23	21:50	09:19	Continuing cal 4
S4Q571-ICCB	4Q39727.D	01/25/23	22:04	09:33	Continuing Calibration Blank
ZZZZZZ	4Q39728.D	01/25/23	22:18	09:47	(unrelated sample)
ZZZZZZ	4Q39730.D	01/25/23	22:46	10:15	(unrelated sample)
ZZZZZZ	4Q39731.D	01/25/23	23:00	10:29	(unrelated sample)
ZZZZZZ	4Q39732.D	01/25/23	23:14	10:43	(unrelated sample)
ZZZZZZ	4Q39733.D	01/25/23	23:28	10:57	(unrelated sample)
ZZZZZZ	4Q39735.D	01/25/23	23:56	11:25	(unrelated sample)
ZZZZZZ	4Q39736.D	01/26/23	00:11	11:40	(unrelated sample)
ZZZZZZ	4Q39737.D	01/26/23	00:25	11:54	(unrelated sample)
S4Q571-CC571	4Q39738.D	01/26/23	00:39	12:08	Continuing cal 4
S4Q571-CC571	4Q39740.D	01/26/23	01:07	12:36	Continuing cal 1.0LL
ZZZZZZ	4Q39741.D	01/26/23	01:21	12:50	(unrelated sample)
ZZZZZZ	4Q39742.D	01/26/23	01:35	13:04	(unrelated sample)
ZZZZZZ	4Q39743.D	01/26/23	01:49	13:18	(unrelated sample)
ZZZZZZ	4Q39745.D	01/26/23	02:17	13:46	(unrelated sample)
ZZZZZZ	4Q39747.D	01/26/23	02:45	14:14	(unrelated sample)
ZZZZZZ	4Q39748.D	01/26/23	02:59	14:28	(unrelated sample)
ZZZZZZ	4Q39750.D	01/26/23	03:28	14:57	(unrelated sample)
S4Q571-CC571	4Q39751.D	01/26/23	03:42	15:11	Continuing cal 4
S4Q571-ICCB	4Q39752.D	01/26/23	03:56	15:25	Continuing Calibration Blank
ZZZZZZ	4Q39754.D	01/26/23	04:24	15:53	(unrelated sample)
ZZZZZZ	4Q39755.D	01/26/23	04:38	16:07	(unrelated sample)
ZZZZZZ	4Q39757.D	01/26/23	05:06	16:35	(unrelated sample)
ZZZZZZ	4Q39759.D	01/26/23	05:34	17:03	(unrelated sample)
FC1815-11	4Q39760.D	01/26/23	05:48	17:17	(used for QC only; not part of job FC2078)
OP95096-MS	4Q39761.D	01/26/23	06:02	17:31	Matrix Spike
OP95096-MSD	4Q39762.D	01/26/23	06:16	17:45	Matrix Spike Duplicate
S4Q571-CC571	4Q39763.D	01/26/23	06:30	17:59	Continuing cal 4
S4Q571-ICCB	4Q39764.D	01/26/23	06:45	18:14	Continuing Calibration Blank
ZZZZZZ	4Q39765.D	01/26/23	06:59	18:28	(unrelated sample)
ZZZZZZ	4Q39766.D	01/26/23	07:13	18:42	(unrelated sample)
ZZZZZZ	4Q39767.D	01/26/23	07:27	18:56	(unrelated sample)
ZZZZZZ	4Q39768.D	01/26/23	07:41	19:10	(unrelated sample)
ZZZZZZ	4Q39769.D	01/26/23	07:55	19:24	(unrelated sample)
ZZZZZZ	4Q39770.D	01/26/23	08:09	19:38	(unrelated sample)
ZZZZZZ	4Q39771.D	01/26/23	08:23	19:52	(unrelated sample)
S4Q571-CC571	4Q39773.D	01/26/23	08:51	20:20	Continuing cal 4
S4Q571-ICCB	4Q39774.D	01/26/23	09:05	20:34	Continuing Calibration Blank
OP94135-MB	4Q39775.D	01/26/23	09:19	20:48	Method Blank
ZZZZZZ	4Q39776.D	01/26/23	09:33	21:02	(unrelated sample)
ZZZZZZ	4Q39777.D	01/26/23	09:47	21:16	(unrelated sample)
ZZZZZZ	4Q39778.D	01/26/23	10:02	21:31	(unrelated sample)
ZZZZZZ	4Q39779.D	01/26/23	10:16	21:45	(unrelated sample)

TDCA Retention Time Check

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Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q571-RT	Injection Date:	01/25/23
Lab File ID:	4Q39688.D	Injection Time:	12:31
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP94007-MB	4Q39780.D	01/26/23	10:30	21:59	Method Blank
ZZZZZZ	4Q39781.D	01/26/23	10:44	22:13	(unrelated sample)
ZZZZZZ	4Q39782.D	01/26/23	10:58	22:27	(unrelated sample)
ZZZZZZ	4Q39783.D	01/26/23	11:12	22:41	(unrelated sample)
ZZZZZZ	4Q39784.D	01/26/23	11:26	22:55	(unrelated sample)
S4Q571-ECC571	4Q39785.D	01/26/23	11:40	23:09	Ending cal 4
S4Q571-ICCB	4Q39786.D	01/26/23	11:54	23:23	Continuing Calibration Blank

6.5.1

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TDCA Retention Time Check

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Job Number: FC2078
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q572-RT	Injection Date:	01/26/23
Lab File ID:	4Q39790.D	Injection Time:	12:58
Instrument ID:	GCMS4Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	9.007	--	--
TDCA	7.386	1.621	1.000
TCDCA	7.211	1.796	1.000
TUDCA	6.355	2.652	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
S4Q572-IBLK	4Q39793.D	01/26/23	13:41	00:43	Instrument Blank
S4Q572-CC571	4Q39794.D	01/26/23	13:55	00:57	Continuing cal 4
S4Q572-CC571	4Q39795.D	01/26/23	14:12	01:14	Continuing cal 1.0LL
ZZZZZZ	4Q39796.D	01/26/23	15:30	02:32	(unrelated sample)
FC2078-1	4Q39797.D	01/26/23	15:44	02:46	AF-RHMW04-WGN01LF-2301W3
ZZZZZZ	4Q39798.D	01/26/23	15:58	03:00	(unrelated sample)
ZZZZZZ	4Q39799.D	01/26/23	16:12	03:14	(unrelated sample)
FC1816-2	4Q39800.D	01/26/23	16:26	03:28	(used for QC only; not part of job FC2078)
ZZZZZZ	4Q39801.D	01/26/23	16:40	03:42	(unrelated sample)
S4Q572-CC571	4Q39802.D	01/26/23	16:54	03:56	Continuing cal 4
S4Q572-ICCB	4Q39803.D	01/26/23	17:08	04:10	Continuing Calibration Blank
ZZZZZZ	4Q39804.D	01/26/23	17:22	04:24	(unrelated sample)
ZZZZZZ	4Q39805.D	01/26/23	17:36	04:38	(unrelated sample)
ZZZZZZ	4Q39806.D	01/26/23	17:50	04:52	(unrelated sample)
ZZZZZZ	4Q39807.D	01/26/23	18:05	05:07	(unrelated sample)
ZZZZZZ	4Q39808.D	01/26/23	18:19	05:21	(unrelated sample)
ZZZZZZ	4Q39809.D	01/26/23	18:33	05:35	(unrelated sample)
ZZZZZZ	4Q39810.D	01/26/23	18:47	05:49	(unrelated sample)
ZZZZZZ	4Q39811.D	01/26/23	19:01	06:03	(unrelated sample)
ZZZZZZ	4Q39812.D	01/26/23	19:15	06:17	(unrelated sample)
S4Q572-CC571	4Q39813.D	01/26/23	19:29	06:31	Continuing cal 4
S4Q572-ICCB	4Q39814.D	01/26/23	19:43	06:45	Continuing Calibration Blank
S4Q572-CC571	4Q39815.D	01/26/23	19:57	06:59	Continuing cal 1.0LL
ZZZZZZ	4Q39816.D	01/26/23	20:11	07:13	(unrelated sample)
ZZZZZZ	4Q39817.D	01/26/23	20:25	07:27	(unrelated sample)
ZZZZZZ	4Q39818.D	01/26/23	20:39	07:41	(unrelated sample)
ZZZZZZ	4Q39819.D	01/26/23	20:53	07:55	(unrelated sample)
ZZZZZZ	4Q39820.D	01/26/23	21:07	08:09	(unrelated sample)
ZZZZZZ	4Q39821.D	01/26/23	21:21	08:23	(unrelated sample)
ZZZZZZ	4Q39822.D	01/26/23	21:36	08:38	(unrelated sample)
ZZZZZZ	4Q39823.D	01/26/23	21:50	08:52	(unrelated sample)
FC1815-11	4Q39824.D	01/26/23	22:04	09:06	(used for QC only; not part of job FC2078)
S4Q572-CC571	4Q39825.D	01/26/23	22:18	09:20	Continuing cal 4
S4Q572-ICCB	4Q39826.D	01/26/23	22:32	09:34	Continuing Calibration Blank

TDCA Retention Time Check

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Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q572-RT	Injection Date:	01/26/23
Lab File ID:	4Q39790.D	Injection Time:	12:58
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	4Q39827.D	01/26/23	22:46	09:48	(unrelated sample)
ZZZZZZ	4Q39828.D	01/26/23	23:00	10:02	(unrelated sample)
ZZZZZZ	4Q39829.D	01/26/23	23:14	10:16	(unrelated sample)
ZZZZZZ	4Q39830.D	01/26/23	23:28	10:30	(unrelated sample)
ZZZZZZ	4Q39831.D	01/26/23	23:42	10:44	(unrelated sample)
S4Q572-ECC571	4Q39832.D	01/26/23	23:56	10:58	Ending cal 4
S4Q572-ICCB	4Q39833.D	01/27/23	00:10	11:12	Continuing Calibration Blank

6.5.2

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Isotope Dilution Standard Recovery Summary

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Job Number: FC2078

Account: AECOMCOD AECOM, INC.

Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FC2078-1	4Q39797.D	112	120	120	112	114	110	102	94
FC2078-1	4Q39712.D	121	122	126	116	114	113	119	123
FC2078-2	4Q39713.D	108	110	113	102	106	101	106	97
OP95096-BS	4Q39709.D	67	113	111	108	102	113	114	123
OP95096-LLBS	4Q39710.D	119	118	118	109	113	109	119	120
OP95096-MB	4Q39711.D	118	119	118	115	111	114	121	115
OP95096-MS	4Q39761.D	66	113	112	117	109	109	116	104
OP95096-MSD	4Q39762.D	67	111	112	113	104	107	106	106
S4Q571-IBLK	4Q39699.D	101	103	105	102	95	102	107	109
S4Q571-ICCB	4Q39752.D	98	100	102	104	99	95	109	112

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%

6.6.1

6

Isotope Dilution Standard Recovery Summary

Page 2 of 3

Job Number: FC2078

Account: AECOMCOD AECOM, INC.

Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FC2078-1	4Q39797.D	103	98	88	107	102	113	108	114
FC2078-1	4Q39712.D	113	112	124	122	111	117	97	98
FC2078-2	4Q39713.D	90	97	107	114	100	108	88	84
OP95096-BS	4Q39709.D	110	107	113	118	100	110	100	95
OP95096-LLBS	4Q39710.D	112	102	110	117	111	109	95	93
OP95096-MB	4Q39711.D	98	90	115	118	105	103	85	83
OP95096-MS	4Q39761.D	112	117	112	115	102	108	95	91
OP95096-MSD	4Q39762.D	111	111	111	106	97	105	94	95
S4Q571-IBLK	4Q39699.D	102	105	96	95	94	99	94	100
S4Q571-ICCB	4Q39752.D	114	124	109	105	104	99	101	101

Isotope Dilution Standards

Recovery Limits

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

20-150%
20-150%
20-150%
20-150%
20-150%
20-150%
20-150%
20-150%

Isotope Dilution Standard Recovery Summary

Page 3 of 3

Job Number: FC2078

Account: AECOMCOD AECOM, INC.

Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18	S19	S20	S21	S22	S23	S24
FC2078-1	4Q39797.D	133	112	114	111	189* a	143	116	126
FC2078-1	4Q39712.D	115	107	113	107	158* a	149	127	122
FC2078-2	4Q39713.D	113	105	98	97	141	123	117	111
OP95096-BS	4Q39709.D	119	117	101	100	152* a	117	117	113
OP95096-LLBS	4Q39710.D	119	112	104	101	166* a	131	122	119
OP95096-MB	4Q39711.D	118	103	95	95	158* a	139	121	121
OP95096-MS	4Q39761.D	119	115	94	96	154* a	127	121	115
OP95096-MSD	4Q39762.D	118	112	96	97	149	120	120	112
S4Q571-IBLK	4Q39699.D	106	94	100	102	125	106	108	100
S4Q571-ICCB	4Q39752.D	123	115	100	106	136	123	125	101

Isotope Dilution Standards

Recovery Limits

S17 = d3-MeFOSAA

20-150%

S18 = d5-EtFOSAA

20-150%

S19 = d7-MeFOSE

20-150%

S20 = d9-EtFOSE

20-150%

S21 = 13C2-4:2FTS

20-150%

S22 = 13C2-6:2FTS

20-150%

S23 = 13C2-8:2FTS

20-150%

S24 = 13C3-HFPO-DA

20-150%

(a) Outside control limits.

6.6.1

6

Initial Calibration Summary

Job Number: FC2078
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICC571
 Lab FileID: 4Q39694.D

Page 2 of 4

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.7487	0.9184	0.9378	0.8690	1.0058	1.1505	1.0949	0.9816	0.9633	13.136
T PFTfDA	Avg RF	0.9206	1.1075	1.2084	1.0889	1.2605	1.3837	1.3007	1.1663	1.1796	12.177
I M2-PFTeDA	Avg RF	0.9867	1.1179	1.1852	1.1225	1.3397	1.5474	1.4664	1.2962	1.2578	15.092
T PFTeDA	Avg RF					ISTD					
I M8-FOSA	Avg RF	0.8440	0.8949	0.9416	0.8565	1.0290	1.1187	1.0429	0.9956	0.9654	10.103
T FOSA	Avg RF					ISTD					
I M3-PFBS	Avg RF	1.0008	0.9906	1.0301	1.0074	1.1883	1.3472	1.2685	1.2055	1.1298	12.364
T PFBS	Avg RF					ISTD					
I M3-PFHxS	Avg RF	0.6938	0.6693	0.7337	0.6429	0.7785	0.8740	0.9355	0.9126	0.7800	14.635
T PFPeS	Avg RF	0.5672	0.7639	0.7492	0.7027	0.8152	0.9216	0.9755	0.9656	0.8076	17.530
T PFHxS	Avg RF					ISTD					
I M8-PFOS	Avg RF	0.7762	0.9702	0.9551	0.9432	1.0585	1.1751	1.1921	1.0138	1.0105	13.301
T PFHpS	Avg RF	0.9712	1.0650	1.1231	1.0803	1.1962	1.3140	1.3866	1.2064	1.1678	11.688
T PFOS	Avg RF	0.4006	0.4504	0.3998	0.3946	0.4315	0.4983	0.5228	0.4614	0.4449	10.720
T PFNS	Avg RF	0.4816	0.6055	0.5704	0.5361	0.6008	0.6270	0.6603	0.5504	0.5790	9.749
T PFDS	Avg RF	0.4339	0.4339	0.4548	0.4682	0.5009	0.5600	0.5693	0.4906	0.4890	10.742
T PFDoS	Avg RF					ISTD					
I M2-4:2FTS	Avg RF	6.6658	7.9174	8.2341	7.4525	8.3184	9.1761	9.1276	8.4754	8.1709	10.229
T 4:2FTS	Avg RF					ISTD					
I M2-6:2FTS	Avg RF	3.3416	4.0305	3.6444	3.8353	4.1291	4.4614	4.4388	3.8238	3.9631	9.680
T 6:2FTS	Avg RF					ISTD					
I M2-8:2FTS	Avg RF	2.2941	2.3007	2.3041	2.2881	2.5890	2.7849	2.6264	2.1628	2.4188	8.996
T 8:2FTS	Avg RF					ISTD					
I M3-MeFOSAA	Avg RF	0.7318	0.7227	0.7940	0.7105	0.8527	0.9417	0.9618	0.9443	0.8325	12.851
T MeFOSAA	Avg RF					ISTD					
I M3-HFO-DA	Avg RF	0.8089	0.8648	0.8861	0.8610	1.0022	1.1068	1.0636	0.9467	0.9425	11.267
T HFO-DA	Avg RF	4.5600	5.1123	5.3341	5.0179	5.6935	6.0500	5.8293	5.4591	5.3945	8.515
T ADONA	Avg RF	2.2842	2.5301	2.6889	2.5921	3.0202	3.4179	3.2819	2.9726	2.8485	13.712
T 9CI-PF3ONS	Avg RF	2.0822	2.2630	2.3867	2.2525	2.5361	2.6118	2.4403	2.1267	2.3374	8.087
T 11CI-PF3OUds	Avg RF					ISTD					
I M5-BrFOSAA	Avg RF	0.8801	0.7392	0.6953	0.7010	0.8454	1.0117	0.9126	0.9127	0.8373	13.696
T EtFOSAA	Avg RF					ISTD					
I M7-MeFOSE	Avg RF	0.9262	1.0507	1.0938	1.0167	1.0846	1.1886	1.1056	0.9833	1.0562	7.674
T MeFOSE	Avg RF					ISTD					
I M9-BrFOSE	Avg RF	0.8227	0.9505	1.0089	0.9317	1.0253	1.0945	1.0312	0.9005	0.9707	8.997
T EtFOSE	Avg RF					ISTD					

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Initial Calibration Summary

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICC571
Lab FileID: 4Q39694.D

Page 3 of 4

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA											
T EtFOSA	Avg RF	0.9859	0.9164	0.9573	0.9222	1.1237	1.2278	1.1670	1.1003	1.0501	11.393
I M3-MeFOSA											
T MeFOSA	Avg RF	0.7290	0.9468	0.9124	0.8408	0.9740	1.1276	1.1393	0.9482	0.9523	14.316
I 13C4-PFOS											
S d3-MeFOSAA	Linear	0.6172	0.5825	0.5889	0.6054	0.5673	0.5505	0.5436	0.5376	0.5741	5.094
S 13C8-PFOS	Linear	1.0912	1.0238	0.9976	0.9934	1.0034	1.0205	1.0068	1.0303	1.0209	3.063
S d5-EFOSAA	Linear	0.5438	0.4967	0.5022	0.5311	0.4766	0.4497	0.5263	0.4741	0.5001	6.476
S 13C8-FOSA	Linear	1.4647	1.4551	1.4171	1.4814	1.3951	1.3807	1.4955	1.3467	1.4295	3.693
S d7-MeFOSE	Linear	0.7927	0.7658	0.7162	0.7837	0.7531	0.7161	0.7454	0.6909	0.7455	4.774
S d3-MeFOSA	Linear	0.6386	0.6351	0.6266	0.6543	0.6159	0.6478	0.6701	0.7421	0.6538	6.025
S d9-EFOSE	Linear	0.9265	0.9338	0.8705	0.9087	0.8580	0.7975	0.8036	0.7327	0.8539	8.323
S d5-EFOSA	Linear	0.7735	0.7898	0.7640	0.8519	0.7232	0.7452	0.8101	0.7812	0.7799	5.061
I 13C3-PFBA											
S 13C4-PFBA	Linear	0.9157	0.9154	0.9076	0.8996	0.9089	0.8919	0.8849	0.8887	0.9016	1.340
I 18O2-PFHxS											
S 13C2-4:2FTS	Linear	0.0958	0.0974	0.0891	0.0922	0.0920	0.0872	0.0771	0.0901	0.0901	7.485
S 13C3-PFBS	Linear	2.1316	2.2106	2.1786	2.1550	2.1413	2.1699	2.2508	2.0468	2.1606	2.779
S 13C2-6:2FTS	Linear	0.2122	0.2195	0.2266	0.2067	0.1992	0.1872	0.1601	0.2017	0.2017	11.134
S 13C3-PFHxS	Linear	1.4879	1.4645	1.4438	1.4962	1.4835	1.5350	1.4366	1.3197	1.4584	4.396
S 13C2-8:2FTS	Linear	0.3076	0.3050	0.2835	0.2795	0.2691	0.2532	0.2340	0.2760	0.2760	9.640
I 13C4-PFOA											
S 13C8-PFOA	Linear	0.9074	0.9275	0.8766	0.9079	0.8923	0.9047	0.8705	0.8914	0.8973	2.057
I 13C2-PFDA											
S 13C6-PFDA	Linear	1.1228	1.1561	1.0620	1.1045	1.1322	1.0816	1.0611	1.1128	1.1041	3.071
S 13C7-PFUnDA	Linear	1.2653	1.2608	1.1927	1.1994	1.2050	1.1568	1.0977	1.1006	1.1848	5.378
S 13C2-PFDODA	Linear	1.3528	1.2286	1.1545	1.1952	1.2460	1.1897	1.1746	1.1662	1.2134	5.289
S 13C2-PFTeDA	Linear	0.8862	0.8972	0.8481	0.8806	0.8714	0.8232	0.8352	0.8617	0.8632	3.022
I 13C5-PFNA											
S 13C9-PFNA	Linear	0.8666	0.9044	0.9231	0.8957	0.8814	0.8667	0.8523	0.9170	0.8884	2.894
I 13C2-PFHxA											
S 13C5-PFPeA	Linear	0.8397	0.8153	0.8271	0.8273	0.8378	0.8178	0.7958	0.7434	0.8130	3.861
S 13C5-PFHxA	Linear	1.0590	1.0545	1.0538	1.0287	1.0646	1.0444	1.0427	1.0625	1.0513	1.143
S 13C3-HFPO-DA	Linear	0.2074	0.2035	0.2043	0.2017	0.2005	0.2010	0.1954	0.1816	0.1994	4.012
S 13C4-PFHpA	Linear	0.5878	0.5828	0.5851	0.5885	0.5990	0.5755	0.5933	0.5528	0.5831	2.415

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

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Initial Calibration Summary

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICC571
Lab FileID: 4Q39694.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 = 0.901609 * x	
S 13C5-PFPeA	Linear	y = 0.813026 * x	
S 13C2-4:2FTS	Linear	y = 0.090106 * x	
S 13C3-PFBS	Linear	y = 2.160564 * x	
S 13C5-PFHxA	Linear	y = 1.051277 * x	
S 13C3-HFPO-DA	Linear	y = 0.199440 * x	
S 13C4-PFHpA	Linear	y = 0.583095 * x	
S 13C2-6:2FTS	Linear	y = 0.201650 * x	
S 13C8-PFOA	Linear	y = 0.897292 * x	
S 13C3-PFHxS	Linear	y = 1.458394 * x	
S 13C9-PFNA	Linear	y = 0.888403 * x	
S 13C2-8:2FTS	Linear	y = 0.275985 * x	
S 13C6-PFDA	Linear	y = 1.104144 * x	
S d3-MeFOSAA	Linear	y = 0.574119 * x	
S 13C8-PFOS	Linear	y = 1.020876 * x	
S d5-EFOSAA	Linear	y = 0.500050 * x	
S 13C7-PFUnDA	Linear	y = 1.184788 * x	
S 13C2-PFDoDA	Linear	y = 1.213447 * x	
S 13C8-FOSA	Linear	y = 1.429528 * x	
S 13C2-PFTeDA	Linear	y = 0.863228 * x	
S d7-MeFOSE	Linear	y = 0.745499 * x	
S d3-MeFOSA	Linear	y = 0.653812 * x	
S d9-EFOSSE	Linear	y = 0.853921 * x	
S d5-EFOSA	Linear	y = 0.779859 * x	

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

Initial Calibration Verification

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICV571
Lab FileID: 4Q39700.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39700

Type : QC

Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.001	20.0	120.0
13C2-6:2FTS	5.000	5.691	13.8	113.8
13C2-8:2FTS	5.000	5.802	16.0	116.0
13C2-PFDoDA	1.250	1.285	2.8	102.8
13C2-PFTeDA	1.250	1.289	3.1	103.1
13C3-PFBS	2.500	2.577	3.1	103.1
13C3-PFHxS	2.500	2.725	9.0	109.0
13C4-PFBA	10.000	9.967	-0.3	99.7
13C4-PFHpA	2.500	2.530	1.2	101.2
13C5-PFHxA	2.500	2.516	0.6	100.6
13C5-PFPeA	5.000	5.101	2.0	102.0
13C6-PFDA	1.250	1.285	2.8	102.8
13C7-PFUnDA	1.250	1.291	3.3	103.3
13C8-FOSA	2.500	2.529	1.2	101.2
13C8-PFOA	2.500	2.489	-0.4	99.6
13C8-PFOS	2.500	2.343	-6.3	93.7
13C9-PFNA	1.250	1.262	1.0	101.0
4:2FTS	9.375	8.164	-12.9	87.1
6:2FTS	9.500	9.655	1.6	101.6
8:2FTS	9.600	8.588	-10.5	89.5
d3-MeFOSAA	5.000	5.025	0.5	100.5
EtFOSAA	2.500	2.248	-10.1	89.9
FOSA	2.500	2.386	-4.6	95.4
MeFOSAA	2.500	2.704	8.1	108.1
PFBA	10.000	9.126	-8.7	91.3
PFBS	2.218	2.092	-5.7	94.3
PFDA	2.500	2.395	-4.2	95.8
PFDoDA	2.500	2.357	-5.7	94.3
PFDS	2.413	2.365	-2.0	98.0
PFHpA	2.500	2.412	-3.5	96.5
PFHpS	2.383	2.377	-0.2	99.8
PFHxA	2.500	2.387	-4.5	95.5
PFHxS	2.285	2.131	-6.7	93.3
PFNA	2.500	2.313	-7.5	92.5
PFNS	2.405	2.338	-2.8	97.2
PFOA	2.500	2.468	-1.3	98.7
PFOS	2.320	2.191	-5.5	94.5

Initial Calibration Verification

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICV571
Lab FileID: 4Q39700.D

PFPeA	5.000	4.765	-4.7	95.3
PFPeS	2.353	2.008	-14.6	85.4
PFTeDA	2.500	2.405	-3.8	96.2
PFTTrDA	2.500	2.504	0.2	100.2
PFUnDA	2.500	2.405	-3.8	96.2
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--		
11Cl-PF3OUdS	9.450	9.467	0.2	100.2
13C3-HFPO-DA	10.000	10.169	1.7	101.7
9Cl-PF3ONS	9.350	8.668	-7.3	92.7
ADONA	9.450	9.133	-3.4	96.6
HFPO-DA	10.000	9.795	-2.0	98.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.262	-9.8	90.2
5:3FTCA	62.400	60.144	-3.6	96.4
7:3FTCA	62.400	61.359	-1.7	98.3
d3-MeFOSA	2.500	2.359	-5.6	94.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.249	-10.1	89.9
EtFOSE	25.000	25.085	0.3	100.3
MeFOSA	2.500	2.393	-4.3	95.7
MeFOSE	25.000	24.480	-2.1	97.9
PFDoDS	2.425	2.363	-2.6	97.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.950	-1.0	99.0
d7-MeFOSE	25.000	25.322	1.3	101.3
d9-EtFOSE	25.000	25.353	1.4	101.4
d5-EtFOSA	2.500	2.481	-0.8	99.2
NFDHA	5.000	4.859	-2.8	97.2
PFMBA	5.000	4.773	-4.5	95.5
PFMPA	5.000	4.645	-7.1	92.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.249	-4.5	95.5

CC Criteria: +/- 30%

Initial Calibration Verification

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICV571
Lab FileID: 4Q39701.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
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6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39701

Type : QC

Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.755	15.1	115.1
13C2-6:2FTS	5.000	5.307	6.1	106.1
13C2-8:2FTS	5.000	5.414	8.3	108.3
13C2-PFDoDA	1.250	1.275	2.0	102.0
13C2-PFTeDA	1.250	1.331	6.5	106.5
13C3-PFBS	2.500	2.651	6.0	106.0
13C3-PFHxS	2.500	2.560	2.4	102.4
13C4-PFBA	10.000	10.102	1.0	101.0
13C4-PFHpA	2.500	2.521	0.9	100.9
13C5-PFHxA	2.550	2.508	-1.6	98.4
13C5-PFPeA	5.000	5.148	3.0	103.0
13C6-PFDA	1.250	1.318	5.4	105.4
13C7-PFUnDA	1.250	1.352	8.1	108.1
13C8-FOSA	2.500	2.623	4.9	104.9
13C8-PFOA	2.250	2.494	10.9	110.9
13C8-PFOS	2.500	2.630	5.2	105.2
13C9-PFNA	1.250	1.318	5.4	105.4
4:2FTS	20.000	19.402	-3.0	97.0
6:2FTS	20.000	21.533	7.7	107.7
8:2FTS	20.000	20.823	4.1	104.1
d3-MeFOSAA	5.000	4.954	-0.9	99.1
EtFOSAA	20.000	23.336	16.7	116.7
FOSA	20.000	21.820	9.1	109.1
MeFOSAA	20.000	24.376	21.9	121.9
PFBA	20.000	19.352	-3.2	96.8
PFBS	20.000	22.500	12.5	112.5
PFDA	20.000	21.882	9.4	109.4
PFDoDA	20.000	18.834	-5.8	94.2
PFDS	20.000	19.994	0.0	100.0
PFHpA	20.000	21.271	6.4	106.4
PFHpS	20.000	20.939	4.7	104.7
PFHxA	20.000	22.559	12.8	112.8
PFHxS	20.000	23.865	19.3	119.3
PFNA	20.000	21.819	9.1	109.1
PFNS	20.000	20.793	4.0	104.0
PFOA	20.000	21.144	5.7	105.7
PFOS	20.000	17.800	-11.0	89.0

Initial Calibration Verification

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICV571
Lab FileID: 4Q39701.D

PFPeA	20.000	22.210	11.0	111.0
PFPeS	20.000	23.212	16.1	116.1
PFTeDA	20.000	22.363	11.8	111.8
PFTTrDA	20.000	19.347	-3.3	96.7
PFUnDA	20.000	19.983	-0.1	99.9
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--		
11Cl-PF3OUdS	20.000	21.943	9.7	109.7
13C3-HFPO-DA	10.000	10.286	2.9	102.9
9Cl-PF3ONS	20.000	21.437	7.2	107.2
ADONA	20.000	21.125	5.6	105.6
HFPO-DA	20.000	20.877	4.4	104.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	19.960	-0.2	99.8
5:3FTCA	20.000	20.722	3.6	103.6
7:3FTCA	20.000	19.955	-0.2	99.8
d3-MeFOSA	2.500	2.499	0.0	100.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	22.167	10.8	110.8
EtFOSE	100.000	101.284	1.3	101.3
MeFOSA	20.000	22.092	10.5	110.5
MeFOSE	100.000	100.051	0.1	100.1
PFDoDS	20.000	19.956	-0.2	99.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.793	-4.1	95.9
d7-MeFOSE	25.000	23.622	-5.5	94.5
d9-EtFOSE	25.000	24.177	-3.3	96.7
d5-EtFOSA	2.500	2.401	-4.0	96.0
NFDHA	20.000	21.729	8.6	108.6
PFMBA	20.000	20.741	3.7	103.7
PFMPA	20.000	20.720	3.6	103.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	18.883	-5.6	94.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39702.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID: Calibration File

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5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39702

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	5.457	9.1	109.1
13C2-8:2FTS	5.000	5.418	8.4	108.4
13C2-PFDoDA	1.250	1.337	7.0	107.0
13C2-PFTeDA	1.250	1.290	3.2	103.2
13C3-PFBS	2.500	2.607	4.3	104.3
13C3-PFHxS	2.500	2.556	2.2	102.2
13C4-PFBA	10.000	9.885	-1.1	98.9
13C4-PFHpA	2.500	2.512	0.5	100.5
13C5-PFHxA	2.500	2.540	1.6	101.6
13C5-PFPeA	5.000	5.082	1.6	101.6
13C6-PFDA	1.250	1.286	2.9	102.9
13C7-PFUnDA	1.250	1.354	8.4	108.4
13C8-FOSA	2.500	2.569	2.7	102.7
13C8-PFOA	2.500	2.487	-0.5	99.5
13C8-PFOS	2.500	2.516	0.7	100.7
13C9-PFNA	1.250	1.231	-1.5	98.5
4:2FTS	9.375	8.957	-4.5	95.5
6:2FTS	9.500	8.484	-10.7	89.3
8:2FTS	9.600	8.552	-10.9	89.1
d3-MeFOSAA	5.000	5.247	4.9	104.9
EtFOSAA	2.500	2.052	-17.9	82.1
FOSA	2.500	2.230	-10.8	89.2
MeFOSAA	2.500	2.349	-6.1	93.9
PFBA	10.000	8.603	-14.0	86.0
PFBS	2.218	1.955	-11.9	88.1
PFDA	2.500	2.283	-8.7	91.3
PFDoDA	2.500	2.213	-11.5	88.5
PFDS	2.413	2.261	-6.3	93.7
PFHpA	2.500	2.288	-8.5	91.5
PFHpS	2.383	2.176	-8.7	91.3
PFHxA	2.500	2.227	-10.9	89.1
PFHxS	2.285	1.992	-12.8	87.2
PFNA	2.500	2.197	-12.1	87.9
PFNS	2.405	1.964	-18.4	81.6
PFOA	2.500	2.356	-5.7	94.3
PFOS	2.320	2.065	-11.0	89.0

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39702.D

PFPeA	5.000	4.576	-8.5	91.5
PFPeS	2.353	1.926	-18.1	81.9
PFTeDA	2.500	2.411	-3.6	96.4
PFTTrDA	2.500	2.362	-5.5	94.5
PFUnDA	2.500	2.065	-17.4	82.6
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--		
11Cl-PF3OUdS	9.450	9.314	-1.4	98.6
13C3-HFPO-DA	10.000	9.915	-0.9	99.1
9Cl-PF3ONS	9.350	8.740	-6.5	93.5
ADONA	9.450	8.991	-4.9	95.1
HFPO-DA	10.000	9.591	-4.1	95.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.865	-12.9	87.1
5:3FTCA	62.400	56.768	-9.0	91.0
7:3FTCA	62.400	59.230	-5.1	94.9
d3-MeFOSA	2.500	2.525	1.0	101.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.273	-9.1	90.9
EtFOSE	25.000	24.075	-3.7	96.3
MeFOSA	2.500	2.299	-8.1	91.9
MeFOSE	25.000	24.724	-1.1	98.9
PFDoDS	2.425	2.215	-8.7	91.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.308	6.2	106.2
d7-MeFOSE	25.000	25.042	0.2	100.2
d9-EtFOSE	25.000	25.924	3.7	103.7
d5-EtFOSA	2.500	2.426	-3.0	97.0
NFDHA	5.000	4.995	-0.1	99.9
PFMBA	5.000	4.665	-6.7	93.3
PFMPA	5.000	4.521	-9.6	90.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.136	-7.1	92.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39703.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID: Calibration File

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2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
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6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39703

Type : QC

Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.203	24.1	124.1
13C2-6:2FTS	5.000	5.850	17.0	117.0
13C2-8:2FTS	5.000	5.662	13.2	113.2
13C2-PFDoDA	1.250	1.266	1.3	101.3
13C2-PFTeDA	1.250	1.262	0.9	100.9
13C3-PFBS	2.500	2.610	4.4	104.4
13C3-PFHxS	2.500	2.591	3.6	103.6
13C4-PFBA	10.000	10.018	0.2	100.2
13C4-PFHpA	2.500	2.492	-0.3	99.7
13C5-PFHxA	2.500	2.541	1.6	101.6
13C5-PFPeA	5.000	5.084	1.7	101.7
13C6-PFDA	1.250	1.277	2.1	102.1
13C7-PFUnDA	1.250	1.335	6.8	106.8
13C8-FOSA	2.500	2.544	1.8	101.8
13C8-PFOA	2.500	2.438	-2.5	97.5
13C8-PFOS	2.500	2.467	-1.3	98.7
13C9-PFNA	1.250	1.257	0.6	100.6
4:2FTS	0.750	0.529	-29.4	70.6
6:2FTS	0.760	0.631	-17.0	83.0
8:2FTS	0.768	0.567	-26.2	73.8
d3-MeFOSAA	5.000	5.502	10.0	110.0
EtFOSAA	0.200	0.190	-4.8	95.2
FOSA	0.200	0.195	-2.7	97.3
MeFOSAA	0.200	0.145	-27.7	72.3
PFBA	0.800	0.596	-25.6	74.4
PFBS	0.177	0.131	-26.2	73.8
PFDA	0.200	0.170	-15.0	85.0
PFDoDA	0.200	0.157	-21.3	78.7
PFDS	0.193	0.172	-11.0	89.0
PFHpA	0.200	0.153	-23.4	76.6
PFHpS	0.191	0.189	-1.2	98.8
PFHxA	0.200	0.154	-23.2	76.8
PFHxS	0.183	0.153	-16.4	83.6
PFNA	0.200	0.154	-23.2	76.8
PFNS	0.192	0.163	-14.9	85.1
PFOA	0.200	0.196	-1.8	98.2
PFOS	0.186	0.196	5.3	105.3

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39703.D

PFPeA	0.400	0.330	-17.4	82.6
PFPeS	0.188	0.169	-10.0	90.0
PFTeDA	0.200	0.173	-13.4	86.6
PFTTrDA	0.200	0.179	-10.7	89.3
PFUnDA	0.200	0.209	4.3	104.3
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--		
11Cl-PF3OUdS	0.756	0.683	-9.6	90.4
13C3-HFPO-DA	10.000	9.926	-0.7	99.3
9Cl-PF3ONS	0.748	0.628	-16.0	84.0
ADONA	0.756	0.682	-9.8	90.2
HFPO-DA	0.800	0.732	-8.5	91.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.816	-18.3	81.7
5:3FTCA	4.992	4.148	-16.9	83.1
7:3FTCA	4.992	3.945	-21.0	79.0
d3-MeFOSA	2.500	2.485	-0.6	99.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.164	-18.1	81.9
EtFOSE	2.000	1.846	-7.7	92.3
MeFOSA	0.200	0.190	-4.9	95.1
MeFOSE	2.000	1.807	-9.6	90.4
PFDoDS	0.194	0.164	-15.2	84.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.339	6.8	106.8
d7-MeFOSE	25.000	26.416	5.7	105.7
d9-EtFOSE	25.000	27.280	9.1	109.1
d5-EtFOSA	2.500	2.571	2.8	102.8
NFDHA	0.400	0.331	-17.4	82.6
PFMBA	0.400	0.331	-17.4	82.6
PFMPA	0.400	0.325	-18.8	81.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.305	-14.3	85.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39714.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
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5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39714

Type : QC

Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.068	21.4	121.4
13C2-6:2FTS	5.000	5.709	14.2	114.2
13C2-8:2FTS	5.000	5.782	15.6	115.6
13C2-PFDoDA	1.250	1.282	2.6	102.6
13C2-PFTeDA	1.250	1.307	4.6	104.6
13C3-PFBS	2.500	2.600	4.0	104.0
13C3-PFHxS	2.500	2.525	1.0	101.0
13C4-PFBA	10.000	9.819	-1.8	98.2
13C4-PFHpA	2.500	2.437	-2.5	97.5
13C5-PFHxA	2.500	2.528	1.1	101.1
13C5-PFPeA	5.000	5.114	2.3	102.3
13C6-PFDA	1.250	1.320	5.6	105.6
13C7-PFUnDA	1.250	1.401	12.1	112.1
13C8-FOSA	2.500	2.508	0.3	100.3
13C8-PFOA	2.500	2.424	-3.0	97.0
13C8-PFOS	2.500	2.547	1.9	101.9
13C9-PFNA	1.250	1.326	6.1	106.1
4:2FTS	9.375	8.471	-9.6	90.4
6:2FTS	9.500	8.455	-11.0	89.0
8:2FTS	9.600	8.321	-13.3	86.7
d3-MeFOSAA	5.000	5.967	19.3	119.3
EtFOSAA	2.500	2.123	-15.1	84.9
FOSA	2.500	2.354	-5.8	94.2
MeFOSAA	2.500	2.281	-8.8	91.2
PFBA	10.000	8.707	-12.9	87.1
PFBS	2.218	1.947	-12.2	87.8
PFDA	2.500	2.219	-11.2	88.8
PFDoDA	2.500	2.235	-10.6	89.4
PFDS	2.413	2.165	-10.3	89.7
PFHpA	2.500	2.288	-8.5	91.5
PFHpS	2.383	2.116	-11.2	88.8
PFHxA	2.500	2.307	-7.7	92.3
PFHxS	2.285	1.823	-20.2	79.8
PFNA	2.500	2.072	-17.1	82.9
PFNS	2.405	2.063	-14.2	85.8
PFOA	2.500	2.286	-8.6	91.4
PFOS	2.320	2.133	-8.1	91.9

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39714.D

PFPeA	5.000	4.576	-8.5	91.5
PFPeS	2.353	1.924	-18.2	81.8
PFTeDA	2.500	2.336	-6.6	93.4
PFTTrDA	2.500	2.330	-6.8	93.2
PFUnDA	2.500	2.069	-17.2	82.8
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--		
11Cl-PF3OUdS	9.450	9.182	-2.8	97.2
13C3-HFPO-DA	10.000	9.977	-0.2	99.8
9Cl-PF3ONS	9.350	8.662	-7.4	92.6
ADONA	9.450	9.031	-4.4	95.6
HFPO-DA	10.000	9.377	-6.2	93.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.380	-16.8	83.2
5:3FTCA	62.400	57.187	-8.4	91.6
7:3FTCA	62.400	56.268	-9.8	90.2
d3-MeFOSA	2.500	2.393	-4.3	95.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.228	-10.9	89.1
EtFOSE	25.000	24.559	-1.8	98.2
MeFOSA	2.500	2.391	-4.4	95.6
MeFOSE	25.000	23.004	-8.0	92.0
PFDoDS	2.425	2.198	-9.3	90.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.671	13.4	113.4
d7-MeFOSE	25.000	26.267	5.1	105.1
d9-EtFOSE	25.000	25.172	0.7	100.7
d5-EtFOSA	2.500	2.501	0.0	100.0
NFDHA	5.000	4.430	-11.4	88.6
PFMBA	5.000	4.636	-7.3	92.7
PFMPA	5.000	4.535	-9.3	90.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.162	-6.5	93.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39740.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39740

Type : QC

Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.732	# 34.6	134.6
13C2-6:2FTS	5.000	5.357	7.1	107.1
13C2-8:2FTS	5.000	5.452	9.0	109.0
13C2-PFDoDA	1.250	1.266	1.3	101.3
13C2-PFTeDA	1.250	1.341	7.3	107.3
13C3-PFBS	2.500	2.452	-1.9	98.1
13C3-PFHxS	2.500	2.402	-3.9	96.1
13C4-PFBA	10.000	9.783	-2.2	97.8
13C4-PFHpA	2.500	2.532	1.3	101.3
13C5-PFHxA	2.500	2.561	2.5	102.5
13C5-PFPeA	5.000	5.116	2.3	102.3
13C6-PFDA	1.250	1.239	-0.9	99.1
13C7-PFUnDA	1.250	1.278	2.3	102.3
13C8-FOSA	2.500	2.628	5.1	105.1
13C8-PFOA	2.500	2.473	-1.1	98.9
13C8-PFOS	2.500	2.443	-2.3	97.7
13C9-PFNA	1.250	1.358	8.7	108.7
4:2FTS	0.750	0.586	-21.9	78.1
6:2FTS	0.760	0.673	-11.4	88.6
8:2FTS	0.768	0.664	-13.5	86.5
d3-MeFOSAA	5.000	5.595	11.9	111.9
EtFOSAA	0.200	0.220	9.9	109.9
FOSA	0.200	0.165	-17.7	82.3
MeFOSAA	0.200	0.221	10.6	110.6
PFBA	0.800	0.638	-20.3	79.7
PFBS	0.177	0.159	-10.0	90.0
PFDA	0.200	0.181	-9.5	90.5
PFDoDA	0.200	0.177	-11.4	88.6
PFDS	0.193	0.172	-10.6	89.4
PFHpA	0.200	0.173	-13.7	86.3
PFHpS	0.191	0.175	-8.4	91.6
PFHxA	0.200	0.169	-15.3	84.7
PFHxS	0.183	0.163	-11.1	88.9
PFNA	0.200	0.174	-12.9	87.1
PFNS	0.192	0.139	-27.5	72.5
PFOA	0.200	0.188	-5.8	94.2
PFOS	0.186	0.189	1.4	101.4

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39740.D

PFPeA	0.400	0.331	-17.3	82.7
PFPeS	0.188	0.140	-25.3	74.7
PFTeDA	0.200	0.153	-23.5	76.5
PFTTrDA	0.200	0.165	-17.3	82.7
PFUnDA	0.200	0.192	-3.8	96.2
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--		
11Cl-PF3OUdS	0.756	0.666	-11.9	88.1
13C3-HFPO-DA	10.000	10.258	2.6	102.6
9Cl-PF3ONS	0.748	0.537	-28.2	71.8
ADONA	0.756	0.641	-15.2	84.8
HFPO-DA	0.800	0.662	-17.3	82.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.822	-17.7	82.3
5:3FTCA	4.992	3.925	-21.4	78.6
7:3FTCA	4.992	3.828	-23.3	76.7
d3-MeFOSA	2.500	2.302	-7.9	92.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.147	-26.3	73.7
EtFOSE	2.000	2.030	1.5	101.5
MeFOSA	0.200	0.181	-9.5	90.5
MeFOSE	2.000	1.859	-7.0	93.0
PFDoDS	0.194	0.188	-3.0	97.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.277	5.5	105.5
d7-MeFOSE	25.000	25.437	1.7	101.7
d9-EtFOSE	25.000	24.762	-1.0	99.0
d5-EtFOSA	2.500	2.455	-1.8	98.2
NFDHA	0.400	0.358	-10.5	89.5
PFMBA	0.400	0.329	-17.8	82.2
PFMPA	0.400	0.327	-18.1	81.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.299	-16.0	84.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39751.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
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5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39751

Type : QC

Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.948	19.0	119.0
13C2-6:2FTS	5.000	5.432	8.6	108.6
13C2-8:2FTS	5.000	5.781	15.6	115.6
13C2-PFDoDA	1.250	1.340	7.2	107.2
13C2-PFTeDA	1.250	1.492	19.4	119.4
13C3-PFBS	2.500	2.546	1.8	101.8
13C3-PFHxS	2.500	2.547	1.9	101.9
13C4-PFBA	10.000	9.800	-2.0	98.0
13C4-PFHpA	2.500	2.560	2.4	102.4
13C5-PFHxA	2.500	2.496	-0.2	99.8
13C5-PFPeA	5.000	4.925	-1.5	98.5
13C6-PFDA	1.250	1.250	0.0	100.0
13C7-PFUnDA	1.250	1.298	3.9	103.9
13C8-FOSA	2.500	2.505	0.2	100.2
13C8-PFOA	2.500	2.472	-1.1	98.9
13C8-PFOS	2.500	2.447	-2.1	97.9
13C9-PFNA	1.250	1.277	2.1	102.1
4:2FTS	9.375	8.455	-9.8	90.2
6:2FTS	9.500	9.290	-2.2	97.8
8:2FTS	9.600	8.814	-8.2	91.8
d3-MeFOSAA	5.000	6.195	23.9	123.9
EtFOSAA	2.500	2.289	-8.4	91.6
FOSA	2.500	2.208	-11.7	88.3
MeFOSAA	2.500	2.201	-12.0	88.0
PFBA	10.000	8.883	-11.2	88.8
PFBS	2.218	1.922	-13.3	86.7
PFDA	2.500	2.265	-9.4	90.6
PFDoDA	2.500	2.276	-9.0	91.0
PFDS	2.413	2.142	-11.2	88.8
PFHpA	2.500	2.259	-9.7	90.3
PFHpS	2.383	2.195	-7.9	92.1
PFHxA	2.500	2.252	-9.9	90.1
PFHxS	2.285	1.933	-15.4	84.6
PFNA	2.500	2.132	-14.7	85.3
PFNS	2.405	2.092	-13.0	87.0
PFOA	2.500	2.277	-8.9	91.1
PFOS	2.320	2.058	-11.3	88.7

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39751.D

PFPeA	5.000	4.636	-7.3	92.7
PFPeS	2.353	2.074	-11.9	88.1
PFTeDA	2.500	2.119	-15.2	84.8
PFTTrDA	2.500	2.217	-11.3	88.7
PFUnDA	2.500	2.288	-8.5	91.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	9.450	9.674	2.4	102.4
13C3-HFPO-DA	10.000	9.886	-1.1	98.9
9Cl-PF3ONS	9.350	8.535	-8.7	91.3
ADONA	9.450	9.030	-4.4	95.6
HFPO-DA	10.000	9.147	-8.5	91.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.683	-14.4	85.6
5:3FTCA	62.400	56.182	-10.0	90.0
7:3FTCA	62.400	57.328	-8.1	91.9
d3-MeFOSA	2.500	2.289	-8.4	91.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.352	-5.9	94.1
EtFOSE	25.000	24.871	-0.5	99.5
MeFOSA	2.500	2.330	-6.8	93.2
MeFOSE	25.000	23.924	-4.3	95.7
PFDoDS	2.425	2.208	-8.9	91.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.617	12.3	112.3
d7-MeFOSE	25.000	24.113	-3.5	96.5
d9-EtFOSE	25.000	24.024	-3.9	96.1
d5-EtFOSA	2.500	2.386	-4.6	95.4
NFDHA	5.000	4.523	-9.5	90.5
PFMBA	5.000	4.612	-7.8	92.2
PFMPA	5.000	4.525	-9.5	90.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.075	-8.4	91.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39763.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID: Calibration File

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4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39763

Type : QC

Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.004	20.1	120.1
13C2-6:2FTS	5.000	5.371	7.4	107.4
13C2-8:2FTS	5.000	6.110	22.2	122.2
13C2-PFDoDA	1.250	1.325	6.0	106.0
13C2-PFTeDA	1.250	1.477	18.1	118.1
13C3-PFBS	2.500	2.731	9.2	109.2
13C3-PFHxS	2.500	2.574	3.0	103.0
13C4-PFBA	10.000	9.857	-1.4	98.6
13C4-PFHpA	2.500	2.596	3.8	103.8
13C5-PFHxA	2.500	2.502	0.1	100.1
13C5-PFPeA	5.000	4.955	-0.9	99.1
13C6-PFDA	1.250	1.243	-0.5	99.5
13C7-PFUnDA	1.250	1.328	6.3	106.3
13C8-FOSA	2.500	2.450	-2.0	98.0
13C8-PFOA	2.500	2.529	1.1	101.1
13C8-PFOS	2.500	2.467	-1.3	98.7
13C9-PFNA	1.250	1.341	7.3	107.3
4:2FTS	9.375	8.679	-7.4	92.6
6:2FTS	9.500	9.889	4.1	104.1
8:2FTS	9.600	8.590	-10.5	89.5
d3-MeFOSAA	5.000	5.752	15.0	115.0
EtFOSAA	2.500	2.314	-7.4	92.6
FOSA	2.500	2.269	-9.2	90.8
MeFOSAA	2.500	2.619	4.8	104.8
PFBA	10.000	8.832	-11.7	88.3
PFBS	2.218	1.937	-12.7	87.3
PFDA	2.500	2.254	-9.8	90.2
PFDoDA	2.500	2.359	-5.6	94.4
PFDS	2.413	2.073	-14.1	85.9
PFHpA	2.500	2.213	-11.5	88.5
PFHpS	2.383	2.161	-9.3	90.7
PFHxA	2.500	2.265	-9.4	90.6
PFHxS	2.285	2.116	-7.4	92.6
PFNA	2.500	2.119	-15.2	84.8
PFNS	2.405	2.024	-15.8	84.2
PFOA	2.500	2.237	-10.5	89.5
PFOS	2.320	2.023	-12.8	87.2

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39763.D

PFPeA	5.000	4.632	-7.4	92.6
PFPeS	2.353	2.137	-9.2	90.8
PFTeDA	2.500	2.160	-13.6	86.4
PFTTrDA	2.500	2.329	-6.8	93.2
PFUnDA	2.500	2.343	-6.3	93.7
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--		
11Cl-PF3OUdS	9.450	9.460	0.1	100.1
13C3-HFPO-DA	10.000	10.094	0.9	100.9
9Cl-PF3ONS	9.350	8.394	-10.2	89.8
ADONA	9.450	8.885	-6.0	94.0
HFPO-DA	10.000	9.202	-8.0	92.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.625	-14.9	85.1
5:3FTCA	62.400	55.693	-10.7	89.3
7:3FTCA	62.400	57.275	-8.2	91.8
d3-MeFOSA	2.500	2.257	-9.7	90.3
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.405	-3.8	96.2
EtFOSE	25.000	24.110	-3.6	96.4
MeFOSA	2.500	2.391	-4.4	95.6
MeFOSE	25.000	24.244	-3.0	97.0
PFDoDS	2.425	2.176	-10.3	89.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.676	13.5	113.5
d7-MeFOSE	25.000	23.488	-6.0	94.0
d9-EtFOSE	25.000	23.540	-5.8	94.2
d5-EtFOSA	2.500	2.195	-12.2	87.8
NFDHA	5.000	4.713	-5.7	94.3
PFMBA	5.000	4.532	-9.4	90.6
PFMPA	5.000	4.543	-9.1	90.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.053	-8.9	91.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39794.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012623_1633_S4Q572\s4q572.batch.bin

Level ID:Calibration File

1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39794

Type : QC

Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.257	25.1	125.1
13C2-6:2FTS	5.000	5.331	6.6	106.6
13C2-8:2FTS	5.000	5.525	10.5	110.5
13C2-PFDoDA	1.250	1.269	1.5	101.5
13C2-PFTeDA	1.250	1.421	13.7	113.7
13C3-PFBS	2.500	2.677	7.1	107.1
13C3-PFHxS	2.500	2.526	1.1	101.1
13C4-PFBA	10.000	9.879	-1.2	98.8
13C4-PFHpA	2.500	2.504	0.2	100.2
13C5-PFHxA	2.500	2.567	2.7	102.7
13C5-PFPeA	5.000	5.020	0.4	100.4
13C6-PFDA	1.250	1.256	0.5	100.5
13C7-PFUnDA	1.250	1.330	6.4	106.4
13C8-FOSA	2.500	2.425	-3.0	97.0
13C8-PFOA	2.500	2.435	-2.6	97.4
13C8-PFOS	2.500	2.388	-4.5	95.5
13C9-PFNA	1.250	1.232	-1.5	98.5
4:2FTS	9.375	8.916	-4.9	95.1
6:2FTS	9.500	10.450	10.0	110.0
8:2FTS	9.600	9.468	-1.4	98.6
d3-MeFOSAA	5.000	5.632	12.6	112.6
EtFOSAA	2.500	2.143	-14.3	85.7
FOSA	2.500	2.408	-3.7	96.3
MeFOSAA	2.500	2.476	-1.0	99.0
PFBA	10.000	9.047	-9.5	90.5
PFBS	2.218	1.995	-10.0	90.0
PFDA	2.500	2.306	-7.7	92.3
PFDoDA	2.500	2.486	-0.6	99.4
PFDS	2.413	2.359	-2.2	97.8
PFHpA	2.500	2.474	-1.0	99.0
PFHpS	2.383	2.092	-12.2	87.8
PFHxA	2.500	2.327	-6.9	93.1
PFHxS	2.285	2.153	-5.8	94.2
PFNA	2.500	2.383	-4.7	95.3
PFNS	2.405	2.186	-9.1	90.9
PFOA	2.500	2.463	-1.5	98.5
PFOS	2.320	2.129	-8.2	91.8

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39794.D

PFPeA	5.000	4.835	-3.3	96.7
PFPeS	2.353	2.177	-7.5	92.5
PFTeDA	2.500	2.240	-10.4	89.6
PFTTrDA	2.500	2.524	0.9	100.9
PFUnDA	2.500	2.138	-14.5	85.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	9.450	9.475	0.3	100.3
13C3-HFPO-DA	10.000	10.716	7.2	107.2
9Cl-PF3ONS	9.350	7.956	-14.9	85.1
ADONA	9.450	8.957	-5.2	94.8
HFPO-DA	10.000	9.838	-1.6	98.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.757	-13.8	86.2
5:3FTCA	62.400	53.890	-13.6	86.4
7:3FTCA	62.400	54.903	-12.0	88.0
d3-MeFOSA	2.500	2.355	-5.8	94.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.384	-4.6	95.4
EtFOSE	25.000	24.672	-1.3	98.7
MeFOSA	2.500	2.300	-8.0	92.0
MeFOSE	25.000	25.159	0.6	100.6
PFDoDS	2.425	2.384	-1.7	98.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.427	8.5	108.5
d7-MeFOSE	25.000	23.772	-4.9	95.1
d9-EtFOSE	25.000	23.973	-4.1	95.9
d5-EtFOSA	2.500	2.287	-8.5	91.5
NFDHA	5.000	4.843	-3.1	96.9
PFMBA	5.000	4.617	-7.7	92.3
PFMPA	5.000	4.434	-11.3	88.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.202	-5.6	94.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39795.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012623_1633_S4Q572\s4q572.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39795

Type : QC

Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	7.341	# 46.8	146.8
13C2-6:2FTS	5.000	5.430	8.6	108.6
13C2-8:2FTS	5.000	5.723	14.5	114.5
13C2-PFDoDA	1.250	1.254	0.3	100.3
13C2-PFTeDA	1.250	1.335	6.8	106.8
13C3-PFBS	2.500	2.617	4.7	104.7
13C3-PFHxS	2.500	2.486	-0.5	99.5
13C4-PFBA	10.000	9.829	-1.7	98.3
13C4-PFHpA	2.500	2.307	-7.7	92.3
13C5-PFHxA	2.500	2.561	2.4	102.4
13C5-PFPeA	5.000	5.044	0.9	100.9
13C6-PFDA	1.250	1.182	-5.4	94.6
13C7-PFUnDA	1.250	1.247	-0.2	99.8
13C8-FOSA	2.500	2.419	-3.2	96.8
13C8-PFOA	2.500	2.524	1.0	101.0
13C8-PFOS	2.500	2.442	-2.3	97.7
13C9-PFNA	1.250	1.261	0.8	100.8
4:2FTS	0.750	0.593	-20.9	79.1
6:2FTS	0.760	0.753	-1.0	99.0
8:2FTS	0.768	0.746	-2.8	97.2
d3-MeFOSAA	5.000	5.709	14.2	114.2
EtFOSAA	0.200	0.167	-16.3	83.7
FOSA	0.200	0.178	-10.8	89.2
MeFOSAA	0.200	0.227	13.3	113.3
PFBA	0.800	0.635	-20.7	79.3
PFBS	0.177	0.144	-18.8	81.2
PFDA	0.200	0.196	-2.0	98.0
PFDoDA	0.200	0.180	-10.0	90.0
PFDS	0.193	0.150	-22.1	77.9
PFHpA	0.200	0.173	-13.5	86.5
PFHpS	0.191	0.176	-8.0	92.0
PFHxA	0.200	0.150	-24.8	75.2
PFHxS	0.183	0.208	13.4	113.4
PFNA	0.200	0.159	-20.4	79.6
PFNS	0.192	0.166	-13.4	86.6
PFOA	0.200	0.149	-25.6	74.4
PFOS	0.186	0.169	-9.1	90.9

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39795.D

PFPeA	0.400	0.329	-17.6	82.4
PFPeS	0.188	0.153	-18.4	81.6
PFTeDA	0.200	0.171	-14.3	85.7
PFTTrDA	0.200	0.168	-15.9	84.1
PFUnDA	0.200	0.188	-6.2	93.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	0.756	0.675	-10.7	89.3
13C3-HFPO-DA	10.000	10.502	5.0	105.0
9Cl-PF3ONS	0.748	0.561	-25.0	75.0
ADONA	0.756	0.642	-15.1	84.9
HFPO-DA	0.800	0.619	-22.6	77.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.717	-28.2	71.8
5:3FTCA	4.992	3.923	-21.4	78.6
7:3FTCA	4.992	3.964	-20.6	79.4
d3-MeFOSA	2.500	2.269	-9.2	90.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.174	-13.0	87.0
EtFOSE	2.000	1.891	-5.5	94.5
MeFOSA	0.200	0.197	-1.3	98.7
MeFOSE	2.000	1.816	-9.2	90.8
PFDoDS	0.194	0.179	-7.6	92.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.383	7.7	107.7
d7-MeFOSE	25.000	24.393	-2.4	97.6
d9-EtFOSE	25.000	24.609	-1.6	98.4
d5-EtFOSA	2.500	2.318	-7.3	92.7
NFDHA	0.400	0.404	1.0	101.0
PFMBA	0.400	0.325	-18.8	81.2
PFMPA	0.400	0.318	-20.5	79.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.295	-17.2	82.8

CC Criteria: +/- 30%

6.7.11

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Continuing Calibration Summary

Page 1 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39802.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012623_1633_S4Q572\s4q572.batch.bin

Level ID: Calibration File

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3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39802

Type : QC

Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.886	17.7	117.7
13C2-6:2FTS	5.000	5.381	7.6	107.6
13C2-8:2FTS	5.000	5.644	12.9	112.9
13C2-PFDoDA	1.250	1.467	17.4	117.4
13C2-PFTeDA	1.250	1.683	# 34.7	134.7
13C3-PFBS	2.500	2.494	-0.2	99.8
13C3-PFHxS	2.500	2.563	2.5	102.5
13C4-PFBA	10.000	9.884	-1.2	98.8
13C4-PFHpA	2.500	2.577	3.1	103.1
13C5-PFHxA	2.500	2.584	3.3	103.3
13C5-PFPeA	5.000	4.977	-0.5	99.5
13C6-PFDA	1.250	1.285	2.8	102.8
13C7-PFUnDA	1.250	1.549	24.0	124.0
13C8-FOSA	2.500	2.400	-4.0	96.0
13C8-PFOA	2.500	2.441	-2.4	97.6
13C8-PFOS	2.500	2.384	-4.6	95.4
13C9-PFNA	1.250	1.221	-2.4	97.6
4:2FTS	9.375	9.102	-2.9	97.1
6:2FTS	9.500	9.918	4.4	104.4
8:2FTS	9.600	9.394	-2.1	97.9
d3-MeFOSAA	5.000	5.701	14.0	114.0
EtFOSAA	2.500	2.389	-4.4	95.6
FOSA	2.500	2.443	-2.3	97.7
MeFOSAA	2.500	2.412	-3.5	96.5
PFBA	10.000	8.970	-10.3	89.7
PFBS	2.218	2.127	-4.1	95.9
PFDA	2.500	2.499	0.0	100.0
PFDoDA	2.500	2.358	-5.7	94.3
PFDS	2.413	2.236	-7.3	92.7
PFHpA	2.500	2.323	-7.1	92.9
PFHpS	2.383	2.163	-9.3	90.7
PFHxA	2.500	2.342	-6.3	93.7
PFHxS	2.285	2.054	-10.1	89.9
PFNA	2.500	2.307	-7.7	92.3
PFNS	2.405	2.055	-14.5	85.5
PFOA	2.500	2.453	-1.9	98.1
PFOS	2.320	2.300	-0.9	99.1

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39802.D

PFPeA	5.000	4.868	-2.6	97.4
PFPeS	2.353	2.108	-10.4	89.6
PFTeDA	2.500	2.205	-11.8	88.2
PFTTrDA	2.500	2.439	-2.4	97.6
PFUnDA	2.500	2.228	-10.9	89.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	9.450	9.514	0.7	100.7
13C3-HFPO-DA	10.000	10.658	6.6	106.6
9Cl-PF3ONS	9.350	8.525	-8.8	91.2
ADONA	9.450	8.814	-6.7	93.3
HFPO-DA	10.000	9.552	-4.5	95.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.865	-12.9	87.1
5:3FTCA	62.400	54.479	-12.7	87.3
7:3FTCA	62.400	54.888	-12.0	88.0
d3-MeFOSA	2.500	2.337	-6.5	93.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.203	-11.9	88.1
EtFOSE	25.000	25.208	0.8	100.8
MeFOSA	2.500	2.394	-4.2	95.8
MeFOSE	25.000	25.386	1.5	101.5
PFDoDS	2.425	2.334	-3.8	96.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.402	8.0	108.0
d7-MeFOSE	25.000	23.813	-4.7	95.3
d9-EtFOSE	25.000	23.647	-5.4	94.6
d5-EtFOSA	2.500	2.390	-4.4	95.6
NFDHA	5.000	4.487	-10.3	89.7
PFMBA	5.000	4.570	-8.6	91.4
PFMPA	5.000	4.458	-10.8	89.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.054	-8.9	91.1

CC Criteria: +/- 30%

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Run Sequence Report

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Job Number: FC2078
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q571		Method: EPA DRAFT 1633		Instrument ID: GCMS4Q	
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID	
S4Q571-RT	4Q39688.D	01/25/23 12:31	n/a	Retention Time Marker	
S4Q571-RT	4Q39689.D	01/25/23 12:45	n/a	Retention Time Marker	
S4Q571-IC571	4Q39690.D	01/25/23 12:59	n/a	Mass Calibration Verification	
S4Q571-IC571	4Q39691.D	01/25/23 13:13	n/a	Initial cal 1	
S4Q571-IC571	4Q39692.D	01/25/23 13:27	n/a	Initial cal 2	
S4Q571-IC571	4Q39693.D	01/25/23 13:41	n/a	Initial cal 3	
S4Q571-ICC571	4Q39694.D	01/25/23 13:55	n/a	Initial cal 4	
S4Q571-IC571	4Q39695.D	01/25/23 14:09	n/a	Initial cal 5	
S4Q571-IC571	4Q39696.D	01/25/23 14:23	n/a	Initial cal 6	
S4Q571-IC571	4Q39697.D	01/25/23 14:38	n/a	Initial cal 7	
S4Q571-IC571	4Q39698.D	01/25/23 14:52	n/a	Initial cal 8	
S4Q571-IBLK	4Q39699.D	01/25/23 15:06	n/a	Instrument Blank	
S4Q571-ICV571	4Q39700.D	01/25/23 15:20	n/a	Initial cal verification 4	
S4Q571-ICV571	4Q39701.D	01/25/23 15:34	n/a	Initial cal verification 20	
S4Q571-CC571	4Q39702.D	01/25/23 15:48	n/a	Continuing cal 4	
S4Q571-CC571	4Q39703.D	01/25/23 16:02	n/a	Continuing cal 1.0LL	
OP95069-BS	4Q39705.D	01/25/23 16:54	OP95069	Blank Spike	
OP95069-LLBS	4Q39706.D	01/25/23 17:08	OP95069	Blank Spike	
OP95069-MB	4Q39707.D	01/25/23 17:22	OP95069	Method Blank	
ZZZZZZ	4Q39708.D	01/25/23 17:36	OP95069	(unrelated sample)	
OP95096-BS	4Q39709.D	01/25/23 17:50	OP95096	Blank Spike	
OP95096-LLBS	4Q39710.D	01/25/23 18:05	OP95096	Blank Spike	
OP95096-MB	4Q39711.D	01/25/23 18:19	OP95096	Method Blank	
FC2078-1	4Q39712.D	01/25/23 18:33	OP95096	AF-RHMW04-WGN01LF-2301W3	
FC2078-2	4Q39713.D	01/25/23 18:47	OP95096	AF-RHMW06-WGN01LF-2301W3	
S4Q571-CC571	4Q39714.D	01/25/23 19:01	n/a	Continuing cal 4	
S4Q571-ICCB	4Q39715.D	01/25/23 19:15	n/a	Continuing Calibration Blank	
ZZZZZZ	4Q39716.D	01/25/23 19:29	OP95069	(unrelated sample)	
ZZZZZZ	4Q39717.D	01/25/23 19:43	OP95069	(unrelated sample)	
ZZZZZZ	4Q39718.D	01/25/23 19:57	OP95069	(unrelated sample)	
ZZZZZZ	4Q39719.D	01/25/23 20:11	OP95069	(unrelated sample)	
ZZZZZZ	4Q39721.D	01/25/23 20:40	OP95069	(unrelated sample)	
FC1816-2	4Q39722.D	01/25/23 20:54	OP95069	(used for QC only; not part of job FC2078)	
OP95069-MS	4Q39723.D	01/25/23 21:08	OP95069	Matrix Spike	
OP95069-MSD	4Q39724.D	01/25/23 21:22	OP95069	Matrix Spike Duplicate	
ZZZZZZ	4Q39725.D	01/25/23 21:36	OP95069	(unrelated sample)	
S4Q571-CC571	4Q39726.D	01/25/23 21:50	n/a	Continuing cal 4	
S4Q571-ICCB	4Q39727.D	01/25/23 22:04	n/a	Continuing Calibration Blank	
ZZZZZZ	4Q39728.D	01/25/23 22:18	OP95069	(unrelated sample)	
ZZZZZZ	4Q39730.D	01/25/23 22:46	OP95069	(unrelated sample)	
ZZZZZZ	4Q39731.D	01/25/23 23:00	OP95069	(unrelated sample)	
ZZZZZZ	4Q39732.D	01/25/23 23:14	OP95069	(unrelated sample)	
ZZZZZZ	4Q39733.D	01/25/23 23:28	OP95069	(unrelated sample)	
ZZZZZZ	4Q39735.D	01/25/23 23:56	OP95069	(unrelated sample)	
ZZZZZZ	4Q39736.D	01/26/23 00:11	OP95069	(unrelated sample)	
ZZZZZZ	4Q39737.D	01/26/23 00:25	OP95069	(unrelated sample)	

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Run Sequence Report

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Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q571	Method: EPA DRAFT 1633	Instrument ID: GCMS4Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q571-CC571	4Q39738.D	01/26/23 00:39	n/a	Continuing cal 4
S4Q571-CC571	4Q39740.D	01/26/23 01:07	n/a	Continuing cal 1.0LL
ZZZZZZ	4Q39741.D	01/26/23 01:21	OP95069	(unrelated sample)
ZZZZZZ	4Q39742.D	01/26/23 01:35	OP95069	(unrelated sample)
ZZZZZZ	4Q39743.D	01/26/23 01:49	OP95069	(unrelated sample)
ZZZZZZ	4Q39745.D	01/26/23 02:17	OP95096	(unrelated sample)
ZZZZZZ	4Q39747.D	01/26/23 02:45	OP95096	(unrelated sample)
ZZZZZZ	4Q39748.D	01/26/23 02:59	OP95096	(unrelated sample)
ZZZZZZ	4Q39750.D	01/26/23 03:28	OP95096	(unrelated sample)
S4Q571-CC571	4Q39751.D	01/26/23 03:42	n/a	Continuing cal 4
S4Q571-ICCB	4Q39752.D	01/26/23 03:56	n/a	Continuing Calibration Blank
ZZZZZZ	4Q39754.D	01/26/23 04:24	OP95096	(unrelated sample)
ZZZZZZ	4Q39755.D	01/26/23 04:38	OP95096	(unrelated sample)
ZZZZZZ	4Q39757.D	01/26/23 05:06	OP95096	(unrelated sample)
ZZZZZZ	4Q39759.D	01/26/23 05:34	OP95096	(unrelated sample)
FC1815-11	4Q39760.D	01/26/23 05:48	OP95096	(used for QC only; not part of job FC2078)
OP95096-MS	4Q39761.D	01/26/23 06:02	OP95096	Matrix Spike
OP95096-MSD	4Q39762.D	01/26/23 06:16	OP95096	Matrix Spike Duplicate
S4Q571-CC571	4Q39763.D	01/26/23 06:30	n/a	Continuing cal 4
S4Q571-ICCB	4Q39764.D	01/26/23 06:45	n/a	Continuing Calibration Blank
ZZZZZZ	4Q39765.D	01/26/23 06:59	OP95096	(unrelated sample)
ZZZZZZ	4Q39766.D	01/26/23 07:13	OP95096	(unrelated sample)
ZZZZZZ	4Q39767.D	01/26/23 07:27	OP95096	(unrelated sample)
ZZZZZZ	4Q39768.D	01/26/23 07:41	OP95096	(unrelated sample)
ZZZZZZ	4Q39769.D	01/26/23 07:55	OP95096	(unrelated sample)
ZZZZZZ	4Q39770.D	01/26/23 08:09	OP95096	(unrelated sample)
ZZZZZZ	4Q39771.D	01/26/23 08:23	OP95096	(unrelated sample)
S4Q571-CC571	4Q39773.D	01/26/23 08:51	n/a	Continuing cal 4
S4Q571-ICCB	4Q39774.D	01/26/23 09:05	n/a	Continuing Calibration Blank
OP94135-MB	4Q39775.D	01/26/23 09:19	OP94135	Method Blank
ZZZZZZ	4Q39776.D	01/26/23 09:33	OP94135	(unrelated sample)
ZZZZZZ	4Q39777.D	01/26/23 09:47	OP94135	(unrelated sample)
ZZZZZZ	4Q39778.D	01/26/23 10:02	OP94135	(unrelated sample)
ZZZZZZ	4Q39779.D	01/26/23 10:16	OP94135	(unrelated sample)
OP94007-MB	4Q39780.D	01/26/23 10:30	OP94007	Method Blank
ZZZZZZ	4Q39781.D	01/26/23 10:44	OP94007	(unrelated sample)
ZZZZZZ	4Q39782.D	01/26/23 10:58	OP94007	(unrelated sample)
ZZZZZZ	4Q39783.D	01/26/23 11:12	OP94007	(unrelated sample)
ZZZZZZ	4Q39784.D	01/26/23 11:26	OP94007	(unrelated sample)
S4Q571-ECC571	4Q39785.D	01/26/23 11:40	n/a	Ending cal 4
S4Q571-ICCB	4Q39786.D	01/26/23 11:54	n/a	Continuing Calibration Blank

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Run Sequence Report

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Job Number: FC2078
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q572		Method: EPA DRAFT 1633		Instrument ID: GCMS4Q	
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID	
S4Q572-RT	4Q39790.D	01/26/23 12:58	n/a	Retention Time Marker	
S4Q572-RT	4Q39791.D	01/26/23 13:13	n/a	Retention Time Marker	
S4Q572-IBLK	4Q39793.D	01/26/23 13:41	n/a	Instrument Blank	
S4Q572-CC571	4Q39794.D	01/26/23 13:55	n/a	Continuing cal 4	
S4Q572-CC571	4Q39795.D	01/26/23 14:12	n/a	Continuing cal 1.0LL	
ZZZZZZ	4Q39796.D	01/26/23 15:30	OP95069	(unrelated sample)	
FC2078-1	4Q39797.D	01/26/23 15:44	OP95096	AF-RHMW04-WGN01LF-2301W3	
ZZZZZZ	4Q39798.D	01/26/23 15:58	OP95069	(unrelated sample)	
ZZZZZZ	4Q39799.D	01/26/23 16:12	OP95069	(unrelated sample)	
FC1816-2	4Q39800.D	01/26/23 16:26	OP95069	(used for QC only; not part of job FC2078)	
ZZZZZZ	4Q39801.D	01/26/23 16:40	OP95069	(unrelated sample)	
S4Q572-CC571	4Q39802.D	01/26/23 16:54	n/a	Continuing cal 4	
S4Q572-ICCB	4Q39803.D	01/26/23 17:08	n/a	Continuing Calibration Blank	
ZZZZZZ	4Q39804.D	01/26/23 17:22	OP95069	(unrelated sample)	
ZZZZZZ	4Q39805.D	01/26/23 17:36	OP95069	(unrelated sample)	
ZZZZZZ	4Q39806.D	01/26/23 17:50	OP95069	(unrelated sample)	
ZZZZZZ	4Q39807.D	01/26/23 18:05	OP95069	(unrelated sample)	
ZZZZZZ	4Q39808.D	01/26/23 18:19	OP95069	(unrelated sample)	
ZZZZZZ	4Q39809.D	01/26/23 18:33	OP95069	(unrelated sample)	
ZZZZZZ	4Q39810.D	01/26/23 18:47	OP95069	(unrelated sample)	
ZZZZZZ	4Q39811.D	01/26/23 19:01	OP95069	(unrelated sample)	
ZZZZZZ	4Q39812.D	01/26/23 19:15	OP95069	(unrelated sample)	
S4Q572-CC571	4Q39813.D	01/26/23 19:29	n/a	Continuing cal 4	
S4Q572-ICCB	4Q39814.D	01/26/23 19:43	n/a	Continuing Calibration Blank	
S4Q572-CC571	4Q39815.D	01/26/23 19:57	n/a	Continuing cal 1.0LL	
ZZZZZZ	4Q39816.D	01/26/23 20:11	OP95096	(unrelated sample)	
ZZZZZZ	4Q39817.D	01/26/23 20:25	OP95096	(unrelated sample)	
ZZZZZZ	4Q39818.D	01/26/23 20:39	OP95096	(unrelated sample)	
ZZZZZZ	4Q39819.D	01/26/23 20:53	OP95096	(unrelated sample)	
ZZZZZZ	4Q39820.D	01/26/23 21:07	OP95096	(unrelated sample)	
ZZZZZZ	4Q39821.D	01/26/23 21:21	OP95096	(unrelated sample)	
ZZZZZZ	4Q39822.D	01/26/23 21:36	OP95096	(unrelated sample)	
ZZZZZZ	4Q39823.D	01/26/23 21:50	OP95096	(unrelated sample)	
FC1815-11	4Q39824.D	01/26/23 22:04	OP95096	(used for QC only; not part of job FC2078)	
S4Q572-CC571	4Q39825.D	01/26/23 22:18	n/a	Continuing cal 4	
S4Q572-ICCB	4Q39826.D	01/26/23 22:32	n/a	Continuing Calibration Blank	
ZZZZZZ	4Q39827.D	01/26/23 22:46	OP95096	(unrelated sample)	
ZZZZZZ	4Q39828.D	01/26/23 23:00	OP95096	(unrelated sample)	
ZZZZZZ	4Q39829.D	01/26/23 23:14	OP95096	(unrelated sample)	
ZZZZZZ	4Q39830.D	01/26/23 23:28	OP95096	(unrelated sample)	
ZZZZZZ	4Q39831.D	01/26/23 23:42	OP95096	(unrelated sample)	
S4Q572-ECC571	4Q39832.D	01/26/23 23:56	n/a	Ending cal 4	
S4Q572-ICCB	4Q39833.D	01/27/23 00:10	n/a	Continuing Calibration Blank	

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Orlando, FL

Section 7

MS Semi-volatiles

Raw Data

7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39712.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 6:33:12 PM
 Sample Name : fc2078-1
 Vial : P1-D9
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,565,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.211	216.8 -> 171.9	460272	10.00 µg/L	0.037
M5-PFPeA	4.876	268.3 -> 223.0	277871	5.00 µg/L	0.012
M5-PFHxA	6.172	318.0 -> 273.0	185057	2.50 µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	94050	2.50 µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	151241	2.50 µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	73481	1.25 µg/L	-0.012
M6-PFDA	8.866	519.1 -> 474.1	55720	1.25 µg/L	-0.012
M7-PFUnDA	9.361	570.0 -> 525.1	62006	1.25 µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	58479	1.25 µg/L	-0.012
M2-PFTeDA	10.499	715.2 -> 670.0	41134	1.25 µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	58605	2.50 µg/L	-0.012
M3-PFBS	6.101	302.1 -> 79.9	48489	2.50 µg/L	0.012
M3-PFHxS	7.904	402.1 -> 79.9	32315	2.50 µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	39875	2.50 µg/L	-0.012
M2-4:2FTS	5.823	329.1 -> 80.9	5161	5.00 µg/L	0.000
M2-6:2FTS	7.524	429.1 -> 80.9	10913	5.00 µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	12671	5.00 µg/L	-0.012
M3-MeFOSAA	8.912	573.2 -> 419.0	46496	5.00 µg/L	-0.013
M3-HFPO-DA	6.551	286.9 -> 168.9	136208	10.00 µg/L	0.000
M5-EtFOSAA	9.133	589.2 -> 419.0	37549	5.00 µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	295056	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	321272	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	26954	2.50 µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	22259	2.50 µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	35158	2.50 µg/L	-0.012
13C3-PFBA	3.215	216.0 -> 172.0	211495	5.00 µg/L	0.037
18O2-PFHxS	7.903	403.0 -> 83.9	18144	2.50 µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	148057	2.50 µg/L	-0.012
13C2-PFDA	8.879	515.1 -> 470.1	42583	1.25 µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	73163	1.25 µg/L	-0.012
13C2-PFHxA	6.173	315.1 -> 270.0	139531	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.823	329.1 -> 80.9	5161	7.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 157.8%		
13C2-6:2FTS	7.524	429.1 -> 80.9	10913	7.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 149.1%		
13C2-8:2FTS	8.641	529.1 -> 80.9	12671	6.33 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 126.5%		
13C2-PFDoDA	9.793	615.1 -> 570.0	58479	1.41 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.2%		
13C2-PFTeDA	10.499	715.2 -> 670.0	41134	1.40 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.9%		
13C3-PFBS	6.101	302.1 -> 79.9	48489	3.09 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 123.7%		
13C3-PFHxS	7.904	402.1 -> 79.9	32315	3.05 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 = 122.1%		
13C4-PFBA	3.211	216.8 -> 171.9	460272	12.07 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 120.7%		
13C4-PFHpA	7.106	367.1 -> 322.0	94050	2.89 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 115.6%		
13C5-PFHxA	6.172	318.0 -> 273.0	185057	3.15 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 126.2%		
13C5-PFPeA	4.876	268.3 -> 223.0	277871	6.12 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.5%		
13C6-PFDA	8.866	519.1 -> 474.1	55720	1.48 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 118.5%		
13C7-PFUnDA	9.361	570.0 -> 525.1	62006	1.54 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 122.9%		
13C8-FOSA	10.235	506.1 -> 77.8	58605	2.92 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 116.6%		
13C8-PFOA	7.776	421.1 -> 376.0	151241	2.85 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.8%		
13C8-PFOS	9.055	507.1 -> 79.9	39875	2.78 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.1%		
13C9-PFNA	8.347	472.1 -> 427.0	73481	1.41 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.1%		
d3-MeFOSAA	8.912	573.2 -> 419.0	46496	5.76 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.2%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	136208	12.24 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 122.4%		
d3-MeFOSA	11.315	515.0 -> 219.0	22259	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.8%		
d5-EtFOSAA	9.133	589.2 -> 419.0	37549	5.34 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.8%		
d7-MeFOSE	11.235	623.2 -> 58.9	295056	28.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 112.6%		
d9-EtFOSE	11.470	639.2 -> 58.9	321272	26.75 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 107.0%		
d5-EtFOSA	11.548	531.1 -> 219.0	26954	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.3%		

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	9.290	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	7.532	599.0 -> 98.8				
		363.1 -> 319.0	0	µg/L	m	1
		363.1 -> 169.0	0			
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	8.735	463.0 -> 419.0	0	µg/L	m	1
		463.0 -> 219.0	0			
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	-	413.0 -> 369.0	-	N.D.		
		413.0 -> 169.0				
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9CI-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	11.995	630.0 -> 58.9	0	µg/L	m	1
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

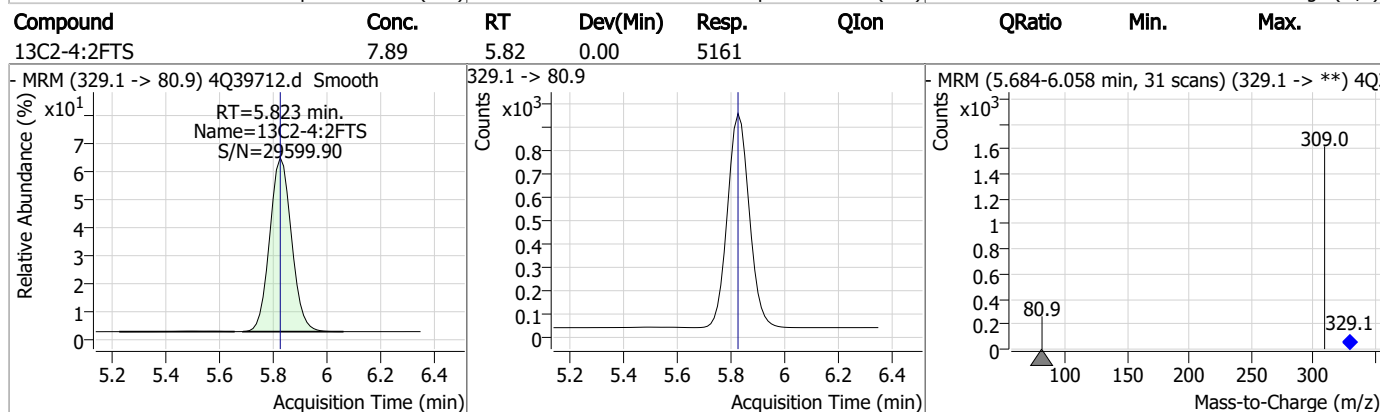
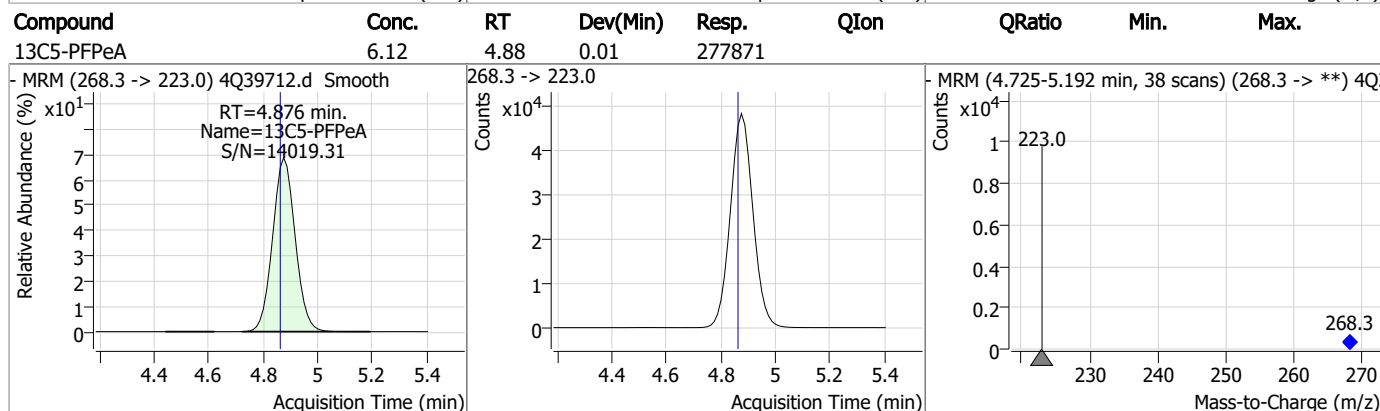
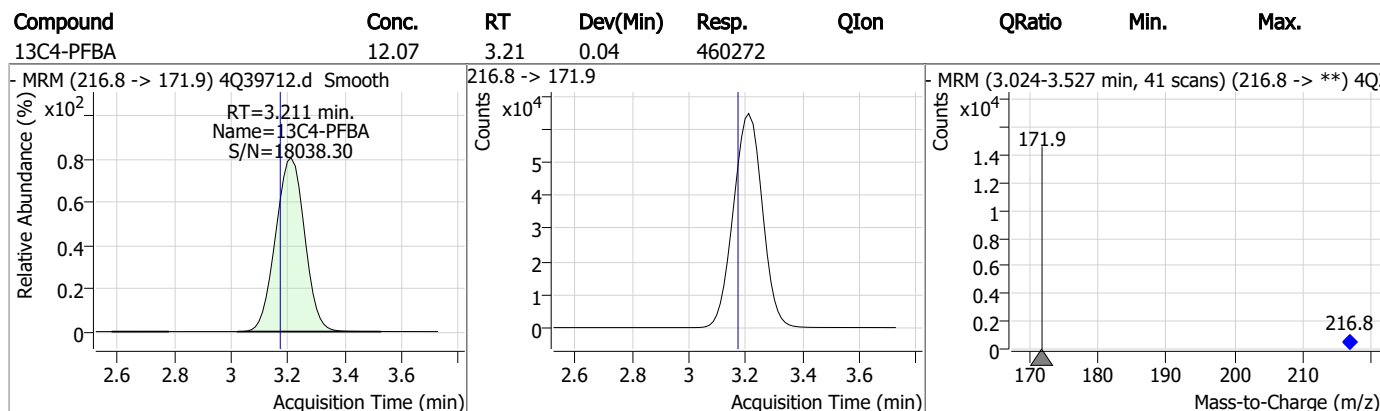
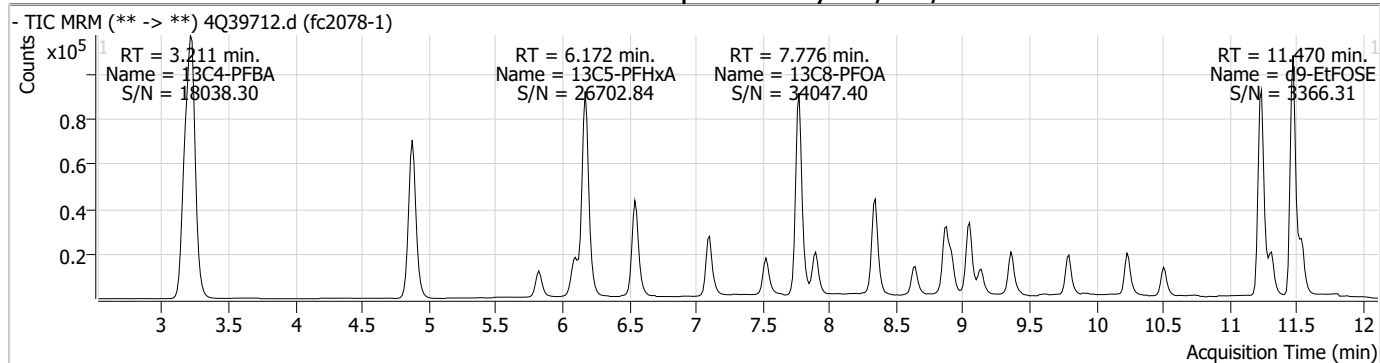
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

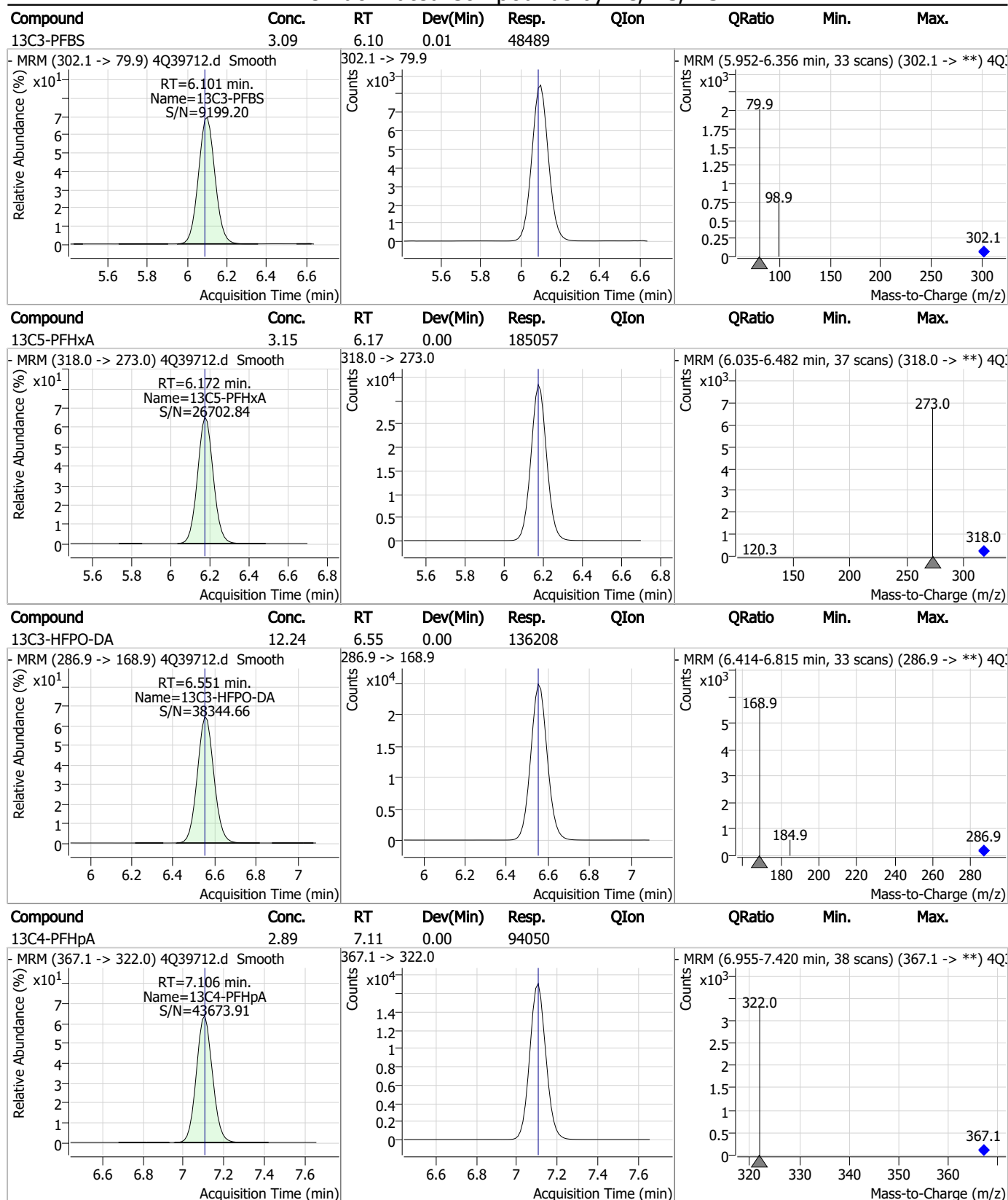
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.1.1
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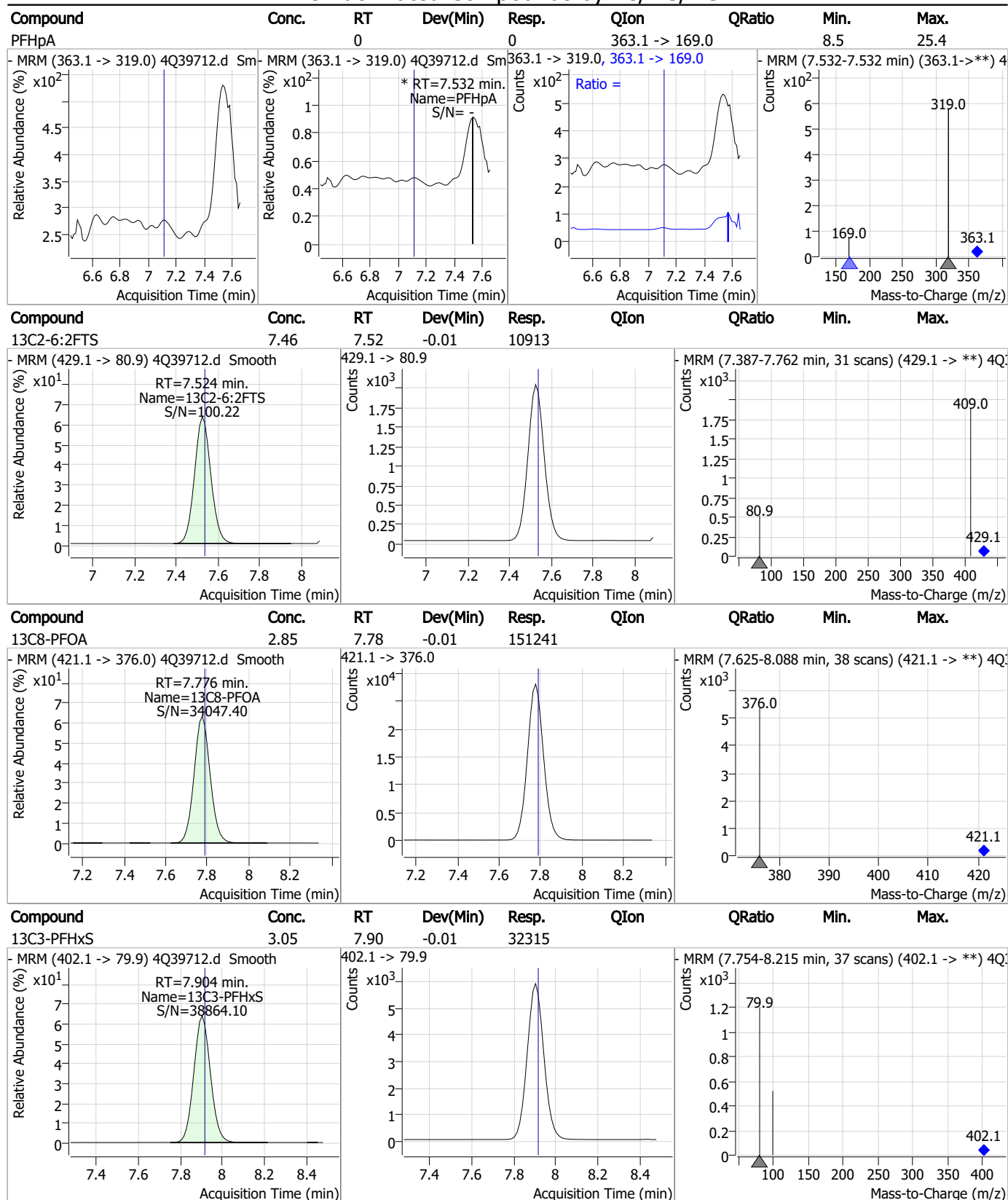
Perfluorinated Compounds by LC/MS/MS



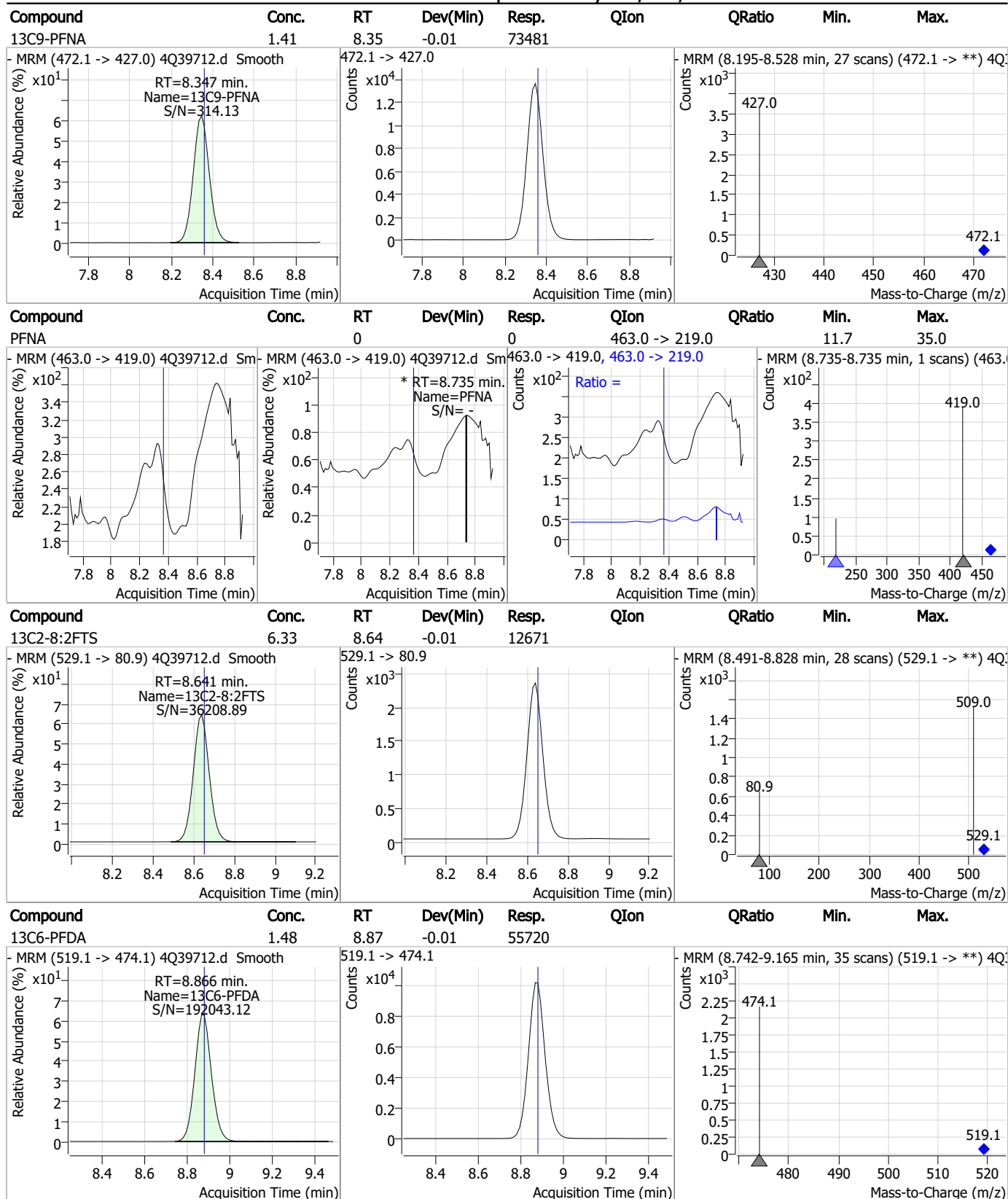
Perfluorinated Compounds by LC/MS/MS



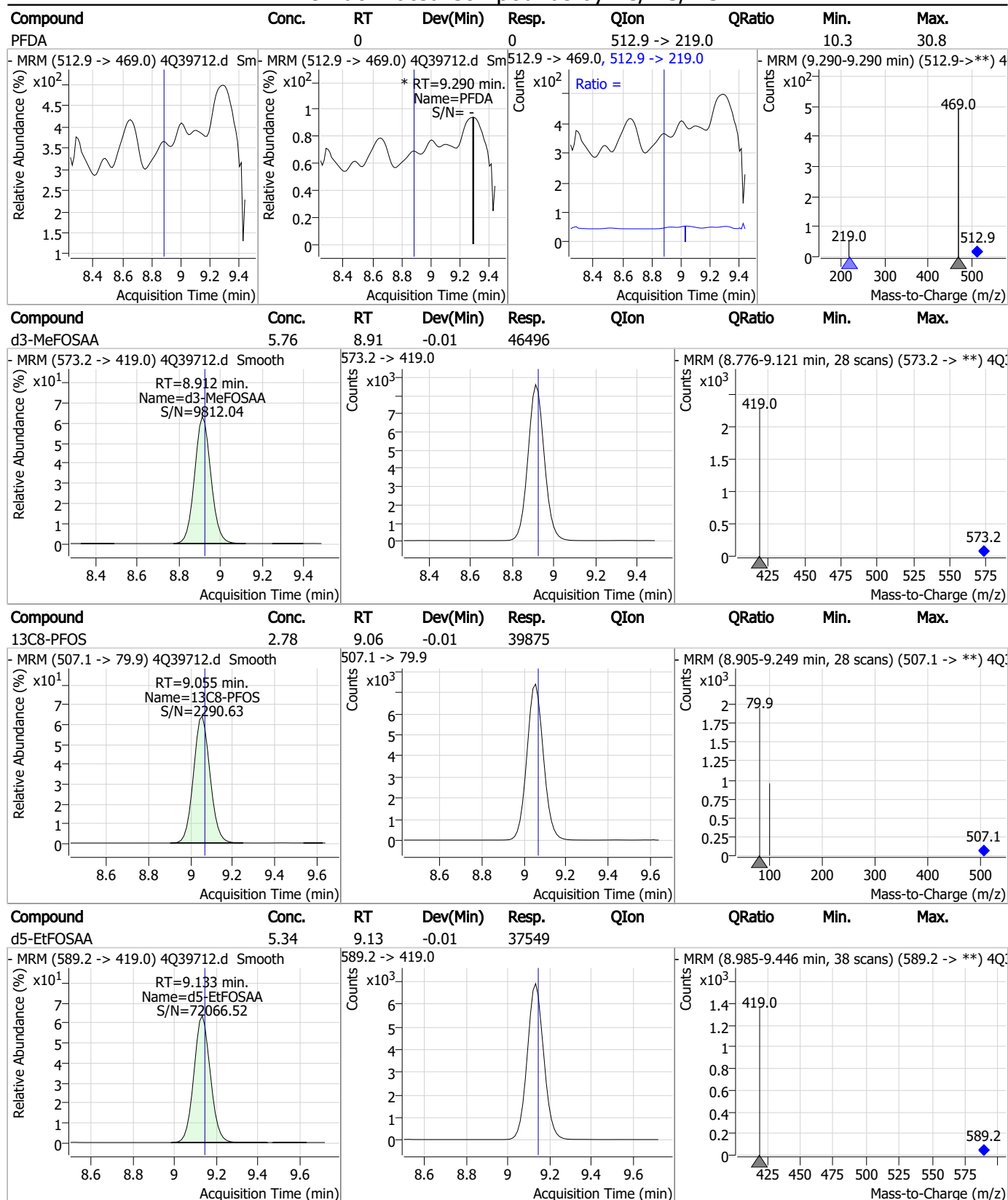
Perfluorinated Compounds by LC/MS/MS



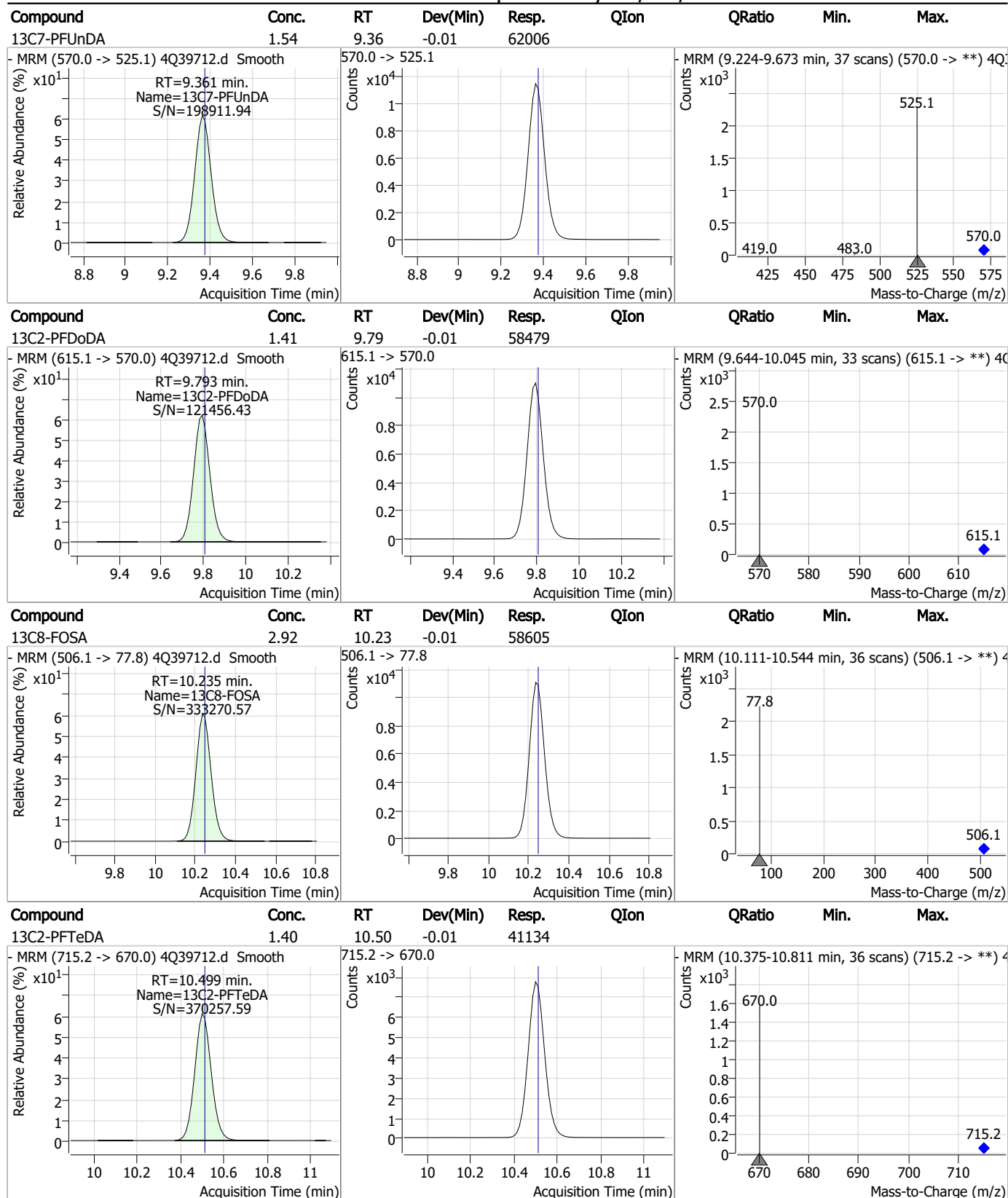
Perfluorinated Compounds by LC/MS/MS



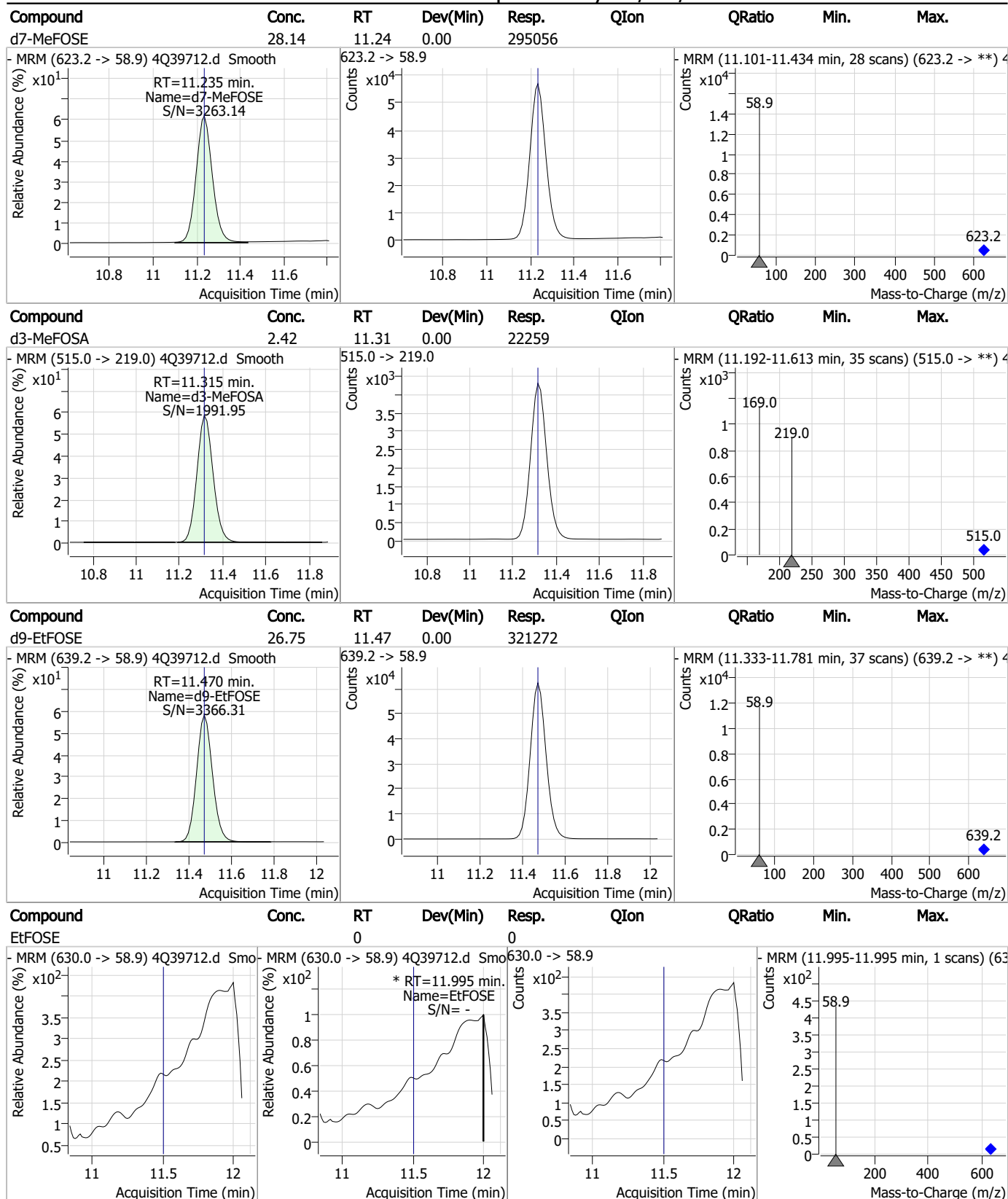
Perfluorinated Compounds by LC/MS/MS



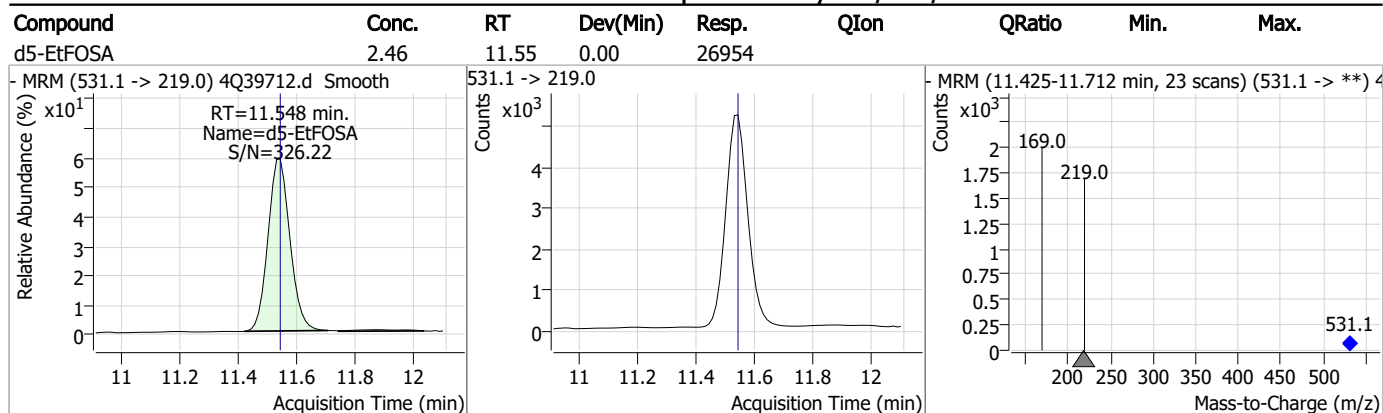
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39797.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 3:44:09 PM
 Sample Name : fc2078-1
 Vial : P3-A2
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q572.batch.bin
 Sample Information : op95096,S4Q572,565,,,5.0,10,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.136	216.8 -> 171.9	42461	1.00 µg/L	0.050
M5-PFPeA	4.776	268.3 -> 223.0	28320	0.50 µg/L	0.013
M5-PFHxA	6.072	318.0 -> 273.0	18361	0.25 µg/L	0.012
M4-PFHpA	7.030	367.1 -> 322.0	9489	0.25 µg/L	0.000
M8-PFOA	7.714	421.1 -> 376.0	14996	0.25 µg/L	0.000
M9-PFNA	8.297	472.1 -> 427.0	7477	0.13 µg/L	0.000
M6-PFDA	8.817	519.1 -> 474.1	5957	0.13 µg/L	-0.012
M7-PFUnDA	9.298	570.0 -> 525.1	5875	0.13 µg/L	-0.012
M2-PFDoDA	9.718	615.1 -> 570.0	6615	0.13 µg/L	-0.013
M2-PFTeDA	10.437	715.2 -> 670.0	4474	0.13 µg/L	0.000
M8-FOSA	10.197	506.1 -> 77.8	5966	0.25 µg/L	0.000
M3-PFBS	5.989	302.1 -> 79.9	4382	0.25 µg/L	0.012
M3-PFHxS	7.841	402.1 -> 79.9	3611	0.25 µg/L	0.000
M8-PFOS	8.993	507.1 -> 79.9	3831	0.25 µg/L	-0.012
M2-4:2FTS	5.721	329.1 -> 80.9	787	0.50 µg/L	0.012
M2-6:2FTS	7.462	429.1 -> 80.9	1334	0.50 µg/L	0.000
M2-8:2FTS	8.579	529.1 -> 80.9	1485	0.50 µg/L	-0.012
M3-MeFOSAA	8.850	573.2 -> 419.0	5634	0.50 µg/L	-0.025
M3-HFPO-DA	6.464	286.9 -> 168.9	14546	1.00 µg/L	0.012
M5-EtFOSAA	9.072	589.2 -> 419.0	4141	0.50 µg/L	-0.012
M7-MeFOSE	11.200	623.2 -> 58.9	31469	2.50 µg/L	0.000
M9-EtFOSE	11.433	639.2 -> 58.9	35058	2.50 µg/L	0.000
M5-EtFOSA	11.498	531.1 -> 219.0	3294	0.25 µg/L	-0.012
M3-MeFOSA	11.277	515.0 -> 219.0	2610	0.25 µg/L	0.000
13C4-PFOS	8.994	502.8 -> 79.9	3693	0.25 µg/L	-0.012
13C3-PFBA	3.128	216.0 -> 172.0	20961	0.50 µg/L	0.037
18O2-PFHxS	7.840	403.0 -> 83.9	2313	0.25 µg/L	0.000
13C4-PFOA	7.714	417.1 -> 372.0	14623	0.25 µg/L	0.000
13C2-PFDA	8.805	515.1 -> 470.1	5303	0.13 µg/L	-0.025
13C5-PFNA	8.297	468.0 -> 423.0	7652	0.13 µg/L	0.000
13C2-PFHxA	6.073	315.1 -> 270.0	14522	0.25 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.721	329.1 -> 80.9	787	0.94 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 18.9%		
13C2-6:2FTS	7.462	429.1 -> 80.9	1334	0.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 14.3%		
13C2-8:2FTS	8.579	529.1 -> 80.9	1485	0.58 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 11.6%		
13C2-PFDoDA	9.718	615.1 -> 570.0	6615	0.13 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 10.3%		
13C2-PFTeDA	10.437	715.2 -> 670.0	4474	0.12 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 9.8%		
13C3-PFBS	5.989	302.1 -> 79.9	4382	0.22 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 8.8%		
13C3-PFHxS	7.841	402.1 -> 79.9	3611	0.27 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 = 10.7%		
13C4-PFBA	3.136	216.8 -> 171.9	42461	1.12 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 11.2%		
13C4-PFHpA	7.030	367.1 -> 322.0	9489	0.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 11.2%		
13C5-PFHxA	6.072	318.0 -> 273.0	18361	0.30 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 12.0%		
13C5-PFPeA	4.776	268.3 -> 223.0	28320	0.60 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 12.0%		
13C6-PFDA	8.817	519.1 -> 474.1	5957	0.13 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 10.2%		
13C7-PFUnDA	9.298	570.0 -> 525.1	5875	0.12 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 9.4%		
13C8-FOSA	10.197	506.1 -> 77.8	5966	0.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 11.3%		
13C8-PFOA	7.714	421.1 -> 376.0	14996	0.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 11.4%		
13C8-PFOS	8.993	507.1 -> 79.9	3831	0.25 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 10.2%		
13C9-PFNA	8.297	472.1 -> 427.0	7477	0.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 11.0%		
d3-MeFOSAA	8.850	573.2 -> 419.0	5634	0.66 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 13.3%		
13C3-HFPO-DA	6.464	286.9 -> 168.9	14546	1.26 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 12.6%		
d3-MeFOSA	11.277	515.0 -> 219.0	2610	0.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 10.8%		
d5-EtFOSAA	9.072	589.2 -> 419.0	4141	0.56 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 11.2%		
d7-MeFOSE	11.200	623.2 -> 58.9	31469	2.86 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 11.4%		
d9-EtFOSE	11.433	639.2 -> 58.9	35058	2.78 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 11.1%		
d5-EtFOSA	11.498	531.1 -> 219.0	3294	0.29 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 11.4%		

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	7.458	599.0 -> 98.8				
		363.1 -> 319.0	0		µg/L m	1
		363.1 -> 169.0	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	9.990	713.1 -> 669.0	0		µg/L m	1
		713.1 -> 168.9	0			
PFTrDA	10.453	663.0 -> 619.0	0		µg/L m	1
		663.0 -> 168.9	0			
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9CI-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

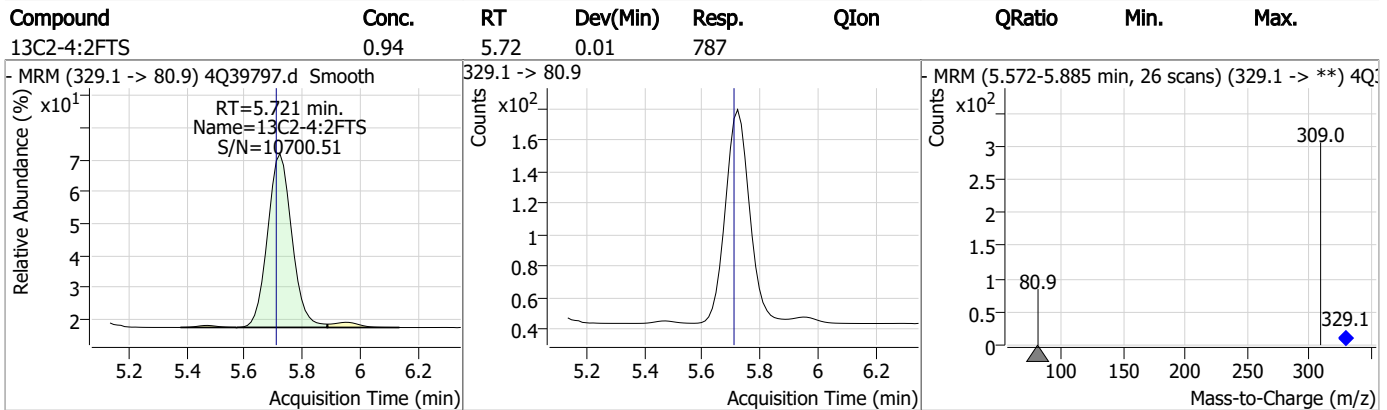
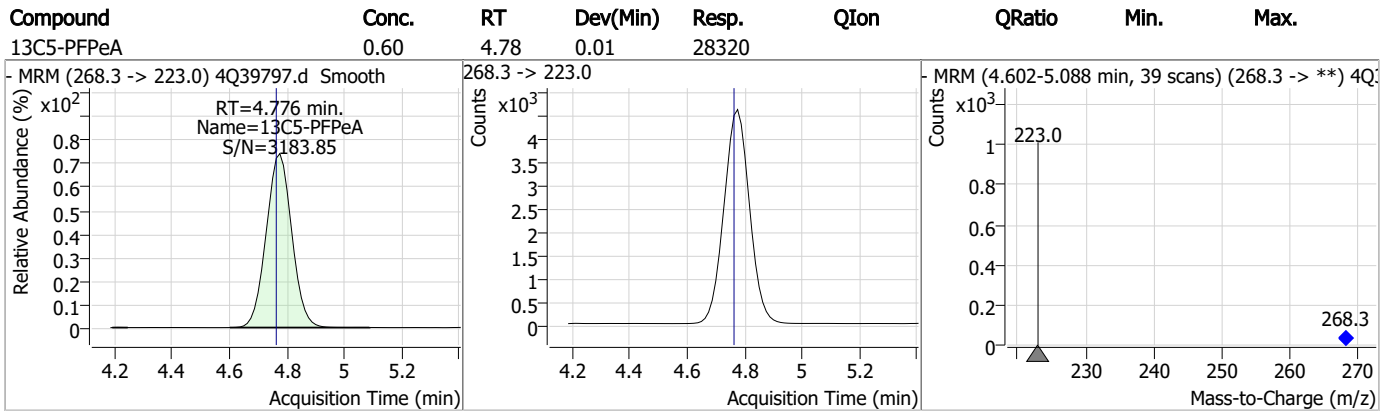
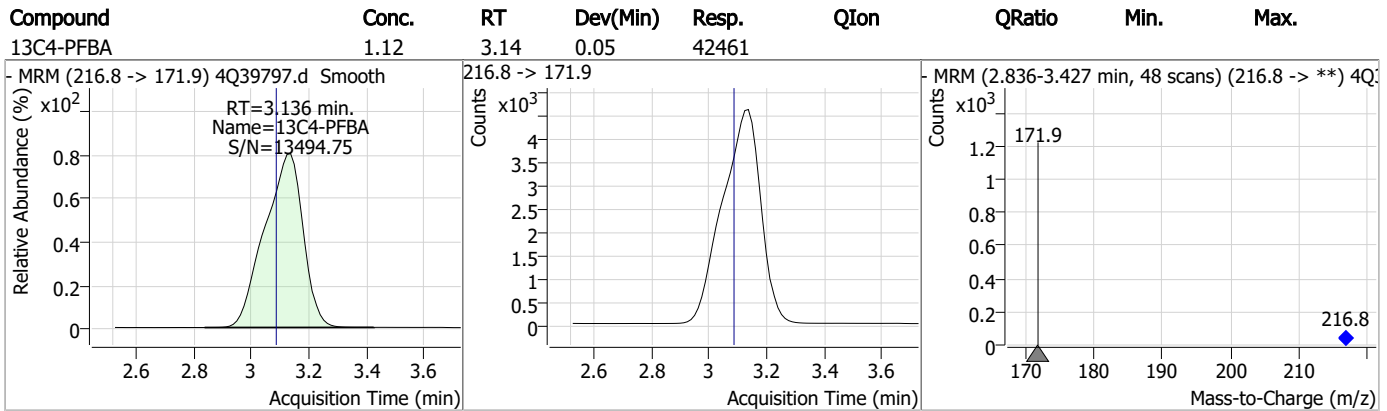
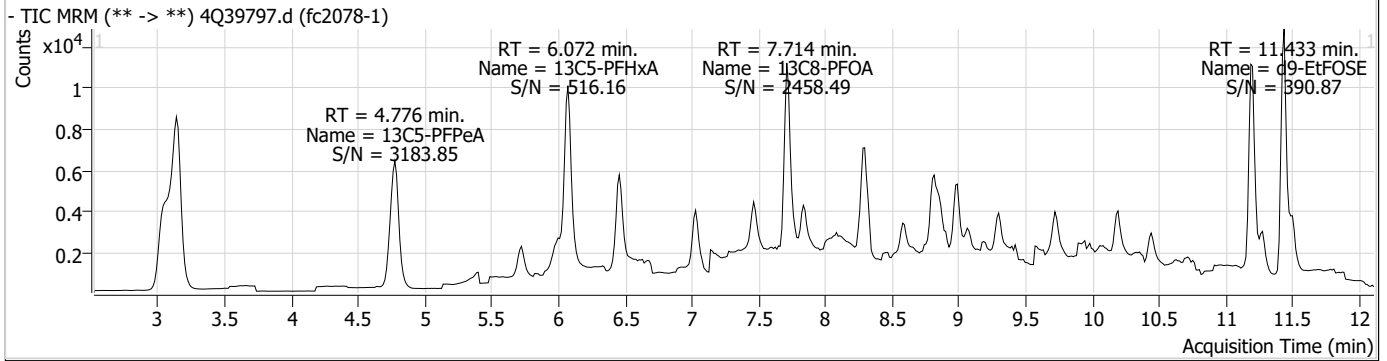
Perfluorinated Compounds by LC/MS/MS

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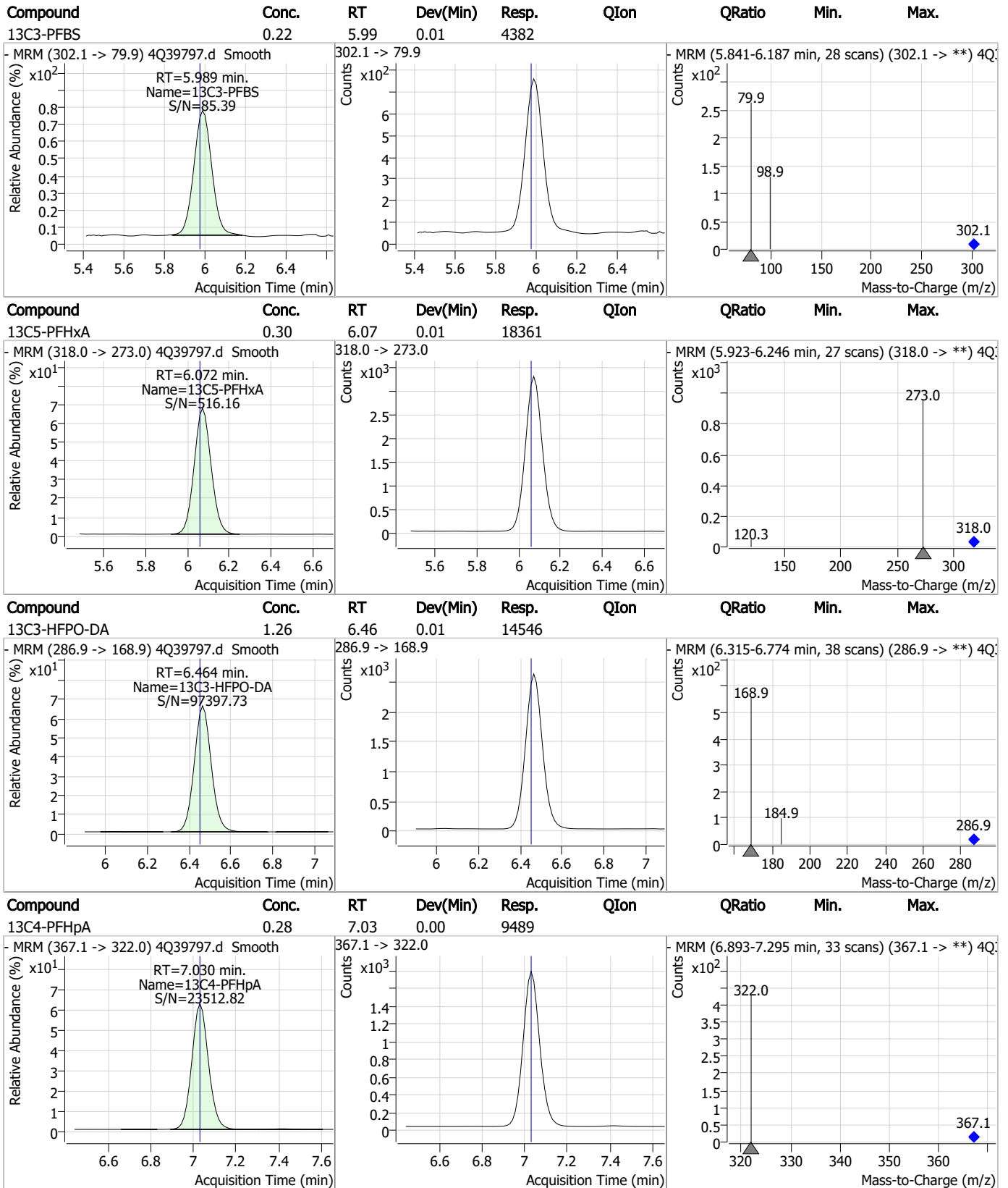
7.1.2

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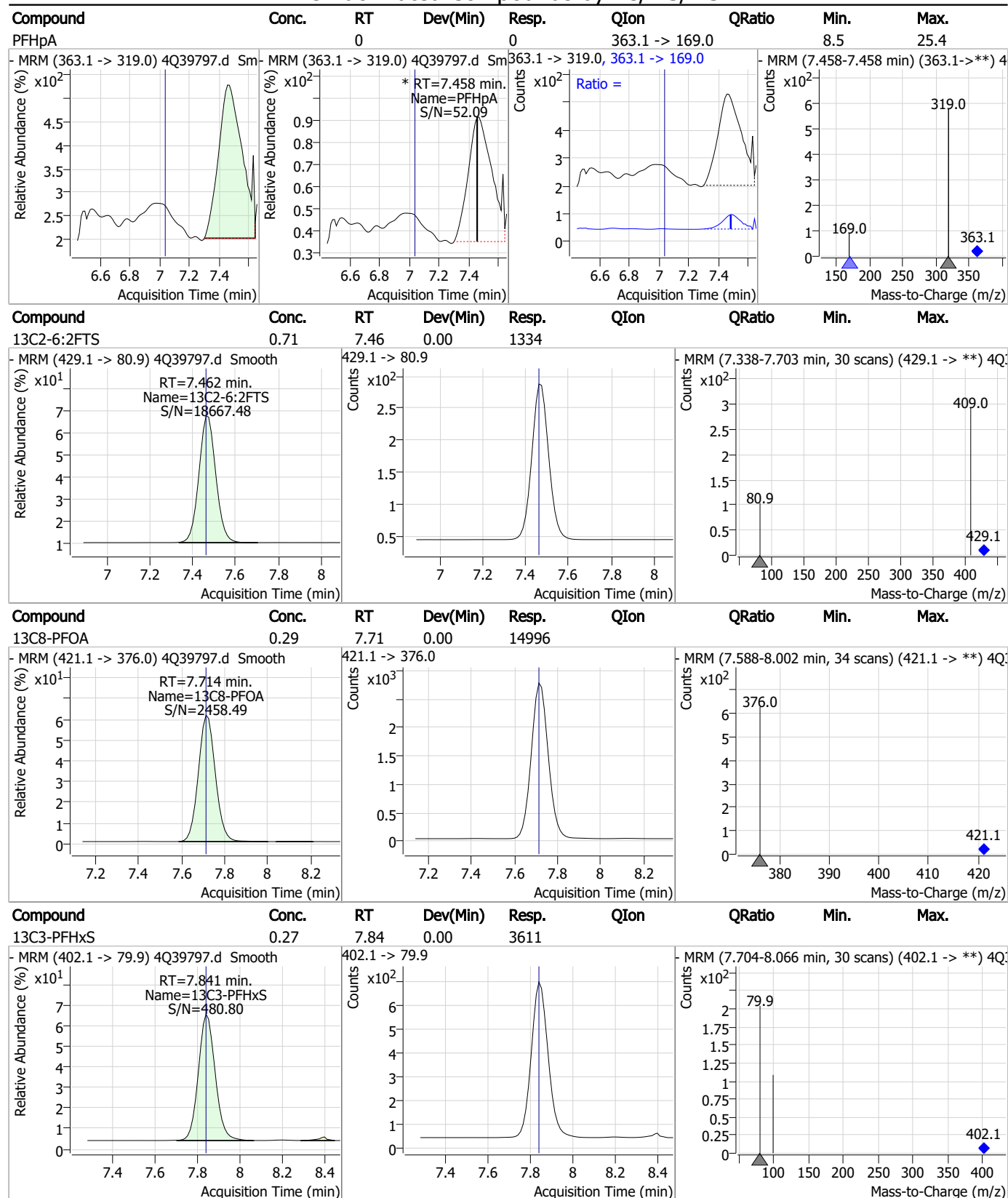
Perfluorinated Compounds by LC/MS/MS



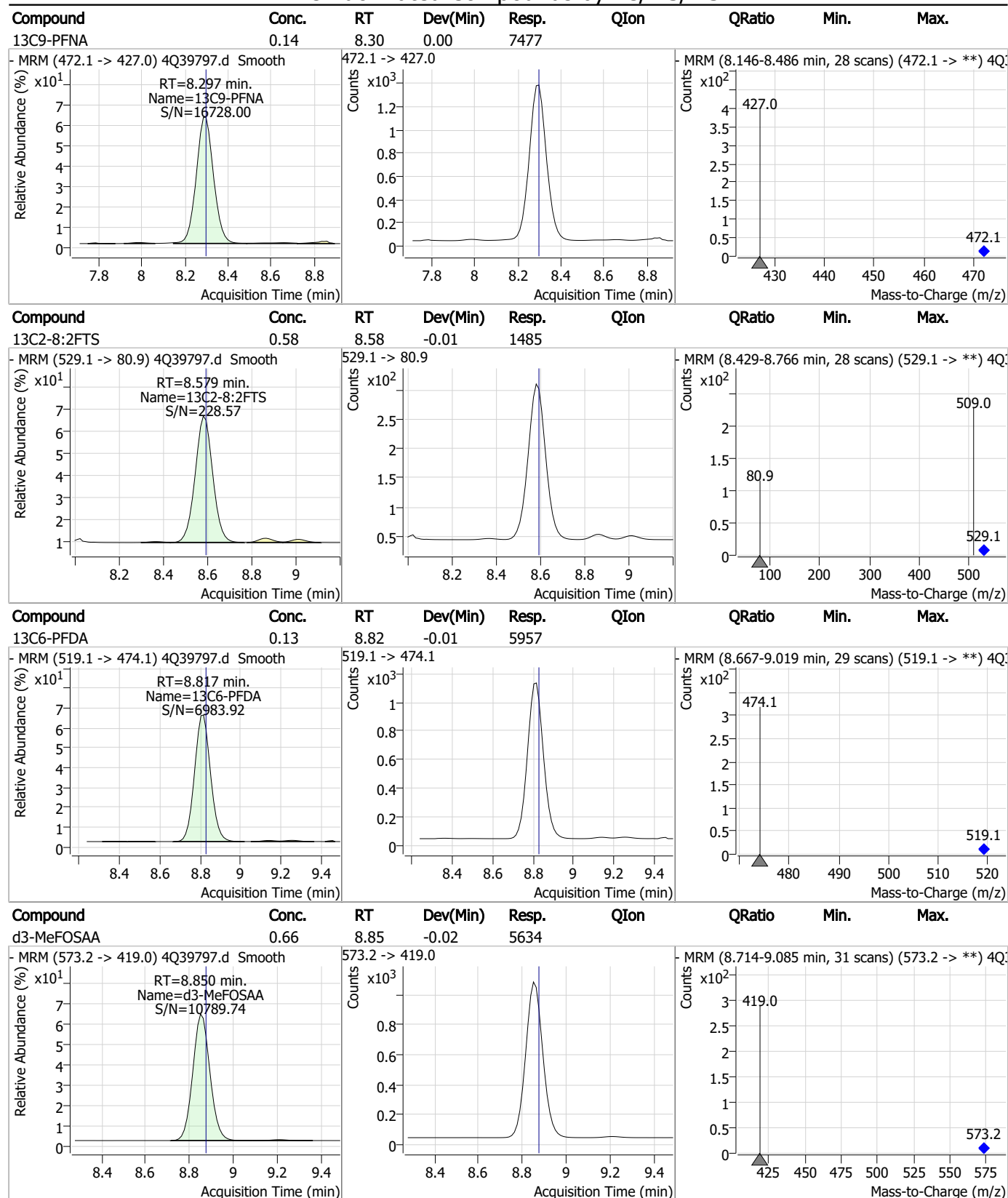
Perfluorinated Compounds by LC/MS/MS



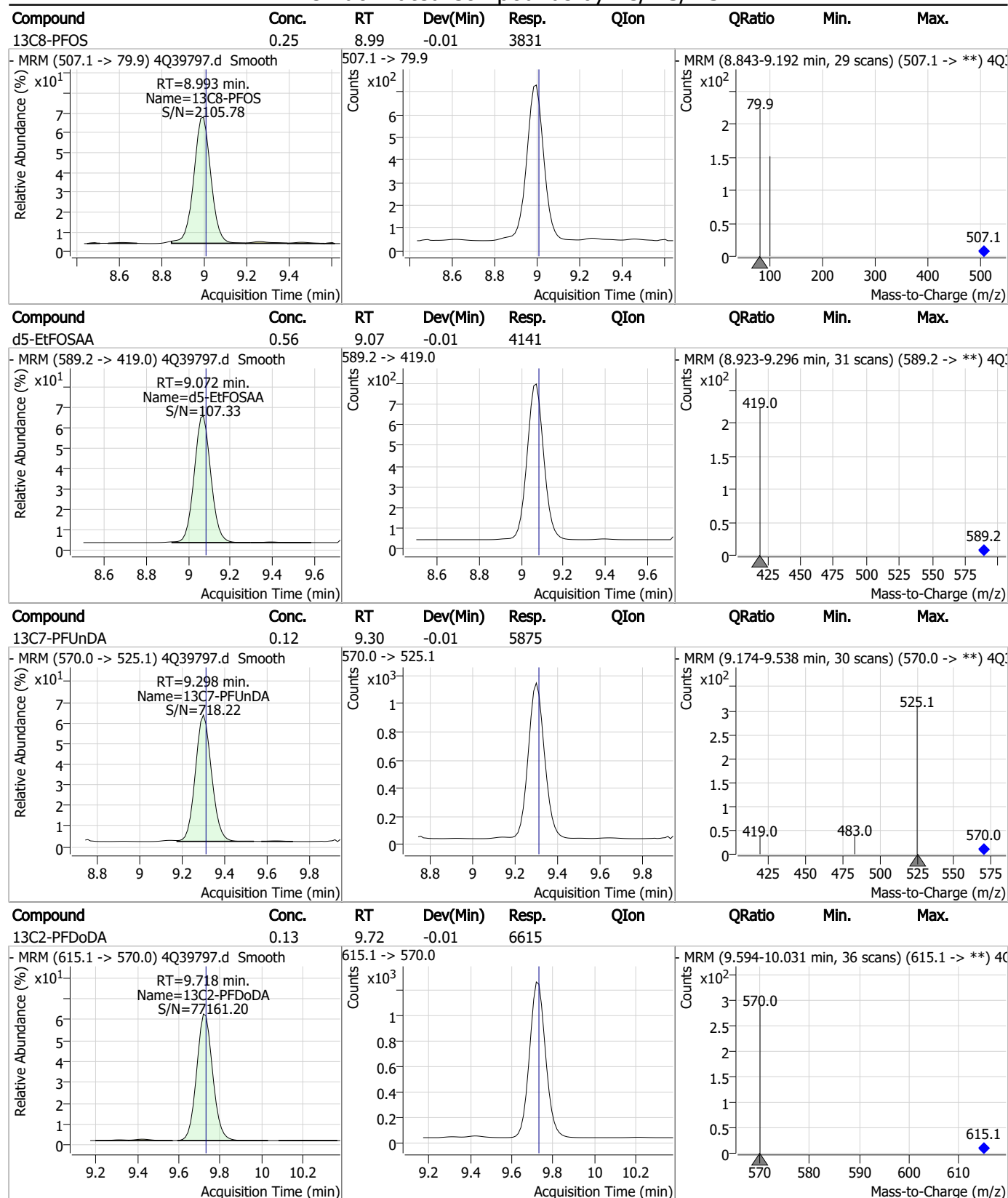
Perfluorinated Compounds by LC/MS/MS



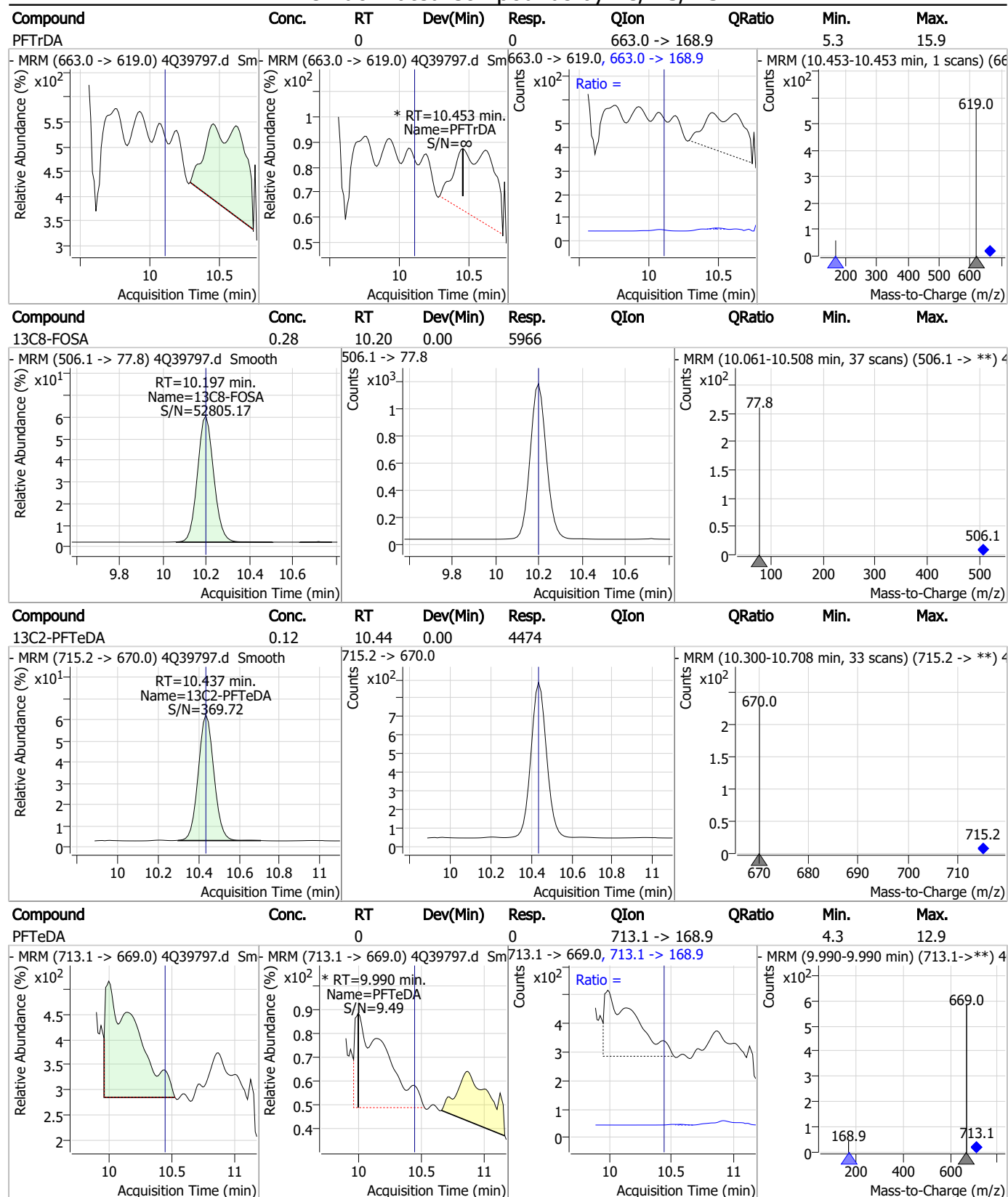
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



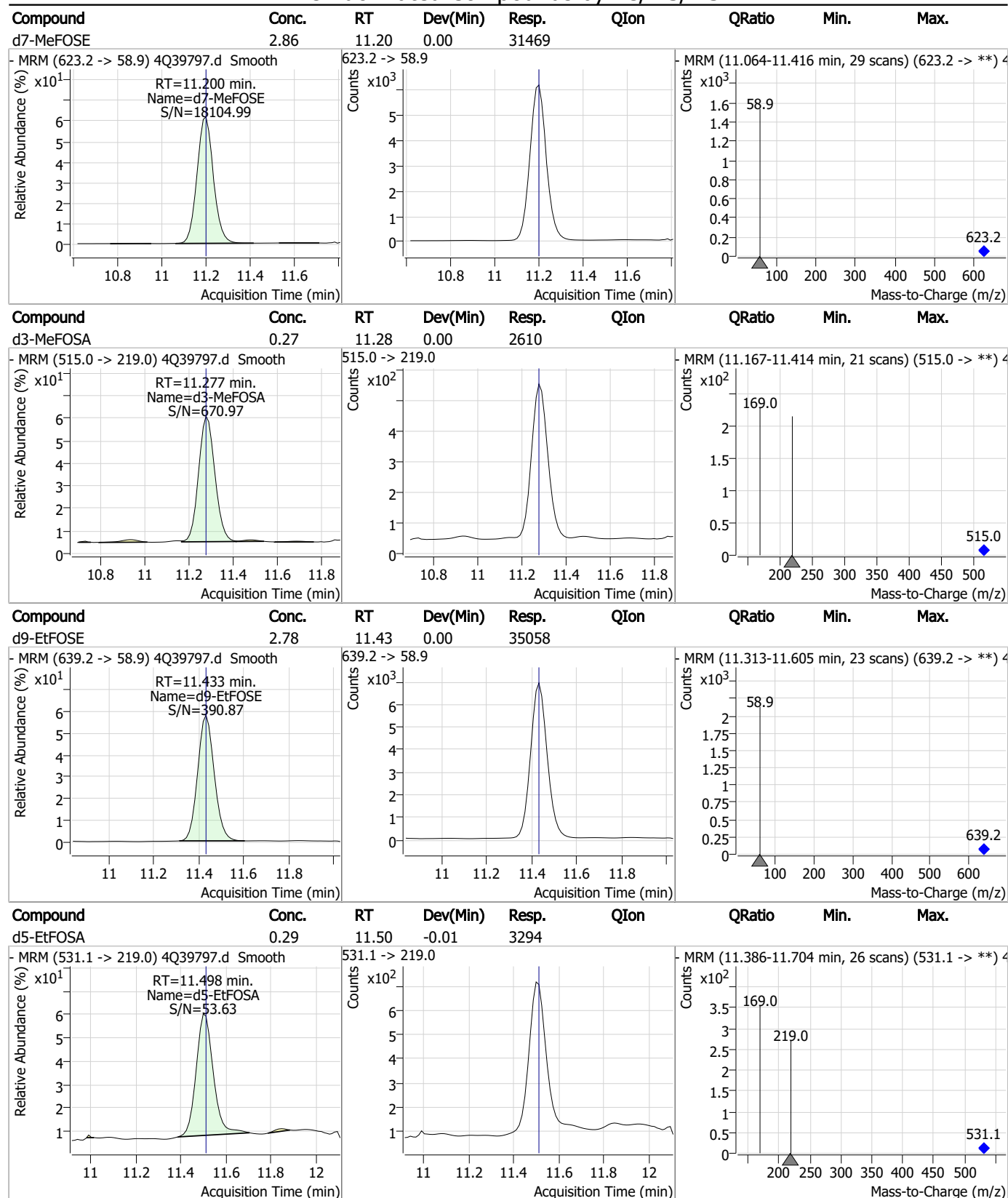
Perfluorinated Compounds by LC/MS/MS



7.1.2

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39713.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 6:47:17 PM
 Sample Name : fc2078-2
 Vial : P1-E1
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,565,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.199	216.8 -> 171.9	416384	10.00 µg/L	0.025
M5-PFPeA	4.863	268.3 -> 223.0	261464	5.00 µg/L	0.000
M5-PFHxA	6.147	318.0 -> 273.0	172609	2.50 µg/L	-0.025
M4-PFHpA	7.080	367.1 -> 322.0	86922	2.50 µg/L	-0.026
M8-PFOA	7.764	421.1 -> 376.0	144587	2.50 µg/L	-0.025
M9-PFNA	8.334	472.1 -> 427.0	67917	1.25 µg/L	-0.026
M6-PFDA	8.866	519.1 -> 474.1	54524	1.25 µg/L	-0.012
M7-PFUnDA	9.361	570.0 -> 525.1	53472	1.25 µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	50562	1.25 µg/L	-0.012
M2-PFTeDA	10.499	715.2 -> 670.0	39125	1.25 µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	54077	2.50 µg/L	-0.012
M3-PFBS	6.077	302.1 -> 79.9	44895	2.50 µg/L	-0.012
M3-PFHxS	7.892	402.1 -> 79.9	32303	2.50 µg/L	-0.025
M8-PFOS	9.043	507.1 -> 79.9	36049	2.50 µg/L	-0.025
M2-4:2FTS	5.796	329.1 -> 80.9	4949	5.00 µg/L	-0.027
M2-6:2FTS	7.511	429.1 -> 80.9	9668	5.00 µg/L	-0.025
M2-8:2FTS	8.629	529.1 -> 80.9	12546	5.00 µg/L	-0.025
M3-MeFOSAA	8.912	573.2 -> 419.0	45498	5.00 µg/L	-0.013
M3-HFPO-DA	6.539	286.9 -> 168.9	129341	10.00 µg/L	-0.012
M5-EtFOSAA	9.121	589.2 -> 419.0	36755	5.00 µg/L	-0.025
M7-MeFOSE	11.235	623.2 -> 58.9	255781	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	290103	25.00 µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	22983	2.50 µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	20129	2.50 µg/L	0.000
13C4-PFOS	9.044	502.8 -> 79.9	35159	2.50 µg/L	-0.025
13C3-PFBA	3.203	216.0 -> 172.0	214631	5.00 µg/L	0.025
18O2-PFHxS	7.891	403.0 -> 83.9	19467	2.50 µg/L	-0.025
13C4-PFOA	7.764	417.1 -> 372.0	152641	2.50 µg/L	-0.025
13C2-PFDA	8.867	515.1 -> 470.1	46488	1.25 µg/L	-0.012
13C5-PFNA	8.334	468.0 -> 423.0	75658	1.25 µg/L	-0.026
13C2-PFHxA	6.148	315.1 -> 270.0	145829	2.50 µg/L	-0.025
System Monitoring Compounds					
13C2-4:2FTS	5.796	329.1 -> 80.9	4949	7.05 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 141.1%		
13C2-6:2FTS	7.511	429.1 -> 80.9	9668	6.16 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.1%		
13C2-8:2FTS	8.629	529.1 -> 80.9	12546	5.84 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.8%		
13C2-PFDoDA	9.793	615.1 -> 570.0	50562	1.12 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.6%		
13C2-PFTeDA	10.499	715.2 -> 670.0	39125	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C3-PFBS	6.077	302.1 -> 79.9	44895	2.67 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C3-PFHxS	7.892	402.1 -> 79.9	32303	2.84 µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.8%		
13C4-PFBA	3.199	216.8 -> 171.9	416384	10.76 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C4-PFHpA	7.080	367.1 -> 322.0	86922	2.56 µg/L	-0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C5-PFHxA	6.147	318.0 -> 273.0	172609	2.81 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.6%		
13C5-PFPeA	4.863	268.3 -> 223.0	261464	5.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.3%		
13C6-PFDA	8.866	519.1 -> 474.1	54524	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C7-PFUnDA	9.361	570.0 -> 525.1	53472	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C8-FOSA	10.235	506.1 -> 77.8	54077	2.69 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C8-PFOA	7.764	421.1 -> 376.0	144587	2.64 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C8-PFOS	9.043	507.1 -> 79.9	36049	2.51 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C9-PFNA	8.334	472.1 -> 427.0	67917	1.26 µg/L	-0.026
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.0%		
d3-MeFOSAA	8.912	573.2 -> 419.0	45498	5.63 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.7%		
13C3-HFPO-DA	6.539	286.9 -> 168.9	129341	11.12 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 111.2%		
d3-MeFOSA	11.315	515.0 -> 219.0	20129	2.19 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 87.6%		
d5-EtFOSAA	9.121	589.2 -> 419.0	36755	5.23 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
d7-MeFOSE	11.235	623.2 -> 58.9	255781	24.40 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 97.6%		
d9-EtFOSE	11.470	639.2 -> 58.9	290103	24.16 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
d5-EtFOSA	11.535	531.1 -> 219.0	22983	2.10 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 83.8%		

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	9.414	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	7.507	599.0 -> 98.8				
		363.1 -> 319.0	0	µg/L	m	1
		363.1 -> 169.0	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				
PFTrDA	9.729	663.0 -> 619.0	0	µg/L	m	1
		663.0 -> 168.9	0			
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9CI-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	11.895	630.0 -> 58.9	0	µg/L	m	1
		511.9 -> 219.0	-	N.D.		
MeFOSA	-	511.9 -> 169.0				
		616.1 -> 58.9	-	N.D.		
MeFOSE	-	699.1 -> 79.9	-	N.D.		
PFDsDS	-	699.1 -> 98.8	-			
		295.0 -> 201.0	-	N.D.		
NFDHA	-	295.0 -> 84.9				
		279.0 -> 85.1	-	N.D.		
PFMBA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

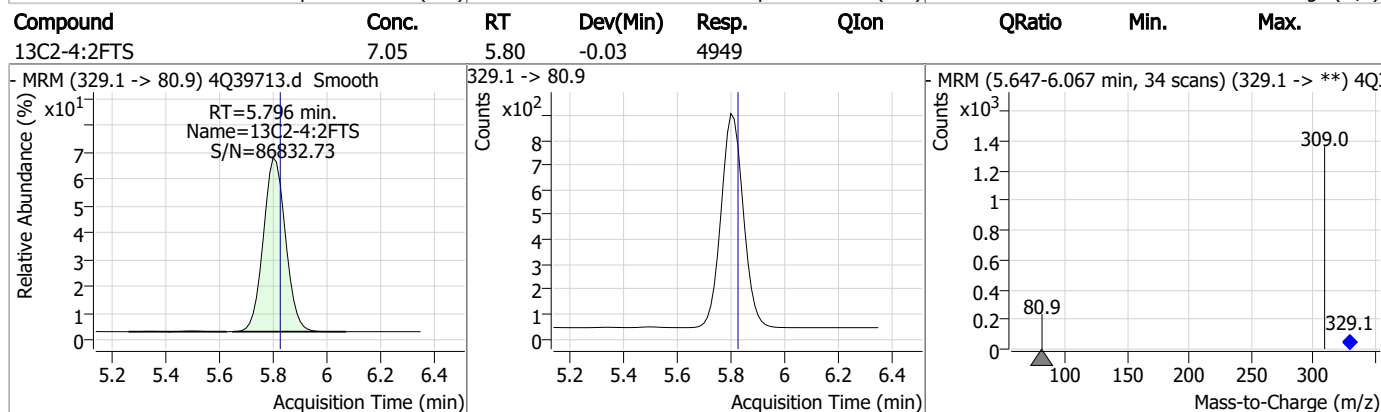
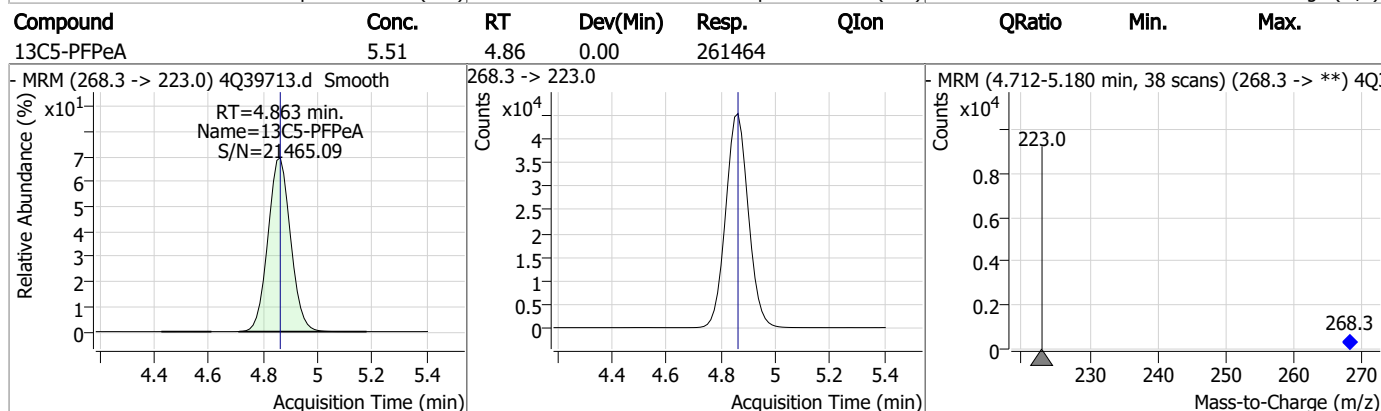
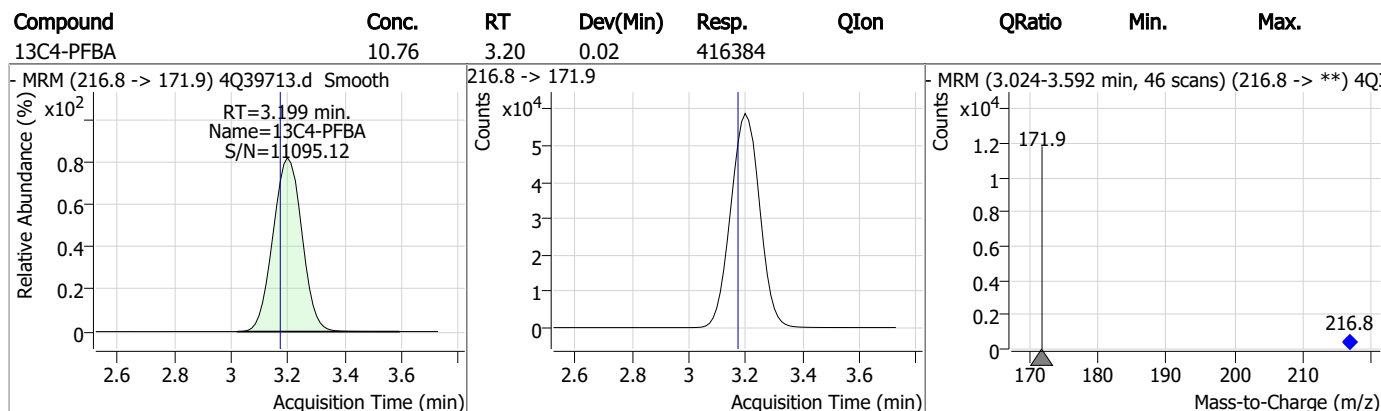
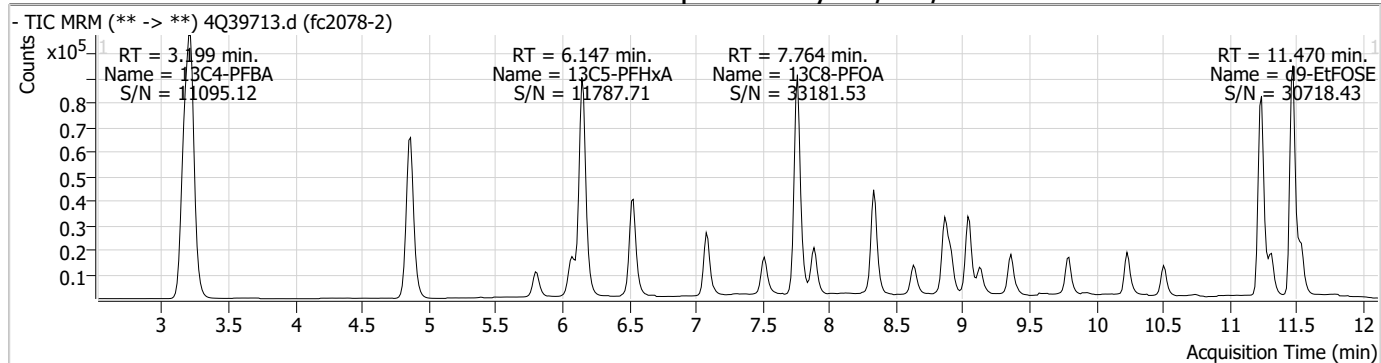
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

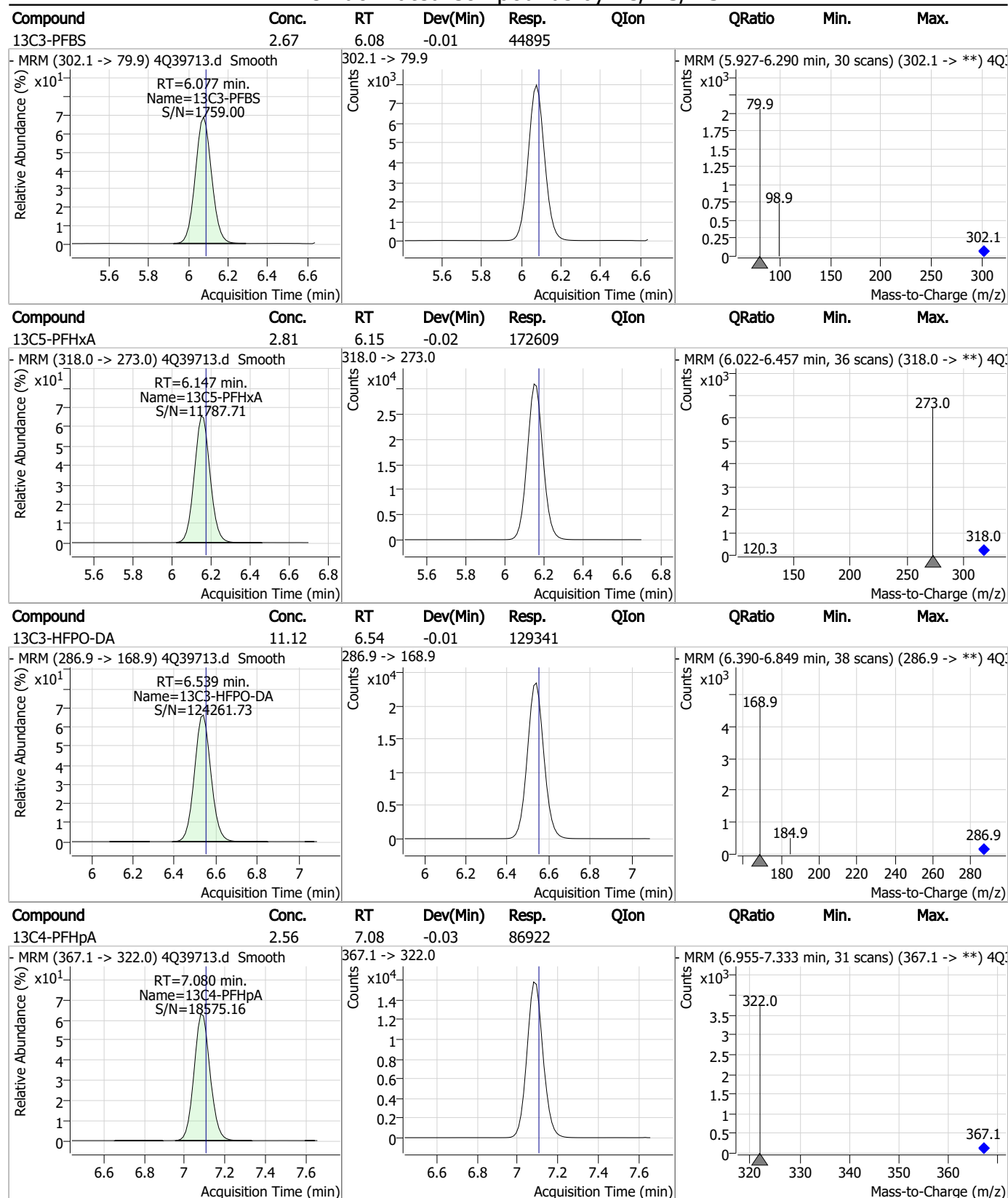
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.1.3
7

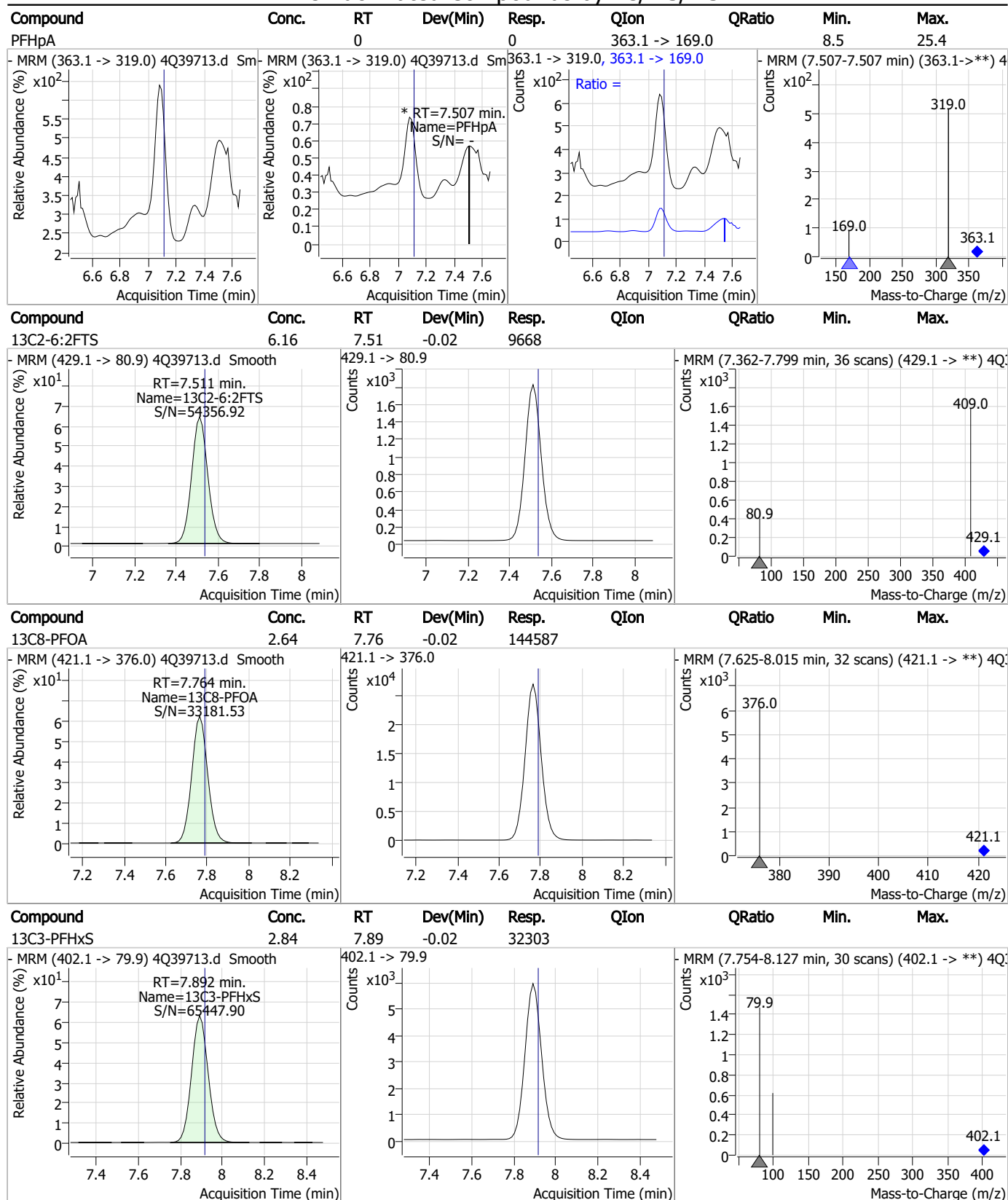
Perfluorinated Compounds by LC/MS/MS



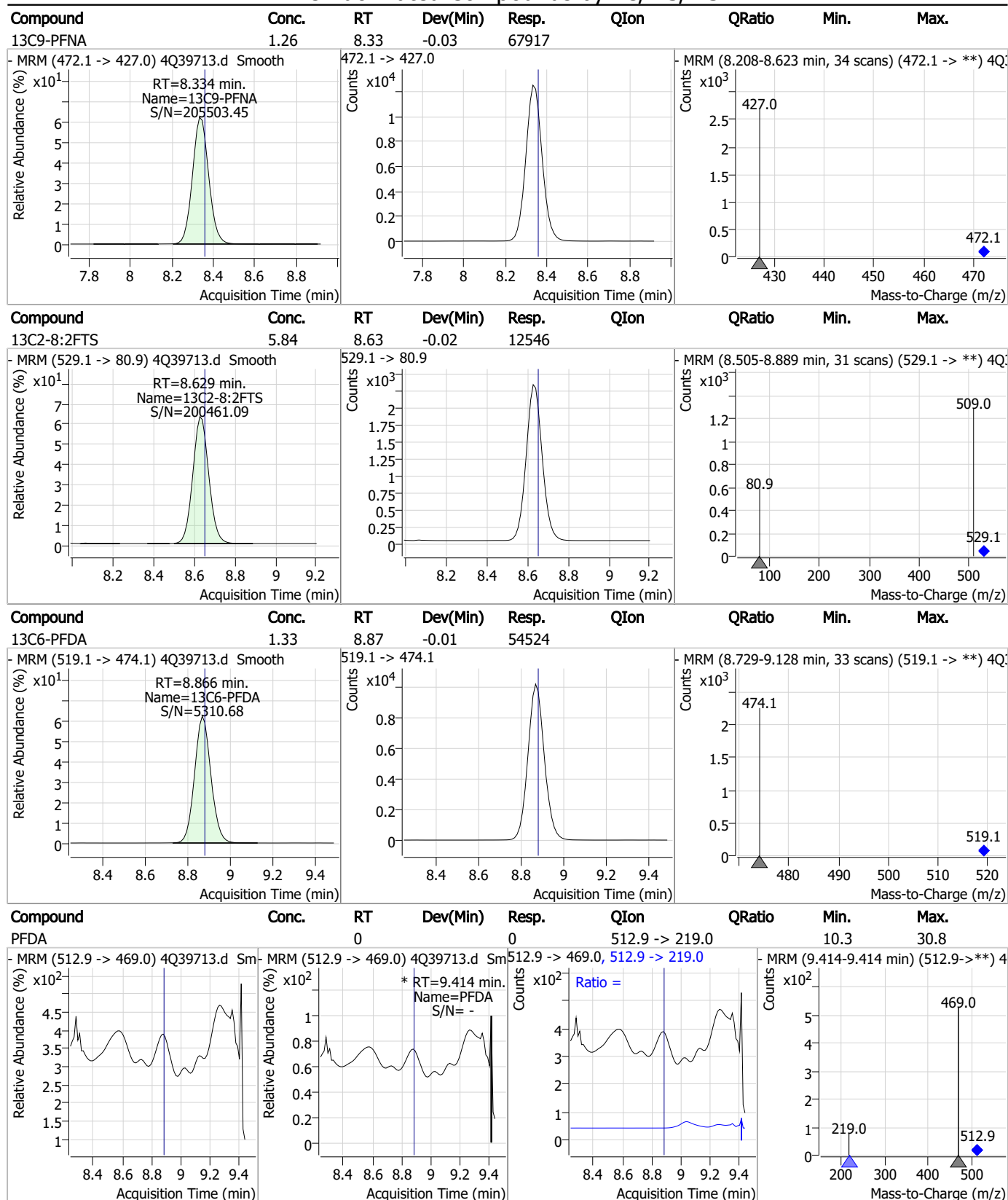
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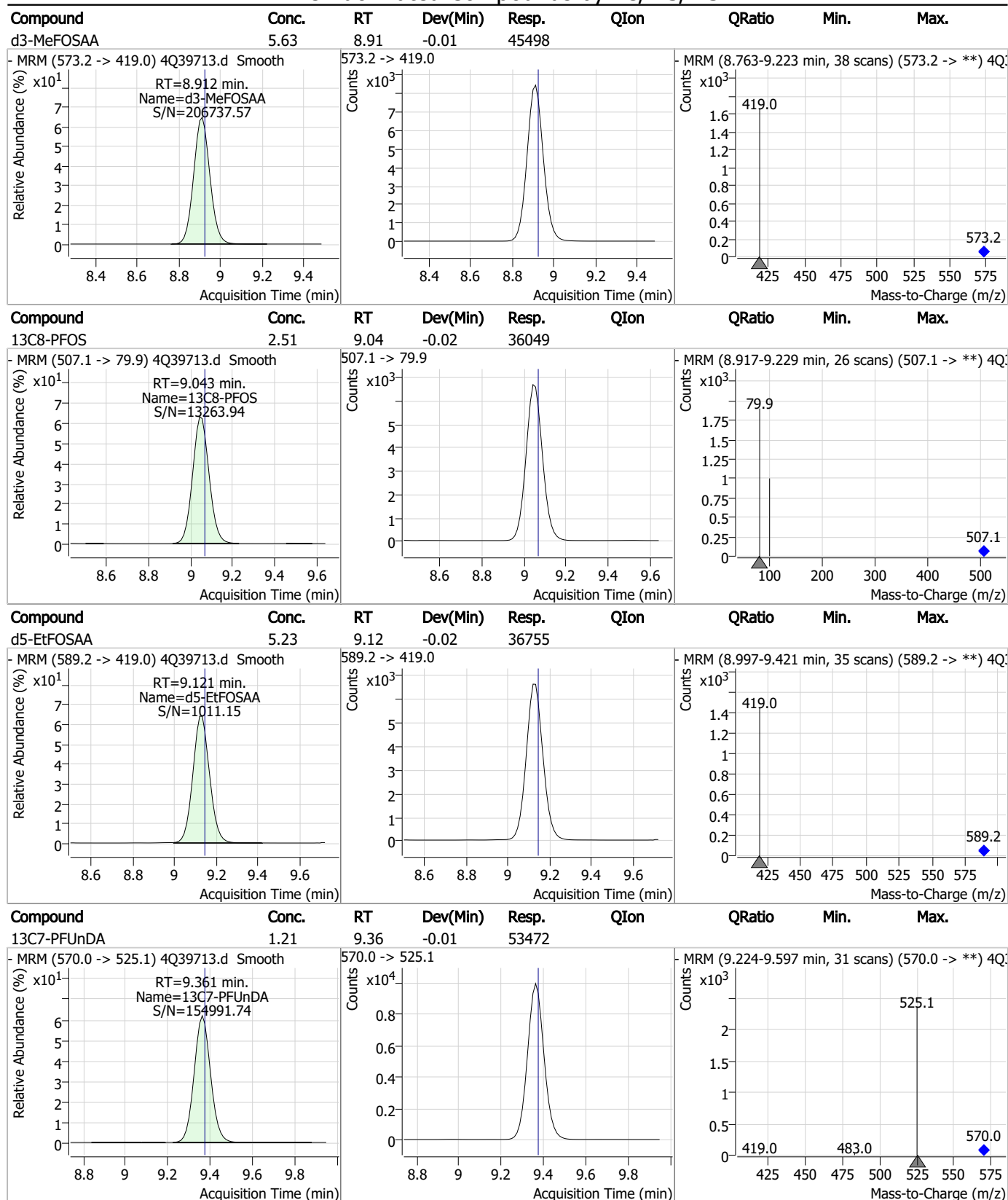
Perfluorinated Compounds by LC/MS/MS



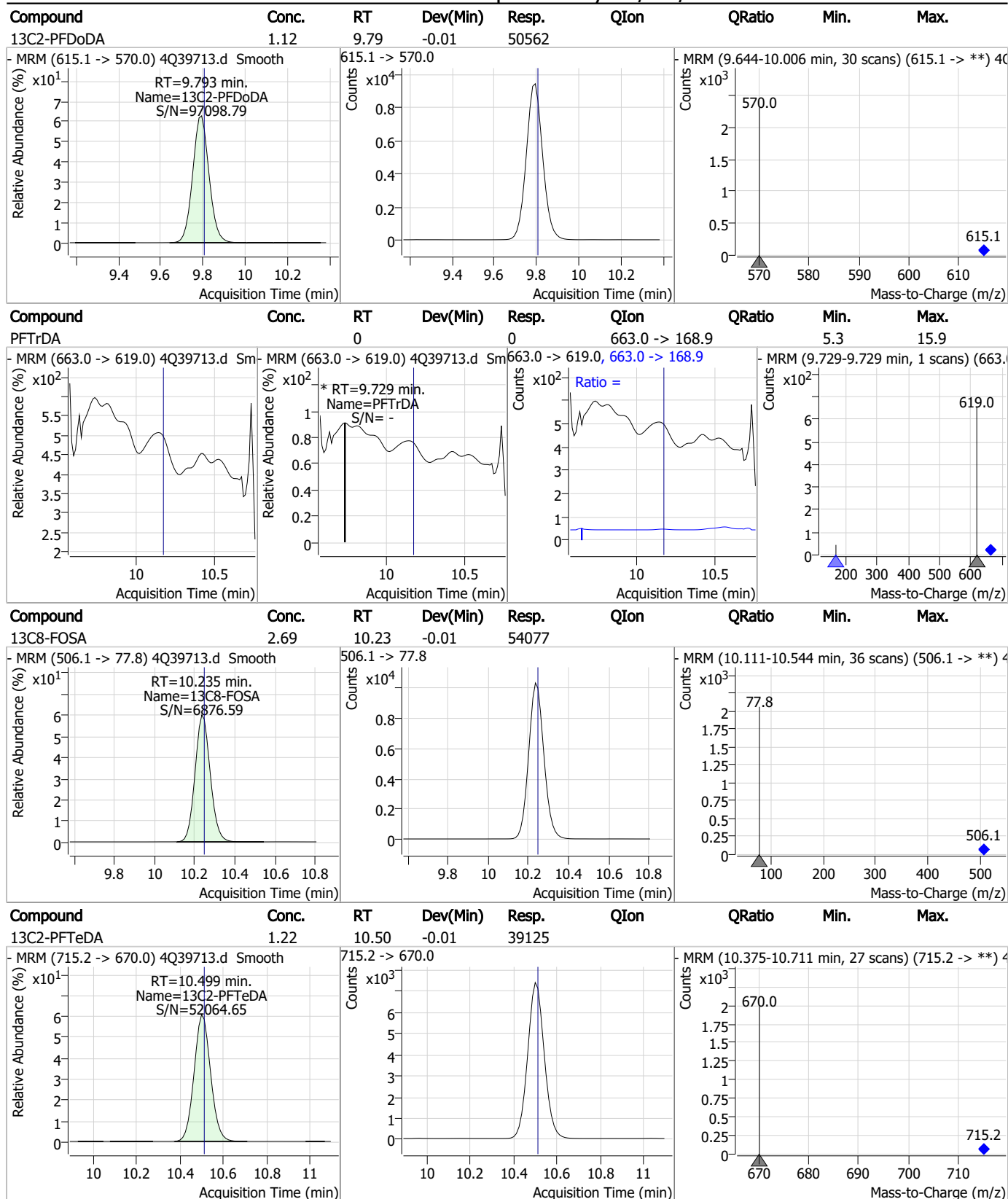
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



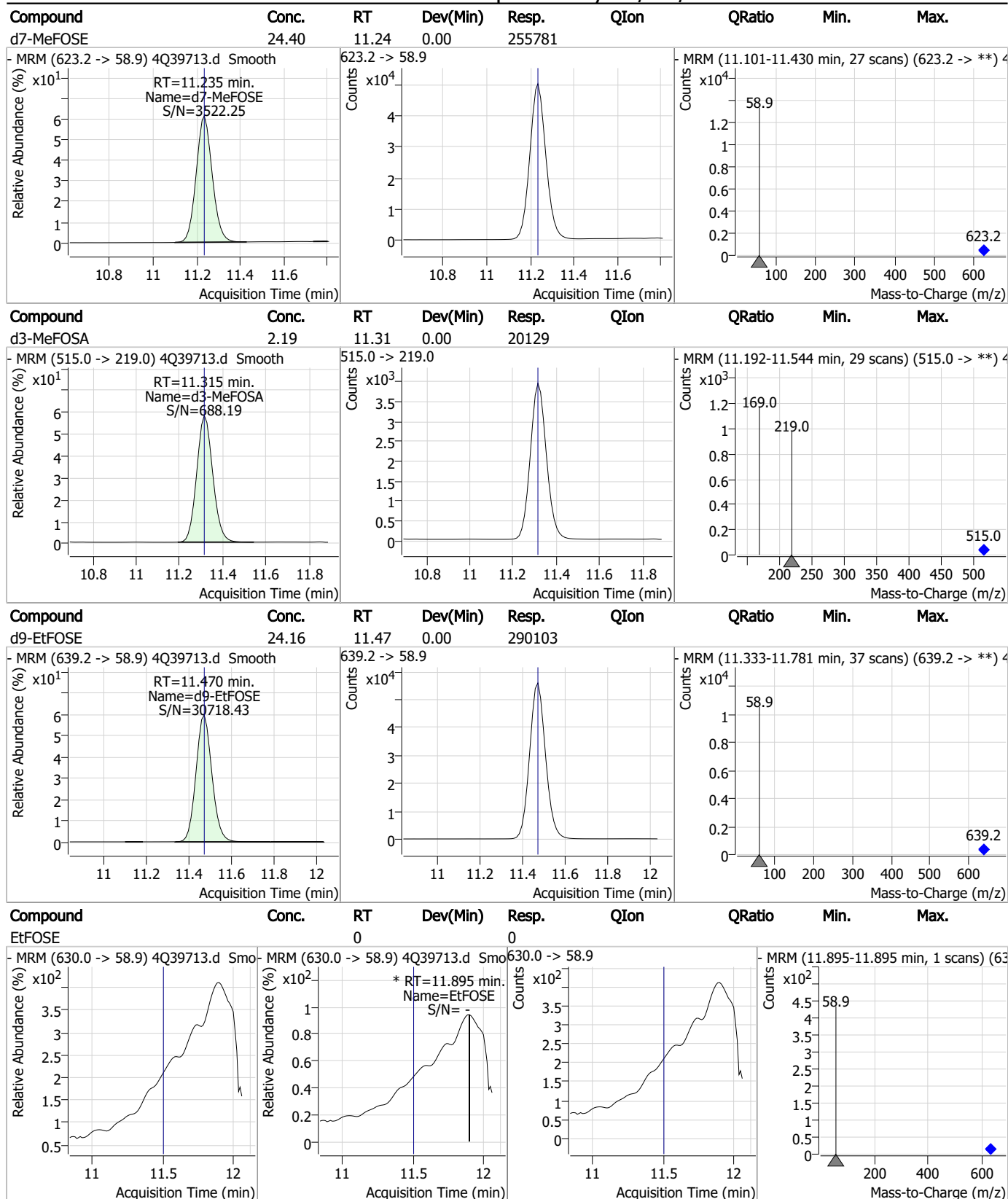
Perfluorinated Compounds by LC/MS/MS



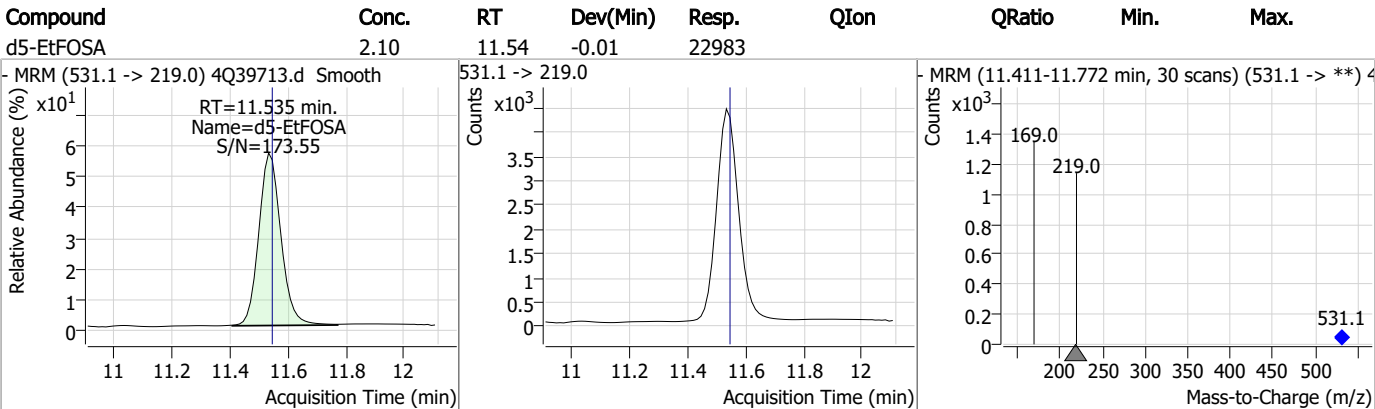
7.1.3

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.3
7

Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39711.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 6:19:10 PM
 Sample Name : op95096-mb
 Vial : P1-D8
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.211	216.8 -> 171.9	452231	10.00 µg/L	0.037
M5-PFPeA	4.863	268.3 -> 223.0	269337	5.00 µg/L	0.000
M5-PFHxA	6.160	318.0 -> 273.0	172183	2.50 µg/L	-0.012
M4-PFHpA	7.093	367.1 -> 322.0	93347	2.50 µg/L	-0.012
M8-PFOA	7.764	421.1 -> 376.0	147034	2.50 µg/L	-0.025
M9-PFNA	8.347	472.1 -> 427.0	76421	1.25 µg/L	-0.012
M6-PFDA	8.879	519.1 -> 474.1	60509	1.25 µg/L	0.000
M7-PFUnDA	9.361	570.0 -> 525.1	61703	1.25 µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	54007	1.25 µg/L	-0.012
M2-PFTeDA	10.499	715.2 -> 670.0	35170	1.25 µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	51202	2.50 µg/L	-0.012
M3-PFBS	6.077	302.1 -> 79.9	46639	2.50 µg/L	-0.012
M3-PFHxS	7.904	402.1 -> 79.9	32258	2.50 µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	37084	2.50 µg/L	-0.012
M2-4:2FTS	5.808	329.1 -> 80.9	5324	5.00 µg/L	-0.014
M2-6:2FTS	7.524	429.1 -> 80.9	10452	5.00 µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	12510	5.00 µg/L	-0.012
M3-MeFOSAA	8.912	573.2 -> 419.0	47203	5.00 µg/L	-0.013
M3-HFPO-DA	6.539	286.9 -> 168.9	134790	10.00 µg/L	-0.012
M5-EtFOSAA	9.133	589.2 -> 419.0	35732	5.00 µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	246275	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	282751	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	22377	2.50 µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	19243	2.50 µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	34714	2.50 µg/L	-0.012
13C3-PFBA	3.215	216.0 -> 172.0	212816	5.00 µg/L	0.037
18O2-PFHxS	7.903	403.0 -> 83.9	18691	2.50 µg/L	-0.012
13C4-PFOA	7.764	417.1 -> 372.0	147014	2.50 µg/L	-0.025
13C2-PFDA	8.879	515.1 -> 470.1	45310	1.25 µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	75745	1.25 µg/L	-0.012
13C2-PFHxA	6.161	315.1 -> 270.0	139314	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.808	329.1 -> 80.9	5324	7.90 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 158.1%		
13C2-6:2FTS	7.524	429.1 -> 80.9	10452	6.93 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 138.7%		
13C2-8:2FTS	8.641	529.1 -> 80.9	12510	6.06 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.3%		
13C2-PFDoDA	9.793	615.1 -> 570.0	54007	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C2-PFTeDA	10.499	715.2 -> 670.0	35170	1.12 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.9%		
13C3-PFBS	6.077	302.1 -> 79.9	46639	2.89 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 115.5%		
13C3-PFHxS	7.904	402.1 -> 79.9	32258	2.96 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 = 118.3%		
13C4-PFBA	3.211	216.8 -> 171.9	452231	11.78 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 117.8%		
13C4-PFHpA	7.093	367.1 -> 322.0	93347	2.87 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 114.9%		
13C5-PFHxA	6.160	318.0 -> 273.0	172183	2.94 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 117.6%		
13C5-PFPeA	4.863	268.3 -> 223.0	269337	5.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.9%		
13C6-PFDA	8.879	519.1 -> 474.1	60509	1.51 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 120.9%		
13C7-PFUnDA	9.361	570.0 -> 525.1	61703	1.44 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 114.9%		
13C8-FOSA	10.235	506.1 -> 77.8	51202	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C8-PFOA	7.764	421.1 -> 376.0	147034	2.79 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C8-PFOS	9.055	507.1 -> 79.9	37084	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C9-PFNA	8.347	472.1 -> 427.0	76421	1.42 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.6%		
d3-MeFOSAA	8.912	573.2 -> 419.0	47203	5.92 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.4%		
13C3-HFPO-DA	6.539	286.9 -> 168.9	134790	12.13 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 121.3%		
d3-MeFOSA	11.315	515.0 -> 219.0	19243	2.12 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 84.8%		
d5-EtFOSAA	9.133	589.2 -> 419.0	35732	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
d7-MeFOSE	11.235	623.2 -> 58.9	246275	23.79 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 95.2%		
d9-EtFOSE	11.470	639.2 -> 58.9	282751	23.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 95.4%		
d5-EtFOSA	11.548	531.1 -> 219.0	22377	2.07 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 82.7%		

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	9.253	512.9 -> 469.0	0	µg/L	m
		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	8.313	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	9.057	413.0 -> 169.0	1274	0.07 µg/L	m	94
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	671	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	10.179	663.0 -> 619.0	0	µg/L	m	1
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9CI-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	11.933	630.0 -> 58.9	0	µg/L	m	1
		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				

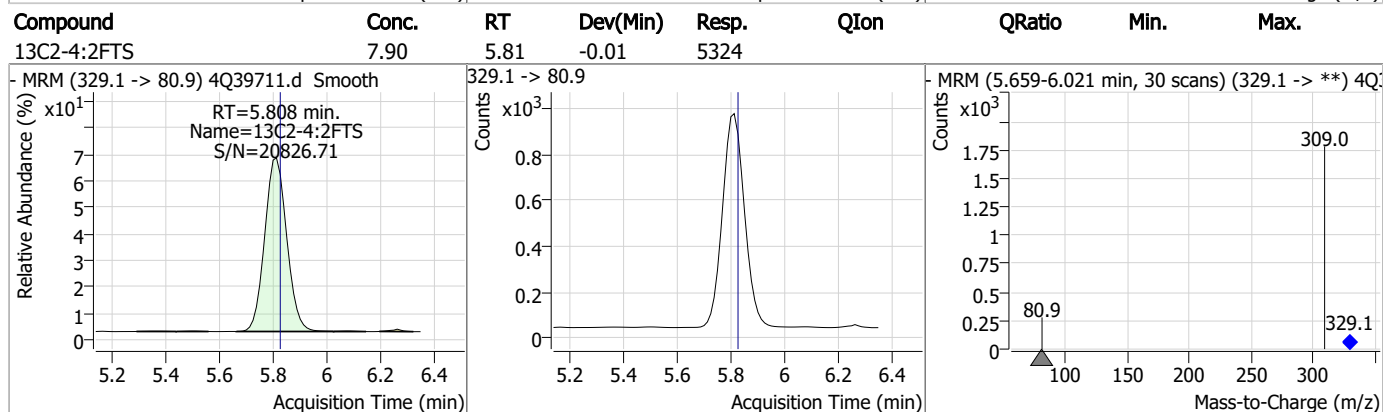
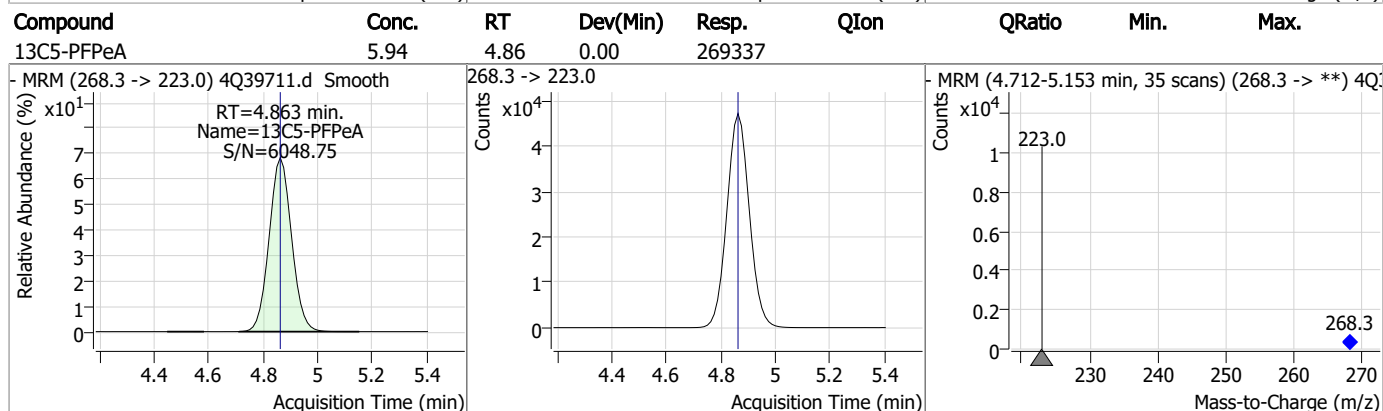
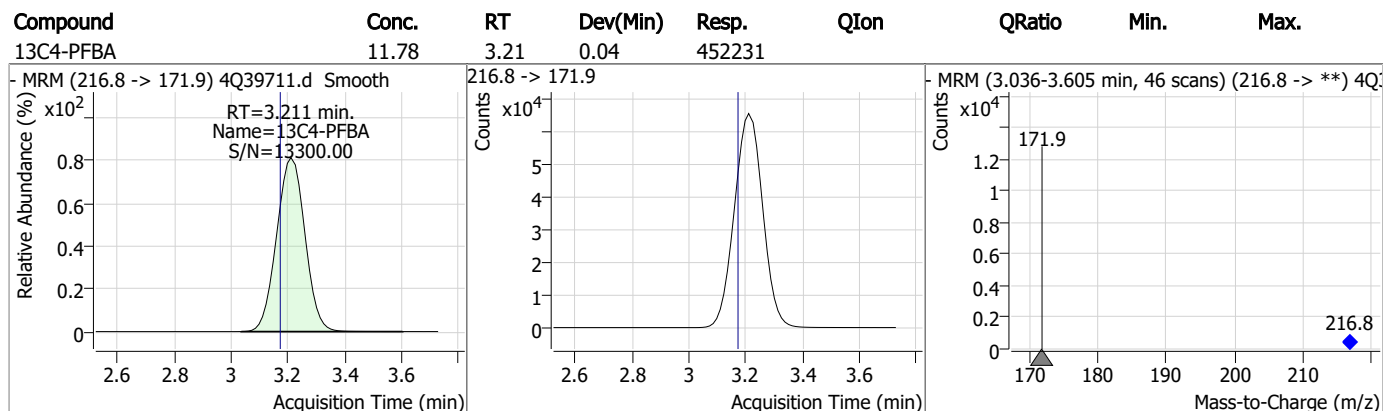
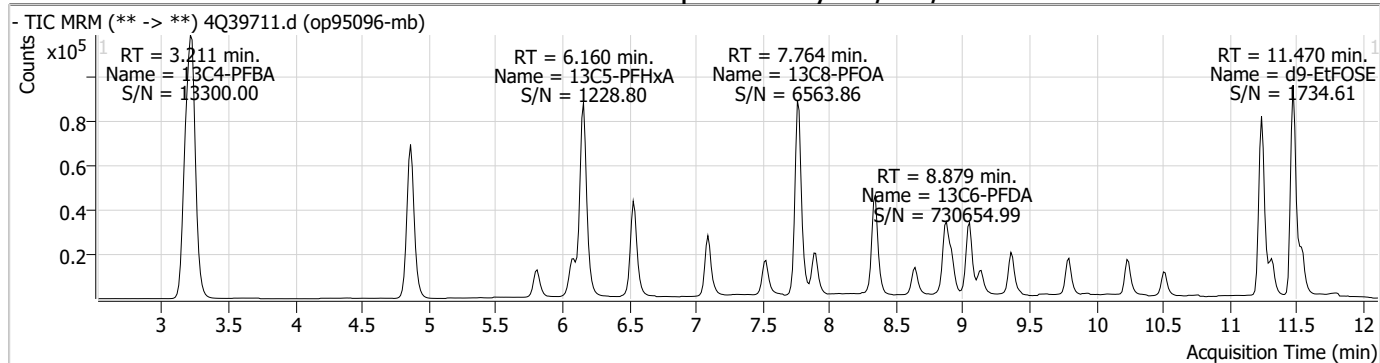
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

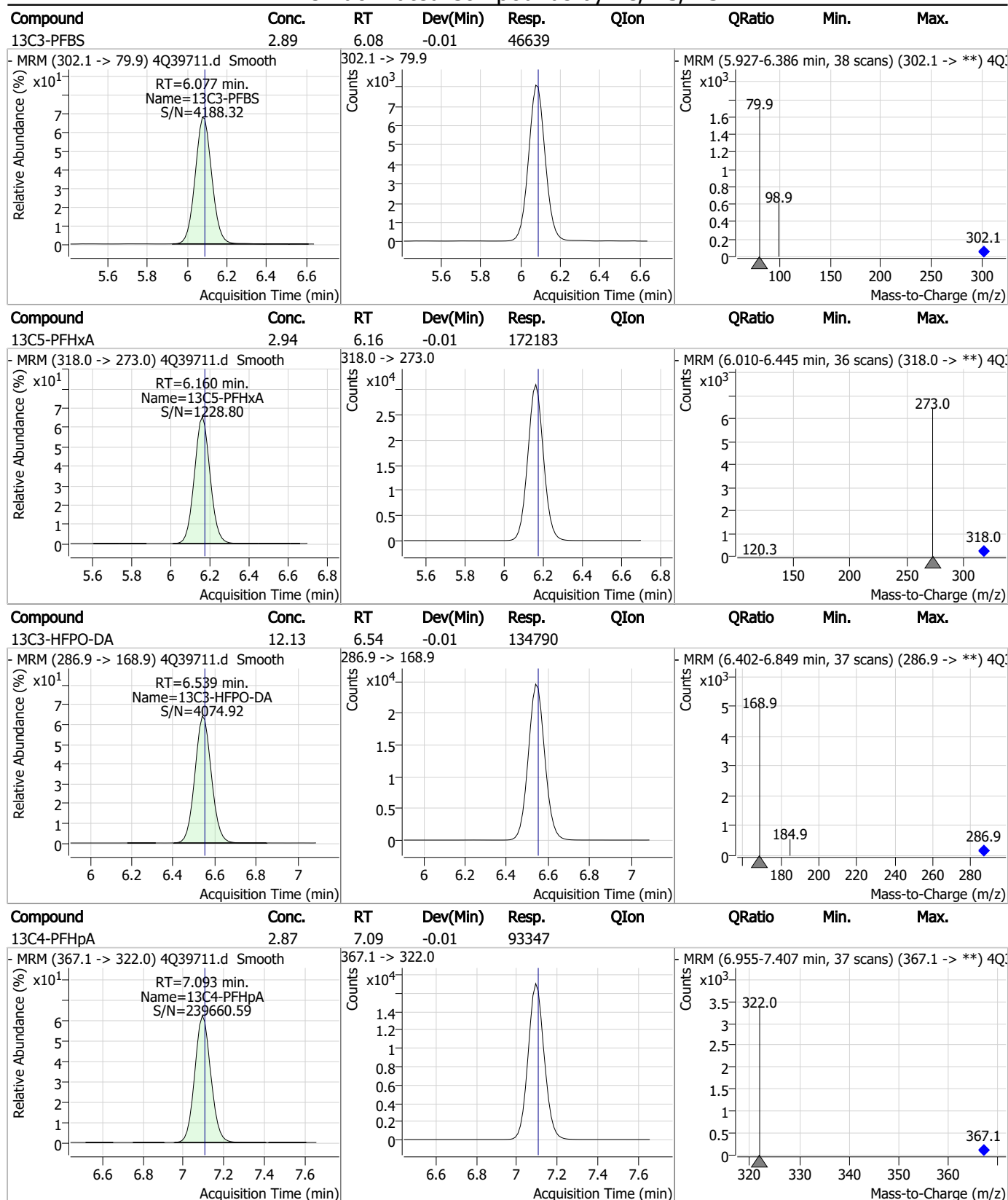
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.2.1
7

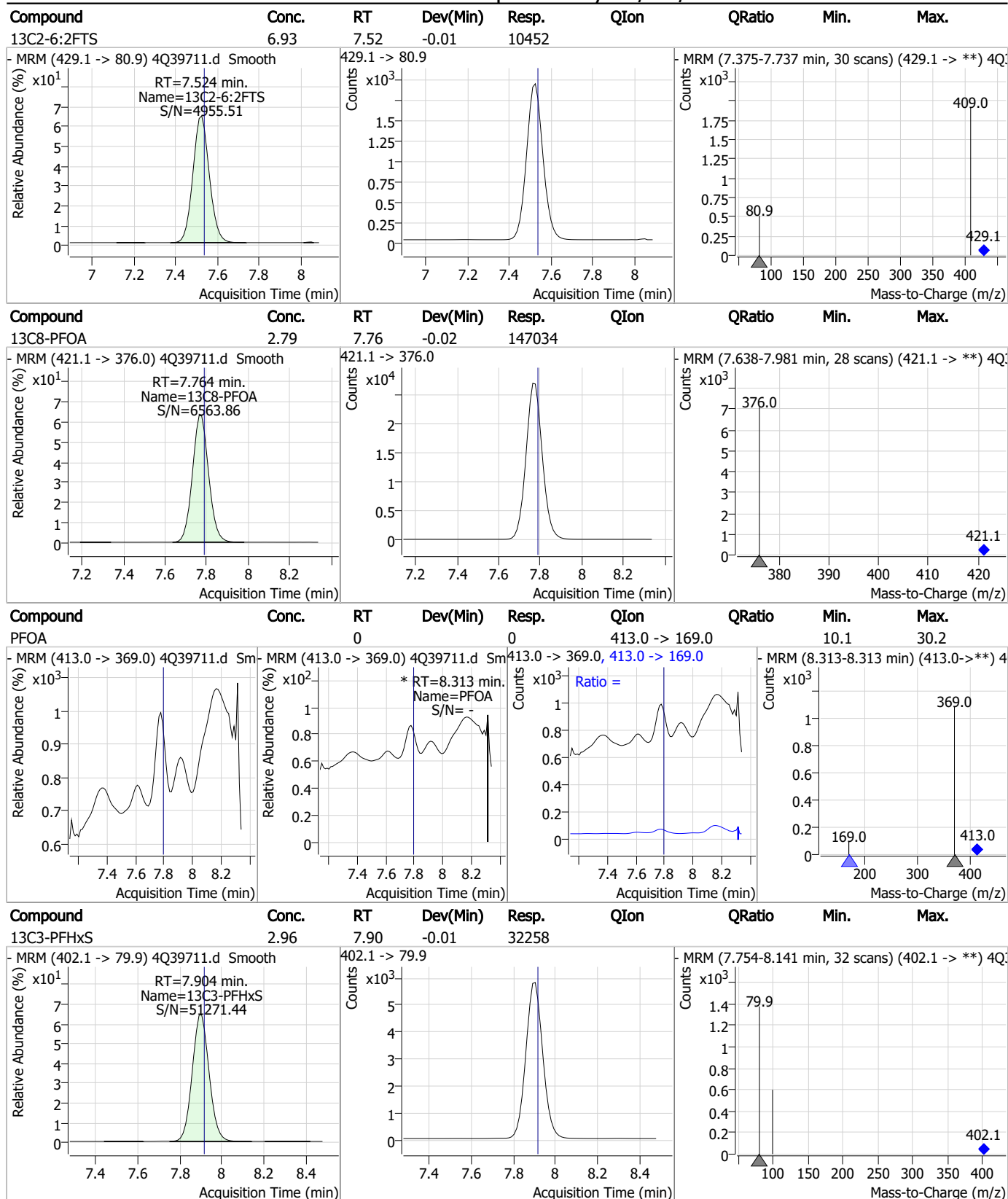
Perfluorinated Compounds by LC/MS/MS



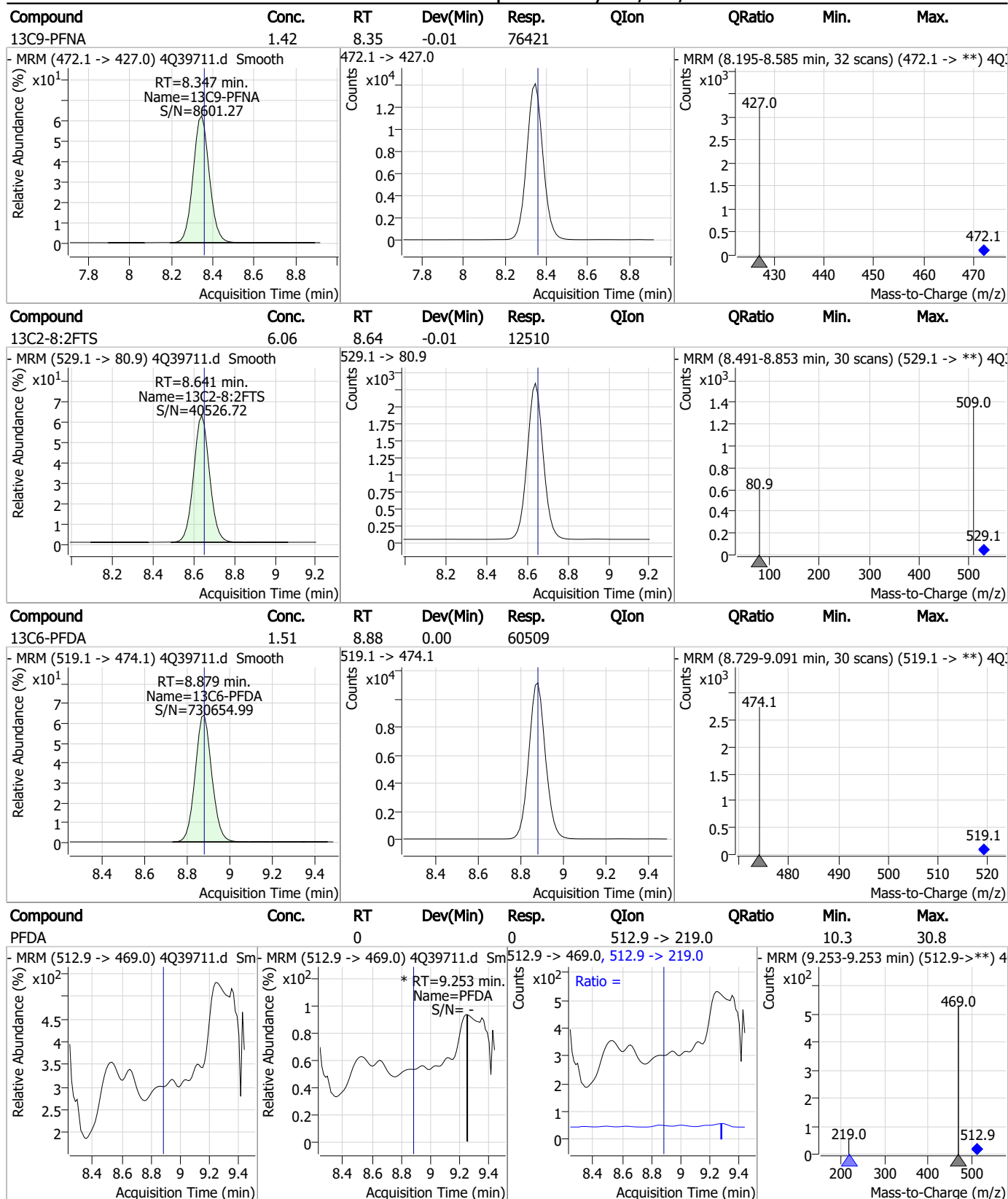
Perfluorinated Compounds by LC/MS/MS



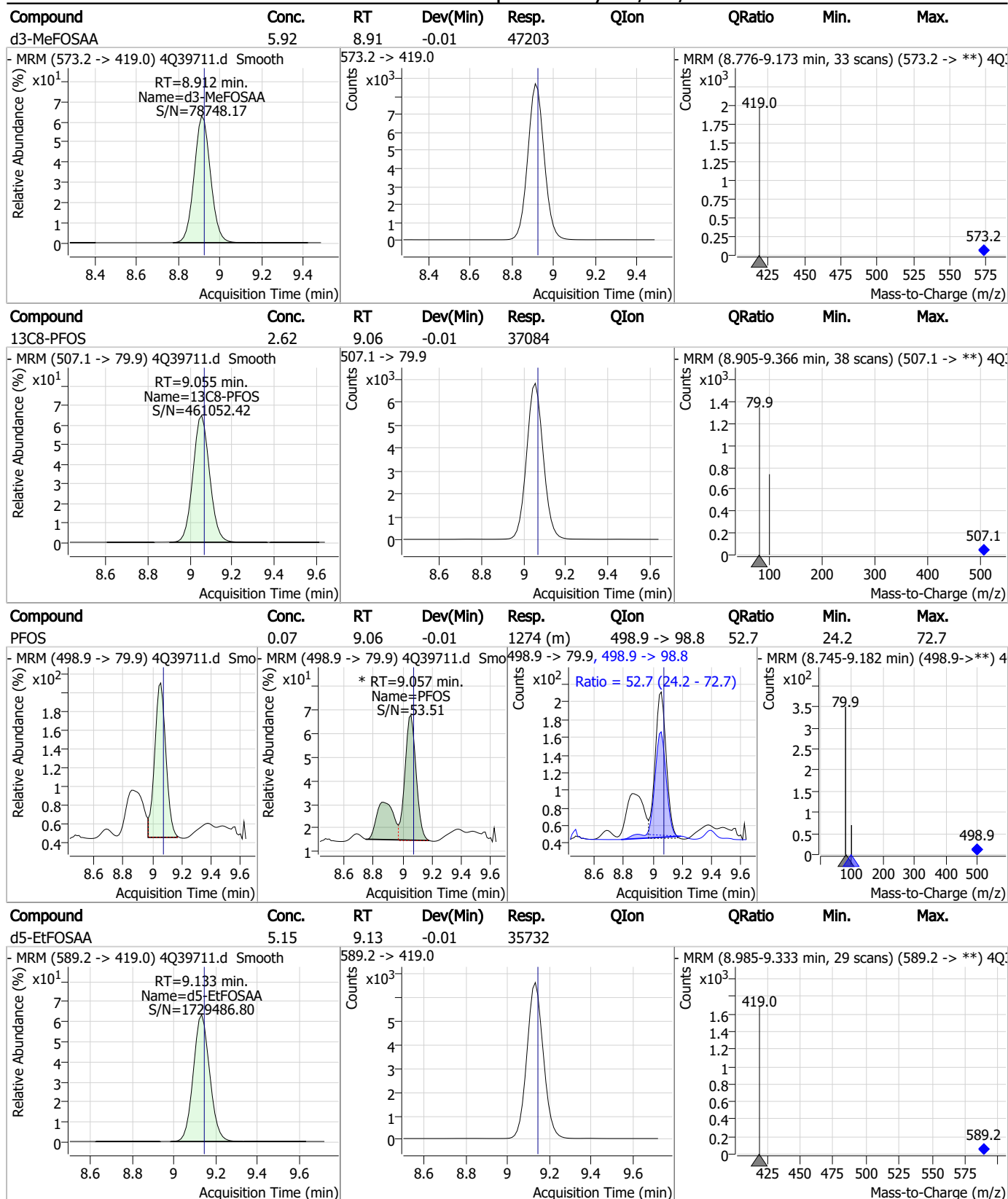
Perfluorinated Compounds by LC/MS/MS



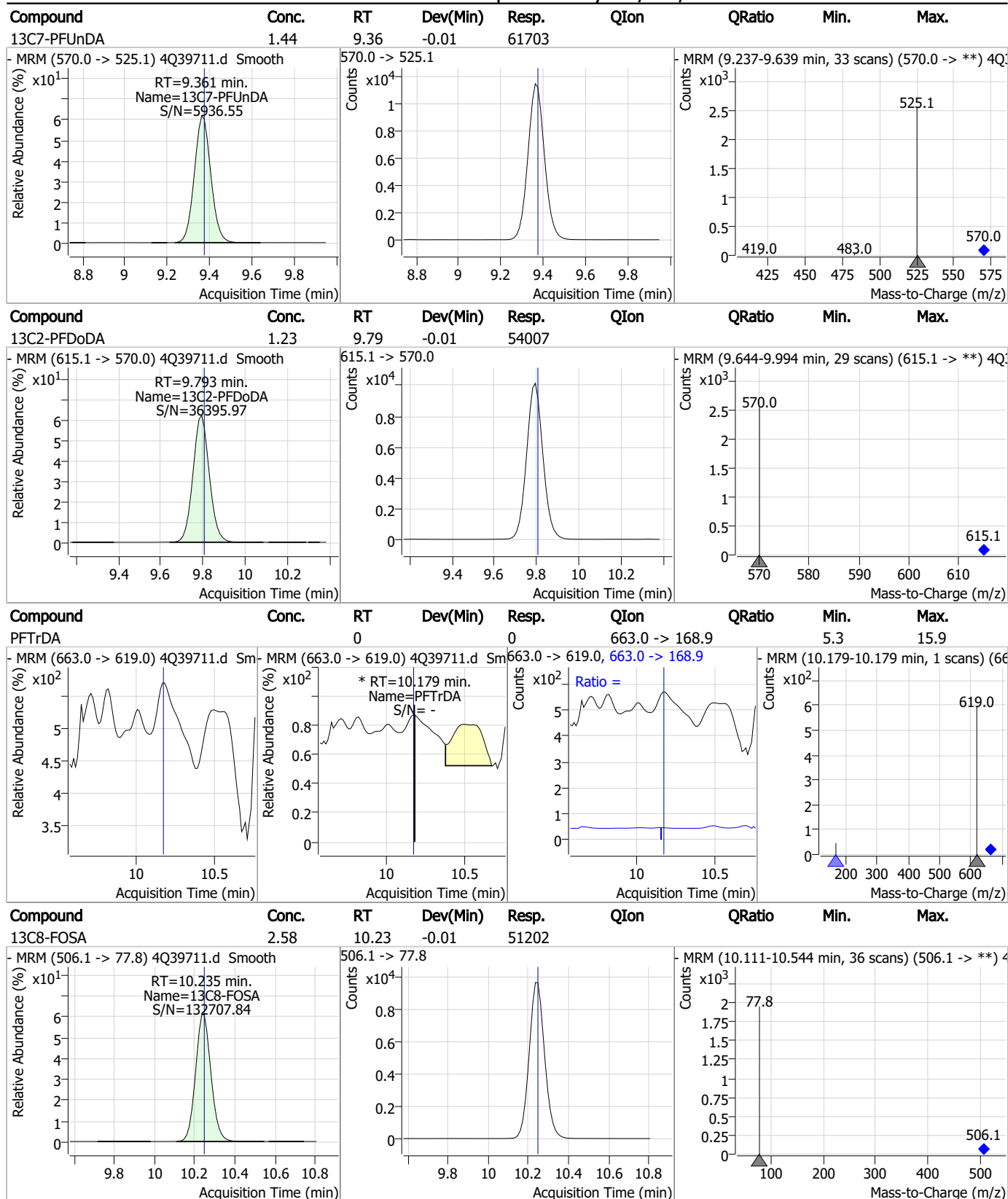
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



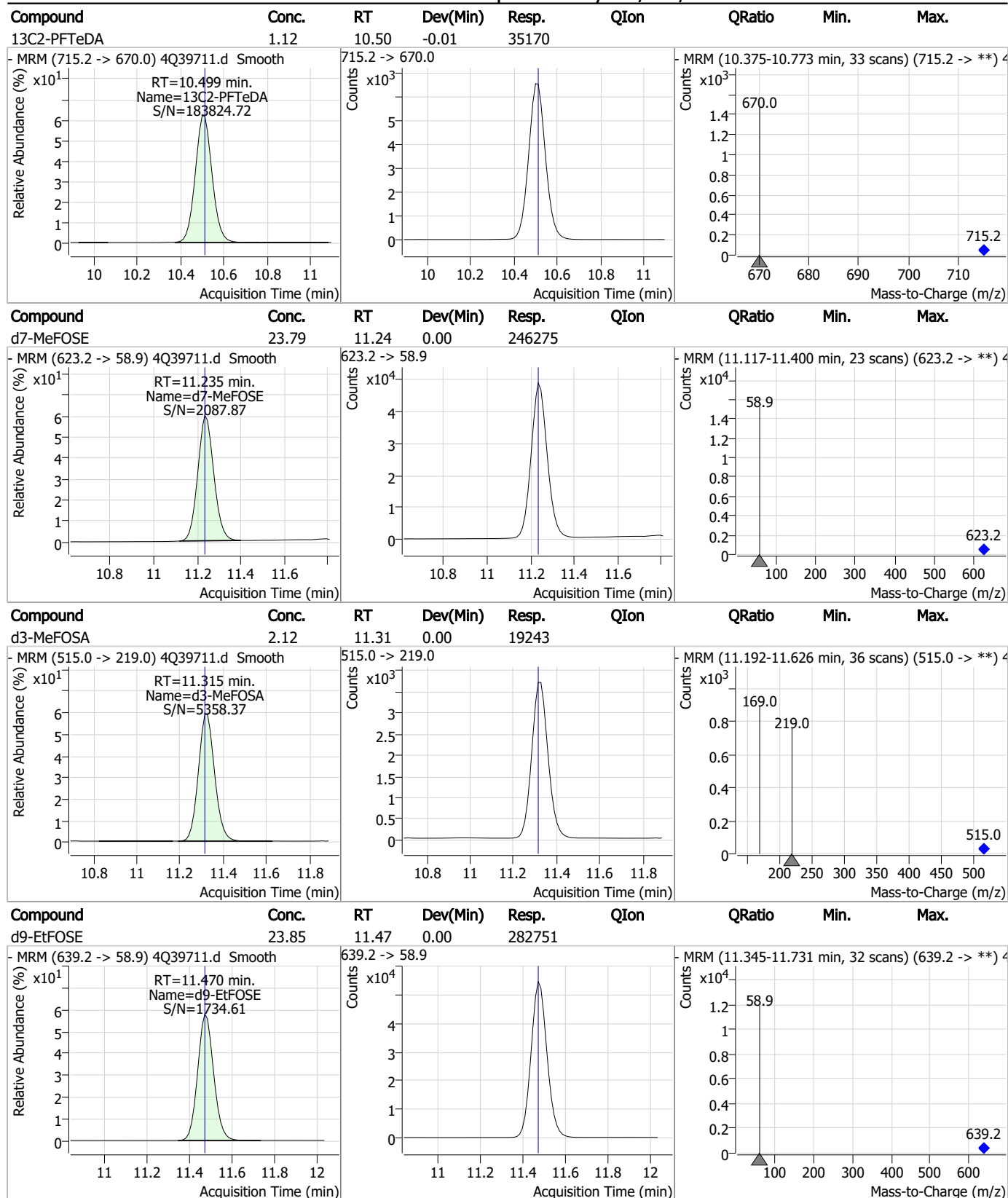
Perfluorinated Compounds by LC/MS/MS



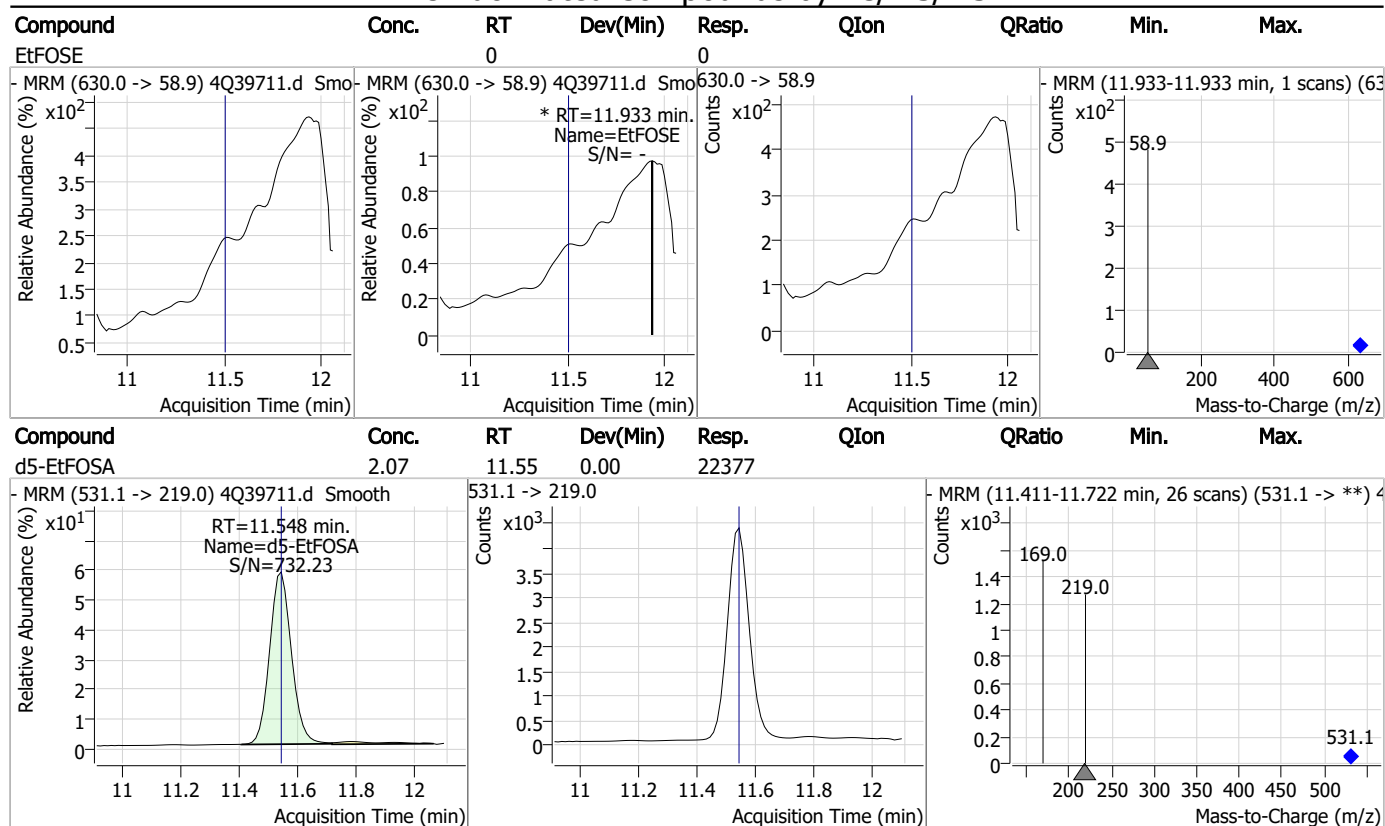
7.2.1

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: OP95096-MB

Method: EPA DRAFT 1633

Lab FileID: 4Q39711.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 18:19

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak

7.2.1.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39699.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 3:06:13 PM
 Sample Name : iblk
 Vial : P1-A1
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.186	216.8 -> 171.9	458728	10.00 µg/L	0.012
M5-PFPeA	4.863	268.3 -> 223.0	296708	5.00 µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	195696	2.50 µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	105386	2.50 µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	166224	2.50 µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	83708	1.25 µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	65303	1.25 µg/L	0.012
M7-PFUnDA	9.373	570.0 -> 525.1	70923	1.25 µg/L	0.000
M2-PFDoDA	9.806	615.1 -> 570.0	68124	1.25 µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	50131	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	60255	2.50 µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	51177	2.50 µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	34261	2.50 µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	40890	2.50 µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	5594	5.00 µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	10615	5.00 µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	14794	5.00 µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	51747	5.00 µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	142112	10.00 µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	39851	5.00 µg/L	0.000
M7-MeFOSE	11.248	623.2 -> 58.9	318909	25.00 µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	369217	25.00 µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	33345	2.50 µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	26212	2.50 µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	42592	2.50 µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	253122	5.00 µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	24757	2.50 µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	194102	2.50 µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	55101	1.25 µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	92267	1.25 µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	177500	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.823	329.1 -> 80.9	5594	6.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.4%		
13C2-6:2FTS	7.536	429.1 -> 80.9	10615	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C2-8:2FTS	8.653	529.1 -> 80.9	14794	5.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C2-PFDoDA	9.806	615.1 -> 570.0	68124	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C2-PFTeDA	10.512	715.2 -> 670.0	50131	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C3-PFBS	6.089	302.1 -> 79.9	51177	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C3-PFHxS	7.917	402.1 -> 79.9	34261	2.37 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 = 94.9%	
13C4-PFBA	3.186	216.8 -> 171.9	458728	10.05 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	7.106	367.1 -> 322.0	105386	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFHxA	6.172	318.0 -> 273.0	195696	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C5-PFPeA	4.863	268.3 -> 223.0	296708	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C6-PFDA	8.891	519.1 -> 474.1	65303	1.34 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C7-PFUnDA	9.373	570.0 -> 525.1	70923	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C8-FOSA	10.247	506.1 -> 77.8	60255	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-PFOA	7.788	421.1 -> 376.0	166224	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C8-PFOS	9.068	507.1 -> 79.9	40890	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C9-PFNA	8.360	472.1 -> 427.0	83708	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	8.924	573.2 -> 419.0	51747	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C3-HFPO-DA	6.564	286.9 -> 168.9	142112	10.04 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d3-MeFOSA	11.327	515.0 -> 219.0	26212	2.35 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%	
d5-EtFOSAA	9.146	589.2 -> 419.0	39851	4.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
d7-MeFOSE	11.248	623.2 -> 58.9	318909	25.11 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d9-EtFOSE	11.482	639.2 -> 58.9	369217	25.38 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d5-EtFOSA	11.548	531.1 -> 219.0	33345	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	

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	7.569	599.0 -> 98.8				
		363.1 -> 319.0	0	µg/L	m	1
		363.1 -> 169.0	0			
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	7.765	413.0 -> 369.0	808	0.01 µg/L	#m	66
		413.0 -> 169.0	290			
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	9.374	563.1 -> 519.0	1762	0.04 µg/L	#	64
		563.1 -> 269.1	42			
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9CI-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				

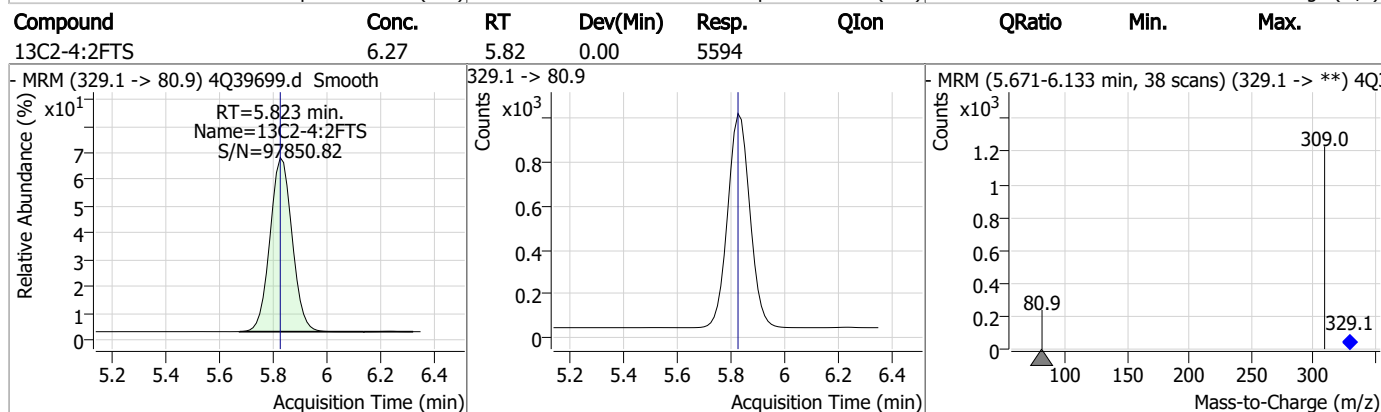
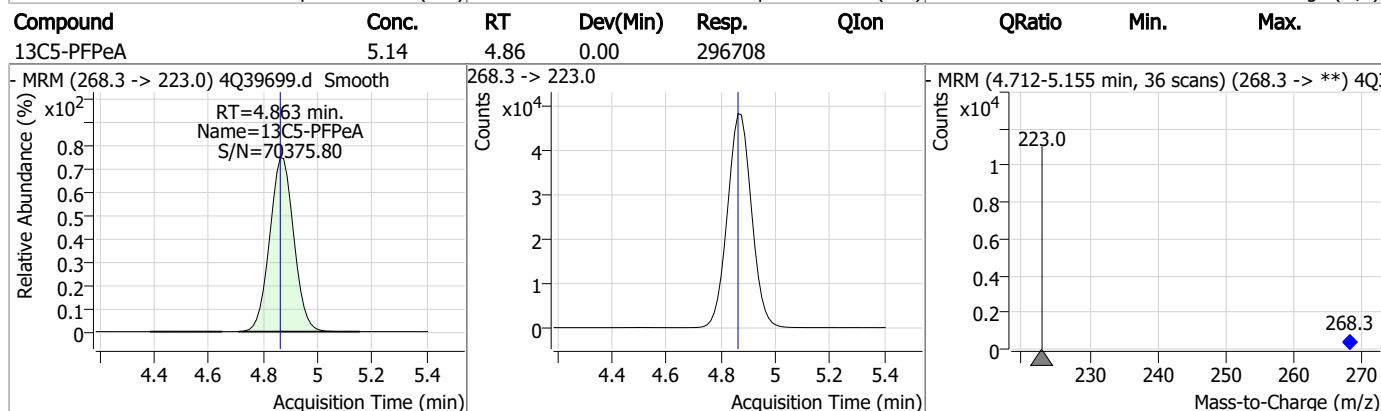
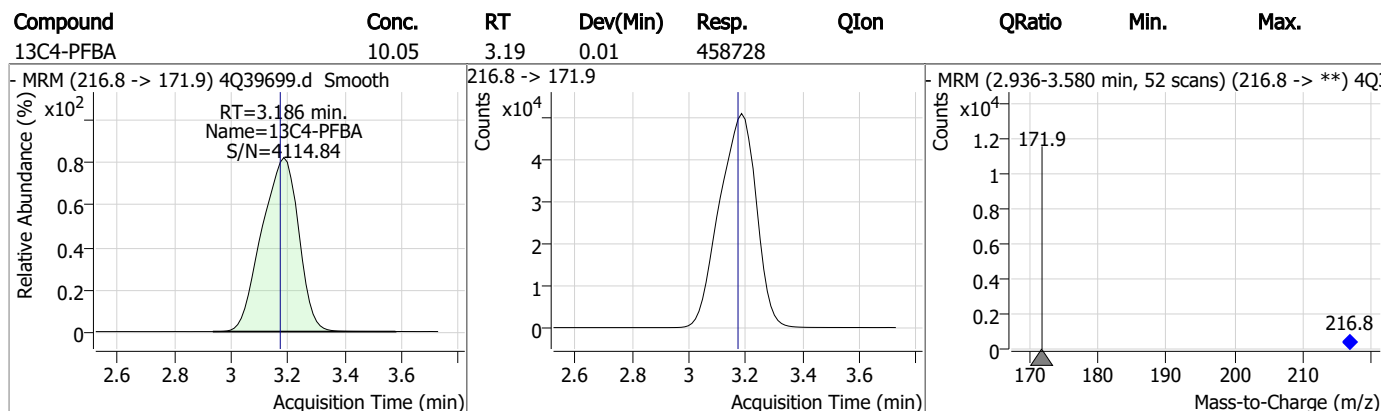
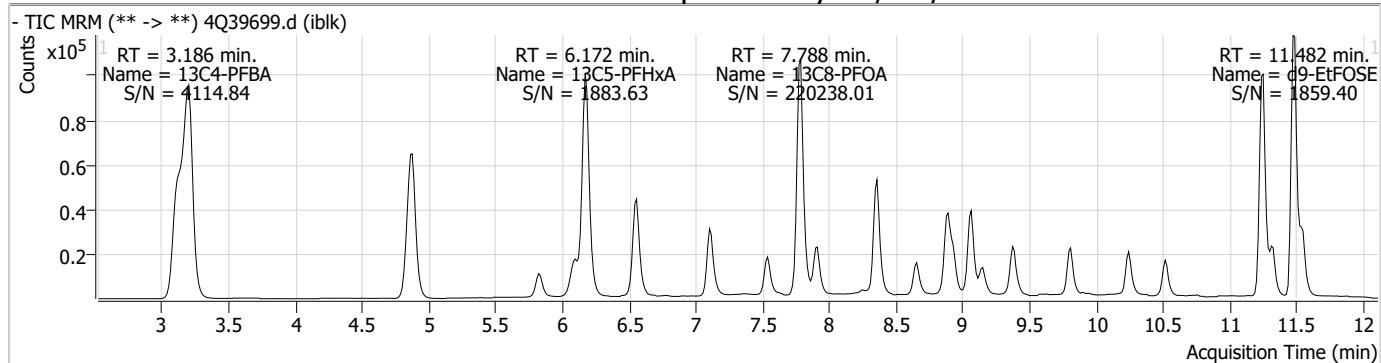
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

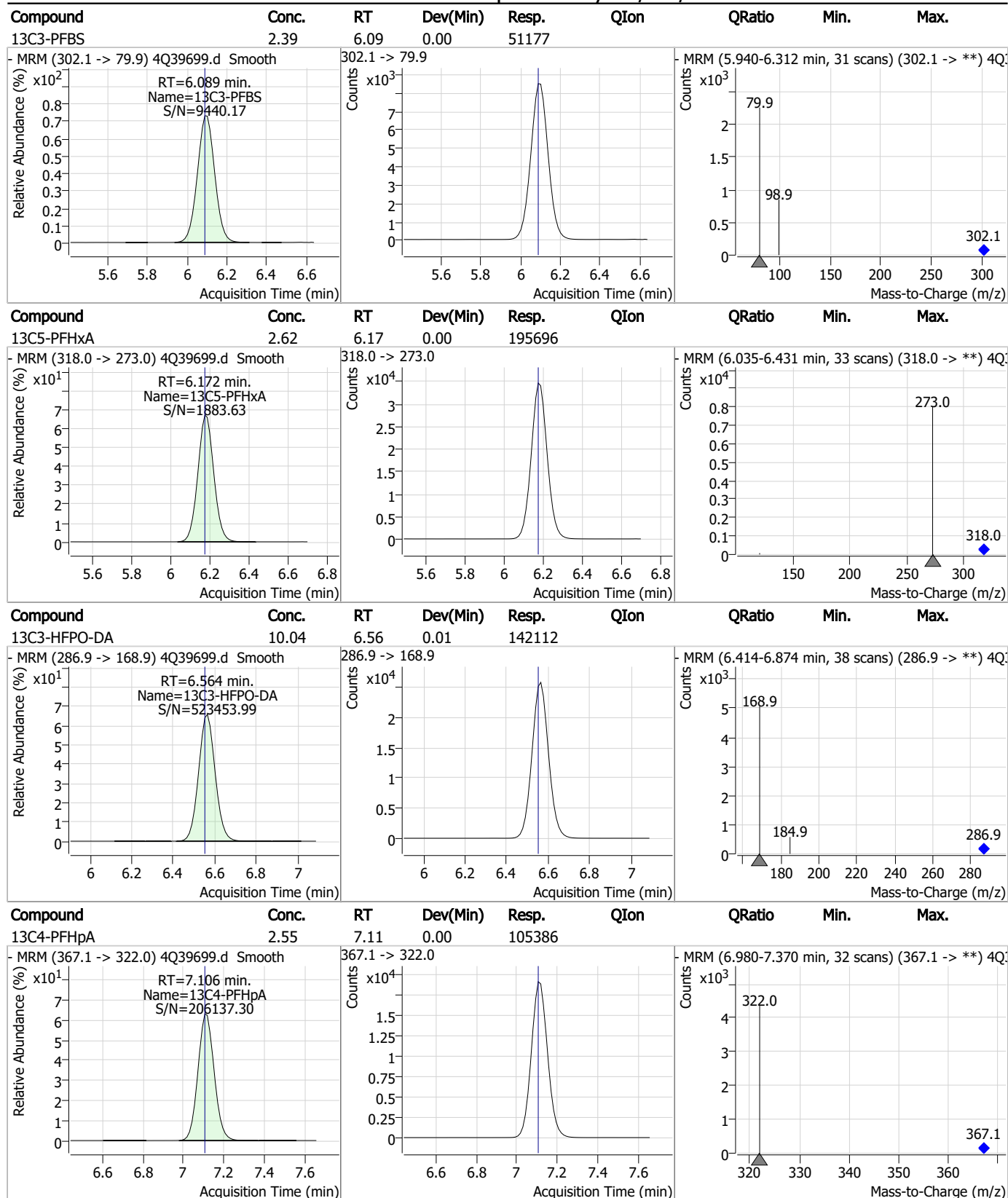
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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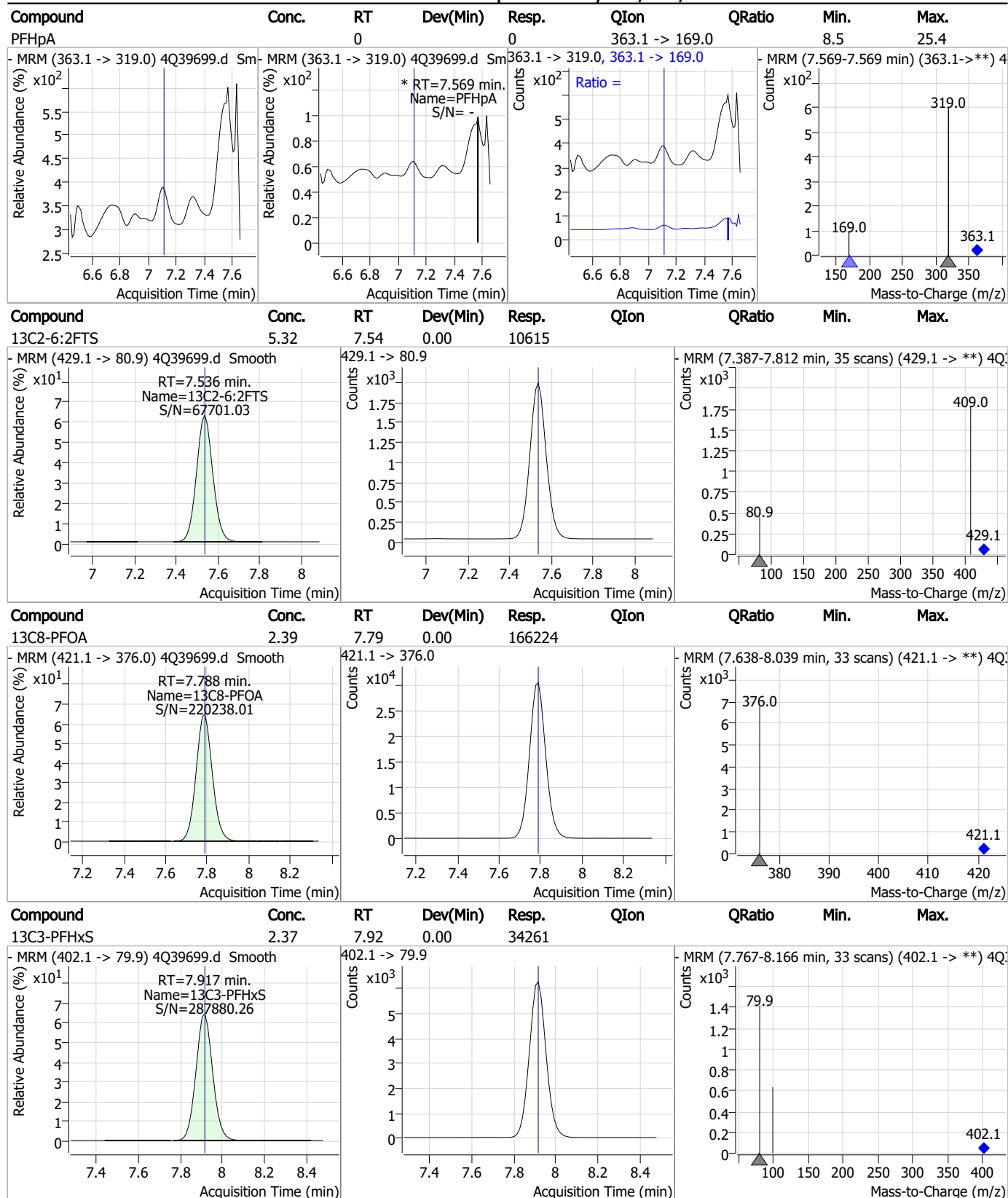
Perfluorinated Compounds by LC/MS/MS



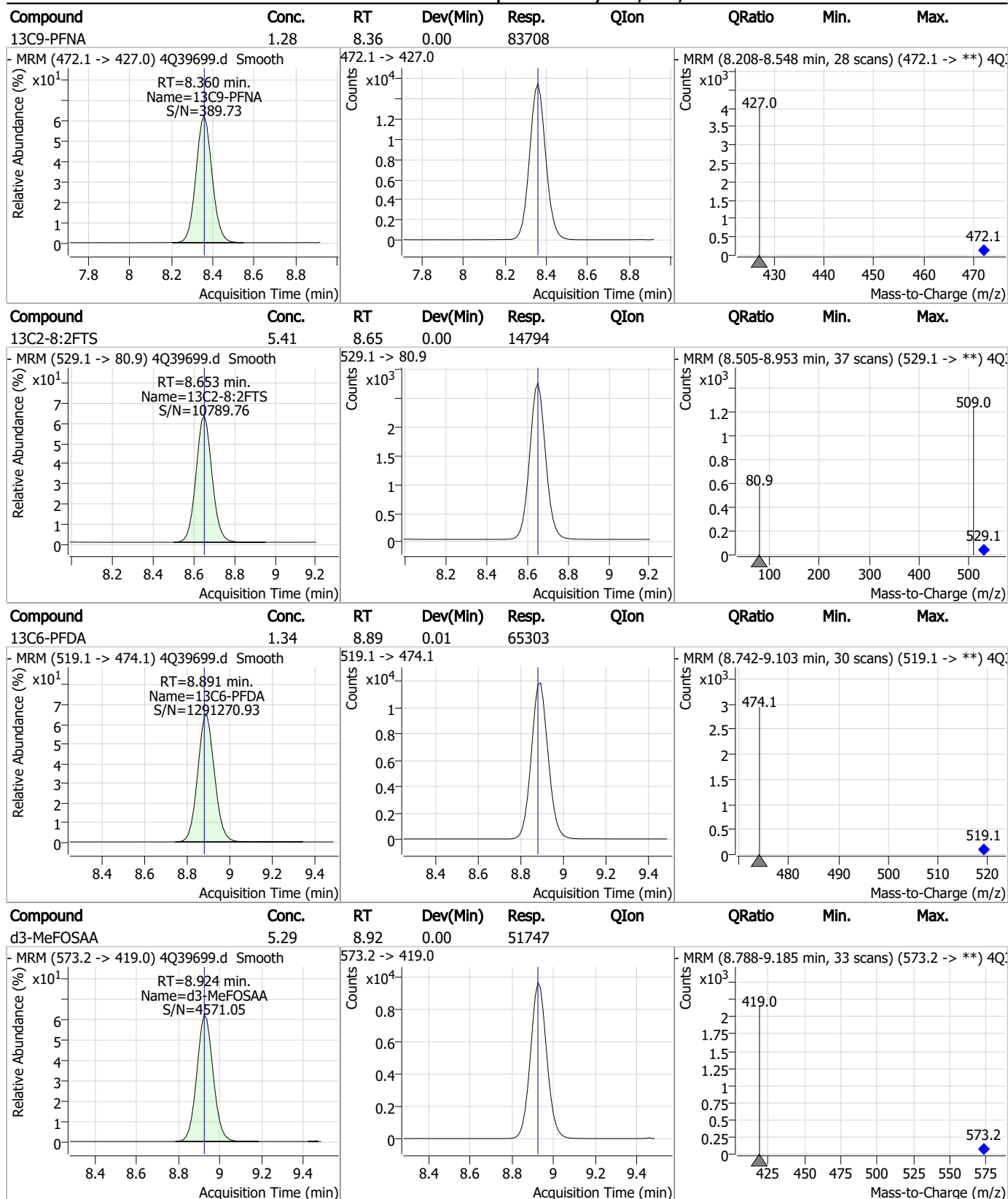
Perfluorinated Compounds by LC/MS/MS



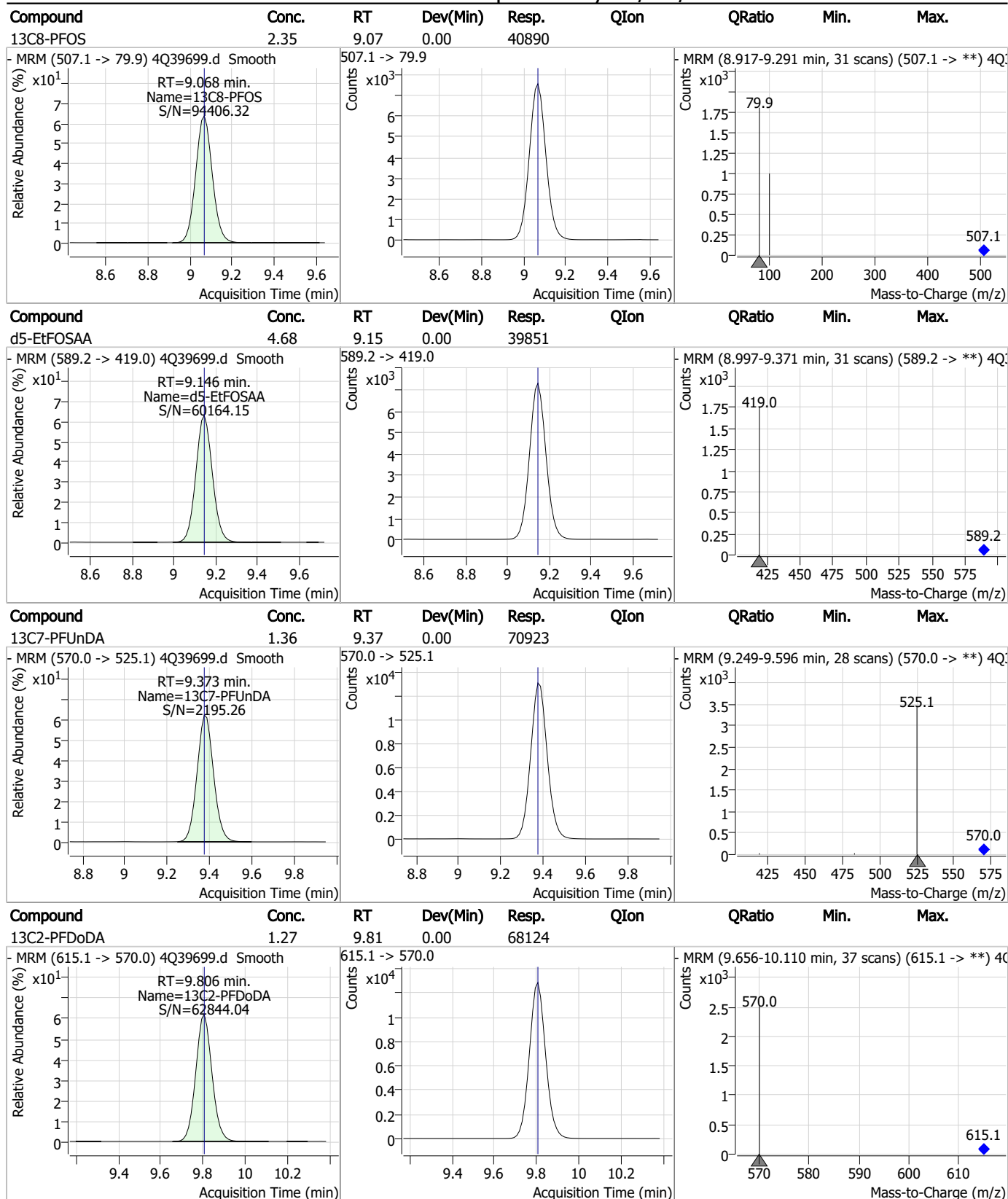
Perfluorinated Compounds by LC/MS/MS



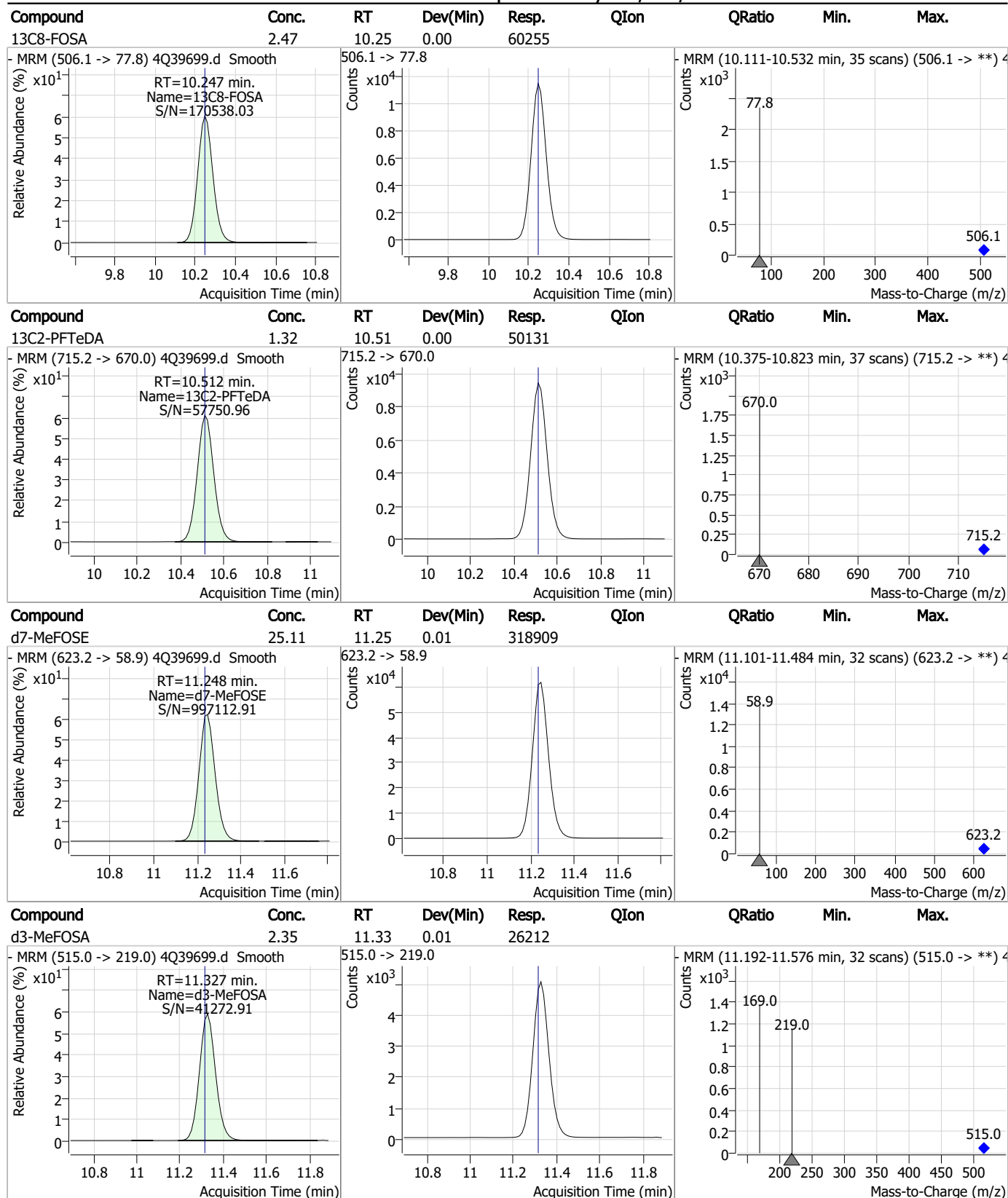
Perfluorinated Compounds by LC/MS/MS



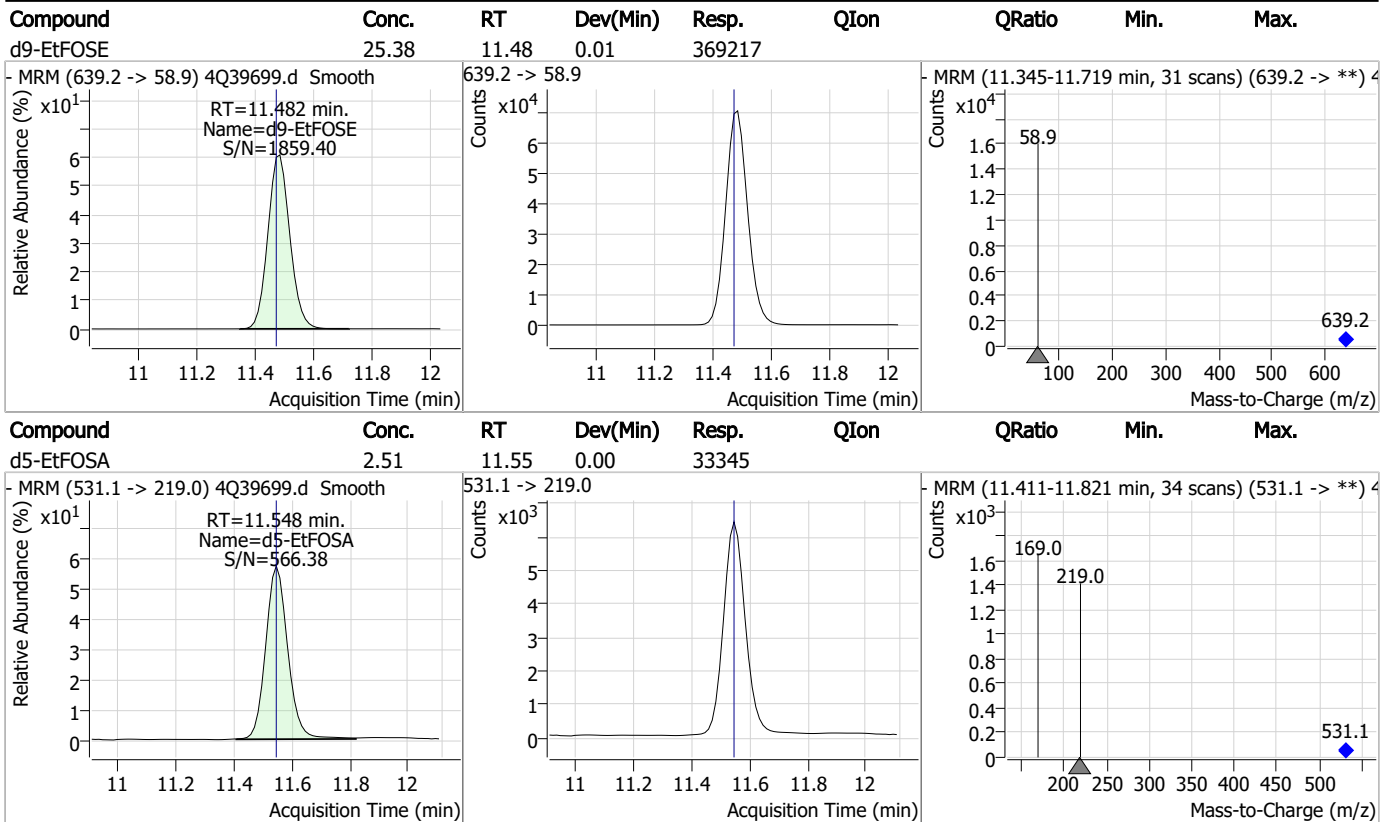
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q571-IBLK

Method: EPA DRAFT 1633

Lab FileID: 4Q39699.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 15:06

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.76	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39752.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 3:56:08 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.099	216.8 -> 171.9	437482	10.00 µg/L	-0.075
M5-PFPeA	4.851	268.3 -> 223.0	296200	5.00 µg/L	-0.013
M5-PFHxA	6.184	318.0 -> 273.0	194549	2.50 µg/L	0.012
M4-PFHpA	7.080	367.1 -> 322.0	109827	2.50 µg/L	-0.026
M8-PFOA	7.739	421.1 -> 376.0	171745	2.50 µg/L	-0.050
M9-PFNA	8.309	472.1 -> 427.0	81409	1.25 µg/L	-0.051
M6-PFDA	8.829	519.1 -> 474.1	69149	1.25 µg/L	-0.049
M7-PFUnDA	9.323	570.0 -> 525.1	75882	1.25 µg/L	-0.050
M2-PFDoDA	9.781	615.1 -> 570.0	79164	1.25 µg/L	-0.025
M2-PFTeDA	10.524	715.2 -> 670.0	61136	1.25 µg/L	0.012
M8-FOSA	10.259	506.1 -> 77.8	59472	2.50 µg/L	0.012
M3-PFBS	6.101	302.1 -> 79.9	53228	2.50 µg/L	0.012
M3-PFHxS	7.866	402.1 -> 79.9	34736	2.50 µg/L	-0.051
M8-PFOS	9.006	507.1 -> 79.9	44344	2.50 µg/L	-0.062
M2-4:2FTS	5.847	329.1 -> 80.9	5544	5.00 µg/L	0.025
M2-6:2FTS	7.486	429.1 -> 80.9	11233	5.00 µg/L	-0.050
M2-8:2FTS	8.591	529.1 -> 80.9	15583	5.00 µg/L	-0.062
M3-MeFOSAA	8.874	573.2 -> 419.0	59287	5.00 µg/L	-0.050
M3-HFPO-DA	6.551	286.9 -> 168.9	146693	10.00 µg/L	0.000
M5-EtFOSAA	9.084	589.2 -> 419.0	48342	5.00 µg/L	-0.062
M7-MeFOSE	11.260	623.2 -> 58.9	313266	25.00 µg/L	0.025
M9-EtFOSE	11.495	639.2 -> 58.9	378551	25.00 µg/L	0.025
M5-EtFOSA	11.573	531.1 -> 219.0	33179	2.50 µg/L	0.025
M3-MeFOSA	11.340	515.0 -> 219.0	27603	2.50 µg/L	0.025
13C4-PFOS	9.007	502.8 -> 79.9	41931	2.50 µg/L	-0.062
13C3-PFBA	3.090	216.0 -> 172.0	248106	5.00 µg/L	-0.087
18O2-PFHxS	7.865	403.0 -> 83.9	22605	2.50 µg/L	-0.051
13C4-PFOA	7.739	417.1 -> 372.0	192945	2.50 µg/L	-0.050
13C2-PFDA	8.830	515.1 -> 470.1	57236	1.25 µg/L	-0.049
13C5-PFNA	8.309	468.0 -> 423.0	96858	1.25 µg/L	-0.051
13C2-PFHxA	6.185	315.1 -> 270.0	181793	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.847	329.1 -> 80.9	5544	6.81 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 136.1%		
13C2-6:2FTS	7.486	429.1 -> 80.9	11233	6.16 µg/L	-0.050
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.2%		
13C2-8:2FTS	8.591	529.1 -> 80.9	15583	6.24 µg/L	-0.062
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.9%		
13C2-PFDoDA	9.781	615.1 -> 570.0	79164	1.42 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 114.0%		
13C2-PFTeDA	10.524	715.2 -> 670.0	61136	1.55 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 123.7%		
13C3-PFBS	6.101	302.1 -> 79.9	53228	2.72 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C3-PFHxS	7.866	402.1 -> 79.9	34736	2.63 µg/L	-0.051

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C4-PFBA	3.099	216.8 -> 171.9	437482	9.78 µg/L	-0.075
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C4-PFHpA	7.080	367.1 -> 322.0	109827	2.59 µg/L	-0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C5-PFHxA	6.184	318.0 -> 273.0	194549	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C5-PFPeA	4.851	268.3 -> 223.0	296200	5.01 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C6-PFDA	8.829	519.1 -> 474.1	69149	1.37 µg/L	-0.049
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.4%		
13C7-PFUnDA	9.323	570.0 -> 525.1	75882	1.40 µg/L	-0.050
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.9%		
13C8-FOSA	10.259	506.1 -> 77.8	59472	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C8-PFOA	7.739	421.1 -> 376.0	171745	2.48 µg/L	-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C8-PFOS	9.006	507.1 -> 79.9	44344	2.59 µg/L	-0.062
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C9-PFNA	8.309	472.1 -> 427.0	81409	1.18 µg/L	-0.051
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
d3-MeFOSAA	8.874	573.2 -> 419.0	59287	6.16 µg/L	-0.050
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.1%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	146693	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.1%		
d3-MeFOSA	11.340	515.0 -> 219.0	27603	2.52 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.7%		
d5-EtFOSAA	9.084	589.2 -> 419.0	48342	5.76 µg/L	-0.062
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.3%		
d7-MeFOSE	11.260	623.2 -> 58.9	313266	25.05 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
d9-EtFOSE	11.495	639.2 -> 58.9	378551	26.43 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 105.7%		
d5-EtFOSA	11.573	531.1 -> 219.0	33179	2.54 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		

Target Compounds

QValue

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

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.594	599.0 -> 98.8				
		363.1 -> 319.0	0	µg/L	m	1
		363.1 -> 169.0	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	8.164	413.0 -> 369.0	0	µg/L	m	1
		413.0 -> 169.0	0			
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	9.965	713.1 -> 669.0	0	µg/L	m	1
		713.1 -> 168.9	0			
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9CI-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	11.920	630.0 -> 58.9	0	µg/L	m	1
		511.9 -> 219.0	-	N.D.		
MeFOSA	-	511.9 -> 169.0				
		616.1 -> 58.9	-	N.D.		
MeFOSE	-	699.1 -> 79.9	-	N.D.		
PFDODS	-	699.1 -> 98.8	-	N.D.		
		295.0 -> 201.0	-	N.D.		
NFDHA	-	295.0 -> 84.9	-	N.D.		
		279.0 -> 85.1	-	N.D.		
PFMBA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

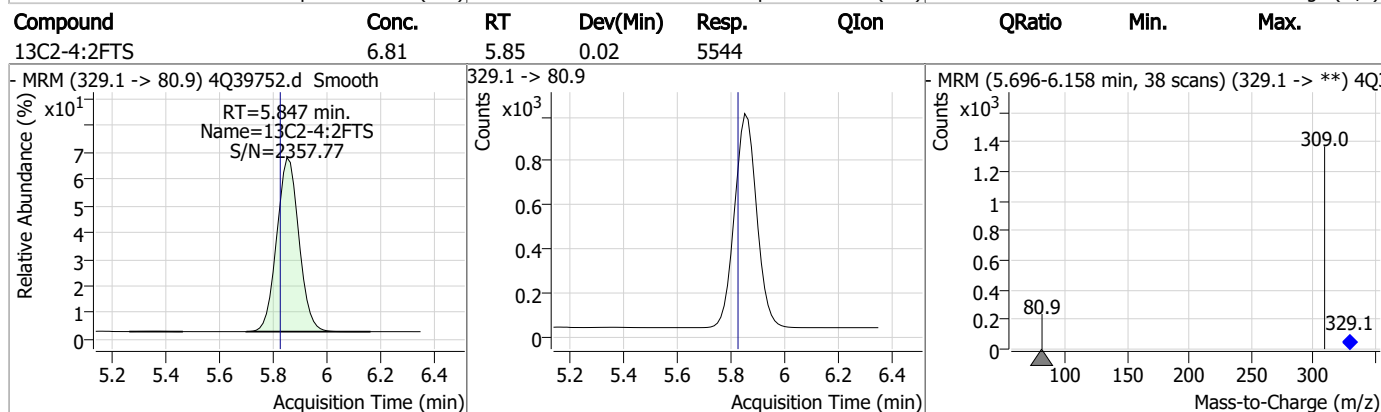
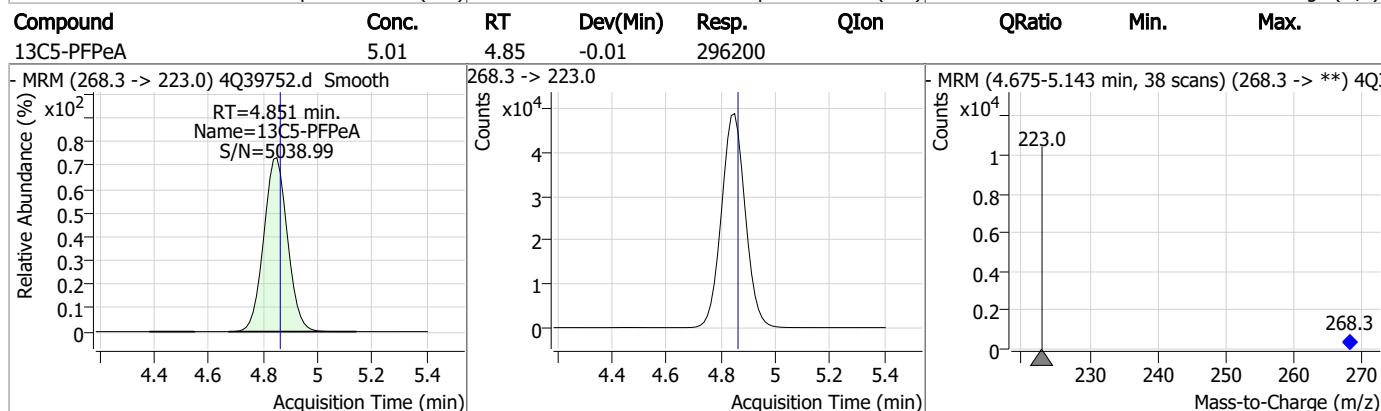
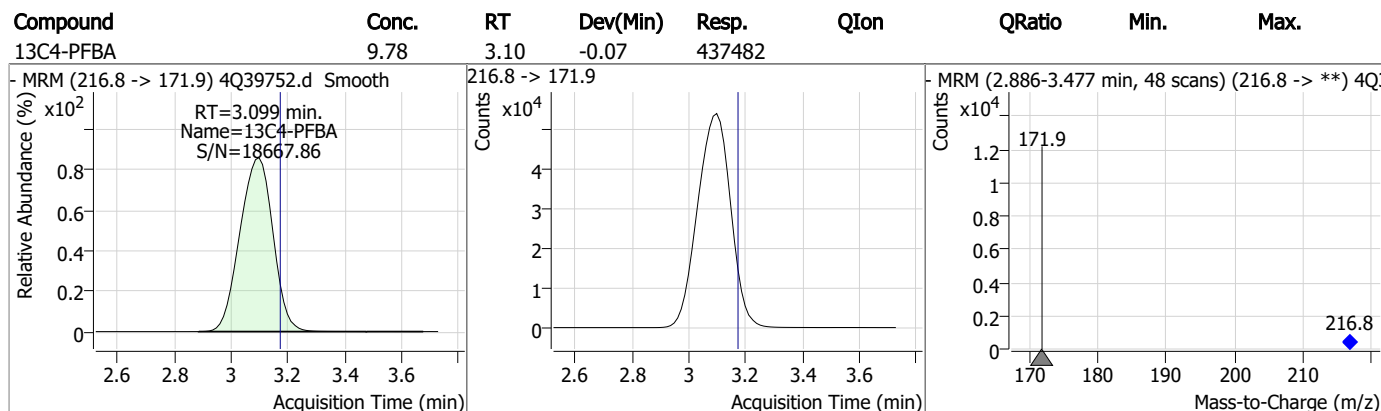
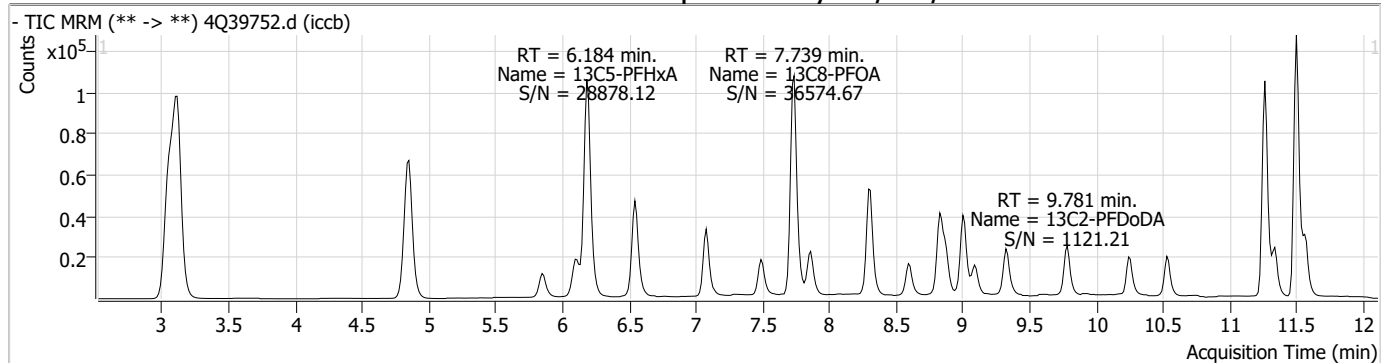
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

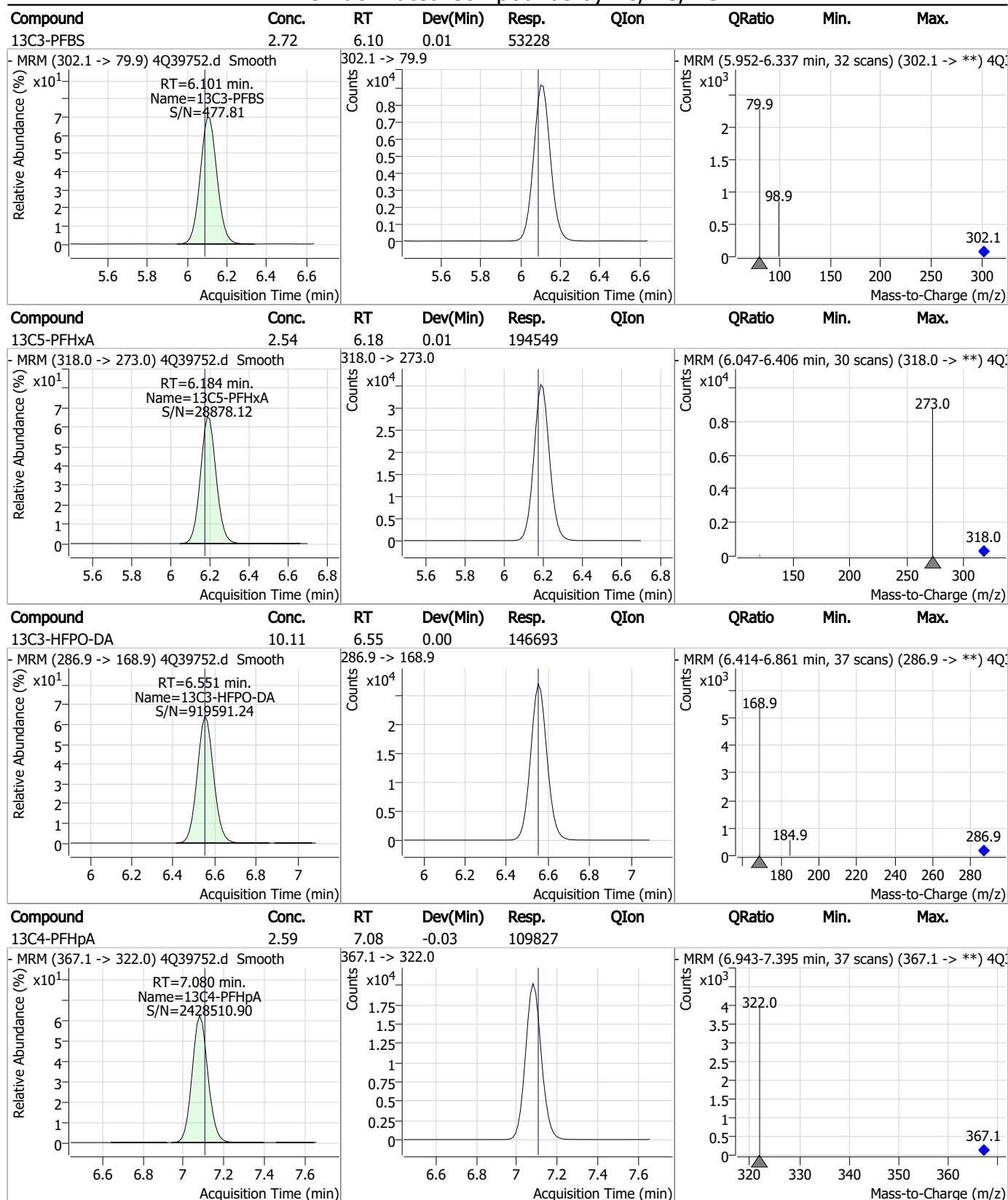
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.2.3
7

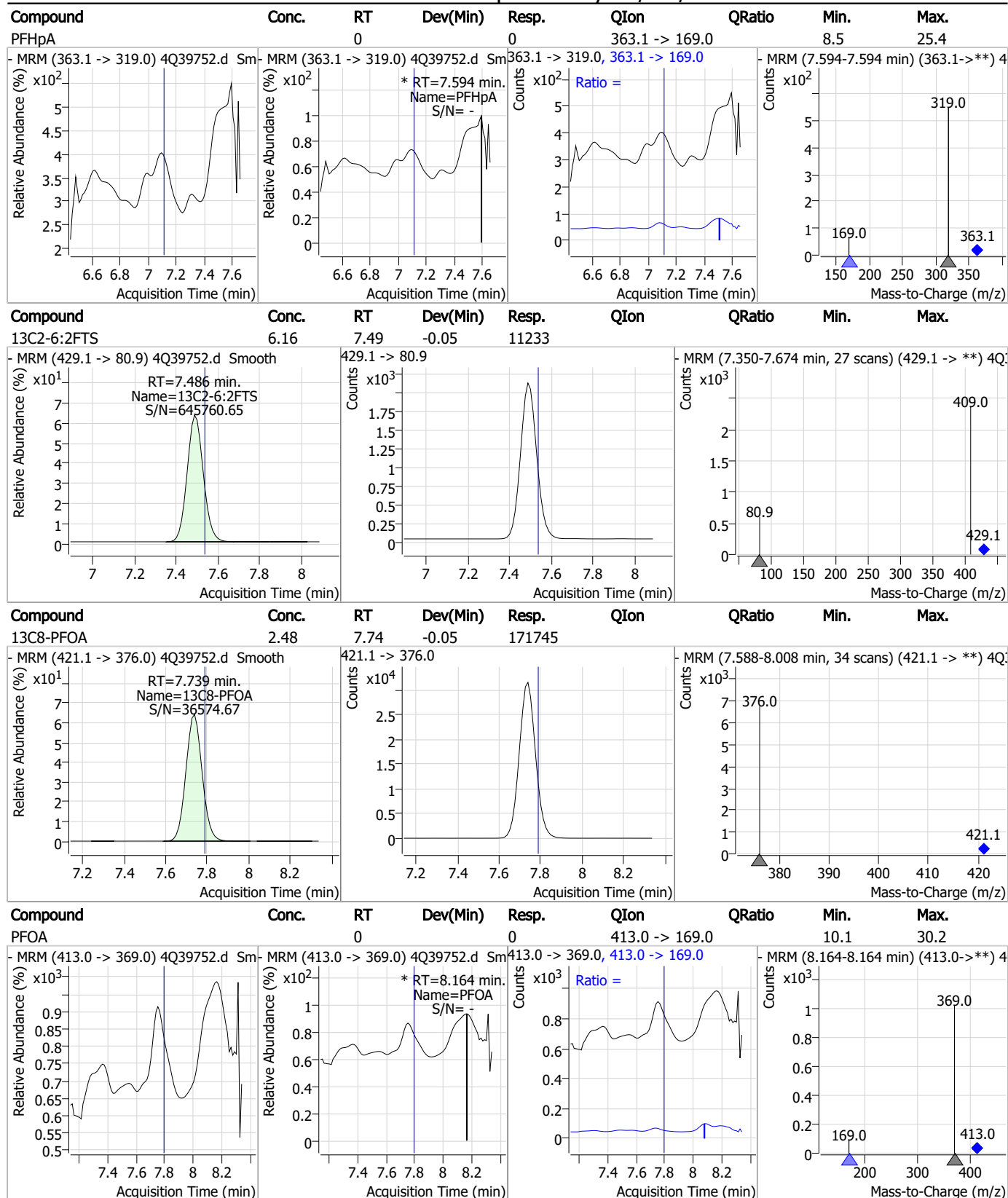
Perfluorinated Compounds by LC/MS/MS



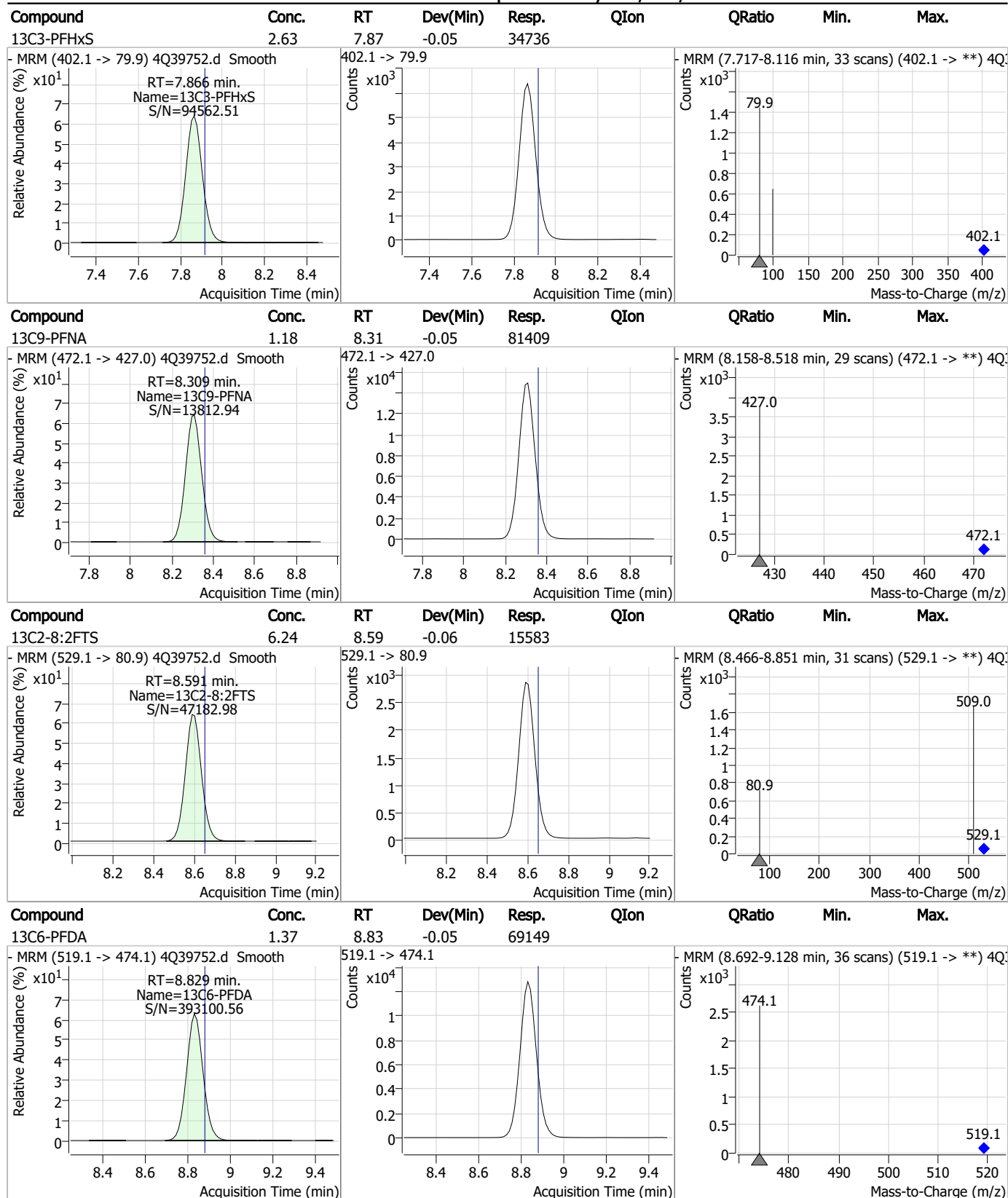
Perfluorinated Compounds by LC/MS/MS



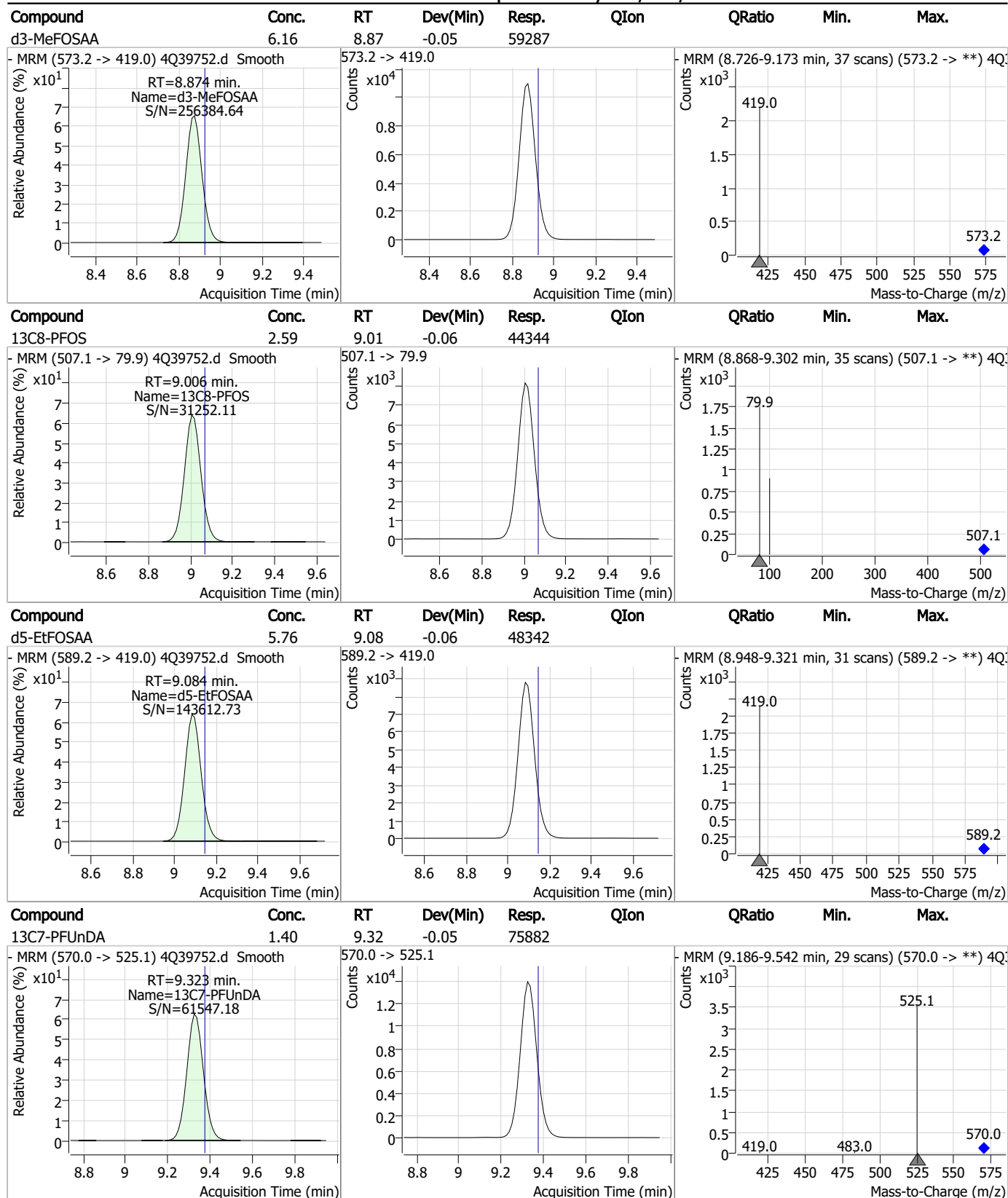
Perfluorinated Compounds by LC/MS/MS



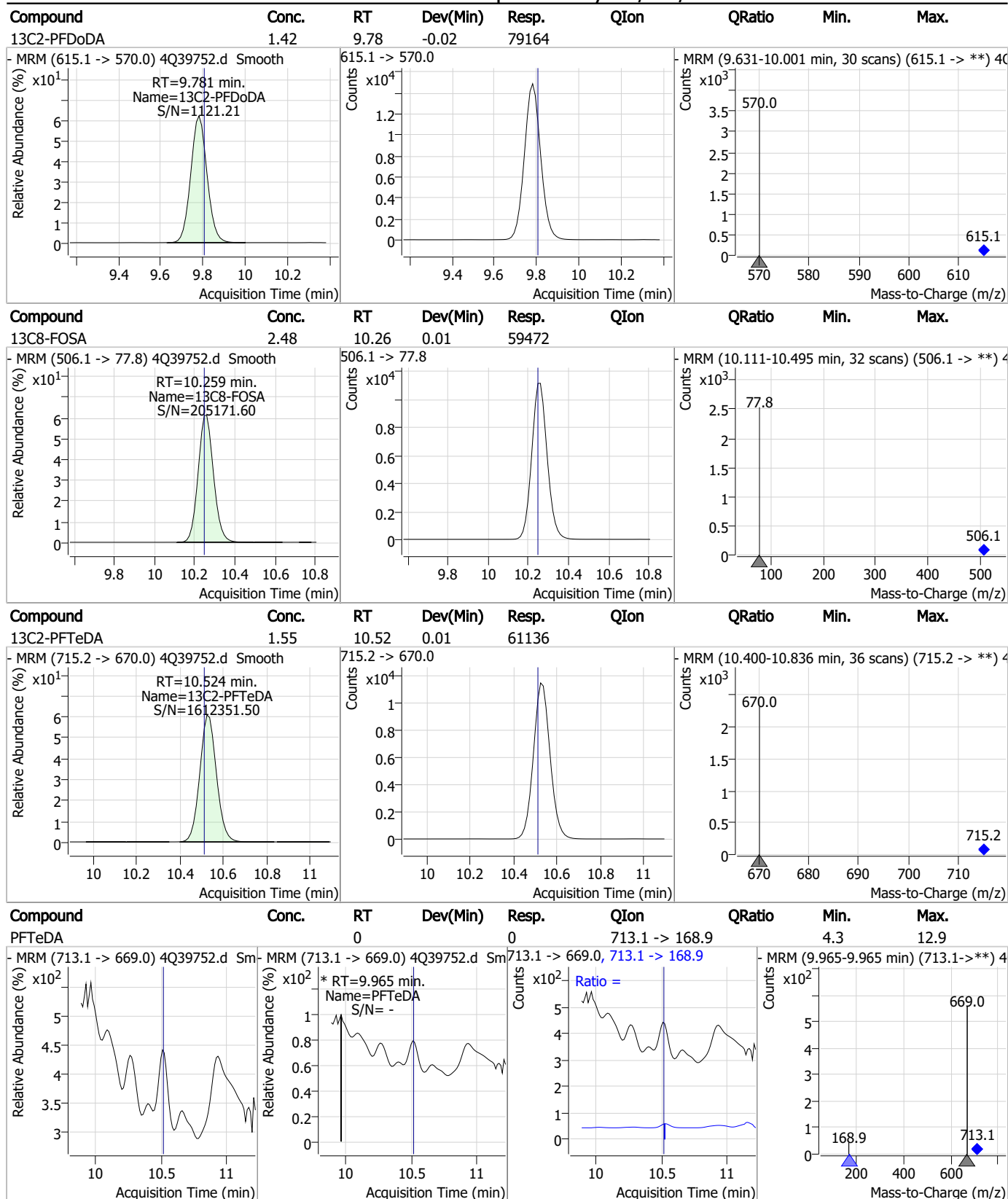
Perfluorinated Compounds by LC/MS/MS



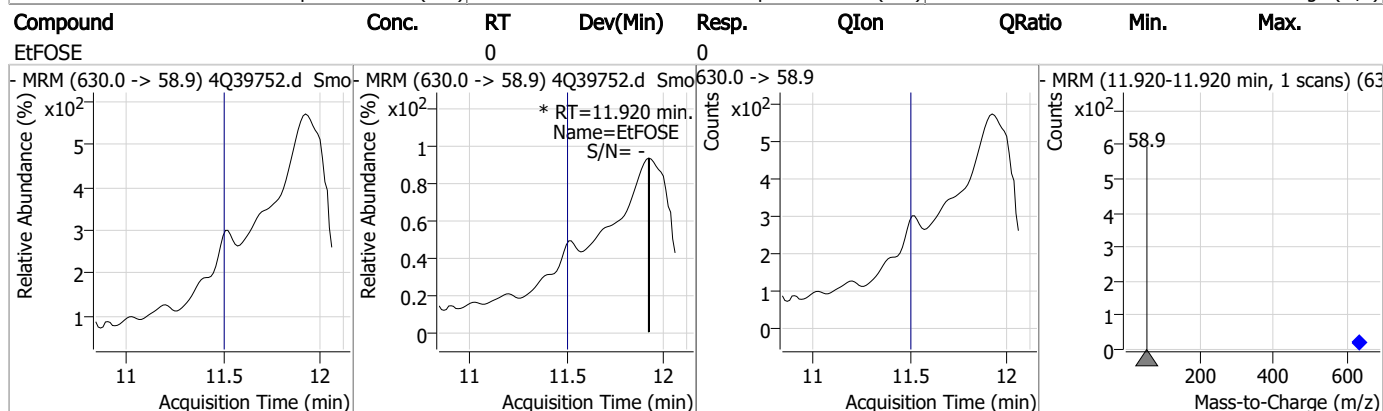
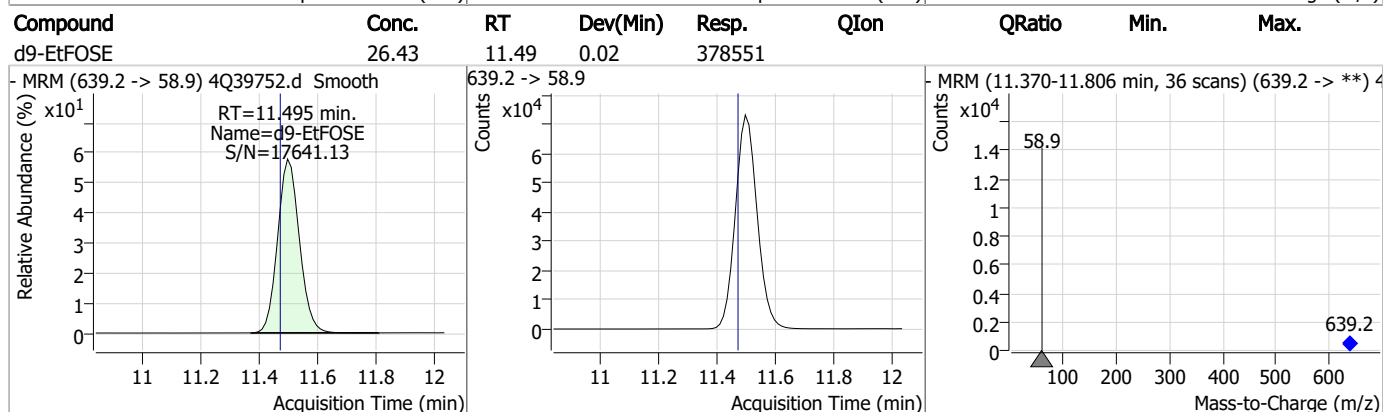
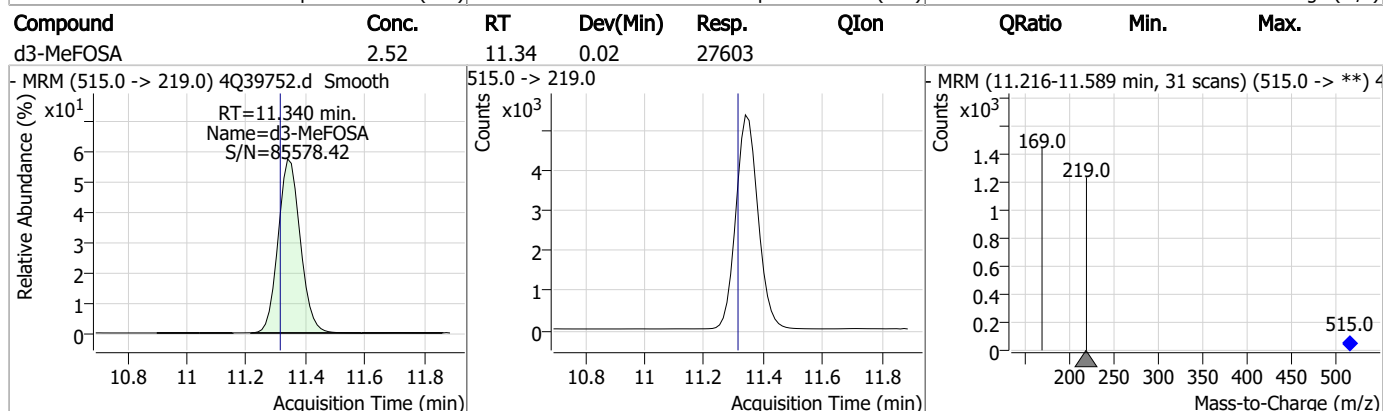
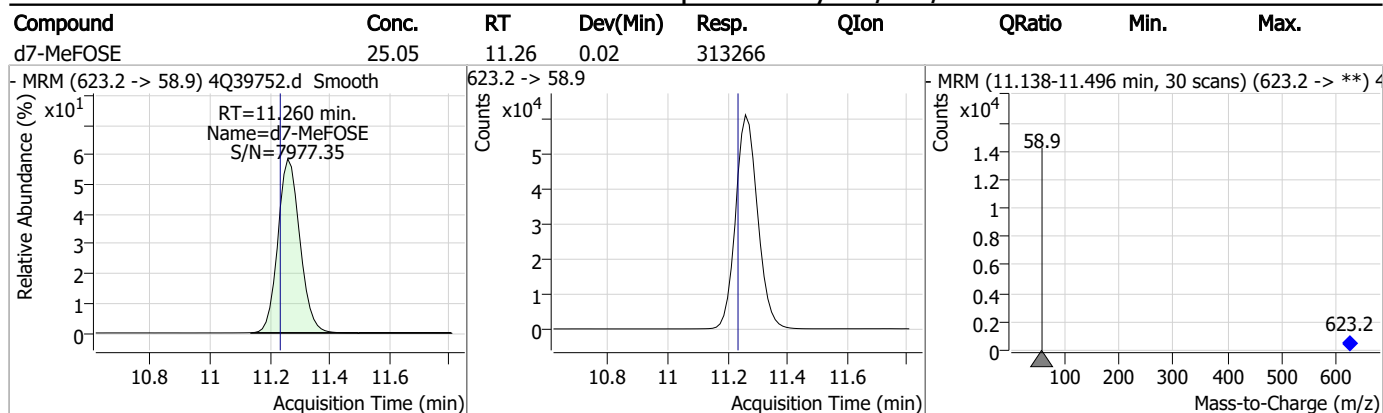
Perfluorinated Compounds by LC/MS/MS



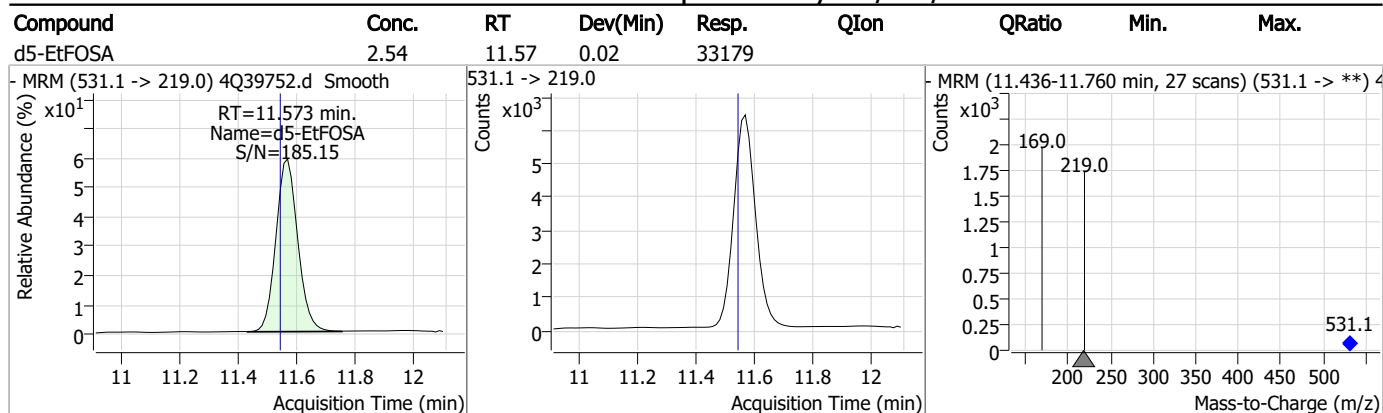
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.2.3

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Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39709.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 5:50:59 PM
 Sample Name : op95096-bs
 Vial : P1-D6
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.227	216.8 -> 171.9	280511	10.00 µg/L	0.053
M5-PFPeA	4.888	268.3 -> 223.0	267909	5.00 µg/L	0.025
M5-PFHxA	6.184	318.0 -> 273.0	170837	2.50 µg/L	0.012
M4-PFHpA	7.106	367.1 -> 322.0	92228	2.50 µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	145569	2.50 µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	74077	1.25 µg/L	-0.012
M6-PFDA	8.879	519.1 -> 474.1	55958	1.25 µg/L	0.000
M7-PFUnDA	9.361	570.0 -> 525.1	64685	1.25 µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	59240	1.25 µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	40918	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	57831	2.50 µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	47046	2.50 µg/L	0.012
M3-PFHxS	7.904	402.1 -> 79.9	33165	2.50 µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	37518	2.50 µg/L	-0.012
M2-4:2FTS	5.835	329.1 -> 80.9	5275	5.00 µg/L	0.012
M2-6:2FTS	7.524	429.1 -> 80.9	9115	5.00 µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	12453	5.00 µg/L	-0.012
M3-MeFOSAA	8.912	573.2 -> 419.0	50106	5.00 µg/L	-0.013
M3-HFPO-DA	6.564	286.9 -> 168.9	131747	10.00 µg/L	0.012
M5-EtFOSAA	9.133	589.2 -> 419.0	43007	5.00 µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	278321	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	314427	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	27180	2.50 µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	24136	2.50 µg/L	0.012
13C4-PFOS	9.056	502.8 -> 79.9	36793	2.50 µg/L	-0.012
13C3-PFBA	3.230	216.0 -> 172.0	232914	5.00 µg/L	0.052
18O2-PFHxS	7.903	403.0 -> 83.9	19269	2.50 µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	158475	2.50 µg/L	-0.012
13C2-PFDA	8.879	515.1 -> 470.1	44424	1.25 µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	74040	1.25 µg/L	-0.012
13C2-PFHxA	6.185	315.1 -> 270.0	146008	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.835	329.1 -> 80.9	5275	7.59 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 151.9%		
13C2-6:2FTS	7.524	429.1 -> 80.9	9115	5.86 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.3%		
13C2-8:2FTS	8.641	529.1 -> 80.9	12453	5.85 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.1%		
13C2-PFDoDA	9.793	615.1 -> 570.0	59240	1.37 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C2-PFTeDA	10.512	715.2 -> 670.0	40918	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C3-PFBS	6.101	302.1 -> 79.9	47046	2.83 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.0%		
13C3-PFHxS	7.904	402.1 -> 79.9	33165	2.95 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 = 118.0%	
13C4-PFBA	3.227	216.8 -> 171.9	280511	6.68 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 66.8%	
13C4-PFHpA	7.106	367.1 -> 322.0	92228	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C5-PFHxA	6.184	318.0 -> 273.0	170837	2.78 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.3%	
13C5-PFPeA	4.888	268.3 -> 223.0	267909	5.64 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.8%	
13C6-PFDA	8.879	519.1 -> 474.1	55958	1.43 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.1%	
13C7-PFUnDA	9.361	570.0 -> 525.1	64685	1.54 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 122.9%	
13C8-FOSA	10.247	506.1 -> 77.8	57831	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C8-PFOA	7.776	421.1 -> 376.0	145569	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOS	9.055	507.1 -> 79.9	37518	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C9-PFNA	8.347	472.1 -> 427.0	74077	1.41 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.6%	
d3-MeFOSAA	8.912	573.2 -> 419.0	50106	5.93 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.6%	
13C3-HFPO-DA	6.564	286.9 -> 168.9	131747	11.31 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.1%	
d3-MeFOSA	11.327	515.0 -> 219.0	24136	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
d5-EtFOSAA	9.133	589.2 -> 419.0	43007	5.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.9%	
d7-MeFOSE	11.235	623.2 -> 58.9	278321	25.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d9-EtFOSE	11.470	639.2 -> 58.9	314427	25.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d5-EtFOSA	11.548	531.1 -> 219.0	27180	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	

Target Compounds

					QValue
4:2FTS	5.823	327.1 -> 307.0	78128	9.06 µg/L	100
		327.1 -> 80.9	36637		
6:2FTS	7.524	427.1 -> 407.0	76919	10.65 µg/L	100
		427.1 -> 80.9	37606		
8:2FTS	8.641	527.1 -> 507.0	59374	9.86 µg/L	95
		527.1 -> 80.8	33662		
EtFOSAA	9.134	584.2 -> 419.1	16472	2.29 µg/L	93
		584.2 -> 526.0	7431		
FOSA	10.250	498.1 -> 77.9	54556	2.44 µg/L	100
		498.1 -> 478.0	1115		
MeFOSAA	8.912	570.1 -> 419.0	18666	2.51 µg/L	98
		570.1 -> 483.0	3843		
PFBA	3.233	212.8 -> 168.9	73073	9.36 µg/L	100
PFBS	6.102	298.7 -> 79.9	48338	2.27 µg/L	96
		298.7 -> 98.8	15443		
PFDA	8.879	512.9 -> 469.0	104812	2.63 µg/L	97
		512.9 -> 219.0	19902		
PFDODA	9.794	613.1 -> 569.0	119975	2.63 µg/L	100
		613.1 -> 319.0	17350		
PFDS	9.959	599.0 -> 79.9	21095	2.43 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.106	599.0 -> 98.8	9772	2.63	µg/L	99
		363.1 -> 319.0	151210			
PFHpS	8.513	363.1 -> 169.0	24848	2.41	µg/L	94
		449.0 -> 79.9	36573			
PFHxA	6.175	449.0 -> 98.9	18359	2.60	µg/L	100
		313.0 -> 269.0	172751			
PFHxS	7.905	313.0 -> 118.9	4726	2.16	µg/L	99
		398.7 -> 79.9	23110			
PFNA	8.348	398.7 -> 98.9	11483	2.43	µg/L	99
		463.0 -> 419.0	130933			
PFNS	9.536	463.0 -> 219.0	31164	2.44	µg/L	93
		548.8 -> 79.9	16302			
PFOA	7.777	548.8 -> 98.9	7878	2.65	µg/L	100
		413.0 -> 369.0	171638			
PFOS	9.057	413.0 -> 169.0	34325	2.42	µg/L	98
		498.9 -> 79.9	42393			
PFPeA	4.891	498.9 -> 98.8	21233	5.16	µg/L	100
		263.0 -> 219.0	303452			
PFPeS	7.171	349.1 -> 79.9	21665	2.09	µg/L	95
		349.1 -> 98.9	9126			
PFTeDA	10.513	713.1 -> 669.0	108259	2.63	µg/L	99
		713.1 -> 168.9	9039			
PFTrDA	10.167	663.0 -> 619.0	148629	2.66	µg/L	99
		663.0 -> 168.9	15372			
PFUnDA	9.374	563.1 -> 519.0	91965	2.35	µg/L	99
		563.1 -> 269.1	16325			
11CI-PF3OUdS	10.218	630.9 -> 450.9	292865	9.51	µg/L	100
		632.9 -> 452.9	87729			
9CI-PF3ONS	9.413	530.8 -> 351.0	343765	9.16	µg/L	98
		532.8 -> 353.0	99662			
ADONA	7.369	376.9 -> 250.9	683812	9.62	µg/L	99
		376.9 -> 84.8	243532			
HFPO-DA	6.565	284.9 -> 168.9	120643	9.72	µg/L	99
		284.9 -> 184.9	13019			
3:3FTCA	4.254	241.0 -> 177.0	34379	12.48	µg/L	99
		241.0 -> 117.0	3155			
5:3FTCA	6.796	341.0 -> 237.1	554210	62.72	µg/L	99
		341.0 -> 217.0	409506			
7:3FTCA	8.249	441.0 -> 316.9	320740	63.21	µg/L	99
		441.0 -> 336.9	730121			
EtFOSA	11.550	526.0 -> 219.0	25911	2.27	µg/L	95
		526.0 -> 169.0	31142			
EtFOSE	11.496	630.0 -> 58.9	311399	25.51	µg/L	100
		511.9 -> 219.0	20544			
MeFOSA	11.329	511.9 -> 169.0	25871	2.23	µg/L	98
		616.1 -> 58.9	300691			
MeFOSE	11.248	699.1 -> 79.9	17362	25.57	µg/L	100
		699.1 -> 98.8	9606			
PFDoDS	10.639	295.0 -> 201.0	23492	2.37	µg/L	96
		295.0 -> 84.9	6960			
NFDHA	6.053	279.0 -> 85.1	189541	5.38	µg/L	99
		229.0 -> 84.9	186290			
PFMBA	5.341	314.8 -> 134.9	263906	4.65	µg/L	99
		314.8 -> 82.9	7973			

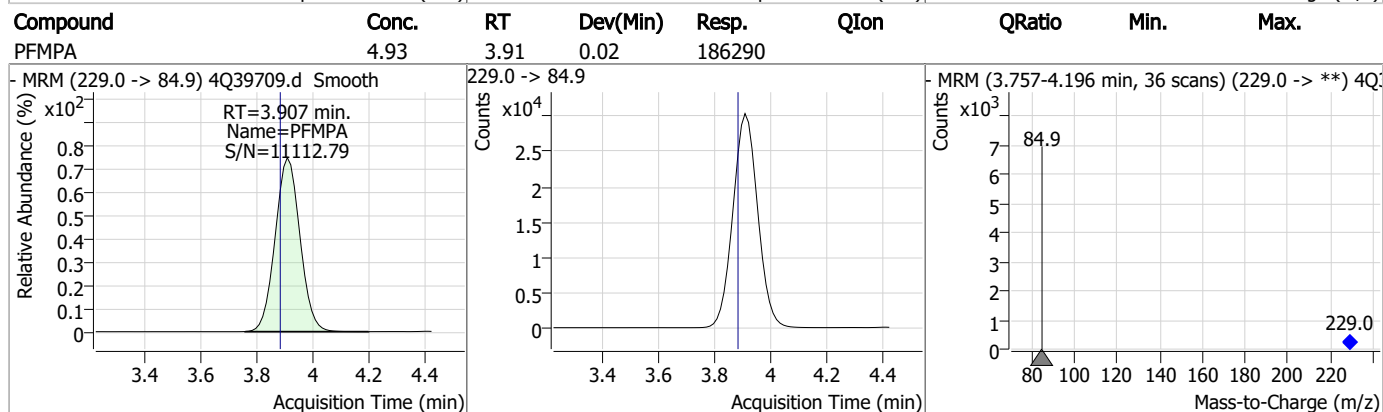
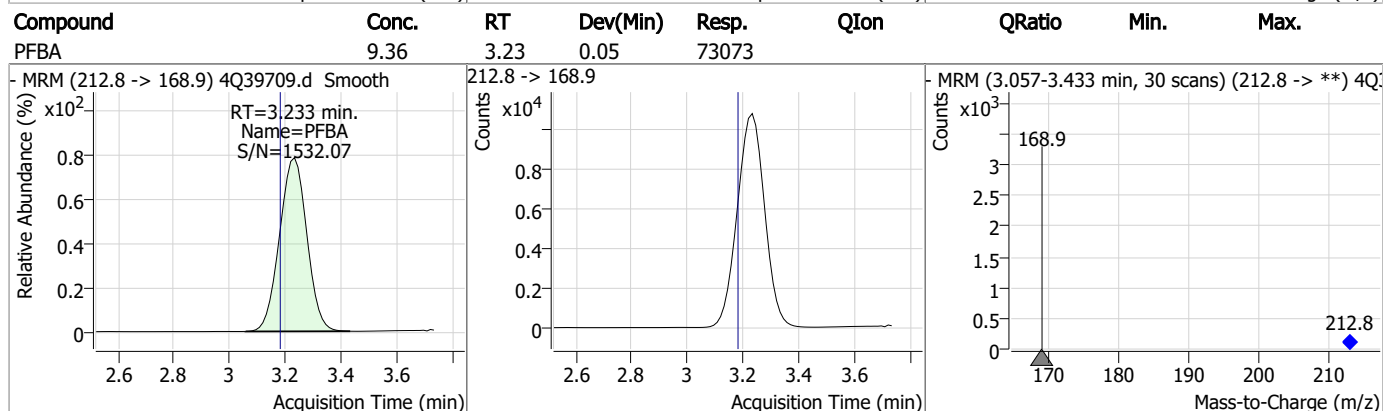
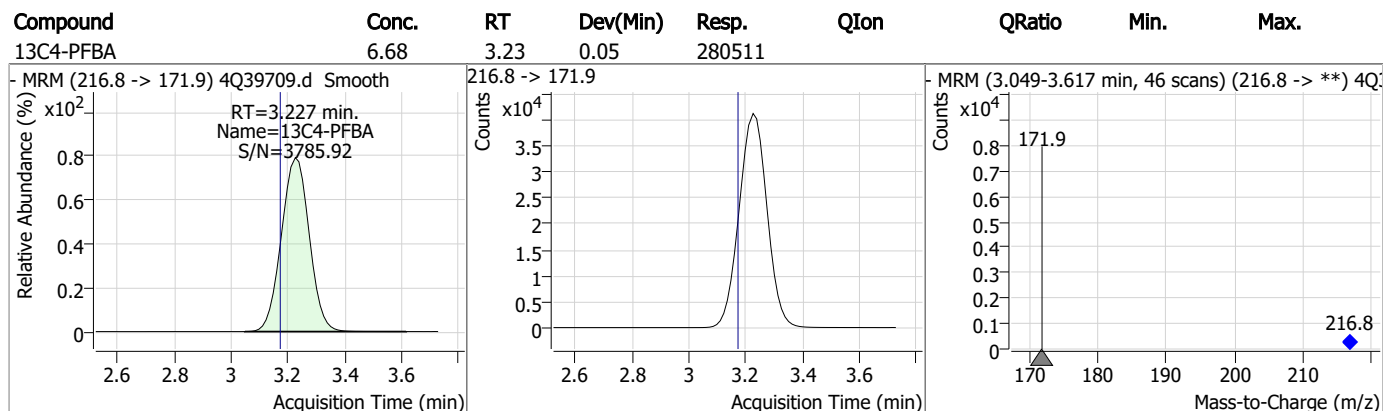
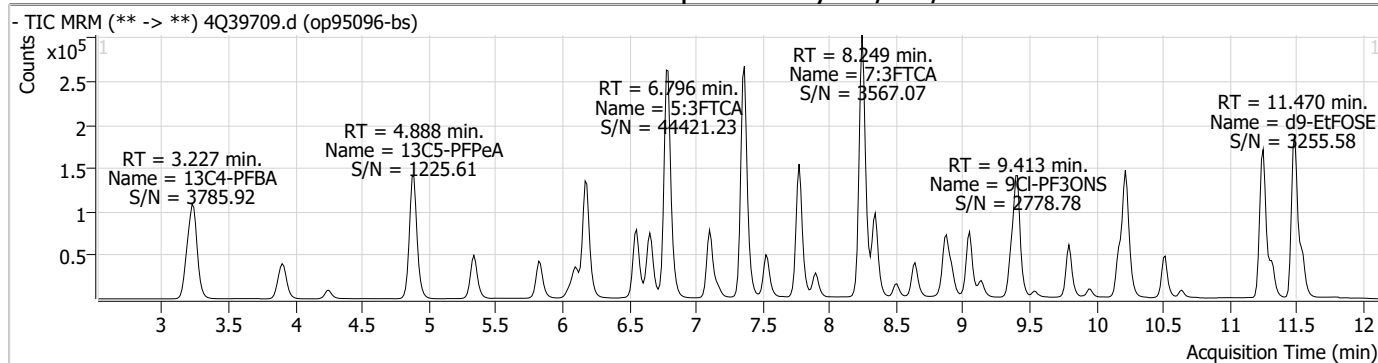
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

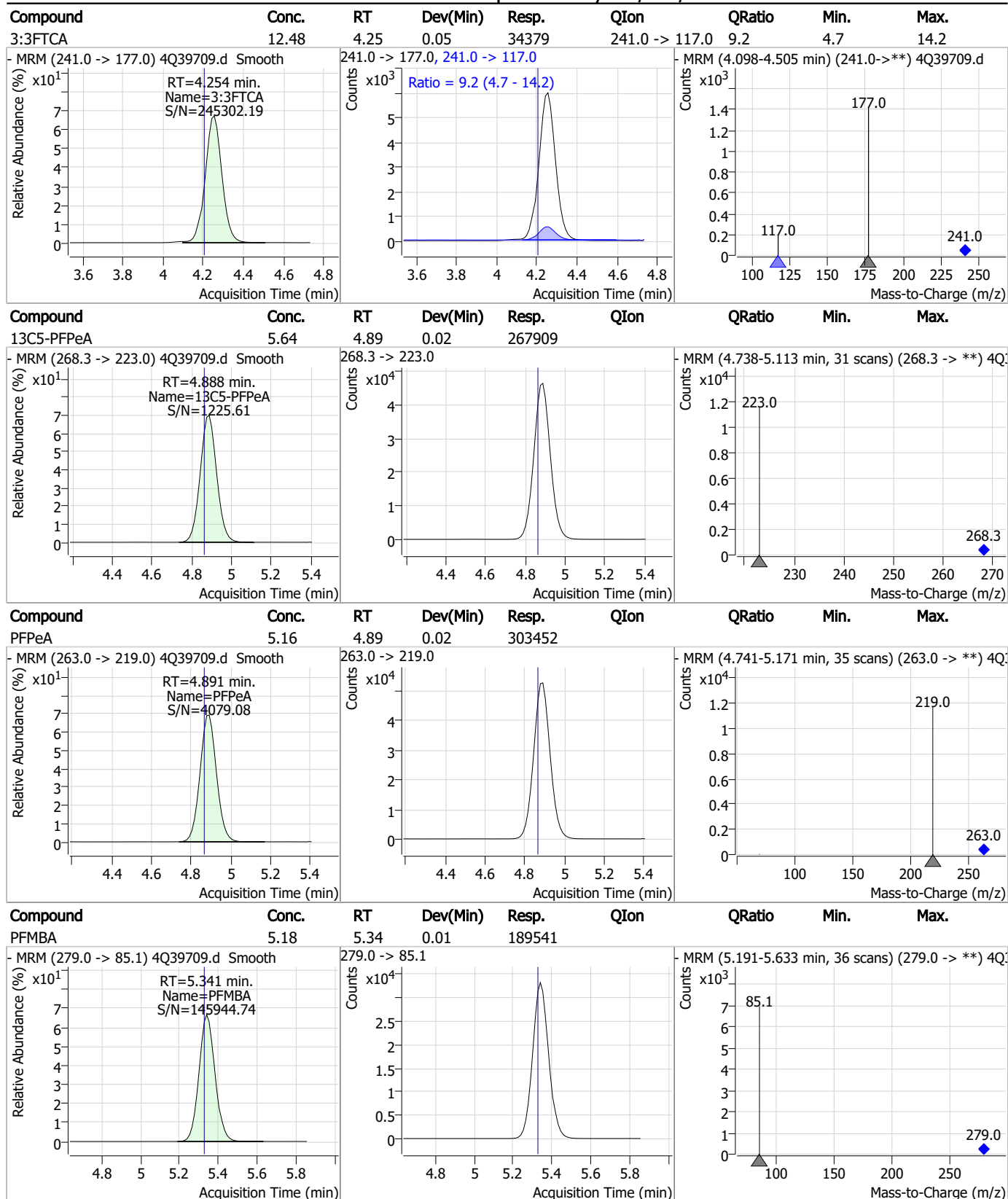
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.3.1
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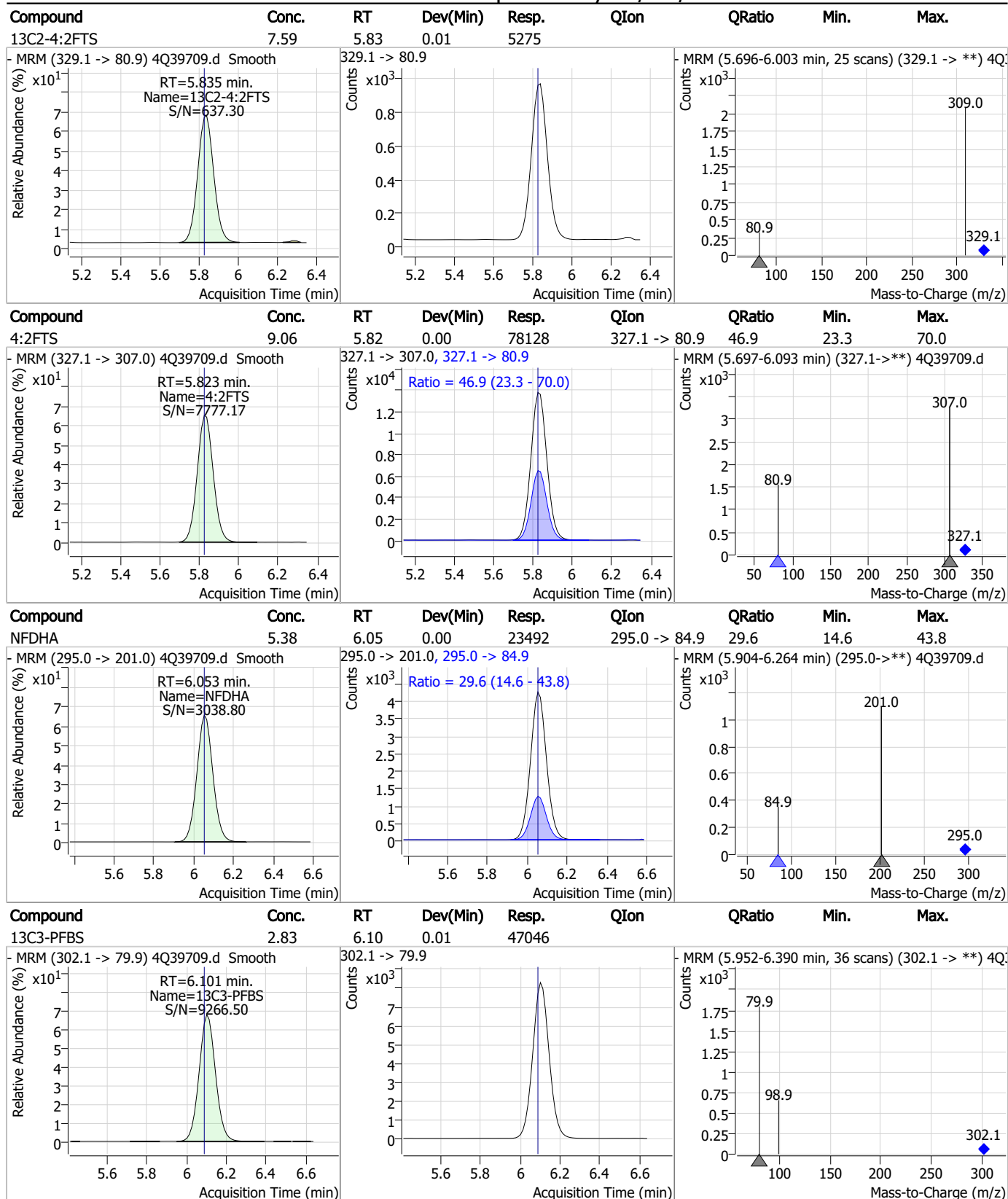
Perfluorinated Compounds by LC/MS/MS



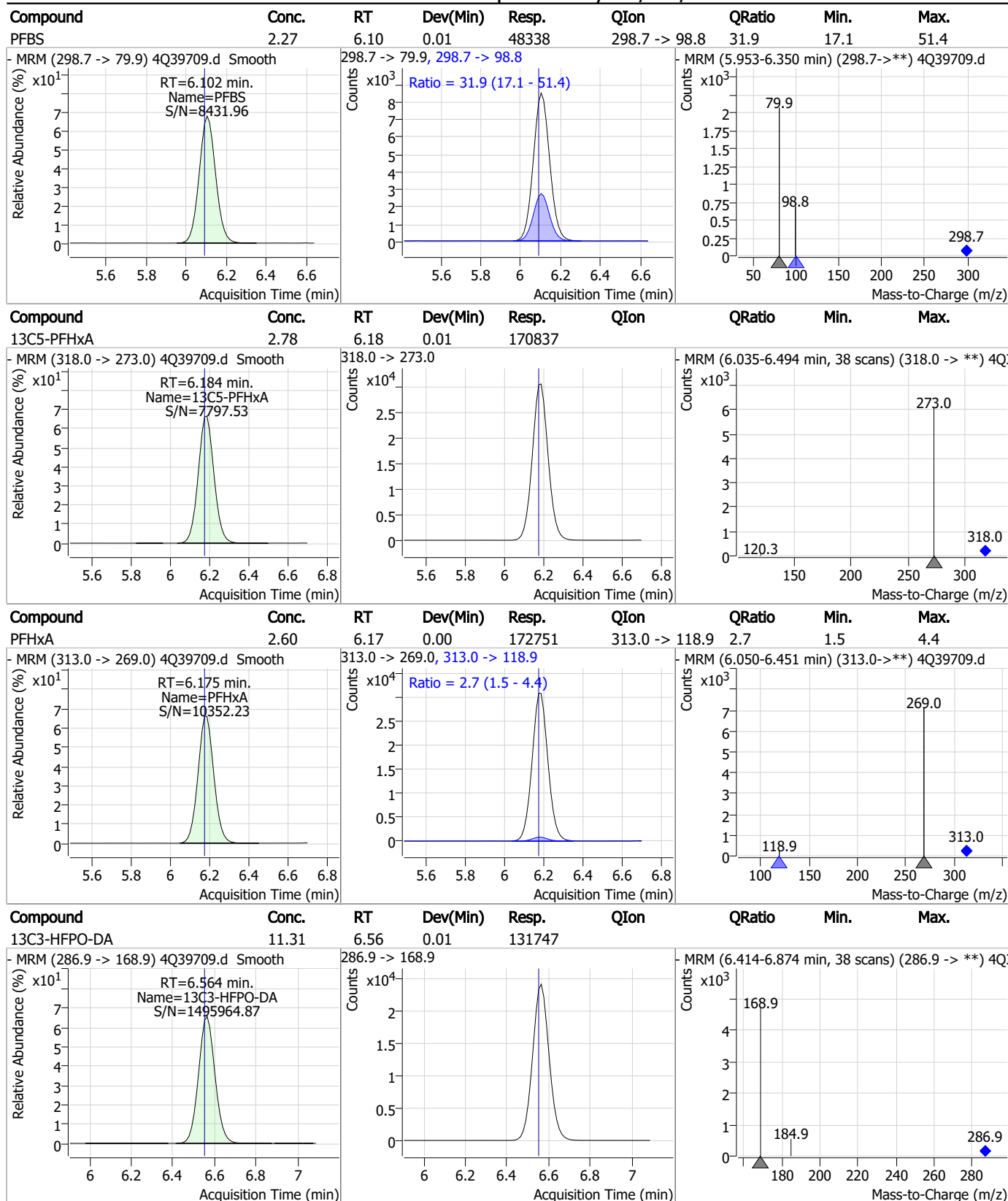
Perfluorinated Compounds by LC/MS/MS



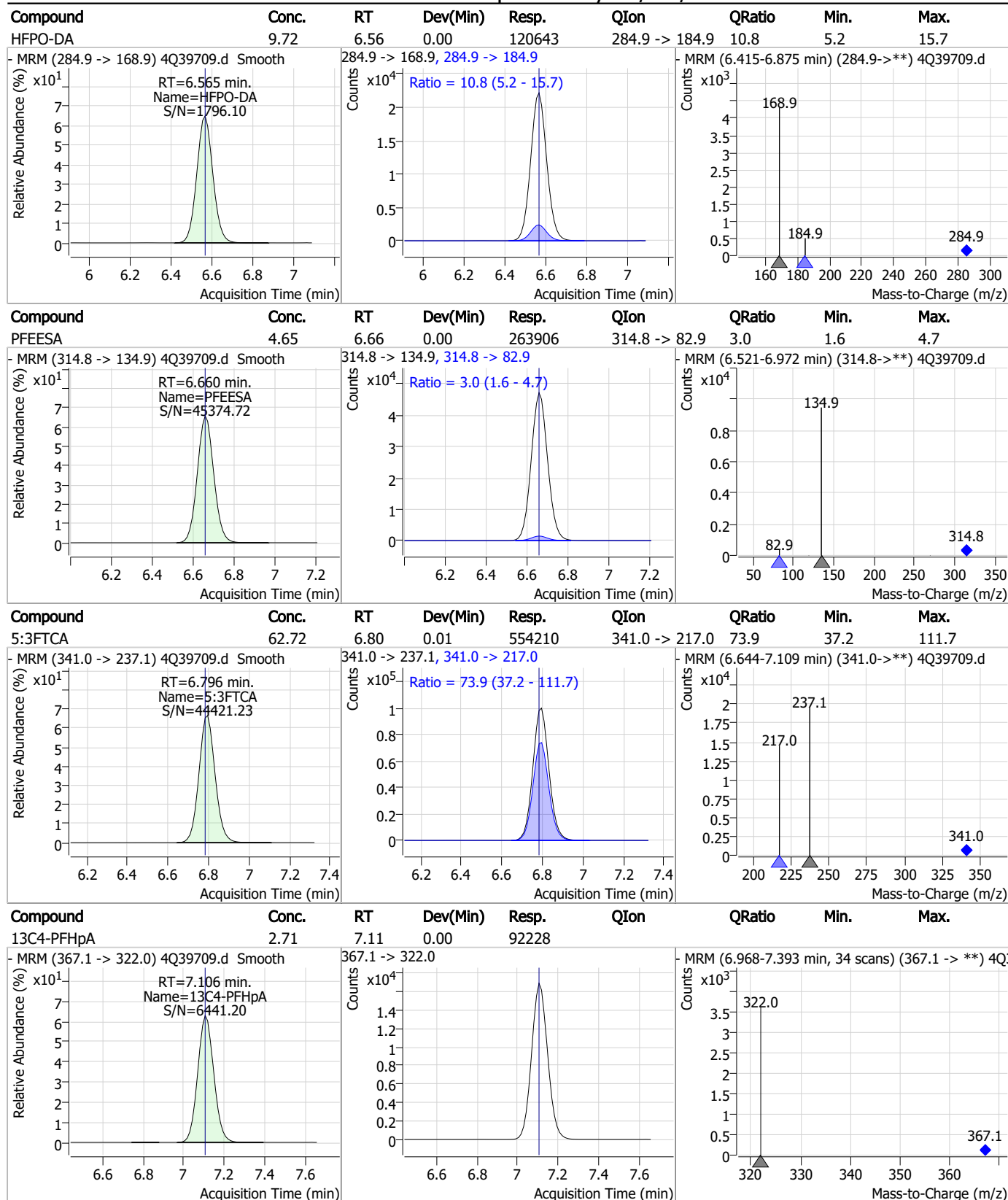
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

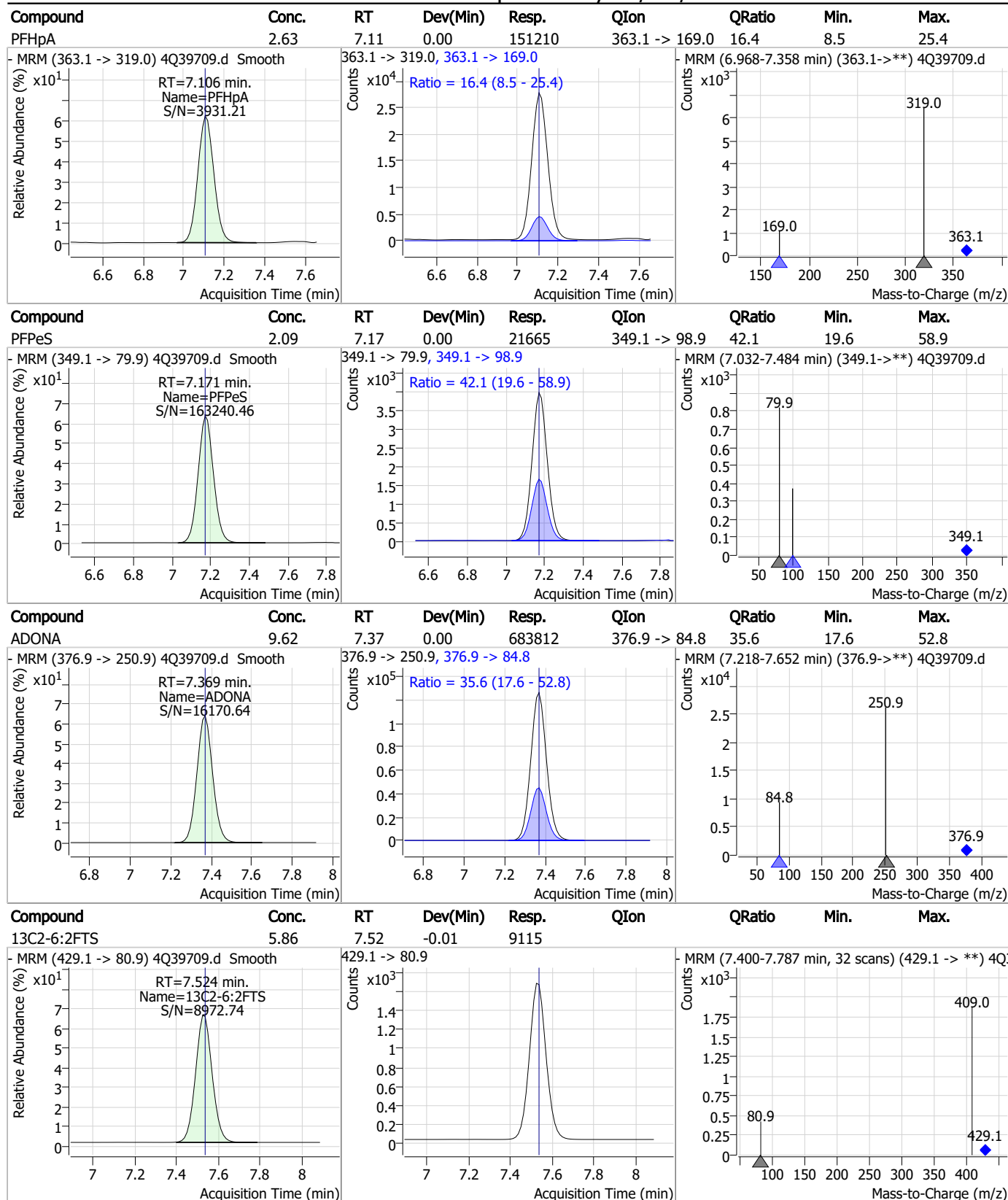


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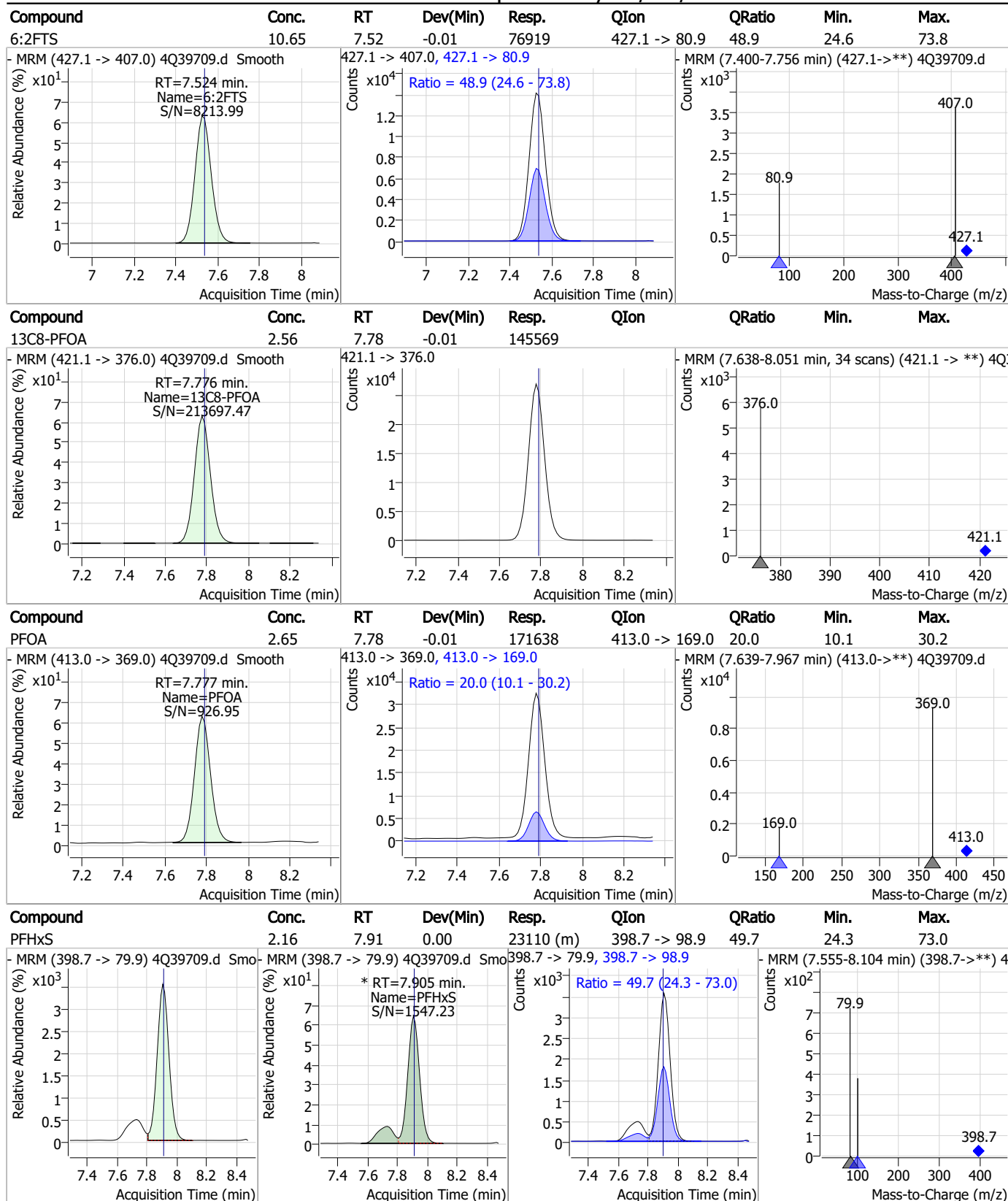


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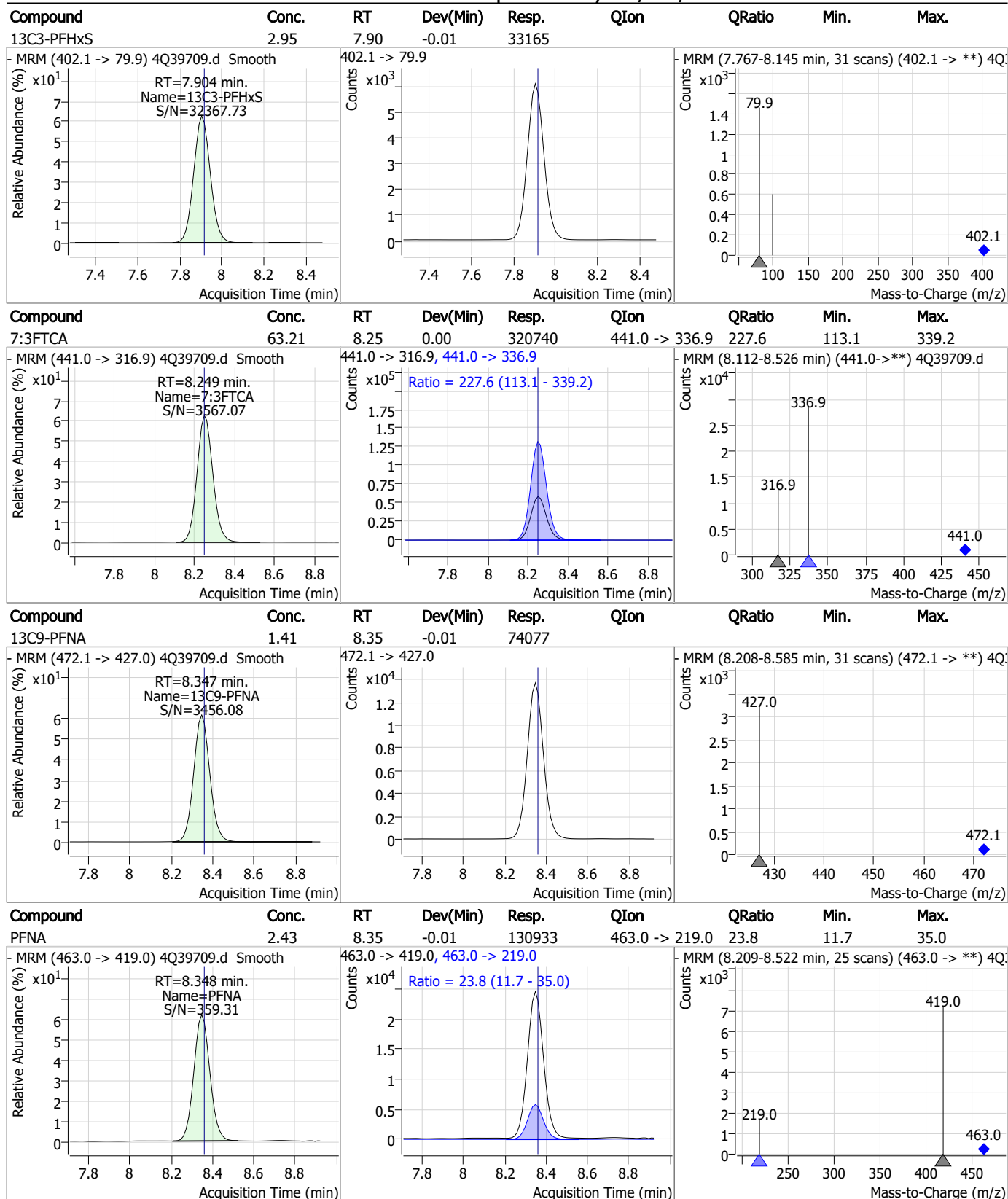
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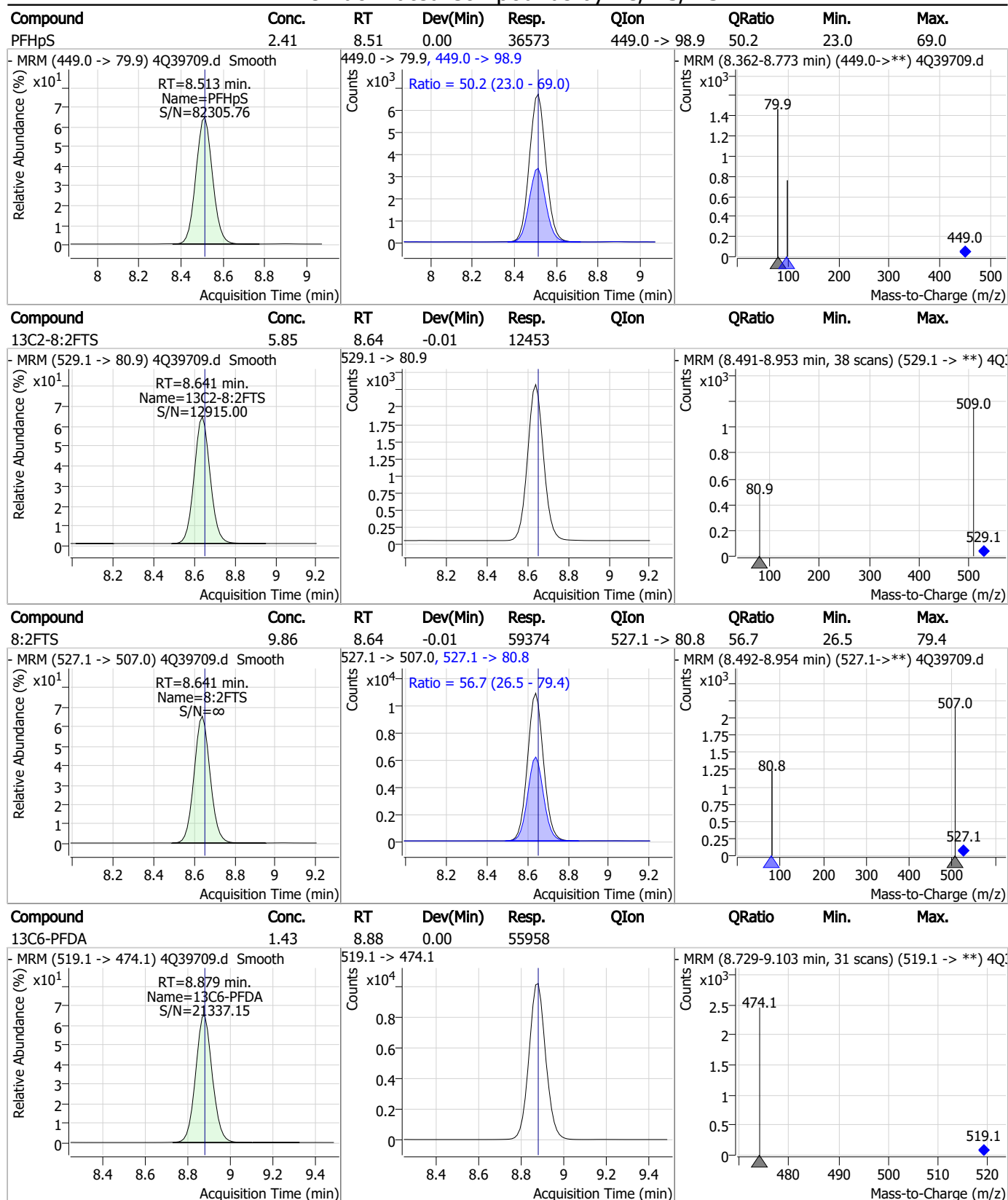
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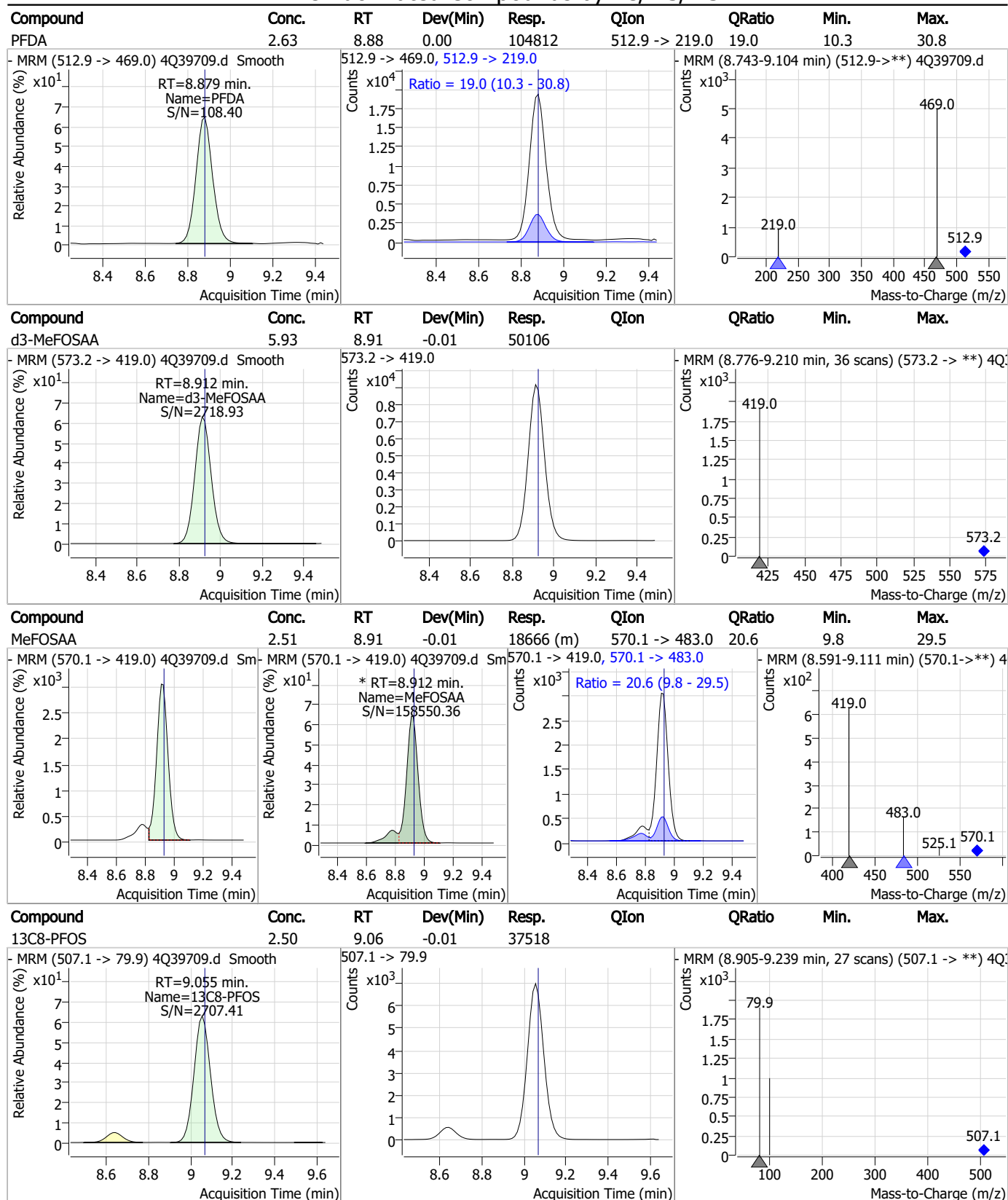
Perfluorinated Compounds by LC/MS/MS



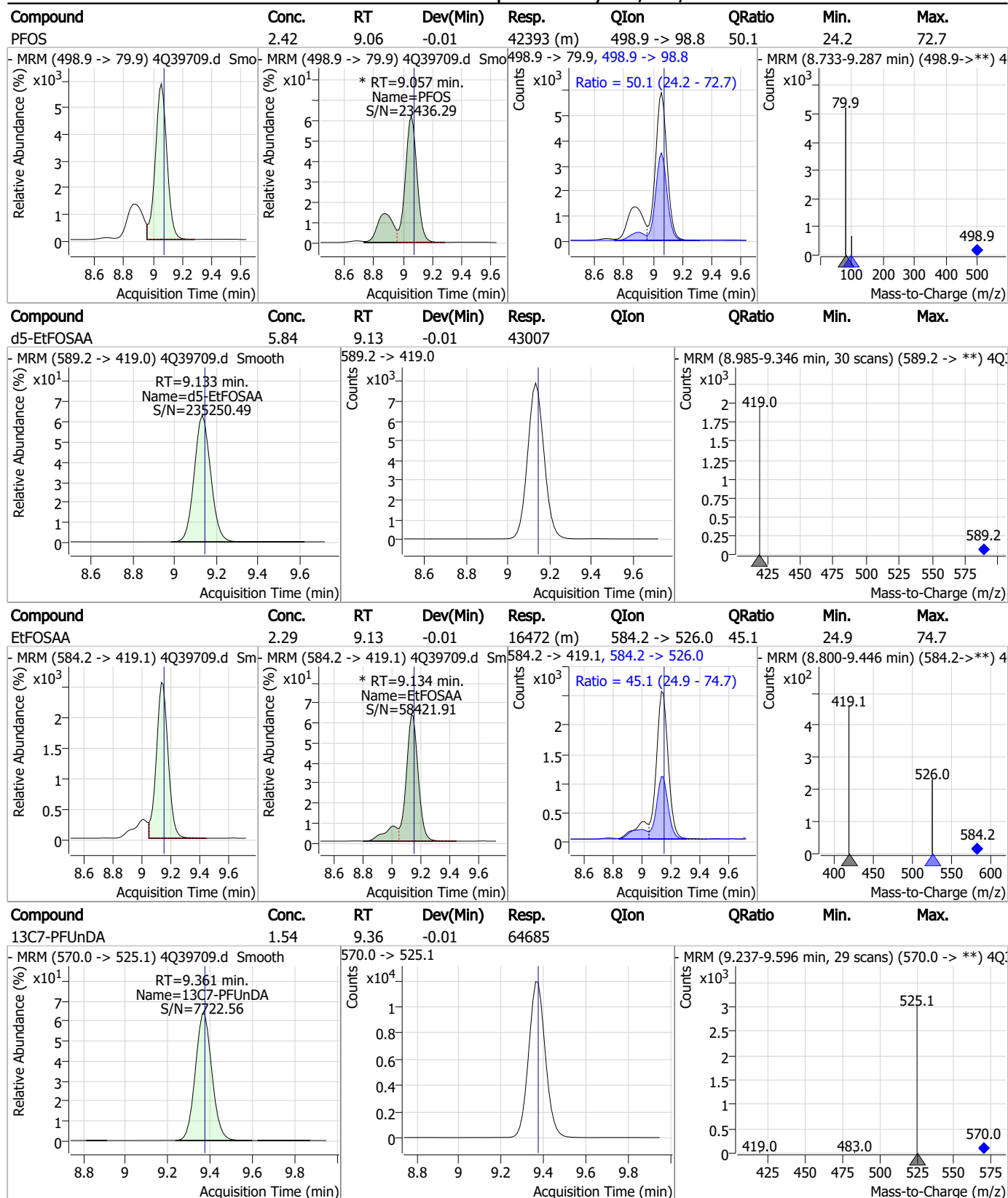
Perfluorinated Compounds by LC/MS/MS



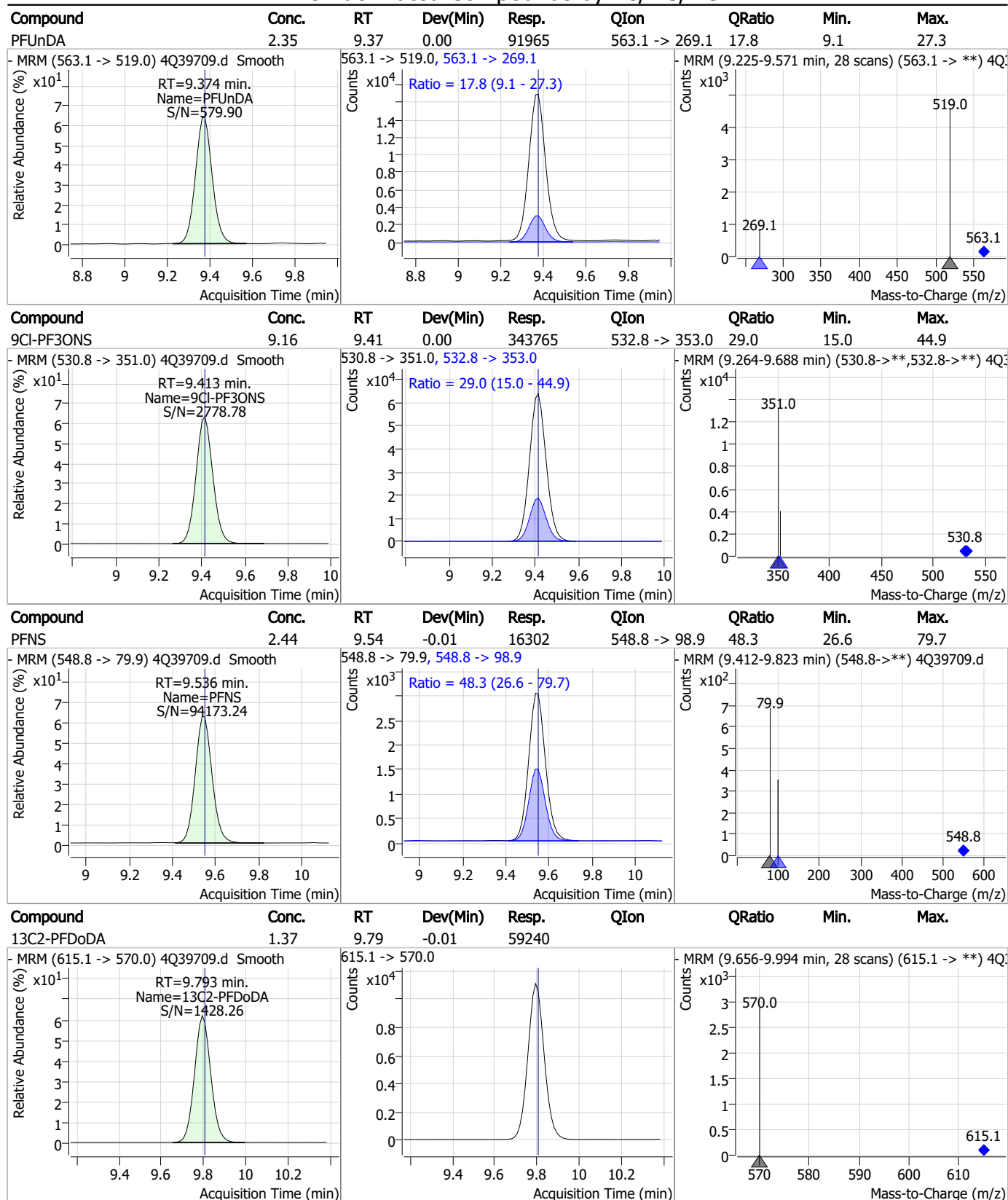
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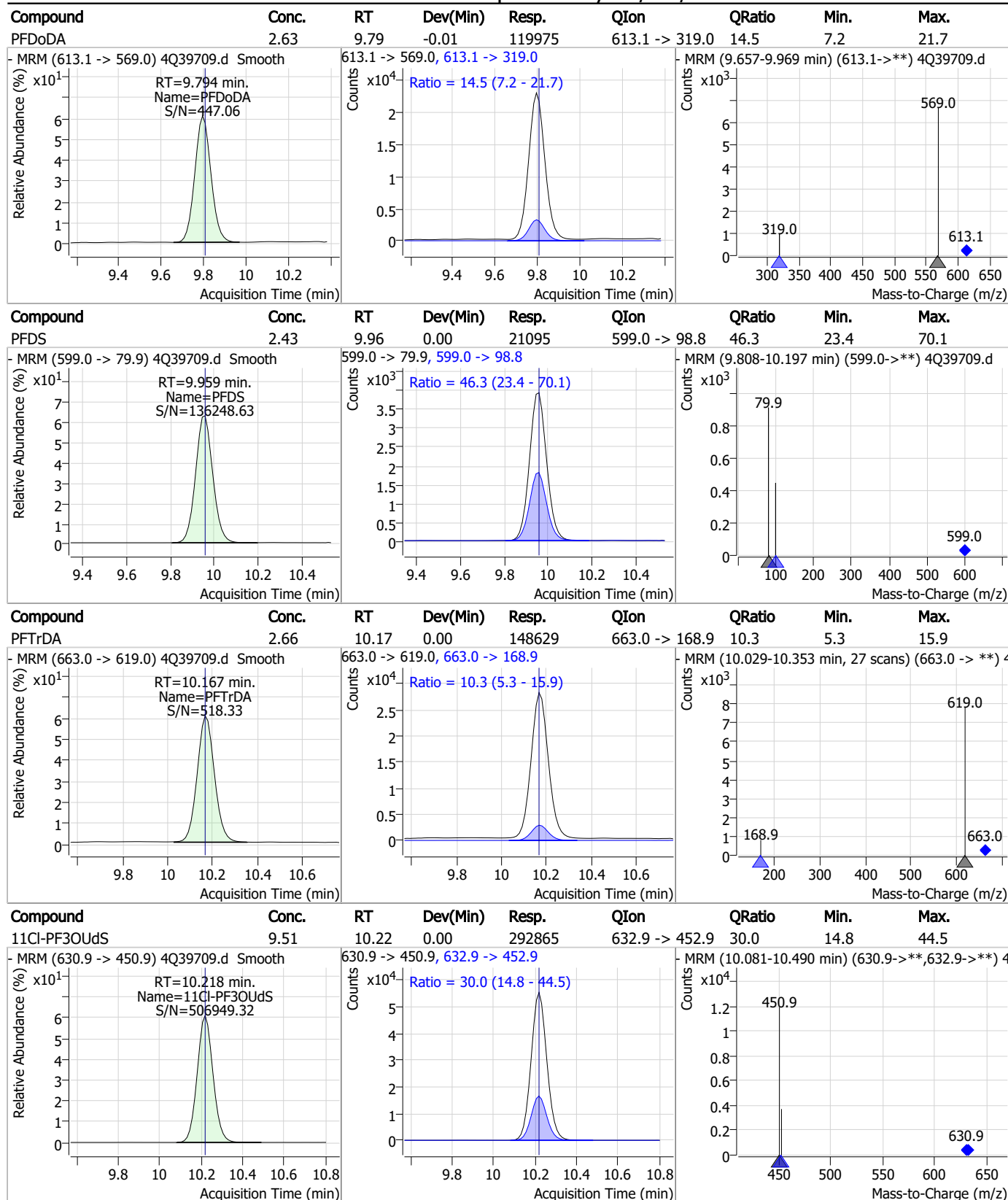
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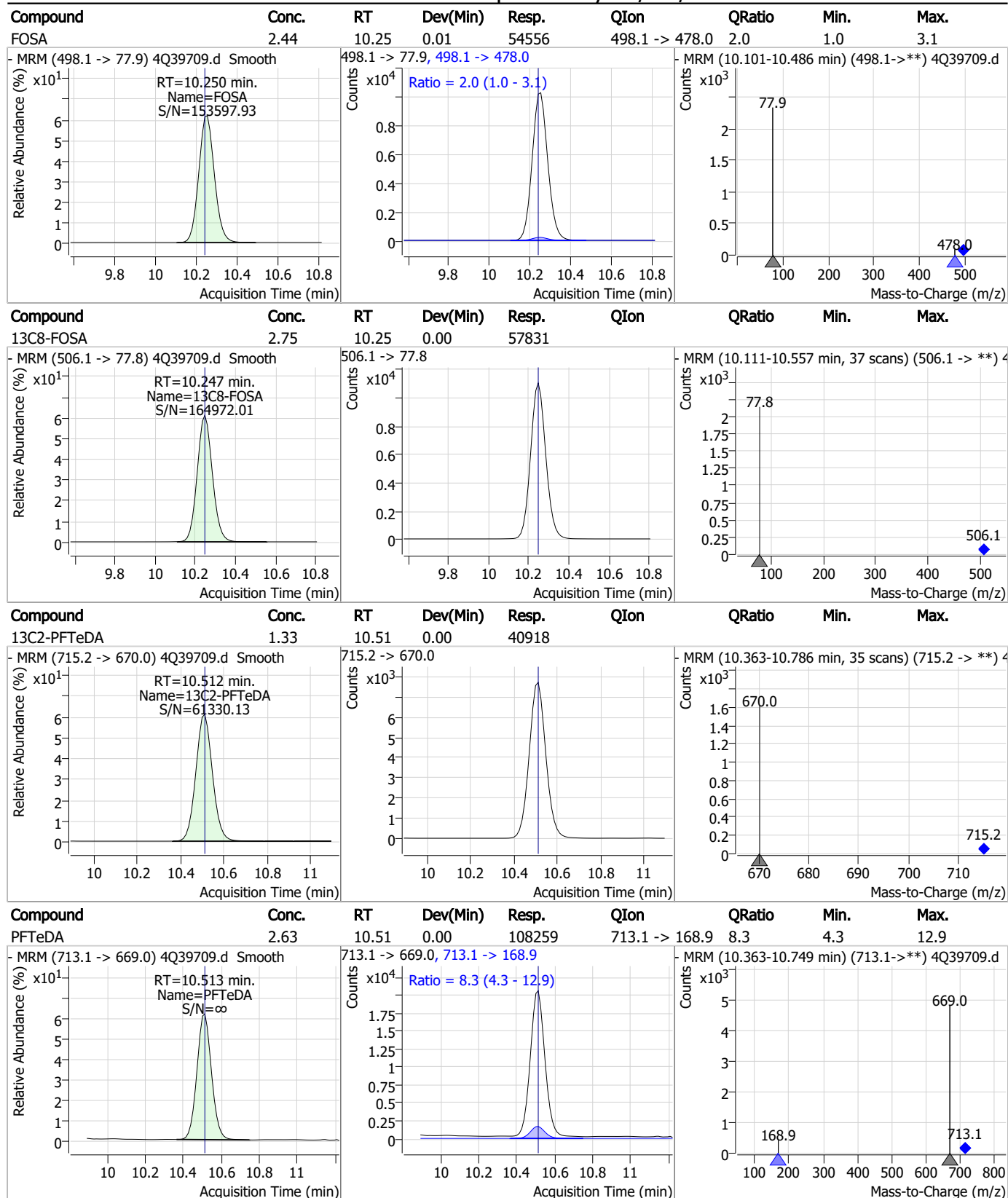
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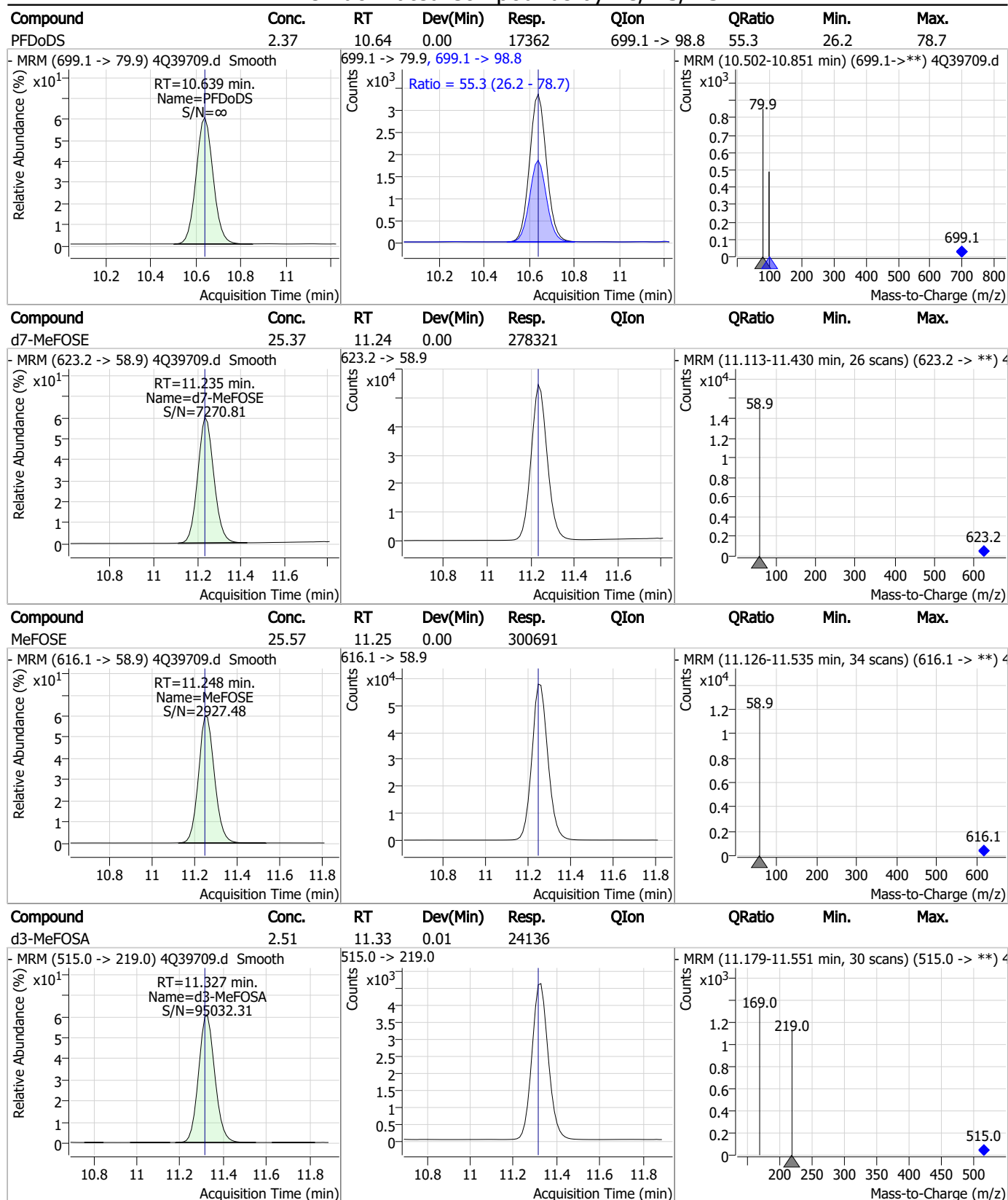
Perfluorinated Compounds by LC/MS/MS



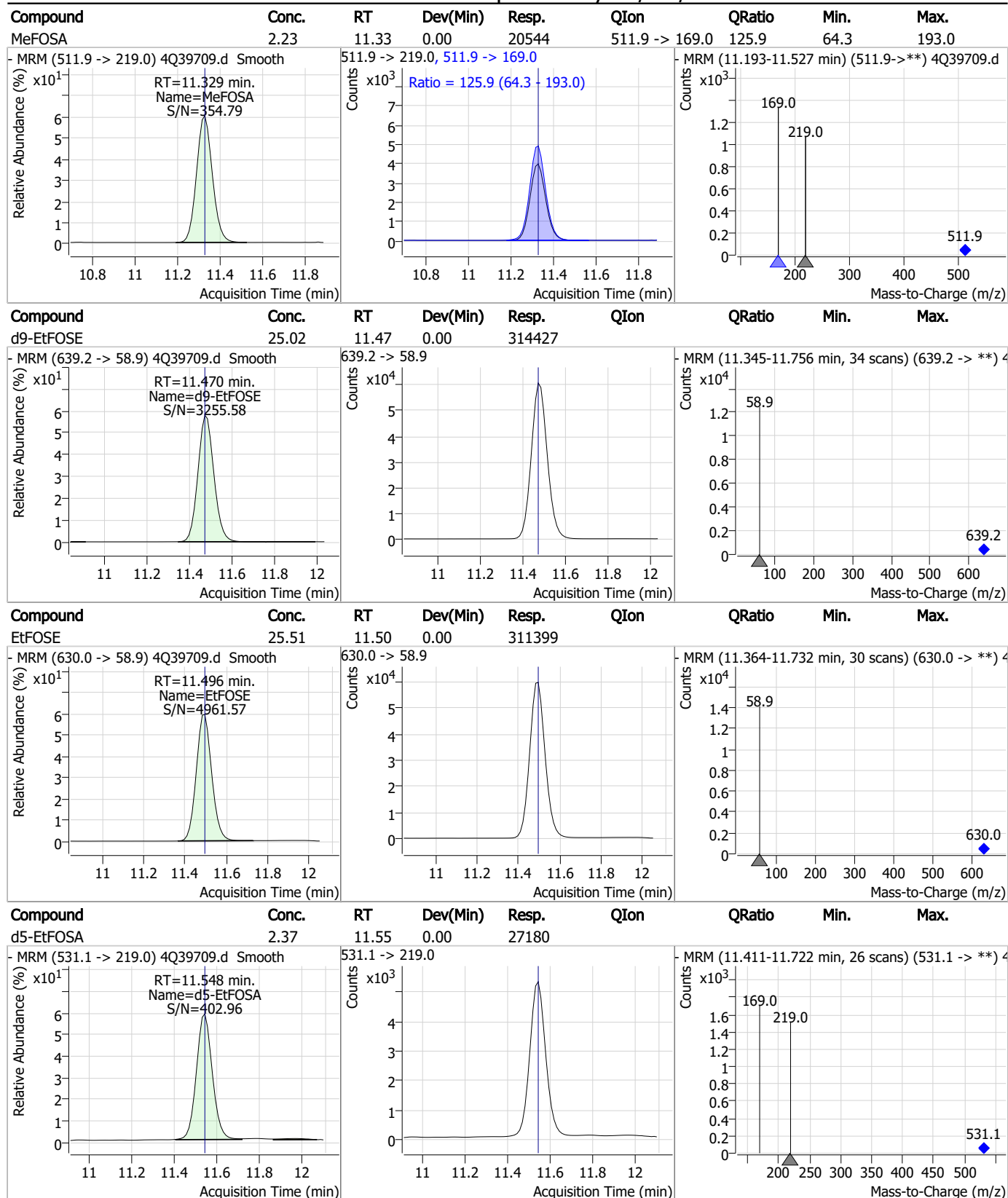
Perfluorinated Compounds by LC/MS/MS



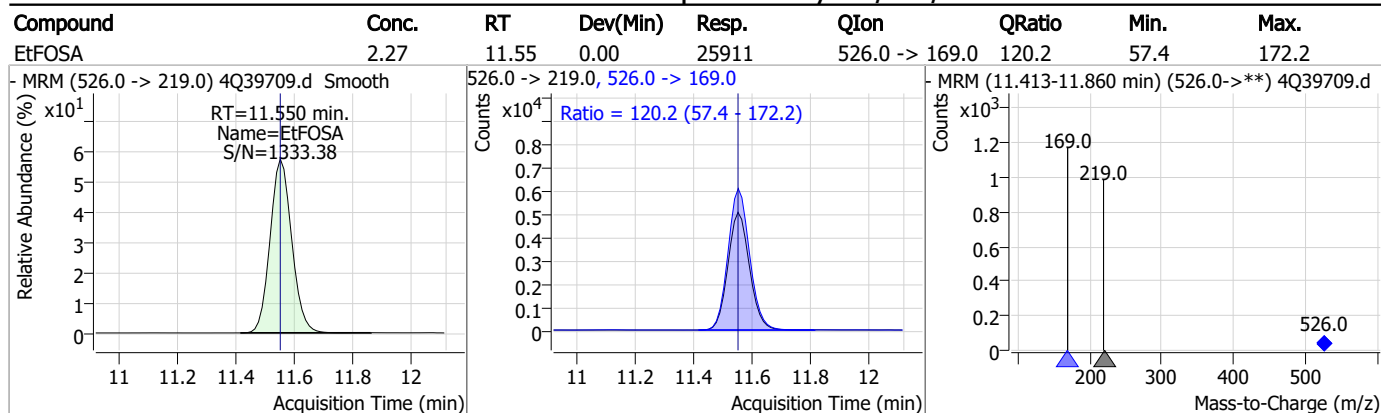
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: OP95096-BS

Method: EPA DRAFT 1633

Lab FileID: 4Q39709.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 17:50

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.91	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.13	Split peak

7.3.1.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39710.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 6:05:07 PM
 Sample Name : op95096-llbs:3
 Vial : P1-D7
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.211	216.8 -> 171.9	451444	10.00 µg/L	0.037
M5-PFPeA	4.851	268.3 -> 223.0	271936	5.00 µg/L	-0.012
M5-PFHxA	6.147	318.0 -> 273.0	175274	2.50 µg/L	-0.025
M4-PFHpA	7.080	367.1 -> 322.0	89752	2.50 µg/L	-0.026
M8-PFOA	7.764	421.1 -> 376.0	151911	2.50 µg/L	-0.025
M9-PFNA	8.334	472.1 -> 427.0	71236	1.25 µg/L	-0.026
M6-PFDA	8.866	519.1 -> 474.1	58323	1.25 µg/L	-0.012
M7-PFUnDA	9.361	570.0 -> 525.1	62847	1.25 µg/L	-0.012
M2-PFDoDA	9.781	615.1 -> 570.0	60096	1.25 µg/L	-0.025
M2-PFTeDA	10.499	715.2 -> 670.0	39019	1.25 µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	54421	2.50 µg/L	-0.012
M3-PFBS	6.064	302.1 -> 79.9	45713	2.50 µg/L	-0.025
M3-PFHxS	7.892	402.1 -> 79.9	32629	2.50 µg/L	-0.025
M8-PFOS	9.043	507.1 -> 79.9	39545	2.50 µg/L	-0.025
M2-4:2FTS	5.796	329.1 -> 80.9	5748	5.00 µg/L	-0.027
M2-6:2FTS	7.511	429.1 -> 80.9	10105	5.00 µg/L	-0.025
M2-8:2FTS	8.629	529.1 -> 80.9	12885	5.00 µg/L	-0.025
M3-MeFOSAA	8.912	573.2 -> 419.0	47811	5.00 µg/L	-0.013
M3-HFPO-DA	6.526	286.9 -> 168.9	134784	10.00 µg/L	-0.025
M5-EtFOSAA	9.121	589.2 -> 419.0	39170	5.00 µg/L	-0.025
M7-MeFOSE	11.235	623.2 -> 58.9	270946	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	303237	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	25326	2.50 µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	21838	2.50 µg/L	0.000
13C4-PFOS	9.044	502.8 -> 79.9	35035	2.50 µg/L	-0.025
13C3-PFBA	3.203	216.0 -> 172.0	210349	5.00 µg/L	0.025
18O2-PFHxS	7.891	403.0 -> 83.9	19167	2.50 µg/L	-0.025
13C4-PFOA	7.764	417.1 -> 372.0	149746	2.50 µg/L	-0.025
13C2-PFDA	8.867	515.1 -> 470.1	44328	1.25 µg/L	-0.012
13C5-PFNA	8.334	468.0 -> 423.0	73324	1.25 µg/L	-0.026
13C2-PFHxA	6.148	315.1 -> 270.0	141586	2.50 µg/L	-0.025
System Monitoring Compounds					
13C2-4:2FTS	5.796	329.1 -> 80.9	5748	8.32 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 166.4%		
13C2-6:2FTS	7.511	429.1 -> 80.9	10105	6.54 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 130.7%		
13C2-8:2FTS	8.629	529.1 -> 80.9	12885	6.09 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.8%		
13C2-PFDoDA	9.781	615.1 -> 570.0	60096	1.40 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.7%		
13C2-PFTeDA	10.499	715.2 -> 670.0	39019	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C3-PFBS	6.064	302.1 -> 79.9	45713	2.76 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.4%		
13C3-PFHxS	7.892	402.1 -> 79.9	32629	2.92 µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.7%	
13C4-PFBA	3.211	216.8 -> 171.9	451444	11.90 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.0%	
13C4-PFHpA	7.080	367.1 -> 322.0	89752	2.72 µg/L	-0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C5-PFHxA	6.147	318.0 -> 273.0	175274	2.94 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.8%	
13C5-PFPeA	4.851	268.3 -> 223.0	271936	5.91 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.1%	
13C6-PFDA	8.866	519.1 -> 474.1	58323	1.49 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 119.2%	
13C7-PFUnDA	9.361	570.0 -> 525.1	62847	1.50 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 119.7%	
13C8-FOSA	10.235	506.1 -> 77.8	54421	2.72 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C8-PFOA	7.764	421.1 -> 376.0	151911	2.83 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.1%	
13C8-PFOS	9.043	507.1 -> 79.9	39545	2.76 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C9-PFNA	8.334	472.1 -> 427.0	71236	1.37 µg/L	-0.026
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.4%	
d3-MeFOSAA	8.912	573.2 -> 419.0	47811	5.94 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.8%	
13C3-HFPO-DA	6.526	286.9 -> 168.9	134784	11.93 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.3%	
d3-MeFOSA	11.315	515.0 -> 219.0	21838	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
d5-EtFOSAA	9.121	589.2 -> 419.0	39170	5.59 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.8%	
d7-MeFOSE	11.235	623.2 -> 58.9	270946	25.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d9-EtFOSE	11.470	639.2 -> 58.9	303237	25.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
d5-EtFOSA	11.548	531.1 -> 219.0	25326	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%	
Target Compounds					QValue
4:2FTS	5.797	327.1 -> 307.0	28922	3.08 µg/L	98
		327.1 -> 80.9	13188		
6:2FTS	7.512	427.1 -> 407.0	26057	3.25 µg/L	97
		427.1 -> 80.9	13420		
8:2FTS	8.629	527.1 -> 507.0	20425	3.28 µg/L	92
		527.1 -> 80.8	12023		
EtFOSAA	9.134	584.2 -> 419.1	5380	0.82 µg/L	97
		584.2 -> 526.0	2778		
FOSA	10.238	498.1 -> 77.9	18719	0.89 µg/L	100
		498.1 -> 478.0	371		
MeFOSAA	8.912	570.1 -> 419.0	5779	0.82 µg/L	90
		570.1 -> 483.0	1408		
PFBA	3.207	212.8 -> 168.9	41135	3.27 µg/L	100
PFBS	6.065	298.7 -> 79.9	16559	0.80 µg/L	99
		298.7 -> 98.8	5738		
PFDA	8.867	512.9 -> 469.0	34306	0.82 µg/L	98
		512.9 -> 219.0	6723		
PFDODA	9.781	613.1 -> 569.0	39473	0.85 µg/L	98
		613.1 -> 319.0	6006		
PFDS	9.945	599.0 -> 79.9	6843	0.75 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.080	599.0 -> 98.8	3367	0.86	µg/L	97
		363.1 -> 319.0	47929			
PFHpS	8.501	363.1 -> 169.0	8696	0.86	µg/L	98
		449.0 -> 79.9	13698			
PFHxA	6.150	449.0 -> 98.9	6140	0.90	µg/L	99
		313.0 -> 269.0	61611			
PFHxS	7.893	313.0 -> 118.9	1977	0.79	µg/L	93
		398.7 -> 79.9	8276			
PFNA	8.334	398.7 -> 98.9	3641	0.89	µg/L	97
		463.0 -> 419.0	46193			
PFNS	9.536	463.0 -> 219.0	10103	0.81	µg/L	94
		548.8 -> 79.9	5735			
PFOA	7.765	548.8 -> 98.9	2817	0.88	µg/L	100
		413.0 -> 369.0	59226			
PFOS	9.044	413.0 -> 169.0	11973	0.78	µg/L	99
		498.9 -> 79.9	14439			
PFPeA	4.854	498.9 -> 98.8	6939	1.77	µg/L	100
		263.0 -> 219.0	105468			
PFPeS	7.146	349.1 -> 79.9	7909	0.78	µg/L	99
		349.1 -> 98.9	3072			
PFTeDA	10.500	713.1 -> 669.0	33333	0.85	µg/L	98
		713.1 -> 168.9	3130			
PFTrDA	10.167	663.0 -> 619.0	48639	0.86	µg/L	97
		663.0 -> 168.9	4524			
PFUnDA	9.361	563.1 -> 519.0	32339	0.85	µg/L	94
		563.1 -> 269.1	6729			
11CI-PF3OUdS	10.206	630.9 -> 450.9	100927	3.20	µg/L	98
		632.9 -> 452.9	30808			
9CI-PF3ONS	9.401	530.8 -> 351.0	119011	3.10	µg/L	97
		532.8 -> 353.0	33948			
ADONA	7.344	376.9 -> 250.9	244531	3.36	µg/L	100
		376.9 -> 84.8	85850			
HFPO-DA	6.527	284.9 -> 168.9	41425	3.26	µg/L	97
		284.9 -> 184.9	4852			
3:3FTCA	4.217	241.0 -> 177.0	12242	4.38	µg/L	98
		241.0 -> 117.0	1236			
5:3FTCA	6.758	341.0 -> 237.1	196606	21.69	µg/L	98
		341.0 -> 217.0	149226			
7:3FTCA	8.236	441.0 -> 316.9	109924	21.11	µg/L	95
		441.0 -> 336.9	258396			
EtFOSA	11.550	526.0 -> 219.0	7951	0.75	µg/L	95
		526.0 -> 169.0	9555			
EtFOSE	11.496	630.0 -> 58.9	107497	9.13	µg/L	100
		511.9 -> 219.0	6852			
MeFOSA	11.329	511.9 -> 169.0	8413	0.82	µg/L	95
		616.1 -> 58.9	102380			
MeFOSE	11.248	699.1 -> 79.9	5749	8.94	µg/L	100
		699.1 -> 98.8	3302			
PFDoDS	10.639	295.0 -> 201.0	6989	1.56	µg/L	91
		295.0 -> 84.9	2367			
PFMBA	5.303	279.0 -> 85.1	65263	1.76	µg/L	100
		229.0 -> 84.9	66672			
PFEEA	6.634	314.8 -> 134.9	91273	1.57	µg/L	100
		314.8 -> 82.9	3022			

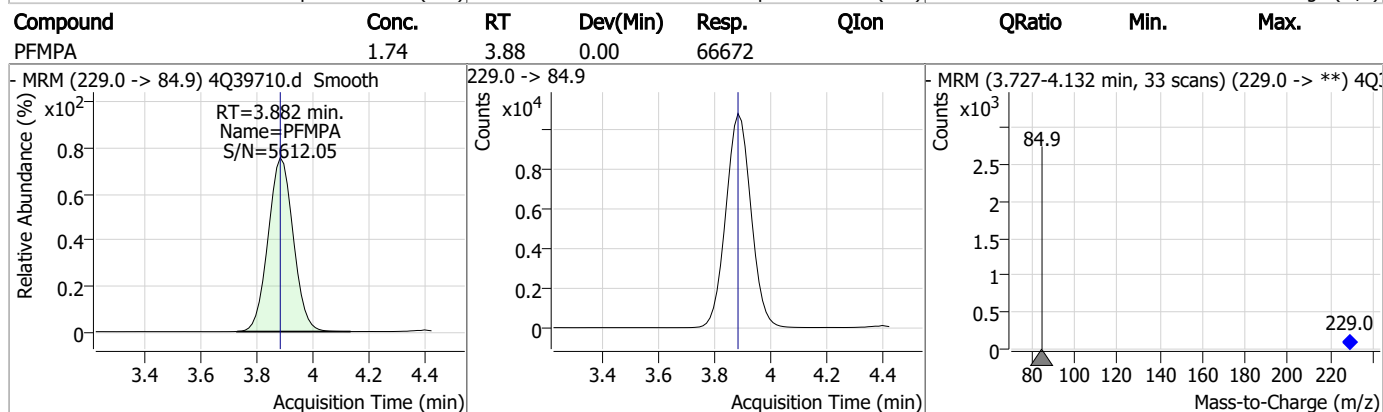
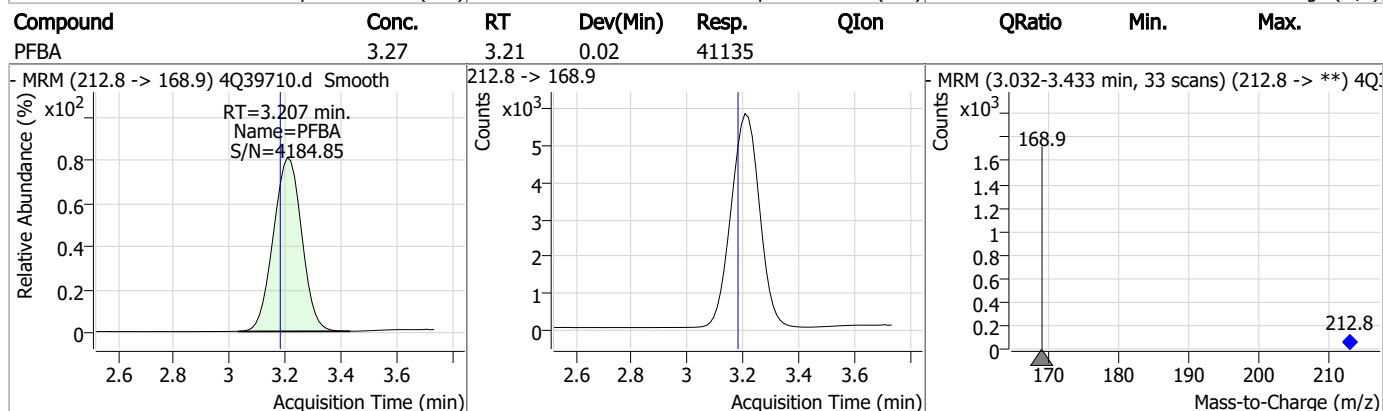
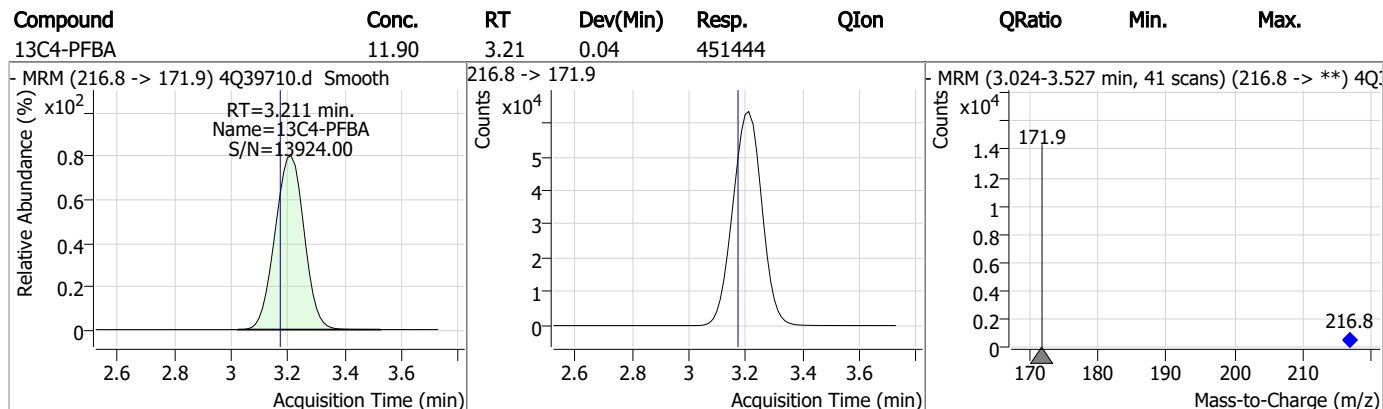
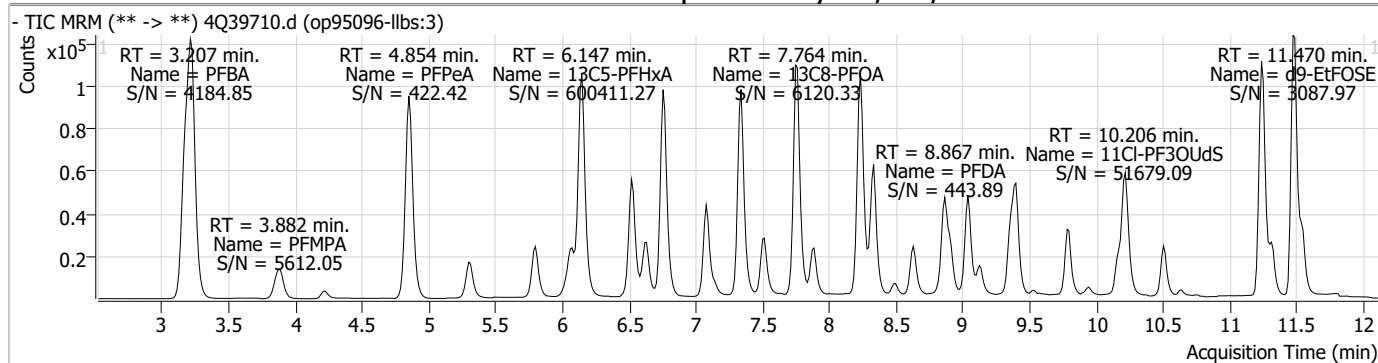
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

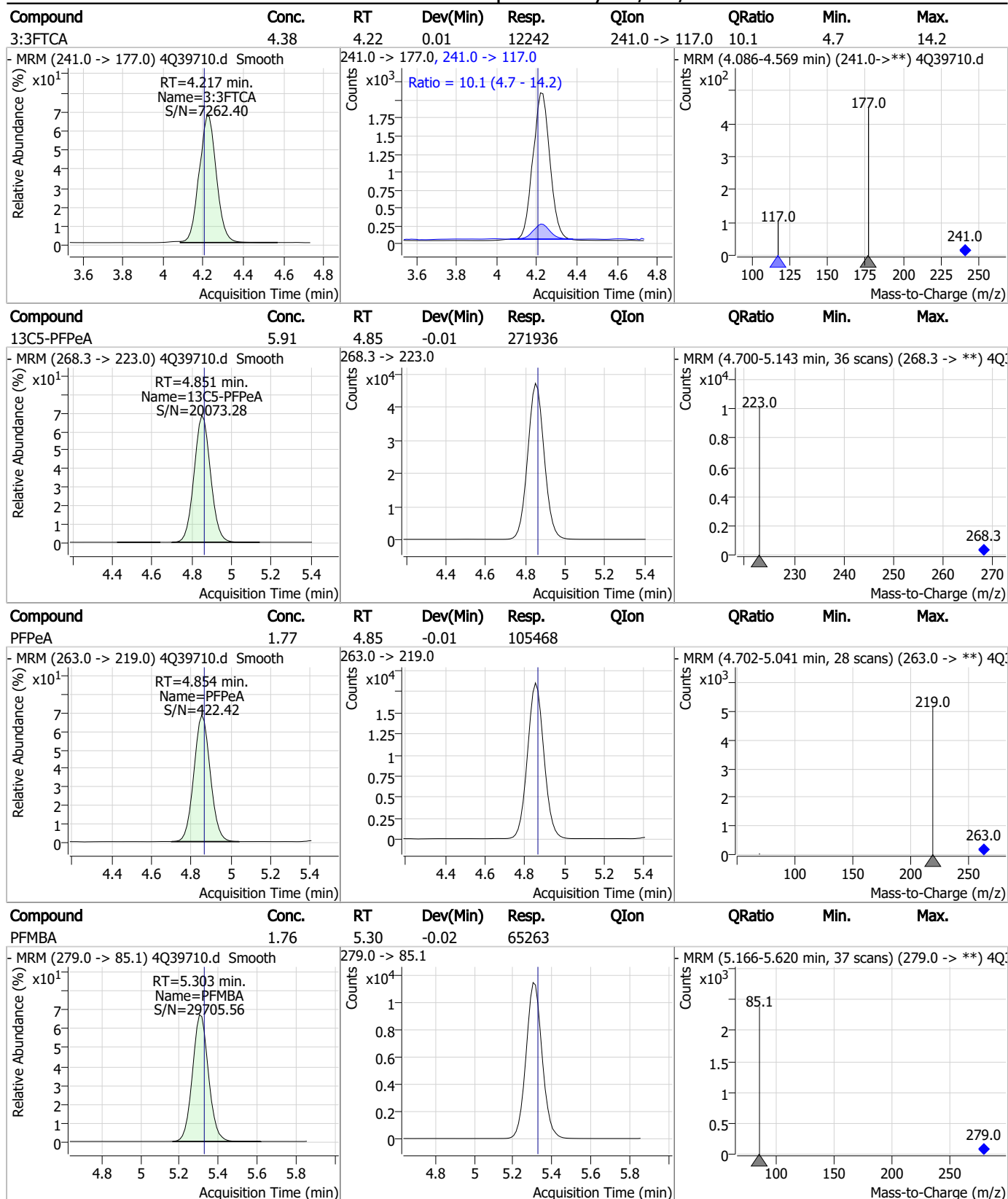
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.3.2
7

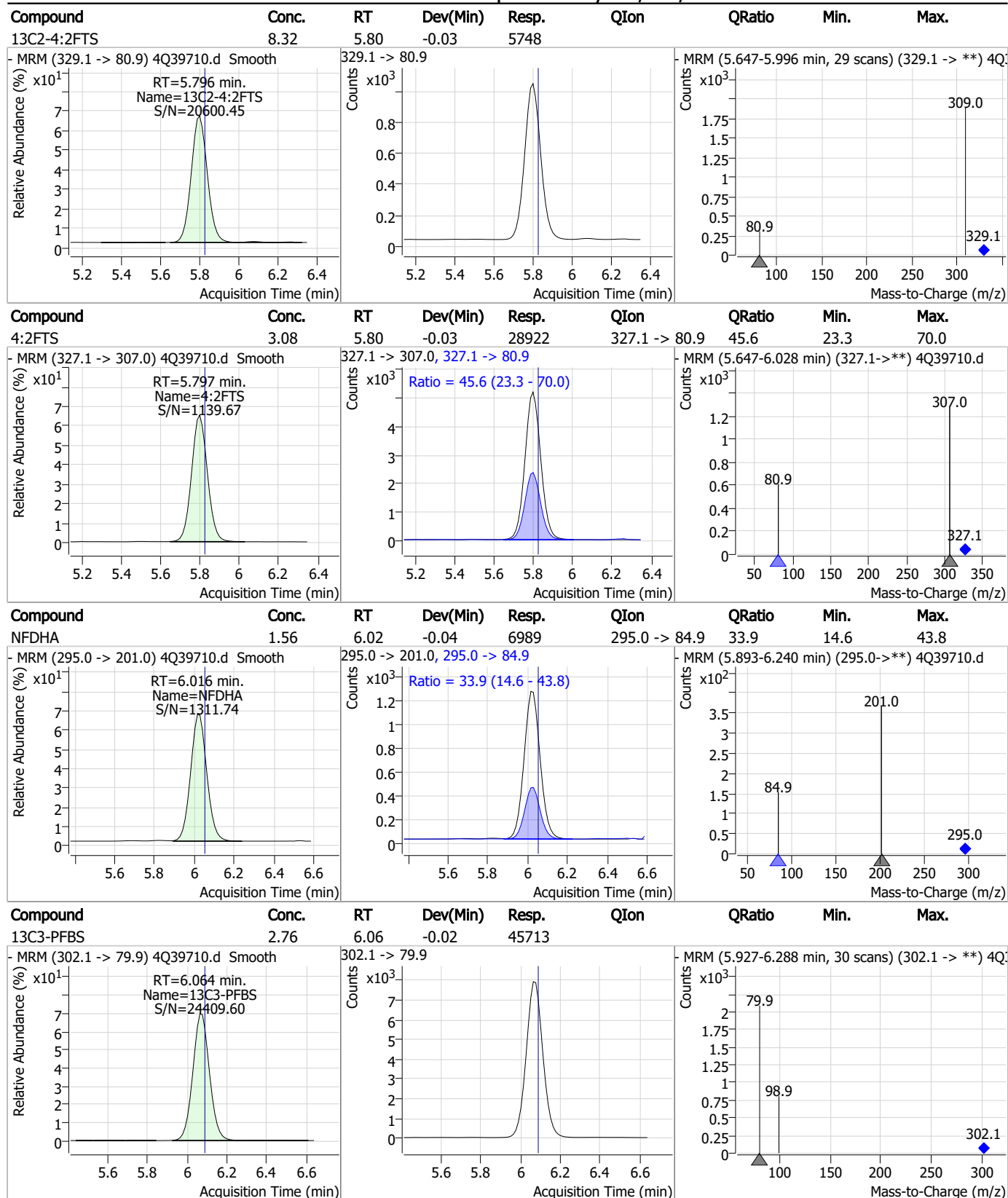
Perfluorinated Compounds by LC/MS/MS



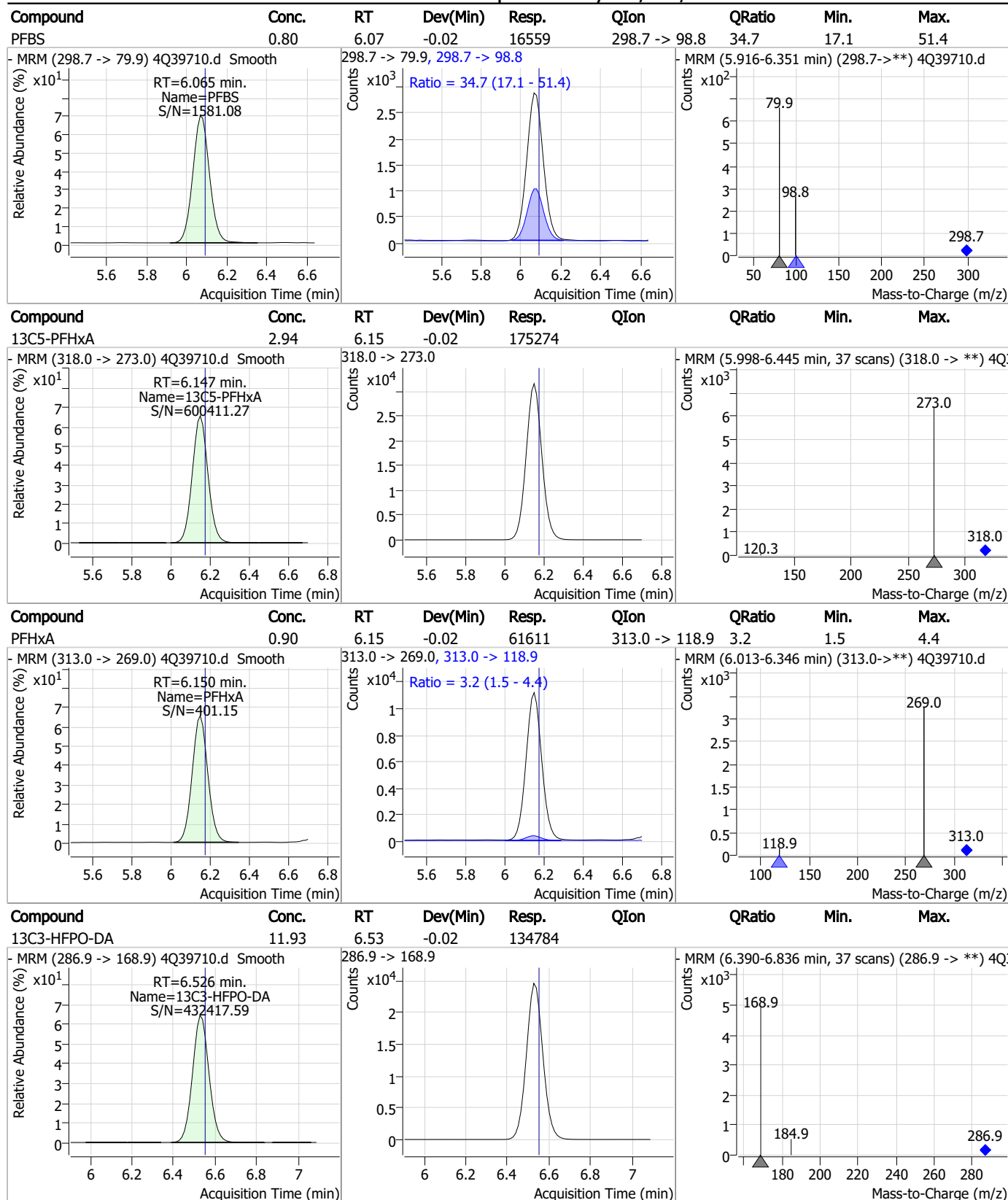
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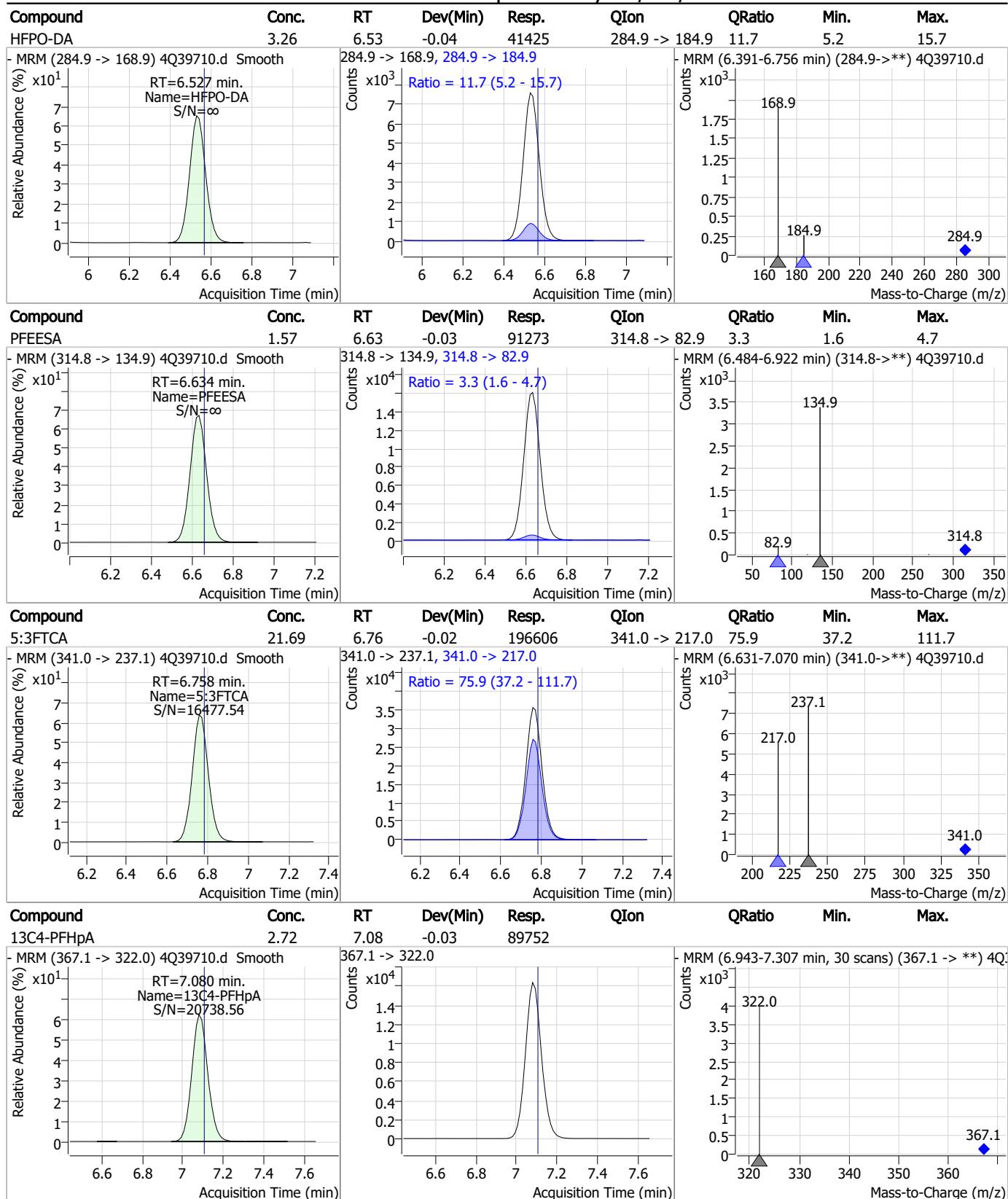
Perfluorinated Compounds by LC/MS/MS



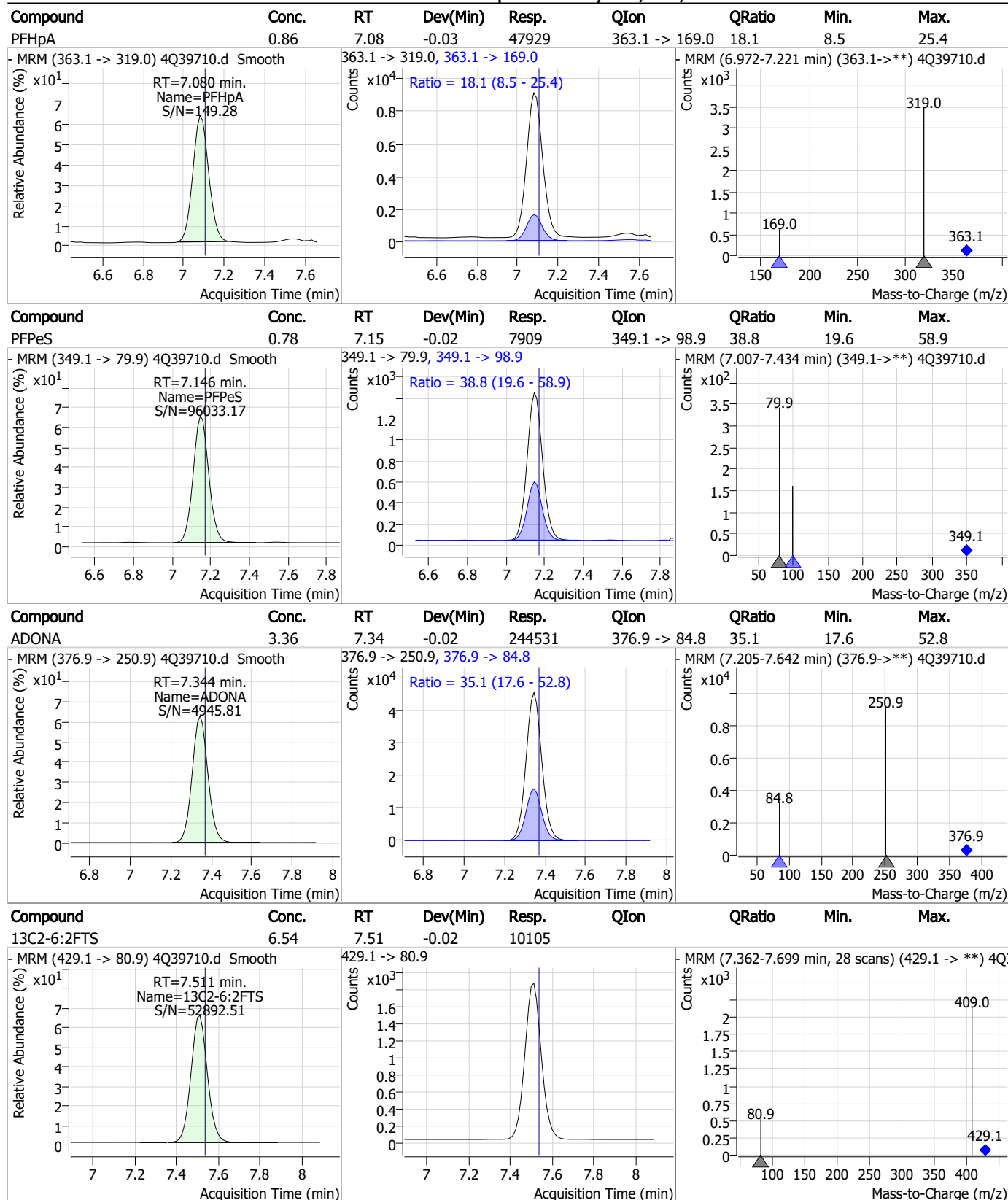
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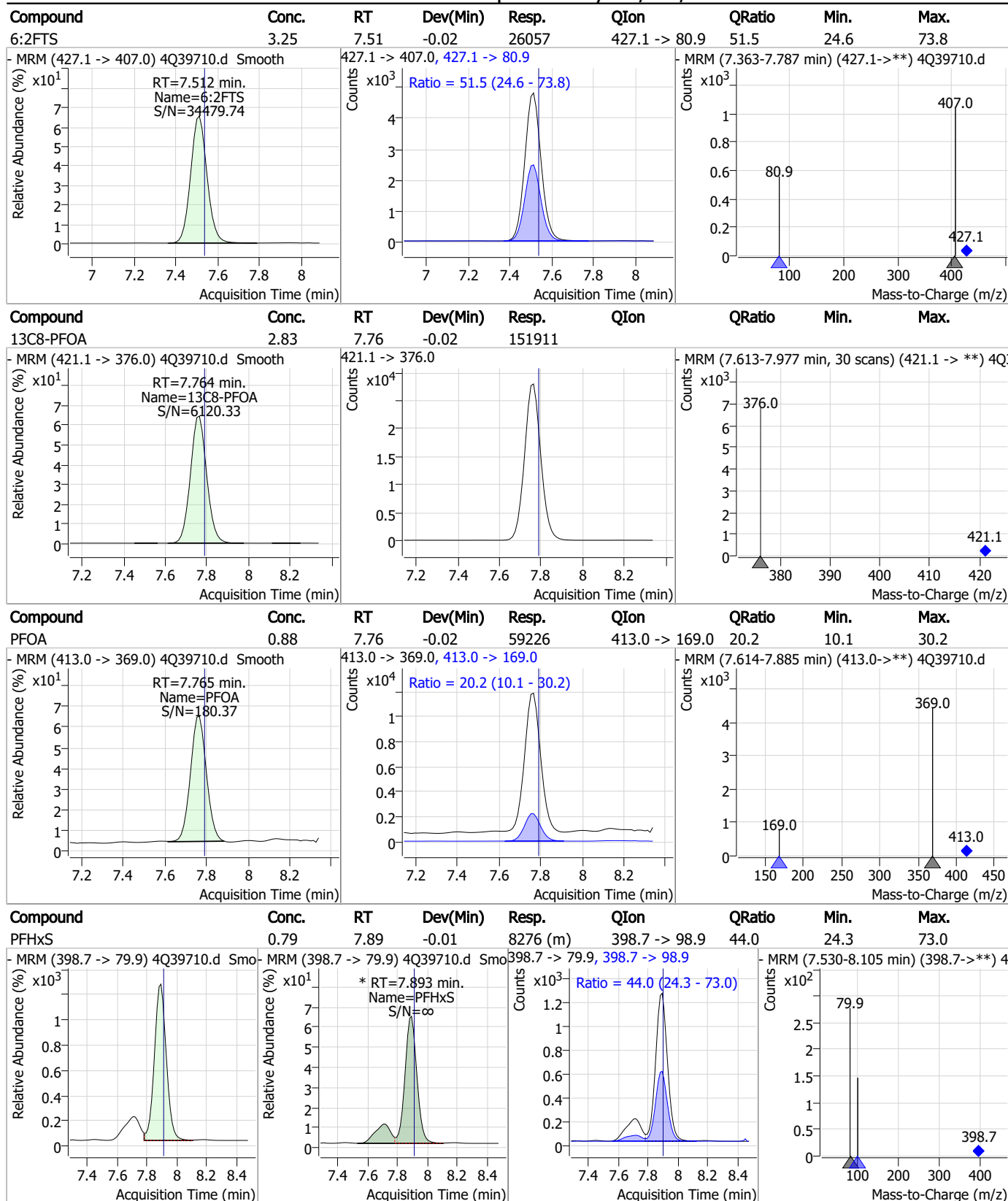
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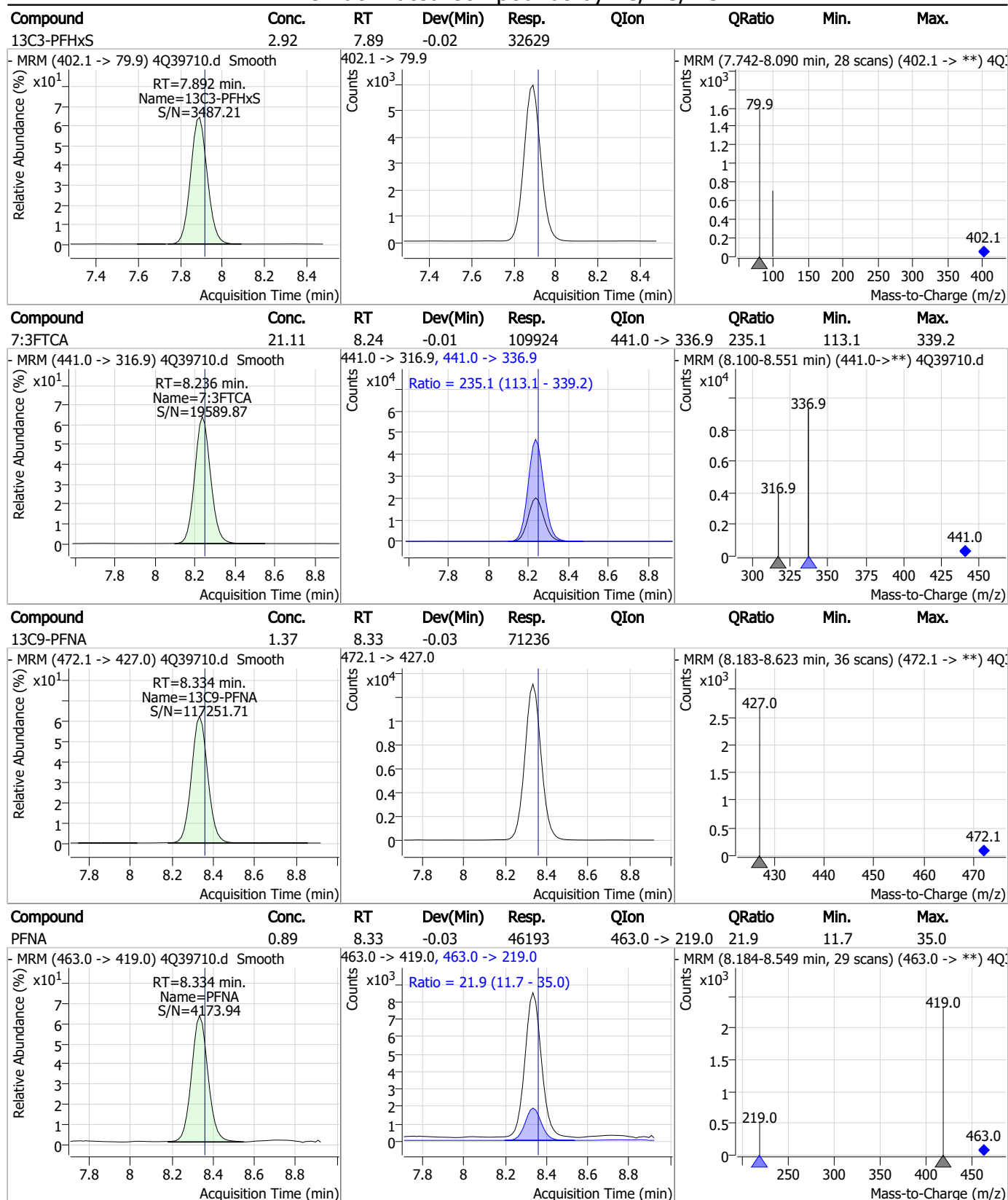
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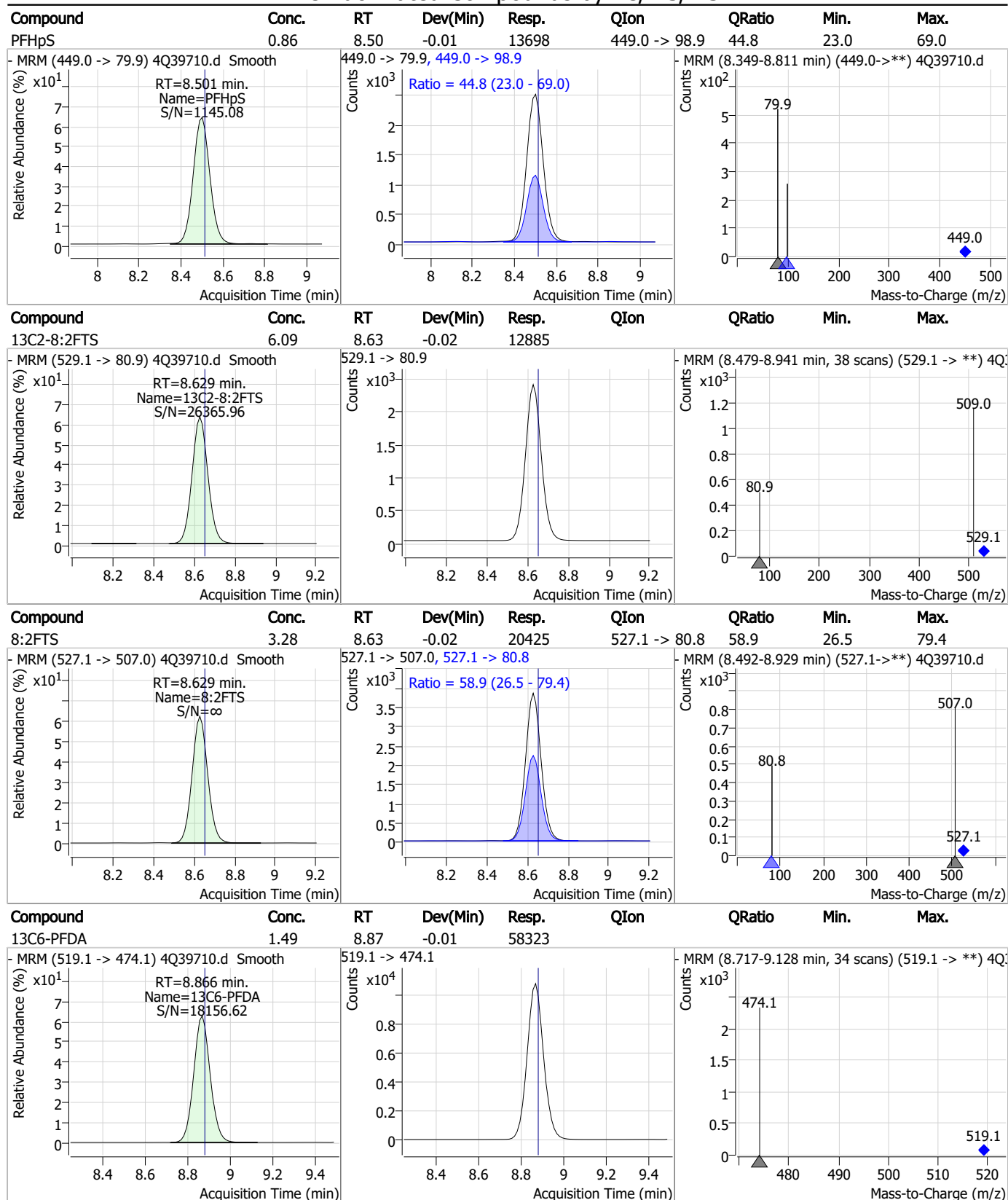
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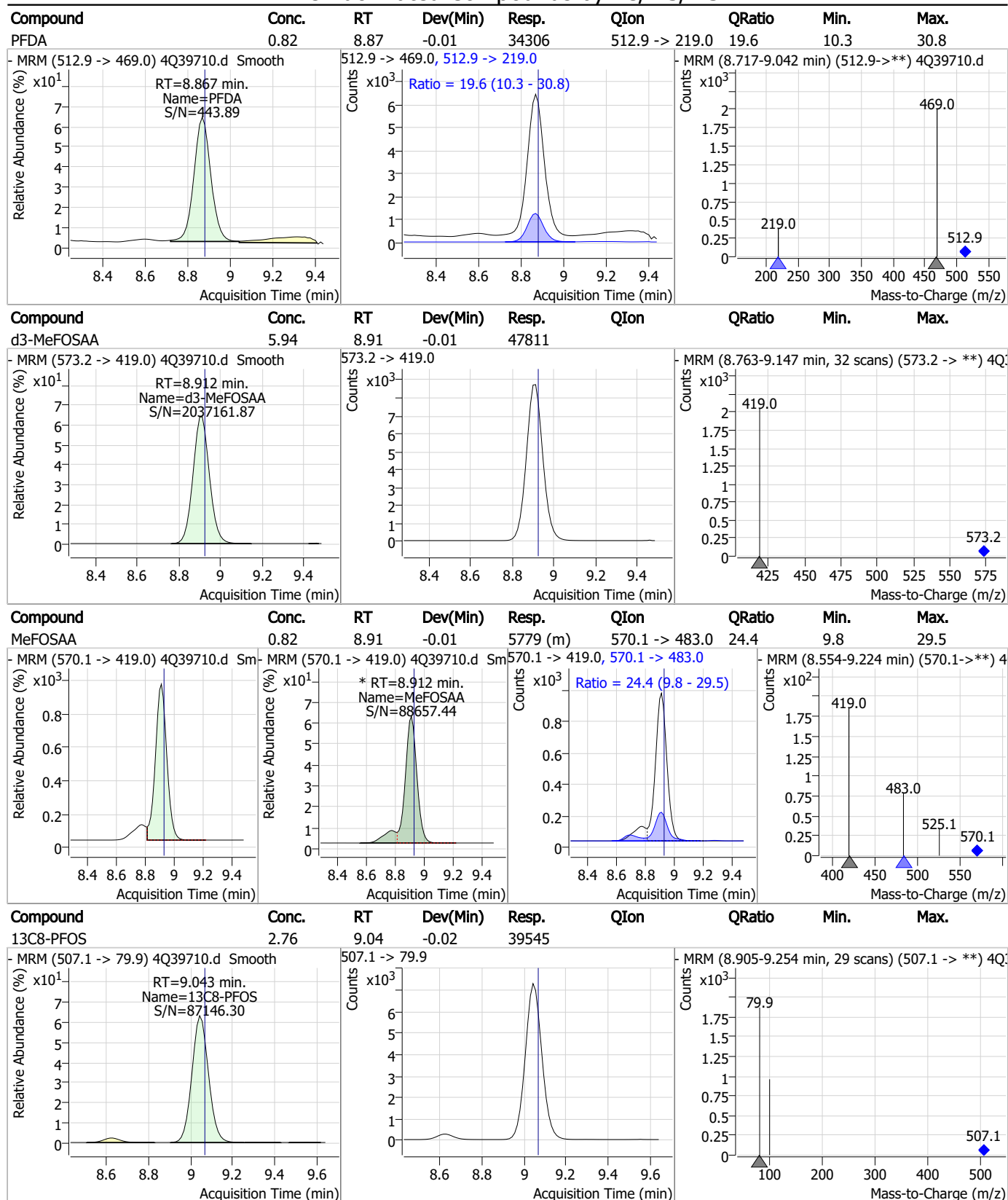
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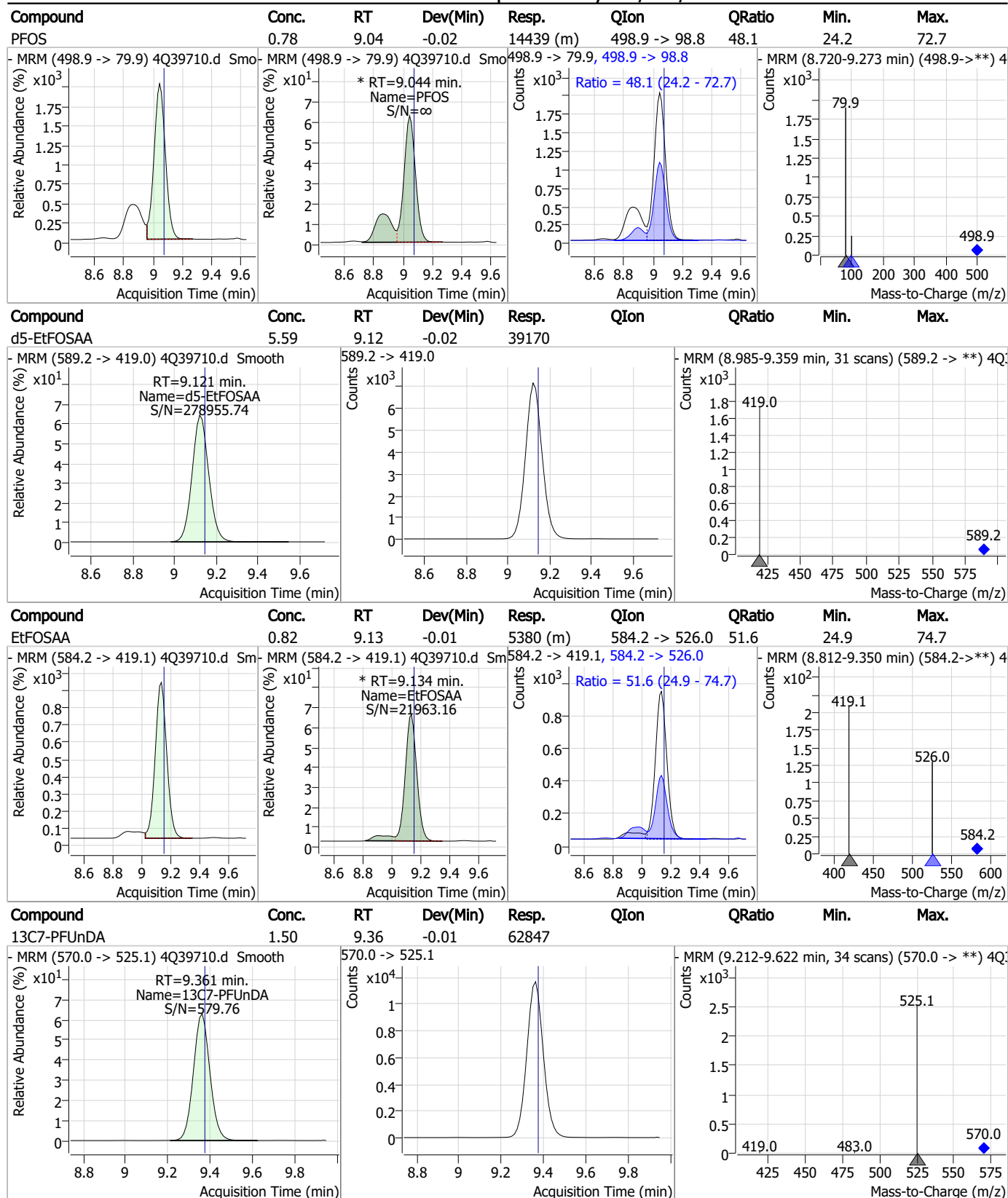
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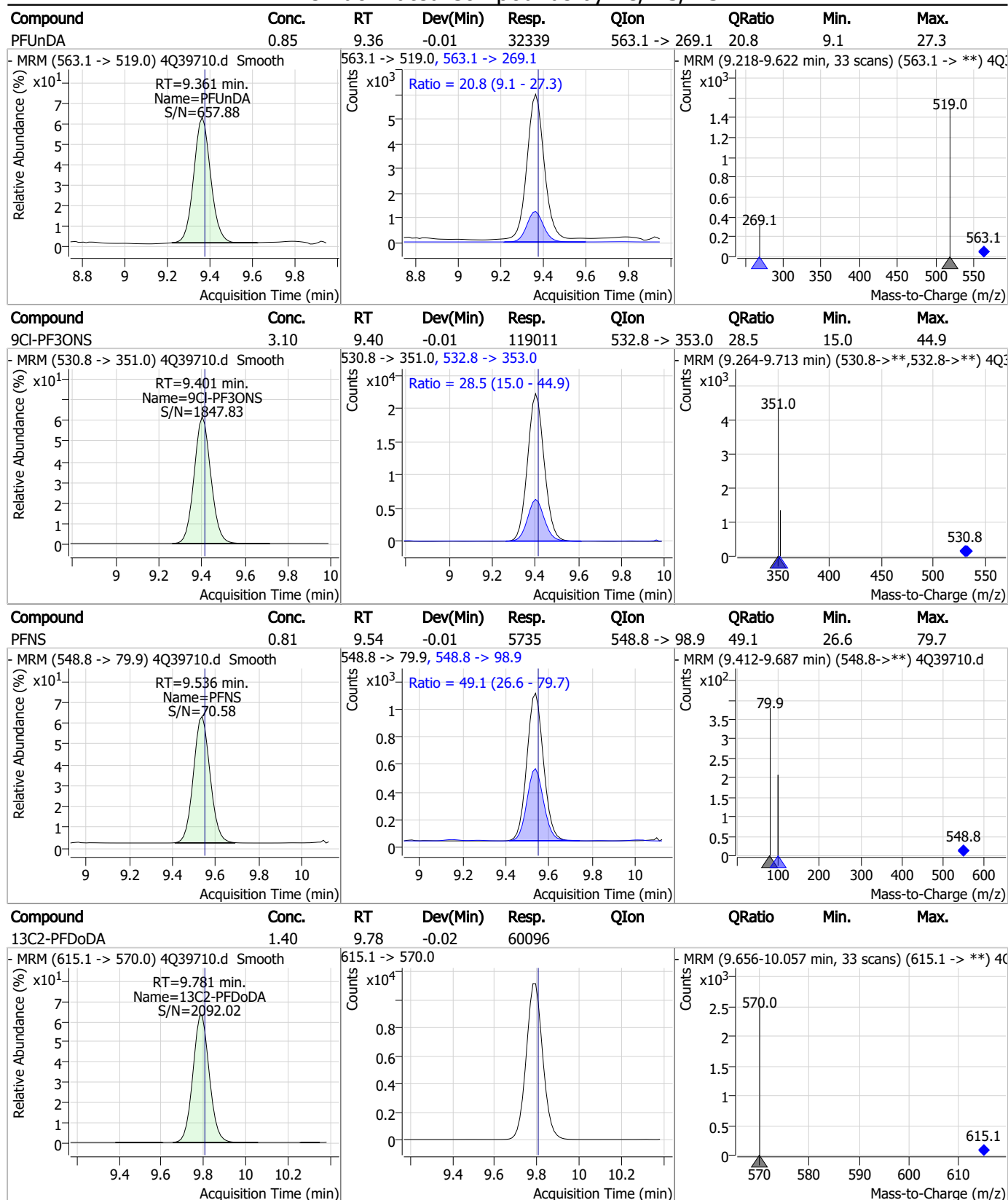
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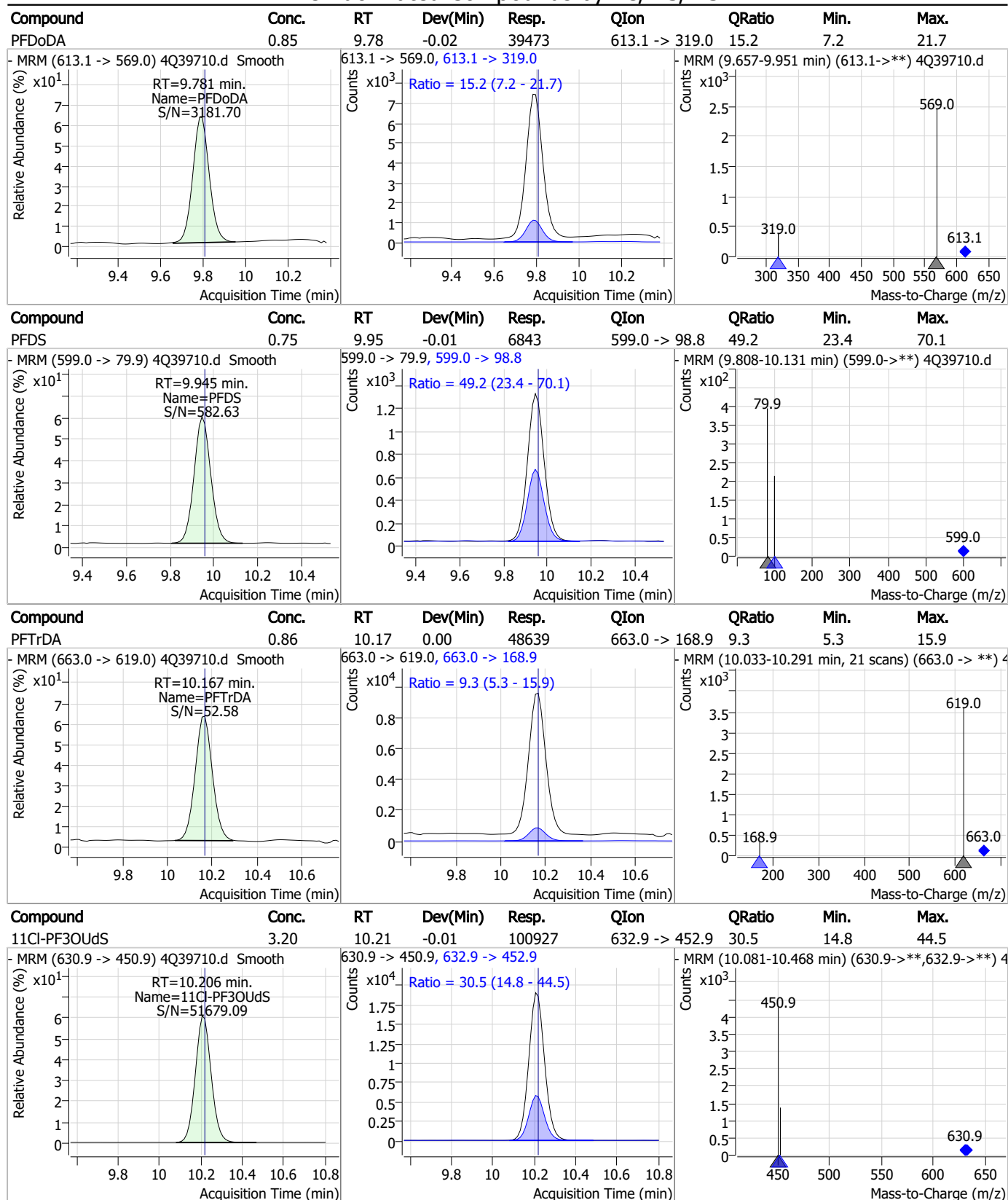
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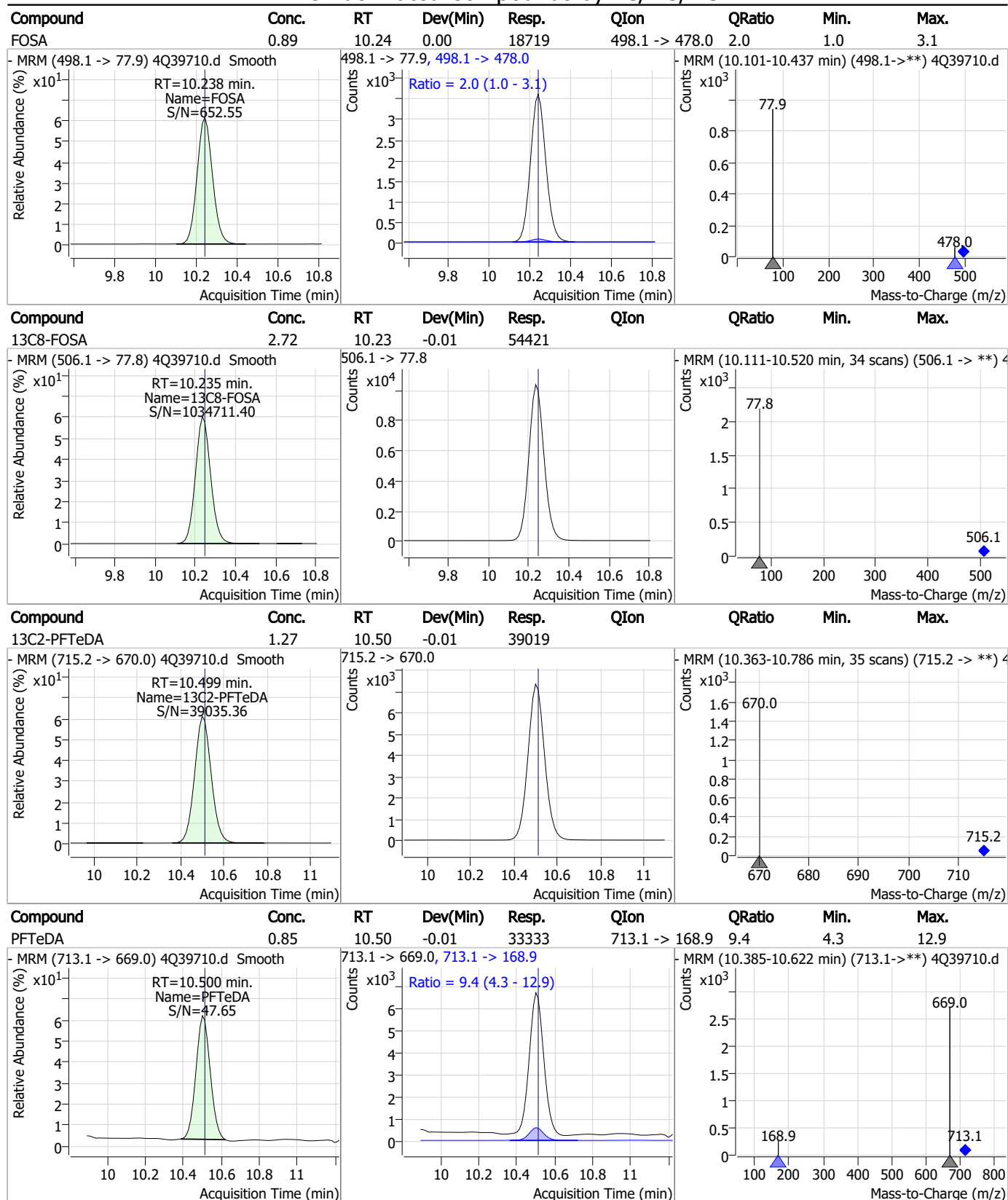
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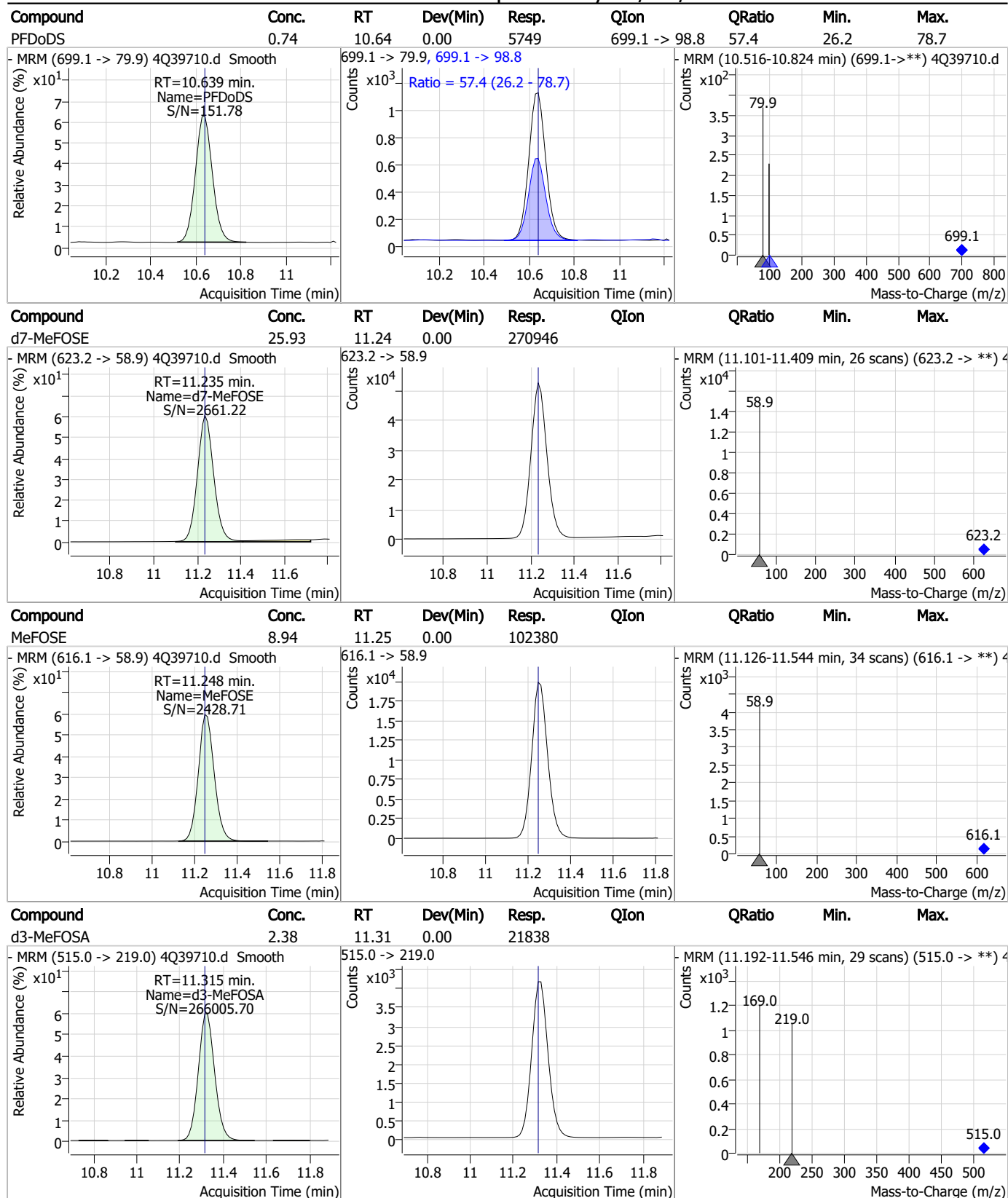
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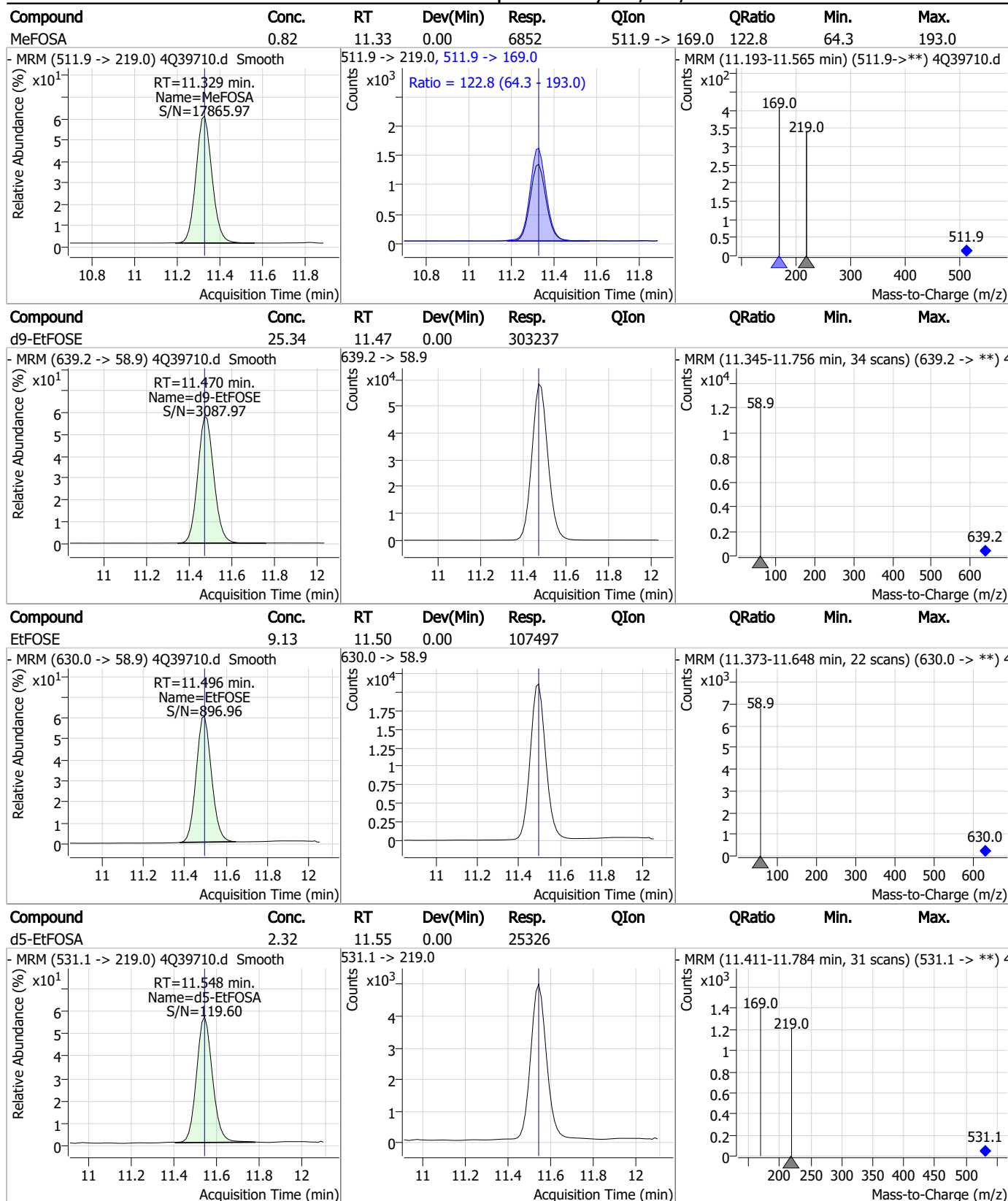
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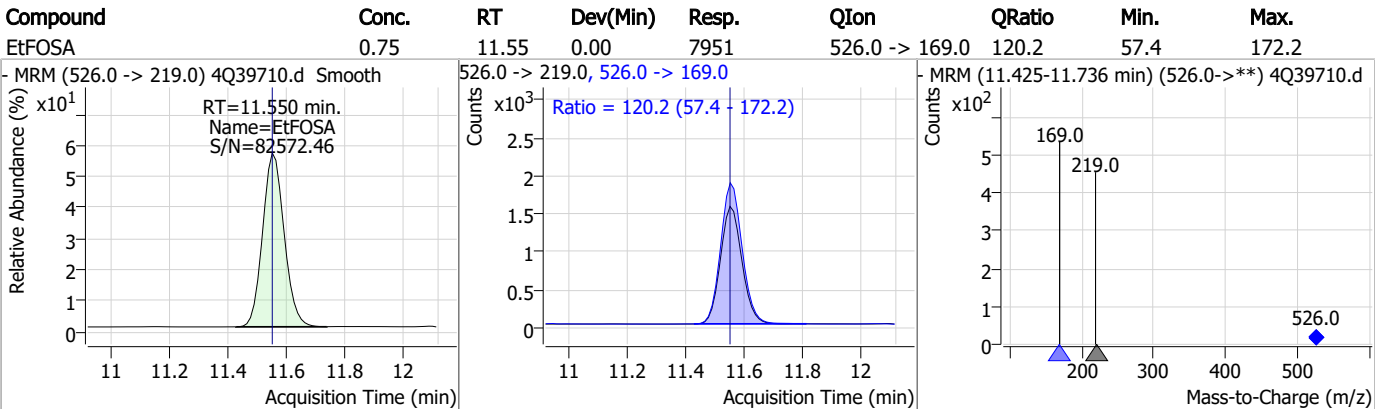
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Manual Integration Approval Summary

Sample Number: OP95096-LLBS

Method: EPA DRAFT 1633

Lab FileID: 4Q39710.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 18:05

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.89	Split peak
MeFOSAA	2355-31-9		8.91	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.04	Split peak
EtFOSAA	2991-50-6		9.13	Split peak

7.3.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39761.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 6:02:51 AM
 Sample Name : op95096-ms
 Vial : P2-C4
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,565,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.277	216.8 -> 171.9	279460	10.00 µg/L	0.103
M5-PFPeA	4.913	268.3 -> 223.0	266724	5.00 µg/L	0.050
M5-PFHxA	6.184	318.0 -> 273.0	172039	2.50 µg/L	0.012
M4-PFHpA	7.106	367.1 -> 322.0	99467	2.50 µg/L	0.000
M8-PFOA	7.813	421.1 -> 376.0	150303	2.50 µg/L	0.025
M9-PFNA	8.397	472.1 -> 427.0	74616	1.25 µg/L	0.037
M6-PFDA	8.903	519.1 -> 474.1	61524	1.25 µg/L	0.025
M7-PFUnDA	9.361	570.0 -> 525.1	59213	1.25 µg/L	-0.012
M2-PFDoDA	9.756	615.1 -> 570.0	64778	1.25 µg/L	-0.050
M2-PFTeDA	10.450	715.2 -> 670.0	48402	1.25 µg/L	-0.062
M8-FOSA	10.222	506.1 -> 77.8	55810	2.50 µg/L	-0.025
M3-PFBS	6.114	302.1 -> 79.9	46337	2.50 µg/L	0.025
M3-PFHxS	7.955	402.1 -> 79.9	31878	2.50 µg/L	0.038
M8-PFOS	9.068	507.1 -> 79.9	37675	2.50 µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	5279	5.00 µg/L	0.000
M2-6:2FTS	7.549	429.1 -> 80.9	9767	5.00 µg/L	0.012
M2-8:2FTS	8.678	529.1 -> 80.9	12776	5.00 µg/L	0.025
M3-MeFOSAA	8.936	573.2 -> 419.0	49294	5.00 µg/L	0.012
M3-HFPO-DA	6.564	286.9 -> 168.9	132910	10.00 µg/L	0.012
M5-EtFOSAA	9.133	589.2 -> 419.0	41393	5.00 µg/L	-0.012
M7-MeFOSE	11.200	623.2 -> 58.9	253845	25.00 µg/L	-0.035
M9-EtFOSE	11.433	639.2 -> 58.9	295508	25.00 µg/L	-0.037
M5-EtFOSA	11.511	531.1 -> 219.0	25690	2.50 µg/L	-0.037
M3-MeFOSA	11.290	515.0 -> 219.0	22327	2.50 µg/L	-0.025
13C4-PFOS	9.068	502.8 -> 79.9	36056	2.50 µg/L	0.000
13C3-PFBA	3.280	216.0 -> 172.0	234098	5.00 µg/L	0.102
18O2-PFHxS	7.954	403.0 -> 83.9	19072	2.50 µg/L	0.038
13C4-PFOA	7.814	417.1 -> 372.0	153262	2.50 µg/L	0.025
13C2-PFDA	8.904	515.1 -> 470.1	47859	1.25 µg/L	0.025
13C5-PFNA	8.397	468.0 -> 423.0	76923	1.25 µg/L	0.037
13C2-PFHxA	6.185	315.1 -> 270.0	145495	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.823	329.1 -> 80.9	5279	7.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 153.6%		
13C2-6:2FTS	7.549	429.1 -> 80.9	9767	6.35 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 127.0%		
13C2-8:2FTS	8.678	529.1 -> 80.9	12776	6.07 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.4%		
13C2-PFDoDA	9.756	615.1 -> 570.0	64778	1.39 µg/L	-0.050
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-PFTeDA	10.450	715.2 -> 670.0	48402	1.46 µg/L	-0.062
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 117.2%		
13C3-PFBS	6.114	302.1 -> 79.9	46337	2.81 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.5%		
13C3-PFHxS	7.955	402.1 -> 79.9	31878	2.87 µg/L	0.038

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.6%	
13C4-PFBA	3.277	216.8 -> 171.9	279460	6.62 µg/L	0.103
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 66.2%	
13C4-PFHpA	7.106	367.1 -> 322.0	99467	2.93 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.2%	
13C5-PFHxA	6.184	318.0 -> 273.0	172039	2.81 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.5%	
13C5-PFPeA	4.913	268.3 -> 223.0	266724	5.64 µg/L	0.050
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.7%	
13C6-PFDA	8.903	519.1 -> 474.1	61524	1.46 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.4%	
13C7-PFUnDA	9.361	570.0 -> 525.1	59213	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C8-FOSA	10.222	506.1 -> 77.8	55810	2.71 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C8-PFOA	7.813	421.1 -> 376.0	150303	2.73 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C8-PFOS	9.068	507.1 -> 79.9	37675	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C9-PFNA	8.397	472.1 -> 427.0	74616	1.36 µg/L	0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.2%	
d3-MeFOSAA	8.936	573.2 -> 419.0	49294	5.95 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.1%	
13C3-HFPO-DA	6.564	286.9 -> 168.9	132910	11.45 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.5%	
d3-MeFOSA	11.290	515.0 -> 219.0	22327	2.37 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
d5-EtFOSAA	9.133	589.2 -> 419.0	41393	5.74 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.8%	
d7-MeFOSE	11.200	623.2 -> 58.9	253845	23.61 µg/L	-0.035
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.4%	
d9-EtFOSE	11.433	639.2 -> 58.9	295508	23.99 µg/L	-0.037
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
d5-EtFOSA	11.511	531.1 -> 219.0	25690	2.28 µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%	
Target Compounds					QValue
4:2FTS	5.823	327.1 -> 307.0	75120	8.71 µg/L	98
		327.1 -> 80.9	36084		
6:2FTS	7.549	427.1 -> 407.0	83117	10.74 µg/L	95
		427.1 -> 80.9	37850		
8:2FTS	8.679	527.1 -> 507.0	65753	10.64 µg/L	98
		527.1 -> 80.8	33625		
EtFOSAA	9.147	584.2 -> 419.1	17938	2.59 µg/L	m 97
		584.2 -> 526.0	8612		
FOSA	10.213	498.1 -> 77.9	53915	2.50 µg/L	99
		498.1 -> 478.0	1332		
MeFOSAA	8.937	570.1 -> 419.0	19652	2.69 µg/L	m 99
		570.1 -> 483.0	3975		
PFBA	3.271	212.8 -> 168.9	89849	11.55 µg/L	100
PFBS	6.115	298.7 -> 79.9	44708	2.13 µg/L	99
		298.7 -> 98.8	15201		
PFDA	8.904	512.9 -> 469.0	105149	2.40 µg/L	95
		512.9 -> 219.0	19119		
PFDODA	9.756	613.1 -> 569.0	132772	2.66 µg/L	96
		613.1 -> 319.0	17036		
PFDS	9.921	599.0 -> 79.9	21171	2.43 µg/L	95

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.106	599.0 -> 98.8	9158	2.54	µg/L	99
		363.1 -> 319.0	157573			
PFHpS	8.550	363.1 -> 169.0	26179	2.31	µg/L	93
		449.0 -> 79.9	35219			
PFHxA	6.187	449.0 -> 98.9	17846	2.60	µg/L	99
		313.0 -> 269.0	173820			
PFHxS	7.956	313.0 -> 118.9	5434	2.07	µg/L	95
		398.7 -> 79.9	21361			
PFNA	8.398	398.7 -> 98.9	11144	2.40	µg/L	99
		463.0 -> 419.0	130329			
PFNS	9.524	463.0 -> 219.0	31102	2.14	µg/L	92
		548.8 -> 79.9	14335			
PFOA	7.815	548.8 -> 98.9	6771	2.53	µg/L	99
		413.0 -> 369.0	168735			
PFOS	9.069	413.0 -> 169.0	33392	2.17	µg/L	96
		498.9 -> 79.9	38200			
PFPeA	4.916	498.9 -> 98.8	17449	5.41	µg/L	100
		263.0 -> 219.0	316430			
PFPeS	7.184	349.1 -> 79.9	21755	2.19	µg/L	93
		349.1 -> 98.9	9491			
PFTeDA	10.450	713.1 -> 669.0	121243	2.49	µg/L	99
		713.1 -> 168.9	10168			
PFTrDA	10.117	663.0 -> 619.0	154533	2.53	µg/L	97
		663.0 -> 168.9	14495			
PFUnDA	9.361	563.1 -> 519.0	96391	2.69	µg/L	97
		563.1 -> 269.1	16402			
11CI-PF3OUdS	10.169	630.9 -> 450.9	308199	9.92	µg/L	99
		632.9 -> 452.9	89309			
9CI-PF3ONS	9.401	530.8 -> 351.0	315838	8.34	µg/L	97
		532.8 -> 353.0	88990			
ADONA	7.382	376.9 -> 250.9	701898	9.79	µg/L	98
		376.9 -> 84.8	237176			
HFPO-DA	6.565	284.9 -> 168.9	125737	10.04	µg/L	99
		284.9 -> 184.9	12812			
3:3FTCA	4.304	241.0 -> 177.0	32713	11.93	µg/L	99
		241.0 -> 117.0	3031			
5:3FTCA	6.796	341.0 -> 237.1	542294	60.95	µg/L	100
		341.0 -> 217.0	404079			
7:3FTCA	8.299	441.0 -> 316.9	339693	66.48	µg/L	99
		441.0 -> 336.9	764929			
EtFOSA	11.512	526.0 -> 219.0	23944	2.22	µg/L	93
		526.0 -> 169.0	29394			
EtFOSE	11.458	630.0 -> 58.9	294697	25.68	µg/L	100
		511.9 -> 219.0	19546			
MeFOSA	11.292	511.9 -> 169.0	23386	2.30	µg/L	92
		616.1 -> 58.9	291549			
MeFOSE	11.226	699.1 -> 79.9	16772	2.28	µg/L	100
		699.1 -> 98.8	8755			
PFDoDS	10.590	295.0 -> 201.0	22250	5.06	µg/L	94
		295.0 -> 84.9	7199			
NFDHA	6.053	279.0 -> 85.1	184697	5.07	µg/L	100
		229.0 -> 84.9	177954			
PFMBA	3.957	314.8 -> 134.9	261236	4.73	µg/L	100
		314.8 -> 82.9	7985			
PFEESA	6.660			4.57	µg/L	100

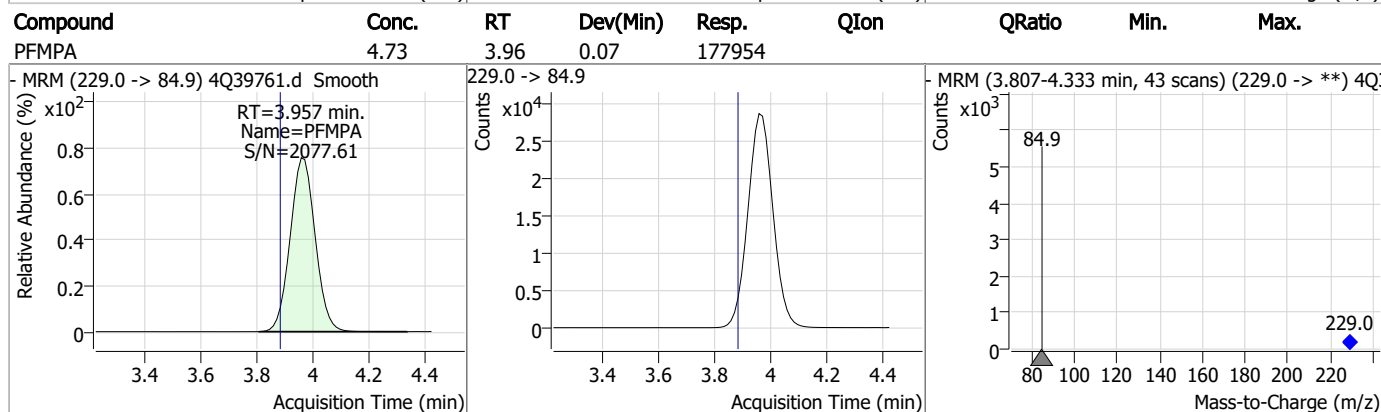
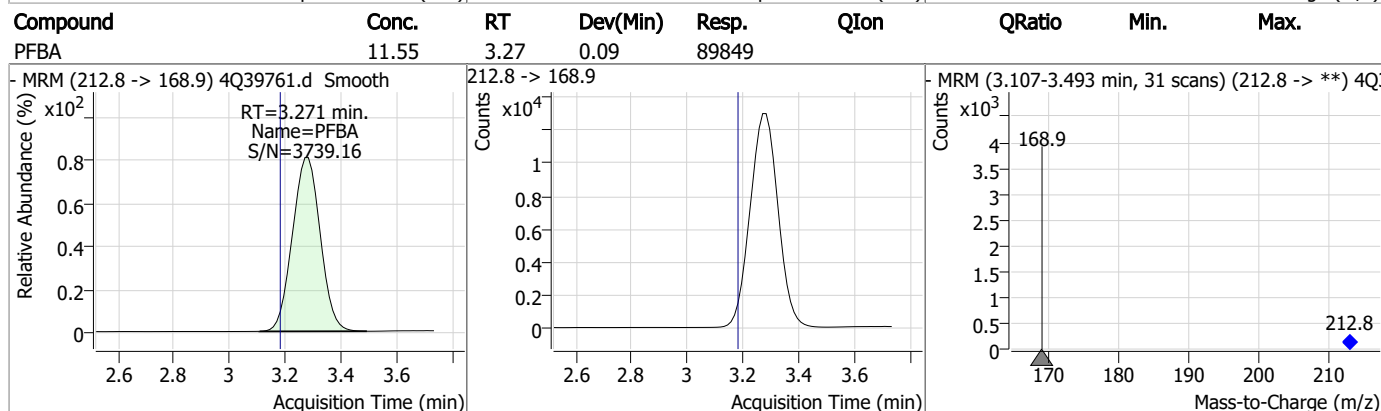
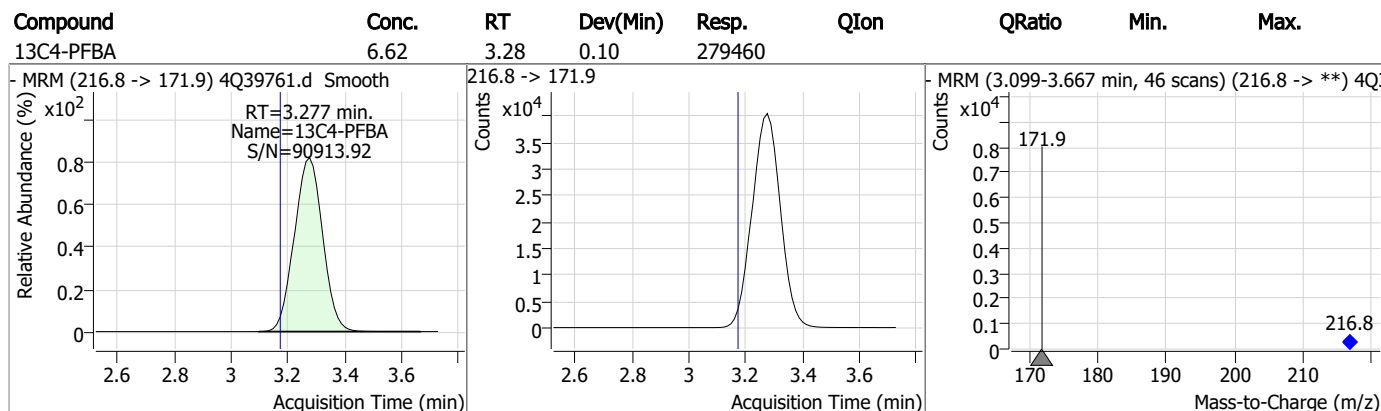
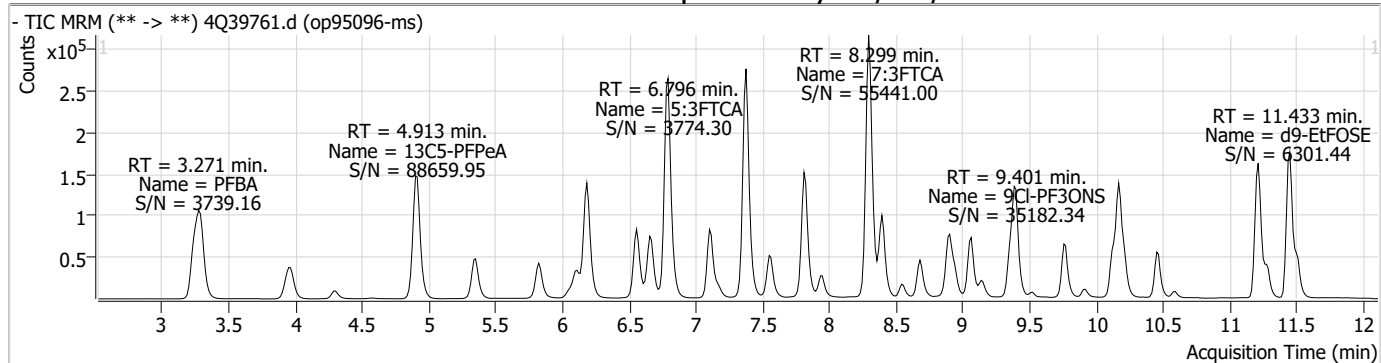
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

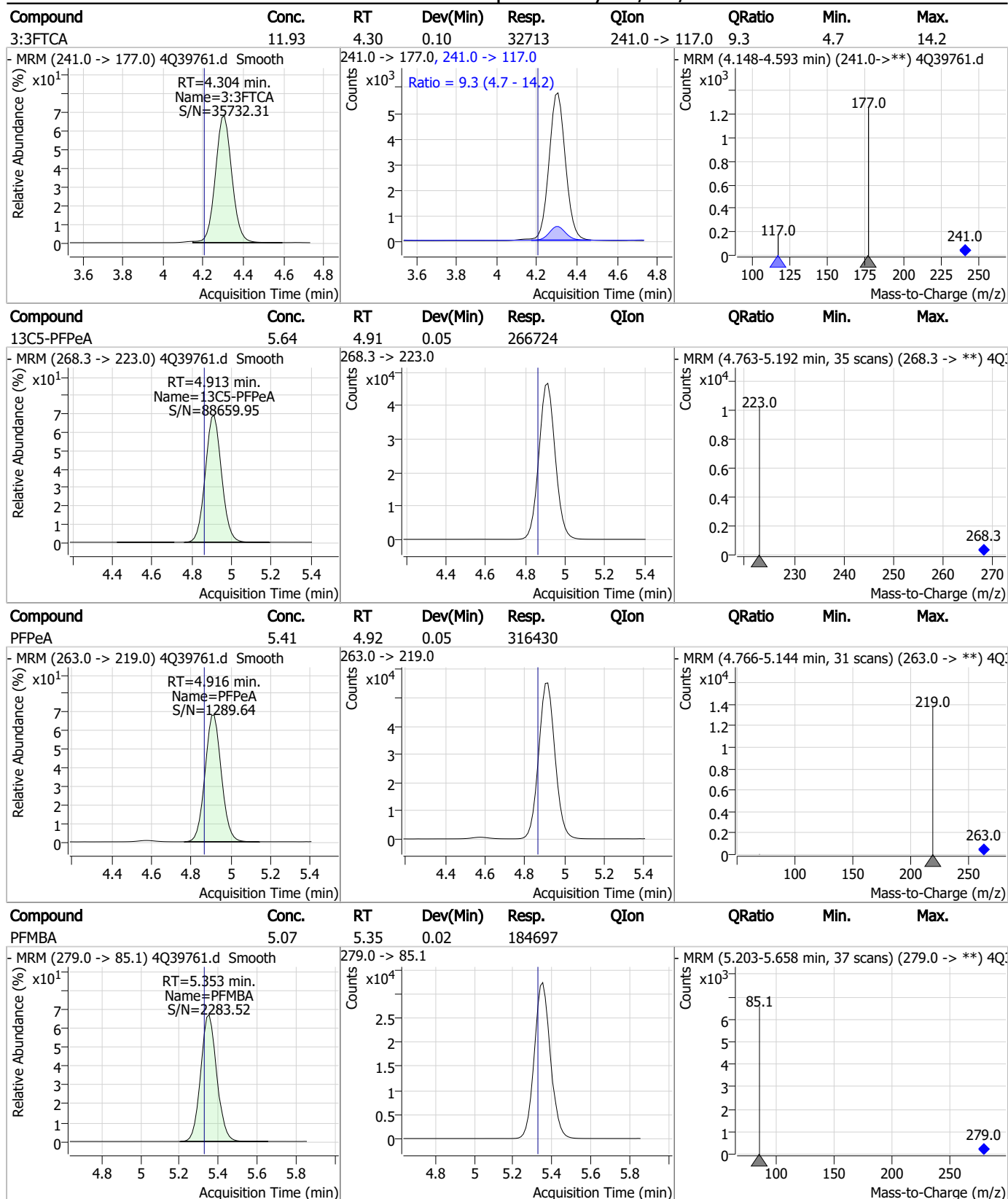
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.4.1
7

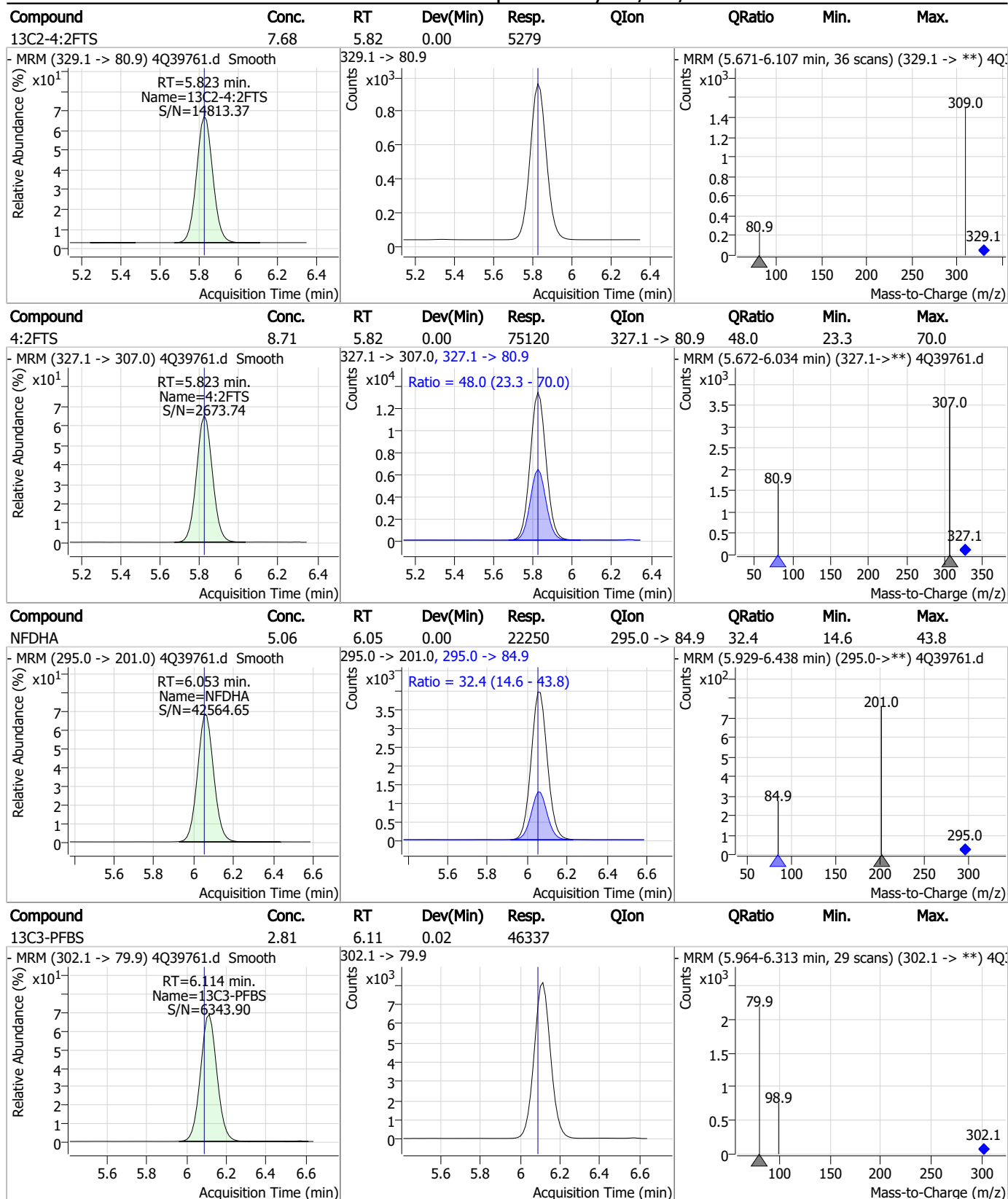
Perfluorinated Compounds by LC/MS/MS



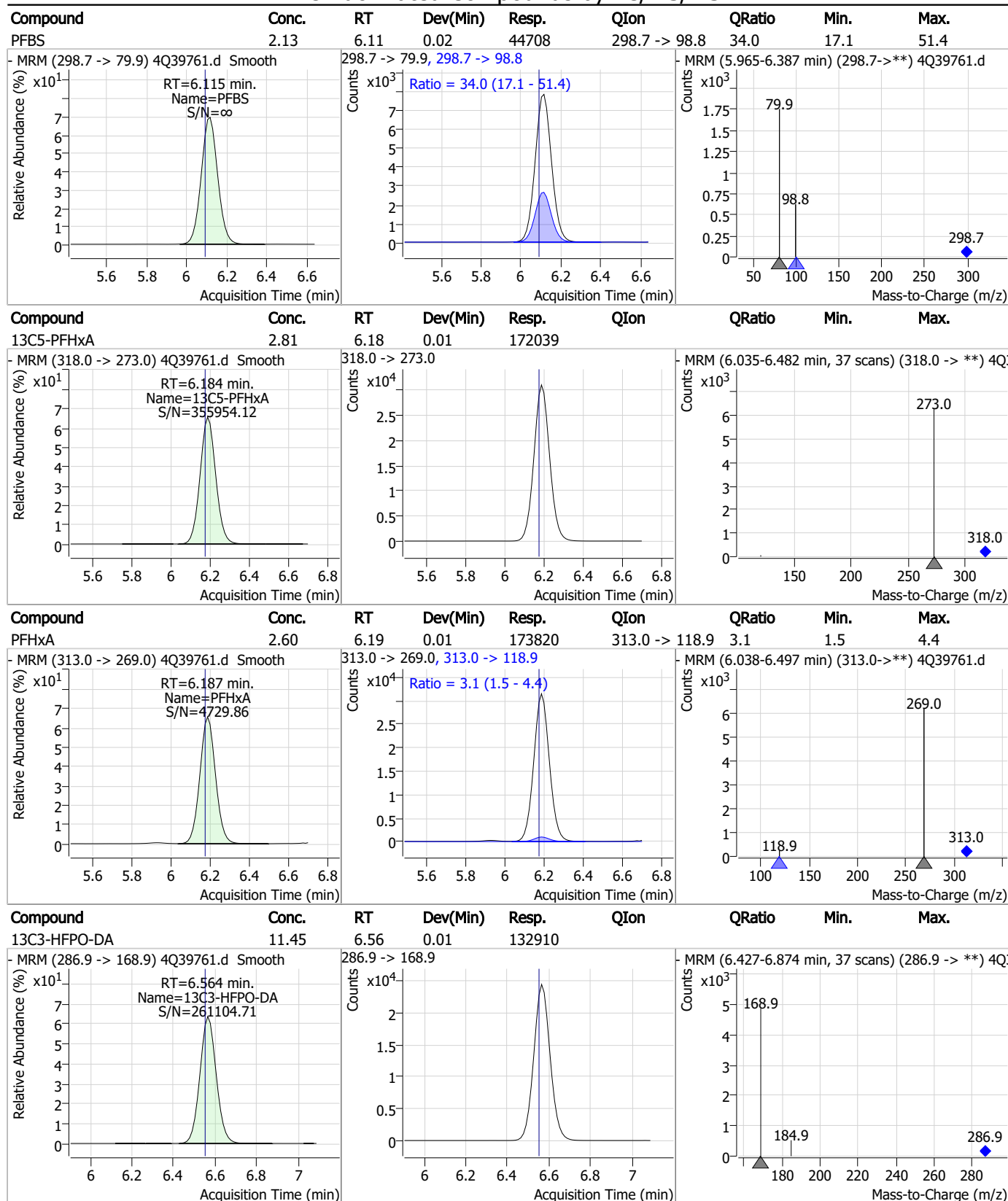
Perfluorinated Compounds by LC/MS/MS



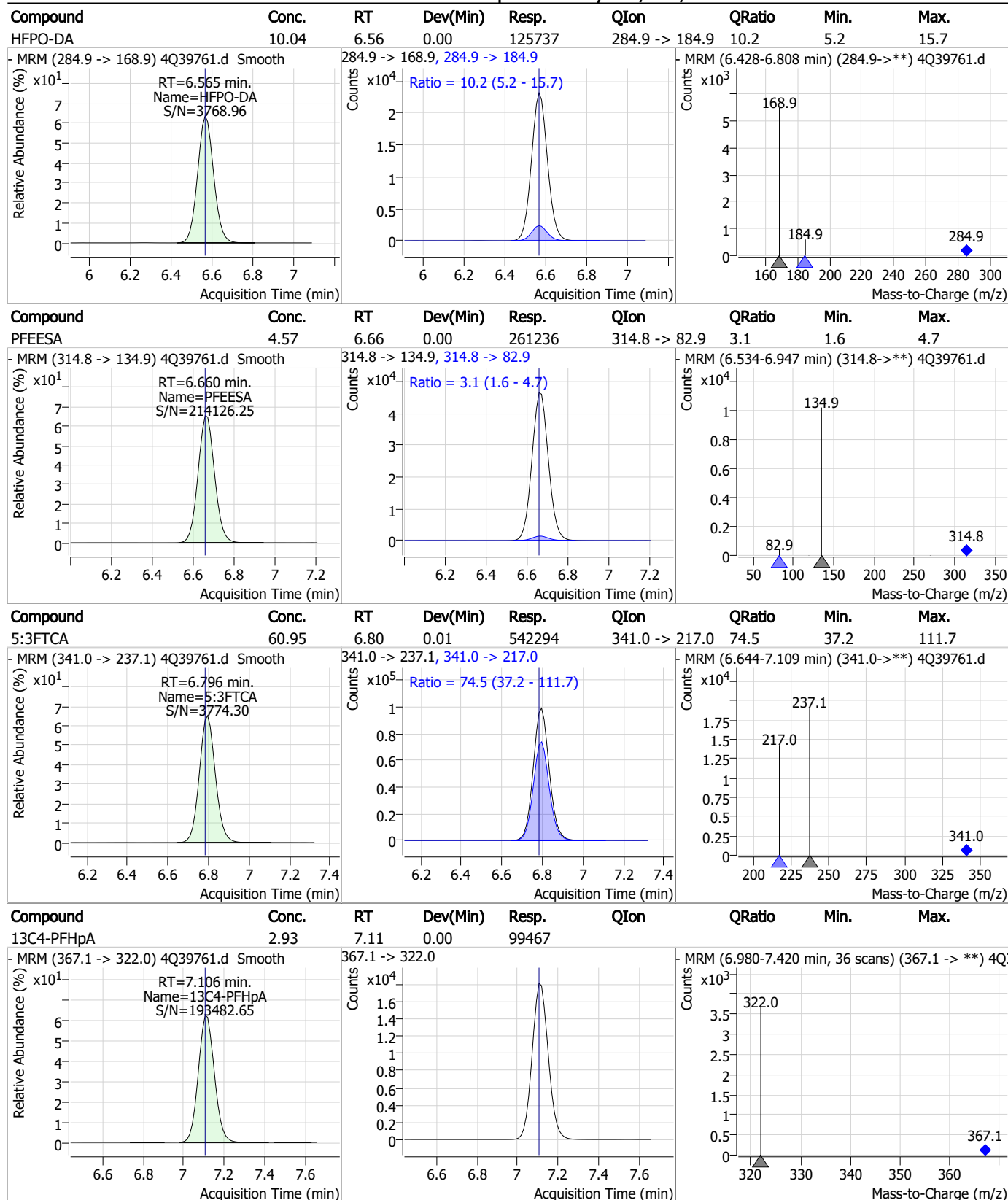
Perfluorinated Compounds by LC/MS/MS



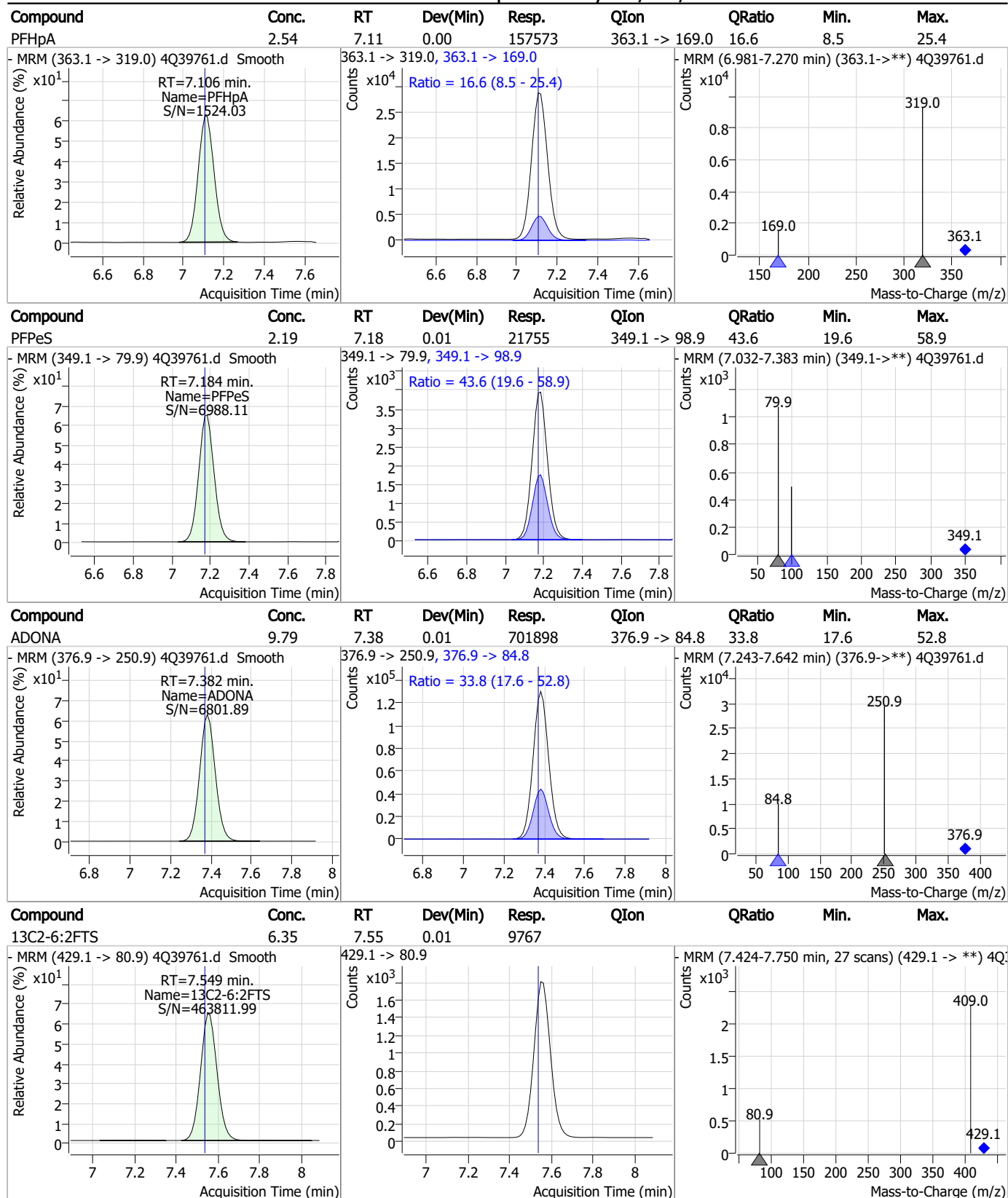
Perfluorinated Compounds by LC/MS/MS



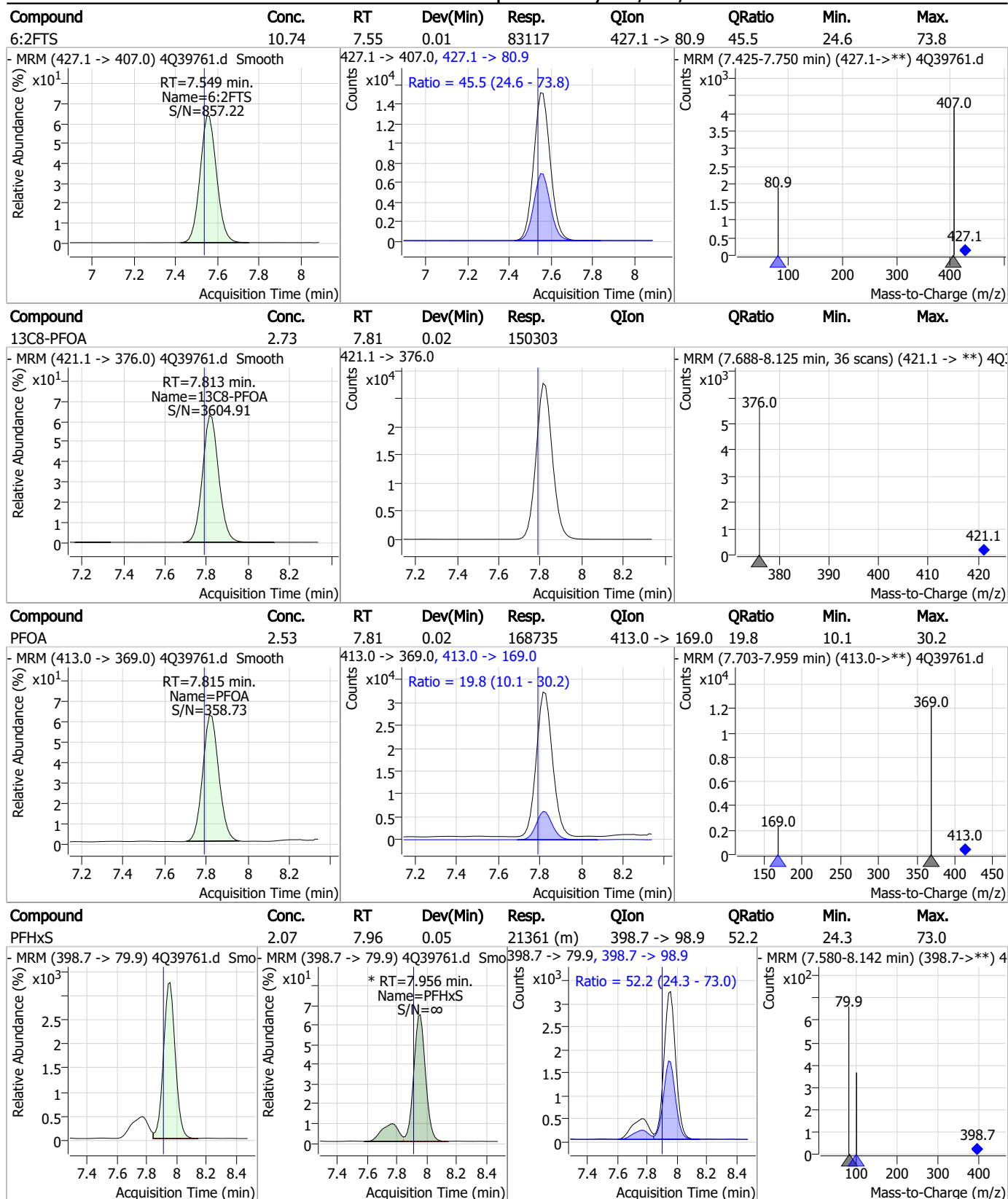
Perfluorinated Compounds by LC/MS/MS



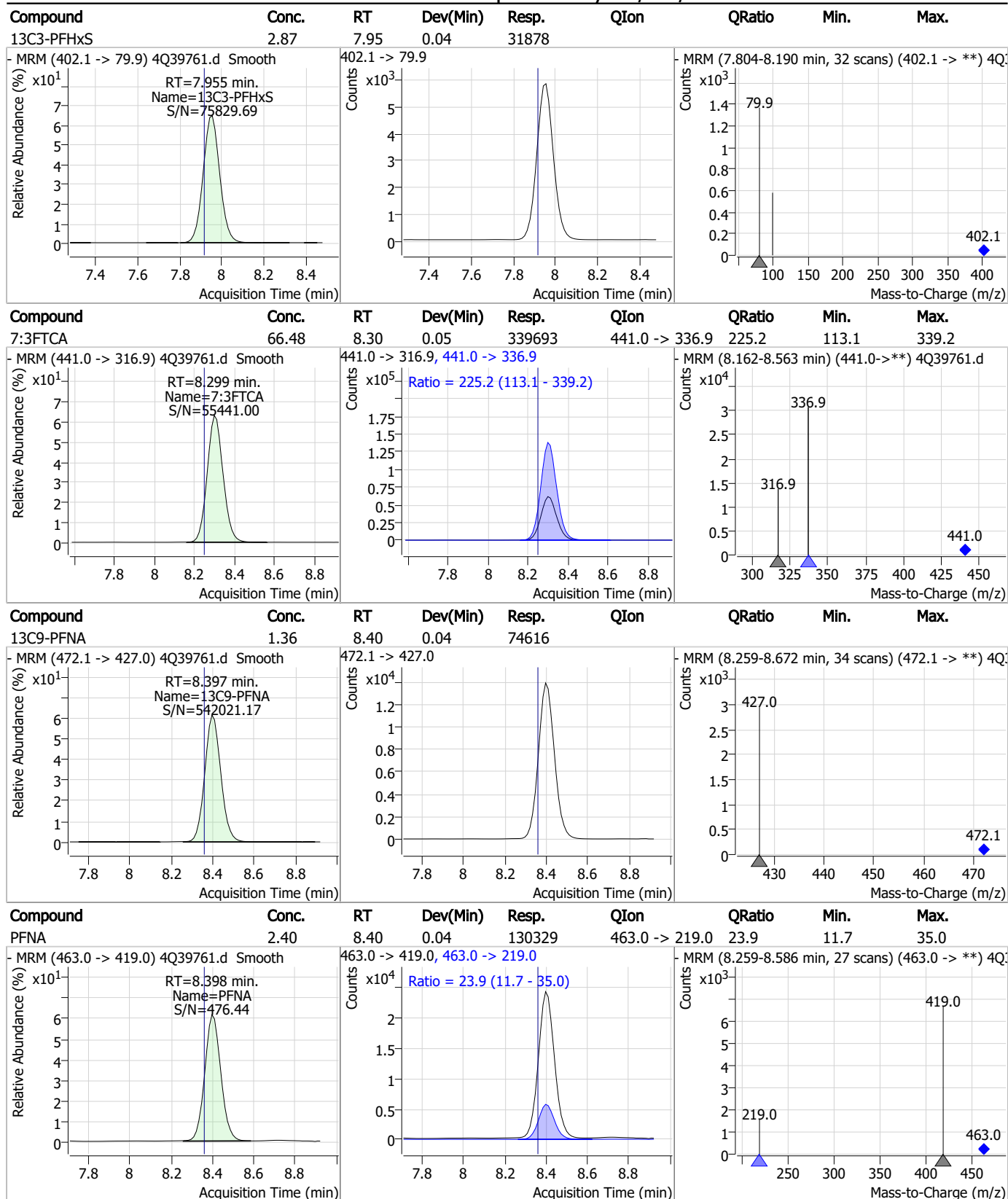
Perfluorinated Compounds by LC/MS/MS



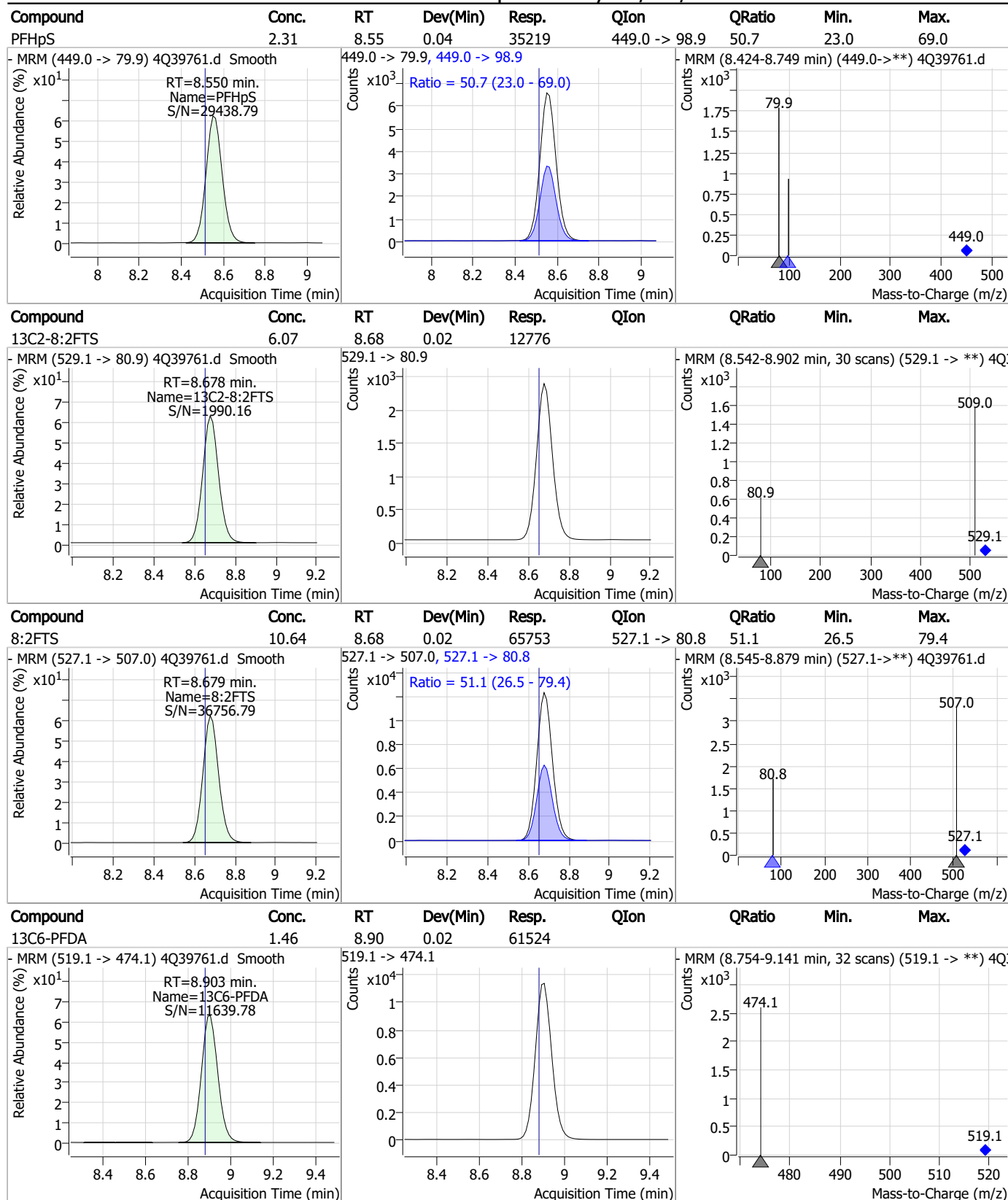
Perfluorinated Compounds by LC/MS/MS



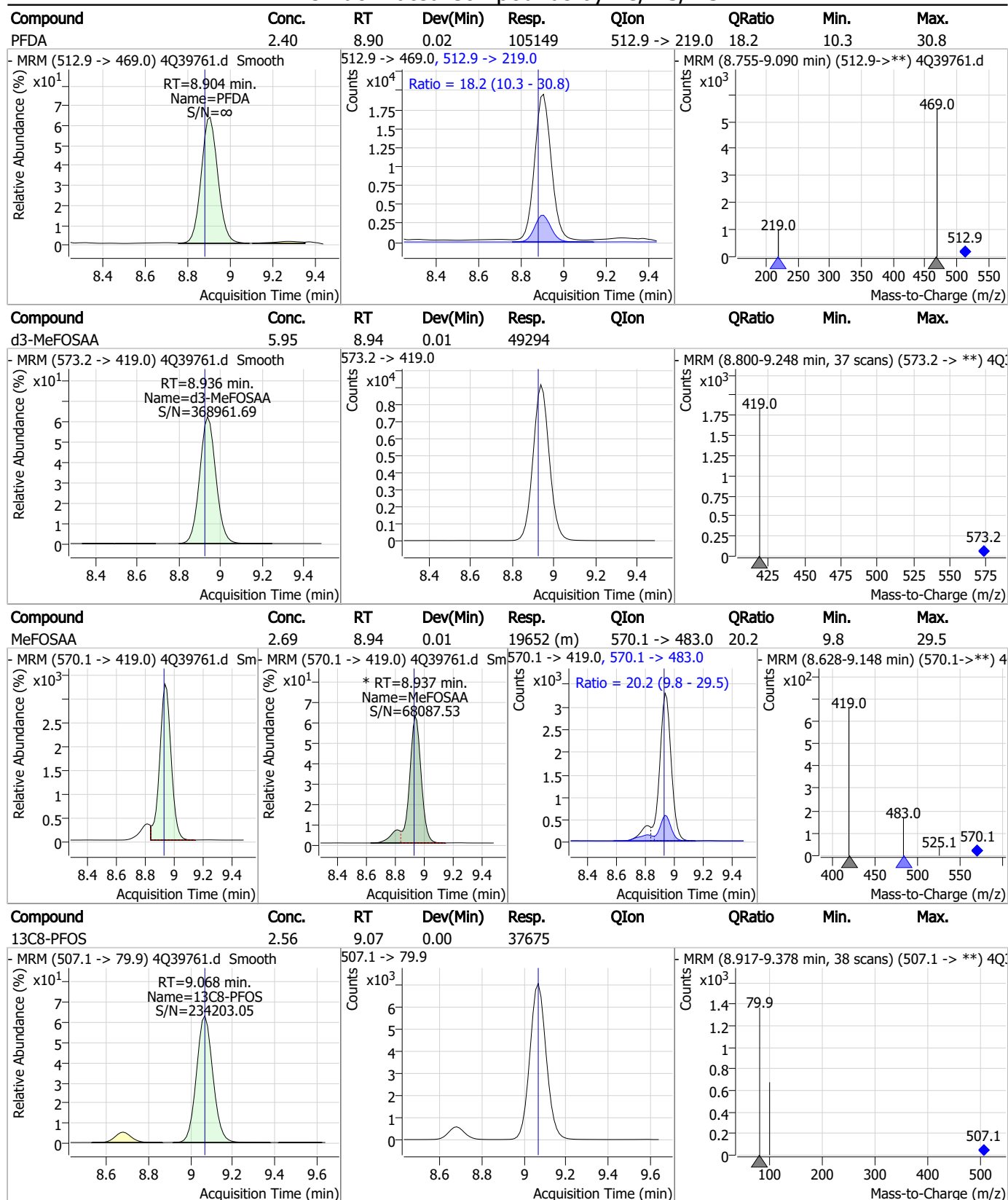
Perfluorinated Compounds by LC/MS/MS



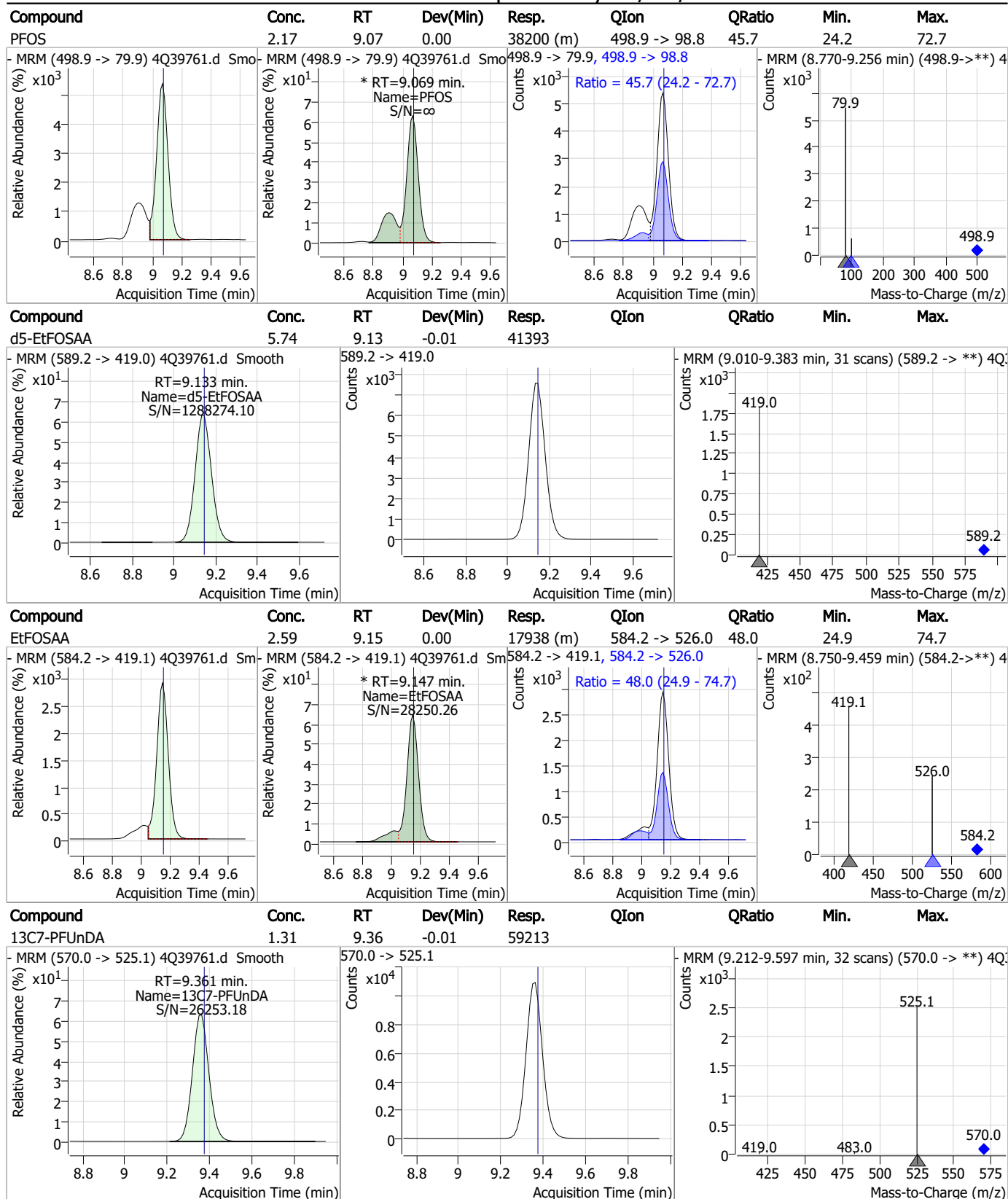
Perfluorinated Compounds by LC/MS/MS



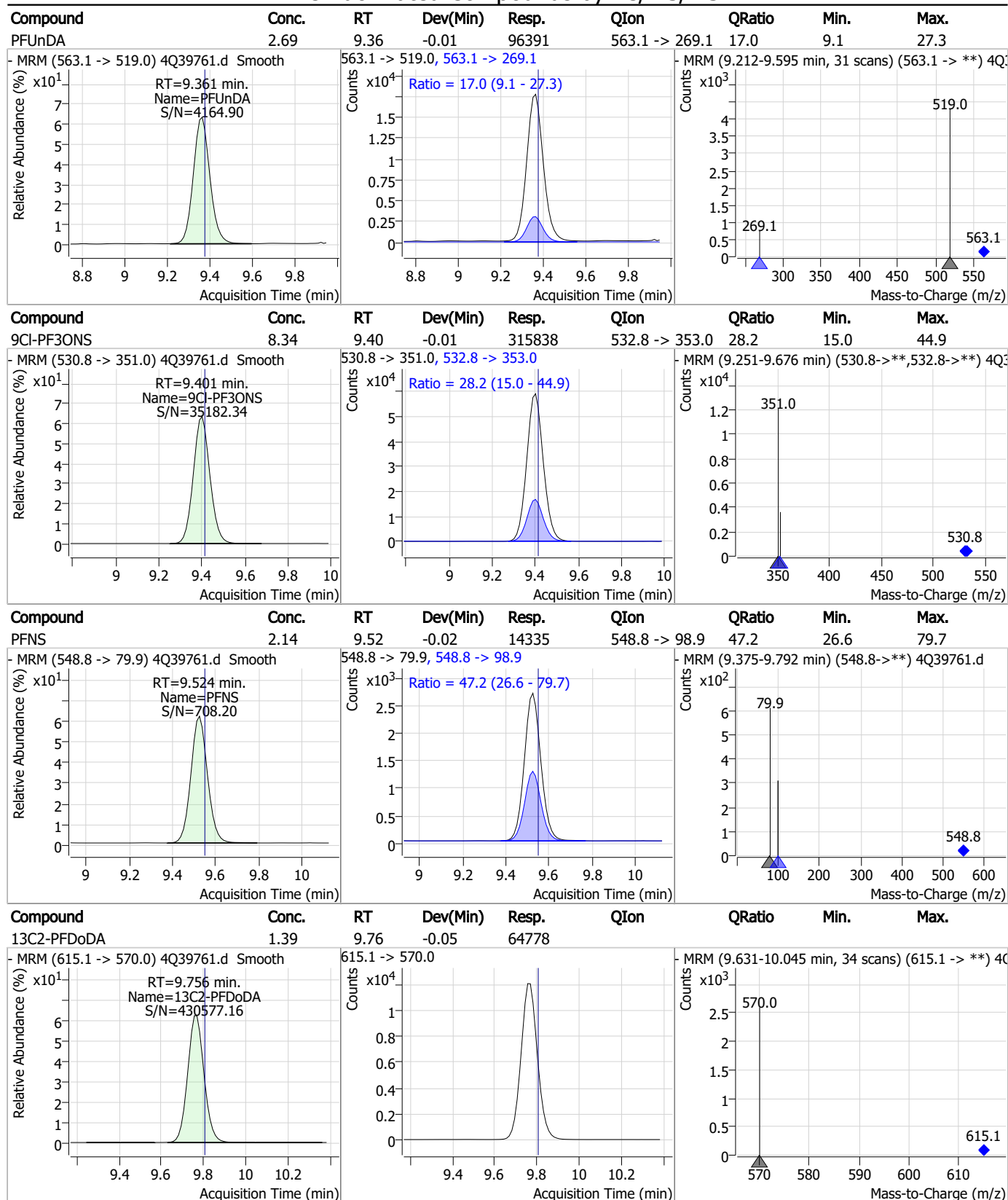
Perfluorinated Compounds by LC/MS/MS



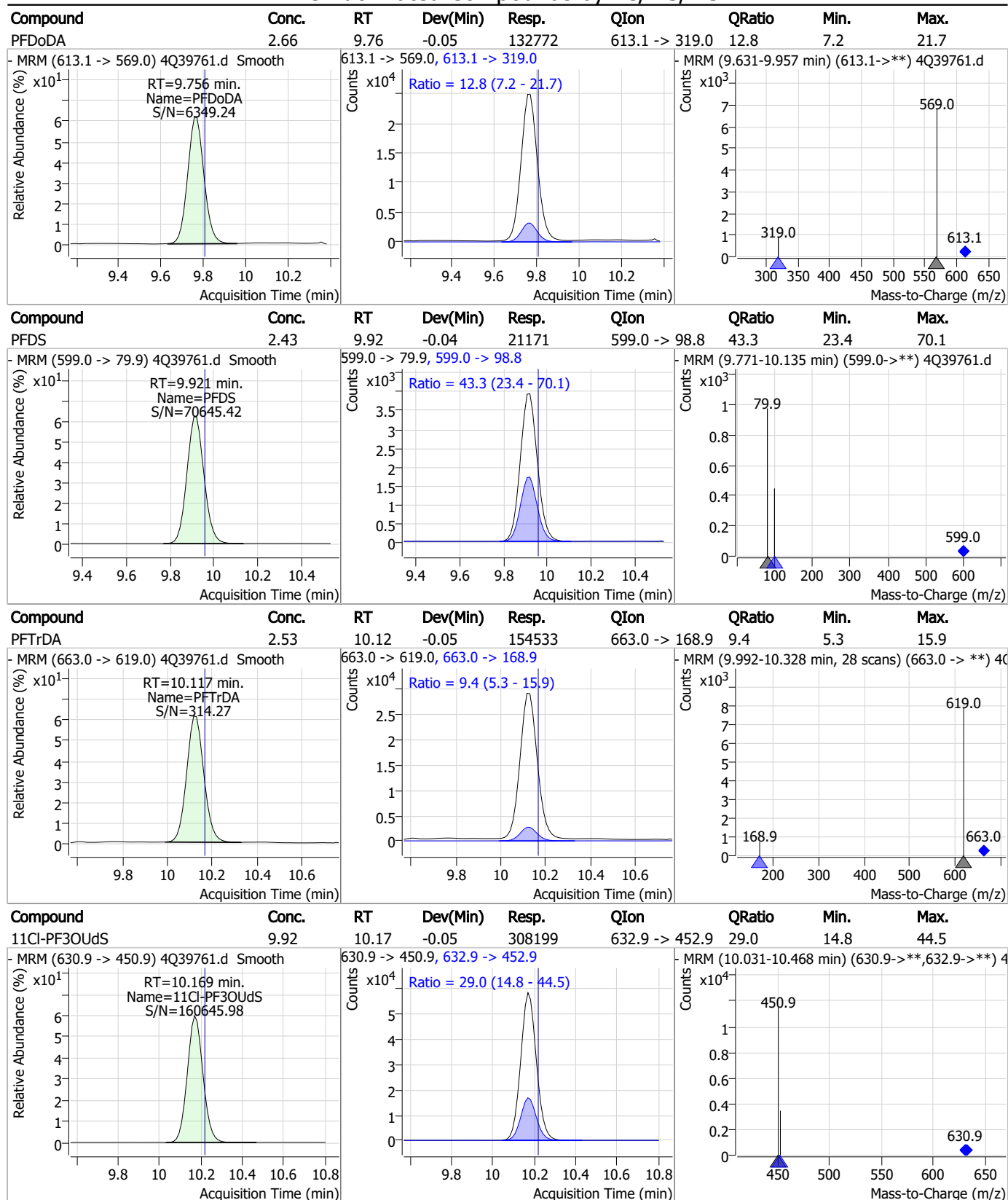
Perfluorinated Compounds by LC/MS/MS



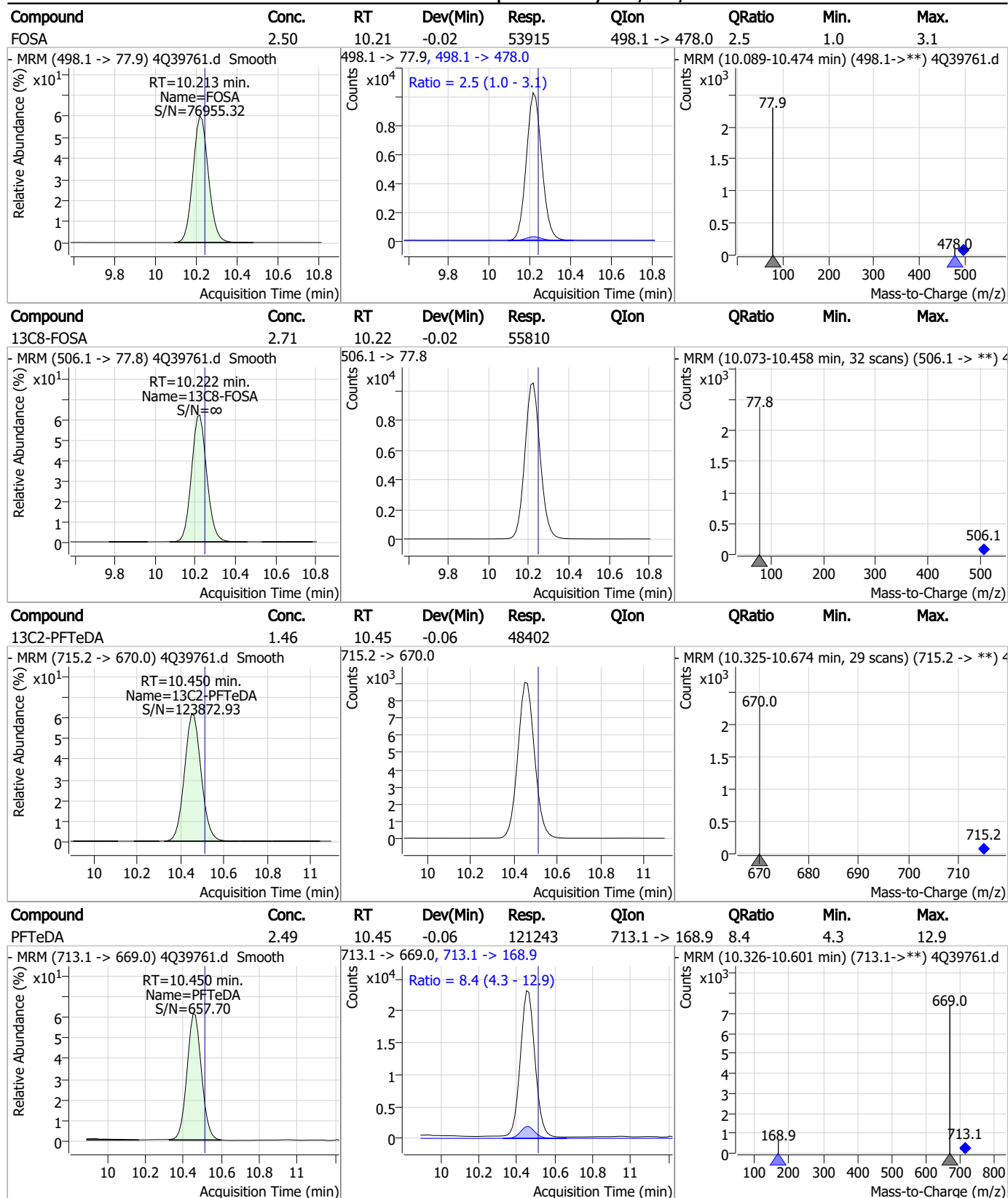
Perfluorinated Compounds by LC/MS/MS



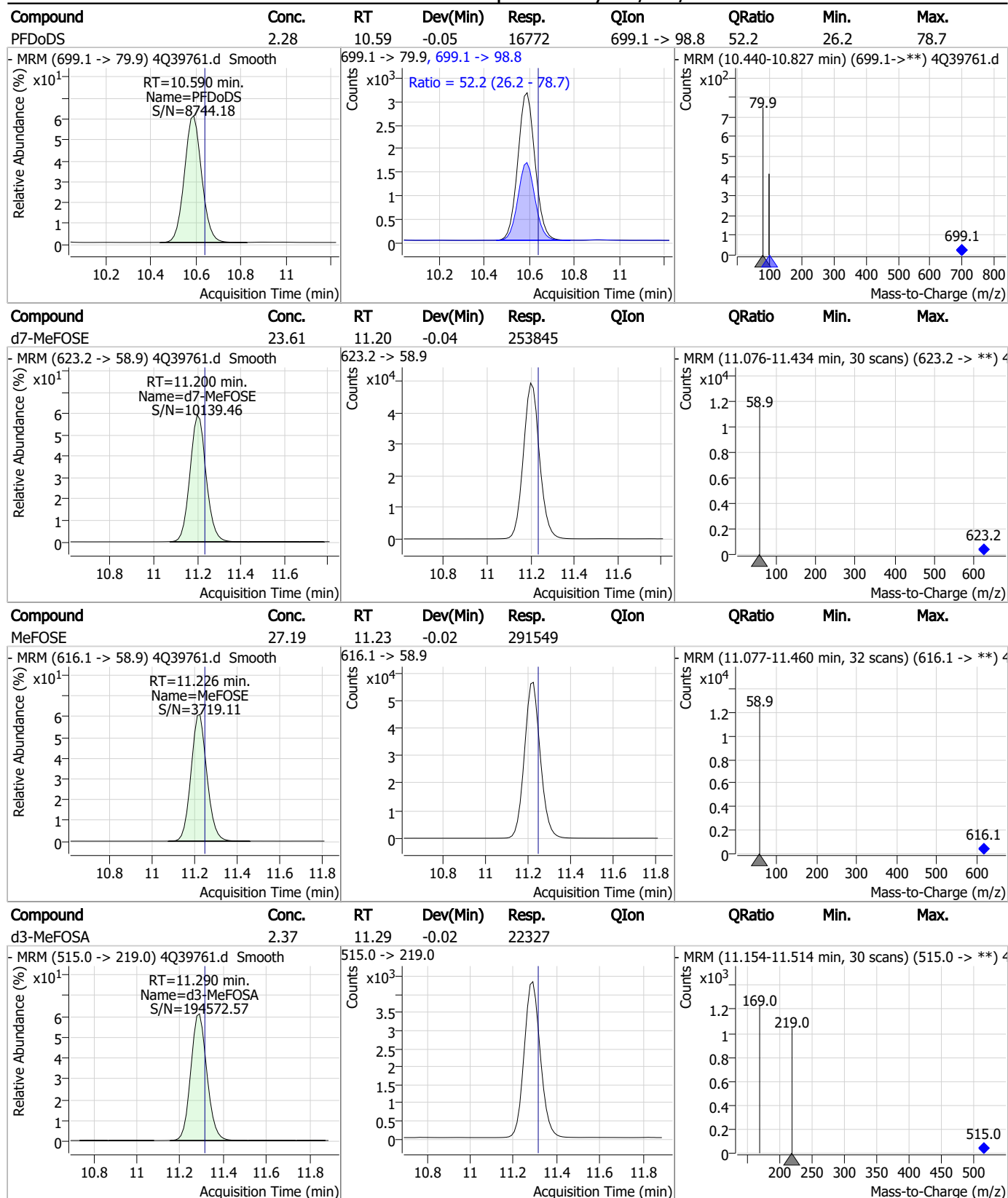
Perfluorinated Compounds by LC/MS/MS



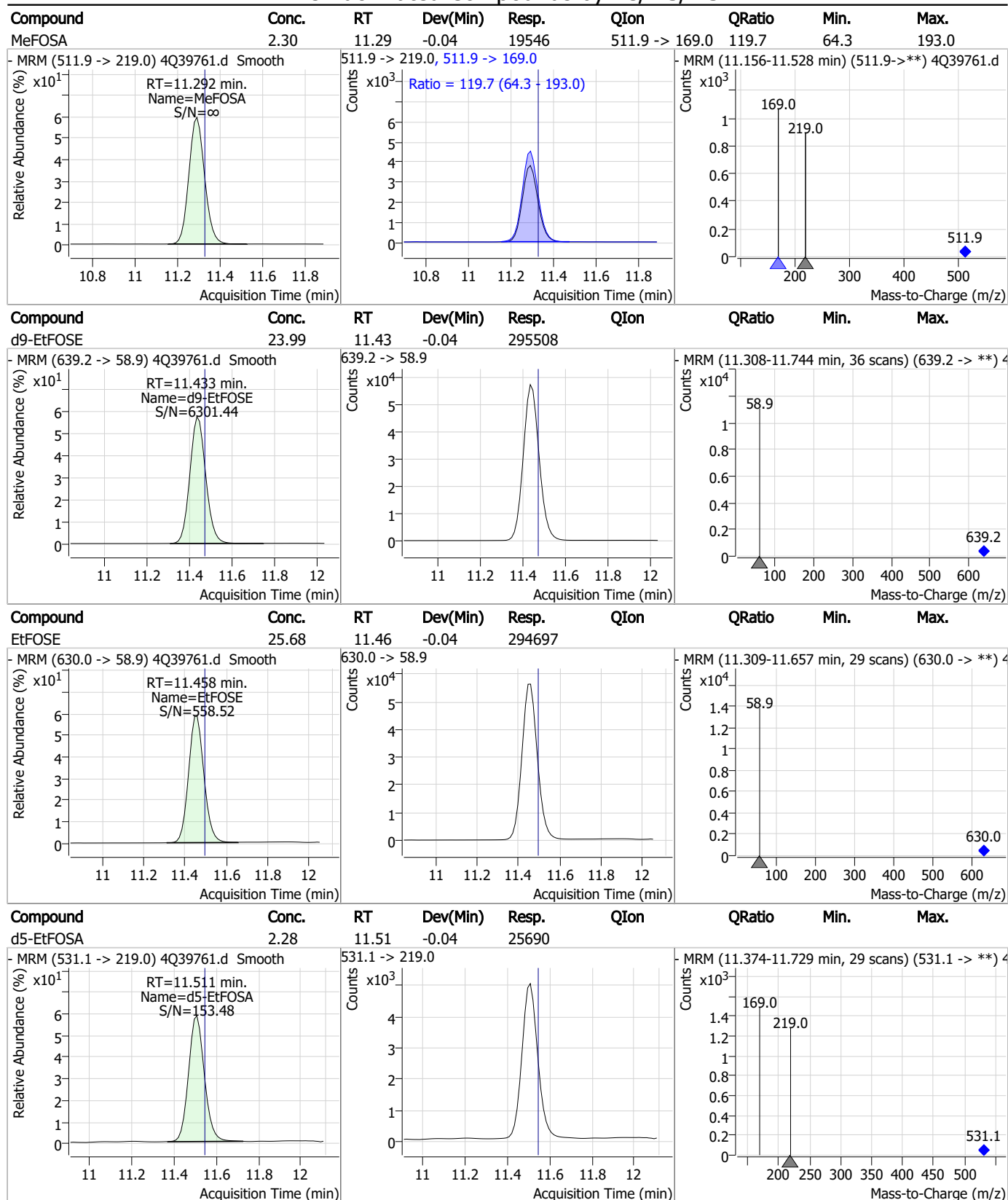
Perfluorinated Compounds by LC/MS/MS



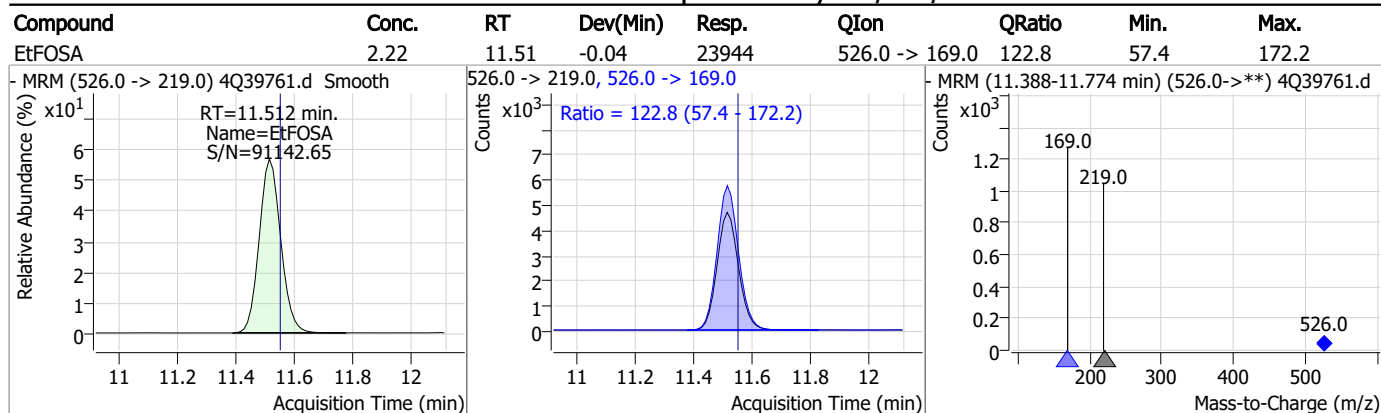
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Manual Integration Approval Summary

Sample Number: OP95096-MS

Method: EPA DRAFT 1633

Lab FileID: 4Q39761.D

Analyst approved: 01/27/23 10:42 Natasha Guntie

Injection Time: 01/26/23 06:02

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.96	Split peak
MeFOSAA	2355-31-9		8.94	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

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7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39762.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 6:16:55 AM
 Sample Name : op95096-msd
 Vial : P2-C5
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,565,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.124	216.8 -> 171.9	250646	10.00 µg/L	-0.050
M5-PFPeA	4.776	268.3 -> 223.0	271713	5.00 µg/L	-0.087
M5-PFHxA	6.047	318.0 -> 273.0	177989	2.50 µg/L	-0.125
M4-PFHpA	7.005	367.1 -> 322.0	98884	2.50 µg/L	-0.101
M8-PFOA	7.676	421.1 -> 376.0	147407	2.50 µg/L	-0.113
M9-PFNA	8.259	472.1 -> 427.0	74584	1.25 µg/L	-0.101
M6-PFDA	8.779	519.1 -> 474.1	58198	1.25 µg/L	-0.099
M7-PFUnDA	9.274	570.0 -> 525.1	62209	1.25 µg/L	-0.100
M2-PFDoDA	9.706	615.1 -> 570.0	66495	1.25 µg/L	-0.100
M2-PFTeDA	10.425	715.2 -> 670.0	47297	1.25 µg/L	-0.087
M8-FOSA	10.172	506.1 -> 77.8	55589	2.50 µg/L	-0.075
M3-PFBS	5.977	302.1 -> 79.9	46116	2.50 µg/L	-0.112
M3-PFHxS	7.804	402.1 -> 79.9	29772	2.50 µg/L	-0.113
M8-PFOS	8.956	507.1 -> 79.9	36810	2.50 µg/L	-0.111
M2-4:2FTS	5.709	329.1 -> 80.9	5190	5.00 µg/L	-0.114
M2-6:2FTS	7.424	429.1 -> 80.9	9344	5.00 µg/L	-0.112
M2-8:2FTS	8.542	529.1 -> 80.9	12781	5.00 µg/L	-0.111
M3-MeFOSAA	8.825	573.2 -> 419.0	50299	5.00 µg/L	-0.099
M3-HFPO-DA	6.439	286.9 -> 168.9	134183	10.00 µg/L	-0.112
M5-EtFOSAA	9.034	589.2 -> 419.0	41703	5.00 µg/L	-0.112
M7-MeFOSE	11.188	623.2 -> 58.9	265117	25.00 µg/L	-0.047
M9-EtFOSE	11.420	639.2 -> 58.9	306211	25.00 µg/L	-0.050
M5-EtFOSA	11.498	531.1 -> 219.0	27343	2.50 µg/L	-0.050
M3-MeFOSA	11.265	515.0 -> 219.0	22886	2.50 µg/L	-0.050
13C4-PFOS	8.957	502.8 -> 79.9	37082	2.50 µg/L	-0.111
13C3-PFBA	3.128	216.0 -> 172.0	207555	5.00 µg/L	-0.050
18O2-PFHxS	7.803	403.0 -> 83.9	19316	2.50 µg/L	-0.113
13C4-PFOA	7.676	417.1 -> 372.0	157556	2.50 µg/L	-0.113
13C2-PFDA	8.780	515.1 -> 470.1	49531	1.25 µg/L	-0.099
13C5-PFNA	8.247	468.0 -> 423.0	78171	1.25 µg/L	-0.113
13C2-PFHxA	6.048	315.1 -> 270.0	150573	2.50 µg/L	-0.125
System Monitoring Compounds					
13C2-4:2FTS	5.709	329.1 -> 80.9	5190	7.46 µg/L	-0.114
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 149.1%		
13C2-6:2FTS	7.424	429.1 -> 80.9	9344	6.00 µg/L	-0.112
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.9%		
13C2-8:2FTS	8.542	529.1 -> 80.9	12781	5.99 µg/L	-0.111
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.9%		
13C2-PFDoDA	9.706	615.1 -> 570.0	66495	1.38 µg/L	-0.100
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.6%		
13C2-PFTeDA	10.425	715.2 -> 670.0	47297	1.38 µg/L	-0.087
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.6%		
13C3-PFBS	5.977	302.1 -> 79.9	46116	2.76 µg/L	-0.112
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C3-PFHxS	7.804	402.1 -> 79.9	29772	2.64 µg/L	-0.113

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C4-PFBA	3.124	216.8 -> 171.9	250646	6.70 µg/L	-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.0%	
13C4-PFHpA	7.005	367.1 -> 322.0	98884	2.82 µg/L	-0.101
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C5-PFHxA	6.047	318.0 -> 273.0	177989	2.81 µg/L	-0.125
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.4%	
13C5-PFPeA	4.776	268.3 -> 223.0	271713	5.55 µg/L	-0.087
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.0%	
13C6-PFDA	8.779	519.1 -> 474.1	58198	1.33 µg/L	-0.099
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C7-PFUnDA	9.274	570.0 -> 525.1	62209	1.33 µg/L	-0.100
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C8-FOSA	10.172	506.1 -> 77.8	55589	2.62 µg/L	-0.075
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C8-PFOA	7.676	421.1 -> 376.0	147407	2.61 µg/L	-0.113
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C8-PFOS	8.956	507.1 -> 79.9	36810	2.43 µg/L	-0.111
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C9-PFNA	8.259	472.1 -> 427.0	74584	1.34 µg/L	-0.101
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.4%	
d3-MeFOSAA	8.825	573.2 -> 419.0	50299	5.91 µg/L	-0.099
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.1%	
13C3-HFPO-DA	6.439	286.9 -> 168.9	134183	11.17 µg/L	-0.112
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.7%	
d3-MeFOSA	11.265	515.0 -> 219.0	22886	2.36 µg/L	-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%	
d5-EtFOSAA	9.034	589.2 -> 419.0	41703	5.62 µg/L	-0.112
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.5%	
d7-MeFOSE	11.188	623.2 -> 58.9	265117	23.98 µg/L	-0.047
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.9%	
d9-EtFOSE	11.420	639.2 -> 58.9	306211	24.18 µg/L	-0.050
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d5-EtFOSA	11.498	531.1 -> 219.0	27343	2.36 µg/L	-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.6%	
Target Compounds					QValue
4:2FTS	5.697	327.1 -> 307.0	80278	9.46 µg/L	99
		327.1 -> 80.9	36872		
6:2FTS	7.425	427.1 -> 407.0	80994	10.94 µg/L	95
		427.1 -> 80.9	37227		
8:2FTS	8.542	527.1 -> 507.0	64249	10.39 µg/L	96
		527.1 -> 80.8	32319		
EtFOSAA	9.048	584.2 -> 419.1	16419	2.35 µg/L	m 94
		584.2 -> 526.0	7530		
FOSA	10.163	498.1 -> 77.9	55300	2.58 µg/L	99
		498.1 -> 478.0	1338		
MeFOSAA	8.826	570.1 -> 419.0	21264	2.85 µg/L	m 98
		570.1 -> 483.0	4397		
PFBA	3.132	212.8 -> 168.9	82217	11.79 µg/L	100
PFBS	5.978	298.7 -> 79.9	47074	2.26 µg/L	99
		298.7 -> 98.8	15768		
PFDA	8.780	512.9 -> 469.0	102869	2.48 µg/L	95
		512.9 -> 219.0	18836		
PFDODA	9.706	613.1 -> 569.0	123733	2.41 µg/L	99
		613.1 -> 319.0	18635		
PFDS	9.870	599.0 -> 79.9	19526	2.29 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.006	599.0 -> 98.8	9019	2.49	µg/L	99
		363.1 -> 319.0	153660			
PFHpS	8.411	363.1 -> 169.0	25559	2.33	µg/L	94
		449.0 -> 79.9	34630			
PFHxA	6.050	449.0 -> 98.9	17302	2.53	µg/L	100
		313.0 -> 269.0	174783			
PFHxS	7.805	313.0 -> 118.9	5248	2.35	µg/L	96
		398.7 -> 79.9	22647			
PFNA	8.259	398.7 -> 98.9	10435	2.44	µg/L	98
		463.0 -> 419.0	132407			
PFNS	9.450	463.0 -> 219.0	29239	2.27	µg/L	97
		548.8 -> 79.9	14855			
PFOA	7.677	548.8 -> 98.9	7616	2.57	µg/L	100
		413.0 -> 369.0	168268			
PFOS	8.958	413.0 -> 169.0	34183	2.35	µg/L	96
		498.9 -> 79.9	40430			
PFPeA	4.766	498.9 -> 98.8	20549	5.40	µg/L	100
		263.0 -> 219.0	321657			
PFPeS	7.069	349.1 -> 79.9	21122	2.27	µg/L	95
		349.1 -> 98.9	8965			
PFTeDA	10.426	713.1 -> 669.0	116417	2.45	µg/L	99
		713.1 -> 168.9	9734			
PFTrDA	10.092	663.0 -> 619.0	159213	2.54	µg/L	97
		663.0 -> 168.9	15291			
PFUnDA	9.274	563.1 -> 519.0	96224	2.56	µg/L	98
		563.1 -> 269.1	16552			
11Cl-PF3OUdS	10.131	630.9 -> 450.9	299420	9.55	µg/L	98
		632.9 -> 452.9	91509			
9Cl-PF3ONS	9.313	530.8 -> 351.0	324497	8.49	µg/L	100
		532.8 -> 353.0	96986			
ADONA	7.256	376.9 -> 250.9	694898	9.60	µg/L	98
		376.9 -> 84.8	238440			
HFPO-DA	6.440	284.9 -> 168.9	127570	10.09	µg/L	100
		284.9 -> 184.9	13582			
3:3FTCA	4.136	241.0 -> 177.0	33579	12.02	µg/L	99
		241.0 -> 117.0	3373			
5:3FTCA	6.669	341.0 -> 237.1	550827	59.84	µg/L	100
		341.0 -> 217.0	410561			
7:3FTCA	8.149	441.0 -> 316.9	313740	59.34	µg/L	98
		441.0 -> 336.9	696857			
EtFOSA	11.500	526.0 -> 219.0	25815	2.25	µg/L	100
		526.0 -> 169.0	29742			
EtFOSE	11.433	630.0 -> 58.9	300582	25.28	µg/L	100
		511.9 -> 219.0	19557			
MeFOSA	11.267	511.9 -> 169.0	24579	2.24	µg/L	97
		616.1 -> 58.9	288474			
MeFOSE	11.201	699.1 -> 79.9	17439	25.76	µg/L	100
		699.1 -> 98.8	9543			
PFDoDS	10.565	295.0 -> 201.0	21968	2.42	µg/L	97
		295.0 -> 84.9	6805			
NFDHA	5.929	279.0 -> 85.1	183961	4.83	µg/L	97
		229.0 -> 84.9	183990			
PFMBA	5.216	314.8 -> 134.9	266573	4.95	µg/L	100
		314.8 -> 82.9	8292			
PFMPA	3.807			4.80	µg/L	100
PFEESA	6.546			4.51	µg/L	100

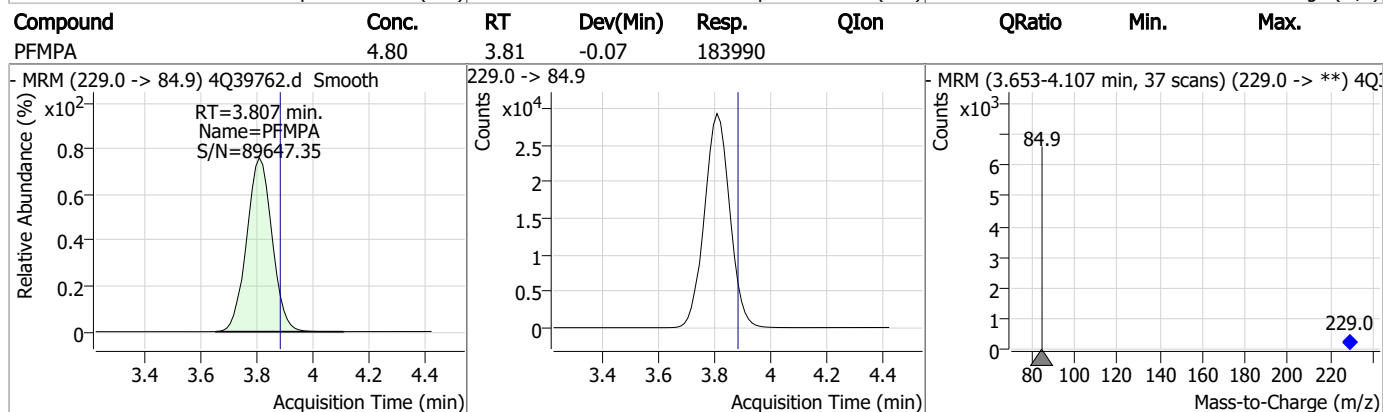
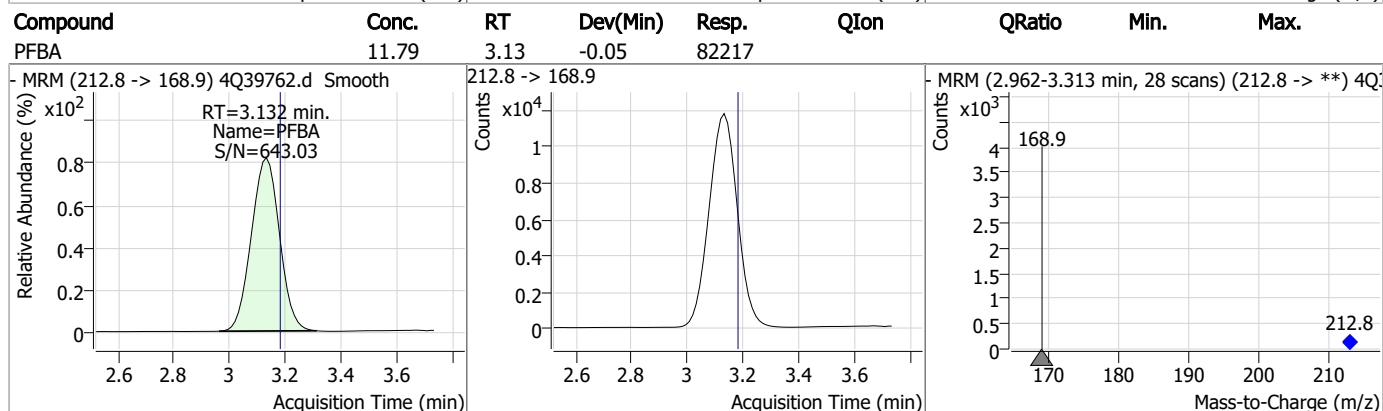
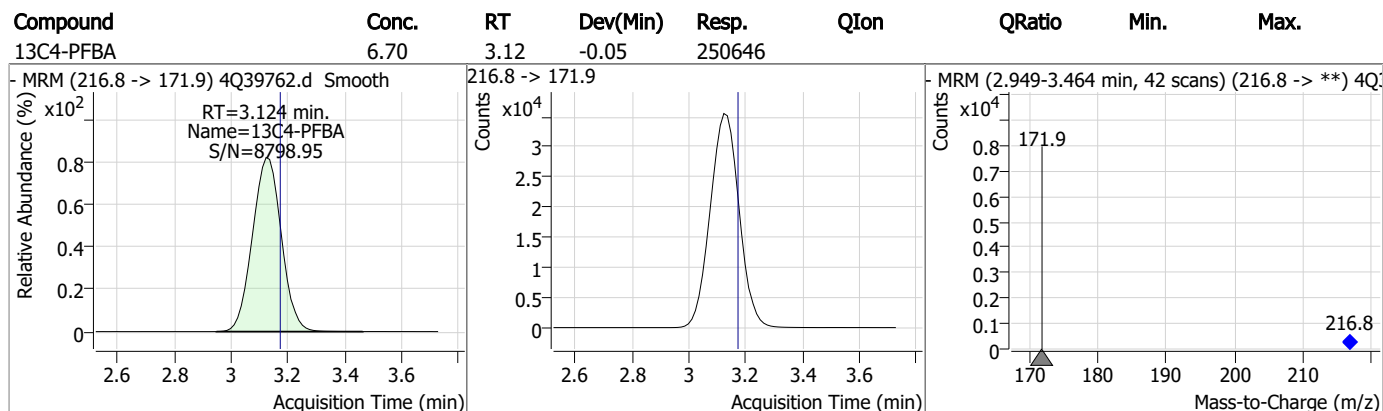
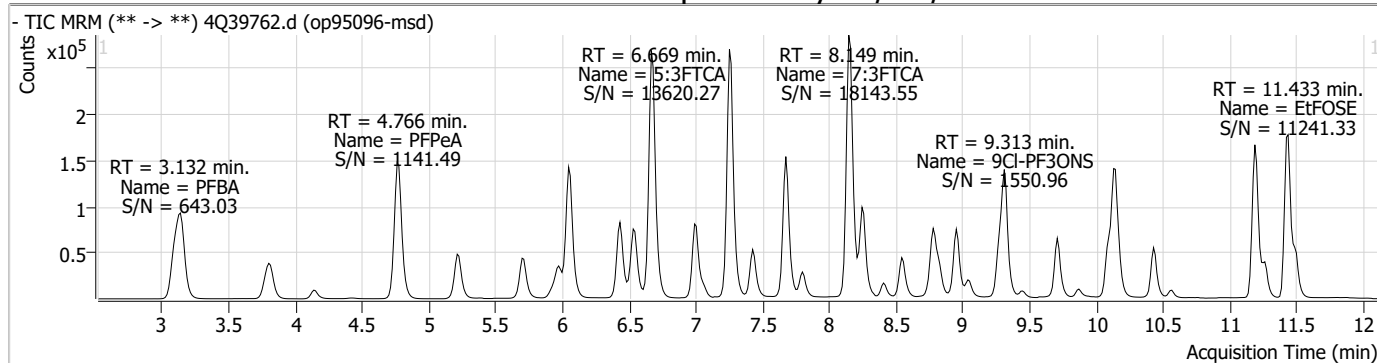
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

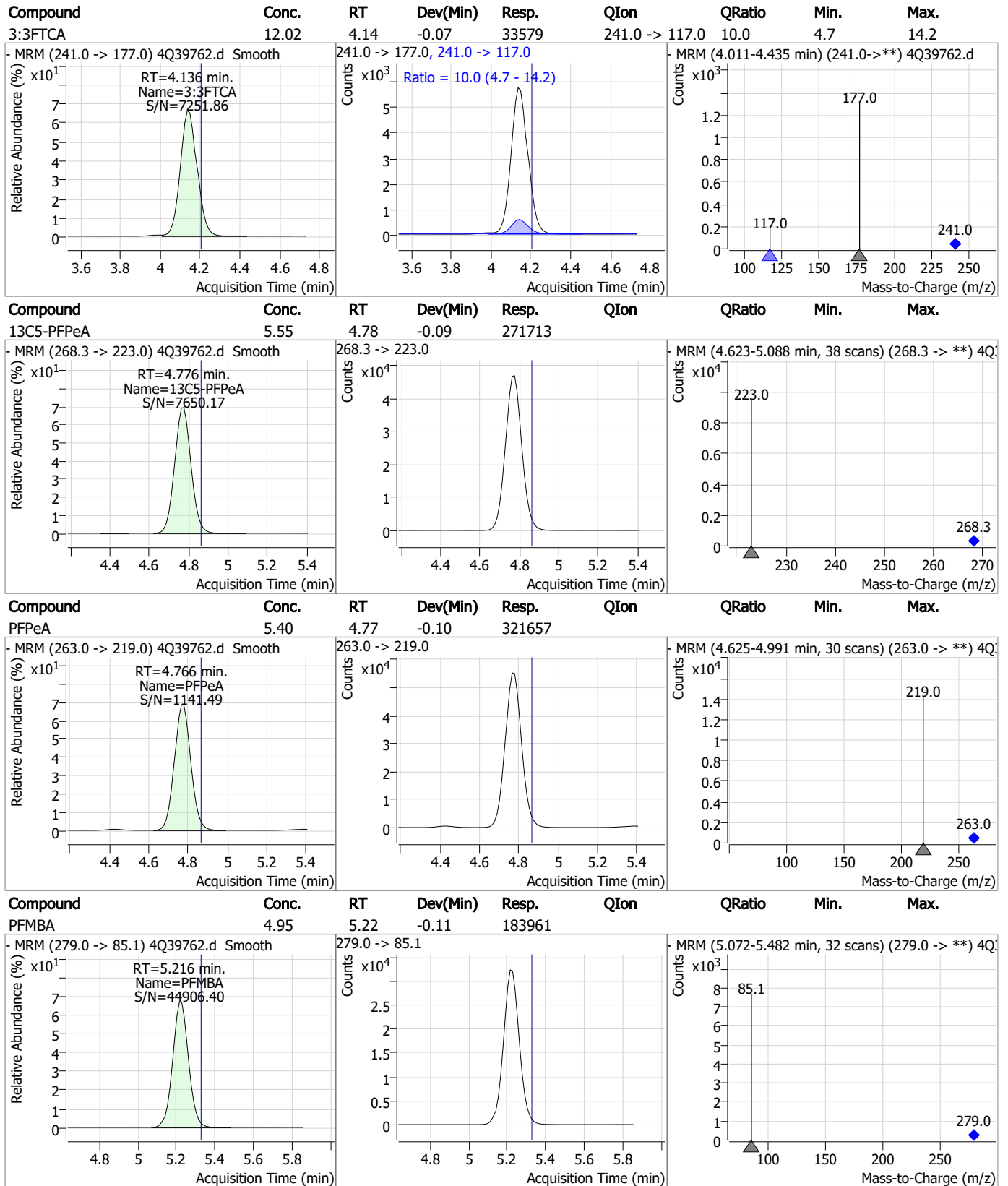
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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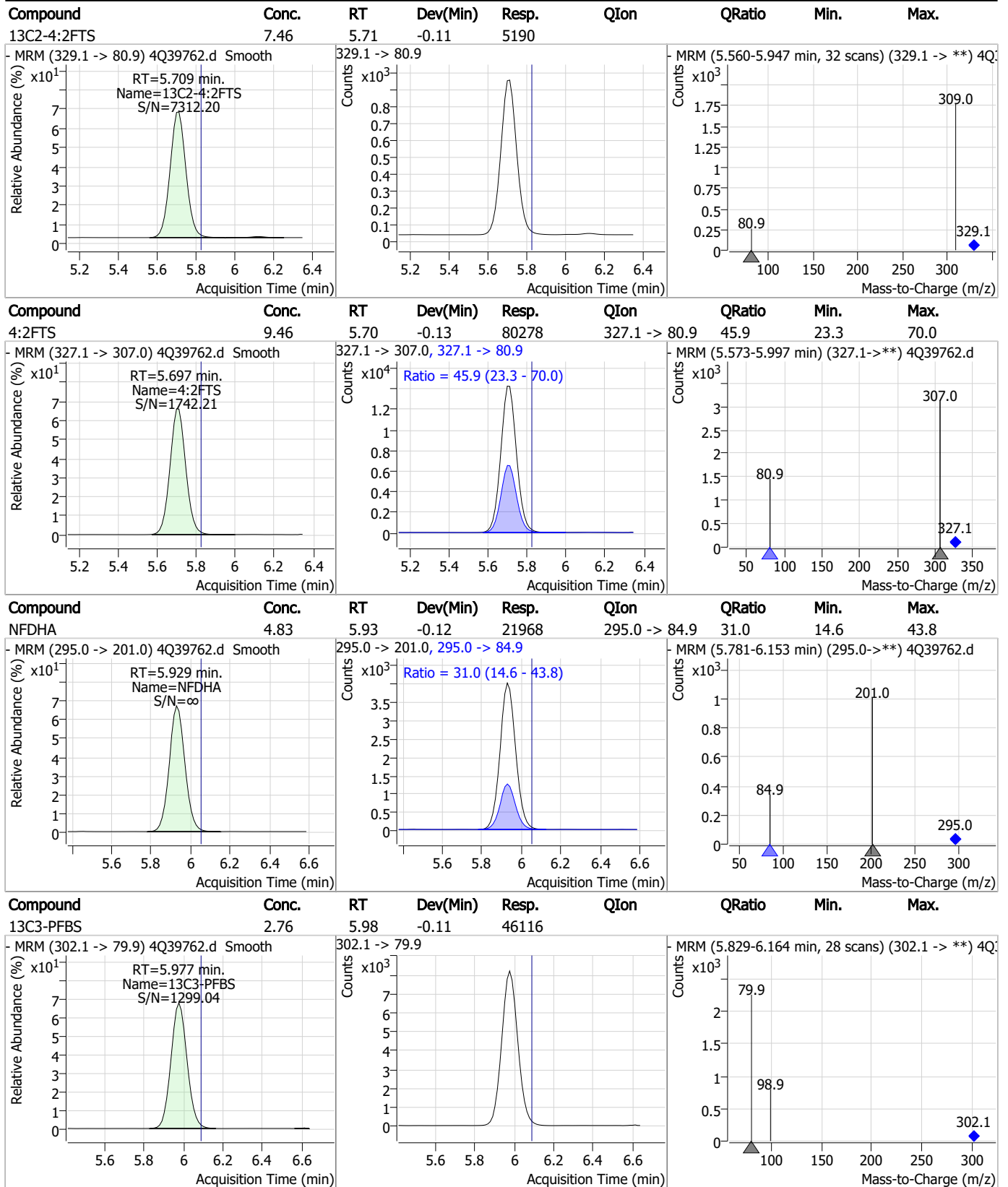
Perfluorinated Compounds by LC/MS/MS



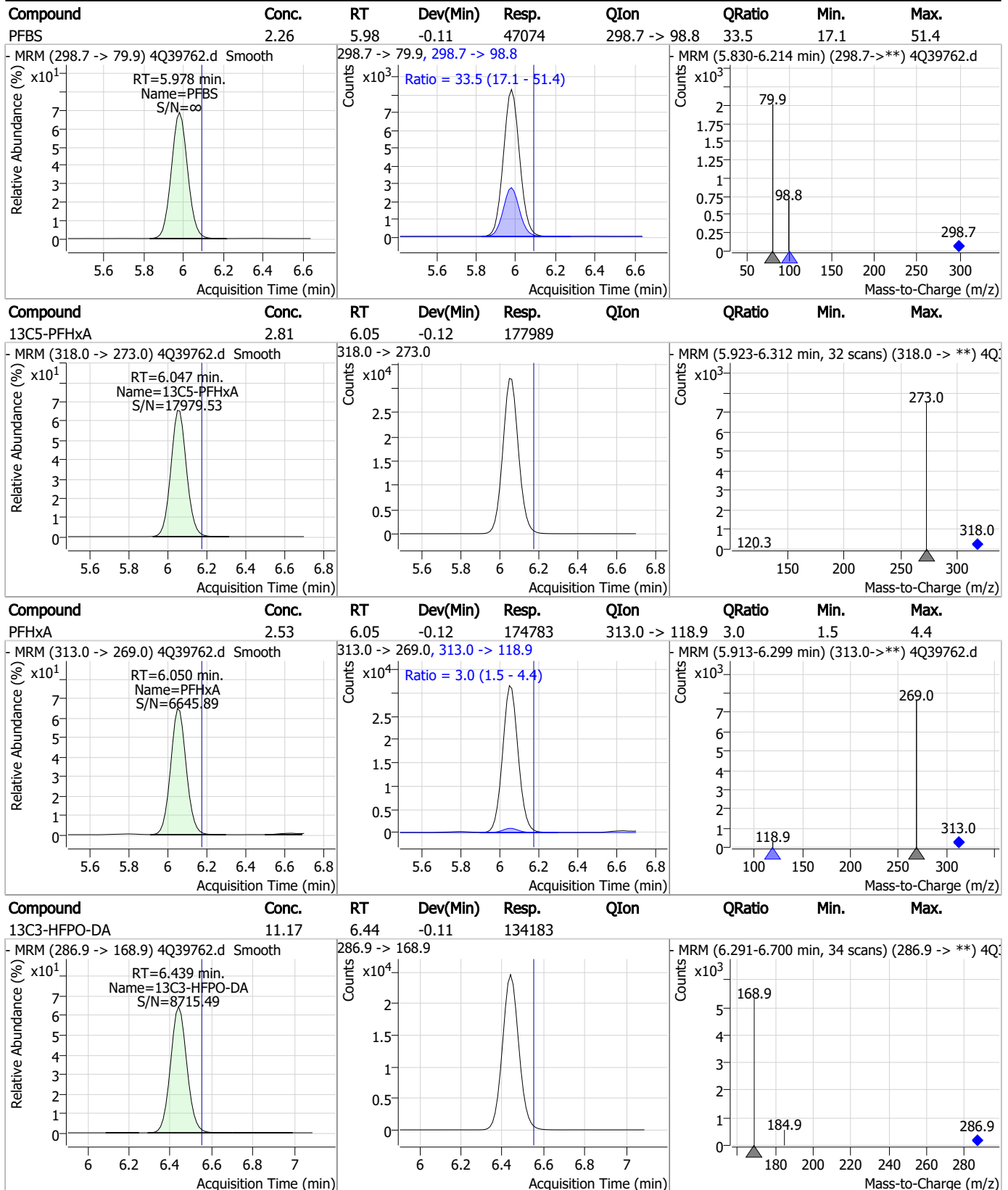
Perfluorinated Compounds by LC/MS/MS



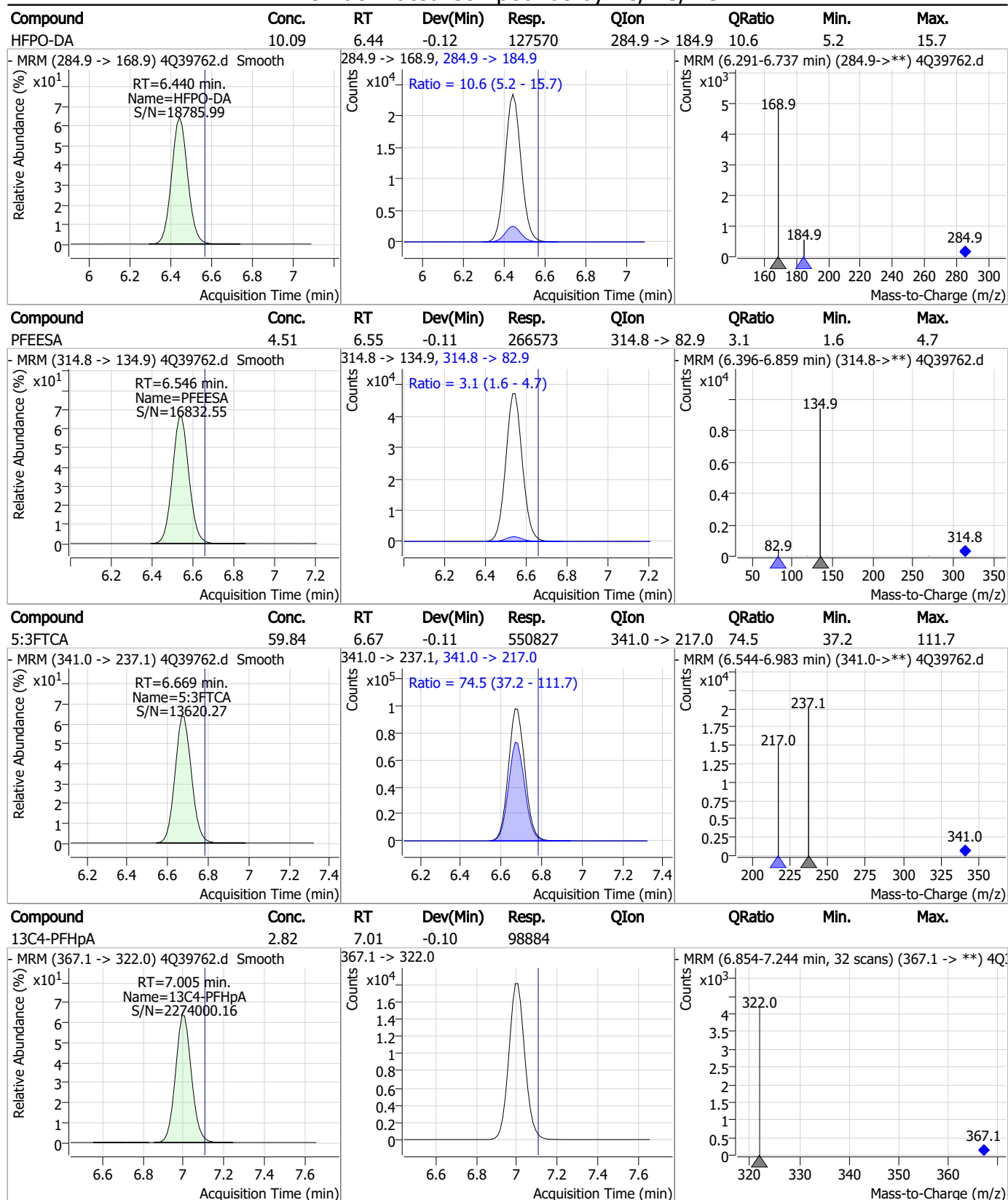
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



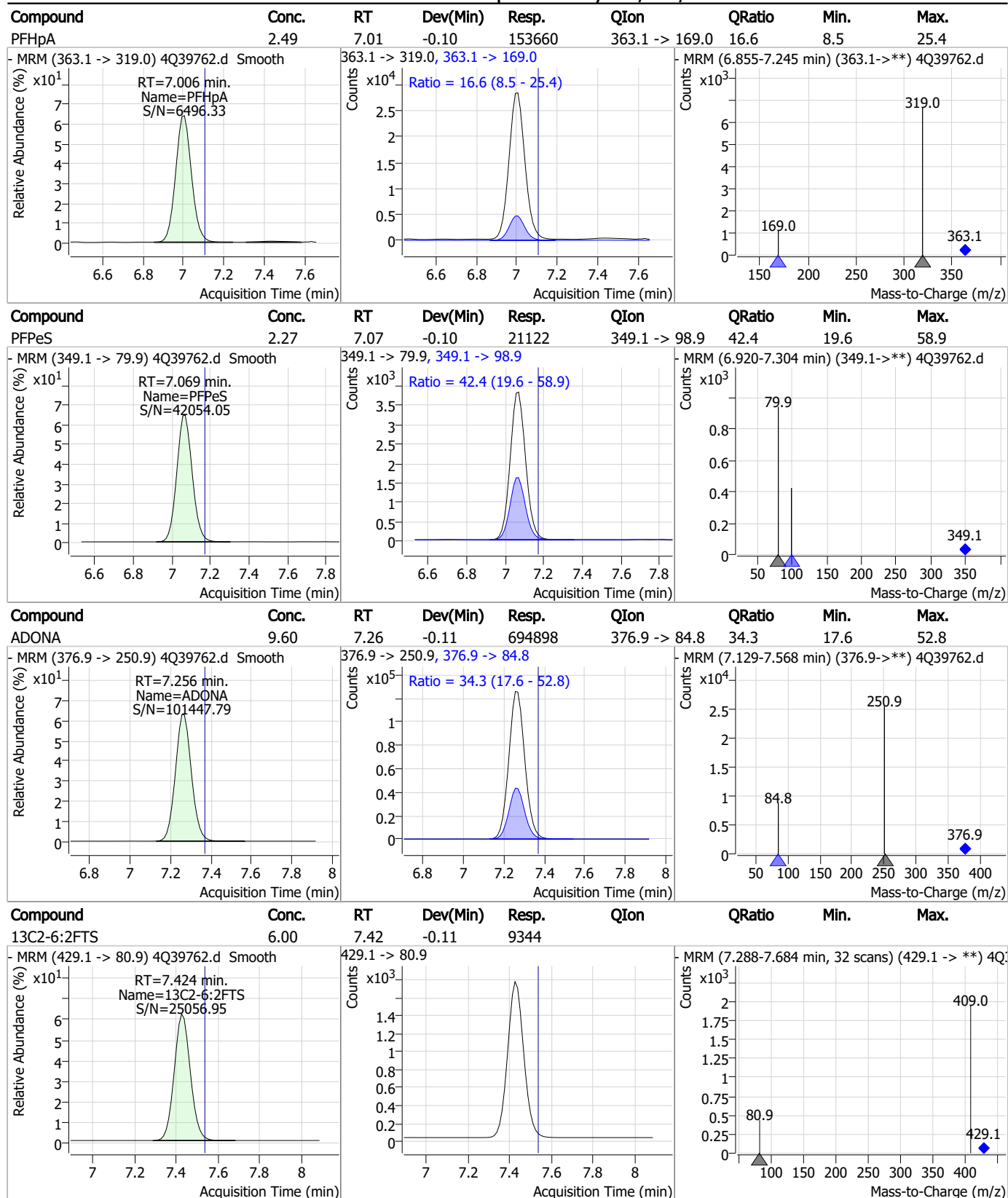
Perfluorinated Compounds by LC/MS/MS



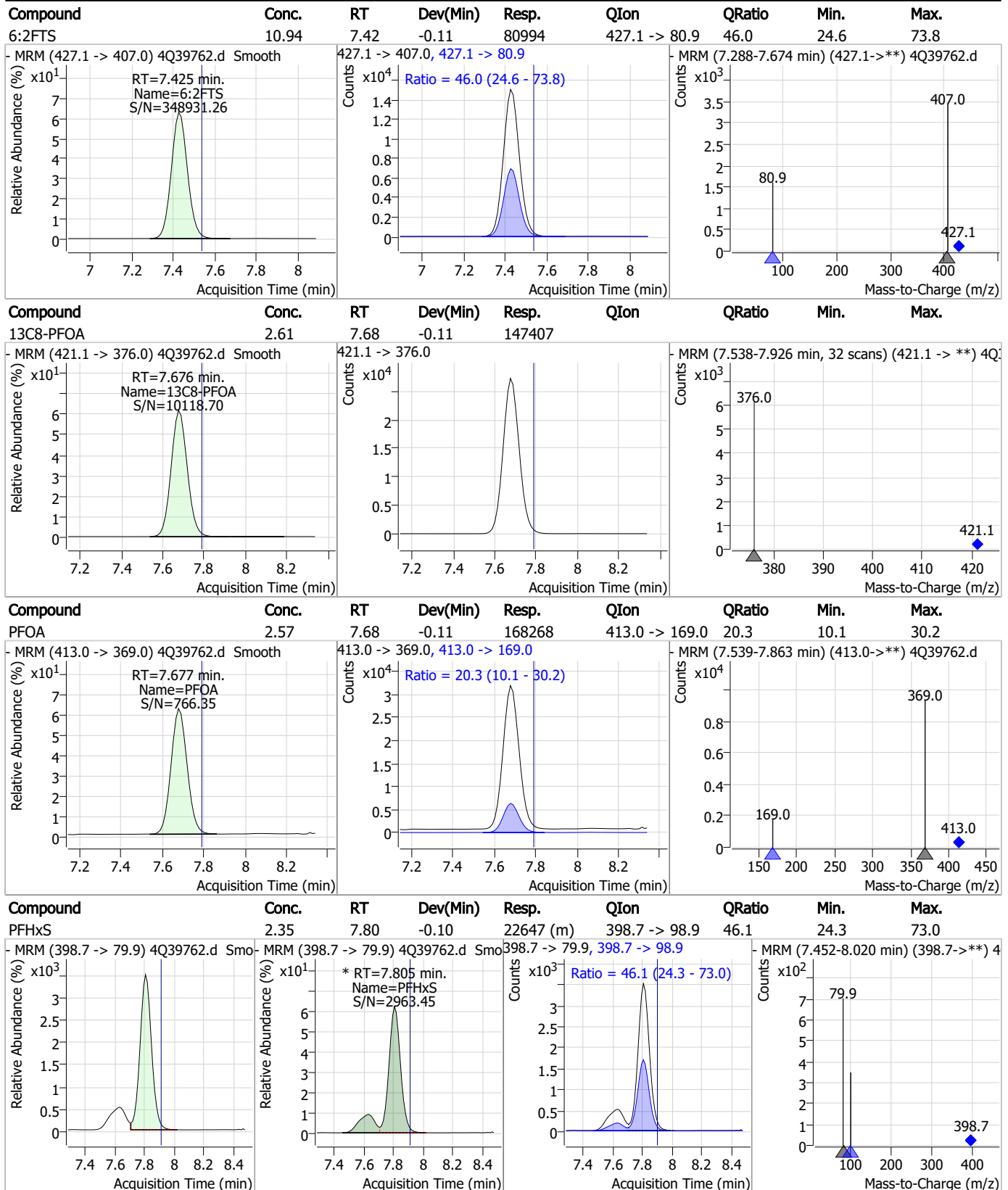
7.4.2

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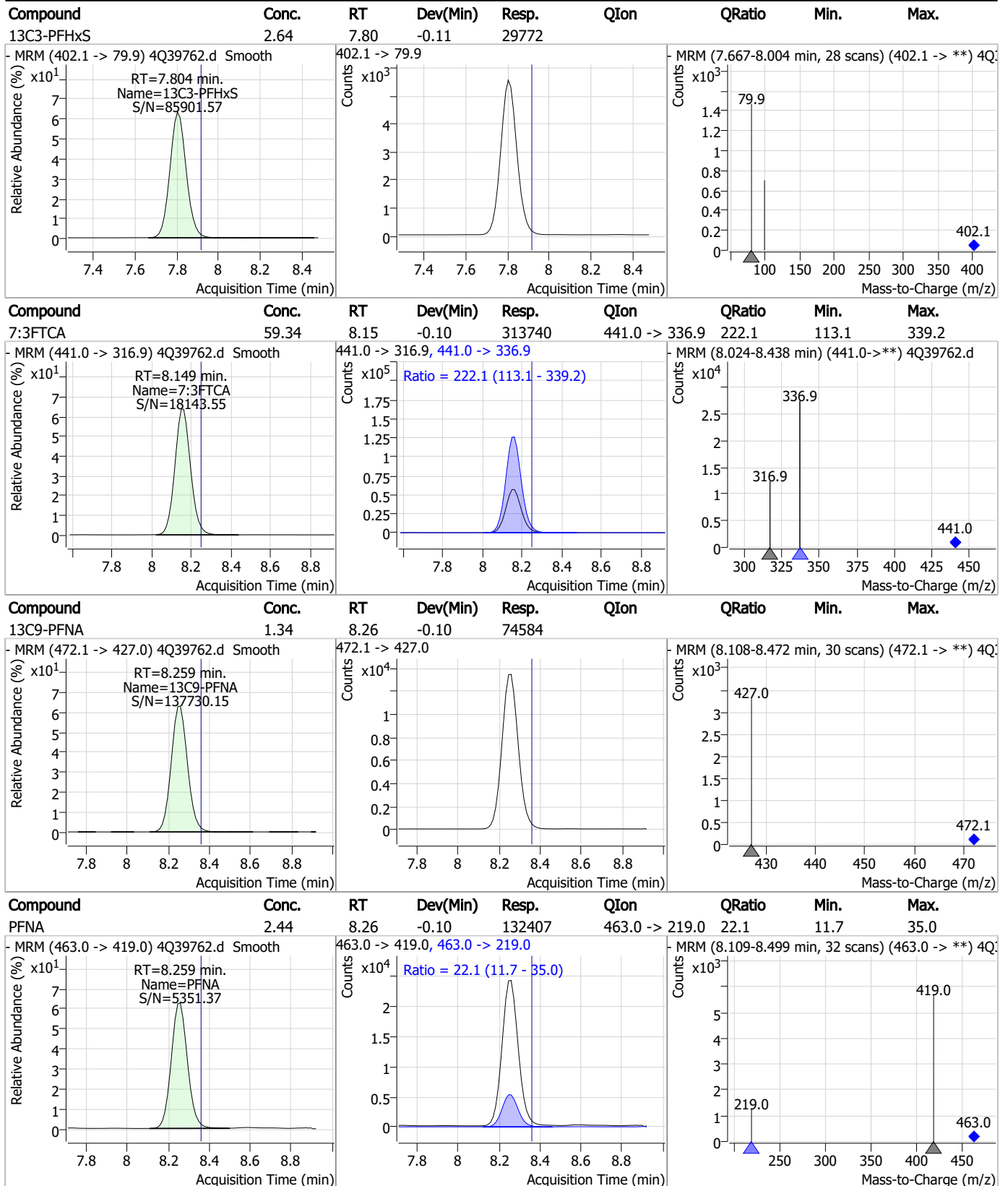
Perfluorinated Compounds by LC/MS/MS



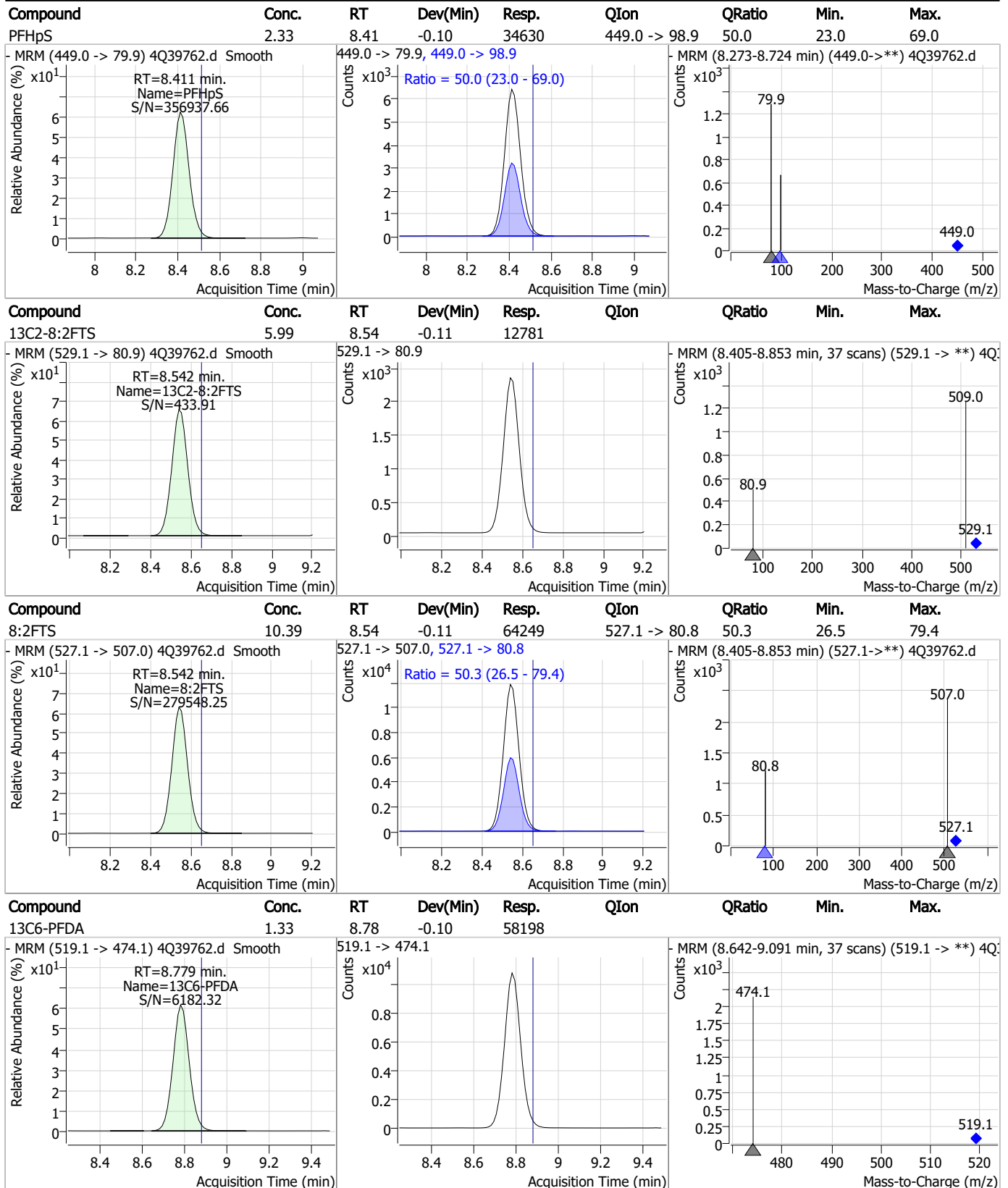
Perfluorinated Compounds by LC/MS/MS



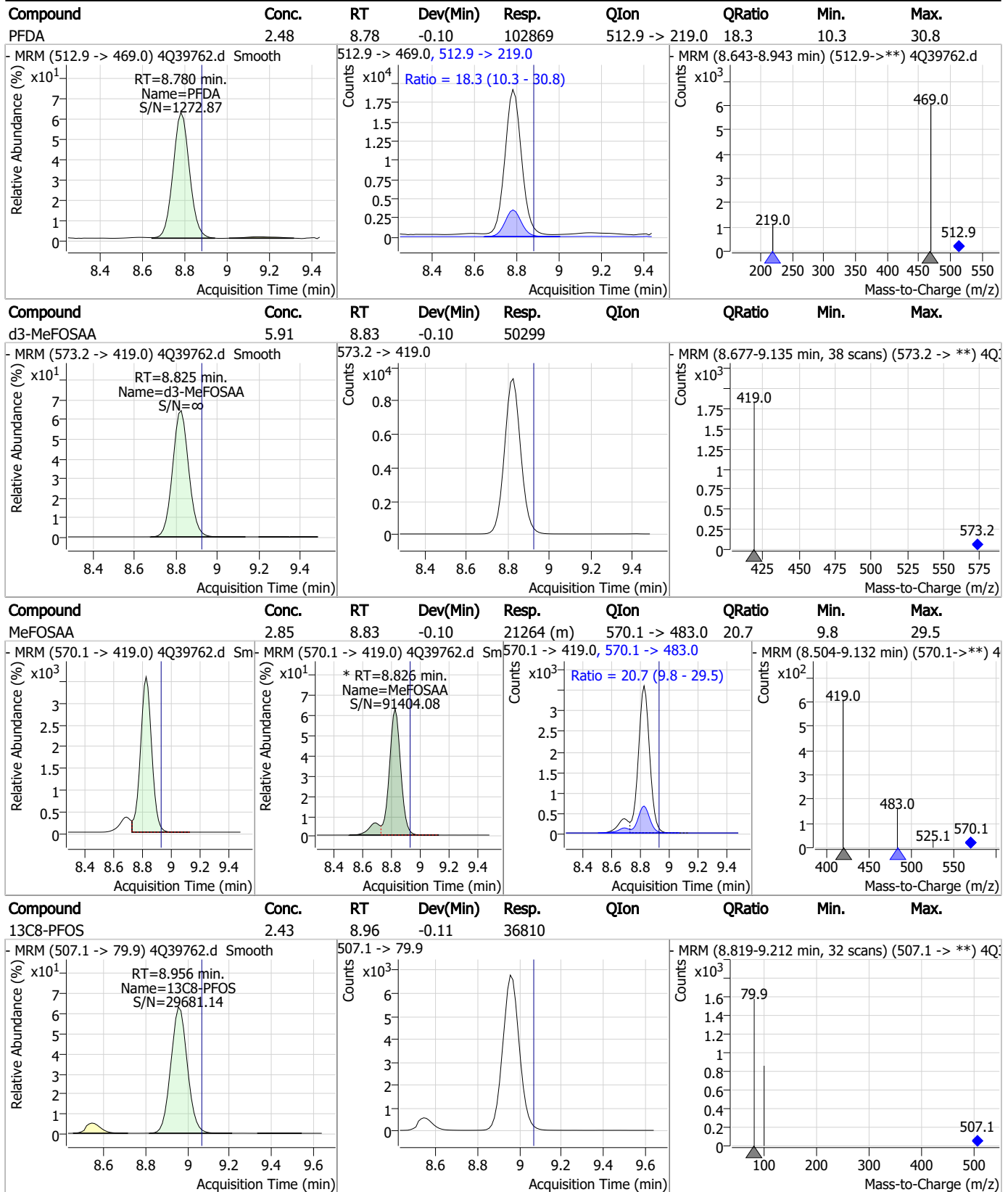
Perfluorinated Compounds by LC/MS/MS



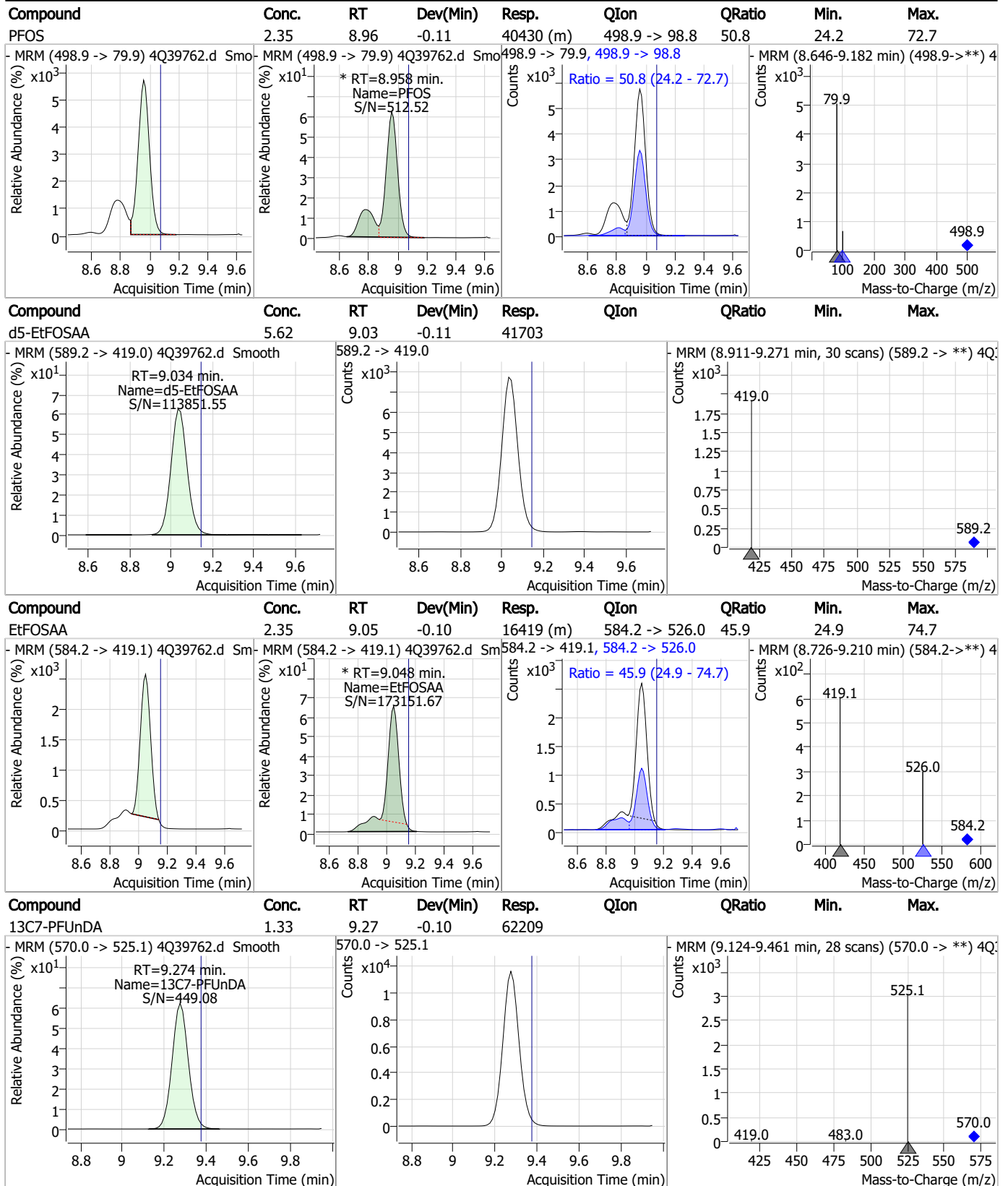
Perfluorinated Compounds by LC/MS/MS



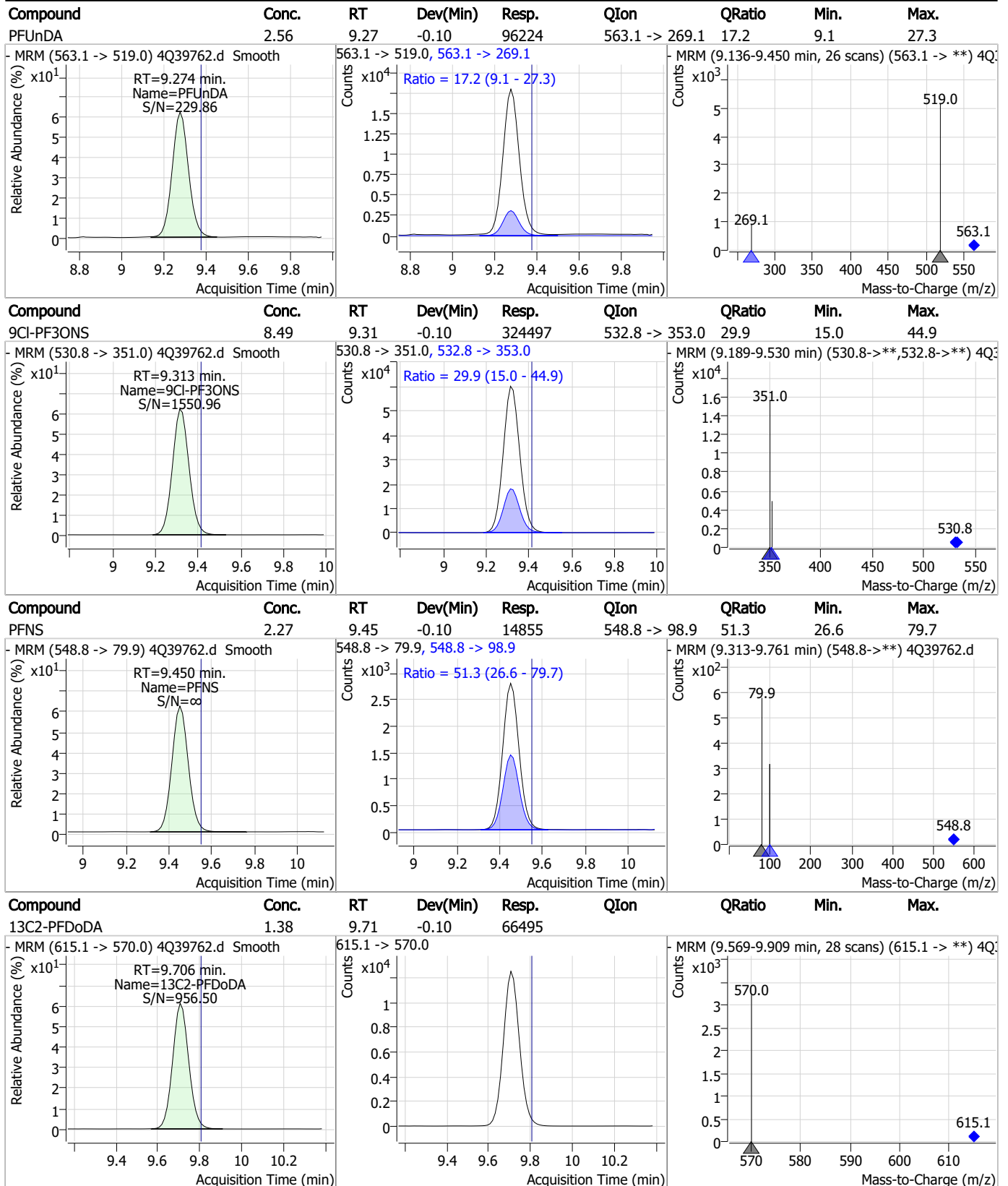
Perfluorinated Compounds by LC/MS/MS



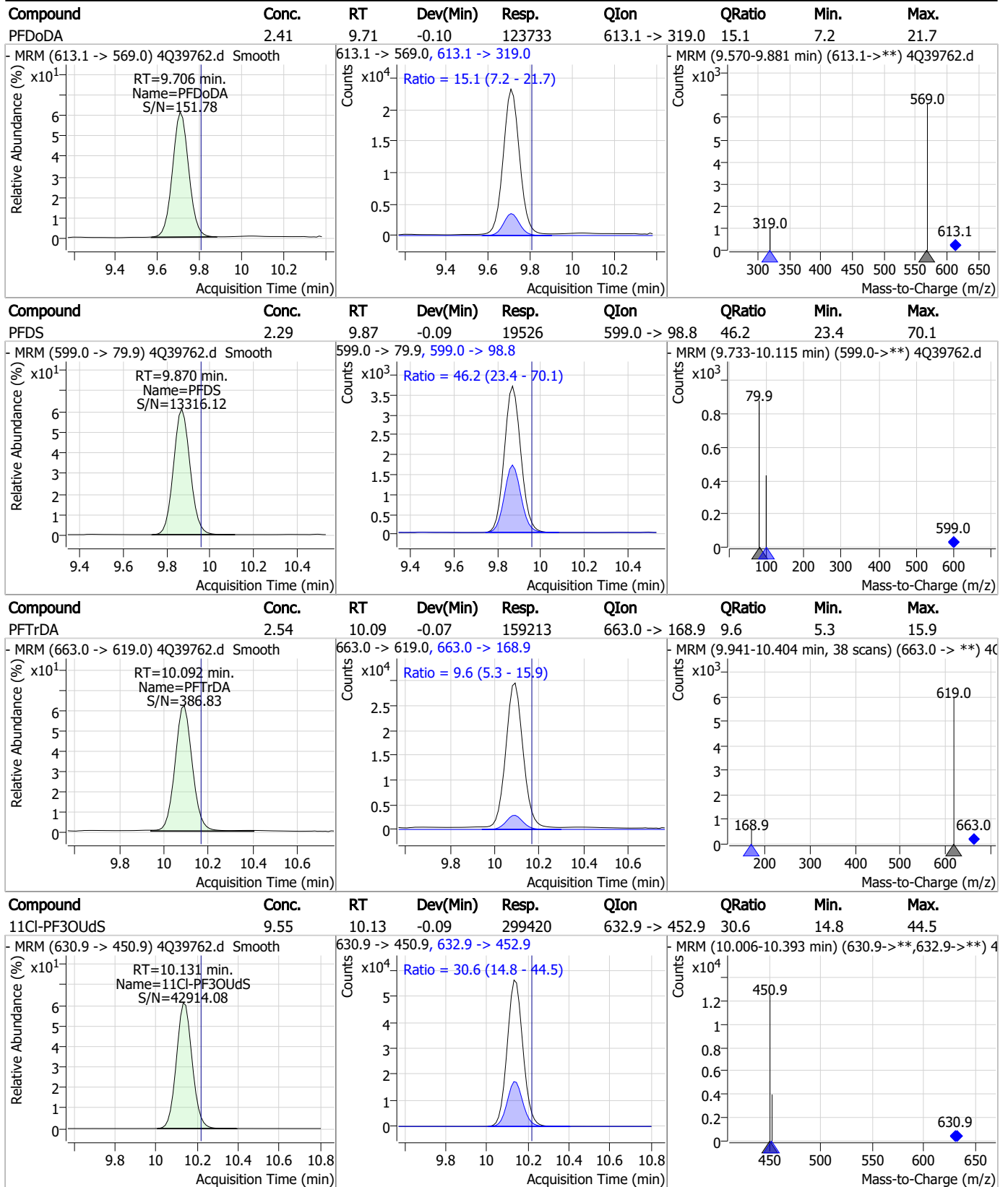
Perfluorinated Compounds by LC/MS/MS



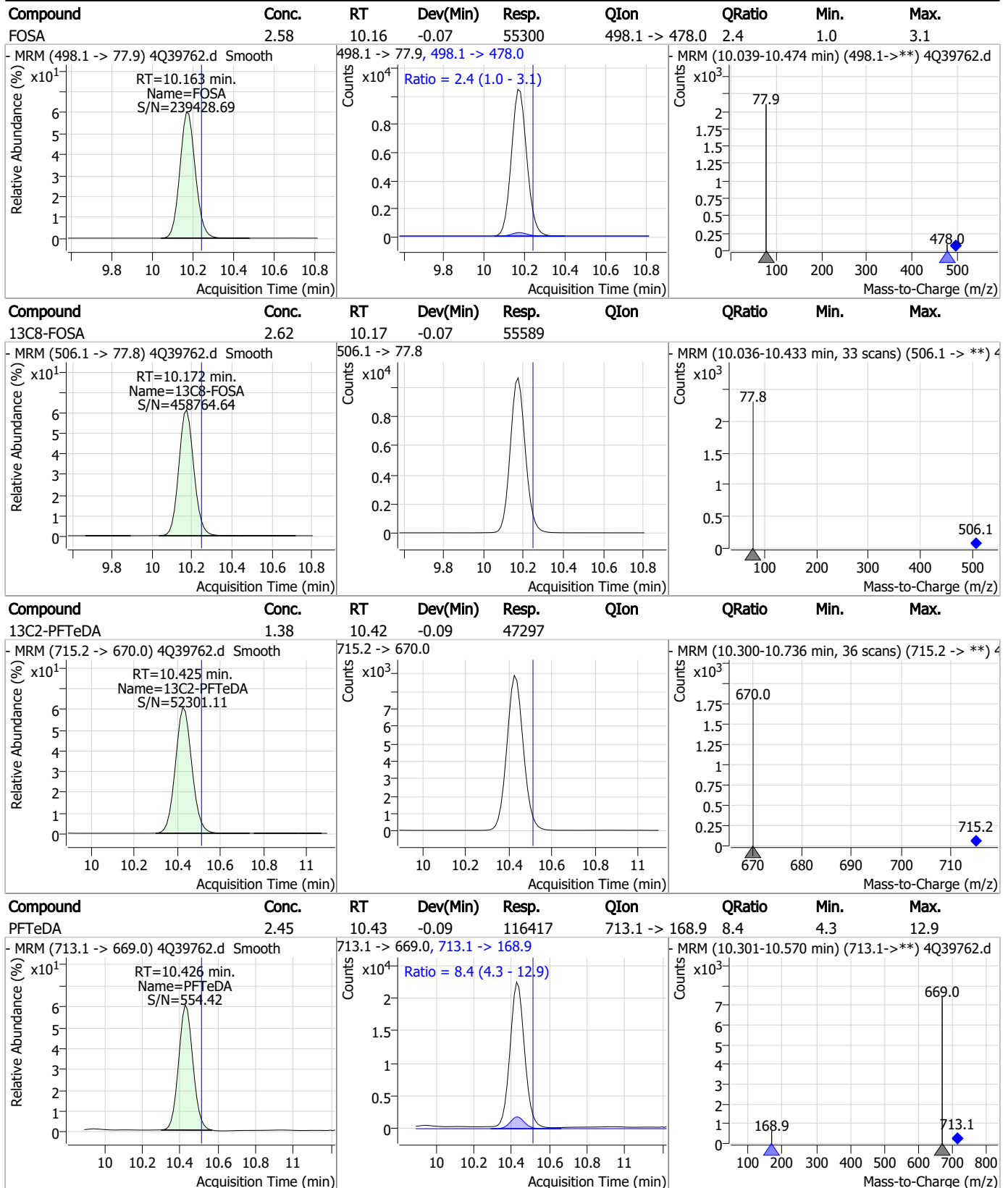
Perfluorinated Compounds by LC/MS/MS



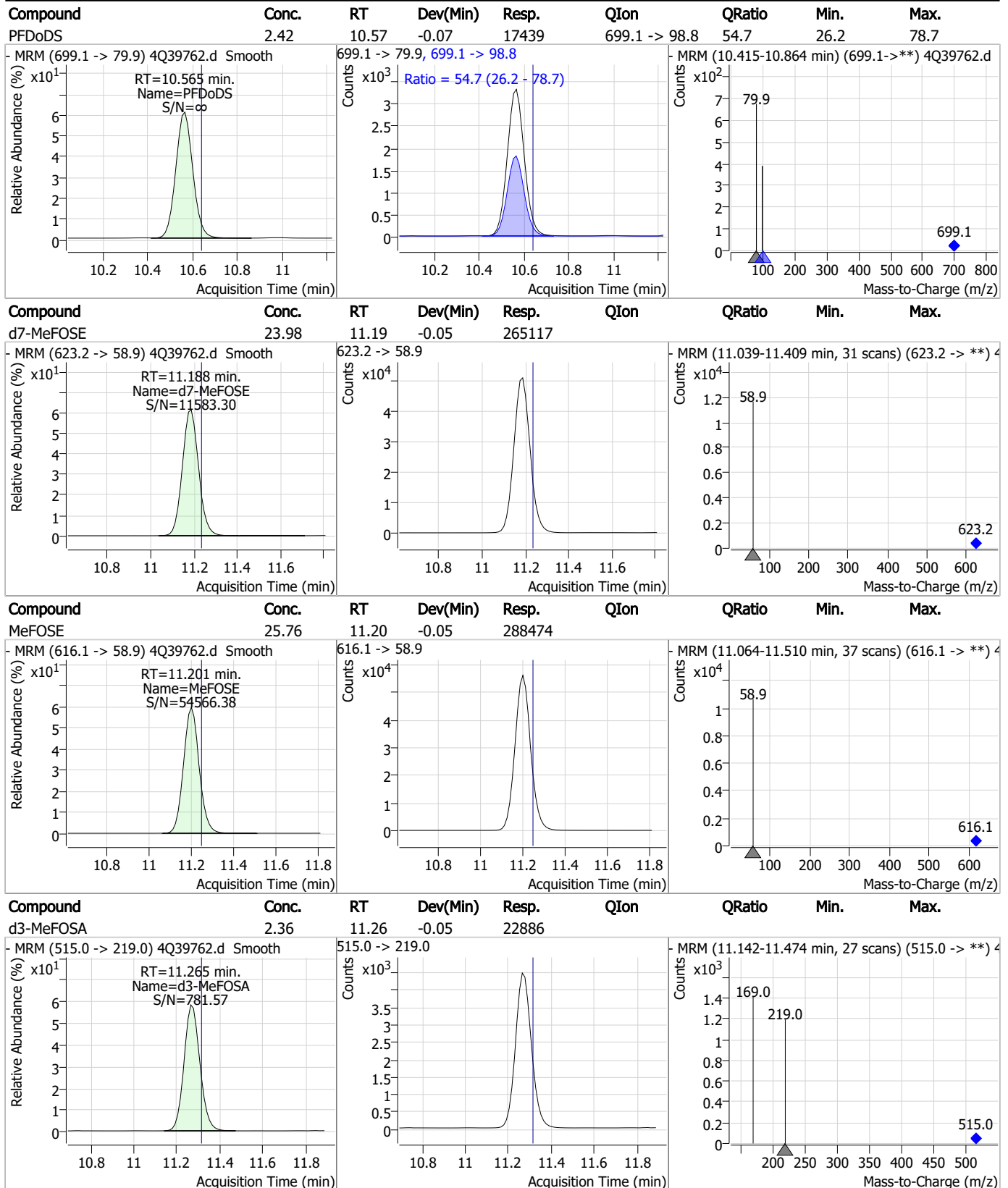
Perfluorinated Compounds by LC/MS/MS



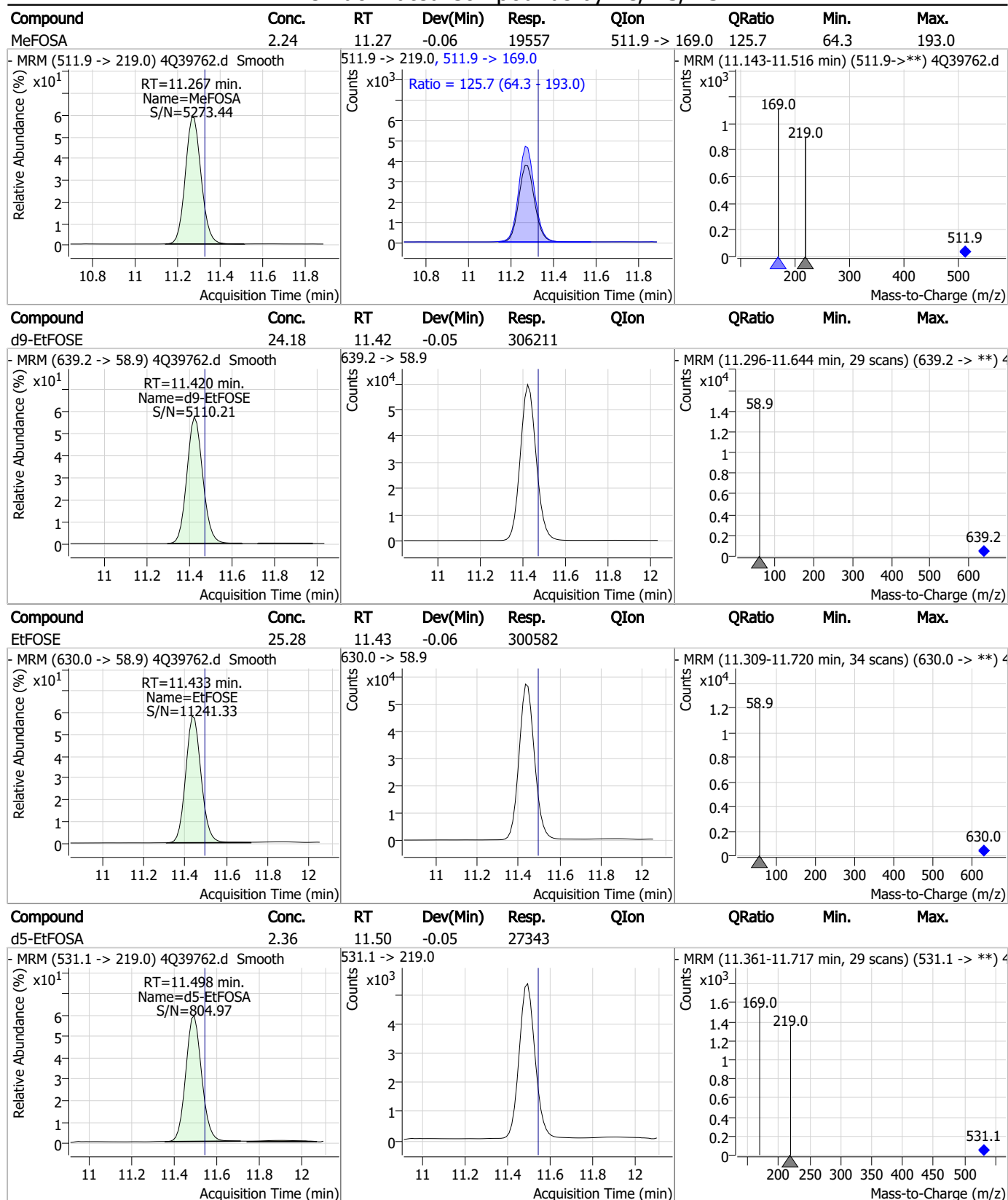
Perfluorinated Compounds by LC/MS/MS



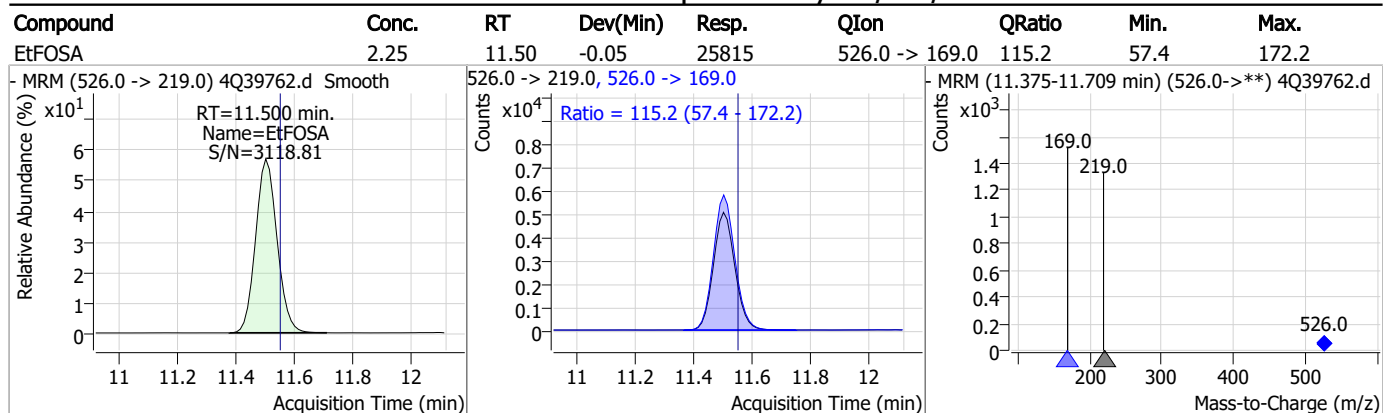
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.4.2

7

Manual Integration Approval Summary

Sample Number: OP95096-MSD

Lab FileID: 4Q39762.D

Injection Time: 01/26/23 06:16

Method: EPA DRAFT 1633

Analyst approved: 01/27/23 10:42 Natasha Guntie

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.80	Split peak
MeFOSAA	2355-31-9		8.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.96	Split peak
EtFOSAA	2991-50-6		9.05	Split peak

7.4.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39688.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 12:31:28 PM
Sample Name : RT TDCA
Vial : P1-B1
DA Method File : TDCA.quantmethod.xml
Batch Name : s4q571_TDCA.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

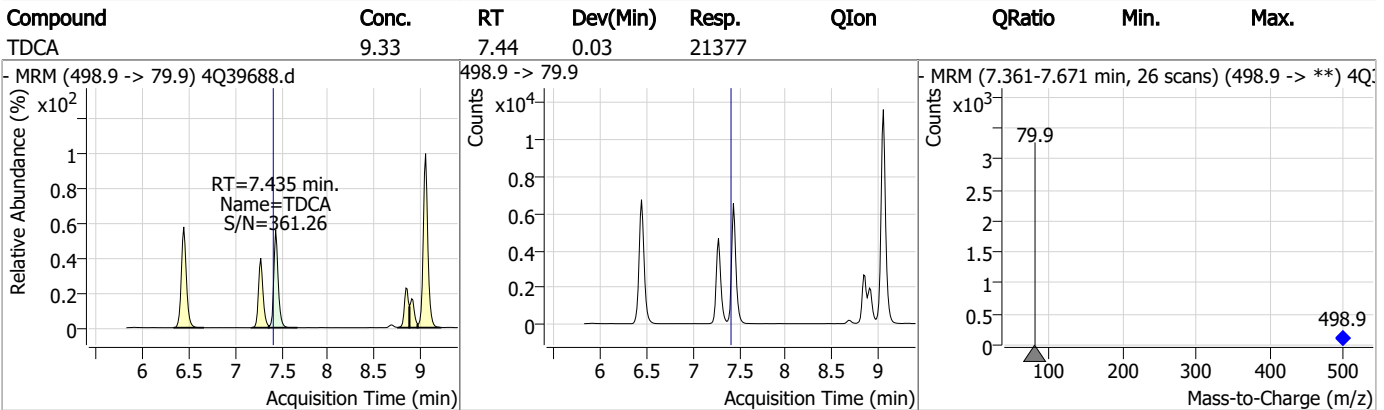
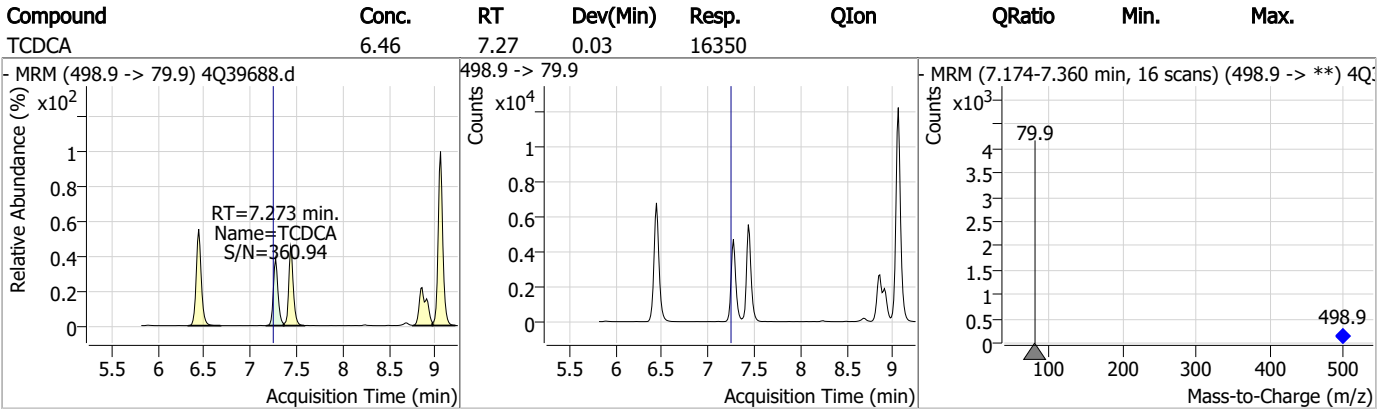
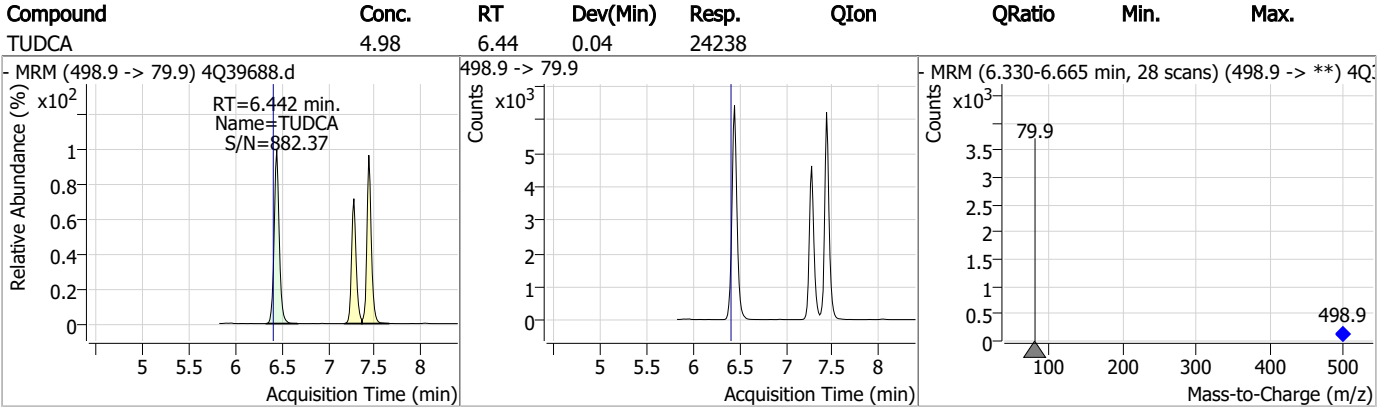
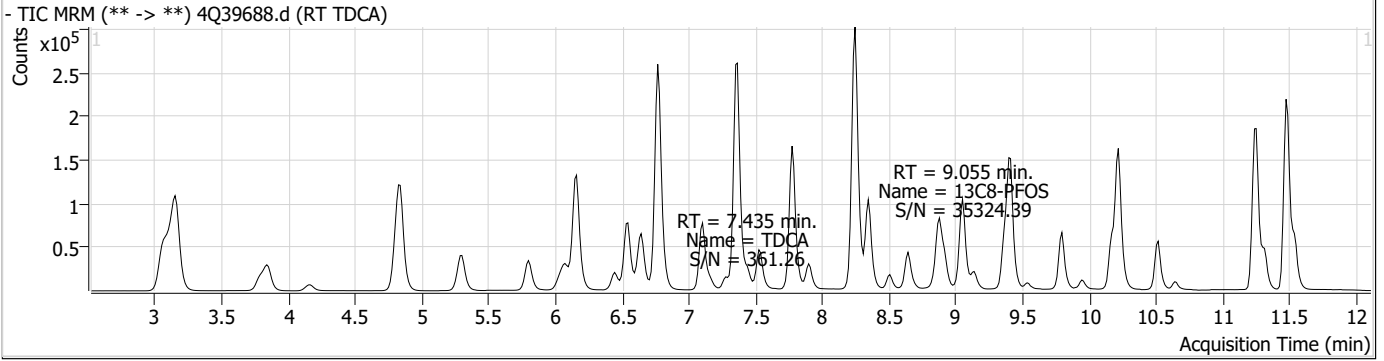
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M8-PFOS	9.055	507.1 -> 79.9	54844	2.50	µg/L	-0.024
13C4-PFOS	9.056	502.8 -> 79.9	58938	2.50	µg/L	-0.024
System Monitoring Compounds						
13C8-PFOS	9.055	507.1 -> 79.9	54844	2.36	µg/L	-0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.4%			
Target Compounds						
PFOS	9.057	498.9 -> 79.9	52290	2.79	µg/L	97
		498.9 -> 98.8	26001		m	
TCDCA	7.273	498.9 -> 79.9	16350	6.46	ng/ml	100
TDCA	7.435	498.9 -> 79.9	21377	9.33	ng/ml	100
TUDCA	6.442	498.9 -> 79.9	24238	4.98	ng/ml	100

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

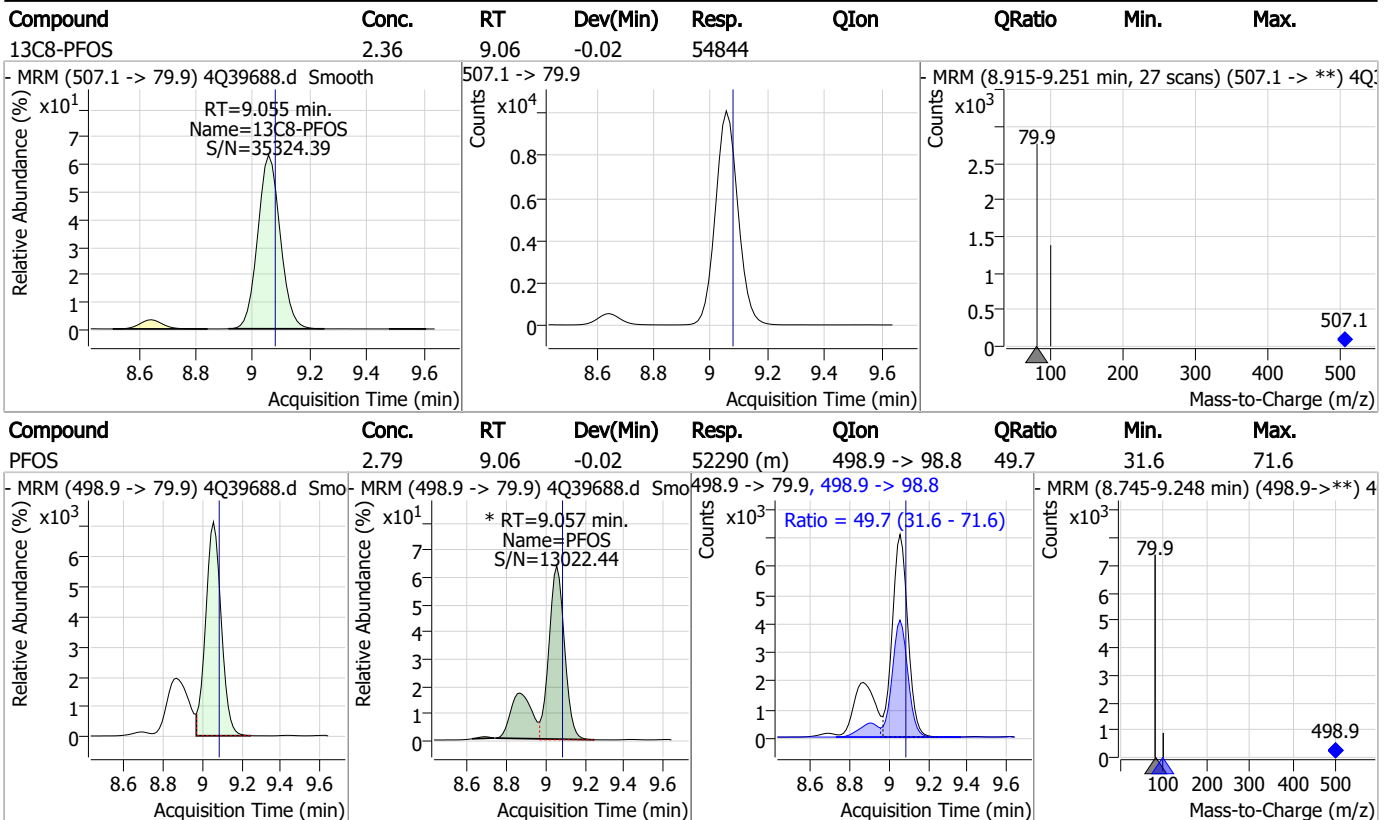
7.5.1

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Manual Integration Approval Summary

Sample Number: S4Q571-RT

Method: EPA DRAFT 1633

Lab FileID: 4Q39688.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 12:31

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39689.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 12:45:33 PM
Sample Name : RT Br-Ln
Vial : P1-B2
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.161	216.8 -> 171.9	351537	10.00 µg/L	-0.012
M5-PFPeA	4.863	268.3 -> 223.0	223819	5.00 µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	144632	2.50 µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	80772	2.50 µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	121074	2.50 µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	63288	1.25 µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	48765	1.25 µg/L	0.000
M7-PFUnDA	9.361	570.0 -> 525.1	55283	1.25 µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	53949	1.25 µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	38702	1.25 µg/L	0.000
M8-FOSA	10.235	506.1 -> 77.8	48243	2.50 µg/L	-0.012
M3-PFBS	6.089	302.1 -> 79.9	41207	2.50 µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	26873	2.50 µg/L	0.000
M8-PFOS	9.055	507.1 -> 79.9	34477	2.50 µg/L	-0.012
M2-4:2FTS	5.823	329.1 -> 80.9	3129	5.00 µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	6495	5.00 µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	8802	5.00 µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	40816	5.00 µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	106736	10.00 µg/L	0.012
M5-EtFOSAA	9.133	589.2 -> 419.0	33836	5.00 µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	249832	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	278617	25.00 µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	25509	2.50 µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	22534	2.50 µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	32711	2.50 µg/L	-0.012
13C3-PFBA	3.165	216.0 -> 172.0	189365	5.00 µg/L	-0.012
18O2-PFHxS	7.916	403.0 -> 83.9	18142	2.50 µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	138411	2.50 µg/L	0.000
13C2-PFDA	8.879	515.1 -> 470.1	46209	1.25 µg/L	0.000
13C5-PFNA	8.360	468.0 -> 423.0	71866	1.25 µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	133508	2.50 µg/L	0.000

System Monitoring Compounds

13C2-4:2FTS	5.823	329.1 -> 80.9	3129	4.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C2-6:2FTS	7.536	429.1 -> 80.9	6495	4.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.8%		
13C2-8:2FTS	8.653	529.1 -> 80.9	8802	4.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.9%		
13C2-PFDoDA	9.793	615.1 -> 570.0	53949	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C2-PFTeDA	10.512	715.2 -> 670.0	38702	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C3-PFBS	6.089	302.1 -> 79.9	41207	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C3-PFHxS	7.917	402.1 -> 79.9	26873	2.54 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound		RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50		Range: 50.0 - 150.0%		Recovery = 101.6%		
13C4-PFBA		3.161	216.8 -> 171.9	351537	10.29 µg/L	-0.012
Spiked Amount: 10.00		Range: 50.0 - 150.0%		Recovery = 102.9%		
13C4-PFHpA		7.106	367.1 -> 322.0	80772	2.59 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%		Recovery = 103.8%		
13C5-PFHxA		6.172	318.0 -> 273.0	144632	2.58 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%		Recovery = 103.0%		
13C5-PFPeA		4.863	268.3 -> 223.0	223819	5.15 µg/L	0.000
Spiked Amount: 5.00		Range: 50.0 - 150.0%		Recovery = 103.1%		
13C6-PFDA		8.879	519.1 -> 474.1	48765	1.19 µg/L	0.000
Spiked Amount: 1.25		Range: 50.0 - 150.0%		Recovery = 95.6%		
13C7-PFUnDA		9.361	570.0 -> 525.1	55283	1.26 µg/L	-0.012
Spiked Amount: 1.25		Range: 50.0 - 150.0%		Recovery = 101.0%		
13C8-FOSA		10.235	506.1 -> 77.8	48243	2.58 µg/L	-0.012
Spiked Amount: 2.50		Range: 50.0 - 150.0%		Recovery = 103.2%		
13C8-PFOA		7.788	421.1 -> 376.0	121074	2.44 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%		Recovery = 97.5%		
13C8-PFOS		9.055	507.1 -> 79.9	34477	2.58 µg/L	-0.012
Spiked Amount: 2.50		Range: 50.0 - 150.0%		Recovery = 103.2%		
13C9-PFNA		8.360	472.1 -> 427.0	63288	1.24 µg/L	0.000
Spiked Amount: 1.25		Range: 50.0 - 150.0%		Recovery = 99.1%		
d3-MeFOSAA		8.924	573.2 -> 419.0	40816	5.43 µg/L	0.000
Spiked Amount: 5.00		Range: 50.0 - 150.0%		Recovery = 108.7%		
13C3-HFPO-DA		6.564	286.9 -> 168.9	106736	10.02 µg/L	0.012
Spiked Amount: 10.00		Range: 50.0 - 150.0%		Recovery = 100.2%		
d3-MeFOSA		11.315	515.0 -> 219.0	22534	2.63 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%		Recovery = 105.4%		
d5-EtFOSAA		9.133	589.2 -> 419.0	33836	5.17 µg/L	-0.012
Spiked Amount: 5.00		Range: 50.0 - 150.0%		Recovery = 103.4%		
d7-MeFOSE		11.235	623.2 -> 58.9	249832	25.61 µg/L	0.000
Spiked Amount: 25.00		Range: 50.0 - 150.0%		Recovery = 102.4%		
d9-EtFOSE		11.470	639.2 -> 58.9	278617	24.94 µg/L	0.000
Spiked Amount: 25.00		Range: 50.0 - 150.0%		Recovery = 99.7%		
d5-EtFOSA		11.535	531.1 -> 219.0	25509	2.50 µg/L	-0.012
Spiked Amount: 2.50		Range: 50.0 - 150.0%		Recovery = 100.0%		
Target Compounds						QValue
4:2FTS		5.823	327.1 -> 307.0	261770	51.19 µg/L	99
			327.1 -> 80.9	123811		
6:2FTS		7.537	427.1 -> 407.0	291287	56.58 µg/L	100
			427.1 -> 80.9	143486		
8:2FTS		8.654	527.1 -> 507.0	255208	59.94 µg/L	100
			527.1 -> 80.8	135382		
EtFOSAA		9.147	584.2 -> 419.1	69963	12.35 µg/L	76
			584.2 -> 526.0	23146		
FOSA		10.238	498.1 -> 77.9	531101	28.51 µg/L	99
			498.1 -> 478.0	8626		
MeFOSAA		8.925	570.1 -> 419.0	85781	14.18 µg/L	91
			570.1 -> 483.0	13203		
PFBA		3.170	212.8 -> 168.9	562202	57.47 µg/L	100
PFBS		6.090	298.7 -> 79.9	222477	11.95 µg/L	100
			298.7 -> 98.8	76651		
PFDA		8.879	512.9 -> 469.0	524799	15.09 µg/L	99
			512.9 -> 219.0	105328		
PFDODA		9.794	613.1 -> 569.0	600393	14.44 µg/L	99
			613.1 -> 319.0	89262		
PFDS		9.945	599.0 -> 79.9	108754	13.62 µg/L	100
SGS Orlando	4Q39689.d	Page 2 of 21			Generated at 12:17 PM on 1/26/2023	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	7.106	599.0 -> 98.8	50769	14.51 µg/L	100
		363.1 -> 319.0	730328		
PFHpS	8.526	363.1 -> 169.0	123628	13.70 µg/L	95
		449.0 -> 79.9	190984		
PFHxA	6.175	449.0 -> 98.9	94018	14.10 µg/L	99
		313.0 -> 269.0	792969		
PFHxS	7.917	313.0 -> 118.9	24423	10.88 µg/L	97
		398.7 -> 79.9	94492		
PFNA	8.360	398.7 -> 98.9	48124	14.49 µg/L	98
		463.0 -> 419.0	666769		
PFNS	9.536	463.0 -> 219.0	160320	13.70 µg/L	95
		548.8 -> 79.9	84063		
PFOA	7.790	548.8 -> 98.9	41672	30.82 µg/L	99
		413.0 -> 369.0	1659129		
PFOS	9.057	413.0 -> 169.0	339886	10.12 µg/L	88
		498.9 -> 79.9	162920		
PFPeA	4.866	498.9 -> 98.8	92099	28.36 µg/L	100
		263.0 -> 219.0	1392402		
PFPeS	7.171	349.1 -> 79.9	110471	13.18 µg/L	99
		349.1 -> 98.9	43832		
PFTeDA	10.513	713.1 -> 669.0	571289	14.67 µg/L	100
		713.1 -> 168.9	49392		
PFTrDA	10.167	663.0 -> 619.0	738279	14.50 µg/L	100
		663.0 -> 168.9	77087		
PFUnDA	9.361	563.1 -> 519.0	465411	13.91 µg/L	98
		563.1 -> 269.1	88022		
11CI-PF3OUdS	10.218	630.9 -> 450.9	1463803	58.67 µg/L	99
		632.9 -> 452.9	442456		
9CI-PF3ONS	9.413	530.8 -> 351.0	1829683	60.18 µg/L	99
		532.8 -> 353.0	557250		
ADONA	7.369	376.9 -> 250.9	3171915	55.09 µg/L	99
		376.9 -> 84.8	1129849		
HFPO-DA	6.565	284.9 -> 168.9	594778	59.12 µg/L	99
		284.9 -> 184.9	65013		
3:3FTCA	4.192	241.0 -> 177.0	163731	71.15 µg/L	97
		241.0 -> 117.0	14040		
5:3FTCA	6.783	341.0 -> 237.1	2592860	346.62 µg/L	99
		341.0 -> 217.0	1948897		
7:3FTCA	8.249	441.0 -> 316.9	1588027	369.65 µg/L	99
		441.0 -> 336.9	3603935		
EtFOSA	11.550	526.0 -> 219.0	396091	36.97 µg/L	85
		526.0 -> 169.0	520533		
EtFOSE	11.483	630.0 -> 58.9	1710898	158.15 µg/L	100
MeFOSA	11.316	511.9 -> 219.0	262506	30.58 µg/L	72
		511.9 -> 169.0	424035		
MeFOSE	11.248	616.1 -> 58.9	1638561	155.24 µg/L	100
PFDoDS	10.639	699.1 -> 79.9	93427	13.86 µg/L	99
		699.1 -> 98.8	49599		
NFDHA	6.053	295.0 -> 201.0	113717	30.77 µg/L	98
		295.0 -> 84.9	32175		
PFMBA	5.328	279.0 -> 85.1	873955	28.56 µg/L	100
PFMPA	3.869	229.0 -> 84.9	917336	29.06 µg/L	100
PFEESA	6.660	314.8 -> 134.9	1216861	25.31 µg/L	100
		314.8 -> 82.9	38674		

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

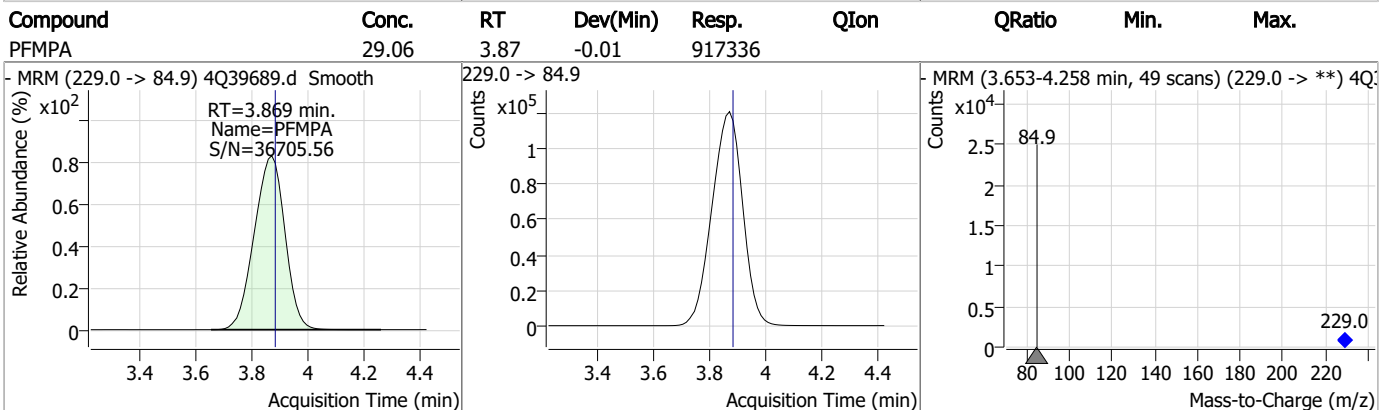
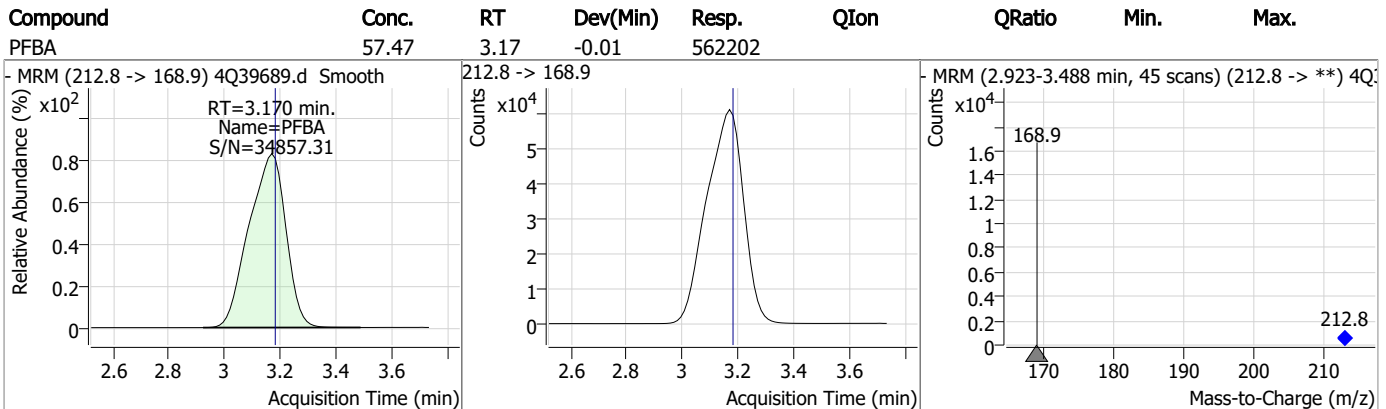
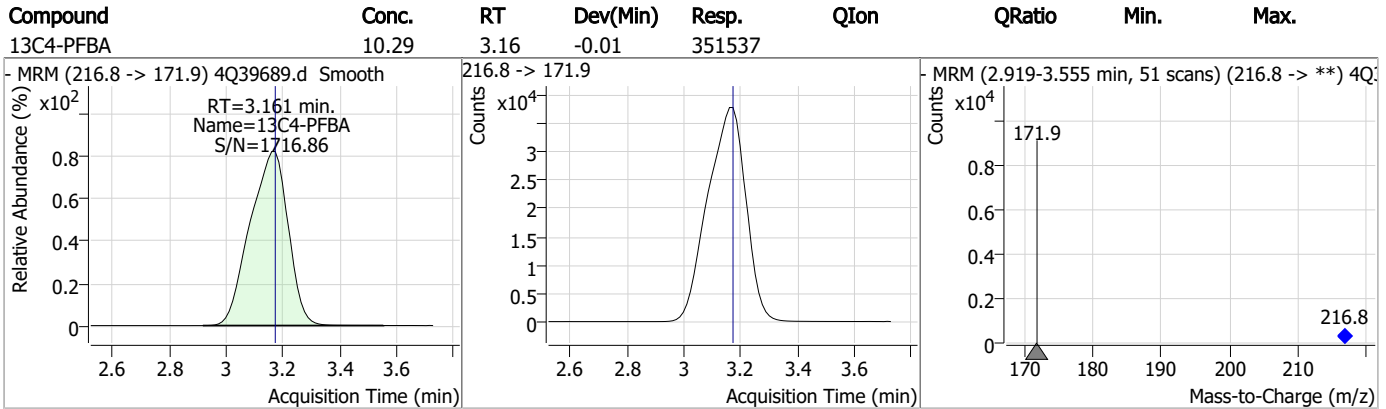
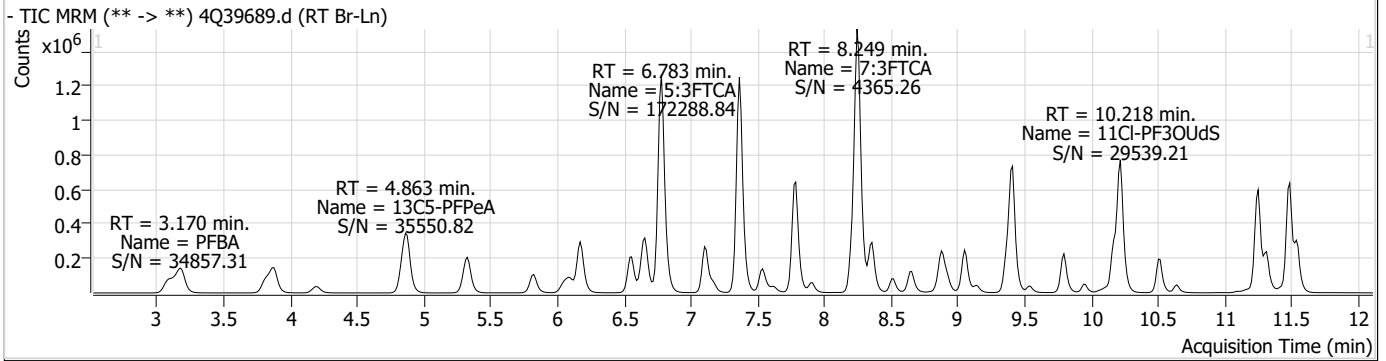
Perfluorinated Compounds by LC/MS/MS

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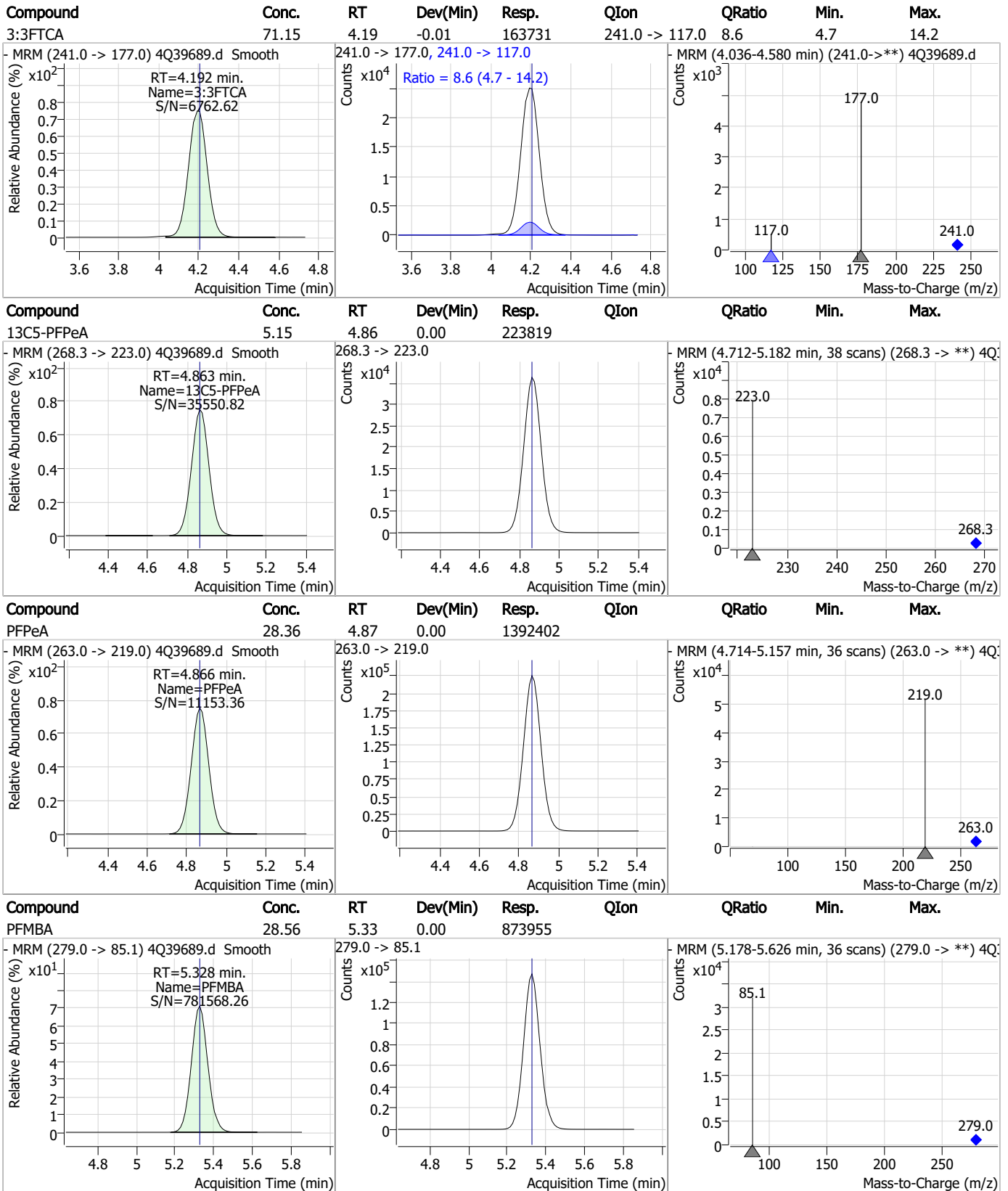
7.5.2

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Perfluorinated Compounds by LC/MS/MS



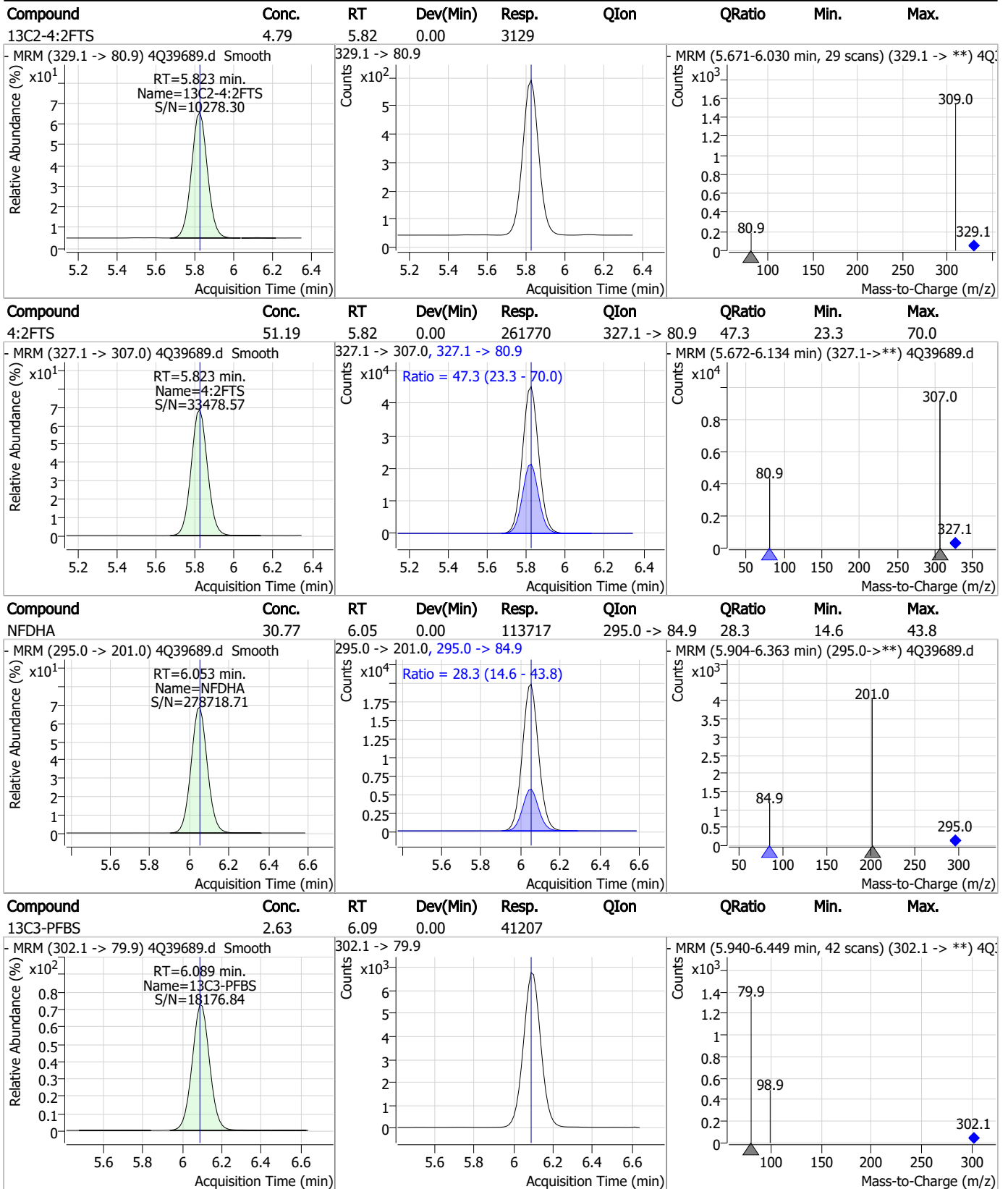
Perfluorinated Compounds by LC/MS/MS



7.5.2

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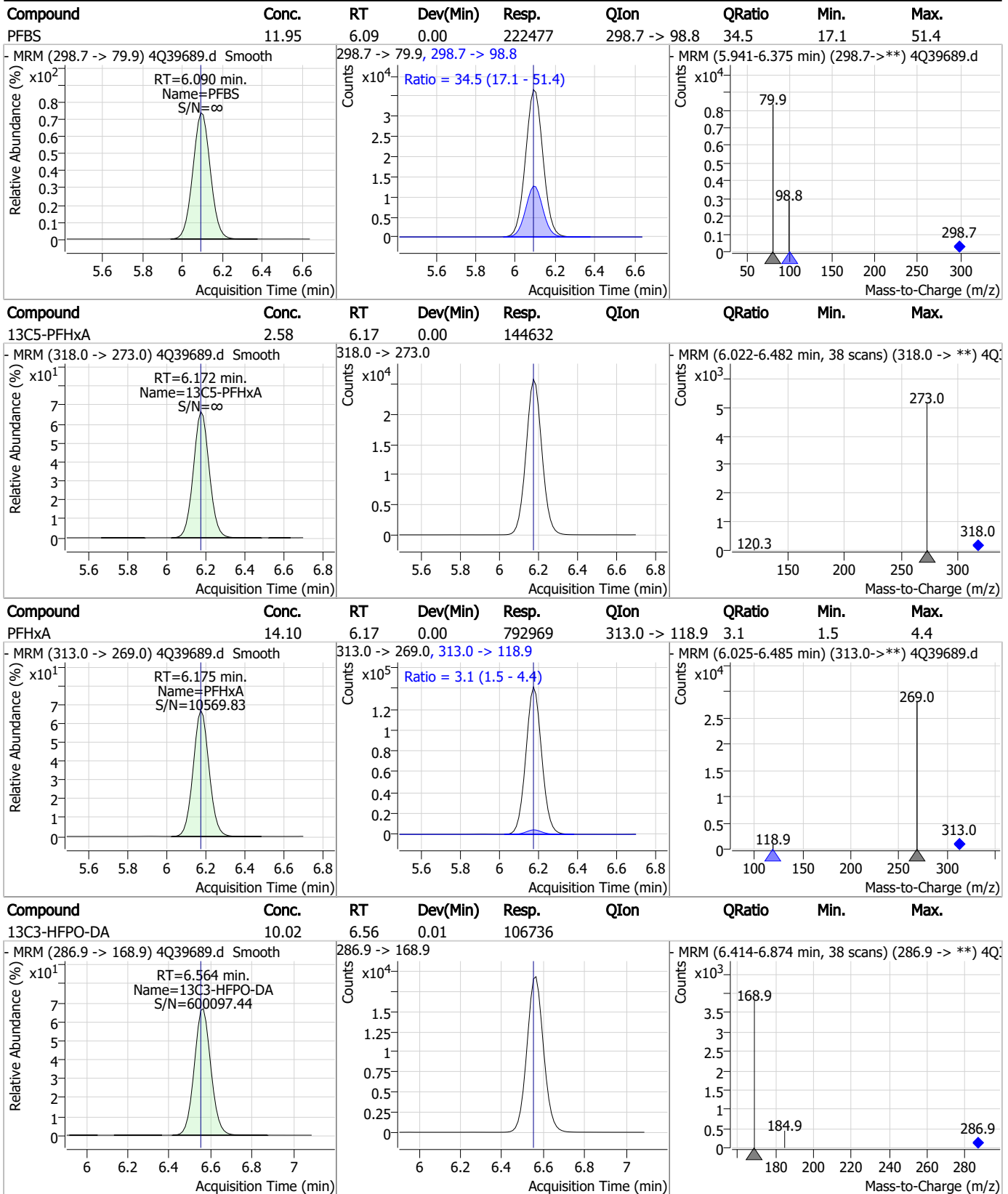
Perfluorinated Compounds by LC/MS/MS



7.5.2

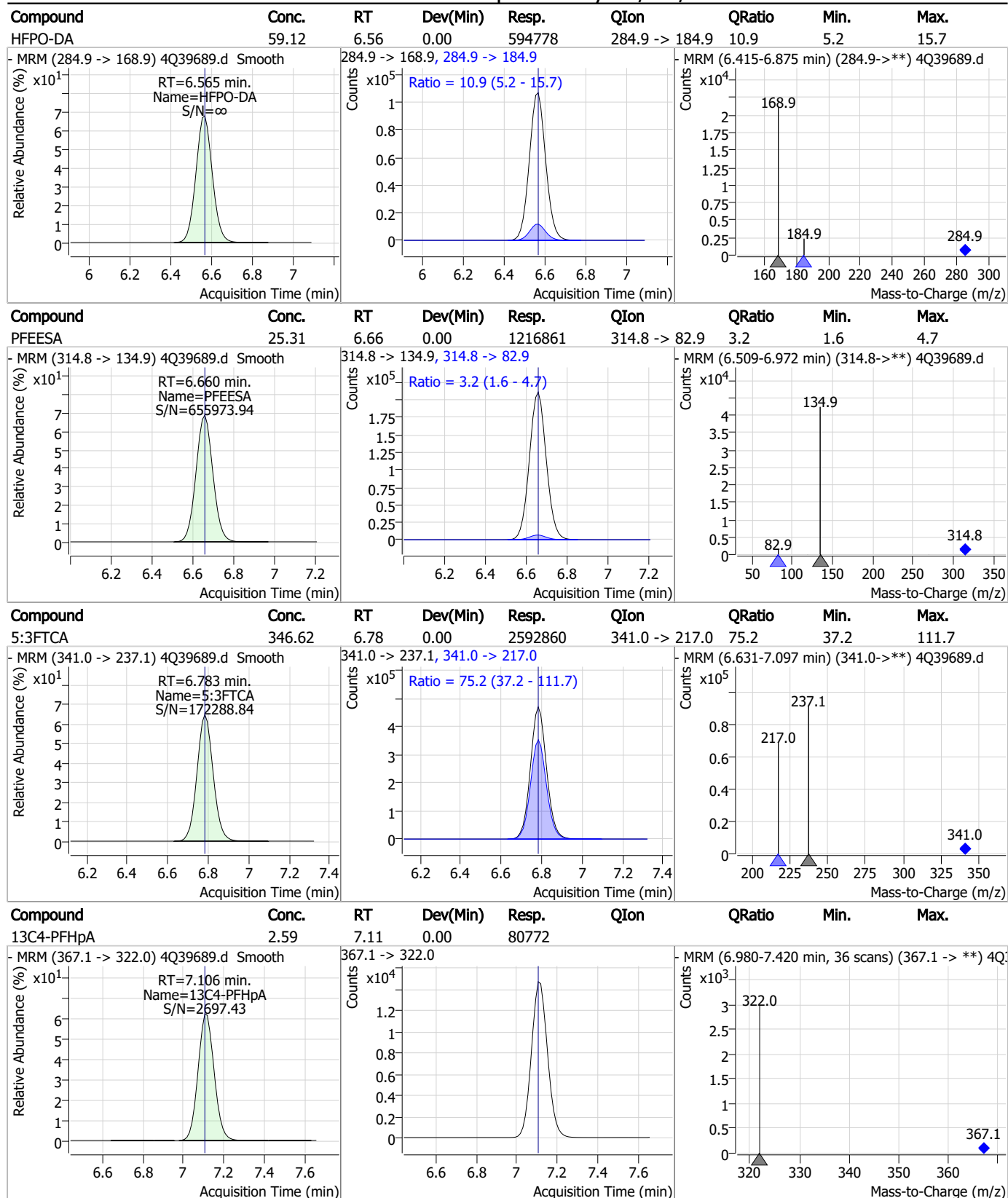
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Perfluorinated Compounds by LC/MS/MS

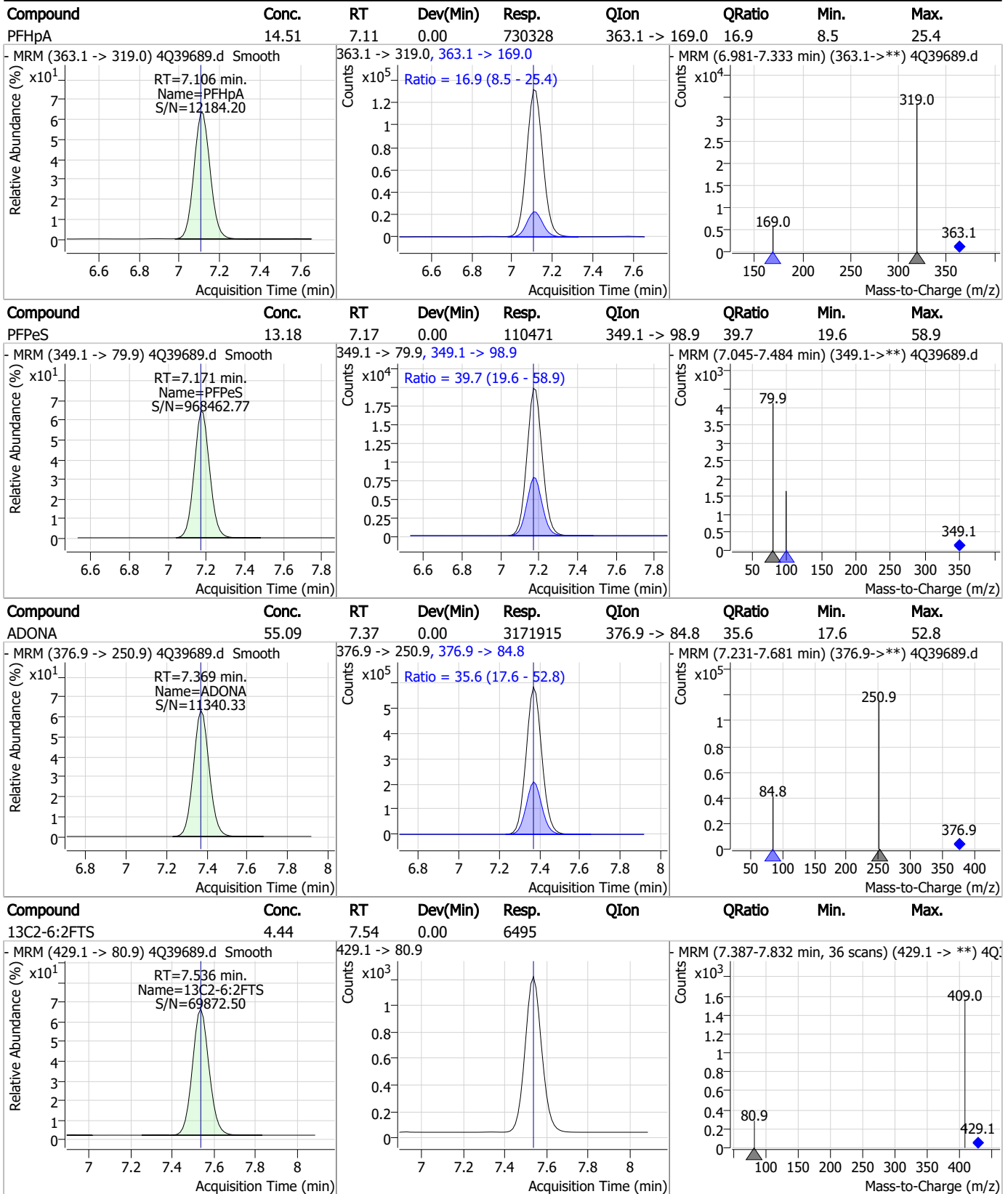


7.5.2
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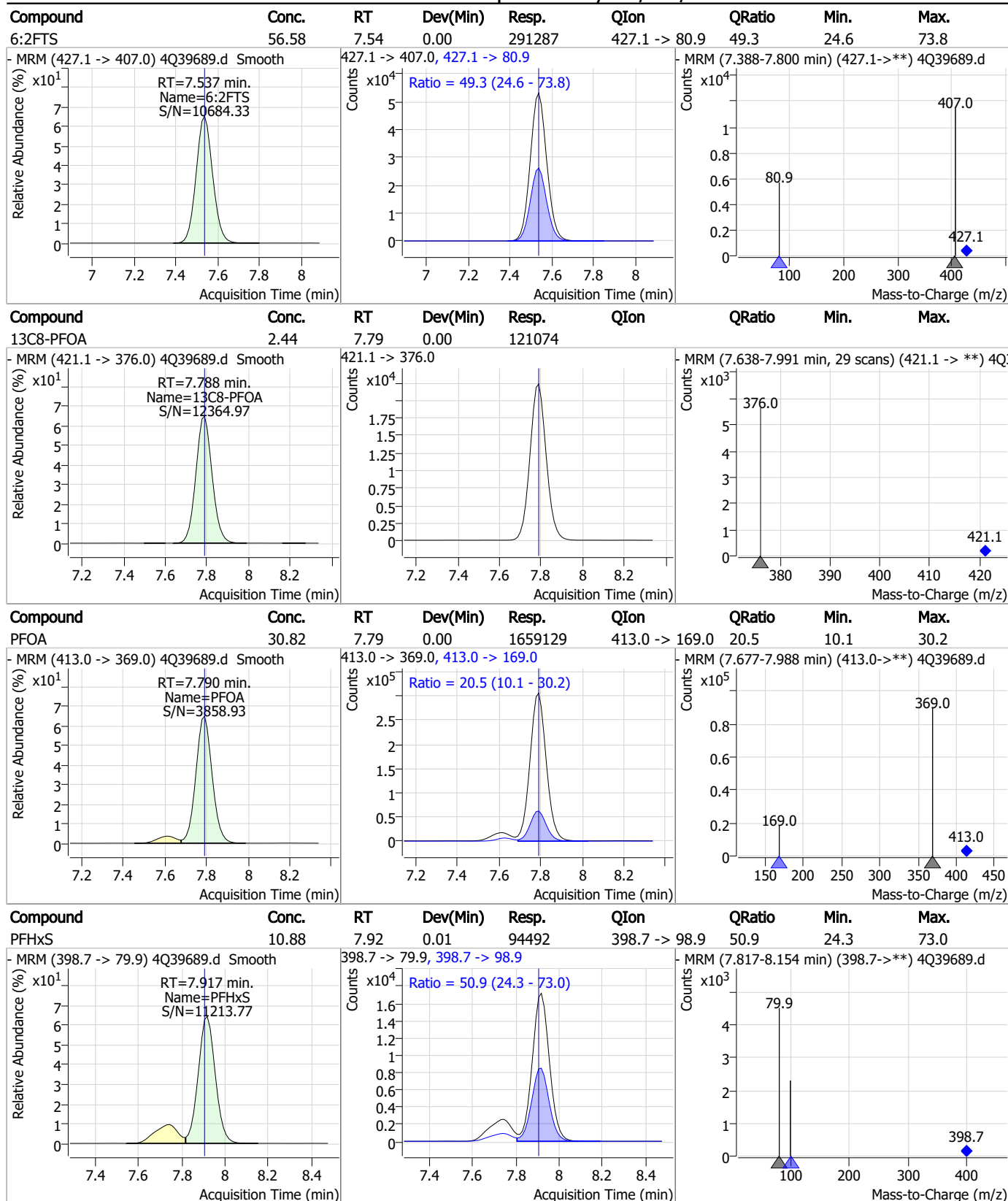
Perfluorinated Compounds by LC/MS/MS



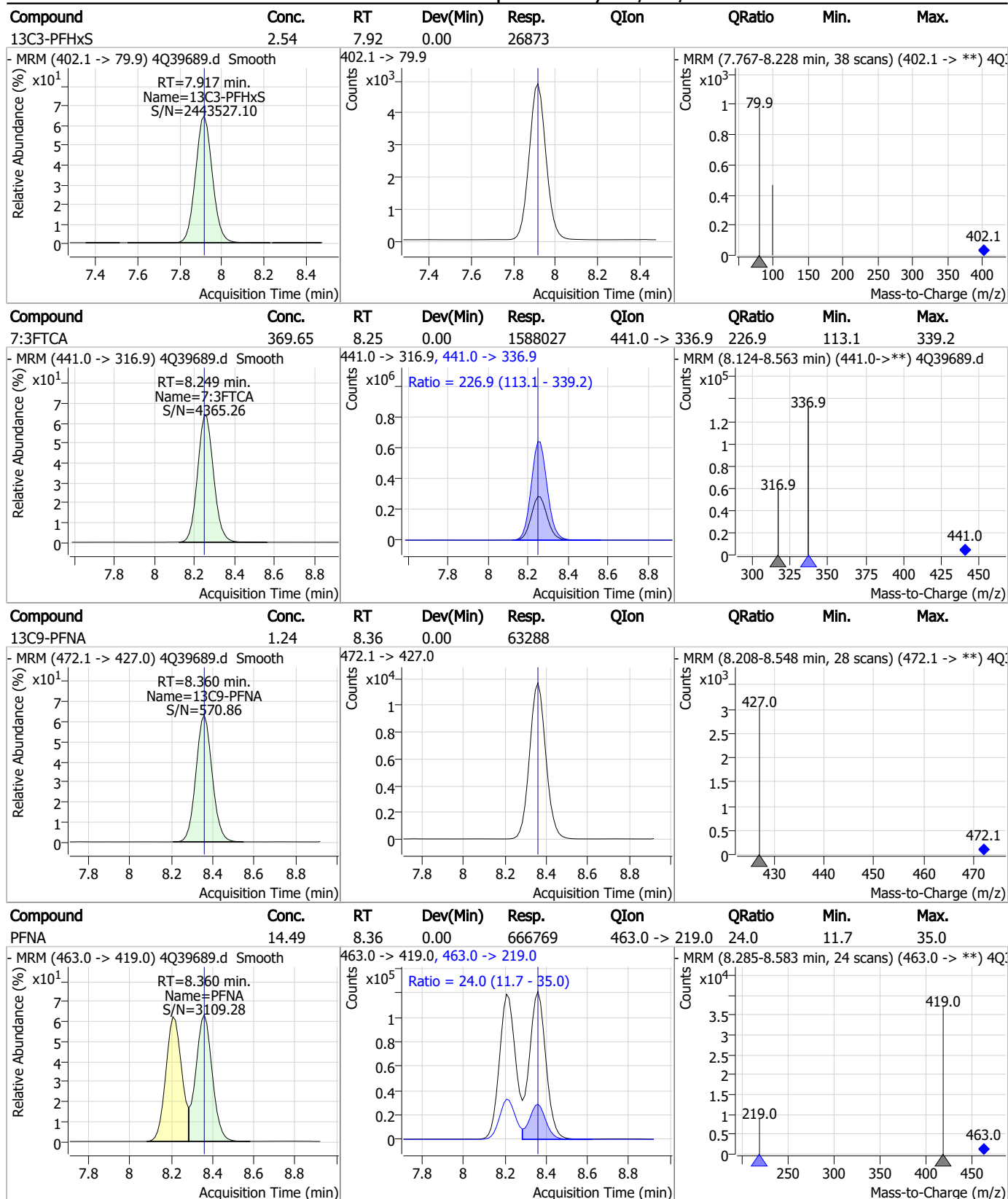
Perfluorinated Compounds by LC/MS/MS



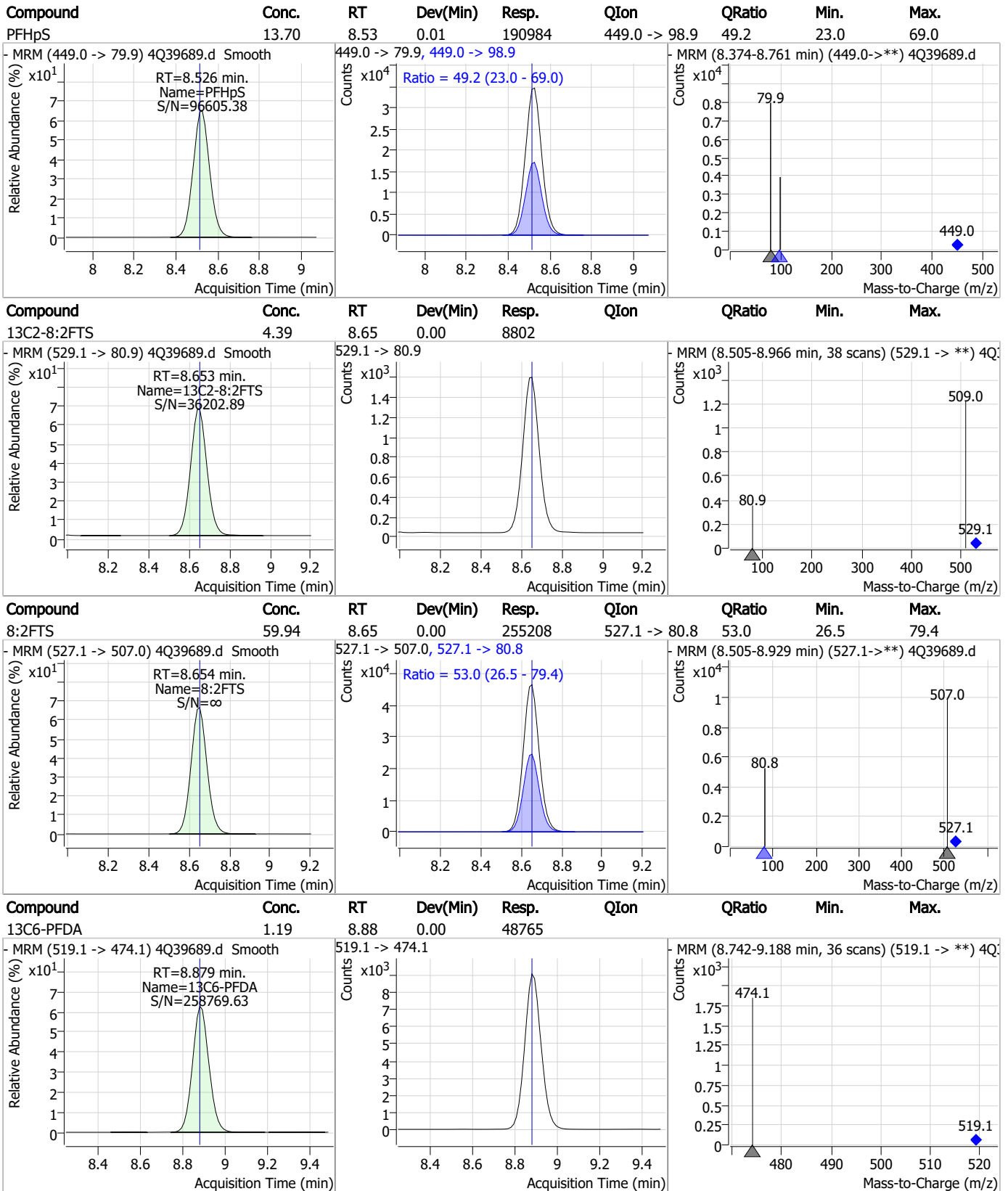
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



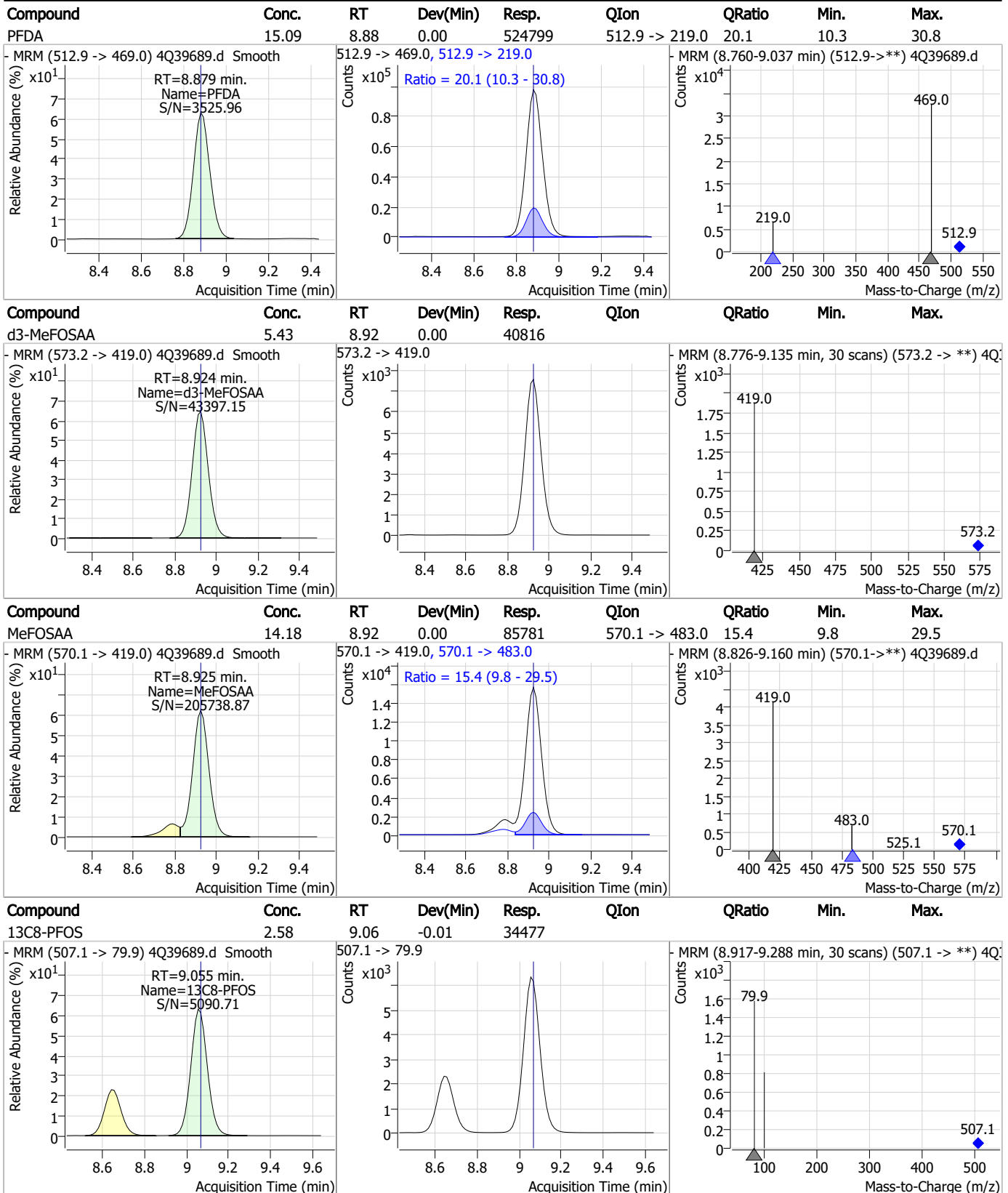
Perfluorinated Compounds by LC/MS/MS



7.5.2

7

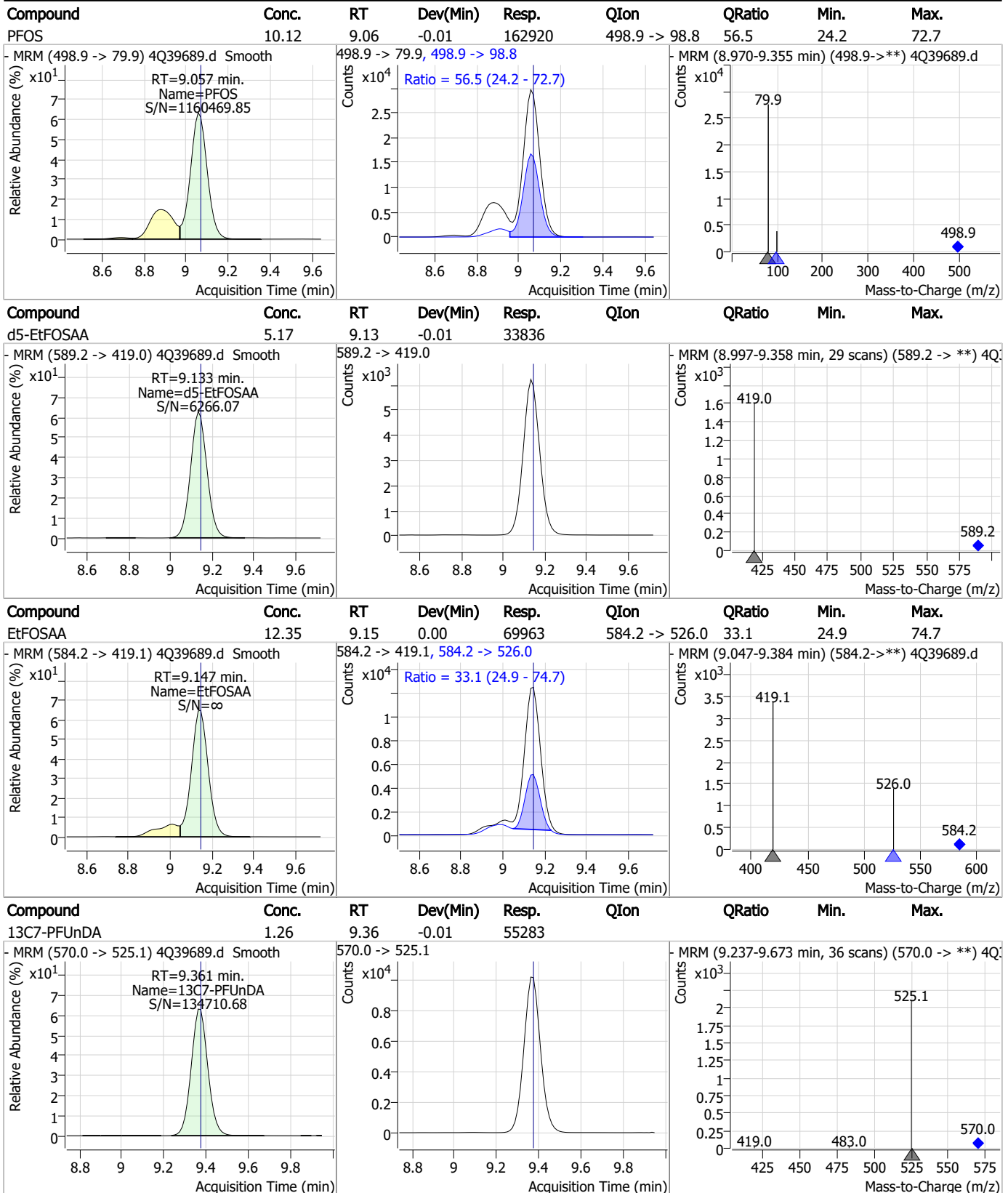
Perfluorinated Compounds by LC/MS/MS



7.5.2

7

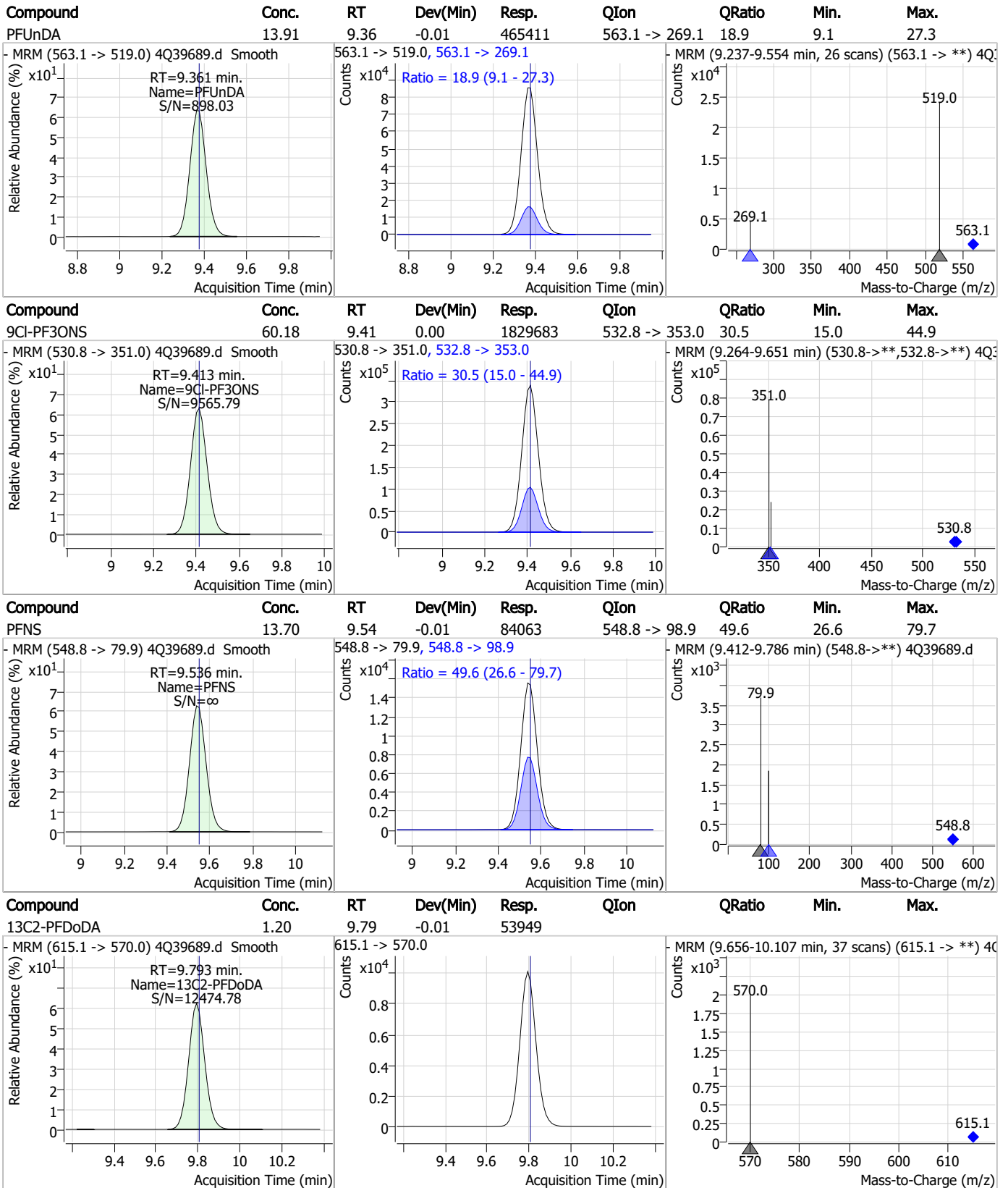
Perfluorinated Compounds by LC/MS/MS



7.5.2

7

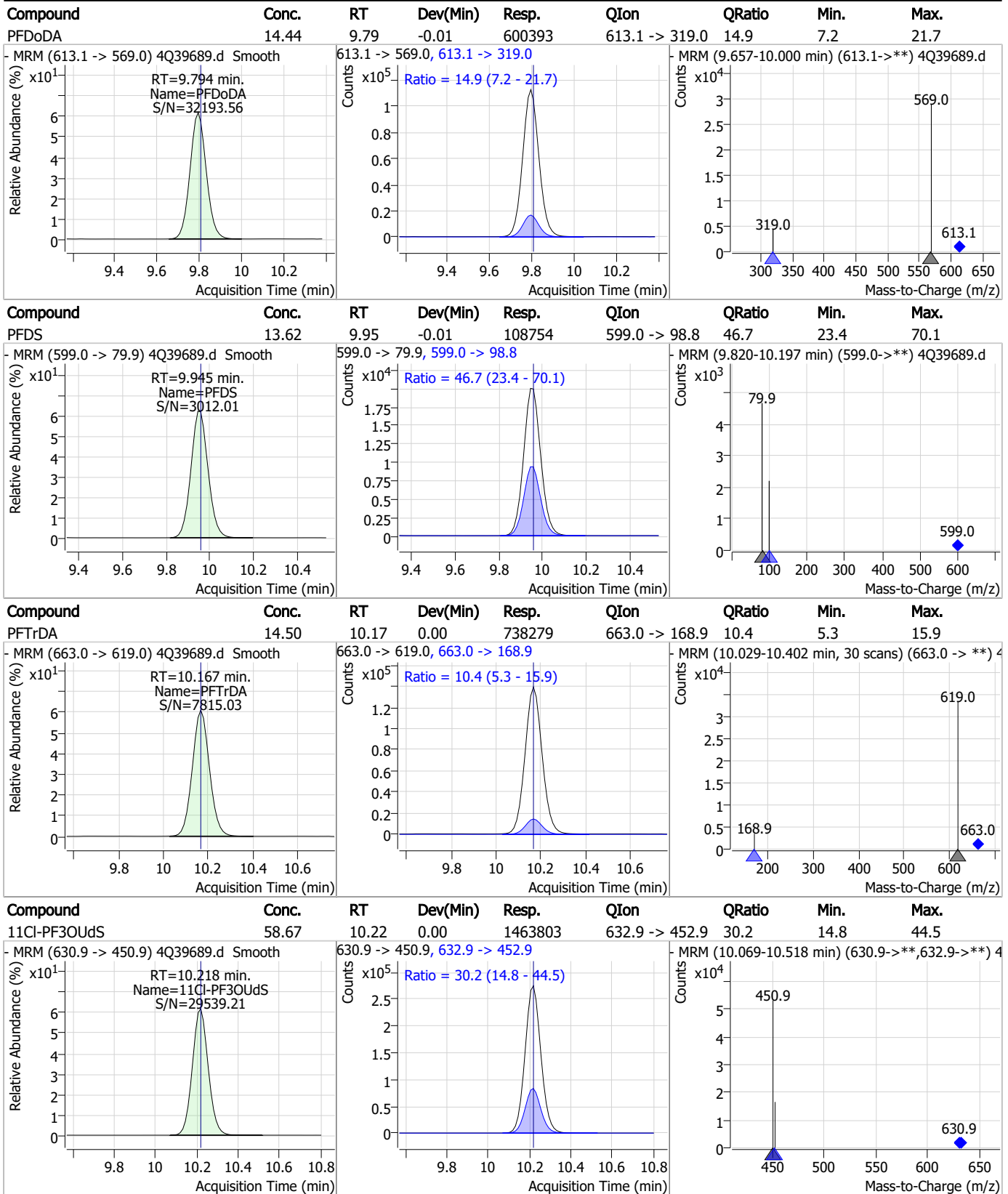
Perfluorinated Compounds by LC/MS/MS



7.5.2

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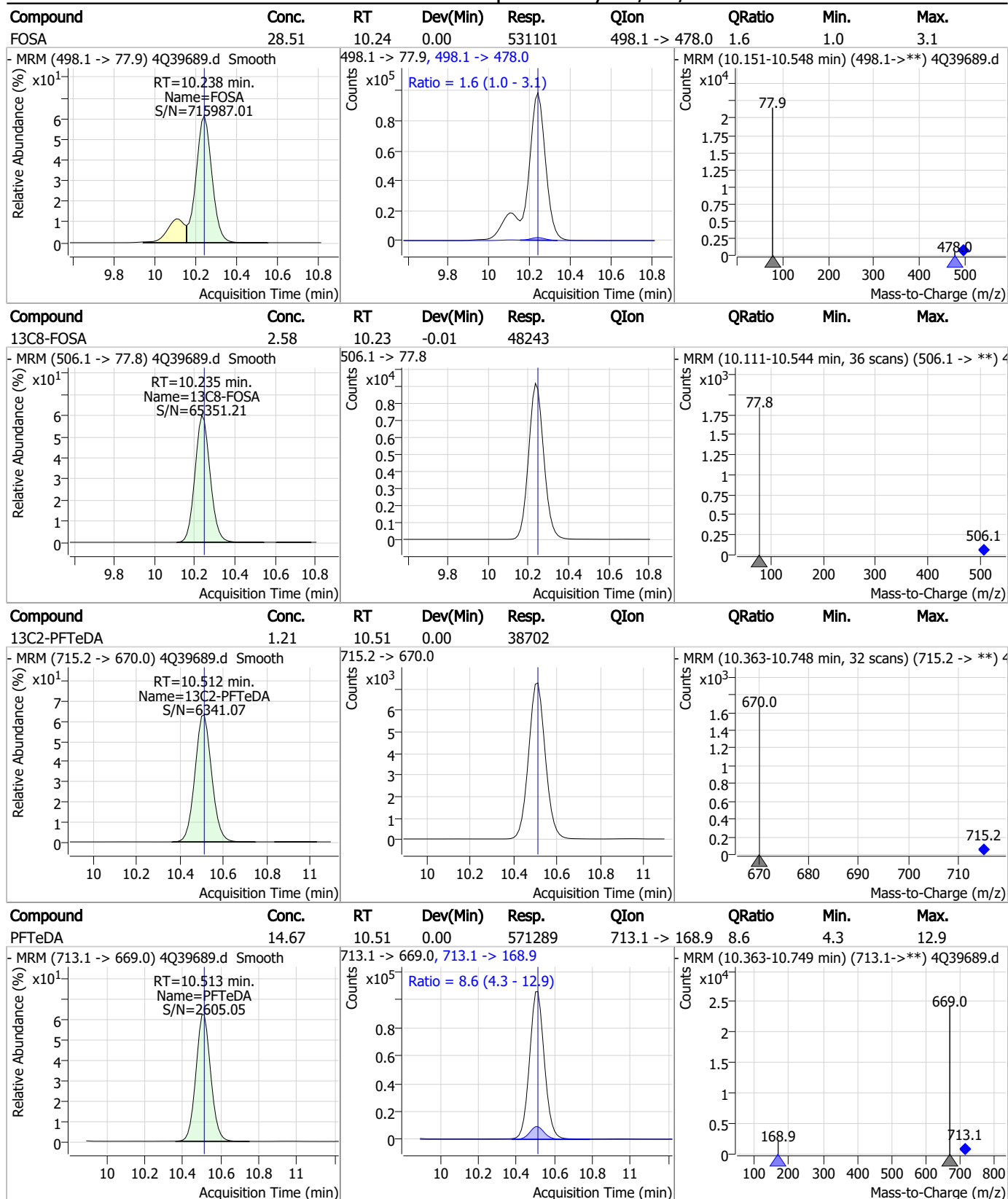
Perfluorinated Compounds by LC/MS/MS



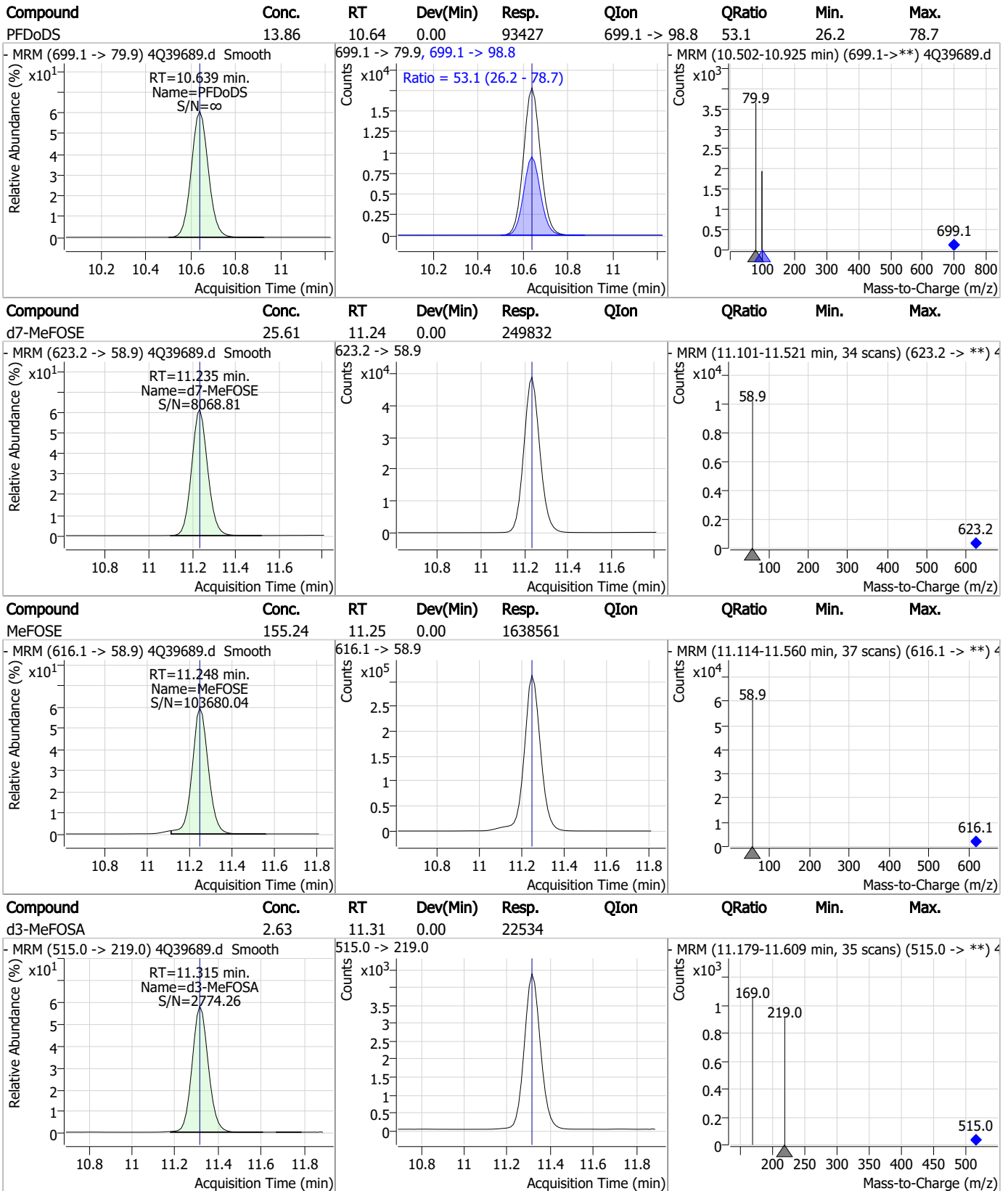
7.5.2

7

Perfluorinated Compounds by LC/MS/MS



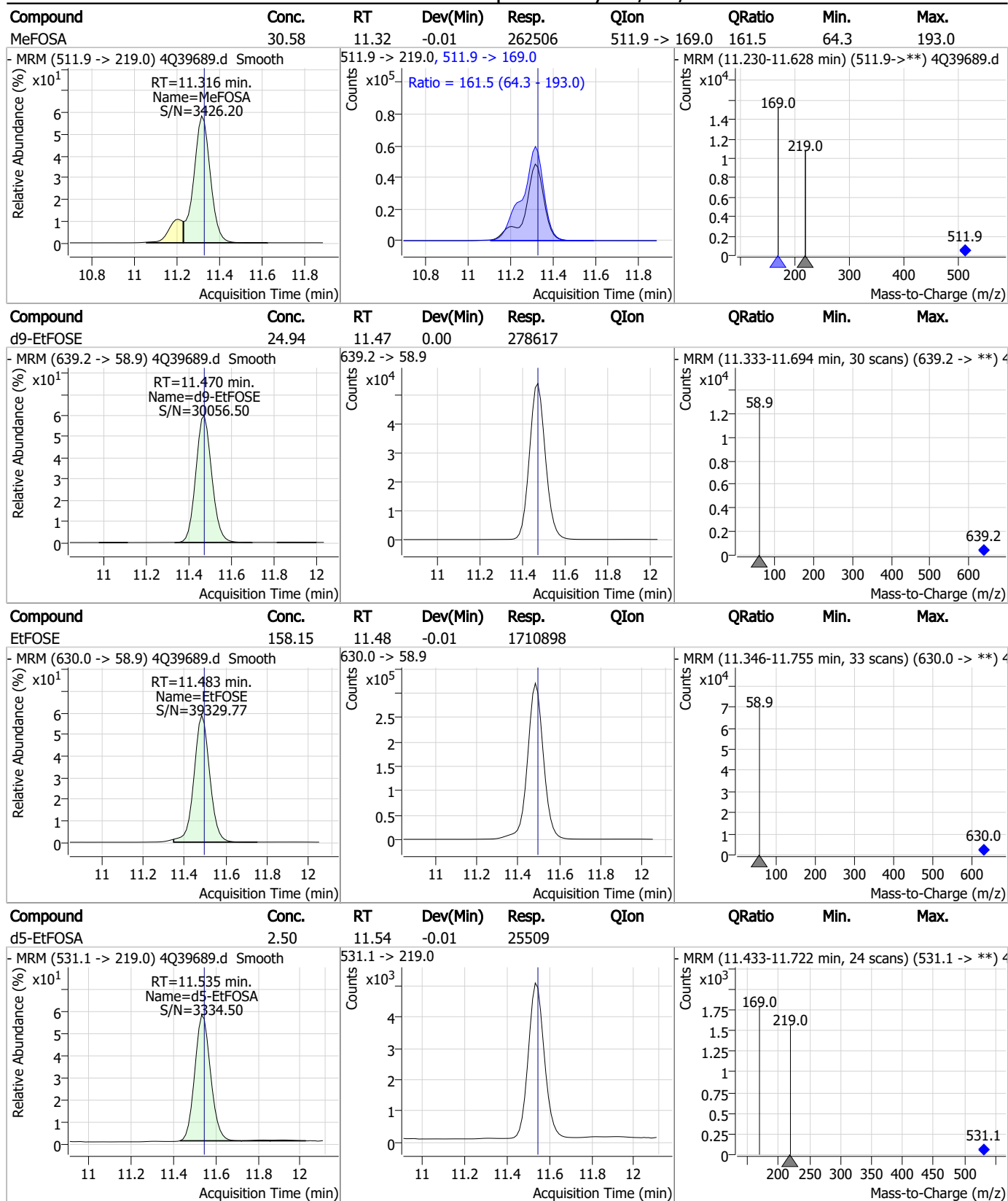
Perfluorinated Compounds by LC/MS/MS



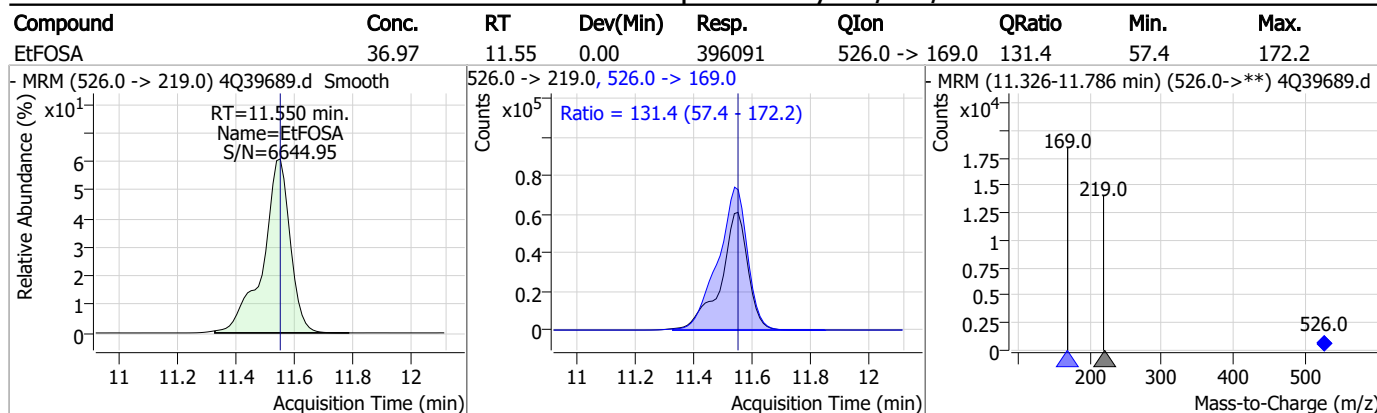
7.5.2

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.5.2

7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39790.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/26/2023 12:58:59 PM
Sample Name : RT TDCA
Vial : P1-B1
DA Method File : TDCA.quantmethod.xml
Batch Name : s4q572_TDCA.batch.bin
Sample Information : op95096,S4Q572,500,,,5.0,1,water

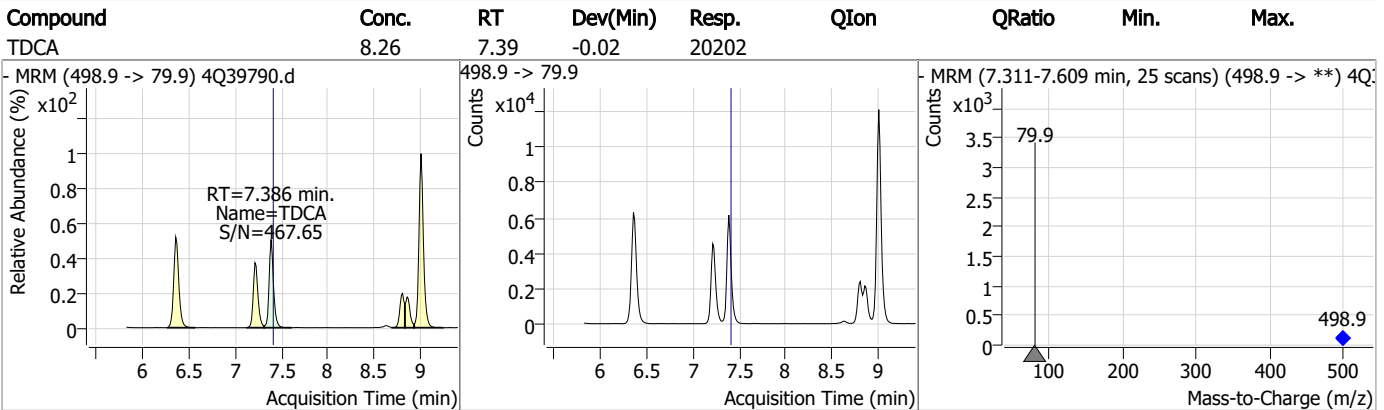
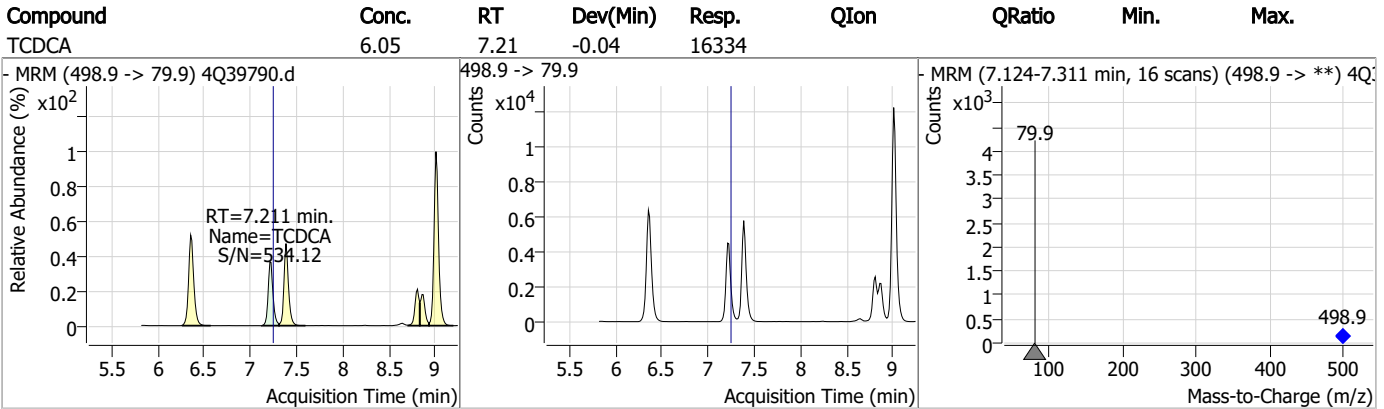
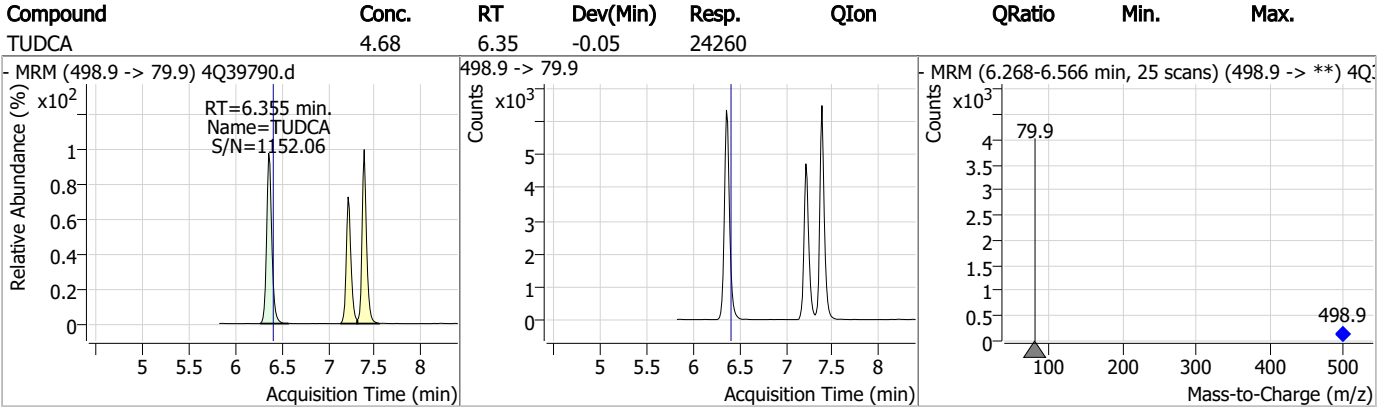
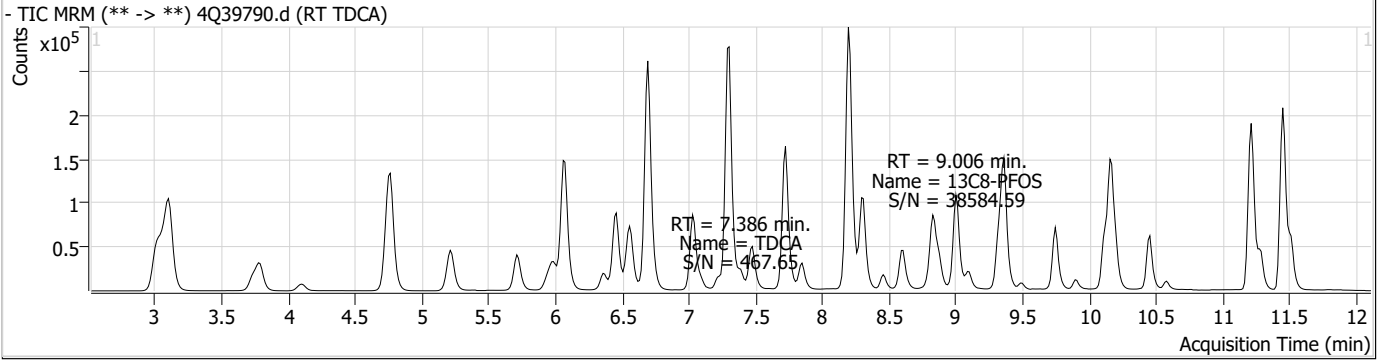
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M8-PFOS	9.006	507.1 -> 79.9	58519	2.50	µg/L	-0.073
13C4-PFOS	9.007	502.8 -> 79.9	57240	2.50	µg/L	-0.073
System Monitoring Compounds						
13C8-PFOS	9.006	507.1 -> 79.9	58519	2.59	µg/L	-0.073
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.7%			
Target Compounds						
PFOS	9.007	498.9 -> 79.9	56827	2.84	µg/L	94
		498.9 -> 98.8	26958		m	
TCDCA	7.211	498.9 -> 79.9	16334	6.05	ng/ml	100
TDCA	7.386	498.9 -> 79.9	20202	8.26	ng/ml	100
TUDCA	6.355	498.9 -> 79.9	24260	4.68	ng/ml	100

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

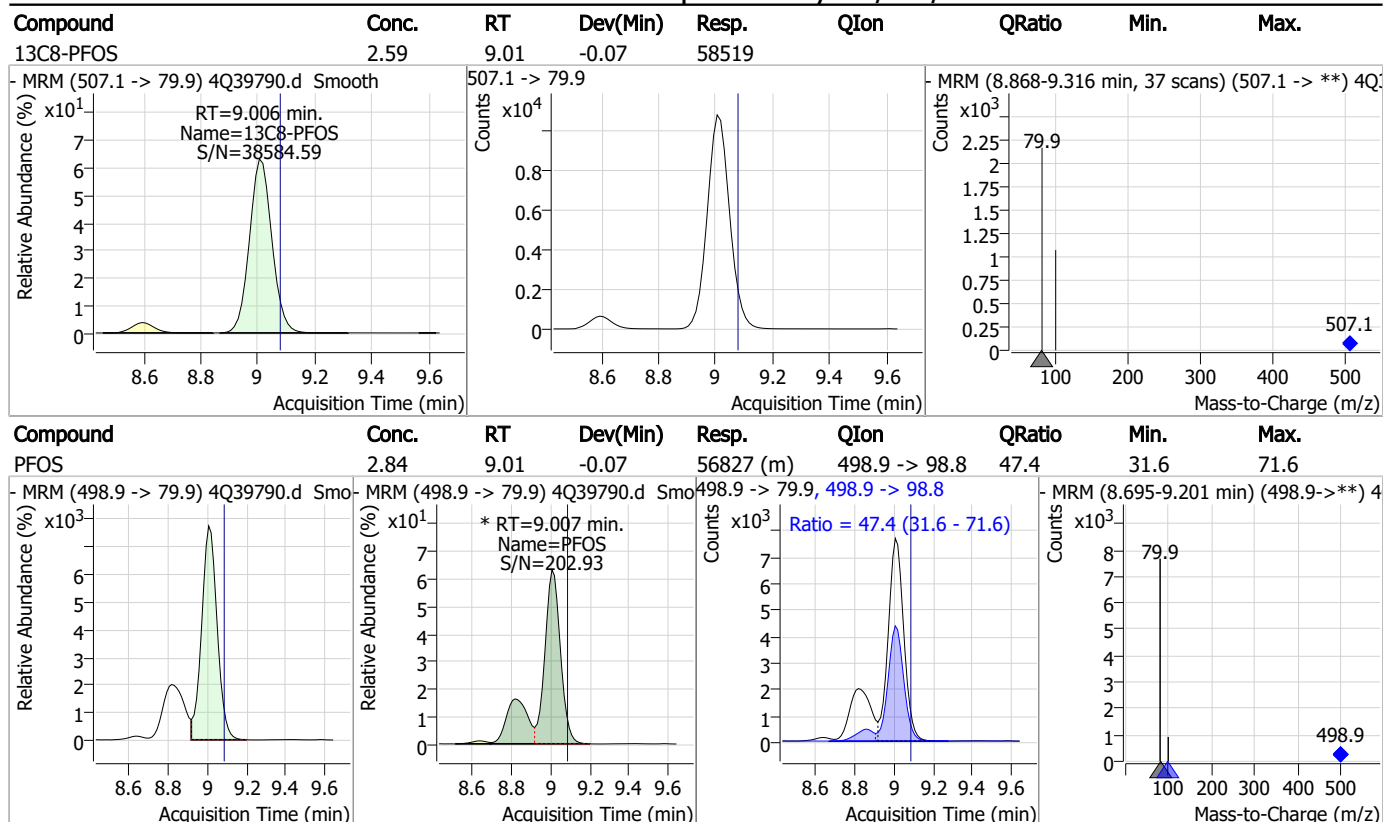
7.5.3

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q572-RT

Method: EPA DRAFT 1633

Lab FileID: 4Q39790.D

Analyst approved: 01/27/23 10:21 Natasha Guntie

Injection Time: 01/26/23 12:58

Supervisor approved: 01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		9.01	Split peak

7.5.3.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39791.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/26/2023 1:13:03 PM
Sample Name : RT Br-Ln
Vial : P1-B2
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q572.batch.bin
Sample Information : op95096,S4Q572,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.099	216.8 -> 171.9	333340	10.00 µg/L	0.013
M5-PFPeA	4.763	268.3 -> 223.0	233728	5.00 µg/L	0.000
M5-PFHxA	6.060	318.0 -> 273.0	157548	2.50 µg/L	0.000
M4-PFHpA	7.005	367.1 -> 322.0	87499	2.50 µg/L	-0.025
M8-PFOA	7.688	421.1 -> 376.0	126009	2.50 µg/L	-0.026
M9-PFNA	8.259	472.1 -> 427.0	68071	1.25 µg/L	-0.038
M6-PFDA	8.779	519.1 -> 474.1	53187	1.25 µg/L	-0.050
M7-PFUnDA	9.274	570.0 -> 525.1	57013	1.25 µg/L	-0.037
M2-PFDoDA	9.706	615.1 -> 570.0	59768	1.25 µg/L	-0.025
M2-PFTeDA	10.425	715.2 -> 670.0	46777	1.25 µg/L	-0.012
M8-FOSA	10.172	506.1 -> 77.8	49846	2.50 µg/L	-0.025
M3-PFBS	5.977	302.1 -> 79.9	40249	2.50 µg/L	0.000
M3-PFHxS	7.816	402.1 -> 79.9	28708	2.50 µg/L	-0.025
M8-PFOS	8.956	507.1 -> 79.9	33525	2.50 µg/L	-0.050
M2-4:2FTS	5.709	329.1 -> 80.9	3733	5.00 µg/L	0.000
M2-6:2FTS	7.437	429.1 -> 80.9	7006	5.00 µg/L	-0.025
M2-8:2FTS	8.554	529.1 -> 80.9	9621	5.00 µg/L	-0.037
M3-MeFOSAA	8.825	573.2 -> 419.0	43818	5.00 µg/L	-0.049
M3-HFPO-DA	6.439	286.9 -> 168.9	123052	10.00 µg/L	-0.013
M5-EtFOSAA	9.034	589.2 -> 419.0	36123	5.00 µg/L	-0.050
M7-MeFOSE	11.188	623.2 -> 58.9	238967	25.00 µg/L	-0.012
M9-EtFOSE	11.433	639.2 -> 58.9	266822	25.00 µg/L	0.000
M5-EtFOSA	11.498	531.1 -> 219.0	24738	2.50 µg/L	-0.012
M3-MeFOSA	11.277	515.0 -> 219.0	22386	2.50 µg/L	0.000
13C4-PFOS	8.957	502.8 -> 79.9	34692	2.50 µg/L	-0.050
13C3-PFBA	3.090	216.0 -> 172.0	189605	5.00 µg/L	0.000
18O2-PFHxS	7.815	403.0 -> 83.9	17994	2.50 µg/L	-0.025
13C4-PFOA	7.688	417.1 -> 372.0	139629	2.50 µg/L	-0.026
13C2-PFDA	8.780	515.1 -> 470.1	48913	1.25 µg/L	-0.050
13C5-PFNA	8.259	468.0 -> 423.0	73368	1.25 µg/L	-0.038
13C2-PFHxA	6.061	315.1 -> 270.0	143395	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.709	329.1 -> 80.9	3733	5.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.1%		
13C2-6:2FTS	7.437	429.1 -> 80.9	7006	4.83 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C2-8:2FTS	8.554	529.1 -> 80.9	9621	4.84 µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C2-PFDoDA	9.706	615.1 -> 570.0	59768	1.26 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	10.425	715.2 -> 670.0	46777	1.38 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C3-PFBS	5.977	302.1 -> 79.9	40249	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C3-PFHxS	7.816	402.1 -> 79.9	28708	2.73 µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C4-PFBA	3.099	216.8 -> 171.9	333340	9.75 µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C4-PFHpA	7.005	367.1 -> 322.0	87499	2.62 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C5-PFHxA	6.060	318.0 -> 273.0	157548	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C5-PFPeA	4.763	268.3 -> 223.0	233728	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C6-PFDA	8.779	519.1 -> 474.1	53187	1.23 µg/L	-0.050
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C7-PFUnDA	9.274	570.0 -> 525.1	57013	1.23 µg/L	-0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C8-FOSA	10.172	506.1 -> 77.8	49846	2.51 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-PFOA	7.688	421.1 -> 376.0	126009	2.51 µg/L	-0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C8-PFOS	8.956	507.1 -> 79.9	33525	2.37 µg/L	-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C9-PFNA	8.259	472.1 -> 427.0	68071	1.31 µg/L	-0.038
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%	
d3-MeFOSAA	8.825	573.2 -> 419.0	43818	5.50 µg/L	-0.049
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C3-HFPO-DA	6.439	286.9 -> 168.9	123052	10.76 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
d3-MeFOSA	11.277	515.0 -> 219.0	22386	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
d5-EtFOSAA	9.034	589.2 -> 419.0	36123	5.21 µg/L	-0.050
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
d7-MeFOSE	11.188	623.2 -> 58.9	238967	23.10 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.4%	
d9-EtFOSE	11.433	639.2 -> 58.9	266822	22.52 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.1%	
d5-EtFOSA	11.498	531.1 -> 219.0	24738	2.29 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%	

Target Compounds

					QValue
4:2FTS	5.710	327.1 -> 307.0	308609	50.58 µg/L	98
		327.1 -> 80.9	139330		
6:2FTS	7.437	427.1 -> 407.0	318653	57.39 µg/L	97
		427.1 -> 80.9	149555		
8:2FTS	8.542	527.1 -> 507.0	264312	56.79 µg/L	98
		527.1 -> 80.8	143166		
EtFOSAA	9.048	584.2 -> 419.1	87956	14.54 µg/L	91
		584.2 -> 526.0	38224		
FOSA	10.176	498.1 -> 77.9	667478	34.68 µg/L	100
		498.1 -> 478.0	13998		
MeFOSAA	8.826	570.1 -> 419.0	104848	16.15 µg/L	98
		570.1 -> 483.0	19568		
PFBA	3.095	212.8 -> 168.9	534765	57.65 µg/L	100
PFBS	5.978	298.7 -> 79.9	240674	13.23 µg/L	100
		298.7 -> 98.8	83224		
PFDA	8.780	512.9 -> 469.0	540078	14.23 µg/L	97
		512.9 -> 219.0	103094		
PFDODA	9.706	613.1 -> 569.0	673515	14.62 µg/L	100
		613.1 -> 319.0	97886		
PFDS	9.870	599.0 -> 79.9	109248	14.07 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.006	599.0 -> 98.8	52148	14.41	µg/L	99
		363.1 -> 319.0	785706			
PFHpS	8.411	363.1 -> 169.0	135588	13.86	µg/L	93
		449.0 -> 79.9	187860			
PFHxA	6.063	449.0 -> 98.9	95041	14.14	µg/L	100
		313.0 -> 269.0	865979			
PFHxS	7.817	313.0 -> 118.9	26518	12.67	µg/L	97
		398.7 -> 79.9	117490			
PFNA	8.259	398.7 -> 98.9	54618	26.56	µg/L	94
		463.0 -> 419.0	1314652			
PFNS	9.450	463.0 -> 219.0	345055	14.19	µg/L	93
		548.8 -> 79.9	84644			
PFOA	7.690	548.8 -> 98.9	40914	31.45	µg/L	96
		413.0 -> 369.0	1761850			
PFOS	8.958	413.0 -> 169.0	385332	13.94	µg/L	98
		498.9 -> 79.9	218319			
PFPeA	4.754	498.9 -> 98.8	102745	28.95	µg/L	100
		263.0 -> 219.0	1483969			
PFPeS	7.069	349.1 -> 79.9	113496	12.67	µg/L	99
		349.1 -> 98.9	45556			
PFTeDA	10.426	713.1 -> 669.0	642210	13.64	µg/L	99
		713.1 -> 168.9	52433			
PFTrDA	10.080	663.0 -> 619.0	814492	14.44	µg/L	97
		663.0 -> 168.9	78554			
PFUnDA	9.274	563.1 -> 519.0	486296	14.09	µg/L	100
		563.1 -> 269.1	89364			
11CI-PF3OUdS	10.131	630.9 -> 450.9	1548717	53.85	µg/L	98
		632.9 -> 452.9	474891			
9CI-PF3ONS	9.313	530.8 -> 351.0	1778908	50.75	µg/L	100
		532.8 -> 353.0	528867			
ADONA	7.268	376.9 -> 250.9	3361033	50.63	µg/L	99
		376.9 -> 84.8	1169918			
HFPO-DA	6.440	284.9 -> 168.9	681489	58.76	µg/L	99
		284.9 -> 184.9	74896			
3:3FTCA	4.098	241.0 -> 177.0	175283	72.94	µg/L	98
		241.0 -> 117.0	15145			
5:3FTCA	6.681	341.0 -> 237.1	2754834	338.08	µg/L	100
		341.0 -> 217.0	2052578			
7:3FTCA	8.162	441.0 -> 316.9	1519912	324.79	µg/L	98
		441.0 -> 336.9	3397629			
EtFOSA	11.500	526.0 -> 219.0	391451	37.67	µg/L	87
		526.0 -> 169.0	503911			
EtFOSE	11.446	630.0 -> 58.9	1631494	157.48	µg/L	100
		511.9 -> 219.0	307858			
MeFOSA	11.279	511.9 -> 169.0	421834	36.10	µg/L	93
		616.1 -> 58.9	1625080			
MeFOSE	11.201	699.1 -> 79.9	97575	14.88	µg/L	97
		699.1 -> 98.8	53138			
PFDoDS	10.565	295.0 -> 201.0	116829	29.02	µg/L	100
		295.0 -> 84.9	34067			
NFDHA	5.929	279.0 -> 85.1	918787	28.76	µg/L	100
		229.0 -> 84.9	944968			
PFMBA	3.782	314.8 -> 134.9	1333644	25.47	µg/L	99
		314.8 -> 82.9	39381			
PFEESA	6.546					

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

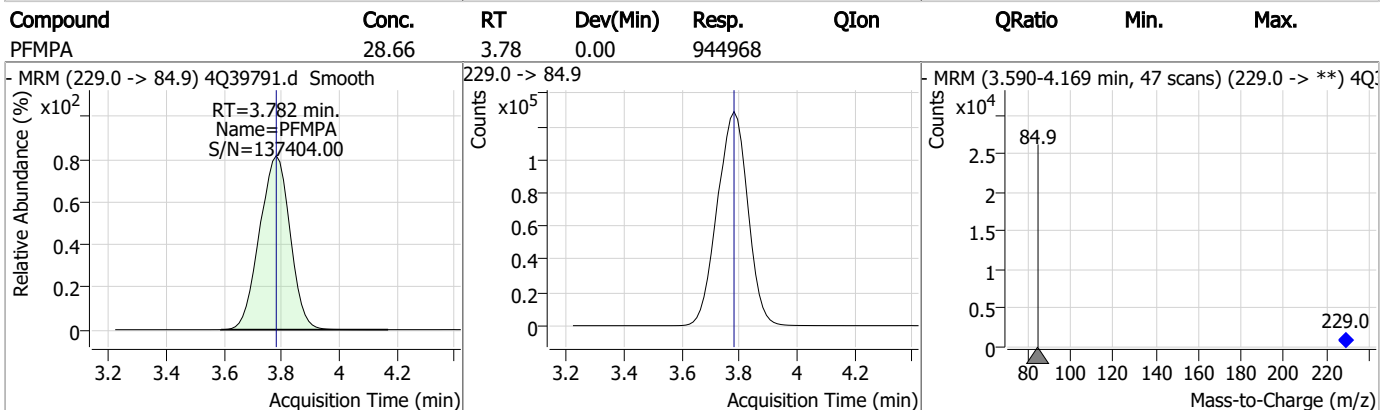
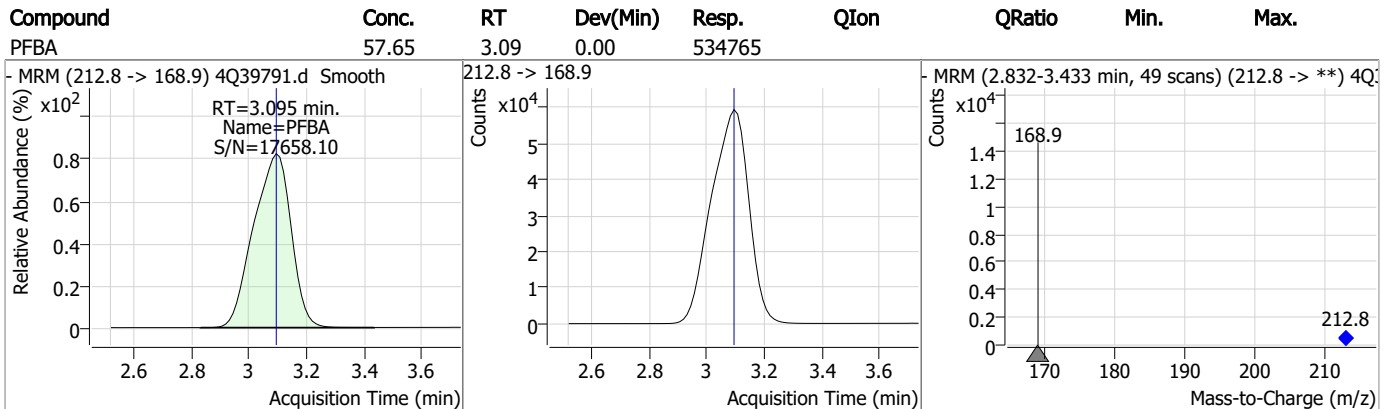
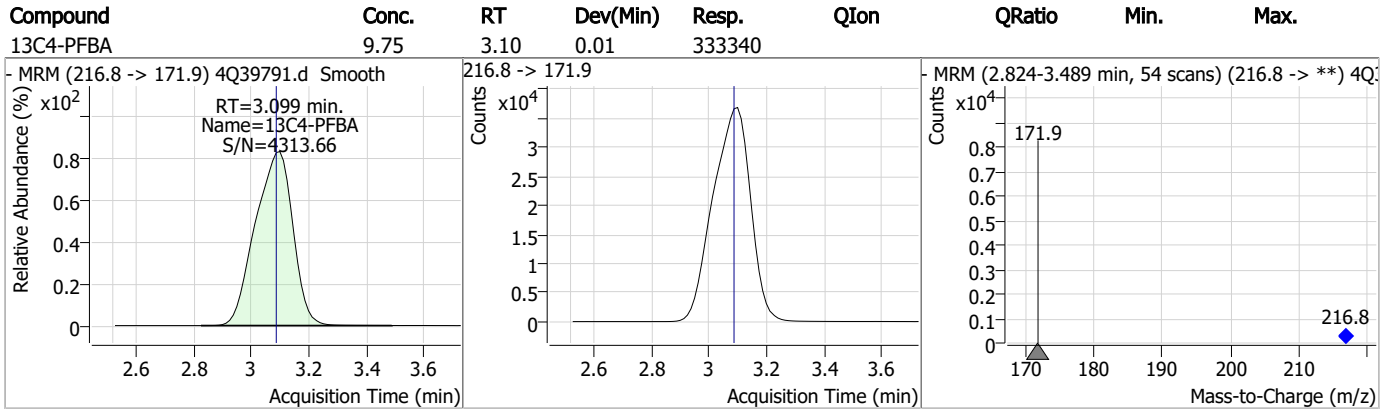
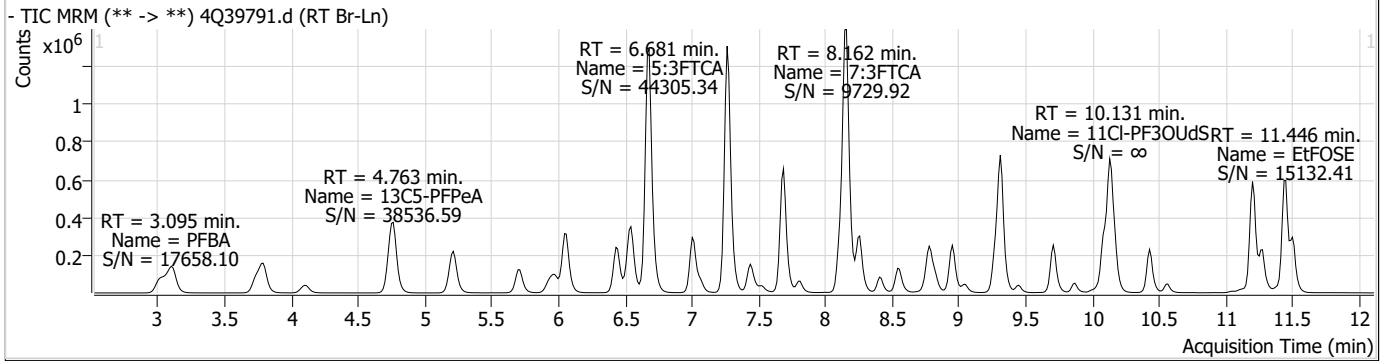
Perfluorinated Compounds by LC/MS/MS

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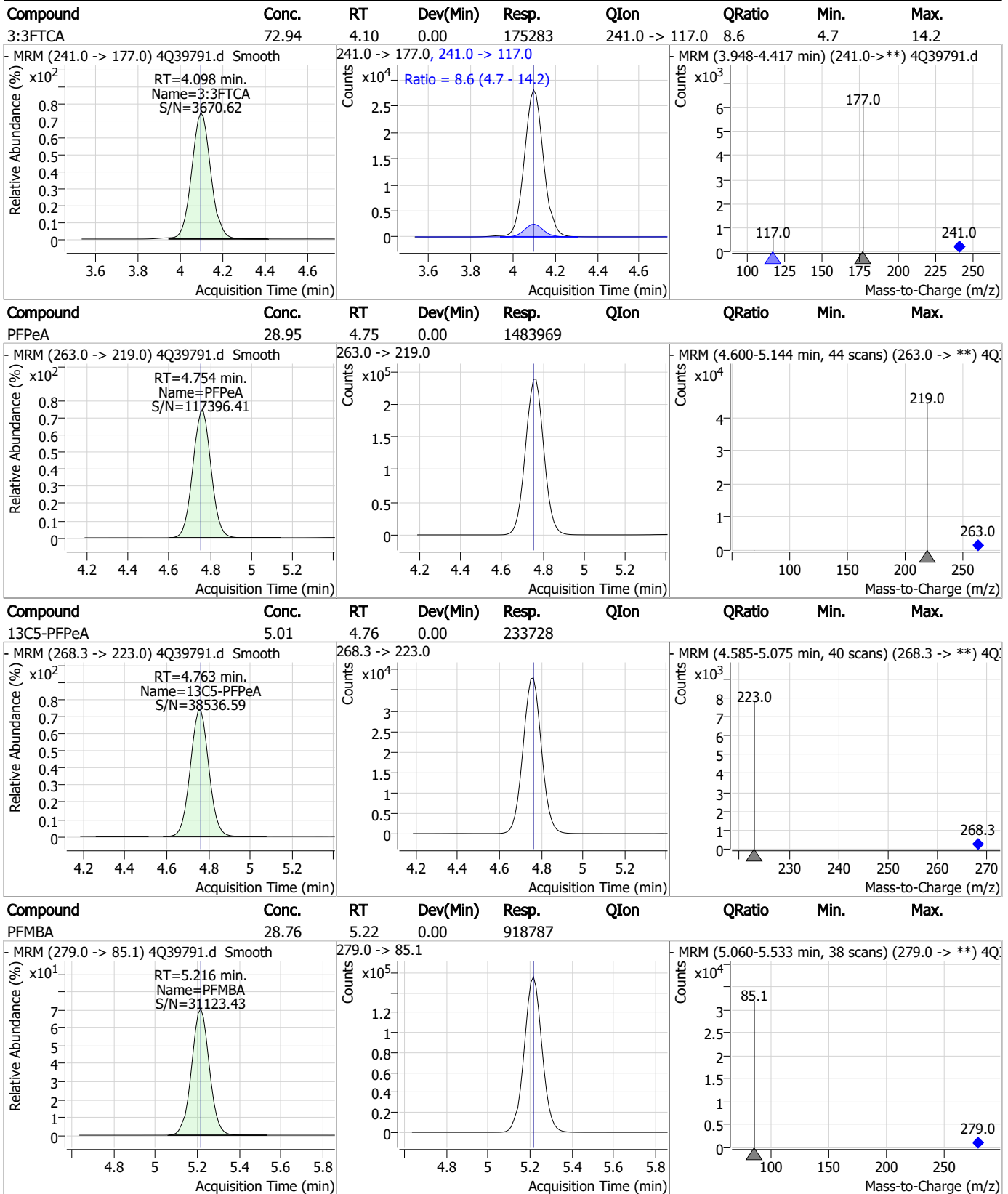
7.5.4

7

Perfluorinated Compounds by LC/MS/MS



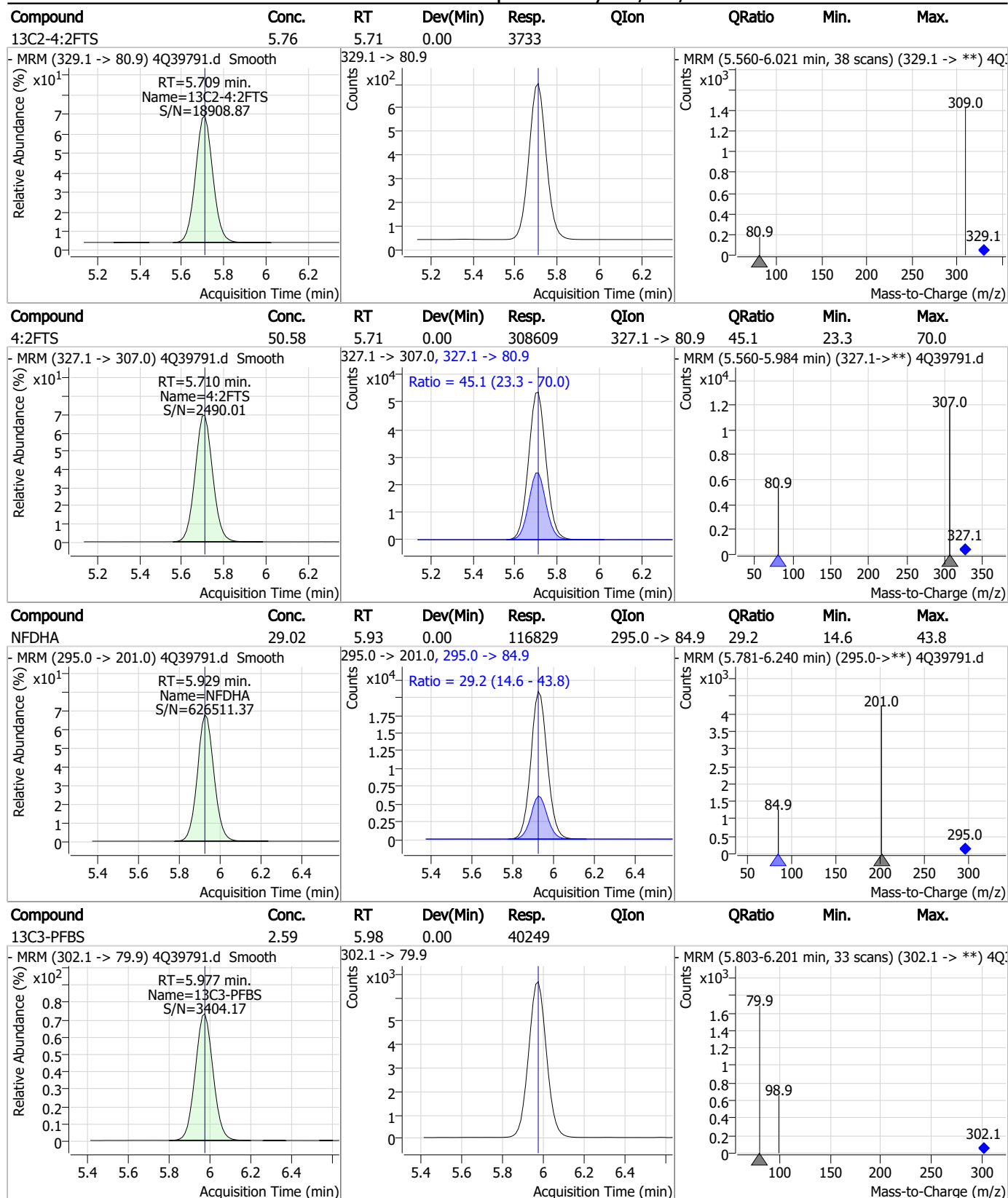
Perfluorinated Compounds by LC/MS/MS



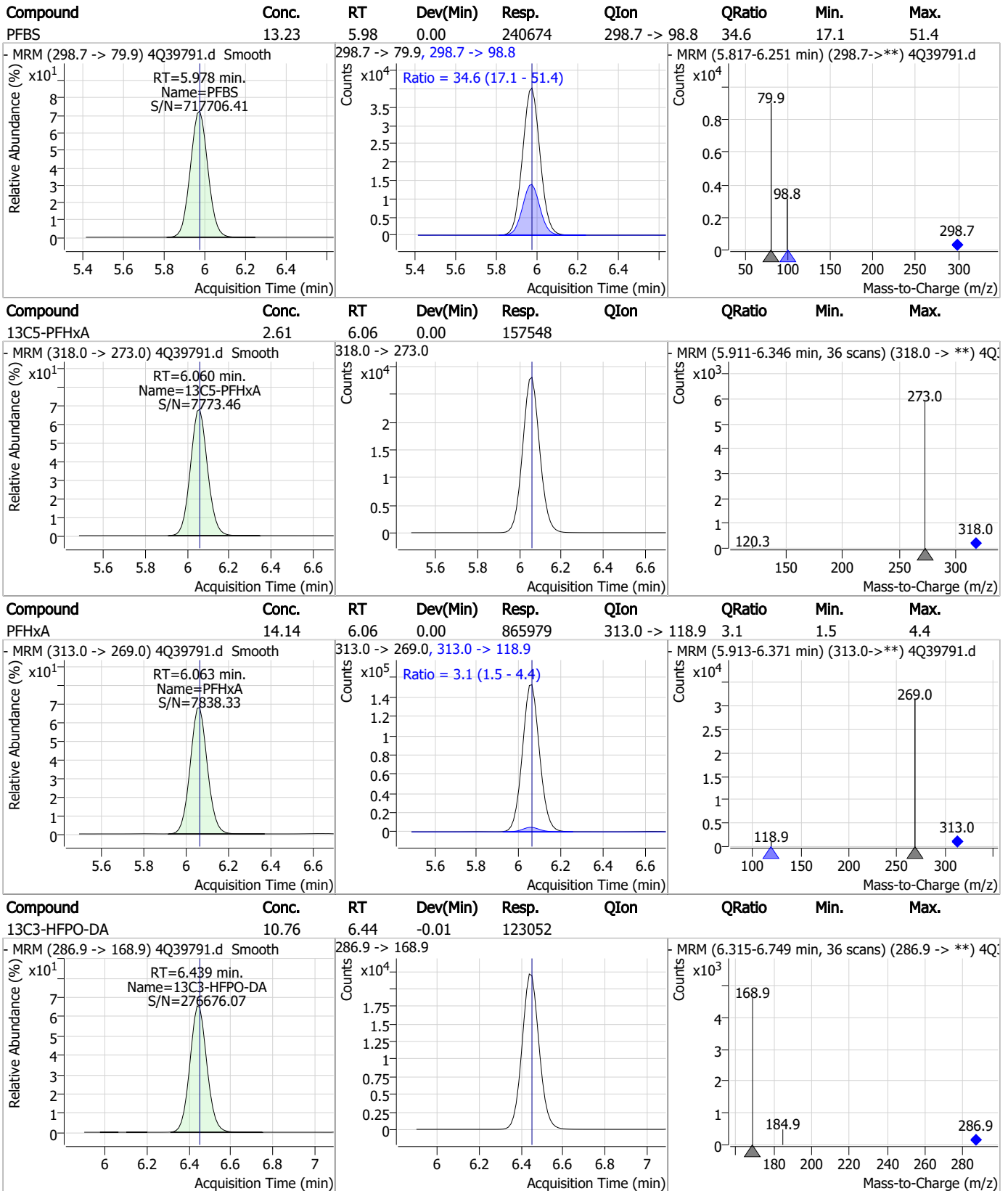
7.5.4

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Perfluorinated Compounds by LC/MS/MS



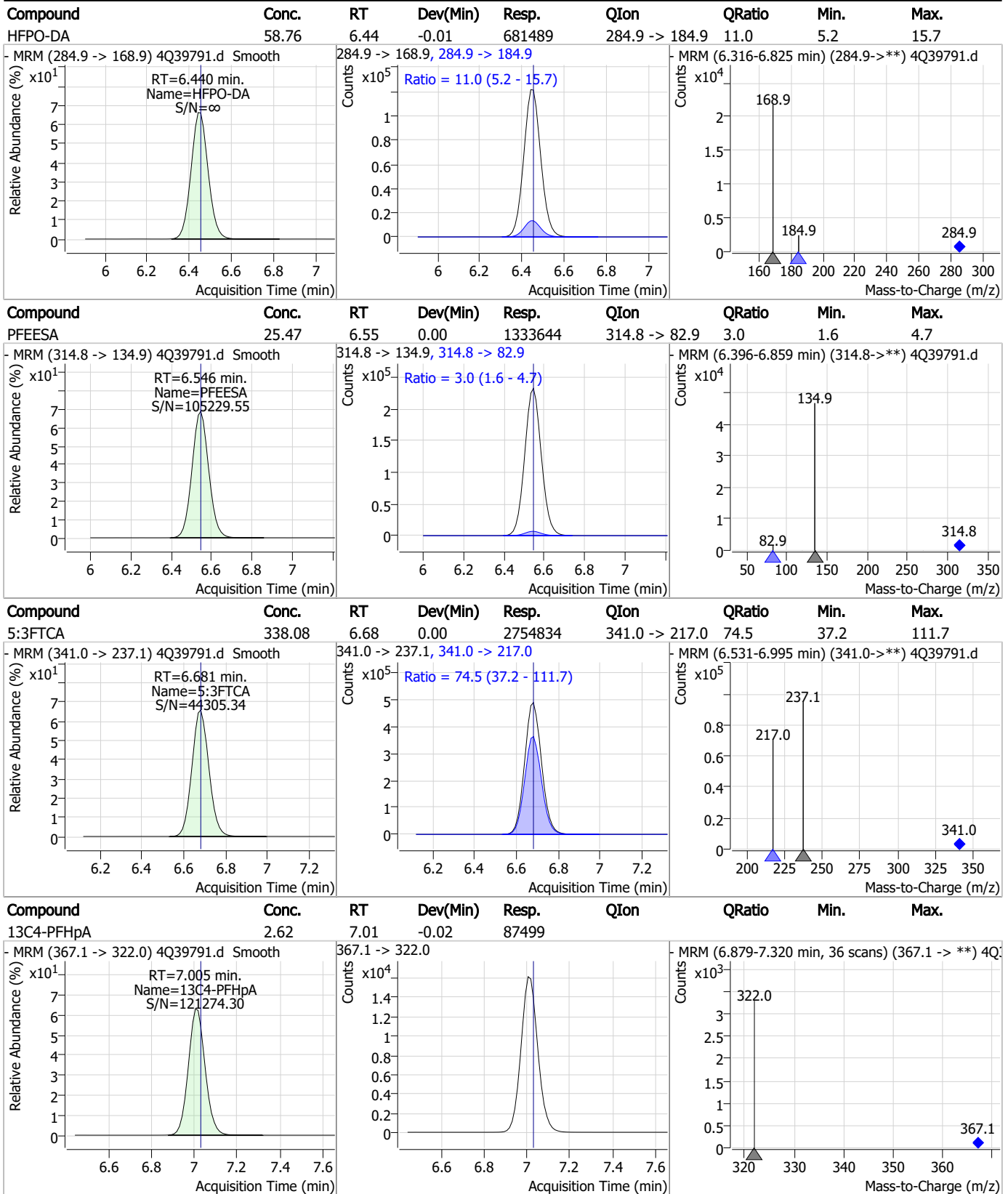
Perfluorinated Compounds by LC/MS/MS



7.5.4

7

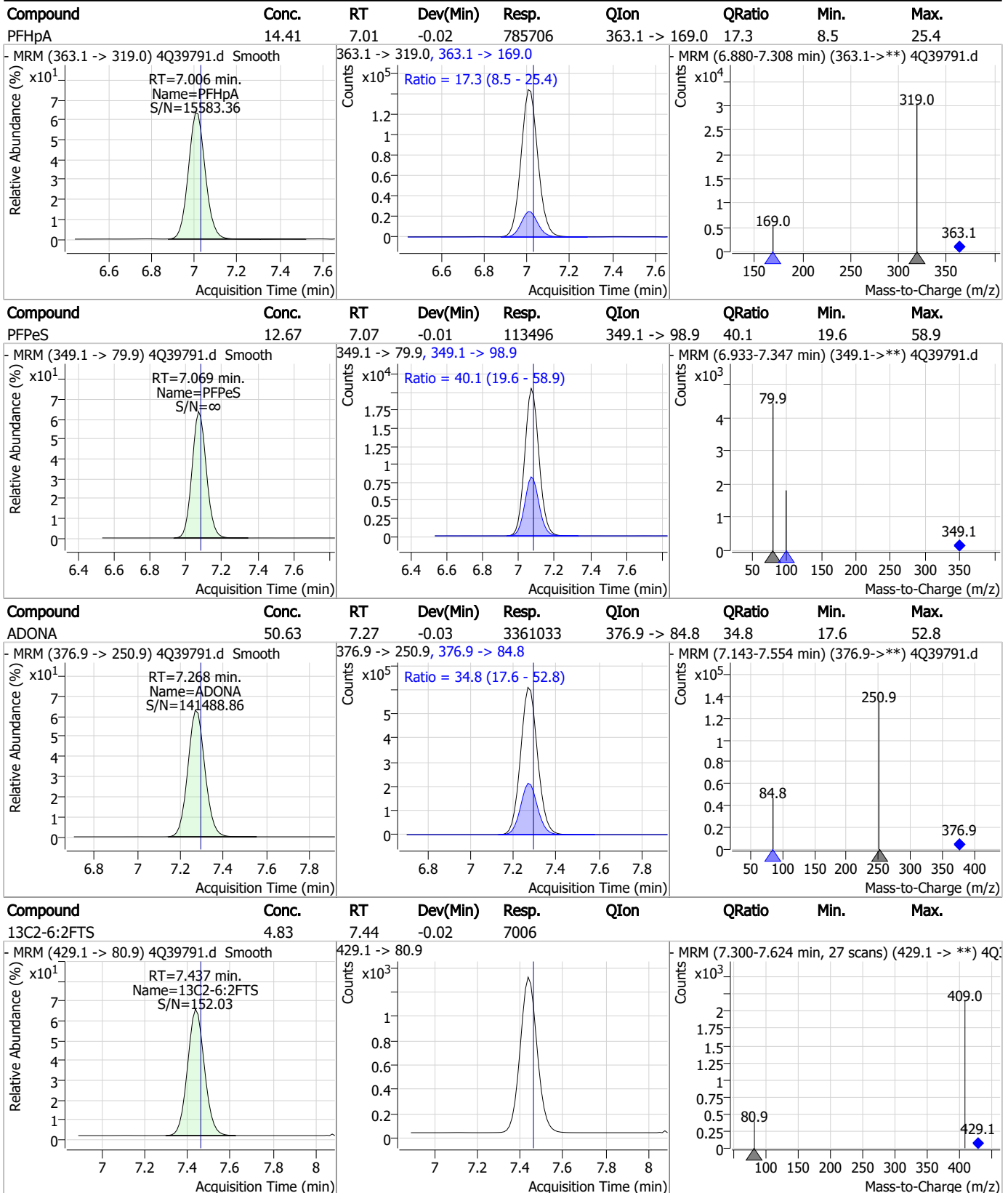
Perfluorinated Compounds by LC/MS/MS



7.5.4

7

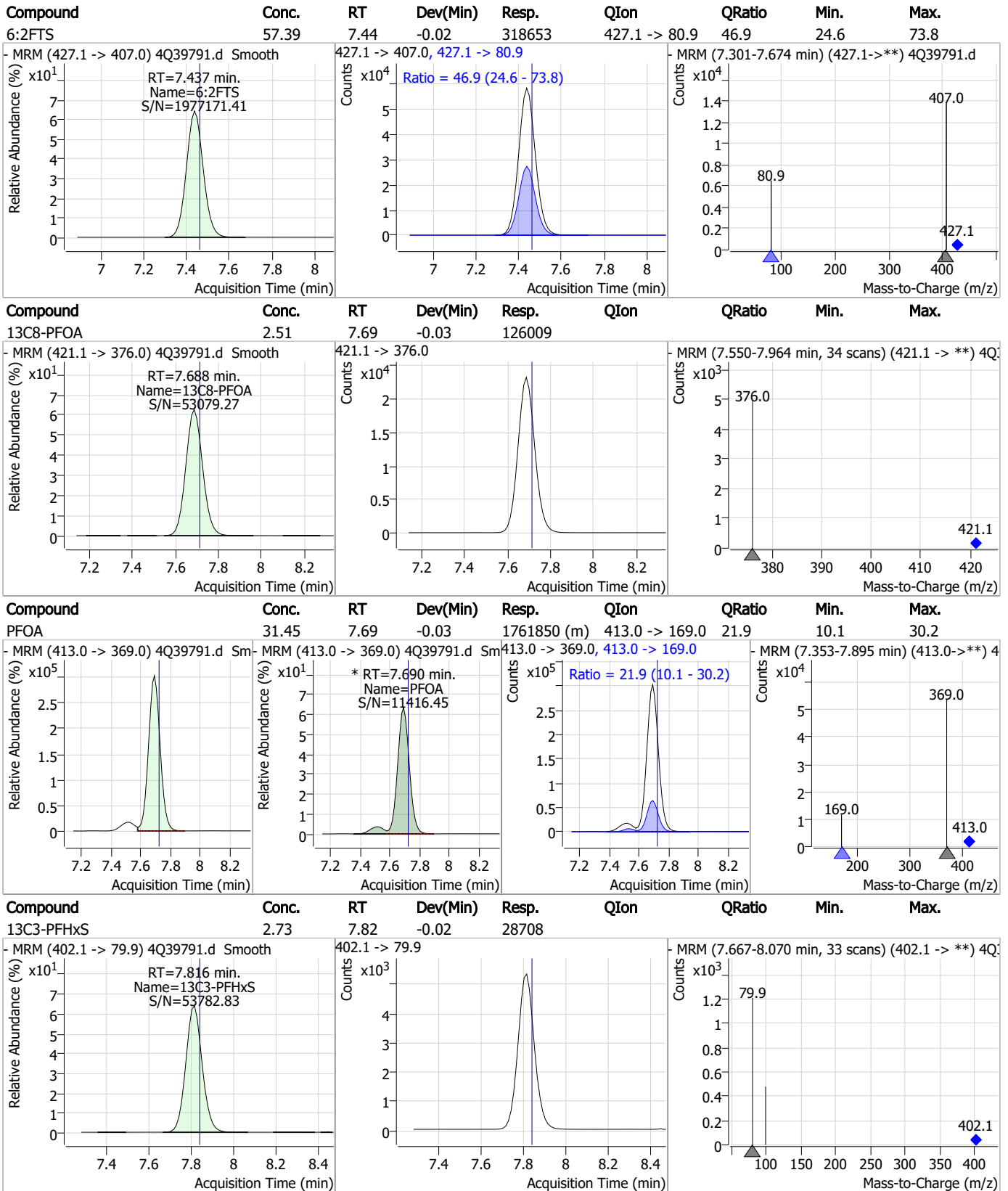
Perfluorinated Compounds by LC/MS/MS



7.5.4

7

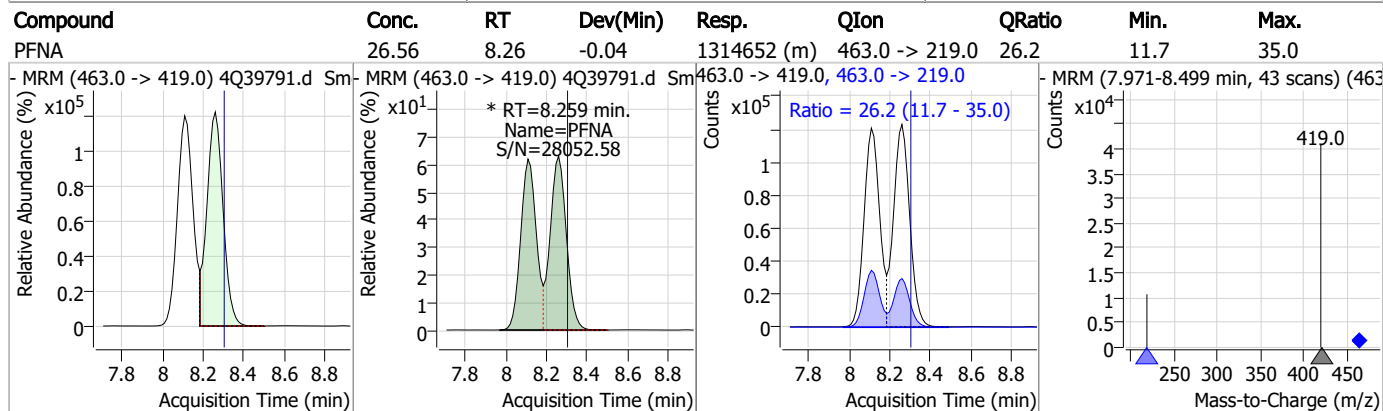
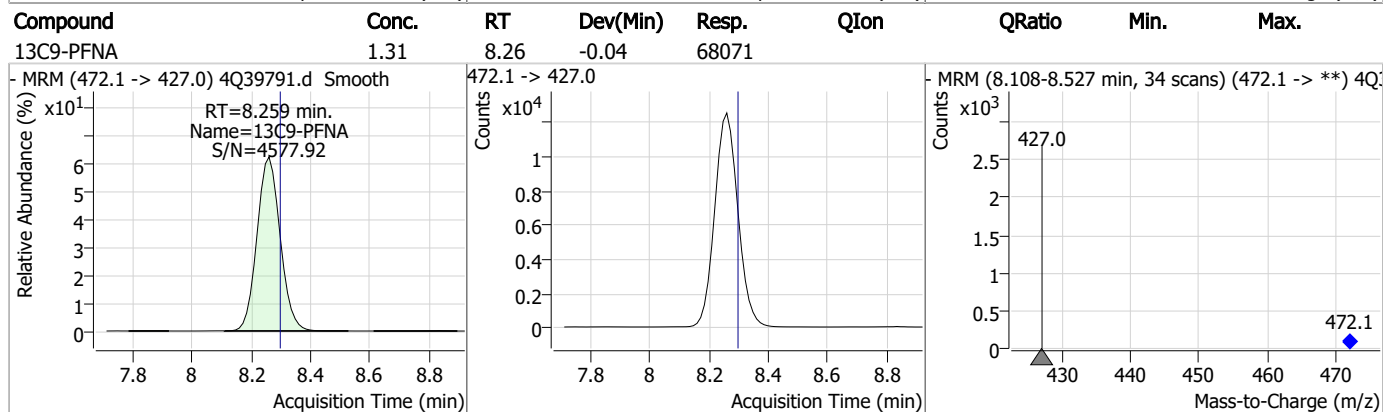
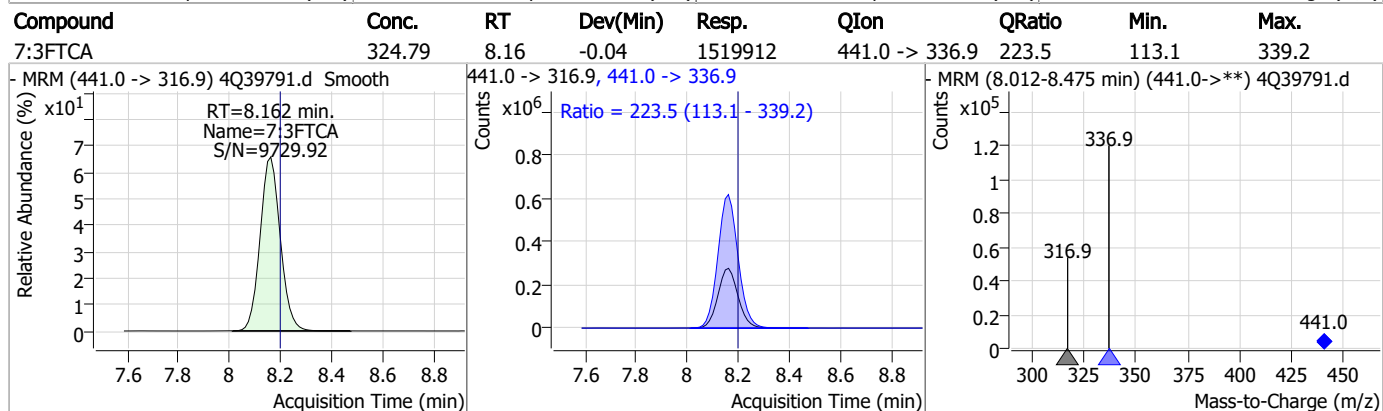
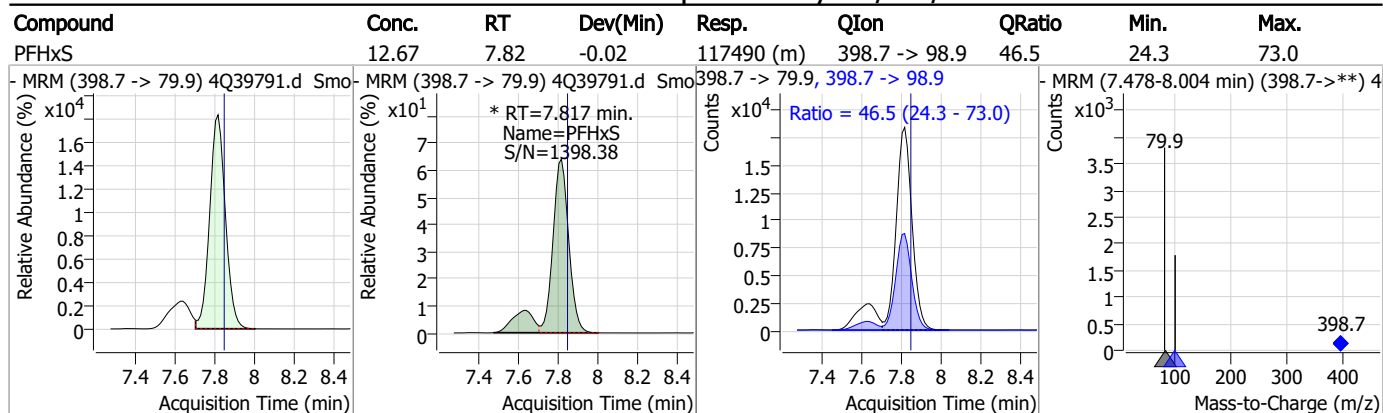
Perfluorinated Compounds by LC/MS/MS



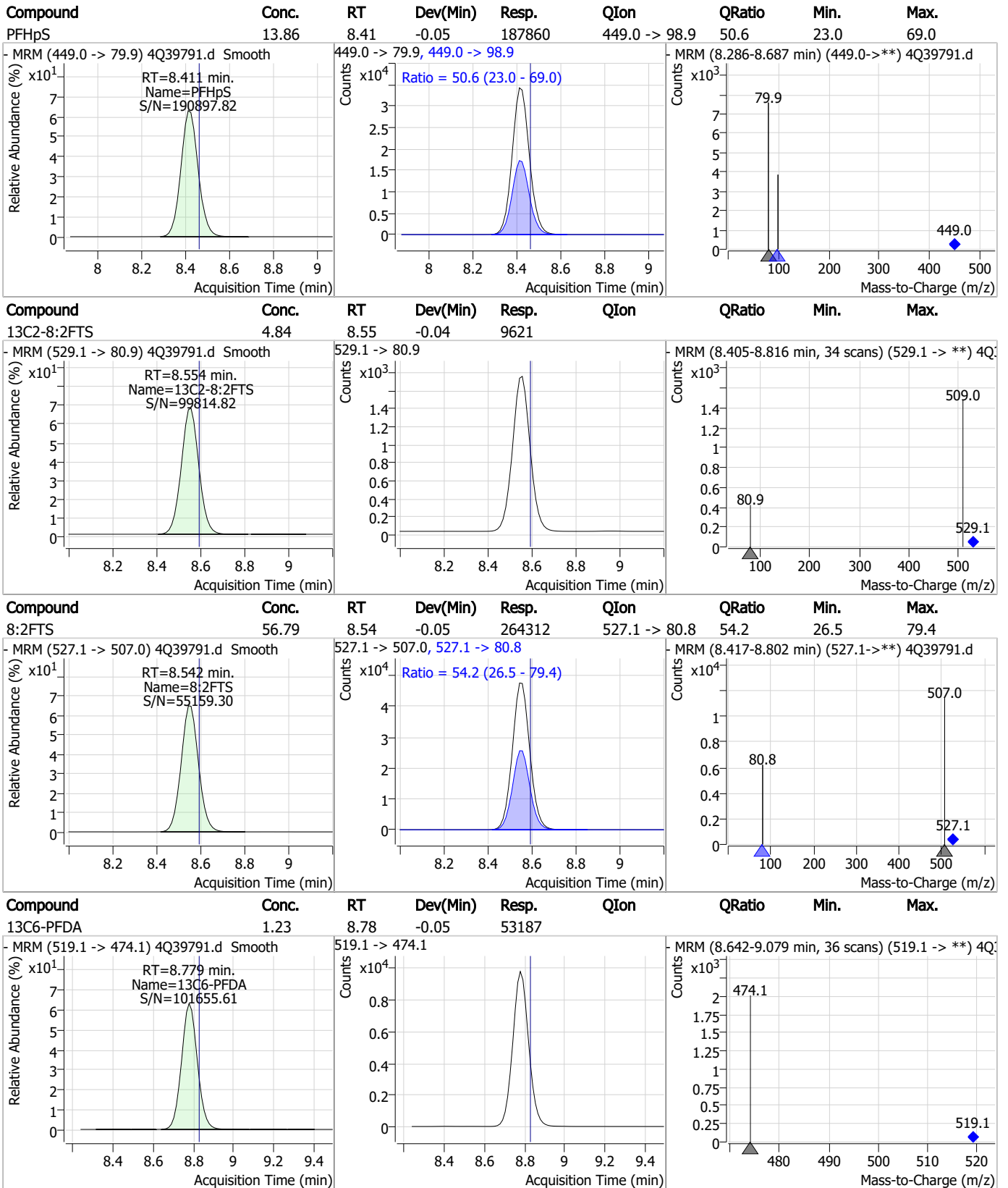
7.5.4

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Perfluorinated Compounds by LC/MS/MS



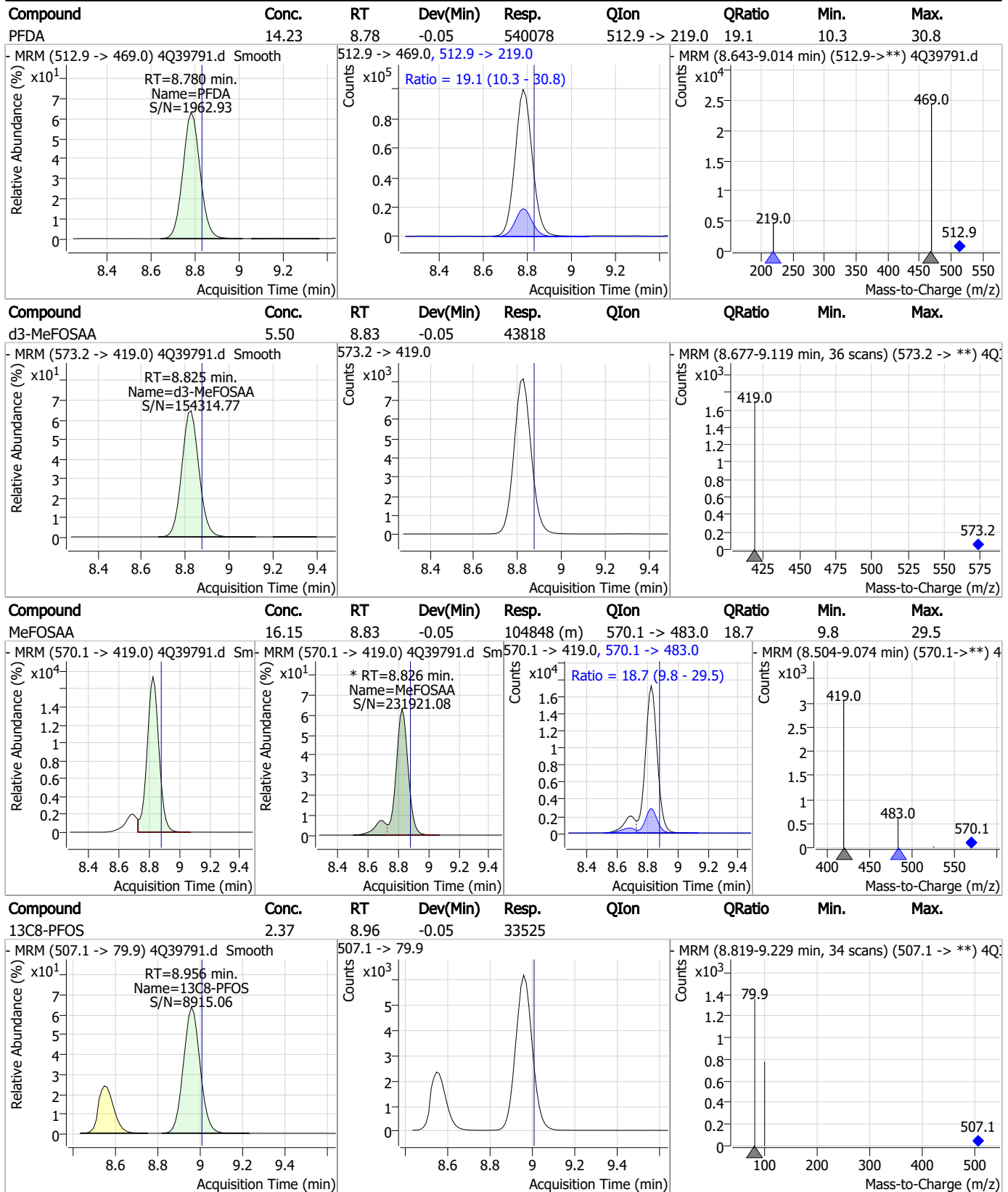
Perfluorinated Compounds by LC/MS/MS



7.5.4

7

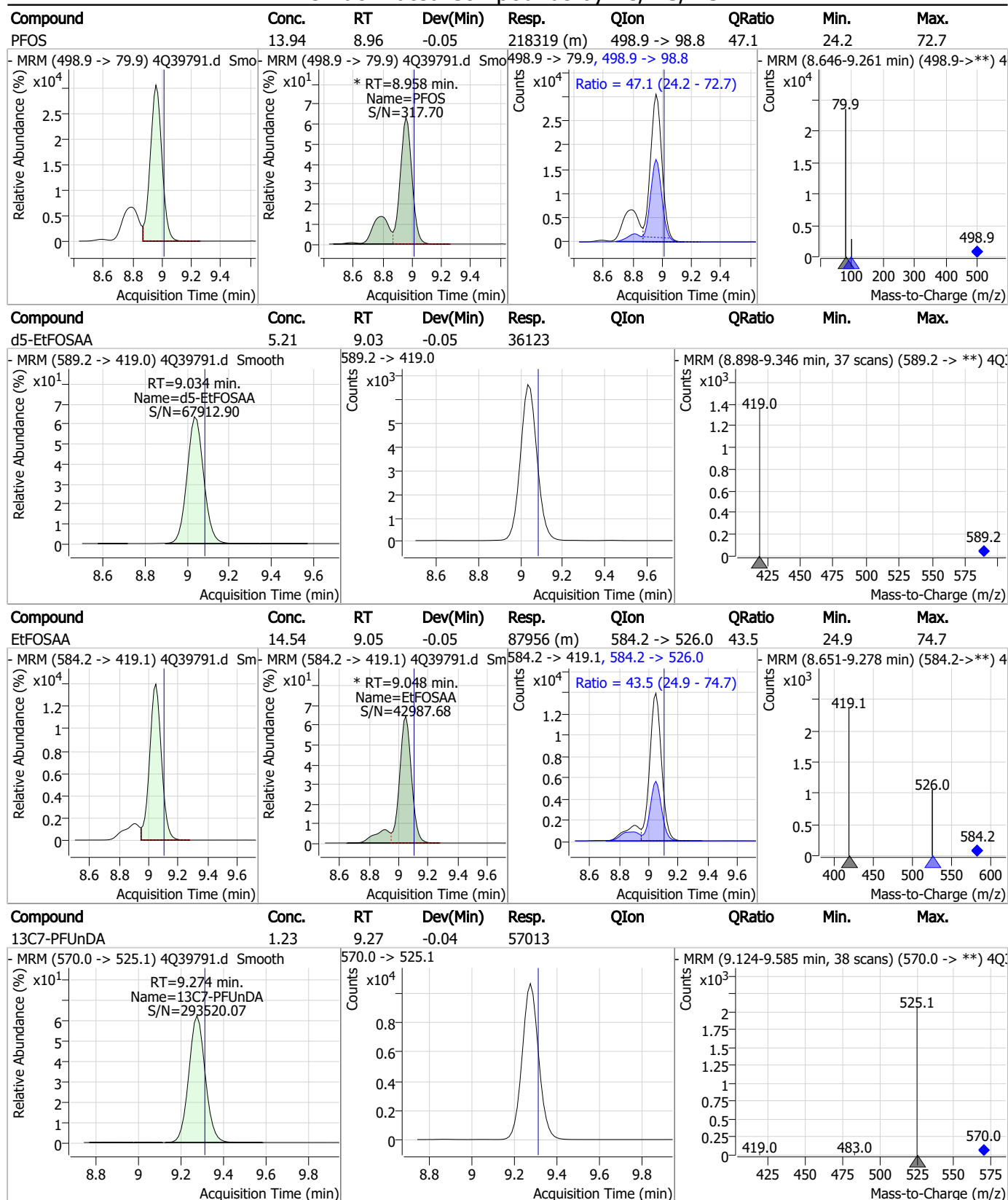
Perfluorinated Compounds by LC/MS/MS



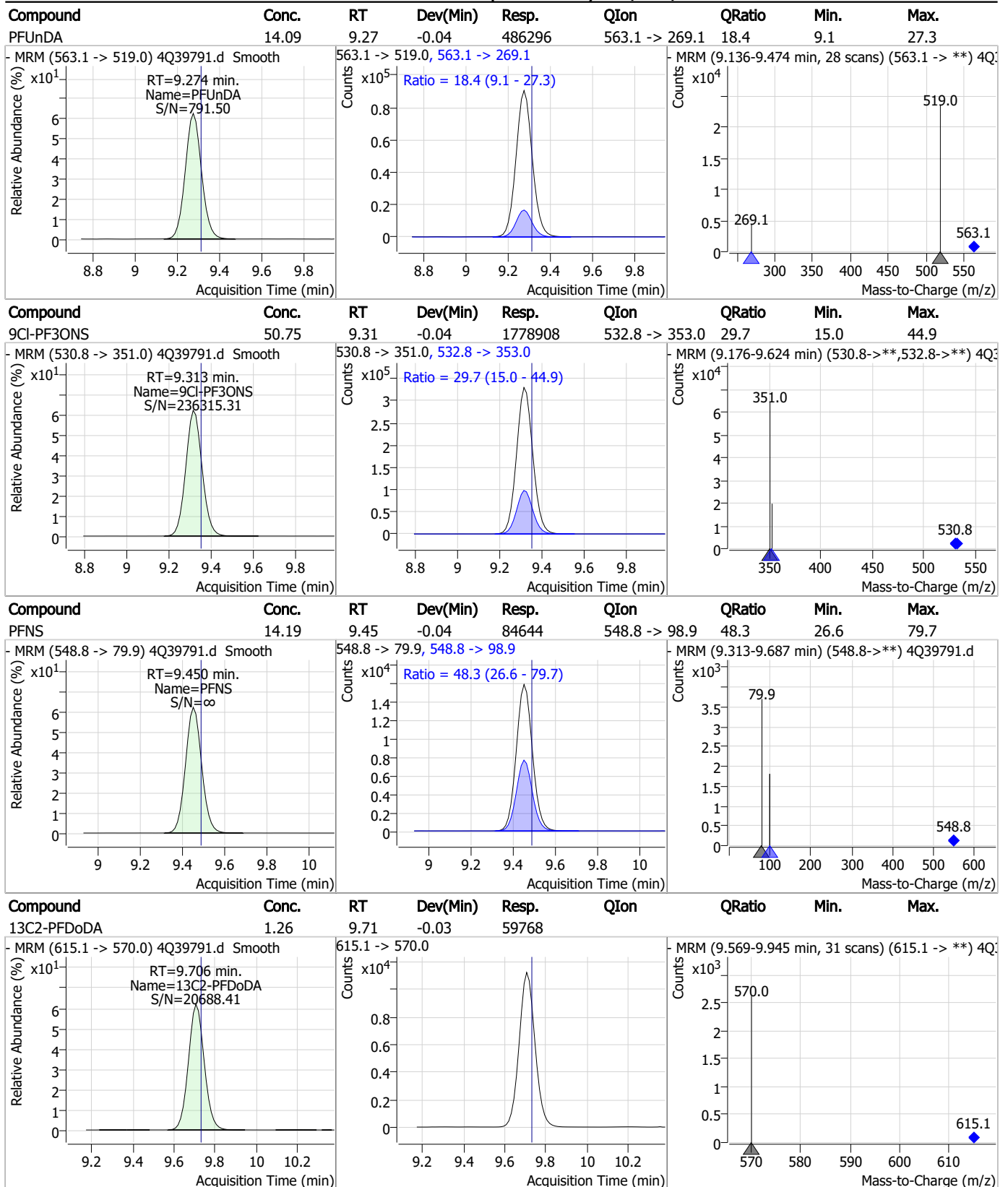
7.5.4

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Perfluorinated Compounds by LC/MS/MS



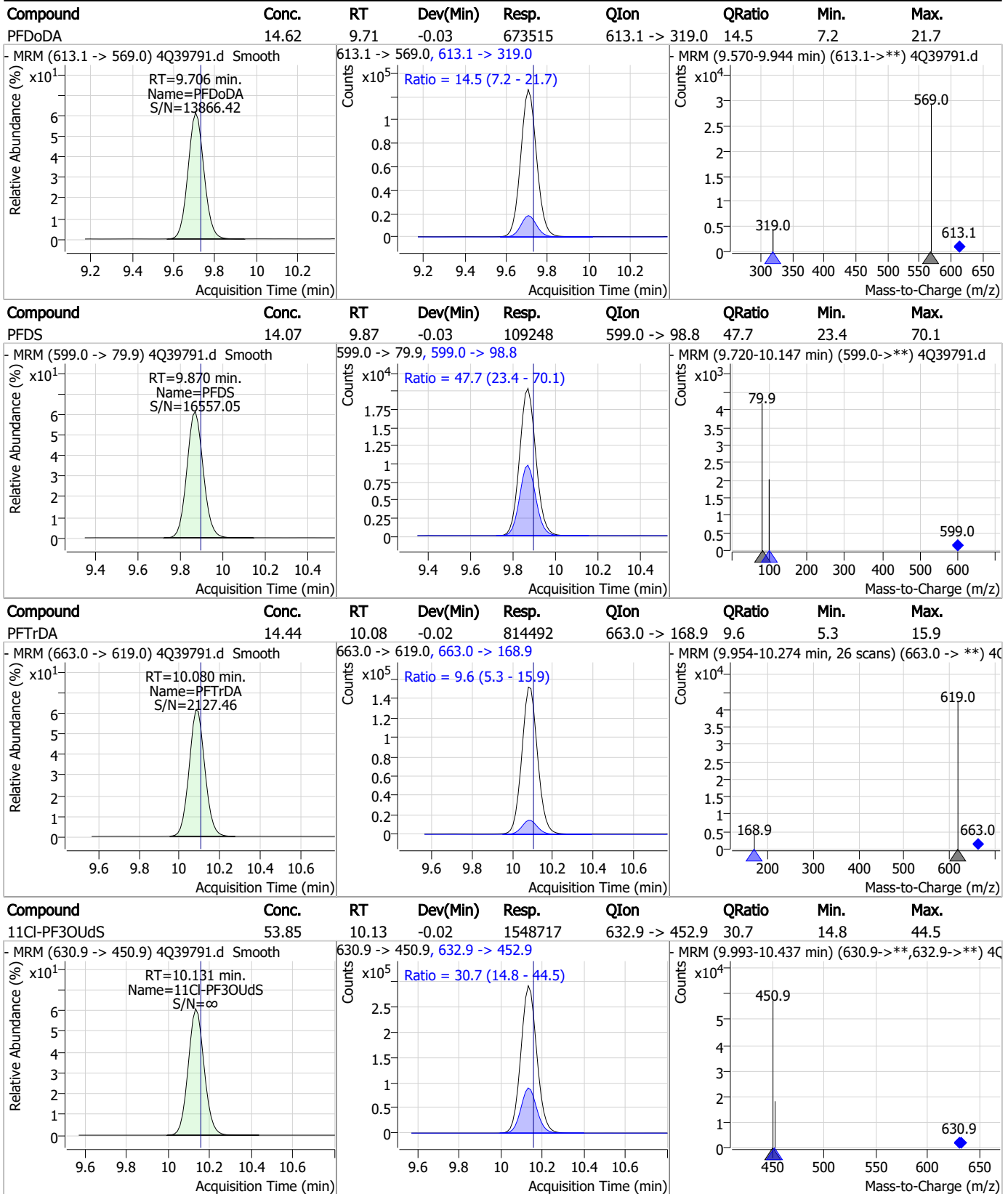
Perfluorinated Compounds by LC/MS/MS



7.5.4

7

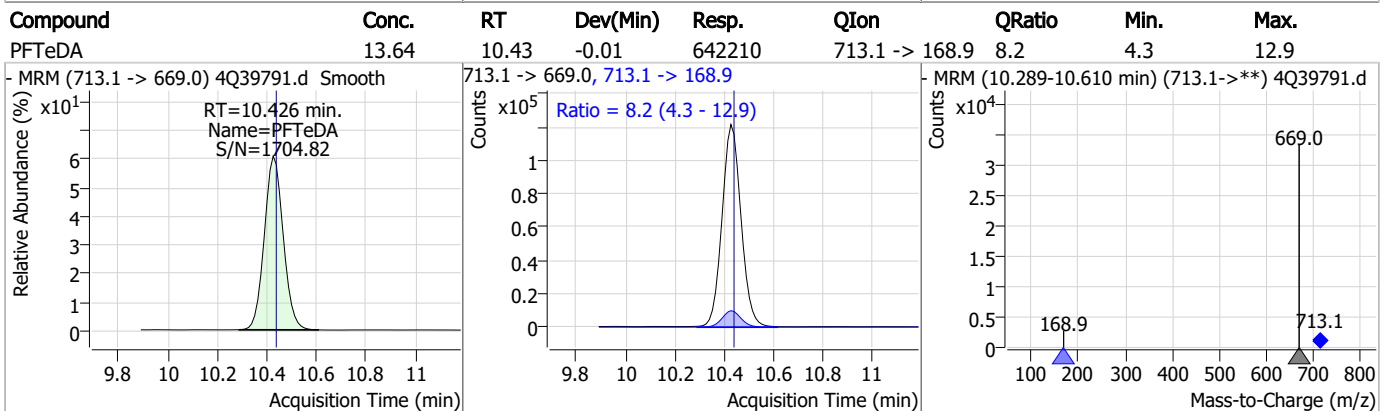
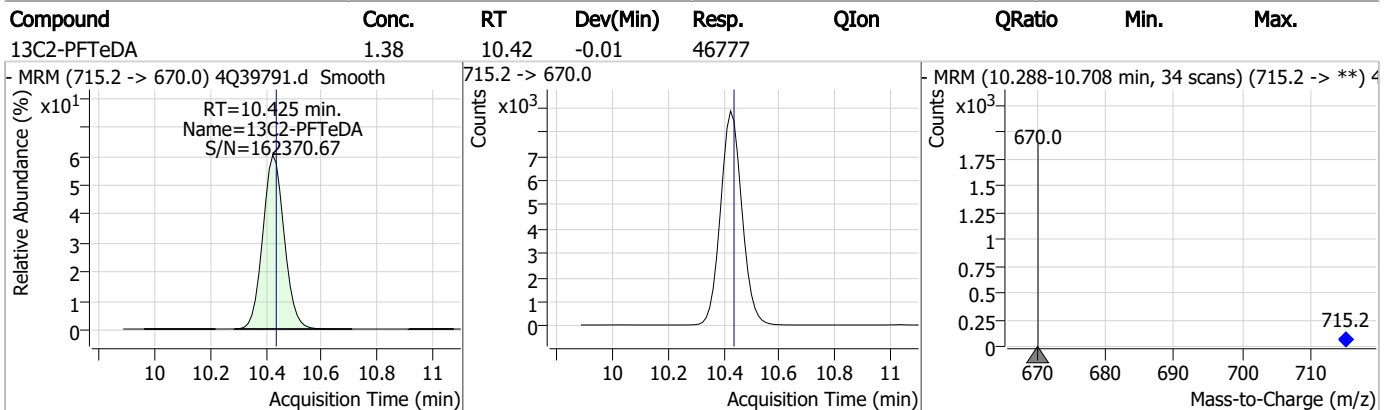
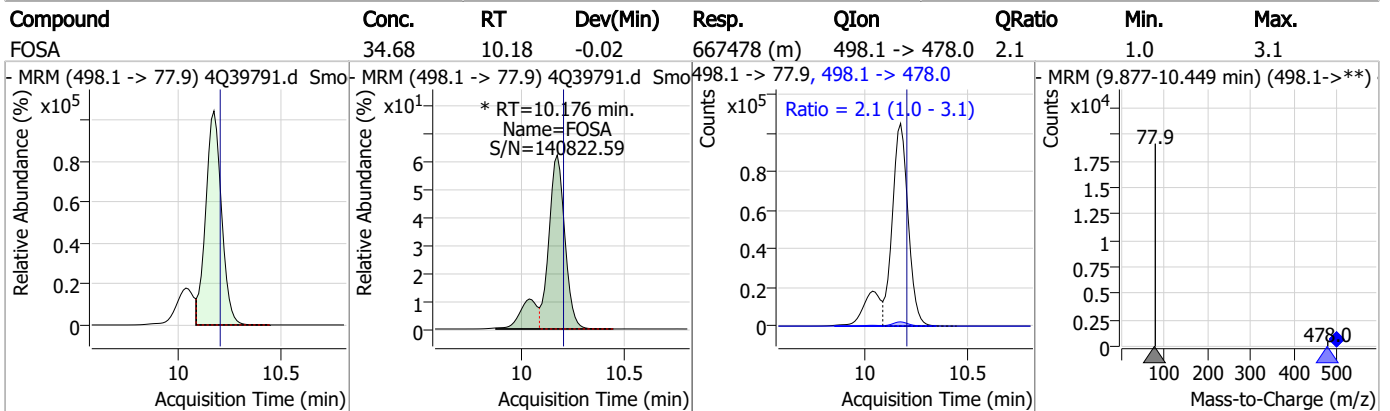
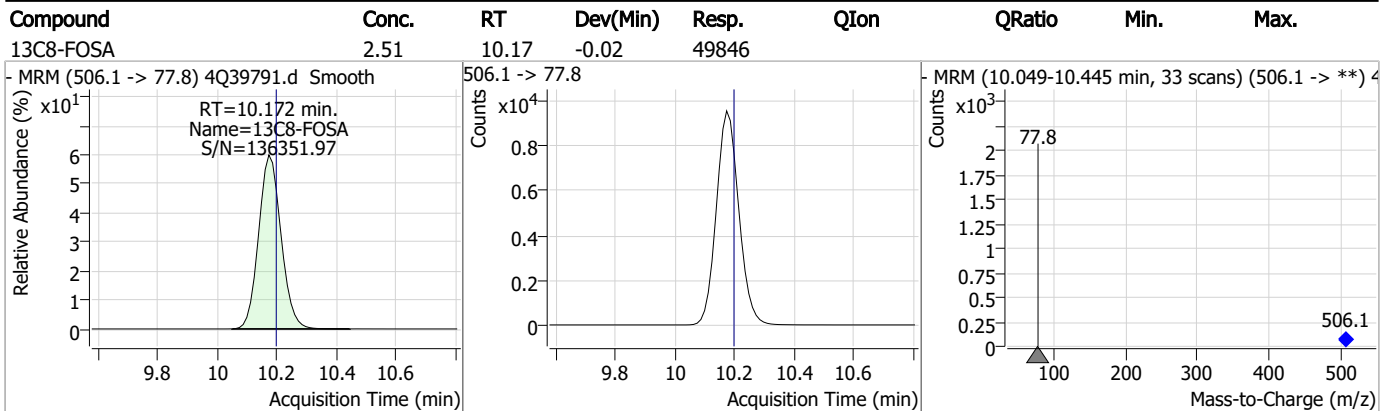
Perfluorinated Compounds by LC/MS/MS



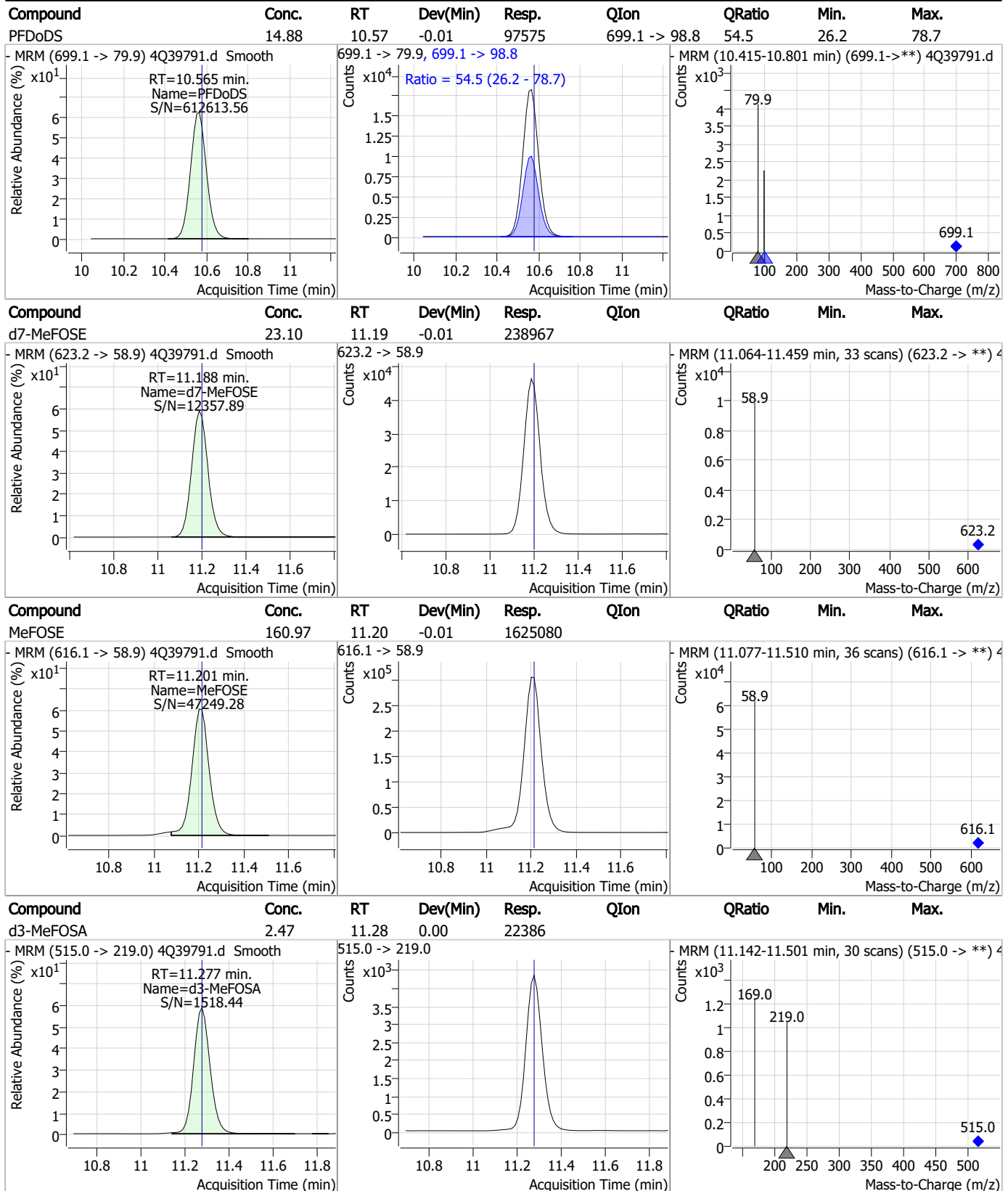
7.5.4

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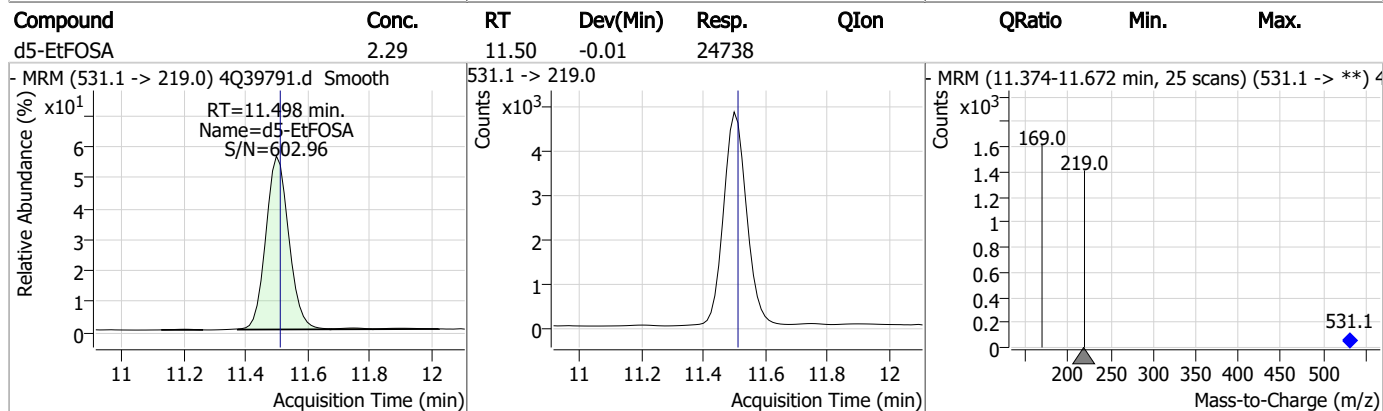
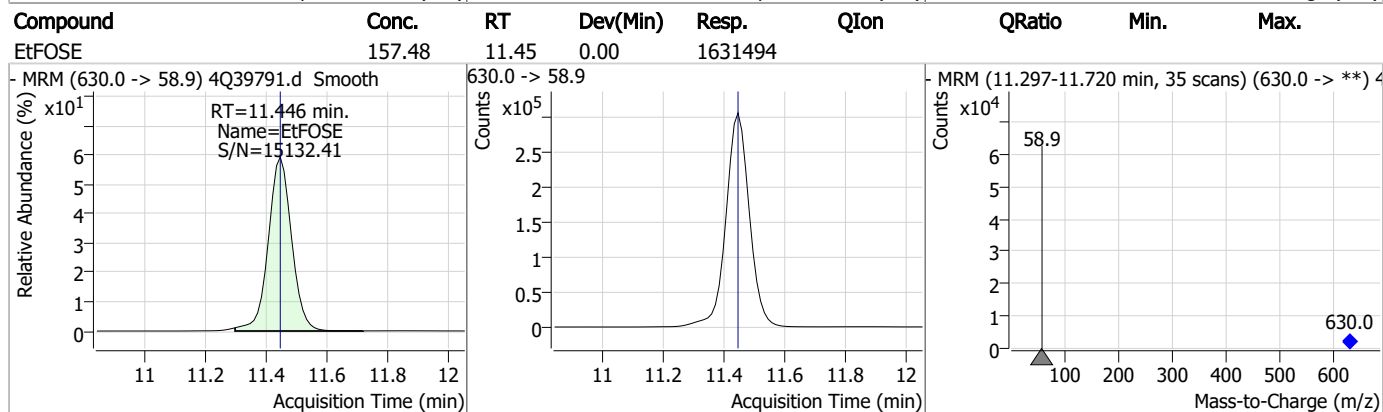
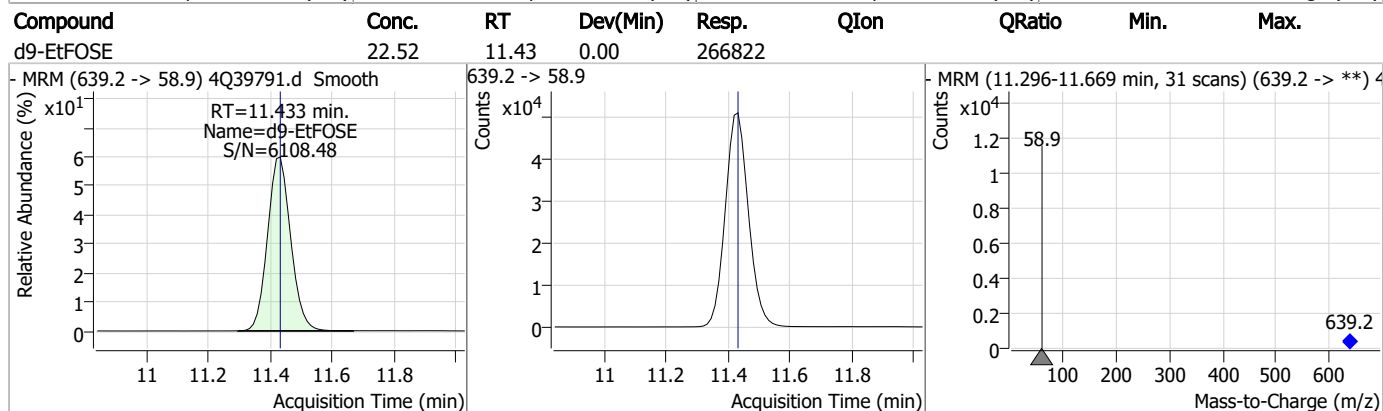
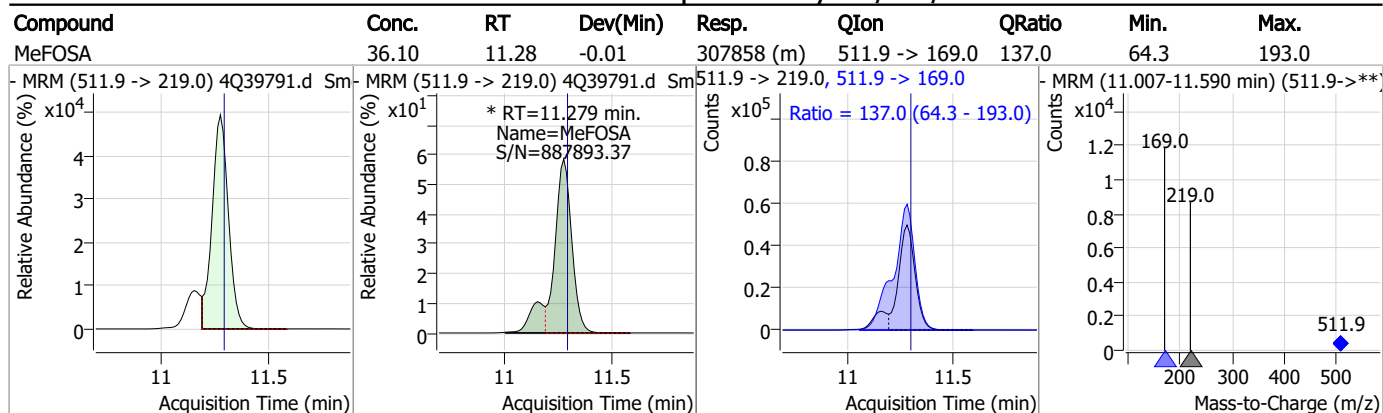
Perfluorinated Compounds by LC/MS/MS



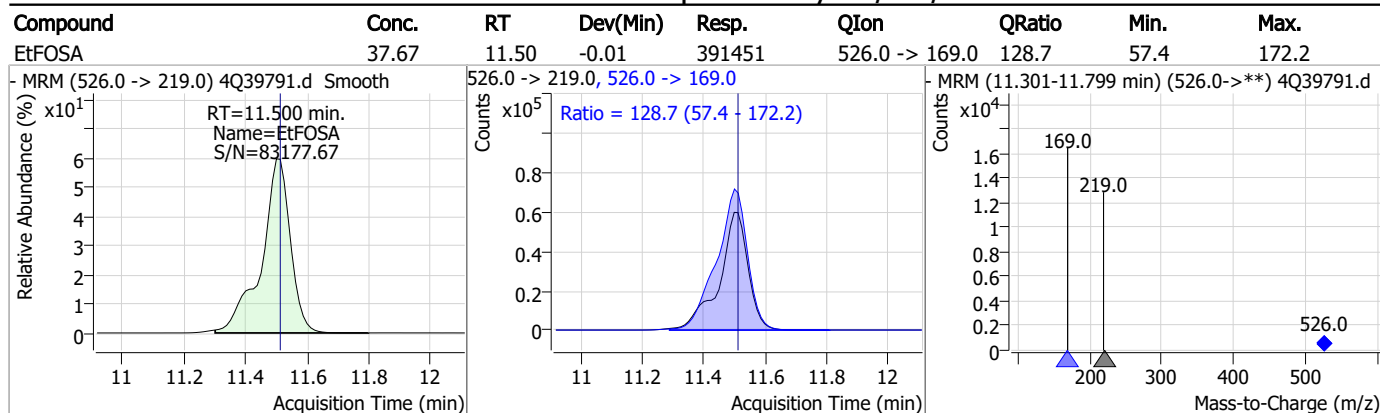
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.5.4

7

Manual Integration Approval Summary

Sample Number: S4Q572-RT

Method: EPA DRAFT 1633

Lab FileID: 4Q39791.D

Analyst approved: 01/27/23 10:21 Natasha Guntie

Injection Time: 01/26/23 13:13

Supervisor approved: 01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.69	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.82	Split peak
Perfluorononanoic acid	375-95-1		8.26	Split peak
MeFOSAA	2355-31-9		8.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.96	Split peak
EtFOSAA	2991-50-6		9.05	Split peak
PFOSA	754-91-6		10.18	Split peak
MeFOSA	31506-32-8		11.28	Split peak

7.5.4.1
7

QQQ Check Tune Report



Agilent

Trusted Answers

Instrument Name	LCMS4-Q
MS Model	G6470A
MS Instrument Serial	SG2004G105
Software_Firmware Version	10.0.142, FW: A.00.08.100
Tune Date & Time	25 January 2023 12:05:19
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.59E+0 [R] (Torr); 3.48E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	3500
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	7

7.6.1

7

QQQ Check Tune Report



Agilent

Trusted Answers

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	113.00	0.01	Pass	0.70	0.74	0.04	Pass	168395
302.00	302.00	0.00	Pass	0.70	0.70	0.00	Pass	265819
601.98	602.01	0.03	Pass	0.70	0.71	0.01	Pass	473392
1033.99	1034.01	0.02	Pass	0.70	0.69	-0.01	Pass	533021
1633.95	1634.00	0.05	Pass	0.70	0.67	-0.03	Pass	971783
2233.91	2233.93	0.02	Pass	0.70	0.70	0.00	Pass	545277

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.99	-0.01	Pass	0.70	0.74	0.04	Pass	47134
112.99	112.93	-0.06	Pass	0.70	0.79	0.09	Pass	140249
302.00	302.02	0.02	Pass	0.70	0.70	0.00	Pass	254327
601.98	602.01	0.03	Pass	0.70	0.70	0.00	Pass	308931
1033.99	1034.09	0.10	Pass	0.70	0.65	-0.05	Pass	229423
1633.95	1633.95	0.00	Pass	0.70	0.69	-0.01	Pass	512306
2233.91	2233.92	0.01	Pass	0.70	0.68	-0.02	Pass	276022

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.03	0.04	Pass	1.20	1.24	0.04	Pass	201016
302.00	302.00	0.00	Pass	1.20	1.26	0.06	Pass	343276
601.98	601.96	-0.02	Pass	1.20	1.23	0.03	Pass	641773
1033.99	1033.96	-0.03	Pass	1.20	1.26	0.06	Pass	853282
1633.95	1633.91	-0.04	Pass	1.20	1.24	0.04	Pass	2093908
2233.91	2233.87	-0.04	Pass	1.20	1.25	0.05	Pass	1357888

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.97	-0.03	Pass	1.20	1.19	-0.01	Pass	60096
112.99	112.94	-0.05	Pass	1.20	1.23	0.03	Pass	191377
302.00	301.79	-0.21	Pass	1.20	1.34	0.14	Pass	348130
601.98	601.72	-0.26	Pass	1.20	1.43	0.23	Pass	545717
1033.99	1033.87	-0.12	Pass	1.20	1.38	0.18	Pass	436121
1633.95	1633.90	-0.05	Pass	1.20	1.36	0.16	Pass	1221253
2233.91	2234.00	0.09	Pass	1.20	1.26	0.06	Pass	703698

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	2.50	2.53	0.03	Pass	254213
302.00	302.00	0.00	Pass	2.50	2.50	0.00	Pass	429283
601.98	601.99	0.01	Pass	2.50	2.44	-0.06	Pass	926526
1033.99	1033.95	-0.04	Pass	2.50	2.49	-0.01	Pass	1499218
1633.95	1633.92	-0.03	Pass	2.50	2.41	-0.09	Pass	4541677
2233.91	2233.81	-0.10	Pass	2.50	2.39	-0.11	Pass	3706981

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.97	-0.03	Pass	2.50	2.52	0.02	Pass	71751
112.99	112.95	-0.04	Pass	2.50	2.56	0.06	Pass	236501
302.00	301.98	-0.02	Pass	2.50	2.54	0.04	Pass	446017
601.98	601.94	-0.04	Pass	2.50	2.61	0.11	Pass	752845
1033.99	1034.12	0.13	Pass	2.50	2.52	0.02	Pass	705110
1633.95	1634.24	0.29	Pass	2.50	2.28	-0.22	Pass	2178532
2233.91	2234.05	0.14	Pass	2.50	2.26	-0.24	Pass	1645963

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39691.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 1:13:39 PM
 Sample Name : ic571-1
 Vial : P1-A2
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.161	216.8 -> 171.9	378112	10.00 µg/L	-0.012
M5-PFPeA	4.851	268.3 -> 223.0	244215	5.00 µg/L	-0.013
M5-PFHxA	6.160	318.0 -> 273.0	153999	2.50 µg/L	-0.012
M4-PFHpA	7.093	367.1 -> 322.0	85473	2.50 µg/L	-0.012
M8-PFOA	7.776	421.1 -> 376.0	144006	2.50 µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	67256	1.25 µg/L	-0.012
M6-PFDA	8.879	519.1 -> 474.1	51600	1.25 µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	58149	1.25 µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	62170	1.25 µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	40820	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	51136	2.50 µg/L	0.000
M3-PFBS	6.077	302.1 -> 79.9	42632	2.50 µg/L	-0.012
M3-PFHxS	7.904	402.1 -> 79.9	29757	2.50 µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	38096	2.50 µg/L	-0.012
M2-4:2FTS	5.796	329.1 -> 80.9	3832	5.00 µg/L	-0.027
M2-6:2FTS	7.524	429.1 -> 80.9	8489	5.00 µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	12306	5.00 µg/L	-0.012
M3-MeFOSAA	8.924	573.2 -> 419.0	43096	5.00 µg/L	0.000
M3-HFPO-DA	6.539	286.9 -> 168.9	120662	10.00 µg/L	-0.012
M5-EtFOSAA	9.133	589.2 -> 419.0	37972	5.00 µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	276768	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	323467	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	27006	2.50 µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	22296	2.50 µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	34913	2.50 µg/L	-0.012
13C3-PFBA	3.153	216.0 -> 172.0	206451	5.00 µg/L	-0.025
18O2-PFHxS	7.903	403.0 -> 83.9	20000	2.50 µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	158705	2.50 µg/L	-0.012
13C2-PFDA	8.879	515.1 -> 470.1	45955	1.25 µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	77611	1.25 µg/L	-0.012
13C2-PFHxA	6.161	315.1 -> 270.0	145414	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.796	329.1 -> 80.9	3832	5.32 µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C2-6:2FTS	7.524	429.1 -> 80.9	8489	5.26 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C2-8:2FTS	8.641	529.1 -> 80.9	12306	5.57 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-PFDoDA	9.793	615.1 -> 570.0	62170	1.39 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-PFTeDA	10.512	715.2 -> 670.0	40820	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C3-PFBS	6.077	302.1 -> 79.9	42632	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFHxS	7.904	402.1 -> 79.9	29757	2.55 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 = 102.0%		
13C4-PFBA	3.161	216.8 -> 171.9	378112	10.16 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C4-PFHpA	7.093	367.1 -> 322.0	85473	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C5-PFHxA	6.160	318.0 -> 273.0	153999	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C5-PFPeA	4.851	268.3 -> 223.0	244215	5.16 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C6-PFDA	8.879	519.1 -> 474.1	51600	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C7-PFUnDA	9.373	570.0 -> 525.1	58149	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C8-FOSA	10.247	506.1 -> 77.8	51136	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C8-PFOA	7.776	421.1 -> 376.0	144006	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C8-PFOS	9.055	507.1 -> 79.9	38096	2.67 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.9%		
13C9-PFNA	8.347	472.1 -> 427.0	67256	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.5%		
d3-MeFOSAA	8.924	573.2 -> 419.0	43096	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C3-HFPO-DA	6.539	286.9 -> 168.9	120662	10.40 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 104.0%		
d3-MeFOSA	11.315	515.0 -> 219.0	22296	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.7%		
d5-EtFOSAA	9.133	589.2 -> 419.0	37972	5.44 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.8%		
d7-MeFOSE	11.235	623.2 -> 58.9	276768	26.58 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 106.3%		
d9-EtFOSE	11.470	639.2 -> 58.9	323467	27.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 108.5%		
d5-EtFOSA	11.548	531.1 -> 219.0	27006	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		

Target Compounds

					QValue
4:2FTS	5.797	327.1 -> 307.0	3831	0.61 µg/L	91
		327.1 -> 80.9	2027		
6:2FTS	7.524	427.1 -> 407.0	4312	0.64 µg/L	96
		427.1 -> 80.9	2239		
8:2FTS	8.641	527.1 -> 507.0	4336	0.73 µg/L	94
		527.1 -> 80.8	2104		
EtFOSAA	9.147	584.2 -> 419.1	1337	0.21 µg/L	76
		584.2 -> 526.0	448		
FOSA	10.238	498.1 -> 77.9	3453	0.17 µg/L	96
		498.1 -> 478.0	116		
MeFOSAA	8.925	570.1 -> 419.0	1262	0.20 µg/L	89
		570.1 -> 483.0	184		
PFBA	3.157	212.8 -> 168.9	7130	0.68 µg/L	100
PFBS	6.078	298.7 -> 79.9	3021	0.16 µg/L	95
		298.7 -> 98.8	945		
PFDA	8.879	512.9 -> 469.0	6119	0.17 µg/L	91
		512.9 -> 219.0	1517		
PFDODA	9.806	613.1 -> 569.0	7448	0.16 µg/L	99
		613.1 -> 319.0	1043		
PFDS	9.959	599.0 -> 79.9	1416	0.16 µg/L	89

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.094	599.0 -> 98.8	562	0.15	µg/L	94
		363.1 -> 319.0	7993			
		363.1 -> 169.0	1552			
PFHpS	8.513	449.0 -> 79.9	2259	0.15	µg/L	86
		449.0 -> 98.9	1256			
PFHxA	6.162	313.0 -> 269.0	9159	0.15	µg/L	93
		313.0 -> 118.9	467			
PFHxS	7.905	398.7 -> 79.9	1235	0.13	µg/L	82
		398.7 -> 98.9	749			
PFNA	8.348	463.0 -> 419.0	8831	0.18	µg/L	94
		463.0 -> 219.0	1806			
PFNS	9.549	548.8 -> 79.9	1172	0.17	µg/L	99
		548.8 -> 98.9	633			
PFOA	7.777	413.0 -> 369.0	10905	0.17	µg/L	99
		413.0 -> 169.0	2273			
PFOS	9.057	498.9 -> 79.9	2753	0.15	µg/L	93
		498.9 -> 98.8	1460			
PFPeA	4.854	263.0 -> 219.0	17770	0.33	µg/L	100
PFPeS	7.159	349.1 -> 79.9	1553	0.17	µg/L	87
		349.1 -> 98.9	485			
PFTeDA	10.513	713.1 -> 669.0	6444	0.16	µg/L	88
		713.1 -> 168.9	829			
PFTTrDA	10.167	663.0 -> 619.0	9157	0.16	µg/L	99
		663.0 -> 168.9	927			
PFUnDA	9.374	563.1 -> 519.0	6400	0.18	µg/L	99
		563.1 -> 269.1	1194			
11CI-PF3OUdS	10.218	630.9 -> 450.9	18994	0.67	µg/L	98
		632.9 -> 452.9	5801			
9CI-PF3ONS	9.413	530.8 -> 351.0	20616	0.60	µg/L	97
		532.8 -> 353.0	6545			
ADONA	7.357	376.9 -> 250.9	42508	0.65	µg/L	97
		376.9 -> 84.8	14339			
HFPO-DA	6.540	284.9 -> 168.9	7808	0.69	µg/L	93
		284.9 -> 184.9	1026			
3:3FTCA	4.173	241.0 -> 177.0	2038	0.81	µg/L	98
		241.0 -> 117.0	176			
5:3FTCA	6.771	341.0 -> 237.1	34816	4.37	µg/L	94
		341.0 -> 217.0	24312			
7:3FTCA	8.249	441.0 -> 316.9	18421	4.03	µg/L	86
		441.0 -> 336.9	45896			
EtFOSA	11.550	526.0 -> 219.0	2130	0.19	µg/L	96
		526.0 -> 169.0	2351			
EtFOSE	11.483	630.0 -> 58.9	21289	1.70	µg/L	100
MeFOSA	11.329	511.9 -> 219.0	1300	0.15	µg/L	82
		511.9 -> 169.0	1951			
MeFOSE	11.248	616.1 -> 58.9	20507	1.75	µg/L	100
PFDoDS	10.639	699.1 -> 79.9	1283	0.17	µg/L	94
		699.1 -> 98.8	615			
NFDHA	6.028	295.0 -> 201.0	1476	0.38	µg/L	92
		295.0 -> 84.9	498			
PFMBA	5.316	279.0 -> 85.1	10832	0.32	µg/L	100
PFMPA	3.857	229.0 -> 84.9	11007	0.32	µg/L	100
PFEESA	6.634	314.8 -> 134.9	14600	0.29	µg/L	99
		314.8 -> 82.9	439			

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

Perfluorinated Compounds by LC/MS/MS

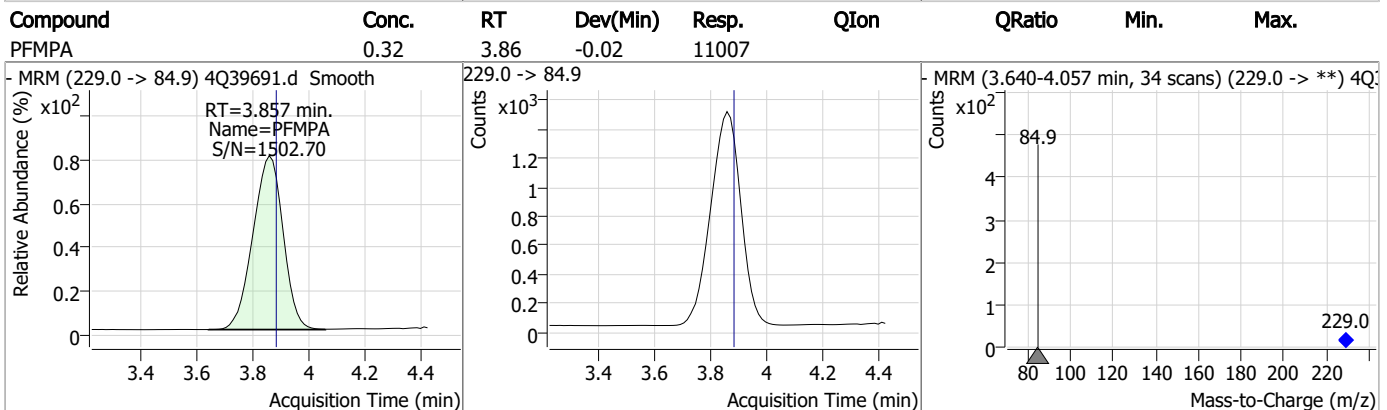
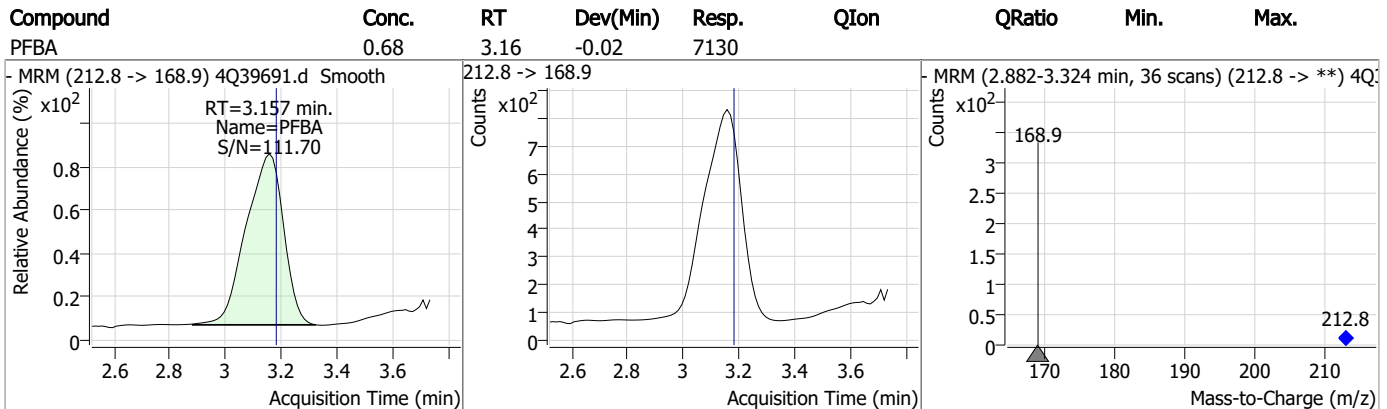
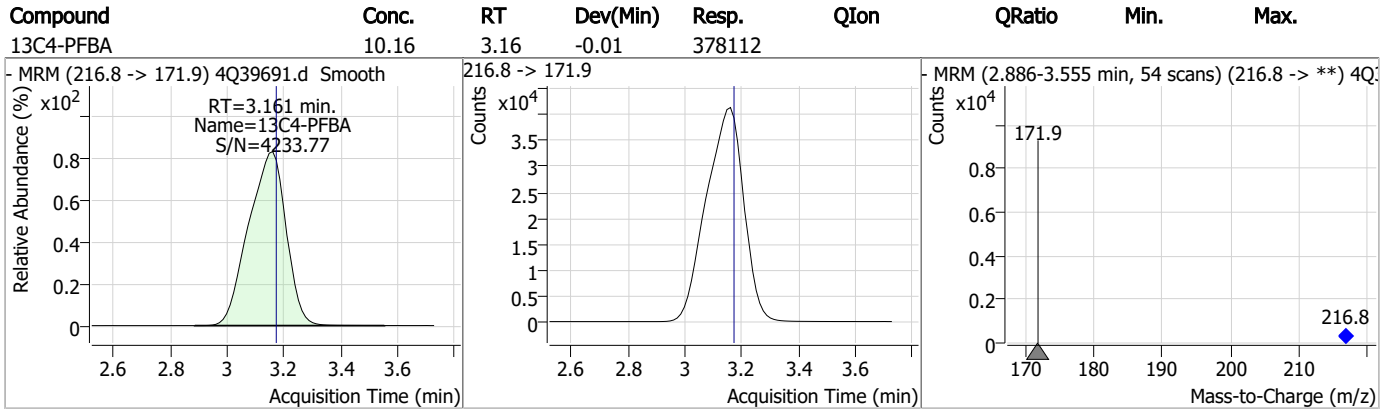
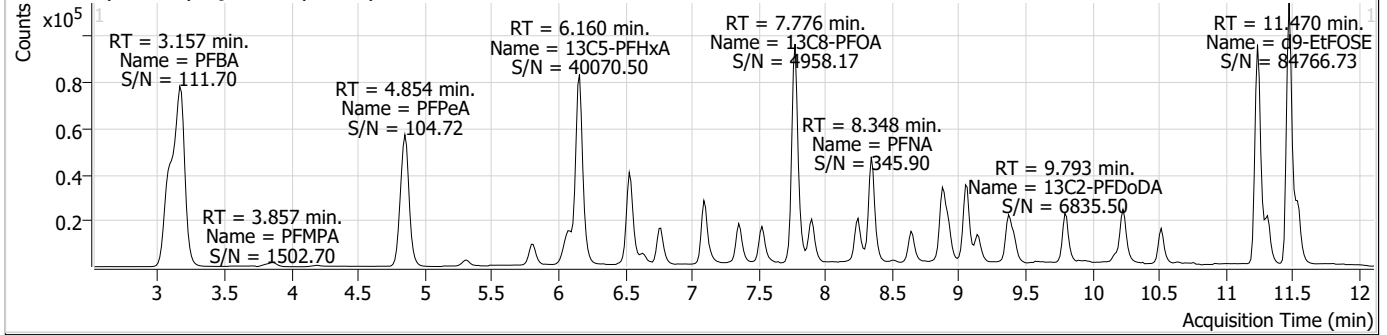
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.2

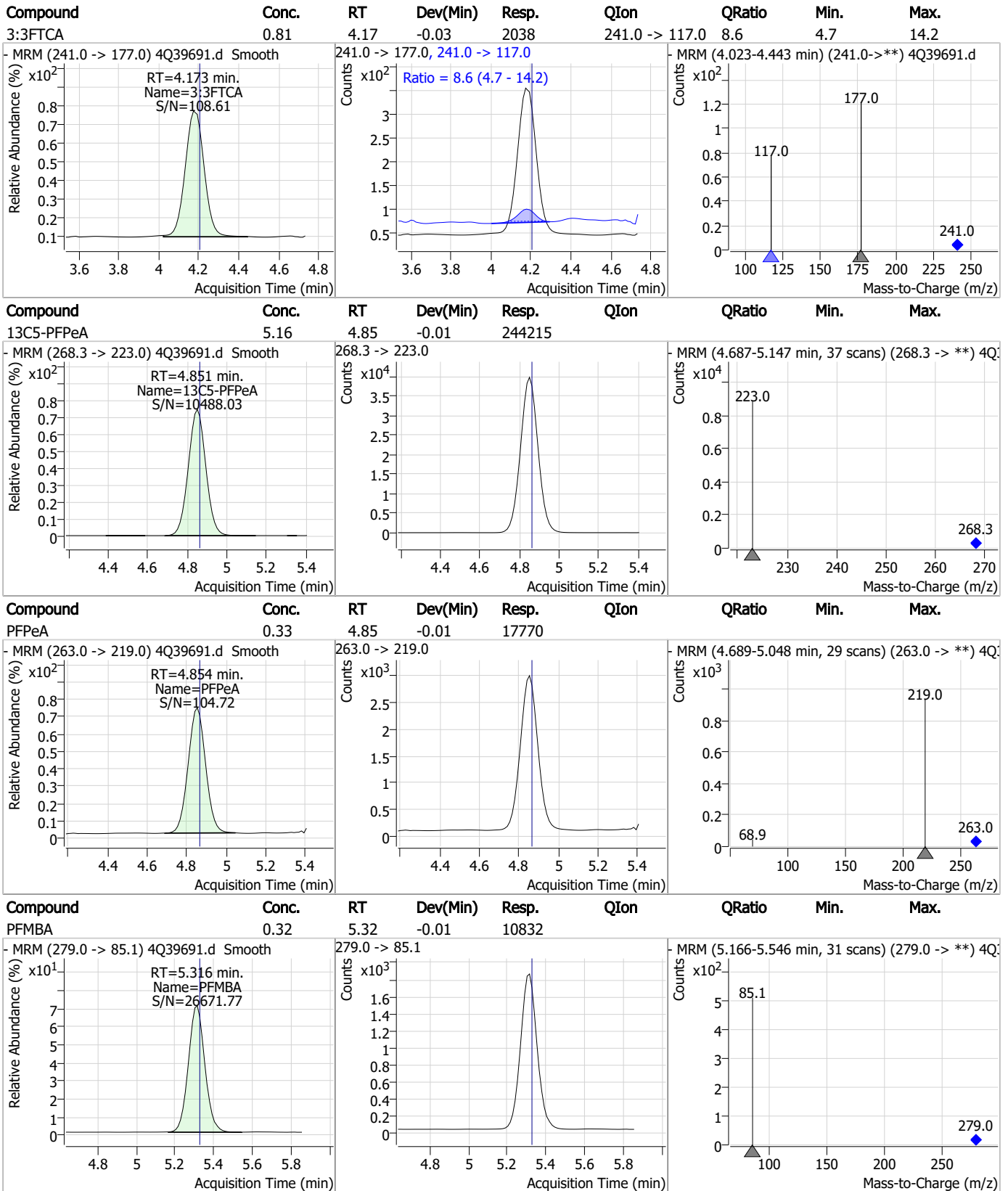
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Perfluorinated Compounds by LC/MS/MS

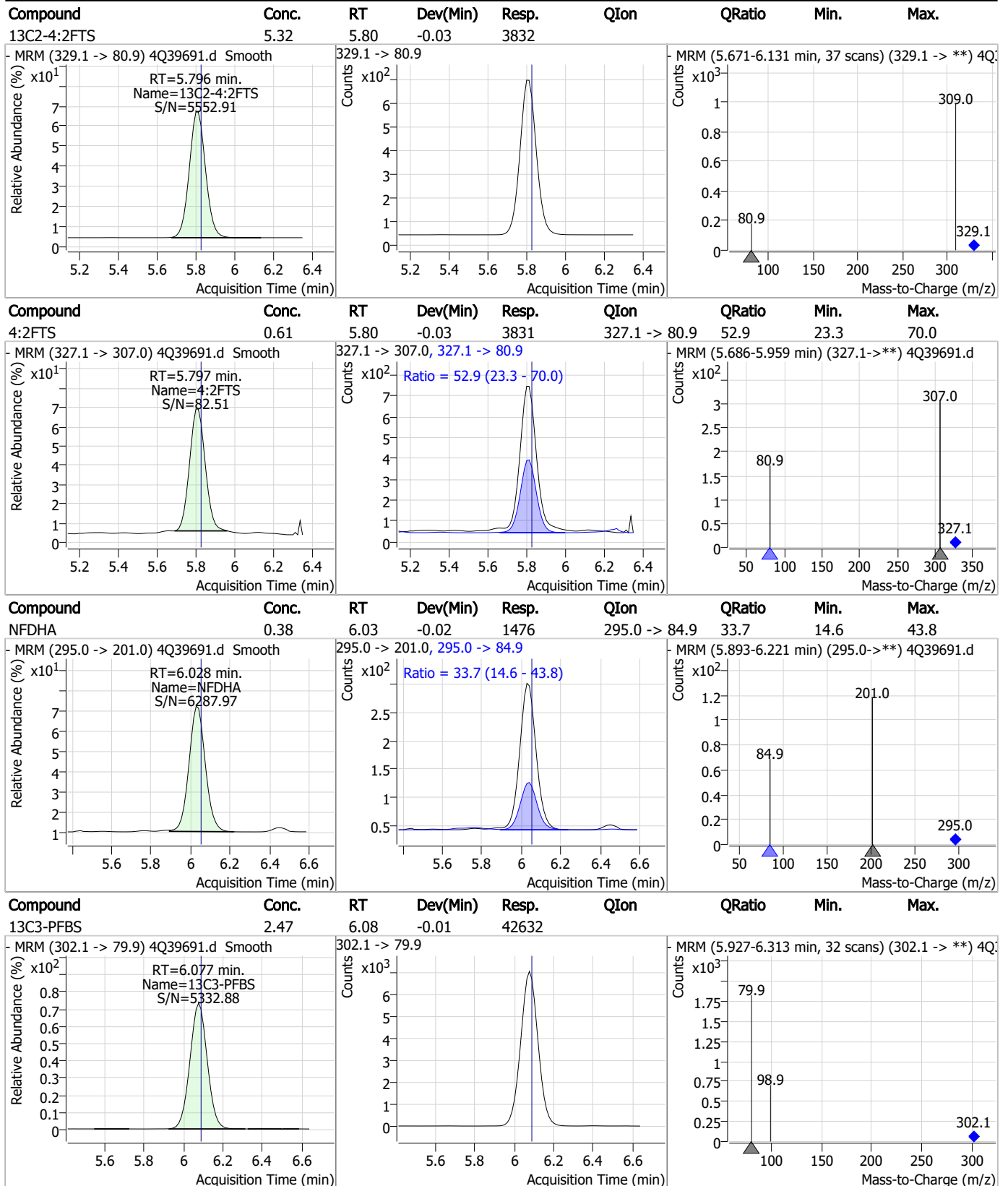
- TIC MRM (** -> **) 4Q39691.d (ic571-1)



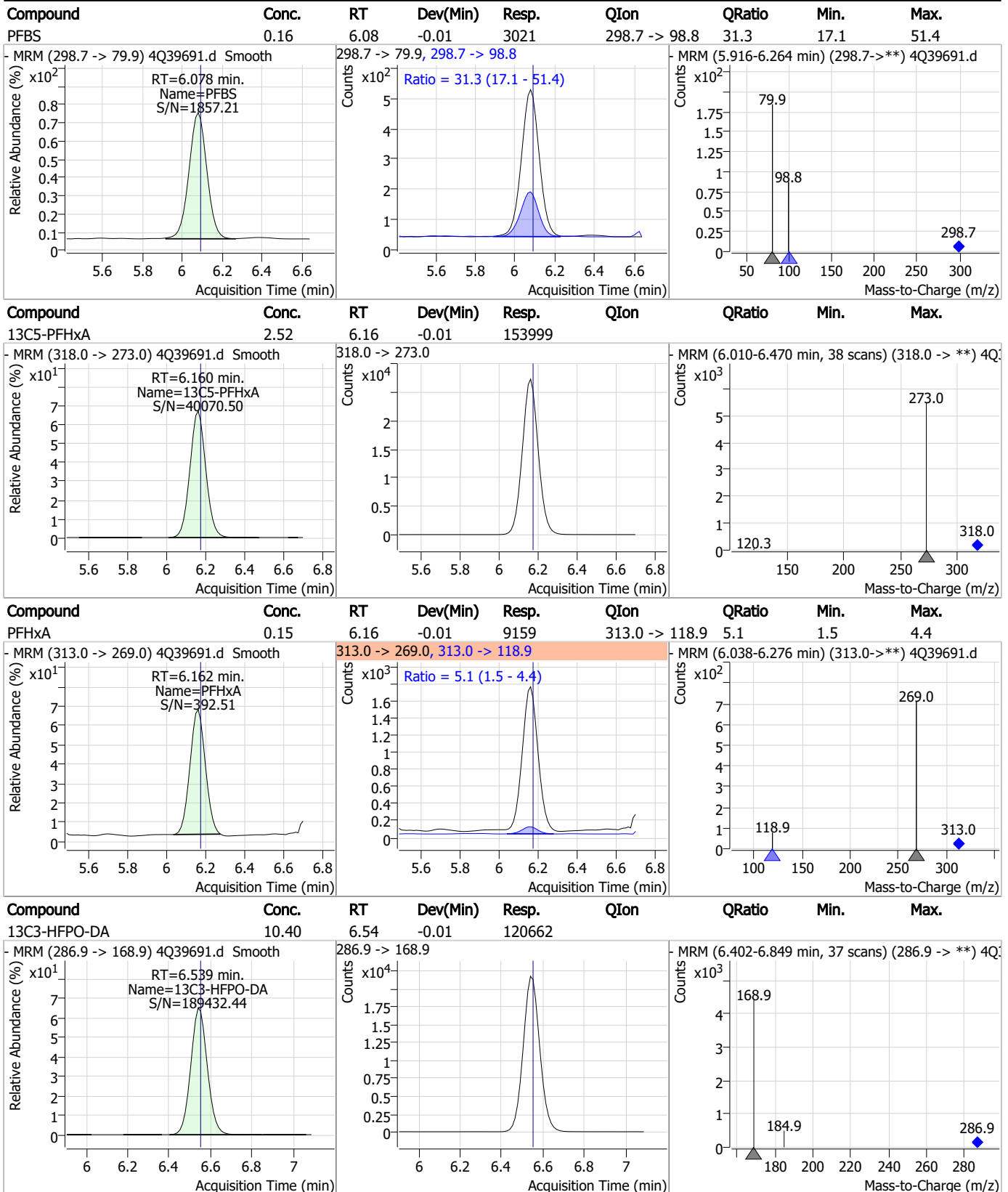
Perfluorinated Compounds by LC/MS/MS



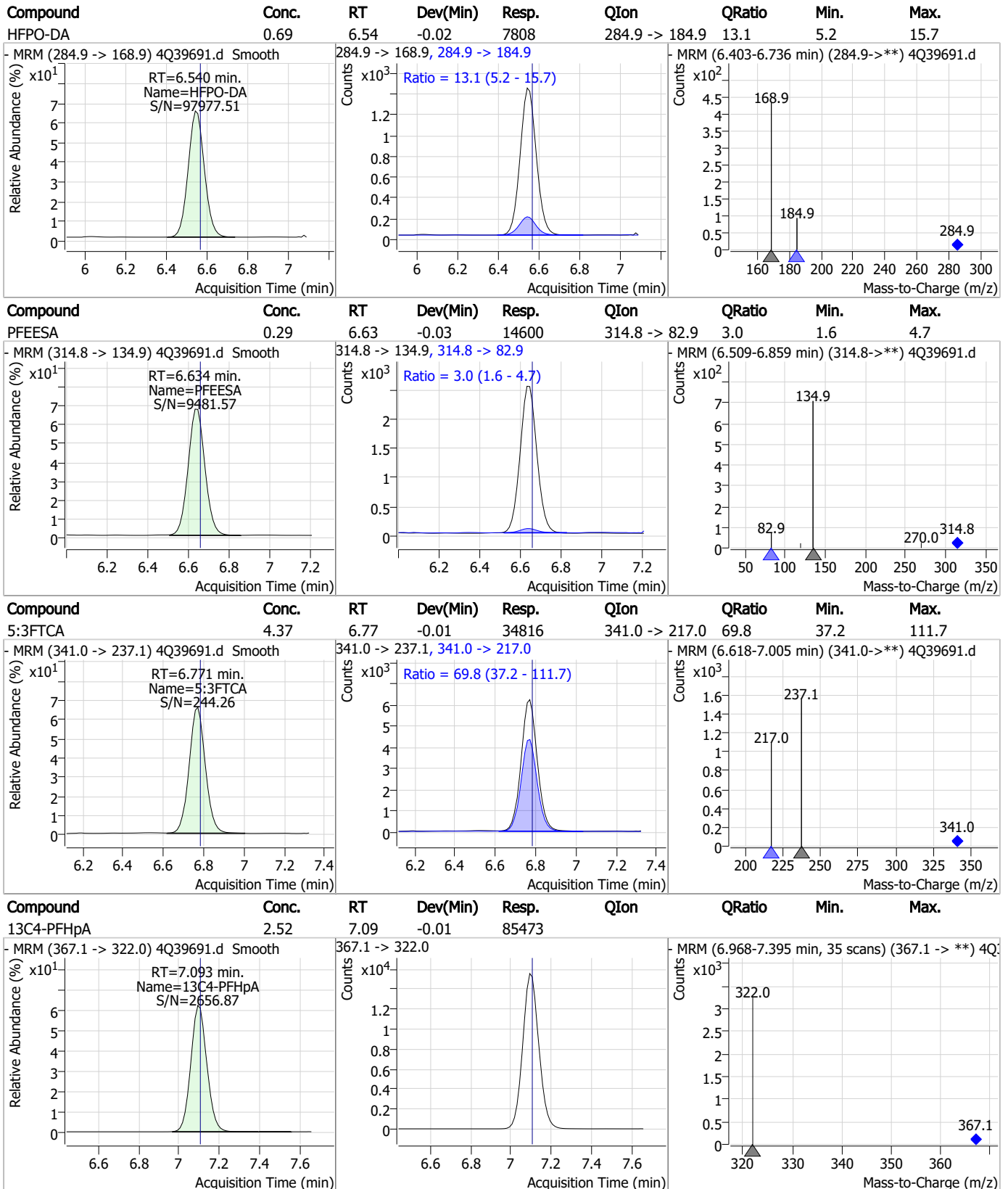
Perfluorinated Compounds by LC/MS/MS



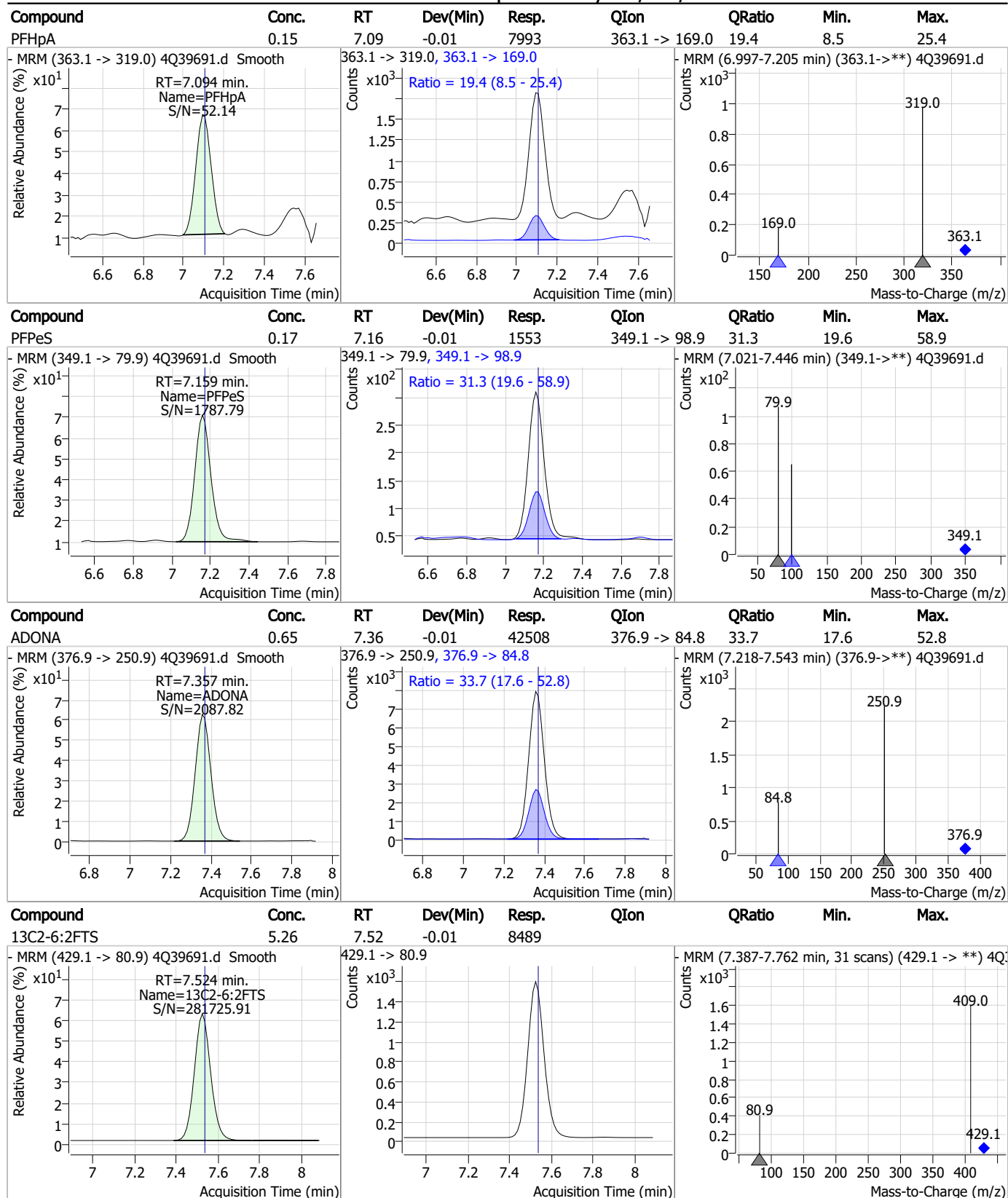
Perfluorinated Compounds by LC/MS/MS



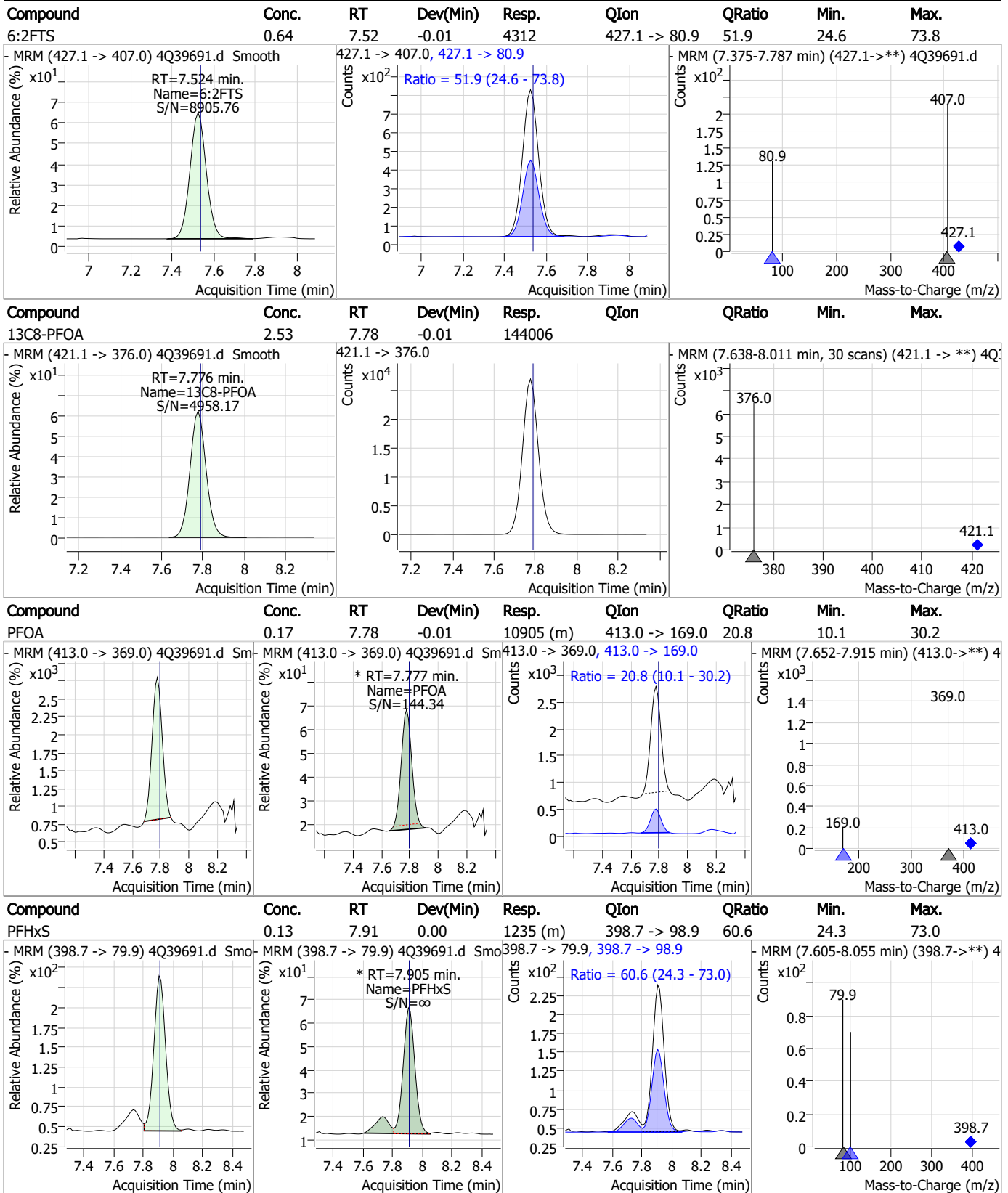
Perfluorinated Compounds by LC/MS/MS



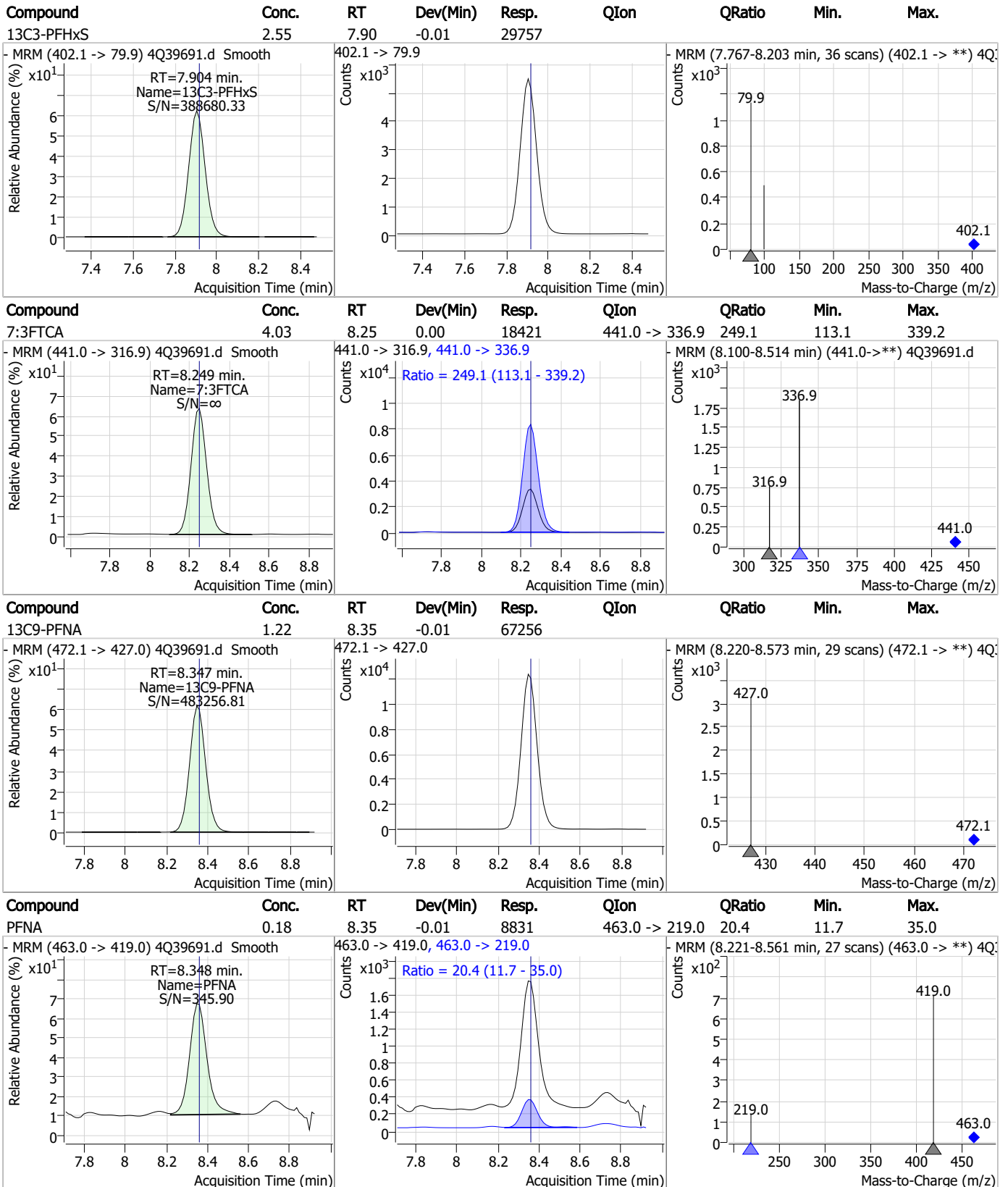
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



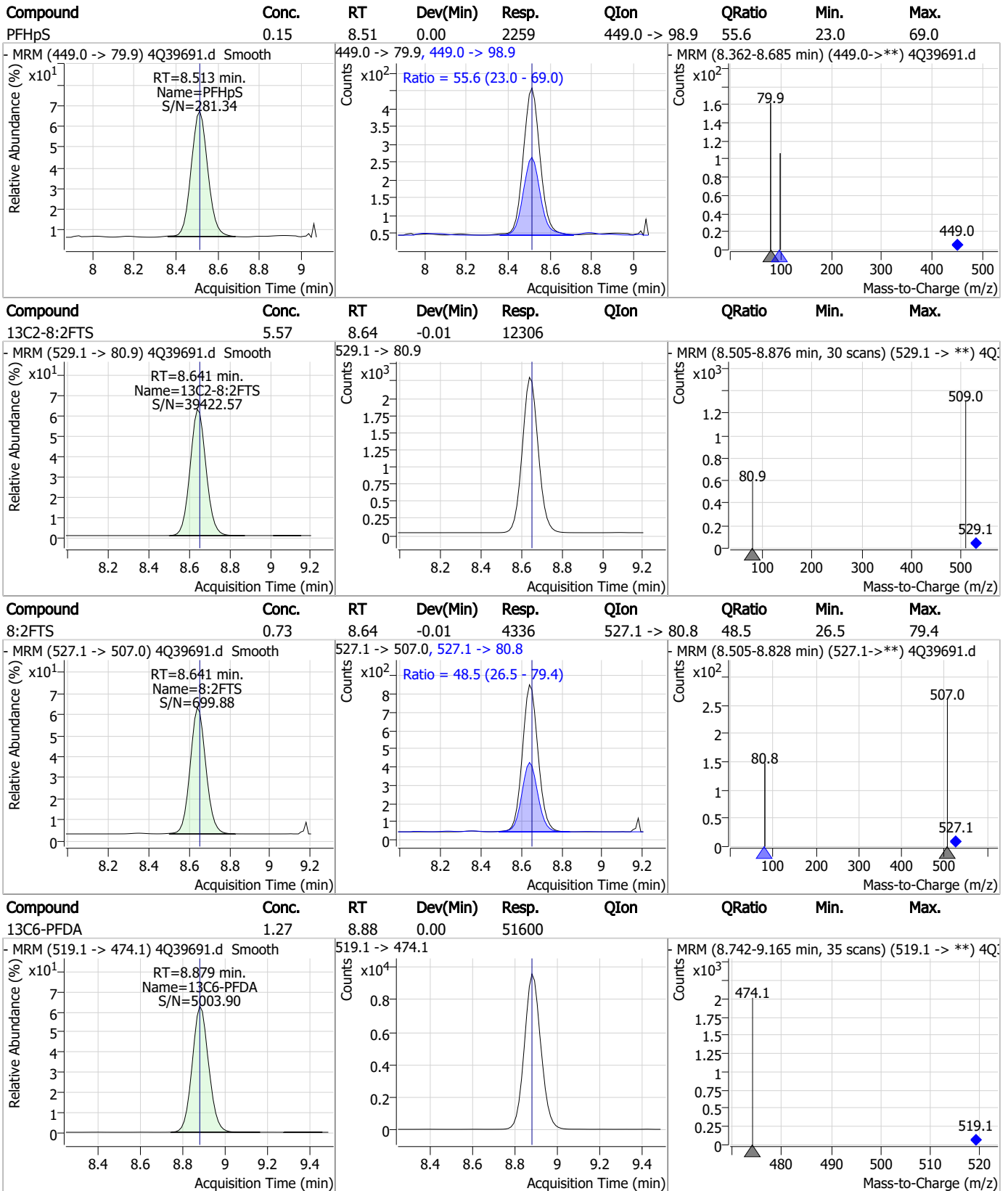
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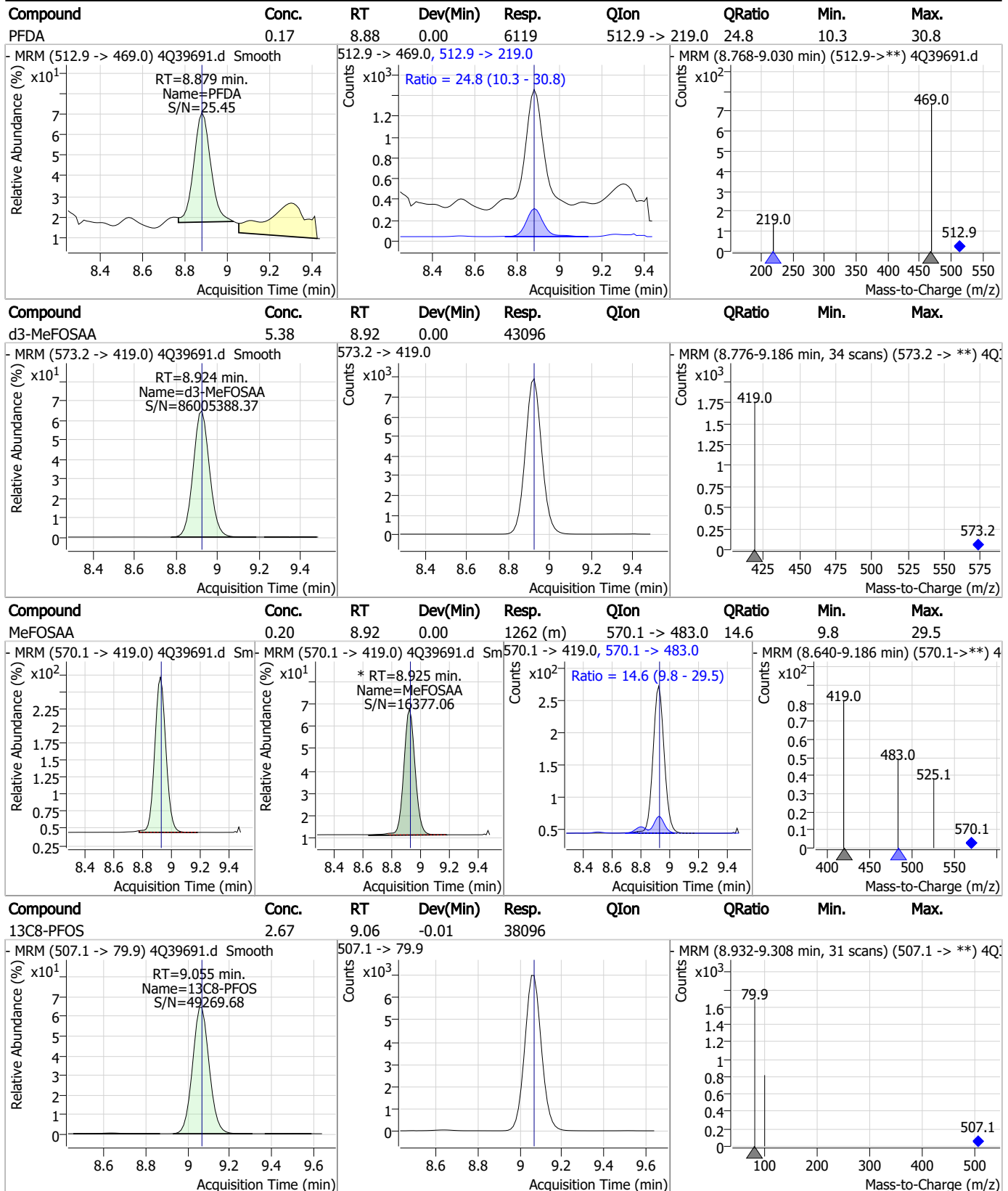
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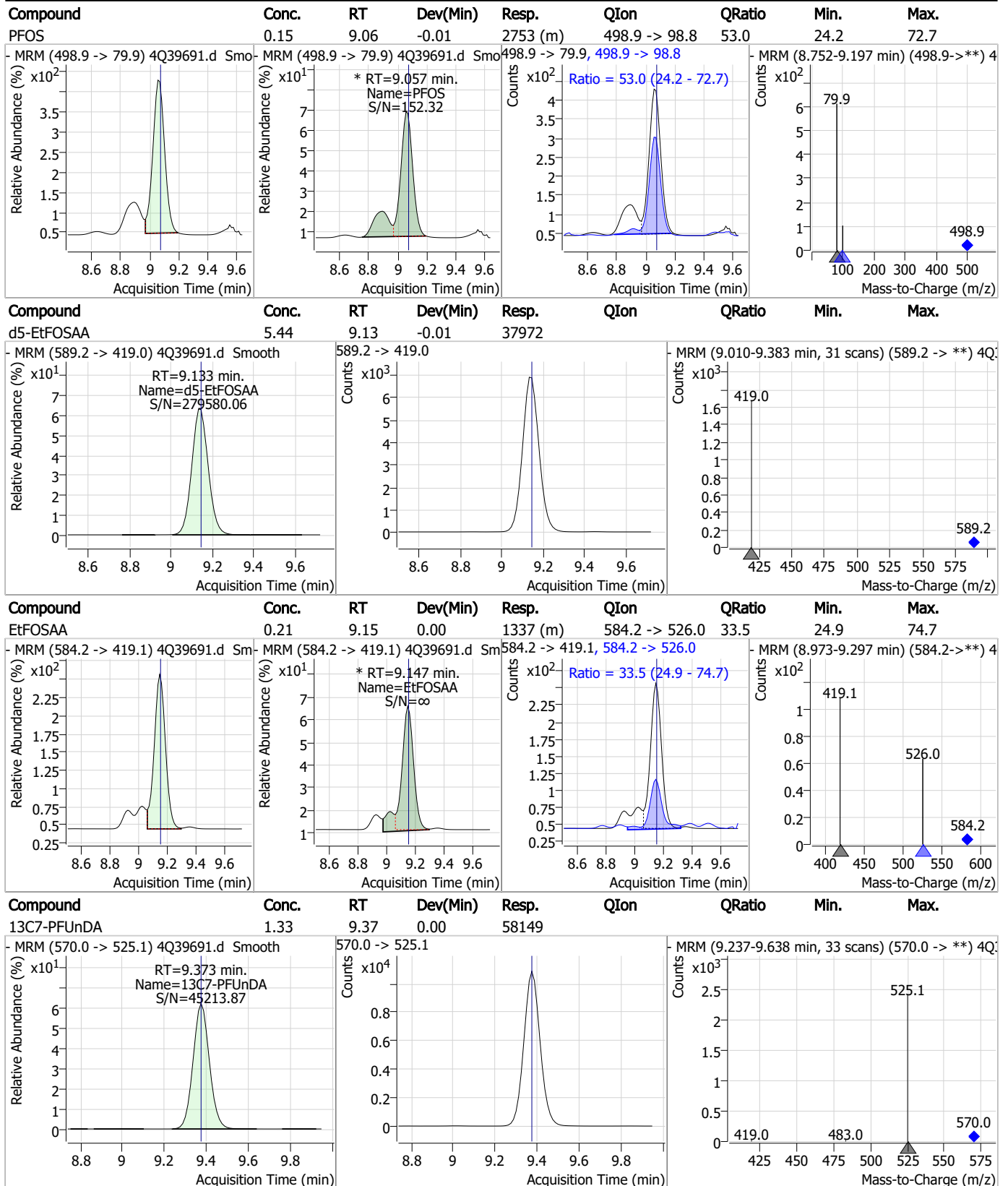
Perfluorinated Compounds by LC/MS/MS



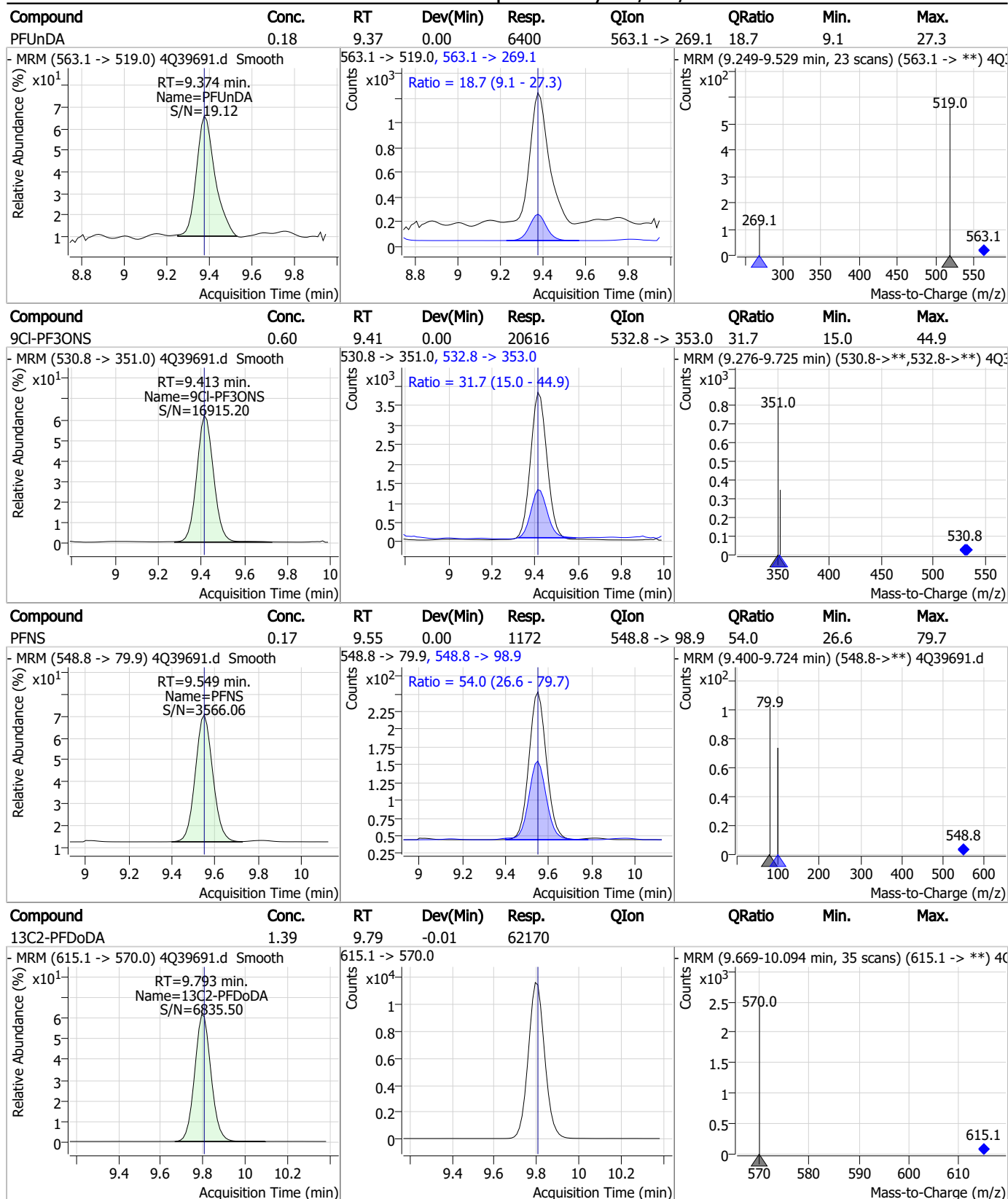
Perfluorinated Compounds by LC/MS/MS



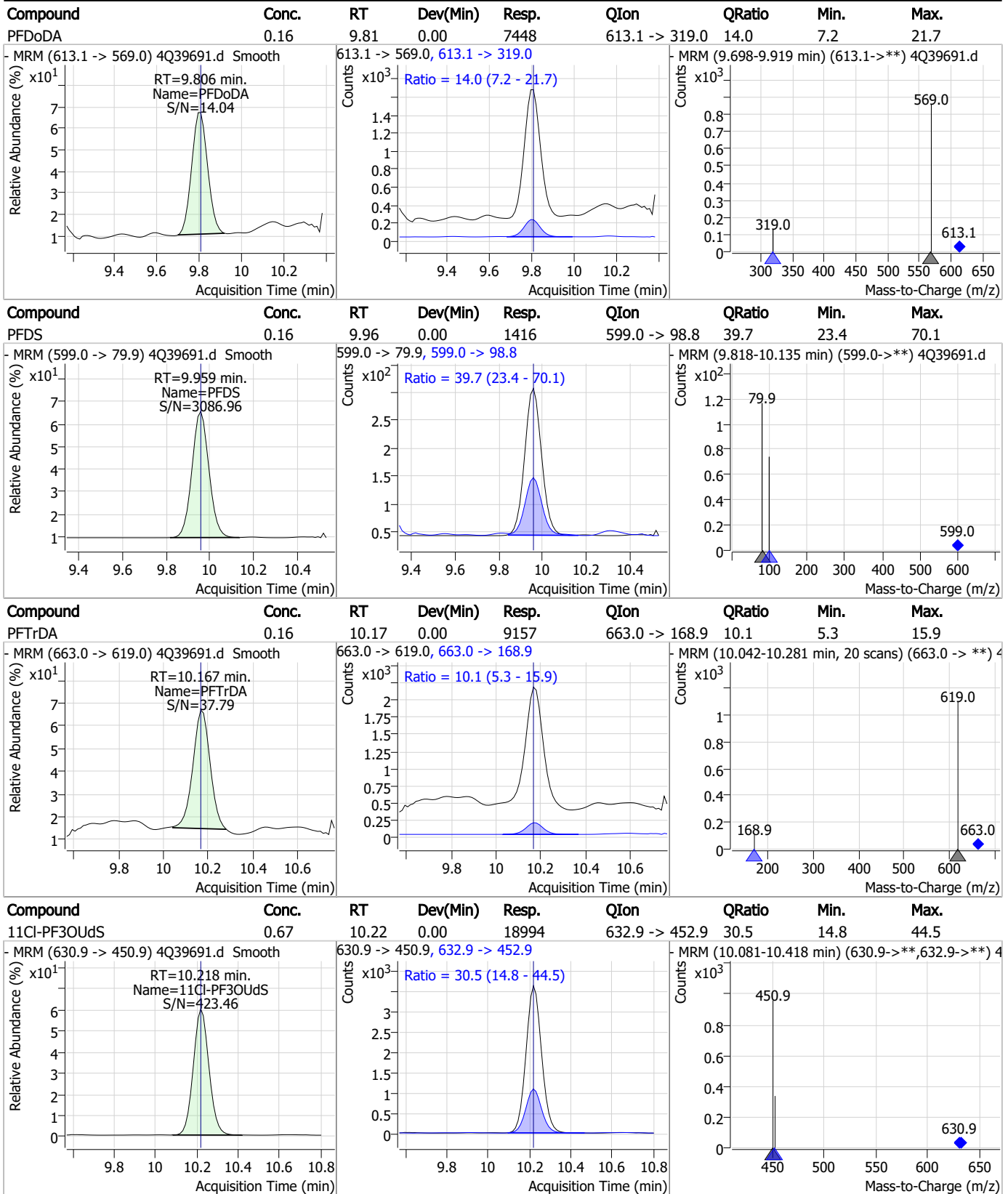
Perfluorinated Compounds by LC/MS/MS



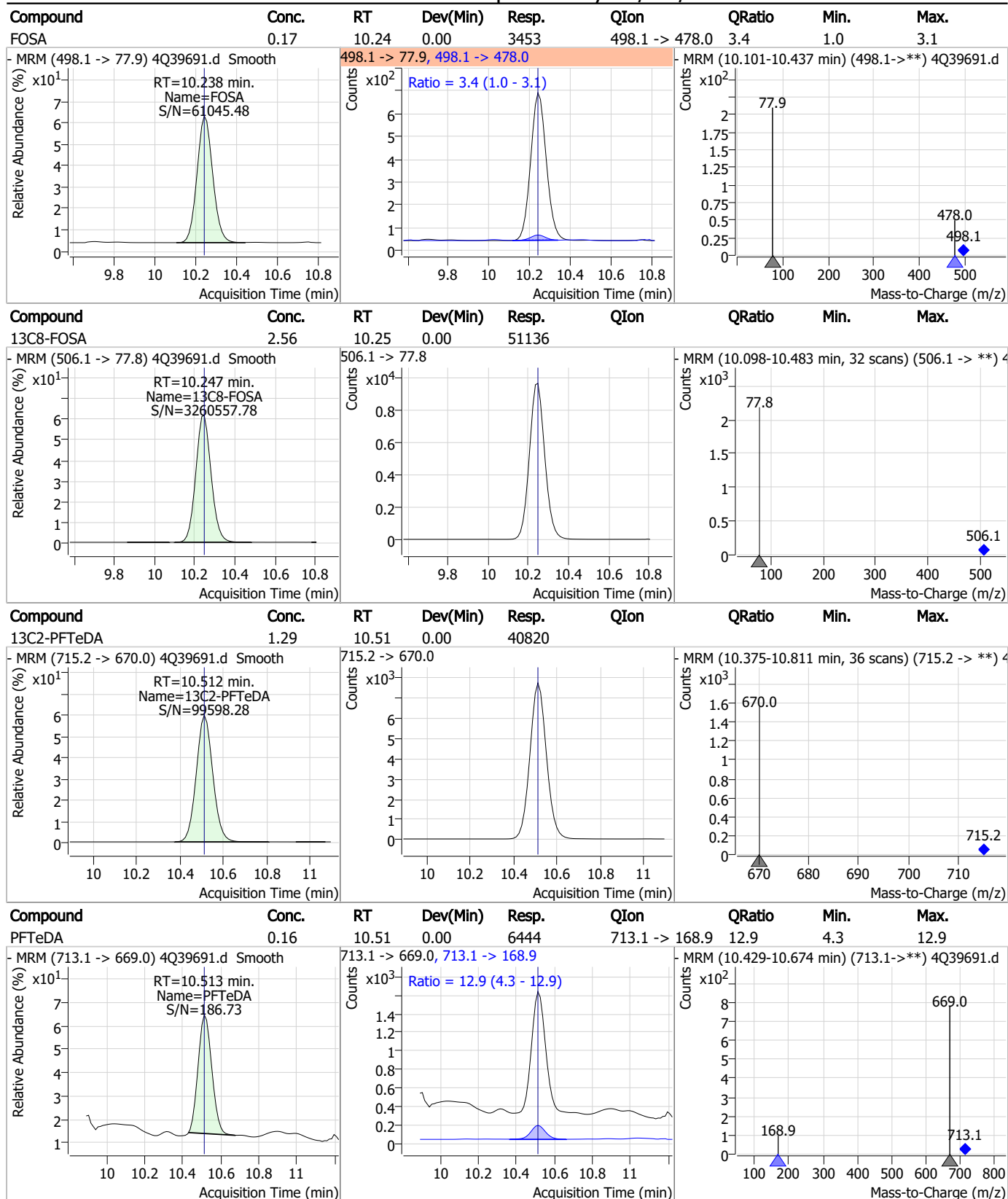
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



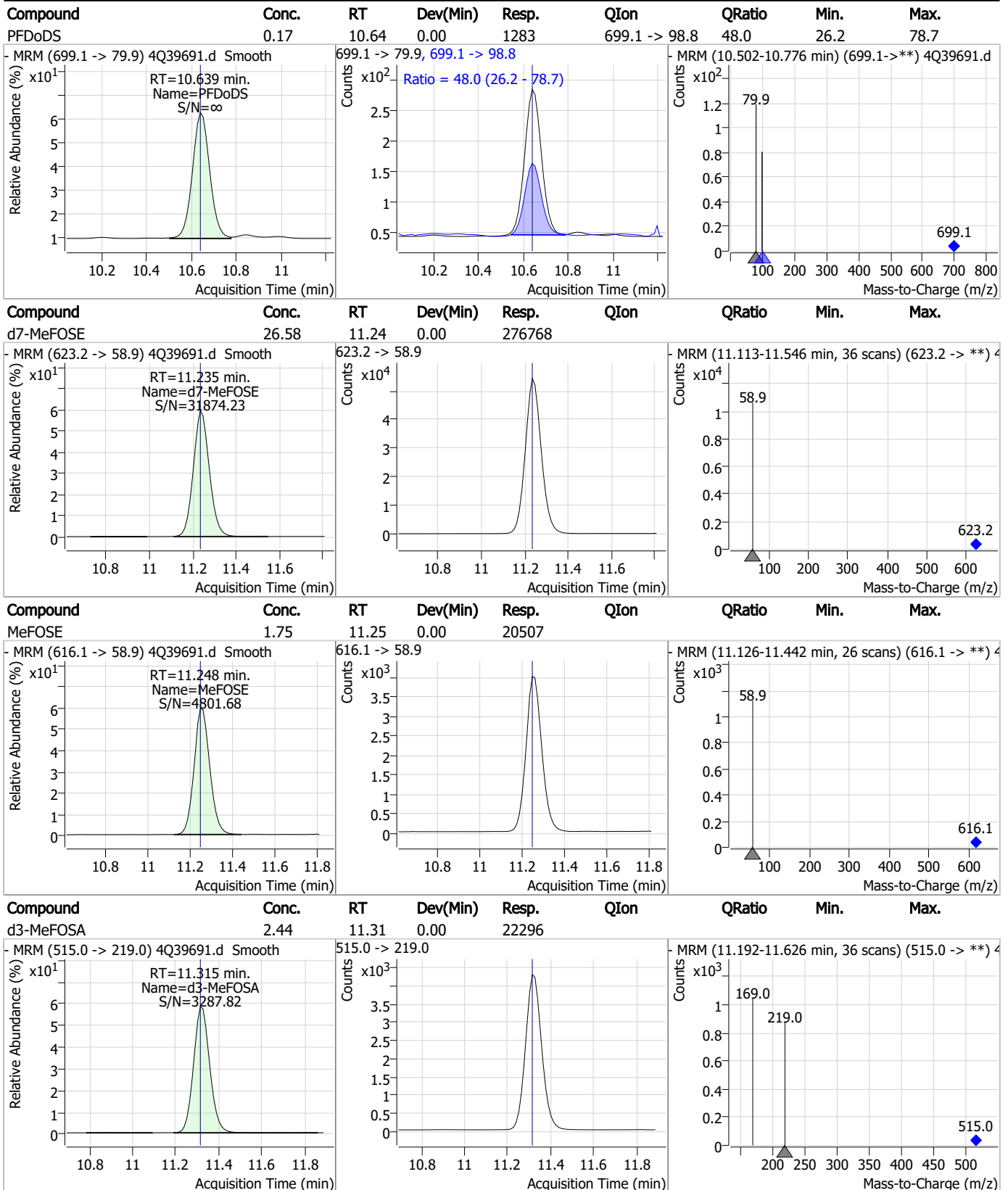
Perfluorinated Compounds by LC/MS/MS



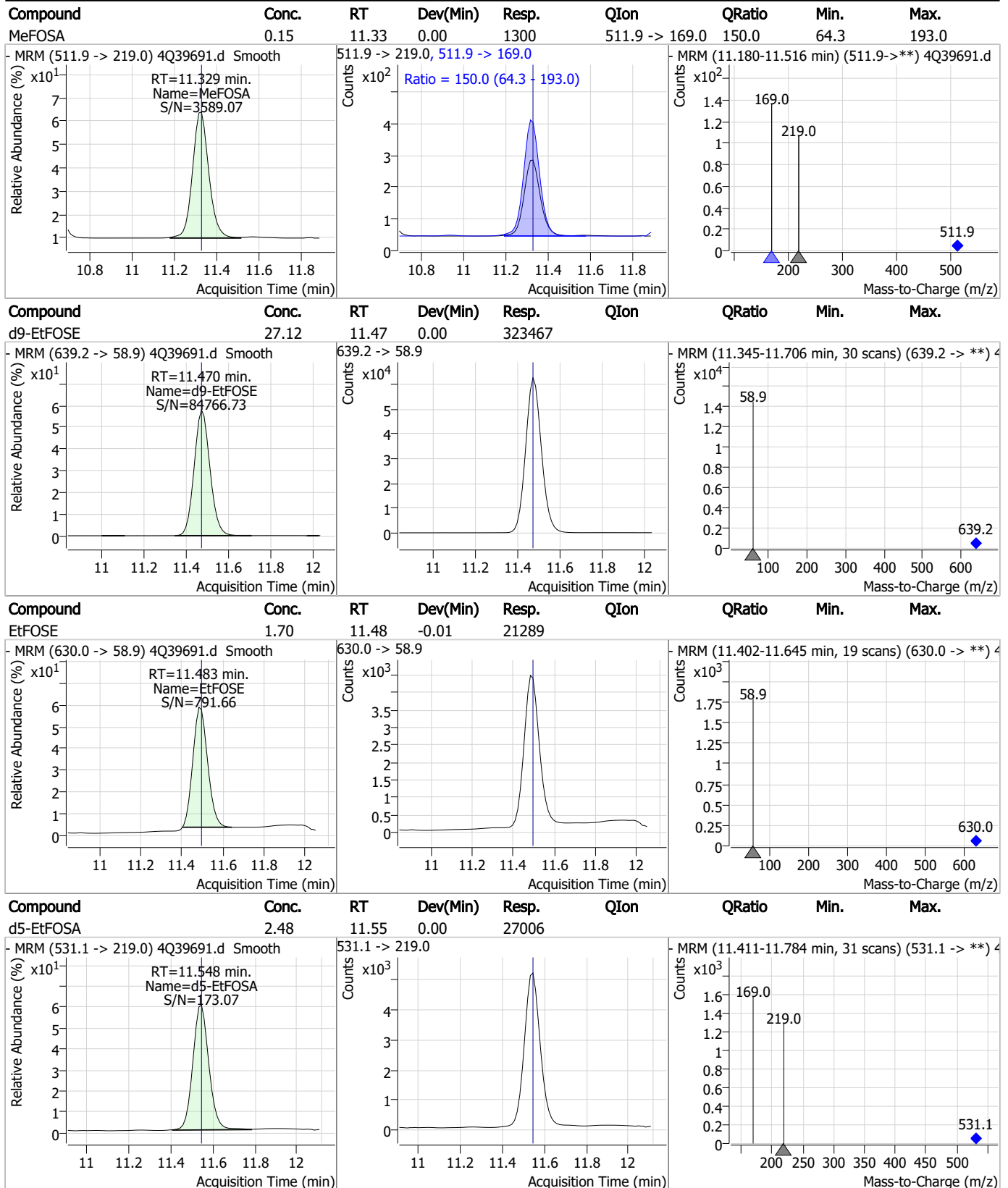
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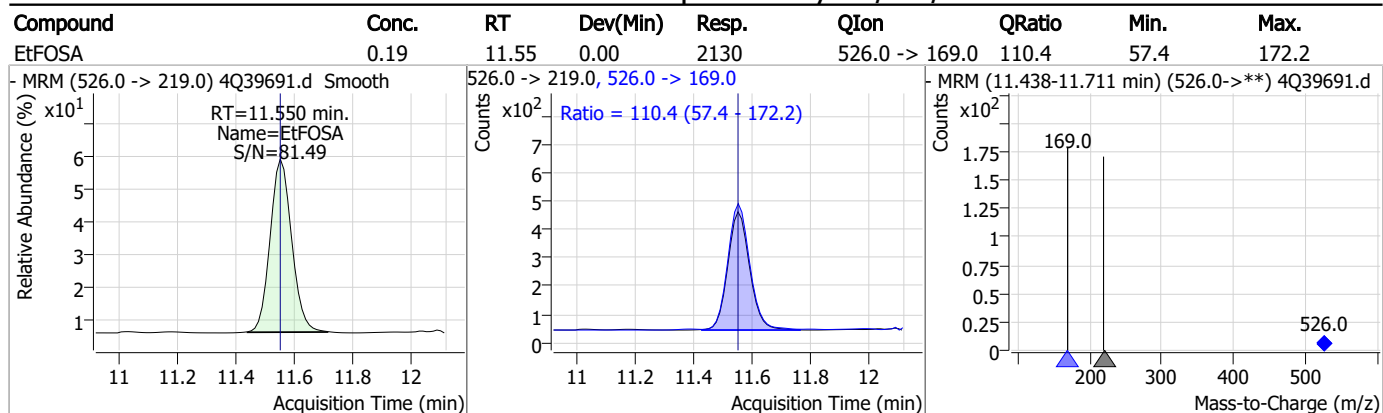
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

Sample Number: S4Q571-IC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39691.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 13:13

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.78	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

7.6.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39692.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 1:27:44 PM
 Sample Name : ic571-2
 Vial : P1-A3
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.174	216.8 -> 171.9	425906	10.00 µg/L	0.000
M5-PFPeA	4.863	268.3 -> 223.0	275437	5.00 µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	178125	2.50 µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	98454	2.50 µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	162718	2.50 µg/L	-0.012
M9-PFNA	8.360	472.1 -> 427.0	77025	1.25 µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	60461	1.25 µg/L	0.012
M7-PFUnDA	9.373	570.0 -> 525.1	65940	1.25 µg/L	0.000
M2-PFDoDA	9.806	615.1 -> 570.0	64252	1.25 µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	46921	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	57584	2.50 µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	48477	2.50 µg/L	0.000
M3-PFHxS	7.904	402.1 -> 79.9	32115	2.50 µg/L	-0.012
M8-PFOS	9.068	507.1 -> 79.9	40514	2.50 µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	4273	5.00 µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	9626	5.00 µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	13379	5.00 µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	46101	5.00 µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	137508	10.00 µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	39312	5.00 µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	303064	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	369546	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	31256	2.50 µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	25133	2.50 µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	39574	2.50 µg/L	0.000
13C3-PFBA	3.178	216.0 -> 172.0	232642	5.00 µg/L	0.000
18O2-PFHxS	7.916	403.0 -> 83.9	21929	2.50 µg/L	0.000
13C4-PFOA	7.776	417.1 -> 372.0	175433	2.50 µg/L	-0.012
13C2-PFDA	8.891	515.1 -> 470.1	52298	1.25 µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	85169	1.25 µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	168924	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.823	329.1 -> 80.9	4273	5.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9626	5.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C2-8:2FTS	8.653	529.1 -> 80.9	13379	5.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C2-PFDoDA	9.806	615.1 -> 570.0	64252	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-PFTeDA	10.512	715.2 -> 670.0	46921	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C3-PFBS	6.089	302.1 -> 79.9	48477	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C3-PFHxS	7.904	402.1 -> 79.9	32115	2.51 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C4-PFBA	3.174	216.8 -> 171.9	425906	10.15 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C4-PFHpA	7.106	367.1 -> 322.0	98454	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C5-PFHxA	6.172	318.0 -> 273.0	178125	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C5-PFPeA	4.863	268.3 -> 223.0	275437	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C6-PFDA	8.891	519.1 -> 474.1	60461	1.31 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C7-PFUnDA	9.373	570.0 -> 525.1	65940	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C8-FOSA	10.247	506.1 -> 77.8	57584	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C8-PFOA	7.776	421.1 -> 376.0	162718	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C8-PFOS	9.068	507.1 -> 79.9	40514	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C9-PFNA	8.360	472.1 -> 427.0	77025	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
d3-MeFOSAA	8.924	573.2 -> 419.0	46101	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-HFPO-DA	6.564	286.9 -> 168.9	137508	10.20 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 102.0%		
d3-MeFOSA	11.327	515.0 -> 219.0	25133	2.43 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.1%		
d5-EtFOSAA	9.146	589.2 -> 419.0	39312	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
d7-MeFOSE	11.235	623.2 -> 58.9	303064	25.68 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 102.7%		
d9-EtFOSE	11.470	639.2 -> 58.9	369546	27.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 109.4%		
d5-EtFOSA	11.548	531.1 -> 219.0	31256	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.3%		
Target Compounds					QValue
4:2FTS	5.823	327.1 -> 307.0	12685	1.82 µg/L	98
		327.1 -> 80.9	6125		
6:2FTS	7.537	427.1 -> 407.0	14743	1.93 µg/L	98
		427.1 -> 80.9	7010		
8:2FTS	8.654	527.1 -> 507.0	11820	1.83 µg/L	97
		527.1 -> 80.8	6500		
EtFOSAA	9.147	584.2 -> 419.1	2906	0.44 µg/L	m 94
		584.2 -> 526.0	1329		
FOSA	10.250	498.1 -> 77.9	10307	0.46 µg/L	99
		498.1 -> 478.0	180		
MeFOSAA	8.925	570.1 -> 419.0	3332	0.49 µg/L	m 92
		570.1 -> 483.0	778		
PFBA	3.182	212.8 -> 168.9	21185	1.79 µg/L	100
PFBS	6.090	298.7 -> 79.9	8529	0.39 µg/L	97
		298.7 -> 98.8	3071		
PFDA	8.892	512.9 -> 469.0	18848	0.44 µg/L	96
		512.9 -> 219.0	4217		
PFDODA	9.806	613.1 -> 569.0	23605	0.48 µg/L	96
		613.1 -> 319.0	3818		
PFDS	9.959	599.0 -> 79.9	4739	0.51 µg/L	85

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.106	599.0 -> 98.8	1749	0.47	µg/L	98
		363.1 -> 319.0	28669			
PFHpS	8.526	363.1 -> 169.0	4597	0.46	µg/L	100
		449.0 -> 79.9	7500			
PFHxA	6.175	449.0 -> 98.9	3445	0.46	µg/L	100
		313.0 -> 269.0	31517			
PFHxS	7.917	313.0 -> 118.9	952	0.43	µg/L	93
		398.7 -> 79.9	4485			
PFNA	8.360	398.7 -> 98.9	2402	0.46	µg/L	99
		463.0 -> 419.0	25887			
PFNS	9.549	463.0 -> 219.0	5863	0.49	µg/L	92
		548.8 -> 79.9	3511			
PFOA	7.790	548.8 -> 98.9	1667	0.44	µg/L	99
		413.0 -> 369.0	31496			
PFOS	9.069	413.0 -> 169.0	6460	0.42	µg/L	94
		498.9 -> 79.9	8008			
PFPeA	4.866	498.9 -> 98.8	4181	0.92	µg/L	100
		263.0 -> 219.0	55704			
PFPeS	7.171	349.1 -> 79.9	4050	0.40	µg/L	88
		349.1 -> 98.9	1893			
PFTeDA	10.513	713.1 -> 669.0	20982	0.44	µg/L	97
		713.1 -> 168.9	2048			
PFTrDA	10.179	663.0 -> 619.0	28463	0.47	µg/L	100
		663.0 -> 168.9	3062			
PFUnDA	9.374	563.1 -> 519.0	19707	0.49	µg/L	98
		563.1 -> 269.1	3373			
11CI-PF3OUdS	10.218	630.9 -> 450.9	58813	1.83	µg/L	99
		632.9 -> 452.9	17927			
9CI-PF3ONS	9.425	530.8 -> 351.0	65058	1.66	µg/L	100
		532.8 -> 353.0	19539			
ADONA	7.369	376.9 -> 250.9	132864	1.79	µg/L	96
		376.9 -> 84.8	43992			
HFPO-DA	6.565	284.9 -> 168.9	23783	1.84	µg/L	98
		284.9 -> 184.9	2694			
3:3FTCA	4.204	241.0 -> 177.0	6089	2.15	µg/L	100
		241.0 -> 117.0	588			
5:3FTCA	6.783	341.0 -> 237.1	109086	11.84	µg/L	99
		341.0 -> 217.0	80255			
7:3FTCA	8.249	441.0 -> 316.9	62555	11.82	µg/L	93
		441.0 -> 336.9	148943			
EtFOSA	11.550	526.0 -> 219.0	5728	0.44	µg/L	96
		526.0 -> 169.0	6301			
EtFOSE	11.483	630.0 -> 58.9	70253	4.90	µg/L	100
		511.9 -> 219.0	4759			
MeFOSA	11.329	511.9 -> 169.0	5626	0.50	µg/L	91
		616.1 -> 58.9	63688			
MeFOSE	11.261	699.1 -> 79.9	3410	4.97	µg/L	100
		699.1 -> 98.8	2007			
PFDoDS	10.639	295.0 -> 201.0	4255	0.93	µg/L	98
		295.0 -> 84.9	1281			
NFDHA	6.053	279.0 -> 85.1	34270	0.91	µg/L	100
		229.0 -> 84.9	35067			
PFMBA	3.869	314.8 -> 134.9	47492	0.90	µg/L	100
		314.8 -> 82.9	1633			
PFEESA	6.660			0.80	µg/L	99

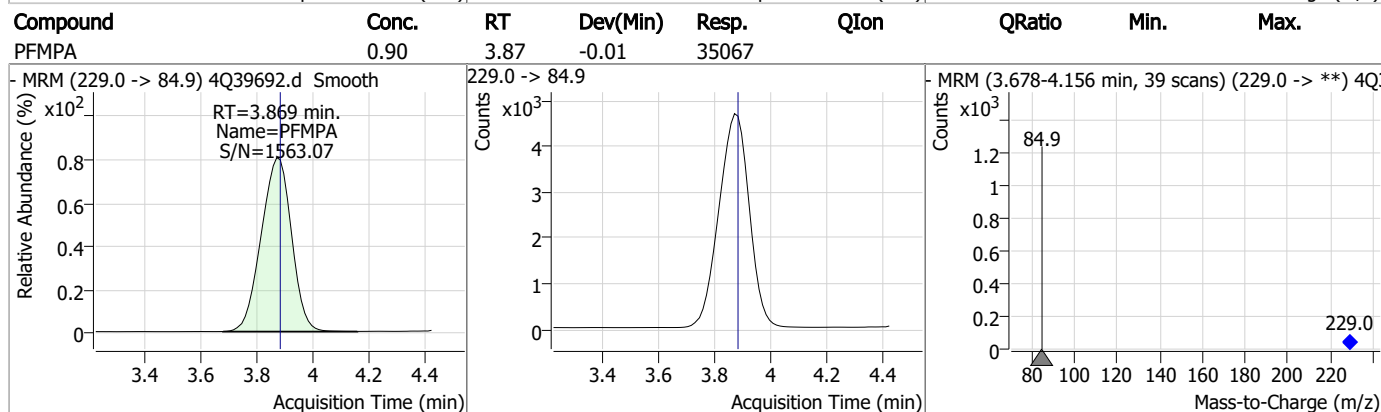
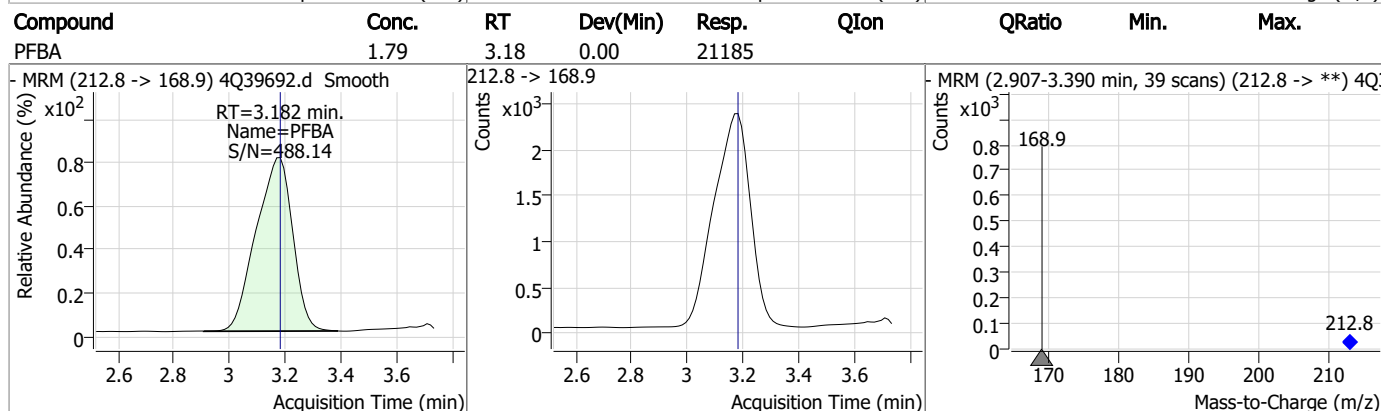
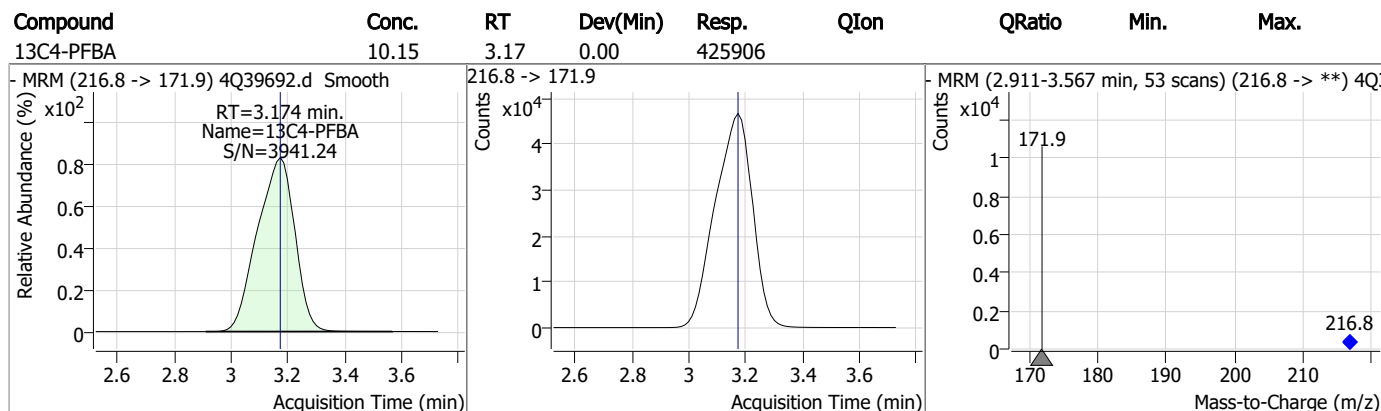
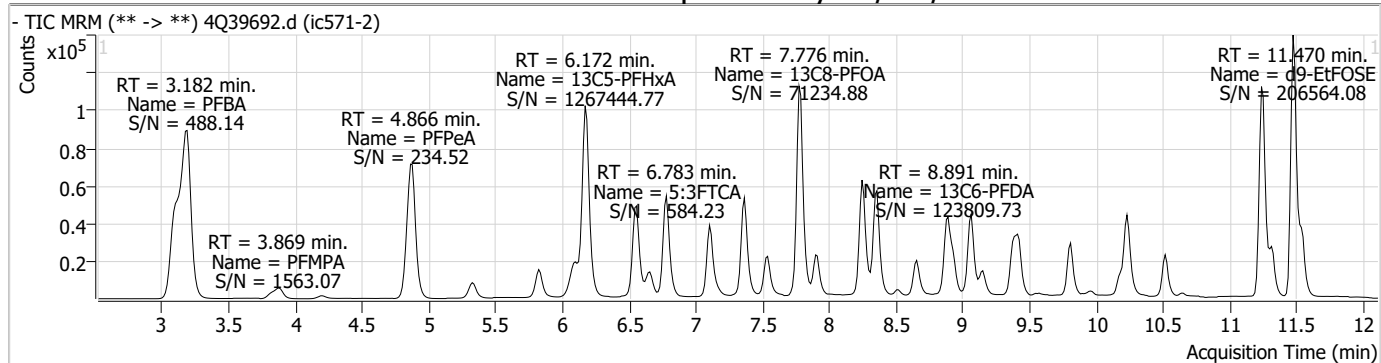
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

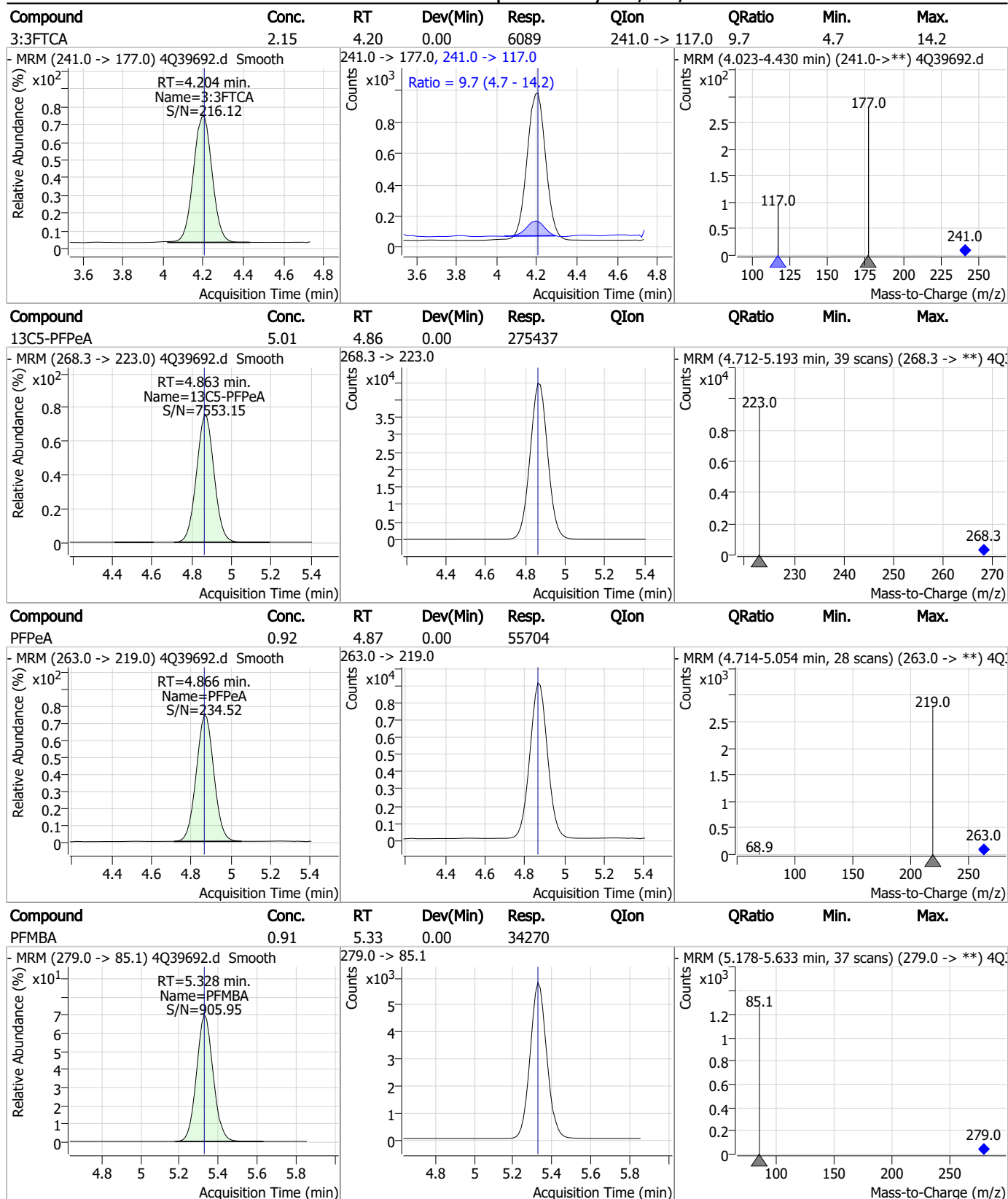
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.6.3
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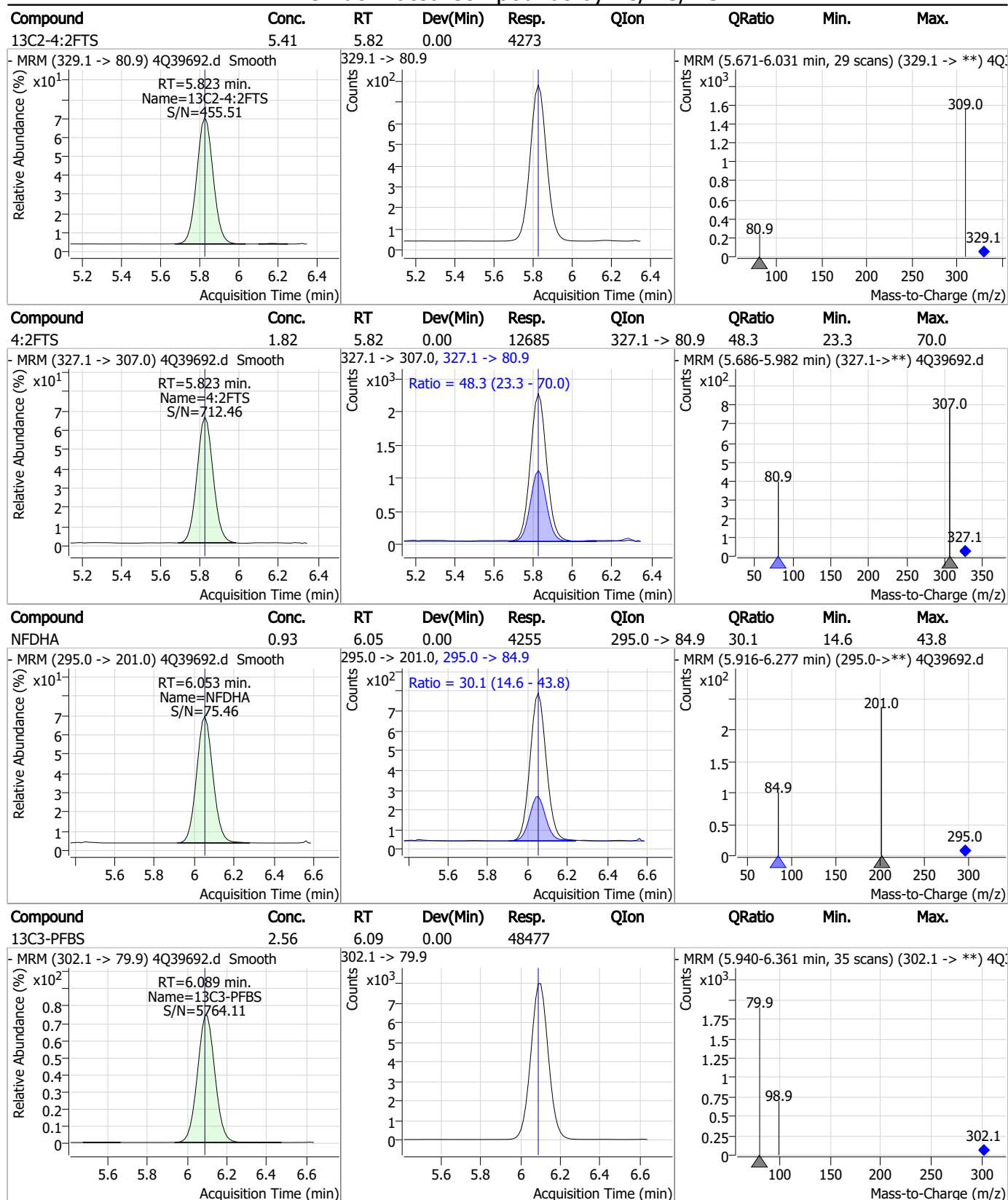
Perfluorinated Compounds by LC/MS/MS



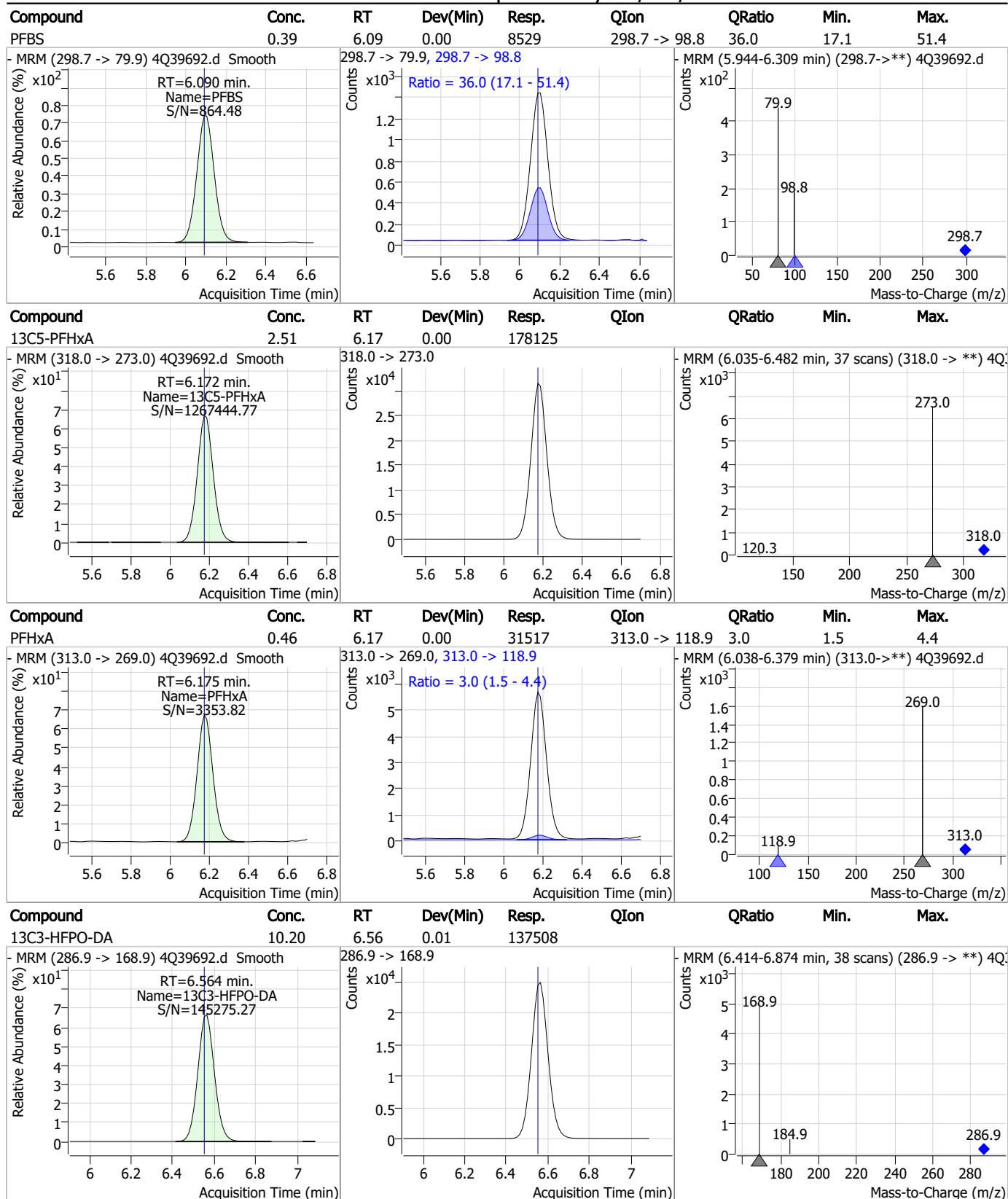
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



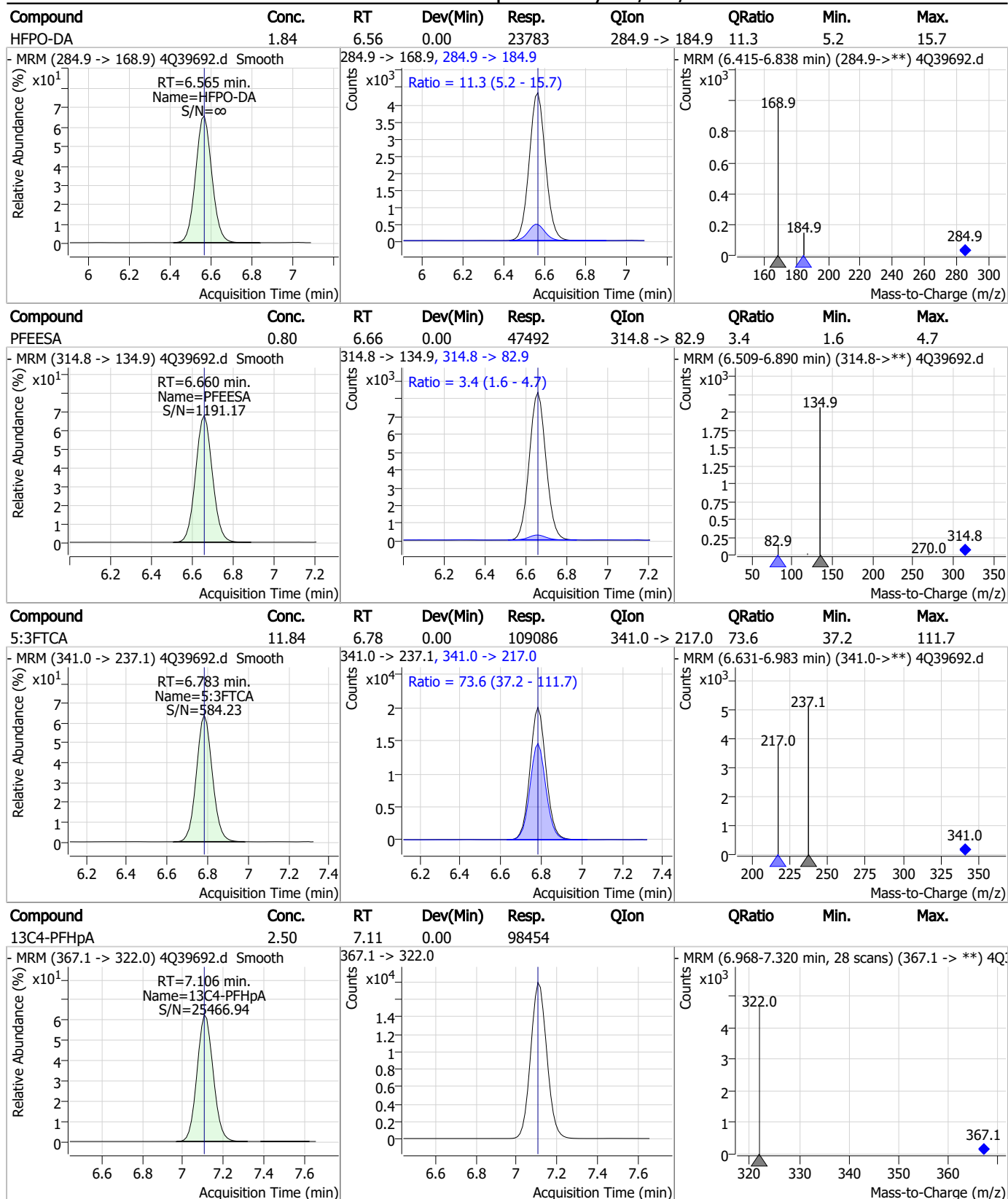
Perfluorinated Compounds by LC/MS/MS



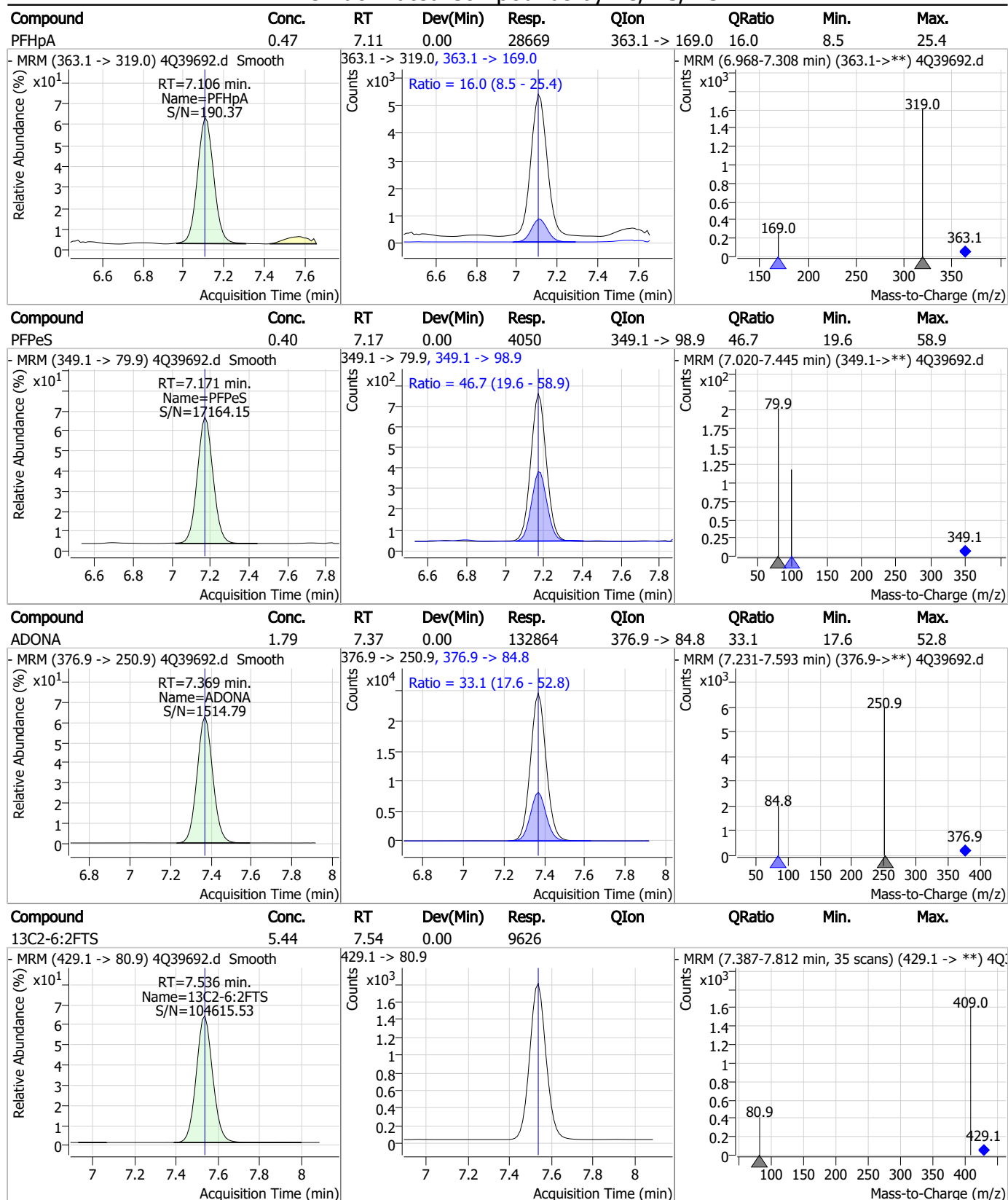
7.6.3

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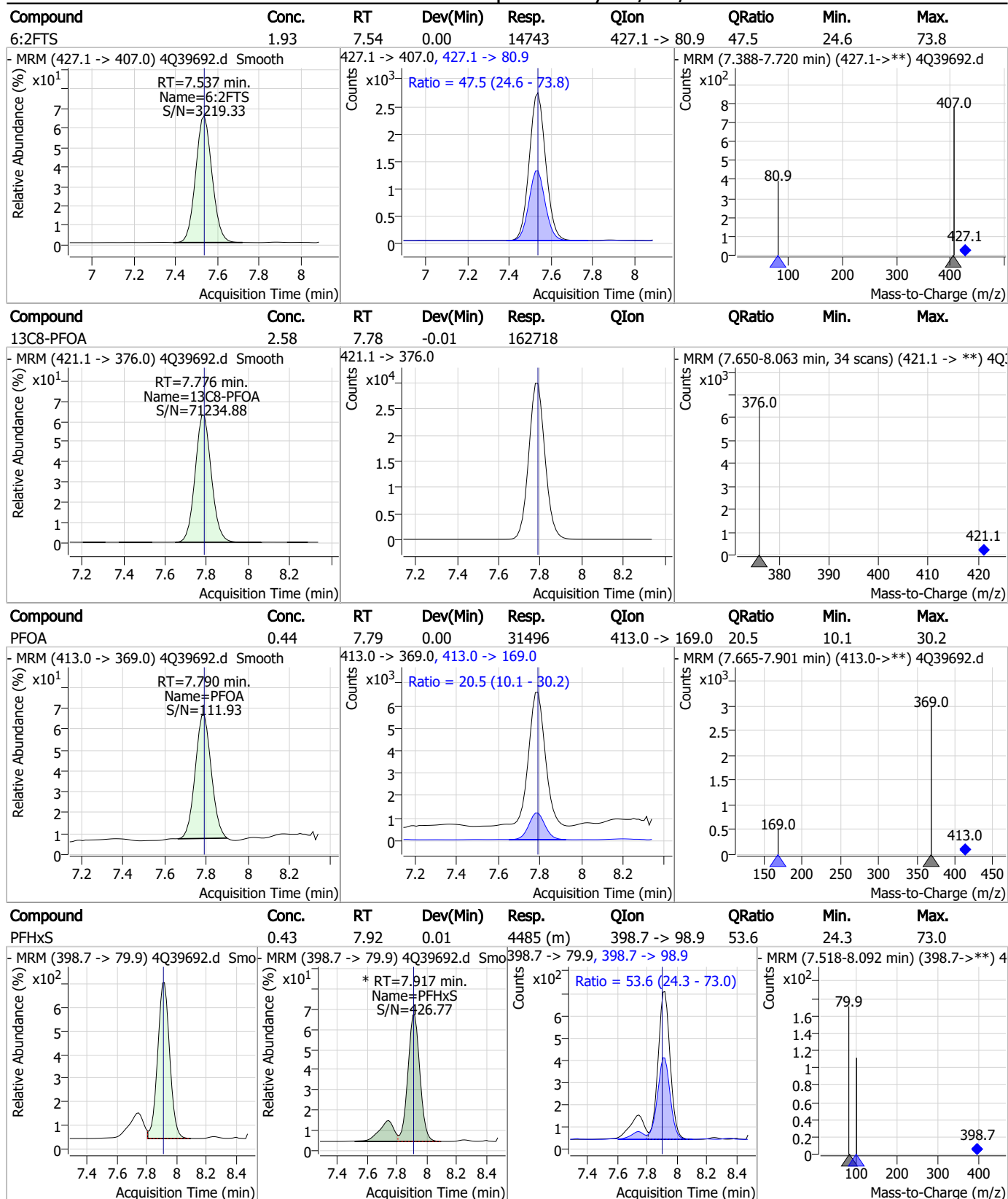
Perfluorinated Compounds by LC/MS/MS



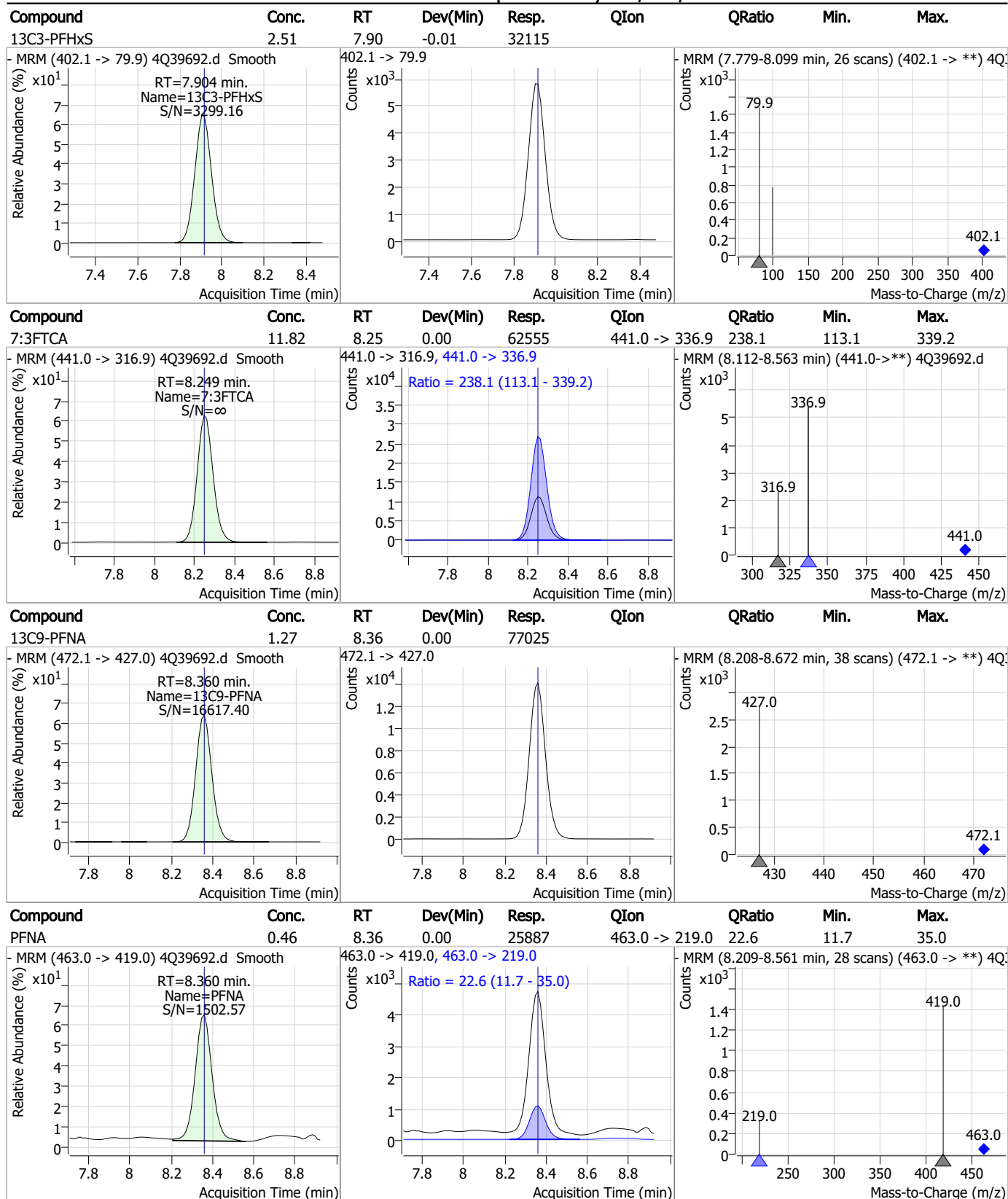
Perfluorinated Compounds by LC/MS/MS



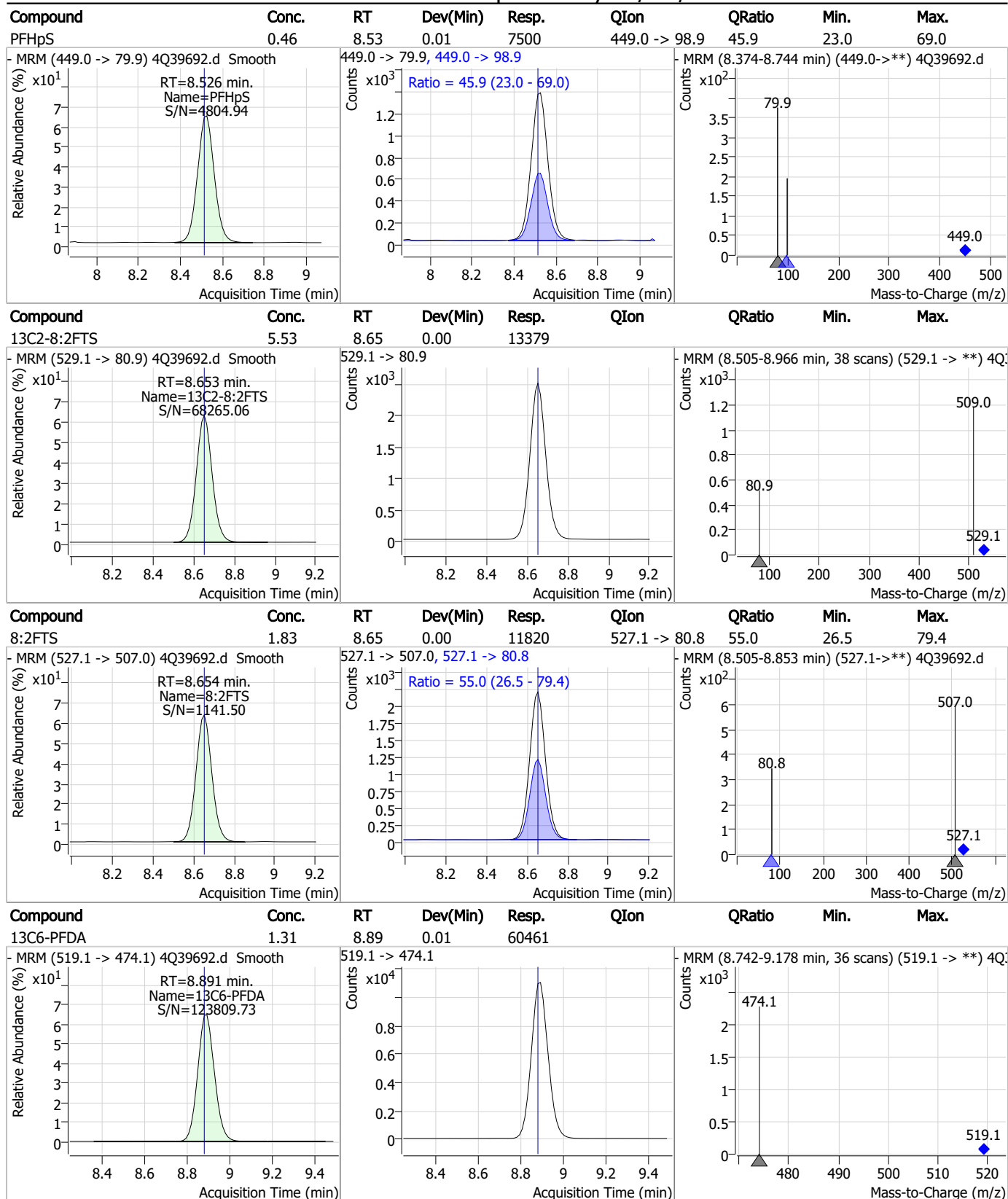
Perfluorinated Compounds by LC/MS/MS



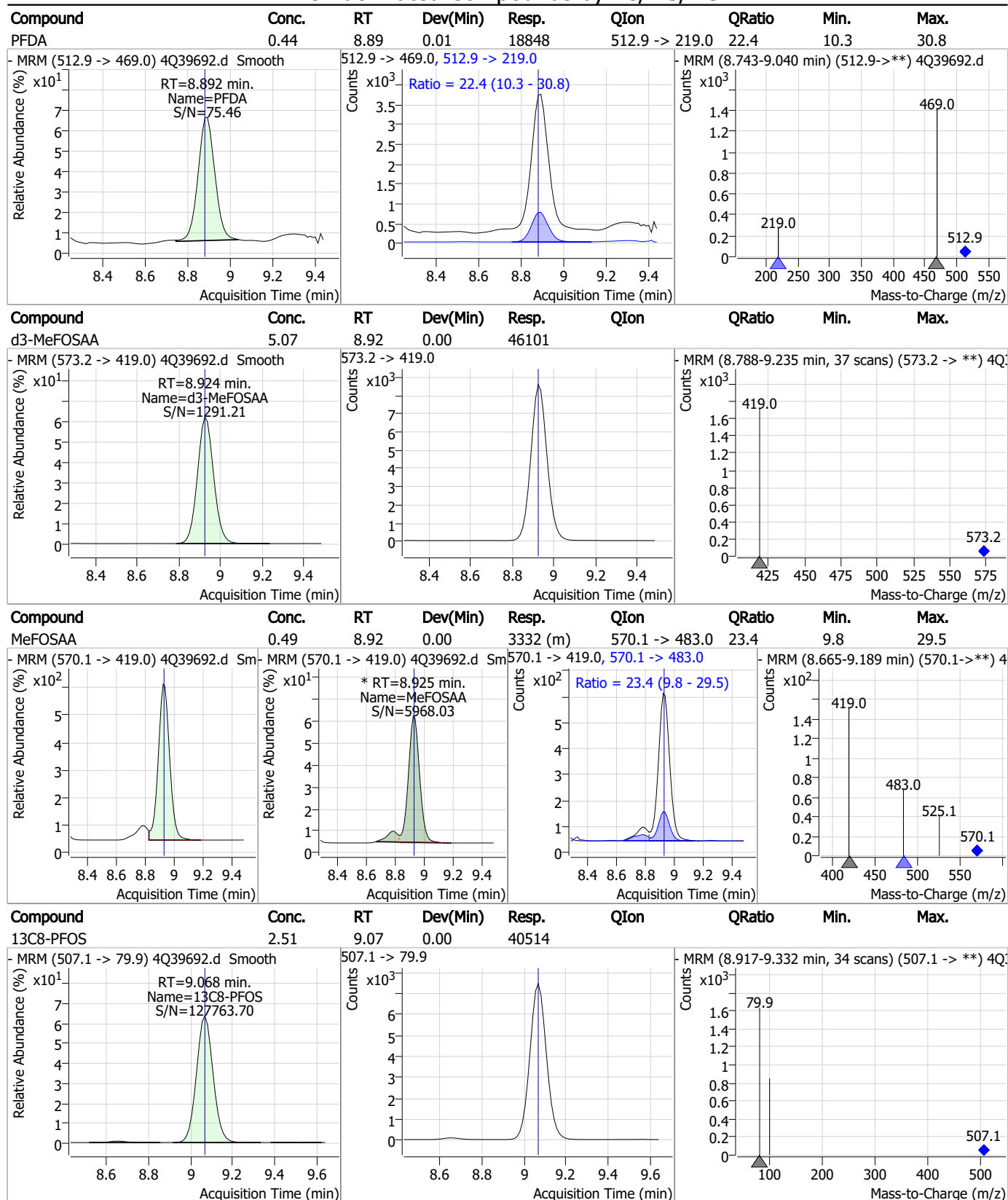
Perfluorinated Compounds by LC/MS/MS



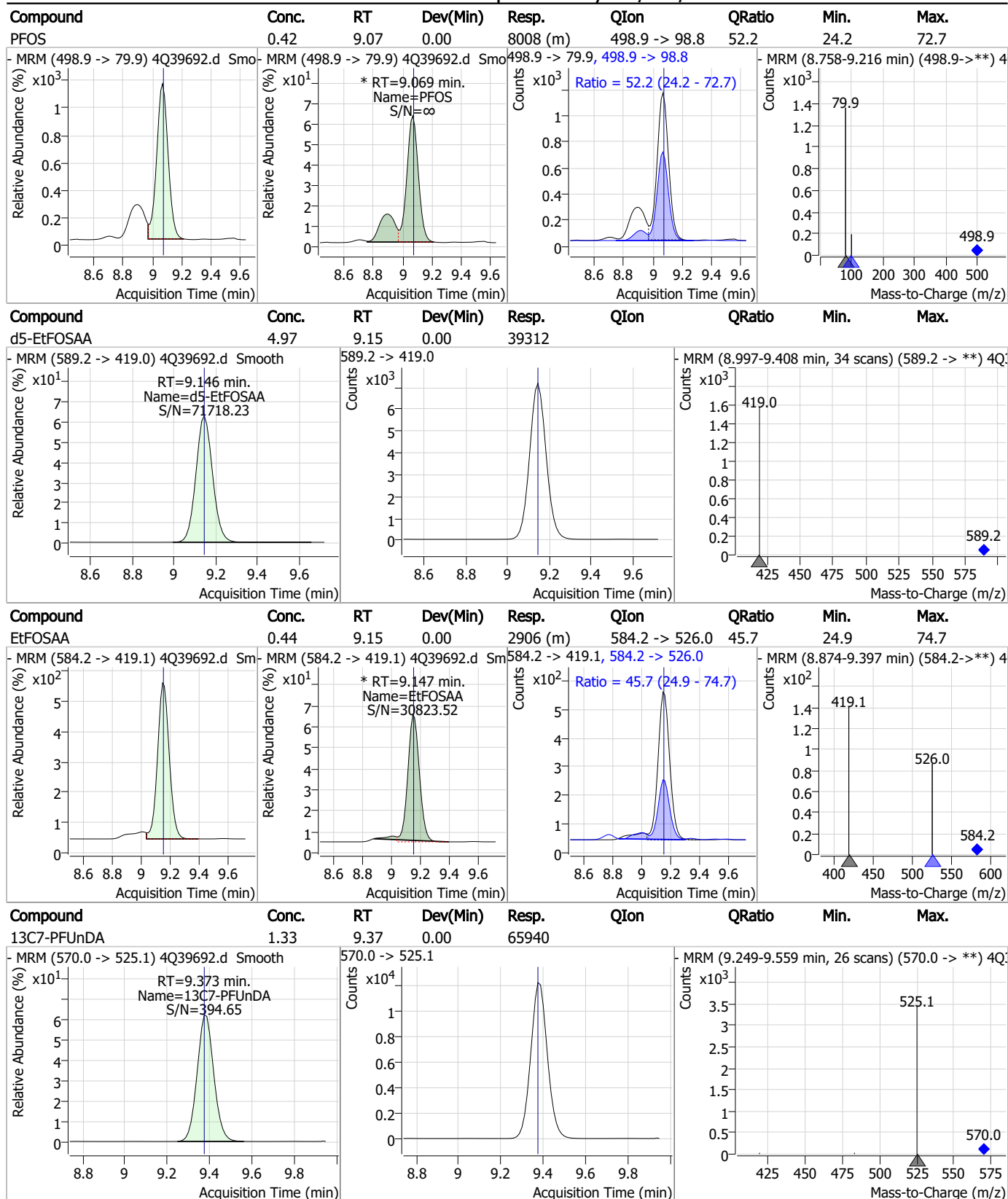
Perfluorinated Compounds by LC/MS/MS



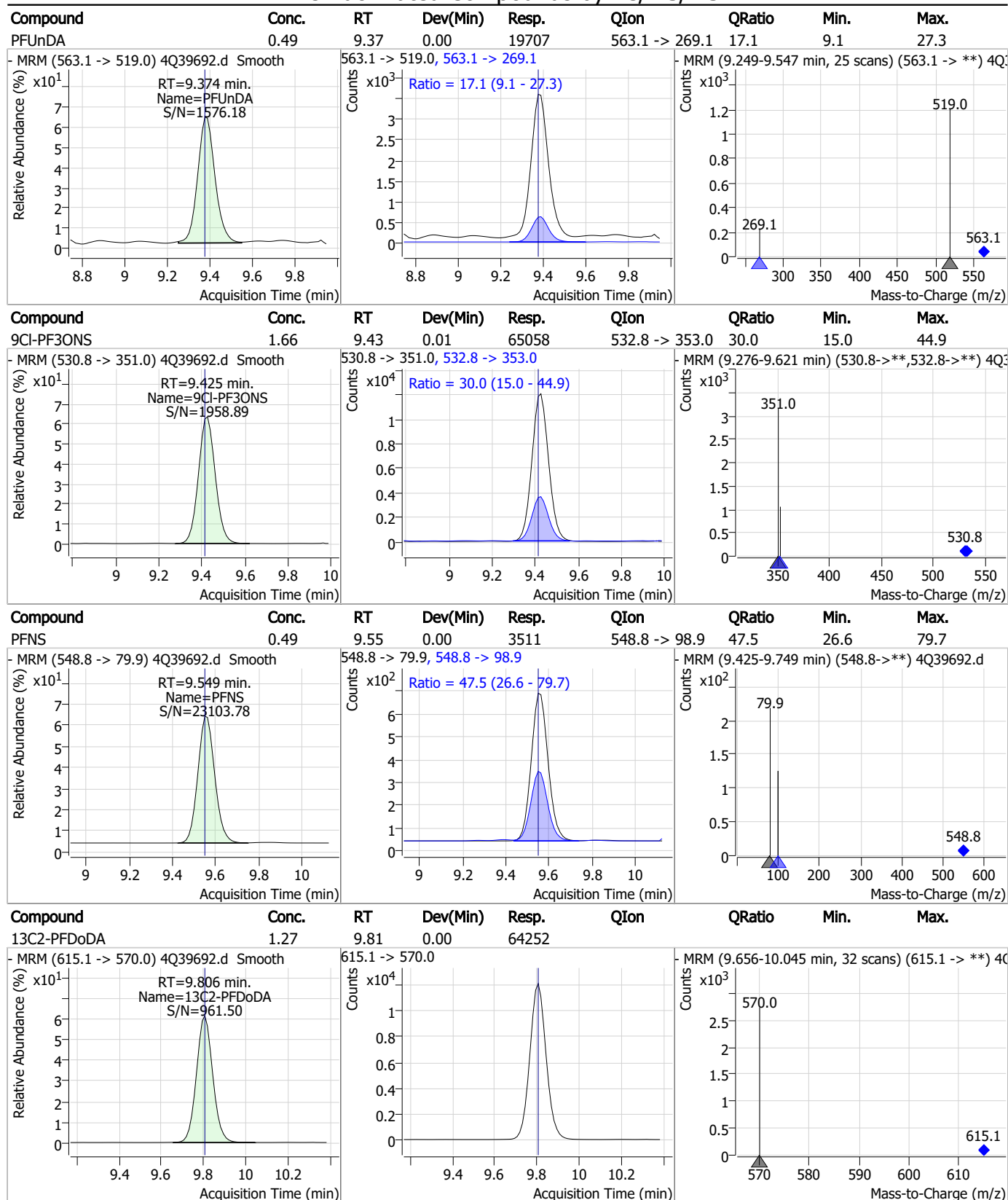
Perfluorinated Compounds by LC/MS/MS



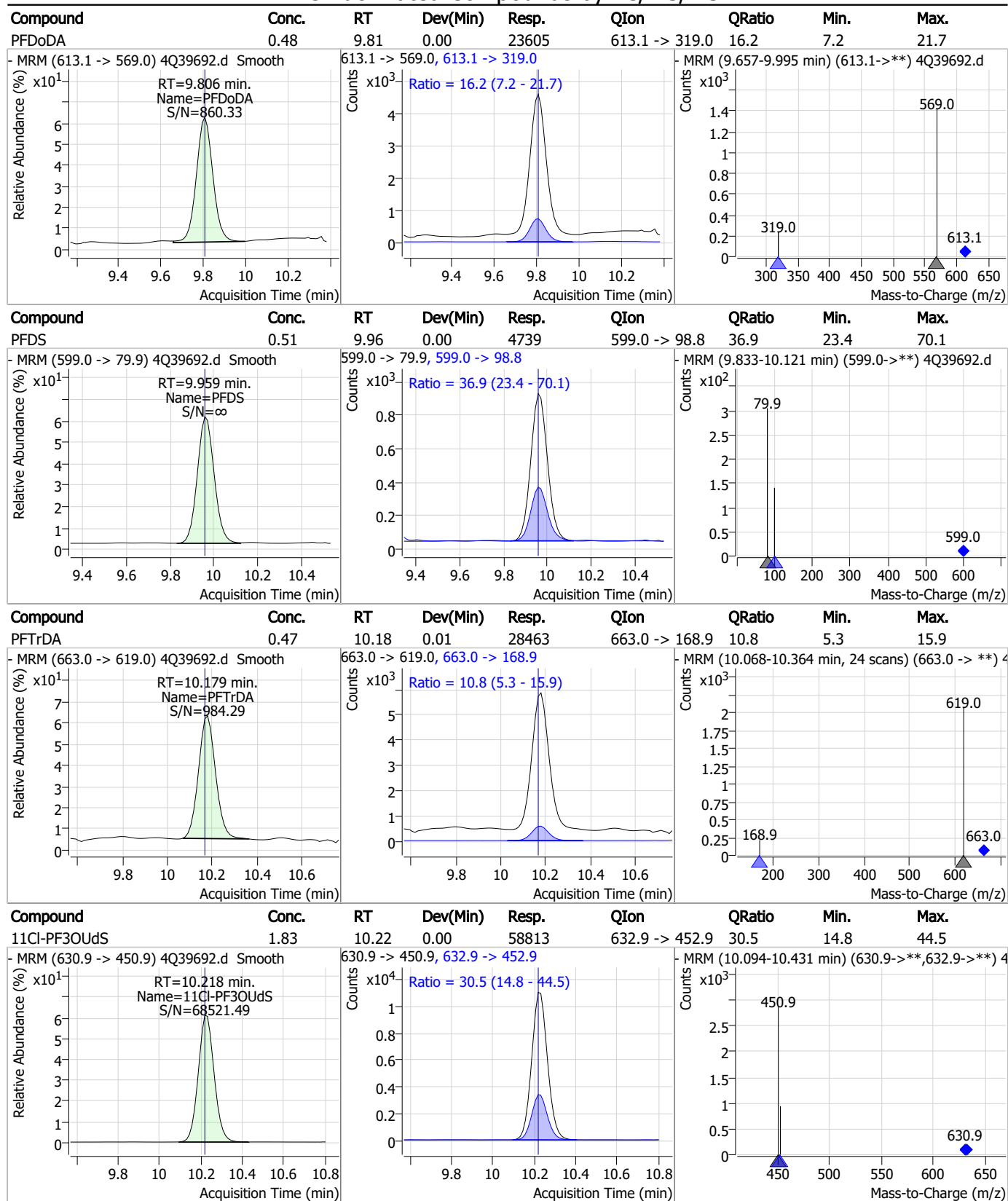
Perfluorinated Compounds by LC/MS/MS



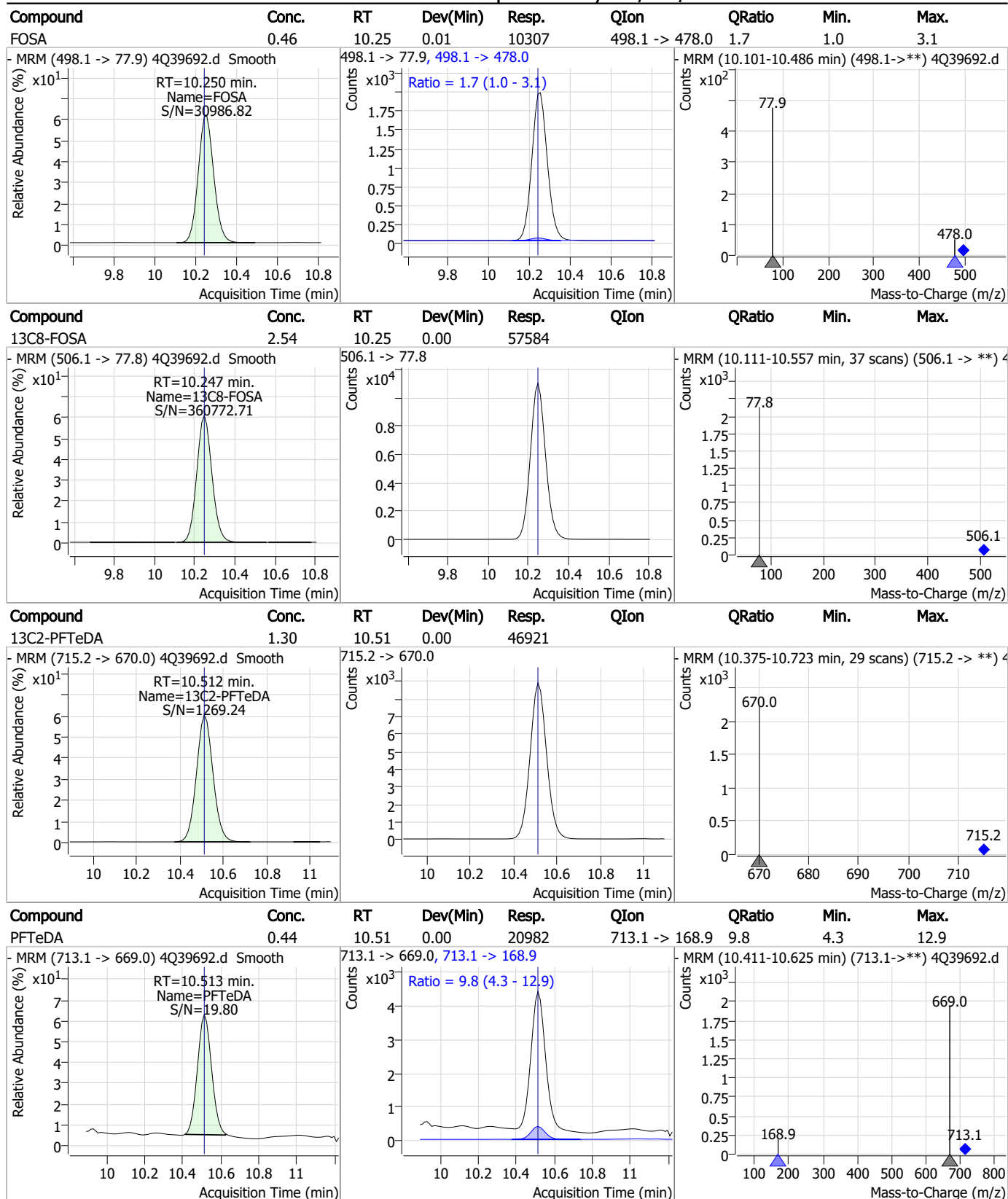
Perfluorinated Compounds by LC/MS/MS



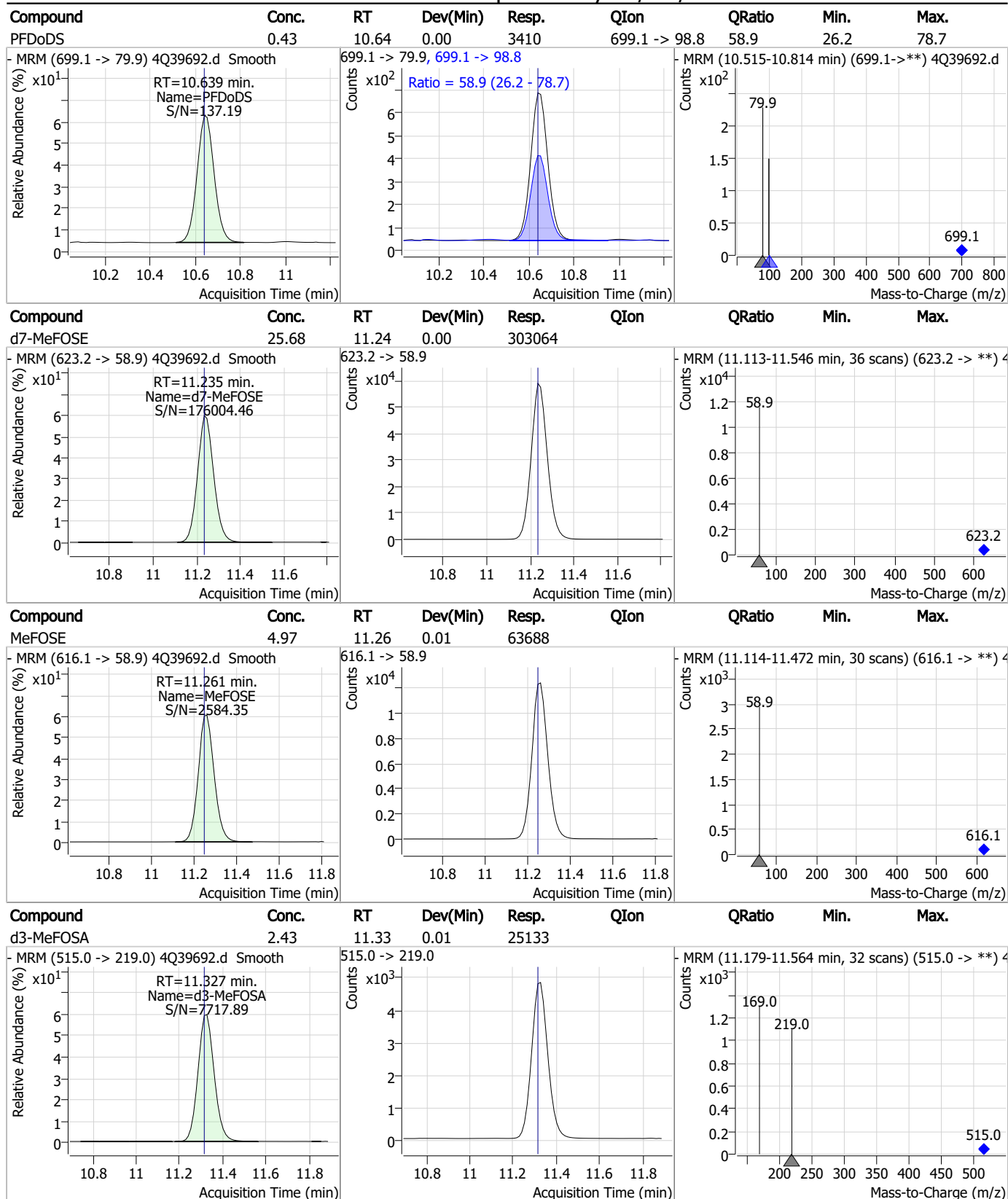
Perfluorinated Compounds by LC/MS/MS



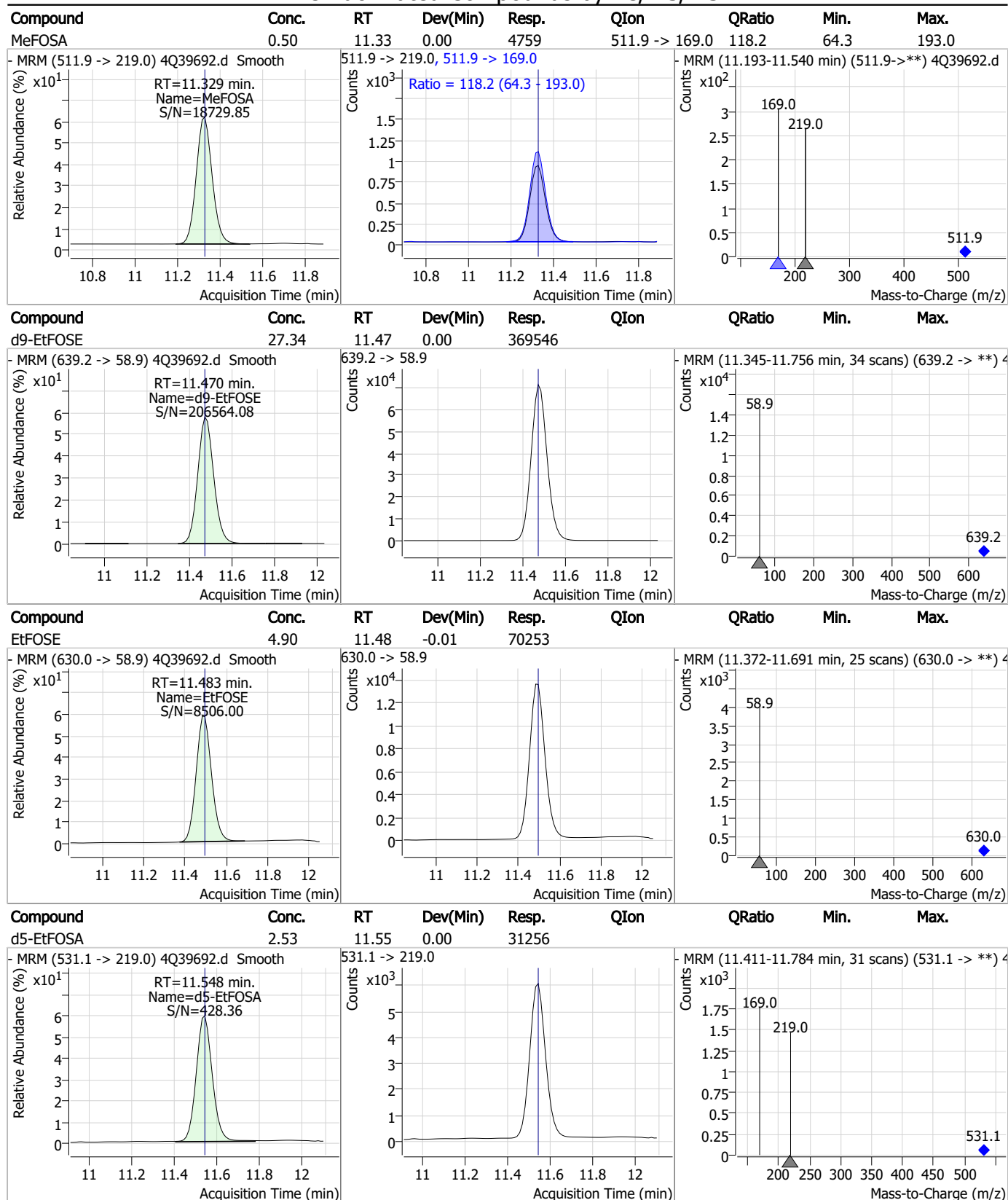
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



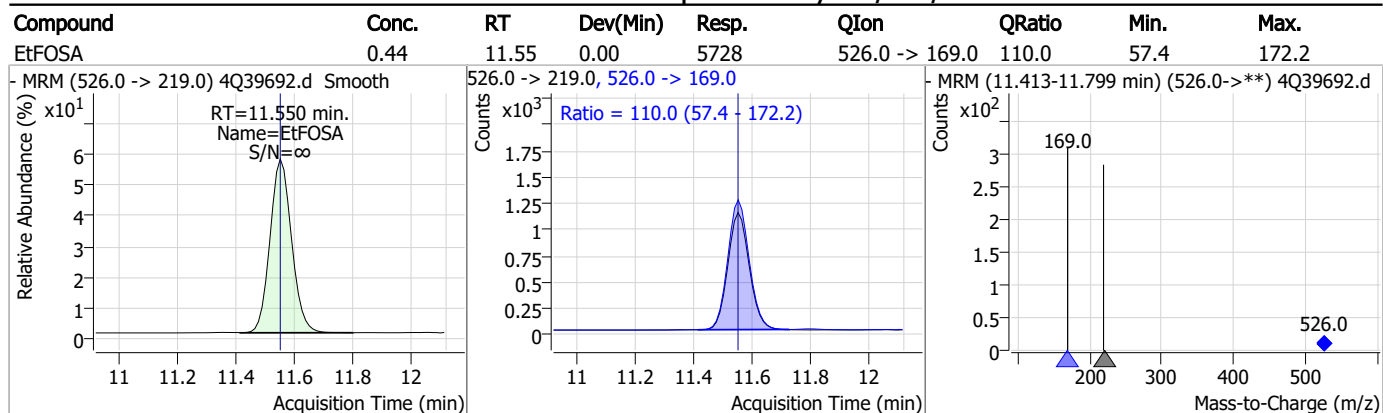
Perfluorinated Compounds by LC/MS/MS



7.6.3

7

Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q571-IC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39692.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 13:27

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

7.6.3.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39693.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 1:41:46 PM
 Sample Name : ic571-3
 Vial : P1-A4
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.174	216.8 -> 171.9	420330	10.00 µg/L	0.000
M5-PFPeA	4.863	268.3 -> 223.0	277981	5.00 µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	177083	2.50 µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	98314	2.50 µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	157496	2.50 µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	77407	1.25 µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	59889	1.25 µg/L	0.012
M7-PFUnDA	9.386	570.0 -> 525.1	67259	1.25 µg/L	0.012
M2-PFDoDA	9.806	615.1 -> 570.0	65101	1.25 µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	47827	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	57939	2.50 µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	49095	2.50 µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	32537	2.50 µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	40788	2.50 µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	4015	5.00 µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	10214	5.00 µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	12778	5.00 µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	48157	5.00 µg/L	0.000
M3-HFPO-DA	6.551	286.9 -> 168.9	137307	10.00 µg/L	0.000
M5-EtFOSAA	9.146	589.2 -> 419.0	41063	5.00 µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	292848	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	355927	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	31239	2.50 µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	25620	2.50 µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	40887	2.50 µg/L	0.000
13C3-PFBA	3.178	216.0 -> 172.0	231552	5.00 µg/L	0.000
18O2-PFHxS	7.916	403.0 -> 83.9	22535	2.50 µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	179662	2.50 µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	56391	1.25 µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	83856	1.25 µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	168037	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.823	329.1 -> 80.9	4015	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C2-6:2FTS	7.536	429.1 -> 80.9	10214	5.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.4%		
13C2-8:2FTS	8.653	529.1 -> 80.9	12778	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-PFDoDA	9.806	615.1 -> 570.0	65101	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C2-PFTeDA	10.512	715.2 -> 670.0	47827	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C3-PFBS	6.089	302.1 -> 79.9	49095	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFHxS	7.917	402.1 -> 79.9	32537	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	3.174	216.8 -> 171.9	420330	10.07 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFHpA	7.106	367.1 -> 322.0	98314	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C5-PFHxA	6.172	318.0 -> 273.0	177083	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFPeA	4.863	268.3 -> 223.0	277981	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	8.891	519.1 -> 474.1	59889	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C7-PFUnDA	9.386	570.0 -> 525.1	67259	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C8-FOSA	10.247	506.1 -> 77.8	57939	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C8-PFOA	7.788	421.1 -> 376.0	157496	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C8-PFOS	9.068	507.1 -> 79.9	40788	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C9-PFNA	8.360	472.1 -> 427.0	77407	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.9%	
d3-MeFOSAA	8.924	573.2 -> 419.0	48157	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C3-HFPO-DA	6.551	286.9 -> 168.9	137307	10.24 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSA	11.327	515.0 -> 219.0	25620	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
d5-EtFOSAA	9.146	589.2 -> 419.0	41063	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d7-MeFOSE	11.235	623.2 -> 58.9	292848	24.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
d9-EtFOSE	11.470	639.2 -> 58.9	355927	25.49 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d5-EtFOSA	11.548	531.1 -> 219.0	31239	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	

Target Compounds

					QValue
4:2FTS	5.823	327.1 -> 307.0	30999	4.72 µg/L	100
		327.1 -> 80.9	14409		
6:2FTS	7.537	427.1 -> 407.0	35363	4.37 µg/L	99
		427.1 -> 80.9	17590		
8:2FTS	8.654	527.1 -> 507.0	28264	4.57 µg/L	90
		527.1 -> 80.8	16904		
EtFOSAA	9.147	584.2 -> 419.1	7138	1.04 µg/L	m 97
		584.2 -> 526.0	3388		
FOSA	10.250	498.1 -> 77.9	27278	1.22 µg/L	99
		498.1 -> 478.0	500		
MeFOSAA	8.925	570.1 -> 419.0	9559	1.34 µg/L	m 96
		570.1 -> 483.0	1726		
PFBA	3.182	212.8 -> 168.9	54696	4.68 µg/L	100
PFBS	6.090	298.7 -> 79.9	22434	1.01 µg/L	97
		298.7 -> 98.8	8080		
PFDA	8.892	512.9 -> 469.0	52576	1.23 µg/L	94
		512.9 -> 219.0	9437		
PFDODA	9.806	613.1 -> 569.0	61053	1.22 µg/L	97
		613.1 -> 319.0	9678		
PFDS	9.959	599.0 -> 79.9	11223	1.19 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.106	599.0 -> 98.8	5236	1.18	µg/L	99
		363.1 -> 319.0	72552			
PFHpS	8.526	363.1 -> 169.0	12662	1.13	µg/L	96
		449.0 -> 79.9	18558			
PFHxA	6.175	449.0 -> 98.9	8978	1.19	µg/L	99
		313.0 -> 269.0	81895			
PFHxS	7.905	313.0 -> 118.9	2708	1.06	µg/L	93
		398.7 -> 79.9	11145			
PFNA	8.360	398.7 -> 98.9	5921	1.15	µg/L	97
		463.0 -> 419.0	64752			
PFNS	9.549	463.0 -> 219.0	15957	1.08	µg/L	93
		548.8 -> 79.9	7847			
PFOA	7.790	548.8 -> 98.9	3789	1.20	µg/L	99
		413.0 -> 369.0	84336			
PFOS	9.069	413.0 -> 169.0	16820	1.12	µg/L	96
		498.9 -> 79.9	21255			
PFPeA	4.866	498.9 -> 98.8	10797	2.43	µg/L	100
		263.0 -> 219.0	148150			
PFPeS	7.171	349.1 -> 79.9	11230	1.11	µg/L	95
		349.1 -> 98.9	4039			
PFTeDA	10.513	713.1 -> 669.0	56683	1.18	µg/L	100
		713.1 -> 168.9	4808			
PFTrDA	10.179	663.0 -> 619.0	78669	1.28	µg/L	96
		663.0 -> 168.9	7263			
PFUnDA	9.374	563.1 -> 519.0	48030	1.18	µg/L	98
		563.1 -> 269.1	8253			
11CI-PF3OUdS	10.218	630.9 -> 450.9	154841	4.82	µg/L	99
		632.9 -> 452.9	47035			
9CI-PF3ONS	9.425	530.8 -> 351.0	172603	4.41	µg/L	100
		532.8 -> 353.0	52048			
ADONA	7.369	376.9 -> 250.9	346064	4.67	µg/L	99
		376.9 -> 84.8	120306			
HFPO-DA	6.552	284.9 -> 168.9	60836	4.70	µg/L	98
		284.9 -> 184.9	6883			
3:3FTCA	4.204	241.0 -> 177.0	15876	5.55	µg/L	100
		241.0 -> 117.0	1501			
5:3FTCA	6.783	341.0 -> 237.1	277747	30.33	µg/L	99
		341.0 -> 217.0	205043			
7:3FTCA	8.249	441.0 -> 316.9	165517	31.47	µg/L	95
		441.0 -> 336.9	388455			
EtFOSA	11.550	526.0 -> 219.0	14952	1.14	µg/L	95
		526.0 -> 169.0	17976			
EtFOSE	11.496	630.0 -> 58.9	179555	12.99	µg/L	100
		511.9 -> 219.0	11688			
MeFOSA	11.329	511.9 -> 169.0	14783	1.20	µg/L	98
		616.1 -> 58.9	160163			
MeFOSE	11.261	699.1 -> 79.9	9001	12.95	µg/L	100
		699.1 -> 98.8	5129			
PFDoDS	10.639	295.0 -> 201.0	11275	1.13	µg/L	94
		295.0 -> 84.9	3051			
NFDHA	6.053	279.0 -> 85.1	90721	2.49	µg/L	96
		229.0 -> 84.9	91519			
PFMBA	5.328	314.8 -> 134.9	126566	2.33	µg/L	100
		314.8 -> 82.9	3911			
PFMPA	3.869			2.15	µg/L	100
PFEESA	6.647			2.15	µg/L	100

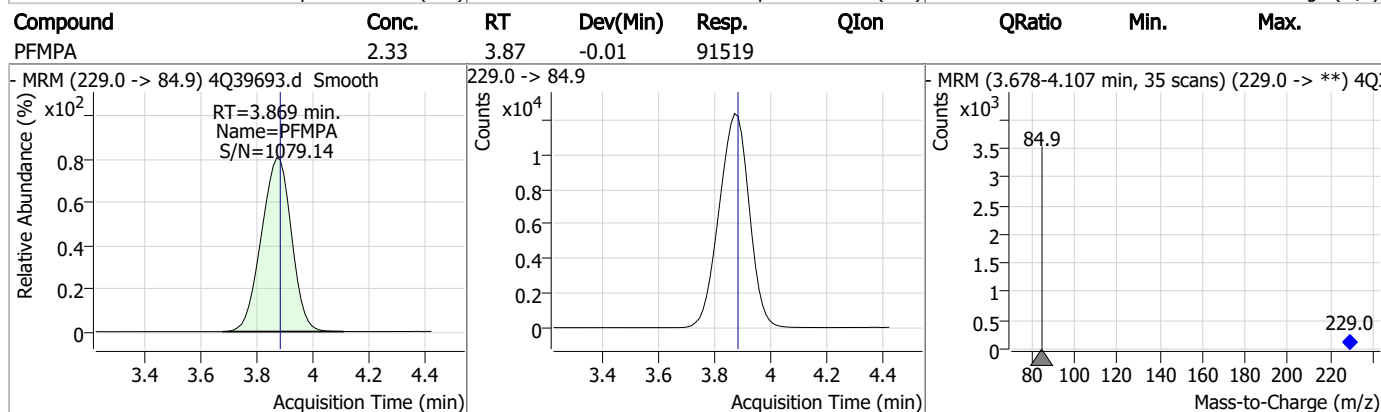
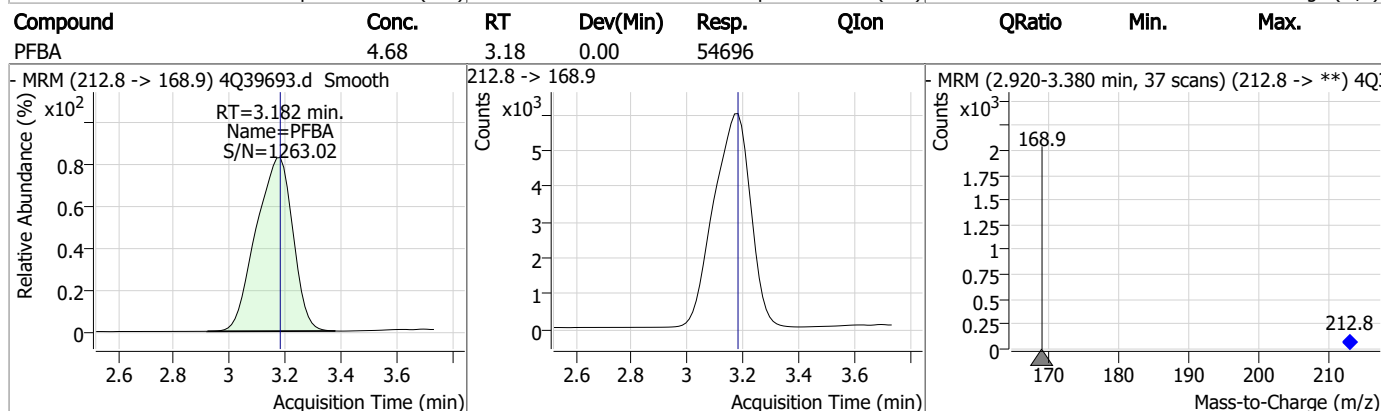
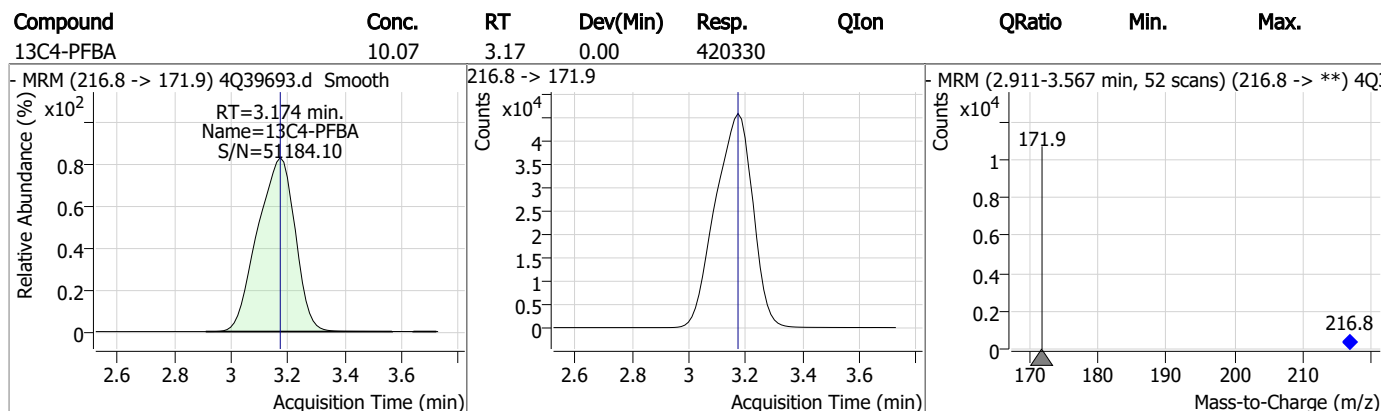
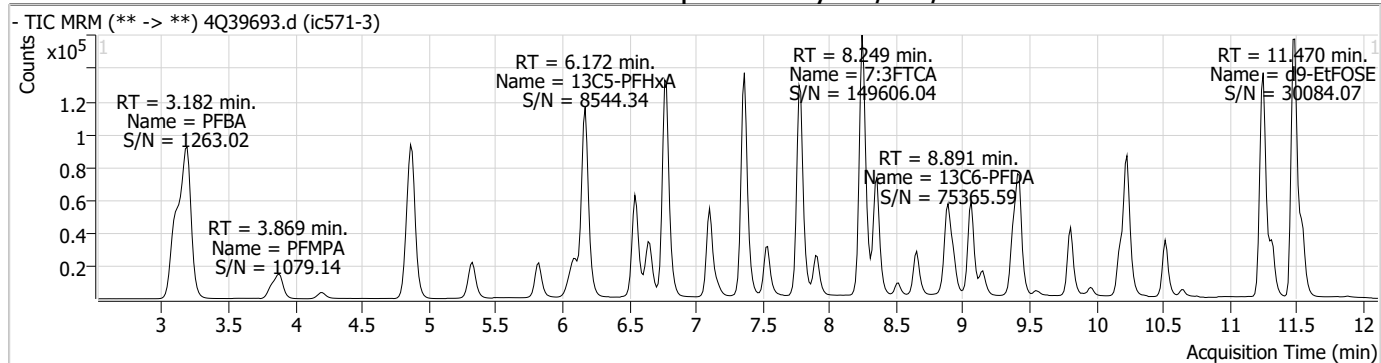
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

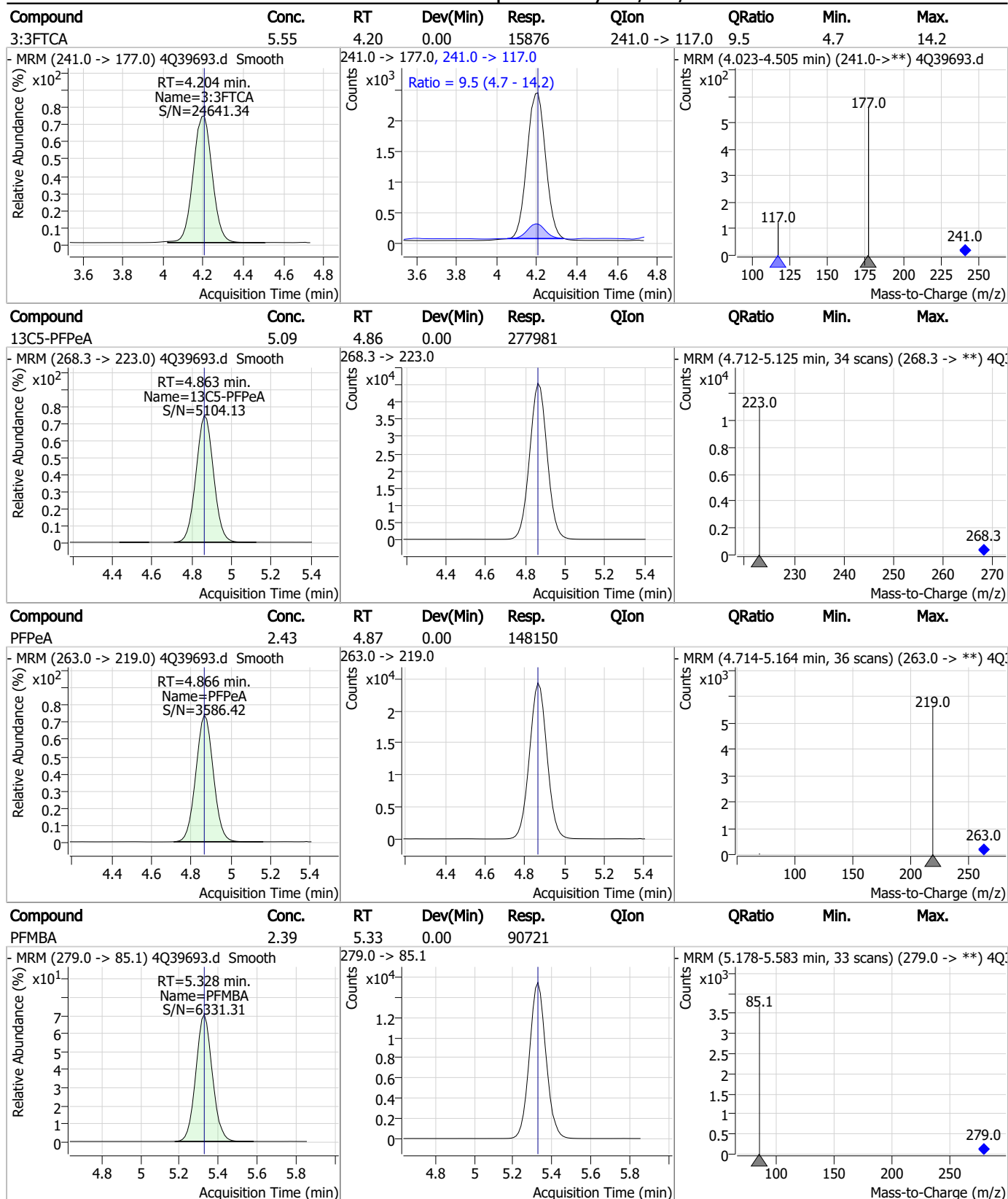
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.6.4
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Perfluorinated Compounds by LC/MS/MS



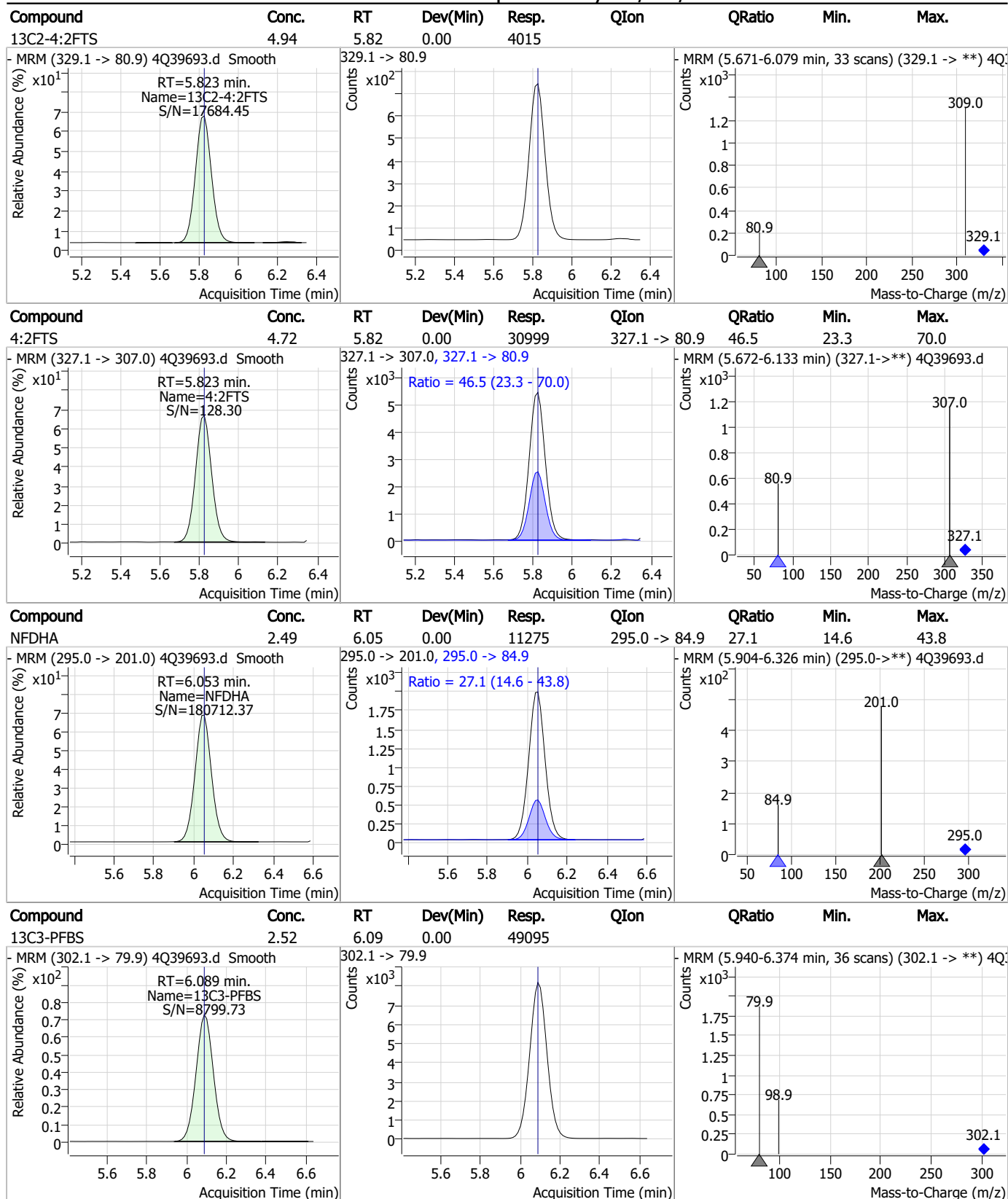
Perfluorinated Compounds by LC/MS/MS



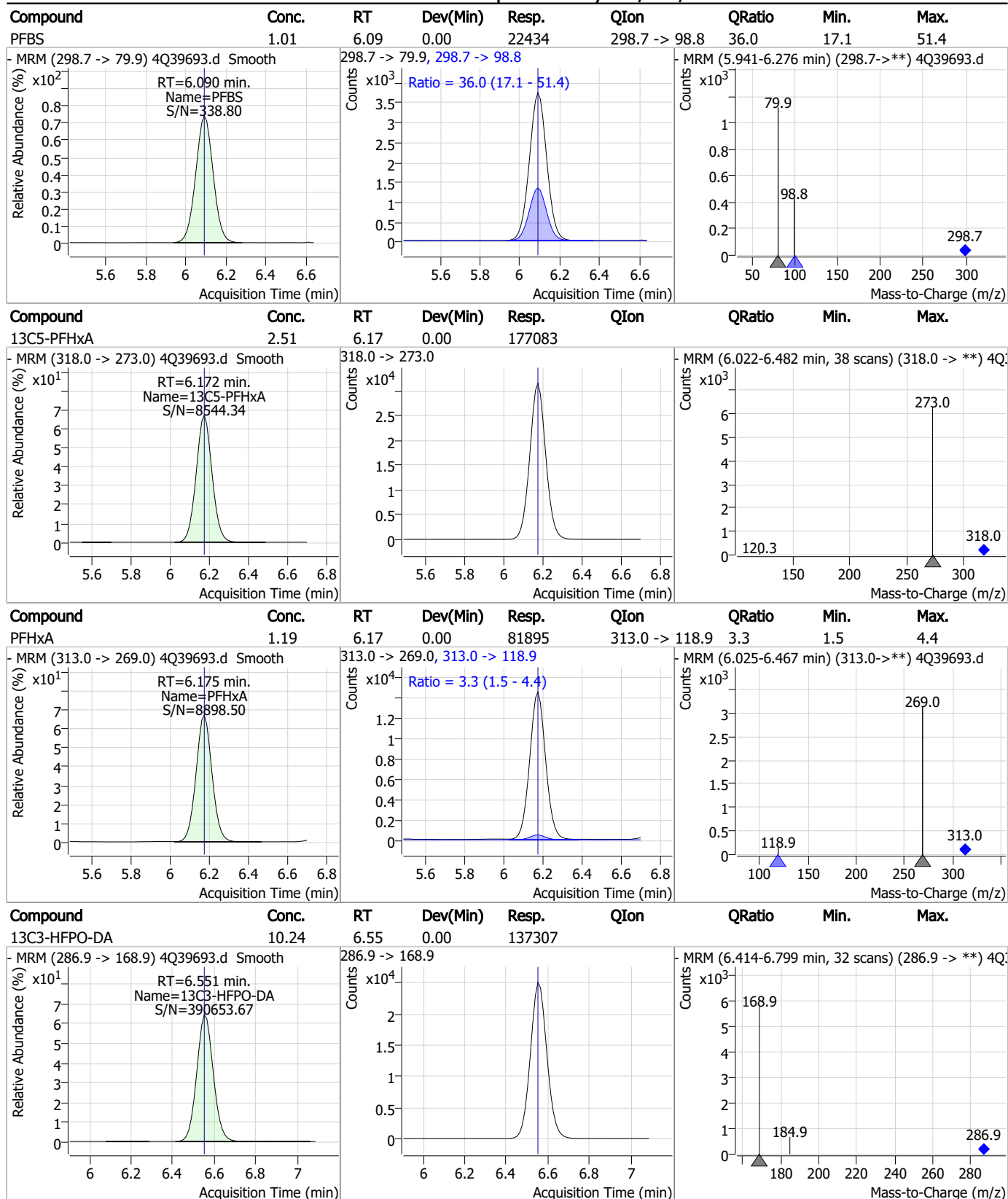
7.6.4

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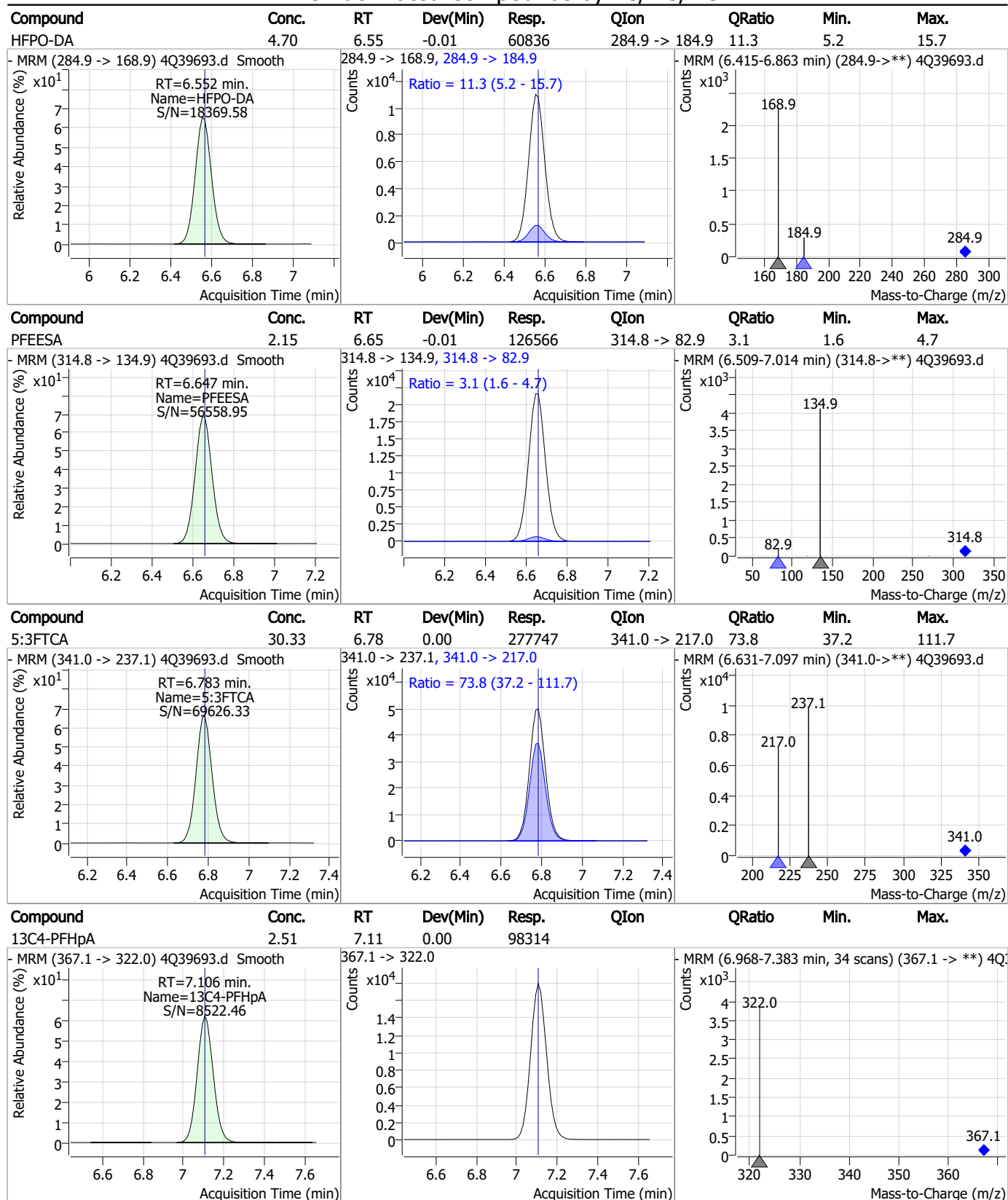
Perfluorinated Compounds by LC/MS/MS



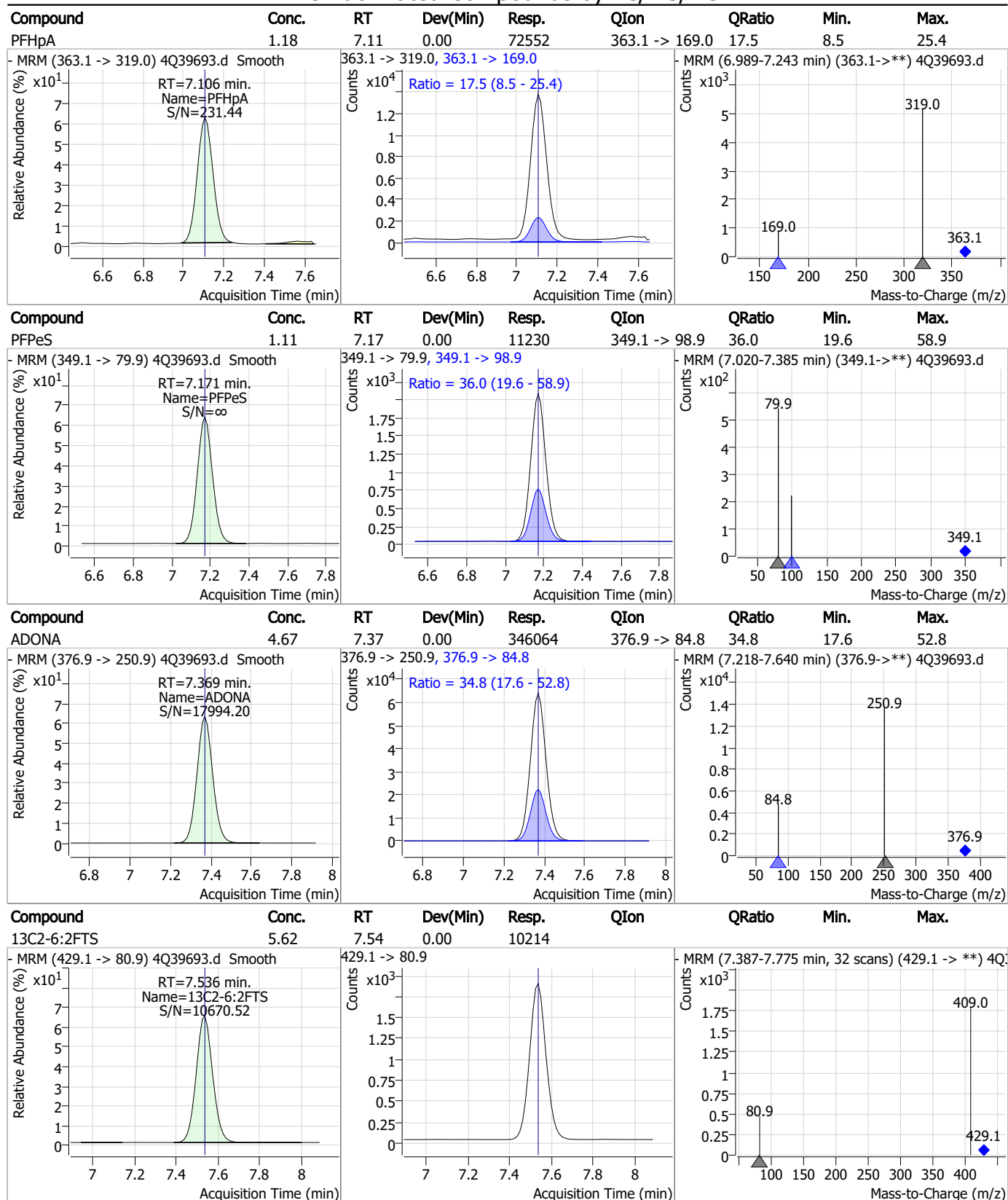
Perfluorinated Compounds by LC/MS/MS



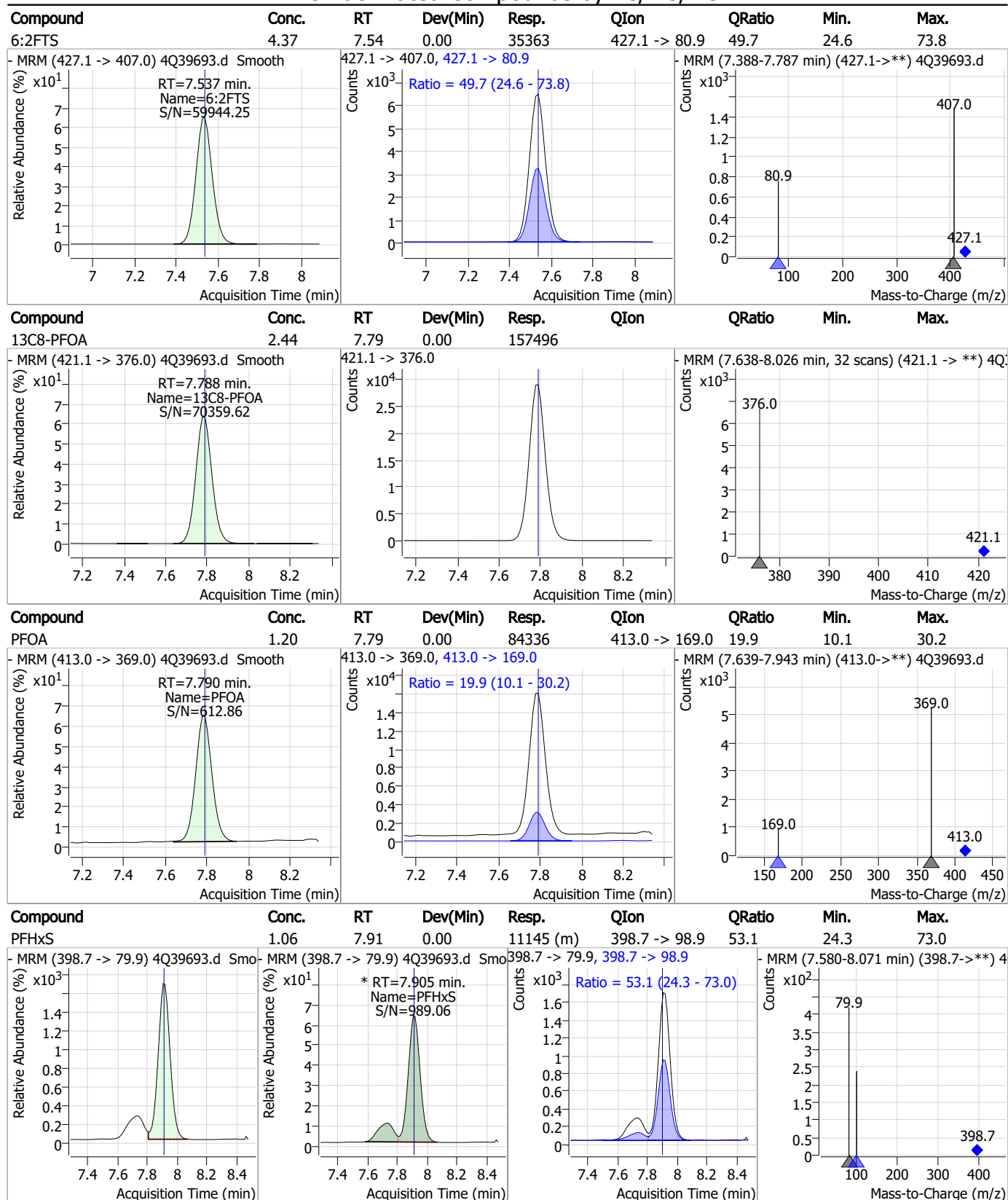
Perfluorinated Compounds by LC/MS/MS



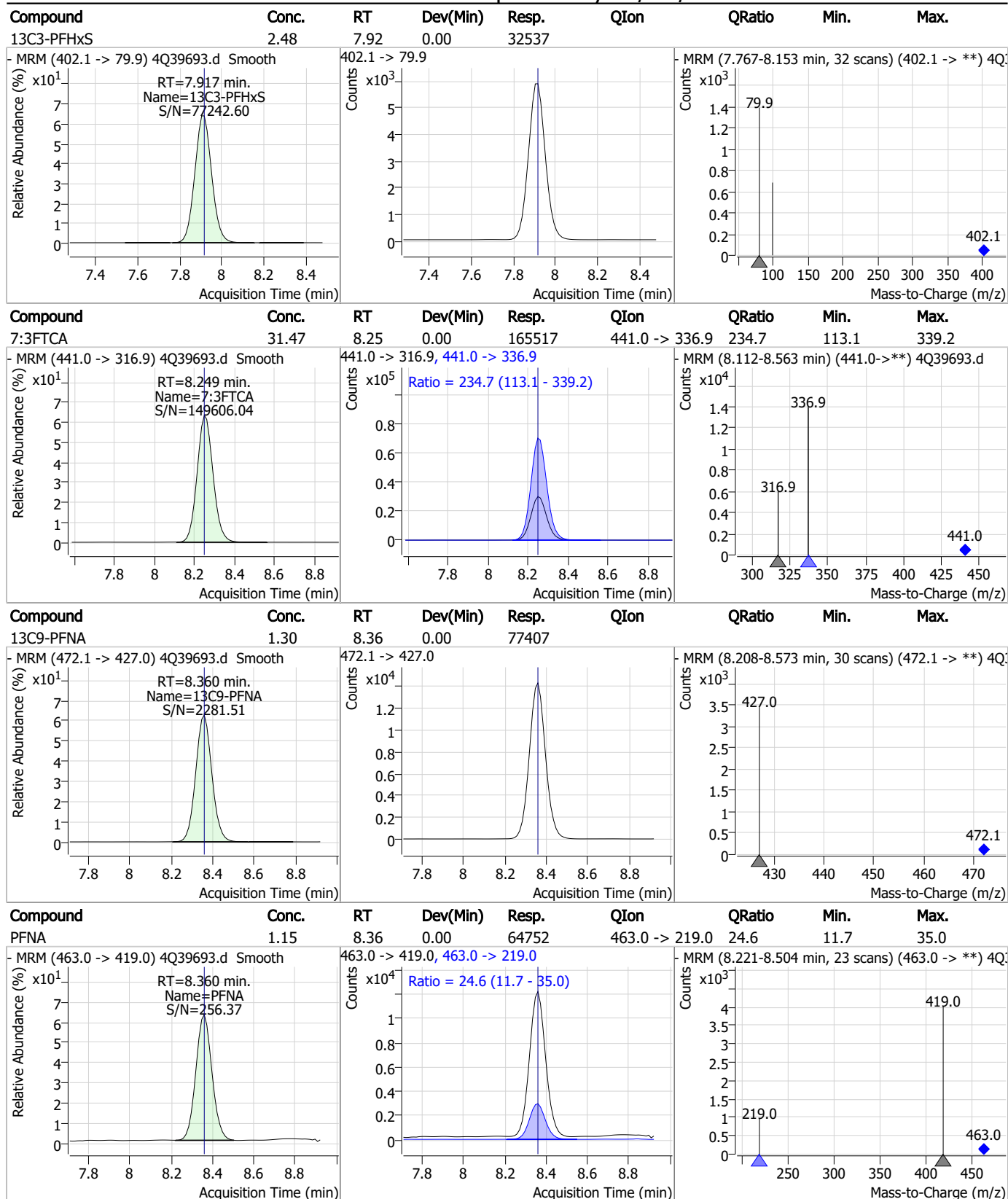
Perfluorinated Compounds by LC/MS/MS



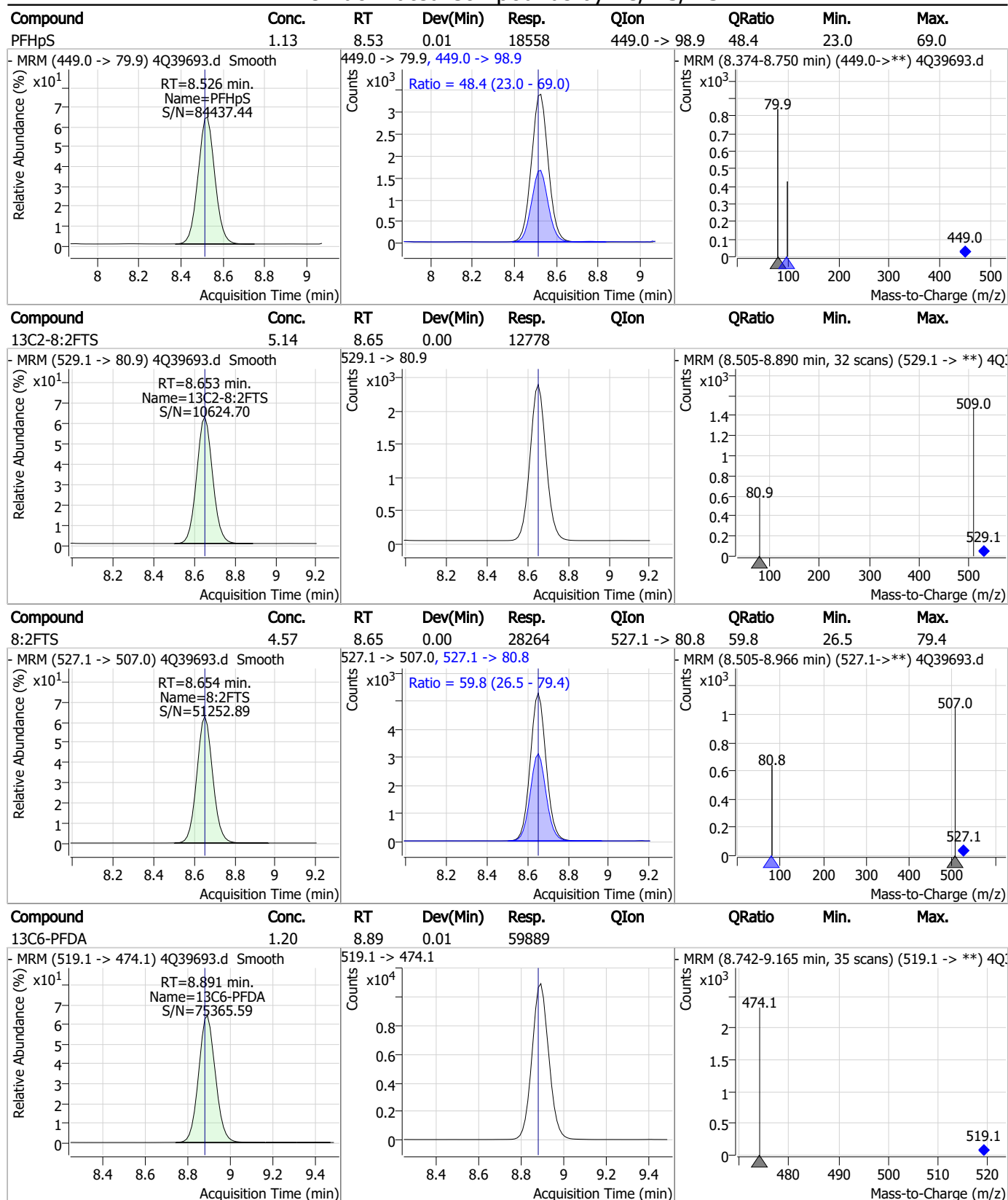
Perfluorinated Compounds by LC/MS/MS



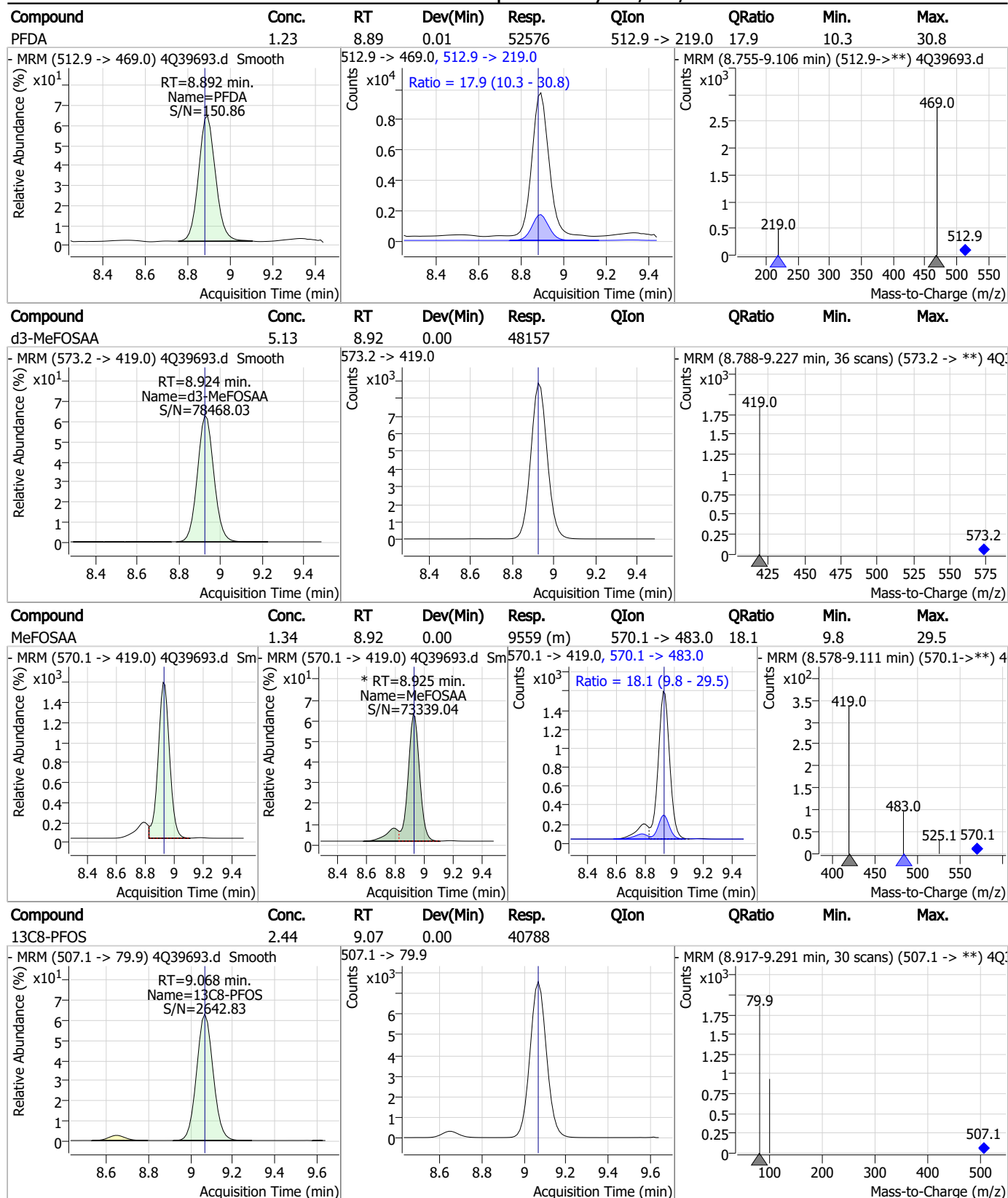
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



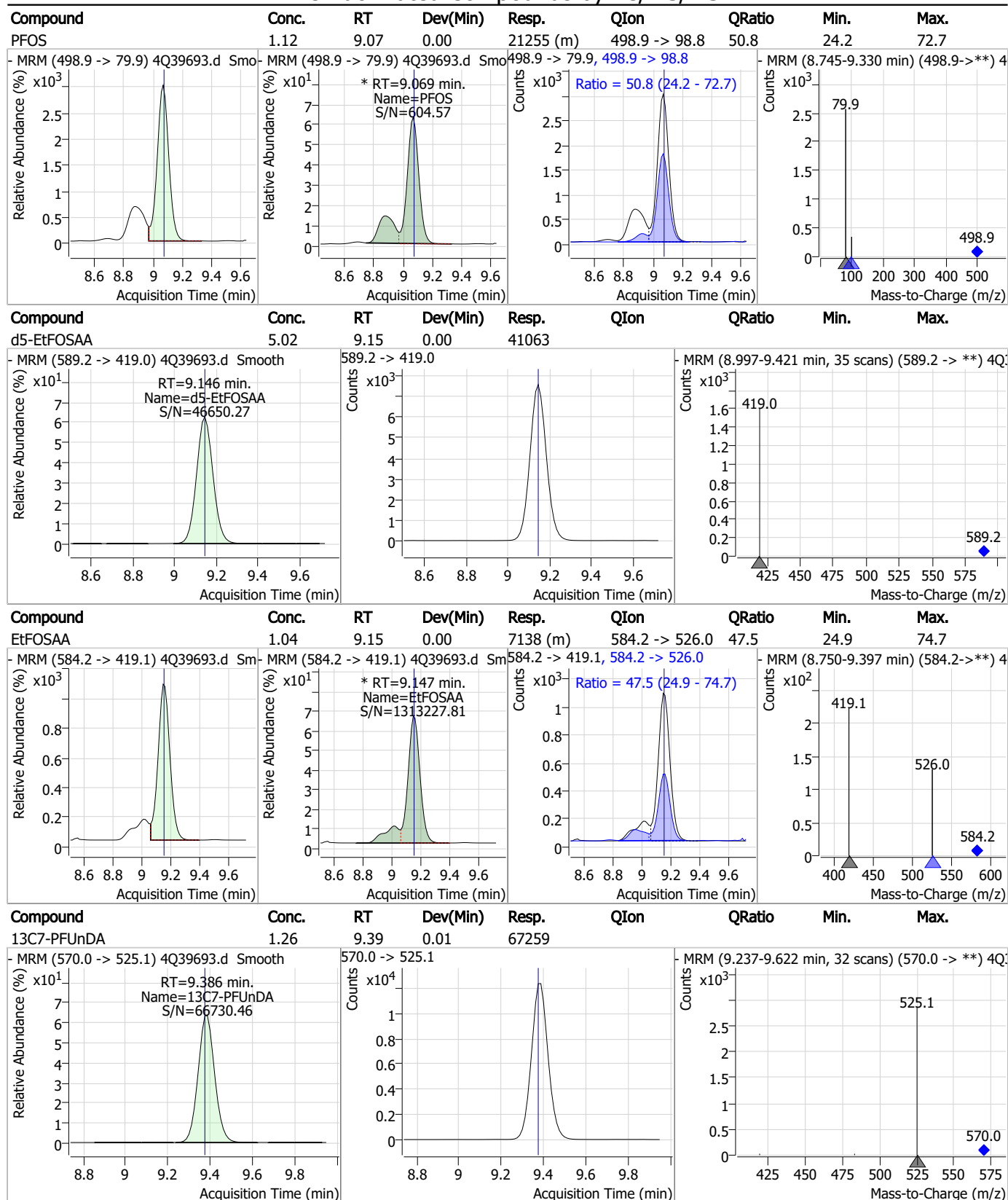
Perfluorinated Compounds by LC/MS/MS



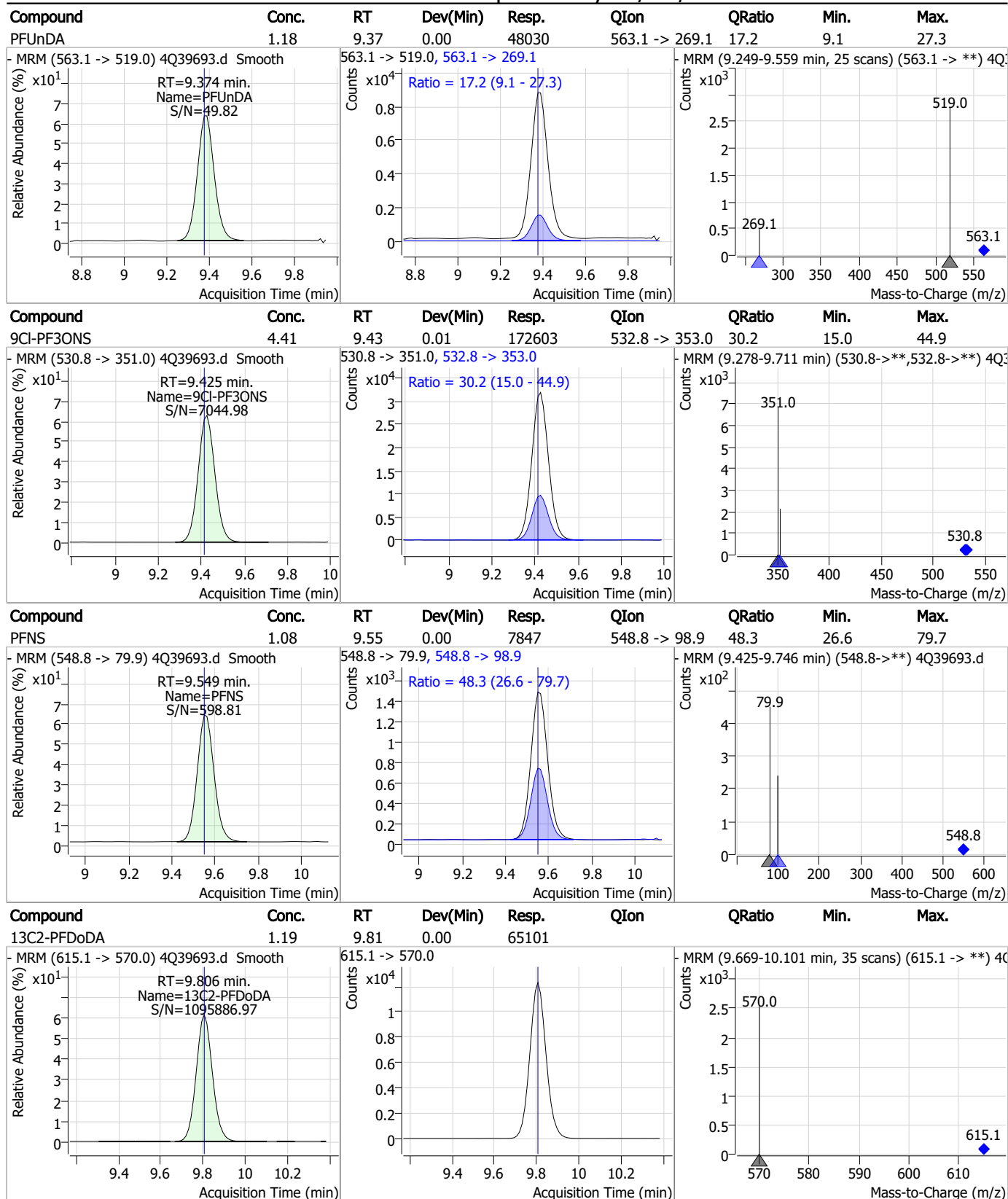
7.6.4

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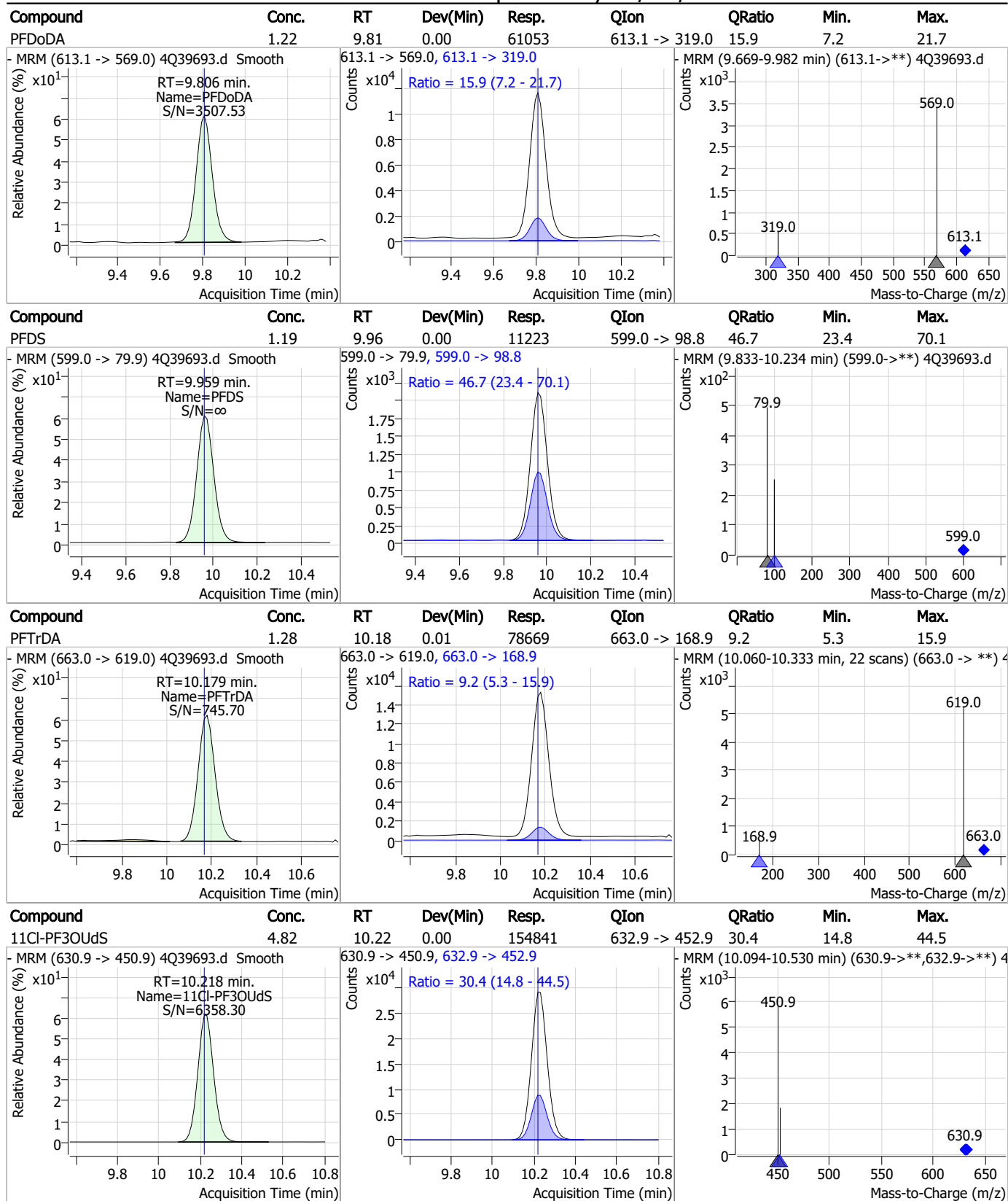
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



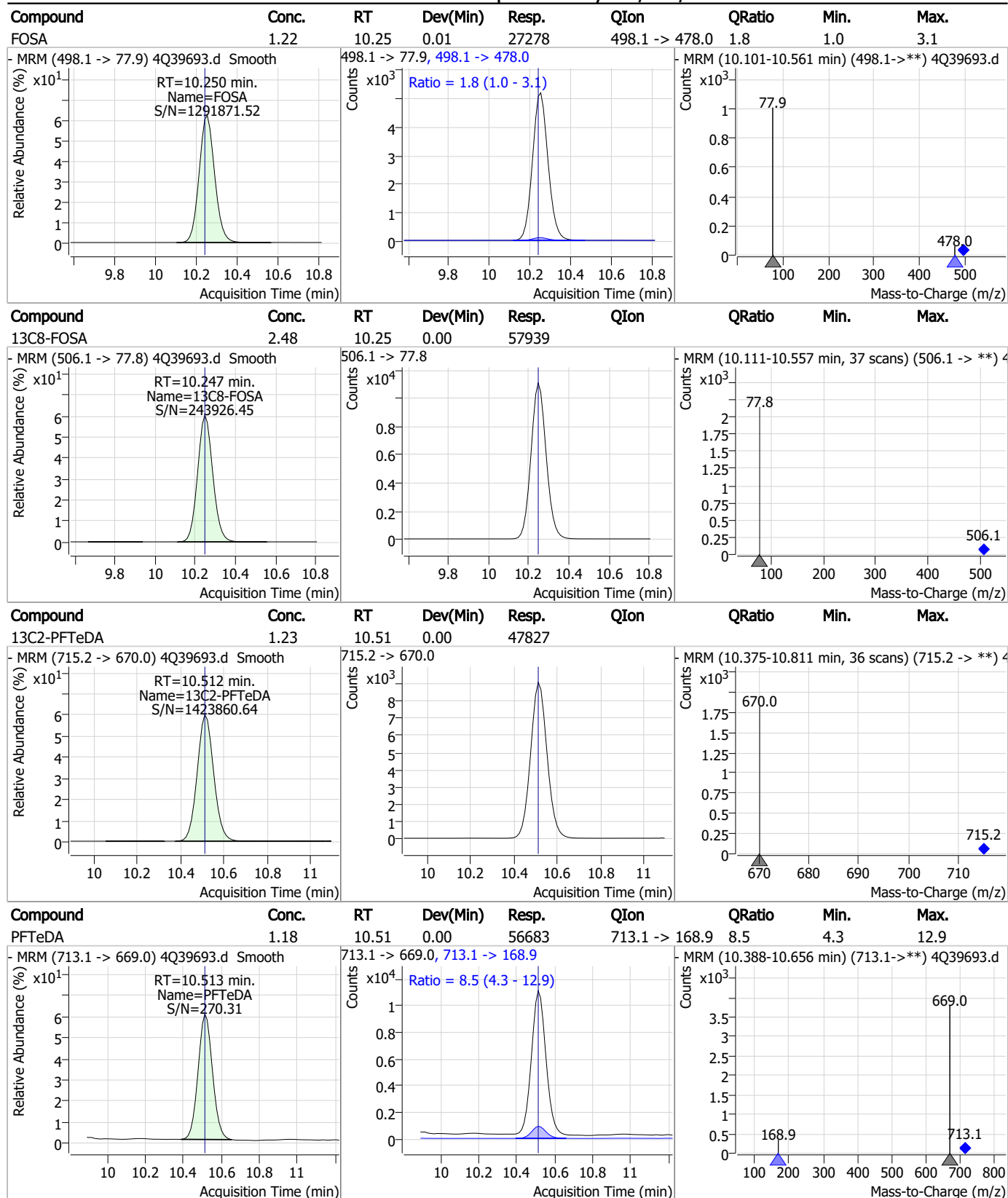
Perfluorinated Compounds by LC/MS/MS



7.6.4

7

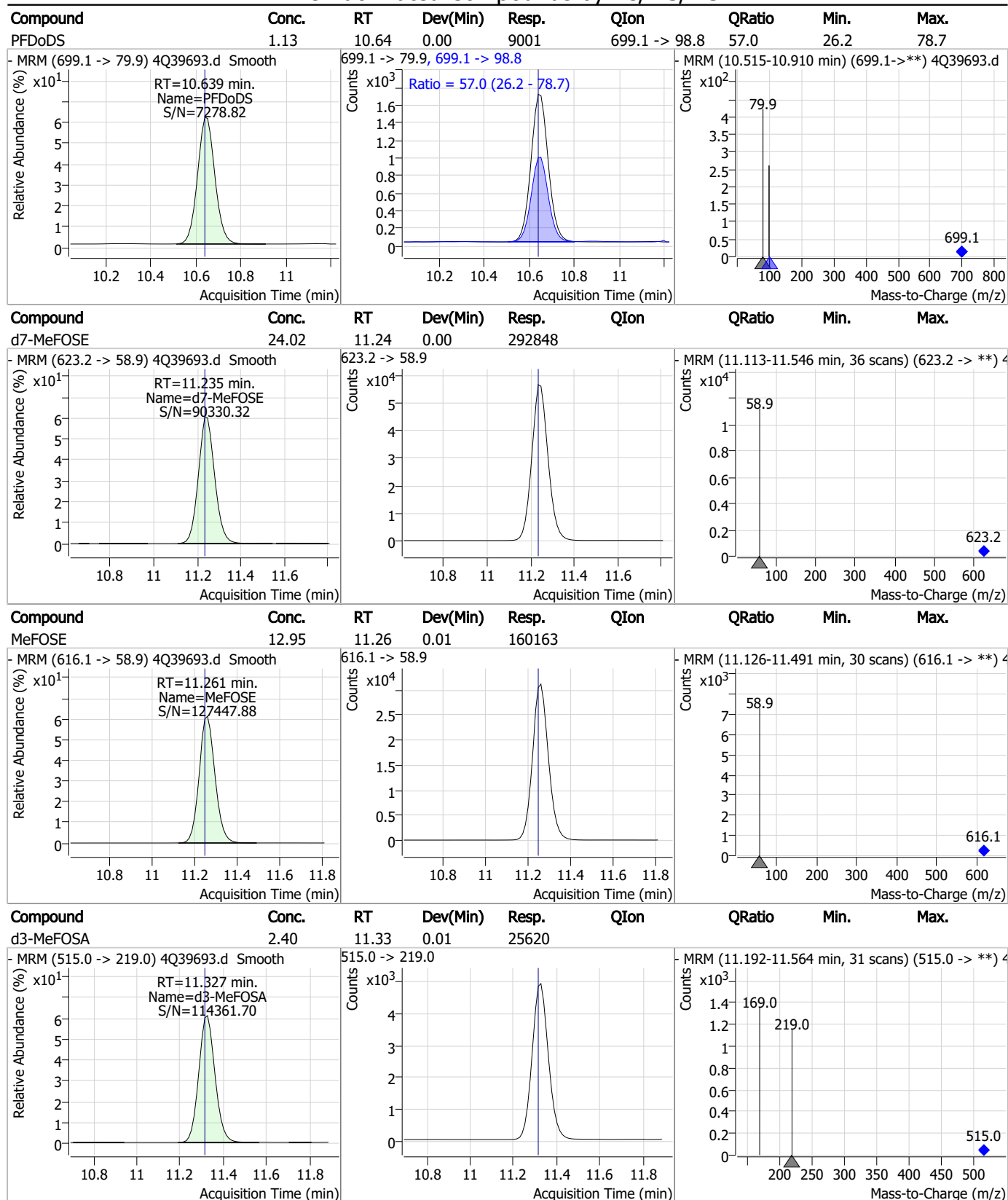
Perfluorinated Compounds by LC/MS/MS



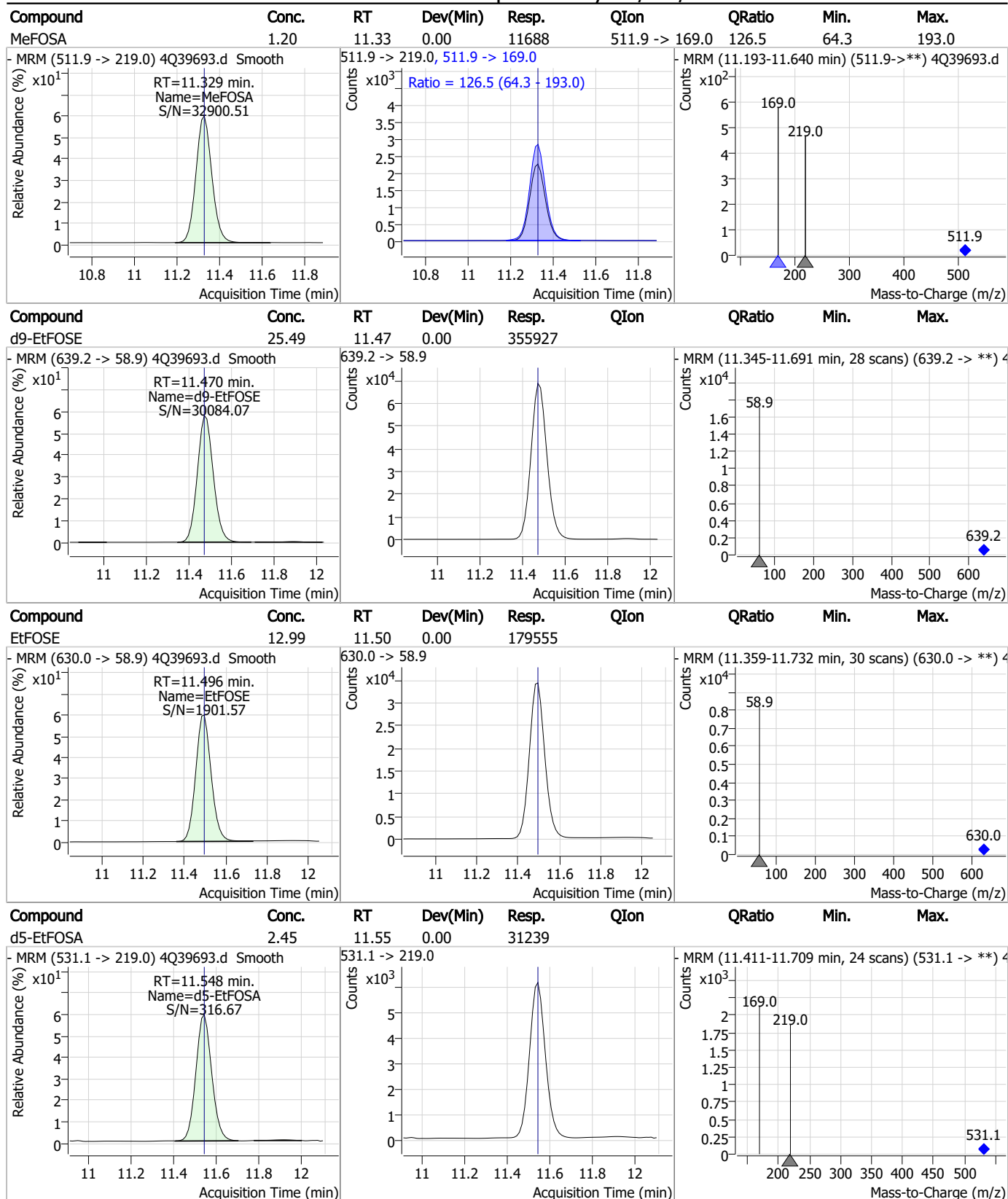
7.6.4

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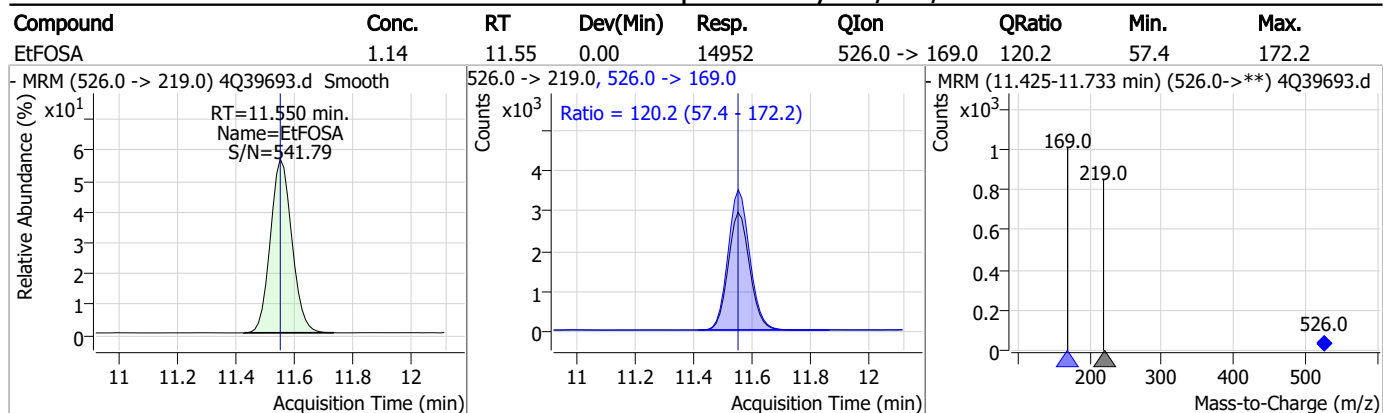
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Manual Integration Approval Summary

Sample Number: S4Q571-IC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39693.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 13:41

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

7.6.4.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39694.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 1:55:50 PM
 Sample Name : icc571-4
 Vial : P1-A5
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.174	216.8 -> 171.9	441400	10.00 µg/L	0.000
M5-PFPeA	4.863	268.3 -> 223.0	293070	5.00 µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	182217	2.50 µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	104247	2.50 µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	171671	2.50 µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	81248	1.25 µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	64118	1.25 µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	69624	1.25 µg/L	0.000
M2-PFDoDA	9.806	615.1 -> 570.0	69379	1.25 µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	51121	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	60134	2.50 µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	50511	2.50 µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	35070	2.50 µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	40325	2.50 µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	4324	5.00 µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	9692	5.00 µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	13101	5.00 µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	49146	5.00 µg/L	0.000
M3-HFPO-DA	6.551	286.9 -> 168.9	142936	10.00 µg/L	0.000
M5-EtFOSAA	9.146	589.2 -> 419.0	43117	5.00 µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	318140	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	368880	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	34580	2.50 µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	26560	2.50 µg/L	0.000
13C4-PFOS	9.068	502.8 -> 79.9	40593	2.50 µg/L	0.000
13C3-PFBA	3.178	216.0 -> 172.0	245325	5.00 µg/L	0.000
18O2-PFHxS	7.916	403.0 -> 83.9	23439	2.50 µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	189084	2.50 µg/L	0.000
13C2-PFDA	8.879	515.1 -> 470.1	58050	1.25 µg/L	0.000
13C5-PFNA	8.360	468.0 -> 423.0	90711	1.25 µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	177127	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.823	329.1 -> 80.9	4324	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9692	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C2-8:2FTS	8.653	529.1 -> 80.9	13101	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-PFDoDA	9.806	615.1 -> 570.0	69379	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C2-PFTeDA	10.512	715.2 -> 670.0	51121	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C3-PFBS	6.089	302.1 -> 79.9	50511	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C3-PFHxS	7.917	402.1 -> 79.9	35070	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 = 102.6%	
13C4-PFBA	3.174	216.8 -> 171.9	441400	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFHpA	7.106	367.1 -> 322.0	104247	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C5-PFHxA	6.172	318.0 -> 273.0	182217	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C5-PFPeA	4.863	268.3 -> 223.0	293070	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C6-PFDA	8.879	519.1 -> 474.1	64118	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C7-PFUnDA	9.373	570.0 -> 525.1	69624	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-FOSA	10.247	506.1 -> 77.8	60134	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C8-PFOA	7.788	421.1 -> 376.0	171671	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	9.068	507.1 -> 79.9	40325	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C9-PFNA	8.360	472.1 -> 427.0	81248	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
d3-MeFOSAA	8.924	573.2 -> 419.0	49146	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C3-HFPO-DA	6.551	286.9 -> 168.9	142936	10.12 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
d3-MeFOSA	11.315	515.0 -> 219.0	26560	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
d5-EtFOSAA	9.146	589.2 -> 419.0	43117	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
d7-MeFOSE	11.235	623.2 -> 58.9	318140	26.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
d9-EtFOSE	11.470	639.2 -> 58.9	368880	26.60 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
d5-EtFOSA	11.548	531.1 -> 219.0	34580	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%	

Target Compounds

QValue

4:2FTS	5.823	327.1 -> 307.0	60421	8.55 µg/L	100
		327.1 -> 80.9	28203		
6:2FTS	7.537	427.1 -> 407.0	70624	9.19 µg/L	100
		427.1 -> 80.9	34733		
8:2FTS	8.654	527.1 -> 507.0	57553	9.08 µg/L	100
		527.1 -> 80.8	30457		
EtFOSAA	9.147	584.2 -> 419.1	15112	2.09 µg/L	100
		584.2 -> 526.0	7523		
FOSA	10.238	498.1 -> 77.9	51504	2.22 µg/L	100
		498.1 -> 478.0	1078		
MeFOSAA	8.925	570.1 -> 419.0	17460	2.40 µg/L	100
		570.1 -> 483.0	3439		
PFBA	3.182	212.8 -> 168.9	107304	8.74 µg/L	100
PFBS	6.090	298.7 -> 79.9	45144	1.98 µg/L	100
		298.7 -> 98.8	15474		
PFDA	8.879	512.9 -> 469.0	99658	2.18 µg/L	100
		512.9 -> 219.0	20492		
PFDODA	9.806	613.1 -> 569.0	120584	2.26 µg/L	100
		613.1 -> 319.0	17471		
PFDS	9.959	599.0 -> 79.9	20864	2.23 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.106	599.0 -> 98.8	9747	2.26	µg/L	100
		363.1 -> 319.0	146591			
PFHpS	8.513	363.1 -> 169.0	24846	2.22	µg/L	100
		449.0 -> 79.9	36253			
PFHxA	6.175	449.0 -> 98.9	16680	2.34	µg/L	100
		313.0 -> 269.0	165491			
PFHxS	7.905	313.0 -> 118.9	4827	1.99	µg/L	100
		398.7 -> 79.9	22524			
PFNA	8.360	398.7 -> 98.9	10969	2.21	µg/L	100
		463.0 -> 419.0	130741			
PFNS	9.549	463.0 -> 219.0	30482	2.13	µg/L	100
		548.8 -> 79.9	15308			
PFOA	7.790	548.8 -> 98.9	8135	2.24	µg/L	100
		413.0 -> 369.0	170801			
PFOS	9.069	413.0 -> 169.0	34435	2.15	µg/L	100
		498.9 -> 79.9	40426			
PFPeA	4.866	498.9 -> 98.8	19583	4.53	µg/L	100
		263.0 -> 219.0	291410			
PFPeS	7.171	349.1 -> 79.9	21220	1.94	µg/L	100
		349.1 -> 98.9	8337			
PFTeDA	10.513	713.1 -> 669.0	114770	2.23	µg/L	100
		713.1 -> 168.9	9869			
PFTrDA	10.167	663.0 -> 619.0	151089	2.31	µg/L	100
		663.0 -> 168.9	16015			
PFUnDA	9.374	563.1 -> 519.0	91428	2.17	µg/L	100
		563.1 -> 269.1	16627			
11CI-PF3OUdS	10.218	630.9 -> 450.9	304251	9.11	µg/L	100
		632.9 -> 452.9	90269			
9CI-PF3ONS	9.413	530.8 -> 351.0	346424	8.51	µg/L	100
		532.8 -> 353.0	103738			
ADONA	7.369	376.9 -> 250.9	677791	8.79	µg/L	100
		376.9 -> 84.8	238608			
HFPO-DA	6.565	284.9 -> 168.9	123064	9.13	µg/L	100
		284.9 -> 184.9	12915			
3:3FTCA	4.204	241.0 -> 177.0	31868	10.58	µg/L	100
		241.0 -> 117.0	3016			
5:3FTCA	6.783	341.0 -> 237.1	547549	58.10	µg/L	100
		341.0 -> 217.0	407828			
7:3FTCA	8.249	441.0 -> 316.9	324127	59.89	µg/L	100
		441.0 -> 336.9	733000			
EtFOSA	11.550	526.0 -> 219.0	31890	2.20	µg/L	100
		526.0 -> 169.0	36617			
EtFOSE	11.496	630.0 -> 58.9	343672	24.00	µg/L	100
		511.9 -> 219.0	22332			
MeFOSA	11.329	511.9 -> 169.0	28736	2.21	µg/L	100
		616.1 -> 58.9	323453			
MeFOSE	11.248	699.1 -> 79.9	18314	24.07	µg/L	100
		699.1 -> 98.8	9612			
PFDoDS	10.639	295.0 -> 201.0	22702	2.32	µg/L	100
		295.0 -> 84.9	6623			
NFDHA	6.053	279.0 -> 85.1	184849	4.61	µg/L	100
		229.0 -> 84.9	185440			
PFMBA	5.328	314.8 -> 134.9	255985	4.49	µg/L	100
		314.8 -> 82.9	8078			
PFMPA	3.882			4.23	µg/L	100
PFEESA	6.660			4.23	µg/L	100

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

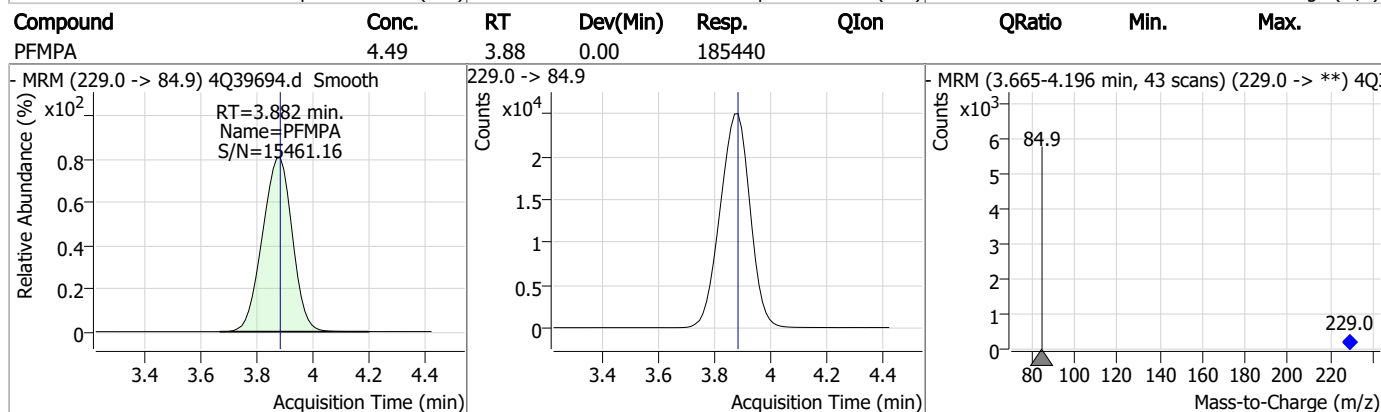
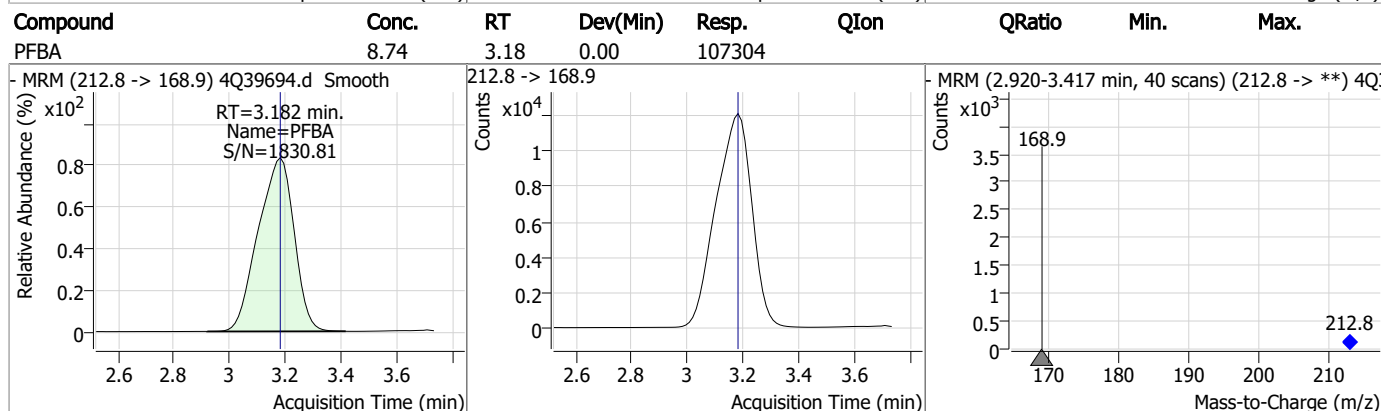
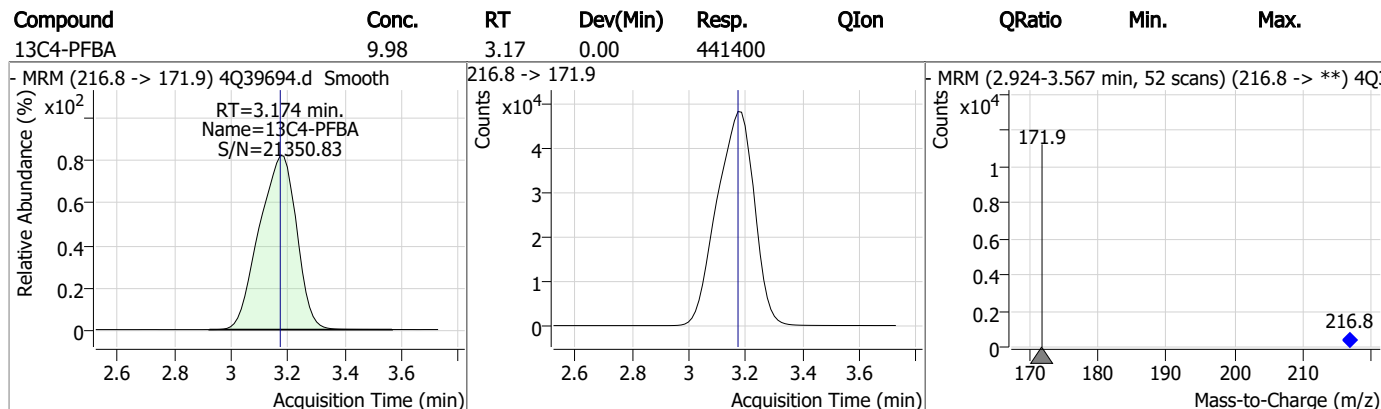
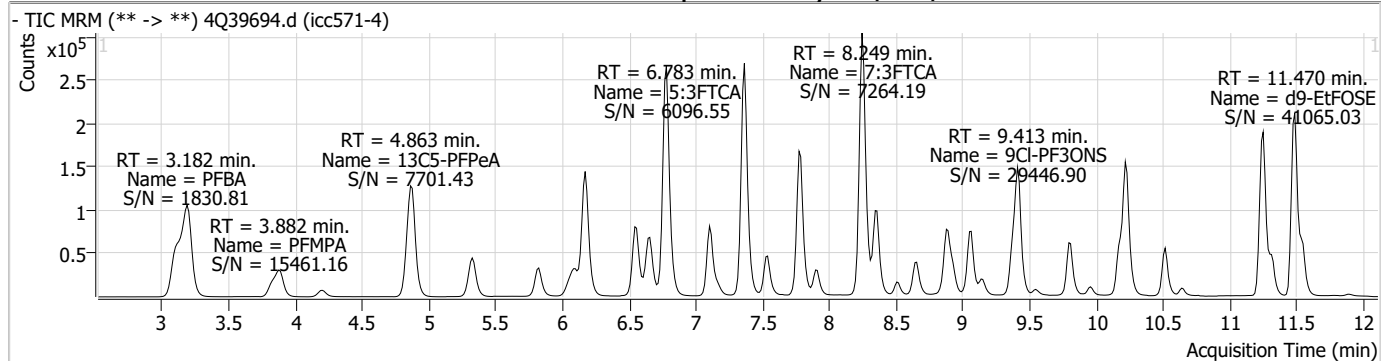
Perfluorinated Compounds by LC/MS/MS

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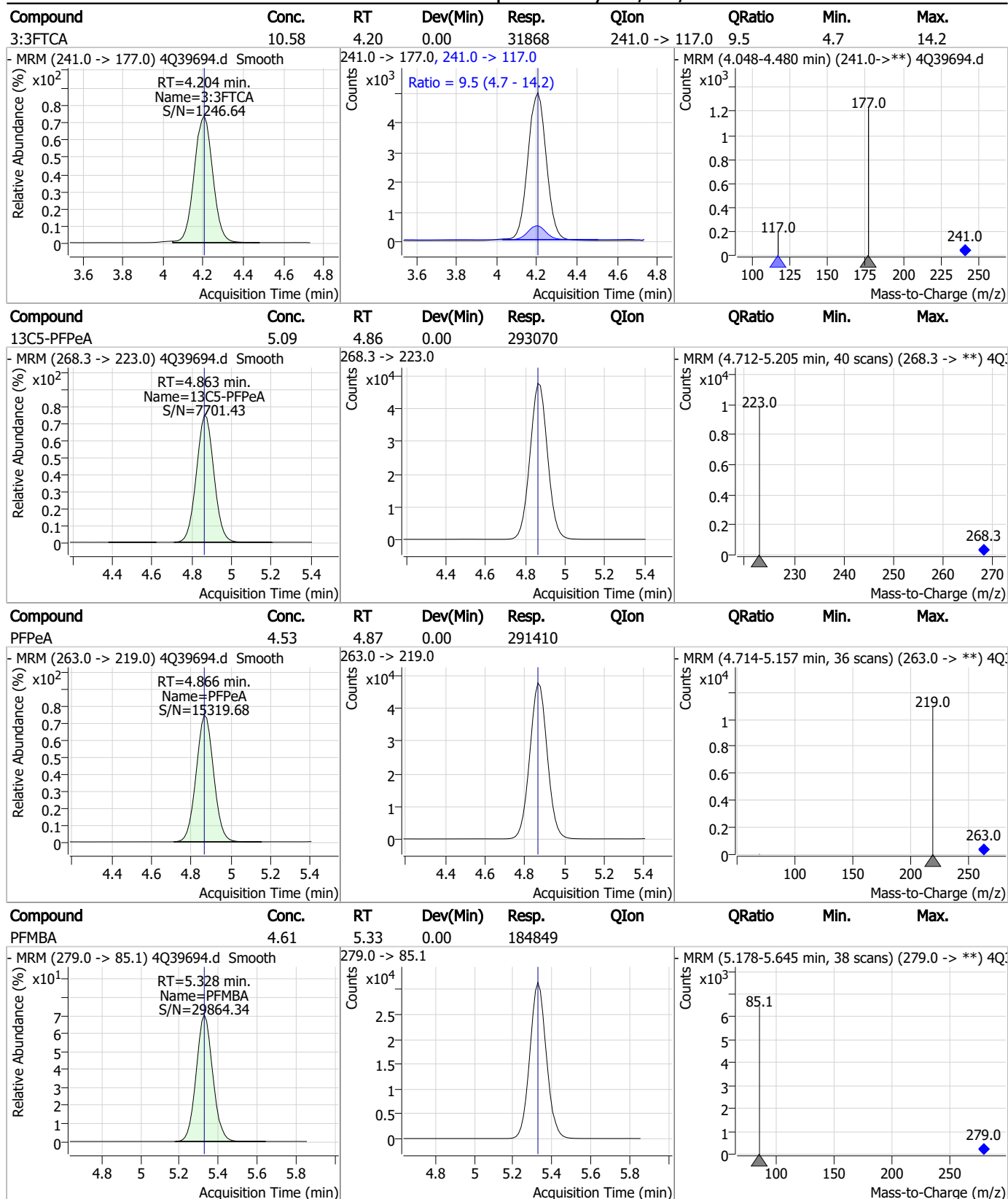
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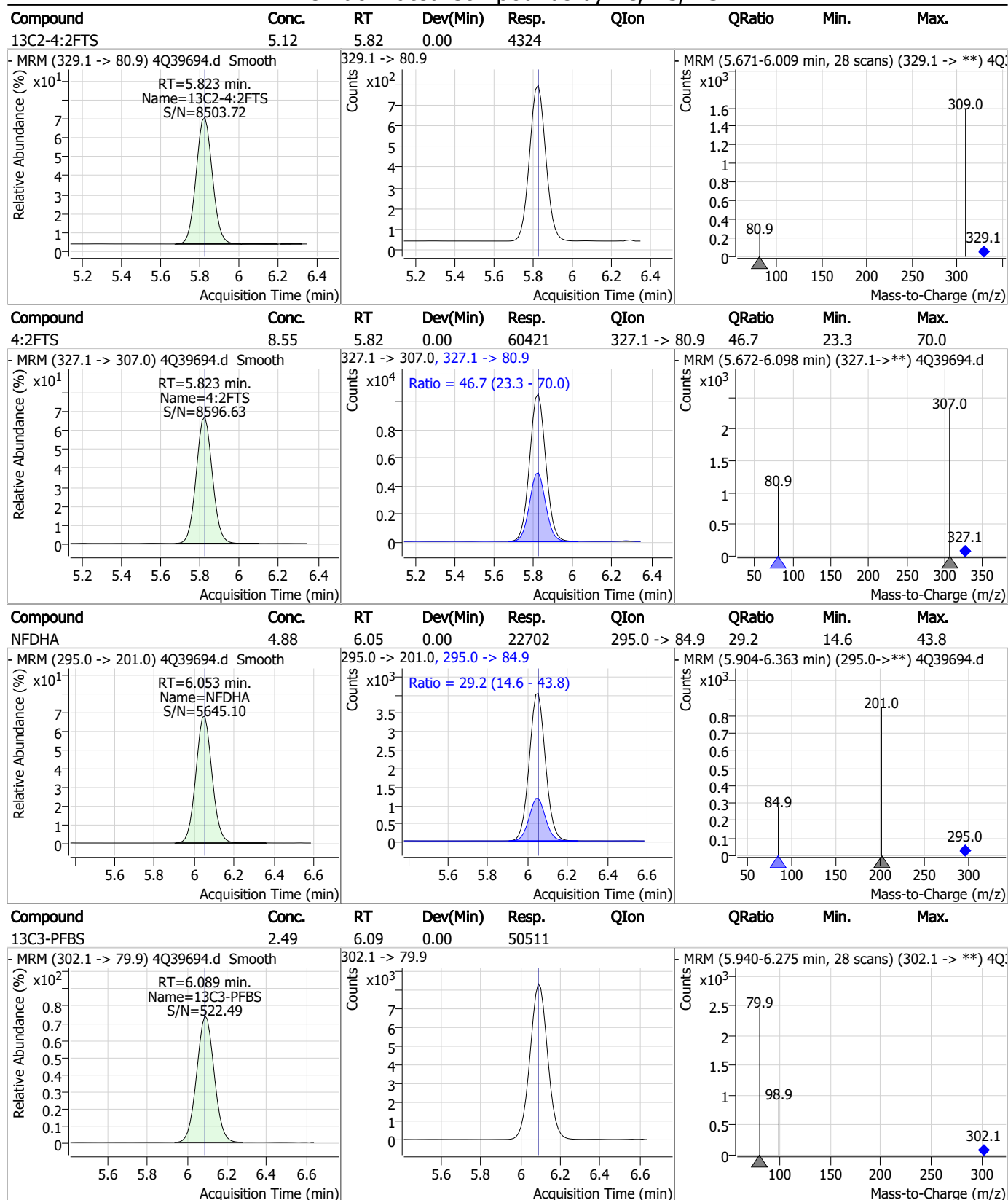
Perfluorinated Compounds by LC/MS/MS



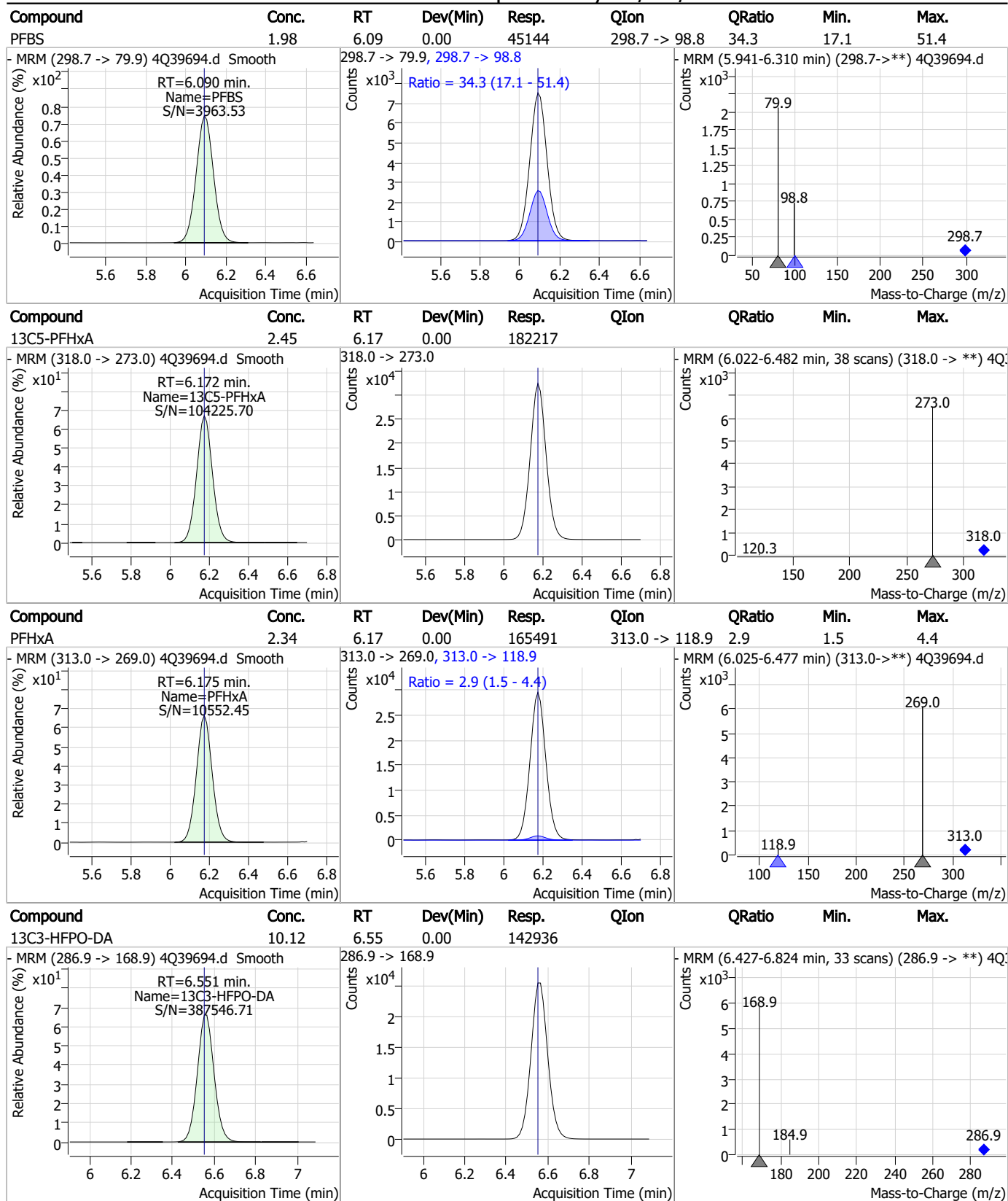
Perfluorinated Compounds by LC/MS/MS



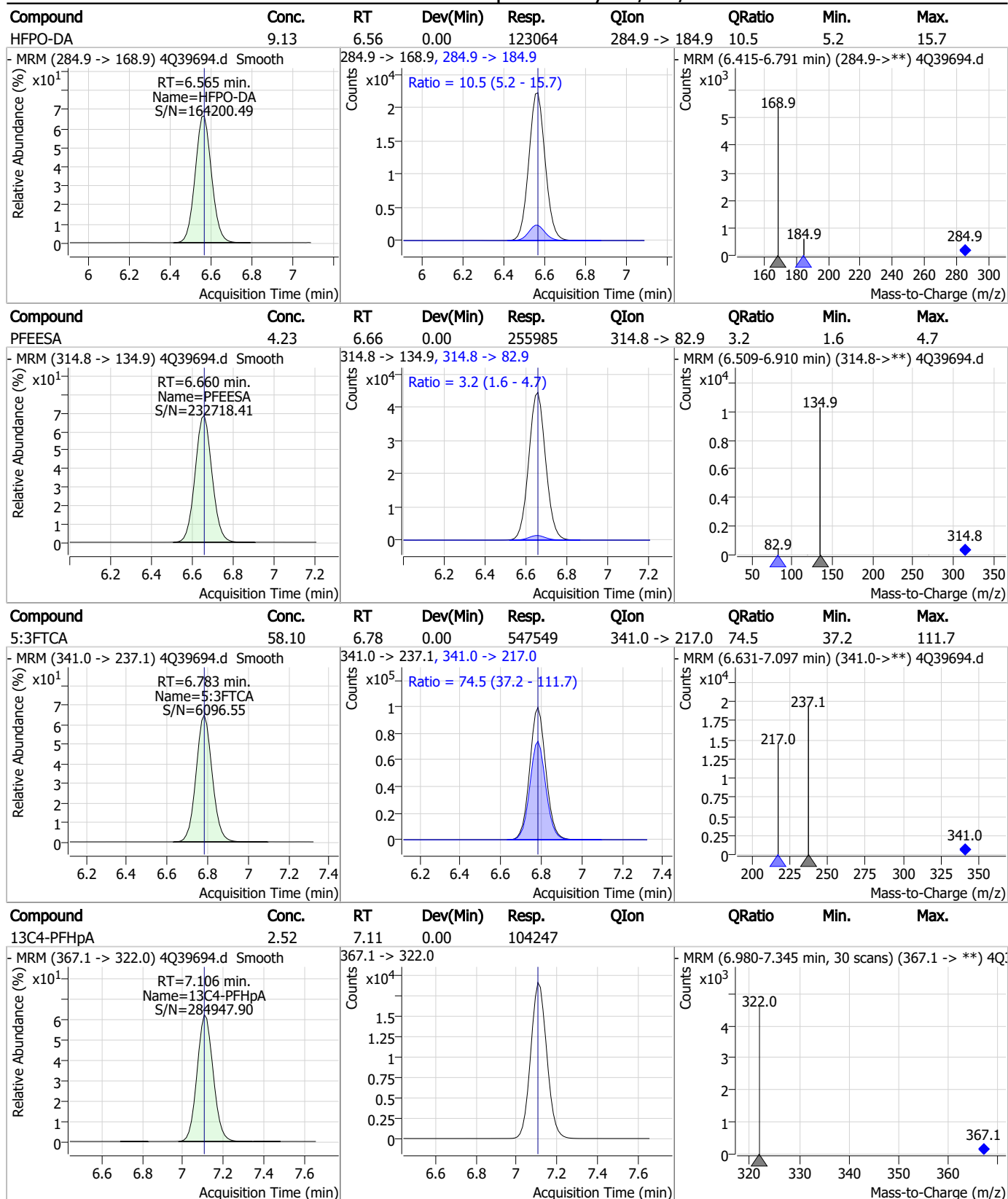
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



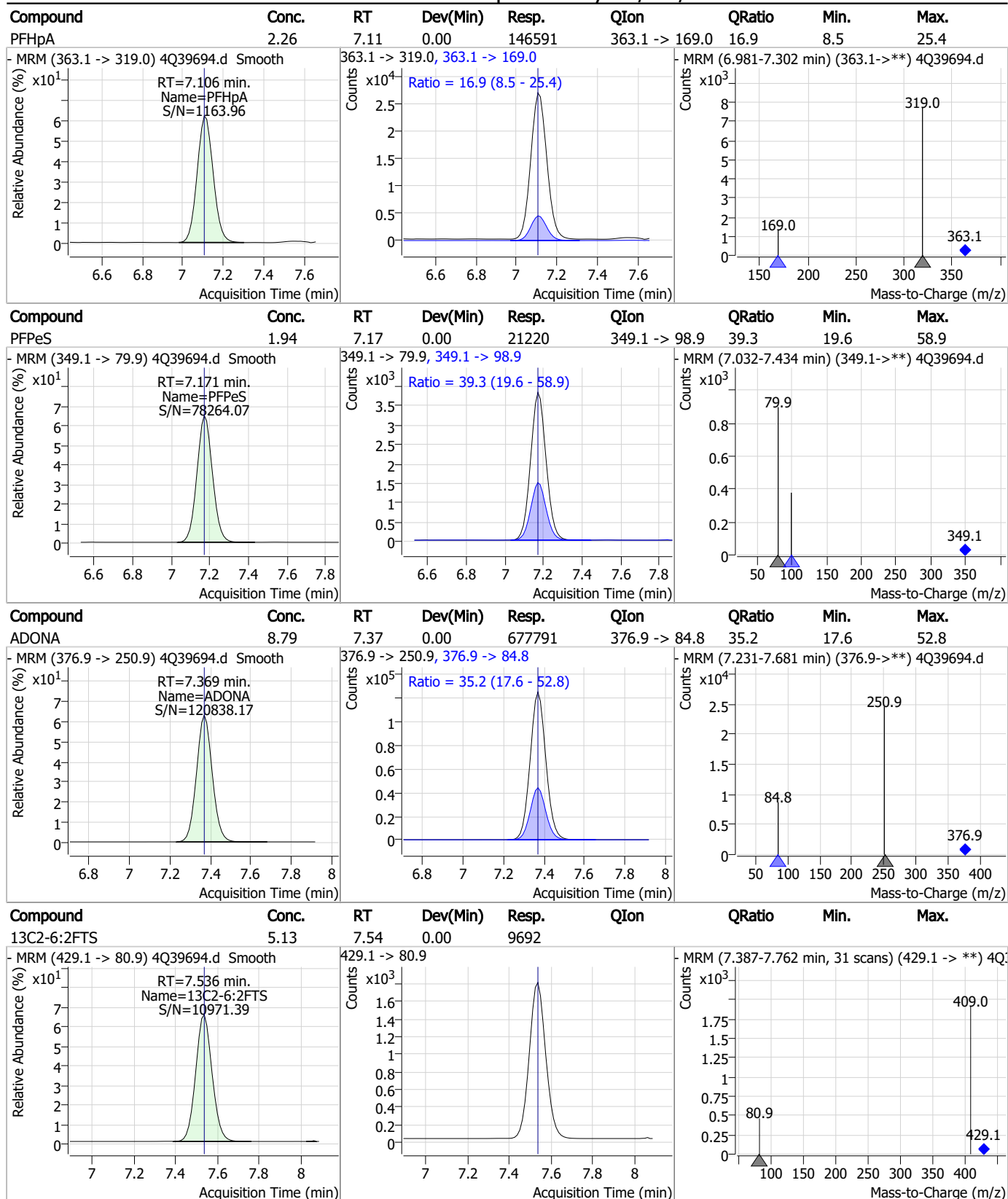
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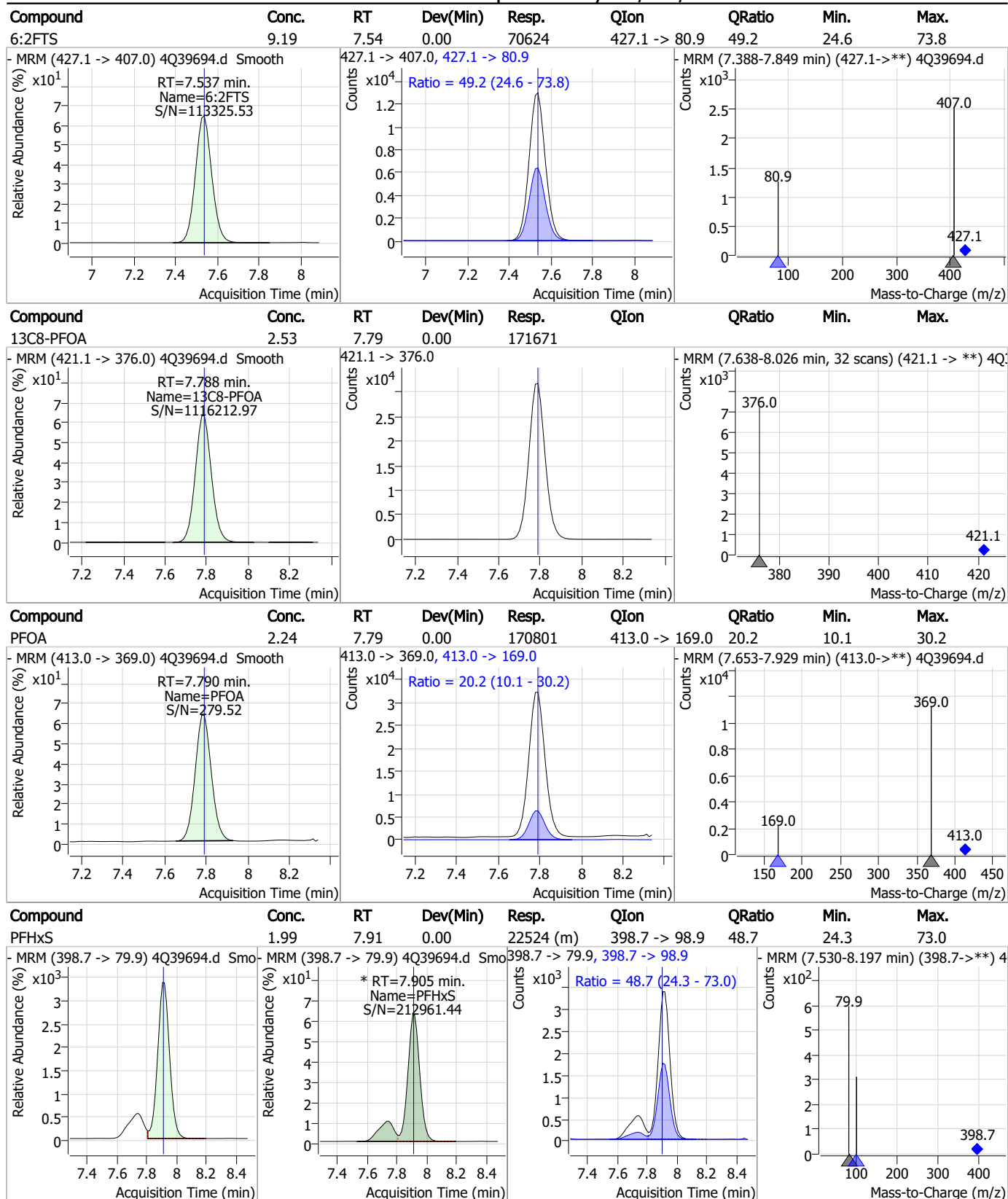
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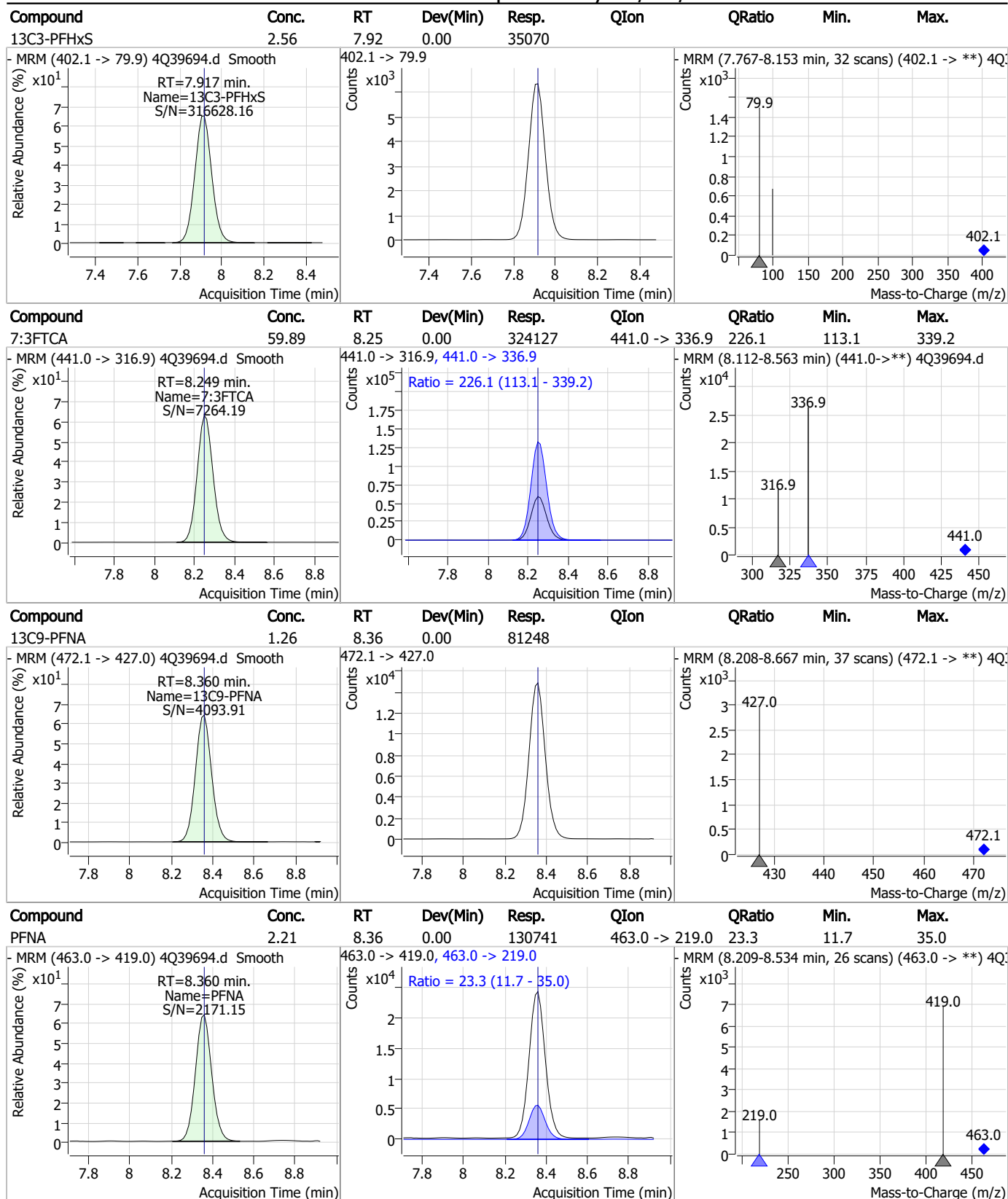
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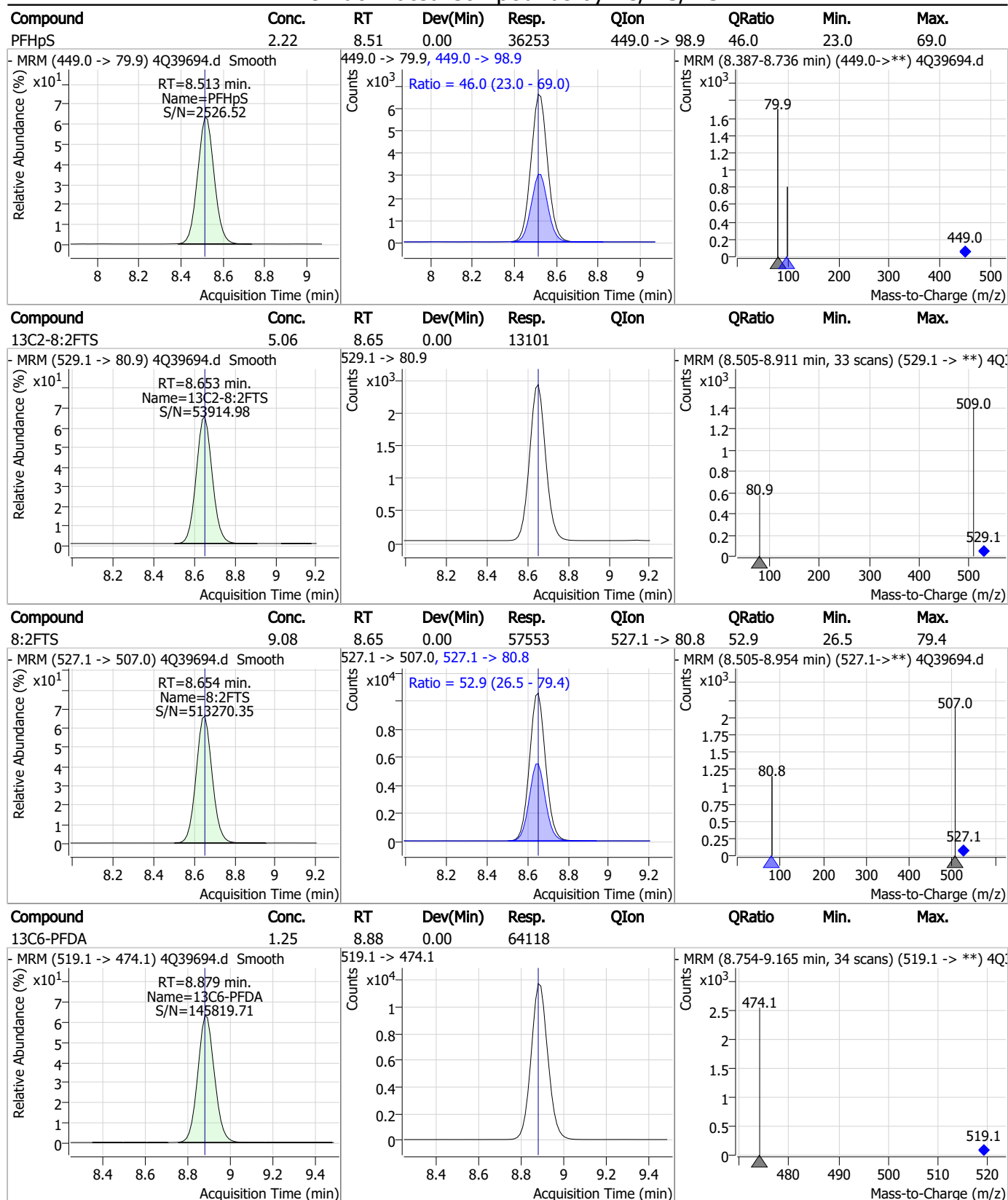
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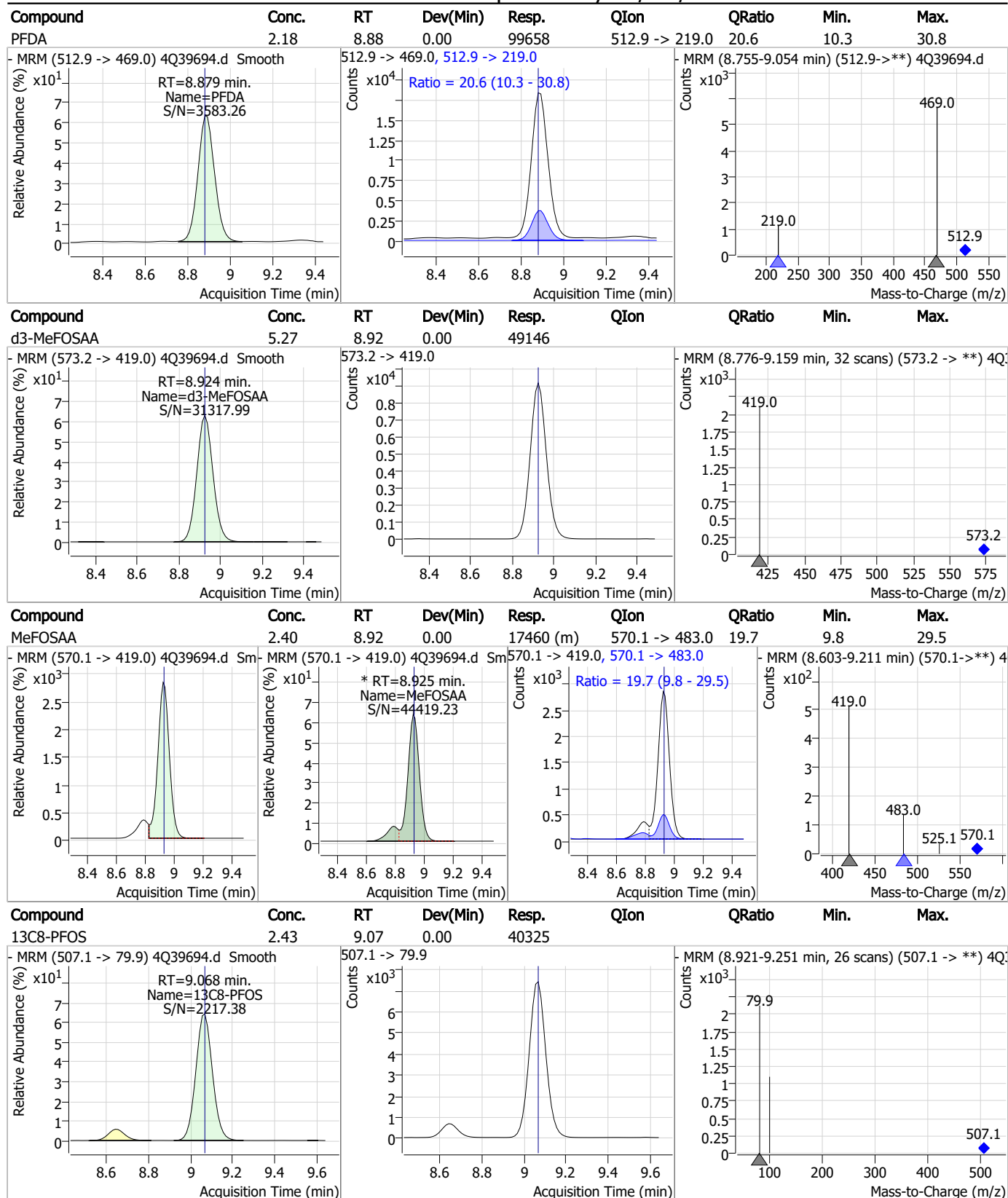
Perfluorinated Compounds by LC/MS/MS



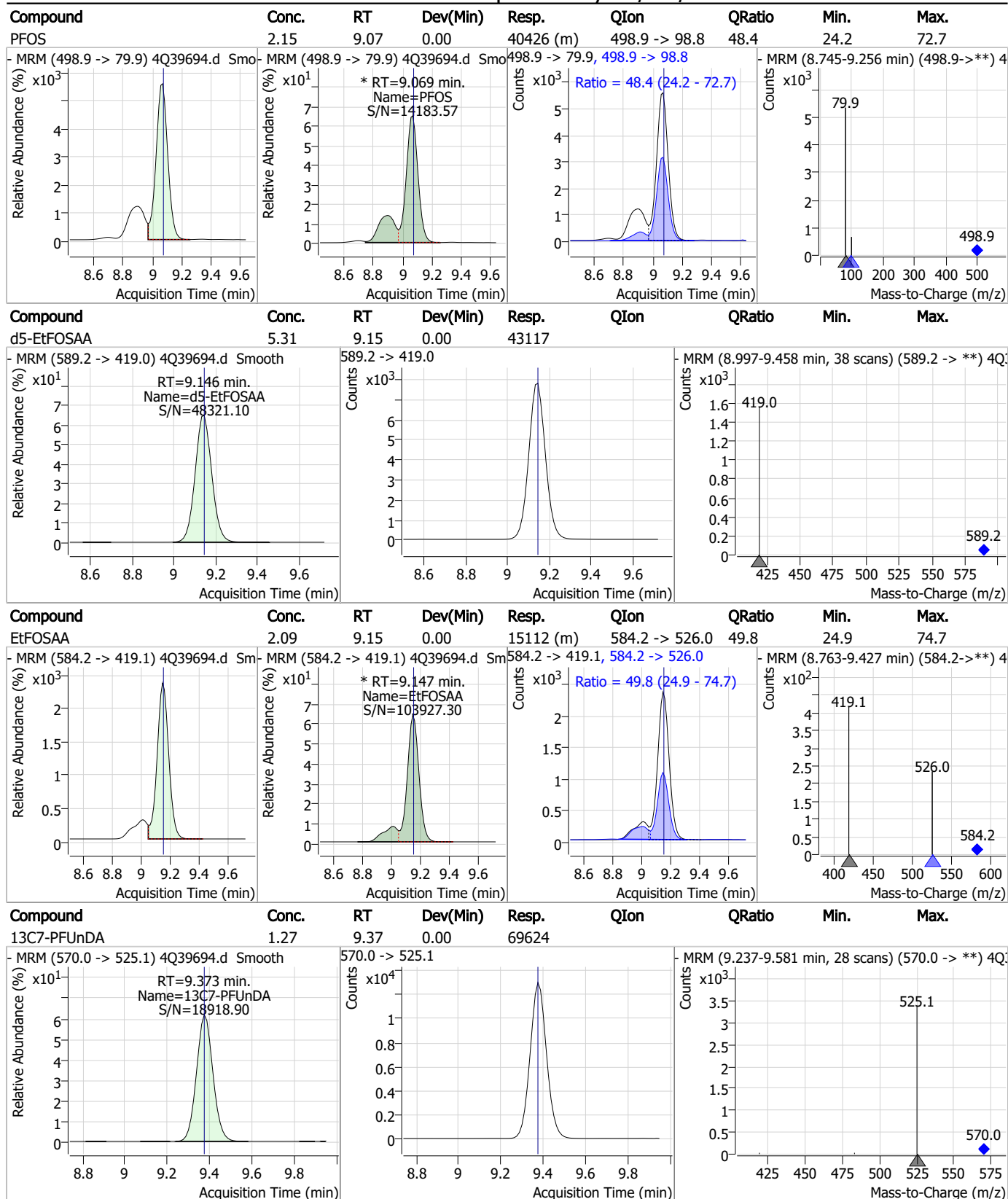
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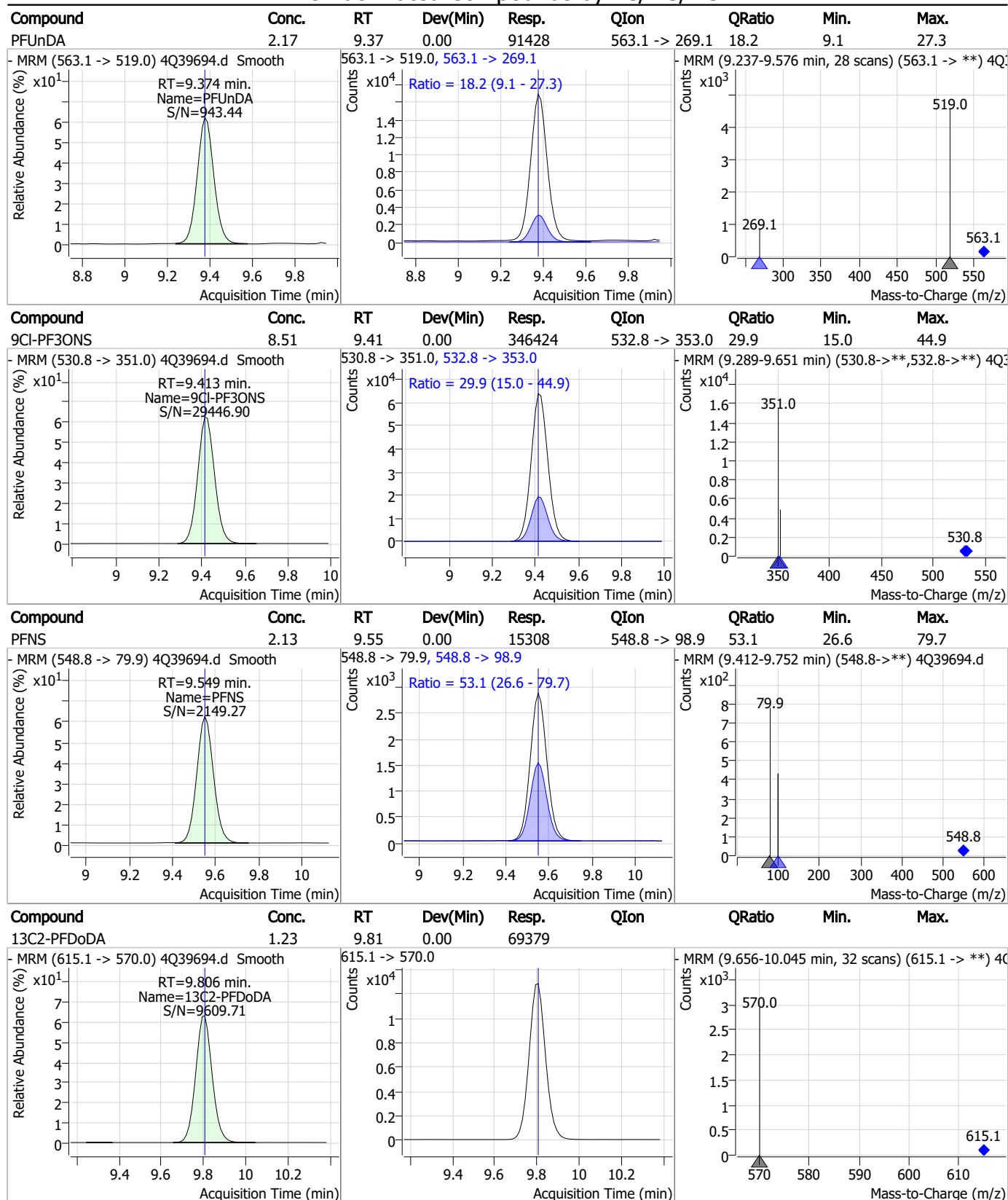
Perfluorinated Compounds by LC/MS/MS



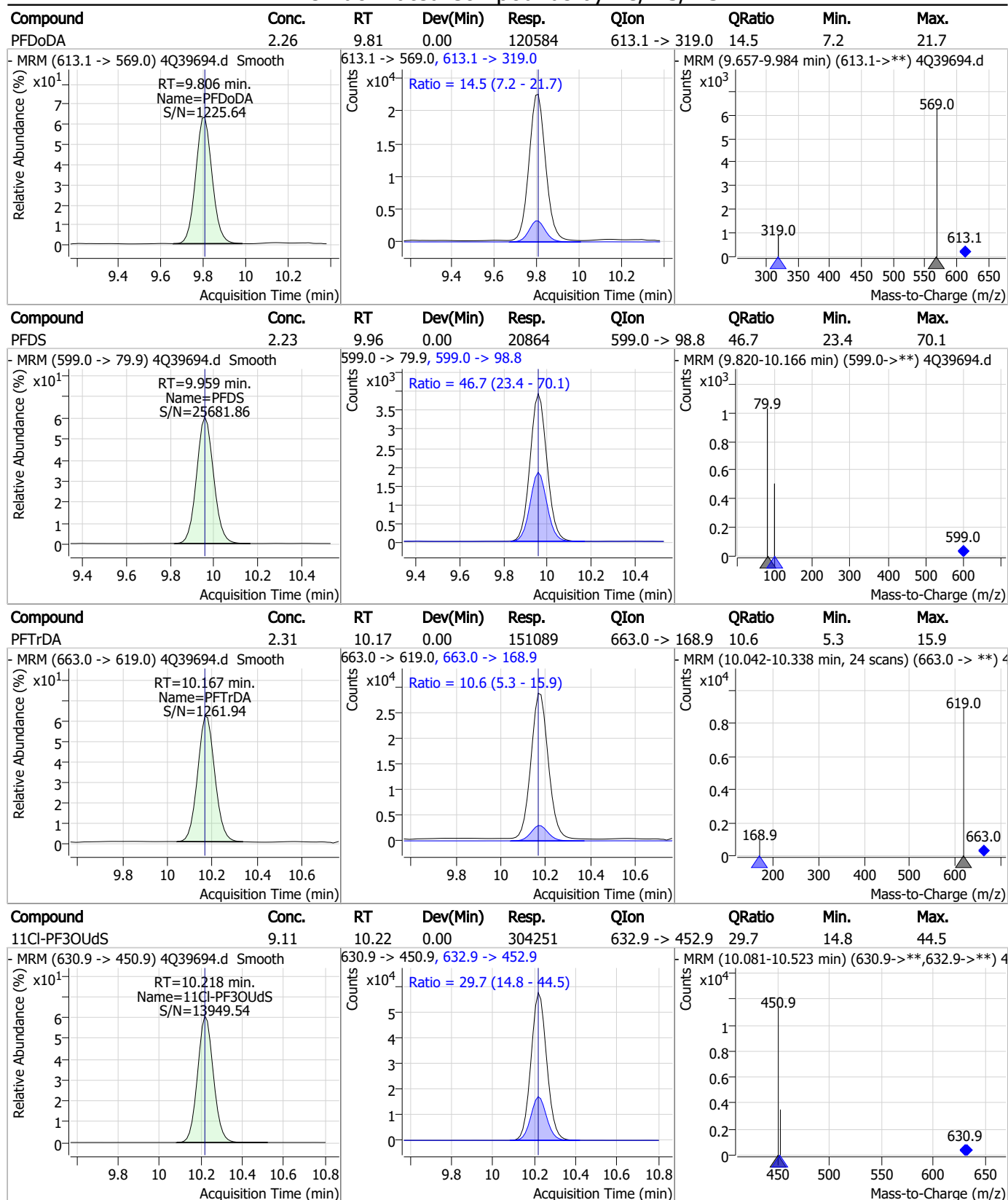
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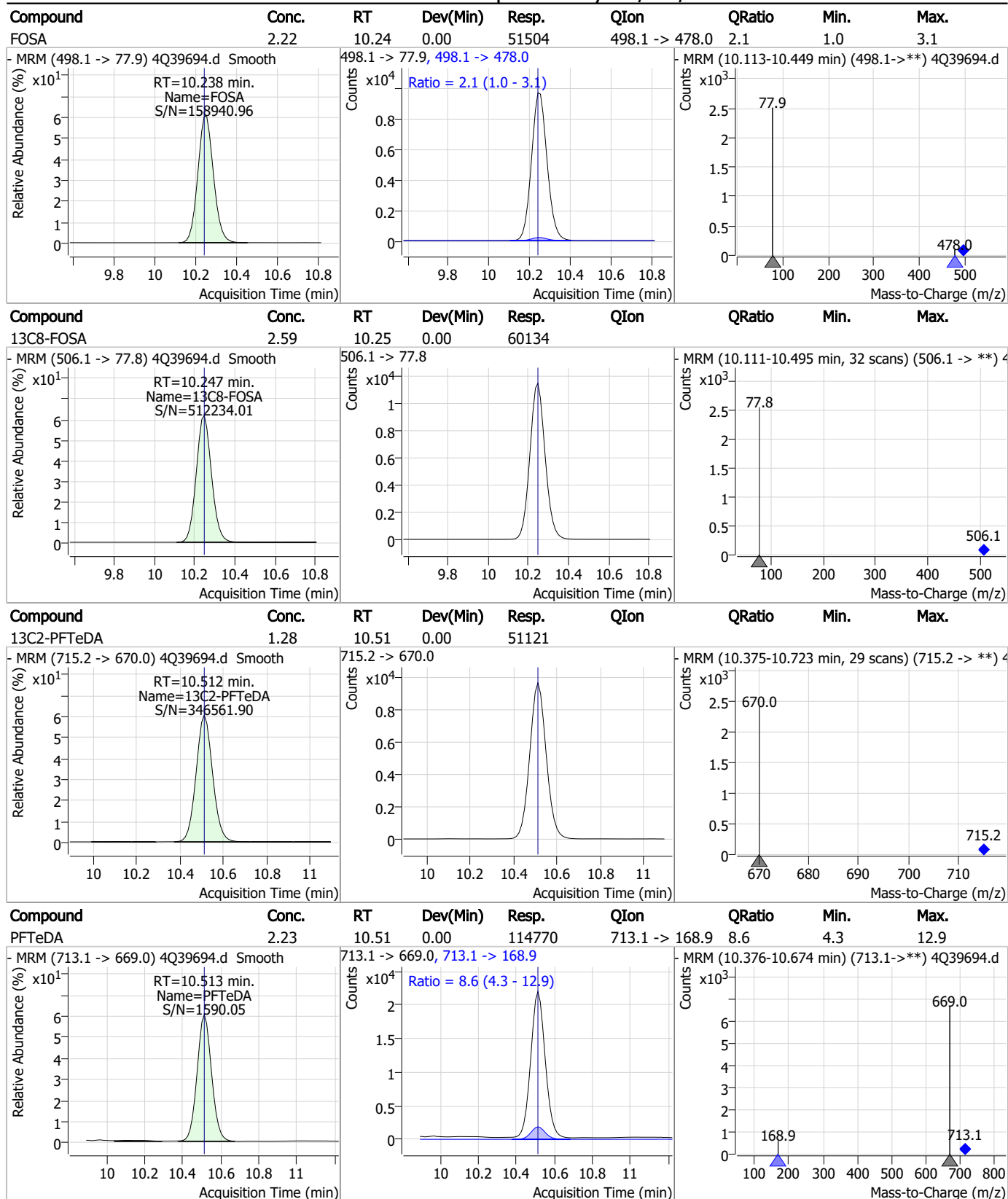
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



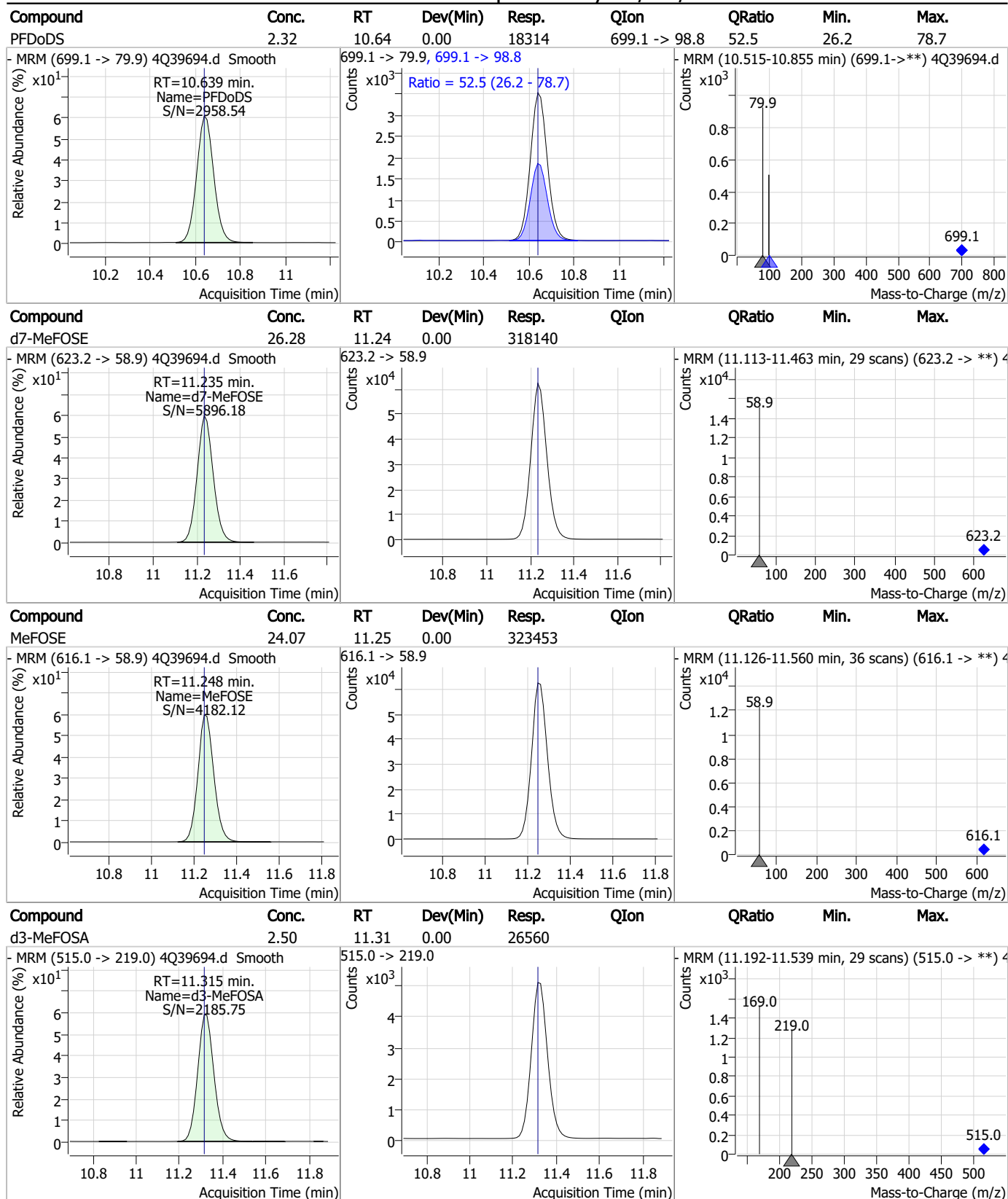
Perfluorinated Compounds by LC/MS/MS



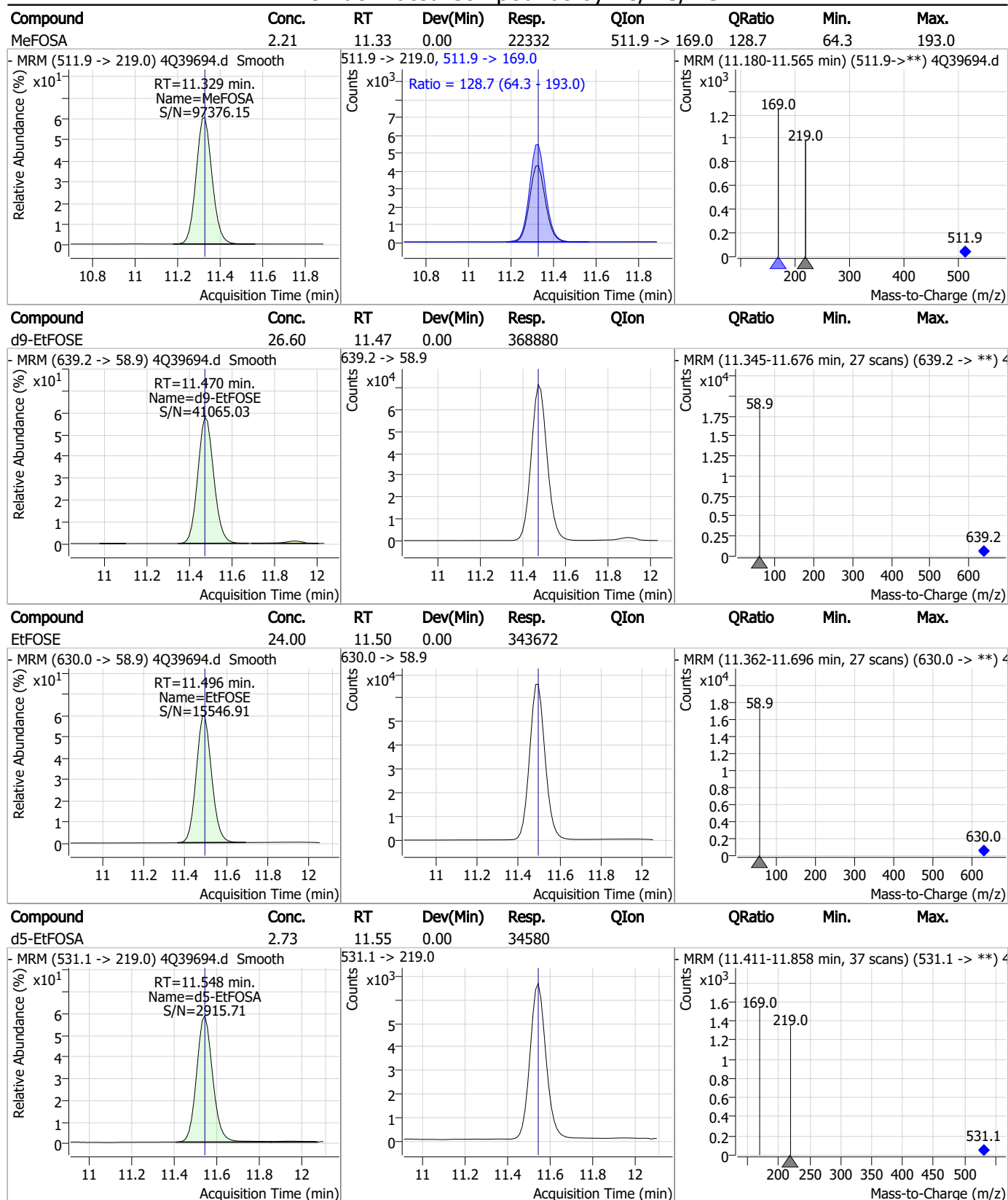
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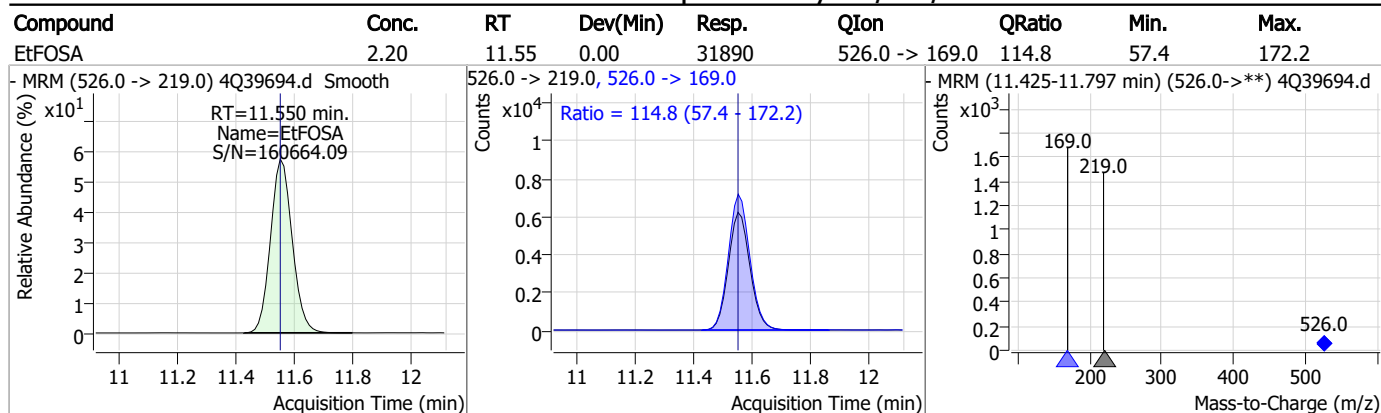
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q571-ICC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39694.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 13:55

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

7.6.5.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39695.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 2:09:56 PM
 Sample Name : ic571-5
 Vial : P1-A6
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.186	216.8 -> 171.9	408897	10.00 µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	269912	5.00 µg/L	0.012
M5-PFHxA	6.172	318.0 -> 273.0	171494	2.50 µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	96487	2.50 µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	152326	2.50 µg/L	-0.012
M9-PFNA	8.360	472.1 -> 427.0	71058	1.25 µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	58494	1.25 µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	62258	1.25 µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	64377	1.25 µg/L	-0.012
M2-PFTeDA	10.499	715.2 -> 670.0	45023	1.25 µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	56001	2.50 µg/L	-0.012
M3-PFBS	6.089	302.1 -> 79.9	46575	2.50 µg/L	0.000
M3-PFHxS	7.904	402.1 -> 79.9	32268	2.50 µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	40278	2.50 µg/L	-0.012
M2-4:2FTS	5.823	329.1 -> 80.9	4000	5.00 µg/L	0.000
M2-6:2FTS	7.524	429.1 -> 80.9	8667	5.00 µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	11705	5.00 µg/L	-0.012
M3-MeFOSAA	8.924	573.2 -> 419.0	45543	5.00 µg/L	0.000
M3-HFPO-DA	6.551	286.9 -> 168.9	129215	10.00 µg/L	0.000
M5-EtFOSAA	9.133	589.2 -> 419.0	38262	5.00 µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	302282	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	344405	25.00 µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	29030	2.50 µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	24722	2.50 µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	40141	2.50 µg/L	-0.012
13C3-PFBA	3.190	216.0 -> 172.0	224932	5.00 µg/L	0.013
18O2-PFHxS	7.903	403.0 -> 83.9	21751	2.50 µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	170705	2.50 µg/L	-0.012
13C2-PFDA	8.879	515.1 -> 470.1	51665	1.25 µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	80616	1.25 µg/L	-0.012
13C2-PFHxA	6.173	315.1 -> 270.0	161087	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.823	329.1 -> 80.9	4000	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-6:2FTS	7.524	429.1 -> 80.9	8667	4.94 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C2-8:2FTS	8.641	529.1 -> 80.9	11705	4.87 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C2-PFDoDA	9.793	615.1 -> 570.0	64377	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-PFTeDA	10.499	715.2 -> 670.0	45023	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C3-PFBS	6.089	302.1 -> 79.9	46575	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C3-PFHxS	7.904	402.1 -> 79.9	32268	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	3.186	216.8 -> 171.9	408897	10.08 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFHpA	7.106	367.1 -> 322.0	96487	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C5-PFHxA	6.172	318.0 -> 273.0	171494	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C5-PFPeA	4.876	268.3 -> 223.0	269912	5.15 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C6-PFDA	8.879	519.1 -> 474.1	58494	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C7-PFUnDA	9.373	570.0 -> 525.1	62258	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-FOSA	10.235	506.1 -> 77.8	56001	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOA	7.776	421.1 -> 376.0	152326	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C8-PFOS	9.055	507.1 -> 79.9	40278	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C9-PFNA	8.360	472.1 -> 427.0	71058	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%	
d3-MeFOSAA	8.924	573.2 -> 419.0	45543	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C3-HFPO-DA	6.551	286.9 -> 168.9	129215	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d3-MeFOSA	11.315	515.0 -> 219.0	24722	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%	
d5-EtFOSAA	9.133	589.2 -> 419.0	38262	4.77 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.3%	
d7-MeFOSE	11.235	623.2 -> 58.9	302282	25.25 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d9-EtFOSE	11.470	639.2 -> 58.9	344405	25.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d5-EtFOSA	11.535	531.1 -> 219.0	29030	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%	

Target Compounds

					QValue
4:2FTS	5.823	327.1 -> 307.0	124780	19.09 µg/L	99
		327.1 -> 80.9	57221		
6:2FTS	7.524	427.1 -> 407.0	135986	19.80 µg/L	99
		427.1 -> 80.9	67948		
8:2FTS	8.641	527.1 -> 507.0	116368	20.55 µg/L	96
		527.1 -> 80.8	64744		
EtFOSAA	9.147	584.2 -> 419.1	32345	5.05 µg/L	92
		584.2 -> 526.0	14285		
FOSA	10.238	498.1 -> 77.9	115256	5.33 µg/L	100
		498.1 -> 478.0	2544		
MeFOSAA	8.925	570.1 -> 419.0	38834	5.76 µg/L	93
		570.1 -> 483.0	6472		
PFBA	3.195	212.8 -> 168.9	234087	20.57 µg/L	100
PFBS	6.090	298.7 -> 79.9	98184	4.66 µg/L	98
		298.7 -> 98.8	32497		
PFDA	8.879	512.9 -> 469.0	216813	5.20 µg/L	99
		512.9 -> 219.0	43375		
PFDODA	9.794	613.1 -> 569.0	259003	5.22 µg/L	100
		613.1 -> 319.0	37287		
PFDS	9.959	599.0 -> 79.9	46706	5.01 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.106	599.0 -> 98.8	21423	5.33	µg/L	99
		363.1 -> 319.0	320246			
PFHpS	8.513	363.1 -> 169.0	53265	4.99	µg/L	97
		449.0 -> 79.9	81258			
PFHxA	6.175	449.0 -> 98.9	38906	5.34	µg/L	100
		313.0 -> 269.0	356362			
PFHxS	7.905	313.0 -> 118.9	10435	4.61	µg/L	97
		398.7 -> 79.9	48088			
PFNA	8.360	398.7 -> 98.9	22376	5.33	µg/L	100
		463.0 -> 419.0	275346			
PFNS	9.549	463.0 -> 219.0	64242	4.66	µg/L	95
		548.8 -> 79.9	33440			
PFOA	7.777	548.8 -> 98.9	16491	5.38	µg/L	99
		413.0 -> 369.0	364057			
PFOS	9.057	413.0 -> 169.0	72019	4.75	µg/L	98
		498.9 -> 79.9	89420			
PFPeA	4.879	498.9 -> 98.8	42122	10.44	µg/L	100
		263.0 -> 219.0	618160			
PFPeS	7.171	349.1 -> 79.9	47279	4.70	µg/L	99
		349.1 -> 98.9	18214			
PFTeDA	10.500	713.1 -> 669.0	241275	5.33	µg/L	100
		713.1 -> 168.9	20543			
PFTrDA	10.167	663.0 -> 619.0	324590	5.34	µg/L	98
		663.0 -> 168.9	31876			
PFUnDA	9.374	563.1 -> 519.0	184344	4.89	µg/L	97
		563.1 -> 269.1	35628			
11CI-PF3OUdS	10.218	630.9 -> 450.9	619354	20.51	µg/L	98
		632.9 -> 452.9	190541			
9CI-PF3ONS	9.413	530.8 -> 351.0	729769	19.83	µg/L	99
		532.8 -> 353.0	222008			
ADONA	7.369	376.9 -> 250.9	1390455	19.95	µg/L	98
		376.9 -> 84.8	502364			
HFPO-DA	6.552	284.9 -> 168.9	258993	21.27	µg/L	100
		284.9 -> 184.9	27281			
3:3FTCA	4.204	241.0 -> 177.0	69868	25.18	µg/L	98
		241.0 -> 117.0	6021			
5:3FTCA	6.783	341.0 -> 237.1	1136065	128.08	µg/L	99
		341.0 -> 217.0	859022			
7:3FTCA	8.249	441.0 -> 316.9	679840	133.46	µg/L	98
		441.0 -> 336.9	1518133			
EtFOSA	11.550	526.0 -> 219.0	65245	5.35	µg/L	97
		526.0 -> 169.0	77219			
EtFOSE	11.483	630.0 -> 58.9	706251	52.81	µg/L	100
		511.9 -> 219.0	48161			
MeFOSA	11.316	511.9 -> 169.0	62208	5.11	µg/L	100
		616.1 -> 58.9	655693			
MeFOSE	11.248	699.1 -> 79.9	39137	51.34	µg/L	100
		699.1 -> 98.8	21360			
PFDoDS	10.639	295.0 -> 201.0	45897	4.97	µg/L	97
		295.0 -> 84.9	13161			
NFDHA	6.053	279.0 -> 85.1	383589	10.40	µg/L	100
		229.0 -> 84.9	390180			
PFMBA	5.328	314.8 -> 134.9	533425	10.25	µg/L	100
		314.8 -> 82.9	16308			
PFMPA	3.882			9.36	µg/L	100
PFEESA	6.660					

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

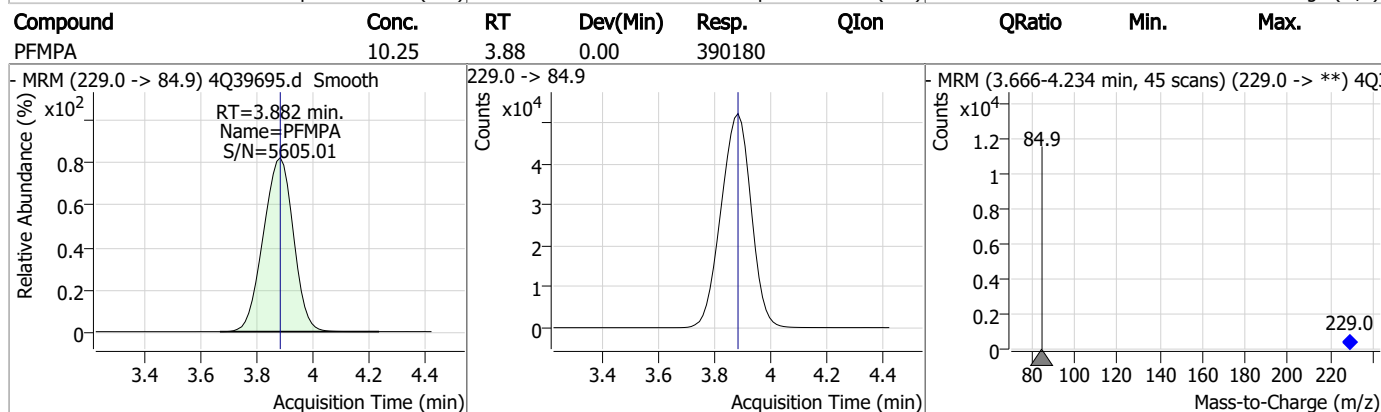
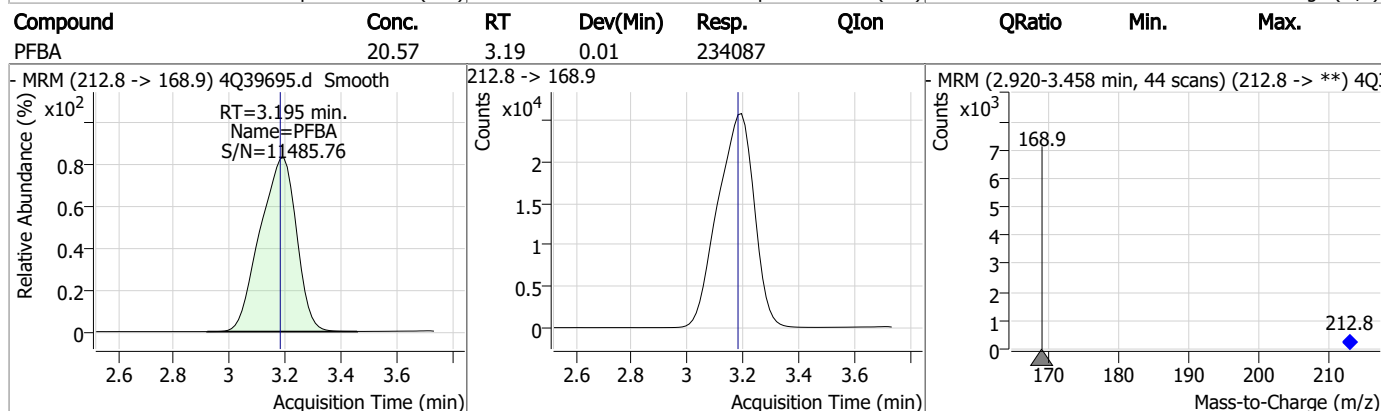
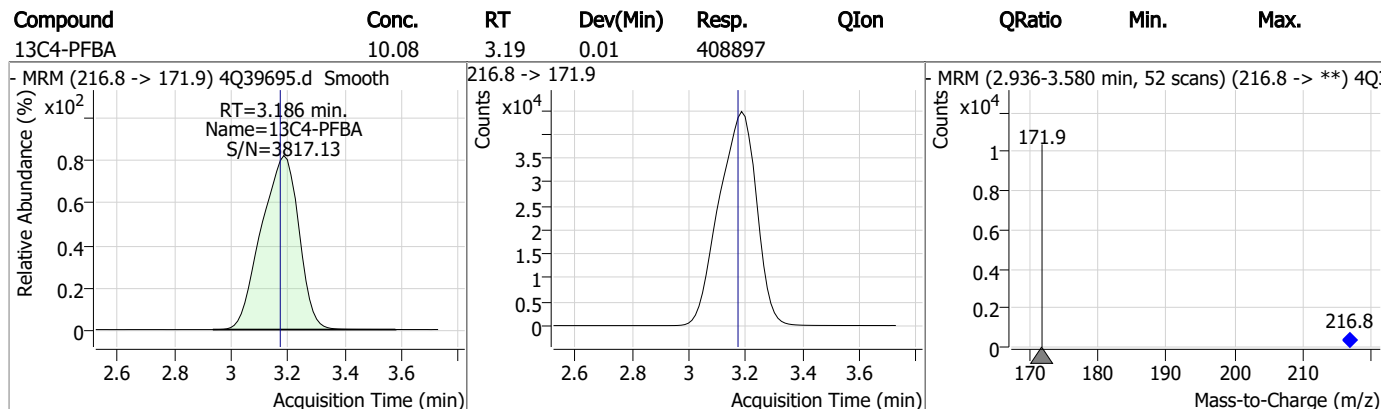
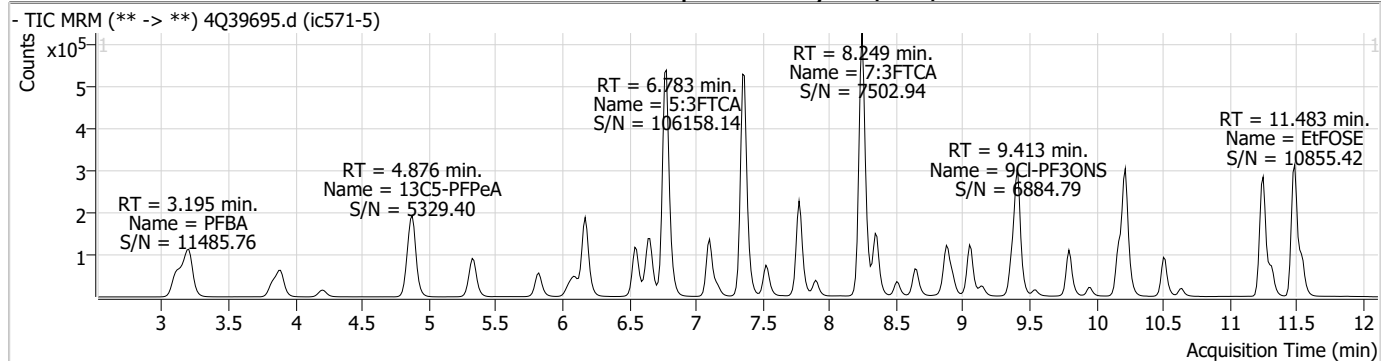
Perfluorinated Compounds by LC/MS/MS

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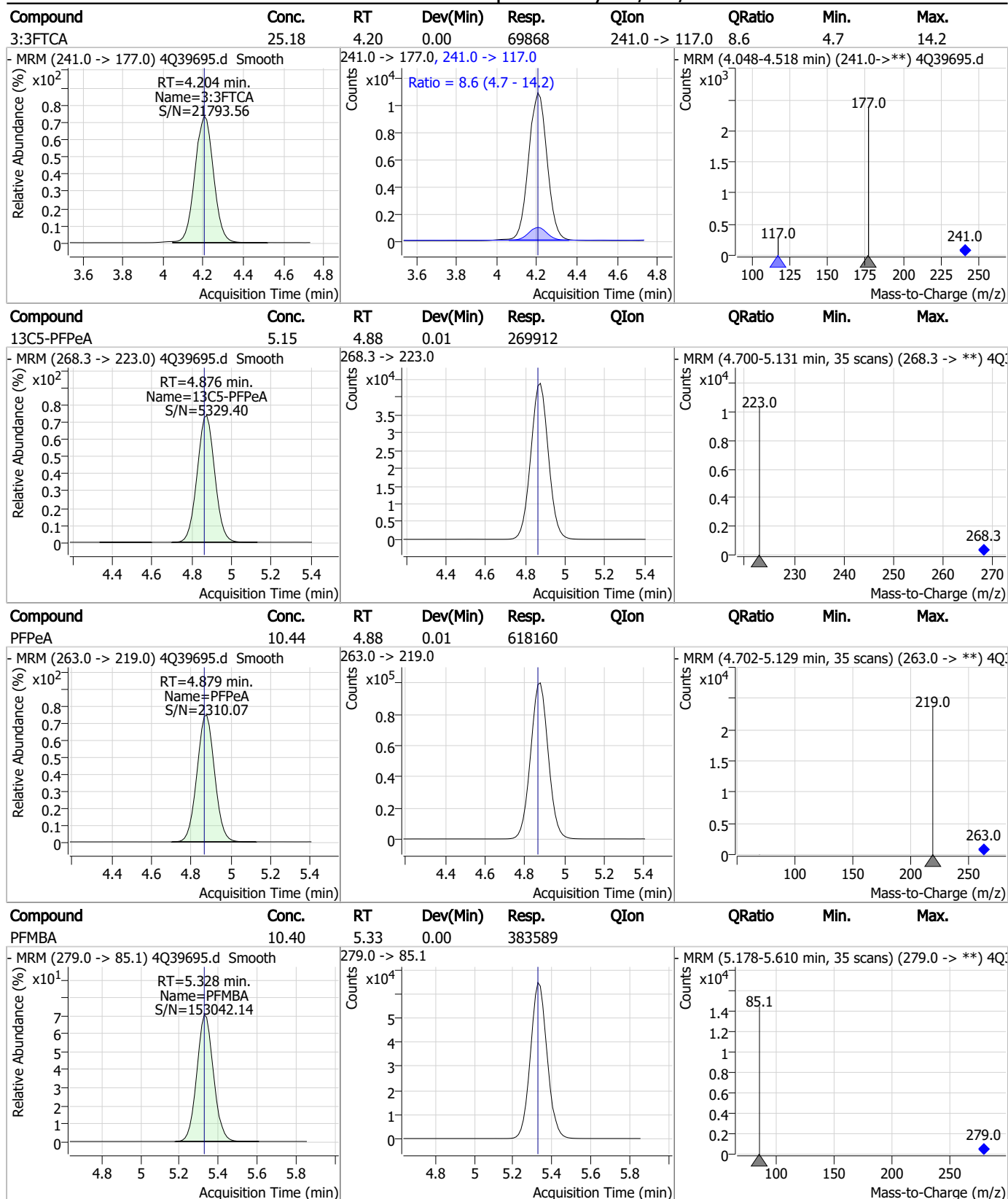
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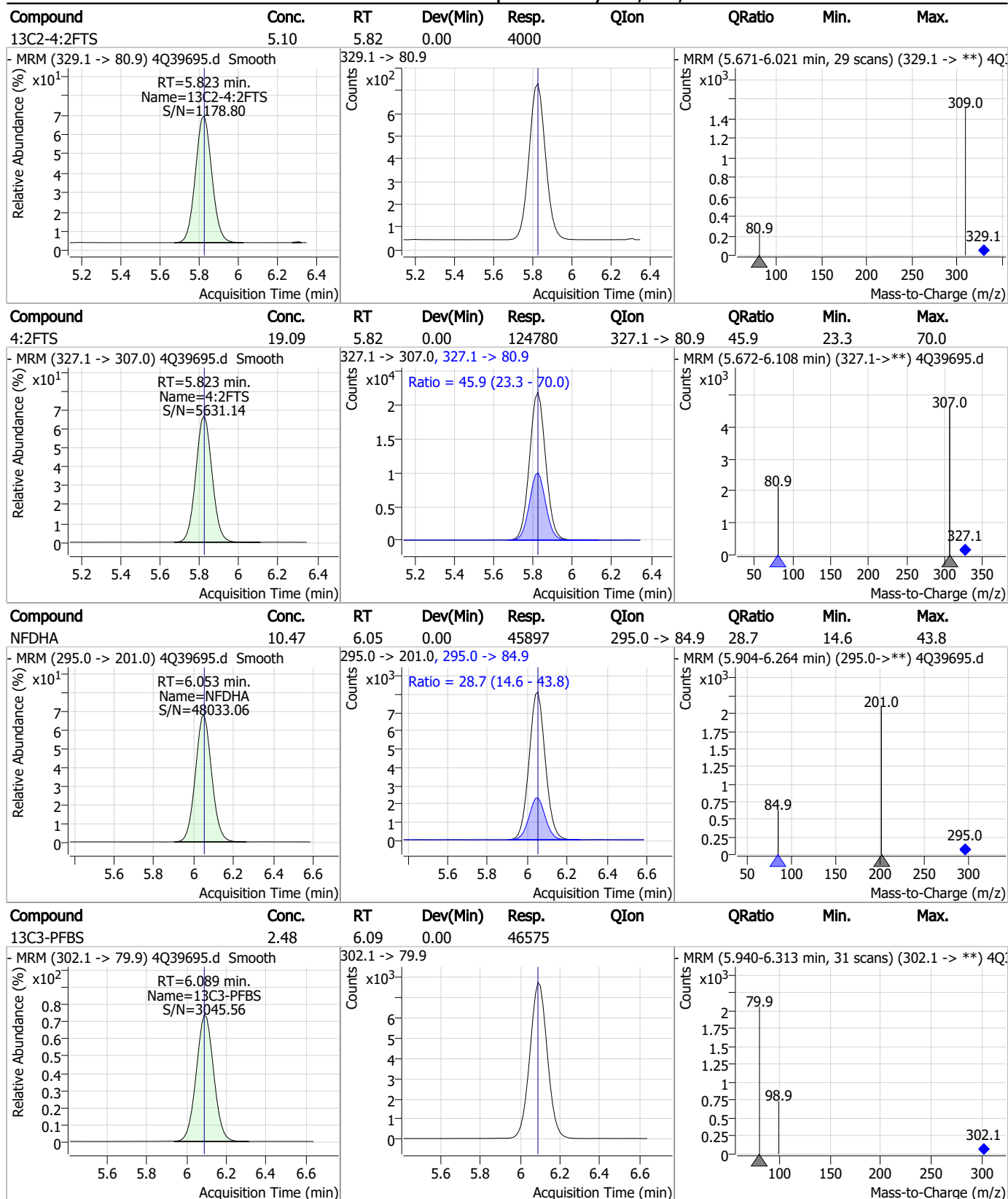
Perfluorinated Compounds by LC/MS/MS



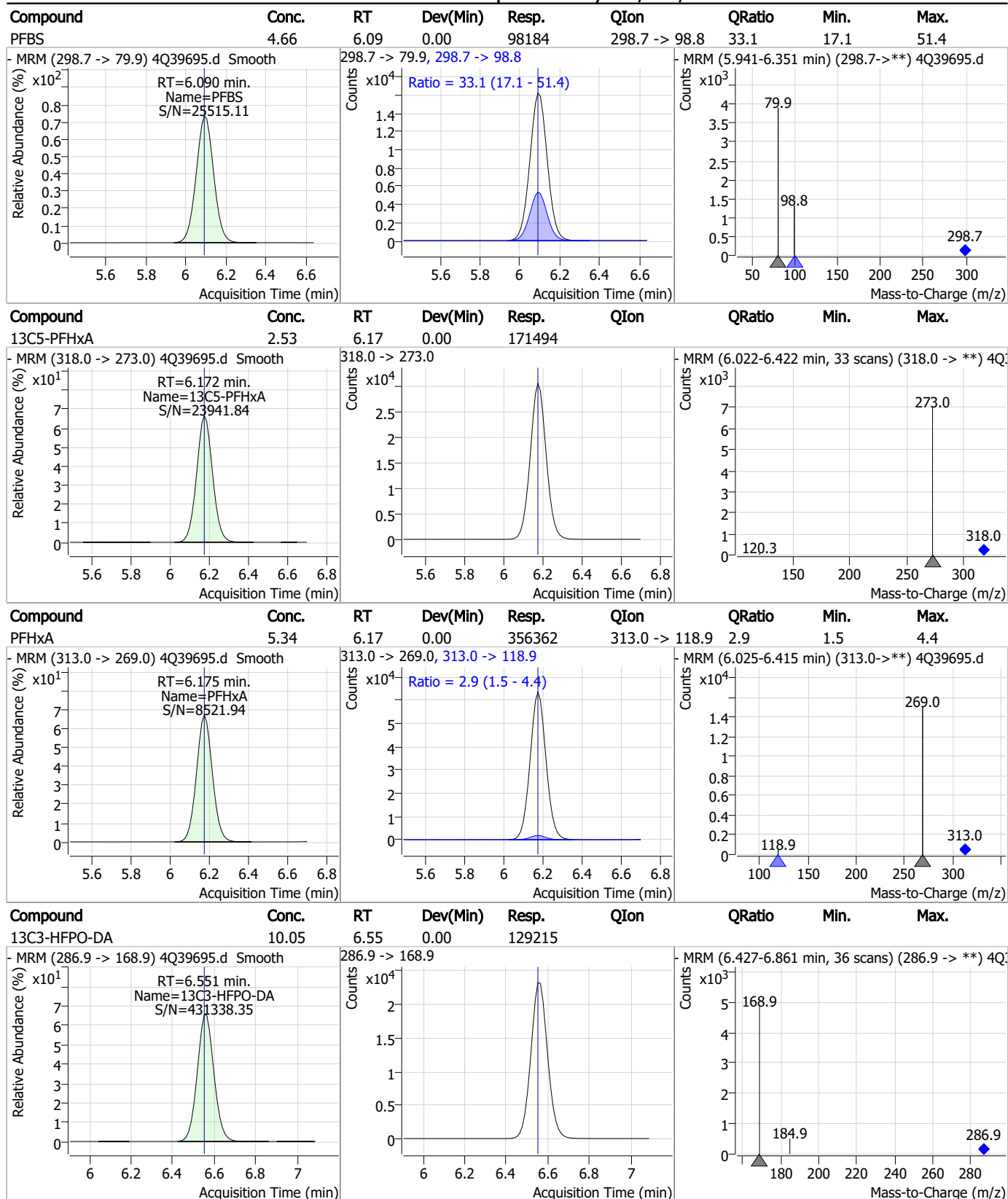
Perfluorinated Compounds by LC/MS/MS



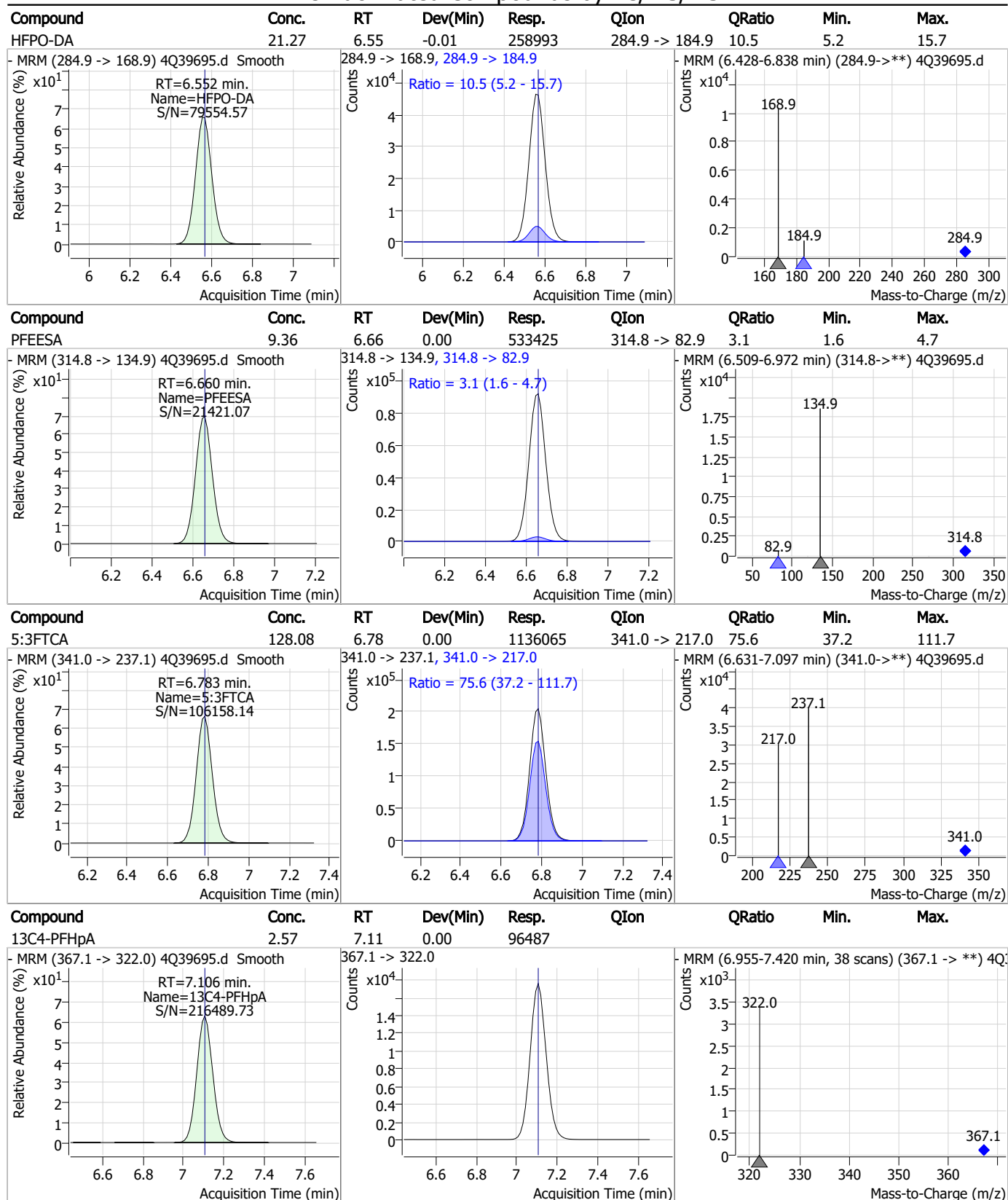
Perfluorinated Compounds by LC/MS/MS



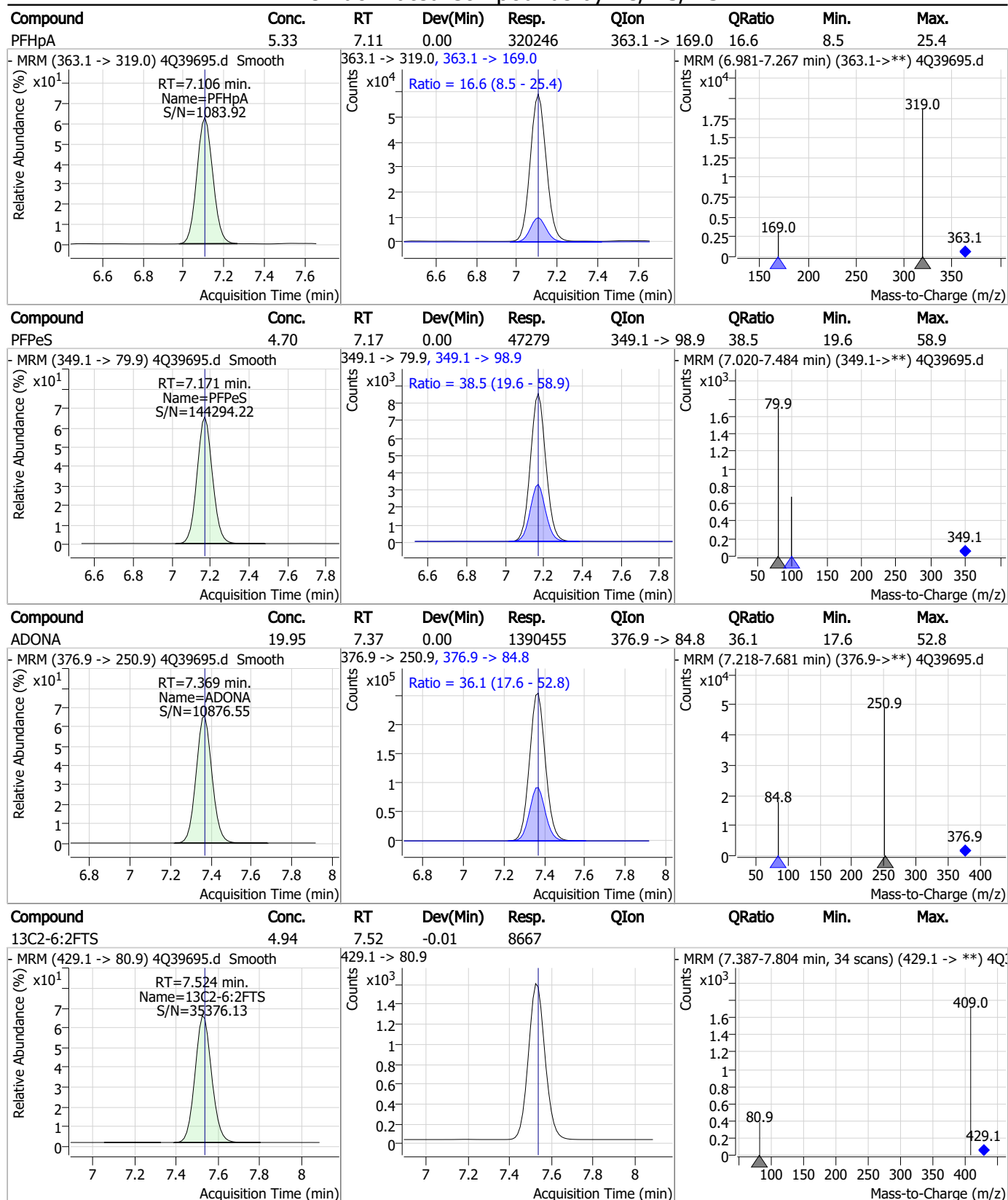
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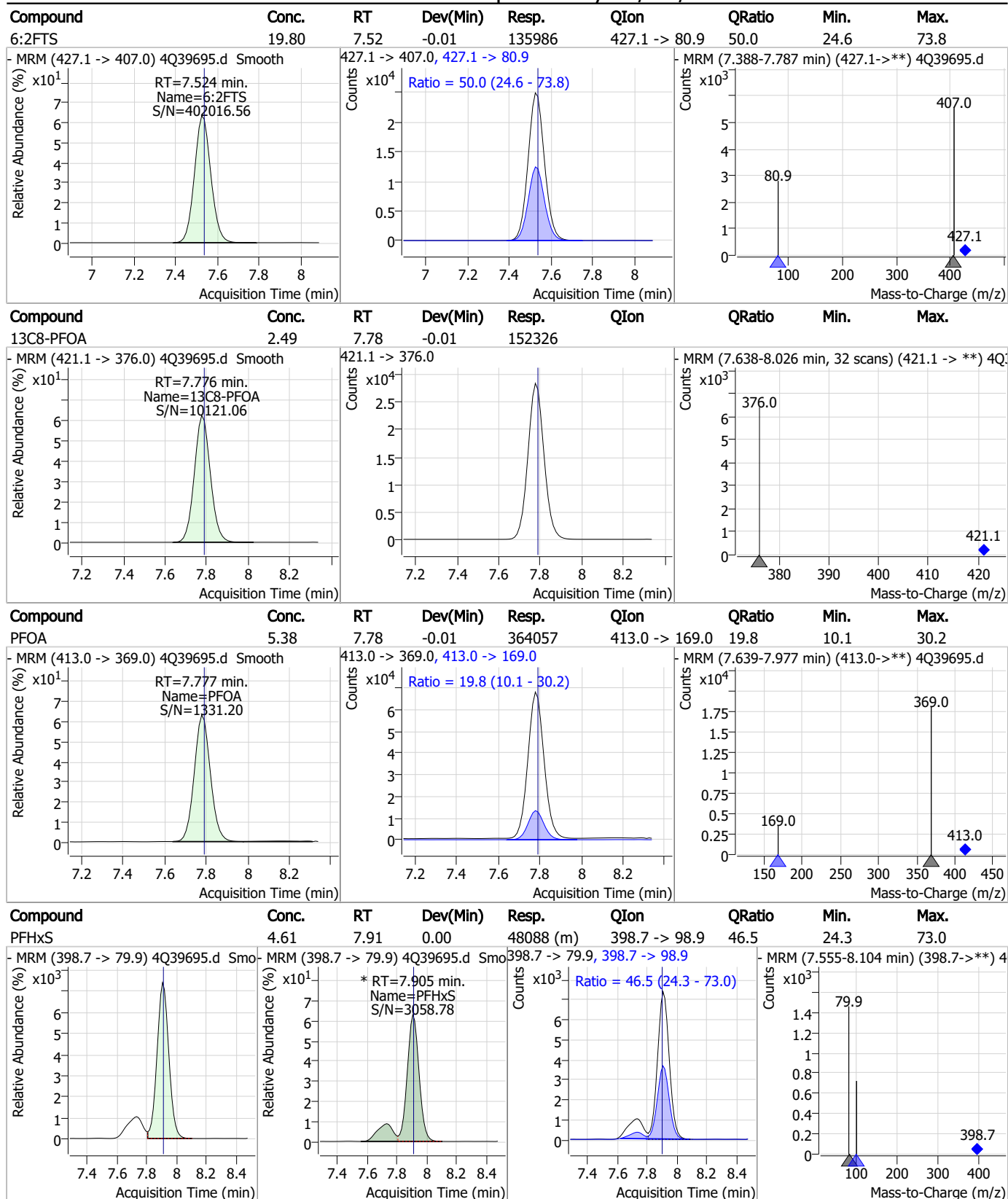
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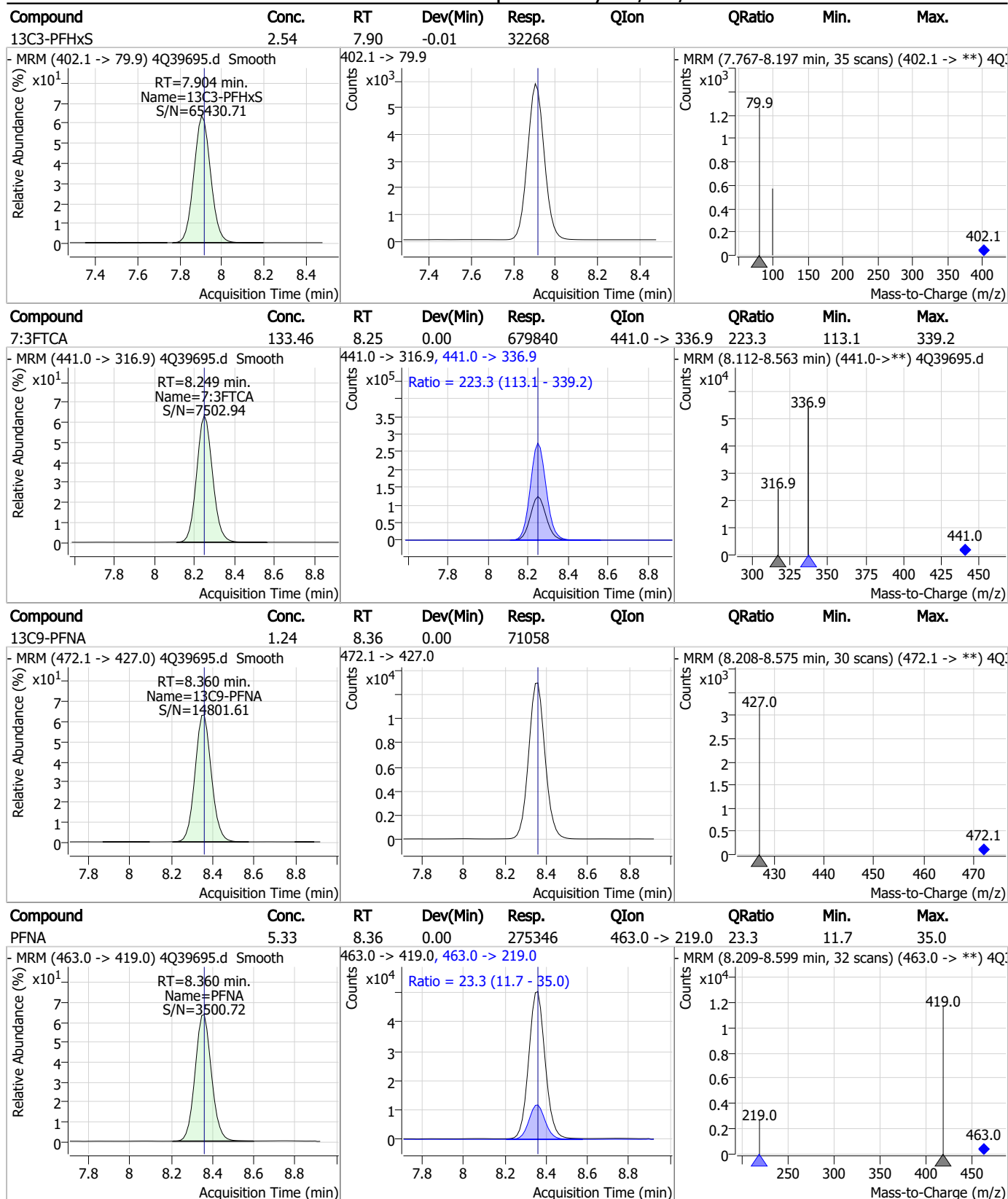
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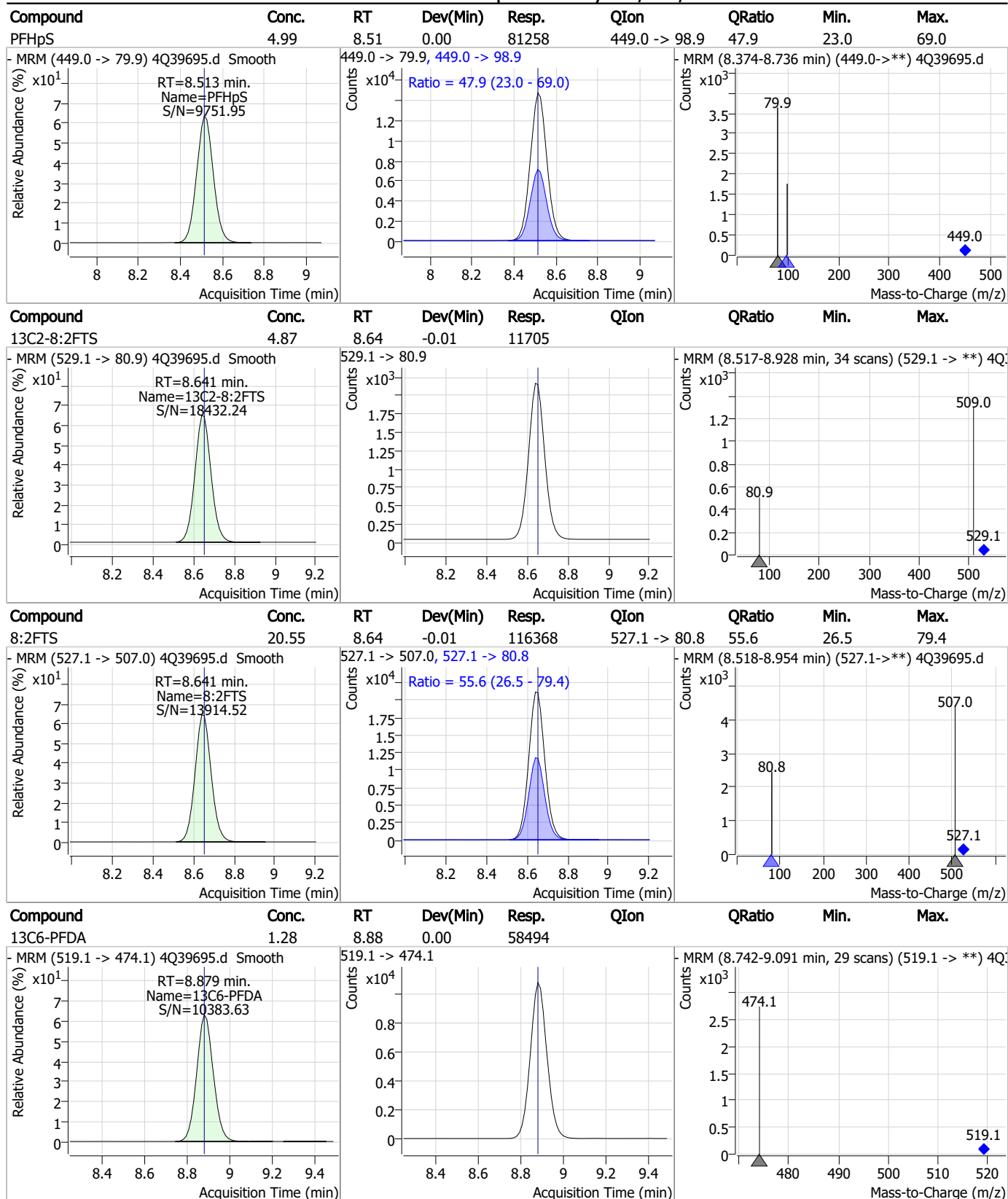
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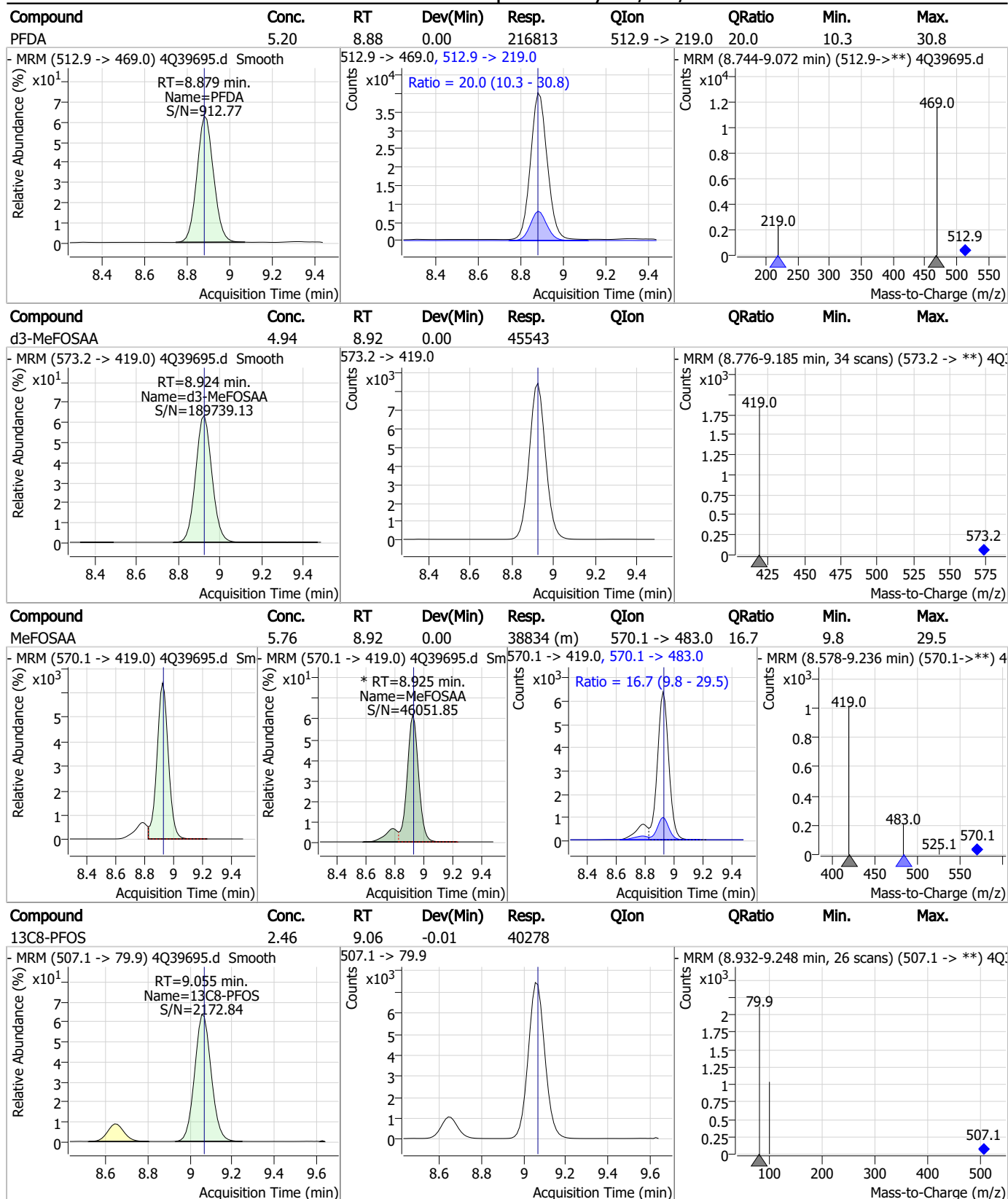
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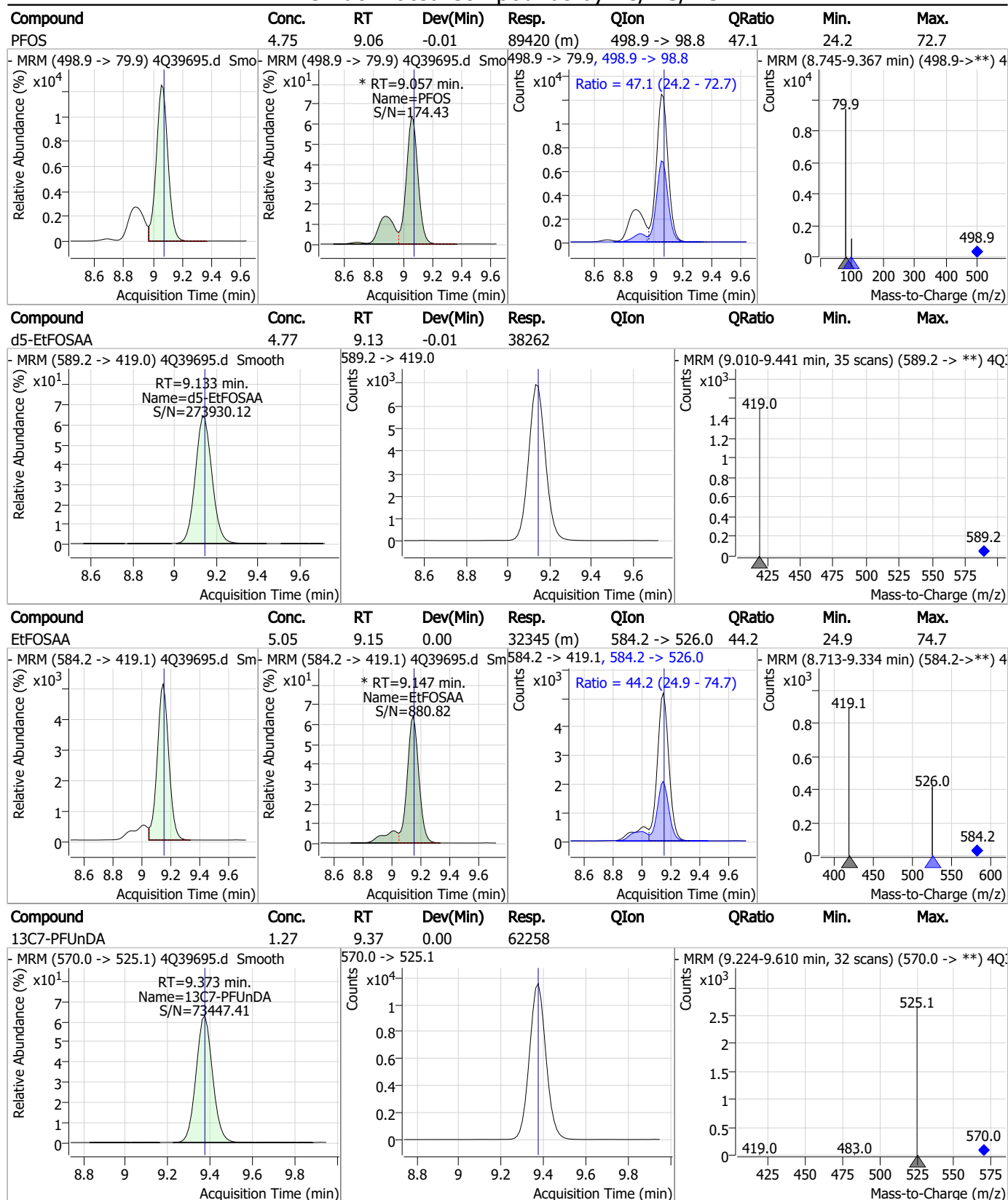
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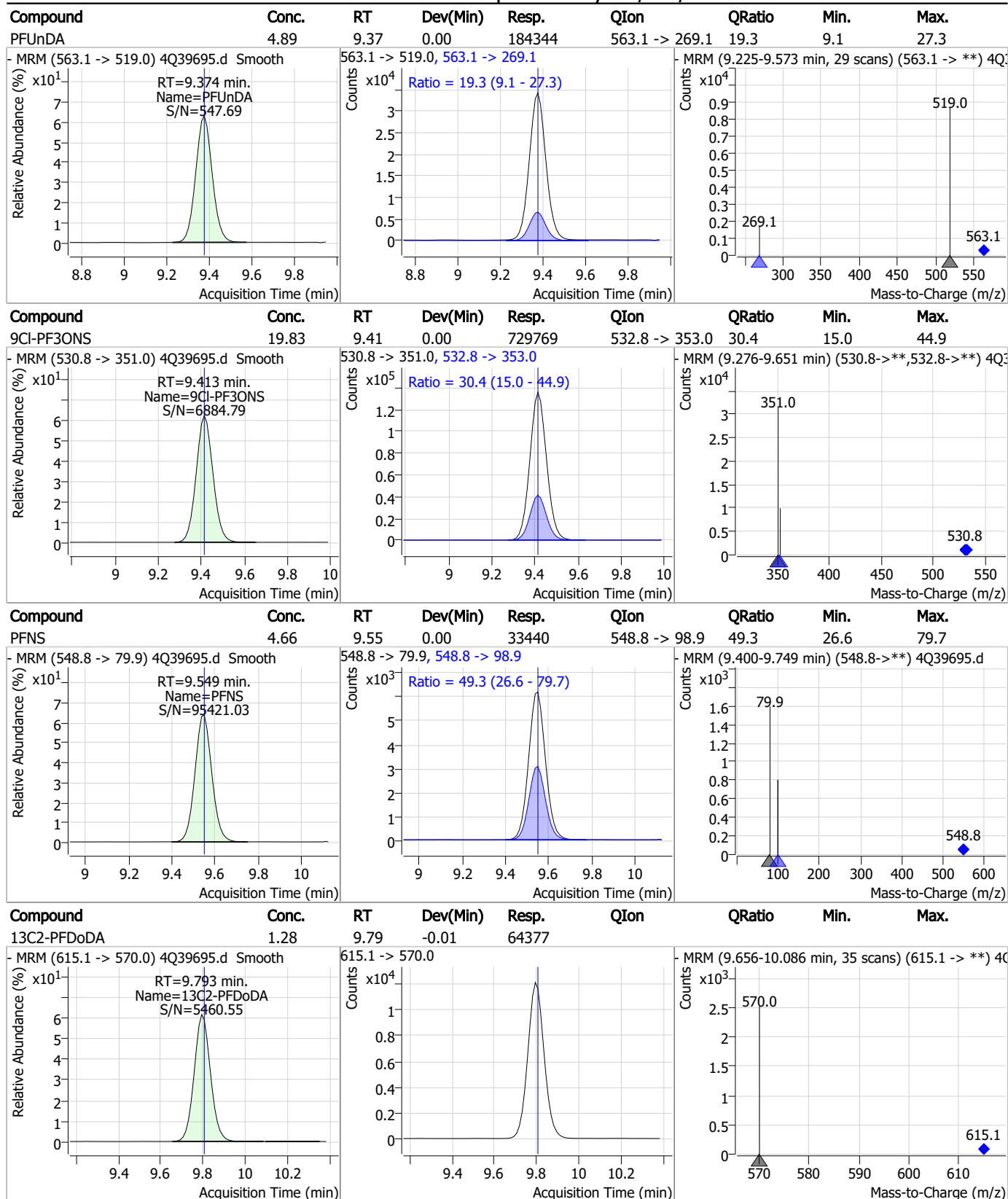
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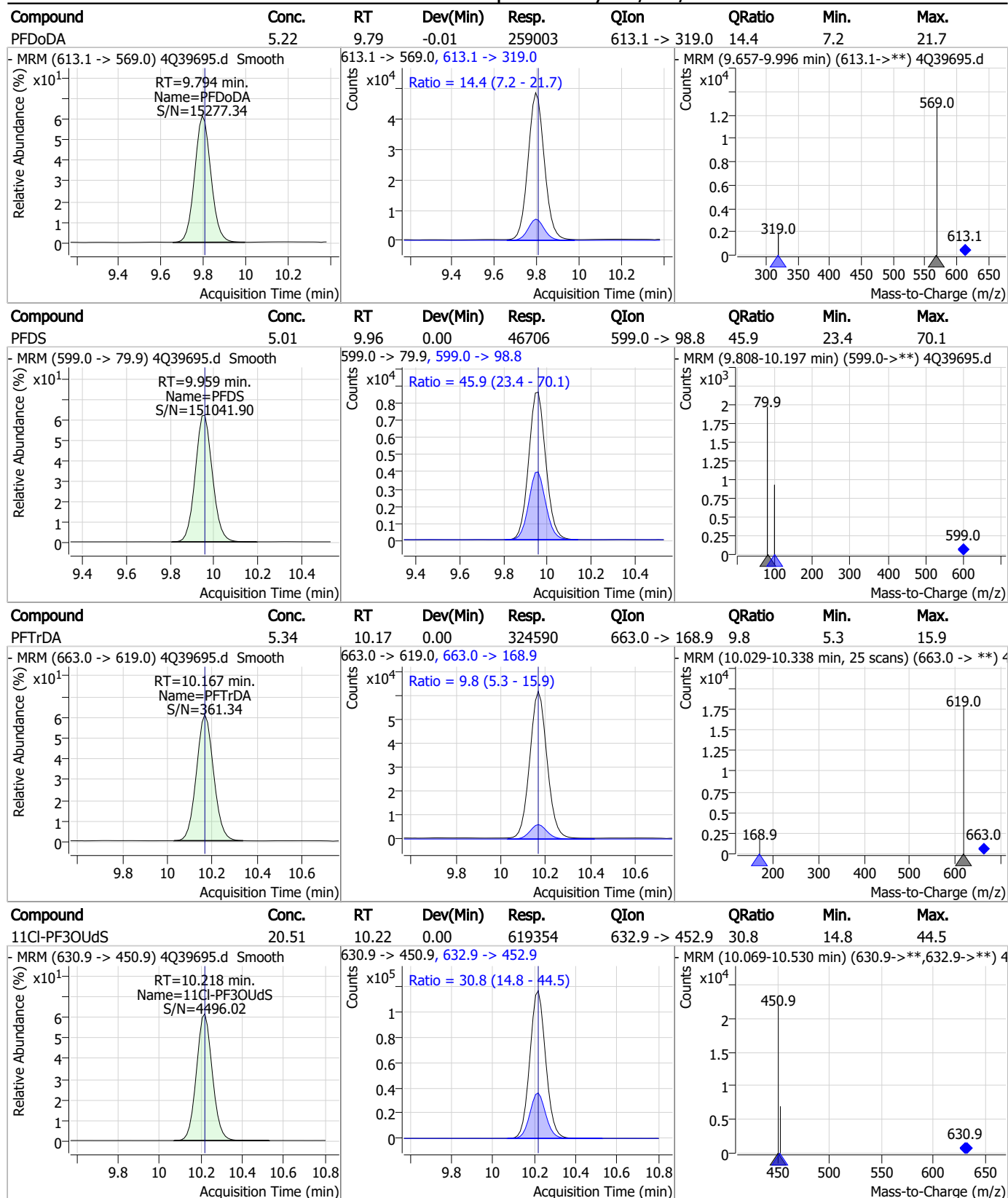
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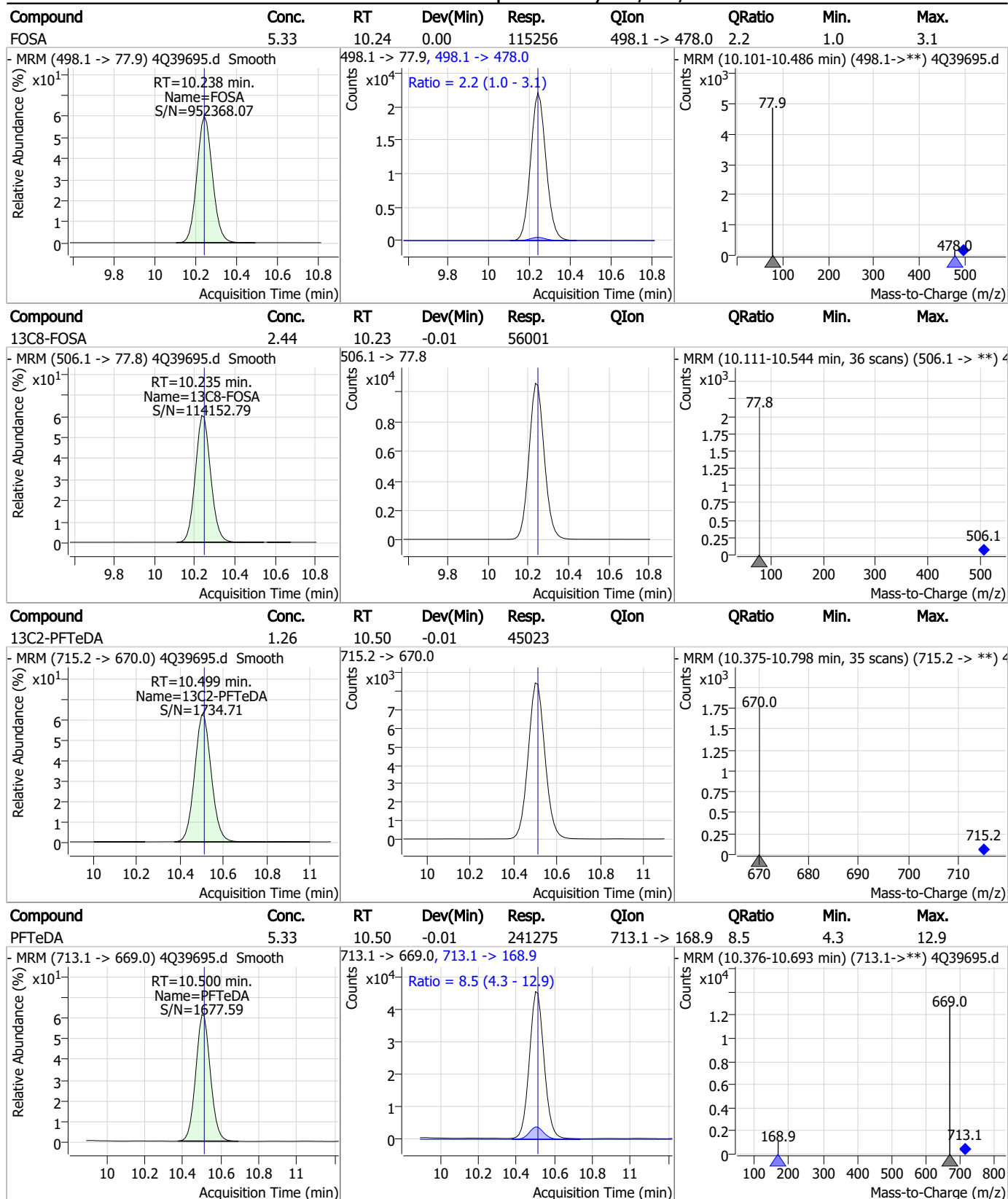
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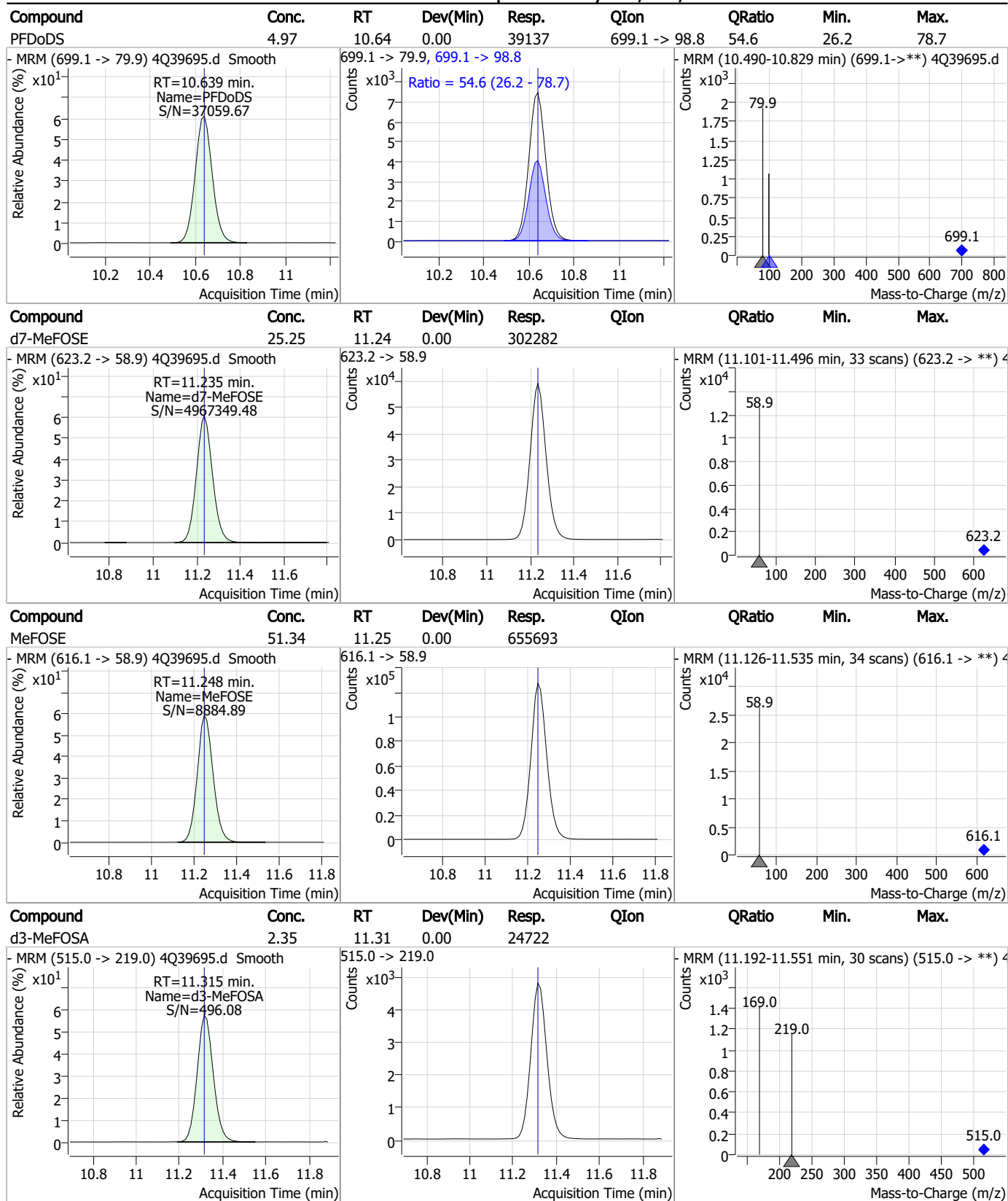
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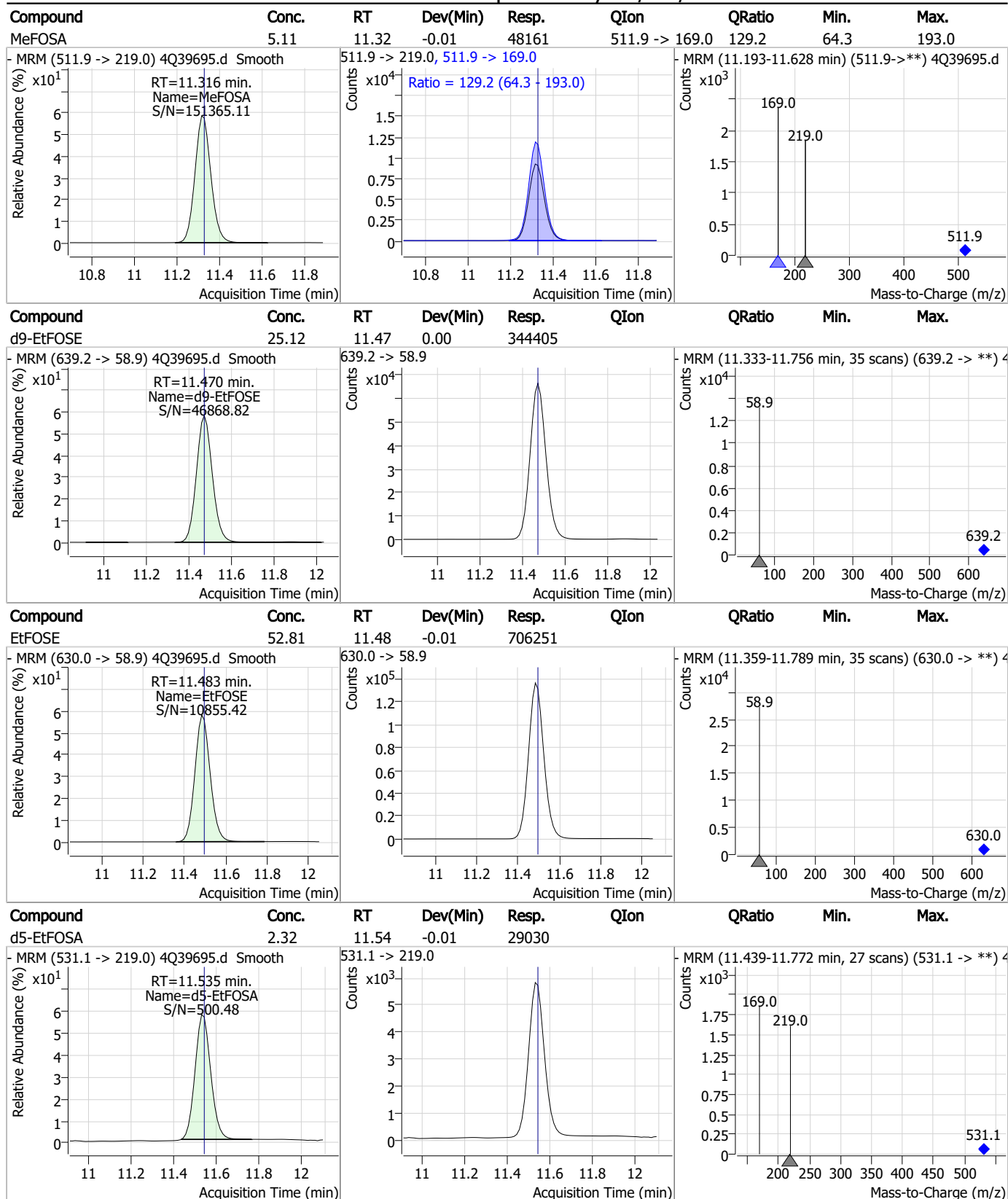
Perfluorinated Compounds by LC/MS/MS



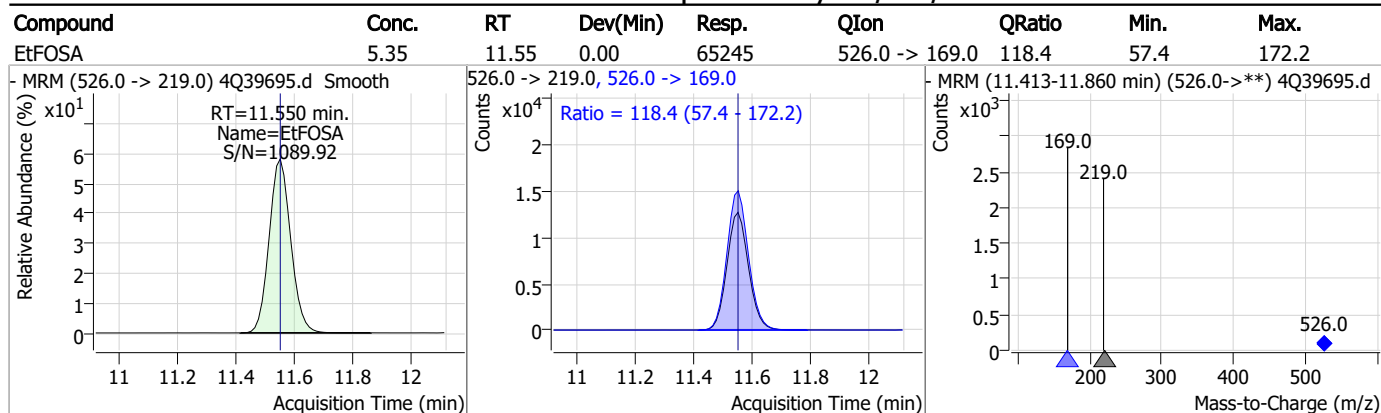
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q571-IC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39695.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 14:09

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

7.6.6.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39696.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 2:23:59 PM
 Sample Name : ic571-6
 Vial : P1-A7
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.161	216.8 -> 171.9	369078	10.00 µg/L	-0.012
M5-PFPeA	4.851	268.3 -> 223.0	254974	5.00 µg/L	-0.013
M5-PFHxA	6.160	318.0 -> 273.0	162811	2.50 µg/L	-0.012
M4-PFHpA	7.093	367.1 -> 322.0	89713	2.50 µg/L	-0.012
M8-PFOA	7.776	421.1 -> 376.0	145420	2.50 µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	67248	1.25 µg/L	-0.012
M6-PFDA	8.866	519.1 -> 474.1	54380	1.25 µg/L	-0.012
M7-PFUnDA	9.361	570.0 -> 525.1	58160	1.25 µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	59817	1.25 µg/L	-0.012
M2-PFTeDA	10.499	715.2 -> 670.0	41390	1.25 µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	53662	2.50 µg/L	-0.012
M3-PFBS	6.077	302.1 -> 79.9	44644	2.50 µg/L	-0.012
M3-PFHxS	7.904	402.1 -> 79.9	31582	2.50 µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	39665	2.50 µg/L	-0.012
M2-4:2FTS	5.808	329.1 -> 80.9	3587	5.00 µg/L	-0.014
M2-6:2FTS	7.524	429.1 -> 80.9	7703	5.00 µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	10417	5.00 µg/L	-0.012
M3-MeFOSAA	8.912	573.2 -> 419.0	42794	5.00 µg/L	-0.013
M3-HFPO-DA	6.539	286.9 -> 168.9	125367	10.00 µg/L	-0.012
M5-EtFOSAA	9.133	589.2 -> 419.0	34957	5.00 µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	278309	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	309959	25.00 µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	28962	2.50 µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	25177	2.50 µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	38866	2.50 µg/L	-0.012
13C3-PFBA	3.165	216.0 -> 172.0	206897	5.00 µg/L	-0.012
18O2-PFHxS	7.903	403.0 -> 83.9	20574	2.50 µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	160746	2.50 µg/L	-0.012
13C2-PFDA	8.867	515.1 -> 470.1	50277	1.25 µg/L	-0.012
13C5-PFNA	8.348	468.0 -> 423.0	77588	1.25 µg/L	-0.012
13C2-PFHxA	6.161	315.1 -> 270.0	155895	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.808	329.1 -> 80.9	3587	4.84 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C2-6:2FTS	7.524	429.1 -> 80.9	7703	4.64 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.8%		
13C2-8:2FTS	8.641	529.1 -> 80.9	10417	4.59 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.7%		
13C2-PFDoDA	9.793	615.1 -> 570.0	59817	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C2-PFTeDA	10.499	715.2 -> 670.0	41390	1.19 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C3-PFBS	6.077	302.1 -> 79.9	44644	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFHxS	7.904	402.1 -> 79.9	31582	2.63 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C4-PFBA	3.161	216.8 -> 171.9	369078	9.89 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	7.093	367.1 -> 322.0	89713	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C5-PFHxA	6.160	318.0 -> 273.0	162811	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFPeA	4.851	268.3 -> 223.0	254974	5.03 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.866	519.1 -> 474.1	54380	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C7-PFUnDA	9.361	570.0 -> 525.1	58160	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-FOSA	10.235	506.1 -> 77.8	53662	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C8-PFOA	7.776	421.1 -> 376.0	145420	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-PFOS	9.055	507.1 -> 79.9	39665	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C9-PFNA	8.347	472.1 -> 427.0	67248	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
d3-MeFOSAA	8.912	573.2 -> 419.0	42794	4.79 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C3-HFPO-DA	6.539	286.9 -> 168.9	125367	10.08 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
d3-MeFOSA	11.315	515.0 -> 219.0	25177	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
d5-EtFOSAA	9.133	589.2 -> 419.0	34957	4.50 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.9%	
d7-MeFOSE	11.235	623.2 -> 58.9	278309	24.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
d9-EtFOSE	11.470	639.2 -> 58.9	309959	23.35 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
d5-EtFOSA	11.535	531.1 -> 219.0	28962	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
Target Compounds					QValue
4:2FTS	5.809	327.1 -> 307.0	308581	52.64 µg/L	99
		327.1 -> 80.9	142084		
6:2FTS	7.524	427.1 -> 407.0	326461	53.47 µg/L	98
		427.1 -> 80.9	156329		
8:2FTS	8.641	527.1 -> 507.0	278514	55.27 µg/L	98
		527.1 -> 80.8	150420		
EtFOSAA	9.134	584.2 -> 419.1	88418	15.11 µg/L	m 91
		584.2 -> 526.0	38592		
FOSA	10.238	498.1 -> 77.9	300150	14.48 µg/L	100
		498.1 -> 478.0	6822		
MeFOSAA	8.912	570.1 -> 419.0	100751	15.89 µg/L	m 98
		570.1 -> 483.0	18730		
PFBA	3.170	212.8 -> 168.9	610463	59.44 µg/L	100
PFBS	6.078	298.7 -> 79.9	266754	13.22 µg/L	98
		298.7 -> 98.8	95202		
PFDA	8.867	512.9 -> 469.0	576853	14.87 µg/L	99
		512.9 -> 219.0	116005		
PFDODA	9.794	613.1 -> 569.0	688192	14.93 µg/L	98
		613.1 -> 319.0	104282		
PFDS	9.945	599.0 -> 79.9	119999	13.06 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.094	599.0 -> 98.8	54482	14.85	µg/L	99
		363.1 -> 319.0	830259			
PFHpS	8.501	363.1 -> 169.0	142943	13.85	µg/L	96
		449.0 -> 79.9	222101			
PFHxA	6.162	449.0 -> 98.9	108126	14.86	µg/L	100
		313.0 -> 269.0	940842			
PFHxS	7.905	313.0 -> 118.9	27444	13.04	µg/L	99
		398.7 -> 79.9	133011			
PFNA	8.348	398.7 -> 98.9	63800	14.63	µg/L	97
		463.0 -> 419.0	715404			
PFNS	9.536	463.0 -> 219.0	177206	13.47	µg/L	92
		548.8 -> 79.9	95073			
PFOA	7.777	548.8 -> 98.9	45058	14.35	µg/L	99
		413.0 -> 369.0	927641			
PFOS	9.057	413.0 -> 169.0	193534	13.05	µg/L	98
		498.9 -> 79.9	241826			
PFPeA	4.841	498.9 -> 98.8	114467	28.98	µg/L	100
		263.0 -> 219.0	1620943			
PFPeS	7.159	349.1 -> 79.9	129871	13.18	µg/L	99
		349.1 -> 98.9	50195			
PFTeDA	10.500	713.1 -> 669.0	640468	15.38	µg/L	100
		713.1 -> 168.9	56083			
PFTrDA	10.167	663.0 -> 619.0	827713	14.66	µg/L	100
		663.0 -> 168.9	86398			
PFUnDA	9.361	563.1 -> 519.0	506814	14.39	µg/L	98
		563.1 -> 269.1	96566			
11Cl-PF3OUdS	10.206	630.9 -> 450.9	1547152	52.80	µg/L	99
		632.9 -> 452.9	469773			
9Cl-PF3ONS	9.401	530.8 -> 351.0	2003197	56.10	µg/L	99
		532.8 -> 353.0	589018			
ADONA	7.357	376.9 -> 250.9	3583756	52.99	µg/L	100
		376.9 -> 84.8	1265758			
HFPO-DA	6.540	284.9 -> 168.9	693788	58.72	µg/L	99
		284.9 -> 184.9	74977			
3:3FTCA	4.173	241.0 -> 177.0	189477	72.28	µg/L	98
		241.0 -> 117.0	16467			
5:3FTCA	6.771	341.0 -> 237.1	3031842	360.05	µg/L	99
		341.0 -> 217.0	2286881			
7:3FTCA	8.236	441.0 -> 316.9	1725452	356.80	µg/L	99
		441.0 -> 336.9	3881688			
EtFOSA	11.550	526.0 -> 219.0	177802	14.62	µg/L	99
		526.0 -> 169.0	206734			
EtFOSE	11.483	630.0 -> 58.9	1696285	140.95	µg/L	100
MeFOSA	11.316	511.9 -> 219.0	141951	14.80	µg/L	92
		511.9 -> 169.0	168994			
MeFOSE	11.248	616.1 -> 58.9	1653958	140.67	µg/L	100
PFDoDS	10.627	699.1 -> 79.9	107726	13.89	µg/L	99
		699.1 -> 98.8	57150			
NFDHA	6.028	295.0 -> 201.0	121326	29.17	µg/L	99
		295.0 -> 84.9	36195			
PFMBA	5.303	279.0 -> 85.1	1007118	28.89	µg/L	100
PFMPA	3.857	229.0 -> 84.9	1053080	29.28	µg/L	100
PFEESA	6.634	314.8 -> 134.9	1402117	25.91	µg/L	100
		314.8 -> 82.9	44965			

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

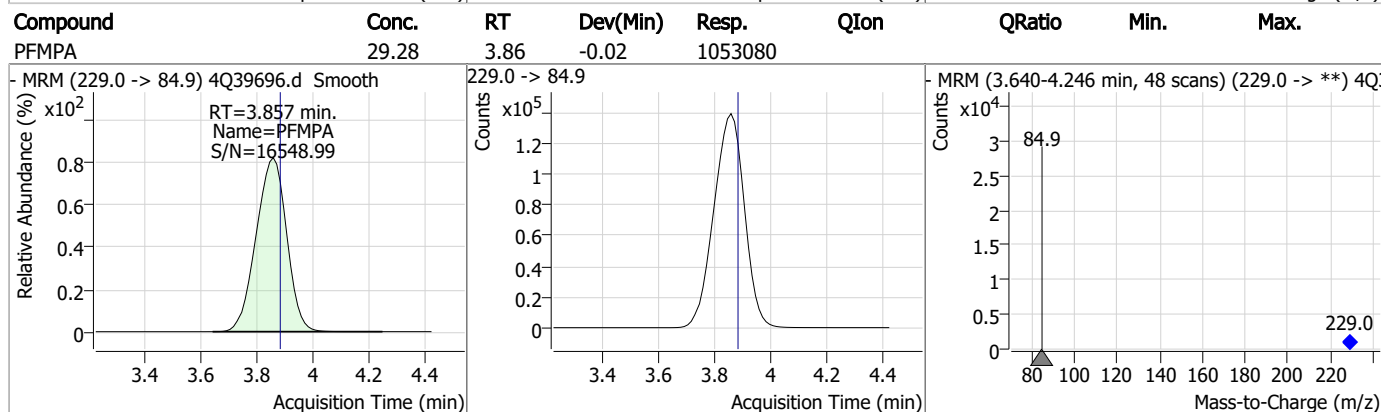
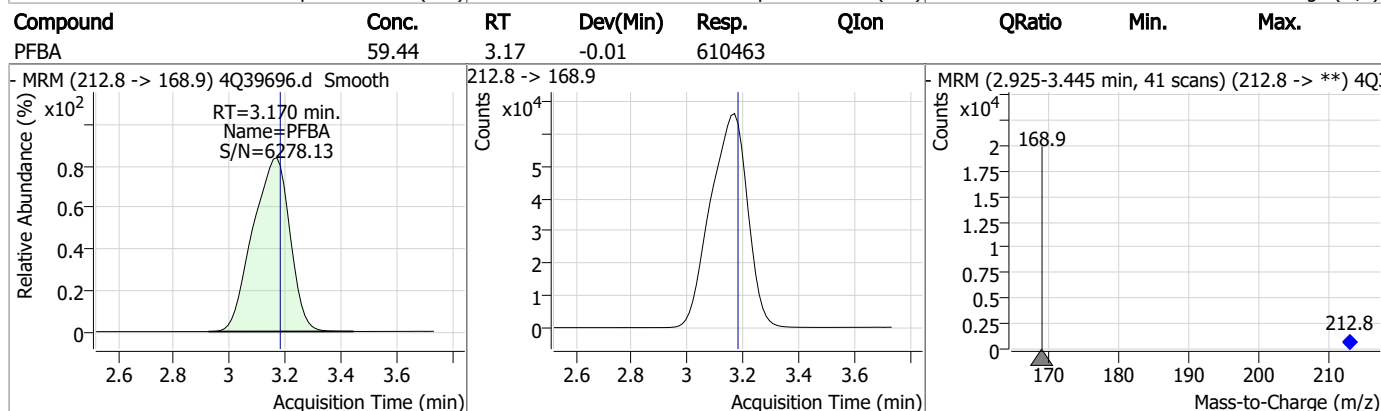
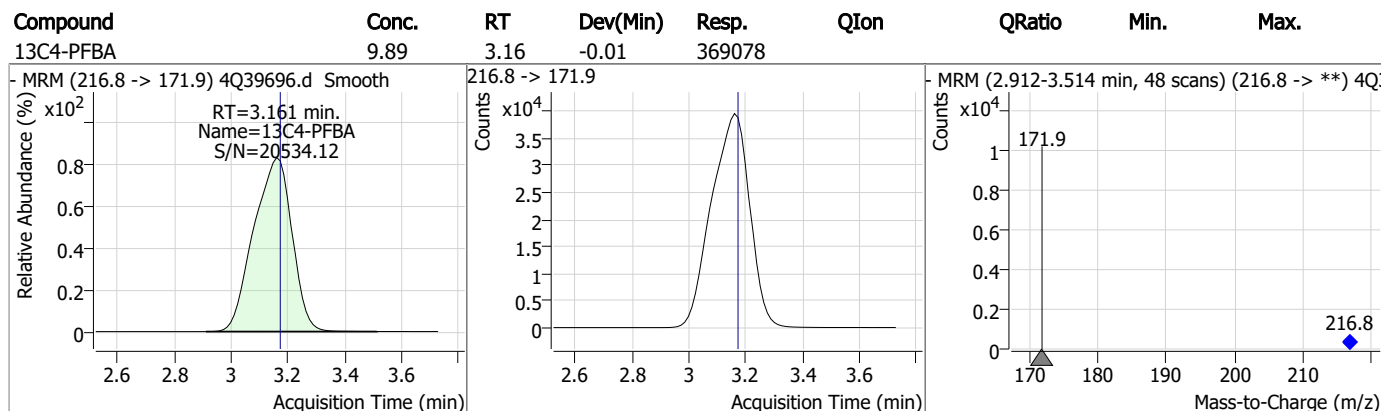
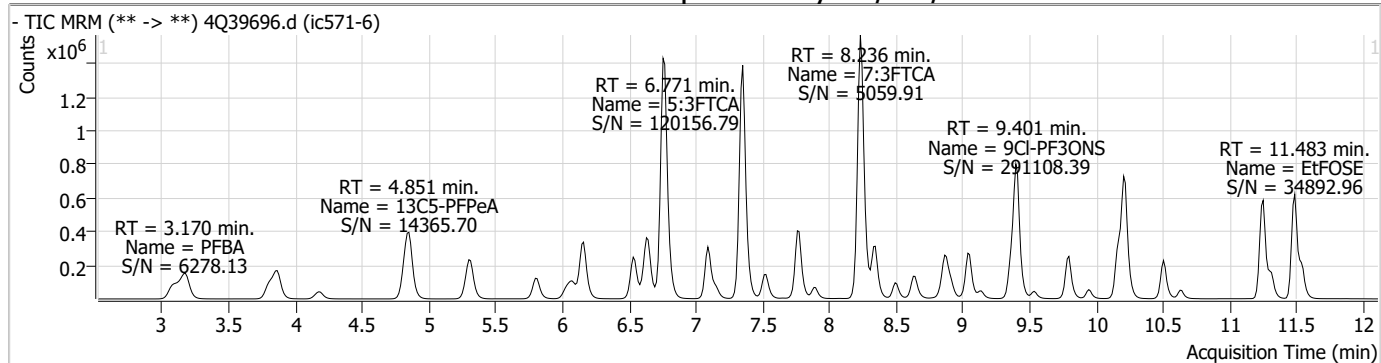
Perfluorinated Compounds by LC/MS/MS

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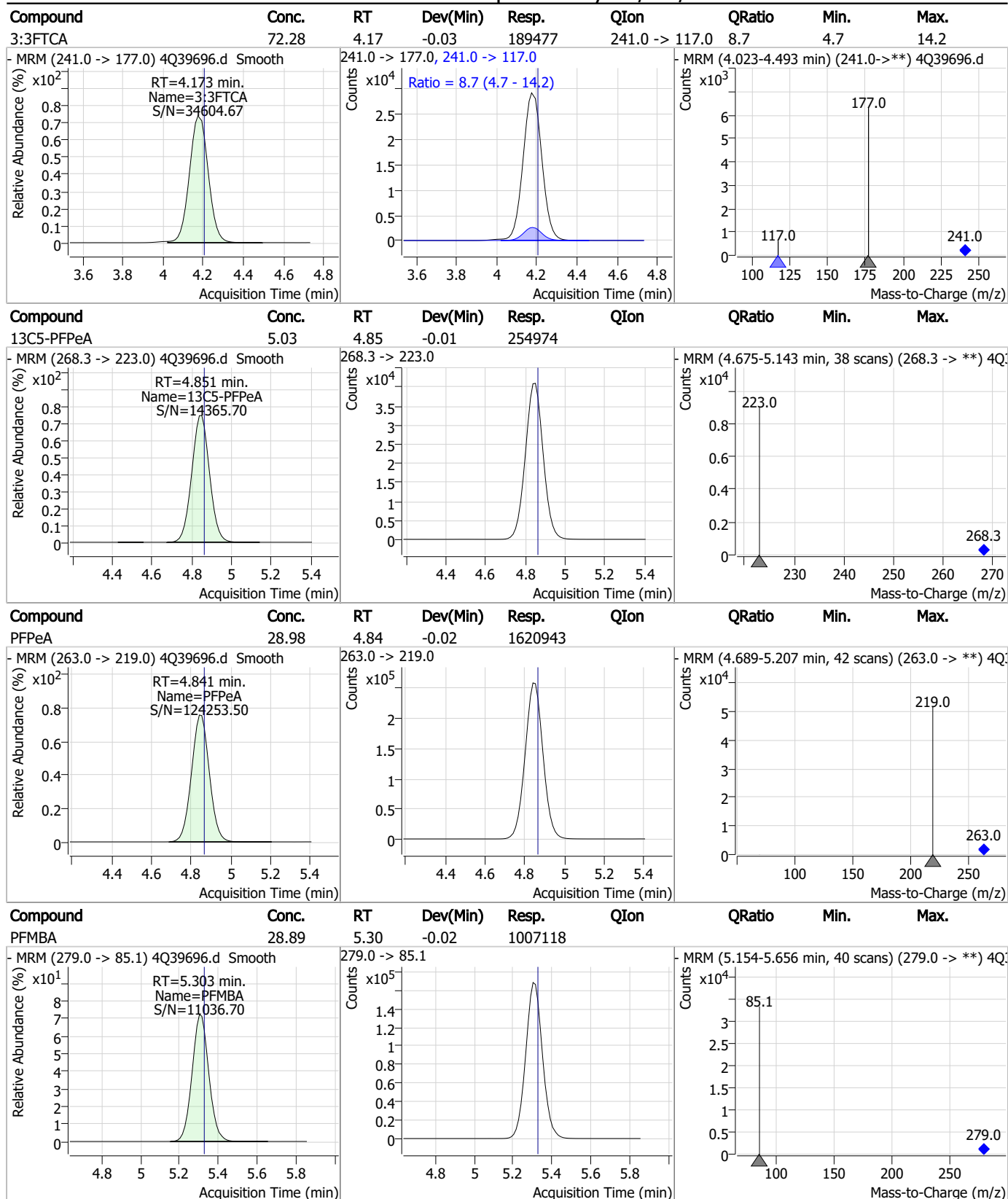
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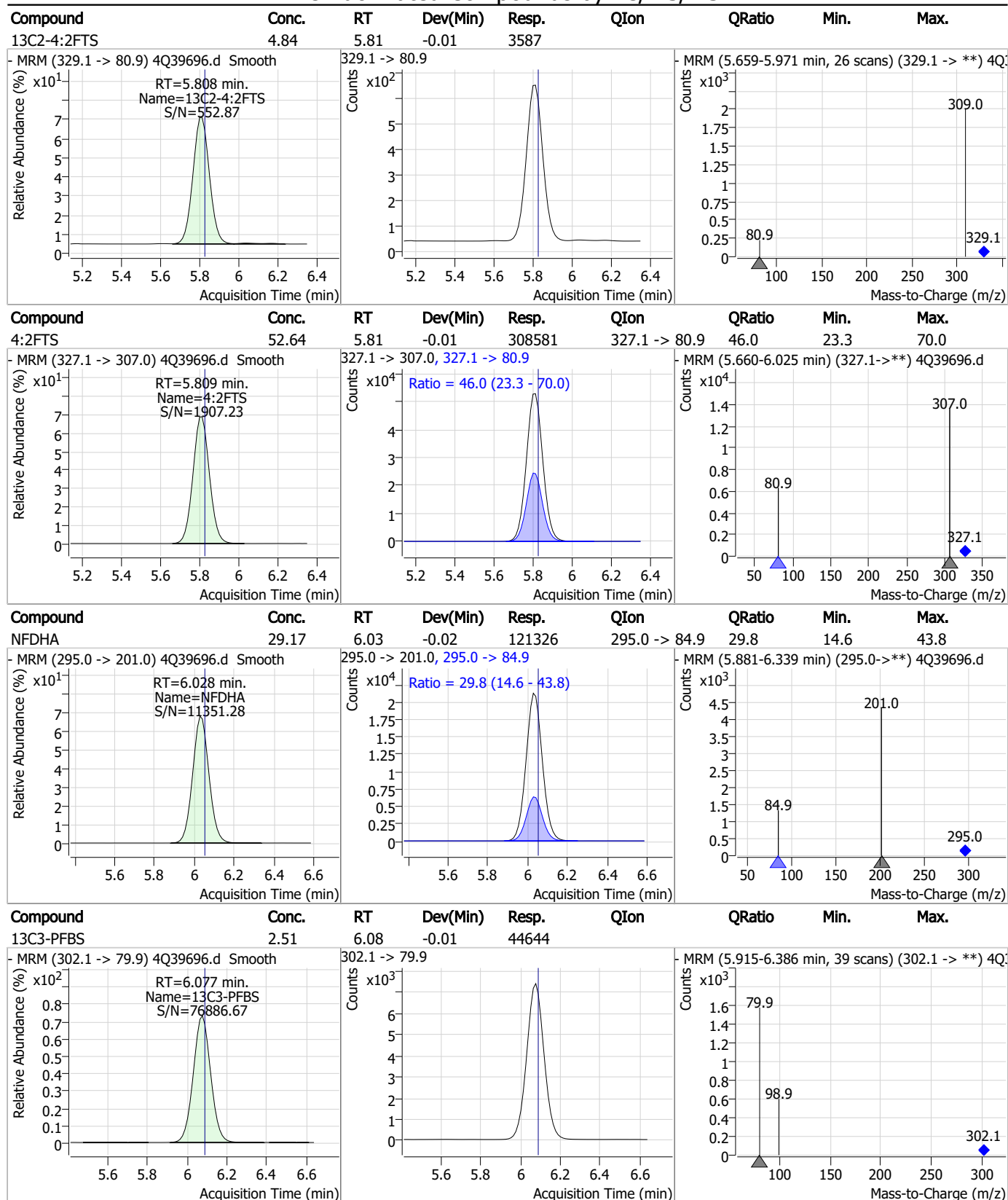
Perfluorinated Compounds by LC/MS/MS



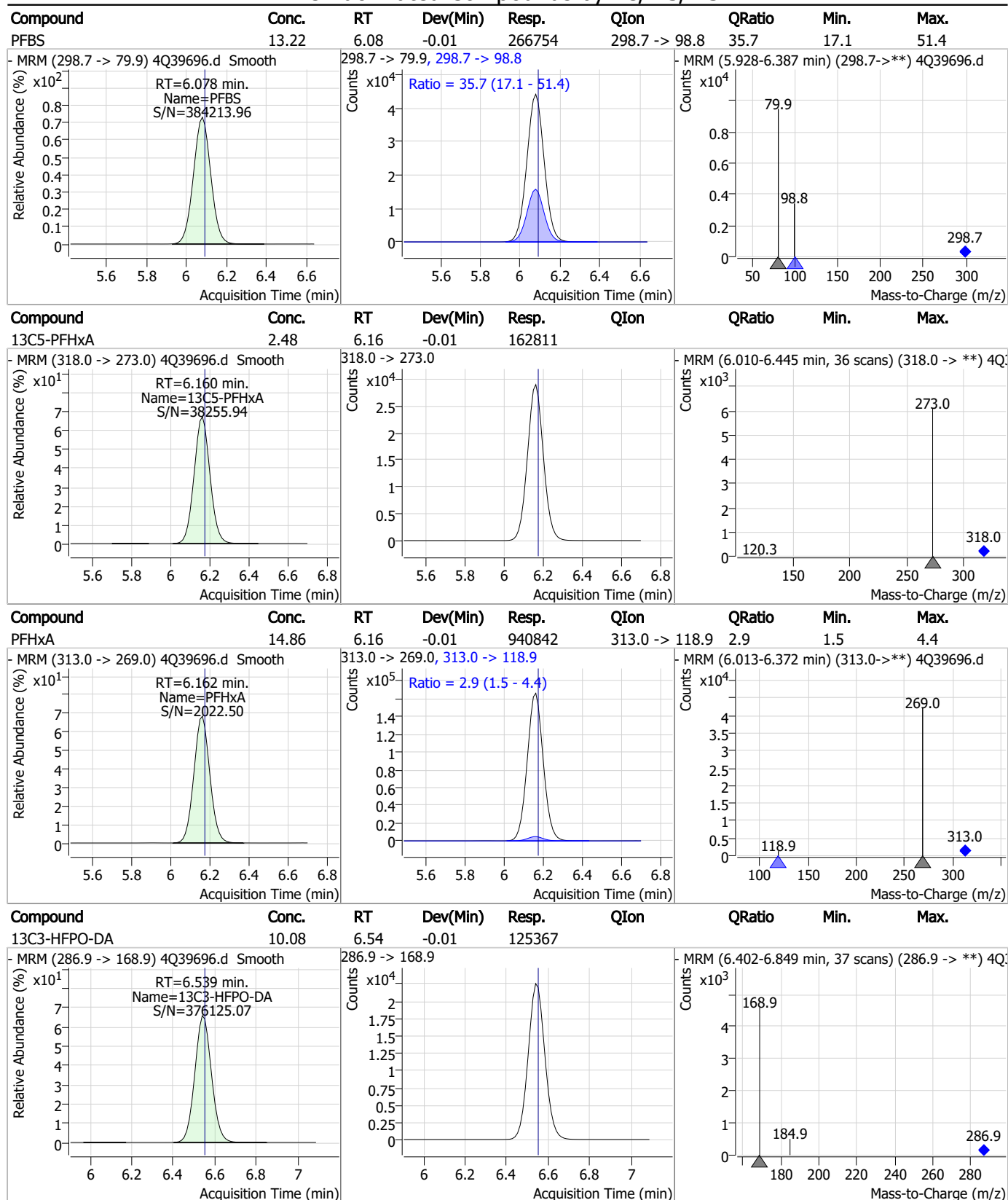
Perfluorinated Compounds by LC/MS/MS



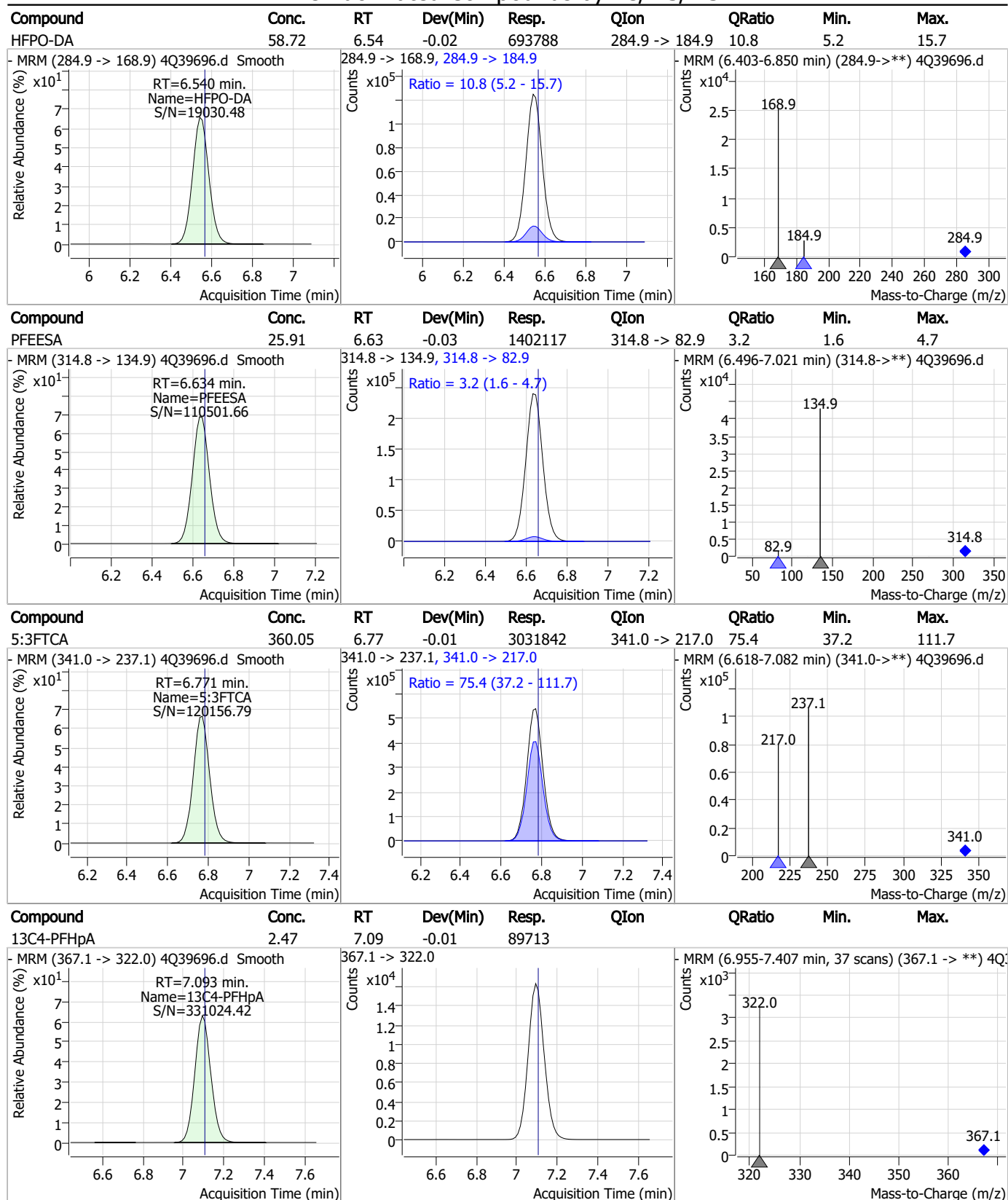
Perfluorinated Compounds by LC/MS/MS



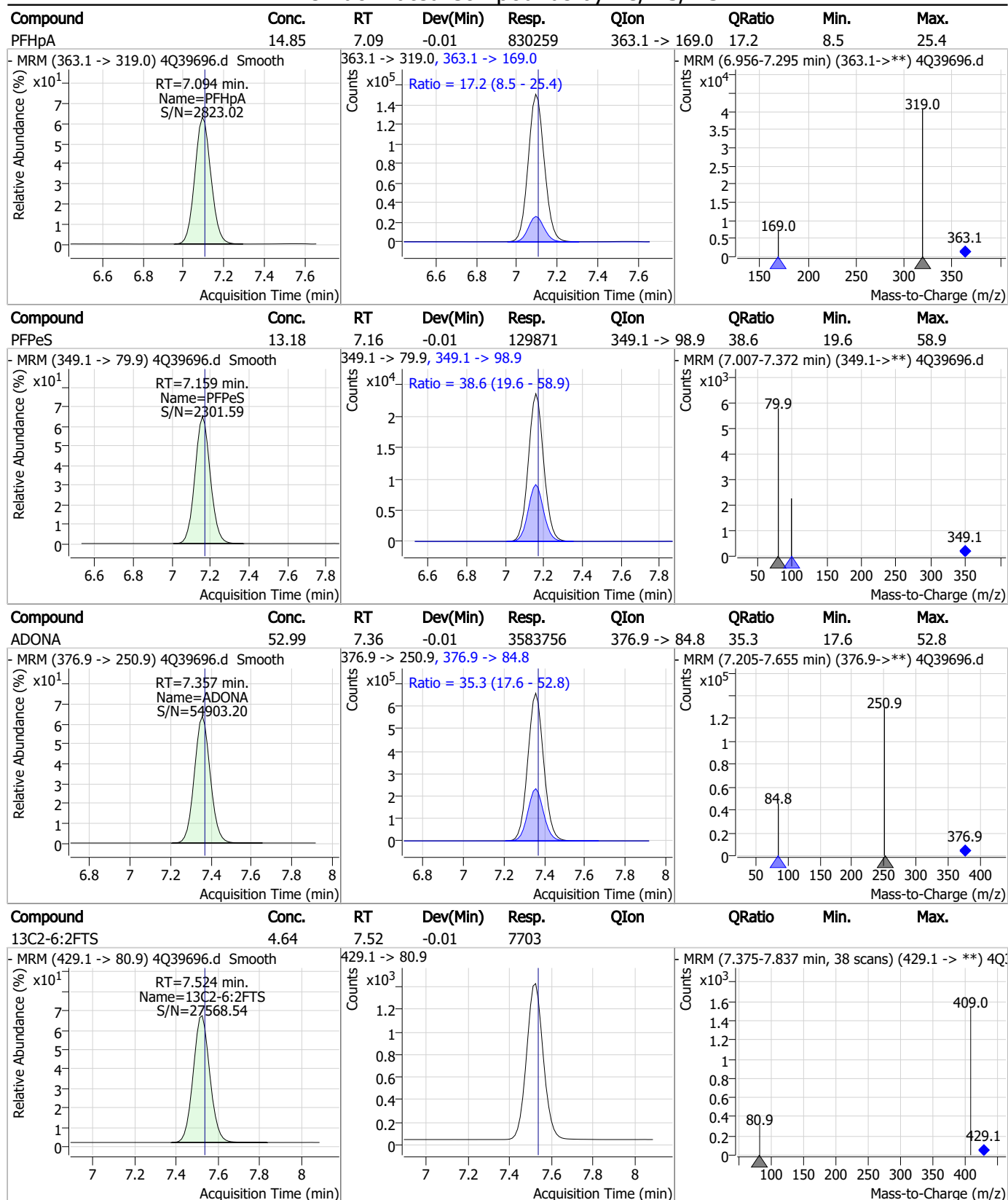
Perfluorinated Compounds by LC/MS/MS



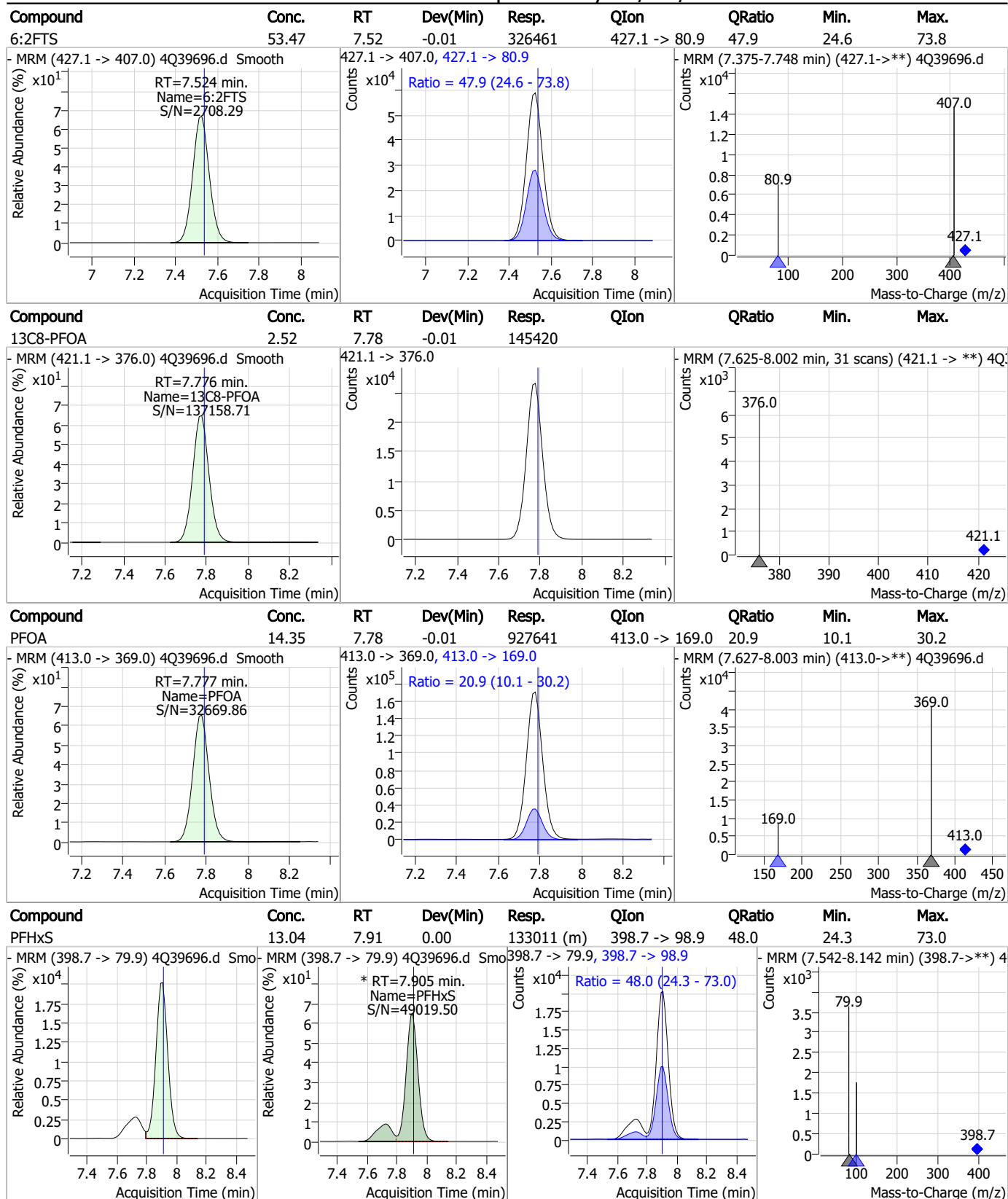
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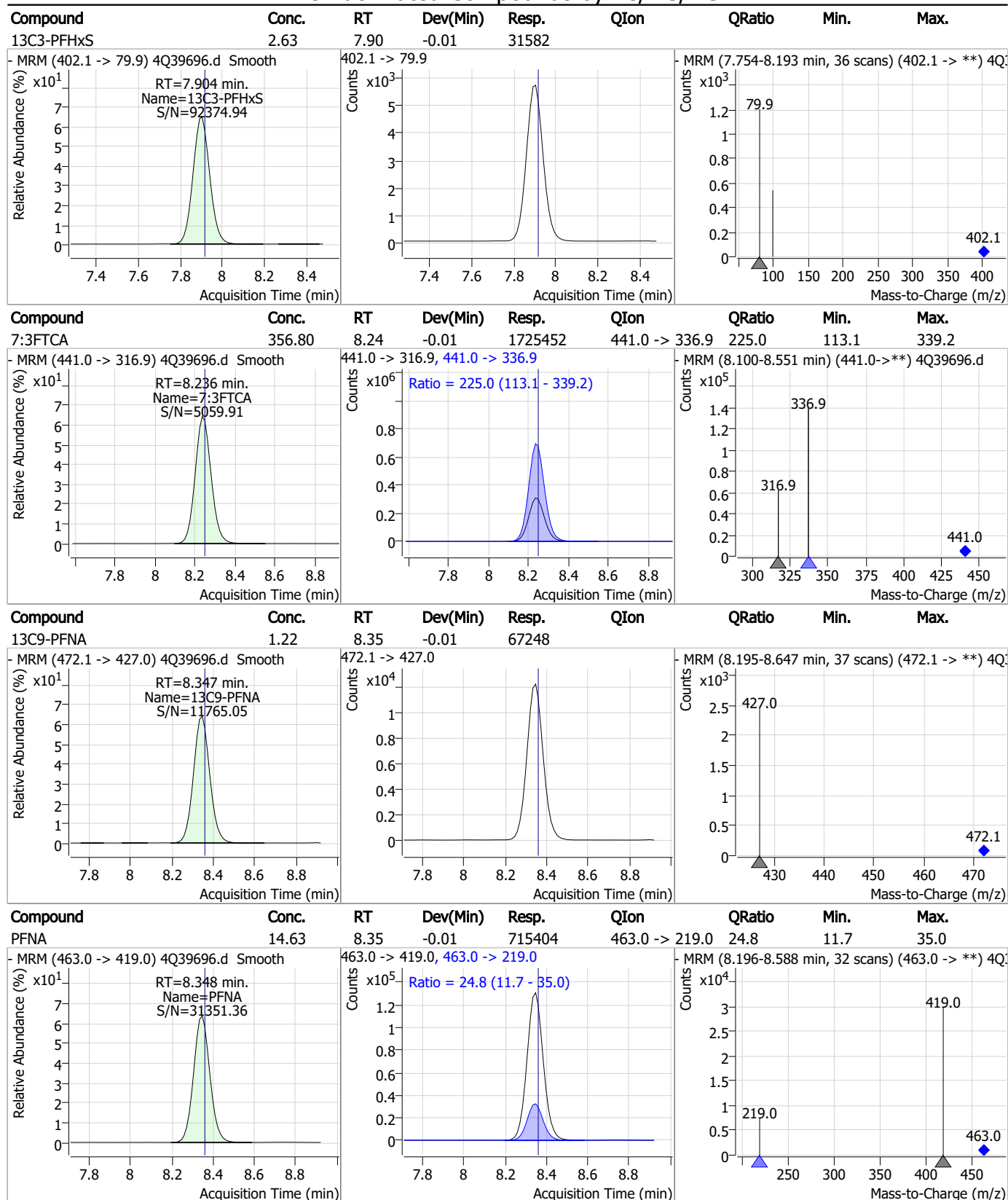
Perfluorinated Compounds by LC/MS/MS



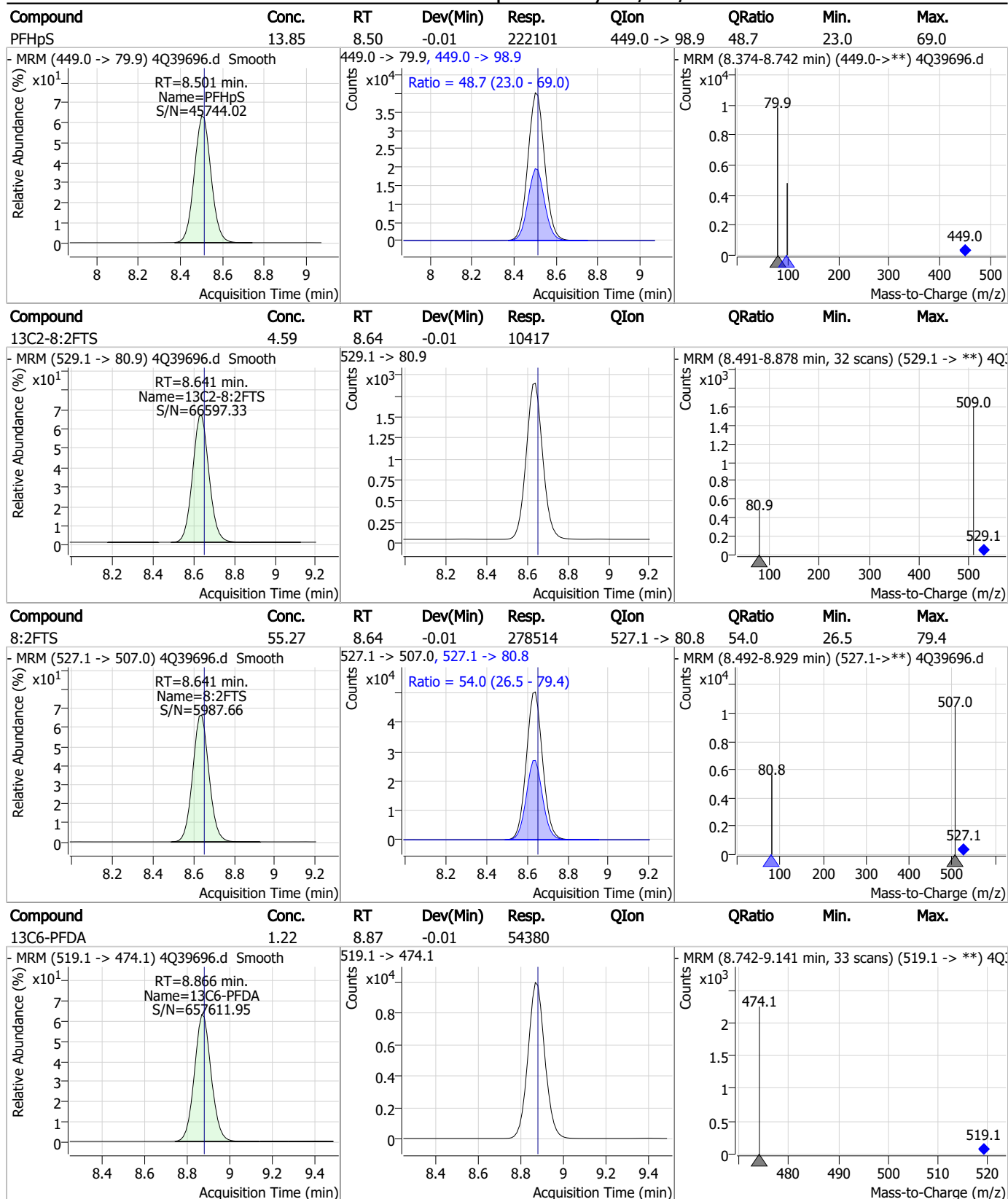
Perfluorinated Compounds by LC/MS/MS



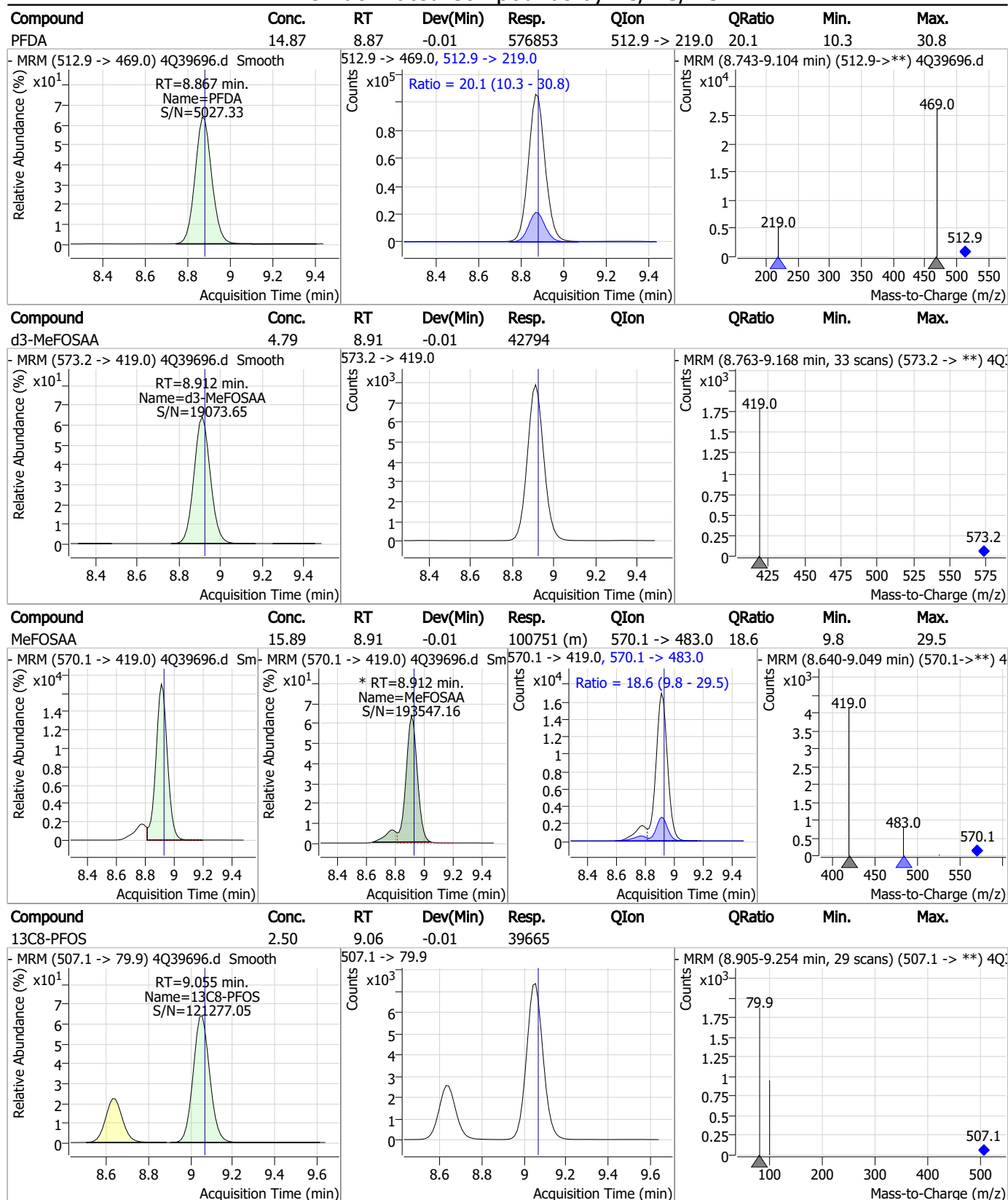
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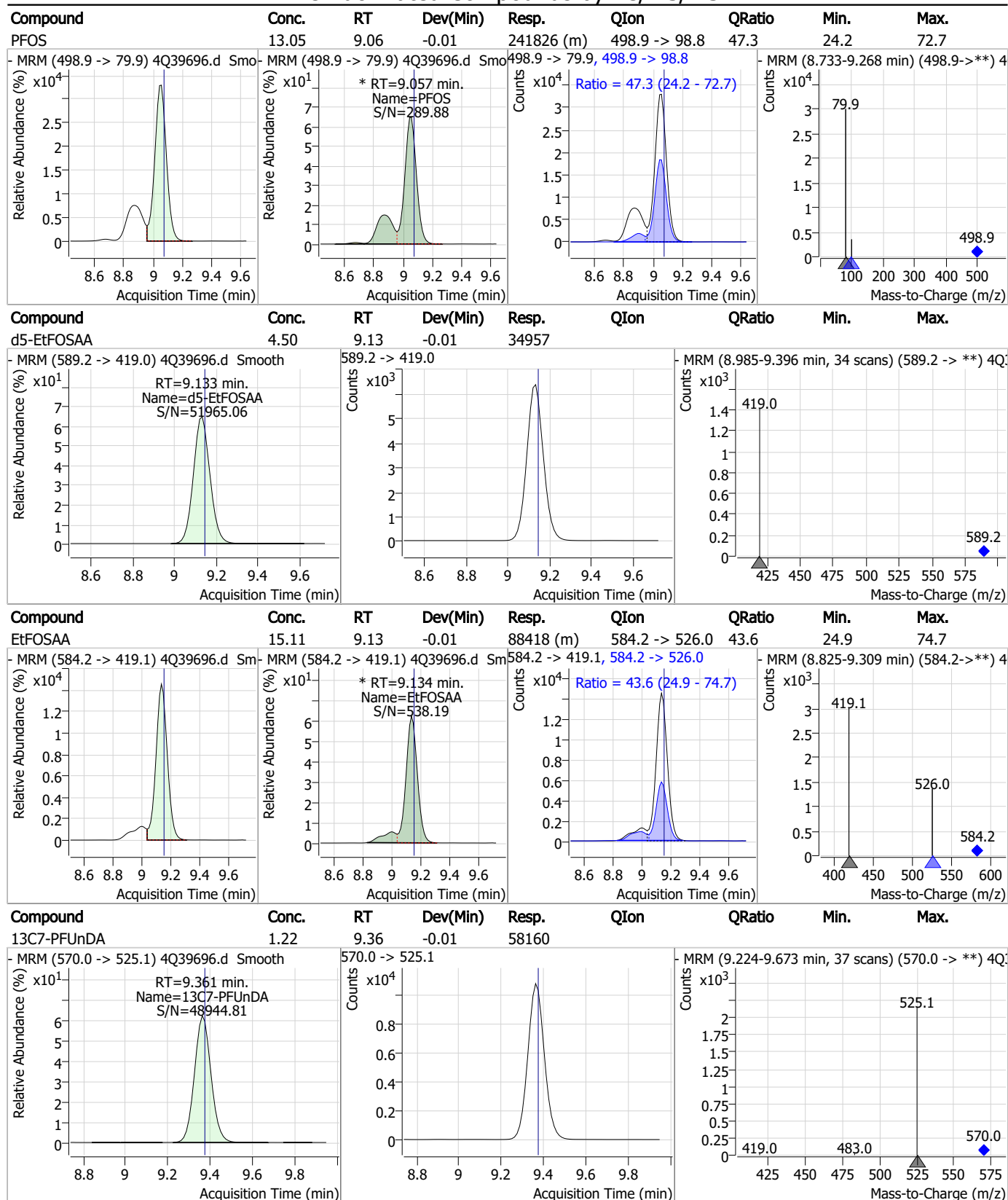
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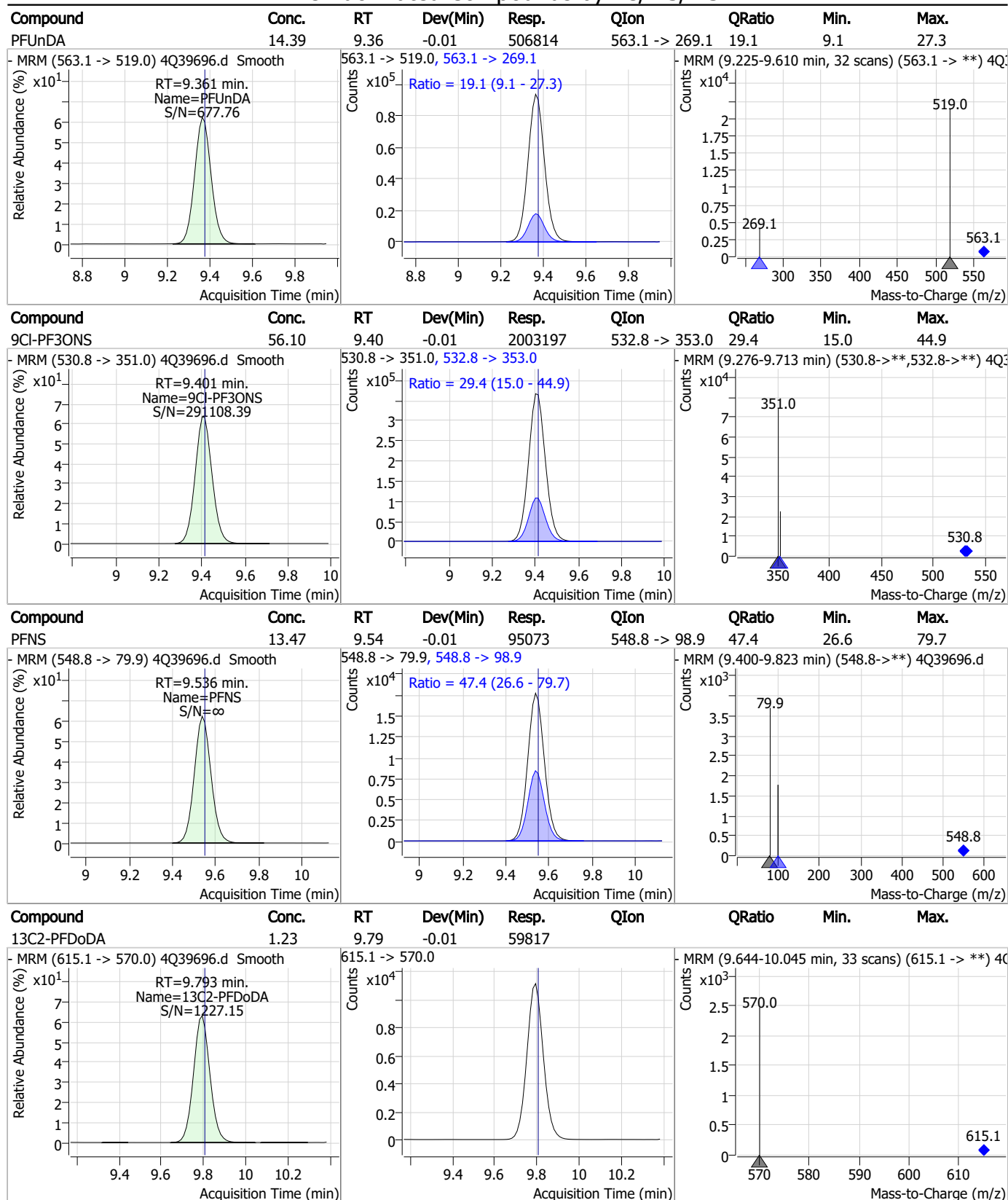
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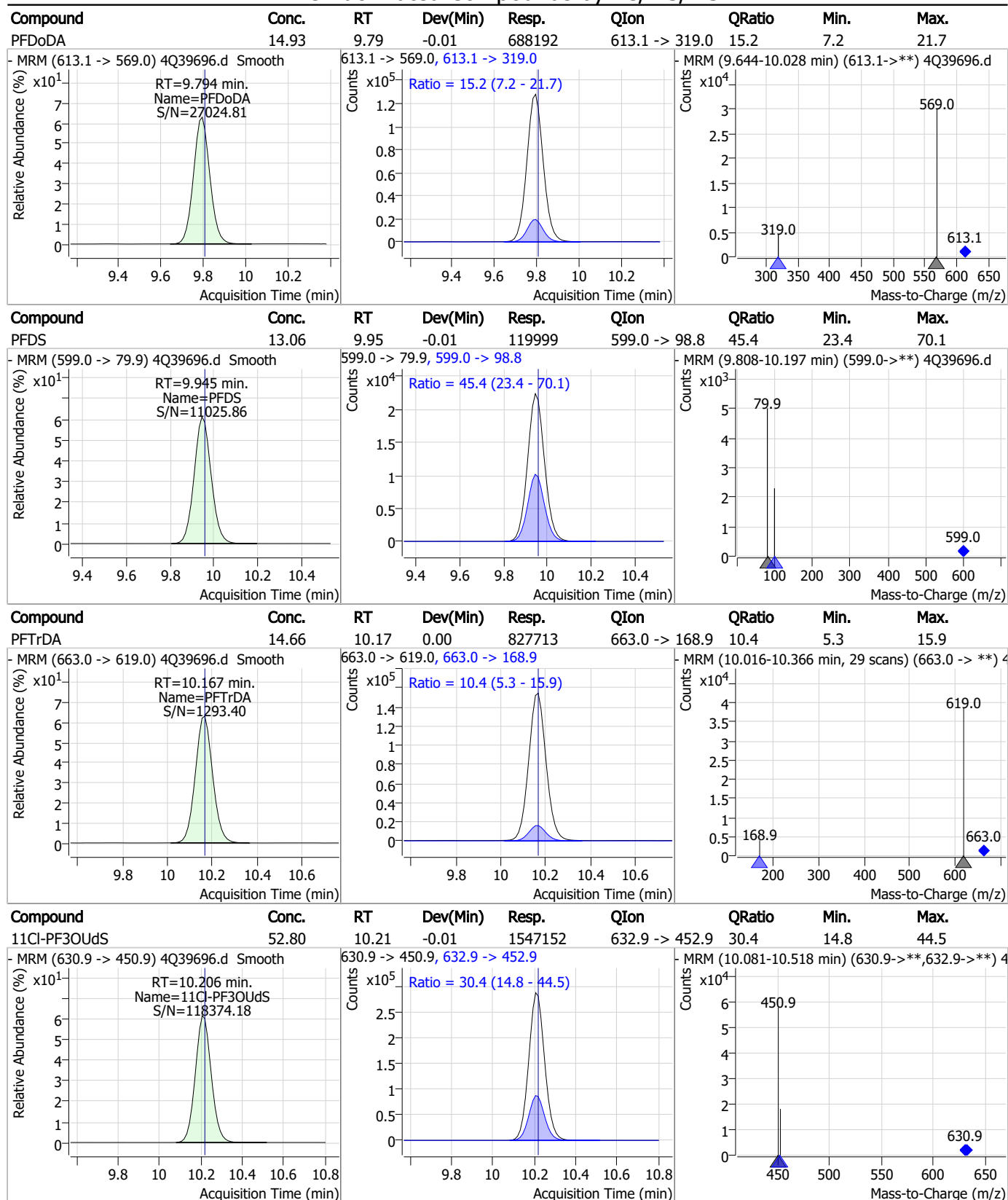
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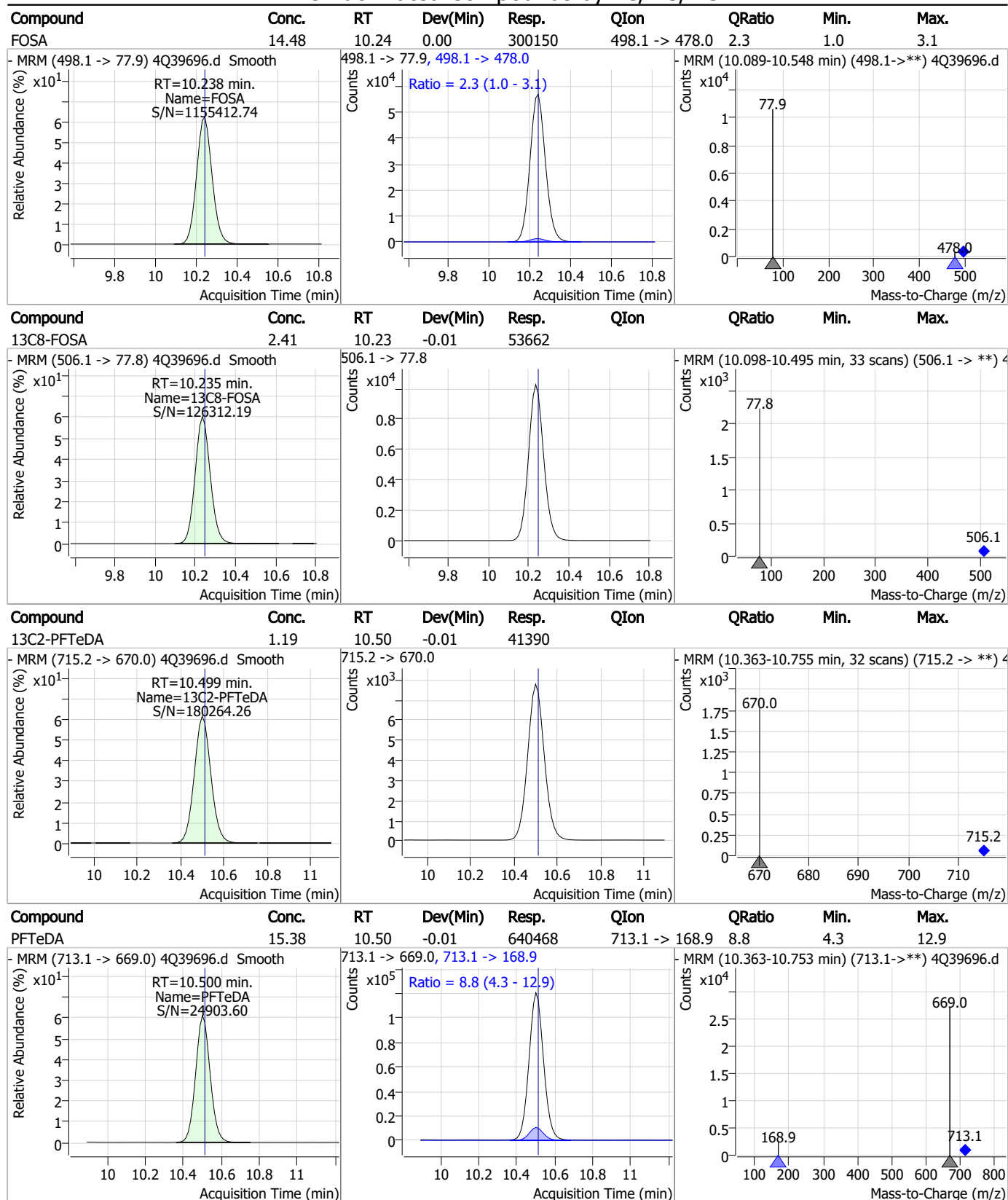
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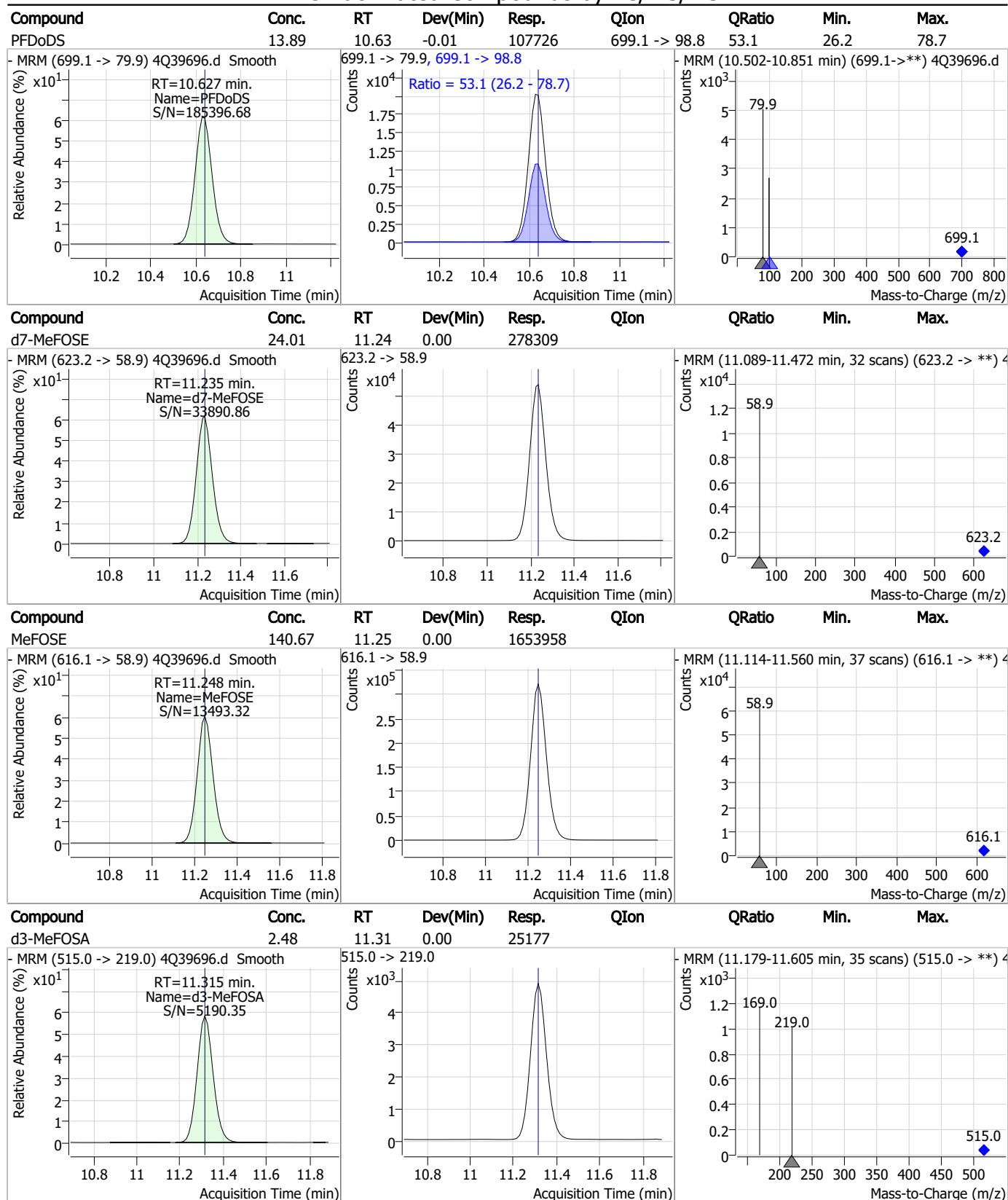
Perfluorinated Compounds by LC/MS/MS



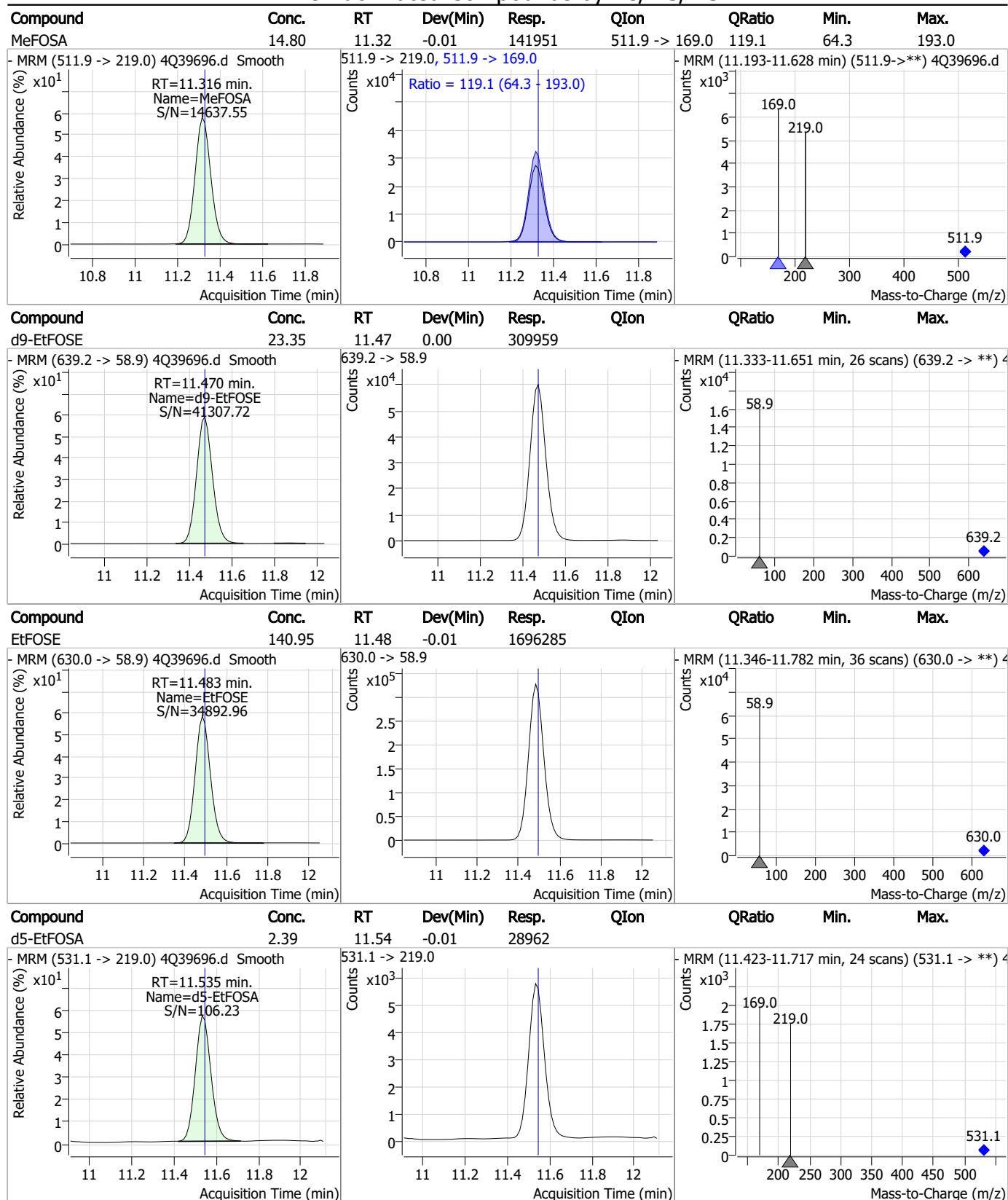
Perfluorinated Compounds by LC/MS/MS



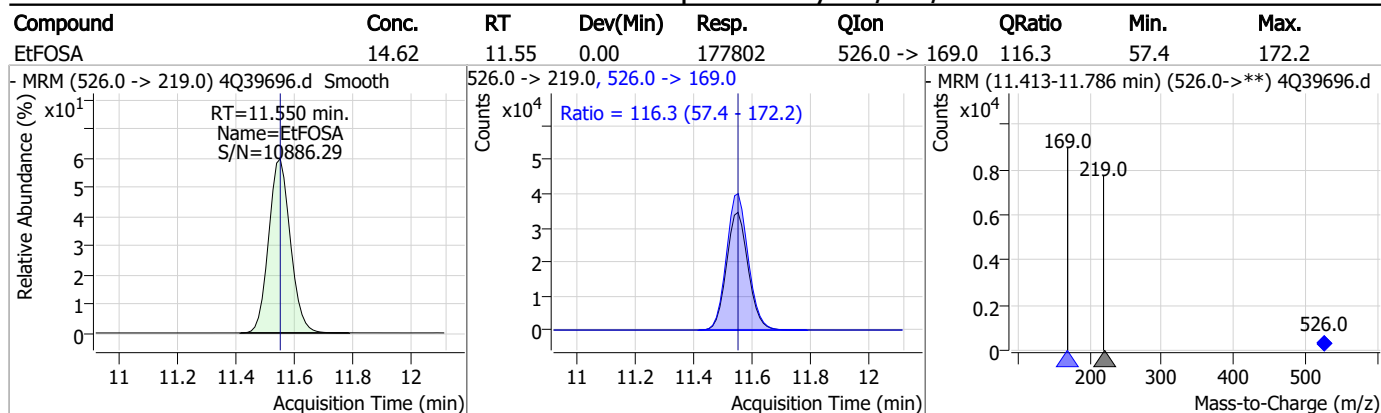
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q571-IC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39696.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 14:23

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.91	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.13	Split peak

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Manual Integrations
APPROVED
(compounds with "m" flag)

Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39697.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 2:38:03 PM
Sample Name : ic571-7
Vial : P1-A8
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.174	216.8 -> 171.9	350066	10.00 µg/L	0.000
M5-PFPeA	4.863	268.3 -> 223.0	244619	5.00 µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	160250	2.50 µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	91182	2.50 µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	134744	2.50 µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	67313	1.25 µg/L	-0.012
M6-PFDA	8.879	519.1 -> 474.1	52323	1.25 µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	54128	1.25 µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	57922	1.25 µg/L	-0.012
M2-PFTeDA	10.499	715.2 -> 670.0	41187	1.25 µg/L	-0.012
M8-FOSA	10.247	506.1 -> 77.8	53535	2.50 µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	44844	2.50 µg/L	0.000
M3-PFHxS	7.904	402.1 -> 79.9	28621	2.50 µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	36041	2.50 µg/L	-0.012
M2-4:2FTS	5.808	329.1 -> 80.9	3071	5.00 µg/L	-0.014
M2-6:2FTS	7.524	429.1 -> 80.9	6378	5.00 µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	9324	5.00 µg/L	-0.012
M3-MeFOSAA	8.924	573.2 -> 419.0	38921	5.00 µg/L	0.000
M3-HFPO-DA	6.551	286.9 -> 168.9	120106	10.00 µg/L	0.000
M5-EtFOSAA	9.133	589.2 -> 419.0	37679	5.00 µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	266840	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	287681	25.00 µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	28999	2.50 µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	23987	2.50 µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	35798	2.50 µg/L	-0.012
13C3-PFBA	3.178	216.0 -> 172.0	197800	5.00 µg/L	0.000
18O2-PFHxS	7.903	403.0 -> 83.9	19923	2.50 µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	154783	2.50 µg/L	-0.012
13C2-PFDA	8.879	515.1 -> 470.1	49313	1.25 µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	78977	1.25 µg/L	-0.012
13C2-PFHxA	6.173	315.1 -> 270.0	153692	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.808	329.1 -> 80.9	3071	4.28 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.5%		
13C2-6:2FTS	7.524	429.1 -> 80.9	6378	3.97 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 79.4%		
13C2-8:2FTS	8.641	529.1 -> 80.9	9324	4.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 84.8%		
13C2-PFDoDA	9.793	615.1 -> 570.0	57922	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C2-PFTeDA	10.499	715.2 -> 670.0	41187	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C3-PFBS	6.089	302.1 -> 79.9	44844	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C3-PFHxS	7.904	402.1 -> 79.9	28621	2.46 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C4-PFBA	3.174	216.8 -> 171.9	350066	9.81 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C4-PFHpA	7.106	367.1 -> 322.0	91182	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C5-PFHxA	6.172	318.0 -> 273.0	160250	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C5-PFPeA	4.863	268.3 -> 223.0	244619	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C6-PFDA	8.879	519.1 -> 474.1	52323	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C7-PFUnDA	9.373	570.0 -> 525.1	54128	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.6%		
13C8-FOSA	10.247	506.1 -> 77.8	53535	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C8-PFOA	7.776	421.1 -> 376.0	134744	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C8-PFOS	9.055	507.1 -> 79.9	36041	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C9-PFNA	8.347	472.1 -> 427.0	67313	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.9%		
d3-MeFOSAA	8.924	573.2 -> 419.0	38921	4.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	120106	9.80 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
d3-MeFOSA	11.315	515.0 -> 219.0	23987	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
d5-EtFOSAA	9.133	589.2 -> 419.0	37679	5.26 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.2%		
d7-MeFOSE	11.235	623.2 -> 58.9	266840	25.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 100.0%		
d9-EtFOSE	11.470	639.2 -> 58.9	287681	23.53 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.1%		
d5-EtFOSA	11.535	531.1 -> 219.0	28999	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.9%		

Target Compounds

					QValue
4:2FTS	5.809	327.1 -> 307.0	525658	104.73 µg/L	100
		327.1 -> 80.9	244079		
6:2FTS	7.524	427.1 -> 407.0	537883	106.40 µg/L	99
		427.1 -> 80.9	261729		
8:2FTS	8.641	527.1 -> 507.0	470186	104.24 µg/L	100
		527.1 -> 80.8	250131		
EtFOSAA	9.147	584.2 -> 419.1	171932	27.25 µg/L	m 92
		584.2 -> 526.0	76617		
FOSA	10.238	498.1 -> 77.9	558333	27.01 µg/L	100
		498.1 -> 478.0	11125		
MeFOSAA	8.925	570.1 -> 419.0	187178	32.46 µg/L	m 100
		570.1 -> 483.0	36751		
PFBA	3.170	212.8 -> 168.9	1138692	116.89 µg/L	100
PFBS	6.090	298.7 -> 79.9	504554	24.90 µg/L	98
		298.7 -> 98.8	179779		
PFDA	8.879	512.9 -> 469.0	1099336	29.45 µg/L	100
		512.9 -> 219.0	225891		
PFDODA	9.794	613.1 -> 569.0	1268326	28.41 µg/L	98
		613.1 -> 319.0	193951		
PFDS	9.959	599.0 -> 79.9	229635	27.51 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.106	599.0 -> 98.8	108594	28.31	µg/L	99
		363.1 -> 319.0	1608807			
PFHpS	8.513	363.1 -> 169.0	277059	28.11	µg/L	95
		449.0 -> 79.9	409445			
PFHxA	6.175	449.0 -> 98.9	201777	28.88	µg/L	99
		313.0 -> 269.0	1799895			
PFHxS	7.905	313.0 -> 118.9	56317	27.60	µg/L	97
		398.7 -> 79.9	255178			
PFNA	8.360	398.7 -> 98.9	119186	28.29	µg/L	97
		463.0 -> 419.0	1384587			
PFNS	9.549	463.0 -> 219.0	341623	28.26	µg/L	93
		548.8 -> 79.9	181262			
PFOA	7.777	548.8 -> 98.9	87610	28.68	µg/L	98
		413.0 -> 369.0	1717813			
PFOS	9.057	413.0 -> 169.0	366208	27.55	µg/L	99
		498.9 -> 79.9	463766			
PFPeA	4.866	498.9 -> 98.8	221145	56.49	µg/L	100
		263.0 -> 219.0	3030712			
PFPeS	7.171	349.1 -> 79.9	251961	28.21	µg/L	99
		349.1 -> 98.9	100078			
PFTeDA	10.500	713.1 -> 669.0	1207927	29.15	µg/L	99
		713.1 -> 168.9	106582			
PFTrDA	10.167	663.0 -> 619.0	1506789	27.57	µg/L	100
		663.0 -> 168.9	159602			
PFUnDA	9.374	563.1 -> 519.0	951755	29.05	µg/L	98
		563.1 -> 269.1	181336			
11CI-PF3OUdS	10.218	630.9 -> 450.9	2769757	98.66	µg/L	99
		632.9 -> 452.9	834953			
9CI-PF3ONS	9.413	530.8 -> 351.0	3685518	107.73	µg/L	100
		532.8 -> 353.0	1095683			
ADONA	7.369	376.9 -> 250.9	6616281	102.12	µg/L	99
		376.9 -> 84.8	2296038			
HFPO-DA	6.552	284.9 -> 168.9	1277394	112.84	µg/L	99
		284.9 -> 184.9	139379			
3:3FTCA	4.192	241.0 -> 177.0	375562	149.32	µg/L	99
		241.0 -> 117.0	34067			
5:3FTCA	6.771	341.0 -> 237.1	5755542	694.42	µg/L	99
		341.0 -> 217.0	4332447			
7:3FTCA	8.249	441.0 -> 316.9	3322260	697.97	µg/L	98
		441.0 -> 336.9	7623121			
EtFOSA	11.550	526.0 -> 219.0	338432	27.78	µg/L	98
		526.0 -> 169.0	396413			
EtFOSE	11.483	630.0 -> 58.9	2966644	265.60	µg/L	100
MeFOSA	11.316	511.9 -> 219.0	273278	29.91	µg/L	93
		511.9 -> 169.0	328823			
MeFOSE	11.248	616.1 -> 58.9	2950093	261.69	µg/L	100
PFDoDS	10.639	699.1 -> 79.9	199036	28.24	µg/L	96
		699.1 -> 98.8	109470			
NFDHA	6.041	295.0 -> 201.0	227429	55.55	µg/L	100
		295.0 -> 84.9	65928			
PFMBA	5.316	279.0 -> 85.1	1893468	56.62	µg/L	100
PFMPA	3.869	229.0 -> 84.9	1984262	57.51	µg/L	100
PFEESA	6.647	314.8 -> 134.9	2702597	50.74	µg/L	100
		314.8 -> 82.9	89154			

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

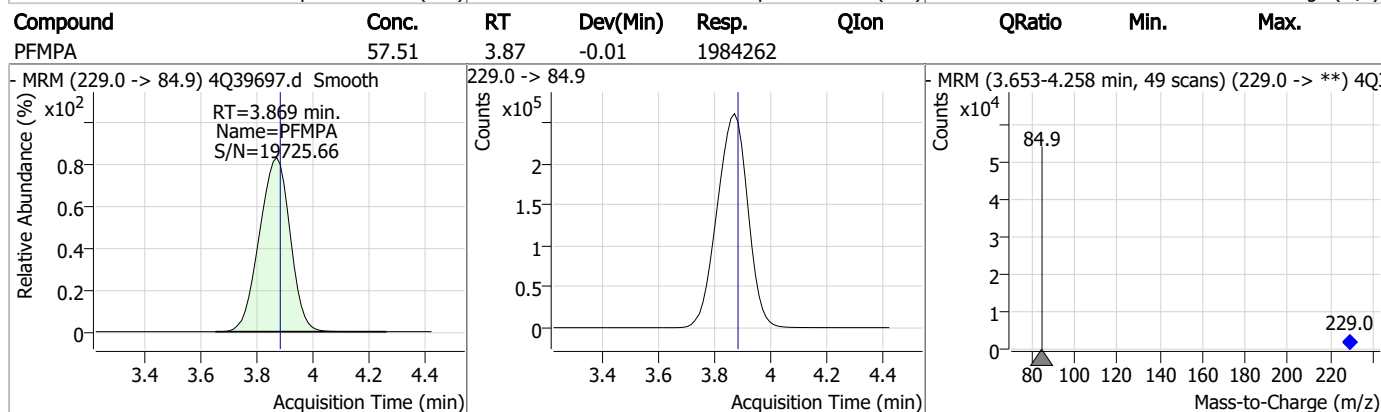
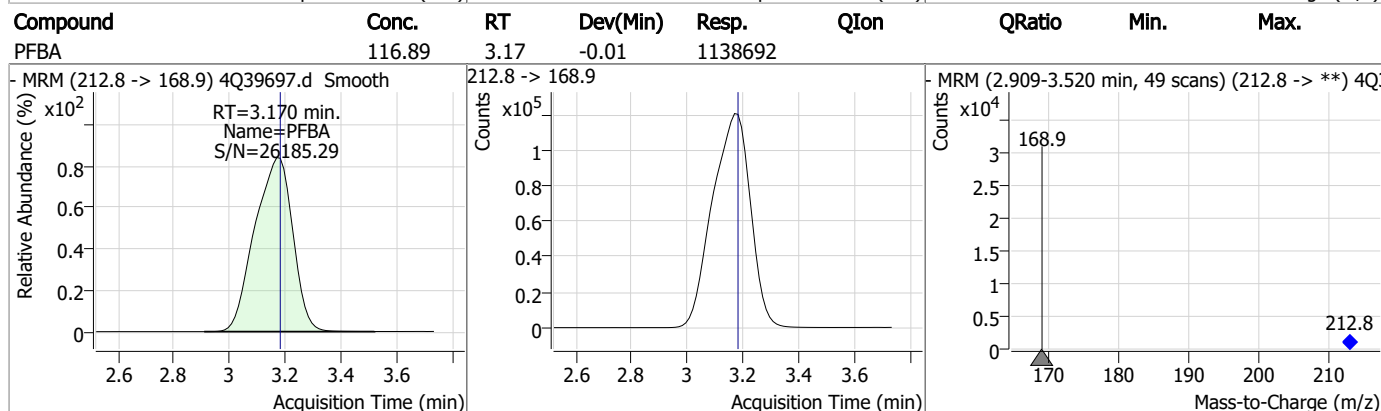
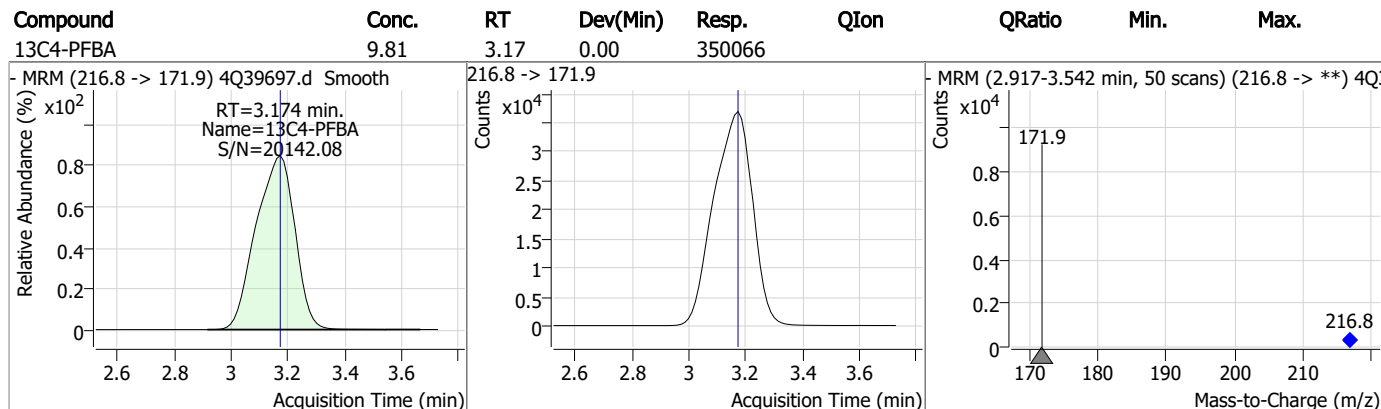
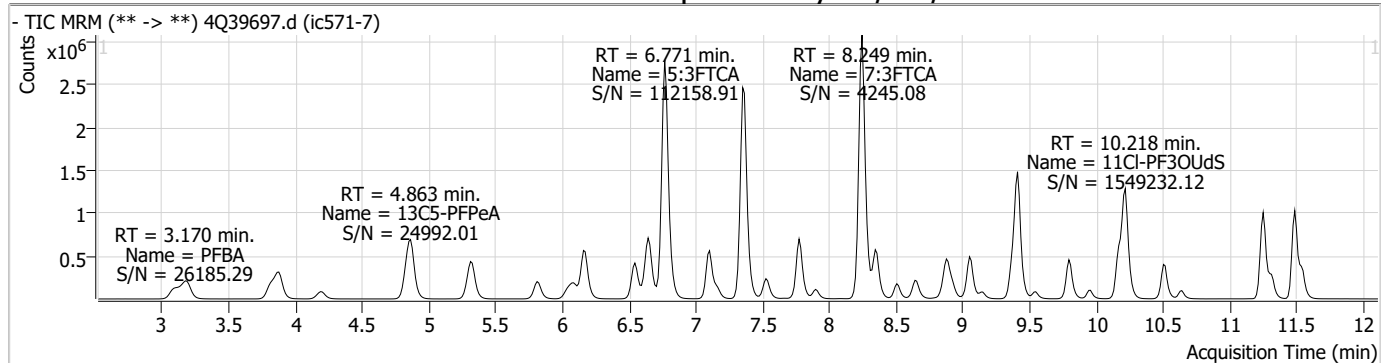
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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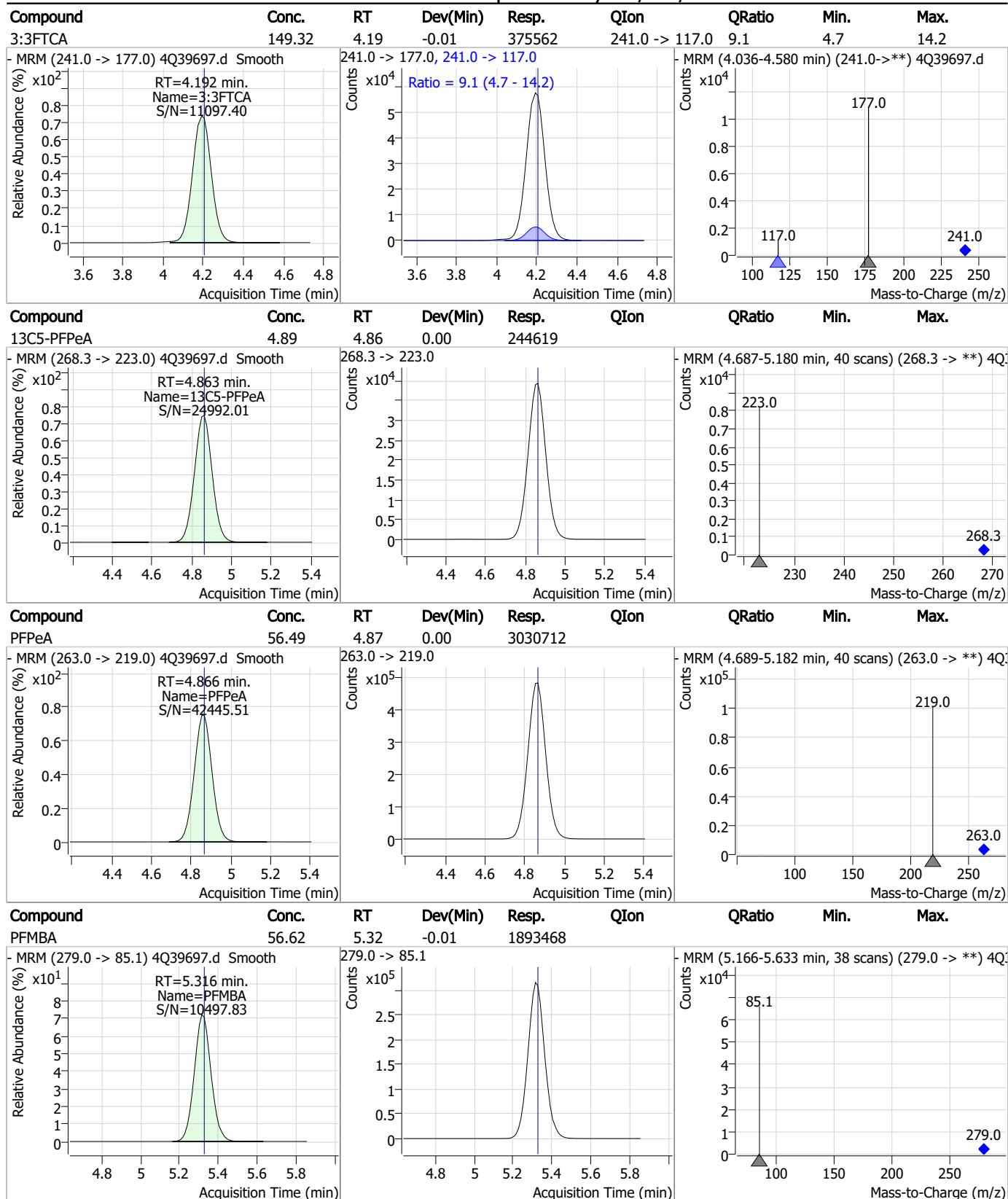
7.6.8

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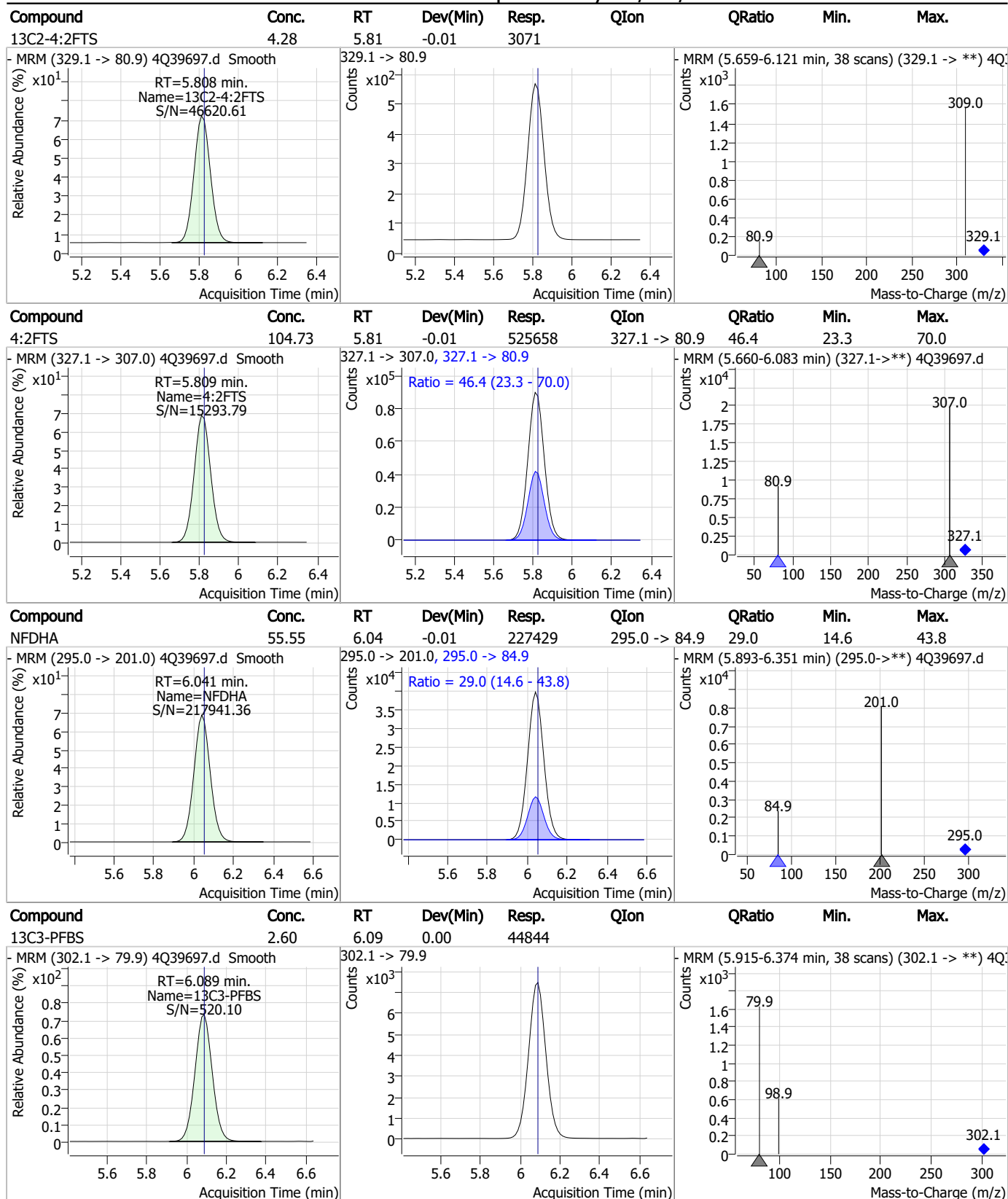
Perfluorinated Compounds by LC/MS/MS



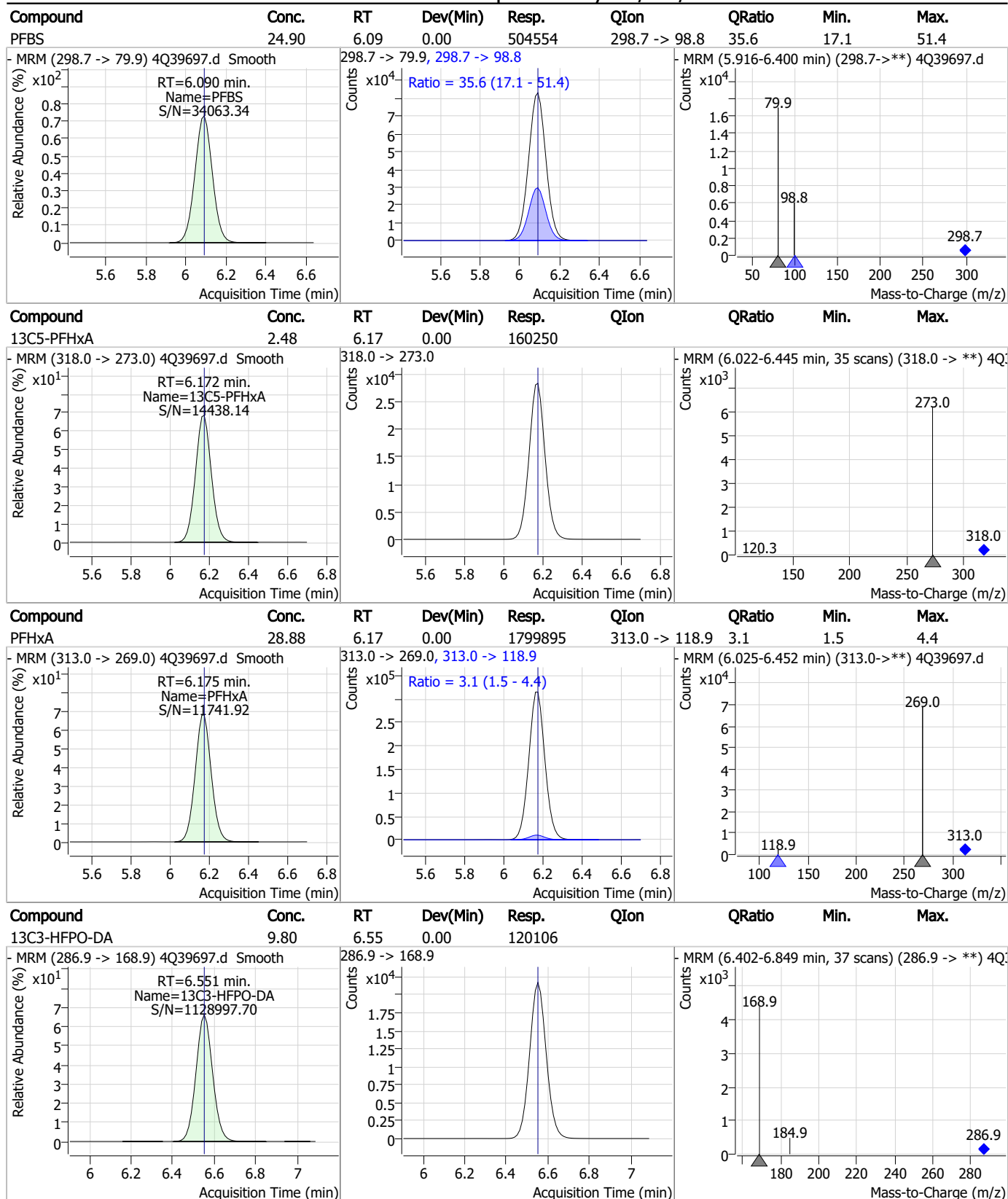
Perfluorinated Compounds by LC/MS/MS



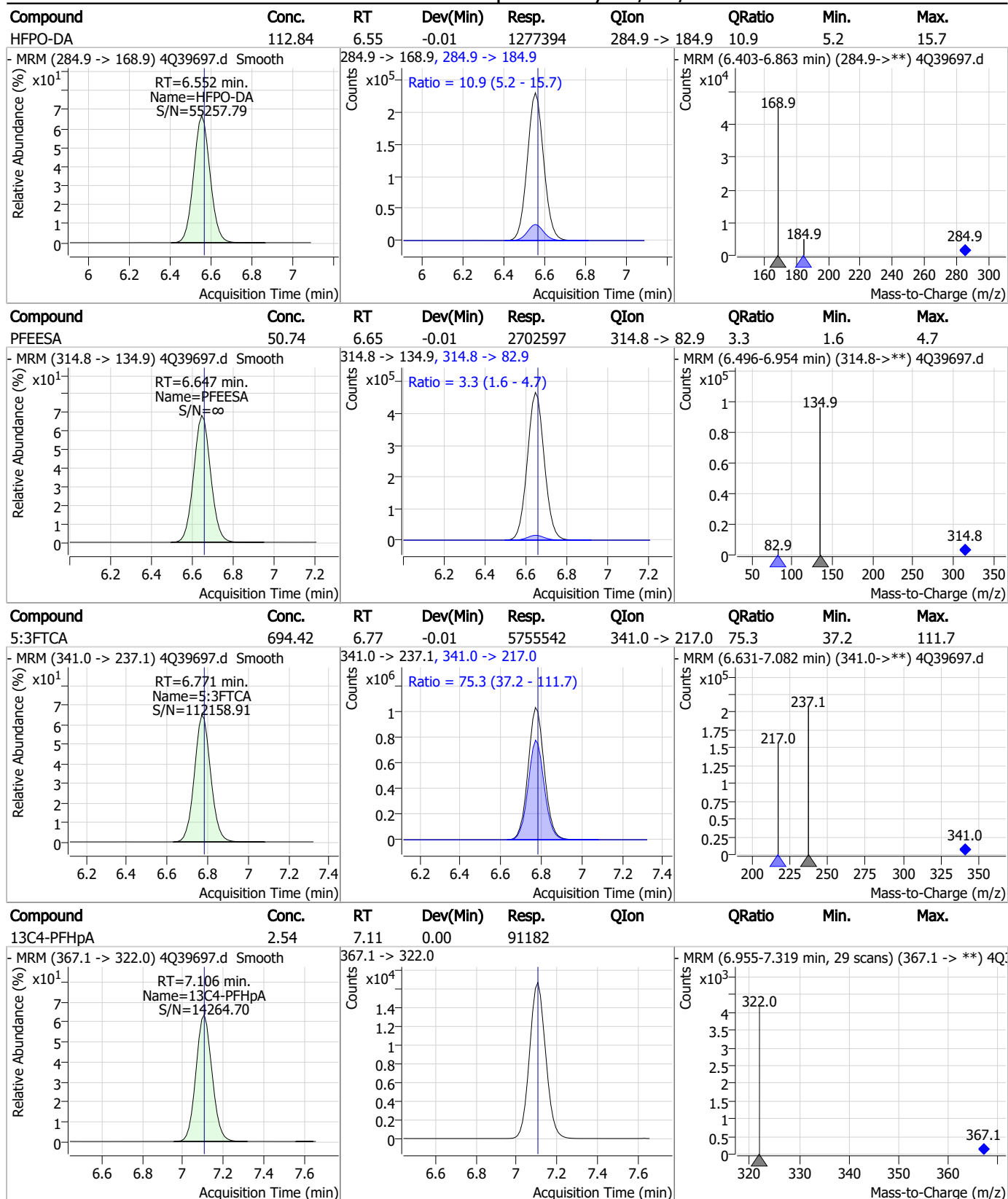
Perfluorinated Compounds by LC/MS/MS



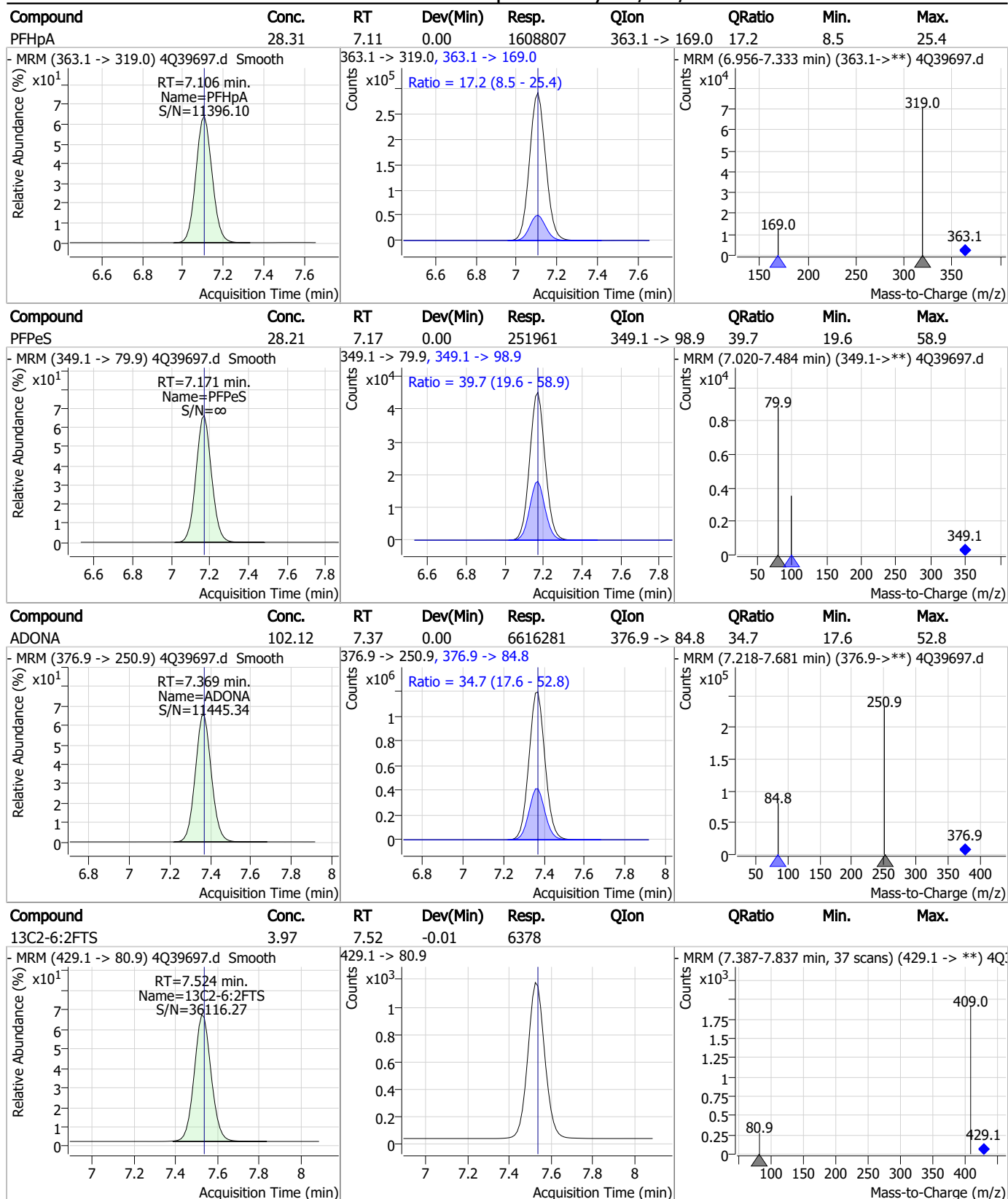
Perfluorinated Compounds by LC/MS/MS



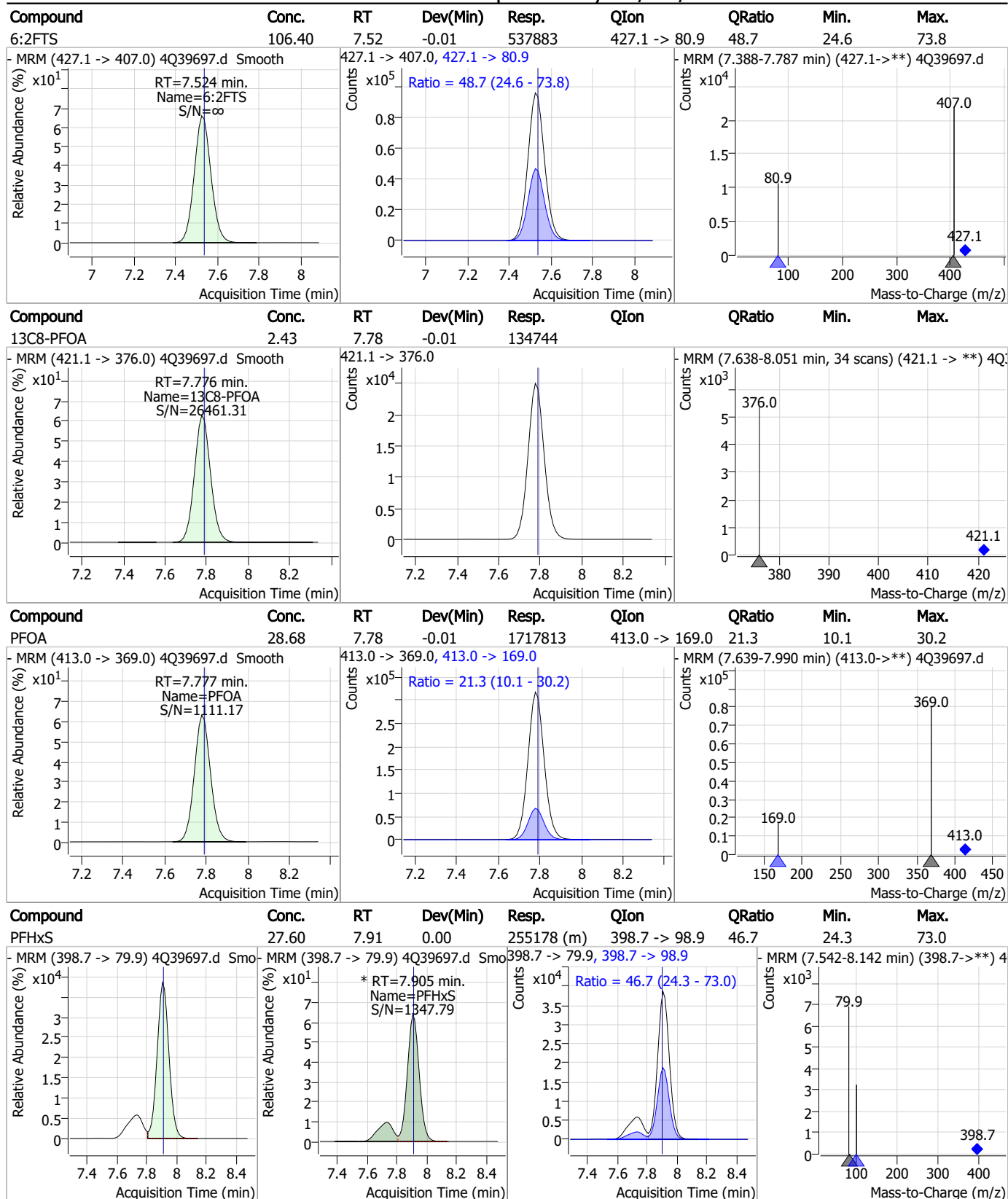
Perfluorinated Compounds by LC/MS/MS



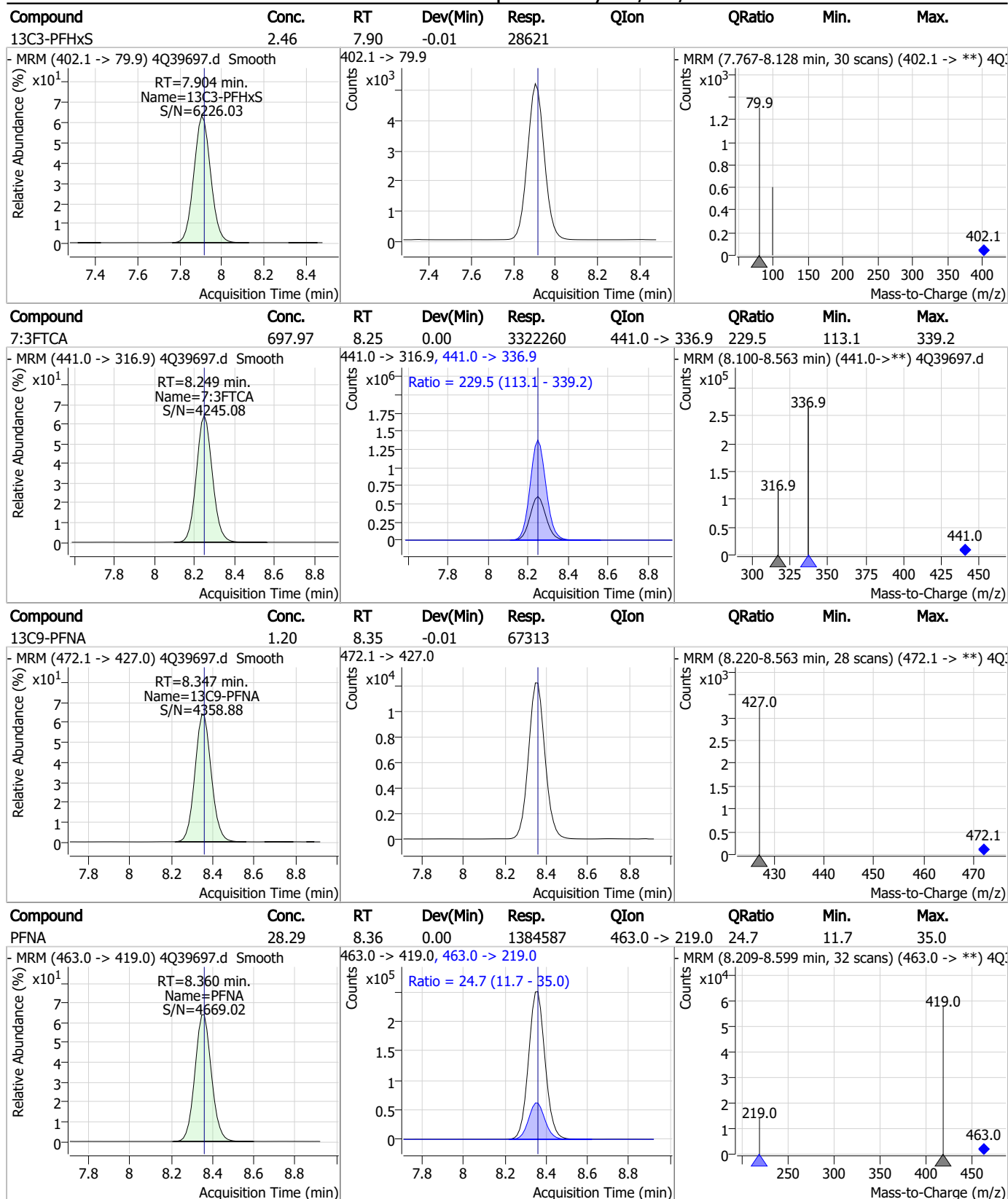
Perfluorinated Compounds by LC/MS/MS



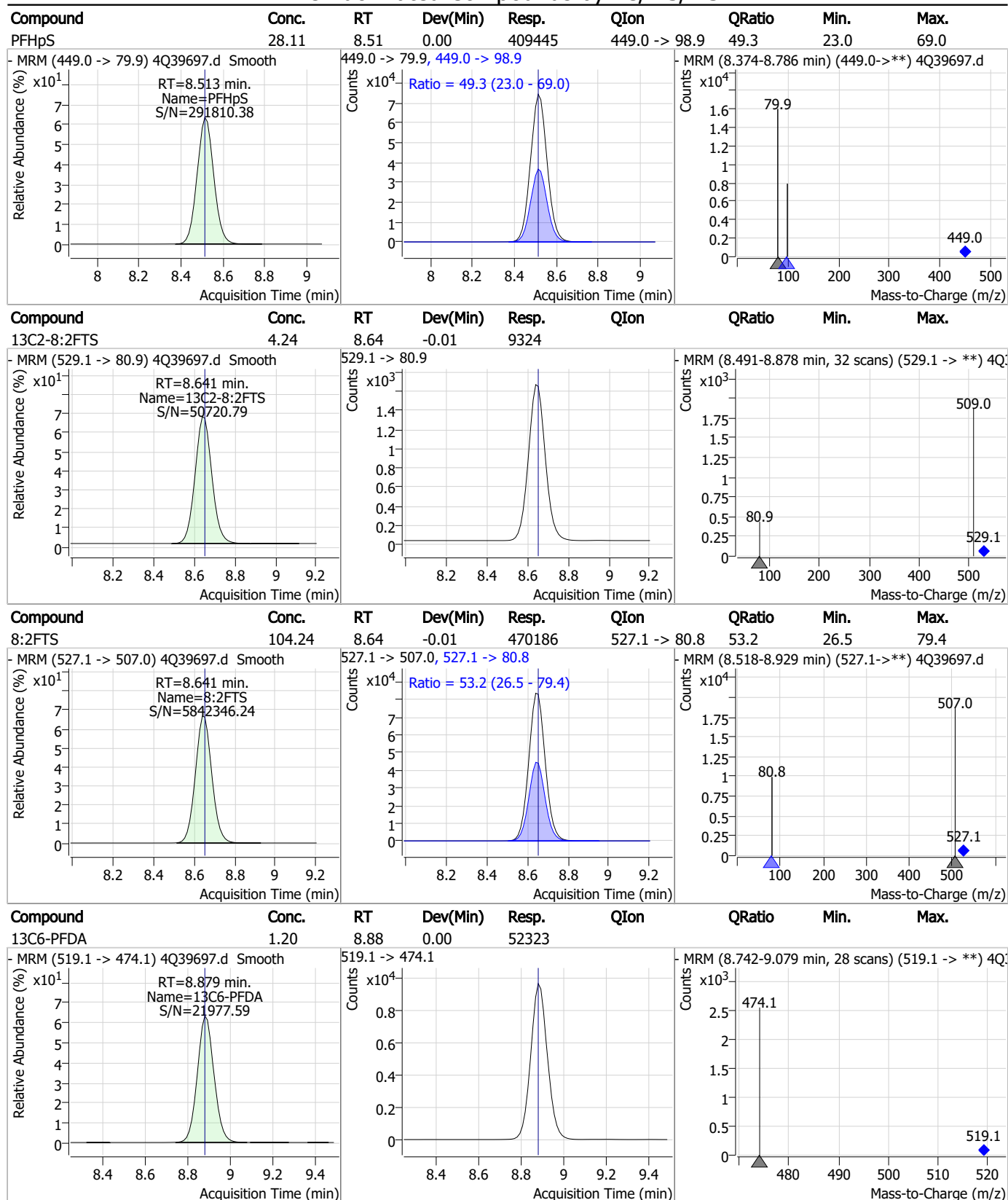
Perfluorinated Compounds by LC/MS/MS



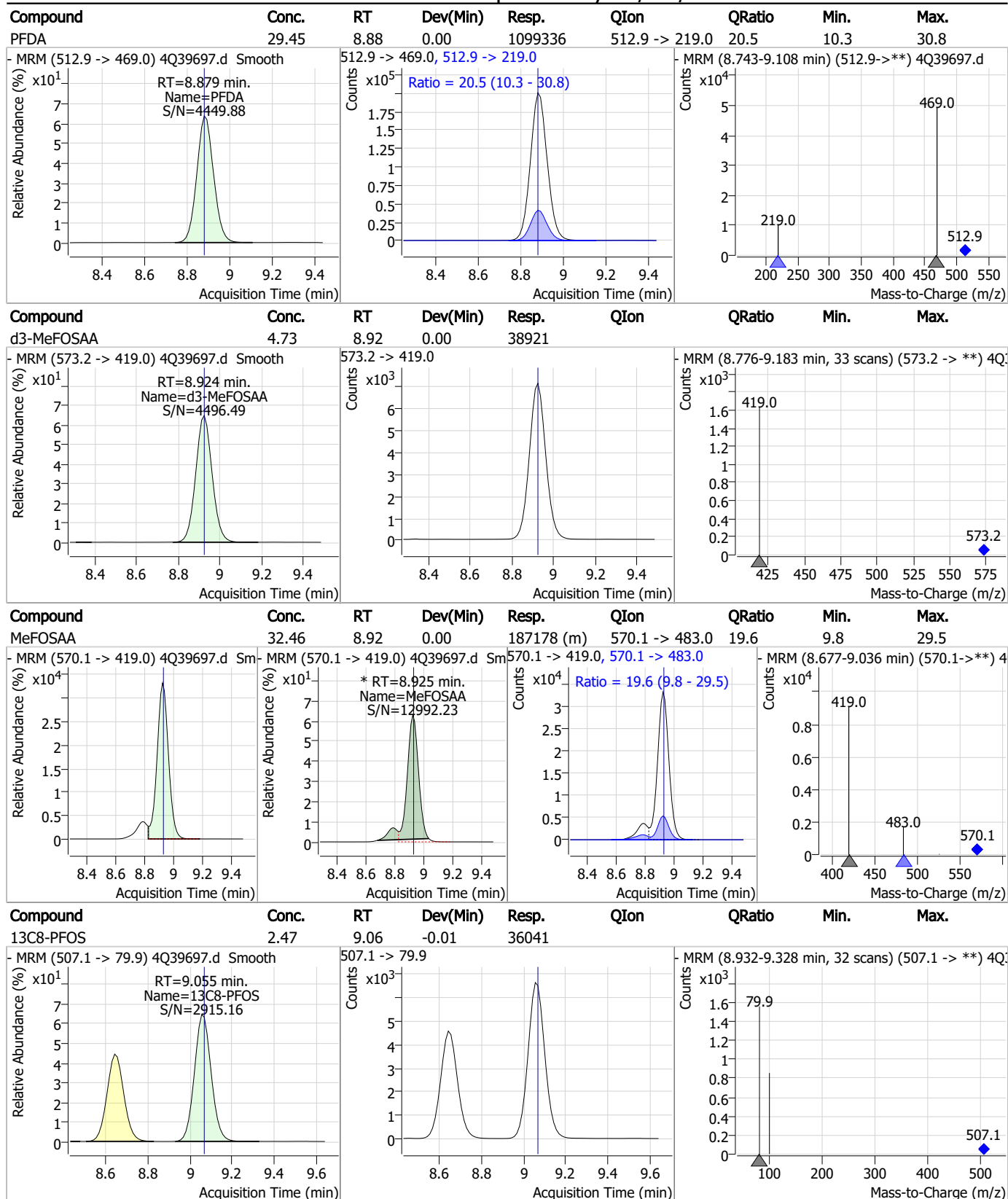
Perfluorinated Compounds by LC/MS/MS



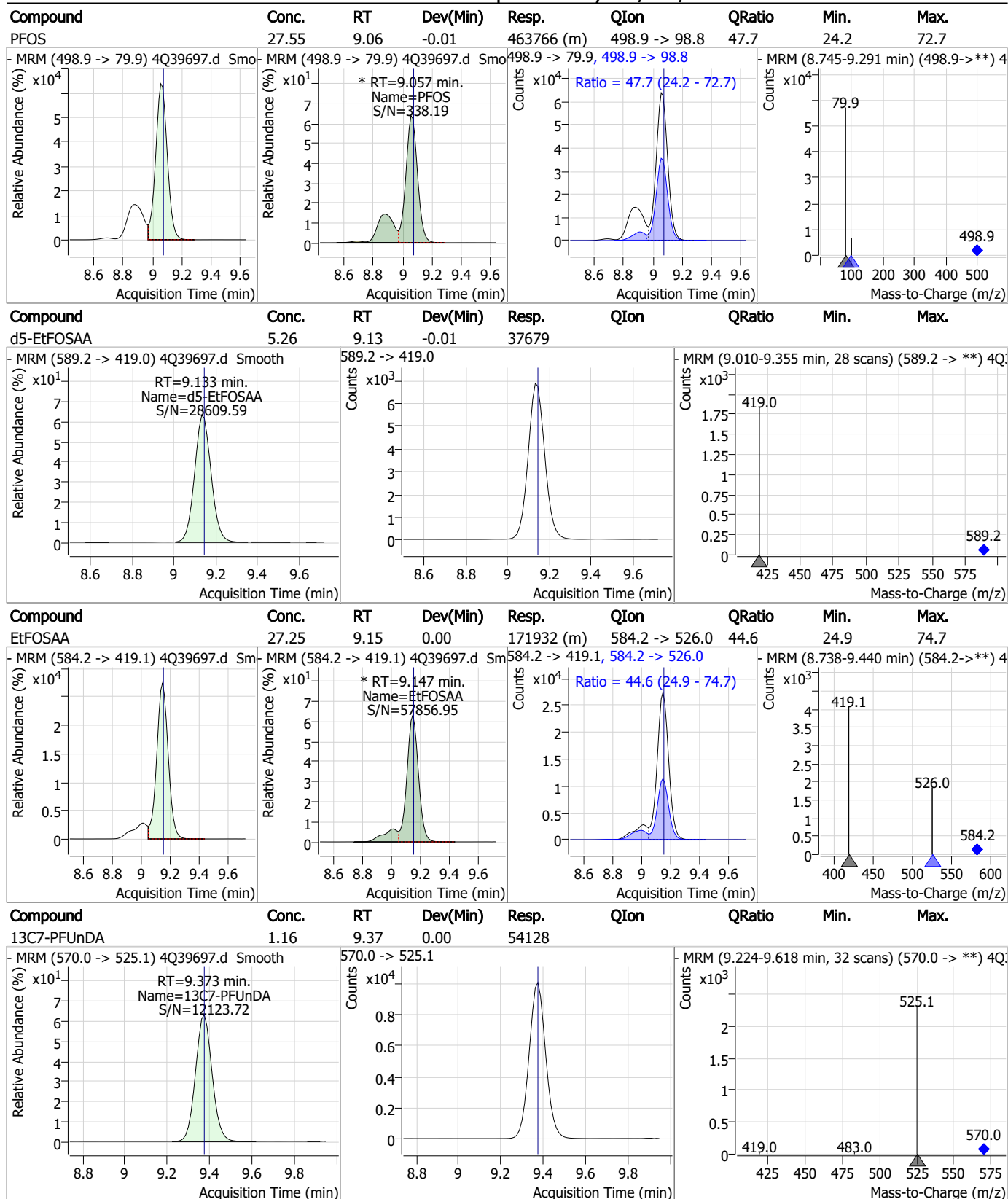
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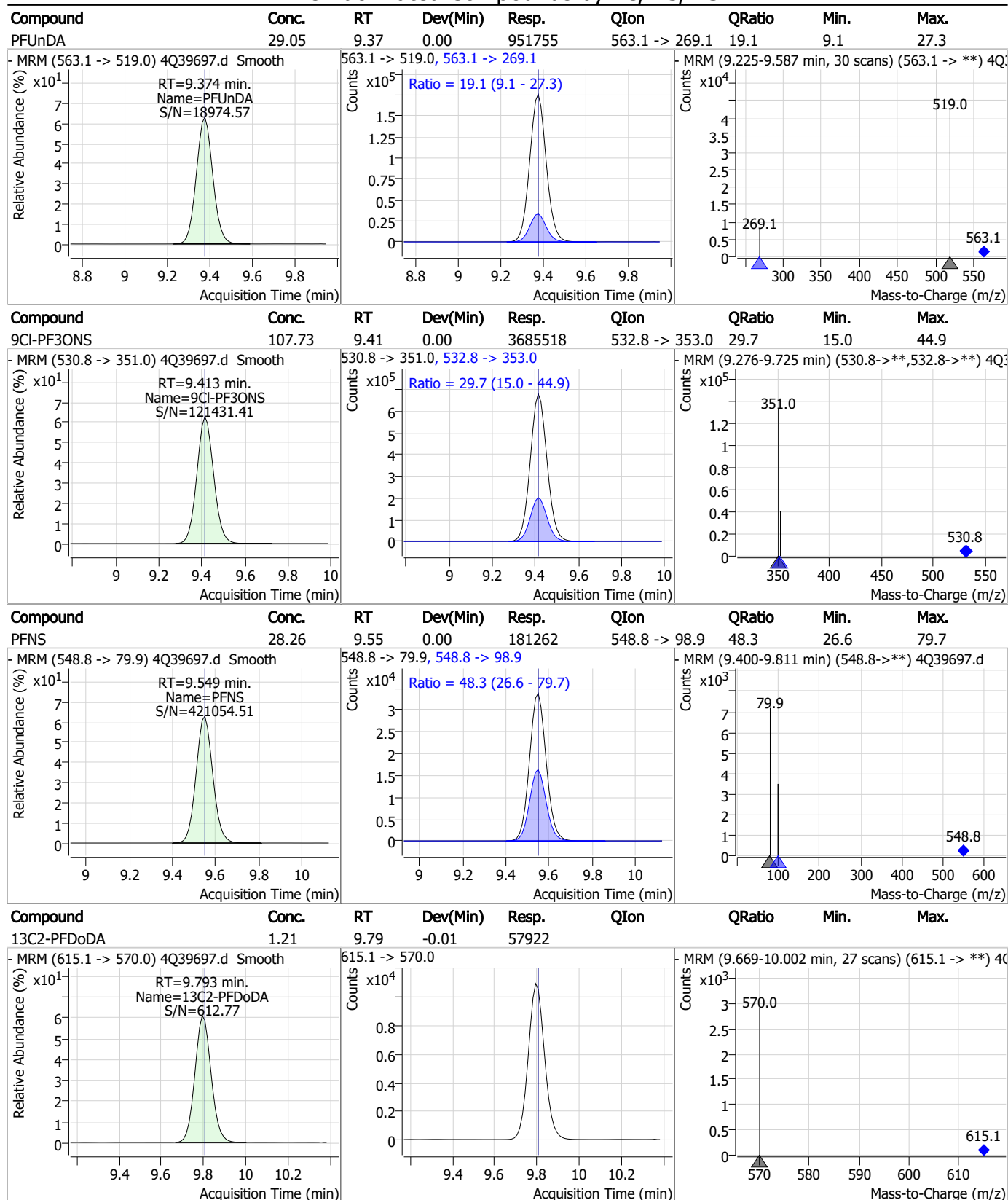
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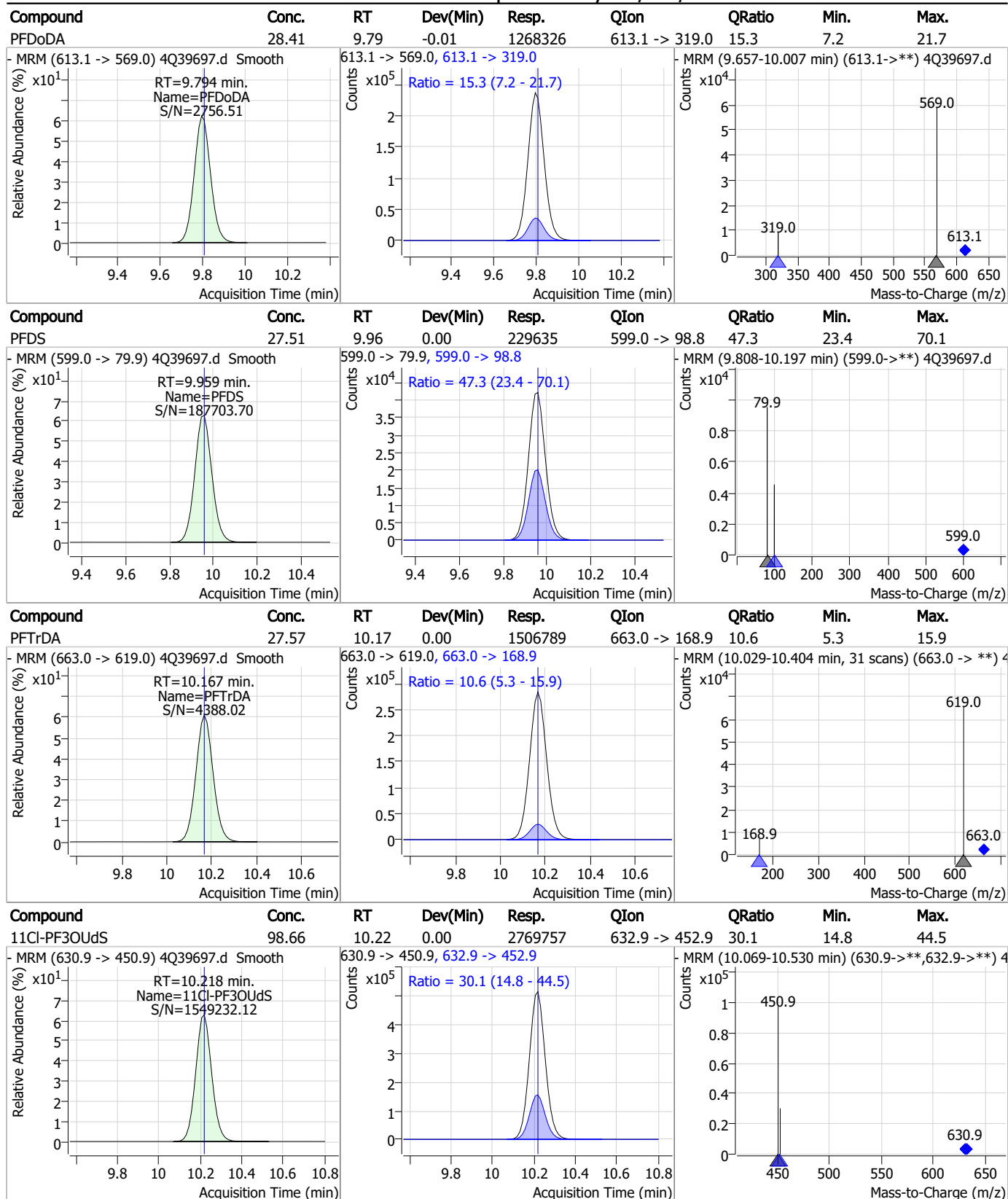
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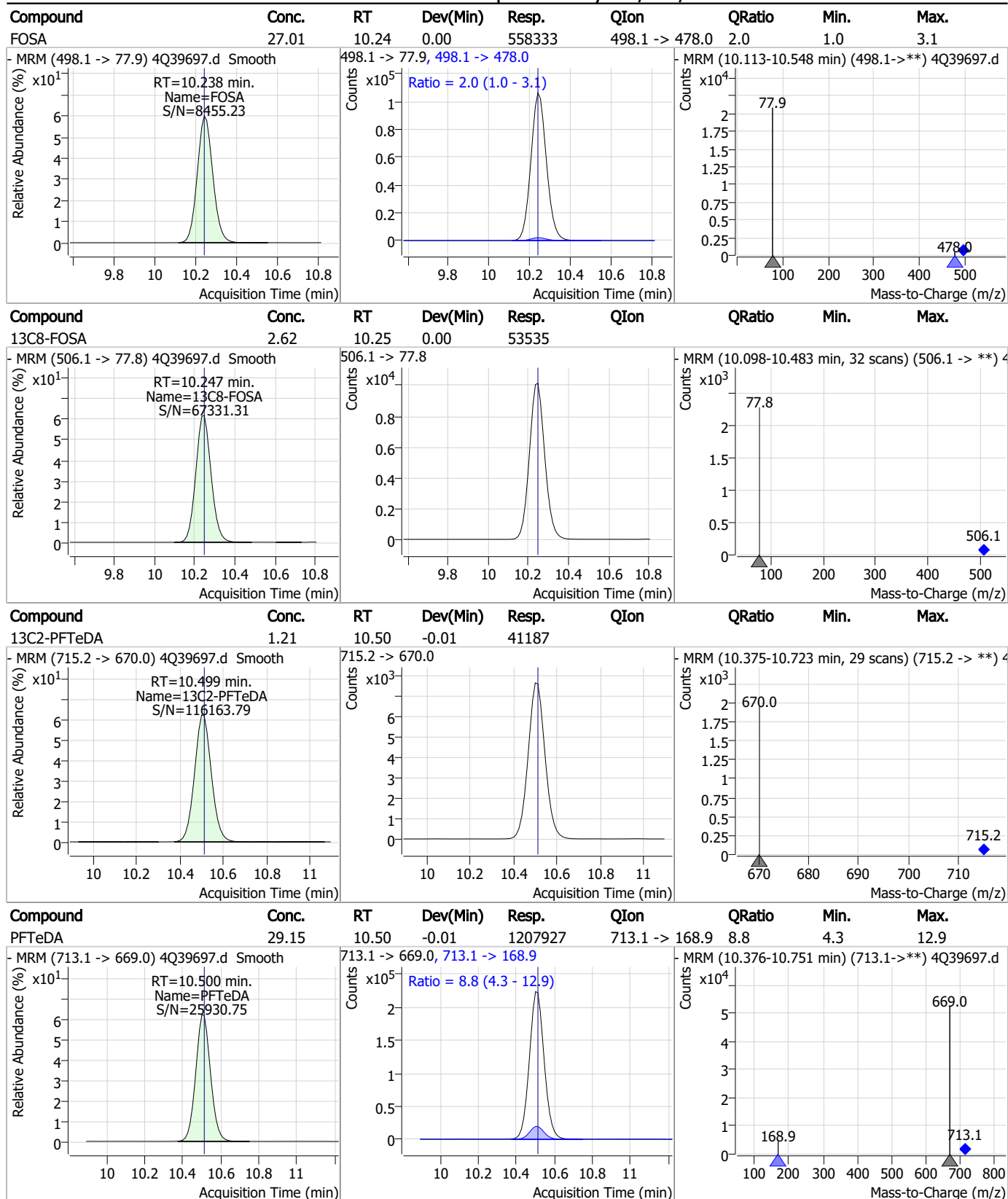
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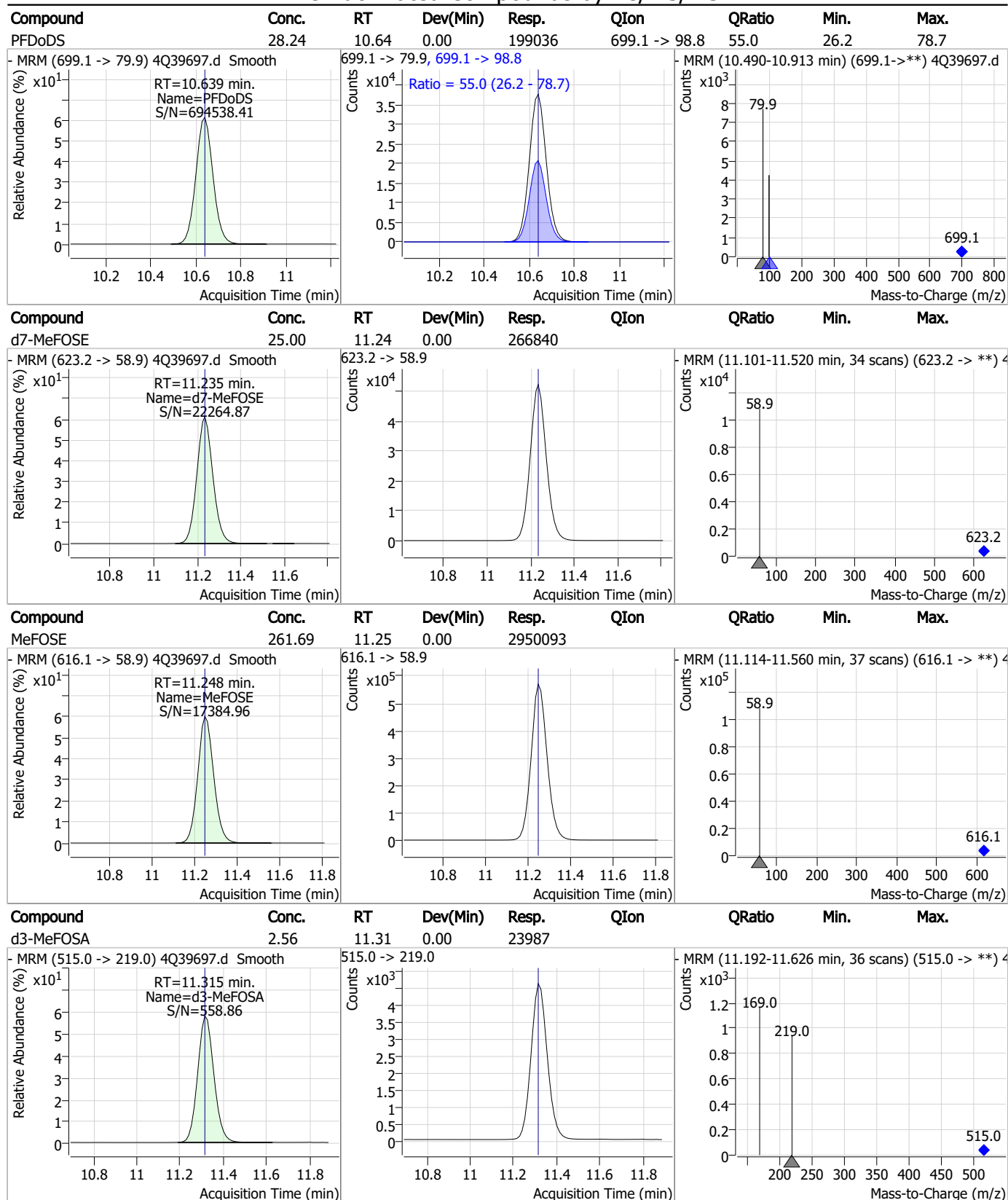
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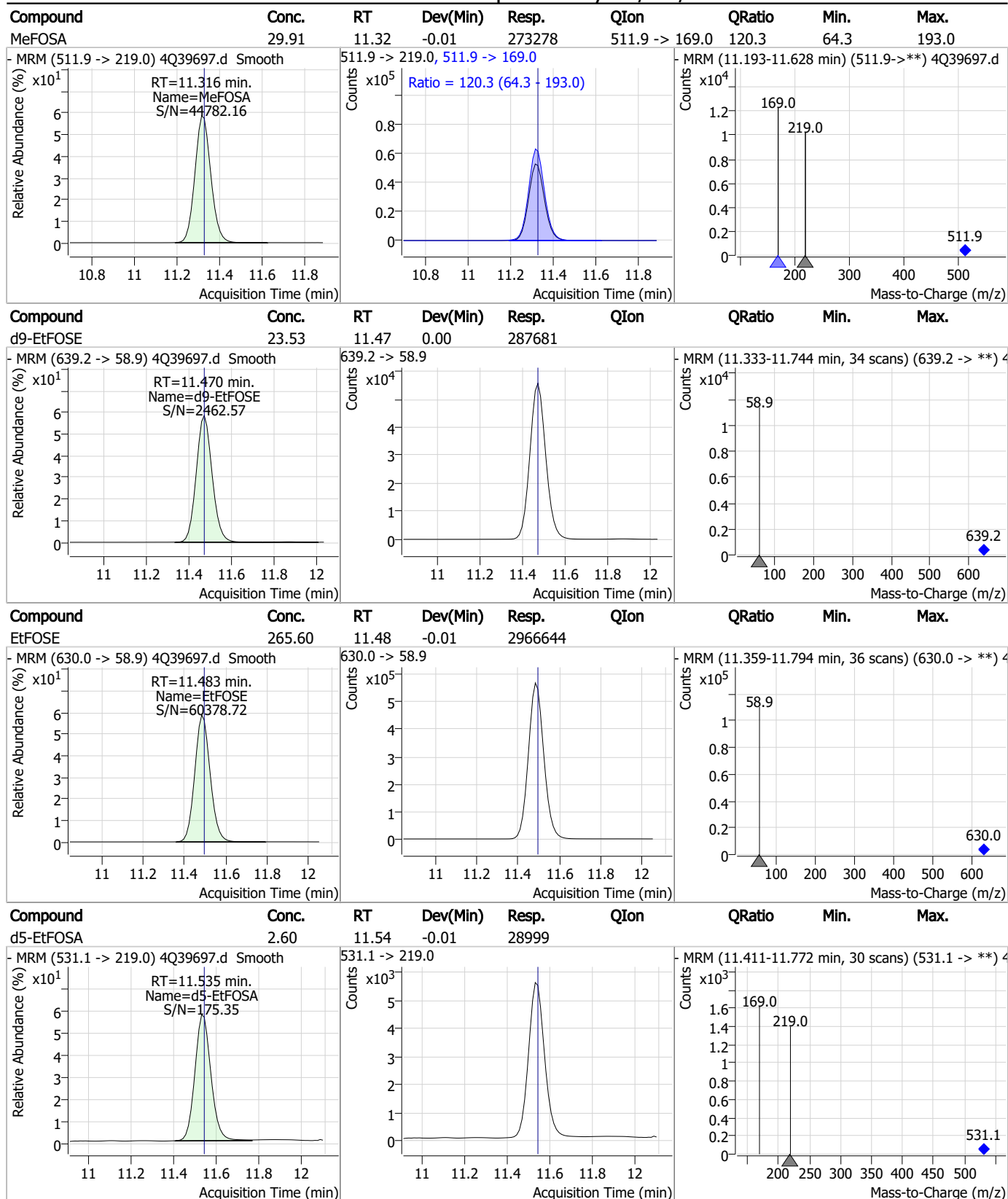
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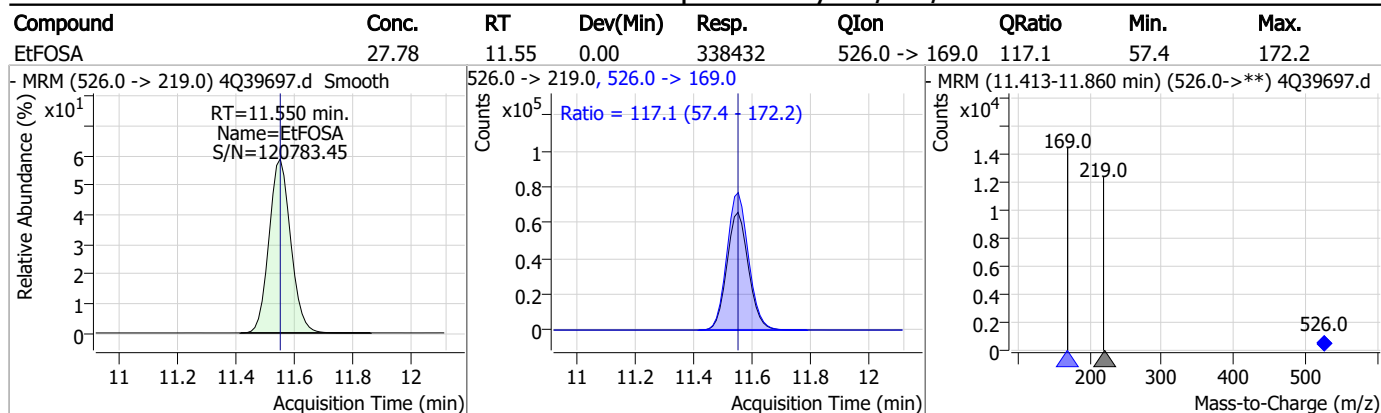
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q571-IC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39697.D

Analyst approved: 01/26/23 13:32 Natasha Gumtie

Injection Time: 01/25/23 14:38

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

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Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39698.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 2:52:07 PM
 Sample Name : ic571-8
 Vial : P1-A9
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.186	216.8 -> 171.9	318998	10.00 µg/L	0.012
M5-PFPeA	4.863	268.3 -> 223.0	224357	5.00 µg/L	0.000
M5-PFHxA	6.160	318.0 -> 273.0	160327	2.50 µg/L	-0.012
M4-PFHpA	7.093	367.1 -> 322.0	83415	2.50 µg/L	-0.012
M8-PFOA	7.776	421.1 -> 376.0	126320	2.50 µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	65881	1.25 µg/L	-0.012
M6-PFDA	8.879	519.1 -> 474.1	52704	1.25 µg/L	0.000
M7-PFUnDA	9.361	570.0 -> 525.1	52123	1.25 µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	55230	1.25 µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	40811	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	47774	2.50 µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	41156	2.50 µg/L	0.000
M3-PFHxS	7.904	402.1 -> 79.9	26535	2.50 µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	36550	2.50 µg/L	-0.012
M2-4:2FTS	5.808	329.1 -> 80.9	2621	5.00 µg/L	-0.014
M2-6:2FTS	7.524	429.1 -> 80.9	5327	5.00 µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	8297	5.00 µg/L	-0.012
M3-MeFOSAA	8.912	573.2 -> 419.0	38141	5.00 µg/L	-0.013
M3-HFPO-DA	6.551	286.9 -> 168.9	109609	10.00 µg/L	0.000
M5-EtFOSAA	9.133	589.2 -> 419.0	33636	5.00 µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	245100	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	259915	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	27711	2.50 µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	26327	2.50 µg/L	0.012
13C4-PFOS	9.056	502.8 -> 79.9	35474	2.50 µg/L	-0.012
13C3-PFBA	3.178	216.0 -> 172.0	179468	5.00 µg/L	0.000
18O2-PFHxS	7.903	403.0 -> 83.9	20107	2.50 µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	141714	2.50 µg/L	-0.012
13C2-PFDA	8.867	515.1 -> 470.1	47360	1.25 µg/L	-0.012
13C5-PFNA	8.348	468.0 -> 423.0	71843	1.25 µg/L	-0.012
13C2-PFHxA	6.161	315.1 -> 270.0	150897	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.808	329.1 -> 80.9	2621	3.62 µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 72.3%		
13C2-6:2FTS	7.524	429.1 -> 80.9	5327	3.28 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 65.7%		
13C2-8:2FTS	8.641	529.1 -> 80.9	8297	3.74 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 74.8%		
13C2-PFDoDA	9.793	615.1 -> 570.0	55230	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C2-PFTeDA	10.512	715.2 -> 670.0	40811	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFBS	6.089	302.1 -> 79.9	41156	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C3-PFHxS	7.904	402.1 -> 79.9	26535	2.26 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 = 90.5%		
13C4-PFBA	3.186	216.8 -> 171.9	318998	9.86 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C4-PFHpA	7.093	367.1 -> 322.0	83415	2.37 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.8%		
13C5-PFHxA	6.160	318.0 -> 273.0	160327	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C5-PFPeA	4.863	268.3 -> 223.0	224357	4.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.4%		
13C6-PFDA	8.879	519.1 -> 474.1	52704	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C7-PFUnDA	9.361	570.0 -> 525.1	52123	1.16 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C8-FOSA	10.247	506.1 -> 77.8	47774	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.2%		
13C8-PFOA	7.776	421.1 -> 376.0	126320	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C8-PFOS	9.055	507.1 -> 79.9	36550	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C9-PFNA	8.347	472.1 -> 427.0	65881	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.2%		
d3-MeFOSAA	8.912	573.2 -> 419.0	38141	4.68 µg/L	-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.6%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	109609	9.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 91.1%		
d3-MeFOSA	11.327	515.0 -> 219.0	26327	2.84 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.5%		
d5-EtFOSAA	9.133	589.2 -> 419.0	33636	4.74 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.8%		
d7-MeFOSE	11.235	623.2 -> 58.9	245100	23.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 92.7%		
d9-EtFOSE	11.470	639.2 -> 58.9	259915	21.45 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 85.8%		
d5-EtFOSA	11.548	531.1 -> 219.0	27711	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.2%		

Target Compounds

					QValue
4:2FTS	5.809	327.1 -> 307.0	1041365	243.11 µg/L	99
		327.1 -> 80.9	479457		
6:2FTS	7.524	427.1 -> 407.0	967552	229.15 µg/L	100
		427.1 -> 80.9	472894		
8:2FTS	8.641	527.1 -> 507.0	861341	214.60 µg/L	98
		527.1 -> 80.8	466024		
EtFOSAA	9.134	584.2 -> 419.1	383730	68.13 µg/L	94
		584.2 -> 526.0	176255		
FOSA	10.238	498.1 -> 77.9	1189092	64.45 µg/L	100
		498.1 -> 478.0	24219		
MeFOSAA	8.912	570.1 -> 419.0	450206	79.67 µg/L	97
		570.1 -> 483.0	82869		
PFBA	3.182	212.8 -> 168.9	2361469	266.02 µg/L	100
PFBS	6.090	298.7 -> 79.9	1100163	59.15 µg/L	97
		298.7 -> 98.8	398564		
PFDA	8.879	512.9 -> 469.0	2425540	64.51 µg/L	99
		512.9 -> 219.0	493684		
PFDODA	9.794	613.1 -> 569.0	2710594	63.68 µg/L	97
		613.1 -> 319.0	422038		
PFDS	9.945	599.0 -> 79.9	485305	57.33 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.094	599.0 -> 98.8	225281	67.52	µg/L	99
		363.1 -> 319.0	3510441			
PFHpS	8.513	363.1 -> 169.0	610490	59.75	µg/L	94
		449.0 -> 79.9	882807			
PFHxA	6.162	449.0 -> 98.9	441805	64.16	µg/L	99
		313.0 -> 269.0	3999743			
PFHxS	7.905	313.0 -> 118.9	132517	68.30	µg/L	99
		398.7 -> 79.9	585472			
PFNA	8.348	398.7 -> 98.9	279562	62.42	µg/L	98
		463.0 -> 419.0	2990079			
PFNS	9.536	463.0 -> 219.0	731205	62.35	µg/L	96
		548.8 -> 79.9	405611			
PFOA	7.777	548.8 -> 98.9	203741	65.56	µg/L	98
		413.0 -> 369.0	3681564			
PFOS	9.057	413.0 -> 169.0	770522	59.92	µg/L	99
		498.9 -> 79.9	1023009			
PFPeA	4.866	498.9 -> 98.8	487770	129.59	µg/L	100
		263.0 -> 219.0	6377006			
PFPeS	7.159	349.1 -> 79.9	569663	68.81	µg/L	98
		349.1 -> 98.9	230026			
PFTeDA	10.513	713.1 -> 669.0	2644932	64.41	µg/L	99
		713.1 -> 168.9	234614			
PFTrDA	10.167	663.0 -> 619.0	3220822	61.80	µg/L	100
		663.0 -> 168.9	336542			
PFUnDA	9.361	563.1 -> 519.0	1972957	62.53	µg/L	98
		563.1 -> 269.1	378812			
11CI-PF3OUdS	10.218	630.9 -> 450.9	5507049	214.95	µg/L	99
		632.9 -> 452.9	1660882			
9CI-PF3ONS	9.401	530.8 -> 351.0	7616181	243.94	µg/L	99
		532.8 -> 353.0	2220536			
ADONA	7.357	376.9 -> 250.9	14136286	239.08	µg/L	97
		376.9 -> 84.8	4736132			
HFPO-DA	6.552	284.9 -> 168.9	2594160	251.11	µg/L	98
		284.9 -> 184.9	293242			
3:3FTCA	4.204	241.0 -> 177.0	881204	382.01	µg/L	99
		241.0 -> 117.0	79715			
5:3FTCA	6.771	341.0 -> 237.1	12669471	1527.87	µg/L	99
		341.0 -> 217.0	9339210			
7:3FTCA	8.236	441.0 -> 316.9	7028212	1475.84	µg/L	92
		441.0 -> 336.9	16842538			
EtFOSA	11.550	526.0 -> 219.0	762262	65.49	µg/L	99
		526.0 -> 169.0	880307			
EtFOSE	11.496	630.0 -> 58.9	5851245	579.81	µg/L	100
		511.9 -> 219.0	624110			
MeFOSA	11.329	511.9 -> 169.0	751163	62.24	µg/L	93
		616.1 -> 58.9	6025380			
MeFOSE	11.261	699.1 -> 79.9	434882	581.89	µg/L	100
		699.1 -> 98.8	234274			
PFDoDS	10.639	295.0 -> 201.0	425012	103.75	µg/L	99
		295.0 -> 84.9	121264			
NFDHA	6.041	279.0 -> 85.1	4114360	134.15	µg/L	100
		229.0 -> 84.9	4436600			
PFMBA	3.869	314.8 -> 134.9	6074560	140.19	µg/L	100
		314.8 -> 82.9	203069			
PFEEA	6.647			114.00	µg/L	100

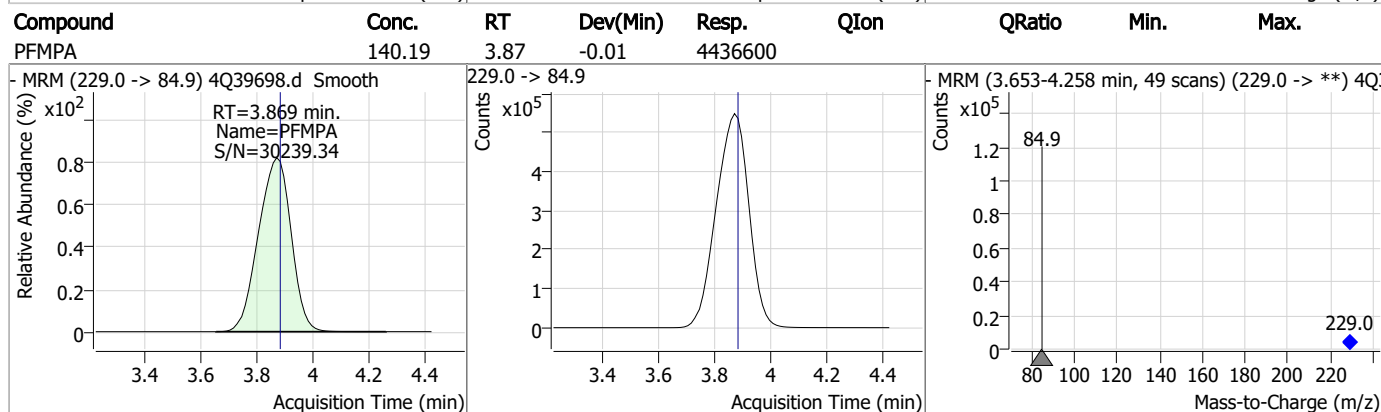
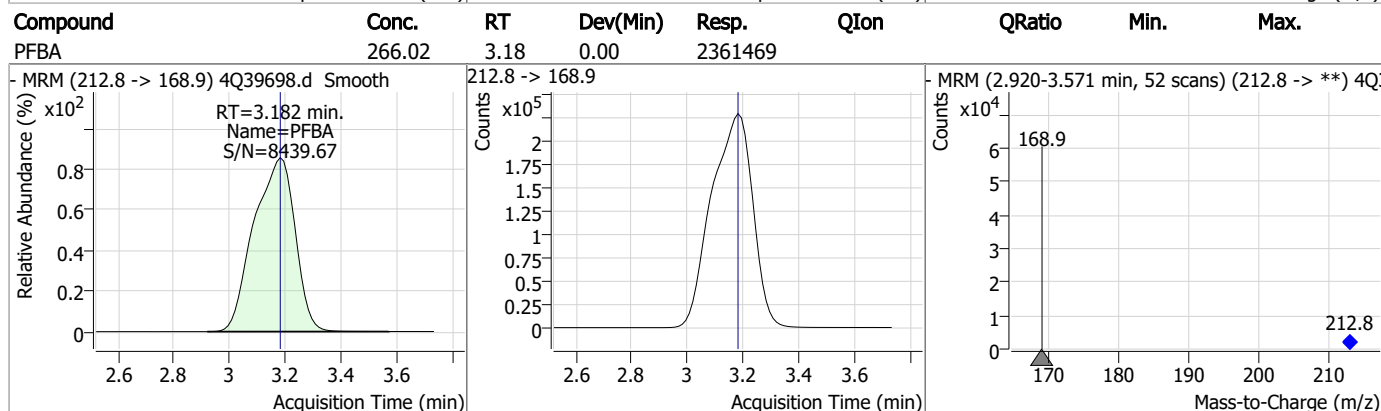
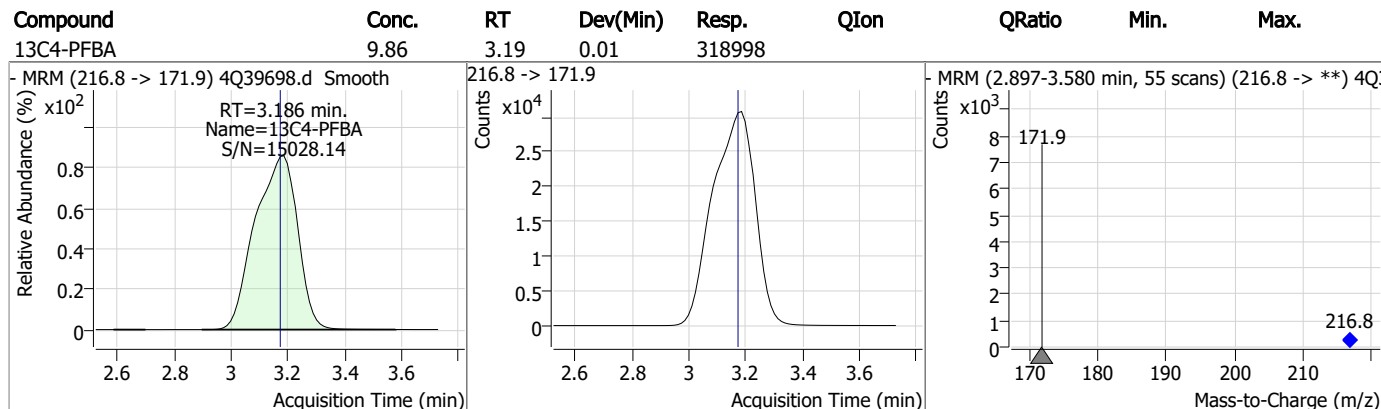
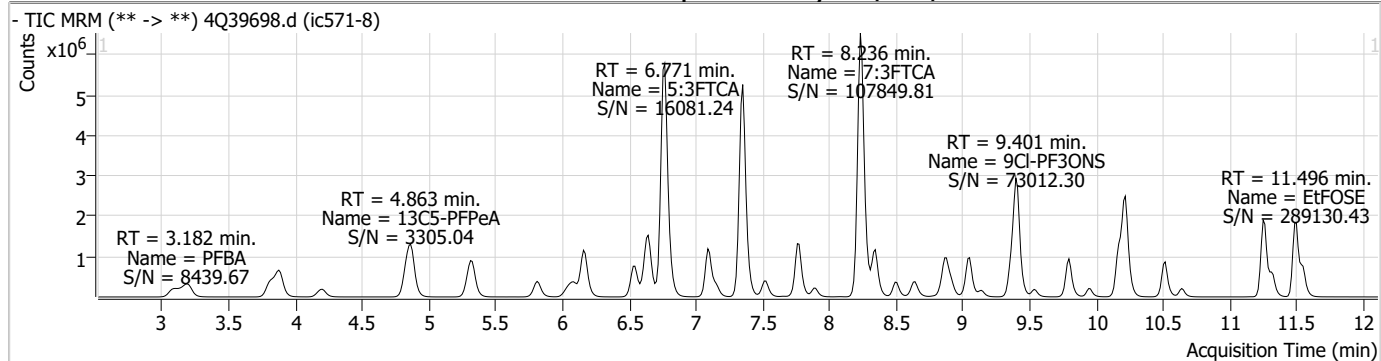
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

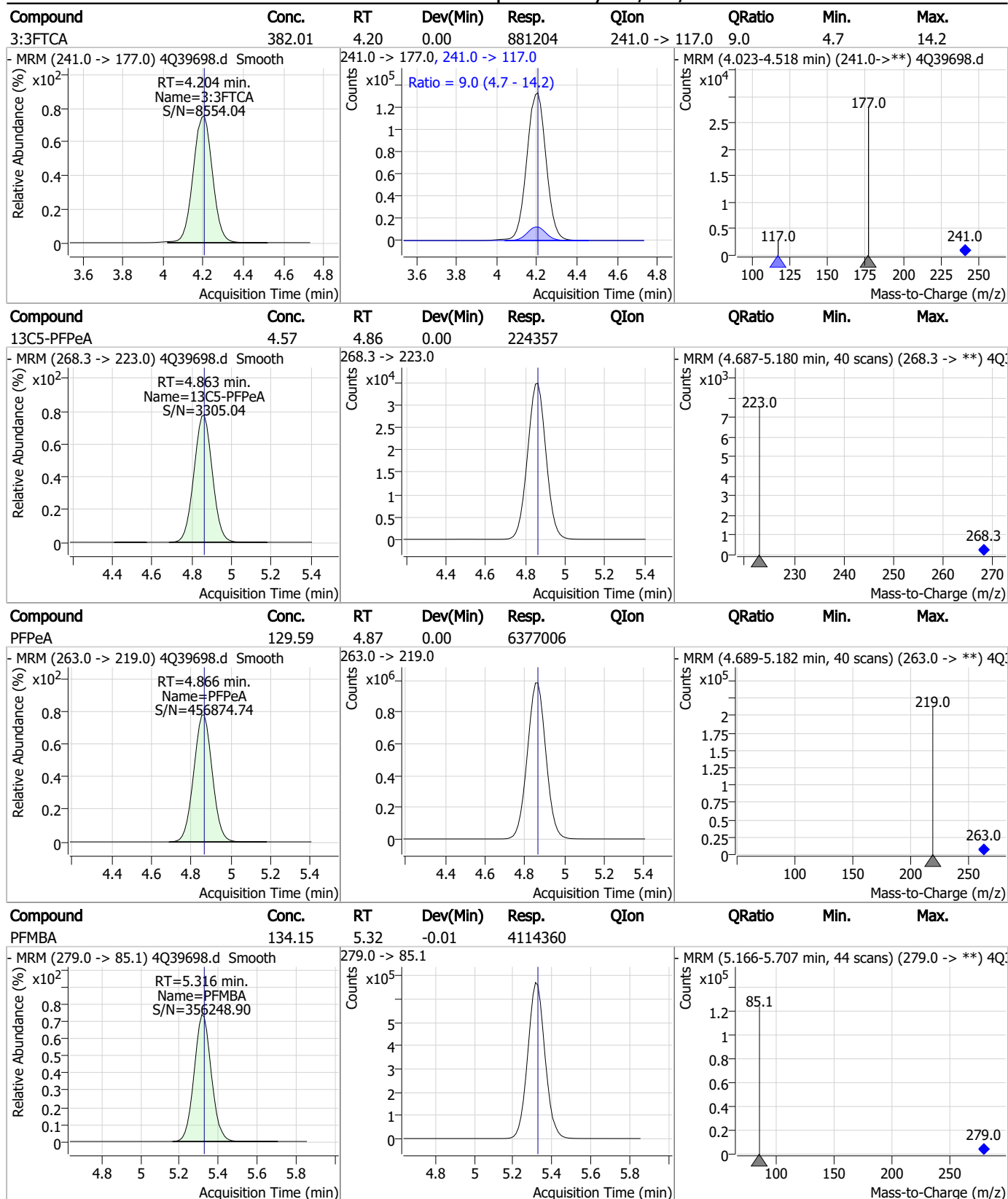
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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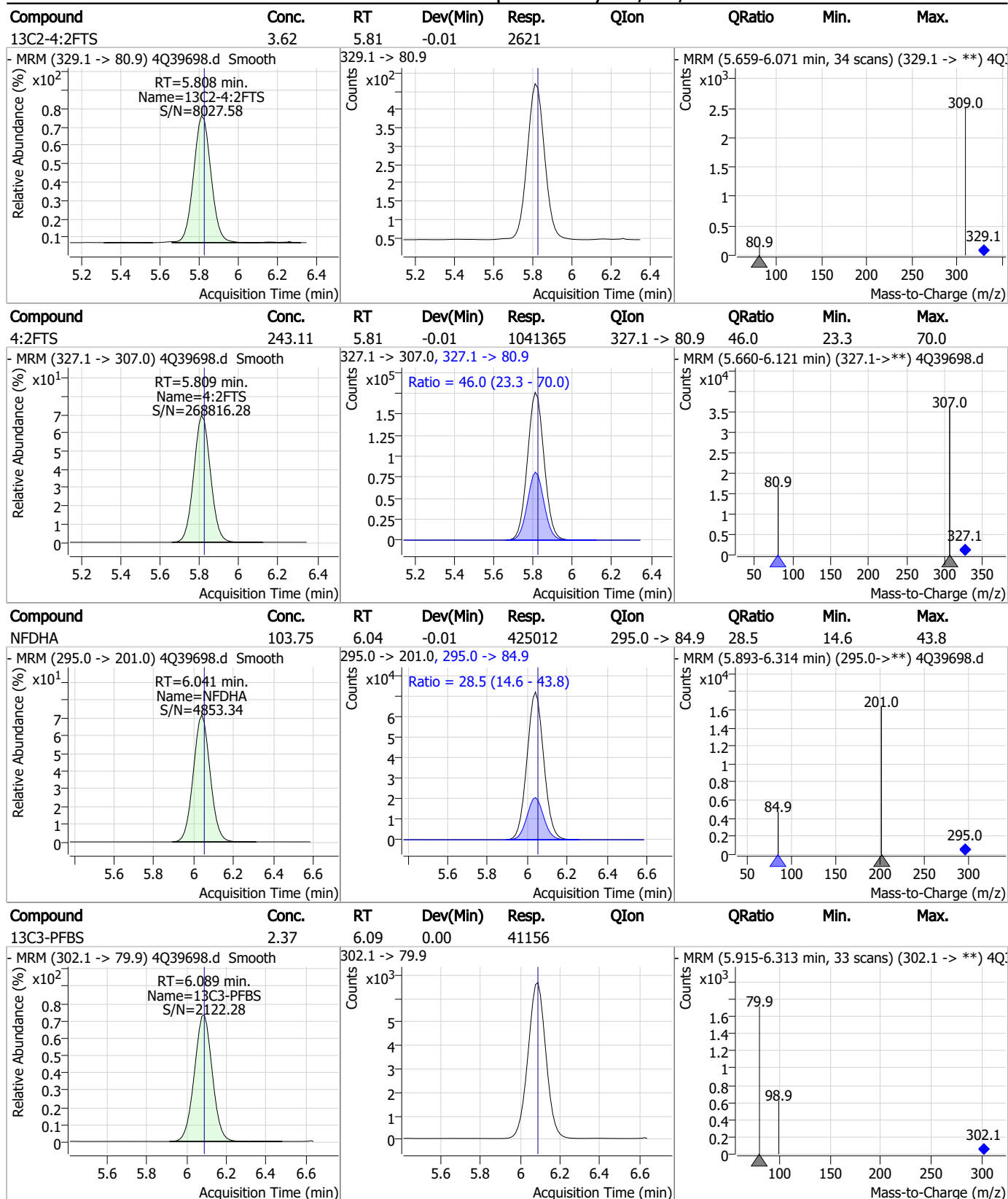
Perfluorinated Compounds by LC/MS/MS



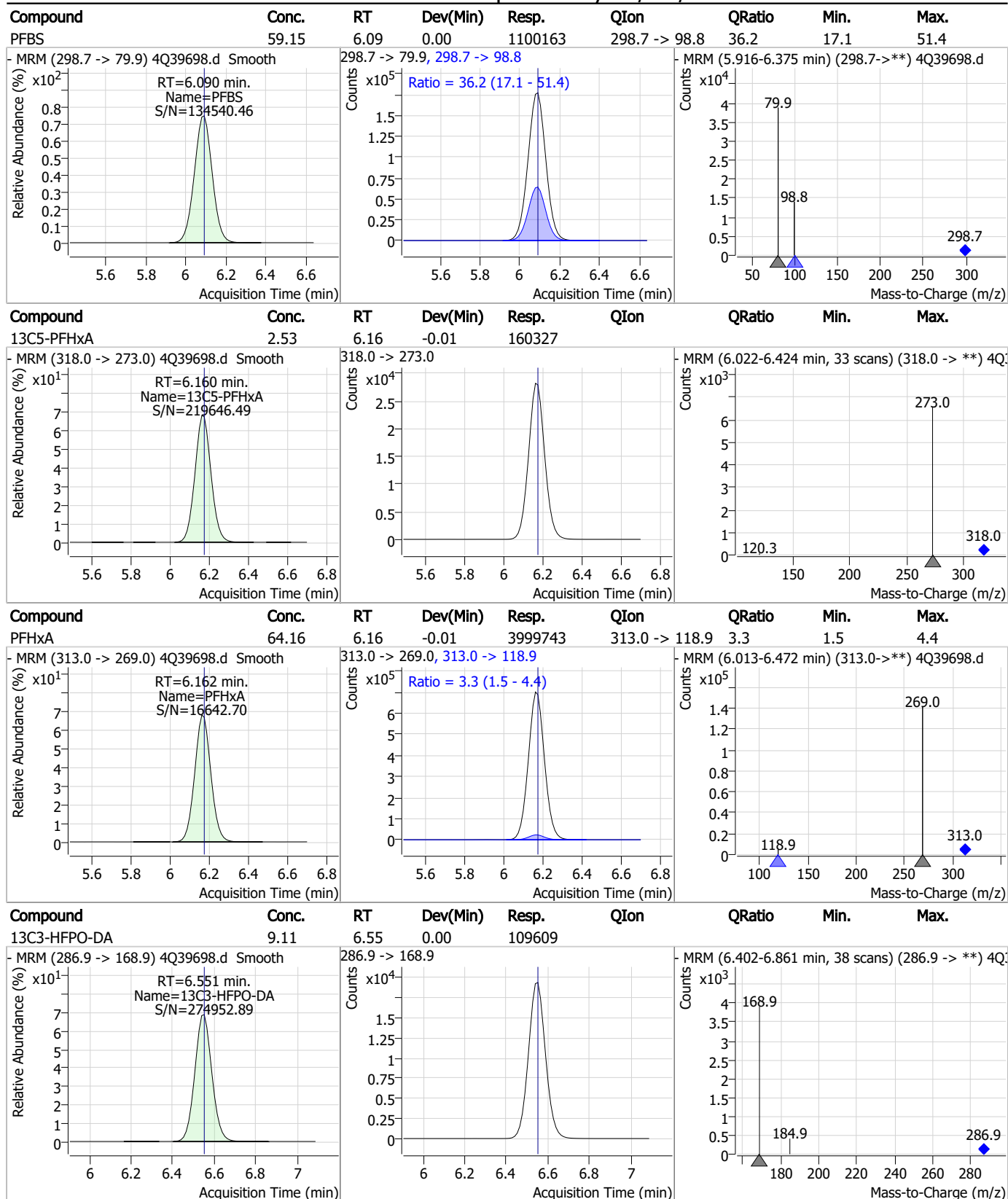
Perfluorinated Compounds by LC/MS/MS



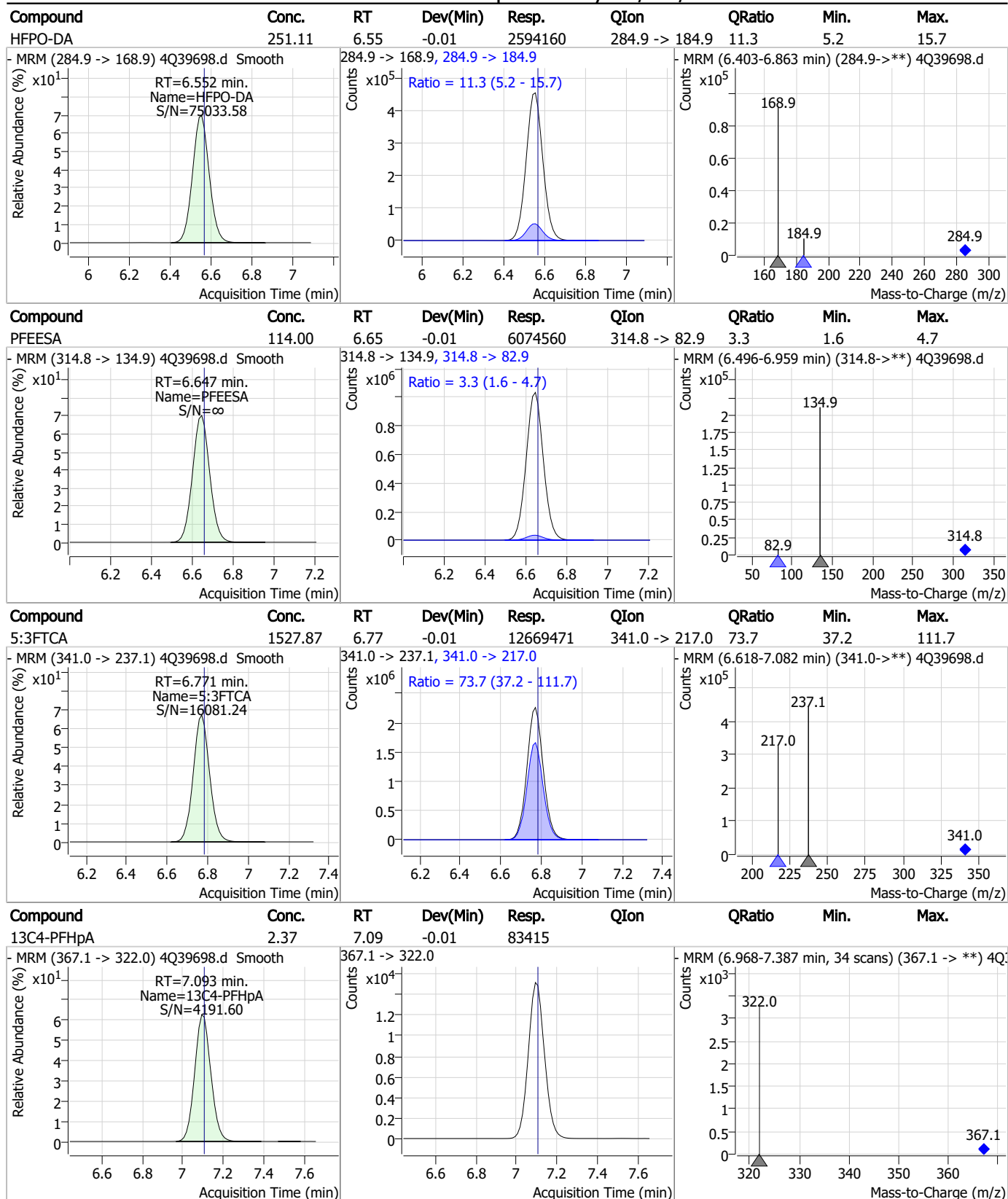
Perfluorinated Compounds by LC/MS/MS



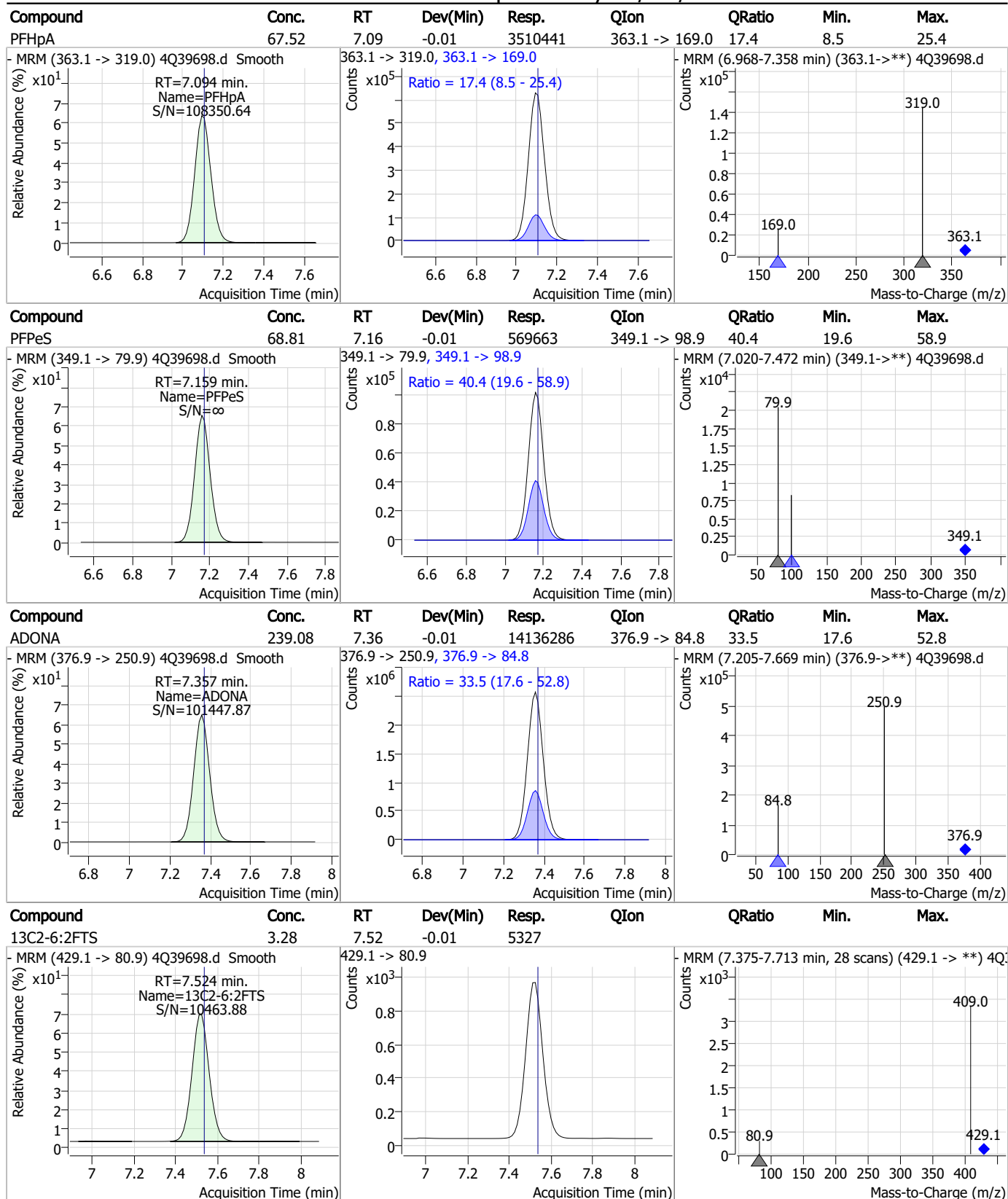
Perfluorinated Compounds by LC/MS/MS



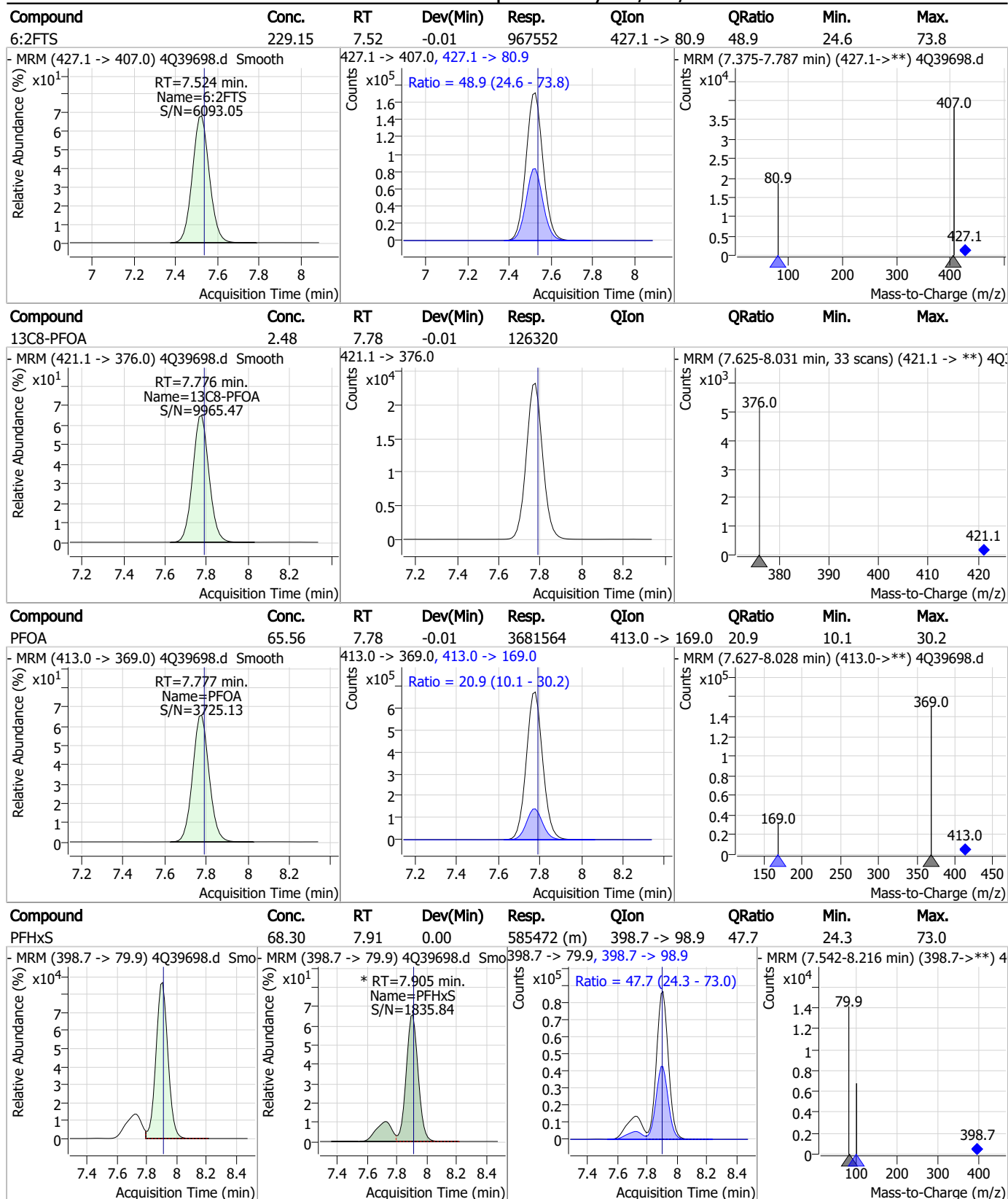
Perfluorinated Compounds by LC/MS/MS



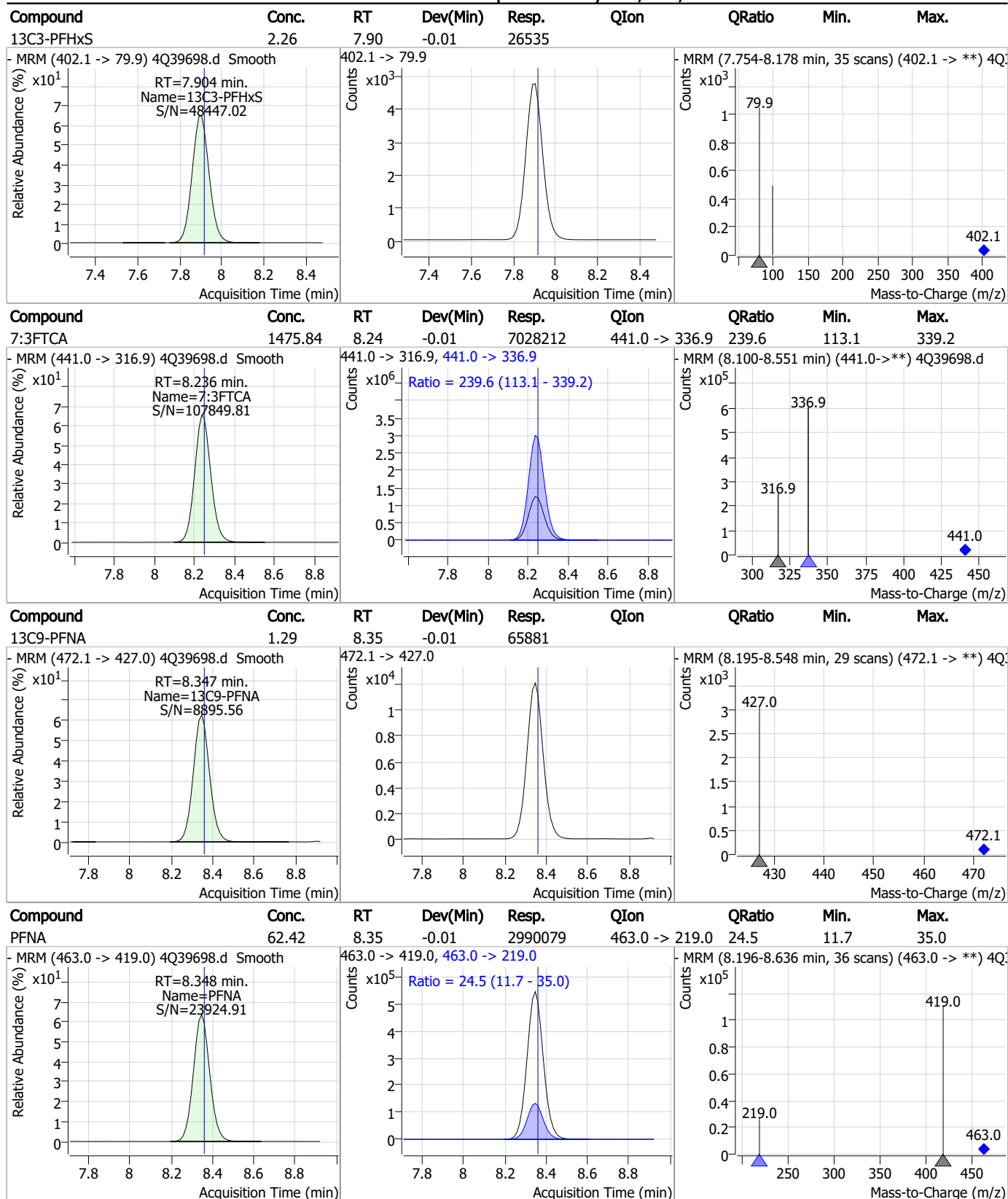
Perfluorinated Compounds by LC/MS/MS



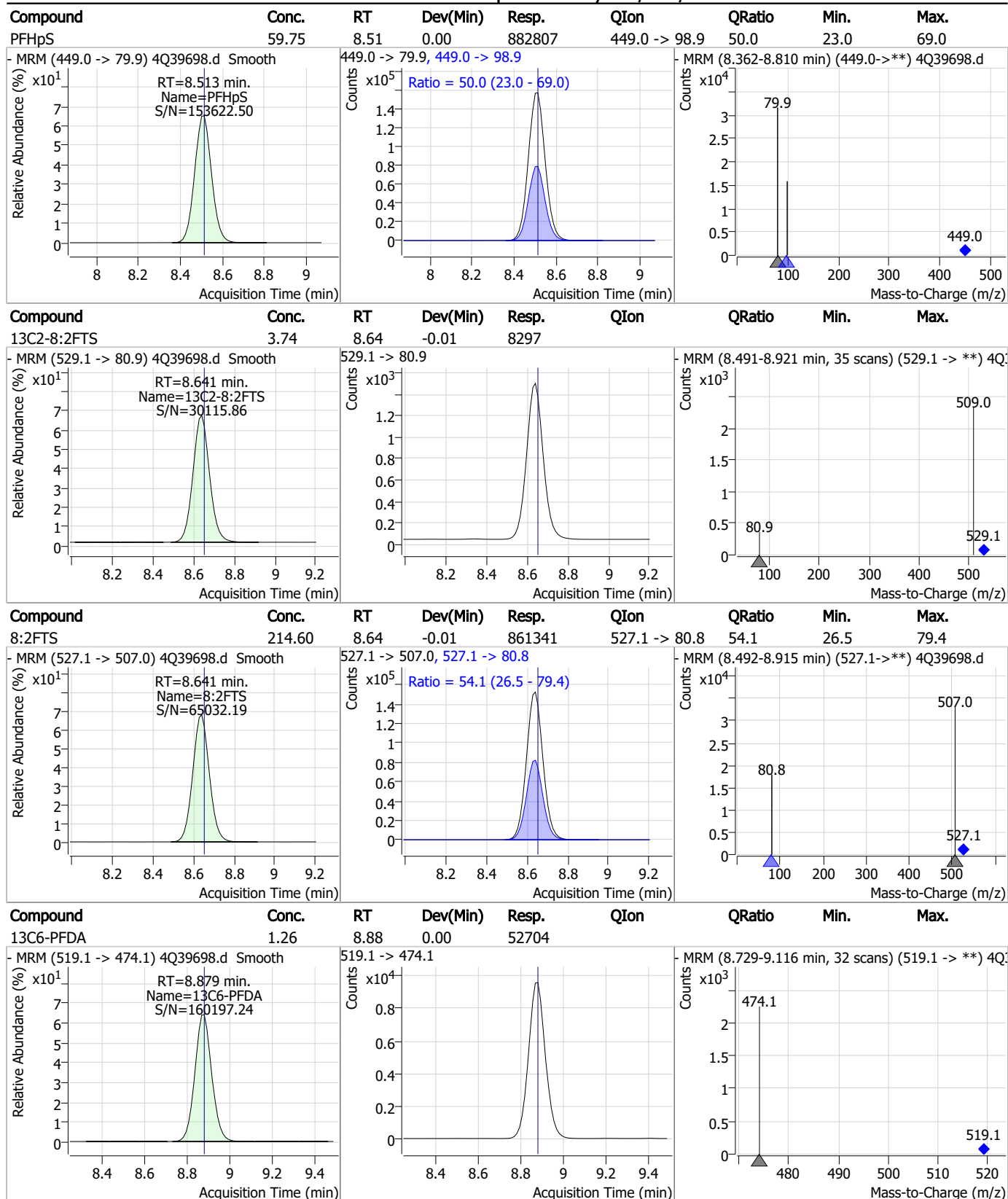
Perfluorinated Compounds by LC/MS/MS



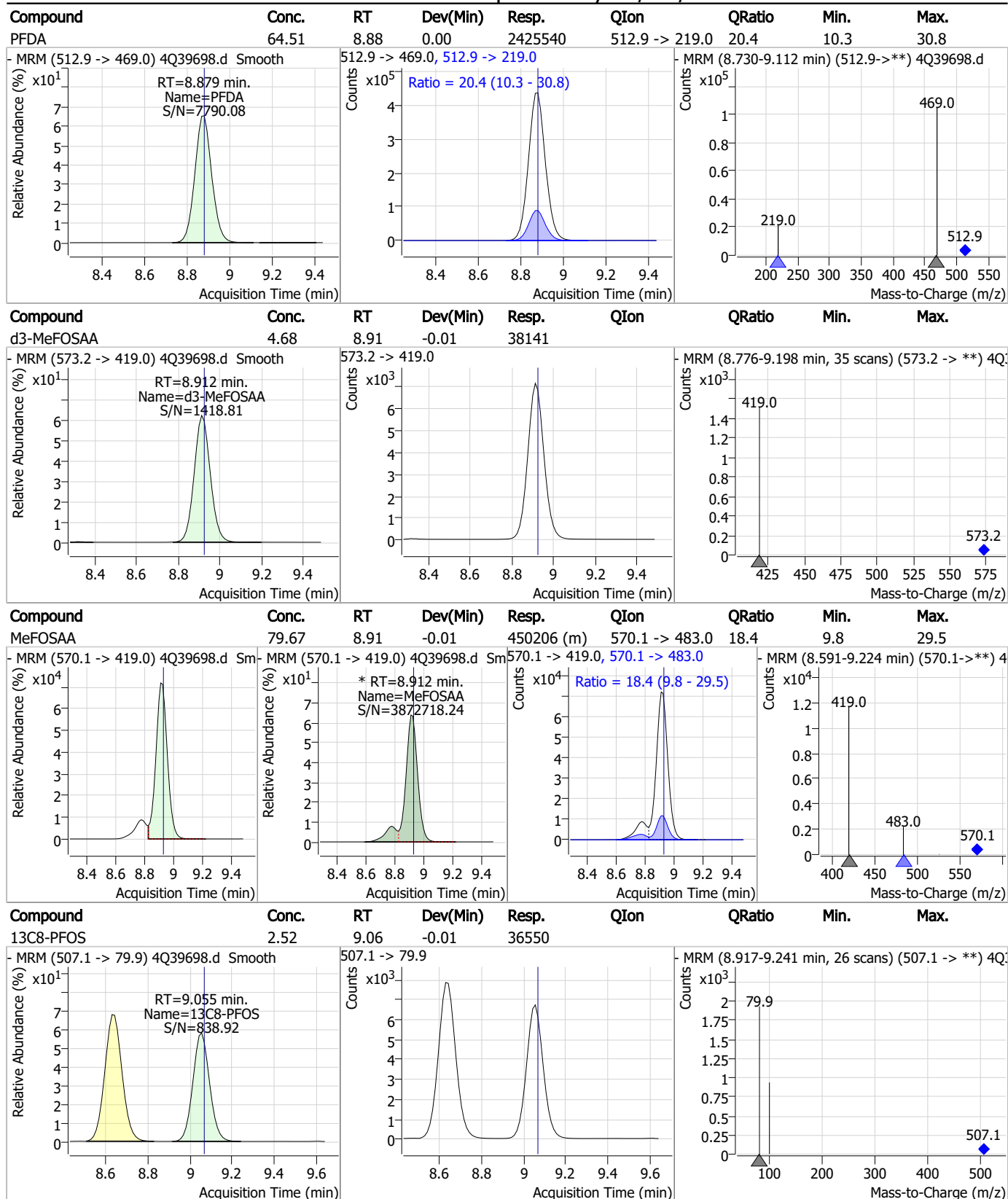
Perfluorinated Compounds by LC/MS/MS



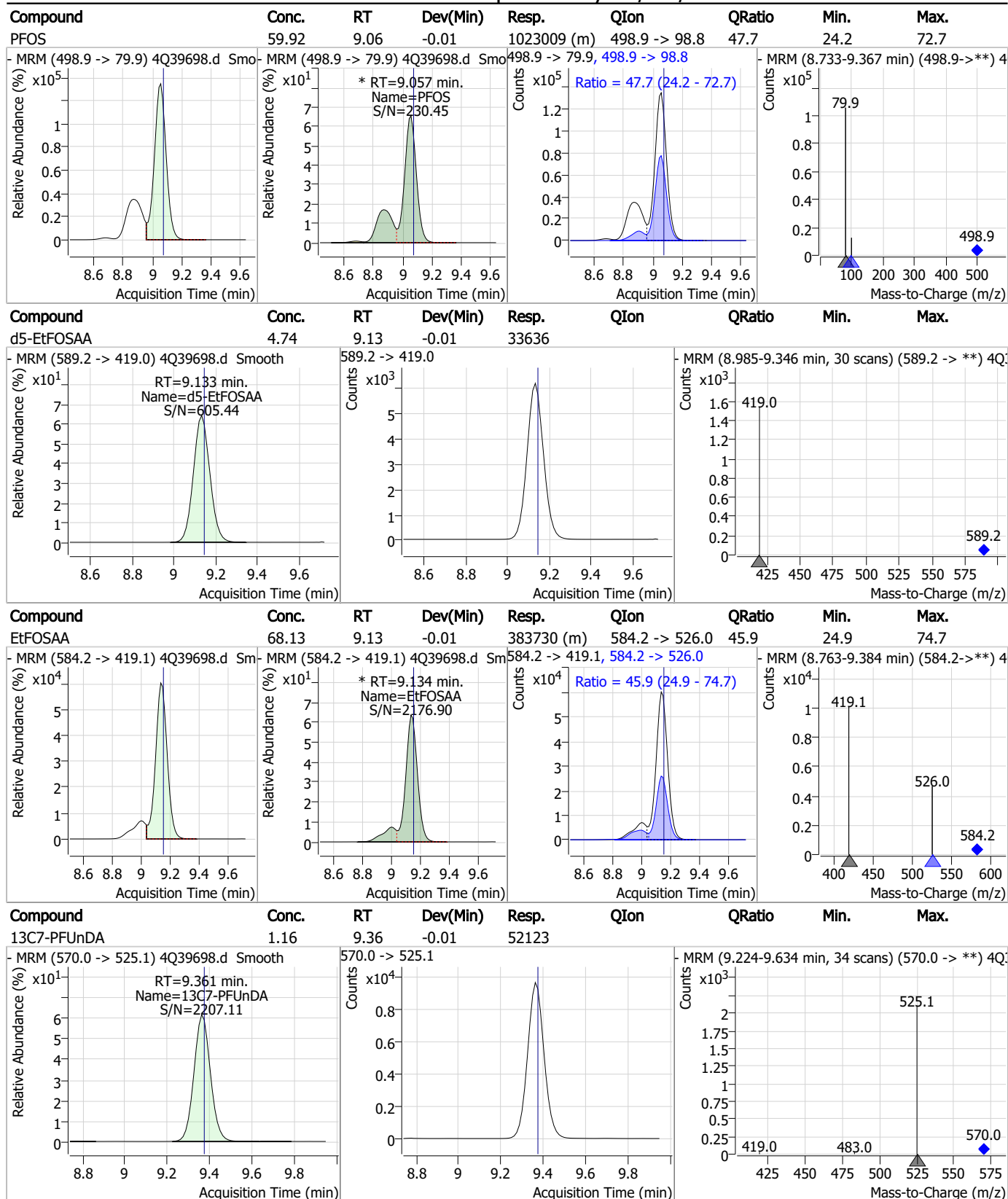
Perfluorinated Compounds by LC/MS/MS



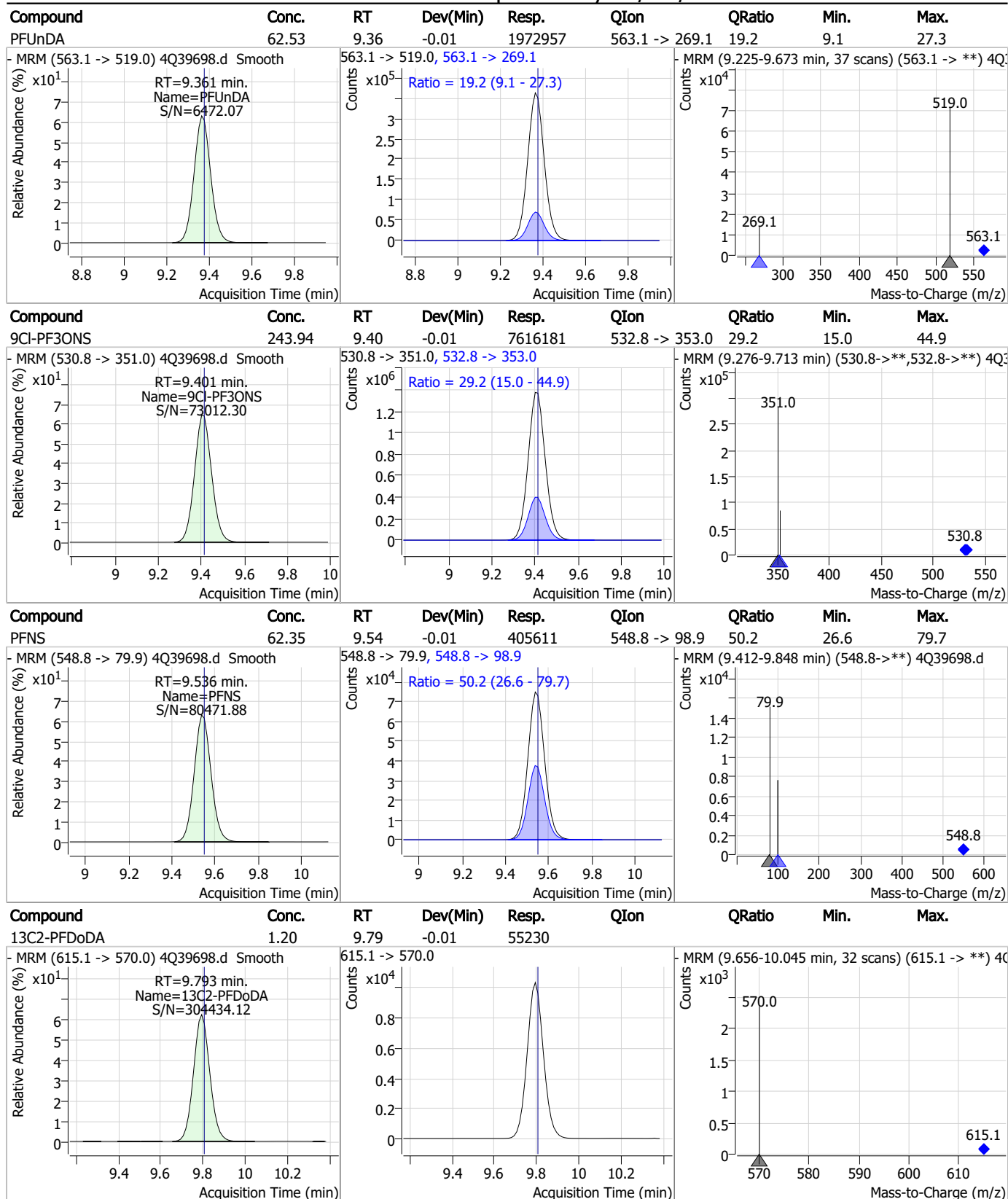
Perfluorinated Compounds by LC/MS/MS



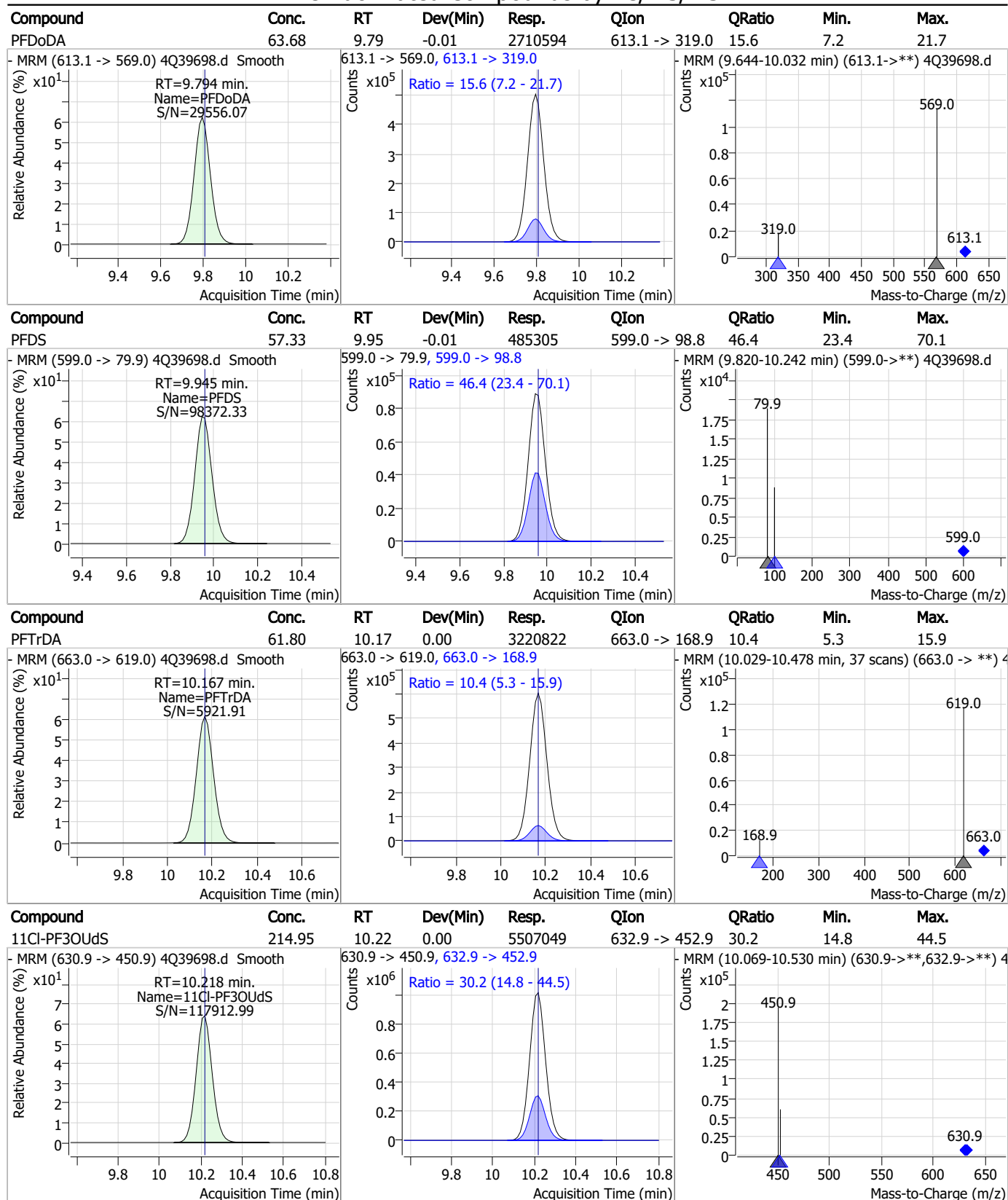
Perfluorinated Compounds by LC/MS/MS



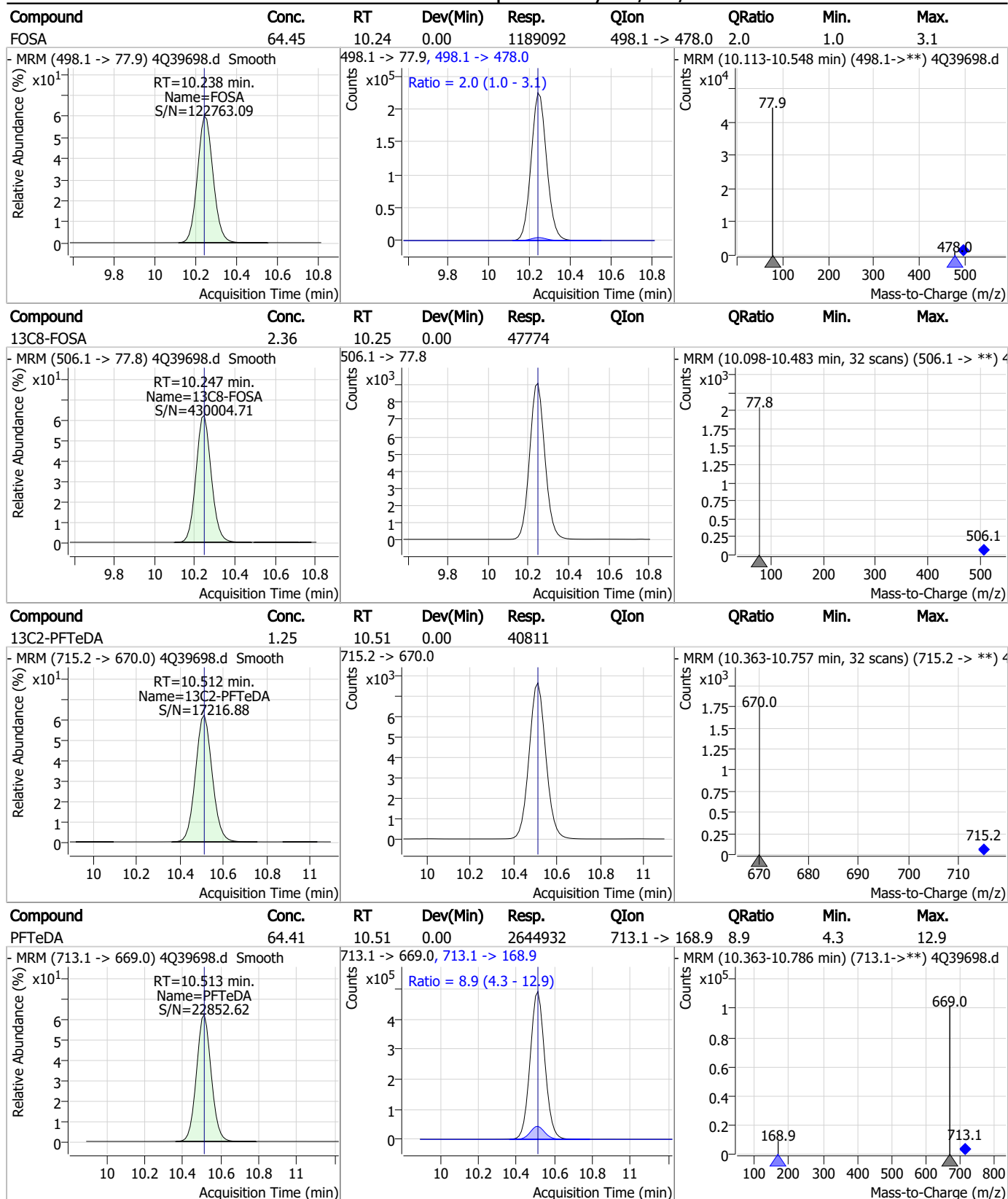
Perfluorinated Compounds by LC/MS/MS



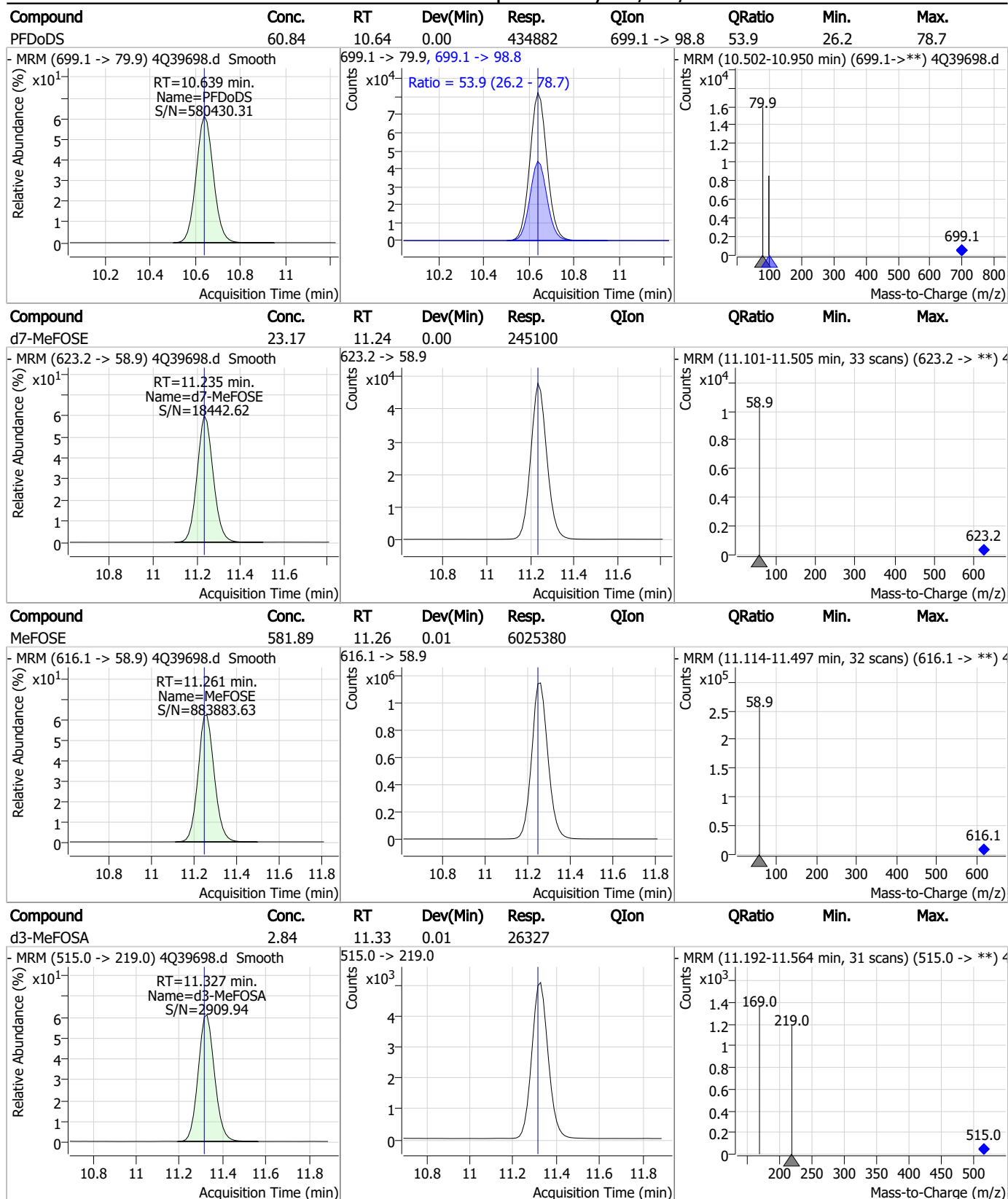
Perfluorinated Compounds by LC/MS/MS



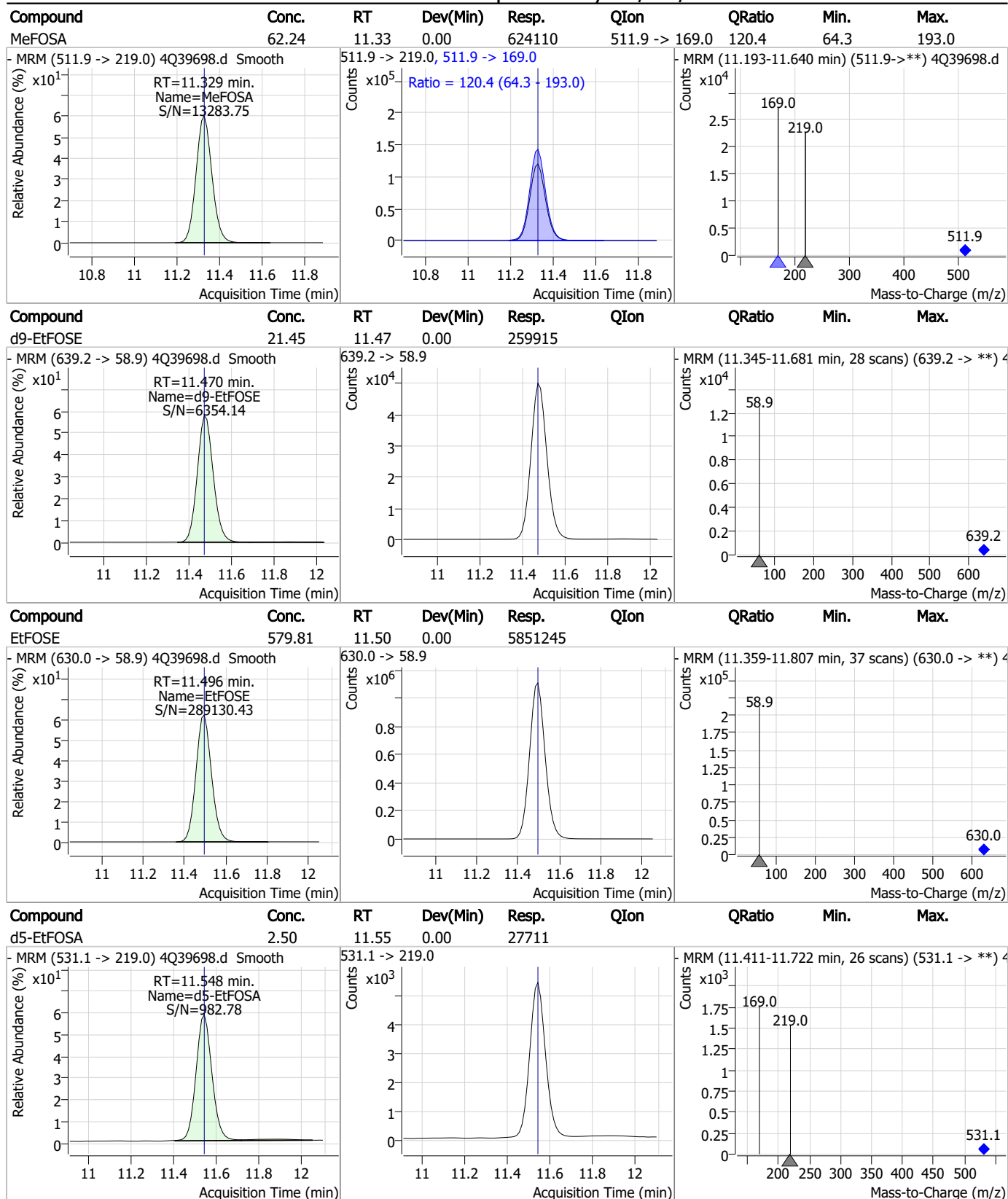
Perfluorinated Compounds by LC/MS/MS



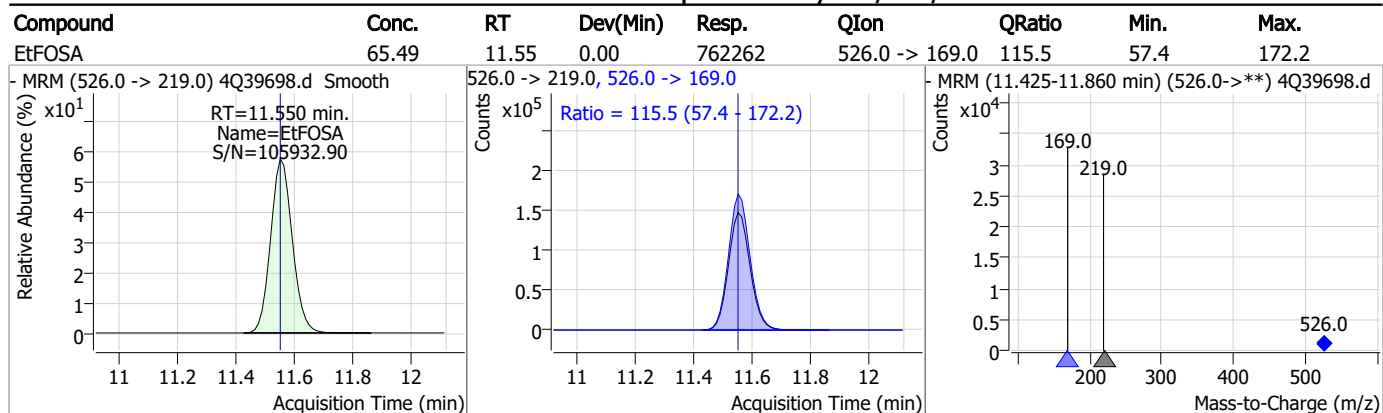
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q571-IC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39698.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 14:52

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.91	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.13	Split peak

7.6.9.1
7

Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39700.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 3:20:17 PM
 Sample Name : icv571-4
 Vial : P1-B3
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.186	216.8 -> 171.9	419809	10.00 µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	275371	5.00 µg/L	0.012
M5-PFHxA	6.184	318.0 -> 273.0	175598	2.50 µg/L	0.012
M4-PFHpA	7.106	367.1 -> 322.0	97939	2.50 µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	156890	2.50 µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	75671	1.25 µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	58039	1.25 µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	62565	1.25 µg/L	0.000
M2-PFDoDA	9.806	615.1 -> 570.0	63791	1.25 µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	45529	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	57771	2.50 µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	46812	2.50 µg/L	0.012
M3-PFHxS	7.917	402.1 -> 79.9	33415	2.50 µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	38226	2.50 µg/L	0.000
M2-4:2FTS	5.835	329.1 -> 80.9	4547	5.00 µg/L	0.012
M2-6:2FTS	7.536	429.1 -> 80.9	9650	5.00 µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	13465	5.00 µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	46102	5.00 µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	134672	10.00 µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	39555	5.00 µg/L	0.000
M7-MeFOSE	11.248	623.2 -> 58.9	301651	25.00 µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	345936	25.00 µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	30919	2.50 µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	24647	2.50 µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	39948	2.50 µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	233574	5.00 µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	21022	2.50 µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	175601	2.50 µg/L	0.000
13C2-PFDA	8.879	515.1 -> 470.1	51142	1.25 µg/L	0.000
13C5-PFNA	8.360	468.0 -> 423.0	84342	1.25 µg/L	0.000
13C2-PFHxA	6.185	315.1 -> 270.0	166002	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.835	329.1 -> 80.9	4547	6.00 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.0%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9650	5.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.8%		
13C2-8:2FTS	8.653	529.1 -> 80.9	13465	5.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.0%		
13C2-PFDoDA	9.806	615.1 -> 570.0	63791	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C2-PFTeDA	10.512	715.2 -> 670.0	45529	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFBS	6.101	302.1 -> 79.9	46812	2.58 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFHxS	7.917	402.1 -> 79.9	33415	2.72 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.0%	
13C4-PFBA	3.186	216.8 -> 171.9	419809	9.97 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	7.106	367.1 -> 322.0	97939	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFHxA	6.184	318.0 -> 273.0	175598	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C5-PFPeA	4.876	268.3 -> 223.0	275371	5.10 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C6-PFDA	8.879	519.1 -> 474.1	58039	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C7-PFUnDA	9.373	570.0 -> 525.1	62565	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C8-FOSA	10.247	506.1 -> 77.8	57771	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOA	7.788	421.1 -> 376.0	156890	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOS	9.068	507.1 -> 79.9	38226	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
13C9-PFNA	8.360	472.1 -> 427.0	75671	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSAA	8.924	573.2 -> 419.0	46102	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C3-HFPO-DA	6.564	286.9 -> 168.9	134672	10.17 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d3-MeFOSA	11.327	515.0 -> 219.0	24647	2.36 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%	
d5-EtFOSAA	9.146	589.2 -> 419.0	39555	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d7-MeFOSE	11.248	623.2 -> 58.9	301651	25.32 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d9-EtFOSE	11.482	639.2 -> 58.9	345936	25.35 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
d5-EtFOSA	11.548	531.1 -> 219.0	30919	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
Target Compounds					QValue
4:2FTS	5.836	327.1 -> 307.0	60656	8.16 µg/L	98
		327.1 -> 80.9	29001		
6:2FTS	7.537	427.1 -> 407.0	73849	9.65 µg/L	99
		427.1 -> 80.9	35628		
8:2FTS	8.654	527.1 -> 507.0	55939	8.59 µg/L	96
		527.1 -> 80.8	31236		
EtFOSAA	9.147	584.2 -> 419.1	14888	2.25 µg/L	m 93
		584.2 -> 526.0	6658		
FOSA	10.250	498.1 -> 77.9	53232	2.39 µg/L	100
		498.1 -> 478.0	1189		
MeFOSAA	8.925	570.1 -> 419.0	18467	2.70 µg/L	m 95
		570.1 -> 483.0	3255		
PFBA	3.195	212.8 -> 168.9	106609	9.13 µg/L	100
PFBS	6.102	298.7 -> 79.9	44248	2.09 µg/L	97
		298.7 -> 98.8	15916		
PFDA	8.879	512.9 -> 469.0	99158	2.39 µg/L	96
		512.9 -> 219.0	18612		
PFDODA	9.806	613.1 -> 569.0	115852	2.36 µg/L	97
		613.1 -> 319.0	18073		
PFDS	9.959	599.0 -> 79.9	20938	2.37 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.119	599.0 -> 98.8	9660	2.41	µg/L	99
		363.1 -> 319.0	147217			
PFHpS	8.513	363.1 -> 169.0	24253	2.38	µg/L	97
		449.0 -> 79.9	36734			
PFHxA	6.187	449.0 -> 98.9	17638	2.39	µg/L	99
		313.0 -> 269.0	163008			
PFHxS	7.917	313.0 -> 118.9	5296	2.13	µg/L	98
		398.7 -> 79.9	23005			
PFNA	8.360	398.7 -> 98.9	11536	2.31	µg/L	99
		463.0 -> 419.0	127251			
PFNS	9.549	463.0 -> 219.0	30128	2.34	µg/L	89
		548.8 -> 79.9	15909			
PFOA	7.790	548.8 -> 98.9	7194	2.47	µg/L	97
		413.0 -> 369.0	172147			
PFOS	9.069	413.0 -> 169.0	32751	2.19	µg/L	99
		498.9 -> 79.9	39129			
PFPeA	4.879	498.9 -> 98.8	18553	4.76	µg/L	100
		263.0 -> 219.0	287776			
PFPeS	7.171	349.1 -> 79.9	20939	2.01	µg/L	98
		349.1 -> 98.9	8436			
PFTeDA	10.513	713.1 -> 669.0	110162	2.40	µg/L	99
		713.1 -> 168.9	9133			
PFTrDA	10.179	663.0 -> 619.0	150737	2.50	µg/L	97
		663.0 -> 168.9	14420			
PFUnDA	9.374	563.1 -> 519.0	91082	2.40	µg/L	99
		563.1 -> 269.1	16075			
11CI-PF3OUdS	10.218	630.9 -> 450.9	298011	9.47	µg/L	99
		632.9 -> 452.9	89388			
9CI-PF3ONS	9.413	530.8 -> 351.0	332500	8.67	µg/L	100
		532.8 -> 353.0	99667			
ADONA	7.369	376.9 -> 250.9	663475	9.13	µg/L	100
		376.9 -> 84.8	233410			
HFPO-DA	6.565	284.9 -> 168.9	124331	9.80	µg/L	98
		284.9 -> 184.9	13867			
3:3FTCA	4.217	241.0 -> 177.0	31885	11.26	µg/L	98
		241.0 -> 117.0	3218			
5:3FTCA	6.783	341.0 -> 237.1	546231	60.14	µg/L	99
		341.0 -> 217.0	409650			
7:3FTCA	8.249	441.0 -> 316.9	320035	61.36	µg/L	100
		441.0 -> 336.9	725669			
EtFOSA	11.550	526.0 -> 219.0	29202	2.25	µg/L	93
		526.0 -> 169.0	35873			
EtFOSE	11.496	630.0 -> 58.9	336935	25.09	µg/L	100
		511.9 -> 219.0	22470			
MeFOSA	11.329	511.9 -> 169.0	26597	2.39	µg/L	91
		616.1 -> 58.9	311977			
MeFOSE	11.261	699.1 -> 79.9	17665	24.48	µg/L	100
		699.1 -> 98.8	9572			
PFDoDS	10.639	295.0 -> 201.0	21799	4.86	µg/L	92
		295.0 -> 84.9	7313			
NFDHA	6.053	279.0 -> 85.1	179686	4.77	µg/L	100
		229.0 -> 84.9	180405			
PFMBA	3.882	314.8 -> 134.9	247990	4.64	µg/L	100
		314.8 -> 82.9	7147			
PFEESA	6.660			4.25	µg/L	99

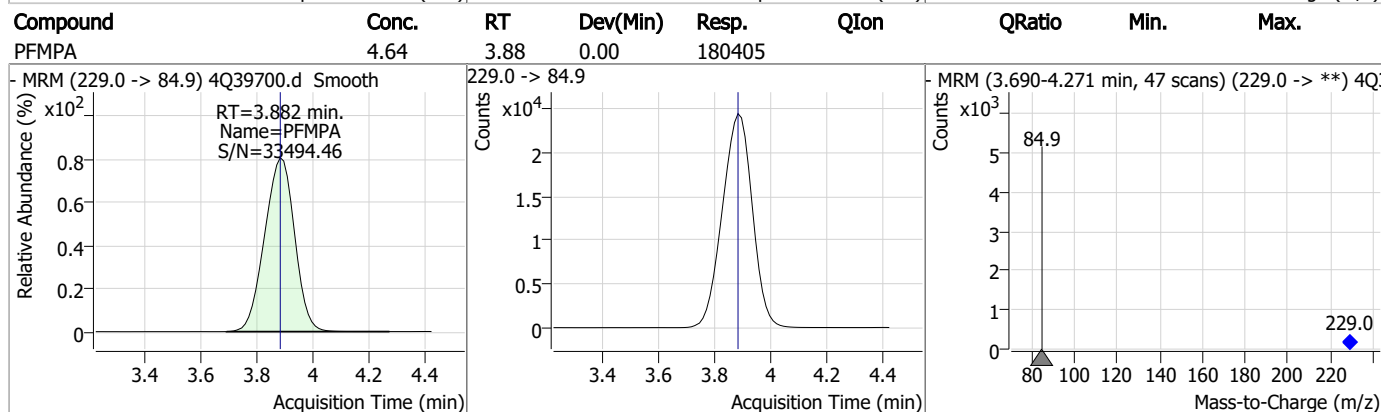
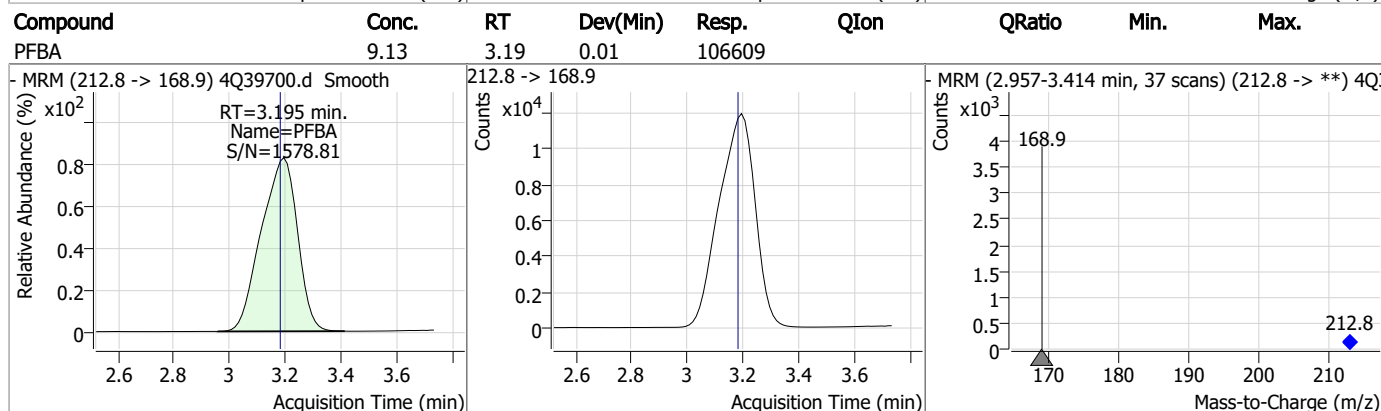
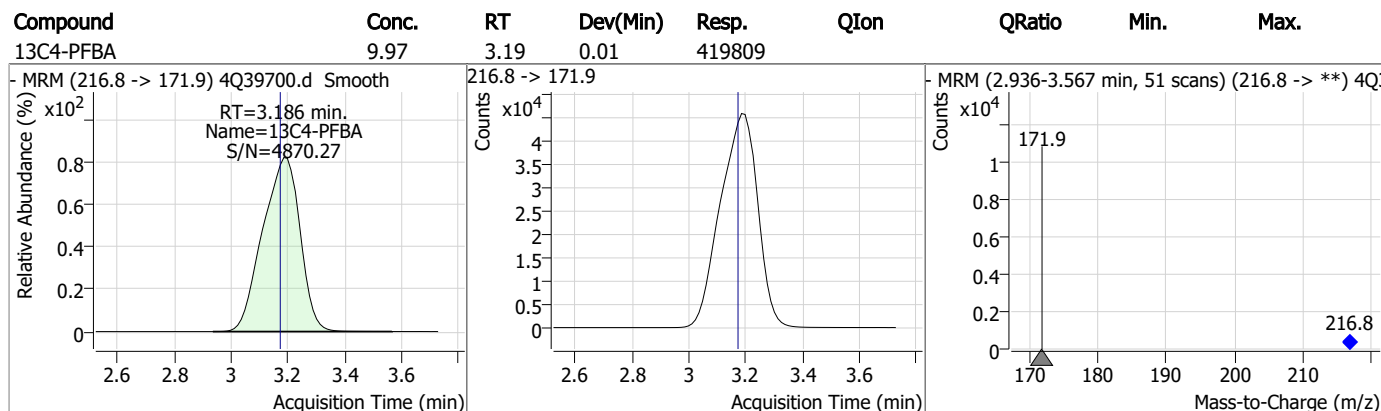
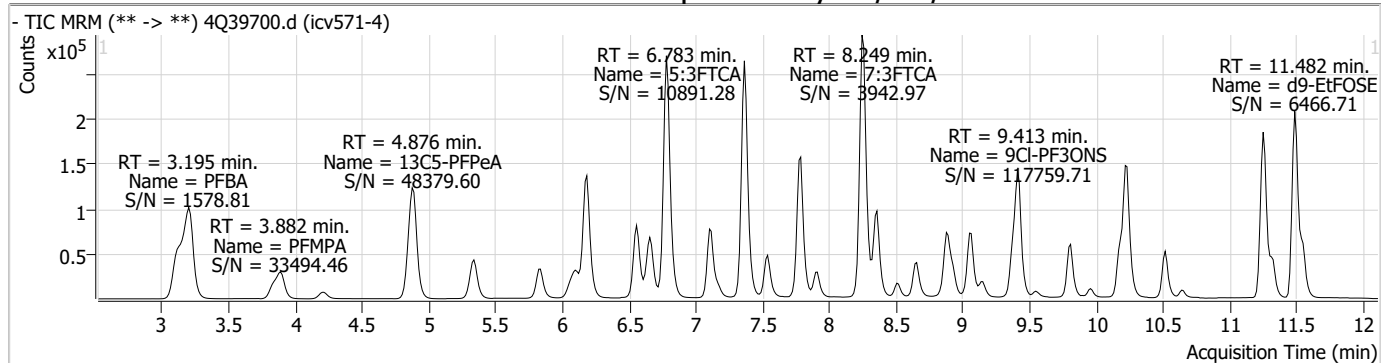
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

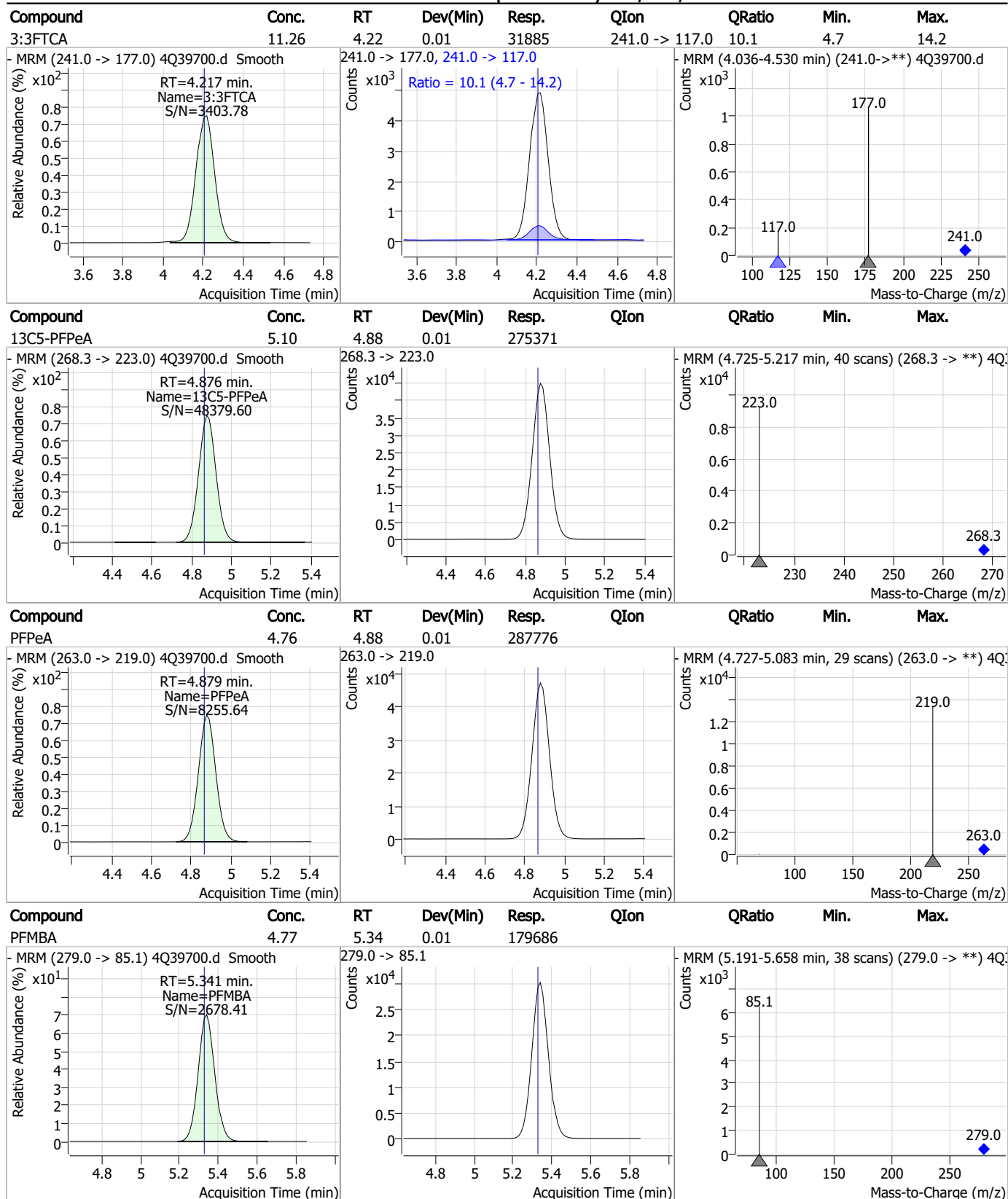
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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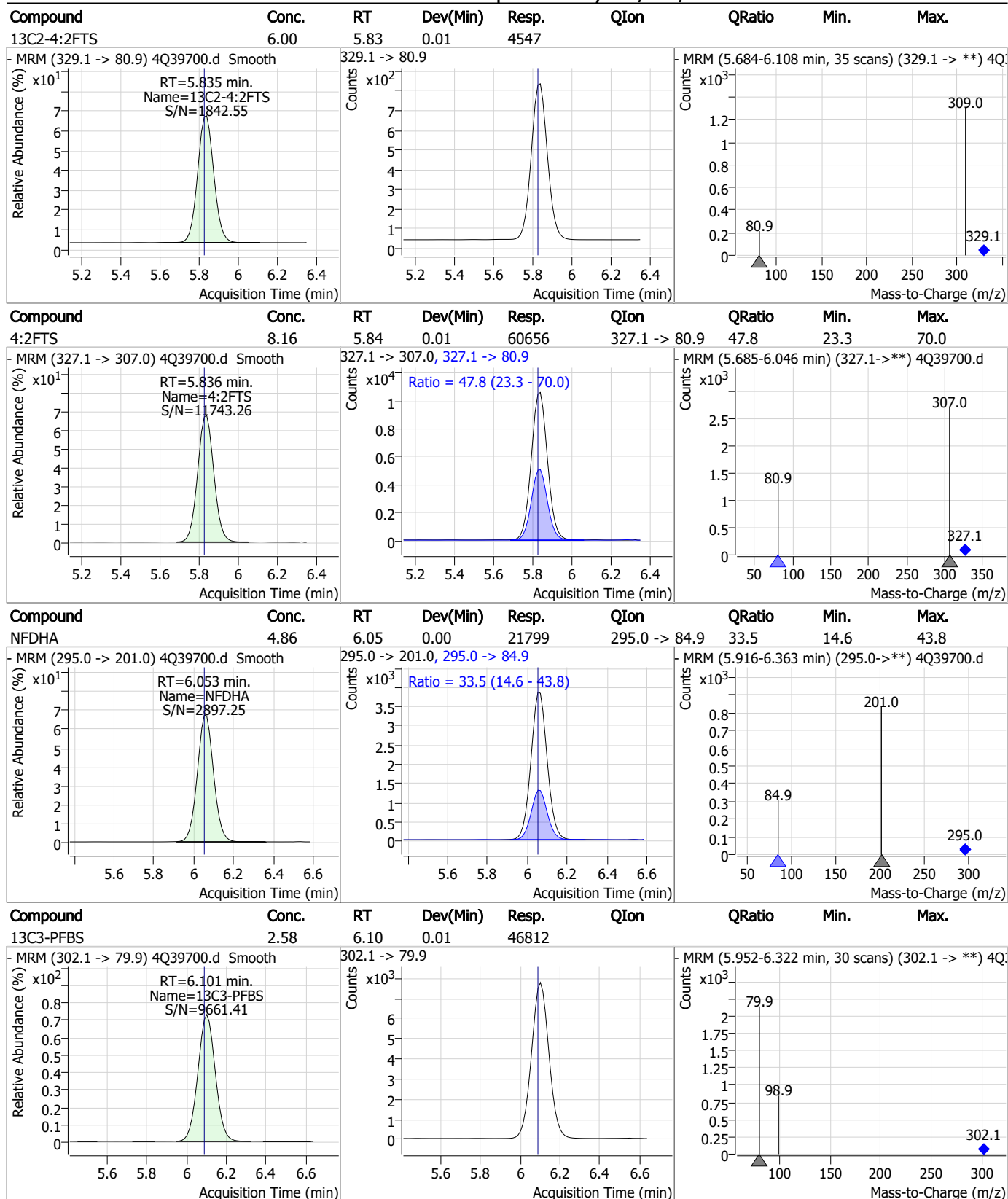
Perfluorinated Compounds by LC/MS/MS



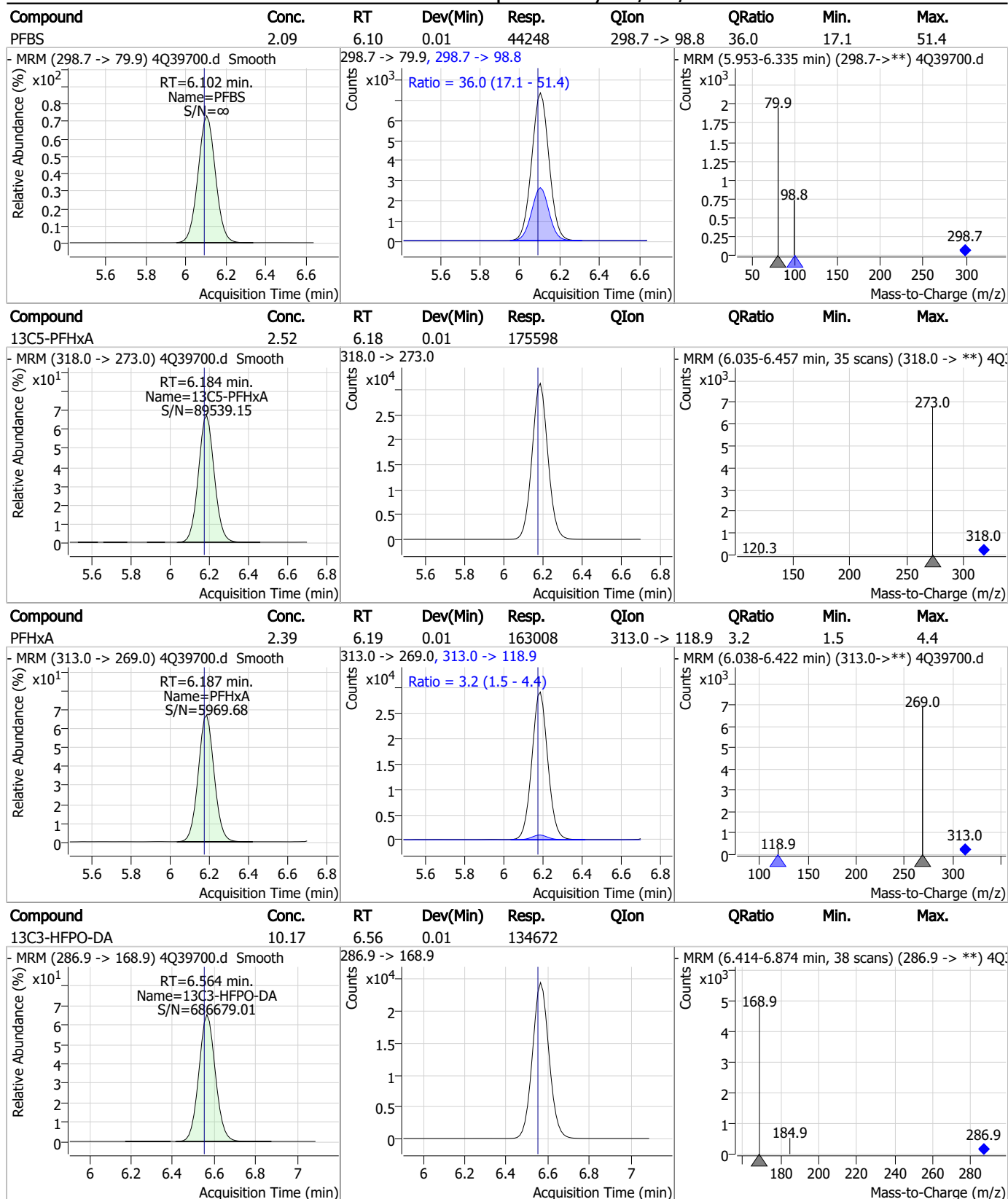
Perfluorinated Compounds by LC/MS/MS



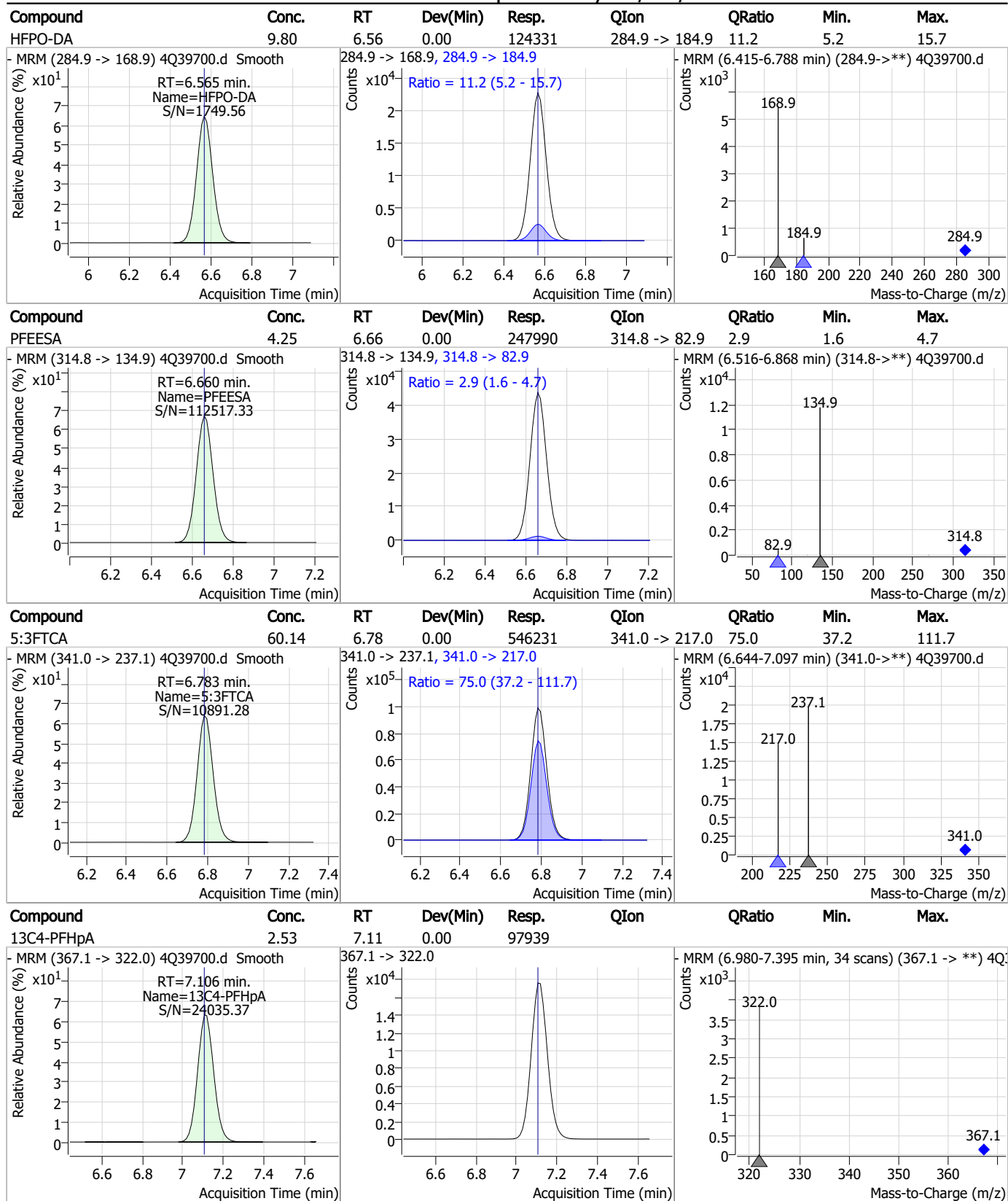
Perfluorinated Compounds by LC/MS/MS



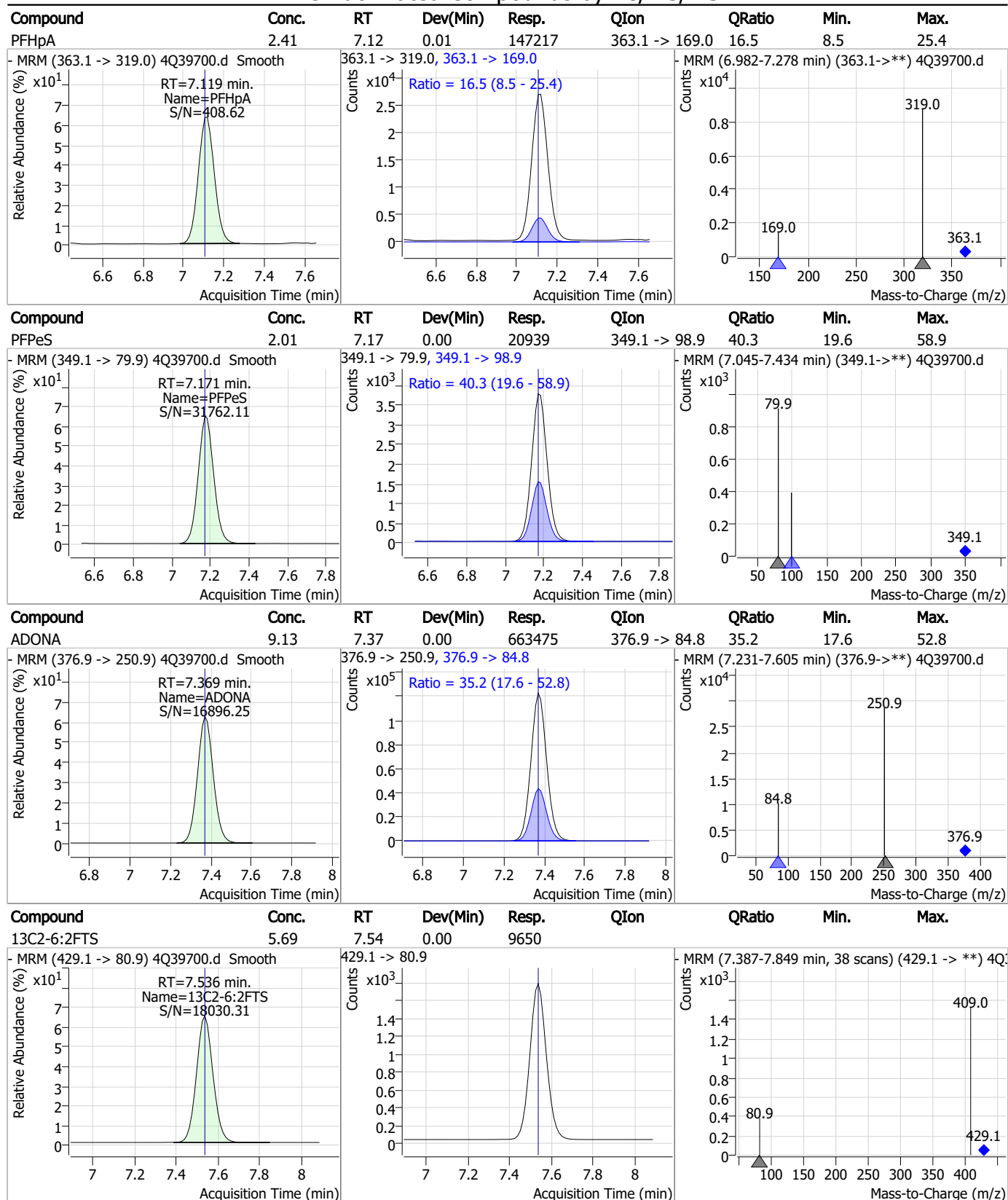
Perfluorinated Compounds by LC/MS/MS



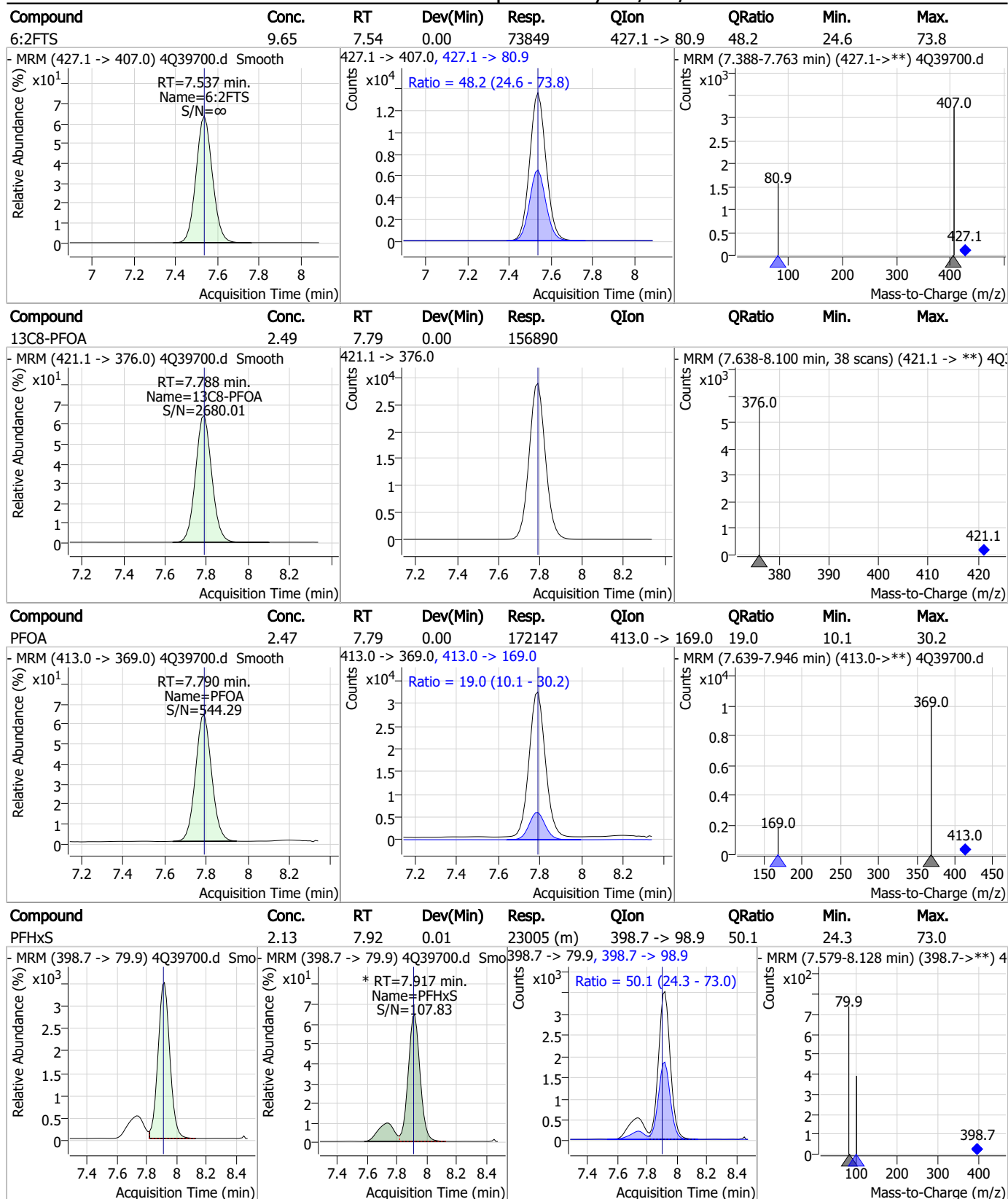
Perfluorinated Compounds by LC/MS/MS



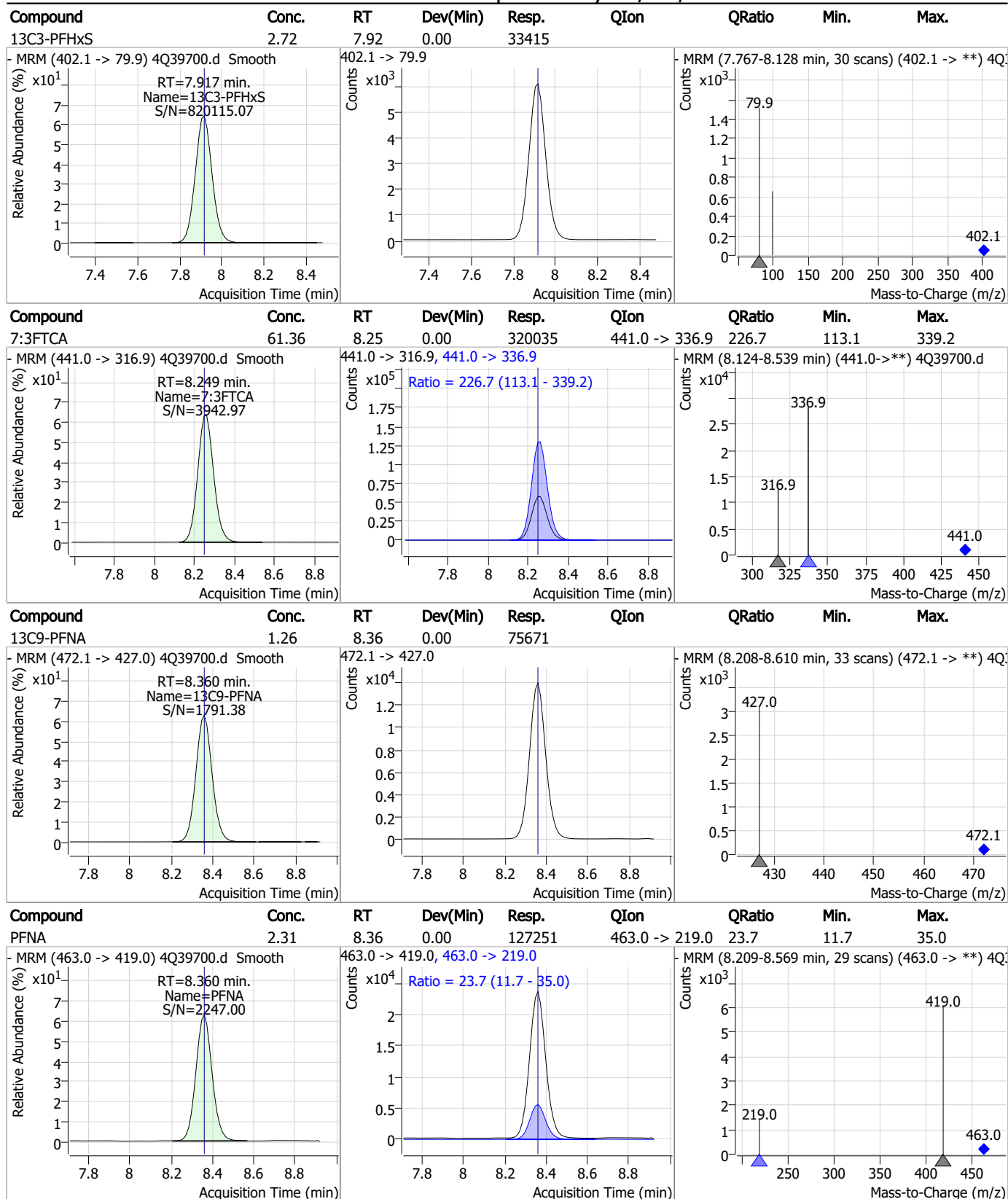
Perfluorinated Compounds by LC/MS/MS



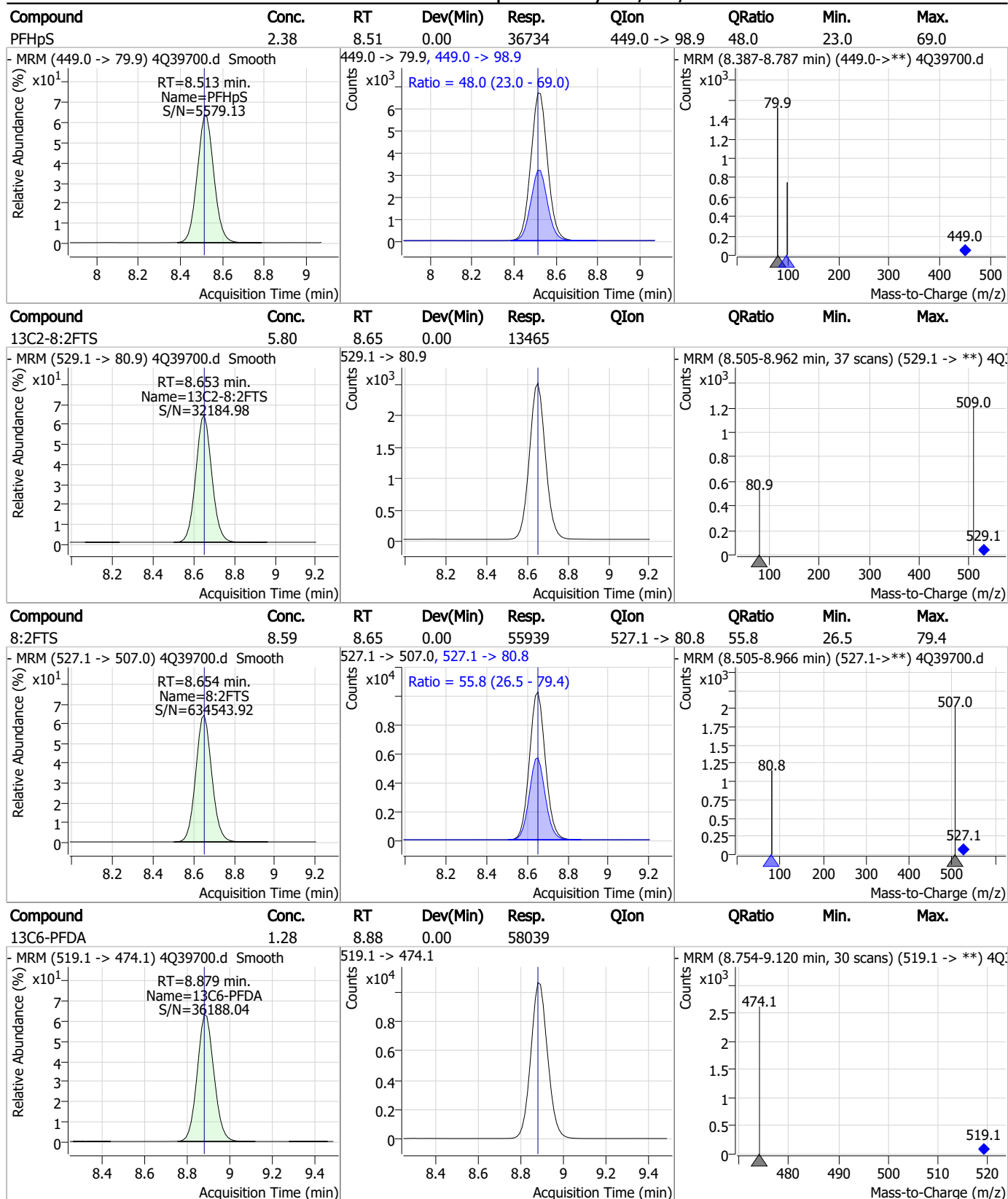
Perfluorinated Compounds by LC/MS/MS



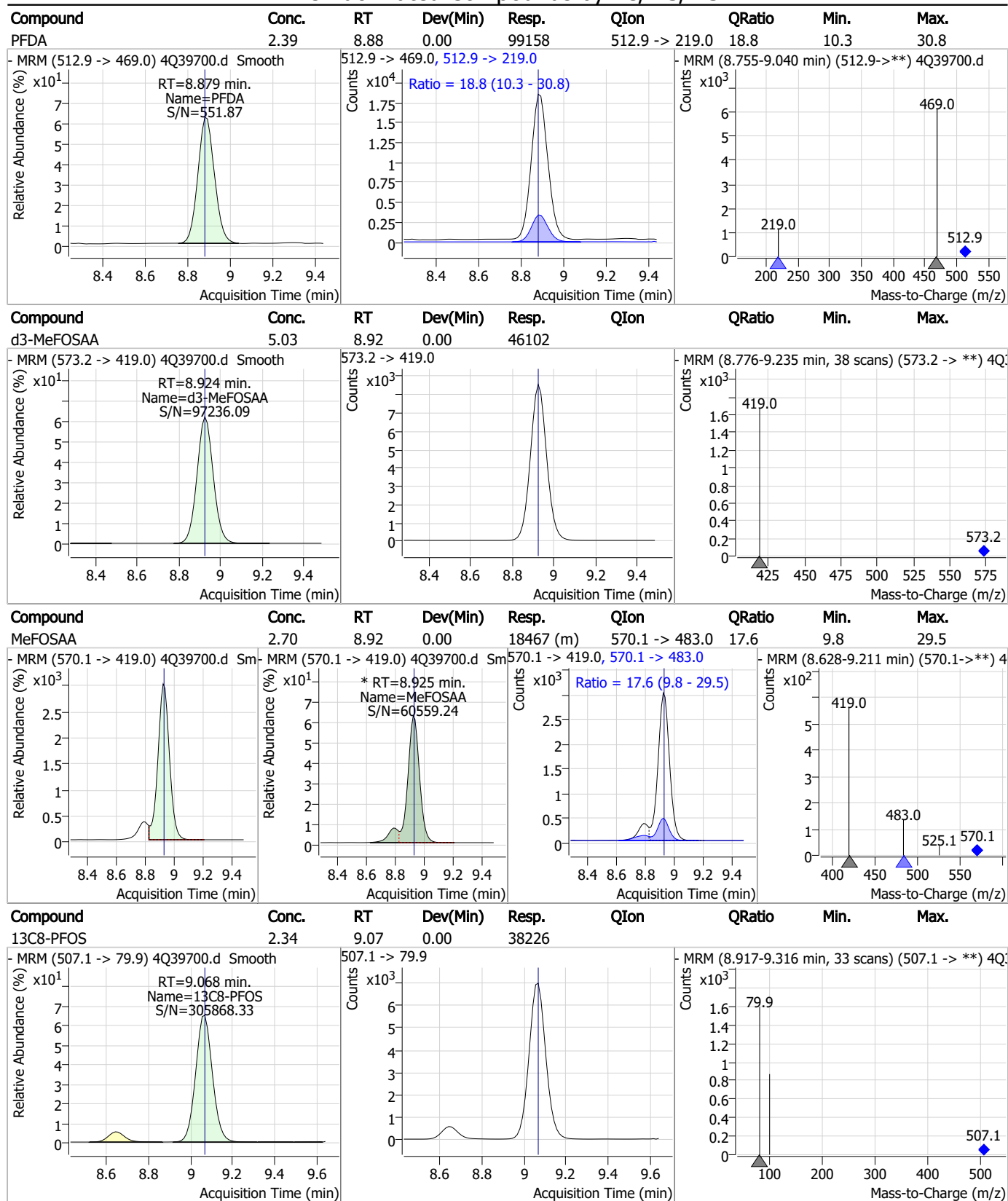
Perfluorinated Compounds by LC/MS/MS



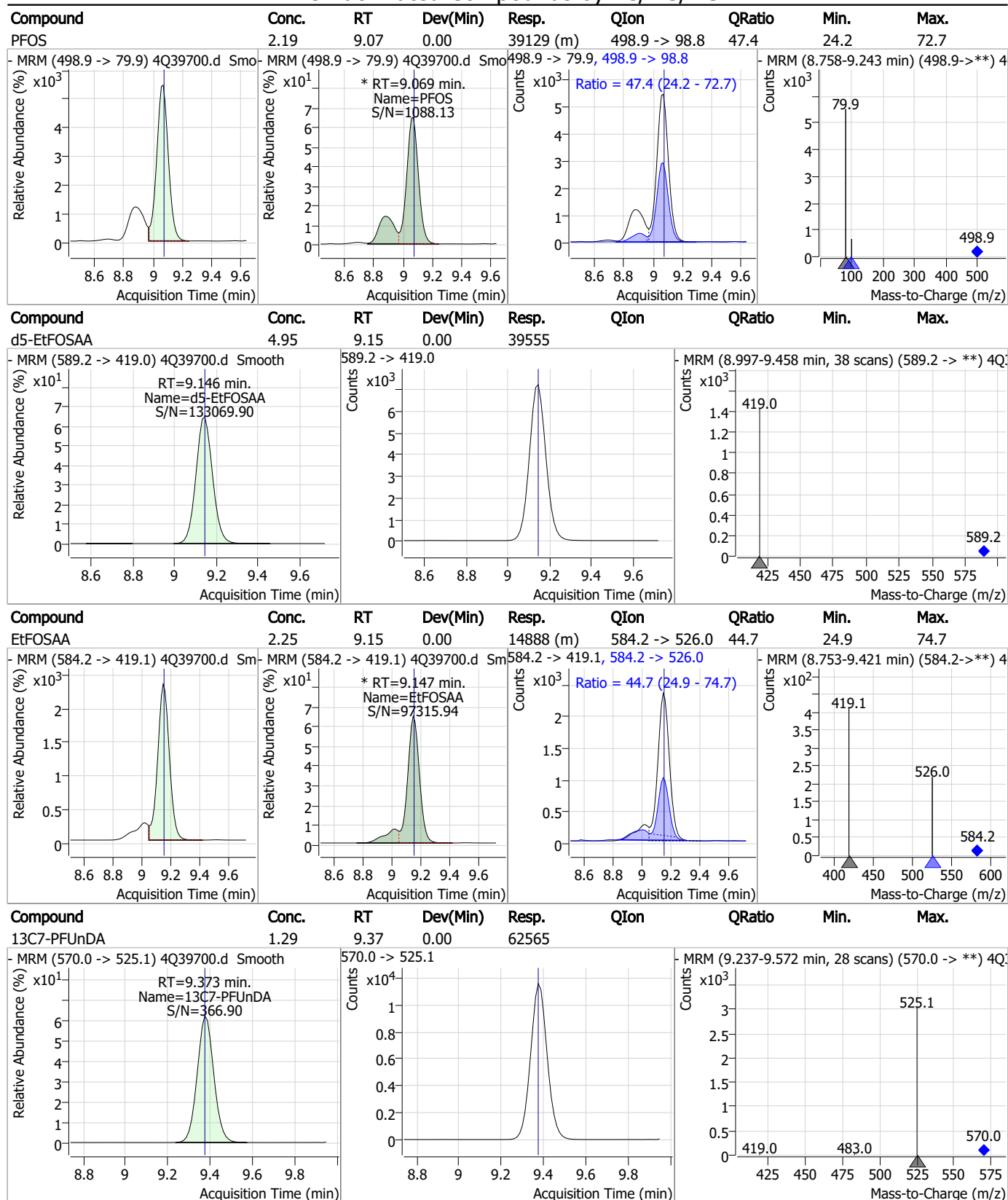
Perfluorinated Compounds by LC/MS/MS



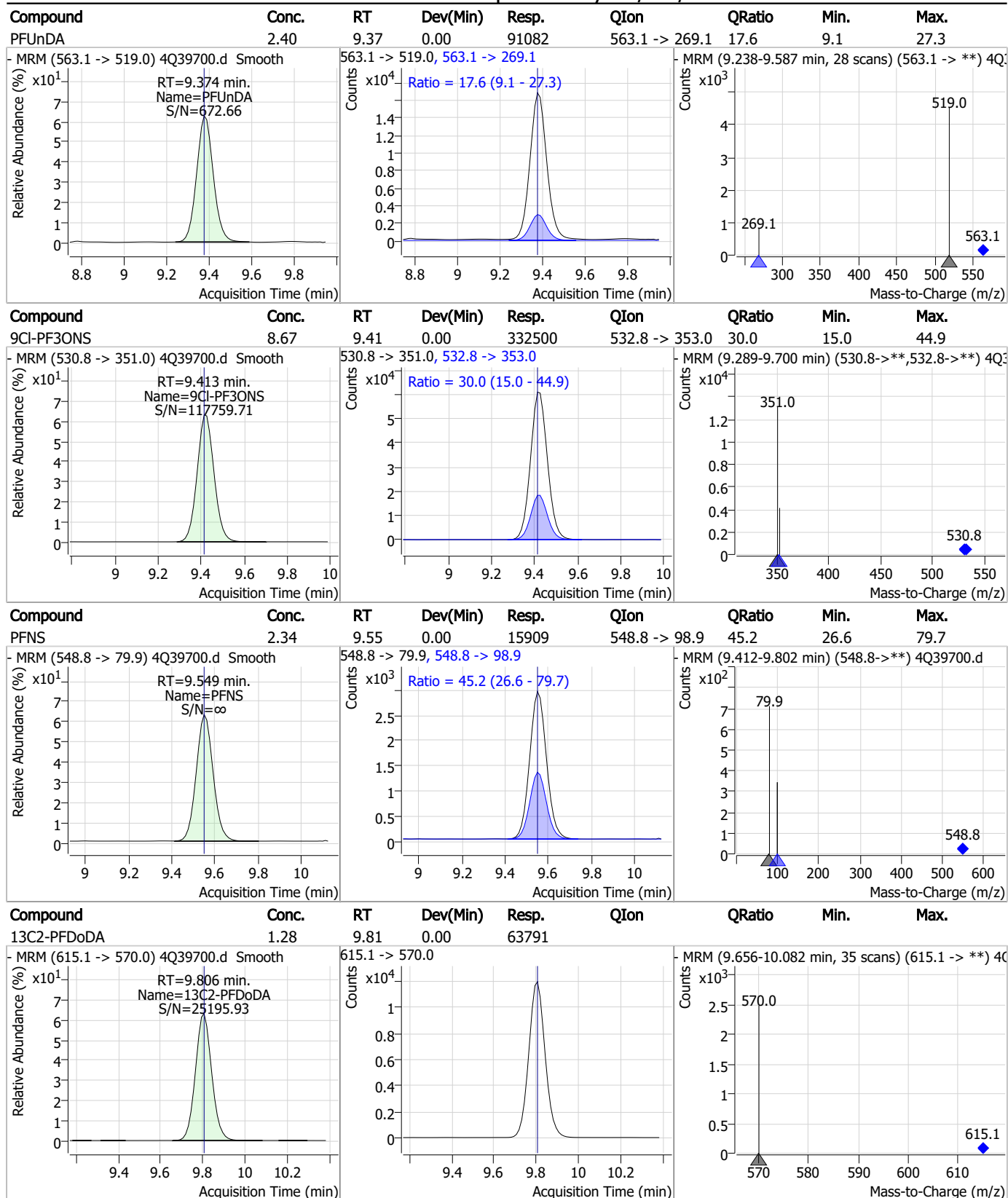
Perfluorinated Compounds by LC/MS/MS



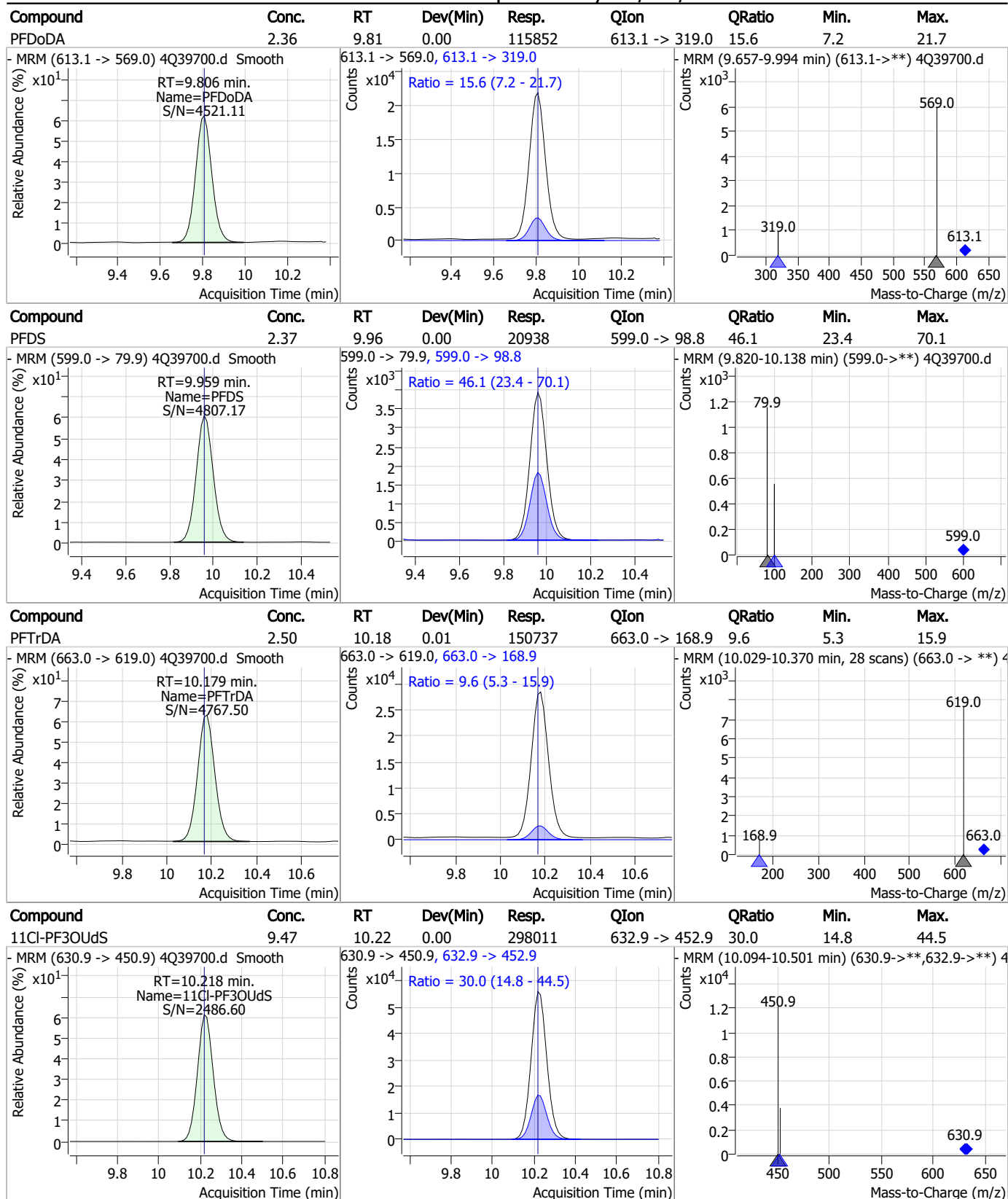
Perfluorinated Compounds by LC/MS/MS



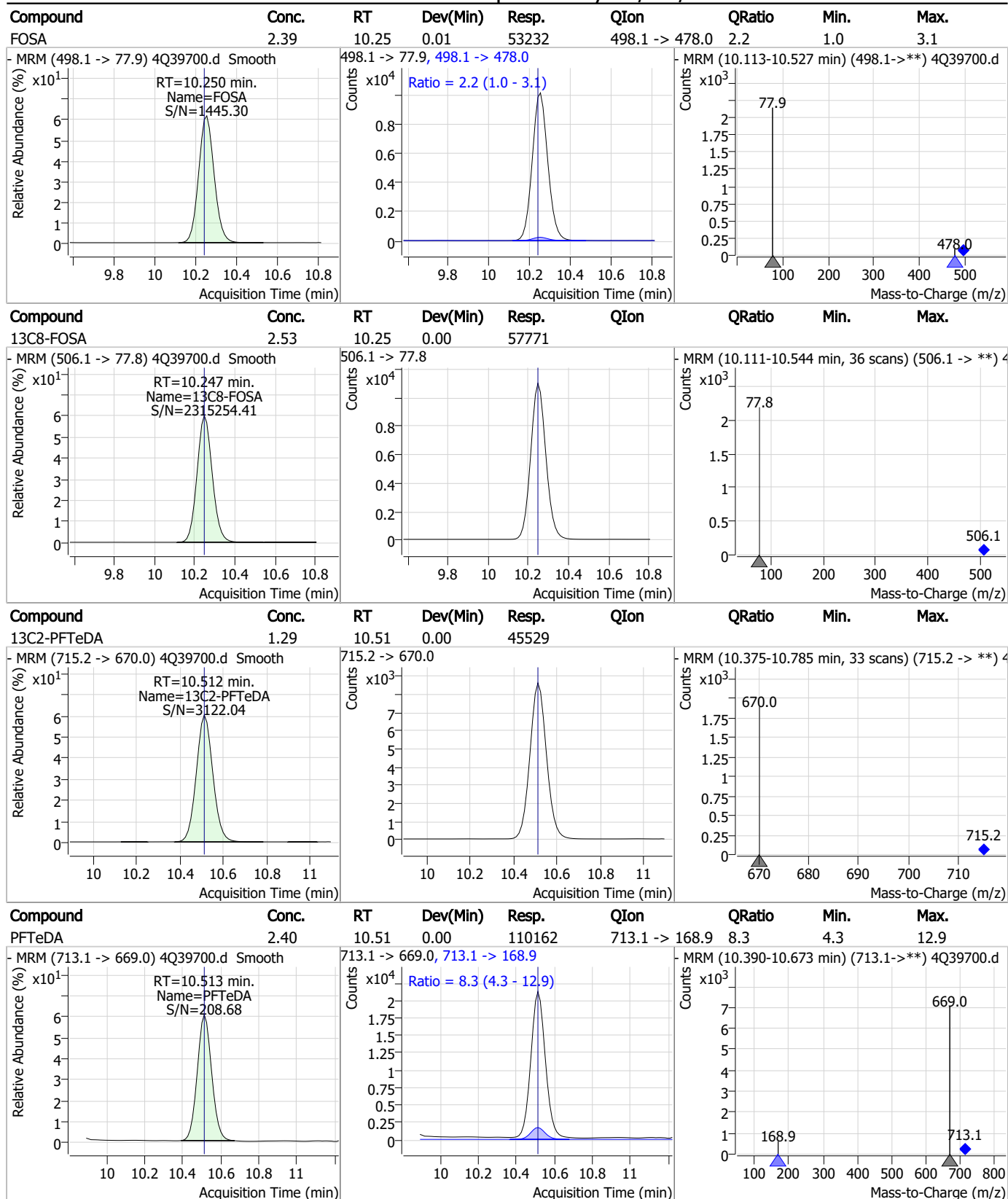
Perfluorinated Compounds by LC/MS/MS



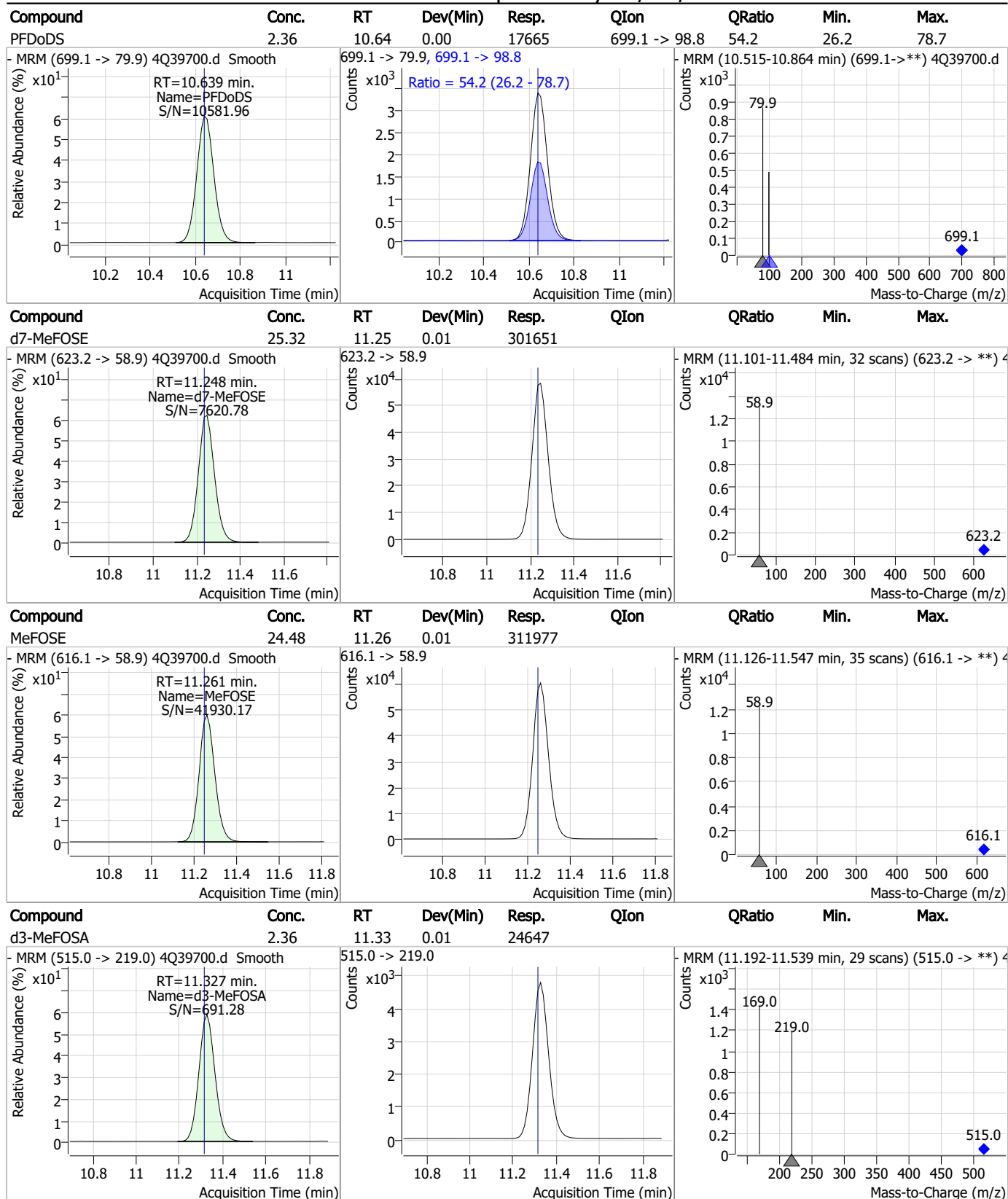
Perfluorinated Compounds by LC/MS/MS



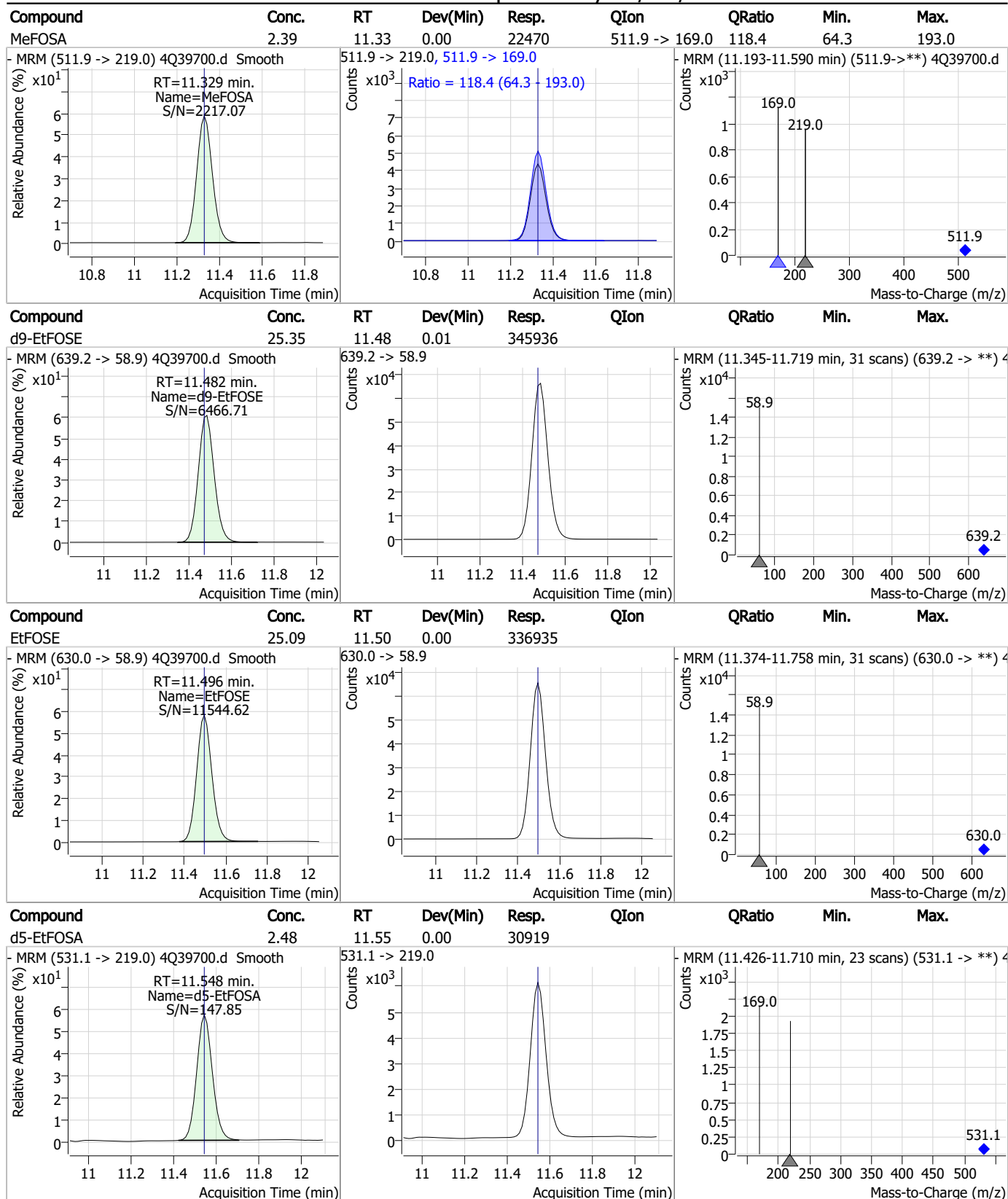
Perfluorinated Compounds by LC/MS/MS



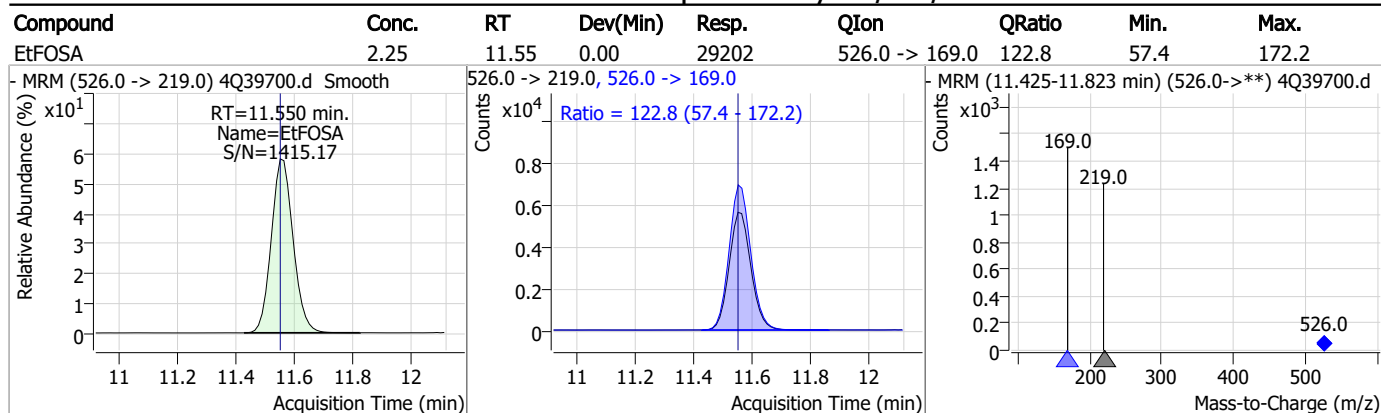
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.10

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Manual Integration Approval Summary

Sample Number: S4Q571-ICV571

Method: EPA DRAFT 1633

Lab FileID: 4Q39700.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 15:20

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

7.6.10.1
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Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39701.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 3:34:20 PM
 Sample Name : icv571-20
 Vial : P1-B4
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.186	216.8 -> 171.9	420873	10.00 µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	272735	5.00 µg/L	0.012
M5-PFHxA	6.172	318.0 -> 273.0	171841	2.50 µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	95812	2.50 µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	149743	2.50 µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	74972	1.25 µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	57128	1.25 µg/L	0.012
M7-PFUnDA	9.386	570.0 -> 525.1	62875	1.25 µg/L	0.012
M2-PFDoDA	9.806	615.1 -> 570.0	60737	1.25 µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	45113	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	57923	2.50 µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	47683	2.50 µg/L	0.012
M3-PFHxS	7.917	402.1 -> 79.9	31089	2.50 µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	41482	2.50 µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	4317	5.00 µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	8909	5.00 µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	12438	5.00 µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	43935	5.00 µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	133683	10.00 µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	37023	5.00 µg/L	0.000
M7-MeFOSE	11.248	623.2 -> 58.9	272030	25.00 µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	318908	25.00 µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	28923	2.50 µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	25237	2.50 µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	38618	2.50 µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	231036	5.00 µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	20813	2.50 µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	167260	2.50 µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	49074	1.25 µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	80039	1.25 µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	162920	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.823	329.1 -> 80.9	4317	5.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.1%		
13C2-6:2FTS	7.536	429.1 -> 80.9	8909	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C2-8:2FTS	8.653	529.1 -> 80.9	12438	5.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C2-PFDoDA	9.806	615.1 -> 570.0	60737	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-PFTeDA	10.512	715.2 -> 670.0	45113	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C3-PFBS	6.101	302.1 -> 79.9	47683	2.65 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C3-PFHxS	7.917	402.1 -> 79.9	31089	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		3.186	216.8 -> 171.9	420873	10.10 µg/L	0.012
Spiked Amount: 10.00		Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFHpA		7.106	367.1 -> 322.0	95812	2.52 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%			Recovery = 100.9%	
13C5-PFHxA		6.172	318.0 -> 273.0	171841	2.51 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%			Recovery = 100.3%	
13C5-PFPeA		4.876	268.3 -> 223.0	272735	5.15 µg/L	0.012
Spiked Amount: 5.00		Range: 50.0 - 150.0%			Recovery = 103.0%	
13C6-PFDA		8.891	519.1 -> 474.1	57128	1.32 µg/L	0.012
Spiked Amount: 1.25		Range: 50.0 - 150.0%			Recovery = 105.4%	
13C7-PFUnDA		9.386	570.0 -> 525.1	62875	1.35 µg/L	0.012
Spiked Amount: 1.25		Range: 50.0 - 150.0%			Recovery = 108.1%	
13C8-FOSA		10.247	506.1 -> 77.8	57923	2.62 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%			Recovery = 104.9%	
13C8-PFOA		7.788	421.1 -> 376.0	149743	2.49 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOS		9.068	507.1 -> 79.9	41482	2.63 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%			Recovery = 105.2%	
13C9-PFNA		8.360	472.1 -> 427.0	74972	1.32 µg/L	0.000
Spiked Amount: 1.25		Range: 50.0 - 150.0%			Recovery = 105.4%	
d3-MeFOSAA		8.924	573.2 -> 419.0	43935	4.95 µg/L	0.000
Spiked Amount: 5.00		Range: 50.0 - 150.0%			Recovery = 99.1%	
13C3-HFPO-DA		6.564	286.9 -> 168.9	133683	10.29 µg/L	0.012
Spiked Amount: 10.00		Range: 50.0 - 150.0%			Recovery = 102.9%	
d3-MeFOSA		11.327	515.0 -> 219.0	25237	2.50 µg/L	0.012
Spiked Amount: 2.50		Range: 50.0 - 150.0%			Recovery = 100.0%	
d5-EtFOSAA		9.146	589.2 -> 419.0	37023	4.79 µg/L	0.000
Spiked Amount: 5.00		Range: 50.0 - 150.0%			Recovery = 95.9%	
d7-MeFOSE		11.248	623.2 -> 58.9	272030	23.62 µg/L	0.012
Spiked Amount: 25.00		Range: 50.0 - 150.0%			Recovery = 94.5%	
d9-EtFOSE		11.482	639.2 -> 58.9	318908	24.18 µg/L	0.012
Spiked Amount: 25.00		Range: 50.0 - 150.0%			Recovery = 96.7%	
d5-EtFOSA		11.548	531.1 -> 219.0	28923	2.40 µg/L	0.000
Spiked Amount: 2.50		Range: 50.0 - 150.0%			Recovery = 96.0%	
Target Compounds						QValue
4:2FTS		5.823	327.1 -> 307.0	136893	19.40 µg/L	100
			327.1 -> 80.9	63523		
6:2FTS		7.537	427.1 -> 407.0	152053	21.53 µg/L	100
			427.1 -> 80.9	74622		
8:2FTS		8.654	527.1 -> 507.0	125296	20.82 µg/L	98
			527.1 -> 80.8	68177		
EtFOSAA		9.159	584.2 -> 419.1	144668	23.34 µg/L	m 91
			584.2 -> 526.0	63101		
FOSA		10.250	498.1 -> 77.9	488073	21.82 µg/L	100
			498.1 -> 478.0	9628		
MeFOSAA		8.937	570.1 -> 419.0	158672	24.38 µg/L	m 98
			570.1 -> 483.0	30125		
PFBA		3.195	212.8 -> 168.9	226643	19.35 µg/L	100
PFBS		6.102	298.7 -> 79.9	484859	22.50 µg/L	97
			298.7 -> 98.8	175842		
PFDA		8.892	512.9 -> 469.0	891801	21.88 µg/L	99
			512.9 -> 219.0	181144		
PFDODA		9.806	613.1 -> 569.0	881584	18.83 µg/L	97
			613.1 -> 319.0	138320		
PFDS		9.959	599.0 -> 79.9	192085	19.99 µg/L	100
SGS Orlando	4Q39701.d	Page 2 of 21			Generated at 12:18 PM on 1/26/2023	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.106	599.0 -> 98.8	89274	21.27	µg/L	99
		363.1 -> 319.0	1270226			
PFHpS	8.526	363.1 -> 169.0	222107	20.94	µg/L	95
		449.0 -> 79.9	351093			
PFHxA	6.175	449.0 -> 98.9	174153	22.56	µg/L	99
		313.0 -> 269.0	1507388			
PFHxS	7.917	313.0 -> 118.9	46364	23.86	µg/L	96
		398.7 -> 79.9	239672			
PFNA	8.360	398.7 -> 98.9	110073	21.82	µg/L	98
		463.0 -> 419.0	1189342			
PFNS	9.549	463.0 -> 219.0	286440	20.79	µg/L	93
		548.8 -> 79.9	153507			
PFOA	7.790	548.8 -> 98.9	73466	21.14	µg/L	98
		413.0 -> 369.0	1407619			
PFOS	9.069	413.0 -> 169.0	297573	17.80	µg/L	95
		498.9 -> 79.9	344915			
PFPeA	4.879	498.9 -> 98.8	156409	22.21	µg/L	100
		263.0 -> 219.0	1328608			
PFPeS	7.171	349.1 -> 79.9	225163	23.21	µg/L	97
		349.1 -> 98.9	92488			
PFTeDA	10.513	713.1 -> 669.0	1015146	22.36	µg/L	99
		713.1 -> 168.9	89826			
PFTrDA	10.179	663.0 -> 619.0	1108866	19.35	µg/L	100
		663.0 -> 168.9	118315			
PFUnDA	9.386	563.1 -> 519.0	760580	19.98	µg/L	99
		563.1 -> 269.1	141442			
11CI-PF3OUdS	10.218	630.9 -> 450.9	685669	21.94	µg/L	98
		632.9 -> 452.9	211023			
9CI-PF3ONS	9.425	530.8 -> 351.0	816321	21.44	µg/L	100
		532.8 -> 353.0	242608			
ADONA	7.369	376.9 -> 250.9	1523437	21.12	µg/L	99
		376.9 -> 84.8	543935			
HFPO-DA	6.565	284.9 -> 168.9	263046	20.88	µg/L	99
		284.9 -> 184.9	28370			
3:3FTCA	4.204	241.0 -> 177.0	55972	19.96	µg/L	99
		241.0 -> 117.0	5472			
5:3FTCA	6.783	341.0 -> 237.1	184175	20.72	µg/L	99
		341.0 -> 217.0	138010			
7:3FTCA	8.262	441.0 -> 316.9	101851	19.95	µg/L	91
		441.0 -> 336.9	244884			
EtFOSA	11.562	526.0 -> 219.0	269302	22.17	µg/L	99
		526.0 -> 169.0	312295			
EtFOSE	11.496	630.0 -> 58.9	1254128	101.28	µg/L	100
MeFOSA	11.329	511.9 -> 219.0	212376	22.09	µg/L	95
		511.9 -> 169.0	260944			
MeFOSE	11.261	616.1 -> 58.9	1149837	100.05	µg/L	100
PFDoDS	10.652	699.1 -> 79.9	161904	19.96	µg/L	99
		699.1 -> 98.8	85701			
NFDHA	6.053	295.0 -> 201.0	95403	21.73	µg/L	98
		295.0 -> 84.9	26893			
PFMBA	5.328	279.0 -> 85.1	773308	20.74	µg/L	100
PFMPA	3.882	229.0 -> 84.9	797110	20.72	µg/L	100
PFEESA	6.660	314.8 -> 134.9	1078478	18.88	µg/L	100
		314.8 -> 82.9	33867			

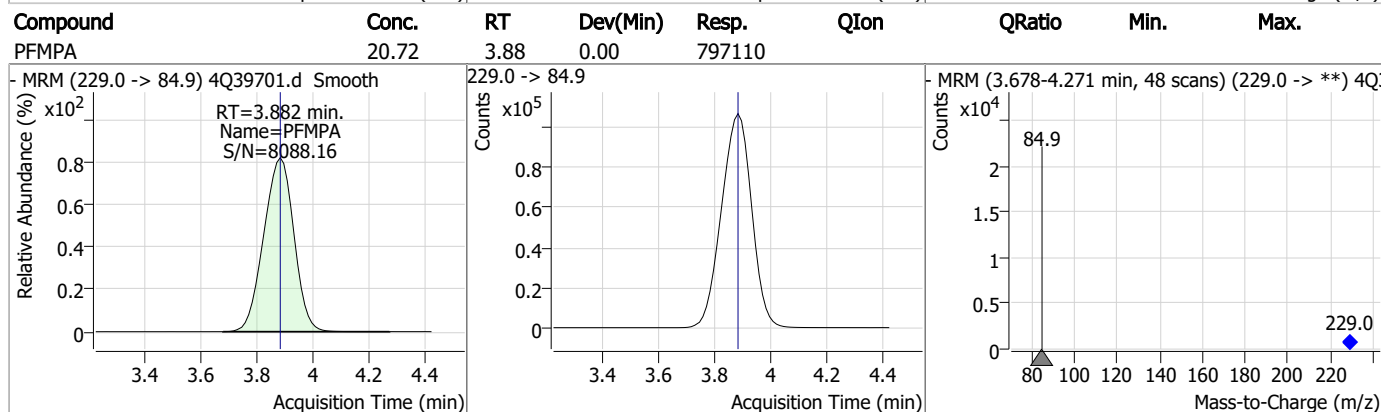
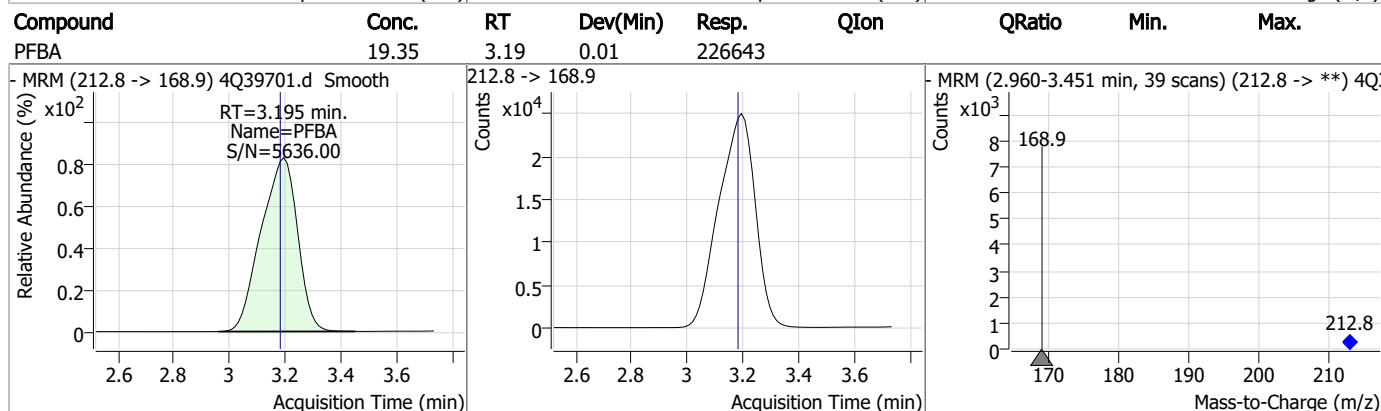
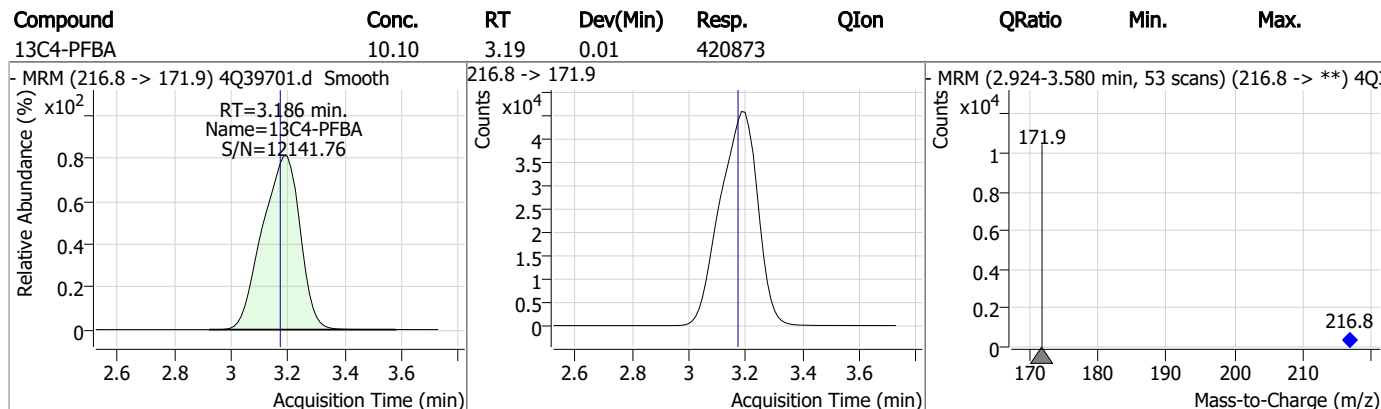
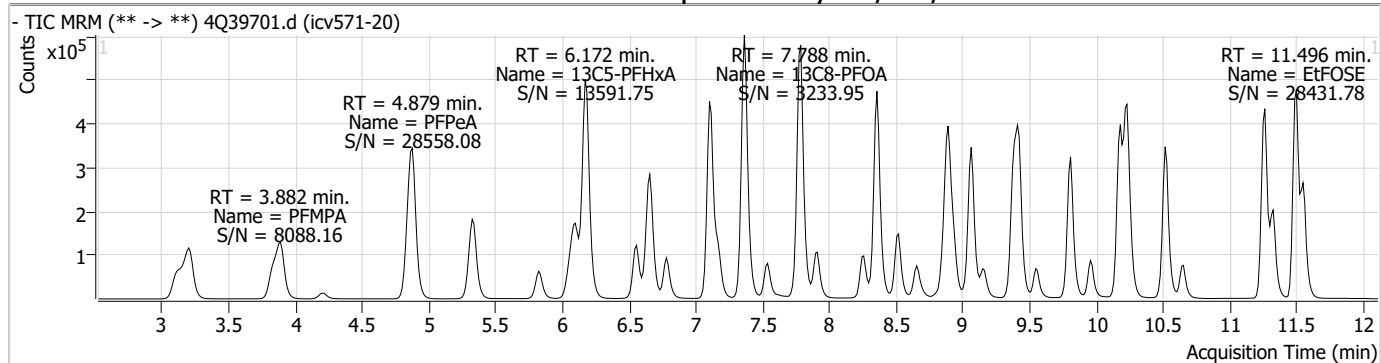
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

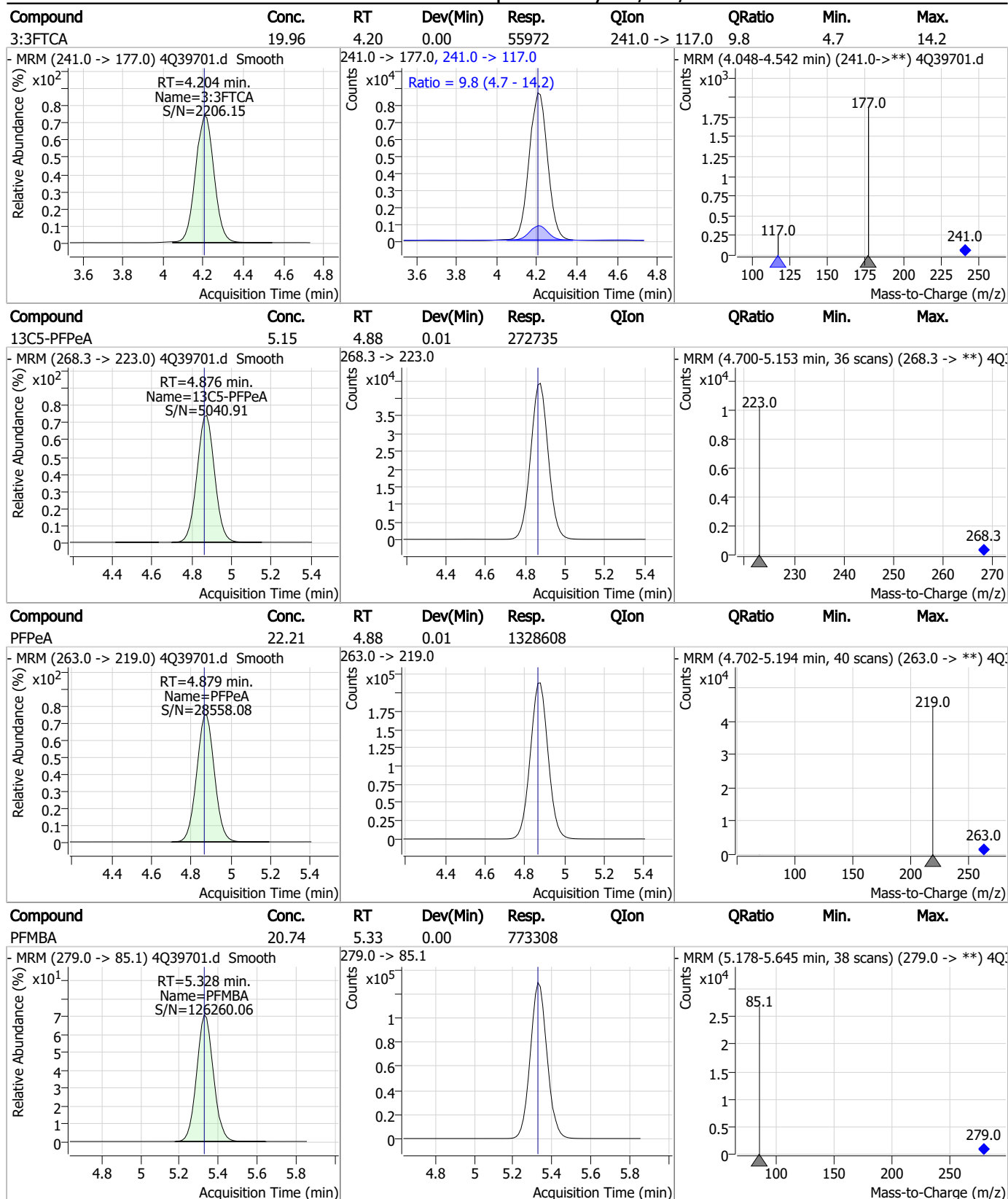
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.6.11
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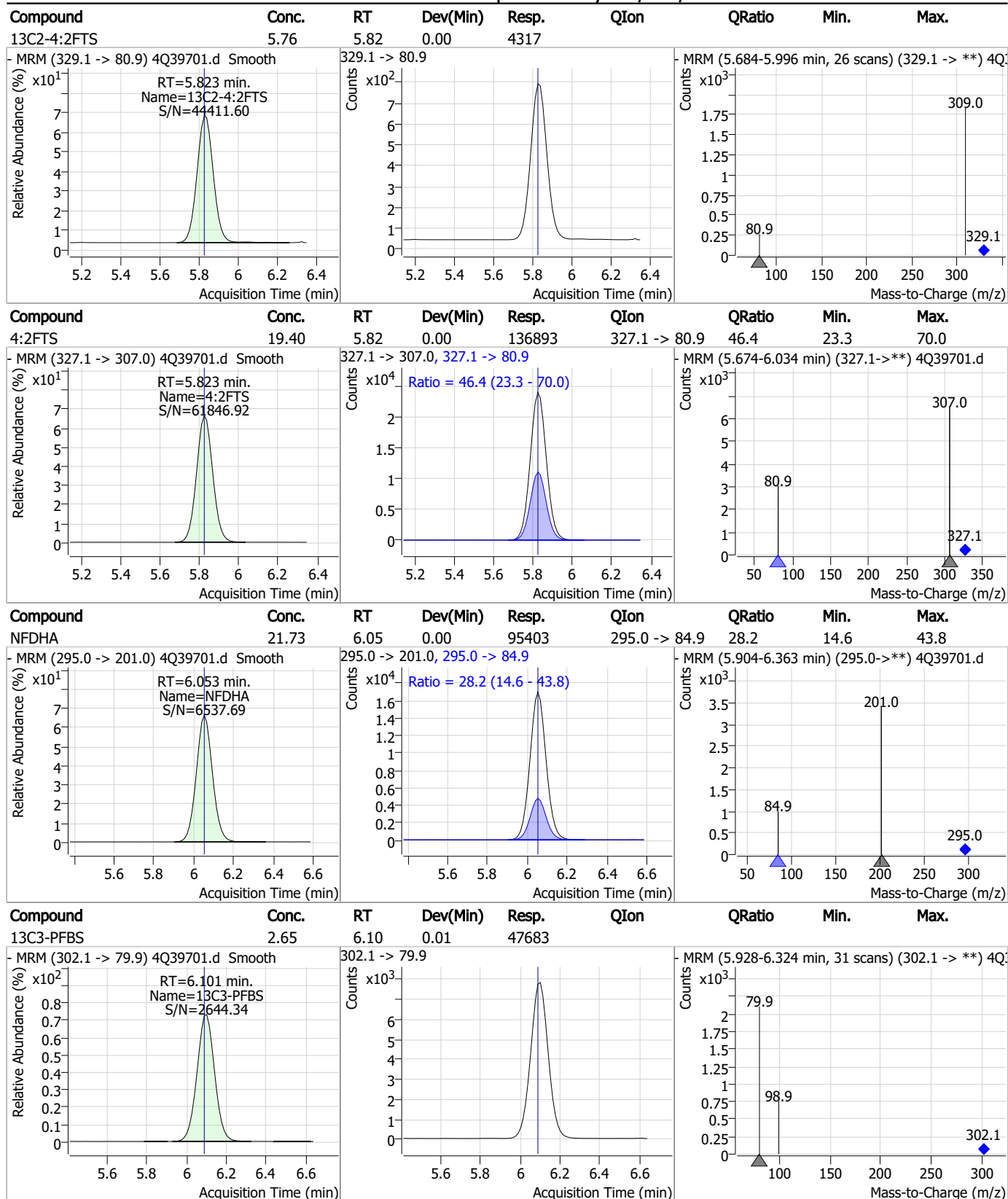
Perfluorinated Compounds by LC/MS/MS



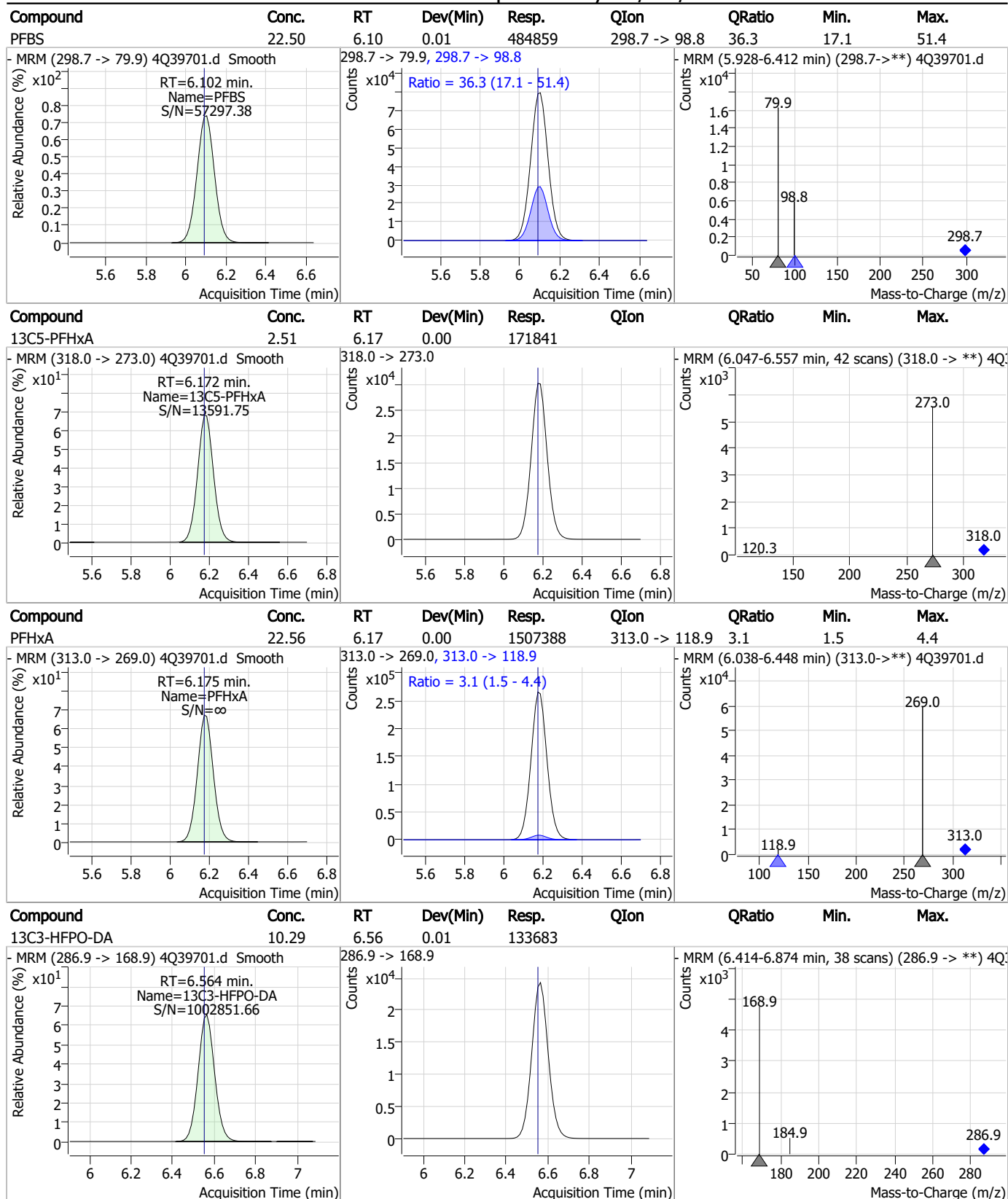
Perfluorinated Compounds by LC/MS/MS



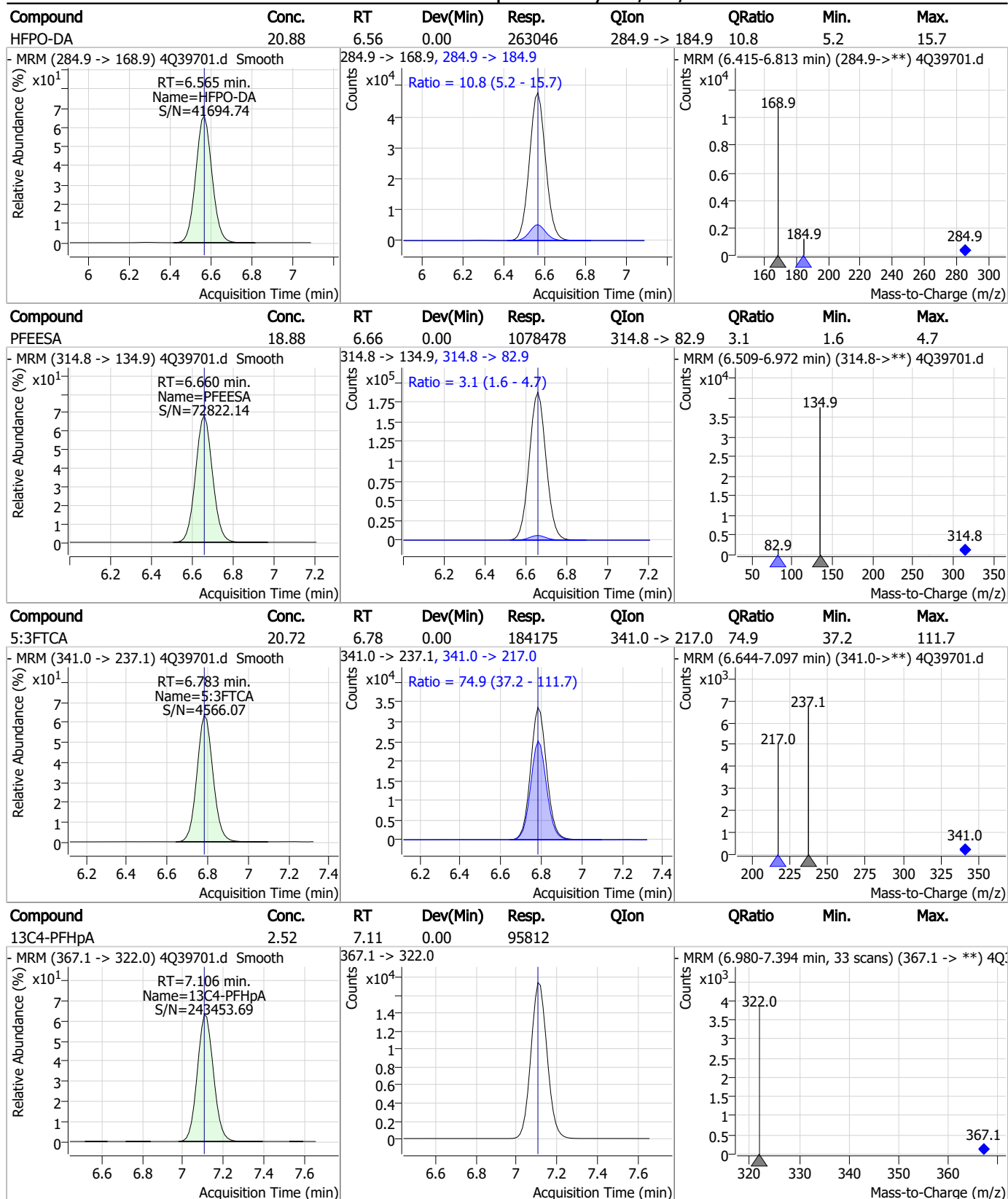
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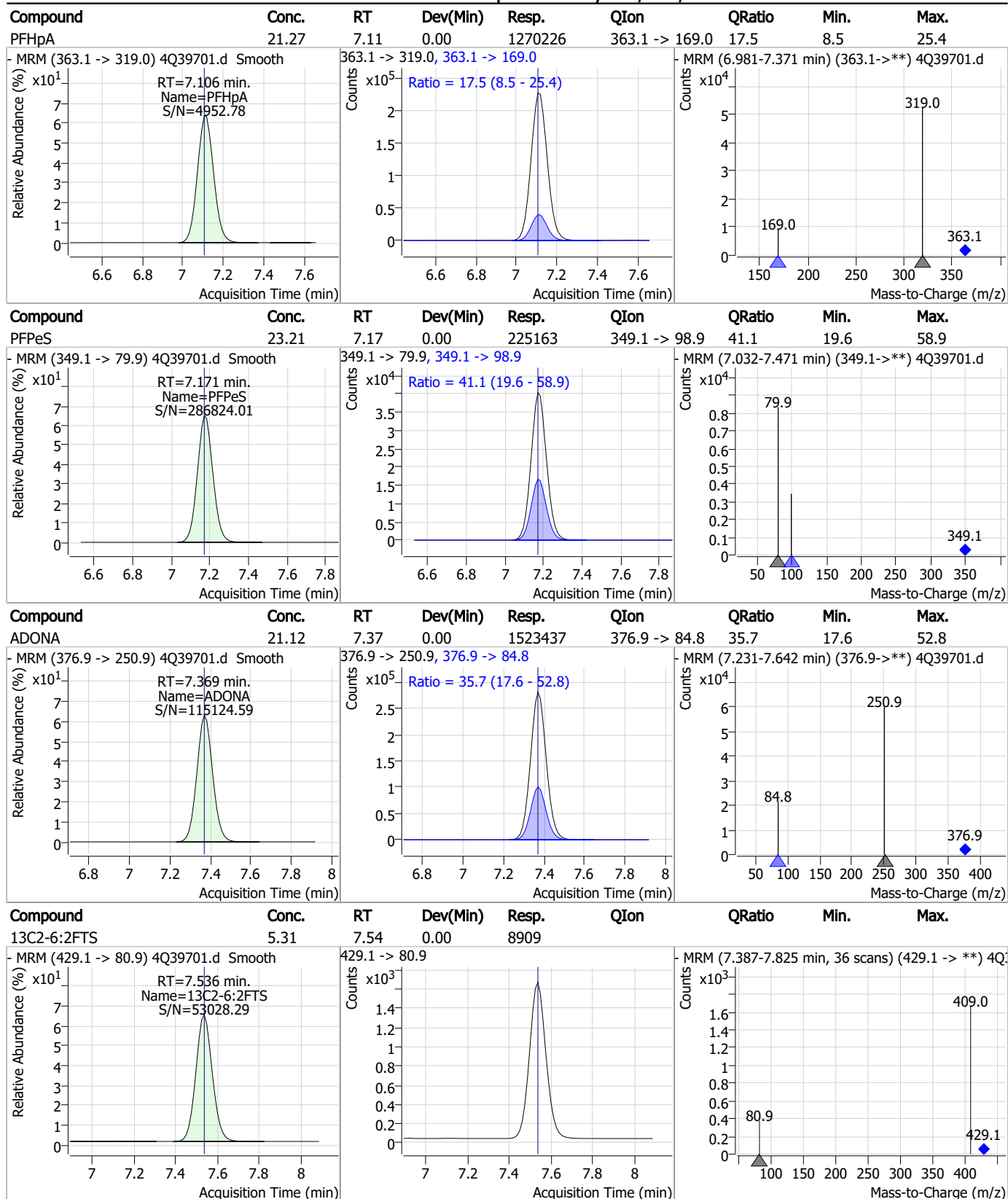
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



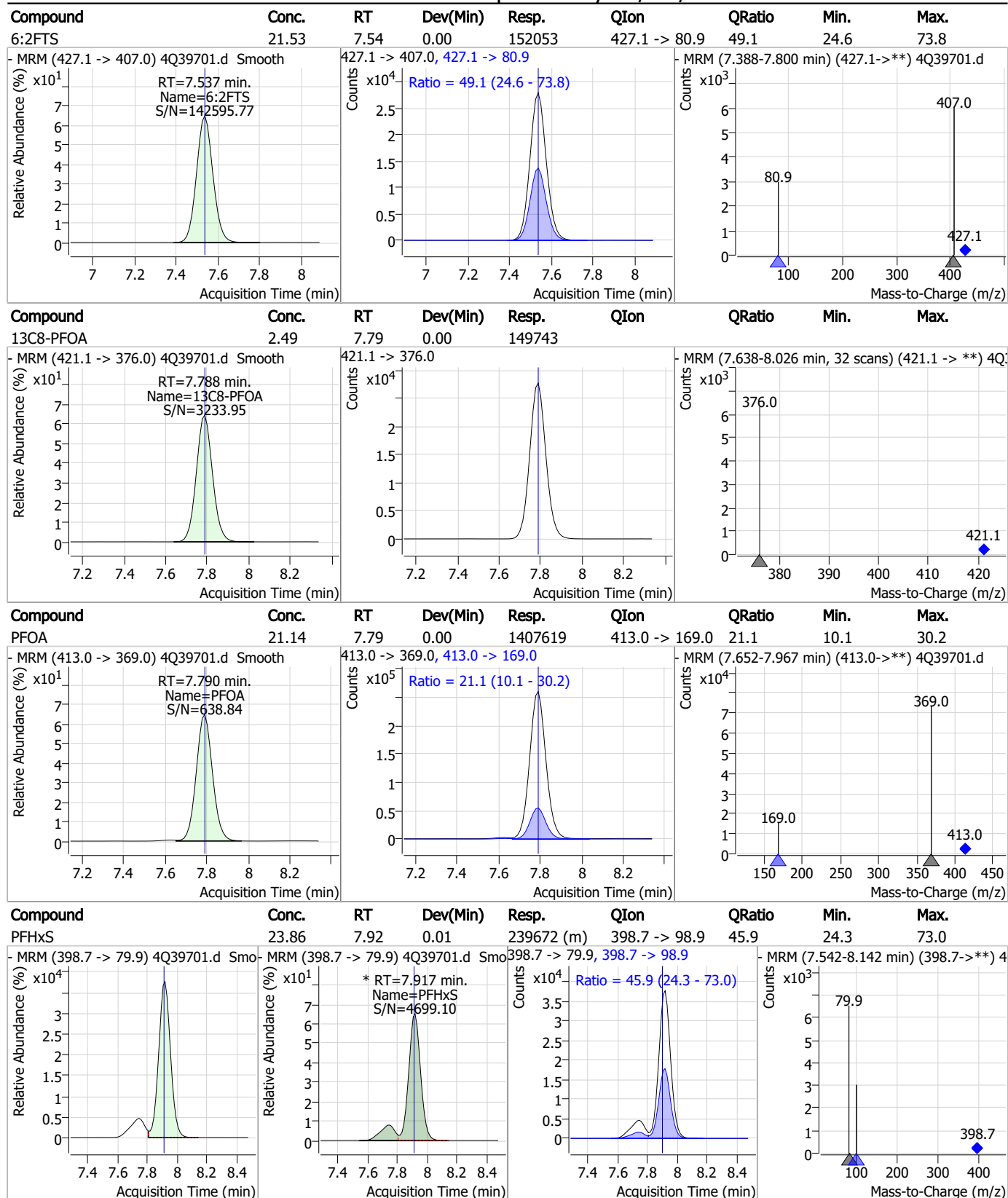
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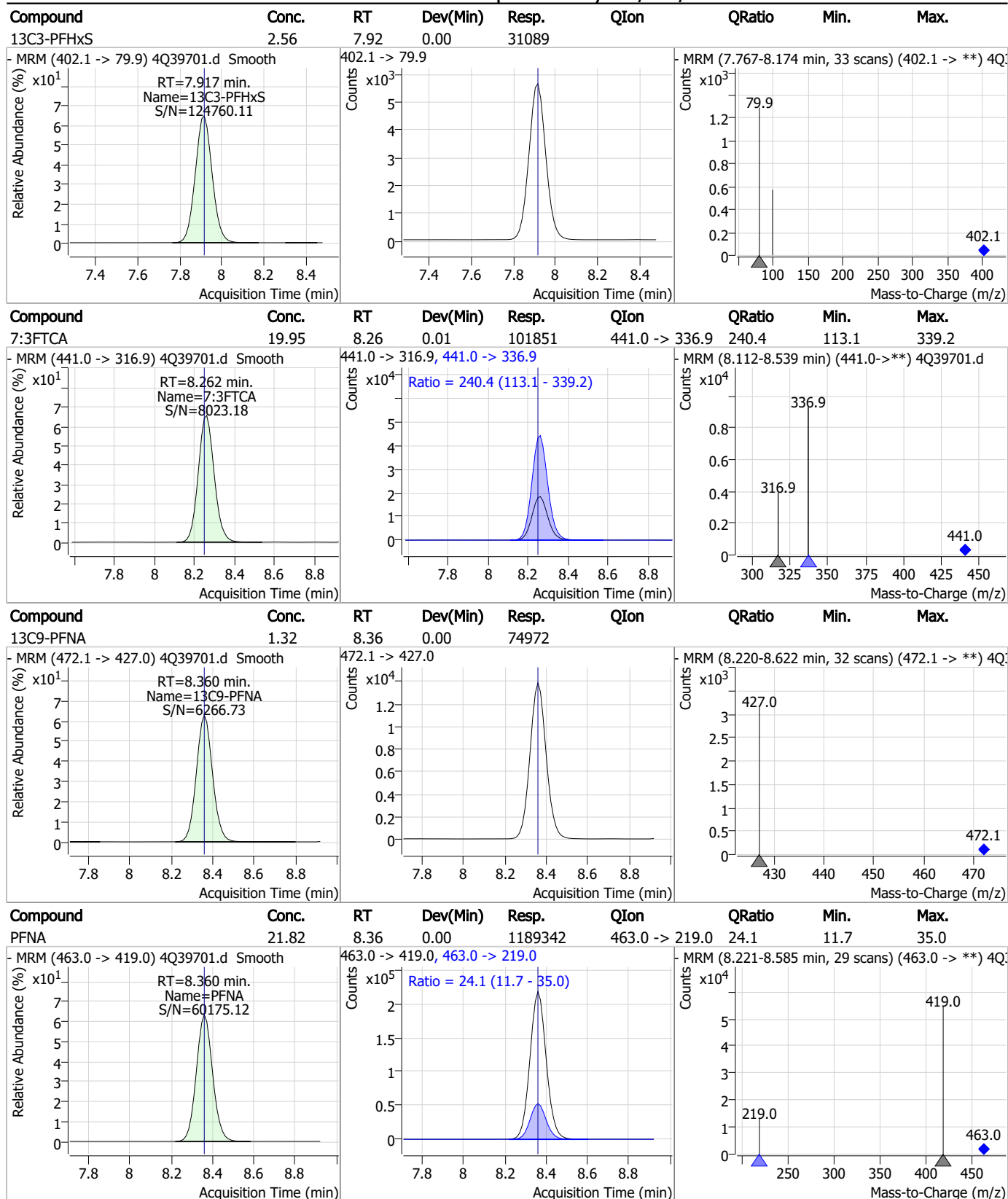
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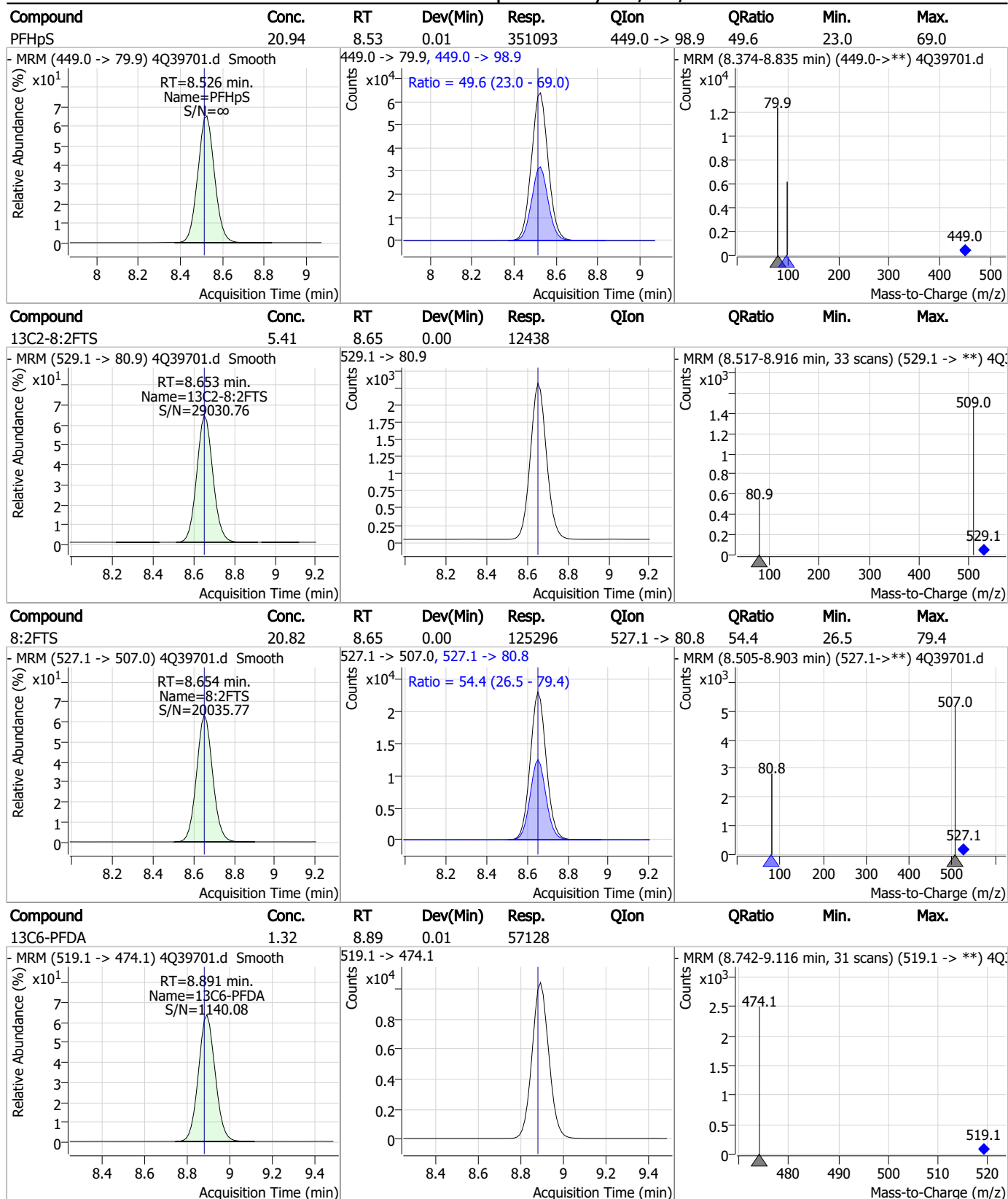
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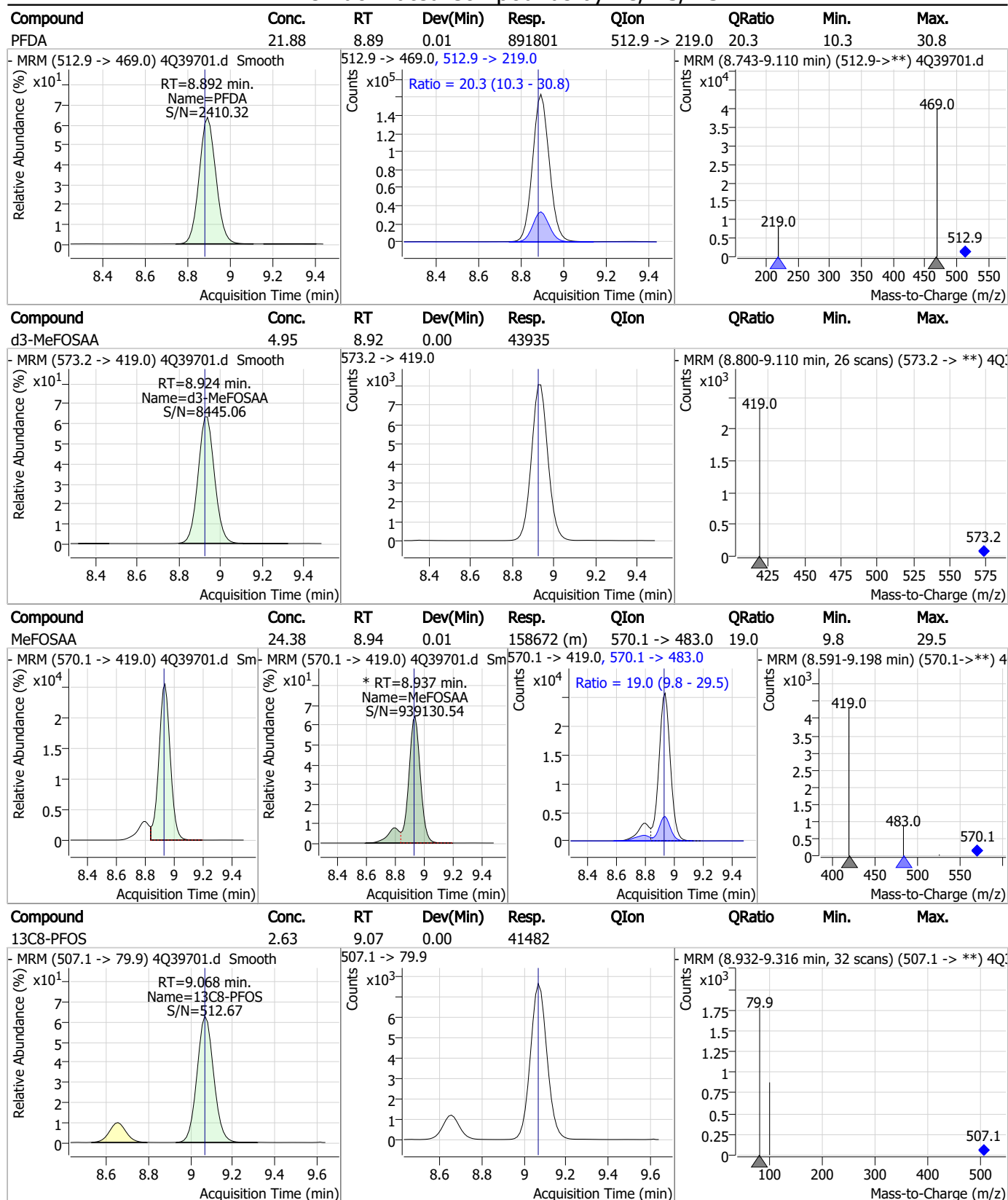
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



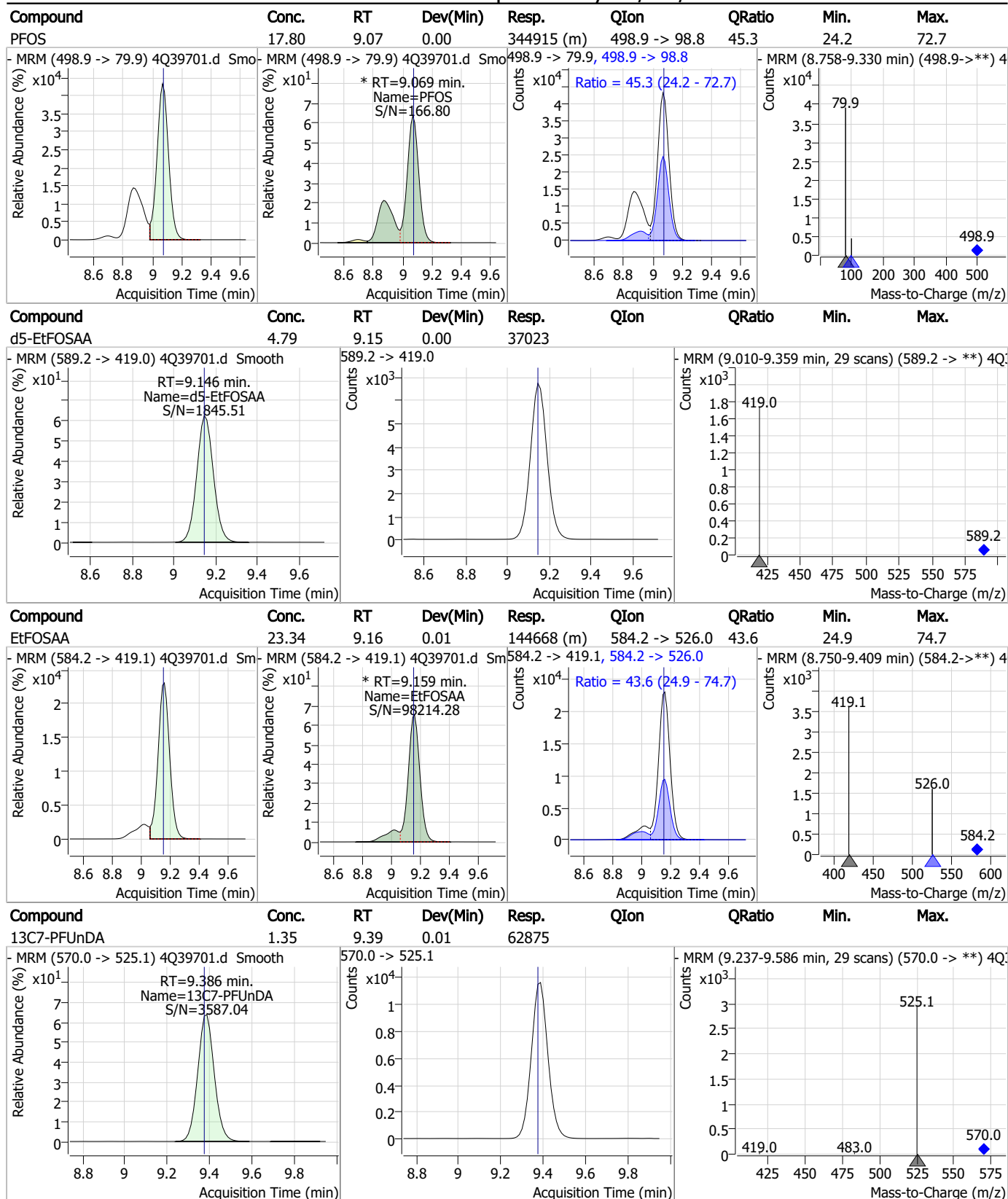
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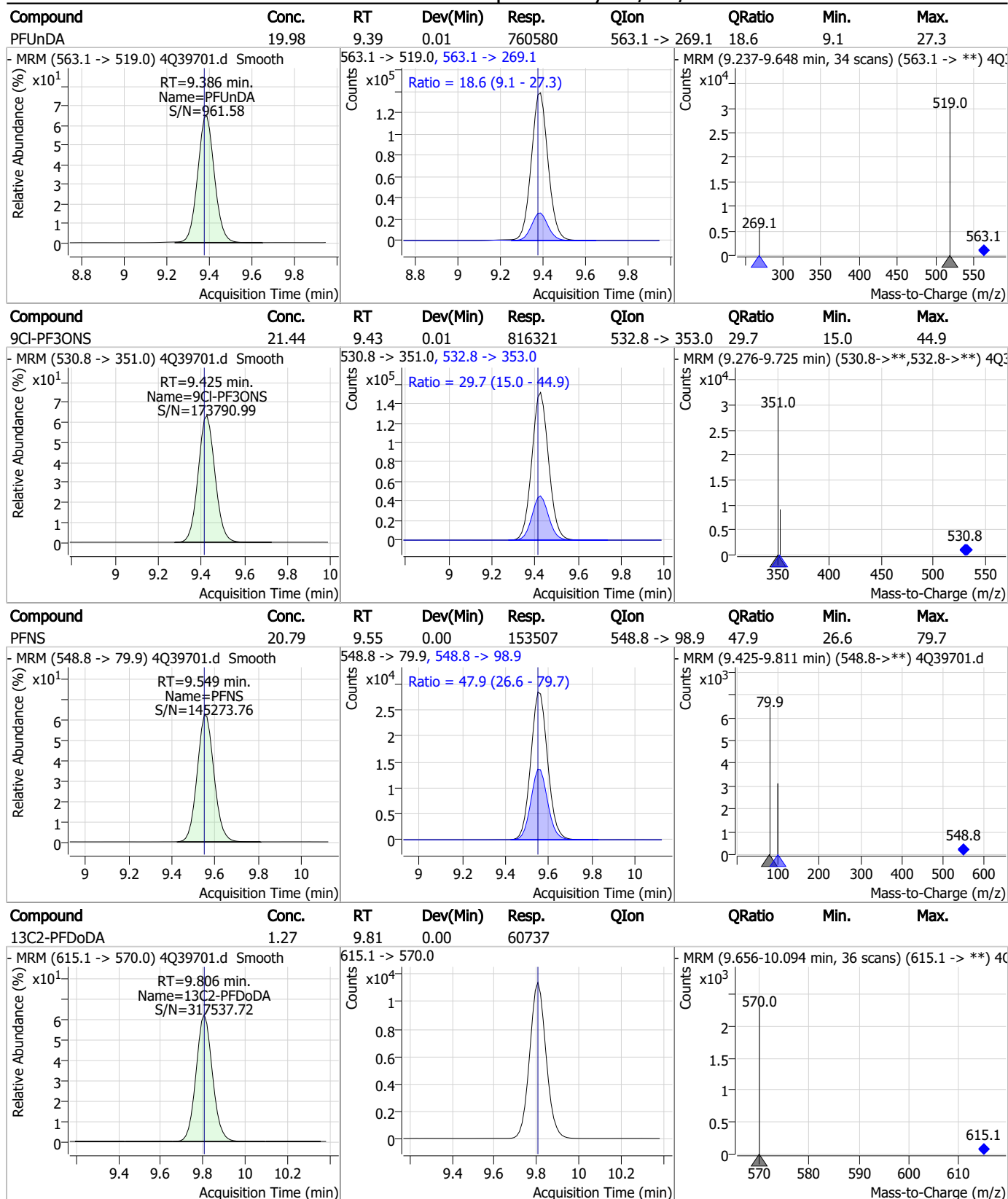
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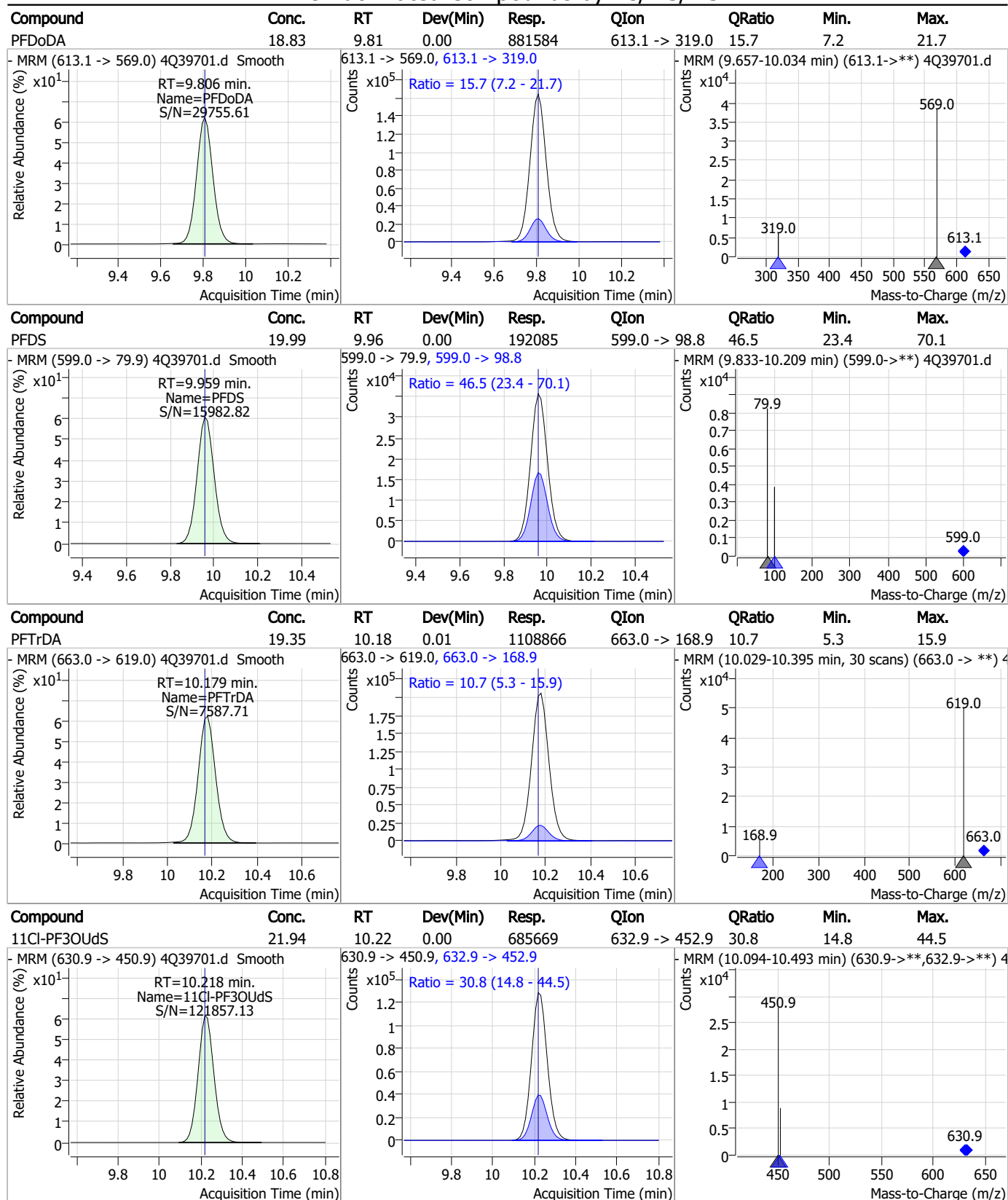
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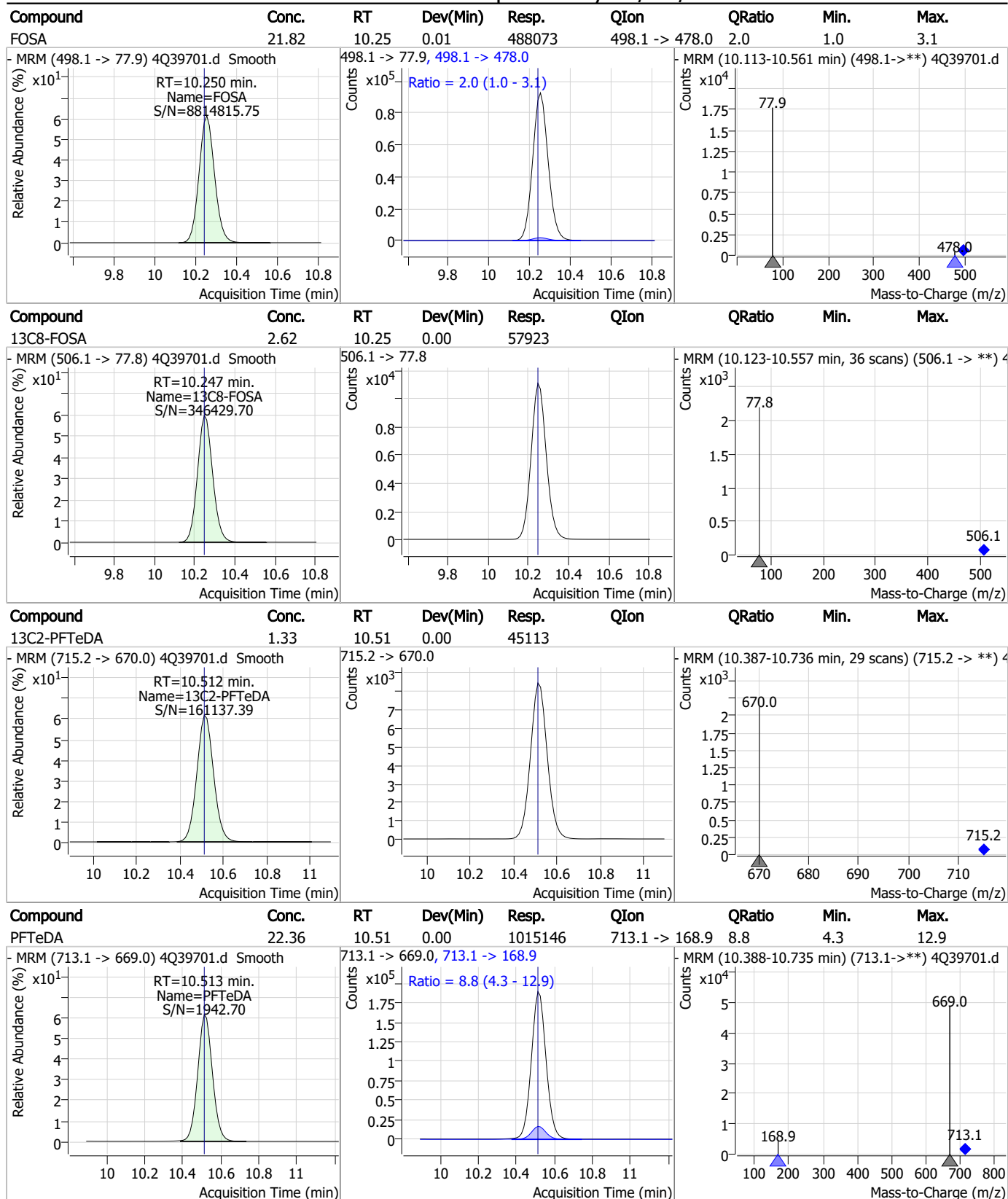
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



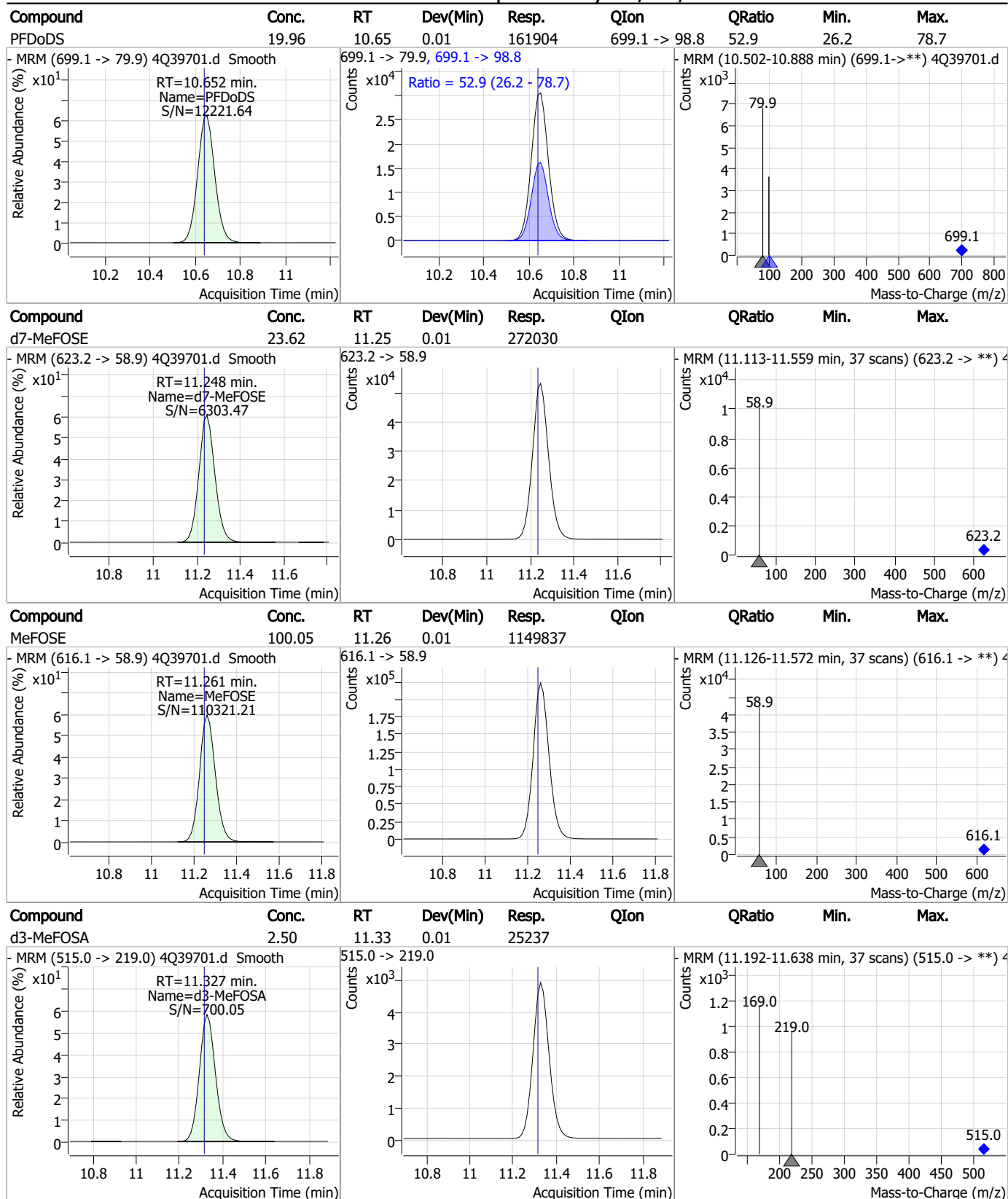
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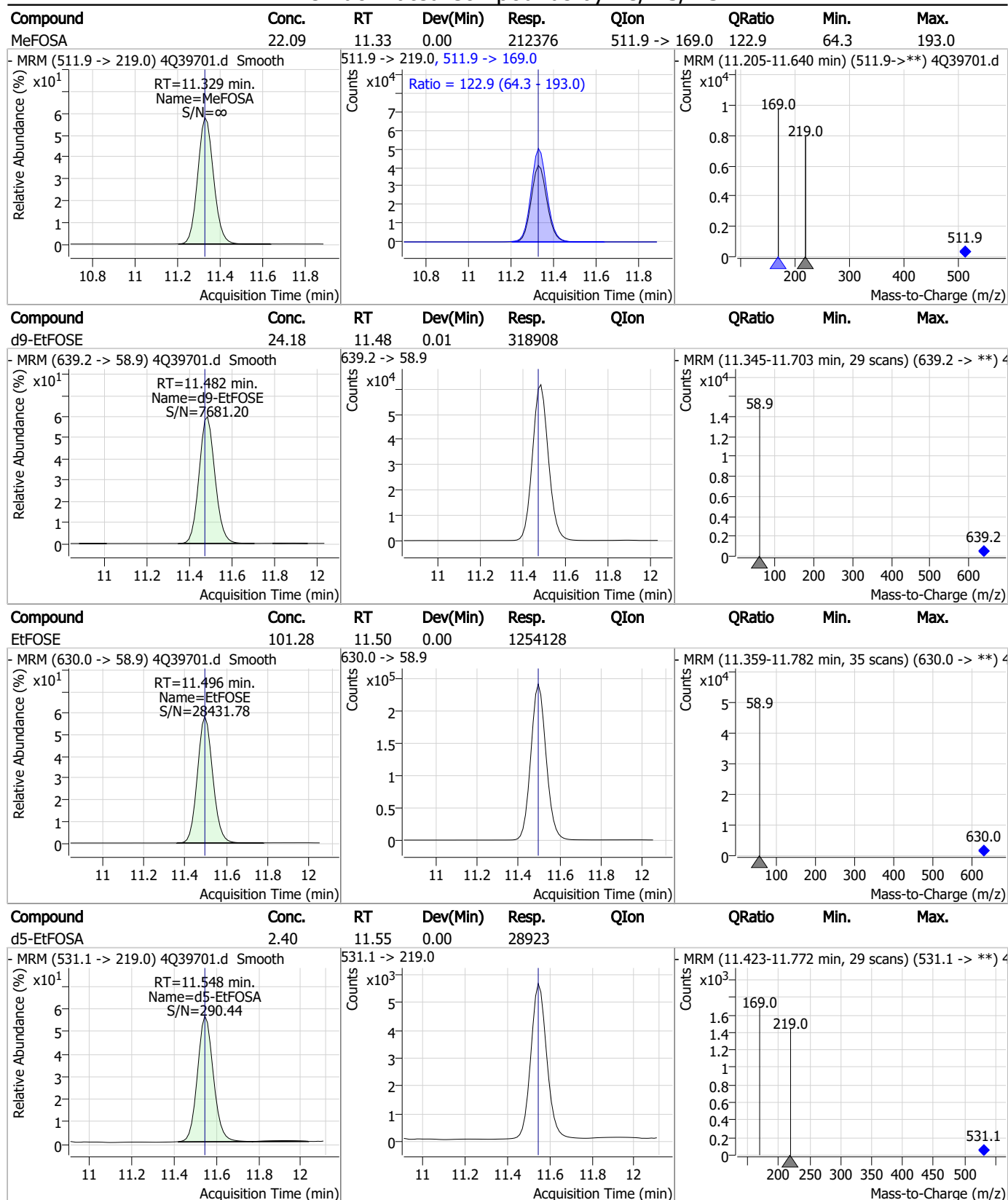
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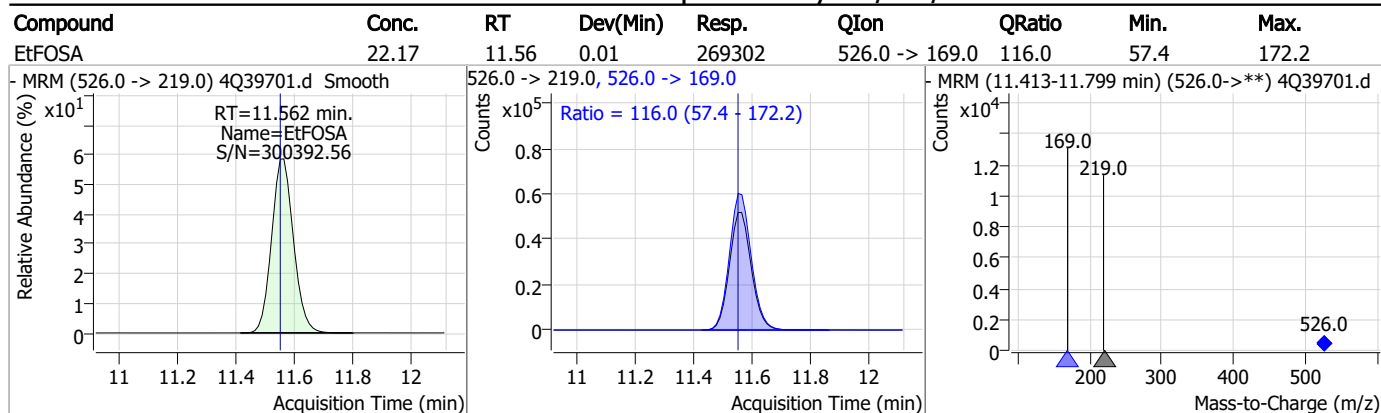
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.11

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Manual Integration Approval Summary

Sample Number: S4Q571-ICV571

Method: EPA DRAFT 1633

Lab FileID: 4Q39701.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 15:34

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.94	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.16	Split peak

7.6.11.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39702.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 3:48:23 PM
 Sample Name : cc571-4
 Vial : P1-A5
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.186	216.8 -> 171.9	446624	10.00 µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	294214	5.00 µg/L	0.012
M5-PFHxA	6.184	318.0 -> 273.0	190169	2.50 µg/L	0.012
M4-PFHpA	7.118	367.1 -> 322.0	104291	2.50 µg/L	0.012
M8-PFOA	7.788	421.1 -> 376.0	164465	2.50 µg/L	0.000
M9-PFNA	8.372	472.1 -> 427.0	79797	1.25 µg/L	0.012
M6-PFDA	8.891	519.1 -> 474.1	61306	1.25 µg/L	0.012
M7-PFUnDA	9.386	570.0 -> 525.1	69263	1.25 µg/L	0.012
M2-PFDoDA	9.806	615.1 -> 570.0	70038	1.25 µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	48047	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	61516	2.50 µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	53027	2.50 µg/L	0.012
M3-PFHxS	7.917	402.1 -> 79.9	35097	2.50 µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	43034	2.50 µg/L	0.000
M2-4:2FTS	5.835	329.1 -> 80.9	4439	5.00 µg/L	0.012
M2-6:2FTS	7.536	429.1 -> 80.9	10360	5.00 µg/L	0.000
M2-8:2FTS	8.666	529.1 -> 80.9	14078	5.00 µg/L	0.012
M3-MeFOSAA	8.936	573.2 -> 419.0	50470	5.00 µg/L	0.012
M3-HFPO-DA	6.576	286.9 -> 168.9	140810	10.00 µg/L	0.025
M5-EtFOSAA	9.146	589.2 -> 419.0	44465	5.00 µg/L	0.000
M7-MeFOSE	11.248	623.2 -> 58.9	312745	25.00 µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	370847	25.00 µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	31692	2.50 µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	27658	2.50 µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	41881	2.50 µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	250560	5.00 µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	23539	2.50 µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	184242	2.50 µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	53953	1.25 µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	91212	1.25 µg/L	0.000
13C2-PFHxA	6.185	315.1 -> 270.0	178027	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.835	329.1 -> 80.9	4439	5.23 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C2-6:2FTS	7.536	429.1 -> 80.9	10360	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-8:2FTS	8.666	529.1 -> 80.9	14078	5.42 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C2-PFDoDA	9.806	615.1 -> 570.0	70038	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C2-PFTeDA	10.512	715.2 -> 670.0	48047	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-PFBS	6.101	302.1 -> 79.9	53027	2.61 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C3-PFHxS	7.917	402.1 -> 79.9	35097	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 = 102.2%	
13C4-PFBA	3.186	216.8 -> 171.9	446624	9.89 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	7.118	367.1 -> 322.0	104291	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFHxA	6.184	318.0 -> 273.0	190169	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFPeA	4.876	268.3 -> 223.0	294214	5.08 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C6-PFDA	8.891	519.1 -> 474.1	61306	1.29 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C7-PFUnDA	9.386	570.0 -> 525.1	69263	1.35 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C8-FOSA	10.247	506.1 -> 77.8	61516	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-PFOA	7.788	421.1 -> 376.0	164465	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C8-PFOS	9.068	507.1 -> 79.9	43034	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C9-PFNA	8.372	472.1 -> 427.0	79797	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSAA	8.936	573.2 -> 419.0	50470	5.25 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C3-HFPO-DA	6.576	286.9 -> 168.9	140810	9.91 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSA	11.327	515.0 -> 219.0	27658	2.53 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
d5-EtFOSAA	9.146	589.2 -> 419.0	44465	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
d7-MeFOSE	11.248	623.2 -> 58.9	312745	25.04 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
d9-EtFOSE	11.482	639.2 -> 58.9	370847	25.92 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d5-EtFOSA	11.548	531.1 -> 219.0	31692	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
Target Compounds					QValue
4:2FTS	5.836	327.1 -> 307.0	64973	8.96 µg/L	100
		327.1 -> 80.9	30512		
6:2FTS	7.537	427.1 -> 407.0	69673	8.48 µg/L	98
		427.1 -> 80.9	33505		
8:2FTS	8.666	527.1 -> 507.0	58243	8.55 µg/L	96
		527.1 -> 80.8	32353		
EtFOSAA	9.159	584.2 -> 419.1	15280	2.05 µg/L	m 96
		584.2 -> 526.0	7237		
FOSA	10.250	498.1 -> 77.9	52976	2.23 µg/L	100
		498.1 -> 478.0	1176		
MeFOSAA	8.937	570.1 -> 419.0	17562	2.35 µg/L	m 96
		570.1 -> 483.0	3158		
PFBA	3.195	212.8 -> 168.9	106921	8.60 µg/L	100
PFBS	6.102	298.7 -> 79.9	46841	1.95 µg/L	97
		298.7 -> 98.8	16911		
PFDA	8.892	512.9 -> 469.0	99861	2.28 µg/L	100
		512.9 -> 219.0	20491		
PFDODA	9.806	613.1 -> 569.0	119454	2.21 µg/L	98
		613.1 -> 319.0	18117		
PFDS	9.959	599.0 -> 79.9	22536	2.26 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.119	599.0 -> 98.8	10425	2.29	µg/L	99
		363.1 -> 319.0	148750			
PFHpS	8.526	363.1 -> 169.0	24615	2.18	µg/L	97
		449.0 -> 79.9	37856			
PFHxA	6.187	449.0 -> 98.9	18152	2.23	µg/L	100
		313.0 -> 269.0	164664			
PFHxS	7.917	313.0 -> 118.9	4996	1.99	µg/L	97
		398.7 -> 79.9	22580			
PFNA	8.373	398.7 -> 98.9	11449	2.20	µg/L	99
		463.0 -> 419.0	127465			
PFNS	9.561	463.0 -> 219.0	30436	1.96	µg/L	96
		548.8 -> 79.9	15039			
PFOA	7.790	548.8 -> 98.9	7596	2.36	µg/L	98
		413.0 -> 369.0	172301			
PFOS	9.069	413.0 -> 169.0	33511	2.07	µg/L	98
		498.9 -> 79.9	41517			
PFPeA	4.879	498.9 -> 98.8	19635	4.58	µg/L	100
		263.0 -> 219.0	295311			
PFPeS	7.184	349.1 -> 79.9	21094	1.93	µg/L	99
		349.1 -> 98.9	8450			
PFTeDA	10.513	713.1 -> 669.0	116570	2.41	µg/L	98
		713.1 -> 168.9	9248			
PFTrDA	10.179	663.0 -> 619.0	156080	2.36	µg/L	99
		663.0 -> 168.9	16088			
PFUnDA	9.386	563.1 -> 519.0	86605	2.07	µg/L	98
		563.1 -> 269.1	16504			
11Cl-PF3OUdS	10.231	630.9 -> 450.9	306545	9.31	µg/L	100
		632.9 -> 452.9	91460			
9Cl-PF3ONS	9.425	530.8 -> 351.0	350548	8.74	µg/L	98
		532.8 -> 353.0	101208			
ADONA	7.382	376.9 -> 250.9	682942	8.99	µg/L	99
		376.9 -> 84.8	243674			
HFPO-DA	6.577	284.9 -> 168.9	127284	9.59	µg/L	99
		284.9 -> 184.9	12945			
3:3FTCA	4.217	241.0 -> 177.0	32867	10.87	µg/L	98
		241.0 -> 117.0	3394			
5:3FTCA	6.796	341.0 -> 237.1	558357	56.77	µg/L	100
		341.0 -> 217.0	414376			
7:3FTCA	8.262	441.0 -> 316.9	334564	59.23	µg/L	100
		441.0 -> 336.9	755222			
EtFOSA	11.562	526.0 -> 219.0	30254	2.27	µg/L	95
		526.0 -> 169.0	36259			
EtFOSE	11.496	630.0 -> 58.9	346655	24.08	µg/L	100
		511.9 -> 219.0	24216			
MeFOSA	11.329	511.9 -> 169.0	29313	2.30	µg/L	93
		616.1 -> 58.9	326670			
MeFOSE	11.261	699.1 -> 79.9	18643	24.72	µg/L	100
		699.1 -> 98.8	9836			
PFDoDS	10.652	295.0 -> 201.0	24270	2.21	µg/L	100
		295.0 -> 84.9	6267			
NFDHA	6.066	279.0 -> 85.1	187635	4.99	µg/L	94
		229.0 -> 84.9	187635			
PFMBA	5.341	314.8 -> 134.9	261388	4.67	µg/L	100
PFMPA	3.882	314.8 -> 82.9	7564	4.52	µg/L	100
PFEESA	6.672			4.14	µg/L	99

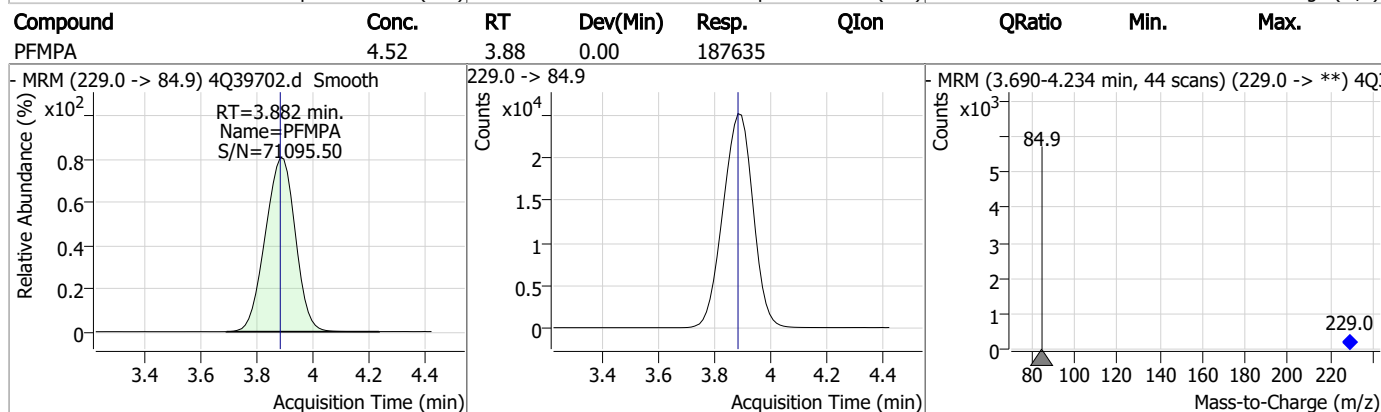
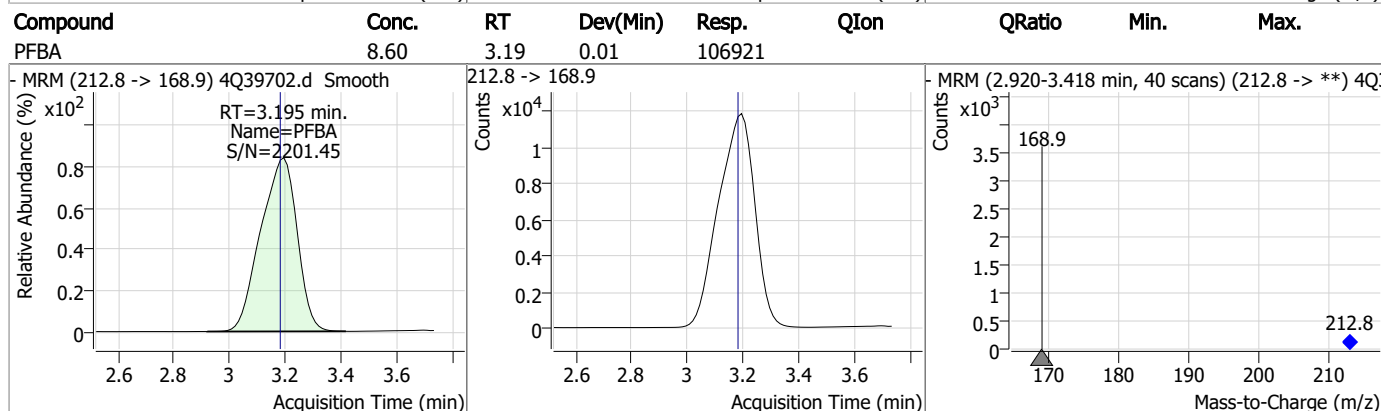
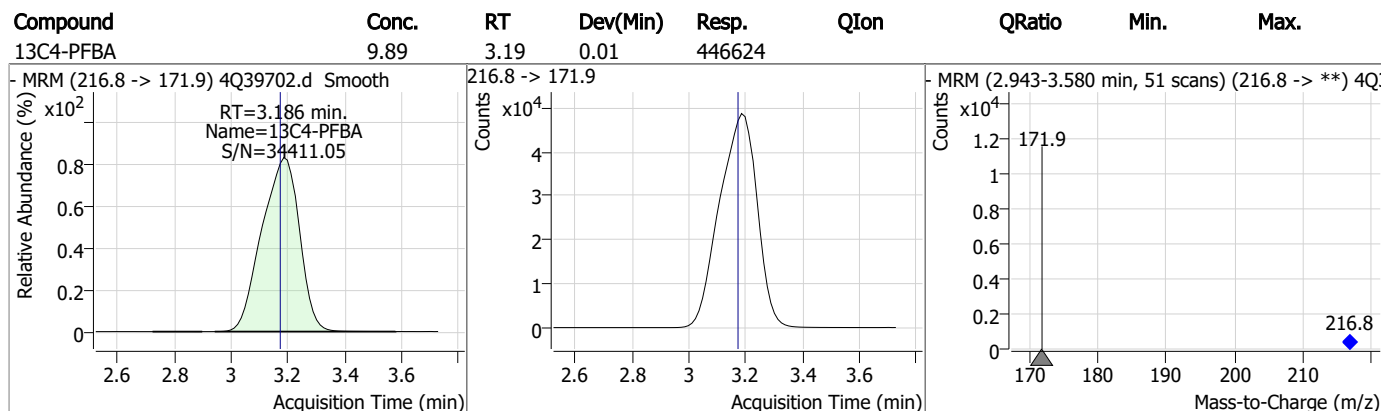
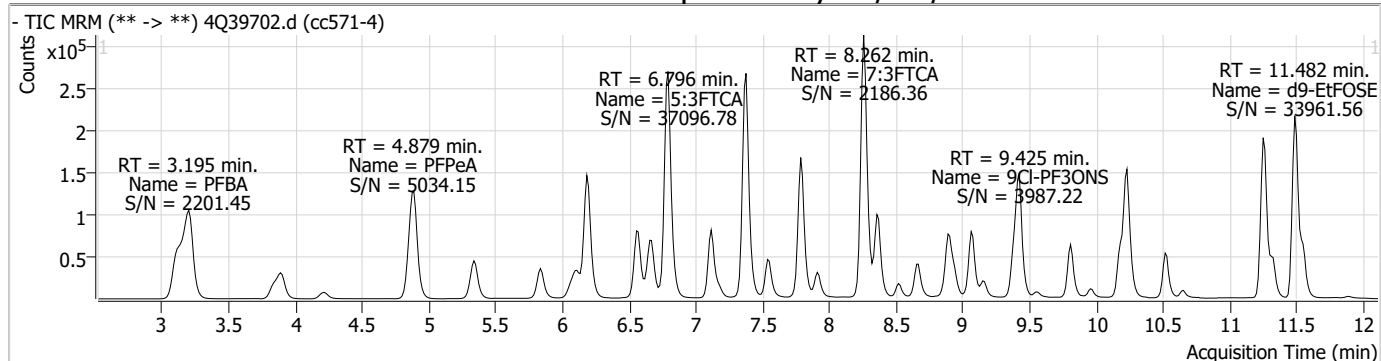
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

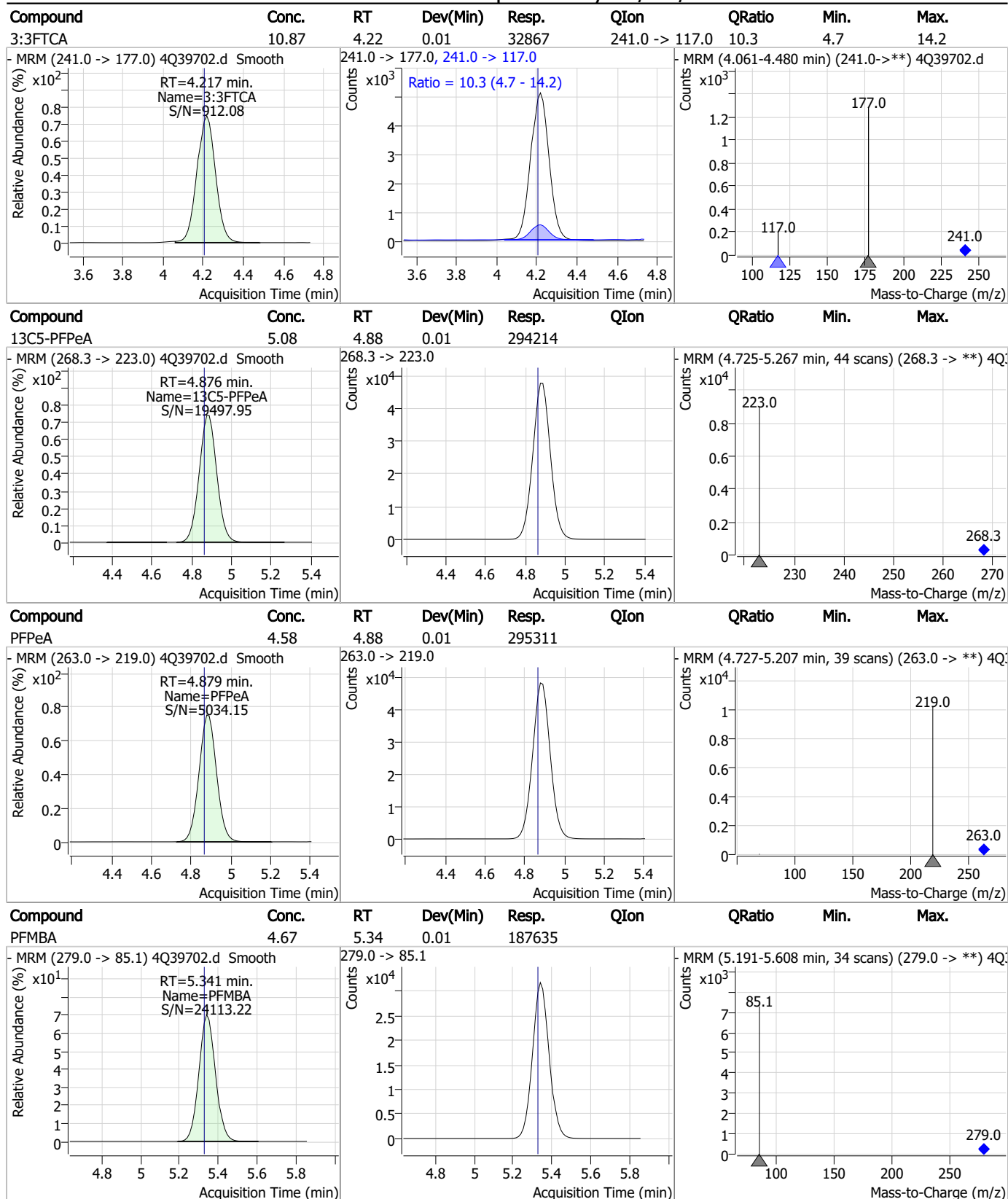
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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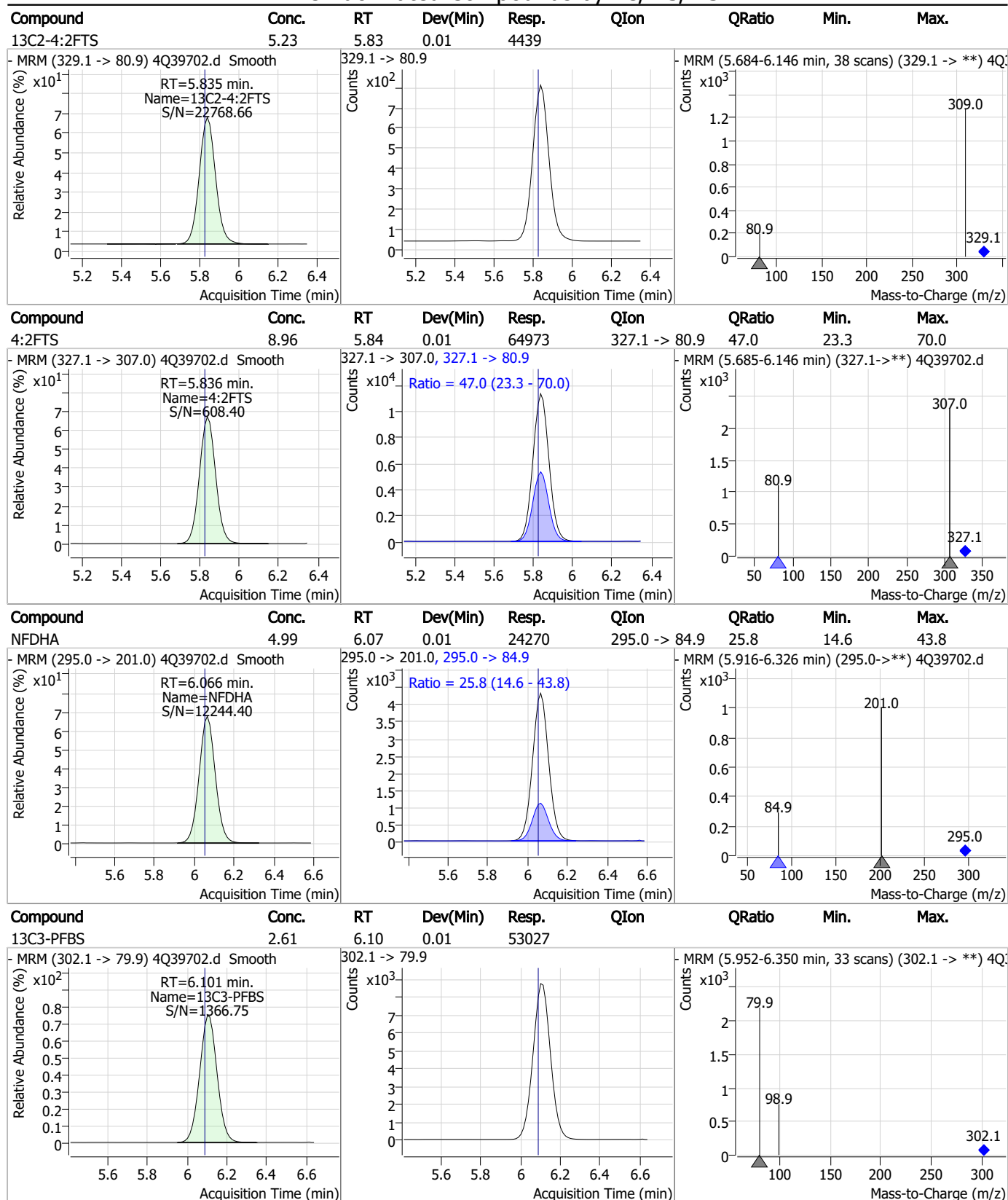
Perfluorinated Compounds by LC/MS/MS



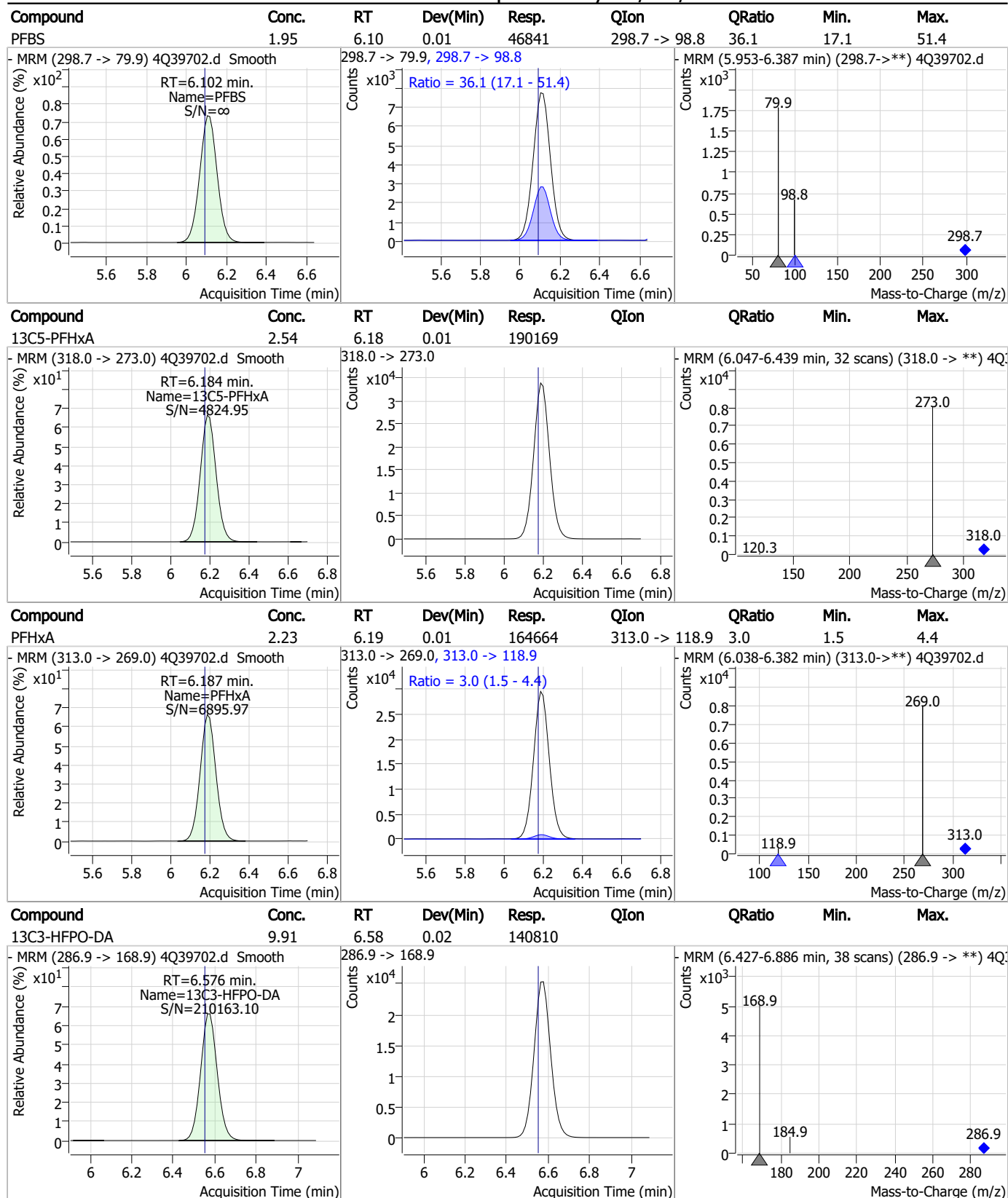
Perfluorinated Compounds by LC/MS/MS



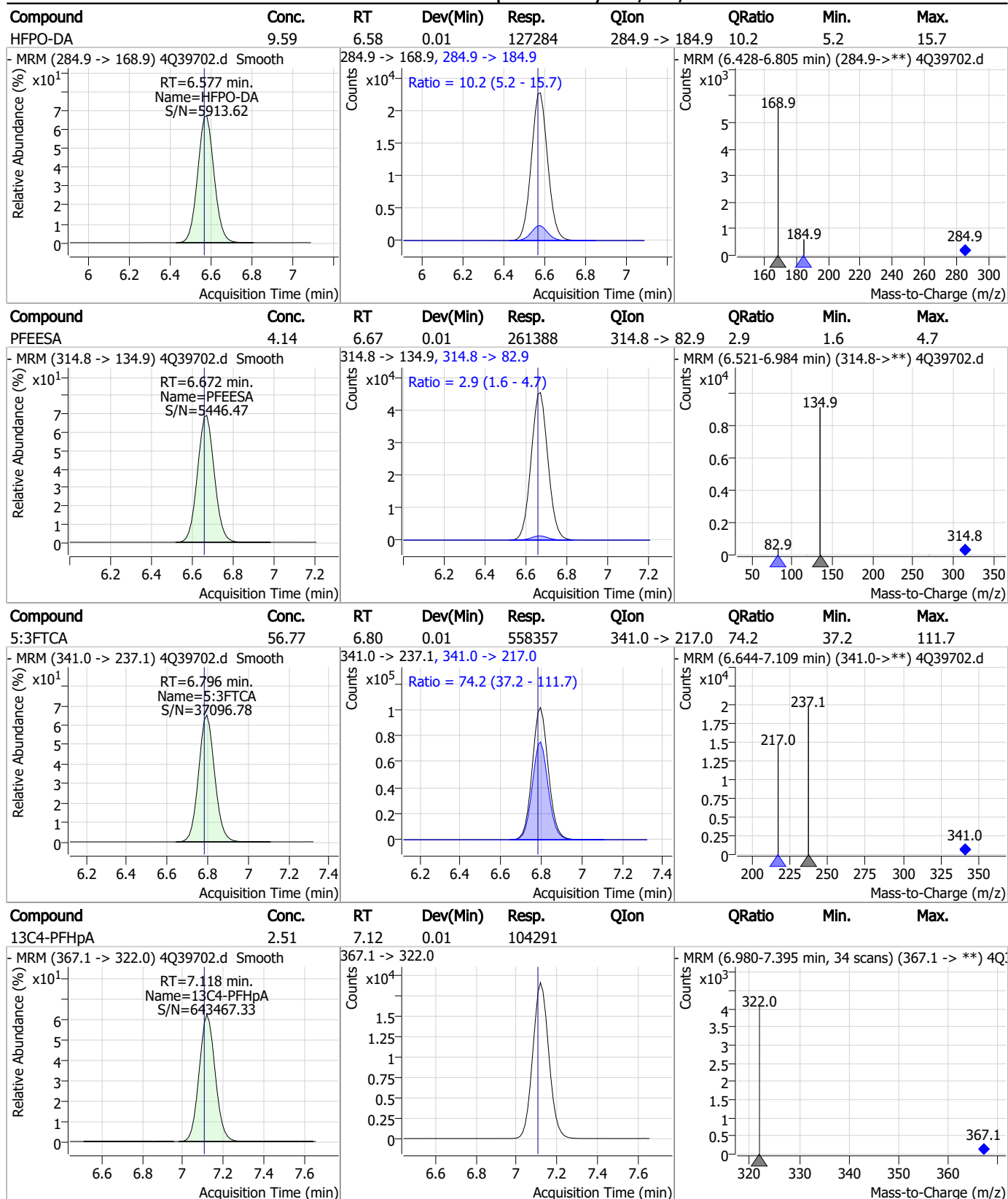
Perfluorinated Compounds by LC/MS/MS



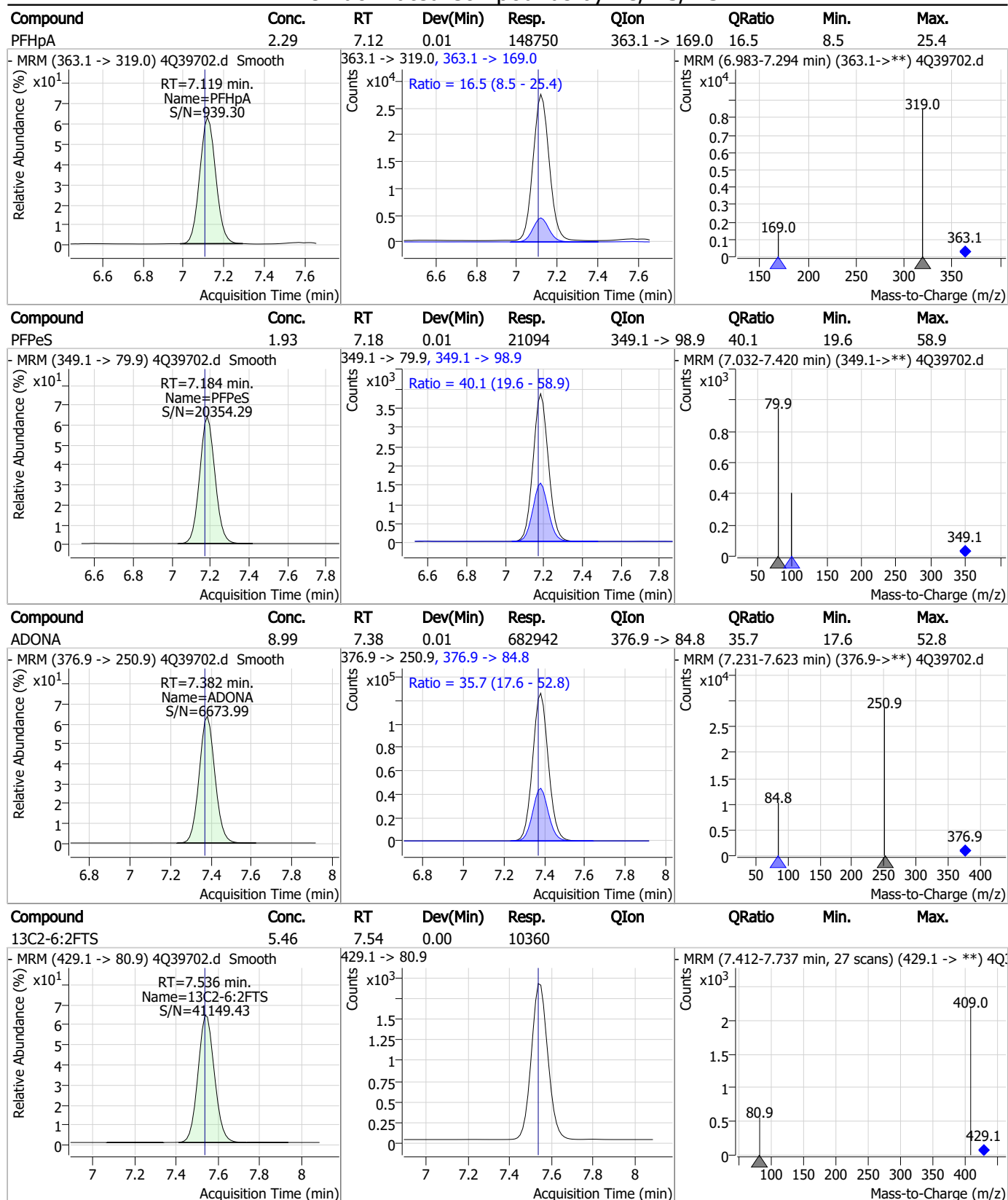
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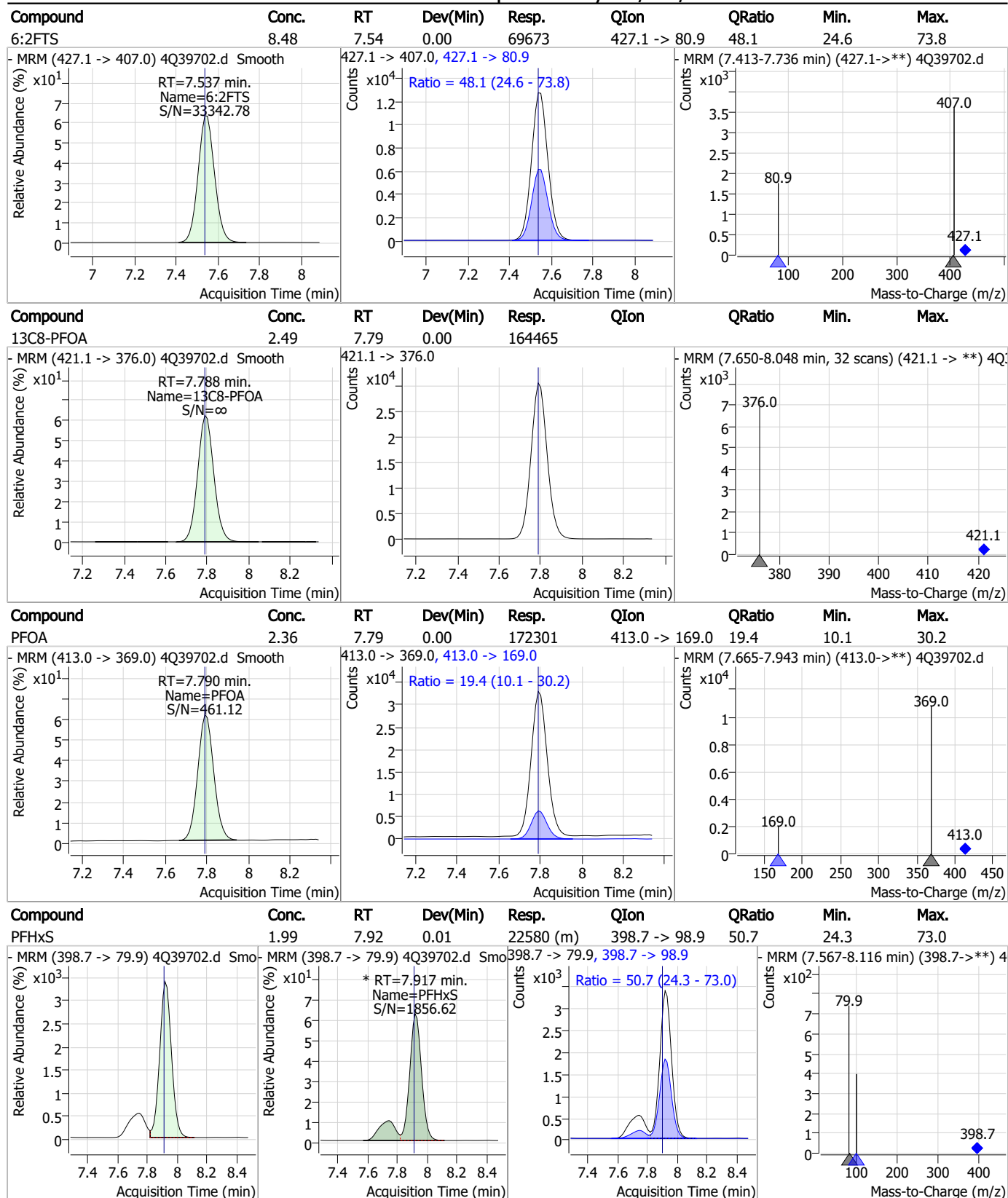
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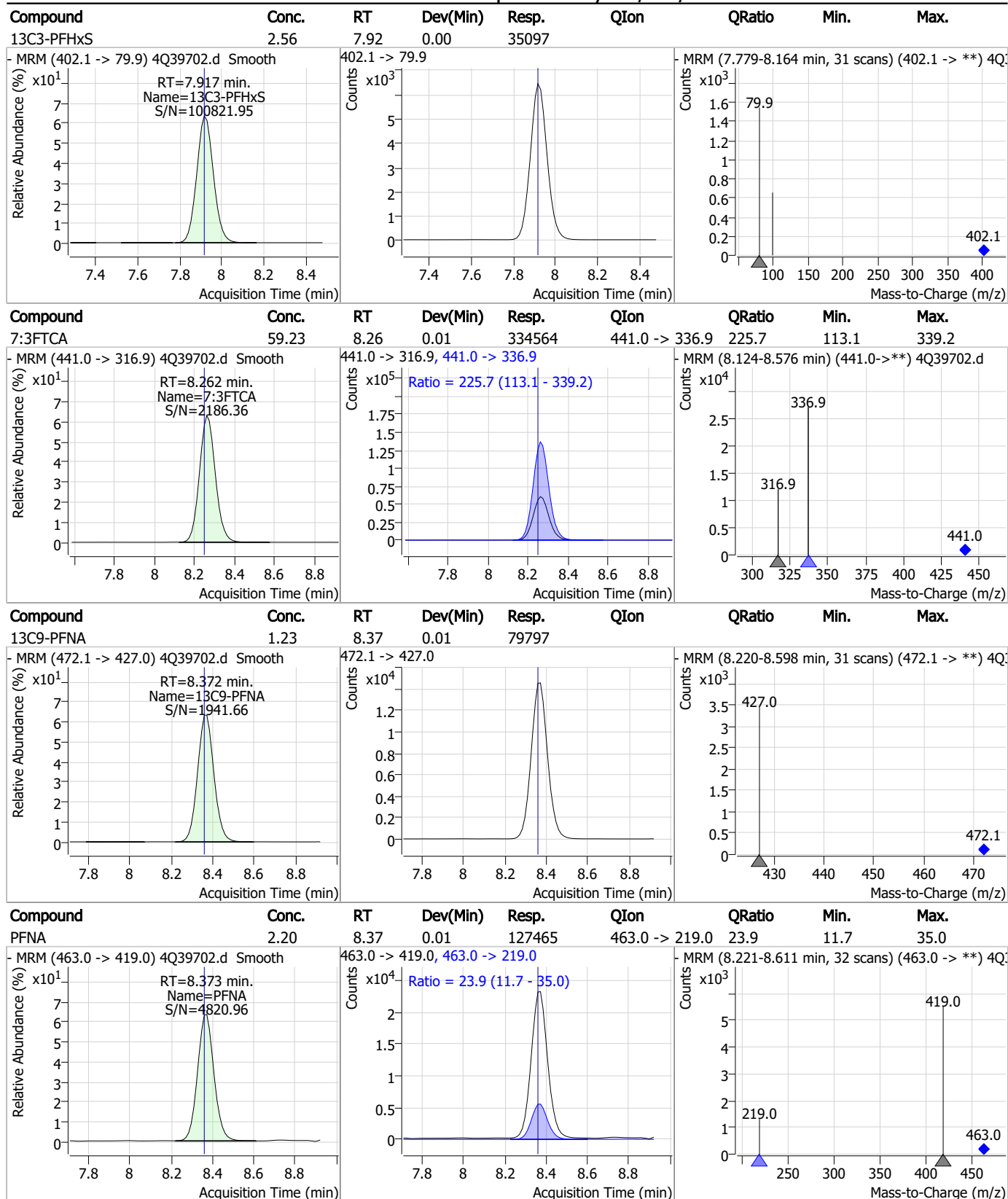
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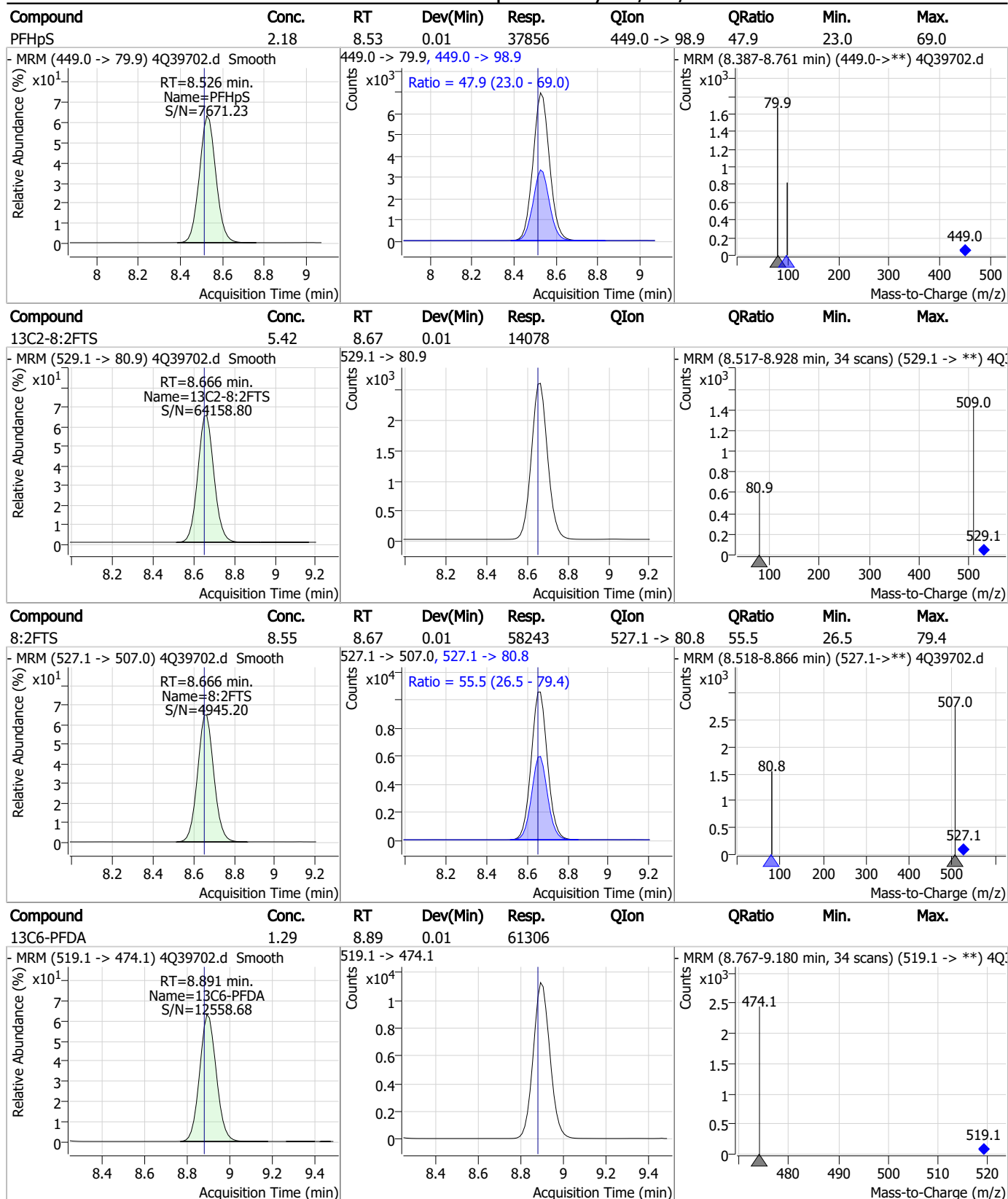
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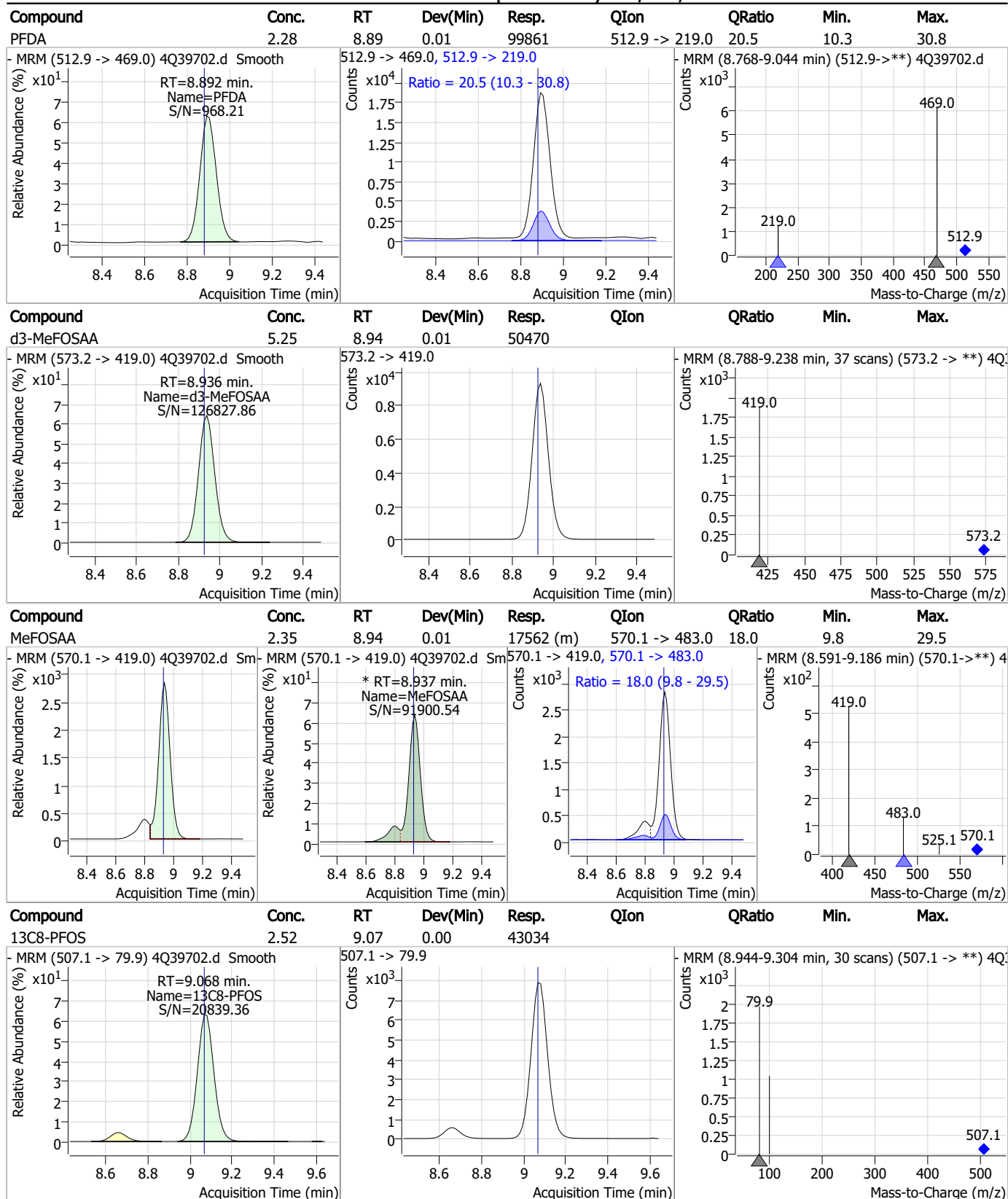
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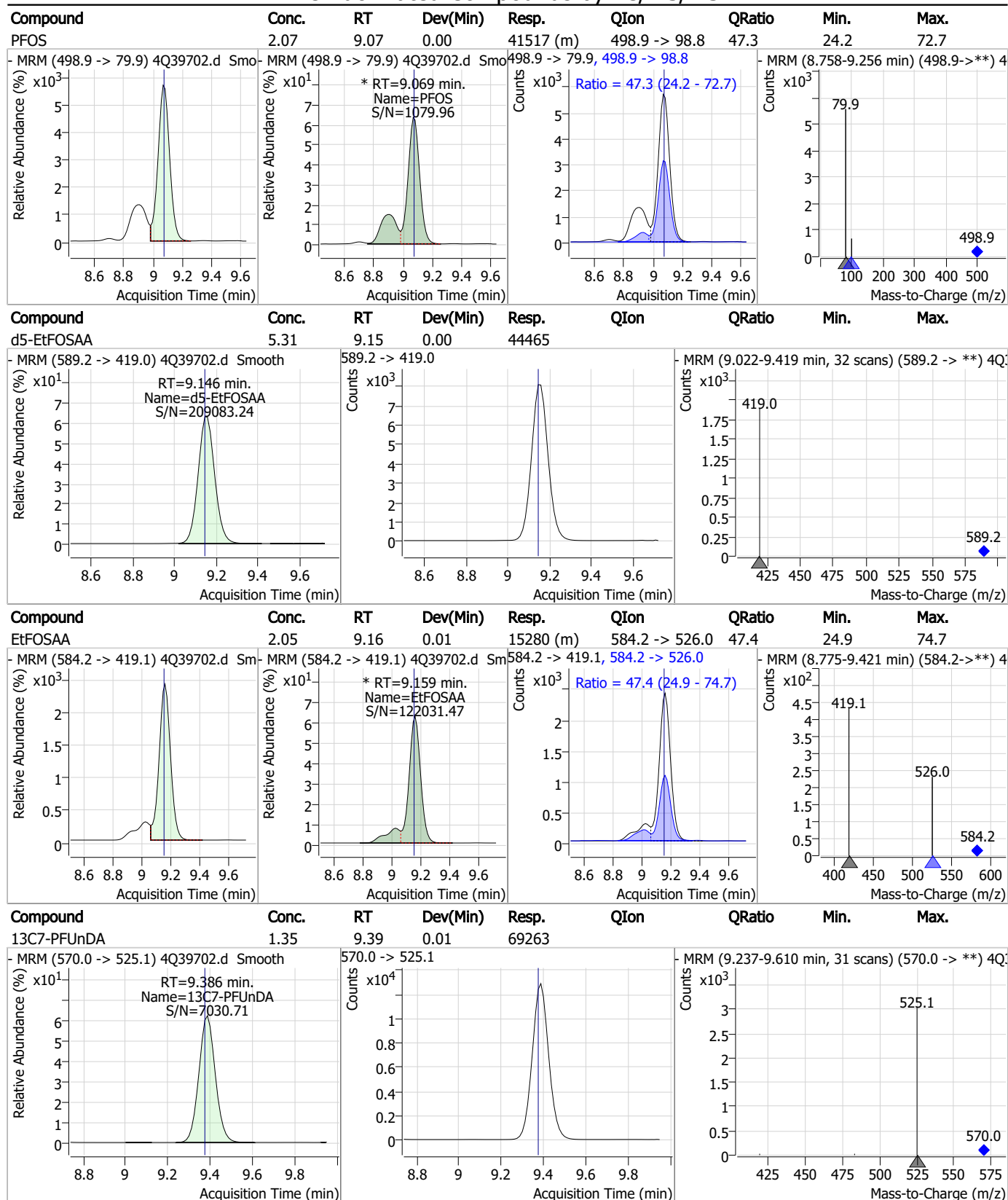
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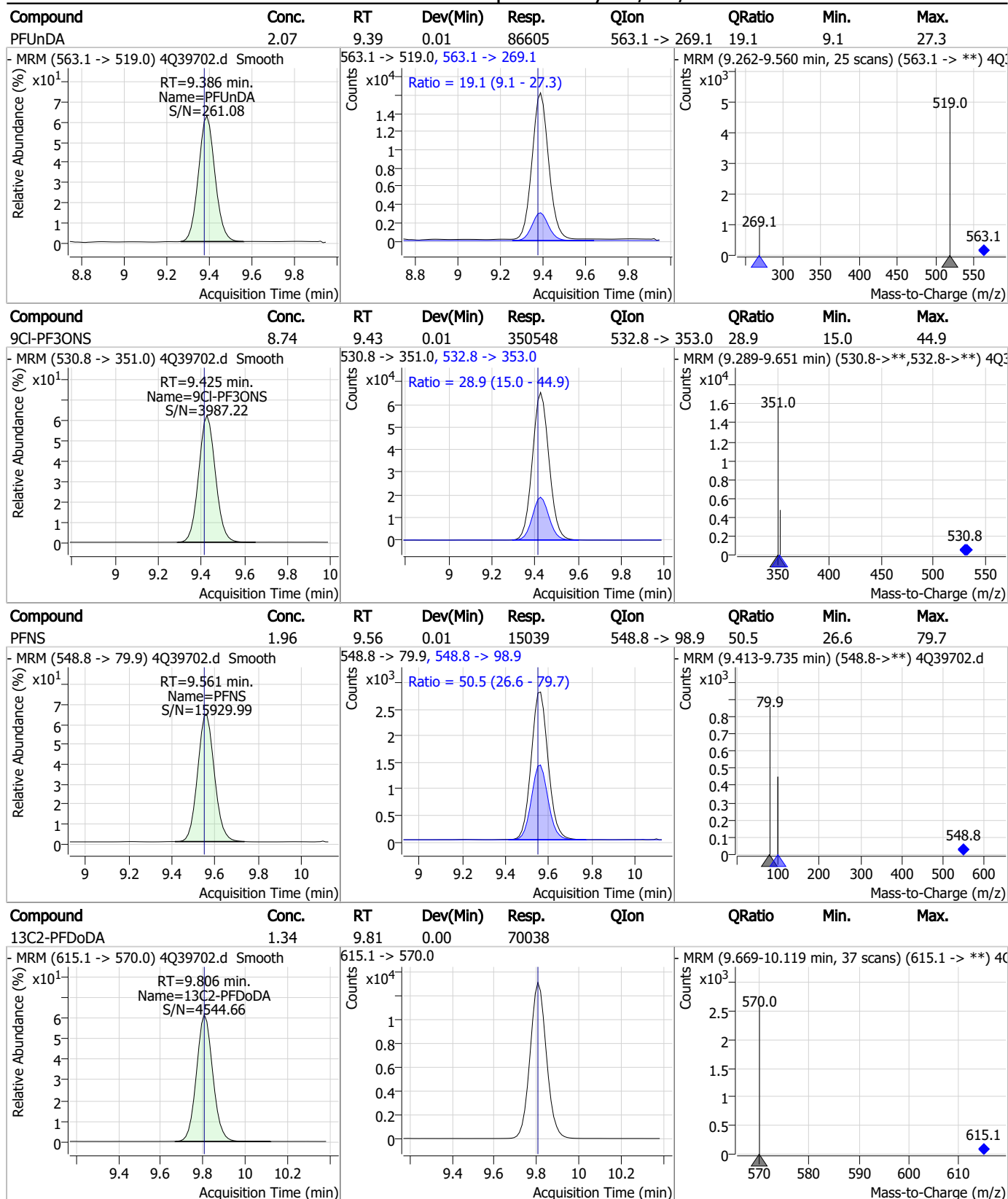
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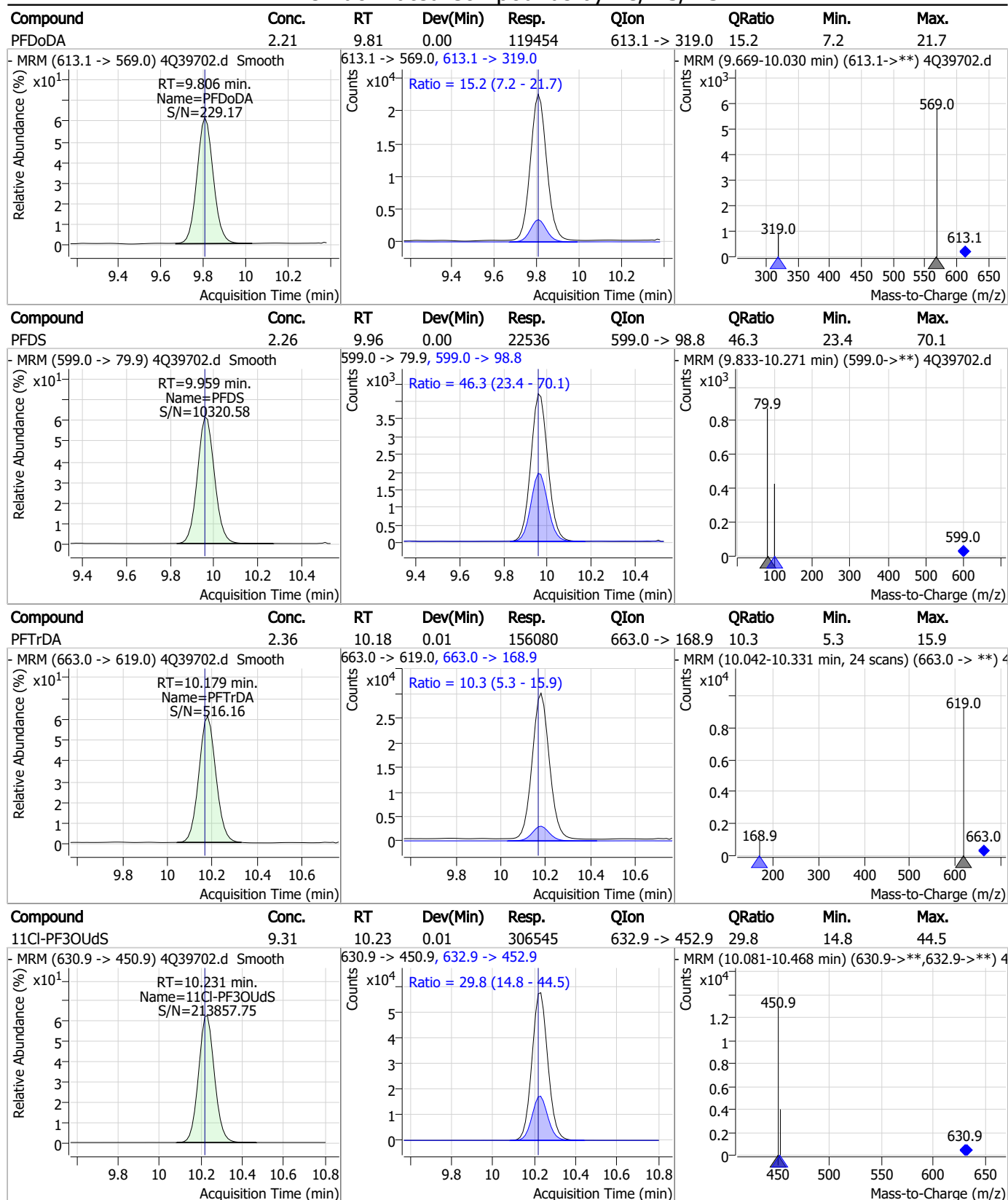
Perfluorinated Compounds by LC/MS/MS



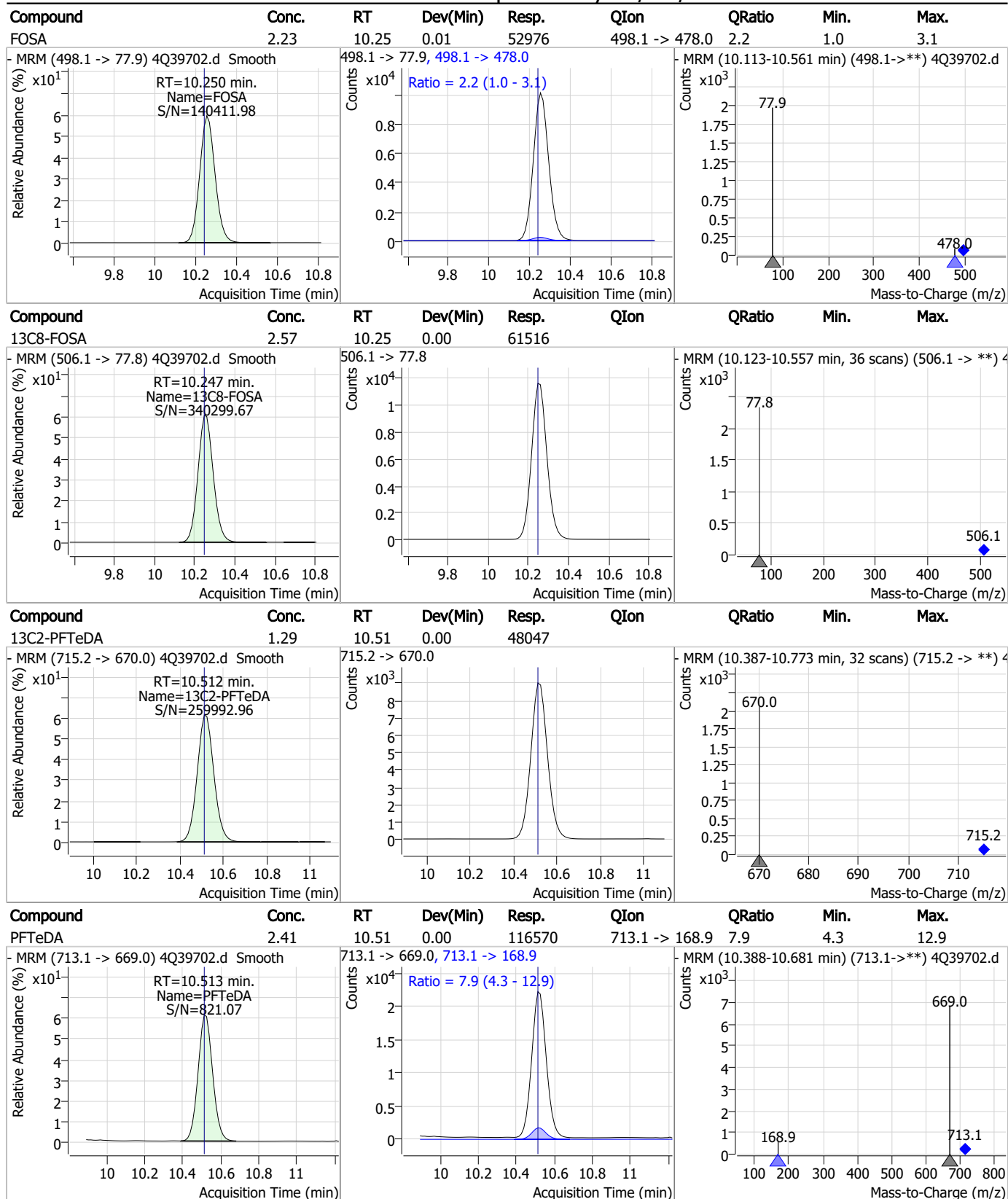
Perfluorinated Compounds by LC/MS/MS



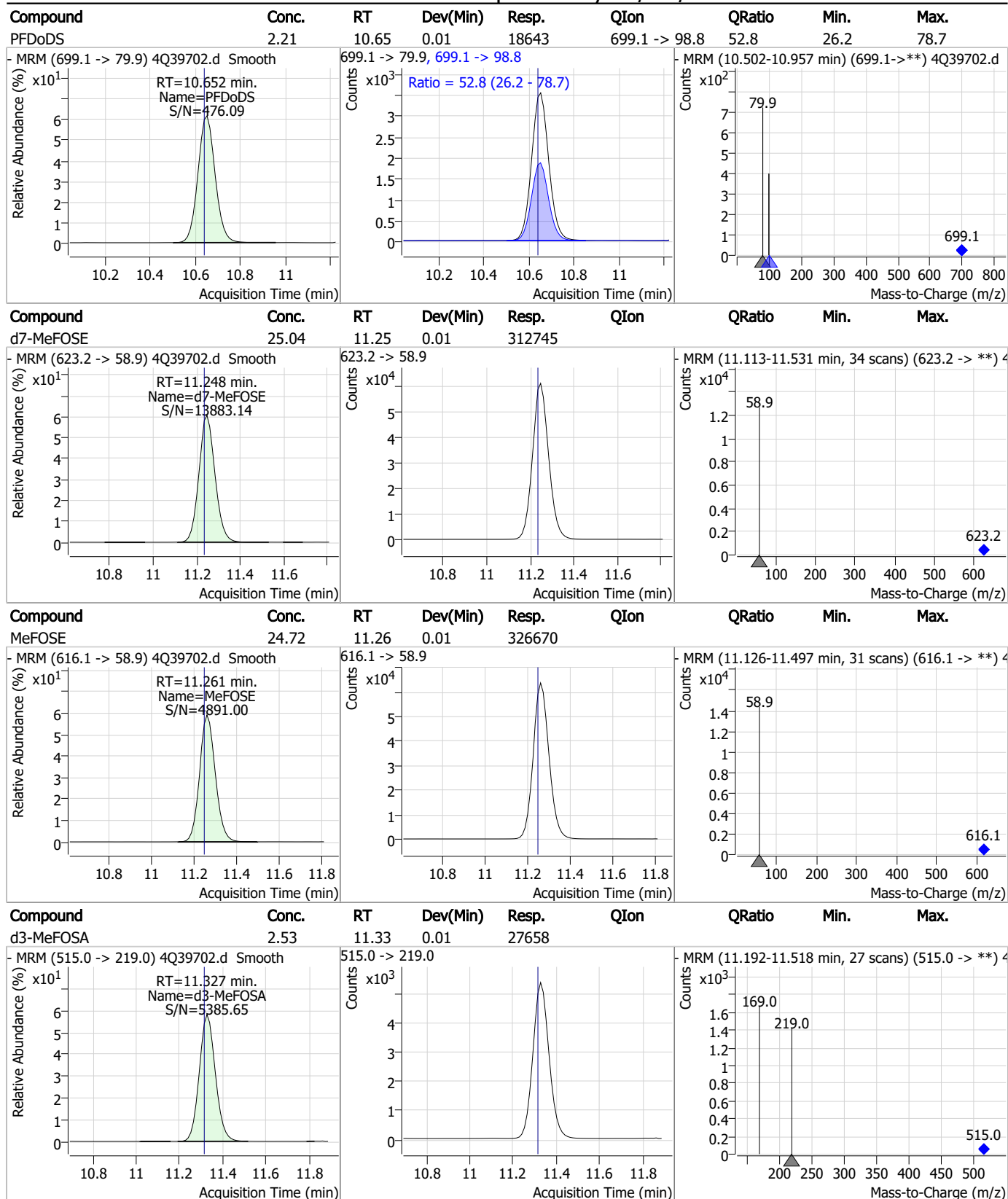
Perfluorinated Compounds by LC/MS/MS



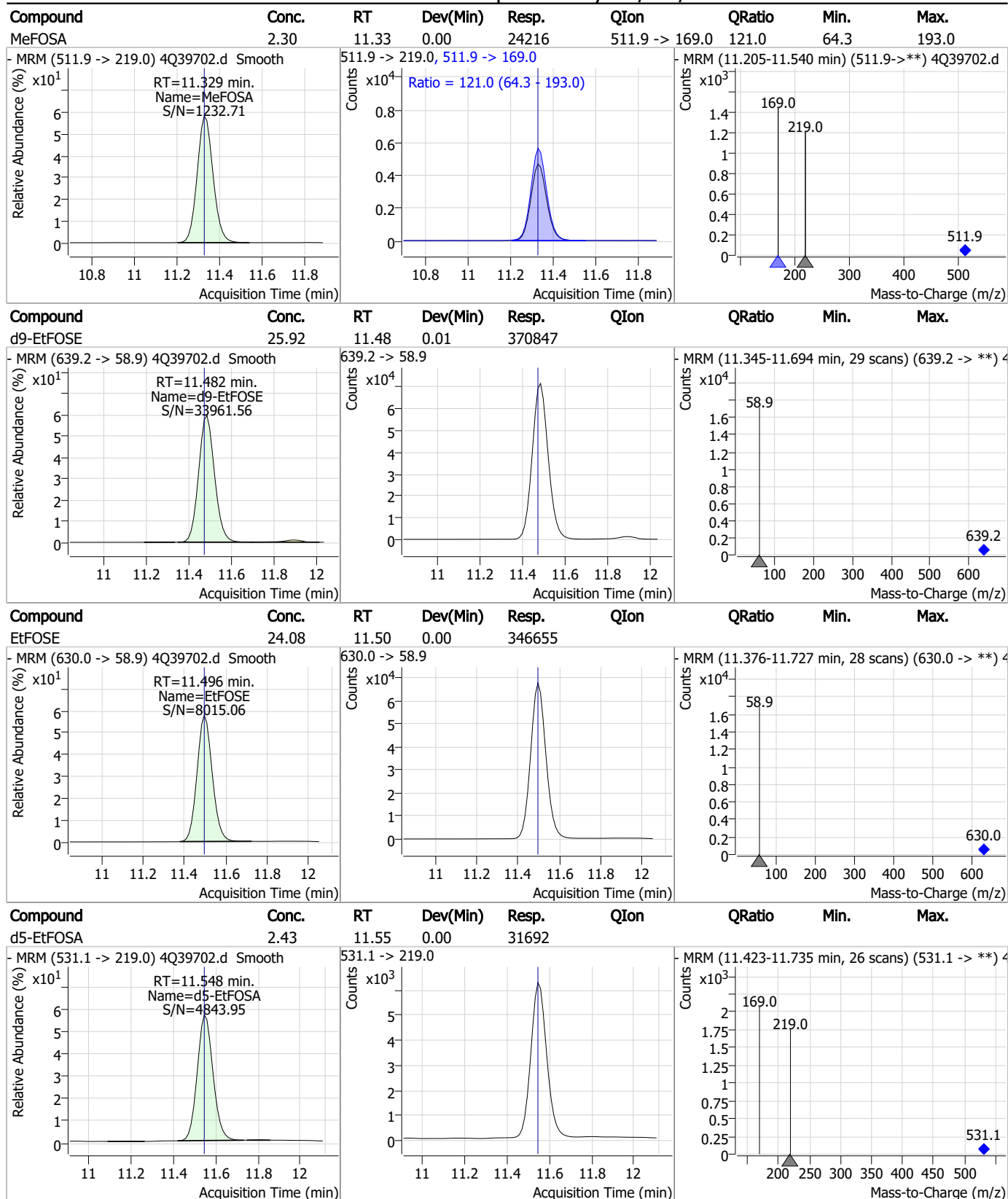
Perfluorinated Compounds by LC/MS/MS



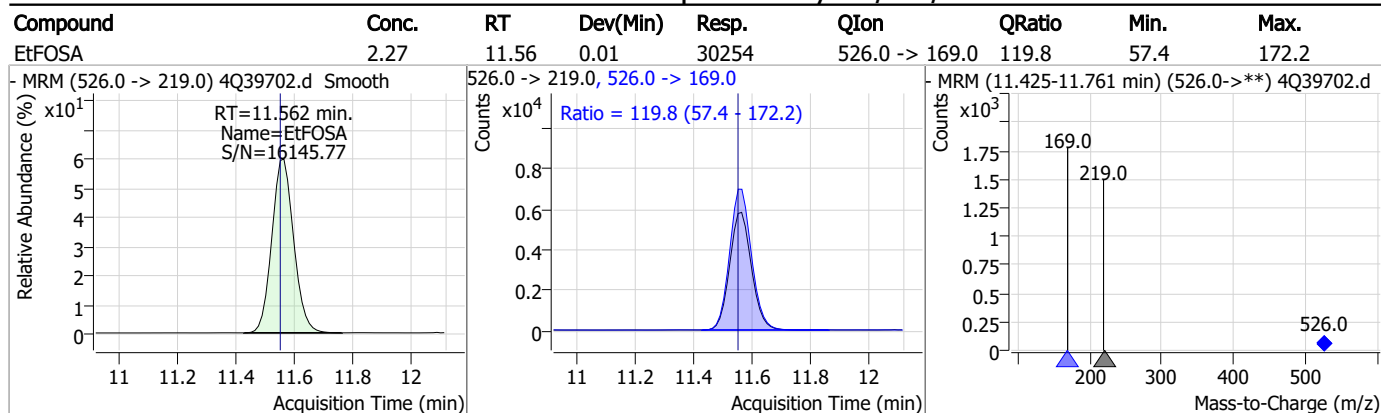
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S4Q571-CC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39702.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 15:48

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.94	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.16	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39703.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 4:02:26 PM
 Sample Name : cc571-1.0LL
 Vial : P1-A2
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.186	216.8 -> 171.9	372647	10.00 µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	244594	5.00 µg/L	0.012
M5-PFHxA	6.184	318.0 -> 273.0	158061	2.50 µg/L	0.012
M4-PFHpA	7.118	367.1 -> 322.0	85983	2.50 µg/L	0.012
M8-PFOA	7.788	421.1 -> 376.0	137019	2.50 µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	67070	1.25 µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	52115	1.25 µg/L	0.012
M7-PFUnDA	9.386	570.0 -> 525.1	58483	1.25 µg/L	0.012
M2-PFDoDA	9.806	615.1 -> 570.0	56811	1.25 µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	40270	1.25 µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	49286	2.50 µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	43255	2.50 µg/L	0.012
M3-PFHxS	7.917	402.1 -> 79.9	28985	2.50 µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	34131	2.50 µg/L	0.000
M2-4:2FTS	5.835	329.1 -> 80.9	4288	5.00 µg/L	0.012
M2-6:2FTS	7.536	429.1 -> 80.9	9050	5.00 µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	11987	5.00 µg/L	0.000
M3-MeFOSAA	8.936	573.2 -> 419.0	42803	5.00 µg/L	0.012
M3-HFPO-DA	6.564	286.9 -> 168.9	117139	10.00 µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	36179	5.00 µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	266850	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	315657	25.00 µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	27166	2.50 µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	22017	2.50 µg/L	0.000
13C4-PFOS	9.068	502.8 -> 79.9	33876	2.50 µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	206281	5.00 µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	19178	2.50 µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	156572	2.50 µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	46218	1.25 µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	75055	1.25 µg/L	0.000
13C2-PFHxA	6.185	315.1 -> 270.0	147925	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.835	329.1 -> 80.9	4288	6.20 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.1%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9050	5.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.0%		
13C2-8:2FTS	8.653	529.1 -> 80.9	11987	5.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.2%		
13C2-PFDoDA	9.806	615.1 -> 570.0	56811	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-PFTeDA	10.512	715.2 -> 670.0	40270	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C3-PFBS	6.101	302.1 -> 79.9	43255	2.61 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C3-PFHxS	7.917	402.1 -> 79.9	28985	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	3.186	216.8 -> 171.9	372647	10.02 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C4-PFHpA	7.118	367.1 -> 322.0	85983	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C5-PFHxA	6.184	318.0 -> 273.0	158061	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C5-PFPeA	4.876	268.3 -> 223.0	244594	5.08 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C6-PFDA	8.891	519.1 -> 474.1	52115	1.28 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C7-PFUnDA	9.386	570.0 -> 525.1	58483	1.34 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C8-FOSA	10.247	506.1 -> 77.8	49286	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C8-PFOA	7.788	421.1 -> 376.0	137019	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C8-PFOS	9.068	507.1 -> 79.9	34131	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C9-PFNA	8.360	472.1 -> 427.0	67070	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.6%		
d3-MeFOSAA	8.936	573.2 -> 419.0	42803	5.50 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.0%		
13C3-HFPO-DA	6.564	286.9 -> 168.9	117139	9.93 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
d3-MeFOSA	11.315	515.0 -> 219.0	22017	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.4%		
d5-EtFOSAA	9.146	589.2 -> 419.0	36179	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.8%		
d7-MeFOSE	11.235	623.2 -> 58.9	266850	26.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 105.7%		
d9-EtFOSE	11.470	639.2 -> 58.9	315657	27.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
d5-EtFOSA	11.548	531.1 -> 219.0	27166	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.8%		

Target Compounds

4:2FTS	5.836	327.1 -> 307.0	3709	0.53 µg/L	m	84
		327.1 -> 80.9	2129			
6:2FTS	7.537	427.1 -> 407.0	4527	0.63 µg/L		89
		427.1 -> 80.9	2572			
8:2FTS	8.654	527.1 -> 507.0	3287	0.57 µg/L		83
		527.1 -> 80.8	2143			
EtFOSAA	9.159	584.2 -> 419.1	1154	0.19 µg/L	m	100
		584.2 -> 526.0	575			
FOSA	10.250	498.1 -> 77.9	3703	0.19 µg/L		99
		498.1 -> 478.0	95			
MeFOSAA	8.937	570.1 -> 419.0	917	0.14 µg/L	m	90
		570.1 -> 483.0	141			
PFBA	3.195	212.8 -> 168.9	6176	0.60 µg/L		100
PFBS	6.102	298.7 -> 79.9	2552	0.13 µg/L		96
		298.7 -> 98.8	934			
PFDA	8.892	512.9 -> 469.0	6318	0.17 µg/L		95
		512.9 -> 219.0	1167			
PFDODA	9.806	613.1 -> 569.0	6889	0.16 µg/L		87
		613.1 -> 319.0	1366			
PFDS	9.959	599.0 -> 79.9	1357	0.17 µg/L		91

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.119	599.0 -> 98.8	719	0.15	µg/L	95
		363.1 -> 319.0	8208			
PFHpS	8.526	363.1 -> 169.0	1574	0.19	µg/L	95
		449.0 -> 79.9	2603			
PFHxA	6.187	449.0 -> 98.9	1114	0.15	µg/L	96
		313.0 -> 269.0	9446			
PFHxS	7.917	313.0 -> 118.9	406	0.15	µg/L	98
		398.7 -> 79.9	1432			
PFNA	8.360	398.7 -> 98.9	720	0.15	µg/L	96
		463.0 -> 419.0	7490			
PFNS	9.549	463.0 -> 219.0	1614	0.16	µg/L	95
		548.8 -> 79.9	992			
PFOA	7.790	548.8 -> 98.9	565	0.20	µg/L	90
		413.0 -> 369.0	11968			
PFOS	9.069	413.0 -> 169.0	1875	0.20	µg/L	99
		498.9 -> 79.9	3122			
PFPeA	4.879	498.9 -> 98.8	1541	0.33	µg/L	100
		263.0 -> 219.0	17716			
PFPeS	7.184	349.1 -> 79.9	1531	0.17	µg/L	98
		349.1 -> 98.9	582			
PFTeDA	10.513	713.1 -> 669.0	7018	0.17	µg/L	96
		713.1 -> 168.9	701			
PFTrDA	10.179	663.0 -> 619.0	9572	0.18	µg/L	100
		663.0 -> 168.9	1017			
PFUnDA	9.386	563.1 -> 519.0	7382	0.21	µg/L	90
		563.1 -> 269.1	1003			
11CI-PF3OUdS	10.218	630.9 -> 450.9	18703	0.68	µg/L	97
		632.9 -> 452.9	5249			
9CI-PF3ONS	9.425	530.8 -> 351.0	20969	0.63	µg/L	95
		532.8 -> 353.0	5702			
ADONA	7.369	376.9 -> 250.9	43070	0.68	µg/L	99
		376.9 -> 84.8	15487			
HFPO-DA	6.565	284.9 -> 168.9	8084	0.73	µg/L	97
		284.9 -> 184.9	940			
3:3FTCA	4.204	241.0 -> 177.0	2052	0.82	µg/L	100
		241.0 -> 117.0	196			
5:3FTCA	6.796	341.0 -> 237.1	33906	4.15	µg/L	98
		341.0 -> 217.0	24545			
7:3FTCA	8.262	441.0 -> 316.9	18520	3.94	µg/L	77
		441.0 -> 336.9	48831			
EtFOSA	11.550	526.0 -> 219.0	1869	0.16	µg/L	95
		526.0 -> 169.0	2049			
EtFOSE	11.483	630.0 -> 58.9	22621	1.85	µg/L	100
		511.9 -> 219.0	1595			
MeFOSA	11.329	511.9 -> 169.0	1946	0.19	µg/L	94
		616.1 -> 58.9	20376			
MeFOSE	11.261	699.1 -> 79.9	1098	1.81	µg/L	100
		699.1 -> 98.8	615			
PFDoDS	10.639	295.0 -> 201.0	1335	0.16	µg/L	95
		295.0 -> 84.9	404			
NFDHA	6.053	279.0 -> 85.1	11051	0.33	µg/L	100
		229.0 -> 84.9	11202			
PFMBA	5.341	314.8 -> 134.9	16032	0.32	µg/L	100
		314.8 -> 82.9	358			
PFMPA	3.882			0.31	µg/L	97
PFEESA	6.660					

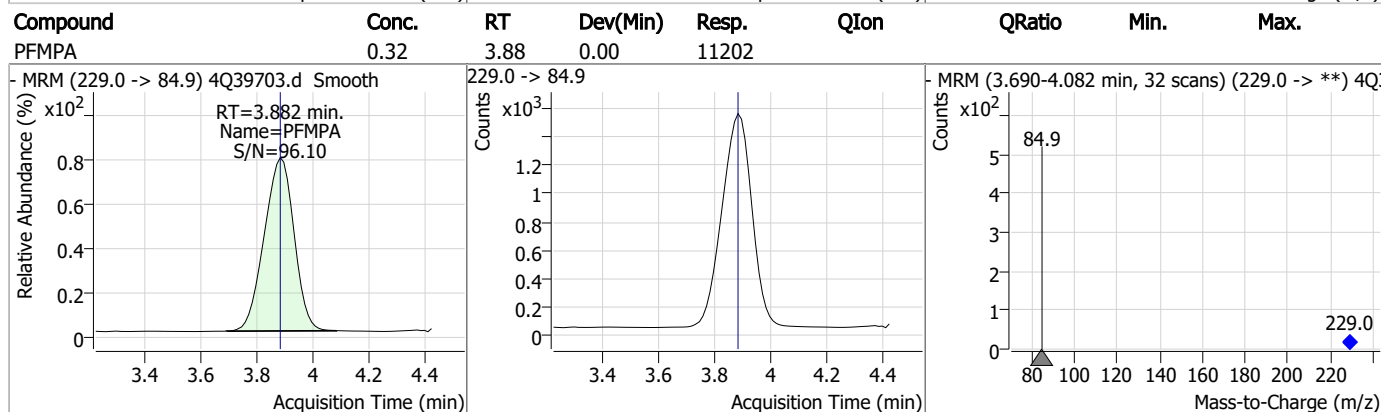
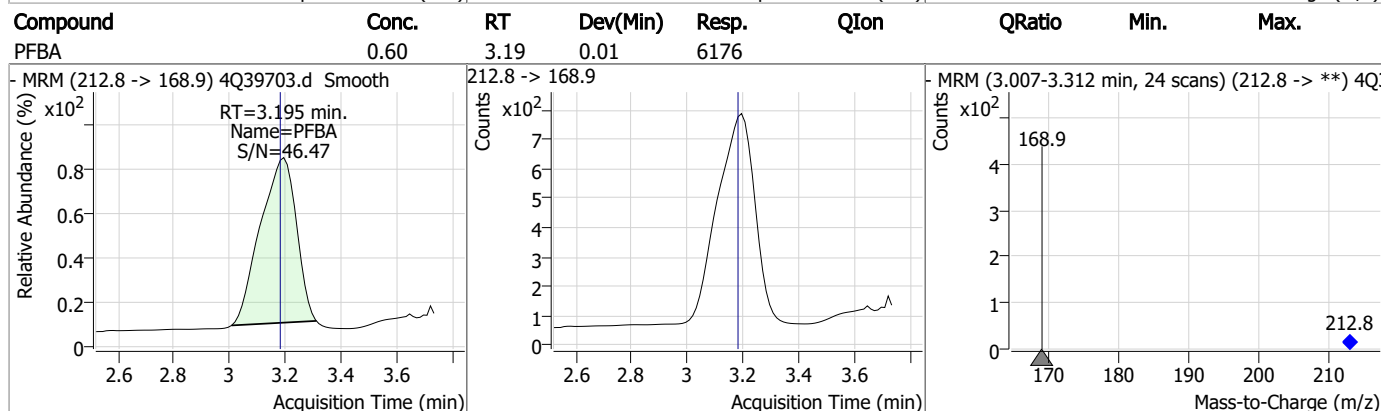
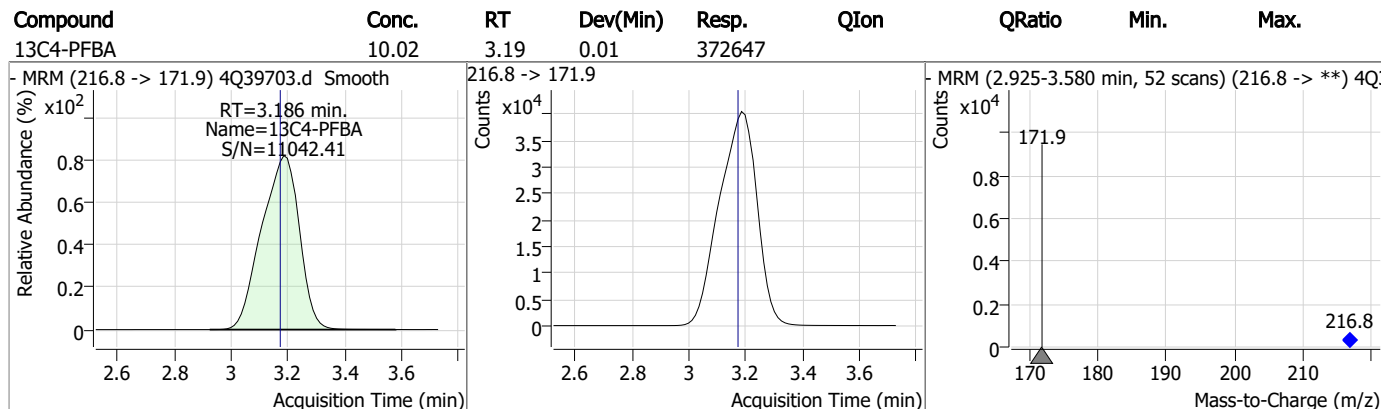
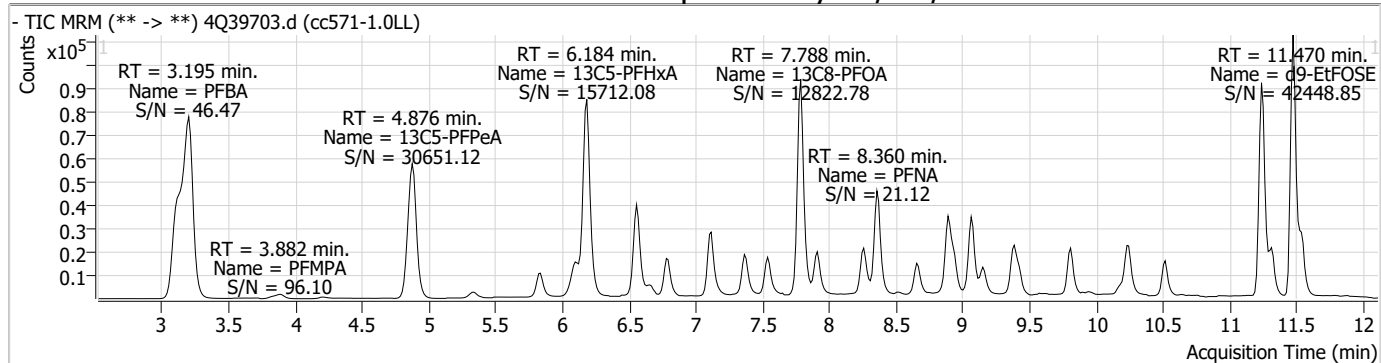
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

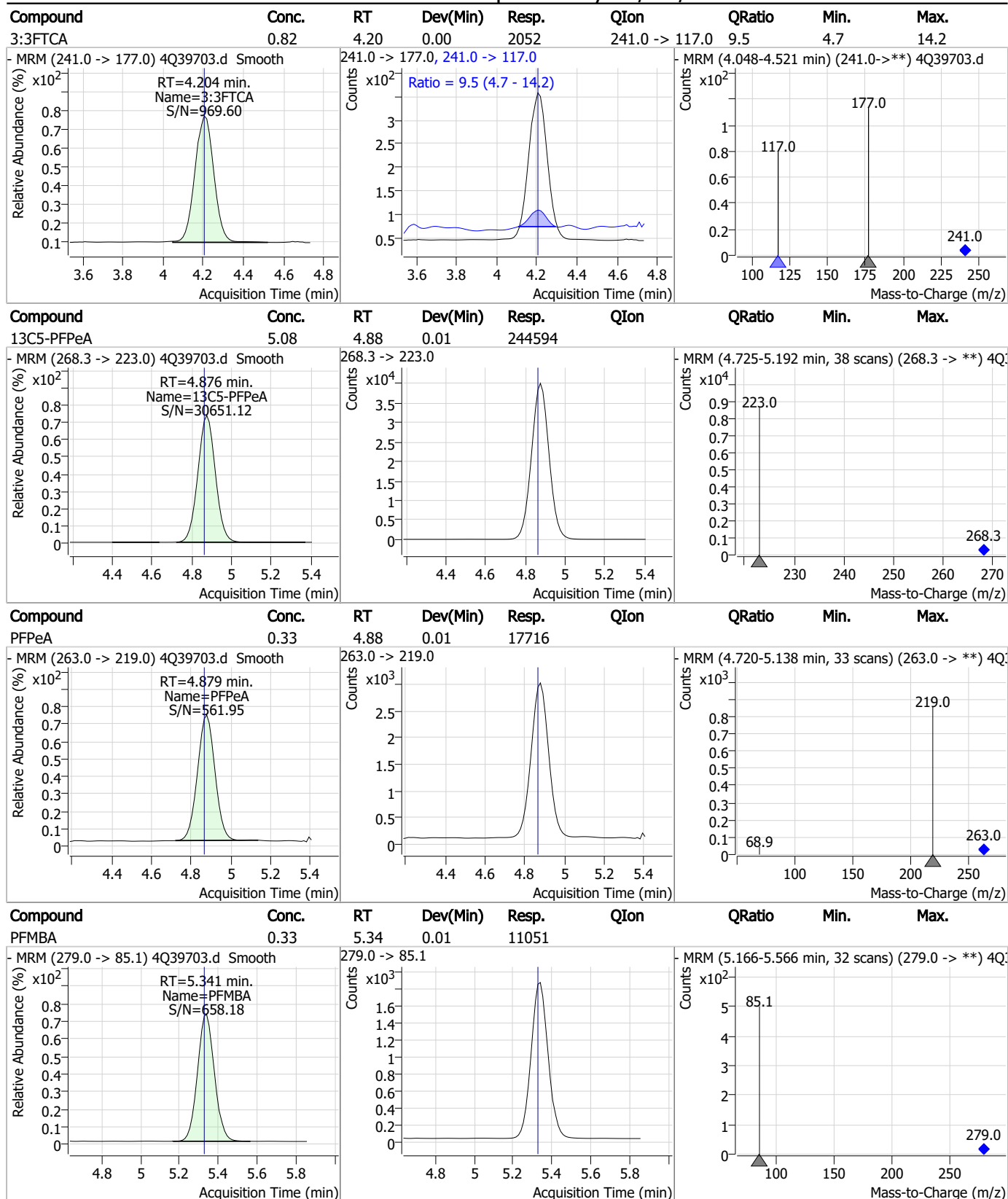
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.6.13
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Perfluorinated Compounds by LC/MS/MS



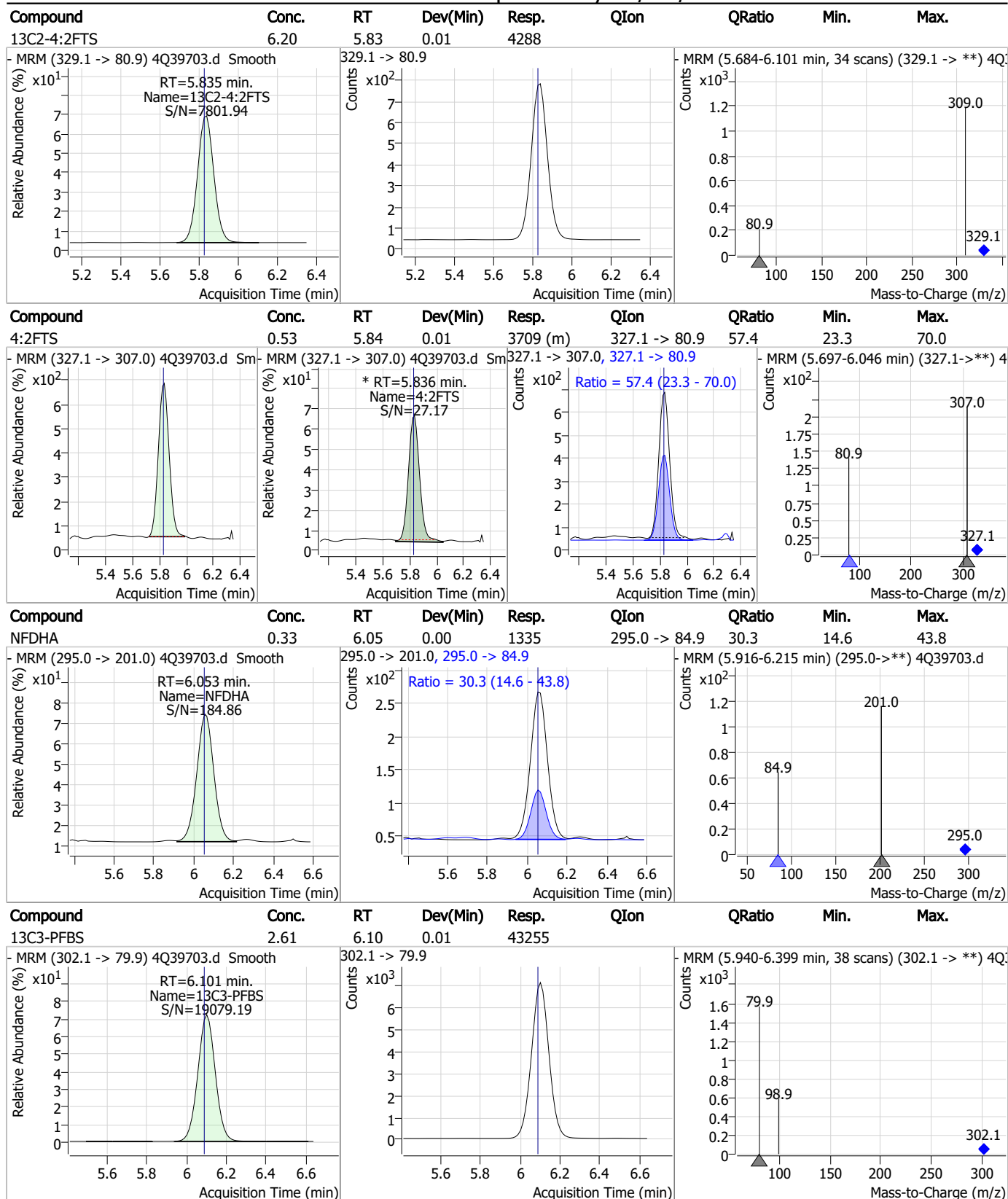
Perfluorinated Compounds by LC/MS/MS



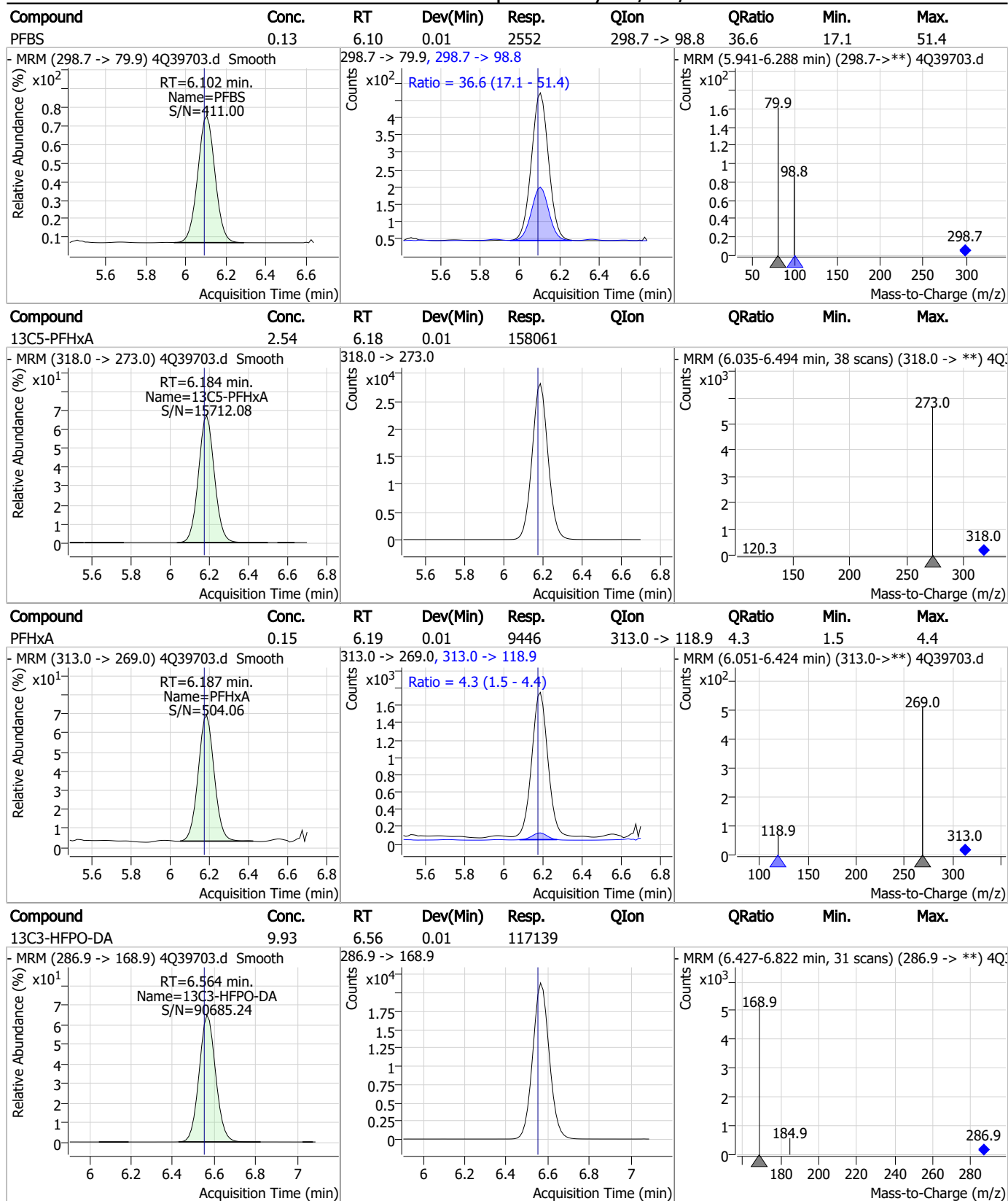
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Perfluorinated Compounds by LC/MS/MS



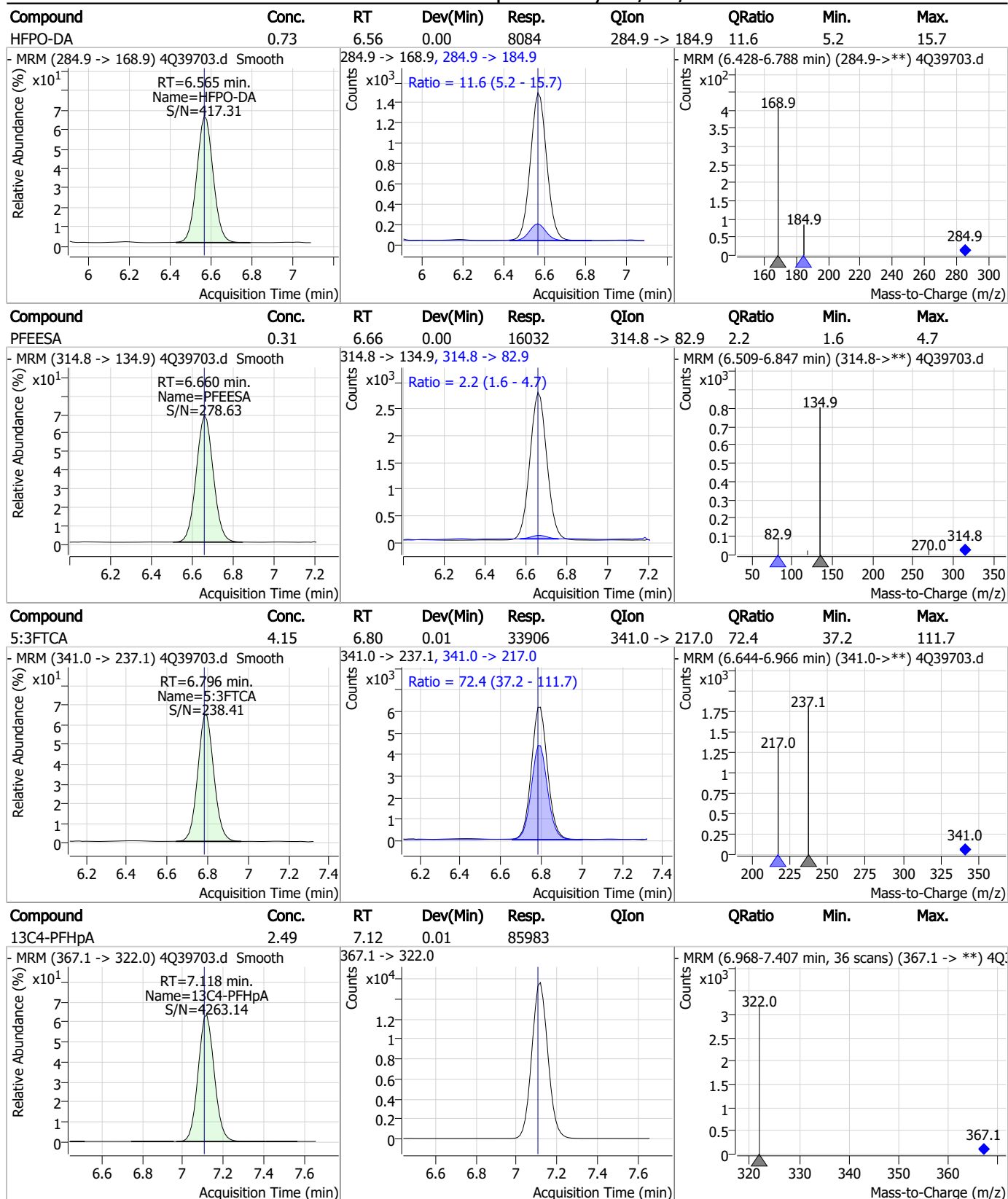
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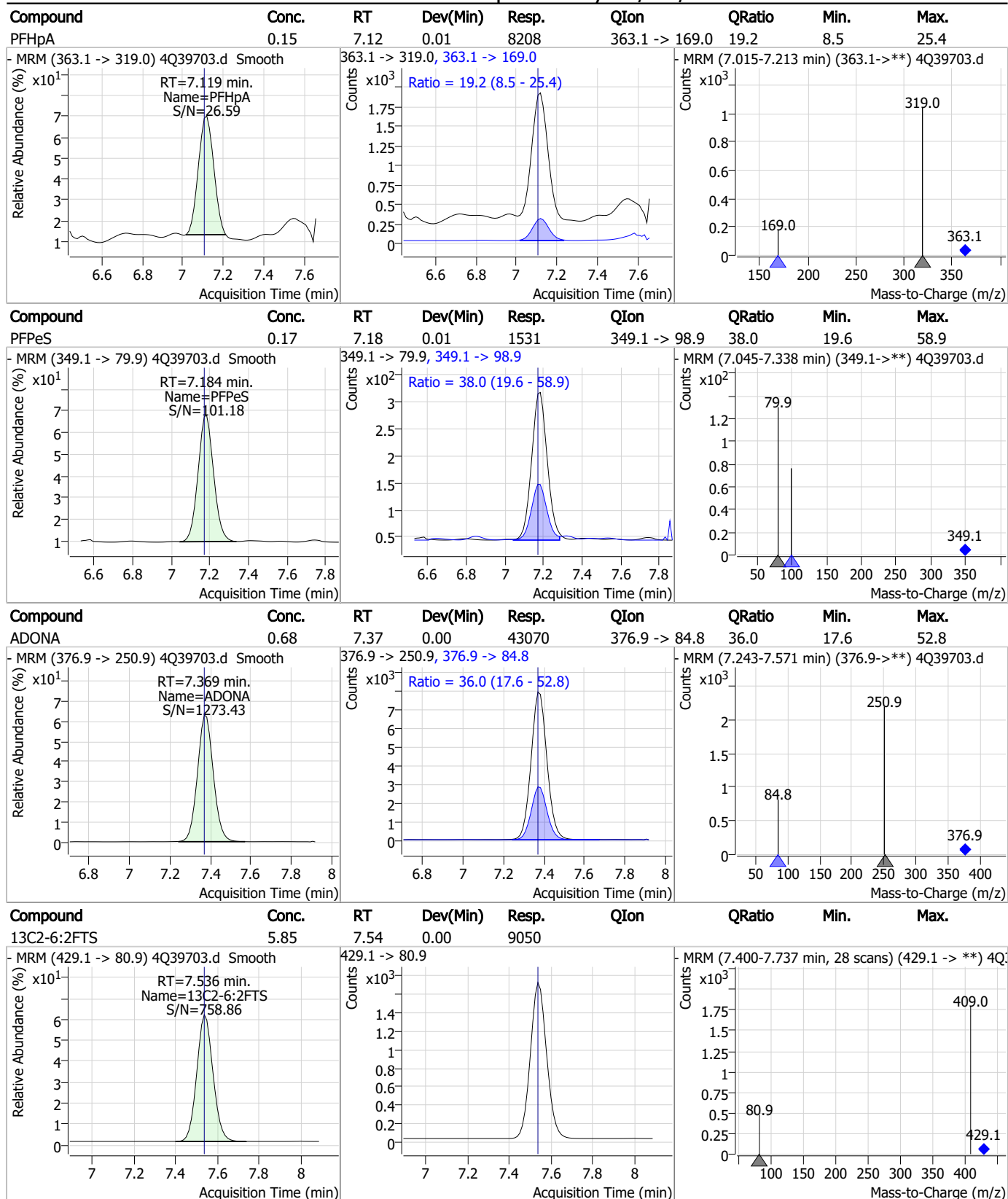
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Perfluorinated Compounds by LC/MS/MS



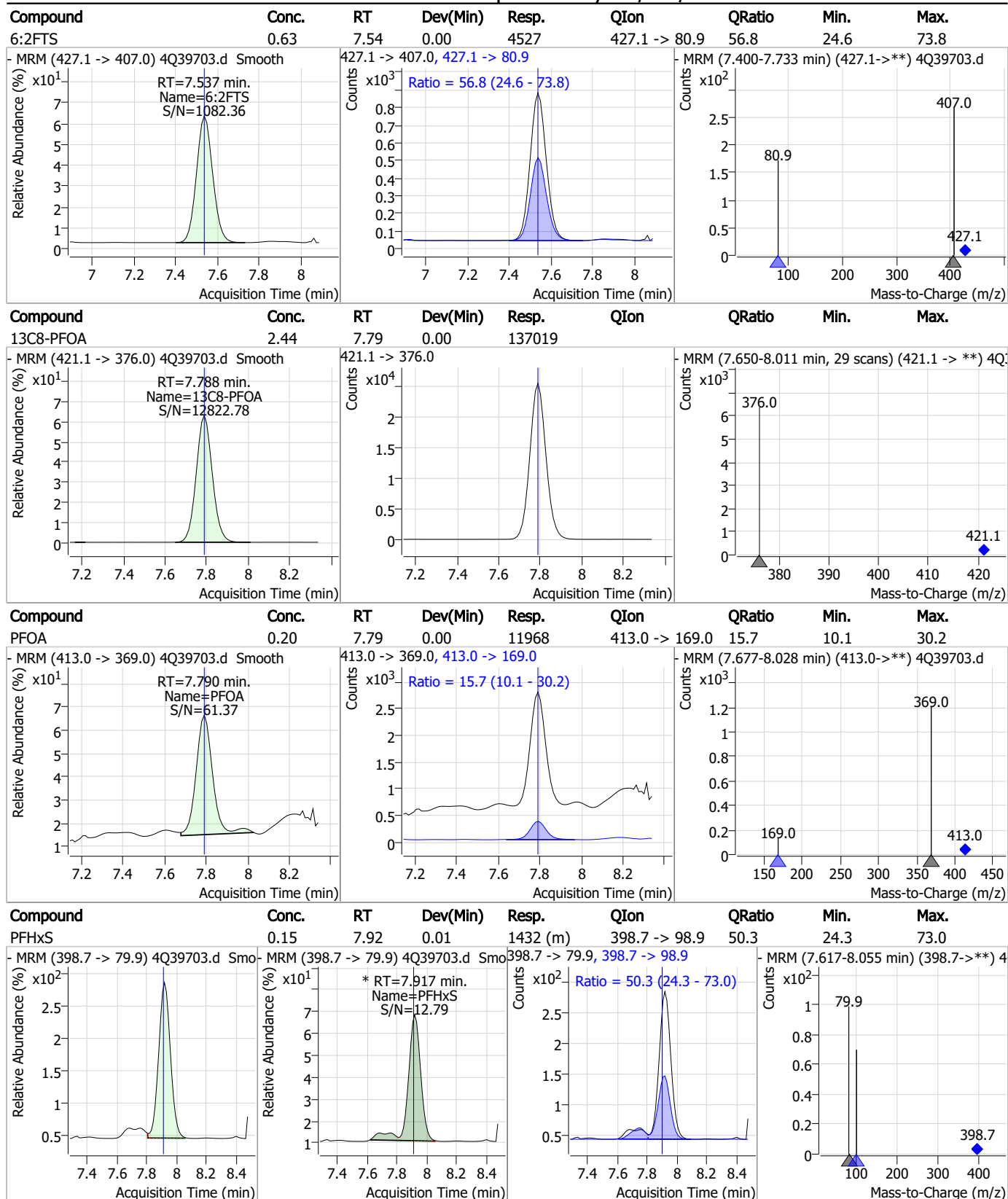
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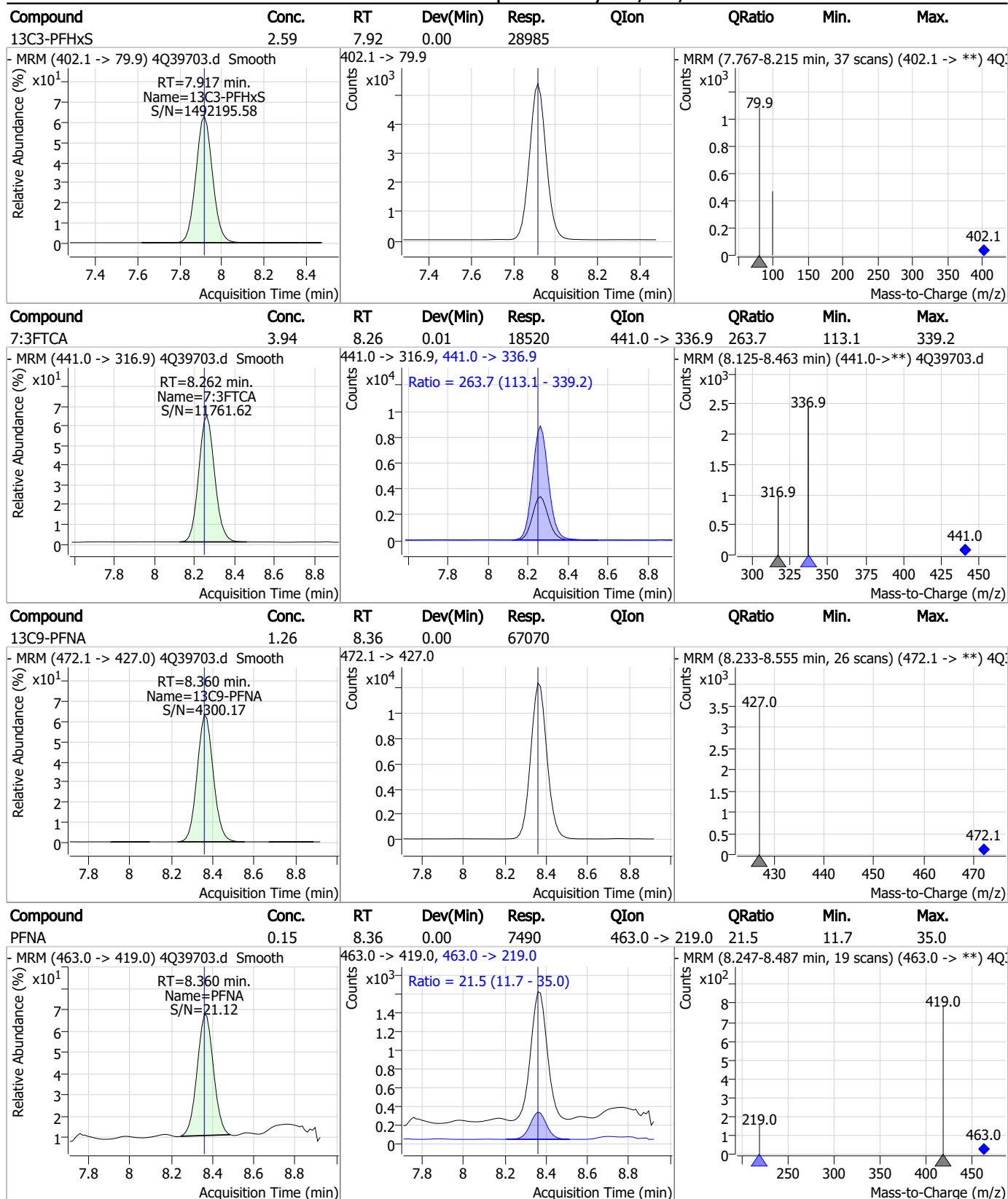
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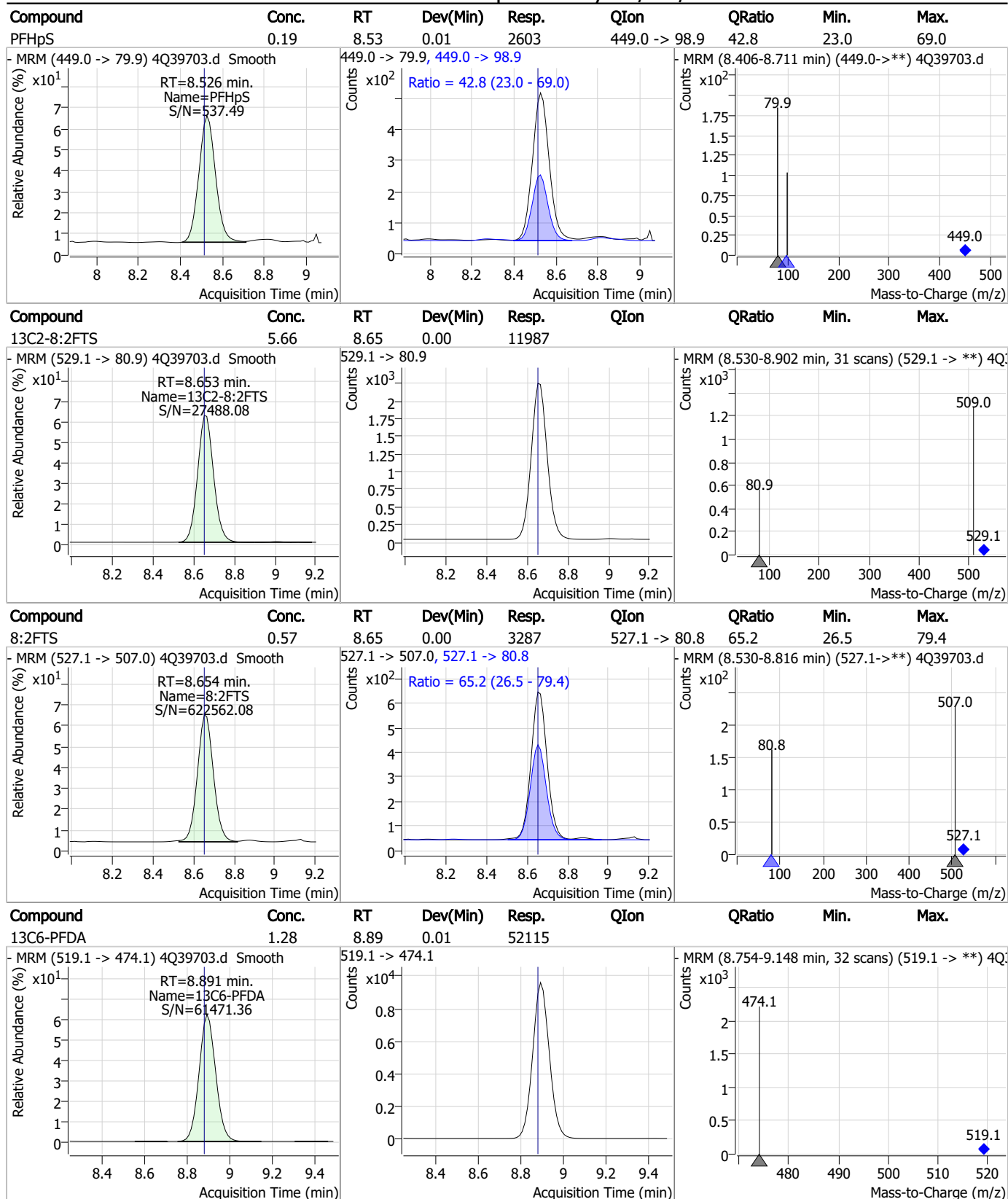
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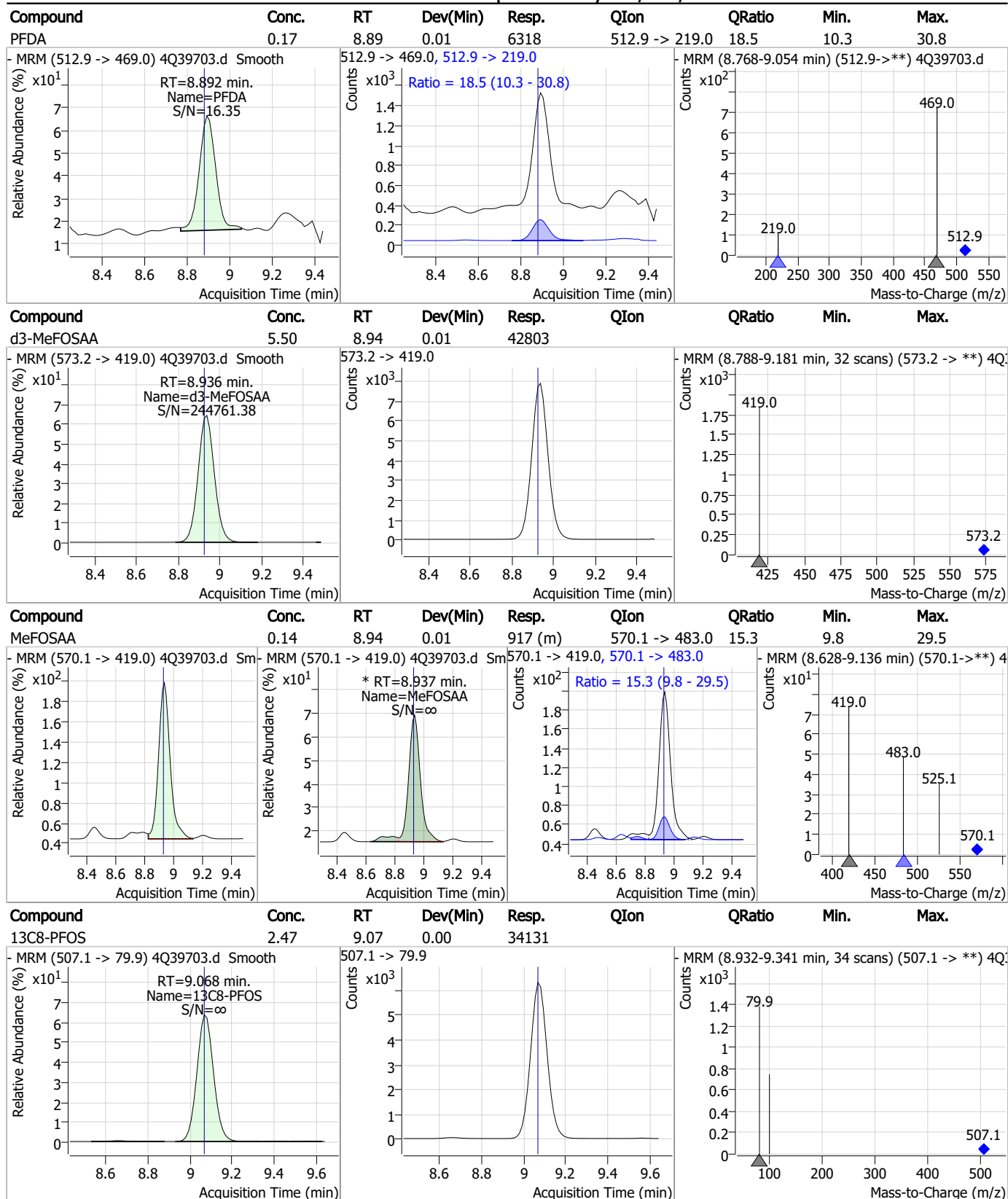
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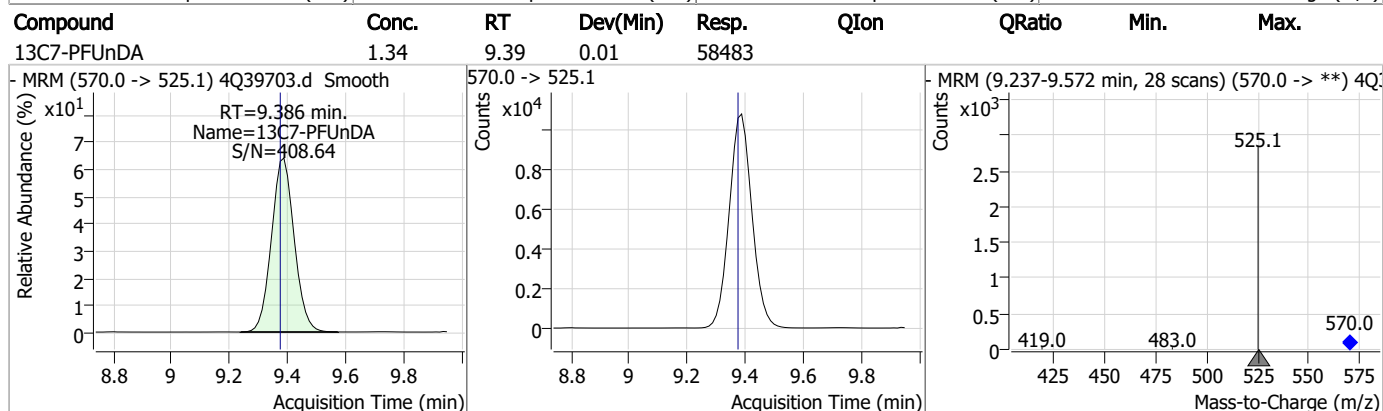
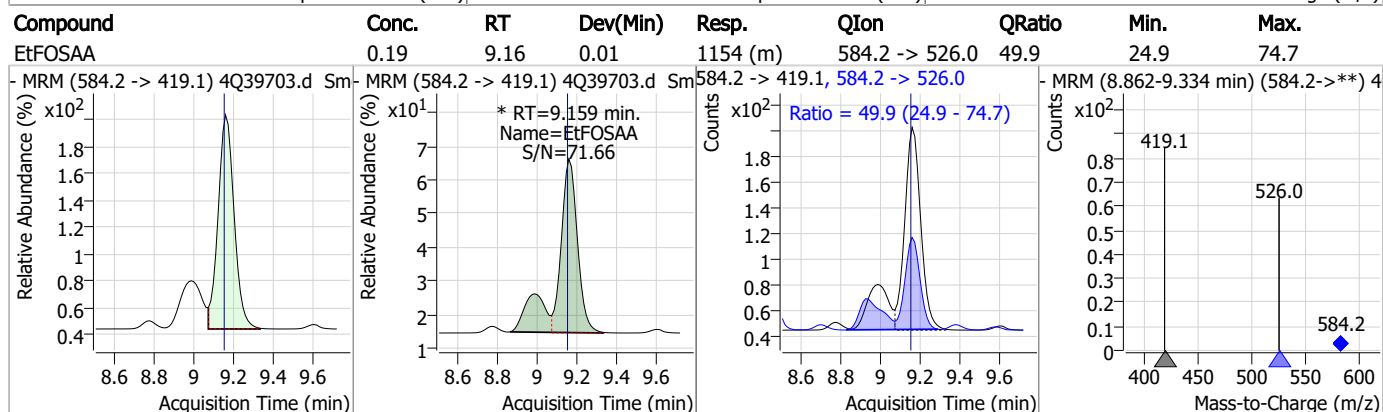
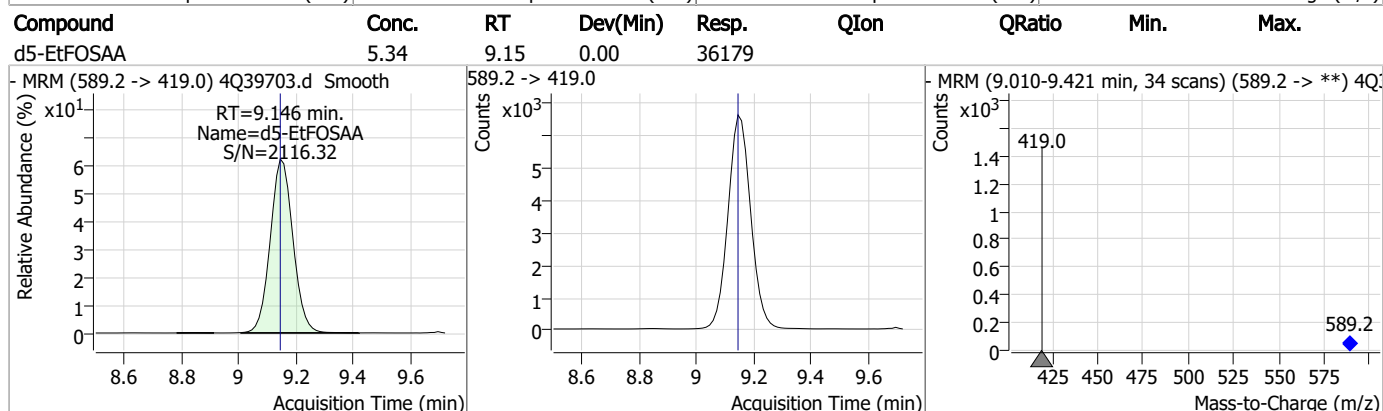
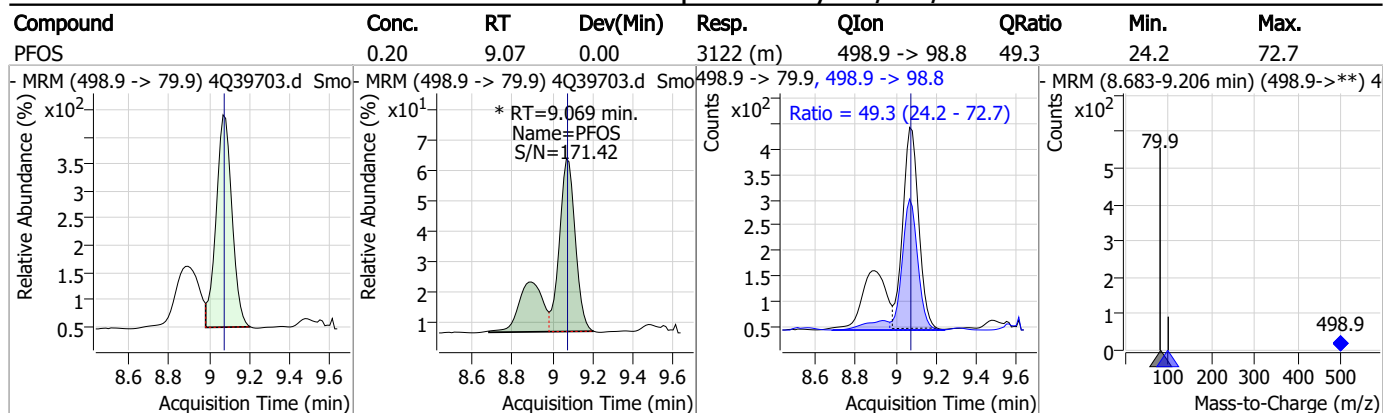
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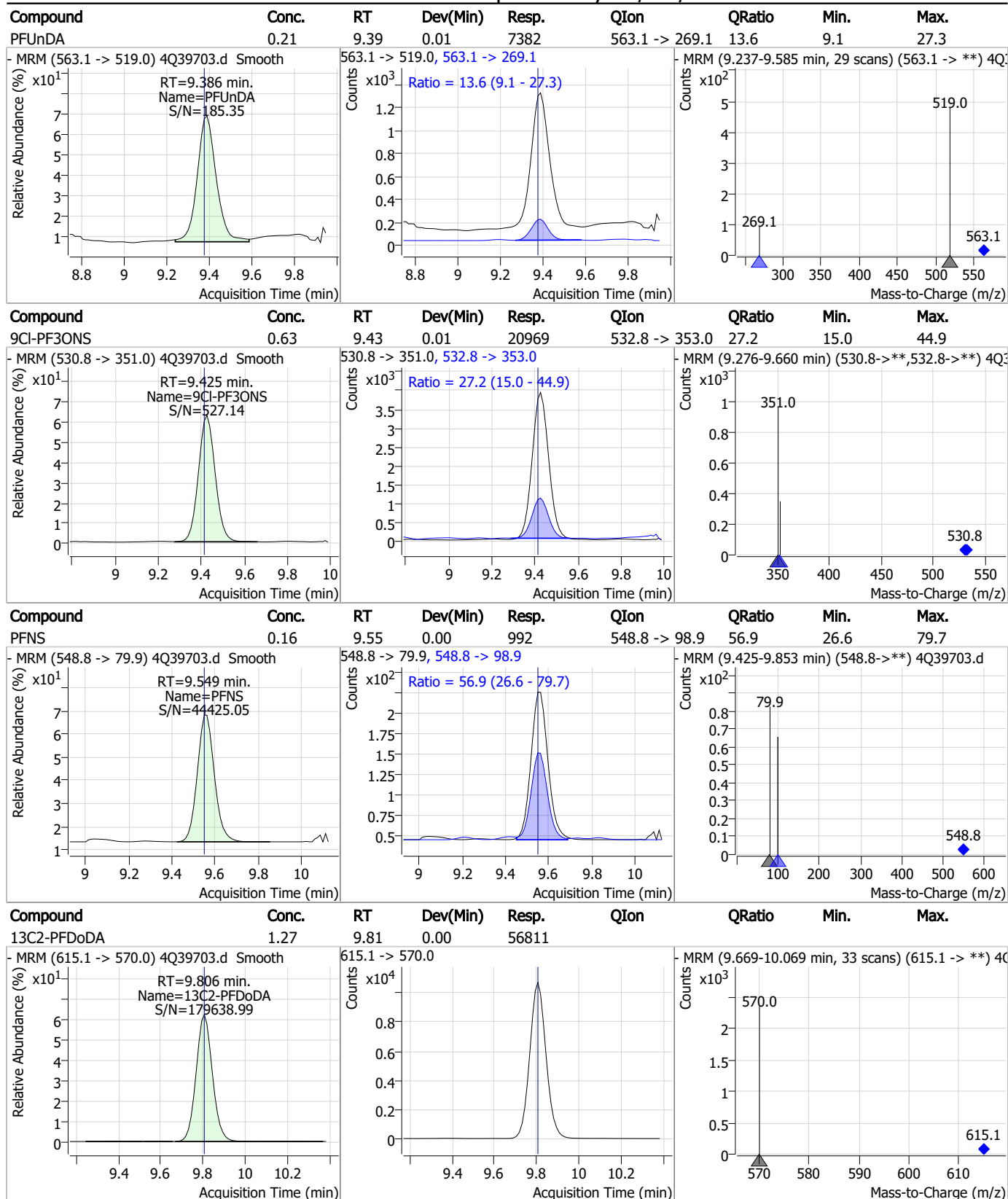
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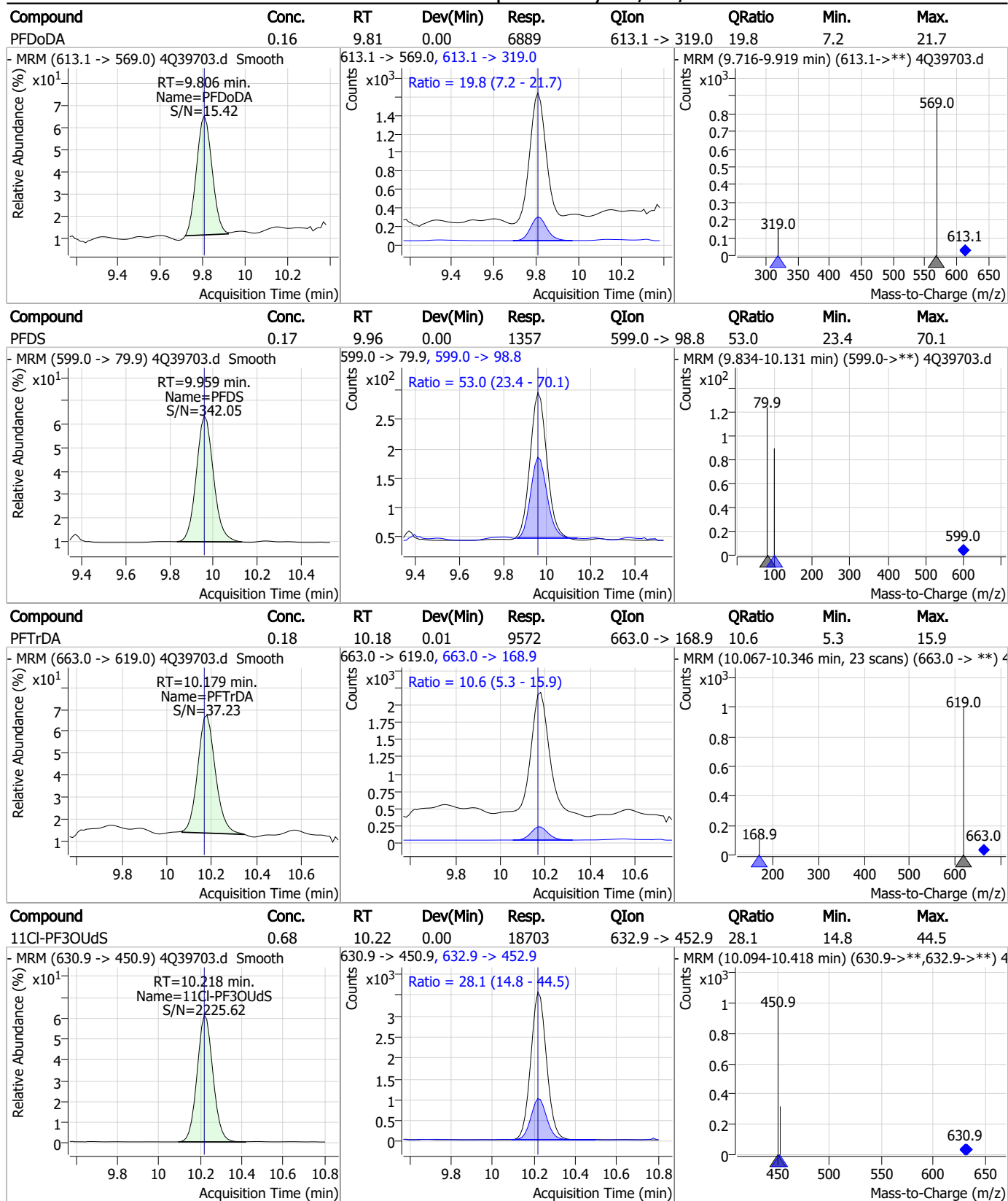
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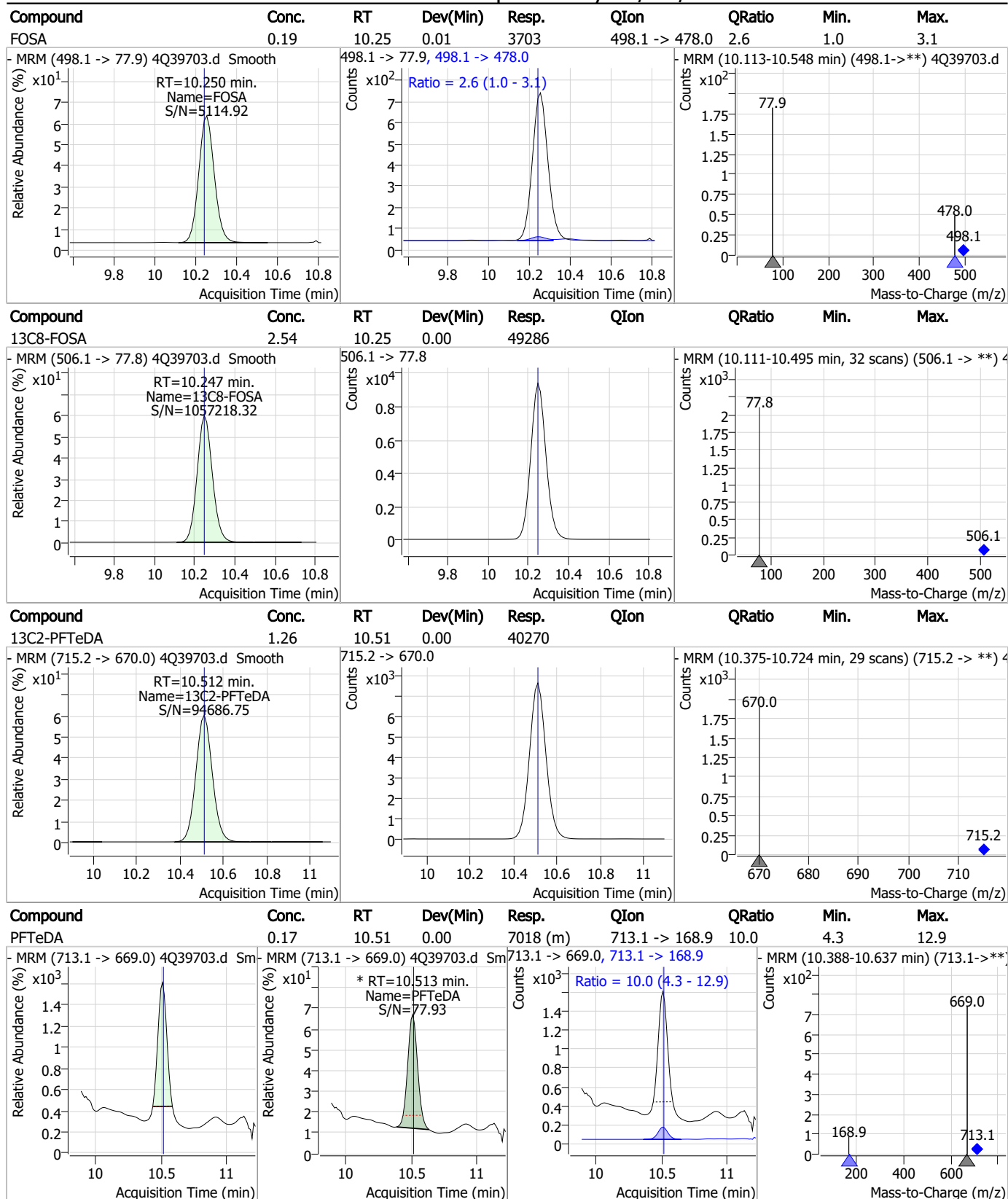
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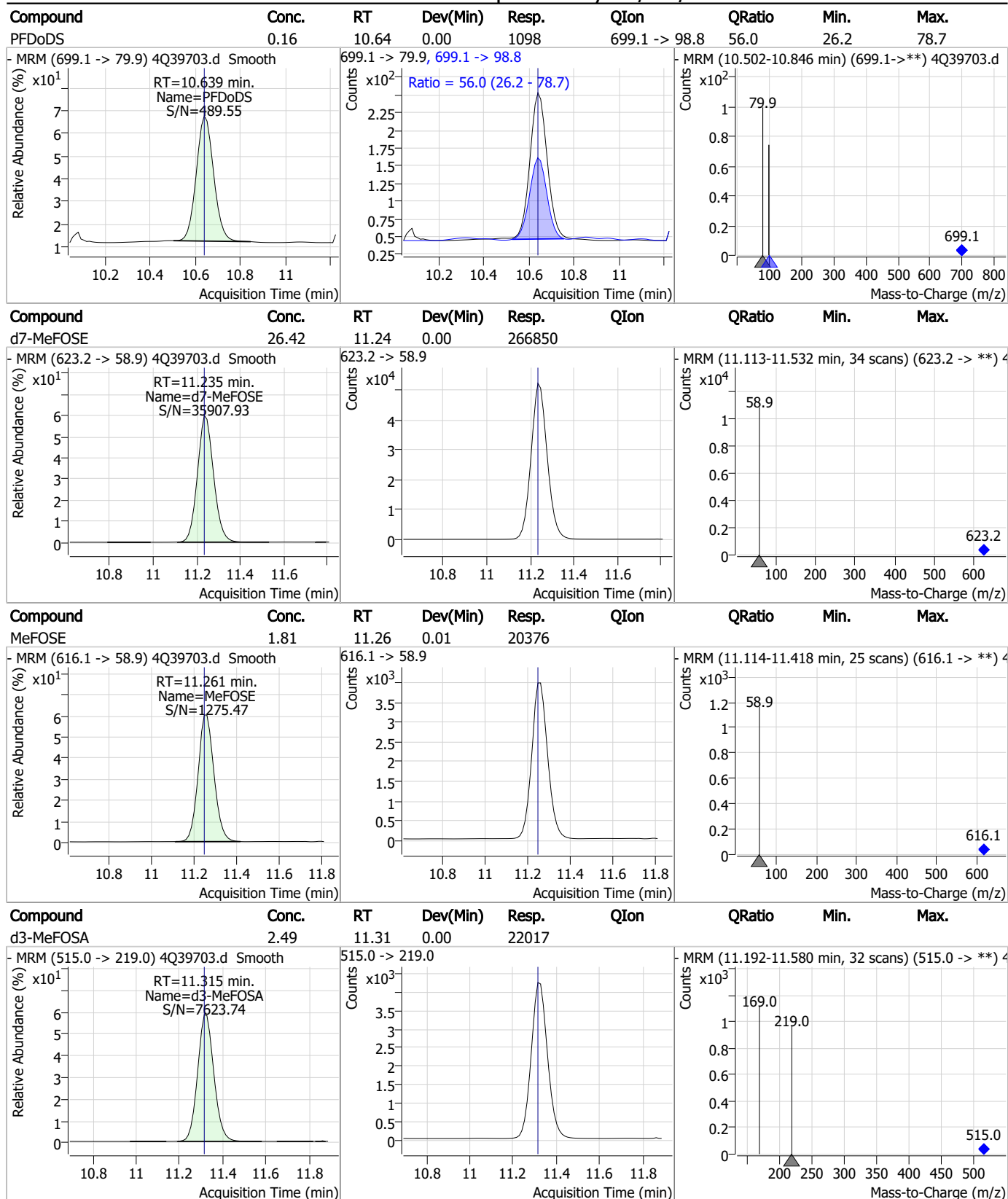
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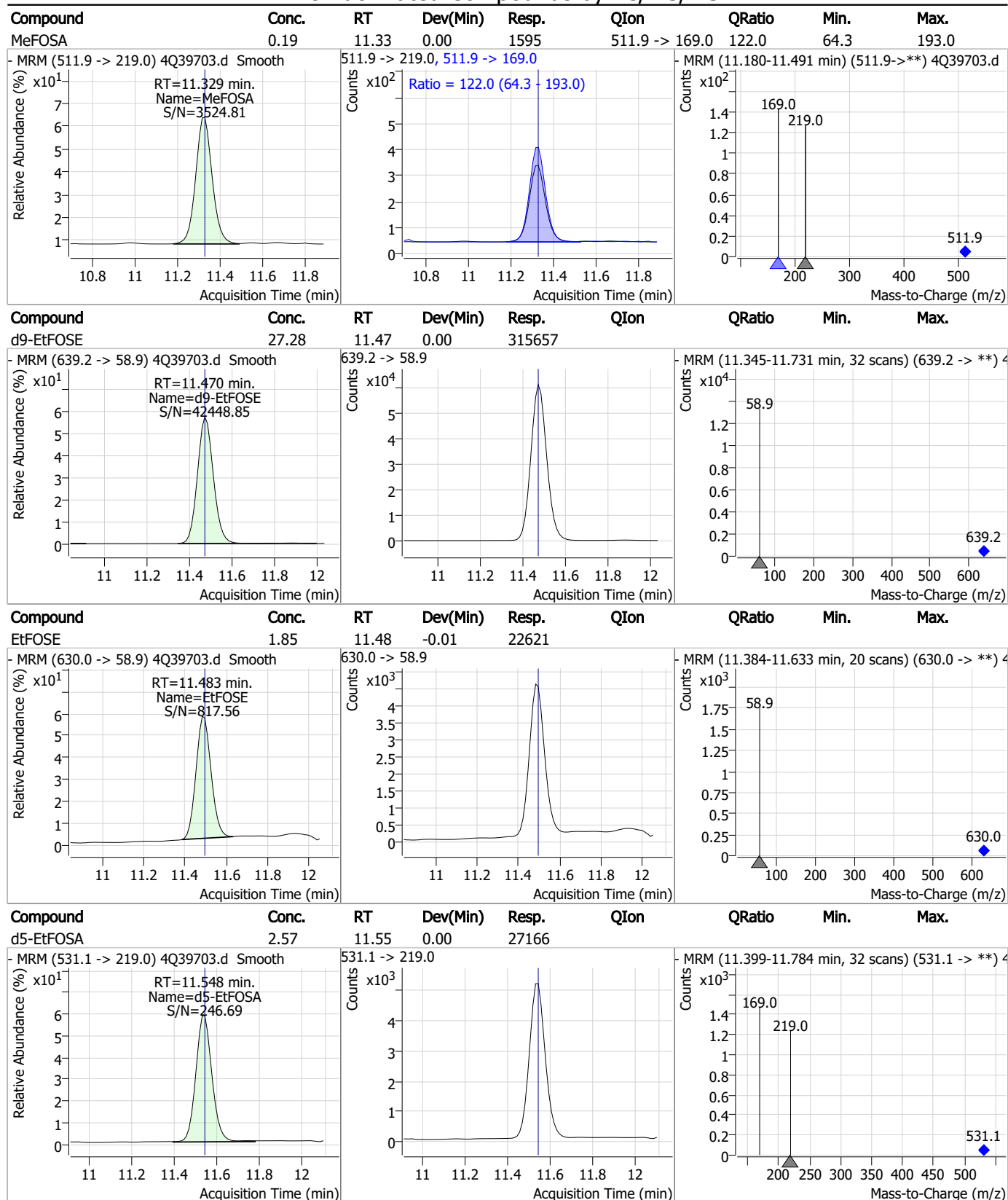
Perfluorinated Compounds by LC/MS/MS



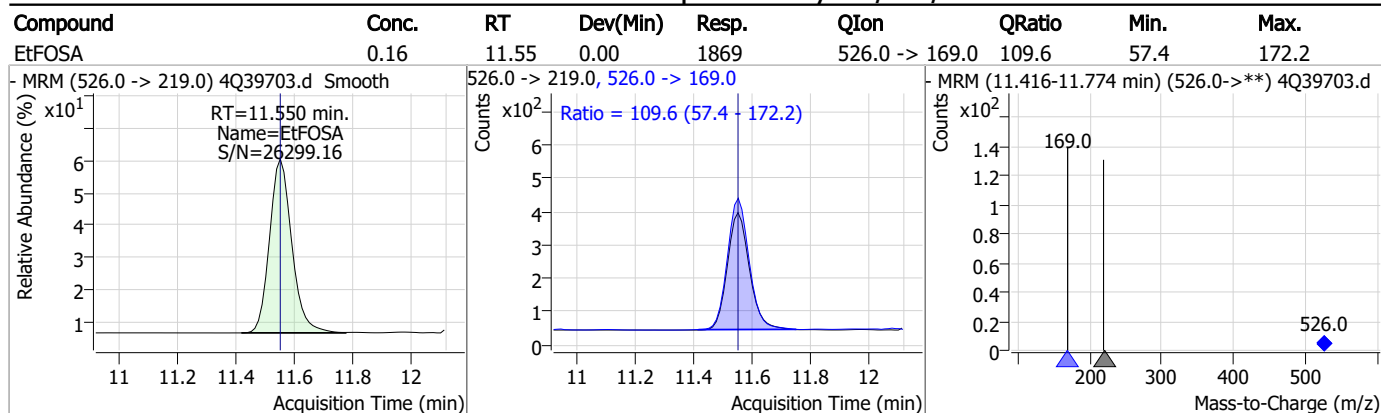
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q571-CC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39703.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/25/23 16:02

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
4:2 Fluorotelomer sulfonate	757124-72-4		5.84	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.94	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.16	Split peak
Perfluorotetradecanoic acid	376-06-7		10.51	Split peak

7.6.13.1
7

Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39714.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/25/2023 7:01:20 PM
 Sample Name : cc571-4
 Vial : P1-A5
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.149	216.8 -> 171.9	444825	10.00 µg/L	-0.025
M5-PFPeA	4.826	268.3 -> 223.0	300490	5.00 µg/L	-0.037
M5-PFHxA	6.135	318.0 -> 273.0	192037	2.50 µg/L	-0.037
M4-PFHpA	7.080	367.1 -> 322.0	102710	2.50 µg/L	-0.026
M8-PFOA	7.751	421.1 -> 376.0	167955	2.50 µg/L	-0.037
M9-PFNA	8.321	472.1 -> 427.0	82977	1.25 µg/L	-0.038
M6-PFDA	8.854	519.1 -> 474.1	65560	1.25 µg/L	-0.025
M7-PFUnDA	9.349	570.0 -> 525.1	74658	1.25 µg/L	-0.025
M2-PFDoDA	9.781	615.1 -> 570.0	69992	1.25 µg/L	-0.025
M2-PFTeDA	10.499	715.2 -> 670.0	50759	1.25 µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	60634	2.50 µg/L	-0.012
M3-PFBS	6.052	302.1 -> 79.9	52987	2.50 µg/L	-0.037
M3-PFHxS	7.879	402.1 -> 79.9	34736	2.50 µg/L	-0.037
M8-PFOS	9.031	507.1 -> 79.9	43972	2.50 µg/L	-0.037
M2-4:2FTS	5.783	329.1 -> 80.9	5157	5.00 µg/L	-0.039
M2-6:2FTS	7.499	429.1 -> 80.9	10858	5.00 µg/L	-0.037
M2-8:2FTS	8.616	529.1 -> 80.9	15051	5.00 µg/L	-0.037
M3-MeFOSAA	8.899	573.2 -> 419.0	57933	5.00 µg/L	-0.025
M3-HFPO-DA	6.526	286.9 -> 168.9	143806	10.00 µg/L	-0.025
M5-EtFOSAA	9.109	589.2 -> 419.0	47956	5.00 µg/L	-0.037
M7-MeFOSE	11.235	623.2 -> 58.9	331128	25.00 µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	363470	25.00 µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	32985	2.50 µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	26457	2.50 µg/L	0.000
13C4-PFOS	9.031	502.8 -> 79.9	42275	2.50 µg/L	-0.037
13C3-PFBA	3.153	216.0 -> 172.0	251240	5.00 µg/L	-0.025
18O2-PFHxS	7.878	403.0 -> 83.9	23578	2.50 µg/L	-0.037
13C4-PFOA	7.752	417.1 -> 372.0	193038	2.50 µg/L	-0.037
13C2-PFDA	8.854	515.1 -> 470.1	56230	1.25 µg/L	-0.025
13C5-PFNA	8.322	468.0 -> 423.0	88048	1.25 µg/L	-0.038
13C2-PFHxA	6.136	315.1 -> 270.0	180678	2.50 µg/L	-0.037
System Monitoring Compounds					
13C2-4:2FTS	5.783	329.1 -> 80.9	5157	6.07 µg/L	-0.039
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.4%		
13C2-6:2FTS	7.499	429.1 -> 80.9	10858	5.71 µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.2%		
13C2-8:2FTS	8.616	529.1 -> 80.9	15051	5.78 µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.6%		
13C2-PFDoDA	9.781	615.1 -> 570.0	69992	1.28 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C2-PFTeDA	10.499	715.2 -> 670.0	50759	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C3-PFBS	6.052	302.1 -> 79.9	52987	2.60 µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C3-PFHxS	7.879	402.1 -> 79.9	34736	2.53 µg/L	-0.037

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	3.149	216.8 -> 171.9	444825	9.82 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C4-PFHpA	7.080	367.1 -> 322.0	102710	2.44 µg/L	-0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C5-PFHxA	6.135	318.0 -> 273.0	192037	2.53 µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFPeA	4.826	268.3 -> 223.0	300490	5.11 µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C6-PFDA	8.854	519.1 -> 474.1	65560	1.32 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C7-PFUnDA	9.349	570.0 -> 525.1	74658	1.40 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.1%	
13C8-FOSA	10.235	506.1 -> 77.8	60634	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C8-PFOA	7.751	421.1 -> 376.0	167955	2.42 µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOS	9.031	507.1 -> 79.9	43972	2.55 µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C9-PFNA	8.321	472.1 -> 427.0	82977	1.33 µg/L	-0.038
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.1%	
d3-MeFOSAA	8.899	573.2 -> 419.0	57933	5.97 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.3%	
13C3-HFPO-DA	6.526	286.9 -> 168.9	143806	9.98 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d3-MeFOSA	11.315	515.0 -> 219.0	26457	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
d5-EtFOSAA	9.109	589.2 -> 419.0	47956	5.67 µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.4%	
d7-MeFOSE	11.235	623.2 -> 58.9	331128	26.27 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
d9-EtFOSE	11.470	639.2 -> 58.9	363470	25.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d5-EtFOSA	11.535	531.1 -> 219.0	32985	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	

Target Compounds

					QValue
4:2FTS	5.784	327.1 -> 307.0	71381	8.47 µg/L	99
		327.1 -> 80.9	32696		
6:2FTS	7.499	427.1 -> 407.0	72769	8.46 µg/L	99
		427.1 -> 80.9	35438		
8:2FTS	8.617	527.1 -> 507.0	60586	8.32 µg/L	96
		527.1 -> 80.8	33716		
EtFOSAA	9.122	584.2 -> 419.1	17048	2.12 µg/L	100
		584.2 -> 526.0	8500		
FOSA	10.225	498.1 -> 77.9	55127	2.35 µg/L	100
		498.1 -> 478.0	1218		
MeFOSAA	8.900	570.1 -> 419.0	19579	2.28 µg/L	98
		570.1 -> 483.0	4045		
PFBA	3.157	212.8 -> 168.9	107777	8.71 µg/L	100
PFBS	6.053	298.7 -> 79.9	46629	1.95 µg/L	96
		298.7 -> 98.8	17041		
PFDA	8.855	512.9 -> 469.0	103799	2.22 µg/L	99
		512.9 -> 219.0	20993		
PFDODA	9.781	613.1 -> 569.0	120565	2.24 µg/L	98
		613.1 -> 319.0	18403		
PFDS	9.933	599.0 -> 79.9	22047	2.16 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.080	599.0 -> 98.8	9676			
		363.1 -> 319.0	146439	2.29	µg/L	99
PFHpS	8.488	363.1 -> 169.0	24387			
		449.0 -> 79.9	37600	2.12	µg/L	96
PFHxA	6.138	449.0 -> 98.9	18169			
		313.0 -> 269.0	172306	2.31	µg/L	100
PFHxS	7.880	313.0 -> 118.9	4870			
		398.7 -> 79.9	20457	1.82	µg/L	89
PFNA	8.322	398.7 -> 98.9	11552		m	
		463.0 -> 419.0	124988	2.07	µg/L	100
PFNS	9.524	463.0 -> 219.0	29402			
		548.8 -> 79.9	16144	2.06	µg/L	95
PFOA	7.753	548.8 -> 98.9	8021			
		413.0 -> 369.0	170692	2.29	µg/L	99
PFOS	9.032	413.0 -> 169.0	33698			
		498.9 -> 79.9	43809	2.13	µg/L	99
PFPeA	4.829	498.9 -> 98.8	20770		m	
		263.0 -> 219.0	301577	4.58	µg/L	100
PFPeS	7.146	349.1 -> 79.9	20856	1.92	µg/L	96
		349.1 -> 98.9	8707			
PFTeDA	10.500	713.1 -> 669.0	119308	2.34	µg/L	99
		713.1 -> 168.9	9842			
PFTrDA	10.154	663.0 -> 619.0	153911	2.33	µg/L	98
		663.0 -> 168.9	15337			
PFUnDA	9.349	563.1 -> 519.0	93523	2.07	µg/L	97
		563.1 -> 269.1	18277			
11CI-PF3OUdS	10.206	630.9 -> 450.9	308626	9.18	µg/L	100
		632.9 -> 452.9	91737			
9CI-PF3ONS	9.388	530.8 -> 351.0	354840	8.66	µg/L	100
		532.8 -> 353.0	105991			
ADONA	7.332	376.9 -> 250.9	700559	9.03	µg/L	99
		376.9 -> 84.8	252000			
HFPO-DA	6.527	284.9 -> 168.9	127093	9.38	µg/L	99
		284.9 -> 184.9	12901			
3:3FTCA	4.161	241.0 -> 177.0	32071	10.38	µg/L	100
		241.0 -> 117.0	2990			
5:3FTCA	6.746	341.0 -> 237.1	568003	57.19	µg/L	99
		341.0 -> 217.0	429224			
7:3FTCA	8.224	441.0 -> 316.9	320954	56.27	µg/L	99
		441.0 -> 336.9	731228			
EtFOSA	11.550	526.0 -> 219.0	30870	2.23	µg/L	99
		526.0 -> 169.0	35710			
EtFOSE	11.483	630.0 -> 58.9	346591	24.56	µg/L	100
MeFOSA	11.316	511.9 -> 219.0	24093	2.39	µg/L	96
		511.9 -> 169.0	29814			
MeFOSE	11.248	616.1 -> 58.9	321809	23.00	µg/L	100
PFDoDS	10.627	699.1 -> 79.9	18905	2.20	µg/L	99
		699.1 -> 98.8	9800			
NFDHA	6.004	295.0 -> 201.0	21738	4.43	µg/L	94
		295.0 -> 84.9	7074			
PFMBA	5.291	279.0 -> 85.1	190444	4.64	µg/L	100
PFMPA	3.844	229.0 -> 84.9	192213	4.53	µg/L	100
PFEEA	6.621	314.8 -> 134.9	265631	4.16	µg/L	99
		314.8 -> 82.9	7605			

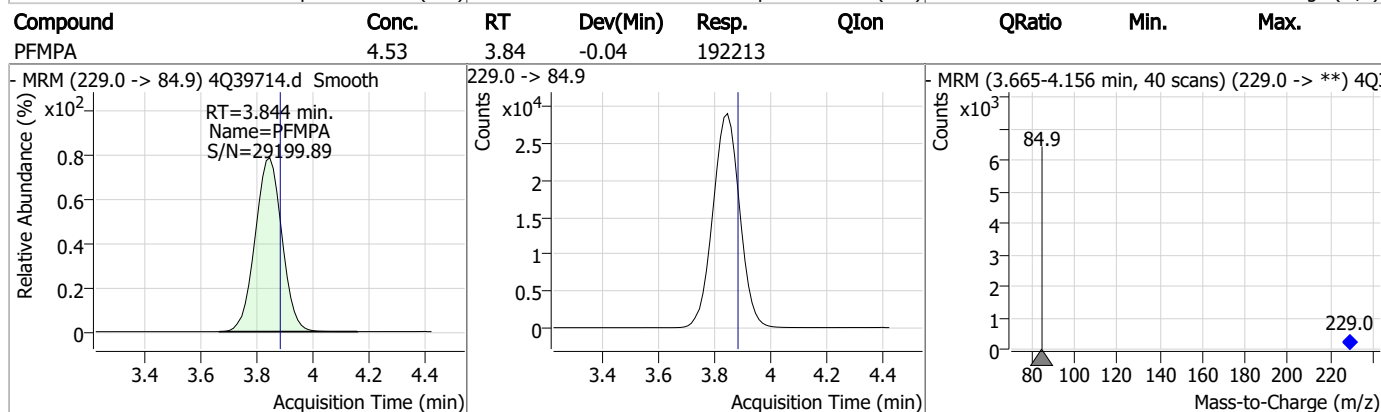
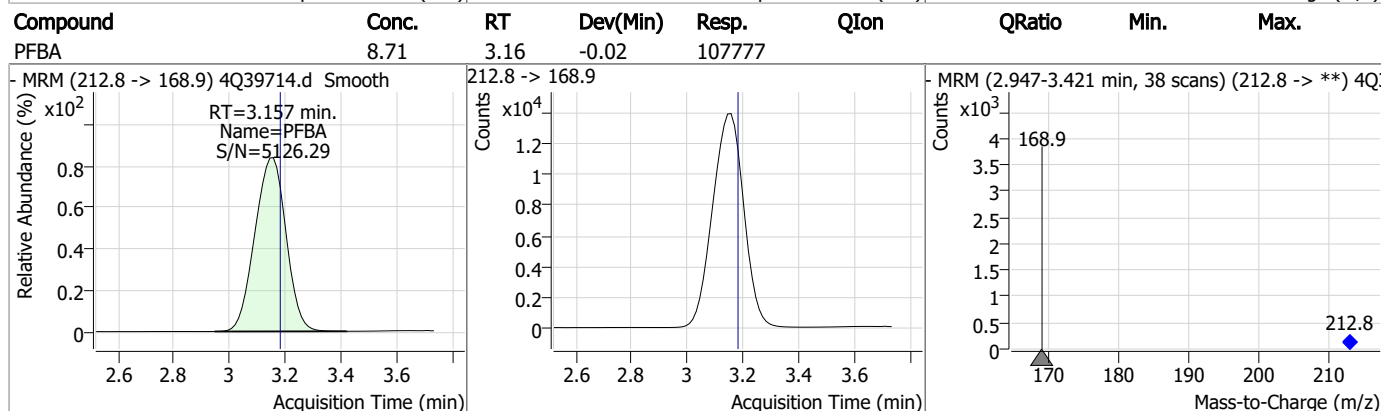
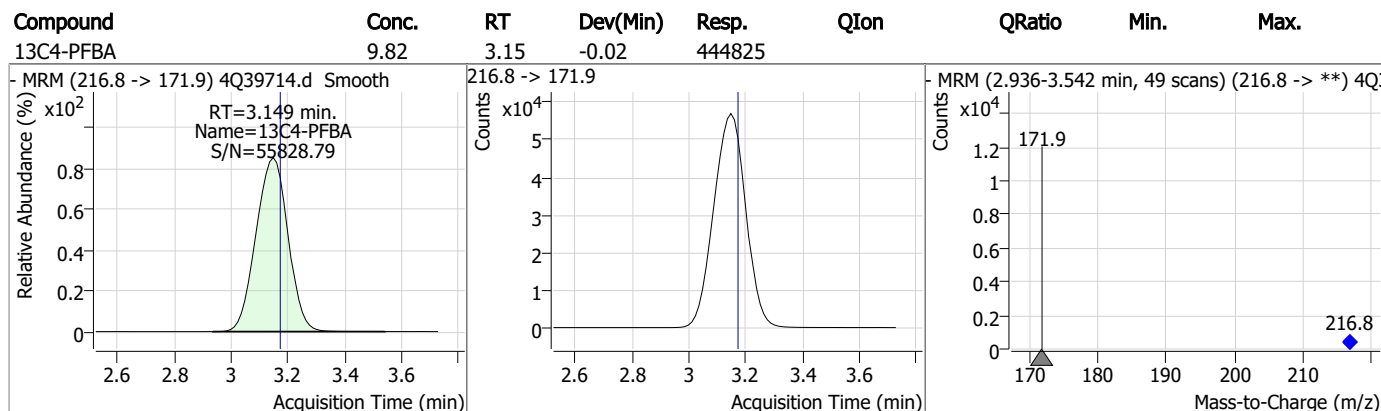
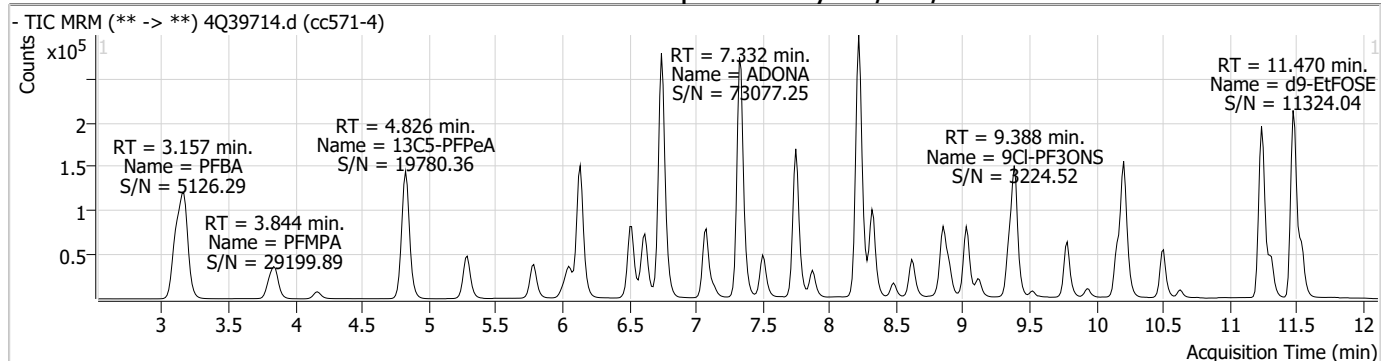
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

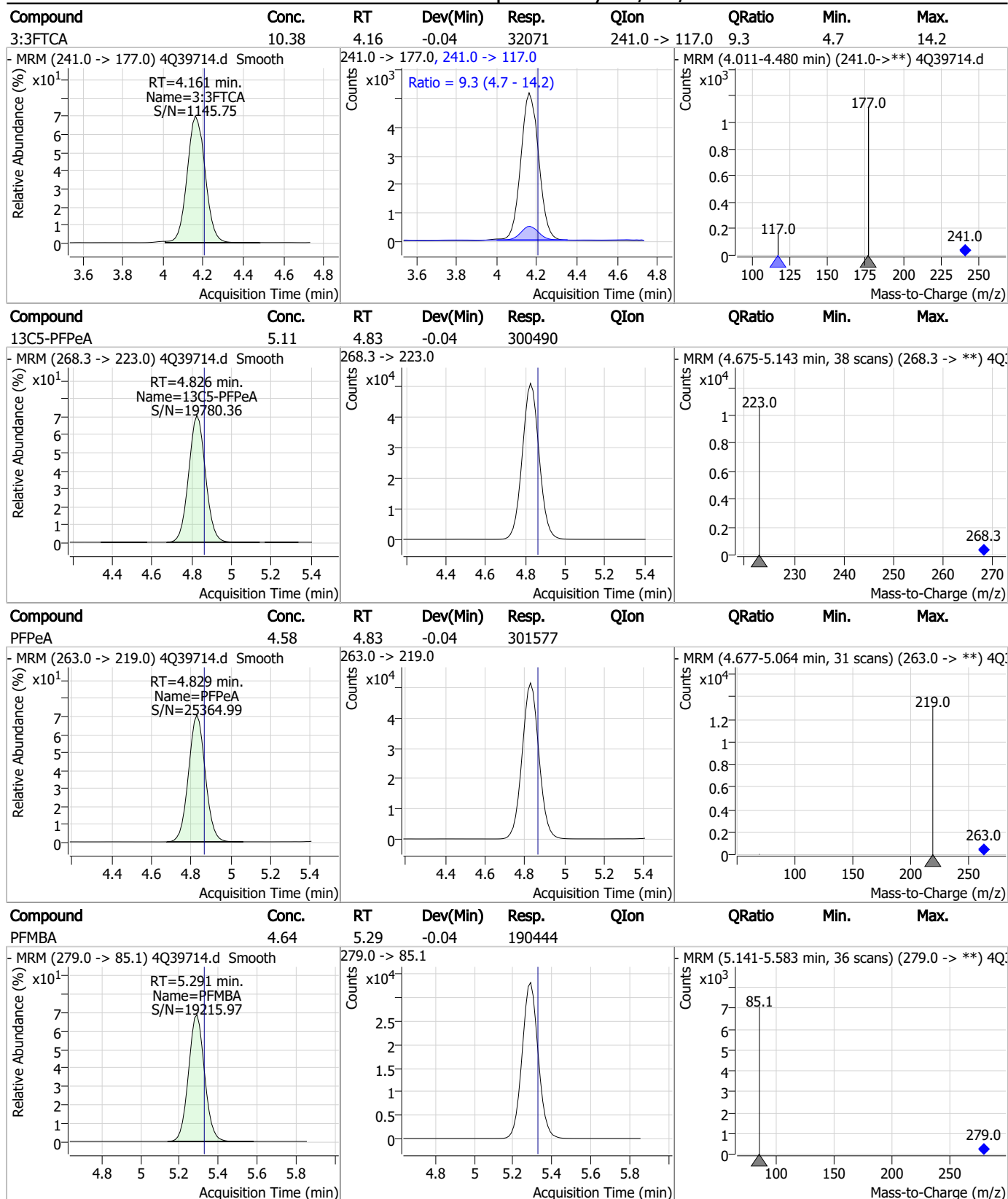
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.6.14
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Perfluorinated Compounds by LC/MS/MS



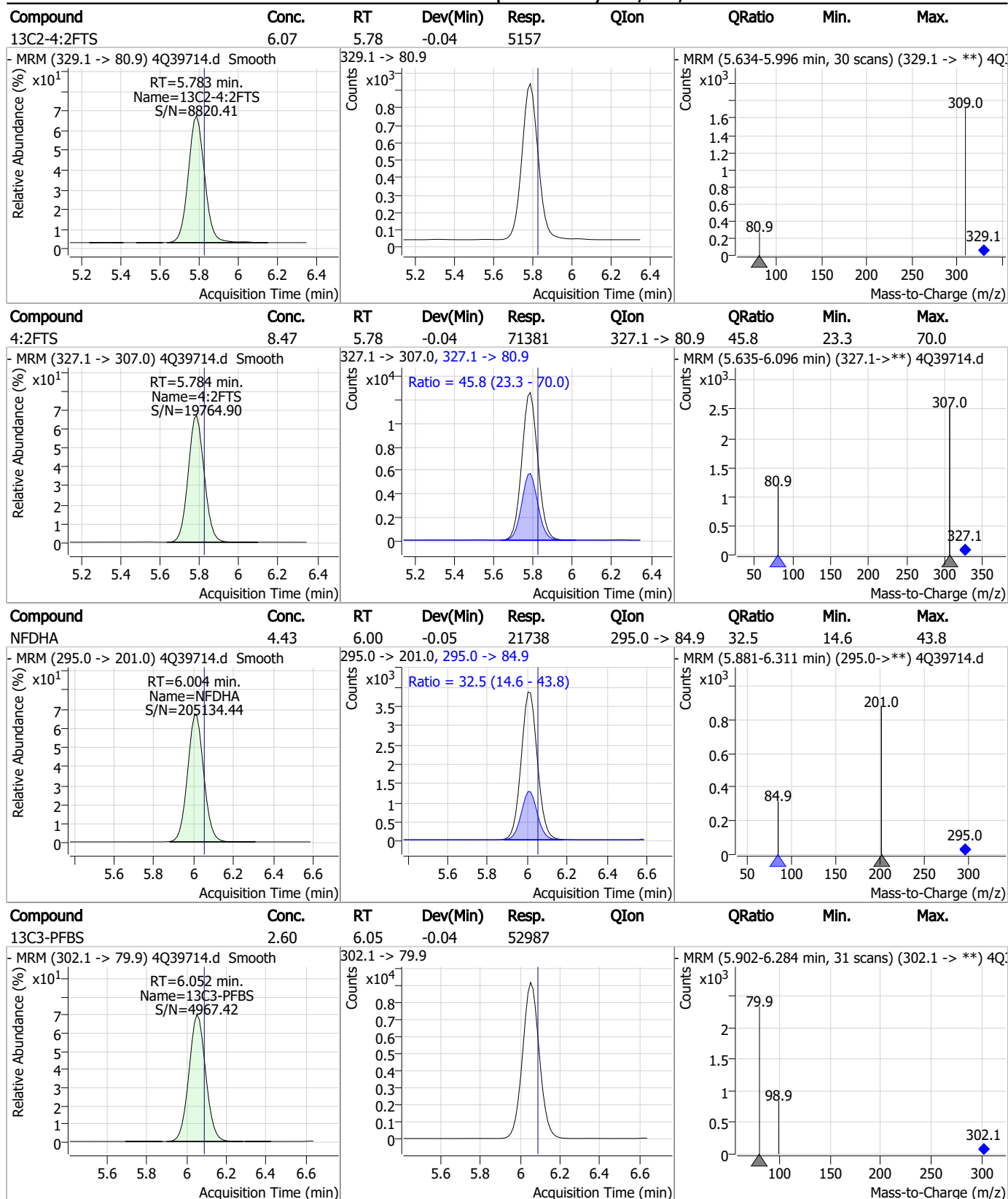
Perfluorinated Compounds by LC/MS/MS



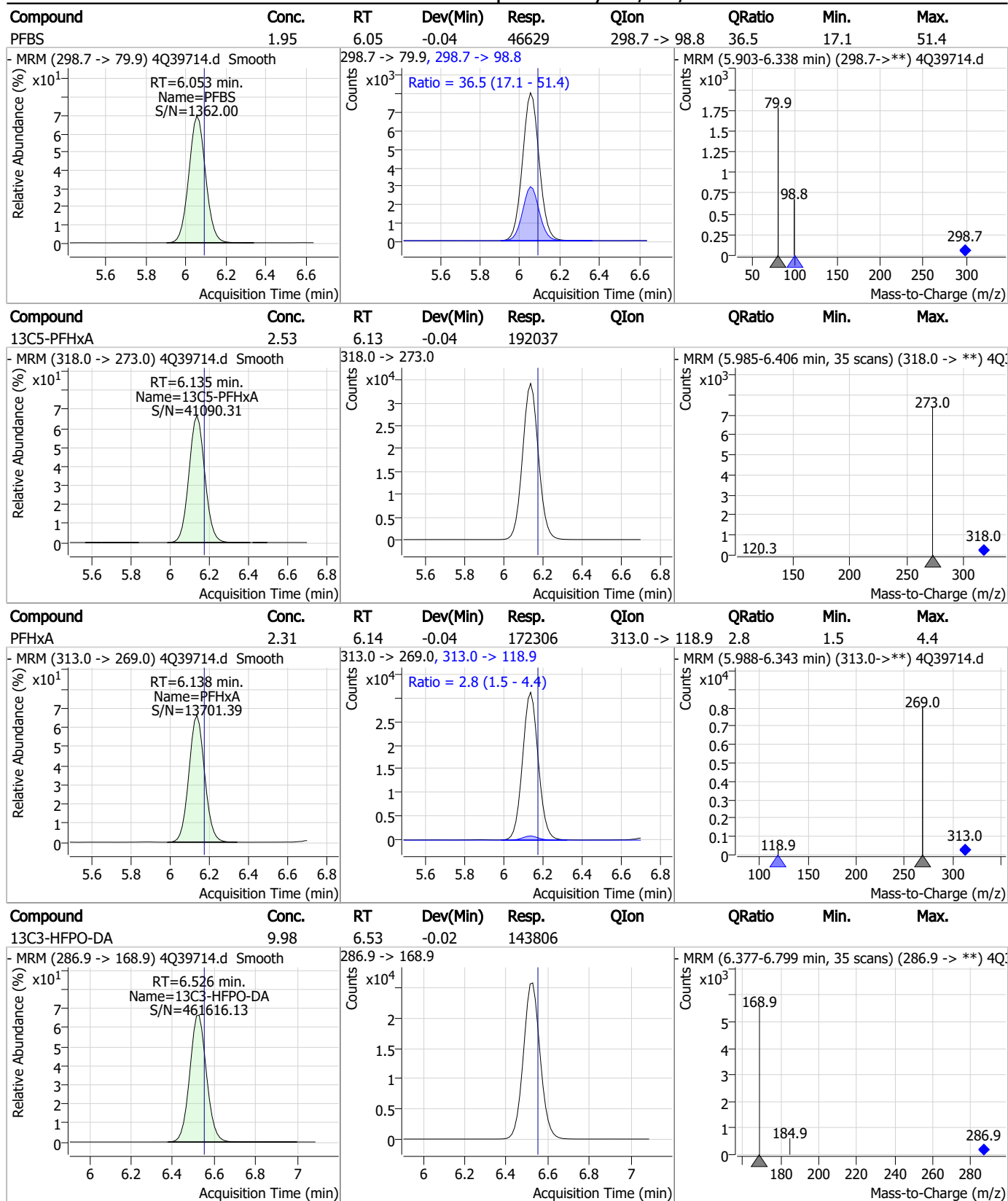
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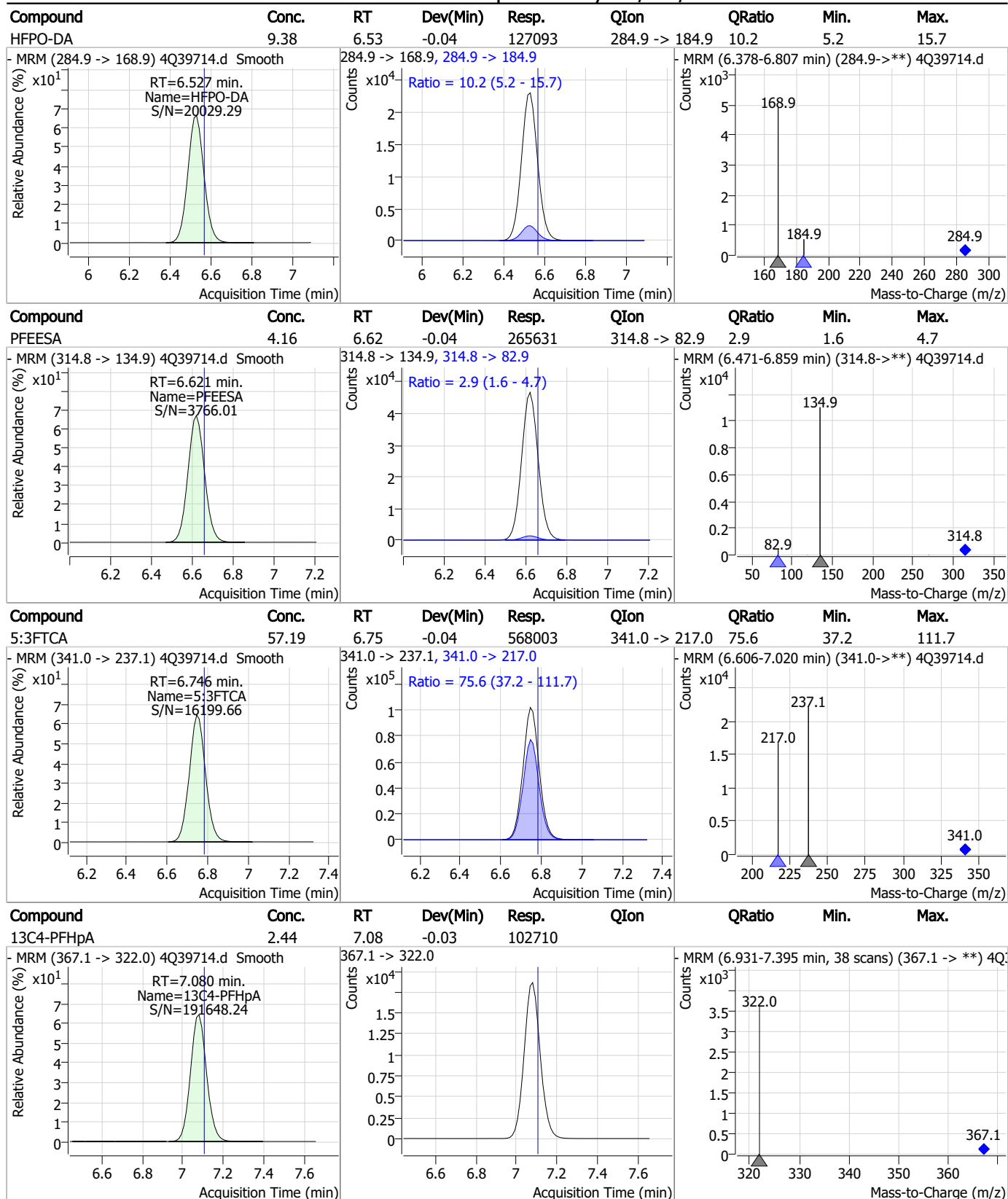
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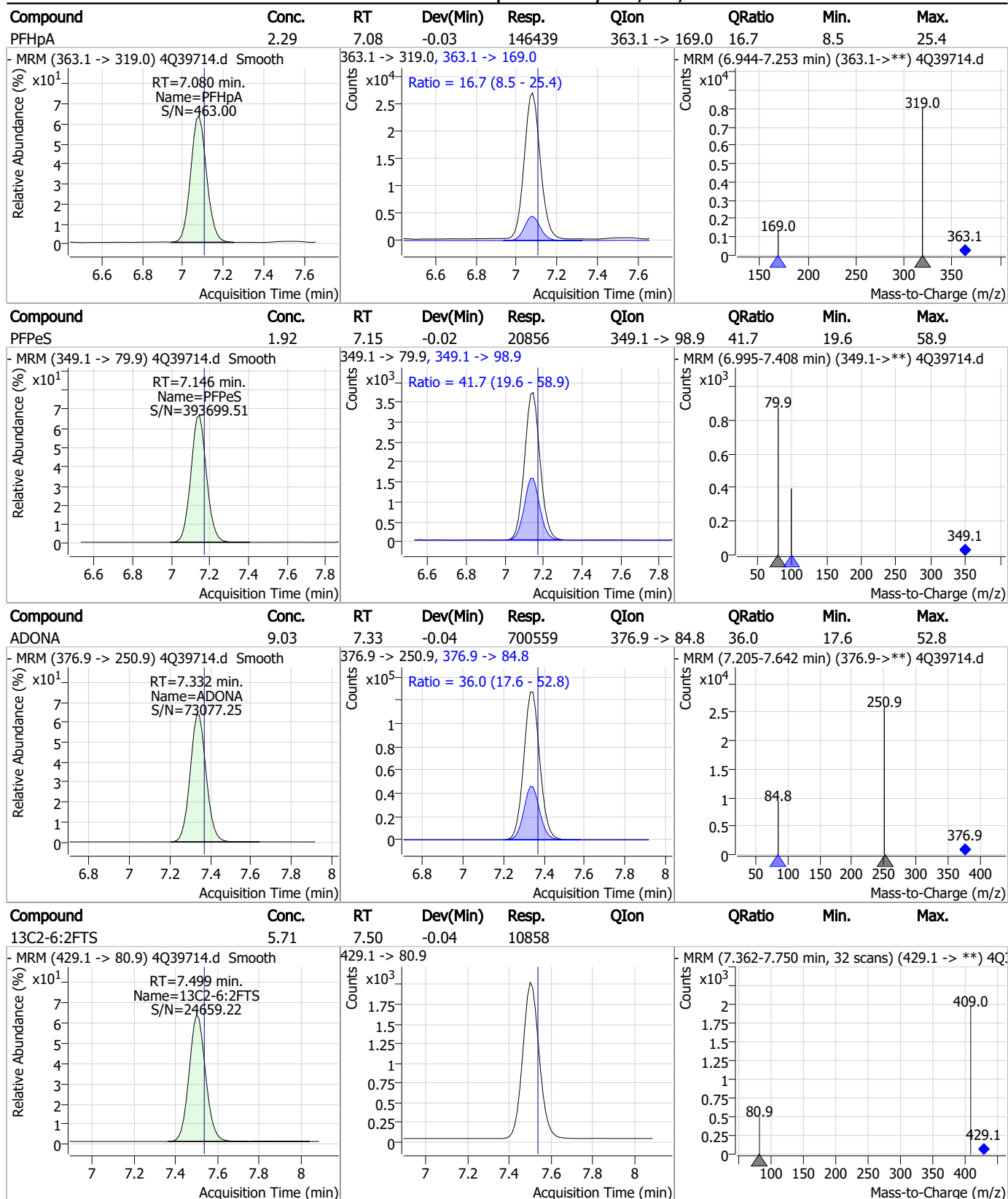
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



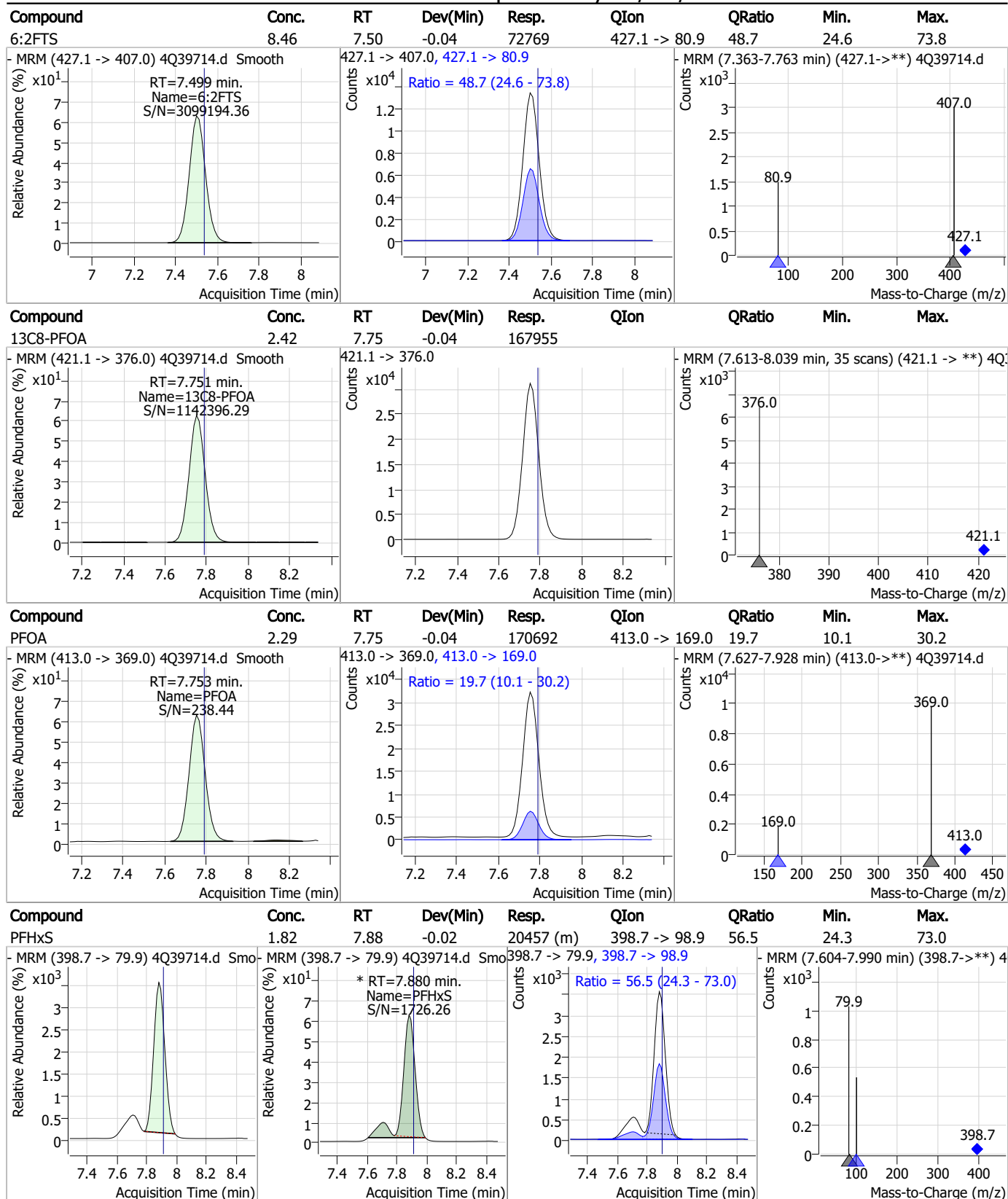
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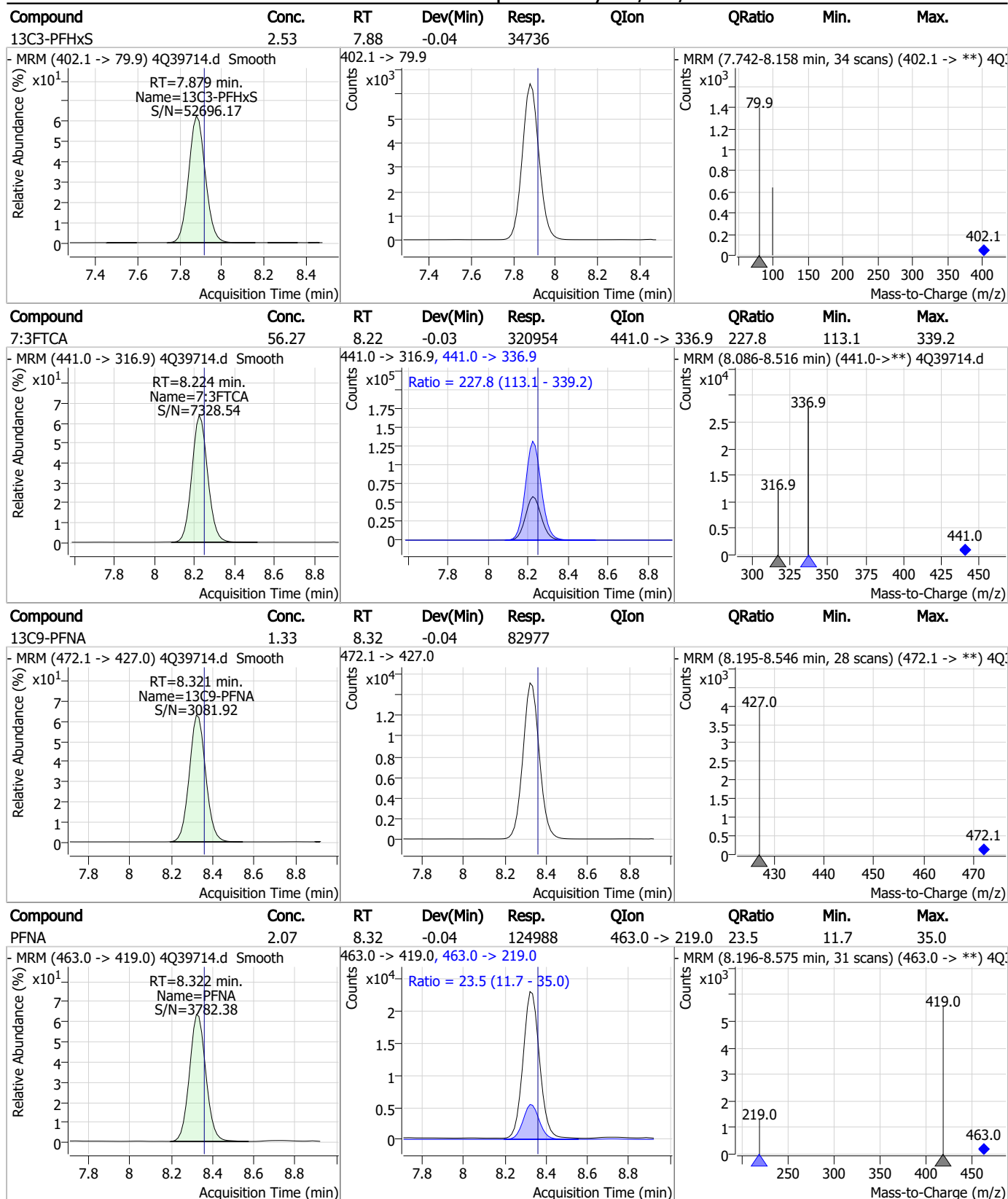
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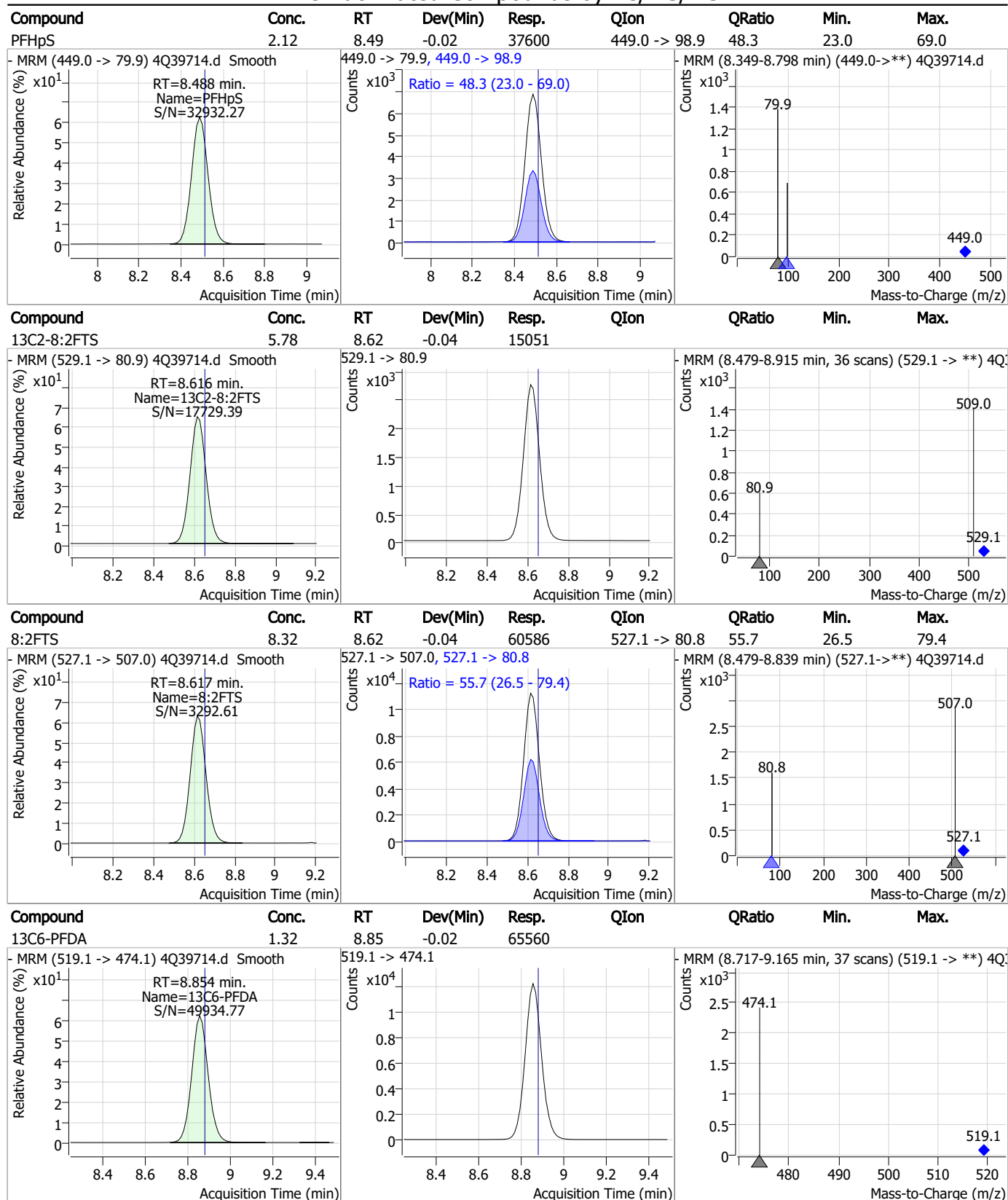
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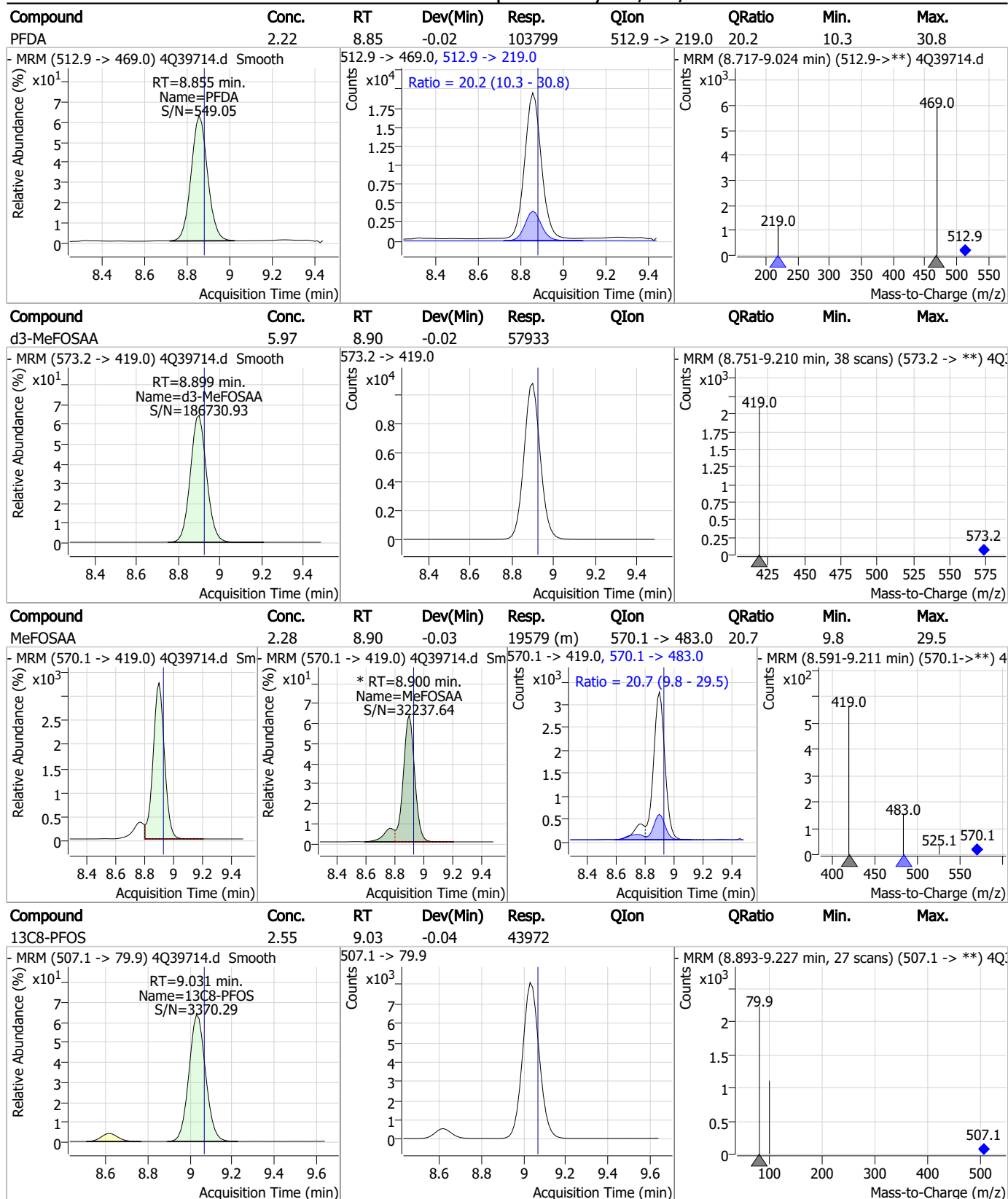
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Perfluorinated Compounds by LC/MS/MS



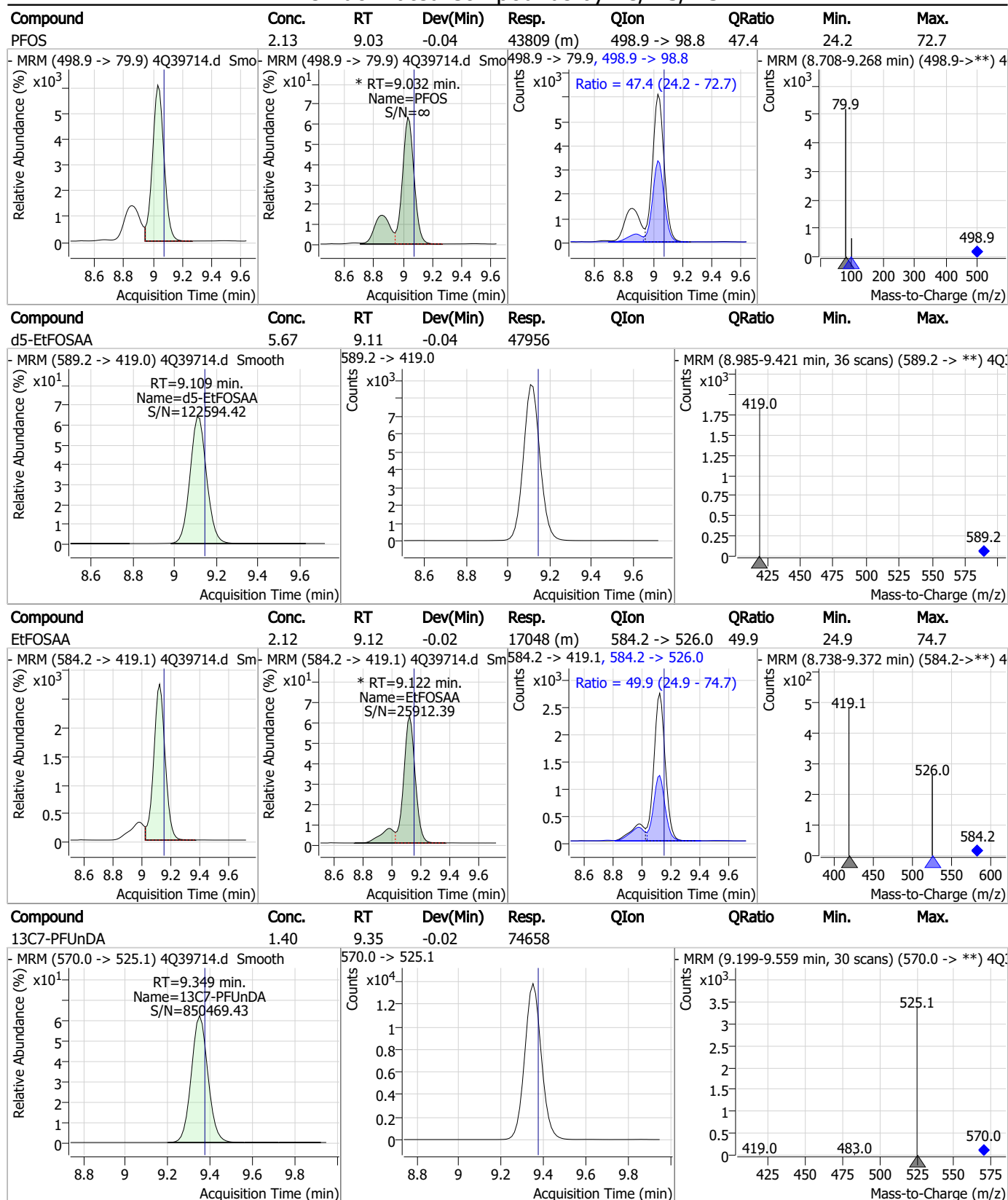
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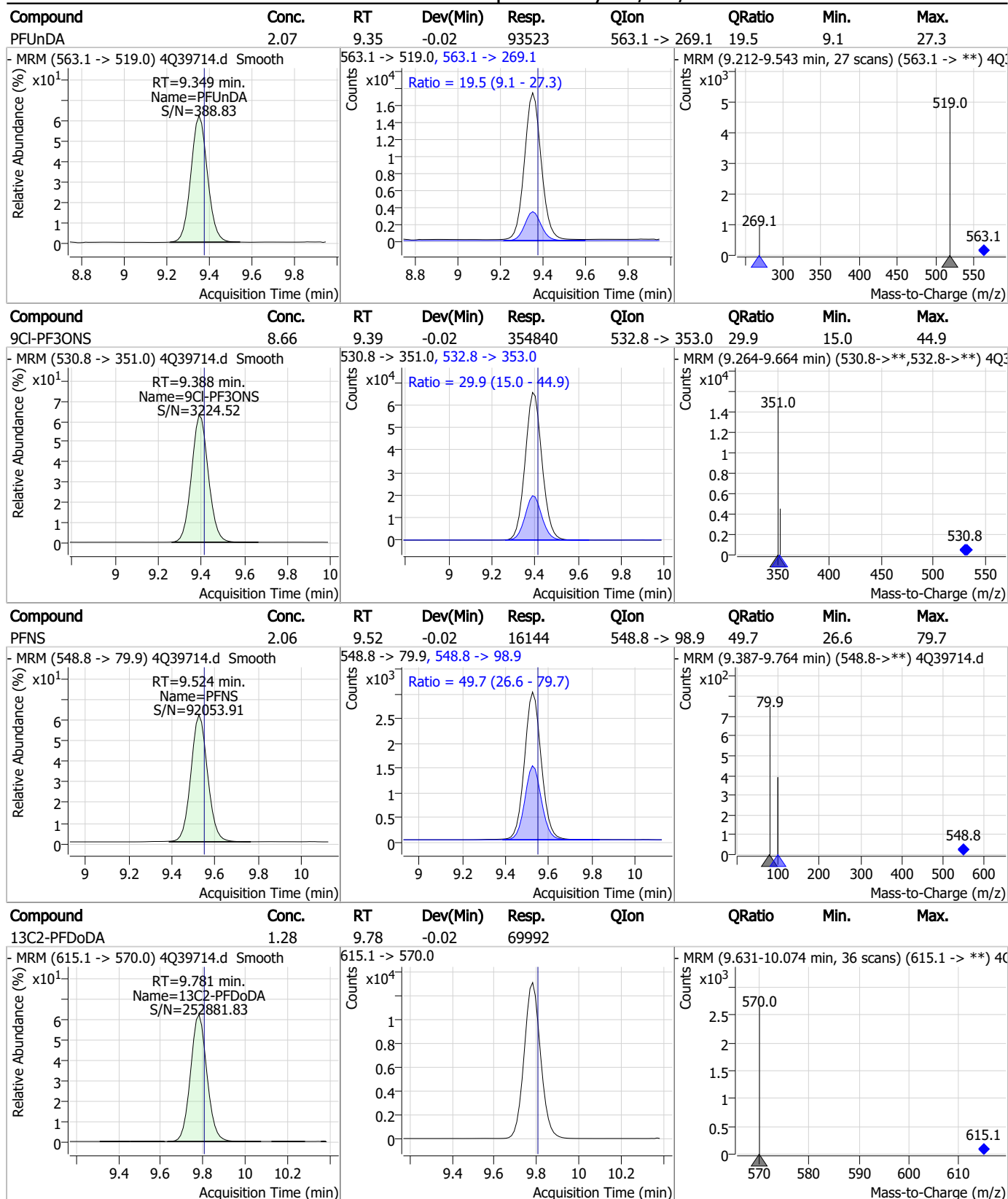
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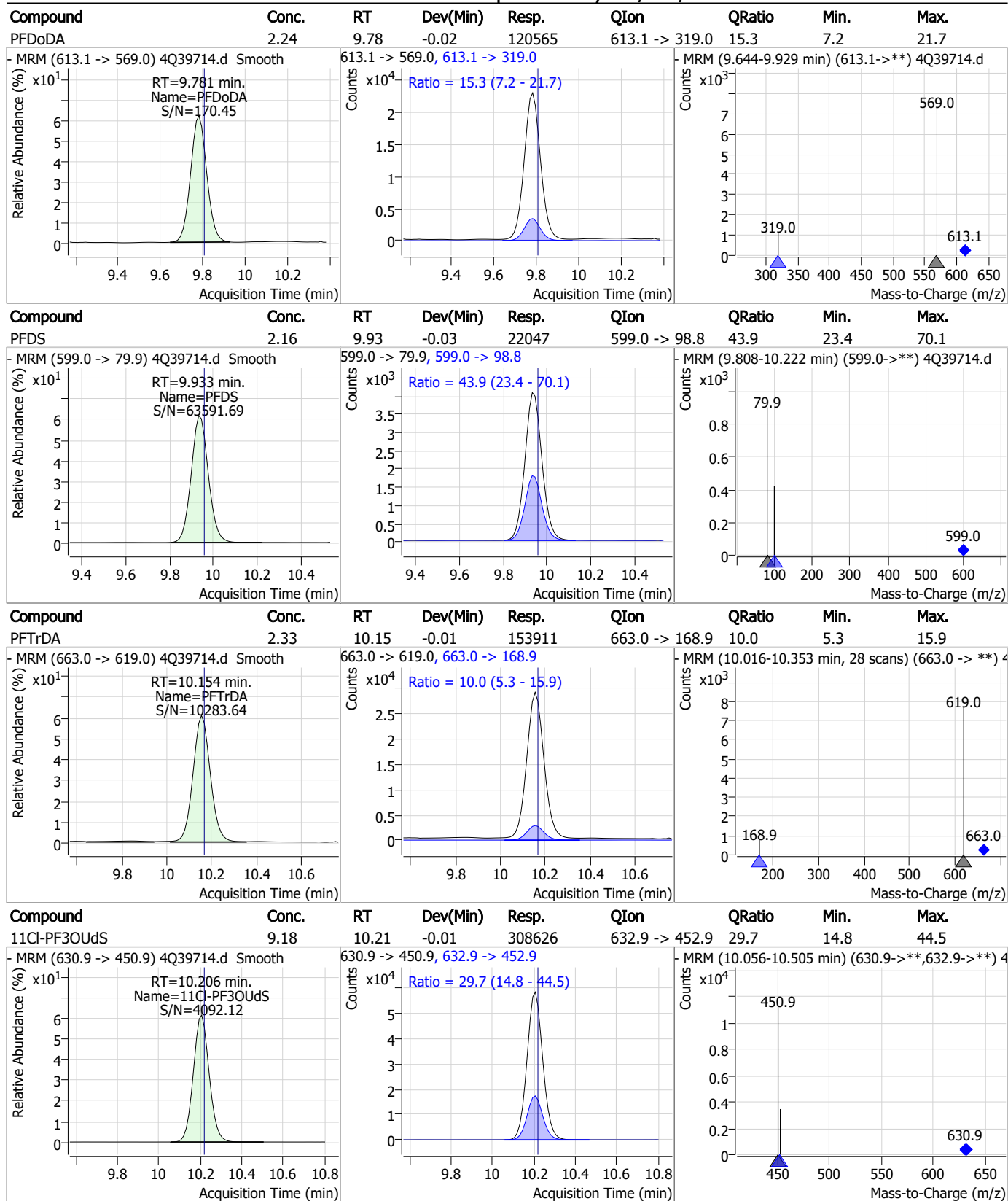
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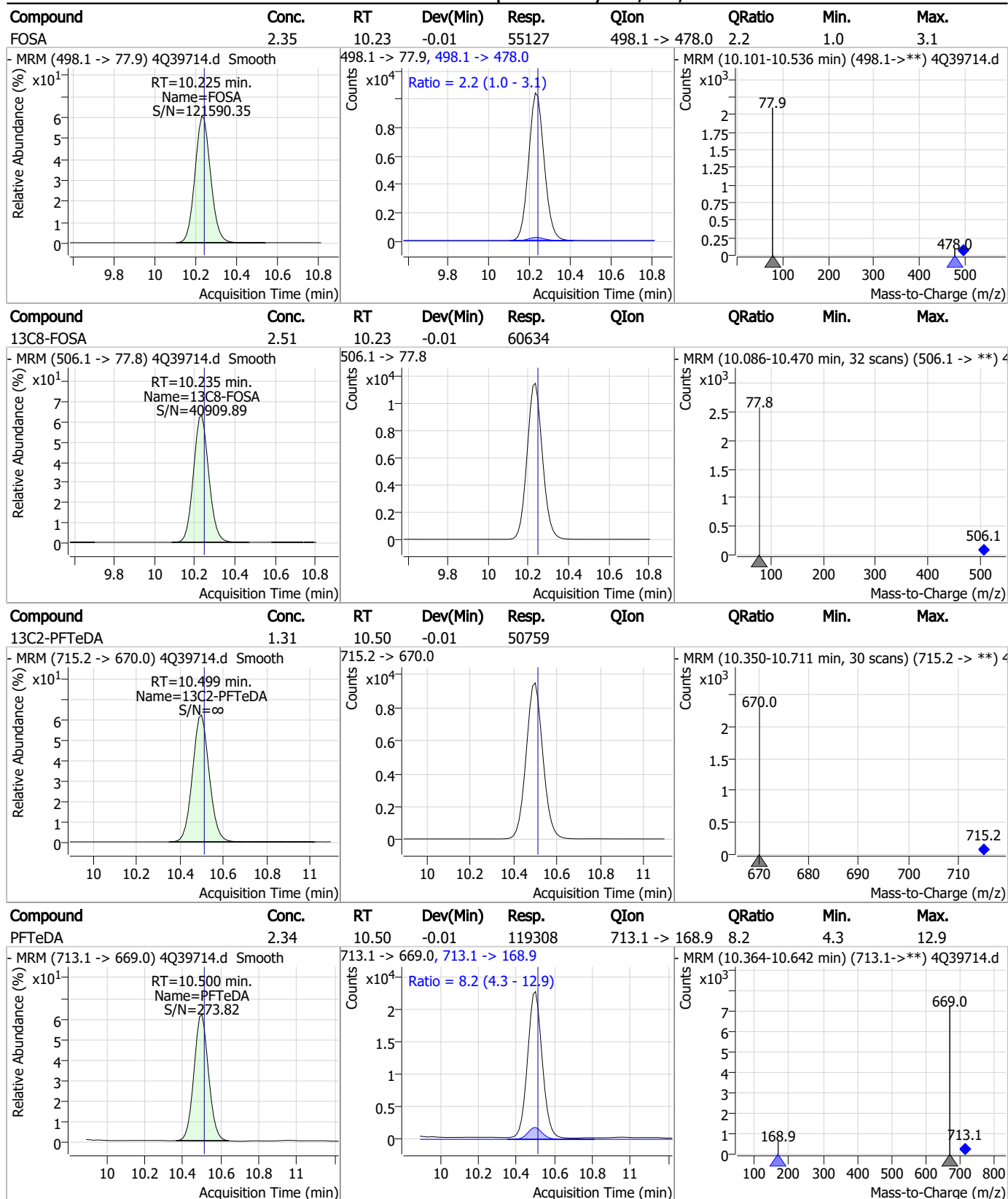
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Perfluorinated Compounds by LC/MS/MS



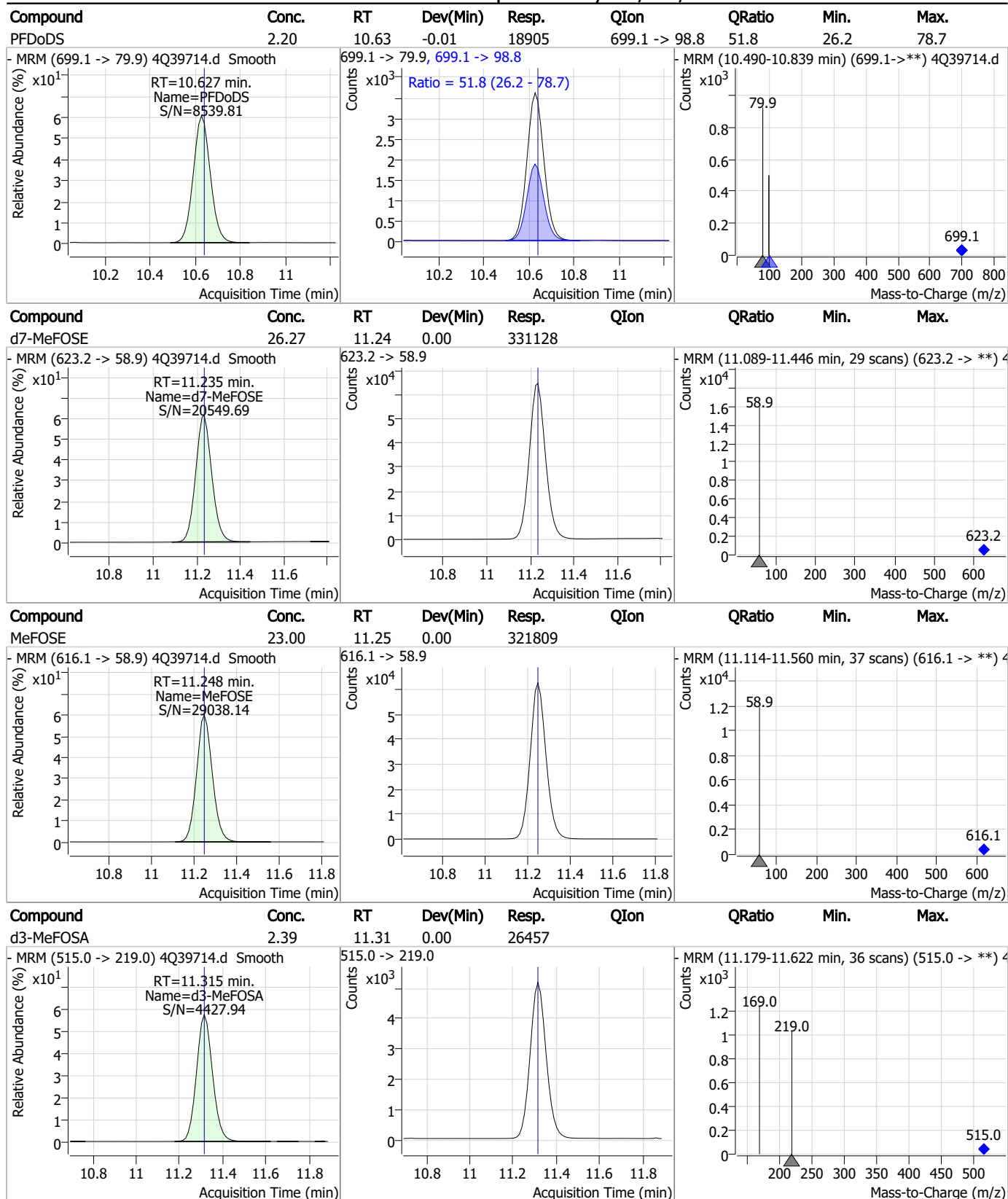
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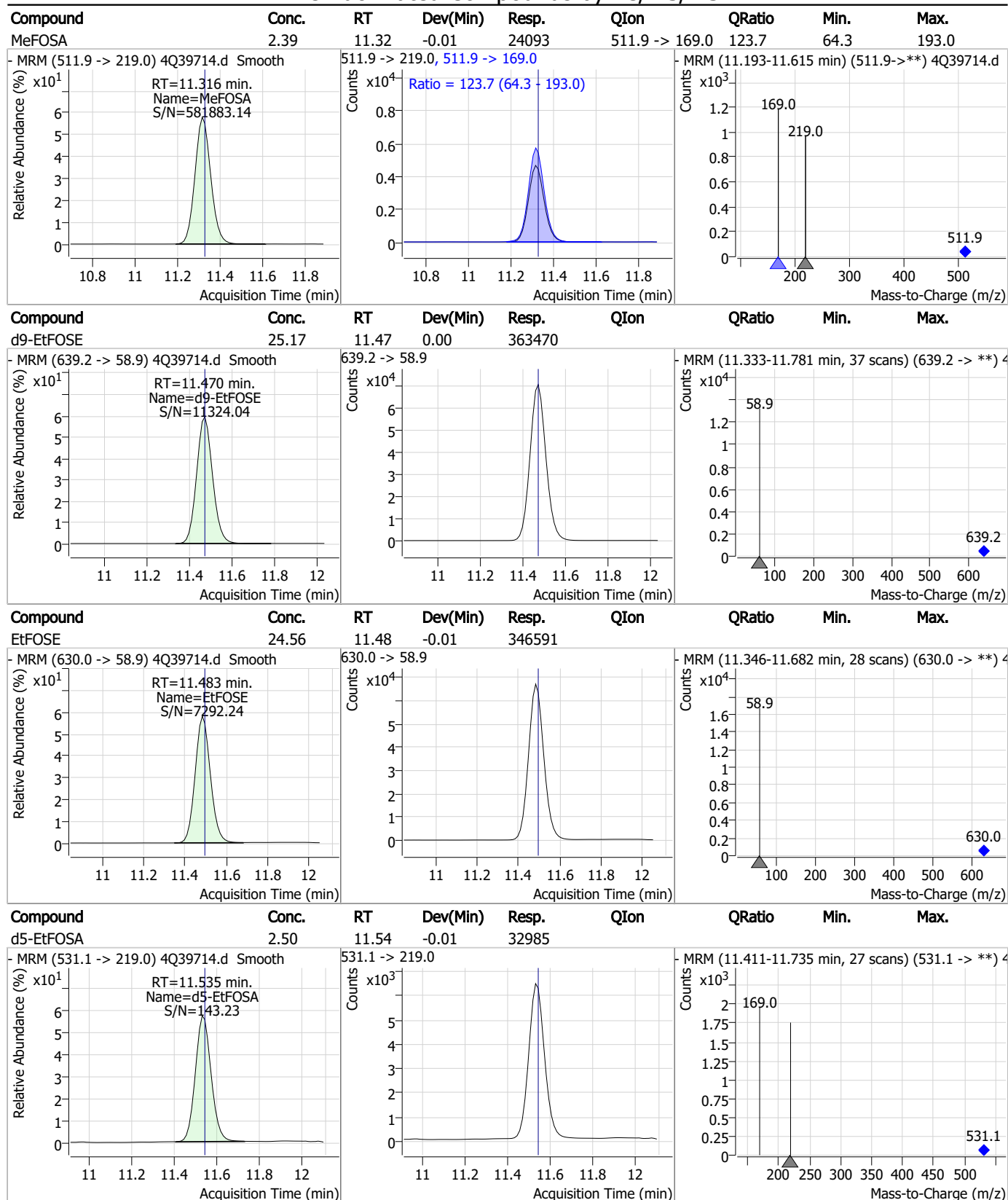
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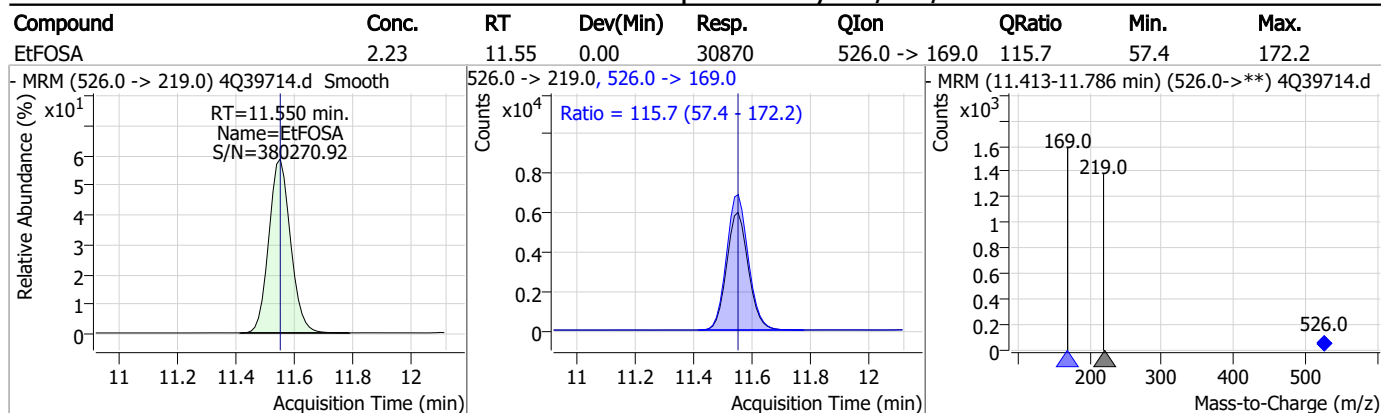
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.14

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Manual Integration Approval Summary

Sample Number: S4Q571-CC571

Lab FileID: 4Q39714.D

Injection Time: 01/25/23 19:01

Method: EPA DRAFT 1633

Analyst approved: 01/26/23 13:32 Natasha Guntie

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.88	Split peak
MeFOSAA	2355-31-9		8.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.03	Split peak
EtFOSAA	2991-50-6		9.12	Split peak

7.6.14.1
7

Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39740.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 1:07:20 AM
 Sample Name : cc571-1.0LL
 Vial : P1-A2
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.111	216.8 -> 171.9	363108	10.00 µg/L	-0.062
M5-PFPeA	4.788	268.3 -> 223.0	249698	5.00 µg/L	-0.075
M5-PFHxA	6.084	318.0 -> 273.0	161653	2.50 µg/L	-0.088
M4-PFHpA	7.030	367.1 -> 322.0	88631	2.50 µg/L	-0.076
M8-PFOA	7.700	421.1 -> 376.0	138397	2.50 µg/L	-0.088
M9-PFNA	8.284	472.1 -> 427.0	71170	1.25 µg/L	-0.075
M6-PFDA	8.804	519.1 -> 474.1	53300	1.25 µg/L	-0.074
M7-PFUnDA	9.311	570.0 -> 525.1	59035	1.25 µg/L	-0.063
M2-PFDoDA	9.743	615.1 -> 570.0	59858	1.25 µg/L	-0.062
M2-PFTeDA	10.462	715.2 -> 670.0	45127	1.25 µg/L	-0.050
M8-FOSA	10.197	506.1 -> 77.8	53025	2.50 µg/L	-0.050
M3-PFBS	6.002	302.1 -> 79.9	43276	2.50 µg/L	-0.087
M3-PFHxS	7.829	402.1 -> 79.9	28623	2.50 µg/L	-0.088
M8-PFOS	8.993	507.1 -> 79.9	35191	2.50 µg/L	-0.074
M2-4:2FTS	5.734	329.1 -> 80.9	4956	5.00 µg/L	-0.089
M2-6:2FTS	7.449	429.1 -> 80.9	8824	5.00 µg/L	-0.087
M2-8:2FTS	8.579	529.1 -> 80.9	12292	5.00 µg/L	-0.074
M3-MeFOSAA	8.850	573.2 -> 419.0	45332	5.00 µg/L	-0.074
M3-HFPO-DA	6.464	286.9 -> 168.9	122820	10.00 µg/L	-0.087
M5-EtFOSAA	9.072	589.2 -> 419.0	37242	5.00 µg/L	-0.074
M7-MeFOSE	11.212	623.2 -> 58.9	267622	25.00 µg/L	-0.023
M9-EtFOSE	11.445	639.2 -> 58.9	298411	25.00 µg/L	-0.025
M5-EtFOSA	11.511	531.1 -> 219.0	27015	2.50 µg/L	-0.037
M3-MeFOSA	11.290	515.0 -> 219.0	21239	2.50 µg/L	-0.025
13C4-PFOS	8.994	502.8 -> 79.9	35281	2.50 µg/L	-0.074
13C3-PFBA	3.115	216.0 -> 172.0	205838	5.00 µg/L	-0.062
18O2-PFHxS	7.828	403.0 -> 83.9	20424	2.50 µg/L	-0.088
13C4-PFOA	7.701	417.1 -> 372.0	155946	2.50 µg/L	-0.088
13C2-PFDA	8.805	515.1 -> 470.1	48719	1.25 µg/L	-0.074
13C5-PFNA	8.285	468.0 -> 423.0	73716	1.25 µg/L	-0.075
13C2-PFHxA	6.085	315.1 -> 270.0	150090	2.50 µg/L	-0.087
System Monitoring Compounds					
13C2-4:2FTS	5.734	329.1 -> 80.9	4956	6.73 µg/L	-0.089
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 134.6%		
13C2-6:2FTS	7.449	429.1 -> 80.9	8824	5.36 µg/L	-0.087
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C2-8:2FTS	8.579	529.1 -> 80.9	12292	5.45 µg/L	-0.074
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C2-PFDoDA	9.743	615.1 -> 570.0	59858	1.27 µg/L	-0.062
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-PFTeDA	10.462	715.2 -> 670.0	45127	1.34 µg/L	-0.050
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.3%		
13C3-PFBS	6.002	302.1 -> 79.9	43276	2.45 µg/L	-0.087
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C3-PFHxS	7.829	402.1 -> 79.9	28623	2.40 µg/L	-0.088

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	3.111	216.8 -> 171.9	363108	9.78 µg/L	-0.062
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C4-PFHpA	7.030	367.1 -> 322.0	88631	2.53 µg/L	-0.076
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C5-PFHxA	6.084	318.0 -> 273.0	161653	2.56 µg/L	-0.088
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C5-PFPeA	4.788	268.3 -> 223.0	249698	5.12 µg/L	-0.075
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C6-PFDA	8.804	519.1 -> 474.1	53300	1.24 µg/L	-0.074
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C7-PFUnDA	9.311	570.0 -> 525.1	59035	1.28 µg/L	-0.063
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C8-FOSA	10.197	506.1 -> 77.8	53025	2.63 µg/L	-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C8-PFOA	7.700	421.1 -> 376.0	138397	2.47 µg/L	-0.088
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C8-PFOS	8.993	507.1 -> 79.9	35191	2.44 µg/L	-0.074
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C9-PFNA	8.284	472.1 -> 427.0	71170	1.36 µg/L	-0.075
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.7%	
d3-MeFOSAA	8.850	573.2 -> 419.0	45332	5.59 µg/L	-0.074
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.9%	
13C3-HFPO-DA	6.464	286.9 -> 168.9	122820	10.26 µg/L	-0.087
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d3-MeFOSA	11.290	515.0 -> 219.0	21239	2.30 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.1%	
d5-EtFOSAA	9.072	589.2 -> 419.0	37242	5.28 µg/L	-0.074
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
d7-MeFOSE	11.212	623.2 -> 58.9	267622	25.44 µg/L	-0.023
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d9-EtFOSE	11.445	639.2 -> 58.9	298411	24.76 µg/L	-0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d5-EtFOSA	11.511	531.1 -> 219.0	27015	2.45 µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
Target Compounds					QValue
4:2FTS	5.734	327.1 -> 307.0	4742	0.59 µg/L	95
		327.1 -> 80.9	2381		
6:2FTS	7.450	427.1 -> 407.0	4709	0.67 µg/L	97
		427.1 -> 80.9	2226		
8:2FTS	8.580	527.1 -> 507.0	3950	0.66 µg/L	93
		527.1 -> 80.8	2273		
EtFOSAA	9.085	584.2 -> 419.1	1371	0.22 µg/L	m 92
		584.2 -> 526.0	757		
FOSA	10.200	498.1 -> 77.9	3371	0.16 µg/L	# 95
		498.1 -> 478.0	124		
MeFOSAA	8.850	570.1 -> 419.0	1486	0.22 µg/L	m 94
		570.1 -> 483.0	255		
PFBA	3.120	212.8 -> 168.9	6446	0.64 µg/L	100
PFBS	6.003	298.7 -> 79.9	3116	0.16 µg/L	94
		298.7 -> 98.8	968		
PFDA	8.805	512.9 -> 469.0	6880	0.18 µg/L	94
		512.9 -> 219.0	1599		
PFDODA	9.744	613.1 -> 569.0	8172	0.18 µg/L	100
		613.1 -> 319.0	1181		
PFDS	9.896	599.0 -> 79.9	1406	0.17 µg/L	91

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.030	599.0 -> 98.8	738	0.17	µg/L	100
		363.1 -> 319.0	9539			
PFHpS	8.437	363.1 -> 169.0	1595	0.17	µg/L	92
		449.0 -> 79.9	2488			
PFHxA	6.087	449.0 -> 98.9	1020	0.17	µg/L	99
		313.0 -> 269.0	10643			
PFHxS	7.830	313.0 -> 118.9	261	0.16	µg/L	75
		398.7 -> 79.9	1505			
PFNA	8.285	398.7 -> 98.9	986	0.17	µg/L	90
		463.0 -> 419.0	9016			
PFNS	9.487	463.0 -> 219.0	1661	0.14	µg/L	82
		548.8 -> 79.9	871			
PFOA	7.702	548.8 -> 98.9	576	0.19	µg/L	97
		413.0 -> 369.0	11587			
PFOS	8.983	413.0 -> 169.0	2167	0.19	µg/L	93
		498.9 -> 79.9	3101			
PFPeA	4.791	498.9 -> 98.8	1362	0.33	µg/L	100
		263.0 -> 219.0	18109			
PFPeS	7.082	349.1 -> 79.9	1254	0.14	µg/L	93
		349.1 -> 98.9	442			
PFTeDA	10.463	713.1 -> 669.0	6949	0.15	µg/L	100
		713.1 -> 168.9	586			
PFTrDA	10.117	663.0 -> 619.0	9341	0.17	µg/L	94
		663.0 -> 168.9	1199			
PFUnDA	9.311	563.1 -> 519.0	6874	0.19	µg/L	98
		563.1 -> 269.1	1186			
11CI-PF3OUdS	10.169	630.9 -> 450.9	19128	0.67	µg/L	98
		632.9 -> 452.9	5924			
9CI-PF3ONS	9.351	530.8 -> 351.0	18801	0.54	µg/L	94
		532.8 -> 353.0	6200			
ADONA	7.294	376.9 -> 250.9	42456	0.64	µg/L	99
		376.9 -> 84.8	15312			
HFPO-DA	6.465	284.9 -> 168.9	7663	0.66	µg/L	92
		284.9 -> 184.9	1026			
3:3FTCA	4.123	241.0 -> 177.0	2111	0.82	µg/L	94
		241.0 -> 117.0	249			
5:3FTCA	6.694	341.0 -> 237.1	32814	3.92	µg/L	99
		341.0 -> 217.0	24037			
7:3FTCA	8.174	441.0 -> 316.9	18381	3.83	µg/L	87
		441.0 -> 336.9	45596			
EtFOSA	11.525	526.0 -> 219.0	1673	0.15	µg/L	66
		526.0 -> 169.0	2541			
EtFOSE	11.458	630.0 -> 58.9	23525	2.03	µg/L	100
		511.9 -> 219.0	1465			
MeFOSA	11.292	511.9 -> 169.0	1939	0.18	µg/L	97
		616.1 -> 58.9	21022			
MeFOSE	11.226	699.1 -> 79.9	1295	1.86	µg/L	100
		699.1 -> 98.8	661			
PFDoDS	10.590	295.0 -> 201.0	1478	0.36	µg/L	89
		295.0 -> 84.9	517			
NFDHA	5.954	279.0 -> 85.1	11218	0.33	µg/L	100
		229.0 -> 84.9	11534			
PFMBA	3.807	314.8 -> 134.9	16065	0.33	µg/L	100
		314.8 -> 82.9	351			
PFEESA	6.559			0.30	µg/L	97

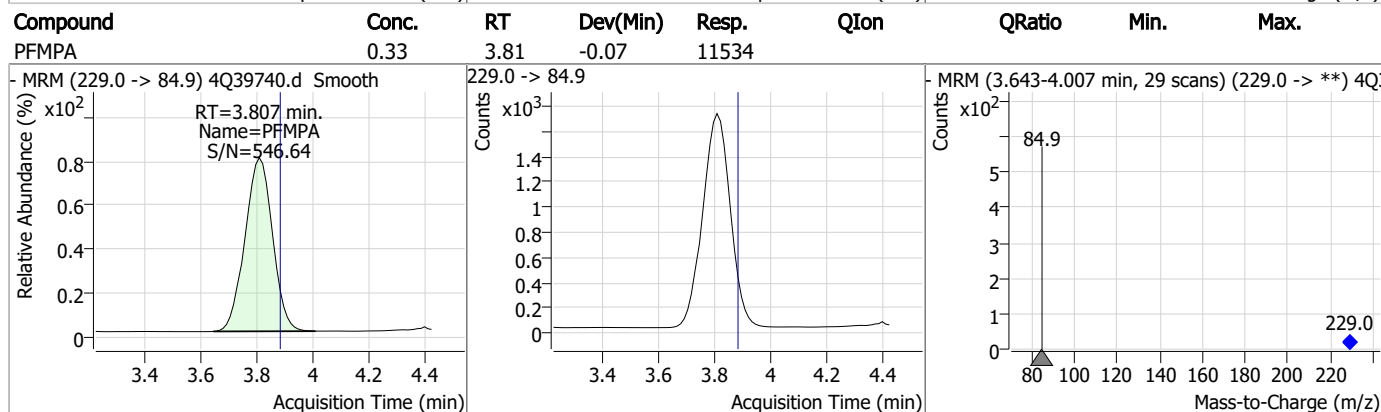
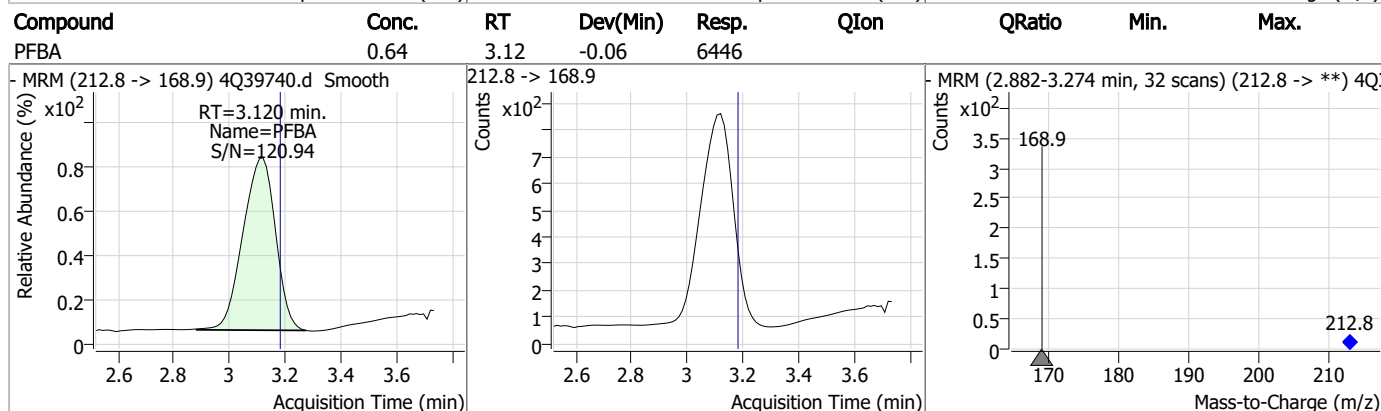
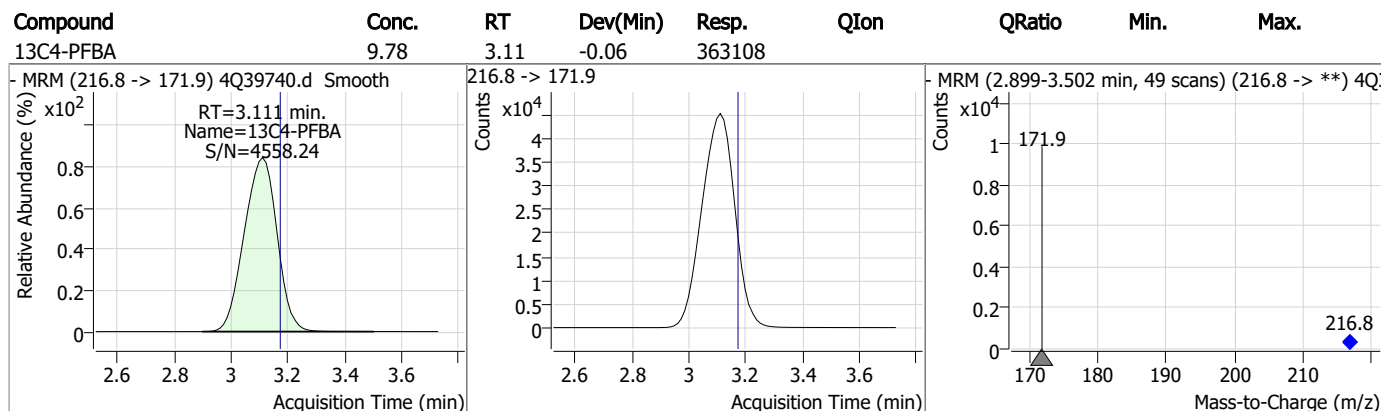
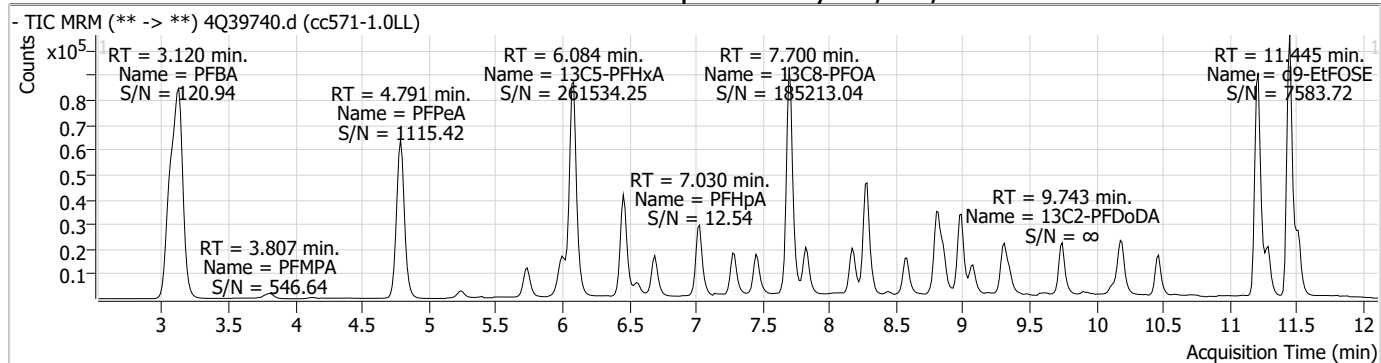
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

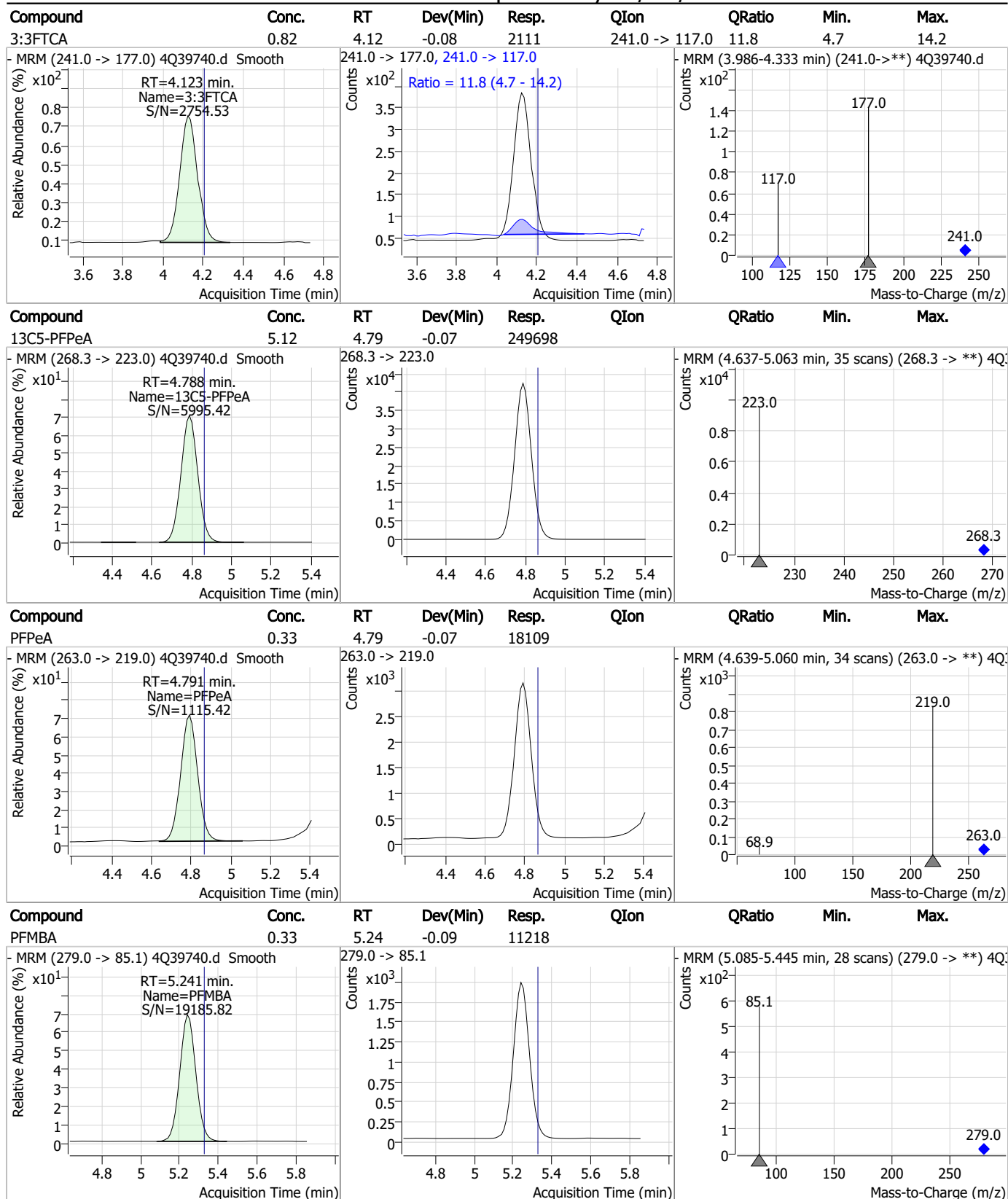
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.6.15
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Perfluorinated Compounds by LC/MS/MS



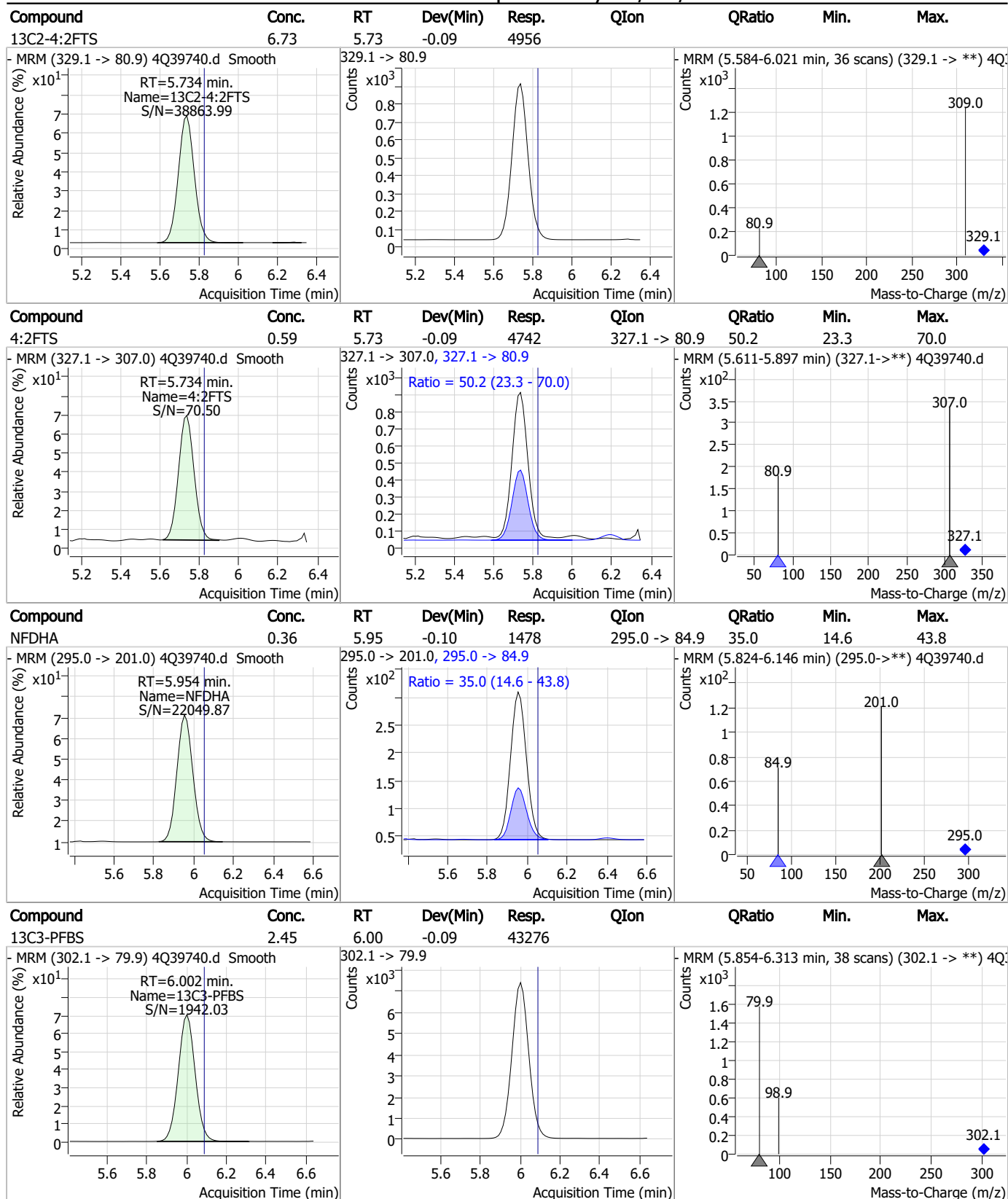
Perfluorinated Compounds by LC/MS/MS



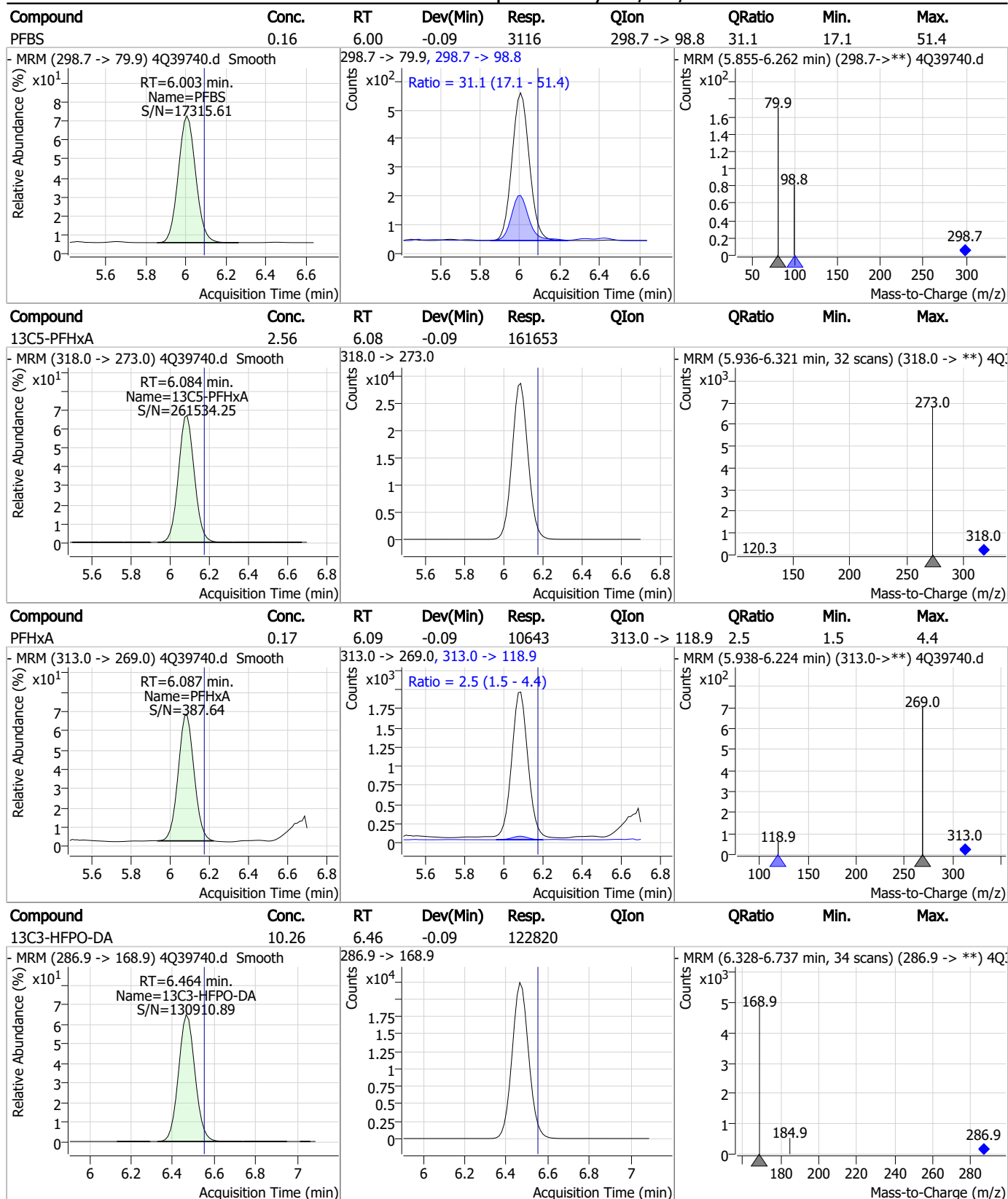
7.6.15

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Perfluorinated Compounds by LC/MS/MS



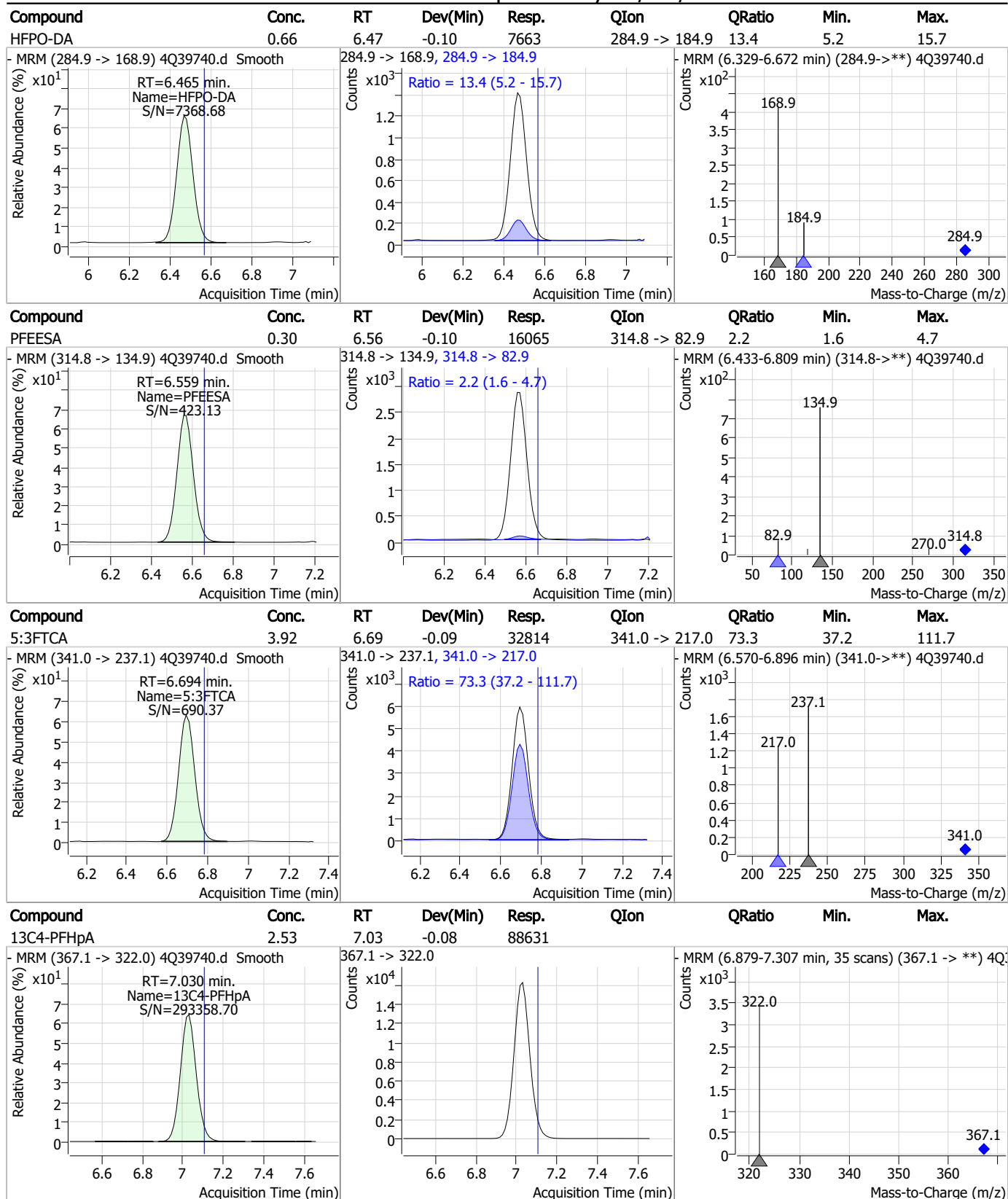
Perfluorinated Compounds by LC/MS/MS



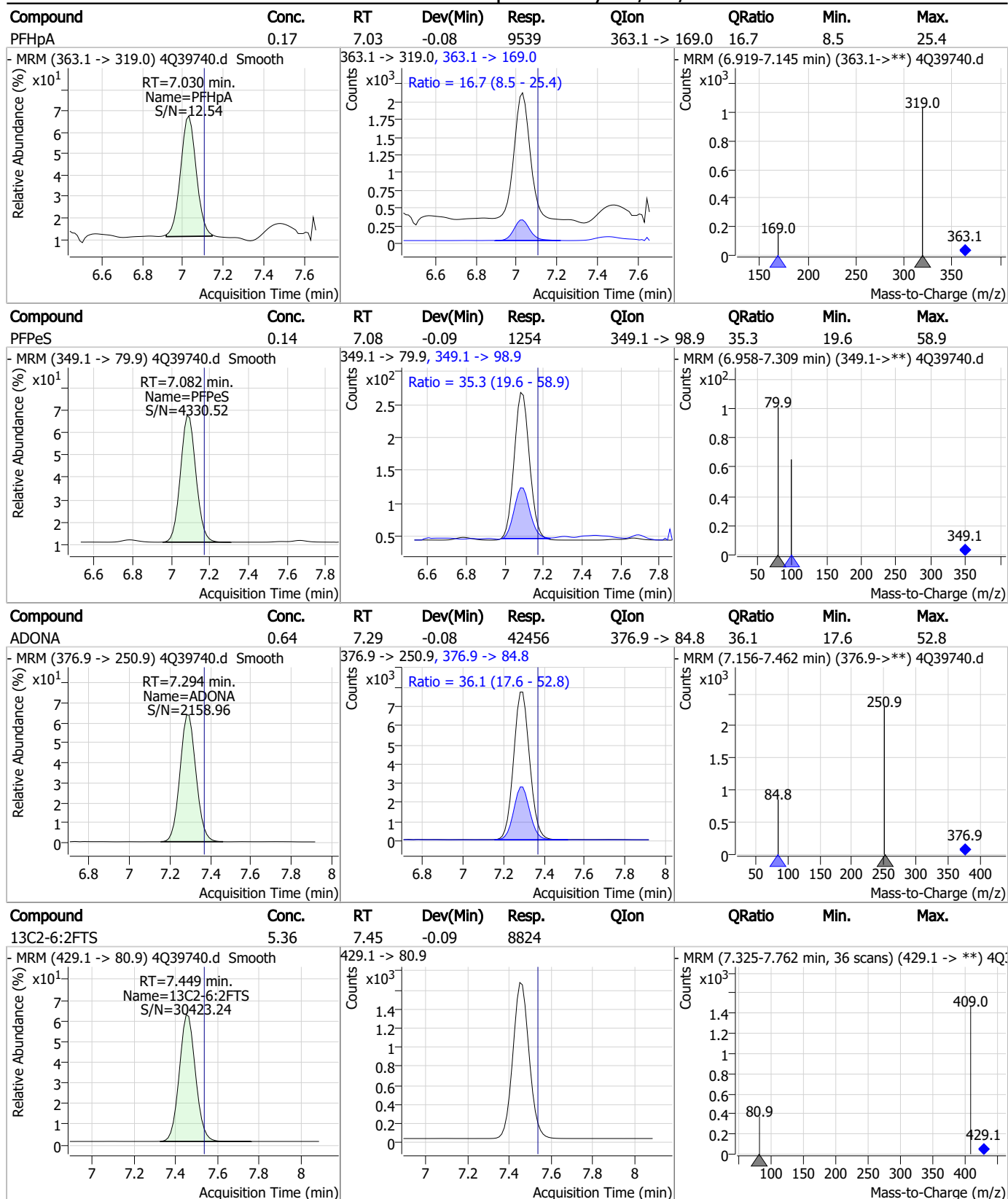
7.6.15

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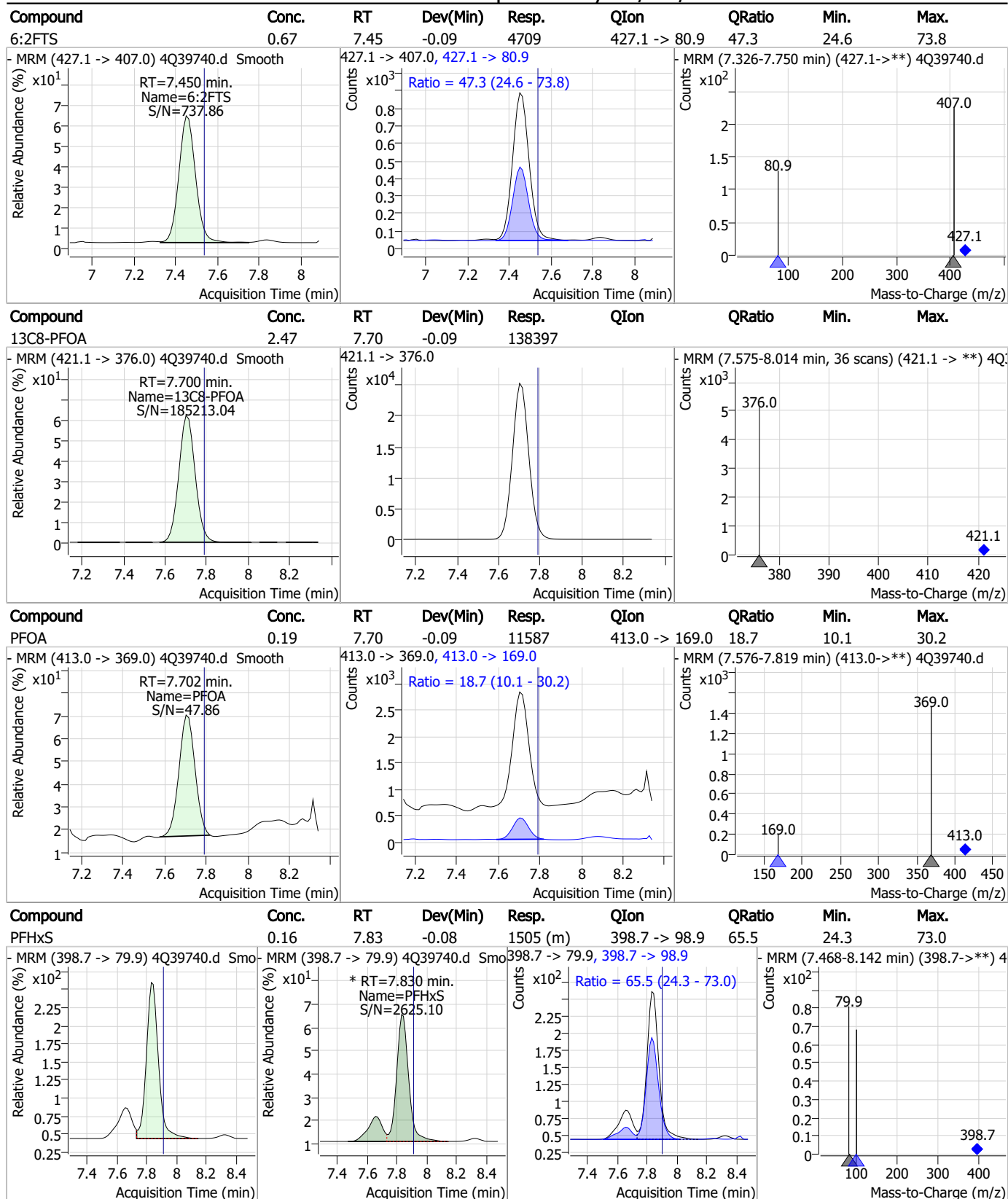
Perfluorinated Compounds by LC/MS/MS



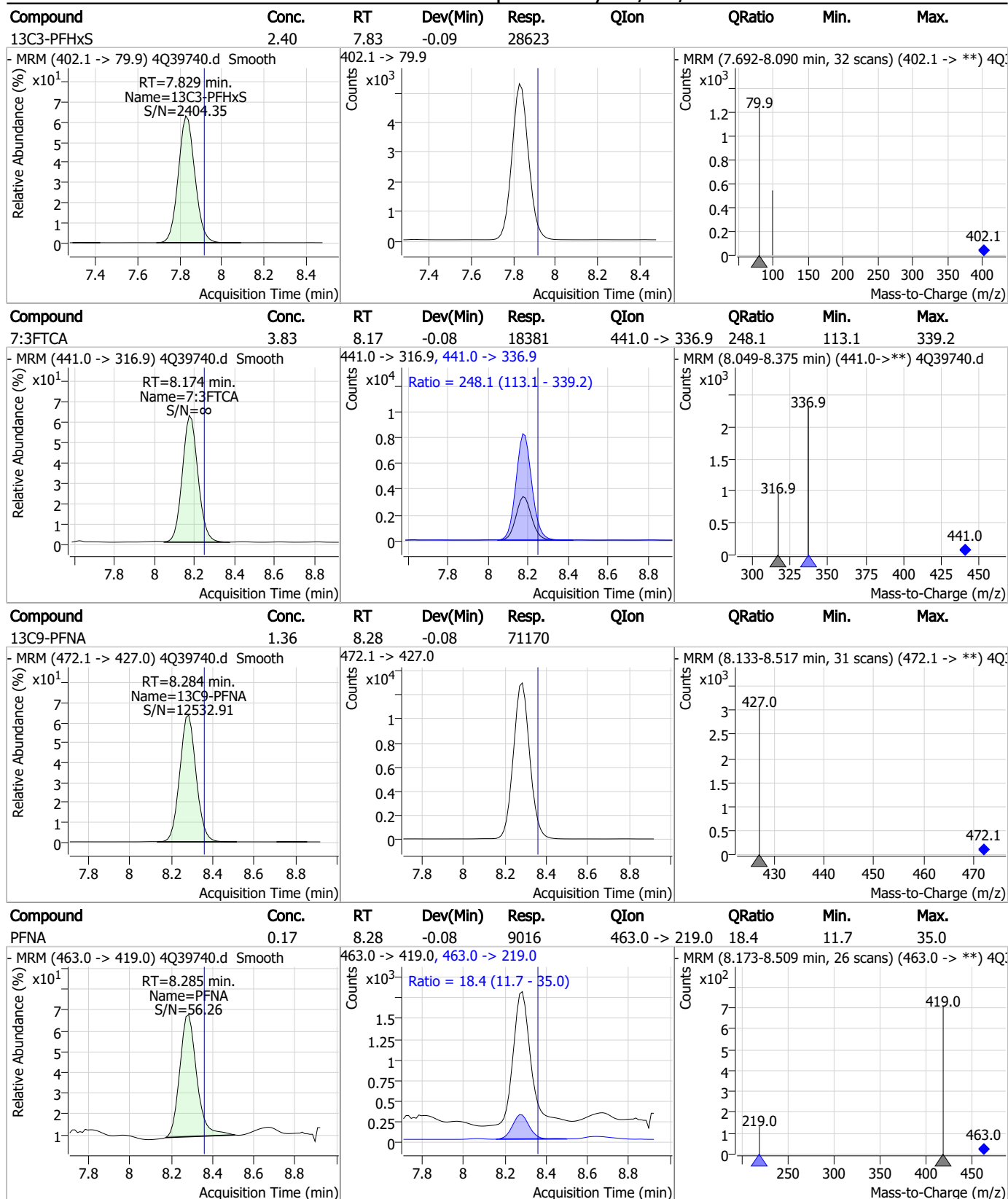
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



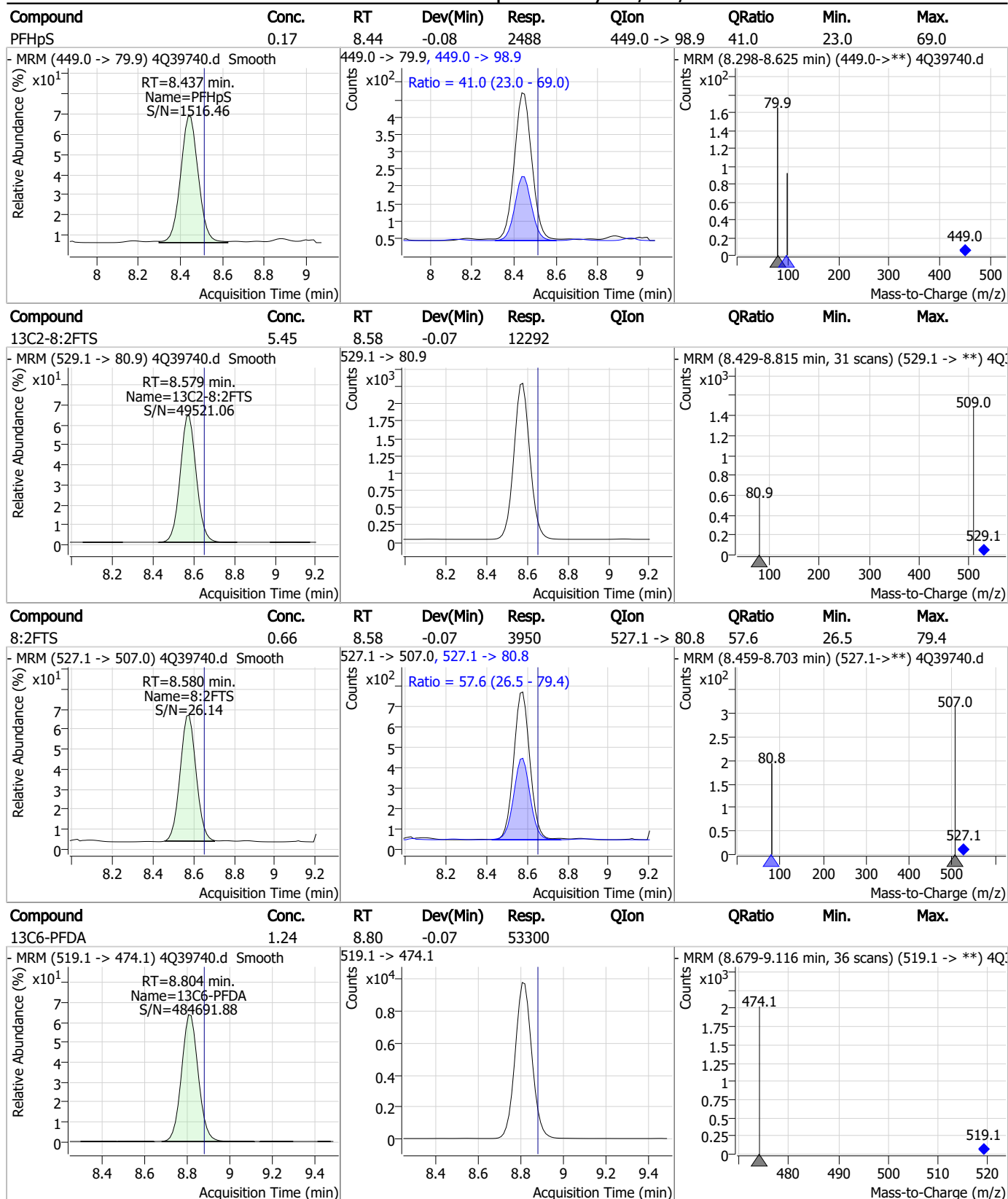
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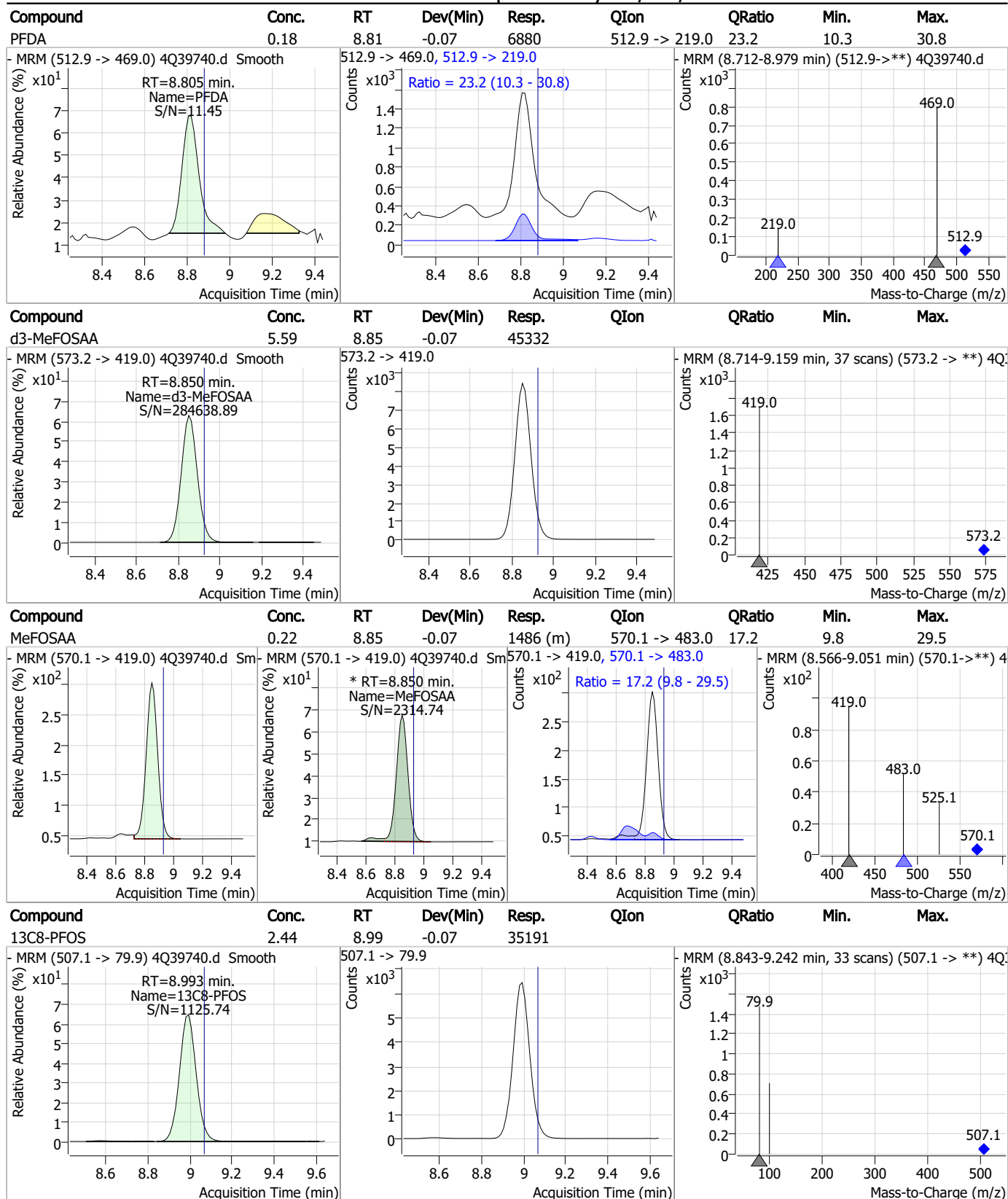
7.6.15

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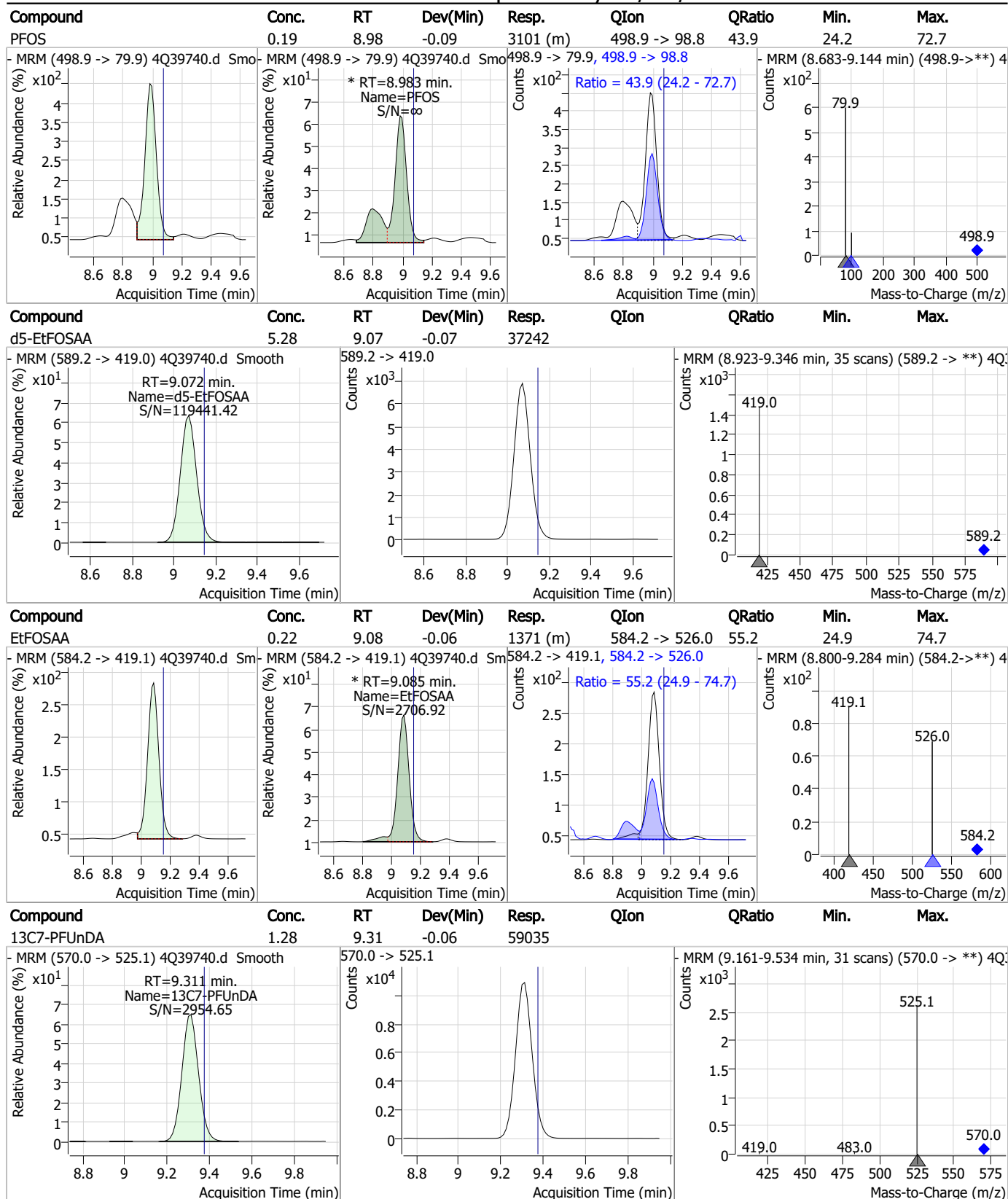
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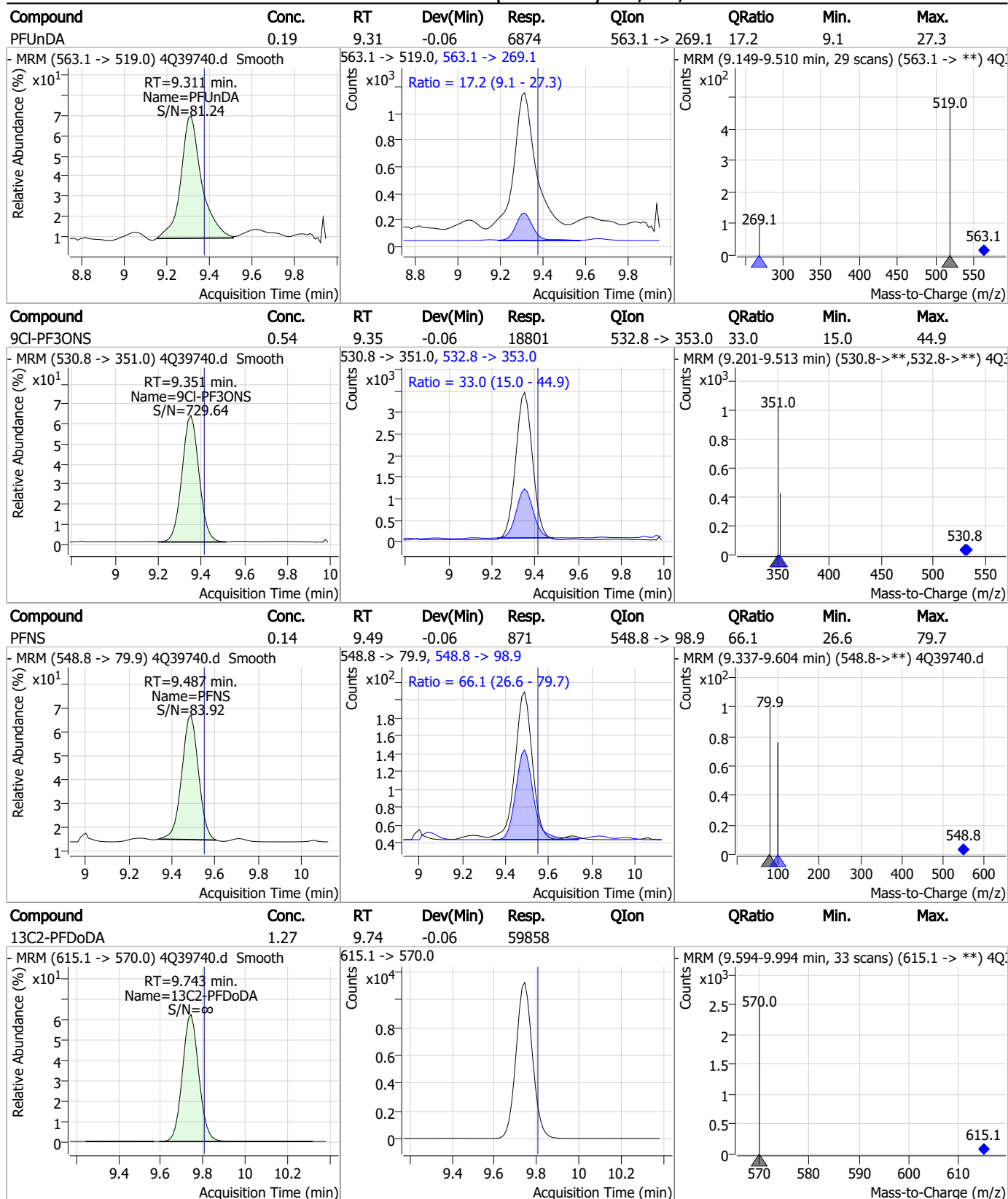
Perfluorinated Compounds by LC/MS/MS



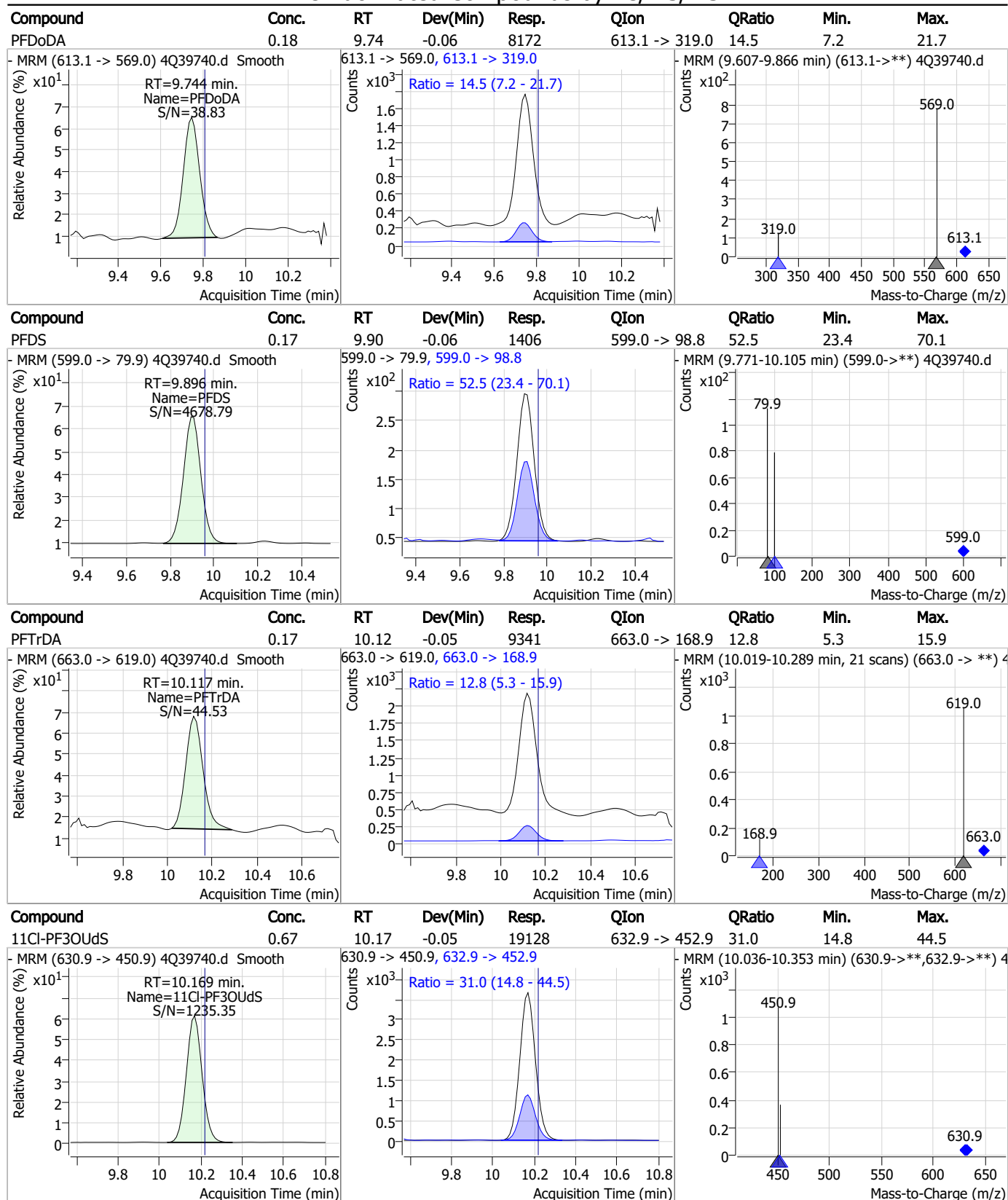
Perfluorinated Compounds by LC/MS/MS



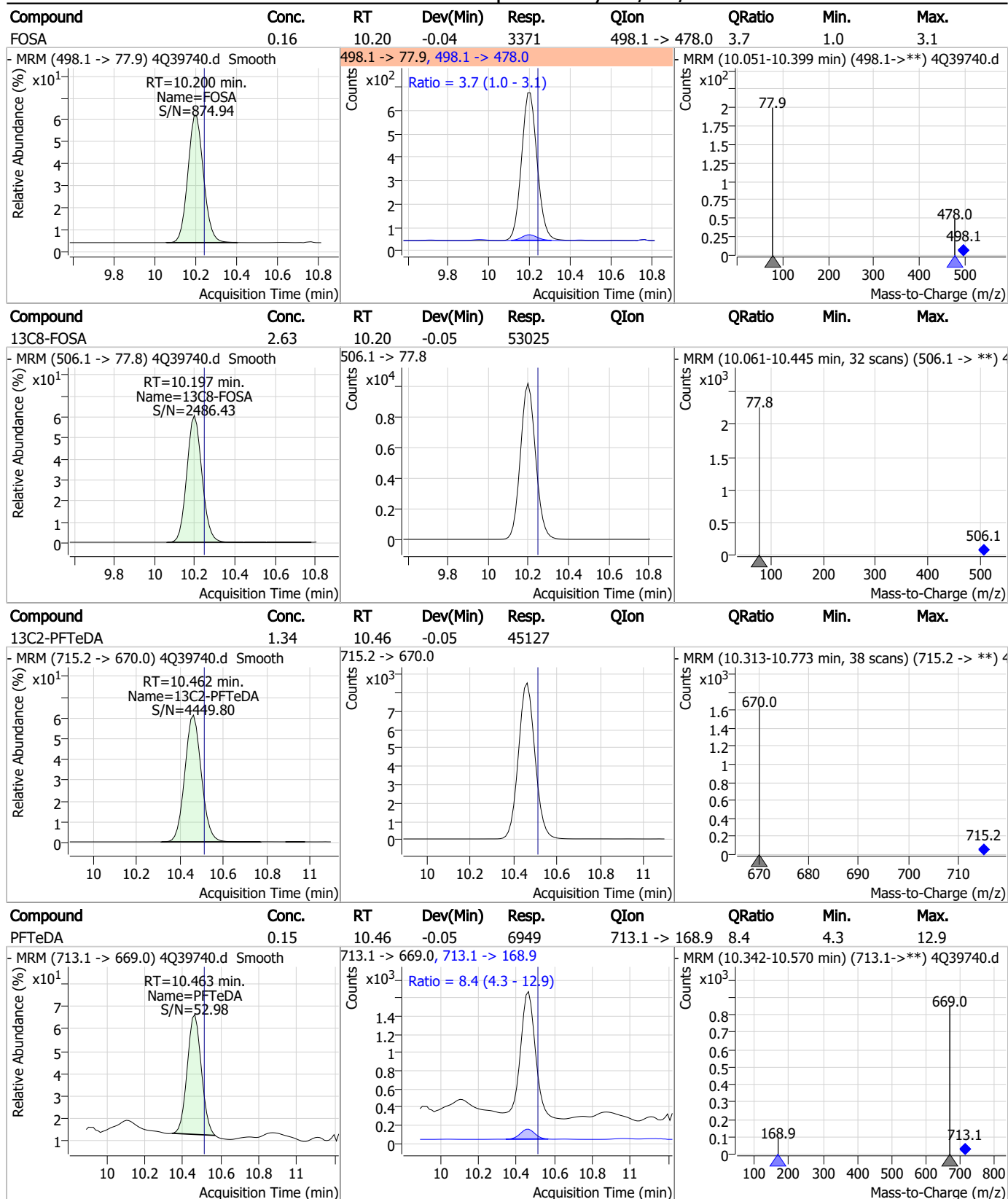
Perfluorinated Compounds by LC/MS/MS



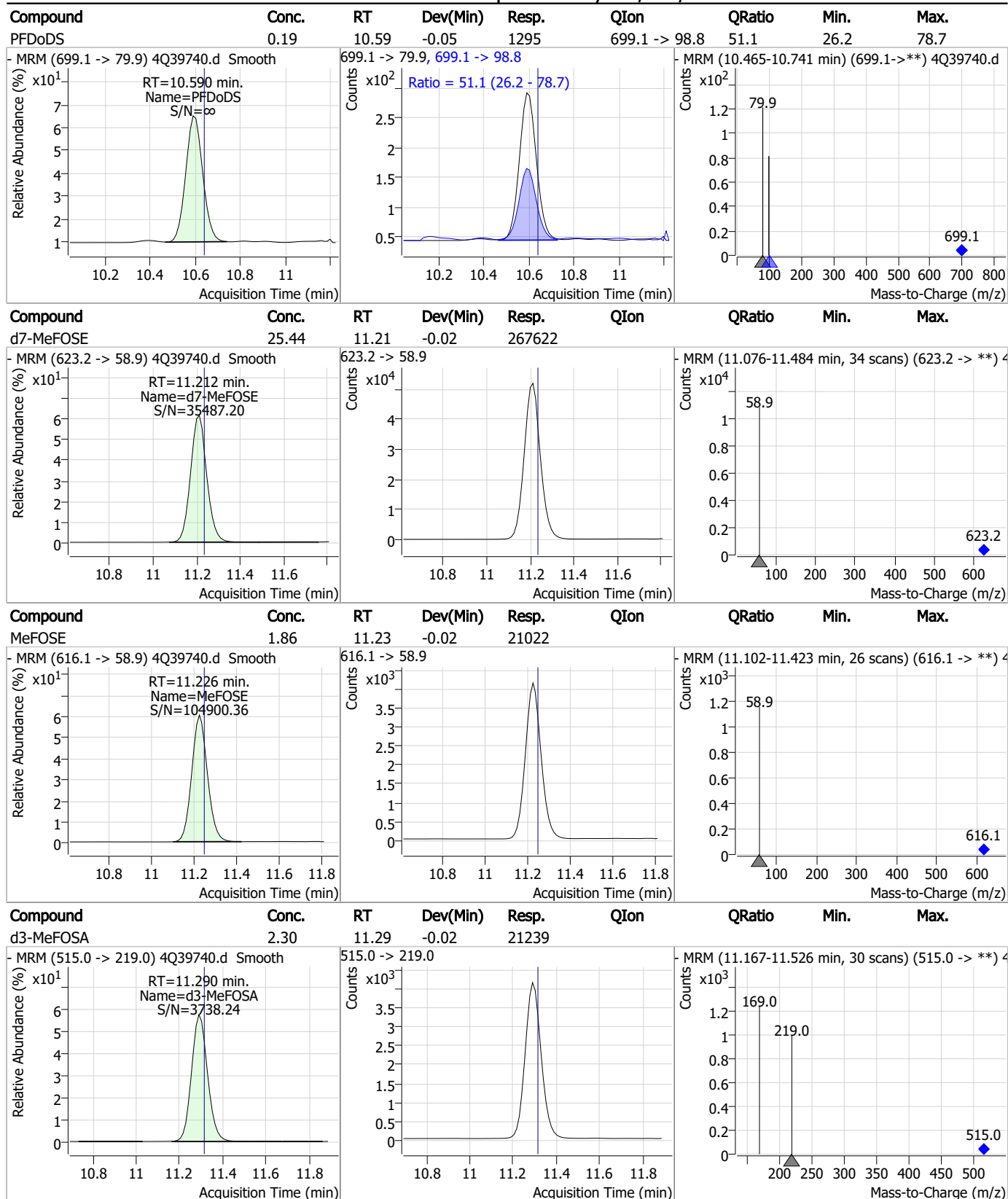
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



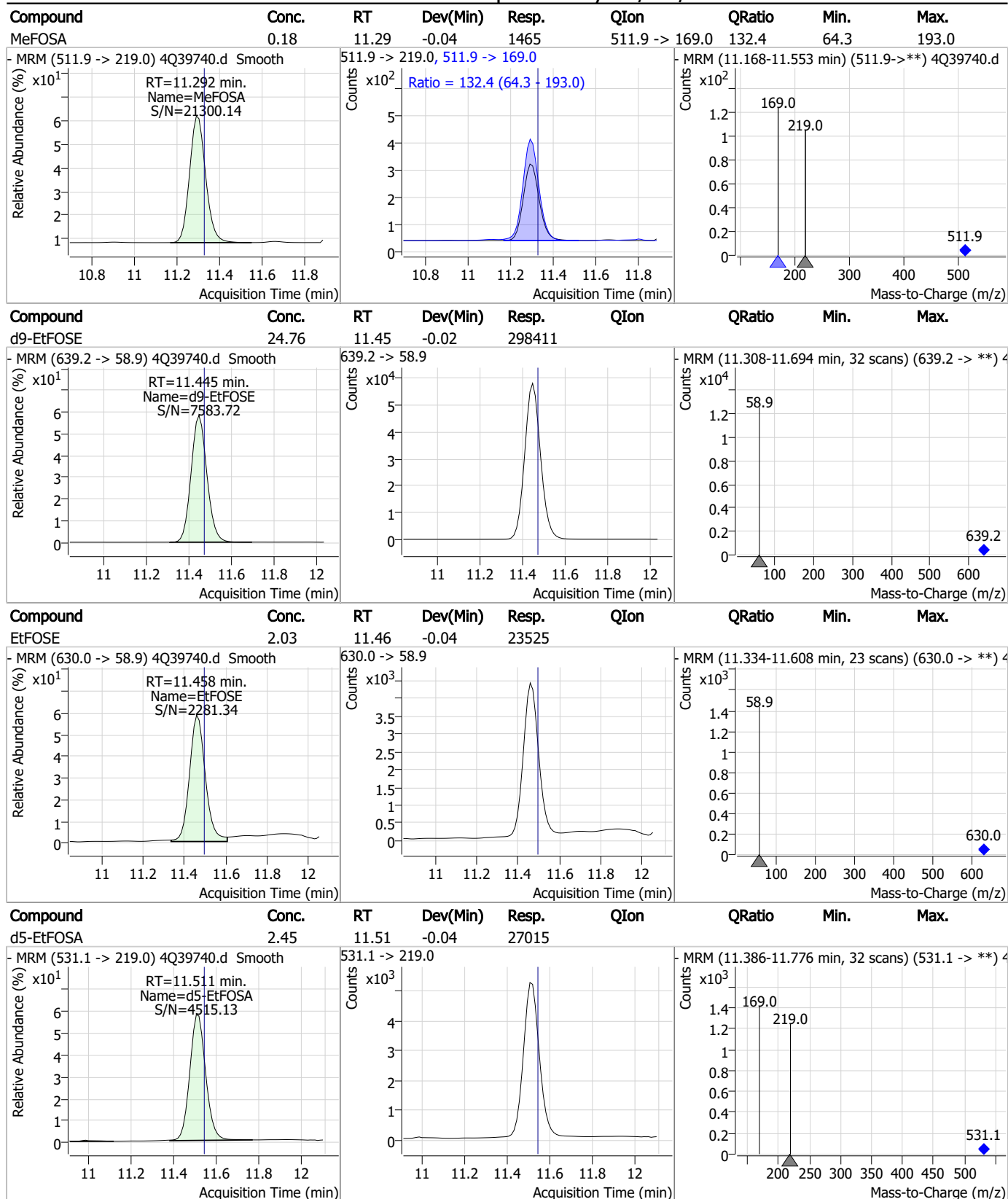
Perfluorinated Compounds by LC/MS/MS



7.6.15

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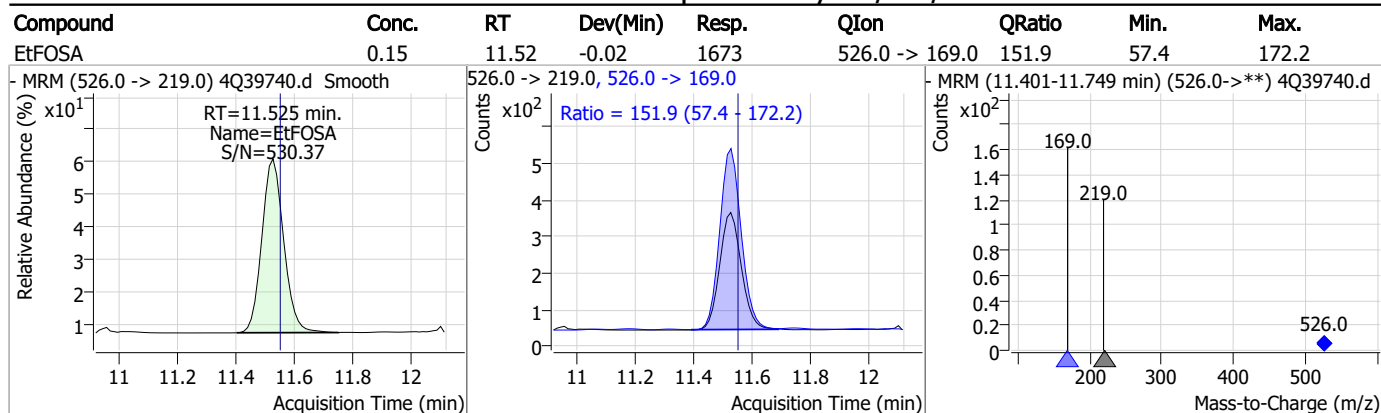
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.6.15

7

Manual Integration Approval Summary

Sample Number: S4Q571-CC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39740.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/26/23 01:07

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.83	Split peak
MeFOSAA	2355-31-9		8.85	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.98	Split peak
EtFOSAA	2991-50-6		9.09	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39751.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 3:42:05 AM
 Sample Name : cc571-4
 Vial : P1-A5
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.074	216.8 -> 171.9	452665	10.00 µg/L	-0.100
M5-PFPeA	4.751	268.3 -> 223.0	307891	5.00 µg/L	-0.112
M5-PFHxA	6.047	318.0 -> 273.0	201724	2.50 µg/L	-0.125
M4-PFHpA	6.993	367.1 -> 322.0	114769	2.50 µg/L	-0.113
M8-PFOA	7.676	421.1 -> 376.0	175063	2.50 µg/L	-0.113
M9-PFNA	8.246	472.1 -> 427.0	89644	1.25 µg/L	-0.113
M6-PFDA	8.779	519.1 -> 474.1	68213	1.25 µg/L	-0.099
M7-PFUnDA	9.274	570.0 -> 525.1	76008	1.25 µg/L	-0.100
M2-PFDoDA	9.706	615.1 -> 570.0	80357	1.25 µg/L	-0.100
M2-PFTeDA	10.437	715.2 -> 670.0	63667	1.25 µg/L	-0.075
M8-FOSA	10.172	506.1 -> 77.8	63921	2.50 µg/L	-0.075
M3-PFBS	5.964	302.1 -> 79.9	55043	2.50 µg/L	-0.125
M3-PFHxS	7.804	402.1 -> 79.9	37179	2.50 µg/L	-0.113
M8-PFOS	8.956	507.1 -> 79.9	44603	2.50 µg/L	-0.111
M2-4:2FTS	5.696	329.1 -> 80.9	5364	5.00 µg/L	-0.126
M2-6:2FTS	7.424	429.1 -> 80.9	10961	5.00 µg/L	-0.112
M2-8:2FTS	8.542	529.1 -> 80.9	15967	5.00 µg/L	-0.111
M3-MeFOSAA	8.825	573.2 -> 419.0	63494	5.00 µg/L	-0.099
M3-HFPO-DA	6.427	286.9 -> 168.9	151596	10.00 µg/L	-0.124
M5-EtFOSAA	9.034	589.2 -> 419.0	50146	5.00 µg/L	-0.112
M7-MeFOSE	11.188	623.2 -> 58.9	320917	25.00 µg/L	-0.047
M9-EtFOSE	11.420	639.2 -> 58.9	366233	25.00 µg/L	-0.050
M5-EtFOSA	11.498	531.1 -> 219.0	33214	2.50 µg/L	-0.050
M3-MeFOSA	11.277	515.0 -> 219.0	26715	2.50 µg/L	-0.037
13C4-PFOS	8.957	502.8 -> 79.9	44631	2.50 µg/L	-0.111
13C3-PFBA	3.078	216.0 -> 172.0	256161	5.00 µg/L	-0.100
18O2-PFHxS	7.803	403.0 -> 83.9	25019	2.50 µg/L	-0.113
13C4-PFOA	7.676	417.1 -> 372.0	197310	2.50 µg/L	-0.113
13C2-PFDA	8.780	515.1 -> 470.1	61774	1.25 µg/L	-0.099
13C5-PFNA	8.247	468.0 -> 423.0	98802	1.25 µg/L	-0.113
13C2-PFHxA	6.036	315.1 -> 270.0	192217	2.50 µg/L	-0.137
System Monitoring Compounds					
13C2-4:2FTS	5.696	329.1 -> 80.9	5364	5.95 µg/L	-0.126
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.0%		
13C2-6:2FTS	7.424	429.1 -> 80.9	10961	5.43 µg/L	-0.112
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C2-8:2FTS	8.542	529.1 -> 80.9	15967	5.78 µg/L	-0.111
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.6%		
13C2-PFDoDA	9.706	615.1 -> 570.0	80357	1.34 µg/L	-0.100
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C2-PFTeDA	10.437	715.2 -> 670.0	63667	1.49 µg/L	-0.075
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 119.4%		
13C3-PFBS	5.964	302.1 -> 79.9	55043	2.55 µg/L	-0.125
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C3-PFHxS	7.804	402.1 -> 79.9	37179	2.55 µg/L	-0.113

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C4-PFBA	3.074	216.8 -> 171.9	452665	9.80 µg/L	-0.100
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C4-PFHpA	6.993	367.1 -> 322.0	114769	2.56 µg/L	-0.113
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C5-PFHxA	6.047	318.0 -> 273.0	201724	2.50 µg/L	-0.125
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C5-PFPeA	4.751	268.3 -> 223.0	307891	4.93 µg/L	-0.112
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C6-PFDA	8.779	519.1 -> 474.1	68213	1.25 µg/L	-0.099
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C7-PFUnDA	9.274	570.0 -> 525.1	76008	1.30 µg/L	-0.100
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C8-FOSA	10.172	506.1 -> 77.8	63921	2.50 µg/L	-0.075
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C8-PFOA	7.676	421.1 -> 376.0	175063	2.47 µg/L	-0.113
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C8-PFOS	8.956	507.1 -> 79.9	44603	2.45 µg/L	-0.111
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C9-PFNA	8.246	472.1 -> 427.0	89644	1.28 µg/L	-0.113
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.1%		
d3-MeFOSAA	8.825	573.2 -> 419.0	63494	6.19 µg/L	-0.099
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.9%		
13C3-HFPO-DA	6.427	286.9 -> 168.9	151596	9.89 µg/L	-0.124
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.9%		
d3-MeFOSA	11.277	515.0 -> 219.0	26715	2.29 µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.6%		
d5-EtFOSAA	9.034	589.2 -> 419.0	50146	5.62 µg/L	-0.112
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.3%		
d7-MeFOSE	11.188	623.2 -> 58.9	320917	24.11 µg/L	-0.047
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 96.5%		
d9-EtFOSE	11.420	639.2 -> 58.9	366233	24.02 µg/L	-0.050
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 96.1%		
d5-EtFOSA	11.498	531.1 -> 219.0	33214	2.39 µg/L	-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.4%		

Target Compounds

					QValue
4:2FTS	5.697	327.1 -> 307.0	74114	8.46 µg/L	98
		327.1 -> 80.9	33553		
6:2FTS	7.425	427.1 -> 407.0	80711	9.29 µg/L	99
		427.1 -> 80.9	38916		
8:2FTS	8.542	527.1 -> 507.0	68080	8.81 µg/L	98
		527.1 -> 80.8	35089		
EtFOSAA	9.047	584.2 -> 419.1	19223	2.29 µg/L	97
		584.2 -> 526.0	9155		
FOSA	10.163	498.1 -> 77.9	54511	2.21 µg/L	100
		498.1 -> 478.0	1110		
MeFOSAA	8.826	570.1 -> 419.0	20701	2.20 µg/L	99
		570.1 -> 483.0	4179		
PFBA	3.082	212.8 -> 168.9	111891	8.88 µg/L	100
PFBS	5.965	298.7 -> 79.9	47815	1.92 µg/L	97
		298.7 -> 98.8	17095		
PFDA	8.780	512.9 -> 469.0	110213	2.26 µg/L	96
		512.9 -> 219.0	20712		
PFDODA	9.706	613.1 -> 569.0	140963	2.28 µg/L	99
		613.1 -> 319.0	19586		
PFDS	9.870	599.0 -> 79.9	22126	2.14 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.993	599.0 -> 98.8	10113	2.26	µg/L	100
		363.1 -> 319.0	161559			
PFHpS	8.411	363.1 -> 169.0	27007	2.19	µg/L	97
		449.0 -> 79.9	39569			
PFHxA	6.038	449.0 -> 98.9	18886	2.25	µg/L	99
		313.0 -> 269.0	176657			
PFHxS	7.805	313.0 -> 118.9	5571	1.93	µg/L	100
		398.7 -> 79.9	23215			
PFNA	8.247	398.7 -> 98.9	11231	2.13	µg/L	98
		463.0 -> 419.0	138960			
PFNS	9.450	463.0 -> 219.0	31339	2.09	µg/L	89
		548.8 -> 79.9	16604			
PFOA	7.677	548.8 -> 98.9	7505	2.28	µg/L	100
		413.0 -> 369.0	177191			
PFOS	8.958	413.0 -> 169.0	35668	2.06	µg/L	97
		498.9 -> 79.9	42871			
PFPeA	4.754	498.9 -> 98.8	19891	4.64	µg/L	100
		263.0 -> 219.0	313068			
PFPeS	7.057	349.1 -> 79.9	24055	2.07	µg/L	97
		349.1 -> 98.9	9038			
PFTeDA	10.426	713.1 -> 669.0	135760	2.12	µg/L	98
		713.1 -> 168.9	10758			
PFTrDA	10.092	663.0 -> 619.0	168115	2.22	µg/L	98
		663.0 -> 168.9	16614			
PFUnDA	9.274	563.1 -> 519.0	105264	2.29	µg/L	100
		563.1 -> 269.1	19354			
11Cl-PF3OUdS	10.144	630.9 -> 450.9	342802	9.67	µg/L	98
		632.9 -> 452.9	104727			
9Cl-PF3ONS	9.313	530.8 -> 351.0	368565	8.54	µg/L	100
		532.8 -> 353.0	109513			
ADONA	7.256	376.9 -> 250.9	738500	9.03	µg/L	99
		376.9 -> 84.8	256177			
HFPO-DA	6.428	284.9 -> 168.9	130688	9.15	µg/L	100
		284.9 -> 184.9	13734			
3:3FTCA	4.098	241.0 -> 177.0	33820	10.68	µg/L	98
		241.0 -> 117.0	2999			
5:3FTCA	6.656	341.0 -> 237.1	586166	56.18	µg/L	99
		341.0 -> 217.0	441374			
7:3FTCA	8.149	441.0 -> 316.9	343499	57.33	µg/L	97
		441.0 -> 336.9	761781			
EtFOSA	11.500	526.0 -> 219.0	32816	2.35	µg/L	96
		526.0 -> 169.0	36291			
EtFOSE	11.446	630.0 -> 58.9	353660	24.87	µg/L	100
		511.9 -> 219.0	23713			
MeFOSA	11.279	511.9 -> 169.0	28622	2.33	µg/L	93
		616.1 -> 58.9	324355			
MeFOSE	11.201	699.1 -> 79.9	19263	23.92	µg/L	100
		699.1 -> 98.8	10443			
PFDoDS	10.565	295.0 -> 201.0	23313	4.52	µg/L	99
		295.0 -> 84.9	6875			
NFDHA	5.916	279.0 -> 85.1	194117	4.61	µg/L	100
		229.0 -> 84.9	196515			
PFMBA	3.769	314.8 -> 134.9	273217	4.52	µg/L	100
		314.8 -> 82.9	8123			
PFEEA	6.534			4.08	µg/L	99

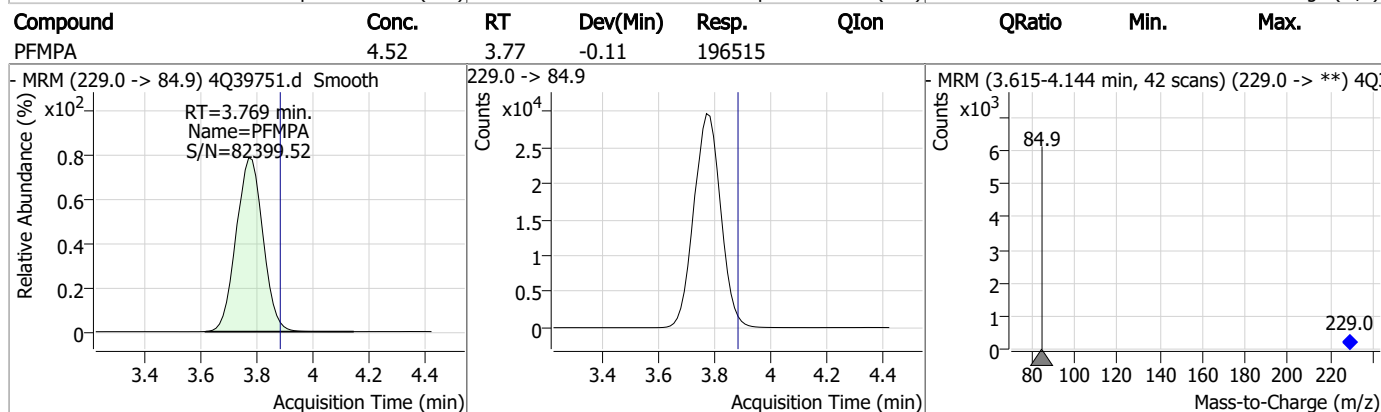
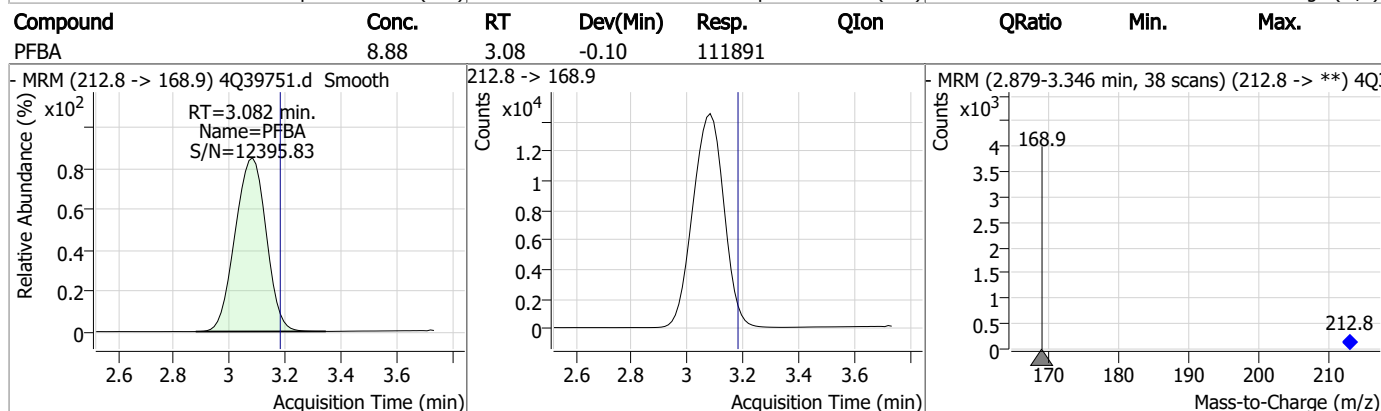
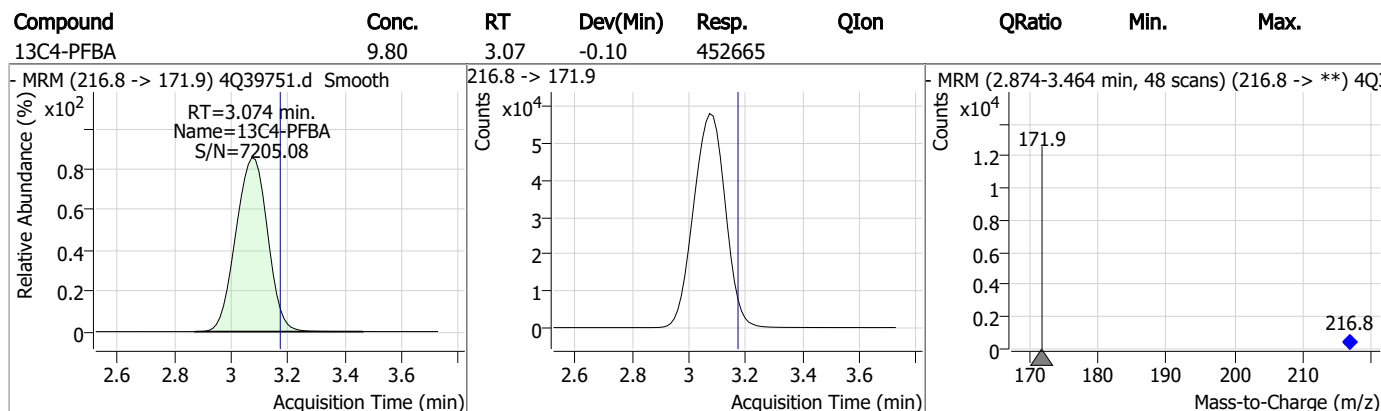
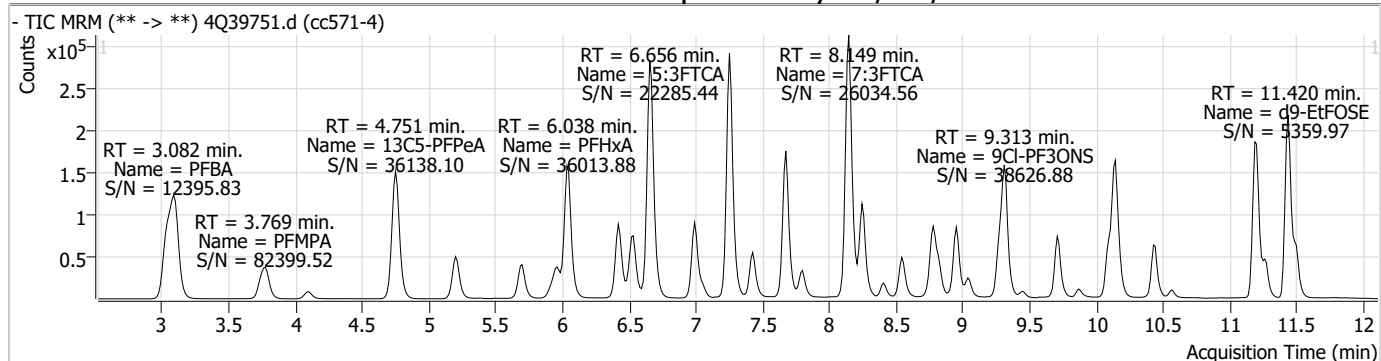
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

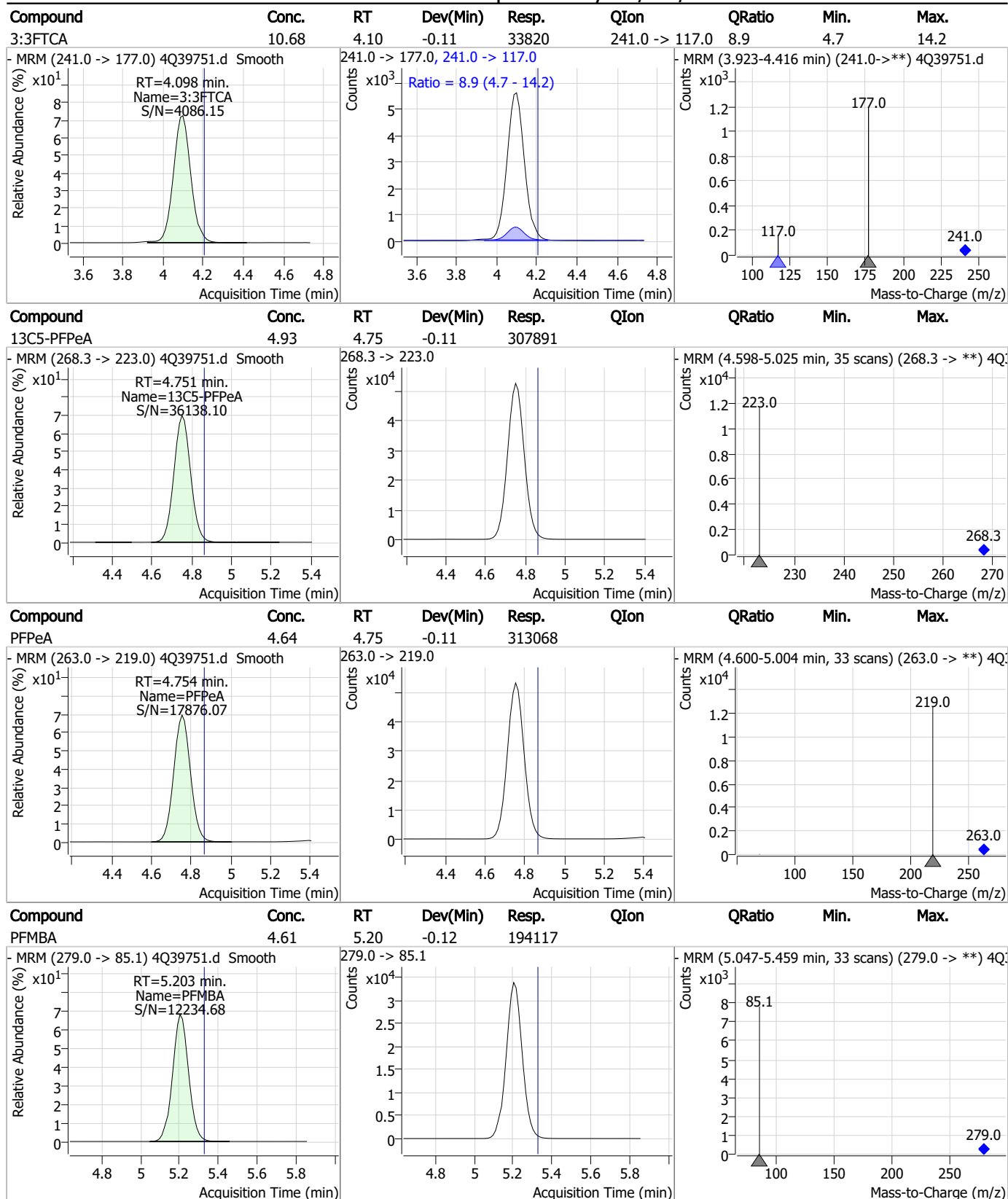
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.6.16
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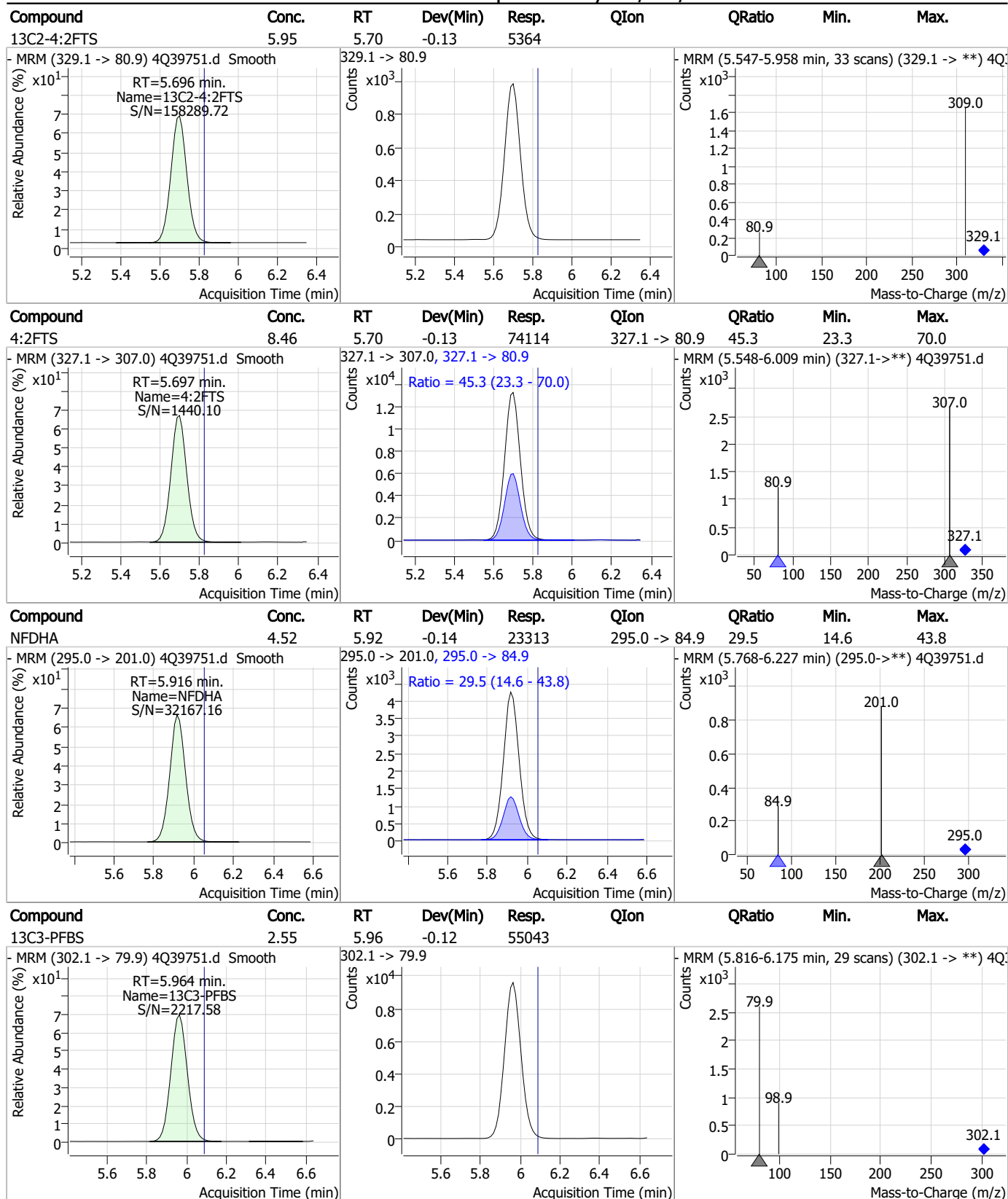
Perfluorinated Compounds by LC/MS/MS



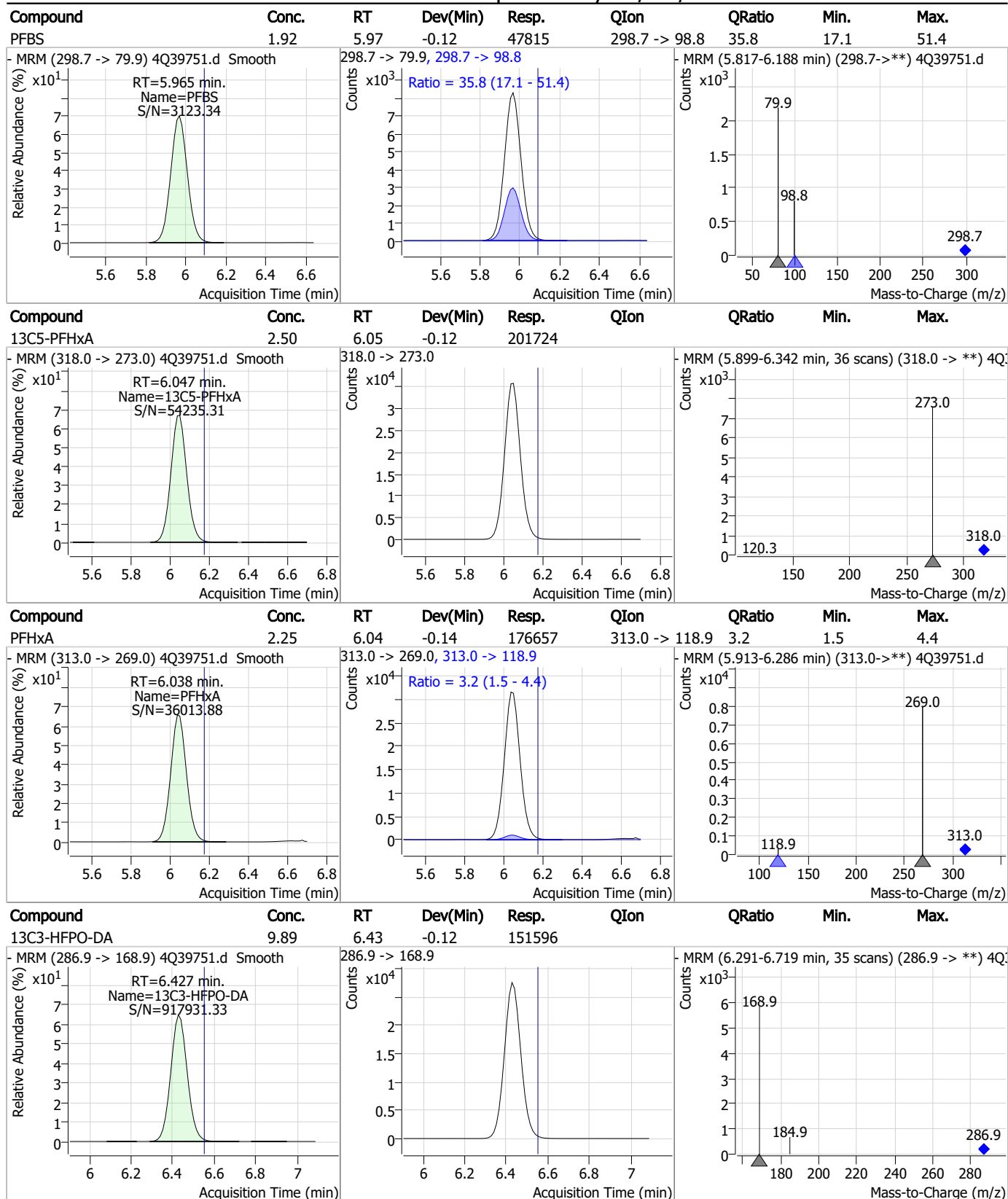
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



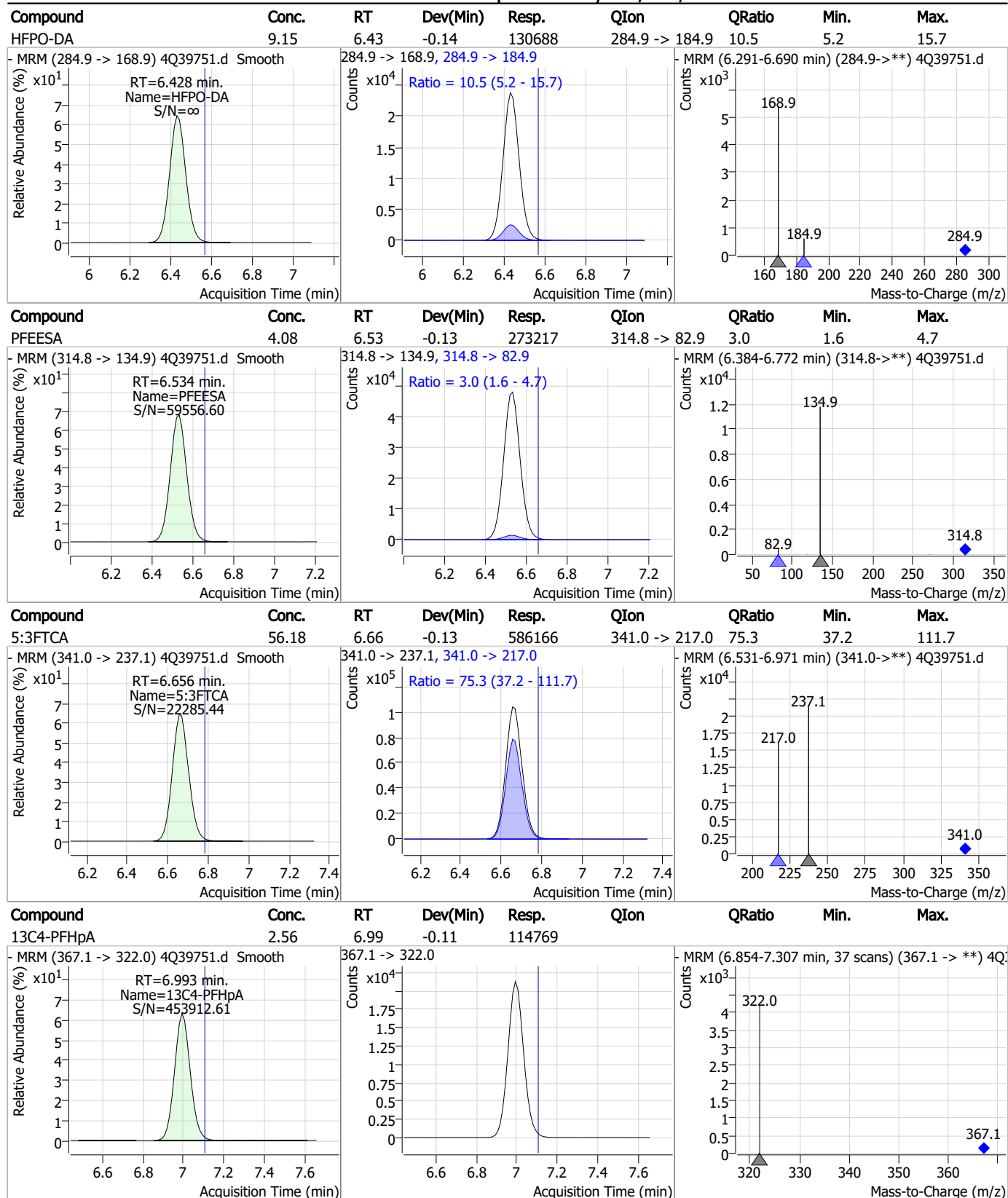
Perfluorinated Compounds by LC/MS/MS



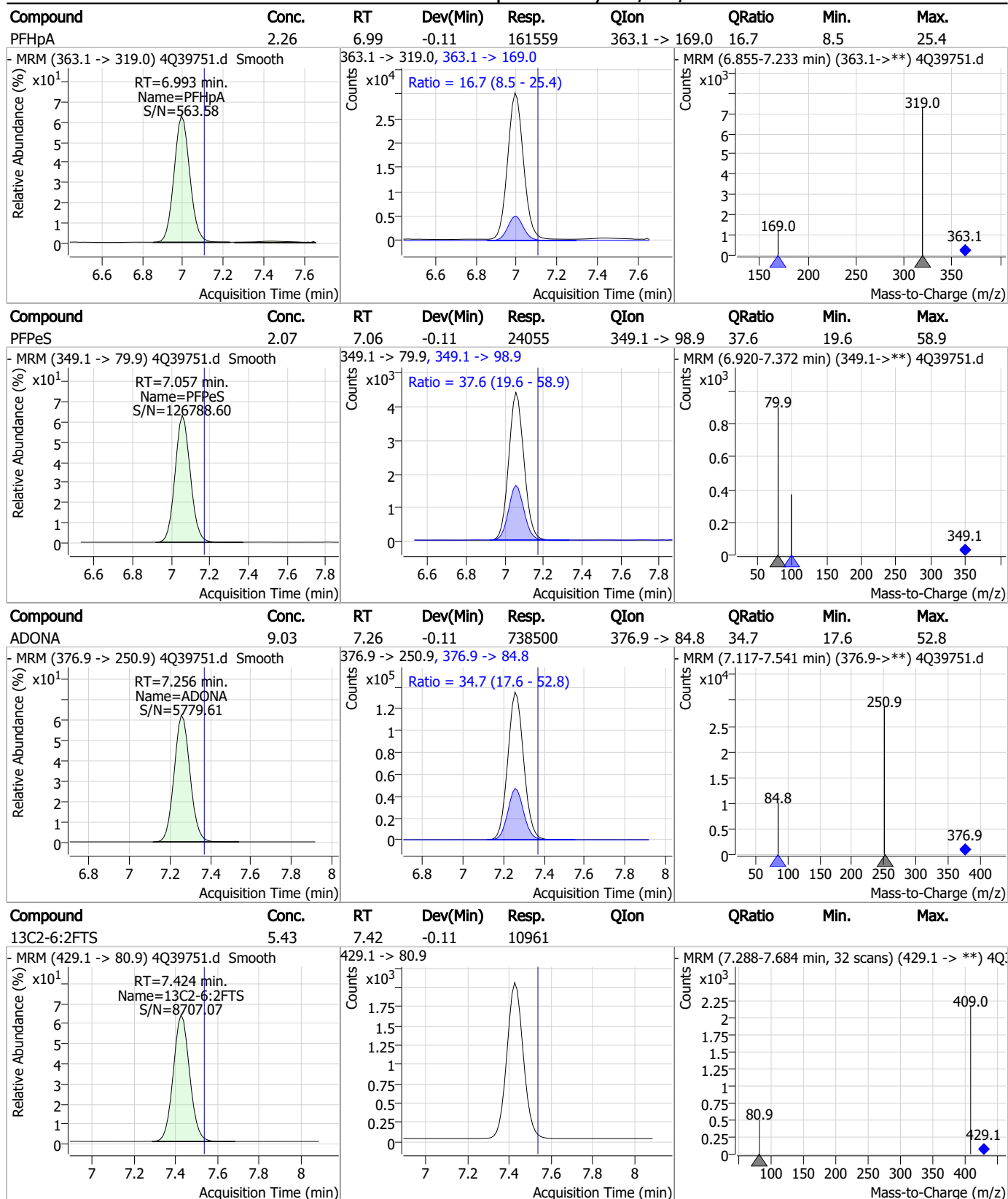
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Perfluorinated Compounds by LC/MS/MS



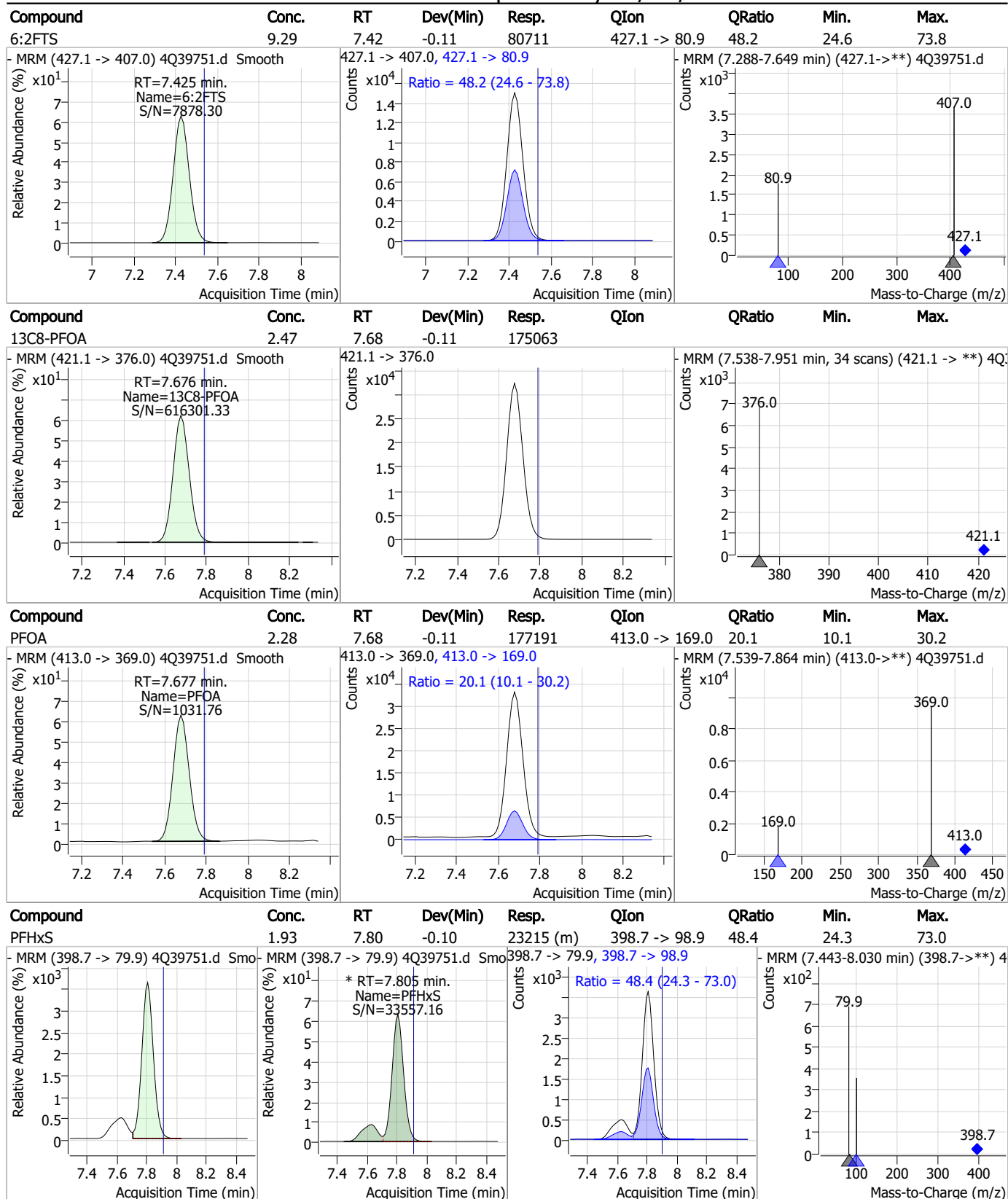
Perfluorinated Compounds by LC/MS/MS



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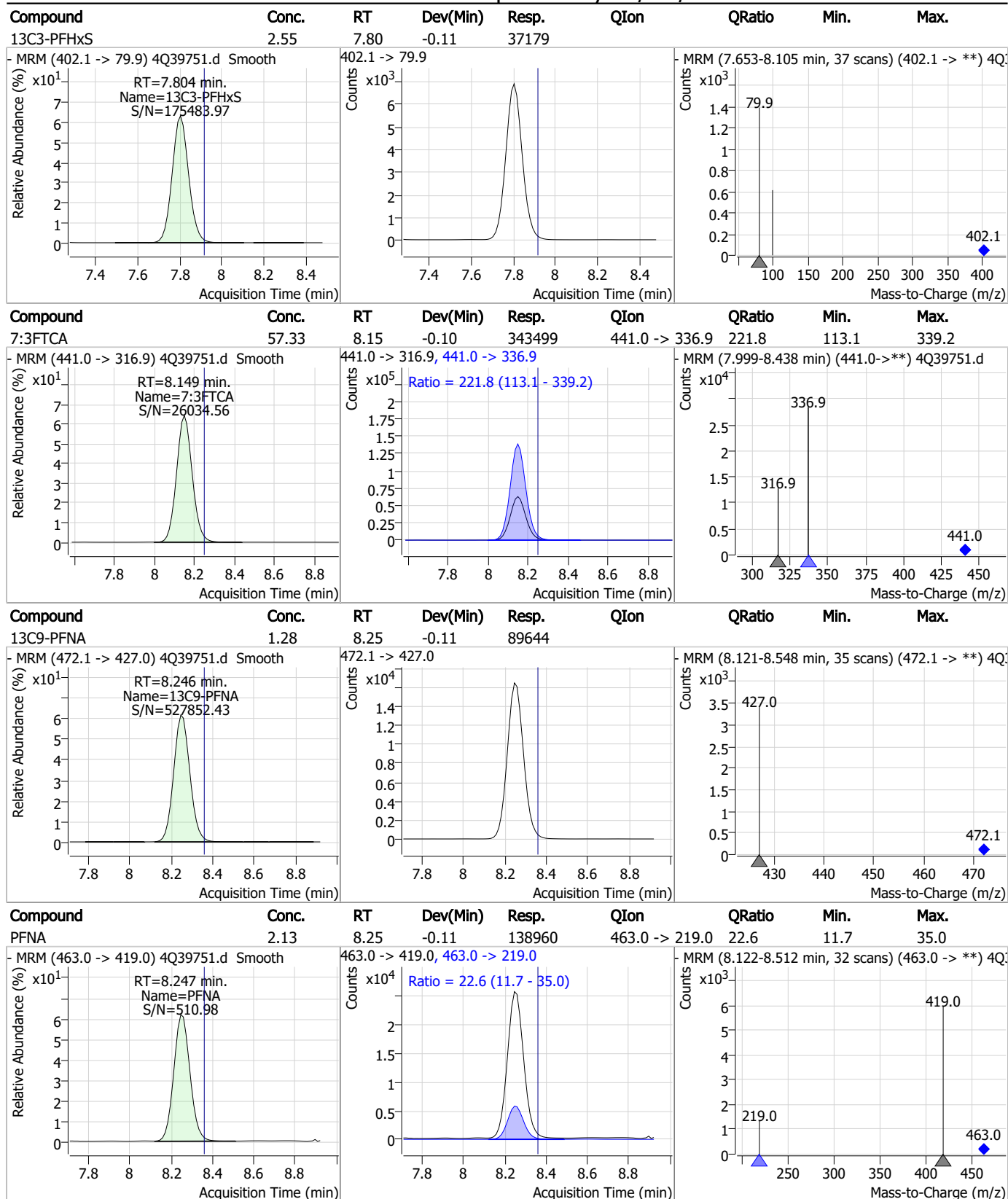
Perfluorinated Compounds by LC/MS/MS



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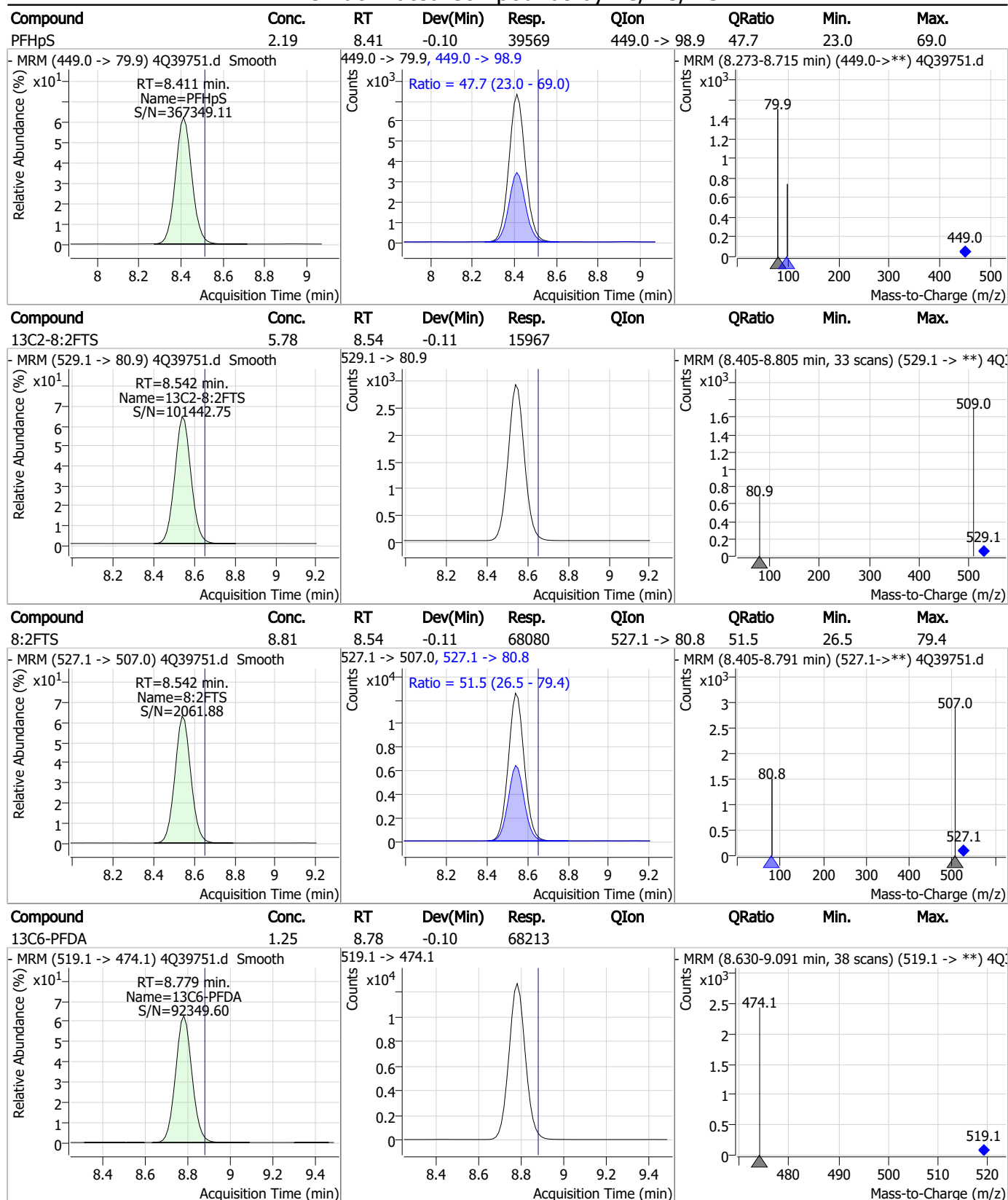
Perfluorinated Compounds by LC/MS/MS



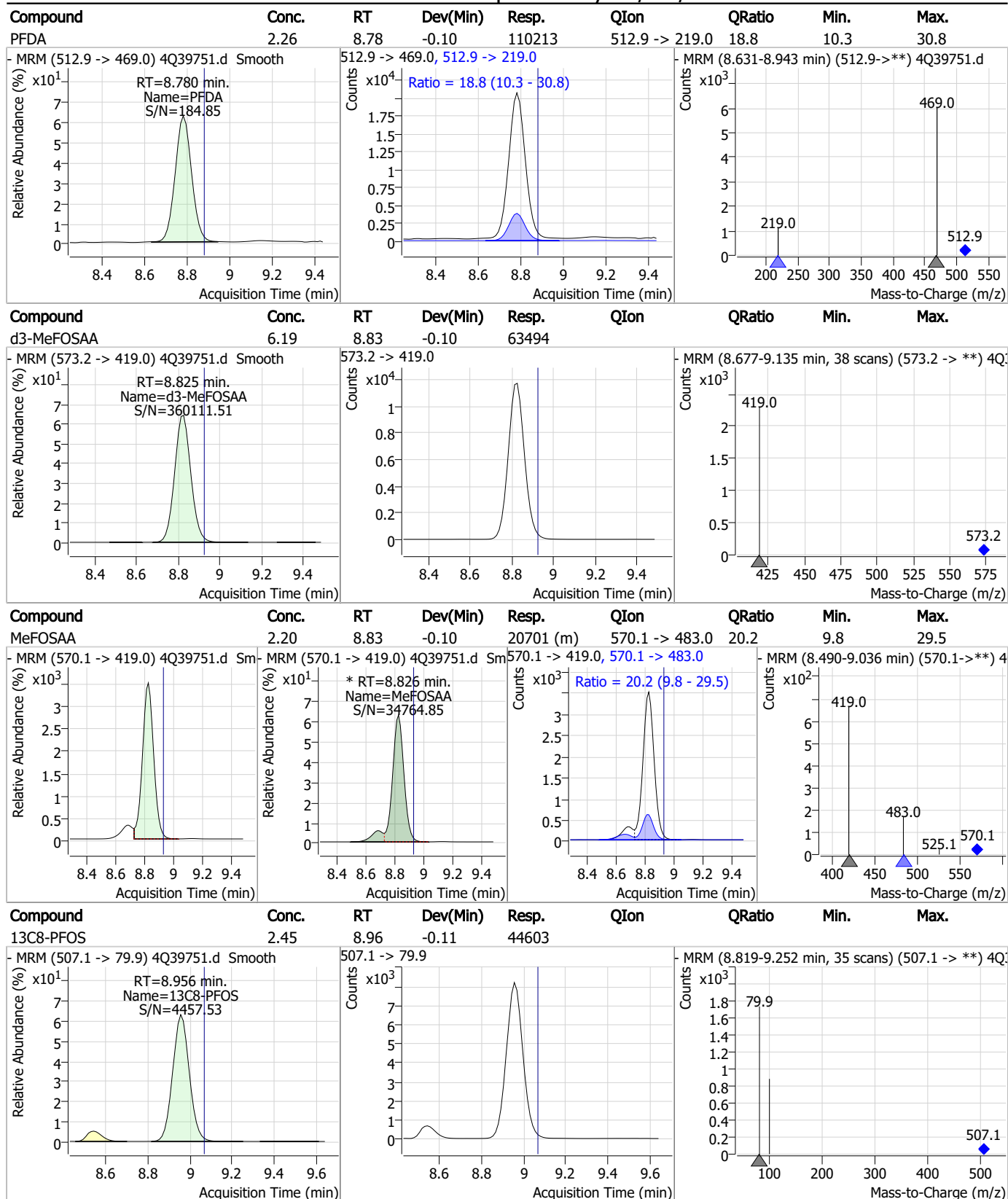
7.6.16

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Perfluorinated Compounds by LC/MS/MS



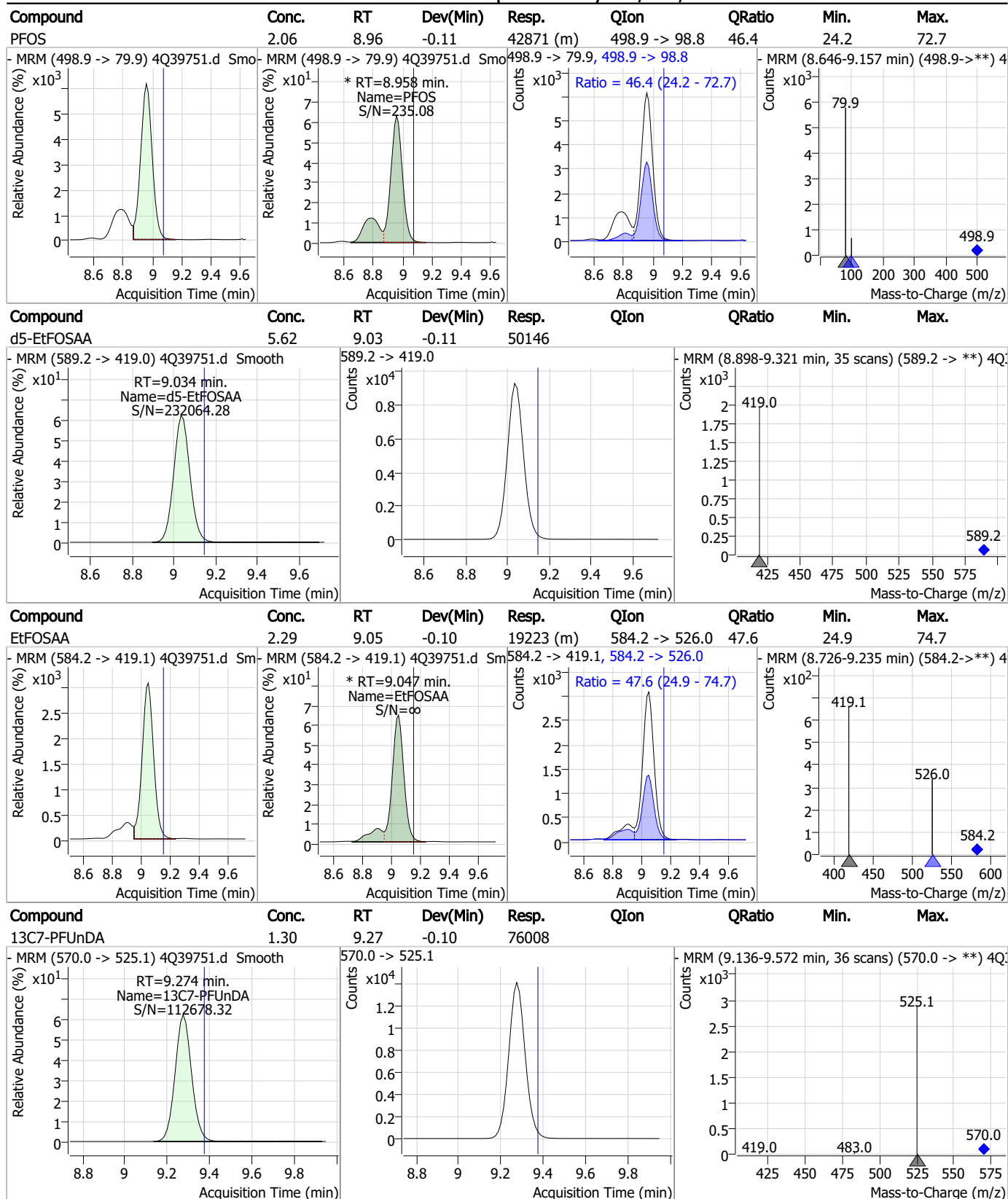
Perfluorinated Compounds by LC/MS/MS



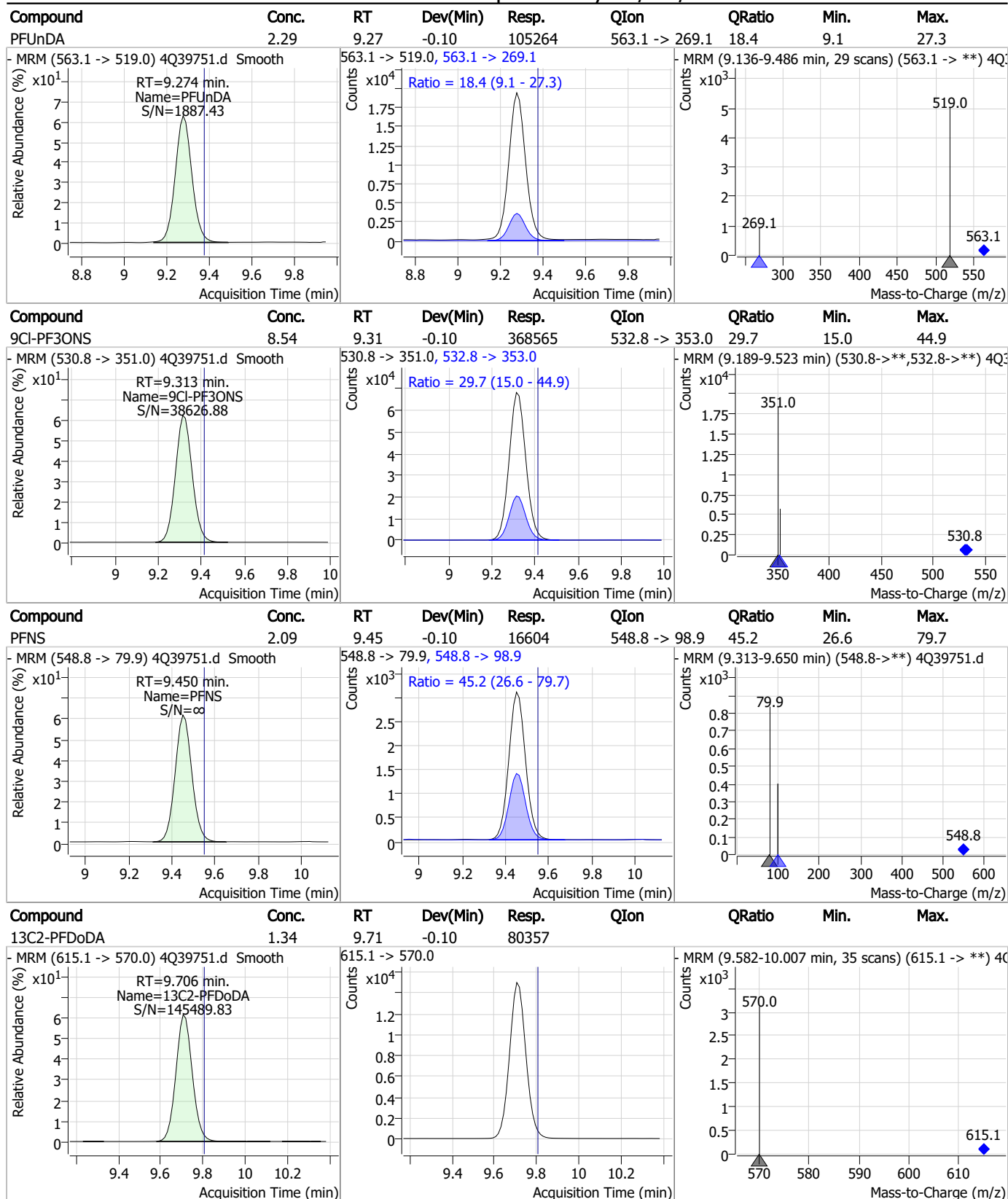
7.6.16

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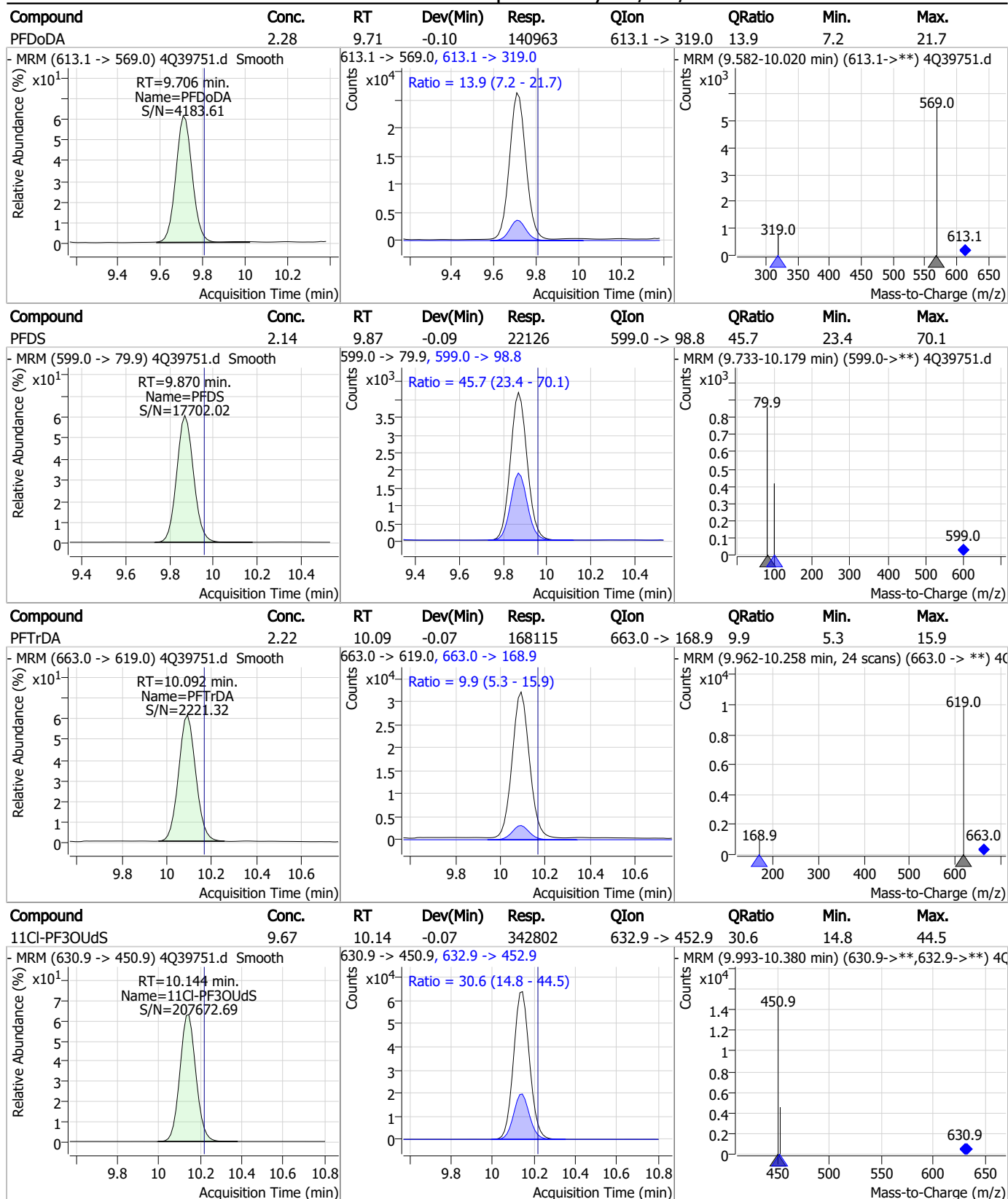
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



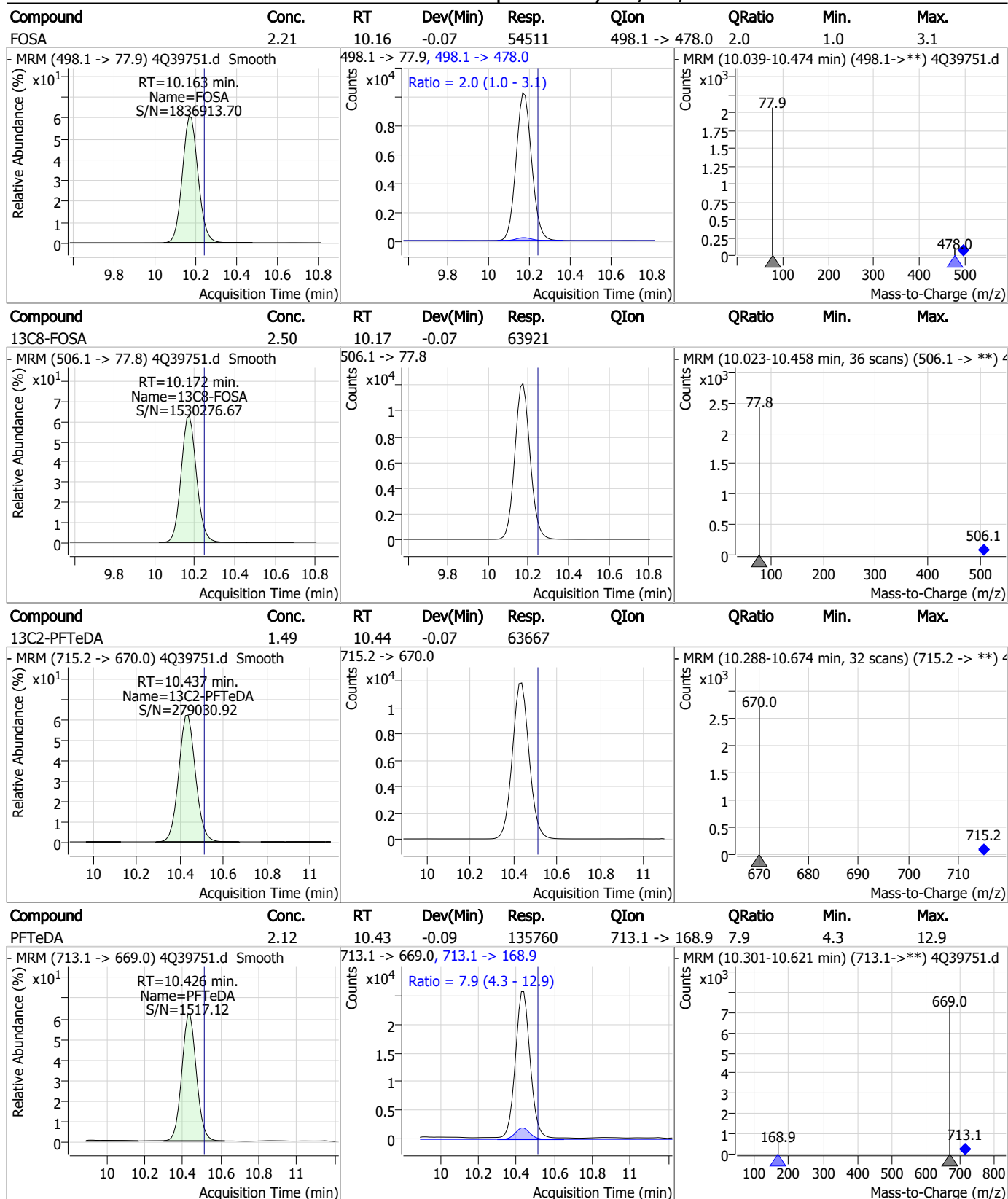
Perfluorinated Compounds by LC/MS/MS



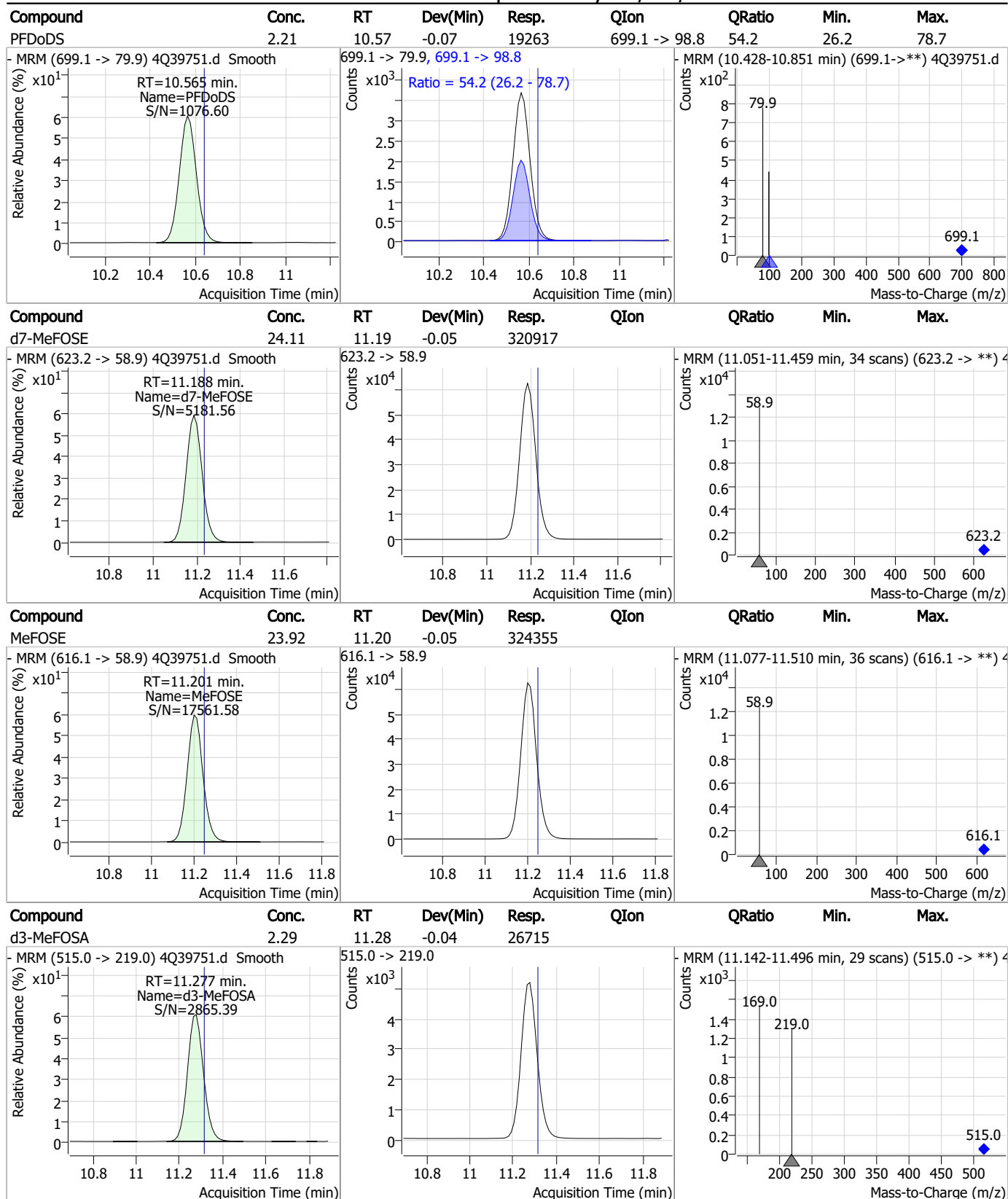
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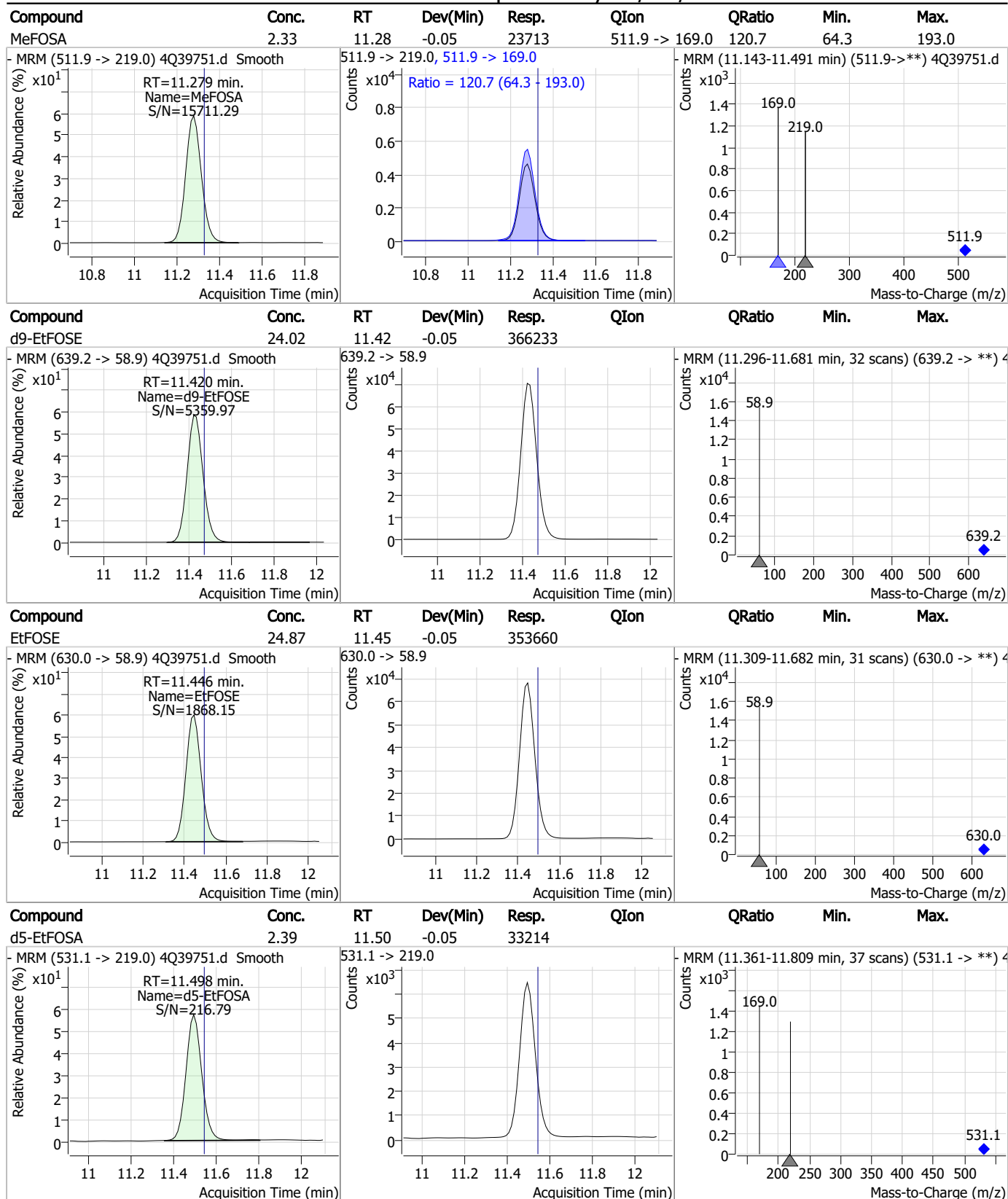
Perfluorinated Compounds by LC/MS/MS



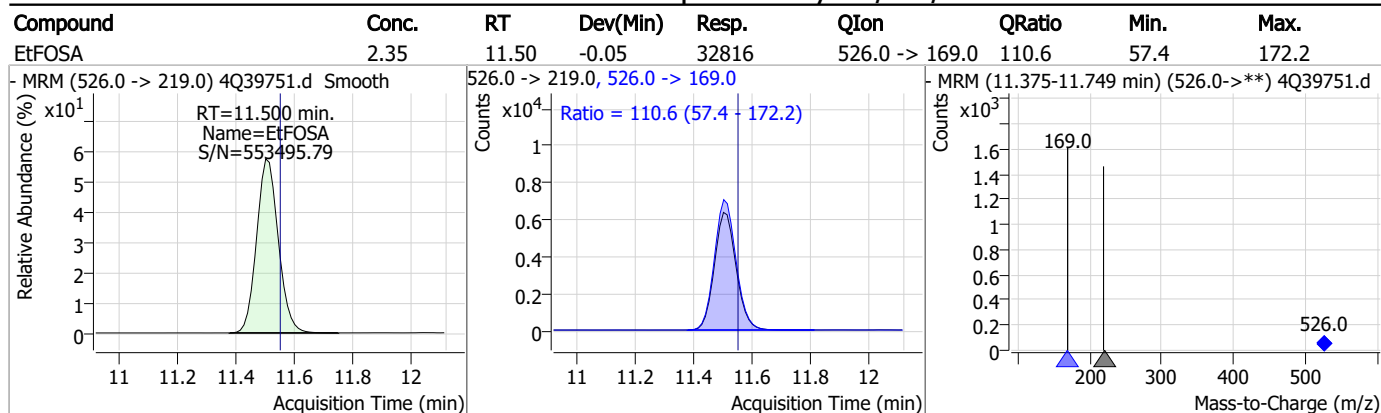
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.16

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Manual Integration Approval Summary

Sample Number: S4Q571-CC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39751.D

Analyst approved: 01/26/23 13:32 Natasha Guntie

Injection Time: 01/26/23 03:42

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.80	Split peak
MeFOSAA	2355-31-9		8.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.96	Split peak
EtFOSAA	2991-50-6		9.05	Split peak

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Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39763.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 6:30:57 AM
 Sample Name : cc571-4
 Vial : P1-A5
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q571A.batch.bin
 Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.086	216.8 -> 171.9	462988	10.00 µg/L	-0.087
M5-PFPeA	4.751	268.3 -> 223.0	320435	5.00 µg/L	-0.112
M5-PFHxA	6.035	318.0 -> 273.0	209245	2.50 µg/L	-0.137
M4-PFHpA	6.993	367.1 -> 322.0	120400	2.50 µg/L	-0.113
M8-PFOA	7.663	421.1 -> 376.0	181198	2.50 µg/L	-0.125
M9-PFNA	8.246	472.1 -> 427.0	92647	1.25 µg/L	-0.113
M6-PFDA	8.767	519.1 -> 474.1	70032	1.25 µg/L	-0.112
M7-PFUnDA	9.261	570.0 -> 525.1	80278	1.25 µg/L	-0.112
M2-PFDoDA	9.694	615.1 -> 570.0	81996	1.25 µg/L	-0.112
M2-PFTeDA	10.425	715.2 -> 670.0	65022	1.25 µg/L	-0.087
M8-FOSA	10.160	506.1 -> 77.8	66213	2.50 µg/L	-0.087
M3-PFBS	5.964	302.1 -> 79.9	58511	2.50 µg/L	-0.125
M3-PFHxS	7.792	402.1 -> 79.9	37224	2.50 µg/L	-0.125
M8-PFOS	8.944	507.1 -> 79.9	47615	2.50 µg/L	-0.124
M2-4:2FTS	5.696	329.1 -> 80.9	5365	5.00 µg/L	-0.126
M2-6:2FTS	7.412	429.1 -> 80.9	10740	5.00 µg/L	-0.124
M2-8:2FTS	8.530	529.1 -> 80.9	16720	5.00 µg/L	-0.124
M3-MeFOSAA	8.813	573.2 -> 419.0	62428	5.00 µg/L	-0.111
M3-HFPO-DA	6.427	286.9 -> 168.9	160113	10.00 µg/L	-0.124
M5-EtFOSAA	9.022	589.2 -> 419.0	53655	5.00 µg/L	-0.124
M7-MeFOSE	11.175	623.2 -> 58.9	331000	25.00 µg/L	-0.060
M9-EtFOSE	11.420	639.2 -> 58.9	379990	25.00 µg/L	-0.050
M5-EtFOSA	11.498	531.1 -> 219.0	32354	2.50 µg/L	-0.050
M3-MeFOSA	11.265	515.0 -> 219.0	27899	2.50 µg/L	-0.050
13C4-PFOS	8.945	502.8 -> 79.9	47259	2.50 µg/L	-0.124
13C3-PFBA	3.090	216.0 -> 172.0	260485	5.00 µg/L	-0.087
18O2-PFHxS	7.791	403.0 -> 83.9	24789	2.50 µg/L	-0.125
13C4-PFOA	7.664	417.1 -> 372.0	199649	2.50 µg/L	-0.125
13C2-PFDA	8.767	515.1 -> 470.1	63761	1.25 µg/L	-0.112
13C5-PFNA	8.247	468.0 -> 423.0	97174	1.25 µg/L	-0.113
13C2-PFHxA	6.036	315.1 -> 270.0	198841	2.50 µg/L	-0.137
System Monitoring Compounds					
13C2-4:2FTS	5.696	329.1 -> 80.9	5365	6.00 µg/L	-0.126
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.1%		
13C2-6:2FTS	7.412	429.1 -> 80.9	10740	5.37 µg/L	-0.124
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C2-8:2FTS	8.530	529.1 -> 80.9	16720	6.11 µg/L	-0.124
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.2%		
13C2-PFDoDA	9.694	615.1 -> 570.0	81996	1.32 µg/L	-0.112
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C2-PFTeDA	10.425	715.2 -> 670.0	65022	1.48 µg/L	-0.087
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 118.1%		
13C3-PFBS	5.964	302.1 -> 79.9	58511	2.73 µg/L	-0.125
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C3-PFHxS	7.792	402.1 -> 79.9	37224	2.57 µg/L	-0.125

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C4-PFBA	3.086	216.8 -> 171.9	462988	9.86 µg/L	-0.087
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C4-PFHpA	6.993	367.1 -> 322.0	120400	2.60 µg/L	-0.113
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C5-PFHxA	6.035	318.0 -> 273.0	209245	2.50 µg/L	-0.137
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFPeA	4.751	268.3 -> 223.0	320435	4.96 µg/L	-0.112
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C6-PFDA	8.767	519.1 -> 474.1	70032	1.24 µg/L	-0.112
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C7-PFUnDA	9.261	570.0 -> 525.1	80278	1.33 µg/L	-0.112
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C8-FOSA	10.160	506.1 -> 77.8	66213	2.45 µg/L	-0.087
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C8-PFOA	7.663	421.1 -> 376.0	181198	2.53 µg/L	-0.125
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C8-PFOS	8.944	507.1 -> 79.9	47615	2.47 µg/L	-0.124
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C9-PFNA	8.246	472.1 -> 427.0	92647	1.34 µg/L	-0.113
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.3%	
d3-MeFOSAA	8.813	573.2 -> 419.0	62428	5.75 µg/L	-0.111
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.0%	
13C3-HFPO-DA	6.427	286.9 -> 168.9	160113	10.09 µg/L	-0.124
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
d3-MeFOSA	11.265	515.0 -> 219.0	27899	2.26 µg/L	-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.3%	
d5-EtFOSAA	9.022	589.2 -> 419.0	53655	5.68 µg/L	-0.124
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.5%	
d7-MeFOSE	11.175	623.2 -> 58.9	331000	23.49 µg/L	-0.060
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.0%	
d9-EtFOSE	11.420	639.2 -> 58.9	379990	23.54 µg/L	-0.050
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
d5-EtFOSA	11.498	531.1 -> 219.0	32354	2.19 µg/L	-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.8%	
Target Compounds					QValue
4:2FTS	5.697	327.1 -> 307.0	76089	8.68 µg/L	99
		327.1 -> 80.9	35053		
6:2FTS	7.413	427.1 -> 407.0	84183	9.89 µg/L	96
		427.1 -> 80.9	39009		
8:2FTS	8.530	527.1 -> 507.0	69484	8.59 µg/L	98
		527.1 -> 80.8	36018		
EtFOSAA	9.035	584.2 -> 419.1	20793	2.31 µg/L	m 90
		584.2 -> 526.0	8959		
FOSA	10.163	498.1 -> 77.9	58015	2.27 µg/L	99
		498.1 -> 478.0	1399		
MeFOSAA	8.813	570.1 -> 419.0	24225	2.62 µg/L	m 100
		570.1 -> 483.0	4742		
PFBA	3.095	212.8 -> 168.9	113791	8.83 µg/L	100
PFBS	5.965	298.7 -> 79.9	51224	1.94 µg/L	99
		298.7 -> 98.8	17729		
PFDA	8.768	512.9 -> 469.0	112616	2.25 µg/L	96
		512.9 -> 219.0	21031		
PFDODA	9.694	613.1 -> 569.0	149086	2.36 µg/L	98
		613.1 -> 319.0	20587		
PFDS	9.858	599.0 -> 79.9	22857	2.07 µg/L	93

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.993	599.0 -> 98.8	11702	2.21	µg/L	98
		363.1 -> 319.0	166077			
PFHpS	8.399	363.1 -> 169.0	26783	2.16	µg/L	98
		449.0 -> 79.9	41590			
PFHxA	6.038	449.0 -> 98.9	18472	2.26	µg/L	100
		313.0 -> 269.0	184271			
PFHxS	7.792	313.0 -> 118.9	5585	2.12	µg/L	99
		398.7 -> 79.9	25442			
PFNA	8.247	398.7 -> 98.9	12137	2.12	µg/L	97
		463.0 -> 419.0	142724			
PFNS	9.437	463.0 -> 219.0	31253	2.02	µg/L	90
		548.8 -> 79.9	17155			
PFOA	7.665	548.8 -> 98.9	7856	2.24	µg/L	99
		413.0 -> 369.0	180186			
PFOS	8.945	413.0 -> 169.0	36843	2.02	µg/L	95
		498.9 -> 79.9	44990			
PFPeA	4.754	498.9 -> 98.8	20108	4.63	µg/L	100
		263.0 -> 219.0	325531			
PFPeS	7.057	349.1 -> 79.9	24820	2.14	µg/L	99
		349.1 -> 98.9	9592			
PFTeDA	10.426	713.1 -> 669.0	141311	2.16	µg/L	99
		713.1 -> 168.9	11816			
PFTrDA	10.080	663.0 -> 619.0	180203	2.33	µg/L	96
		663.0 -> 168.9	16261			
PFUnDA	9.262	563.1 -> 519.0	113883	2.34	µg/L	98
		563.1 -> 269.1	19552			
11Cl-PF3OUdS	10.131	630.9 -> 450.9	354032	9.46	µg/L	100
		632.9 -> 452.9	105988			
9Cl-PF3ONS	9.301	530.8 -> 351.0	382816	8.39	µg/L	98
		532.8 -> 353.0	109842			
ADONA	7.256	376.9 -> 250.9	767416	8.88	µg/L	98
		376.9 -> 84.8	262479			
HFPO-DA	6.428	284.9 -> 168.9	138869	9.20	µg/L	98
		284.9 -> 184.9	15816			
3:3FTCA	4.098	241.0 -> 177.0	35005	10.62	µg/L	99
		241.0 -> 117.0	3220			
5:3FTCA	6.656	341.0 -> 237.1	602725	55.69	µg/L	99
		341.0 -> 217.0	455300			
7:3FTCA	8.137	441.0 -> 316.9	355977	57.28	µg/L	98
		441.0 -> 336.9	795373			
EtFOSA	11.500	526.0 -> 219.0	32676	2.40	µg/L	98
		526.0 -> 169.0	36943			
EtFOSE	11.433	630.0 -> 58.9	355717	24.11	µg/L	100
		511.9 -> 219.0	25409			
MeFOSA	11.267	511.9 -> 169.0	29847	2.39	µg/L	90
		616.1 -> 58.9	339033			
MeFOSE	11.201	699.1 -> 79.9	20267	24.24	µg/L	100
		699.1 -> 98.8	10740			
PFDoDS	10.553	295.0 -> 201.0	25196	2.18	µg/L	99
		295.0 -> 84.9	7804			
NFDHA	5.916	279.0 -> 85.1	198501	4.71	µg/L	97
		229.0 -> 84.9	205347			
PFMBA	5.203	314.8 -> 134.9	281850	4.53	µg/L	100
PFMPA	3.782	314.8 -> 82.9	8408	4.54	µg/L	100
PFEESA	6.534			4.05	µg/L	99

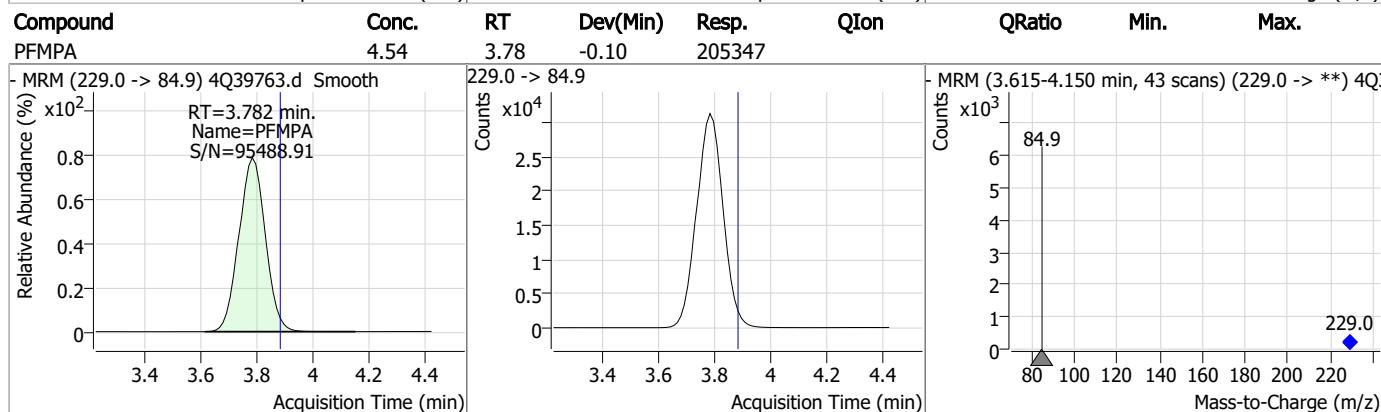
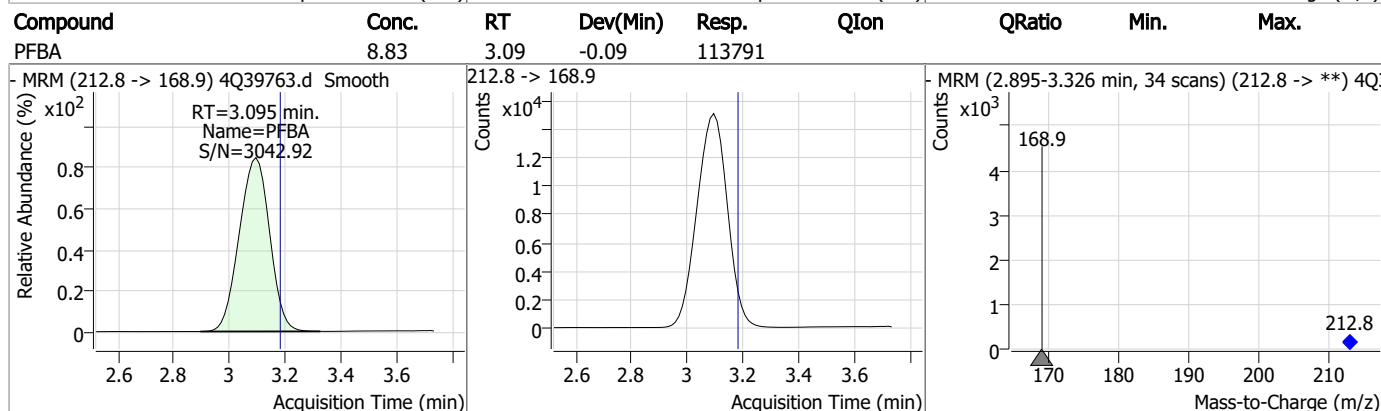
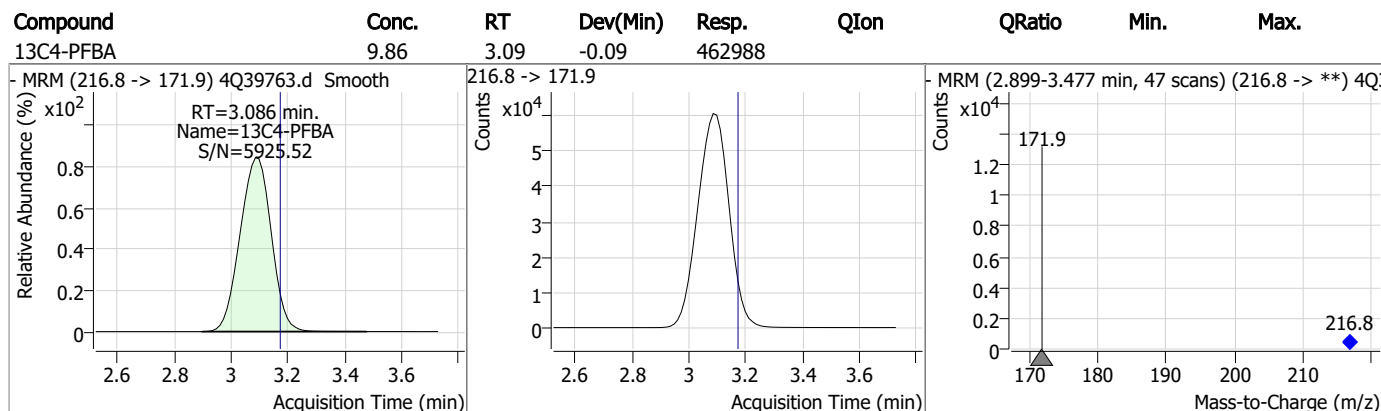
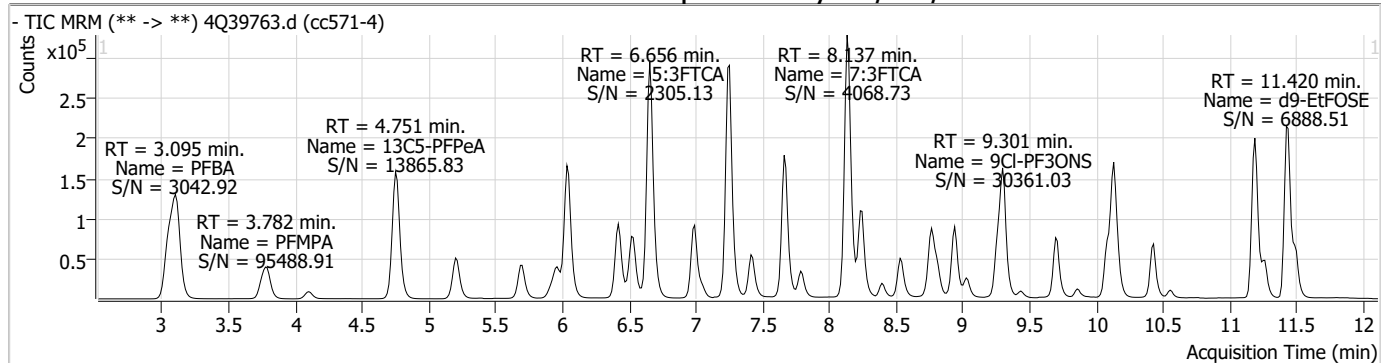
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

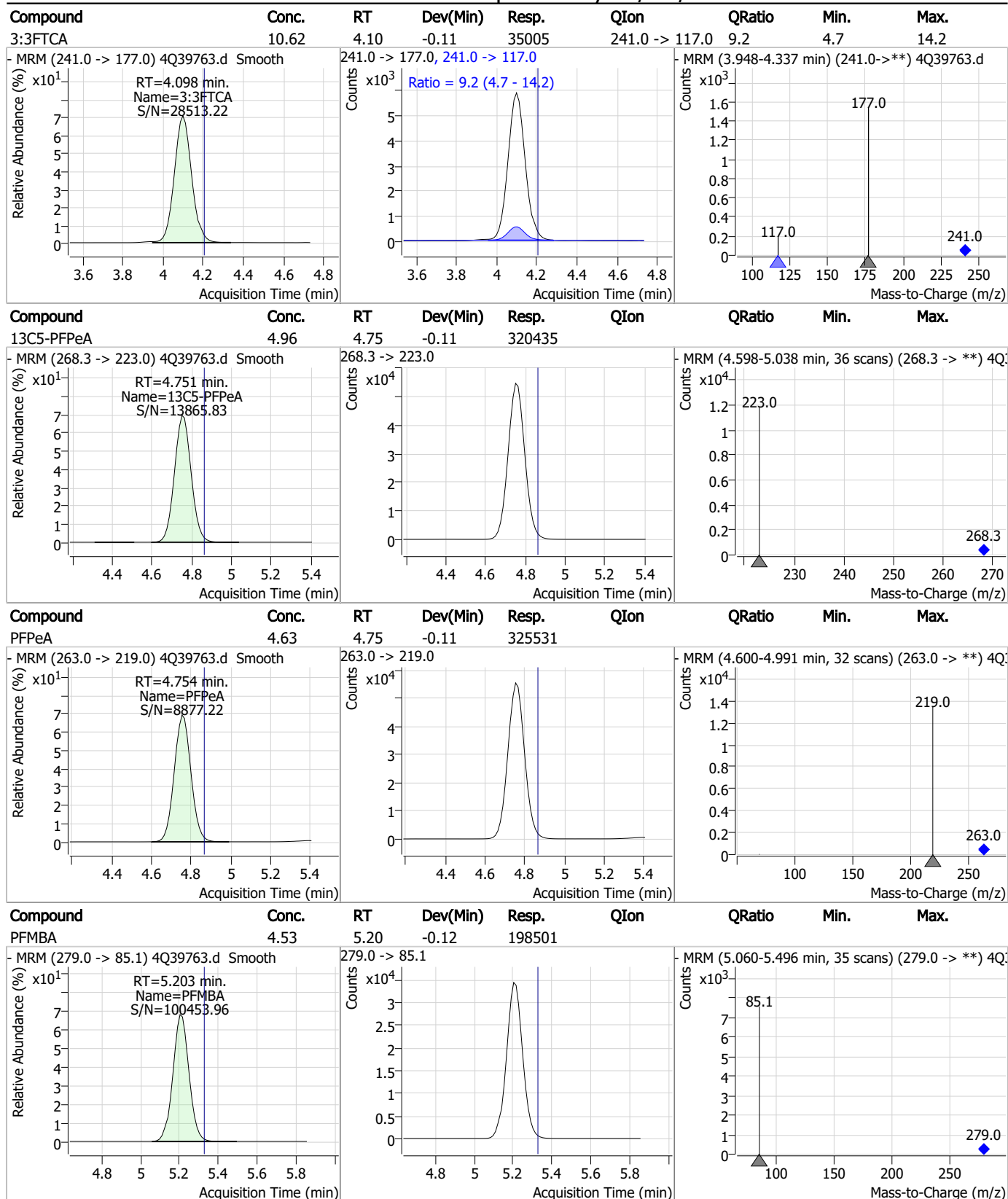
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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Perfluorinated Compounds by LC/MS/MS



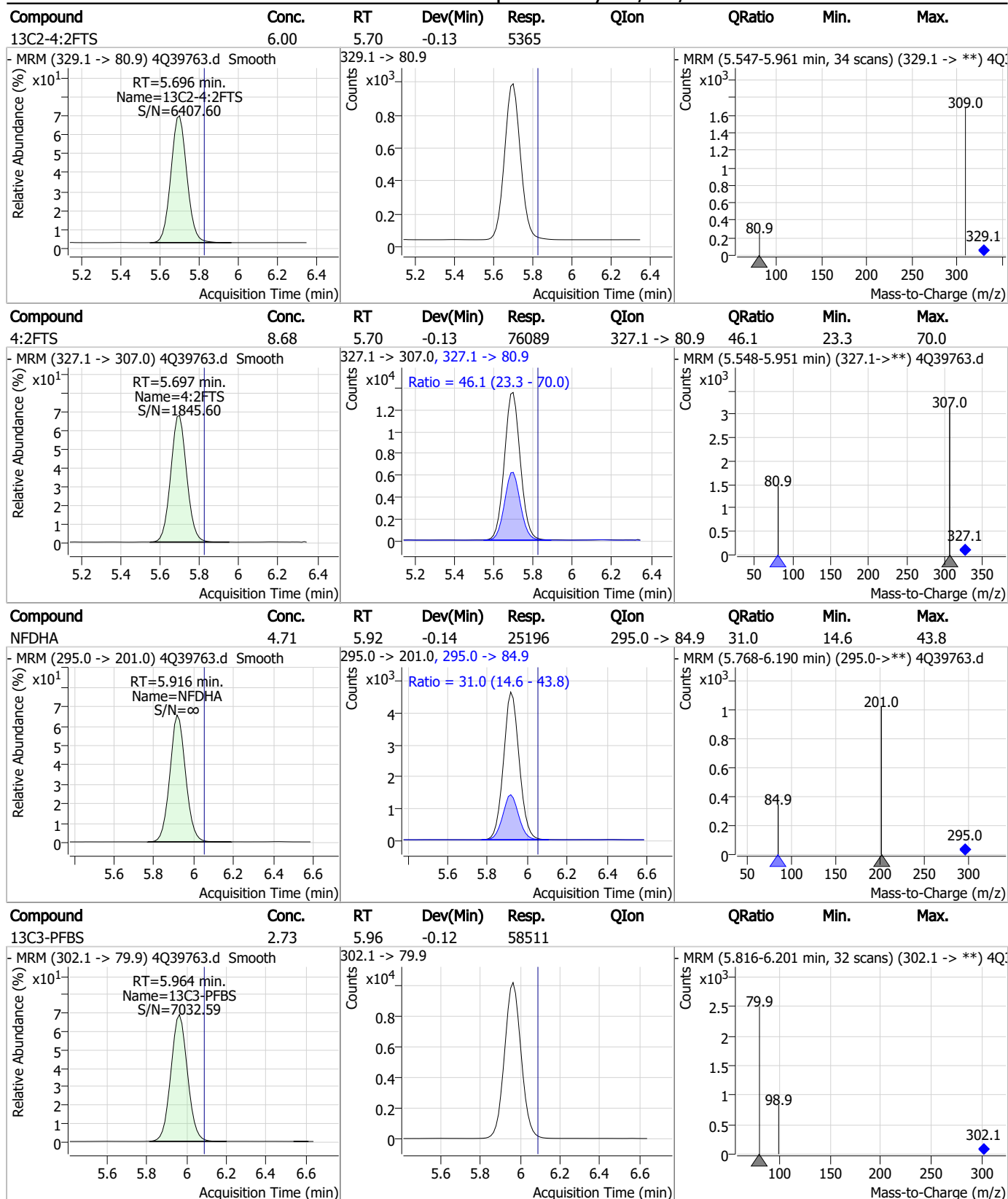
Perfluorinated Compounds by LC/MS/MS



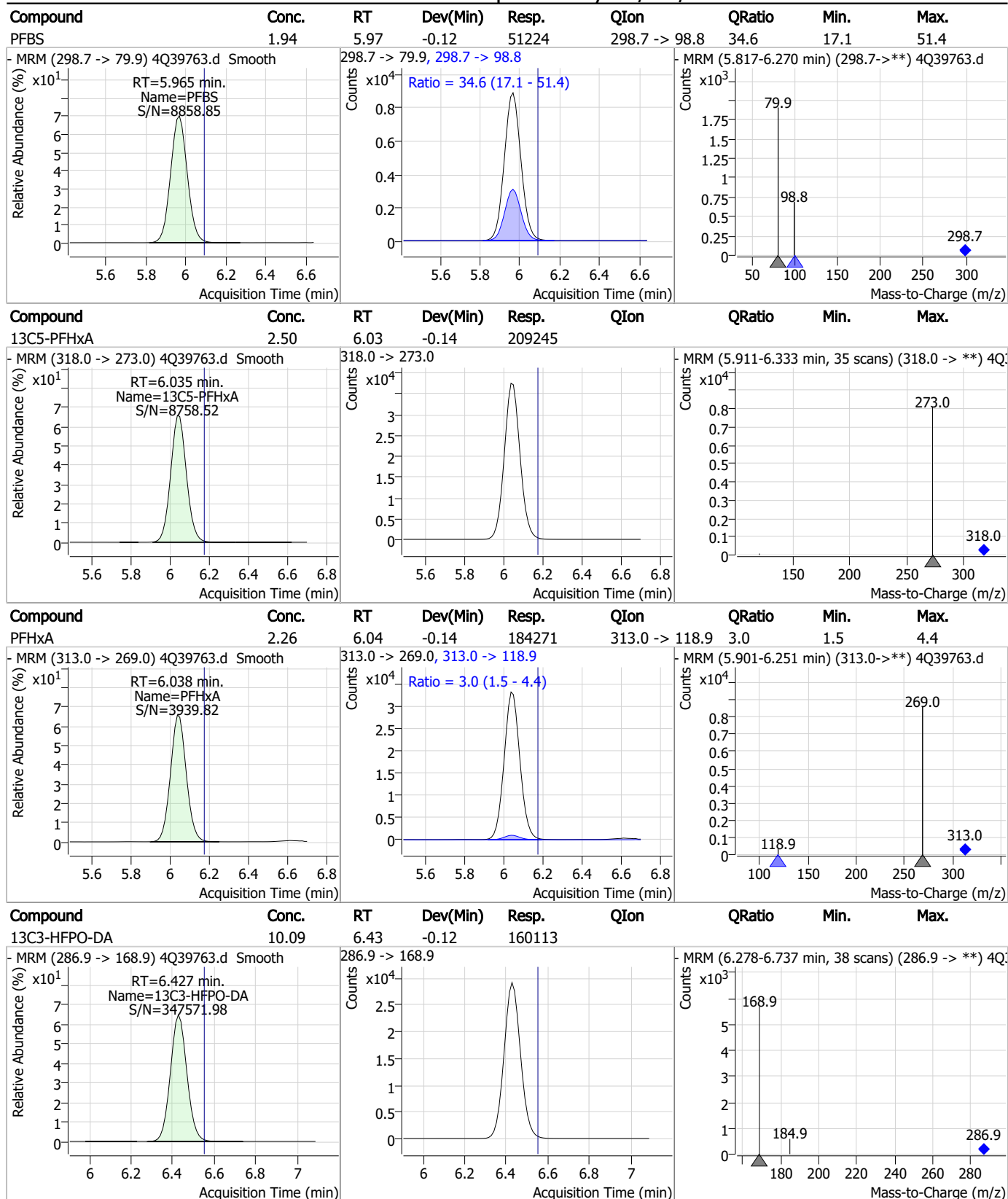
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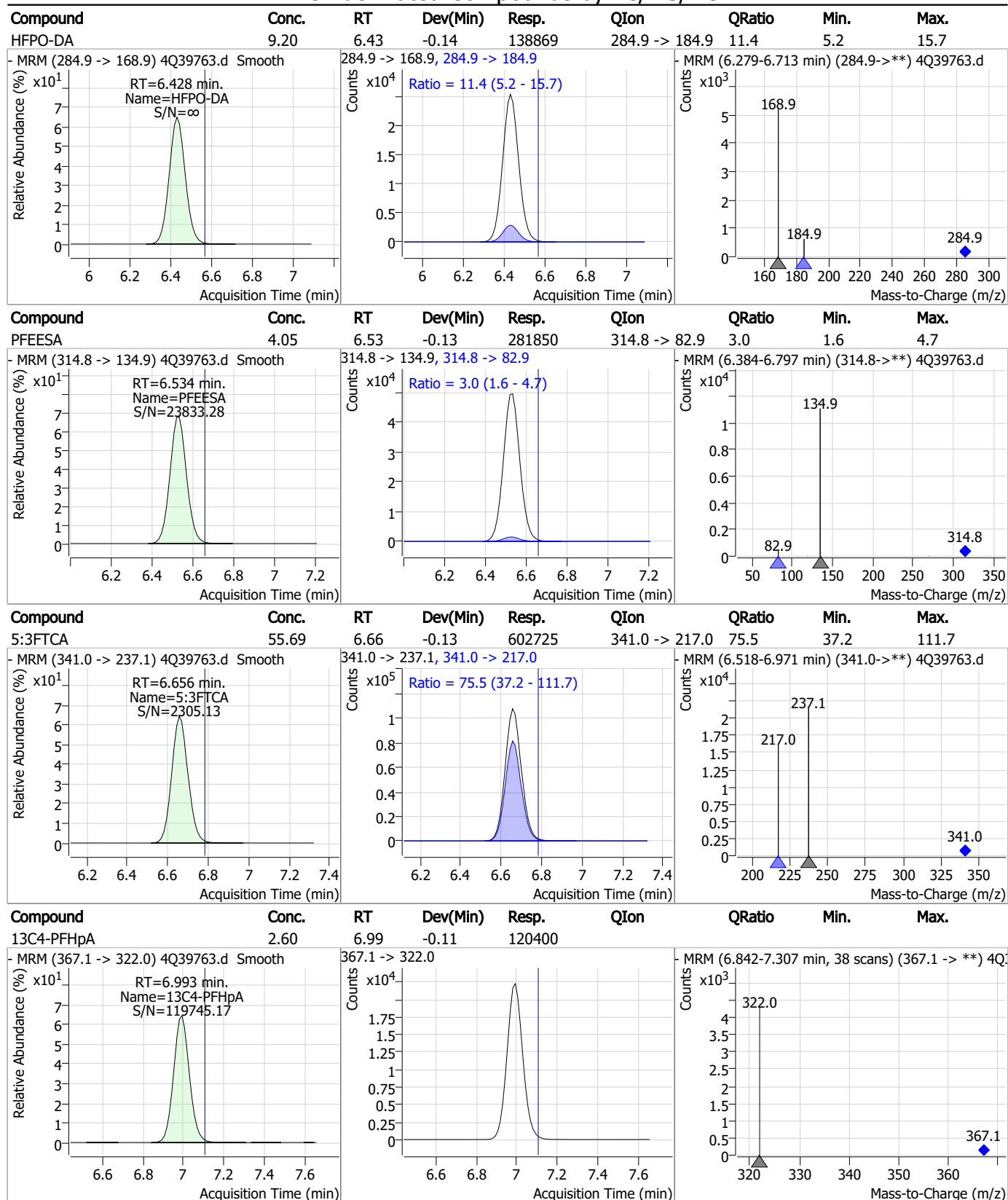
Perfluorinated Compounds by LC/MS/MS



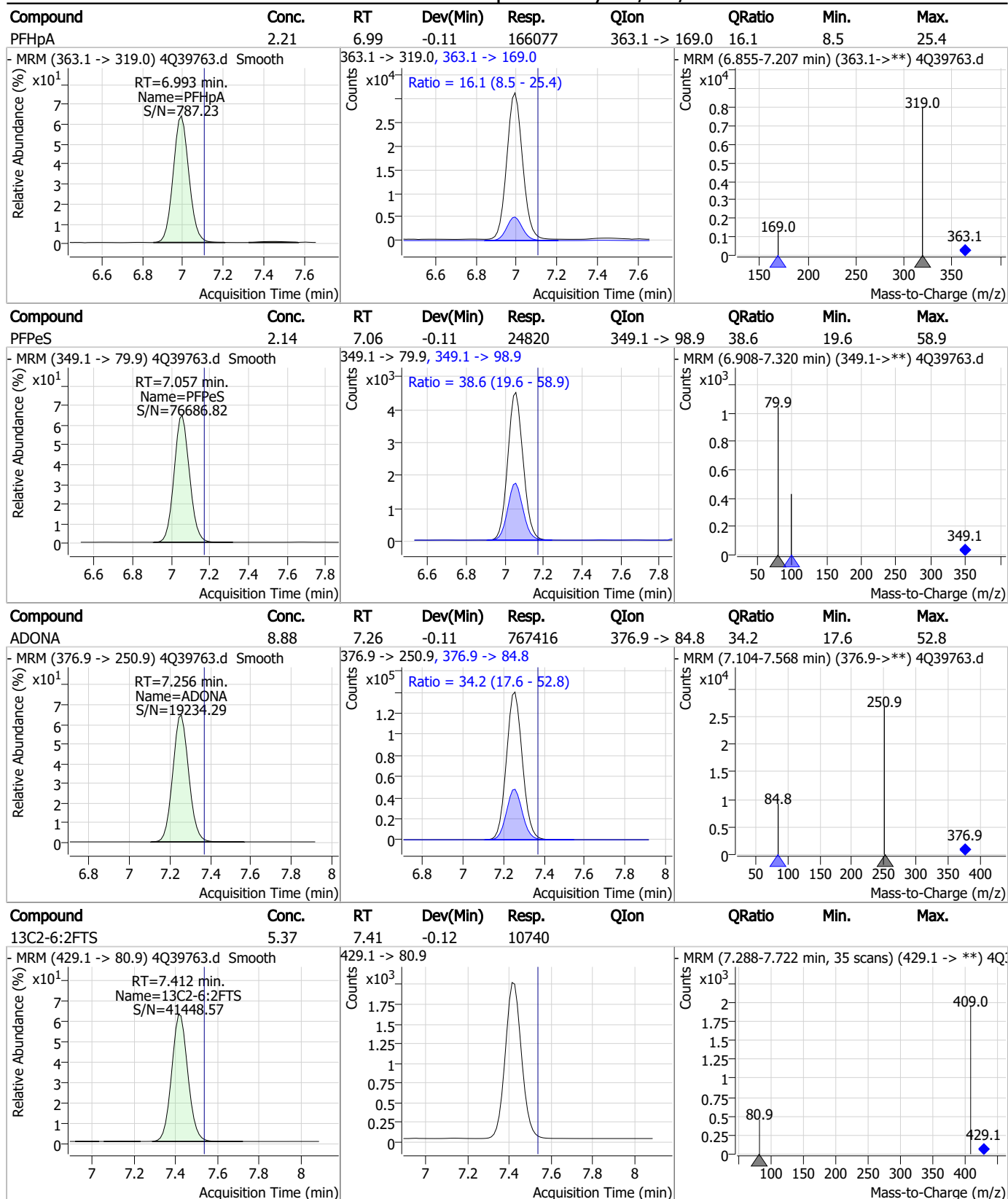
Perfluorinated Compounds by LC/MS/MS



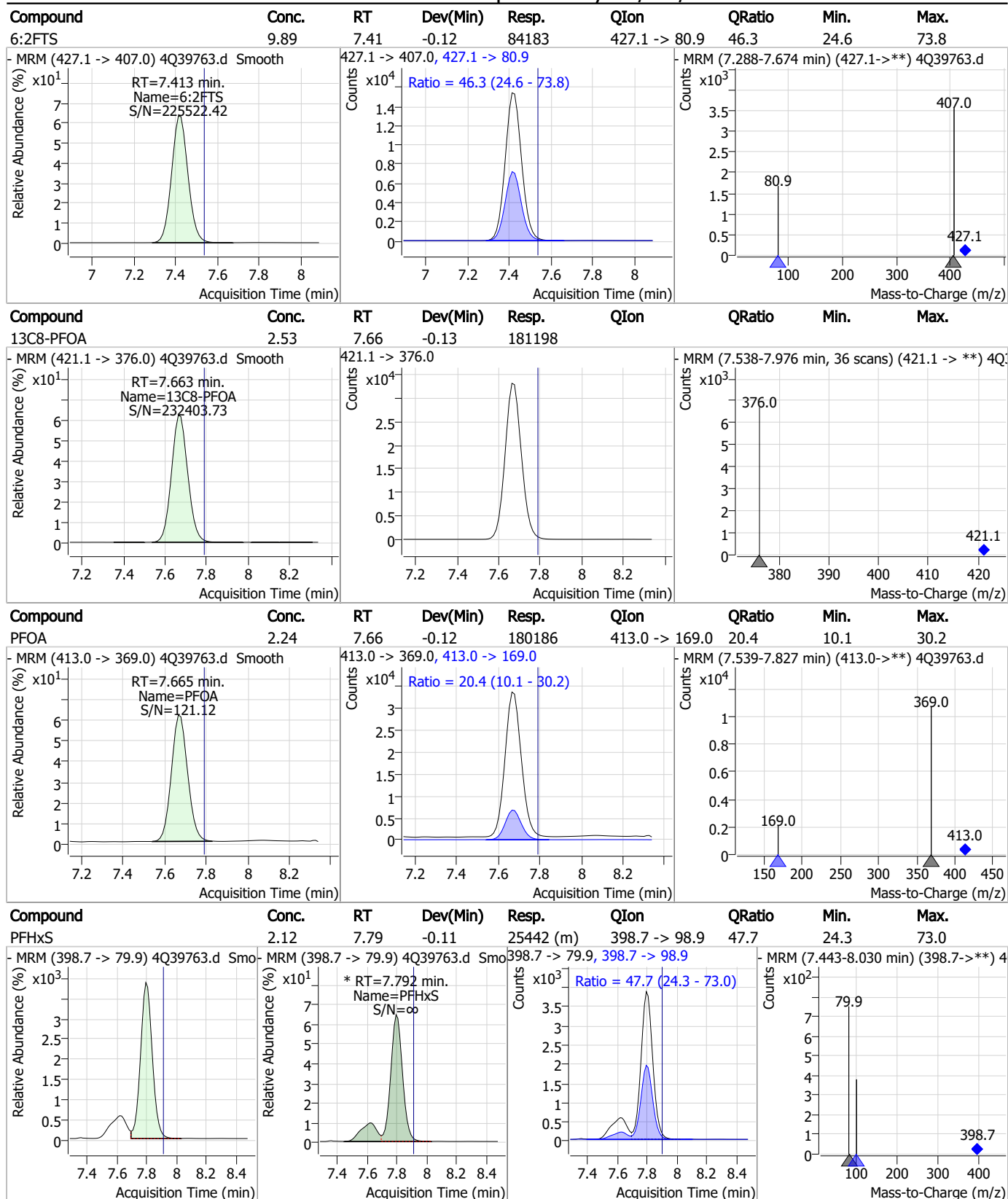
Perfluorinated Compounds by LC/MS/MS



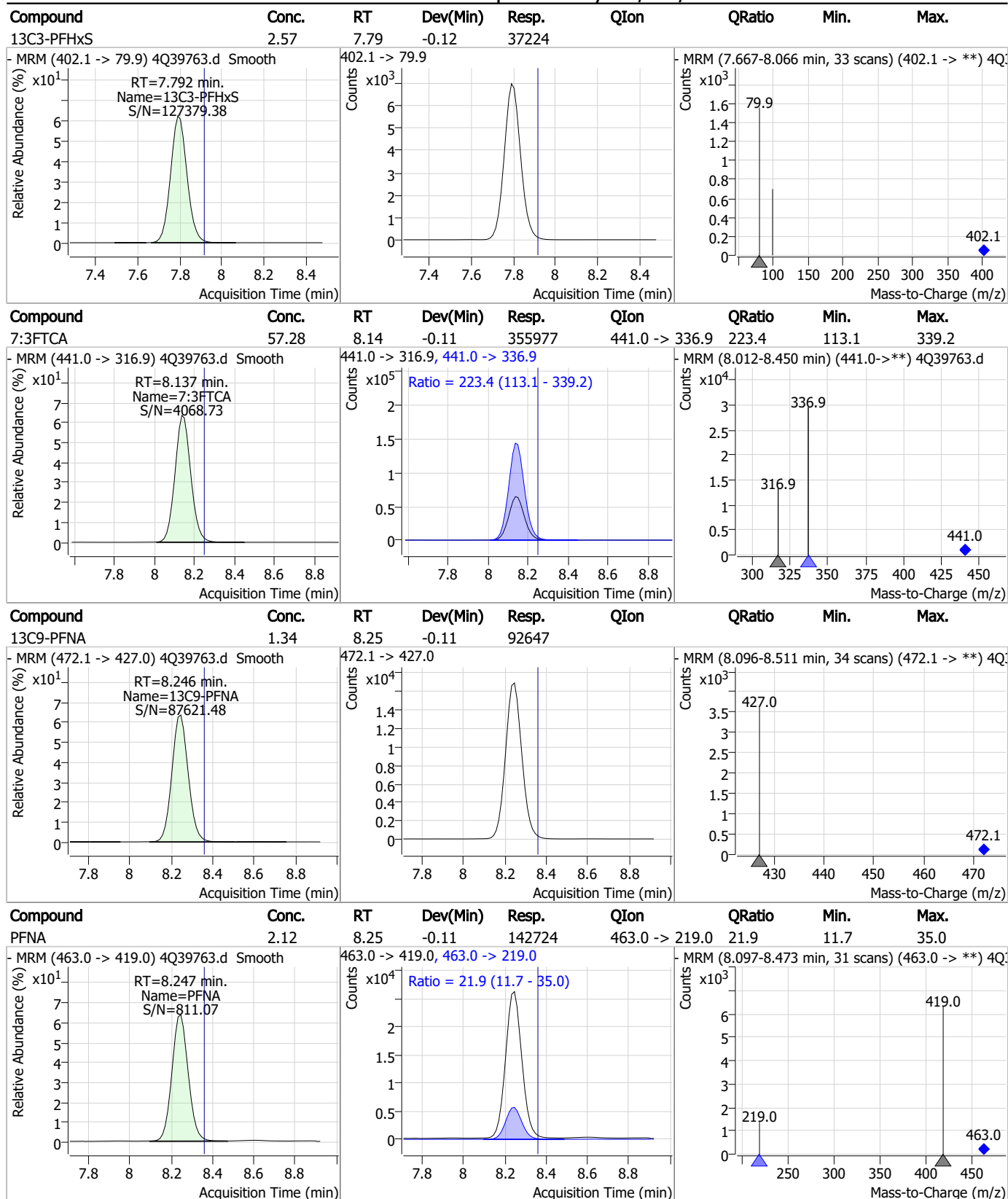
Perfluorinated Compounds by LC/MS/MS



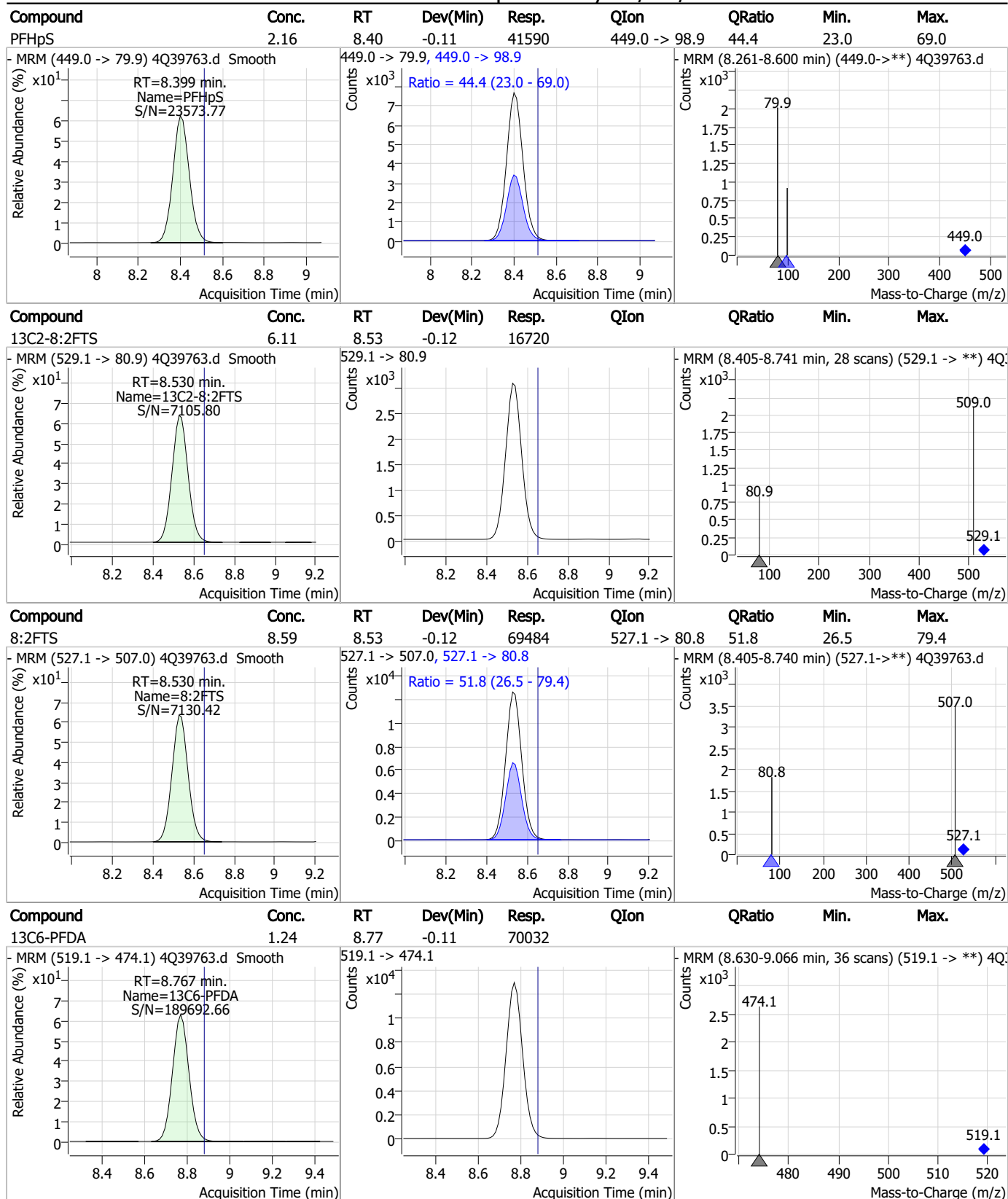
Perfluorinated Compounds by LC/MS/MS



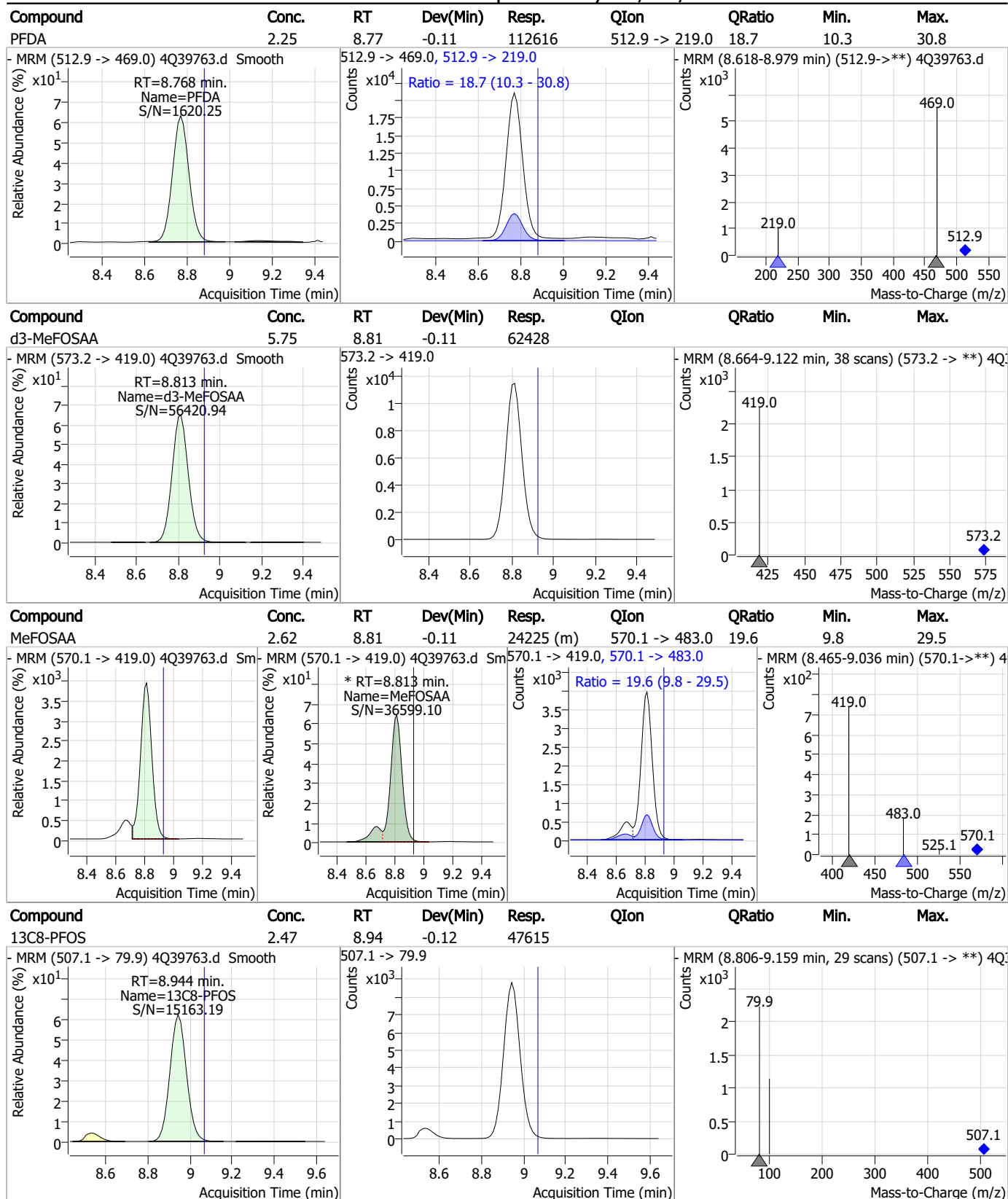
Perfluorinated Compounds by LC/MS/MS



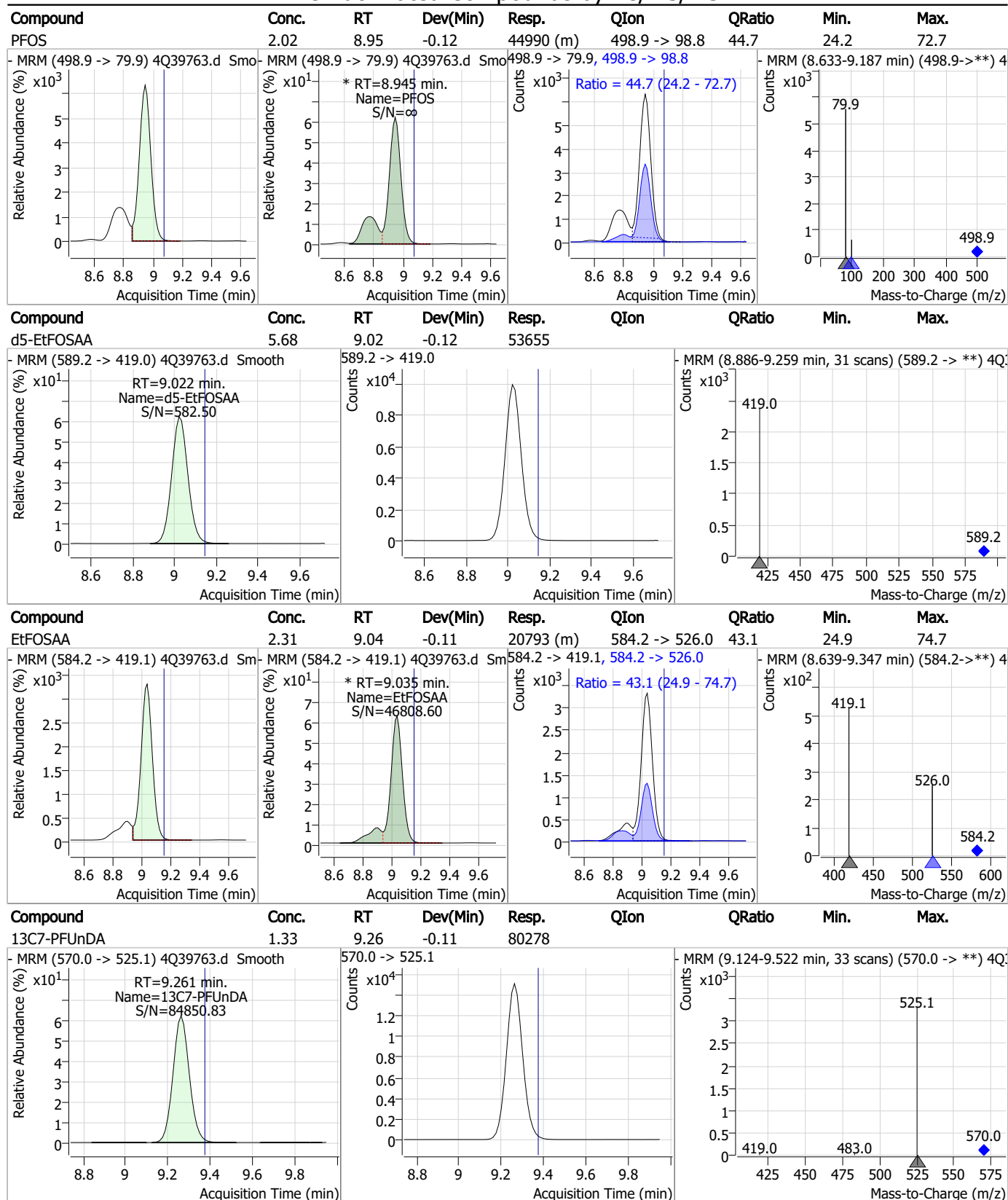
Perfluorinated Compounds by LC/MS/MS



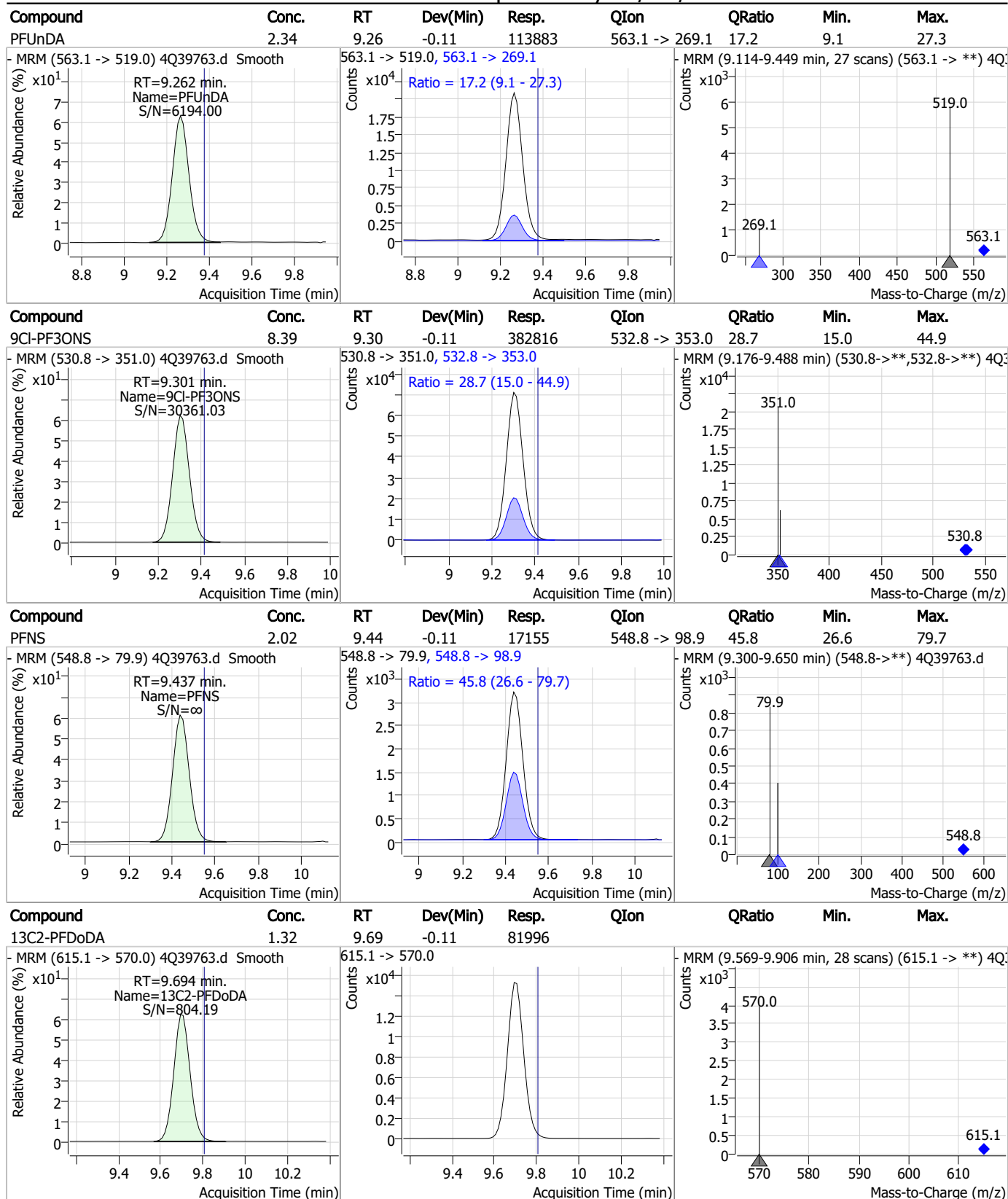
Perfluorinated Compounds by LC/MS/MS



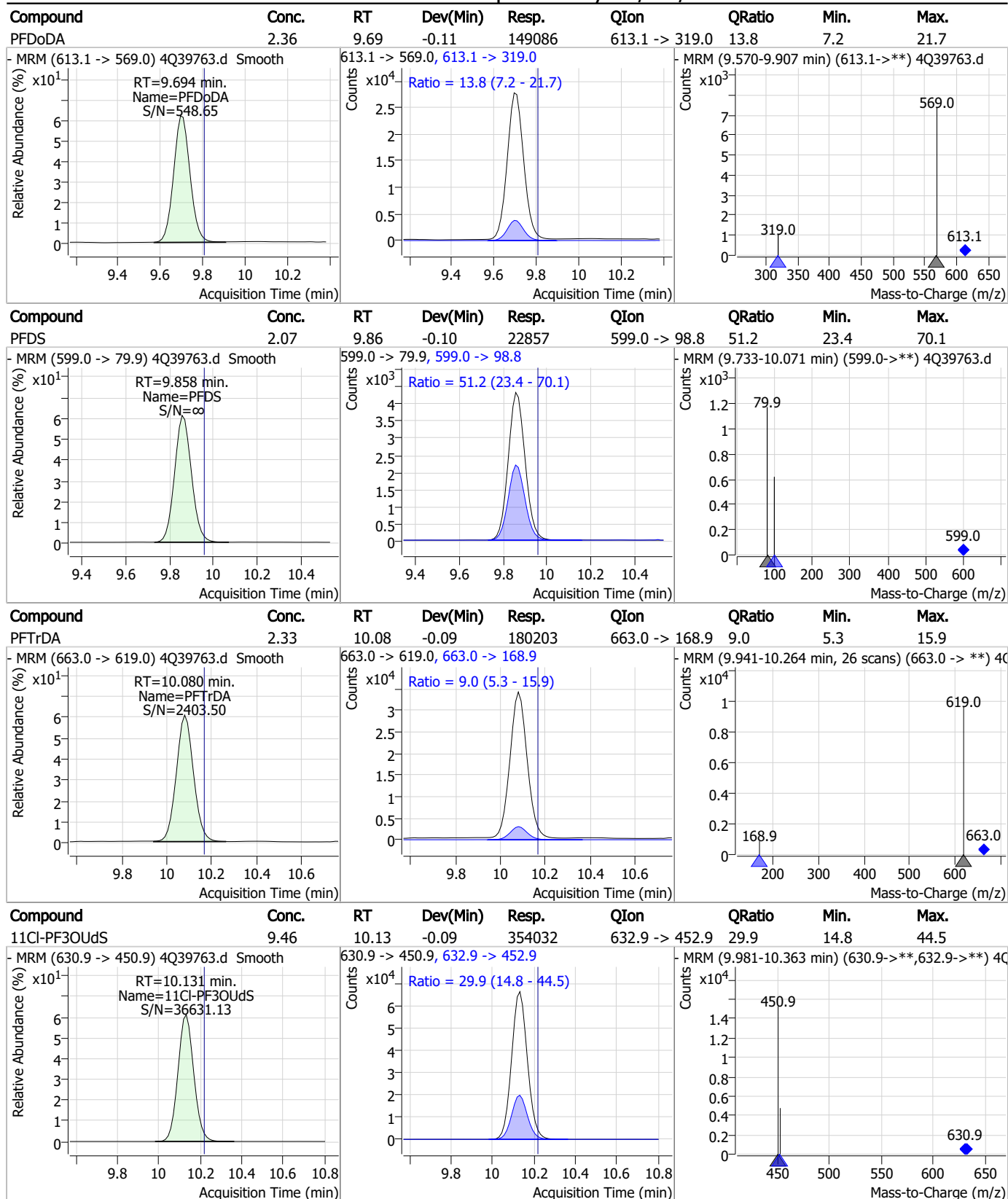
Perfluorinated Compounds by LC/MS/MS



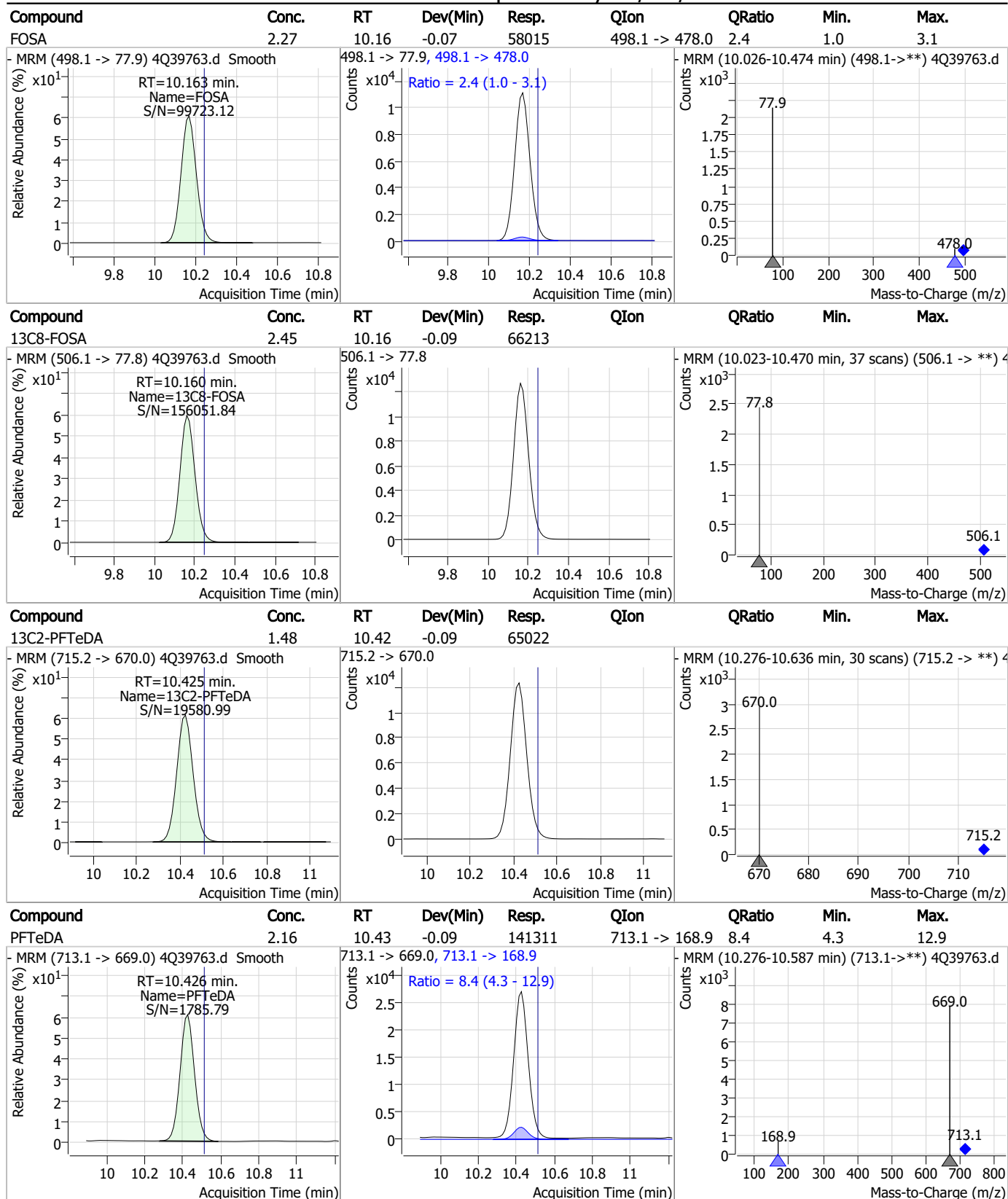
Perfluorinated Compounds by LC/MS/MS



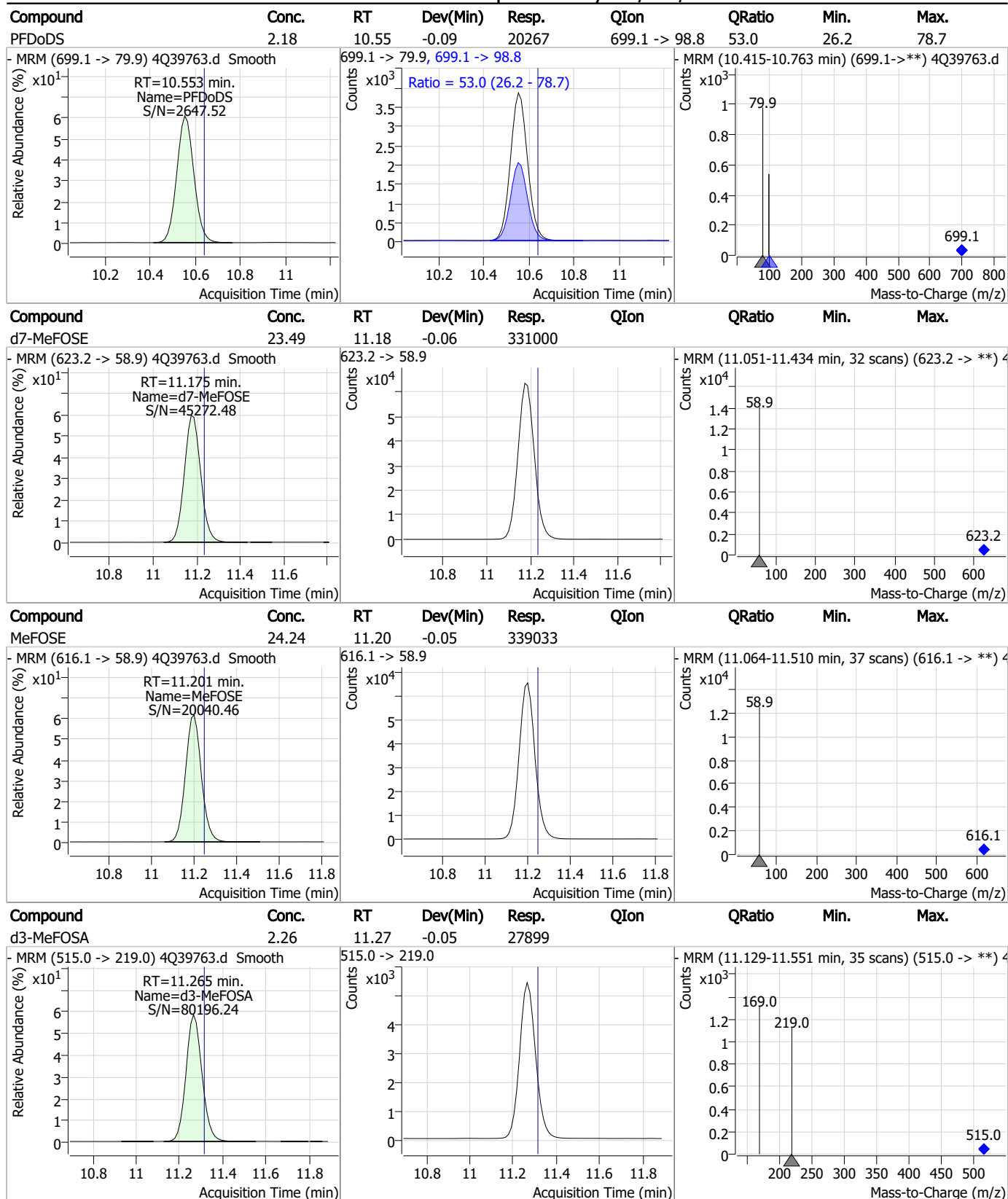
Perfluorinated Compounds by LC/MS/MS



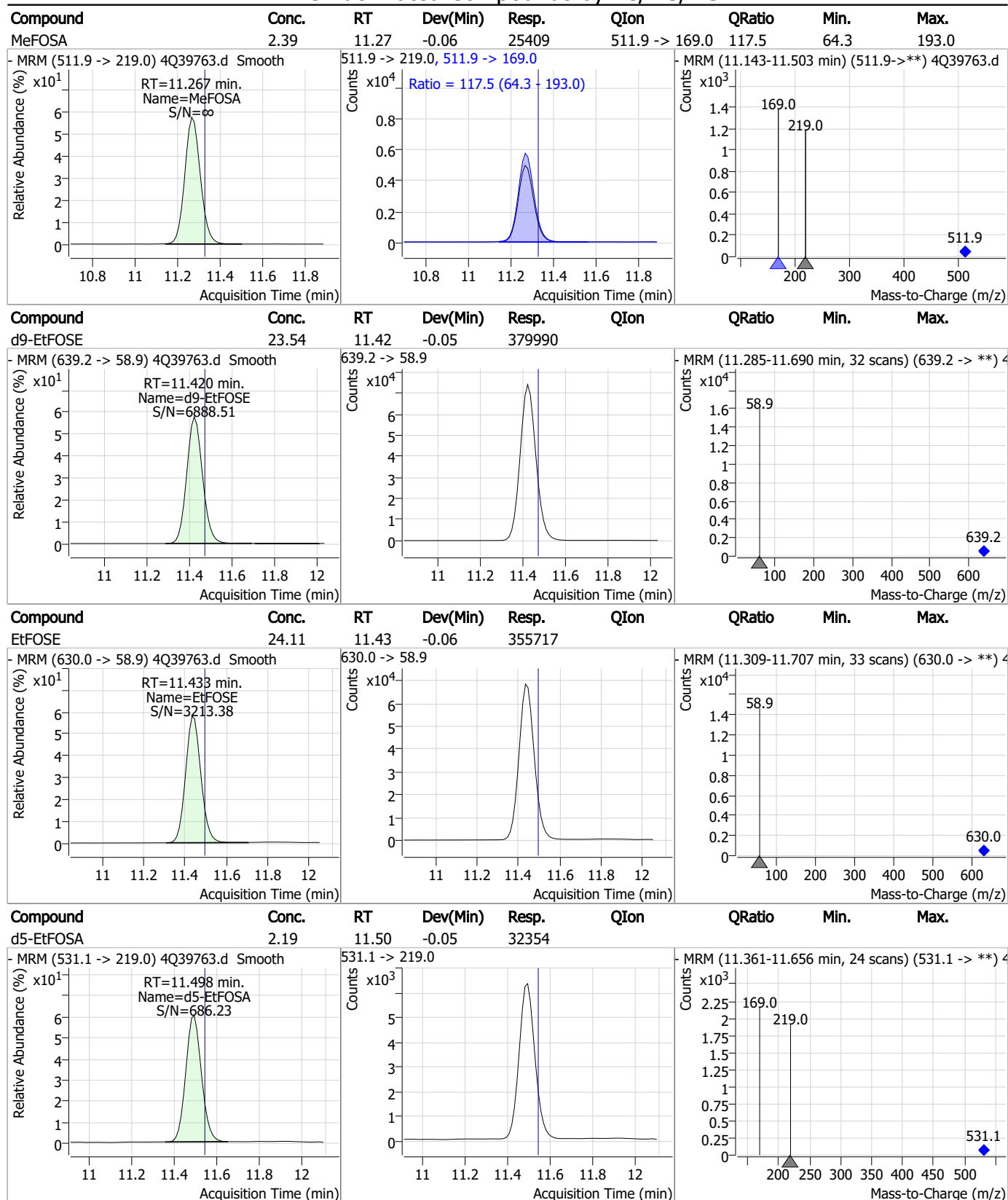
Perfluorinated Compounds by LC/MS/MS



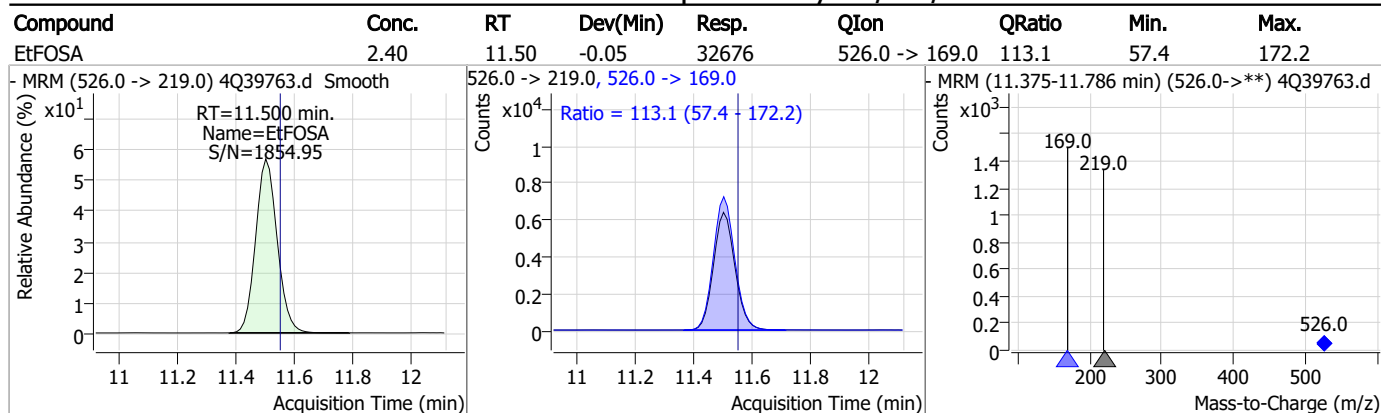
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q571-CC571

Lab FileID: 4Q39763.D

Injection Time: 01/26/23 06:30

Method: EPA DRAFT 1633

Analyst approved: 01/26/23 13:32 Natasha Guntie

Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.79	Split peak
MeFOSAA	2355-31-9		8.81	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.95	Split peak
EtFOSAA	2991-50-6		9.04	Split peak

7.6.17.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39794.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 1:55:13 PM
 Sample Name : cc571-4
 Vial : P1-A5
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q572.batch.bin
 Sample Information : op95096,S4Q572,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.086	216.8 -> 171.9	398108	10.00 µg/L	0.000
M5-PFPeA	4.763	268.3 -> 223.0	270367	5.00 µg/L	0.000
M5-PFHxA	6.060	318.0 -> 273.0	178772	2.50 µg/L	0.000
M4-PFHpA	7.030	367.1 -> 322.0	96722	2.50 µg/L	0.000
M8-PFOA	7.714	421.1 -> 376.0	150148	2.50 µg/L	0.000
M9-PFNA	8.297	472.1 -> 427.0	75053	1.25 µg/L	0.000
M6-PFDA	8.829	519.1 -> 474.1	59712	1.25 µg/L	0.000
M7-PFUnDA	9.311	570.0 -> 525.1	67840	1.25 µg/L	0.000
M2-PFDoDA	9.731	615.1 -> 570.0	66307	1.25 µg/L	0.000
M2-PFTeDA	10.437	715.2 -> 670.0	52809	1.25 µg/L	0.000
M8-FOSA	10.197	506.1 -> 77.8	56302	2.50 µg/L	0.000
M3-PFBS	5.977	302.1 -> 79.9	48094	2.50 µg/L	0.000
M3-PFHxS	7.841	402.1 -> 79.9	30641	2.50 µg/L	0.000
M8-PFOS	9.006	507.1 -> 79.9	39595	2.50 µg/L	0.000
M2-4:2FTS	5.709	329.1 -> 80.9	4689	5.00 µg/L	0.000
M2-6:2FTS	7.462	429.1 -> 80.9	8941	5.00 µg/L	0.000
M2-8:2FTS	8.591	529.1 -> 80.9	12682	5.00 µg/L	0.000
M3-MeFOSAA	8.874	573.2 -> 419.0	52516	5.00 µg/L	0.000
M3-HFPO-DA	6.452	286.9 -> 168.9	141564	10.00 µg/L	0.000
M5-EtFOSAA	9.084	589.2 -> 419.0	44075	5.00 µg/L	0.000
M7-MeFOSE	11.200	623.2 -> 58.9	287860	25.00 µg/L	0.000
M9-EtFOSE	11.433	639.2 -> 58.9	332507	25.00 µg/L	0.000
M5-EtFOSA	11.511	531.1 -> 219.0	28964	2.50 µg/L	0.000
M3-MeFOSA	11.277	515.0 -> 219.0	25010	2.50 µg/L	0.000
13C4-PFOS	9.007	502.8 -> 79.9	40607	2.50 µg/L	0.000
13C3-PFBA	3.090	216.0 -> 172.0	223492	5.00 µg/L	0.000
18O2-PFHxS	7.840	403.0 -> 83.9	20792	2.50 µg/L	0.000
13C4-PFOA	7.714	417.1 -> 372.0	171786	2.50 µg/L	0.000
13C2-PFDA	8.830	515.1 -> 470.1	53827	1.25 µg/L	0.000
13C5-PFNA	8.297	468.0 -> 423.0	85726	1.25 µg/L	0.000
13C2-PFHxA	6.061	315.1 -> 270.0	165602	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.709	329.1 -> 80.9	4689	6.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.1%		
13C2-6:2FTS	7.462	429.1 -> 80.9	8941	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.6%		
13C2-8:2FTS	8.591	529.1 -> 80.9	12682	5.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C2-PFDoDA	9.731	615.1 -> 570.0	66307	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C2-PFTeDA	10.437	715.2 -> 670.0	52809	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C3-PFBS	5.977	302.1 -> 79.9	48094	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C3-PFHxS	7.841	402.1 -> 79.9	30641	2.53 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C4-PFBA	3.086	216.8 -> 171.9	398108	9.88 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C4-PFHpA	7.030	367.1 -> 322.0	96722	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFHxA	6.060	318.0 -> 273.0	178772	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C5-PFPeA	4.763	268.3 -> 223.0	270367	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C6-PFDA	8.829	519.1 -> 474.1	59712	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C7-PFUnDA	9.311	570.0 -> 525.1	67840	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C8-FOSA	10.197	506.1 -> 77.8	56302	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOA	7.714	421.1 -> 376.0	150148	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOS	9.006	507.1 -> 79.9	39595	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C9-PFNA	8.297	472.1 -> 427.0	75053	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSAA	8.874	573.2 -> 419.0	52516	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C3-HFPO-DA	6.452	286.9 -> 168.9	141564	10.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
d3-MeFOSA	11.277	515.0 -> 219.0	25010	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%	
d5-EtFOSAA	9.084	589.2 -> 419.0	44075	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.5%	
d7-MeFOSE	11.200	623.2 -> 58.9	287860	23.77 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
d9-EtFOSE	11.433	639.2 -> 58.9	332507	23.97 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.9%	
d5-EtFOSA	11.511	531.1 -> 219.0	28964	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.5%	
Target Compounds					QValue
4:2FTS	5.710	327.1 -> 307.0	68320	8.92 µg/L	97
		327.1 -> 80.9	30620		
6:2FTS	7.462	427.1 -> 407.0	74052	10.45 µg/L	98
		427.1 -> 80.9	35324		
8:2FTS	8.592	527.1 -> 507.0	58087	9.47 µg/L	94
		527.1 -> 80.8	33208		
EtFOSAA	9.097	584.2 -> 419.1	15813	2.14 µg/L	m 98
		584.2 -> 526.0	7653		
FOSA	10.200	498.1 -> 77.9	52364	2.41 µg/L	100
		498.1 -> 478.0	1034		
MeFOSAA	8.875	570.1 -> 419.0	19267	2.48 µg/L	m 96
		570.1 -> 483.0	4119		
PFBA	3.095	212.8 -> 168.9	100222	9.05 µg/L	100
PFBS	5.978	298.7 -> 79.9	43371	2.00 µg/L	96
		298.7 -> 98.8	15811		
PFDA	8.830	512.9 -> 469.0	98244	2.31 µg/L	98
		512.9 -> 219.0	19418		
PFDODA	9.732	613.1 -> 569.0	127036	2.49 µg/L	97
		613.1 -> 319.0	16748		
PFDS	9.896	599.0 -> 79.9	21636	2.36 µg/L	94

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.030	599.0 -> 98.8	9188	2.47	µg/L	99
		363.1 -> 319.0	149146			
PFHpS	8.462	363.1 -> 169.0	25837	2.09	µg/L	93
		449.0 -> 79.9	33479			
PFHxA	6.063	449.0 -> 98.9	16917	2.33	µg/L	100
		313.0 -> 269.0	161748			
PFHxS	7.842	313.0 -> 118.9	4591	2.15	µg/L	91
		398.7 -> 79.9	21311			
PFNA	8.297	398.7 -> 98.9	11721	2.38	µg/L	99
		463.0 -> 419.0	130045			
PFNS	9.487	463.0 -> 219.0	30770	2.19	µg/L	96
		548.8 -> 79.9	15406			
PFOA	7.715	548.8 -> 98.9	7696	2.46	µg/L	98
		413.0 -> 369.0	164410			
PFOS	9.007	413.0 -> 169.0	31377	2.13	µg/L	99
		498.9 -> 79.9	39386			
PFPeA	4.754	498.9 -> 98.8	19444	4.84	µg/L	100
		263.0 -> 219.0	286743			
PFPeS	7.082	349.1 -> 79.9	20817	2.18	µg/L	98
		349.1 -> 98.9	7865			
PFTeDA	10.438	713.1 -> 669.0	119009	2.24	µg/L	99
		713.1 -> 168.9	9935			
PFTrDA	10.104	663.0 -> 619.0	157900	2.52	µg/L	97
		663.0 -> 168.9	14835			
PFUnDA	9.311	563.1 -> 519.0	87812	2.14	µg/L	98
		563.1 -> 269.1	16657			
11Cl-PF3OUdS	10.156	630.9 -> 450.9	313532	9.48	µg/L	99
		632.9 -> 452.9	94242			
9Cl-PF3ONS	9.351	530.8 -> 351.0	320808	7.96	µg/L	98
		532.8 -> 353.0	98570			
ADONA	7.294	376.9 -> 250.9	683992	8.96	µg/L	99
		376.9 -> 84.8	238274			
HFPO-DA	6.453	284.9 -> 168.9	131257	9.84	µg/L	99
		284.9 -> 184.9	14226			
3:3FTCA	4.098	241.0 -> 177.0	29904	10.76	µg/L	99
		241.0 -> 117.0	2767			
5:3FTCA	6.681	341.0 -> 237.1	498285	53.89	µg/L	99
		341.0 -> 217.0	373731			
7:3FTCA	8.199	441.0 -> 316.9	291537	54.90	µg/L	99
		441.0 -> 336.9	652330			
EtFOSA	11.512	526.0 -> 219.0	29004	2.38	µg/L	98
		526.0 -> 169.0	32591			
EtFOSE	11.446	630.0 -> 58.9	318518	24.67	µg/L	100
		511.9 -> 219.0	21907			
MeFOSA	11.292	511.9 -> 169.0	24746	2.30	µg/L	86
		616.1 -> 58.9	305968			
MeFOSE	11.213	699.1 -> 79.9	18462	25.16	µg/L	100
		699.1 -> 98.8	9951			
PFDoDS	10.577	295.0 -> 201.0	22119	4.84	µg/L	100
		295.0 -> 84.9	6457			
NFDHA	5.929	279.0 -> 85.1	170652	4.62	µg/L	100
		229.0 -> 84.9	169102			
PFMBA	3.782	314.8 -> 134.9	249646	4.43	µg/L	100
		314.8 -> 82.9	7654			
PFEESA	6.546			4.20	µg/L	100

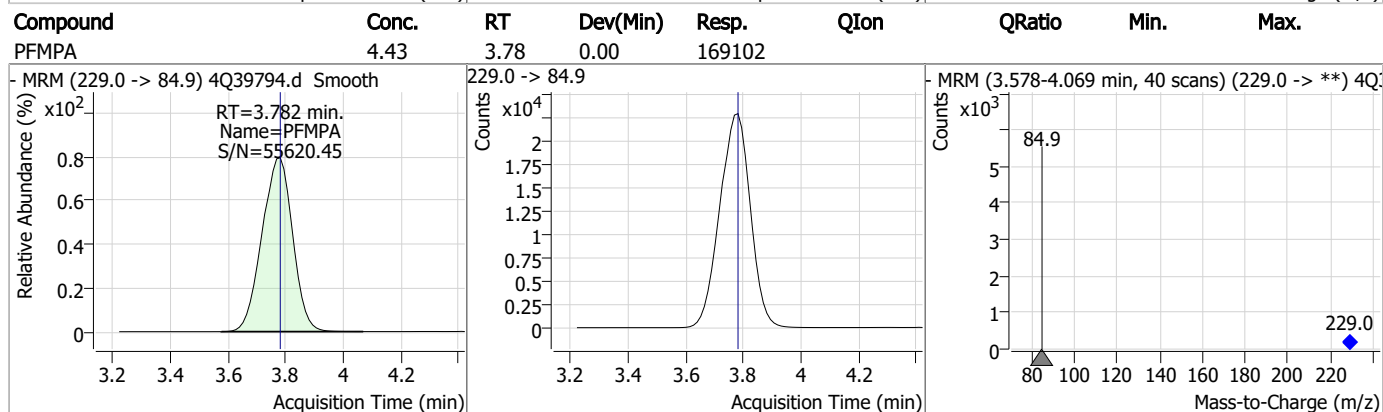
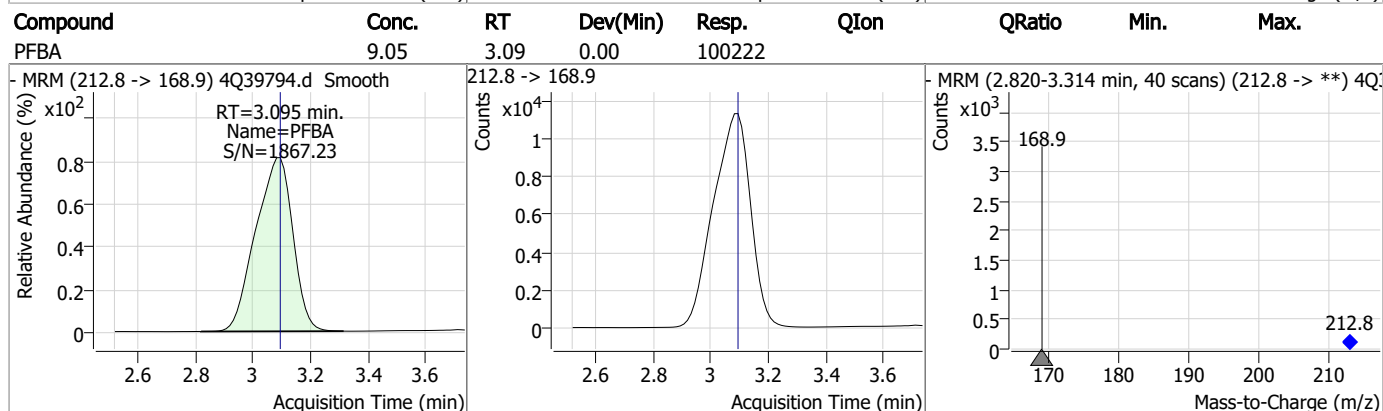
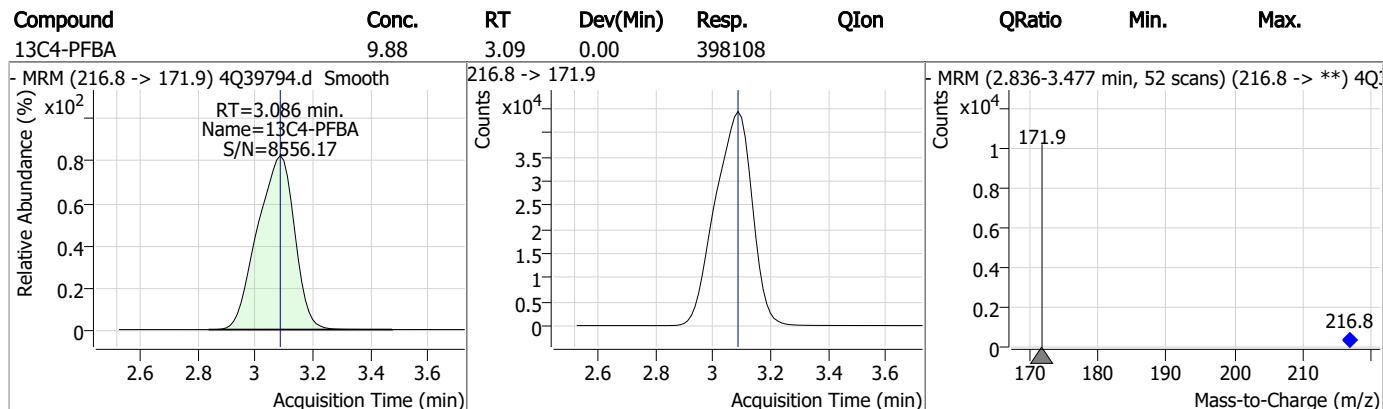
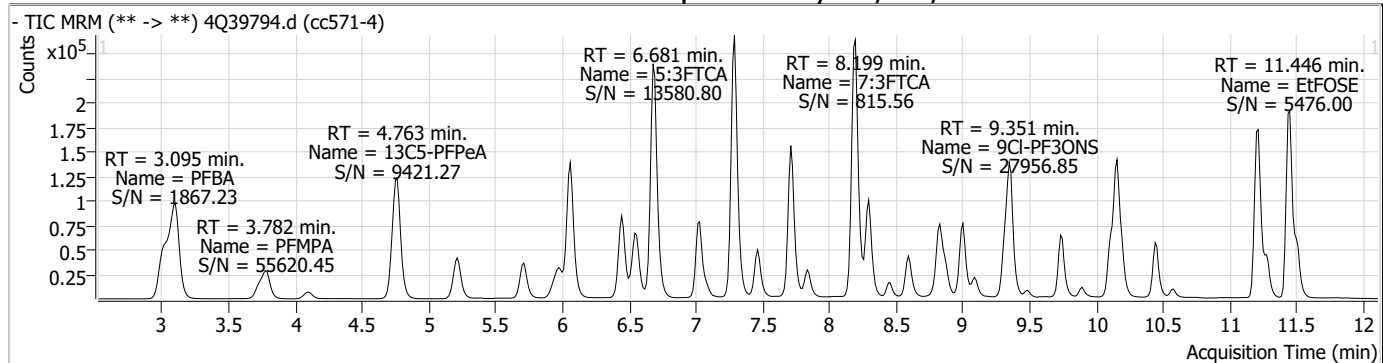
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

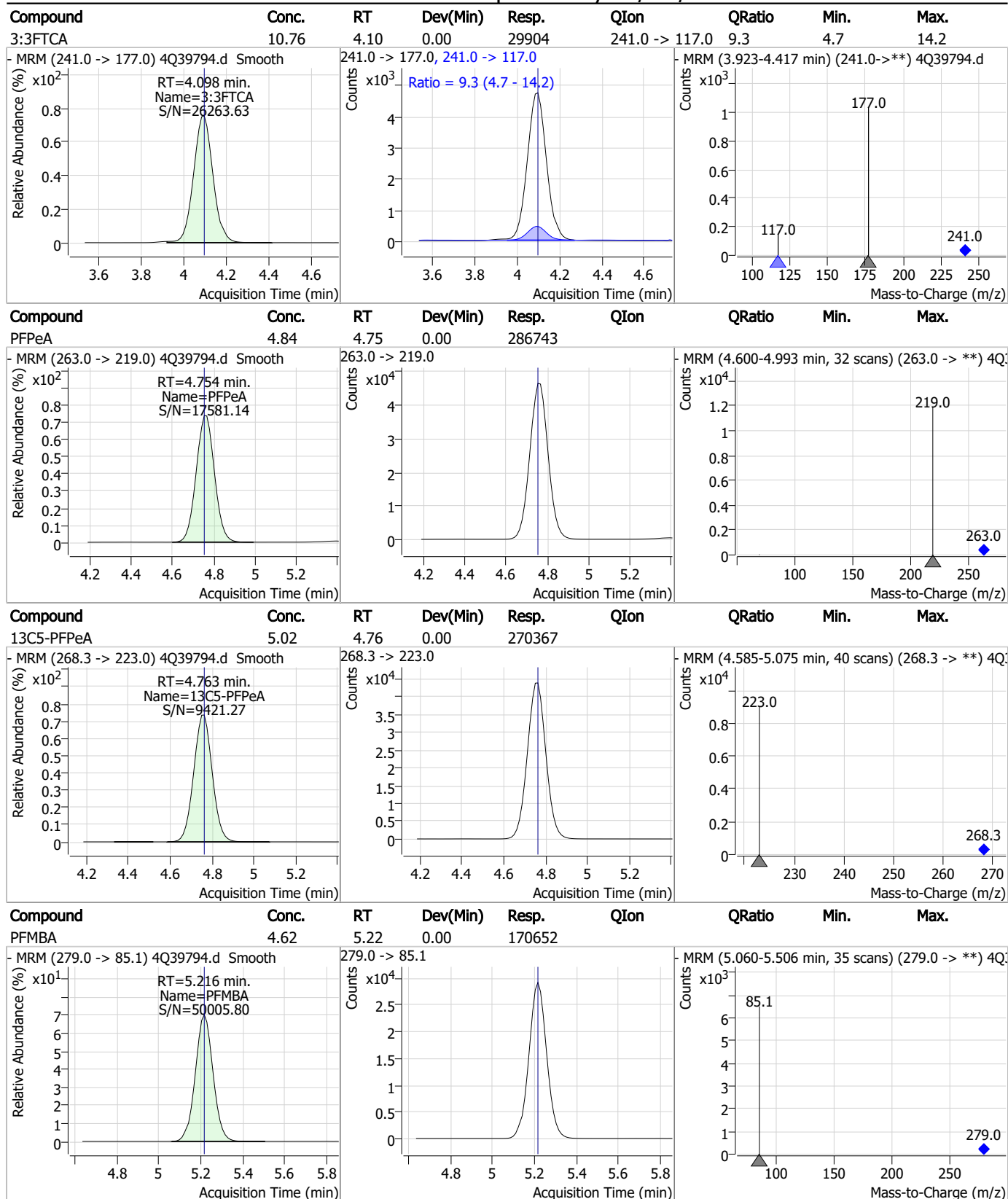
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.6.18
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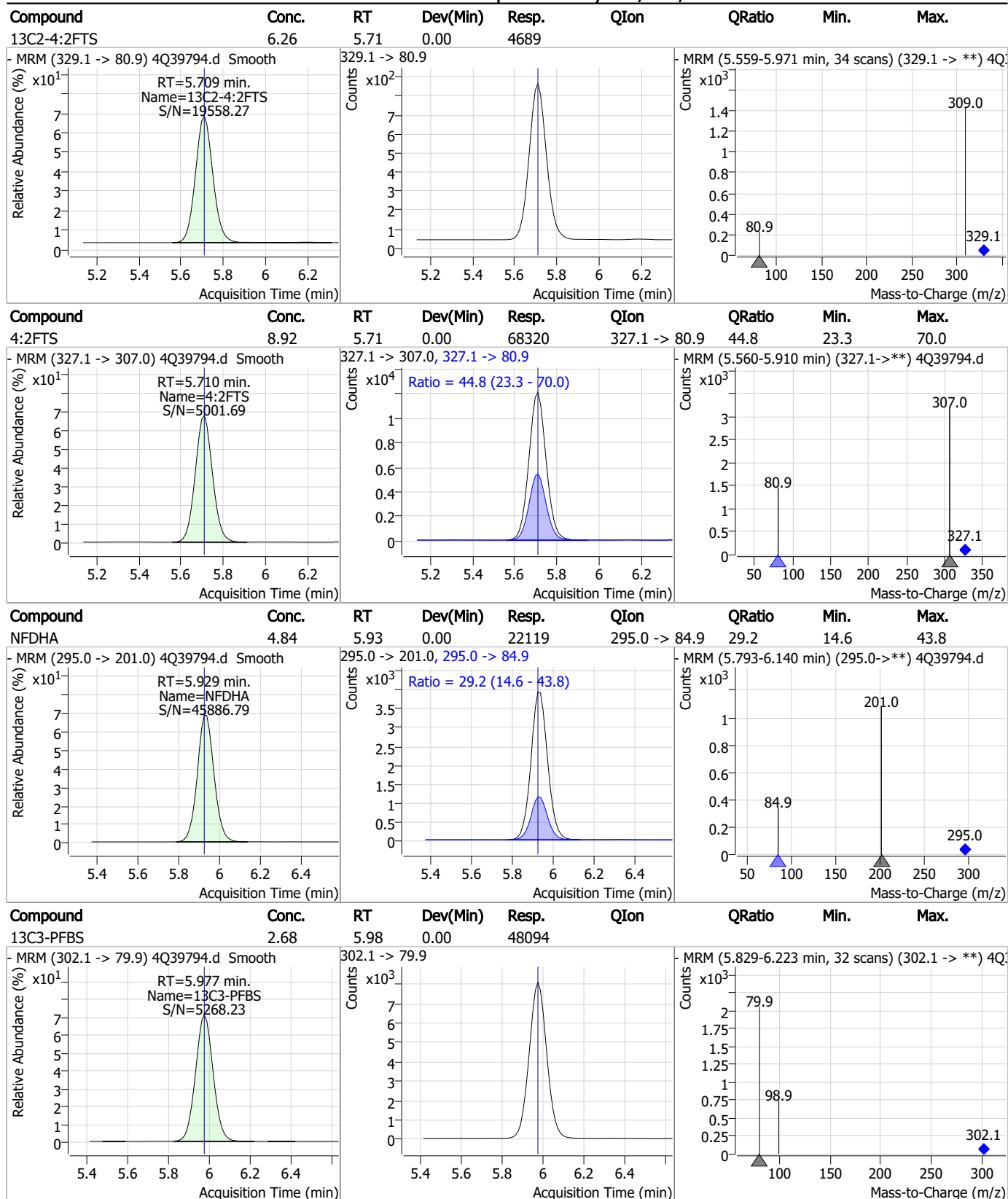
Perfluorinated Compounds by LC/MS/MS



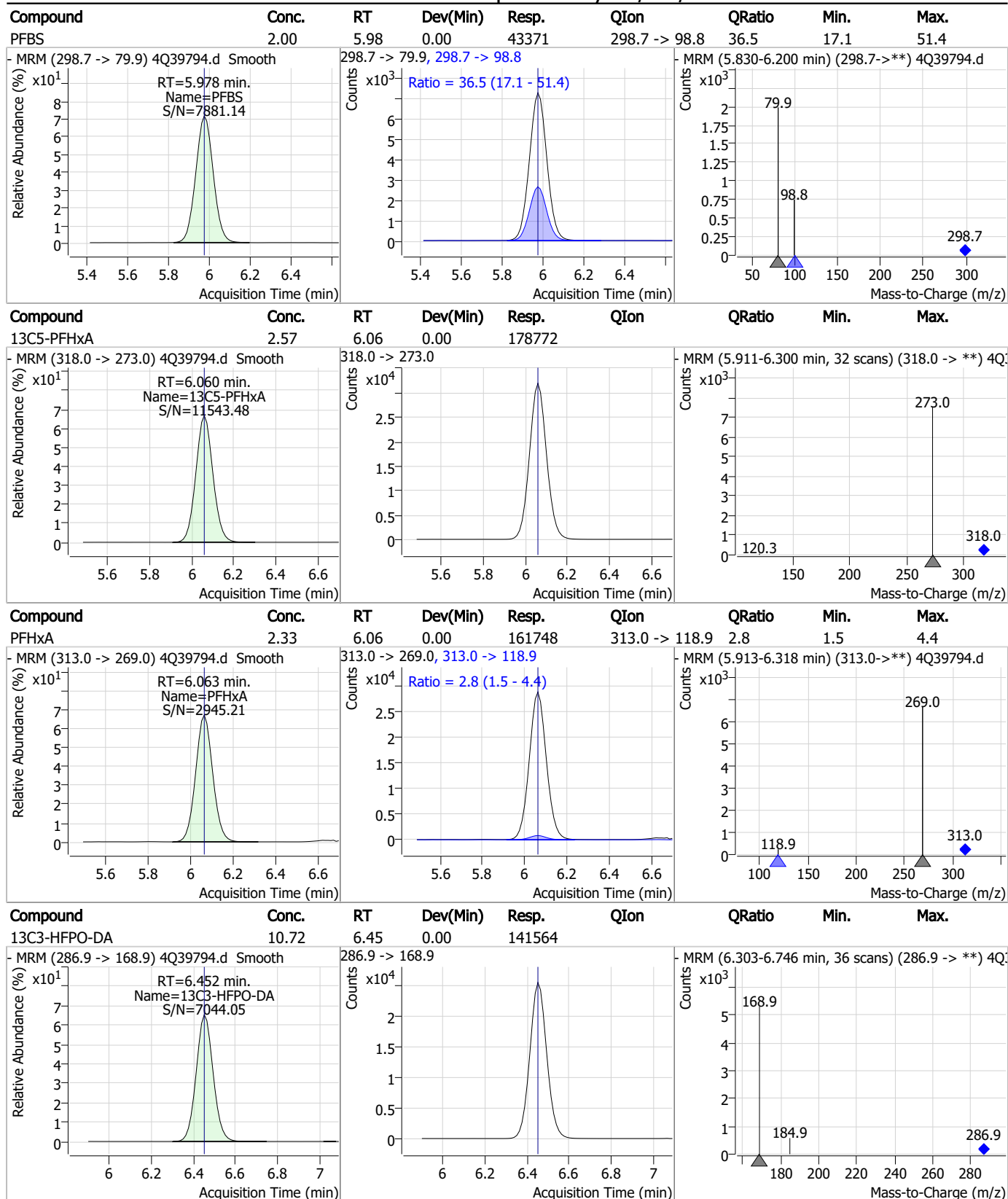
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



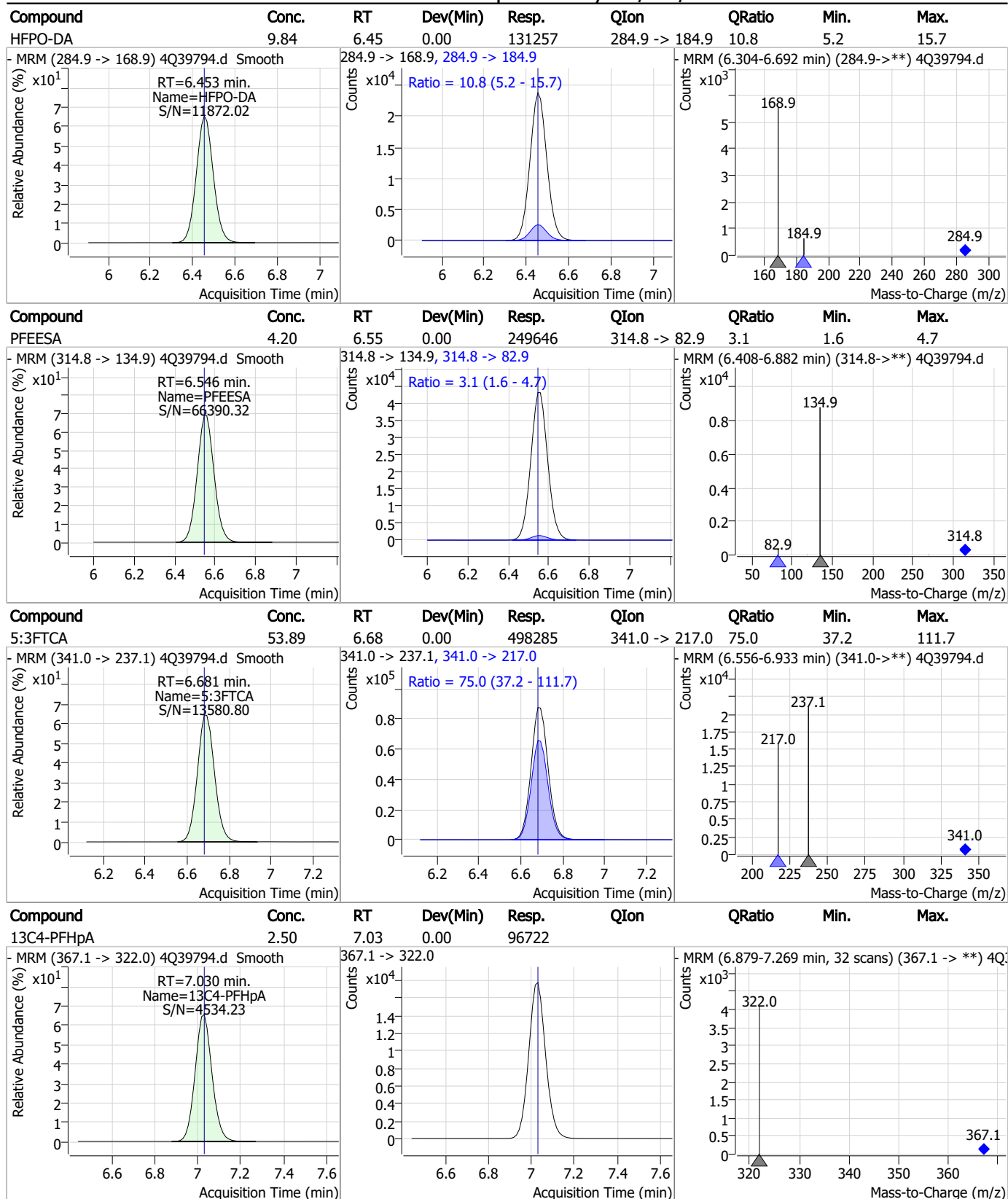
Perfluorinated Compounds by LC/MS/MS



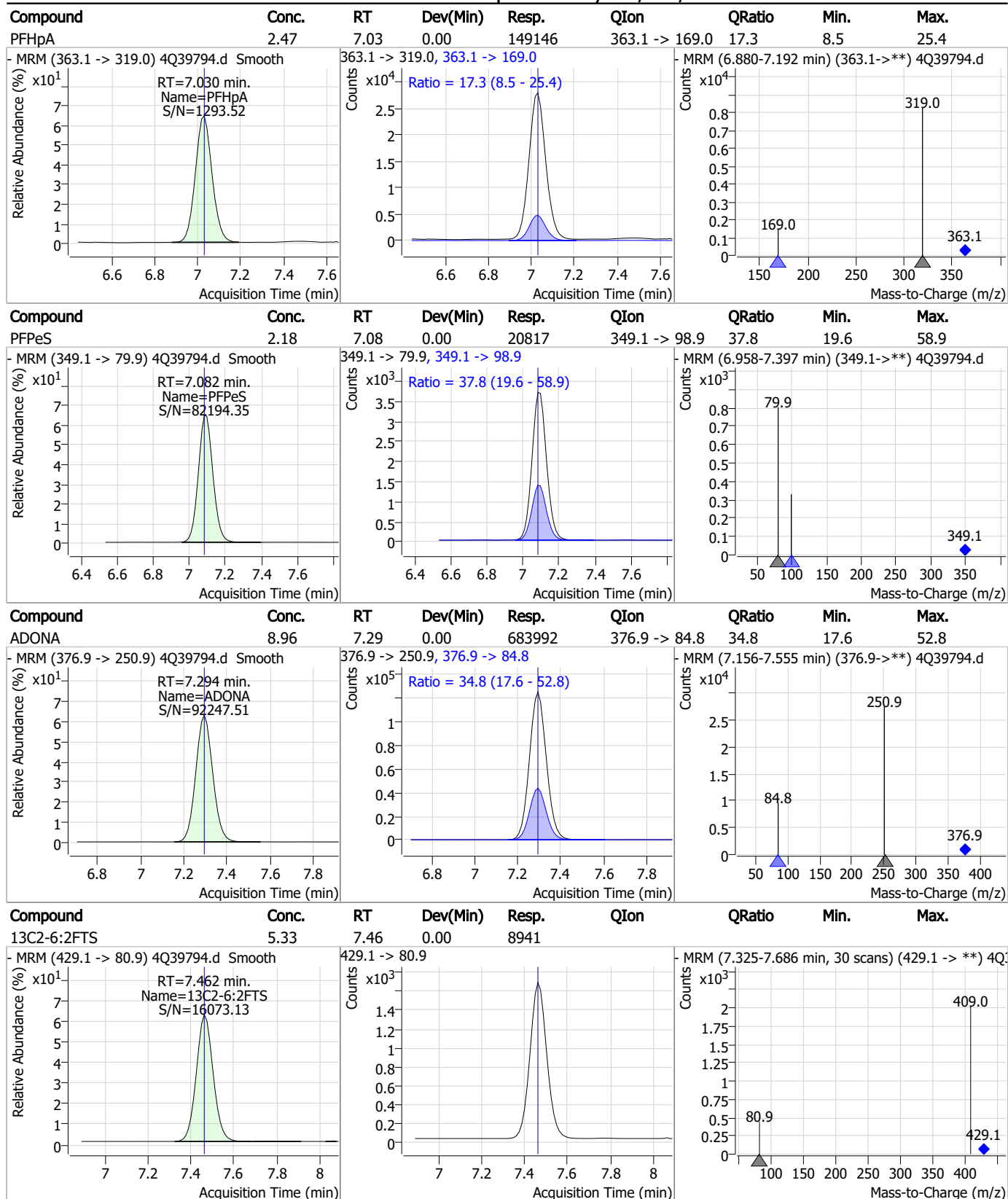
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Perfluorinated Compounds by LC/MS/MS



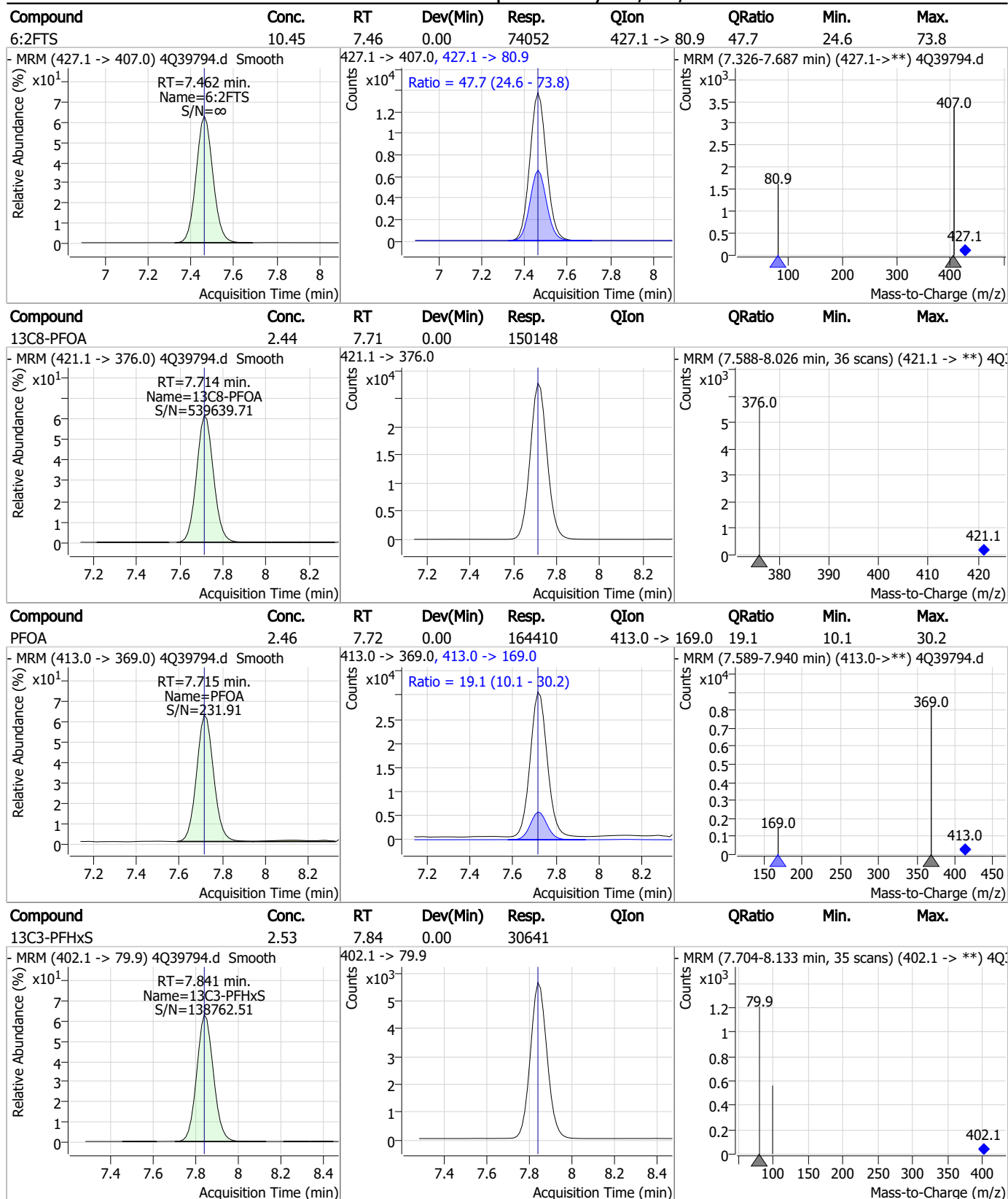
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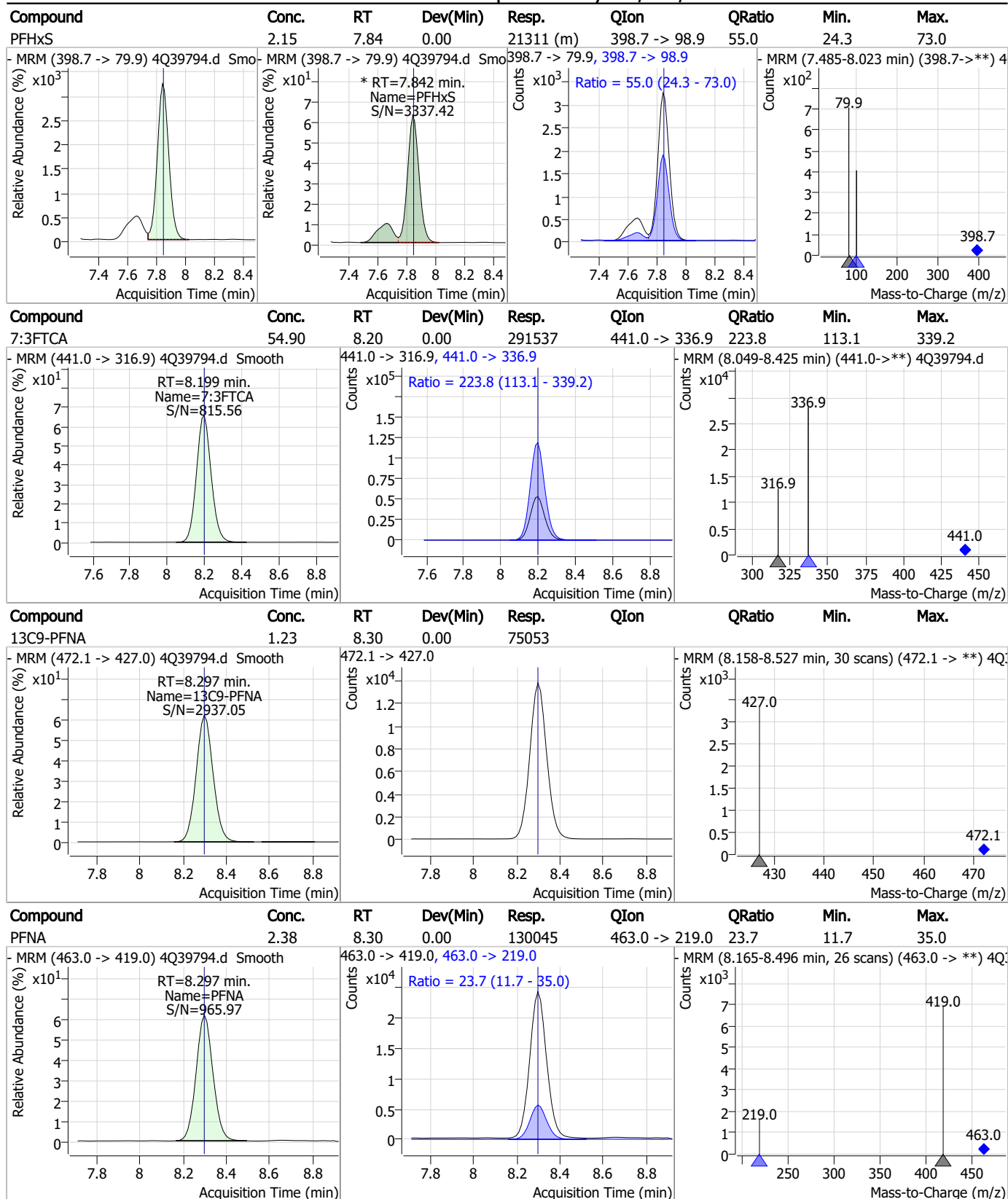
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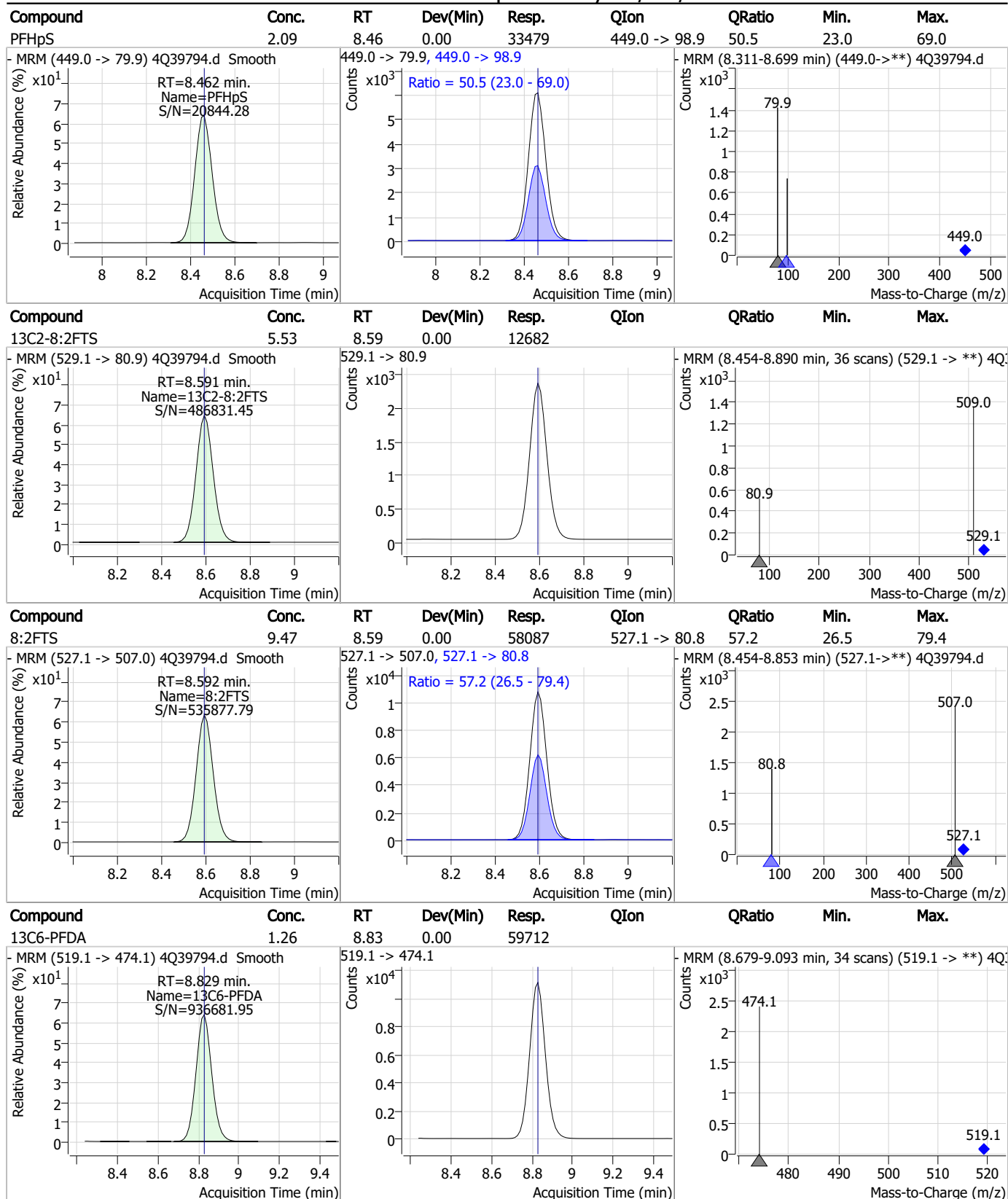
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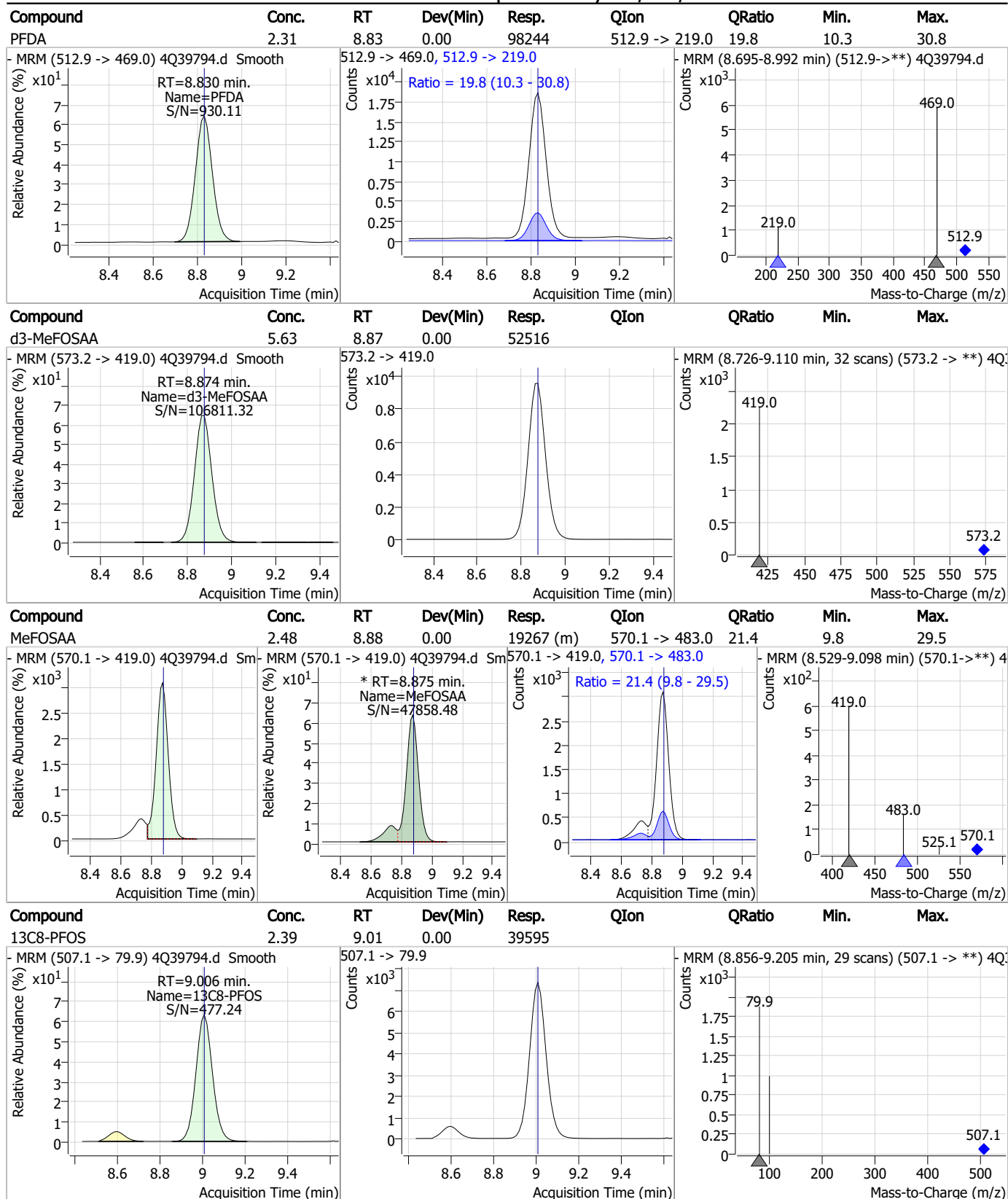
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



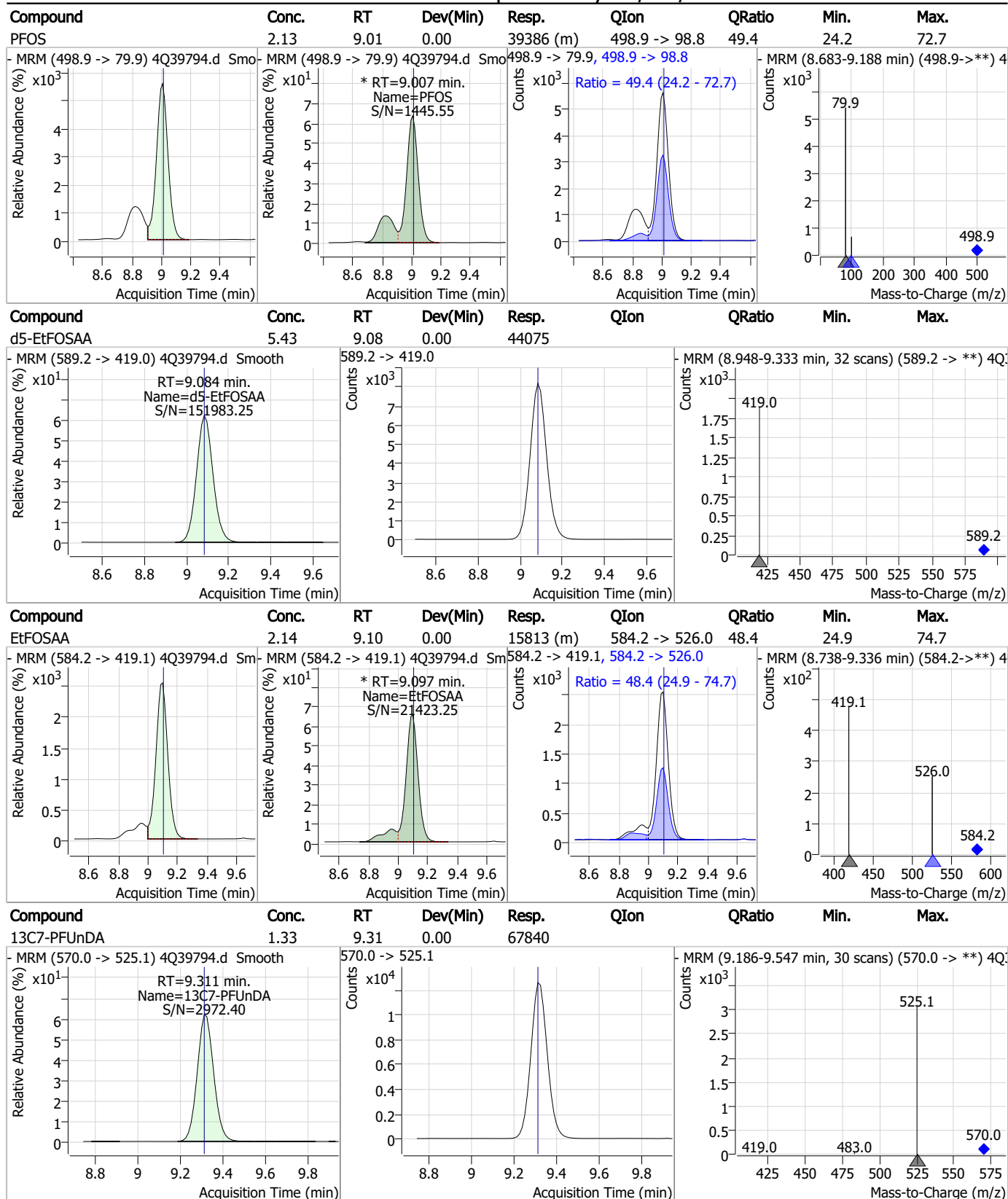
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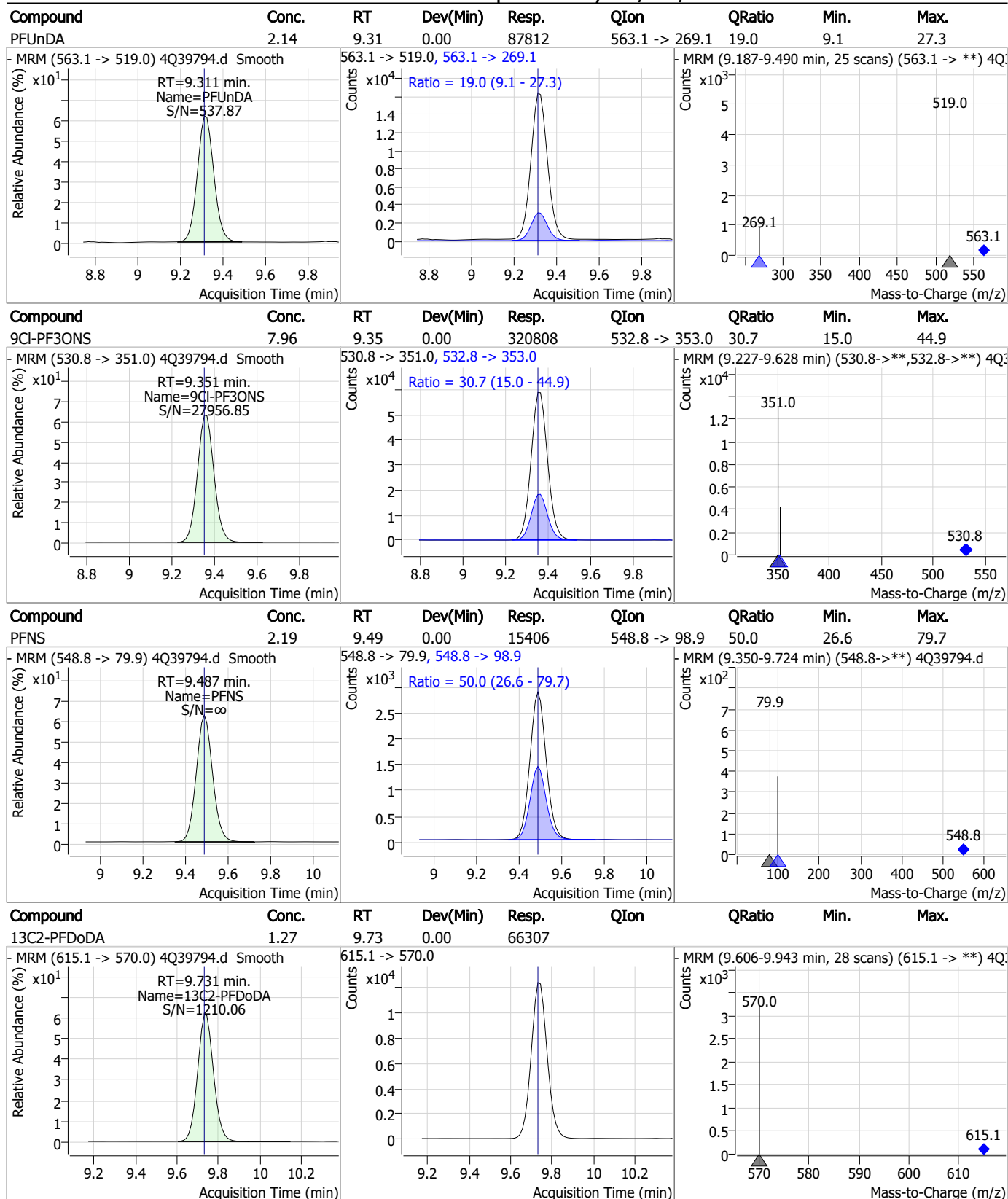
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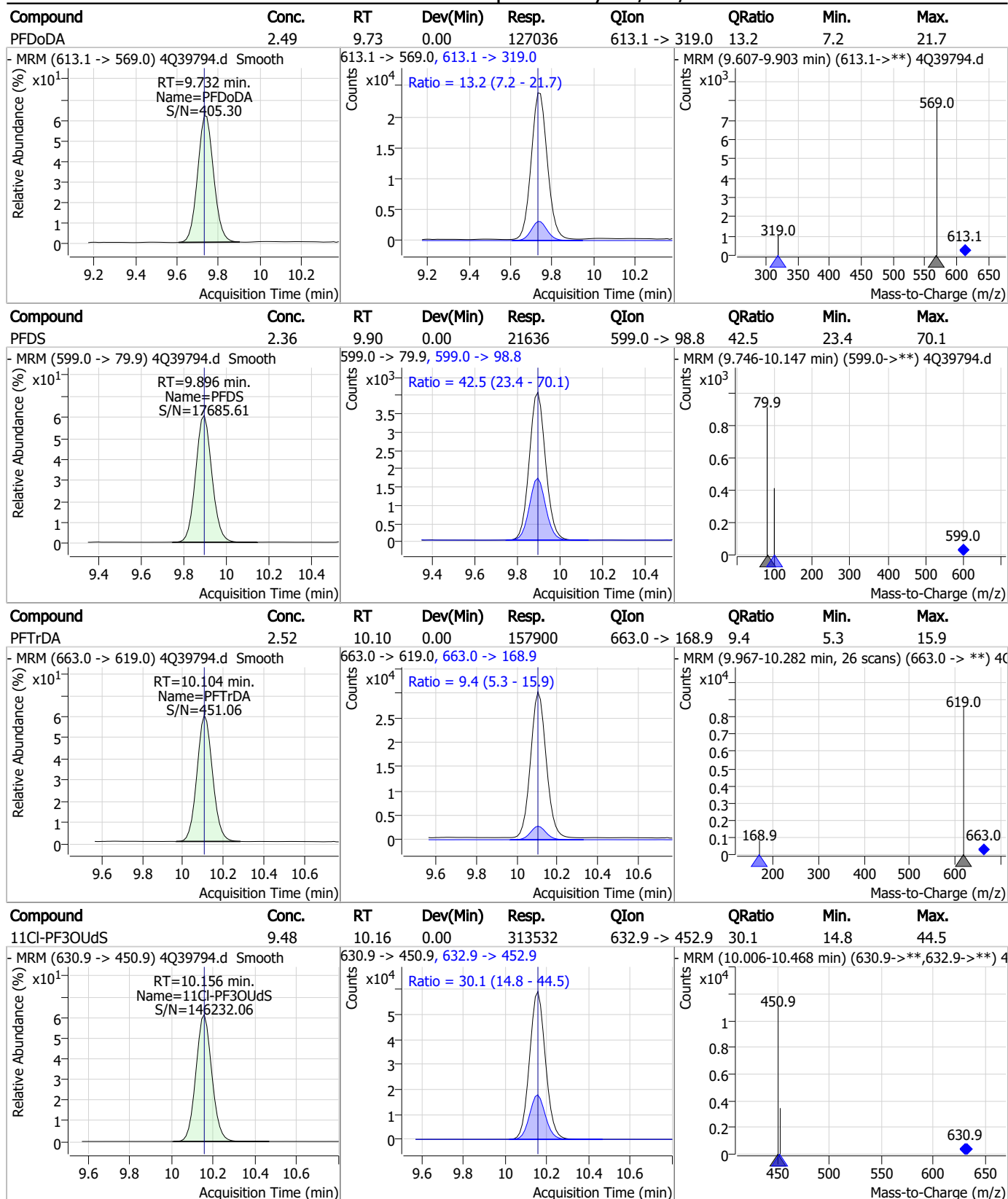
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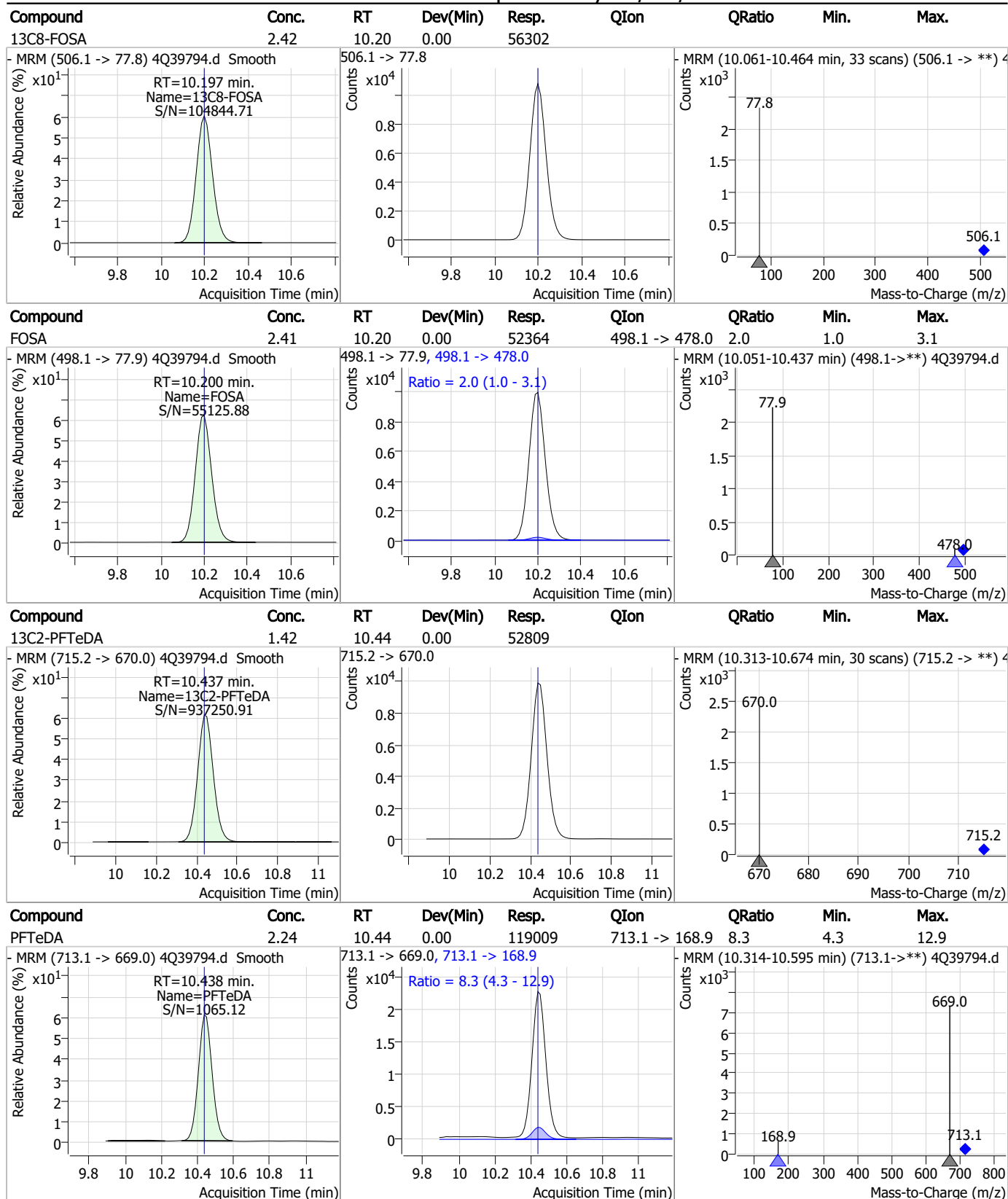
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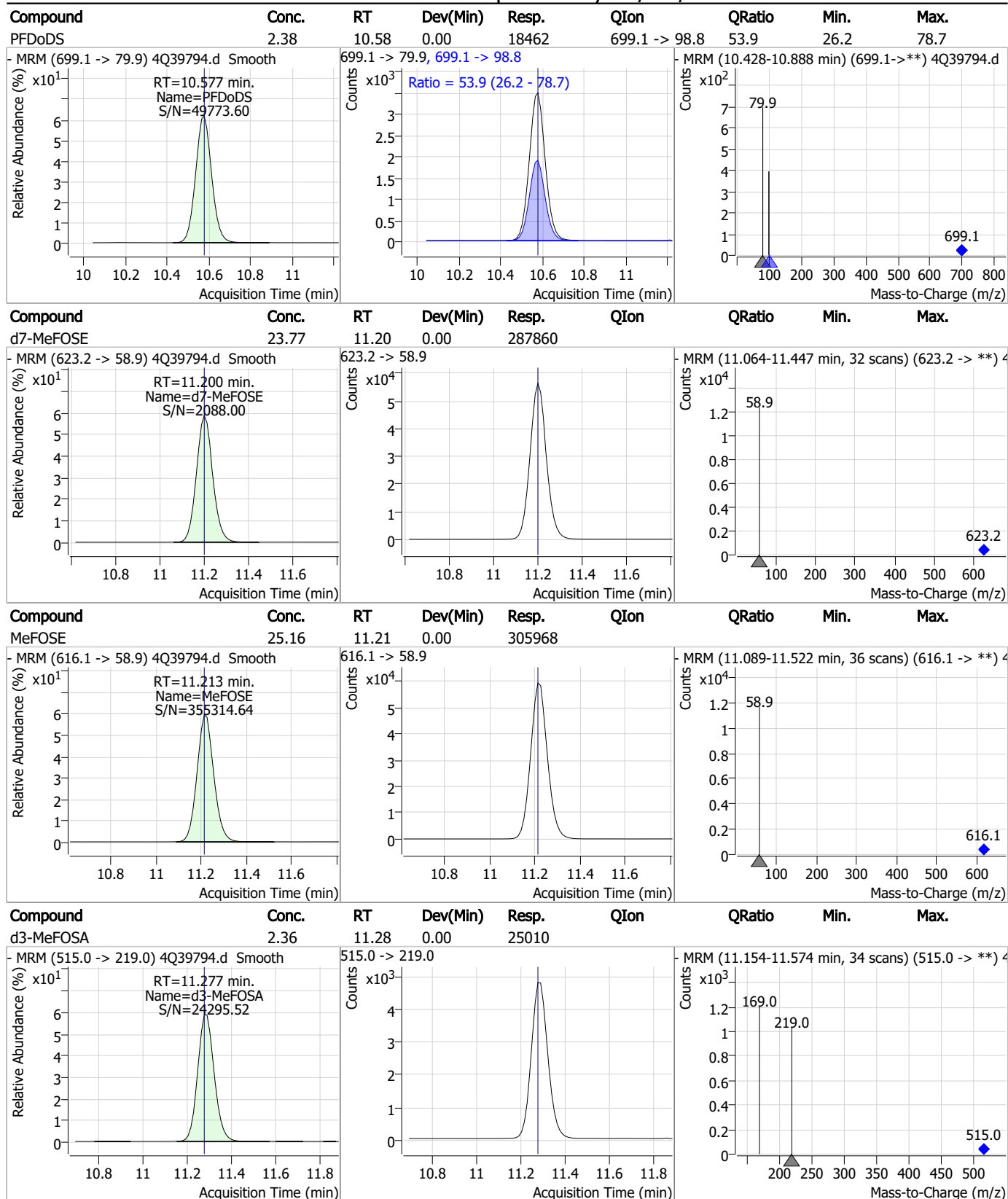
Perfluorinated Compounds by LC/MS/MS



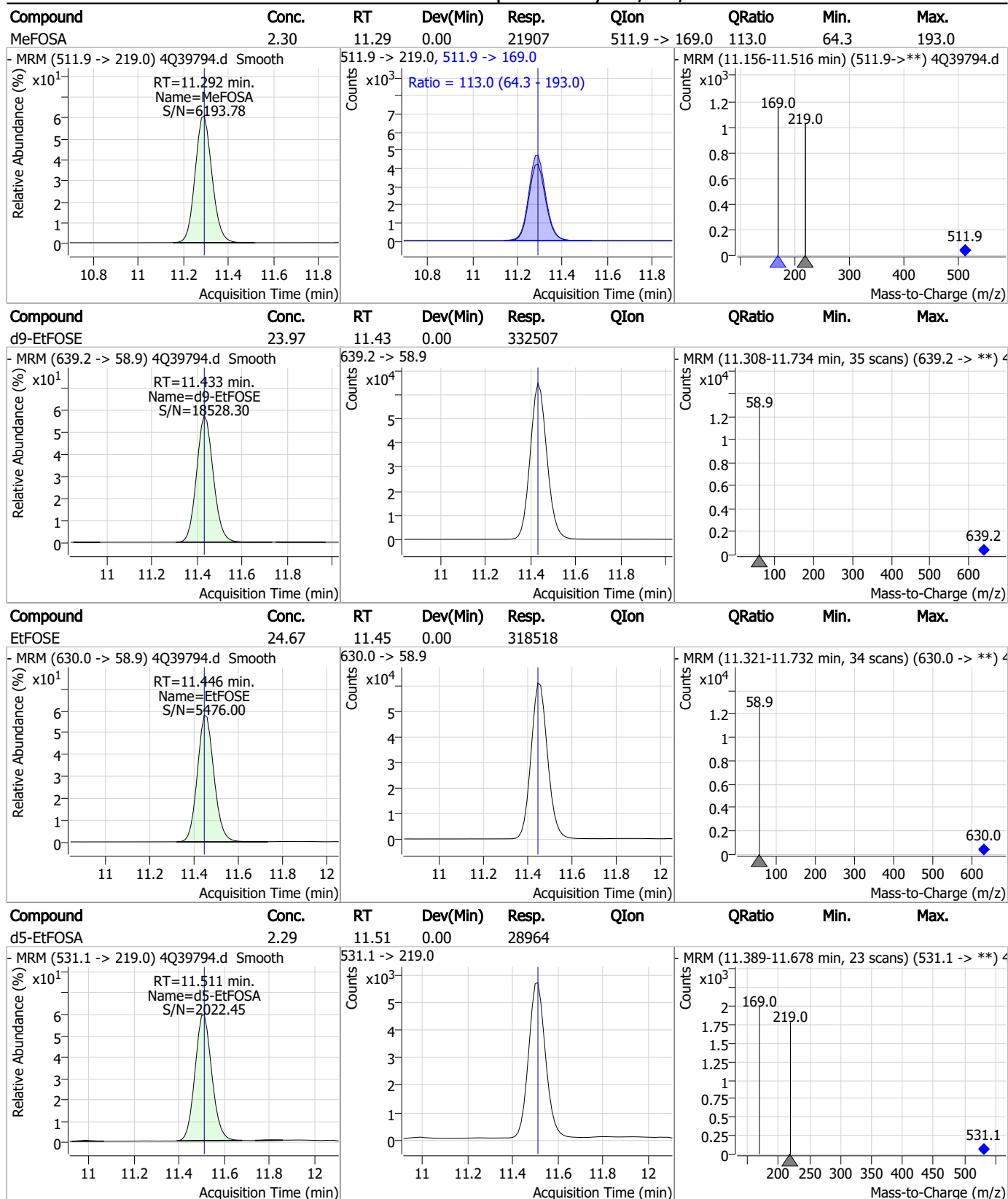
Perfluorinated Compounds by LC/MS/MS



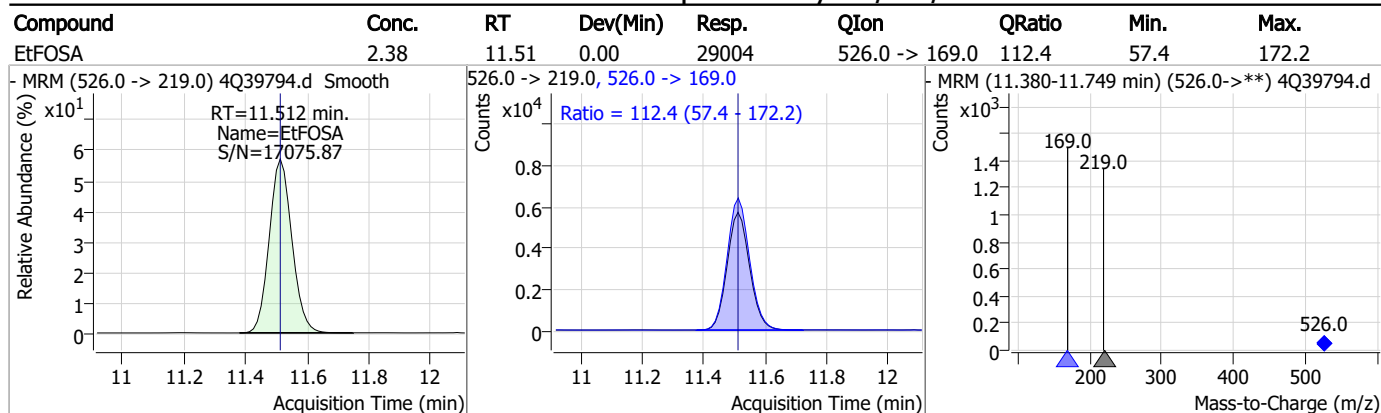
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S4Q572-CC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39794.D

Analyst approved: 01/27/23 10:21 Natasha Guntie

Injection Time: 01/26/23 13:55

Supervisor approved: 01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.84	Split peak
MeFOSAA	2355-31-9		8.88	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.01	Split peak
EtFOSAA	2991-50-6		9.10	Split peak

7.6.18.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39795.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 2:12:46 PM
 Sample Name : cc571-1.0LL
 Vial : P1-A2
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q572.batch.bin
 Sample Information : op95096,S4Q572,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.161	216.8 -> 171.9	370912	10.00 µg/L	0.075
M5-PFPeA	4.801	268.3 -> 223.0	255261	5.00 µg/L	0.037
M5-PFHxA	6.084	318.0 -> 273.0	167567	2.50 µg/L	0.025
M4-PFHpA	7.042	367.1 -> 322.0	83741	2.50 µg/L	0.012
M8-PFOA	7.726	421.1 -> 376.0	144679	2.50 µg/L	0.012
M9-PFNA	8.284	472.1 -> 427.0	71157	1.25 µg/L	-0.012
M6-PFDA	8.804	519.1 -> 474.1	54319	1.25 µg/L	-0.025
M7-PFUnDA	9.286	570.0 -> 525.1	61479	1.25 µg/L	-0.025
M2-PFDoDA	9.718	615.1 -> 570.0	63326	1.25 µg/L	-0.013
M2-PFTeDA	10.437	715.2 -> 670.0	47956	1.25 µg/L	0.000
M8-FOSA	10.185	506.1 -> 77.8	51067	2.50 µg/L	-0.012
M3-PFBS	6.014	302.1 -> 79.9	45026	2.50 µg/L	0.038
M3-PFHxS	7.854	402.1 -> 79.9	28879	2.50 µg/L	0.012
M8-PFOS	8.981	507.1 -> 79.9	36813	2.50 µg/L	-0.025
M2-4:2FTS	5.734	329.1 -> 80.9	5268	5.00 µg/L	0.025
M2-6:2FTS	7.474	429.1 -> 80.9	8720	5.00 µg/L	0.012
M2-8:2FTS	8.567	529.1 -> 80.9	12580	5.00 µg/L	-0.025
M3-MeFOSAA	8.837	573.2 -> 419.0	48402	5.00 µg/L	-0.037
M3-HFPO-DA	6.477	286.9 -> 168.9	130377	10.00 µg/L	0.025
M5-EtFOSAA	9.059	589.2 -> 419.0	39748	5.00 µg/L	-0.025
M7-MeFOSE	11.200	623.2 -> 58.9	268552	25.00 µg/L	0.000
M9-EtFOSE	11.433	639.2 -> 58.9	310336	25.00 µg/L	0.000
M5-EtFOSA	11.498	531.1 -> 219.0	26691	2.50 µg/L	-0.012
M3-MeFOSA	11.277	515.0 -> 219.0	21906	2.50 µg/L	0.000
13C4-PFOS	8.969	502.8 -> 79.9	36920	2.50 µg/L	-0.037
13C3-PFBA	3.165	216.0 -> 172.0	209263	5.00 µg/L	0.075
18O2-PFHxS	7.853	403.0 -> 83.9	19911	2.50 µg/L	0.012
13C4-PFOA	7.727	417.1 -> 372.0	159696	2.50 µg/L	0.012
13C2-PFDA	8.805	515.1 -> 470.1	52011	1.25 µg/L	-0.025
13C5-PFNA	8.285	468.0 -> 423.0	79427	1.25 µg/L	-0.012
13C2-PFHxA	6.085	315.1 -> 270.0	155612	2.50 µg/L	0.025
System Monitoring Compounds					
13C2-4:2FTS	5.734	329.1 -> 80.9	5268	7.34 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 146.8%		
13C2-6:2FTS	7.474	429.1 -> 80.9	8720	5.43 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C2-8:2FTS	8.567	529.1 -> 80.9	12580	5.72 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.5%		
13C2-PFDoDA	9.718	615.1 -> 570.0	63326	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-PFTeDA	10.437	715.2 -> 670.0	47956	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C3-PFBS	6.014	302.1 -> 79.9	45026	2.62 µg/L	0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFHxS	7.854	402.1 -> 79.9	28879	2.49 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 = 99.5%	
13C4-PFBA	3.161	216.8 -> 171.9	370912	9.83 µg/L	0.075
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C4-PFHpA	7.042	367.1 -> 322.0	83741	2.31 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C5-PFHxA	6.084	318.0 -> 273.0	167567	2.56 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C5-PFPeA	4.801	268.3 -> 223.0	255261	5.04 µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C6-PFDA	8.804	519.1 -> 474.1	54319	1.18 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C7-PFUnDA	9.286	570.0 -> 525.1	61479	1.25 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-FOSA	10.185	506.1 -> 77.8	51067	2.42 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C8-PFOA	7.726	421.1 -> 376.0	144679	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-PFOS	8.981	507.1 -> 79.9	36813	2.44 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C9-PFNA	8.284	472.1 -> 427.0	71157	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
d3-MeFOSAA	8.837	573.2 -> 419.0	48402	5.71 µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.2%	
13C3-HFPO-DA	6.477	286.9 -> 168.9	130377	10.50 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
d3-MeFOSA	11.277	515.0 -> 219.0	21906	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.8%	
d5-EtFOSAA	9.059	589.2 -> 419.0	39748	5.38 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
d7-MeFOSE	11.200	623.2 -> 58.9	268552	24.39 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
d9-EtFOSE	11.433	639.2 -> 58.9	310336	24.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d5-EtFOSA	11.498	531.1 -> 219.0	26691	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%	
Target Compounds					QValue
4:2FTS	5.734	327.1 -> 307.0	5105	0.59 µg/L	92
		327.1 -> 80.9	2649		
6:2FTS	7.475	427.1 -> 407.0	5201	0.75 µg/L	96
		427.1 -> 80.9	2424		
8:2FTS	8.567	527.1 -> 507.0	4541	0.75 µg/L	100
		527.1 -> 80.8	2389		
EtFOSAA	9.060	584.2 -> 419.1	1115	0.17 µg/L	m 93
		584.2 -> 526.0	500		
FOSA	10.188	498.1 -> 77.9	3519	0.18 µg/L	# 93
		498.1 -> 478.0	154		
MeFOSAA	8.850	570.1 -> 419.0	1625	0.23 µg/L	m 85
		570.1 -> 483.0	207		
PFBA	3.170	212.8 -> 168.9	6552	0.63 µg/L	100
PFBS	6.015	298.7 -> 79.9	2925	0.14 µg/L	97
		298.7 -> 98.8	1046		
PFDA	8.805	512.9 -> 469.0	7594	0.20 µg/L	92
		512.9 -> 219.0	1268		
PFDODA	9.706	613.1 -> 569.0	8788	0.18 µg/L	99
		613.1 -> 319.0	1250		
PFDS	9.870	599.0 -> 79.9	1281	0.15 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.043	599.0 -> 98.8	636	0.17	µg/L	100
		363.1 -> 319.0	9033			
		363.1 -> 169.0	1532			
PFHpS	8.449	449.0 -> 79.9	2615	0.18	µg/L	88
		449.0 -> 98.9	1410			
PFHxA	6.087	313.0 -> 269.0	9802	0.15	µg/L	97
		313.0 -> 118.9	390			
PFHxS	7.842	398.7 -> 79.9	1937	0.21	µg/L	96
		398.7 -> 98.9	891			
PFNA	8.285	463.0 -> 419.0	8233	0.16	µg/L	99
		463.0 -> 219.0	1969			
PFNS	9.462	548.8 -> 79.9	1090	0.17	µg/L	87
		548.8 -> 98.9	682			
PFOA	7.728	413.0 -> 369.0	9567	0.15	µg/L	94
		413.0 -> 169.0	2176			
PFOS	8.983	498.9 -> 79.9	2907	0.17	µg/L	100
		498.9 -> 98.8	1404			
PFPeA	4.804	263.0 -> 219.0	18446	0.33	µg/L	100
PFPeS	7.108	349.1 -> 79.9	1382	0.15	µg/L	92
		349.1 -> 98.9	477			
PFTeDA	10.426	713.1 -> 669.0	8270	0.17	µg/L	100
		713.1 -> 168.9	703			
PFTrDA	10.092	663.0 -> 619.0	10052	0.17	µg/L	95
		663.0 -> 168.9	868			
PFUnDA	9.287	563.1 -> 519.0	6981	0.19	µg/L	97
		563.1 -> 269.1	1182			
11CI-PF3OUdS	10.144	630.9 -> 450.9	20570	0.67	µg/L	92
		632.9 -> 452.9	5247			
9CI-PF3ONS	9.326	530.8 -> 351.0	20845	0.56	µg/L	94
		532.8 -> 353.0	5601			
ADONA	7.306	376.9 -> 250.9	45128	0.64	µg/L	97
		376.9 -> 84.8	14997			
HFPO-DA	6.478	284.9 -> 168.9	7611	0.62	µg/L	90
		284.9 -> 184.9	1090			
3:3FTCA	4.173	241.0 -> 177.0	1881	0.72	µg/L	100
		241.0 -> 117.0	182			
5:3FTCA	6.721	341.0 -> 237.1	34003	3.92	µg/L	98
		341.0 -> 217.0	25909			
7:3FTCA	8.199	441.0 -> 316.9	19730	3.96	µg/L	99
		441.0 -> 336.9	44126			
EtFOSA	11.512	526.0 -> 219.0	1951	0.17	µg/L	99
		526.0 -> 169.0	2270			
EtFOSE	11.446	630.0 -> 58.9	22782	1.89	µg/L	100
MeFOSA	11.279	511.9 -> 219.0	1648	0.20	µg/L	82
		511.9 -> 169.0	1781			
MeFOSE	11.213	616.1 -> 58.9	20603	1.82	µg/L	100
PFDoDS	10.565	699.1 -> 79.9	1291	0.18	µg/L	94
		699.1 -> 98.8	625			
NFDHA	5.966	295.0 -> 201.0	1730	0.40	µg/L	93
		295.0 -> 84.9	439			
PFMBA	5.253	279.0 -> 85.1	11339	0.32	µg/L	100
PFMPA	3.832	229.0 -> 84.9	11445	0.32	µg/L	100
PFEEA	6.571	314.8 -> 134.9	16410	0.29	µg/L	98
		314.8 -> 82.9	649			

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

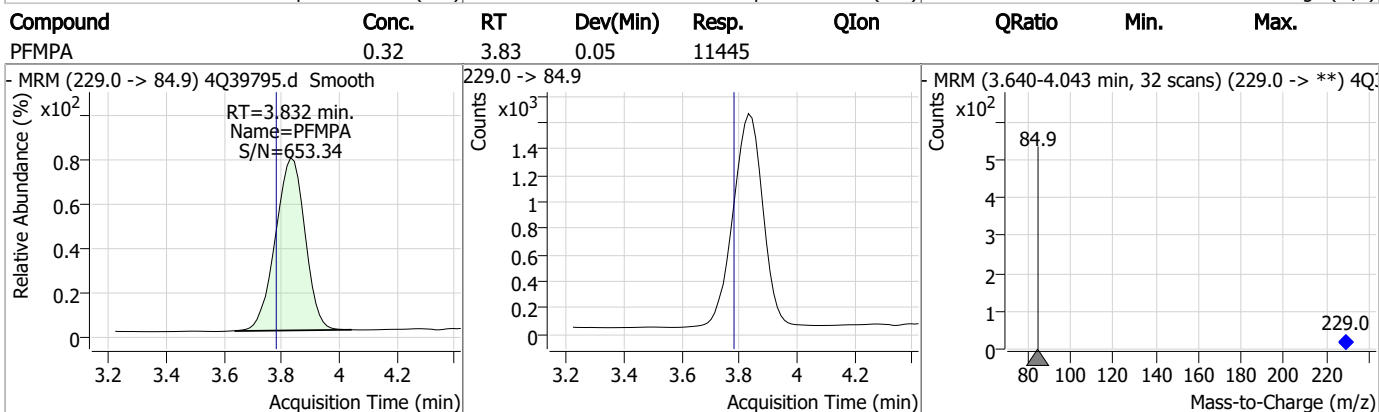
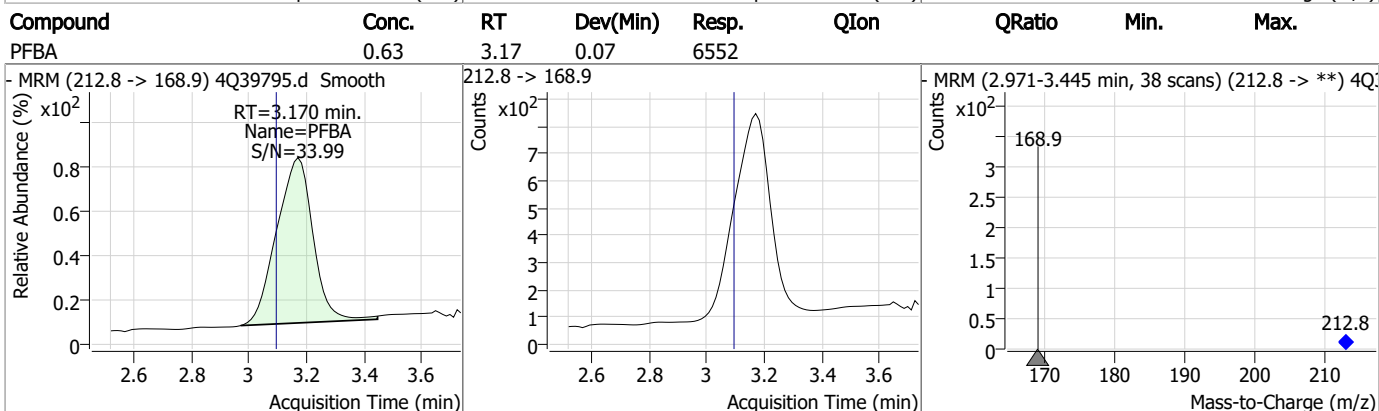
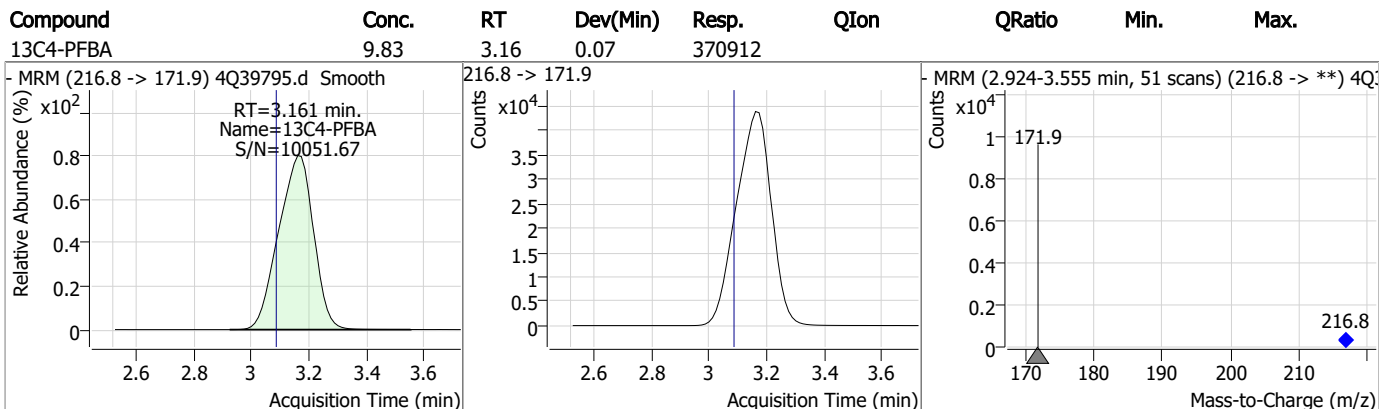
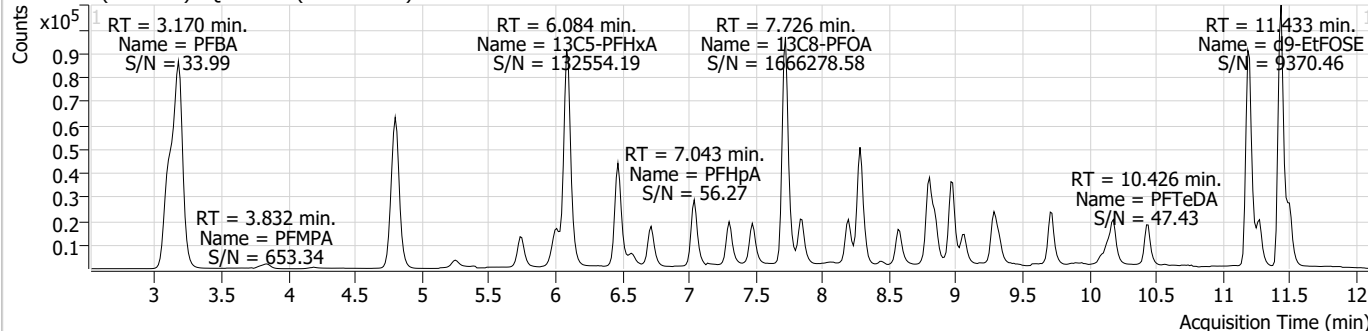
Perfluorinated Compounds by LC/MS/MS

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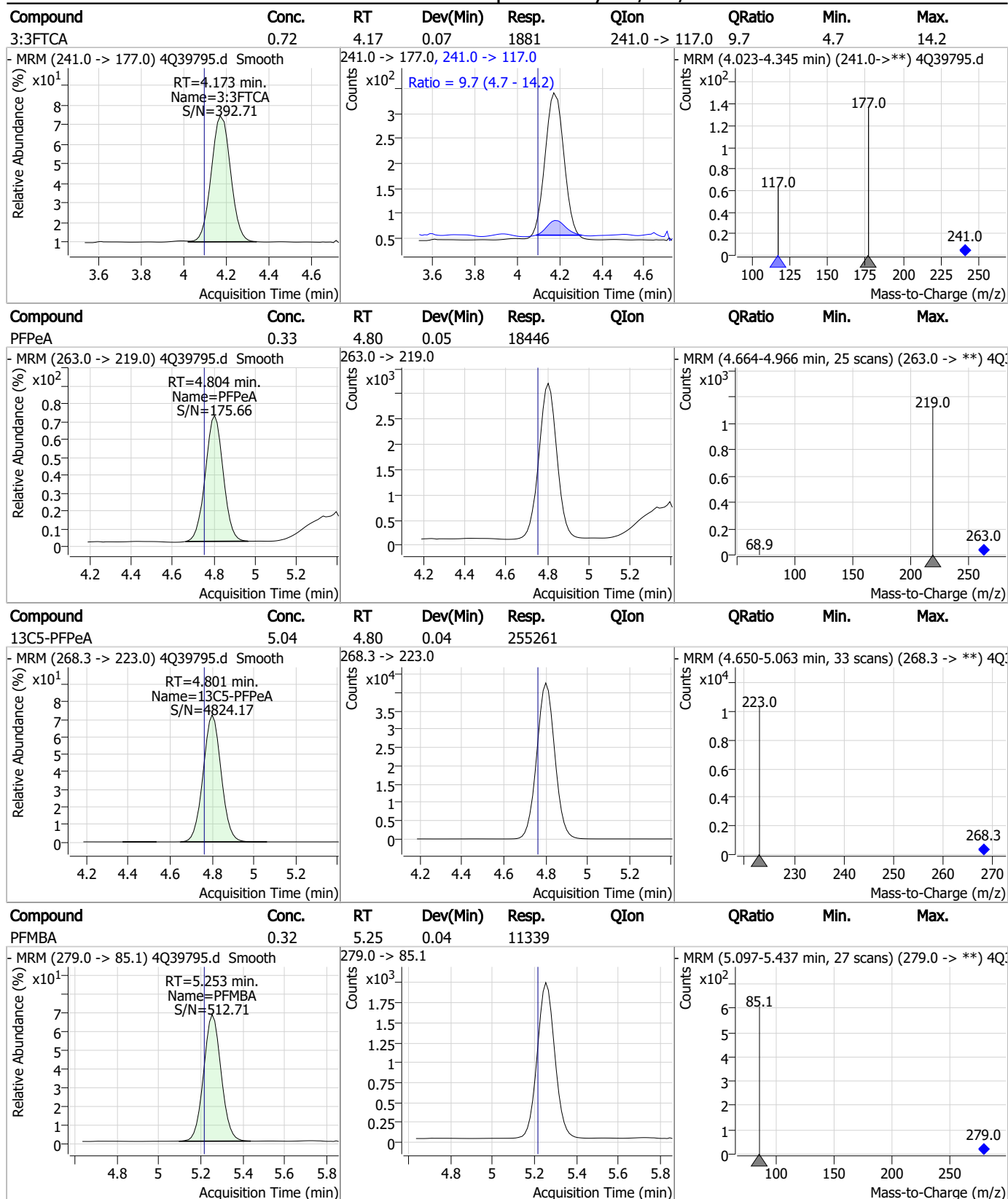
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Perfluorinated Compounds by LC/MS/MS

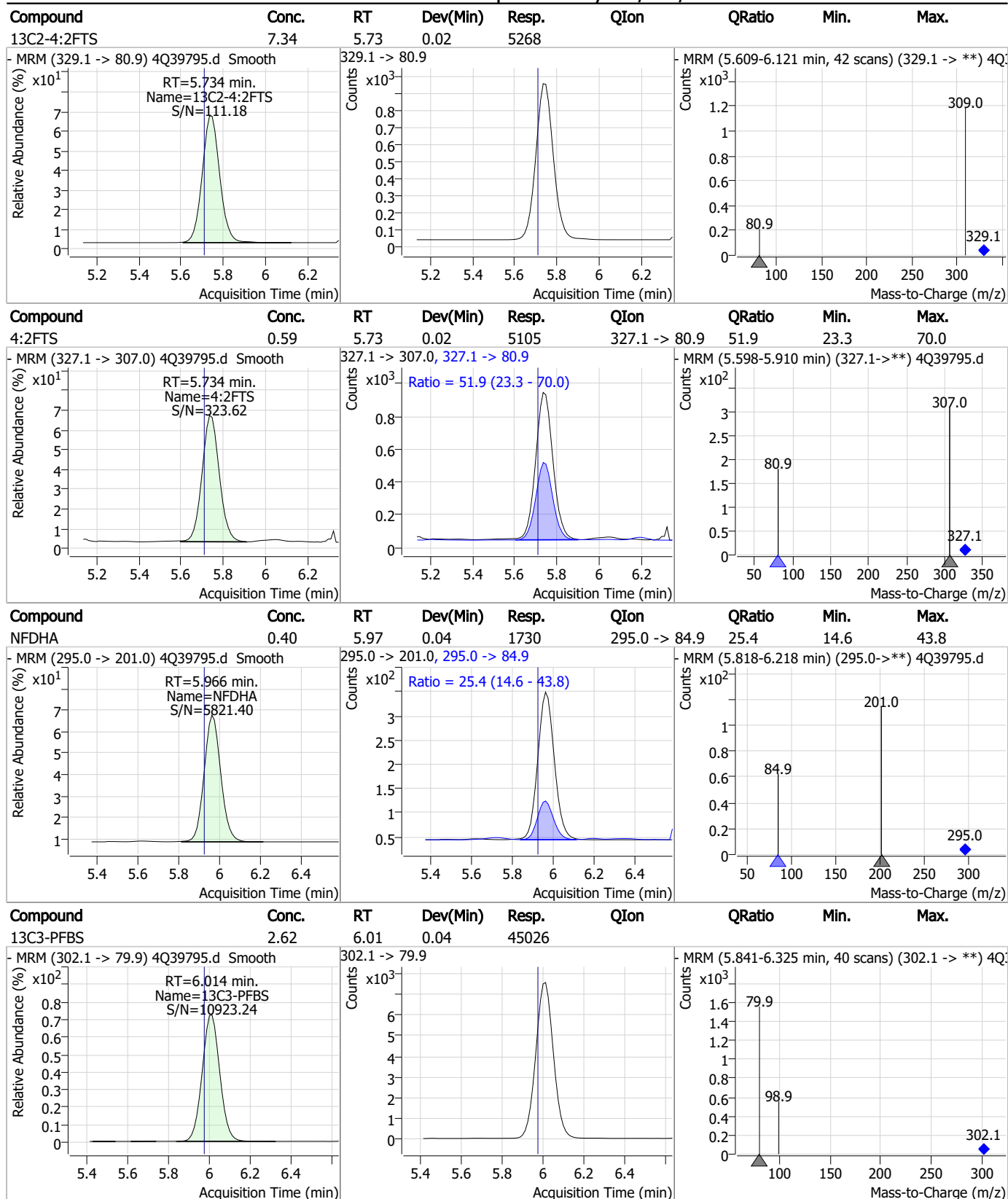
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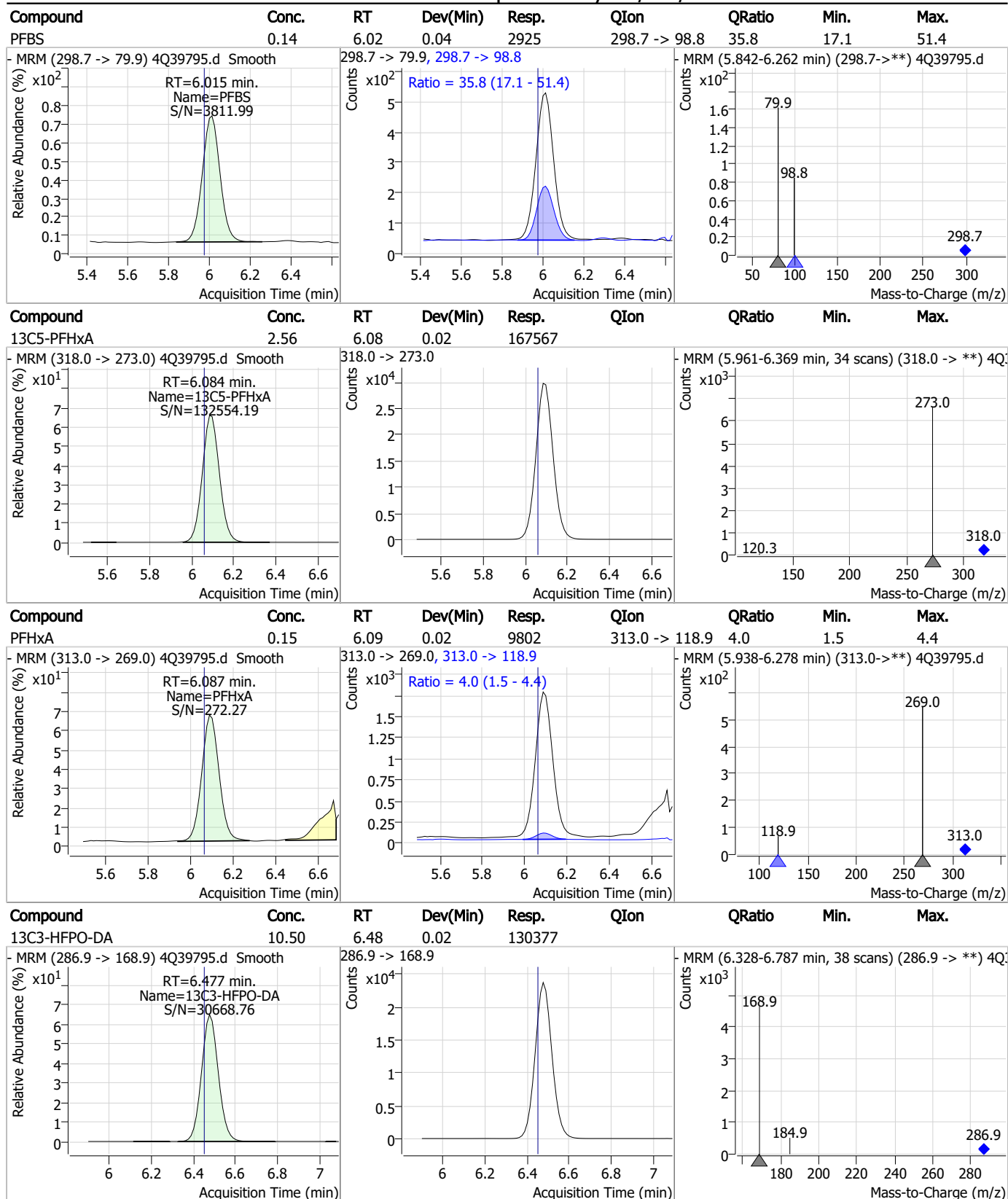
Perfluorinated Compounds by LC/MS/MS



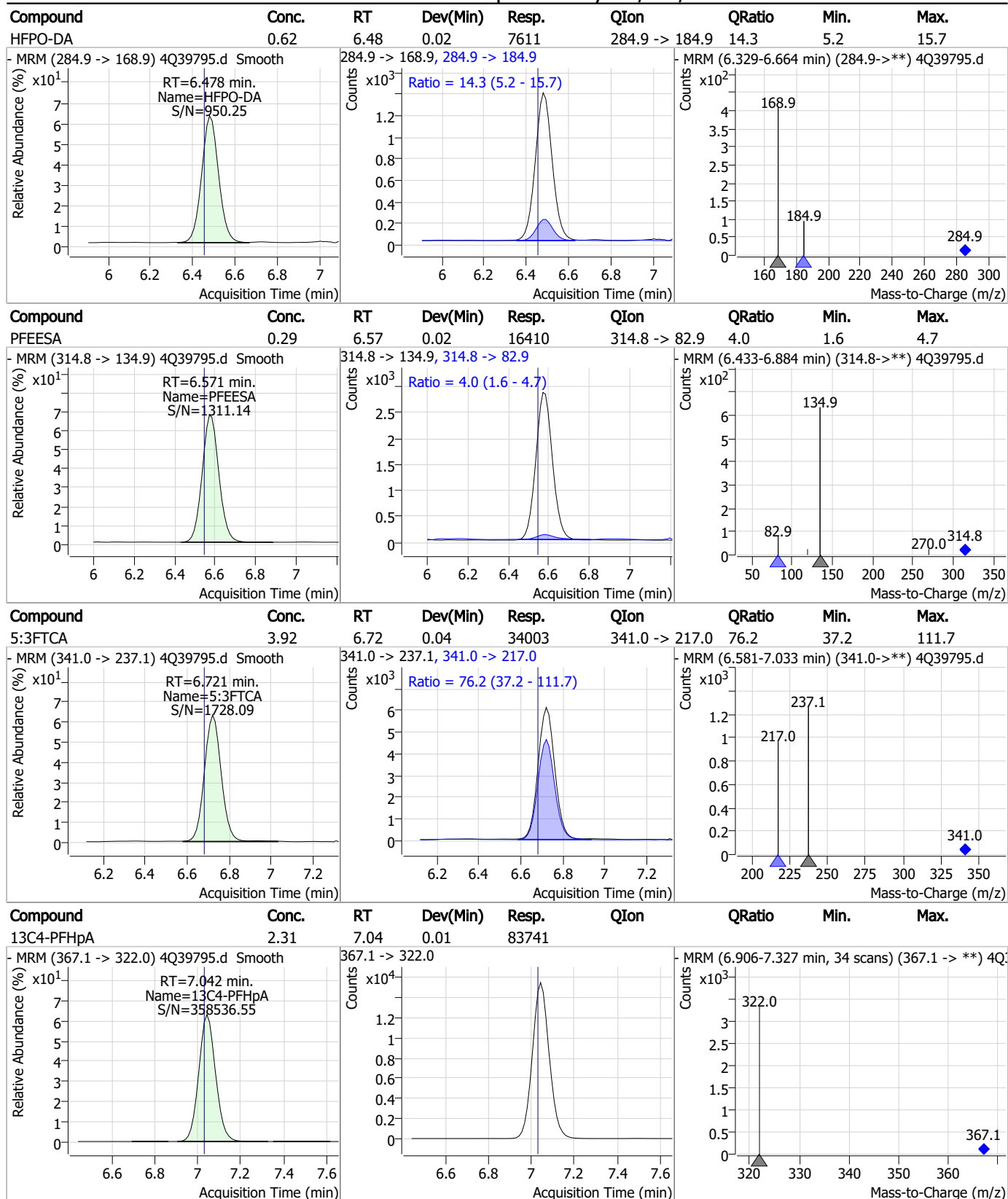
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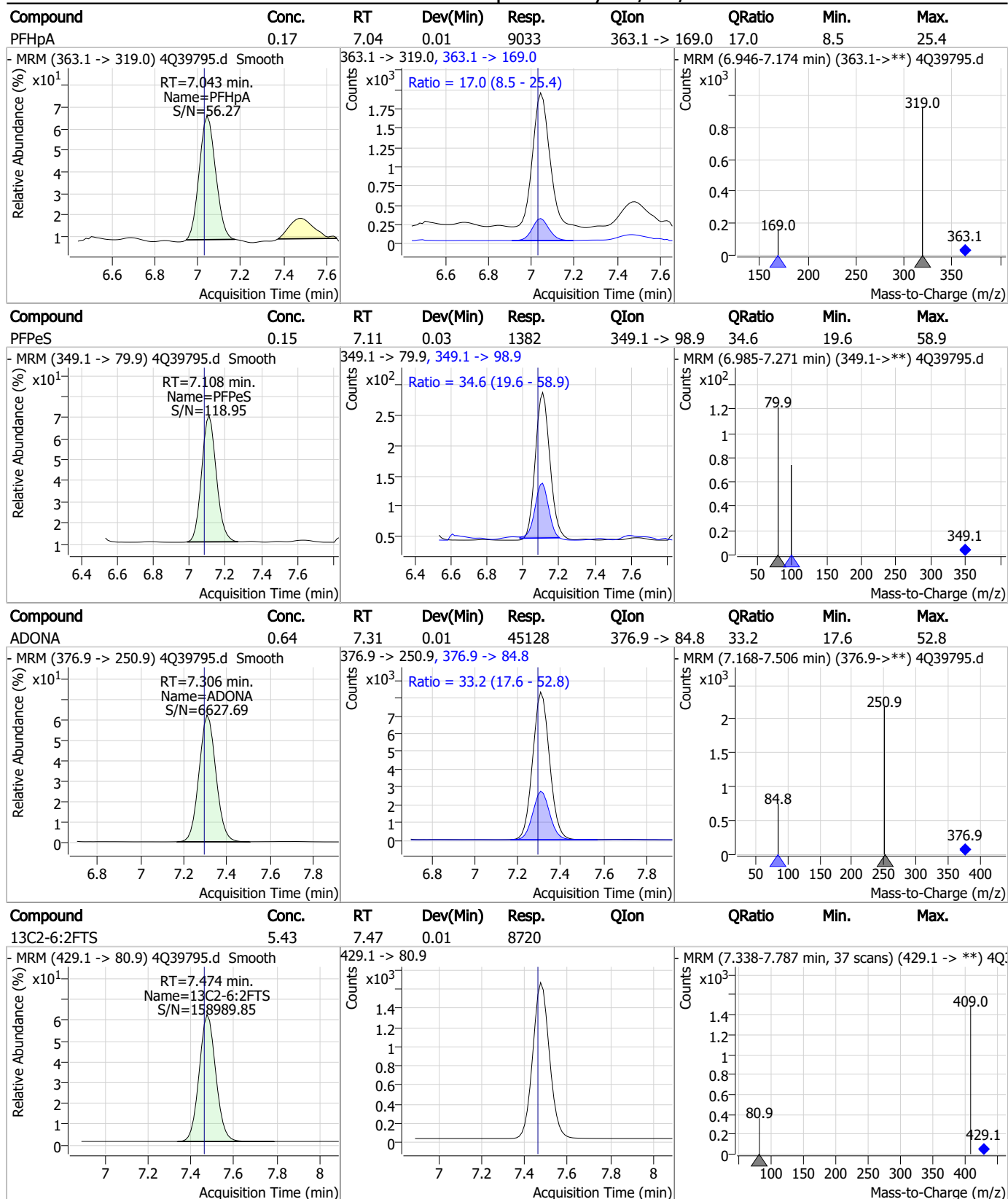
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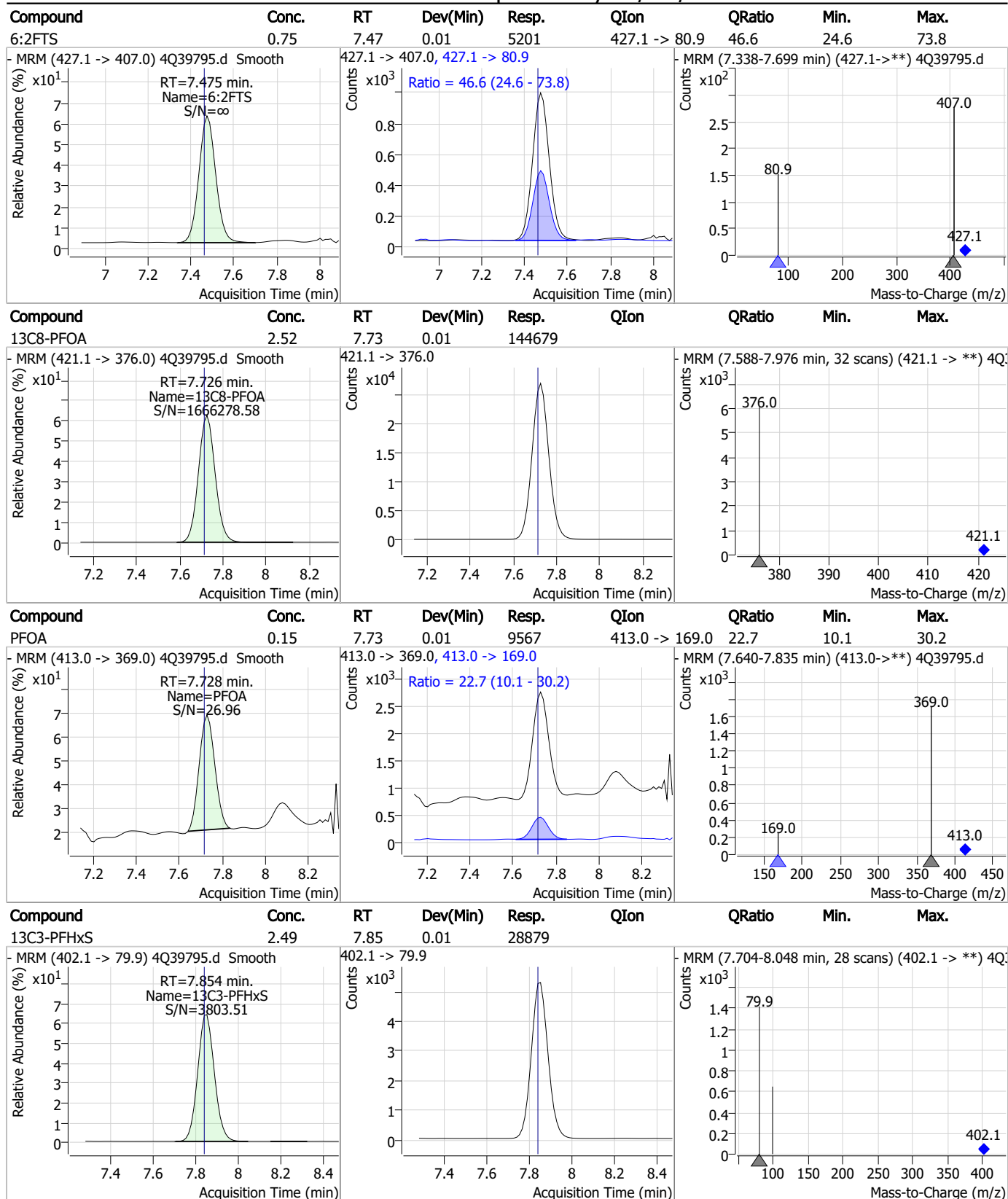
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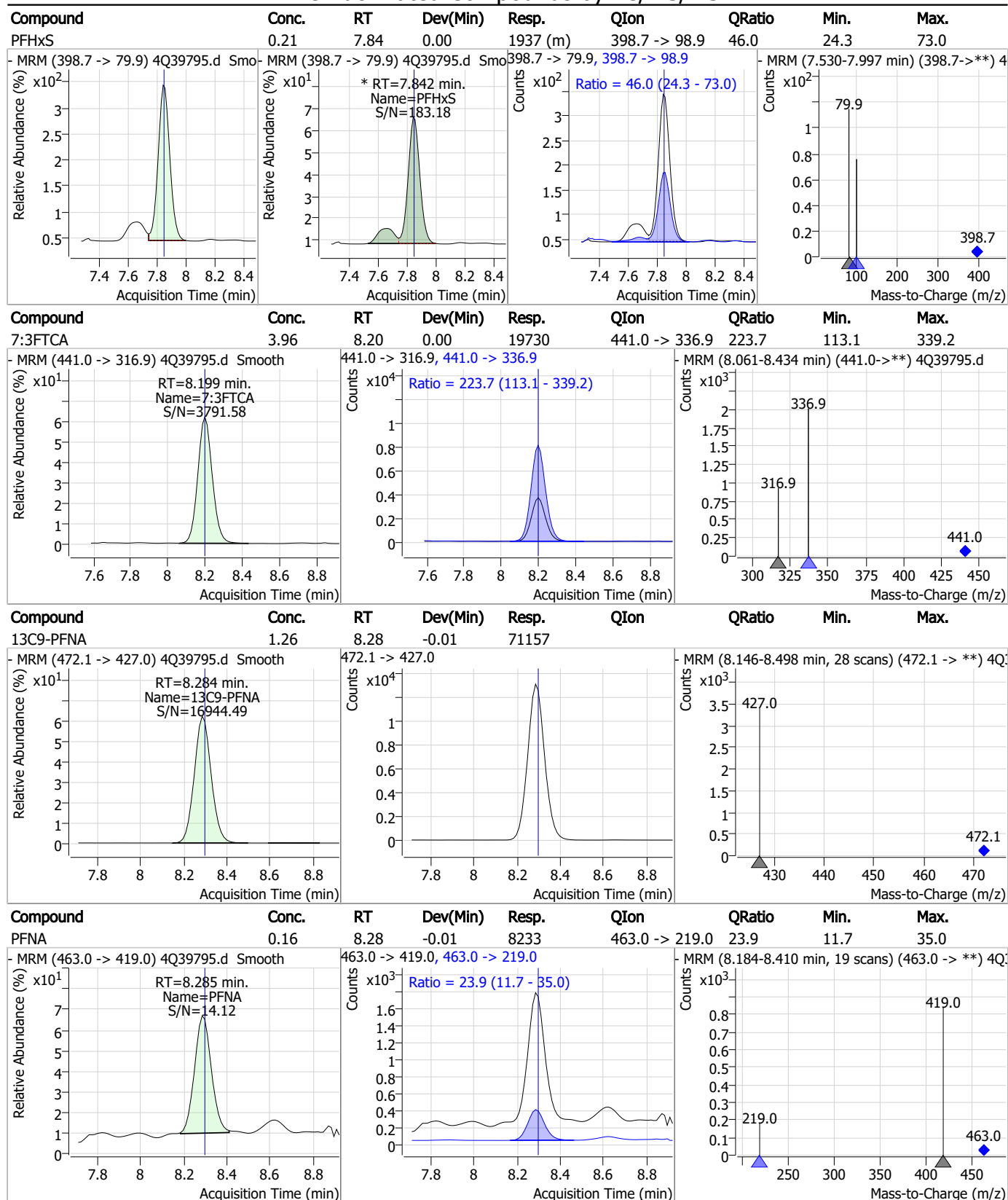
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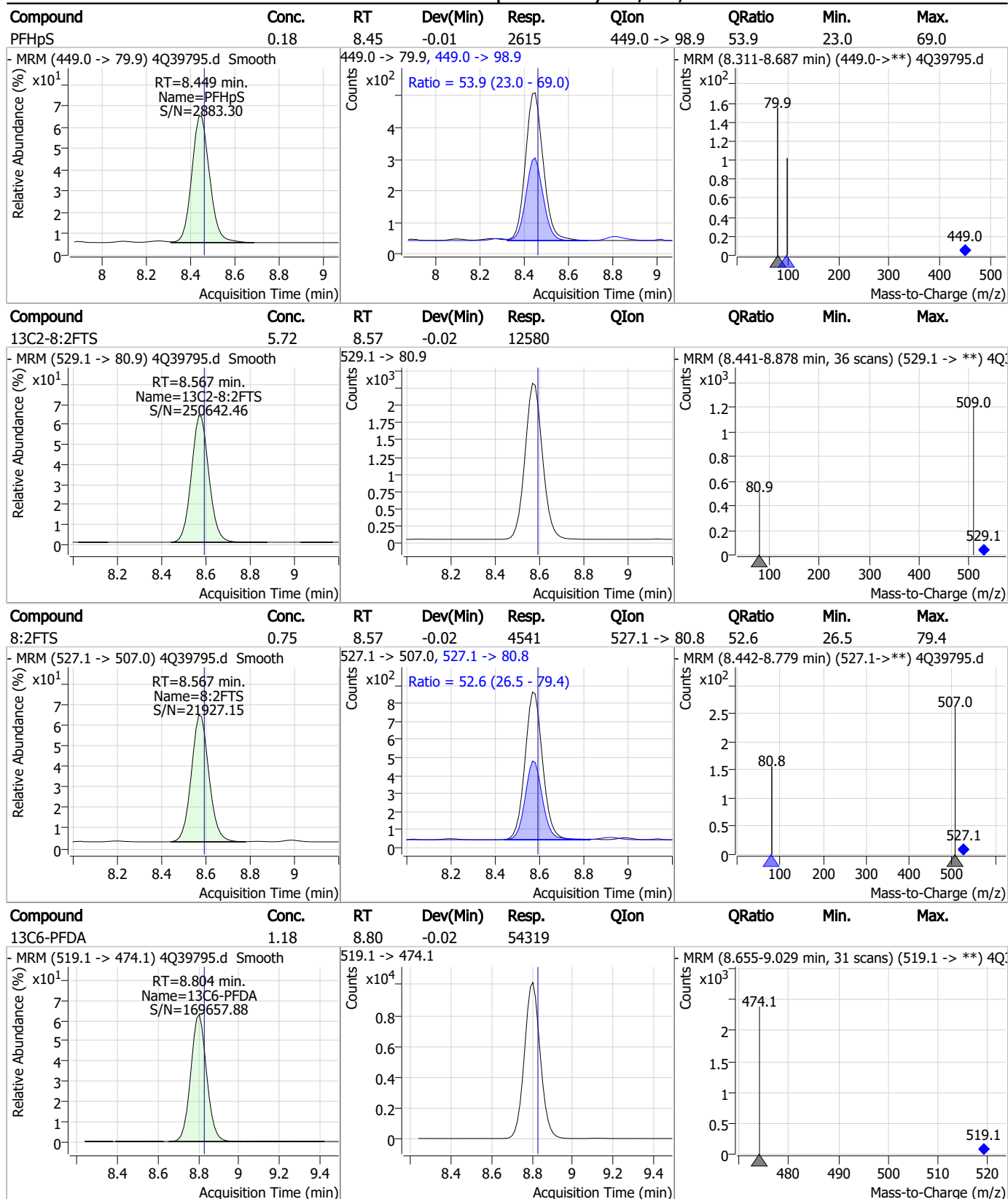
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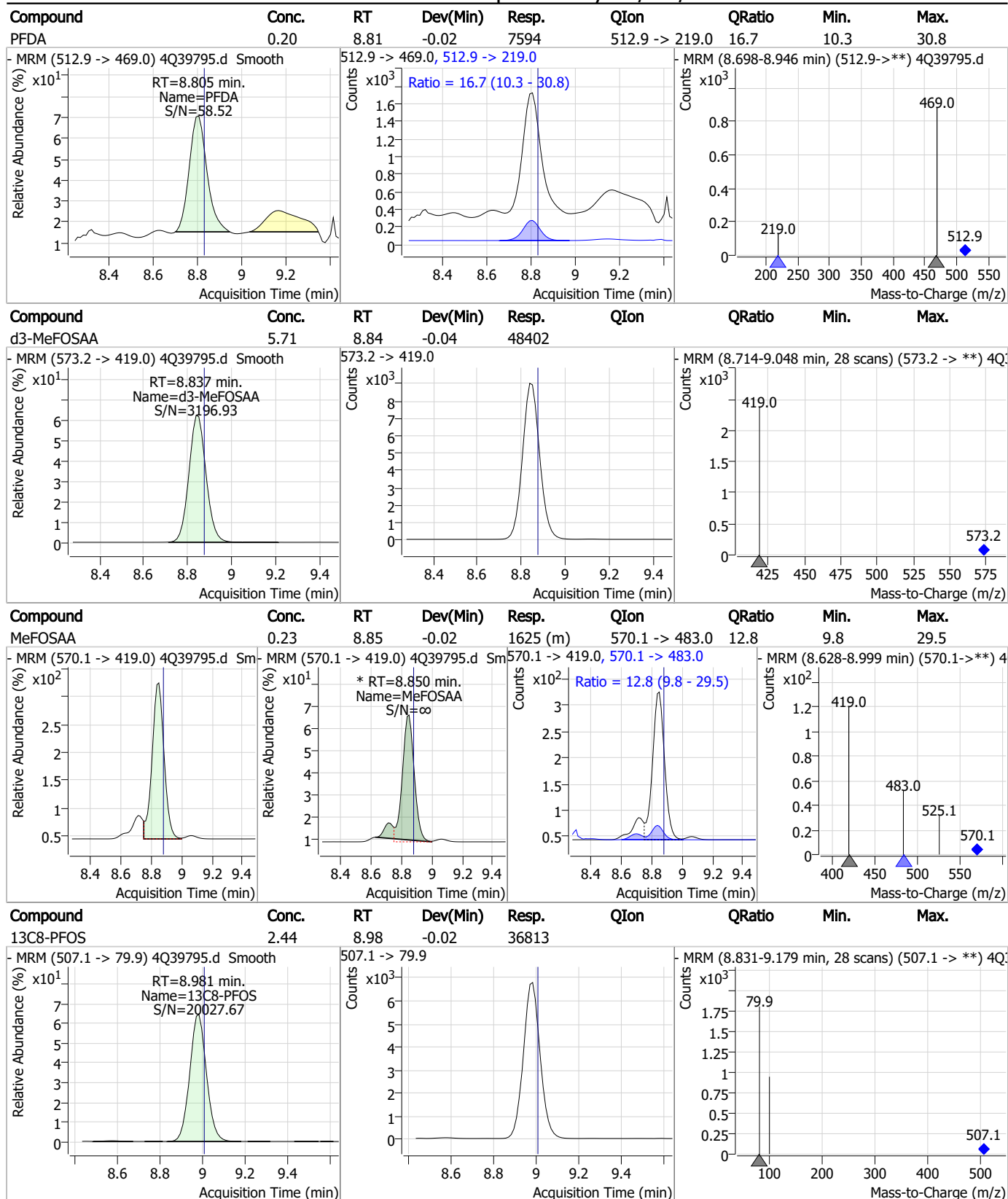
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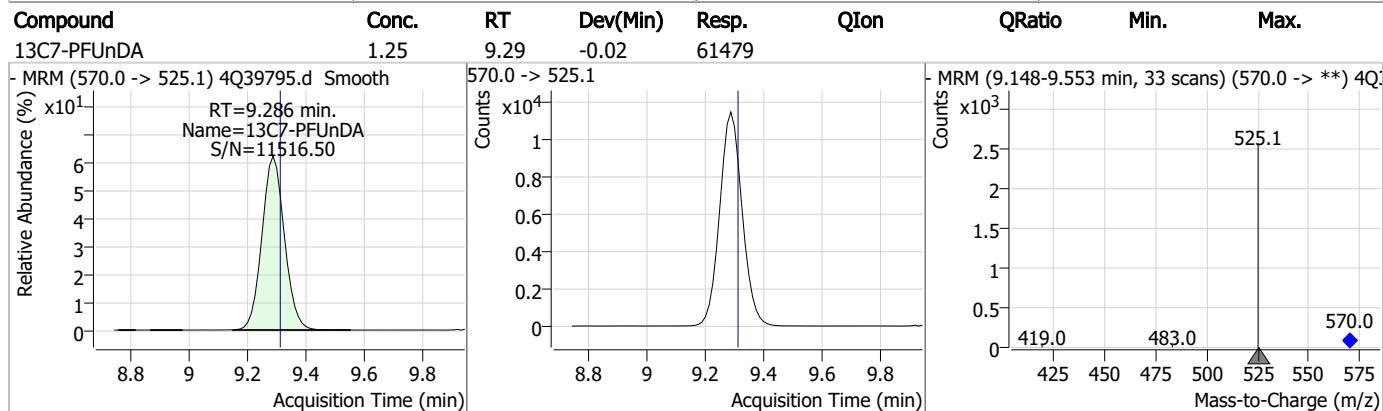
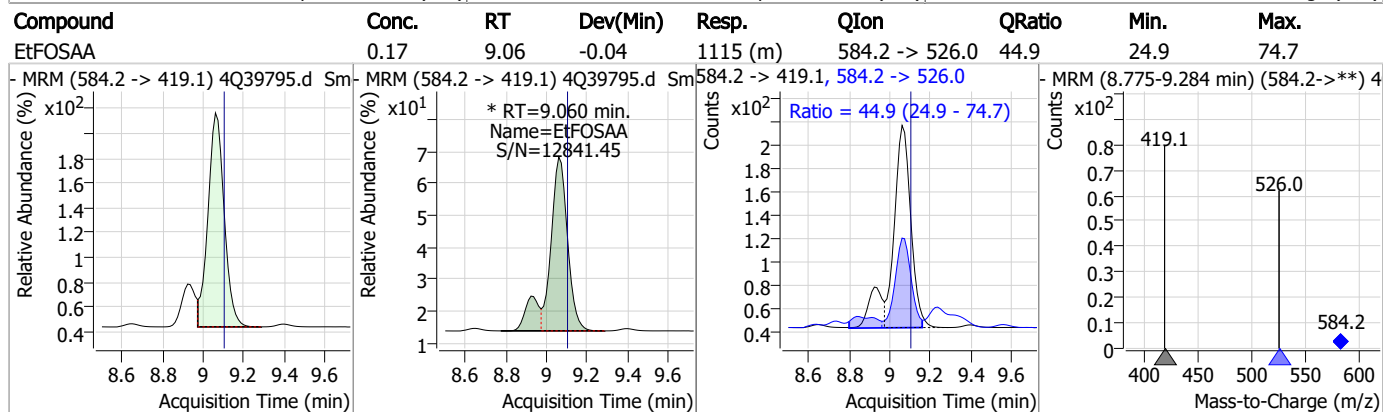
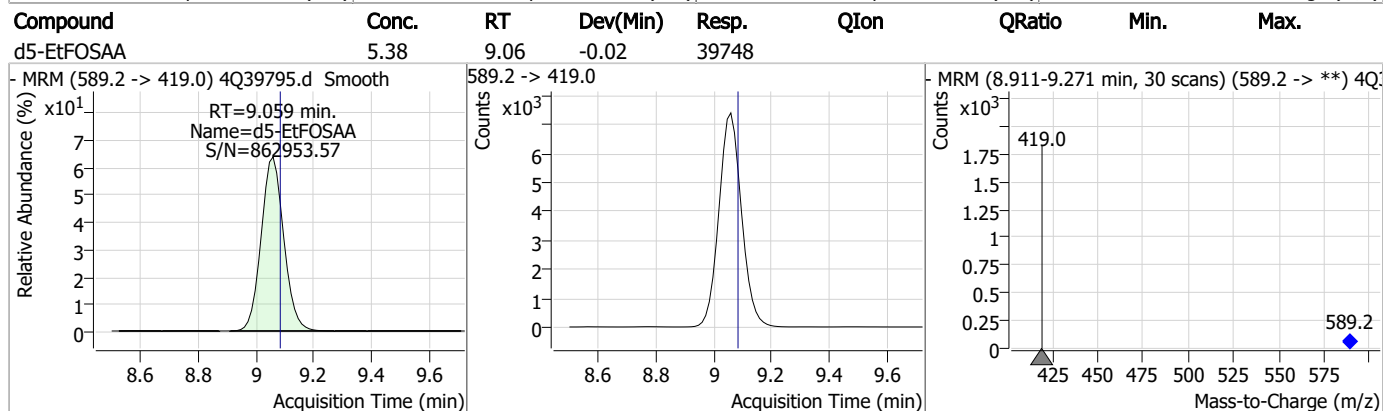
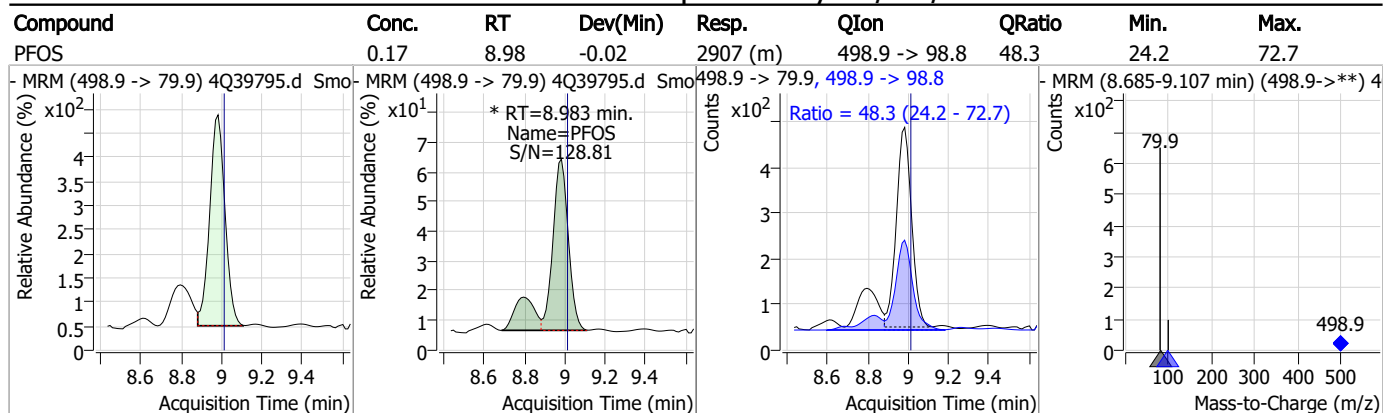
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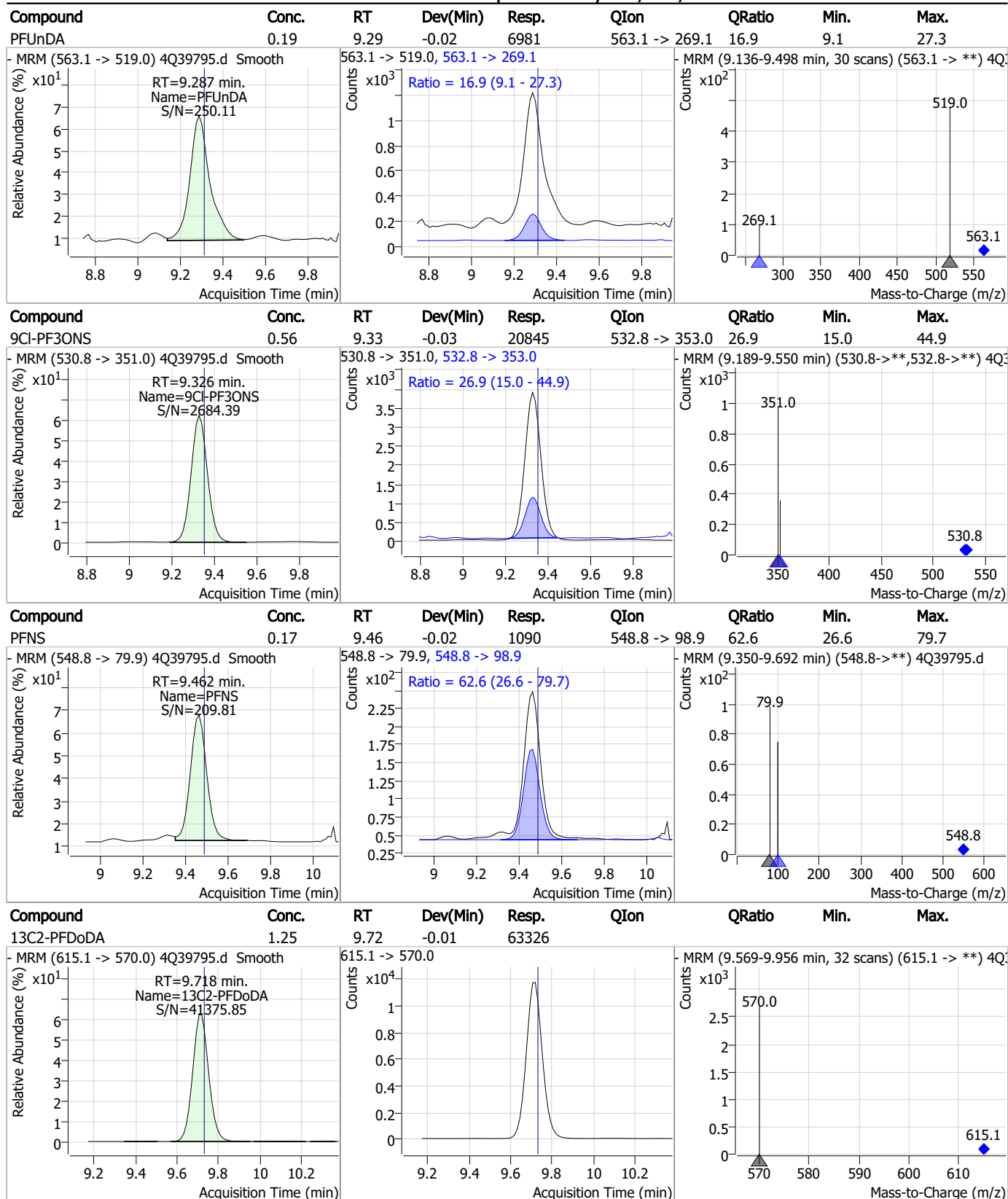
Perfluorinated Compounds by LC/MS/MS



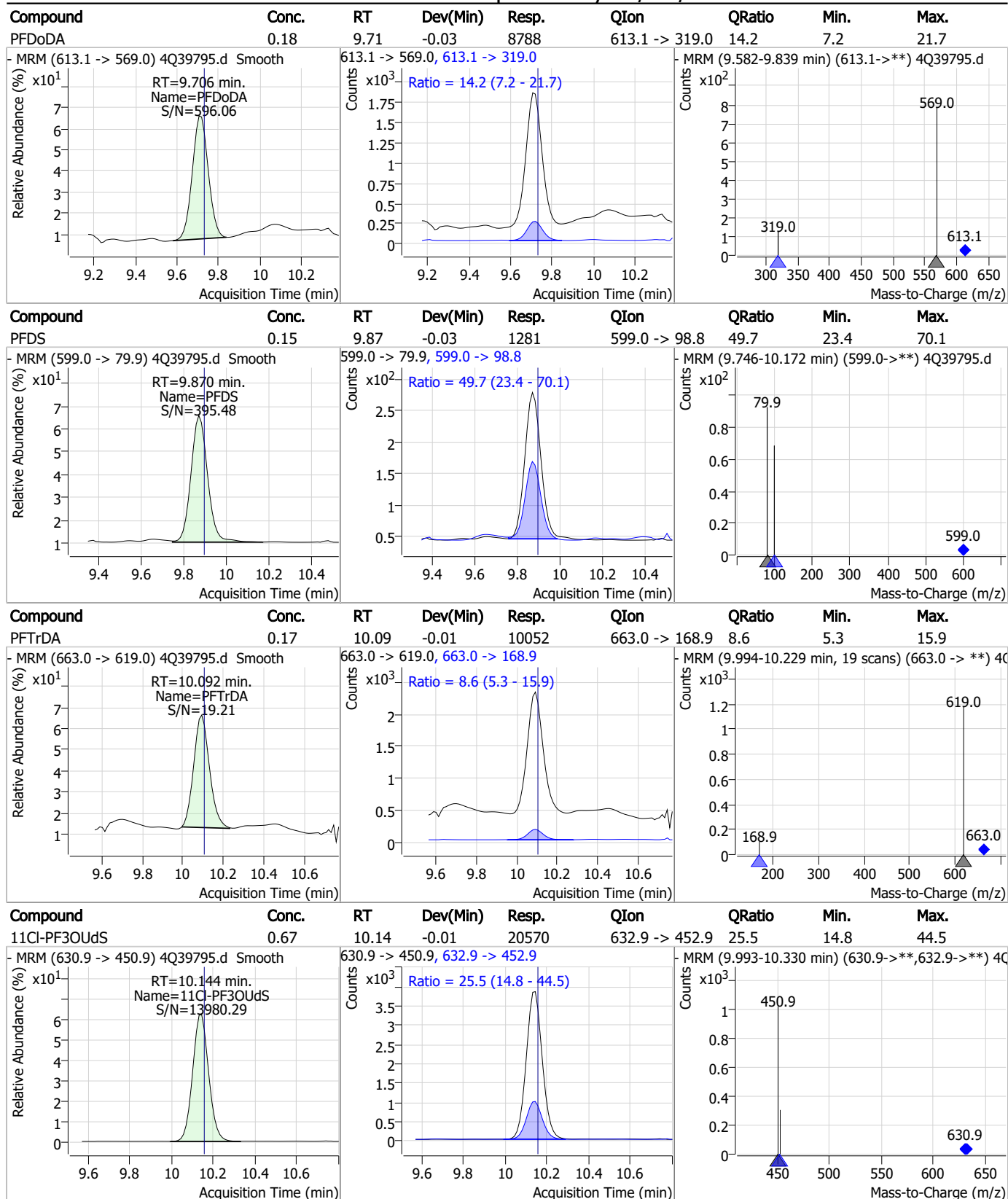
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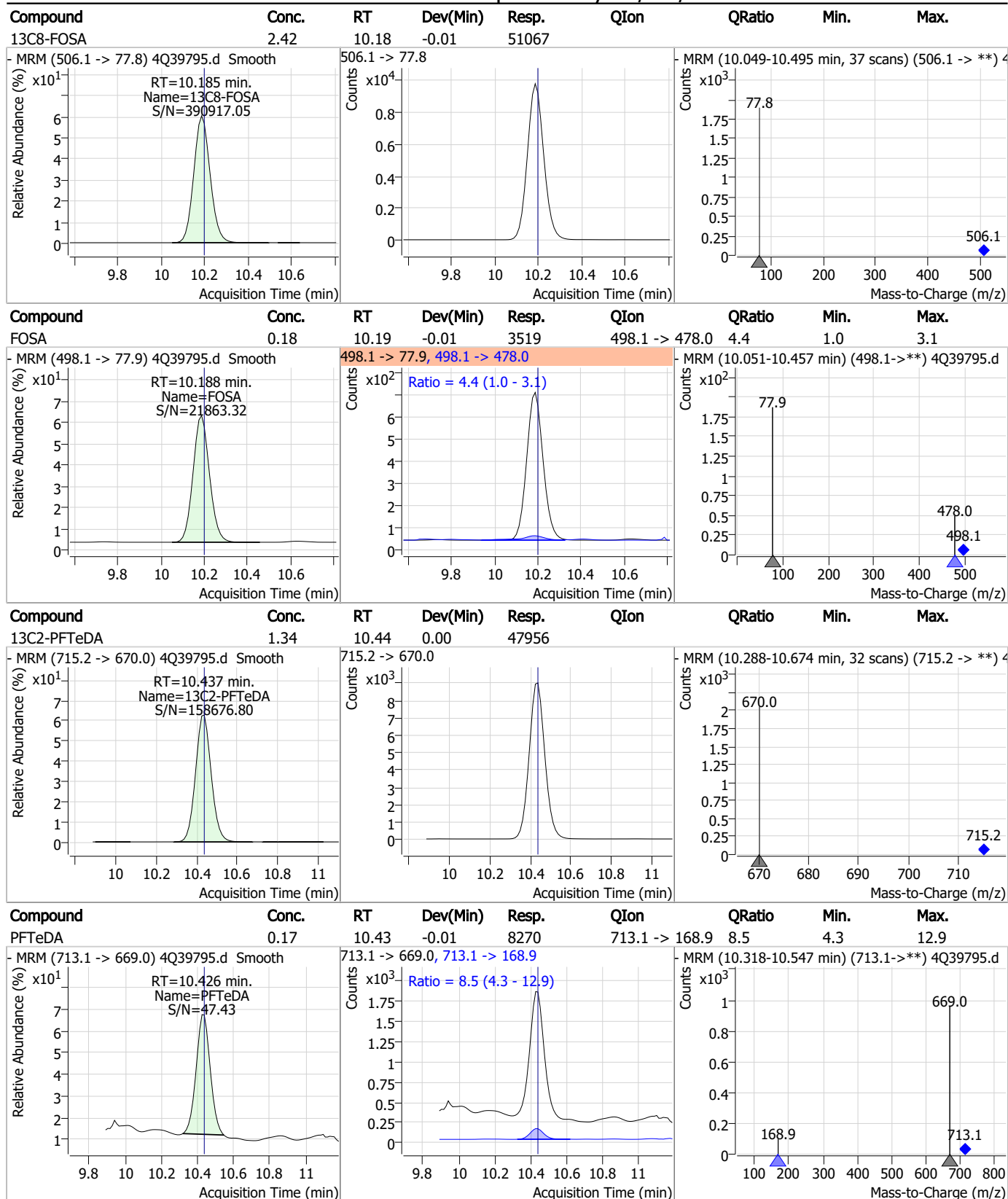
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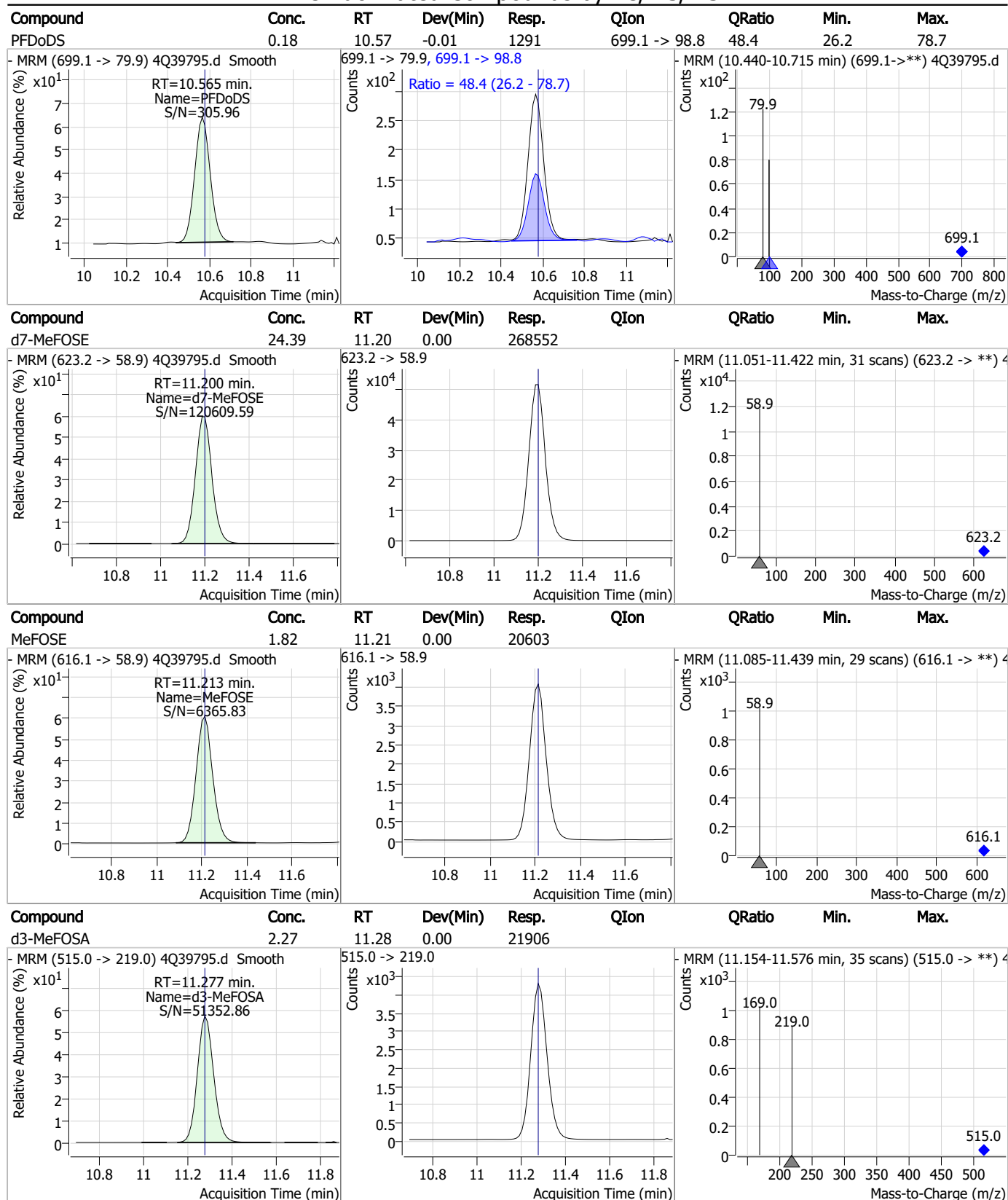
Perfluorinated Compounds by LC/MS/MS



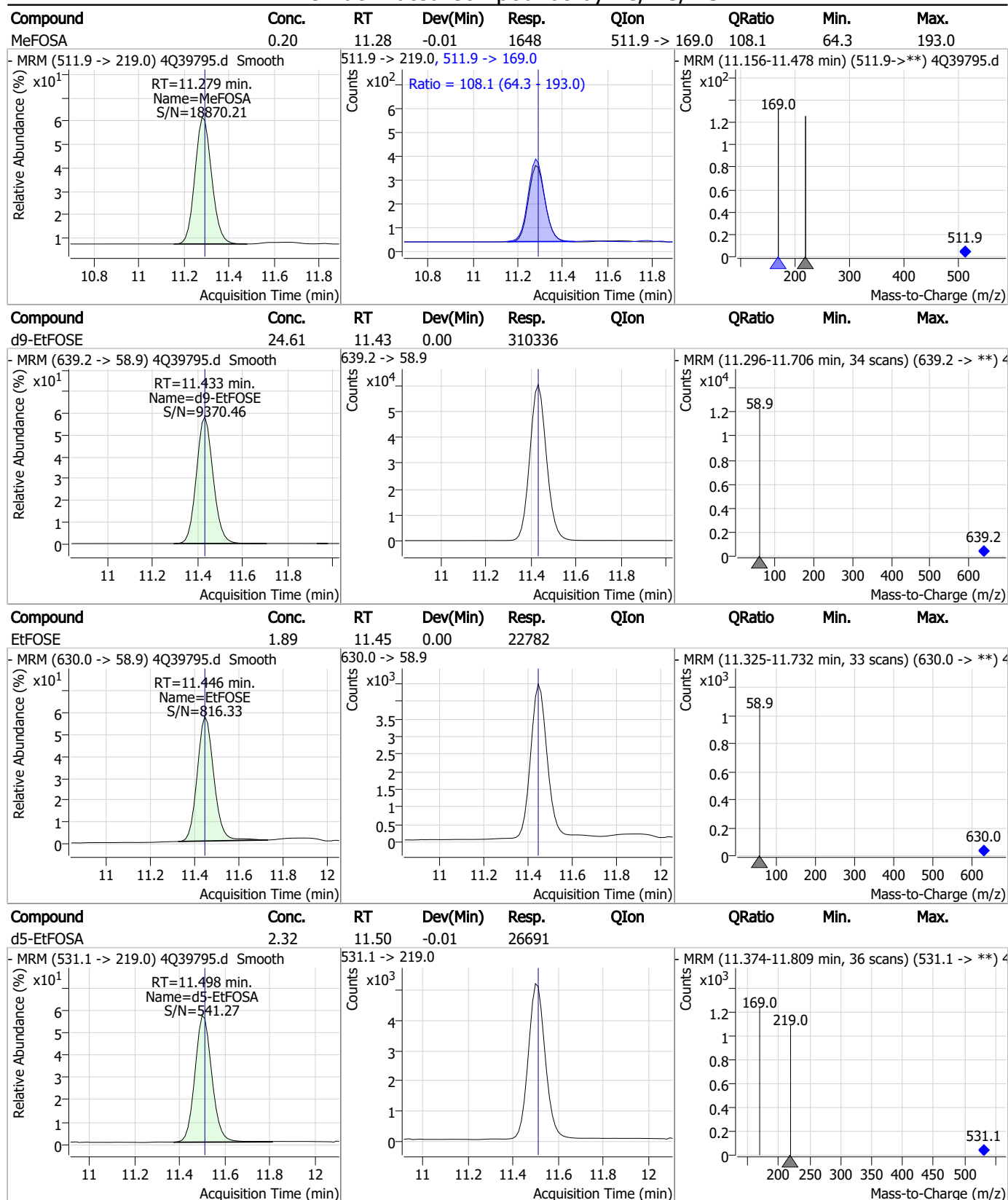
Perfluorinated Compounds by LC/MS/MS



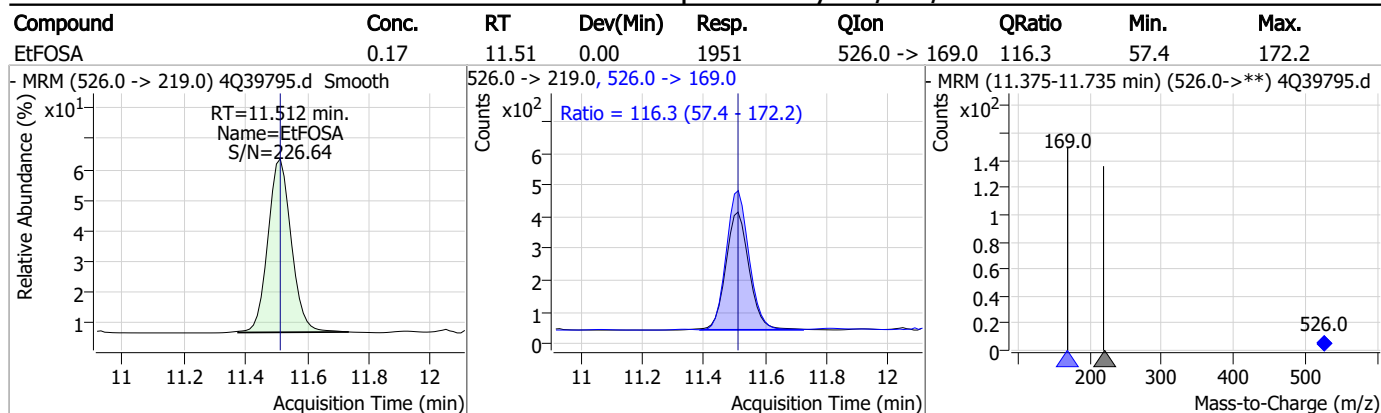
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S4Q572-CC571

Method: EPA DRAFT 1633

Lab FileID: 4Q39795.D

Analyst approved: 01/27/23 10:21 Natasha Guntie

Injection Time: 01/26/23 14:12

Supervisor approved: 01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.84	Split peak
MeFOSAA	2355-31-9		8.85	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.98	Split peak
EtFOSAA	2991-50-6		9.06	Split peak

7.6.19.1
7

Mike Eger
01/29/23 09:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39802.d
 Operator : natashag
 Acq. Method : 1633full.m
 Acq. Date-Time : 1/26/2023 4:54:37 PM
 Sample Name : cc571-4
 Vial : P1-A5
 DA Method File : 1633_012423_S4Q571.quantmethod.xml
 Batch Name : s4q572.batch.bin
 Sample Information : op95096,S4Q572,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.086	216.8 -> 171.9	406020	10.00 µg/L	0.000
M5-PFPeA	4.763	268.3 -> 223.0	273243	5.00 µg/L	0.000
M5-PFHxA	6.060	318.0 -> 273.0	183416	2.50 µg/L	0.000
M4-PFHpA	7.005	367.1 -> 322.0	101467	2.50 µg/L	-0.025
M8-PFOA	7.688	421.1 -> 376.0	151846	2.50 µg/L	-0.026
M9-PFNA	8.259	472.1 -> 427.0	77937	1.25 µg/L	-0.038
M6-PFDA	8.792	519.1 -> 474.1	56086	1.25 µg/L	-0.037
M7-PFUnDA	9.286	570.0 -> 525.1	72580	1.25 µg/L	-0.025
M2-PFDoDA	9.718	615.1 -> 570.0	70391	1.25 µg/L	-0.013
M2-PFTeDA	10.437	715.2 -> 670.0	57447	1.25 µg/L	0.000
M8-FOSA	10.185	506.1 -> 77.8	55845	2.50 µg/L	-0.012
M3-PFBS	5.977	302.1 -> 79.9	47380	2.50 µg/L	0.000
M3-PFHxS	7.816	402.1 -> 79.9	32871	2.50 µg/L	-0.025
M8-PFOS	8.969	507.1 -> 79.9	39628	2.50 µg/L	-0.037
M2-4:2FTS	5.709	329.1 -> 80.9	4664	5.00 µg/L	0.000
M2-6:2FTS	7.437	429.1 -> 80.9	9541	5.00 µg/L	-0.025
M2-8:2FTS	8.554	529.1 -> 80.9	13697	5.00 µg/L	-0.037
M3-MeFOSAA	8.825	573.2 -> 419.0	53288	5.00 µg/L	-0.049
M3-HFPO-DA	6.452	286.9 -> 168.9	143546	10.00 µg/L	0.000
M5-EtFOSAA	9.047	589.2 -> 419.0	43978	5.00 µg/L	-0.037
M7-MeFOSE	11.200	623.2 -> 58.9	289004	25.00 µg/L	0.000
M9-EtFOSE	11.445	639.2 -> 58.9	328730	25.00 µg/L	0.012
M5-EtFOSA	11.511	531.1 -> 219.0	30345	2.50 µg/L	0.000
M3-MeFOSA	11.290	515.0 -> 219.0	24877	2.50 µg/L	0.012
13C4-PFOS	8.969	502.8 -> 79.9	40699	2.50 µg/L	-0.037
13C3-PFBA	3.090	216.0 -> 172.0	227797	5.00 µg/L	0.000
18O2-PFHxS	7.815	403.0 -> 83.9	21983	2.50 µg/L	-0.025
13C4-PFOA	7.688	417.1 -> 372.0	173319	2.50 µg/L	-0.026
13C2-PFDA	8.792	515.1 -> 470.1	49421	1.25 µg/L	-0.037
13C5-PFNA	8.259	468.0 -> 423.0	89844	1.25 µg/L	-0.038
13C2-PFHxA	6.061	315.1 -> 270.0	168826	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.709	329.1 -> 80.9	4664	5.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.7%		
13C2-6:2FTS	7.437	429.1 -> 80.9	9541	5.38 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C2-8:2FTS	8.554	529.1 -> 80.9	13697	5.64 µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.9%		
13C2-PFDoDA	9.718	615.1 -> 570.0	70391	1.47 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 117.4%		
13C2-PFTeDA	10.437	715.2 -> 670.0	57447	1.68 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 134.7%		
13C3-PFBS	5.977	302.1 -> 79.9	47380	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFHxS	7.816	402.1 -> 79.9	32871	2.56 µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C4-PFBA	3.086	216.8 -> 171.9	406020	9.88 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C4-PFHpA	7.005	367.1 -> 322.0	101467	2.58 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C5-PFHxA	6.060	318.0 -> 273.0	183416	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFPeA	4.763	268.3 -> 223.0	273243	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C6-PFDA	8.792	519.1 -> 474.1	56086	1.28 µg/L	-0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C7-PFUnDA	9.286	570.0 -> 525.1	72580	1.55 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 124.0%	
13C8-FOSA	10.185	506.1 -> 77.8	55845	2.40 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-PFOA	7.688	421.1 -> 376.0	151846	2.44 µg/L	-0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOS	8.969	507.1 -> 79.9	39628	2.38 µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C9-PFNA	8.259	472.1 -> 427.0	77937	1.22 µg/L	-0.038
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
d3-MeFOSAA	8.825	573.2 -> 419.0	53288	5.70 µg/L	-0.049
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.0%	
13C3-HFPO-DA	6.452	286.9 -> 168.9	143546	10.66 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%	
d3-MeFOSA	11.290	515.0 -> 219.0	24877	2.34 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
d5-EtFOSAA	9.047	589.2 -> 419.0	43978	5.40 µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.0%	
d7-MeFOSE	11.200	623.2 -> 58.9	289004	23.81 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.3%	
d9-EtFOSE	11.445	639.2 -> 58.9	328730	23.65 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
d5-EtFOSA	11.511	531.1 -> 219.0	30345	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
Target Compounds					QValue
4:2FTS	5.710	327.1 -> 307.0	69371	9.10 µg/L	99
		327.1 -> 80.9	32755		
6:2FTS	7.437	427.1 -> 407.0	75006	9.92 µg/L	97
		427.1 -> 80.9	35447		
8:2FTS	8.555	527.1 -> 507.0	62246	9.39 µg/L	99
		527.1 -> 80.8	32686		
EtFOSAA	9.060	584.2 -> 419.1	17593	2.39 µg/L	m 90
		584.2 -> 526.0	7571		
FOSA	10.188	498.1 -> 77.9	52679	2.44 µg/L	100
		498.1 -> 478.0	1057		
MeFOSAA	8.838	570.1 -> 419.0	19043	2.41 µg/L	m 99
		570.1 -> 483.0	3695		
PFBA	3.095	212.8 -> 168.9	101351	8.97 µg/L	100
PFBS	5.978	298.7 -> 79.9	45533	2.13 µg/L	98
		298.7 -> 98.8	15017		
PFDA	8.793	512.9 -> 469.0	100006	2.50 µg/L	99
		512.9 -> 219.0	20207		
PFDODA	9.719	613.1 -> 569.0	127943	2.36 µg/L	99
		613.1 -> 319.0	18126		
PFDS	9.882	599.0 -> 79.9	20524	2.24 µg/L	95

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.006	599.0 -> 98.8	8956	2.32	µg/L	97
		363.1 -> 319.0	146888			
PFHpS	8.424	363.1 -> 169.0	23227	2.16	µg/L	97
		449.0 -> 79.9	34639			
PFHxA	6.063	449.0 -> 98.9	16705	2.34	µg/L	99
		313.0 -> 269.0	167004			
PFHxS	7.817	313.0 -> 118.9	5168	2.05	µg/L	94
		398.7 -> 79.9	21814			
PFNA	8.259	398.7 -> 98.9	11498	2.31	µg/L	99
		463.0 -> 419.0	130705			
PFNS	9.462	463.0 -> 219.0	29794	2.06	µg/L	96
		548.8 -> 79.9	14495			
PFOA	7.690	548.8 -> 98.9	7300	2.45	µg/L	99
		413.0 -> 369.0	165582			
PFOS	8.970	413.0 -> 169.0	32731	2.30	µg/L	98
		498.9 -> 79.9	42579			
PFPeA	4.754	498.9 -> 98.8	20125	4.87	µg/L	100
		263.0 -> 219.0	291720			
PFPeS	7.069	349.1 -> 79.9	21624	2.11	µg/L	99
		349.1 -> 98.9	8592			
PFTeDA	10.438	713.1 -> 669.0	127475	2.21	µg/L	99
		713.1 -> 168.9	10286			
PFTrDA	10.104	663.0 -> 619.0	162016	2.44	µg/L	95
		663.0 -> 168.9	14407			
PFUnDA	9.287	563.1 -> 519.0	97896	2.23	µg/L	99
		563.1 -> 269.1	17301			
11Cl-PF3OUdS	10.144	630.9 -> 450.9	319228	9.51	µg/L	100
		632.9 -> 452.9	94290			
9Cl-PF3ONS	9.326	530.8 -> 351.0	348589	8.53	µg/L	99
		532.8 -> 353.0	102673			
ADONA	7.268	376.9 -> 250.9	682548	8.81	µg/L	99
		376.9 -> 84.8	235429			
HFPO-DA	6.453	284.9 -> 168.9	129226	9.55	µg/L	98
		284.9 -> 184.9	14633			
3:3FTCA	4.098	241.0 -> 177.0	30525	10.87	µg/L	99
		241.0 -> 117.0	2799			
5:3FTCA	6.681	341.0 -> 237.1	516816	54.48	µg/L	100
		341.0 -> 217.0	384599			
7:3FTCA	8.162	441.0 -> 316.9	299029	54.89	µg/L	100
		441.0 -> 336.9	674634			
EtFOSA	11.525	526.0 -> 219.0	28080	2.20	µg/L	96
		526.0 -> 169.0	33551			
EtFOSE	11.458	630.0 -> 58.9	321739	25.21	µg/L	100
		511.9 -> 219.0	22683			
MeFOSA	11.292	511.9 -> 169.0	26581	2.39	µg/L	90
		616.1 -> 58.9	309953			
MeFOSE	11.226	699.1 -> 79.9	18090	25.39	µg/L	100
		699.1 -> 98.8	10257			
PFDoDS	10.577	295.0 -> 201.0	21027	2.33	µg/L	94
		295.0 -> 84.9	6760			
NFDHA	5.929	279.0 -> 85.1	170712	4.49	µg/L	94
		229.0 -> 84.9	171827			
PFMBA	5.216	314.8 -> 134.9	247158	4.57	µg/L	100
PFMPA	3.782	314.8 -> 82.9	8258	4.46	µg/L	100
PFEESA	6.546			4.05	µg/L	100

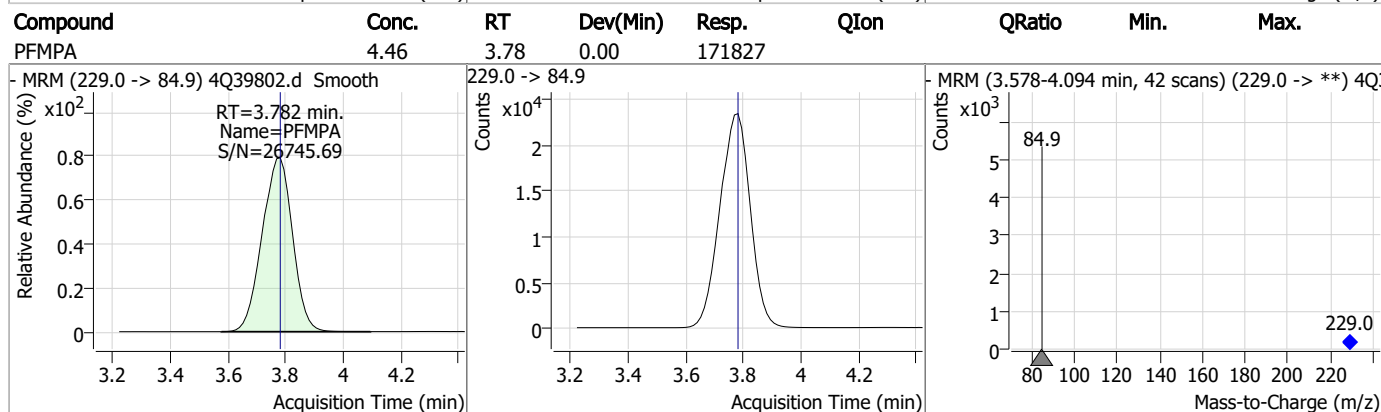
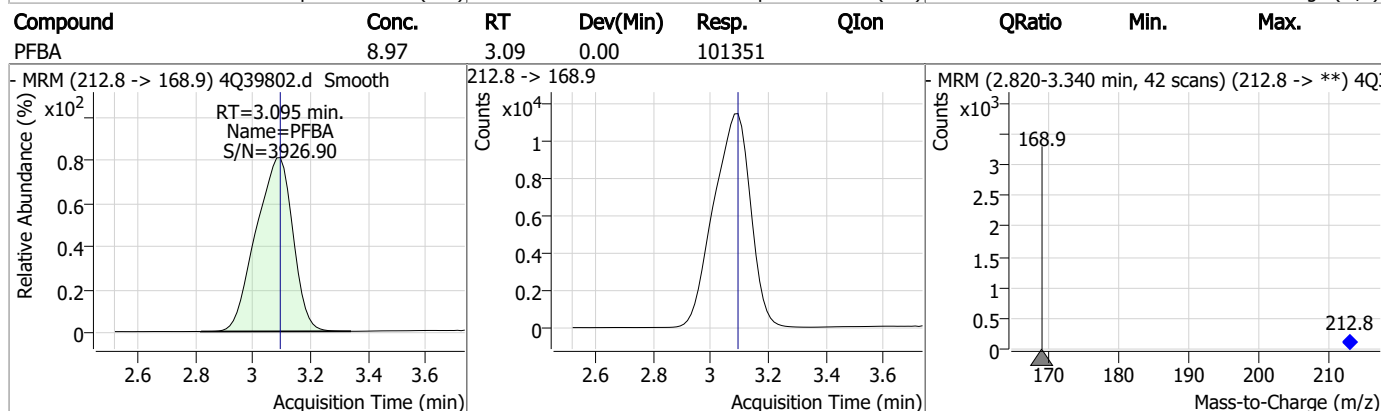
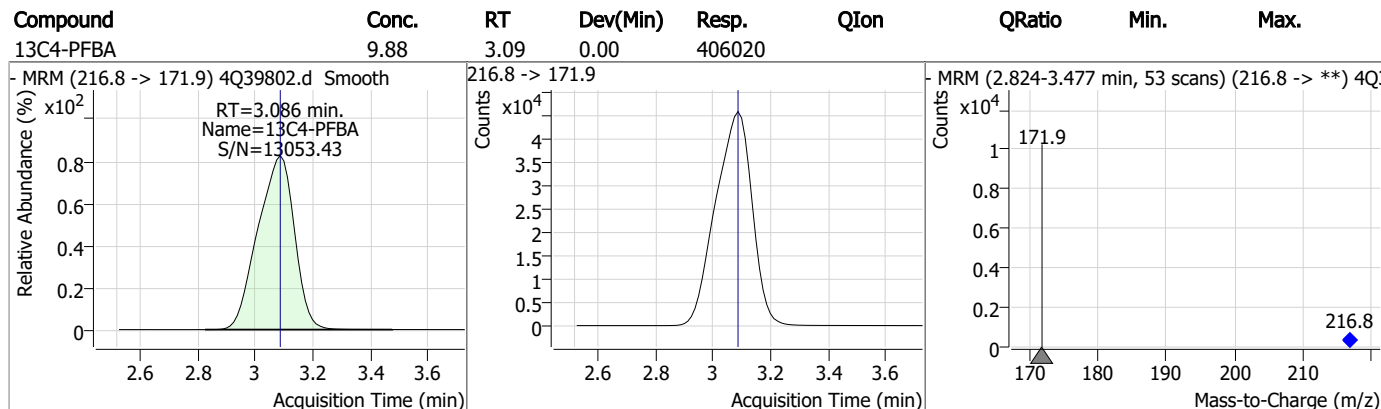
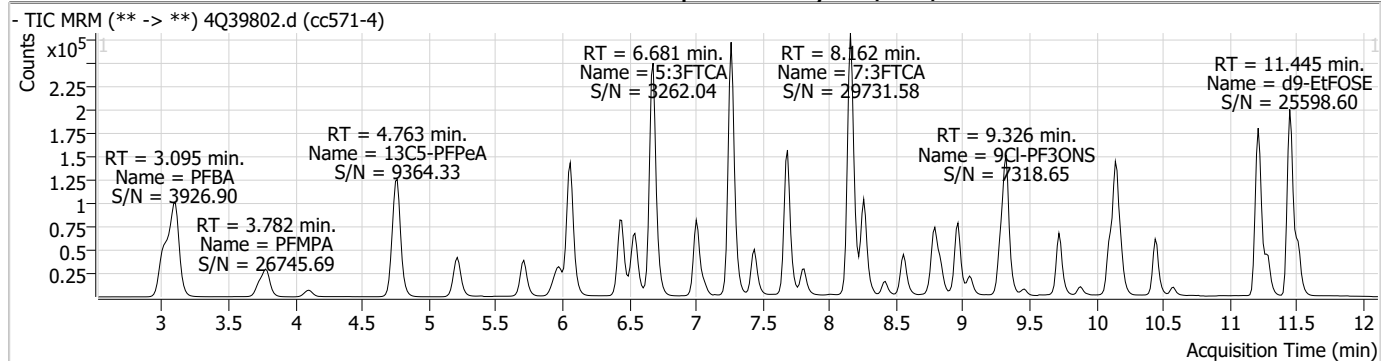
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

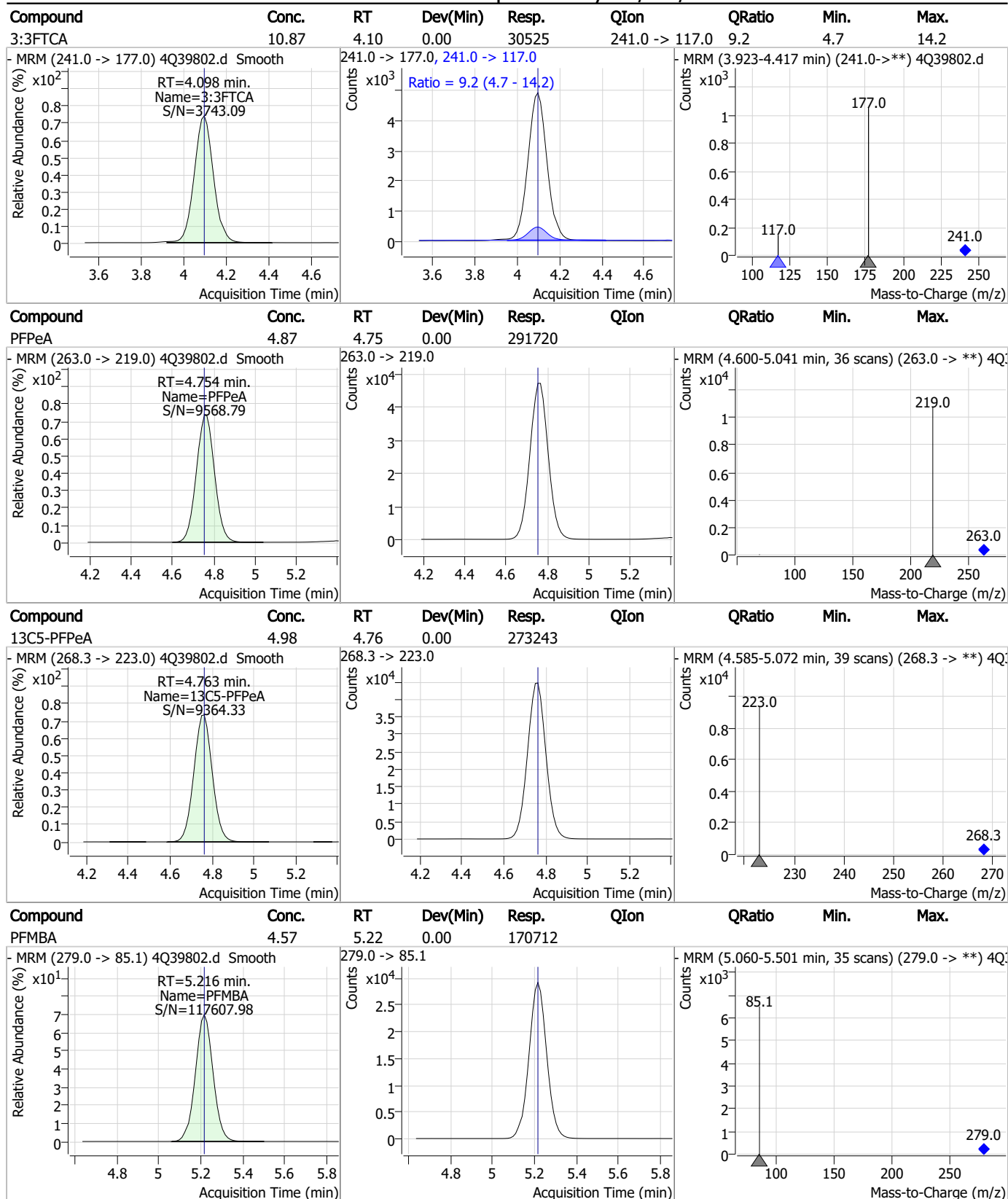
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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Perfluorinated Compounds by LC/MS/MS



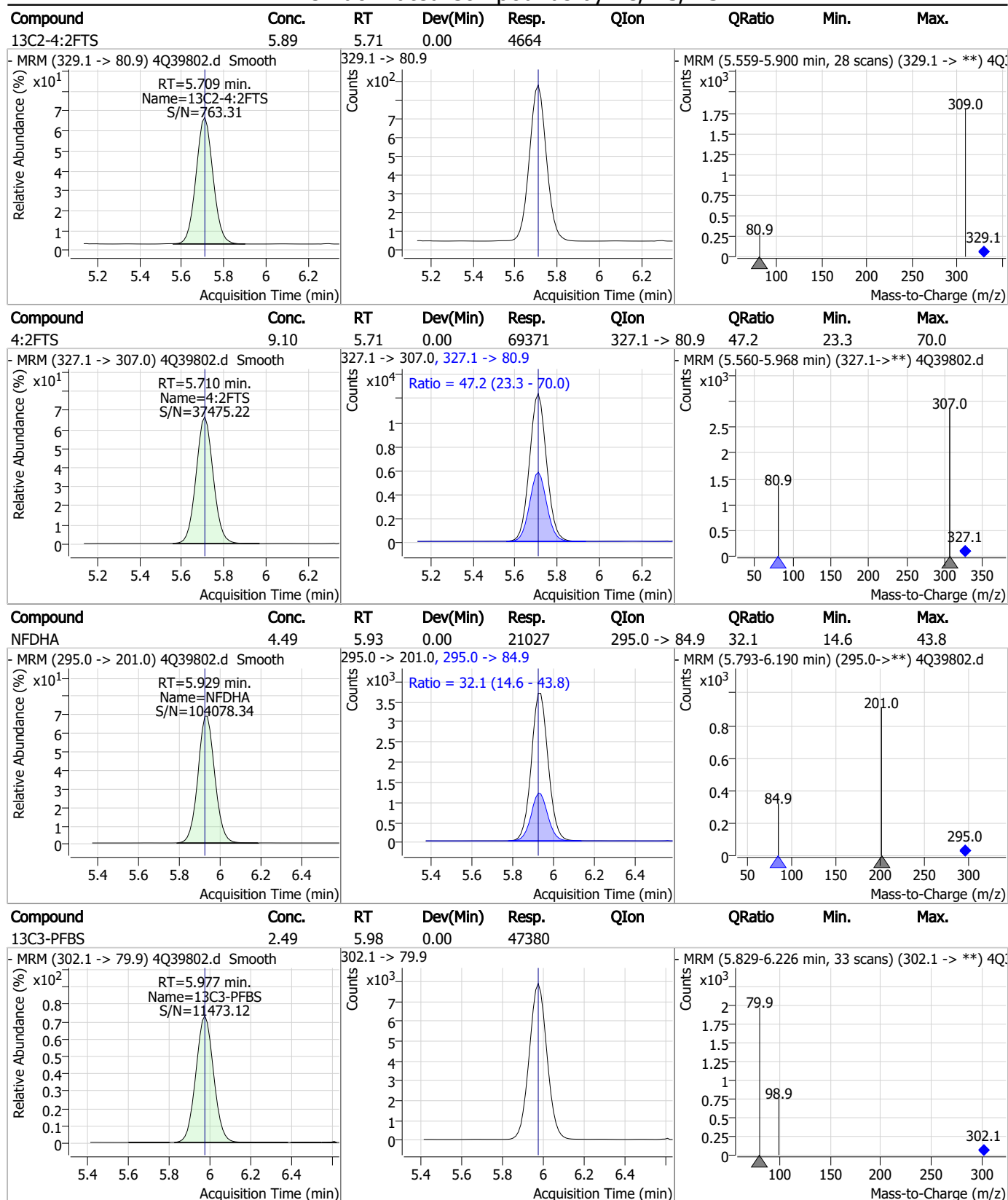
Perfluorinated Compounds by LC/MS/MS



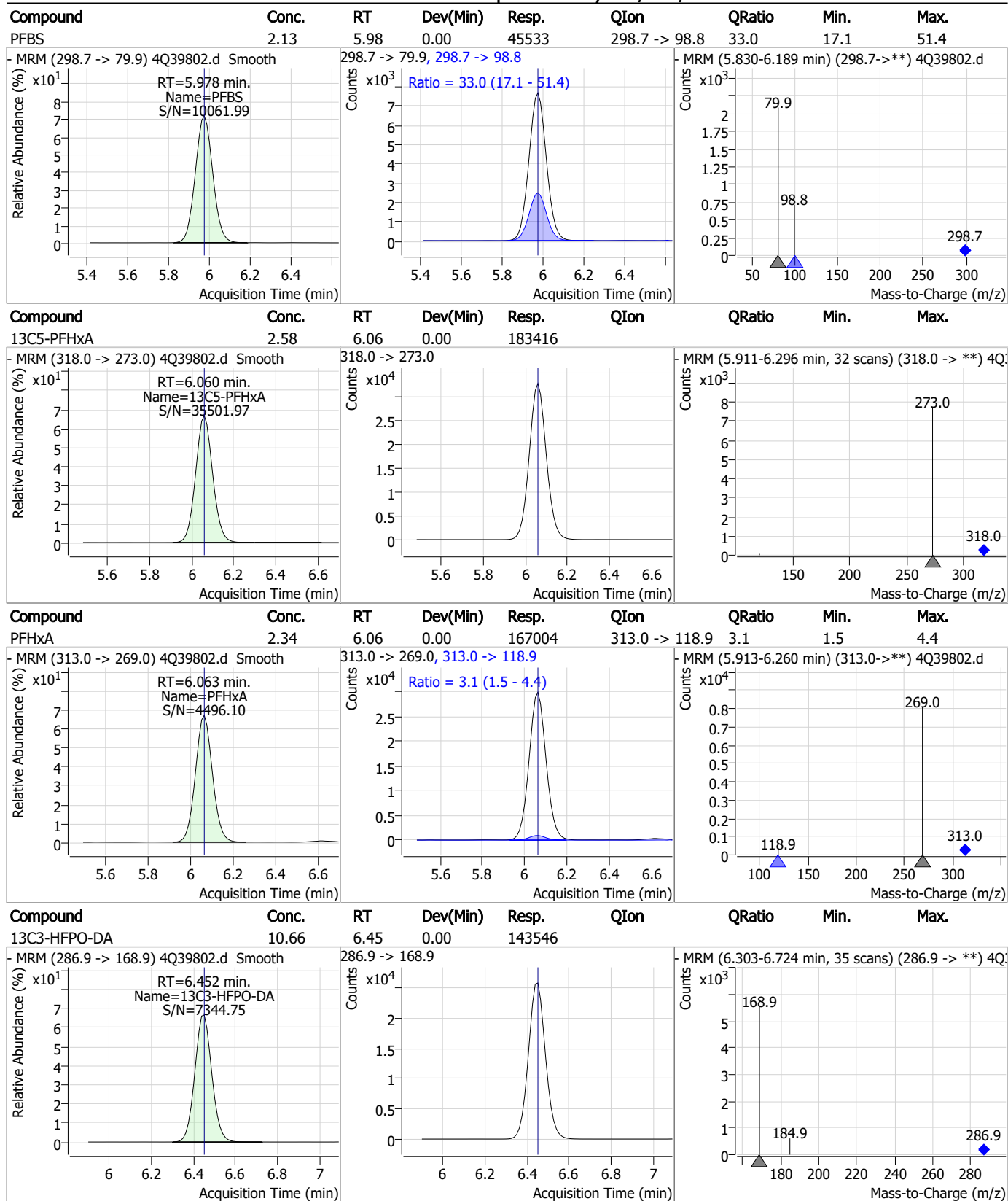
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Perfluorinated Compounds by LC/MS/MS



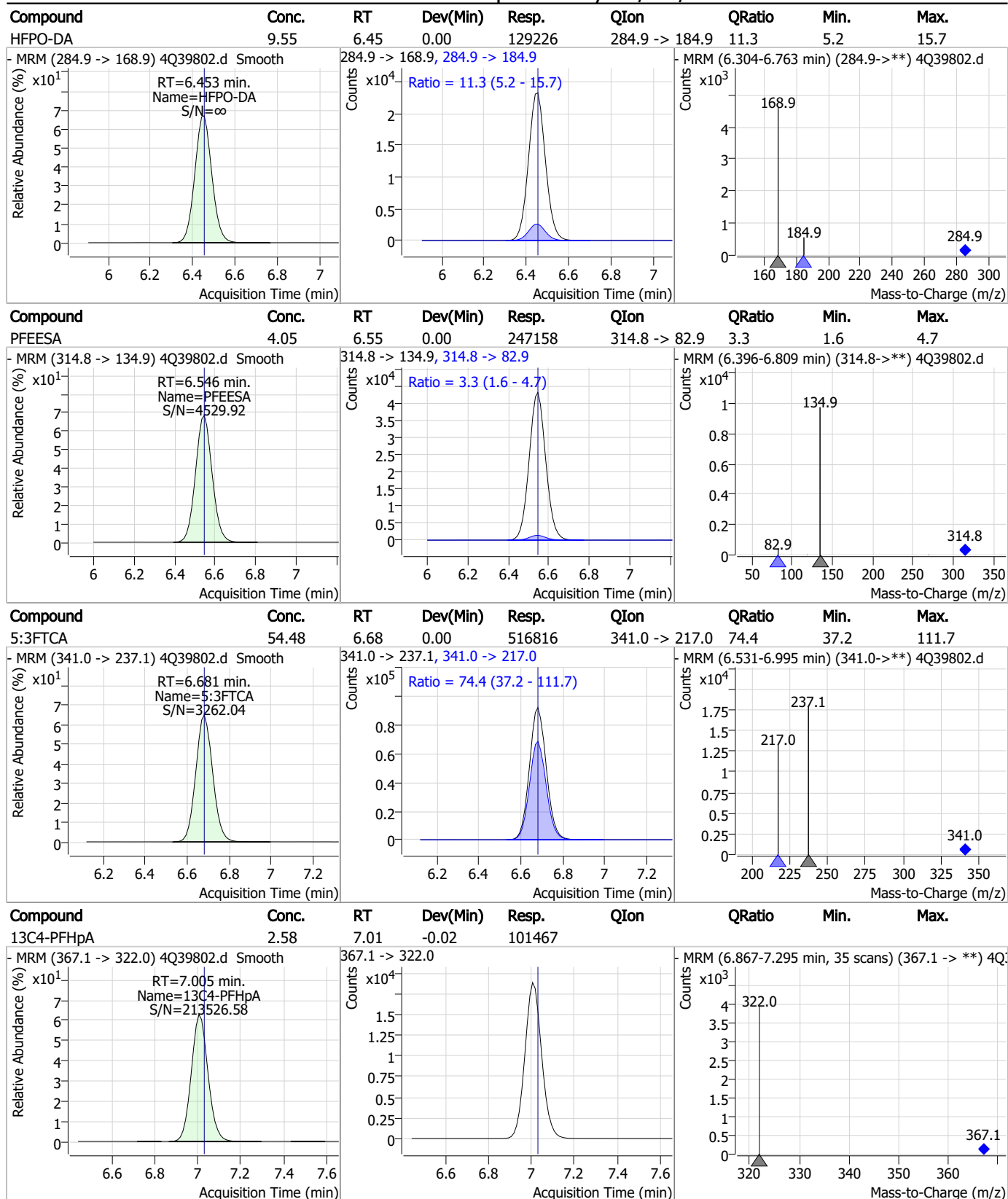
Perfluorinated Compounds by LC/MS/MS



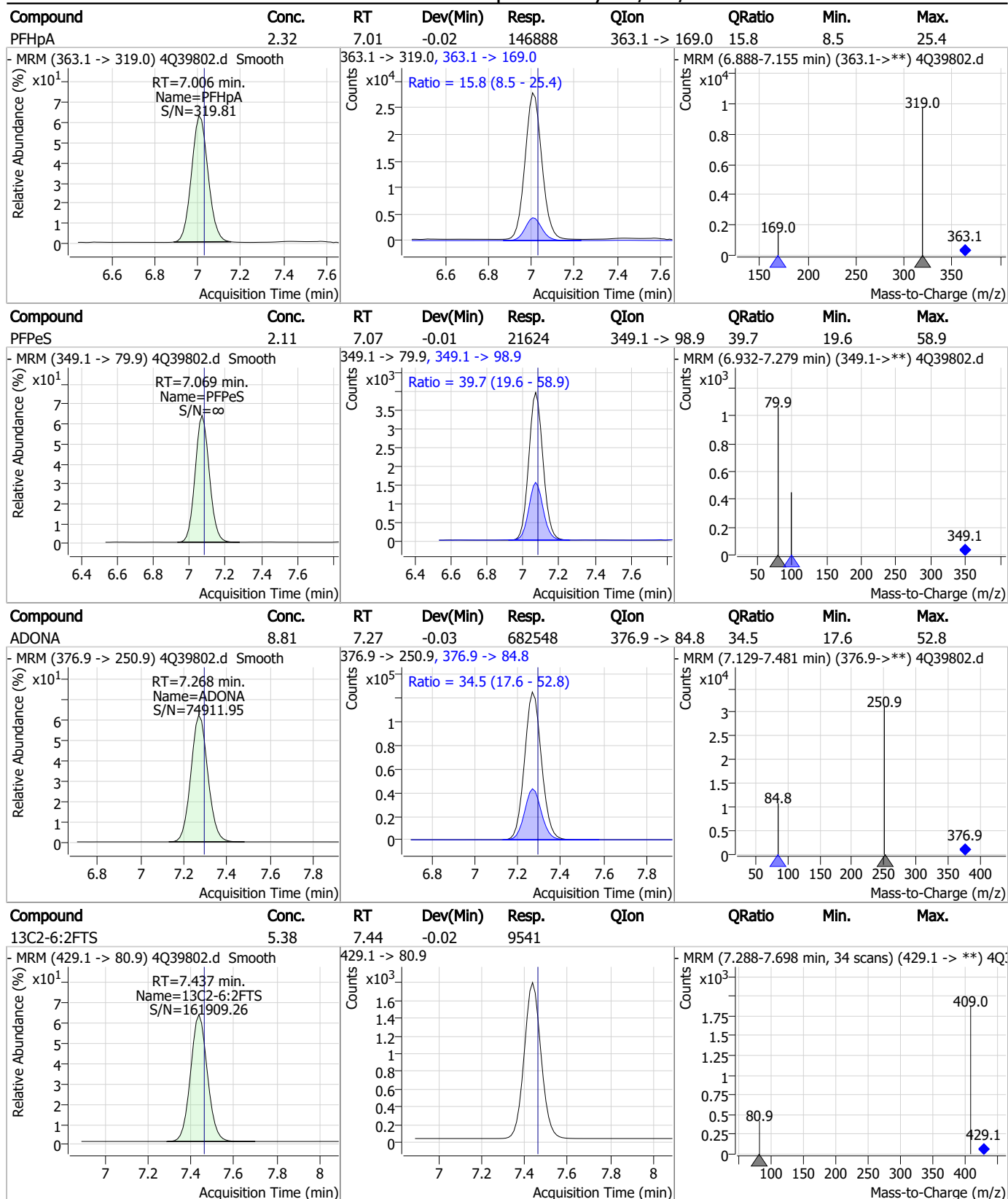
7.6.20

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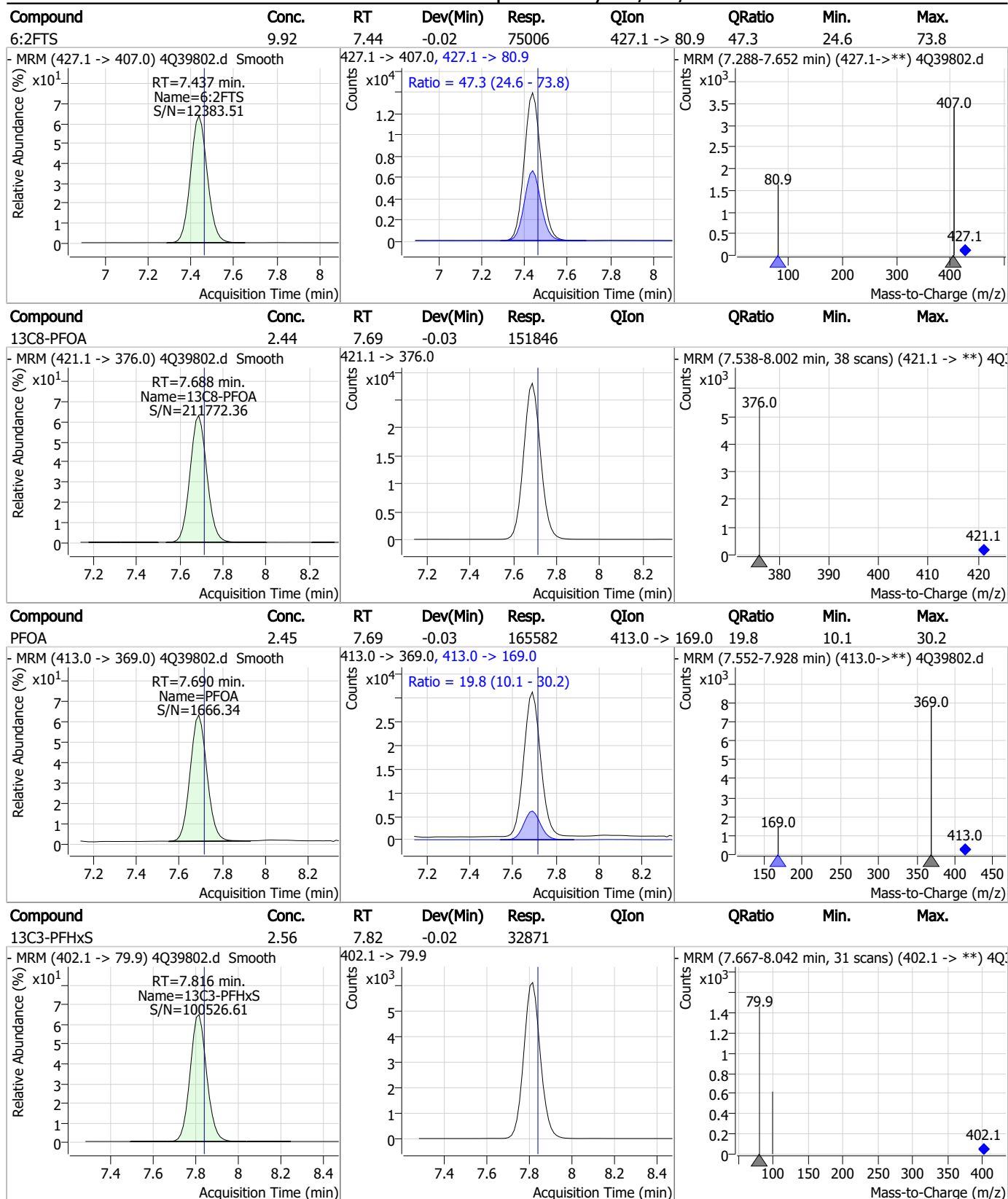
Perfluorinated Compounds by LC/MS/MS



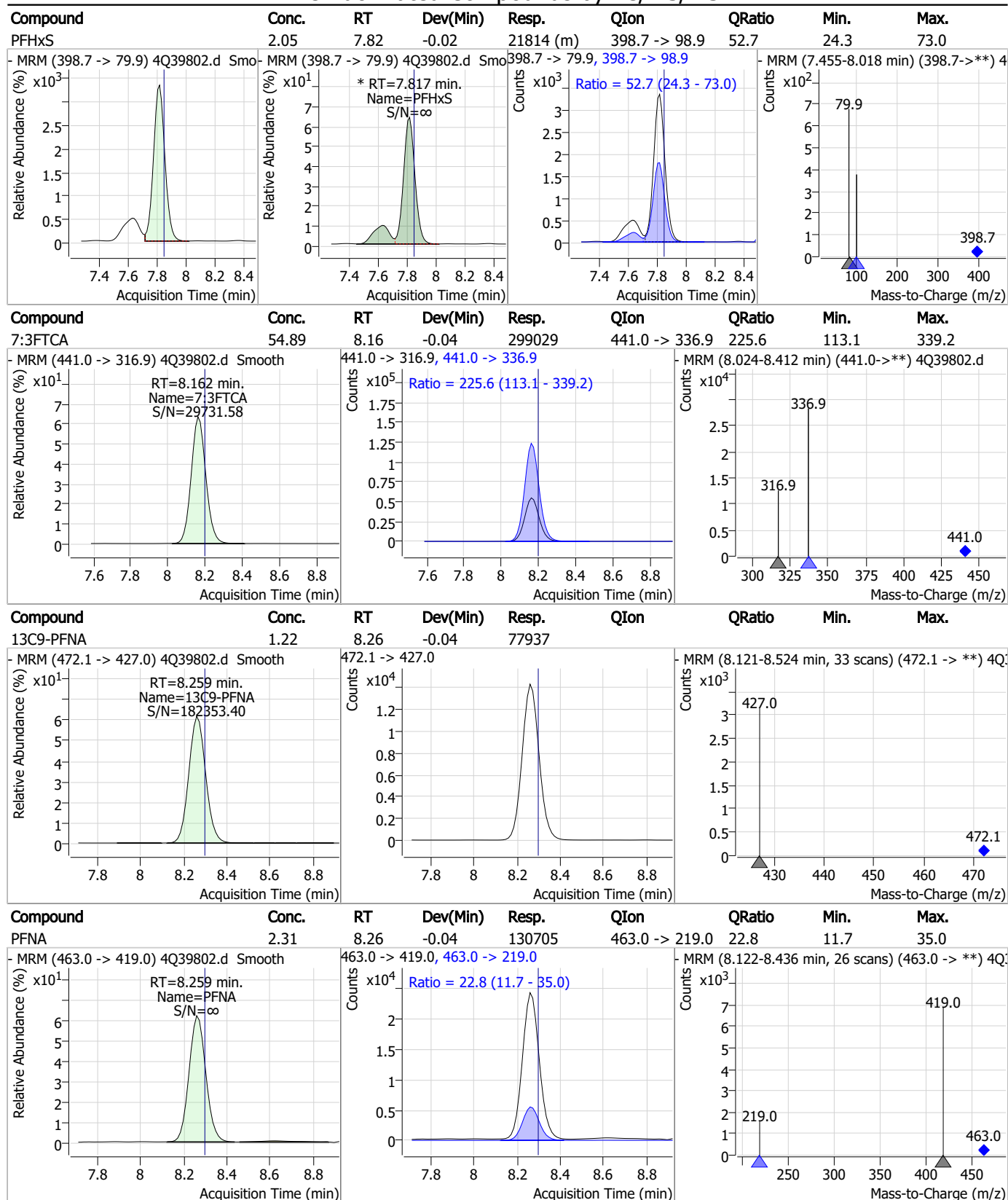
Perfluorinated Compounds by LC/MS/MS



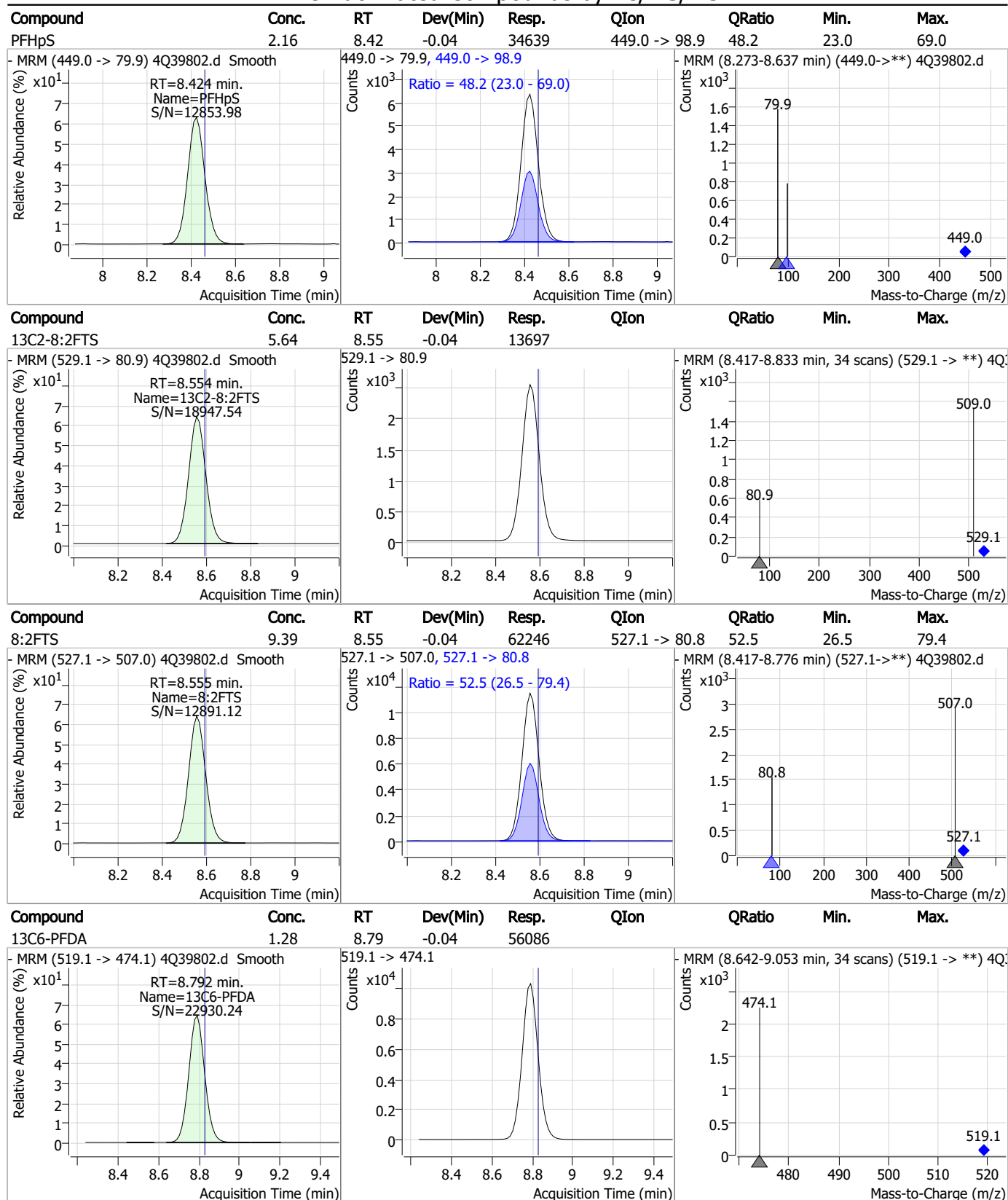
Perfluorinated Compounds by LC/MS/MS



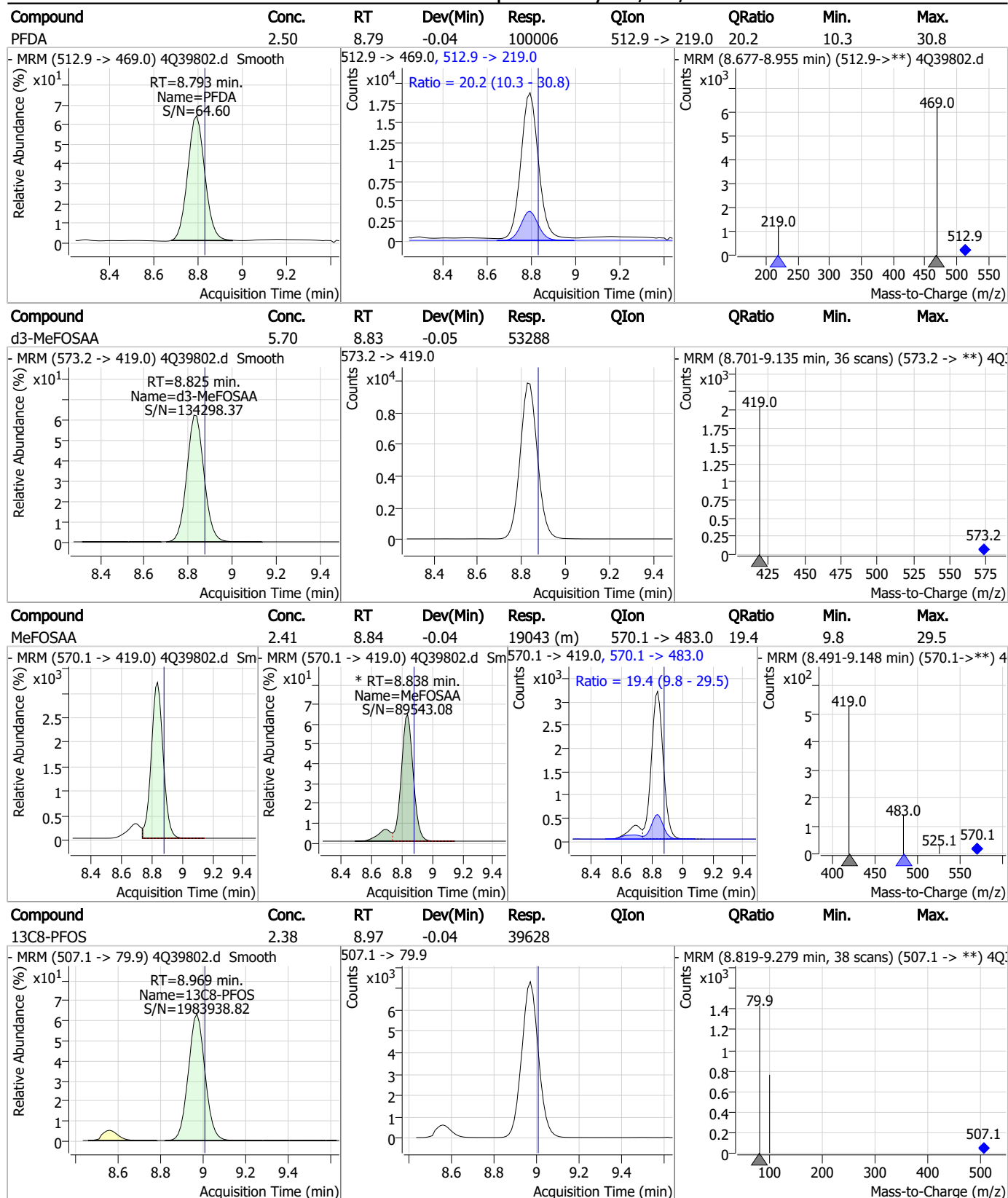
Perfluorinated Compounds by LC/MS/MS



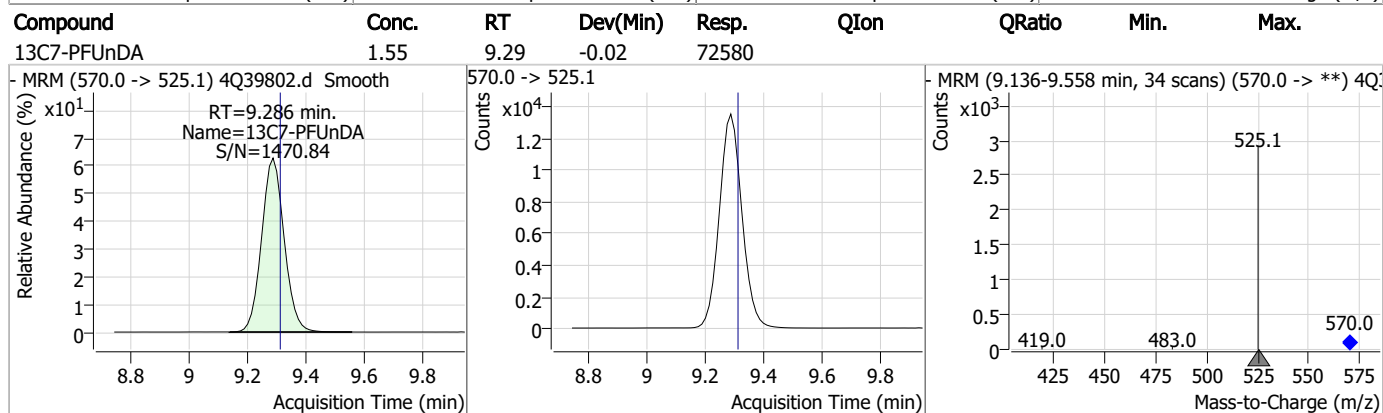
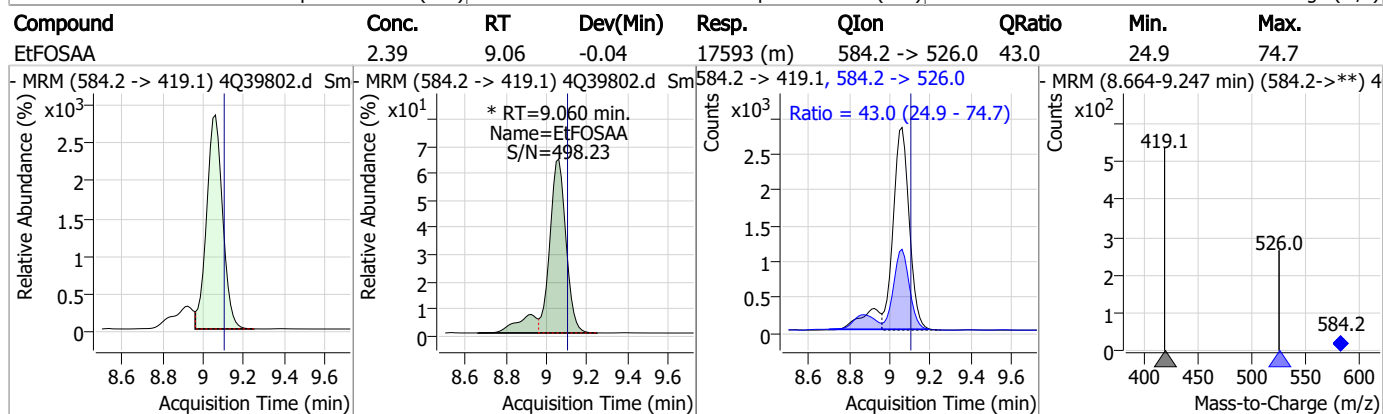
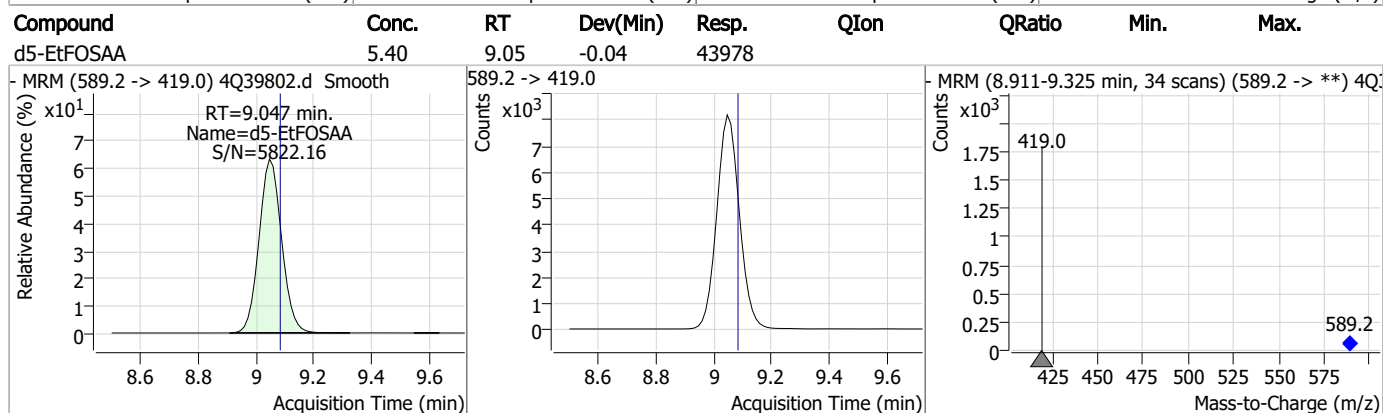
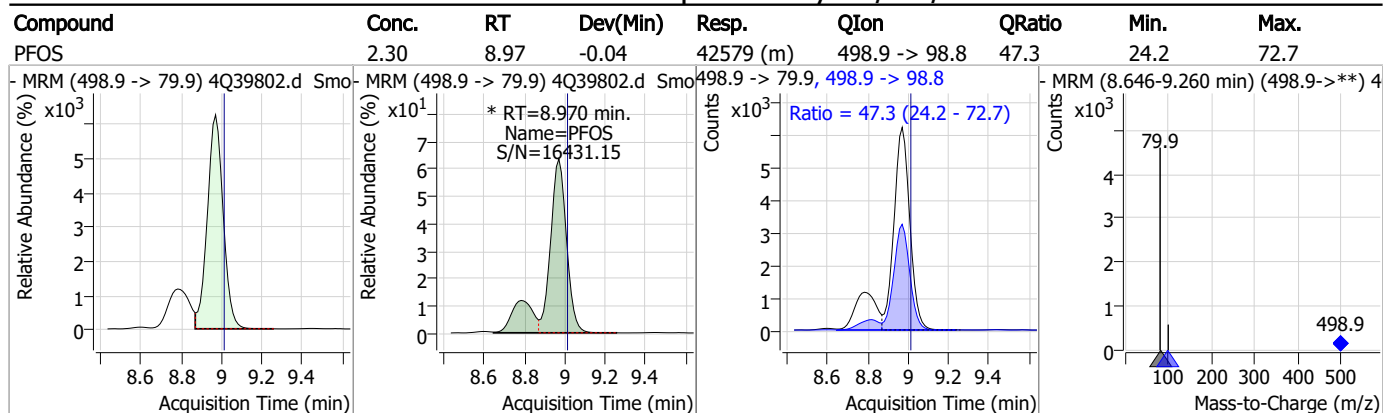
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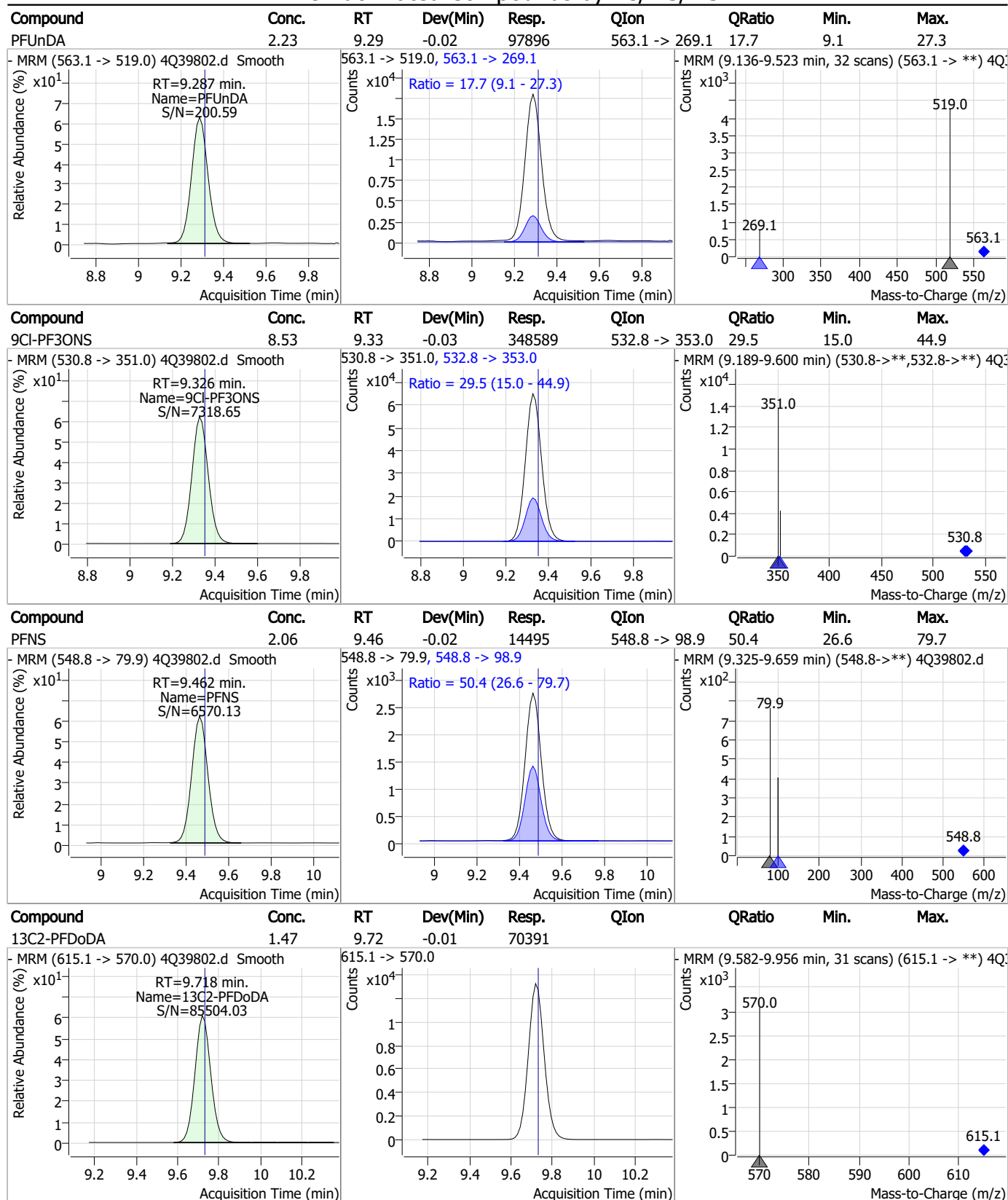
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



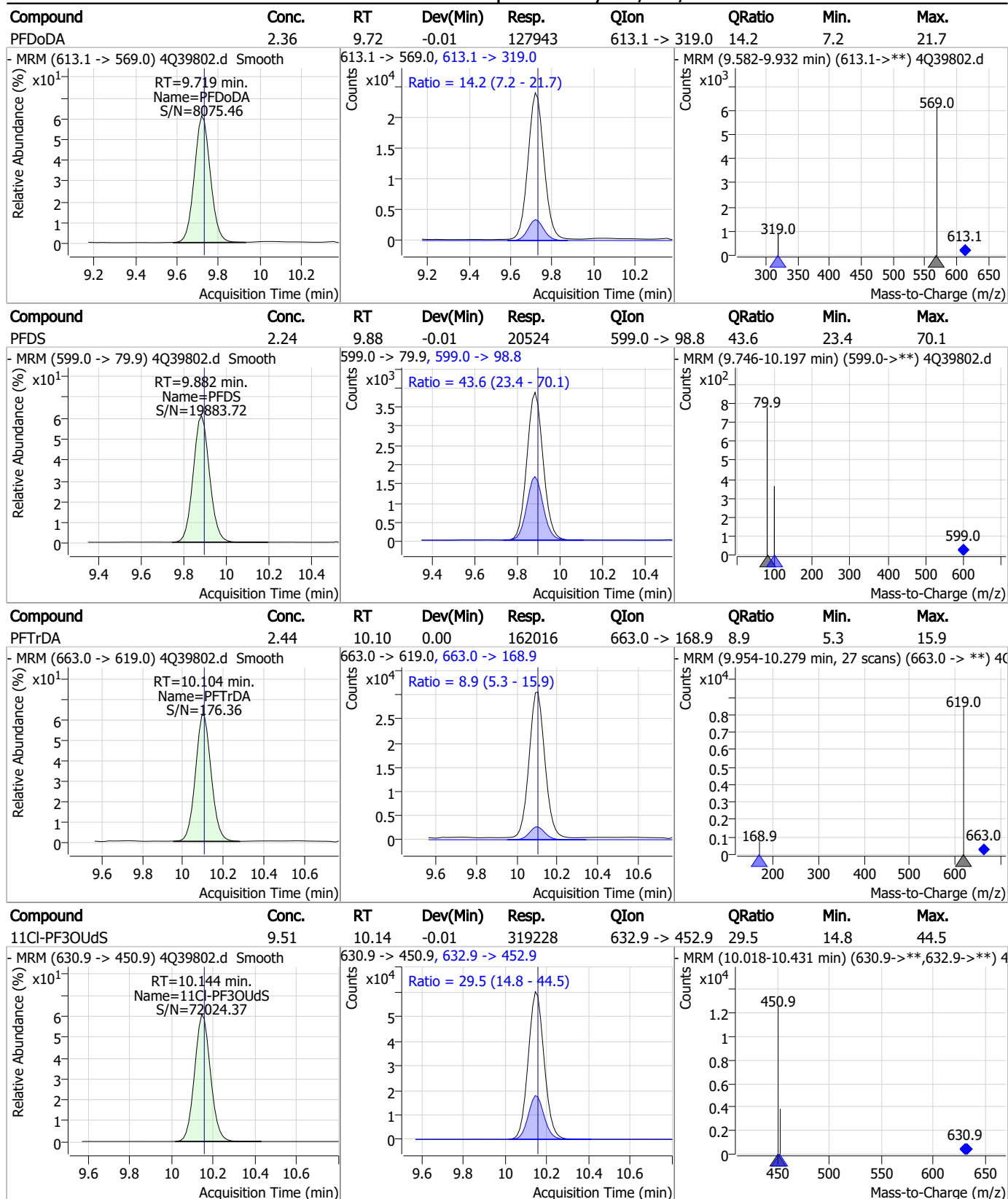
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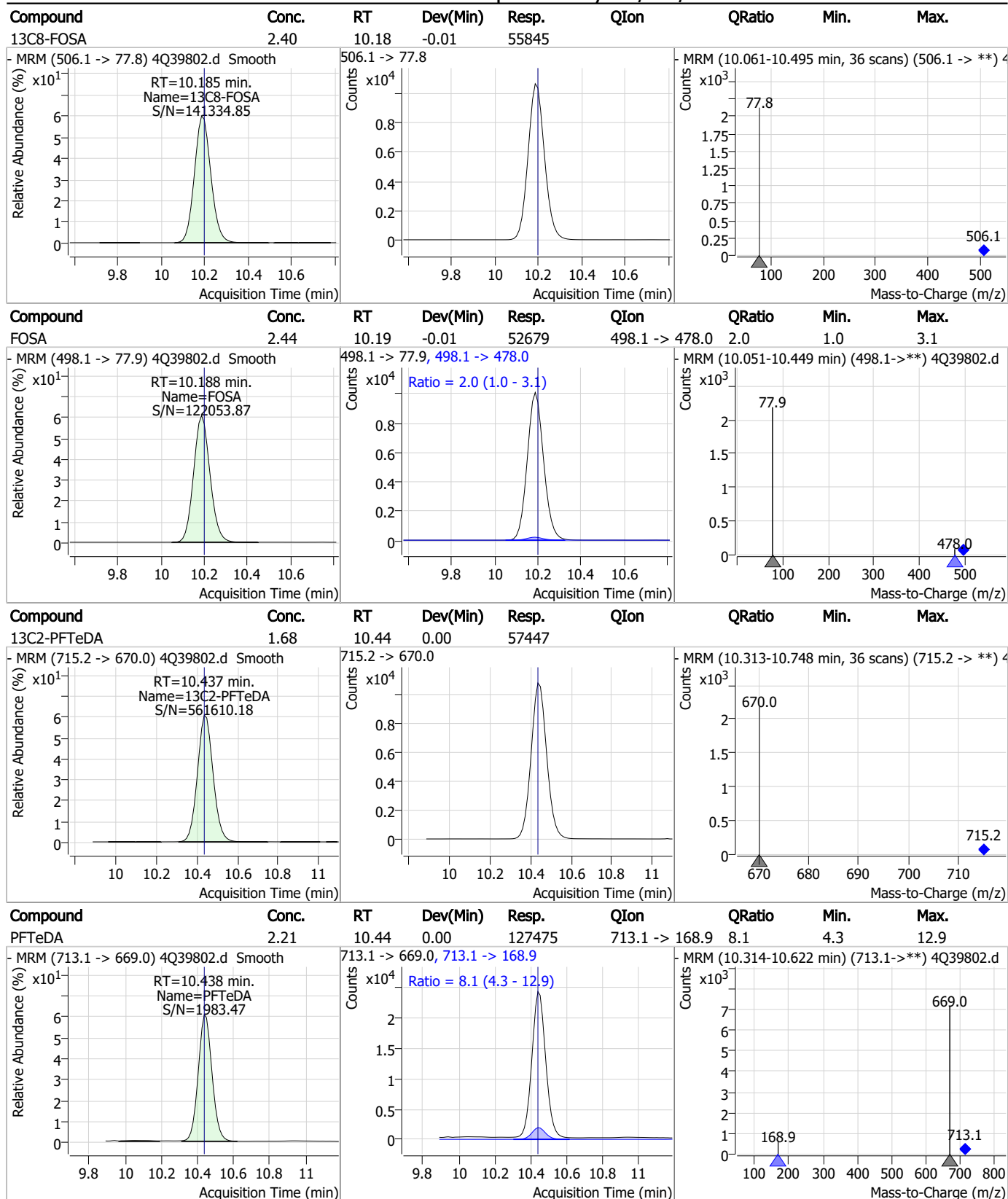
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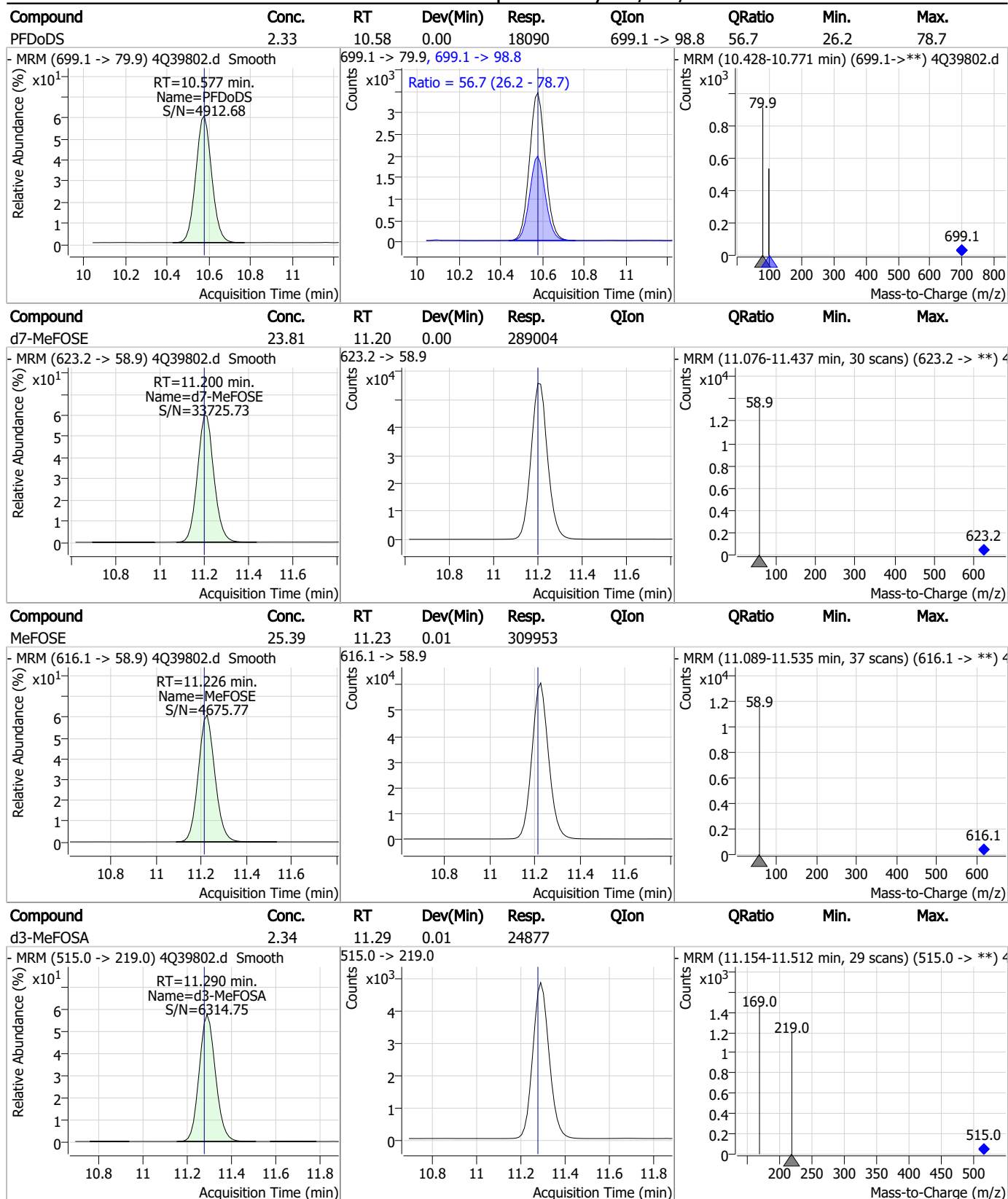
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



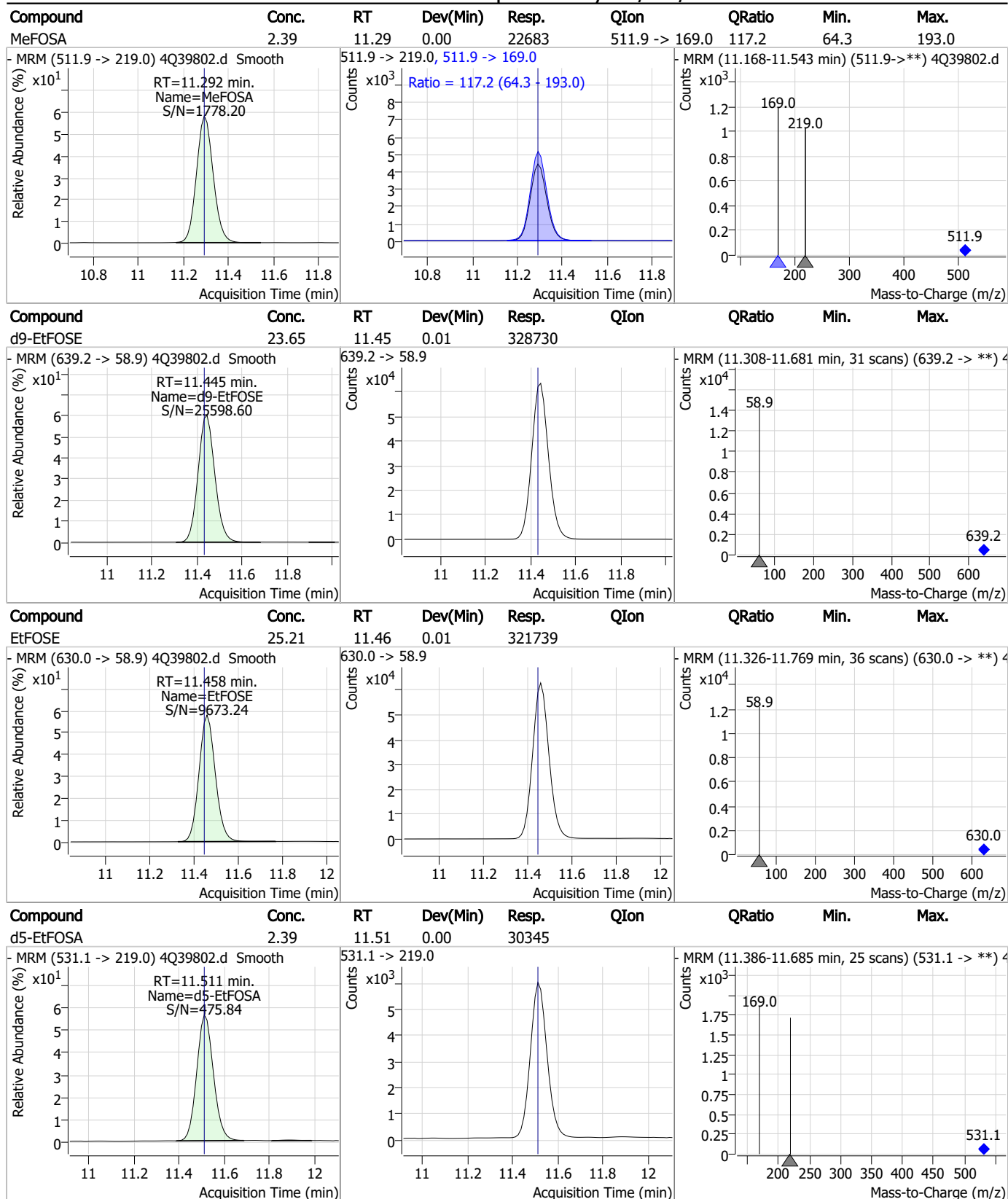
Perfluorinated Compounds by LC/MS/MS



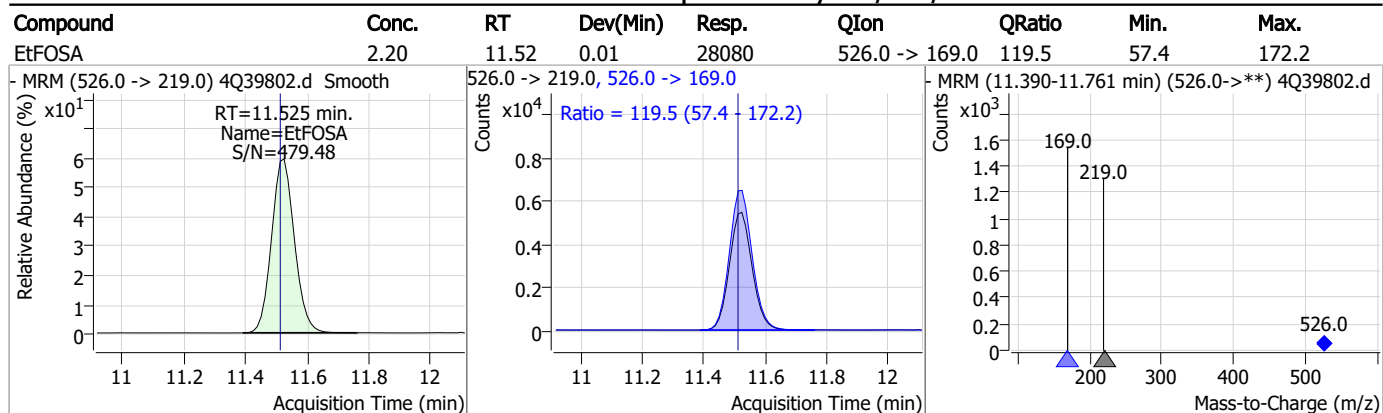
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.20

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Manual Integration Approval Summary

Sample Number: S4Q572-CC571

Lab FileID: 4Q39802.D

Injection Time: 01/26/23 16:54

Method: EPA DRAFT 1633

Analyst approved: 01/27/23 10:21 Natasha Guntie

Supervisor approved: 01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.82	Split peak
MeFOSAA	2355-31-9		8.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.97	Split peak
EtFOSAA	2991-50-6		9.06	Split peak

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LCMS4-4Q ANALYSIS LOG

DATE:	01/24/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 uL
INSTRUMENT:	LCMS4-4Q

METHODS:	1633
PROC. METH:	ID 011623 S4Q571
CAL DATE:	01/24/23
ANALYST:	NG
RUN BATCH:	S4Q571

ELUENT A LOT #:	ACN 214785
ELUENT B LOT #:	224863 w5%ACN 214785 2mMAMAC 11387
IC/CC STD LOT #:	LCMS 2055
ICV STD LOT #:	LCMS 2055/2026
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q39688.d	P1-B1	RT IDCA	1633full.m	Sample	20/500	op95096,S4Q571,500,,5.0.1,water	✓
2	4Q39689.d	P1-B2	RT Br-Ln	1633full.m	Sample	100/500	op95096,S4Q571,500,,5.0.1,water	✓
3	4Q39690.d	P1-A1	ic571-0	1633full.m	Sample		op95096,S4Q571,500,,5.0.1,water	Check Tune File
4	4Q39691.d	P1-A2	ic571-1	1633full.m	Calibration	1.6/500	op95096,S4Q571,500,,5.0.1,water	PASS
5	4Q39692.d	P1-A3	ic571-2	1633full.m	Calibration	4/500	op95096,S4Q571,500,,5.0.1,water	PASS
6	4Q39693.d	P1-A4	ic571-3	1633full.m	Calibration	10/500	op95096,S4Q571,500,,5.0.1,water	PASS
7	4Q39694.d	P1-A5	icc571-4	1633full.m	Calibration	20/500	op95096,S4Q571,500,,5.0.1,water	PASS
8	4Q39695.d	P1-A6	ic571-5	1633full.m	Calibration	40/500	op95096,S4Q571,500,,5.0.1,water	PASS
9	4Q39696.d	P1-A7	ic571-6	1633full.m	Calibration	100/500	op95096,S4Q571,500,,5.0.1,water	PASS
10	4Q39697.d	P1-A8	ic571-7	1633full.m	Calibration	200/500	op95096,S4Q571,500,,5.0.1,water	PASS
11	4Q39698.d	P1-A9	ic571-8	1633full.m	Calibration	1x	op95096,S4Q571,500,,5.0.1,water	PASS, FTS's surrs dropped
12	4Q39699.d	P1-A1	iblk	1633full.m	Sample		op95096,S4Q571,500,,5.0.1,water	ND
13	4Q39700.d	P1-B3	icv571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,5.0.1,water	PASS
14	4Q39701.d	P1-B4	icv571-20	1633full.m	QC	100/500	op95096,S4Q571,500,,5.0.1,water	PASS
15	4Q39702.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,5.0.1,water	PASS
16	4Q39703.d	P1-A2	cc571-1.0LL	1633full.m	QC	1.6/500	op95096,S4Q571,500,,5.0.1,water	PASS
17	4Q39704.d	P1-A1	ccb	1633full.m	Sample		op95096,S4Q571,500,,5.0.1,water	ND
18	4Q39705.d	P1-D2	op95069-bs	1633full.m	Sample		op95069,S4Q571,500,,5.0.1,water	✓
19	4Q39706.d	P1-D3	op95069-llbs:3	1633full.m	Sample		op95069,S4Q571,500,,5.0.1,water	✓
20	4Q39707.d	P1-D4	op95069-mb	1633full.m	Sample		op95069,S4Q571,500,,5.0.1,water	✓
21	4Q39708.d	P1-D5	fc2034-1	1633full.m	Sample		op95069,S4Q571,520,,5.0.1,water	rr 10x
22	4Q39709.d	P1-D6	op95096-bs	1633full.m	Sample		op95096,S4Q571,500,,5.0.1,water	✓
23	4Q39710.d	P1-D7	op95096-llbs:3	1633full.m	Sample		op95096,S4Q571,500,,5.0.1,water	✓
24	4Q39711.d	P1-D8	op95096-mb	1633full.m	Sample		op95096,S4Q571,500,,5.0.1,water	✓
25	4Q39712.d	P1-D9	fc2078-1	1633full.m	Sample		op95096,S4Q571,565,,5.0.1,water	✓
26	4Q39713.d	P1-E1	fc2078-2	1633full.m	Sample		op95096,S4Q571,565,,5.0.1,water	✓
27	4Q39714.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,5.0.1,water	PASS
28	4Q39715.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q571,500,,5.0.1,water	ND
29	4Q39716.d	P1-E2	fc1804-3	1633full.m	Sample		op95069,S4Q571,550,,5.0.1,water	rr 10x
30	4Q39717.d	P1-E3	fc1804-4	1633full.m	Sample		op95069,S4Q571,570,,5.0.1,water	✓
31	4Q39718.d	P1-E4	fc1804-4	1633full.m	Sample	50/500	op95069,S4Q571,570,,5.0.10,water	✓
32	4Q39719.d	P1-E5	fc1804-5	1633full.m	Sample		op95069,S4Q571,570,,5.0.1,water	✓
33	4Q39720.d	P1-E6	fc1804-5	1633full.m	Sample	50/500	op95069,S4Q571,570,,5.0.10,water	✓
34	4Q39721.d	P1-E7	fc1816-1	1633full.m	Sample		op95069,S4Q571,570,,5.0.1,water	rr 10x
35	4Q39722.d	P1-E8	fc1816-2	1633full.m	Sample		op95069,S4Q571,570,,5.0.1,water	rr 10x

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LCMS4-4Q ANALYSIS LOG

36	4Q39723.d	P1-E9	op95069.ms	1633full.m	Sample	op95069,S4Q571,570,,5.0,1,water	rr 10x
37	4Q39724.d	P1-F1	op95069.ms	1633full.m	Sample	op95069,S4Q571,570,,5.0,1,water	rr 10x
38	4Q39725.d	P1-F2	fc1816-3	1633full.m	Sample	op95069,S4Q571,570,,5.0,1,water	rr 10x
39	4Q39726.d	P1-A5	cc571-4	1633full.m	QC	op95096,S4Q571,500,,5.0,1,water	PASS
40	4Q39727.d	P1-A1	iccb	1633full.m	Sample	op95096,S4Q571,500,,5.0,1,water	ND
41	4Q39728.d	P1-F3	fc1816-4	1633full.m	Sample	op95069,S4Q571,530,,5.0,1,water	rr 10x
42	4Q39729.d	P1-F4	fc1816-4	1633full.m	Sample	op95069,S4Q571,530,,5.0,10,water	rr 10x
43	4Q39730.d	P1-F5	fc1816-5	1633full.m	Sample	op95069,S4Q571,540,,5.0,1,water	rr 10x
44	4Q39731.d	P1-F6	fc1816-6	1633full.m	Sample	op95069,S4Q571,550,,5.0,1,water	rr 10x
45	4Q39732.d	P1-F7	fc1816-7	1633full.m	Sample	op95069,S4Q571,560,,5.0,1,water	rr 10x
46	4Q39733.d	P1-F8	fc1816-8	1633full.m	Sample	op95069,S4Q571,570,,5.0,1,water	rr 10x
47	4Q39734.d	P1-F9	fc1816-8	1633full.m	Sample	op95069,S4Q571,570,,5.0,10,water	rr 10x
48	4Q39735.d	P2-A1	fc1816-9	1633full.m	Sample	op95069,S4Q571,540,,5.0,1,water	rr 10x
49	4Q39736.d	P2-A2	fc1816-10	1633full.m	Sample	op95069,S4Q571,570,,5.0,1,water	rr 10x
50	4Q39737.d	P2-A3	fc1816-11	1633full.m	Sample	op95069,S4Q571,570,,5.0,1,water	rr 10x
51	4Q39738.d	P1-A5	cc571-4	1633full.m	QC	op95096,S4Q571,500,,5.0,1,water	PASS
52	4Q39739.d	P1-A1	iccb	1633full.m	Sample	op95096,S4Q571,500,,5.0,1,water	ND
53	4Q39740.d	P1-A2	cc571-1.OLL	1633full.m	QC	op95096,S4Q571,500,,5.0,1,water	PASS
54	4Q39741.d	P2-A4	fc1816-12	1633full.m	Sample	op95069,S4Q571,550,,5.0,1,water	✓
55	4Q39742.d	P2-A5	fc1816-12	1633full.m	Sample	op95069,S4Q571,550,,5.0,10,water	✓
56	4Q39743.d	P2-A6	fc1816-13	1633full.m	Sample	op95069,S4Q571,560,,5.0,1,water	rr 10x
57	4Q39744.d	P2-A7	fc1816-13	1633full.m	Sample	op95069,S4Q571,560,,5.0,10,water	rr 10x
58	4Q39745.d	P2-A8	fc1815-1	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x
59	4Q39746.d	P2-A9	fc1815-2	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x, 1x
60	4Q39747.d	P2-B1	fc1815-3	1633full.m	Sample	op95096,S4Q571,540,,5.0,1,water	✓
61	4Q39748.d	P2-B2	fc1815-4	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	✓
62	4Q39749.d	P2-B3	fc1815-4	1633full.m	Sample	op95096,S4Q571,565,,5.0,10,water	✓
63	4Q39750.d	P2-B4	fc1815-5	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	✓
64	4Q39751.d	P1-A5	cc571-4	1633full.m	QC	op95096,S4Q571,500,,5.0,1,water	PASS
65	4Q39752.d	P1-A1	iccb	1633full.m	Sample	op95096,S4Q571,500,,5.0,1,water	ND
66	4Q39753.d	P2-B5	fc1815-6	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x, 1x
67	4Q39754.d	P2-B6	fc1815-7	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x
68	4Q39755.d	P2-B7	fc1815-8	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	✓
69	4Q39756.d	P2-B8	fc1815-8	1633full.m	Sample	op95096,S4Q571,565,,5.0,10,water	✓
70	4Q39757.d	P2-B9	fc1815-9	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x
71	4Q39758.d	P2-C1	fc1815-9	1633full.m	Sample	op95096,S4Q571,565,,5.0,10,water	rr 10x
72	4Q39759.d	P2-C2	fc1815-10	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x
73	4Q39760.d	P2-C3	fc1815-11	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x
74	4Q39761.d	P2-C4	op95096.ms	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x
75	4Q39762.d	P2-C5	op95096.ms	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x
76	4Q39763.d	P1-A5	cc571-4	1633full.m	QC	op95096,S4Q571,500,,5.0,1,water	PASS
77	4Q39764.d	P1-A1	iccb	1633full.m	Sample	op95096,S4Q571,500,,5.0,1,water	ND
78	4Q39765.d	P2-C6	fc1815-12	1633full.m	Sample	op95096,S4Q571,565,,5.0,1,water	rr 10x

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LCMS4-4Q ANALYSIS LOG

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79	4Q39766.d	P2-C7	fc1815-13	1633full.m	Sample	50/500	op95096,S4Q571,565,,5.0,1,water	✓
80	4Q39767.d	P2-C8	fc1815-13	1633full.m	Sample		op95096,S4Q571,565,,5.0,10,water	✓
81	4Q39768.d	P2-C9	fc1815-14	1633full.m	Sample		op95096,S4Q571,565,,5.0,1,water	rr 10x
82	4Q39769.d	P2-D1	fc1815-15	1633full.m	Sample		op95096,S4Q571,565,,5.0,1,water	rr 10x
83	4Q39770.d	P2-D2	fc1815-16	1633full.m	Sample		op95096,S4Q571,540,,5.0,1,water	rr 10x
84	4Q39771.d	P2-D3	fc1815-17	1633full.m	Sample		op95096,S4Q571,565,,5.0,1,water	rr 10x
85	4Q39772.d	P2-D4	fc1815-17	1633full.m	Sample	50/500	op95096,S4Q571,565,,5.0,10,water	rr 10x
86	4Q39773.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,5.0,1,water	PASS
87	4Q39774.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q571,500,,5.0,1,water	ND
88	4Q39775.d	P1-C1	op94135-mb	1633full.m	Sample		op94135,S4Q571,500,,5.0,1,water	LOD/LOQ
89	4Q39776.d	P1-C2	fa9824-37	1633full.m	Sample		op94135,S4Q571,500,,5.0,1,water	LOD/LOQ
90	4Q39777.d	P1-C3	fa9824-38	1633full.m	Sample		op94135,S4Q571,500,,5.0,1,water	LOD/LOQ
91	4Q39778.d	P1-C4	fa9824-39	1633full.m	Sample		op94135,S4Q571,500,,5.0,1,water	LOD/LOQ
92	4Q39779.d	P1-C5	fa9824-40	1633full.m	Sample		op94135,S4Q571,500,,5.0,1,water	LOD/LOQ
93	4Q39780.d	P1-C6	op94007-mb	1633full.m	Sample		op94007,S4Q571,5.00,,5.0,1,soil	LOD/LOQ
94	4Q39781.d	P1-C7	fa9824-41	1633full.m	Sample		op94007,S4Q571,5.00,,5.0,1,soil	LOD/LOQ
95	4Q39782.d	P1-C8	fa9824-42	1633full.m	Sample		op94007,S4Q571,5.00,,5.0,1,soil	LOD/LOQ
96	4Q39783.d	P1-C9	fa9824-43	1633full.m	Sample		op94007,S4Q571,5.00,,5.0,1,soil	LOD/LOQ
97	4Q39784.d	P1-D1	fa9824-44	1633full.m	Sample		op94007,S4Q571,5.00,,5.0,1,soil	LOD/LOQ
98	4Q39785.d	P1-A5	ecc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,5.0,1,water	PASS
99	4Q39786.d	P1-A1	iccb	1633full.m	Sample		op94007,S4Q571,5.00,,5.0,1,soil	ND

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DATE:	01/26/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 ul
INSTRUMENT:	LCMS4-4Q

LCMS4-4Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	ID_011623_S4Q571
CAL DATE:	01/24/23
ANALYST:	NG
RUN BATCH:	S4Q572

ELUENT A LOT #:	ACN 214785
ELUENT B LOT #:	224863 w5%ACN 214785 2mMAMAC 11387
IC/CC STD LOT #:	LCMS 2055
ICV STD LOT #:	LCMS 2055/2026
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q39787.d	P1-A1	ccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
2	4Q39788.d	P1-A1	ccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
3	4Q39789.d	P1-A1	ccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
4	4Q39790.d	P1-B1	RT TDCA	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
5	4Q39791.d	P1-B2	RT Br-Ln	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
6	4Q39792.d	P1-A9	high std	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
7	4Q39793.d	P1-A1	iblk	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
8	4Q39794.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
9	4Q39795.d	P1-A2	cc571-1,0LL	1633full.m	QC	1.6/500	op95096,S4Q572,500,,,5.0,1,water	✓
10	4Q39796.d	P3-A1	fc2034-1	1633full.m	Sample	50/500	op95069,S4Q572,520,,,5.0,10,water	✓
11	4Q39797.d	P3-A2	fc2078-1	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
12	4Q39798.d	P3-A3	fc1804-3	1633full.m	Sample	50/500	op95069,S4Q572,550,,,5.0,10,water	✓
13	4Q39799.d	P3-A4	fc1816-1	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
14	4Q39800.d	P3-A5	fc1816-2	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
15	4Q39801.d	P3-A6	fc1816-3	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
16	4Q39802.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
17	4Q39803.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
18	4Q39804.d	P3-A7	fc1816-4	1633full.m	Sample	50/500	op95069,S4Q572,530,,,5.0,10,water	✓
19	4Q39805.d	P3-A8	fc1816-5	1633full.m	Sample	50/500	op95069,S4Q572,540,,,5.0,10,water	✓
20	4Q39806.d	P3-A9	fc1816-6	1633full.m	Sample	50/500	op95069,S4Q572,550,,,5.0,10,water	✓
21	4Q39807.d	P3-B1	fc1816-7	1633full.m	Sample	50/500	op95069,S4Q572,560,,,5.0,10,water	✓
22	4Q39808.d	P3-B2	fc1816-8	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
23	4Q39809.d	P3-B3	fc1816-9	1633full.m	Sample	50/500	op95069,S4Q572,540,,,5.0,10,water	✓
24	4Q39810.d	P3-B4	fc1816-10	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
25	4Q39811.d	P3-B5	fc1816-11	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
26	4Q39812.d	P3-B6	fc1816-13	1633full.m	Sample	50/500	op95069,S4Q572,560,,,5.0,10,water	✓
27	4Q39813.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
28	4Q39814.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
29	4Q39815.d	P1-A2	cc571-1,0LL	1633full.m	QC	1.6/500	op95096,S4Q572,500,,,5.0,1,water	✓
30	4Q39816.d	P3-B7	fc1815-1	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
31	4Q39817.d	P3-B8	fc1815-2	1633full.m	Sample		op95096,S4Q572,565,,,5.0,1,water	✓
32	4Q39818.d	P3-B9	fc1815-2	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
33	4Q39819.d	P3-C1	fc1815-6	1633full.m	Sample		op95096,S4Q572,565,,,5.0,1,water	✓
34	4Q39820.d	P3-C2	fc1815-6	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
35	4Q39821.d	P3-C3	fc1815-7	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓

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SGS ORLANDO LCMS4-4Q ANALYSIS LOG

36	4Q39822.d	P3-C4	fc1815-9	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
37	4Q39823.d	P3-C5	fc1815-10	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
38	4Q39824.d	P3-C6	fc1815-11	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
39	4Q39825.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
40	4Q39826.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
41	4Q39827.d	P3-C7	fc1815-12	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
42	4Q39828.d	P3-C8	fc1815-14	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
43	4Q39829.d	P3-C9	fc1815-15	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
44	4Q39830.d	P3-D1	fc1815-16	1633full.m	Sample	50/500	op95096,S4Q572,540,,,5.0,10,water	✓
45	4Q39831.d	P3-D2	fc1815-17	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
46	4Q39832.d	P1-A5	ecc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
47	4Q39833.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2052	1633 prep mix	221044 Lot:	MeOH	Fisher	—	1/4/24	99.9%	92mL	100mL	92%	N/A	1/19/23	4/19/23	NV
		219481 Lot:	NH4OH		—	9/19/23	100%	3.3mL		1%				
		224863 Lot:	H2O		—	1/17/24 1/17/23	100%	1.7mL		4%				
		224297 Lot:	Acetic ACID		—	6/24	99.7%	0.625mL		.625%				
LCMS 2053	(spike) Full 11st std	11568	PFAC 200 28 comp.	SGS standards	11/9/27	1/10/24	1.0ppm	400uL	4.0mL	100ppb	95% MeOH 5% H2O	12/4/23	3/21/23	NV
		LCMS 1987	40 11st ADDITION		—	3/21/23	1.0ppm	400uL						
		LCMS 1986	40 11st ADDITION #2		—	4/18/23	1.0ppm	400uL						
		LCMS 2054	FOSC std.		—	7/24/23 5/11/23	5.0ppm	400uL		50ppb				
LCMS 2054	FOSC std.	11336	N-Et- FOSC	Wellington	5/13/27	9/19/23	50ppm	200uL	2.0mL	5ppm	95% MeOH 5% H2O	12/4/23	7/24/23	NV
		11338	N-Me FOSC		5/13/27	9/19/23	50ppm	200uL						
LCMS 2055	1633 Cal std.	10855	PFAC- MxH	Wellington	9/14/26	1/17/24	1-4 ppm	250uL	4mL	62.5 125 250ppb	1633 NIX	1/24/23	7/24/23	NV
		10853I	PFAC- MxI		9/14/26	1/11/24	1-10 ppm	250uL		62.5 125 250ppb				
		11579B	PFAC- MxH		1/11/25	1/11/24	2ppm	500uL		250ppb				
		10854I	PFAC- MxG		3/4/25	1/11/24	2ppm	250uL		125ppb				
		10854J	PFAC- MxJ		9/14/26	1/11/24	4-20 ppm	312uL		312/1000 ppb				
		11492	PFAC- MxJ		9/14/26	1/11/24	4-20 ppm	312uL						
		11603	PFAC- MxJ		9/14/26	1/11/24	4-20 ppm	312uL						
						1/11/24	4-20 ppm	312uL						

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Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2025	List 40 (Surr) ADD-ON Isotope Mix	11333	d7-N- MeFosc	Wellington Labs	01/27/27	10/12/23	50ppm	200uL	2.0 mL	1/5 ppm	95% MeOH 5% H ₂ O	12/17/22	6/17/23	MU
		11460	d9-N- EtFosc		01/27/27	12/07/23		200uL						
		11339	EtFosc		01/27/27	10/12/23		40uL						
		11115	H2-		11/23/28	08/23/23		40uL						
		10836	PFHxDA D-N		12/30/25	08/23/23		40uL						
			EtFosa											
LCMS 2026	(spike) Full List Std.	11447	PROA- molag	Absolute	06/05/27	11/29/23	1.0ppm	400uL	4.0mL	100ppb	95% MeOH 5% H ₂ O	12/08/22	12/12/23	NG
		1987	HOLST			03/21/23	1.0ppm	400uL		100ppb				NG
		1987	ADON#1			04/18/23	1.0ppm	400uL		100ppb				NG
		1986	HOLST			04/18/23	1.0ppm	400uL		100ppb				NG
		1986	ADON#2			05/11/23	5.0ppm	400uL		500ppb				NG
LCMS 2027	(spike) 1633 CAL Std.	10855F	PFAC- MXH	Wellington Labs	09/14/26	11/04/23	1-4 ppm	250uL	4mL	625/105/50 ppb	1633 Mix	12/12/22	05/01/23	NG
		10853F	PFAC- MXI		09/14/26	11/22/23	1-10 ppm	250uL		625/105 ppb				NG
		11403A	PFAC- MXF		05/01/23	11/29/23	2 ppm	500uL		250ppb				NG
		10854F	PFAC- MXG		03/04/25	11/22/23	2 ppm	250uL		125ppb				NG
		1085TE	PFAC- MXJ		10/12/23	11/22/23	4-20 ppm	312uL		312/1160 ppb				NG
LCMS 2028	537.1 DW Std.	11447	PROA-DOP Carbamates	Absolute	08/05/27	11/29/23	1.0ppm	400uL	4mL	100ppb	96% MeOH 4% H ₂ O	12/12/22	02/01/23	NG
		1950	537.1 DW Surr			02/01/23	10/20 ppm	400uL		100/200 ppb				NG

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Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 1987	40 List Std ADD-ON #1	10736A	10:2 PFS	Wallington Labs	03/03/26	03/31/23	50ppm	80uL	4.0mL	1ppm	05/NEOH 5:1420	10/18/22	03/21/23	NG
		10840	10:2 PFS		07/01/26	10/18/23								
		10829	N-HETSA		08/03/26	05/12/23								
		10837	N-HETSA		08/03/26	05/12/23								
		10842	PFHDA	NS Wallington Labs	03/03/26	10/18/23								
		10841	PFODA		05/07/26	10/18/23								
		10684A	3:3FCA		11/12/25	03/21/23								
		10685A	5:3FCA		11/11/25	08/12/23								
		10683A	7:3FCA		11/12/25	03/21/23								
		11117	PFCHS		10/14/26	06/12/23								
		10762B	PFESA		05/12/25	10/18/23								
		10763B	PFMBA		03/21/25	10/18/23								
		10764A	PFMBA		03/21/25	03/21/23								
		10765B	PFHDA		03/21/25	10/18/23								
			3:6 OFHBA											
						10/18/22								

* based on date opened as specified in each SGS - Orlando SOP.

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Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 1985A-B	List 40 ADD-ON ADD-ON #2	11333	D7-N- EFOSA	Wellington Labs	01/27/27	10/12/23	50ppm	200uL	20mL	15ppm	95% MeOH 5% H ₂ O	10/18/22	01/18/23	NS
→	→	11339	D9-N- EFOSA	→	01/27/27	10/12/23	→	200uL	→	→	→	→	→	NS
→	→	11115	D2- EFOSA	→	11/23/28	08/23/23	→	40uL	→	→	→	→	→	NS
→	→	10836	D-N- EFOSA	→	12/30/25	08/23/23	→	40uL	→	→	→	→	→	NS
LCMS 1986	40 List Std. ADD-ON #2	11224	FBSA-1 EFOSA	Wellington Labs	11/10/26	06/12/23	50ppm	80uL	4.0mL	1ppm	95% MeOH 5% H ₂ O	10/18/22	01/18/23	NS
→	→	11225	FBSA-1	→	12/28/26	06/12/23	50ppm	80uL	→	→	→	→	→	NS
→	→	11140	L-PFRS	→	07/26/26	05/26/23	50ppm	80uL	→	→	→	→	→	NS
NS 10/18/22														

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Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS A 2009 B	PFC Spike	11083	PFDA-D8 (800mg) Labs	Wellington Labs	08/05/27	11/08/23	1.0 ppm	2 mL	5 mL	400 ppb	95/11/00H 5/1/1720	11/08/22	05/05/23	NG
		10829	N-He- FOSEA-M		08/23/26	09/23/23	500 ppm	400 µL						NG
		11224	FOSEA-1		11/10/26	06/23/23								NG
		11249	FAHSA-1		12/29/26	11/03/23								NG
		11332	PFECMS		03/28/27	10/18/23								NG
LCMS A-B 2010	(Spike) 1623 CAL. Std.	10855F	PFAC- N2H4	Wellington Labs	09/14/26	11/04/23	1-4 ppm	250 µL	4 mL	12.5 µg/L 1250 ppb	16/23 16/23 16/23 Mix	11/01/22	05/01/23	NG
		10853E	PFAC- N2H4		09/14/26	11/04/23	1-10 ppm	250 µL		12.5 µg/L 1250 ppb				NG
		10856I	PFAC- N2H4		05/01/23	05/01/23	2 ppm	500 µL		250 ppb				NG
		10854E	PFAC- N2H4		03/01/25	11/04/23	2 ppm	250 µL		125 ppb				NG
		10857D	PFAC- N2H4		10/12/23	11/02/23	4-20 ppm	312 µL		212 µg/L 2120 ppb				NG
LCMS 2011	(Spike) FULL List Std.	11440	PFDA- D8 (28g)	Absolute	08/05/27	10/24/23	1.0 ppm	400 µL	4.0 mL	100 ppb	95/11/00H 5/1/1720	11/11/22	07/21/23	NG
		LCMS 1987	HOLIST ADDITION #1			03/21/23	1.0 ppm	400 µL		100 ppb				NG
		LCMS 1986	HOLIST ADDITION #2			01/18/23	1.0 ppm	400 µL		100 ppb				NG
		LCMS 2012	FOSE Std.			05/11/23	500 ppm	400 µL		500 ppb				NG
LCMS 2012	FOSE Std.	11336	N-He- FOSE	Wellington Labs	05/13/27	09/19/23	500 ppm	200 µL	2.0 mL	5 ppm	95/11/00H 5/1/1720	11/11/22	05/11/23	NG
		11336	N-He- FOSE		05/13/27	09/19/23	500 ppm	200 µL						NG

* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-icms std prep log.xls 030819

Page 49 of 50

10853

**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PFAC-MXI****Native Perfluorooctanesulfonamide
and Perfluorooctanesulfonamidoethanol
Solution/Mixture****PRODUCT CODE:**

PFAC-MXI

LOT NUMBER:

PFACMXI0921

SOLVENT(S):

Methanol

DATE PREPARED: (mm/dd/yyyy)

09/08/2021

LAST TESTED: (mm/dd/yyyy)

09/14/2021

EXPIRY DATE: (mm/dd/yyyy)

09/14/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXI is a solution/mixture of two native perfluorooctanesulfonamides (FOSAs) and two native perfluorooctanesulfonamidoethanols (FOSEs). The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture

Figure 1: LC/MS Data (SIR)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Form#: 13, Issued 2004-11-10
Revision#: 8, Revised 2020-12-23

PFACMXI0921 (1 of 5)
rev0

Table A: PFAC-MXI; Components and Concentrations (µg/mL; ± 5% in methanol)

Compound	Acronym	Concentration (µg/mL)	Peak Assignment in Figure 1
N-methylperfluoro-1-octanesulfonamide	N-MeFOSA	1.00	B
N-ethylperfluoro-1-octanesulfonamide	N-EtFOSA	1.00	D
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	N-MeFOSE	10.0	A
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	N-EtFOSE	10.0	C

Certified By: _____

B.G. Chittim, General Manager

Date: 09/23/2021
(mm/dd/yyyy)

Form# 13, Issued 2004-11-10
Revision# 9, Revised 2020-12-23

PFACMXI0921 (3 of 5)
rev0

rec'd 10/31/22 11492



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:

PFAC-MXJ

LOT NUMBER:

PFACMXJ0921

SOLVENT(S):

Methanol

DATE PREPARED: (mm/dd/yyyy)

09/08/2021

LAST TESTED: (mm/dd/yyyy)

09/14/2021

EXPIRY DATE: (mm/dd/yyyy)

09/14/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native 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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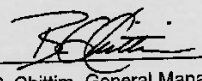
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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXJ0921 (1 of 5)
rev1

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: 10/02/2021
(mm/dd/yyyy)

11603
rec'd: 01/10/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXJ
<u>LOT NUMBER:</u>	PFACMXJ0921
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/08/2021
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/14/2021
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	09/14/2026
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Form# 13, Issued 2004-11-10
Revision# 9, Revised 2020-12-23

PFACMXJ0921 (1 of 5)
rev1

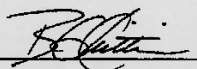
7.8.1

7

Table A: PFAC-MXJ; Components and Concentrations ($\mu\text{g/mL}$; $\pm 5\%$ in methanol)

Compound	Acronym	Concentration ($\mu\text{g/mL}$)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By:


B.G. Chittim, General Manager

Date: 10/02/2021

(mm/dd/yyyy)

11579 A-B
rec'd 12/27/22



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

PRODUCT CODE: PFAC-MXF
LOT NUMBER: PFACMXF0122
SOLVENT(S): Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 01/10/2022
LAST TESTED: (mm/dd/yyyy) 01/11/2022
EXPIRY DATE: (mm/dd/yyyy) 01/11/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Revision#: 9, Revised 2020-12-23

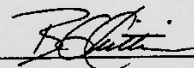
PFACMXF0122 (1 of 5)
rev0

Table A: PFAC-MXF; Components and Concentrations (ng/mL; \pm 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-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-PF3OUS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By:


B.G. Chittim, General Manager

Date: 01/12/2022
(mm/dd/yyyy)

11617 A-B rec'd 01/19/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE: PFAC-MXF
LOT NUMBER: PFACMXF0122
SOLVENT(S): Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 01/10/2022
LAST TESTED: (mm/dd/yyyy) 01/11/2022
EXPIRY DATE: (mm/dd/yyyy) 01/11/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9CI-PF3ONS and 11CI-PF3OUDS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Form# 13, Issued 2004-11-10
Revision# 9, Revised 2020-12-23

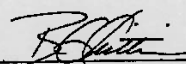
PFACMXF0122 (1 of 5)
revD

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
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
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: 01/12/2022
(mm/dd/yyyy)

10854

**WELLINGTON**
LABORATORIESCERTIFICATE OF ANALYSIS
DOCUMENTATION**PFAC-MXG****Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture****PRODUCT CODE:**

PFAC-MXG

LOT NUMBER:

PFACMXG1219

SOLVENT(S):

Methanol/Water (<1%)

DATE PREPARED: (mm/dd/yyyy)

12/03/2019

LAST TESTED: (mm/dd/yyyy)

05/04/2020

EXPIRY DATE: (mm/dd/yyyy)

05/04/2025

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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Form#13, Issued 2004-11-10
Revision#9, Revised 2020-12-23

PFACMXG1219 (1 of 5)
rev2

Table A: PFAC-MXG; Components and Concentrations (ng/mL; \pm 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-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: 07/30/2021

(mmdd/yyyy)

10899



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native Per- and Poly-fluoroalkyl Substance
Solution/Mixture

PRODUCT CODE:

PFAC-MXH

LOT NUMBER:

PFACMXH0921

SOLVENT(S):

Methanol / Isopropanol (2%) / Water (<1%)

DATE PREPARED: (mm/dd/yyyy)

09/09/2021

LAST TESTED: (mm/dd/yyyy)

09/14/2021

EXPIRY DATE: (mm/dd/yyyy)

09/14/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C_4 - C_{14}), eight native perfluoroalkanesulfonates (C_4 , C_5 , C_7 , C_9 , C_{10} and C_{12} linear; C_8 and C_8 linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of br-NMeFOSAA
Table C: Isomeric Components and Percent Composition of br-NEtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXH0921 (1 of 11)
rev0

Table A: PFAC-MXH; Components and Concentrations
($\mu\text{g/mL}$, $\pm 5\%$ in methanol / isopropanol (2%) / water (<1%))

Compound			Acronym	Concentration* ($\mu\text{g/mL}$)	Peak Assignment in Figure 1	
Perfluoro-n-butanoic acid			PFBA	4.00	1	
Perfluoro-n-pentanoic acid			PFPeA	2.00	2	
Perfluoro-n-hexanoic acid			PFHxA	1.00	5	
Perfluoro-n-heptanoic acid			PFHpA	1.00	7	
Perfluoro-n-octanoic acid			PFOA	1.00	11	
Perfluoro-n-nonanoic acid			PFNA	1.00	14	
Perfluoro-n-decanoic acid			PFDA	1.00	18	
Perfluoro-n-undecanoic acid			PFUdA	1.00	23	
Perfluoro-n-dodecanoic acid			PFDoA	1.00	26	
Perfluoro-n-tridecanoic acid			PFTrDA	1.00	27	
Perfluoro-n-tetradecanoic acid			PFTeDA	1.00	29	
Perfluoro-1-octanesulfonamide			FOSA	1.00	25	
N-methylperfluorooctanesulfonamidoacetic acid ^a			N-MeFOSAA: linear isomer	0.760	20	
			N-MeFOSAA: Σ branched isomers	0.240	17	
N-ethylperfluorooctanesulfonamidoacetic acid ^a			N-EtFOSAA: linear isomer	0.775	22	
			N-EtFOSAA: Σ branched isomers	0.225	21	
Compound			Acronym	Concentration* ($\mu\text{g/mL}$)		Peak Assignment in Figure 1
				as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate			L-PFBS	1.00	0.887	3
Sodium perfluoro-1-pentanesulfonate			L-PFPeS	1.00	0.941	6
Potassium perfluorohexanesulfonate ^c			PFHxSK: linear isomer	0.811	0.741	9
			PFHxSK: Σ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptanesulfonate			L-PFHpS	1.00	0.953	12
Potassium perfluorooctanesulfonate ^a			PFOSK: linear isomer	0.788	0.732	15
			PFOSK: Σ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanesulfonate			L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanedisulfonate			L-PFDS	1.00	0.965	24
Sodium perfluoro-1-dodecanedisulfonate			L-PFDoS	1.00	0.970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate			4:2FTS	4.00	3.75	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate			6:2FTS	4.00	3.80	10
Sodium 1H,1H,2H,2H-perfluorodecanedisulfonate			8:2FTS	4.00	3.84	16

* See Table B for percent composition of linear and branched N-MeFOSAA isomers.


* See Table C for percent composition of linear and branched N-EtFOSAA isomers.

* See Table D for percent composition of linear and branched PFHxSK isomers.

* See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By:


B.G. Chittim, General Manager

Date: 09/23/2021
(mm/dd/yyyy)

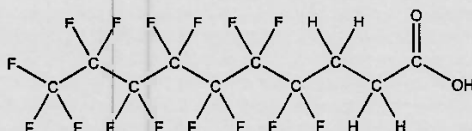
10683A

**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

FHpPA

LOT NUMBER: FHpPA1020**COMPOUND:**

3-Perfluoroheptyl propanoic acid

STRUCTURE:**CAS #:** 812-70-4**MOLECULAR FORMULA:** $C_{10}H_{15}F_{15}O_2$ **MOLECULAR WEIGHT:**

442.12

CONCENTRATION:50.0 \pm 2.5 μ g/mL**SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:**11/27/2020
(mm/dd/yyyy)**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**
519-822-2436 • Fax: 519-822-2849 • info@well-labs.comForm#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10FHpPA1020 (1 of 4)
rev0

106 84A



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPrPA

LOT NUMBER:

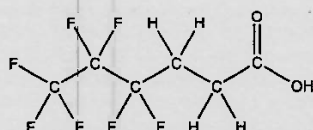
FPrPA1020

COMPOUND:

3-Perfluoropropyl propanoic acid

STRUCTURE:**CAS #:**

356-02-5

**MOLECULAR FORMULA:** $C_6H_5F_7O_2$ **MOLECULAR WEIGHT:**

242.09

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_8H_5F_7O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 11/27/2020

(mm/dd/yyyy)

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10685A



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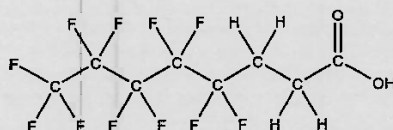
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPePA

LOT NUMBER: FPePA1120**COMPOUND:**

3-Perfluoropentyl propanoic acid

STRUCTURE:**CAS #:** 914637-49-3**MOLECULAR FORMULA:** $C_8H_5F_{11}O_2$ **MOLECULAR WEIGHT:**

342.11

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/11/2020

EXPIRY DATE: (mm/dd/yyyy)

11/11/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager
Date: 11/27/2020
(mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
Revision#:8, Revised 2020-09-10

FPePA1120 (1 of 4)
rev0

10726 A

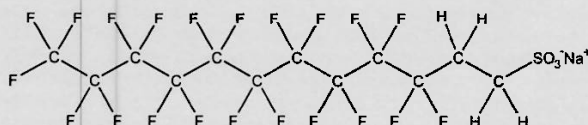


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CERTIFICATE OF ANALYSIS DOCUMENTATION

7.8.1
7

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate
STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: $C_{12}H_4F_{21}SO_3Na$ **MOLECULAR WEIGHT:** 650.18
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
 48.3 ± 2.4 µg/mL (10:2FTS acid)
 48.2 ± 2.4 µg/mL (10:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/03/2021
EXPIRY DATE: (mm/dd/yyyy) 03/03/2026
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: 
 B.G. Chittim, General Manager

Date: 03/05/2021
 (mm/dd/yyyy)

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10762 A-B



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PRODUCT CODE:

PFEESA

LOT NUMBER:

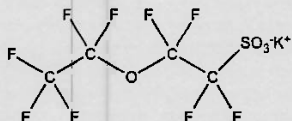
PFEESA0520

COMPOUND:

Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE:**CAS #:**

117205-07-9

**MOLECULAR FORMULA:** $C_4F_9SO_4K$ **MOLECULAR WEIGHT:**

354.19

CONCENTRATION:

50.0 ± 2.5 µg/ml (K salt)
 44.6 ± 2.2 µg/ml (PFEESA acid)
 44.5 ± 2.2 µg/ml (PFEESA anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>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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B.G. Chittim, General Manager

Date: 05/29/2020
(mm/dd/yyyy)

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10763 A-B



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PF5OHxA

LOT NUMBER:

PF5OHxA0320

COMPOUND:

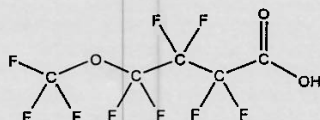
Perfluoro-5-oxahexanoic acid

SYNONYM:

Perfluoro-4-methoxybutanoic acid (PFMBA)

STRUCTURE:**CAS #:**

863090-89-5

**MOLECULAR FORMULA:** $C_5H_5F_9O_3$ **MOLECULAR WEIGHT:**

280.05

CONCENTRATION:50.0 \pm 2.5 μ g/mL**SOLVENT(S):**Methanol
Water (<1%)**CHEMICAL PURITY:**

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By:

B.G. Chittim, General Manager

Date:

12/21/2020
(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

PF5OHxA0320 (1 of 4)
rev1

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PF4OPeA

LOT NUMBER:

PF4OPeA0320

COMPOUND:

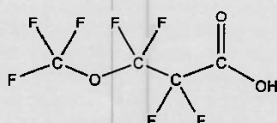
Perfluoro-4-oxapentanoic acid

SYNONYM:

Perfluoro-3-methoxypropanoic acid (PFMPA)

STRUCTURE:**CAS #:**

377-73-1

**MOLECULAR FORMULA:** $C_4HF_7O_3$ **MOLECULAR WEIGHT:**

230.04

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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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B.G. Chittim, General Manager
Date: 12/21/2020

(mm/dd/yyyy)

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10765 A-13



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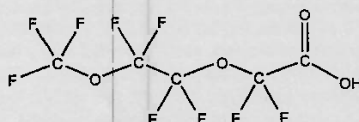
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

rec'd
WPH
8/20/21**LOT NUMBER:** 36OPFHpA0320**COMPOUND:**

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:**CAS #:** 151772-58-6**MOLECULAR FORMULA:** $C_5HF_9O_4$ **MOLECULAR WEIGHT:**

296.04

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):**Methanol
Water (<1%)**CHEMICAL PURITY:**

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager
Date: 05/27/2020
(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
Revision#: 7, Revised 2020-01-09

36OPFHpA0320 (1 of 4)
rev0

10829



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSA-M

LOT NUMBER:

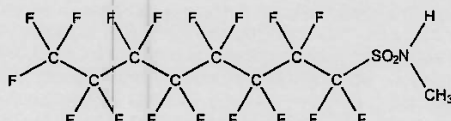
NMeFOSA0721M

COMPOUND:

N-methylperfluoro-1-octanesulfonamide

STRUCTURE:**CAS #:**

31506-32-8



rec'd
WHL
10/5/21

MOLECULAR FORMULA: $C_8H_4F_{17}NO_2S$ **MOLECULAR WEIGHT:**

513.17

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/03/2021

EXPIRY DATE: (mm/dd/yyyy)

08/03/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

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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Revision#: 9, Revised 2020-12-23

NMeFOSA0721M (1 of 4)
rev0



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PRODUCT CODE:

N-EtFOSA-M

10837

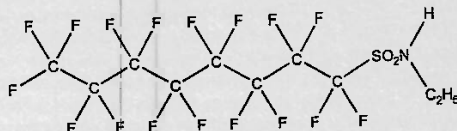
COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

LOT NUMBER: NEtFOSA0821M

STRUCTURE:

CAS #: 4151-50-2



MOLECULAR FORMULA:

$C_{10}H_{17}F_{17}NO_2S$

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$

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

MOLECULAR WEIGHT:

527.20

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: 08/16/2021

(mm/dd/yyyy)

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11140



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PRODUCT CODE:

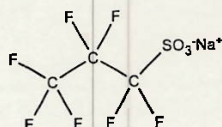
L-PFPrS

LOT NUMBER: LPFPrS0721**COMPOUND:**

Sodium perfluoro-1-propanesulfonate

STRUCTURE:**CAS #:**

Not available

**MOLECULAR FORMULA:** $C_3F_7SO_3Na$ **MOLECULAR WEIGHT:**

272.07

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)
 46.0 ± 2.3 µg/mL (PFPrS acid)
 45.8 ± 2.3 µg/mL (PFPrS anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

07/12/2021

EXPIRY DATE: (mm/dd/yyyy)

07/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 08/04/2021

(mm/dd/yyyy)

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11224



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PRODUCT CODE:

FBSA-I

LOT NUMBER:

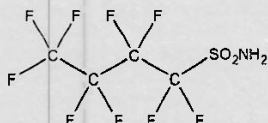
FBSA11211

COMPOUND:

Perfluoro-1-butananesulfonamide

STRUCTURE:**CAS #:**

30334-69-1

**MOLECULAR FORMULA:** $C_4H_2F_9NO_2S$ **MOLECULAR WEIGHT:**

299.11

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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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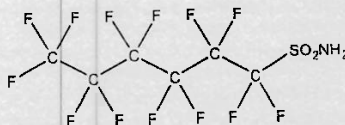

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DOCUMENTATION
PRODUCT CODE:

FHxSA-I

LOT NUMBER: FHxSA12211**COMPOUND:**

Perfluoro-1-hexanesulfonamide

STRUCTURE:**CAS #:** 41997-13-1**MOLECULAR FORMULA:** $C_8H_2F_{13}NO_2S$ **MOLECULAR WEIGHT:**

399.13

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

12/29/2021

EXPIRY DATE: (mm/dd/yyyy)

12/29/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

 B.G. Chittim, General Manager
Date: 01/10/2022
(mm/dd/yyyy)
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 Revision#: 9, Revised 2020-12-23

 FHxSA12211 (1 of 4)
 revD

11338



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PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

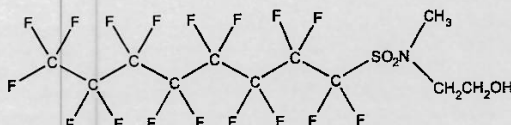
NMeFOSE0522M

COMPOUND:

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:** $C_{11}H_8F_{17}NO_3S$ **MOLECULAR WEIGHT:**

557.22

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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: 06/14/2022
(mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

NMeFOSE0522M (1 of 5)
rev0

11384 A-J



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CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled Perfluoroalkyl Substance
Injection Standard Solution/Mixture

PRODUCT CODE:

MPFAC-HIF-IS

LOT NUMBER:

MPFACHIFIS0921

SOLVENT(S):

Methanol/Water (<1%)

DATE PREPARED: (mm/dd/yyyy)

09/07/2021

LAST TESTED: (mm/dd/yyyy)

09/07/2021

EXPIRY DATE: (mm/dd/yyyy)

09/07/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4 , C_6 , C_8 - C_{10}) and two mass-labelled (^{18}O and ^{13}C) perfluoroalkanesulfonates (C_6 and C_8). 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 $\geq 99\%$ per ^{13}C or >94% per ^{18}O .

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFIS0921 (1 of 5)
rev1



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CERTIFICATE OF ANALYSIS DOCUMENTATION

10840

PRODUCT CODE:

L-PFDoS

LOT NUMBER:

LPFDoS0721

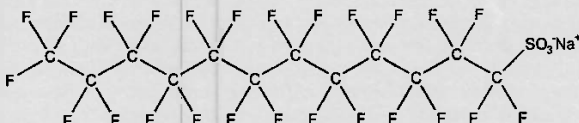
COMPOUND:

Sodium perfluoro-1-dodecanesulfonate

STRUCTURE:

CAS #:

1260224-54-1



MOLECULAR FORMULA:

$C_{12}F_{25}SO_3Na$

MOLECULAR WEIGHT:

722.14

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$ (Na salt)

SOLVENT(S):

Methanol

$48.5 \pm 2.4 \mu\text{g/mL}$ (PFDoS acid)

$48.4 \pm 2.4 \mu\text{g/mL}$ (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

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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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

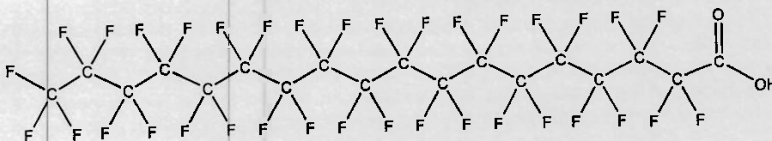
COMPOUND:

Perfluoro-n-octadecanoic acid

CAS #:

16517-11-6

STRUCTURE:



MOLECULAR FORMULA:

$C_{18}H_{35}O_2$

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$

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)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

10842 NG 01/18/23

PRODUCT CODE:

PFHxDA

LOT NUMBER:

PFHxDA0421

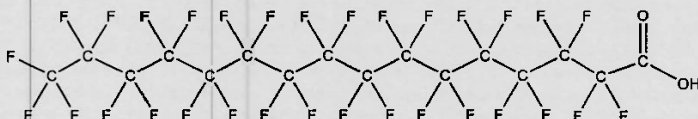
COMPOUND:

Perfluoro-n-hexadecanoic acid

STRUCTURE:

CAS #:

67905-19-5



MOLECULAR FORMULA:

$C_{16}H_{31}O_2$

MOLECULAR WEIGHT:

814.13

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$

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:

B.G. Chittim, General Manager

Date: 05/25/2021
(mm/dd/yyyy)

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1117



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

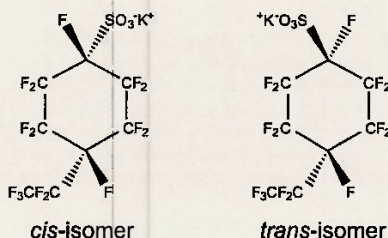
PFECHS

LOT NUMBER: PFECHS1021**COMPOUND:**

Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE:**CAS #:**

335-24-0

**MOLECULAR FORMULA:** $C_8F_{15}SO_3K$ **MOLECULAR WEIGHT:**

500.22

CONCENTRATION:

50.0 ± 2.5 µg/mL (K salt)
 46.2 ± 2.3 µg/mL (PFECHS acid)
 46.1 ± 2.3 µg/mL (PFECHS anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

10/14/2021

EXPIRY DATE: (mm/dd/yyyy)

10/14/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager

Date: 10/15/2021

(mm/dd/yyyy)

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

11336

PRODUCT CODE:

N-EtFOSE-M

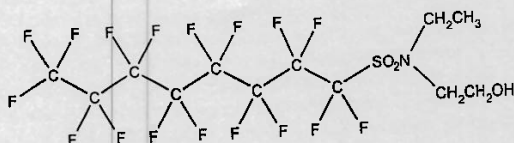
LOT NUMBER: NEtFOSE0622M

COMPOUND:

2-(N-ethylperfluoro-1-octanesulfonamido)ethanol

CAS #: 1691-99-2

STRUCTURE:



MOLECULAR FORMULA:

$C_{12}H_{10}F_{17}NO_3S$

MOLECULAR WEIGHT: 571.25

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$

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)

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NEtFOSE0622M (1 of 5)
rev0

11383 A-J



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES

**Mass-Labelled PFAS Extraction
Standard Solution/Mixture**

PRODUCT CODE:

MPFAC-HIF-ES

LOT NUMBER:

MPFACHIFES0822

SOLVENT(S):

Methanol/Isopropanol (1%)/Water (<1%)

DATE PREPARED: (mm/dd/yyyy)

07/20/2022

LAST TESTED: (mm/dd/yyyy)

08/02/2022

EXPIRY DATE: (mm/dd/yyyy)

08/02/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids ($\text{C}_4\text{-C}_{12}$, C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4 , C_6 , and C_8), three mass-labelled (one ^{13}C and two ^2H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^2H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^2H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C -labelled components all have chemical purities >98% and isotopic purities of $\geq 99\%$. The individual ^2H -labelled components all have chemical purities >98% and isotopic purities of $\geq 98\%$.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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Form# 13, Issued 2004-11-10
Revision#9, Revised 2020-12-23

MPFACHIFES0822 (1 of 7)
rev0

Table A: MPFAC-HIF-ES; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₆)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₆)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₇)undecanoic acid	M7PFUdA	250		17
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		23
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		18
N-methyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₅ -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 ₅ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d9-N-EtFOSE	5000		22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 08/02/2022
(mm/dd/yyyy)

SGS - ORLANDO

Date/Time: 01-23-23 11:00
Started (mm/dd/yy 24:00)Date/Time: 01/24/23 10:00
Finished (mm/dd/yy 24:00)Batch#: OP95096Ext. By: DBL

Conc. By: _____

Viald By: _____

SPE LIQUID SAMPLE PREP REPORT

Method: EPA 1633 Draft QSM

Balance ID: _____

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP 95096 MB	n/a	500	7.0	n/a	25		5	G	
OP 95096 BS	n/a	500				200		G	surrogate #1
OP 95096 LLBS	n/a	500				80		G	
FC1815-1	1	565							
FC1815-2	1	565							
-3	1	540							
-4	1	565							
-5	1	565							
-6	1	565							
-7	1	565							surrogate #2
-8	1	565							
-9	1	565						H	
-10	1	565							
-11	1	565							
-12	1	565							
-13	1	565							
-14	1	565							
-15	1	565							
-16	1	540							
-17	1	565							
FC2078-1	2	565							
-2	2	565							
OP 95096 MS	n/a 2	565	7.0	n/a	25	200	5	G	FC1815-11, surrogate #1
OP 95096 MSD	n/a 3	565				200		G	-11, surrogate #1
OP DUP	DBL 01-23-23								

Comments:

EIS (SURR) ID: 11597 Conc: 250-5000 ng/ml Exp. Date: 01-11-24 Inj. By: DBL Ver. By: GH
 SPIKE 1 ID: LCMS 2050-A Conc: varied Exp. Date: 07-17-23 Inj. By: DBL Ver. By: GH
 SPIKE 2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11596 Conc: 250-1000 ng/ml Exp. Date: 01/24/24 Inj. By: NG Ver. By: MRE

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

Methanol Lot # 223213 1% NH4OH MeOH PF243 SPE Lot # S22-006891
 Water Lot# OP94474 95096 DBL 01-23-23 0.3M Formic Acid PF241 Syringe filter Lot # _____
 Acetic Acid# 194003 3% NH4OH Sol _____ pH paper Lot# 215322
 0.1M Formic PF242 5% Formic Acid _____ Carbon Lot# 160898

Relinquished By: [Signature]Accepted By: [Signature]Date: 01-23-23Date: 01/24/23