



Off-Base Drinking Water Sample Results, Combined Level 2 and Level 4 Laboratory Report, and the Sample Location Figure, SDG FA44597

*Naval Air Station Cecil Field
Jacksonville, Florida*

July 2019

N60200_009866
CECIL_FIELD_NAS
SSIC 5000-33c

LABORATORY DATA PACKAGE FA44597 NAS CECIL FIELD FL
06/02/2017
ACCUTEST LABORATORIES

Approved for public release: distribution unlimited.

Technical Report for

Resolution Consultants

NAS Cecil Field PFAS; Jacksonville, FL

0888817799

SGS Accutest Job Number: FA44597

Sampling Date: 06/02/17



Report to:

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Total number of pages in report: **294**



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), IL(200063), 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

Resolution Consultants

Job No: FA44597

NAS Cecil Field PFAS; Jacksonville, FL
Project No: 0888817799

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA44597-1	06/02/17	15:40 RB	06/05/17	DW	Drinking Water	COJ-40-0617
FA44597-2	06/02/17	15:40 RB	06/05/17	DW	Drinking Water	COJ-40-0617-D
FA44597-3	06/02/17	15:42 RB	06/05/17	DW	Drinking Water FB	FB-COJ-40-0617

SAMPLE DELIVERY GROUP CASE NARRATIVE

2

Client: Resolution Consultants

Job No: FA44597

Site: NAS Cecil Field PFAS; Jacksonville, FL

Report Date: 6/28/2017 1:08:44 PM

2 Sample(s), and 1 Field Blank(s) were collected on 06/02/2017 and were received at SGS Accutest Southeast (SASE) on 06/05/2017 properly preserved, at 0.8 Deg. C and intact. These Samples received an SASE job number of FA44597. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Extractables by GCMS By Method EPA 537

Matrix: DW

Batch ID: OP65503

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA44596-1MS, FA44596-1MSD were used as the QC samples indicated.

Sample(s) OP65503-MS, OP65503-MSD have surrogates outside control limits. Probable cause is due to matrix interference.

OP65503-MS for 13C2-PFHxA: Outside control limits.

OP65503-MSD for 13C2-PFHxA: Outside control limits.

SGS Accutest (SASE) certifies that this report meets the project requirements for analytical data produced for the samples as received at SASE and as stated on the COC. SASE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SASE Quality Manual except as noted above. This report is to be used in its entirety. SASE is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Kim Benham, Client Services (signature on file)

Summary of Hits

Job Number: FA44597
Account: Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL
Collected: 06/02/17



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
---------------	------------------	-----------------	-----	-----	-------	--------

FA44597-1 COJ-40-0617

No hits reported in this sample.

FA44597-2 COJ-40-0617-D

Perfluorooctanesulfonic acid	0.00372 J	0.0077	0.0031	ug/l	EPA 537
------------------------------	-----------	--------	--------	------	---------

FA44597-3 FB-COJ-40-0617

No hits reported in this sample.



Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

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Client Sample ID:	COJ-40-0617				
Lab Sample ID:	FA44597-1			Date Sampled:	06/02/17
Matrix:	DW - Drinking Water			Date Received:	06/05/17
Method:	EPA 537 EPA 537			Percent Solids:	n/a
Project:	NAS Cecil Field PFAS; Jacksonville, FL				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q2824.D	1	06/27/17 15:44	NAF	06/16/17 09:00	OP65503	S2Q70
Run #2							

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

CAS No. Compound Result MCL LOQ LOD DL Units Q

PERFLUOROALKYLCARBOXYLIC ACIDS

335-67-1 Perfluorooctanoic acid 0.0031 U 0.0077 0.0031 0.0019 ug/l

PERFLUOROALKYLSULFONATES

375-73-5 Perfluorobutanesulfonic acid 0.0058 U 0.0077 0.0058 0.0038 ug/l

1763-23-1 Perfluorooctanesulfonic acid 0.0031 U 0.0077 0.0031 0.0019 ug/l

CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits

13C2-PFHxA 74% 70-130%
13C2-PFDA 93% 70-130%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 141) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

SGS Accutest

Report of Analysis

Page 1 of 1

Client Sample ID:	COJ-40-0617-D				
Lab Sample ID:	FA44597-2			Date Sampled:	06/02/17
Matrix:	DW - Drinking Water			Date Received:	06/05/17
Method:	EPA 537 EPA 537			Percent Solids:	n/a
Project:	NAS Cecil Field PFAS; Jacksonville, FL				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q2825.D	1	06/27/17 16:04	NAF	06/16/17 09:00	OP65503	S2Q70
Run #2							

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

CAS No. Compound Result MCL LOQ LOD DL Units Q

PERFLUOROALKYLCARBOXYLIC ACIDS

335-67-1 Perfluorooctanoic acid 0.0031 U 0.0077 0.0031 0.0019 ug/l

PERFLUOROALKYLSULFONATES

375-73-5 Perfluorobutanesulfonic acid 0.0058 U 0.0077 0.0058 0.0038 ug/l

1763-23-1 Perfluorooctanesulfonic acid 0.00372 0.0077 0.0031 0.0019 ug/l J

CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits

13C2-PFHxA 71% 70-130%
13C2-PFDA 95% 70-130%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 141) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

SGS Accutest

Report of Analysis

Page 1 of 1

Client Sample ID:	FB-COJ-40-0617				
Lab Sample ID:	FA44597-3			Date Sampled:	06/02/17
Matrix:	DW - Drinking Water FB			Date Received:	06/05/17
Method:	EPA 537 EPA 537			Percent Solids:	n/a
Project:	NAS Cecil Field PFAS; Jacksonville, FL				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q2826.D	1	06/27/17 16:23	NAF	06/16/17 09:00	OP65503	S2Q70
Run #2							

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

CAS No. Compound Result MCL LOQ LOD DL Units Q

PERFLUOROALKYLCARBOXYLIC ACIDS

335-67-1 Perfluorooctanoic acid 0.0031 U 0.0077 0.0031 0.0019 ug/l

PERFLUOROALKYLSULFONATES

375-73-5 Perfluorobutanesulfonic acid 0.0058 U 0.0077 0.0058 0.0038 ug/l

1763-23-1 Perfluorooctanesulfonic acid 0.0031 U 0.0077 0.0031 0.0019 ug/l

CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits

13C2-PFHxA 77% 70-130%
13C2-PFDA 88% 70-130%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 141) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4

Misc. Forms

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Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5 Limits

5.1

0.8

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SGS Accutest Sample Receipt Summary

Job Number: FA44597

Client: RESOLUTION CONSULTANTS

Project: FMR NAS CECIL FIELD

Date / Time Received: 6/5/2017 6:30:00 PM

Delivery Method: ALSE

Airbill #s: _____

Therm ID: IR 1;

Therm CF: 0.4;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (0.4);

Cooler Temps (Corrected) °C: Cooler 1: (0.8);

Cooler Information

Y or N

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

Trip Blank Information

Y or N N/A

- | | | | |
|--------------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 1. Trip Blank present / cooler | ☐ | ☒ | ☐ |
| 2. Trip Blank listed on COC | ☐ | ☒ | ☐ |
| | <u>W or S</u> | <u>N/A</u> | |
| 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 | <u>Intact</u> | | |
| 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 _____
Residual Chlorine Test Strip Lot #: _____			

Comments

SM001
Rev. Date 05/24/17

Technician: PHILIPD

Date: 6/5/2017 6:30:00 PM

Reviewer: _____

Date: _____

FA44597: Chain of Custody

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QC Evaluation: DOD QSM5 Limits

Job Number: FA44597
Account: Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL
Collected: 06/02/17

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
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No Exceptions found.

* Sample used for QC is not from job FA44597



GC/MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Page 1 of 1

Job Number: FA44597
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP65503-MB	2Q2779.D	1	06/27/17	NAF	06/16/17	OP65503	S2Q69

The QC reported here applies to the following samples:**Method:** EPA 537

FA44597-1, FA44597-2, FA44597-3

CAS No.	Compound	Result	RL	MDL	Units	Q
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0040	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	

CAS No.	Surrogate Recoveries	Limits
	13C2-PFHxA	70% 70-130%
	13C2-PFDA	103% 70-130%

6.1.1

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Blank Spike Summary

Page 1 of 1

Job Number: FA44597
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP65503-BS	2Q2778.D	1	06/27/17	NAF	06/16/17	OP65503	S2Q69

The QC reported here applies to the following samples:

Method: EPA 537

FA44597-1, FA44597-2, FA44597-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
335-67-1	Perfluorooctanoic acid	0.08	0.0772	97	70-130
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0677	85	70-130
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0650	81	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
	13C2-PFHxA	73%	70-130%
	13C2-PFDA	108%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: FA44597

Account: RESCTNM Resolution Consultants

Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP65503-MS	2Q2781.D	1	06/27/17	NAF	06/16/17	OP65503	S2Q69
OP65503-MSD	2Q2782.D	1	06/27/17	NAF	06/16/17	OP65503	S2Q69
FA44596-1	2Q2780.D	1	06/27/17	NAF	06/16/17	OP65503	S2Q69

The QC reported here applies to the following samples:

Method: EPA 537

FA44597-1, FA44597-2, FA44597-3

CAS No.	Compound	FA44596-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
335-67-1	Perfluorooctanoic acid	0.0077 U	0.0769	0.0749	97	0.0769	0.0947	123	23	70-130/30
375-73-5	Perfluorobutanesulfonic acid	0.0077 U	0.0769	0.0623	81	0.0769	0.0760	99	20	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	0.0077 U	0.0769	0.0566	74	0.0769	0.0750	98	28	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	FA44596-1	Limits
13C2-PFHxA		64%* b	62%* b	60%* a	70-130%
13C2-PFDA		101%	103%	91%	70-130%

(a) Outside control limits due to matrix interference. Confirmed by MS/MSD.

(b) Outside control limits.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Page 1 of 1

Job Number: FA44597
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Check Std: S2Q69-CC67	Injection Date: 06/26/17
Lab File ID: 2Q2774.D	Injection Time: 23:06
Instrument ID: GCMS2Q	Method: EPA 537

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Initial Cal ^a	39986	4.33	70181	6.65	42255	6.64	26295	7.15	32912	7.58	85608	10.12
Check Std ^b	37576	4.38	83043	6.74	47284	6.73	28418	7.26	39921	7.60	92382	10.91
Upper Limit ^c	59979	5.38	105272	7.74	63383	7.73	39443	8.26	49368	8.60	128412	11.91
Lower Limit ^d	19993	3.38	35091	5.74	21128	5.73	13148	6.26	16456	6.60	42804	9.91

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP65503-BS	36352	4.38	81098	6.74	45185	6.73	27254	7.26	39500	7.59	88619	10.89
OP65503-MB	34372	4.40	72357	6.74	41611	6.73	25326	7.26	36385	7.60	80892	10.93
FA44596-1	31128	4.38	72327	6.74	42208	6.73	23835	7.26	35891	7.60	77332	10.89
OP65503-MS	30982	4.38	77065	6.74	40693	6.73	24244	7.26	36215	7.60	70460	10.91
OP65503-MSD	27467	4.38	68890	6.74	35815	6.73	21777	7.26	32382	7.59	71563	10.89

IS 1 = 13C3-PFPeA
IS 2 = 13C2-6:2FTS
IS 3 = 13C2-PFOA
IS 4 = 13C4-PFOS
IS 5 = d3-MeFOSAA
IS 6 = 13C2-PFDODA

- (a) Initial Cal is: S2Q67-ICC67 2Q2582.D 06/23/17 11:42. Area is AVERAGE of initial cal points.
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Semivolatile Internal Standard Area Summary

Page 1 of 1

Job Number: FA44597
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Check Std: S2Q70-ICC70	Injection Date: 06/27/17
Lab File ID: 2Q2816.D	Injection Time: 13:01
Instrument ID: GCMS2Q	Method: EPA 537

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Initial Cal ^a	32684	4.37	76194	6.72	40553	6.71	24795	7.26	34347	7.59	78047	10.99
Check Std ^b	33124	4.37	76489	6.72	40996	6.71	25172	7.26	35370	7.59	78581	10.99
Upper Limit ^c	49026	5.37	114291	7.72	60830	7.71	37193	8.26	51521	8.59	117071	11.99
Lower Limit ^d	16342	3.37	38097	5.72	20277	5.71	12398	6.26	17174	6.59	39024	9.99

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	30814	4.37	69939	6.72	40053	6.71	23079	7.26	34664	7.58	73357	10.98
FA44597-1	27341	4.36	71123	6.72	39157	6.71	22683	7.25	34183	7.58	71541	10.95
FA44597-2	25311	4.36	69376	6.72	38575	6.71	21868	7.26	33066	7.58	70141	10.96
FA44597-3	30629	4.37	71250	6.74	39766	6.73	23142	7.26	35191	7.59	74533	10.98

IS 1 = 13C3-PFPeA
IS 2 = 13C2-6:2FTS
IS 3 = 13C2-PFOA
IS 4 = 13C4-PFOS
IS 5 = d3-MeFOSAA
IS 6 = 13C2-PFDoDA

(a) Initial Cal is: S2Q70-ICC70 2Q2816.D 06/27/17 13:01. Area is AVERAGE of initial cal points.

(b) Check Std Limit = -50 to +50% of initial cal area.

(c) Upper Limit = +50% of initial standard area; Retention time +1 minutes of check standard.

(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Semivolatile Surrogate Recovery Summary

Job Number: FA44597
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Method: EPA 537	Matrix: DW
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
FA44597-1	2Q2824.D	74	93
FA44597-2	2Q2825.D	71	95
FA44597-3	2Q2826.D	77	88
OP65503-BS	2Q2778.D	73	108
OP65503-MB	2Q2779.D	70	103
OP65503-MS	2Q2781.D	64* a	101
OP65503-MSD	2Q2782.D	62* a	103

Surrogate Compounds	Recovery Limits
---------------------	-----------------

S1 = 13C2-PFHxA	70-130%
S2 = 13C2-PFDA	70-130%

(a) Outside control limits.

Initial Calibration Summary

Page 1 of 1

Job Number: FA44597
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q67-ICC67
Lab FileID: 2Q2582.D

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0623_pfc_S2Q67\S2Q67.batch.bin

Level ID : Calibration File

1 : D:\MassHunter\Data\0623_pfc_S2Q67\2Q2578.d
2 : D:\MassHunter\Data\0623_pfc_S2Q67\2Q2579.d
3 : D:\MassHunter\Data\0623_pfc_S2Q67\2Q2580.d
4 : D:\MassHunter\Data\0623_pfc_S2Q67\2Q2581.d
5 : D:\MassHunter\Data\0623_pfc_S2Q67\2Q2582.d
6 : D:\MassHunter\Data\0623_pfc_S2Q67\2Q2583.d
7 : D:\MassHunter\Data\0623_pfc_S2Q67\2Q2584.d
8 : D:\MassHunter\Data\0623_pfc_S2Q67\2Q2585.d

Compound	1	2	3	4	5	6	7	8	AvgRF	%RSD	r^2
1) 13C2-6:2FTS	-----ISTD-----										
8) 4:2FTS	0.6750	0.6629	0.6102	0.6186	0.6130	0.5967	0.5831	0.5104	0.6087	8.307	0.9999
9) 6:2FTS	1.1548	1.0927	0.9824	0.9764	0.9693	0.9351	0.9024	0.7715	0.9731	11.942	0.9999
10) 8:2FTS	1.4016	1.4340	1.2580	1.2690	1.2389	1.2315	1.1958	1.0604	1.2611	9.269	0.9999
3) 13C2-PFDoDA	-----ISTD-----										
19) PFDoDA	0.9243	0.9050	0.8642	0.8726	0.8780	0.9116	0.8750	0.8375	0.8835	3.210	0.9984
31) PFTeDA	0.4195	0.4096	0.3763	0.3885	0.3820	0.3865	0.3818	0.3580	0.3878	4.946	0.9980
32) PFTrDA	0.7814	0.7370	0.7114	0.7029	0.7161	0.7386	0.7145	0.6842	0.7233	4.053	0.9986
33) PFUnDA	0.8687	0.8298	0.7970	0.8060	0.8130	0.8300	0.8184	0.7720	0.8169	3.453	0.9984
5) 13C2-PFOA	-----ISTD-----										
2) 13C2-PFDA	1.9759	1.7331	1.6419	1.6114	1.5922	1.6561	1.5801	1.4596	1.6492	8.642	0.9997
4) 13C2-PFHxA	1.2080	1.1274	1.0649	1.0596	1.0832	1.0918	1.0810	0.9904	1.0873	5.032	0.9998
16) PFBA	0.3496	0.3761	0.3191	0.3137	0.3111	0.3155	0.3117	0.2962	0.3241	7.961	0.9987
18) PFDA	1.1263	1.0283	0.9438	0.9368	0.9503	0.9616	0.9491	0.8676	0.9705	7.884	0.9998
21) PFHpA	1.6145	1.5017	1.3873	1.4055	1.4165	1.4331	1.4392	1.3295	1.4409	5.926	0.9976
23) PFHxA	0.4912	0.4820	0.4445	0.4343	0.4417	0.4494	0.4491	0.4155	0.4510	5.462	0.9998
25) PFNA	-----	1.1320	0.9752	0.9953	0.9876	1.0261	0.9909	0.9655	1.0104	5.630	0.9991
27) PFOA	0.9000	0.8793	0.7561	0.7828	0.8126	0.8064	0.8073	0.7580	0.8128	6.446	0.9984
6) 13C3-PFPeA	-----ISTD-----										
29) PFPeA	1.5599	1.4686	1.3862	1.3999	1.4111	1.4420	1.4214	1.3507	1.4300	4.427	0.9987
30) PFPeS	0.1818	0.1773	0.1680	0.1672	0.1678	0.1738	0.1704	0.1615	0.1710	3.764	0.9985
7) 13C4-PFOS	-----ISTD-----										
17) PFBS	0.7954	0.7567	0.7286	0.7253	0.7364	0.7608	0.7575	0.7432	0.7505	3.011	0.9998
20) PFDS	0.5957	0.5553	0.5348	0.5509	0.5592	0.5790	0.5764	0.5686	0.5650	3.360	0.9999
22) PFHpS	0.9370	0.9752	0.8788	0.8865	0.9037	0.9278	0.9354	0.8916	0.9170	3.559	0.9992
24) PFHxS	0.9545	0.9379	0.8744	0.8838	0.9031	0.9309	0.9276	0.8821	0.9118	3.280	0.9990
26) PFNS	0.5047	0.5185	0.4560	0.4516	0.4545	0.4681	0.4625	0.4392	0.4694	5.879	0.9988
28) PFOS	1.5001	1.3217	1.1963	1.1499	1.1393	1.1624	1.1445	1.0882	1.2128	11.095	0.9999
11) d3-MeFOSAA	-----ISTD-----										
12) d5-EtFOSAA	-----	1.2357	1.1050	1.0658	1.0755	1.0618	1.0359	0.9174	1.0710	8.795	0.9909
13) EtFOSAA	1.0406	1.0208	0.9088	0.9156	0.9203	0.9077	0.8812	0.7803	0.9219	8.793	0.9999
14) FOSA	2.0227	1.8406	1.7819	1.7984	1.8009	1.6656	1.5926	1.3208	1.7279	11.996	0.9999
15) MeFOSAA	1.1164	1.0775	1.0498	1.0222	1.0739	1.0878	1.0735	0.9998	1.0626	3.508	0.9998

*(value) - Average RF below (value)

Initial Calibration Verification

Page 1 of 1

Job Number: FA44597
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q67-ICV67
Lab FileID: 2Q2588.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0623_pfc_S2Q67\S2Q67.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2578.d
2:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2579.d
3:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2580.d
4:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2581.d
5:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2582.d
6:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2583.d
7:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2584.d
8:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2585.d

Data File: 2Q2588

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	0.000	0.0	0.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	0.000	0.0	0.0
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	22.752	13.8	113.8
6:2FTS	20.000	22.219	11.1	111.1
8:2FTS	20.000	22.092	10.5	110.5
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	0.000	0.0	0.0
EtFOSAA	20.000	22.043	10.2	110.2
FOSA	20.000	20.035	0.2	100.2
MeFOSAA	20.000	20.716	3.6	103.6
PFBA	20.000	20.142	0.7	100.7
PFBS	20.000	19.870	-0.7	99.3
PFDA	20.000	18.890	-5.5	94.5
PFDoDA	20.000	20.212	1.1	101.1
PFDS	20.000	19.822	-0.9	99.1
PFHpA	20.000	20.004	0.0	100.0
PFHpS	20.000	22.101	10.5	110.5
PFHxA	20.000	18.911	-5.4	94.6
PFHxS	20.000	21.018	5.1	105.1
PFNA	20.000	19.957	-0.2	99.8
PFNS	20.000	22.401	12.0	112.0
PFOA	20.000	19.875	-0.6	99.4
PFOS	20.000	17.415	-12.9	87.1
PFPeA	20.000	19.986	-0.1	99.9
PFPeS	20.000	21.473	7.4	107.4
PFTeDA	20.000	20.350	1.7	101.7
PFTTrDA	20.000	20.075	0.4	100.4
PFUnDA	20.000	20.348	1.7	101.7

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA44597
 Account: RESCTNM Resolution Consultants
 Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q69-CC67
 Lab FileID: 2Q2774.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0626_pfc_S2Q69\S2Q69.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2578.d
 2:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2579.d
 3:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2580.d
 4:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2581.d
 5:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2582.d
 6:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2583.d
 7:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2584.d
 8:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2585.d

Data File: 2Q2774

Type : QC
 Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	20.114	0.6	100.6
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	15.367	-23.2	76.8
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	17.984	-10.1	89.9
6:2FTS	20.000	19.521	-2.4	97.6
8:2FTS	20.000	22.411	12.1	112.1
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.170	5.8	105.8
EtFOSAA	20.000	19.645	-1.8	98.2
FOSA	20.000	15.486	-22.6	77.4
MeFOSAA	20.000	18.741	-6.3	93.7
PFBA	20.000	15.632	-21.8	78.2
PFBS	20.000	17.533	-12.3	87.7
PFDA	20.000	20.238	1.2	101.2
PFDoDA	20.000	20.580	2.9	102.9
PFDS	20.000	21.791	9.0	109.0
PFHpA	20.000	19.476	-2.6	97.4
PFHpS	20.000	20.347	1.7	101.7
PFHxA	20.000	16.999	-15.0	85.0
PFHxS	20.000	19.415	-2.9	97.1
PFNA	20.000	19.327	-3.4	96.6
PFNS	20.000	19.960	-0.2	99.8
PFOA	20.000	19.903	-0.5	99.5
PFOS	20.000	18.790	-6.0	94.0
PFPeA	20.000	20.715	3.6	103.6
PFPeS	20.000	19.772	-1.1	98.9
PFTeDA	20.000	19.300	-3.5	96.5
PFTTrDA	20.000	20.064	0.3	100.3
PFUnDA	20.000	20.941	4.7	104.7

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA44597
 Account: RESCTNM Resolution Consultants
 Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q69-CC67
 Lab FileID: 2Q2777.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0626_pfc_S2Q69\S2Q69.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2578.d
 2:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2579.d
 3:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2580.d
 4:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2581.d
 5:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2582.d
 6:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2583.d
 7:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2584.d
 8:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2585.d

Data File: 2Q2777

Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	1.000	1.210	21.0	121.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	1.000	0.905	-9.5	90.5
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	1.000	1.085	8.5	108.5
6:2FTS	1.000	1.204	20.4	120.4
8:2FTS	1.000	1.336	# 33.6	133.6
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	1.000	1.309	# 30.9	130.9
EtFOSAA	1.000	1.145	14.5	114.5
FOSA	1.000	0.952	-4.8	95.2
MeFOSAA	1.000	1.097	9.7	109.7
PFBA	1.000	0.953	-4.7	95.3
PFBS	1.000	1.072	7.2	107.2
PFDA	1.000	1.171	17.1	117.1
PFDoDA	1.000	1.233	23.3	123.3
PFDS	1.000	1.275	# 27.5	127.5
PFHpA	1.000	1.232	23.2	123.2
PFHpS	1.000	1.222	22.2	122.2
PFHxA	1.000	1.064	6.4	106.4
PFHxS	1.000	1.167	16.7	116.7
PFNA	1.000	1.188	18.8	118.8
PFNS	1.000	1.252	# 25.2	125.2
PFOA	1.000	1.307	# 30.7	130.7
PFOS	1.000	1.213	21.3	121.3
PFPeA	1.000	1.231	23.1	123.1
PFPeS	1.000	1.126	12.6	112.6
PFTeDA	1.000	1.146	14.6	114.6
PFTTrDA	1.000	1.189	18.9	118.9
PFUnDA	1.000	1.229	22.9	122.9

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA44597
 Account: RESCTNM Resolution Consultants
 Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q69-CC67
 Lab FileID: 2Q2787.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0626_pfc_S2Q69\S2Q69.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2578.d
 2:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2579.d
 3:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2580.d
 4:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2581.d
 5:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2582.d
 6:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2583.d
 7:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2584.d
 8:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2585.d

Data File: 2Q2787

Type : QC
 Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	20.624	3.1	103.1
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	15.020	-24.9	75.1
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	18.395	-8.0	92.0
6:2FTS	20.000	19.697	-1.5	98.5
8:2FTS	20.000	23.444	17.2	117.2
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.879	9.4	109.4
EtFOSAA	20.000	20.103	0.5	100.5
FOSA	20.000	16.532	-17.3	82.7
MeFOSAA	20.000	18.998	-5.0	95.0
PFBA	20.000	14.844	# -25.8	74.2
PFBS	20.000	17.531	-12.3	87.7
PFDA	20.000	20.027	0.1	100.1
PFDoDA	20.000	20.491	2.5	102.5
PFDS	20.000	21.933	9.7	109.7
PFHpA	20.000	19.423	-2.9	97.1
PFHpS	20.000	20.381	1.9	101.9
PFHxA	20.000	16.536	-17.3	82.7
PFHxS	20.000	19.691	-1.5	98.5
PFNA	20.000	18.689	-6.6	93.4
PFNS	20.000	19.974	-0.1	99.9
PFOA	20.000	20.504	2.5	102.5
PFOS	20.000	18.939	-5.3	94.7
PFPeA	20.000	20.479	2.4	102.4
PFPeS	20.000	19.949	-0.3	99.7
PFTeDA	20.000	19.354	-3.2	96.8
PFTTrDA	20.000	20.219	1.1	101.1
PFUnDA	20.000	20.637	3.2	103.2

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA44597
 Account: RESCTNM Resolution Consultants
 Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q69-CC67
 Lab FileID: 2Q2788.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0626_pfc_S2Q69\S2Q69.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2578.d
 2:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2579.d
 3:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2580.d
 4:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2581.d
 5:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2582.d
 6:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2583.d
 7:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2584.d
 8:D:\MassHunter\Data\0623_pfc_S2Q67\2Q2585.d

Data File: 2Q2788

Type : QC
 Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	21.006	5.0	105.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	15.722	-21.4	78.6
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	18.102	-9.5	90.5
6:2FTS	20.000	19.614	-1.9	98.1
8:2FTS	20.000	22.736	13.7	113.7
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.427	7.1	107.1
EtFOSAA	20.000	19.883	-0.6	99.4
FOSA	20.000	16.051	-19.7	80.3
MeFOSAA	20.000	19.086	-4.6	95.4
PFBA	20.000	15.648	-21.8	78.2
PFBS	20.000	17.661	-11.7	88.3
PFDA	20.000	20.771	3.9	103.9
PFDoDA	20.000	19.511	-2.4	97.6
PFDS	20.000	21.794	9.0	109.0
PFHpA	20.000	19.851	-0.7	99.3
PFHpS	20.000	20.330	1.7	101.7
PFHxA	20.000	17.063	-14.7	85.3
PFHxS	20.000	19.518	-2.4	97.6
PFNA	20.000	19.300	-3.5	96.5
PFNS	20.000	19.700	-1.5	98.5
PFOA	20.000	21.075	5.4	105.4
PFOS	20.000	18.723	-6.4	93.6
PFPeA	20.000	20.565	2.8	102.8
PFPeS	20.000	20.012	0.1	100.1
PFTeDA	20.000	19.031	-4.8	95.2
PFTTrDA	20.000	19.855	-0.7	99.3
PFUnDA	20.000	20.622	3.1	103.1

CC Criteria: +/- 25%

Initial Calibration Summary

Job Number: FA44597
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q70-ICC70
Lab FileID: 2Q2816.D

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0627_pfc_S2Q70\S2Q70.batch.bin

Level ID : Calibration File											
1 : D:\MassHunter\Data\0627_pfc_S2Q70\2Q2812.d											
2 : D:\MassHunter\Data\0627_pfc_S2Q70\2Q2813.d											
3 : D:\MassHunter\Data\0627_pfc_S2Q70\2Q2814.d											
4 : D:\MassHunter\Data\0627_pfc_S2Q70\2Q2815.d											
5 : D:\MassHunter\Data\0627_pfc_S2Q70\2Q2816.d											
6 : D:\MassHunter\Data\0627_pfc_S2Q70\2Q2817.d											
7 : D:\MassHunter\Data\0627_pfc_S2Q70\2Q2818.d											
8 : D:\MassHunter\Data\0627_pfc_S2Q70\2Q2819.d											
Compound	1	2	3	4	5	6	7	8	AvgRF	%RSD	r^2
1) 13C2-6:2FTS -----ISTD-----											
8) 4:2FTS	0.6913	0.6433	0.6268	0.5945	0.5653	0.5817	0.5876	0.5270	0.6022	8.410	0.9996
9) 6:2FTS	1.2248	1.0998	1.0660	1.0271	0.9692	0.9730	0.9732	0.8605	1.0242	10.616	0.9997
10) 8:2FTS	1.7198	1.5624	1.5115	1.4645	1.3996	1.4402	1.4599	1.3331	1.4864	7.848	0.9996
3) 13C2-PFDoDA -----ISTD-----											
19) PFDoDA	1.0279	0.9764	0.9450	0.9094	0.9027	0.9262	0.9544	0.9528	0.9494	4.226	0.9997
31) PFTeDA	0.4391	0.3926	0.3837	0.3719	0.3697	0.3809	0.3888	0.3870	0.3892	5.566	0.9998
32) PFTrDA	0.8287	0.7709	0.7593	0.7294	0.7185	0.7591	0.7727	0.7605	0.7624	4.328	0.9998
33) PFUnDA	0.9793	0.9171	0.8818	0.8503	0.8624	0.9018	0.9137	0.9204	0.9034	4.450	0.9997
5) 13C2-PFOA -----ISTD-----											
2) 13C2-PFDA	1.9975	1.8605	1.7993	1.7170	1.7168	1.8081	1.7853	1.7101	1.7993	5.349	0.9991
4) 13C2-PFHxA	1.0889	0.9940	0.9359	0.9016	0.8902	0.9565	0.9441	0.9288	0.9550	6.582	0.9997
16) PFBA	0.3057	0.2712	0.2522	0.2397	0.2353	0.2501	0.2469	0.2496	0.2563	8.807	0.9998
18) PFDA	1.2157	1.1409	1.0671	1.0043	1.0061	1.0670	1.0505	1.0485	1.0750	6.607	0.9998
21) PFHpA	1.6595	1.5447	1.4589	1.3660	1.3918	1.4186	1.4401	1.4563	1.4670	6.426	0.9998
23) PFHxA	0.4709	0.4511	0.4332	0.4067	0.4051	0.4235	0.4273	0.4178	0.4294	5.195	0.9998
25) PFNA	-----	1.0621	0.9673	0.9471	0.9489	1.0242	1.0181	1.0277	0.9993	4.476	0.9996
27) PFOA	1.0189	0.9439	0.8506	0.8202	0.8247	0.8585	0.8634	0.8626	0.8803	7.670	0.9999
6) 13C3-PFPeA -----ISTD-----											
29) PFPeA	1.7235	1.5633	1.5309	1.4482	1.4300	1.4917	1.5337	1.5296	1.5314	5.878	0.9997
30) PFPeS	0.2028	0.1740	0.1741	0.1691	0.1661	0.1772	0.1805	0.1800	0.1780	6.296	0.9996
7) 13C4-PFOS -----ISTD-----											
17) PFBS	0.7631	0.7296	0.7001	0.6686	0.6594	0.6968	0.7110	0.7237	0.7065	4.739	0.9994
20) PFDS	0.7277	0.7070	0.6854	0.6544	0.6487	0.6893	0.7021	0.7152	0.6912	4.045	0.9993
22) PFHpS	1.0953	1.0485	1.0121	0.9700	0.9570	1.0041	1.0222	1.0218	1.0164	4.265	0.9997
24) PFHxS	1.0263	0.9433	0.9339	0.9004	0.8930	0.9444	0.9586	0.9334	0.9417	4.332	0.9997
26) PFNS	0.5320	0.4899	0.4911	0.4649	0.4610	0.4781	0.4899	0.4888	0.4870	4.464	0.9997
28) PFOS	1.3502	1.3006	1.2076	1.1341	1.1295	1.1981	1.2192	1.2283	1.2210	6.169	0.9996
11) d3-MeFOSAA -----ISTD-----											
12) d5-EtFOSAA	-----	1.1602	1.1020	1.0592	1.0233	1.0774	1.1077	1.0477	1.0825	4.190	0.9990
13) EtFOSAA	1.2024	1.0489	1.0137	0.9785	0.9283	0.9733	1.0137	0.9481	1.0134	8.448	0.9993
14) FOSA	1.7732	1.7497	1.6808	1.5756	1.4516	1.4668	1.4946	1.3522	1.5681	9.749	0.9996
15) MeFOSAA	1.2979	1.2008	1.1229	1.1016	1.0581	1.1385	1.1643	1.1362	1.1525	6.260	0.9996

*(value) - Average RF below (value)

6.6.7
6

Initial Calibration Verification

Page 1 of 1

Job Number: FA44597
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q70-ICV70
Lab FileID: 2Q2821.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0627_pfc_S2Q70\S2Q70.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2812.d
2:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2813.d
3:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2814.d
4:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2815.d
5:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2816.d
6:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2817.d
7:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2818.d
8:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2819.d

Data File: 2Q2821

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	0.000	0.0	0.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	0.000	0.0	0.0
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	23.820	19.1	119.1
6:2FTS	20.000	22.758	13.8	113.8
8:2FTS	20.000	22.650	13.3	113.3
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	0.000	0.0	0.0
EtFOSAA	20.000	22.539	12.7	112.7
FOSA	20.000	22.322	11.6	111.6
MeFOSAA	20.000	22.390	12.0	112.0
PFBA	20.000	20.297	1.5	101.5
PFBS	20.000	19.884	-0.6	99.4
PFDA	20.000	21.162	5.8	105.8
PFDoDA	20.000	20.687	3.4	103.4
PFDS	20.000	20.151	0.8	100.8
PFHpA	20.000	20.419	2.1	102.1
PFHpS	20.000	21.771	8.9	108.9
PFHxA	20.000	20.972	4.9	104.9
PFHxS	20.000	21.349	6.7	106.7
PFNA	20.000	20.456	2.3	102.3
PFNS	20.000	22.619	13.1	113.1
PFOA	20.000	20.219	1.1	101.1
PFOS	20.000	18.387	-8.1	91.9
PFPeA	20.000	20.372	1.9	101.9
PFPeS	20.000	21.894	9.5	109.5
PFTeDA	20.000	20.702	3.5	103.5
PFTTrDA	20.000	20.581	2.9	102.9
PFUnDA	20.000	20.605	3.0	103.0

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA44597
 Account: RESCTNM Resolution Consultants
 Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q70-CC70
 Lab FileID: 2Q2827.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0627_pfc_S2Q70\S2Q70.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2812.d
 2:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2813.d
 3:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2814.d
 4:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2815.d
 5:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2816.d
 6:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2817.d
 7:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2818.d
 8:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2819.d

Data File: 2Q2827

Type : QC
 Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.396	-3.0	97.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	18.809	-6.0	94.0
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.043	-4.8	95.2
6:2FTS	20.000	19.395	-3.0	97.0
8:2FTS	20.000	19.192	-4.0	96.0
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.809	-1.0	99.0
EtFOSAA	20.000	18.655	-6.7	93.3
FOSA	20.000	18.964	-5.2	94.8
MeFOSAA	20.000	19.006	-5.0	95.0
PFBA	20.000	18.665	-6.7	93.3
PFBS	20.000	18.138	-9.3	90.7
PFDA	20.000	18.961	-5.2	94.8
PFDoDA	20.000	18.617	-6.9	93.1
PFDS	20.000	18.546	-7.3	92.7
PFHpA	20.000	18.628	-6.9	93.1
PFHpS	20.000	18.589	-7.1	92.9
PFHxA	20.000	19.083	-4.6	95.4
PFHxS	20.000	18.762	-6.2	93.8
PFNA	20.000	18.822	-5.9	94.1
PFNS	20.000	18.978	-5.1	94.9
PFOA	20.000	18.991	-5.0	95.0
PFOS	20.000	18.542	-7.3	92.7
PFPeA	20.000	18.751	-6.2	93.8
PFPeS	20.000	18.748	-6.3	93.7
PFTeDA	20.000	18.862	-5.7	94.3
PFTTrDA	20.000	18.528	-7.4	92.6
PFUnDA	20.000	18.697	-6.5	93.5

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA44597
 Account: RESCTNM Resolution Consultants
 Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q70-CC70
 Lab FileID: 2Q2828.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0627_pfc_S2Q70\S2Q70.batch.bin

Level ID: Calibration File

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 2:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2813.d
 3:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2814.d
 4:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2815.d
 5:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2816.d
 6:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2817.d
 7:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2818.d
 8:D:\MassHunter\Data\0627_pfc_S2Q70\2Q2819.d

Data File: 2Q2828

Type : QC
 Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.449	-2.8	97.2
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	18.898	-5.5	94.5
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	18.623	-6.9	93.1
6:2FTS	20.000	19.052	-4.7	95.3
8:2FTS	20.000	18.746	-6.3	93.7
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.144	0.7	100.7
EtFOSAA	20.000	19.160	-4.2	95.8
FOSA	20.000	18.450	-7.7	92.3
MeFOSAA	20.000	19.115	-4.4	95.6
PFBA	20.000	18.633	-6.8	93.2
PFBS	20.000	18.307	-8.5	91.5
PFDA	20.000	19.362	-3.2	96.8
PFDoDA	20.000	18.695	-6.5	93.5
PFDS	20.000	18.404	-8.0	92.0
PFHpA	20.000	18.485	-7.6	92.4
PFHpS	20.000	18.761	-6.2	93.8
PFHxA	20.000	18.994	-5.0	95.0
PFHxS	20.000	18.835	-5.8	94.2
PFNA	20.000	18.239	-8.8	91.2
PFNS	20.000	19.131	-4.3	95.7
PFOA	20.000	18.899	-5.5	94.5
PFOS	20.000	18.588	-7.1	92.9
PFPeA	20.000	18.566	-7.2	92.8
PFPeS	20.000	18.603	-7.0	93.0
PFTeDA	20.000	18.808	-6.0	94.0
PFTTrDA	20.000	18.595	-7.0	93.0
PFUnDA	20.000	18.793	-6.0	94.0

CC Criteria: +/- 25%



GC/MS Semi-volatiles

Raw Data

7

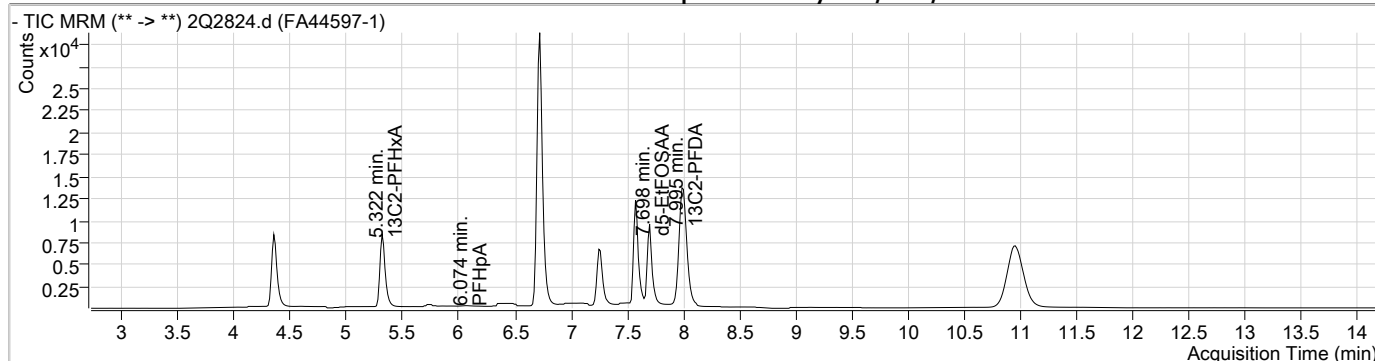
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2824.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 3:44:53 PM
 Sample Name : FA44597-1
 Vial : Vial 14
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65503,S2Q70,260,,,1.0,1,water

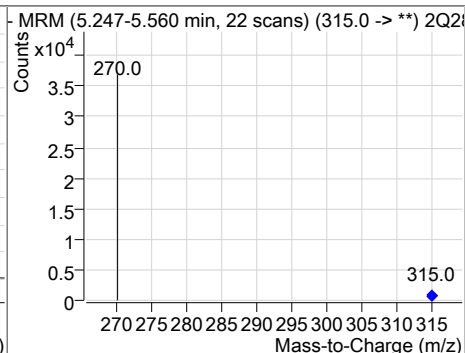
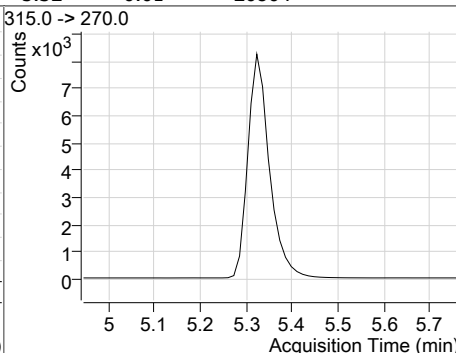
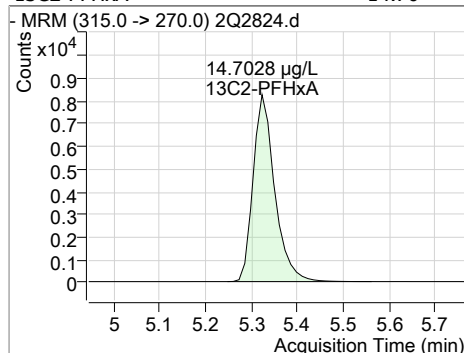
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.724	429.0 -> 409.0	71123	20.00 µg/L	-0.013
13C2-PFDoDA	10.953	615.0 -> 570.0	71541	20.00 µg/L	0.000
13C2-PFOA	6.713	415.0 -> 370.0	39157	20.00 µg/L	-0.014
13C3-PFPeA	4.360	266.0 -> 222.0	27341	20.00 µg/L	-0.025
13C4-PFOS	7.250	503.0 -> 80.0	22683	20.00 µg/L	-0.013
d3-MeFOSAA	7.575	573.0 -> 419.0	34183	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-PFDA	7.995	515.0 -> 470.0	63385	18.67 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 93.3%		
13C2-PFHxA	5.322	315.0 -> 270.0	26864	14.70 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 73.5%		
d5-EtFOSAA	7.698	589.0 -> 419.0	25495	14.06 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 70.3%		
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	-	427.0 -> 407.0	-	N.D.	
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	6.074	363.0 -> 319.0	769	0.27 µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 99.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 99.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	

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

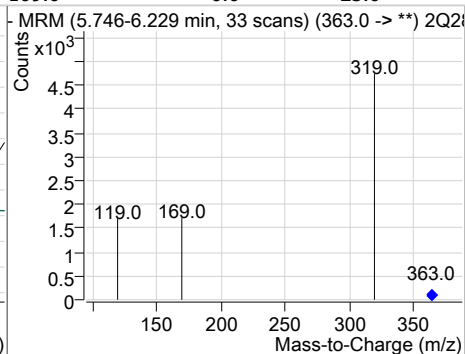
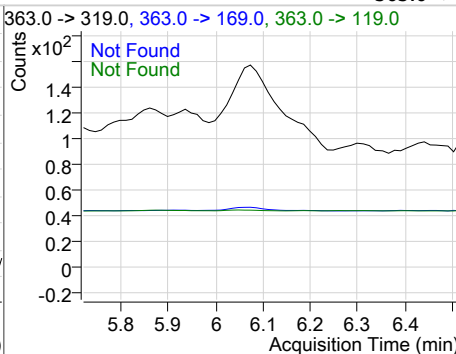
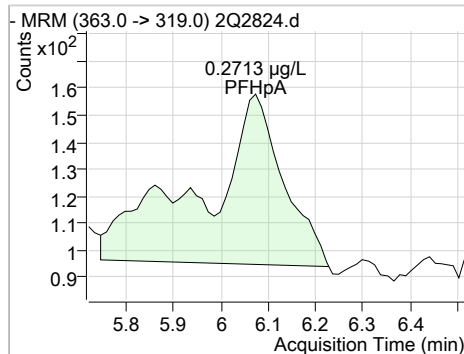
Perfluorinated Compounds by LC/MS/MS



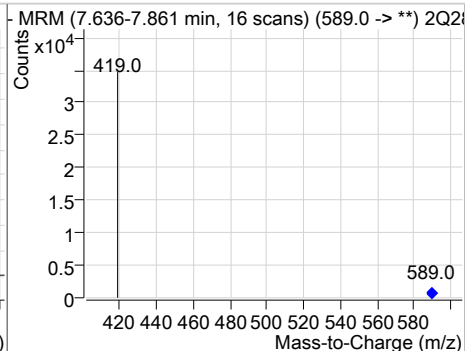
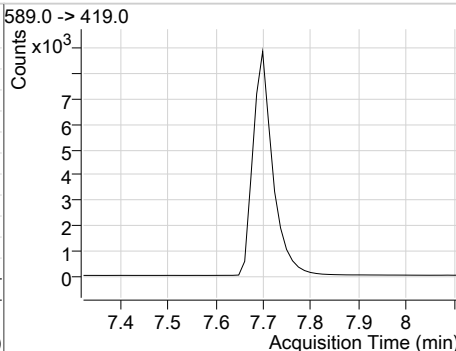
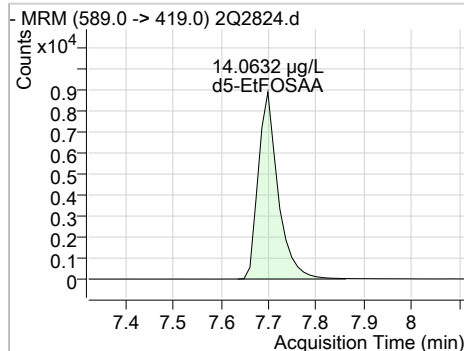
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	14.70	5.32	-0.01	26864				



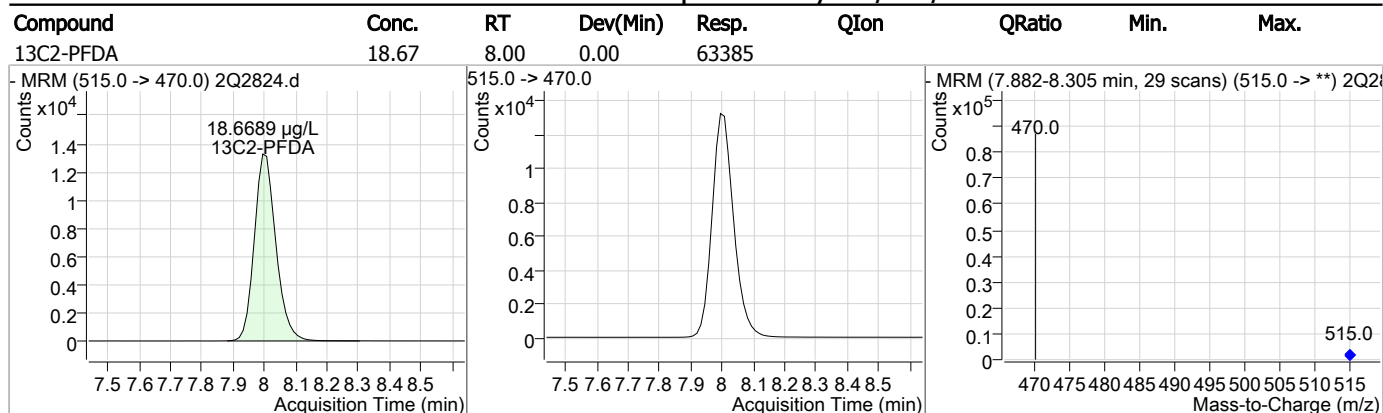
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.27	6.07	-0.01	769	363.0 -> 119.0		0.0	25.0
					363.0 -> 169.0		0.0	25.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.06	7.70	-0.01	25495				



Perfluorinated Compounds by LC/MS/MS



7.1.1
7

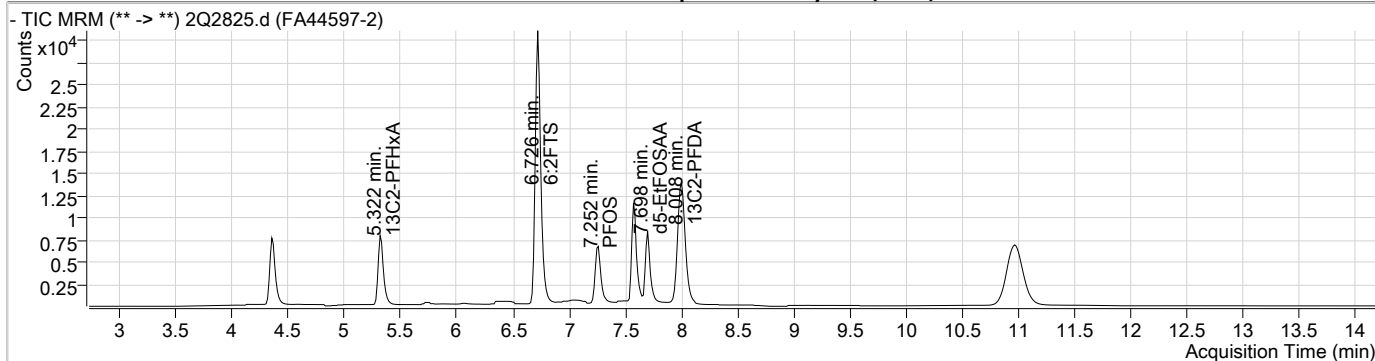
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2825.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 4:04:13 PM
 Sample Name : FA44597-2
 Vial : Vial 15
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65503,S2Q70,260,,,1.0,1,water

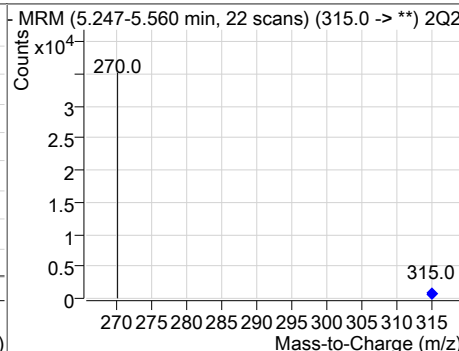
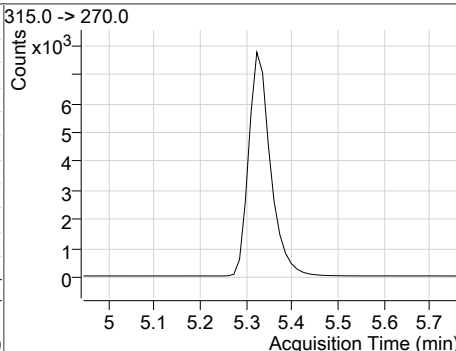
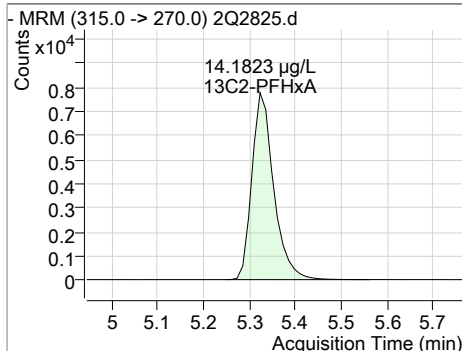
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.724	429.0 -> 409.0	69376	20.00	µg/L	-0.013
13C2-PFDoDA	10.965	615.0 -> 570.0	70141	20.00	µg/L	0.012
13C2-PFOA	6.713	415.0 -> 370.0	38575	20.00	µg/L	-0.014
13C3-PFPeA	4.360	266.0 -> 222.0	25311	20.00	µg/L	-0.025
13C4-PFOS	7.263	503.0 -> 80.0	21868	20.00	µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	33066	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-PFDA	8.008	515.0 -> 470.0	63467	18.98	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 94.9%			
13C2-PFHxA	5.322	315.0 -> 270.0	25527	14.18	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 70.9%			
d5-EtFOSAA	7.698	589.0 -> 419.0	22403	12.77	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 63.9%			
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	6.726	427.0 -> 407.0	428	0.12	µg/L	100
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 99.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	7.252	499.0 -> 80.0	1291	0.97	µg/L	m 74
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 99.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

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

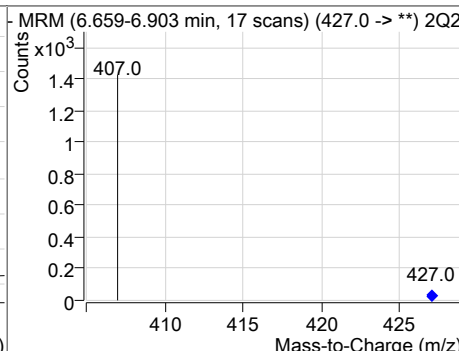
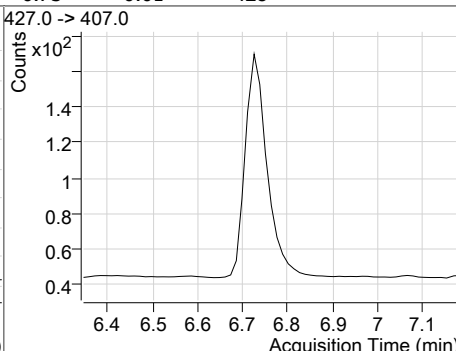
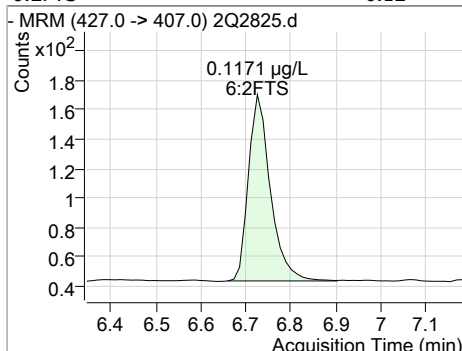
Perfluorinated Compounds by LC/MS/MS



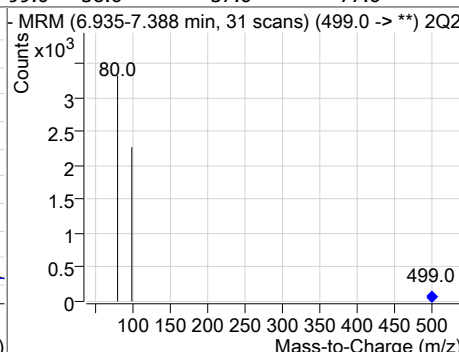
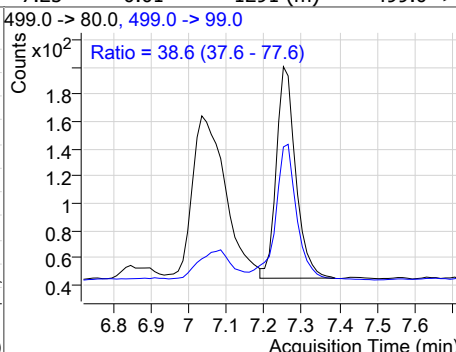
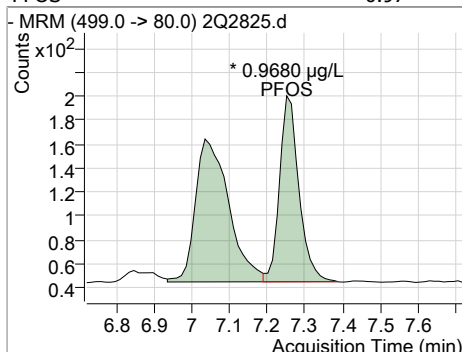
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	14.18	5.32	-0.01	25527				



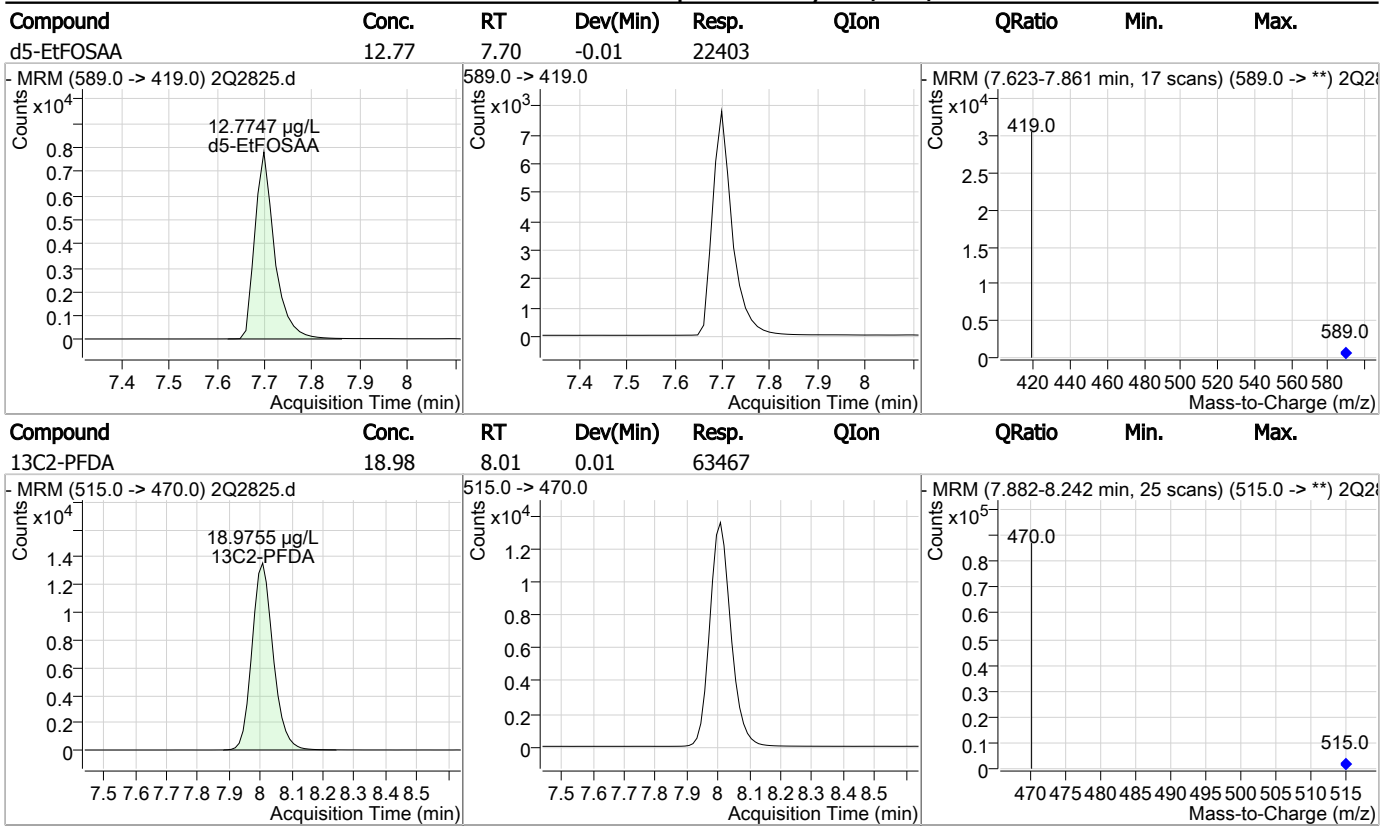
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.12	6.73	-0.01	428				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.97	7.25	-0.01	1291 (m)	499.0 -> 99.0	38.6	37.6	77.6



Perfluorinated Compounds by LC/MS/MS



7.1.2
7

Manual Integration Approval Summary

Sample Number: FA44597-2

Method: EPA 537

Lab FileID: 2Q2825.D

Analyst approved: 06/28/17 09:19 Nancy Saunders

Injection Time: 06/27/17 16:04

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		7.25	Split peak

7.1.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2826.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 4:23:32 PM
 Sample Name : FA44597-3
 Vial : Vial 16
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65503,S2Q70,260,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.737	429.0 -> 409.0	71250	20.00 µg/L	0.000
13C2-PFDoDA	10.978	615.0 -> 570.0	74533	20.00 µg/L	0.025
13C2-PFOA	6.727	415.0 -> 370.0	39766	20.00 µg/L	0.000
13C3-PFPeA	4.372	266.0 -> 222.0	30629	20.00 µg/L	-0.013
13C4-PFOS	7.263	503.0 -> 80.0	23142	20.00 µg/L	0.000
d3-MeFOSAA	7.587	573.0 -> 419.0	35191	20.00 µg/L	0.000

System Monitoring Compounds

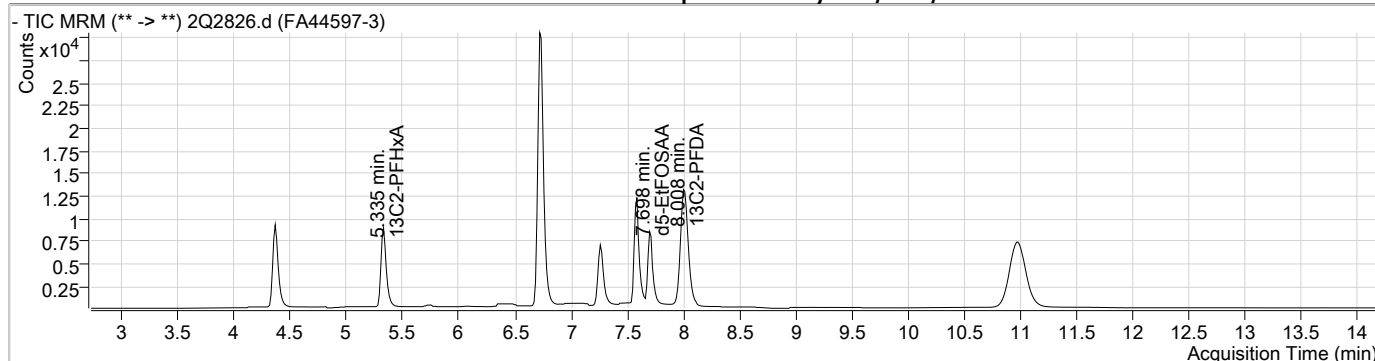
13C2-PFDA	8.008	515.0 -> 470.0	60883	17.66 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 88.3%		
13C2-PFHxA	5.335	315.0 -> 270.0	28523	15.37 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 76.9%		
d5-EtFOSAA	7.698	589.0 -> 419.0	23618	12.65 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 63.3%		

Target Compounds

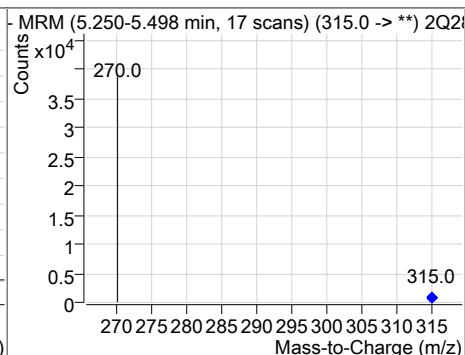
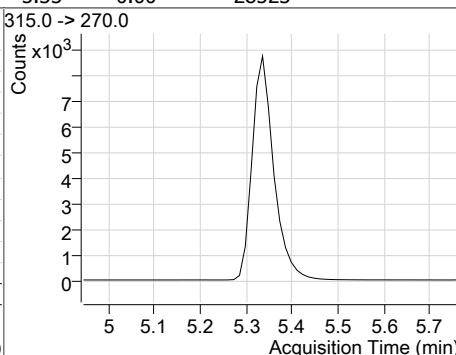
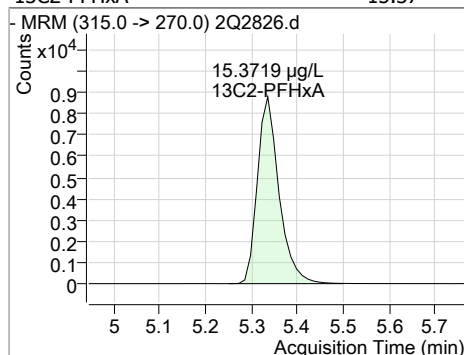
					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	-	427.0 -> 407.0	-	N.D.	
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 99.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 99.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	

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

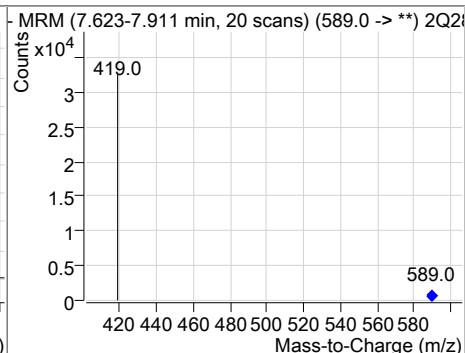
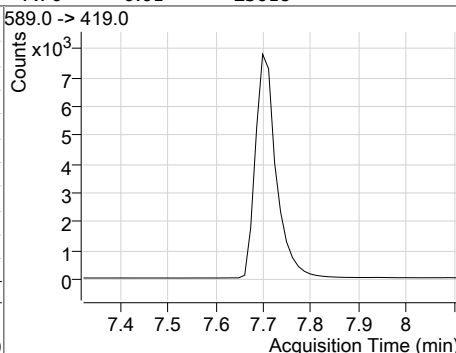
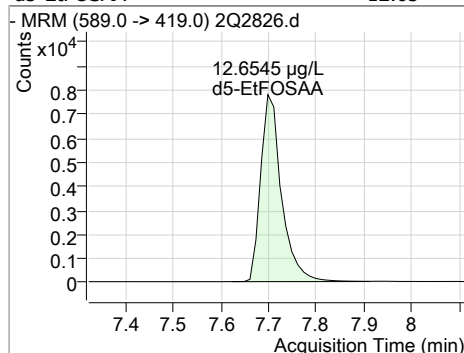
Perfluorinated Compounds by LC/MS/MS



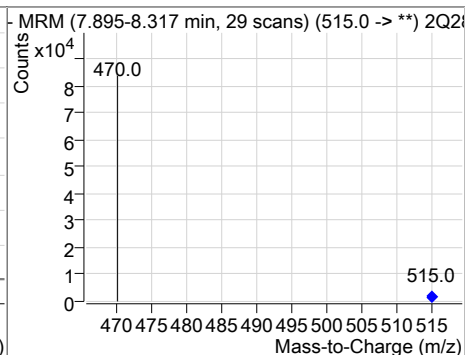
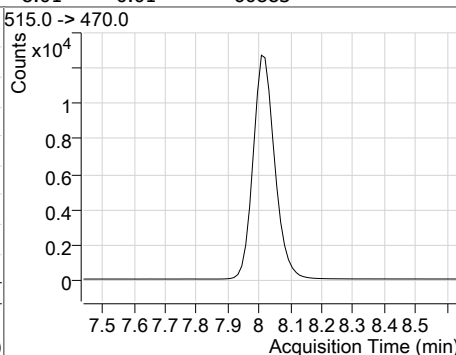
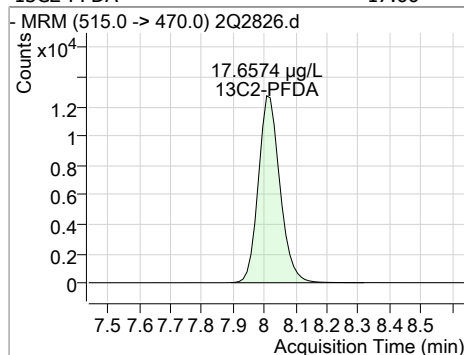
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	15.37	5.33	0.00	28523				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.65	7.70	-0.01	23618				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	17.66	8.01	0.01	60883				



Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2779.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 12:43:11 AM
 Sample Name : OP65503-MB
 Vial : Vial 36
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q69.batch.bin
 Sample Information : OP65503,S2Q69,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.737	429.0 -> 409.0	72357	20.00 µg/L	0.000
13C2-PFDoDA	10.928	615.0 -> 570.0	80892	20.00 µg/L	-0.025
13C2-PFOA	6.727	415.0 -> 370.0	41611	20.00 µg/L	0.000
13C3-PFPeA	4.397	266.0 -> 222.0	34372	20.00 µg/L	0.013
13C4-PFOS	7.263	503.0 -> 80.0	25326	20.00 µg/L	0.000
d3-MeFOSAA	7.600	573.0 -> 419.0	36385	20.00 µg/L	0.013

System Monitoring Compounds

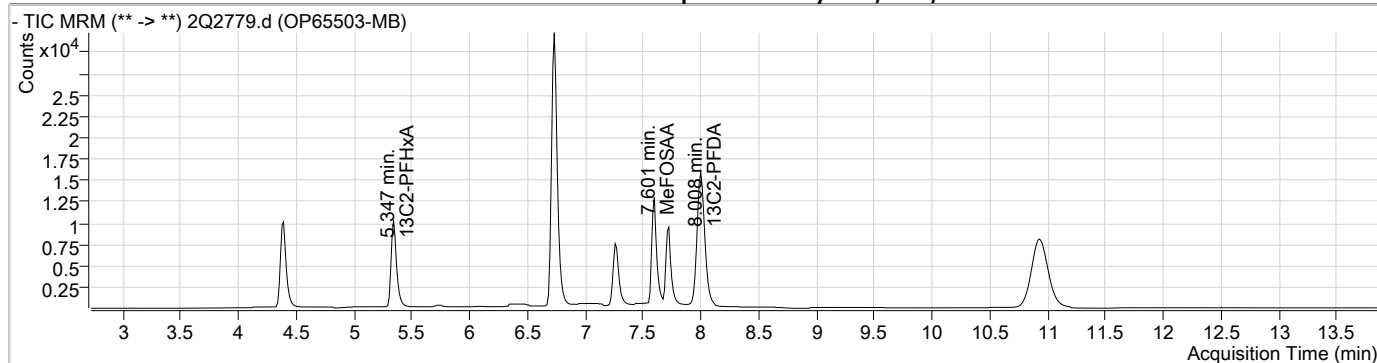
13C2-PFDA	8.008	515.0 -> 470.0	71020	20.53 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 102.6%		
13C2-PFHxA	5.347	315.0 -> 270.0	32761	13.98 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 69.9%		
d5-EtFOSAA	7.723	589.0 -> 419.0	26556	15.22 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 76.1%		

Target Compounds

					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	-	427.0 -> 407.0	-	N.D.	
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	7.725	584.0 -> 419.0	430	0.24 µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	7.601	570.0 -> 419.0	475	0.23 µg/L	100
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 99.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 99.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	

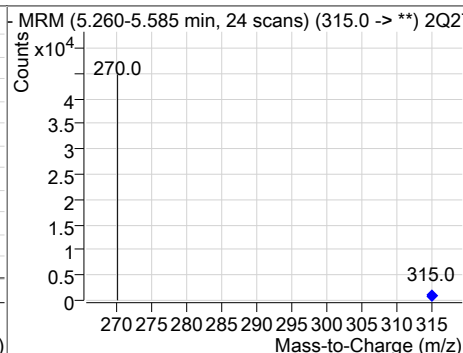
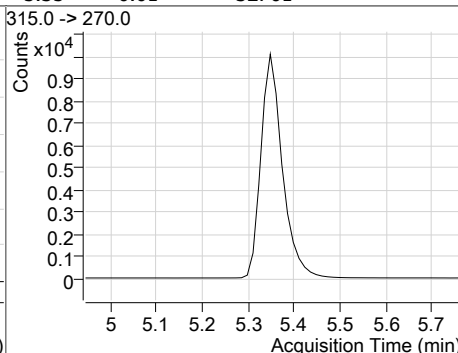
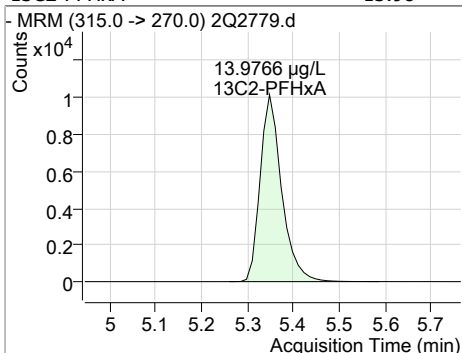
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS



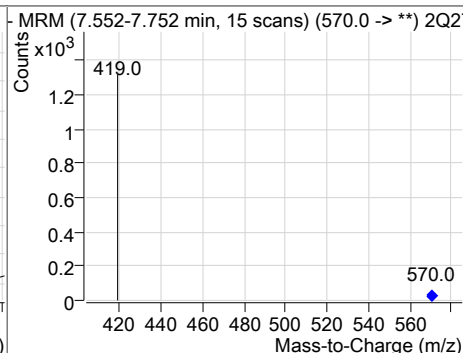
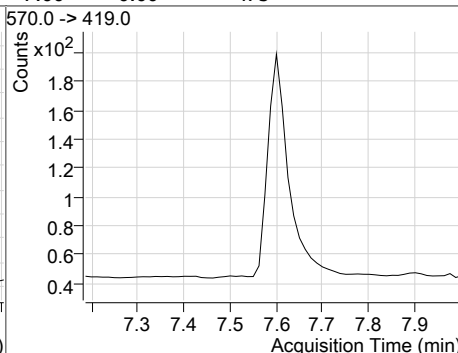
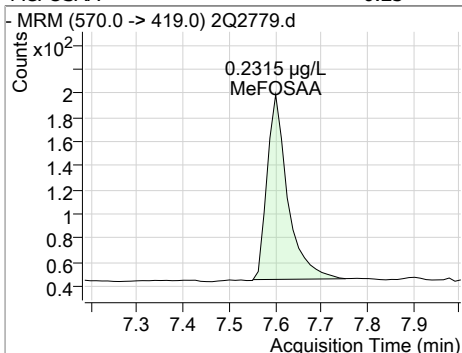
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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13C2-PFHxA	13.98	5.35	0.01	32761				
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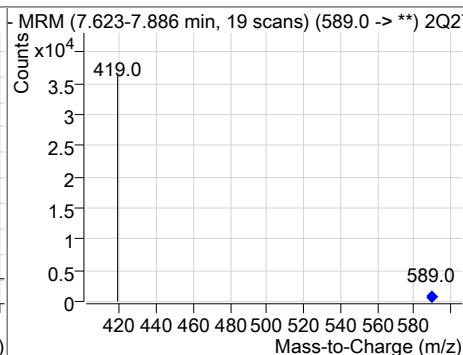
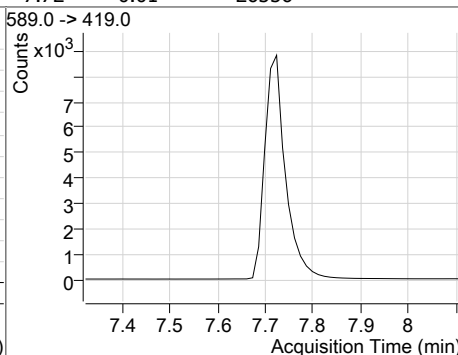
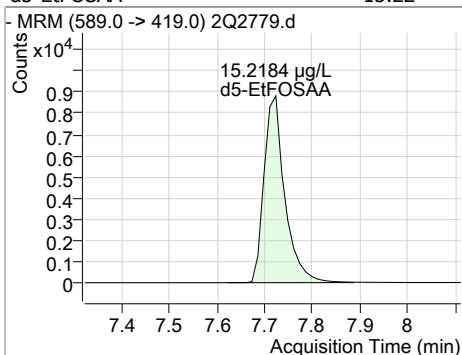
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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MeFOSAA	0.23	7.60	0.00	475				
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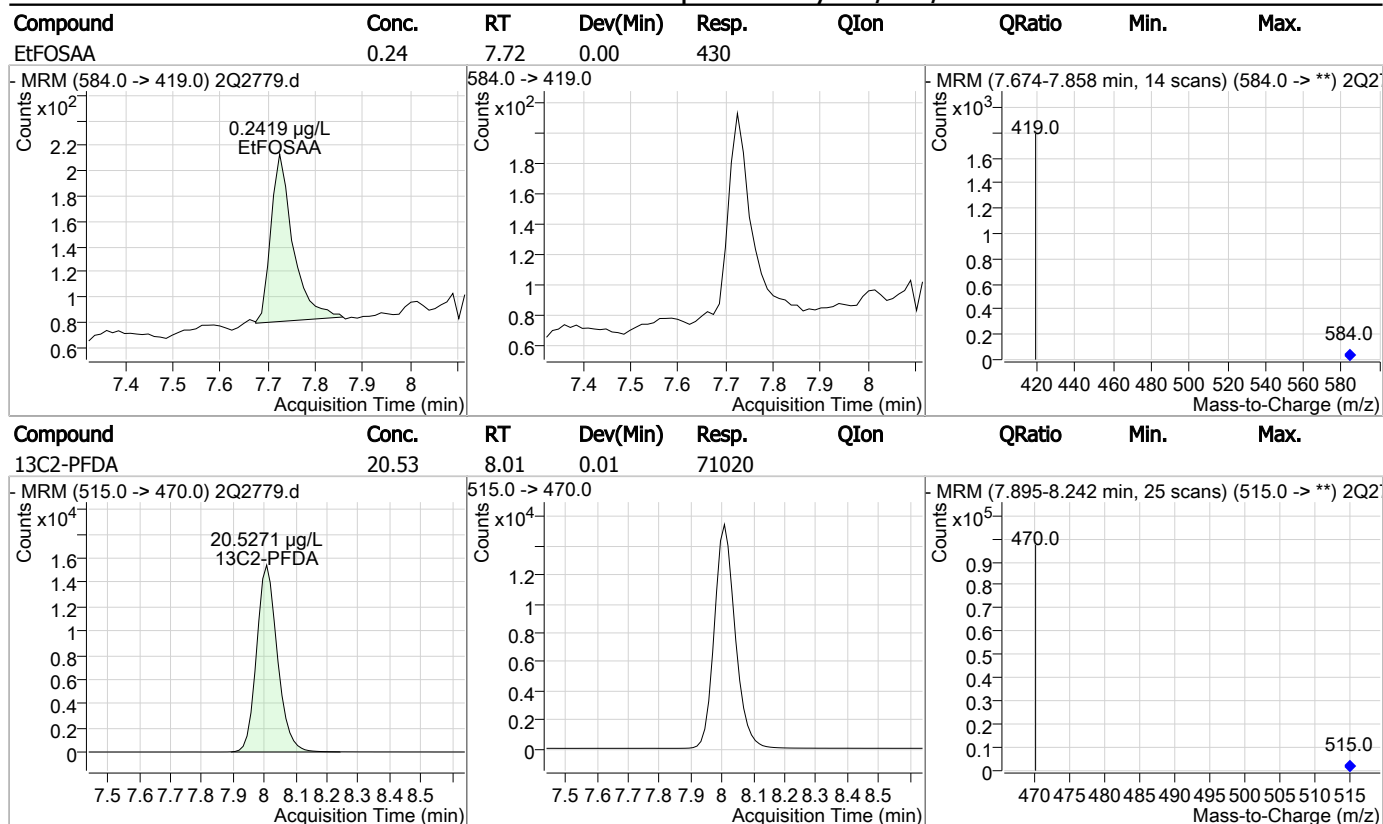


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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d5-EtFOSAA	15.22	7.72	0.01	26556				
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Perfluorinated Compounds by LC/MS/MS



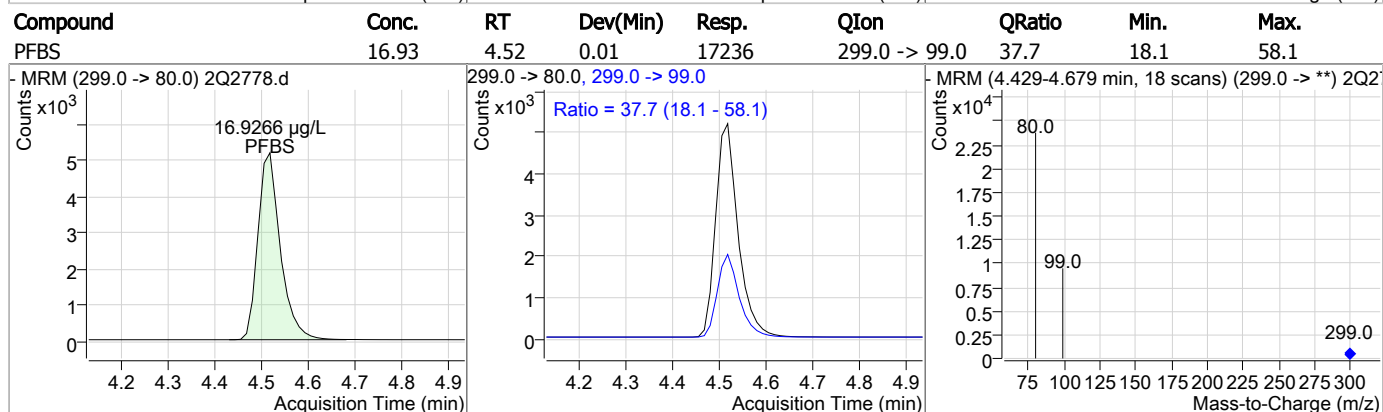
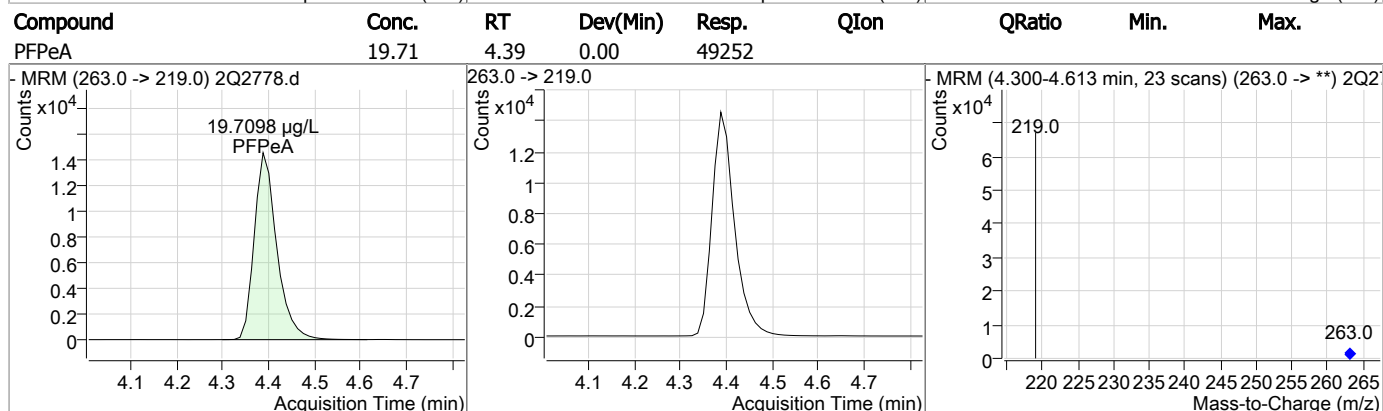
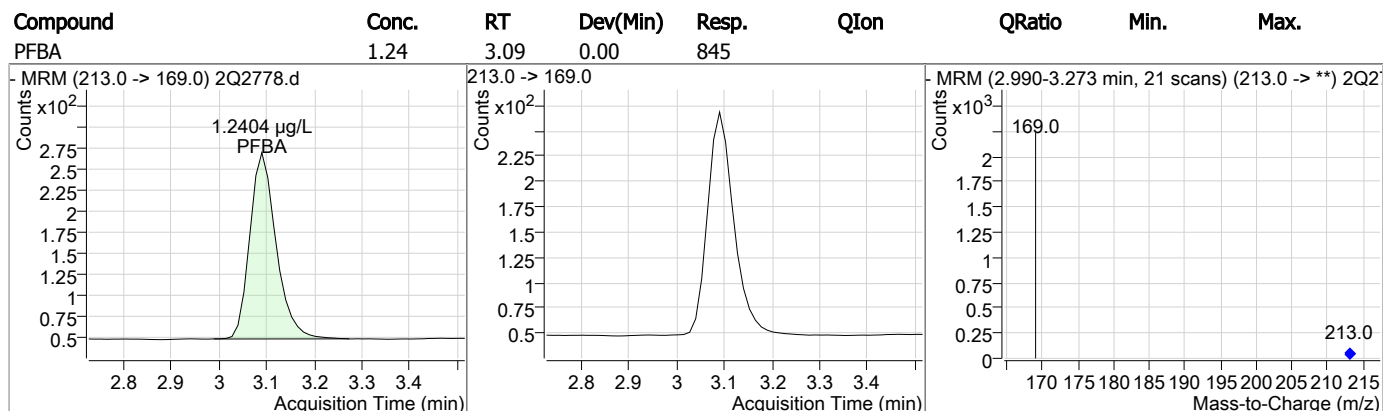
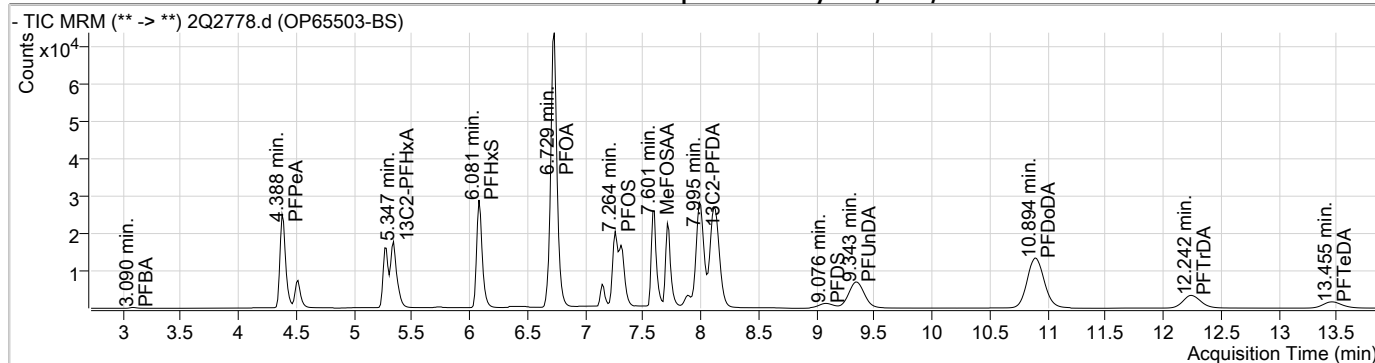
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2778.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 12:23:51 AM
 Sample Name : OP65503-BS
 Vial : Vial 35
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q69.batch.bin
 Sample Information : OP65503,S2Q69,250,,,1.0,1,water

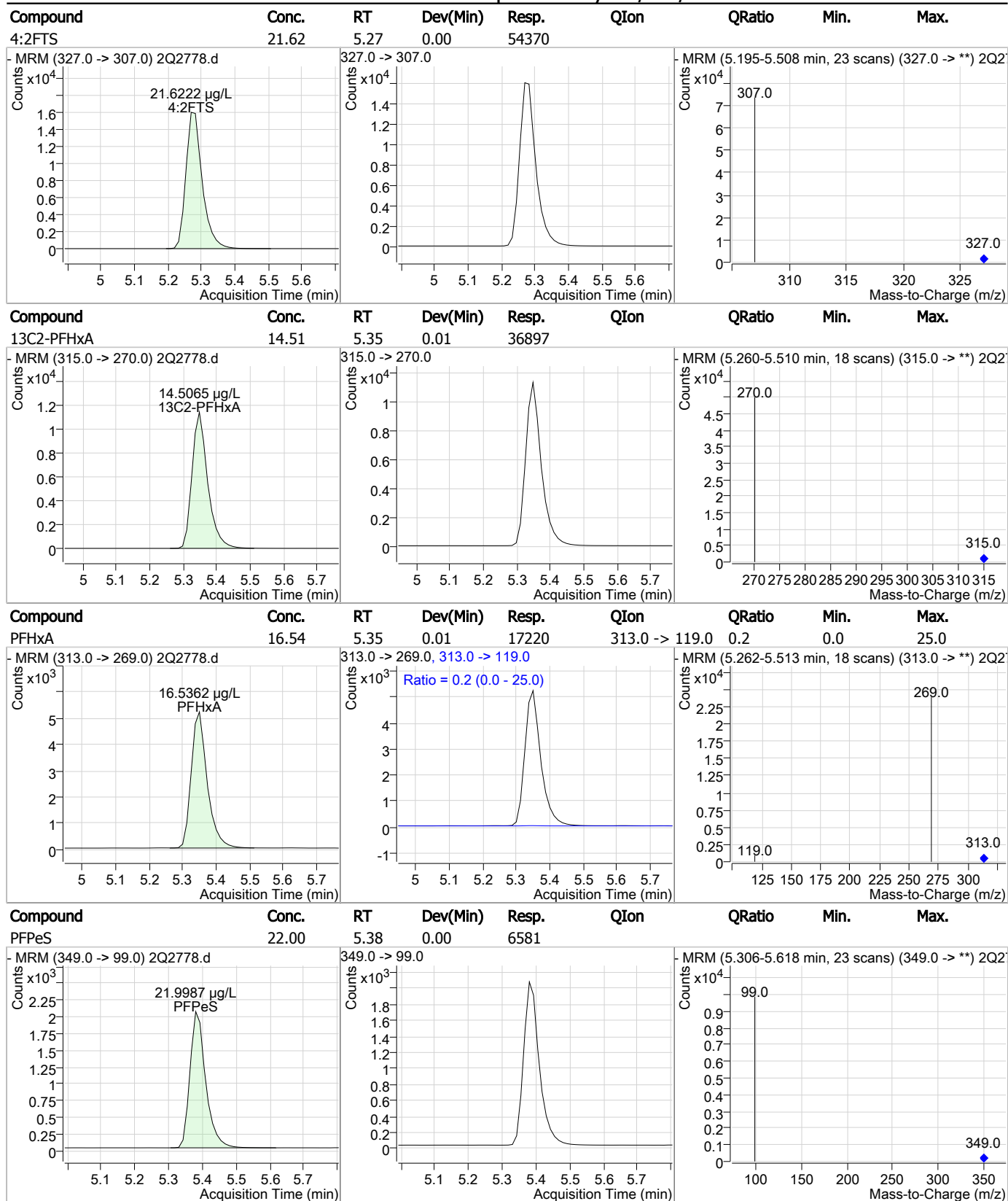
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.737	429.0 -> 409.0	81098	20.00 µg/L	0.000
13C2-PFDoDA	10.890	615.0 -> 570.0	88619	20.00 µg/L	-0.063
13C2-PFOA	6.727	415.0 -> 370.0	45185	20.00 µg/L	0.000
13C3-PFPeA	4.385	266.0 -> 222.0	36352	20.00 µg/L	0.000
13C4-PFOS	7.263	503.0 -> 80.0	27254	20.00 µg/L	0.000
d3-MeFOSAA	7.587	573.0 -> 419.0	39500	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	7.995	515.0 -> 470.0	81019	21.60 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 108.0%		
13C2-PFHxA	5.347	315.0 -> 270.0	36897	14.51 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 72.5%		
d5-EtFOSAA	7.711	589.0 -> 419.0	32735	17.28 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 86.4%		
Target Compounds					QValue
4:2FTS	5.270	327.0 -> 307.0	54370	21.62 µg/L	100
6:2FTS	6.738	427.0 -> 407.0	86366	21.83 µg/L	100
8:2FTS	8.117	527.0 -> 507.0	140778	27.72 µg/L	100
EtFOSAA	7.725	584.0 -> 419.0	34269	18.43 µg/L	100
FOSA	7.150	498.0 -> 78.0	18036	4.92 µg/L	100
MeFOSAA	7.601	570.0 -> 419.0	41127	18.84 µg/L	100
PFBA	3.090	213.0 -> 169.0	845	1.24 µg/L	100
PFBS	4.516	299.0 -> 80.0	17236	16.93 µg/L	99
PFDA	7.996	513.0 -> 469.0	43102	19.38 µg/L	# 47
PFDoDA	10.894	613.0 -> 569.0	47617	12.59 µg/L	# 29
PFDS	9.076	599.0 -> 80.0	10856	13.96 µg/L	100
PFHpA	6.086	363.0 -> 319.0	58469	18.99 µg/L	93
PFHpS	6.683	449.0 -> 80.0	27146	22.05 µg/L	100
PFHxA	5.350	313.0 -> 269.0	17220	16.54 µg/L	85
PFHxS	6.081	399.0 -> 80.0	23750	19.46 µg/L	92
PFNA	7.332	463.0 -> 419.0	41534	18.81 µg/L	97
PFNS	7.892	549.0 -> 99.0	12492	20.51 µg/L	100
PFOA	6.729	413.0 -> 369.0	33721	19.30 µg/L	93
PFOS	7.264	499.0 -> 80.0	26072	16.25 µg/L	98
PFPeA	4.388	263.0 -> 219.0	49252	19.71 µg/L	100
PFPeS	5.380	349.0 -> 99.0	6581	22.00 µg/L	100
PFTeDA	13.455	713.0 -> 669.0	18383	11.33 µg/L	# 32
PFTTrDA	12.242	663.0 -> 619.0	34703	11.25 µg/L	# 33
PFUnDA	9.343	563.0 -> 519.0	60178	17.24 µg/L	# 41

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

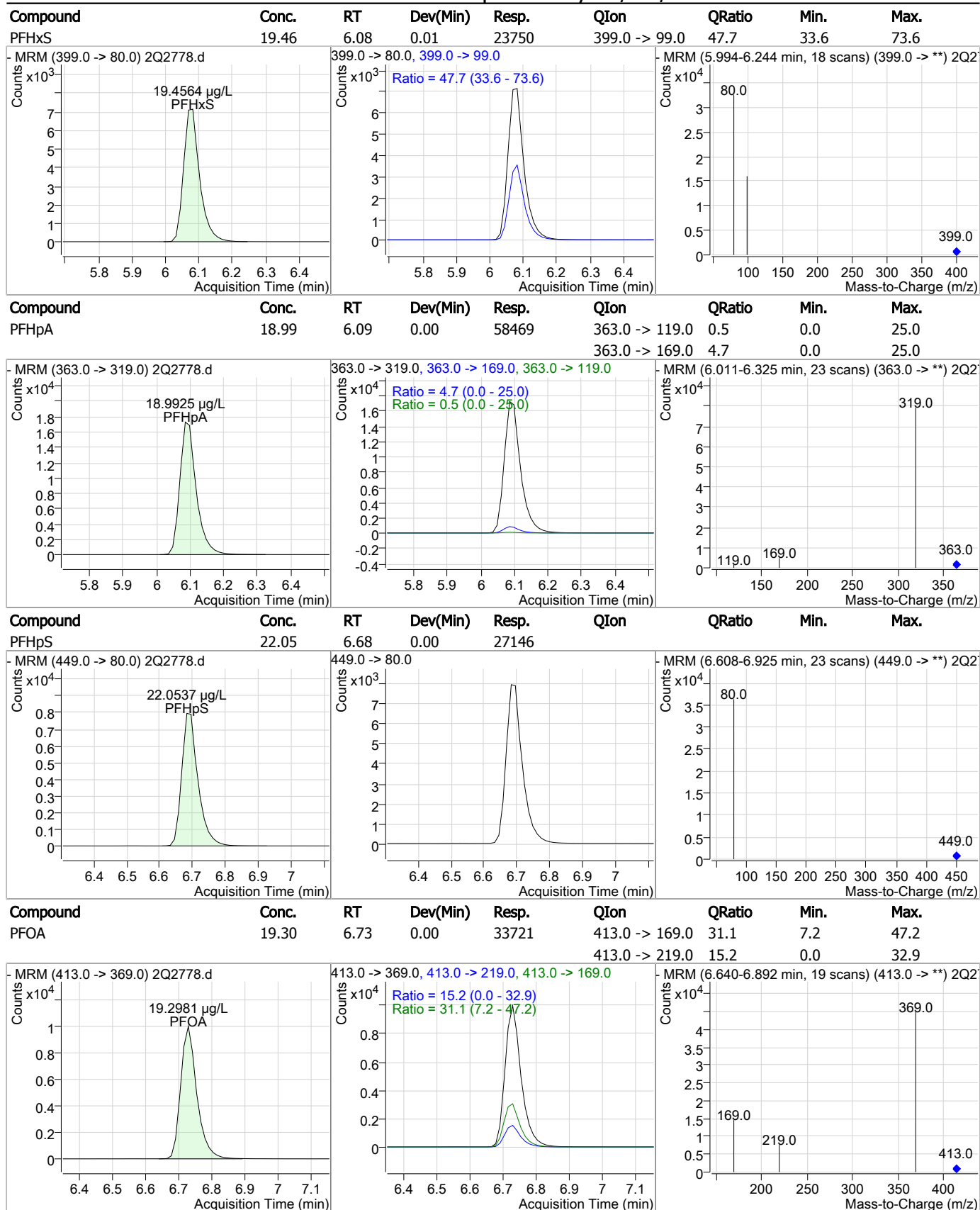
Perfluorinated Compounds by LC/MS/MS



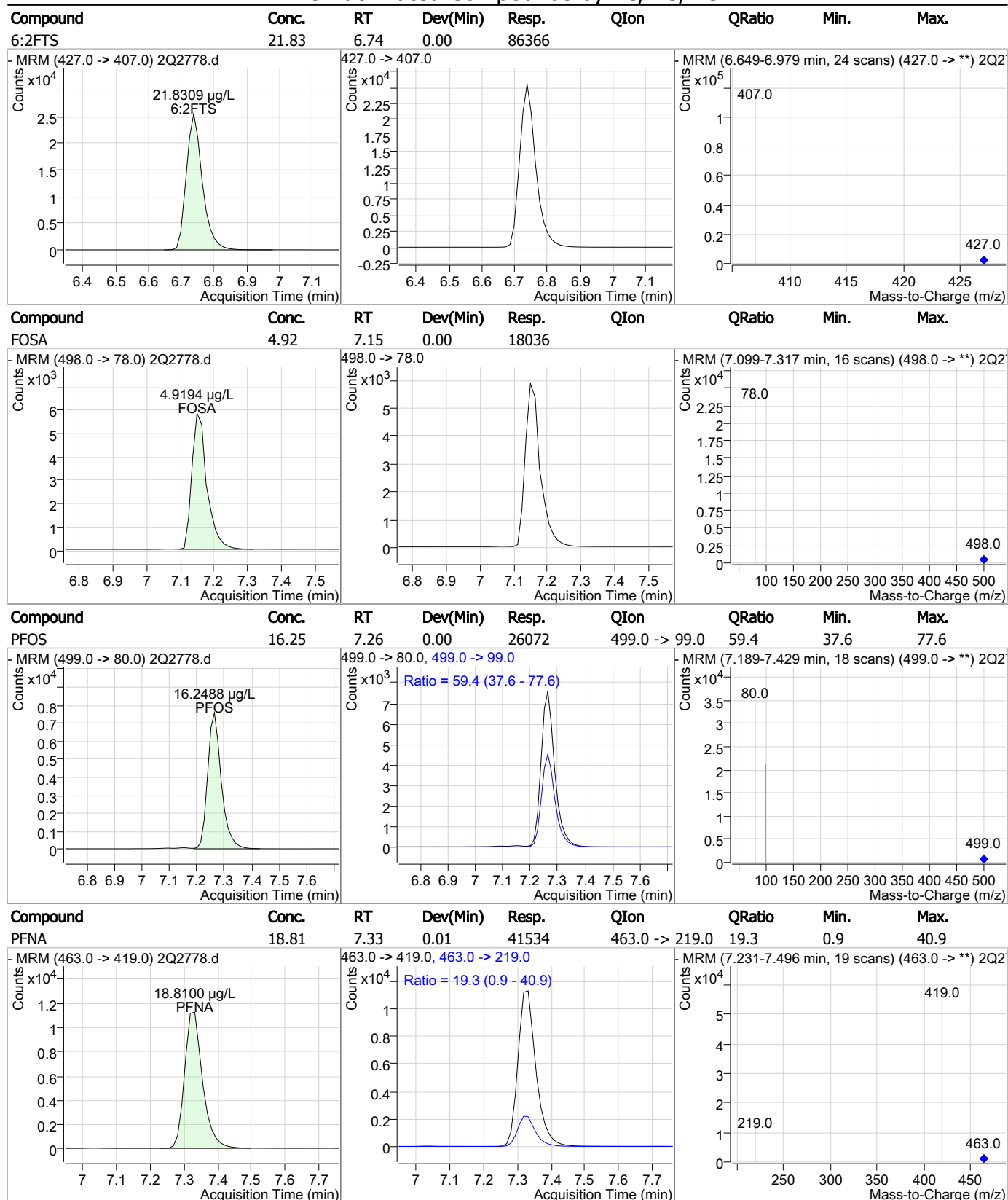
Perfluorinated Compounds by LC/MS/MS



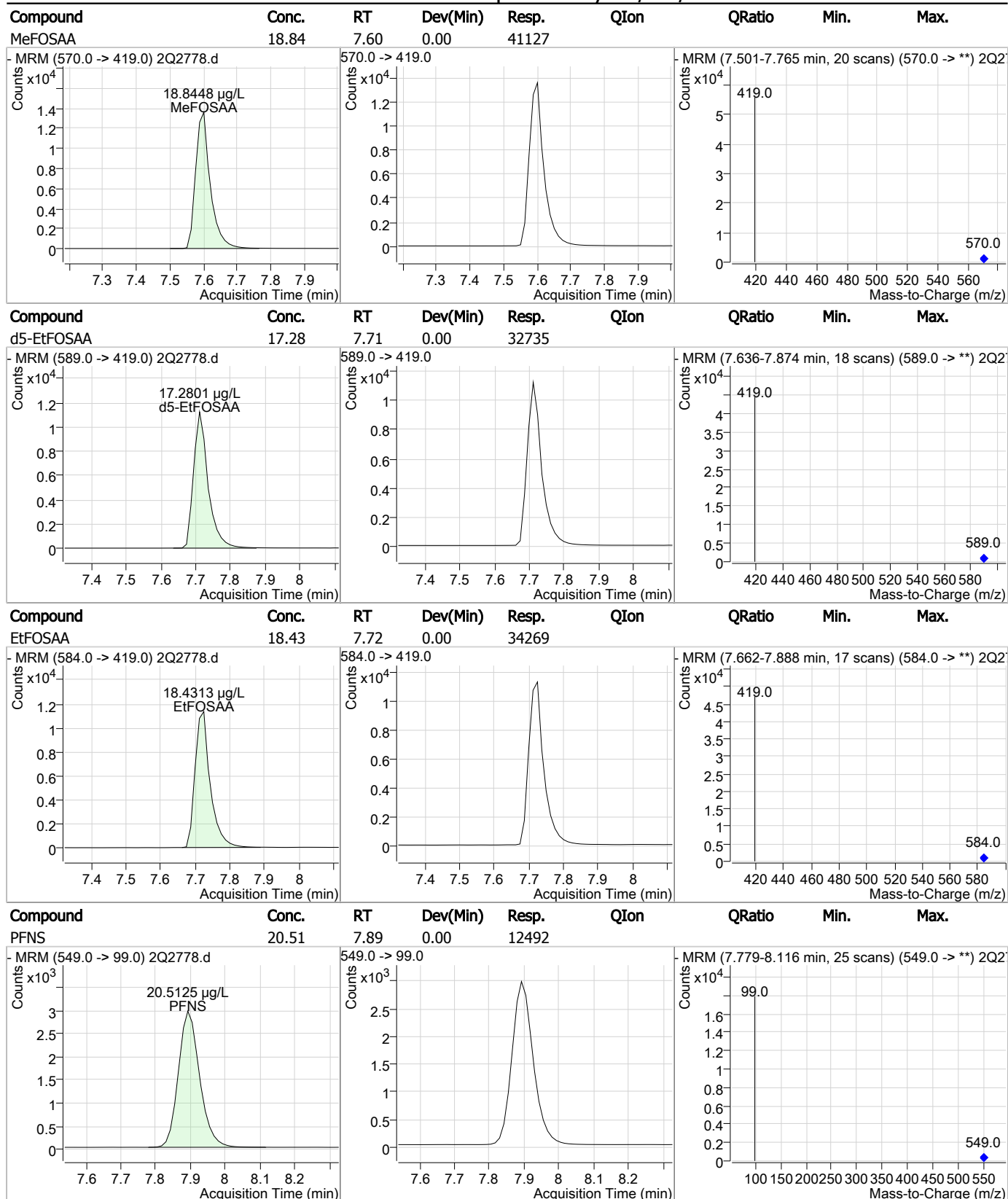
Perfluorinated Compounds by LC/MS/MS



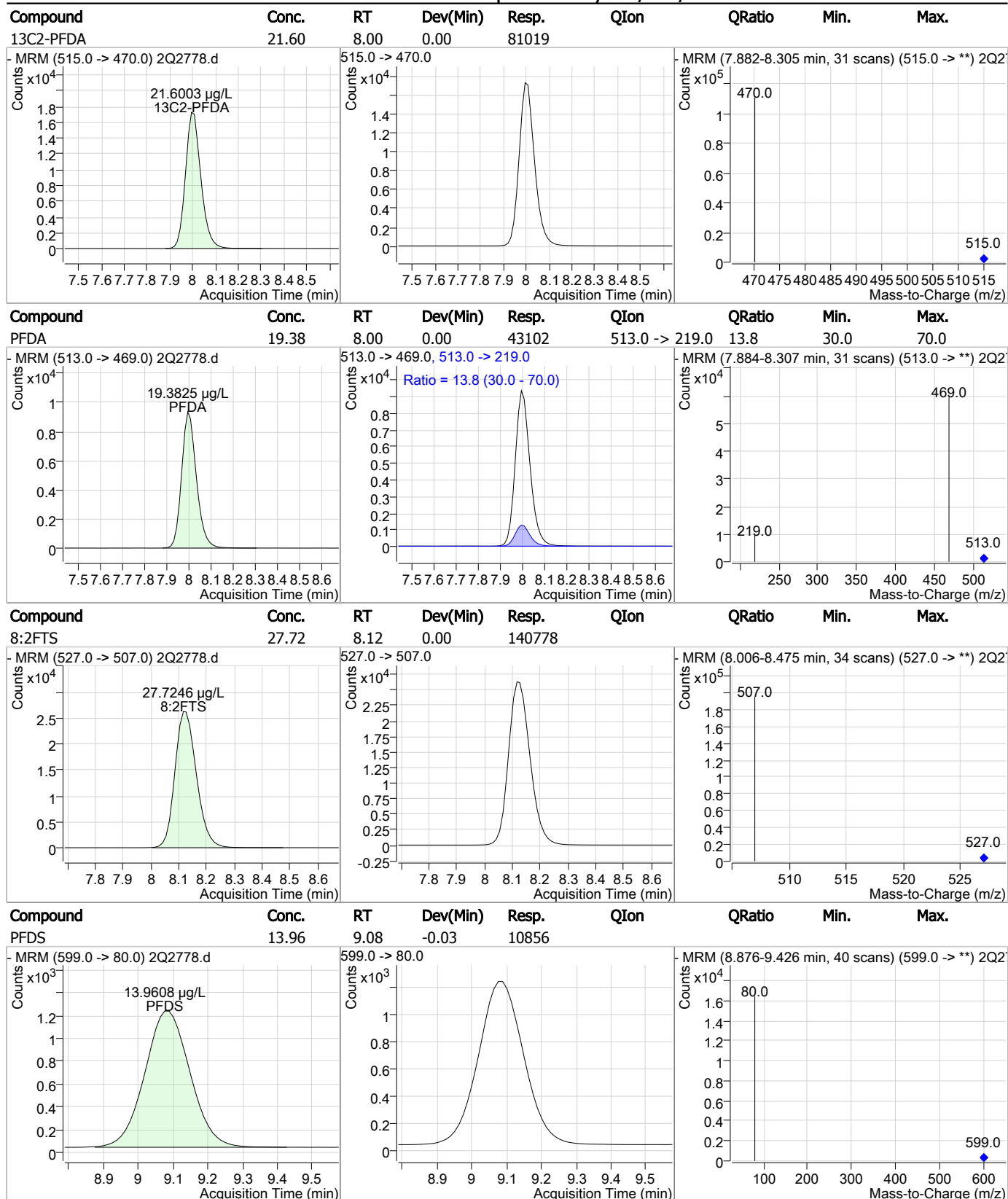
Perfluorinated Compounds by LC/MS/MS



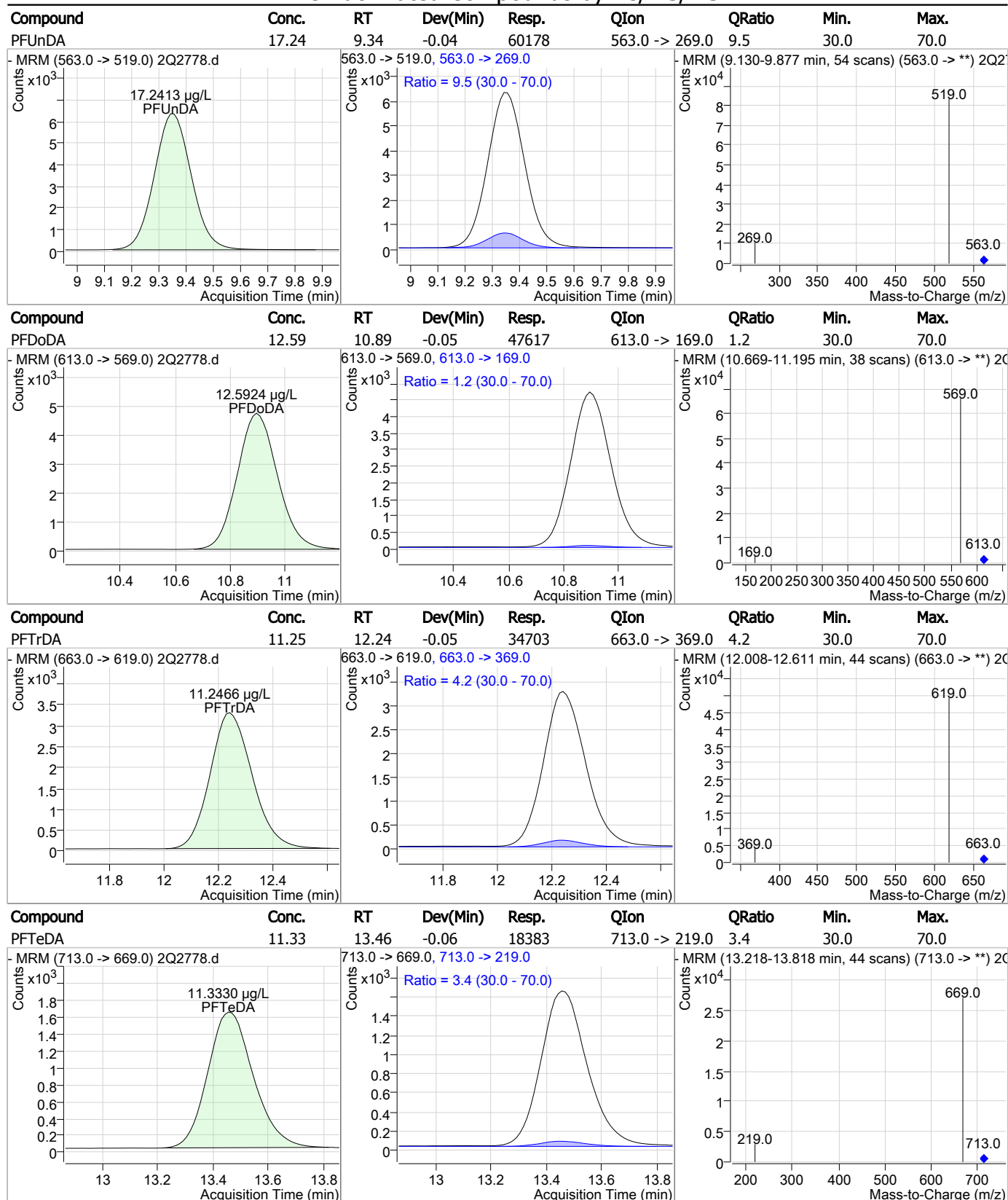
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



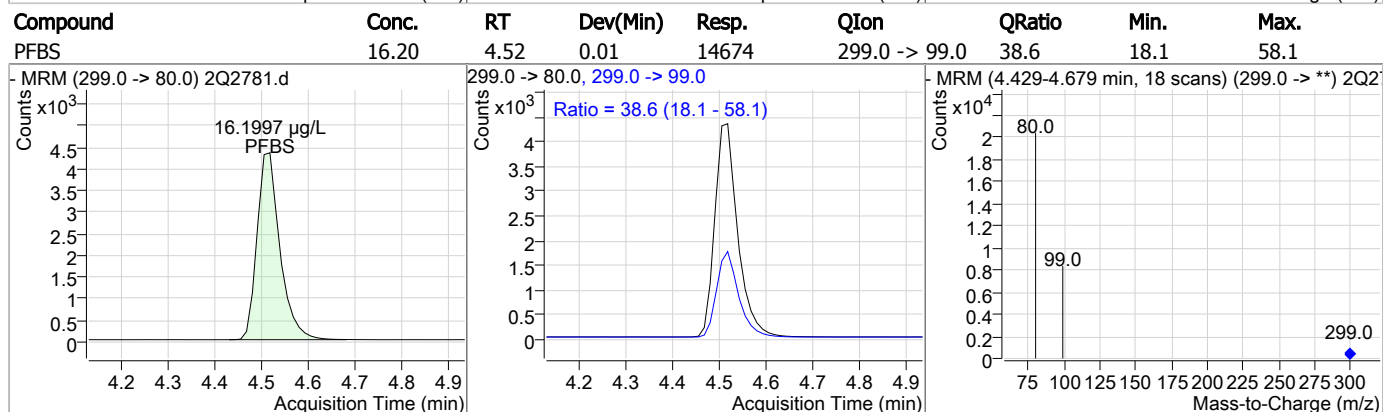
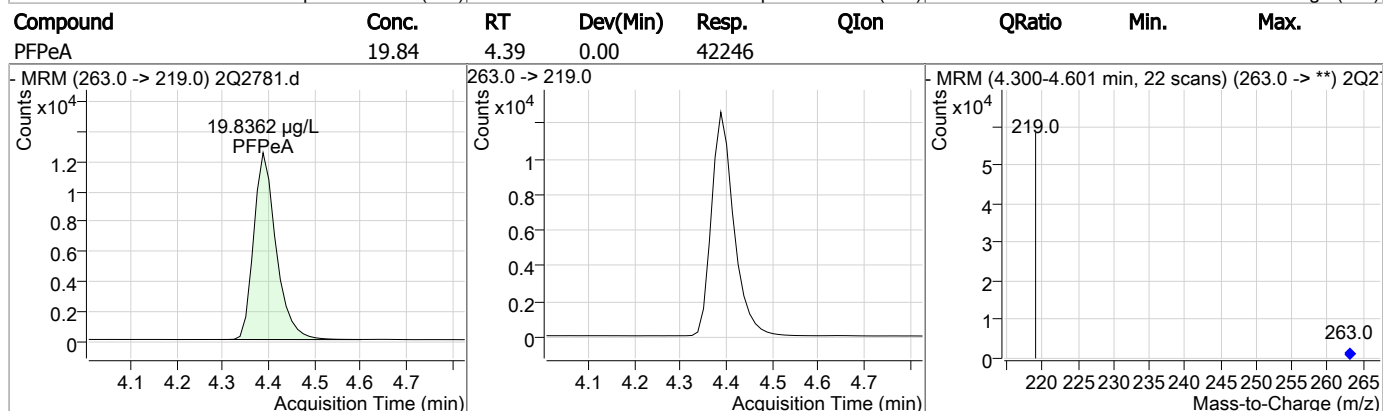
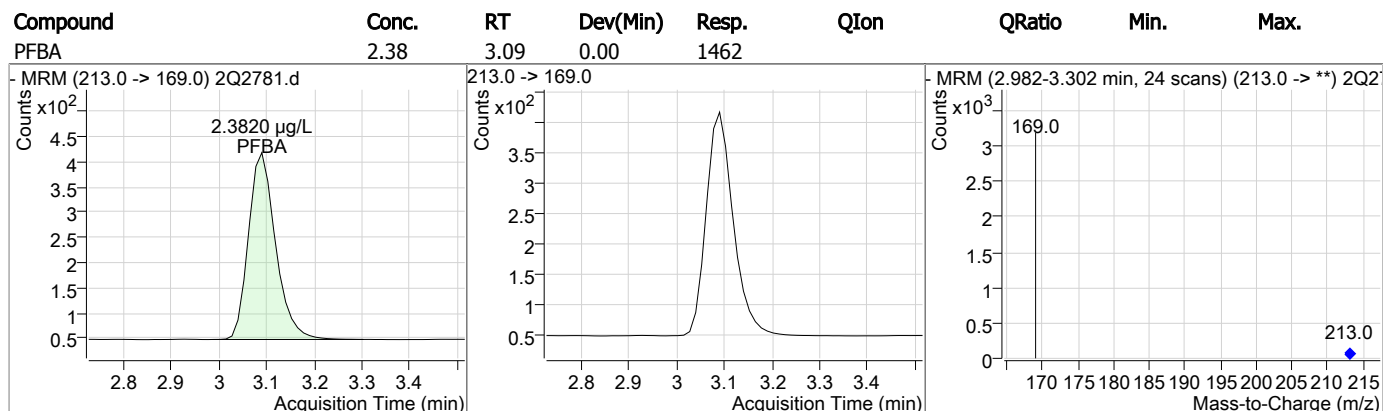
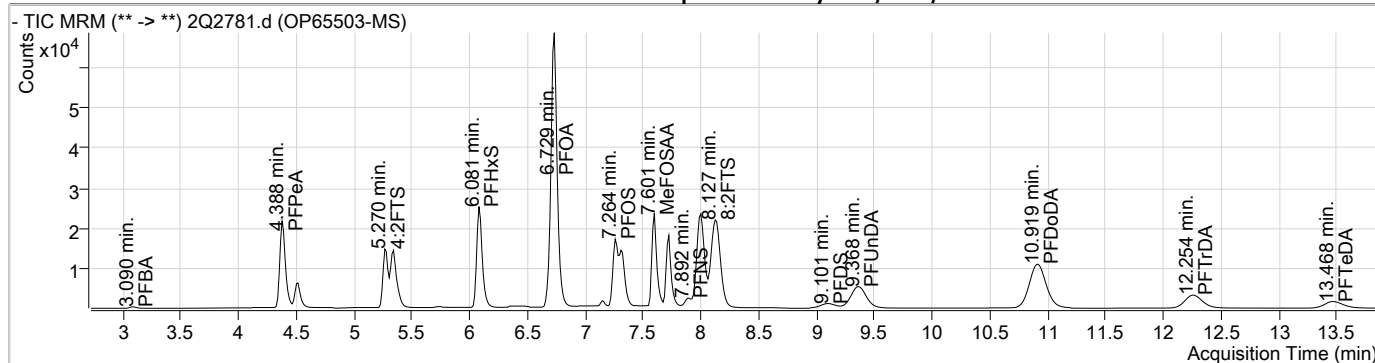
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2781.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 1:21:51 AM
 Sample Name : OP65503-MS
 Vial : Vial 38
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q69.batch.bin
 Sample Information : OP65503,S2Q69,260,,,1.0,1,water

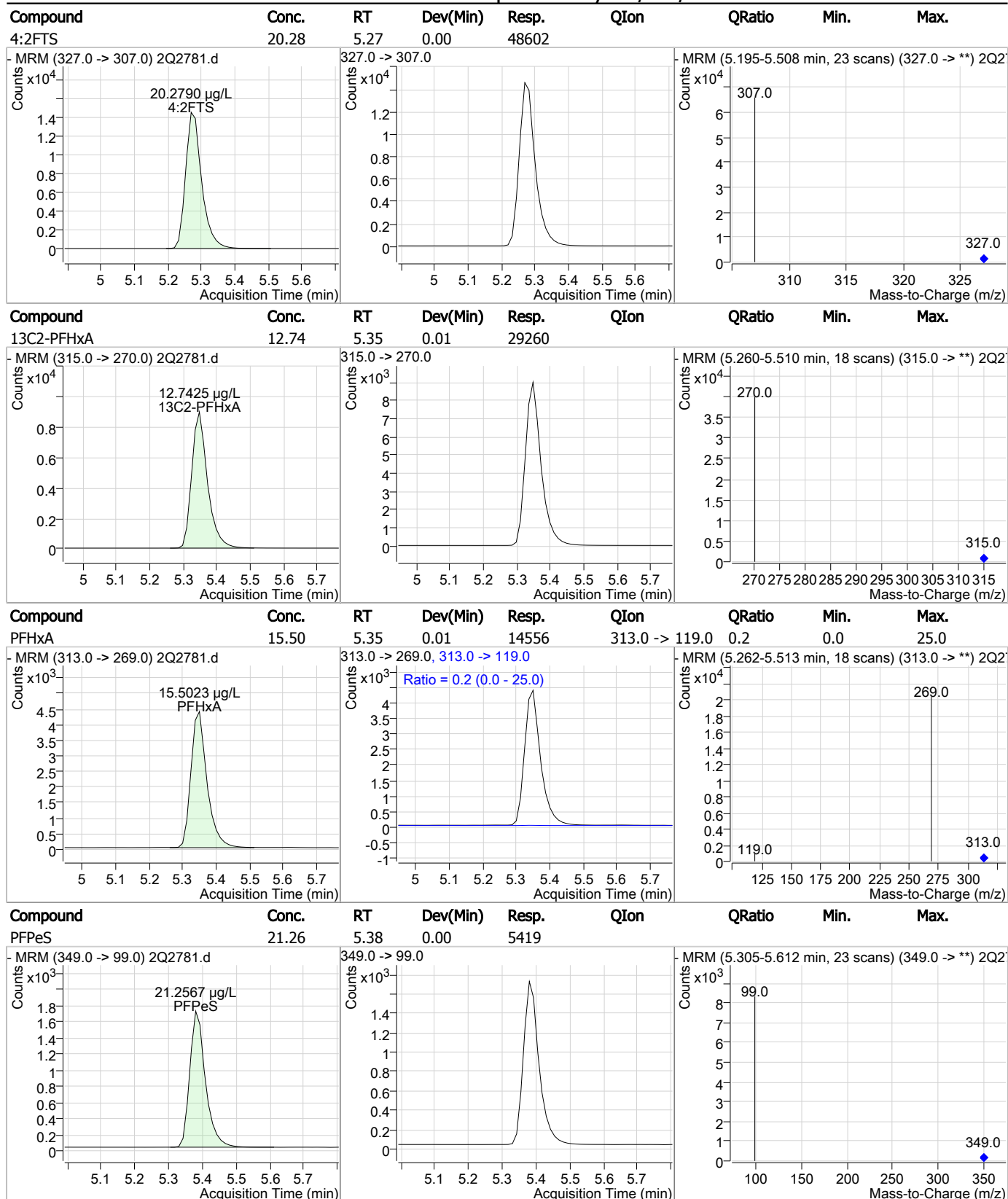
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.737	429.0 -> 409.0	77065	20.00 µg/L	0.000
13C2-PFDoDA	10.915	615.0 -> 570.0	70460	20.00 µg/L	-0.038
13C2-PFOA	6.727	415.0 -> 370.0	40693	20.00 µg/L	0.000
13C3-PFPeA	4.385	266.0 -> 222.0	30982	20.00 µg/L	0.000
13C4-PFOS	7.263	503.0 -> 80.0	24244	20.00 µg/L	0.000
d3-MeFOSAA	7.600	573.0 -> 419.0	36215	20.00 µg/L	0.013
System Monitoring Compounds					
13C2-PFDA	8.008	515.0 -> 470.0	68225	20.15 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 100.8%		
13C2-PFHxA	5.347	315.0 -> 270.0	29260	12.74 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 63.7%		
d5-EtFOSAA	7.723	589.0 -> 419.0	25174	14.49 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 72.5%		
Target Compounds					QValue
4:2FTS	5.270	327.0 -> 307.0	48602	20.28 µg/L	100
6:2FTS	6.738	427.0 -> 407.0	80118	21.28 µg/L	100
8:2FTS	8.127	527.0 -> 507.0	117673	24.21 µg/L	100
EtFOSAA	7.725	584.0 -> 419.0	26931	15.71 µg/L	100
FOSA	7.164	498.0 -> 78.0	4269	1.26 µg/L	100
MeFOSAA	7.601	570.0 -> 419.0	32586	16.24 µg/L	100
PFBA	3.090	213.0 -> 169.0	1462	2.38 µg/L	100
PFBS	4.516	299.0 -> 80.0	14674	16.20 µg/L	99
PFDA	8.009	513.0 -> 469.0	35815	17.84 µg/L	# 48
PFDoDA	10.919	613.0 -> 569.0	39435	13.12 µg/L	# 29
PFDS	9.101	599.0 -> 80.0	9802	14.17 µg/L	100
PFHpA	6.086	363.0 -> 319.0	51075	18.42 µg/L	93
PFHpS	6.695	449.0 -> 80.0	23511	21.47 µg/L	100
PFHxA	5.350	313.0 -> 269.0	14556	15.50 µg/L	85
PFHxS	6.081	399.0 -> 80.0	20619	18.99 µg/L	92
PFNA	7.332	463.0 -> 419.0	35878	18.04 µg/L	96
PFNS	7.892	549.0 -> 99.0	8681	16.02 µg/L	100
PFOA	6.729	413.0 -> 369.0	30651	19.48 µg/L	95
PFOS	7.264	499.0 -> 80.0	21048	14.73 µg/L	97
PFPeA	4.388	263.0 -> 219.0	42246	19.84 µg/L	100
PFPeS	5.380	349.0 -> 99.0	5419	21.26 µg/L	100
PFTeDA	13.468	713.0 -> 669.0	17919	13.89 µg/L	# 32
PFTTrDA	12.254	663.0 -> 619.0	32894	13.41 µg/L	# 34
PFUnDA	9.368	563.0 -> 519.0	45608	16.43 µg/L	# 41

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

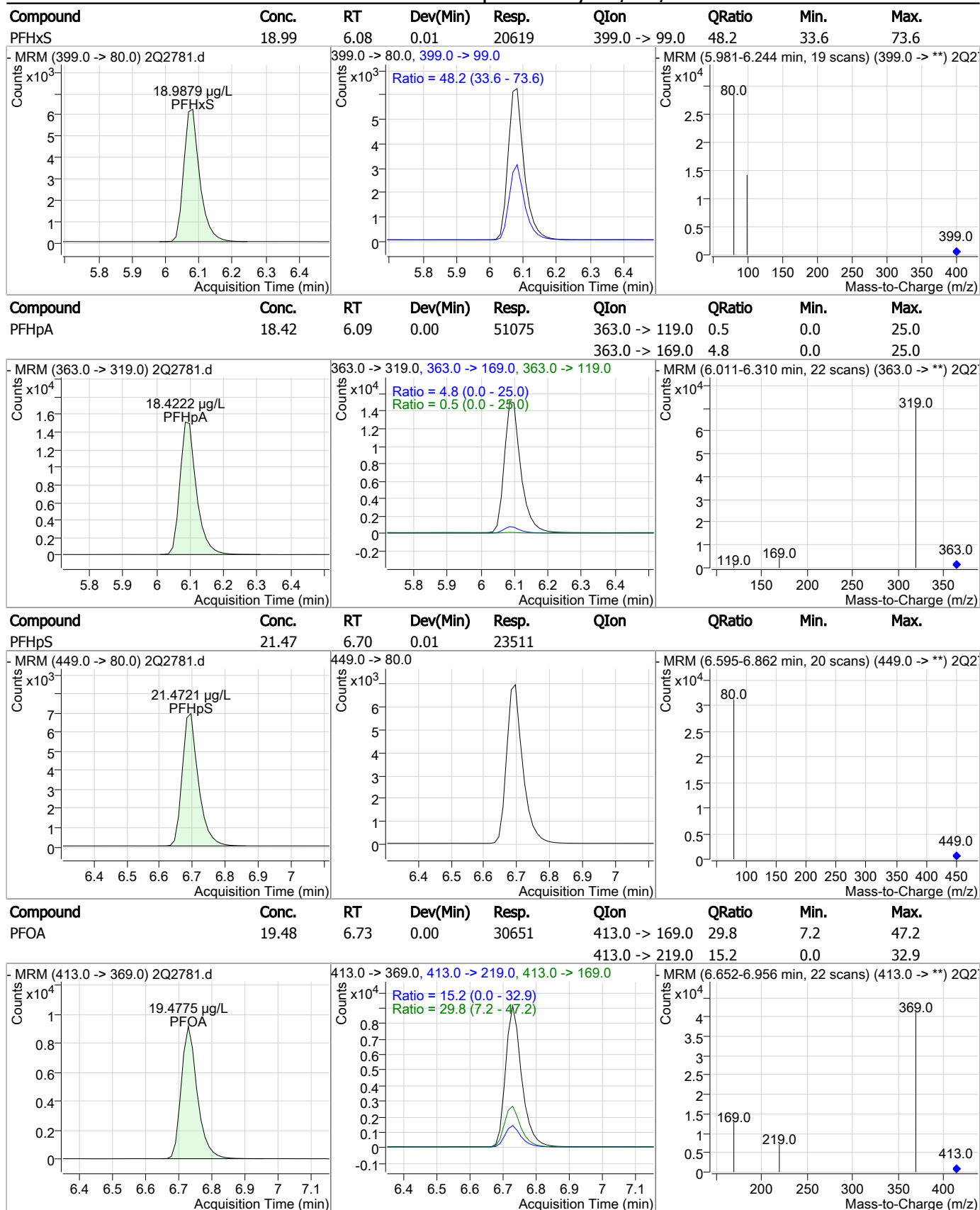
Perfluorinated Compounds by LC/MS/MS



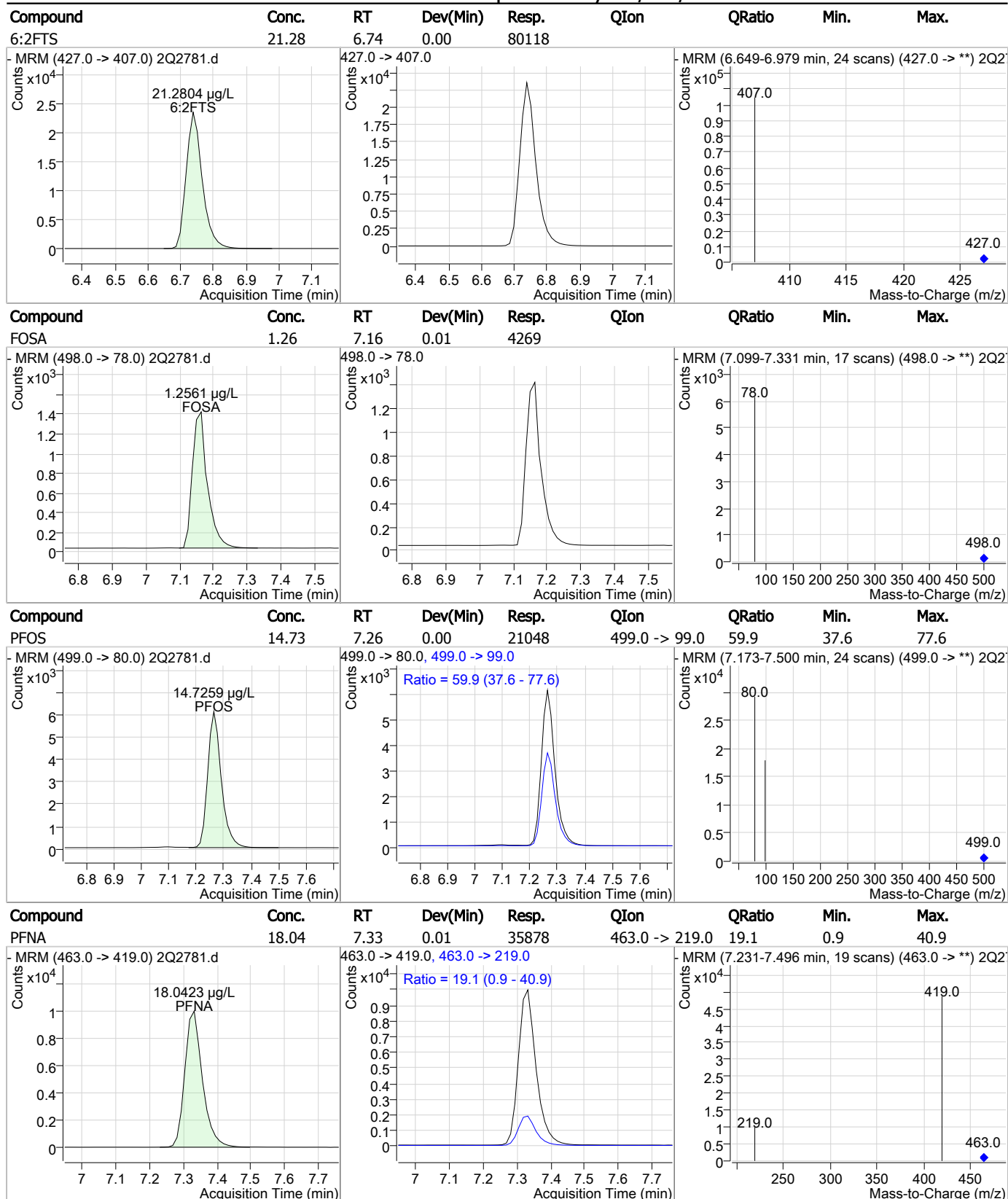
Perfluorinated Compounds by LC/MS/MS



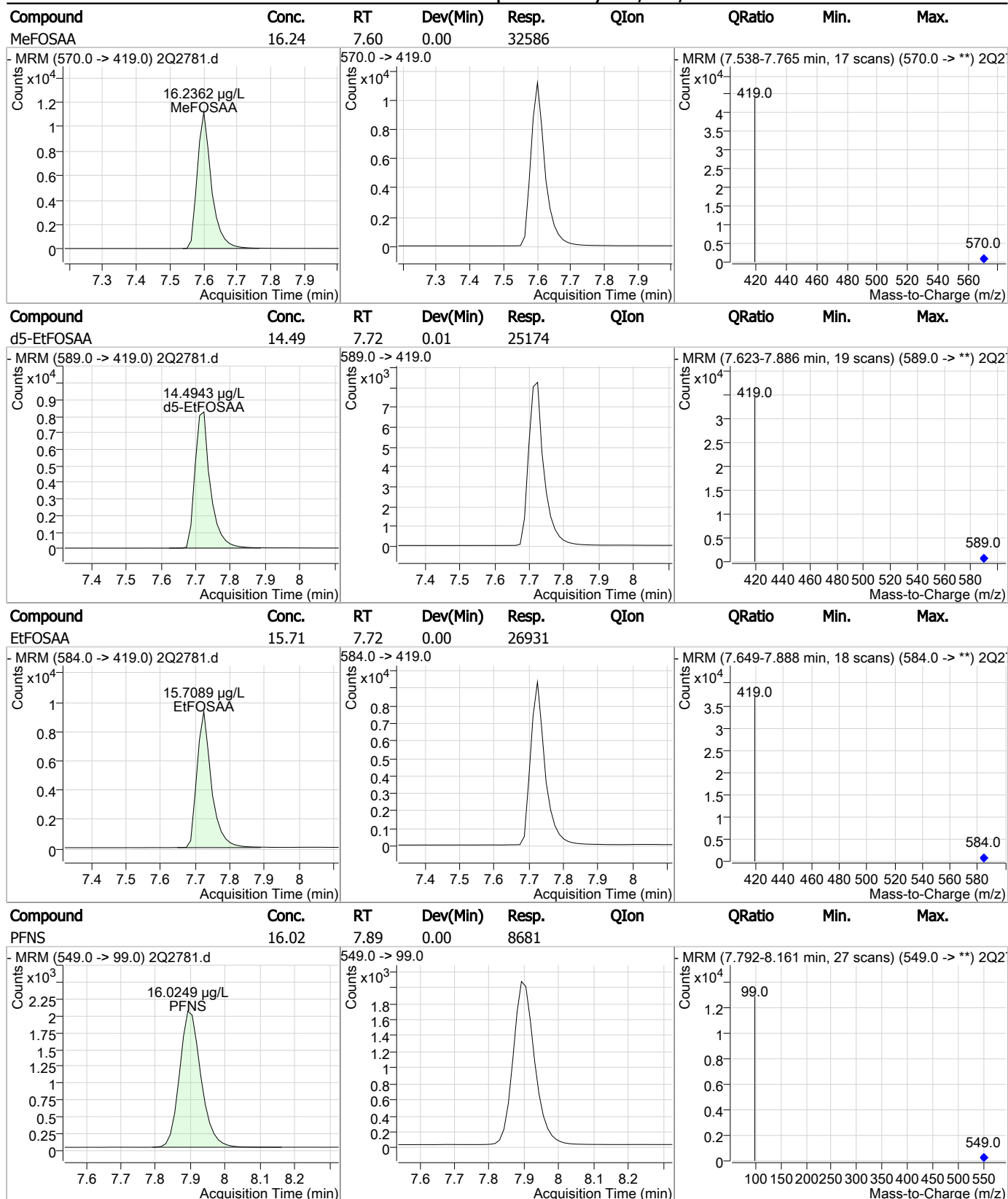
Perfluorinated Compounds by LC/MS/MS



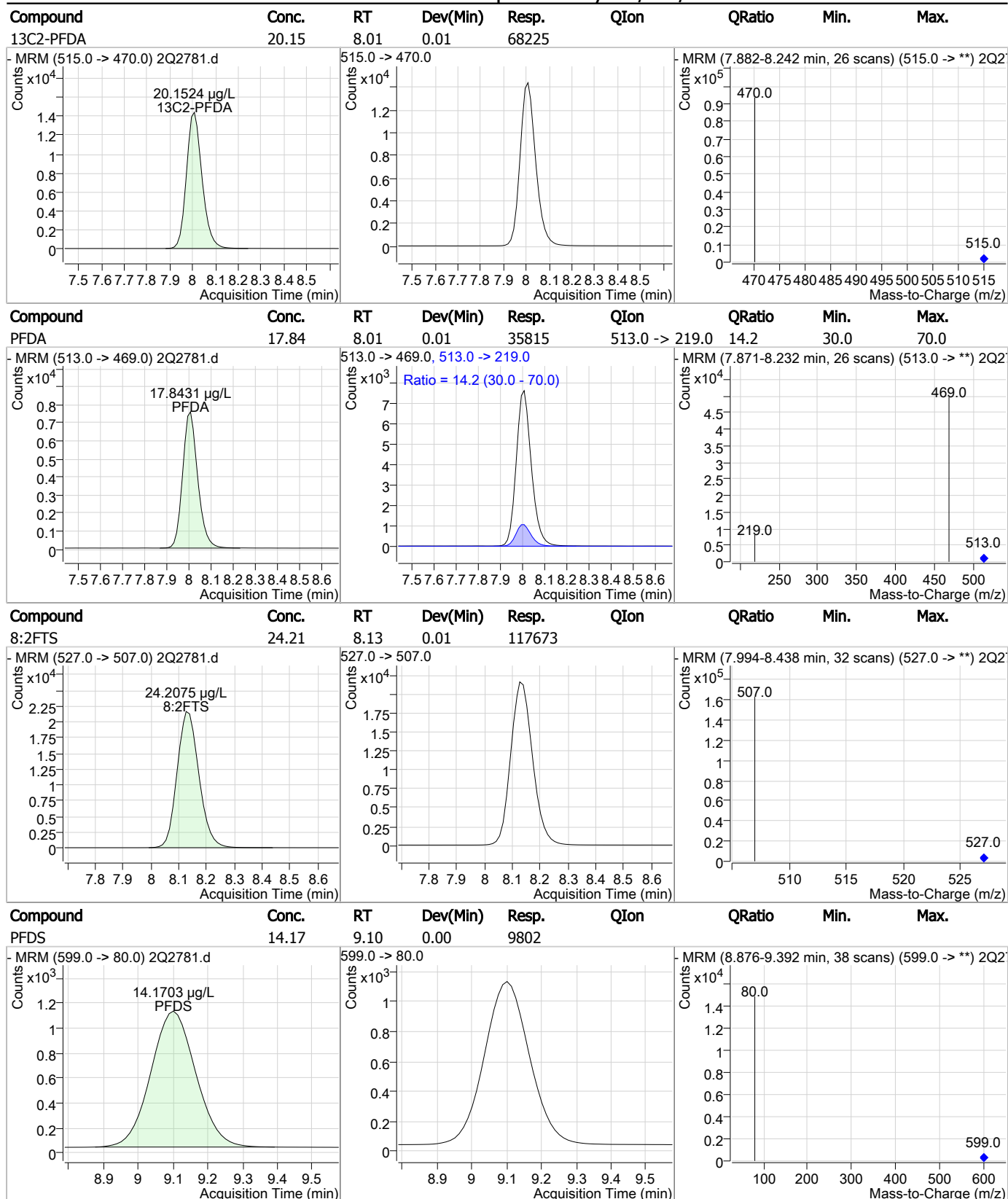
Perfluorinated Compounds by LC/MS/MS



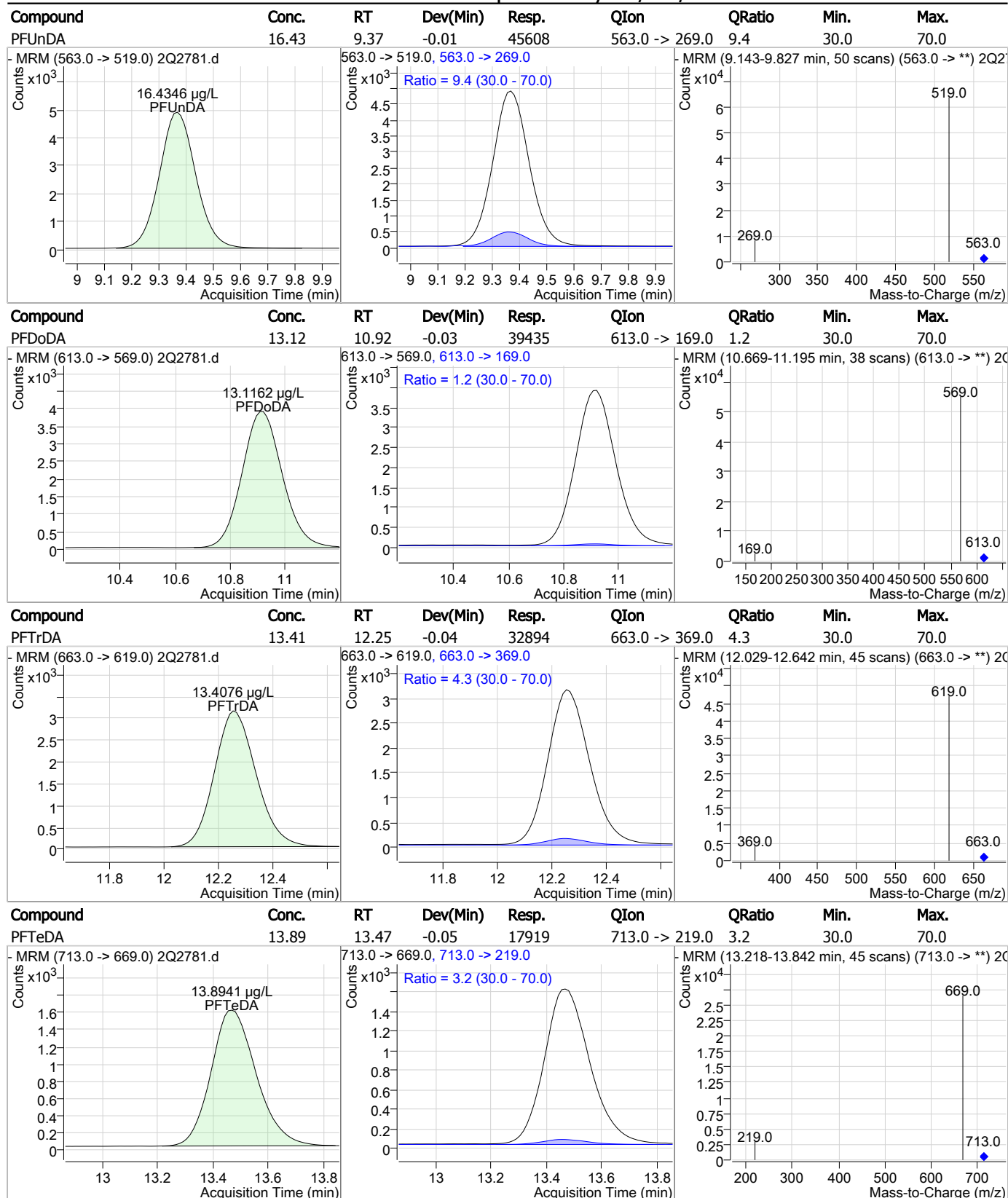
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



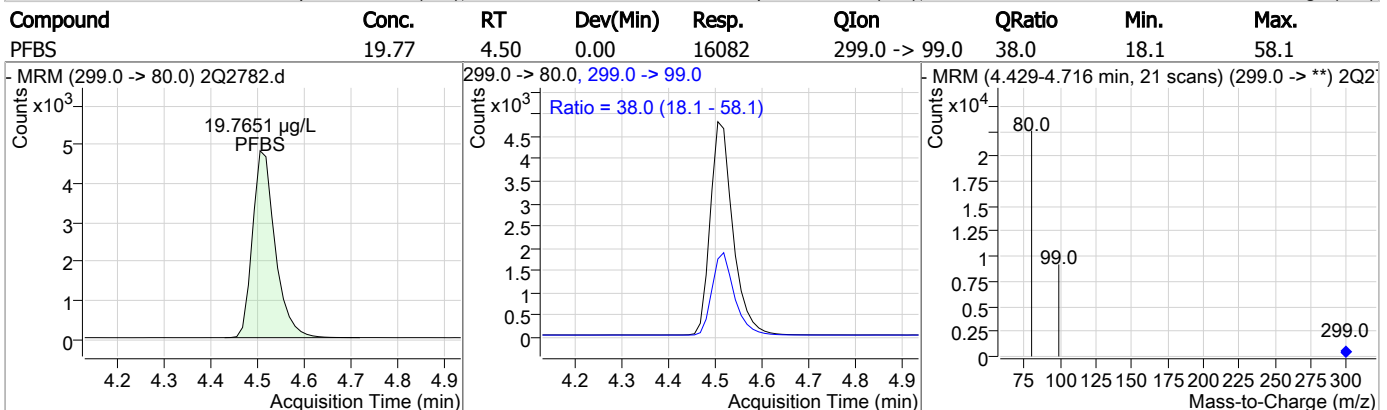
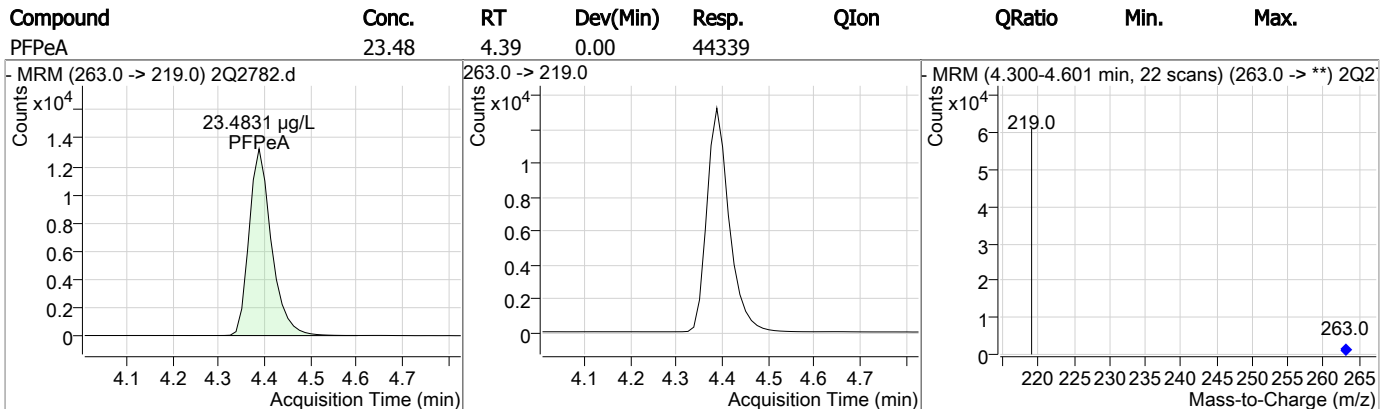
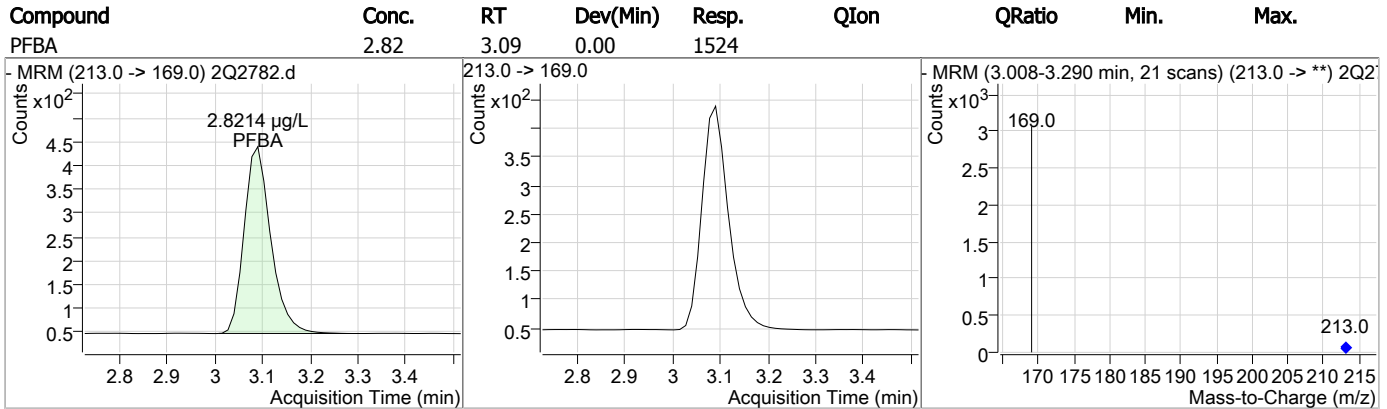
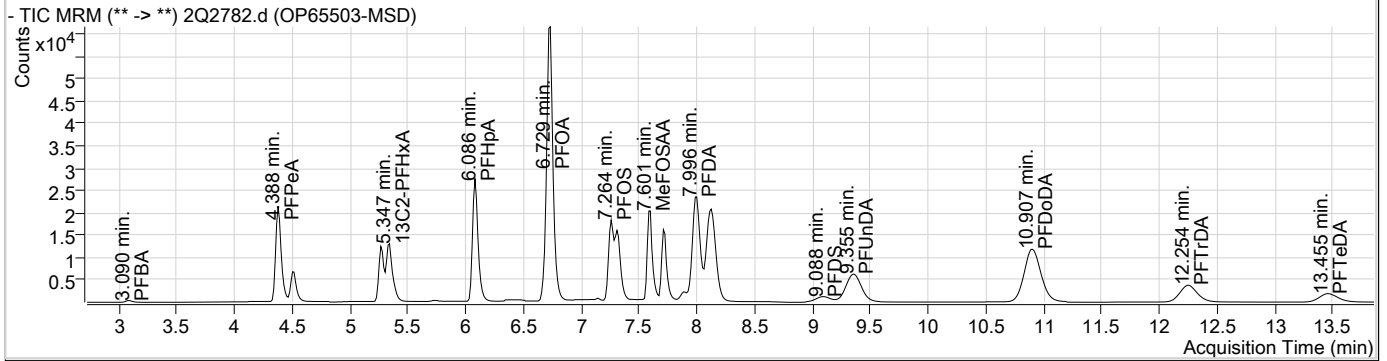
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2782.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 1:41:10 AM
 Sample Name : OP65503-MSD
 Vial : Vial 39
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q69.batch.bin
 Sample Information : OP65503,S2Q69,260,,,1.0,1,water

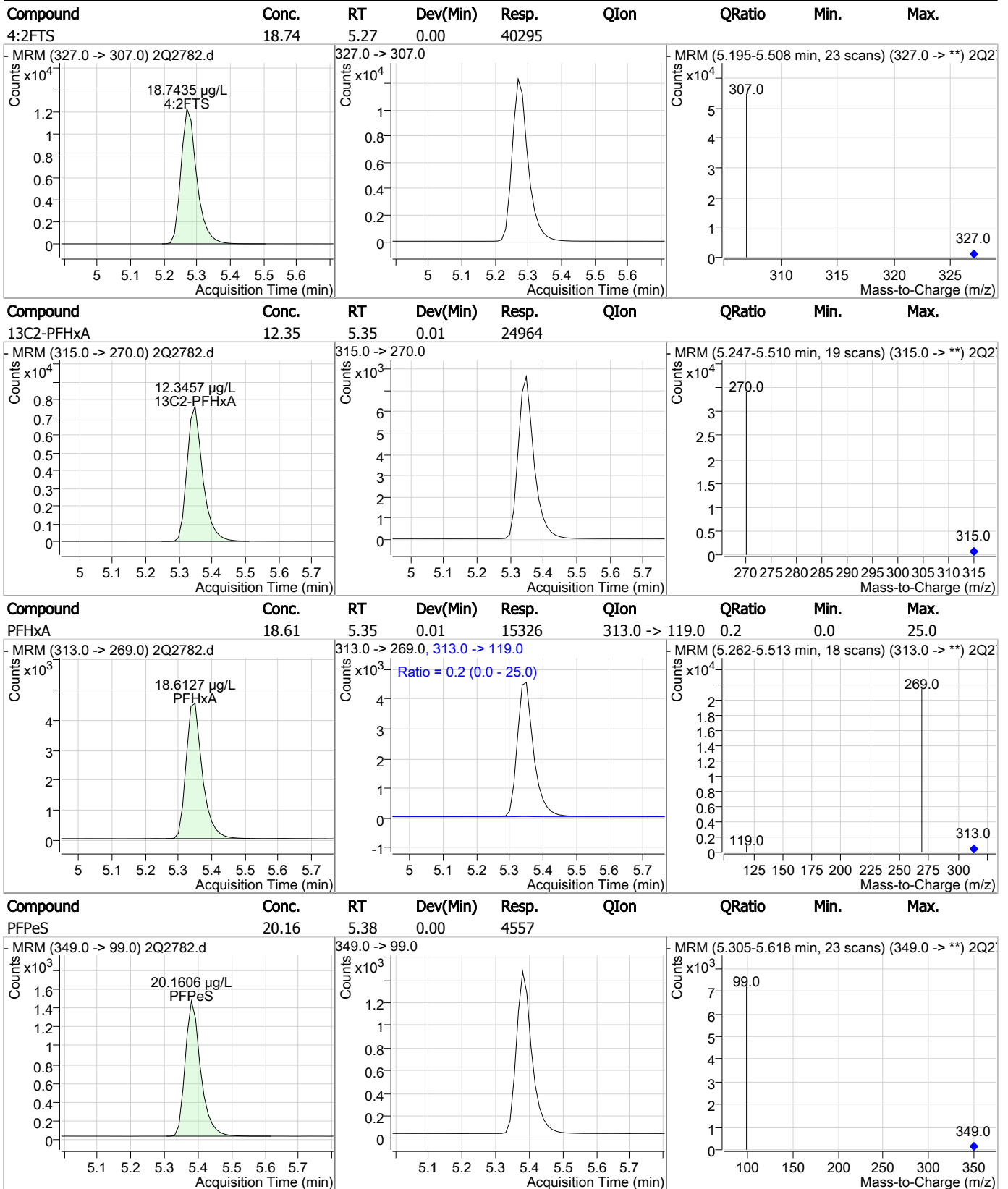
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.737	429.0 -> 409.0	68890	20.00	µg/L	0.000
13C2-PFDoDA	10.890	615.0 -> 570.0	71563	20.00	µg/L	-0.063
13C2-PFOA	6.727	415.0 -> 370.0	35815	20.00	µg/L	0.000
13C3-PFPeA	4.385	266.0 -> 222.0	27467	20.00	µg/L	0.000
13C4-PFOS	7.263	503.0 -> 80.0	21777	20.00	µg/L	0.000
d3-MeFOSAA	7.587	573.0 -> 419.0	32382	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	8.008	515.0 -> 470.0	61417	20.63	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 103.1%			
13C2-PFHxA	5.347	315.0 -> 270.0	24964	12.35	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 61.7%			
d5-EtFOSAA	7.711	589.0 -> 419.0	23916	15.40	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 77.0%			
Target Compounds						QValue
4:2FTS	5.270	327.0 -> 307.0	40295	18.74	µg/L	100
6:2FTS	6.738	427.0 -> 407.0	69264	20.54	µg/L	100
8:2FTS	8.127	527.0 -> 507.0	109967	25.37	µg/L	100
EtFOSAA	7.725	584.0 -> 419.0	23641	15.41	µg/L	100
FOSA	7.150	498.0 -> 78.0	1208	0.40	µg/L	100
MeFOSAA	7.601	570.0 -> 419.0	30222	16.85	µg/L	100
PFBA	3.090	213.0 -> 169.0	1524	2.82	µg/L	100
PFBS	4.504	299.0 -> 80.0	16082	19.77	µg/L	100
PFDA	7.996	513.0 -> 469.0	42196	24.10	µg/L	# 47
PFDoDA	10.907	613.0 -> 569.0	47064	15.41	µg/L	# 29
PFDS	9.088	599.0 -> 80.0	10445	16.81	µg/L	100
PFHpA	6.086	363.0 -> 319.0	54744	22.43	µg/L	93
PFHpS	6.683	449.0 -> 80.0	20801	21.15	µg/L	100
PFHxA	5.350	313.0 -> 269.0	15326	18.61	µg/L	85
PFHxS	6.069	399.0 -> 80.0	22933	23.51	µg/L	91
PFNA	7.319	463.0 -> 419.0	40242	22.99	µg/L	95
PFNS	7.892	549.0 -> 99.0	7779	15.99	µg/L	100
PFOA	6.729	413.0 -> 369.0	34115	24.63	µg/L	96
PFOS	7.264	499.0 -> 80.0	24935	19.50	µg/L	97
PFPeA	4.388	263.0 -> 219.0	44339	23.48	µg/L	100
PFPeS	5.380	349.0 -> 99.0	4557	20.16	µg/L	100
PFTeDA	13.455	713.0 -> 669.0	20521	15.67	µg/L	# 32
PFTTrDA	12.254	663.0 -> 619.0	37771	15.16	µg/L	# 34
PFUnDA	9.355	563.0 -> 519.0	53405	18.95	µg/L	# 41

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

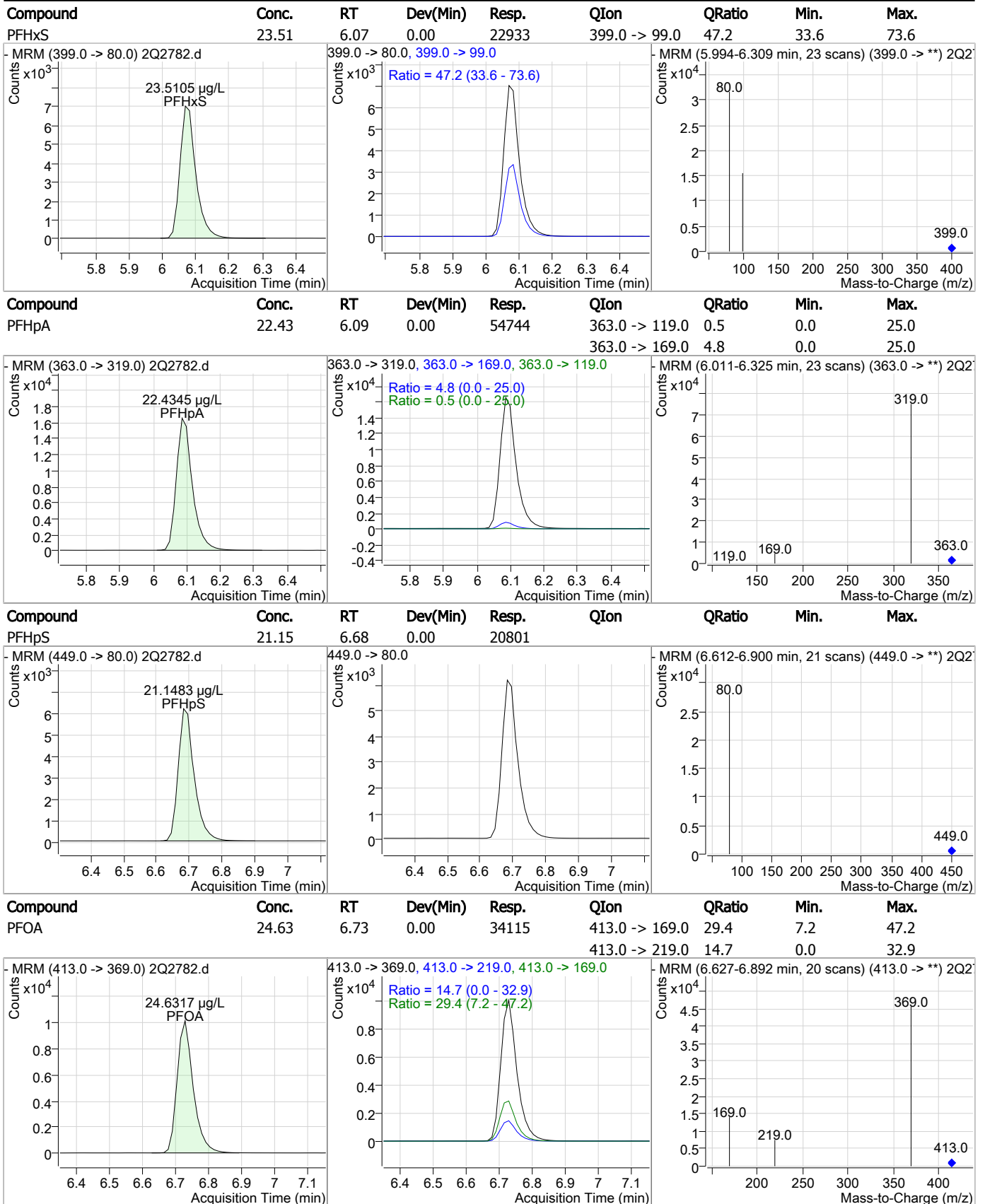
Perfluorinated Compounds by LC/MS/MS



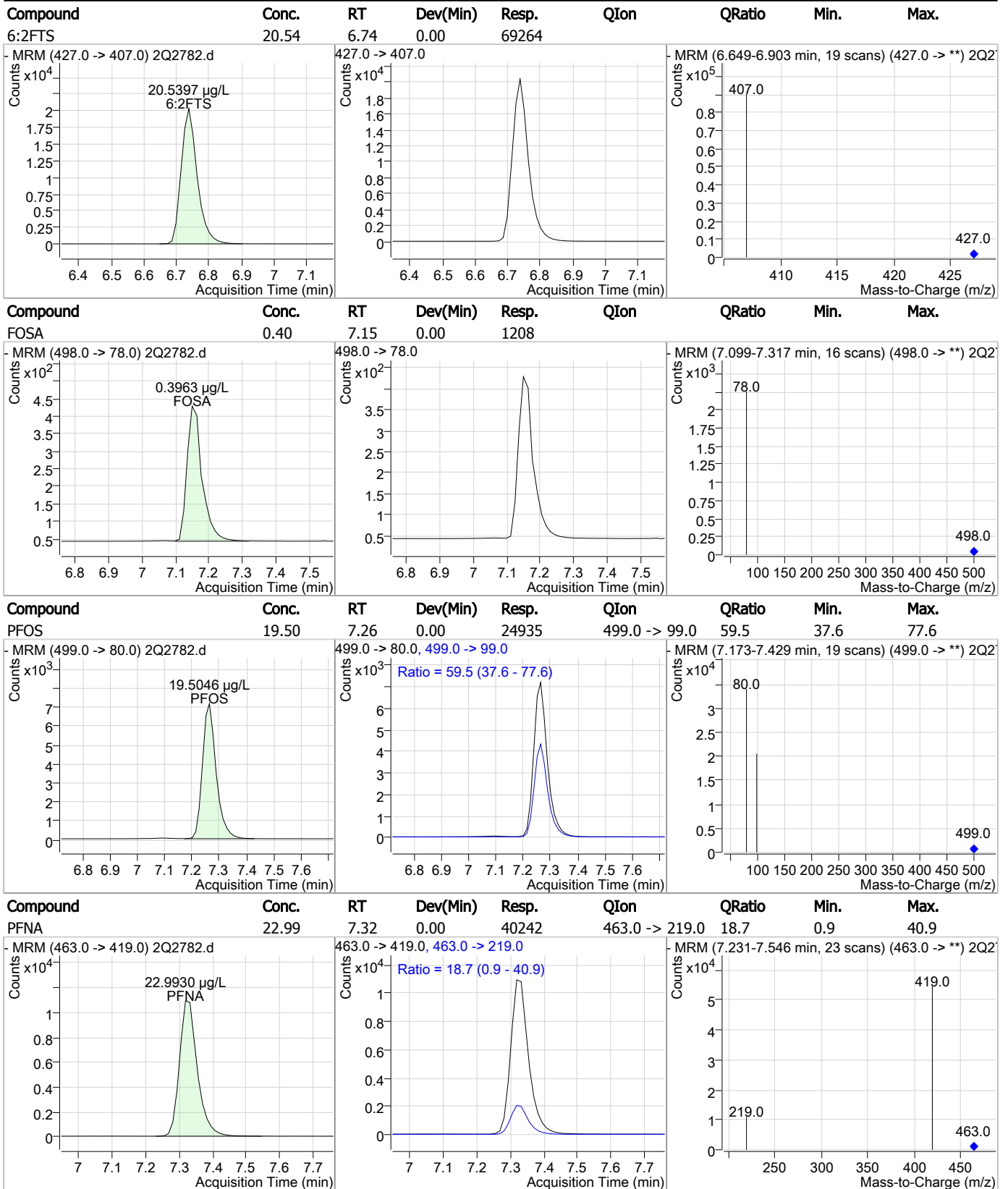
Perfluorinated Compounds by LC/MS/MS



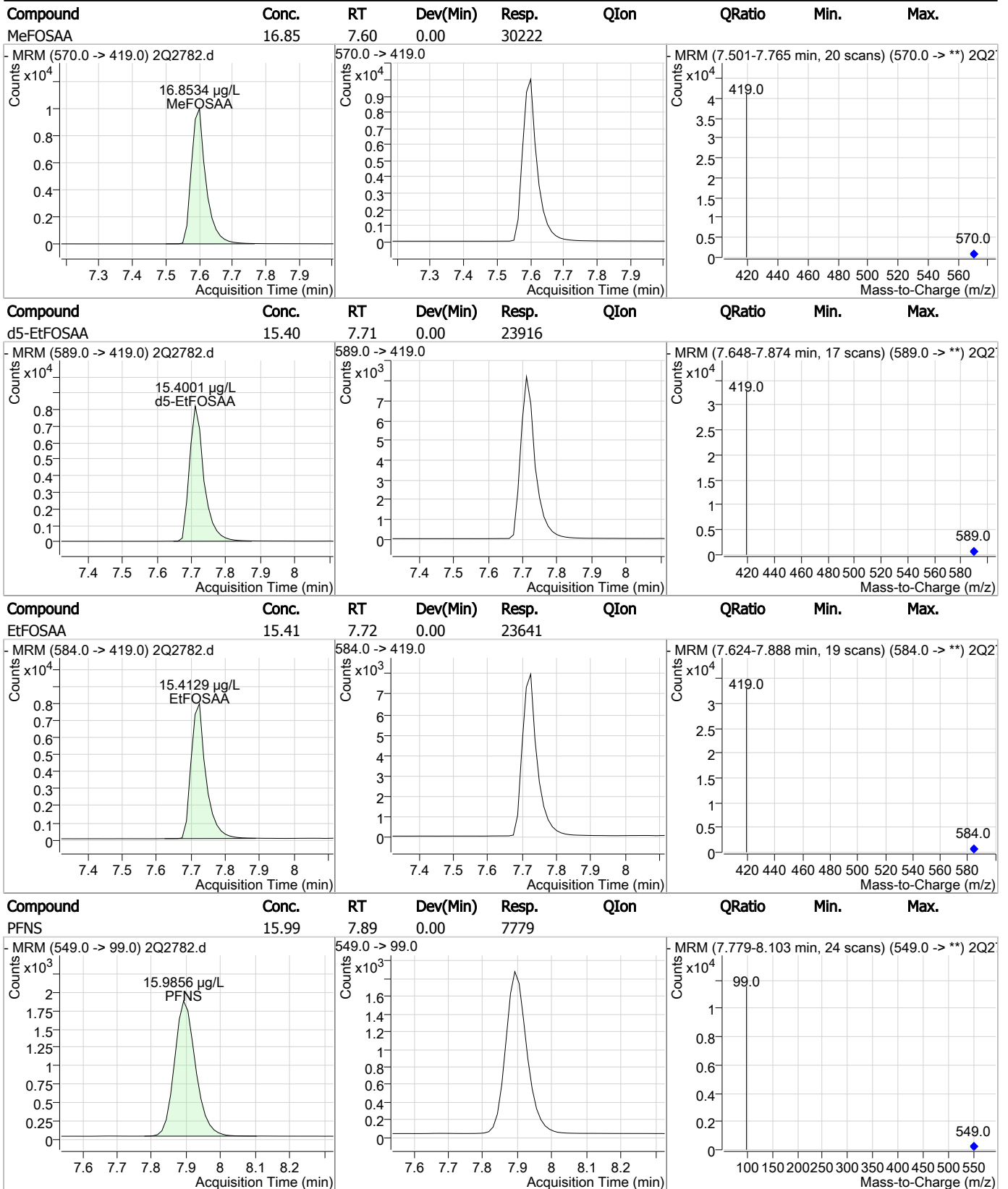
Perfluorinated Compounds by LC/MS/MS



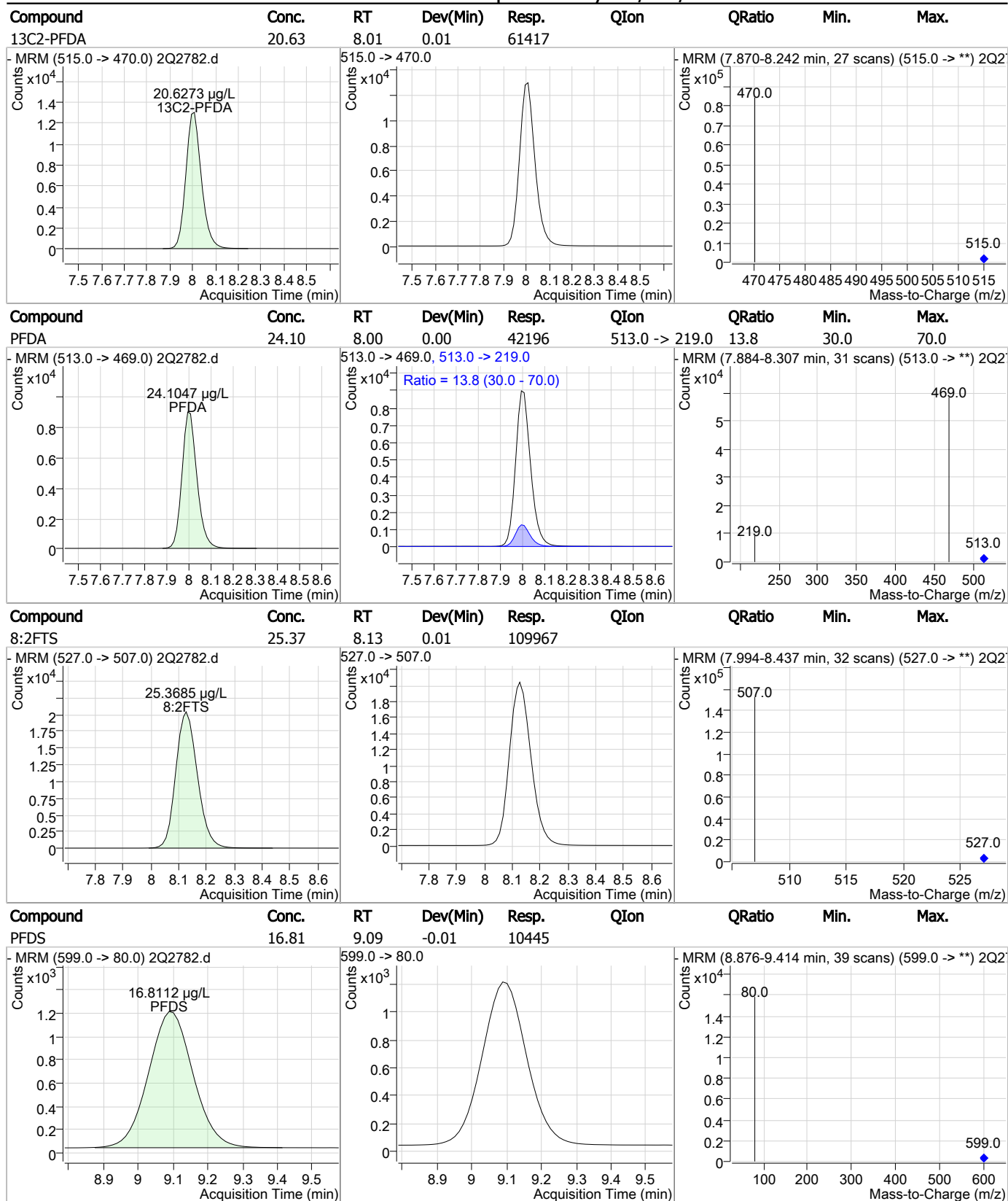
Perfluorinated Compounds by LC/MS/MS



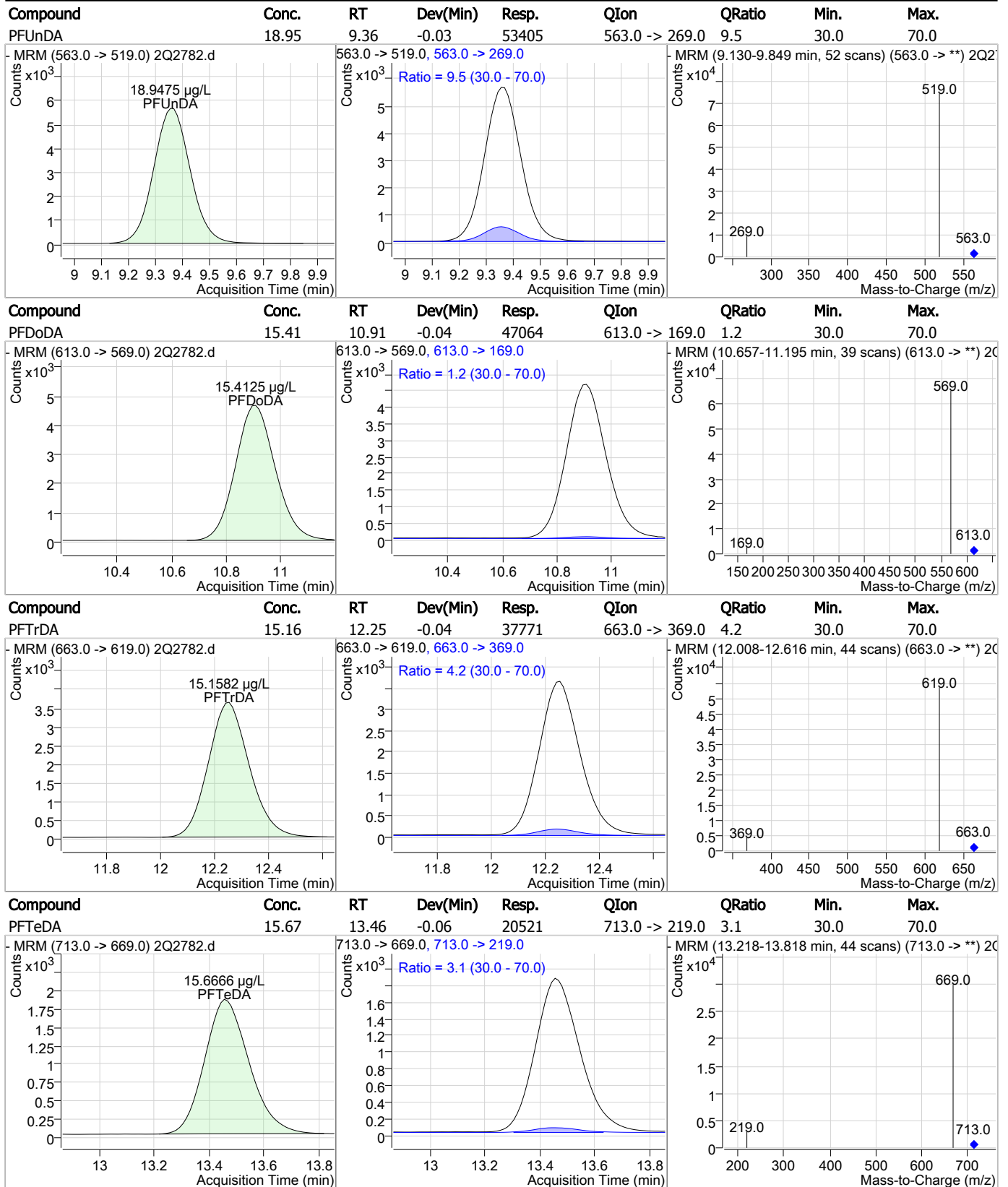
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



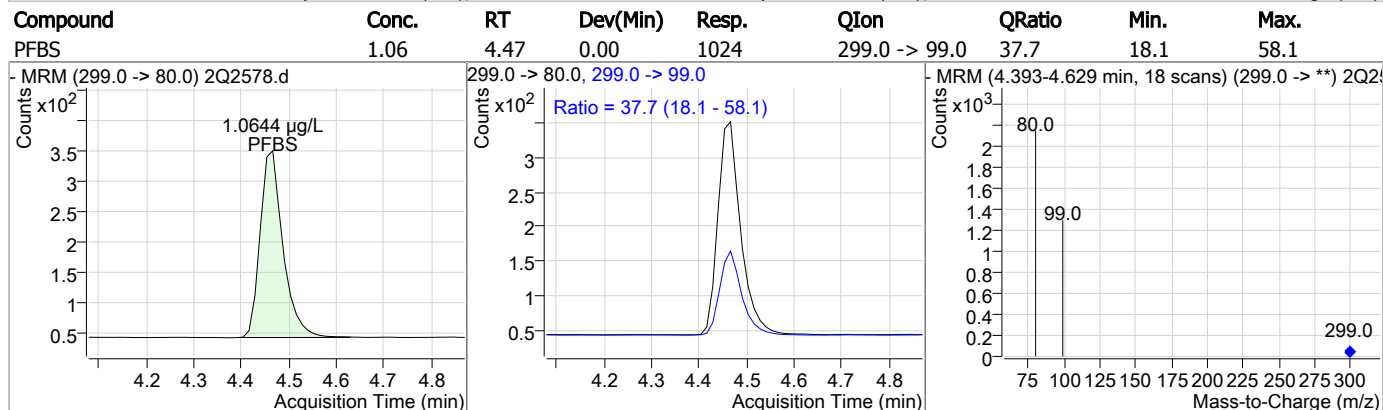
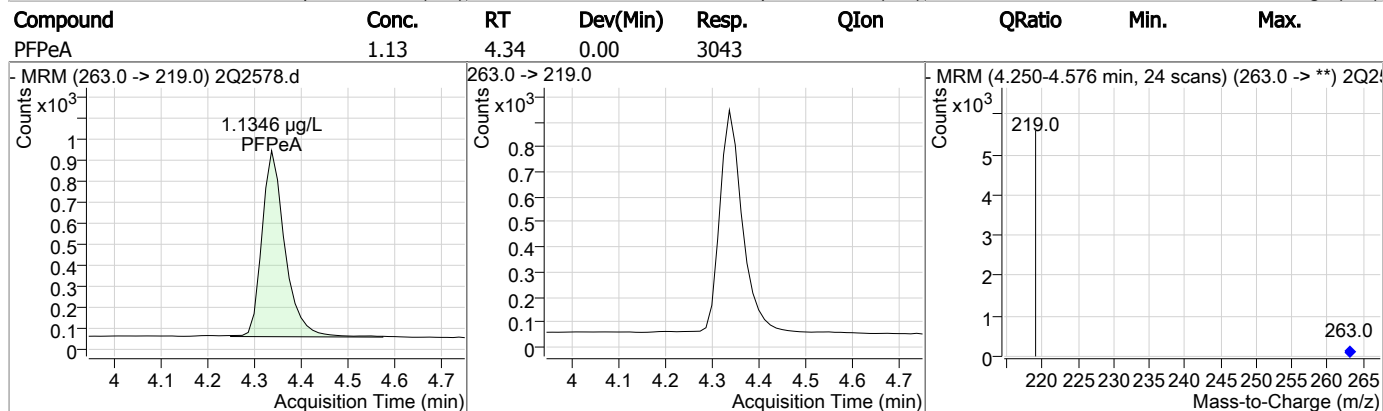
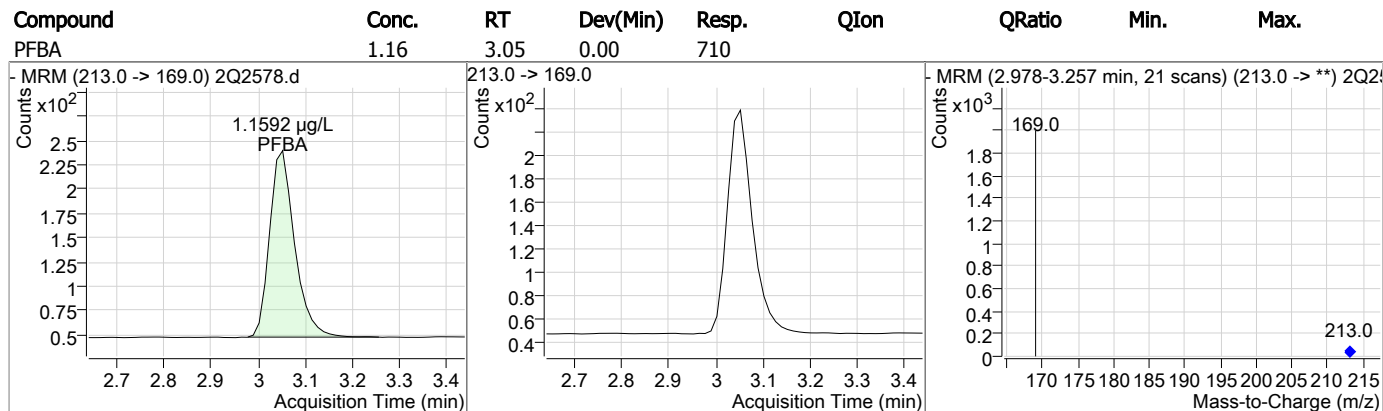
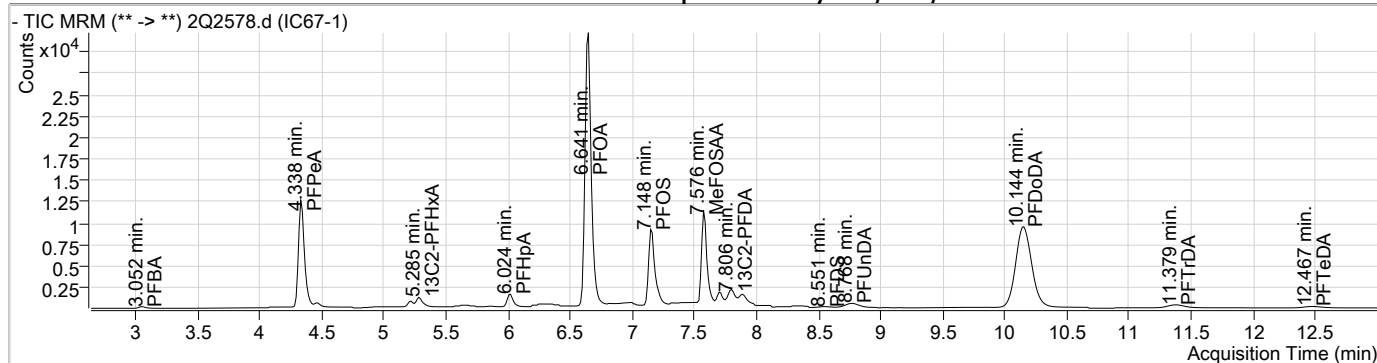
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2578.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/23/2017 10:11:28 AM
 Sample Name : IC67-1
 Vial : Vial 2
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q67.batch.bin
 Sample Information : OP65591,S2Q67,125,,,1.0,,water

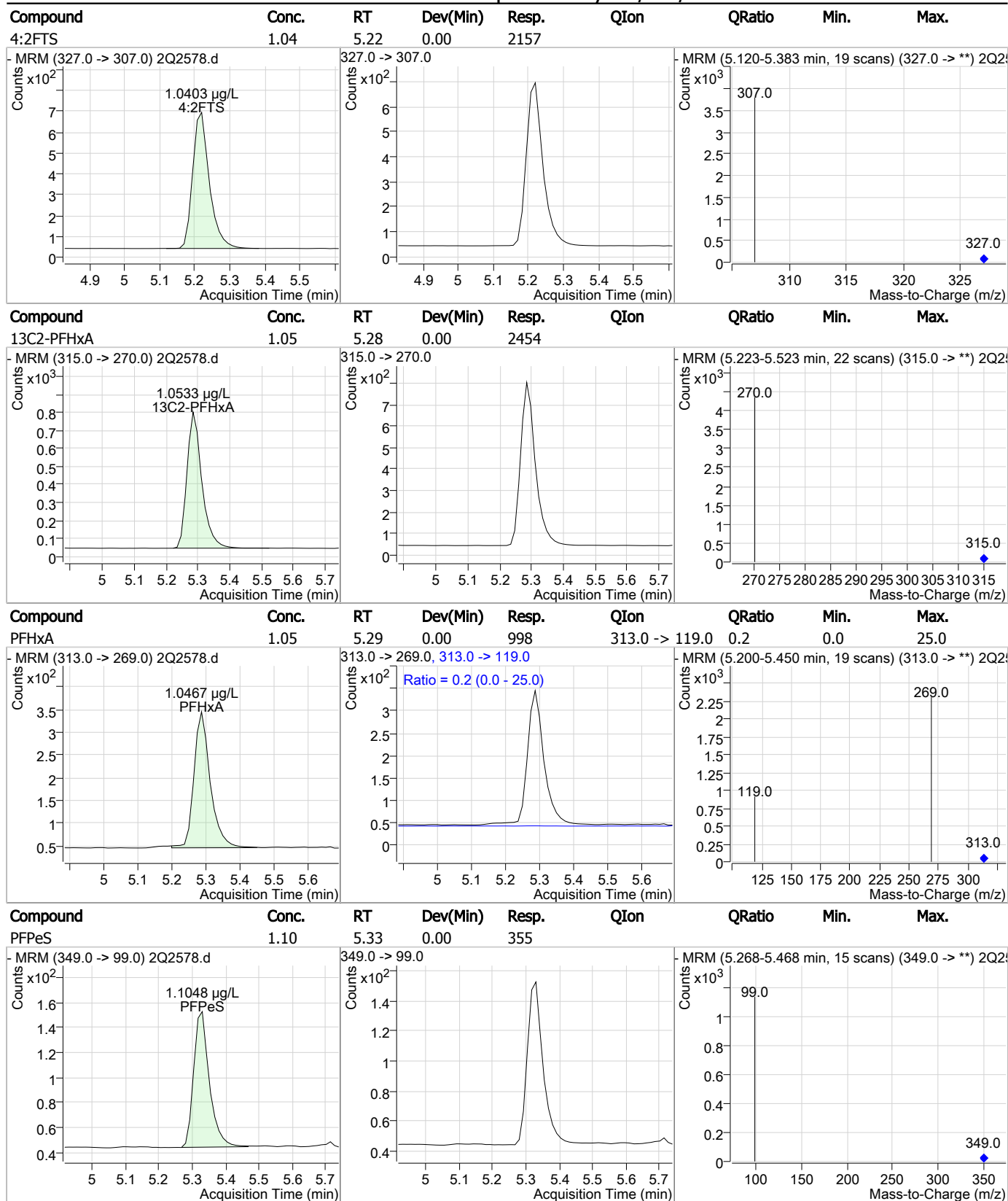
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.649	429.0 -> 409.0	63906	20.00	µg/L	0.000
13C2-PFDoDA	10.152	615.0 -> 570.0	80981	20.00	µg/L	0.000
13C2-PFOA	6.640	415.0 -> 370.0	40630	20.00	µg/L	0.000
13C3-PFPeA	4.335	266.0 -> 222.0	39017	20.00	µg/L	0.000
13C4-PFOS	7.147	503.0 -> 80.0	25760	20.00	µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	31225	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	7.806	515.0 -> 470.0	4014	1.15	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 5.8%			
13C2-PFHxA	5.285	315.0 -> 270.0	2454	1.05	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 5.3%			
d5-EtFOSAA	7.699	589.0 -> 419.0	1958	1.31	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 6.5%			
Target Compounds						QValue
4:2FTS	5.220	327.0 -> 307.0	2157	1.04	µg/L	100
6:2FTS	6.651	427.0 -> 407.0	3690	1.12	µg/L	100
8:2FTS	7.892	527.0 -> 507.0	4479	1.06	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	1625	1.07	µg/L	100
FOSA	7.151	498.0 -> 78.0	3158	1.08	µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	1743	0.99	µg/L	100
PFBA	3.052	213.0 -> 169.0	710	1.16	µg/L	100
PFBS	4.466	299.0 -> 80.0	1024	1.06	µg/L	99
PFDA	7.807	513.0 -> 469.0	2288	1.11	µg/L	# 45
PFDoDA	10.144	613.0 -> 569.0	3743	1.08	µg/L	# 29
PFDS	8.551	599.0 -> 80.0	767	1.04	µg/L	100
PFHpA	6.024	363.0 -> 319.0	3280	1.18	µg/L	93
PFHpS	6.610	449.0 -> 80.0	1207	1.04	µg/L	100
PFHxA	5.287	313.0 -> 269.0	998	1.05	µg/L	85
PFHxS	6.006	399.0 -> 80.0	1229	1.07	µg/L	m 94
PFNA	7.206	463.0 -> 419.0	2238	1.13	µg/L	96
PFNS	7.716	549.0 -> 99.0	650	1.13	µg/L	100
PFOA	6.641	413.0 -> 369.0	1828	1.16	µg/L	96
PFOS	7.148	499.0 -> 80.0	1932	1.26	µg/L	m 78
PFPeA	4.338	263.0 -> 219.0	3043	1.13	µg/L	100
PFPeS	5.330	349.0 -> 99.0	355	1.10	µg/L	100
PFTeDA	12.467	713.0 -> 669.0	1699	1.15	µg/L	# 32
PFTTrDA	11.379	663.0 -> 619.0	3164	1.12	µg/L	# 34
PFUnDA	8.768	563.0 -> 519.0	3518	1.10	µg/L	# 40

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

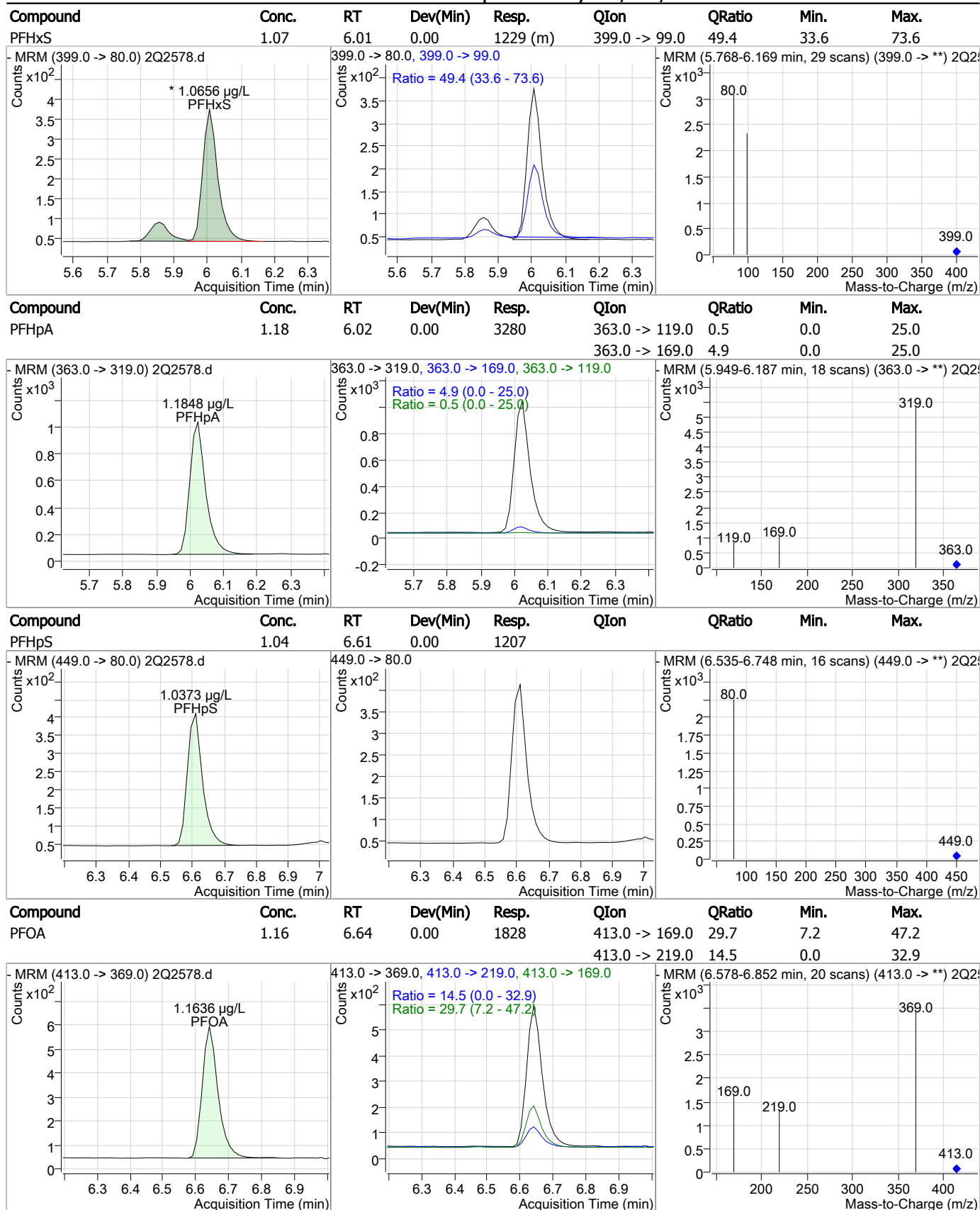
Perfluorinated Compounds by LC/MS/MS



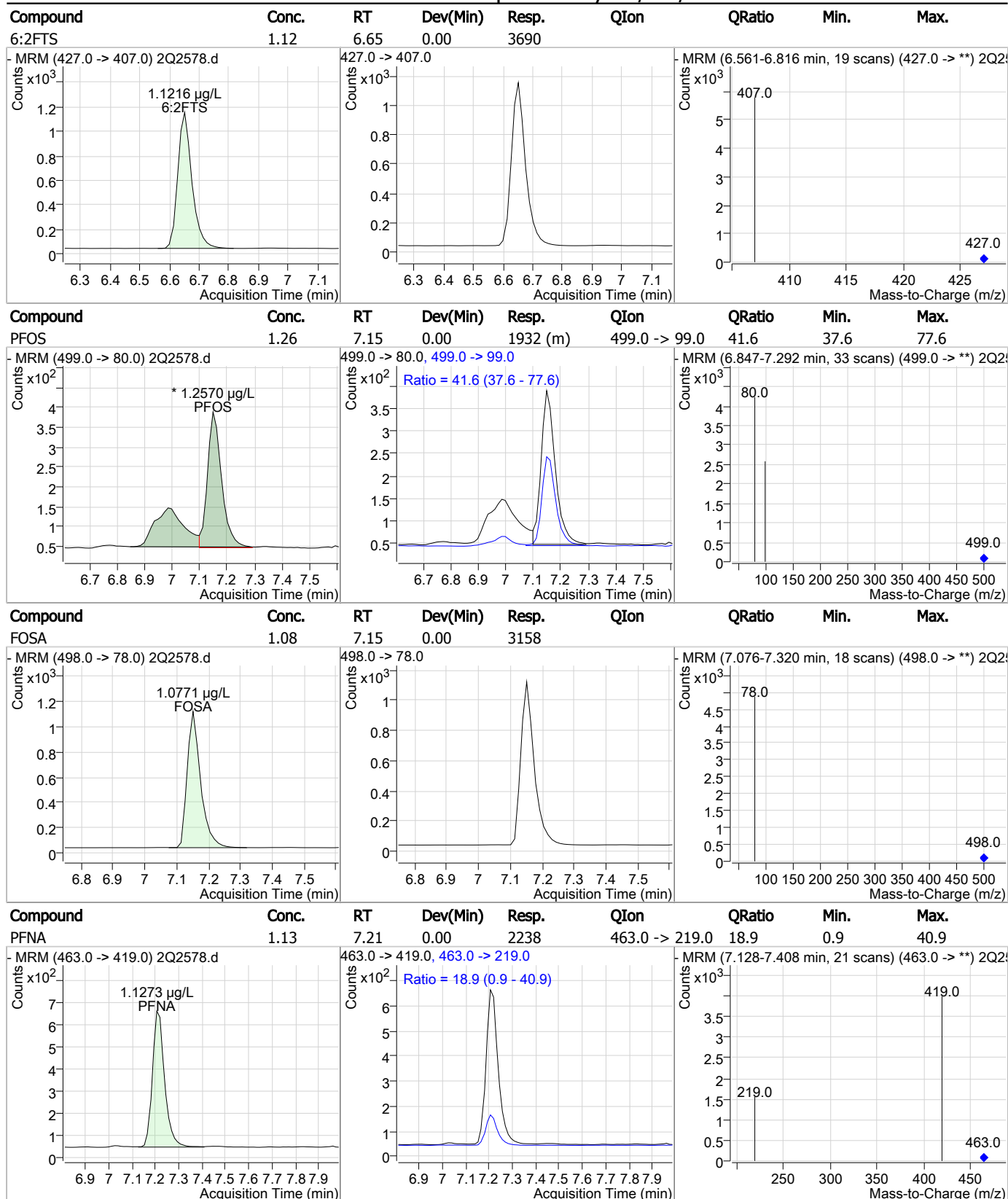
Perfluorinated Compounds by LC/MS/MS



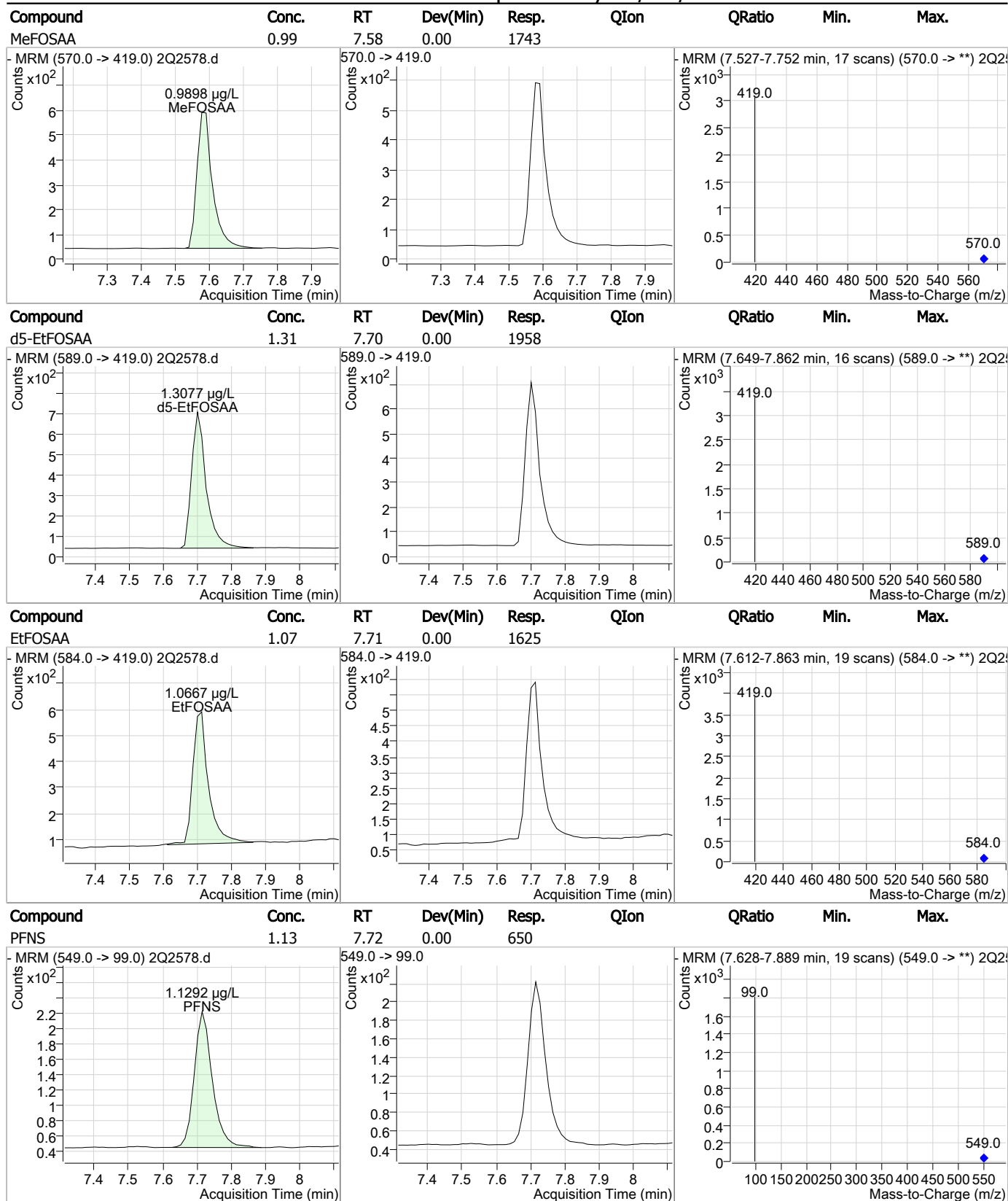
Perfluorinated Compounds by LC/MS/MS



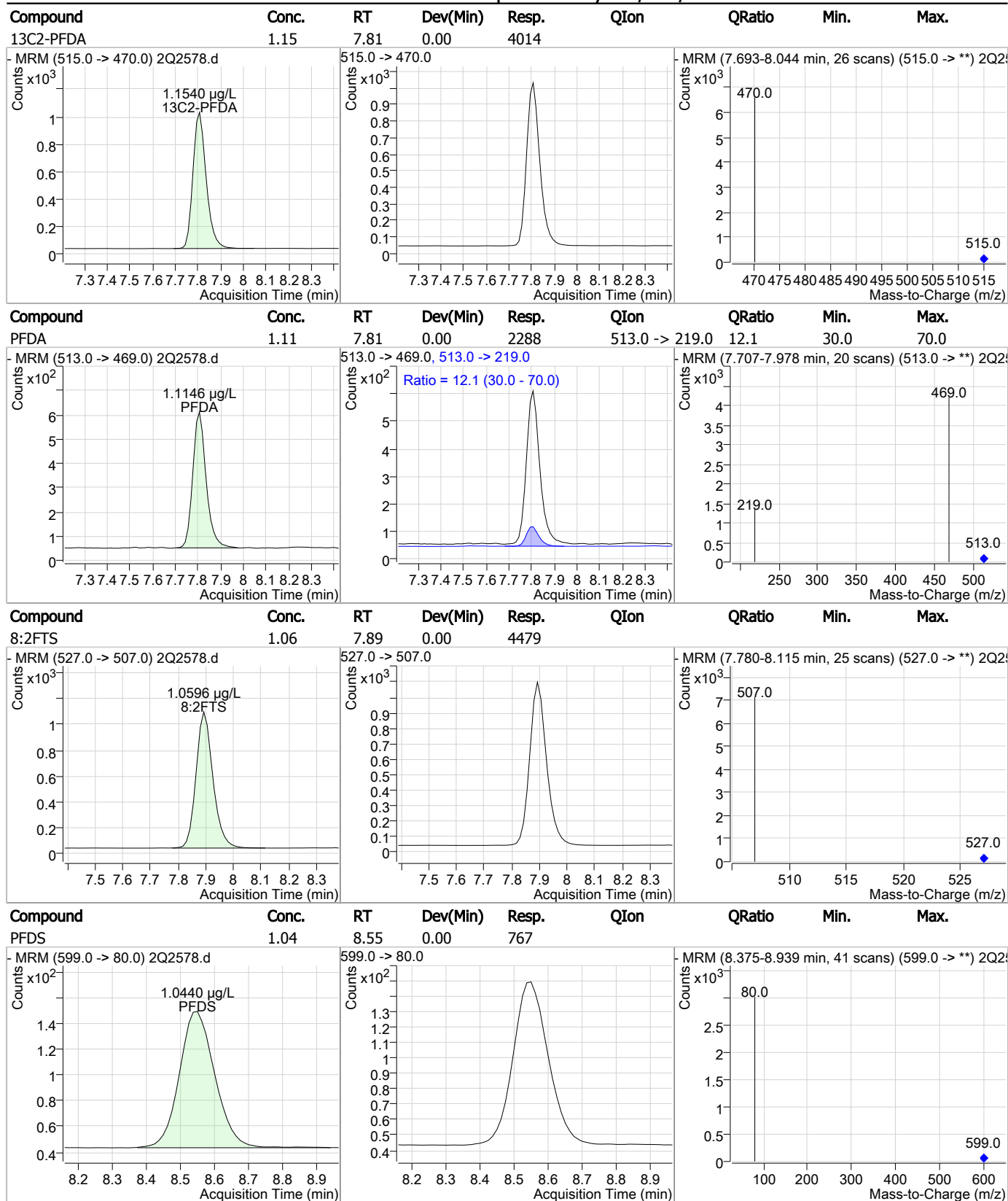
Perfluorinated Compounds by LC/MS/MS



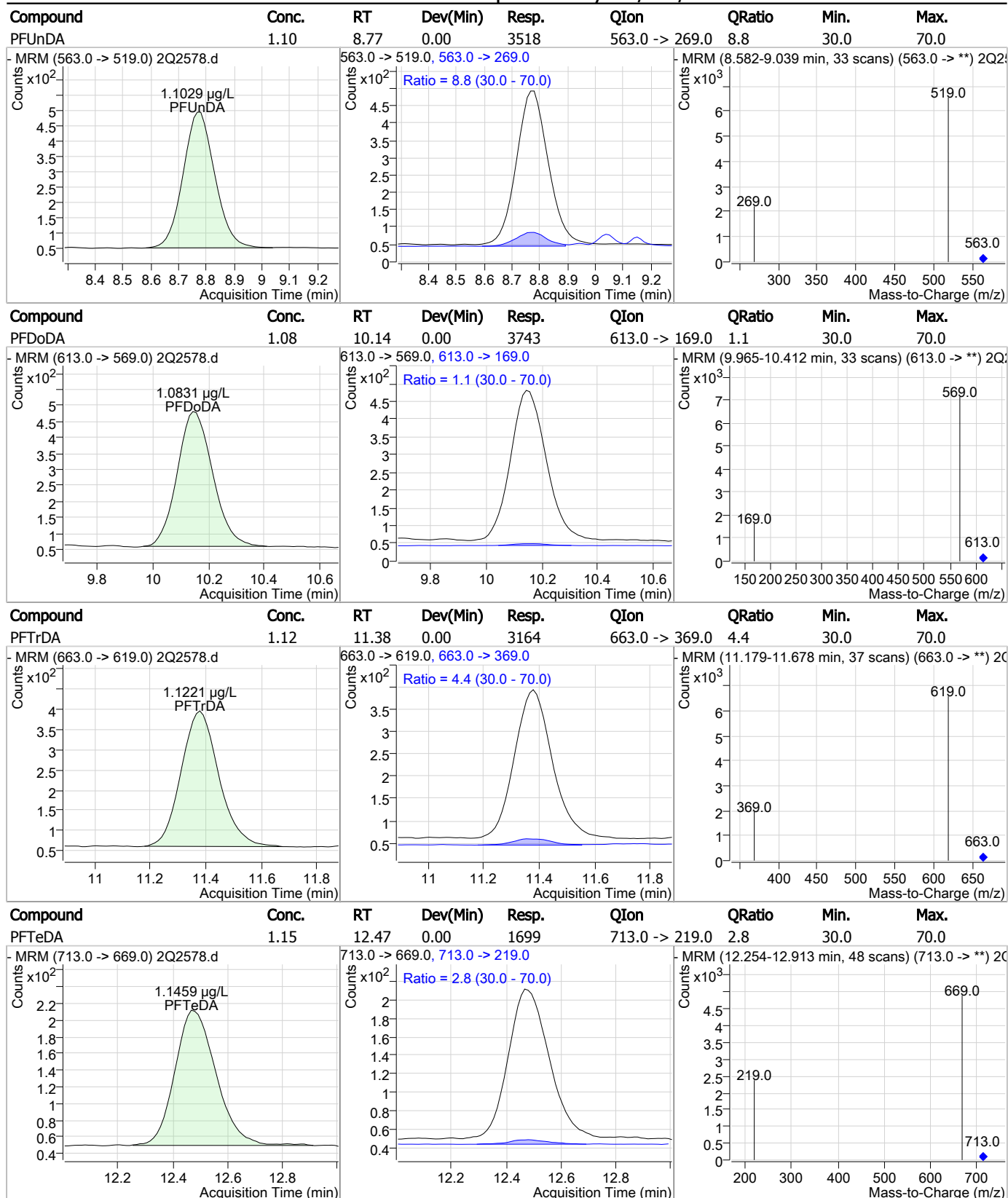
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q67-IC67

Method: EPA 537 MOD

Lab FileID: 2Q2578.D

Analyst approved: 06/24/17 13:30 Nancy Saunders

Injection Time: 06/23/17 10:11

Supervisor approved: 06/26/17 08:56 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.15	Split peak

7.5.1.1
7

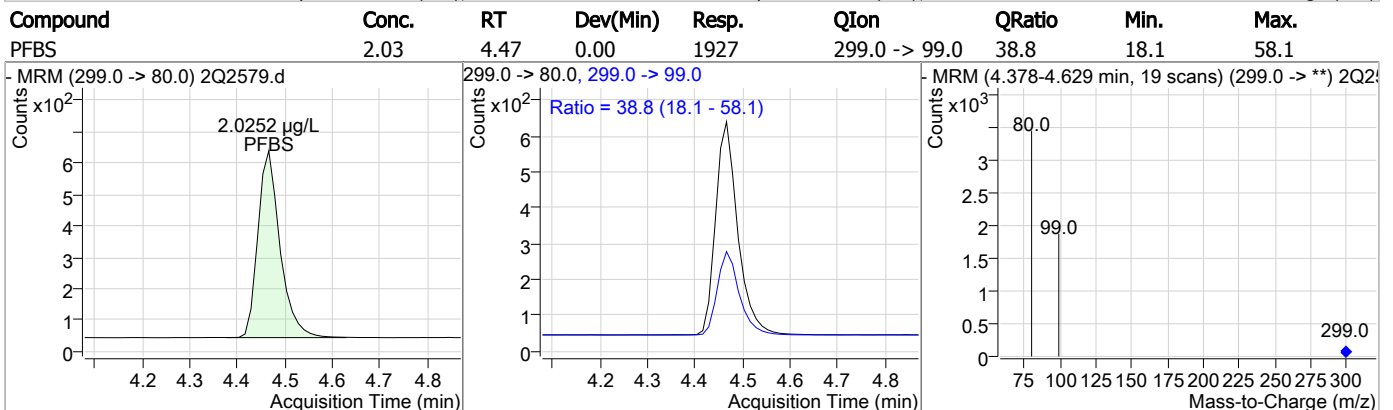
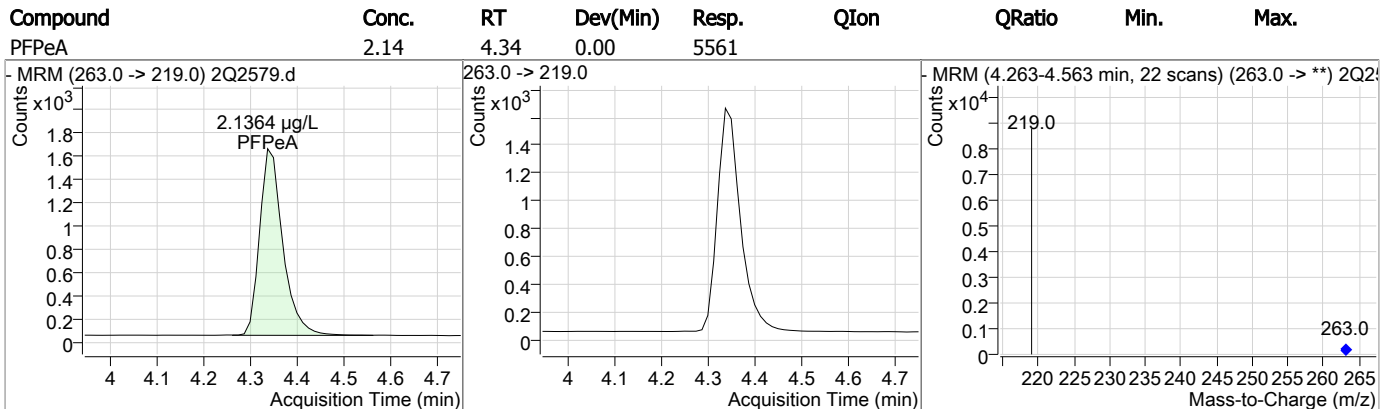
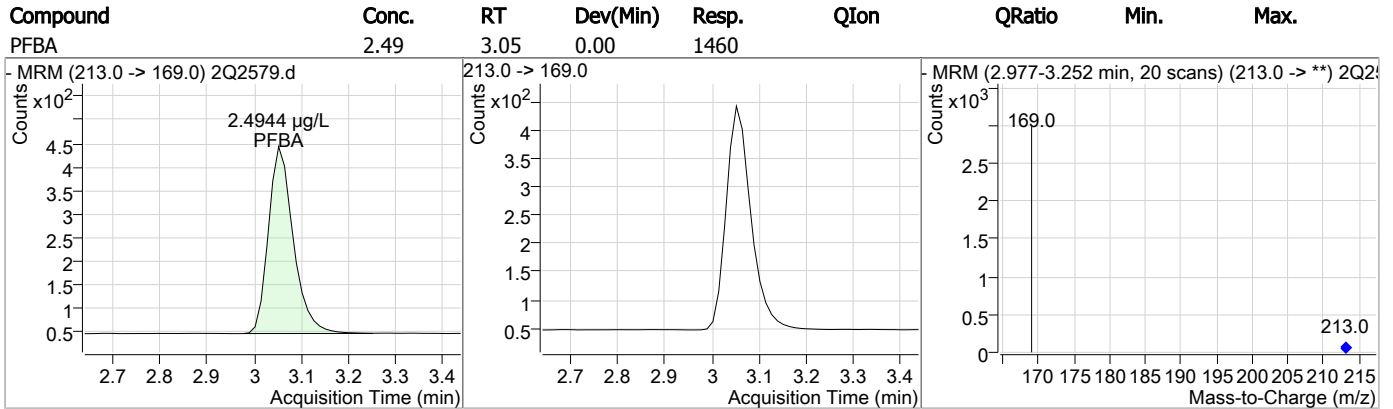
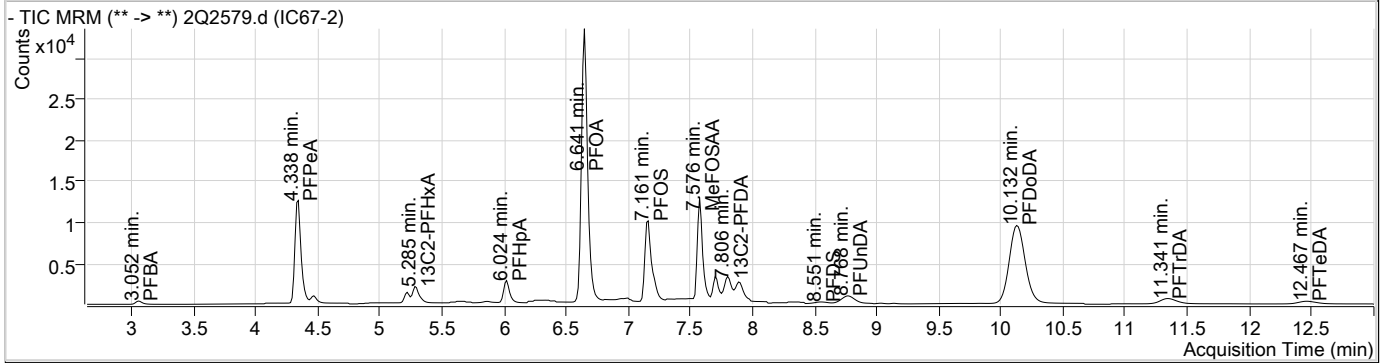
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2579.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/23/2017 10:48:37 AM
 Sample Name : IC67-2
 Vial : Vial 3
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q67.batch.bin
 Sample Information : OP65591,S2Q67,125,,,1.0,,water

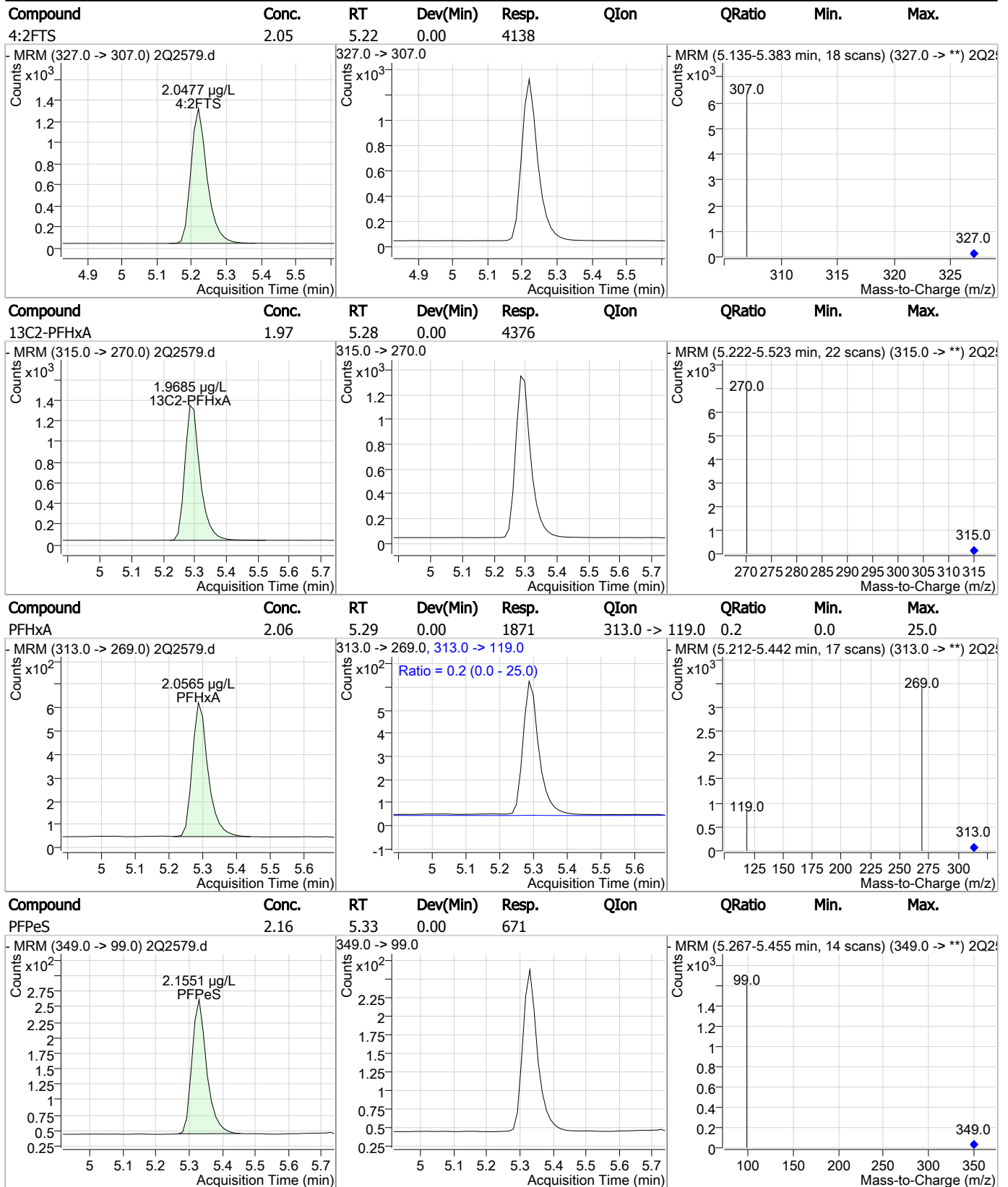
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.649	429.0 -> 409.0	62430	20.00	µg/L	0.000
13C2-PFDoDA	10.127	615.0 -> 570.0	78039	20.00	µg/L	-0.025
13C2-PFOA	6.640	415.0 -> 370.0	38812	20.00	µg/L	0.000
13C3-PFPeA	4.347	266.0 -> 222.0	37865	20.00	µg/L	0.013
13C4-PFOS	7.159	503.0 -> 80.0	25471	20.00	µg/L	0.013
d3-MeFOSAA	7.575	573.0 -> 419.0	33253	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	7.806	515.0 -> 470.0	6727	2.03	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.1%		
13C2-PFHxA	5.285	315.0 -> 270.0	4376	1.97	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 9.8%		
d5-EtFOSAA	7.699	589.0 -> 419.0	4109	2.58	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 12.9%		
Target Compounds						
						QValue
4:2FTS	5.220	327.0 -> 307.0	4138	2.05	µg/L	100
6:2FTS	6.651	427.0 -> 407.0	6822	2.13	µg/L	100
8:2FTS	7.892	527.0 -> 507.0	8953	2.17	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	3394	2.10	µg/L	100
FOSA	7.151	498.0 -> 78.0	6121	1.97	µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	3583	1.91	µg/L	100
PFBA	3.052	213.0 -> 169.0	1460	2.49	µg/L	100
PFBS	4.466	299.0 -> 80.0	1927	2.03	µg/L	99
PFDA	7.807	513.0 -> 469.0	3991	2.04	µg/L	48
PFDoDA	10.132	613.0 -> 569.0	7063	2.12	µg/L	29
PFDS	8.551	599.0 -> 80.0	1414	1.95	µg/L	100
PFHpA	6.024	363.0 -> 319.0	5829	2.20	µg/L	93
PFHpS	6.610	449.0 -> 80.0	2484	2.16	µg/L	100
PFHxA	5.287	313.0 -> 269.0	1871	2.06	µg/L	86
PFHxS	6.006	399.0 -> 80.0	2389	2.09	µg/L	93
PFNA	7.220	463.0 -> 419.0	4394	2.32	µg/L	95
PFNS	7.716	549.0 -> 99.0	1321	2.32	µg/L	100
PFOA	6.641	413.0 -> 369.0	3413	2.27	µg/L	93
PFOS	7.161	499.0 -> 80.0	3366	2.22	µg/L	83
PFPeA	4.338	263.0 -> 219.0	5561	2.14	µg/L	100
PFPeS	5.330	349.0 -> 99.0	671	2.16	µg/L	100
PFTeDA	12.467	713.0 -> 669.0	3196	2.24	µg/L	32
PFTTrDA	11.341	663.0 -> 619.0	5751	2.12	µg/L	34
PFUnDA	8.768	563.0 -> 519.0	6476	2.11	µg/L	41

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

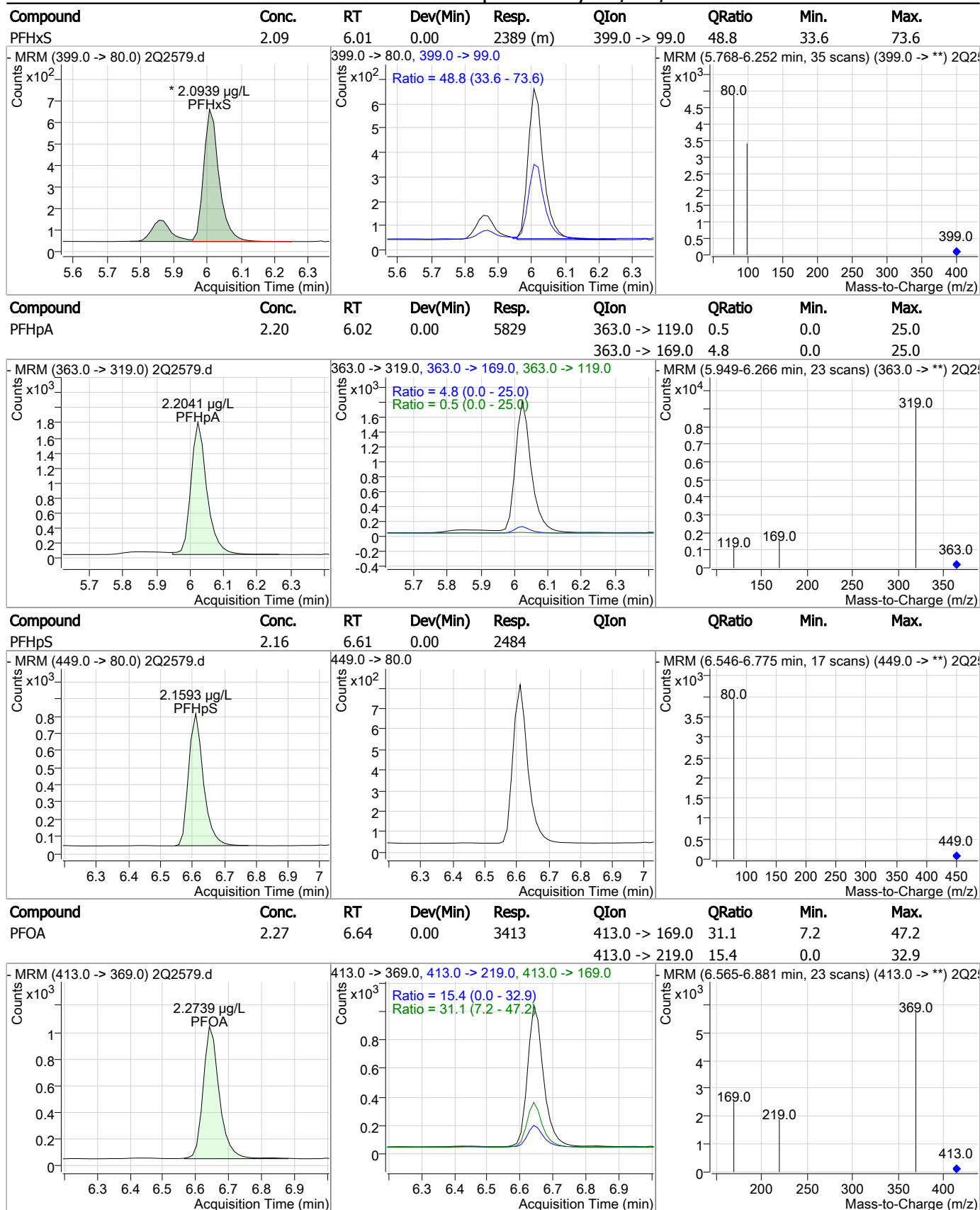
Perfluorinated Compounds by LC/MS/MS



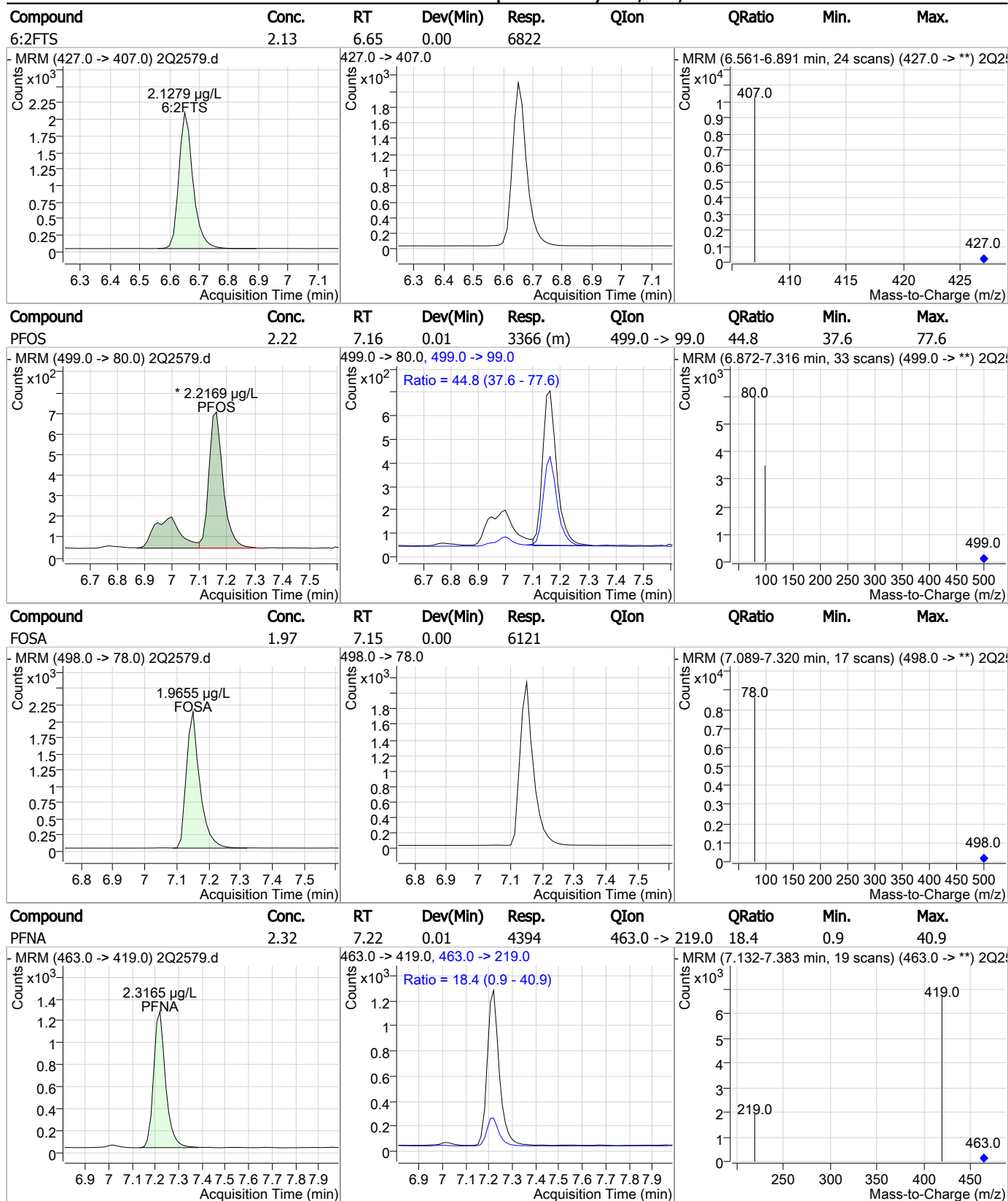
Perfluorinated Compounds by LC/MS/MS



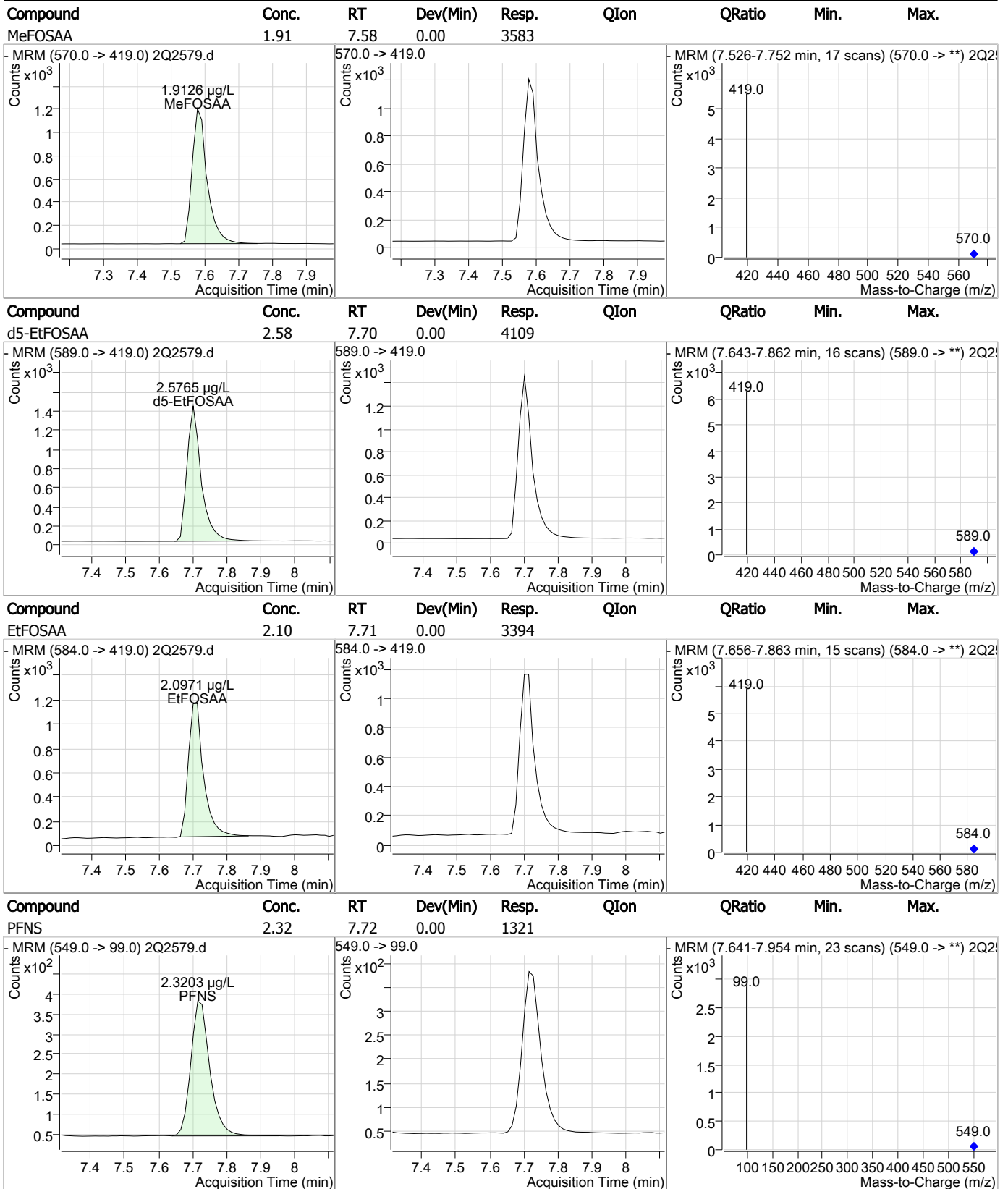
Perfluorinated Compounds by LC/MS/MS



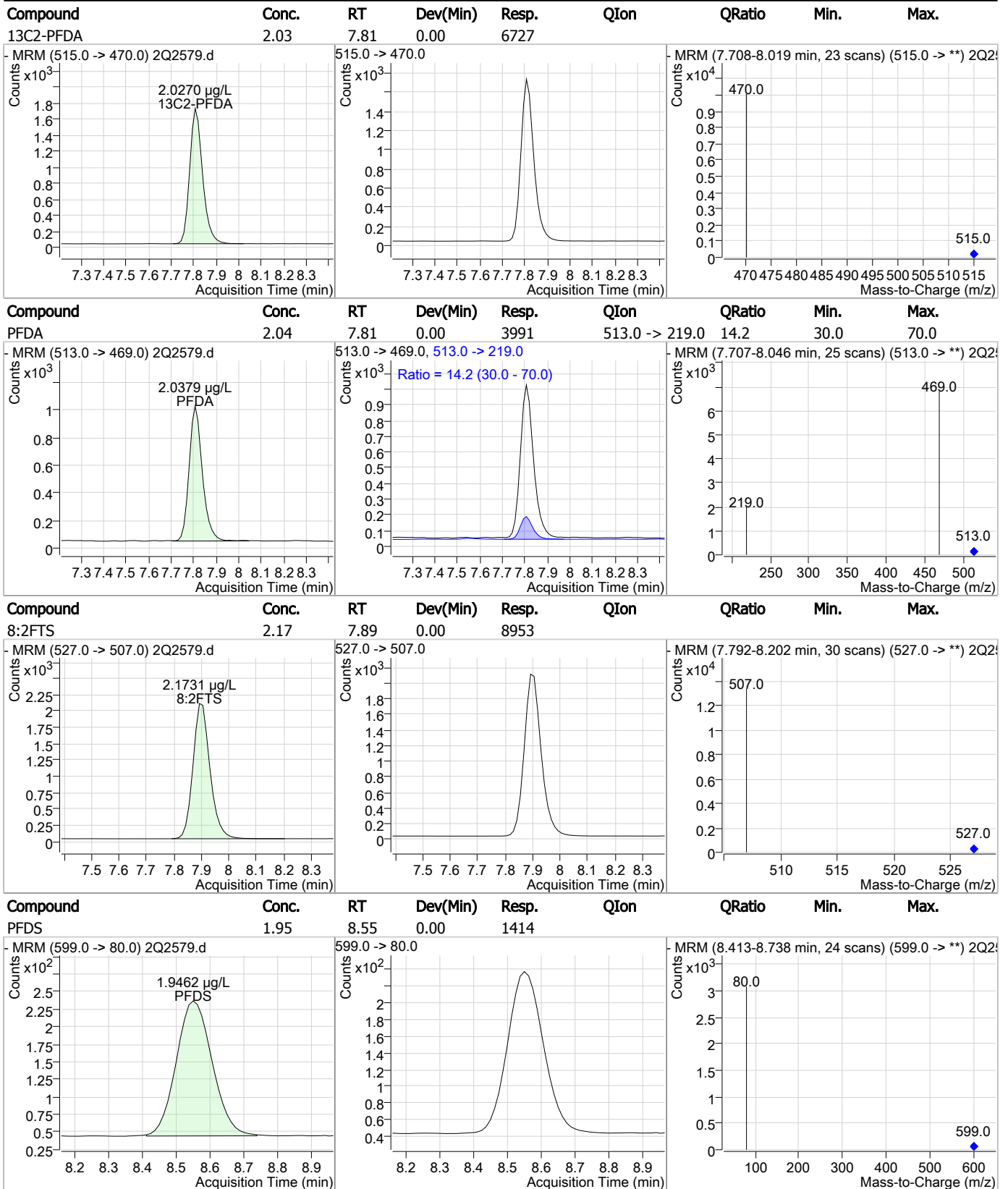
Perfluorinated Compounds by LC/MS/MS



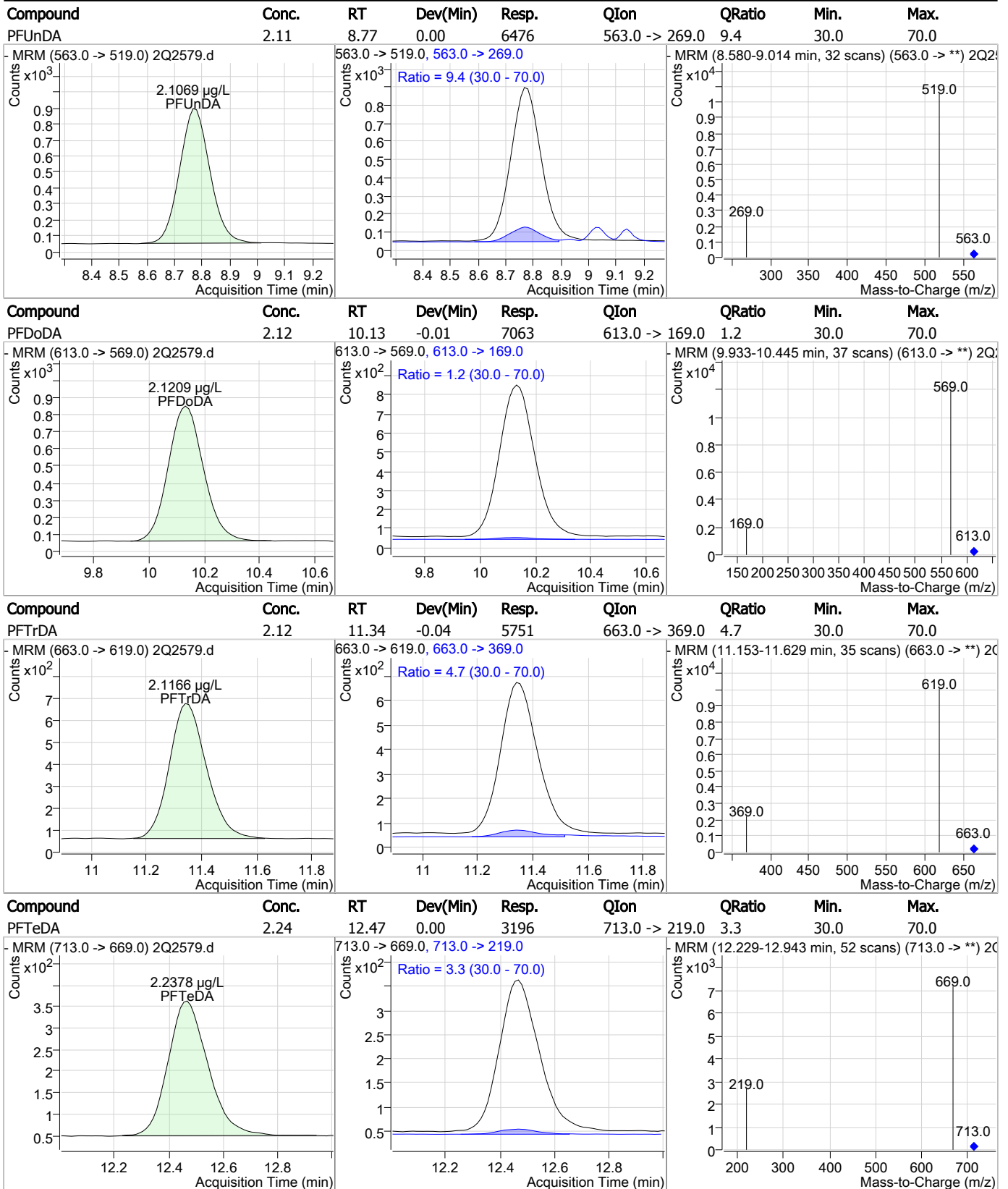
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q67-IC67

Method: EPA 537 MOD

Lab FileID: 2Q2579.D

Analyst approved: 06/24/17 13:30 Nancy Saunders

Injection Time: 06/23/17 10:48

Supervisor approved: 06/26/17 08:56 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.16	Split peak

7.5.2.1
7

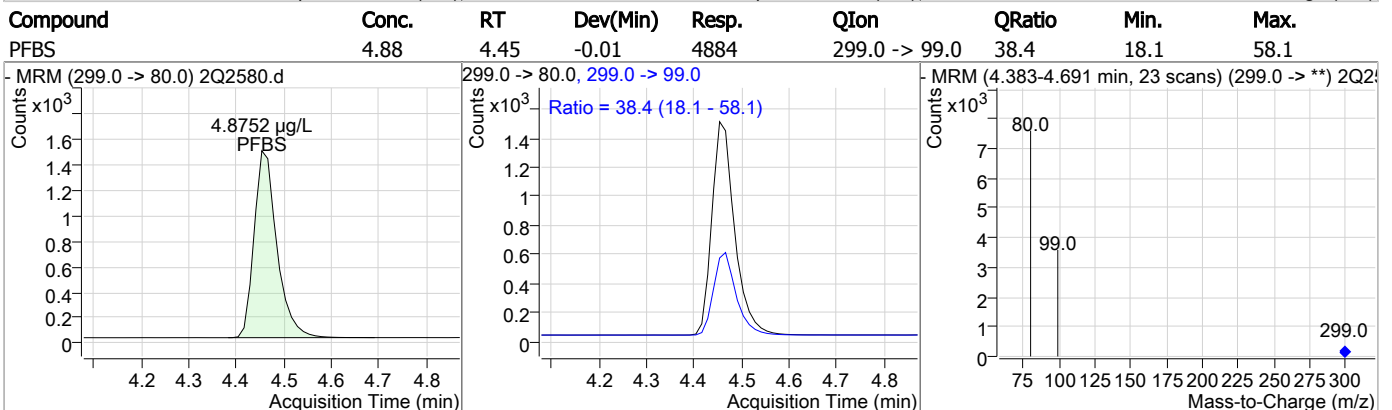
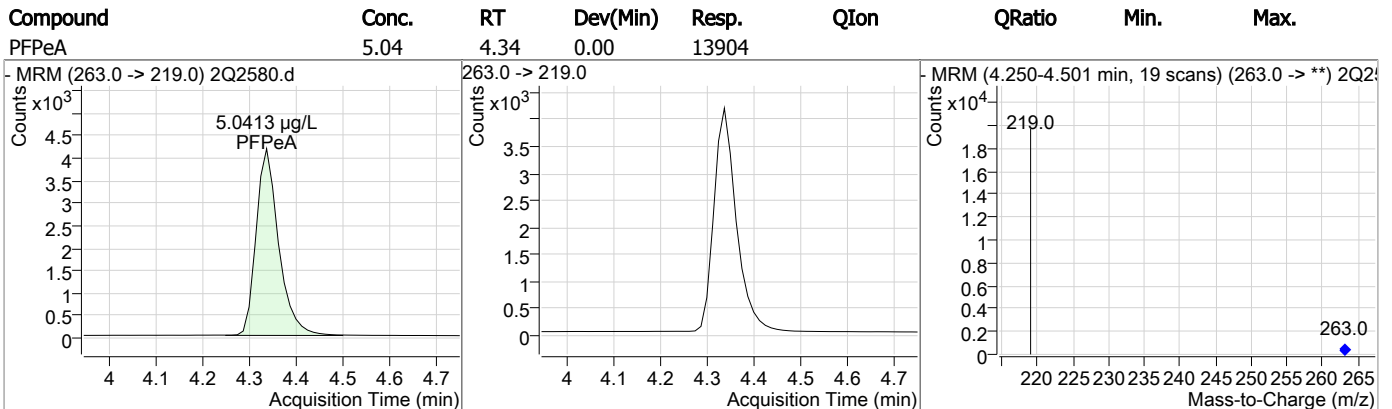
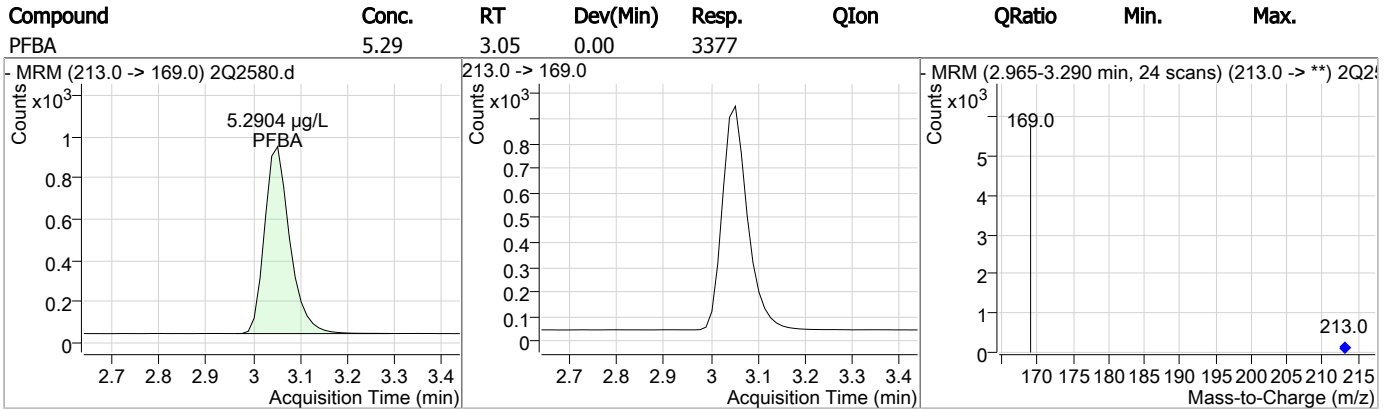
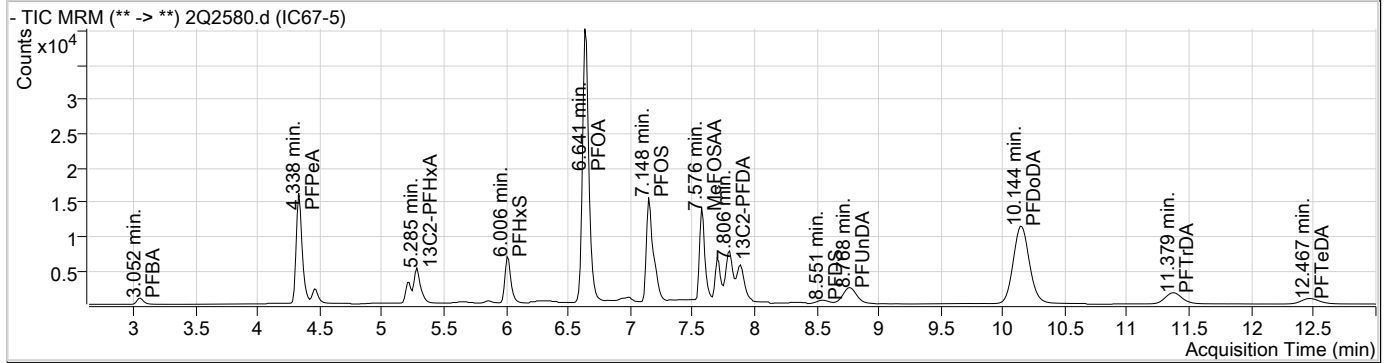
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2580.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/23/2017 11:06:26 AM
 Sample Name : IC67-5
 Vial : Vial 4
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q67.batch.bin
 Sample Information : OP65591,S2Q67,125,,,1.0,,water

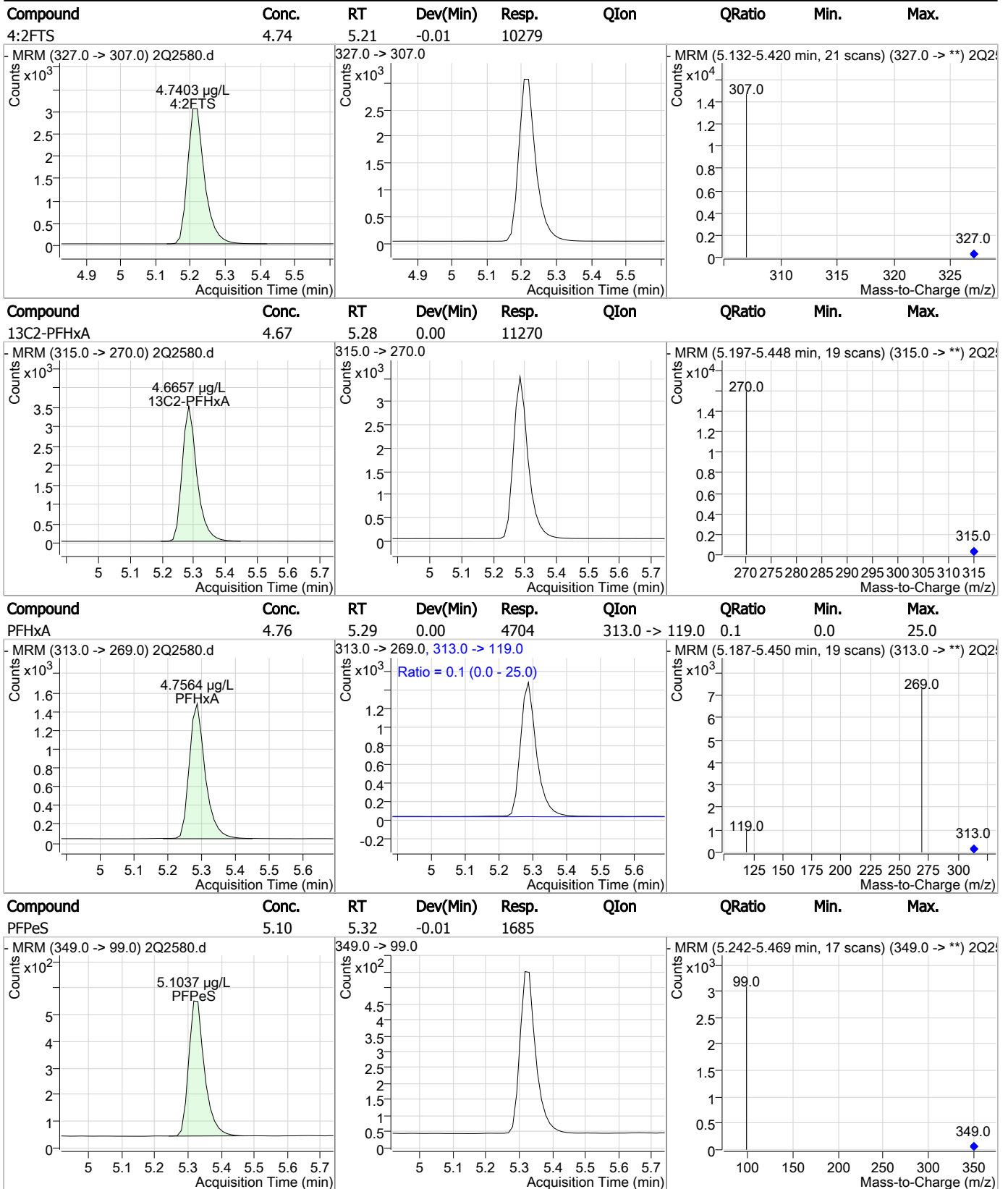
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.649	429.0 -> 409.0	67378	20.00 µg/L	0.000
13C2-PFDoDA	10.152	615.0 -> 570.0	84196	20.00 µg/L	0.000
13C2-PFOA	6.640	415.0 -> 370.0	42333	20.00 µg/L	0.000
13C3-PFPeA	4.335	266.0 -> 222.0	40121	20.00 µg/L	0.000
13C4-PFOS	7.147	503.0 -> 80.0	26813	20.00 µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	32750	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	7.806	515.0 -> 470.0	17377	4.82 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 24.1%	
13C2-PFHxA	5.285	315.0 -> 270.0	11270	4.67 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 23.3%	
d5-EtFOSAA	7.699	589.0 -> 419.0	9047	5.76 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 28.8%	
Target Compounds					
					QValue
4:2FTS	5.207	327.0 -> 307.0	10279	4.74 µg/L	100
6:2FTS	6.651	427.0 -> 407.0	16549	4.82 µg/L	100
8:2FTS	7.892	527.0 -> 507.0	21190	4.79 µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	7440	4.69 µg/L	100
FOSA	7.151	498.0 -> 78.0	14589	4.80 µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	8595	4.67 µg/L	100
PFBA	3.052	213.0 -> 169.0	3377	5.29 µg/L	100
PFBS	4.454	299.0 -> 80.0	4884	4.88 µg/L	100
PFDA	7.807	513.0 -> 469.0	9989	4.69 µg/L	# 47
PFDoDA	10.144	613.0 -> 569.0	18190	5.06 µg/L	# 29
PFDS	8.551	599.0 -> 80.0	3585	4.69 µg/L	100
PFHpA	6.024	363.0 -> 319.0	14682	5.09 µg/L	93
PFHpS	6.610	449.0 -> 80.0	5891	4.86 µg/L	100
PFHxA	5.287	313.0 -> 269.0	4704	4.76 µg/L	85
PFHxS	6.006	399.0 -> 80.0	5861	4.88 µg/L	m 94
PFNA	7.206	463.0 -> 419.0	10320	4.99 µg/L	96
PFNS	7.716	549.0 -> 99.0	3057	5.10 µg/L	100
PFOA	6.641	413.0 -> 369.0	8002	4.89 µg/L	93
PFOS	7.148	499.0 -> 80.0	8019	5.03 µg/L	m 85
PFPeA	4.338	263.0 -> 219.0	13904	5.04 µg/L	100
PFPeS	5.317	349.0 -> 99.0	1685	5.10 µg/L	100
PFTeDA	12.467	713.0 -> 669.0	7920	5.14 µg/L	# 32
PFTTrDA	11.379	663.0 -> 619.0	14973	5.11 µg/L	# 34
PFUnDA	8.768	563.0 -> 519.0	16776	5.06 µg/L	# 41

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

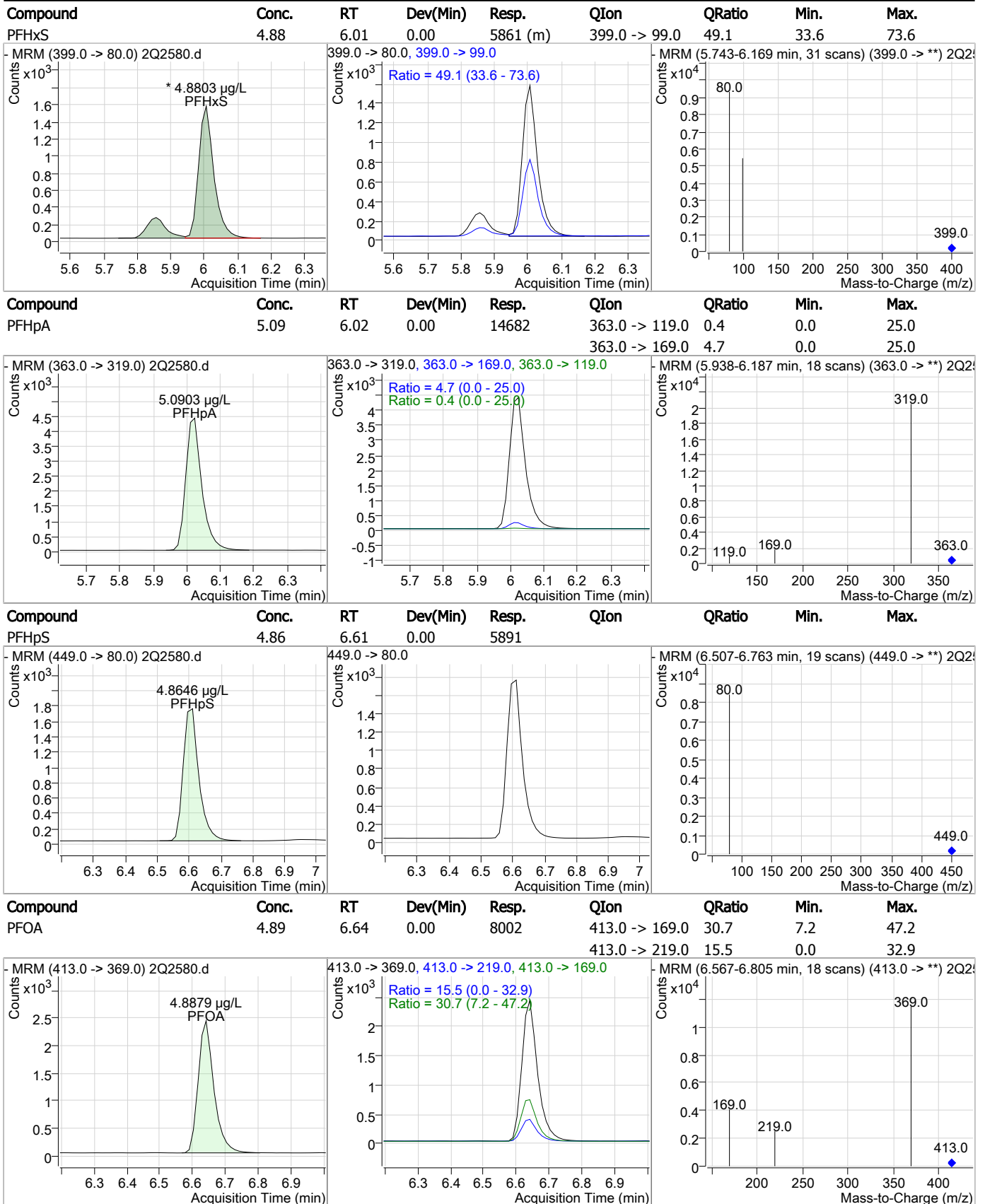
Perfluorinated Compounds by LC/MS/MS



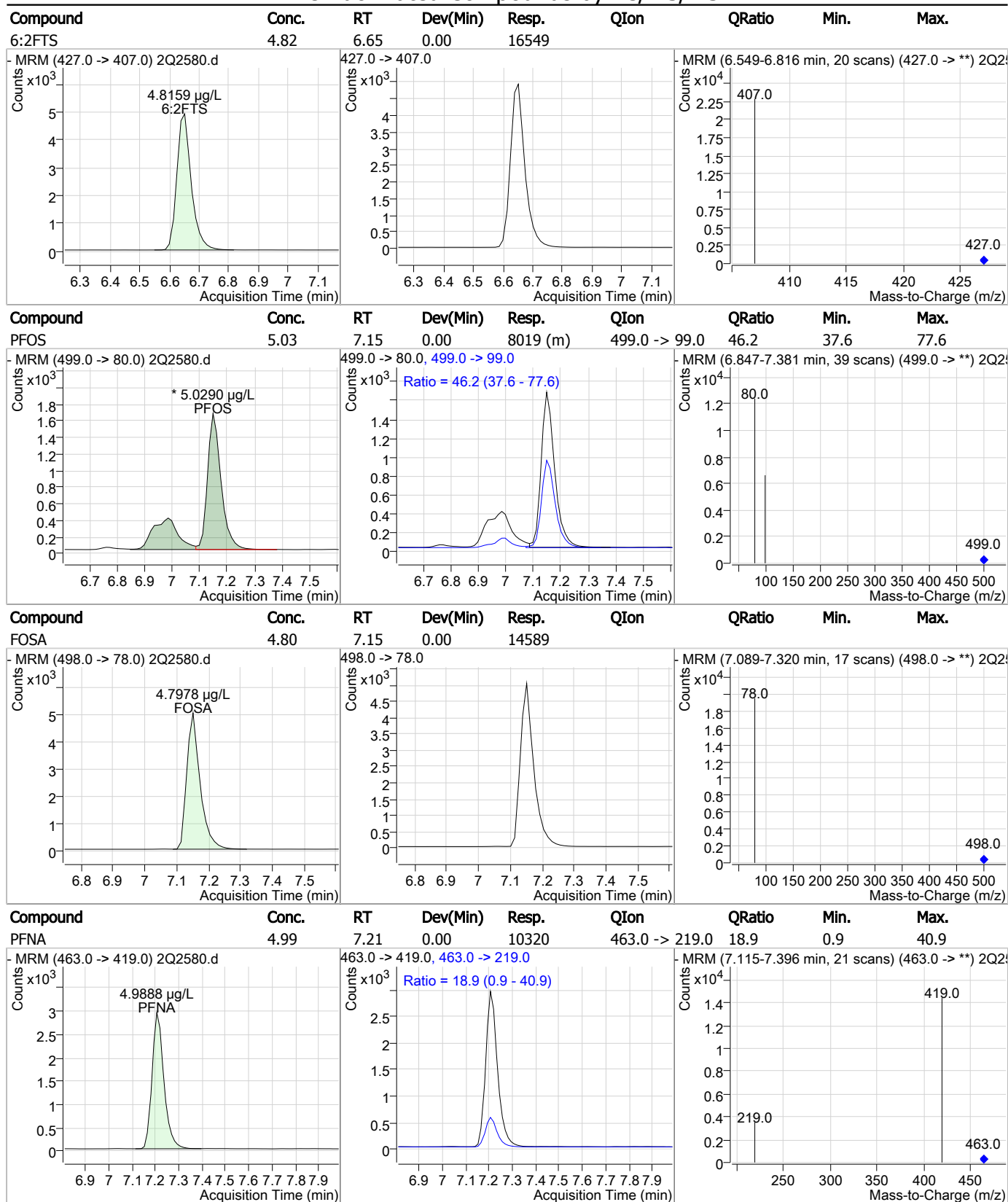
Perfluorinated Compounds by LC/MS/MS



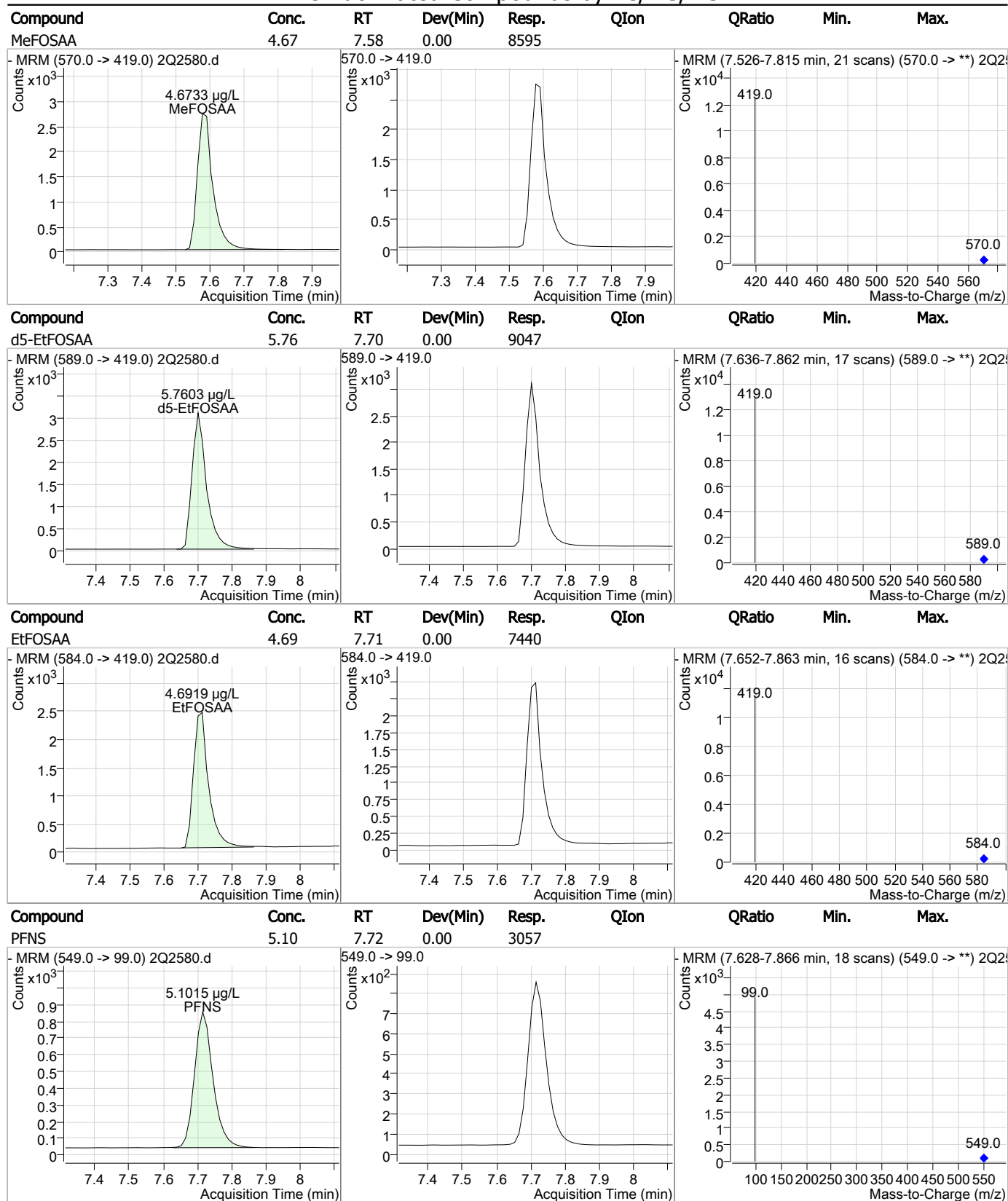
Perfluorinated Compounds by LC/MS/MS



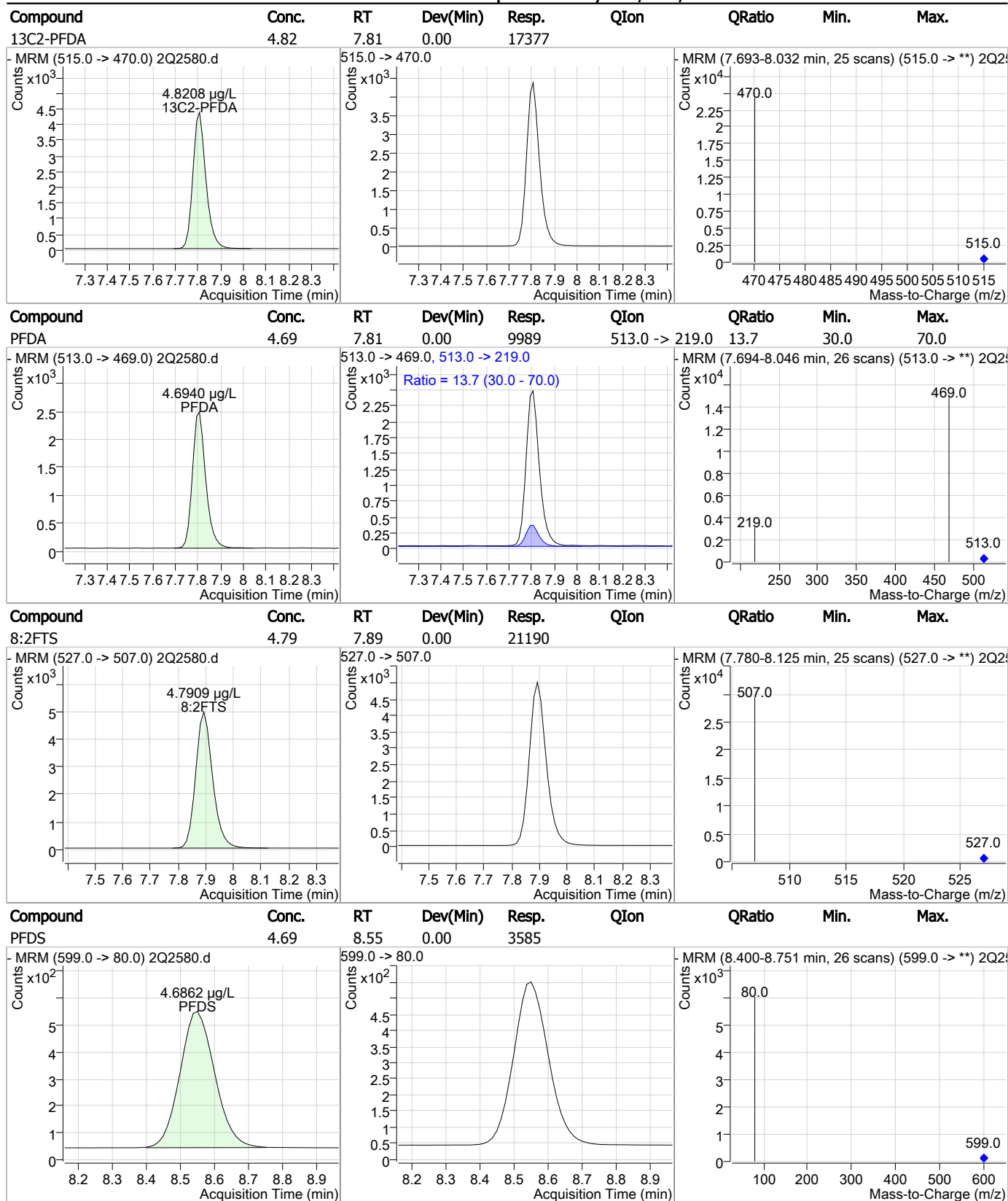
Perfluorinated Compounds by LC/MS/MS



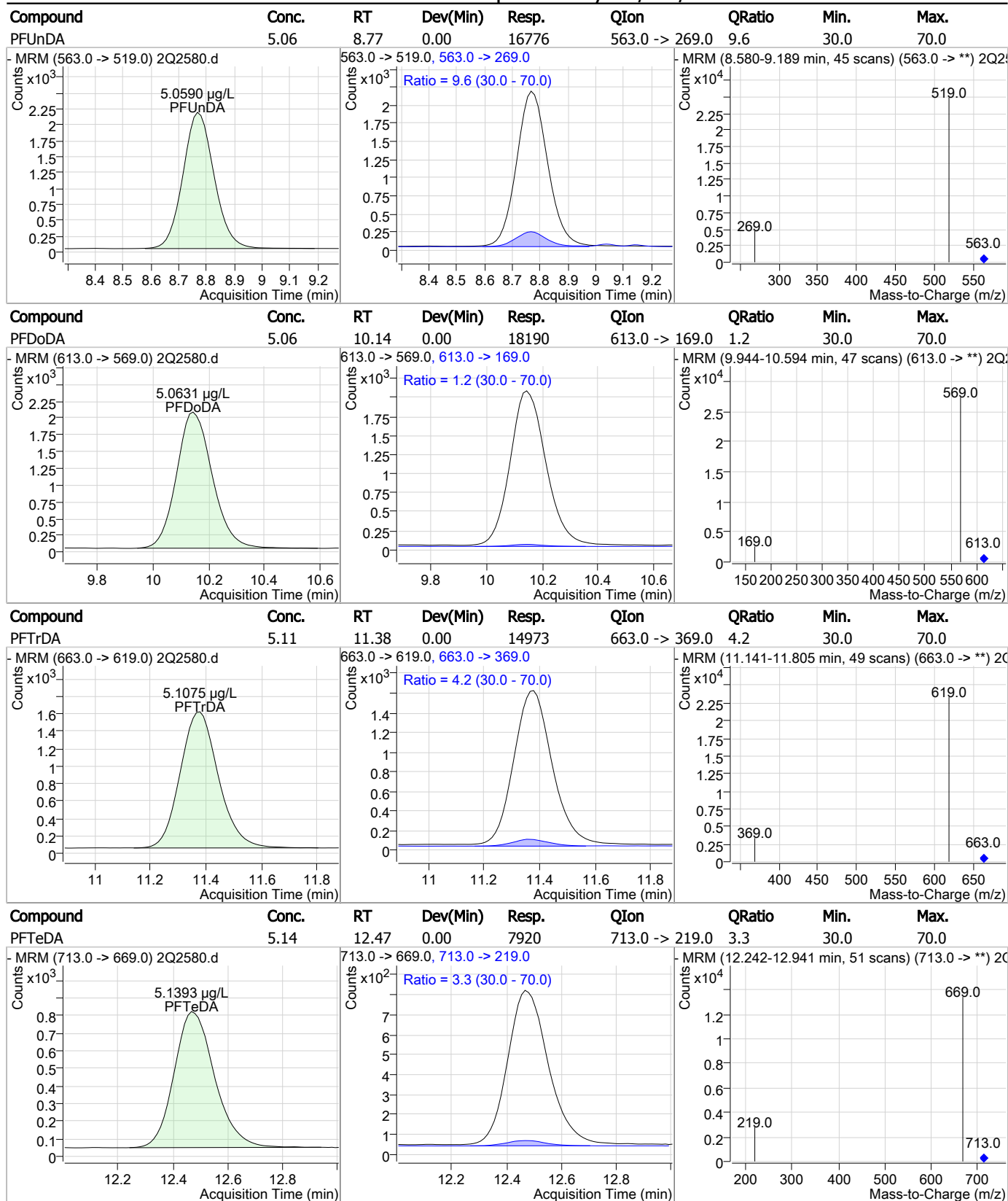
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q67-IC67

Method: EPA 537 MOD

Lab FileID: 2Q2580.D

Analyst approved: 06/24/17 13:30 Nancy Saunders

Injection Time: 06/23/17 11:06

Supervisor approved: 06/26/17 08:56 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.15	Split peak

7.5.3.1
7

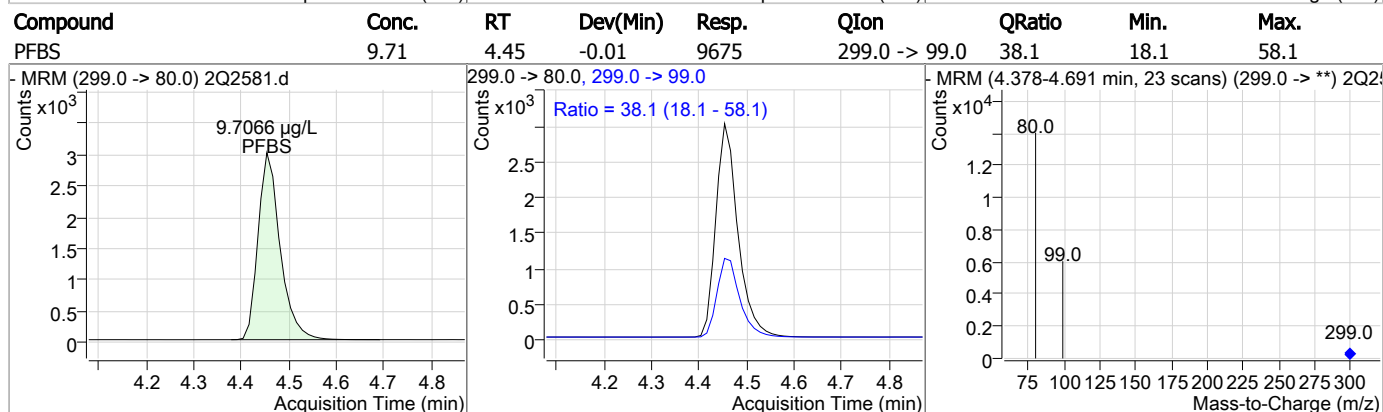
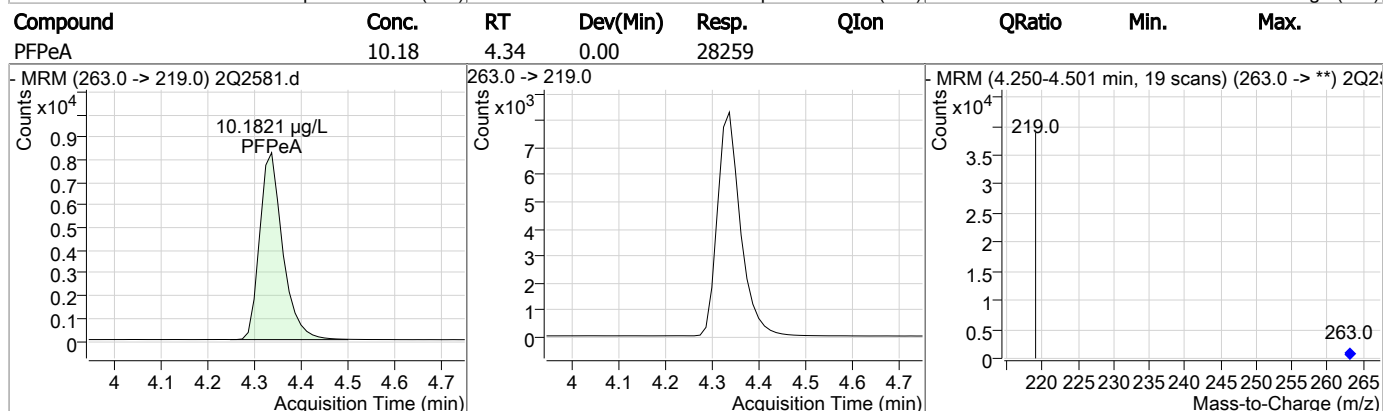
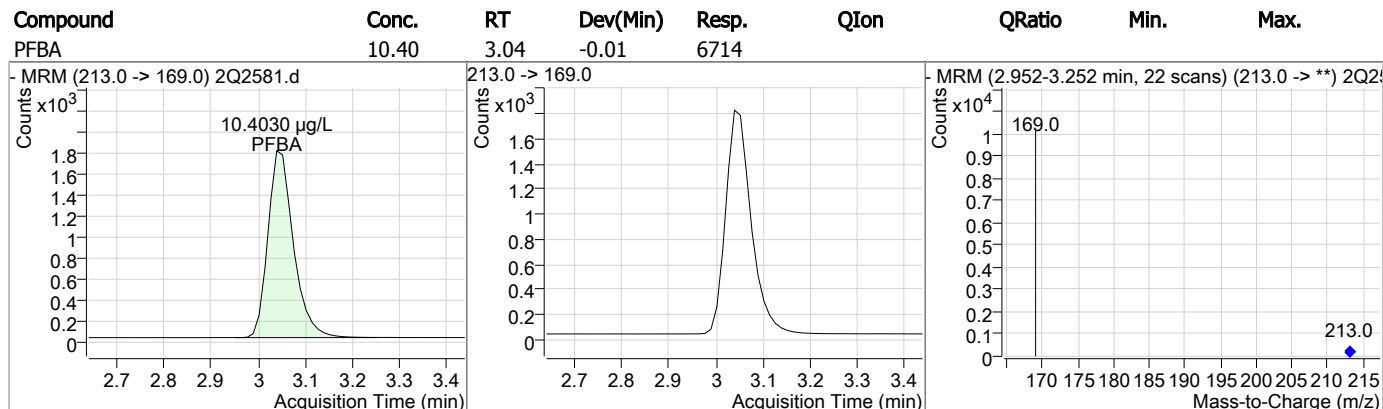
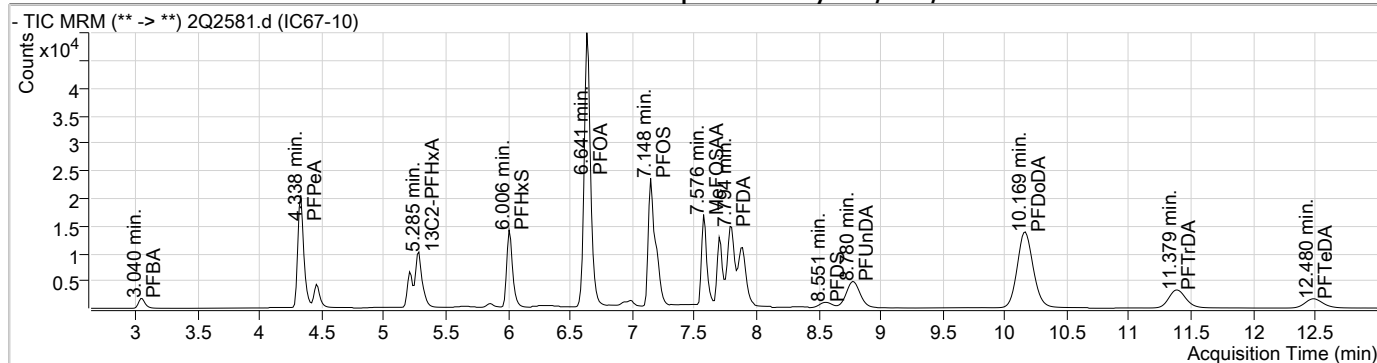
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2581.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/23/2017 11:24:17 AM
 Sample Name : IC67-10
 Vial : Vial 5
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q67.batch.bin
 Sample Information : OP65591,S2Q67,125,,,1.0,,water

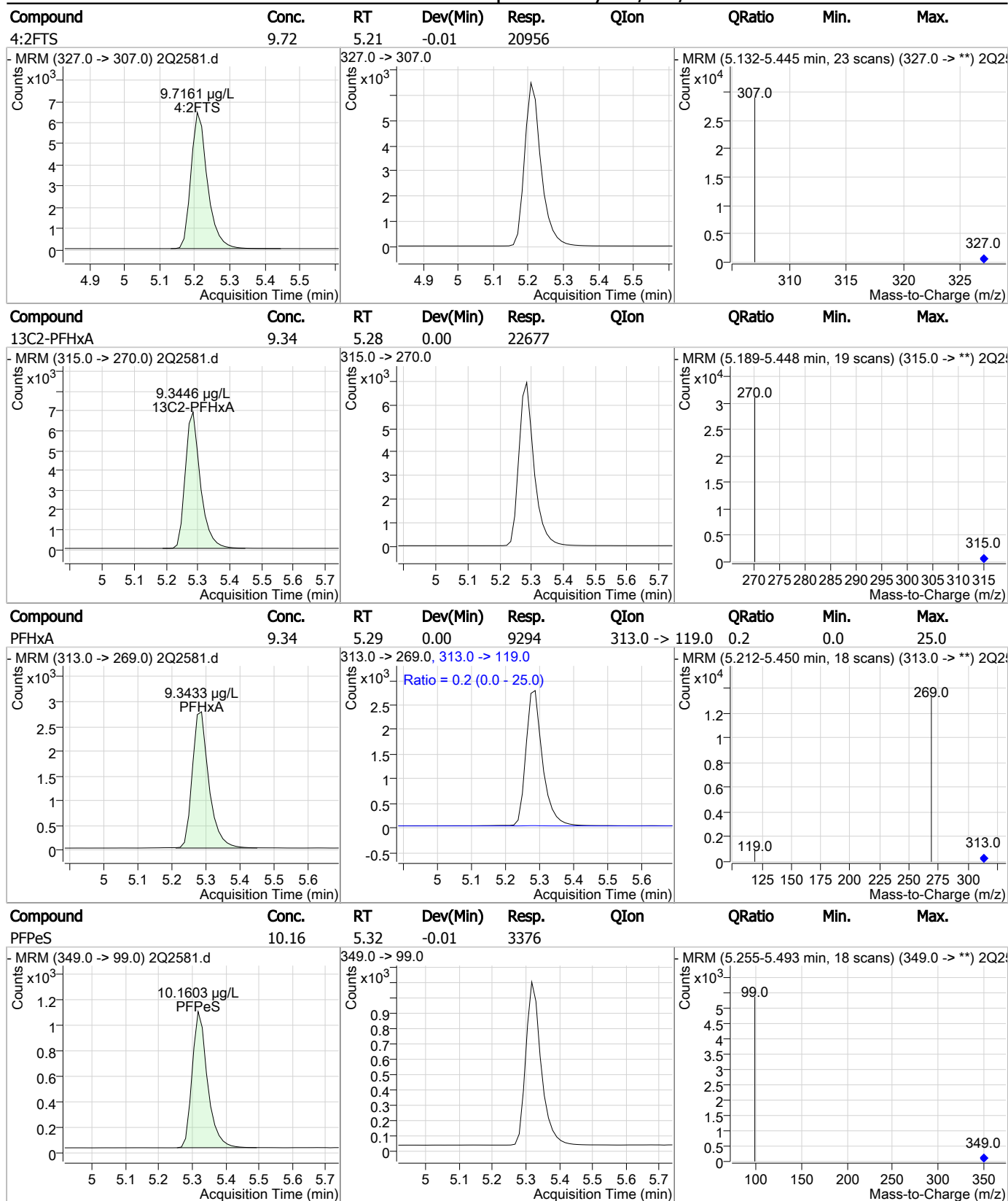
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.649	429.0 -> 409.0	67746	20.00 µg/L	0.000
13C2-PFDoDA	10.165	615.0 -> 570.0	85279	20.00 µg/L	0.013
13C2-PFOA	6.640	415.0 -> 370.0	42804	20.00 µg/L	0.000
13C3-PFPeA	4.335	266.0 -> 222.0	40373	20.00 µg/L	0.000
13C4-PFOS	7.147	503.0 -> 80.0	26676	20.00 µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	33021	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	7.806	515.0 -> 470.0	34487	9.53 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 47.6%	
13C2-PFHxA	5.285	315.0 -> 270.0	22677	9.34 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 46.7%	
d5-EtFOSAA	7.699	589.0 -> 419.0	17598	11.11 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 55.6%	
Target Compounds					
					QValue
4:2FTS	5.207	327.0 -> 307.0	20956	9.72 µg/L	100
6:2FTS	6.651	427.0 -> 407.0	33073	9.69 µg/L	100
8:2FTS	7.892	527.0 -> 507.0	42984	9.76 µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	15117	9.55 µg/L	100
FOSA	7.151	498.0 -> 78.0	29693	9.83 µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	16878	9.15 µg/L	100
PFBA	3.040	213.0 -> 169.0	6714	10.40 µg/L	100
PFBS	4.454	299.0 -> 80.0	9675	9.71 µg/L	100
PFDA	7.794	513.0 -> 469.0	20050	9.38 µg/L	# 48
PFDoDA	10.169	613.0 -> 569.0	37205	10.22 µg/L	# 29
PFDS	8.551	599.0 -> 80.0	7348	9.65 µg/L	100
PFHpA	6.011	363.0 -> 319.0	30080	10.31 µg/L	93
PFHpS	6.595	449.0 -> 80.0	11824	9.81 µg/L	100
PFHxA	5.287	313.0 -> 269.0	9294	9.34 µg/L	86
PFHxS	6.006	399.0 -> 80.0	11789	9.87 µg/L	m 93
PFNA	7.206	463.0 -> 419.0	21302	10.18 µg/L	97
PFNS	7.716	549.0 -> 99.0	6024	10.11 µg/L	100
PFOA	6.641	413.0 -> 369.0	16754	10.12 µg/L	95
PFOS	7.148	499.0 -> 80.0	15338	9.71 µg/L	m 86
PFPeA	4.338	263.0 -> 219.0	28259	10.18 µg/L	100
PFPeS	5.317	349.0 -> 99.0	3376	10.16 µg/L	100
PFTeDA	12.480	713.0 -> 669.0	16566	10.61 µg/L	# 32
PFTTrDA	11.379	663.0 -> 619.0	29971	10.09 µg/L	# 34
PFUnDA	8.780	563.0 -> 519.0	34369	10.23 µg/L	# 41

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

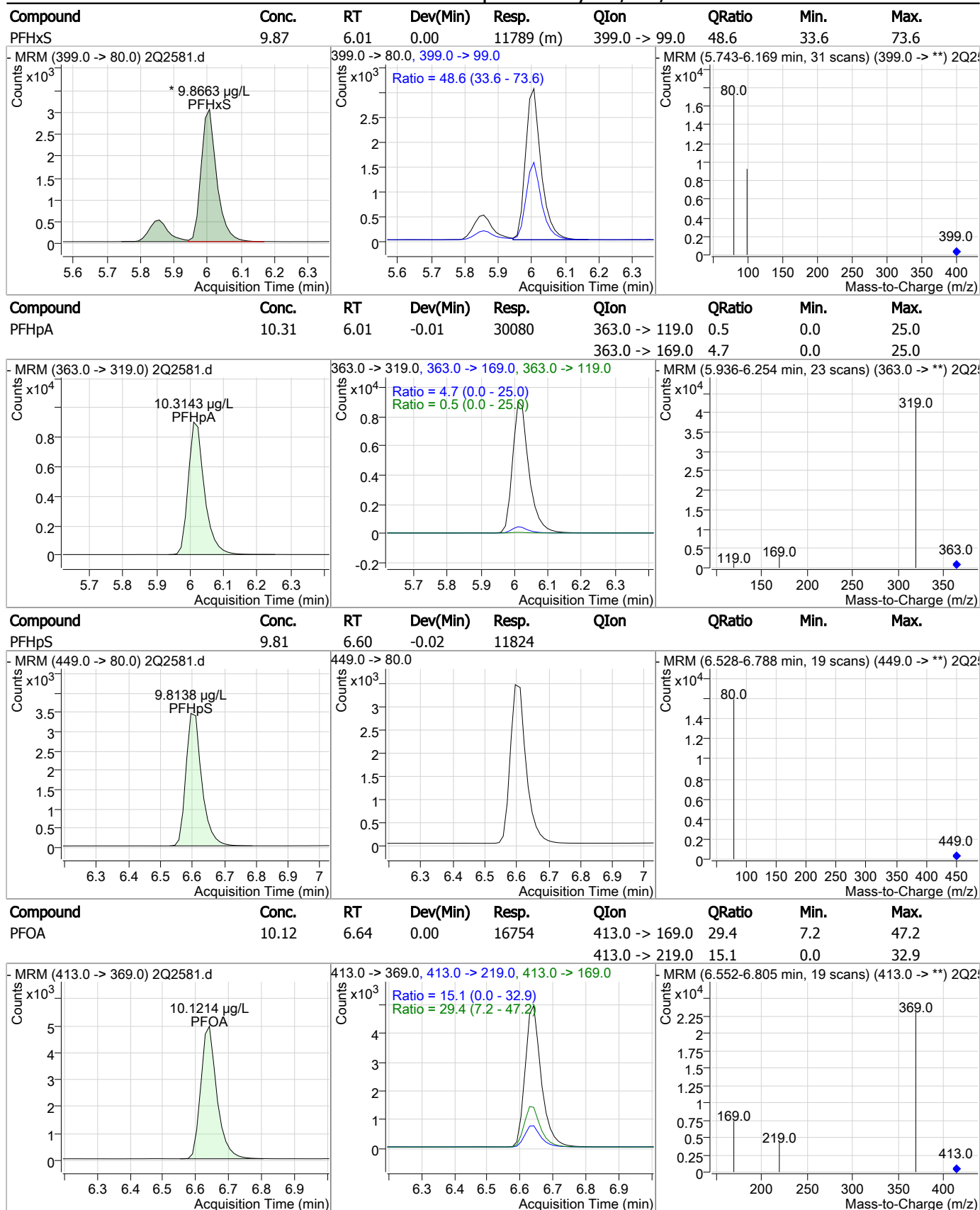
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



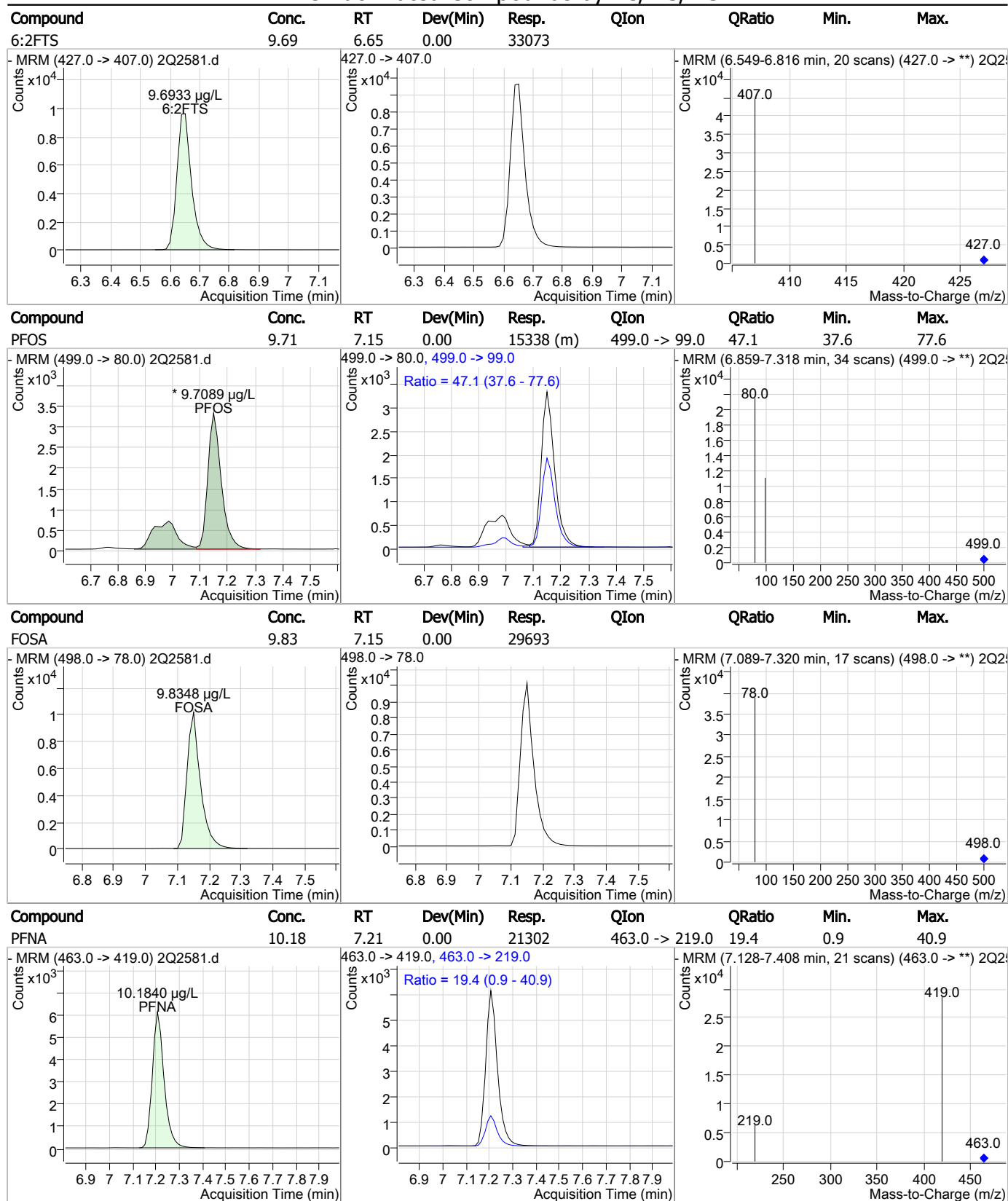
Perfluorinated Compounds by LC/MS/MS



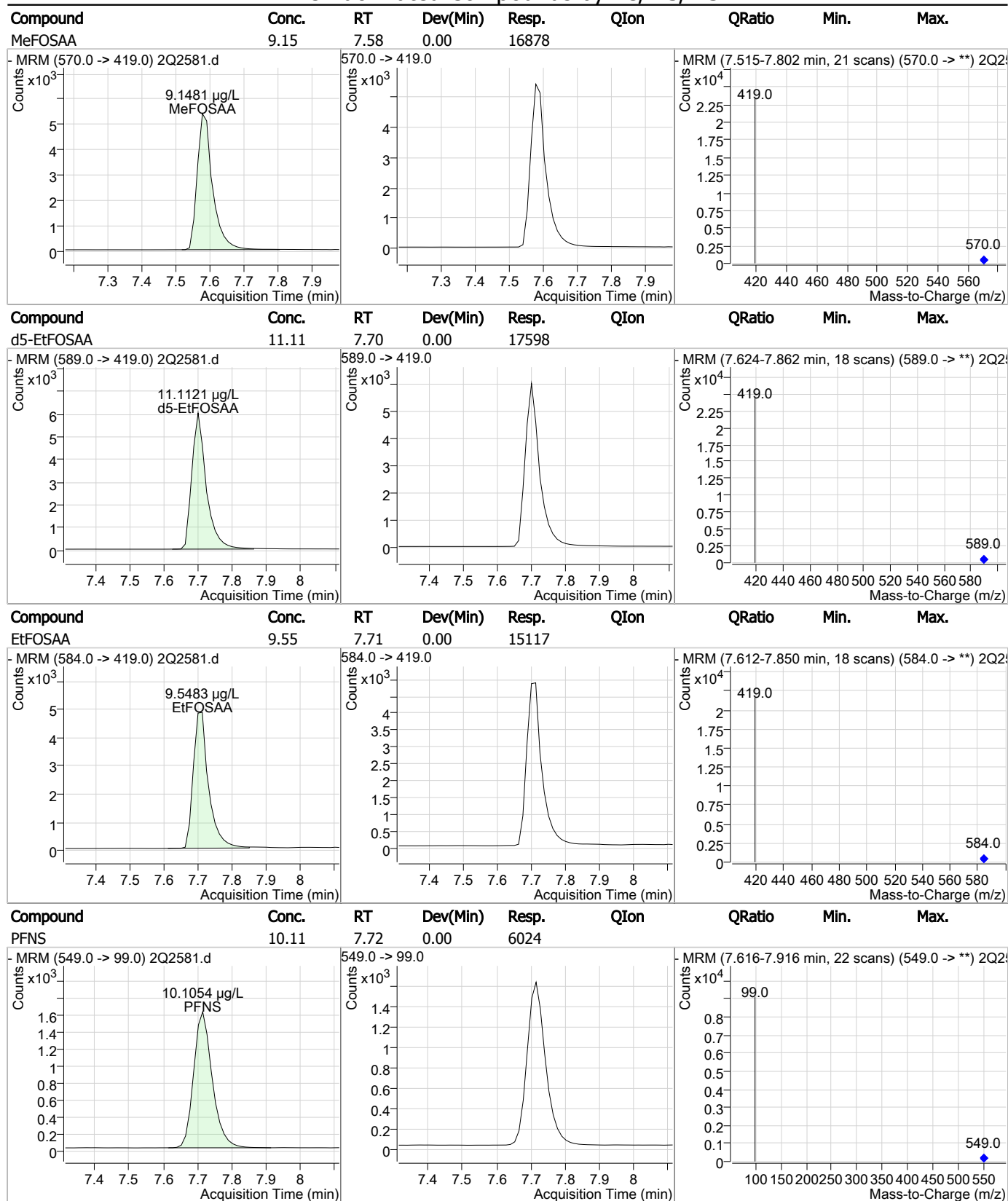
7.5.4

7

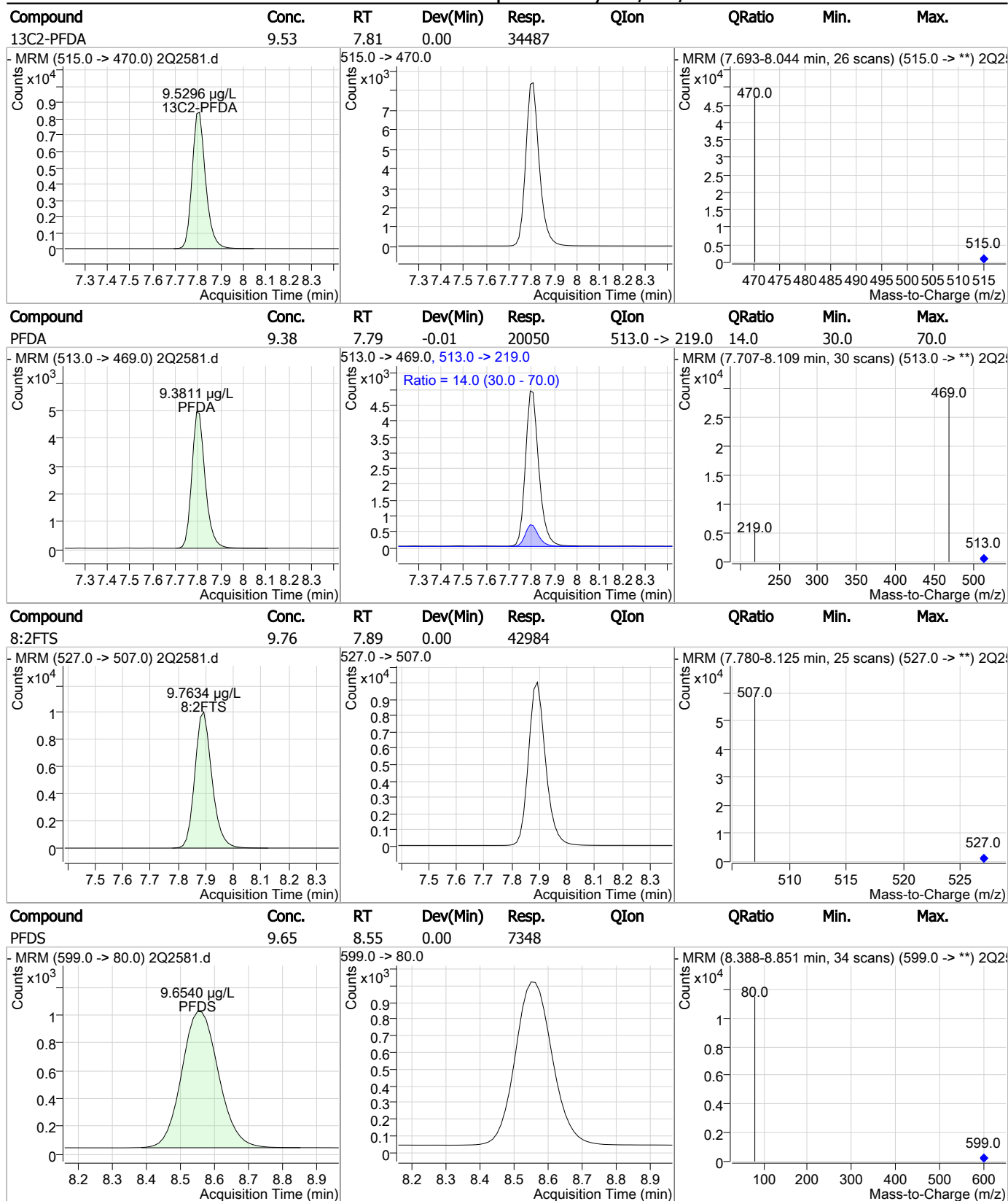
Perfluorinated Compounds by LC/MS/MS



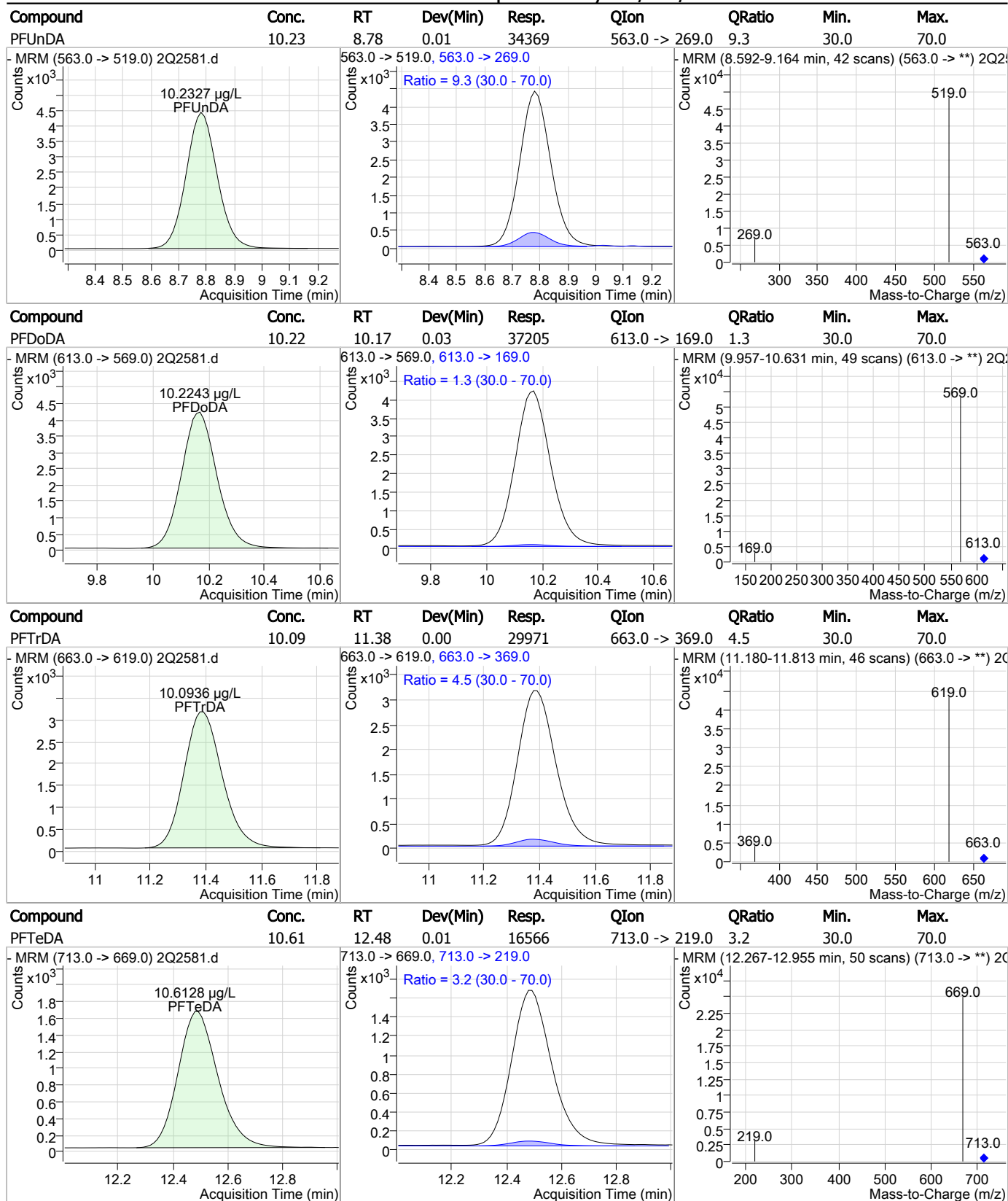
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q67-IC67

Method: EPA 537 MOD

Lab FileID: 2Q2581.D

Analyst approved: 06/24/17 13:30 Nancy Saunders

Injection Time: 06/23/17 11:24

Supervisor approved: 06/26/17 08:56 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.15	Split peak

7.5.4.1

7

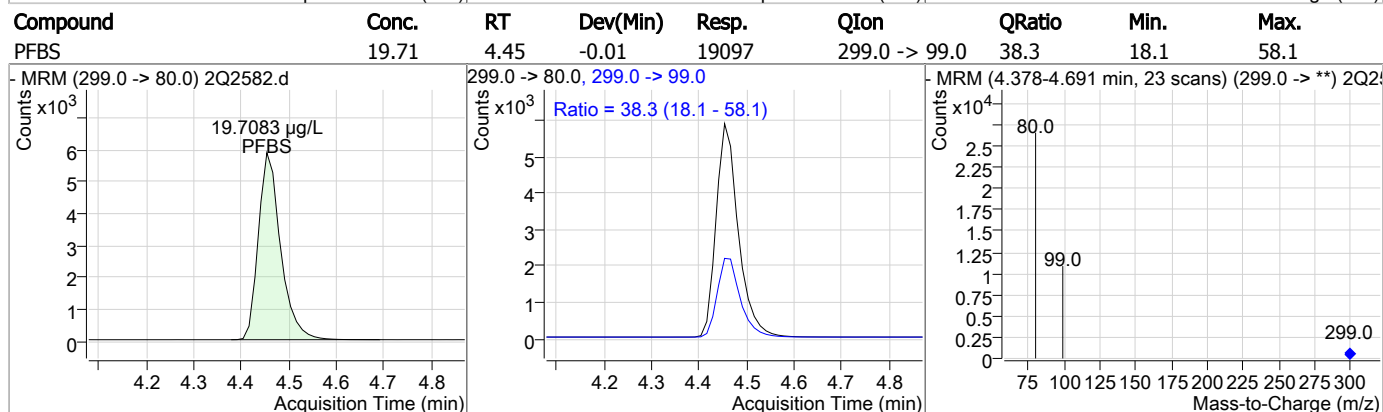
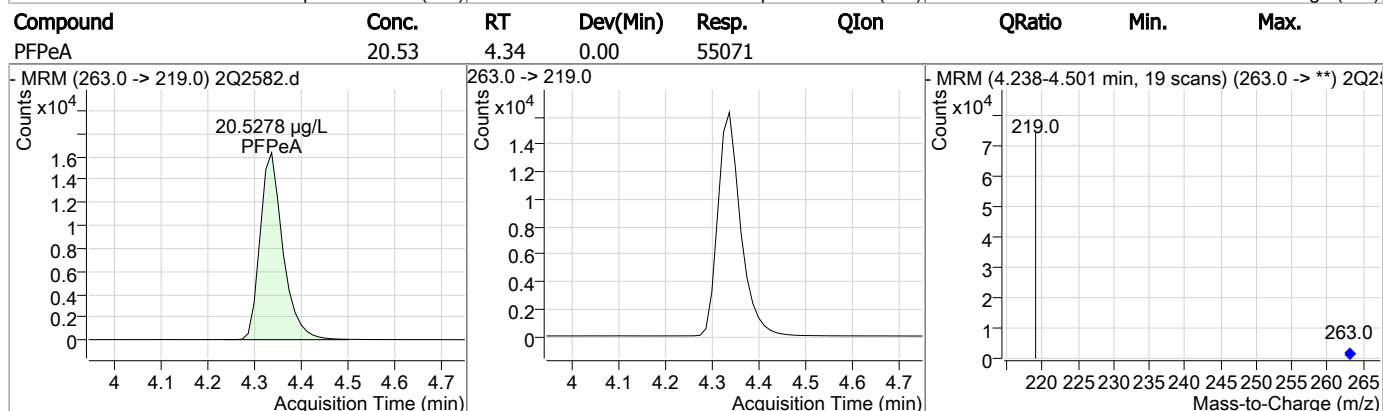
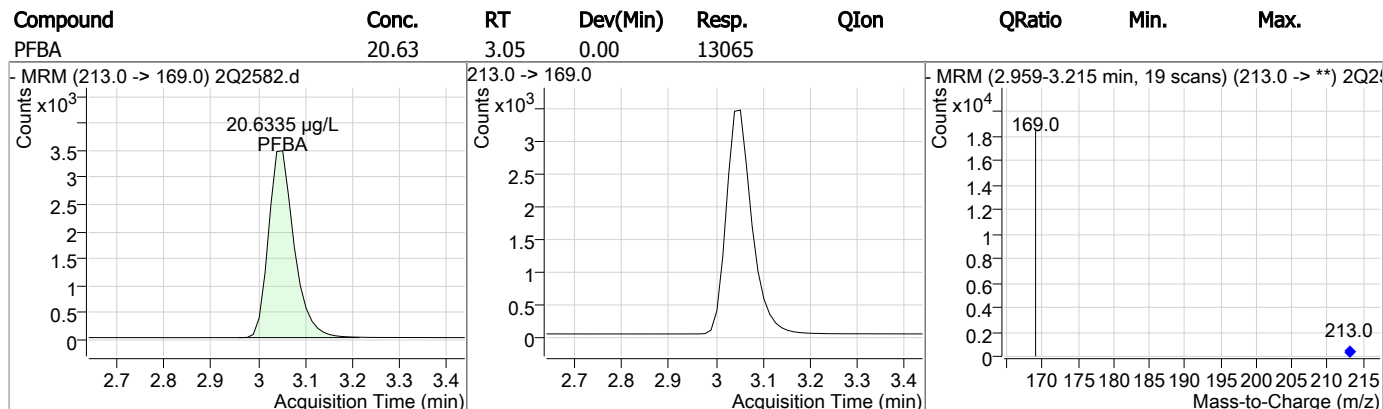
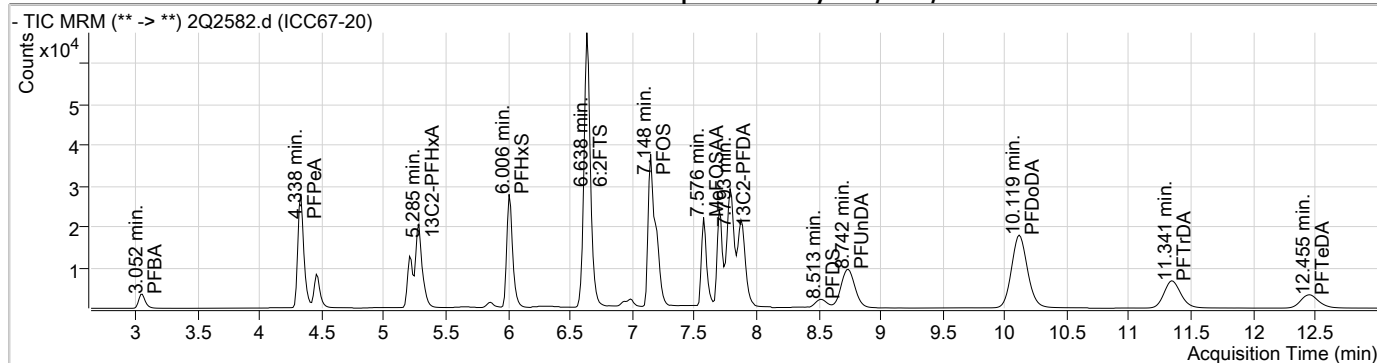
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2582.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/23/2017 11:42:07 AM
 Sample Name : ICC67-20
 Vial : Vial 6
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q67.batch.bin
 Sample Information : OP65591,S2Q67,125,,,1.0,,water

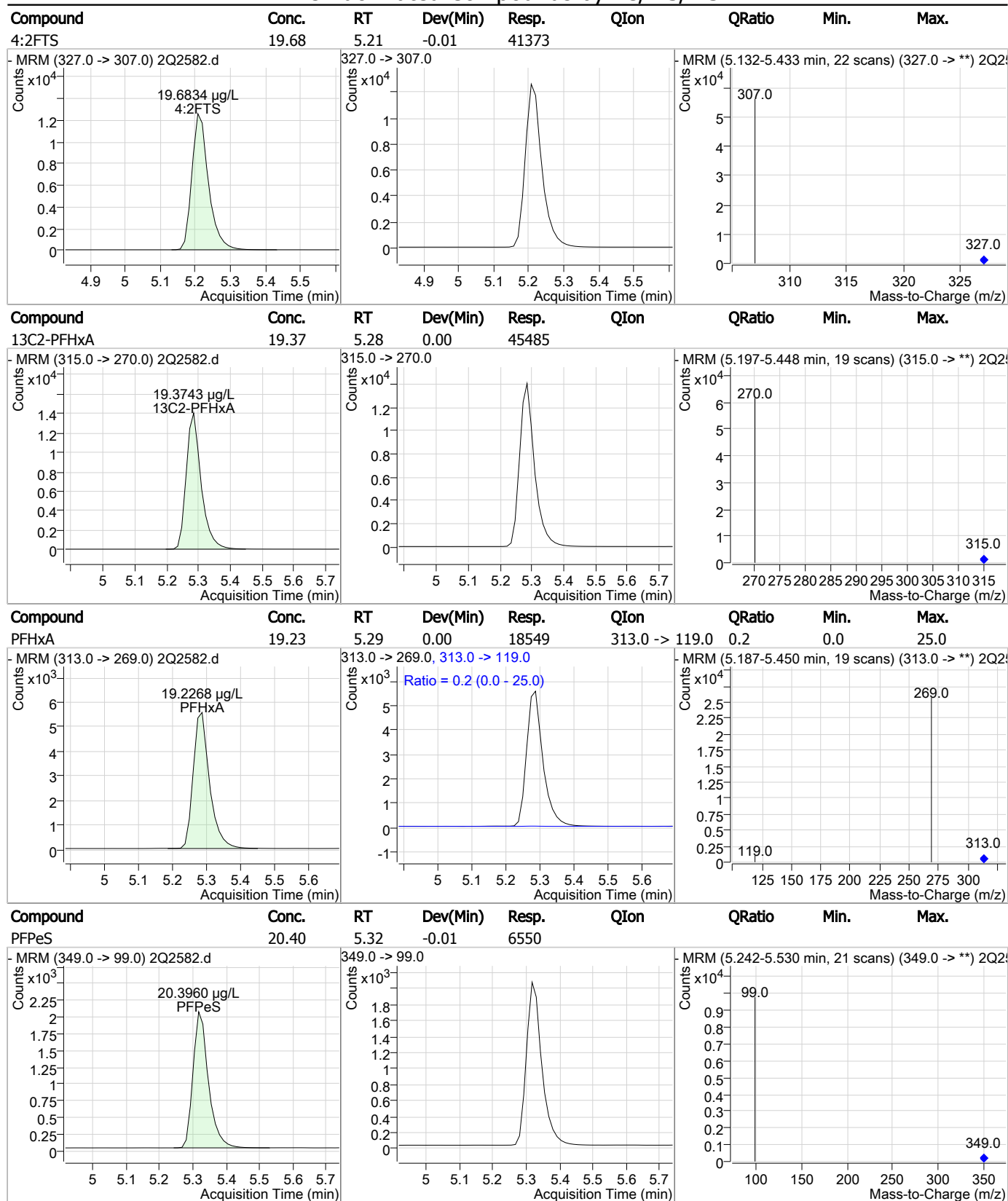
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.649	429.0 -> 409.0	67496	20.00	µg/L	0.000
13C2-PFDoDA	10.115	615.0 -> 570.0	84196	20.00	µg/L	-0.038
13C2-PFOA	6.640	415.0 -> 370.0	41991	20.00	µg/L	0.000
13C3-PFPeA	4.335	266.0 -> 222.0	39026	20.00	µg/L	0.000
13C4-PFOS	7.147	503.0 -> 80.0	25934	20.00	µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	31403	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	7.793	515.0 -> 470.0	66857	19.11	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 95.5%			
13C2-PFHxA	5.285	315.0 -> 270.0	45485	19.37	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 96.9%			
d5-EtFOSAA	7.699	589.0 -> 419.0	33775	22.43	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 112.1%			
Target Compounds						QValue
4:2FTS	5.207	327.0 -> 307.0	41373	19.68	µg/L	100
6:2FTS	6.638	427.0 -> 407.0	65426	19.76	µg/L	100
8:2FTS	7.880	527.0 -> 507.0	83619	19.45	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	28899	19.60	µg/L	100
FOSA	7.151	498.0 -> 78.0	56552	20.36	µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	33723	19.45	µg/L	100
PFBA	3.052	213.0 -> 169.0	13065	20.63	µg/L	100
PFBS	4.454	299.0 -> 80.0	19097	19.71	µg/L	100
PFDA	7.794	513.0 -> 469.0	39904	19.31	µg/L	# 47
PFDoDA	10.119	613.0 -> 569.0	73928	20.58	µg/L	# 29
PFDS	8.513	599.0 -> 80.0	14503	19.60	µg/L	100
PFHpA	6.011	363.0 -> 319.0	59481	20.79	µg/L	93
PFHpS	6.595	449.0 -> 80.0	23437	20.01	µg/L	100
PFHxA	5.287	313.0 -> 269.0	18549	19.23	µg/L	85
PFHxS	6.006	399.0 -> 80.0	23421	20.16	µg/L	m 92
PFNA	7.206	463.0 -> 419.0	41472	20.21	µg/L	96
PFNS	7.716	549.0 -> 99.0	11786	20.34	µg/L	100
PFOA	6.641	413.0 -> 369.0	34122	21.01	µg/L	96
PFOS	7.148	499.0 -> 80.0	29546	19.41	µg/L	m 89
PFPeA	4.338	263.0 -> 219.0	55071	20.53	µg/L	100
PFPeS	5.317	349.0 -> 99.0	6550	20.40	µg/L	100
PFTeDA	12.455	713.0 -> 669.0	32159	20.87	µg/L	# 32
PFTTrDA	11.341	663.0 -> 619.0	60294	20.57	µg/L	# 34
PFUnDA	8.742	563.0 -> 519.0	68454	20.64	µg/L	# 40

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

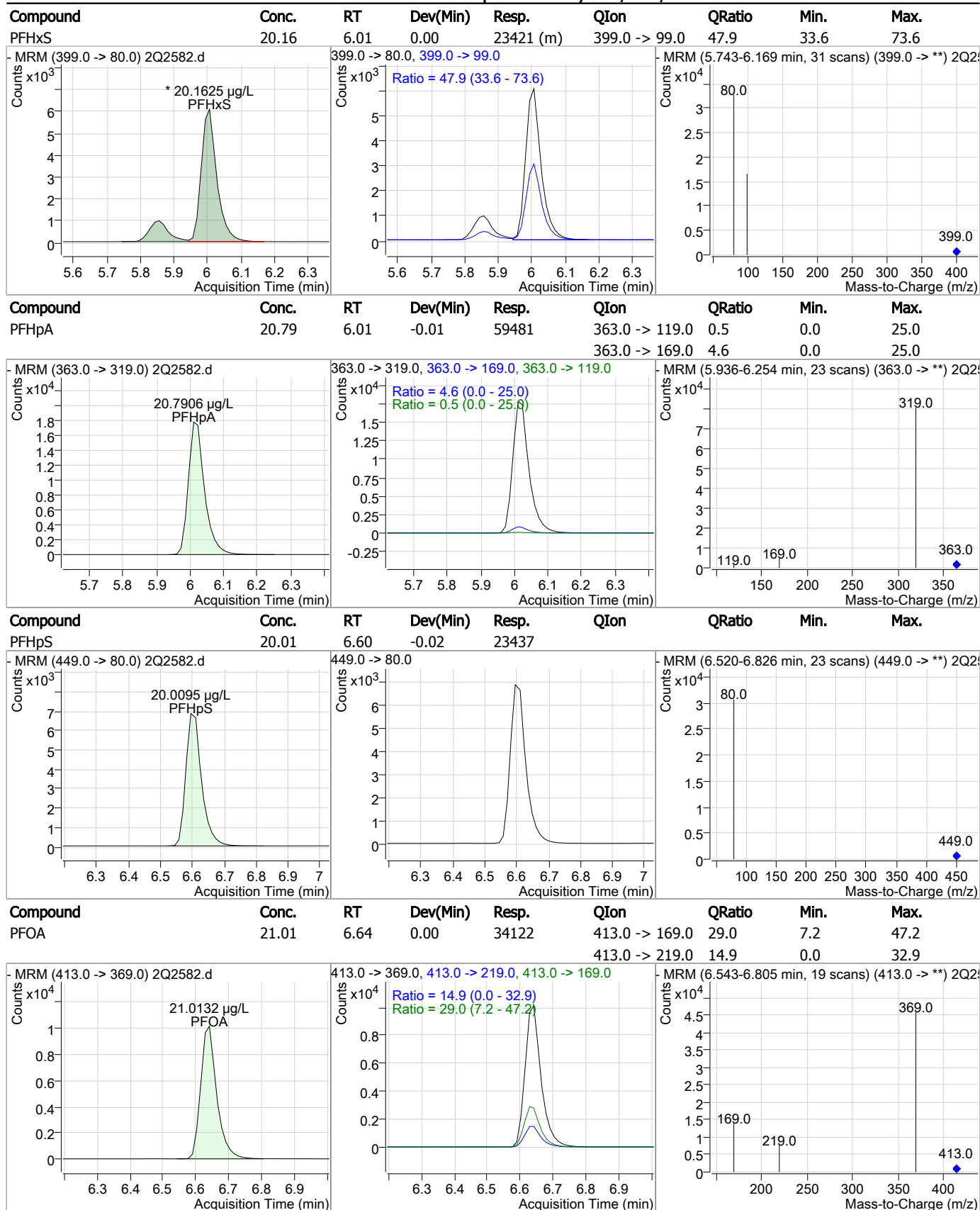
Perfluorinated Compounds by LC/MS/MS



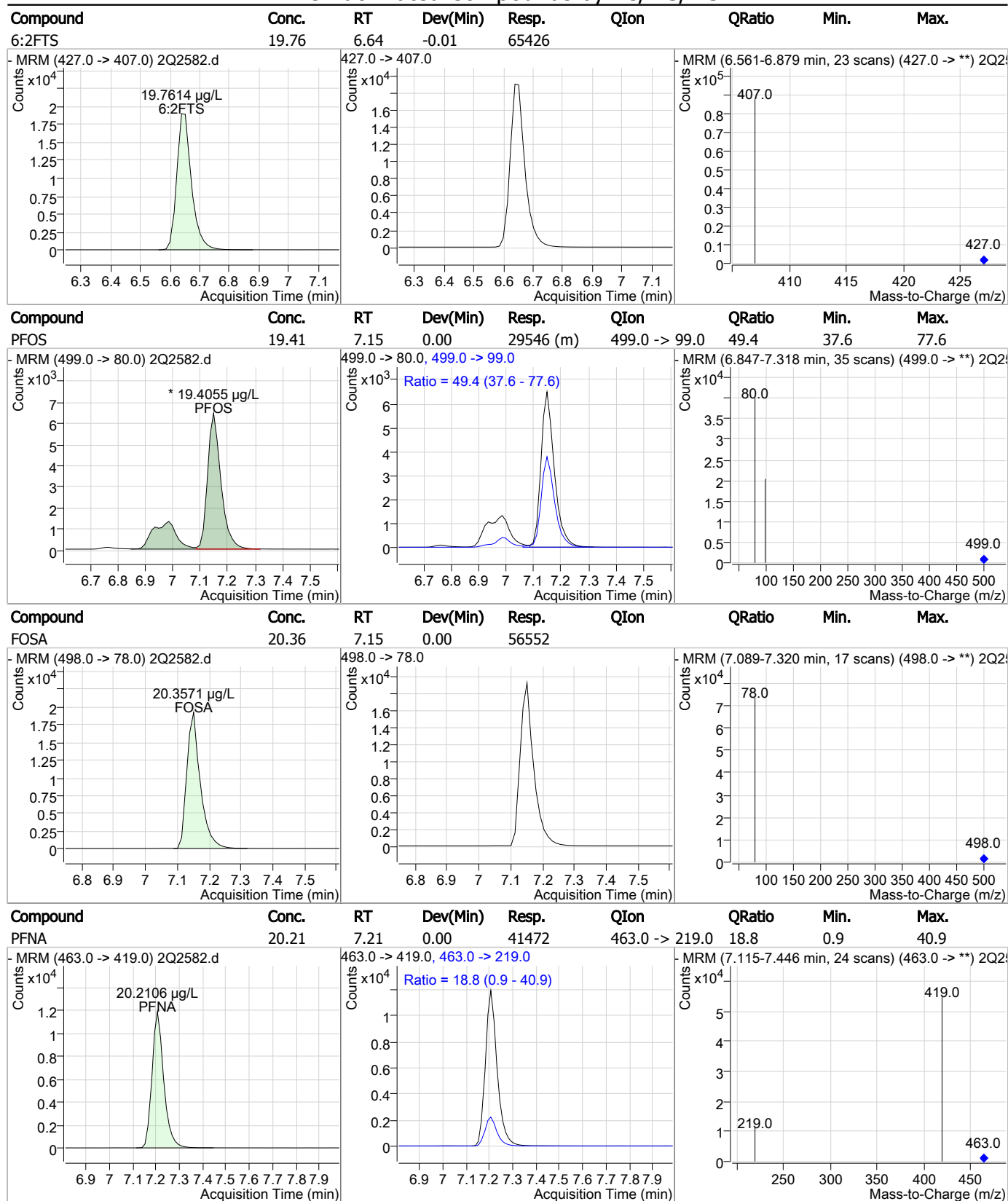
Perfluorinated Compounds by LC/MS/MS



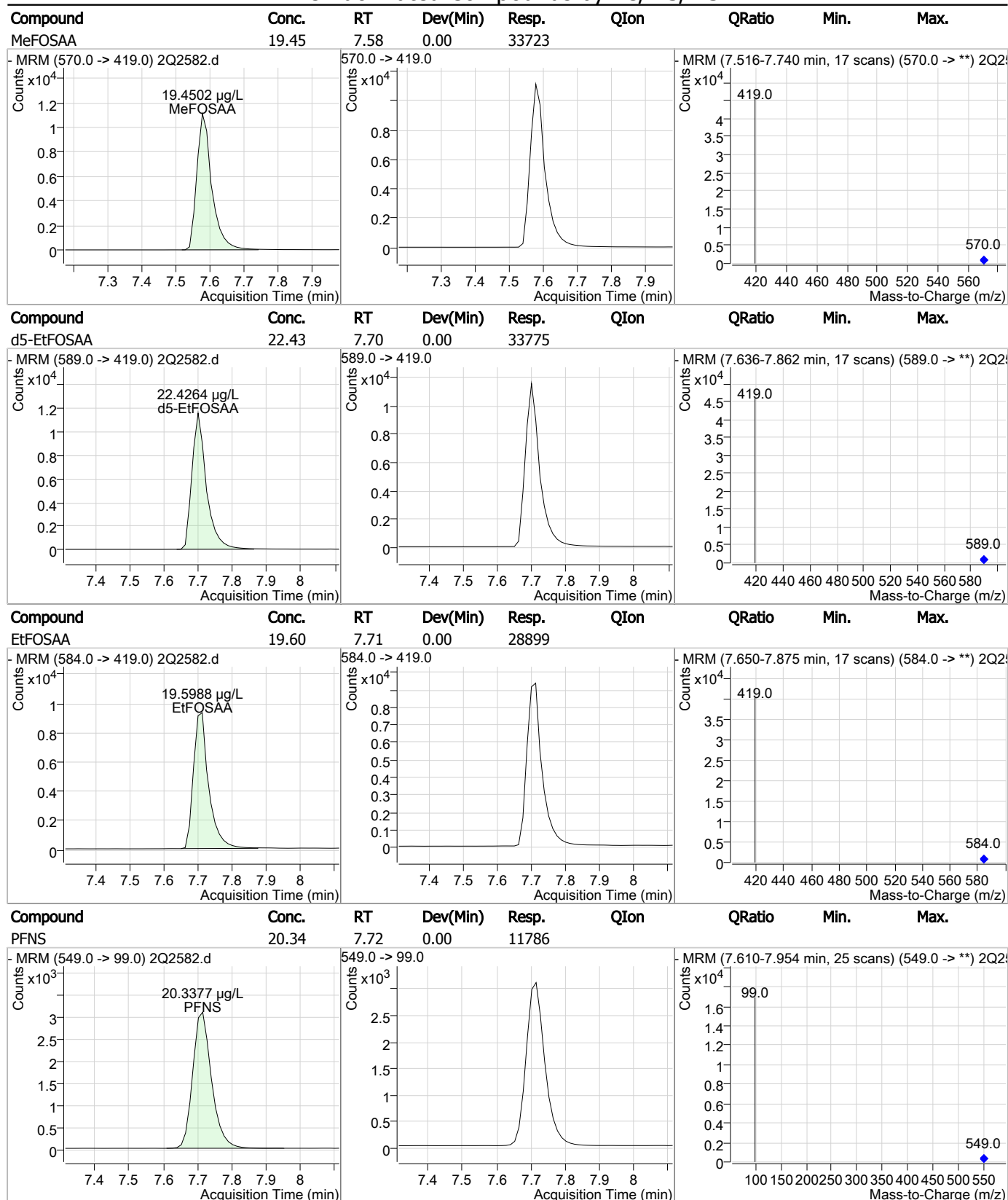
Perfluorinated Compounds by LC/MS/MS

7.55
7

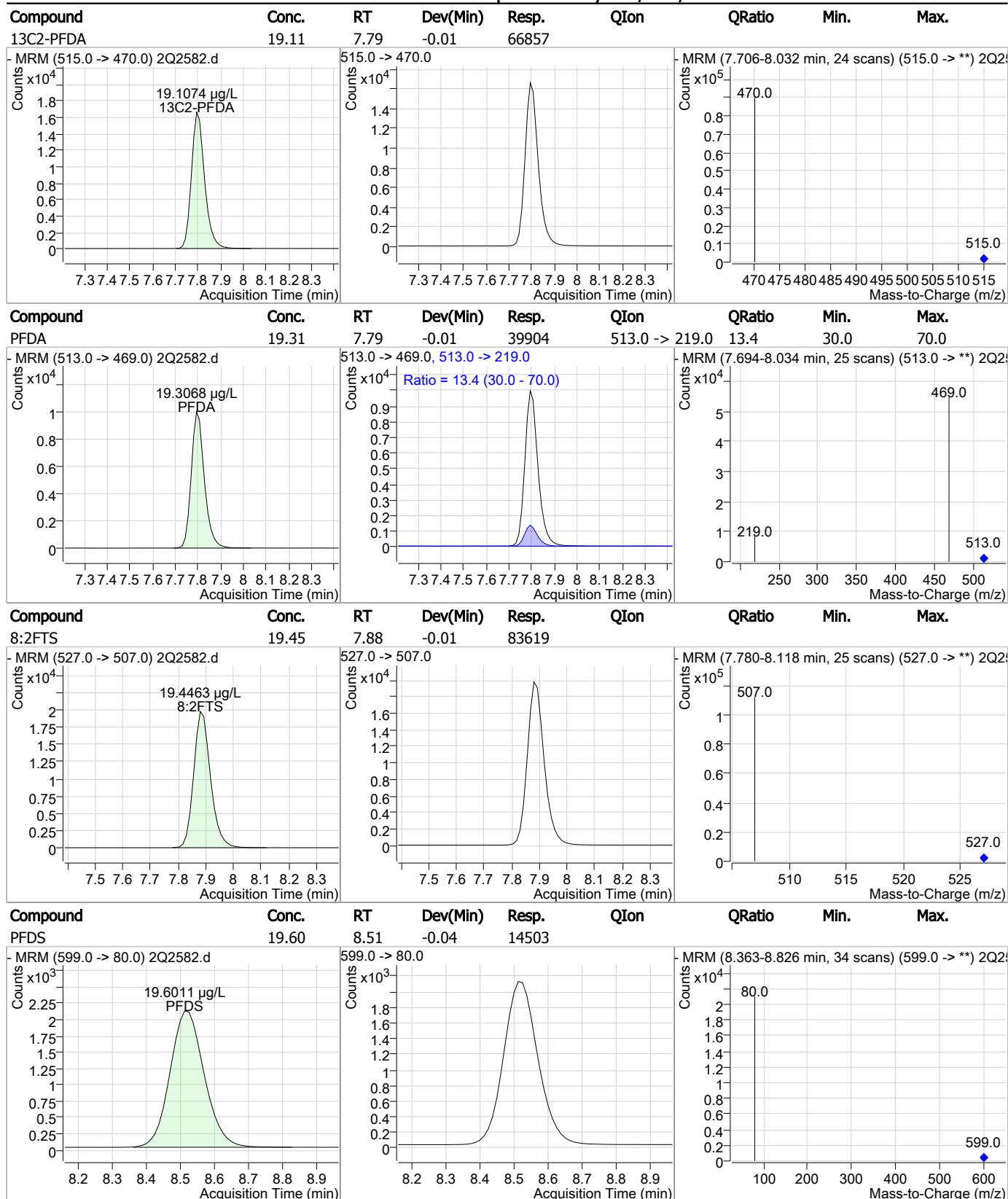
Perfluorinated Compounds by LC/MS/MS



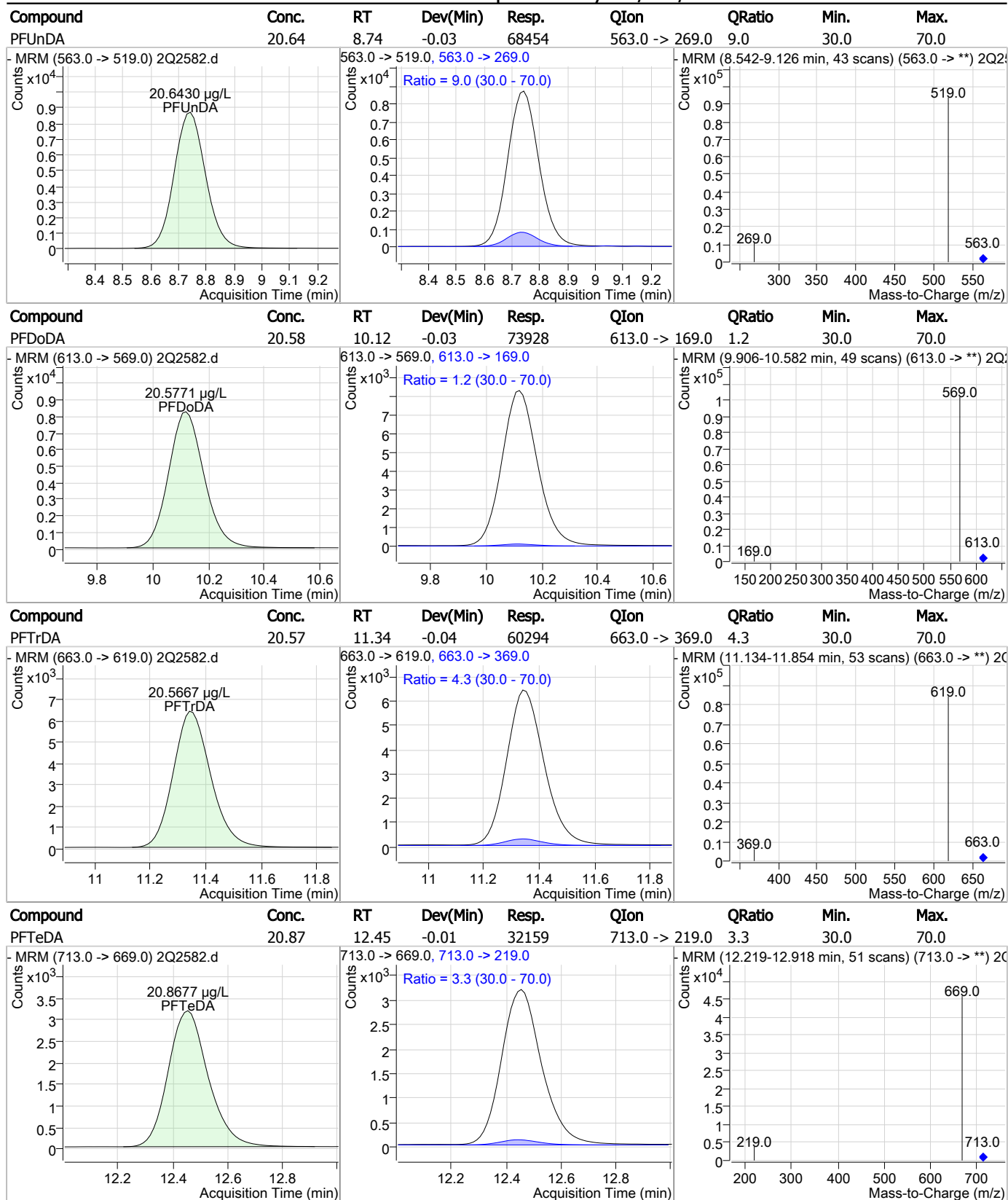
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q67-ICC67

Method: EPA 537 MOD

Lab FileID: 2Q2582.D

Analyst approved: 06/24/17 13:30 Nancy Saunders

Injection Time: 06/23/17 11:42

Supervisor approved: 06/26/17 08:56 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.15	Split peak

7.5.5.1
7

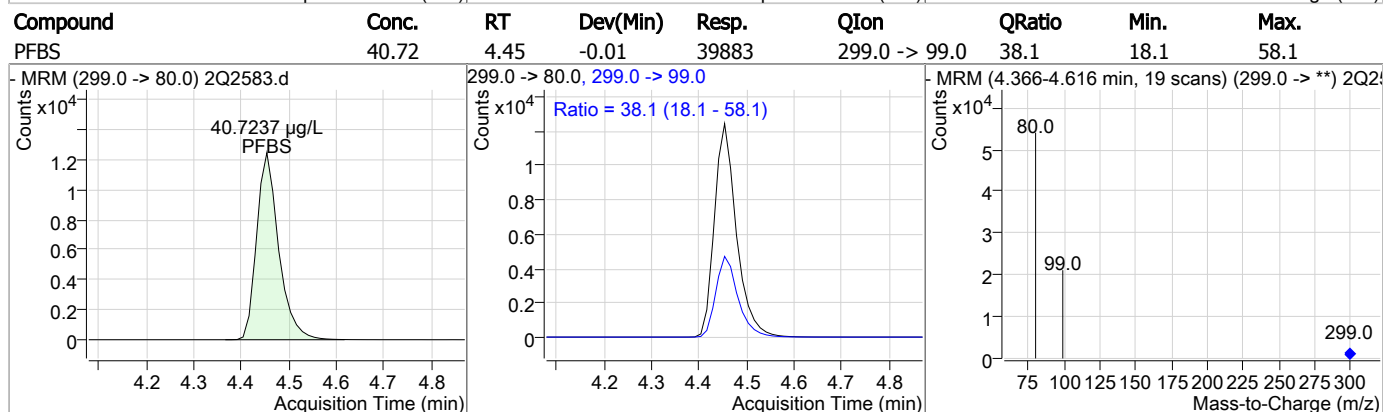
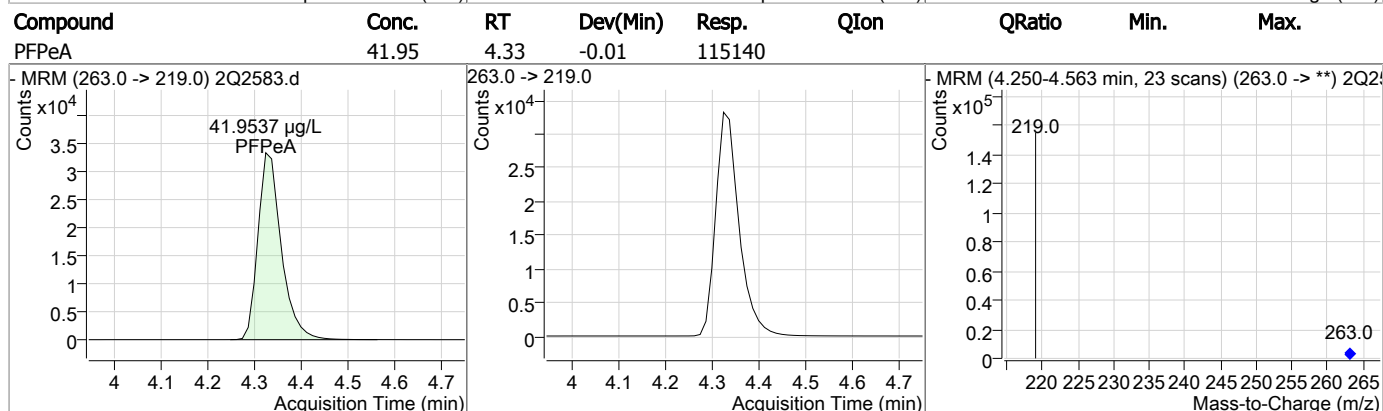
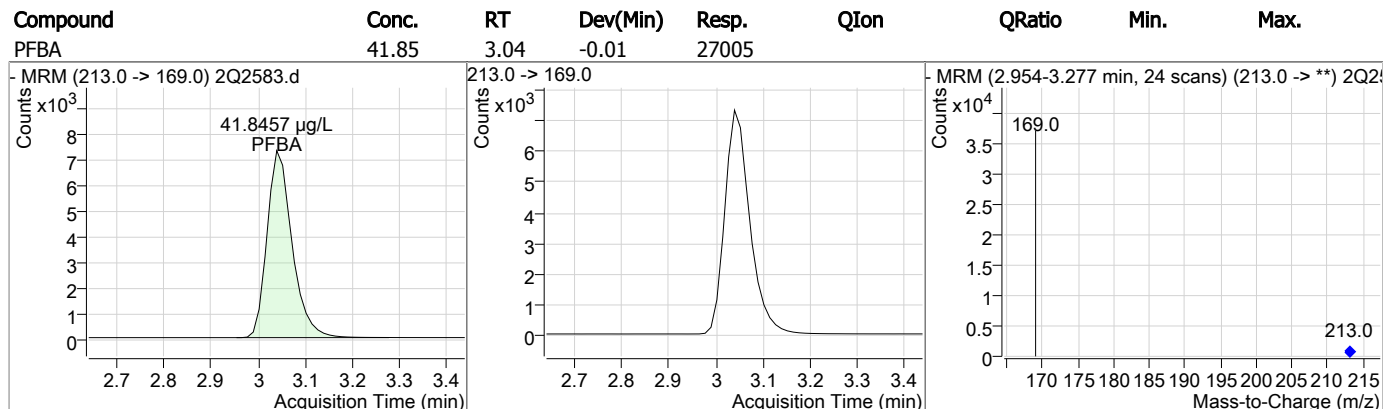
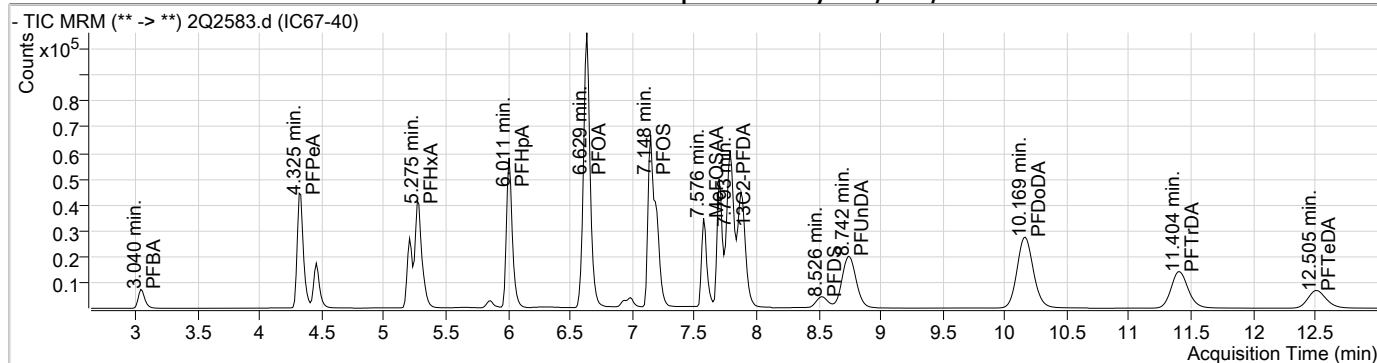
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2583.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/23/2017 11:59:56 AM
 Sample Name : IC67-40
 Vial : Vial 7
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q67.batch.bin
 Sample Information : OP65591,S2Q67,125,,,1.0,,water

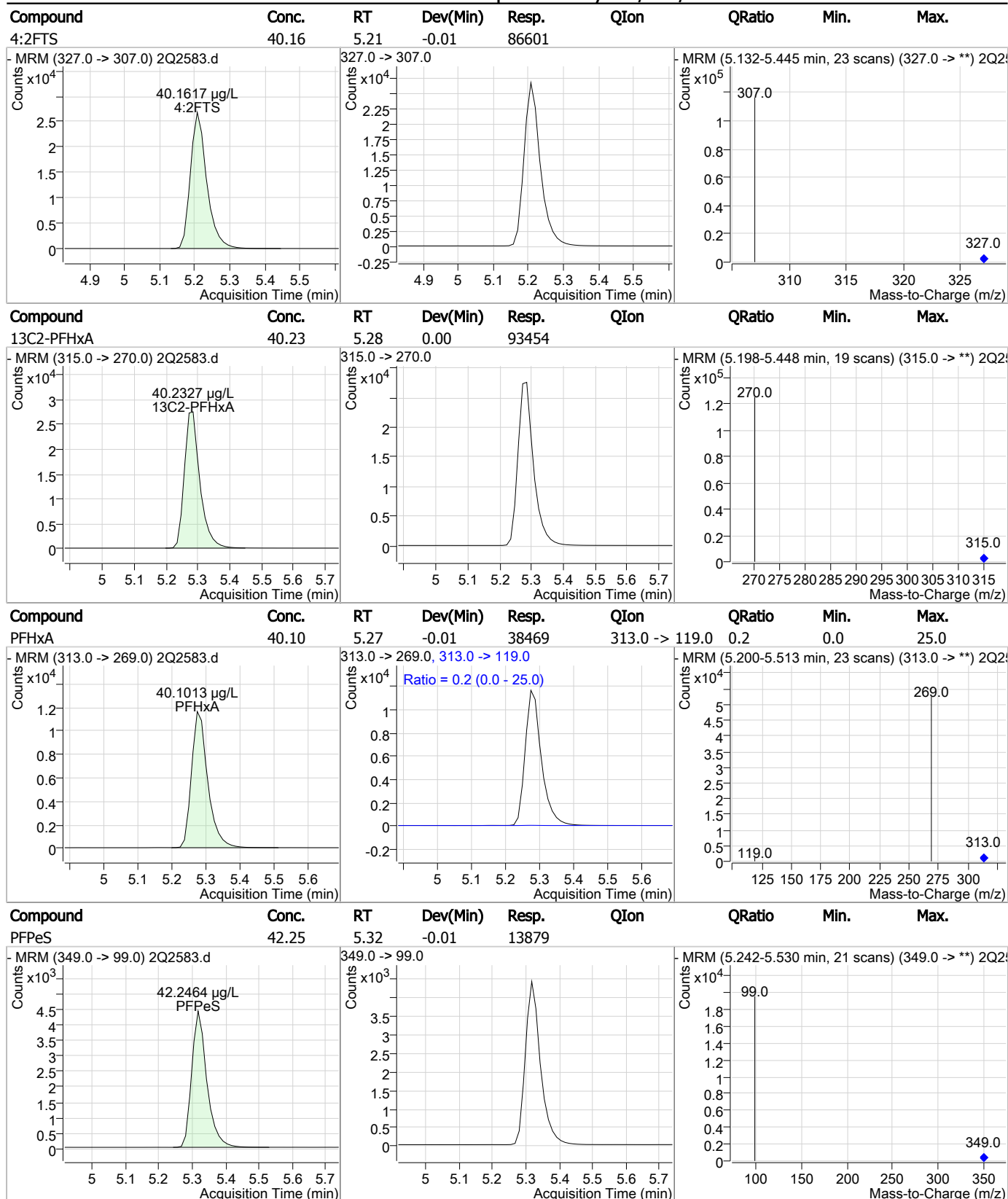
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.637	429.0 -> 409.0	72571	20.00	µg/L	-0.013
13C2-PFDoDA	10.165	615.0 -> 570.0	87855	20.00	µg/L	0.013
13C2-PFOA	6.640	415.0 -> 370.0	42798	20.00	µg/L	0.000
13C3-PFPeA	4.335	266.0 -> 222.0	39924	20.00	µg/L	0.000
13C4-PFOS	7.147	503.0 -> 80.0	26211	20.00	µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	32900	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	7.793	515.0 -> 470.0	141759	41.13	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 205.7%		
13C2-PFHxA	5.285	315.0 -> 270.0	93454	40.23	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 201.2%		
d5-EtFOSAA	7.699	589.0 -> 419.0	69865	44.28	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 221.4%		
Target Compounds						QValue
4:2FTS	5.207	327.0 -> 307.0	86601	40.16	µg/L	100
6:2FTS	6.638	427.0 -> 407.0	135722	40.33	µg/L	100
8:2FTS	7.880	527.0 -> 507.0	178747	40.42	µg/L	100
EtFOSAA	7.700	584.0 -> 419.0	59723	40.42	µg/L	100
FOSA	7.151	498.0 -> 78.0	109598	40.20	µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	71576	40.38	µg/L	100
PFBA	3.040	213.0 -> 169.0	27005	41.85	µg/L	100
PFBS	4.454	299.0 -> 80.0	39883	40.72	µg/L	100
PFDA	7.794	513.0 -> 469.0	82310	40.30	µg/L	# 47
PFDoDA	10.169	613.0 -> 569.0	160174	42.73	µg/L	# 29
PFDS	8.526	599.0 -> 80.0	30352	40.59	µg/L	100
PFHpA	6.011	363.0 -> 319.0	122669	42.07	µg/L	93
PFHpS	6.595	449.0 -> 80.0	48637	41.08	µg/L	100
PFHxA	5.275	313.0 -> 269.0	38469	40.10	µg/L	85
PFHxS	5.994	399.0 -> 80.0	48799	41.57	µg/L	m 89
PFNA	7.206	463.0 -> 419.0	87832	42.00	µg/L	96
PFNS	7.716	549.0 -> 99.0	24537	41.89	µg/L	100
PFOA	6.629	413.0 -> 369.0	69029	41.71	µg/L	94
PFOS	7.148	499.0 -> 80.0	60938	40.36	µg/L	m 90
PFPeA	4.325	263.0 -> 219.0	115140	41.95	µg/L	100
PFPeS	5.317	349.0 -> 99.0	13879	42.25	µg/L	100
PFTeDA	12.505	713.0 -> 669.0	67909	42.23	µg/L	# 32
PFTTrDA	11.404	663.0 -> 619.0	129783	42.43	µg/L	# 33
PFUnDA	8.742	563.0 -> 519.0	145834	42.15	µg/L	# 41

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

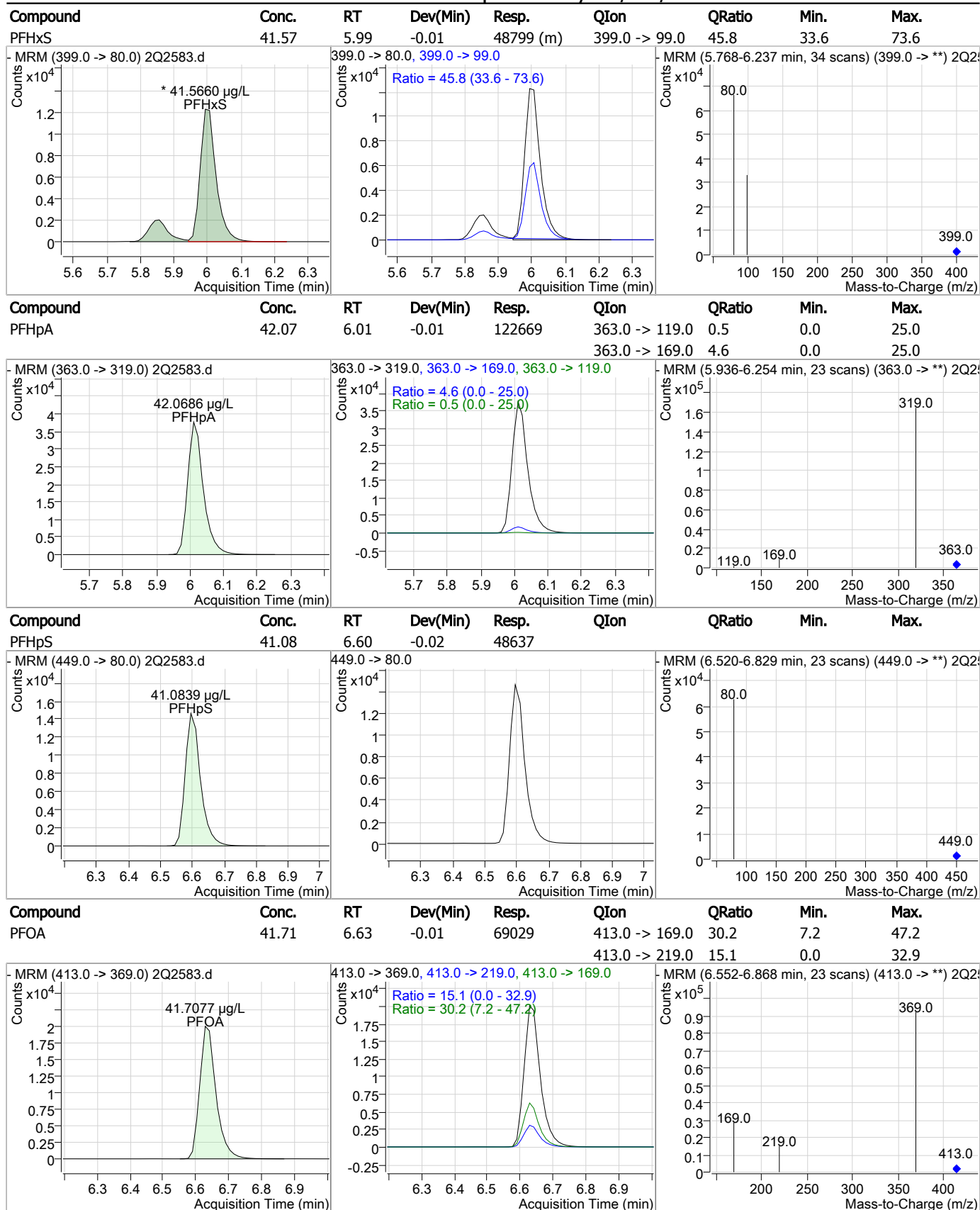
Perfluorinated Compounds by LC/MS/MS



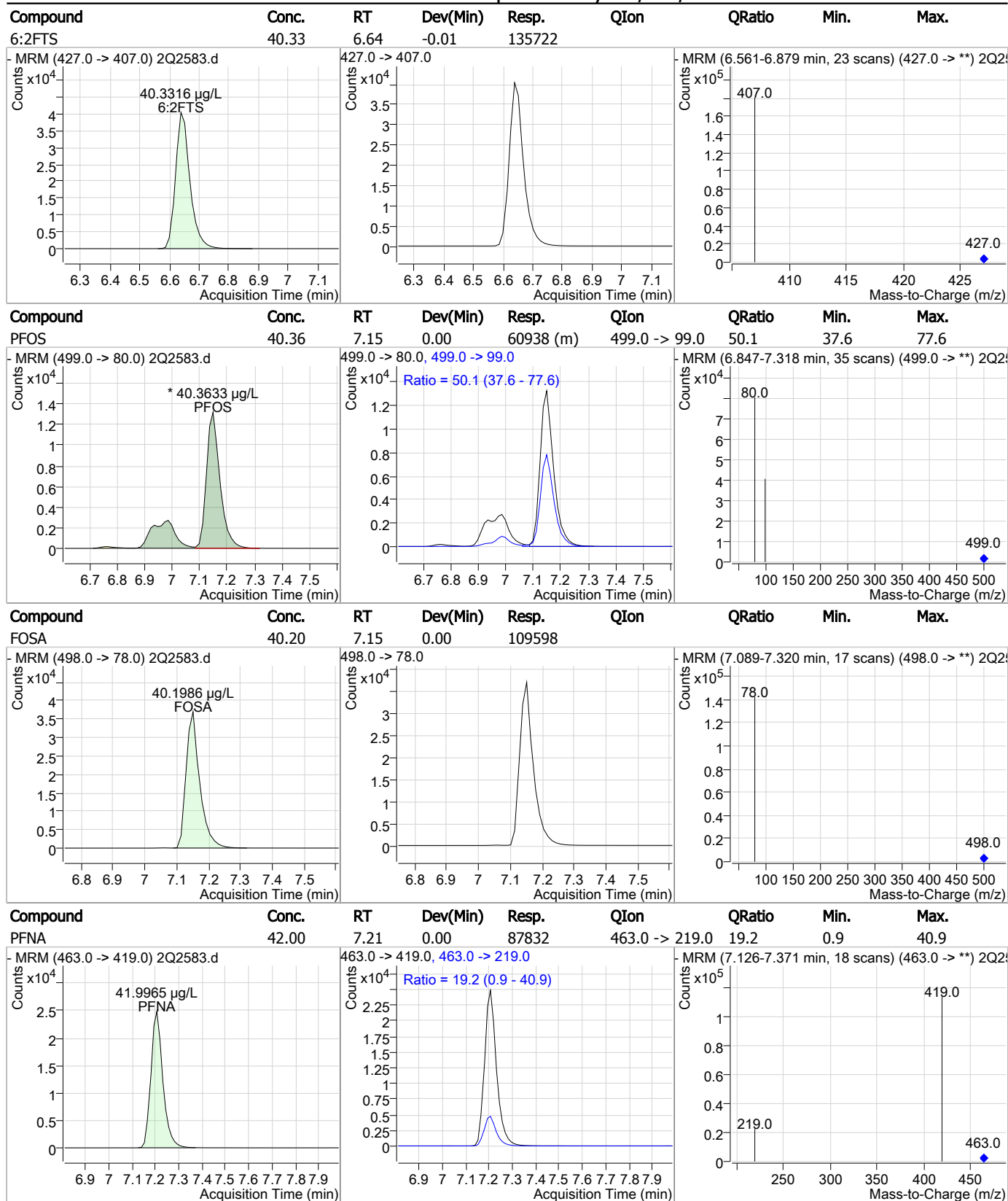
Perfluorinated Compounds by LC/MS/MS



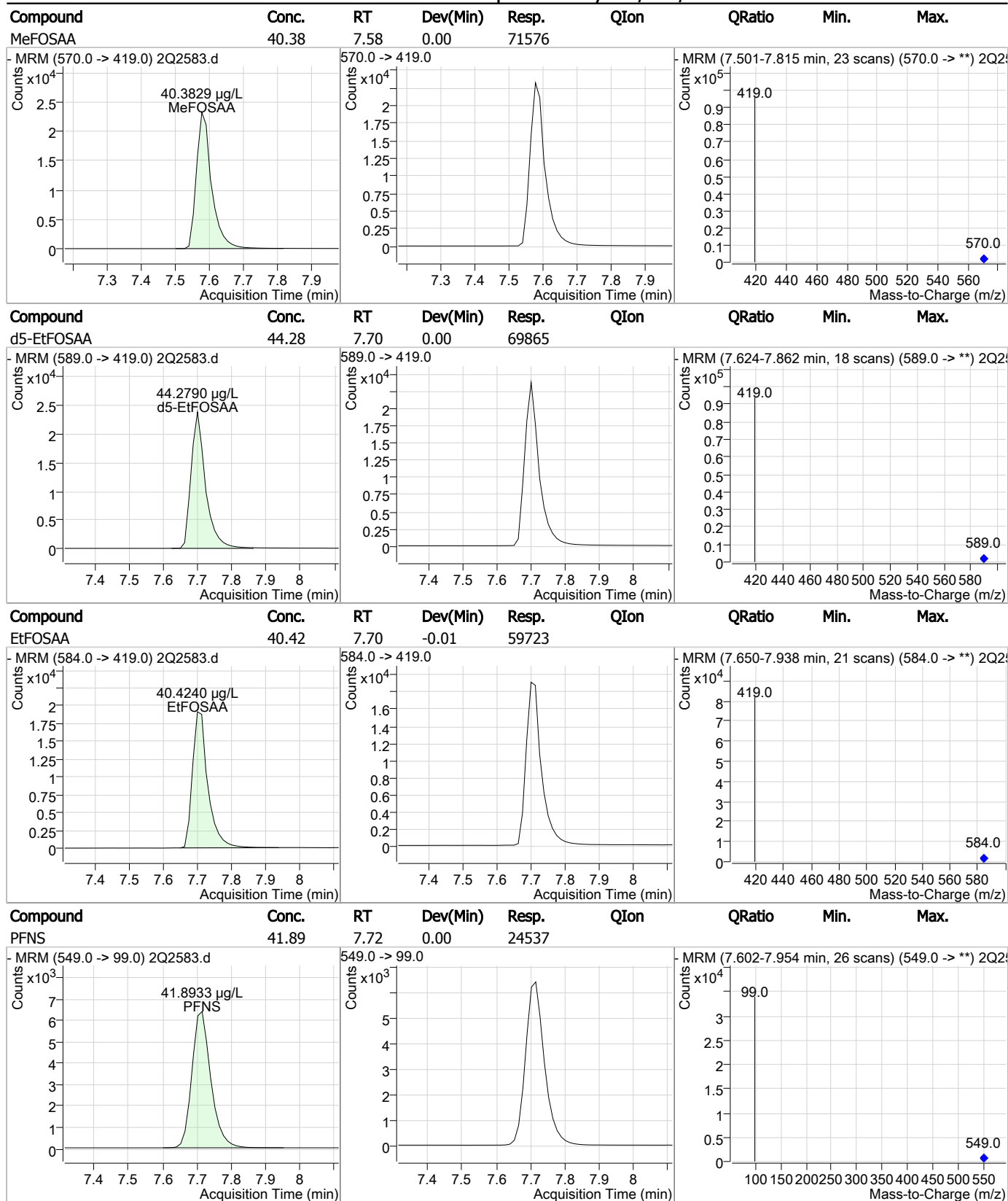
Perfluorinated Compounds by LC/MS/MS



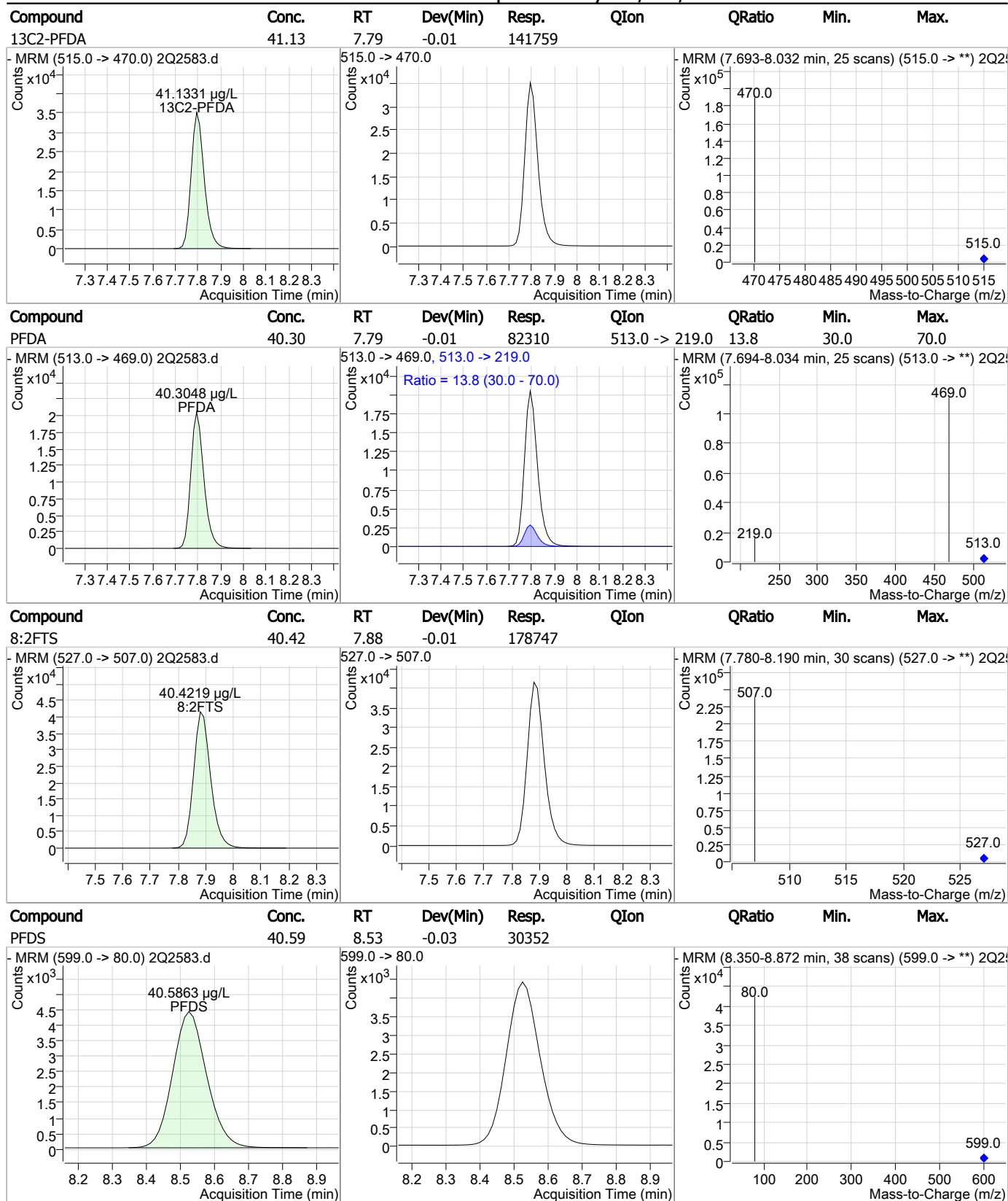
Perfluorinated Compounds by LC/MS/MS



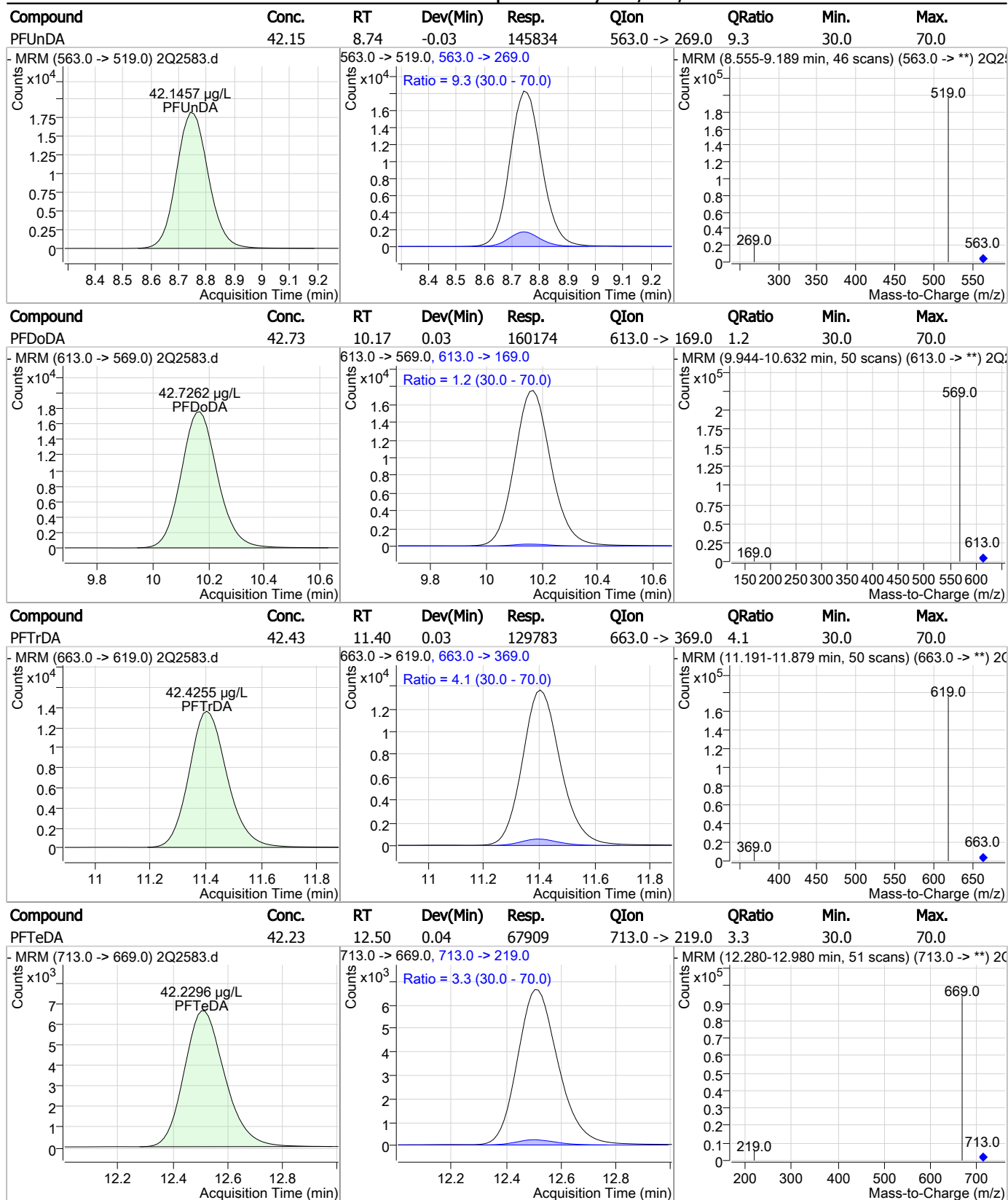
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q67-IC67

Method: EPA 537 MOD

Lab FileID: 2Q2583.D

Analyst approved: 06/24/17 13:30 Nancy Saunders

Injection Time: 06/23/17 11:59

Supervisor approved: 06/26/17 08:56 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.99	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.15	Split peak

7.5.6.1
7

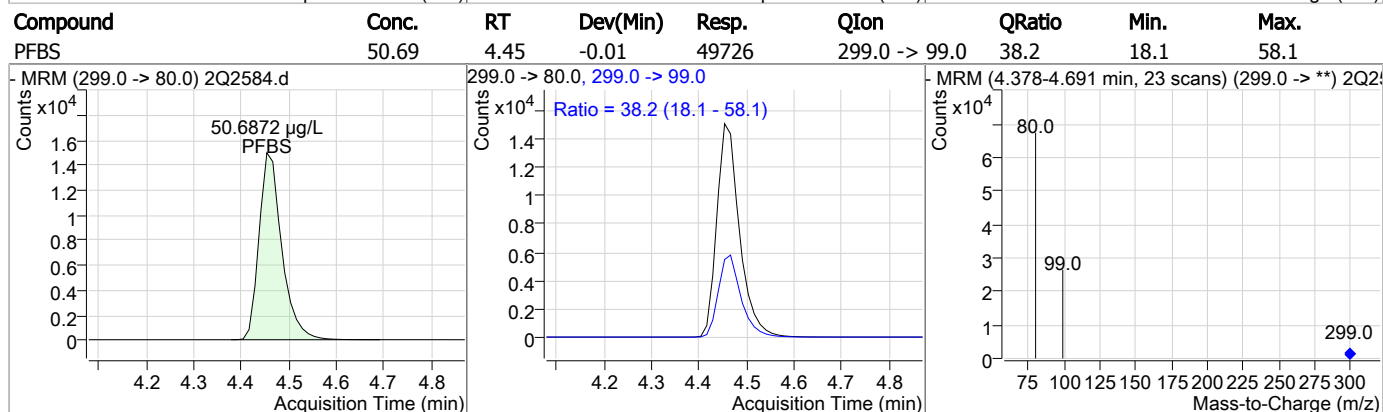
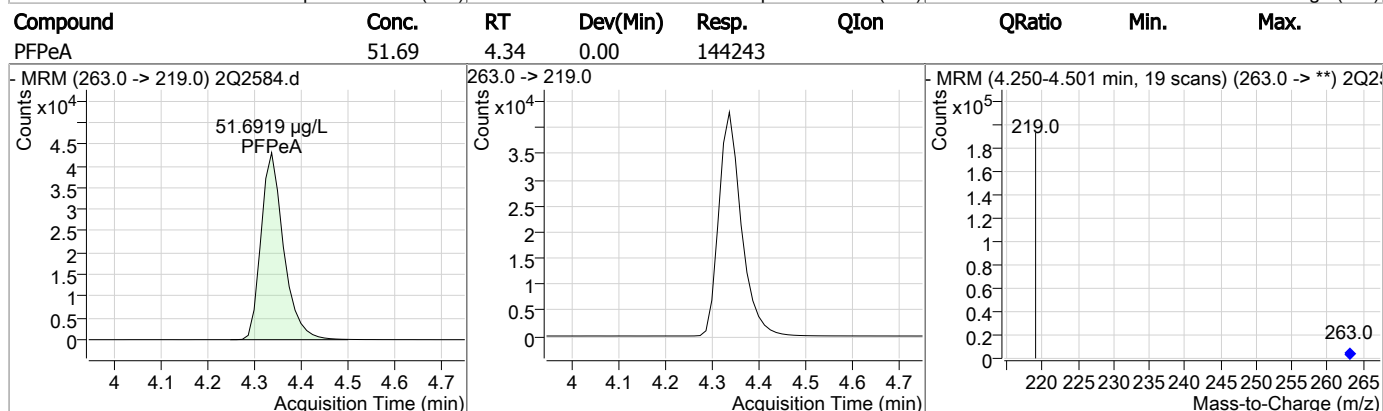
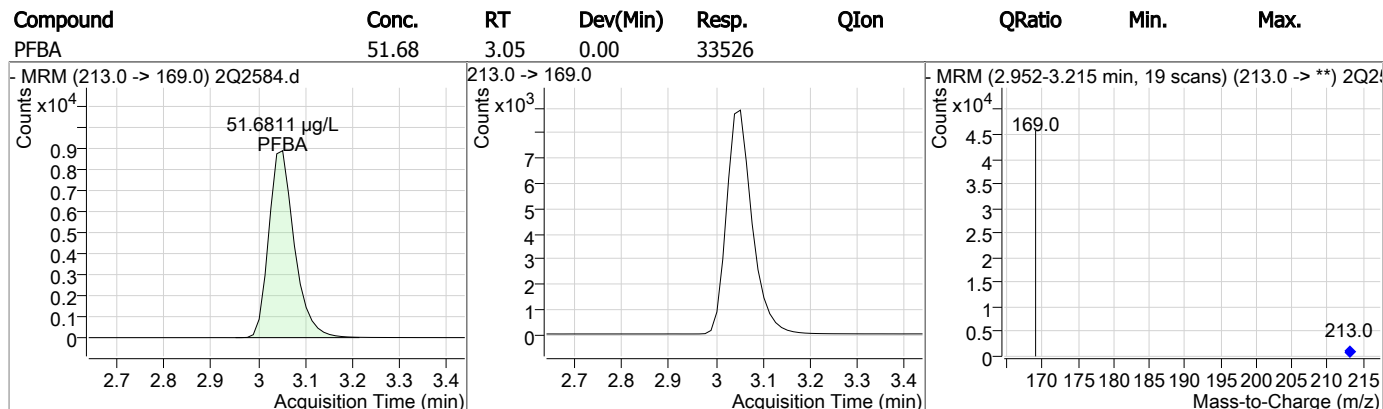
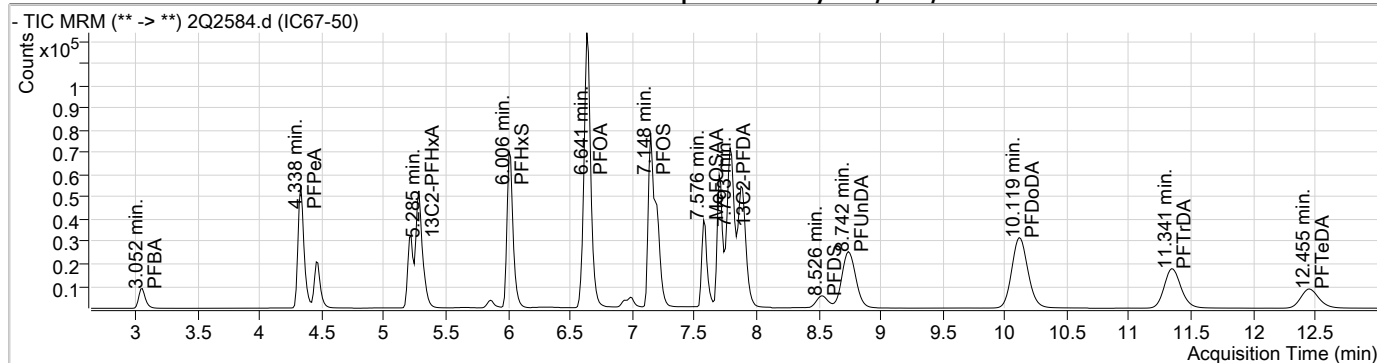
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2584.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/23/2017 12:17:46 PM
 Sample Name : IC67-50
 Vial : Vial 8
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q67.batch.bin
 Sample Information : OP65591,S2Q67,125,,,1.0,,water

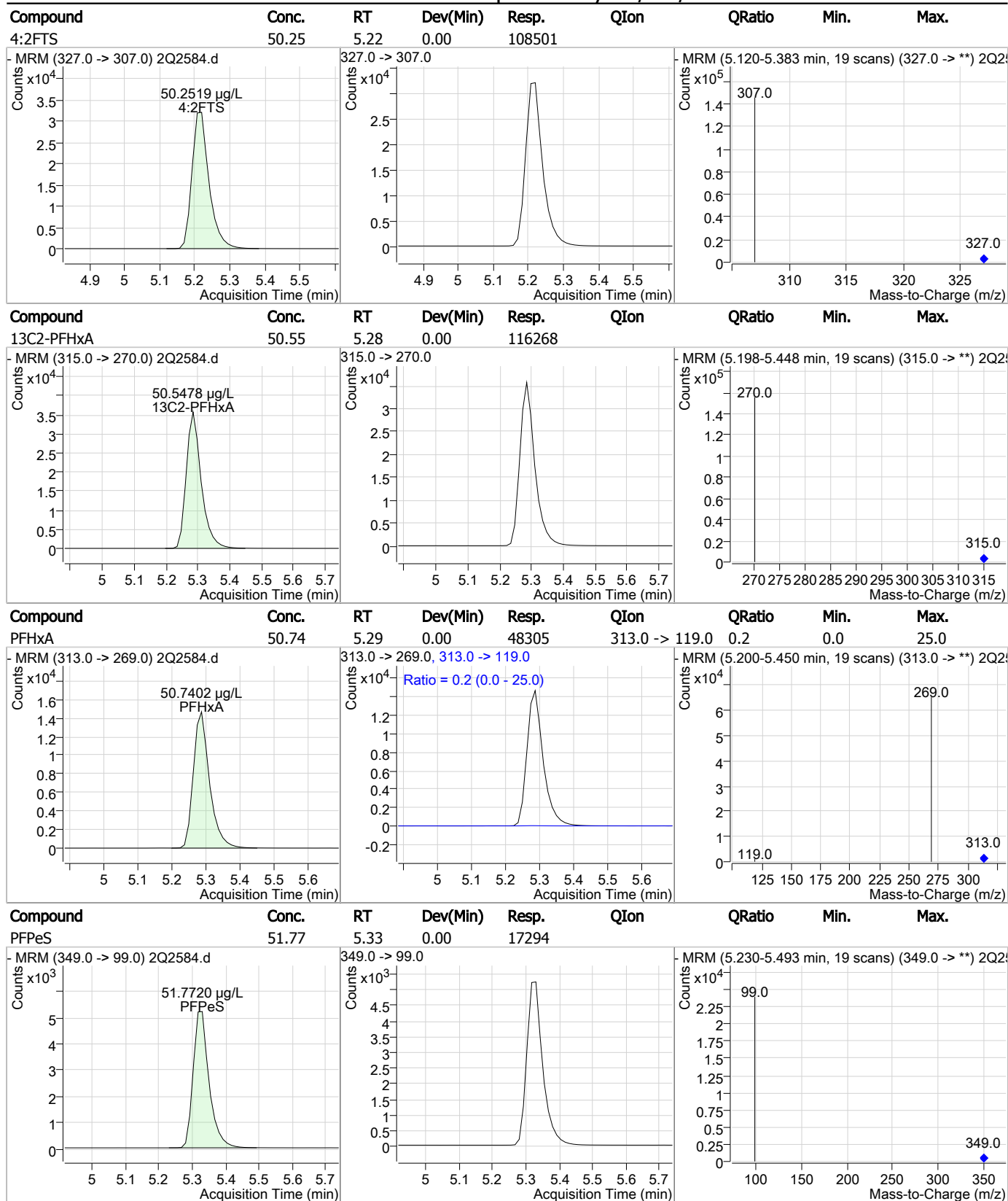
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.649	429.0 -> 409.0	74429	20.00	µg/L	0.000
13C2-PFDoDA	10.127	615.0 -> 570.0	89021	20.00	µg/L	-0.025
13C2-PFOA	6.640	415.0 -> 370.0	43021	20.00	µg/L	0.000
13C3-PFPeA	4.335	266.0 -> 222.0	40593	20.00	µg/L	0.000
13C4-PFOS	7.147	503.0 -> 80.0	26257	20.00	µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	33222	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	7.793	515.0 -> 470.0	169943	49.73	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 248.7%		
13C2-PFHxA	5.285	315.0 -> 270.0	116268	50.55	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 252.7%		
d5-EtFOSAA	7.699	589.0 -> 419.0	86033	54.00	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 270.0%		
Target Compounds						QValue
4:2FTS	5.220	327.0 -> 307.0	108501	50.25	µg/L	100
6:2FTS	6.651	427.0 -> 407.0	167905	50.01	µg/L	100
8:2FTS	7.892	527.0 -> 507.0	222499	50.11	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	73190	50.12	µg/L	100
FOSA	7.151	498.0 -> 78.0	132274	49.64	µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	89162	50.42	µg/L	100
PFBA	3.052	213.0 -> 169.0	33526	51.68	µg/L	100
PFBS	4.454	299.0 -> 80.0	49726	50.69	µg/L	100
PFDA	7.794	513.0 -> 469.0	102074	50.50	µg/L	# 47
PFDoDA	10.119	613.0 -> 569.0	194740	51.27	µg/L	# 29
PFDS	8.526	599.0 -> 80.0	37836	50.51	µg/L	100
PFHpA	6.024	363.0 -> 319.0	154786	52.81	µg/L	92
PFHpS	6.610	449.0 -> 80.0	61399	51.77	µg/L	100
PFHxA	5.287	313.0 -> 269.0	48305	50.74	µg/L	85
PFHxS	6.006	399.0 -> 80.0	60890	51.78	µg/L	m 92
PFNA	7.206	463.0 -> 419.0	106574	50.69	µg/L	96
PFNS	7.716	549.0 -> 99.0	30357	51.74	µg/L	100
PFOA	6.641	413.0 -> 369.0	86826	52.19	µg/L	95
PFOS	7.148	499.0 -> 80.0	75126	50.12	µg/L	m 90
PFPeA	4.338	263.0 -> 219.0	144243	51.69	µg/L	100
PFPeS	5.330	349.0 -> 99.0	17294	51.77	µg/L	100
PFTeDA	12.455	713.0 -> 669.0	84976	52.15	µg/L	# 32
PFTTrDA	11.341	663.0 -> 619.0	159012	51.30	µg/L	# 34
PFUnDA	8.742	563.0 -> 519.0	182145	51.95	µg/L	# 41

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

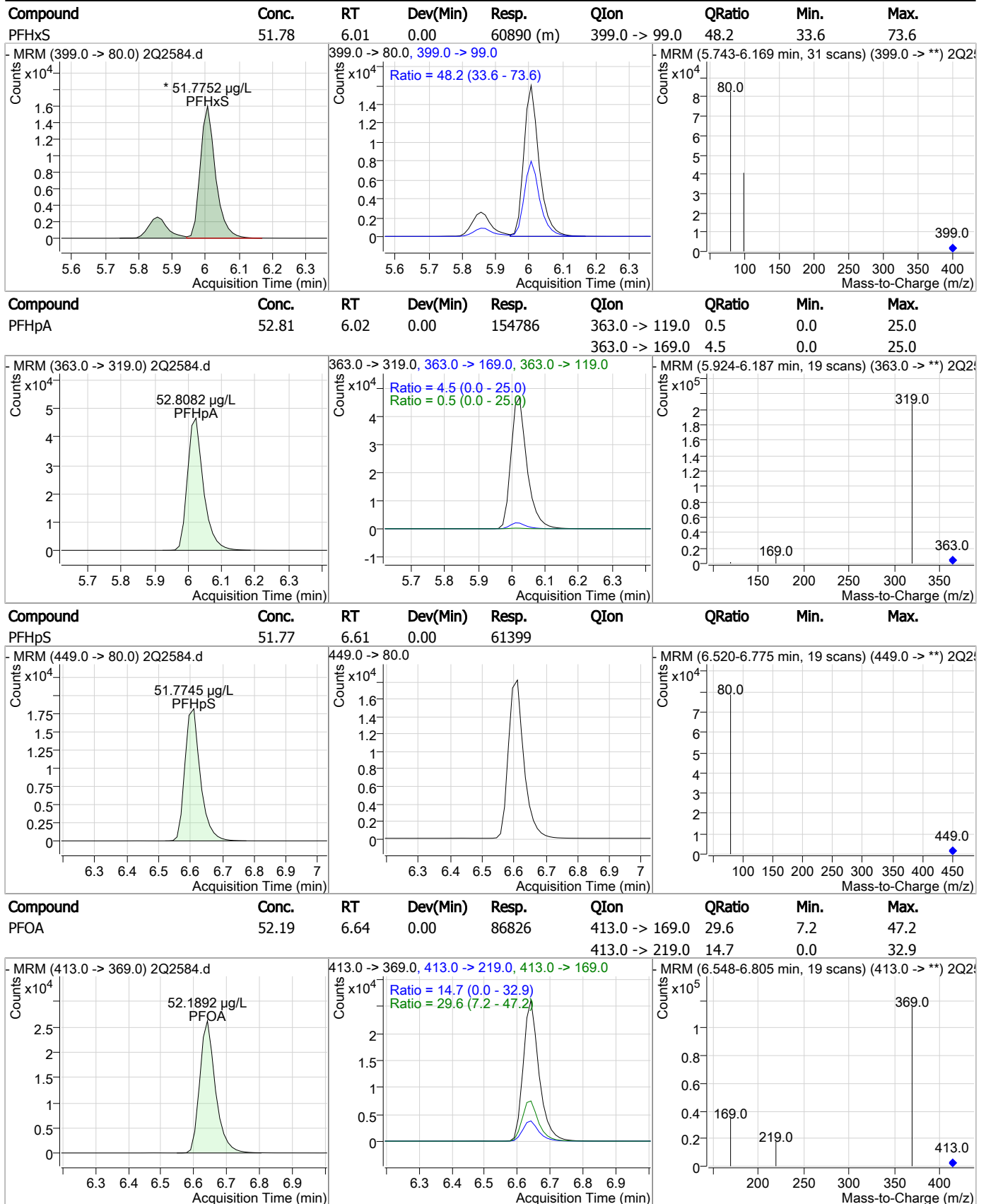
Perfluorinated Compounds by LC/MS/MS



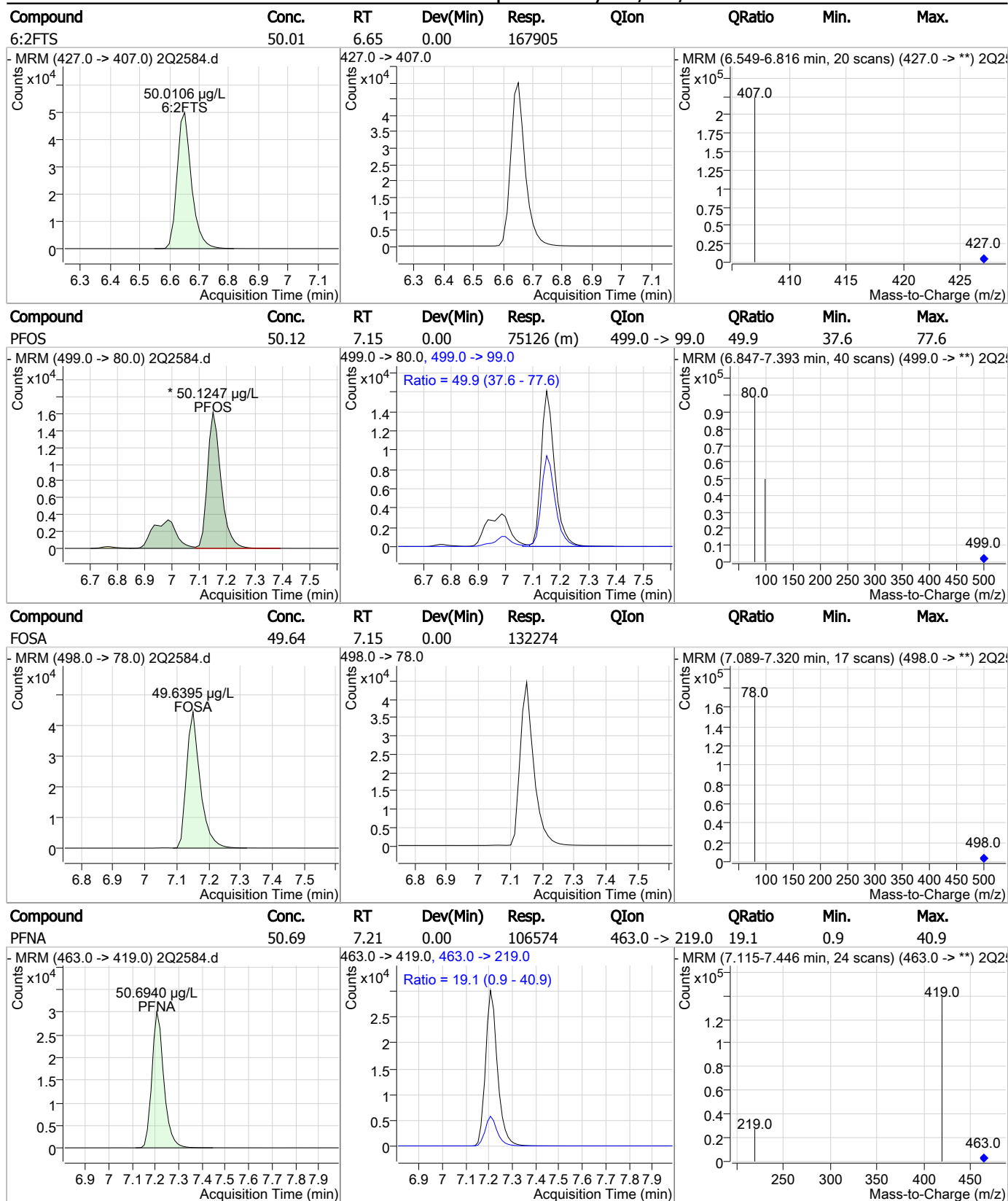
Perfluorinated Compounds by LC/MS/MS



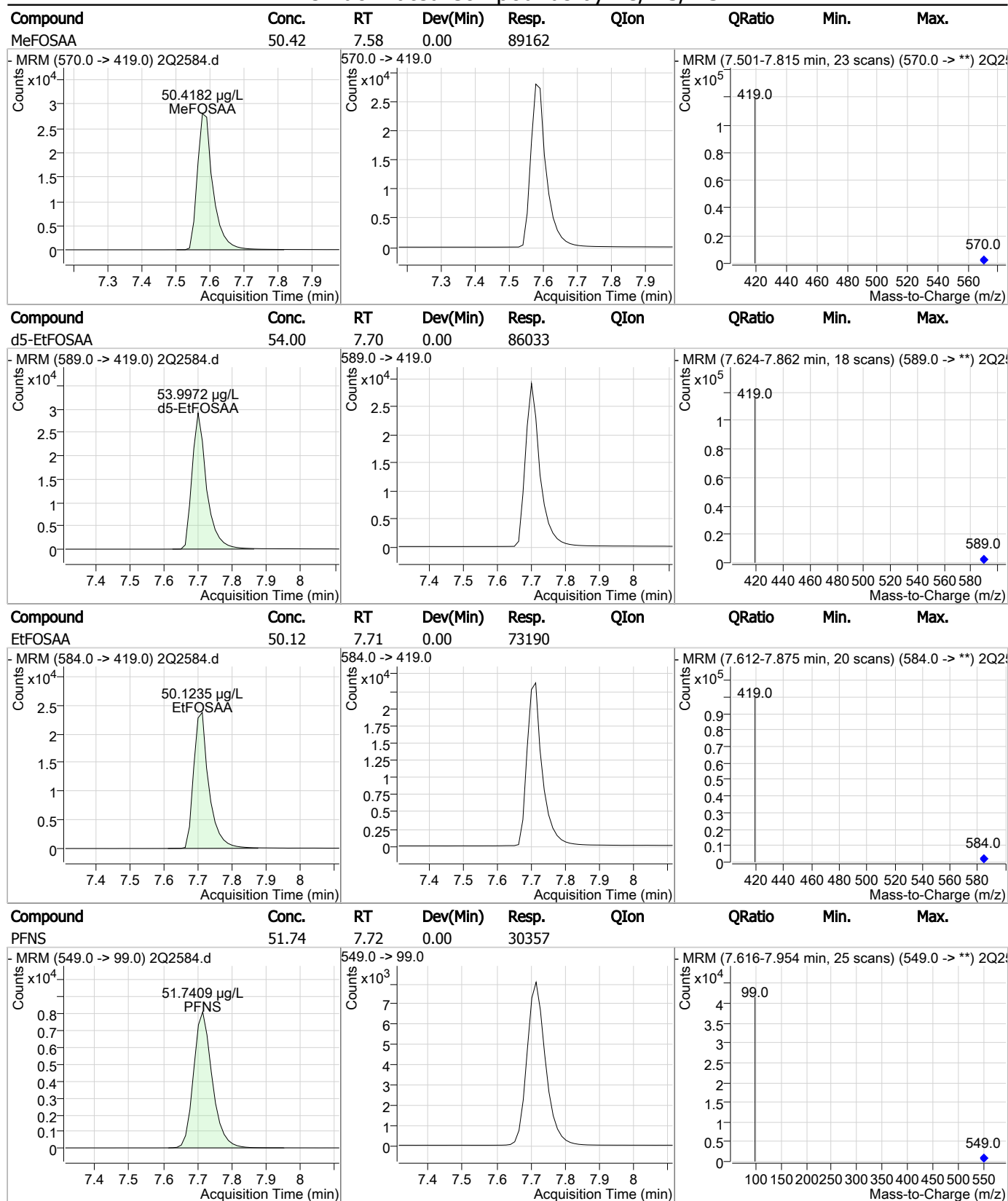
Perfluorinated Compounds by LC/MS/MS



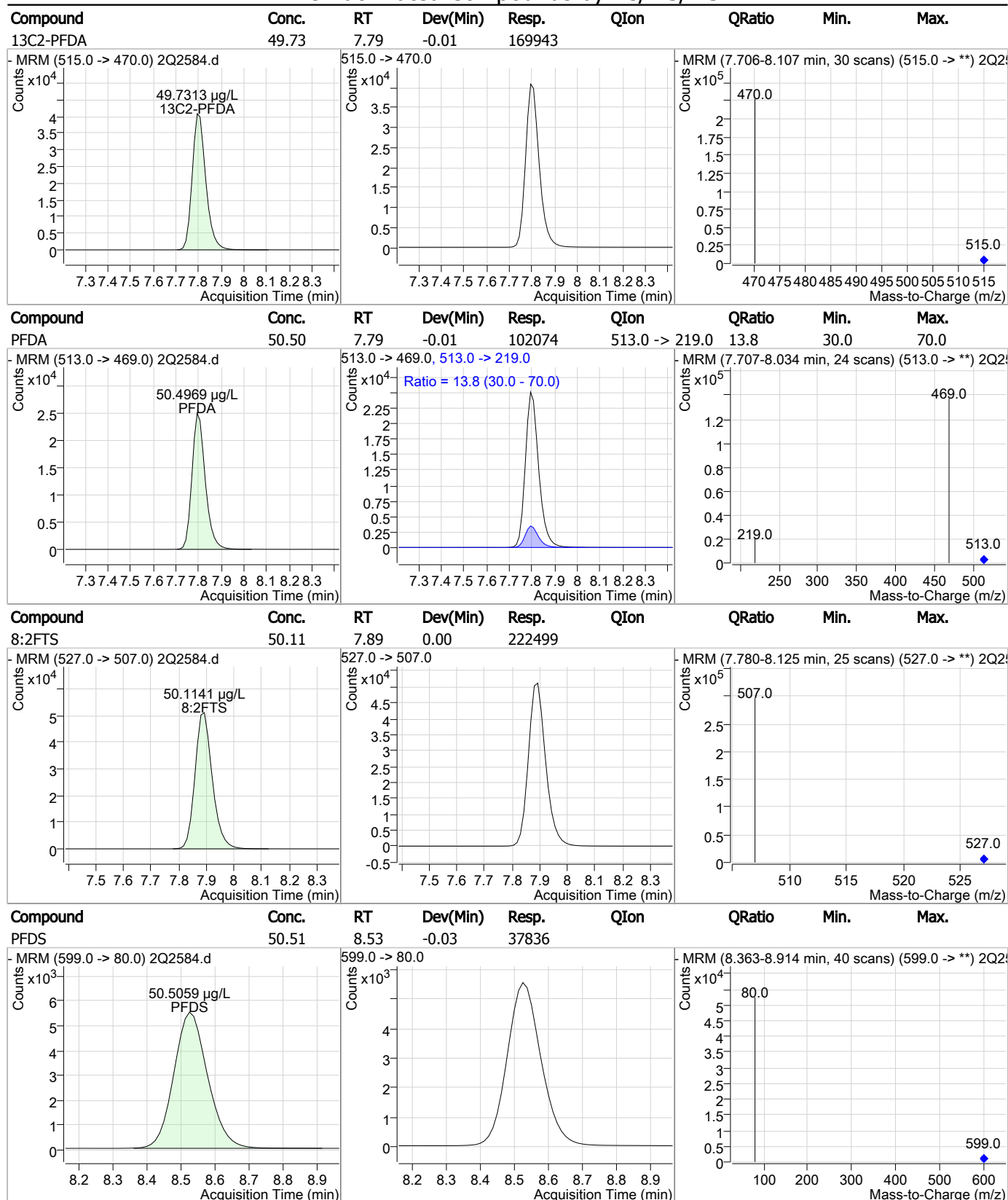
Perfluorinated Compounds by LC/MS/MS



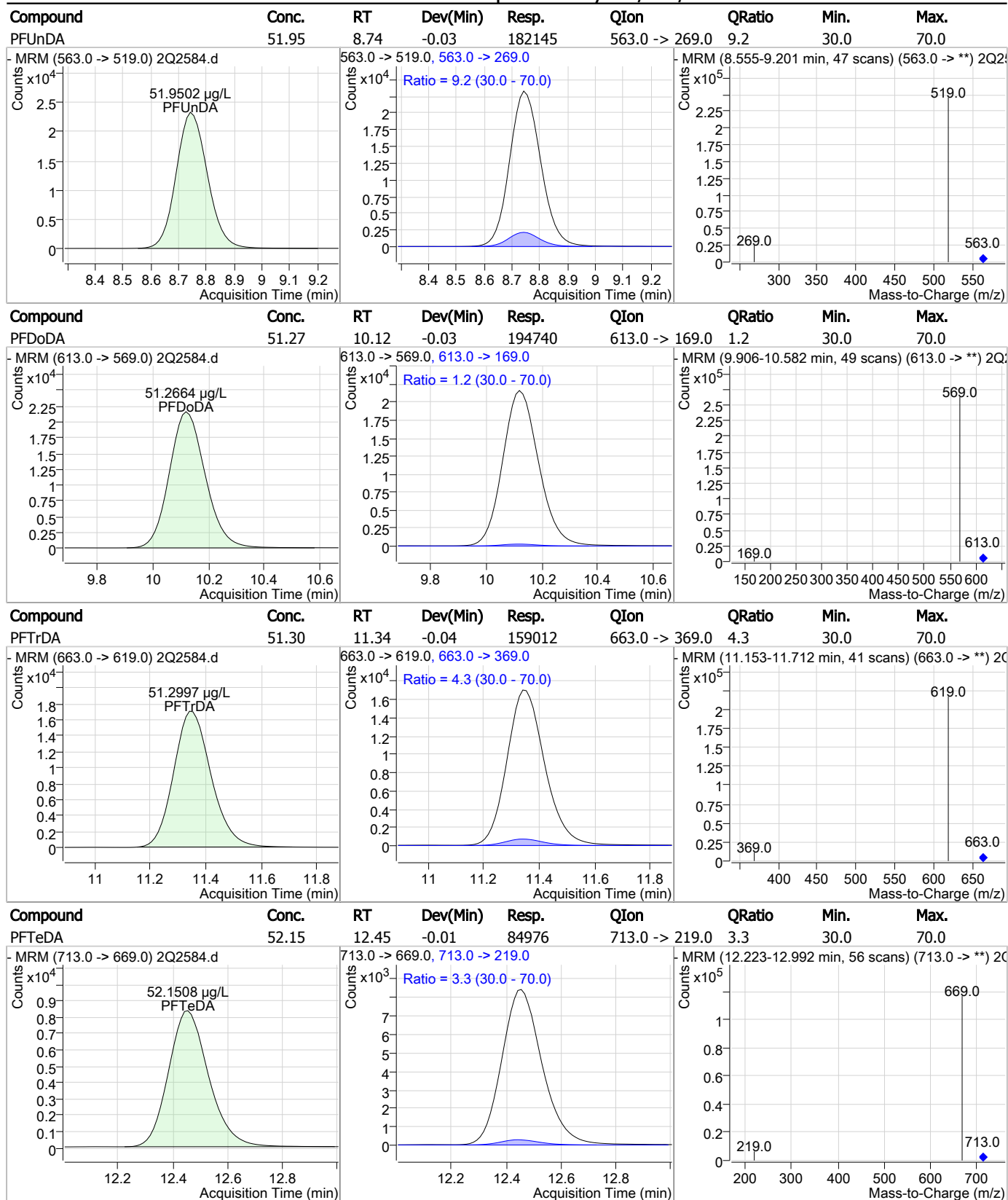
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q67-IC67

Method: EPA 537 MOD

Lab FileID: 2Q2584.D

Analyst approved: 06/24/17 13:30 Nancy Saunders

Injection Time: 06/23/17 12:17

Supervisor approved: 06/26/17 08:56 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.15	Split peak

7.5.7.1
7

Manual Integrations
APPROVED
(compounds with "m" flag)

Mike Eger
06/26/17 08:56

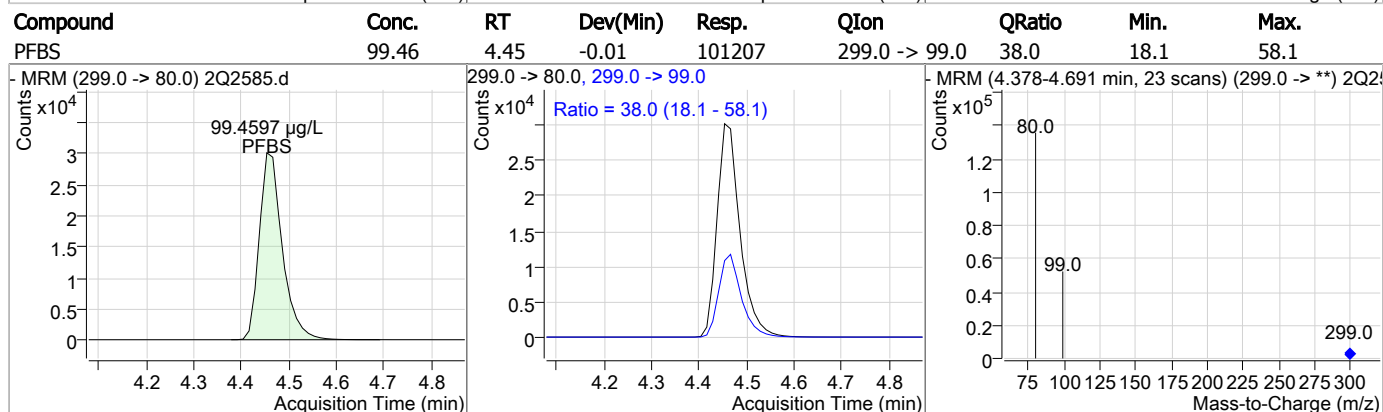
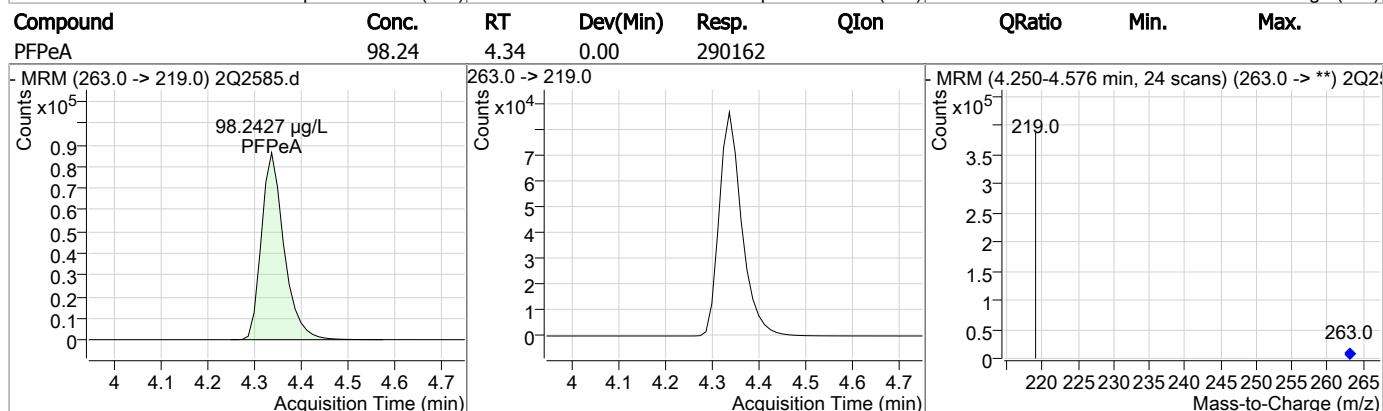
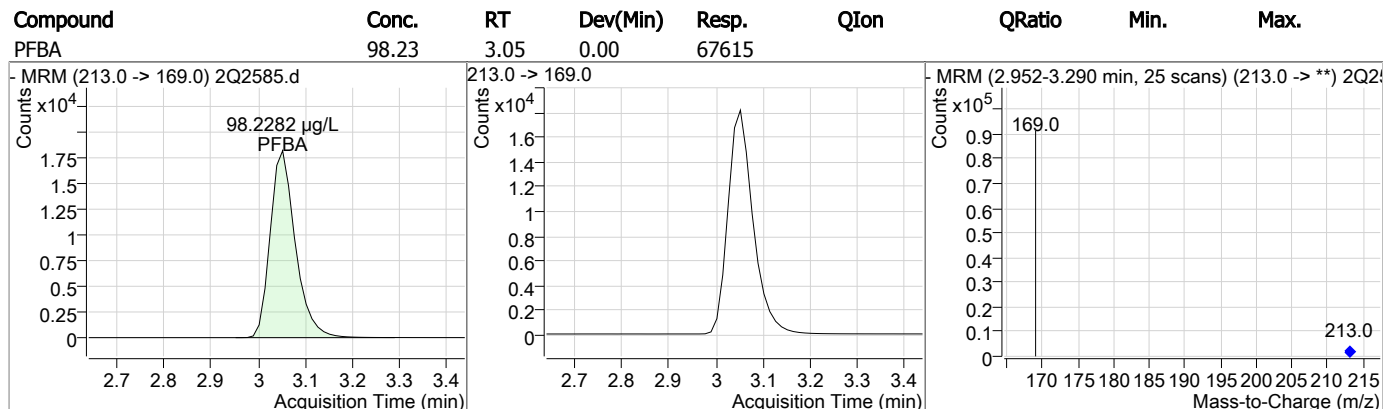
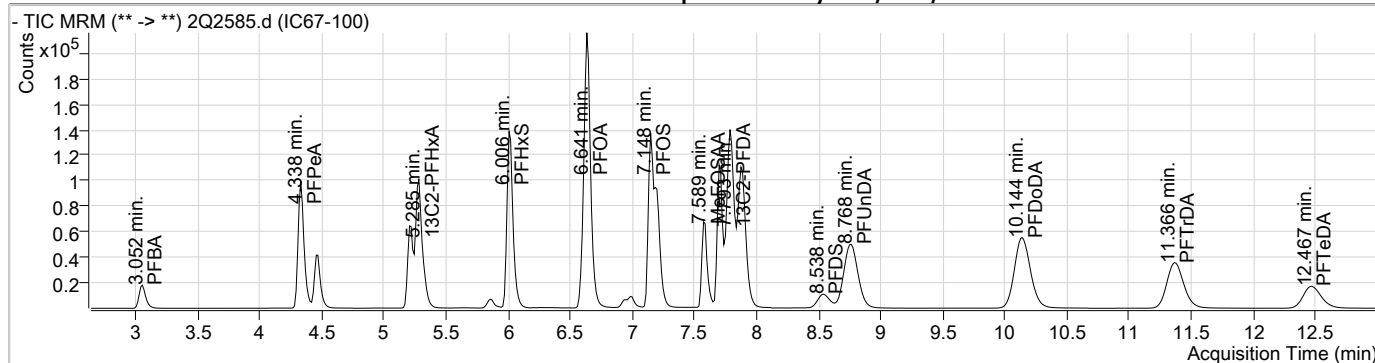
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2585.d
Operator : NANCYF
Acq. Method : 537_LIST.m
Acq. Date-Time : 6/23/2017 12:35:36 PM
Sample Name : IC67-100
Vial : Vial 9
DA Method File : PFC_0623_S2Q67.quantmethod.xml
Batch Name : S2Q67.batch.bin
Sample Information : OP65591,S2Q67,125,,,1.0,,water

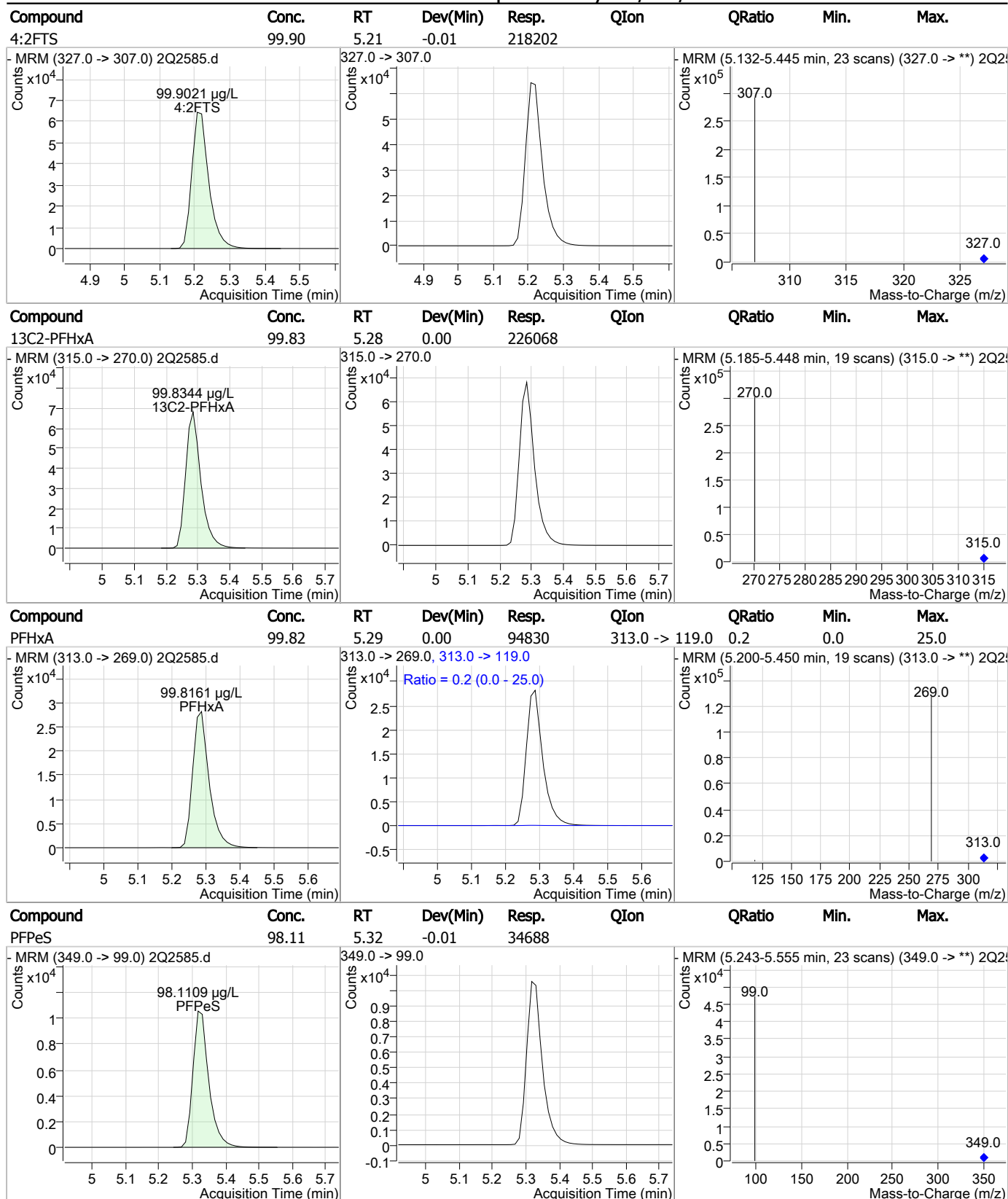
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.649	429.0 -> 409.0	85495	20.00	µg/L	0.000
13C2-PFDoDA	10.140	615.0 -> 570.0	95294	20.00	µg/L	-0.013
13C2-PFOA	6.640	415.0 -> 370.0	45650	20.00	µg/L	0.000
13C3-PFPeA	4.335	266.0 -> 222.0	42965	20.00	µg/L	0.000
13C4-PFOS	7.147	503.0 -> 80.0	27234	20.00	µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	35522	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	7.793	515.0 -> 470.0	333157	99.91	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 499.5%		
13C2-PFHxA	5.285	315.0 -> 270.0	226068	99.83	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 499.2%		
d5-EtFOSAA	7.699	589.0 -> 419.0	162938	95.64	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 478.2%		
Target Compounds						QValue
4:2FTS	5.207	327.0 -> 307.0	218202	99.90	µg/L	100
6:2FTS	6.651	427.0 -> 407.0	329797	99.93	µg/L	100
8:2FTS	7.880	527.0 -> 507.0	453291	99.91	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	138591	99.90	µg/L	100
FOSA	7.151	498.0 -> 78.0	234579	100.07	µg/L	100
MeFOSAA	7.589	570.0 -> 419.0	177583	99.85	µg/L	100
PFBA	3.052	213.0 -> 169.0	67615	98.23	µg/L	100
PFBS	4.454	299.0 -> 80.0	101207	99.46	µg/L	100
PFDA	7.794	513.0 -> 469.0	198034	99.84	µg/L	# 48
PFDoDA	10.144	613.0 -> 569.0	399031	98.13	µg/L	# 29
PFDS	8.538	599.0 -> 80.0	77425	99.64	µg/L	100
PFHpA	6.024	363.0 -> 319.0	303460	97.57	µg/L	93
PFHpS	6.610	449.0 -> 80.0	121404	98.70	µg/L	100
PFHxA	5.287	313.0 -> 269.0	94830	99.82	µg/L	85
PFHxS	6.006	399.0 -> 80.0	120117	98.47	µg/L	m 93
PFNA	7.206	463.0 -> 419.0	220374	98.79	µg/L	96
PFNS	7.716	549.0 -> 99.0	59810	98.28	µg/L	100
PFOA	6.641	413.0 -> 369.0	173014	98.01	µg/L	95
PFOS	7.148	499.0 -> 80.0	148177	99.93	µg/L	m 89
PFPeA	4.338	263.0 -> 219.0	290162	98.24	µg/L	100
PFPeS	5.317	349.0 -> 99.0	34688	98.11	µg/L	100
PFTeDA	12.467	713.0 -> 669.0	170561	97.78	µg/L	# 32
PFTTrDA	11.366	663.0 -> 619.0	325996	98.25	µg/L	# 34
PFUnDA	8.768	563.0 -> 519.0	367847	98.01	µg/L	# 41

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

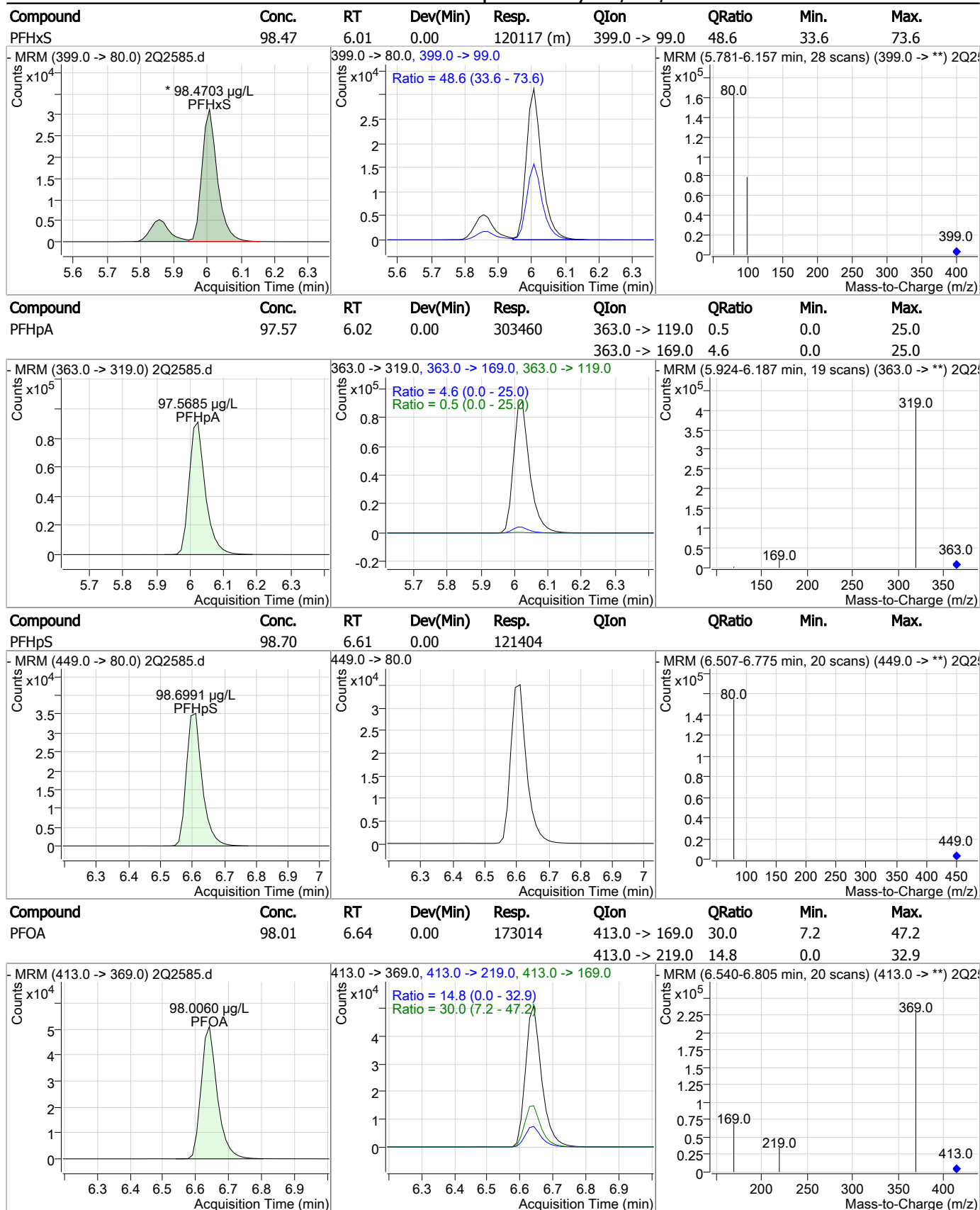
Perfluorinated Compounds by LC/MS/MS



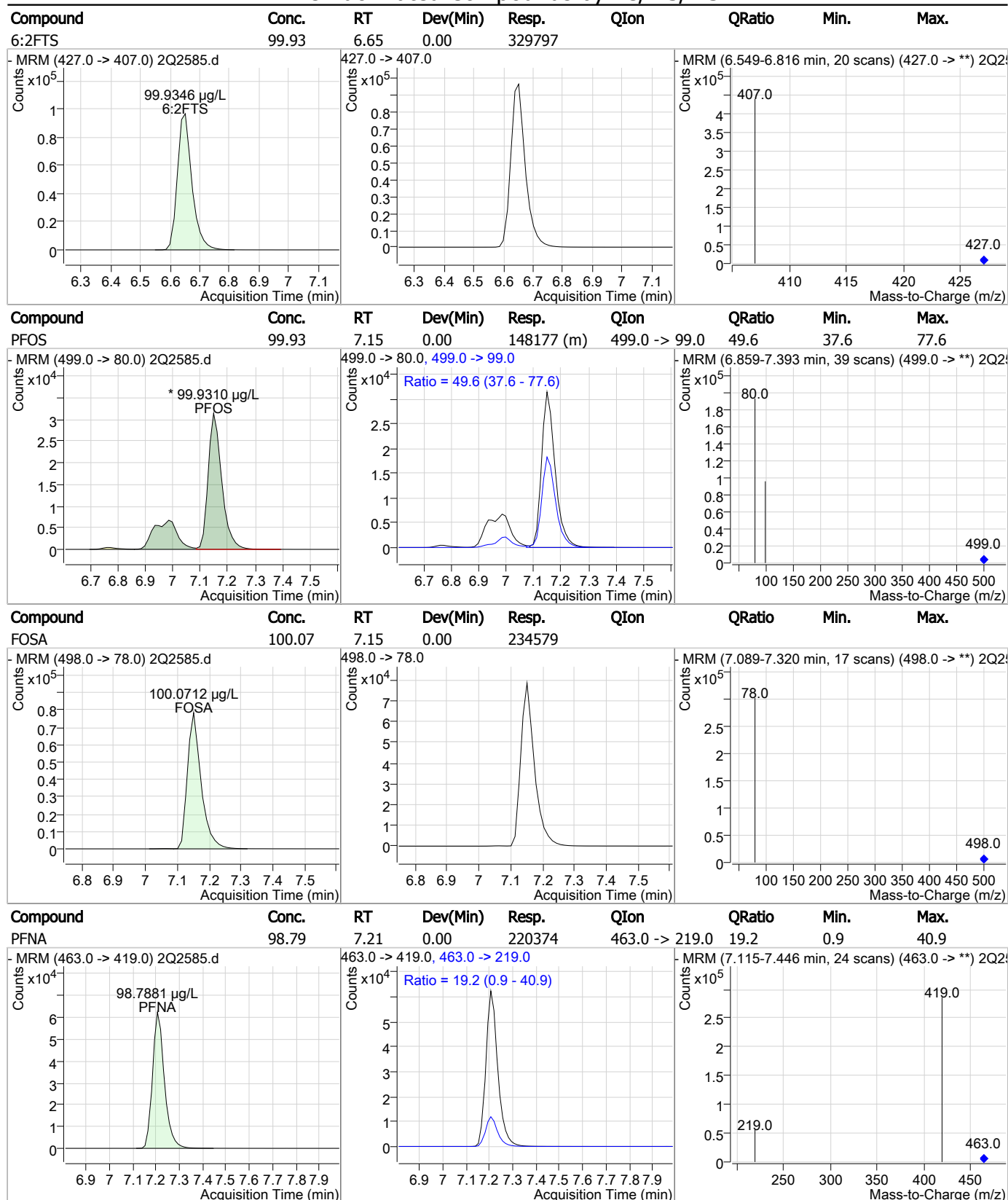
Perfluorinated Compounds by LC/MS/MS



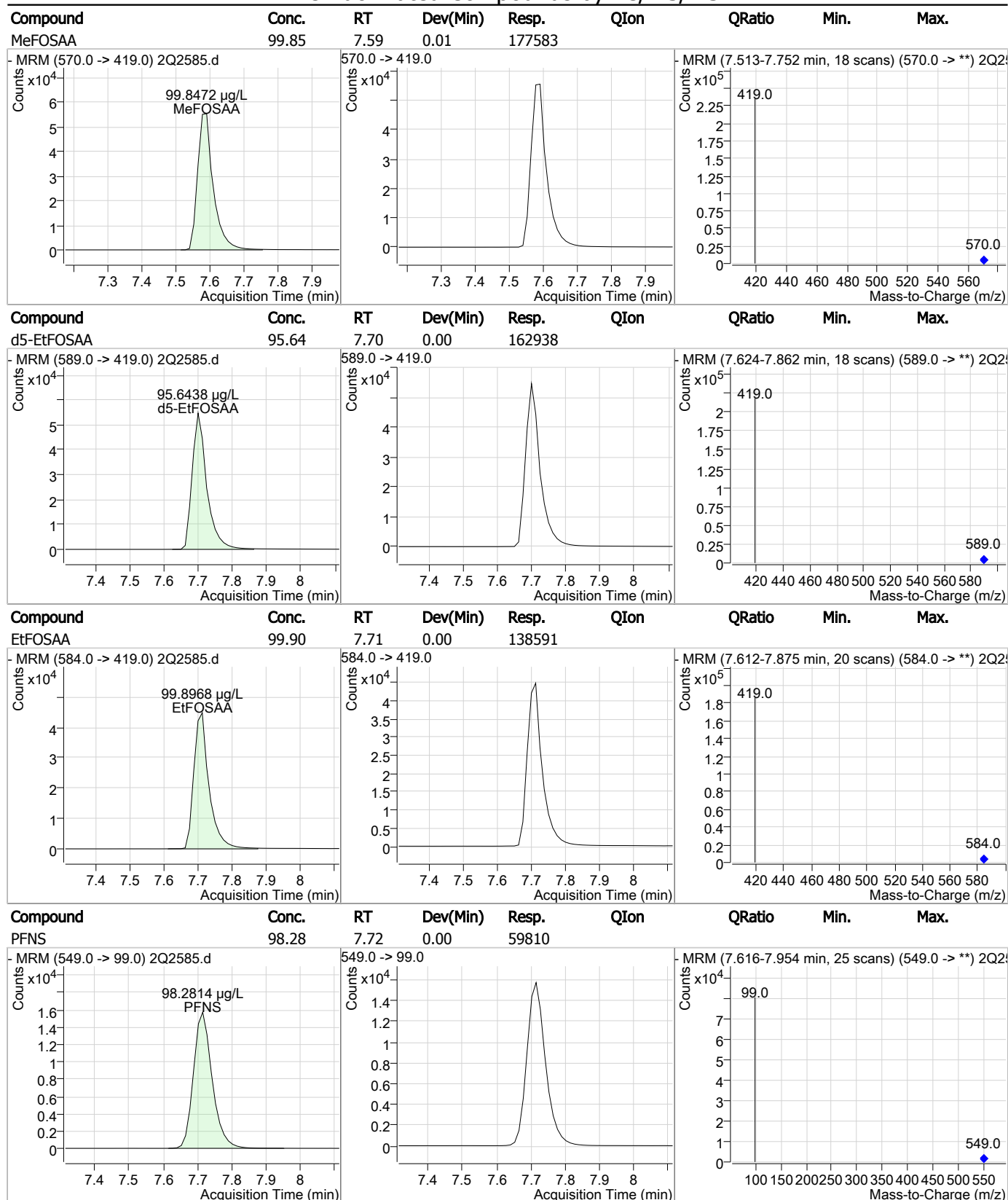
Perfluorinated Compounds by LC/MS/MS



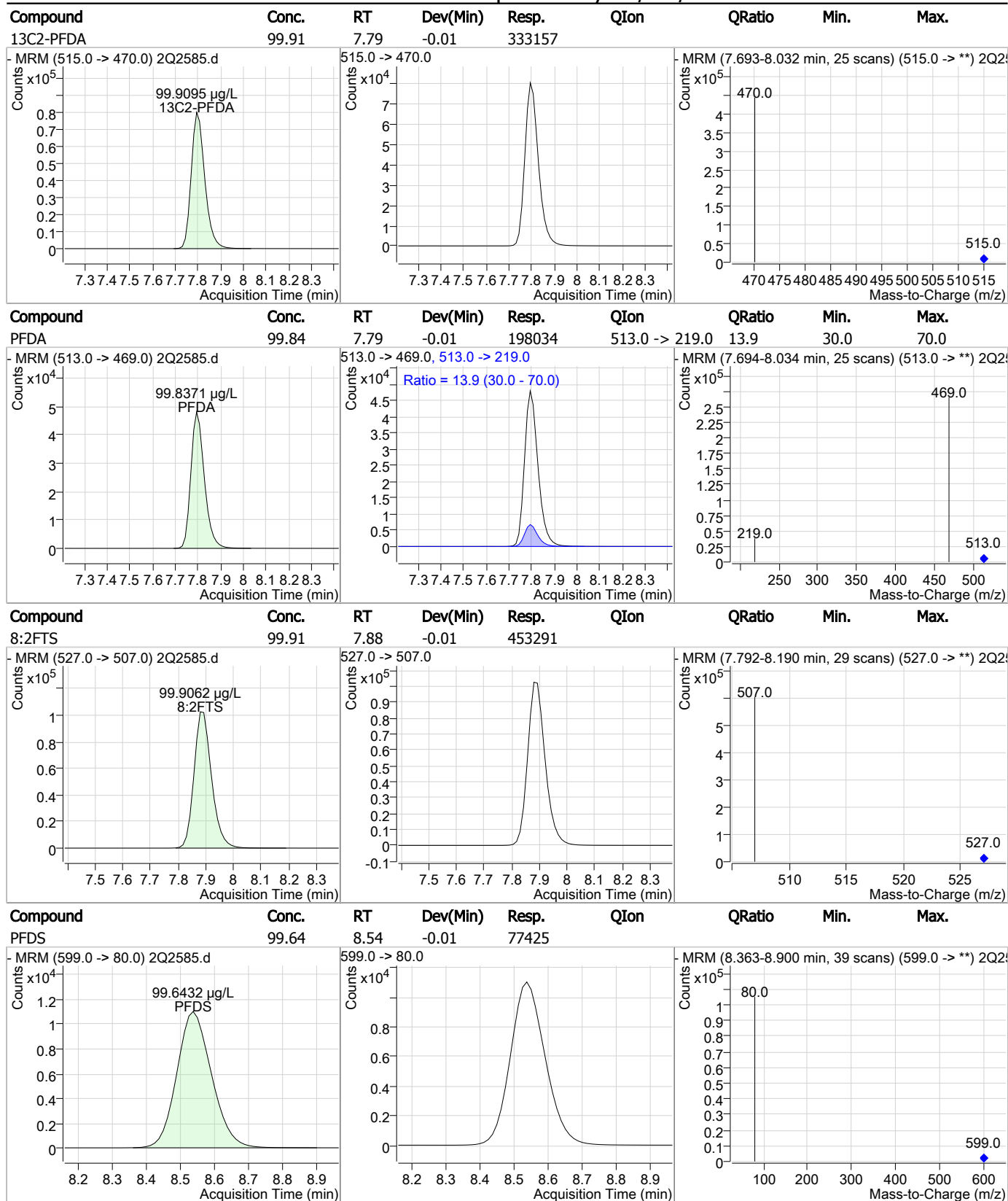
Perfluorinated Compounds by LC/MS/MS



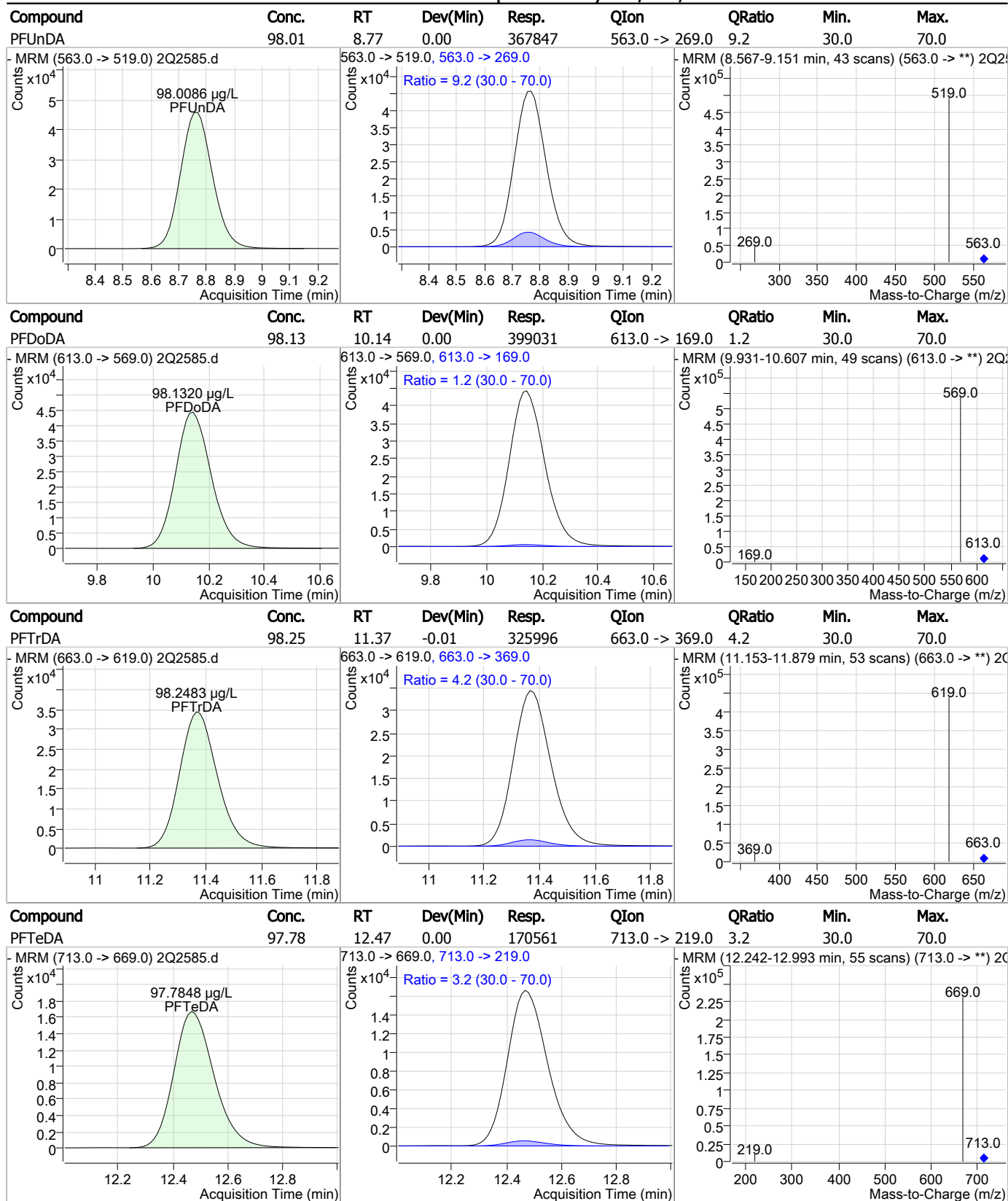
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q67-IC67

Method: EPA 537 MOD

Lab FileID: 2Q2585.D

Analyst approved: 06/24/17 13:30 Nancy Saunders

Injection Time: 06/23/17 12:35

Supervisor approved: 06/26/17 08:56 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.15	Split peak

7.5.8.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2588.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/23/2017 1:31:42 PM
 Sample Name : ICV67-20
 Vial : Vial 11
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q67.batch.bin
 Sample Information : OP65591,S2Q67,125,,,1.0,,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.649	429.0 -> 409.0	74114	20.00	µg/L	0.000
13C2-PFDoDA	10.177	615.0 -> 570.0	93080	20.00	µg/L	0.025
13C2-PFOA	6.640	415.0 -> 370.0	46901	20.00	µg/L	0.000
13C3-PFPeA	4.347	266.0 -> 222.0	43367	20.00	µg/L	0.013
13C4-PFOS	7.159	503.0 -> 80.0	27796	20.00	µg/L	0.013
d3-MeFOSAA	7.575	573.0 -> 419.0	35325	20.00	µg/L	0.000

System Monitoring Compounds

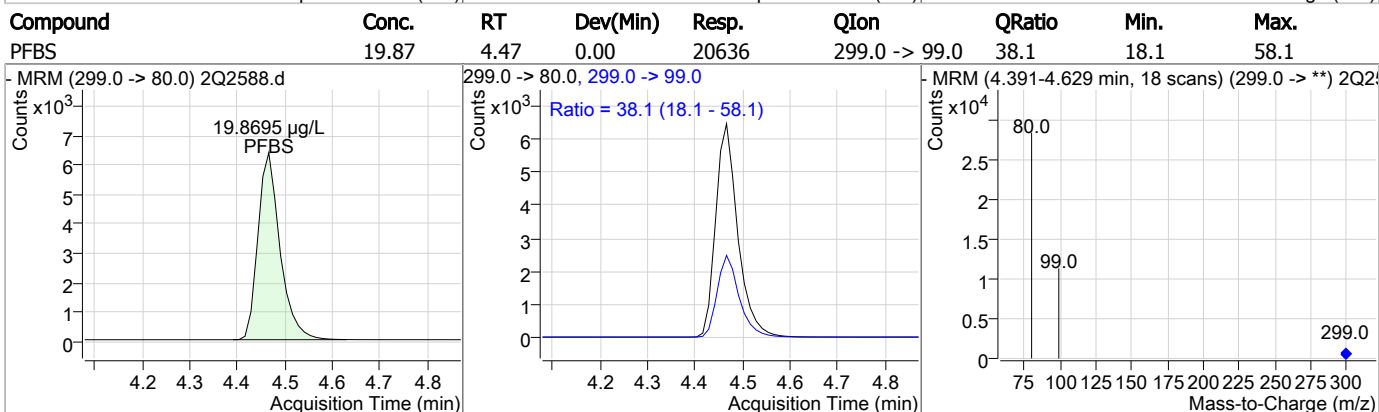
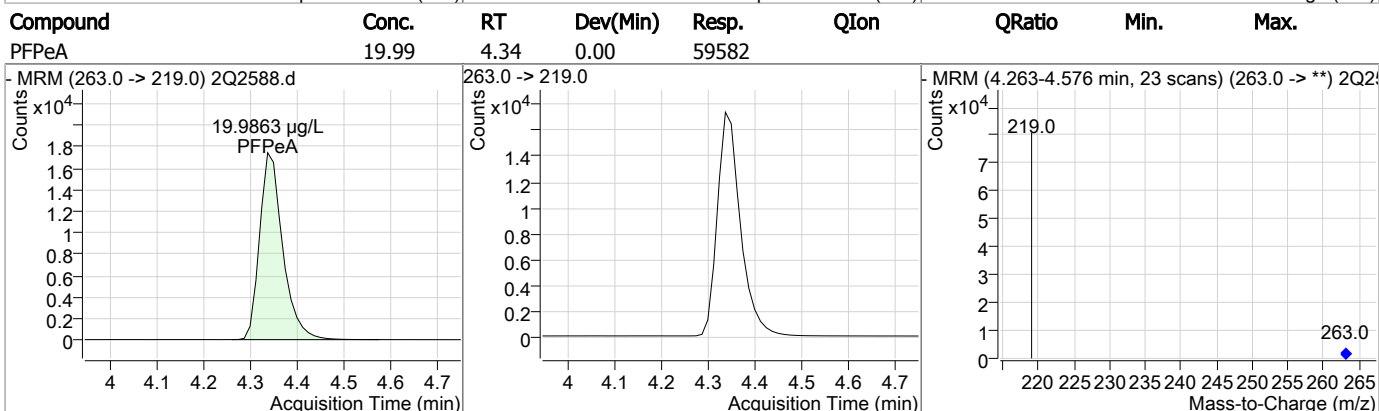
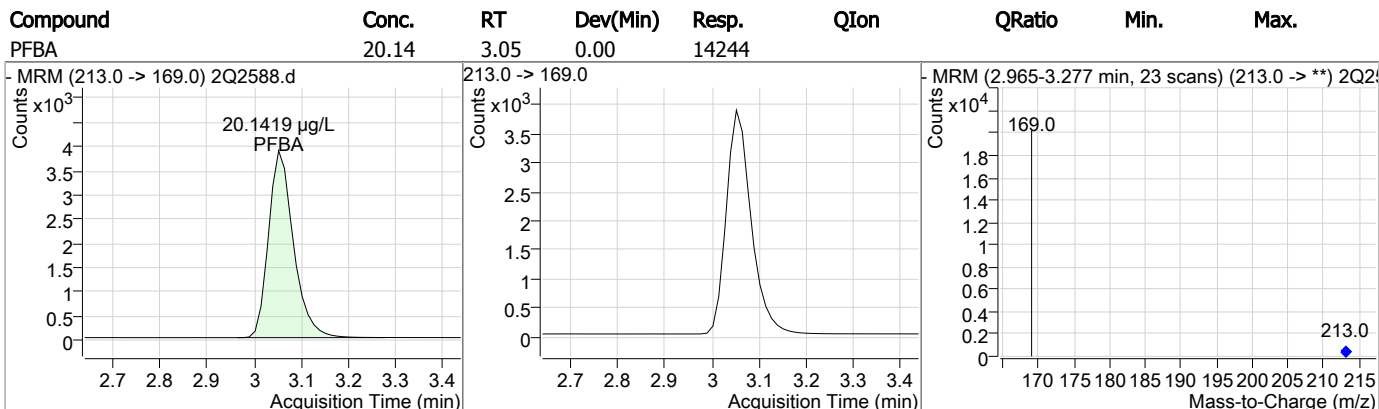
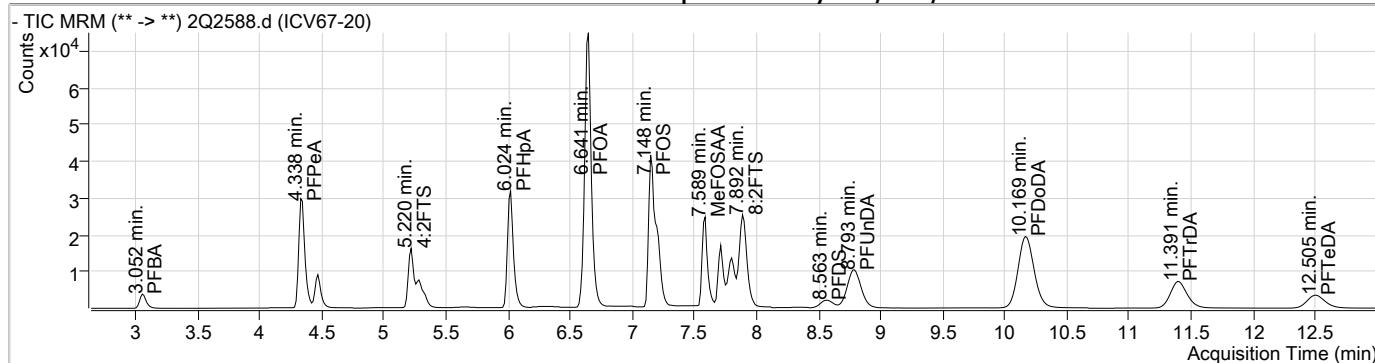
13C2-PFDA	7.806	515.0 -> 470.0	0	0.00	µg/L	m	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = NA%				
13C2-PFHxA	-	315.0 -> 270.0	-	N.D.			
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = NA%				
d5-EtFOSAA	7.711	589.0 -> 419.0	0	0.00	µg/L	m	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = NA%				

Target Compounds

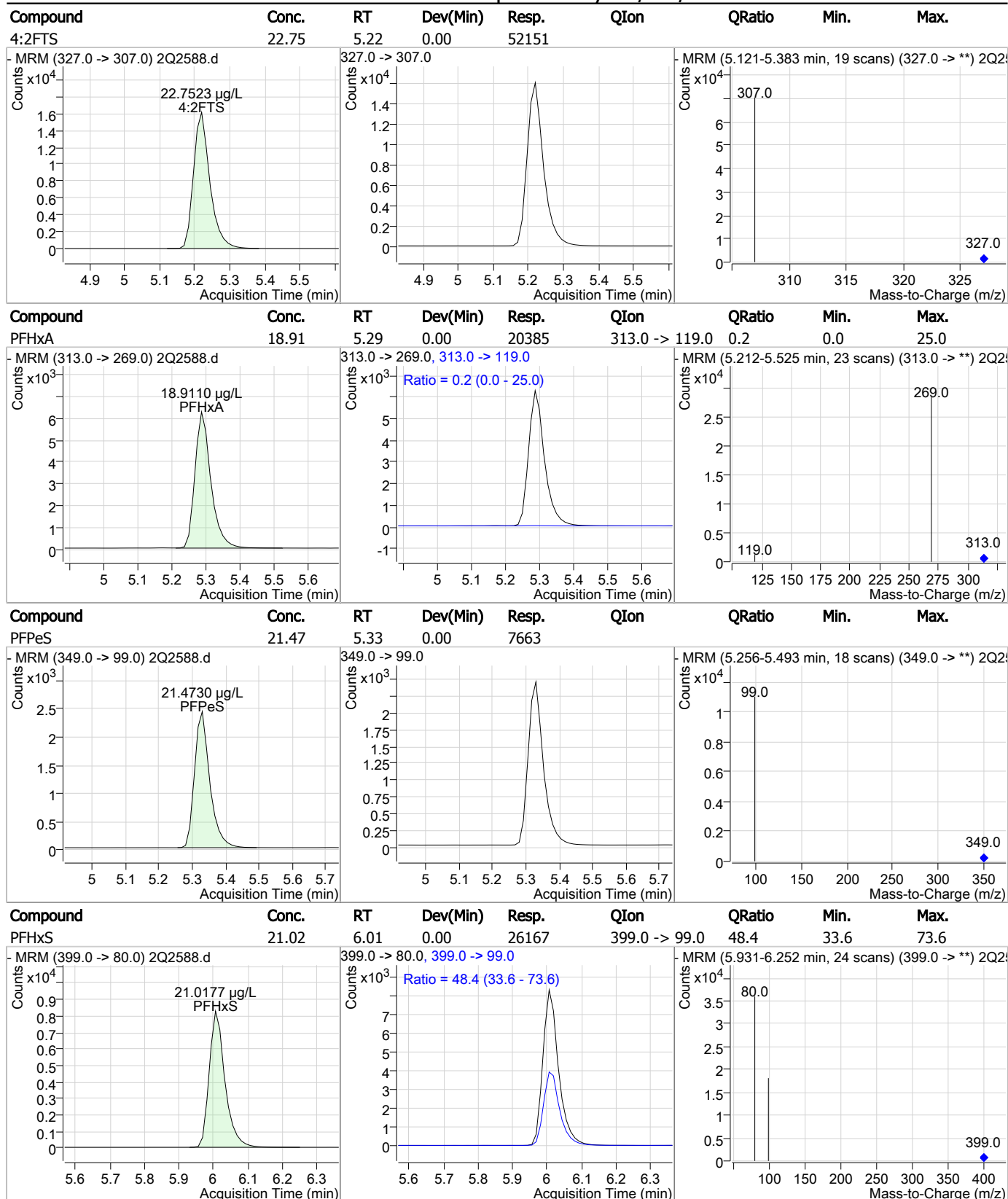
							QValue
4:2FTS	5.220	327.0 -> 307.0	52151	22.75	µg/L		100
6:2FTS	6.651	427.0 -> 407.0	80248	22.22	µg/L		100
8:2FTS	7.892	527.0 -> 507.0	103737	22.09	µg/L		100
EtFOSAA	7.712	584.0 -> 419.0	36375	22.04	µg/L		100
FOSA	7.151	498.0 -> 78.0	62675	20.04	µg/L		100
MeFOSAA	7.589	570.0 -> 419.0	40345	20.72	µg/L		100
PFBA	3.052	213.0 -> 169.0	14244	20.14	µg/L		100
PFBS	4.466	299.0 -> 80.0	20636	19.87	µg/L		100
PFDA	7.807	513.0 -> 469.0	43634	18.89	µg/L	#	47
PFDoDA	10.169	613.0 -> 569.0	80278	20.21	µg/L	#	29
PFDS	8.563	599.0 -> 80.0	15720	19.82	µg/L		100
PFHpA	6.024	363.0 -> 319.0	63921	20.00	µg/L		93
PFHpS	6.610	449.0 -> 80.0	27746	22.10	µg/L		100
PFHxA	5.287	313.0 -> 269.0	20385	18.91	µg/L		85
PFHxS	6.006	399.0 -> 80.0	26167	21.02	µg/L		93
PFNA	7.220	463.0 -> 419.0	45739	19.96	µg/L		96
PFNS	7.716	549.0 -> 99.0	13914	22.40	µg/L		100
PFOA	6.641	413.0 -> 369.0	36048	19.88	µg/L		95
PFOS	7.148	499.0 -> 80.0	28470	17.42	µg/L		99
PFPeA	4.338	263.0 -> 219.0	59582	19.99	µg/L		100
PFPeS	5.330	349.0 -> 99.0	7663	21.47	µg/L		100
PFTeDA	12.505	713.0 -> 669.0	34670	20.35	µg/L	#	32
PFTTrDA	11.391	663.0 -> 619.0	65062	20.07	µg/L	#	34
PFUnDA	8.793	563.0 -> 519.0	74597	20.35	µg/L	#	41

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

Perfluorinated Compounds by LC/MS/MS

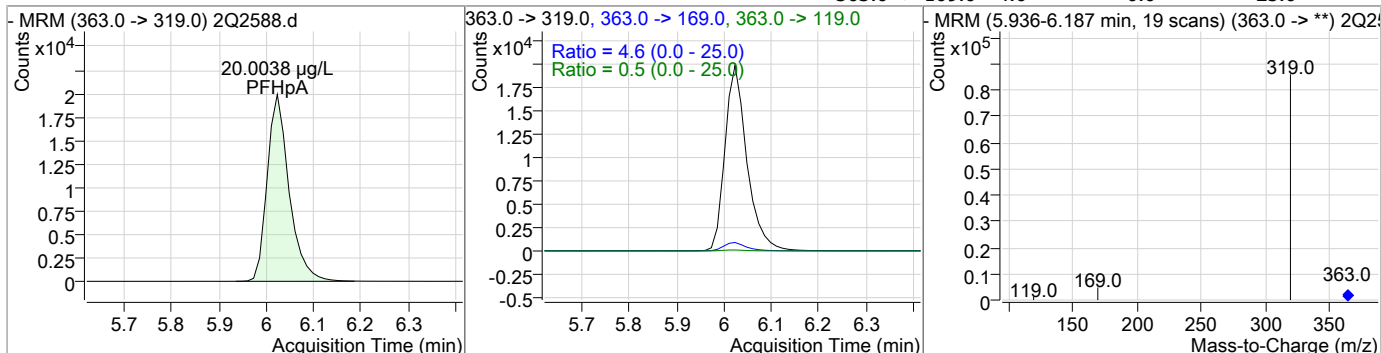


Perfluorinated Compounds by LC/MS/MS

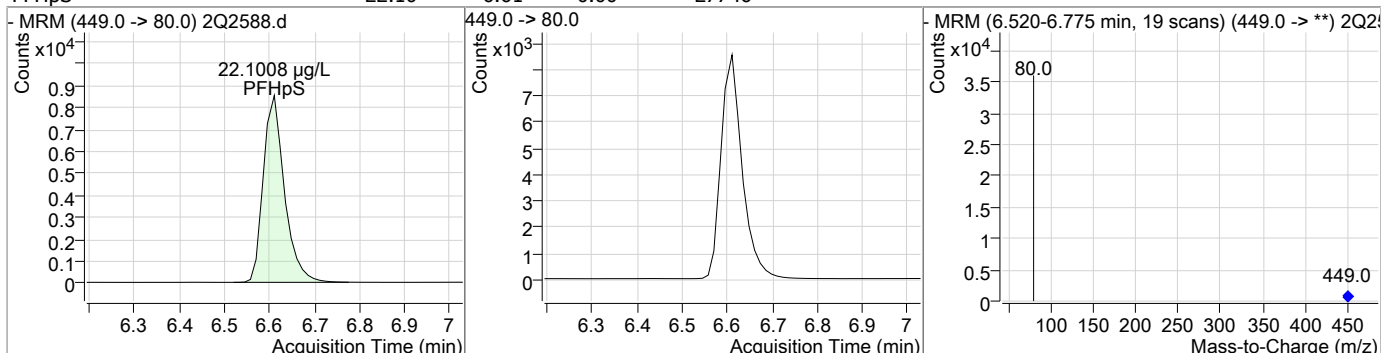


Perfluorinated Compounds by LC/MS/MS

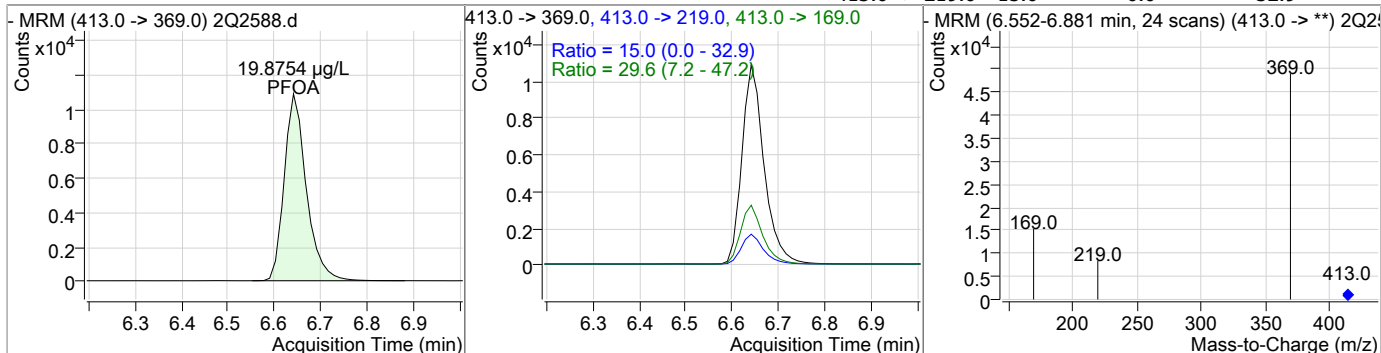
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.00	6.02	0.00	63921	363.0 -> 119.0 363.0 -> 169.0	0.5 4.6	0.0 0.0	25.0 25.0



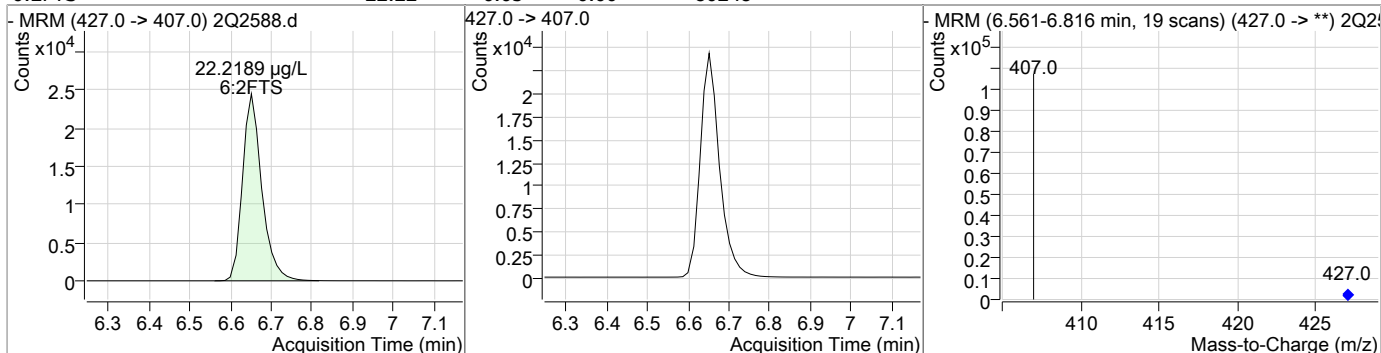
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.10	6.61	0.00	27746				



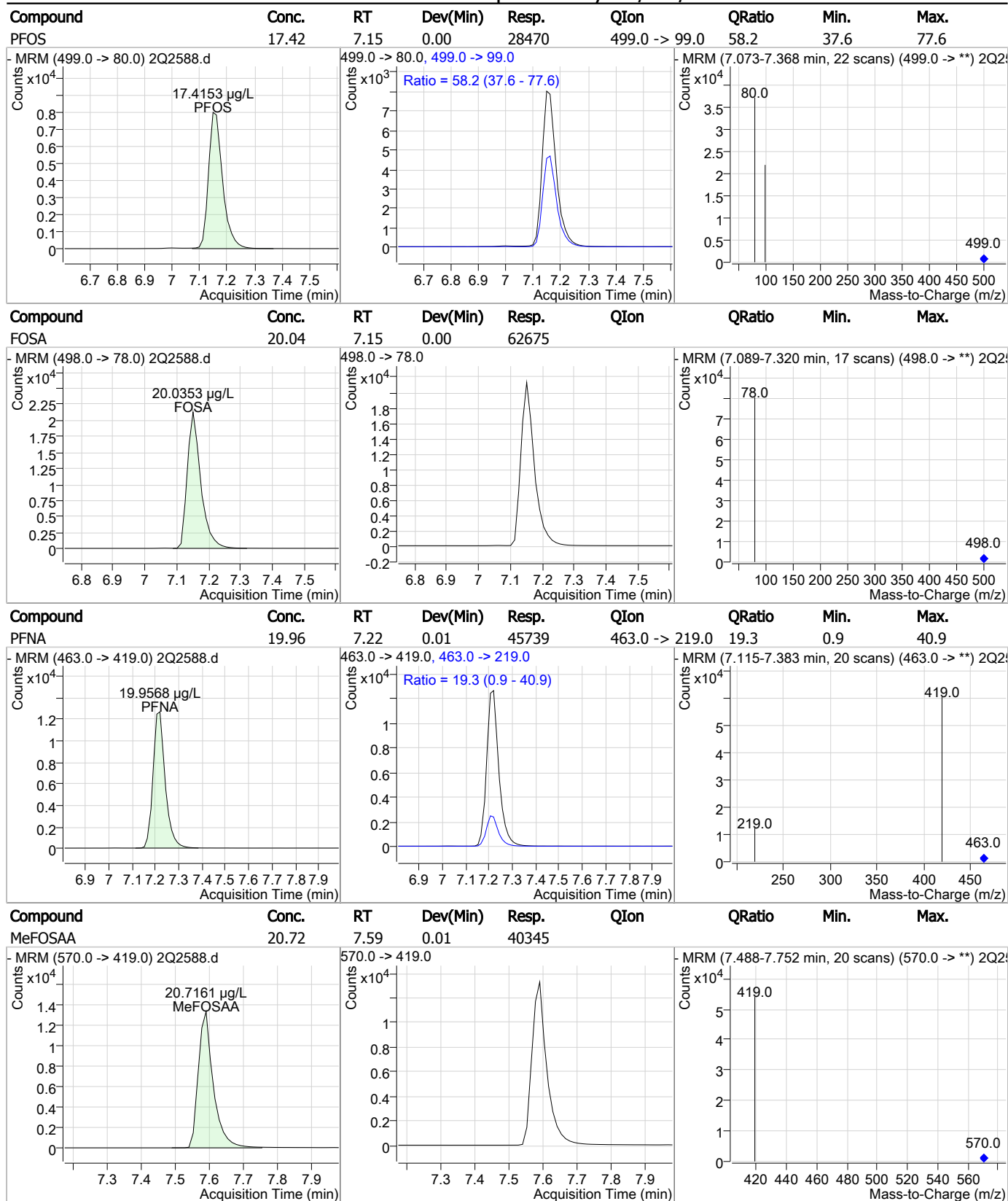
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.88	6.64	0.00	36048	413.0 -> 169.0 413.0 -> 219.0	29.6 15.0	7.2 0.0	47.2 32.9



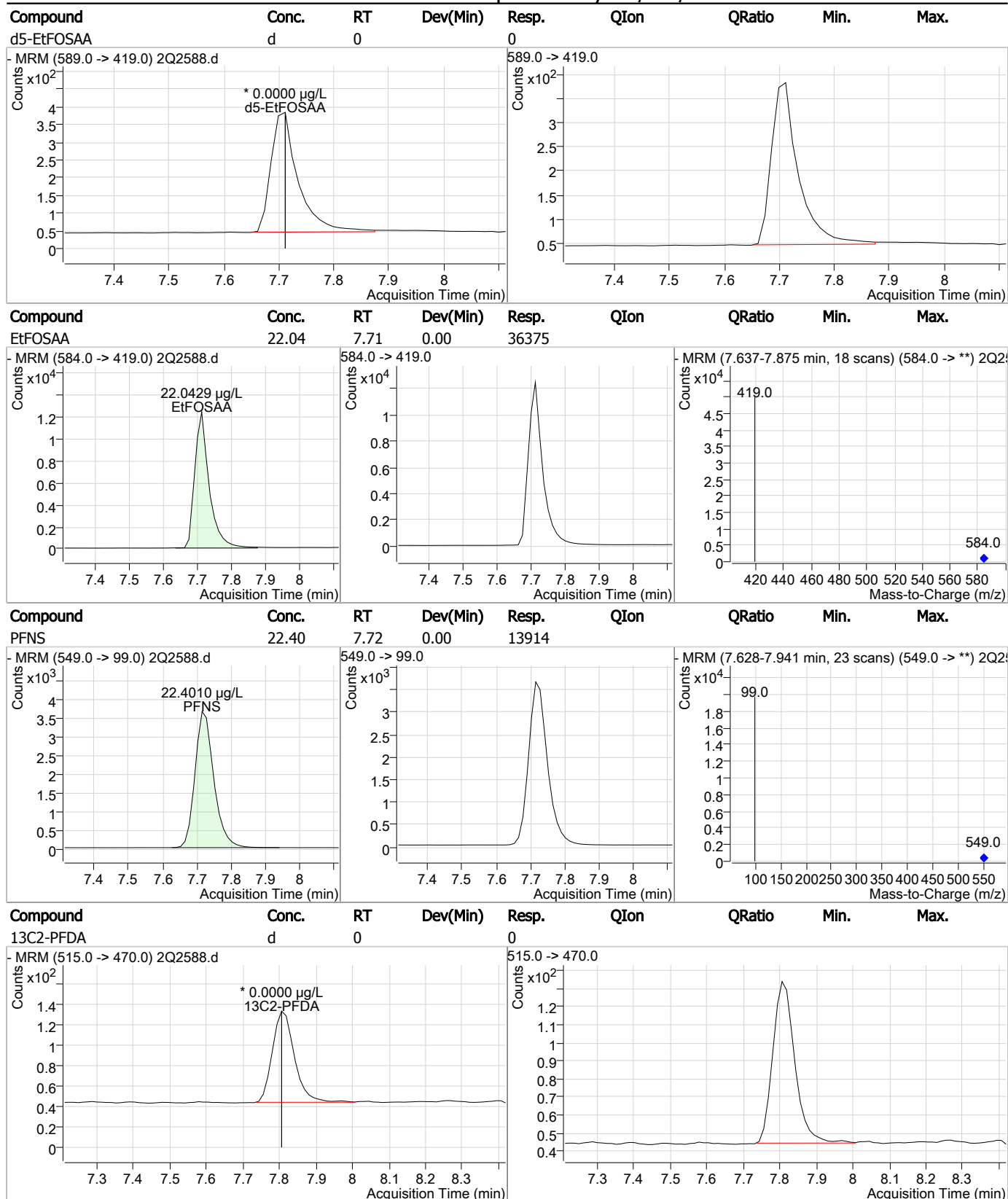
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.22	6.65	0.00	80248				



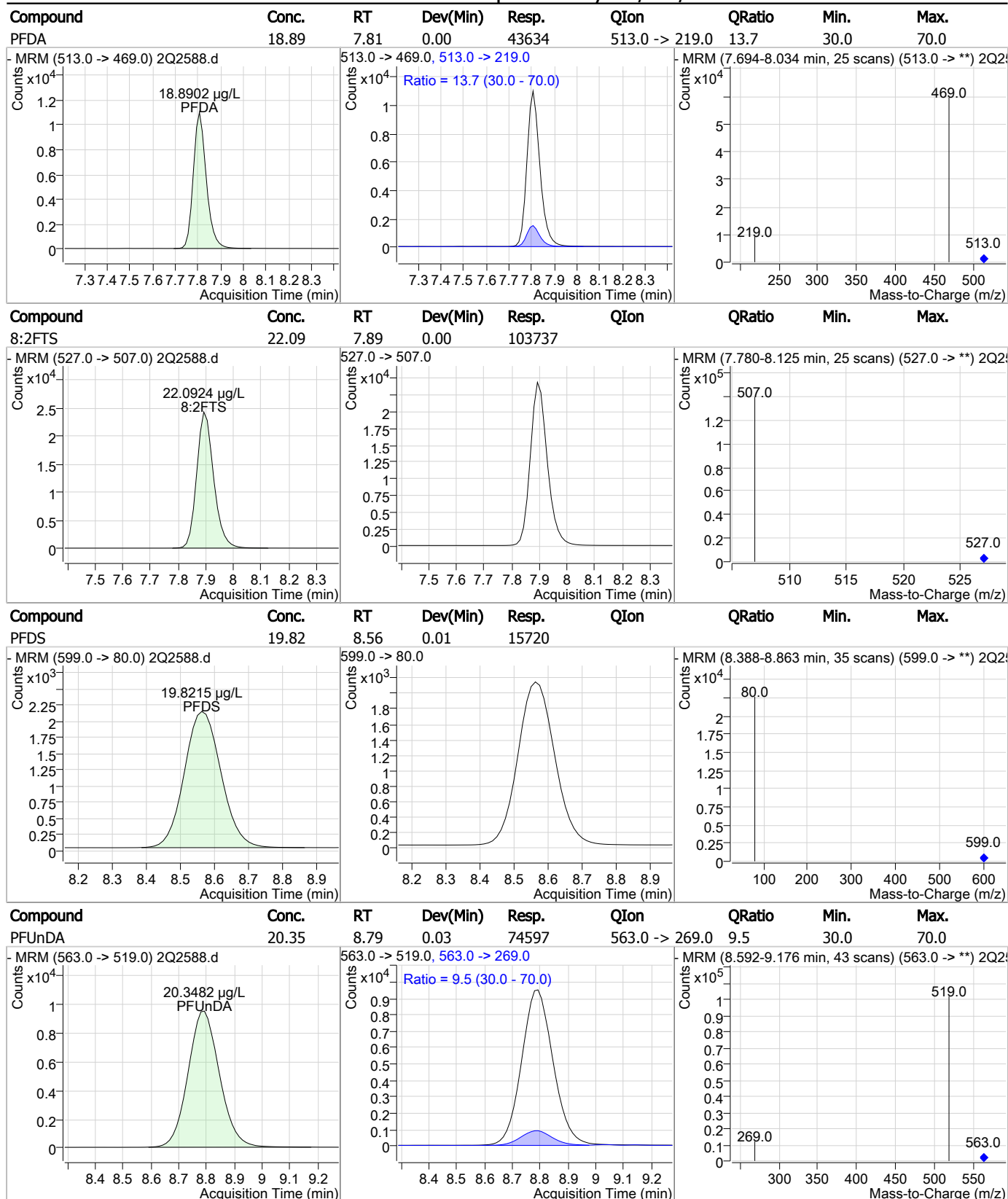
Perfluorinated Compounds by LC/MS/MS



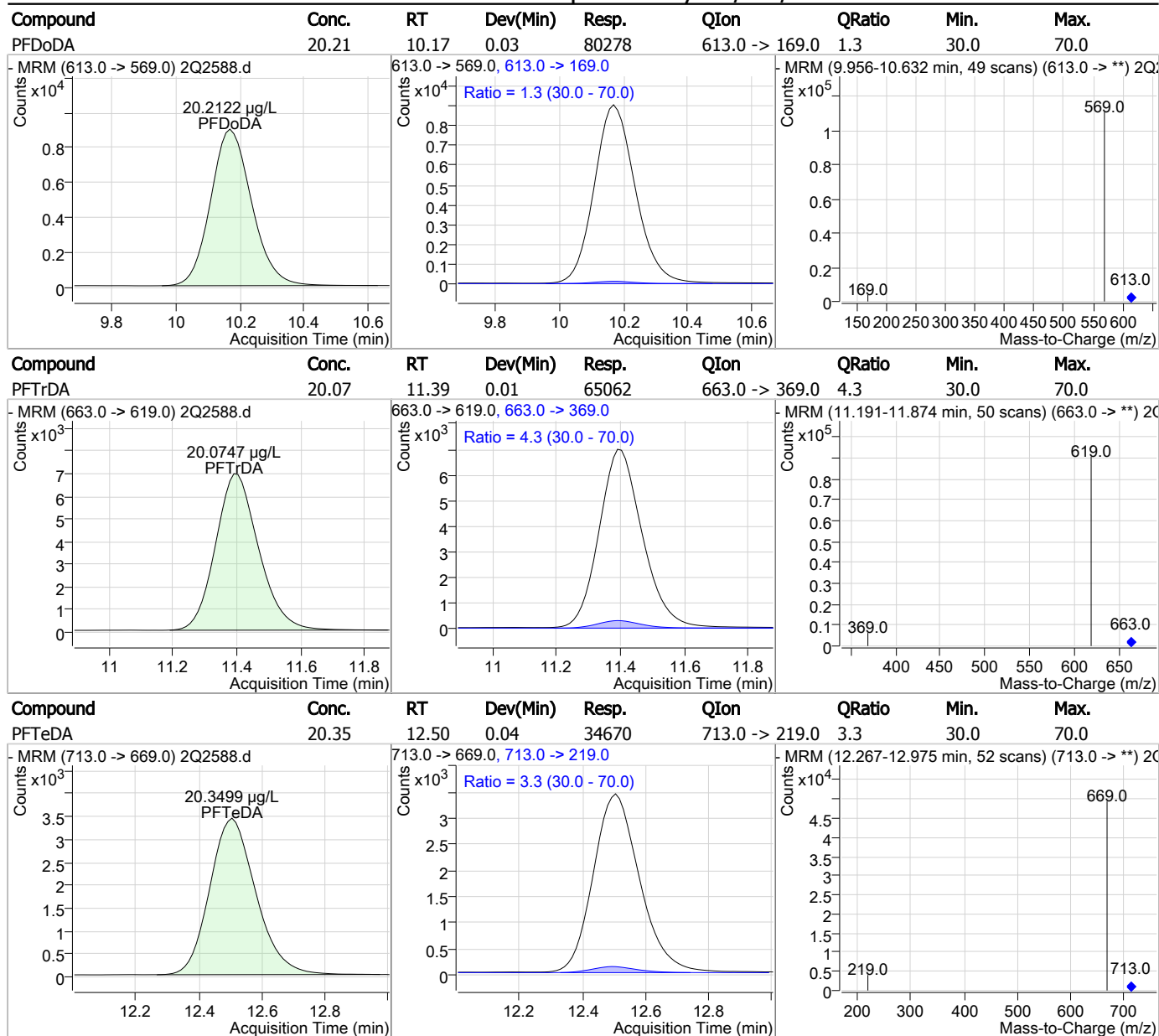
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



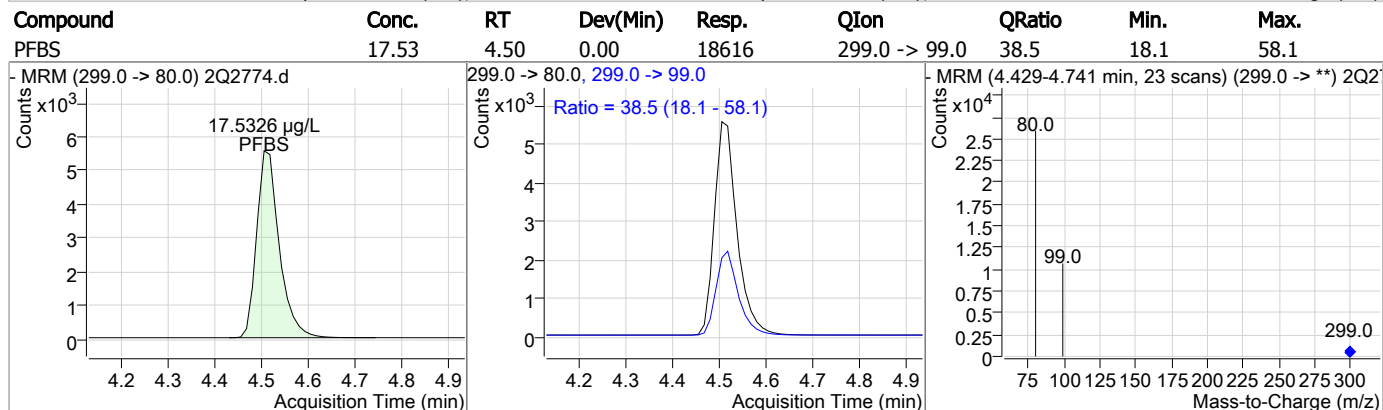
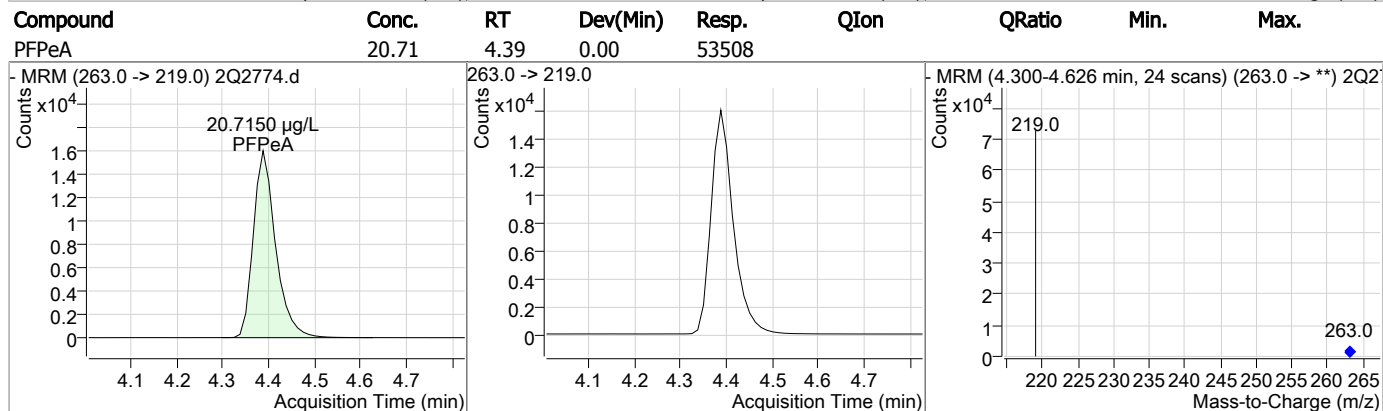
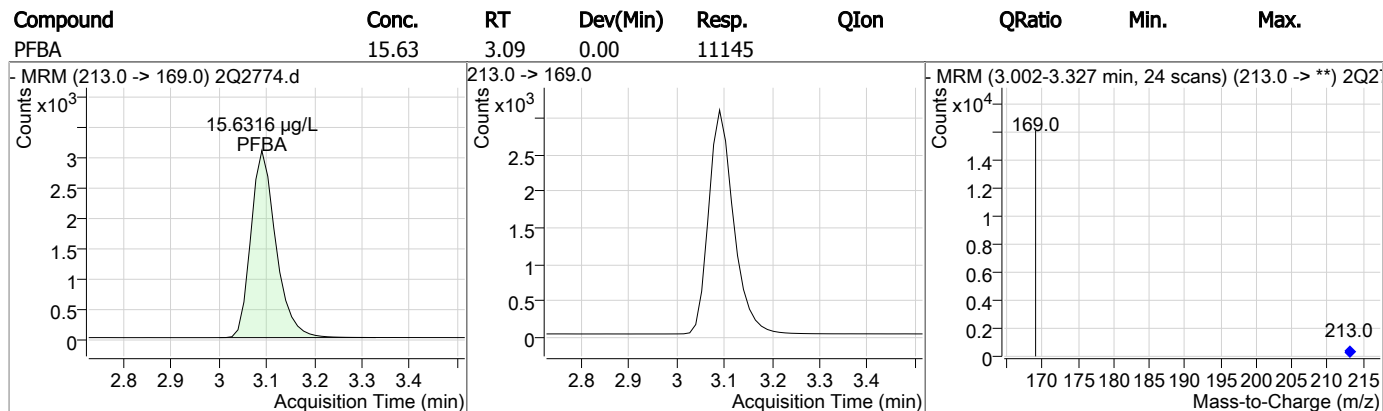
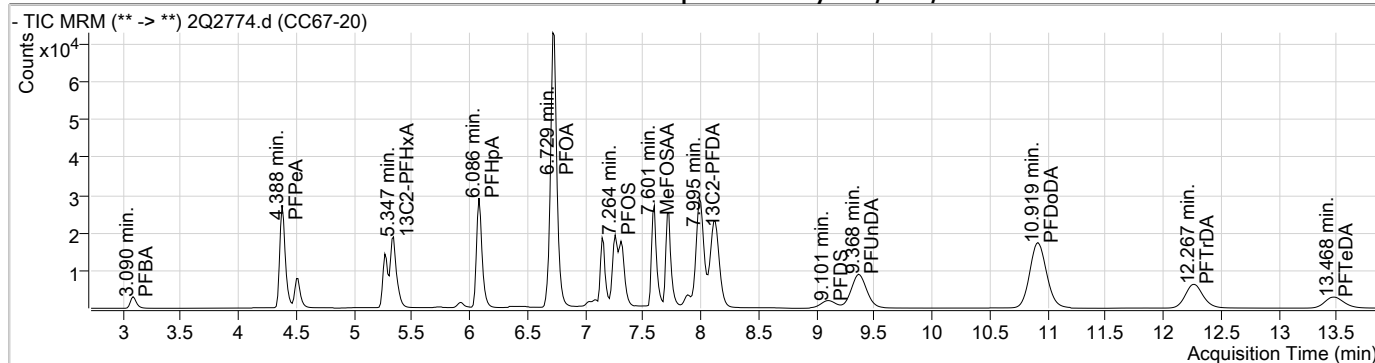
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2774.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/26/2017 11:06:37 PM
 Sample Name : CC67-20
 Vial : Vial 2
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q69.batch.bin
 Sample Information : OP65591,S2Q69,125,,,1.0,1,water

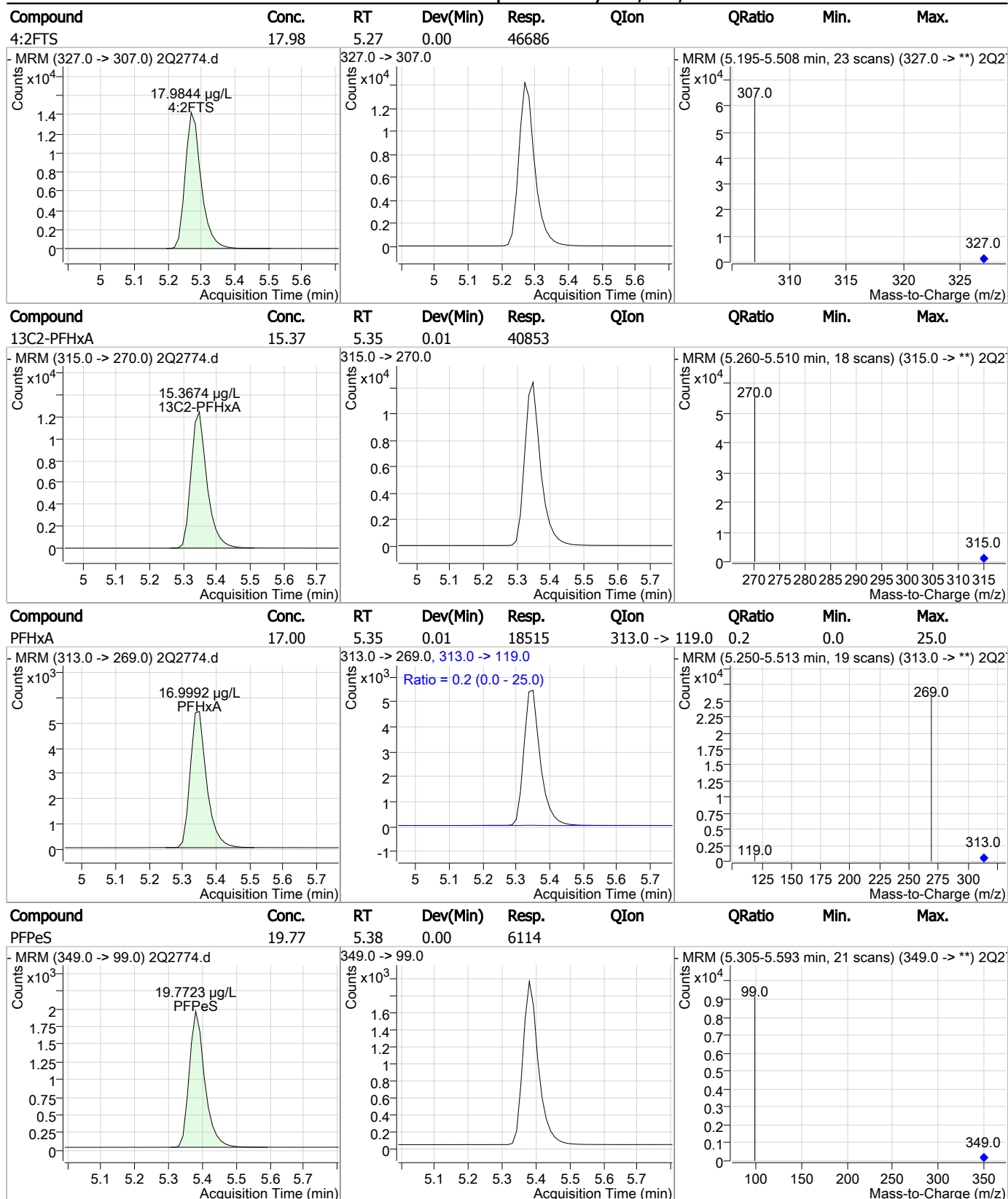
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.737	429.0 -> 409.0	83043	20.00	µg/L	0.000
13C2-PFDoDA	10.915	615.0 -> 570.0	92382	20.00	µg/L	-0.038
13C2-PFOA	6.727	415.0 -> 370.0	47284	20.00	µg/L	0.000
13C3-PFPeA	4.385	266.0 -> 222.0	37576	20.00	µg/L	0.000
13C4-PFOS	7.263	503.0 -> 80.0	28418	20.00	µg/L	0.000
d3-MeFOSAA	7.600	573.0 -> 419.0	39921	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-PFDA	7.995	515.0 -> 470.0	79129	20.11	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 100.6%		
13C2-PFHxA	5.347	315.0 -> 270.0	40853	15.37	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 76.8%		
d5-EtFOSAA	7.711	589.0 -> 419.0	40531	21.17	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 105.8%		
Target Compounds						QValue
4:2FTS	5.270	327.0 -> 307.0	46686	17.98	µg/L	100
6:2FTS	6.738	427.0 -> 407.0	79569	19.52	µg/L	100
8:2FTS	8.127	527.0 -> 507.0	117835	22.41	µg/L	100
EtFOSAA	7.725	584.0 -> 419.0	36821	19.65	µg/L	100
FOSA	7.150	498.0 -> 78.0	55539	15.49	µg/L	100
MeFOSAA	7.601	570.0 -> 419.0	41341	18.74	µg/L	100
PFBA	3.090	213.0 -> 169.0	11145	15.63	µg/L	100
PFBS	4.504	299.0 -> 80.0	18616	17.53	µg/L	99
PFDA	7.996	513.0 -> 469.0	47037	20.24	µg/L	# 48
PFDoDA	10.919	613.0 -> 569.0	81125	20.58	µg/L	# 29
PFDS	9.101	599.0 -> 80.0	17668	21.79	µg/L	100
PFHpA	6.086	363.0 -> 319.0	62742	19.48	µg/L	93
PFHpS	6.683	449.0 -> 80.0	26115	20.35	µg/L	100
PFHxA	5.350	313.0 -> 269.0	18515	17.00	µg/L	86
PFHxS	6.069	399.0 -> 80.0	24713	19.42	µg/L	m 92
PFNA	7.319	463.0 -> 419.0	44658	19.33	µg/L	96
PFNS	7.892	549.0 -> 99.0	12675	19.96	µg/L	100
PFOA	6.729	413.0 -> 369.0	36394	19.90	µg/L	96
PFOS	7.264	499.0 -> 80.0	31366	18.79	µg/L	m 90
PFPeA	4.388	263.0 -> 219.0	53508	20.71	µg/L	100
PFPeS	5.380	349.0 -> 99.0	6114	19.77	µg/L	100
PFTeDA	13.468	713.0 -> 669.0	32636	19.30	µg/L	# 32
PFTTrDA	12.267	663.0 -> 619.0	64540	20.06	µg/L	# 34
PFUnDA	9.368	563.0 -> 519.0	76193	20.94	µg/L	# 41

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

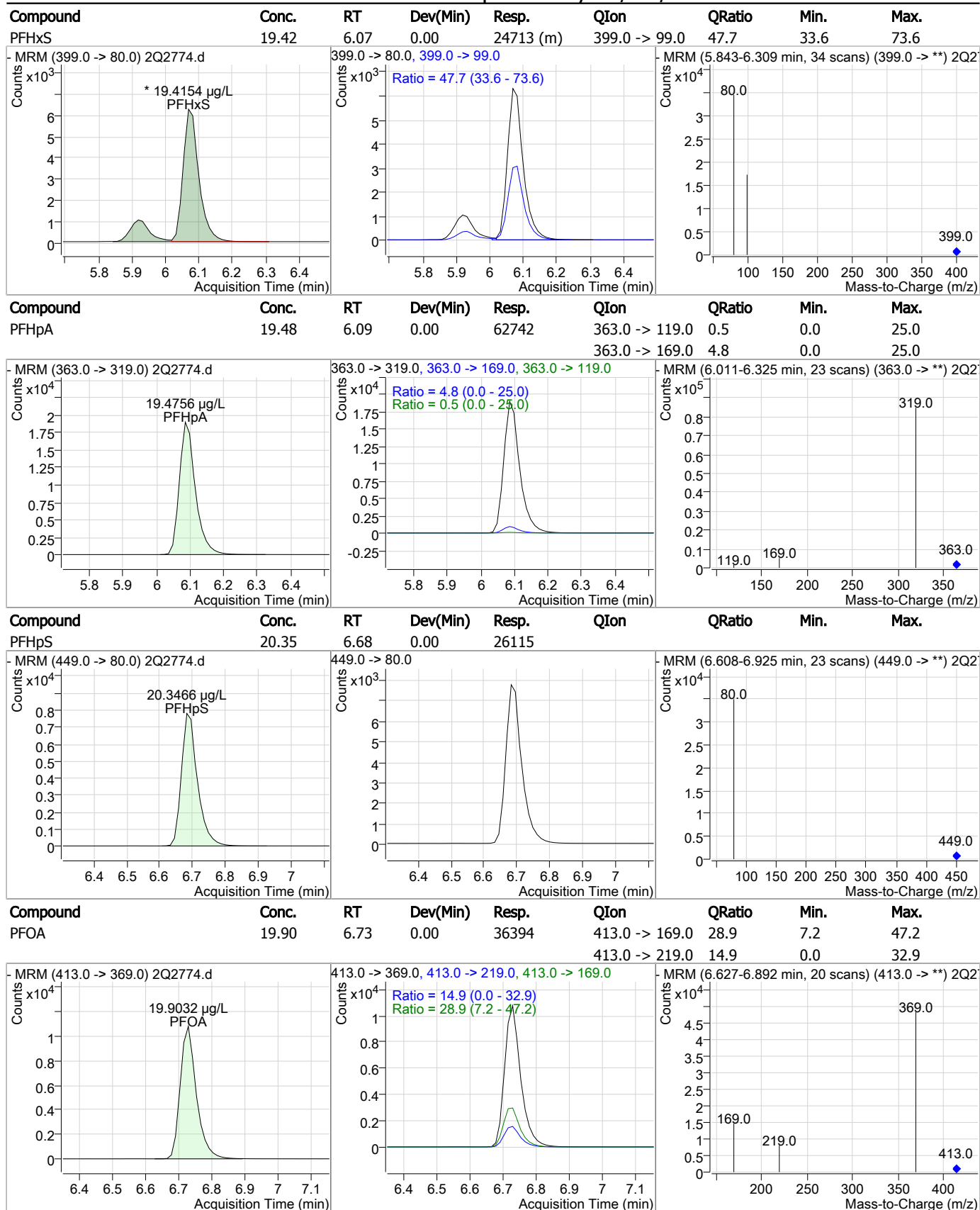
Perfluorinated Compounds by LC/MS/MS



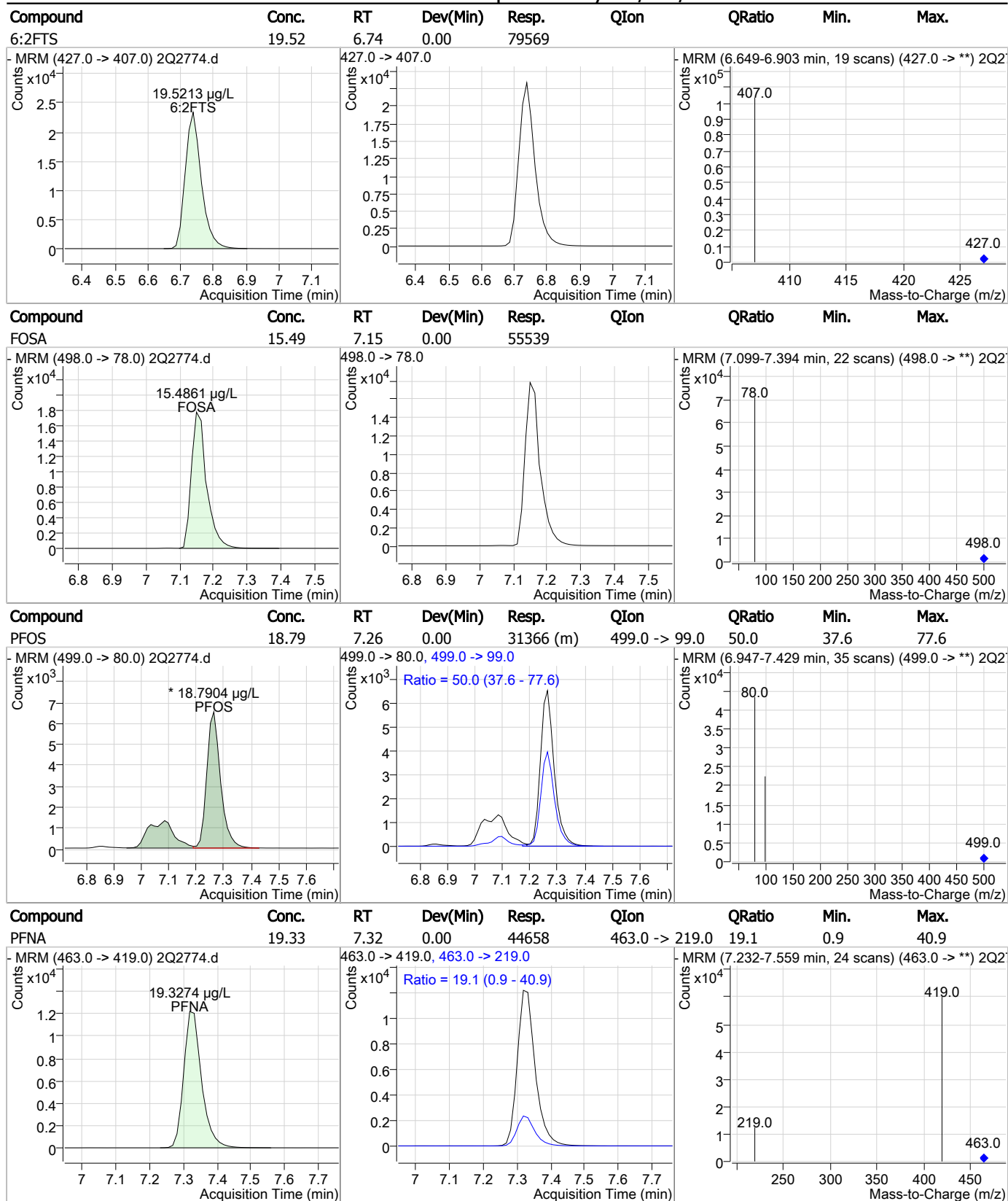
Perfluorinated Compounds by LC/MS/MS



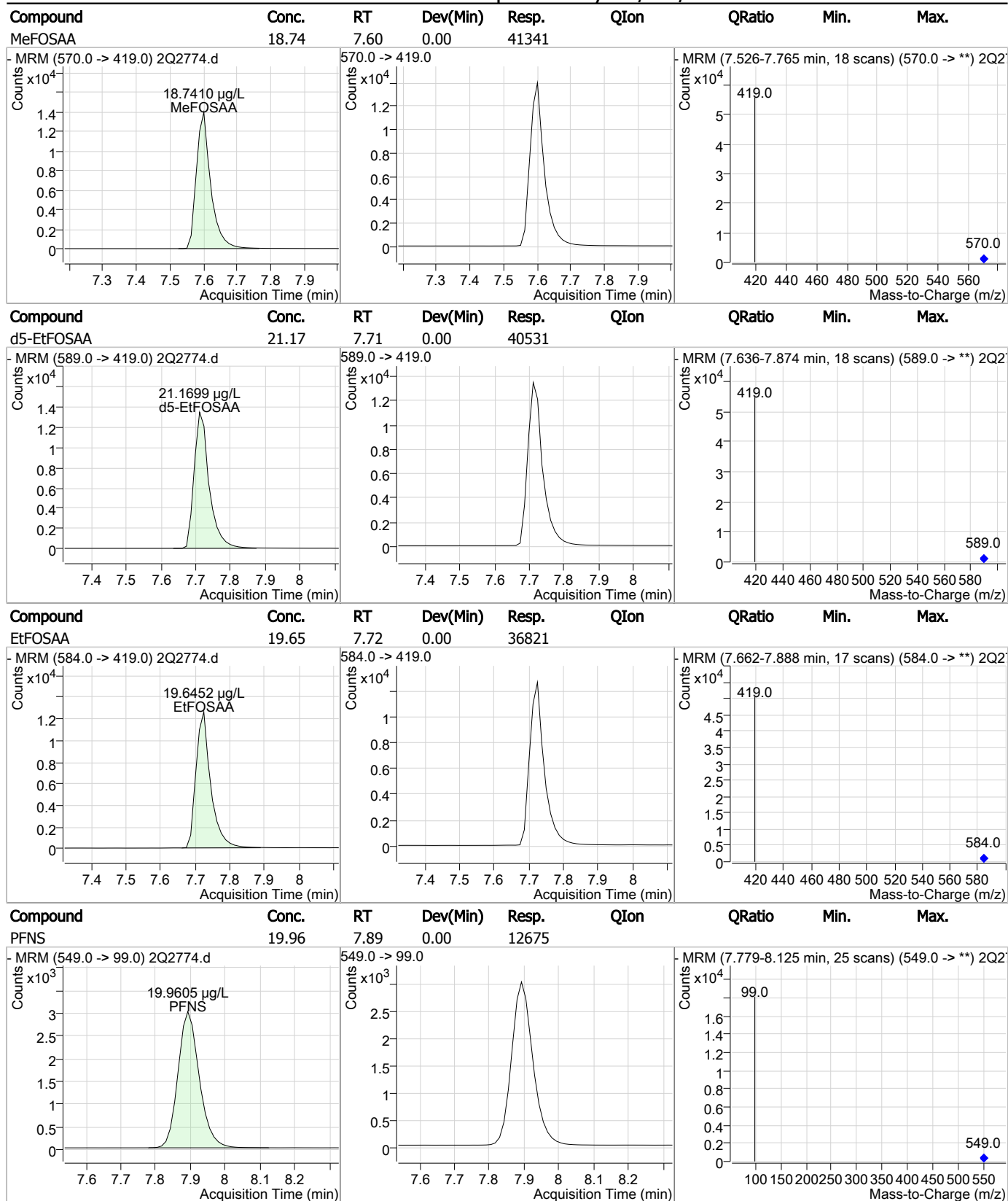
Perfluorinated Compounds by LC/MS/MS



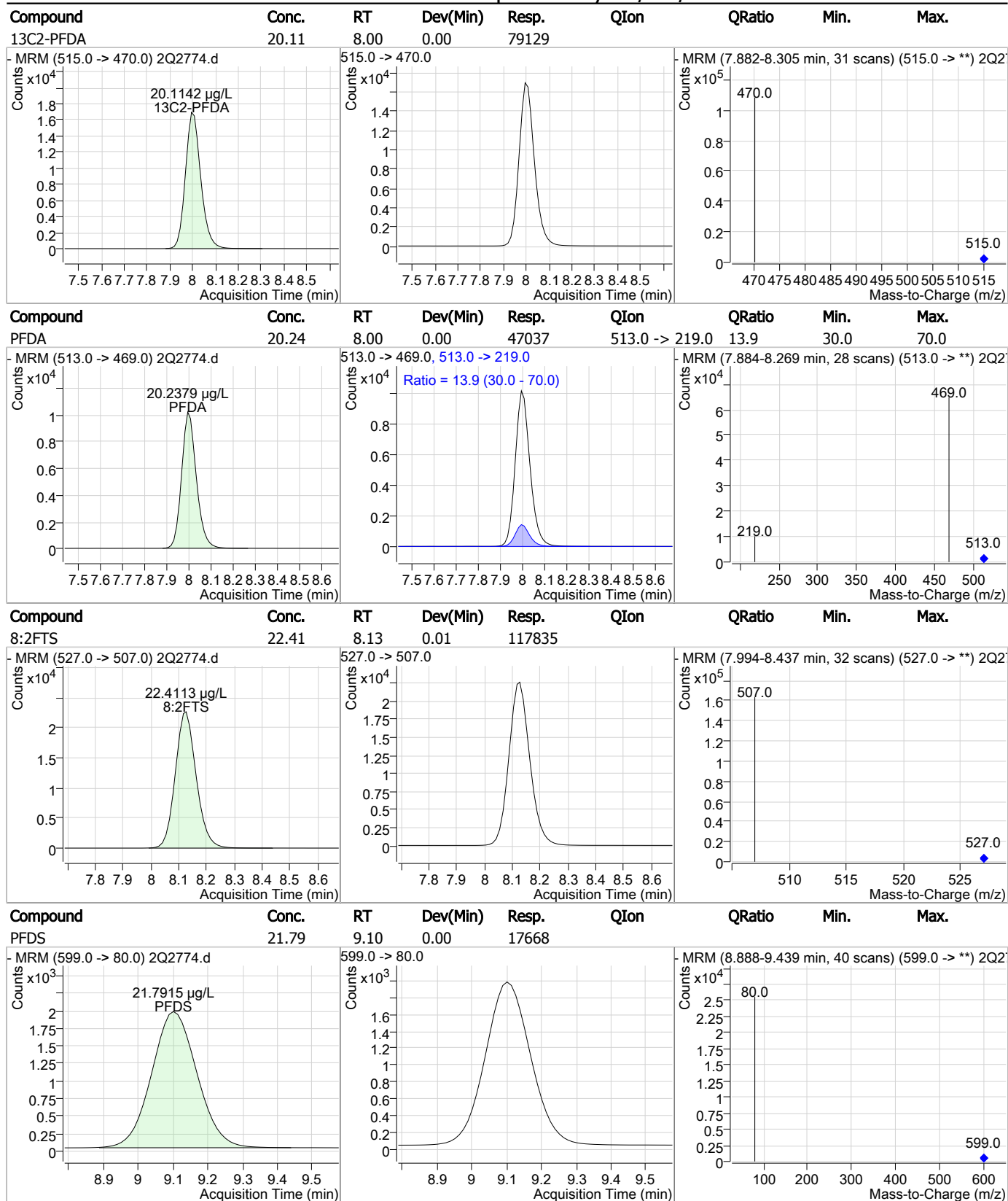
Perfluorinated Compounds by LC/MS/MS



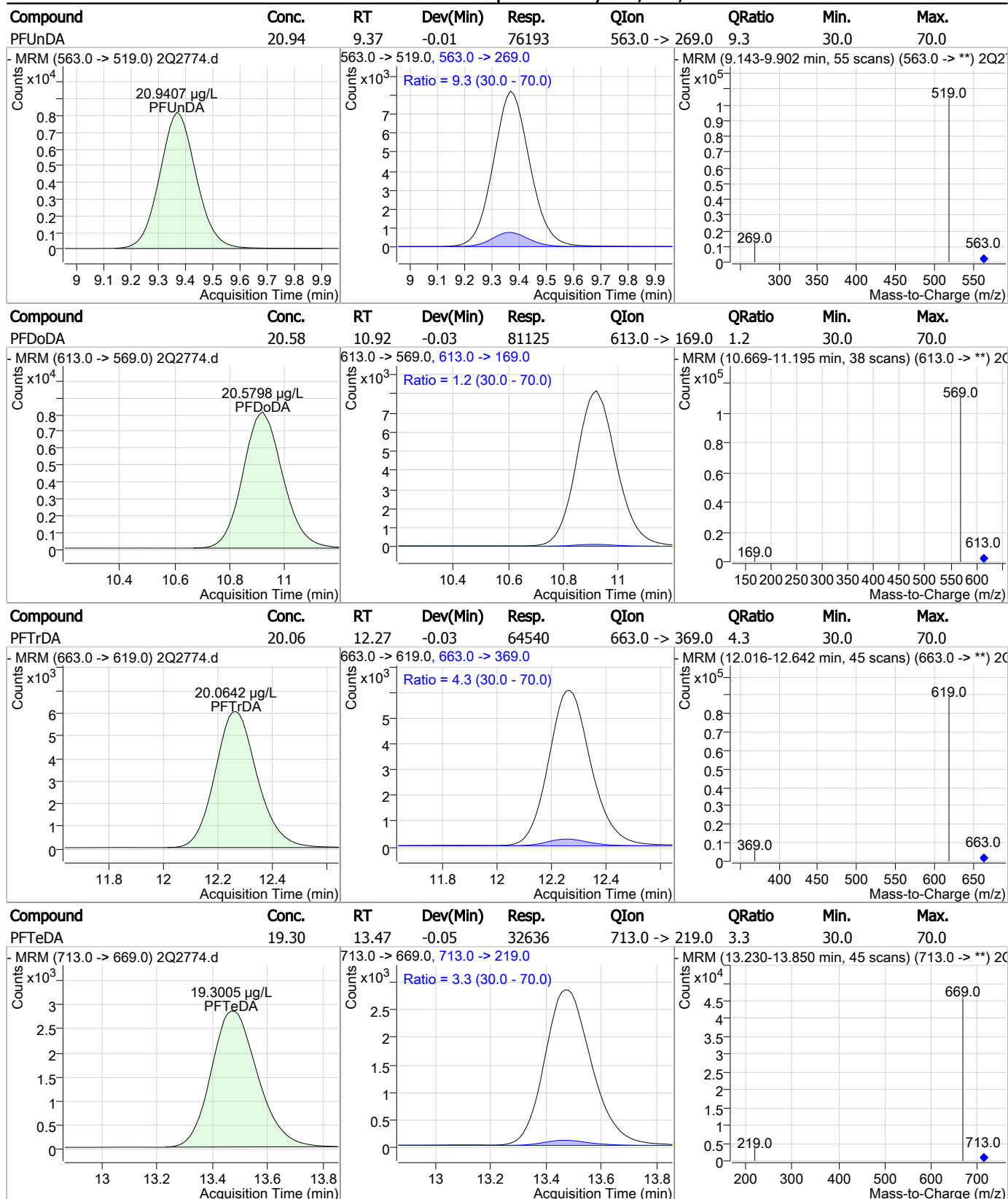
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q69-CC67

Method: EPA 537 MOD

Lab FileID: 2Q2774.D

Analyst approved: 06/27/17 12:06 Nancy Saunders

Injection Time: 06/26/17 23:06

Supervisor approved: 06/27/17 17:36 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.07	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.26	Split peak

7.5.10.1
7

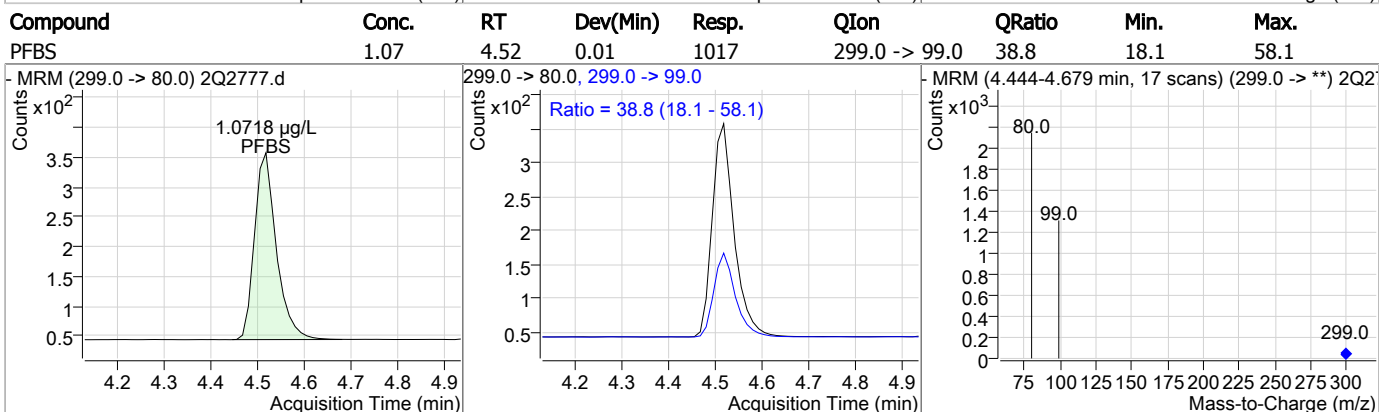
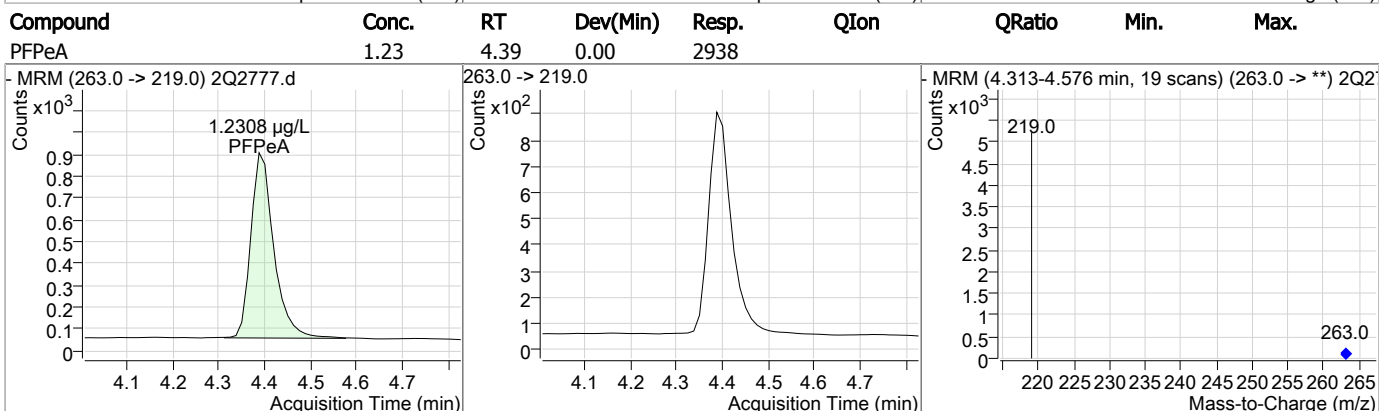
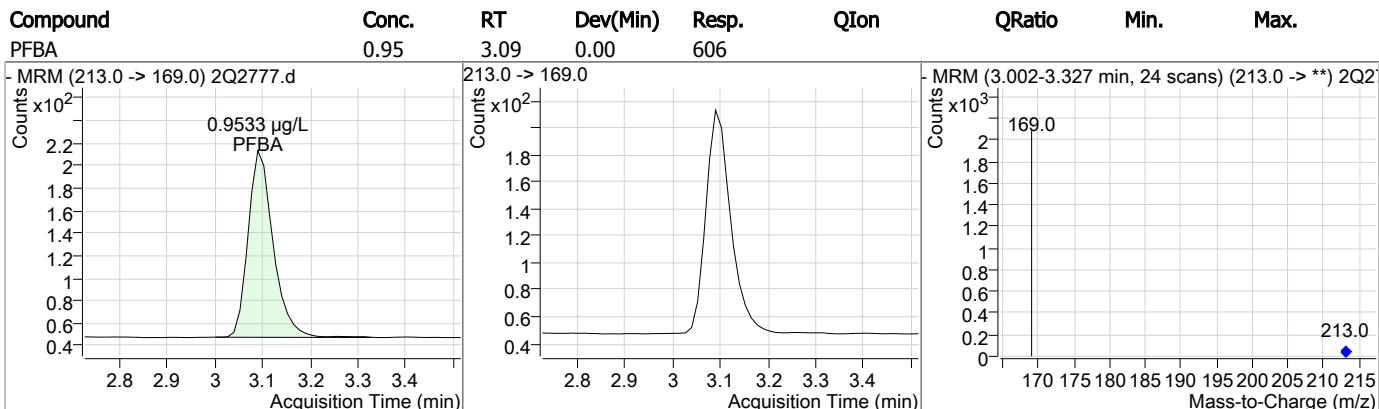
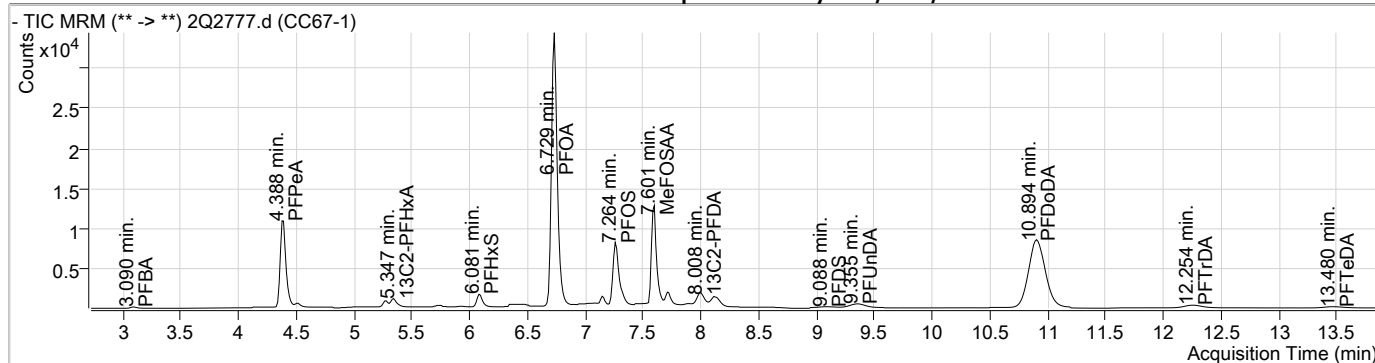
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2777.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 12:04:32 AM
 Sample Name : CC67-1
 Vial : Vial 82
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q69.batch.bin
 Sample Information : OP65503,S2Q69,125,,,1.0,1,water

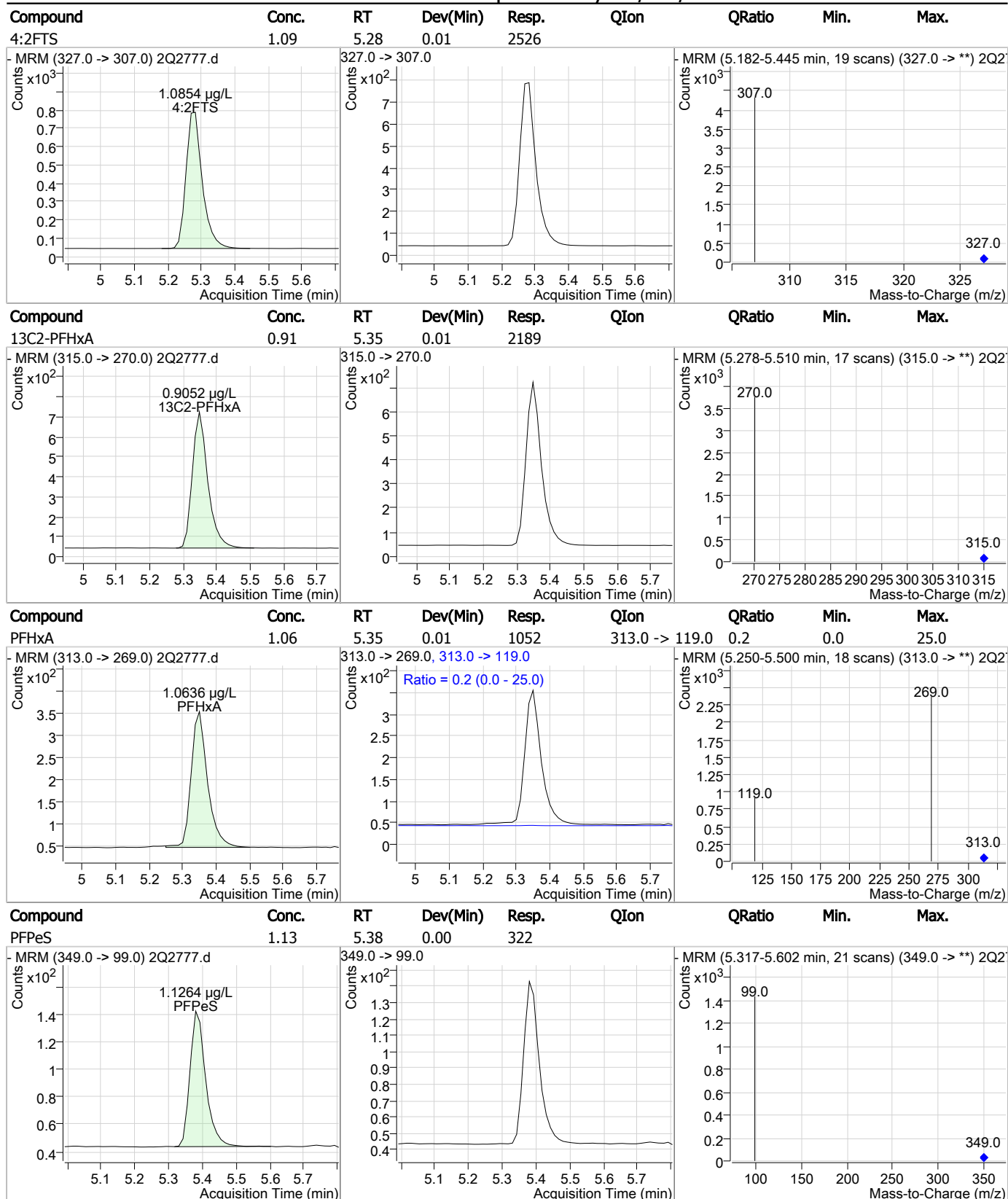
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)	
Internal Standards							
13C2-6:2FTS	6.737	429.0 -> 409.0	71739	20.00	µg/L	0.000	
13C2-PFDoDA	10.903	615.0 -> 570.0	81150	20.00	µg/L	-0.050	
13C2-PFOA	6.727	415.0 -> 370.0	42157	20.00	µg/L	0.000	
13C3-PFPeA	4.397	266.0 -> 222.0	34720	20.00	µg/L	0.013	
13C4-PFOS	7.263	503.0 -> 80.0	25404	20.00	µg/L	0.000	
d3-MeFOSAA	7.600	573.0 -> 419.0	35564	20.00	µg/L	0.013	
System Monitoring Compounds							
13C2-PFDA	8.008	515.0 -> 470.0	4365	1.21	µg/L	0.013	
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 6.0%				
13C2-PFHxA	5.347	315.0 -> 270.0	2189	0.91	µg/L	0.013	
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 4.5%				
d5-EtFOSAA	7.711	589.0 -> 419.0	2233	1.31	µg/L	0.000	
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 6.5%				
Target Compounds						QValue	
4:2FTS	5.282	327.0 -> 307.0	2526	1.09	µg/L	100	
6:2FTS	6.738	427.0 -> 407.0	4447	1.20	µg/L	100	
8:2FTS	8.127	527.0 -> 507.0	6334	1.34	µg/L	100	
EtFOSAA	7.725	584.0 -> 419.0	1986	1.15	µg/L	100	
FOSA	7.164	498.0 -> 78.0	3181	0.95	µg/L	100	
MeFOSAA	7.601	570.0 -> 419.0	2200	1.10	µg/L	100	
PFBA	3.090	213.0 -> 169.0	606	0.95	µg/L	100	
PFBS	4.516	299.0 -> 80.0	1017	1.07	µg/L	99	
PFDA	8.009	513.0 -> 469.0	2493	1.17	µg/L	#	48
PFDoDA	10.894	613.0 -> 569.0	4269	1.23	µg/L	#	29
PFDS	9.088	599.0 -> 80.0	924	1.27	µg/L		100
PFHpA	6.099	363.0 -> 319.0	3540	1.23	µg/L		93
PFHpS	6.695	449.0 -> 80.0	1402	1.22	µg/L		100
PFHxA	5.350	313.0 -> 269.0	1052	1.06	µg/L		86
PFHxS	6.081	399.0 -> 80.0	1328	1.17	µg/L	m	94
PFNA	7.332	463.0 -> 419.0	2446	1.19	µg/L		94
PFNS	7.905	549.0 -> 99.0	711	1.25	µg/L		100
PFOA	6.729	413.0 -> 369.0	2130	1.31	µg/L		95
PFOS	7.264	499.0 -> 80.0	1839	1.21	µg/L	m	87
PFPeA	4.388	263.0 -> 219.0	2938	1.23	µg/L		100
PFPeS	5.380	349.0 -> 99.0	322	1.13	µg/L		100
PFTeDA	13.480	713.0 -> 669.0	1703	1.15	µg/L	#	32
PFTTrDA	12.254	663.0 -> 619.0	3359	1.19	µg/L	#	34
PFUnDA	9.355	563.0 -> 519.0	3928	1.23	µg/L	#	41

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

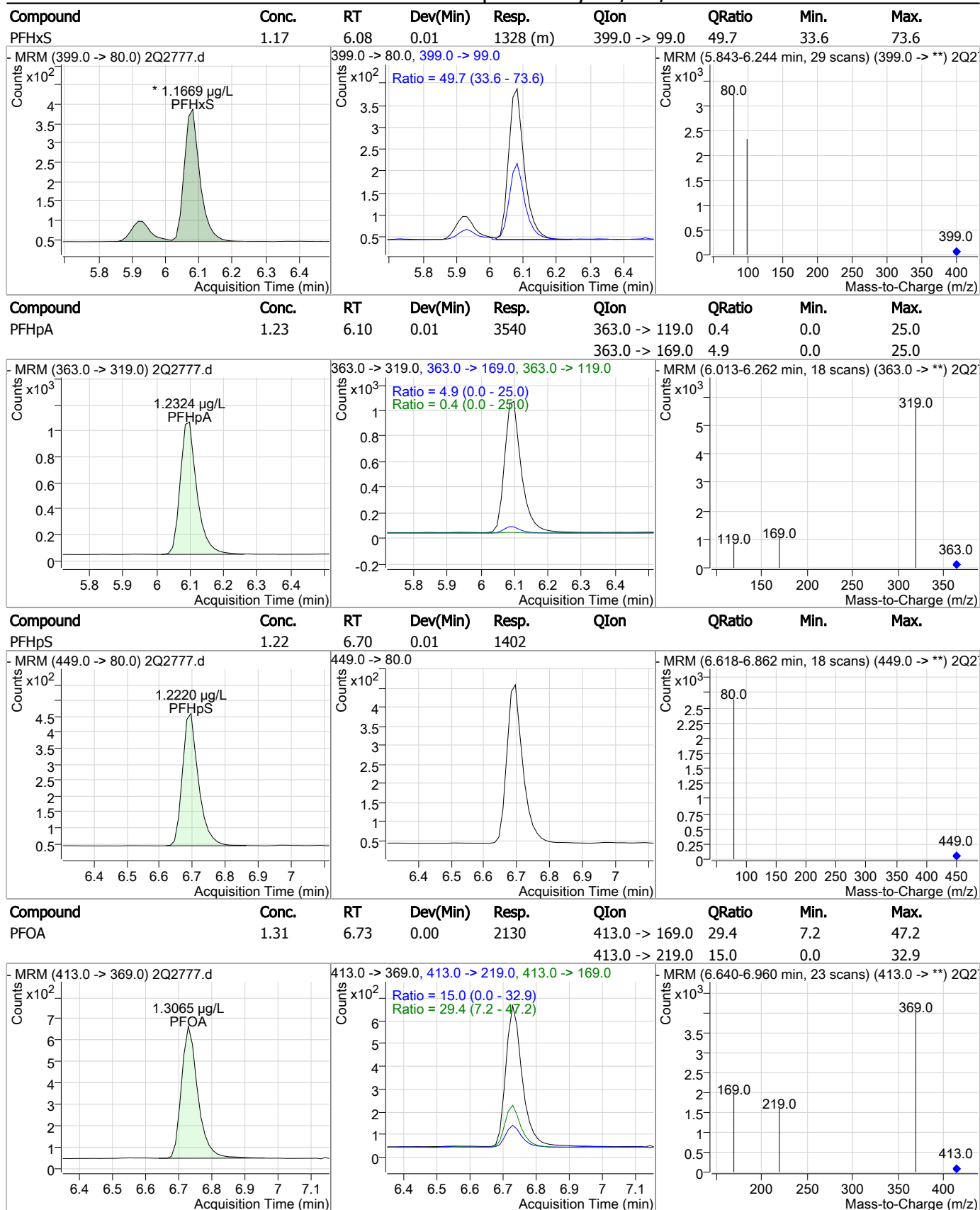
Perfluorinated Compounds by LC/MS/MS



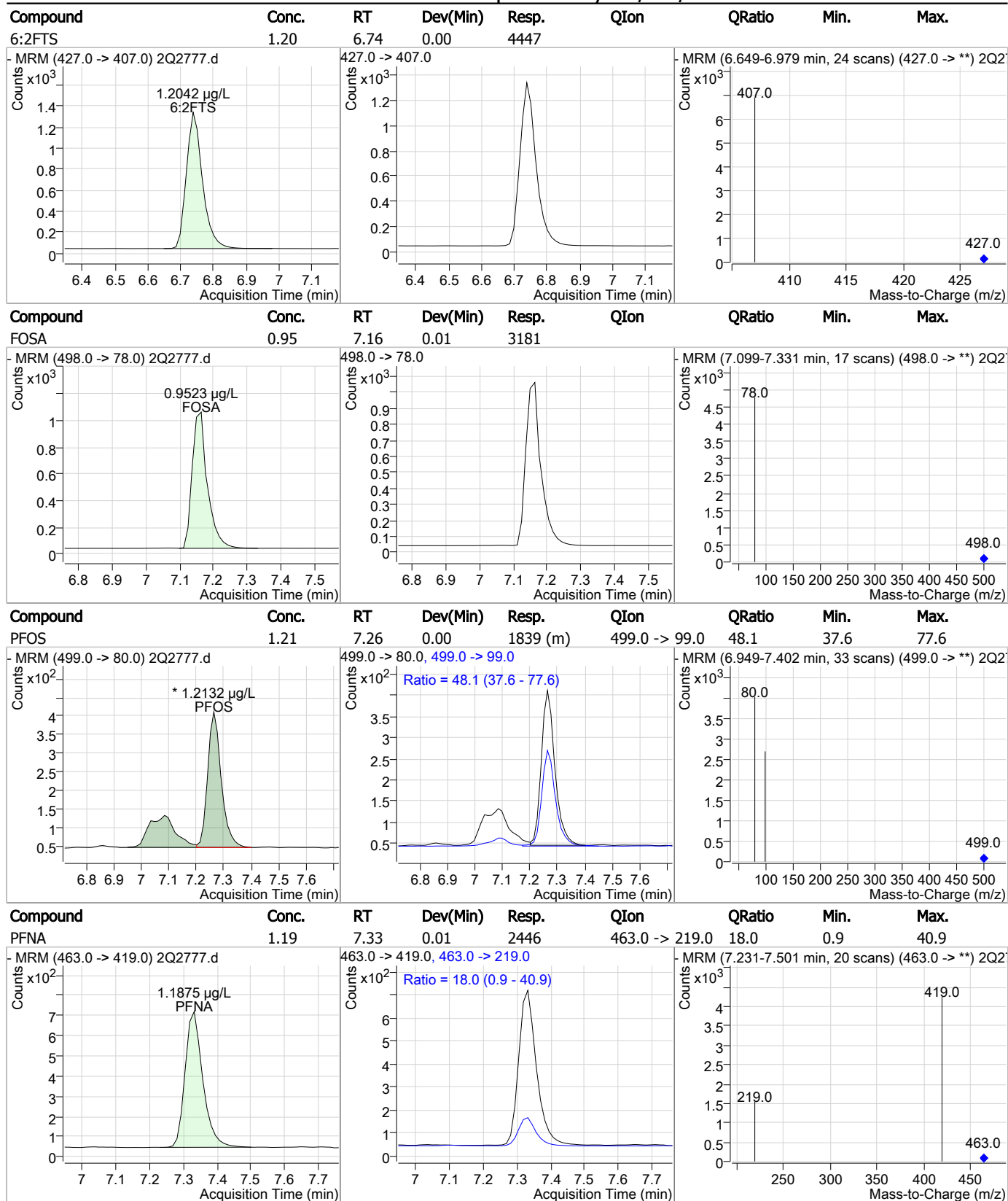
Perfluorinated Compounds by LC/MS/MS



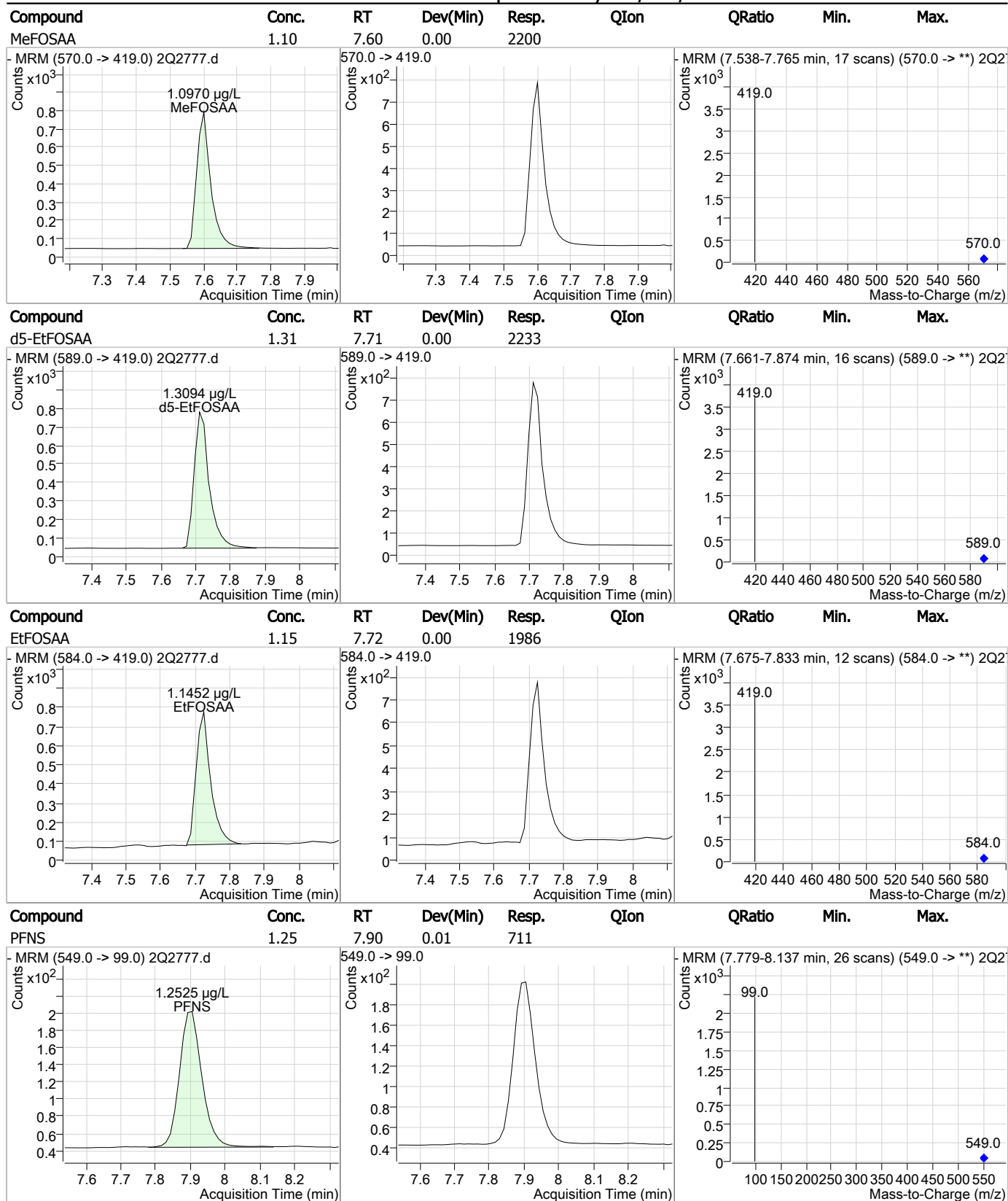
Perfluorinated Compounds by LC/MS/MS



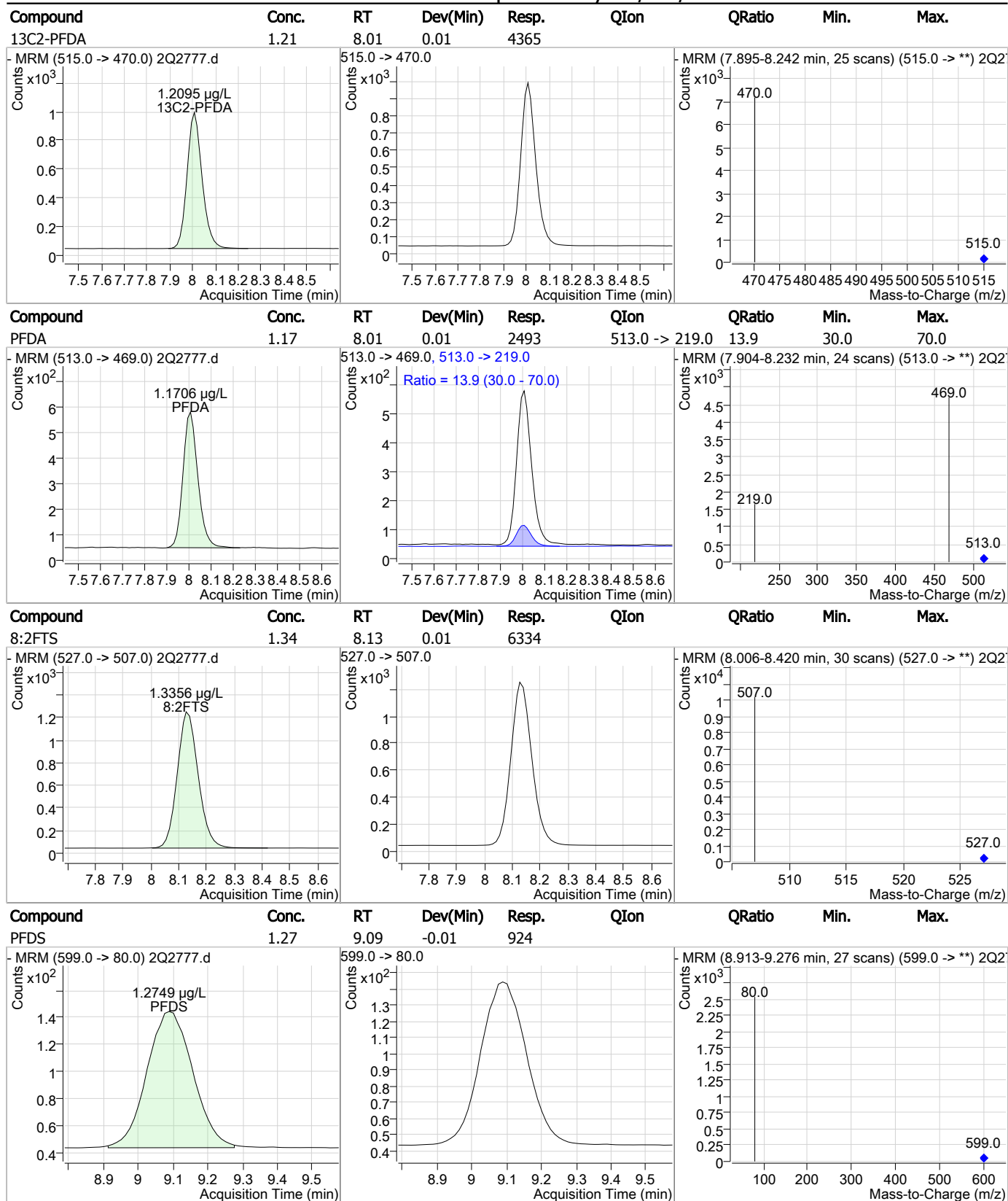
Perfluorinated Compounds by LC/MS/MS



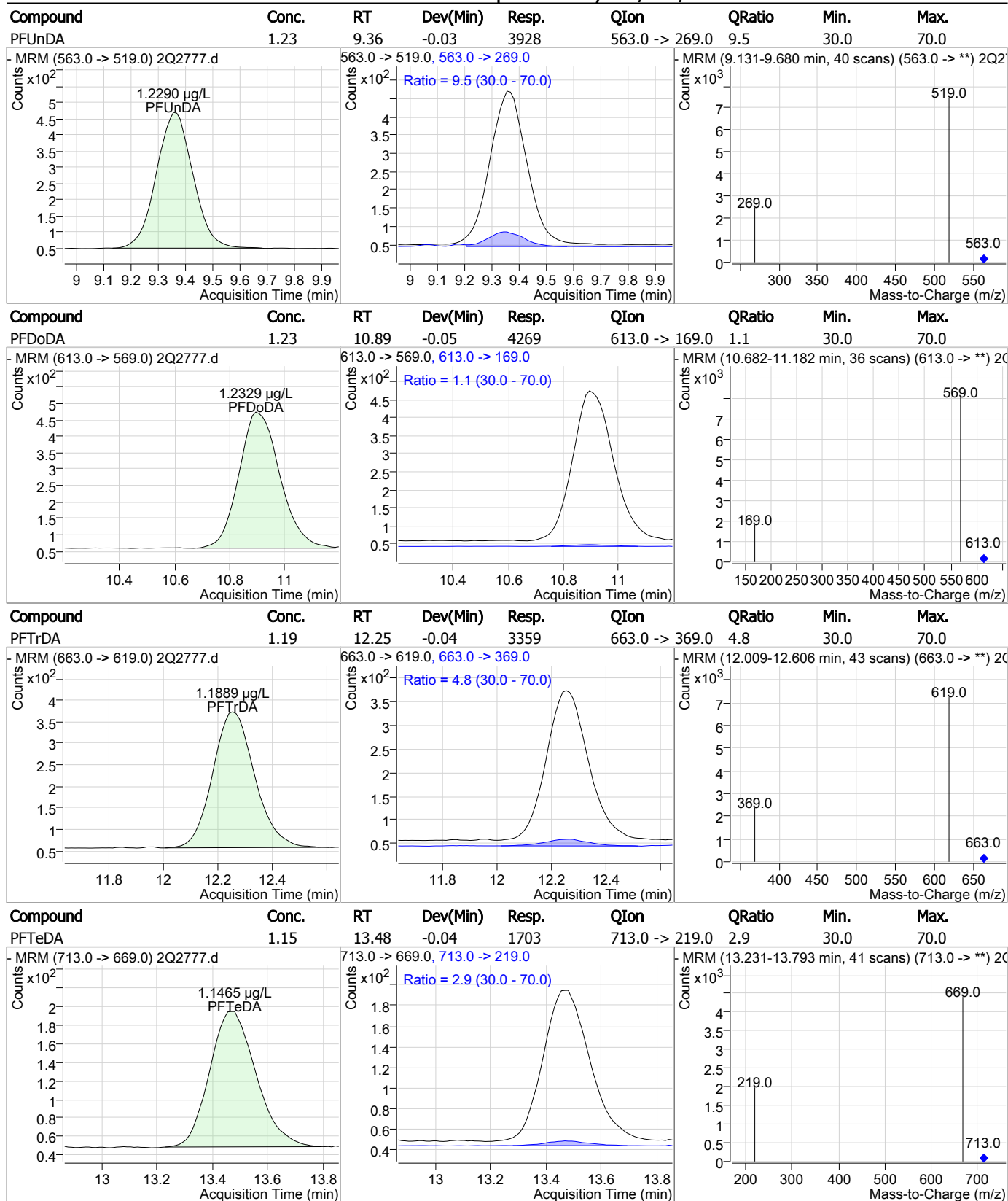
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q69-CC67

Method: EPA 537

Lab FileID: 2Q2777.D

Analyst approved: 06/27/17 12:06 Nancy Saunders

Injection Time: 06/27/17 00:04

Supervisor approved: 06/27/17 17:36 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.26	Split peak

7.5.11.1

7

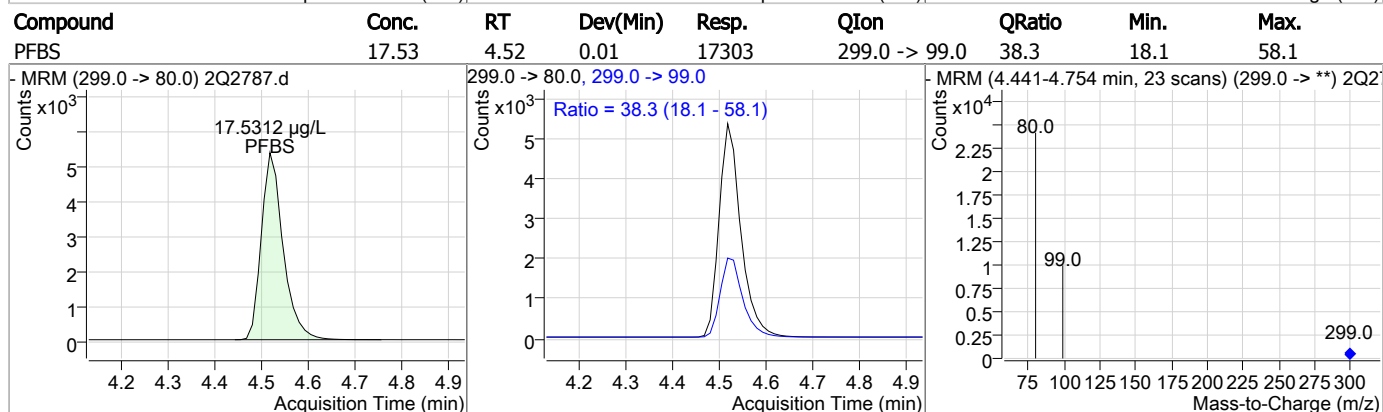
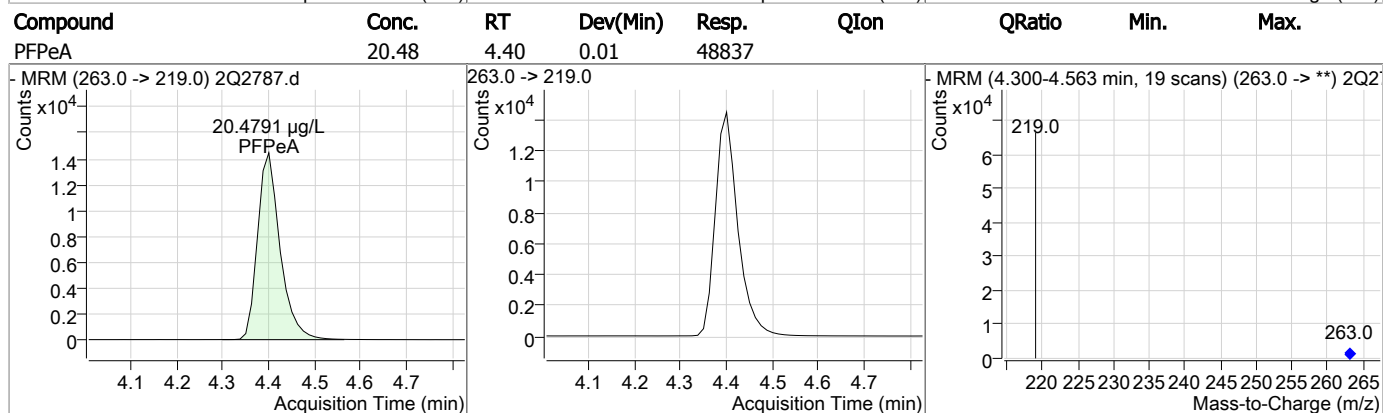
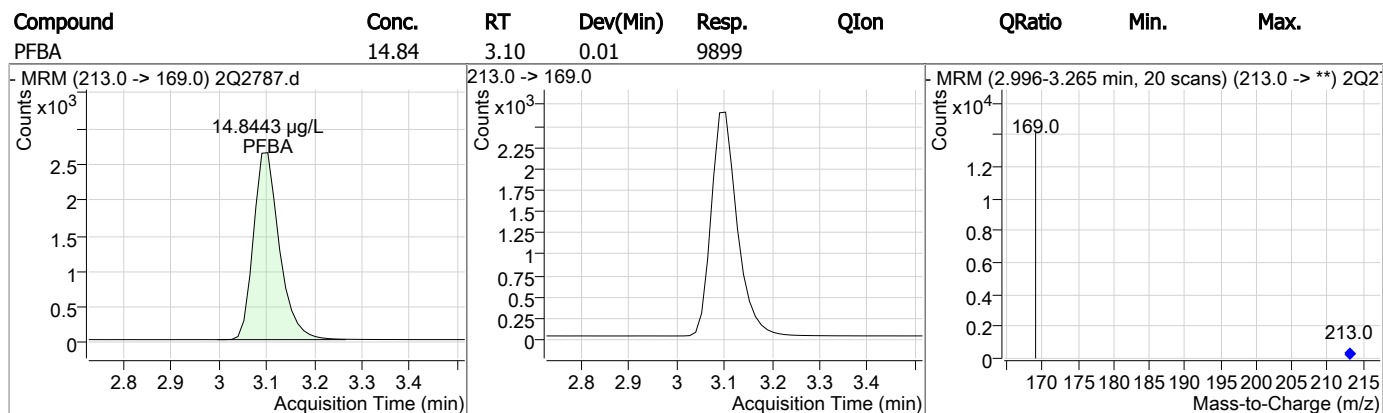
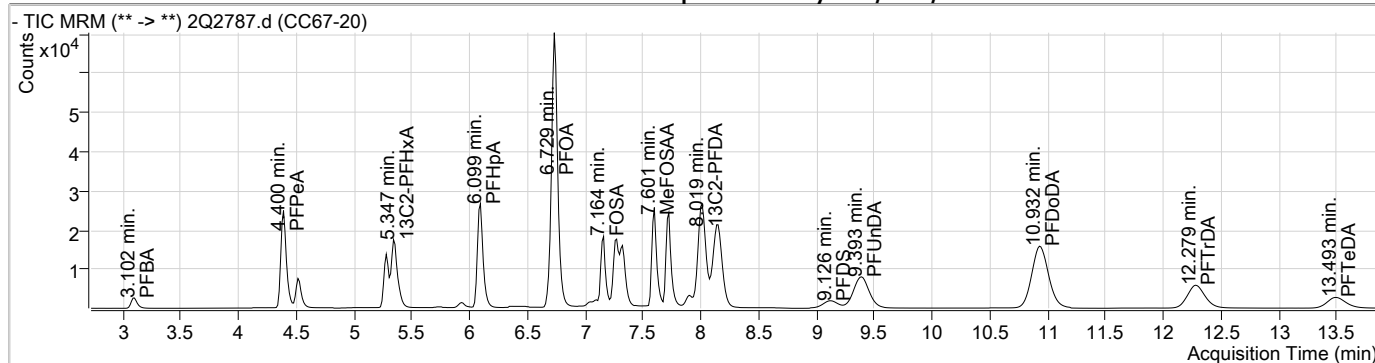
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2787.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 3:17:46 AM
 Sample Name : CC67-20
 Vial : Vial 2
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q69.batch.bin
 Sample Information : OP65503,S2Q69,125,,,1.0,1,water

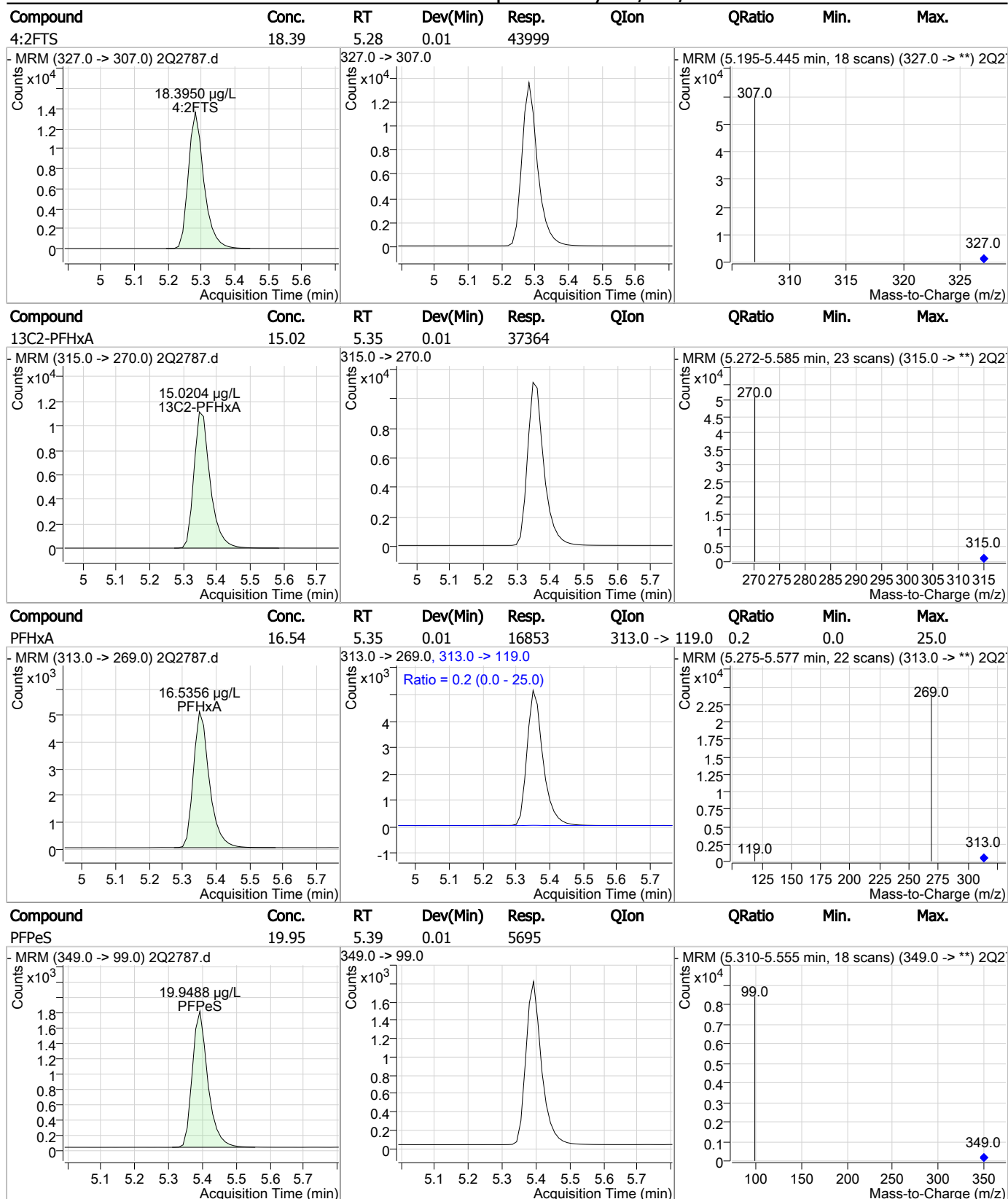
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.749	429.0 -> 409.0	76587	20.00	µg/L	0.013
13C2-PFDoDA	10.928	615.0 -> 570.0	84289	20.00	µg/L	-0.025
13C2-PFOA	6.740	415.0 -> 370.0	44223	20.00	µg/L	0.013
13C3-PFPeA	4.397	266.0 -> 222.0	34691	20.00	µg/L	0.013
13C4-PFOS	7.275	503.0 -> 80.0	26415	20.00	µg/L	0.013
d3-MeFOSAA	7.600	573.0 -> 419.0	36483	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-PFDA	8.019	515.0 -> 470.0	75825	20.62	µg/L	0.024
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 103.1%			
13C2-PFHxA	5.347	315.0 -> 270.0	37364	15.02	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 75.1%			
d5-EtFOSAA	7.711	589.0 -> 419.0	38281	21.88	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 109.4%			
Target Compounds						QValue
4:2FTS	5.282	327.0 -> 307.0	43999	18.39	µg/L	100
6:2FTS	6.751	427.0 -> 407.0	74007	19.70	µg/L	100
8:2FTS	8.152	527.0 -> 507.0	113438	23.44	µg/L	100
EtFOSAA	7.725	584.0 -> 419.0	34401	20.10	µg/L	100
FOSA	7.164	498.0 -> 78.0	54006	16.53	µg/L	100
MeFOSAA	7.601	570.0 -> 419.0	38288	19.00	µg/L	100
PFBA	3.102	213.0 -> 169.0	9899	14.84	µg/L	100
PFBS	4.516	299.0 -> 80.0	17303	17.53	µg/L	100
PFDA	8.021	513.0 -> 469.0	43548	20.03	µg/L	# 48
PFDoDA	10.932	613.0 -> 569.0	73699	20.49	µg/L	# 29
PFDS	9.126	599.0 -> 80.0	16530	21.93	µg/L	100
PFHpA	6.099	363.0 -> 319.0	58523	19.42	µg/L	93
PFHpS	6.695	449.0 -> 80.0	24316	20.38	µg/L	100
PFHxA	5.350	313.0 -> 269.0	16853	16.54	µg/L	85
PFHxS	6.081	399.0 -> 80.0	23298	19.69	µg/L	m 92
PFNA	7.332	463.0 -> 419.0	40389	18.69	µg/L	96
PFNS	7.905	549.0 -> 99.0	11790	19.97	µg/L	100
PFOA	6.729	413.0 -> 369.0	35065	20.50	µg/L	96
PFOS	7.264	499.0 -> 80.0	29382	18.94	µg/L	m 90
PFPeA	4.400	263.0 -> 219.0	48837	20.48	µg/L	100
PFPeS	5.393	349.0 -> 99.0	5695	19.95	µg/L	100
PFTeDA	13.493	713.0 -> 669.0	29859	19.35	µg/L	# 32
PFTTrDA	12.279	663.0 -> 619.0	59340	20.22	µg/L	# 33
PFUnDA	9.393	563.0 -> 519.0	68510	20.64	µg/L	# 41

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

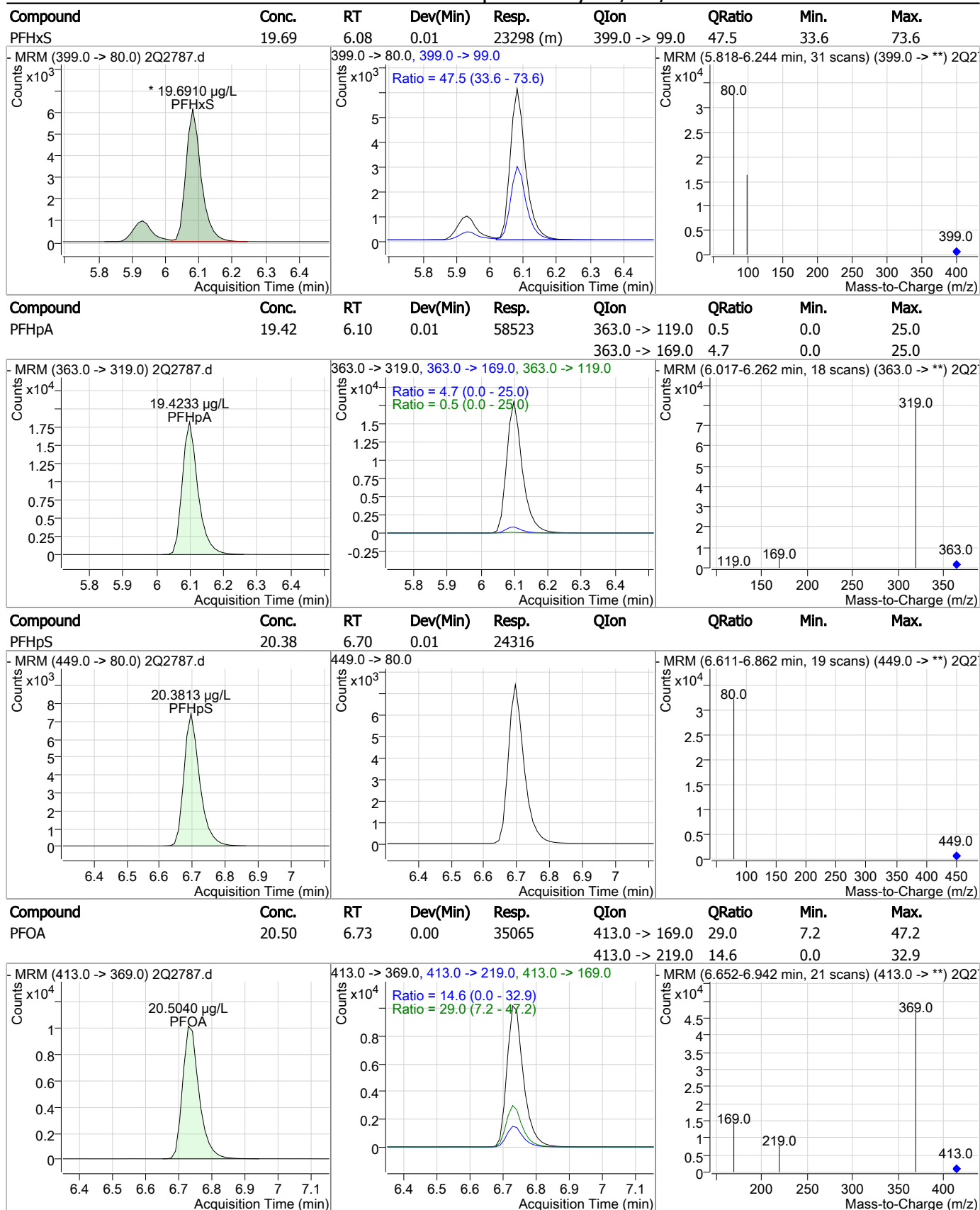
Perfluorinated Compounds by LC/MS/MS



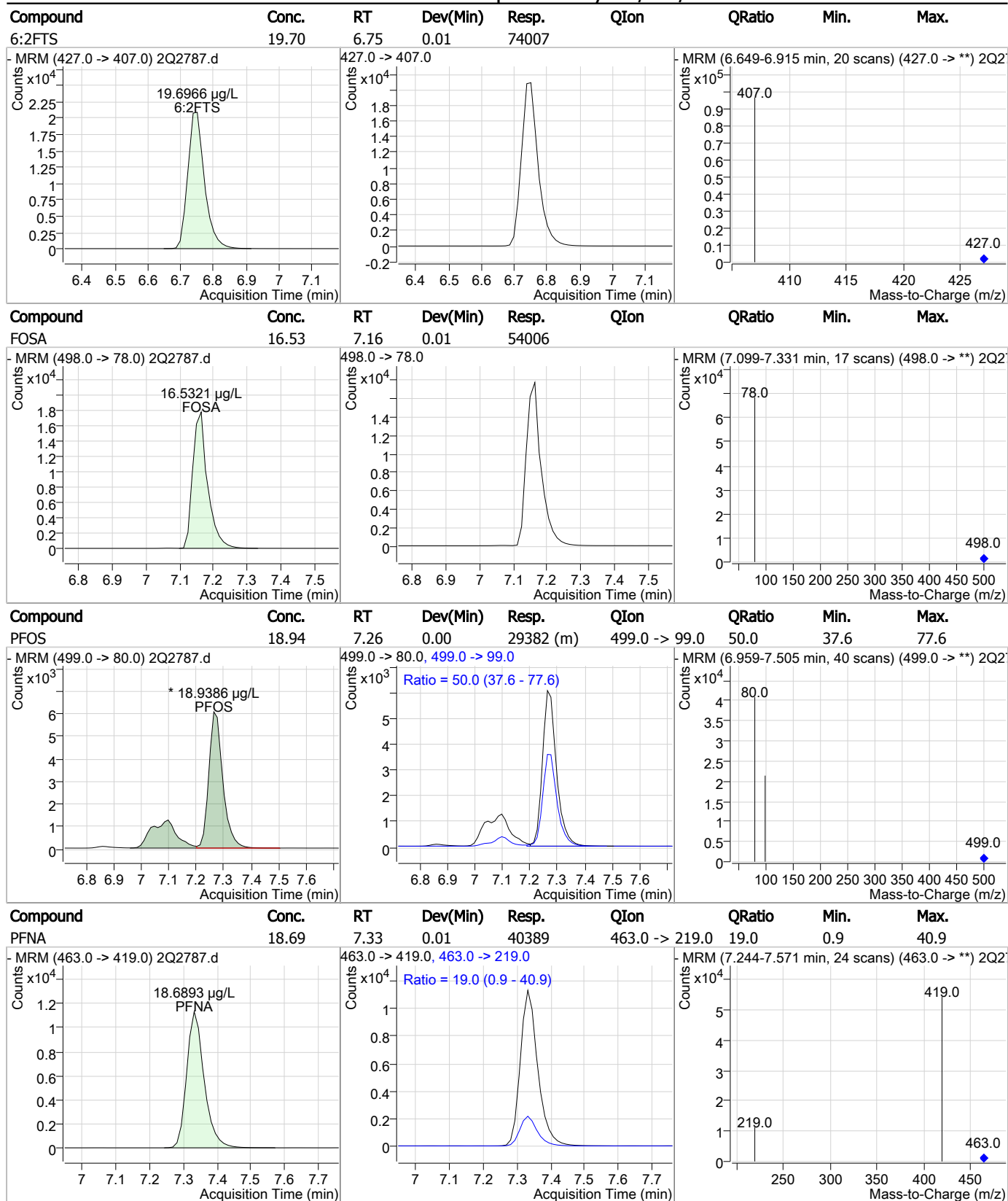
Perfluorinated Compounds by LC/MS/MS



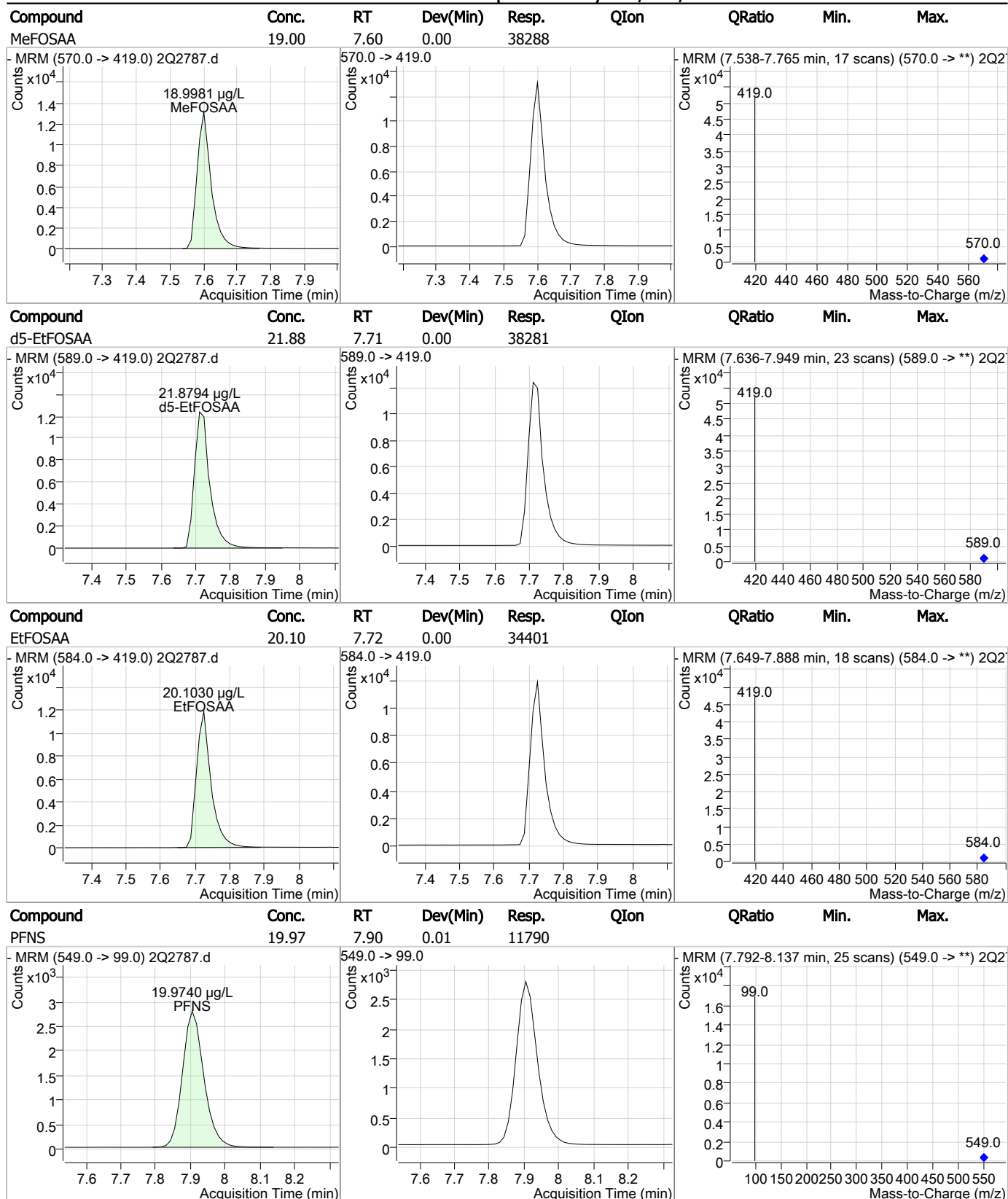
Perfluorinated Compounds by LC/MS/MS



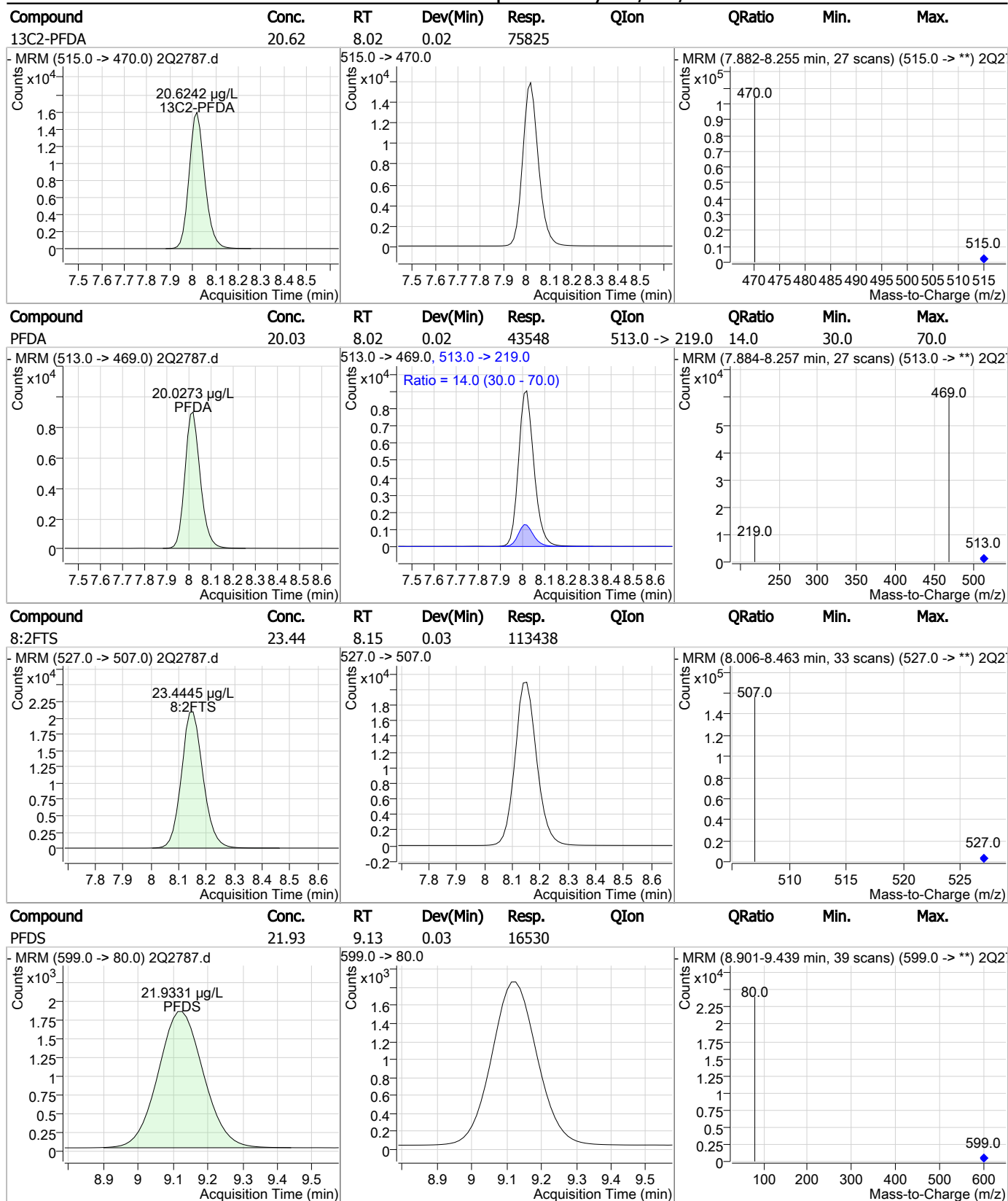
Perfluorinated Compounds by LC/MS/MS



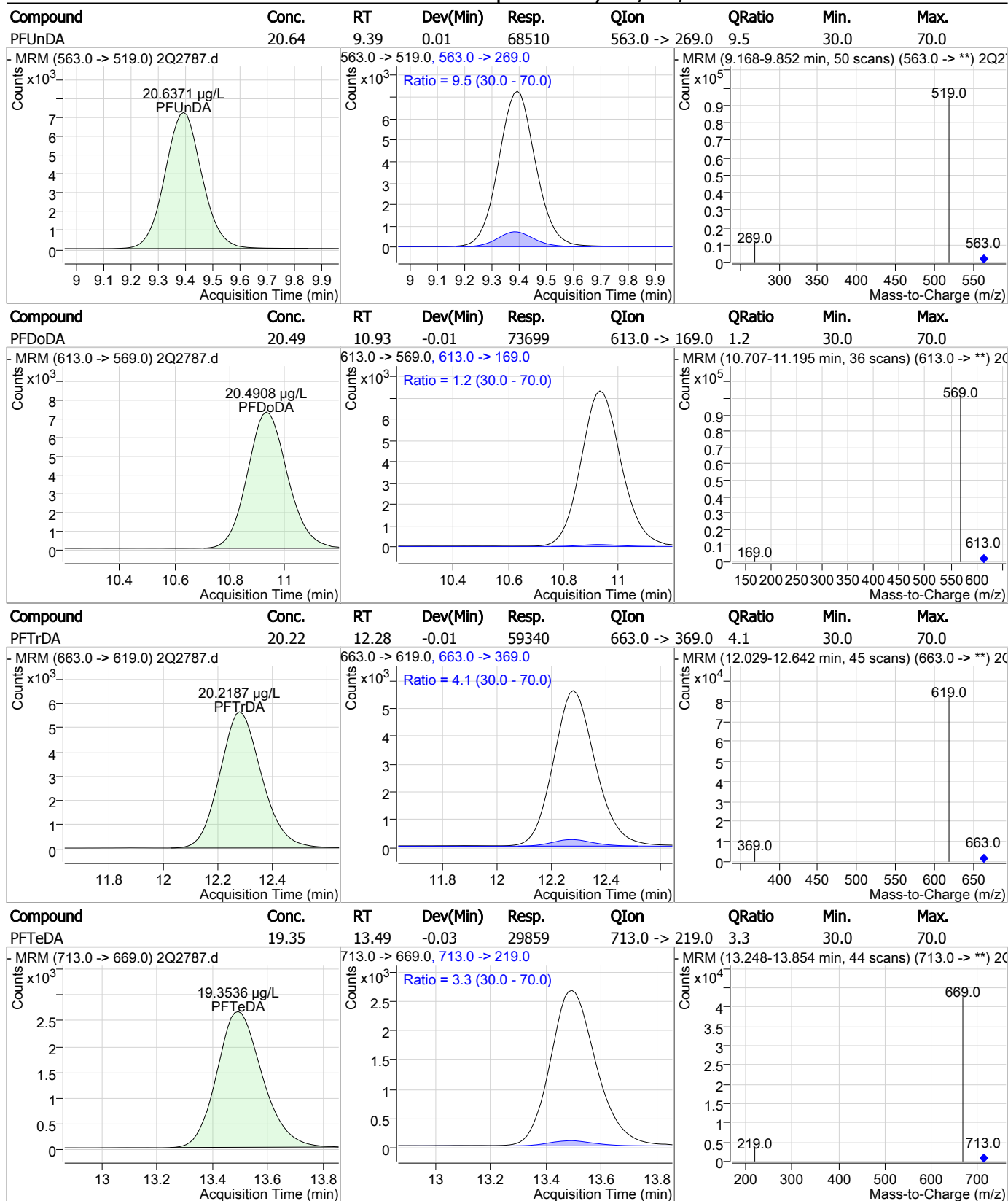
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q69-CC67

Method: EPA 537

Lab FileID: 2Q2787.D

Analyst approved: 06/27/17 12:06 Nancy Saunders

Injection Time: 06/27/17 03:17

Supervisor approved: 06/27/17 17:36 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.26	Split peak

7.5.12.1
7

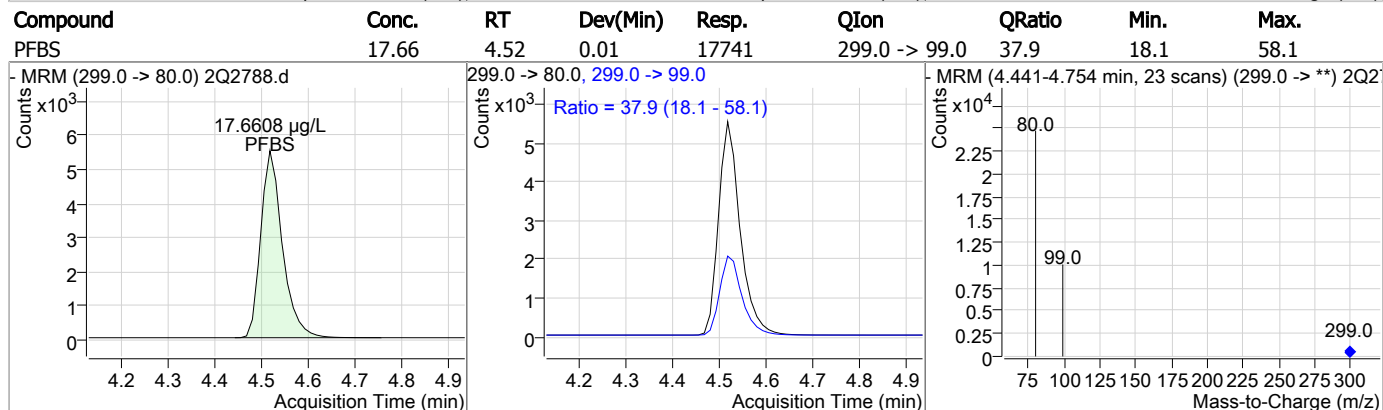
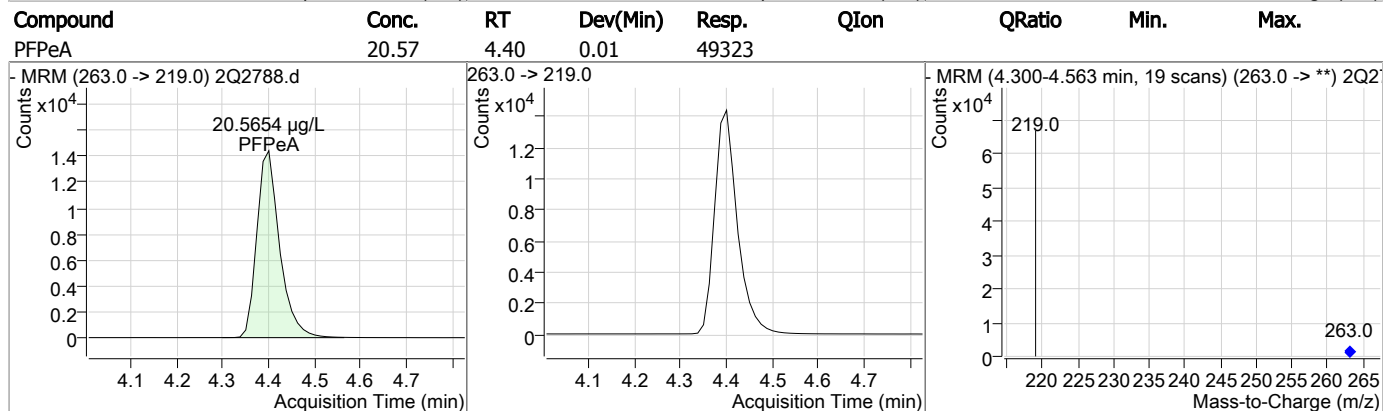
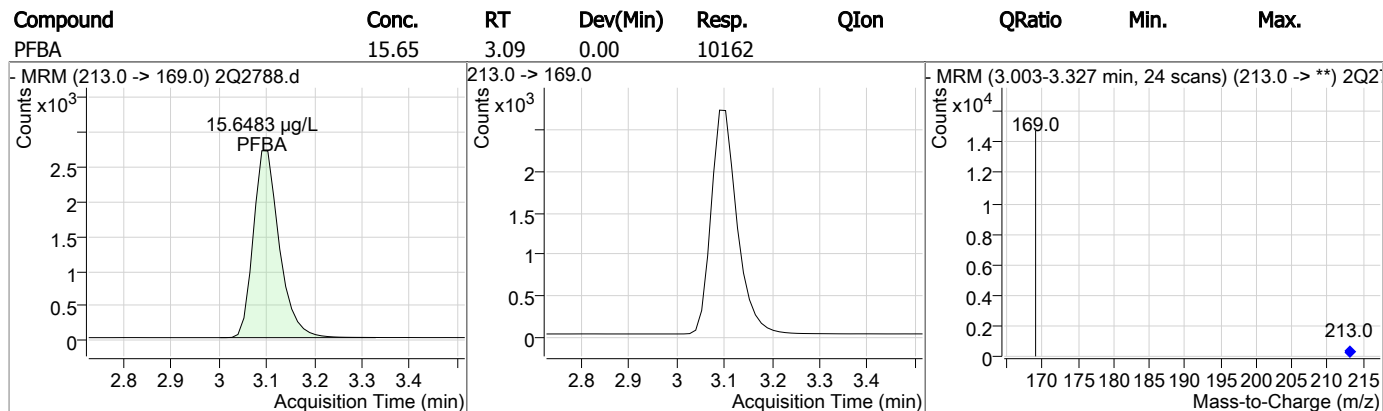
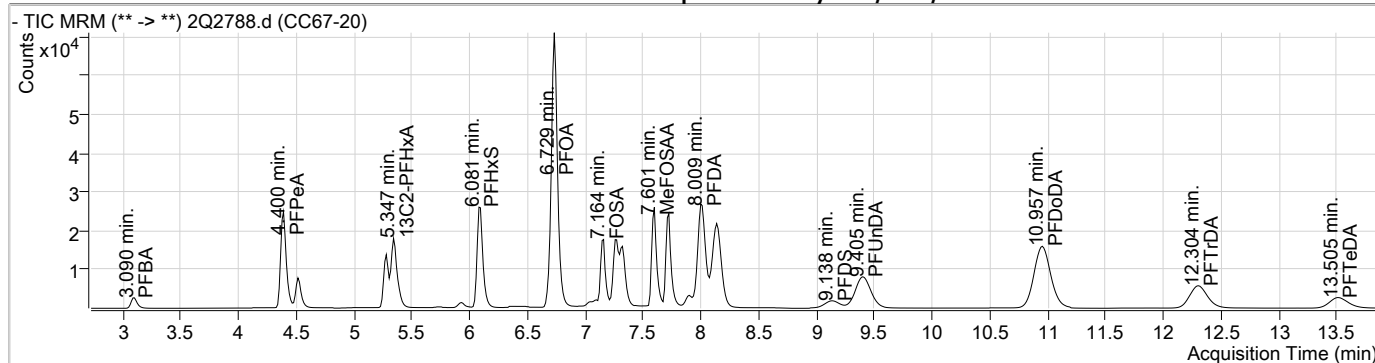
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2788.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 3:37:05 AM
 Sample Name : CC67-20
 Vial : Vial 2
 DA Method File : PFC_0623_S2Q67.quantmethod.xml
 Batch Name : S2Q69.batch.bin
 Sample Information : OP65591,S2Q69,125,,,1.0,1,water

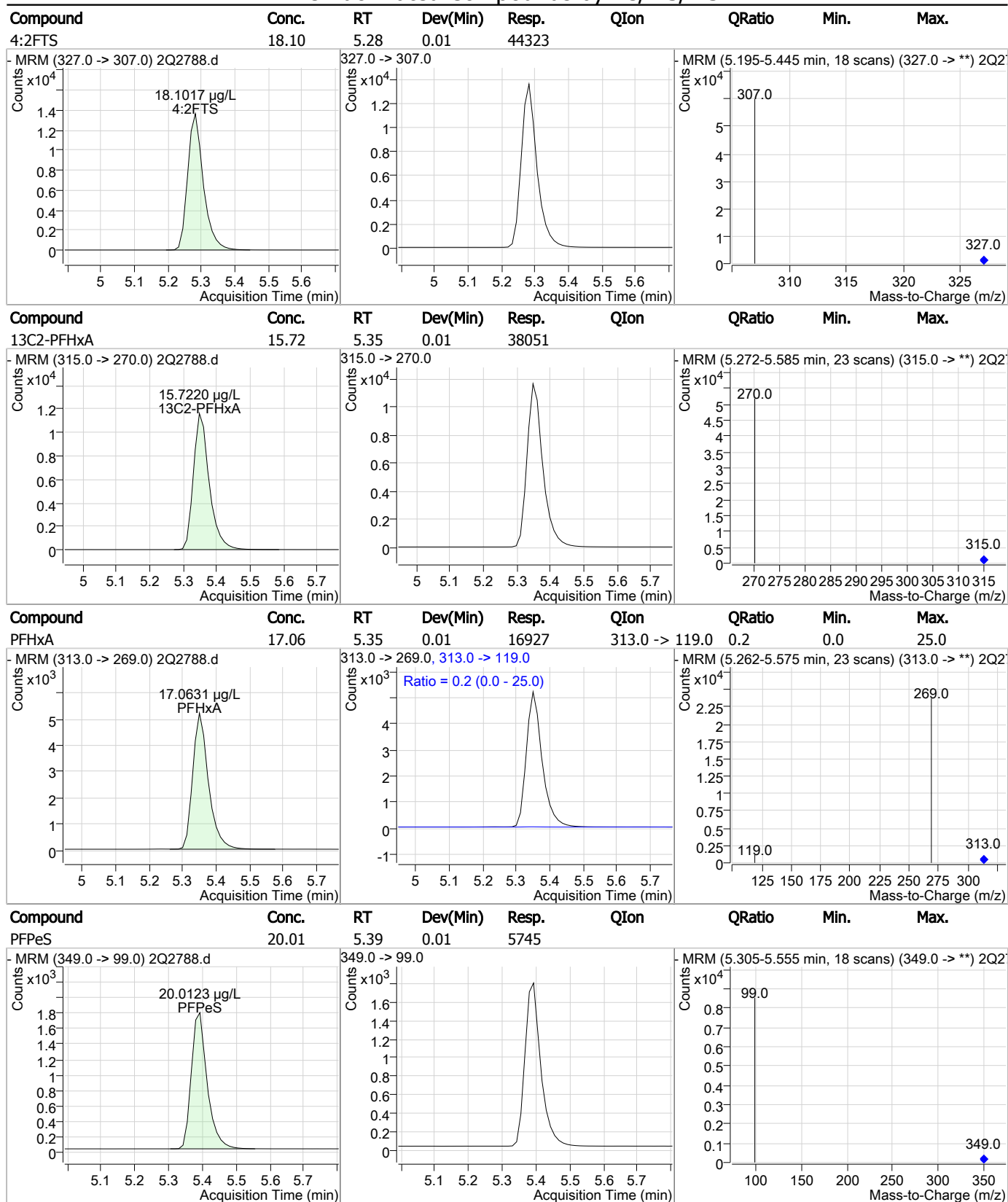
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.737	429.0 -> 409.0	78350	20.00 µg/L	0.000
13C2-PFDoDA	10.953	615.0 -> 570.0	85879	20.00 µg/L	0.000
13C2-PFOA	6.727	415.0 -> 370.0	43069	20.00 µg/L	0.000
13C3-PFPeA	4.397	266.0 -> 222.0	34889	20.00 µg/L	0.013
13C4-PFOS	7.275	503.0 -> 80.0	26886	20.00 µg/L	0.013
d3-MeFOSAA	7.600	573.0 -> 419.0	37319	20.00 µg/L	0.013
System Monitoring Compounds					
13C2-PFDA	8.019	515.0 -> 470.0	75168	21.01 µg/L	0.024
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 105.0%		
13C2-PFHxA	5.347	315.0 -> 270.0	38051	15.72 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 78.6%		
d5-EtFOSAA	7.711	589.0 -> 419.0	38350	21.43 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 107.1%		
Target Compounds					QValue
4:2FTS	5.282	327.0 -> 307.0	44323	18.10 µg/L	100
6:2FTS	6.738	427.0 -> 407.0	75410	19.61 µg/L	100
8:2FTS	8.140	527.0 -> 507.0	112713	22.74 µg/L	100
EtFOSAA	7.725	584.0 -> 419.0	34820	19.88 µg/L	100
FOSA	7.164	498.0 -> 78.0	53717	16.05 µg/L	100
MeFOSAA	7.601	570.0 -> 419.0	39342	19.09 µg/L	100
PFBA	3.090	213.0 -> 169.0	10162	15.65 µg/L	100
PFBS	4.516	299.0 -> 80.0	17741	17.66 µg/L	100
PFDA	8.009	513.0 -> 469.0	43938	20.77 µg/L	# 47
PFDoDA	10.957	613.0 -> 569.0	71497	19.51 µg/L	# 29
PFDS	9.138	599.0 -> 80.0	16717	21.79 µg/L	100
PFHpA	6.099	363.0 -> 319.0	58250	19.85 µg/L	93
PFHpS	6.695	449.0 -> 80.0	24687	20.33 µg/L	100
PFHxA	5.350	313.0 -> 269.0	16927	17.06 µg/L	85
PFHxS	6.081	399.0 -> 80.0	23504	19.52 µg/L	m 92
PFNA	7.332	463.0 -> 419.0	40619	19.30 µg/L	96
PFNS	7.905	549.0 -> 99.0	11835	19.70 µg/L	100
PFOA	6.729	413.0 -> 369.0	35102	21.08 µg/L	95
PFOS	7.264	499.0 -> 80.0	29571	18.72 µg/L	m 90
PFPeA	4.400	263.0 -> 219.0	49323	20.57 µg/L	100
PFPeS	5.393	349.0 -> 99.0	5745	20.01 µg/L	100
PFTeDA	13.505	713.0 -> 669.0	29915	19.03 µg/L	# 32
PFTTrDA	12.304	663.0 -> 619.0	59372	19.86 µg/L	# 34
PFUnDA	9.405	563.0 -> 519.0	69750	20.62 µg/L	# 41

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

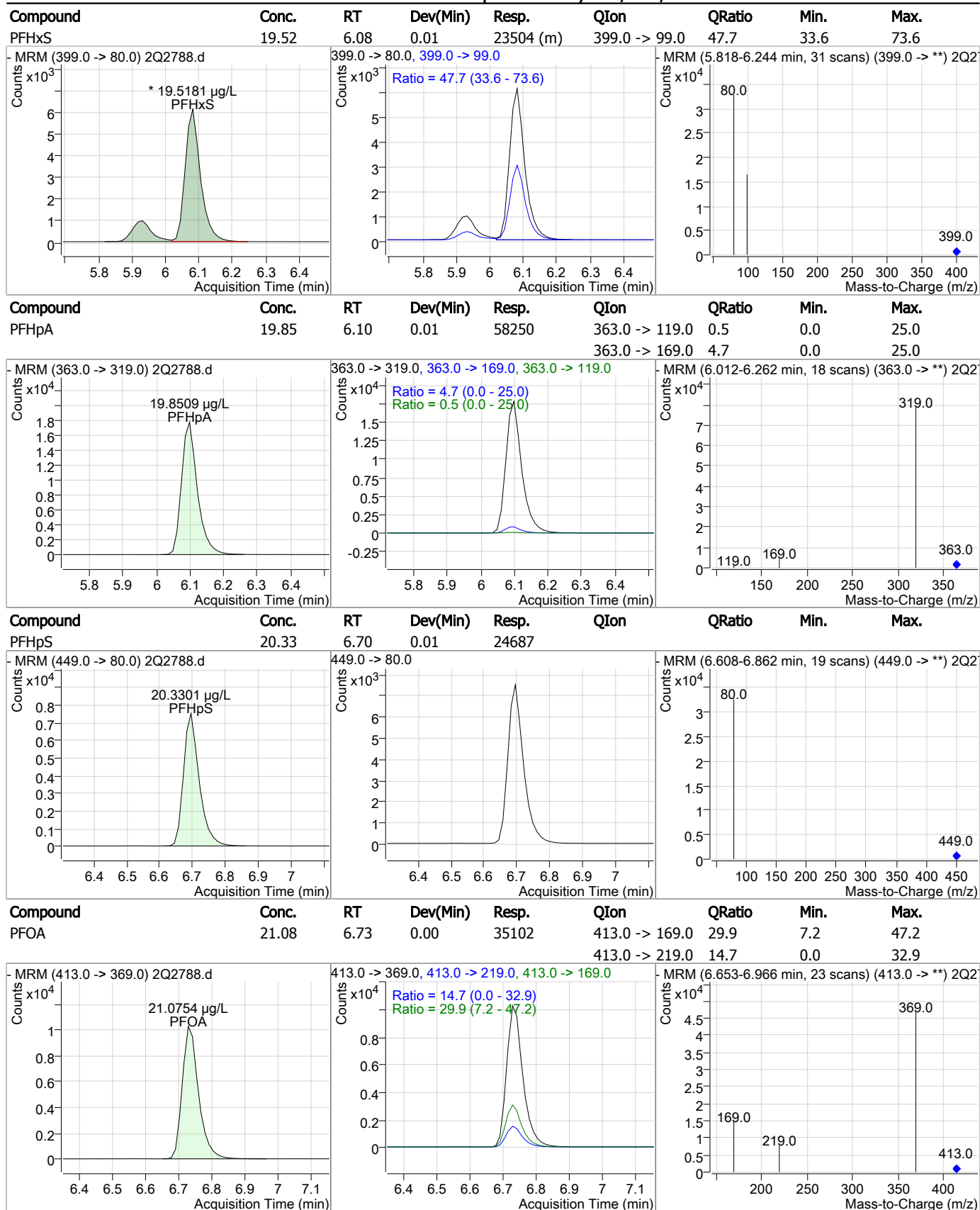
Perfluorinated Compounds by LC/MS/MS



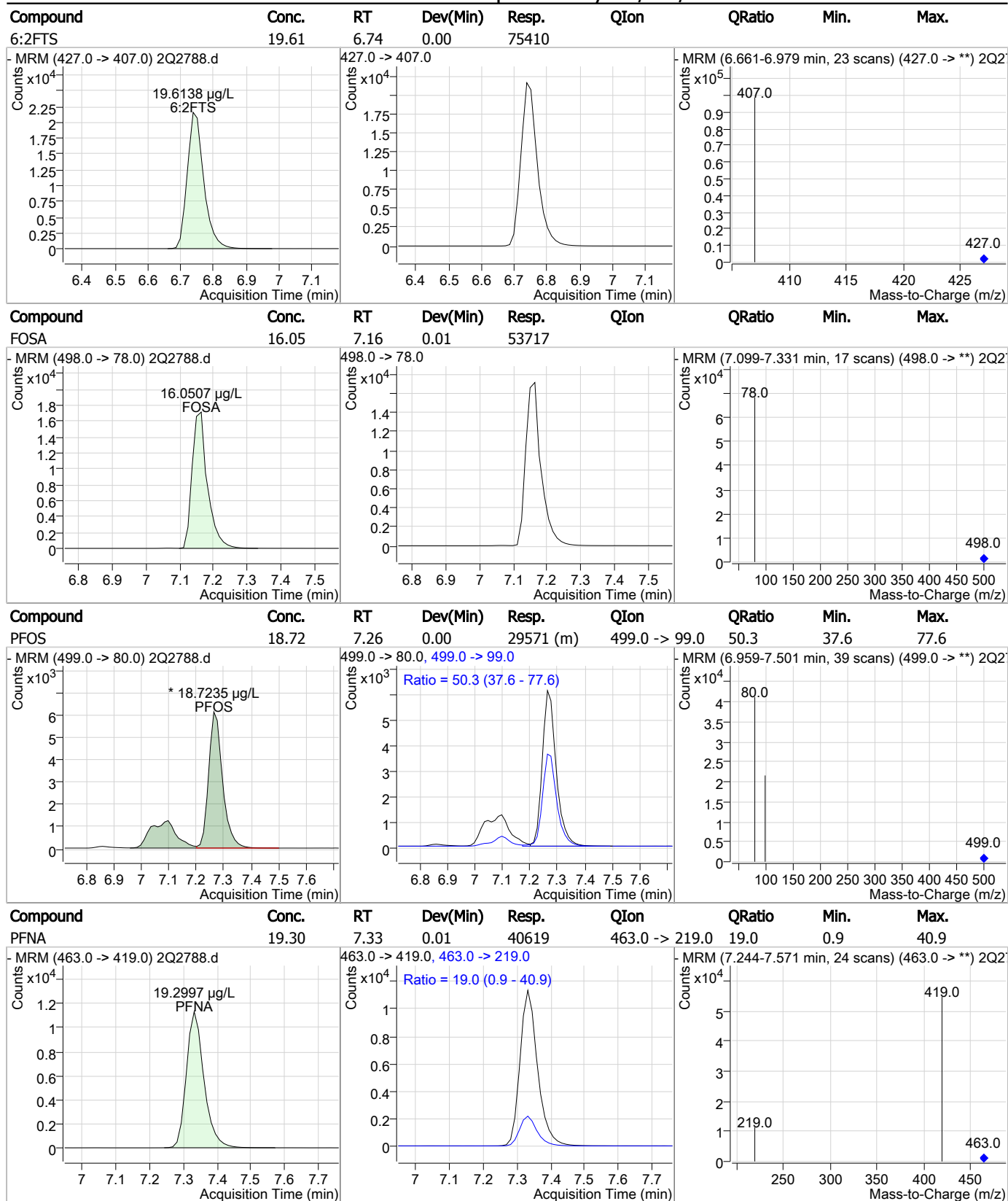
Perfluorinated Compounds by LC/MS/MS



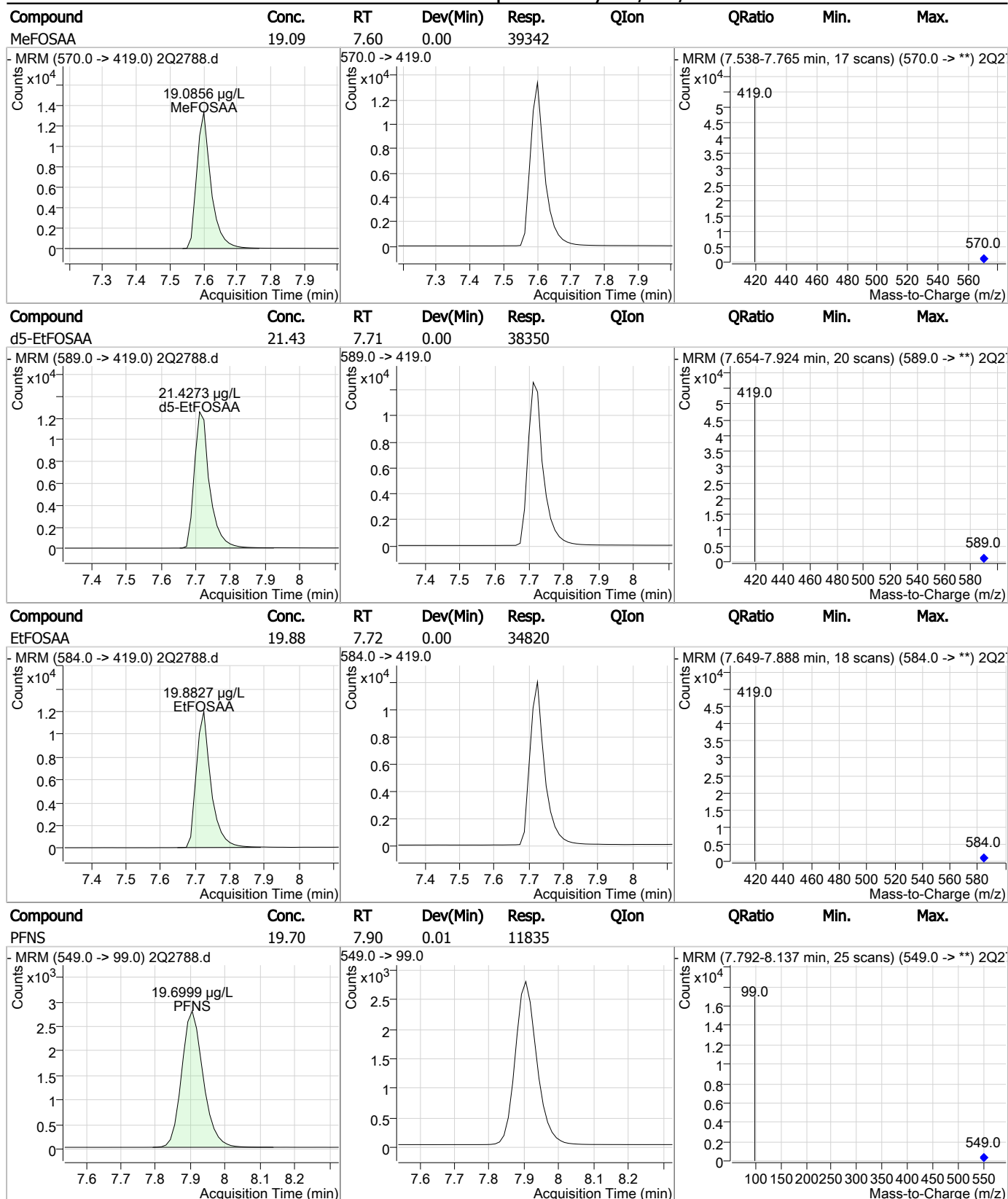
Perfluorinated Compounds by LC/MS/MS



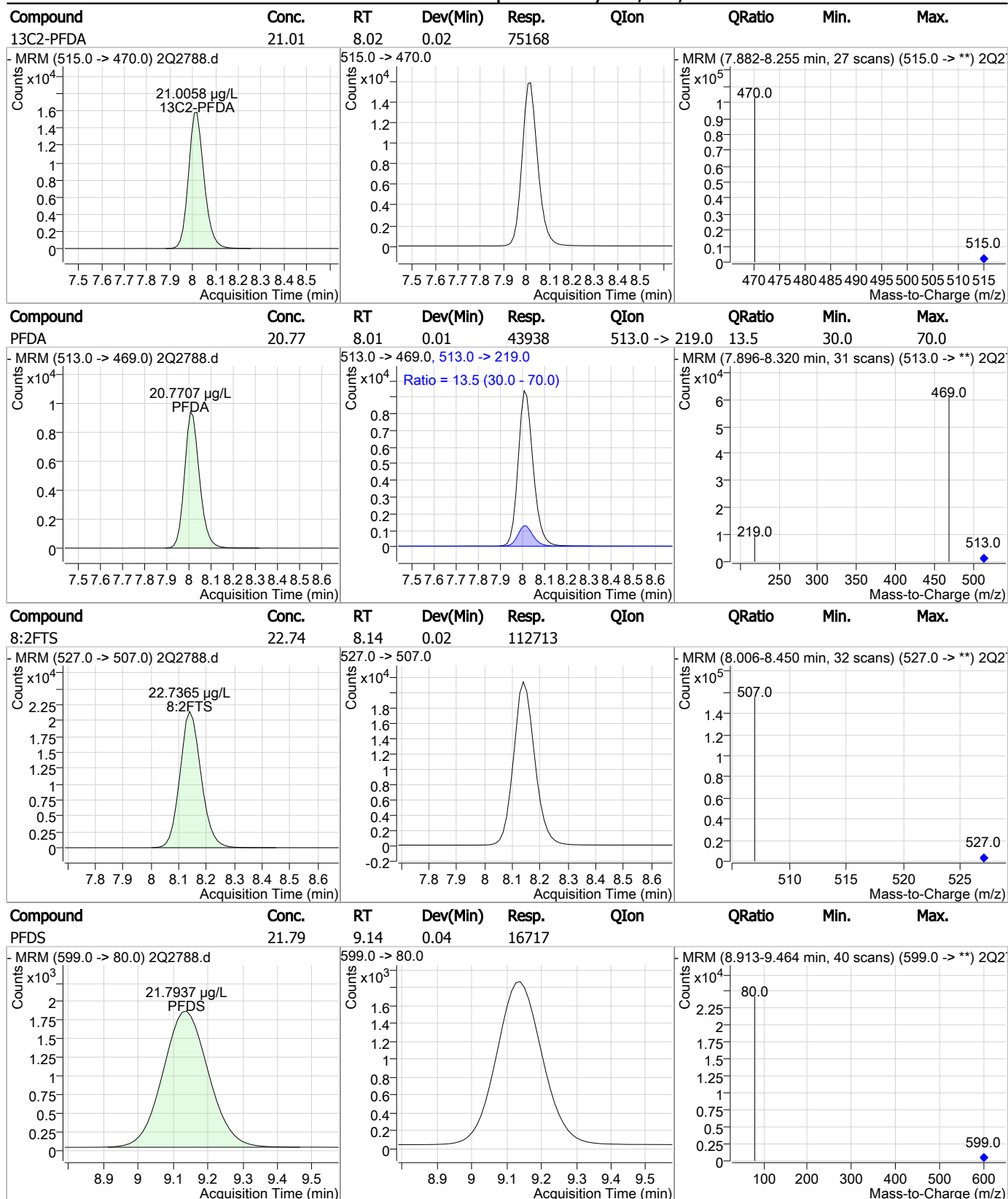
Perfluorinated Compounds by LC/MS/MS



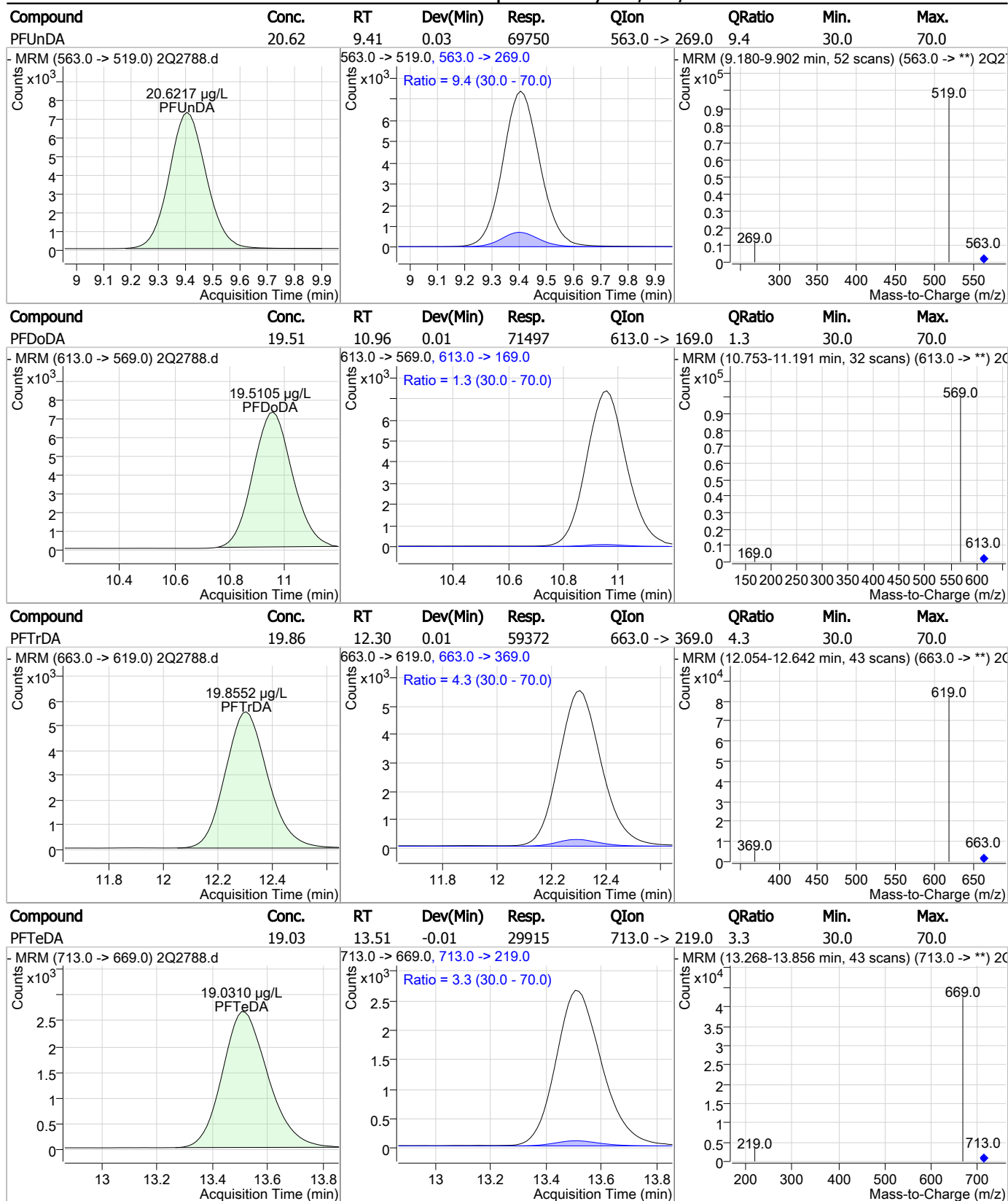
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q69-CC67

Method: EPA 537 MOD

Lab FileID: 2Q2788.D

Analyst approved: 06/27/17 12:06 Nancy Saunders

Injection Time: 06/27/17 03:37

Supervisor approved: 06/27/17 17:36 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.26	Split peak

7.5.13.1
7

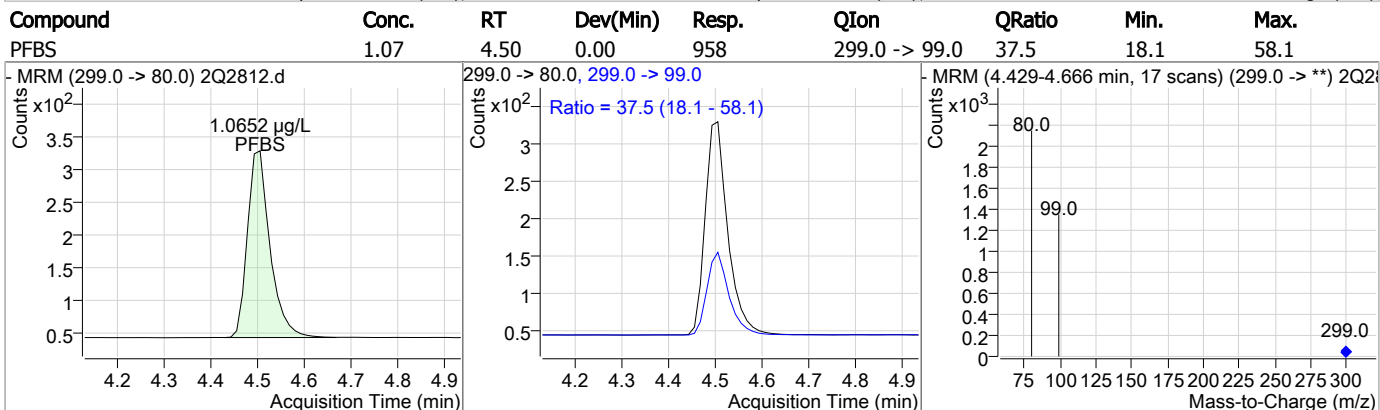
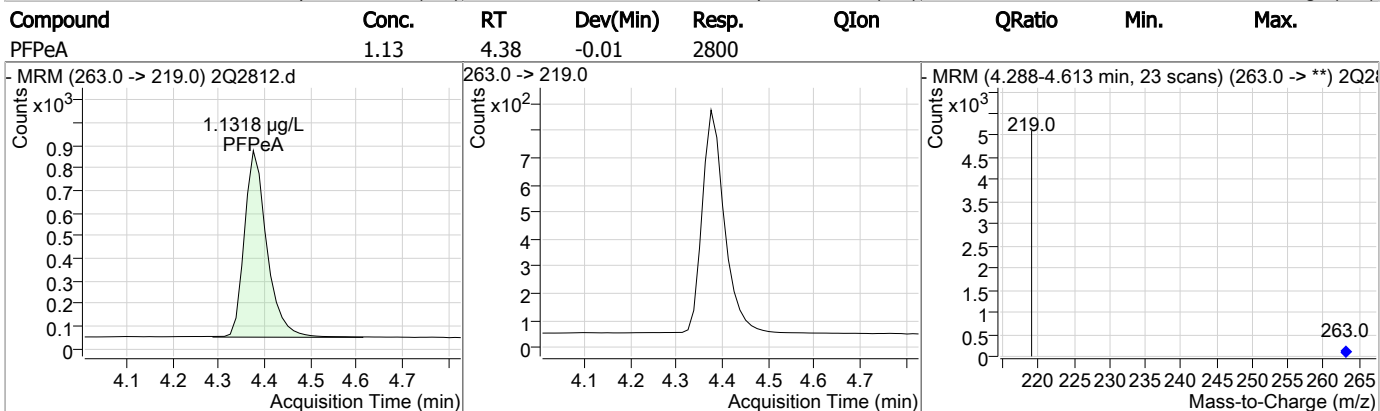
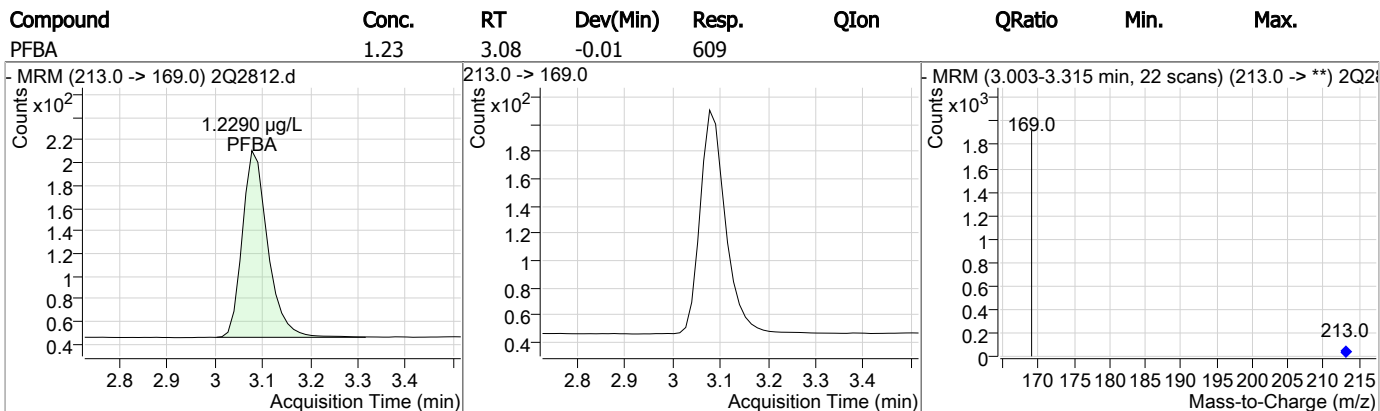
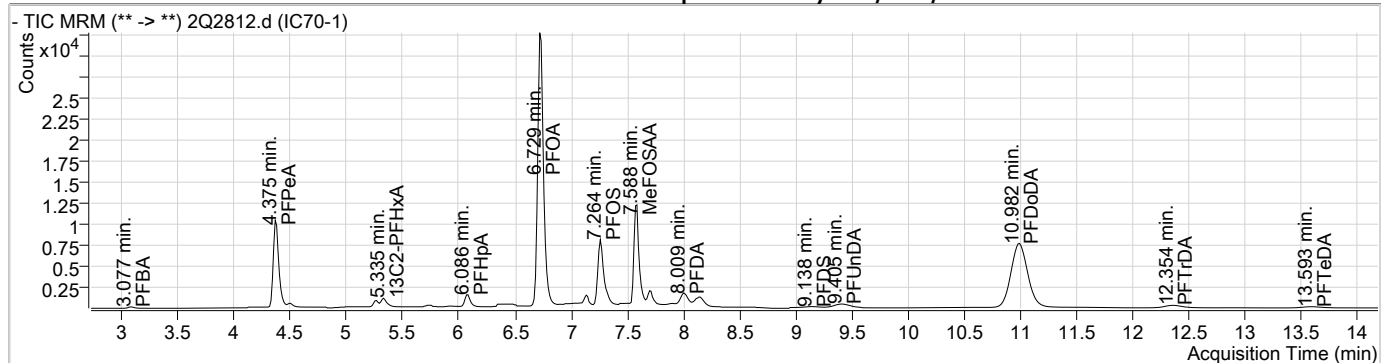
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2812.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 11:43:49 AM
 Sample Name : IC70-1
 Vial : Vial 2
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65591,S2Q70,130,,,1.0,1,water

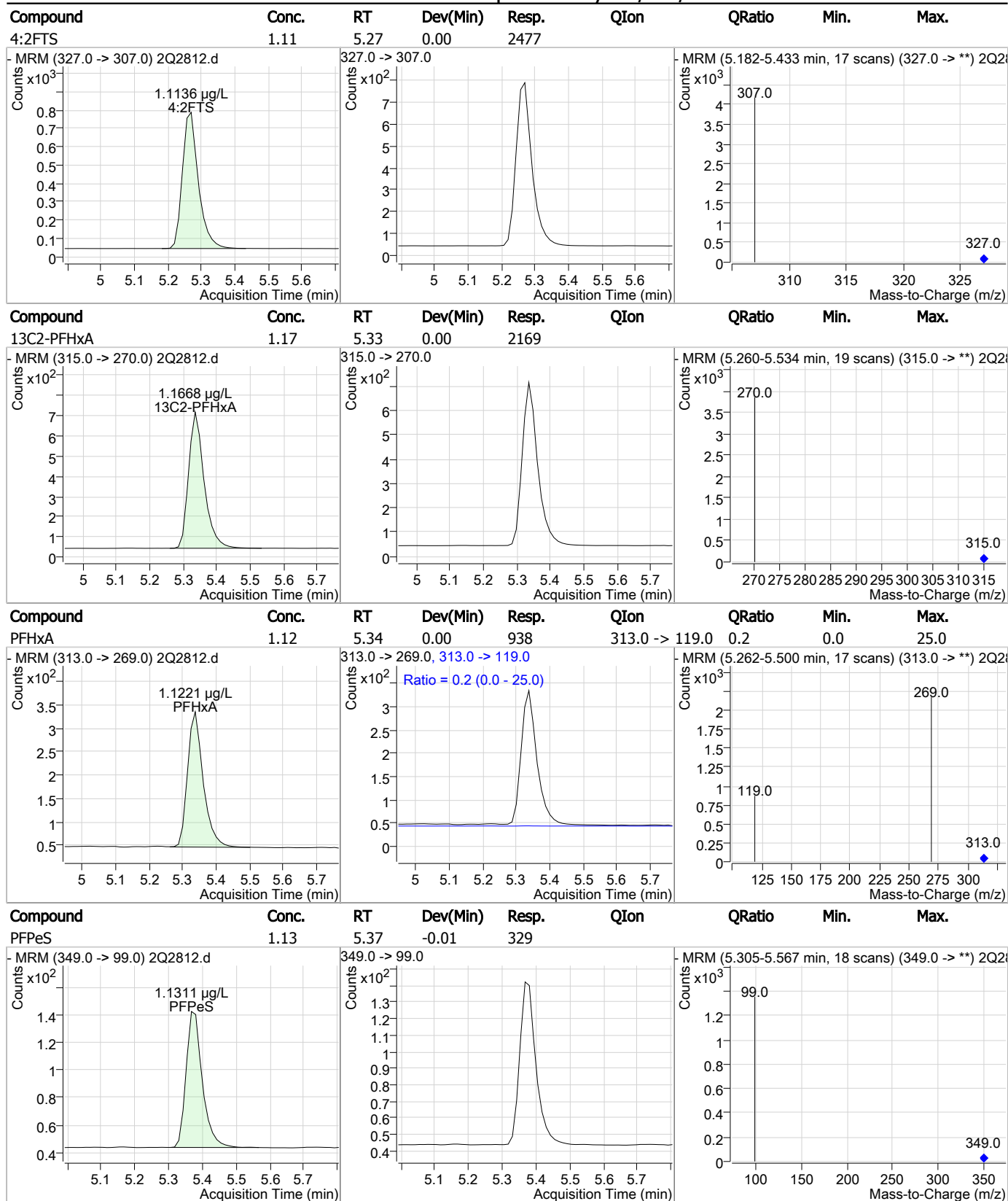
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.737	429.0 -> 409.0	71648	20.00	µg/L	0.000
13C2-PFDoDA	10.990	615.0 -> 570.0	74610	20.00	µg/L	0.037
13C2-PFOA	6.727	415.0 -> 370.0	39834	20.00	µg/L	0.000
13C3-PFPeA	4.372	266.0 -> 222.0	32488	20.00	µg/L	-0.013
13C4-PFOS	7.263	503.0 -> 80.0	25097	20.00	µg/L	0.000
d3-MeFOSAA	7.587	573.0 -> 419.0	34799	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	8.019	515.0 -> 470.0	3978	1.15	µg/L	0.024
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 5.8%			
13C2-PFHxA	5.335	315.0 -> 270.0	2169	1.17	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 5.8%			
d5-EtFOSAA	7.698	589.0 -> 419.0	2392	1.30	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 6.5%			
Target Compounds						QValue
4:2FTS	5.270	327.0 -> 307.0	2477	1.11	µg/L	100
6:2FTS	6.738	427.0 -> 407.0	4388	1.16	µg/L	100
8:2FTS	8.140	527.0 -> 507.0	6161	1.13	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	2092	1.19	µg/L	100
FOSA	7.137	498.0 -> 78.0	3085	1.13	µg/L	100
MeFOSAA	7.588	570.0 -> 419.0	2258	1.14	µg/L	100
PFBA	3.077	213.0 -> 169.0	609	1.23	µg/L	100
PFBS	4.504	299.0 -> 80.0	958	1.07	µg/L	99
PFDA	8.009	513.0 -> 469.0	2421	1.16	µg/L	# 48
PFDoDA	10.982	613.0 -> 569.0	3835	1.08	µg/L	# 29
PFDS	9.138	599.0 -> 80.0	913	1.03	µg/L	100
PFHpA	6.086	363.0 -> 319.0	3305	1.15	µg/L	93
PFHpS	6.683	449.0 -> 80.0	1374	1.08	µg/L	100
PFHxA	5.337	313.0 -> 269.0	938	1.12	µg/L	85
PFHxS	6.069	399.0 -> 80.0	1288	1.09	µg/L	m 92
PFNA	7.332	463.0 -> 419.0	2238	1.10	µg/L	97
PFNS	7.905	549.0 -> 99.0	668	1.09	µg/L	100
PFOA	6.729	413.0 -> 369.0	2029	1.18	µg/L	95
PFOS	7.264	499.0 -> 80.0	1694	1.11	µg/L	m 90
PFPeA	4.375	263.0 -> 219.0	2800	1.13	µg/L	100
PFPeS	5.367	349.0 -> 99.0	329	1.13	µg/L	100
PFTeDA	13.593	713.0 -> 669.0	1638	1.14	µg/L	# 32
PFTTrDA	12.354	663.0 -> 619.0	3092	1.09	µg/L	# 33
PFUnDA	9.405	563.0 -> 519.0	3653	1.07	µg/L	# 41

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

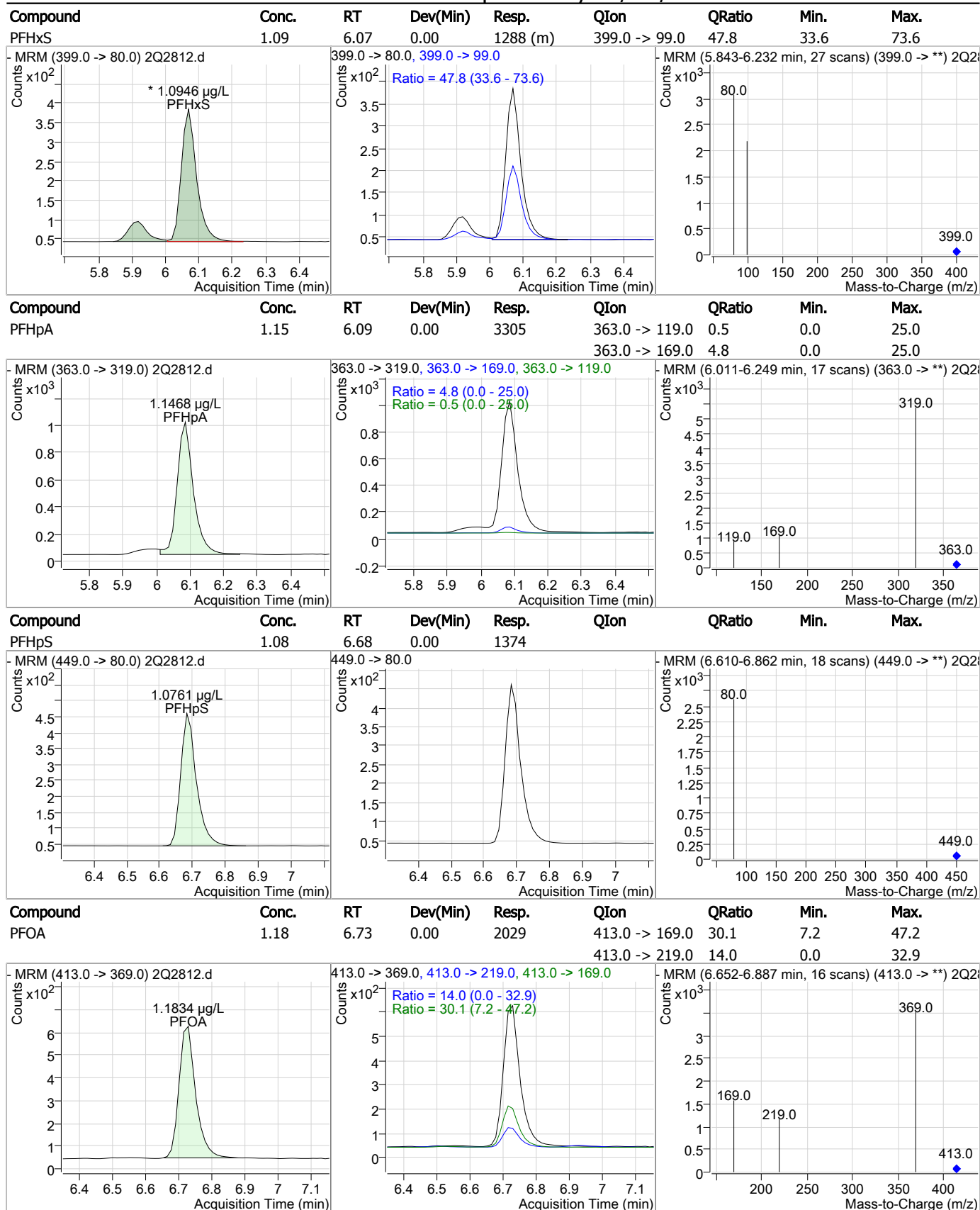
Perfluorinated Compounds by LC/MS/MS



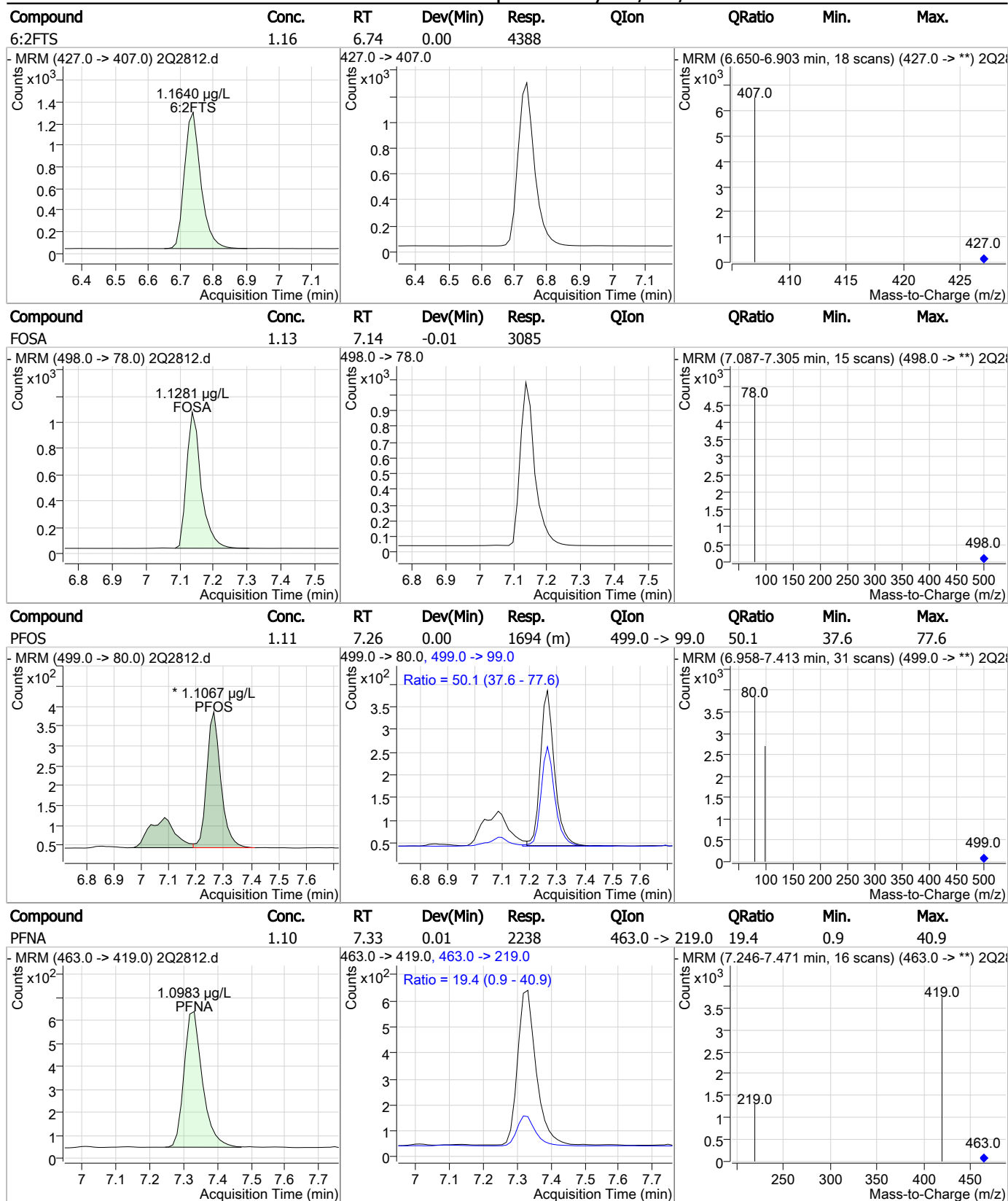
Perfluorinated Compounds by LC/MS/MS



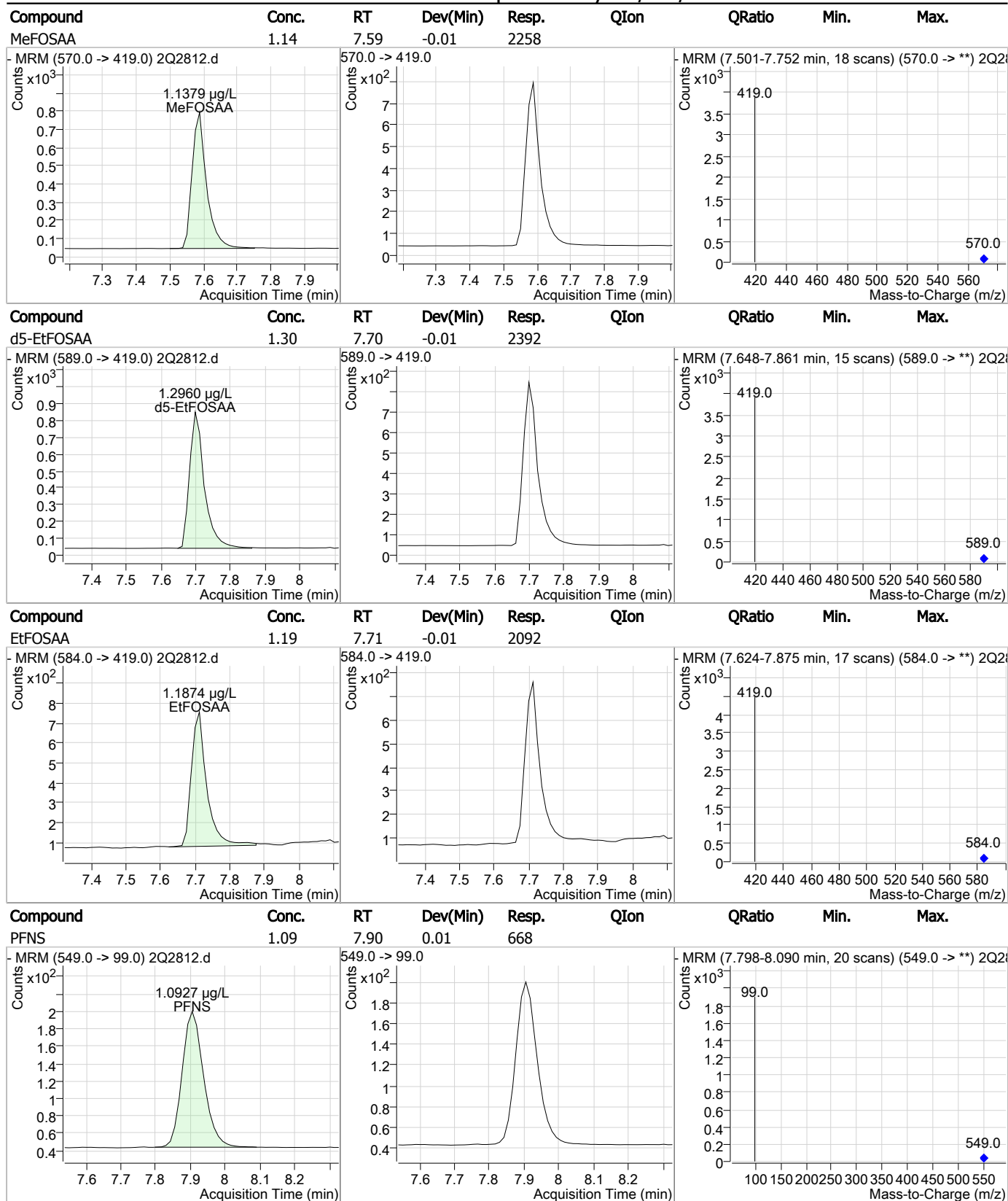
Perfluorinated Compounds by LC/MS/MS



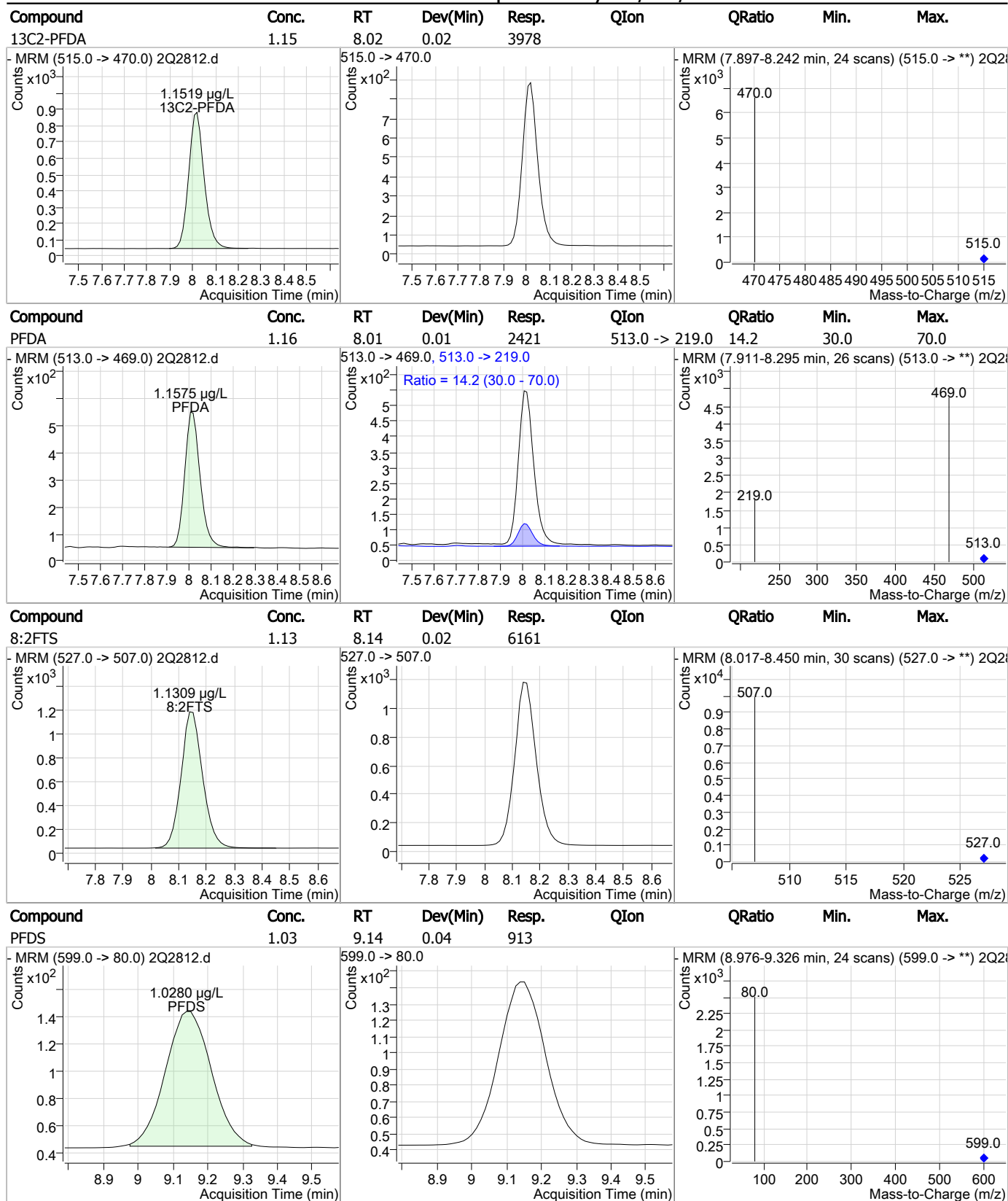
Perfluorinated Compounds by LC/MS/MS



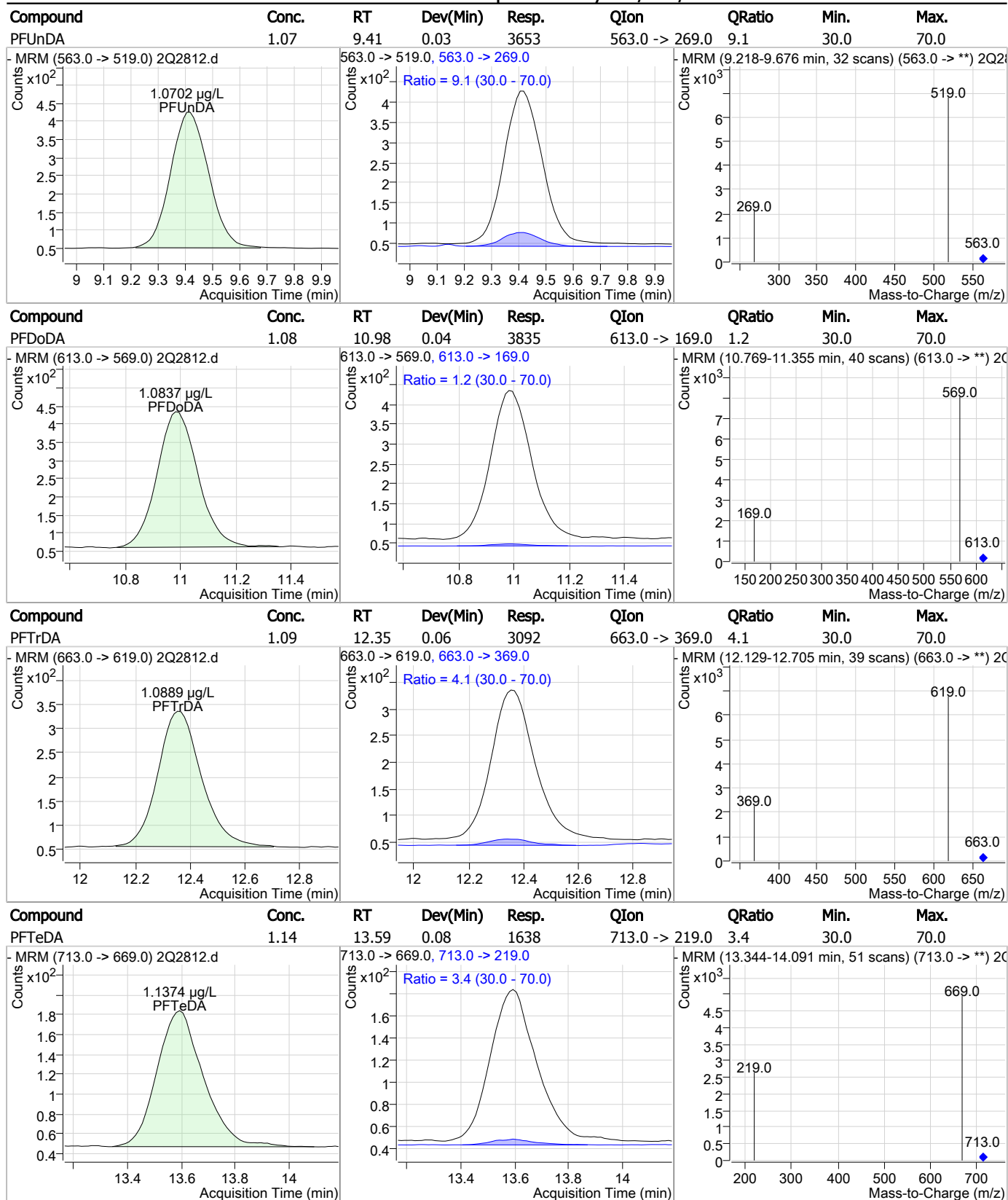
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-IC70

Method: EPA 537 MOD

Lab FileID: 2Q2812.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 11:43

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.07	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.26	Split peak

7.5.14.1
7

Perfluorinated Compounds by LC/MS/MS

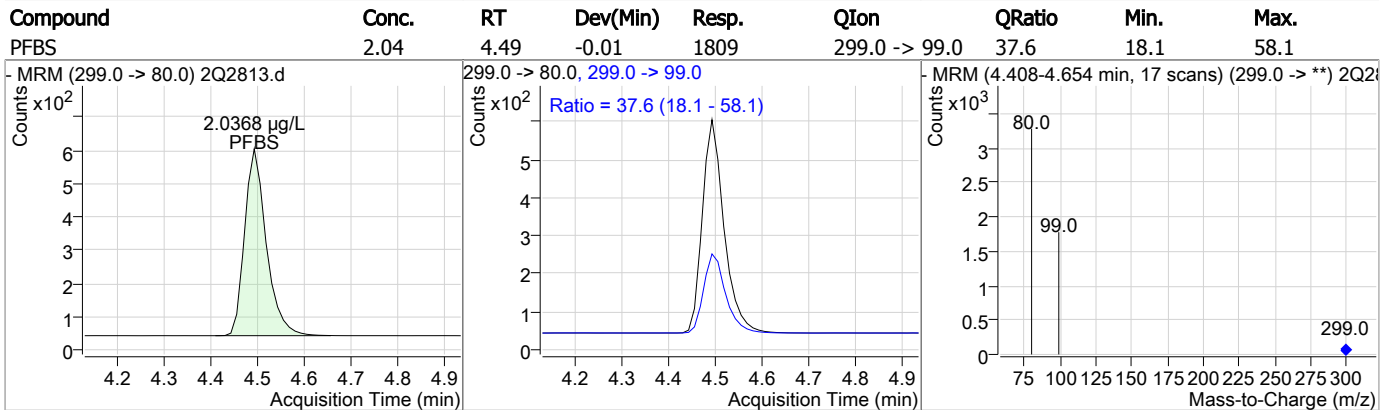
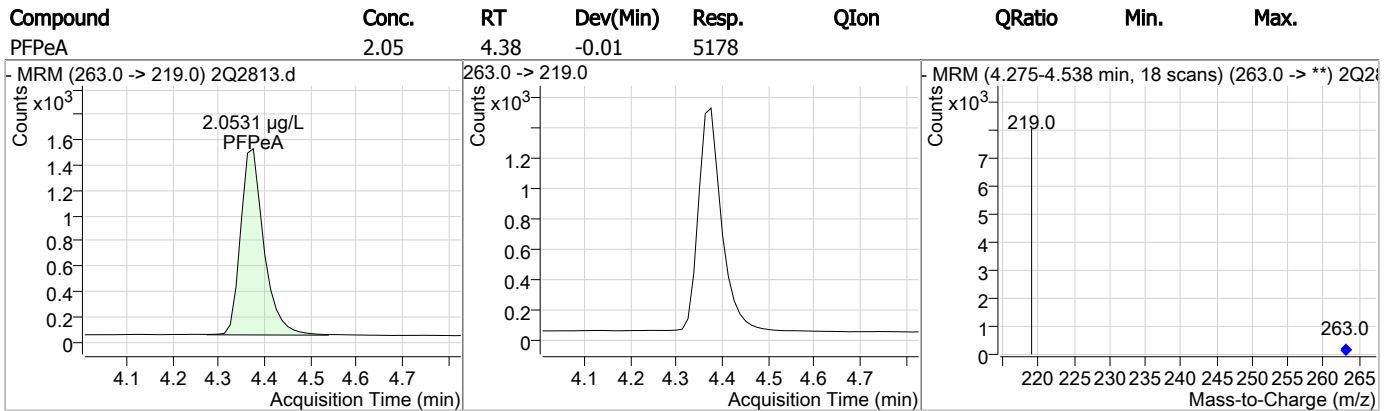
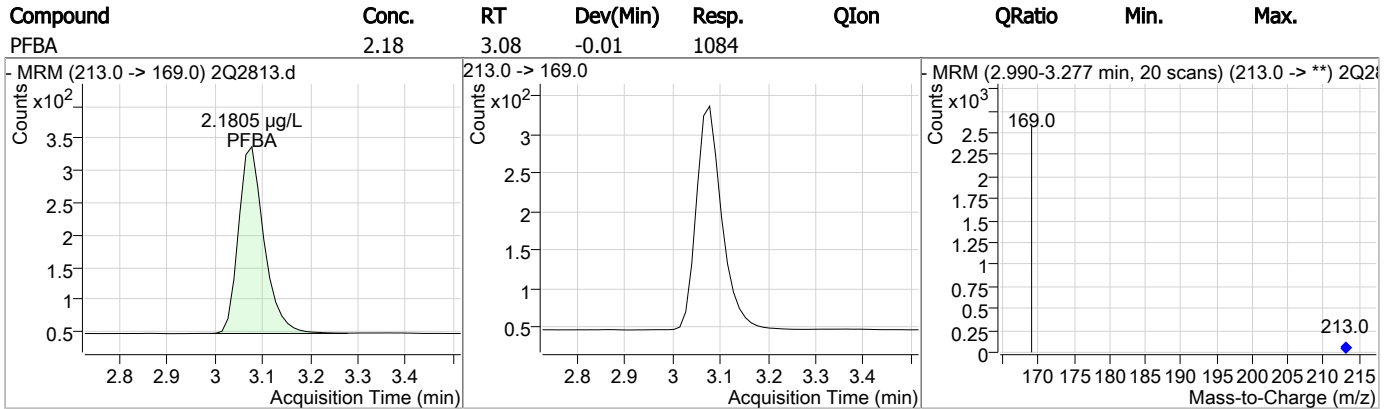
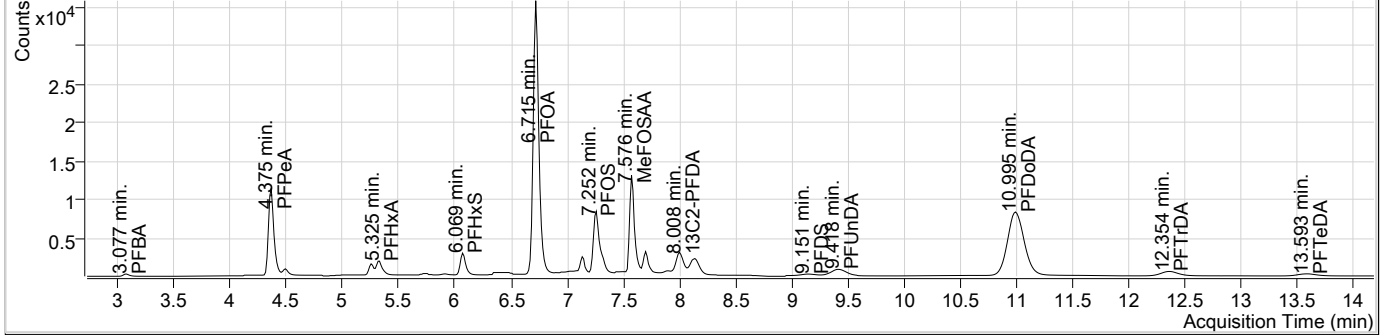
Data File : 2Q2813.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 12:03:08 PM
 Sample Name : IC70-2
 Vial : Vial 3
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65591,S2Q70,130,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.724	429.0 -> 409.0	72796	20.00 µg/L	-0.013
13C2-PFDoDA	10.990	615.0 -> 570.0	77663	20.00 µg/L	0.037
13C2-PFOA	6.713	415.0 -> 370.0	39954	20.00 µg/L	-0.014
13C3-PFPeA	4.372	266.0 -> 222.0	33121	20.00 µg/L	-0.013
13C4-PFOS	7.263	503.0 -> 80.0	24797	20.00 µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	33696	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-PFDA	8.008	515.0 -> 470.0	7433	2.15 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.7%	
13C2-PFHxA	5.335	315.0 -> 270.0	3972	2.13 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.7%	
d5-EtFOSAA	7.698	589.0 -> 419.0	3909	2.19 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.9%	
Target Compounds					
					QValue
4:2FTS	5.257	327.0 -> 307.0	4683	2.08 µg/L	100
6:2FTS	6.726	427.0 -> 407.0	8006	2.09 µg/L	100
8:2FTS	8.140	527.0 -> 507.0	11373	2.06 µg/L	100
EtFOSAA	7.699	584.0 -> 419.0	3534	2.07 µg/L	100
FOSA	7.137	498.0 -> 78.0	5896	2.23 µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	4046	2.11 µg/L	100
PFBA	3.077	213.0 -> 169.0	1084	2.18 µg/L	100
PFBS	4.491	299.0 -> 80.0	1809	2.04 µg/L	99
PFDA	8.009	513.0 -> 469.0	4558	2.17 µg/L	# 47
PFDoDA	10.995	613.0 -> 569.0	7583	2.06 µg/L	# 29
PFDS	9.151	599.0 -> 80.0	1753	2.00 µg/L	100
PFHpA	6.074	363.0 -> 319.0	6172	2.13 µg/L	93
PFHpS	6.683	449.0 -> 80.0	2600	2.06 µg/L	100
PFHxA	5.325	313.0 -> 269.0	1802	2.15 µg/L	86
PFHxS	6.069	399.0 -> 80.0	2339	2.01 µg/L	m 94
PFNA	7.319	463.0 -> 419.0	4243	2.08 µg/L	96
PFNS	7.905	549.0 -> 99.0	1215	2.01 µg/L	100
PFOA	6.715	413.0 -> 369.0	3771	2.19 µg/L	95
PFOS	7.252	499.0 -> 80.0	3225	2.13 µg/L	m 87
PFPeA	4.375	263.0 -> 219.0	5178	2.05 µg/L	100
PFPeS	5.367	349.0 -> 99.0	576	1.94 µg/L	100
PFTeDA	13.593	713.0 -> 669.0	3049	2.03 µg/L	# 32
PFTTrDA	12.354	663.0 -> 619.0	5987	2.03 µg/L	# 34
PFUnDA	9.418	563.0 -> 519.0	7123	2.00 µg/L	# 41

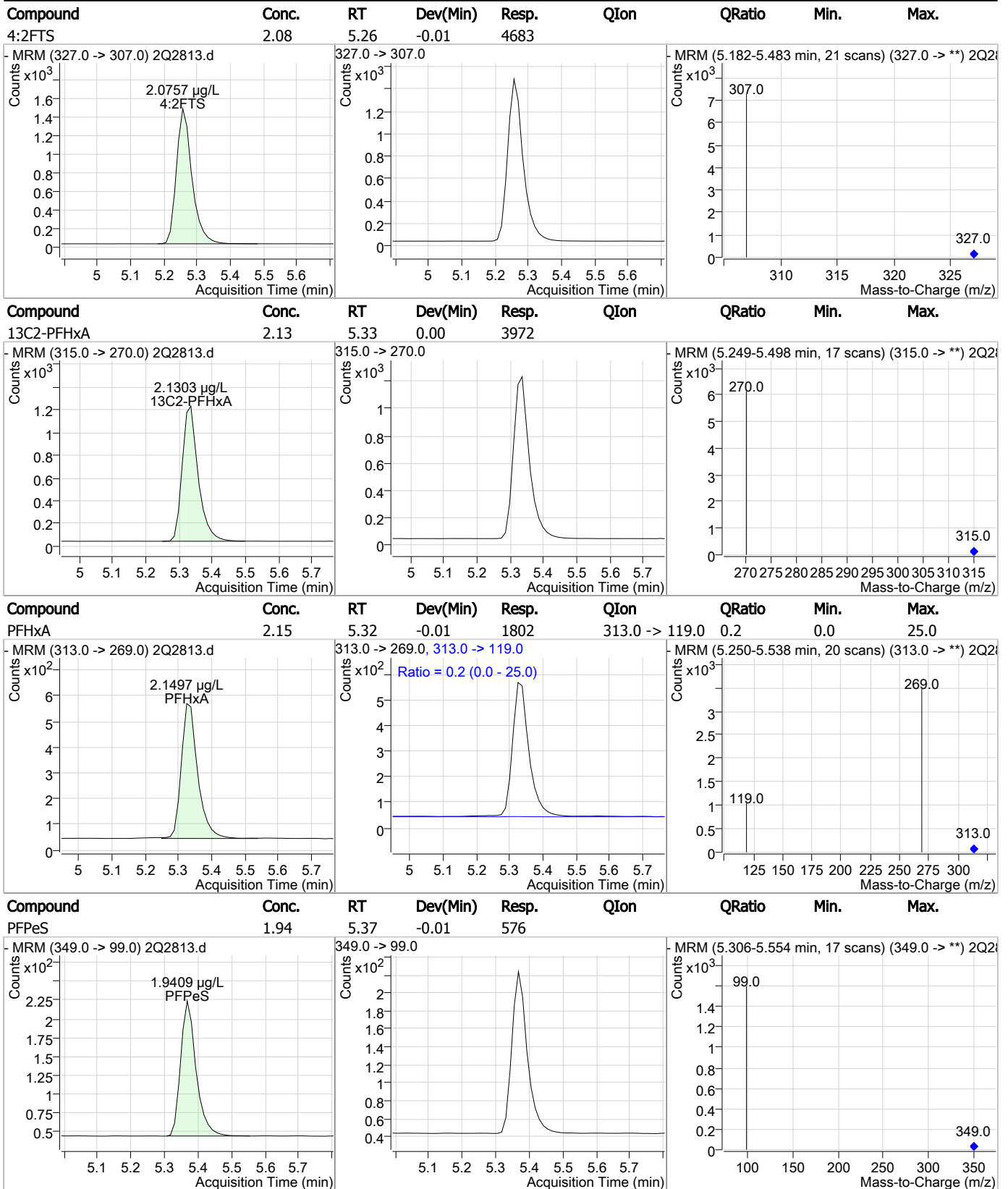
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

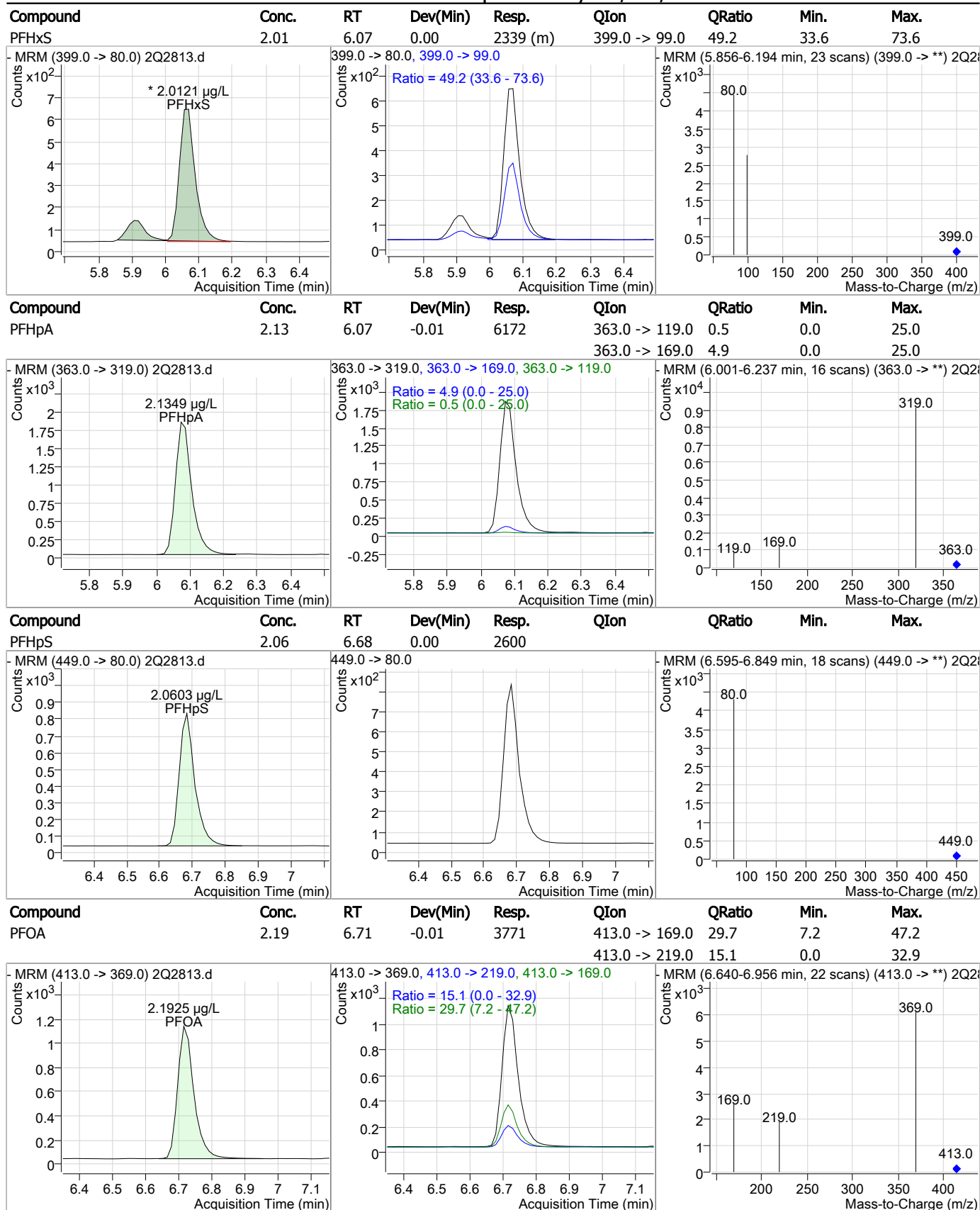
- TIC MRM (** -> **) 2Q2813.d (IC70-2)



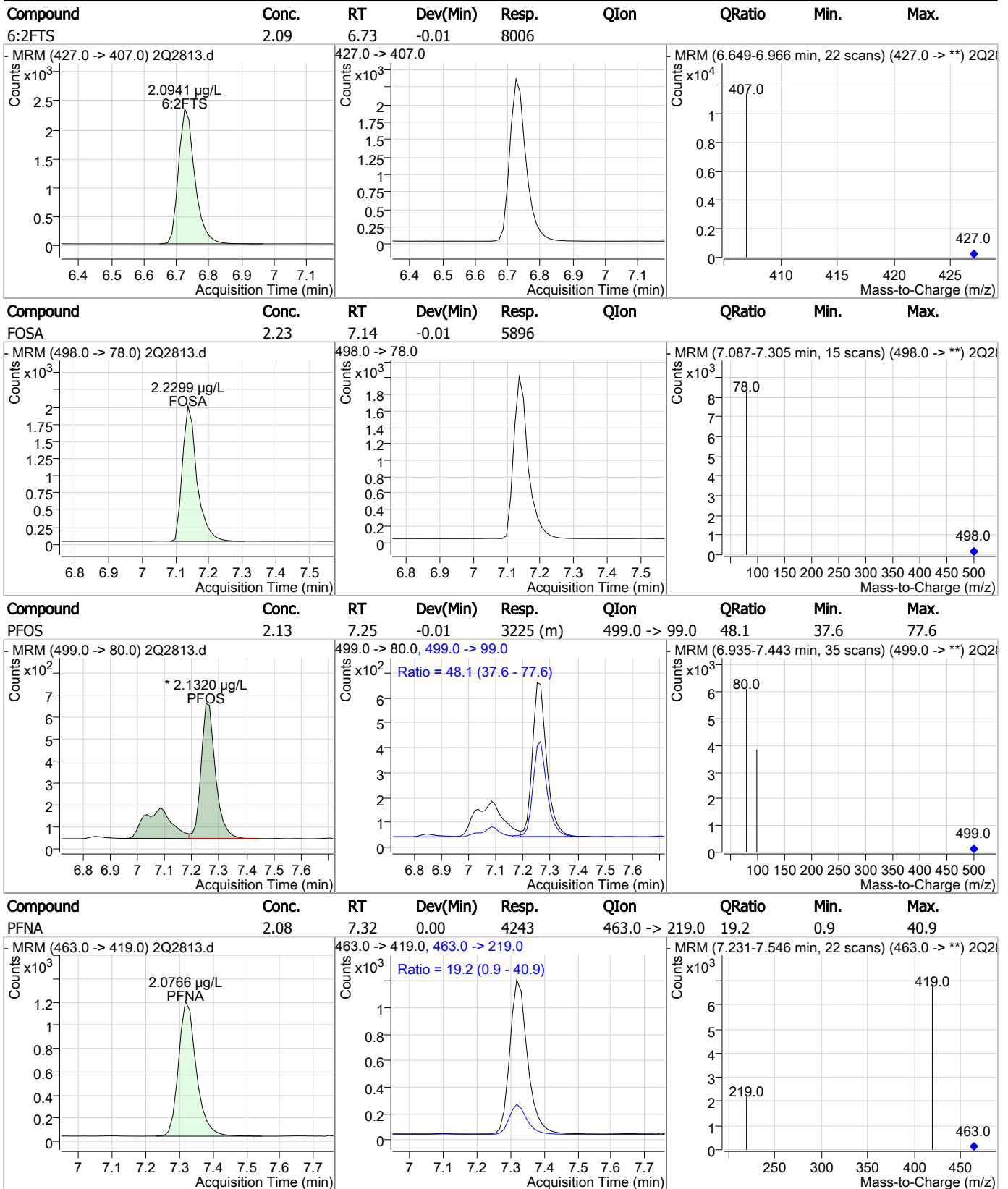
Perfluorinated Compounds by LC/MS/MS



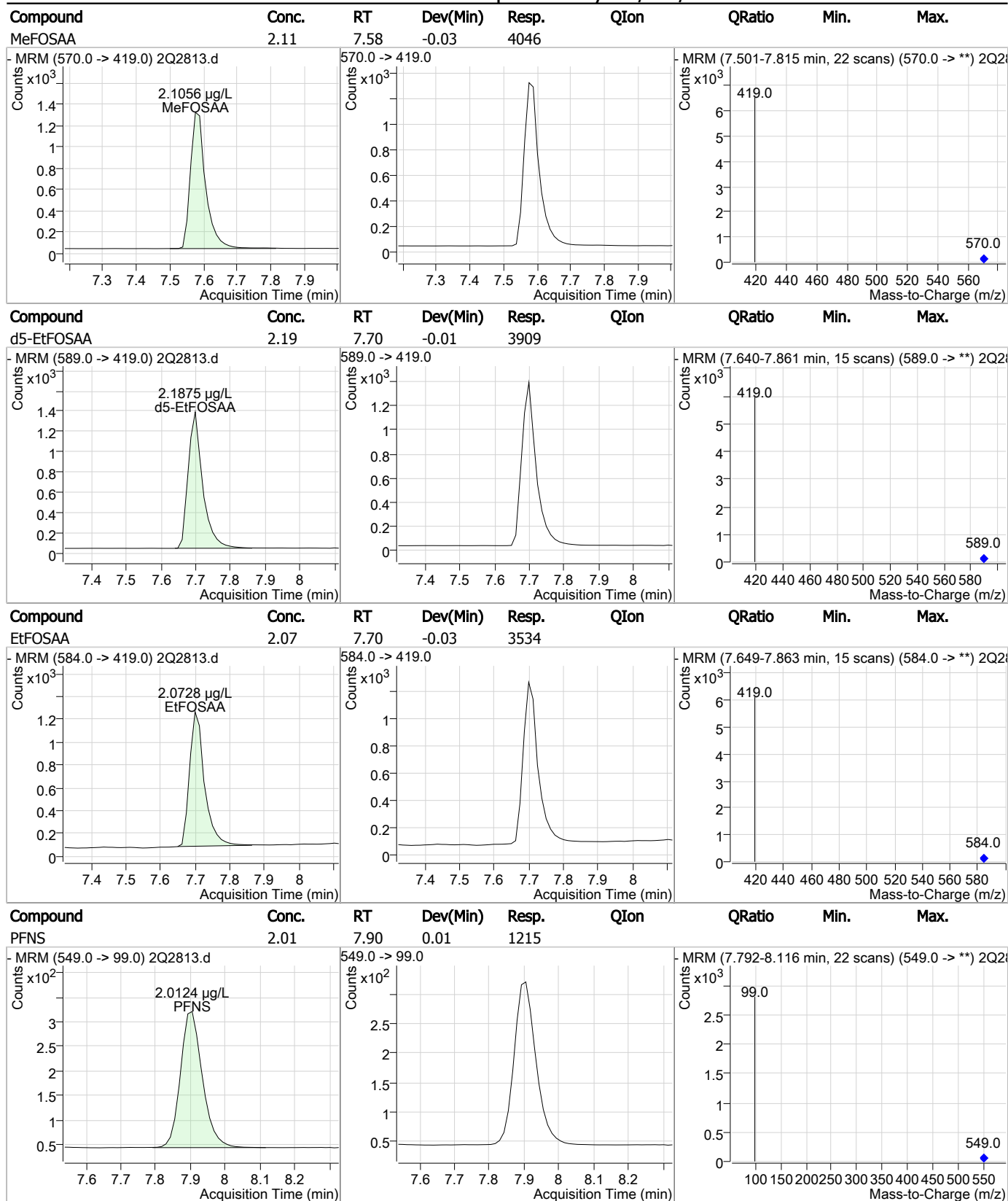
Perfluorinated Compounds by LC/MS/MS



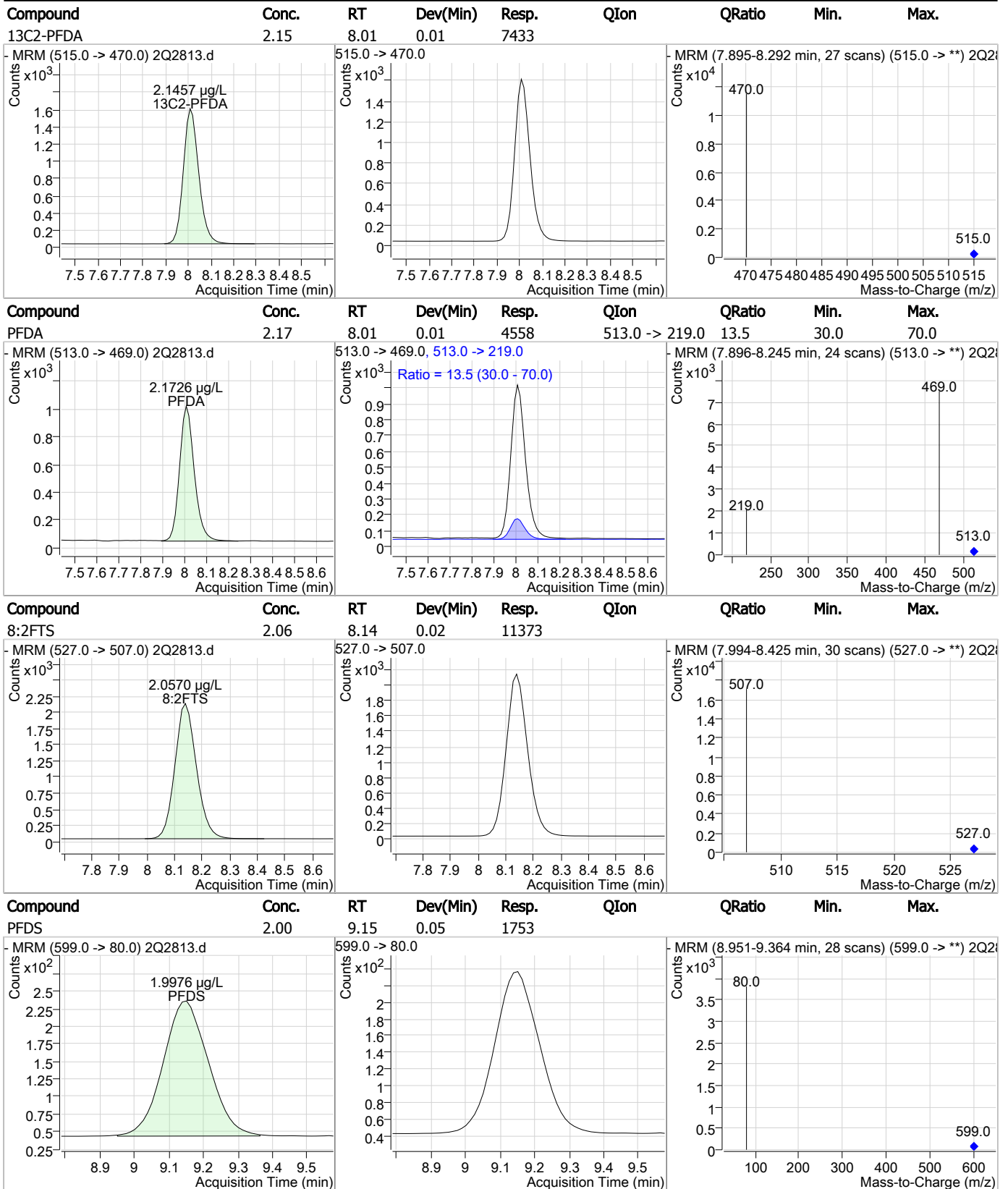
Perfluorinated Compounds by LC/MS/MS



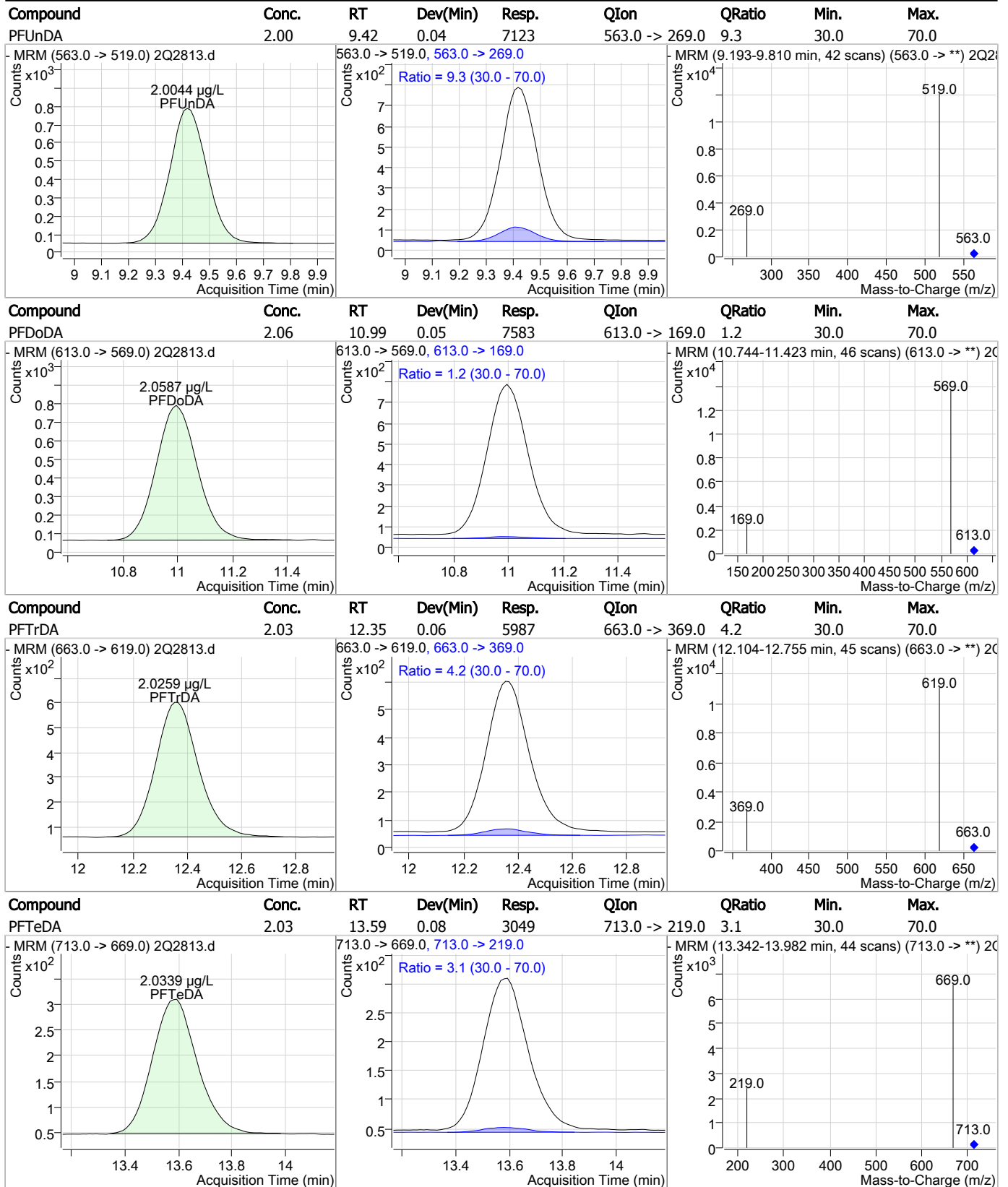
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-IC70

Method: EPA 537 MOD

Lab FileID: 2Q2813.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 12:03

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.07	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.25	Split peak

7.5.15.1
7

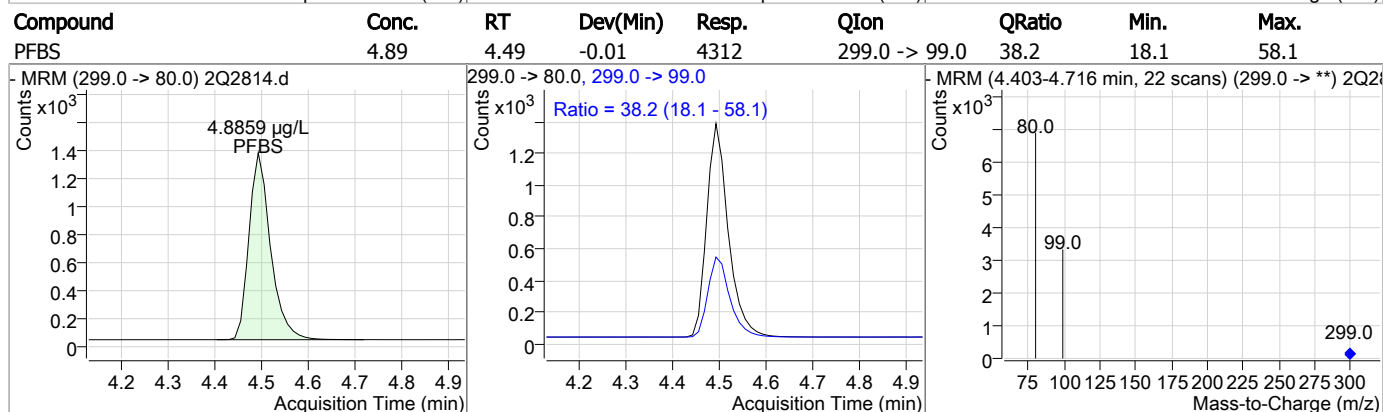
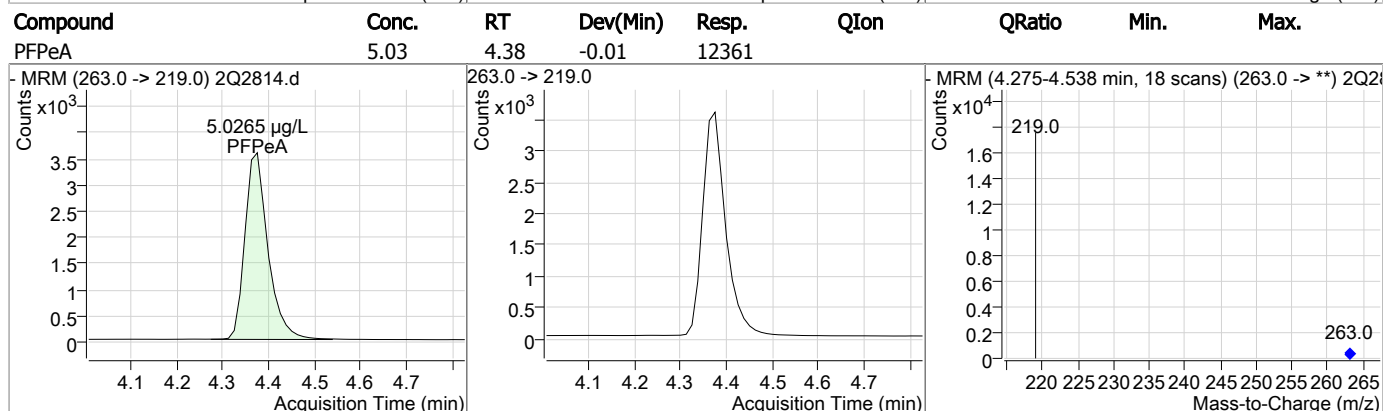
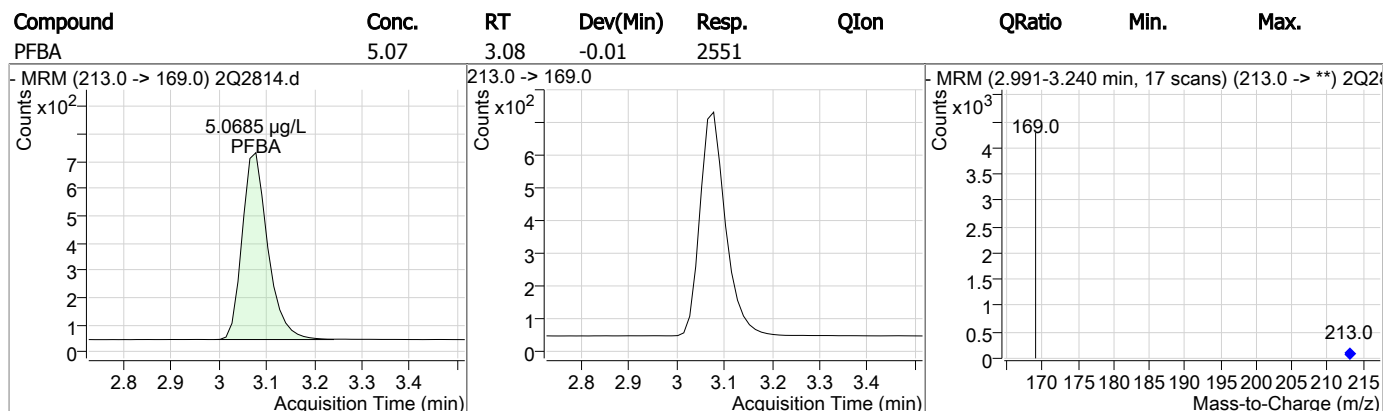
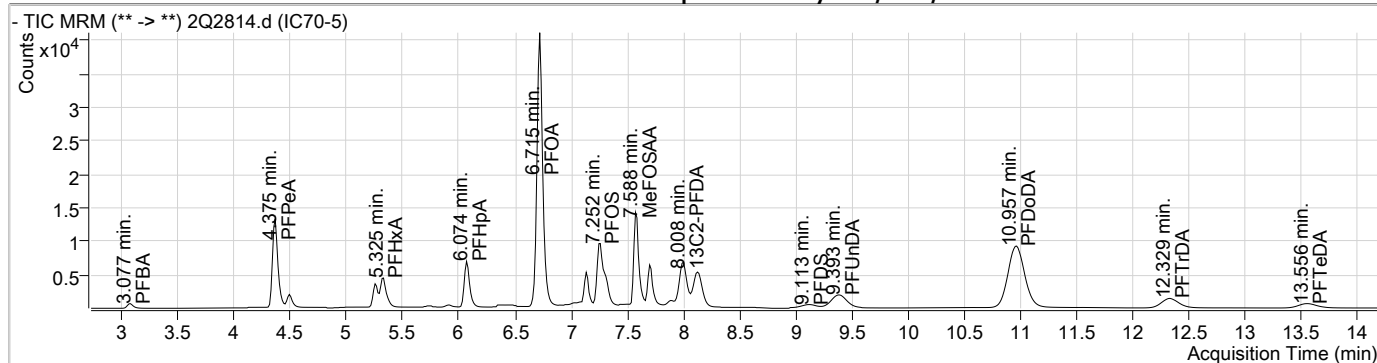
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2814.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 12:22:29 PM
 Sample Name : IC70-5
 Vial : Vial 4
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65591,S2Q70,130,,,1.0,1,water

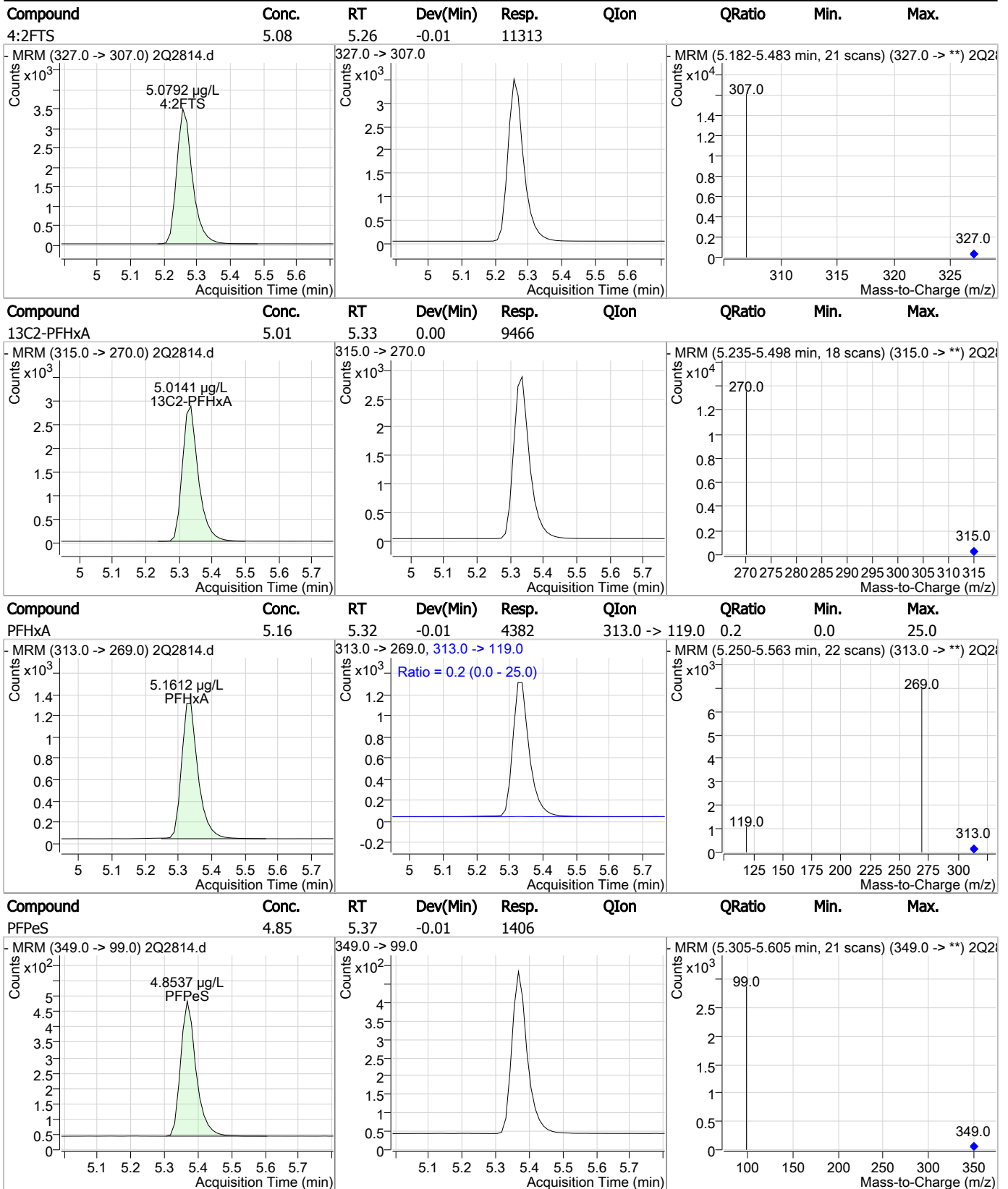
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.724	429.0 -> 409.0	72194	20.00	µg/L	-0.013
13C2-PFDoDA	10.965	615.0 -> 570.0	77020	20.00	µg/L	0.012
13C2-PFOA	6.713	415.0 -> 370.0	40459	20.00	µg/L	-0.014
13C3-PFPeA	4.372	266.0 -> 222.0	32297	20.00	µg/L	-0.013
13C4-PFOS	7.263	503.0 -> 80.0	24637	20.00	µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	33420	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-PFDA	8.008	515.0 -> 470.0	18200	5.19	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 25.9%		
13C2-PFHxA	5.335	315.0 -> 270.0	9466	5.01	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 25.1%		
d5-EtFOSAA	7.698	589.0 -> 419.0	9208	5.19	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 26.0%		
Target Compounds						QValue
4:2FTS	5.257	327.0 -> 307.0	11313	5.08	µg/L	100
6:2FTS	6.726	427.0 -> 407.0	19240	5.10	µg/L	100
8:2FTS	8.127	527.0 -> 507.0	27281	4.99	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	8469	5.02	µg/L	100
FOSA	7.137	498.0 -> 78.0	14043	5.38	µg/L	100
MeFOSAA	7.588	570.0 -> 419.0	9382	4.92	µg/L	100
PFBA	3.077	213.0 -> 169.0	2551	5.07	µg/L	100
PFBS	4.491	299.0 -> 80.0	4312	4.89	µg/L	100
PFDA	8.009	513.0 -> 469.0	10794	5.08	µg/L	# 48
PFDoDA	10.957	613.0 -> 569.0	18195	4.98	µg/L	# 29
PFDS	9.113	599.0 -> 80.0	4222	4.84	µg/L	100
PFHpA	6.074	363.0 -> 319.0	14756	5.04	µg/L	93
PFHpS	6.683	449.0 -> 80.0	6234	4.97	µg/L	100
PFHxA	5.325	313.0 -> 269.0	4382	5.16	µg/L	86
PFHxS	6.056	399.0 -> 80.0	5752	4.98	µg/L	m 93
PFNA	7.319	463.0 -> 419.0	9784	4.73	µg/L	98
PFNS	7.892	549.0 -> 99.0	3025	5.04	µg/L	100
PFOA	6.715	413.0 -> 369.0	8603	4.94	µg/L	94
PFOS	7.252	499.0 -> 80.0	7438	4.95	µg/L	m 89
PFPeA	4.375	263.0 -> 219.0	12361	5.03	µg/L	100
PFPeS	5.367	349.0 -> 99.0	1406	4.85	µg/L	100
PFTeDA	13.556	713.0 -> 669.0	7388	4.97	µg/L	# 32
PFTTrDA	12.329	663.0 -> 619.0	14620	4.99	µg/L	# 34
PFUnDA	9.393	563.0 -> 519.0	16978	4.82	µg/L	# 41

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

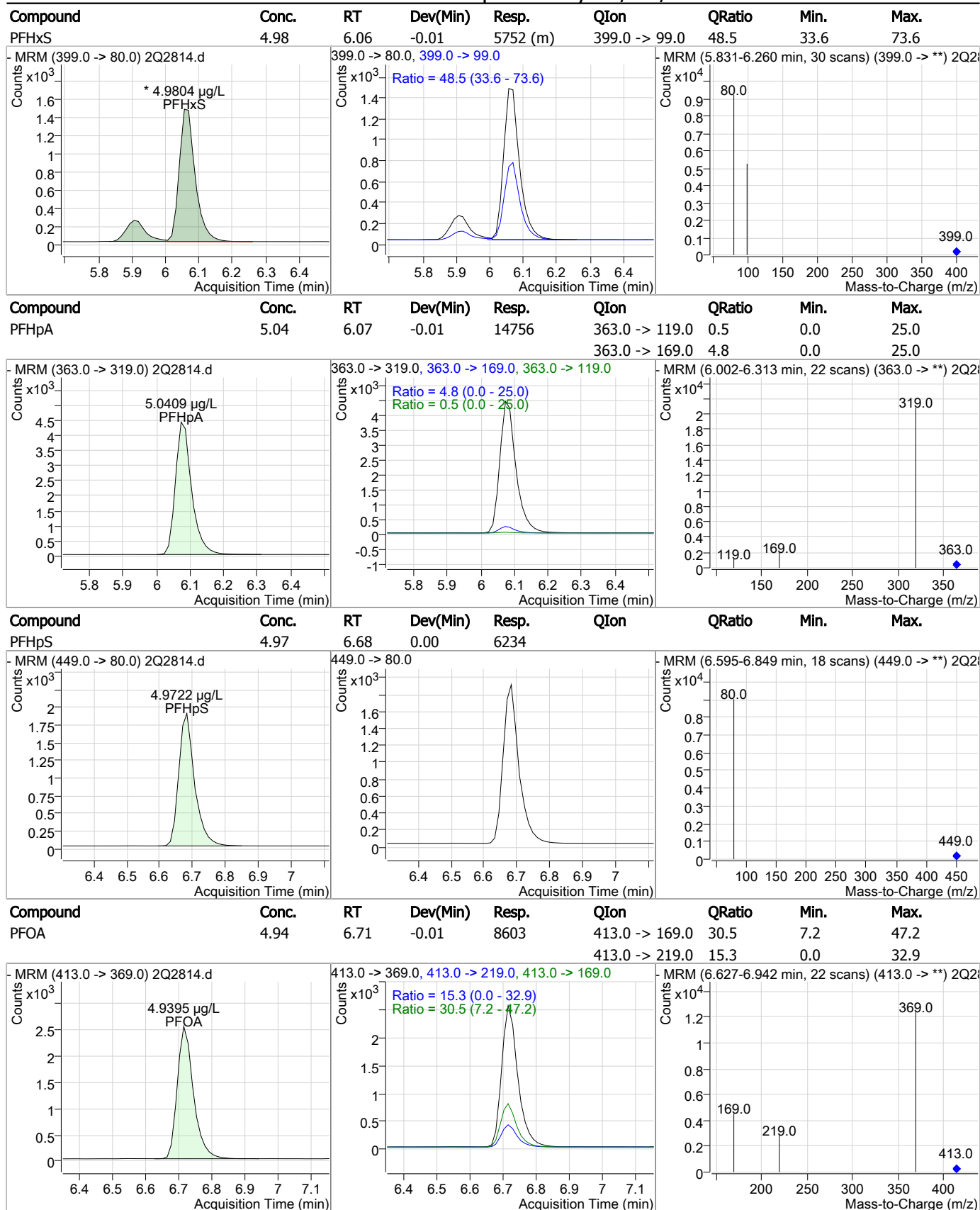
Perfluorinated Compounds by LC/MS/MS



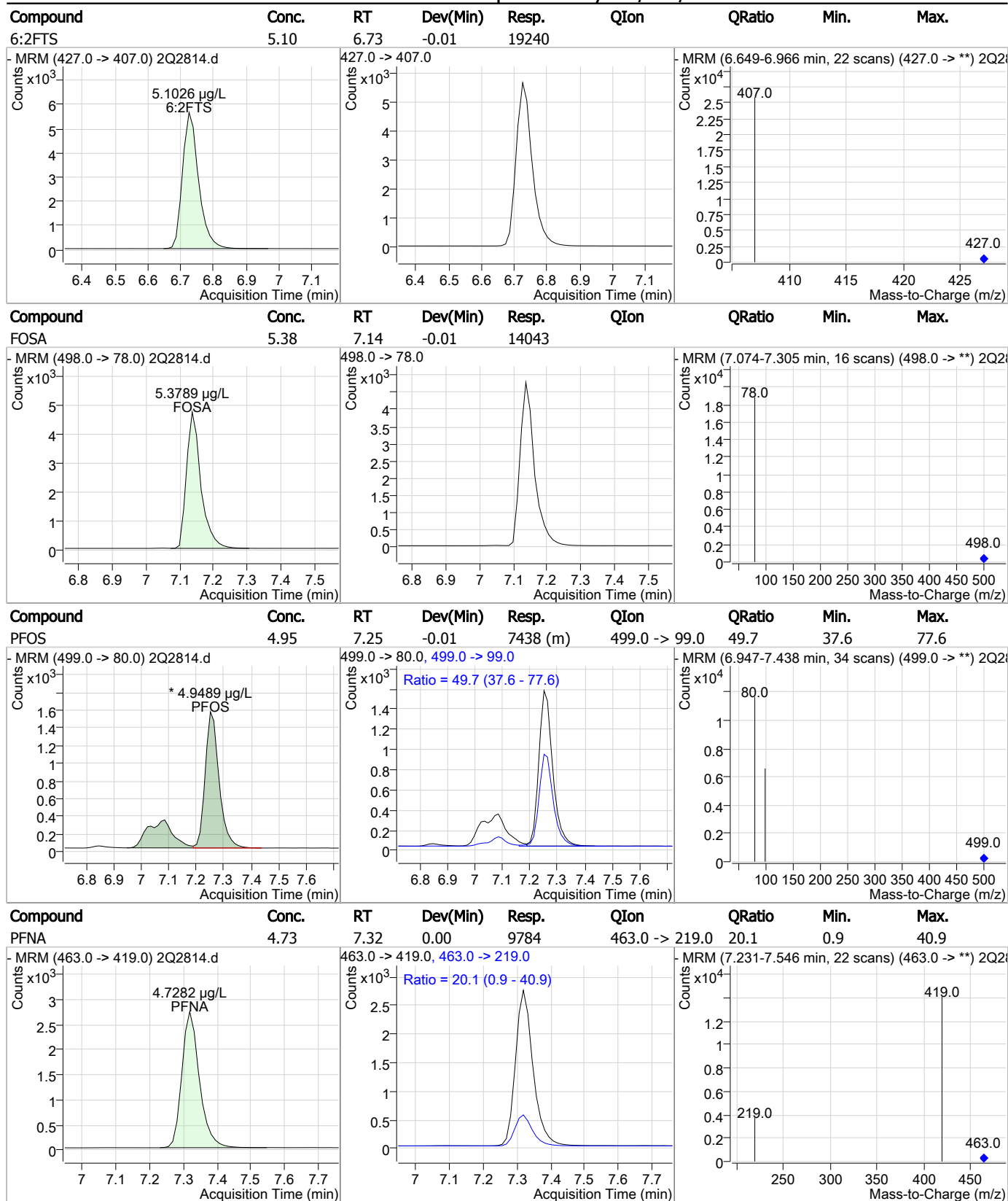
Perfluorinated Compounds by LC/MS/MS



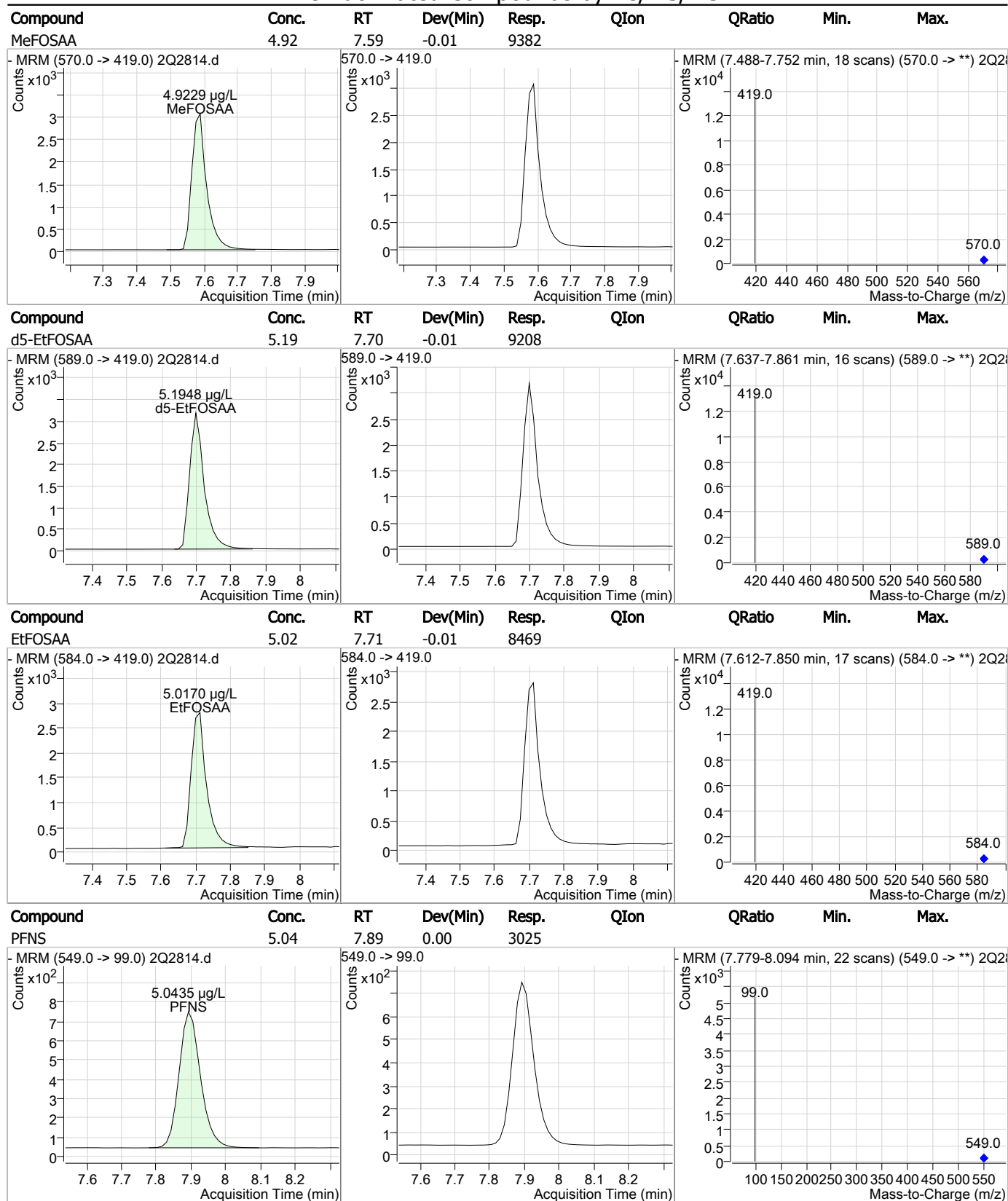
Perfluorinated Compounds by LC/MS/MS



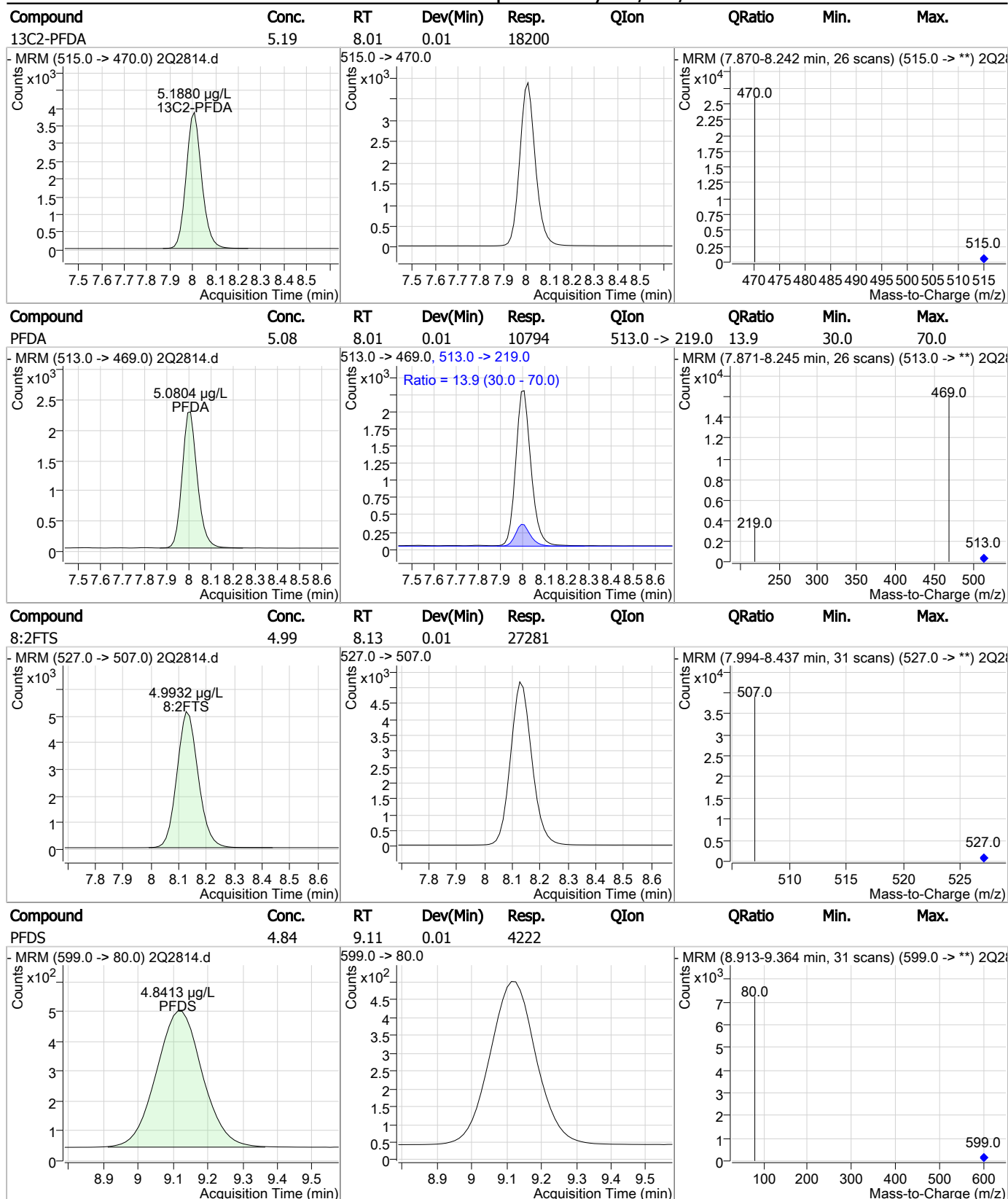
Perfluorinated Compounds by LC/MS/MS



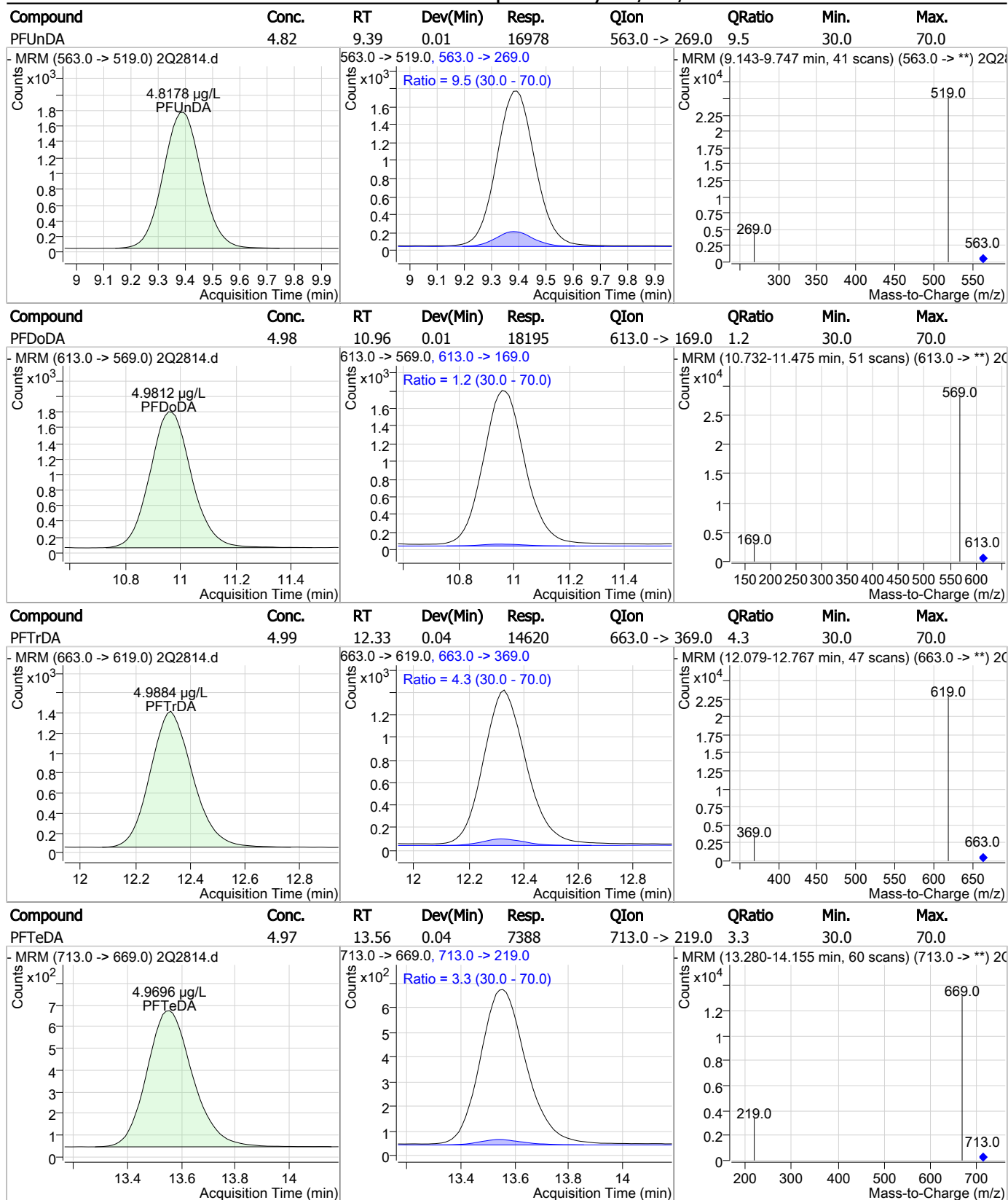
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-IC70

Method: EPA 537 MOD

Lab FileID: 2Q2814.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 12:22

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.25	Split peak

7.5.16.1
7

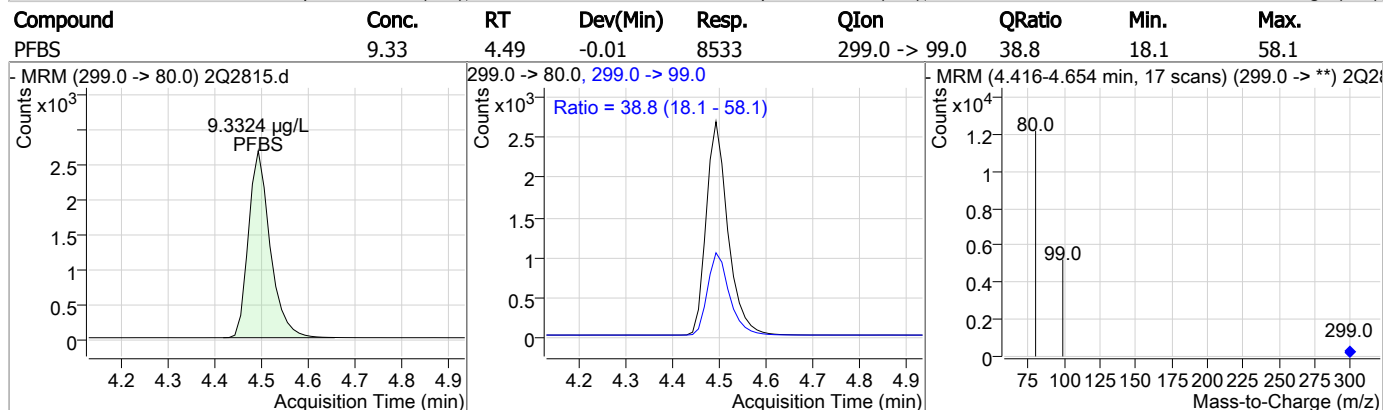
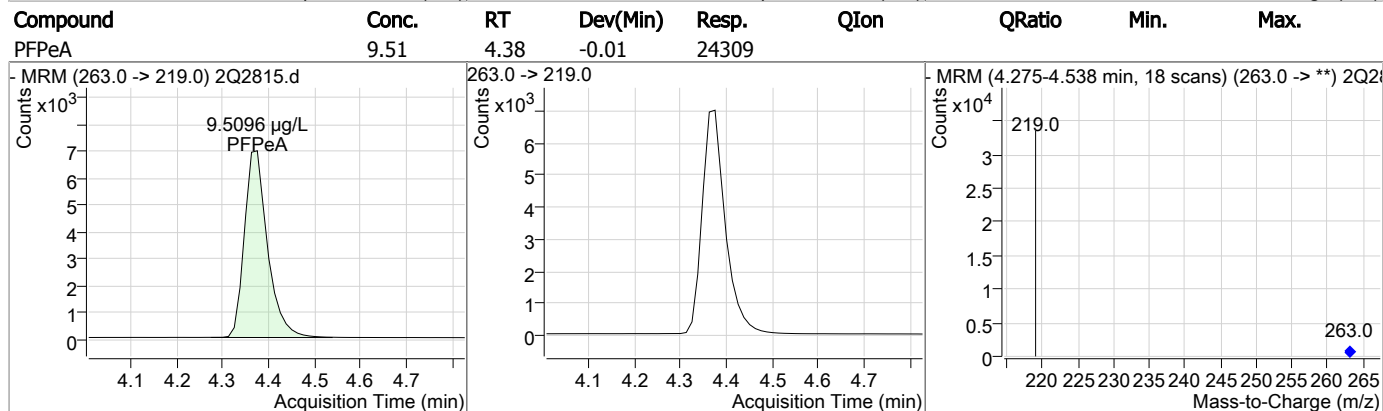
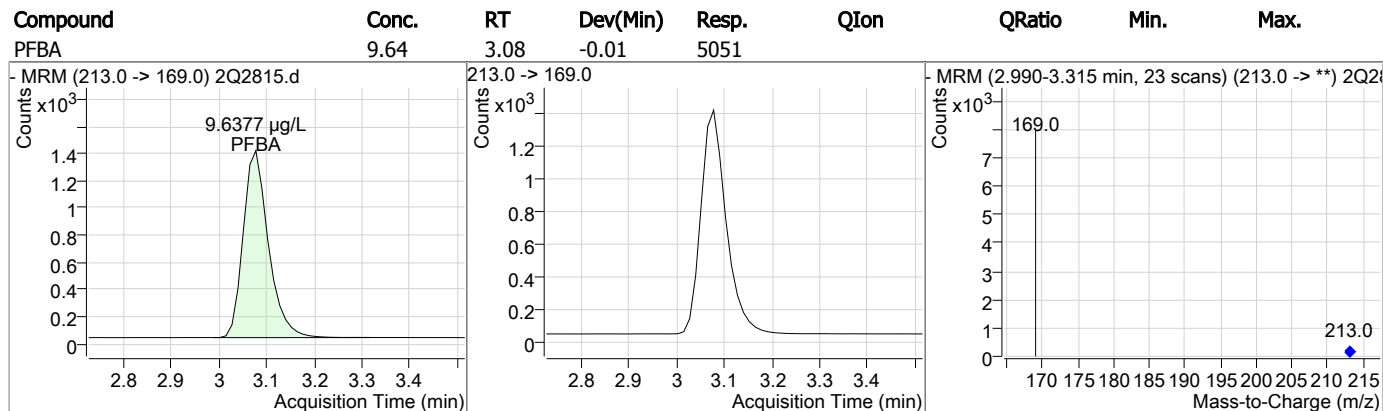
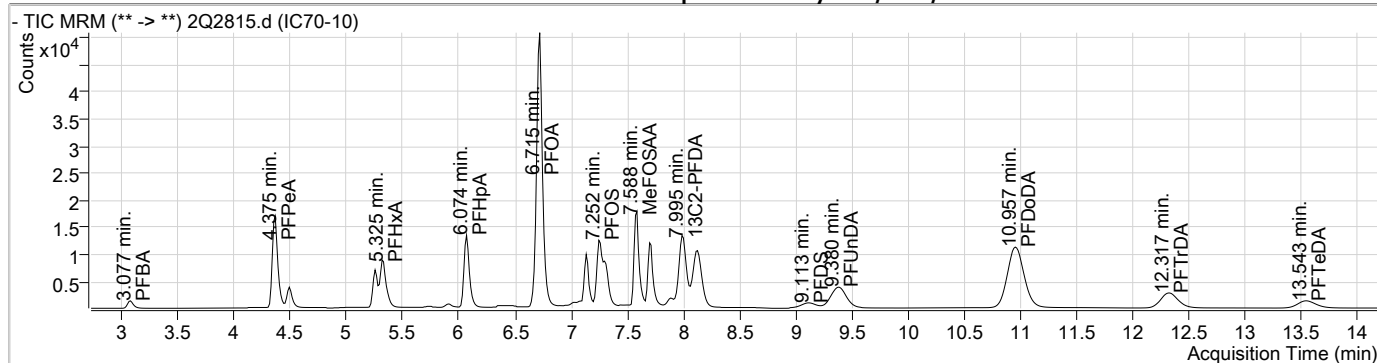
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2815.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 12:41:48 PM
 Sample Name : IC70-10
 Vial : Vial 5
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65591,S2Q70,130,,,1.0,1,water

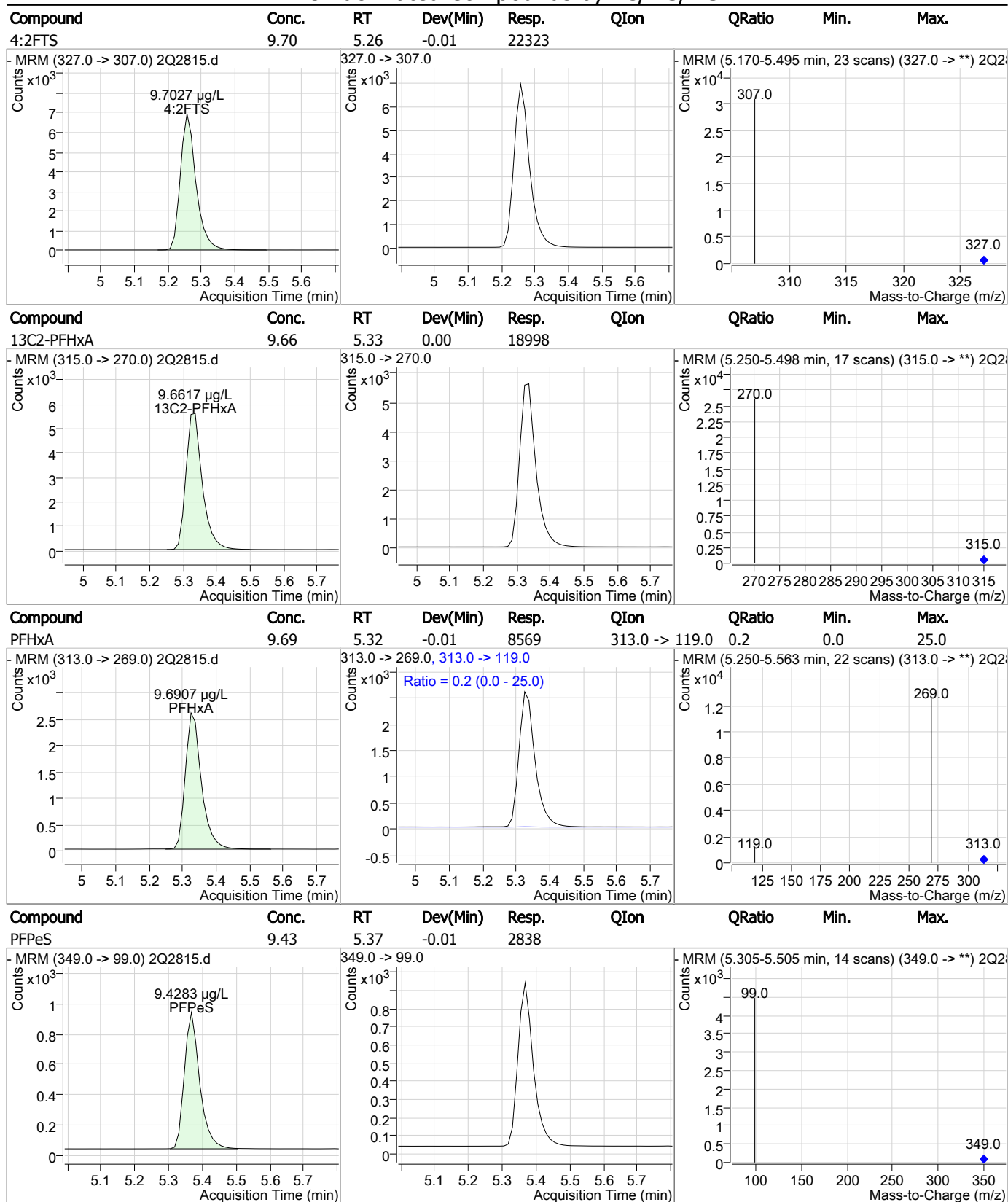
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.724	429.0 -> 409.0	75097	20.00 µg/L	-0.013
13C2-PFDoDA	10.953	615.0 -> 570.0	79676	20.00 µg/L	0.000
13C2-PFOA	6.713	415.0 -> 370.0	42140	20.00 µg/L	-0.014
13C3-PFPeA	4.372	266.0 -> 222.0	33572	20.00 µg/L	-0.013
13C4-PFOS	7.250	503.0 -> 80.0	25525	20.00 µg/L	-0.013
d3-MeFOSAA	7.575	573.0 -> 419.0	34814	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-PFDA	7.995	515.0 -> 470.0	36176	9.90 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 49.5%	
13C2-PFHxA	5.335	315.0 -> 270.0	18998	9.66 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 48.3%	
d5-EtFOSAA	7.698	589.0 -> 419.0	18438	9.99 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 49.9%	
Target Compounds					
					QValue
4:2FTS	5.257	327.0 -> 307.0	22323	9.70 µg/L	100
6:2FTS	6.726	427.0 -> 407.0	38566	9.92 µg/L	100
8:2FTS	8.127	527.0 -> 507.0	54989	9.73 µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	17033	9.71 µg/L	100
FOSA	7.137	498.0 -> 78.0	27427	10.15 µg/L	100
MeFOSAA	7.588	570.0 -> 419.0	19175	9.66 µg/L	100
PFBA	3.077	213.0 -> 169.0	5051	9.64 µg/L	100
PFBS	4.491	299.0 -> 80.0	8533	9.33 µg/L	99
PFDA	7.996	513.0 -> 469.0	21160	9.56 µg/L	# 48
PFDoDA	10.957	613.0 -> 569.0	36231	9.59 µg/L	# 29
PFDS	9.113	599.0 -> 80.0	8351	9.24 µg/L	100
PFHpA	6.074	363.0 -> 319.0	28781	9.44 µg/L	93
PFHpS	6.683	449.0 -> 80.0	12380	9.53 µg/L	100
PFHxA	5.325	313.0 -> 269.0	8569	9.69 µg/L	86
PFHxS	6.056	399.0 -> 80.0	11491	9.60 µg/L	m 92
PFNA	7.319	463.0 -> 419.0	19956	9.26 µg/L	96
PFNS	7.892	549.0 -> 99.0	5933	9.55 µg/L	100
PFOA	6.715	413.0 -> 369.0	17281	9.53 µg/L	95
PFOS	7.252	499.0 -> 80.0	14474	9.30 µg/L	m 91
PFPeA	4.375	263.0 -> 219.0	24309	9.51 µg/L	100
PFPeS	5.367	349.0 -> 99.0	2838	9.43 µg/L	100
PFTeDA	13.543	713.0 -> 669.0	14815	9.63 µg/L	# 32
PFTTrDA	12.317	663.0 -> 619.0	29058	9.58 µg/L	# 33
PFUnDA	9.380	563.0 -> 519.0	33875	9.29 µg/L	# 41

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

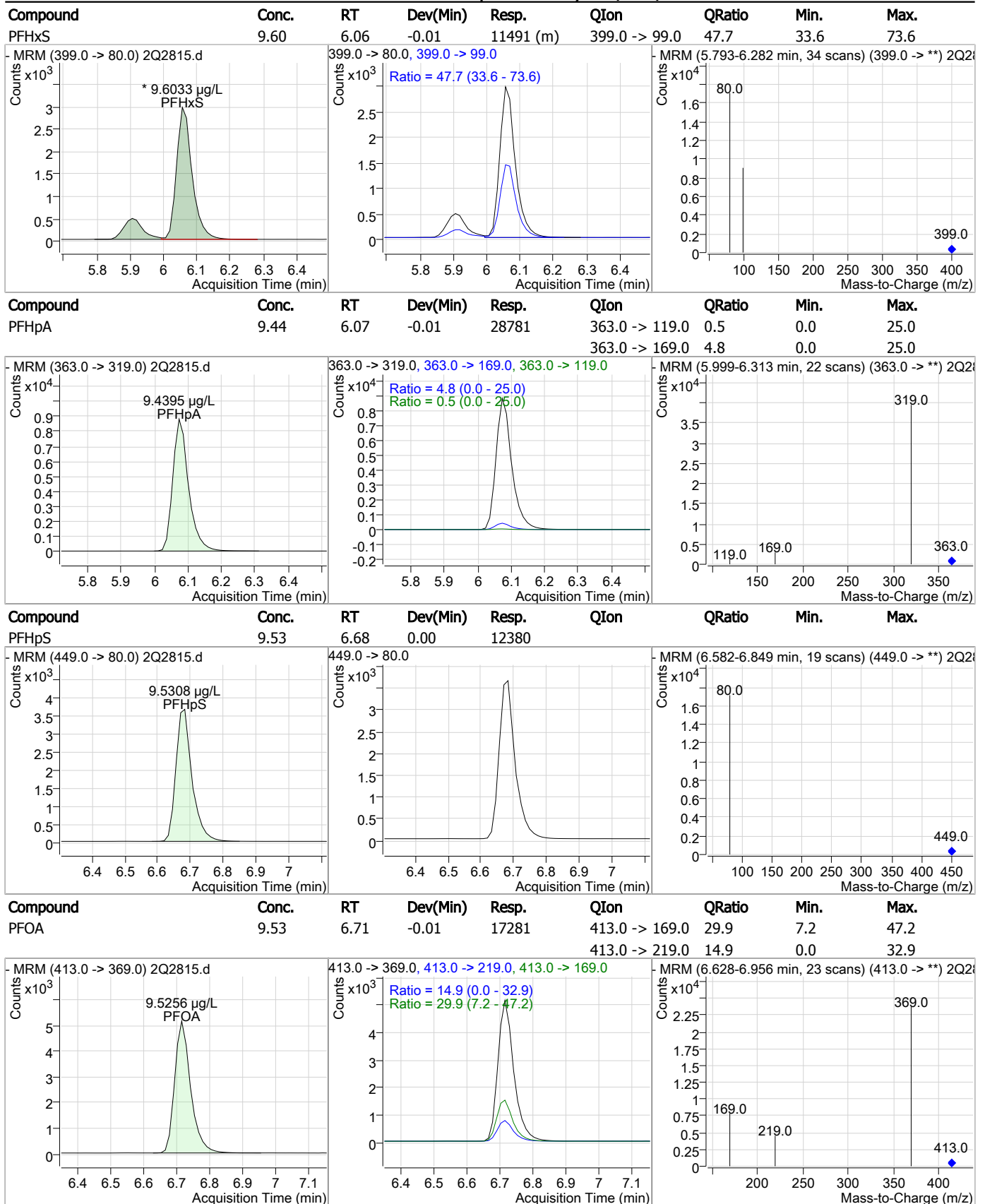
Perfluorinated Compounds by LC/MS/MS



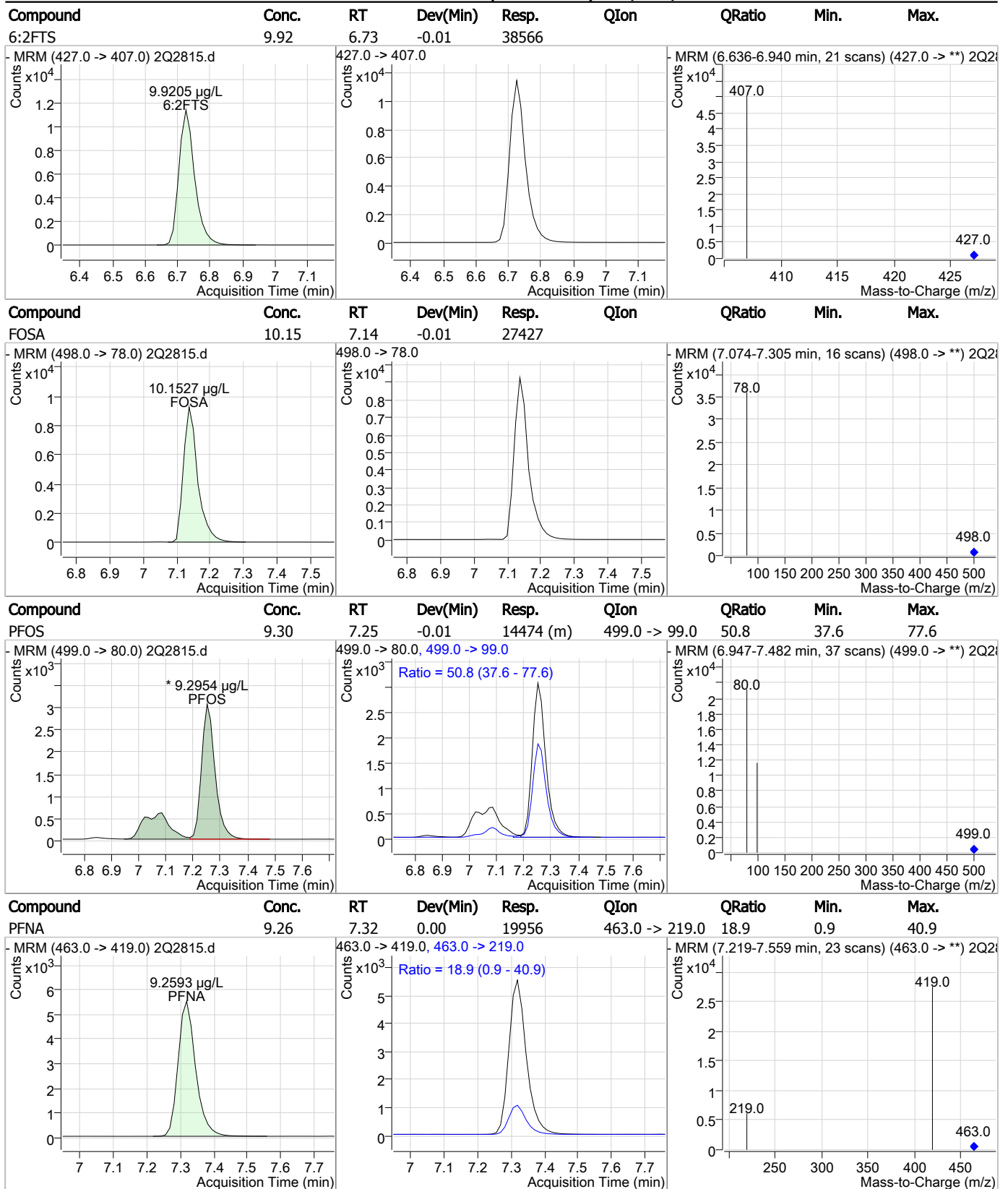
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



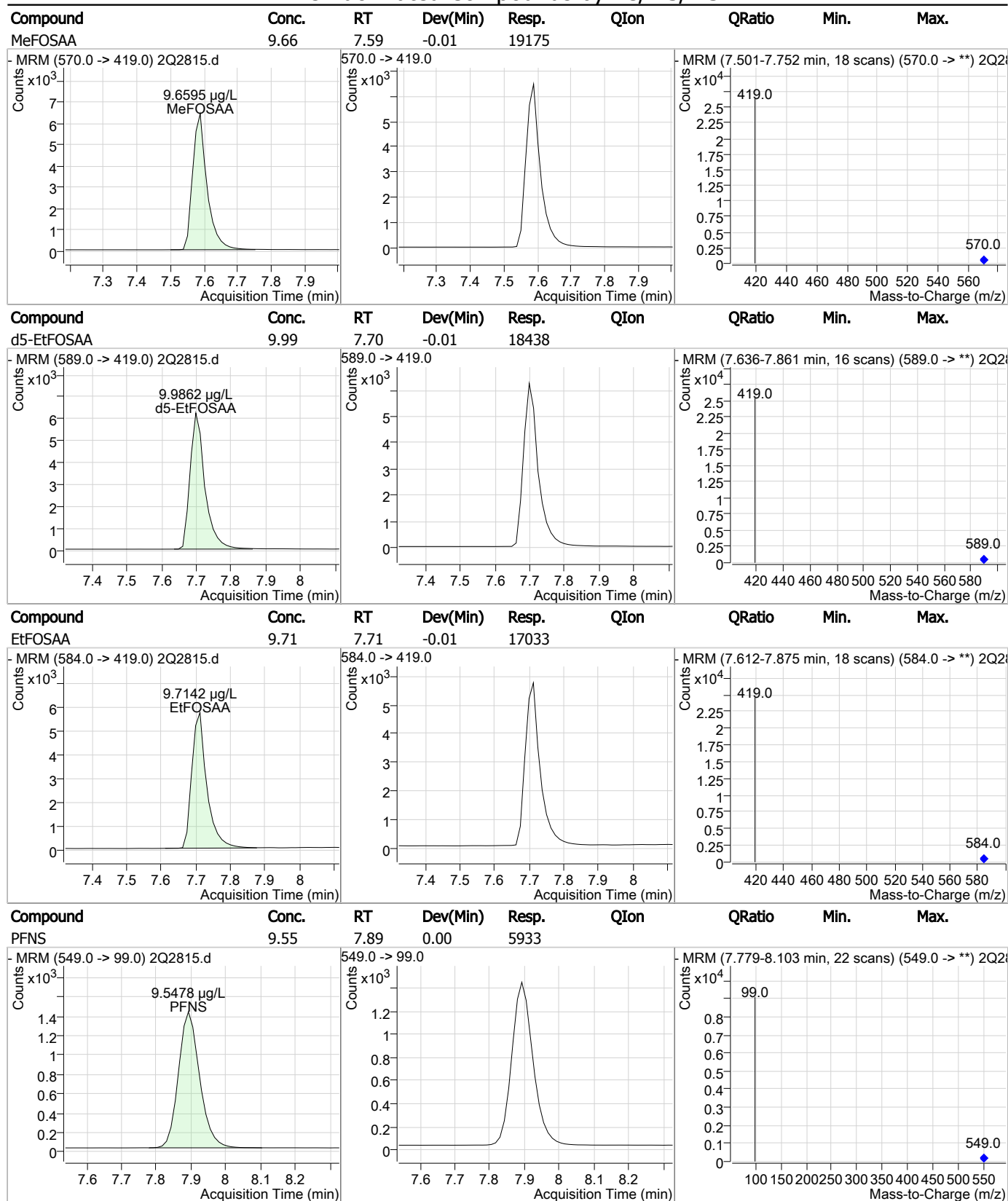
Perfluorinated Compounds by LC/MS/MS



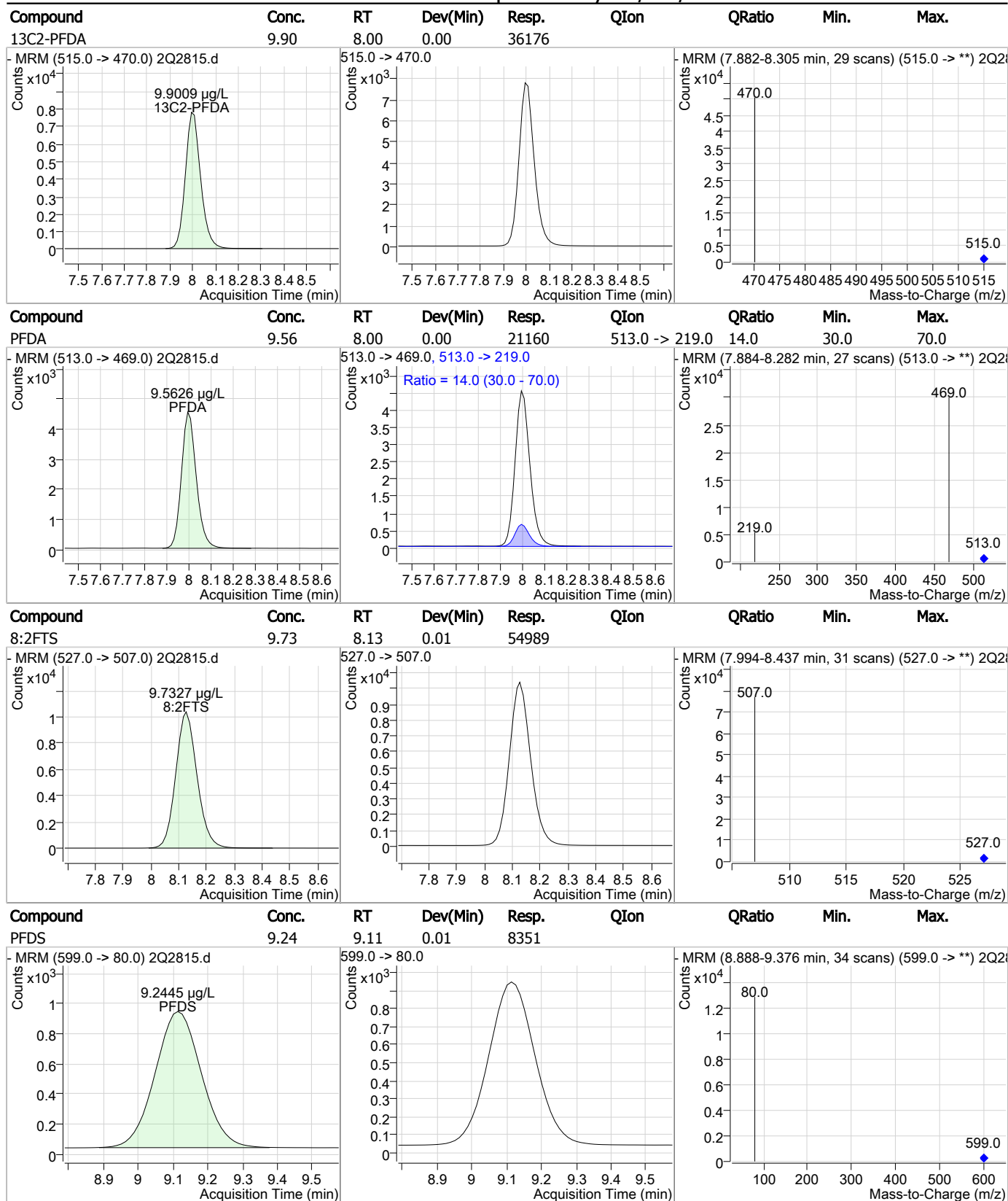
7.5.17

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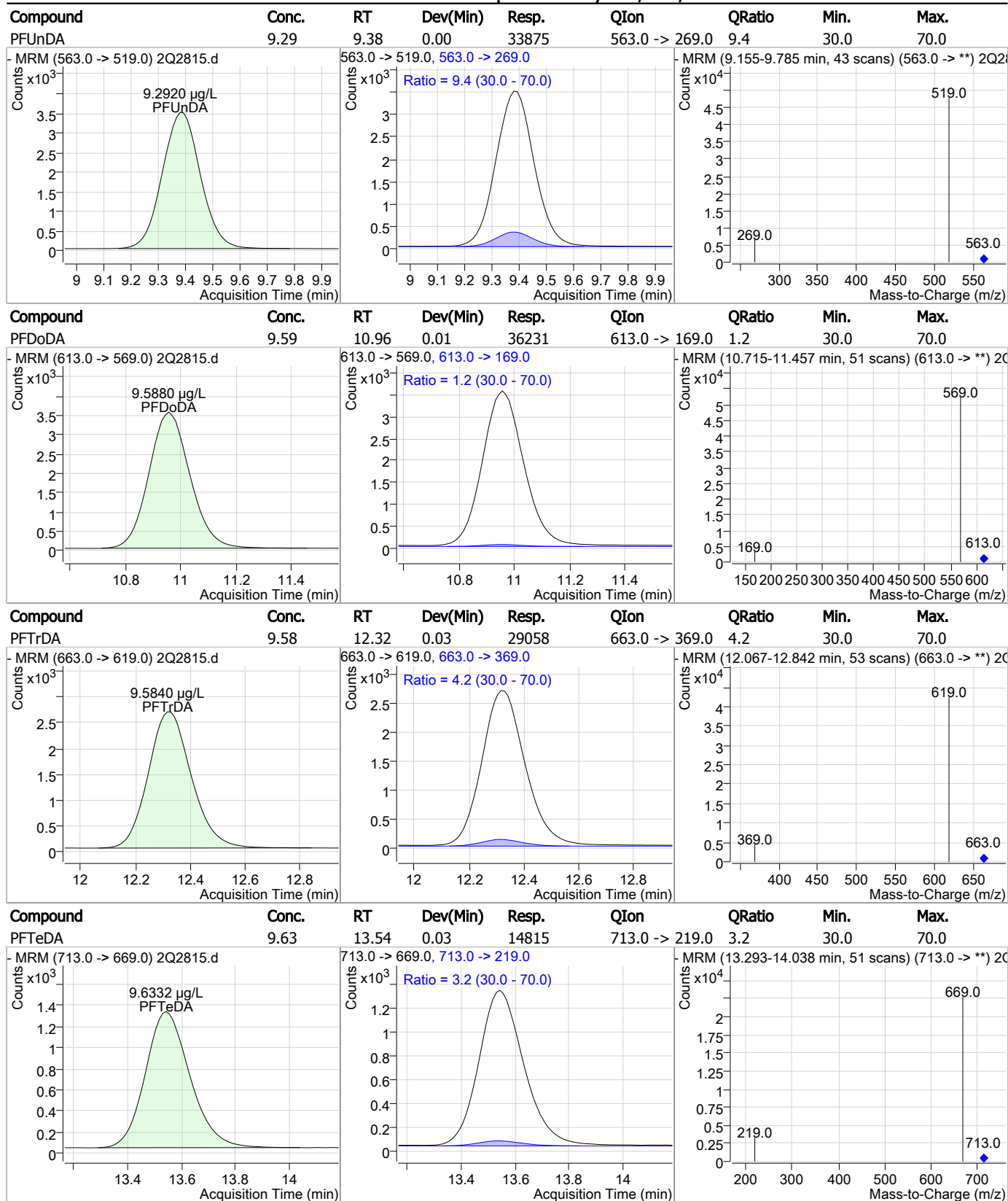
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-IC70

Method: EPA 537 MOD

Lab FileID: 2Q2815.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 12:41

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.25	Split peak

7.5.17.1

7

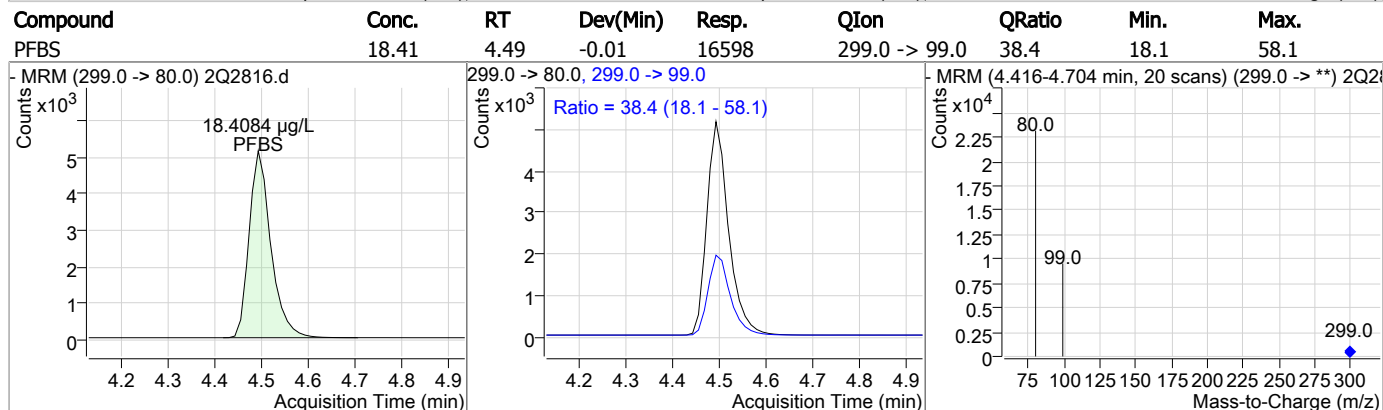
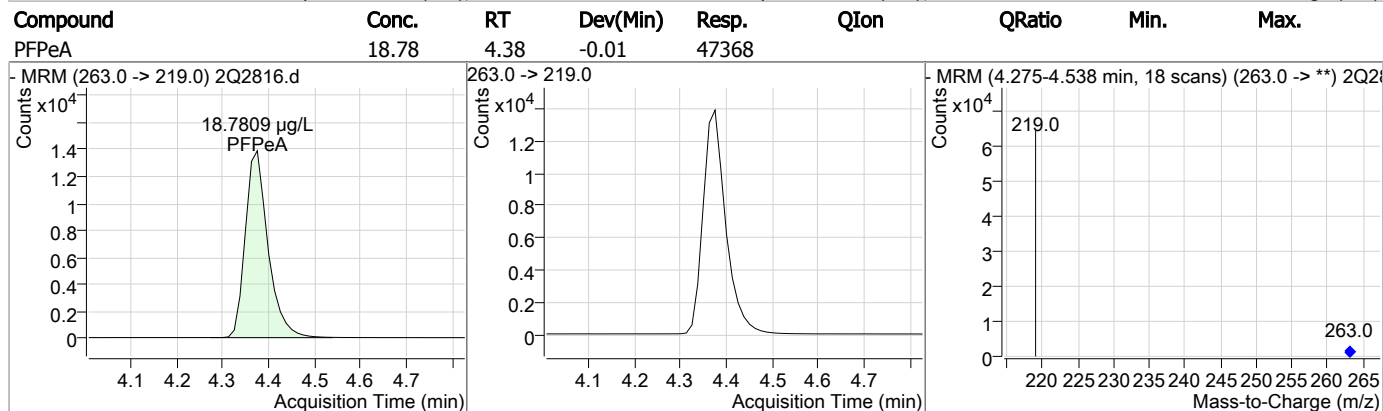
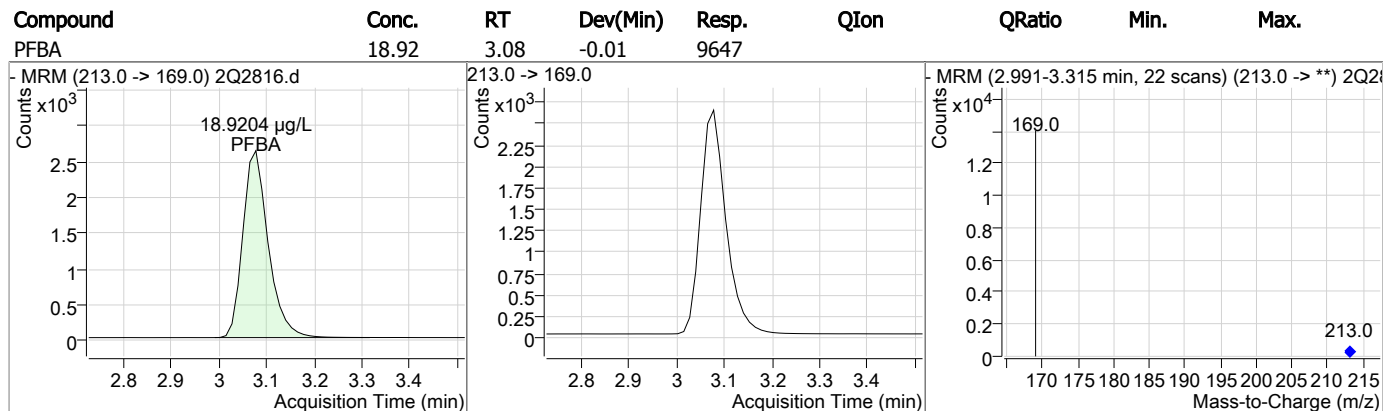
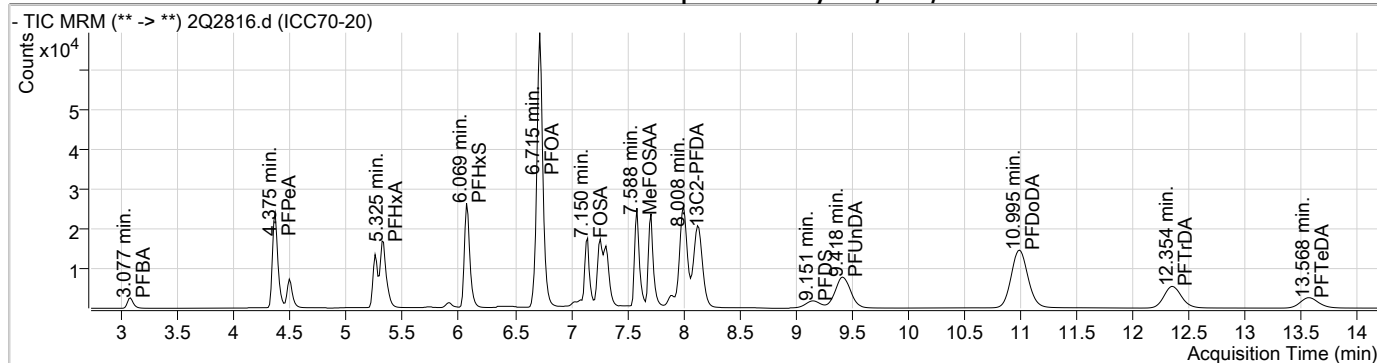
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2816.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 1:01:07 PM
 Sample Name : ICC70-20
 Vial : Vial 6
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65591,S2Q70,130,,,1.0,1,water

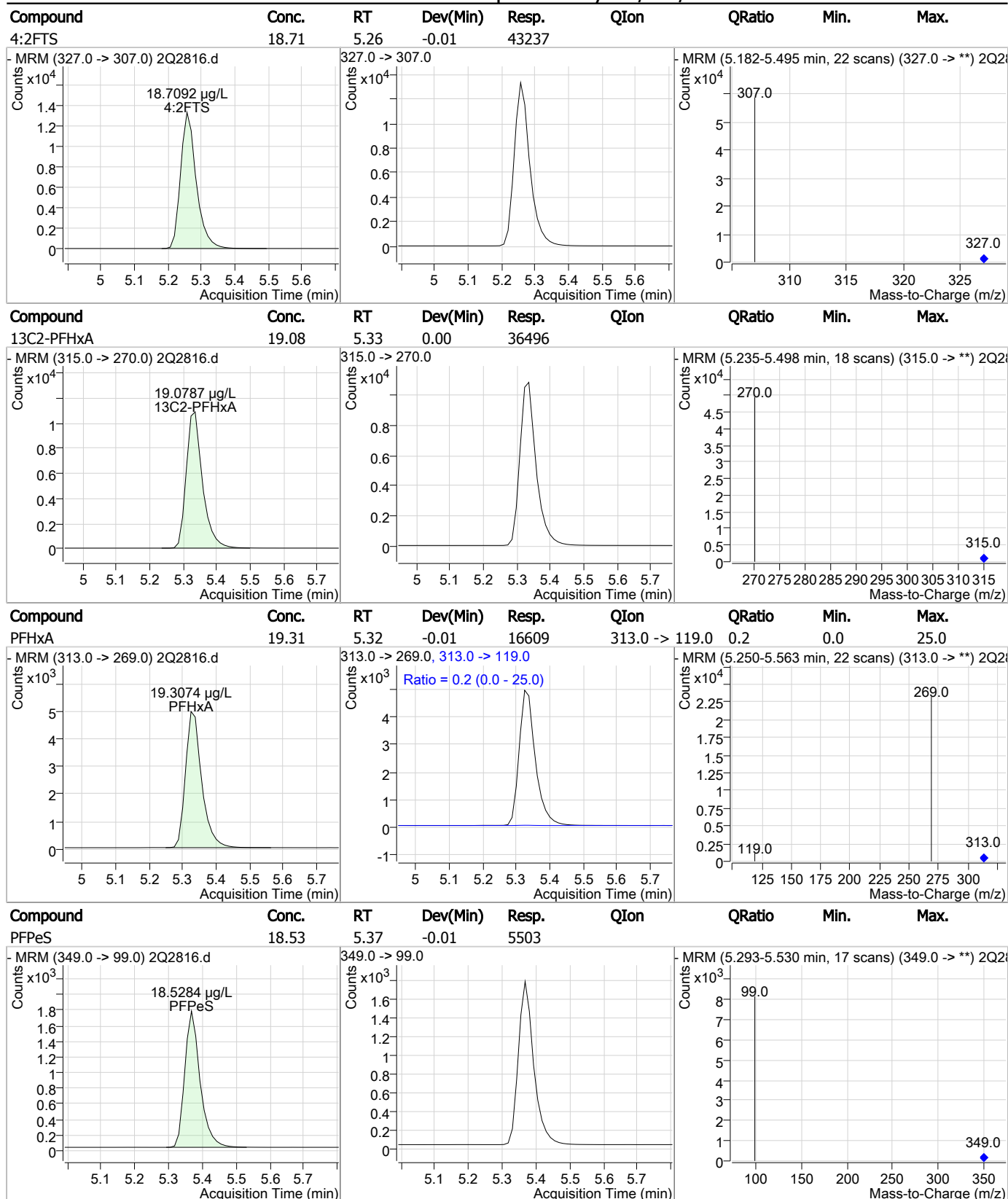
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.724	429.0 -> 409.0	76489	20.00	µg/L	-0.013
13C2-PFDoDA	10.990	615.0 -> 570.0	78581	20.00	µg/L	0.037
13C2-PFOA	6.713	415.0 -> 370.0	40996	20.00	µg/L	-0.014
13C3-PFPeA	4.372	266.0 -> 222.0	33124	20.00	µg/L	-0.013
13C4-PFOS	7.263	503.0 -> 80.0	25172	20.00	µg/L	0.000
d3-MeFOSAA	7.587	573.0 -> 419.0	35370	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	8.008	515.0 -> 470.0	70382	19.80	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 99.0%			
13C2-PFHxA	5.335	315.0 -> 270.0	36496	19.08	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 95.4%			
d5-EtFOSAA	7.711	589.0 -> 419.0	36193	19.29	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 96.5%			
Target Compounds						QValue
4:2FTS	5.257	327.0 -> 307.0	43237	18.71	µg/L	100
6:2FTS	6.726	427.0 -> 407.0	74136	19.05	µg/L	100
8:2FTS	8.127	527.0 -> 507.0	107052	18.82	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	32836	18.53	µg/L	100
FOSA	7.150	498.0 -> 78.0	51345	18.94	µg/L	100
MeFOSAA	7.588	570.0 -> 419.0	37426	18.56	µg/L	100
PFBA	3.077	213.0 -> 169.0	9647	18.92	µg/L	100
PFBS	4.491	299.0 -> 80.0	16598	18.41	µg/L	100
PFDA	8.009	513.0 -> 469.0	41248	19.16	µg/L	# 48
PFDoDA	10.995	613.0 -> 569.0	70935	19.03	µg/L	# 29
PFDS	9.151	599.0 -> 80.0	16330	18.33	µg/L	100
PFHpA	6.074	363.0 -> 319.0	57058	19.24	µg/L	93
PFHpS	6.683	449.0 -> 80.0	24090	18.81	µg/L	100
PFHxA	5.325	313.0 -> 269.0	16609	19.31	µg/L	86
PFHxS	6.069	399.0 -> 80.0	22480	19.05	µg/L	m 90
PFNA	7.319	463.0 -> 419.0	38902	18.55	µg/L	97
PFNS	7.892	549.0 -> 99.0	11605	18.94	µg/L	100
PFOA	6.715	413.0 -> 369.0	33808	19.16	µg/L	96
PFOS	7.264	499.0 -> 80.0	28431	18.51	µg/L	m 90
PFPeA	4.375	263.0 -> 219.0	47368	18.78	µg/L	100
PFPeS	5.367	349.0 -> 99.0	5503	18.53	µg/L	100
PFTeDA	13.568	713.0 -> 669.0	29054	19.15	µg/L	# 32
PFTTrDA	12.354	663.0 -> 619.0	56457	18.88	µg/L	# 33
PFUnDA	9.418	563.0 -> 519.0	67770	18.85	µg/L	# 41

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

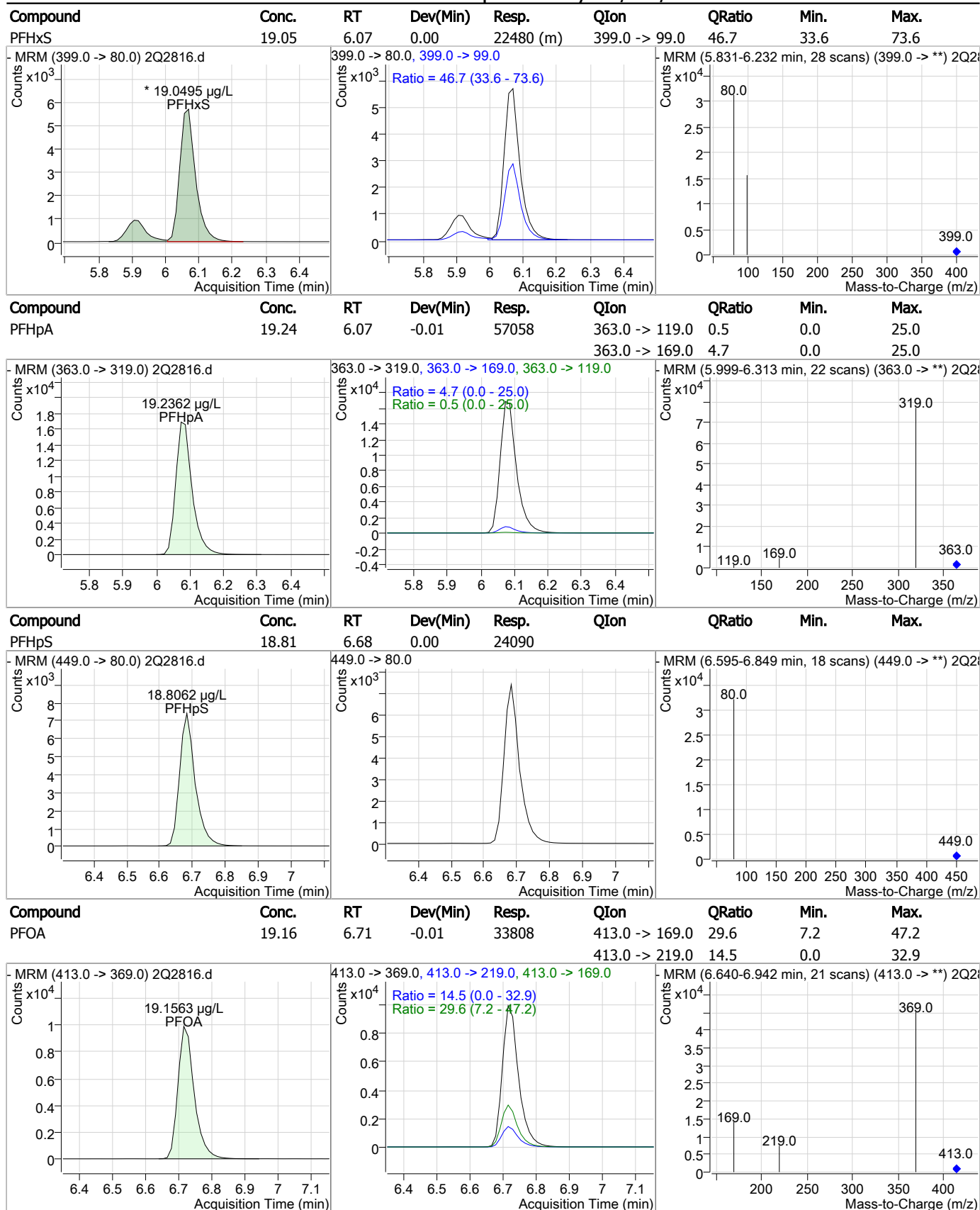
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



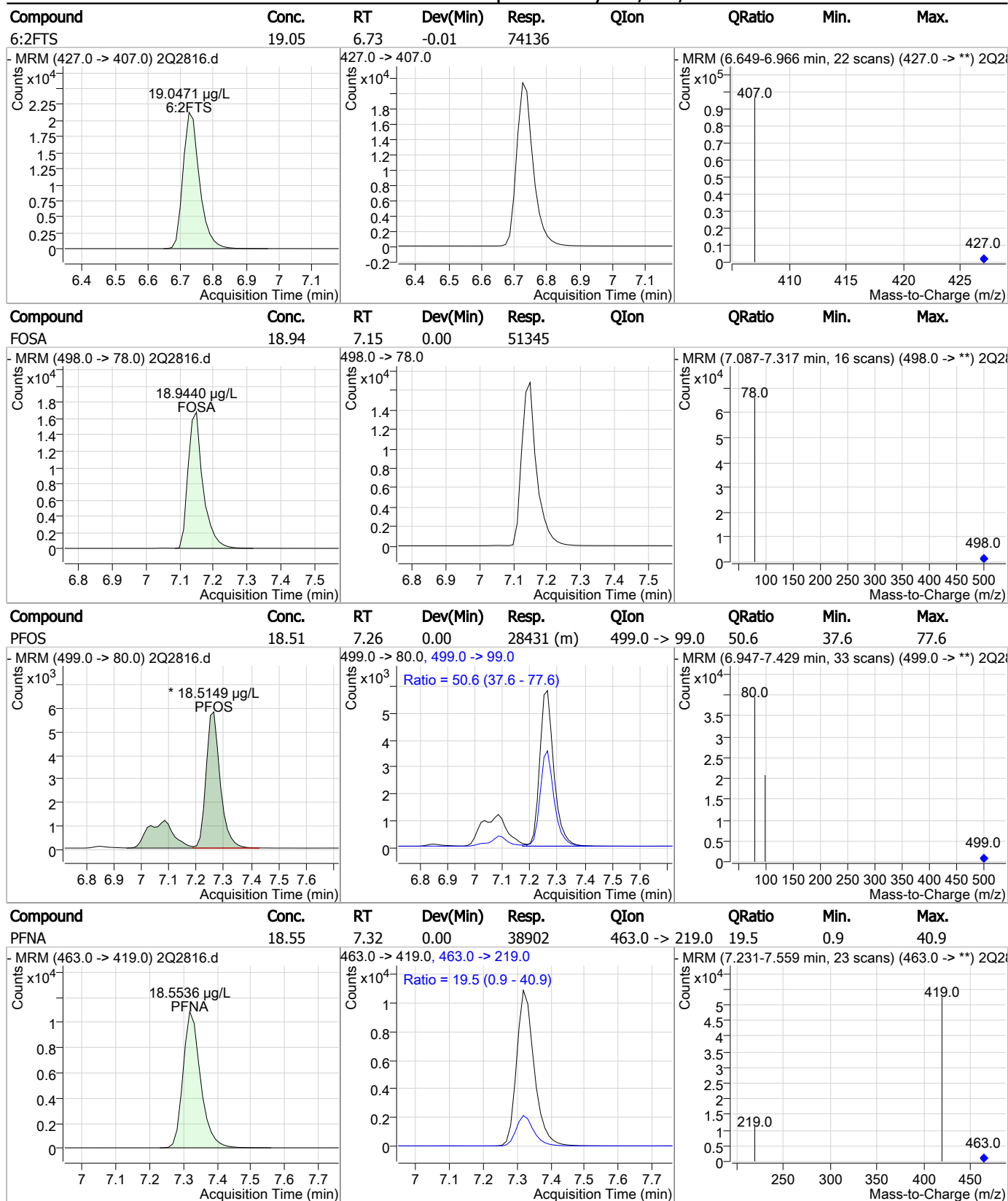
Perfluorinated Compounds by LC/MS/MS



7.5.18

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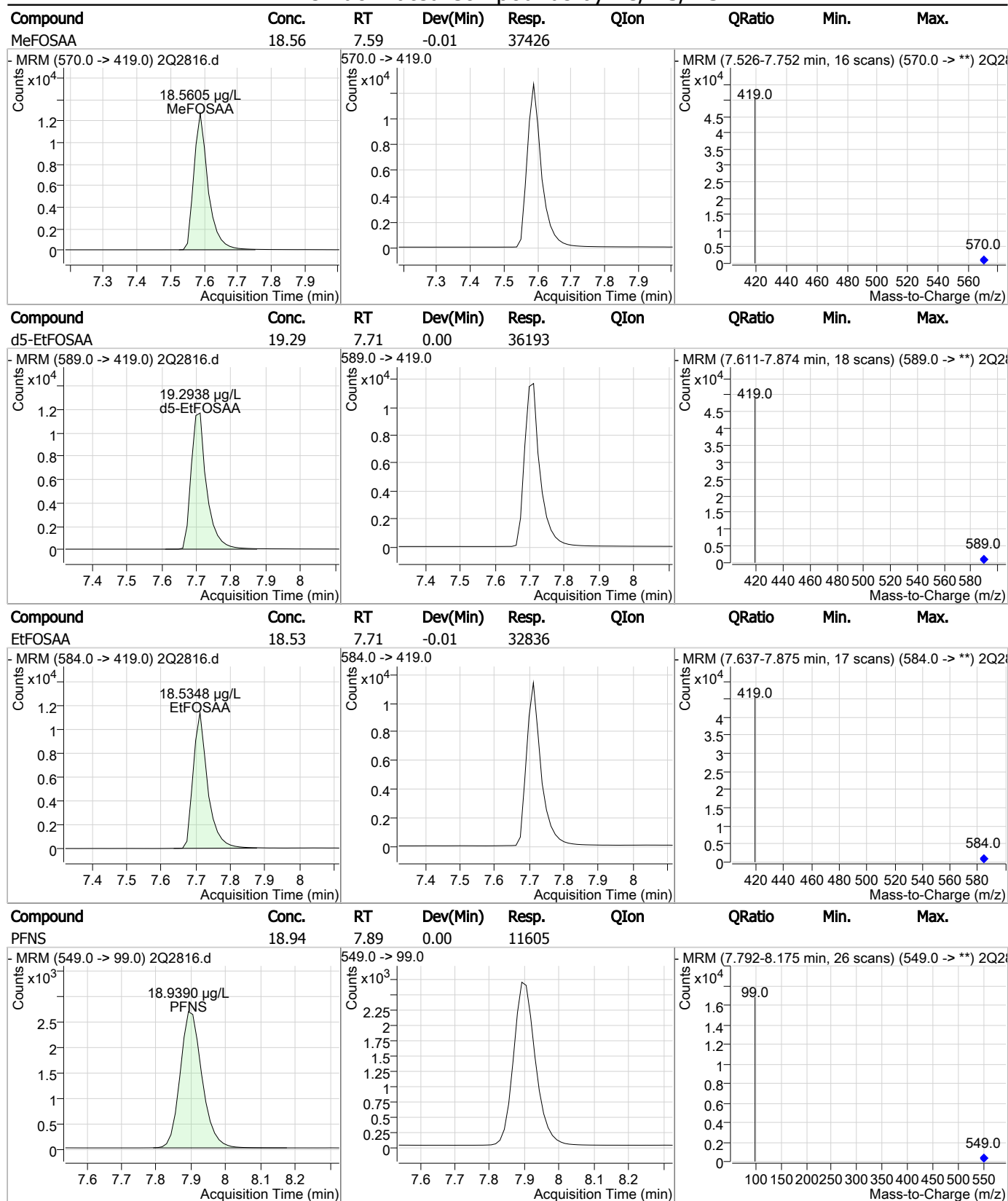
Perfluorinated Compounds by LC/MS/MS



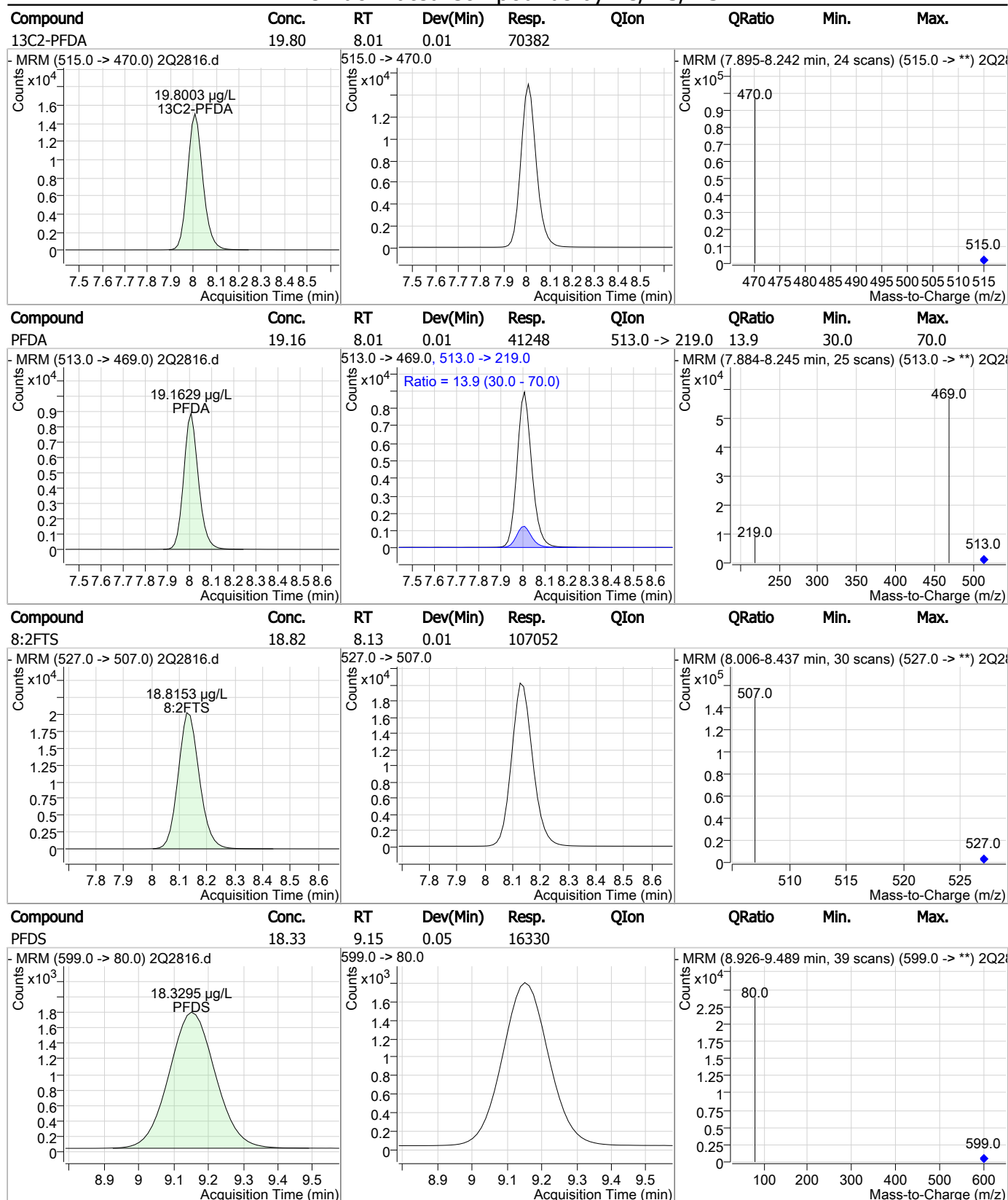
7.5.18

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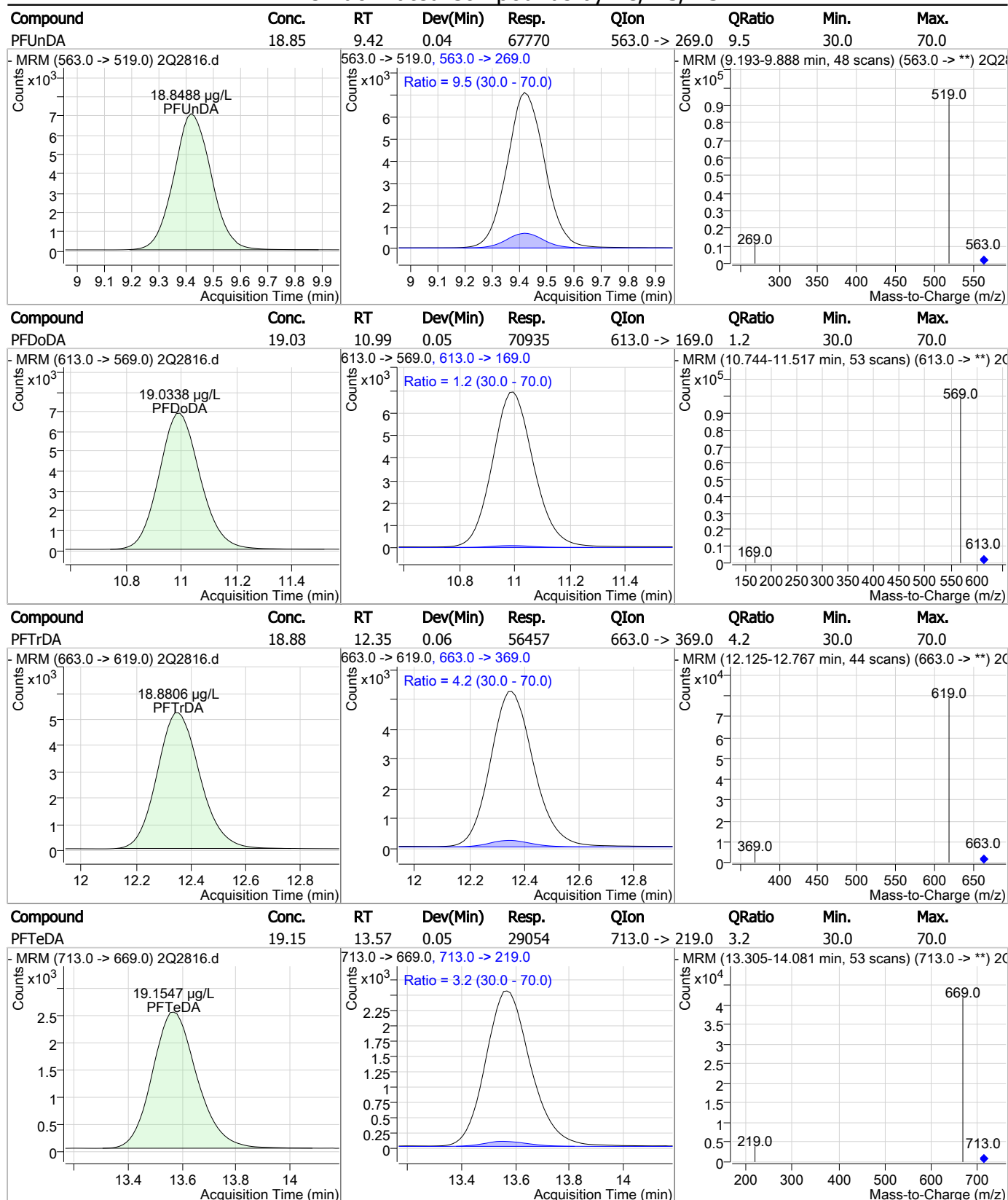
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-ICC70

Method: EPA 537 MOD

Lab FileID: 2Q2816.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 13:01

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.07	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.26	Split peak

7.5.18.1
7

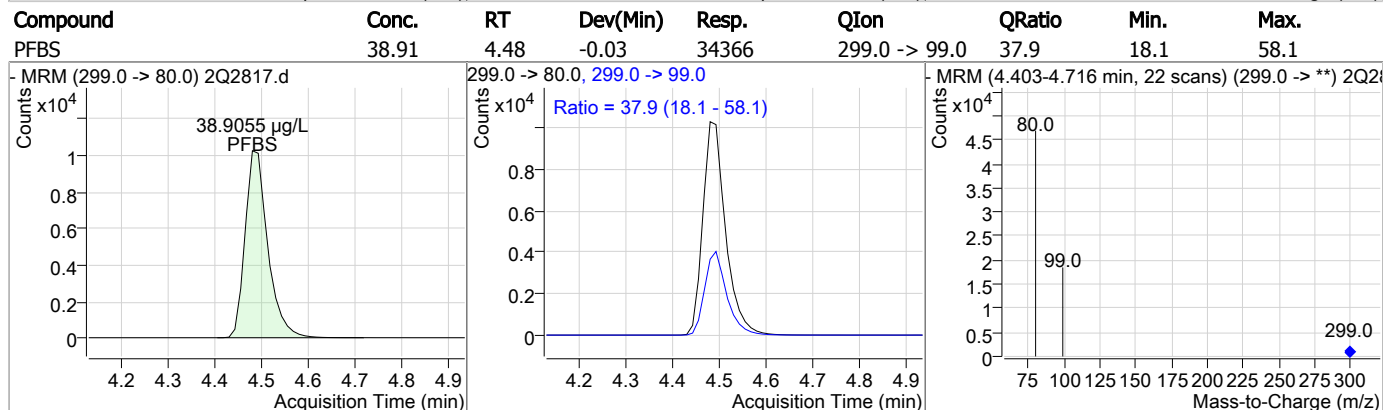
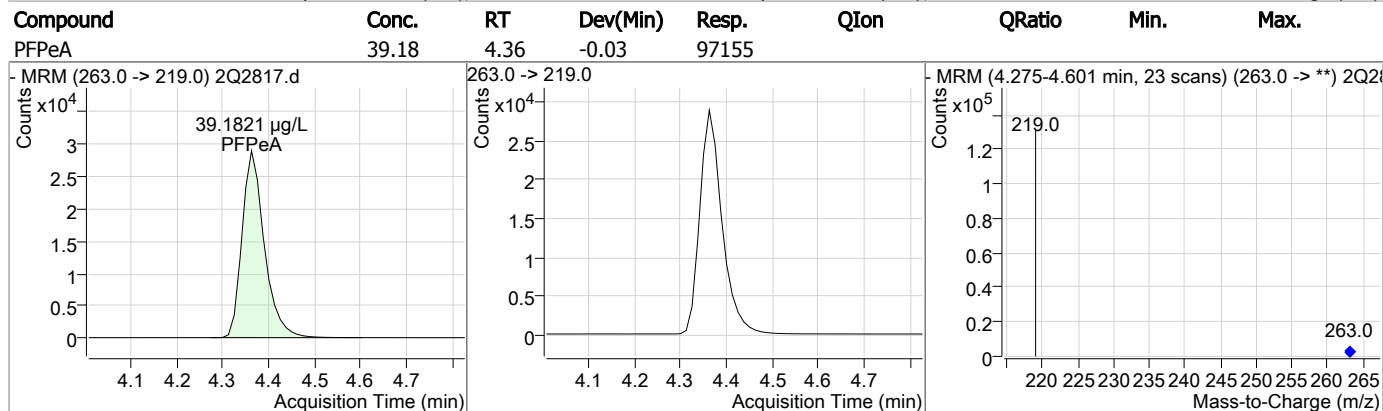
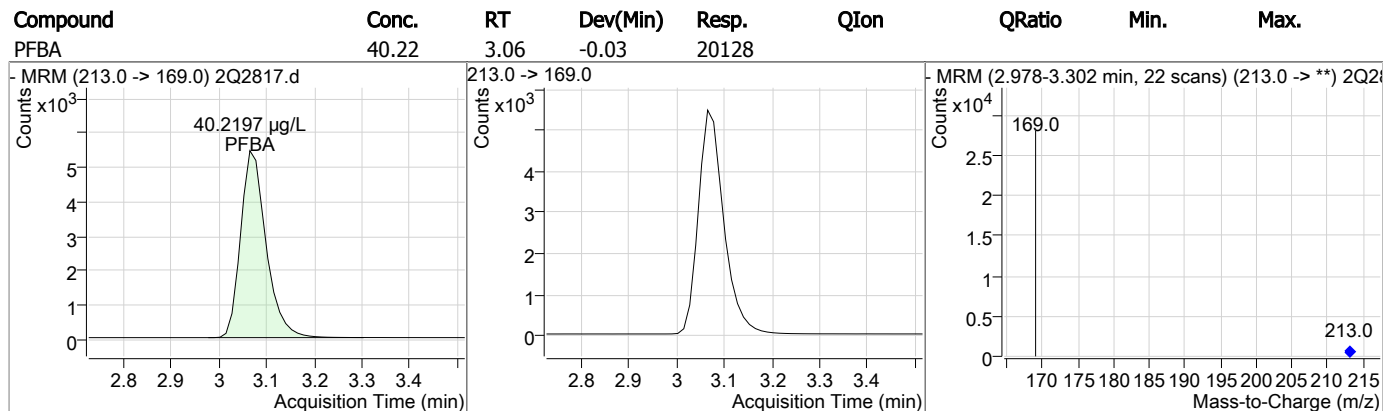
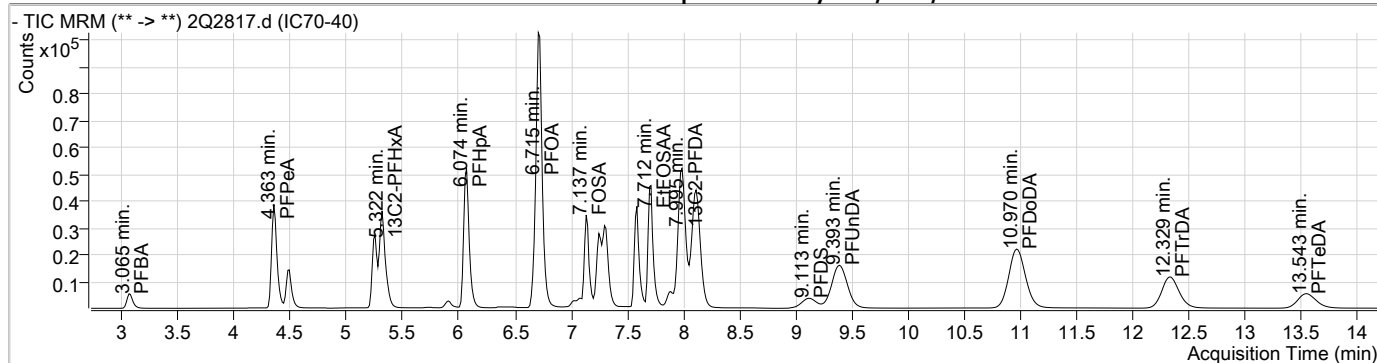
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2817.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 1:20:26 PM
 Sample Name : IC70-40
 Vial : Vial 7
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65591,S2Q70,130,,,1.0,1,water

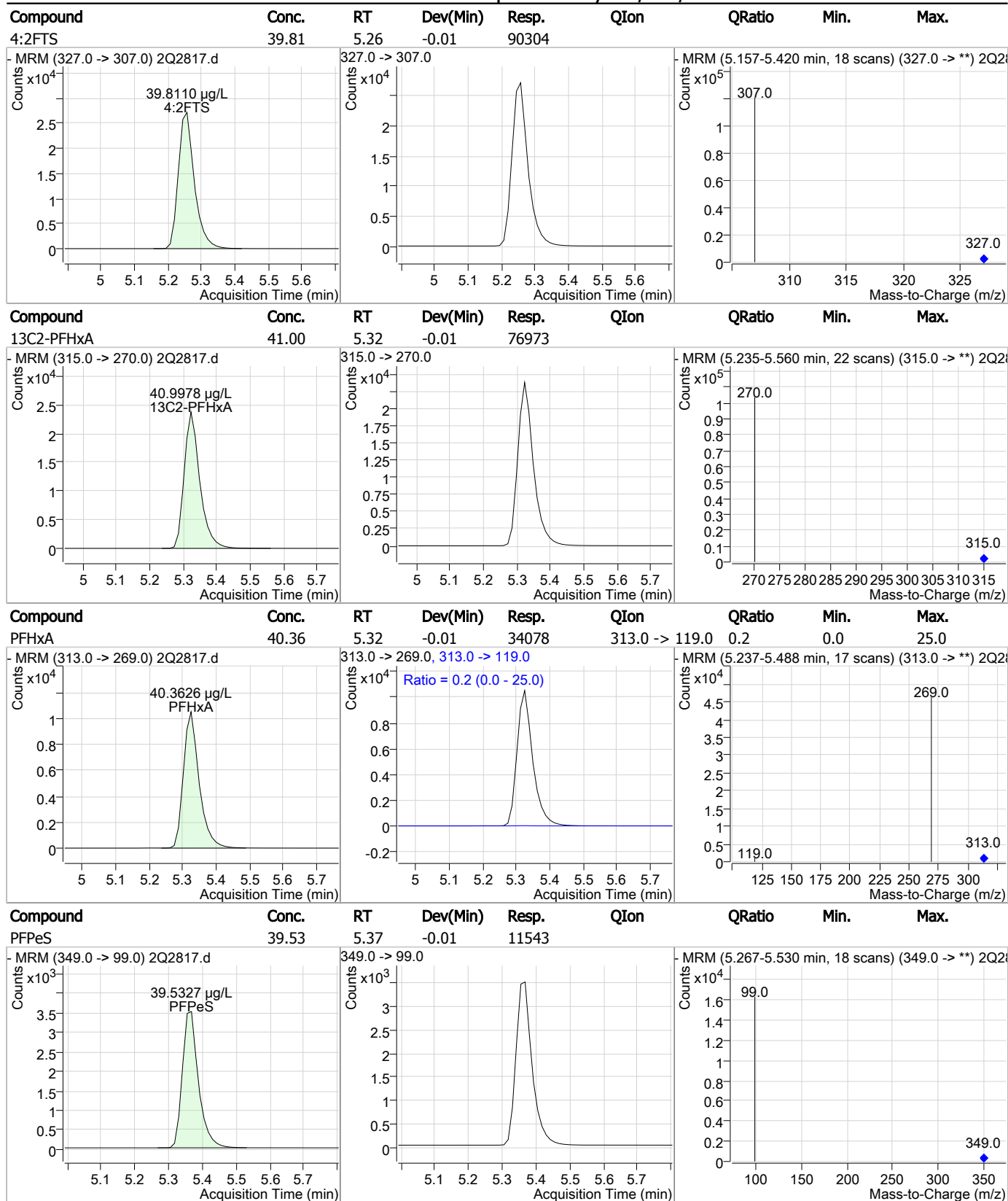
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.724	429.0 -> 409.0	77617	20.00 µg/L	-0.013
13C2-PFDoDA	10.965	615.0 -> 570.0	79253	20.00 µg/L	0.012
13C2-PFOA	6.713	415.0 -> 370.0	40237	20.00 µg/L	-0.014
13C3-PFPeA	4.360	266.0 -> 222.0	32564	20.00 µg/L	-0.025
13C4-PFOS	7.250	503.0 -> 80.0	24660	20.00 µg/L	-0.013
d3-MeFOSAA	7.587	573.0 -> 419.0	34672	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	7.995	515.0 -> 470.0	145507	41.71 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 208.5%	
13C2-PFHxA	5.322	315.0 -> 270.0	76973	41.00 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 205.0%	
d5-EtFOSAA	7.698	589.0 -> 419.0	74708	40.63 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 203.1%	
Target Compounds					
					QValue
4:2FTS	5.257	327.0 -> 307.0	90304	39.81 µg/L	100
6:2FTS	6.726	427.0 -> 407.0	151048	39.81 µg/L	100
8:2FTS	8.117	527.0 -> 507.0	223572	39.77 µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	67489	39.38 µg/L	100
FOSA	7.137	498.0 -> 78.0	101713	39.44 µg/L	100
MeFOSAA	7.588	570.0 -> 419.0	78947	39.96 µg/L	100
PFBA	3.065	213.0 -> 169.0	20128	40.22 µg/L	100
PFBS	4.479	299.0 -> 80.0	34366	38.91 µg/L	100
PFDA	7.996	513.0 -> 469.0	85867	40.65 µg/L	# 47
PFDoDA	10.970	613.0 -> 569.0	146813	39.06 µg/L	# 29
PFDS	9.113	599.0 -> 80.0	33995	38.95 µg/L	100
PFHpA	6.074	363.0 -> 319.0	114158	39.21 µg/L	93
PFHpS	6.670	449.0 -> 80.0	49523	39.46 µg/L	100
PFHxA	5.325	313.0 -> 269.0	34078	40.36 µg/L	85
PFHxS	6.056	399.0 -> 80.0	46579	40.29 µg/L	m 91
PFNA	7.319	463.0 -> 419.0	82419	40.05 µg/L	95
PFNS	7.892	549.0 -> 99.0	23579	39.28 µg/L	100
PFOA	6.715	413.0 -> 369.0	69089	39.89 µg/L	95
PFOS	7.252	499.0 -> 80.0	59091	39.28 µg/L	m 90
PFPeA	4.363	263.0 -> 219.0	97155	39.18 µg/L	100
PFPeS	5.367	349.0 -> 99.0	11543	39.53 µg/L	100
PFTeDA	13.543	713.0 -> 669.0	60372	39.46 µg/L	# 32
PFTTrDA	12.329	663.0 -> 619.0	120314	39.89 µg/L	# 33
PFUnDA	9.393	563.0 -> 519.0	142947	39.42 µg/L	# 41

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

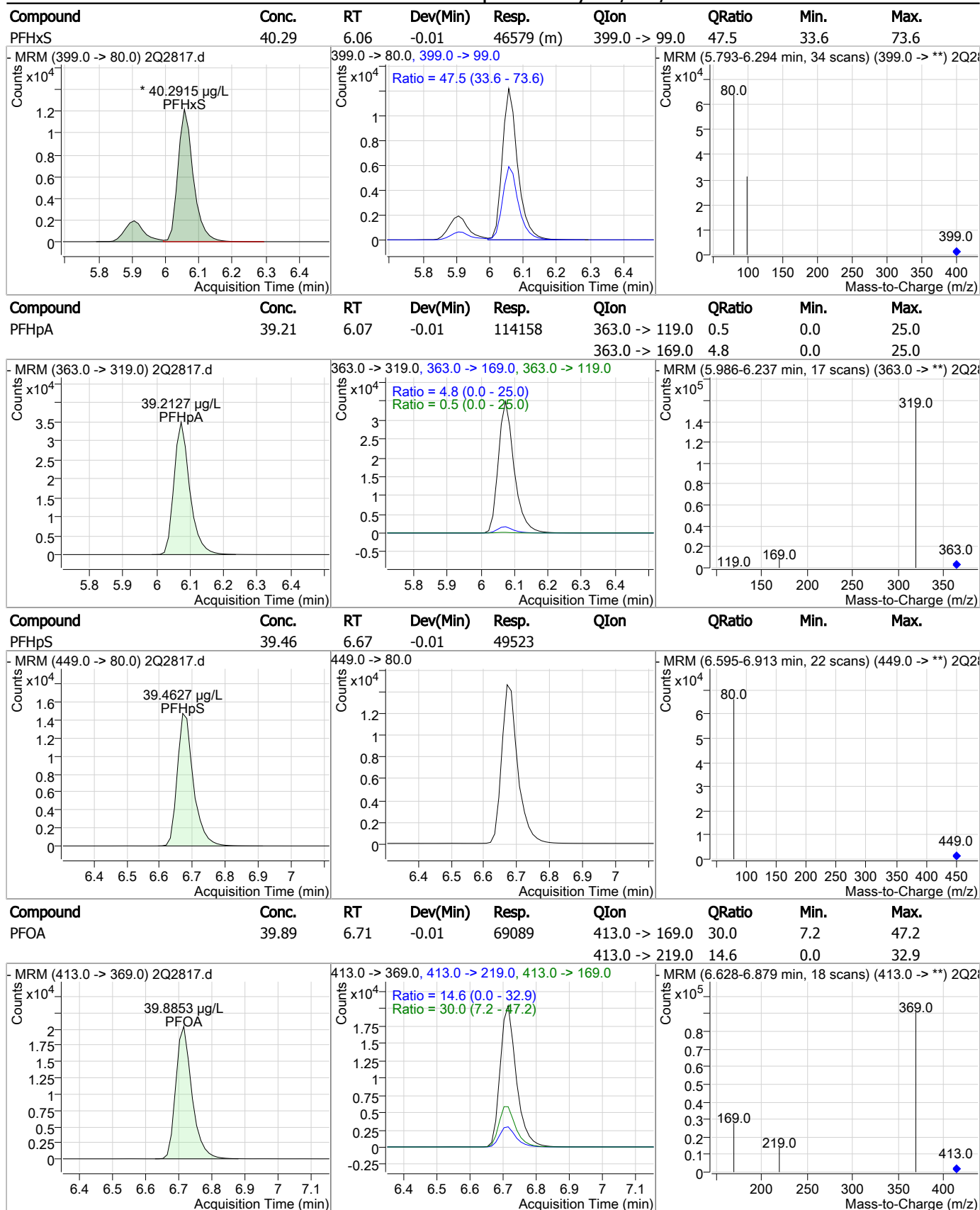
Perfluorinated Compounds by LC/MS/MS



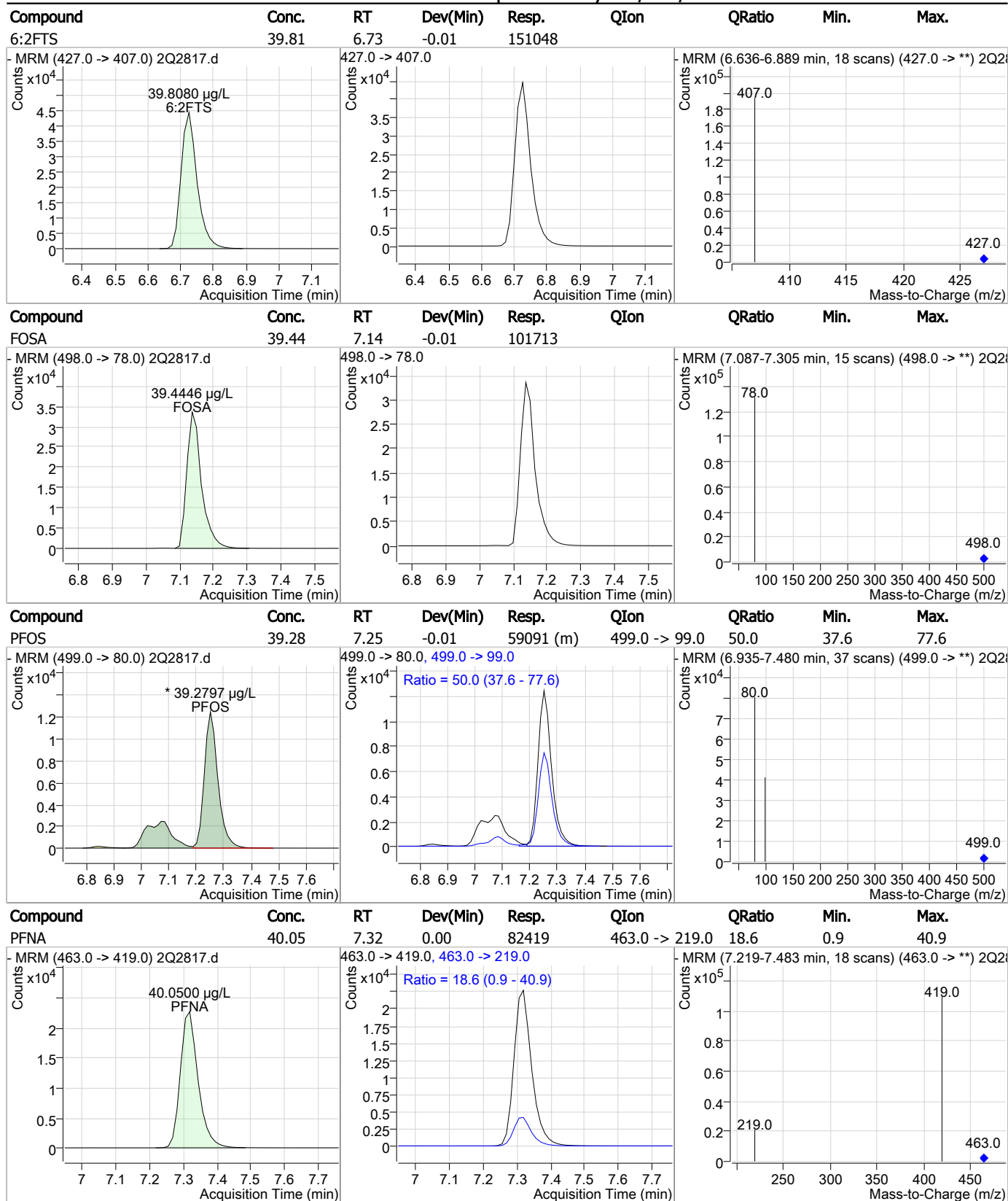
Perfluorinated Compounds by LC/MS/MS



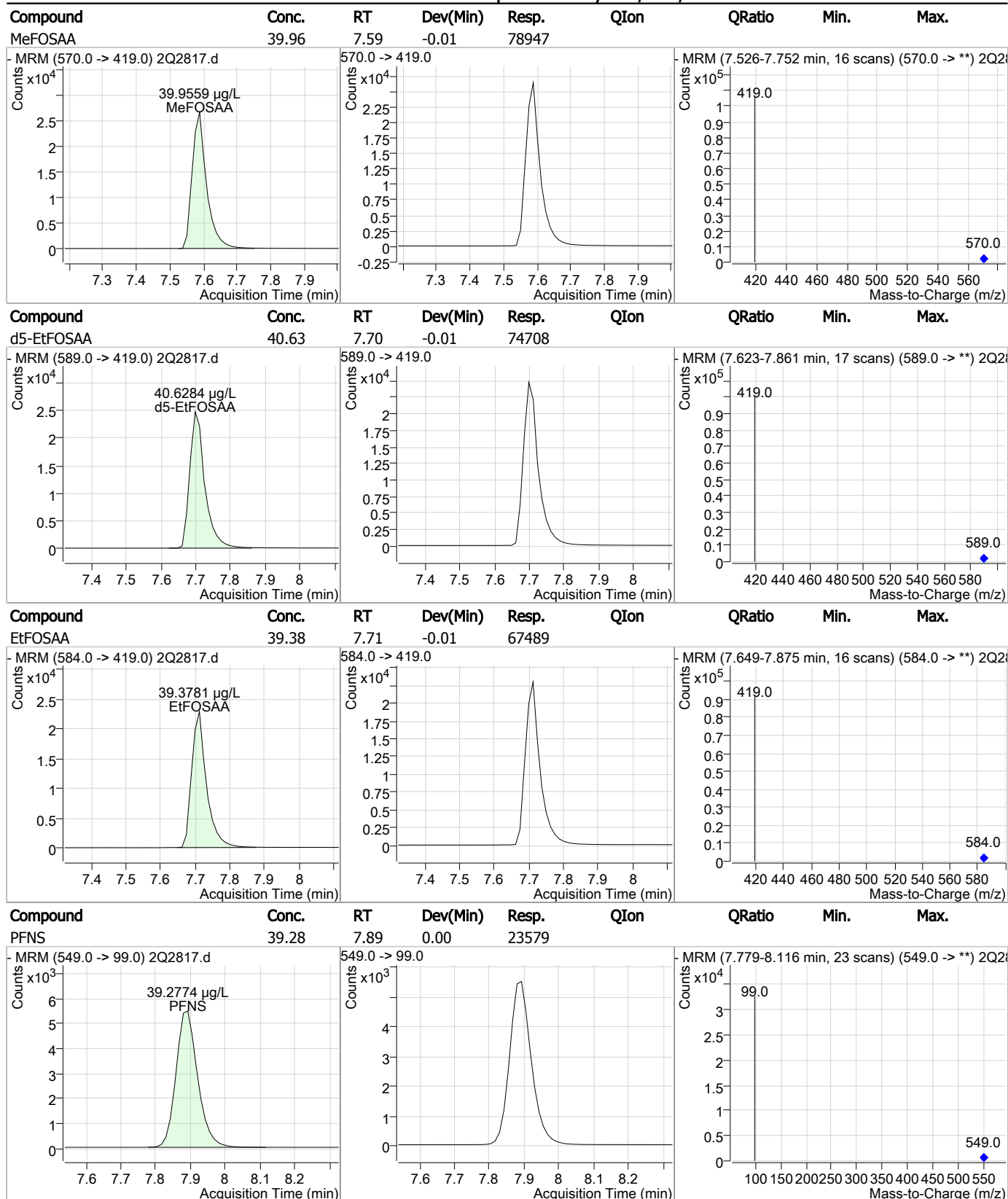
Perfluorinated Compounds by LC/MS/MS



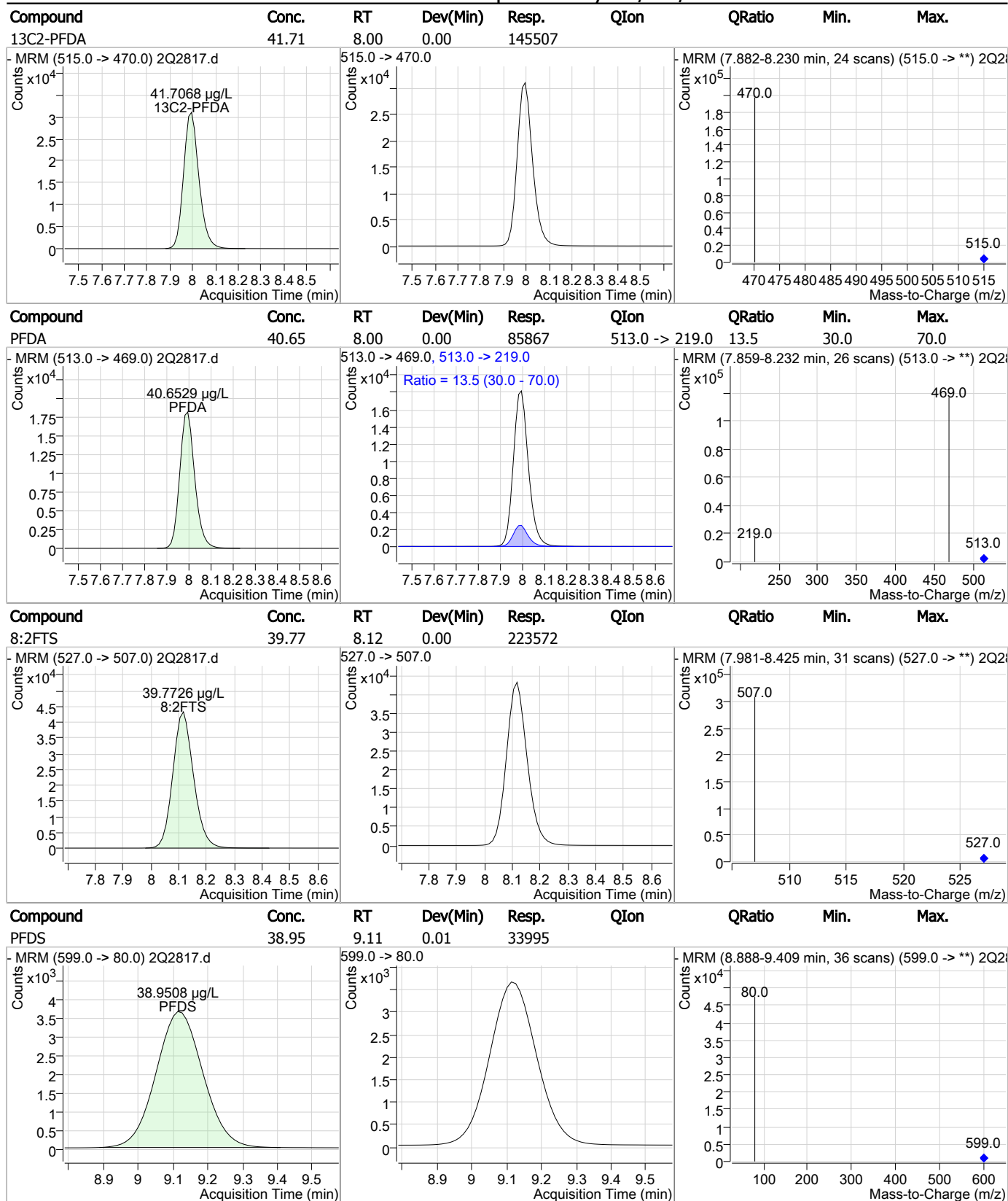
Perfluorinated Compounds by LC/MS/MS



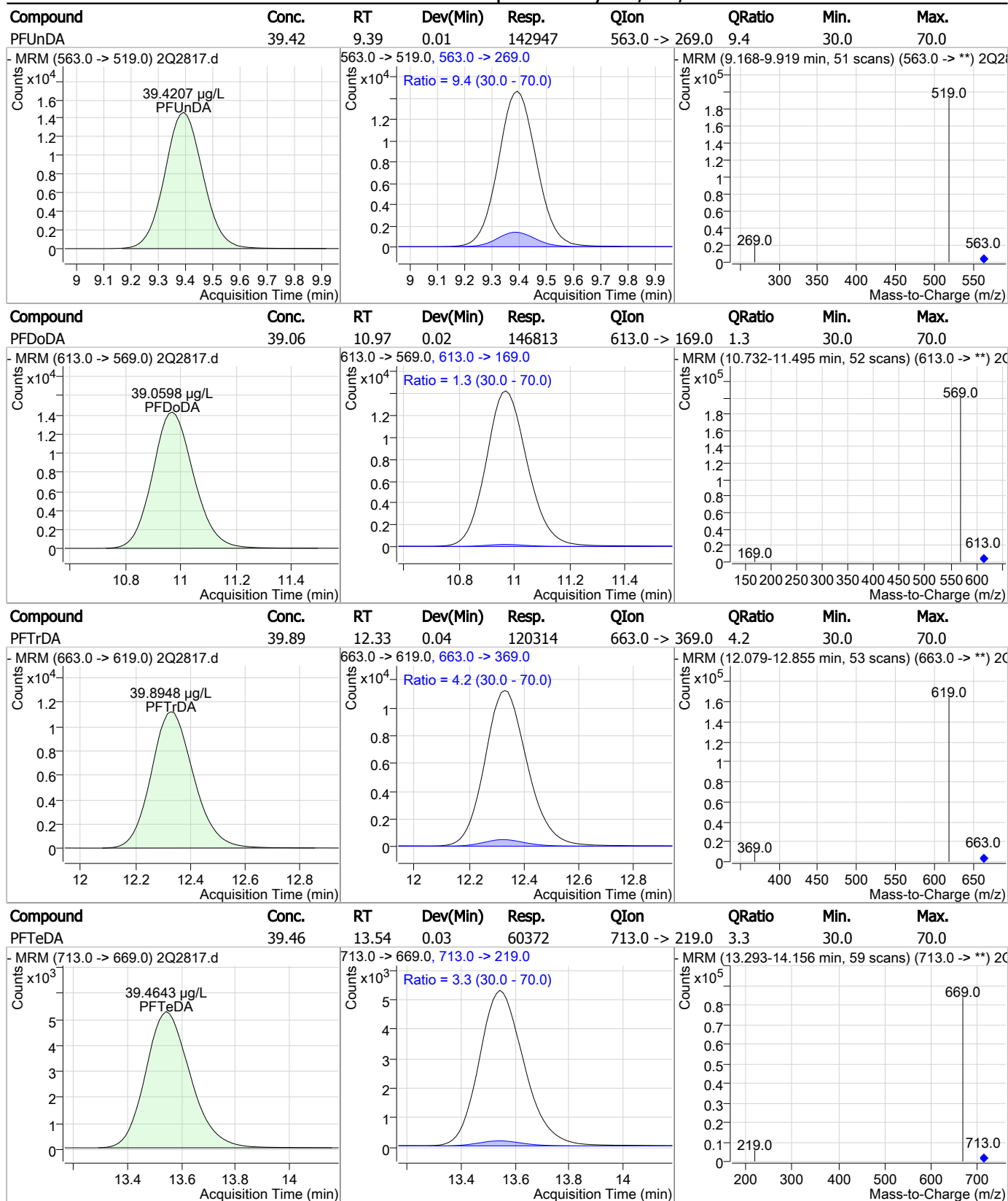
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-IC70

Method: EPA 537 MOD

Lab FileID: 2Q2817.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 13:20

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.25	Split peak

7.5.19.1
7

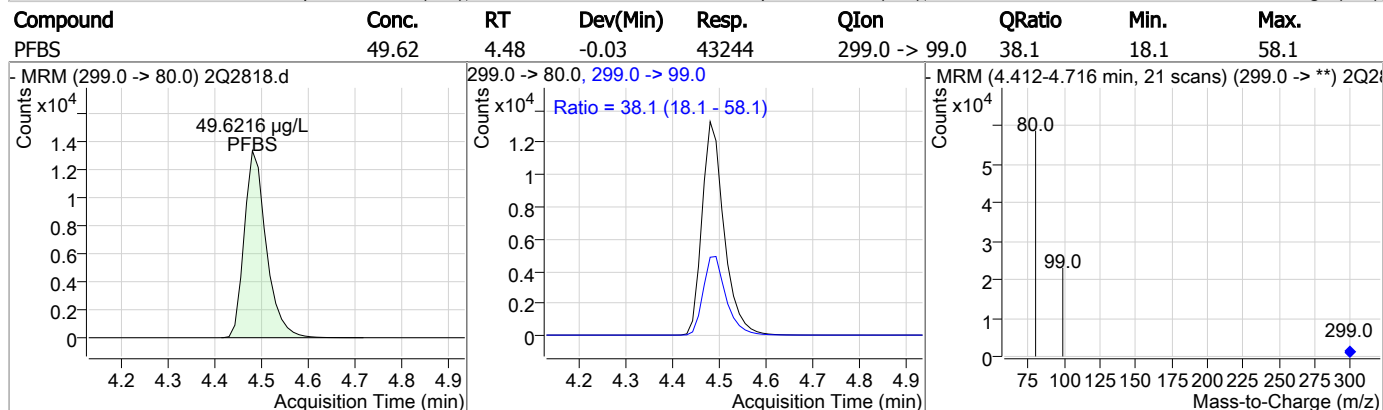
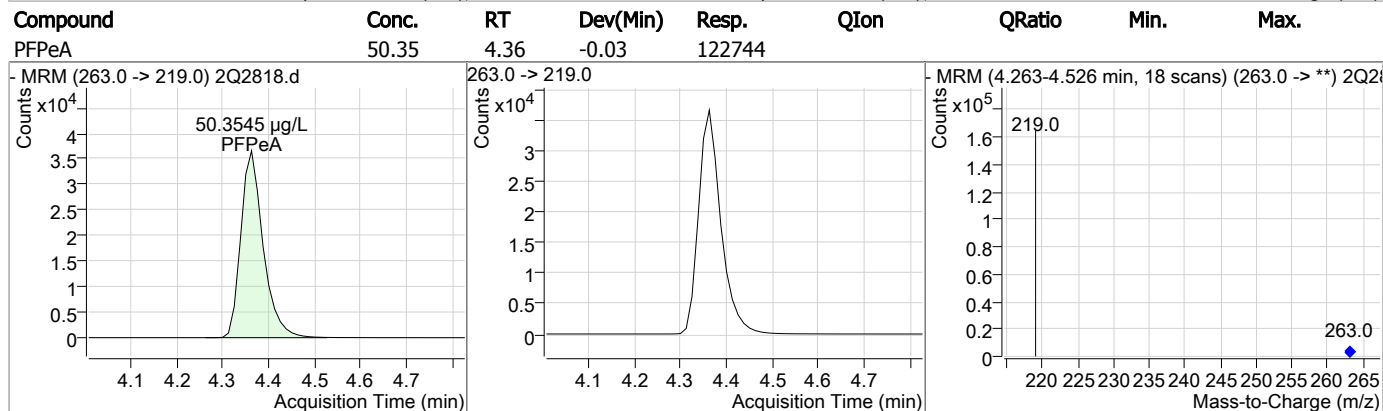
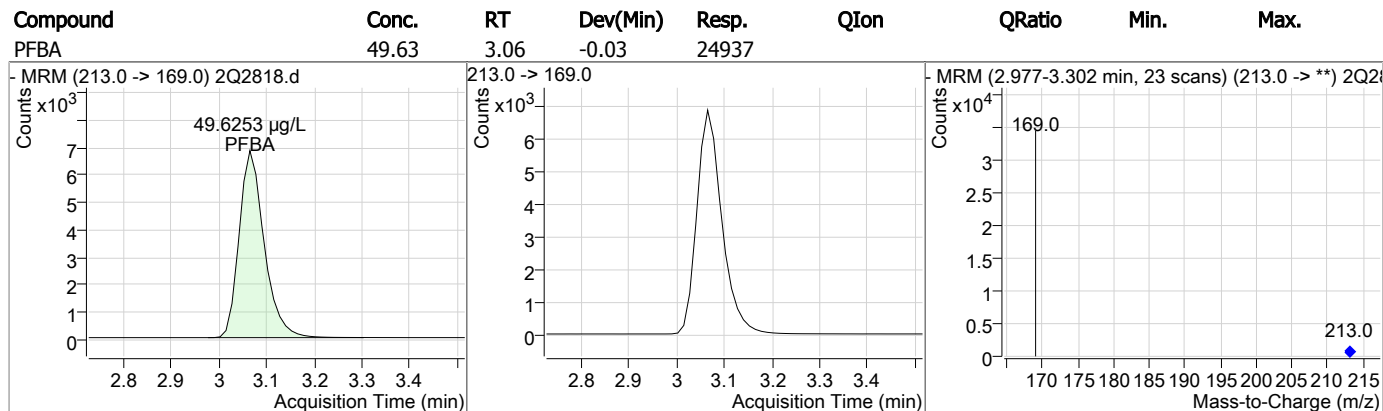
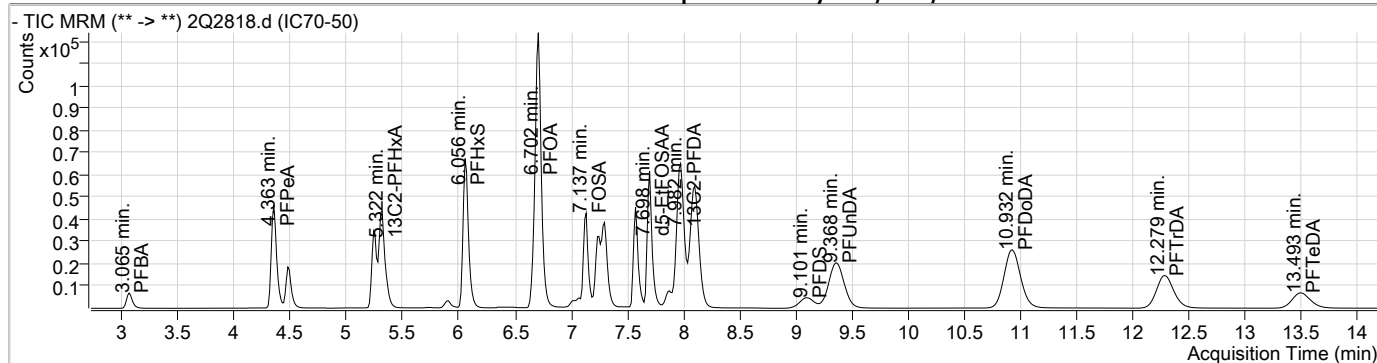
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2818.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 1:39:45 PM
 Sample Name : IC70-50
 Vial : Vial 8
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65591,S2Q70,130,,,1.0,1,water

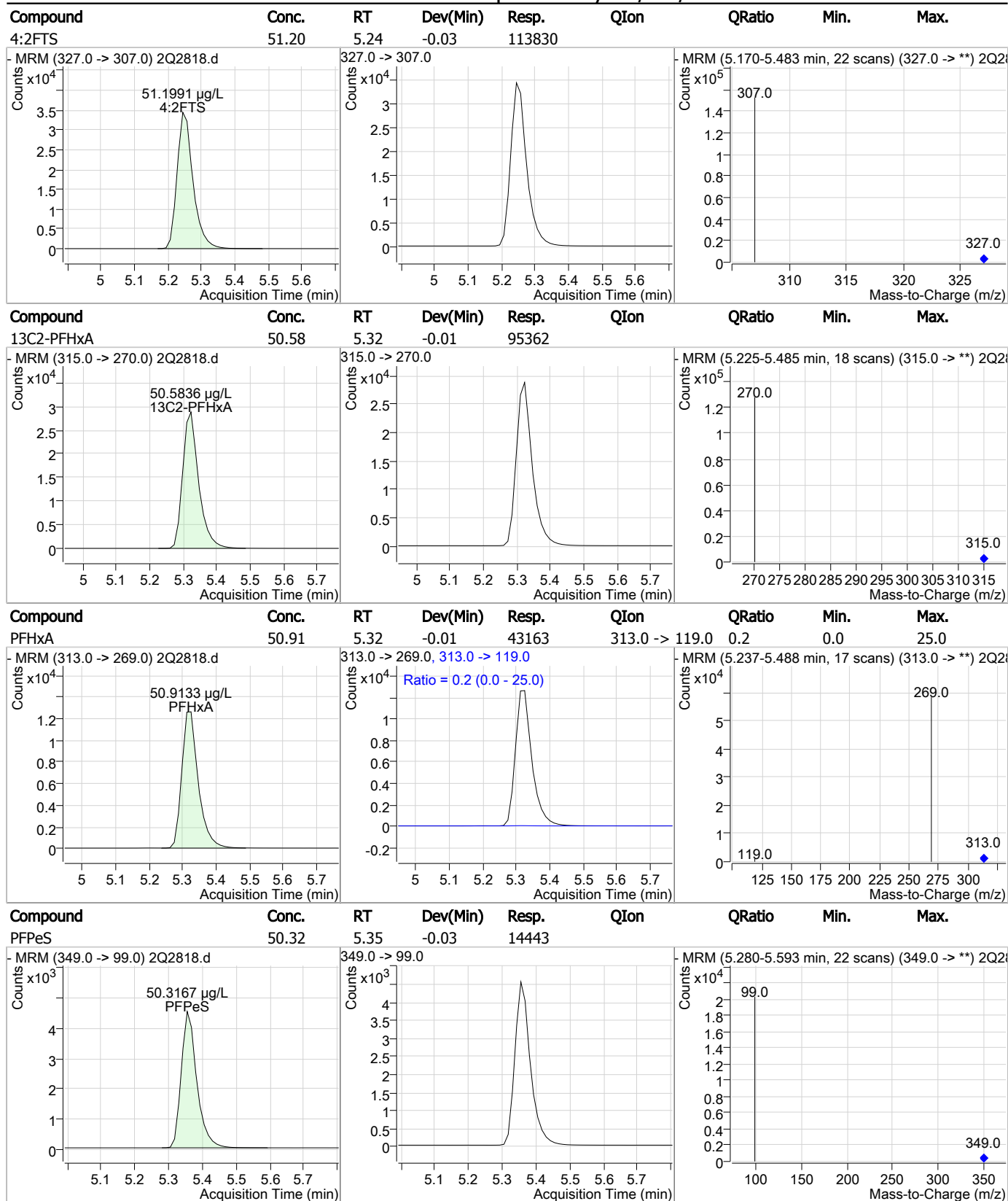
Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.709	429.0 -> 409.0	77491	20.00	µg/L	-0.027
13C2-PFDoDA	10.928	615.0 -> 570.0	78313	20.00	µg/L	-0.025
13C2-PFOA	6.701	415.0 -> 370.0	40402	20.00	µg/L	-0.027
13C3-PFPeA	4.360	266.0 -> 222.0	32013	20.00	µg/L	-0.025
13C4-PFOS	7.250	503.0 -> 80.0	24329	20.00	µg/L	-0.013
d3-MeFOSAA	7.575	573.0 -> 419.0	33863	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-PFDA	7.982	515.0 -> 470.0	180325	51.47	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 257.4%		
13C2-PFHxA	5.322	315.0 -> 270.0	95362	50.58	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 252.9%		
d5-EtFOSAA	7.698	589.0 -> 419.0	93779	52.22	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 261.1%		
Target Compounds						
						QValue
4:2FTS	5.245	327.0 -> 307.0	113830	51.20	µg/L	100
6:2FTS	6.711	427.0 -> 407.0	188543	50.88	µg/L	100
8:2FTS	8.105	527.0 -> 507.0	282823	51.15	µg/L	100
EtFOSAA	7.699	584.0 -> 419.0	85821	51.67	µg/L	100
FOSA	7.137	498.0 -> 78.0	126532	51.12	µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	98568	51.09	µg/L	100
PFBA	3.065	213.0 -> 169.0	24937	49.63	µg/L	100
PFBS	4.479	299.0 -> 80.0	43244	49.62	µg/L	100
PFDA	7.984	513.0 -> 469.0	106103	50.03	µg/L #	47
PFDoDA	10.932	613.0 -> 569.0	186859	50.31	µg/L #	29
PFDS	9.101	599.0 -> 80.0	42705	49.59	µg/L	100
PFHpA	6.074	363.0 -> 319.0	145460	49.76	µg/L	93
PFHpS	6.670	449.0 -> 80.0	62173	50.22	µg/L	100
PFHxA	5.325	313.0 -> 269.0	43163	50.91	µg/L	85
PFHxS	6.056	399.0 -> 80.0	58306	51.12	µg/L m	92
PFNA	7.306	463.0 -> 419.0	102831	49.76	µg/L	97
PFNS	7.879	549.0 -> 99.0	29799	50.31	µg/L	100
PFOA	6.702	413.0 -> 369.0	87210	50.14	µg/L	95
PFOS	7.239	499.0 -> 80.0	74154	49.96	µg/L m	90
PFPeA	4.363	263.0 -> 219.0	122744	50.35	µg/L	100
PFPeS	5.355	349.0 -> 99.0	14443	50.32	µg/L	100
PFTeDA	13.493	713.0 -> 669.0	76120	50.36	µg/L #	32
PFTTrDA	12.279	663.0 -> 619.0	151273	50.76	µg/L #	33
PFUnDA	9.368	563.0 -> 519.0	178884	49.92	µg/L #	41

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

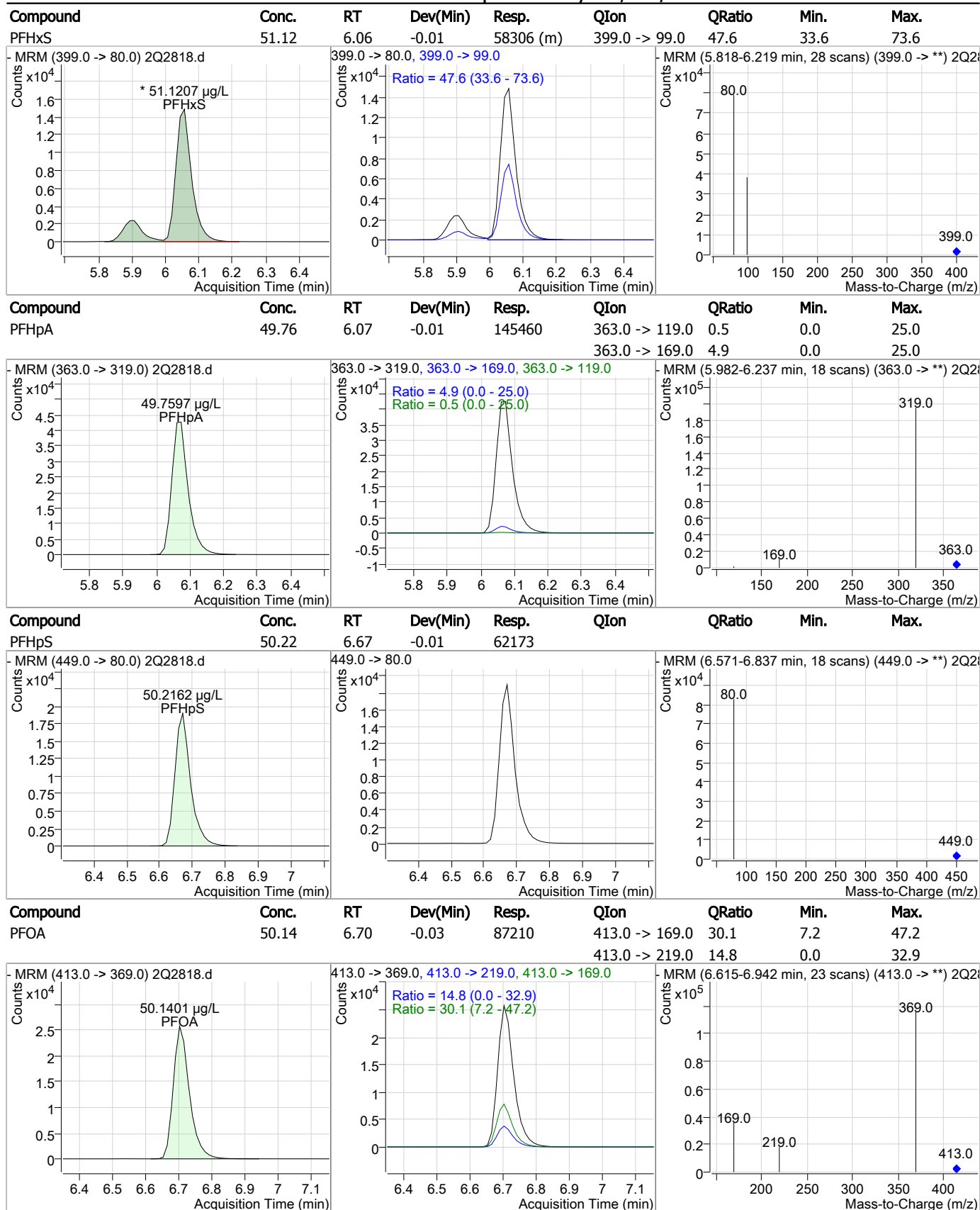
Perfluorinated Compounds by LC/MS/MS



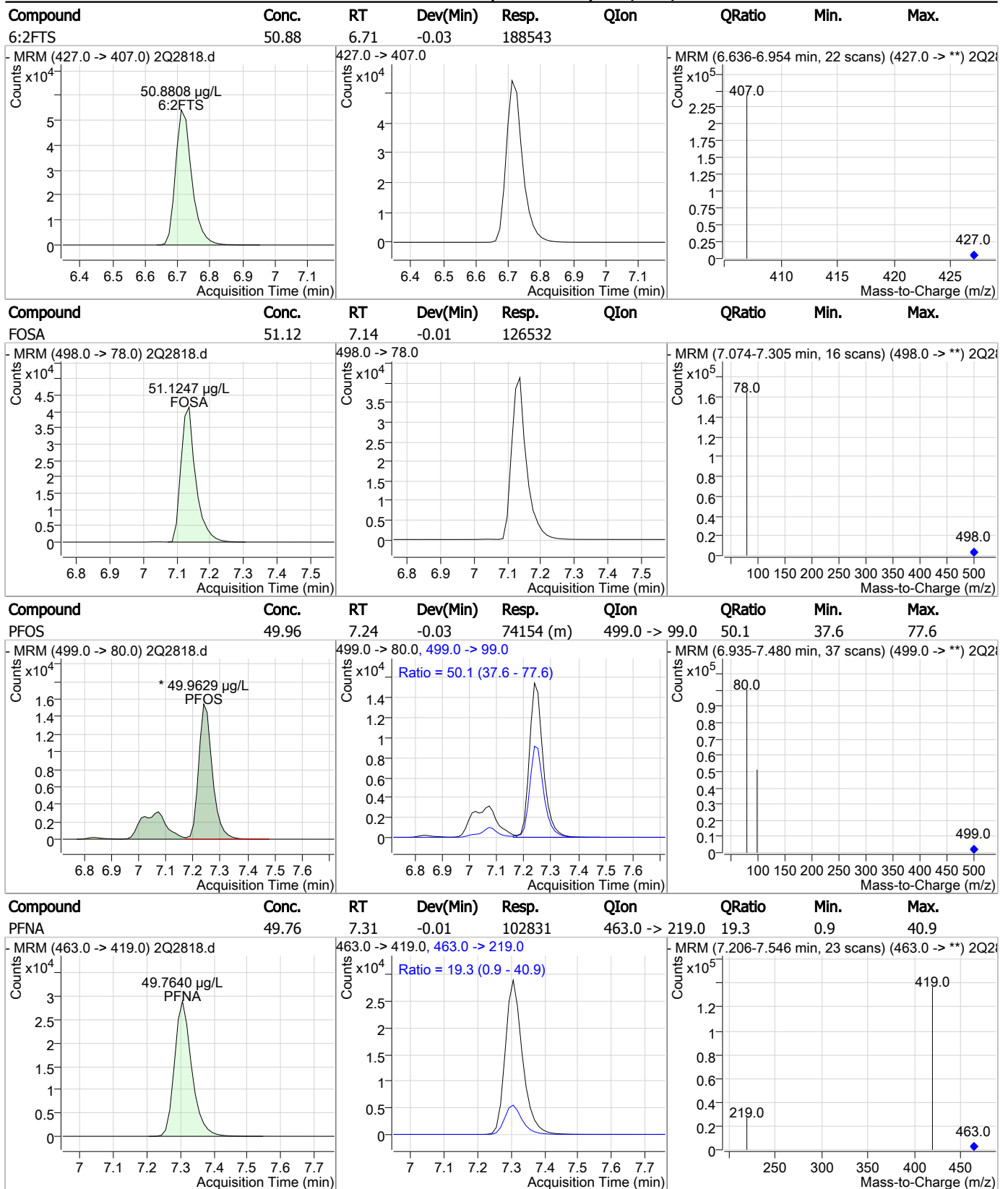
Perfluorinated Compounds by LC/MS/MS



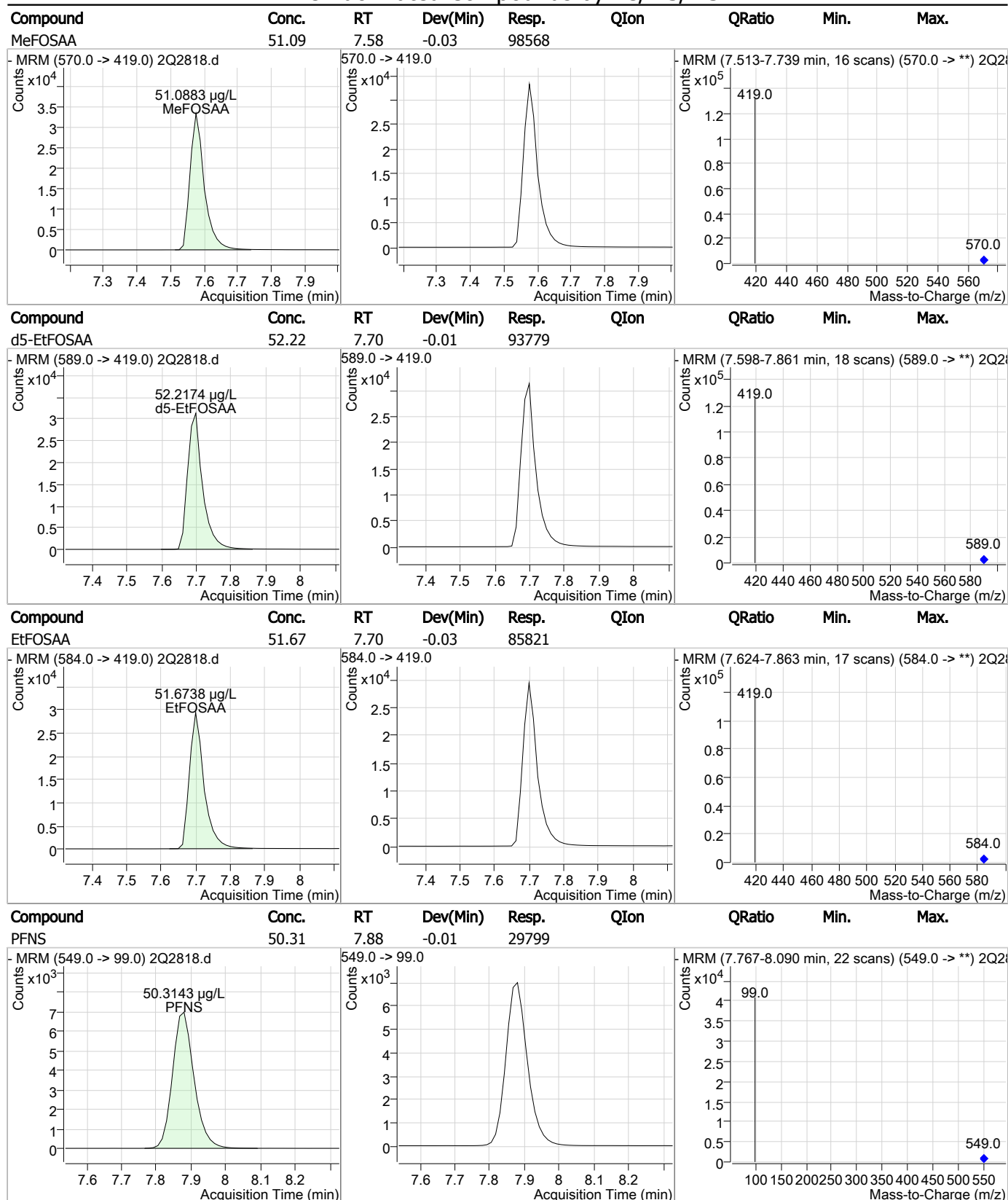
Perfluorinated Compounds by LC/MS/MS



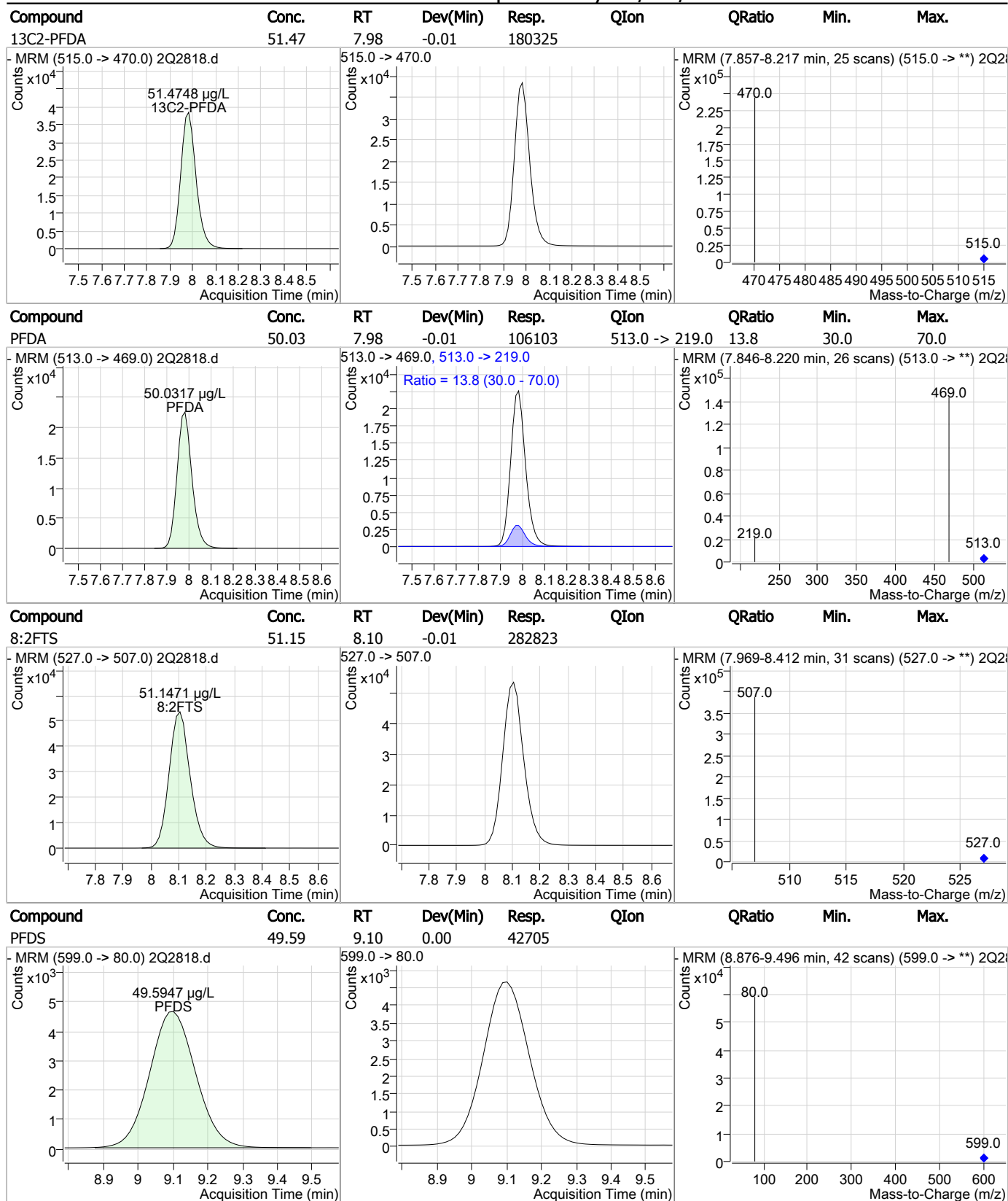
Perfluorinated Compounds by LC/MS/MS



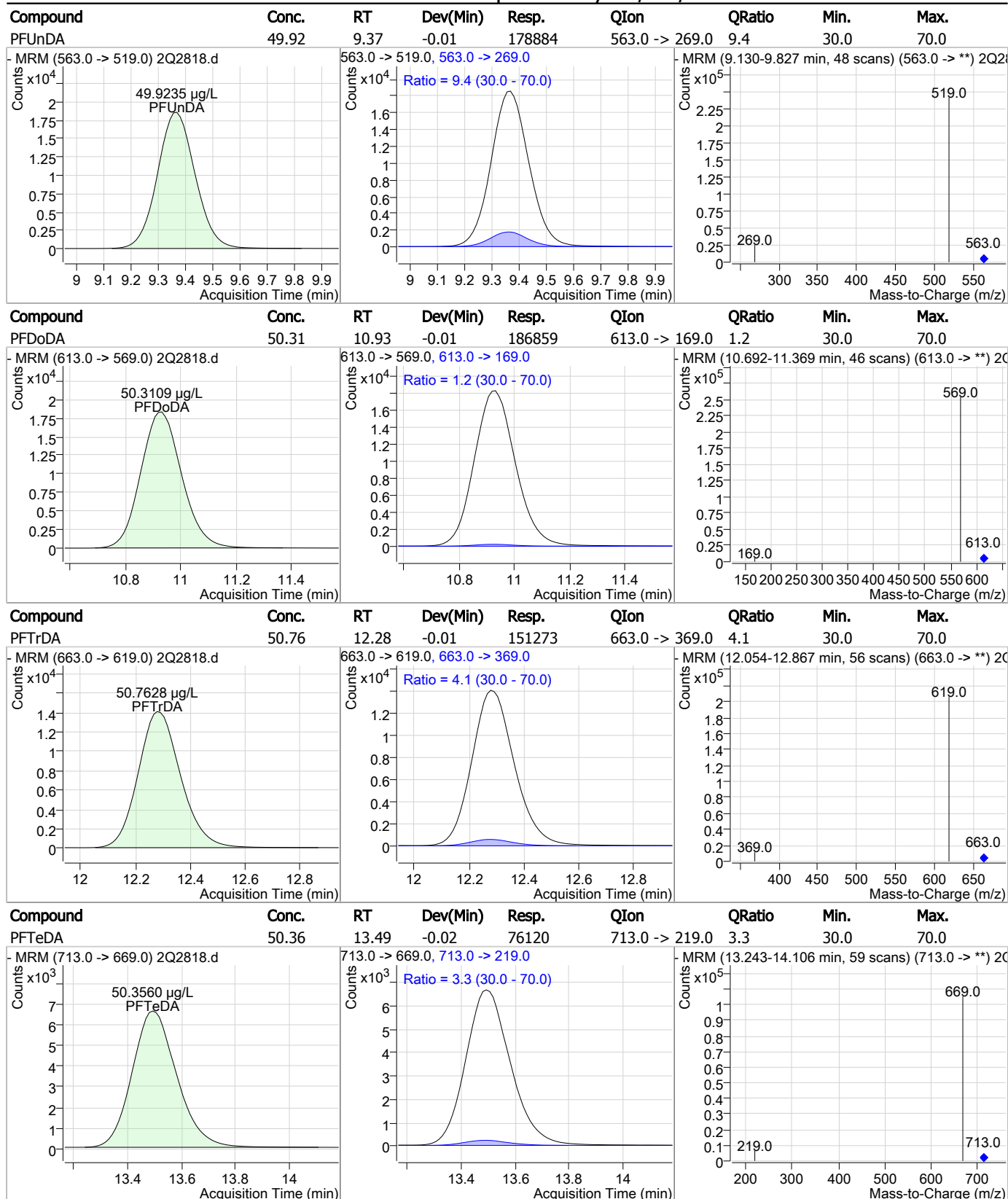
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-IC70

Method: EPA 537 MOD

Lab FileID: 2Q2818.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 13:39

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.24	Split peak

7.5.20.1
7

Manual Integrations
APPROVED
(compounds with "m" flag)

Mike Eger
06/28/17 12:09

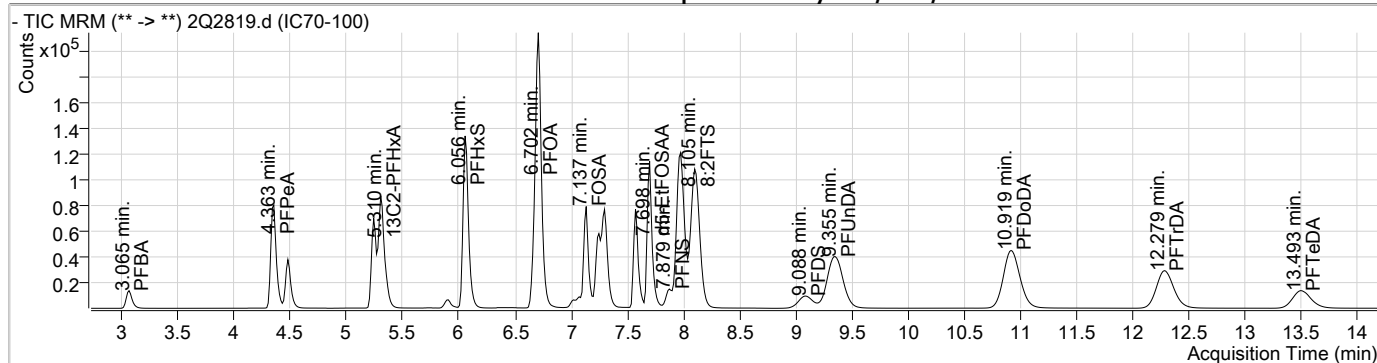
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2819.d
Operator : NANCYF
Acq. Method : 537_LIST.m
Acq. Date-Time : 6/27/2017 1:59:20 PM
Sample Name : IC70-100
Vial : Vial 9
DA Method File : PFC_0627_S2Q70.quantmethod.xml
Batch Name : S2Q70.batch.bin
Sample Information : OP65591,S2Q70,130,,,1.0,1,water

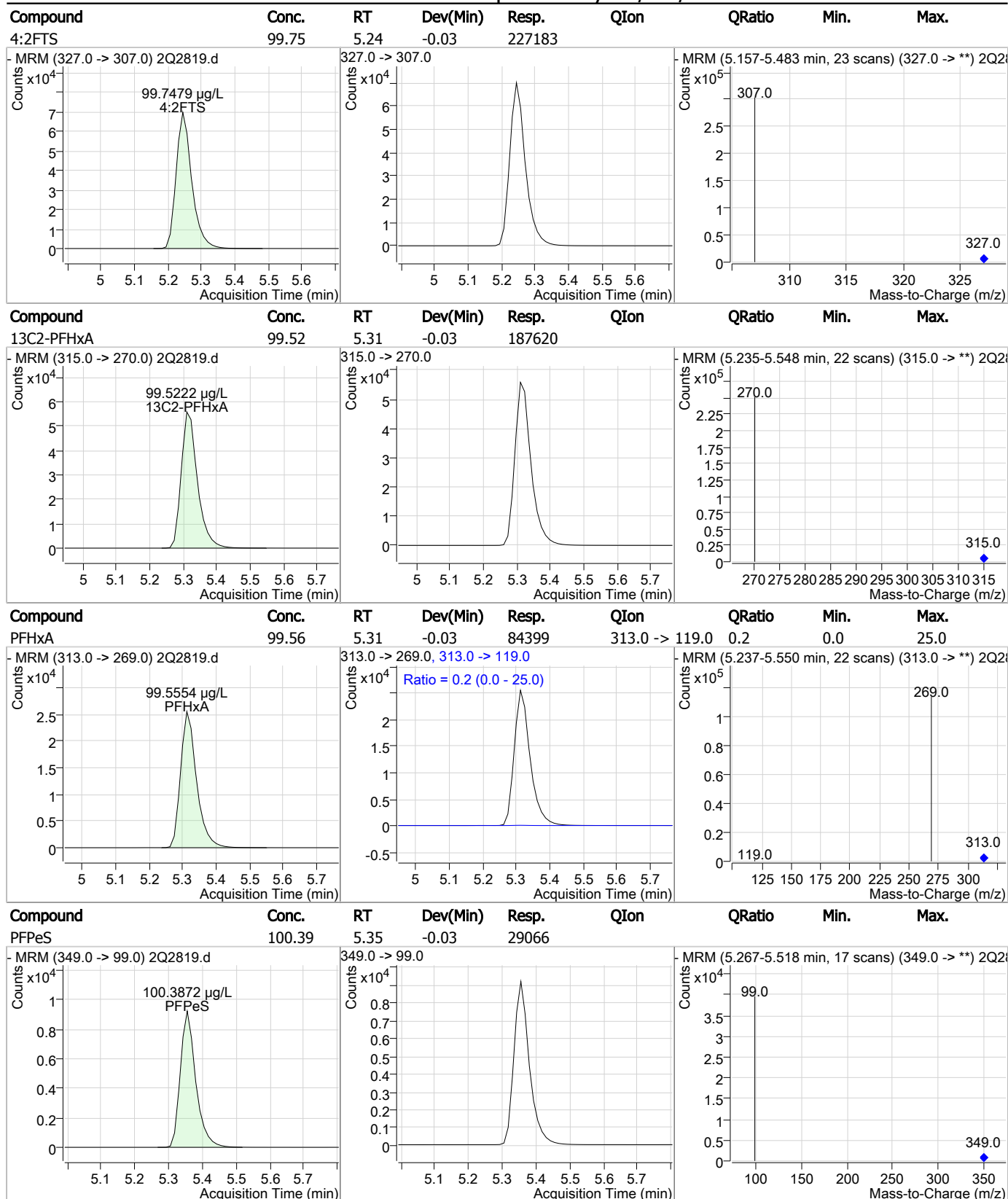
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.724	429.0 -> 409.0	86223	20.00 µg/L	-0.013
13C2-PFDoDA	10.915	615.0 -> 570.0	79263	20.00 µg/L	-0.038
13C2-PFOA	6.701	415.0 -> 370.0	40402	20.00 µg/L	-0.027
13C3-PFPeA	4.360	266.0 -> 222.0	32292	20.00 µg/L	-0.025
13C4-PFOS	7.250	503.0 -> 80.0	24143	20.00 µg/L	-0.013
d3-MeFOSAA	7.575	573.0 -> 419.0	34145	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-PFDA	7.982	515.0 -> 470.0	345464	98.62 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 493.1%	
13C2-PFHxA	5.310	315.0 -> 270.0	187620	99.52 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 497.6%	
d5-EtFOSAA	7.698	589.0 -> 419.0	178861	98.77 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 493.8%	
Target Compounds					
					QValue
4:2FTS	5.245	327.0 -> 307.0	227183	99.75 µg/L	100
6:2FTS	6.711	427.0 -> 407.0	370971	99.81 µg/L	100
8:2FTS	8.105	527.0 -> 507.0	574708	99.77 µg/L	100
EtFOSAA	7.699	584.0 -> 419.0	161869	99.73 µg/L	100
FOSA	7.137	498.0 -> 78.0	230863	99.83 µg/L	100
MeFOSAA	7.576	570.0 -> 419.0	193971	99.80 µg/L	100
PFBA	3.065	213.0 -> 169.0	50422	100.34 µg/L	100
PFBS	4.479	299.0 -> 80.0	87360	101.02 µg/L	99
PFDA	7.984	513.0 -> 469.0	211815	99.93 µg/L	# 47
PFDoDA	10.919	613.0 -> 569.0	377621	100.45 µg/L	# 29
PFDS	9.088	599.0 -> 80.0	86336	101.04 µg/L	100
PFHpA	6.061	363.0 -> 319.0	294185	100.64 µg/L	93
PFHpS	6.670	449.0 -> 80.0	123343	100.39 µg/L	100
PFHxA	5.312	313.0 -> 269.0	84399	99.56 µg/L	85
PFHxS	6.056	399.0 -> 80.0	112675	99.55 µg/L	m 93
PFNA	7.306	463.0 -> 419.0	207613	100.47 µg/L	97
PFNS	7.879	549.0 -> 99.0	58999	100.39 µg/L	100
PFOA	6.702	413.0 -> 369.0	174259	100.19 µg/L	95
PFOS	7.239	499.0 -> 80.0	148273	100.67 µg/L	m 90
PFPeA	4.363	263.0 -> 219.0	246961	100.44 µg/L	100
PFPeS	5.355	349.0 -> 99.0	29066	100.39 µg/L	100
PFTeDA	13.493	713.0 -> 669.0	153367	100.24 µg/L	# 32
PFTTrDA	12.279	663.0 -> 619.0	301391	99.93 µg/L	# 33
PFUnDA	9.355	563.0 -> 519.0	364765	100.58 µg/L	# 41

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

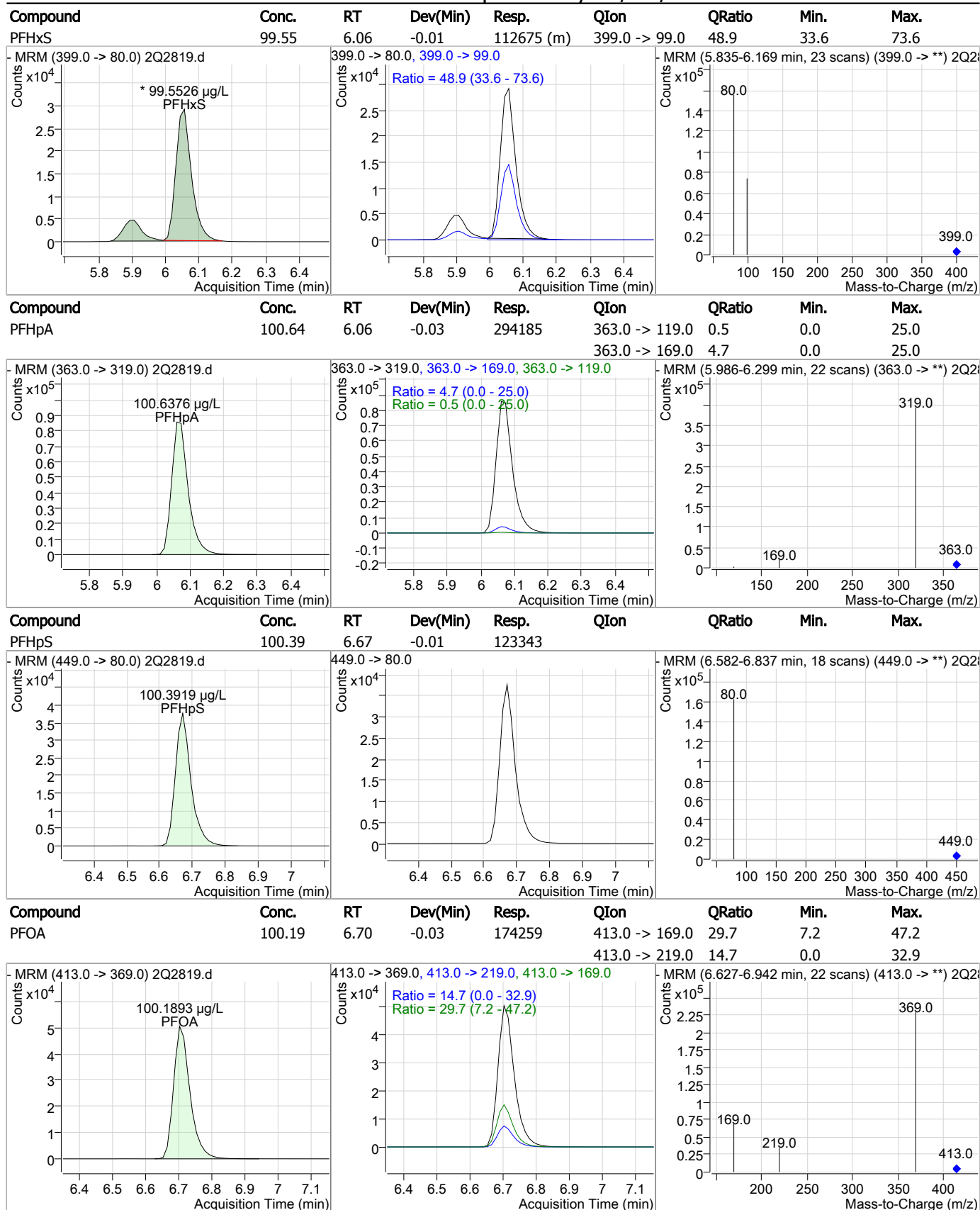
Perfluorinated Compounds by LC/MS/MS



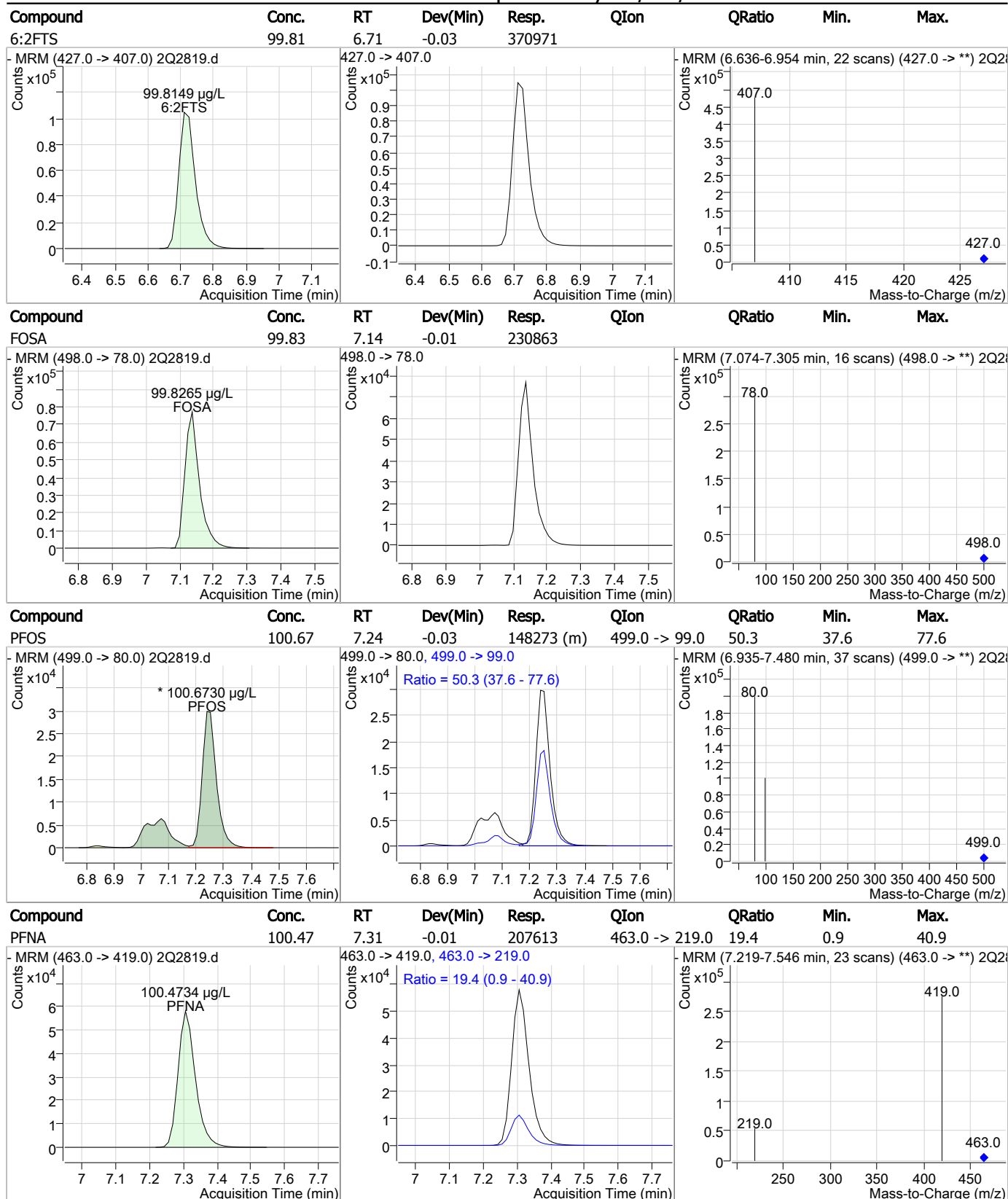
Perfluorinated Compounds by LC/MS/MS



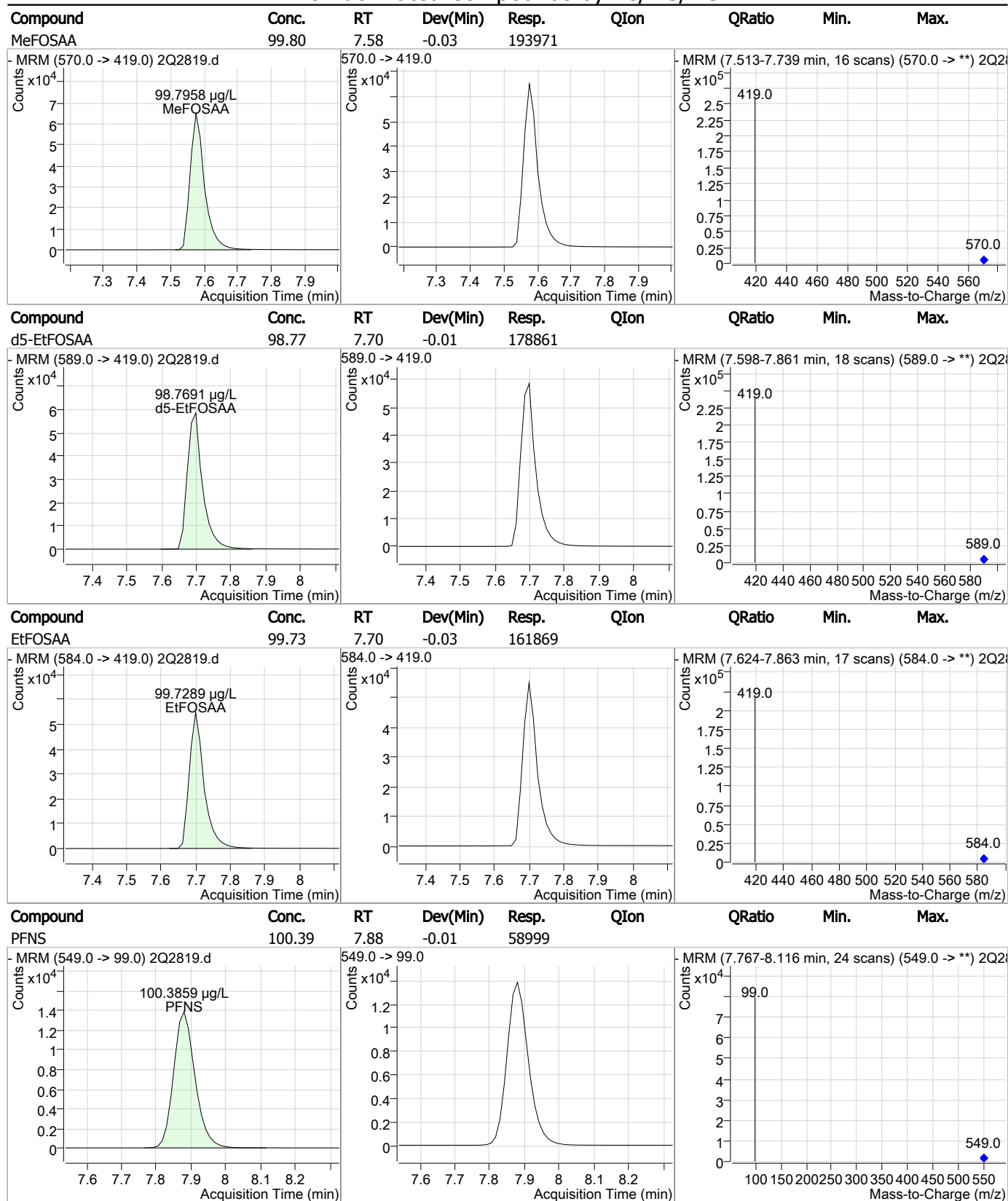
Perfluorinated Compounds by LC/MS/MS



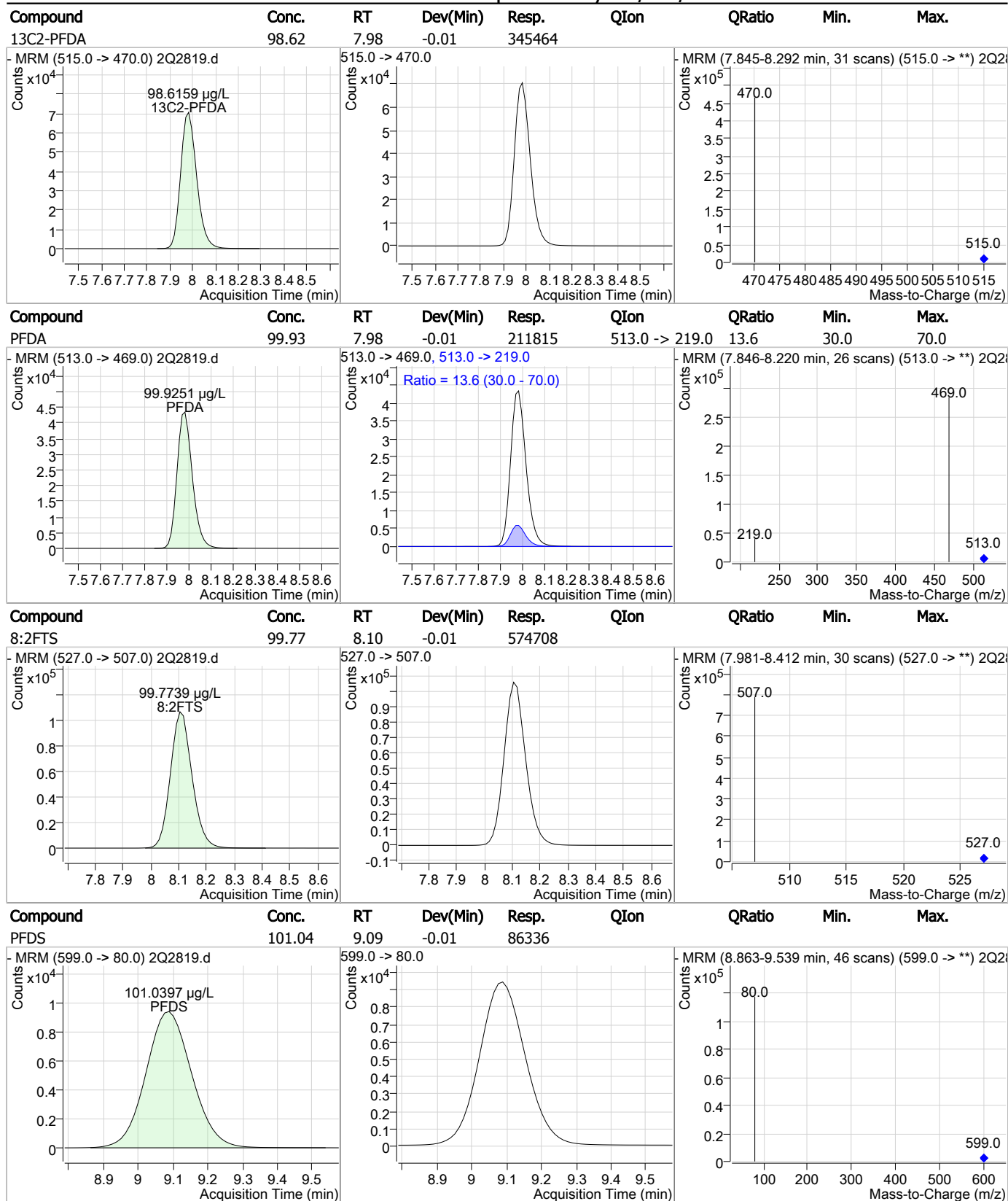
Perfluorinated Compounds by LC/MS/MS



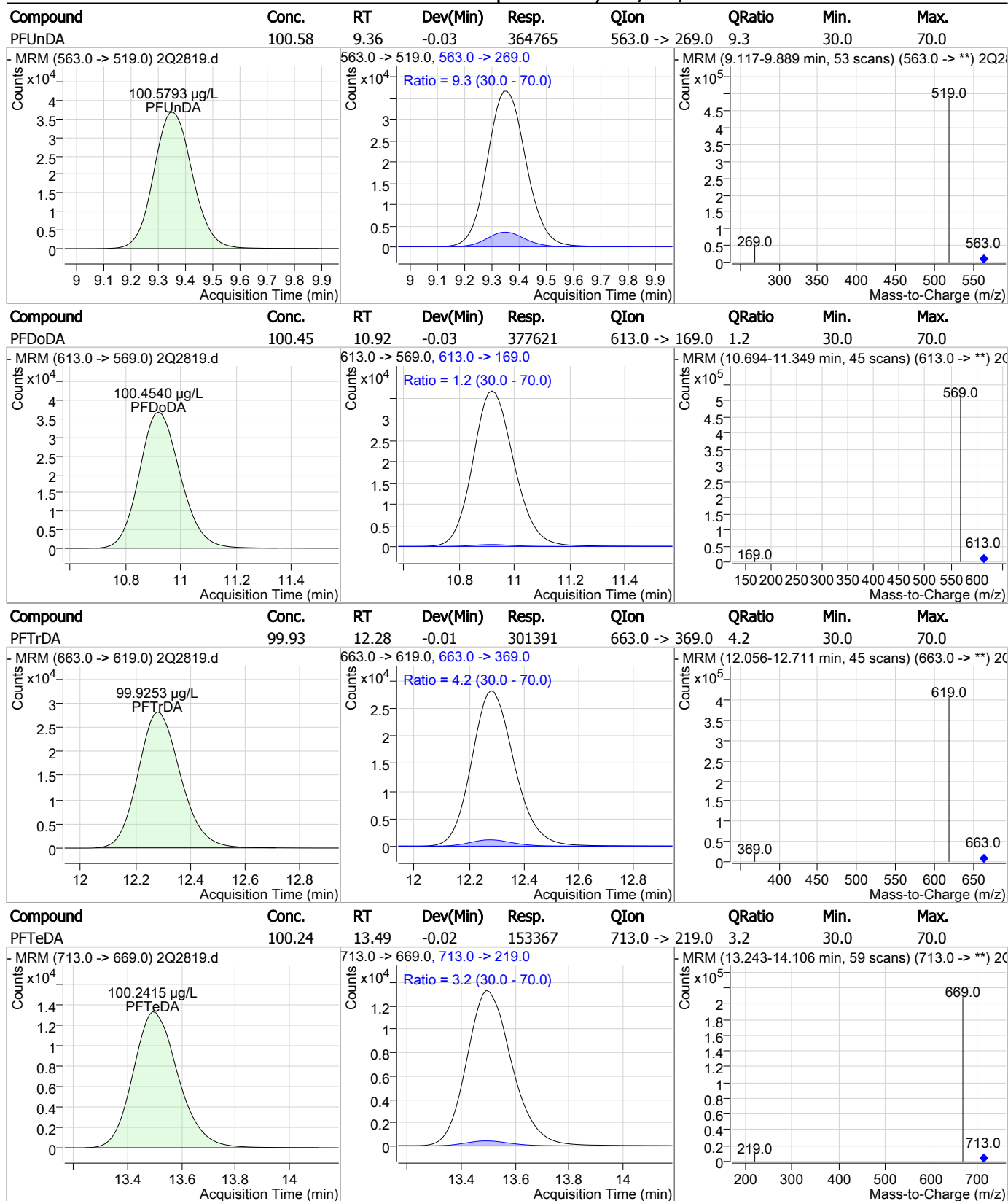
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-IC70

Method: EPA 537 MOD

Lab FileID: 2Q2819.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 13:59

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.24	Split peak

7.5.21.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2821.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 2:37:59 PM
 Sample Name : ICV70-20
 Vial : Vial 11
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65503,S2Q70,130,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.724	429.0 -> 409.0	74232	20.00 µg/L	-0.013
13C2-PFDoDA	10.953	615.0 -> 570.0	77157	20.00 µg/L	0.000
13C2-PFOA	6.713	415.0 -> 370.0	40223	20.00 µg/L	-0.014
13C3-PFPeA	4.372	266.0 -> 222.0	32065	20.00 µg/L	-0.013
13C4-PFOS	7.263	503.0 -> 80.0	24415	20.00 µg/L	0.000
d3-MeFOSAA	7.575	573.0 -> 419.0	33753	20.00 µg/L	-0.013

System Monitoring Compounds

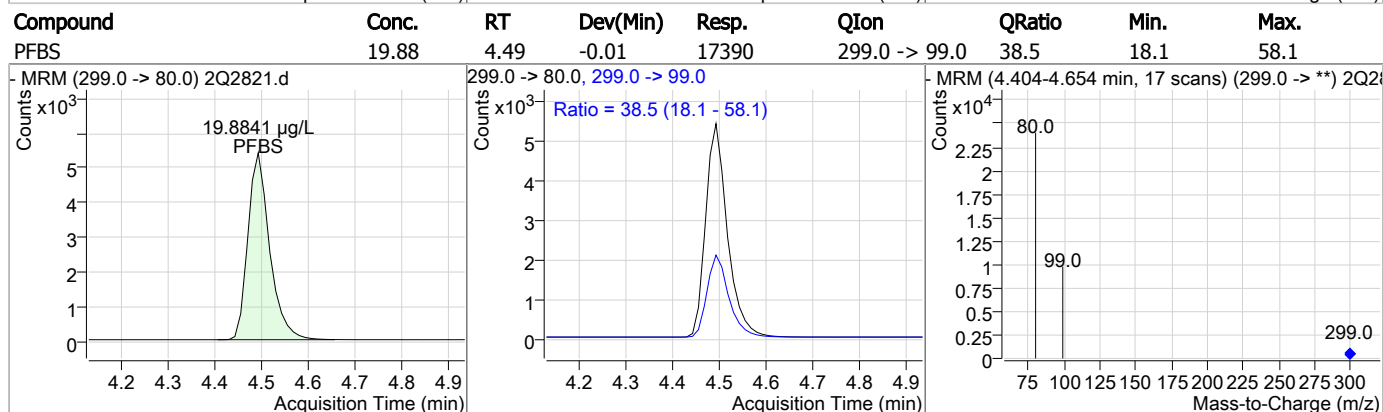
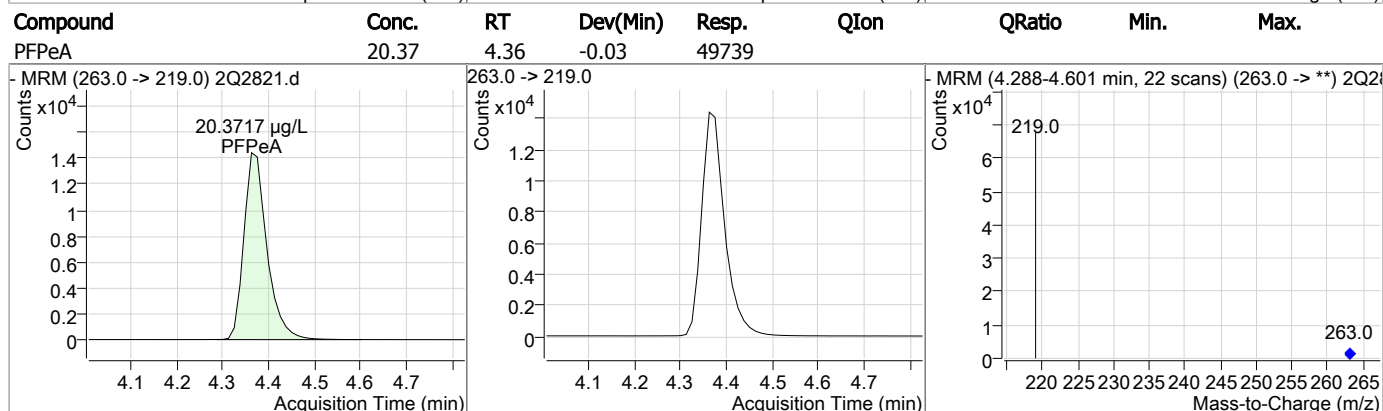
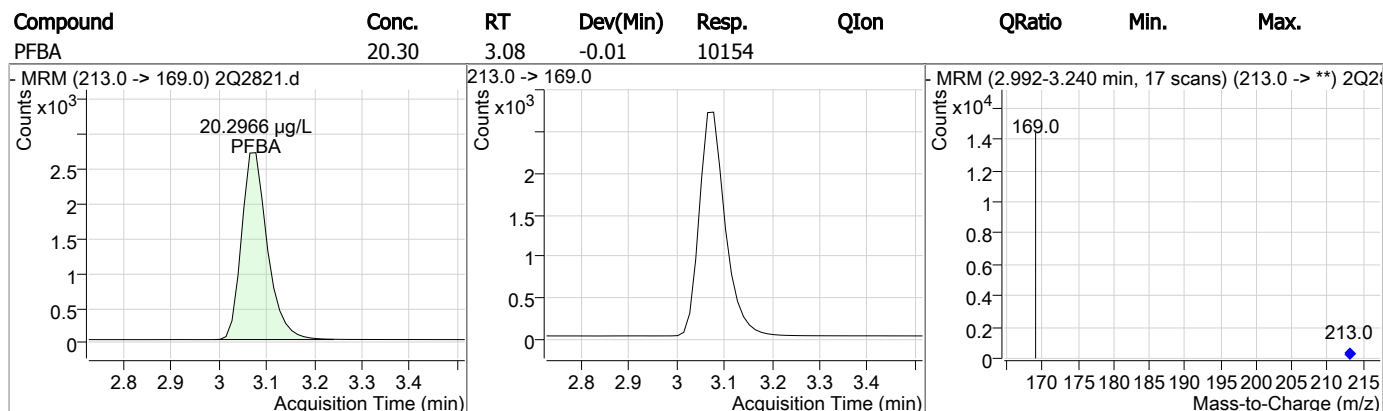
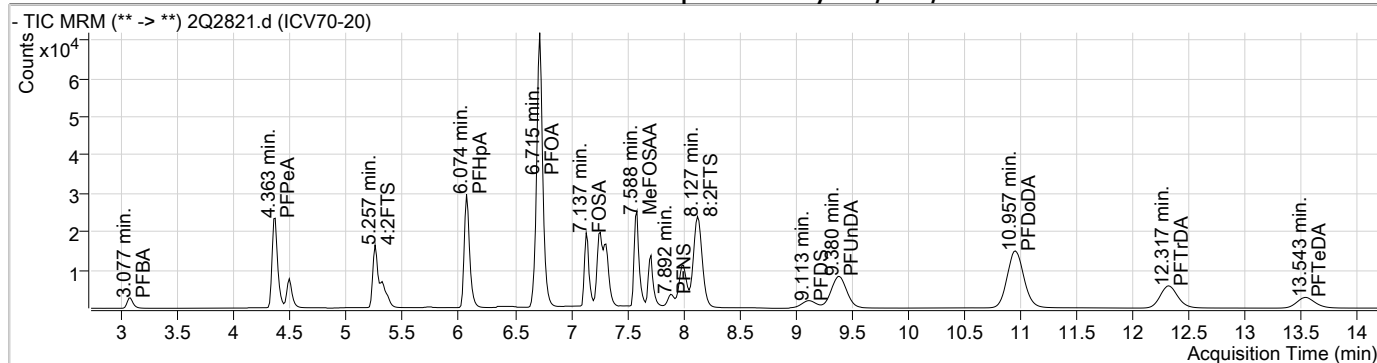
13C2-PFDA	-	515.0 -> 470.0	-	N.D.	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%	
13C2-PFHxA	-	315.0 -> 270.0	-	N.D.	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%	
d5-EtFOSAA	7.698	589.0 -> 419.0	0	0.00 µg/L	m -0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%	

Target Compounds

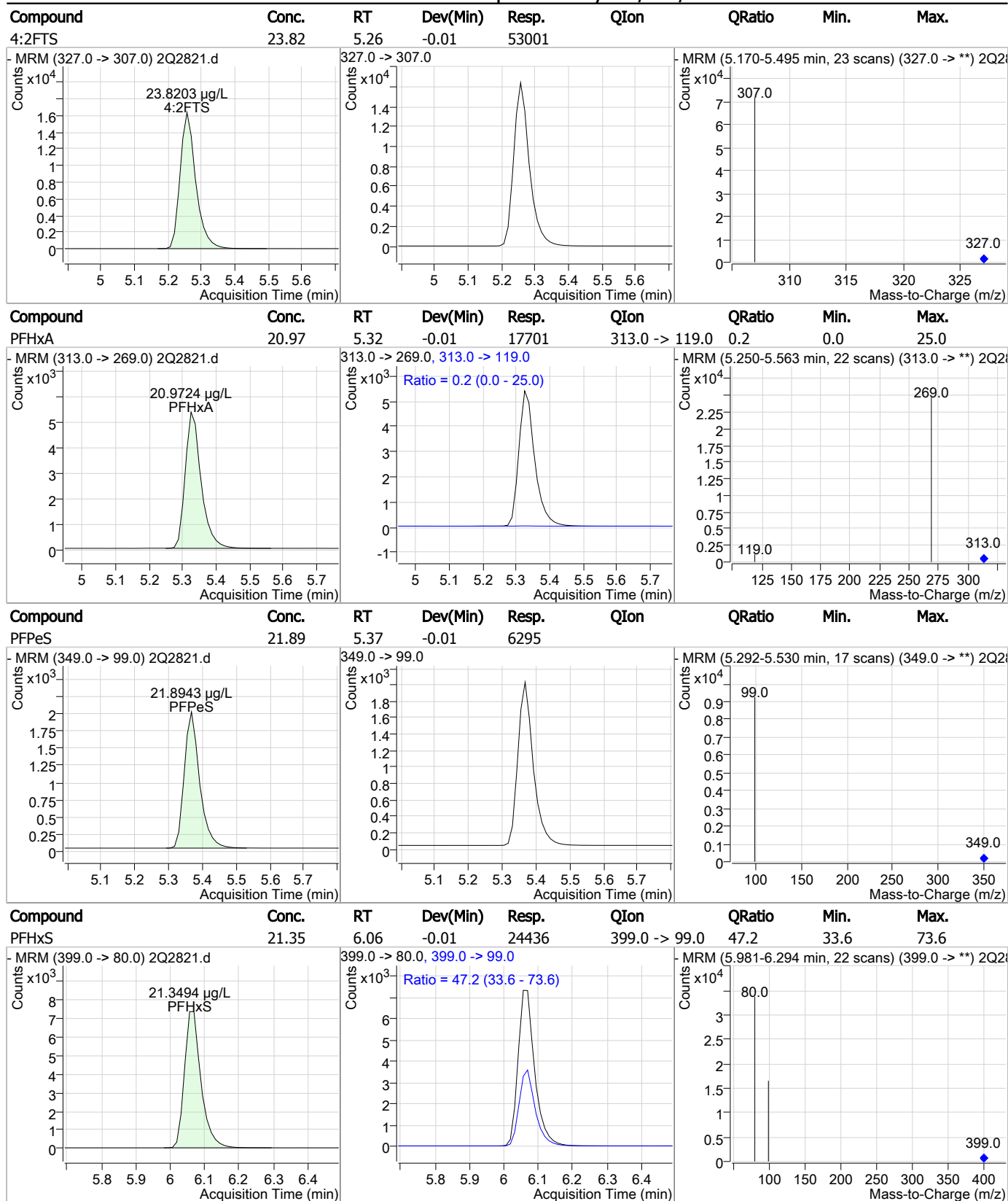
					QValue
4:2FTS	5.257	327.0 -> 307.0	53001	23.82 µg/L	100
6:2FTS	6.726	427.0 -> 407.0	85361	22.76 µg/L	100
8:2FTS	8.127	527.0 -> 507.0	124466	22.65 µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	38008	22.54 µg/L	100
FOSA	7.137	498.0 -> 78.0	57454	22.32 µg/L	100
MeFOSAA	7.588	570.0 -> 419.0	43082	22.39 µg/L	100
PFBA	3.077	213.0 -> 169.0	10154	20.30 µg/L	100
PFBS	4.491	299.0 -> 80.0	17390	19.88 µg/L	99
PFDA	8.009	513.0 -> 469.0	44690	21.16 µg/L	# 48
PFDoDA	10.957	613.0 -> 569.0	75701	20.69 µg/L	# 29
PFDS	9.113	599.0 -> 80.0	17412	20.15 µg/L	100
PFHpA	6.074	363.0 -> 319.0	59425	20.42 µg/L	93
PFHpS	6.683	449.0 -> 80.0	27050	21.77 µg/L	100
PFHxA	5.325	313.0 -> 269.0	17701	20.97 µg/L	86
PFHxS	6.056	399.0 -> 80.0	24436	21.35 µg/L	91
PFNA	7.319	463.0 -> 419.0	42082	20.46 µg/L	97
PFNS	7.892	549.0 -> 99.0	13443	22.62 µg/L	100
PFOA	6.715	413.0 -> 369.0	35010	20.22 µg/L	94
PFOS	7.252	499.0 -> 80.0	27385	18.39 µg/L	97
PFPeA	4.363	263.0 -> 219.0	49739	20.37 µg/L	100
PFPeS	5.367	349.0 -> 99.0	6295	21.89 µg/L	100
PFTeDA	13.543	713.0 -> 669.0	30832	20.70 µg/L	# 32
PFTTrDA	12.317	663.0 -> 619.0	60428	20.58 µg/L	# 34
PFUnDA	9.380	563.0 -> 519.0	72742	20.61 µg/L	# 41

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

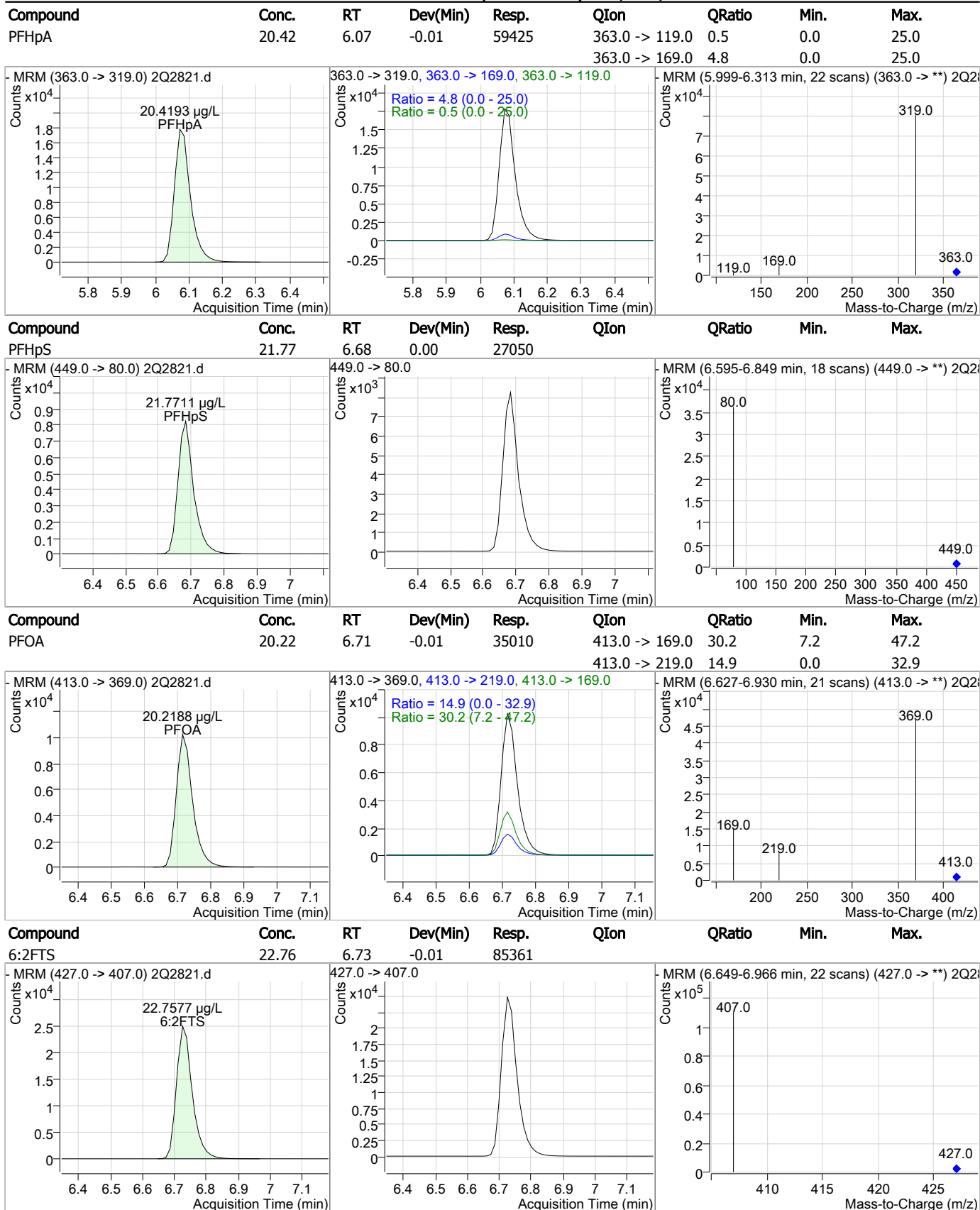
Perfluorinated Compounds by LC/MS/MS



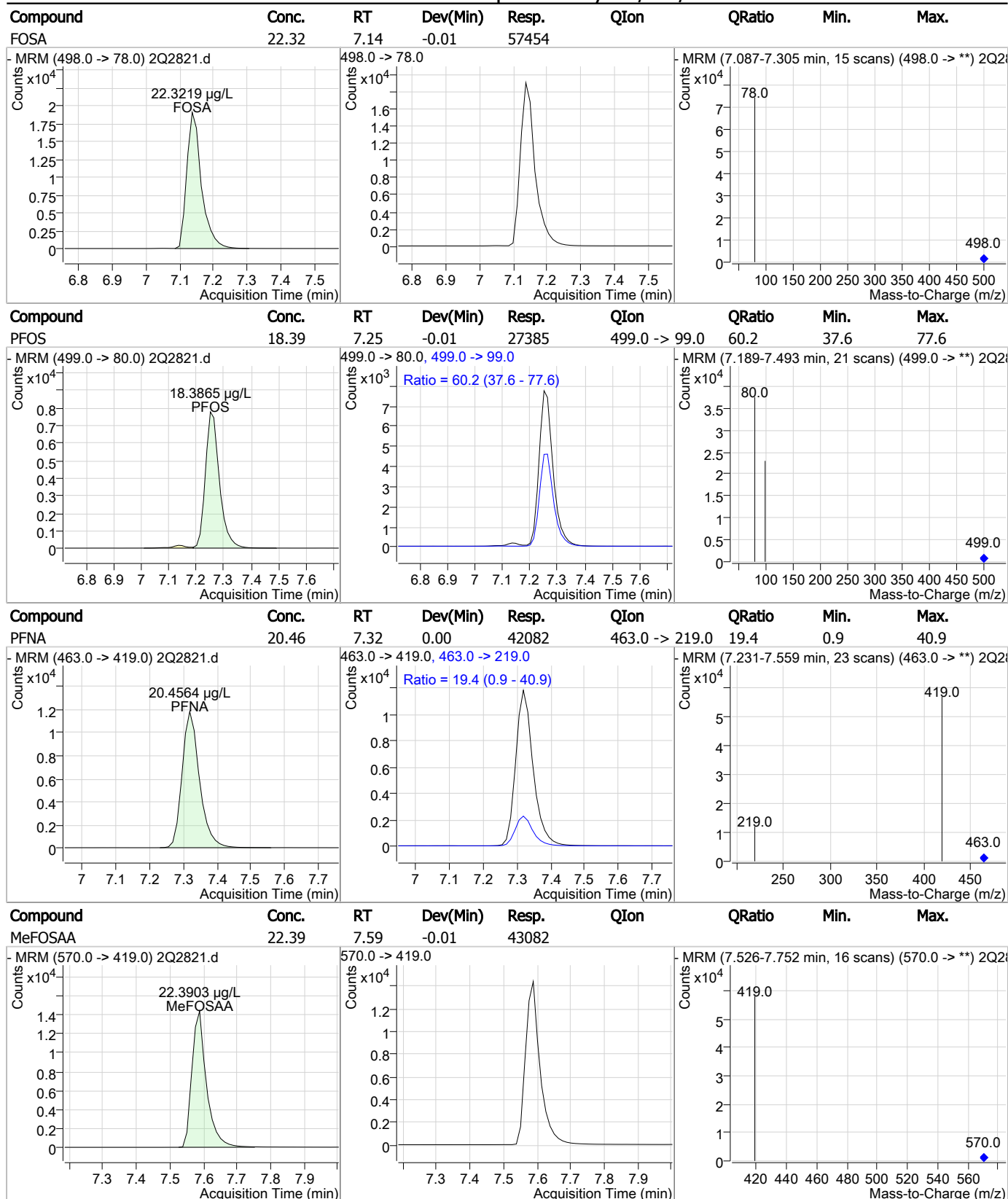
Perfluorinated Compounds by LC/MS/MS



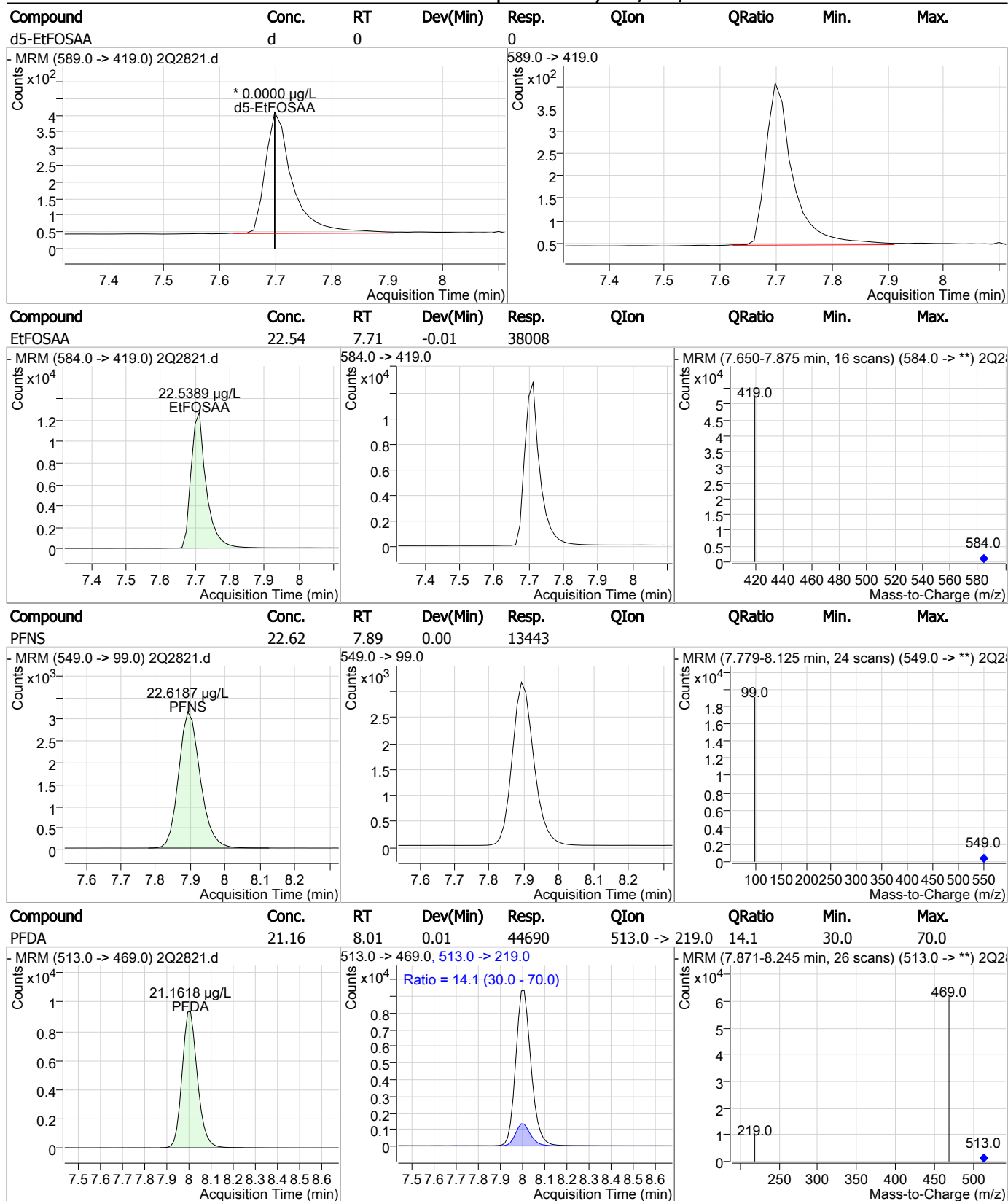
Perfluorinated Compounds by LC/MS/MS



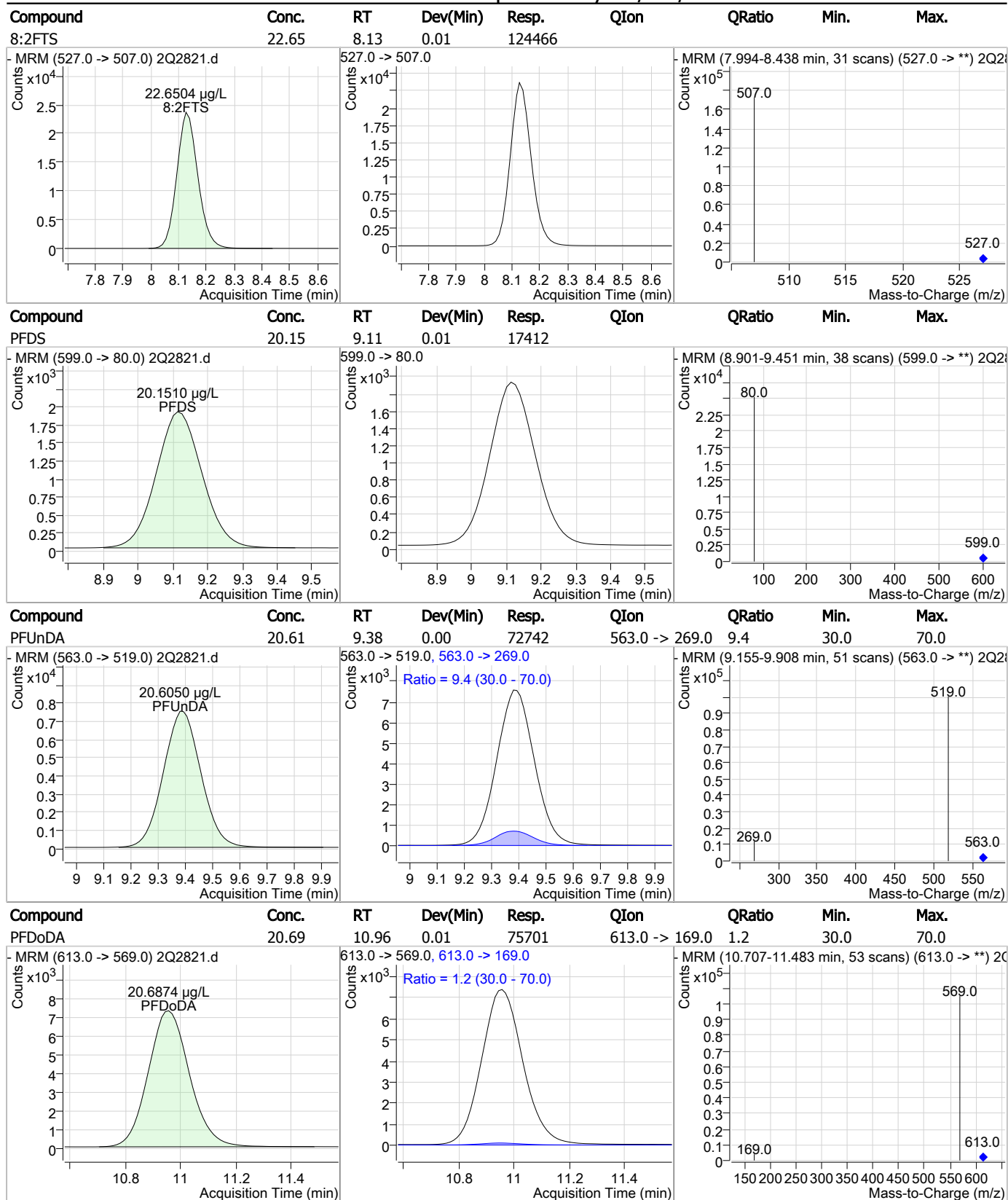
Perfluorinated Compounds by LC/MS/MS



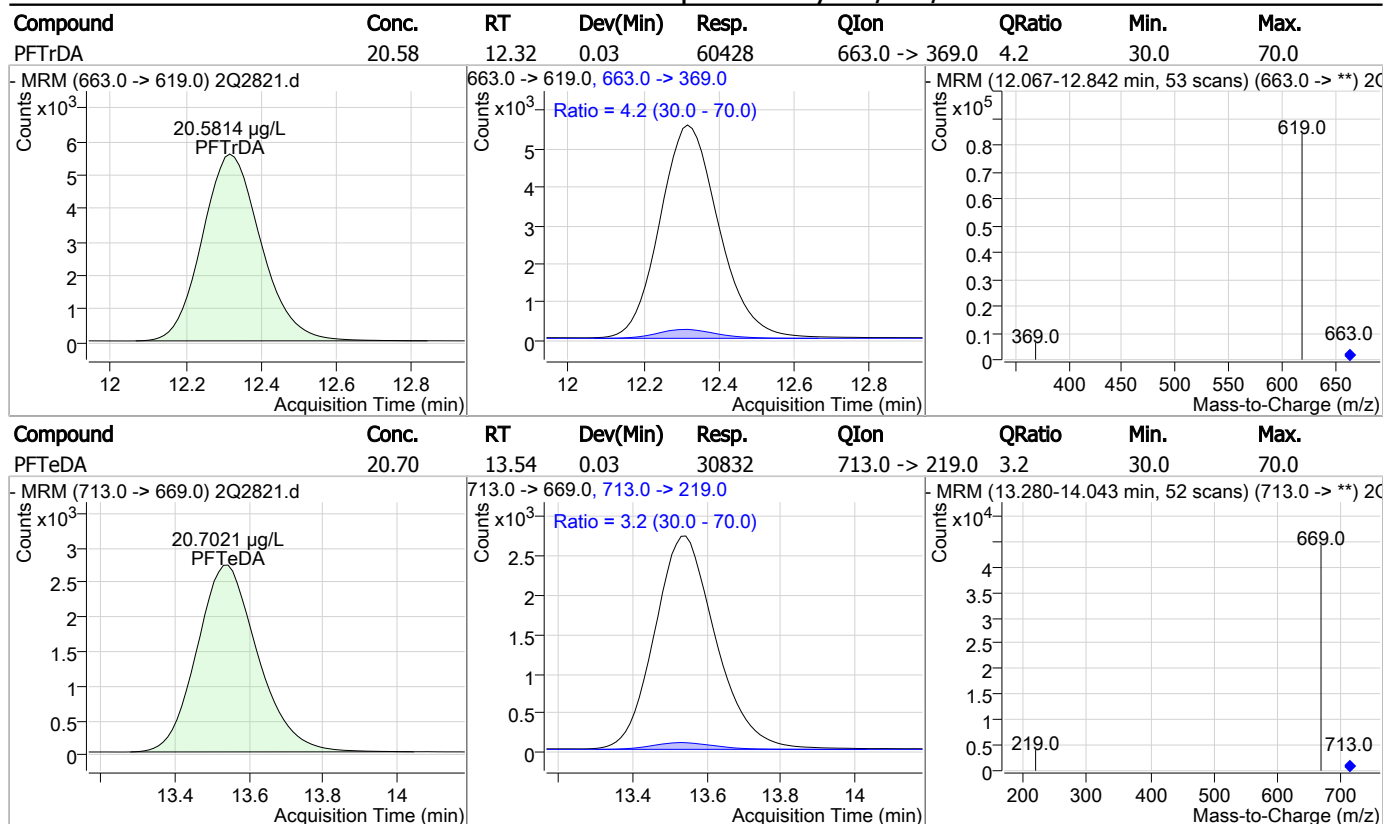
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.5.22

7

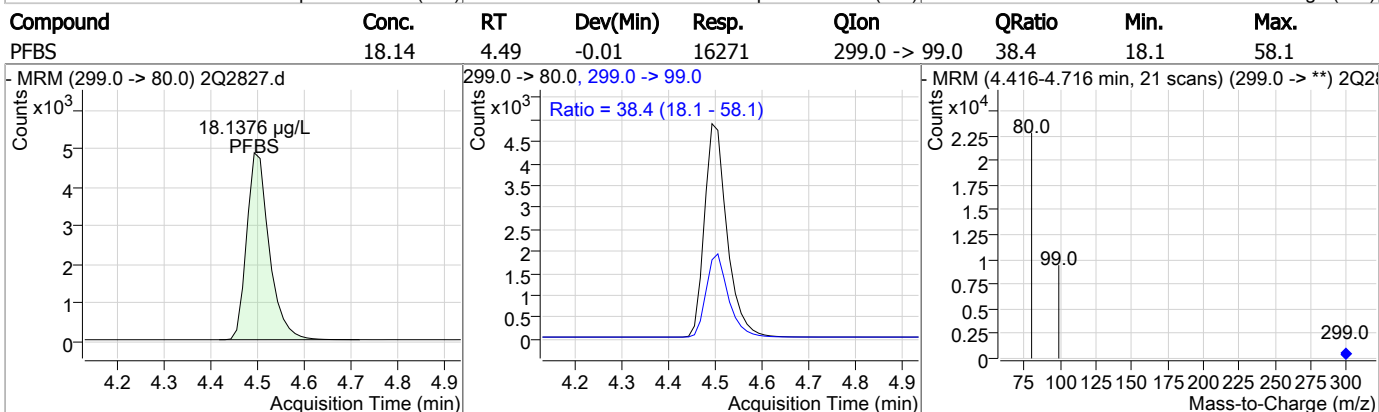
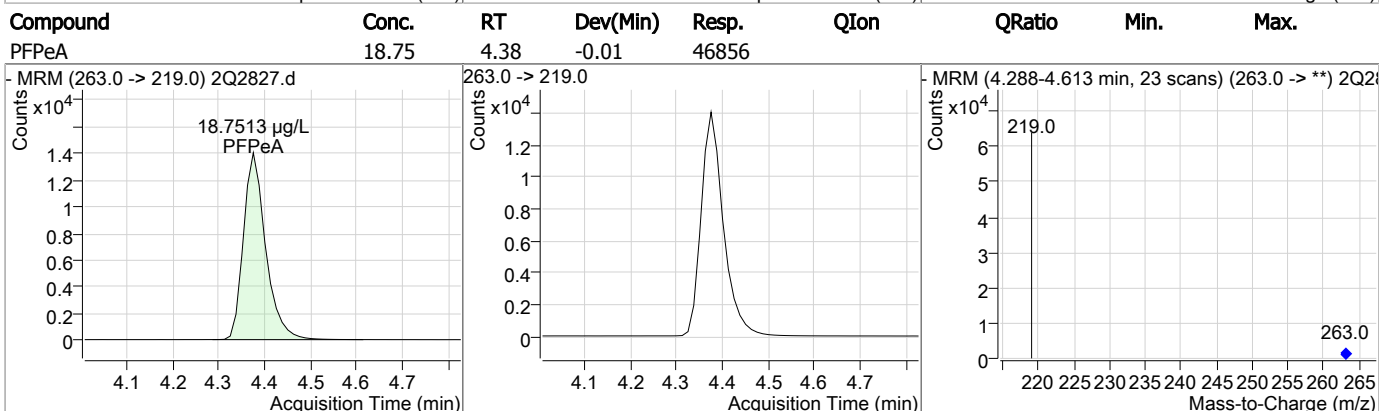
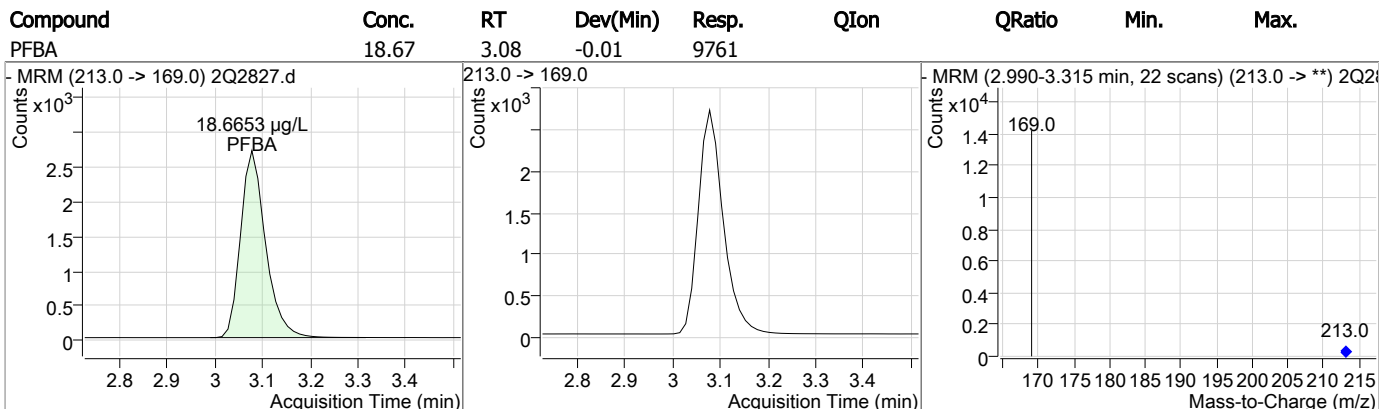
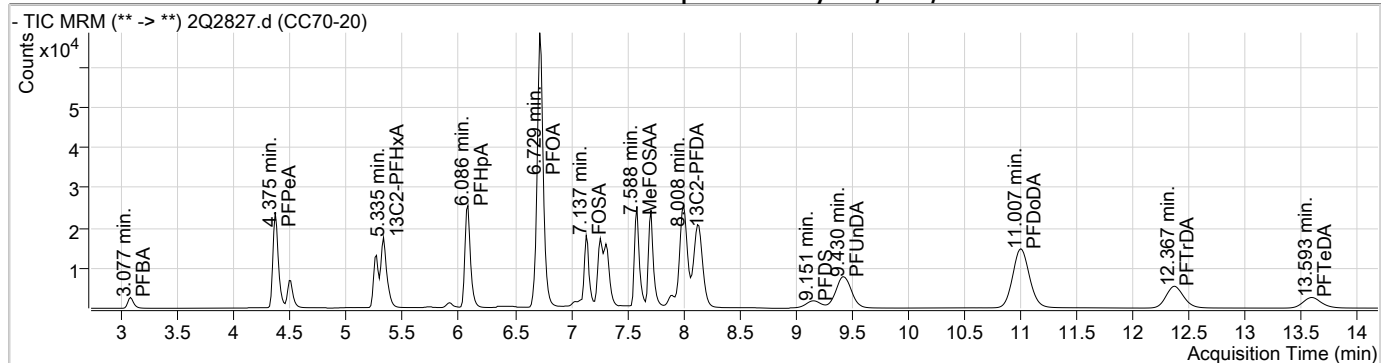
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2827.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 4:42:51 PM
 Sample Name : CC70-20
 Vial : Vial 6
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65503,S2Q70,130,,,1.0,1,water

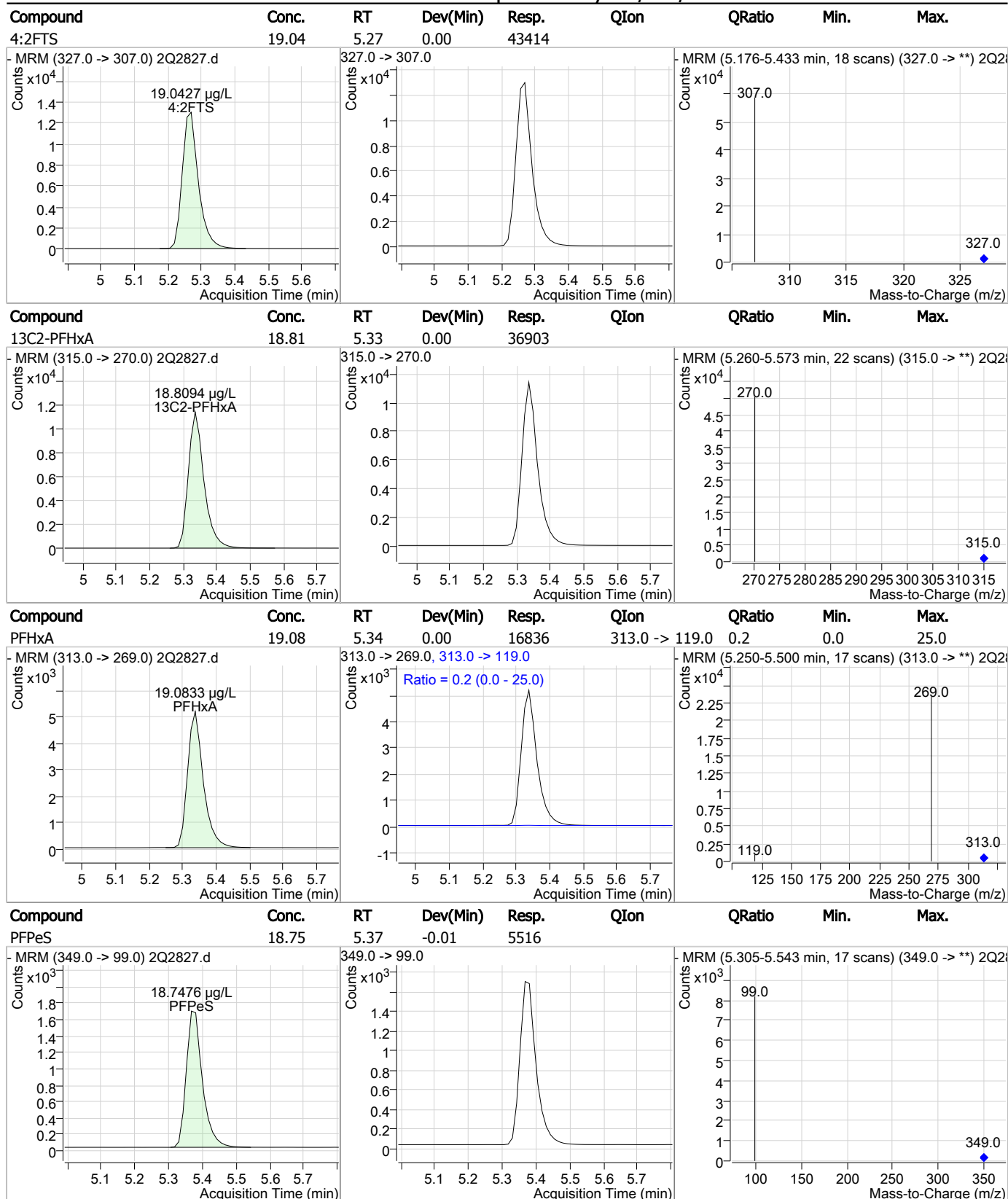
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.737	429.0 -> 409.0	75495	20.00	µg/L	0.000
13C2-PFDoDA	11.003	615.0 -> 570.0	80231	20.00	µg/L	0.050
13C2-PFOA	6.727	415.0 -> 370.0	42046	20.00	µg/L	0.000
13C3-PFPeA	4.372	266.0 -> 222.0	32817	20.00	µg/L	-0.013
13C4-PFOS	7.263	503.0 -> 80.0	25044	20.00	µg/L	0.000
d3-MeFOSAA	7.587	573.0 -> 419.0	35622	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	8.008	515.0 -> 470.0	70713	19.40	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 97.0%			
13C2-PFHxA	5.335	315.0 -> 270.0	36903	18.81	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 94.0%			
d5-EtFOSAA	7.711	589.0 -> 419.0	37425	19.81	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 99.0%			
Target Compounds						QValue
4:2FTS	5.270	327.0 -> 307.0	43414	19.04	µg/L	100
6:2FTS	6.738	427.0 -> 407.0	74460	19.39	µg/L	100
8:2FTS	8.127	527.0 -> 507.0	107726	19.19	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	33282	18.66	µg/L	100
FOSA	7.137	498.0 -> 78.0	51765	18.96	µg/L	100
MeFOSAA	7.588	570.0 -> 419.0	38599	19.01	µg/L	100
PFBA	3.077	213.0 -> 169.0	9761	18.67	µg/L	100
PFBS	4.491	299.0 -> 80.0	16271	18.14	µg/L	100
PFDA	8.009	513.0 -> 469.0	41858	18.96	µg/L	# 48
PFDoDA	11.007	613.0 -> 569.0	70839	18.62	µg/L	# 29
PFDS	9.151	599.0 -> 80.0	16439	18.55	µg/L	100
PFHpA	6.086	363.0 -> 319.0	56670	18.63	µg/L	93
PFHpS	6.683	449.0 -> 80.0	23691	18.59	µg/L	100
PFHxA	5.337	313.0 -> 269.0	16836	19.08	µg/L	85
PFHxS	6.069	399.0 -> 80.0	22028	18.76	µg/L	m 92
PFNA	7.319	463.0 -> 419.0	40476	18.82	µg/L	95
PFNS	7.905	549.0 -> 99.0	11570	18.98	µg/L	100
PFOA	6.729	413.0 -> 369.0	34376	18.99	µg/L	97
PFOS	7.264	499.0 -> 80.0	28328	18.54	µg/L	m 88
PFPeA	4.375	263.0 -> 219.0	46856	18.75	µg/L	100
PFPeS	5.367	349.0 -> 99.0	5516	18.75	µg/L	100
PFTeDA	13.593	713.0 -> 669.0	29210	18.86	µg/L	# 32
PFTTrDA	12.367	663.0 -> 619.0	56565	18.53	µg/L	# 34
PFUnDA	9.430	563.0 -> 519.0	68636	18.70	µg/L	# 41

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

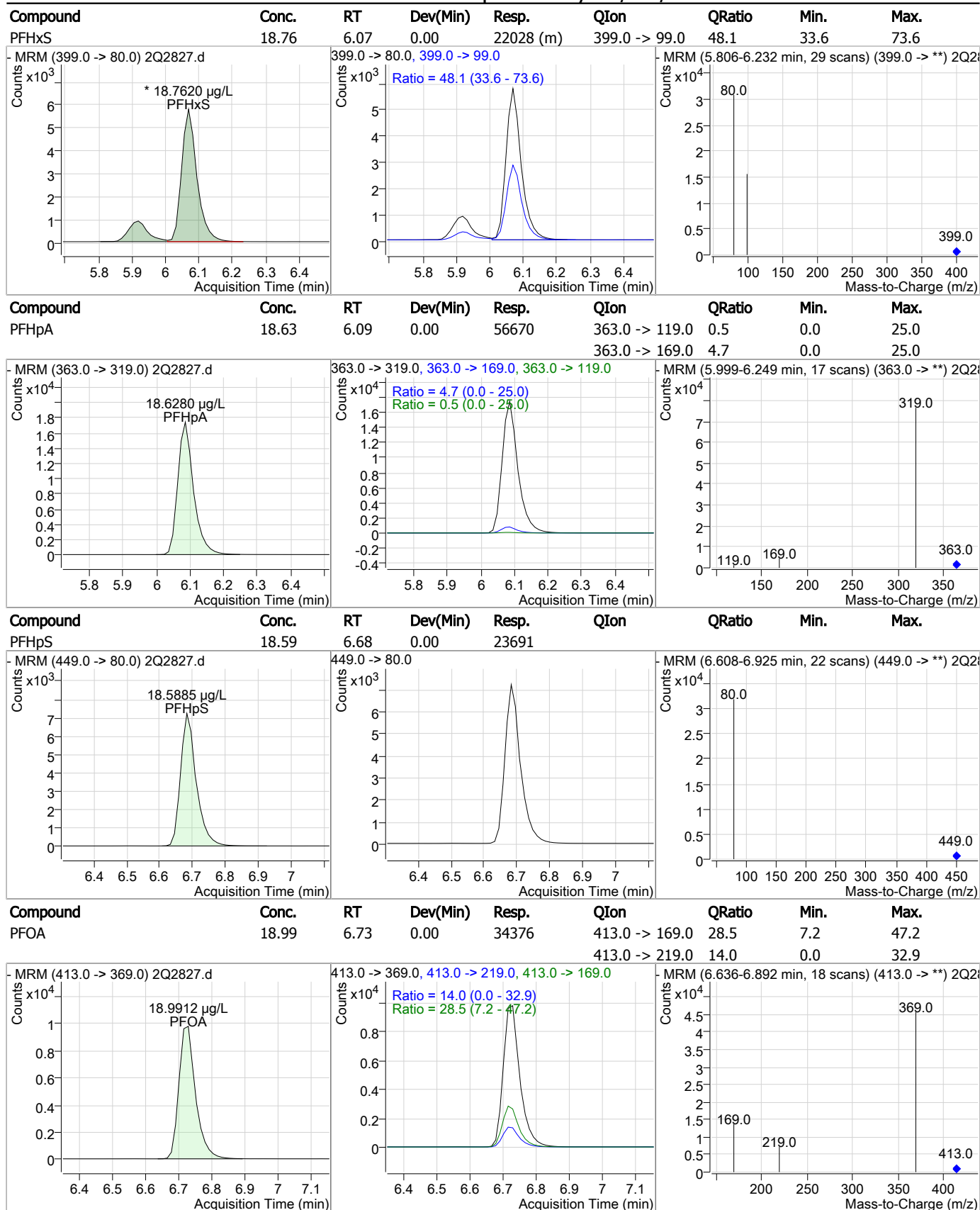
Perfluorinated Compounds by LC/MS/MS



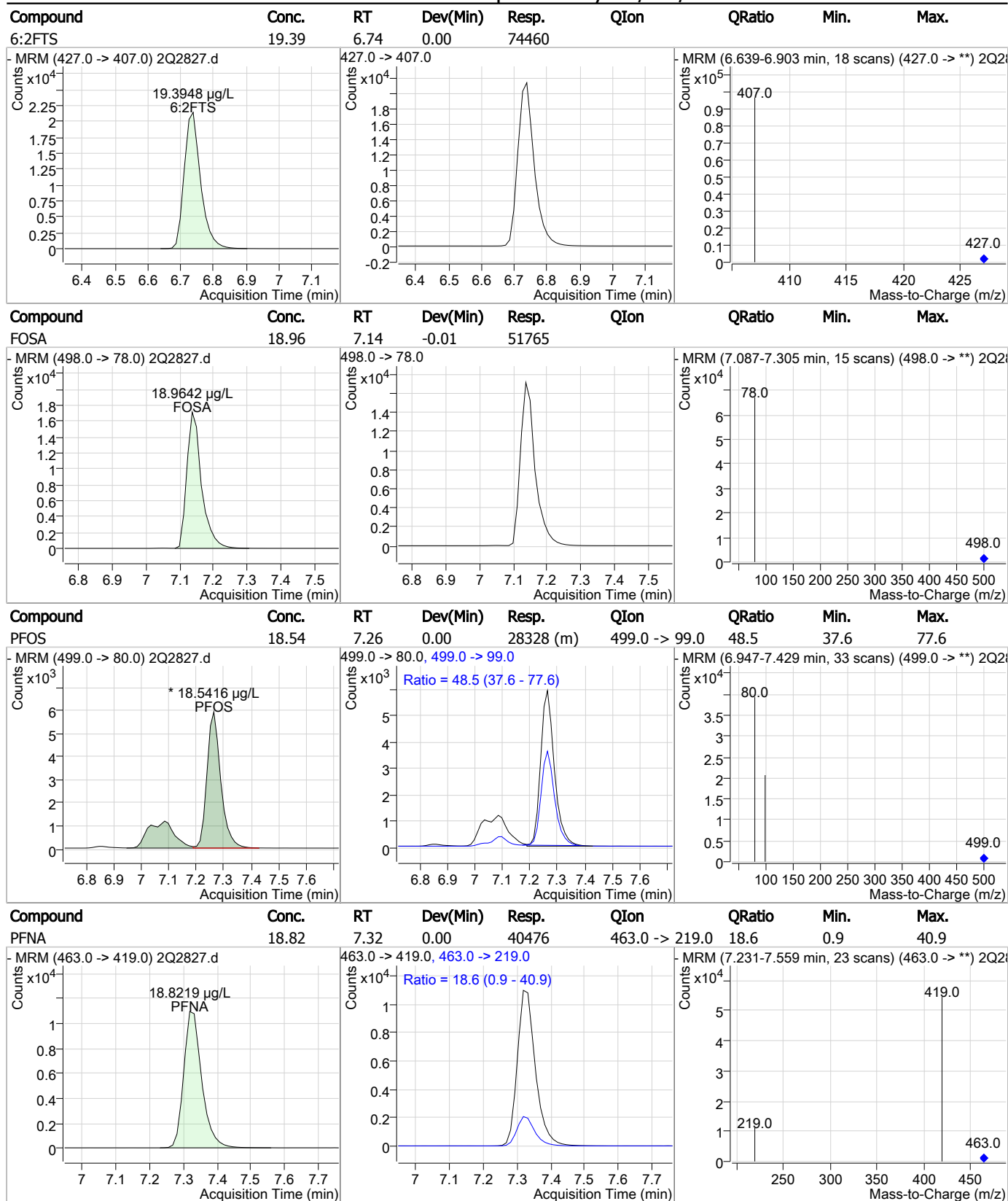
Perfluorinated Compounds by LC/MS/MS



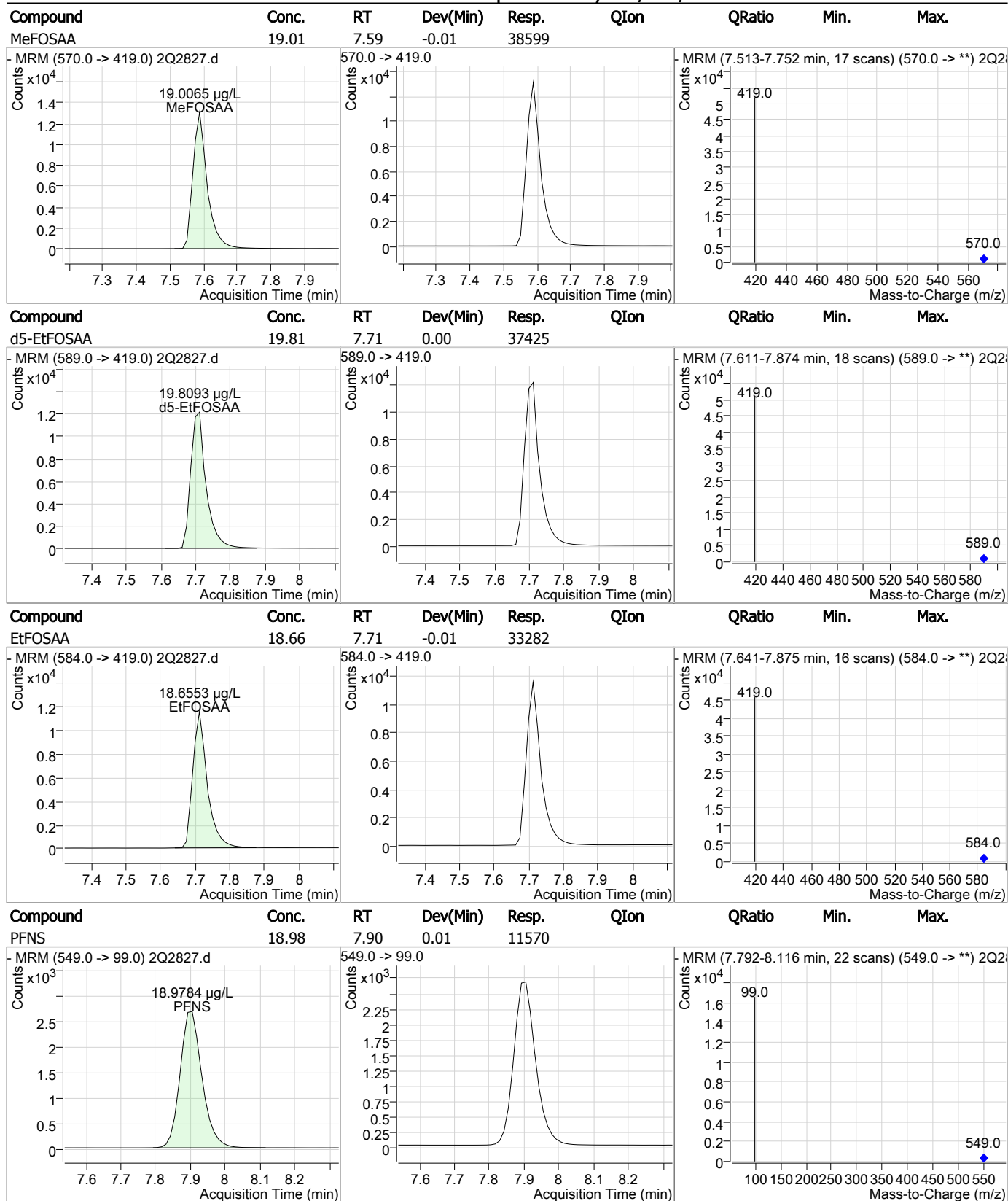
Perfluorinated Compounds by LC/MS/MS



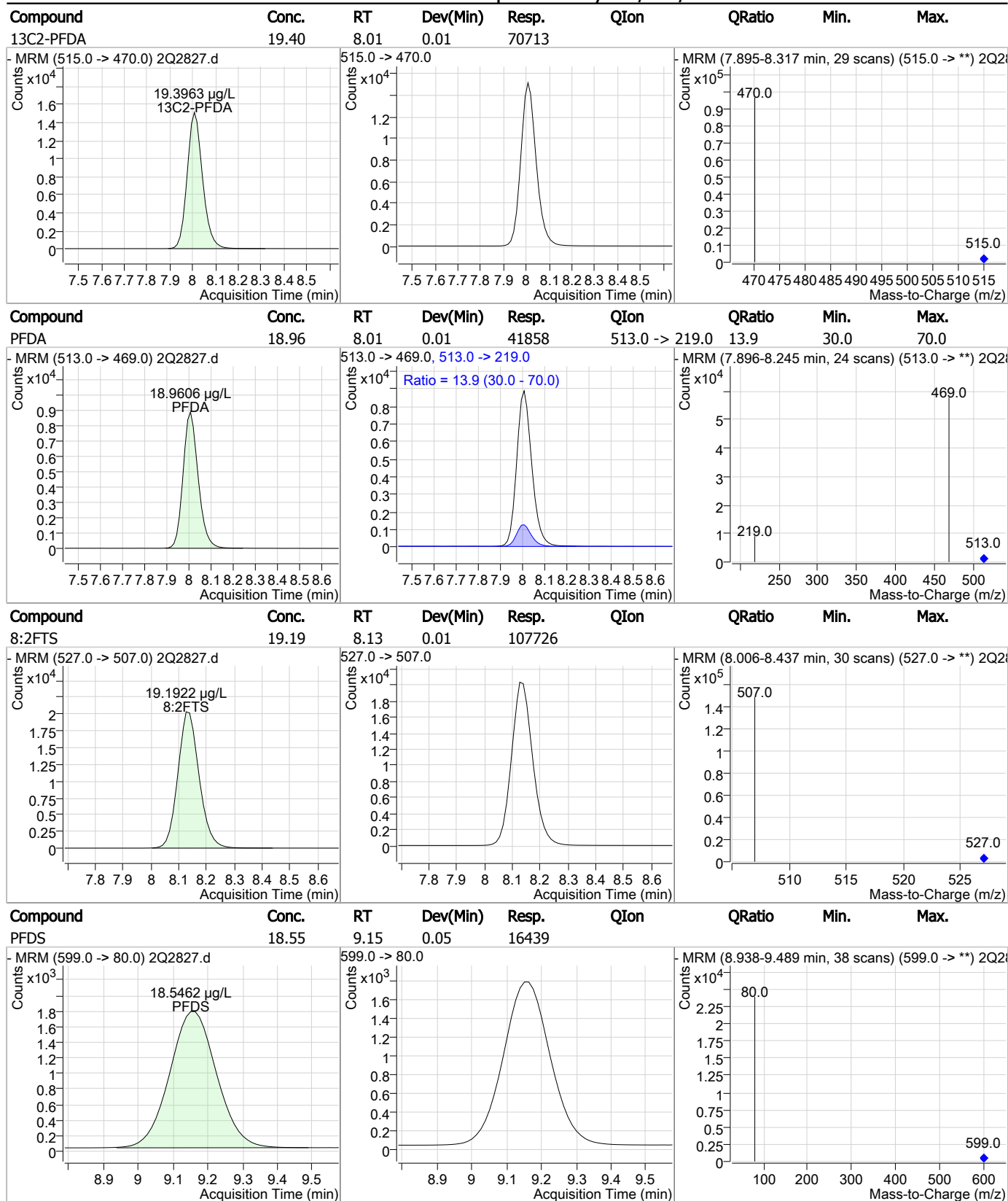
Perfluorinated Compounds by LC/MS/MS



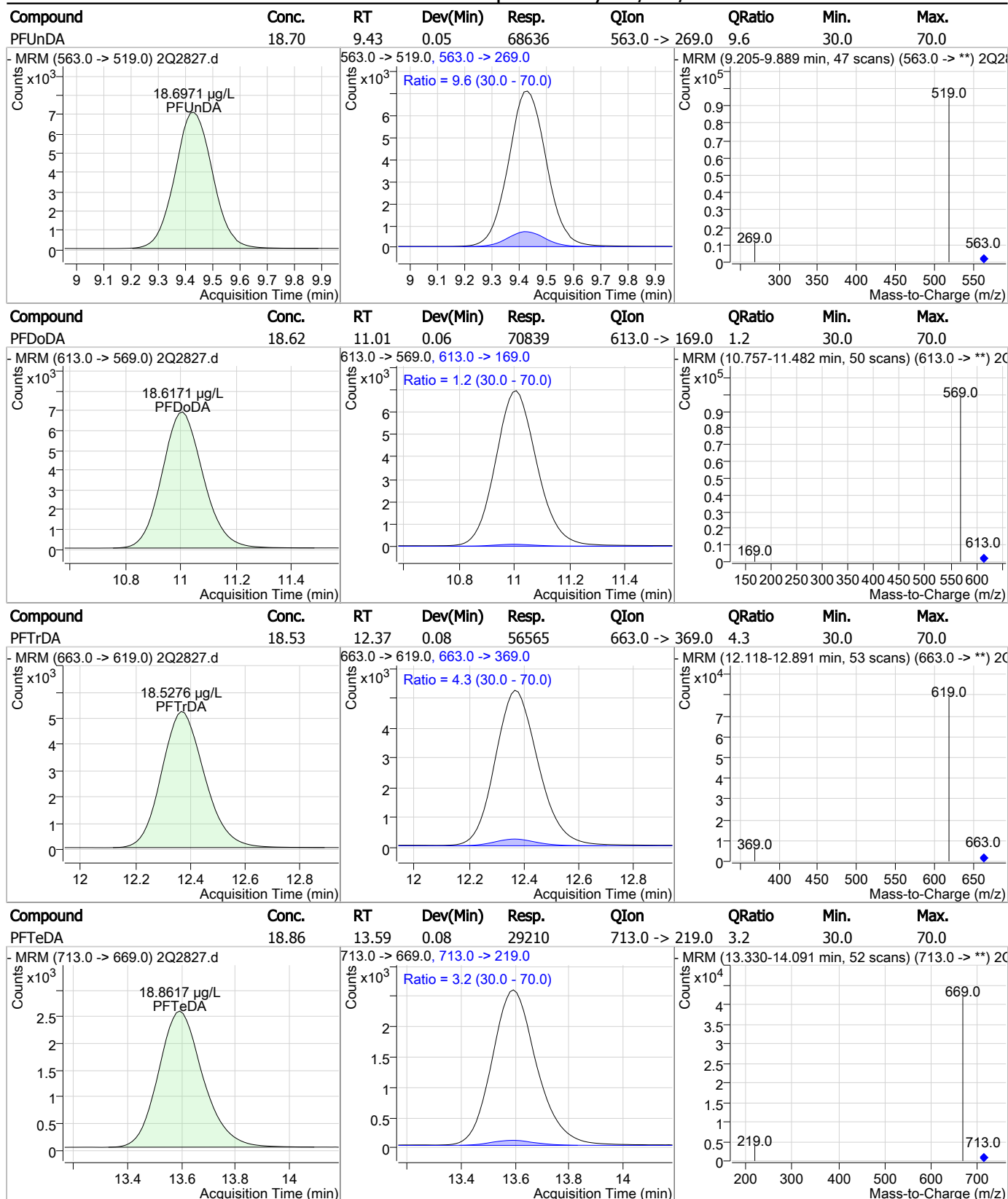
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-CC70

Method: EPA 537

Lab FileID: 2Q2827.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 16:42

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.07	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.26	Split peak

7.5.23.1
7

Mike Eger
06/28/17 12:09

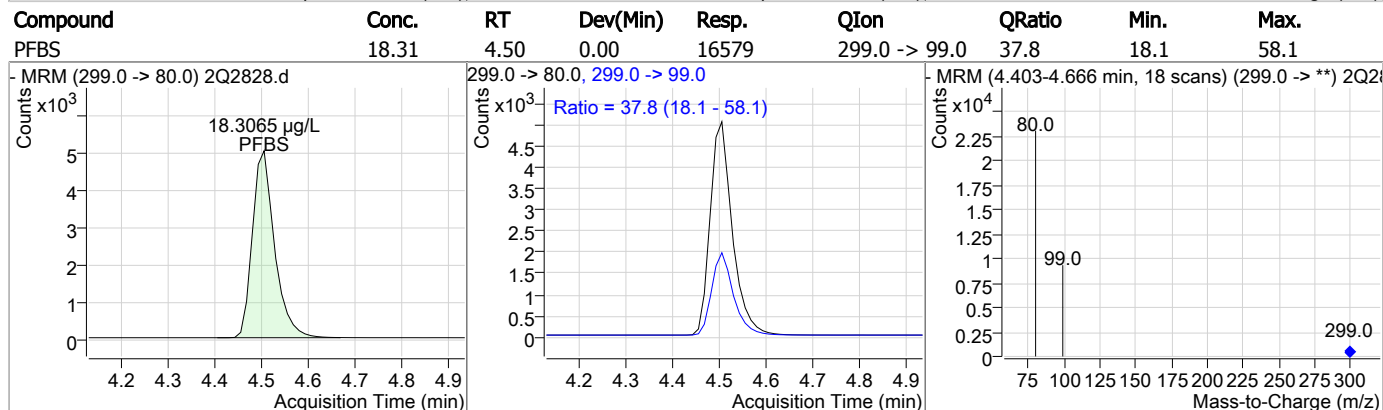
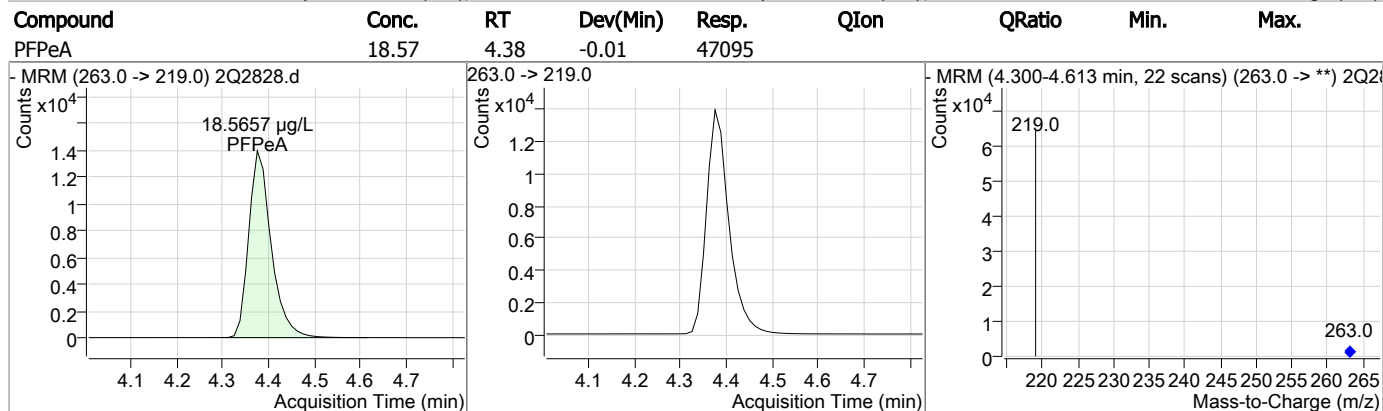
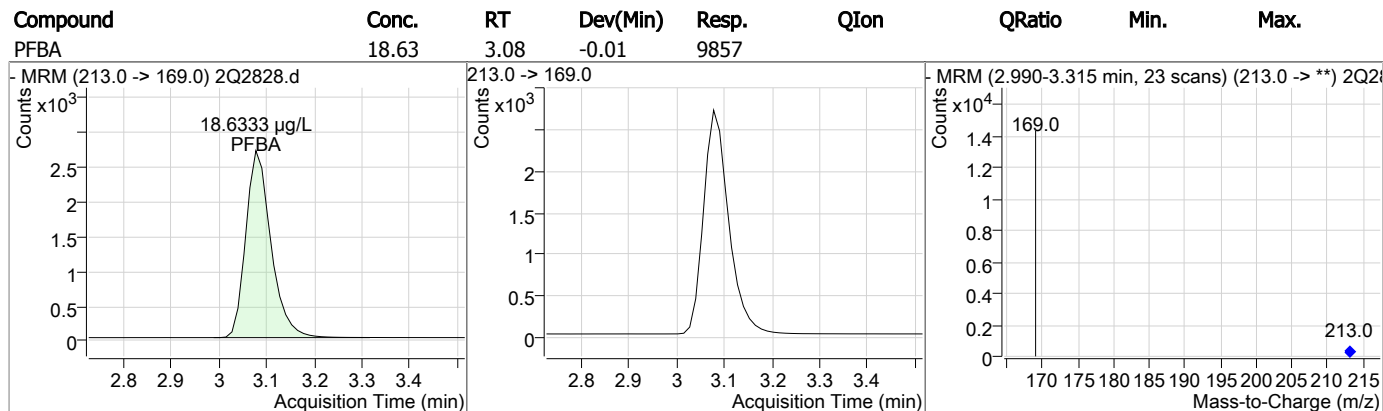
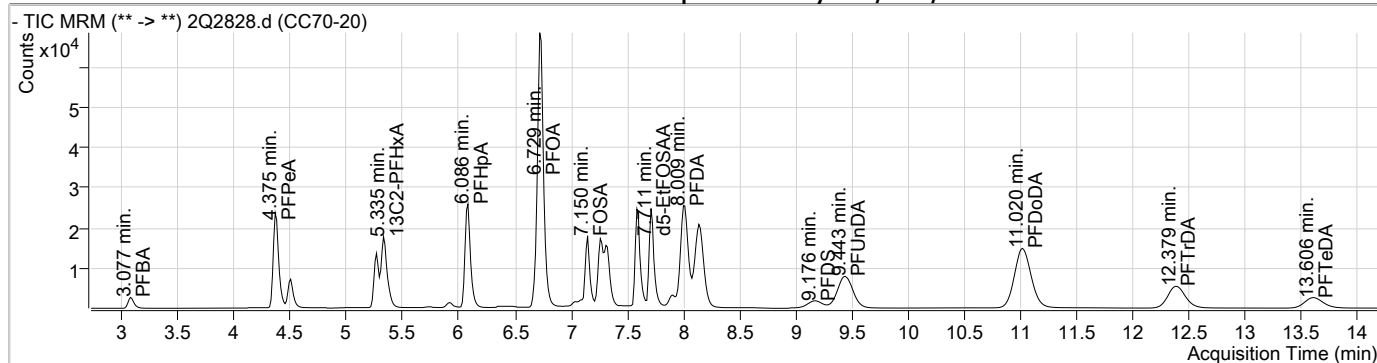
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q2828.d
 Operator : NANCYF
 Acq. Method : 537_LIST.m
 Acq. Date-Time : 6/27/2017 5:02:10 PM
 Sample Name : CC70-20
 Vial : Vial 6
 DA Method File : PFC_0627_S2Q70.quantmethod.xml
 Batch Name : S2Q70.batch.bin
 Sample Information : OP65475,S2Q70,130,,,1.0,1,water

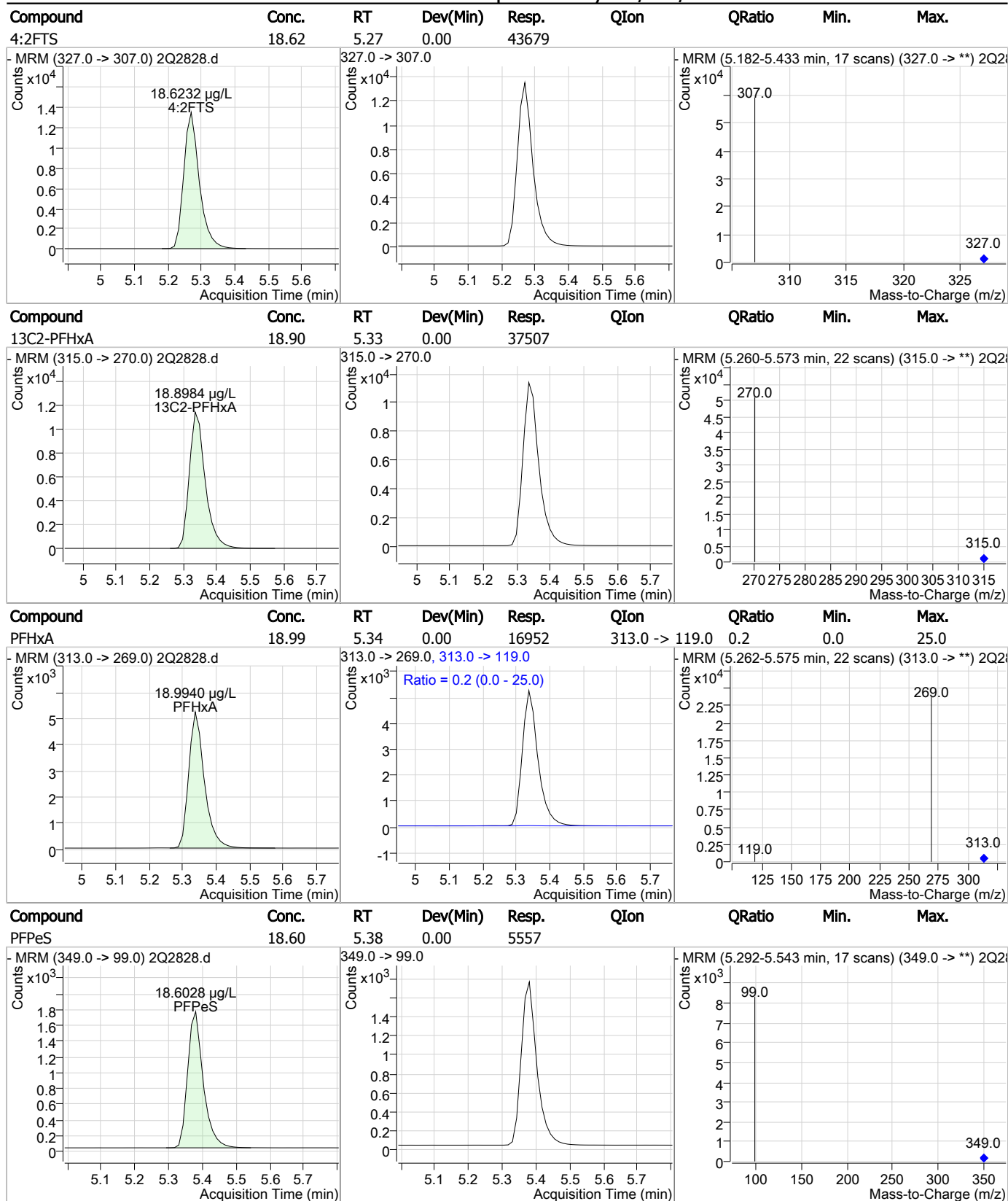
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.737	429.0 -> 409.0	77616	20.00	µg/L	0.000
13C2-PFDoDA	11.015	615.0 -> 570.0	80814	20.00	µg/L	0.063
13C2-PFOA	6.727	415.0 -> 370.0	42533	20.00	µg/L	0.000
13C3-PFPeA	4.372	266.0 -> 222.0	33314	20.00	µg/L	-0.013
13C4-PFOS	7.263	503.0 -> 80.0	25283	20.00	µg/L	0.000
d3-MeFOSAA	7.587	573.0 -> 419.0	35671	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	8.019	515.0 -> 470.0	71725	19.45	µg/L	0.024
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 97.2%			
13C2-PFHxA	5.335	315.0 -> 270.0	37507	18.90	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 94.5%			
d5-EtFOSAA	7.711	589.0 -> 419.0	38108	20.14	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 100.7%			
Target Compounds						QValue
4:2FTS	5.270	327.0 -> 307.0	43679	18.62	µg/L	100
6:2FTS	6.738	427.0 -> 407.0	75247	19.05	µg/L	100
8:2FTS	8.140	527.0 -> 507.0	108242	18.75	µg/L	100
EtFOSAA	7.712	584.0 -> 419.0	34218	19.16	µg/L	100
FOSA	7.150	498.0 -> 78.0	50468	18.45	µg/L	100
MeFOSAA	7.601	570.0 -> 419.0	38871	19.11	µg/L	100
PFBA	3.077	213.0 -> 169.0	9857	18.63	µg/L	100
PFBS	4.504	299.0 -> 80.0	16579	18.31	µg/L	100
PFDA	8.009	513.0 -> 469.0	43239	19.36	µg/L	# 47
PFDoDA	11.020	613.0 -> 569.0	71654	18.70	µg/L	# 29
PFDS	9.176	599.0 -> 80.0	16469	18.40	µg/L	100
PFHpA	6.086	363.0 -> 319.0	56887	18.49	µg/L	93
PFHpS	6.683	449.0 -> 80.0	24139	18.76	µg/L	100
PFHxA	5.337	313.0 -> 269.0	16952	18.99	µg/L	86
PFHxS	6.069	399.0 -> 80.0	22324	18.83	µg/L	m 92
PFNA	7.332	463.0 -> 419.0	39677	18.24	µg/L	97
PFNS	7.905	549.0 -> 99.0	11775	19.13	µg/L	100
PFOA	6.729	413.0 -> 369.0	34606	18.90	µg/L	96
PFOS	7.264	499.0 -> 80.0	28670	18.59	µg/L	m 89
PFPeA	4.375	263.0 -> 219.0	47095	18.57	µg/L	100
PFPeS	5.380	349.0 -> 99.0	5557	18.60	µg/L	100
PFTeDA	13.606	713.0 -> 669.0	29339	18.81	µg/L	# 32
PFTTrDA	12.379	663.0 -> 619.0	57182	18.59	µg/L	# 33
PFUnDA	9.443	563.0 -> 519.0	69489	18.79	µg/L	# 41

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

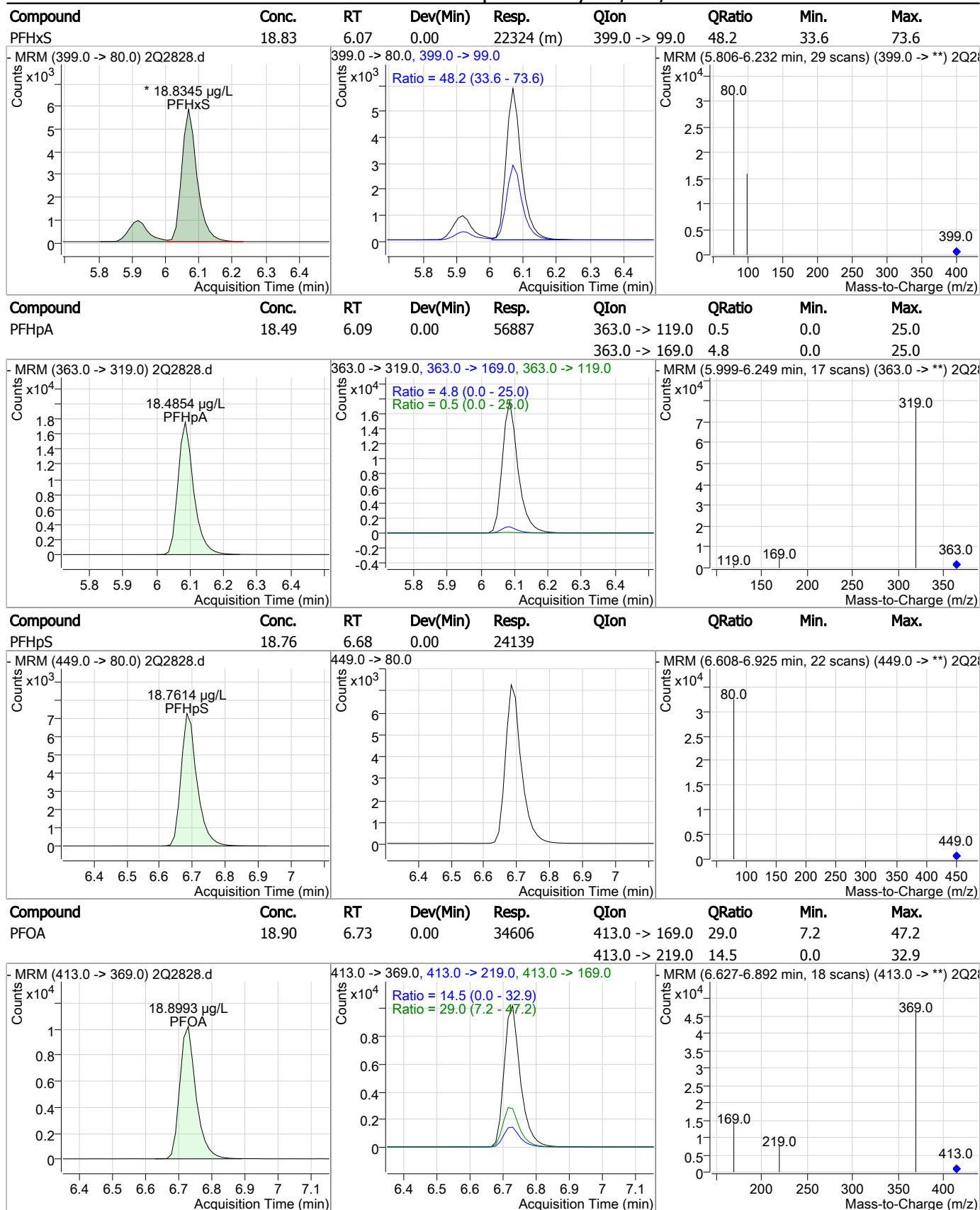
Perfluorinated Compounds by LC/MS/MS



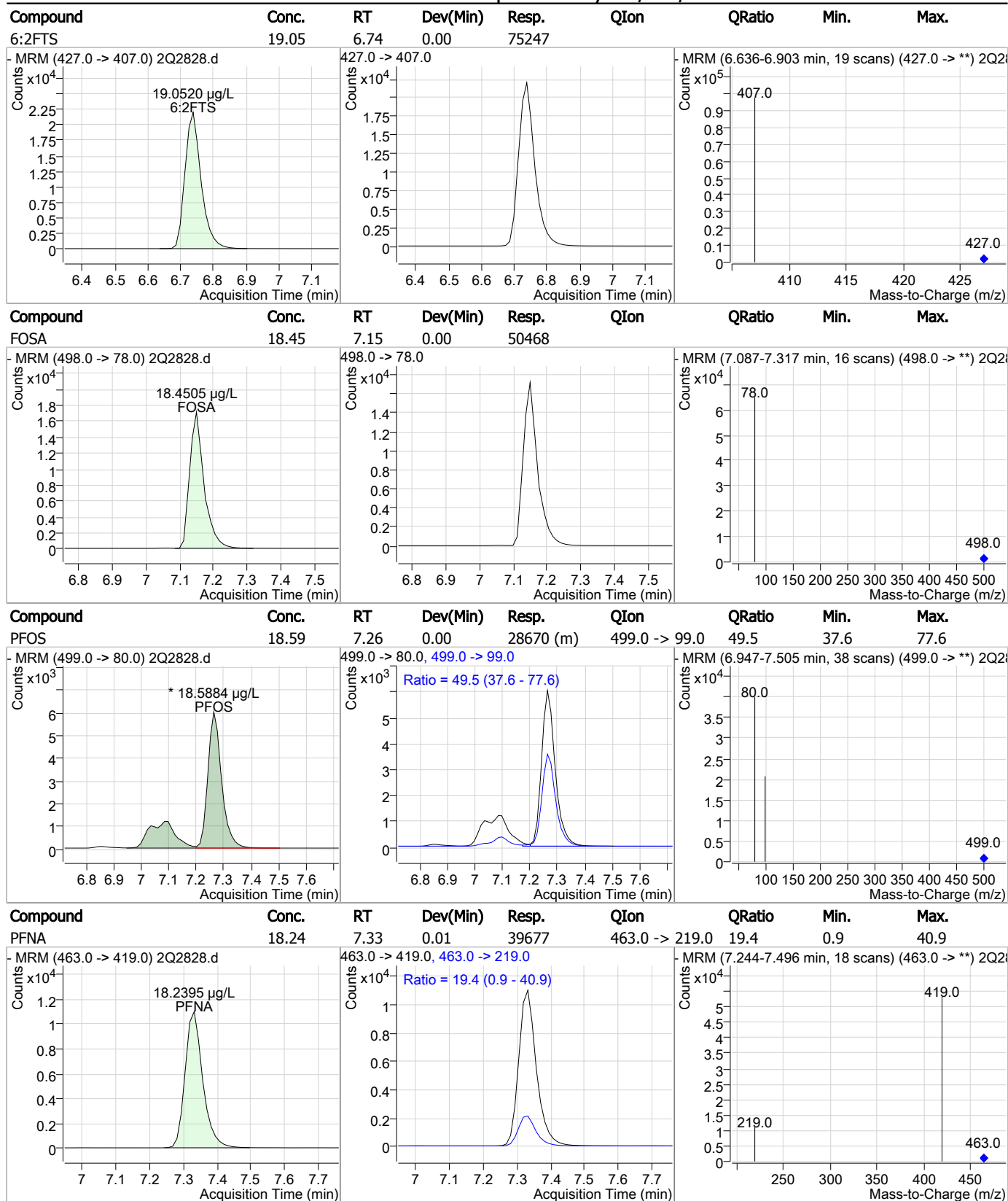
Perfluorinated Compounds by LC/MS/MS



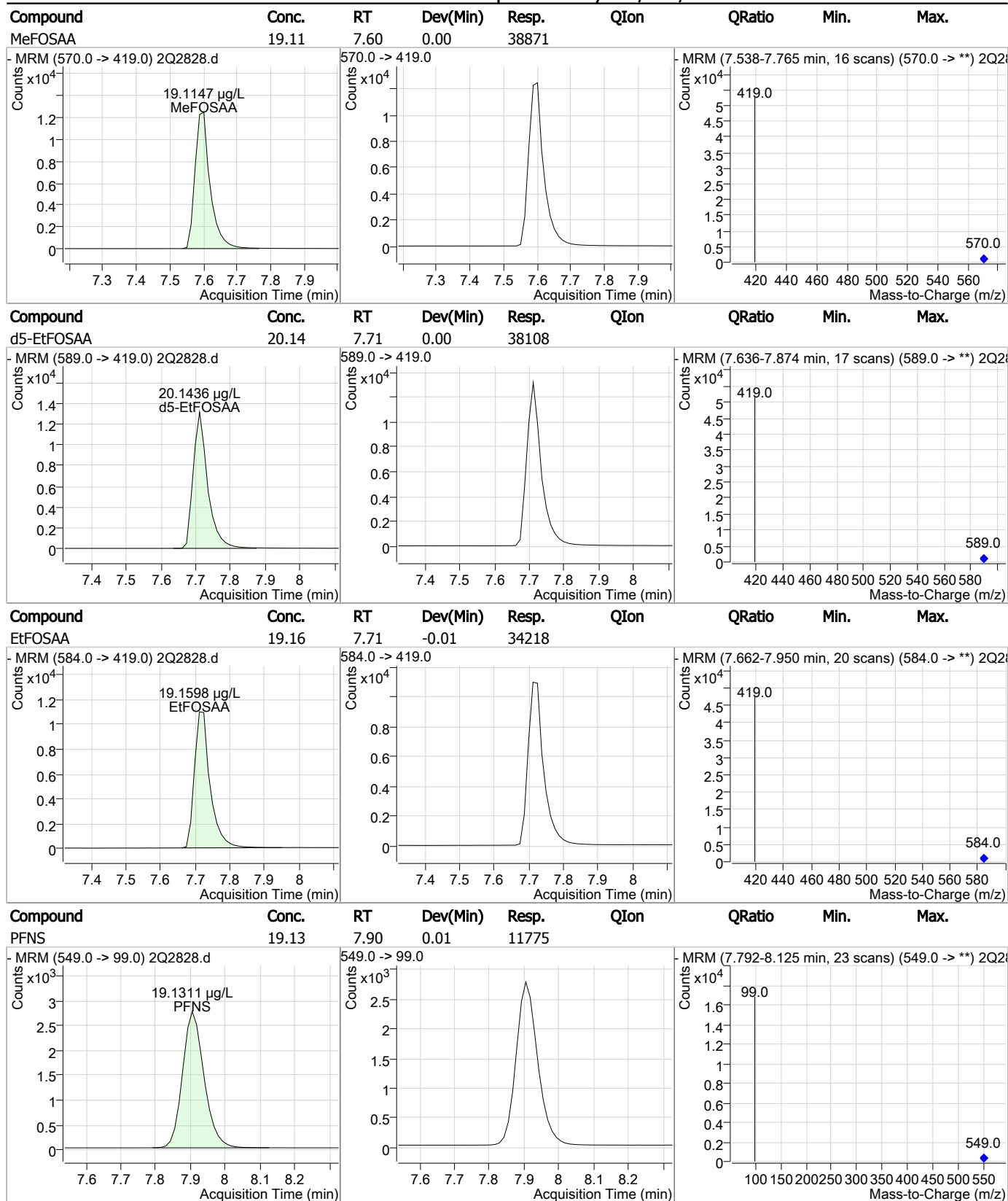
Perfluorinated Compounds by LC/MS/MS



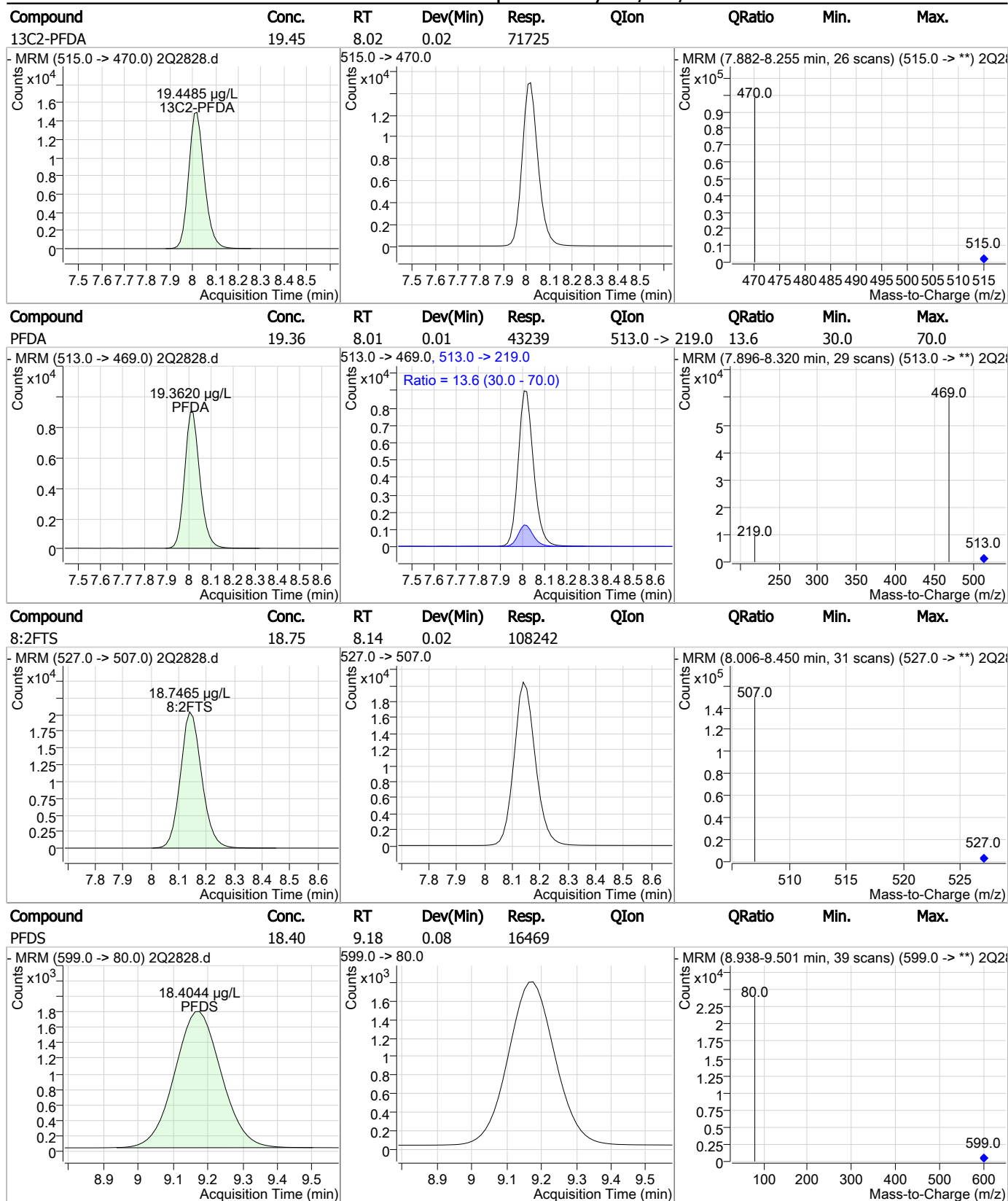
Perfluorinated Compounds by LC/MS/MS



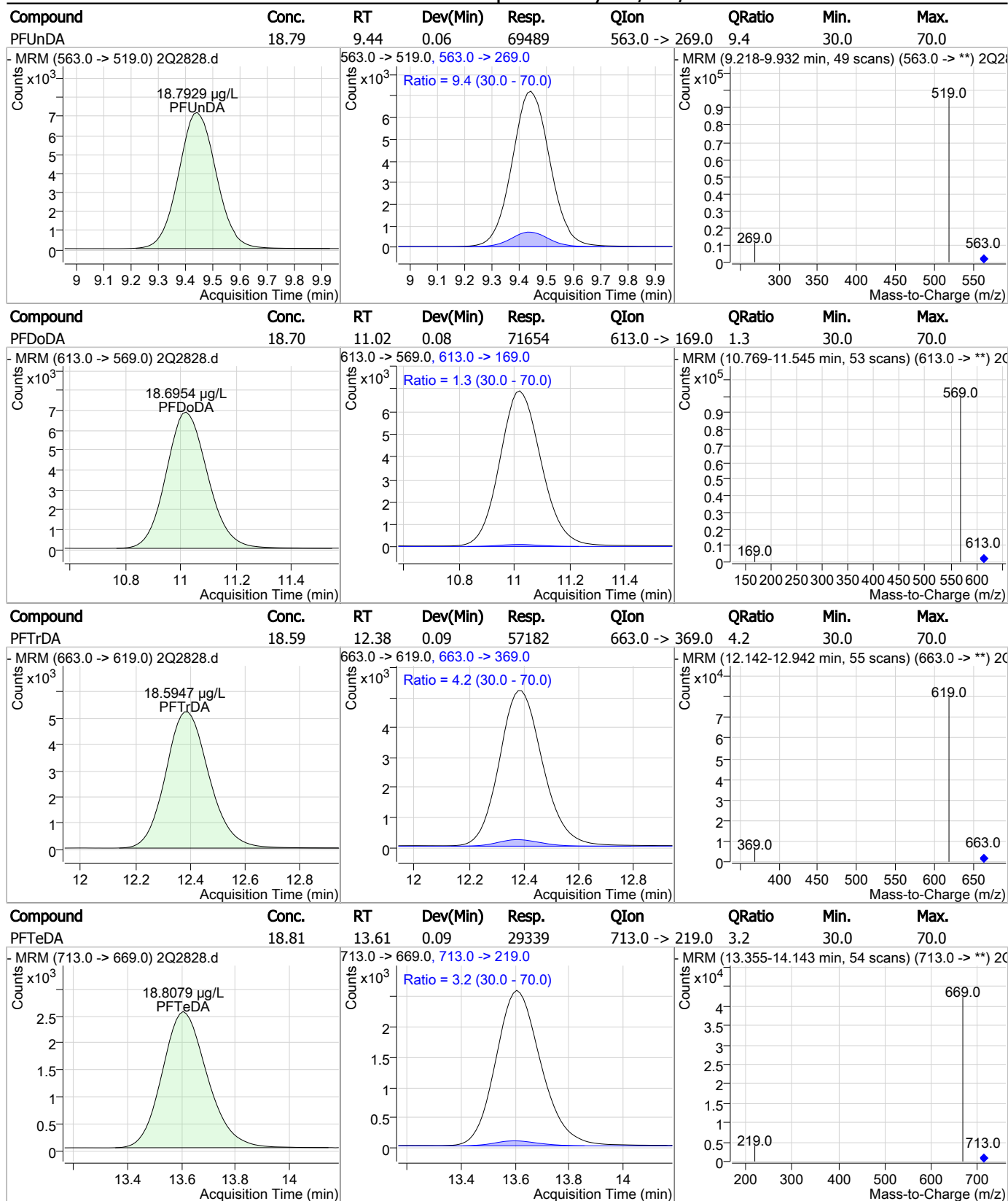
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q70-CC70

Method: EPA 537 MOD

Lab FileID: 2Q2828.D

Analyst approved: 06/28/17 09:02 Nancy Saunders

Injection Time: 06/27/17 17:02

Supervisor approved: 06/28/17 12:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.07	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.26	Split peak

7.5.24.1

7

SGS ACCUTEST-ORLANDO

DATE: 06-23-17
 COLUMN TYPE: Porasil B18
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 315

LCMS2-2Q ANALYSIS LOG

METHODS: 537 m00
 ACQ. METHOD: 537 247
 PROC. METHOD: DFL 06-23 S2Q 67
 CALIB. DATE: 06-23-17
 RUN BATCH: S2Q 67

ANALYST: N/A
 ELUENT A LOT #: 171231 w Arctic
 ELUENT B LOT #: 171470 J
 WATER LOT #: 171231
 ISTD Lot #: LC 868

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 2575	1	CLB	DFL						✓
2Q 76	2	FL67-1			5/150				Fix ARTS
2Q 77	1	CLB							✓
2Q 78	2	FL67-1			5/150		SD		✓
2Q 79	3	-2			10/150		SD		✓
2Q 80	4	-5			25/150		SD		✓
2Q 81	5	-10			50/150		SD		✓
2Q 82	6	FL67-10			100/150		SD		✓
2Q 83	7	FL67-40			200/150		SD		✓
2Q 84	8	-50			250/150		SD		✓
2Q 85	9	-100			1X		SP		✓
2Q 86	10	+ PFOH			50/150				✓
2Q 87	11	FL67-20			515/150				PENS made wrong AR
2Q 88	11	-20			1				POSS
2Q 89	12	OP05536-BS			1X				✓
2Q 90	13	-MB			1				✓ E+SSL APT
2Q 91	14	LA 44451-10			1		SP		NO L SSB APT
2Q 92	15	LA 444661-2			5X		SP		✓
2Q 93	16	LA 44467-4			1X		SP		✓
2Q 94	17	LA 44468-4			1X		SP		✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE:	06-23-17
COLUMN TYPE:	P2000 FC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	3.1

LCMS2-2Q ANALYSIS LOG

METHODS:	S37 M09
ACQ. METHOD:	S37 L057
PROC. METHOD:	PAC 0623 S2Q67
CALIB. DATE:	06-23-17
RUN BATCH:	S2Q 67

ANALYST:	WIS
ELUENT A LOT #:	171231 WATKINS
ELUENT B LOT #:	171470
WATER LOT #:	171231
ISTD Lot #:	LL 068

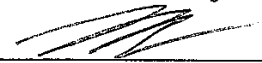
DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 2545	17	FA44408-42	PAC	065343	17		SP		✓SSD AC-PWT
2Q 96	6	CC67-20		22867	100/70		SP		POSS
2Q 97	1	CCB							✓
2Q 98	18	0P65564-85		0P65564	17				✓
2Q 99	14	-ms							NDL
2Q 600	20	FA444695-2							NDL SLD EA
2Q 01	21	-3							NDL SLD
2Q 02	22	-5							NDL SLD OK mmm
2Q 03	23	-6							NDL SLD
2Q 04	24	FA444849-1					SP		✓
2Q - 05	25	-2							✓ SLD EA OK mmm
2Q 06	26	0P65564-ms							✓
2Q 07	27	-ms							✓
2Q 08	6	CC67-20		22867	100/70		SP		POSS
2Q 09	1	CCB							✓
2Q 10	28	FA444849-8		0P65564	17				NDL
2Q 11	24	-4					SP		✓ OK EA SLD mmm
2Q 12	30	-6					SP		✓ 1
2Q 13	21	FA444702-1							NDL
2Q 14	23	FA444800-1							NDL

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

57 of 100

Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE:	06-23-17
COLUMN TYPE:	Agilent 110A
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	3.15

LCMS2-2Q ANALYSIS LOG

METHODS:	S37 m10
ACQ. METHOD:	S37 L57
PROC. METHOD:	PFC 0623 S2Q67
CALIB. DATE:	06-23-17
RUN BATCH:	S2Q 67

ANALYST:	NHJ
ELUENT A LOT #:	171231 A12115
ELUENT B LOT #:	171740 +
WATER LOT #:	171 274
ISTD Lot #:	LC868

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 2615	34	F-A44880-2	PFC	0P65564	17				BDL SS 15 10 100 1000
2Q 16	35	-3			+				BDL
2Q 17	32	F-A44936-1			10x		SP 2		✓ Run 100x
2Q 18	36	F-A44951-2							BDL AA 1X
2Q 19	37	-3			+				BDL AA 1X
2Q 20	6	CC 67-20		LC867	100/100		SP		PASS
2Q 21	1	CCB							✓
2Q 22	38	F-A44951-24		0P65564	1x				BDL SS 15 10 100 1000
2Q 23	39	-11			10x				BDL AA 1X
2Q 24	40	m62417 23							BDL AA 1X
2Q 25	41	-25 24			+		SP		✓ AA 100x (6:25:20) 1000
2Q 26	6	CC 67-20		LC867	100/100		SP		PASS
2Q 27	1	CCB							✓
2Q 28	42	0P65380-B1		0P65380	1x				low
2Q 29	43	-m3							BDL
2Q 30	44	F-A44979-2							BDL AA SS
2Q 31	45	-3							BDL
2Q 32	46	-4							BDL
2Q 33	47	-5							BDL OK SS 1000
2Q 34	48	-6							BDL

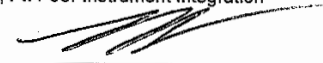
* < Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

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Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE:	06-23-17
COLUMN TYPE:	Perisolv LC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	315

LCMS2-2Q ANALYSIS LOG

METHODS:	537 MOD
ACQ. METHOD:	537 LIST
PROC. METHOD:	PFC 0623 62667
CALIB. DATE:	06-23-17
RUN BATCH:	S2Q 67

ANALYST:	NAS
ELUENT A LOT #:	171231 W 81516
ELUENT B LOT #:	171470
WATER LOT #:	171231
ISTD Lot #:	LC 060

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 2635	49	FA44474-7	PFC	OP65380	1x				NAL
2Q 36	50	-9							NAL set on motion
2Q 37	51	-12							NAL
2Q 38	6	LC67-20		LC067	100/50		SP		POSS
2Q 39	1	CCB							✓
2Q 40	52	FA44573-13		OP65380	1x				NAL
2Q - 41	53	FA44479-1							NAL DEPT SSD
2Q - 42	54	-10							NAL DEPT SSD
2Q - 43	55	-11							XNU ESTD AR
2Q 44	56	FA44573-1					SP		✓
2Q 45	57	OP65380-MS					SP		✓
2Q 46	58	-MS0					SP		✓
2Q 47	6	CC67-20		LC067	100/50		SP		POSS
2Q 48	1	CCB							✓
2Q 49	59	FA44573-3		OP65380	1x		SP		✓
2Q 50	60	-5					SP		✓
2Q 51	61	-7					SP		✓
2Q 52	62	-9					SP		✓
2Q 53	63	-11					SP		✓
2Q 54	64	FA44693-8							✓ AR 10x not IS 70 P

* < Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

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Analyst's Signature: 

ANALYST:

ANALYST:	AMS
ELUENT A LOT #:	171231 w A101 re
ELUENT B LOT #:	171470 +
WATER LOT #:	171231
ISTD Lot #:	1696B

[illegible]

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature:

SGS ACCUTEST-ORLANDO

DATE: 06-26-17
 COLUMN TYPE: Porosil 11 E11B
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 300

LCMS2-2Q ANALYSIS LOG

METHODS: S37 MOD
 ACQ. METHOD: S37 LIT
 PROC. METHOD: PFL 0023 SL067
 CALIB. DATE: 06-23-17
 RUN BATCH: S2Q 09

ANALYST: MS
 ELUENT A LOT #: 171271 w A/LIT
 ELUENT B LOT #: 171470 L
 WATER LOT #: 171271
 ISTD Lot #: LC 008

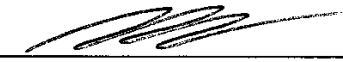
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2Q 2730	2	AT	PFL	LC052	100/TW				✓
2Q 31	2	AT		L	L				✓
2Q 32	1	CCB							✓
2Q 33	2	C167-20		LC052	100/TW		SP		POSS
2Q 34	3	0P65455-B3		0P65455	1X				✓
2Q 35	4	FA44693-3			1X				RT Δ matrix run 10X
2Q (Skipped) 36	5	-42			10X		SP		✓
2Q 39	6	-43			20X		SP		✓
2Q 3938	7	-46			10X		SP		✓ Run 20X 6:2 EST
2Q (Skipped) 41	8	-50			10X		SP		✓
2Q 42	9	-3			10X		SP		✓ DATA IS OUT
2Q 43	10	-46			200X		SP		✓
2Q 44	11	-3			5X		SP		Use 10X RT Δ
2Q 45	2	C167-20		LC052	100/TW		SP		POSS
2Q 46	1	CCB			100/TW				✓
2Q 47	12	FA44693-8		0P65455	10X		SP		✓ Run 100X
2Q 48	13	-11			L		SP		✓
2Q 49	14	FA44693-1		0P65455	250X		SP		✓
2Q 50	15	FA44693-2 CCB			1X		SP		✓ SS↓
2Q 51	16	-3 CCB			L		SP		✓ SS↓

* Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
 All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

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Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE:	196-26-17
COLUMN TYPE:	Perchlorate 1501b
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	300

LCMS2-2Q ANALYSIS LOG

METHODS:	S2Q mon
ACQ. METHOD:	S2Q LST
PROC. METHOD:	PFC 0623 S2Q07
CALIB. DATE:	06-27-17
RUN BATCH:	S2Q 69

ANALYST:	AAK
ELUENT A LOT #:	171231 w Acetic
ELUENT B LOT #:	171470 J
WATER LOT #:	171231
ISTD Lot #:	LL 868

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 2752	17	FA44951-11 G3	PFC	0P65454	1X	1000/100	SP		✓ SS↓
2Q 53	18	-23 G3			+		SP		✓ SS↓
2Q 54	19	-25			500X		SP		✓
2Q 55	2	CC 67-20		LL 612	100/100		SP		Pass
2Q 56	1	CCB							✓
2Q 57	20	FA44693-24		0P65454	1X		SP		✓ 6.27 Am 10X
2Q 58	21	-24			10X		SP		✓ ↓ Am 100X
2Q 59	22	-24			100X		SP		✓
2Q 60	23	-27			1X		SP		✓ 6.2757 Am 10X
2Q 61	24	-27			20X		SP		✓
2Q 62	25	-28			1X		SP		✓
2Q 63	26	-32			1X		SP		✓ 6.2757 Am 10X
2Q 64	27	-32			10X		SP		✓ ↓ Am 10X
2Q 65	28	-32			50X		SP		✓ (Am 100X)
2Q 66	29	-33			1X		SP	Pass	✓ Am 10X SS↓
2Q 67	2	CC 67-20		LL 612	100/100		SP		Pass
2Q 68	1	CCB							✓
2Q 69	30	FA44693-33		0P65454	10X		SP		✓
2Q 70	31	-34			1X		SP	Fail 10X	✓ Am 10X 6.2757 SS↓
2Q 71	32	-34			10X		SP		✓

* < Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

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Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE: 06-26-17
 COLUMN TYPE: Porus 5 μ C18
 AMOUNT INJECTED: 5 μ l
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 200

LCMS2-2Q ANALYSIS LOG

METHODS: S37 M09
 ACQ. METHOD: S37 L137
 PROC. METHOD: PFL 0623 S2067
 CALIB. DATE: 06-23-17
 RUN BATCH: S2Q 69

ANALYST: JAS
 ELUENT A LOT #: 171231 w/Active
 ELUENT B LOT #: 171470 J
 WATER LOT #: 171231
 ISTD Lot #: LC 0609

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 2772	33	FA44643-35	PFL	060544	1X		SA		✓
2Q 73	34	-36		J	J		SP		✓ SSD Re-est
2Q 74	2	CC67-20		LC652	100/TW		SP		Pass
2Q 75	1	C18							✓
2Q 76	81	T-PFOA		LC6046	50/TW				✓
2Q 77	82	CC67-1		LC052	51/TW		SP		Pass
2Q 78	35	0P65503-BS		0P65503					✓
2Q 79	36	-mB							BOL
2Q 80	37	FA44596-1							BOL SSD
2Q 81	38	0P65503-mS							✓
2Q 82	39	-mB							✓
2Q 83	40	FA44546-2							BOL
2Q 84	41	FA44547-1							BOL
2Q 85	42	-2					SP		✓
2Q 86	43	-3		J					BOL
2Q 87	2	CC67-20		LC652	100/TW		SP		Pass PFBAD
2Q 88	2	CC67-20		J	J		SP		Pass
2Q 89	1	CC18							✓
2Q 90	44	0P65475-BS		0P65475	1X				✓
2Q 91	45	-mB	J	J	J				BOL

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE: 06-26-17
 COLUMN TYPE: Poragum 116 C18
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 500

LCMS2-2Q ANALYSIS LOG

METHODS: 537 mod
 ACQ. METHOD: 537 list
 PROC. METHOD: PFC 0623 S2K67
 CALIB. DATE: 06-23-17
 RUN BATCH: S2Q 69

ANALYST: NJS
 ELUENT A LOT #: 171231 w/ HPLC
 ELUENT B LOT #: 171470 J
 WATER LOT #: 171231
 ISTD Lot #: LC868

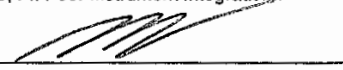
DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 2792	46	F444643-51	PFC	0665475	17		SP		BDL
2Q 93	47	-52							BDL
2Q 94	48	F444700-1					SP		✓ ssd
2Q 95	49	-3					SP		✓
2Q 96	50	-5					SP		✓
2Q 97	51	-7					SP		✓
2Q 98	52	0665475-MS					SP		✓
2Q 99	53	-MSD					SP		✓
2Q 000	2	C167-20		LC852	100/500		SP		Pass
2Q 01	1	CUB							✓
2Q 02	54	F444700-9		0665475	17		SP		✓ ssd
2Q 03	55	-10					SP		✓
2Q 04	56	-11					SP		✓
2Q 05	57	-13					SP		✓
2Q 06	58	2ECC67-20 A		LC852	100/500		SP		Pass ssd
2Q 07	59	2ECC67-20 B					SP		Pass
2Q 08	60	2ECC67-20 C					SP		Pass ssd
2Q 09	61	20							
2Q 10	62	22							
2Q 11	63	24							

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
 All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: 

SGS ACCUTEST-ORLANDO

LCMS2-2Q ANALYSIS LOG

DATE:	06-27-17
COLUMN TYPE:	Dorus 11 E18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	297

METHODS:	537 mud
ACQ. METHOD:	537 List 1062417
PROC. METHOD:	PFL 06237 S2D-70
CALIB. DATE:	06-27-17
RUN BATCH:	S2Q 70

ANALYST:	NAB
ELUENT A LOT #:	171231 w NAB
ELUENT B LOT #:	171740 +
WATER LOT #:	171231
ISTD Lot #:	LC868

DATA FILE	ALS	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 28099	21	CLB	PFL						✓
2Q 10	1	CLB							BOL
2Q 11	641	CLB							BOL
2Q 12	652	IC70-1		LC852	5/100		SP		✓
2Q 13	663	-2			10/100		SP		✓
2Q 14	69	-5			25/100		SP		/
2Q 15	25	-10			50/100		SP		✓
2Q 16	6	IC70-20			100/100		SP		✓
2Q 17	7	IC70-40			200/100		SP		✓
2Q 18	8	-50			250/100		SP		✓
2Q 19	9	-100			1x		SP		✓
2Q 20	10	+ PFOA		LC876	100/100				✓
2Q 21	11	IC70-20		LC860 65946	515 500				Pass
2Q 22	12	F444596-1		0P65503	1x				BOL
2Q 23	13	-2							BOL
2Q 24	14	F444597-1							BOL
2Q 25	15	-2					SP		BOL
2Q 26	16	-3							BOL
2Q 27	6	CC70-20		LC852	m/w		SP		Pass DW
2Q 28	6	CC70-20		+	+		SP		Pass

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE:	06-27-17
COLUMN TYPE:	Porushell B113
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	297

LCMS2-2Q ANALYSIS LOG

METHODS:	S37 M00
ACQ. METHOD:	S37 L13+
PROC. METHOD:	PFL 0627 S2070
CALIB. DATE:	06-27-17
RUN BATCH:	S2Q 70

ANALYST:	YB
ELUENT A LOT #:	171231 w1 n141c
ELUENT B LOT #:	171410
WATER LOT #:	171231
ISTD Lot #:	26866

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 2829	1	CLB	PFL						✓
2Q 30	17	0P65475-01		0P65475	1x				✓
2Q 31	18	-MA							BR
2Q 32	14	V-A44700-15					SP	✓	✓
2Q 33	20	-17					SP	✓	✓
2Q 34	21	-19					SP		✓
2Q 35	22	-20					SP		✓
2Q 36	23	-22					SP		✓
2Q 37	24	-24					SP		✓
2Q 38	25	-26					SP		✓
2Q 39	26	-27					SP		✓
2Q 40	6	CC 70-20		LCB12	10/150		SP		PASS
2Q 41	1	CLB							✓
2Q 42	27	V-A44700-29		0P65475	1x		SP		✓
2Q 43	28	-31							BR
2Q 44	29	-1					SP		✓
2Q 45	30	-3					SP		✓
2Q 46	31	-5					SP		✓
2Q 47	32	-9					SP		✓
2Q 48	33	-10	✓	✓	✓		SP		✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
All strikeouts must be initiated and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: M. Hand

SGS ACCUTEST-ORLANDO

DATE:	06-27-17
COLUMN TYPE:	Porag 11 6018
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	2.97

LCMS2-2Q ANALYSIS LOG

METHODS:	57 m00
ACQ. METHOD:	57 L07
PROC. METHOD:	PFL 0627 S20-70
CALIB. DATE:	06-27-17
RUN BATCH:	S2Q 70

ANALYST:	NAS
ELUENT A LOT #:	171231 w Active
ELUENT B LOT #:	171470 J
WATER LOT #:	171231
ISTD Lot #:	LL 608

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 2849	34	FA44700-11	PFL	0065475	1x		SP		✓
2Q 50	35	-13		+			SP		✓
2Q 71	6	CC 70-20		LC652	100/500		SP		Pass
2Q 52	1	CCB							BOL
2Q 53	36	FA 44643-8		0065380	1004		SP		✓
2Q 54	37	-32		0065454	↓		SP		✓
2Q 11062917	55	CC 70-20		LC652	100/500		SP		Pass Pass ↓
2Q 76	1	CCB							BOL
2Q 57	38	0065659-R5		0065659	1x				✓
2Q 58	39	-m8							BOL
2Q 59	40	FA 45111-1							BOL
2Q 60	41	-2							BOL
2Q 61	42	-3							BOL
2Q 62	43	-4					SP PIR		✓
2Q 63	44	-5							BOL
2Q 64	45	0065659-m5							✓
2Q 65	46	-m50							✓
2Q 66	47	FA 45111-6		↓	↓		PIR SP		✓
2Q 67	6	CC 70-20		LC652	100/500		SP		Pass
2Q 68	1	CCB							BOL

*< Conductivity Limit For Perchlorate by SW846 6850

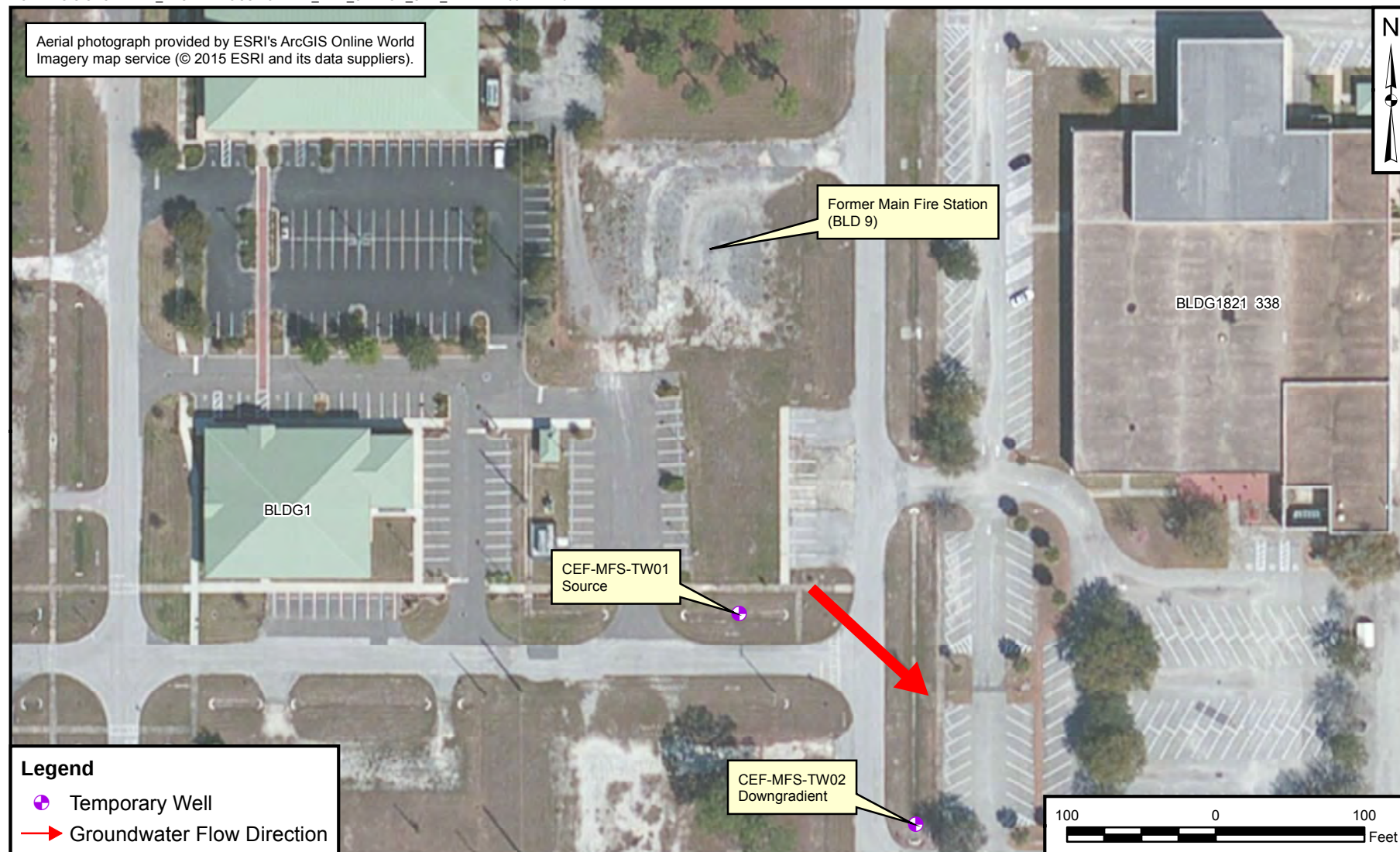
Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

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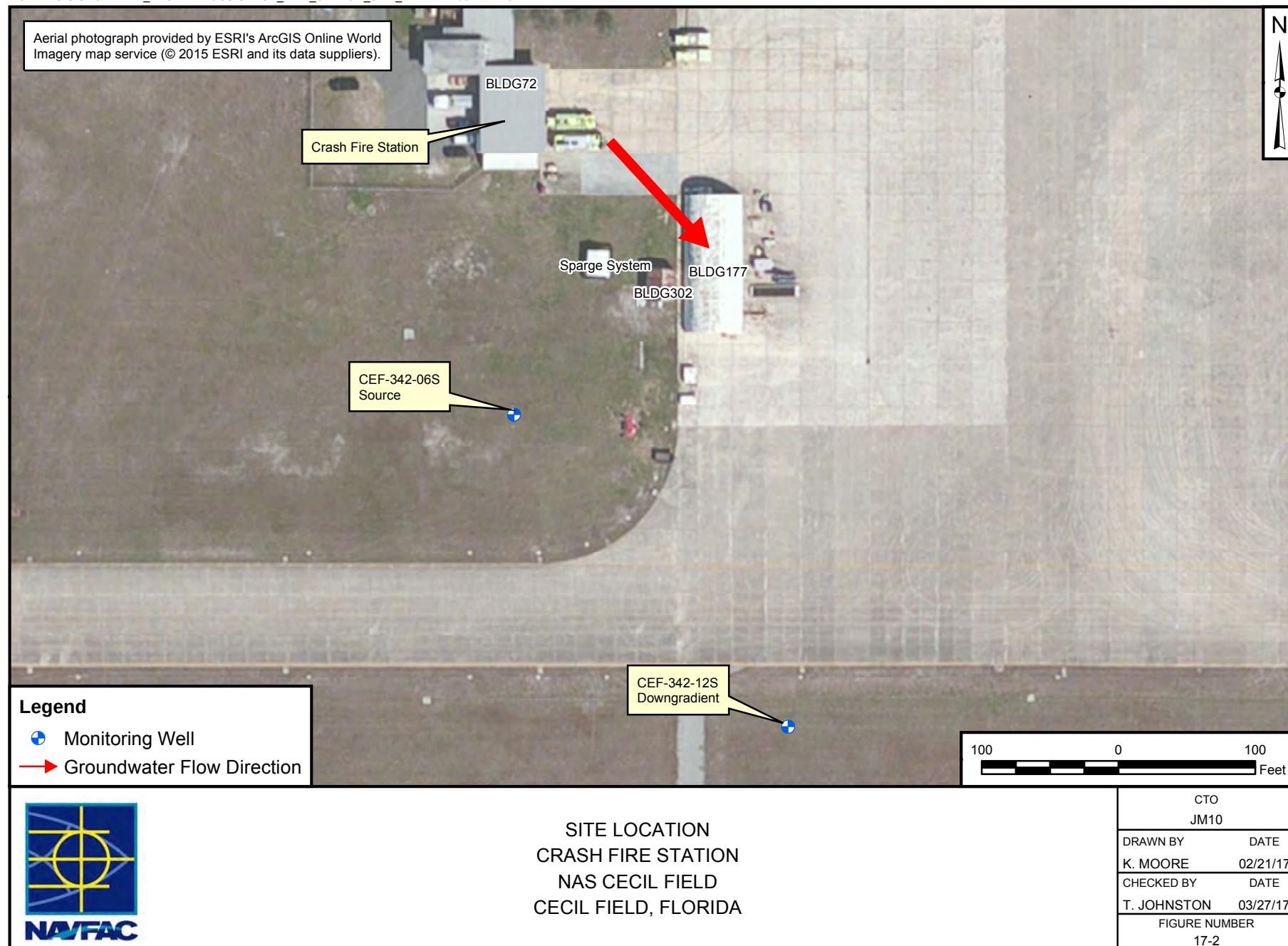
Analyst's Signature: M. Lammela

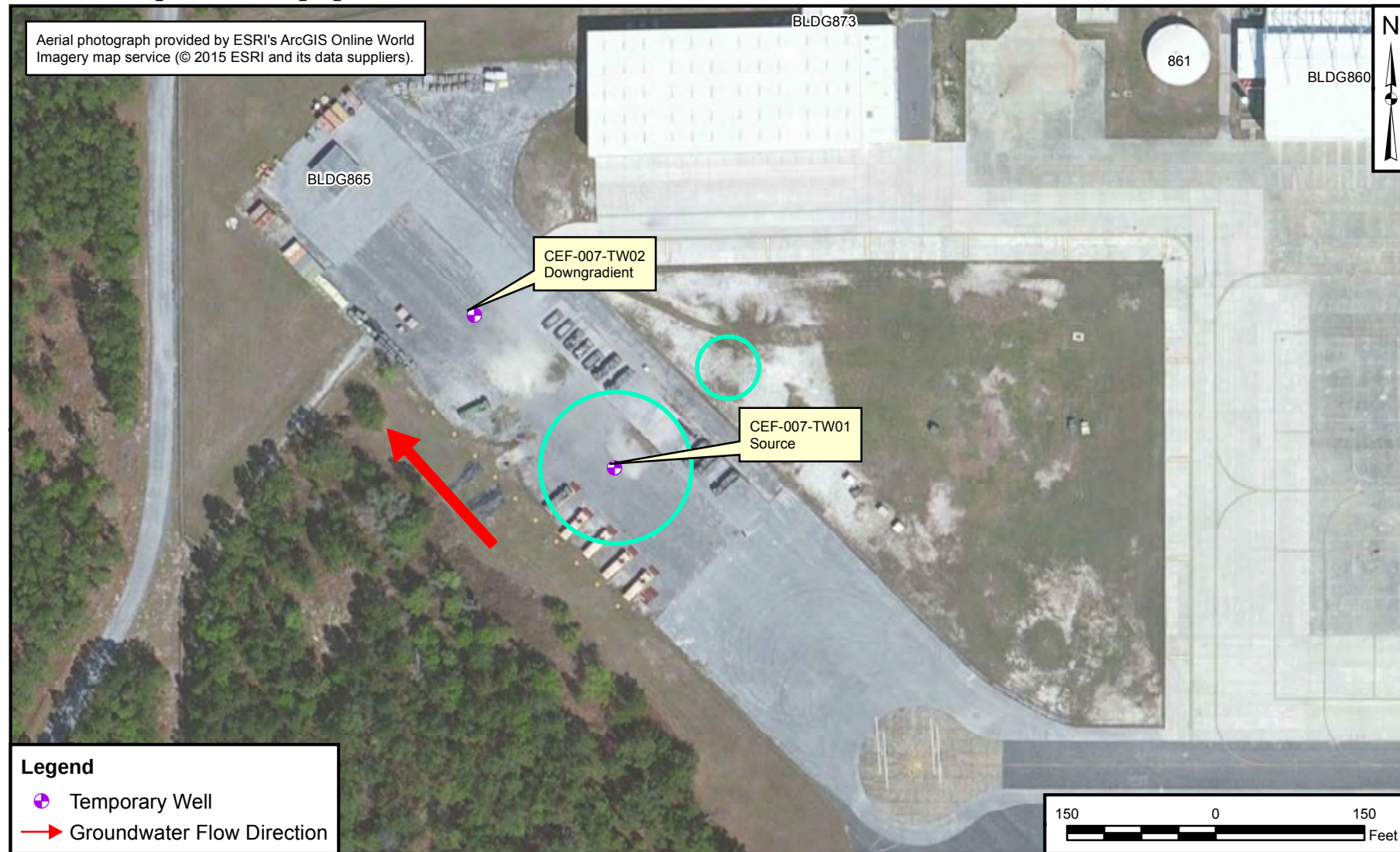
SPE LIQUID SAMPLE PREP REPORT



SITE LOCATION
FORMER FIRE STATION
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-1	





Legend

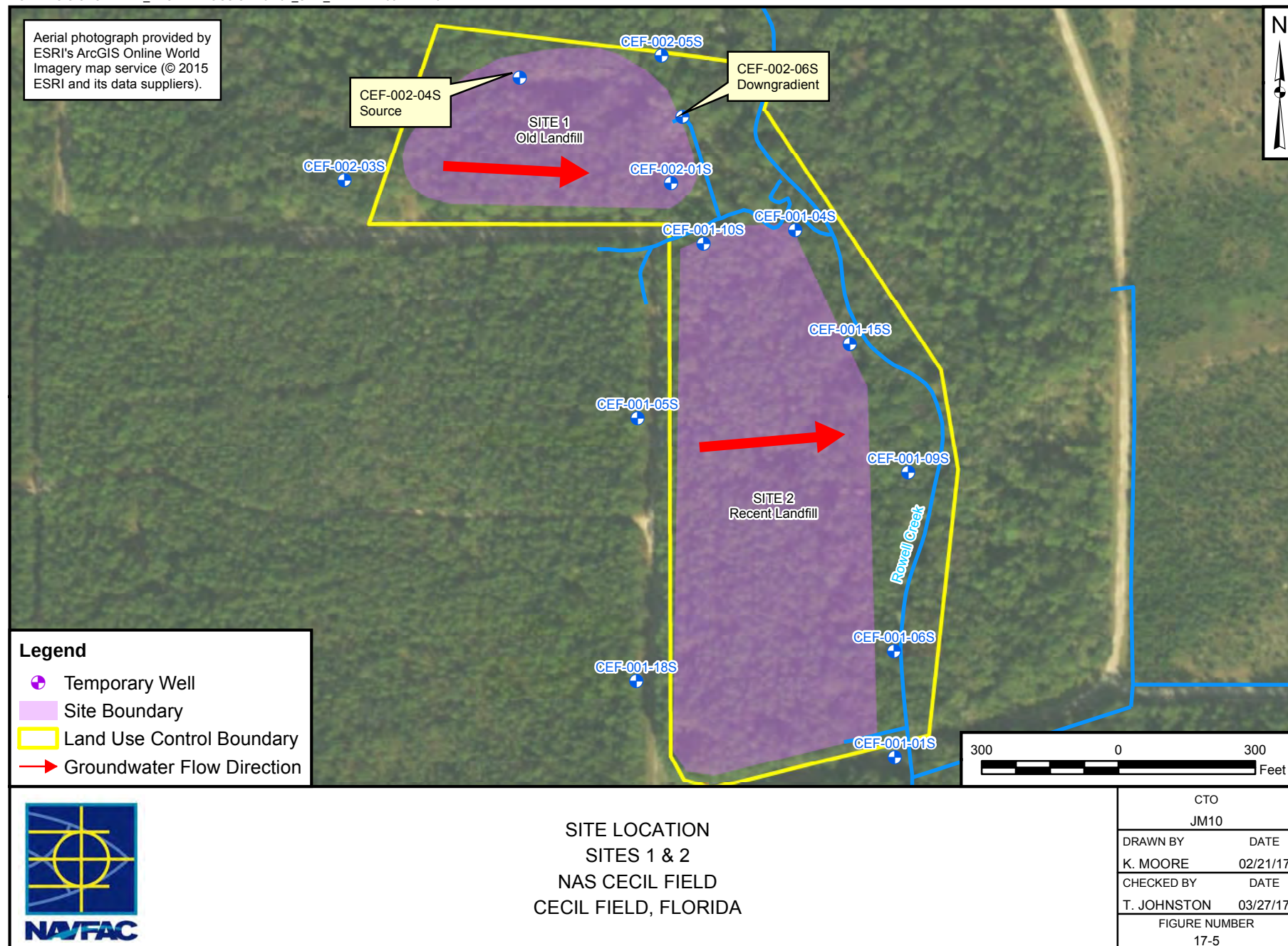
- Temporary Well
- Groundwater Flow Direction

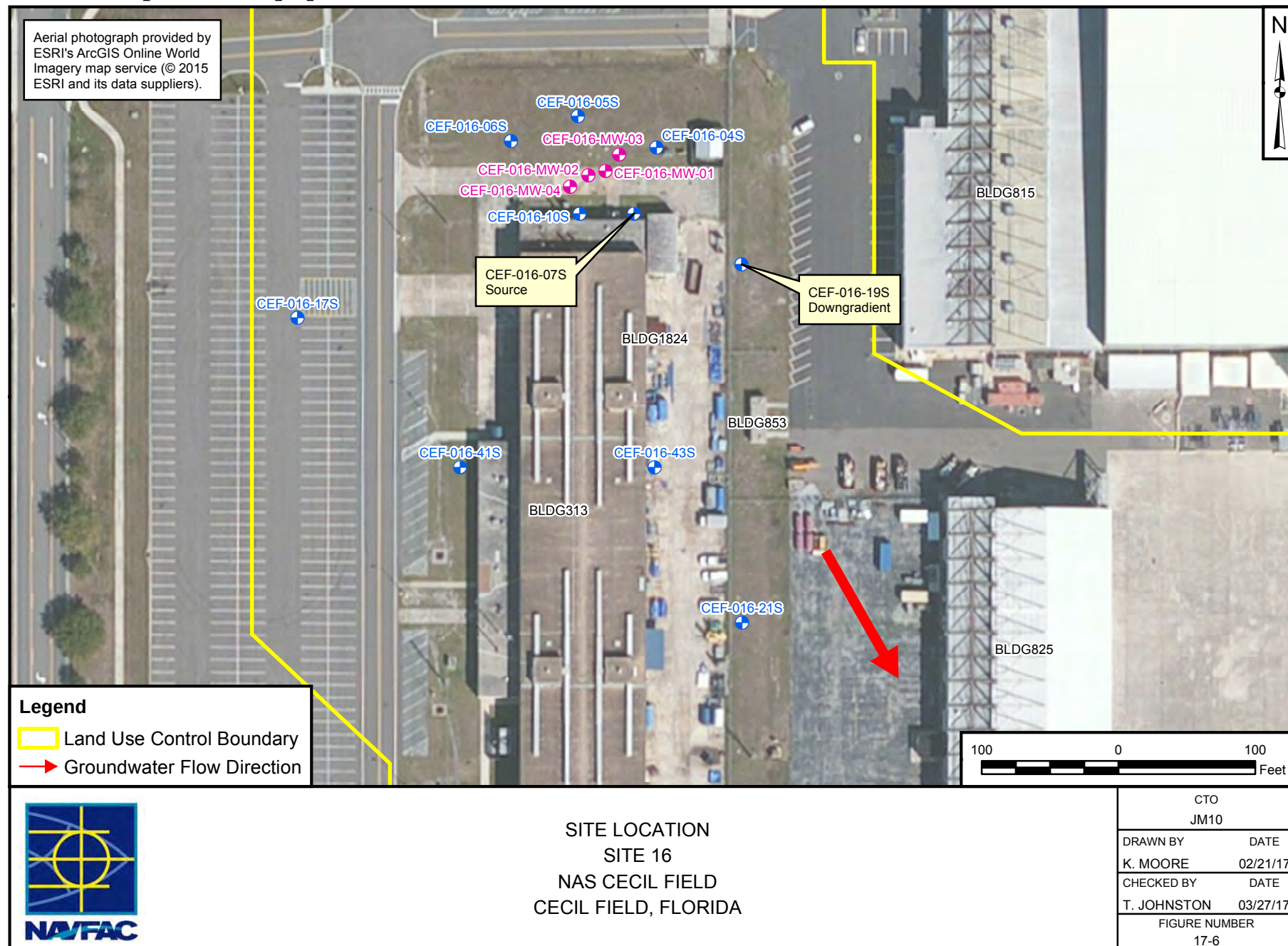


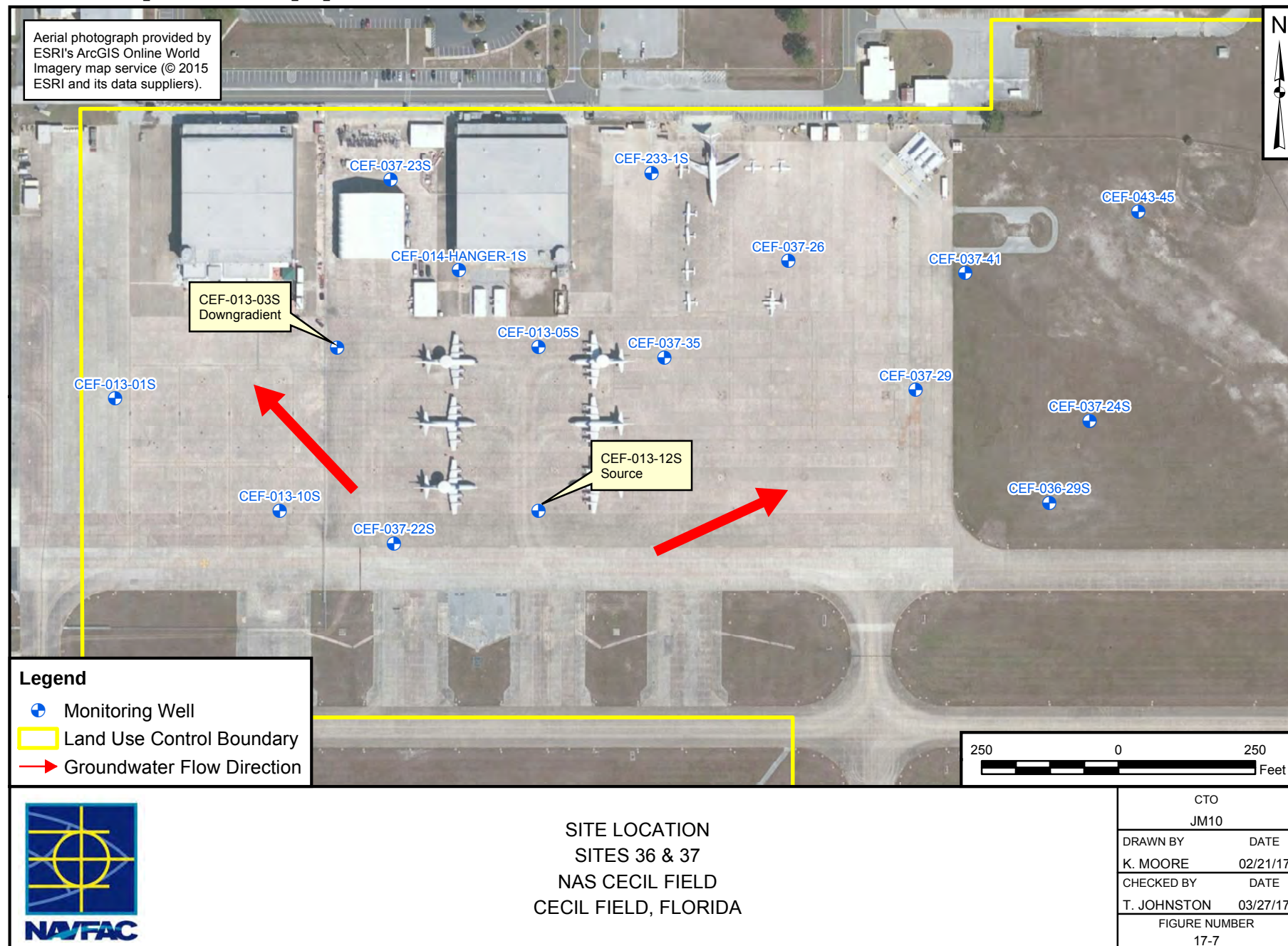
SITE LOCATION
SITE 7
NAS CECIL FIELD
CECIL FIELD, FLORIDA

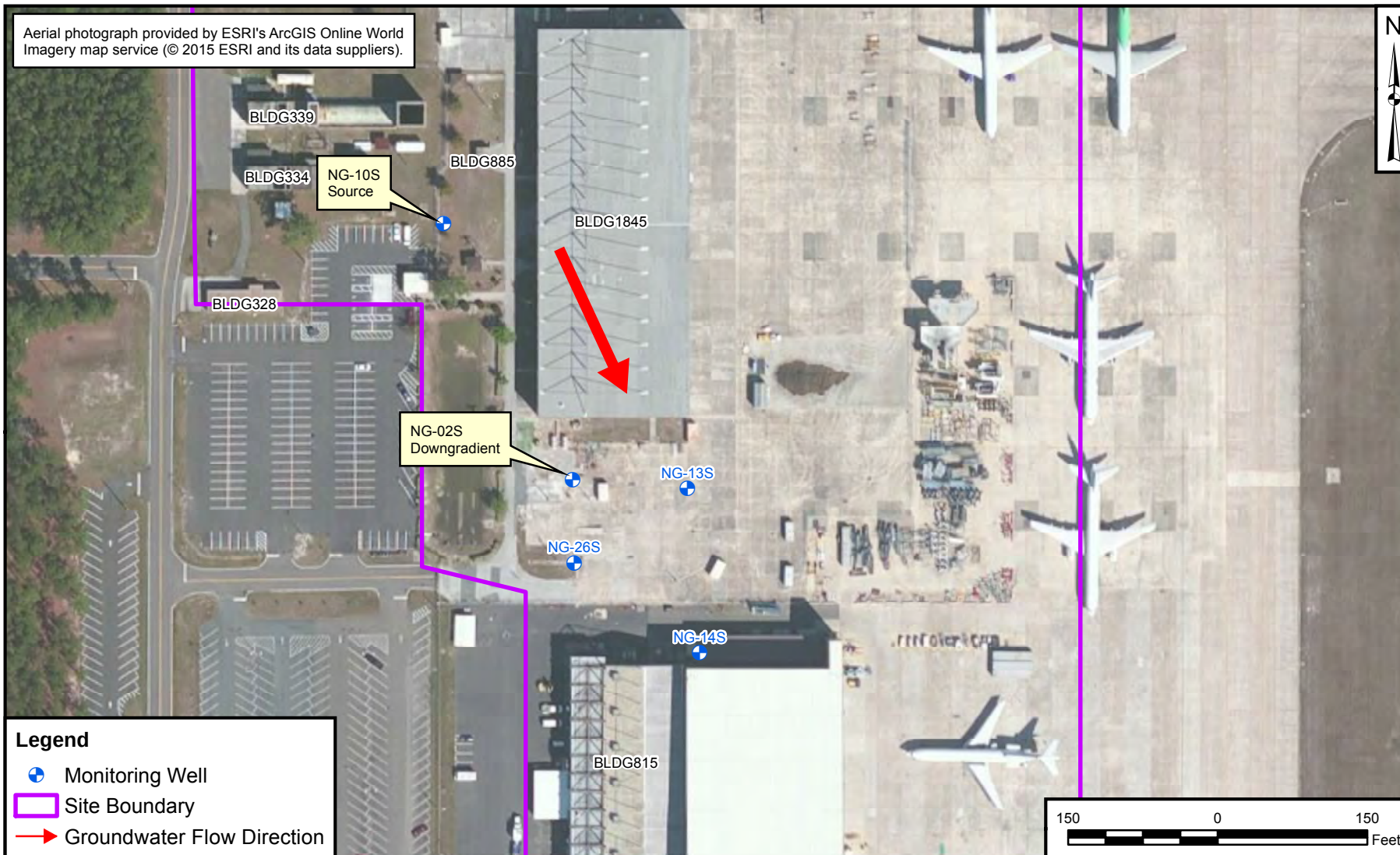
CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-3	





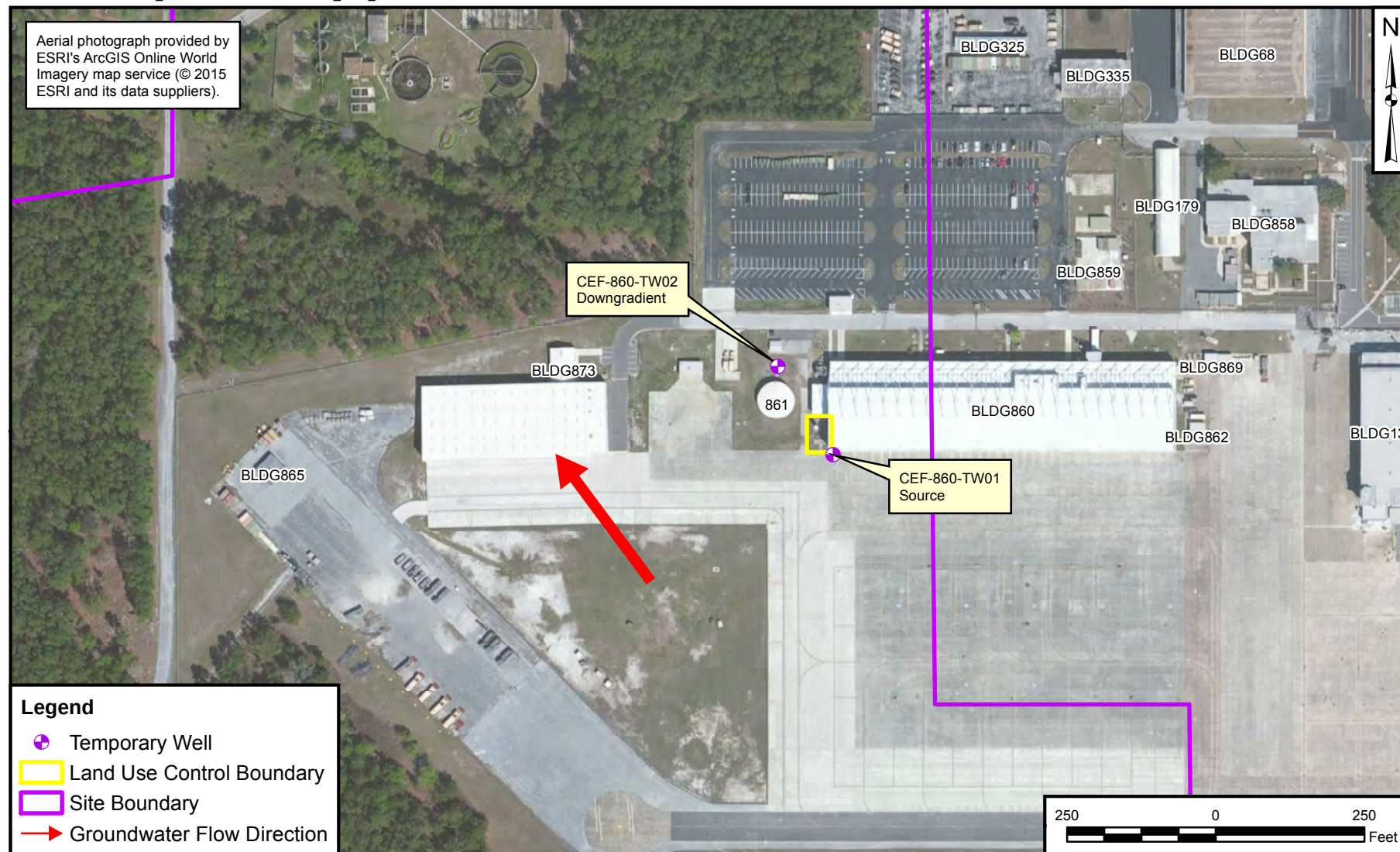






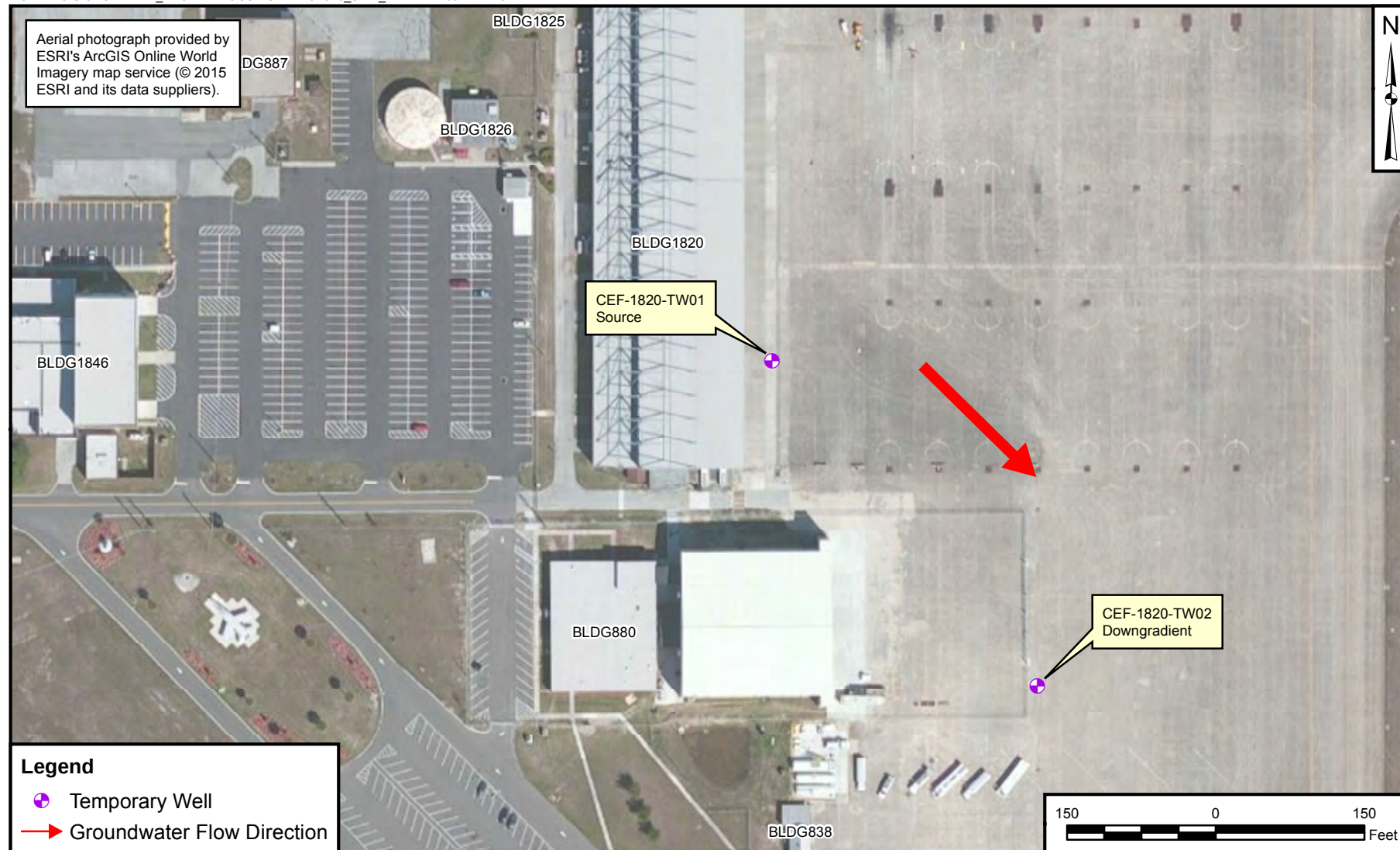
SITE LOCATION
SITE 59
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-8	



SITE LOCATION
BUILDING 860
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-9	



SITE LOCATION
BUILDING 1820
NAS CECIL FIELD
CECIL FIELD, FLORIDA

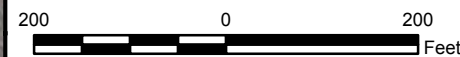
CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-10	

Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2015 ESRI and its data suppliers).



Legend

- Land Use Control Boundary
- ➔ Groundwater Flow Direction



SITE LOCATION
NORTH FUEL FARM
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-11	

Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2015 ESRI and its data suppliers).



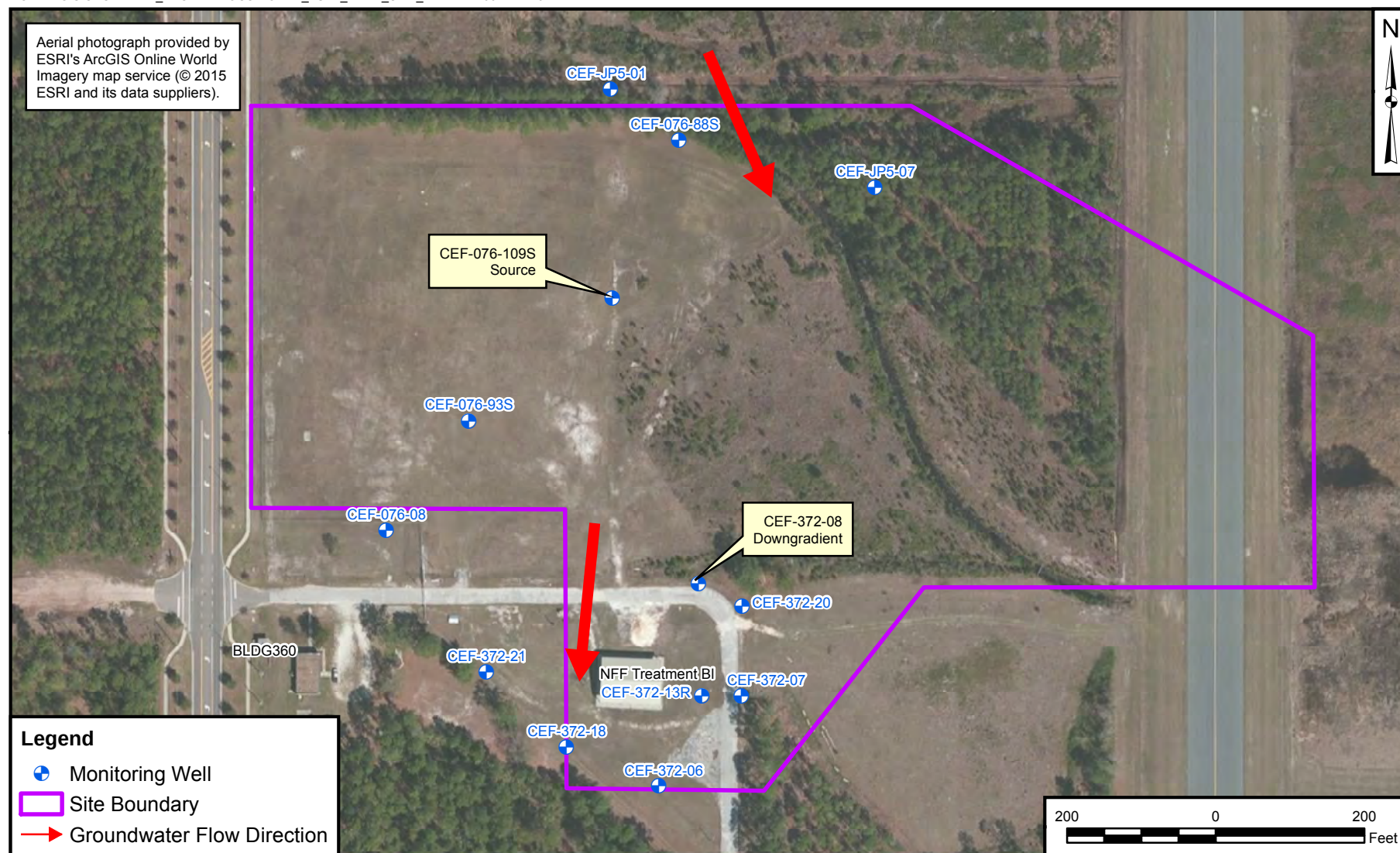
Legend

-  Monitoring Well
-  Groundwater Flow Direction



SITE LOCATION
OCALA CRASH SITE
NAS CECIL FIELD
CECIL FIELD, FLORIDA

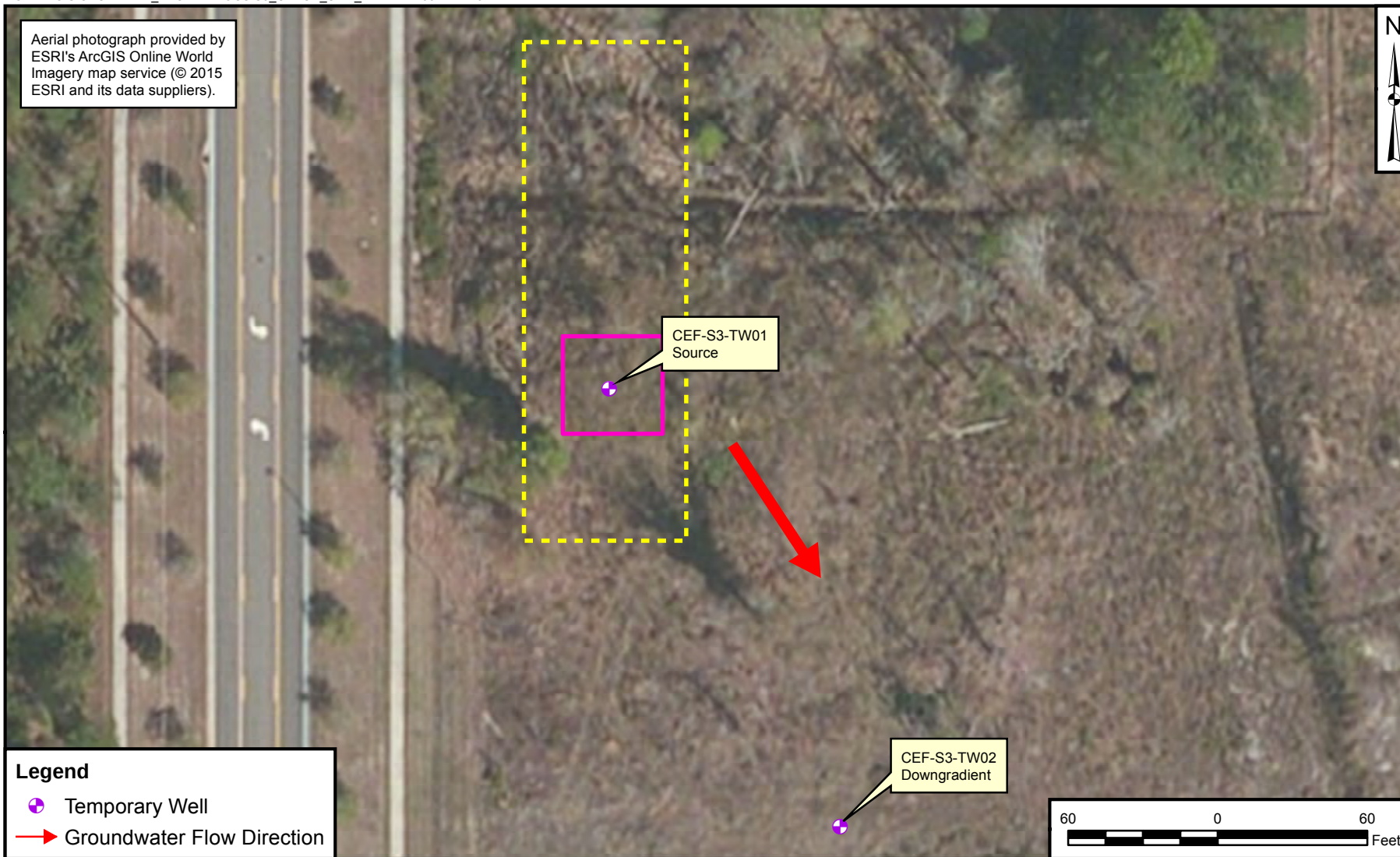
CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-12	



SITE LOCATION
NORTH FUEL FARM
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-13	

Aerial photograph provided by
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Legend

- Temporary Well
- Groundwater Flow Direction



SITE LOCATION
S-3 CRASH SITE
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-14	