

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC6238A

Sampling Date: 05/19/23



Report to:

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

Total number of pages in report: 618



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 unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

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

DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),

AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

This report shall not be reproduced, except in its entirety, without the written approval of SGS.

Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	5
Section 4: Sample Results	6
4.1: FC6238-3A: AF-RHMW17D-WGN01LF-2305W3	7
Section 5: Misc. Forms	8
5.1: Chain of Custody	9
5.2: QC Evaluation: DOD QSM5.x Limits	13
Section 6: MS Semi-volatiles - QC Data Summaries	14
6.1: Method Blank Summary	15
6.2: Blank Spike Summary	19
6.3: Matrix Spike Summary	21
6.4: Duplicate Summary	22
6.5: Injection Standard Area Summaries	23
6.6: TDCA Retention Time Checks	27
6.7: Isotope Dilution Standard Recovery Summaries	30
6.8: Initial and Continuing Calibration Summaries	31
6.9: Run Sequence Reports	51
Section 7: MS Semi-volatiles - Raw Data	53
7.1: Samples	54
7.2: Method Blanks	66
7.3: Blank Spikes	110
7.4: Matrix Spikes	153
7.5: Duplicates	175
7.6: Retention Time Markers	186
7.7: Initial and Continuing Calibrations	212
7.8: Instrument Run Logs	563
7.9: Standard Prep Logs	566
7.10: Sample Prep Logs	618

1

2

3

4

5

6

7



Sample Summary

AECOM, INC.

Job No: FC6238A

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC6238-3A	05/19/23	11:40	NHMY05/20/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2305W3

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC6238A

Site: N6274223F0104 RH Fire Suppression System

Report Date: 7/11/2023 9:05:22 AM

On 05/20/2023, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 3.5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC6238A was assigned to the project.

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

MS Semi-volatiles By Method EPA DRAFT 1633

Matrix: AQ

Batch ID: OP97092

Sample(s) FC6325-1MS, FC6325-2DUP were used as the QC samples indicated.

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

Narrative prepared by:

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

Summary of Hits

Job Number: FC6238A
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/19/23



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

FC6238-3A AF-RHMW17D-WGN01LF-2305W3

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	AF-RHMW17D-WGN01LF-2305W3		
Lab Sample ID:	FC6238-3A	Date Sampled:	05/19/23
Matrix:	AQ - Ground Water	Date Received:	05/20/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q18652.D	1	06/01/23 08:59	MV	05/26/23 10:30	OP97092	S6Q279
Run #2							

	Initial Volume	Final Volume
Run #1	60.0 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
---------	----------	--------	-----	-----	----	-------	---

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	33 U	130	33	16	ng/l	
----------	------------------------	------	-----	----	----	------	--

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	110%		20-150%

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

4.1
4

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



SGS North America Inc - Orlando
Chain of Custody


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

FC6238

COC #: 2305W3AFSG12

SGS - ORLANDO JOB #:

PAGE 1 OF 1

Client / Reporting Information			Project Information			Analytical Information										Matrix Codes			
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System			<div style="text-align: center;">  </div>										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe			
Address: 1001 Bishop St. ste 1600			Street																
City: Honolulu State: HI Zip: 96813			City: Honolulu State: Hawaii																
Project Contact: Katie Abbott Email: katie.abbott@aecom.com Project Manager: Watson Tanji Email: watson.tanji@aecom.com Phone #: 303-796-4624 / 808-954-4512			Project # 60697810 Fax #																
Sampler(s) Name(s) (Printed) Sampler 1: <u>Kate Hosten</u> Sampler 2: <u>Matt Finn</u>			Client Purchase Order #			PFAS EPA Draft 1633										LAB USE ONLY			
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NOISE	HQ	NO3	NO2	NO3	NO3	NO3	DI WATER		MECH		
1	AF-RHMW17S-WGN01LF-2305W3	5/19/23	1030	NH,MY	GW	3			X								X		
2	AF-RHMW17S-WQEB01-2305W3	5/19/23	1115	NH,MY	GW	3			X								X		
Turnaround Time (Business days)			Data Deliverable Information			Comments / Remarks													
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other			Approved By: / Date:			<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S										EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United AWR 016-27919430			
Rush T/A Data Available VIA Email or Lablink			Sample Custody must be documented below each time samples change possession, including courier delivery.																
Relinquished by Sampler/Affiliation 1 Andy Young / AECOM		Date Time: 5/19/23 1425	Received By/Affiliation 2 I Can Sam AECOM		Date Time: 5/19/23 1455	Relinquished By/Affiliation 3 I Can Sam AECOM		Date Time: 5/19/23 1455	Received By/Affiliation 4 I Can Sam AECOM		Date Time: 5/19/23 1455	Received By/Affiliation 5 I Can Sam AECOM		Date Time: 5/19/23 1455	Received By/Affiliation 6 I Can Sam AECOM	Date Time: 5/19/23 1455	Received By/Affiliation 7 I Can Sam AECOM	Date Time: 5/19/23 1455	Received By/Affiliation 8 I Can Sam AECOM
Lab Use Only: Cooler Temperature (s) Celsius (corrected): <u>3.6° (REF)</u>			http://www.sgs.com/en/terms-and-conditions																

PFAS_COCs_ALL.xls Rev 031318

FC6238A: Chain of Custody

Page 1 of 4



SGS Sample Receipt Summary

Job Number: FC6238

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 5/20/2023 2:20:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-27919430

Therm ID: IR 1;

Therm CF: -0.1;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.6);

Cooler Temps (Corrected) °C: Cooler 1: (3.5);

Cooler Information

Y or N

- | | | |
|-----------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Temp criteria achieved | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Cooler temp verification | IR Gun | |
| 5. Cooler media | Ice (Bag) | |

Sample Information

Y or N N/A

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

Trip Blank Information

Y or N N/A

- | | | | |
|--------------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

W or S N/A

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

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____
 Test Strip Lot #s: pH 0-3 _____ 230320 _____ pH 10-12 _____ Other: (Specify) pH 1.0 - 12.0 _____ 222221 _____
 Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: TORYW

Date: 5/20/2023 2:20:00 PM

Reviewer: CD

Date: 5/22/2023

FC6238A: Chain of Custody

Page 4 of 4

5.1
5

QC Evaluation: DOD QSM5.x Limits

Job Number: FC6238A
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/19/23

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

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

* Sample used for QC is not from job FC6238A

5.2
5

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97092-MB	6Q18646.D	1	06/01/23	MV	05/26/23	OP97092	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6238-3A

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	

CAS No.	ID Standard Recoveries	Limits	
	13C4-PFBA	113%	20-150%
	13C5-PFPeA	115%	20-150%
	13C5-PFHxA	112%	20-150%
	13C4-PFHpA	118%	20-150%
	13C8-PFOA	113%	20-150%
	13C9-PFNA	105%	20-150%
	13C6-PFDA	113%	20-150%
	13C7-PFUnDA	114%	20-150%
	13C2-PFDoDA	110%	20-150%
	13C2-PFTeDA	107%	20-150%
	13C3-PFBS	113%	20-150%
	13C3-PFHxS	114%	20-150%
	13C8-PFOS	116%	20-150%
	13C8-FOSA	81%	20-150%
	d3-MeFOSA	82%	20-150%
	d5-EtFOSA	92%	20-150%
	d3-MeFOSAA	115%	20-150%
	d5-EtFOSAA	109%	20-150%
	d7-MeFOSE	74%	20-150%
	d9-EtFOSE	92%	20-150%
	13C2-4:2FTS	127%	20-180%
	13C2-6:2FTS	128%	20-180%
	13C2-8:2FTS	113%	20-180%
	13C3-HFPO-DA	110%	20-150%

Instrument Blank

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97092-BS, OP97092-LLBS, OP97092-DUP1, OP97092-MS, FC5963-8

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	

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

Continuing Calibration Blank

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q279-ICCB	6Q18643.D	1	06/01/23	MV	n/a	n/a	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97092-BS, OP97092-LLBS, OP97092-MB, FC5963-8

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	103% 20-150%
	13C5-PFHxA	105% 20-150%
	13C4-PFHpA	104% 20-150%
	13C8-PFOA	105% 20-150%
	13C9-PFNA	101% 20-150%
	13C6-PFDA	95% 20-150%
	13C7-PFUnDA	104% 20-150%
	13C2-PFDoDA	96% 20-150%
	13C2-PFTeDA	97% 20-150%
	13C3-PFBS	106% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	98% 20-150%
	13C8-FOSA	100% 20-150%
	d3-MeFOSA	96% 20-150%
	d5-EtFOSA	100% 20-150%
	d3-MeFOSAA	99% 20-150%
	d5-EtFOSAA	102% 20-150%
	d7-MeFOSE	100% 20-150%
	d9-EtFOSE	99% 20-150%
	13C2-4:2FTS	110% 20-180%
	13C2-6:2FTS	112% 20-180%
	13C2-8:2FTS	116% 20-180%
	13C3-HFPO-DA	100% 20-150%

Continuing Calibration Blank

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q279-ICCB	6Q18654.D	1	06/01/23	MV	n/a	n/a	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97092-DUP1, OP97092-MS

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	101% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	105% 20-150%
	13C8-PFOA	106% 20-150%
	13C9-PFNA	96% 20-150%
	13C6-PFDA	91% 20-150%
	13C7-PFUnDA	98% 20-150%
	13C2-PFDoDA	95% 20-150%
	13C2-PFTeDA	93% 20-150%
	13C3-PFBS	102% 20-150%
	13C3-PFHxS	105% 20-150%
	13C8-PFOS	100% 20-150%
	13C8-FOSA	102% 20-150%
	d3-MeFOSA	99% 20-150%
	d5-EtFOSA	104% 20-150%
	d3-MeFOSAA	106% 20-150%
	d5-EtFOSAA	102% 20-150%
	d7-MeFOSE	104% 20-150%
	d9-EtFOSE	99% 20-150%
	13C2-4:2FTS	108% 20-180%
	13C2-6:2FTS	110% 20-180%
	13C2-8:2FTS	115% 20-180%
	13C3-HFPO-DA	98% 20-150%

Blank Spike Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97092-LLBS	6Q18645.D	1	06/01/23	MV	05/26/23	OP97092	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6238-3A

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0320	107	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	113%	20-150%
	13C5-PFPeA	118%	20-150%
	13C5-PFHxA	122%	20-150%
	13C4-PFHpA	117%	20-150%
	13C8-PFOA	115%	20-150%
	13C9-PFNA	114%	20-150%
	13C6-PFDA	113%	20-150%
	13C7-PFUnDA	116%	20-150%
	13C2-PFDoDA	115%	20-150%
	13C2-PFTeDA	108%	20-150%
	13C3-PFBS	109%	20-150%
	13C3-PFHxS	109%	20-150%
	13C8-PFOS	114%	20-150%
	13C8-FOSA	80%	20-150%
	d3-MeFOSA	81%	20-150%
	d5-EtFOSA	88%	20-150%
	d3-MeFOSAA	122%	20-150%
	d5-EtFOSAA	110%	20-150%
	d7-MeFOSE	76%	20-150%
	d9-EtFOSE	89%	20-150%
	13C2-4:2FTS	111%	20-180%
	13C2-6:2FTS	118%	20-180%
	13C2-8:2FTS	122%	20-180%
	13C3-HFPO-DA	113%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97092-BS	6Q18644.D	1	06/01/23	MV	05/26/23	OP97092	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6238-3A

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.108	108	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	27%	20-150%
	13C5-PFPeA	104%	20-150%
	13C5-PFHxA	112%	20-150%
	13C4-PFHpA	110%	20-150%
	13C8-PFOA	109%	20-150%
	13C9-PFNA	108%	20-150%
	13C6-PFDA	106%	20-150%
	13C7-PFUnDA	105%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	100%	20-150%
	13C3-PFBS	110%	20-150%
	13C3-PFHxS	106%	20-150%
	13C8-PFOS	119%	20-150%
	13C8-FOSA	87%	20-150%
	d3-MeFOSA	91%	20-150%
	d5-EtFOSA	93%	20-150%
	d3-MeFOSAA	115%	20-150%
	d5-EtFOSAA	111%	20-150%
	d7-MeFOSE	77%	20-150%
	d9-EtFOSE	91%	20-150%
	13C2-4:2FTS	118%	20-180%
	13C2-6:2FTS	108%	20-180%
	13C2-8:2FTS	120%	20-180%
	13C3-HFPO-DA	108%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97092-MS	6Q18656.D	1	06/01/23	MV	05/26/23	OP97092	S6Q279
FC6325-1	6Q18655.D	1	06/01/23	MV	05/26/23	OP97092	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6238-3A

CAS No.	Compound	FC6325-1 ug/l	Spike Q	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015 U	0.0926	0.102	110	40-150

CAS No.	ID Standard Recoveries	MS	FC6325-1	Limits
	13C4-PFBA	76%	101%	20-150%
	13C5-PFPeA	116%	113%	20-150%
	13C5-PFHxA	112%	115%	20-150%
	13C4-PFHpA	116%	115%	20-150%
	13C8-PFOA	118%	115%	20-150%
	13C9-PFNA	113%	109%	20-150%
	13C6-PFDA	113%	112%	20-150%
	13C7-PFUnDA	116%	114%	20-150%
	13C2-PFDoDA	104%	103%	20-150%
	13C2-PFTeDA	98%	100%	20-150%
	13C3-PFBS	107%	117%	20-150%
	13C3-PFHxS	108%	108%	20-150%
	13C8-PFOS	113%	106%	20-150%
	13C8-FOSA	97%	94%	20-150%
	d3-MeFOSA	97%	89%	20-150%
	d5-EtFOSA	100%	91%	20-150%
	d3-MeFOSAA	115%	111%	20-150%
	d5-EtFOSAA	108%	111%	20-150%
	d7-MeFOSE	91%	81%	20-150%
	d9-EtFOSE	104%	91%	20-150%
	13C2-4:2FTS	112%	117%	20-180%
	13C2-6:2FTS	101%	118%	20-180%
	13C2-8:2FTS	115%	124%	20-180%
	13C3-HFPO-DA	114%	111%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97092-DUP1	6Q18658.D	1	06/01/23	MV	05/26/23	OP97092	S6Q279
FC6325-2	6Q18657.D	1	06/01/23	MV	05/26/23	OP97092	S6Q279

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6238-3A

CAS No.	Compound	FC6325-2 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.014 U	ND			nc	30

CAS No.	ID Standard Recoveries	DUP	FC6325-2	Limits
	13C4-PFBA	112%	114%	20-150%
	13C5-PFPeA	121%	119%	20-150%
	13C5-PFHxA	121%	117%	20-150%
	13C4-PFHpA	119%	121%	20-150%
	13C8-PFOA	119%	117%	20-150%
	13C9-PFNA	112%	112%	20-150%
	13C6-PFDA	112%	118%	20-150%
	13C7-PFUnDA	108%	112%	20-150%
	13C2-PFDoDA	98%	108%	20-150%
	13C2-PFTeDA	101%	102%	20-150%
	13C3-PFBS	117%	122%	20-150%
	13C3-PFHxS	113%	116%	20-150%
	13C8-PFOS	117%	113%	20-150%
	13C8-FOSA	91%	97%	20-150%
	d3-MeFOSA	94%	92%	20-150%
	d5-EtFOSA	95%	97%	20-150%
	d3-MeFOSAA	121%	116%	20-150%
	d5-EtFOSAA	115%	106%	20-150%
	d7-MeFOSE	92%	93%	20-150%
	d9-EtFOSE	103%	103%	20-150%
	13C2-4:2FTS	121%	129%	20-180%
	13C2-6:2FTS	122%	124%	20-180%
	13C2-8:2FTS	119%	119%	20-180%
	13C3-HFPO-DA	120%	118%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q279-CC279	Injection Date:	06/01/23
Lab File ID:	6Q18641.D	Injection Time:	06:20
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal ^b	76326	2.81	63211	5.41	101509	7.03	52533	7.54	35697	8.03
Check Std ^c	80817	2.83	66120	5.41	105546	7.03	53000	7.54	37745	8.03
Upper Limit ^d	152652	3.23	126422	5.81	203018	7.43	105066	7.94	71394	8.43
Lower Limit ^e	22898	2.43	18963	5.01	30453	6.63	15760	7.14	10709	7.63

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF ^a
S6Q279-ICCB	76340	2.81	61441	5.41	100813	7.03	51823	7.54	37309	8.01	1
S6Q279-ICCB	76340	2.81	61441	5.41	100813	7.03	51823	7.54	37309	8.01	1
OP97092-BS	63367	2.86	49525	5.42	78049	7.03	41876	7.54	28322	8.03	1
OP97092-LLBS	63104	2.86	48398	5.41	77978	7.03	41800	7.54	27768	8.03	1
OP97092-MB	62328	2.86	49161	5.42	78577	7.03	41515	7.54	28301	8.03	1
ZZZZZZ	59033	2.86	46609	5.42	71547	7.03	39514	7.54	24906	8.03	1
ZZZZZZ	62940	2.86	48153	5.42	71420	7.03	42215	7.54	28192	8.03	1
FC5963-8	62258	2.86	49387	5.42	78600	7.03	44766	7.54	28539	8.03	1
OP97092-DUP2	65044	2.86	49528	5.42	82318	7.03	42521	7.54	30313	8.03	1
FC6238-3A	63563	2.86	50015	5.42	82609	7.03	43382	7.54	29392	8.03	1

- IS 1 = 13C3-PFBA
- IS 2 = 13C2-PFHxA
- IS 3 = 13C4-PFOA
- IS 4 = 13C5-PFNA
- IS 5 = 13C2-PFDA

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

6.5.1
6

Injection Standard Area Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q279-CC279	Injection Date:	06/01/23
Lab File ID:	6Q18641.D	Injection Time:	06:20
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	10927	7.13	18109	8.16
Check Std ^c	11033	7.13	18957	8.16
Upper Limit ^d	21854	7.53	36218	8.56
Lower Limit ^e	3278	6.73	5433	7.76

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q279-ICCB	10560	7.13	18139	8.18	1
S6Q279-ICCB	10560	7.13	18139	8.18	1
OP97092-BS	8622	7.13	13383	8.18	1
OP97092-LLBS	8957	7.13	13830	8.18	1
OP97092-MB	8437	7.13	13735	8.18	1
ZZZZZZ	7967	7.13	13692	8.18	1
ZZZZZZ	7786	7.13	14171	8.18	1
FC5963-8	8528	7.13	14238	8.18	1
OP97092-DUP2	8748	7.13	15304	8.18	1
FC6238-3A	9016	7.13	18422	8.18	1

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

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

6.5.1
6

Injection Standard Area Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q279-CC279	Injection Date:	06/01/23
Lab File ID:	6Q18653.D	Injection Time:	09:14
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal ^b	76326	2.81	63211	5.41	101509	7.03	52533	7.54	35697	8.03
Check Std ^c	80824	2.81	65823	5.41	109869	7.03	55056	7.54	38549	8.03
Upper Limit ^d	152652	3.21	126422	5.81	203018	7.43	105066	7.94	71394	8.43
Lower Limit ^e	22898	2.41	18963	5.01	30453	6.63	15760	7.14	10709	7.63

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF ^a
S6Q279-ICCB	76893	2.81	62187	5.41	100403	7.03	54054	7.54	37284	8.03	1
FC6325-1	63623	2.86	51564	5.42	80743	7.01	43044	7.54	28995	8.03	1
OP97092-MS	63647	2.86	48843	5.42	77126	7.03	40762	7.54	28582	8.03	1
FC6325-2	62364	2.88	49069	5.42	77595	7.03	41888	7.54	27152	8.03	1
OP97092-DUP1	64019	2.86	49091	5.42	78407	7.03	42812	7.54	28950	8.03	1
ZZZZZZ	58528	2.86	46662	5.42	74382	7.03	39680	7.54	26366	8.03	1
ZZZZZZ	70050	2.81	56500	5.41	90195	7.03	49160	7.54	34885	8.03	5
ZZZZZZ	61970	2.81	54020	5.41	75620	7.03	42370	7.54	28250	8.01	10
ZZZZZZ	72143	2.86	56579	5.42	92052	7.03	48343	7.56	32092	8.03	1
ZZZZZZ	67600	2.86	53516	5.42	81996	7.03	45318	7.56	29684	8.03	1

IS 1 = 13C3-PFBA
 IS 2 = 13C2-PFHxA
 IS 3 = 13C4-PFOA
 IS 4 = 13C5-PFNA
 IS 5 = 13C2-PFDA

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

6.5.2
6

Injection Standard Area Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q279-CC279	Injection Date:	06/01/23
Lab File ID:	6Q18653.D	Injection Time:	09:14
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	10927	7.13	18109	8.16
Check Std ^c	11225	7.13	18611	8.18
Upper Limit ^d	21854	7.53	36218	8.58
Lower Limit ^e	3278	6.73	5433	7.78

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q279-ICCB	10612	7.13	17692	8.18	1
FC6325-1	8686	7.13	14538	8.18	1
OP97092-MS	9089	7.13	13726	8.18	1
FC6325-2	8244	7.13	14046	8.18	1
OP97092-DUP1	8877	7.13	13925	8.18	1
ZZZZZZ	8314	7.13	13174	8.18	1
ZZZZZZ	10310	7.12	15165	8.18	5
ZZZZZZ	9140	7.13	16360	8.18	10
ZZZZZZ	9813	7.13	17413	8.18	1
ZZZZZZ	9045	7.13	14907	8.18	1

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

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

6.5.2
6

TDCA Retention Time Check

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.178	--	--
TDCA	6.762	1.416	1.000
TCDCA	6.601	1.577	1.000
TUDCA	5.735	2.443	1.000

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q279-IC279	6Q18585.D	05/31/23	17:01	00:29	Mass Calibration Verification
S6Q279-IC279	6Q18586.D	05/31/23	17:16	00:44	Initial cal 1
S6Q279-IC279	6Q18587.D	05/31/23	17:30	00:58	Initial cal 2
S6Q279-IC279	6Q18588.D	05/31/23	17:45	01:13	Initial cal 3
S6Q279-ICC279	6Q18589.D	05/31/23	17:59	01:27	Initial cal 4
S6Q279-IC279	6Q18590.D	05/31/23	18:14	01:42	Initial cal 5
S6Q279-IC279	6Q18591.D	05/31/23	18:28	01:56	Initial cal 6
S6Q279-IC279	6Q18592.D	05/31/23	18:43	02:11	Initial cal 7
S6Q279-IC279	6Q18593.D	05/31/23	18:57	02:25	Initial cal 8
S6Q279-IBLK	6Q18594.D	05/31/23	19:12	02:40	Instrument Blank
S6Q279-IBLK	6Q18594.D	05/31/23	19:12	02:40	Instrument Blank
S6Q279-ICV279	6Q18595.D	05/31/23	19:26	02:54	Initial cal verification 4
S6Q279-ICV279	6Q18596.D	05/31/23	19:41	03:09	Initial cal verification 20
S6Q279-CC279	6Q18597.D	05/31/23	19:55	03:23	Continuing cal 4
S6Q279-CC279	6Q18598.D	05/31/23	20:10	03:38	Continuing cal 1.0LL
OP97070-BS	6Q18599.D	05/31/23	20:24	03:52	Blank Spike
OP97070-LLBS	6Q18600.D	05/31/23	20:39	04:07	Blank Spike
OP97070-MB	6Q18601.D	05/31/23	20:53	04:21	Method Blank
FC6278-1	6Q18602.D	05/31/23	21:08	04:36	(used for QC only; not part of job FC6238A)
OP97070-MS	6Q18603.D	05/31/23	21:22	04:50	Matrix Spike
ZZZZZZ	6Q18604.D	05/31/23	21:37	05:05	(unrelated sample)
FC6278-3	6Q18605.D	05/31/23	21:51	05:19	(used for QC only; not part of job FC6238A)
OP97070-DUP	6Q18606.D	05/31/23	22:06	05:34	Duplicate
ZZZZZZ	6Q18607.D	05/31/23	22:20	05:48	(unrelated sample)
ZZZZZZ	6Q18608.D	05/31/23	22:35	06:03	(unrelated sample)
S6Q279-CC279	6Q18609.D	05/31/23	22:49	06:17	Continuing cal 4
S6Q279-ICCB	6Q18610.D	05/31/23	23:04	06:32	Continuing Calibration Blank
S6Q279-ICCB	6Q18610.D	05/31/23	23:04	06:32	Continuing Calibration Blank
ZZZZZZ	6Q18611.D	05/31/23	23:18	06:46	(unrelated sample)
OP97024-BS	6Q18612.D	05/31/23	23:32	07:00	Blank Spike
OP97024-LLBS	6Q18613.D	05/31/23	23:47	07:15	Blank Spike
OP97024-MB	6Q18614.D	06/01/23	00:01	07:29	Method Blank
FC6086-1	6Q18615.D	06/01/23	00:16	07:44	(used for QC only; not part of job FC6238A)
OP97024-MS	6Q18616.D	06/01/23	00:30	07:58	Matrix Spike

TDCA Retention Time Check

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP97024-MSD	6Q18617.D	06/01/23	00:45	08:13	Matrix Spike Duplicate
ZZZZZZ	6Q18618.D	06/01/23	00:59	08:27	(unrelated sample)
ZZZZZZ	6Q18619.D	06/01/23	01:14	08:42	(unrelated sample)
ZZZZZZ	6Q18620.D	06/01/23	01:28	08:56	(unrelated sample)
S6Q279-CC279	6Q18621.D	06/01/23	01:43	09:11	Continuing cal 4
S6Q279-ICCB	6Q18622.D	06/01/23	01:57	09:25	Continuing Calibration Blank
S6Q279-ICCB	6Q18622.D	06/01/23	01:57	09:25	Continuing Calibration Blank
ZZZZZZ	6Q18623.D	06/01/23	02:12	09:40	(unrelated sample)
ZZZZZZ	6Q18624.D	06/01/23	02:26	09:54	(unrelated sample)
ZZZZZZ	6Q18625.D	06/01/23	02:41	10:09	(unrelated sample)
ZZZZZZ	6Q18626.D	06/01/23	02:55	10:23	(unrelated sample)
ZZZZZZ	6Q18627.D	06/01/23	03:10	10:38	(unrelated sample)
ZZZZZZ	6Q18628.D	06/01/23	03:24	10:52	(unrelated sample)
S6Q279-CC279	6Q18633.D	06/01/23	04:37	12:05	Continuing cal 4
S6Q279-ICCB	6Q18634.D	06/01/23	04:51	12:19	Continuing Calibration Blank
S6Q279-ICCB	6Q18634.D	06/01/23	04:51	12:19	Continuing Calibration Blank
S6Q279-CC279	6Q18641.D	06/01/23	06:20	13:48	Continuing cal 4
S6Q279-CC279	6Q18642.D	06/01/23	06:35	14:03	Continuing cal 1.0LL
S6Q279-ICCB	6Q18643.D	06/01/23	06:49	14:17	Continuing Calibration Blank
S6Q279-ICCB	6Q18643.D	06/01/23	06:49	14:17	Continuing Calibration Blank
OP97092-BS	6Q18644.D	06/01/23	07:03	14:31	Blank Spike
OP97092-LLBS	6Q18645.D	06/01/23	07:18	14:46	Blank Spike
OP97092-MB	6Q18646.D	06/01/23	07:32	15:00	Method Blank
ZZZZZZ	6Q18647.D	06/01/23	07:47	15:15	(unrelated sample)
ZZZZZZ	6Q18648.D	06/01/23	08:01	15:29	(unrelated sample)
FC5963-8	6Q18650.D	06/01/23	08:30	15:58	(used for QC only; not part of job FC6238A)
OP97092-DUP2	6Q18651.D	06/01/23	08:45	16:13	Duplicate
FC6238-3A	6Q18652.D	06/01/23	08:59	16:27	AF-RHMW17D-WGN01LF-2305W3
S6Q279-CC279	6Q18653.D	06/01/23	09:14	16:42	Continuing cal 4
S6Q279-ICCB	6Q18654.D	06/01/23	09:28	16:56	Continuing Calibration Blank
FC6325-1	6Q18655.D	06/01/23	09:43	17:11	(used for QC only; not part of job FC6238A)
OP97092-MS	6Q18656.D	06/01/23	09:57	17:25	Matrix Spike
FC6325-2	6Q18657.D	06/01/23	10:12	17:40	(used for QC only; not part of job FC6238A)
OP97092-DUP1	6Q18658.D	06/01/23	10:26	17:54	Duplicate
ZZZZZZ	6Q18659.D	06/01/23	10:41	18:09	(unrelated sample)
ZZZZZZ	6Q18660.D	06/01/23	10:55	18:23	(unrelated sample)
ZZZZZZ	6Q18661.D	06/01/23	11:10	18:38	(unrelated sample)
ZZZZZZ	6Q18662.D	06/01/23	11:24	18:52	(unrelated sample)
ZZZZZZ	6Q18663.D	06/01/23	11:39	19:07	(unrelated sample)
S6Q279-CC279	6Q18665.D	06/01/23	12:08	19:36	Continuing cal 4
S6Q279-ICCB	6Q18666.D	06/01/23	12:22	19:50	Continuing Calibration Blank
S6Q279-ICCB	6Q18666.D	06/01/23	12:22	19:50	Continuing Calibration Blank
ZZZZZZ	6Q18667.D	06/01/23	12:37	20:05	(unrelated sample)
ZZZZZZ	6Q18668.D	06/01/23	12:51	20:19	(unrelated sample)

6.6.1

6

TDCA Retention Time Check

Job Number: FC6238A
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

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

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q18669.D	06/01/23	13:06	20:34	(unrelated sample)
S6Q279-ECC279	6Q18670.D	06/01/23	13:20	20:48	Ending cal 4
S6Q279-ICCB	6Q18671.D	06/01/23	13:35	21:03	Continuing Calibration Blank
S6Q279-ICCB	6Q18671.D	06/01/23	13:35	21:03	Continuing Calibration Blank

6.6.1

6

Isotope Dilution Standard Recovery Summary

Job Number: FC6238A
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633	Matrix: AQ
------------------------	------------

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
FC6238-3A	6Q18652.D	110
FC5963-8	6Q18650.D	79
OP97092-BS	6Q18644.D	27
OP97092-DUP1	6Q18658.D	112
OP97092-LLBS	6Q18645.D	113
OP97092-MB	6Q18646.D	113
OP97092-MS	6Q18656.D	76
S6Q279-IBLK	6Q18594.D	100
S6Q279-ICCB	6Q18643.D	100
S6Q279-ICCB	6Q18654.D	99

Isotope Dilution Standards	Recovery Limits
S1 = 13C4-PFBA	20-150%

Initial Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Initial Calibration Report

Method Path	Method File	Batch Name	Last Calib Update	Calibration Files	Level Name	1	2	3	4	5	6	7	8	Avg RF	%RSD
D:\MassHunter\Methods	1633_053123_S6Q279_quantmethod.xml	D:\MassHunter\Data\053123_1633_S6Q279	6/1/2023 10:30:25 AM	D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d	1	0.3753	0.3334	0.3219	0.3137	0.3170	0.3291	0.3376	0.3206	0.3311	5.928
D:\MassHunter\Data\053123_1633_S6Q279	6Q18587.d	D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d	6/1/2023 10:30:25 AM	D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d	2	0.7081	0.6363	0.6350	0.6089	0.6049	0.6302	0.6425	0.6190	0.6356	5.068
D:\MassHunter\Data\053123_1633_S6Q279	6Q18588.d	D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d	6/1/2023 10:30:25 AM	D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d	3	0.0863	0.0769	0.0759	0.0726	0.0726	0.0764	0.0777	0.0764	0.0769	5.562
D:\MassHunter\Data\053123_1633_S6Q279	6Q18589.d	D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d	6/1/2023 10:30:25 AM	D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d	4	1.2962	1.2068	1.1733	1.1429	1.1467	1.1930	1.1954	1.1530	1.2009	6.870
D:\MassHunter>Data\053123_1633_S6Q279	6Q18590.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18591.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18592.d	5	0.9475	0.8203	0.8090	0.7809	0.7790	0.8137	0.8106	0.7773	0.8173	6.776
D:\MassHunter>Data\053123_1633_S6Q279	6Q18591.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18592.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18593.d	6	0.1255	0.1045	0.1003	0.0957	0.0984	0.0992	0.0981	0.0958	0.1022	9.605
D:\MassHunter>Data\053123_1633_S6Q279	6Q18592.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18593.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18594.d	7	0.9569	0.8366	0.7860	0.8138	0.8001	0.8241	0.8423	0.8553	0.8394	6.266
D:\MassHunter>Data\053123_1633_S6Q279	6Q18593.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18594.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18595.d	8	1.1788	1.0306	1.0200	1.0337	1.0745	1.0758	1.0553	1.0552	1.0655	4.699
D:\MassHunter>Data\053123_1633_S6Q279	6Q18594.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18595.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18596.d	9	0.1801	0.1551	0.1462	0.1433	0.1409	0.1457	0.1500	0.1465	0.1510	8.295
D:\MassHunter>Data\053123_1633_S6Q279	6Q18595.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18596.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18597.d	10	0.1170	0.1068	0.0947	0.1010	0.1022	0.1020	0.1045	0.0991	0.1034	6.340
D:\MassHunter>Data\053123_1633_S6Q279	6Q18596.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18597.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18598.d	11	1.2923	1.0943	1.0924	1.0209	1.0772	1.0930	1.0798	1.1005	1.1063	7.165
D:\MassHunter>Data\053123_1633_S6Q279	6Q18597.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18598.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18599.d	12	1.1279	1.0893	1.0165	1.0390	1.0020	1.0999	1.0964	1.0686	1.0674	4.148
D:\MassHunter>Data\053123_1633_S6Q279	6Q18598.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18599.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18600.d	13	1.0714	0.8740	0.8546	0.7861	0.8477	0.8845	0.8665	0.9012	0.8857	9.309
D:\MassHunter>Data\053123_1633_S6Q279	6Q18599.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18601.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18602.d	14	1.7245	1.4816	1.2708	1.4351	1.3572	1.4333	1.4380	1.4541	1.4493	8.948
D:\MassHunter>Data\053123_1633_S6Q279	6Q18600.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18601.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18602.d	15	0.9140	0.8348	0.7848	0.7448	0.8124	0.8179	0.8375	0.7519	0.8122	6.658
D:\MassHunter>Data\053123_1633_S6Q279	6Q18601.d	D:\MassHunter>Data\053123_1633_S6Q279\6Q18602.d	6/1/2023 10:30:25 AM	D:\MassHunter>Data\053123_1633_S6Q279\6Q18603.d	16										

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

Page 1 of 4



Initial Calibration Summary

Job Number: FC6238A
 Account: AECOM AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Initial Calibration Report

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

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

Page 2 of 4

Initial Calibration Summary

Job Number: FC6238A
 Account: AECOM AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Initial Calibration Report

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

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

Initial Calibration Summary

Job Number: FC6238A
 Account: AECOM AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

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

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

Initial Calibration Verification

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Continuing Calibration Report

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

Level ID: Calibration File

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

Data File: 6Q18595
 Type : QC
 Level : 4

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

Initial Calibration Verification

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

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

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Continuing Calibration Report

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

Level ID: Calibration File

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

Data File: 6Q18596
 Type : QC
 Level : 20

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

Initial Calibration Verification

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

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

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Continuing Calibration Report

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

Level ID: Calibration File

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

Data File: 6Q18597
 Type : QC
 Level : 4

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

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

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

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

Continuing Calibration Report

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

Level ID: Calibration File

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

Data File: 6Q18598
 Type : QC
 Level : 1

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

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

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

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

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18641.D

Continuing Calibration Report

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

Level ID: Calibration File

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

Data File: 6Q18641
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.787	15.7	115.7
13C2-6:2FTS	5.000	5.574	11.5	111.5
13C2-8:2FTS	5.000	5.490	9.8	109.8
13C2-PFDoDA	1.250	1.287	2.9	102.9
13C2-PFTeDA	1.250	1.234	-1.3	98.7
13C3-PFBS	2.500	2.564	2.6	102.6
13C3-PFHxS	2.500	2.619	4.7	104.7
13C4-PFBA	10.000	10.059	0.6	100.6
13C4-PFHpA	2.500	2.581	3.3	103.3
13C5-PFHxA	2.500	2.456	-1.8	98.2
13C5-PFPeA	5.000	5.039	0.8	100.8
13C6-PFDA	1.250	1.257	0.6	100.6
13C7-PFUnDA	1.250	1.247	-0.2	99.8
13C8-FOSA	2.500	2.596	3.8	103.8
13C8-PFOA	2.500	2.562	2.5	102.5
13C8-PFOS	2.500	2.404	-3.8	96.2
13C9-PFNA	1.250	1.291	3.3	103.3
4:2FTS	9.375	8.810	-6.0	94.0
6:2FTS	9.500	8.851	-6.8	93.2
8:2FTS	9.600	9.583	-0.2	99.8
d3-MeFOSAA	5.000	4.567	-8.7	91.3
EtFOSAA	2.500	2.529	1.2	101.2
FOSA	2.500	2.270	-9.2	90.8
MeFOSAA	2.500	2.778	11.1	111.1
PFBA	10.000	9.575	-4.2	95.8
PFBS	2.218	2.087	-5.9	94.1
PFDA	2.500	2.448	-2.1	97.9
PFDoDA	2.500	2.306	-7.8	92.2
PFDS	2.413	2.354	-2.4	97.6
PFHpA	2.500	2.266	-9.4	90.6
PFHpS	2.383	2.365	-0.8	99.2
PFHxA	2.500	2.376	-5.0	95.0
PFHxS	2.285	2.124	-7.1	92.9
PFNA	2.500	2.385	-4.6	95.4
PFNS	2.405	2.236	-7.0	93.0
PFOA	2.500	2.330	-6.8	93.2
PFOS	2.320	2.278	-1.8	98.2

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18641.D

PFPeA	5.000	4.760	-4.8	95.2
PFPeS	2.353	2.224	-5.5	94.5
PFTeDA	2.500	2.432	-2.7	97.3
PFTTrDA	2.500	2.383	-4.7	95.3
PFUnDA	2.500	2.443	-2.3	97.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.510	-4.5	95.5
13C3-HFPO-DA	10.000	9.720	-2.8	97.2
9C1-PF3ONS	4.675	4.497	-3.8	96.2
ADONA	4.725	4.707	-0.4	99.6
HFPO-DA	5.000	4.746	-5.1	94.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.766	-5.7	94.3
5:3FTCA	62.400	59.921	-4.0	96.0
7:3FTCA	62.400	62.181	-0.4	99.6
d3-MeFOSA	2.500	2.423	-3.1	96.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.638	-7.2	92.8
EtFOSE	12.500	11.663	-6.7	93.3
MeFOSA	5.000	4.914	-1.7	98.3
MeFOSE	12.500	11.975	-4.2	95.8
PFDoDS	2.425	2.342	-3.4	96.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.760	-4.8	95.2
d7-MeFOSE	25.000	25.277	1.1	101.1
d9-EtFOSE	25.000	25.763	3.1	103.1
d5-EtFOSA	2.500	2.566	2.6	102.6
NFDHA	5.000	4.788	-4.2	95.8
PFMBA	5.000	4.801	-4.0	96.0
PFMPA	5.000	4.781	-4.4	95.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.399	-1.2	98.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18642.D

Continuing Calibration Report

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

Level ID: Calibration File

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

Data File: 6Q18642
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.576	11.5	111.5
13C2-6:2FTS	5.000	5.617	12.3	112.3
13C2-8:2FTS	5.000	5.122	2.4	102.4
13C2-PFDoDA	1.250	1.234	-1.3	98.7
13C2-PFTeDA	1.250	1.258	0.7	100.7
13C3-PFBS	2.500	2.538	1.5	101.5
13C3-PFHxS	2.500	2.474	-1.0	99.0
13C4-PFBA	10.000	9.994	-0.1	99.9
13C4-PFHpA	2.500	2.649	6.0	106.0
13C5-PFHxA	2.500	2.597	3.9	103.9
13C5-PFPeA	5.000	5.101	2.0	102.0
13C6-PFDA	1.250	1.267	1.3	101.3
13C7-PFUnDA	1.250	1.335	6.8	106.8
13C8-FOSA	2.500	2.451	-1.9	98.1
13C8-PFOA	2.500	2.619	4.7	104.7
13C8-PFOS	2.500	2.412	-3.5	96.5
13C9-PFNA	1.250	1.316	5.2	105.2
4:2FTS	0.750	0.894	19.1	119.1
6:2FTS	0.760	0.866	13.9	113.9
8:2FTS	0.768	0.951	23.9	123.9
d3-MeFOSAA	5.000	4.811	-3.8	96.2
EtFOSAA	0.200	0.238	19.2	119.2
FOSA	0.200	0.220	10.2	110.2
MeFOSAA	0.200	0.242	21.0	121.0
PFBA	0.800	0.919	14.9	114.9
PFBS	0.177	0.216	21.9	121.9
PFDA	0.200	0.211	5.6	105.6
PFDoDA	0.200	0.221	10.7	110.7
PFDS	0.193	0.206	6.7	106.7
PFHpA	0.200	0.219	9.3	109.3
PFHpS	0.191	0.228	19.2	119.2
PFHxA	0.200	0.215	7.3	107.3
PFHxS	0.183	0.213	16.5	116.5
PFNA	0.200	0.204	1.9	101.9
PFNS	0.192	0.207	7.9	107.9
PFOA	0.200	0.218	9.2	109.2
PFOS	0.186	0.220	18.2	118.2

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18642.D

PFPeA	0.400	0.475	18.8	118.8
PFPeS	0.188	0.226	20.1	120.1
PFTeDA	0.200	0.236	17.8	117.8
PFTTrDA	0.200	0.227	13.7	113.7
PFUnDA	0.200	0.207	3.5	103.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.378	0.442	16.8	116.8
13C3-HFPO-DA	10.000	9.958	-0.4	99.6
9C1-PF3ONS	0.367	0.438	19.1	119.1
ADONA	0.378	0.476	25.9	125.9
HFPO-DA	0.400	0.430	7.6	107.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.134	13.5	113.5
5:3FTCA	4.992	5.900	18.2	118.2
7:3FTCA	4.992	5.954	19.3	119.3
d3-MeFOSA	2.500	2.320	-7.2	92.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.462	15.5	115.5
EtFOSE	1.000	1.184	18.4	118.4
MeFOSA	0.400	0.478	19.5	119.5
MeFOSE	1.000	1.138	13.8	113.8
PFDoDS	0.194	0.223	15.1	115.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.926	-1.5	98.5
d7-MeFOSE	25.000	23.636	-5.5	94.5
d9-EtFOSE	25.000	23.225	-7.1	92.9
d5-EtFOSA	2.500	2.465	-1.4	98.6
NFDHA	0.400	0.452	12.9	112.9
PFMBA	0.400	0.448	11.9	111.9
PFMPA	0.400	0.451	12.6	112.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.392	10.2	110.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18653.D

Continuing Calibration Report

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

Level ID: Calibration File

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

Data File: 6Q18653
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.551	11.0	111.0
13C2-6:2FTS	5.000	5.468	9.4	109.4
13C2-8:2FTS	5.000	5.429	8.6	108.6
13C2-PFDoDA	1.250	1.184	-5.3	94.7
13C2-PFTeDA	1.250	1.256	0.4	100.4
13C3-PFBS	2.500	2.578	3.1	103.1
13C3-PFHxS	2.500	2.584	3.3	103.3
13C4-PFBA	10.000	10.062	0.6	100.6
13C4-PFHpA	2.500	2.556	2.2	102.2
13C5-PFHxA	2.500	2.580	3.2	103.2
13C5-PFPeA	5.000	5.059	1.2	101.2
13C6-PFDA	1.250	1.250	0.0	100.0
13C7-PFUnDA	1.250	1.249	0.0	100.0
13C8-FOSA	2.500	2.486	-0.6	99.4
13C8-PFOA	2.500	2.431	-2.7	97.3
13C8-PFOS	2.500	2.540	1.6	101.6
13C9-PFNA	1.250	1.316	5.3	105.3
4:2FTS	9.375	8.760	-6.6	93.4
6:2FTS	9.500	8.951	-5.8	94.2
8:2FTS	9.600	8.518	-11.3	88.7
d3-MeFOSAA	5.000	4.903	-1.9	98.1
EtFOSAA	2.500	2.312	-7.5	92.5
FOSA	2.500	2.341	-6.4	93.6
MeFOSAA	2.500	2.566	2.7	102.7
PFBA	10.000	9.668	-3.3	96.7
PFBS	2.218	2.048	-7.7	92.3
PFDA	2.500	2.376	-5.0	95.0
PFDoDA	2.500	2.442	-2.3	97.7
PFDS	2.413	2.179	-9.7	90.3
PFHpA	2.500	2.283	-8.7	91.3
PFHpS	2.383	2.170	-8.9	91.1
PFHxA	2.500	2.297	-8.1	91.9
PFHxS	2.285	2.060	-9.9	90.1
PFNA	2.500	2.259	-9.6	90.4
PFNS	2.405	2.268	-5.7	94.3
PFOA	2.500	2.295	-8.2	91.8
PFOS	2.320	2.122	-8.5	91.5

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18653.D

PFPeA	5.000	4.744	-5.1	94.9
PFPeS	2.353	2.177	-7.5	92.5
PFTeDA	2.500	2.368	-5.3	94.7
PFTTrDA	2.500	2.464	-1.4	98.6
PFUnDA	2.500	2.229	-10.8	89.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.485	-5.1	94.9
13C3-HFPO-DA	10.000	10.168	1.7	101.7
9C1-PF3ONS	4.675	4.312	-7.8	92.2
ADONA	4.725	4.372	-7.5	92.5
HFPO-DA	5.000	4.546	-9.1	90.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.783	-5.6	94.4
5:3FTCA	62.400	57.165	-8.4	91.6
7:3FTCA	62.400	62.037	-0.6	99.4
d3-MeFOSA	2.500	2.409	-3.6	96.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.678	-6.4	93.6
EtFOSE	12.500	11.816	-5.5	94.5
MeFOSA	5.000	5.029	0.6	100.6
MeFOSE	12.500	11.768	-5.9	94.1
PFDoDS	2.425	2.271	-6.4	93.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.445	8.9	108.9
d7-MeFOSE	25.000	25.559	2.2	102.2
d9-EtFOSE	25.000	25.461	1.8	101.8
d5-EtFOSA	2.500	2.581	3.2	103.2
NFDHA	5.000	4.782	-4.4	95.6
PFMBA	5.000	4.693	-6.1	93.9
PFMPA	5.000	4.818	-3.6	96.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.148	-6.8	93.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18665.D

Continuing Calibration Report

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

Level ID: Calibration File

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

Data File: 6Q18665
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.197	3.9	103.9
13C2-6:2FTS	5.000	5.097	1.9	101.9
13C2-8:2FTS	5.000	5.133	2.7	102.7
13C2-PFDoDA	1.250	1.293	3.4	103.4
13C2-PFTeDA	1.250	1.320	5.6	105.6
13C3-PFBS	2.500	2.510	0.4	100.4
13C3-PFHxS	2.500	2.414	-3.4	96.6
13C4-PFBA	10.000	9.967	-0.3	99.7
13C4-PFHpA	2.500	2.620	4.8	104.8
13C5-PFHxA	2.500	2.492	-0.3	99.7
13C5-PFPeA	5.000	5.011	0.2	100.2
13C6-PFDA	1.250	1.346	7.6	107.6
13C7-PFUnDA	1.250	1.368	9.5	109.5
13C8-FOSA	2.500	2.428	-2.9	97.1
13C8-PFOA	2.500	2.547	1.9	101.9
13C8-PFOS	2.500	2.451	-2.0	98.0
13C9-PFNA	1.250	1.239	-0.9	99.1
4:2FTS	9.375	9.205	-1.8	98.2
6:2FTS	9.500	9.692	2.0	102.0
8:2FTS	9.600	9.527	-0.8	99.2
d3-MeFOSAA	5.000	4.926	-1.5	98.5
EtFOSAA	2.500	2.424	-3.0	97.0
FOSA	2.500	2.357	-5.7	94.3
MeFOSAA	2.500	2.595	3.8	103.8
PFBA	10.000	9.684	-3.2	96.8
PFBS	2.218	2.067	-6.8	93.2
PFDA	2.500	2.365	-5.4	94.6
PFDoDA	2.500	2.359	-5.6	94.4
PFDS	2.413	2.222	-7.9	92.1
PFHpA	2.500	2.243	-10.3	89.7
PFHpS	2.383	2.254	-5.4	94.6
PFHxA	2.500	2.426	-3.0	97.0
PFHxS	2.285	2.274	-0.5	99.5
PFNA	2.500	2.390	-4.4	95.6
PFNS	2.405	2.196	-8.7	91.3
PFOA	2.500	2.260	-9.6	90.4
PFOS	2.320	2.129	-8.2	91.8

Continuing Calibration Summary

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18665.D

PFPeA	5.000	4.773	-4.5	95.5
PFPeS	2.353	2.248	-4.5	95.5
PFTeDA	2.500	2.435	-2.6	97.4
PFTTrDA	2.500	2.470	-1.2	98.8
PFUnDA	2.500	2.229	-10.9	89.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.554	-3.6	96.4
13C3-HFPO-DA	10.000	9.752	-2.5	97.5
9C1-PF3ONS	4.675	4.643	-0.7	99.3
ADONA	4.725	4.489	-5.0	95.0
HFPO-DA	5.000	4.920	-1.6	98.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.805	-5.4	94.6
5:3FTCA	62.400	59.342	-4.9	95.1
7:3FTCA	62.400	60.144	-3.6	96.4
d3-MeFOSA	2.500	2.348	-6.1	93.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.836	-3.3	96.7
EtFOSE	12.500	11.985	-4.1	95.9
MeFOSA	5.000	4.852	-3.0	97.0
MeFOSE	12.500	11.814	-5.5	94.5
PFDoDS	2.425	2.265	-6.6	93.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.109	2.2	102.2
d7-MeFOSE	25.000	24.665	-1.3	98.7
d9-EtFOSE	25.000	24.467	-2.1	97.9
d5-EtFOSA	2.500	2.444	-2.2	97.8
NFDHA	5.000	4.724	-5.5	94.5
PFMBA	5.000	4.724	-5.5	94.5
PFMPA	5.000	4.775	-4.5	95.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.255	-4.4	95.6

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q279	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
----------------	------------------------	-----------------------

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q279-RT	6Q18583.D	05/31/23 16:32	n/a	Retention Time Marker
S6Q279-RT	6Q18584.D	05/31/23 16:47	n/a	Retention Time Marker
S6Q279-IC279	6Q18585.D	05/31/23 17:01	n/a	Mass Calibration Verification
S6Q279-IC279	6Q18586.D	05/31/23 17:16	n/a	Initial cal 1
S6Q279-IC279	6Q18587.D	05/31/23 17:30	n/a	Initial cal 2
S6Q279-IC279	6Q18588.D	05/31/23 17:45	n/a	Initial cal 3
S6Q279-ICC279	6Q18589.D	05/31/23 17:59	n/a	Initial cal 4
S6Q279-IC279	6Q18590.D	05/31/23 18:14	n/a	Initial cal 5
S6Q279-IC279	6Q18591.D	05/31/23 18:28	n/a	Initial cal 6
S6Q279-IC279	6Q18592.D	05/31/23 18:43	n/a	Initial cal 7
S6Q279-IC279	6Q18593.D	05/31/23 18:57	n/a	Initial cal 8
S6Q279-IBLK	6Q18594.D	05/31/23 19:12	n/a	Instrument Blank
S6Q279-IBLK	6Q18594.D	05/31/23 19:12	n/a	Instrument Blank
S6Q279-ICV279	6Q18595.D	05/31/23 19:26	n/a	Initial cal verification 4
S6Q279-ICV279	6Q18596.D	05/31/23 19:41	n/a	Initial cal verification 20
S6Q279-CC279	6Q18597.D	05/31/23 19:55	n/a	Continuing cal 4
S6Q279-CC279	6Q18598.D	05/31/23 20:10	n/a	Continuing cal 1.0LL
OP97070-BS	6Q18599.D	05/31/23 20:24	OP97070	Blank Spike
OP97070-LLBS	6Q18600.D	05/31/23 20:39	OP97070	Blank Spike
OP97070-MB	6Q18601.D	05/31/23 20:53	OP97070	Method Blank
FC6278-1	6Q18602.D	05/31/23 21:08	OP97070	(used for QC only; not part of job FC6238A)
OP97070-MS	6Q18603.D	05/31/23 21:22	OP97070	Matrix Spike
ZZZZZZ	6Q18604.D	05/31/23 21:37	OP97070	(unrelated sample)
FC6278-3	6Q18605.D	05/31/23 21:51	OP97070	(used for QC only; not part of job FC6238A)
OP97070-DUP	6Q18606.D	05/31/23 22:06	OP97070	Duplicate
ZZZZZZ	6Q18607.D	05/31/23 22:20	OP97070	(unrelated sample)
ZZZZZZ	6Q18608.D	05/31/23 22:35	OP97070	(unrelated sample)
S6Q279-CC279	6Q18609.D	05/31/23 22:49	n/a	Continuing cal 4
S6Q279-ICCB	6Q18610.D	05/31/23 23:04	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18610.D	05/31/23 23:04	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18611.D	05/31/23 23:18	OP97070	(unrelated sample)
OP97024-BS	6Q18612.D	05/31/23 23:32	OP97024	Blank Spike
OP97024-LLBS	6Q18613.D	05/31/23 23:47	OP97024	Blank Spike
OP97024-MB	6Q18614.D	06/01/23 00:01	OP97024	Method Blank
FC6086-1	6Q18615.D	06/01/23 00:16	OP97024	(used for QC only; not part of job FC6238A)
OP97024-MS	6Q18616.D	06/01/23 00:30	OP97024	Matrix Spike
OP97024-MSD	6Q18617.D	06/01/23 00:45	OP97024	Matrix Spike Duplicate
ZZZZZZ	6Q18618.D	06/01/23 00:59	OP97024	(unrelated sample)
ZZZZZZ	6Q18619.D	06/01/23 01:14	OP97024	(unrelated sample)
ZZZZZZ	6Q18620.D	06/01/23 01:28	OP97024	(unrelated sample)
S6Q279-CC279	6Q18621.D	06/01/23 01:43	n/a	Continuing cal 4
S6Q279-ICCB	6Q18622.D	06/01/23 01:57	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18622.D	06/01/23 01:57	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18623.D	06/01/23 02:12	OP97024	(unrelated sample)
ZZZZZZ	6Q18624.D	06/01/23 02:26	OP97024	(unrelated sample)
ZZZZZZ	6Q18625.D	06/01/23 02:41	OP97024	(unrelated sample)

Run Sequence Report

Job Number: FC6238A
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q279	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
----------------	------------------------	-----------------------

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	6Q18626.D	06/01/23 02:55	OP97024	(unrelated sample)
ZZZZZZ	6Q18627.D	06/01/23 03:10	OP97024	(unrelated sample)
ZZZZZZ	6Q18628.D	06/01/23 03:24	OP97024	(unrelated sample)
S6Q279-CC279	6Q18633.D	06/01/23 04:37	n/a	Continuing cal 4
S6Q279-ICCB	6Q18634.D	06/01/23 04:51	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18634.D	06/01/23 04:51	n/a	Continuing Calibration Blank
S6Q279-CC279	6Q18641.D	06/01/23 06:20	n/a	Continuing cal 4
S6Q279-CC279	6Q18642.D	06/01/23 06:35	n/a	Continuing cal 1.0LL
S6Q279-ICCB	6Q18643.D	06/01/23 06:49	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18643.D	06/01/23 06:49	n/a	Continuing Calibration Blank
OP97092-BS	6Q18644.D	06/01/23 07:03	OP97092	Blank Spike
OP97092-LLBS	6Q18645.D	06/01/23 07:18	OP97092	Blank Spike
OP97092-MB	6Q18646.D	06/01/23 07:32	OP97092	Method Blank
ZZZZZZ	6Q18647.D	06/01/23 07:47	OP97092	(unrelated sample)
ZZZZZZ	6Q18648.D	06/01/23 08:01	OP97092	(unrelated sample)
FC5963-8	6Q18650.D	06/01/23 08:30	OP97092	(used for QC only; not part of job FC6238A)
OP97092-DUP2	6Q18651.D	06/01/23 08:45	OP97092	Duplicate
FC6238-3A	6Q18652.D	06/01/23 08:59	OP97092	AF-RHMW17D-WGN01LF-2305W3
S6Q279-CC279	6Q18653.D	06/01/23 09:14	n/a	Continuing cal 4
S6Q279-ICCB	6Q18654.D	06/01/23 09:28	n/a	Continuing Calibration Blank
FC6325-1	6Q18655.D	06/01/23 09:43	OP97092	(used for QC only; not part of job FC6238A)
OP97092-MS	6Q18656.D	06/01/23 09:57	OP97092	Matrix Spike
FC6325-2	6Q18657.D	06/01/23 10:12	OP97092	(used for QC only; not part of job FC6238A)
OP97092-DUP1	6Q18658.D	06/01/23 10:26	OP97092	Duplicate
ZZZZZZ	6Q18659.D	06/01/23 10:41	OP97092	(unrelated sample)
ZZZZZZ	6Q18660.D	06/01/23 10:55	OP97093	(unrelated sample)
ZZZZZZ	6Q18661.D	06/01/23 11:10	OP97093	(unrelated sample)
ZZZZZZ	6Q18662.D	06/01/23 11:24	OP97093	(unrelated sample)
ZZZZZZ	6Q18663.D	06/01/23 11:39	OP97070	(unrelated sample)
S6Q279-CC279	6Q18665.D	06/01/23 12:08	n/a	Continuing cal 4
S6Q279-ICCB	6Q18666.D	06/01/23 12:22	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18666.D	06/01/23 12:22	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18667.D	06/01/23 12:37	OP97092	(unrelated sample)
ZZZZZZ	6Q18668.D	06/01/23 12:51	OP97092	(unrelated sample)
ZZZZZZ	6Q18669.D	06/01/23 13:06	OP96957	(unrelated sample)
S6Q279-ECC279	6Q18670.D	06/01/23 13:20	n/a	Ending cal 4
S6Q279-ICCB	6Q18671.D	06/01/23 13:35	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18671.D	06/01/23 13:35	n/a	Continuing Calibration Blank

6.9.1

6

MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18652.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 8:59:54 AM
 Sample Name : FC6238-3
 Vial : P2-A9
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,60,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	165779	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	54756	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	59212	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	55946	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	81403	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	38929	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	21872	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	29975	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	25458	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	12846	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	23610	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	21610	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13437	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12694	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3186	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4661	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4699	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	26775	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	36621	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	24210	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	72570	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	108182	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	10719	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10288	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18422	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	63563	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	9016	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	82609	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	29392	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	43382	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	50015	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3186	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4661	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4699	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	25458	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	12846	1.16 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.5%		
13C3-PFBS	5.334	302.1 -> 79.9	21610	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C3-PFHxS	7.130	402.1 -> 79.9	13437	2.67 µg/L	0.000

7.1.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C4-PFBA	2.876	216.8 -> 171.9	165779	10.95 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	55946	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	59212	2.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.9%	
13C5-PFPeA	4.222	268.3 -> 223.0	54756	5.63 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C6-PFDA	8.027	519.1 -> 474.1	21872	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	29975	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.1%	
13C8-FOSA	9.598	506.1 -> 77.8	23610	1.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 67.3%	
13C8-PFOA	7.026	421.1 -> 376.0	81403	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C8-PFOS	8.177	507.1 -> 79.9	12694	2.15 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.0%	
13C9-PFNA	7.545	472.1 -> 427.0	38929	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.9%	
d3-MeFOSAA	8.084	573.2 -> 419.0	26775	4.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.1%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	36621	11.14 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.4%	
d3-MeFOSA	10.739	515.0 -> 219.0	10288	1.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 72.3%	
d5-EtFOSAA	8.279	589.2 -> 419.0	24210	4.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.5%	
d7-MeFOSE	10.660	623.2 -> 58.9	72570	15.69 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 62.7%	
d9-EtFOSE	10.907	639.2 -> 58.9	108182	17.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 71.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	10719	1.99 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 79.6%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.608	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	7.835	449.0 -> 79.9	0	µg/L	m	1
		449.0 -> 98.9	0			
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	8.980	548.8 -> 79.9	0	µg/L	m	1
		548.8 -> 98.9	0			
PFOA	-	413.0 -> 369.0	-	N.D.		
		413.0 -> 169.0				
PFOS	8.116	498.9 -> 79.9	0	µg/L	m	1
		498.9 -> 98.8	0			
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

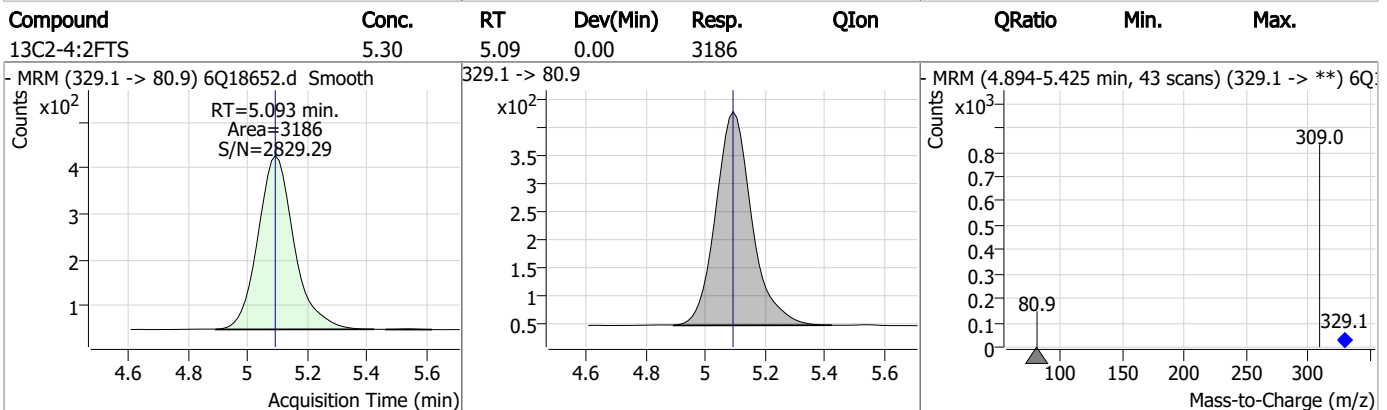
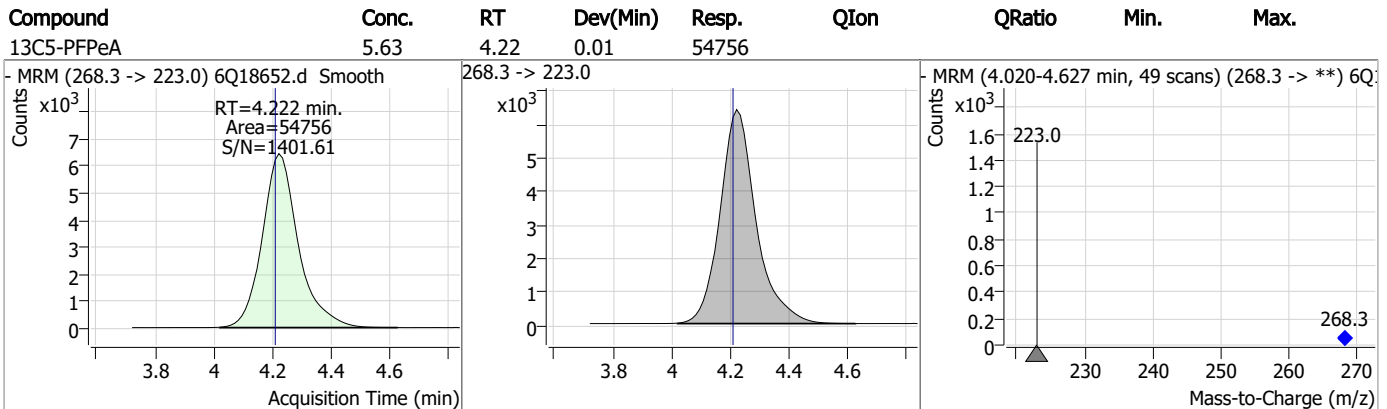
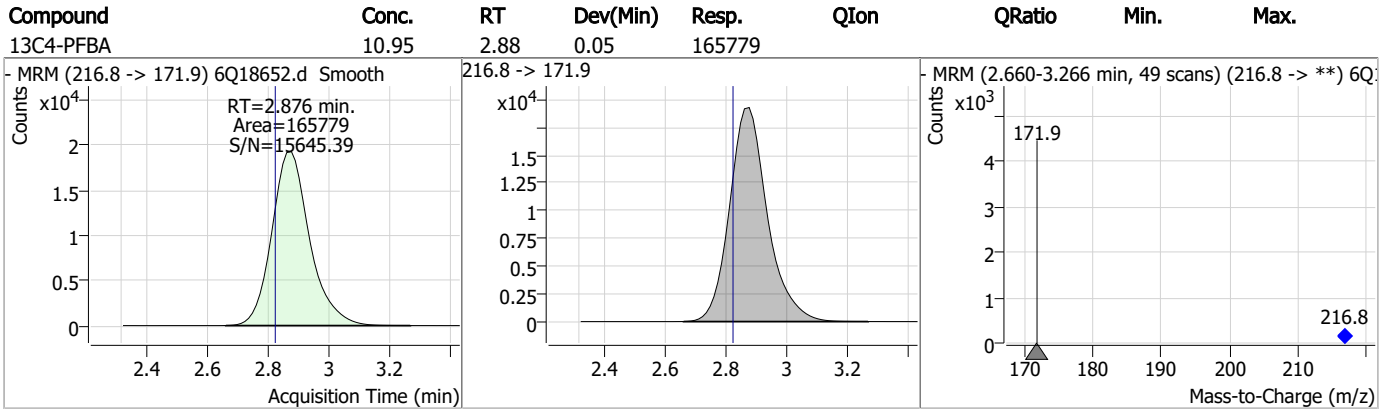
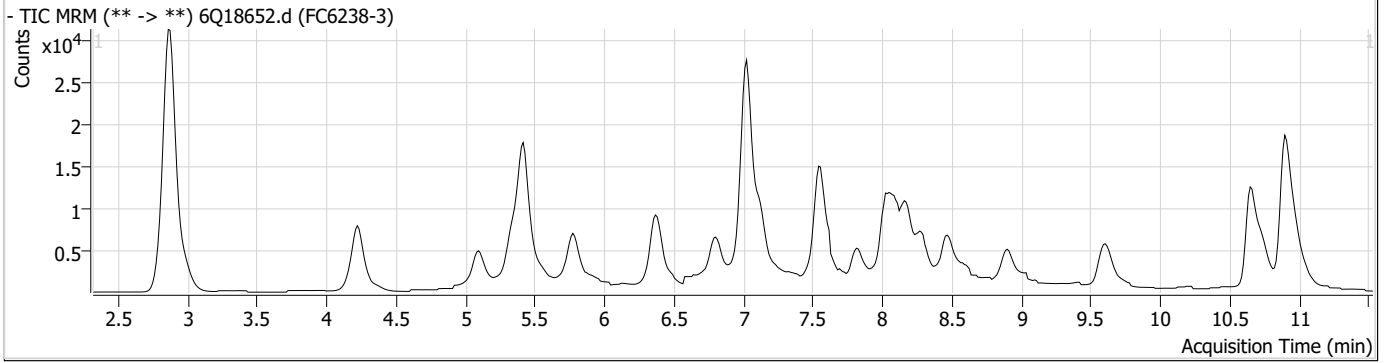
Perfluorinated Compounds by LC/MS/MS

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

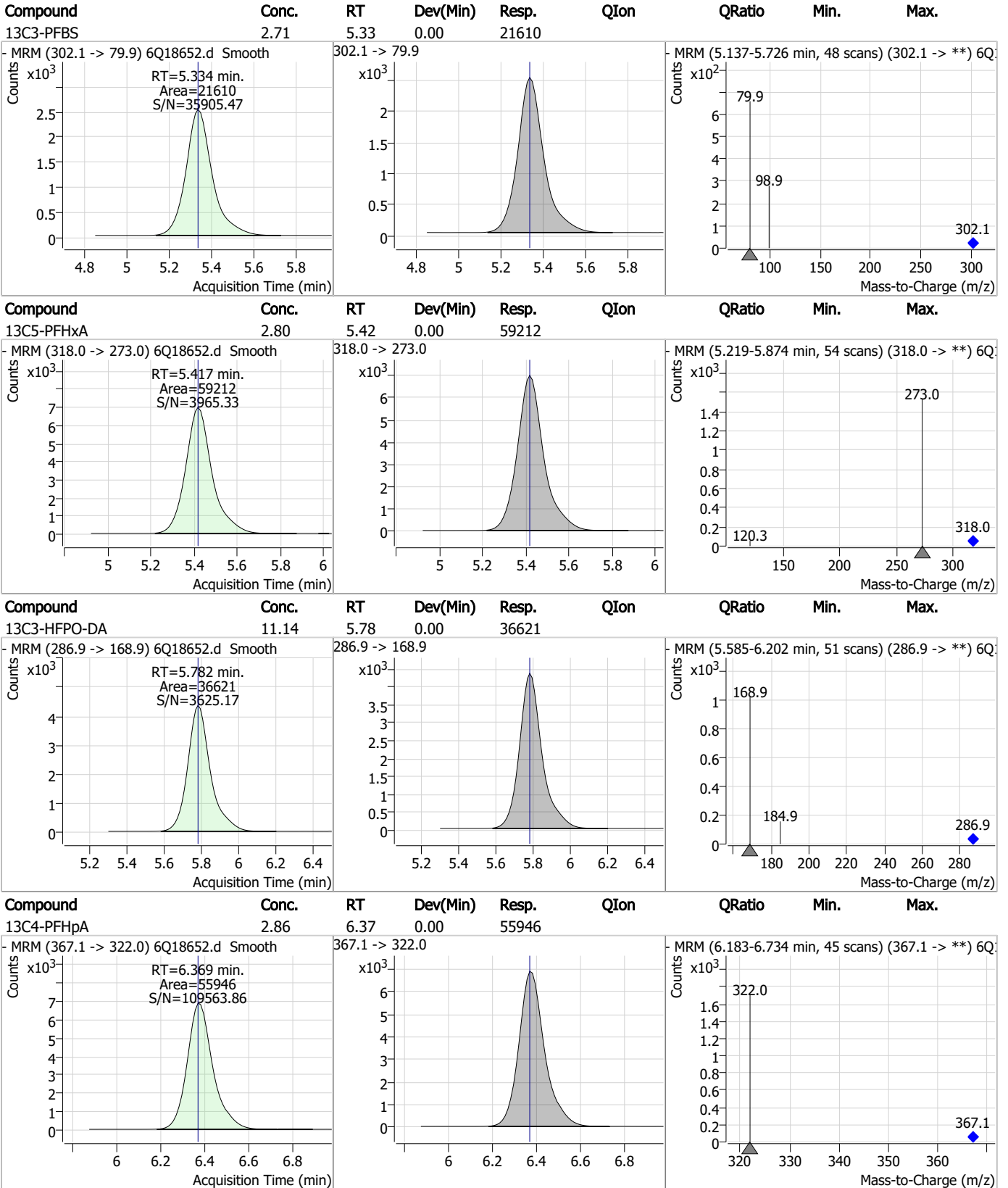
7.1.1
7



Perfluorinated Compounds by LC/MS/MS

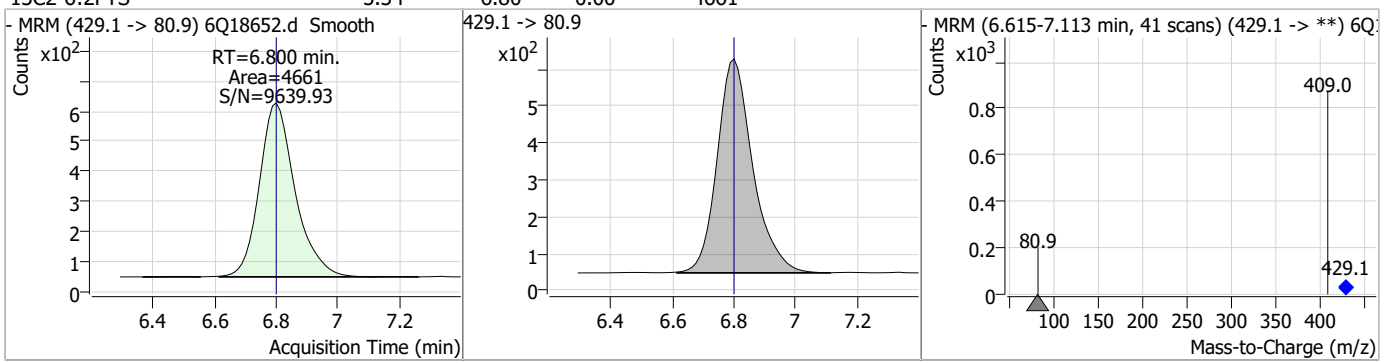


Perfluorinated Compounds by LC/MS/MS

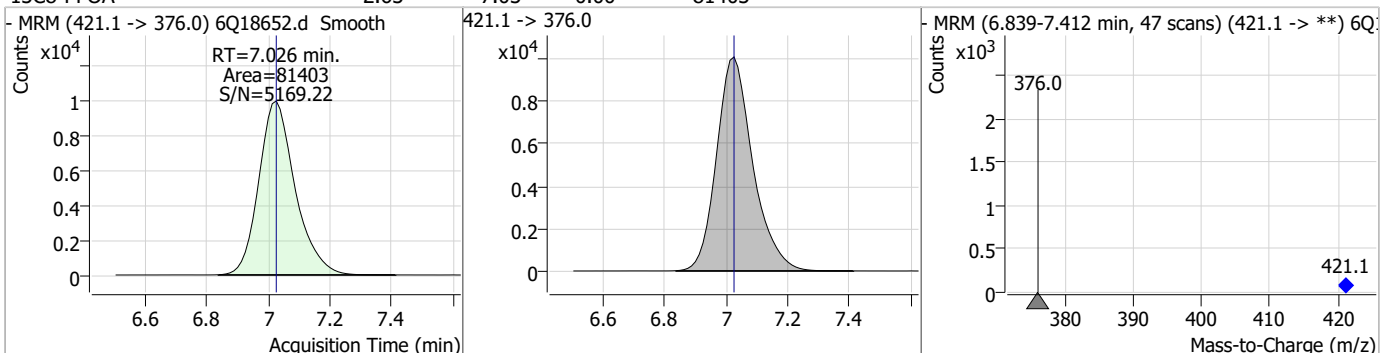


Perfluorinated Compounds by LC/MS/MS

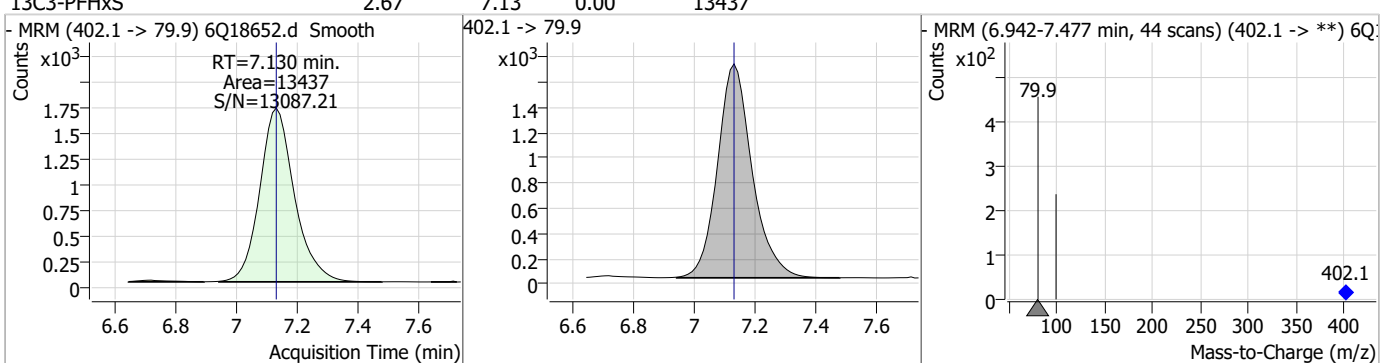
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
----------	-------	----	----------	-------	------	--------	------	------



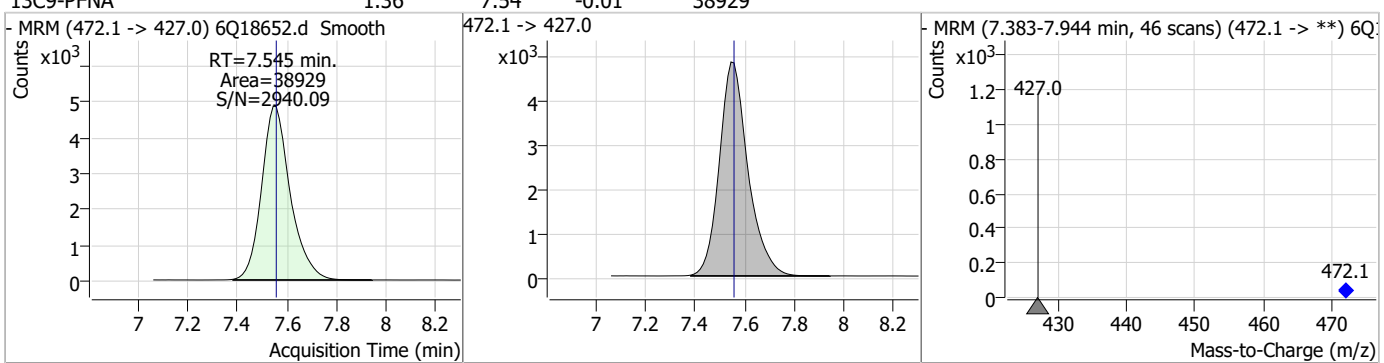
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
----------	-------	----	----------	-------	------	--------	------	------



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

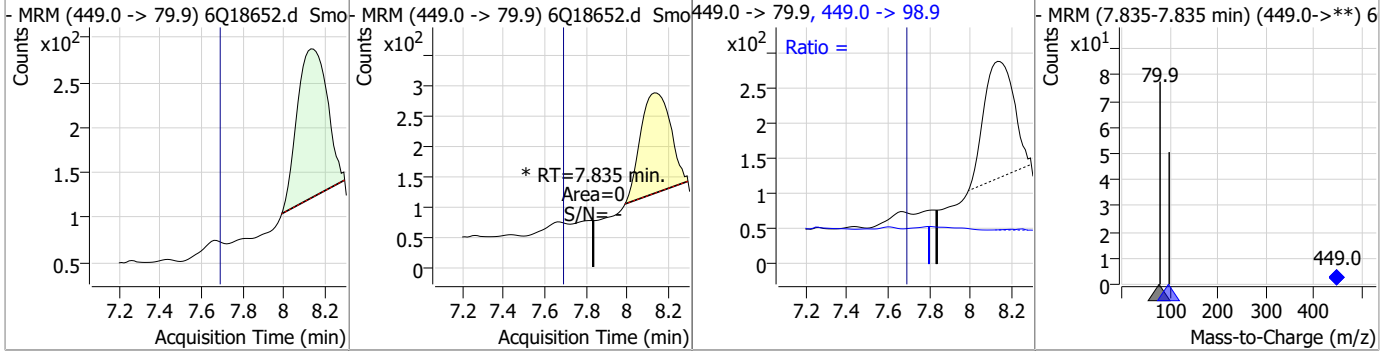


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
----------	-------	----	----------	-------	------	--------	------	------

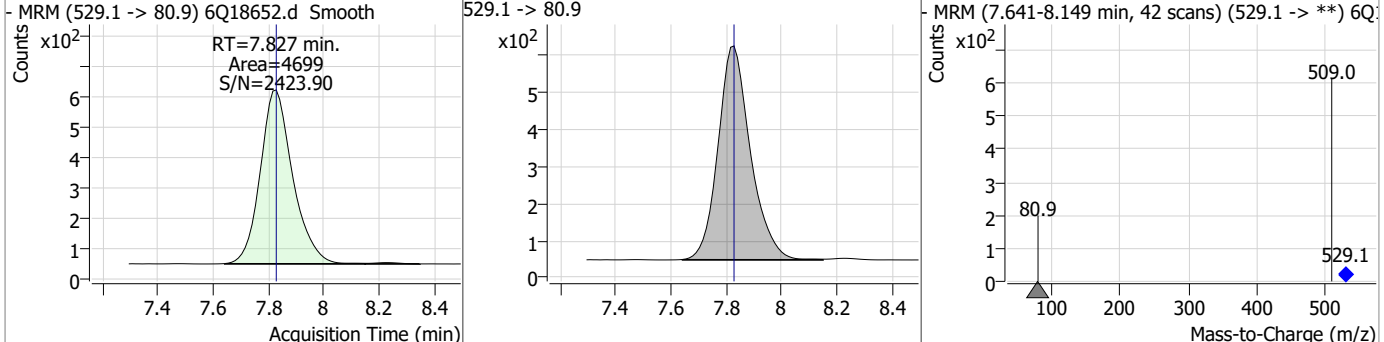


Perfluorinated Compounds by LC/MS/MS

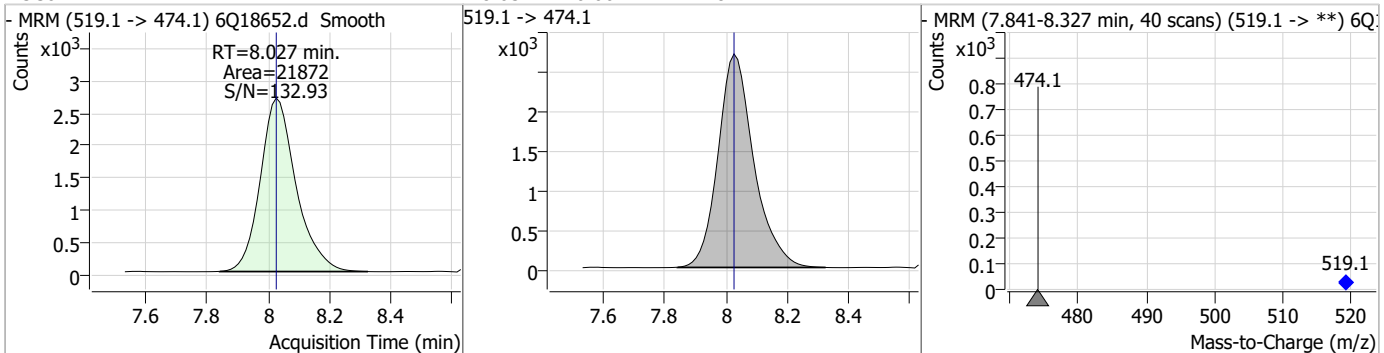
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0	0	0	0	449.0 -> 98.9		24.7	74.2



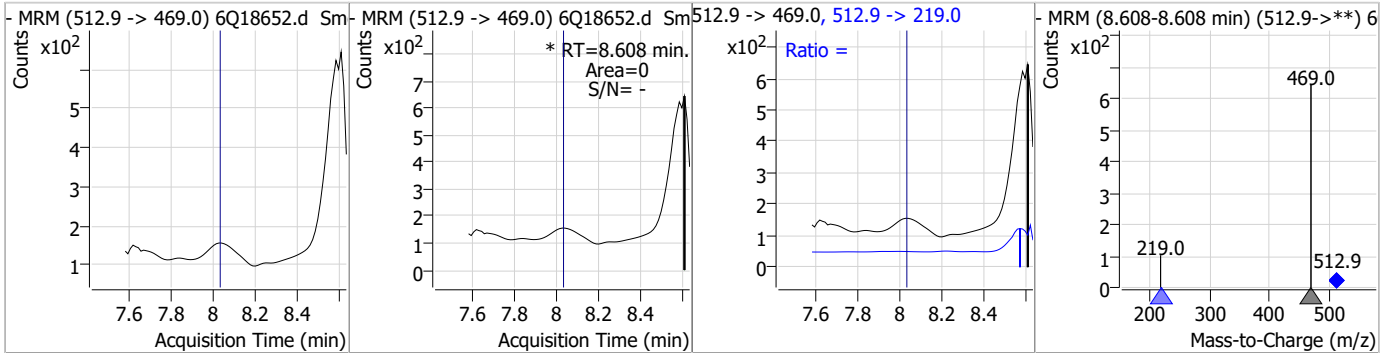
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.31	7.83	0.00	4699				



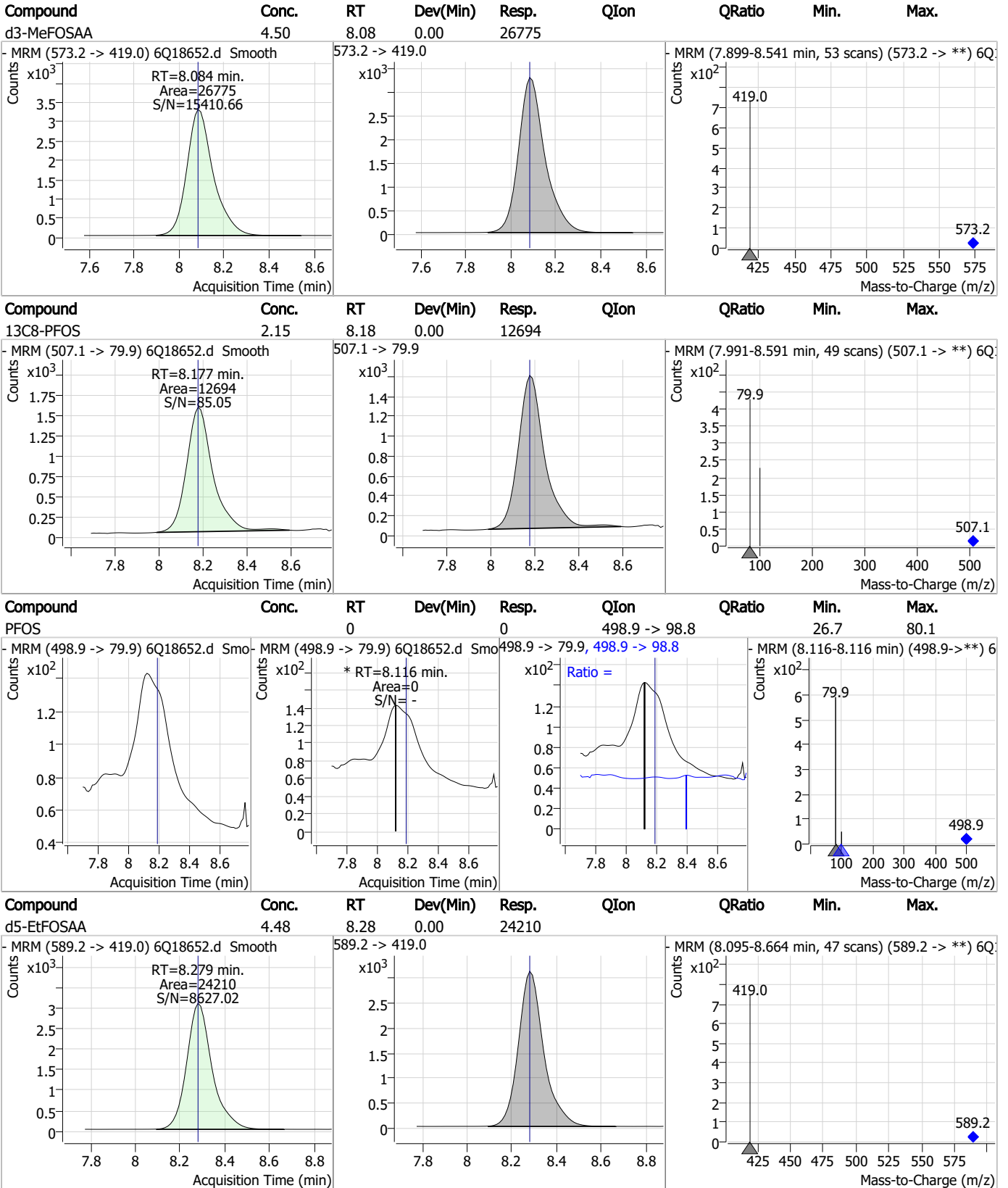
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.27	8.03	0.00	21872				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0	0	0	0	512.9 -> 219.0		8.0	23.9

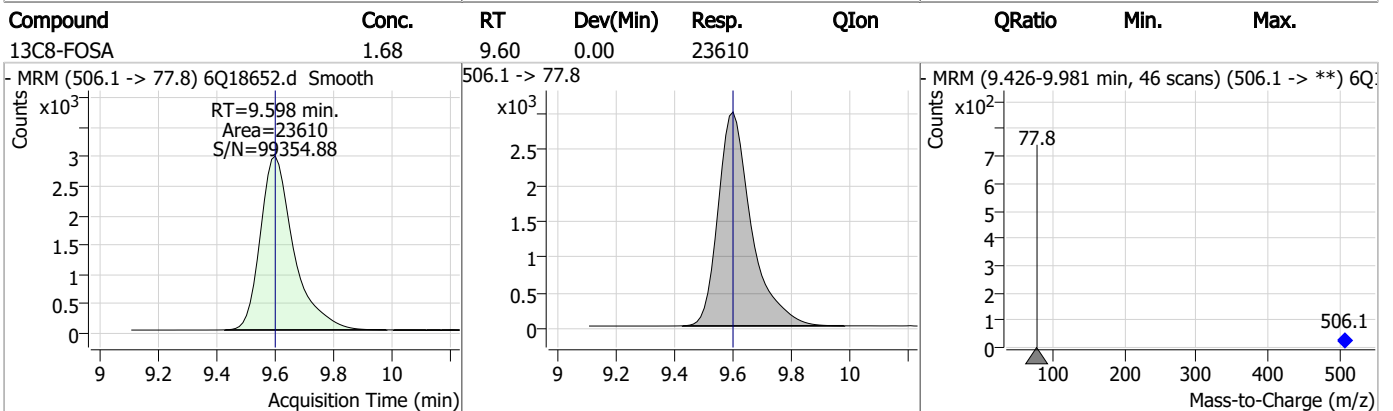
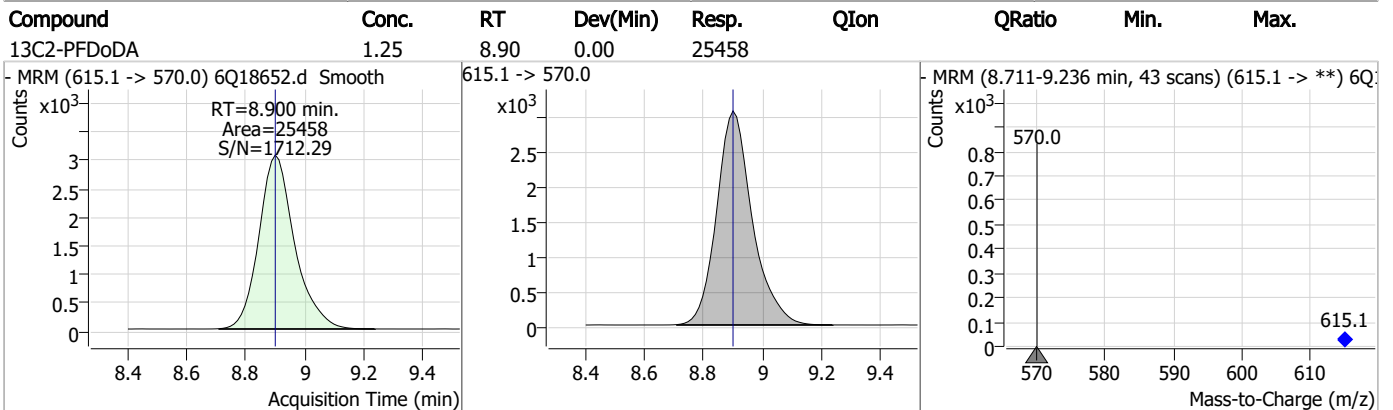
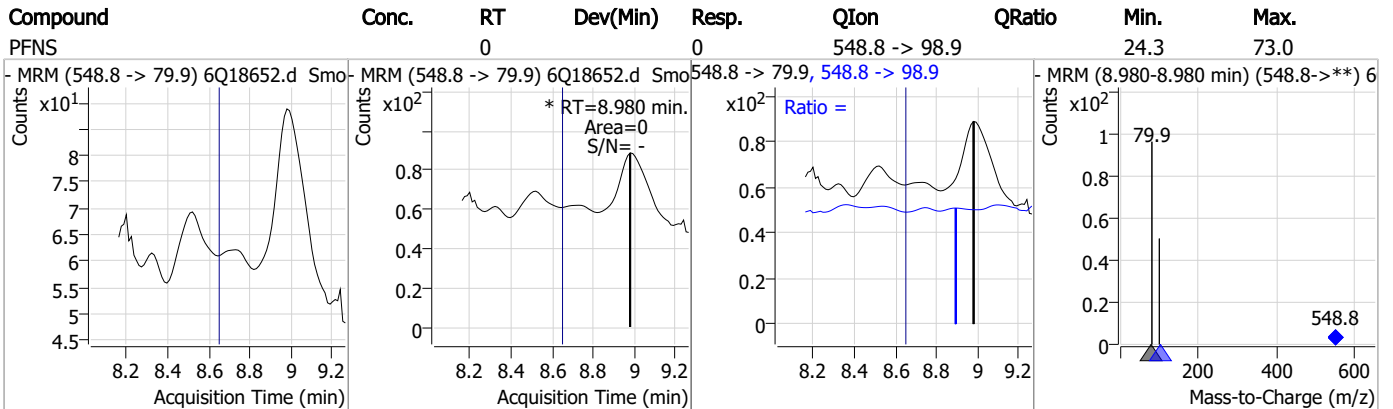
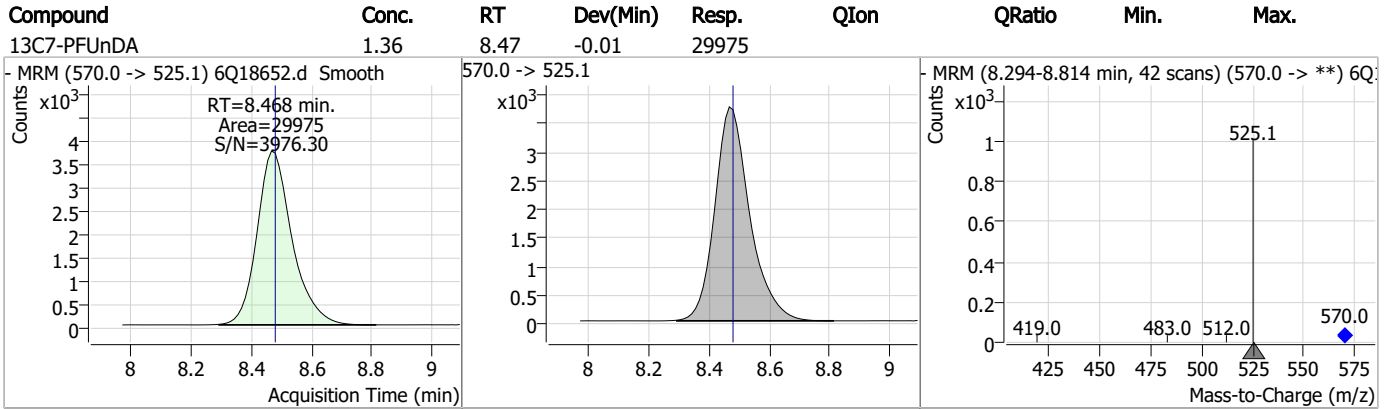


Perfluorinated Compounds by LC/MS/MS

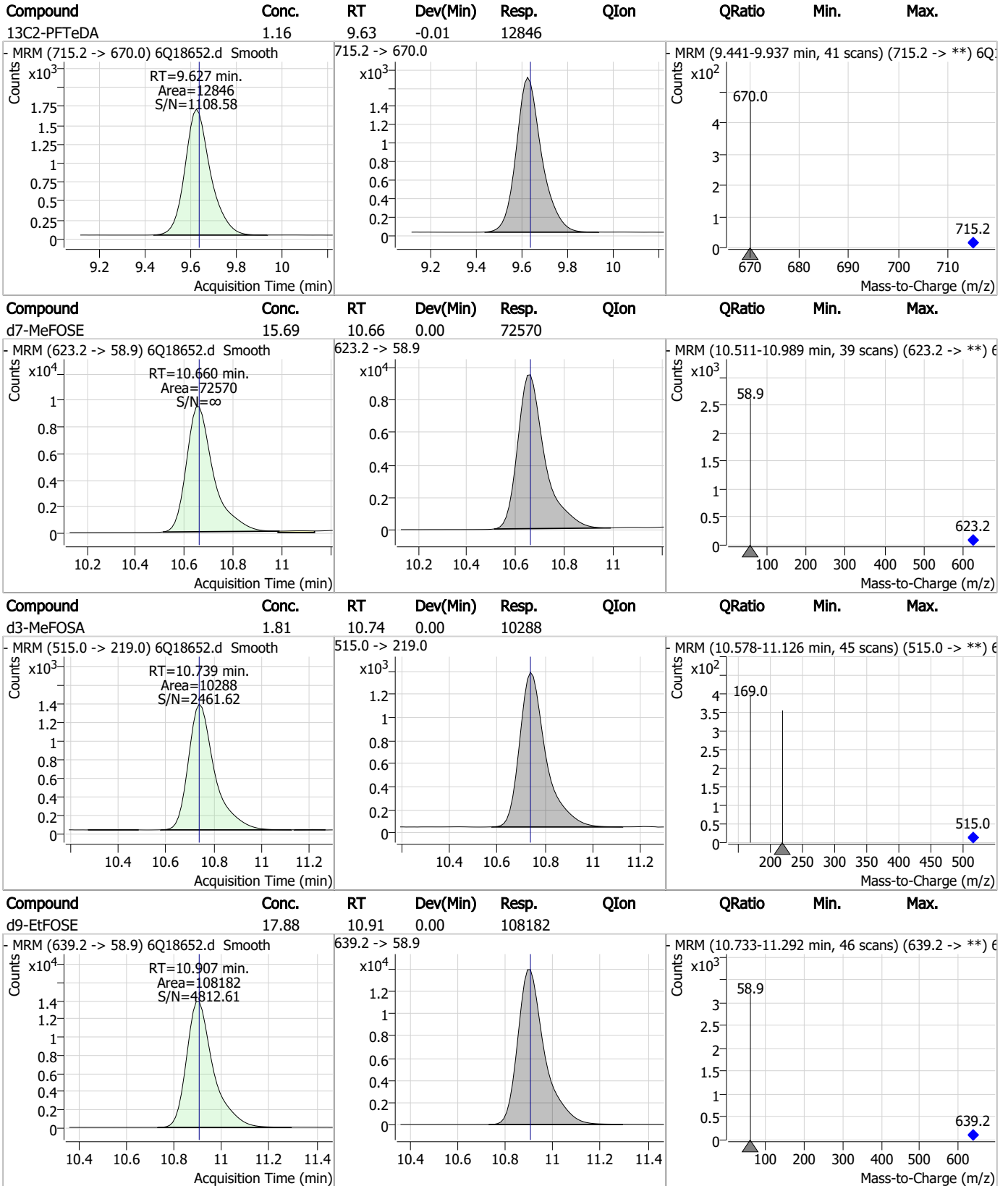


7.1.1
7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

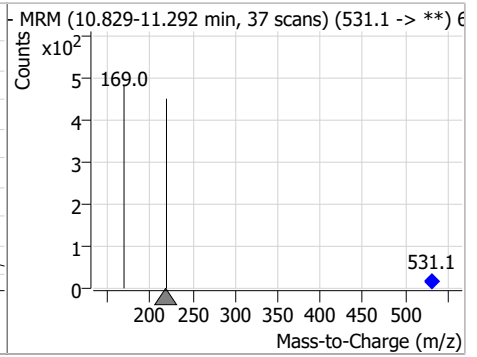
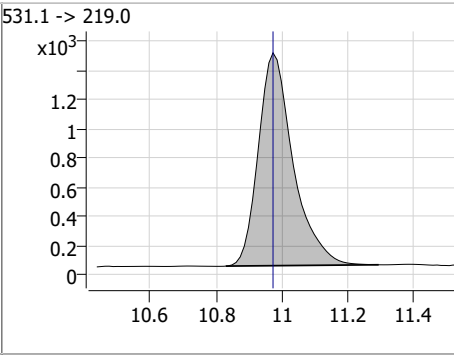
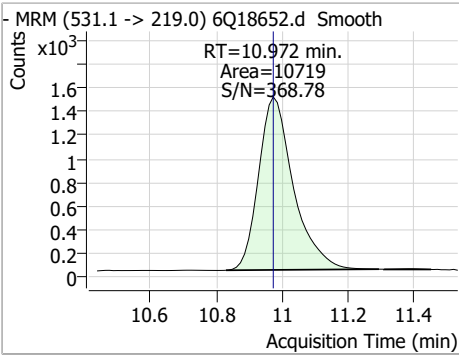


7.1.1

7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	1.99	10.97	0.00	10719				



7.1.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18646.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 7:32:57 AM
 Sample Name : op97092-mb
 Vial : P2-A3
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	167223	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	54800	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	58117	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	56612	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	83202	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	35826	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	23409	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	30121	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	26928	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	14273	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	21087	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	21038	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13426	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12744	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3566	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5239	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4667	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	25397	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	35425	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	21910	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	64140	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	104222	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	9225	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	8726	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13735	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	62328	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8437	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	78577	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	28301	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	41515	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	49161	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3566	6.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 126.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5239	6.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.2%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4667	5.63 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	26928	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.6%		
13C2-PFTeDA	9.627	715.2 -> 670.0	14273	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C3-PFBS	5.334	302.1 -> 79.9	21038	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.7%		
13C3-PFHxS	7.130	402.1 -> 79.9	13426	2.85 µg/L	0.000

7.2.1
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.9%	
13C4-PFBA	2.860	216.8 -> 171.9	167223	11.27 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.7%	
13C4-PFHpA	6.369	367.1 -> 322.0	56612	2.94 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.7%	
13C5-PFHxA	5.417	318.0 -> 273.0	58117	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C5-PFPeA	4.222	268.3 -> 223.0	54800	5.73 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.6%	
13C6-PFDA	8.027	519.1 -> 474.1	23409	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	30121	1.42 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.9%	
13C8-FOSA	9.598	506.1 -> 77.8	21087	2.01 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.6%	
13C8-PFOA	7.026	421.1 -> 376.0	83202	2.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.1%	
13C8-PFOS	8.177	507.1 -> 79.9	12744	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.8%	
13C9-PFNA	7.545	472.1 -> 427.0	35826	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.8%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25397	5.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	35425	10.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	8726	2.06 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 82.3%	
d5-EtFOSAA	8.279	589.2 -> 419.0	21910	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	64140	18.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 74.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	104222	23.10 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.4%	
d5-EtFOSA	10.972	531.1 -> 219.0	9225	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.8%	

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.584	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



7.2.1
7

Perfluorinated Compounds by LC/MS/MS

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

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

7.2.1
7

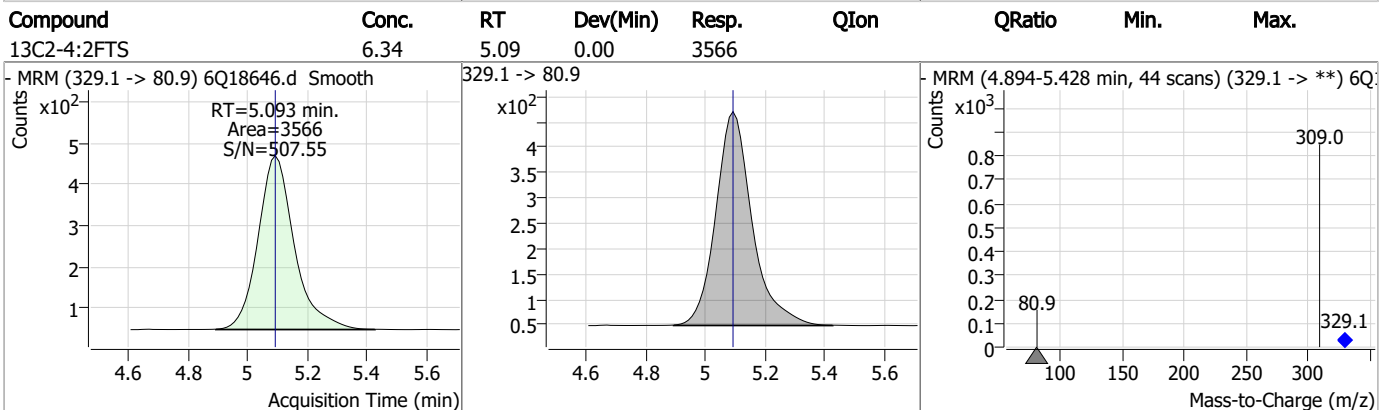
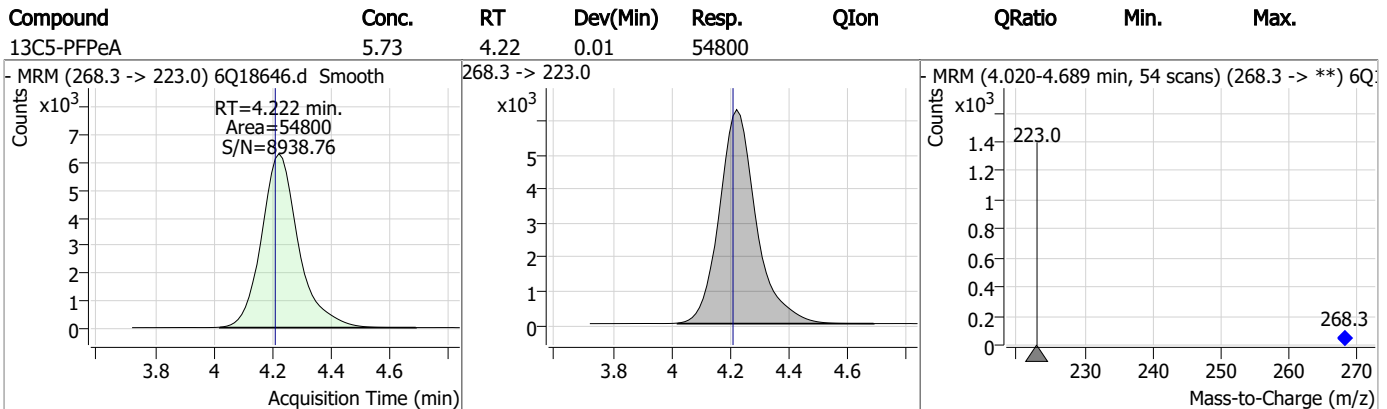
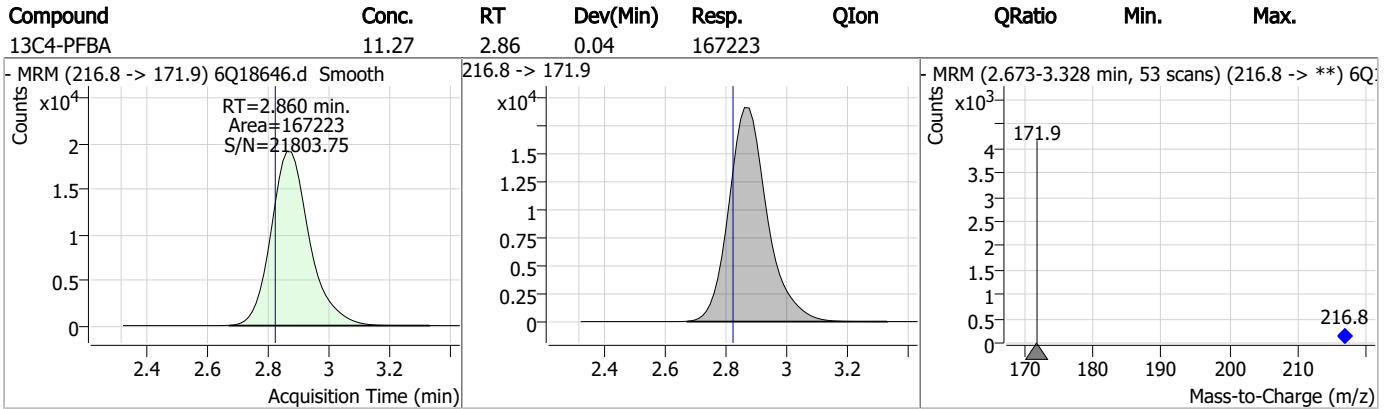
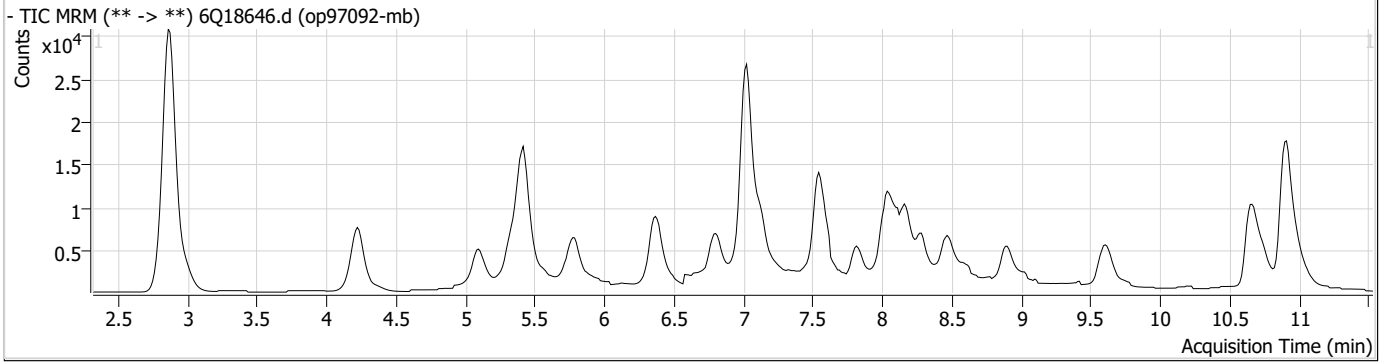
Perfluorinated Compounds by LC/MS/MS

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

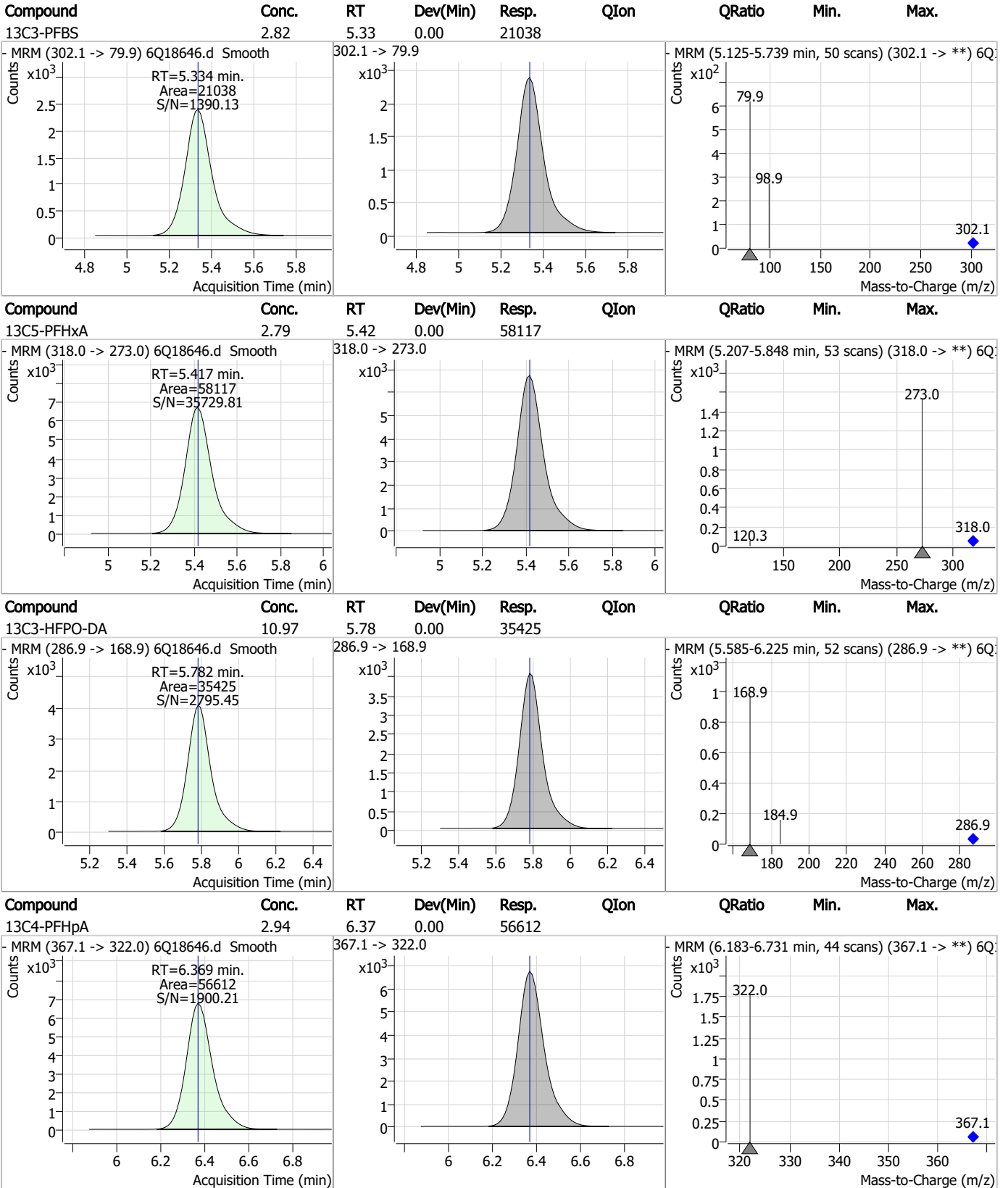
7.2.1

7

Perfluorinated Compounds by LC/MS/MS



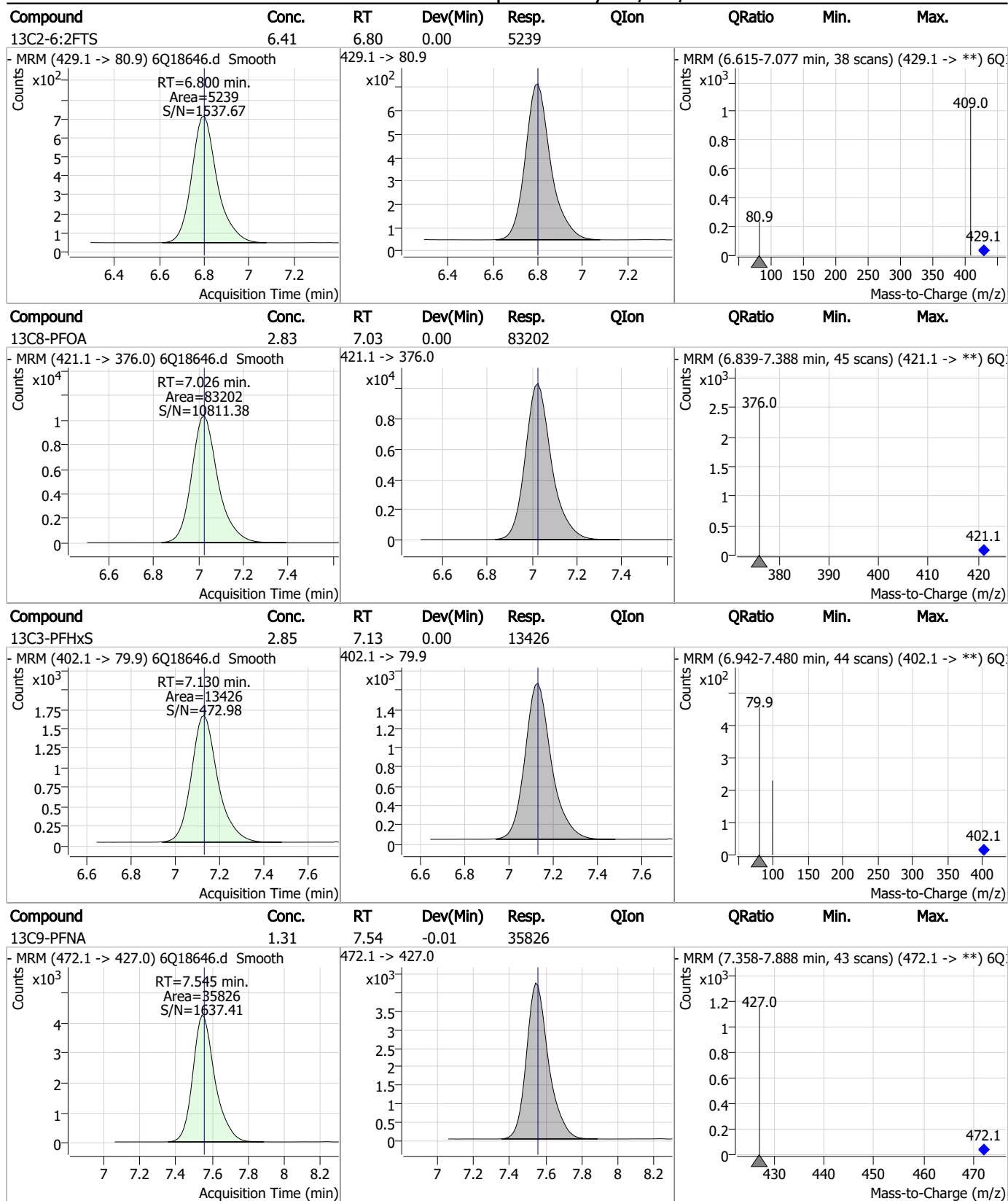
Perfluorinated Compounds by LC/MS/MS



7.2.1

7

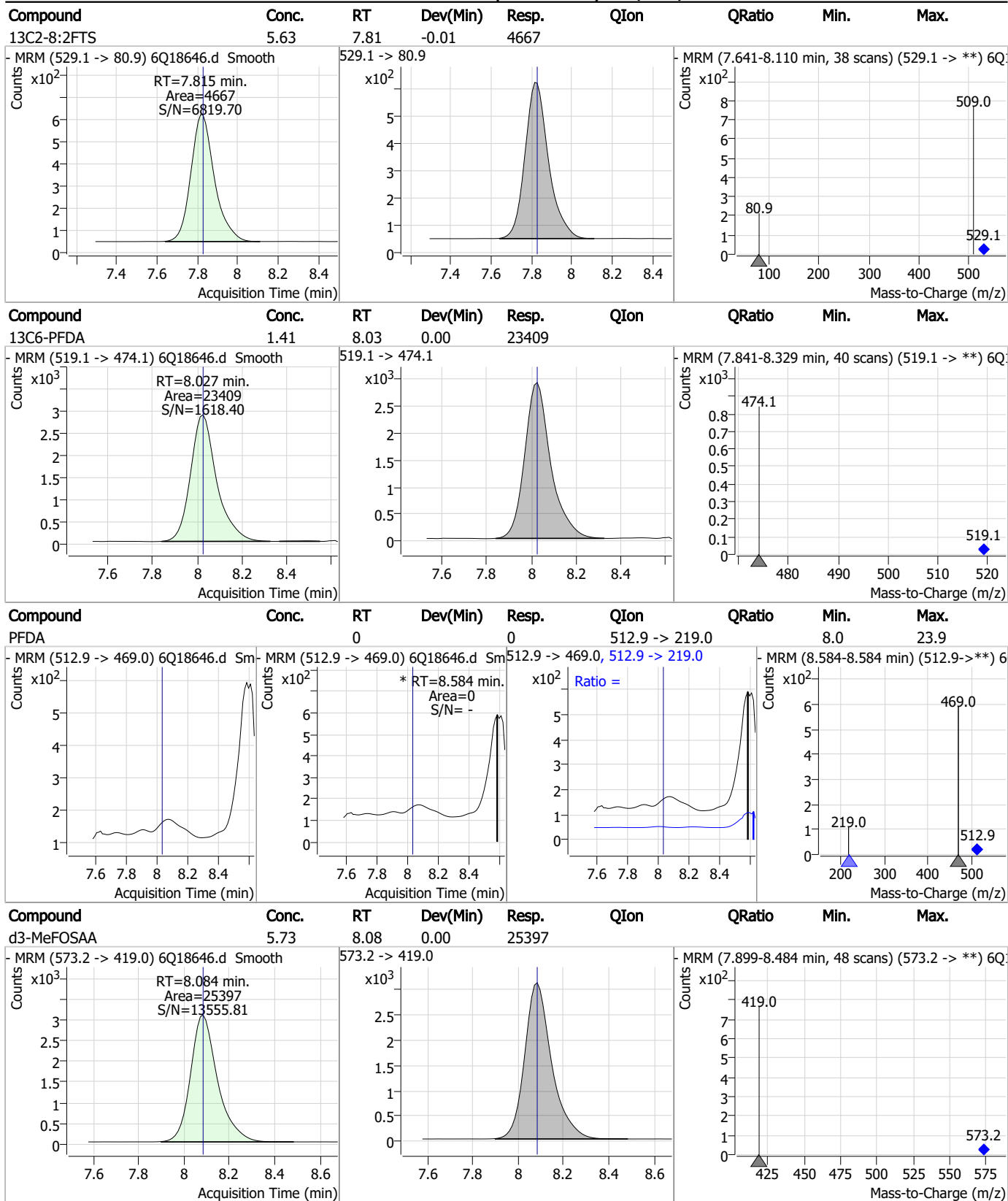
Perfluorinated Compounds by LC/MS/MS



7.2.1
7

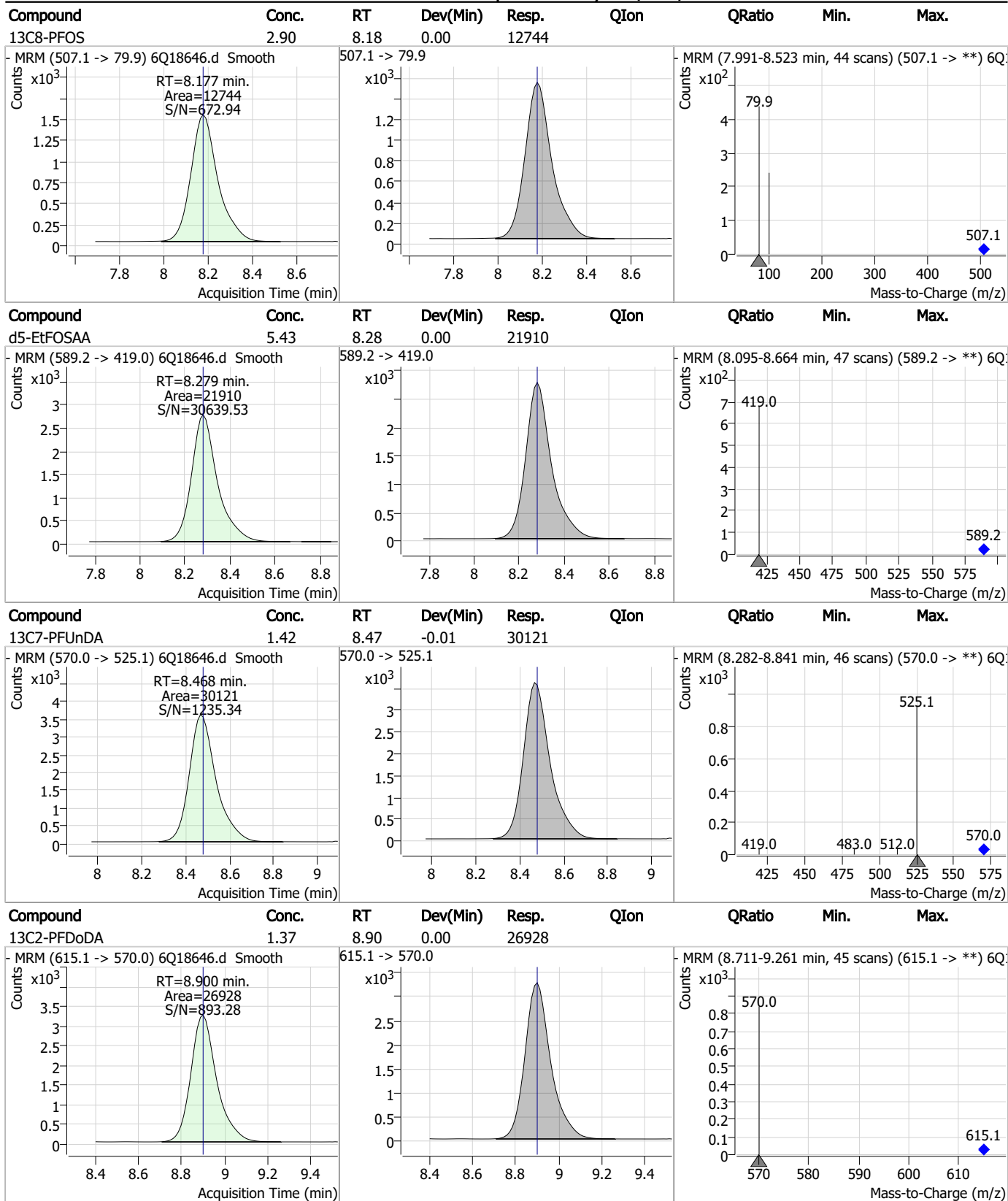


Perfluorinated Compounds by LC/MS/MS



7.2.1
7

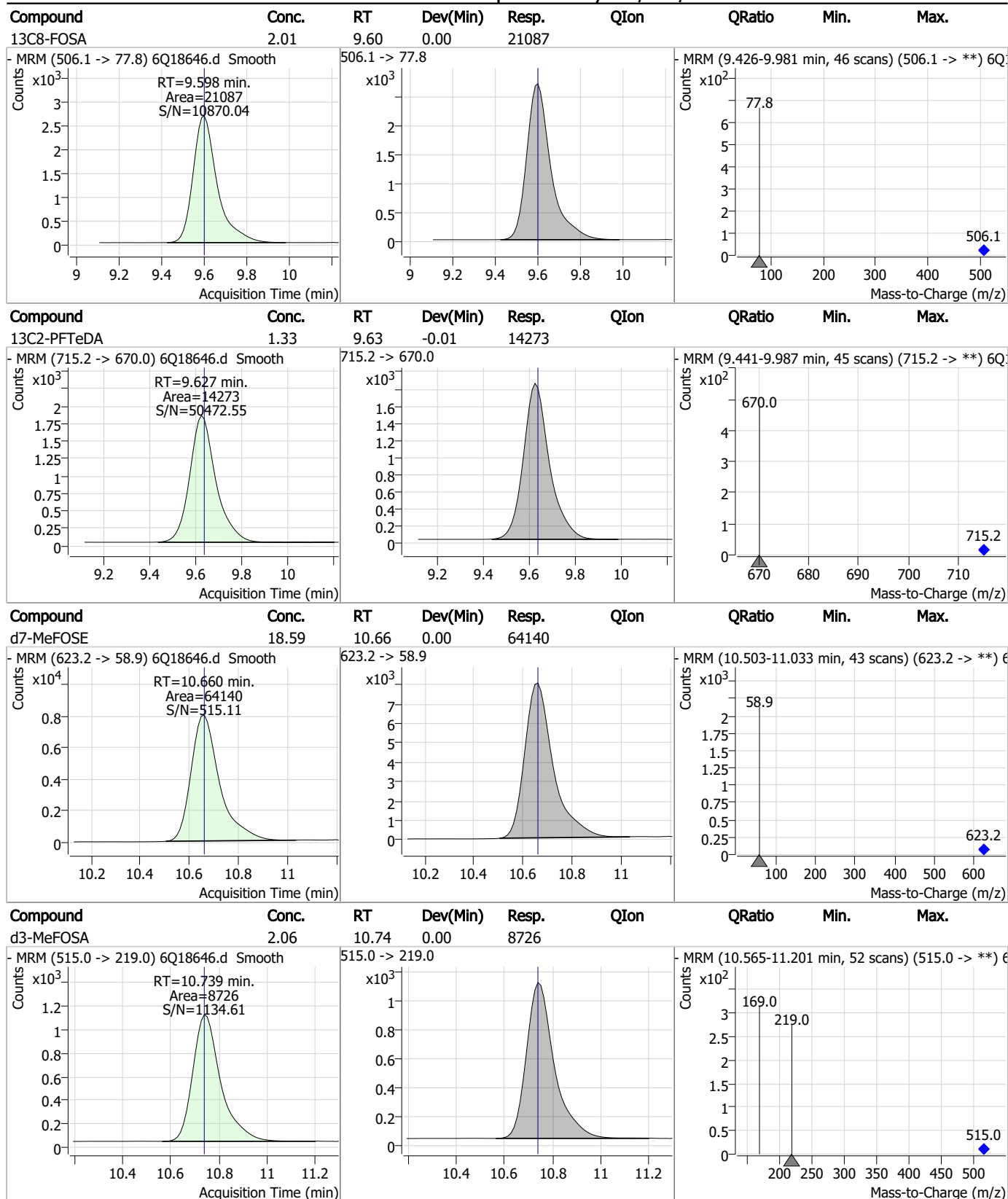
Perfluorinated Compounds by LC/MS/MS



7.2.1

7

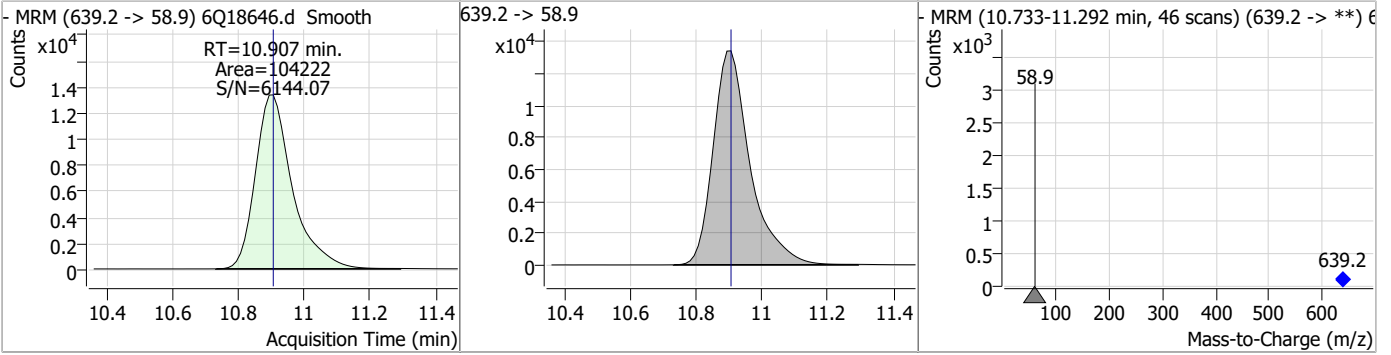
Perfluorinated Compounds by LC/MS/MS



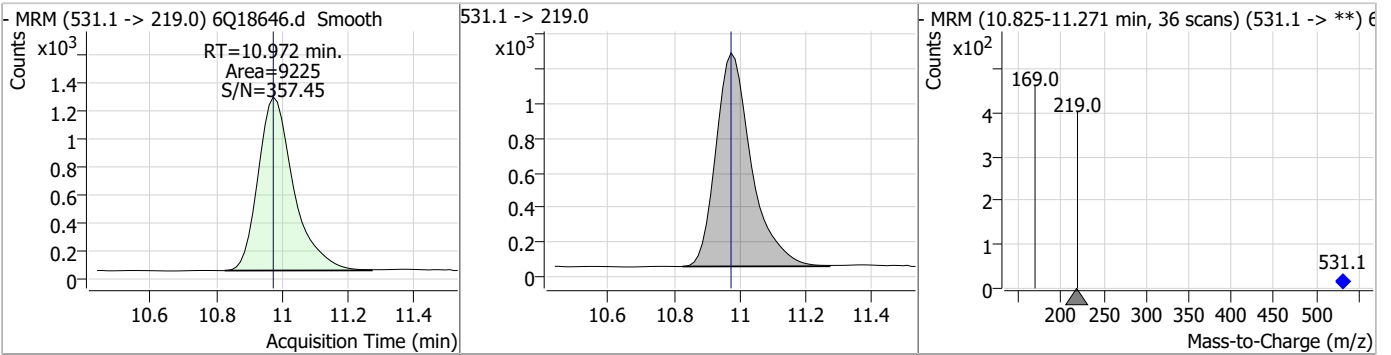
7.2.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.10	10.91	0.00	104222				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.30	10.97	0.00	9225				



7.2.1

7

Perfluorinated Compounds by LC/MS/MS

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

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

7.22
7

Perfluorinated Compounds by LC/MS/MS

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

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



7.2.2
7

Perfluorinated Compounds by LC/MS/MS

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

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

7.2.2
7

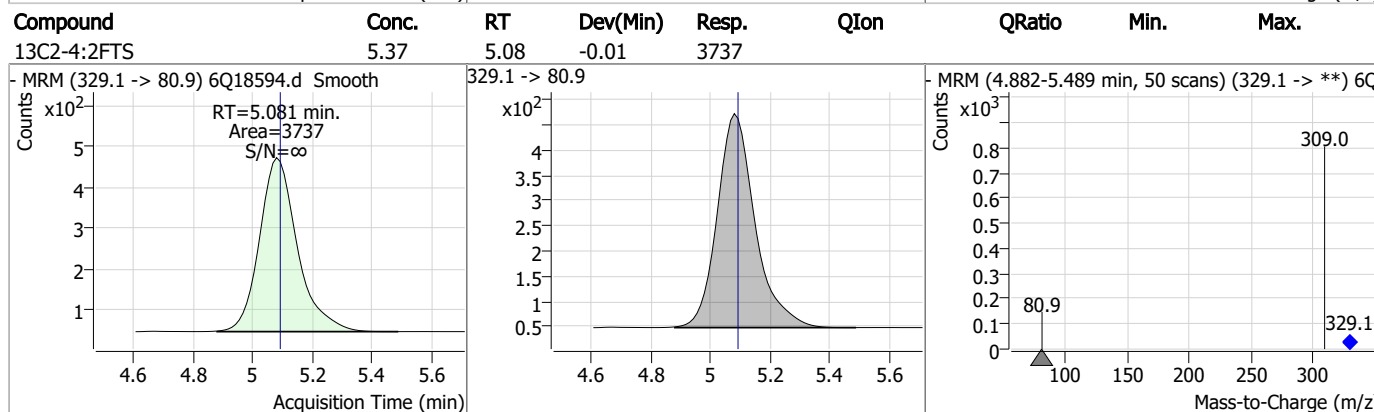
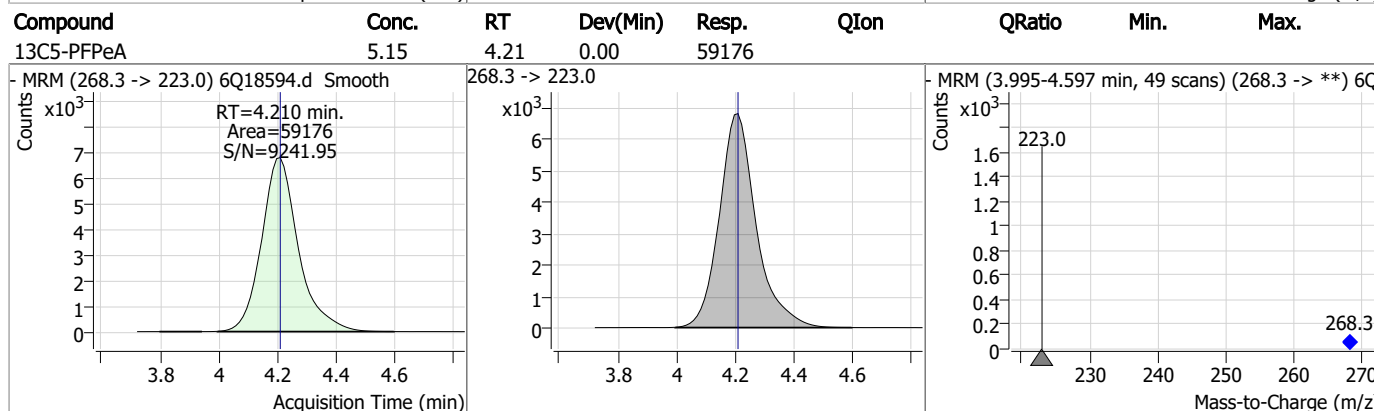
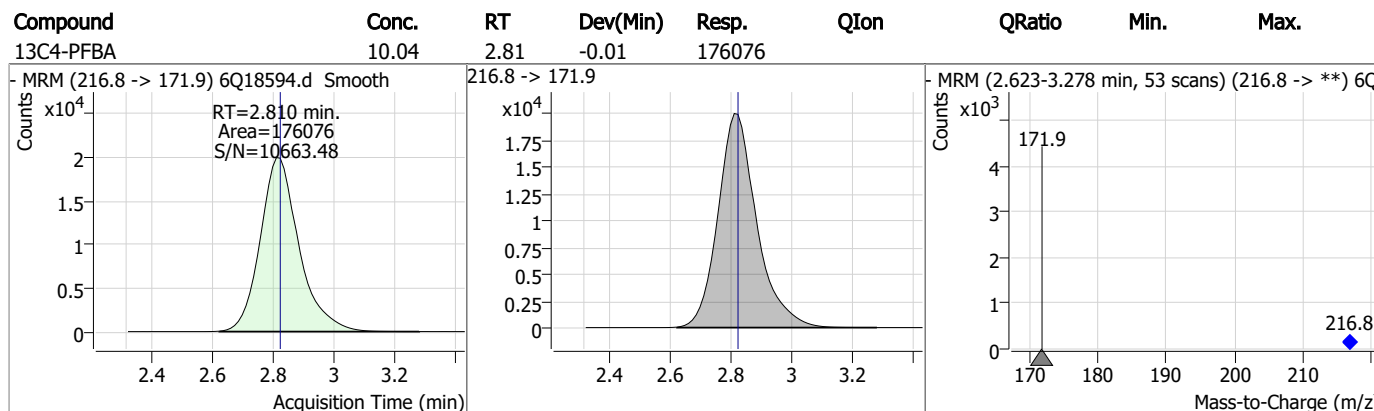
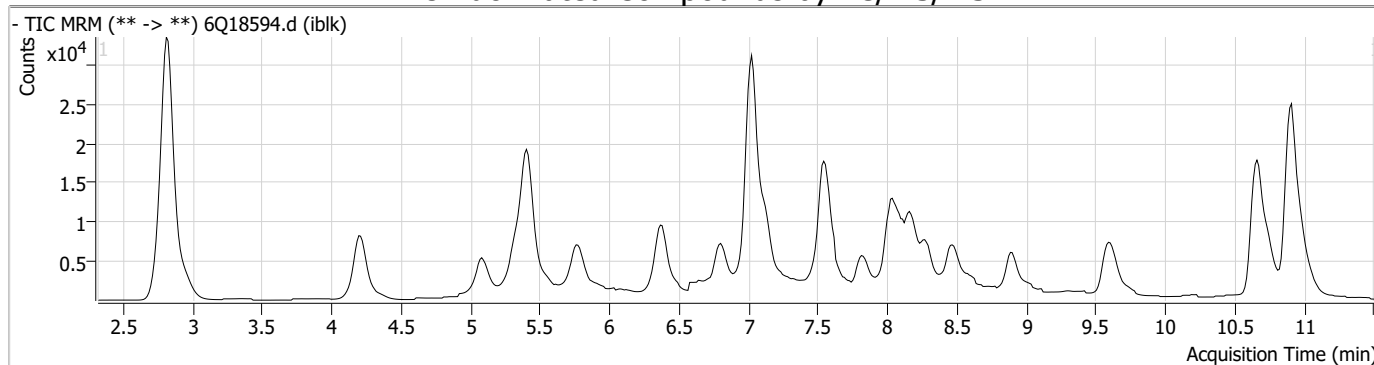
Perfluorinated Compounds by LC/MS/MS

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

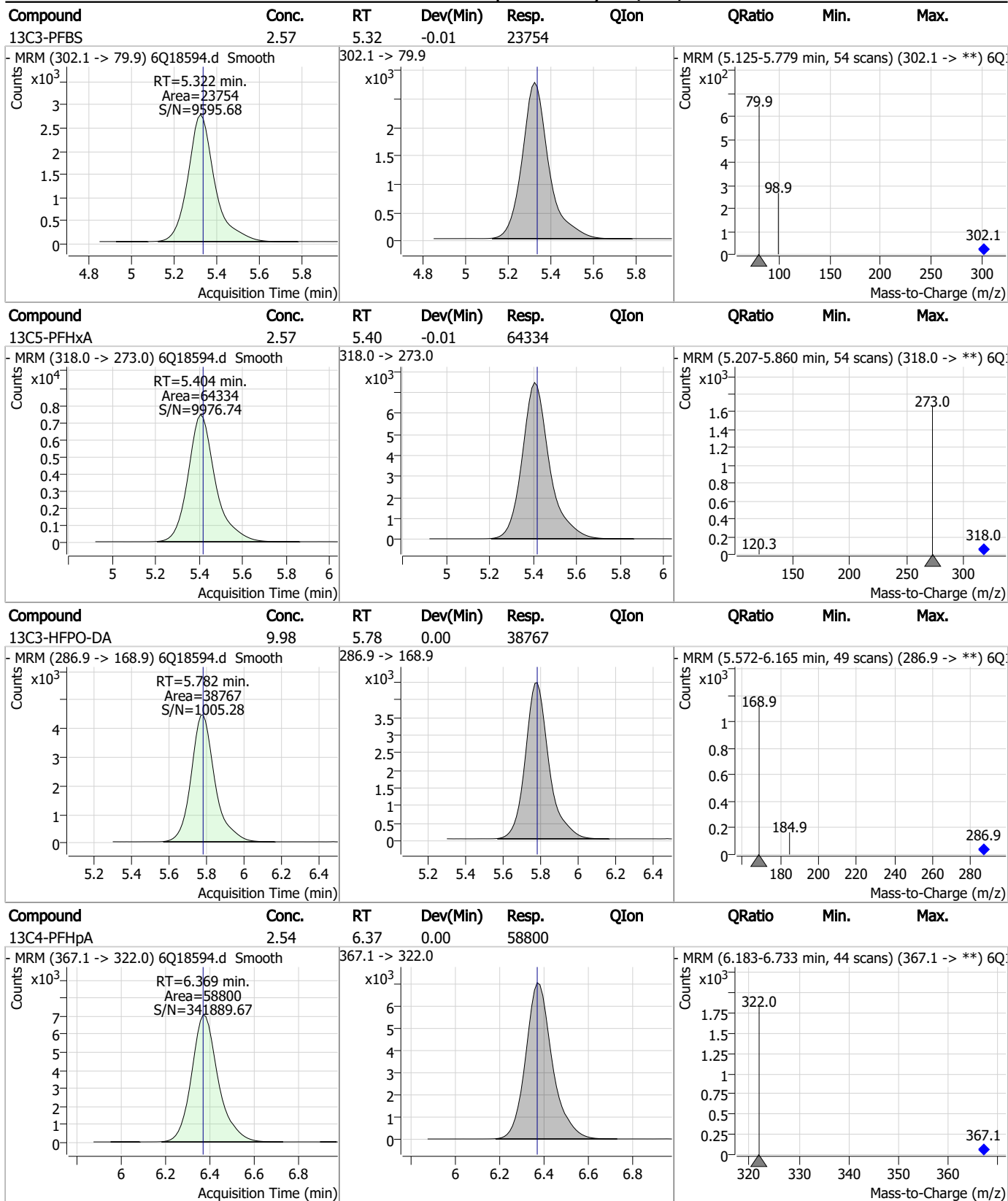
7.2.2

7

Perfluorinated Compounds by LC/MS/MS

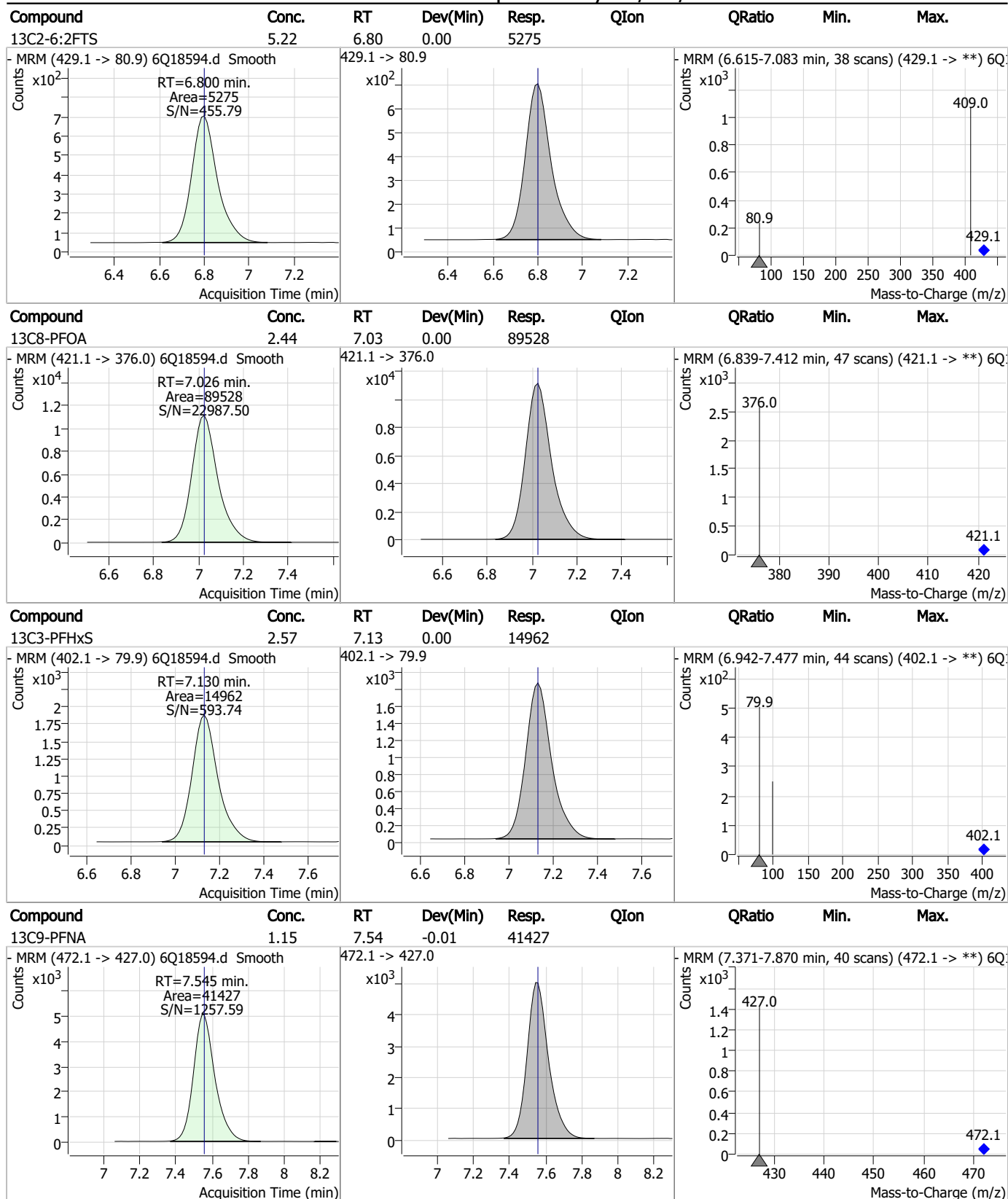


Perfluorinated Compounds by LC/MS/MS



7.2.2
7

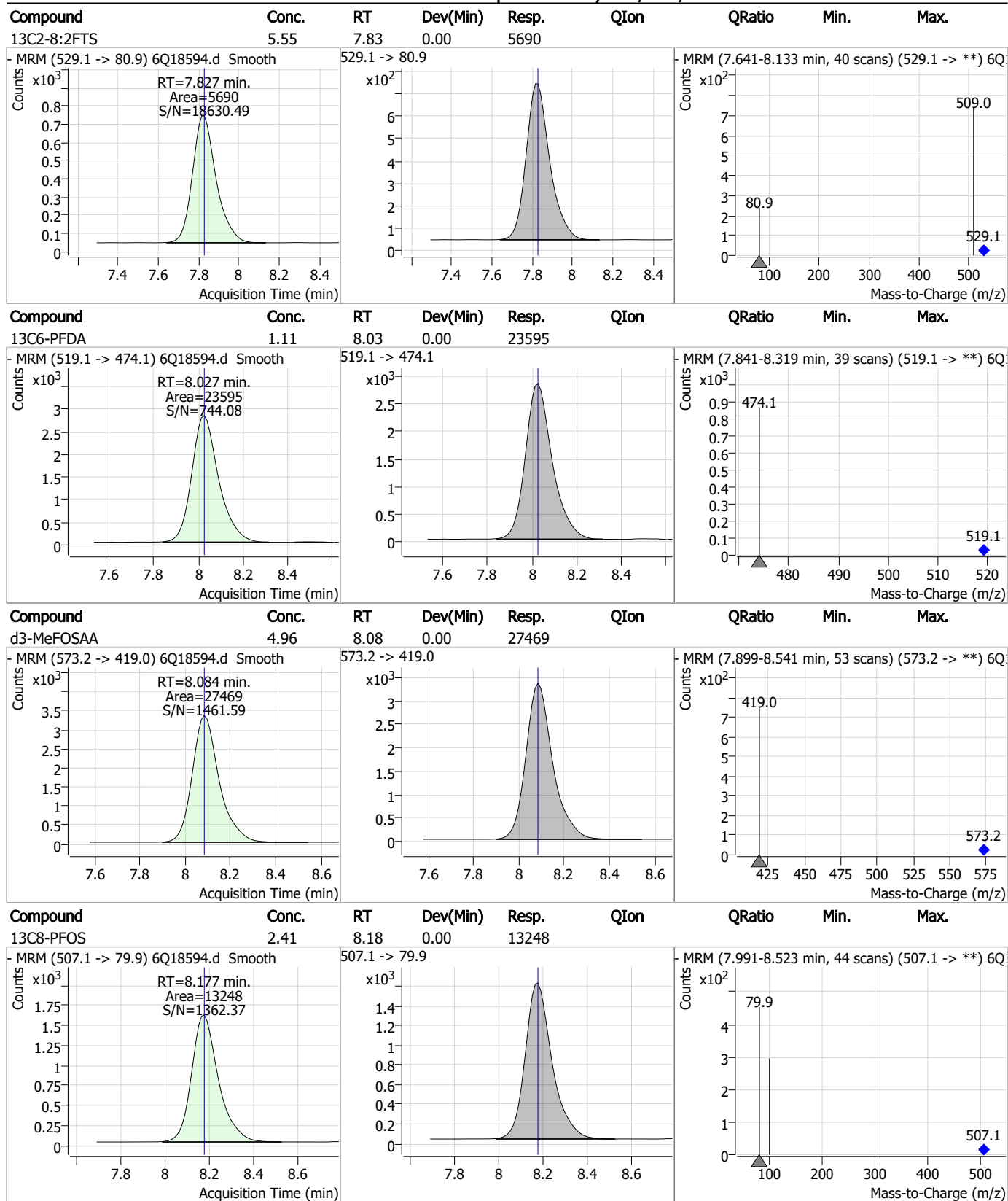
Perfluorinated Compounds by LC/MS/MS



7.2.2
7

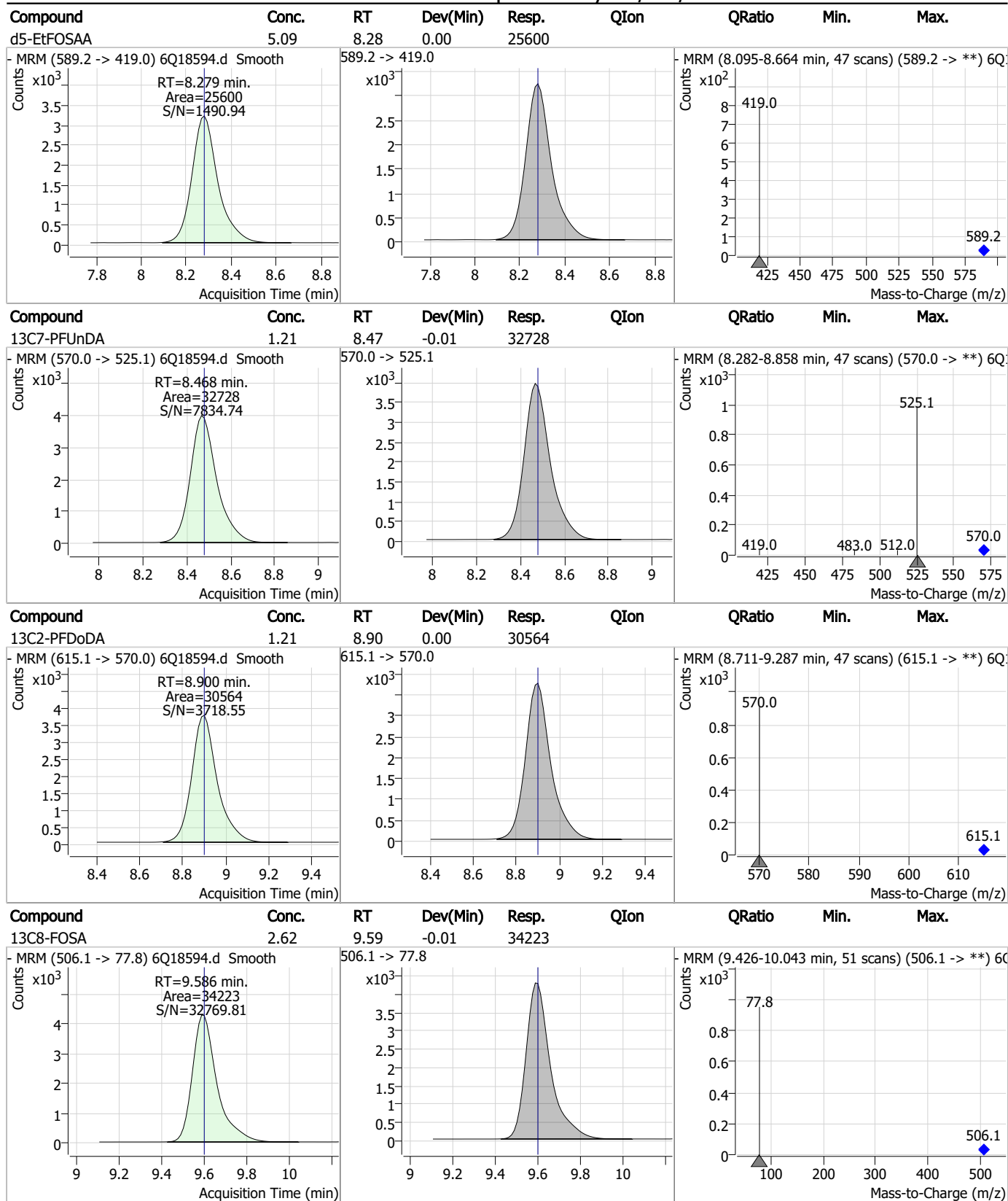


Perfluorinated Compounds by LC/MS/MS



7.2.2
7

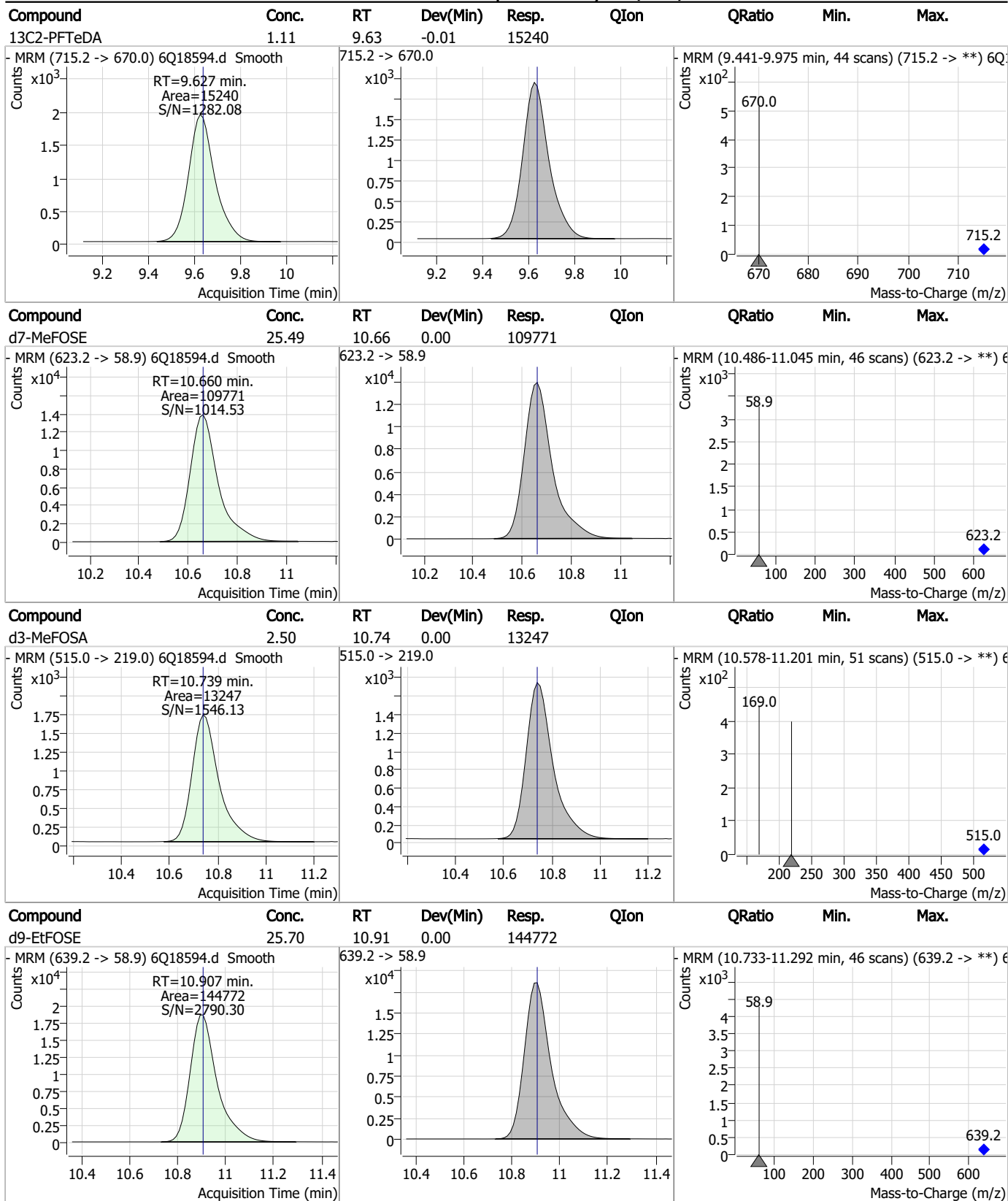
Perfluorinated Compounds by LC/MS/MS



7.2.2
7



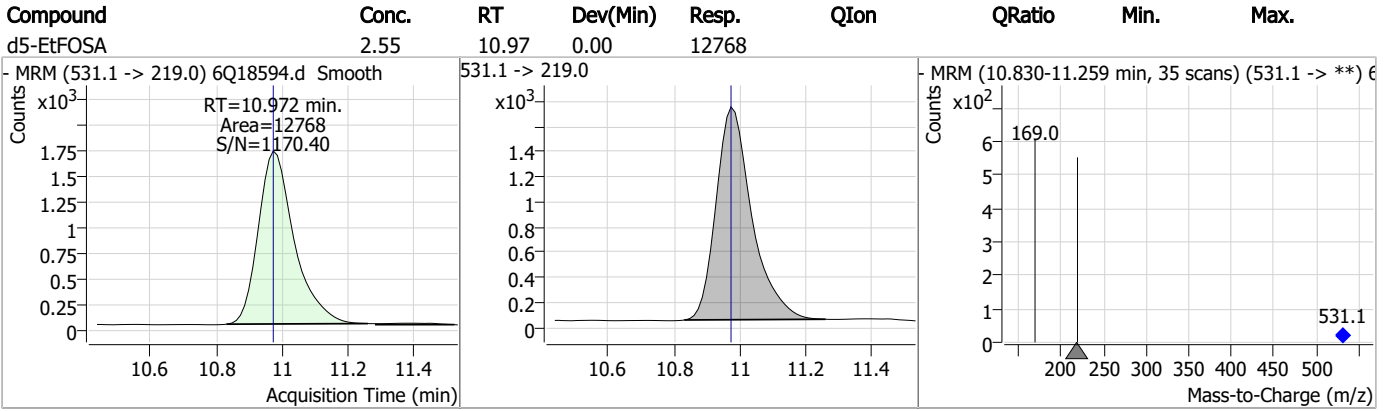
Perfluorinated Compounds by LC/MS/MS



7.2.2
7



Perfluorinated Compounds by LC/MS/MS



7.22

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18643.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 6:49:31 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	181409	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	61451	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	68545	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	62426	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	99039	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	42973	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	26075	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	36244	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31127	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17112	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34447	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24805	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	14991	2.50 µg/L	-0.012
M8-PFOS	8.177	507.1 -> 79.9	14276	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3861	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5732	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	6001	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	29088	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	40281	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	27155	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	114054	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	147237	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13213	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13471	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18139	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	76340	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10560	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	100813	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	37309	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	51823	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	61441	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3861	5.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.6%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5732	5.60 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.1%		
13C2-8:2FTS	7.815	529.1 -> 80.9	6001	5.78 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31127	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17112	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C3-PFBS	5.322	302.1 -> 79.9	24805	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C3-PFHxS	7.118	402.1 -> 79.9	14991	2.54 µg/L	-0.012

7.2.3
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C4-PFBA	2.822	216.8 -> 171.9	181409	9.98	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C4-PFHpA	6.369	367.1 -> 322.0	62426	2.60	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C5-PFHxA	5.404	318.0 -> 273.0	68545	2.64	µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C5-PFPeA	4.210	268.3 -> 223.0	61451	5.14	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C6-PFDA	8.027	519.1 -> 474.1	26075	1.19	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C7-PFUnDA	8.468	570.0 -> 525.1	36244	1.30	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C8-FOSA	9.598	506.1 -> 77.8	34447	2.49	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C8-PFOA	7.026	421.1 -> 376.0	99039	2.62	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C8-PFOS	8.177	507.1 -> 79.9	14276	2.46	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C9-PFNA	7.545	472.1 -> 427.0	42973	1.26	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%		
d3-MeFOSAA	8.072	573.2 -> 419.0	29088	4.97	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-HFPO-DA	5.782	286.9 -> 168.9	40281	9.98	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
d3-MeFOSA	10.739	515.0 -> 219.0	13471	2.40	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%		
d5-EtFOSAA	8.279	589.2 -> 419.0	27155	5.10	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
d7-MeFOSE	10.660	623.2 -> 58.9	114054	25.04	µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
d9-EtFOSE	10.894	639.2 -> 58.9	147237	24.71	µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
d5-EtFOSA	10.972	531.1 -> 219.0	13213	2.49	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%		

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

7.2.3
7

Perfluorinated Compounds by LC/MS/MS

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

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

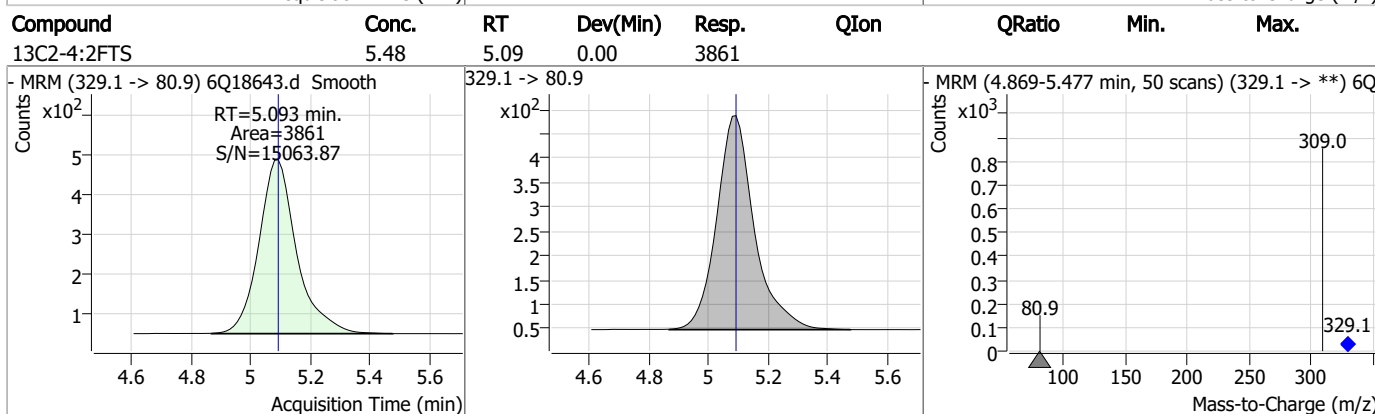
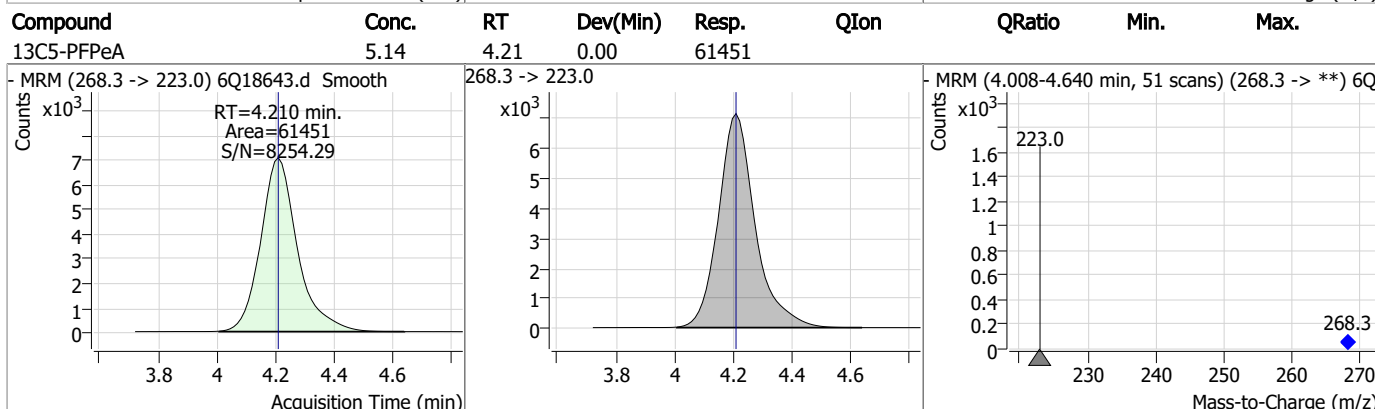
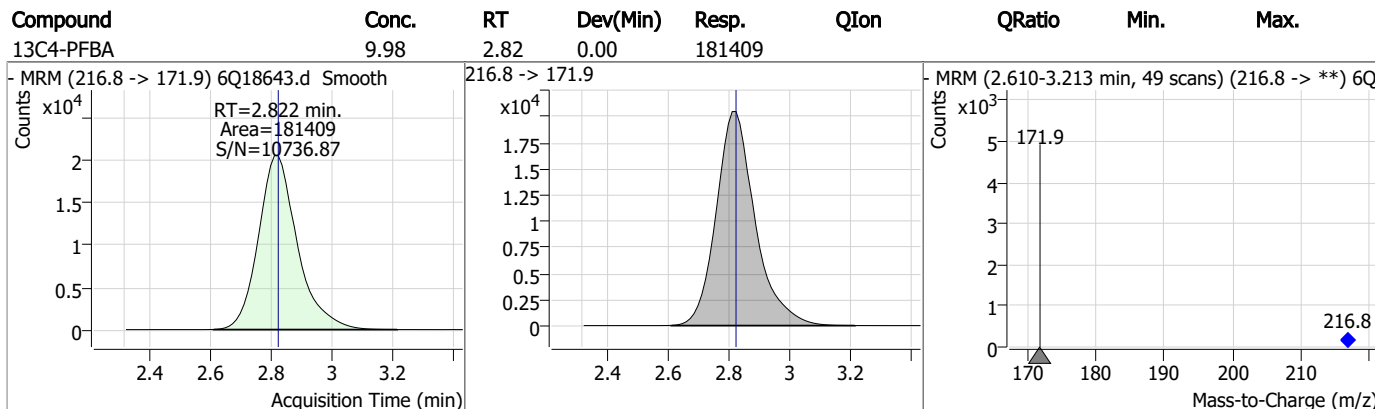
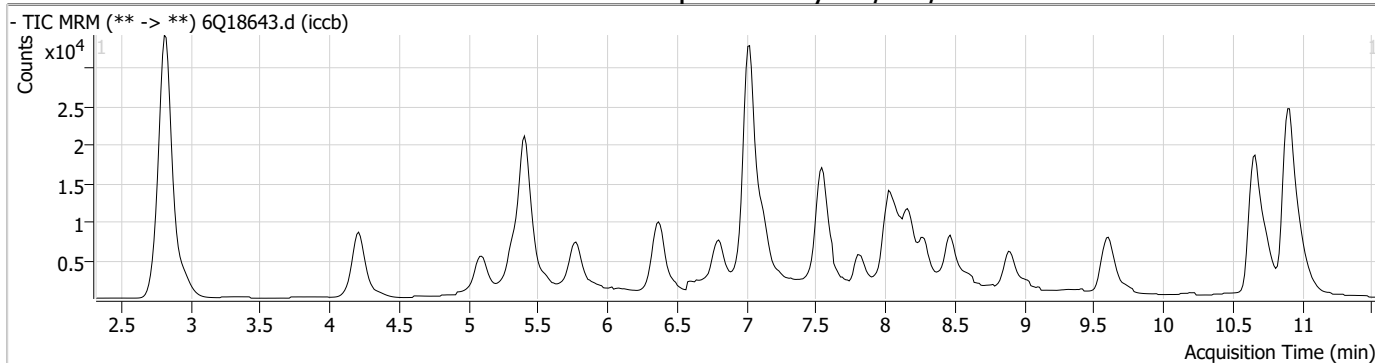
Perfluorinated Compounds by LC/MS/MS

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

7.2.3

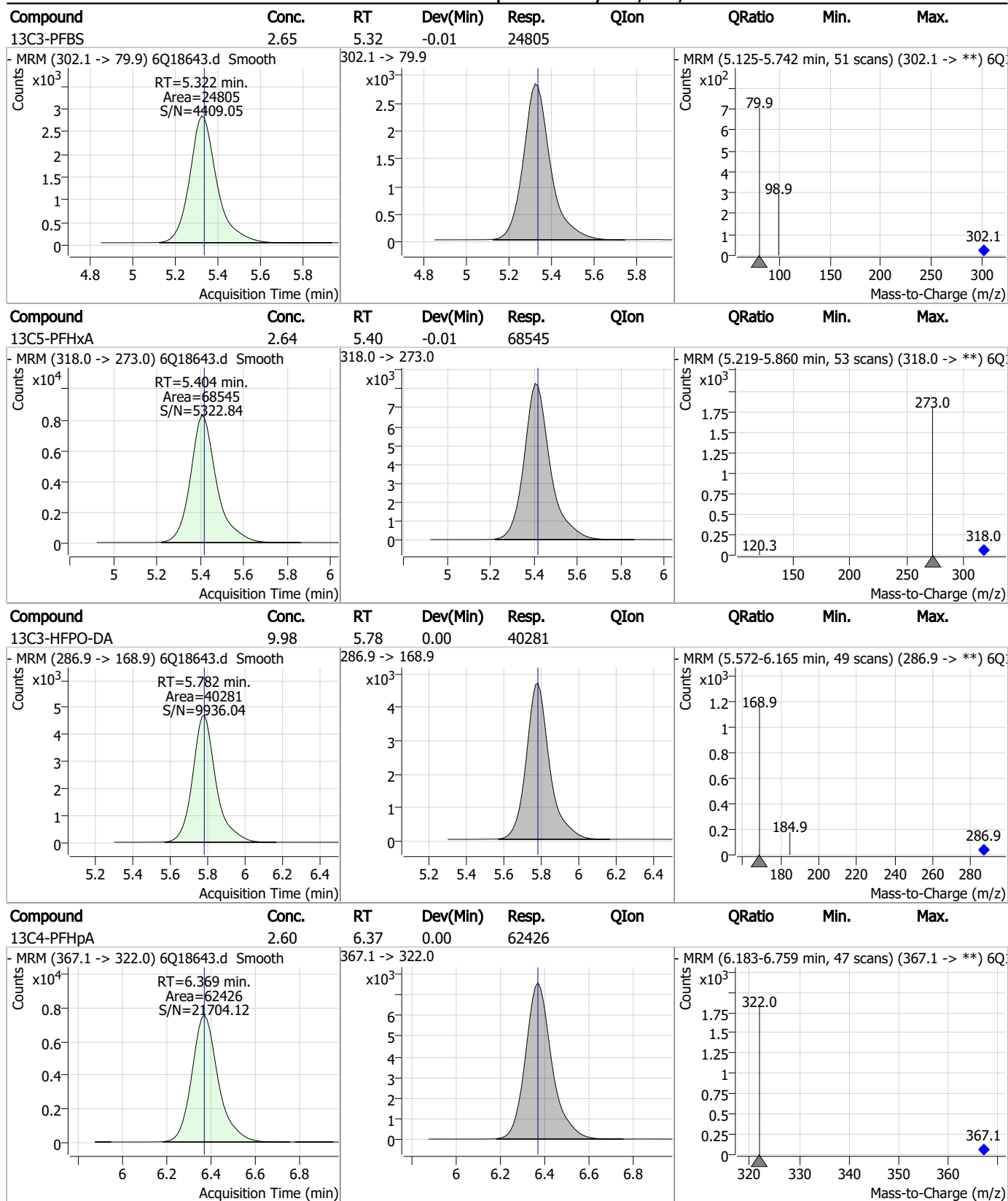
7

Perfluorinated Compounds by LC/MS/MS



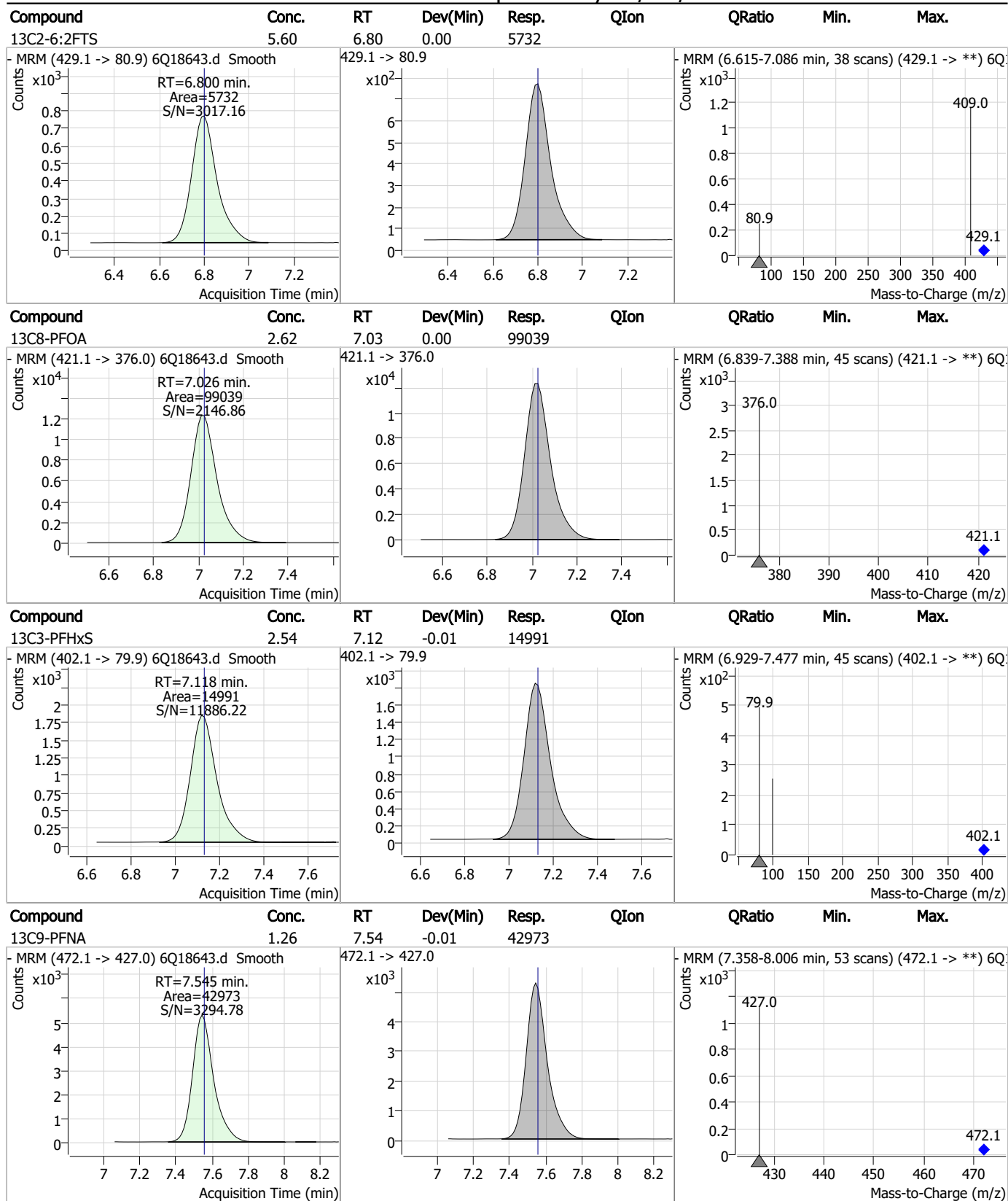
7.2.3
7

Perfluorinated Compounds by LC/MS/MS



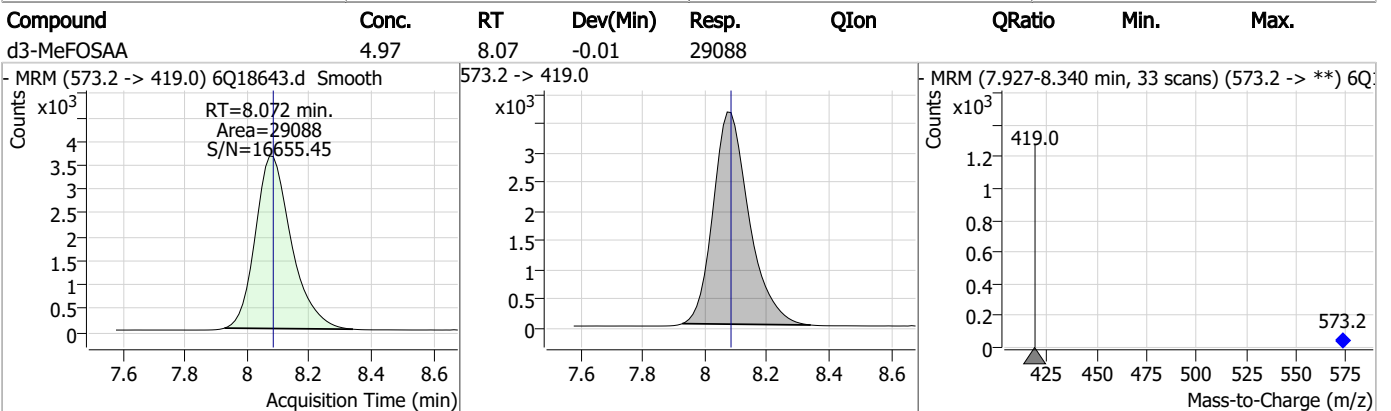
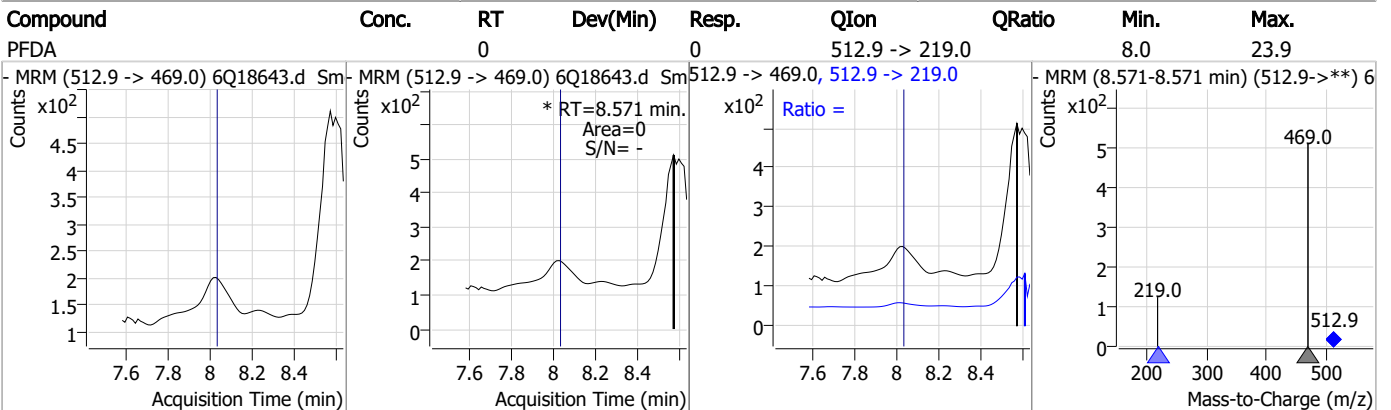
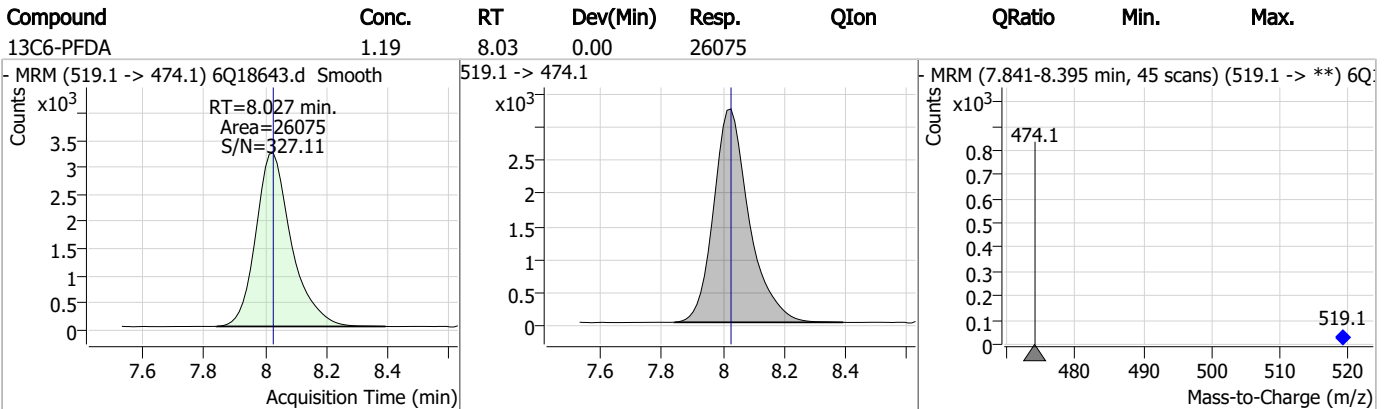
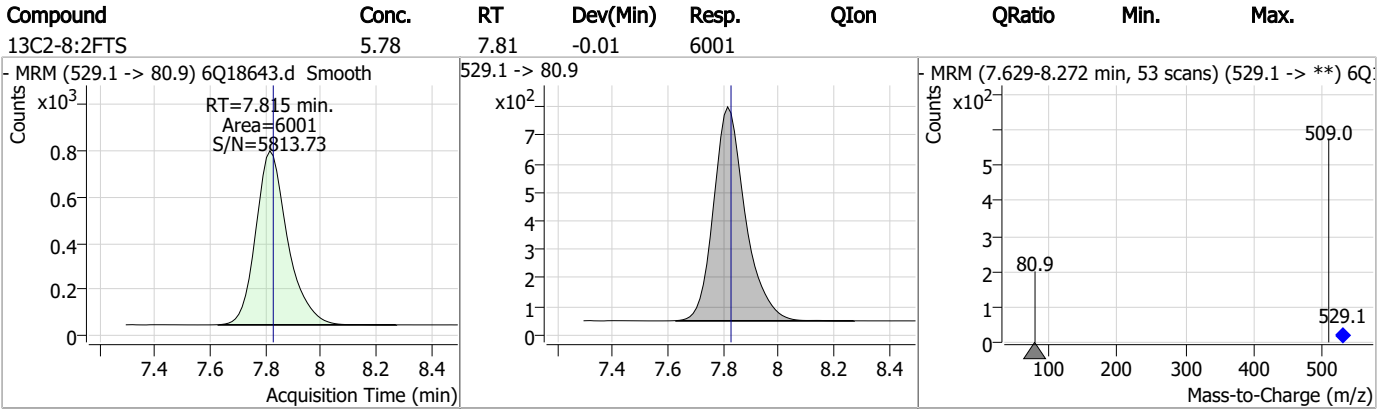
7.2.3
7

Perfluorinated Compounds by LC/MS/MS



7.2.3
7

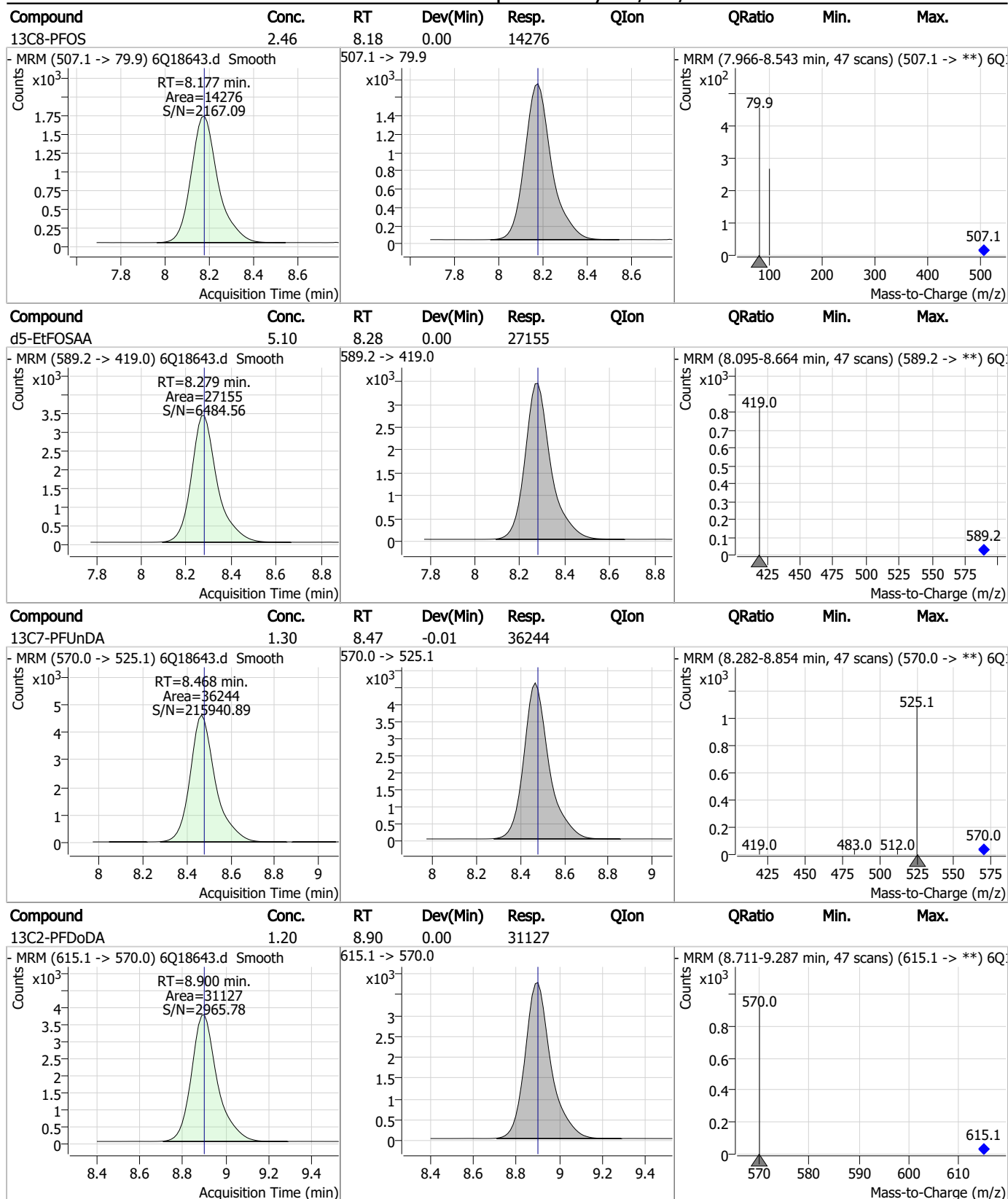
Perfluorinated Compounds by LC/MS/MS



7.2.3

7

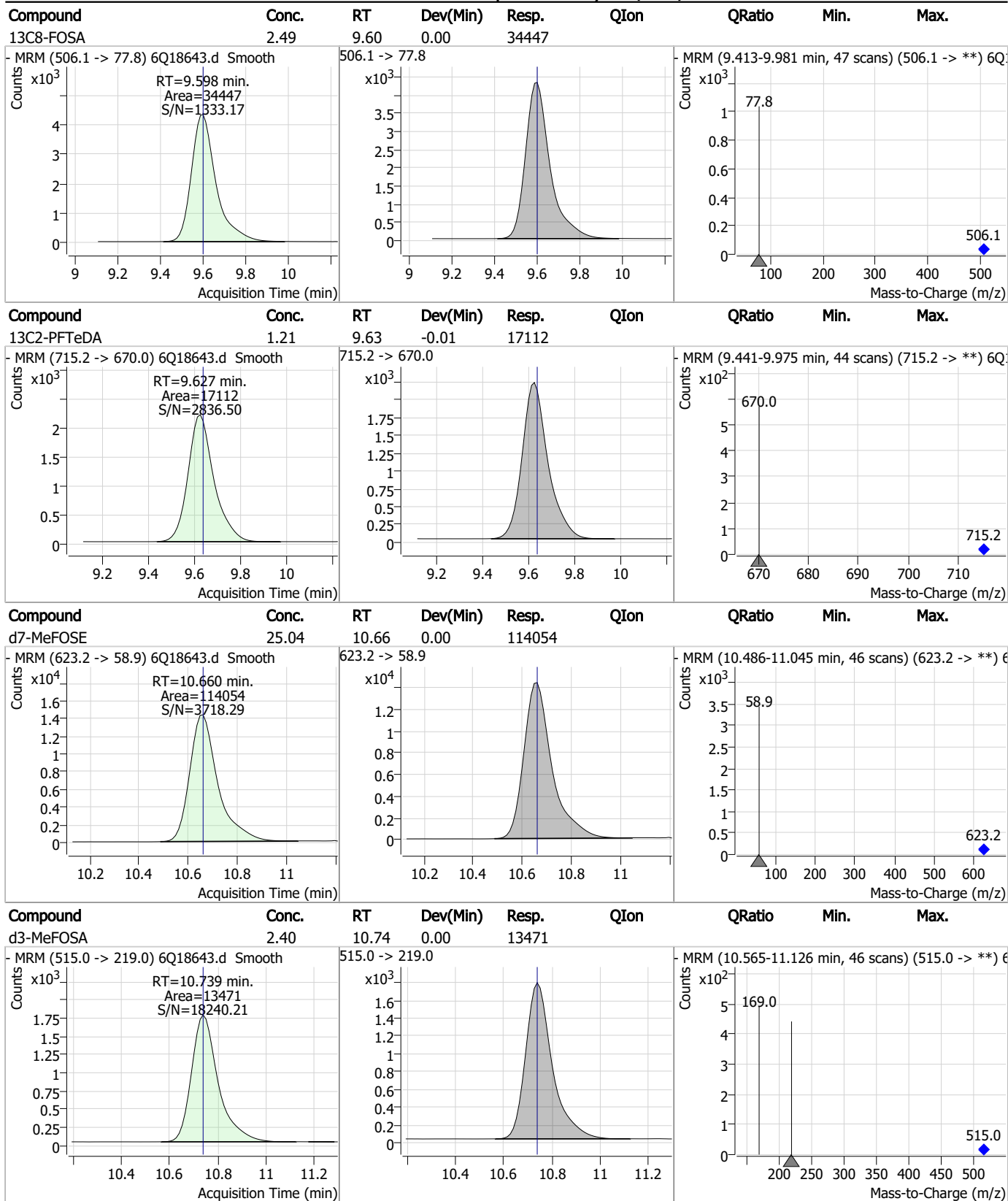
Perfluorinated Compounds by LC/MS/MS



7.2.3

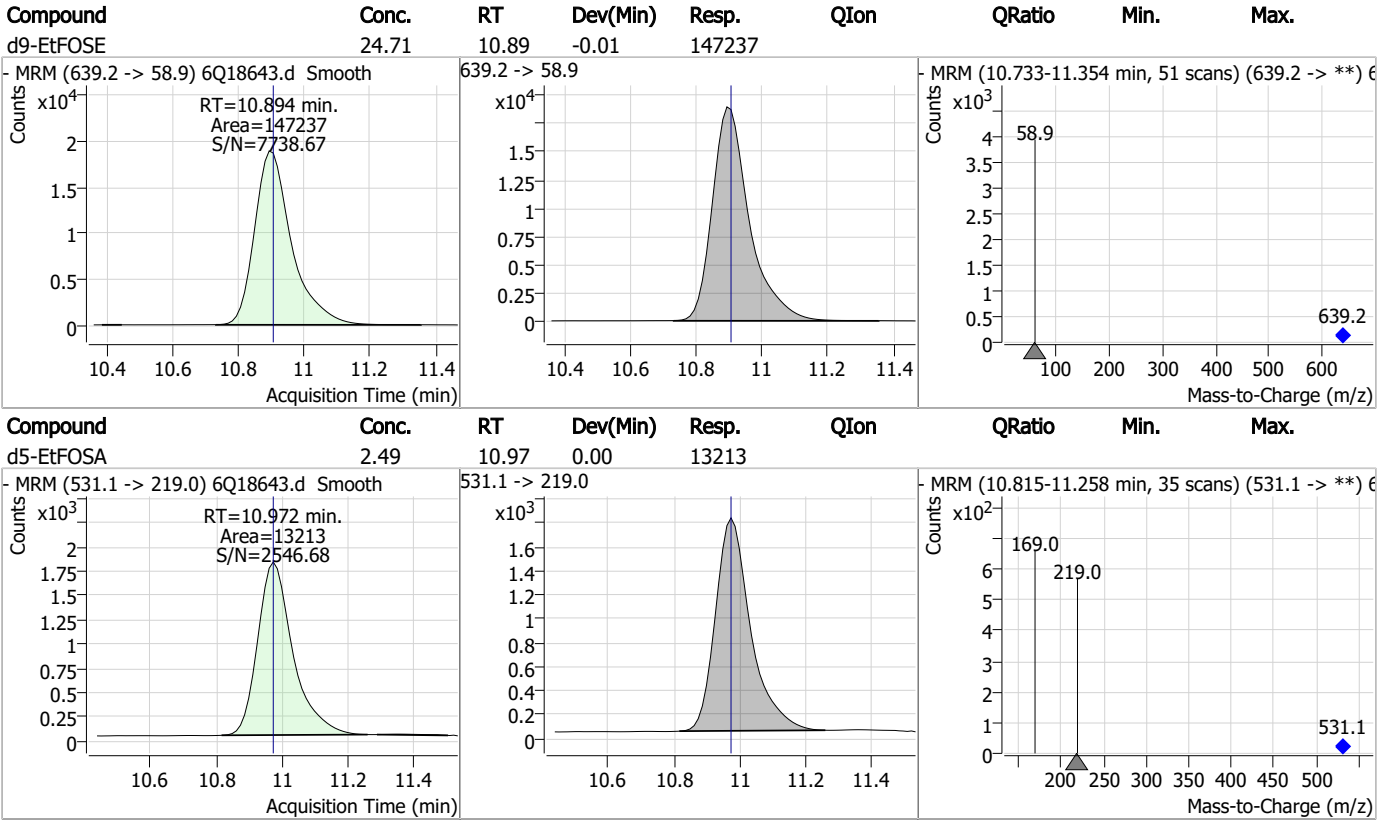
7

Perfluorinated Compounds by LC/MS/MS



7.2.3
7

Perfluorinated Compounds by LC/MS/MS



7.2.3

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18654.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:28:53 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.810	216.8 -> 171.9	181253	10.00 µg/L	-0.012
M5-PFPeA	4.210	268.3 -> 223.0	60788	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	67031	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	64030	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	99544	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	42936	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24749	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	34147	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	30886	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16325	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34464	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23837	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15570	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14233	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3829	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5669	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	6001	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	30248	5.00 µg/L	0.000
M3-HFPO-DA	5.770	286.9 -> 168.9	39973	10.00 µg/L	-0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	26401	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	115640	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	143934	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13484	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13550	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17692	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	76893	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10612	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	100403	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	37284	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	54054	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	62187	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3829	5.41 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5669	5.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	6001	5.76 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	30886	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16325	1.16 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.7%		
13C3-PFBS	5.322	302.1 -> 79.9	23837	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.130	402.1 -> 79.9	15570	2.63 µg/L	0.000

7.24
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C4-PFBA	2.810	216.8 -> 171.9	181253	9.90 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.369	367.1 -> 322.0	64030	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C5-PFHxA	5.404	318.0 -> 273.0	67031	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C5-PFPeA	4.210	268.3 -> 223.0	60788	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C6-PFDA	8.027	519.1 -> 474.1	24749	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	34147	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C8-FOSA	9.598	506.1 -> 77.8	34464	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C8-PFOA	7.026	421.1 -> 376.0	99544	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C8-PFOS	8.177	507.1 -> 79.9	14233	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C9-PFNA	7.545	472.1 -> 427.0	42936	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.4%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30248	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	39973	9.78 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	13550	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26401	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	115640	26.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
d9-EtFOSE	10.907	639.2 -> 58.9	143934	24.77 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	13484	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.608	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

7.2.4 7

Perfluorinated Compounds by LC/MS/MS

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

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

7.2.4
7

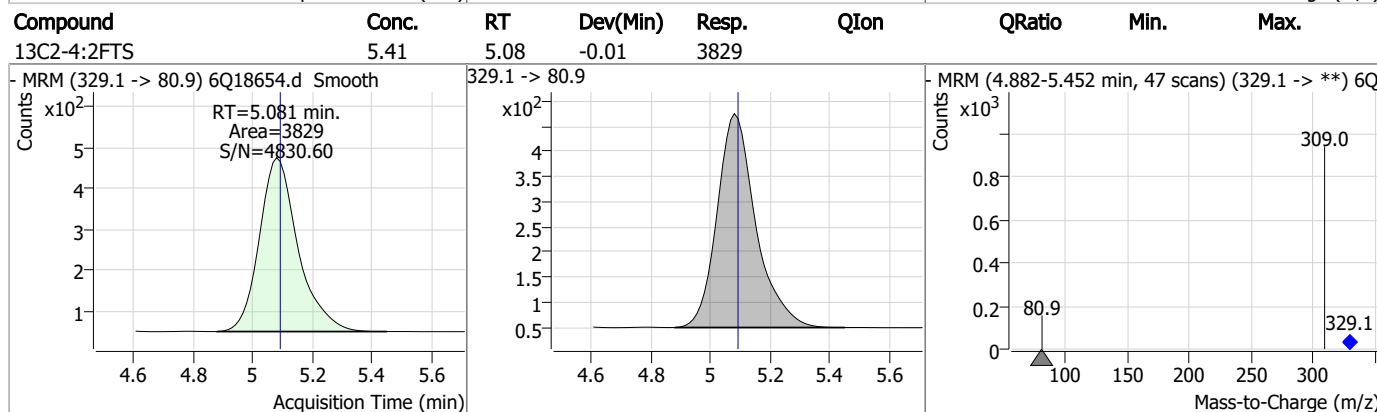
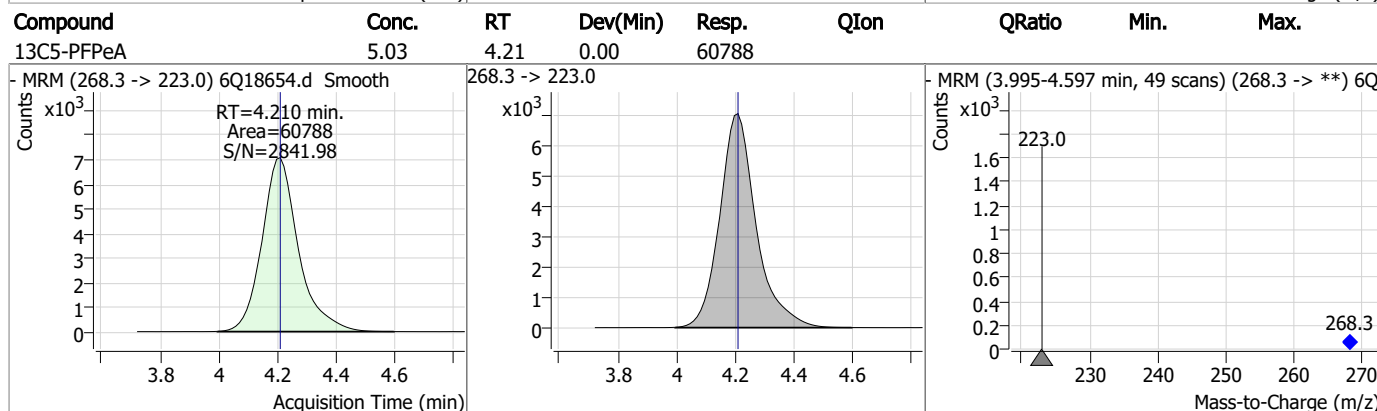
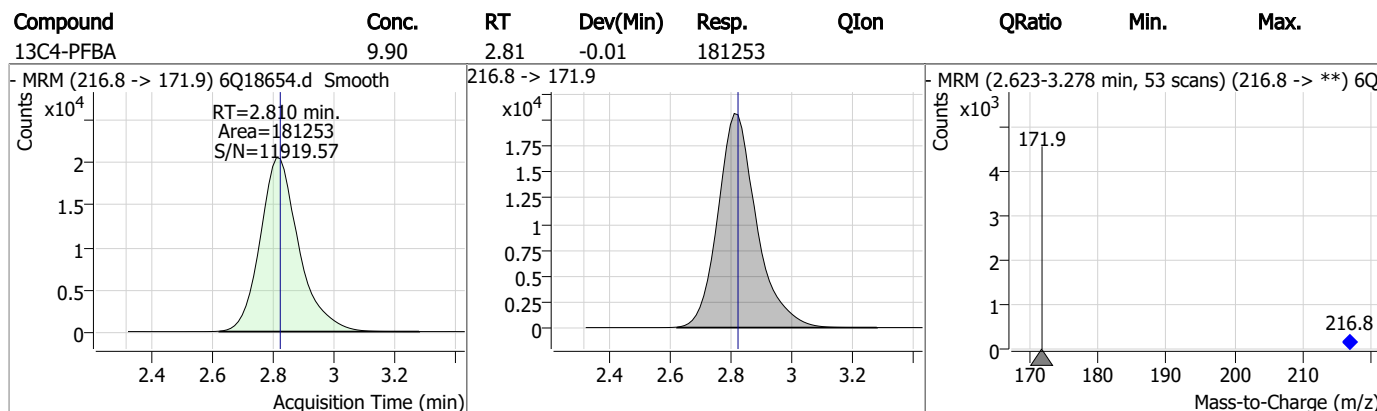
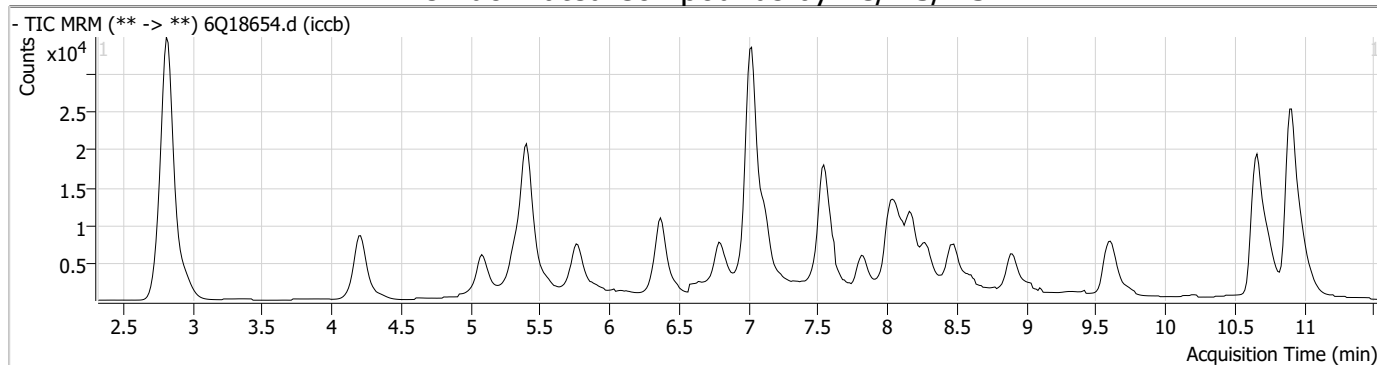
Perfluorinated Compounds by LC/MS/MS

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

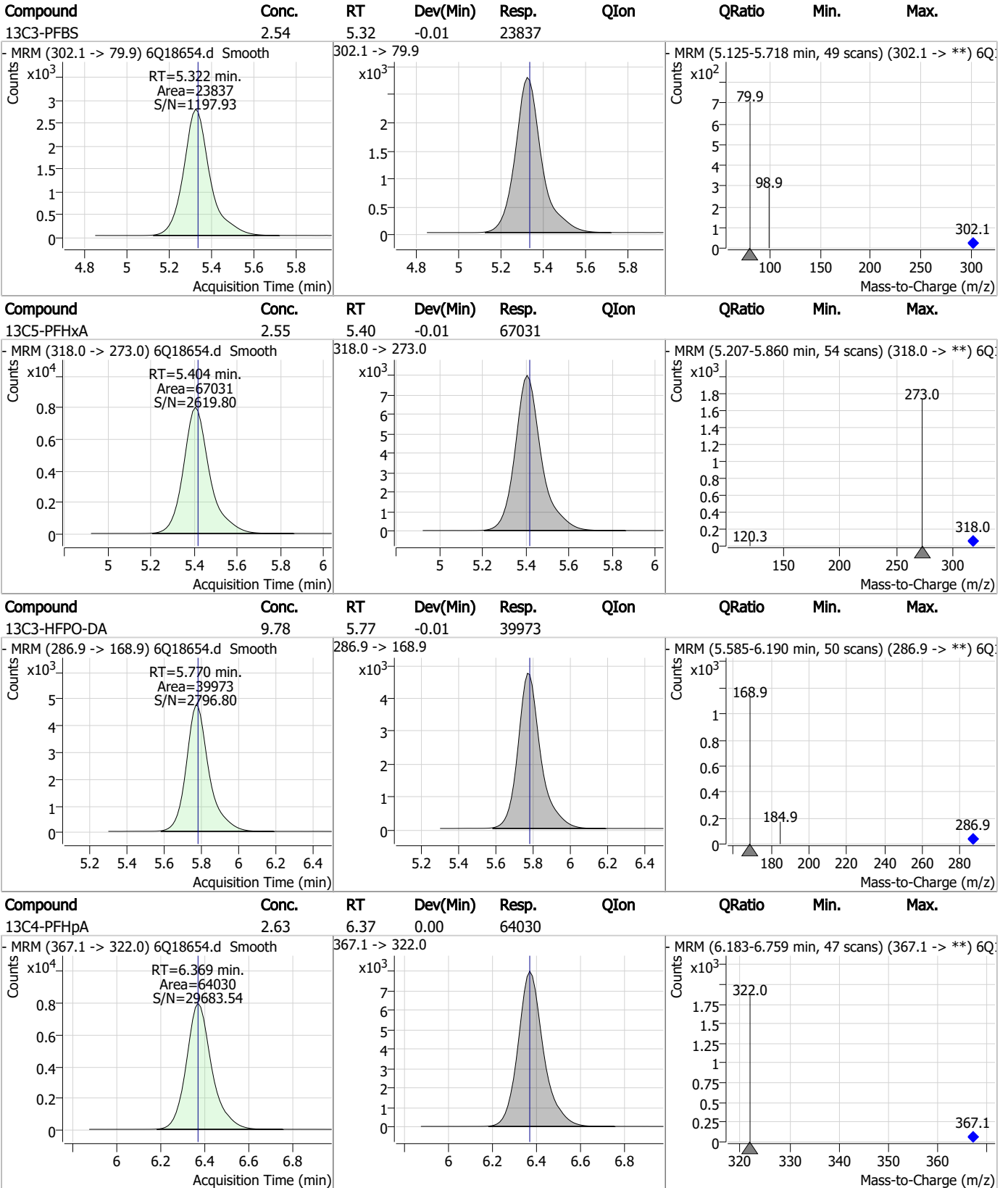
7.2.4

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.2.4

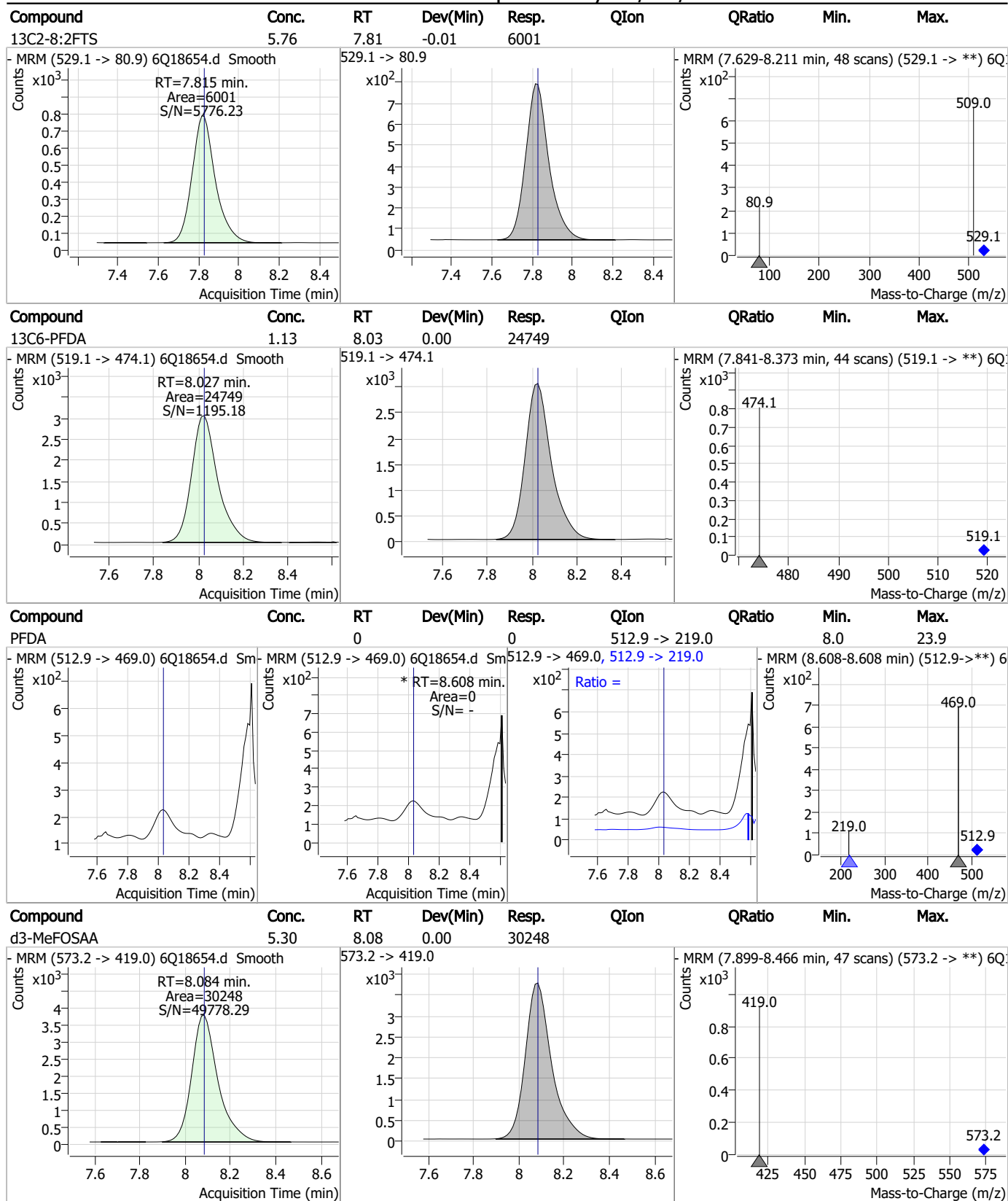
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.52	6.80	0.00	5669				
13C8-PFOA	2.65	7.03	0.00	99544				
13C3-PFHxS	2.63	7.13	0.00	15570				
13C9-PFNA	1.21	7.54	-0.01	42936				

7.2.4
7

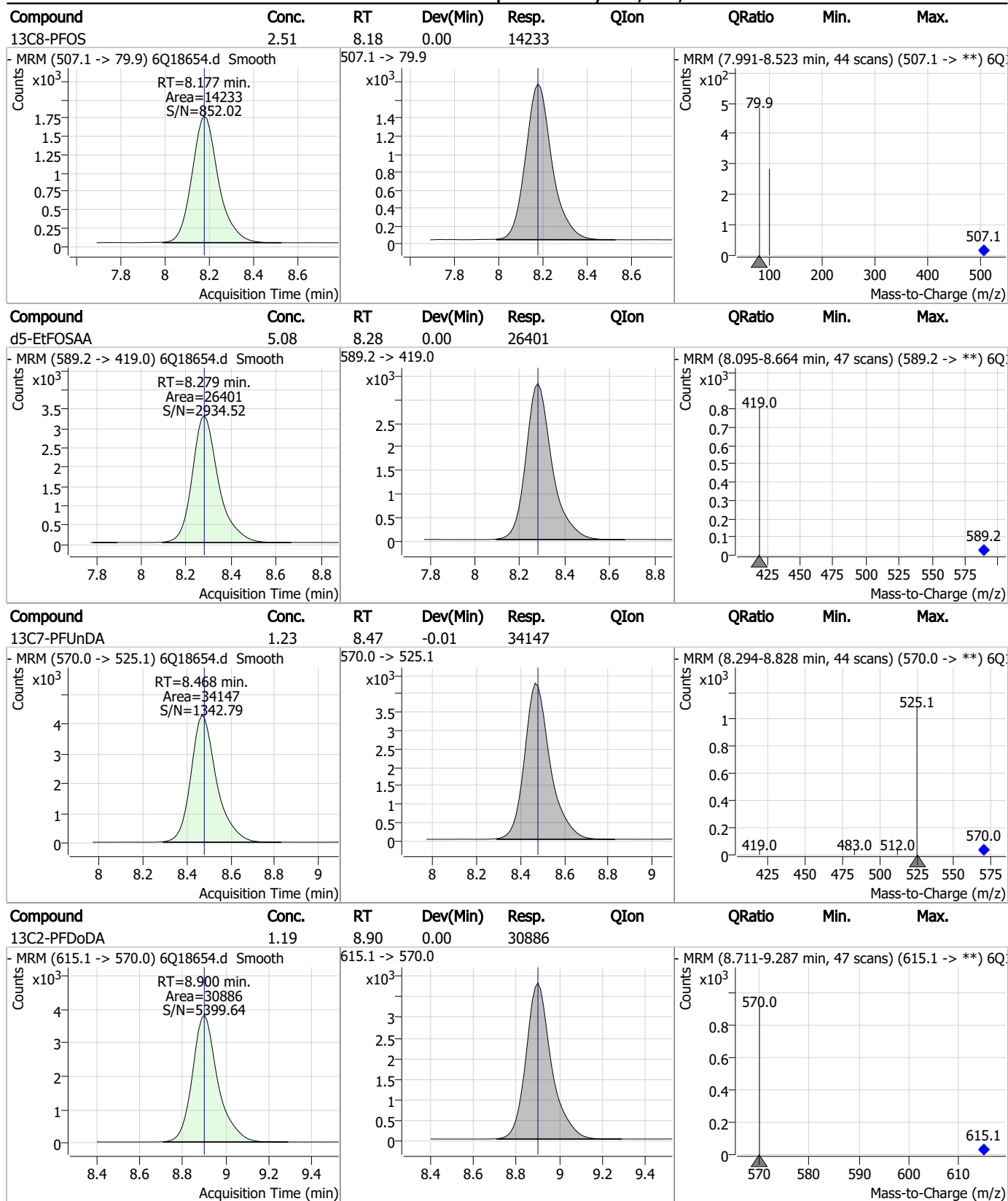
Perfluorinated Compounds by LC/MS/MS



7.2.4
7



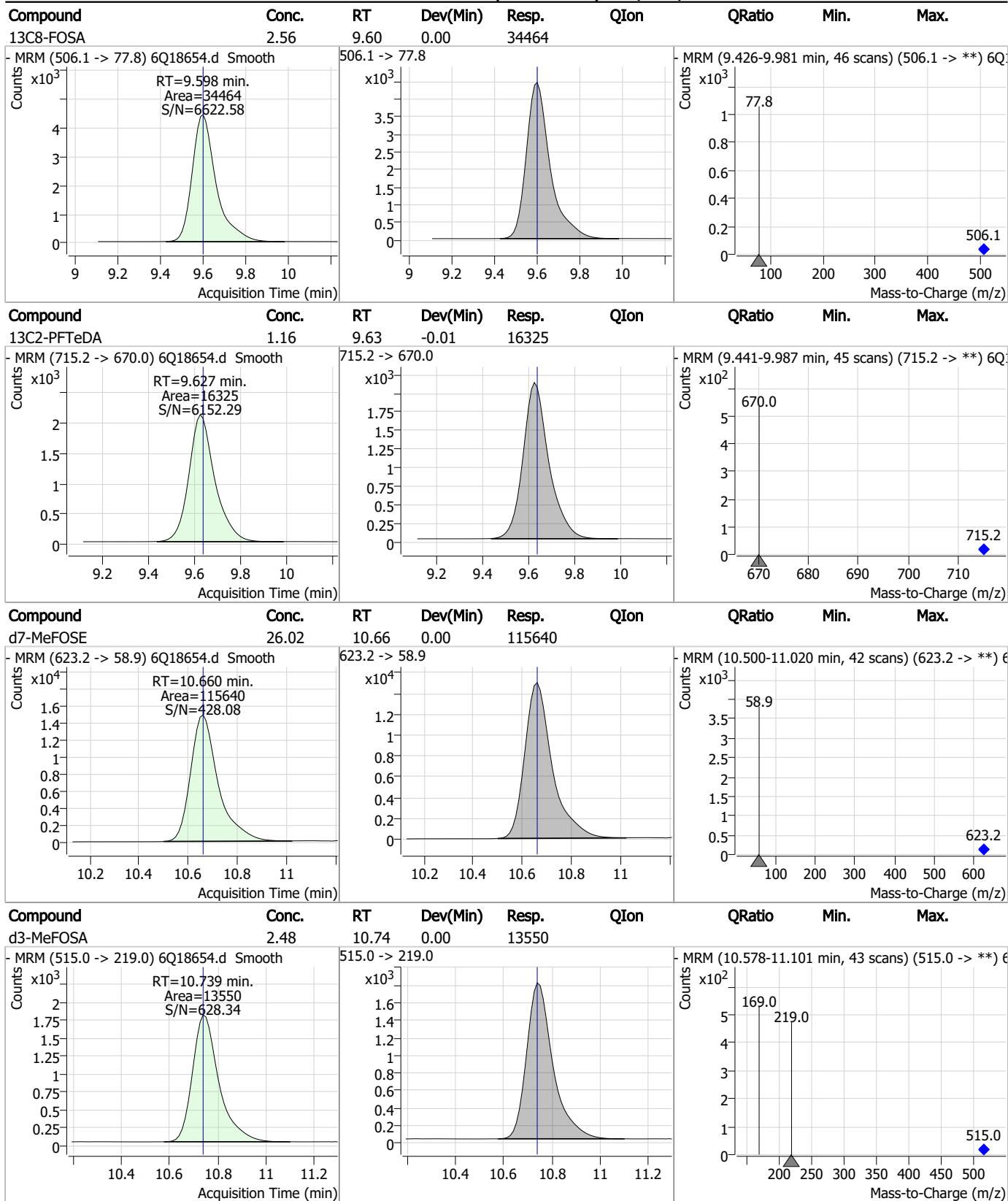
Perfluorinated Compounds by LC/MS/MS



7.2.4

7

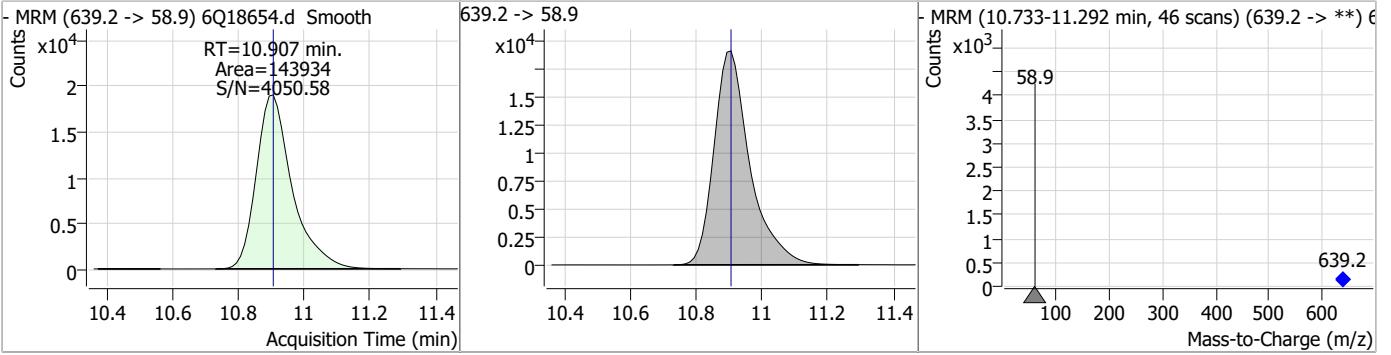
Perfluorinated Compounds by LC/MS/MS



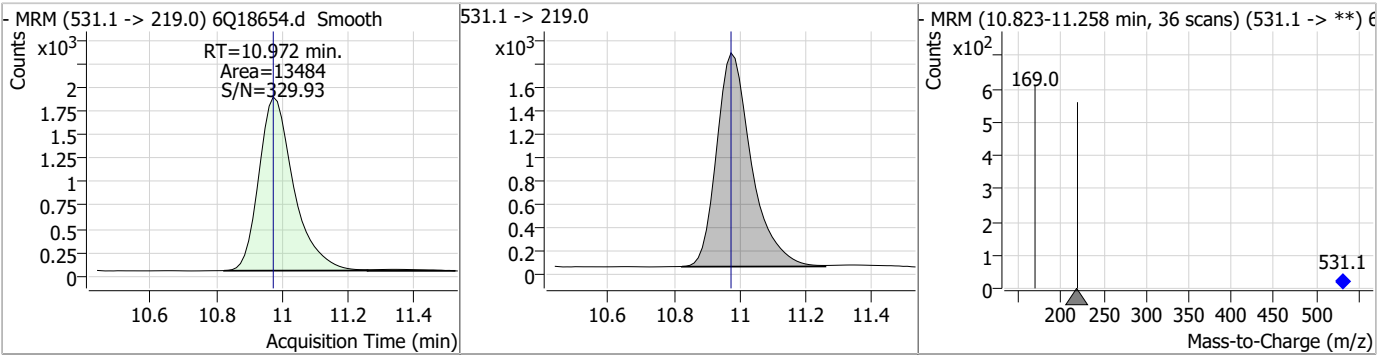
7.2.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.77	10.91	0.00	143934				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.61	10.97	0.00	13484				



7.2.4

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18644.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 7:03:59 AM
 Sample Name : op97092-bs
 Vial : P2-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	41475	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	50145	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	58533	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	53183	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	79719	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	37258	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22033	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	27811	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	25927	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	13444	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	22270	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	20977	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	12715	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12722	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3380	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4502	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5070	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	24754	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	34990	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	21761	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	64659	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	99475	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	9145	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9376	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13383	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	63367	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8622	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	78049	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	28322	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	41876	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	49525	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3380	5.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.5%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4502	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5070	5.99 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	25927	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-PFTeDA	9.627	715.2 -> 670.0	13444	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C3-PFBS	5.334	302.1 -> 79.9	20977	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.0%		
13C3-PFHxS	7.130	402.1 -> 79.9	12715	2.64 µg/L	0.000

7.3.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C4-PFBA	2.860	216.8 -> 171.9	41475	2.75 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 27.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	53183	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C5-PFHxA	5.417	318.0 -> 273.0	58533	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C5-PFPeA	4.222	268.3 -> 223.0	50145	5.21 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C6-PFDA	8.027	519.1 -> 474.1	22033	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C7-PFUnDA	8.468	570.0 -> 525.1	27811	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C8-FOSA	9.598	506.1 -> 77.8	22270	2.18 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.3%	
13C8-PFOA	7.026	421.1 -> 376.0	79719	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.1%	
13C8-PFOS	8.177	507.1 -> 79.9	12722	2.97 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.7%	
13C9-PFNA	7.545	472.1 -> 427.0	37258	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	24754	5.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	34990	10.75 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	9376	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.7%	
d5-EtFOSAA	8.279	589.2 -> 419.0	21761	5.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	64659	19.24 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 76.9%	
d9-EtFOSE	10.894	639.2 -> 58.9	99475	22.63 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	9145	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.4%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	47778	9.73 µg/L	96
		327.1 -> 80.9	17827		
6:2FTS	6.801	427.1 -> 407.0	47513	10.74 µg/L	100
		427.1 -> 80.9	16059		
8:2FTS	7.816	527.1 -> 507.0	26337	9.34 µg/L	93
		527.1 -> 80.8	10013		
EtFOSAA	8.280	584.2 -> 419.1	7754	2.77 µg/L	94
		584.2 -> 526.0	4526		
FOSA	9.589	498.1 -> 77.9	19169	2.49 µg/L	98
		498.1 -> 478.0	712		
MeFOSAA	8.085	570.1 -> 419.0	14292	2.81 µg/L	99
		570.1 -> 483.0	2812		
PFBA	2.868	212.8 -> 168.9	14767	10.75 µg/L	100
PFBS	5.335	298.7 -> 79.9	15981	2.24 µg/L	98
		298.7 -> 98.8	5942		
PFDA	8.027	512.9 -> 469.0	67485	2.64 µg/L	98
		512.9 -> 219.0	11289		
PFDODA	8.900	613.1 -> 569.0	47267	2.66 µg/L	97
		613.1 -> 319.0	6953		
PFDS	9.052	599.0 -> 79.9	7287	2.29 µg/L	98

7.3.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3657			
PFHpA	6.370	363.1 -> 319.0	61113	2.60	µg/L	98
		363.1 -> 169.0	9620			
PFHpS	7.685	449.0 -> 79.9	14604	2.39	µg/L	98
		449.0 -> 98.9	6976			
PFHxA	5.420	313.0 -> 269.0	51559	2.62	µg/L	98
		313.0 -> 118.9	2619			
PFHxS	7.131	398.7 -> 79.9	14276	2.48	µg/L	m 100
		398.7 -> 98.9	6784			
PFNA	7.545	463.0 -> 419.0	67602	2.56	µg/L	99
		463.0 -> 219.0	12956			
PFNS	8.631	548.8 -> 79.9	11845	2.32	µg/L	90
		548.8 -> 98.9	6561			
PFOA	7.028	413.0 -> 369.0	95075	2.79	µg/L	98
		413.0 -> 169.0	15690			
PFOS	8.178	498.9 -> 79.9	13351	2.30	µg/L	m 97
		498.9 -> 98.8	6812			
PFPeA	4.224	263.0 -> 219.0	63469	5.27	µg/L	100
PFPeS	6.422	349.1 -> 79.9	14344	2.50	µg/L	98
		349.1 -> 98.9	6586			
PFTeDA	9.628	713.1 -> 669.0	34841	2.63	µg/L	98
		713.1 -> 168.9	2945			
PFTrDA	9.284	663.0 -> 619.0	47790	2.66	µg/L	96
		663.0 -> 168.9	5105			
PFUnDA	8.468	563.1 -> 519.0	49629	2.75	µg/L	98
		563.1 -> 269.1	8057			
11CI-PF3OUdS	9.336	630.9 -> 450.9	65449	4.99	µg/L	99
		632.9 -> 452.9	19960			
9CI-PF3ONS	8.508	530.8 -> 351.0	105969	5.12	µg/L	96
		532.8 -> 353.0	32512			
ADONA	6.632	376.9 -> 250.9	239358	5.15	µg/L	100
		376.9 -> 84.8	63946			
HFPO-DA	5.783	284.9 -> 168.9	15392	5.19	µg/L	95
		284.9 -> 184.9	1773			
3:3FTCA	3.709	241.0 -> 177.0	4471	5.80	µg/L	97
		241.0 -> 117.0	596			
5:3FTCA	6.086	341.0 -> 237.1	212864	60.21	µg/L	95
		341.0 -> 217.0	159129			
7:3FTCA	7.510	441.0 -> 316.9	152964	63.18	µg/L	100
		441.0 -> 336.9	337912			
EtFOSA	10.974	526.0 -> 219.0	21720	5.10	µg/L	96
		526.0 -> 169.0	27915			
EtFOSE	10.920	630.0 -> 58.9	56185	12.66	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	18060	5.24	µg/L	96
		511.9 -> 169.0	24874			
MeFOSE	10.673	616.1 -> 58.9	32913	12.81	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	3322	2.35	µg/L	98
		699.1 -> 98.8	1821			
NFDHA	5.299	295.0 -> 201.0	12791	5.35	µg/L	98
		295.0 -> 84.9	3306			
PFMBA	4.638	279.0 -> 85.1	45555	5.56	µg/L	100
PFMPA	3.388	229.0 -> 84.9	16823	2.64	µg/L	100
PFEESA	5.875	314.8 -> 134.9	119674	4.80	µg/L	98
		314.8 -> 82.9	3965			

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

7.3.1
7

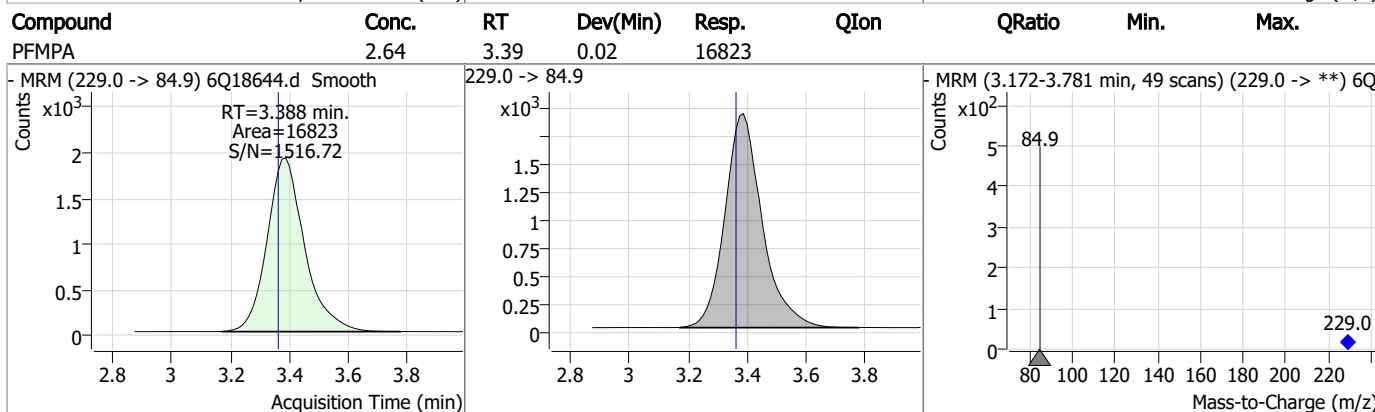
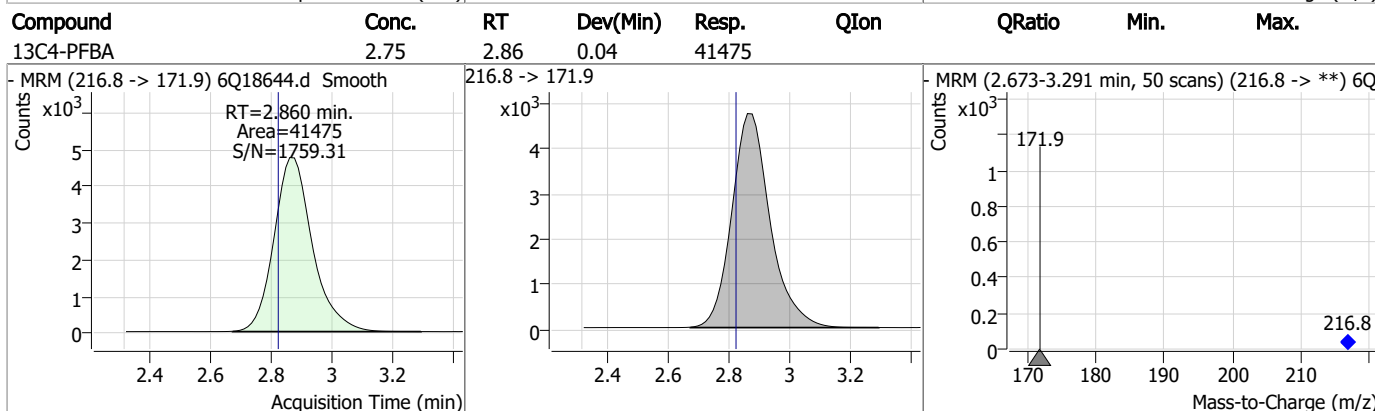
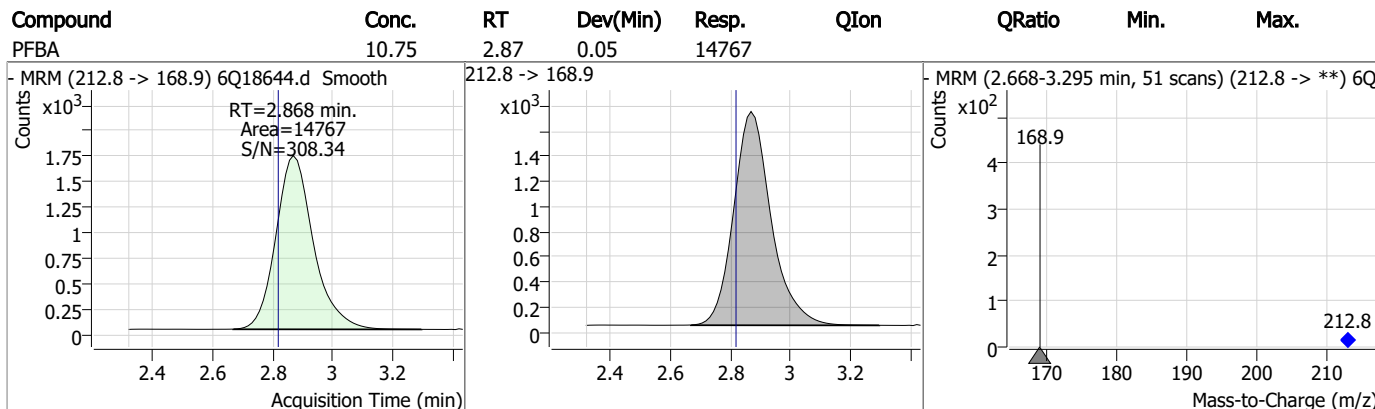
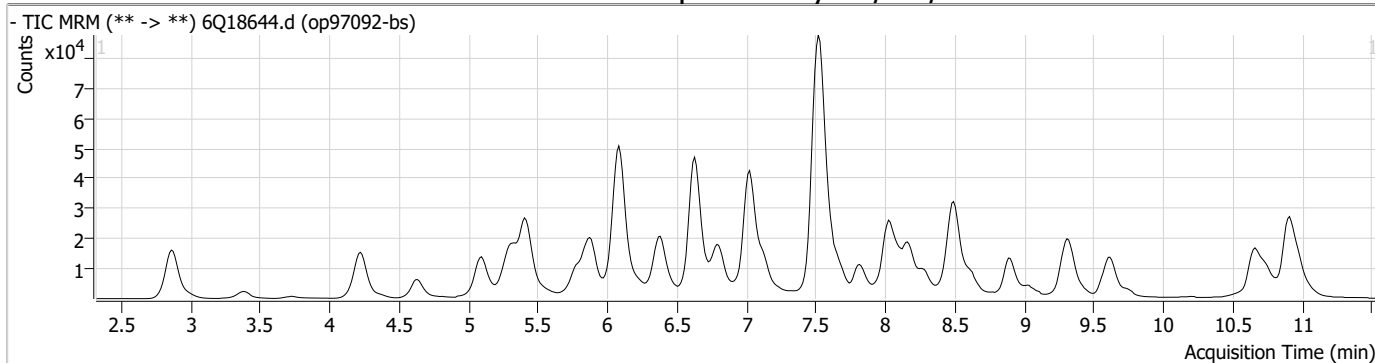
Perfluorinated Compounds by LC/MS/MS

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

7.3.1

7

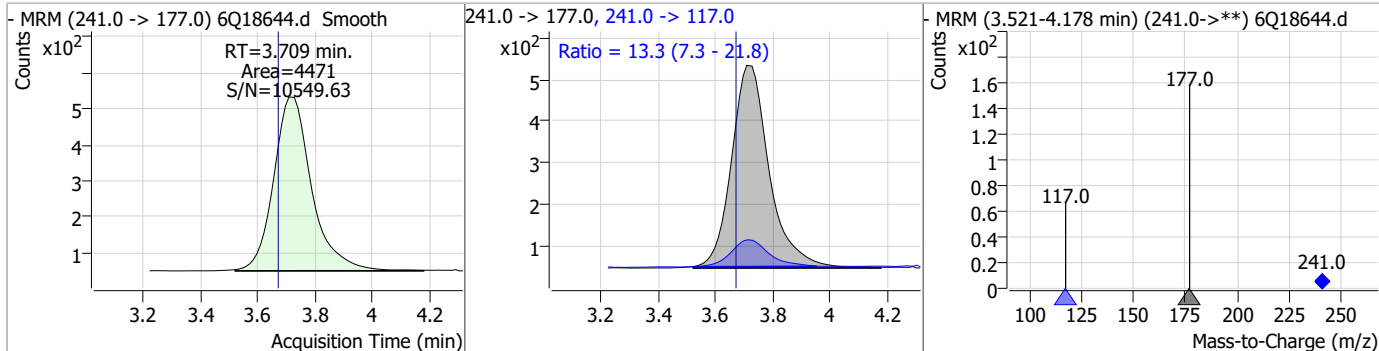
Perfluorinated Compounds by LC/MS/MS



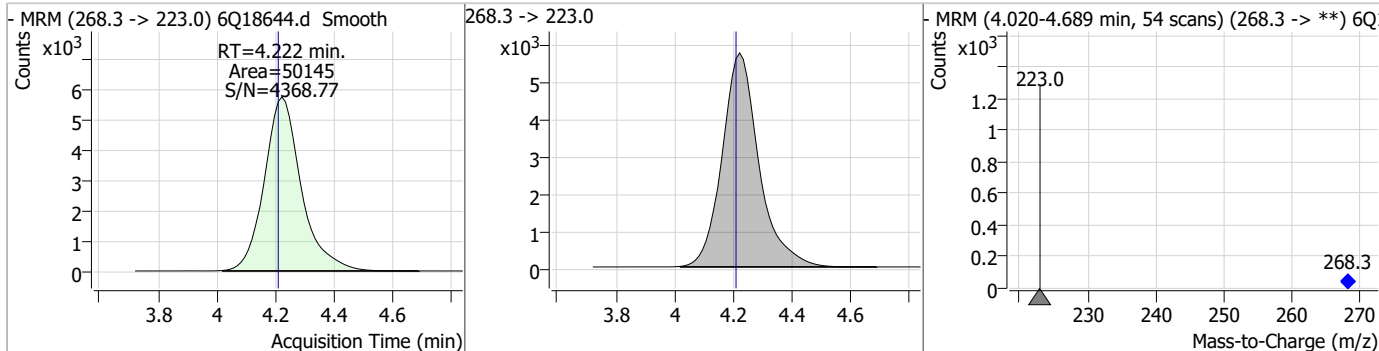
7.3.1
7

Perfluorinated Compounds by LC/MS/MS

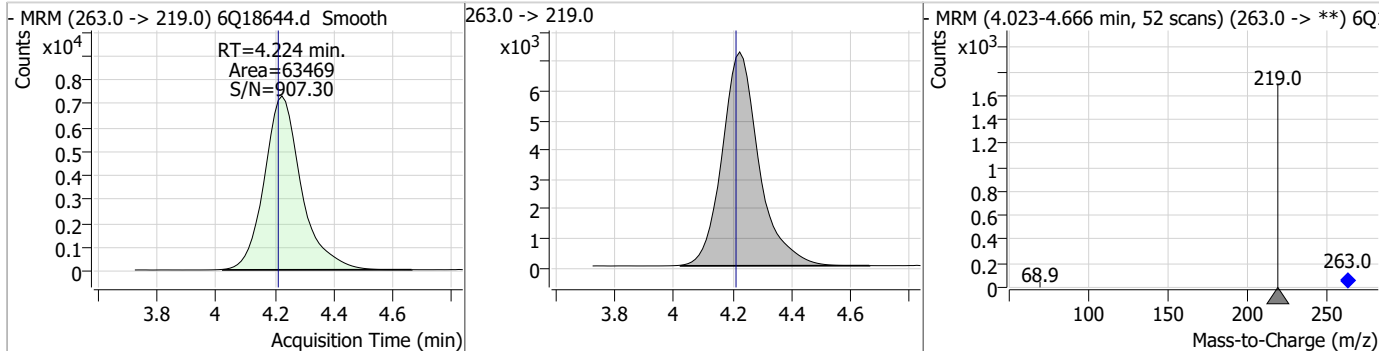
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	5.80	3.71	0.04	4471	241.0 -> 117.0	13.3	7.3	21.8



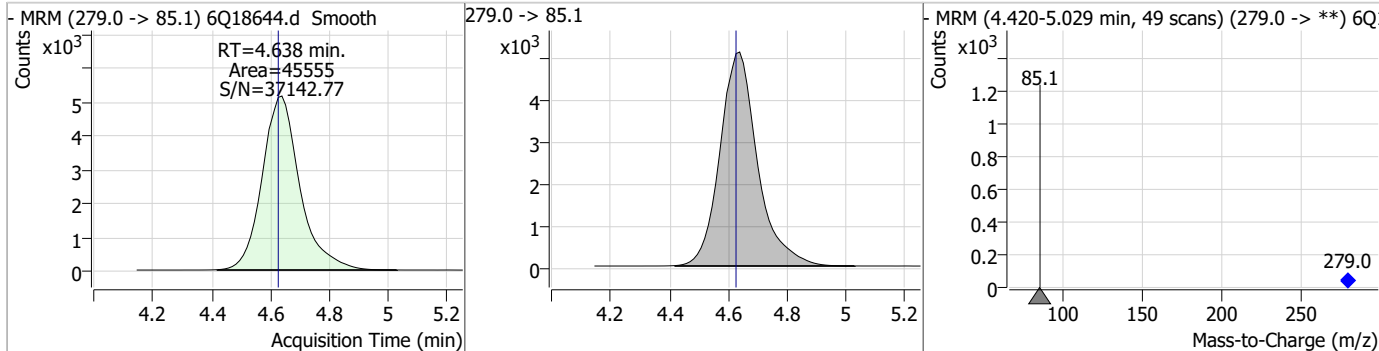
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.21	4.22	0.01	50145	268.3 -> 223.0			



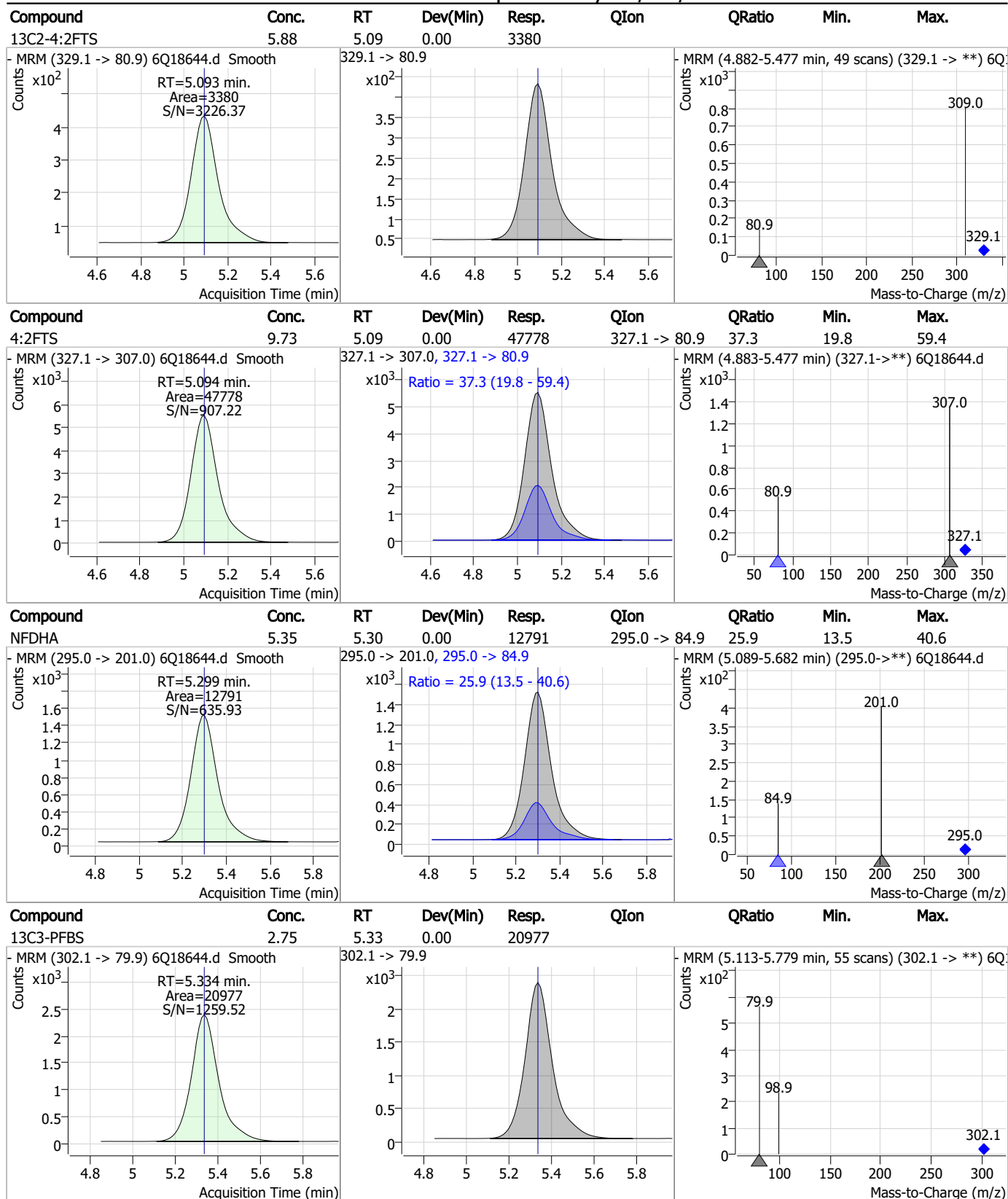
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.27	4.22	0.01	63469	263.0 -> 219.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.56	4.64	0.01	45555	279.0 -> 85.1			



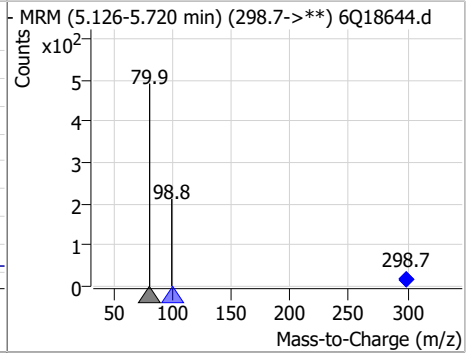
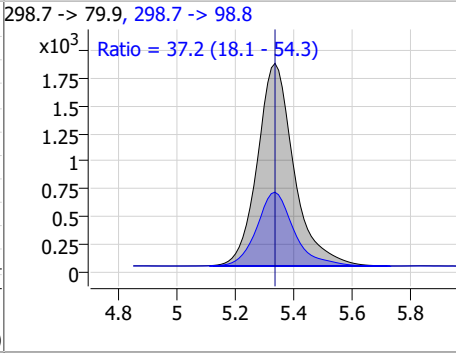
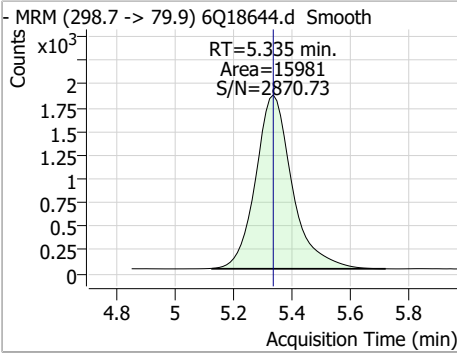
Perfluorinated Compounds by LC/MS/MS



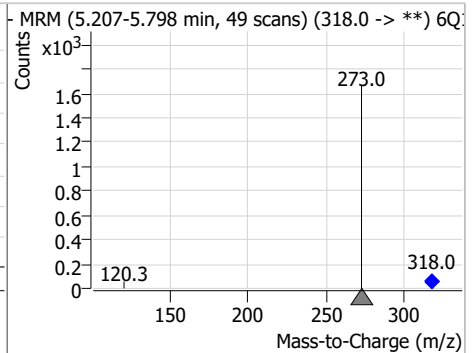
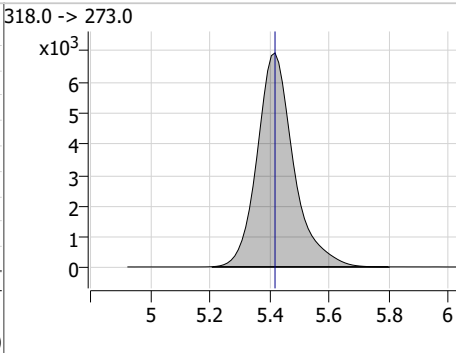
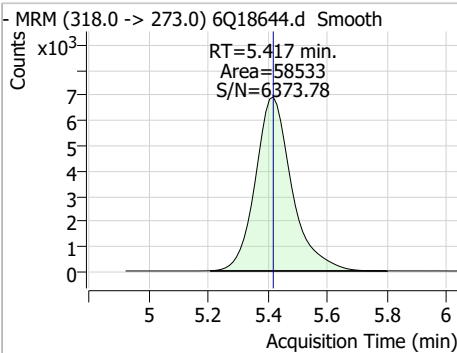
7.3.1
7

Perfluorinated Compounds by LC/MS/MS

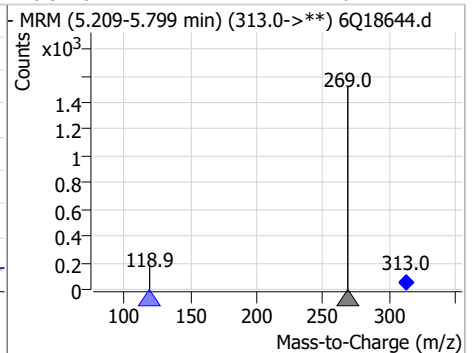
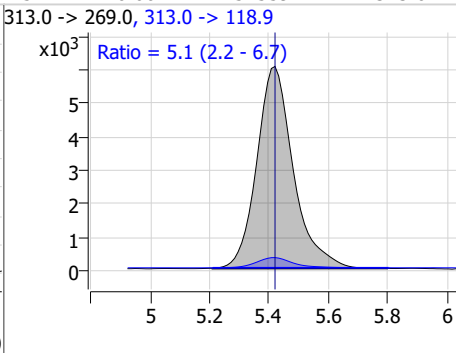
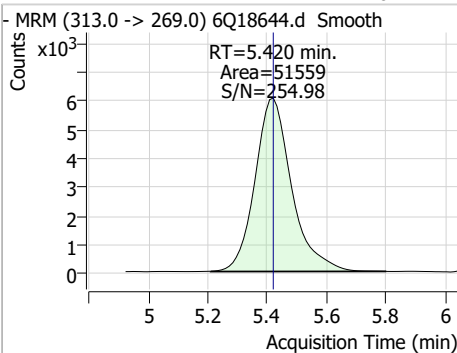
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.24	5.34	0.00	15981	298.7 -> 98.8	37.2	18.1	54.3



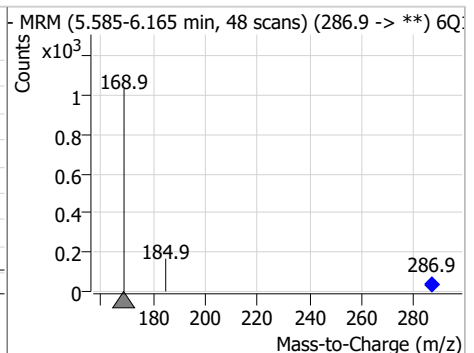
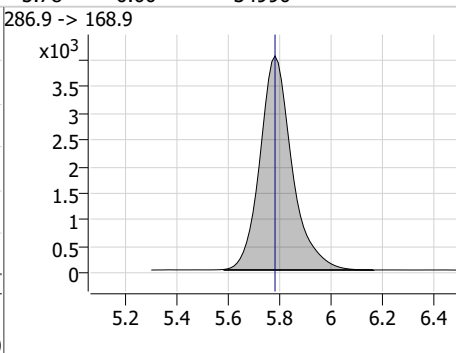
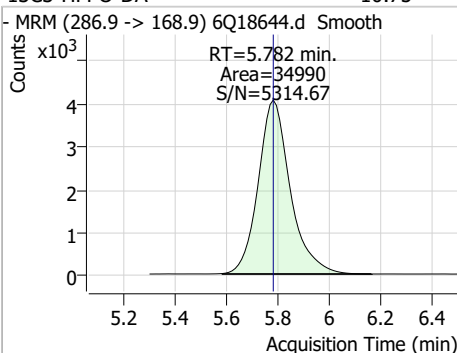
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.79	5.42	0.00	58533	318.0 -> 273.0	5.1	2.2	6.7



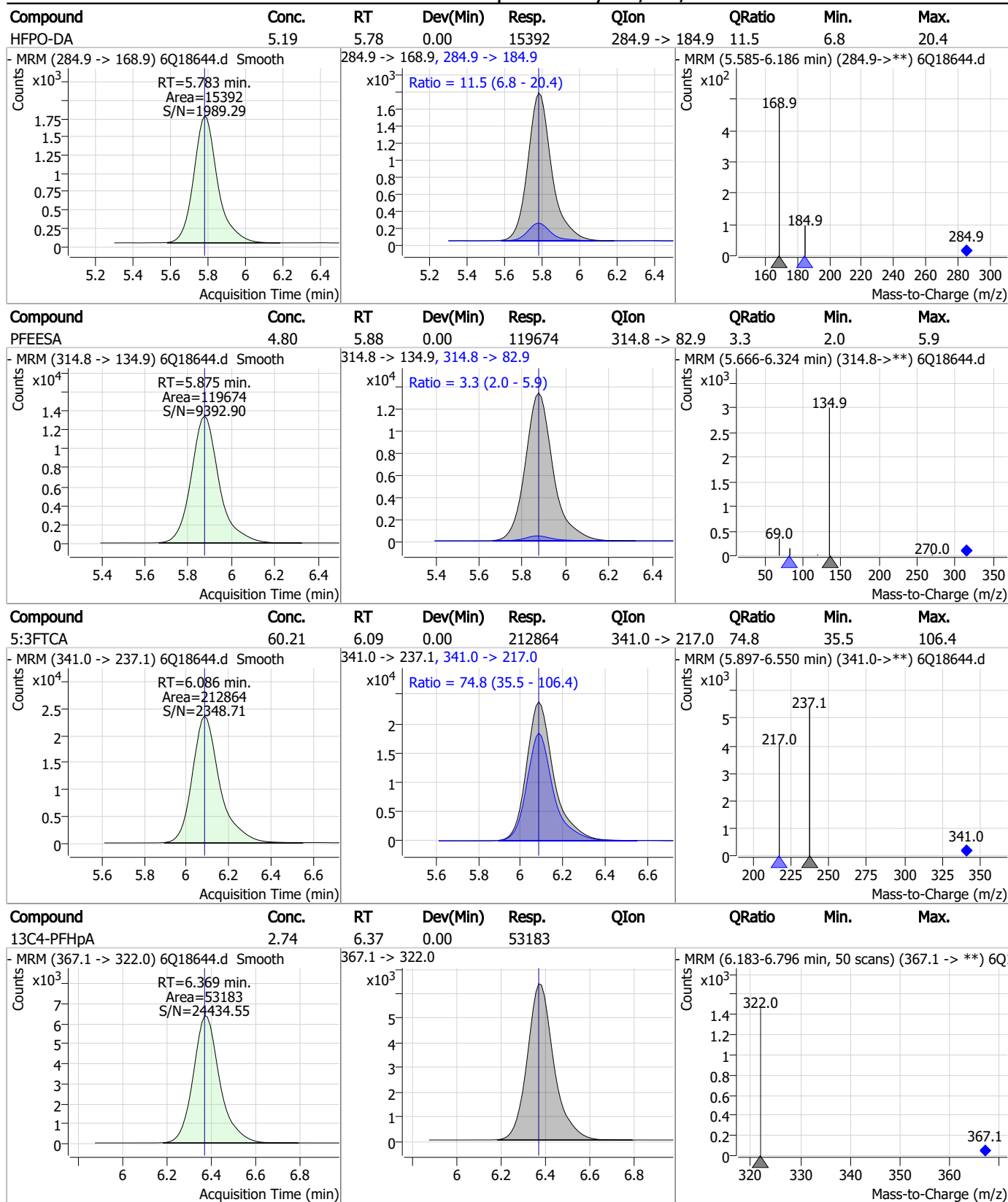
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.62	5.42	0.00	51559	313.0 -> 118.9	5.1	2.2	6.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.75	5.78	0.00	34990	286.9 -> 168.9	5.1	2.2	6.7



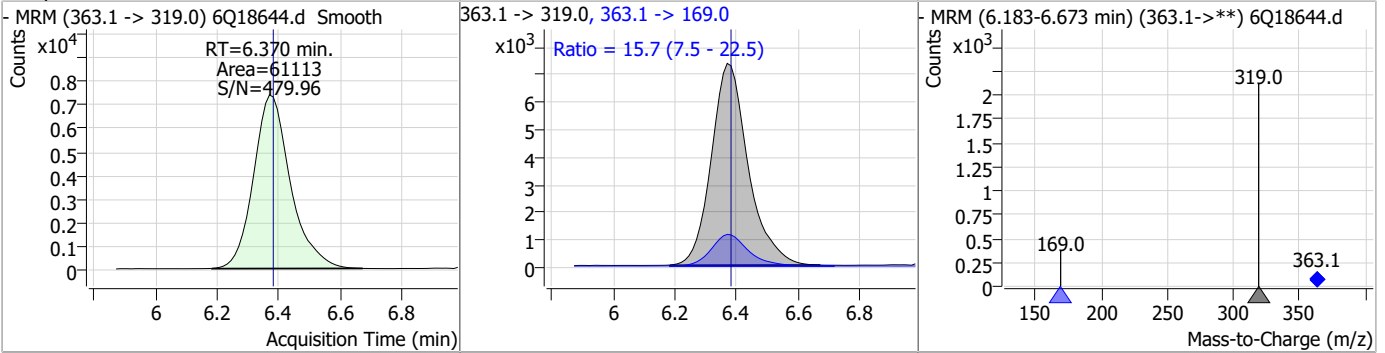
Perfluorinated Compounds by LC/MS/MS



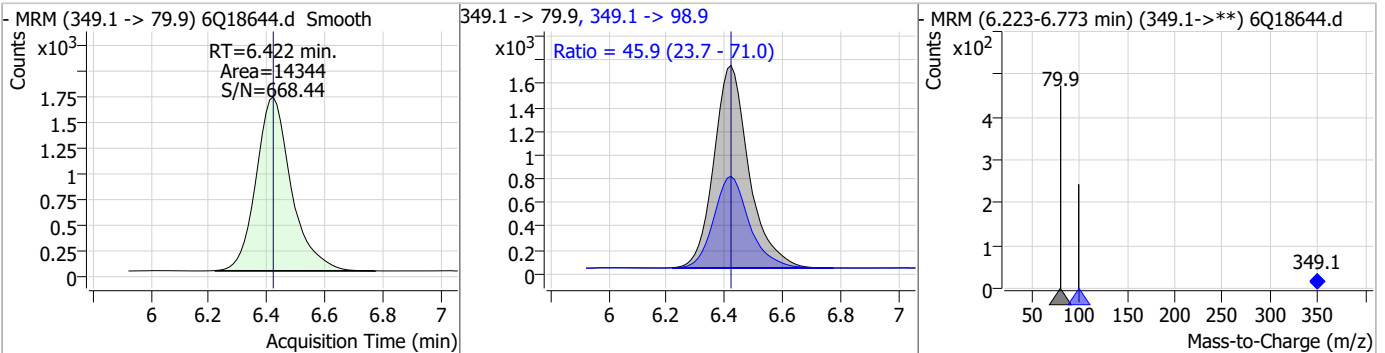
7.3.1
7

Perfluorinated Compounds by LC/MS/MS

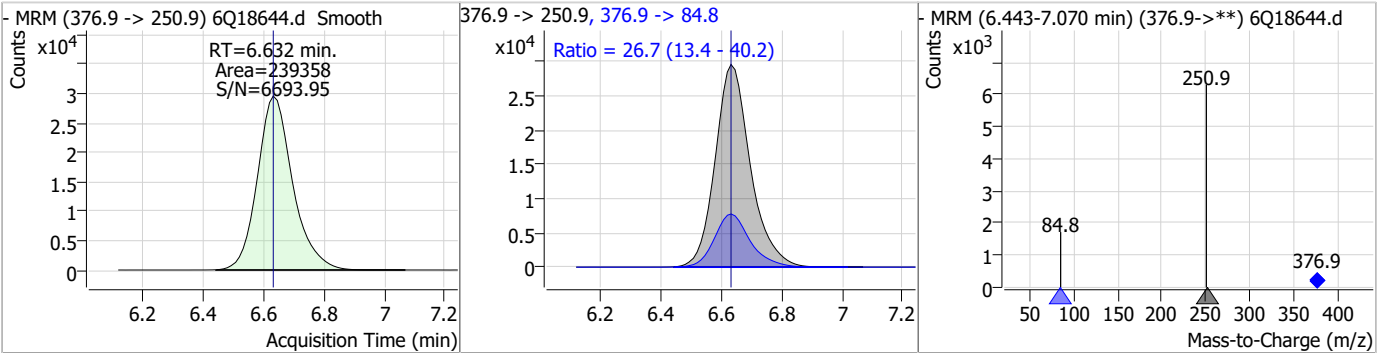
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.60	6.37	-0.01	61113	363.1 -> 169.0	15.7	7.5	22.5



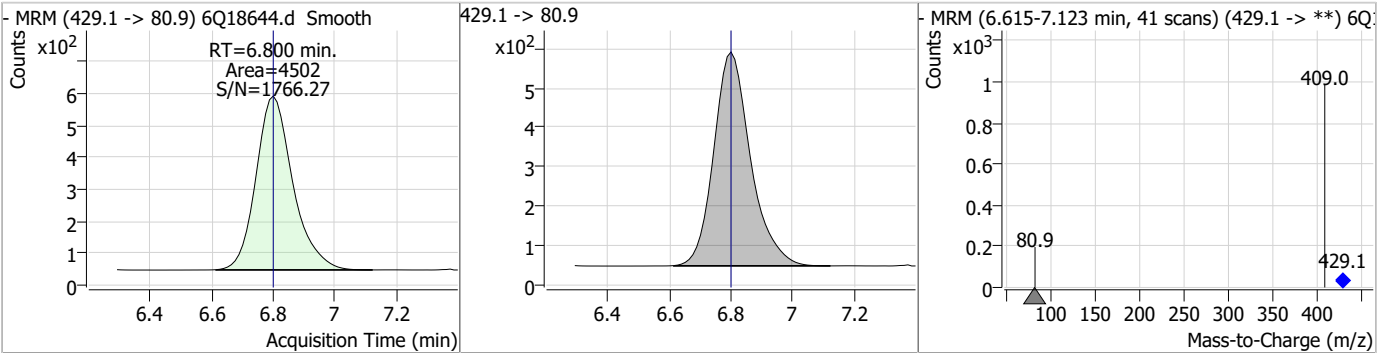
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.50	6.42	0.00	14344	349.1 -> 98.9	45.9	23.7	71.0



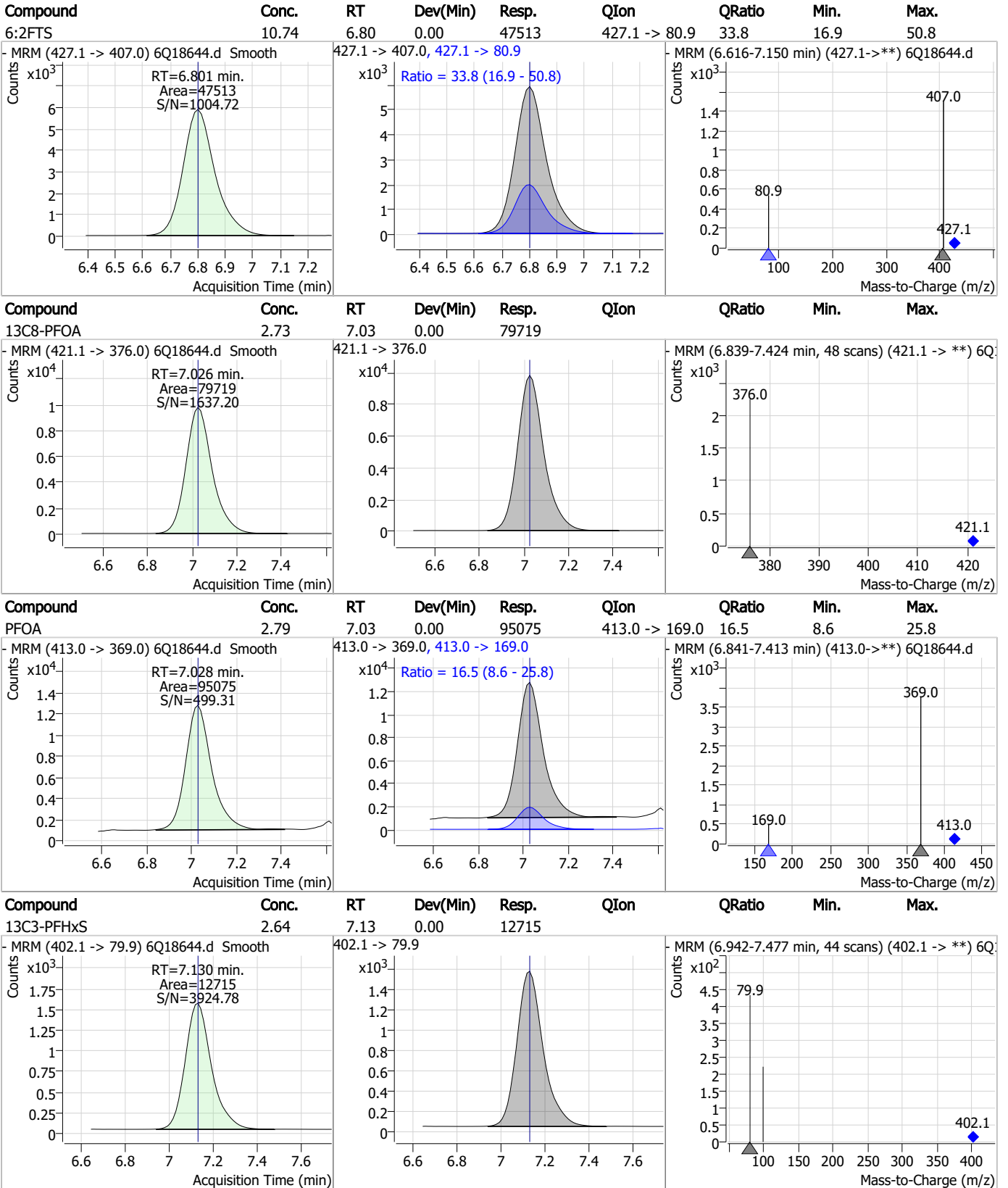
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.15	6.63	0.00	239358	376.9 -> 84.8	26.7	13.4	40.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.39	6.80	0.00	4502	429.1 -> 80.9			



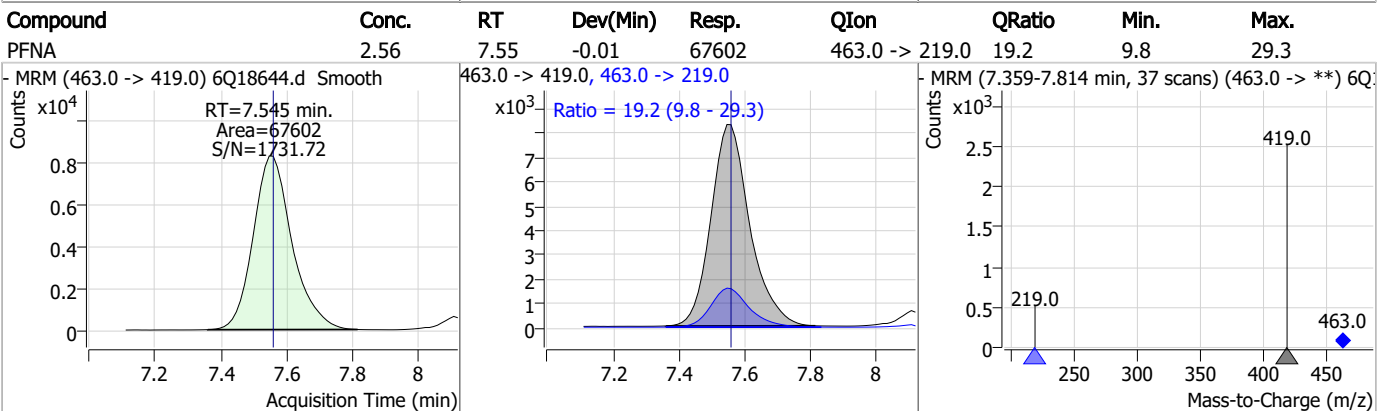
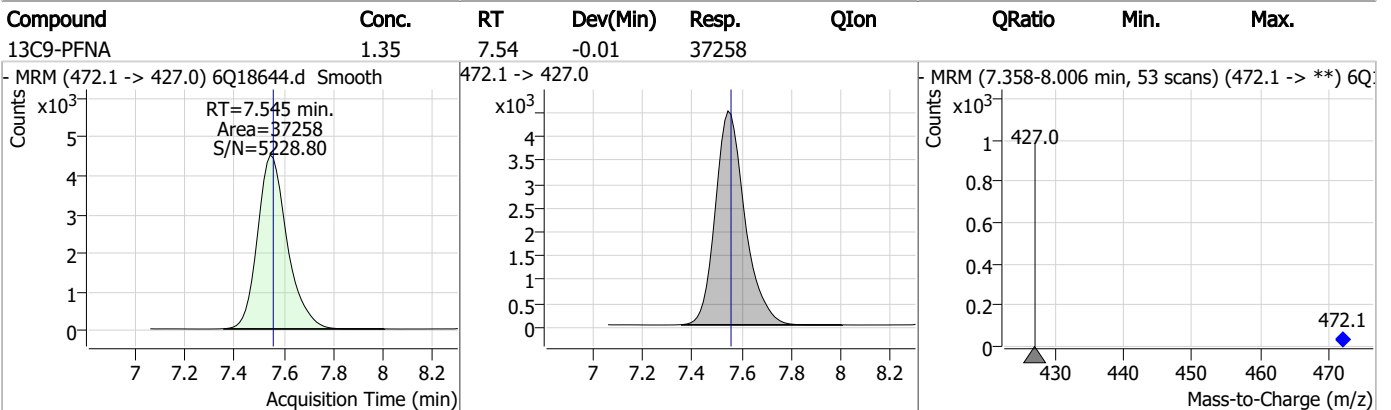
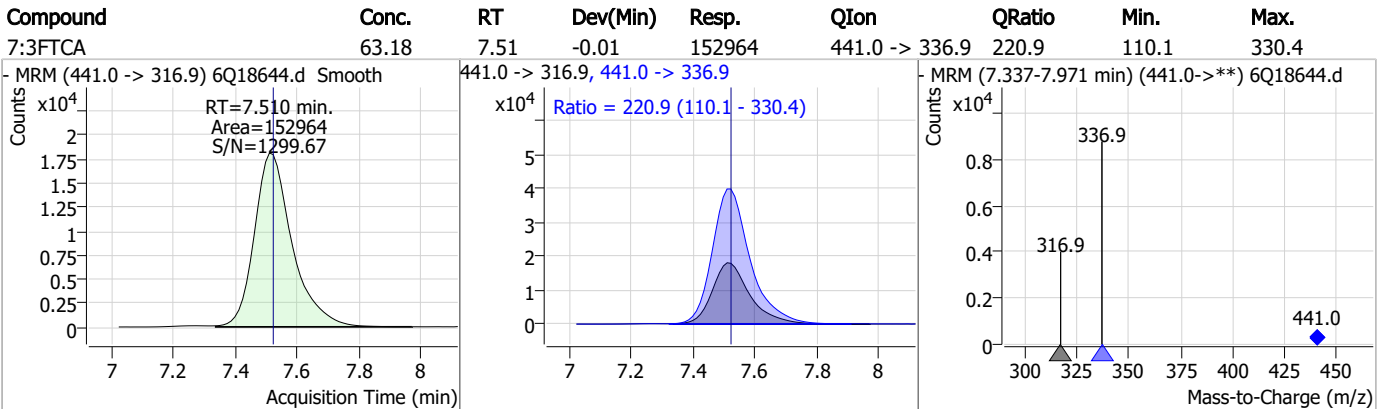
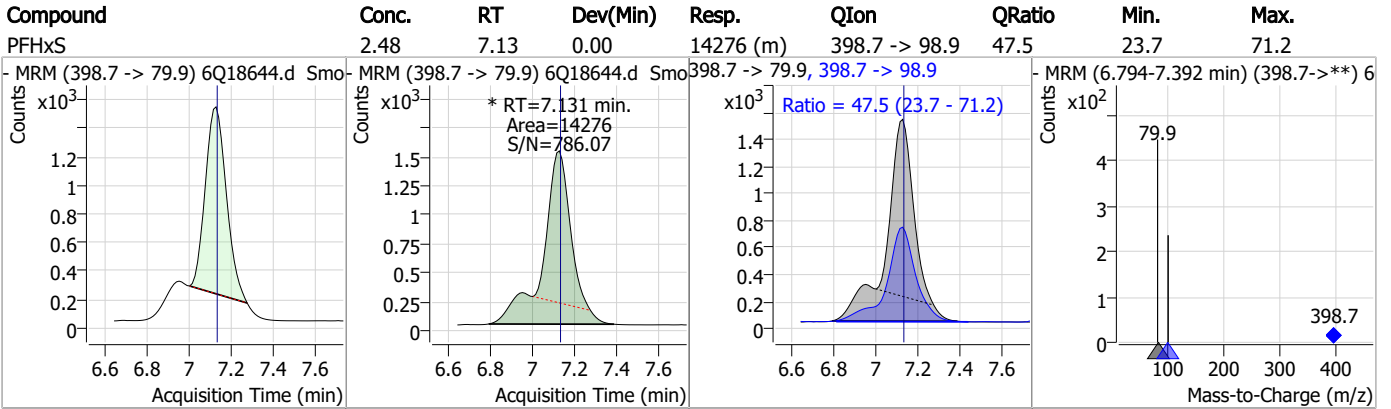
Perfluorinated Compounds by LC/MS/MS



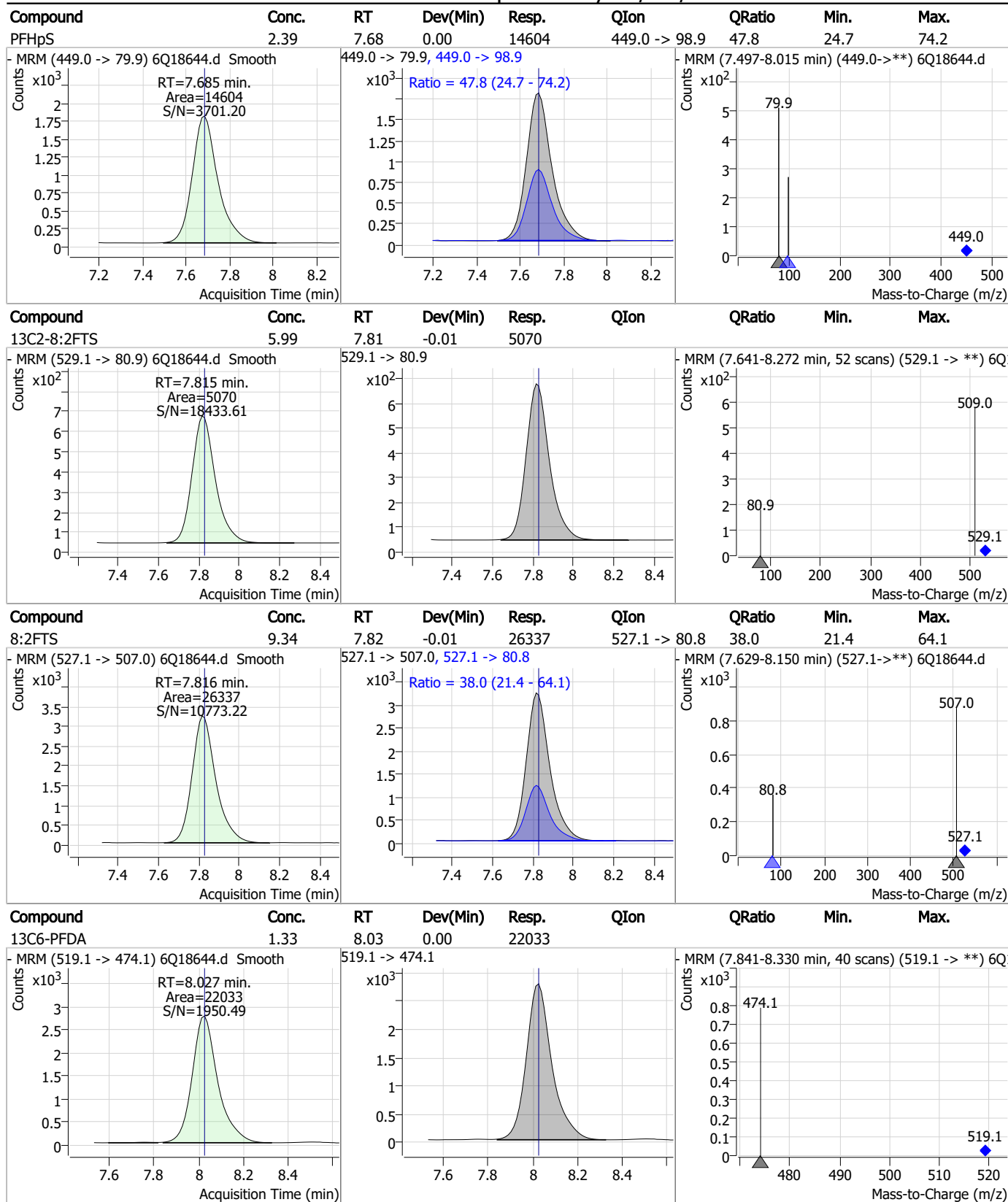
7.3.1

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

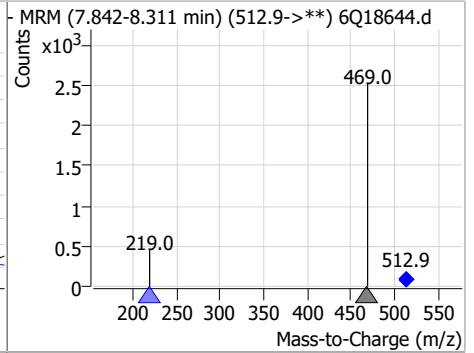
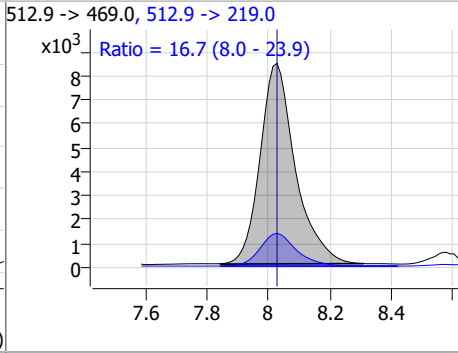
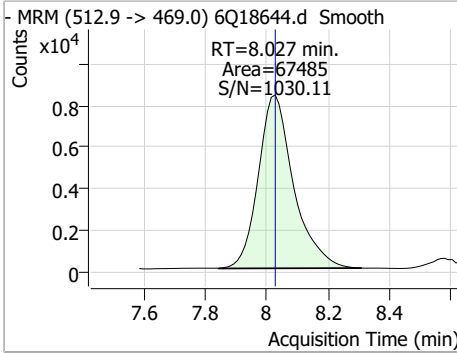


7.3.1
7

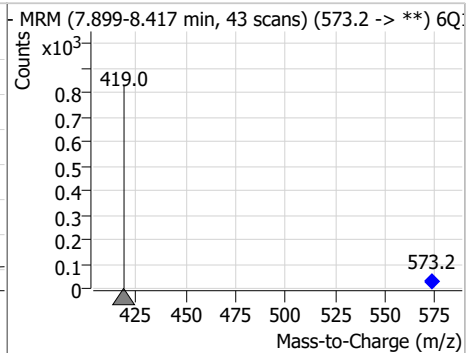
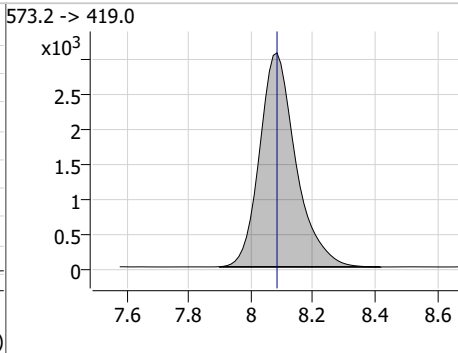
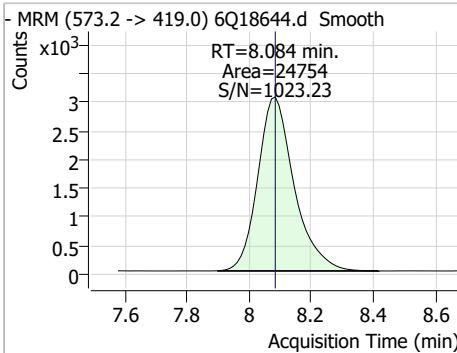


Perfluorinated Compounds by LC/MS/MS

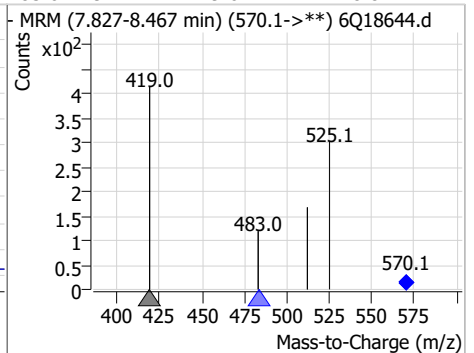
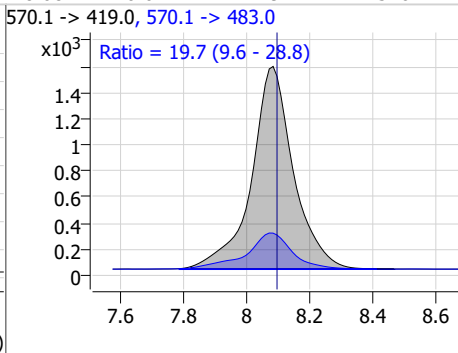
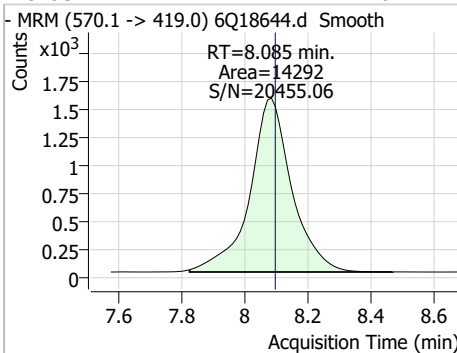
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.64	8.03	0.00	67485	512.9 -> 219.0	16.7	8.0	23.9



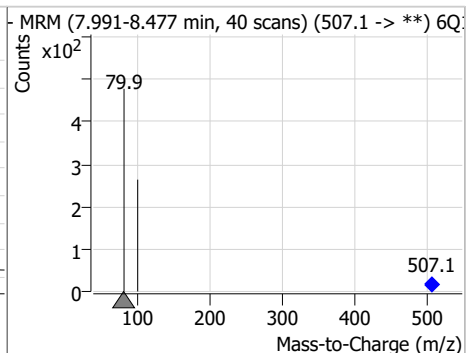
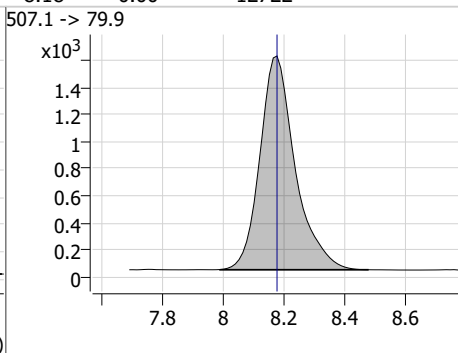
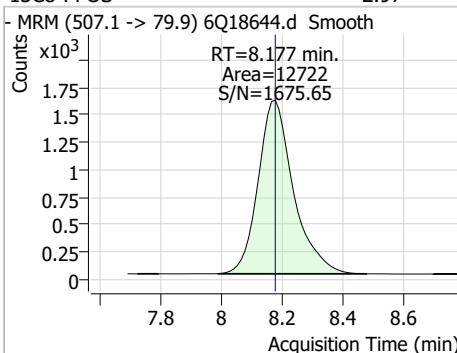
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.73	8.08	0.00	24754				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.81	8.08	-0.01	14292	570.1 -> 483.0	19.7	9.6	28.8

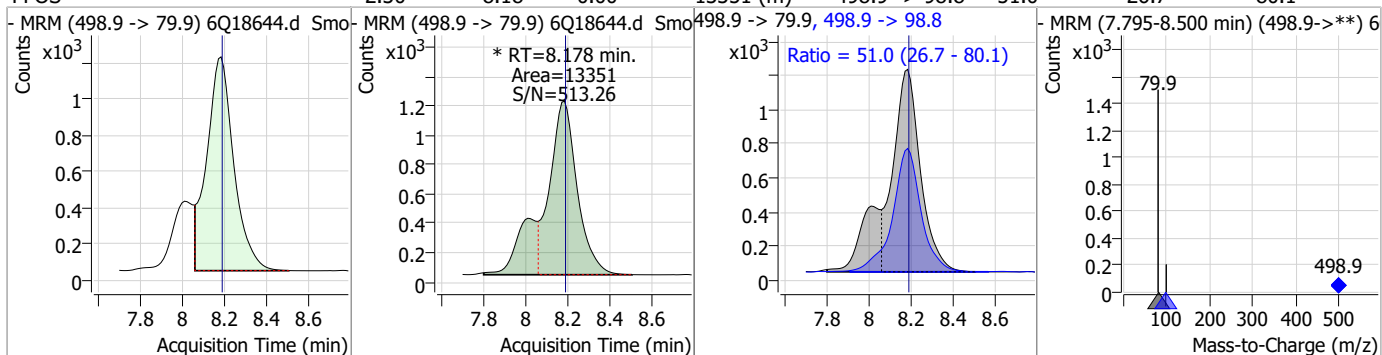


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.97	8.18	0.00	12722				

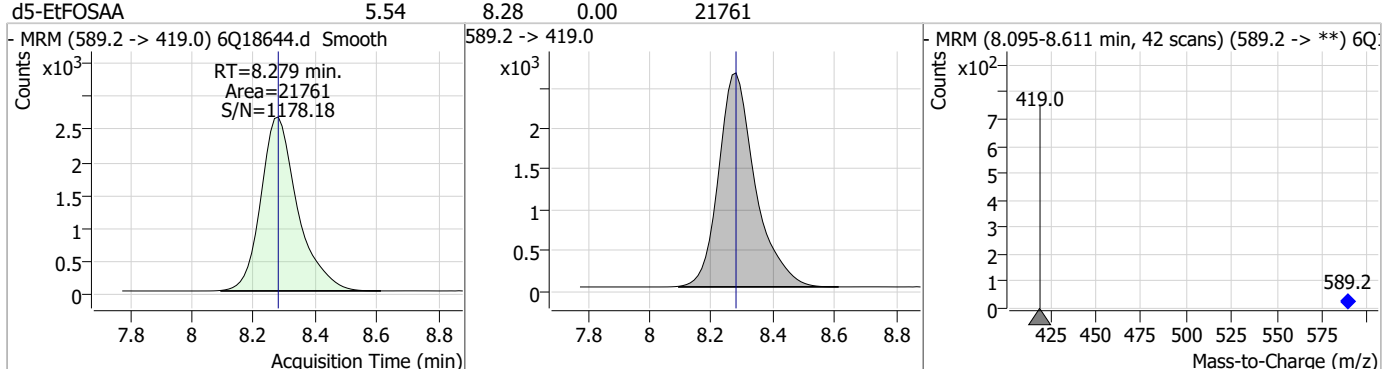


Perfluorinated Compounds by LC/MS/MS

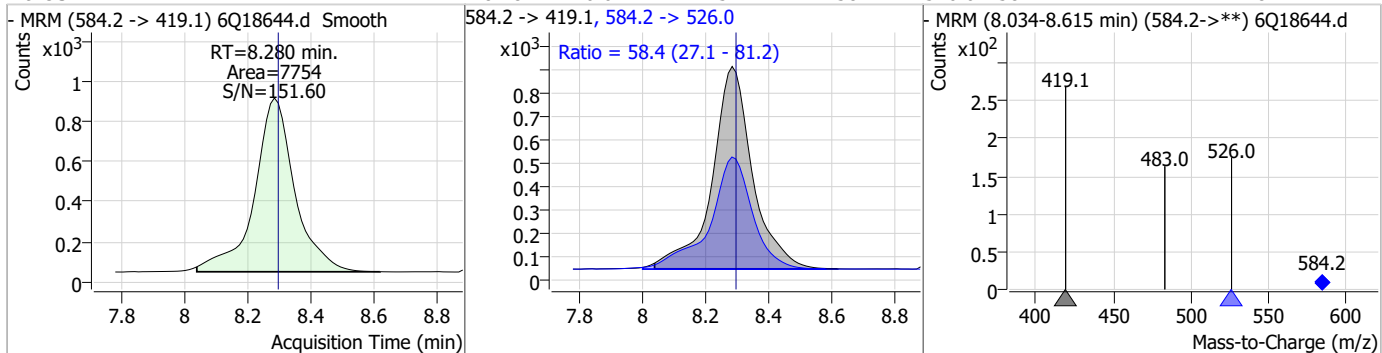
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.30	8.18	0.00	13351 (m)	498.9 -> 98.8	51.0	26.7	80.1



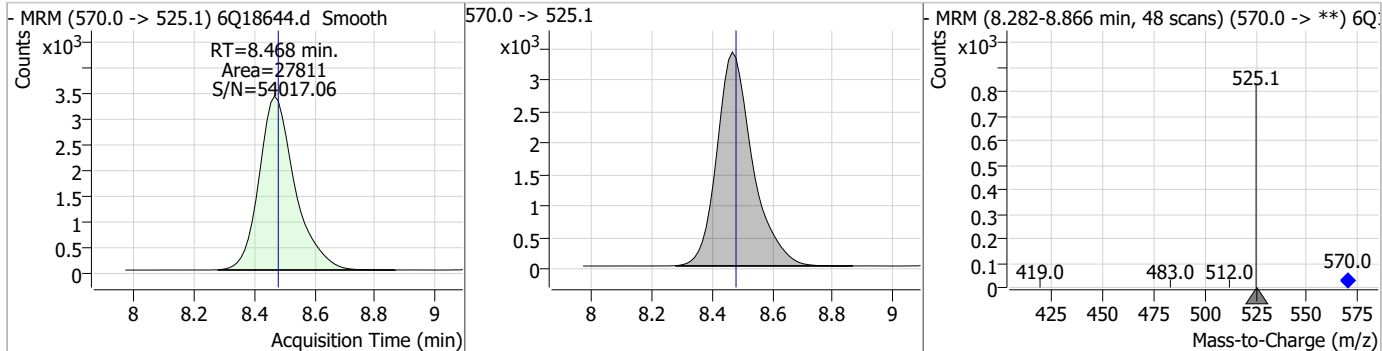
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.54	8.28	0.00	21761				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.77	8.28	-0.01	7754	584.2 -> 526.0	58.4	27.1	81.2



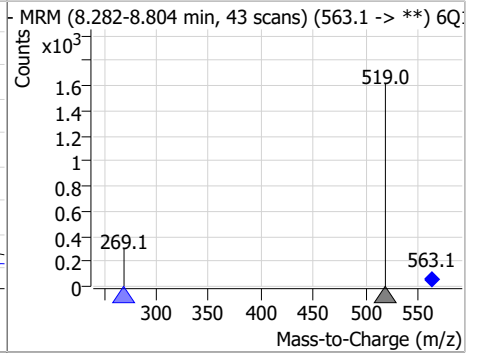
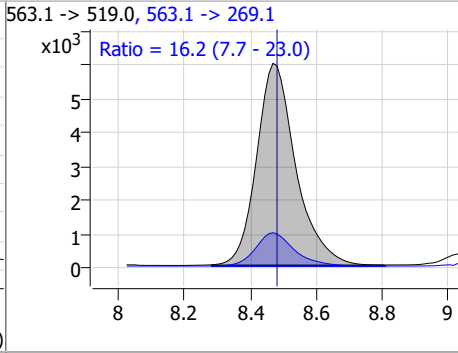
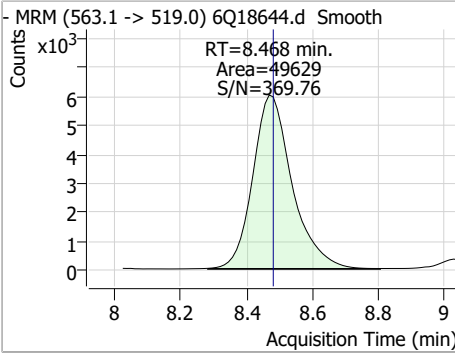
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.47	-0.01	27811				



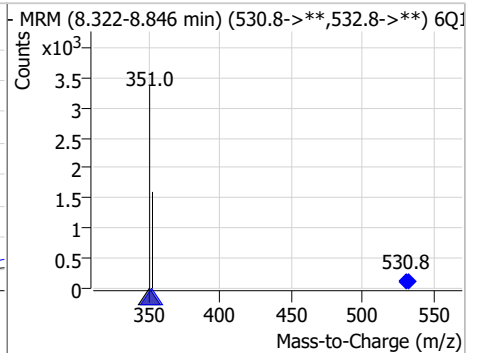
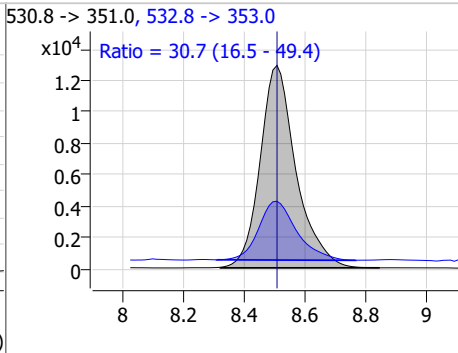
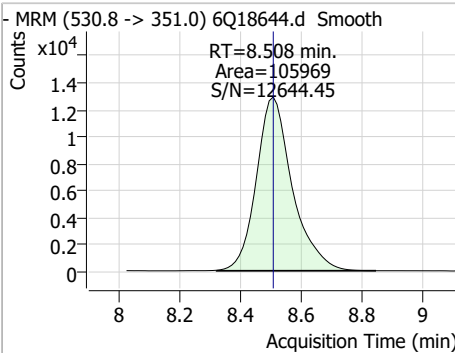
7.3.1
7

Perfluorinated Compounds by LC/MS/MS

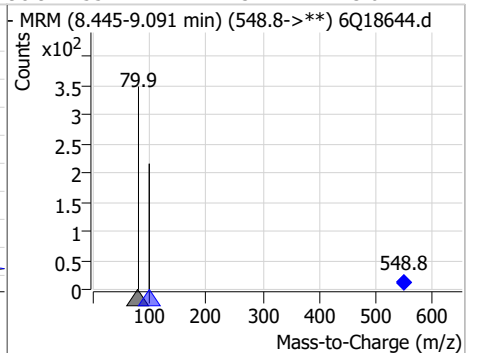
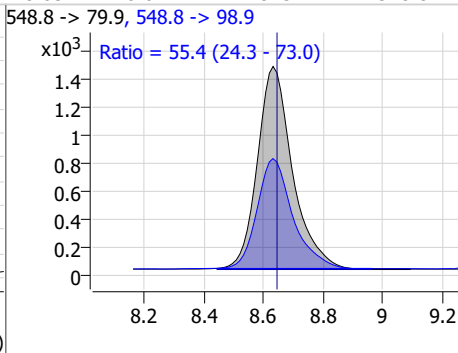
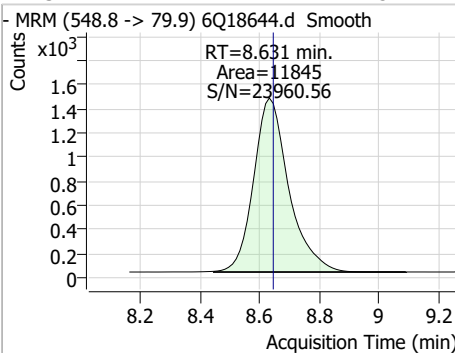
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.75	8.47	-0.01	49629	563.1 -> 269.1	16.2	7.7	23.0



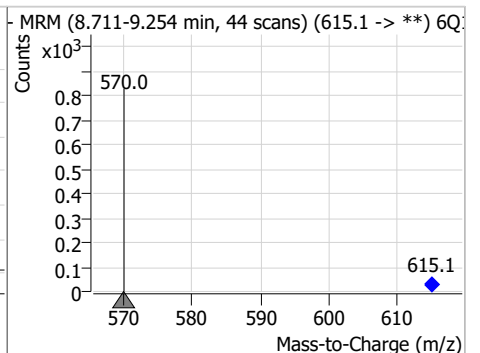
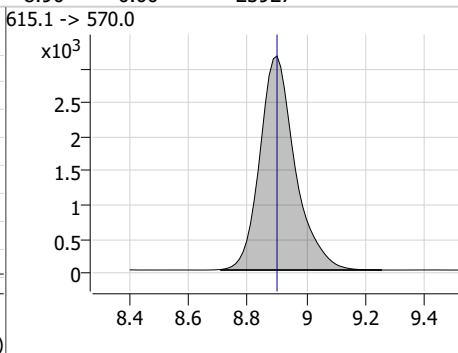
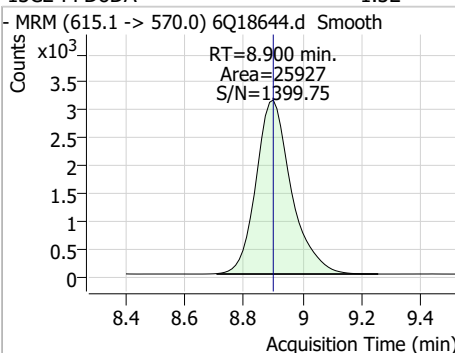
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	5.12	8.51	0.00	105969	532.8 -> 353.0	30.7	16.5	49.4



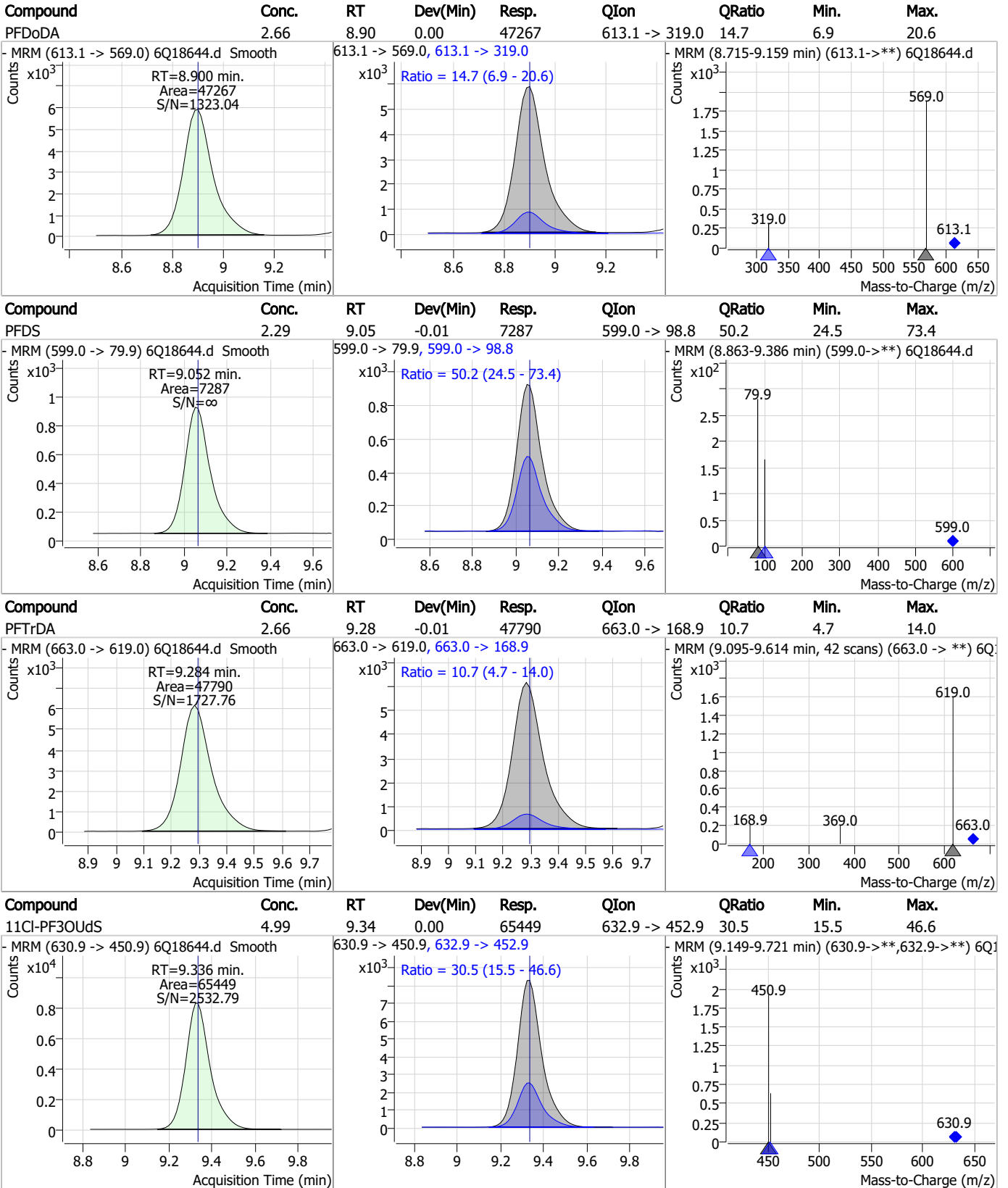
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.32	8.63	-0.01	11845	548.8 -> 98.9	55.4	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.32	8.90	0.00	25927	615.1 -> 570.0			

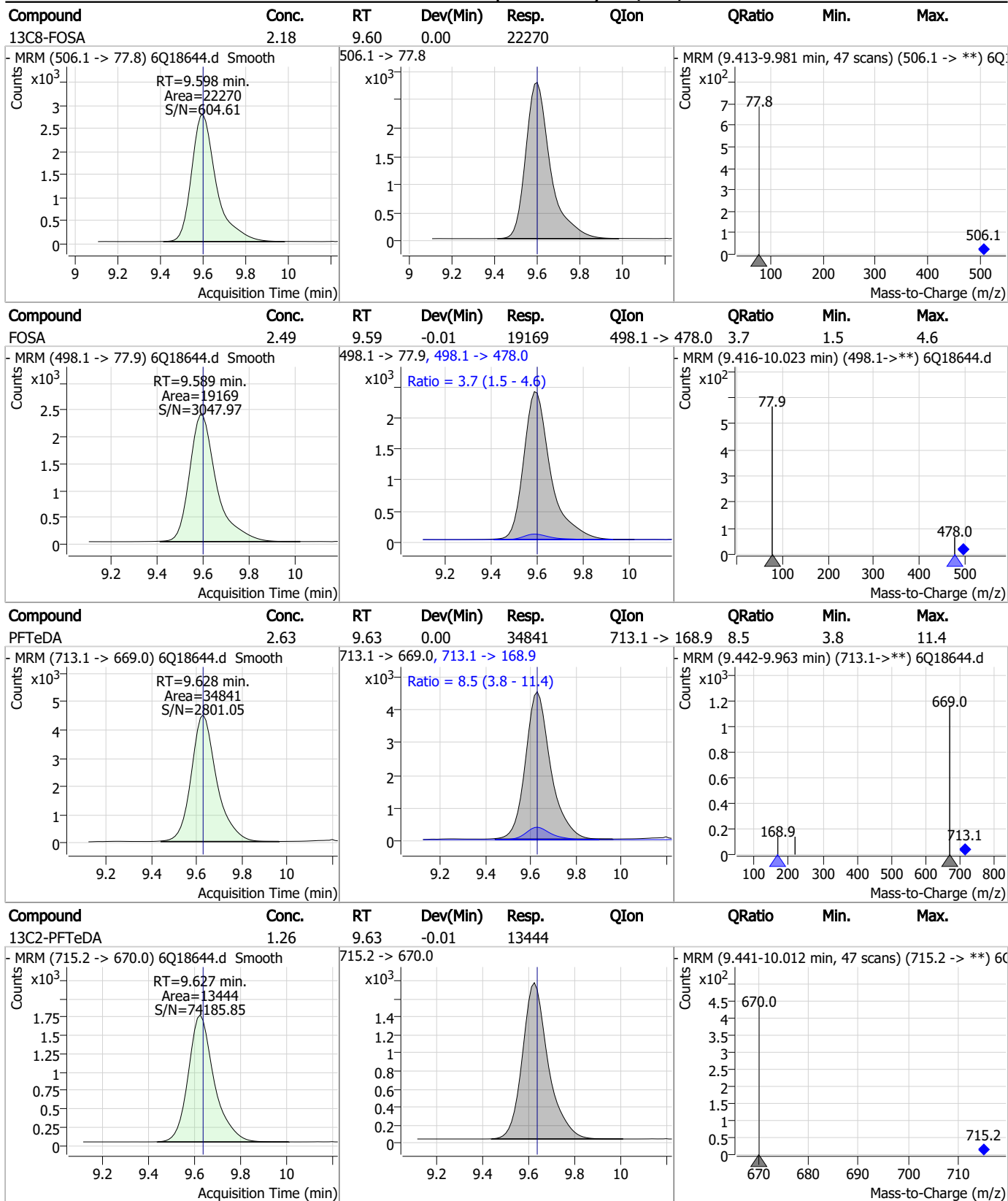


Perfluorinated Compounds by LC/MS/MS



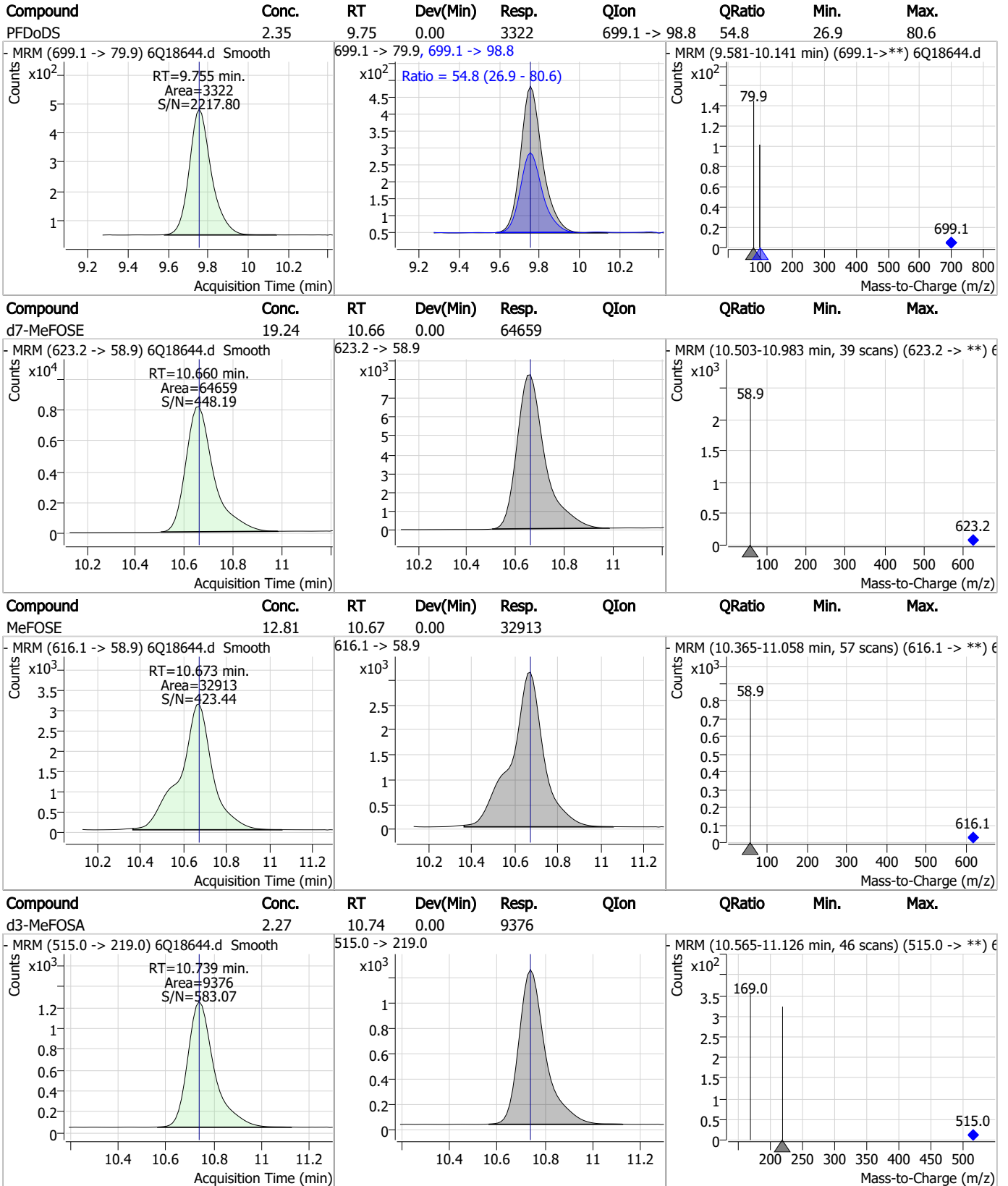
7.3.1
7

Perfluorinated Compounds by LC/MS/MS



7.3.1
7

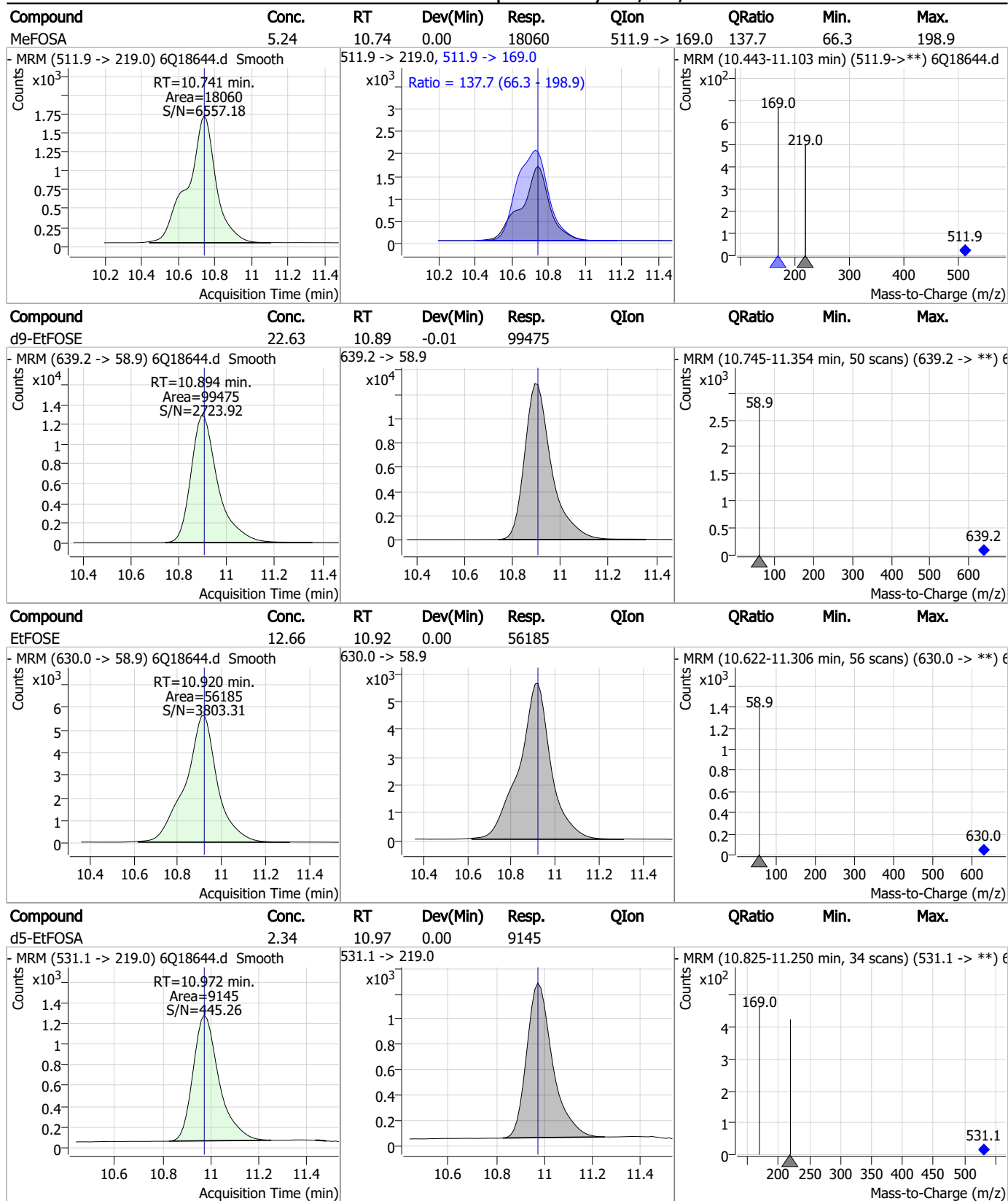
Perfluorinated Compounds by LC/MS/MS



7.3.1

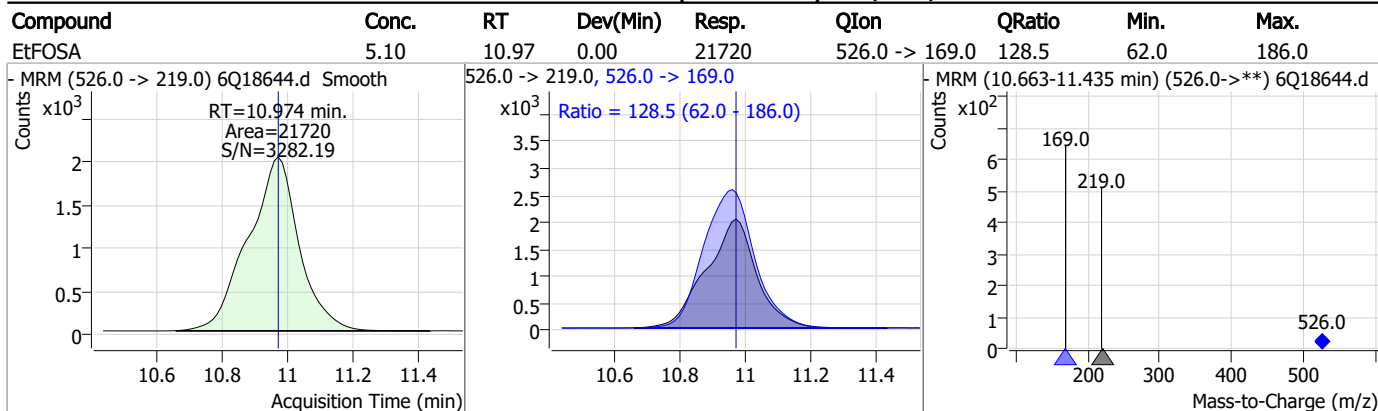
7

Perfluorinated Compounds by LC/MS/MS



7.3.1
7

Perfluorinated Compounds by LC/MS/MS



7.3.1
7

Manual Integration Approval Summary

Sample Number: OP97092-BS Method: EPA DRAFT 1633
Lab FileID: 6Q18644.D Analyst approved: 06/01/23 19:33 Norman Farmer
Injection Time: 06/01/23 07:03 Supervisor approved: 06/01/23 19:35 Norman Farmer

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

7.3.1.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18645.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 7:18:28 AM
 Sample Name : op97092-llbs:3
 Vial : P2-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	169524	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	55557	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	62585	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	55291	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	84316	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	39254	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	23059	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	30073	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	27649	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	14168	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	21131	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	21680	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13665	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12644	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3310	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5122	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5381	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	27125	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	35876	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	22408	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	65865	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	100562	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	8903	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	8703	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13830	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	63104	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8957	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	77978	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	27768	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	41800	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	48398	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3310	5.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5122	5.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.1%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5381	6.11 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.3%		
13C2-PFDoDA	8.900	615.1 -> 570.0	27649	1.43 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 114.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	14168	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.0%		
13C3-PFBS	5.334	302.1 -> 79.9	21680	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.4%		
13C3-PFHxS	7.130	402.1 -> 79.9	13665	2.73 µg/L	0.000

7.3.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C4-PFBA	2.876	216.8 -> 171.9	169524	11.28 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.8%	
13C4-PFHpA	6.369	367.1 -> 322.0	55291	2.92 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.7%	
13C5-PFHxA	5.417	318.0 -> 273.0	62585	3.05 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 122.2%	
13C5-PFPeA	4.222	268.3 -> 223.0	55557	5.90 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.0%	
13C6-PFDA	8.014	519.1 -> 474.1	23059	1.42 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.4%	
13C7-PFUnDA	8.468	570.0 -> 525.1	30073	1.45 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.9%	
13C8-FOSA	9.598	506.1 -> 77.8	21131	2.00 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.2%	
13C8-PFOA	7.026	421.1 -> 376.0	84316	2.89 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.5%	
13C8-PFOS	8.177	507.1 -> 79.9	12644	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.1%	
13C9-PFNA	7.545	472.1 -> 427.0	39254	1.43 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27125	6.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	35876	11.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	8703	2.04 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 81.5%	
d5-EtFOSAA	8.267	589.2 -> 419.0	22408	5.52 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	65865	18.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.8%	
d9-EtFOSE	10.894	639.2 -> 58.9	100562	22.14 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	8903	2.20 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.0%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	14796	3.08 µg/L	99
		327.1 -> 80.9	5777		
6:2FTS	6.801	427.1 -> 407.0	15767	3.13 µg/L	97
		427.1 -> 80.9	5076		
8:2FTS	7.816	527.1 -> 507.0	8375	2.80 µg/L	100
		527.1 -> 80.8	3568		
EtFOSAA	8.280	584.2 -> 419.1	2397	0.83 µg/L	92
		584.2 -> 526.0	1444		
FOSA	9.589	498.1 -> 77.9	5601	0.77 µg/L	99
		498.1 -> 478.0	179		
MeFOSAA	8.085	570.1 -> 419.0	4482	0.80 µg/L	98
		570.1 -> 483.0	821		
PFBA	2.868	212.8 -> 168.9	17967	3.20 µg/L	100
PFBS	5.335	298.7 -> 79.9	5232	0.71 µg/L	100
		298.7 -> 98.8	1881		
PFDA	8.027	512.9 -> 469.0	21767	0.81 µg/L	100
		512.9 -> 219.0	3444		
PFDODA	8.900	613.1 -> 569.0	14395	0.76 µg/L	93
		613.1 -> 319.0	2404		
PFDS	9.052	599.0 -> 79.9	2507	0.79 µg/L	95

7.3.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	1142	0.80 µg/L	97
		363.1 -> 319.0	19559		
PFHpS	7.685	363.1 -> 169.0	3203	0.77 µg/L	98
		449.0 -> 79.9	4668		
PFHxA	5.420	449.0 -> 98.9	2231	0.78 µg/L	96
		313.0 -> 269.0	16334		
PFHxS	7.131	313.0 -> 118.9	936	0.74 µg/L	95
		398.7 -> 79.9	4585		
PFNA	7.545	398.7 -> 98.9	2035	0.76 µg/L	98
		463.0 -> 419.0	21237		
PFNS	8.631	463.0 -> 219.0	4365	0.75 µg/L	91
		548.8 -> 79.9	3828		
PFOA	7.015	548.8 -> 98.9	2109	0.82 µg/L	99
		413.0 -> 369.0	29551		
PFOS	8.178	413.0 -> 169.0	5180	0.77 µg/L	93
		498.9 -> 79.9	4425		
PFPeA	4.224	498.9 -> 98.8	2150	1.62 µg/L	100
		263.0 -> 219.0	21639		
PFPeS	6.422	349.1 -> 79.9	4559	0.74 µg/L	97
		349.1 -> 98.9	2241		
PFTeDA	9.628	713.1 -> 669.0	11571	0.83 µg/L	98
		713.1 -> 168.9	980		
PFTrDA	9.284	663.0 -> 619.0	15070	0.79 µg/L	97
		663.0 -> 168.9	1549		
PFUnDA	8.468	563.1 -> 519.0	16084	0.82 µg/L	98
		563.1 -> 269.1	2611		
11CI-PF3OUdS	9.323	630.9 -> 450.9	21077	1.57 µg/L	100
		632.9 -> 452.9	6604		
9CI-PF3ONS	8.495	530.8 -> 351.0	33244	1.57 µg/L	100
		532.8 -> 353.0	10870		
ADONA	6.632	376.9 -> 250.9	75826	1.59 µg/L	100
		376.9 -> 84.8	20232		
HFPO-DA	5.783	284.9 -> 168.9	5059	1.66 µg/L	97
		284.9 -> 184.9	625		
3:3FTCA	3.727	241.0 -> 177.0	2456	2.88 µg/L	98
		241.0 -> 117.0	334		
5:3FTCA	6.086	341.0 -> 237.1	64404	17.04 µg/L	93
		341.0 -> 217.0	49417		
7:3FTCA	7.510	441.0 -> 316.9	47267	18.26 µg/L	97
		441.0 -> 336.9	102172		
EtFOSA	10.974	526.0 -> 219.0	6191	1.49 µg/L	90
		526.0 -> 169.0	8382		
EtFOSE	10.907	630.0 -> 58.9	16382	3.65 µg/L	100
		511.9 -> 219.0	5054		
MeFOSA	10.741	511.9 -> 169.0	7106	1.58 µg/L	93
		616.1 -> 58.9	9729		
MeFOSE	10.673	699.1 -> 79.9	1102	3.72 µg/L	100
		699.1 -> 98.8	559		
PFDoDS	9.755	295.0 -> 201.0	4078	0.78 µg/L	96
		295.0 -> 84.9	1010		
NFDHA	5.299	279.0 -> 85.1	14796	1.59 µg/L	95
		229.0 -> 84.9	11513		
PFMBA	4.638	314.8 -> 134.9	34827	1.63 µg/L	100
		314.8 -> 82.9	1295		
PFMPA	3.388			1.63 µg/L	100
PFEESA	5.875			1.31 µg/L	99

7.3.2
7

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

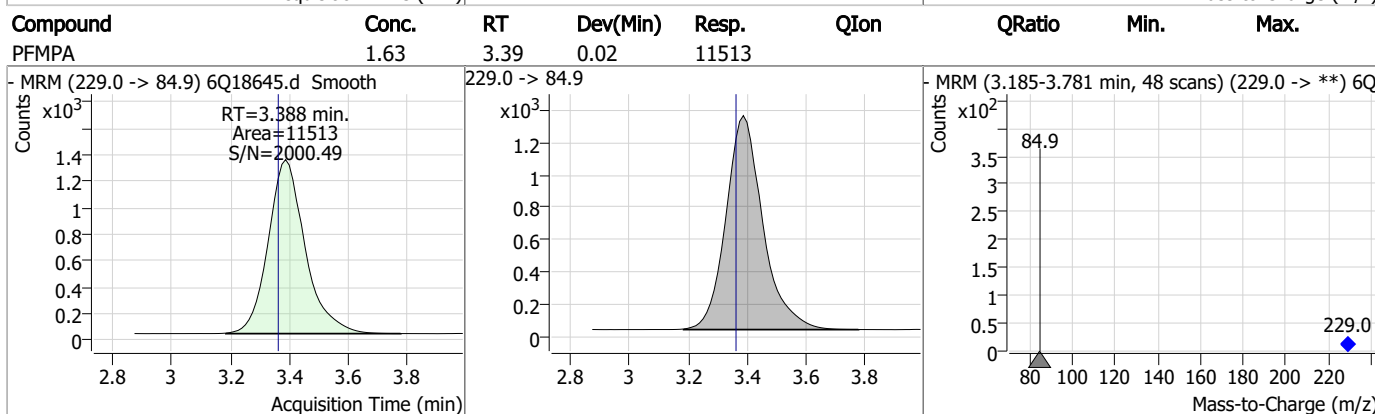
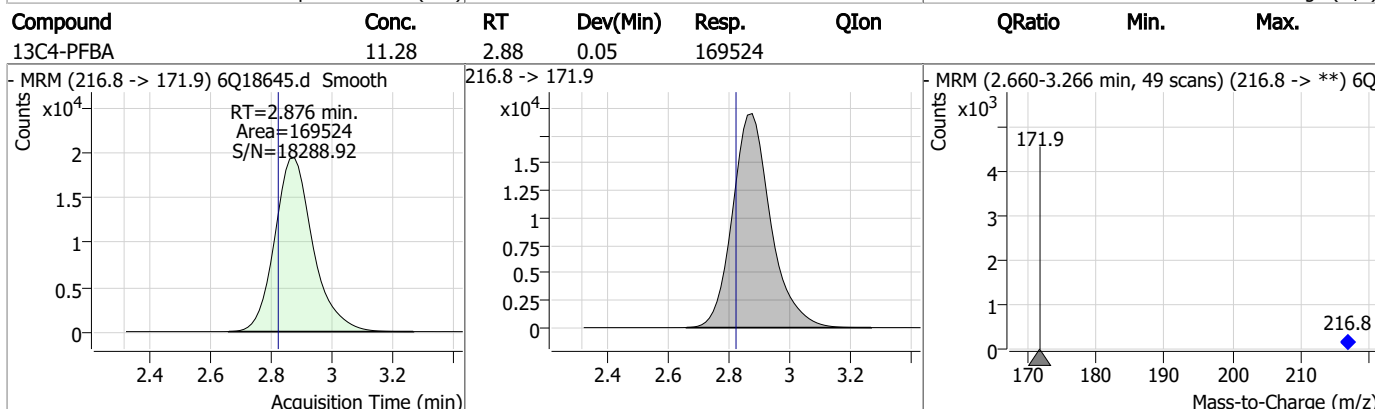
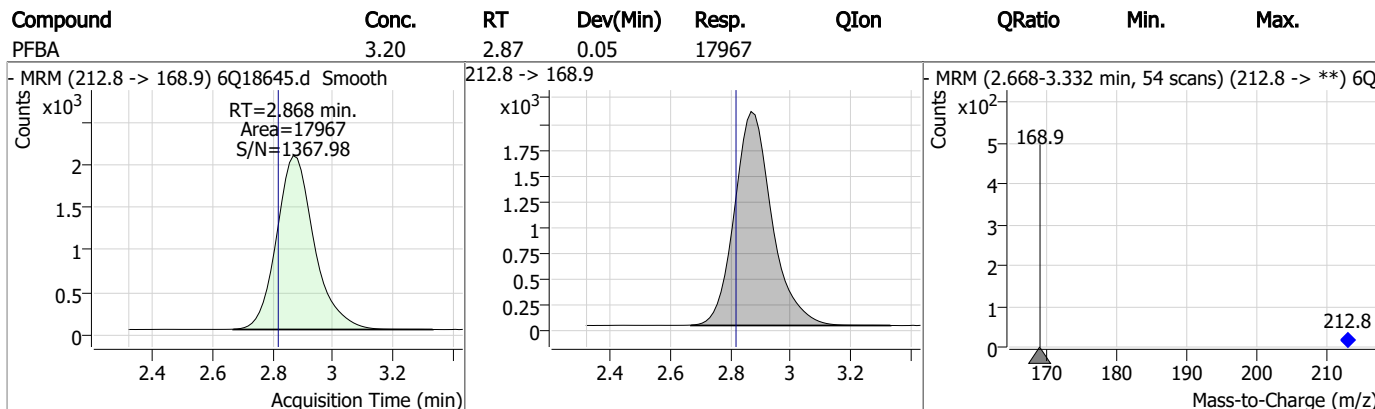
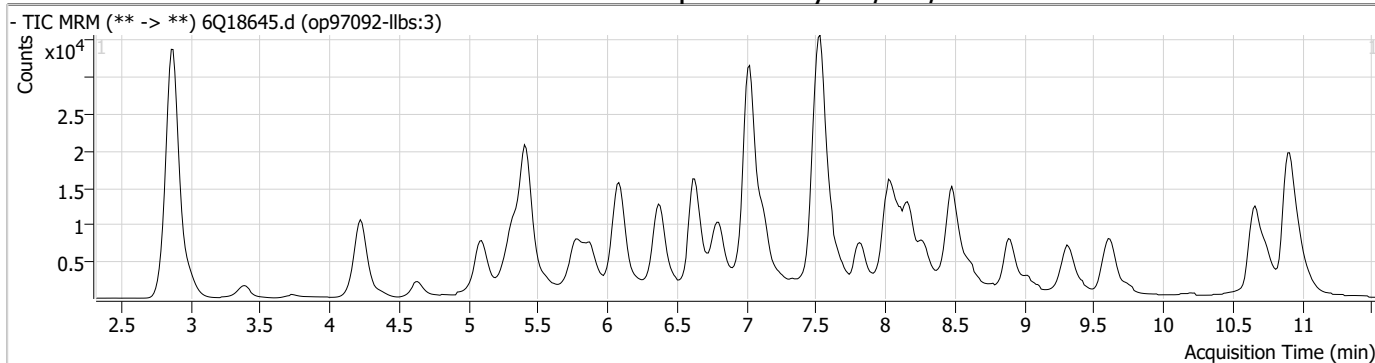
Perfluorinated Compounds by LC/MS/MS

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

7.3.2

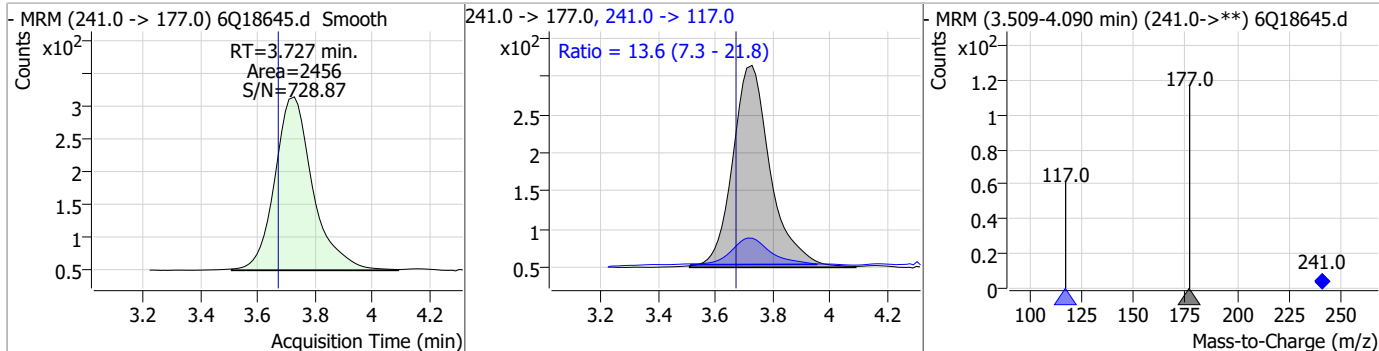
7

Perfluorinated Compounds by LC/MS/MS

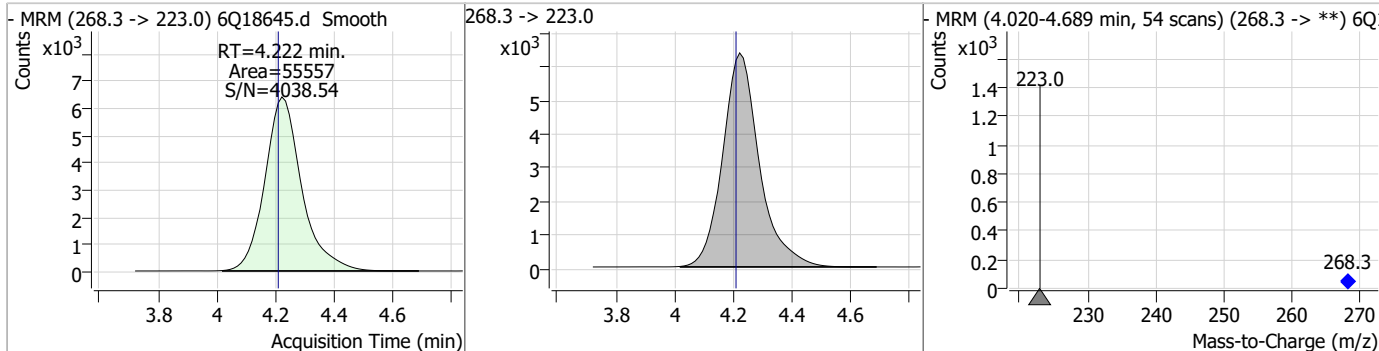


Perfluorinated Compounds by LC/MS/MS

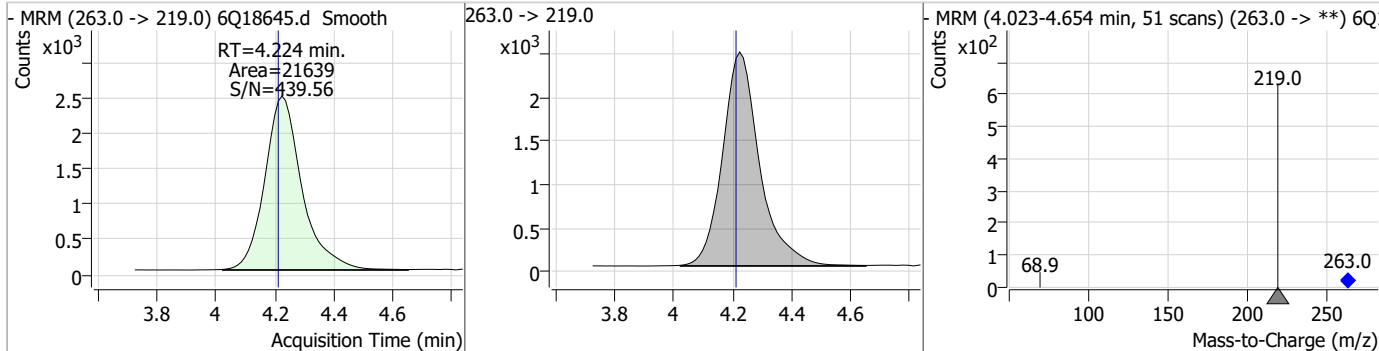
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	2.88	3.73	0.06	2456	241.0 -> 117.0	13.6	7.3	21.8



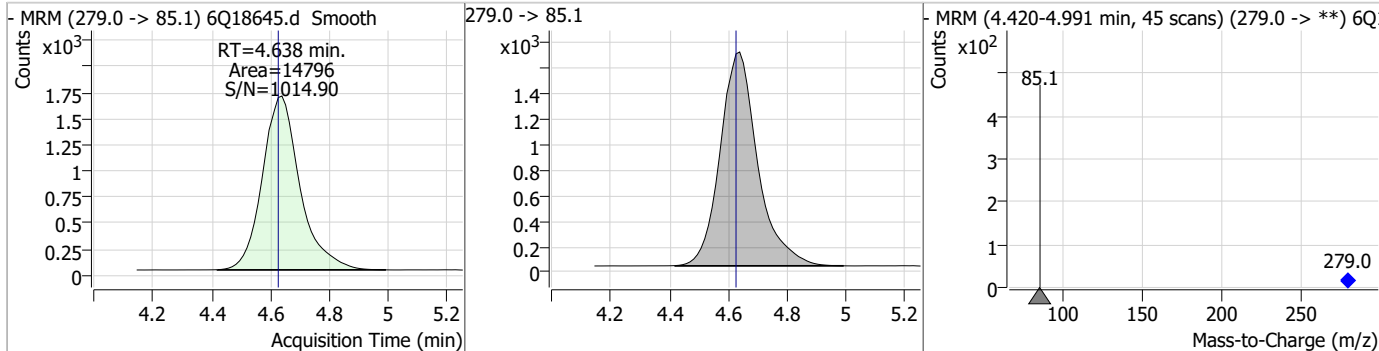
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.90	4.22	0.01	55557				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.62	4.22	0.01	21639				

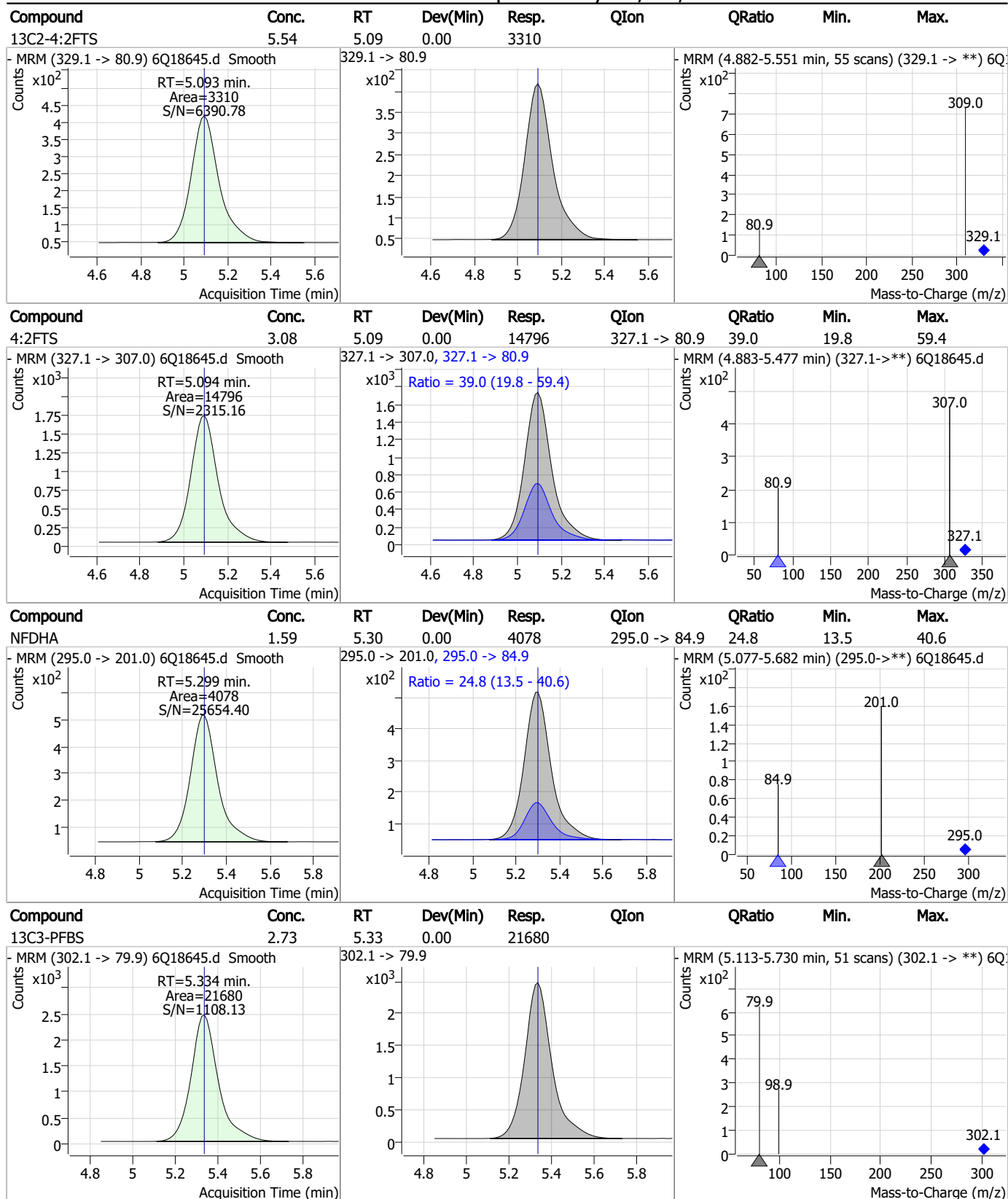


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.63	4.64	0.01	14796				



7.3.2
7

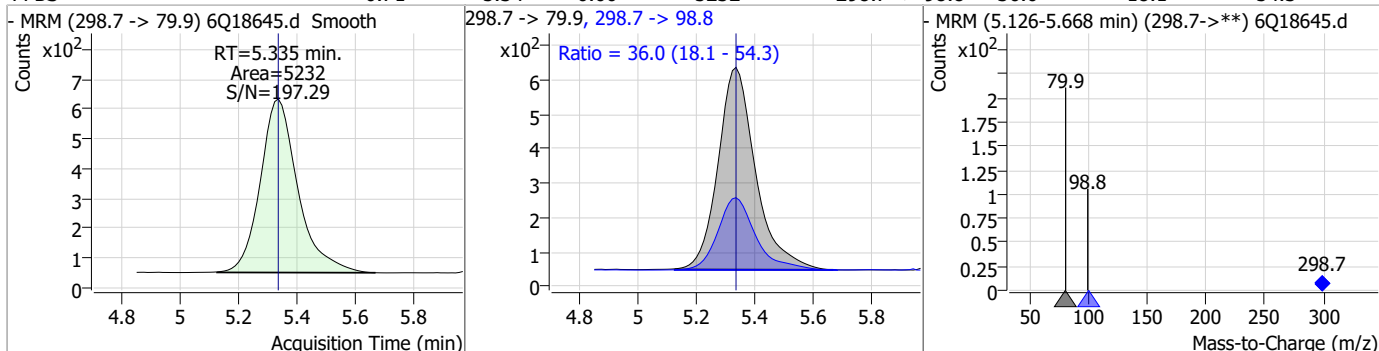
Perfluorinated Compounds by LC/MS/MS



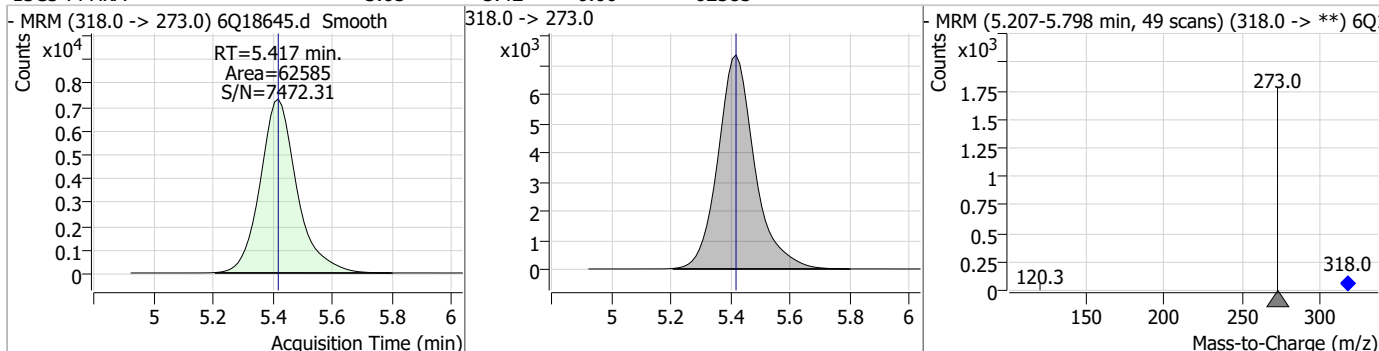
7.3.2
7

Perfluorinated Compounds by LC/MS/MS

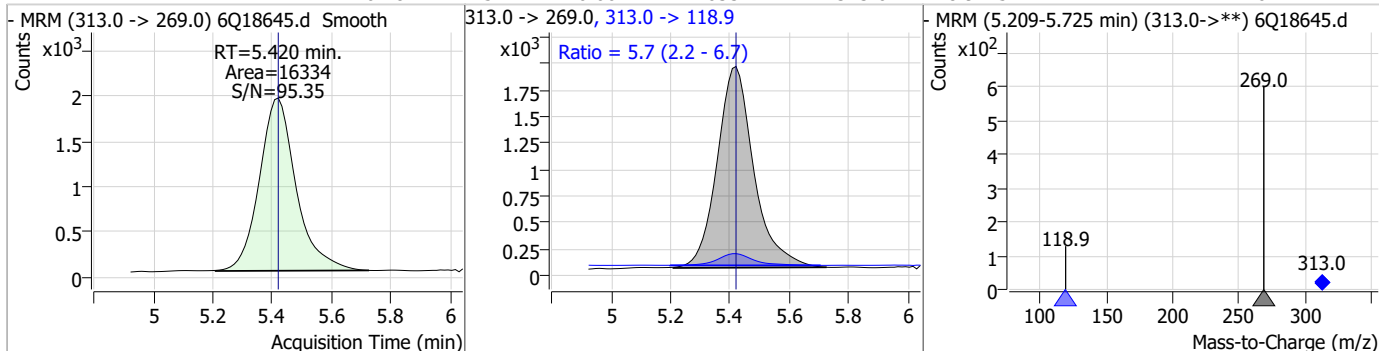
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.71	5.34	0.00	5232	298.7 -> 98.8	36.0	18.1	54.3



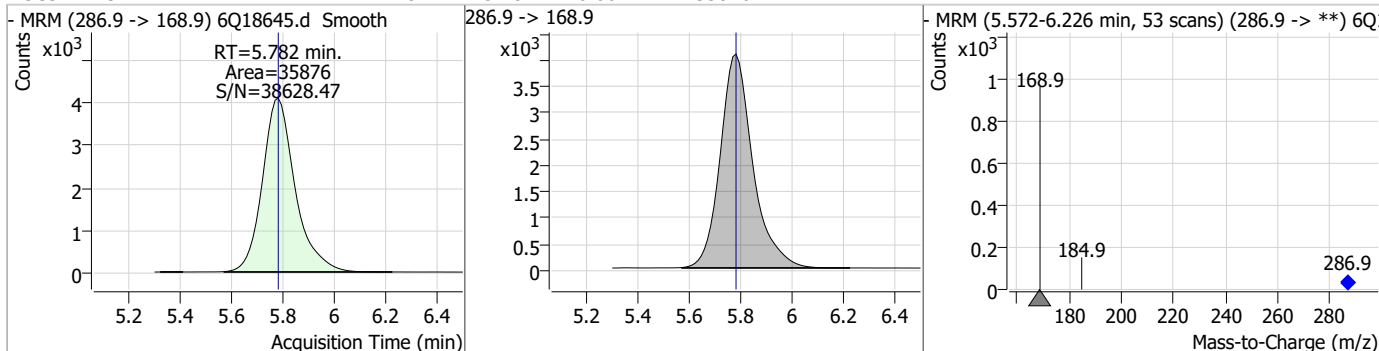
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.05	5.42	0.00	62585				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.78	5.42	0.00	16334	313.0 -> 118.9	5.7	2.2	6.7

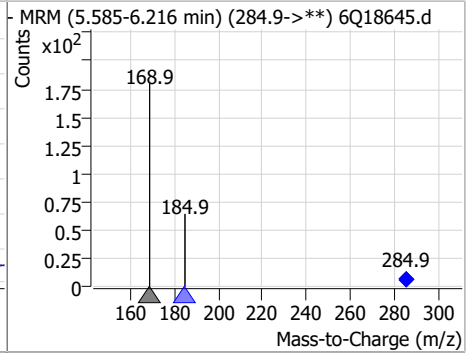
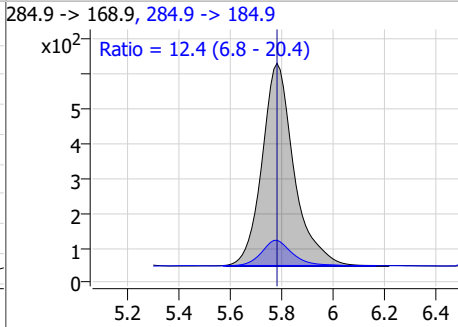
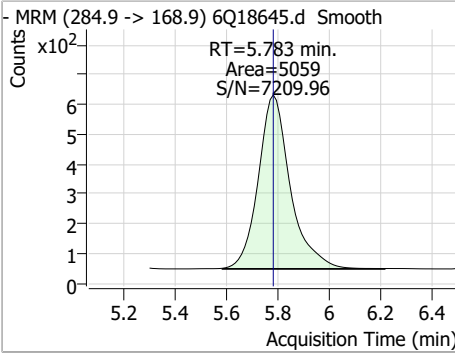


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.28	5.78	0.00	35876				

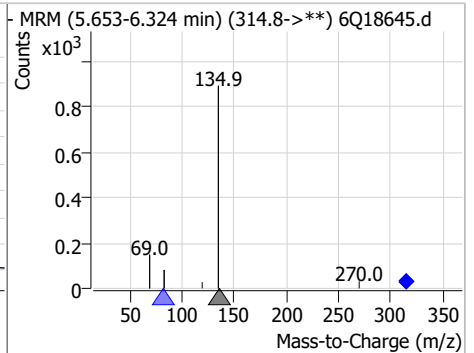
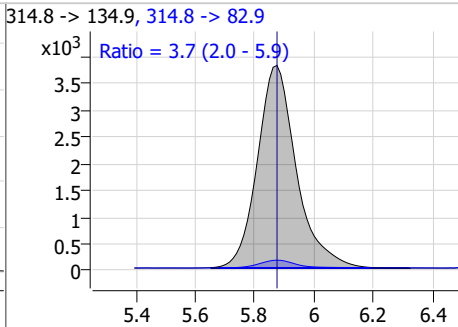
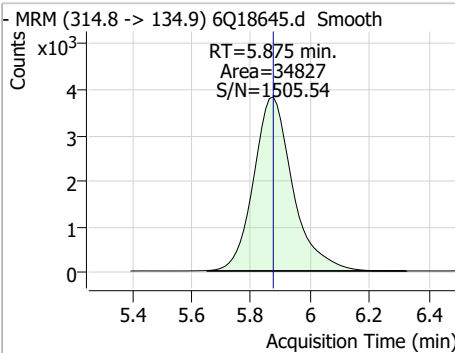


Perfluorinated Compounds by LC/MS/MS

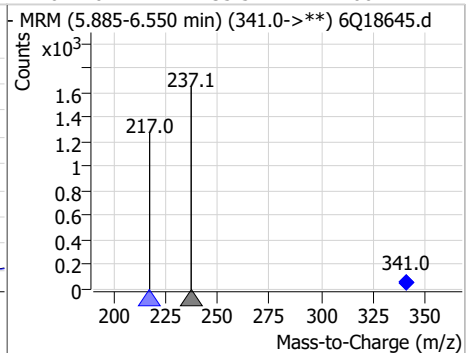
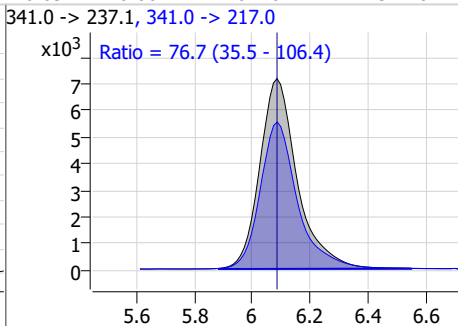
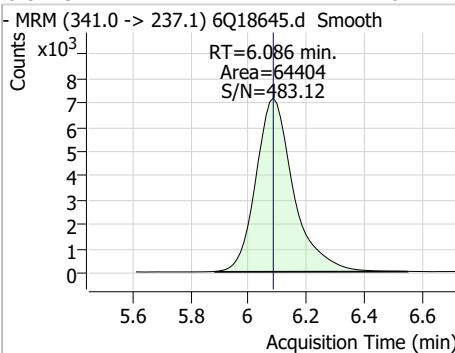
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.66	5.78	0.00	5059	284.9 -> 184.9	12.4	6.8	20.4



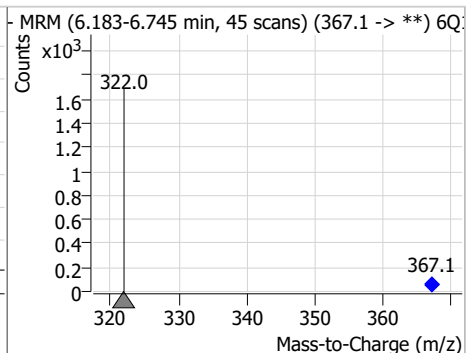
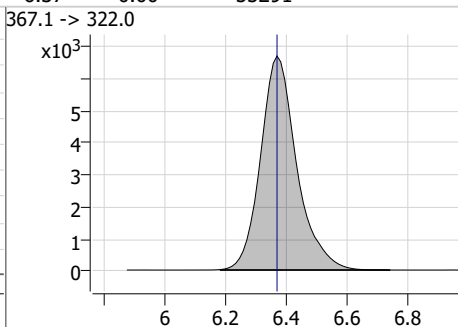
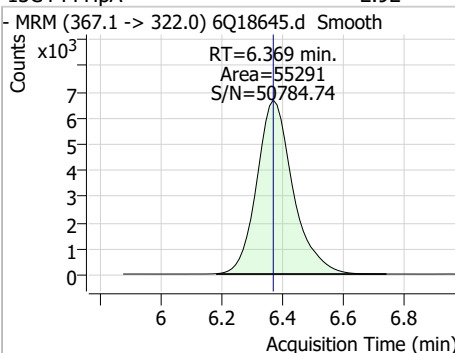
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.31	5.88	0.00	34827	314.8 -> 82.9	3.7	2.0	5.9



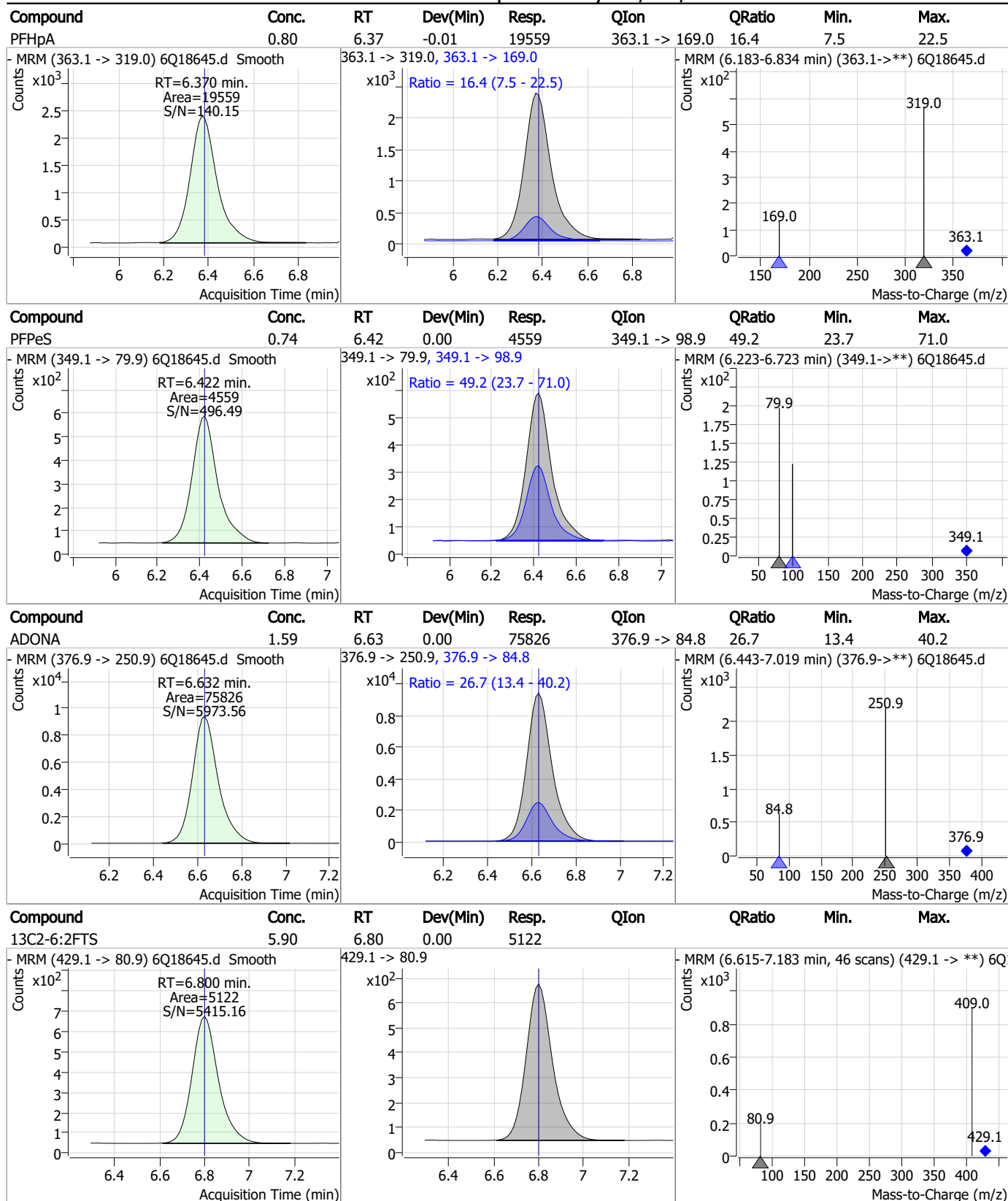
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	17.04	6.09	0.00	64404	341.0 -> 217.0	76.7	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.92	6.37	0.00	55291	367.1 -> 322.0			

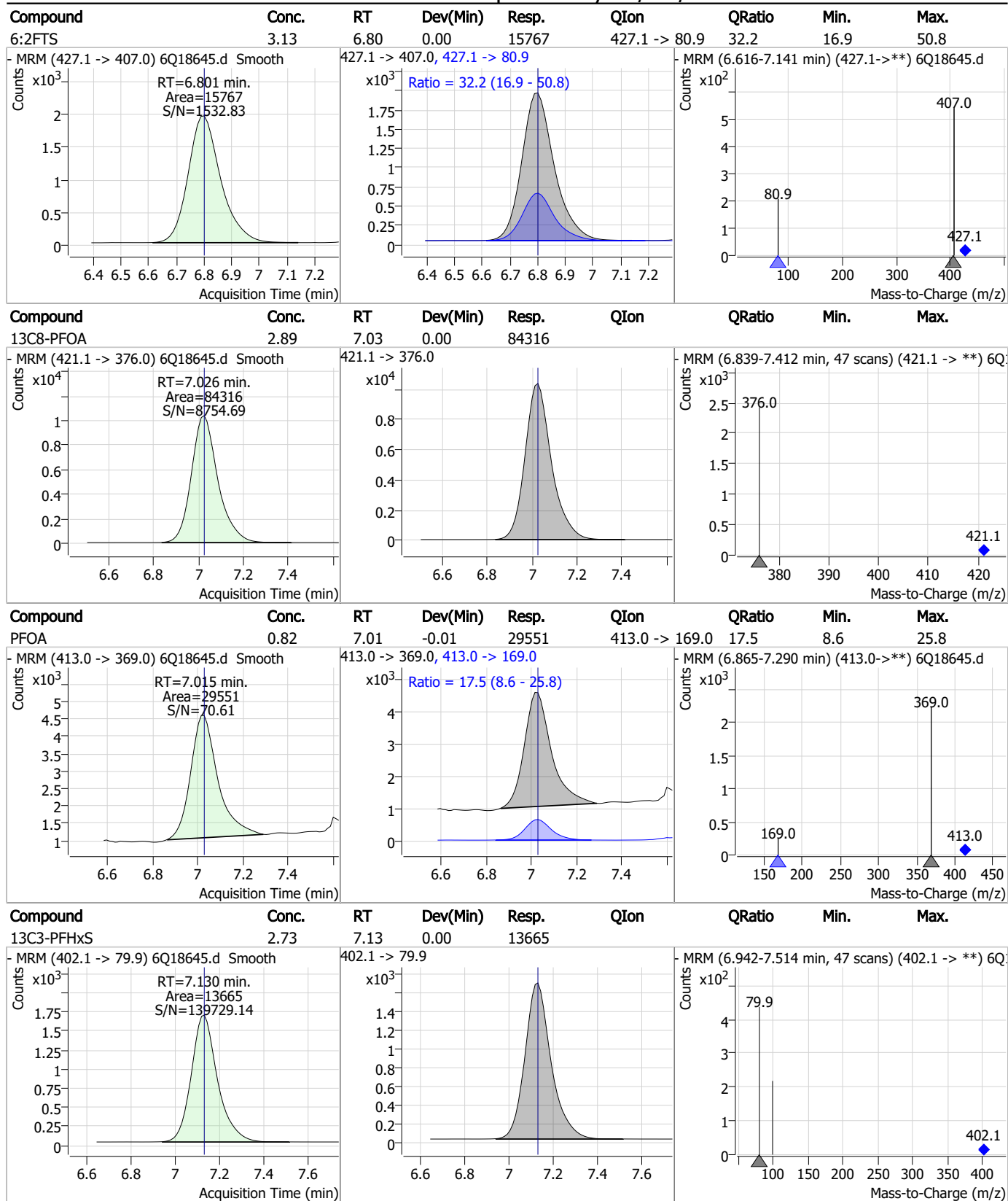


Perfluorinated Compounds by LC/MS/MS



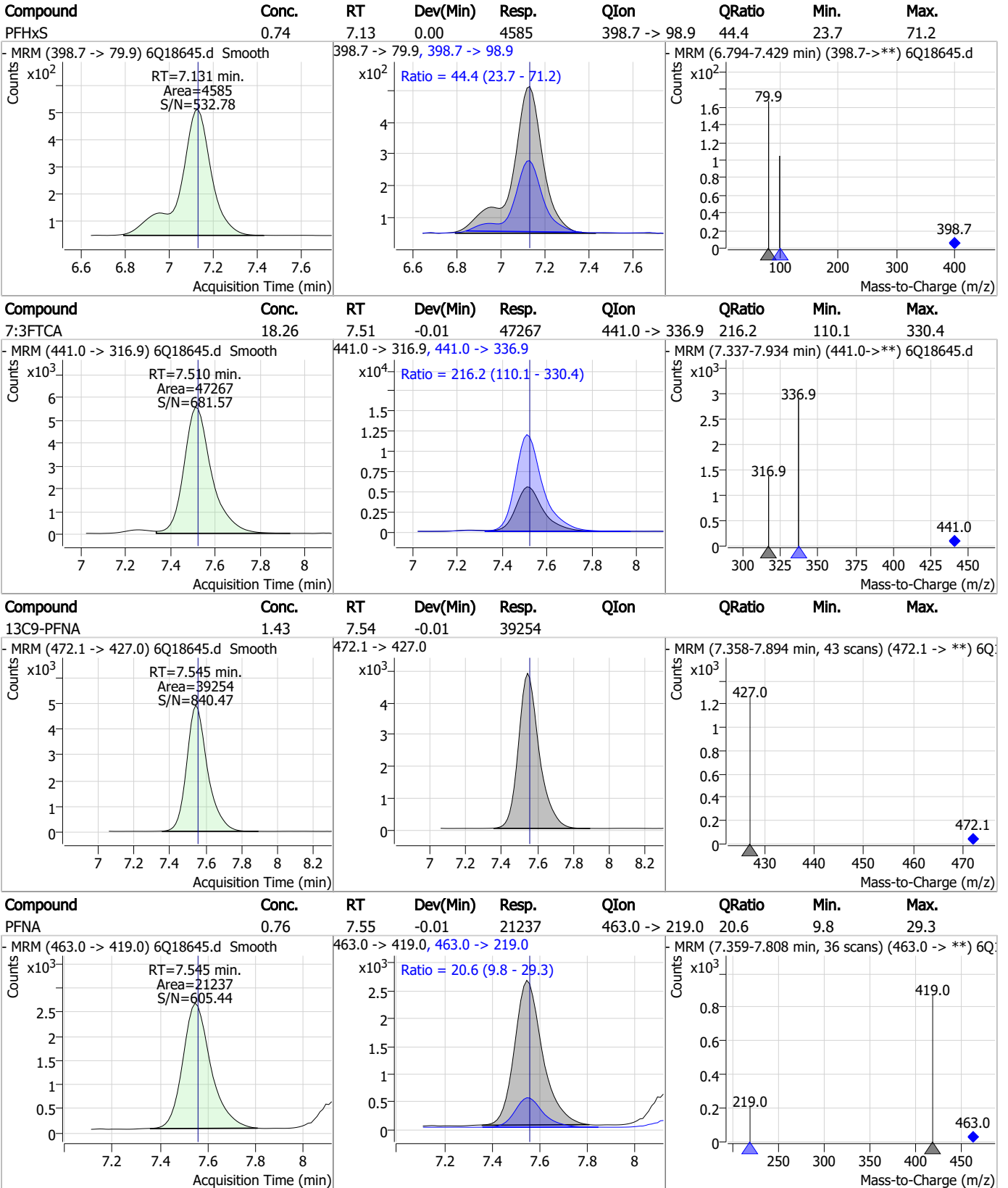
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS

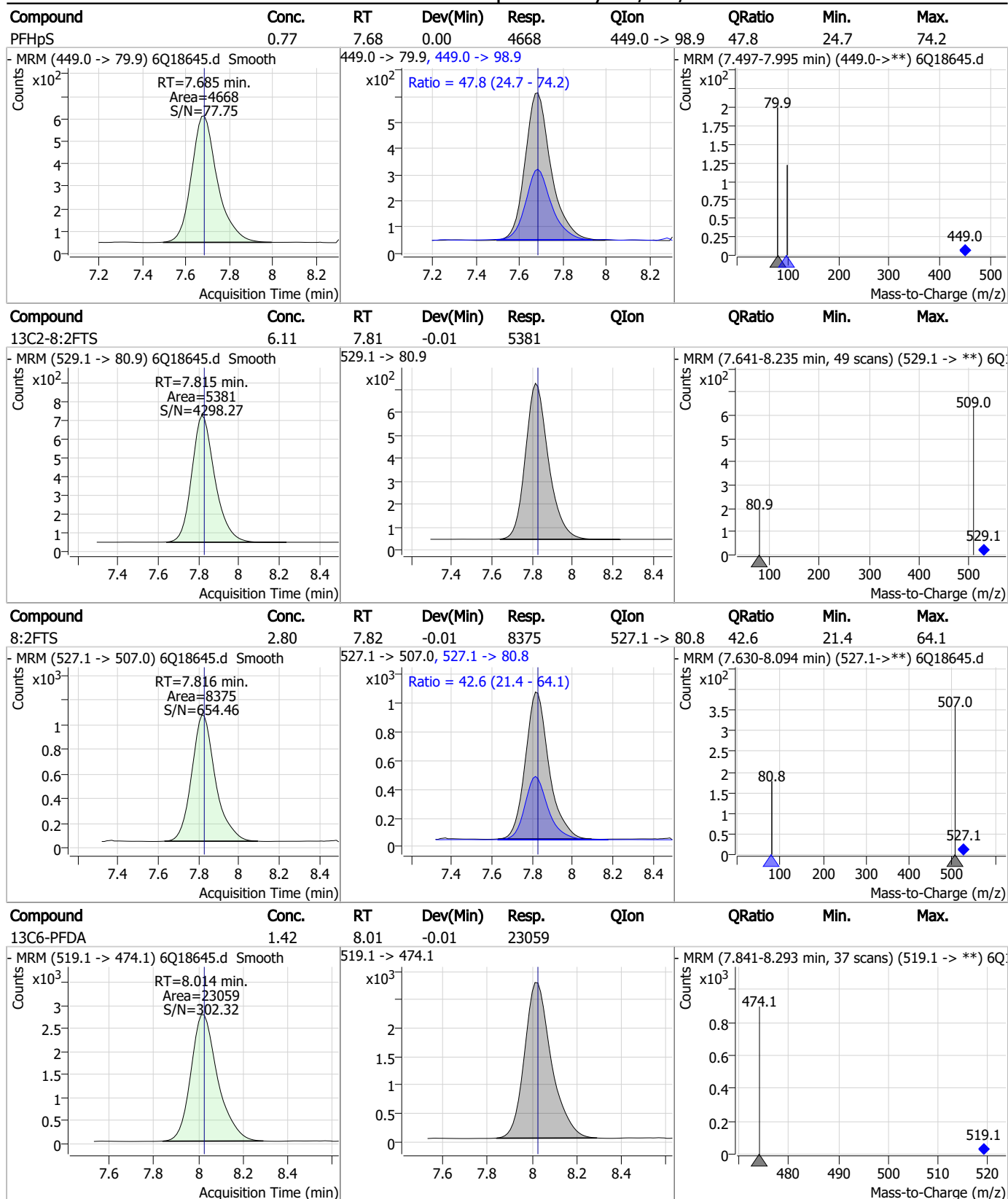


7.3.2

7

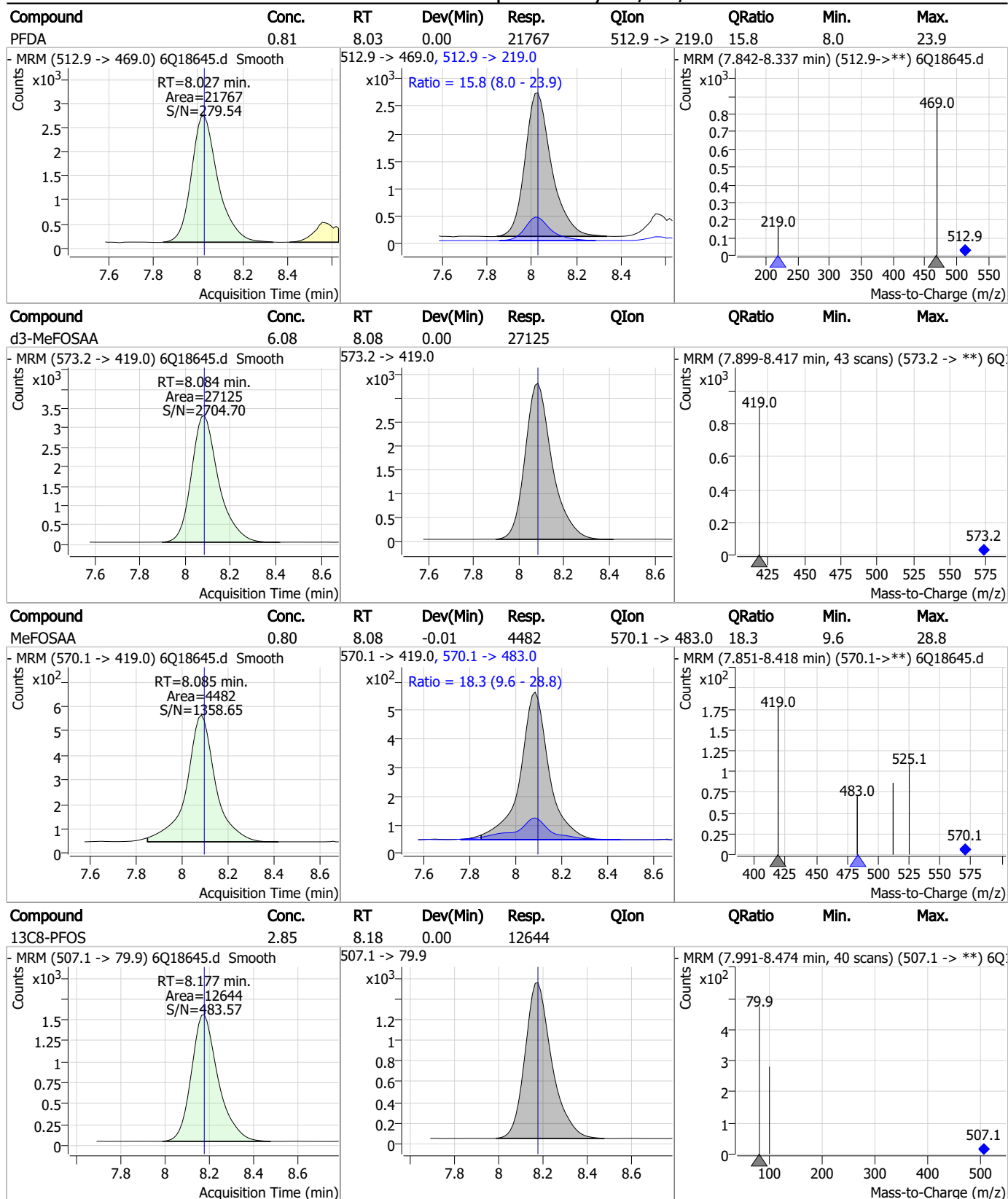


Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS

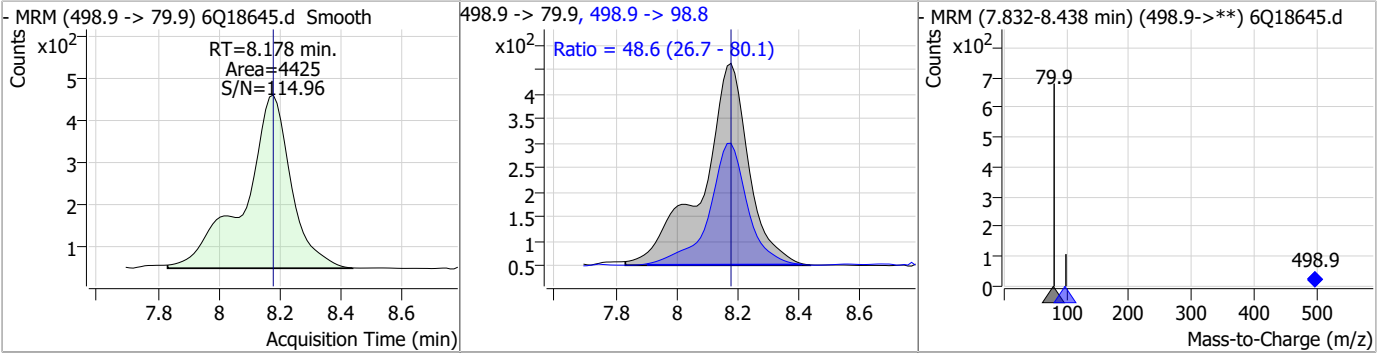


7.3.2
7

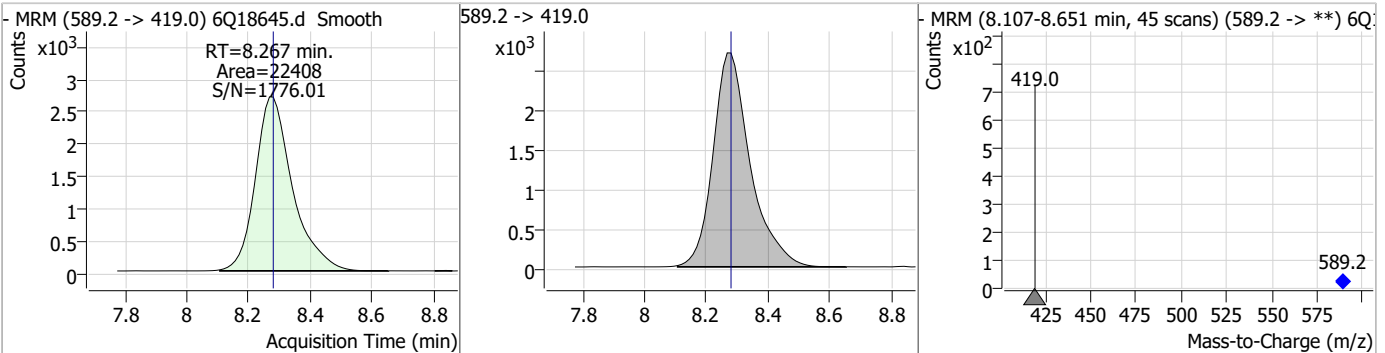


Perfluorinated Compounds by LC/MS/MS

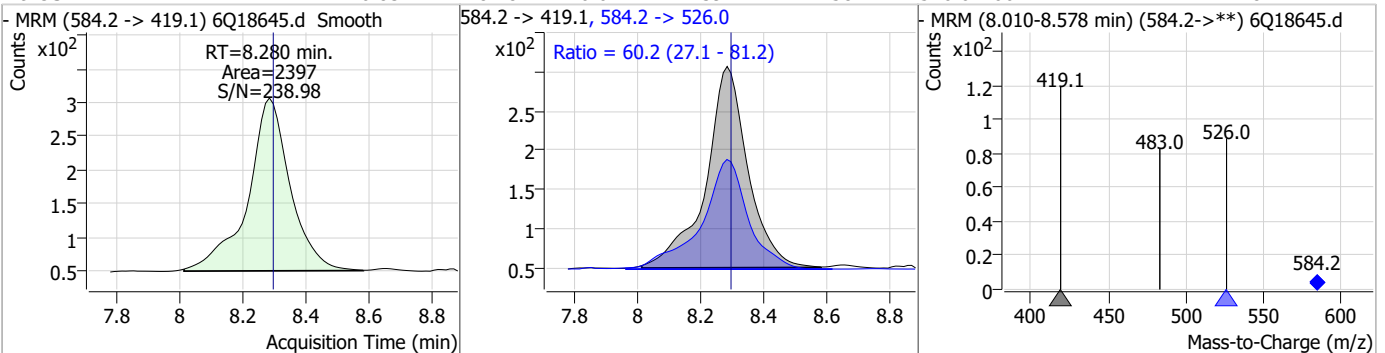
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.77	8.18	0.00	4425	498.9 -> 98.8	48.6	26.7	80.1



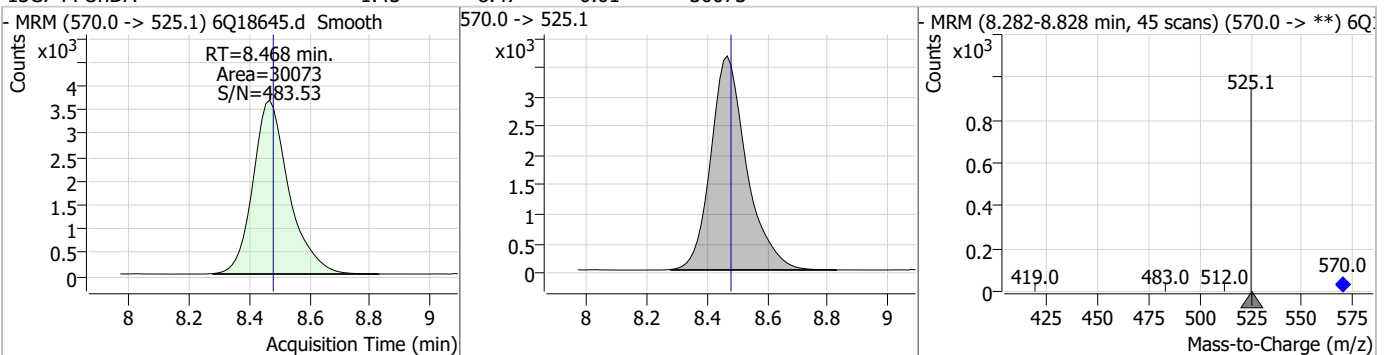
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.52	8.27	-0.01	22408				



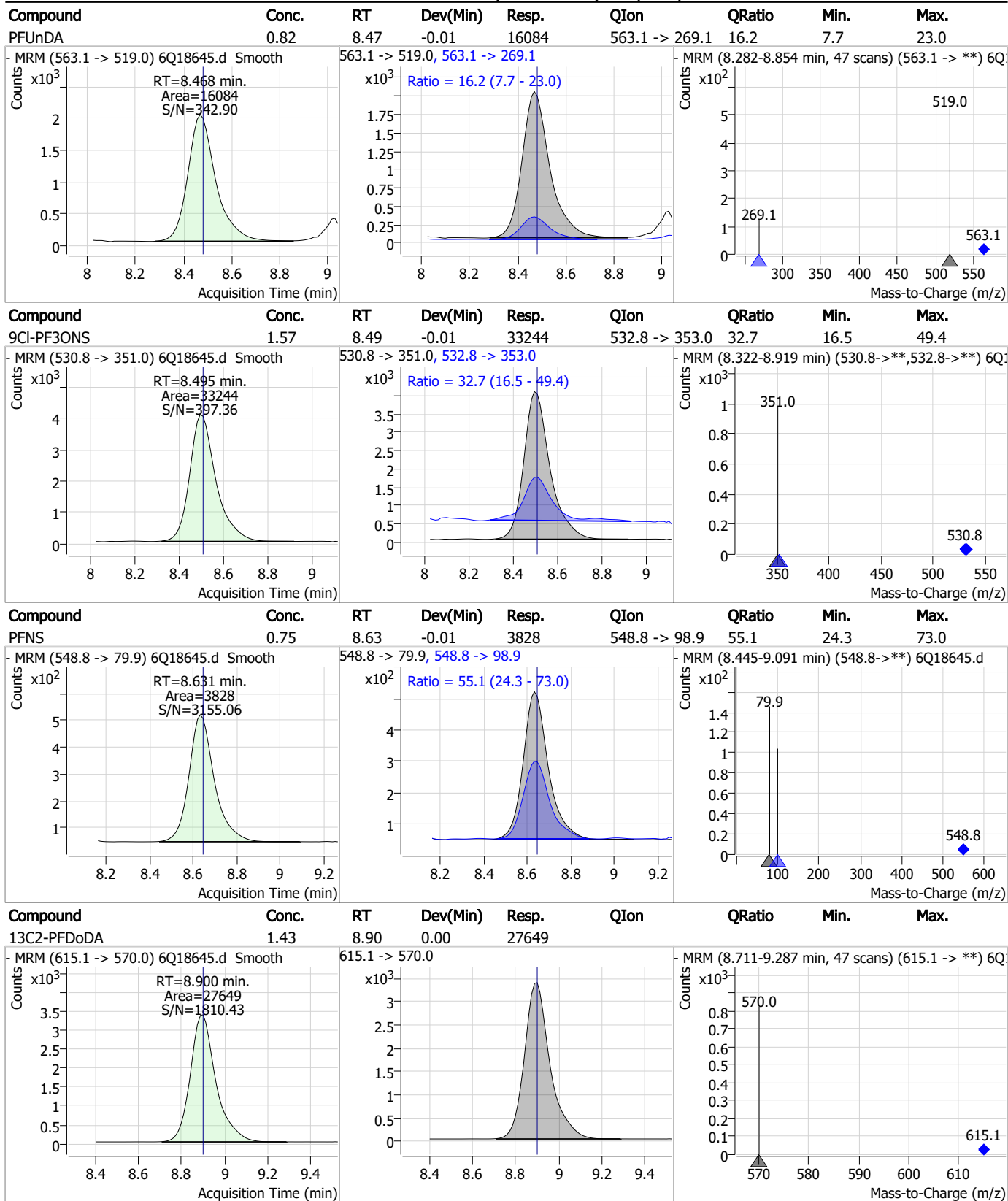
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.83	8.28	-0.01	2397	584.2 -> 526.0	60.2	27.1	81.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.45	8.47	-0.01	30073				

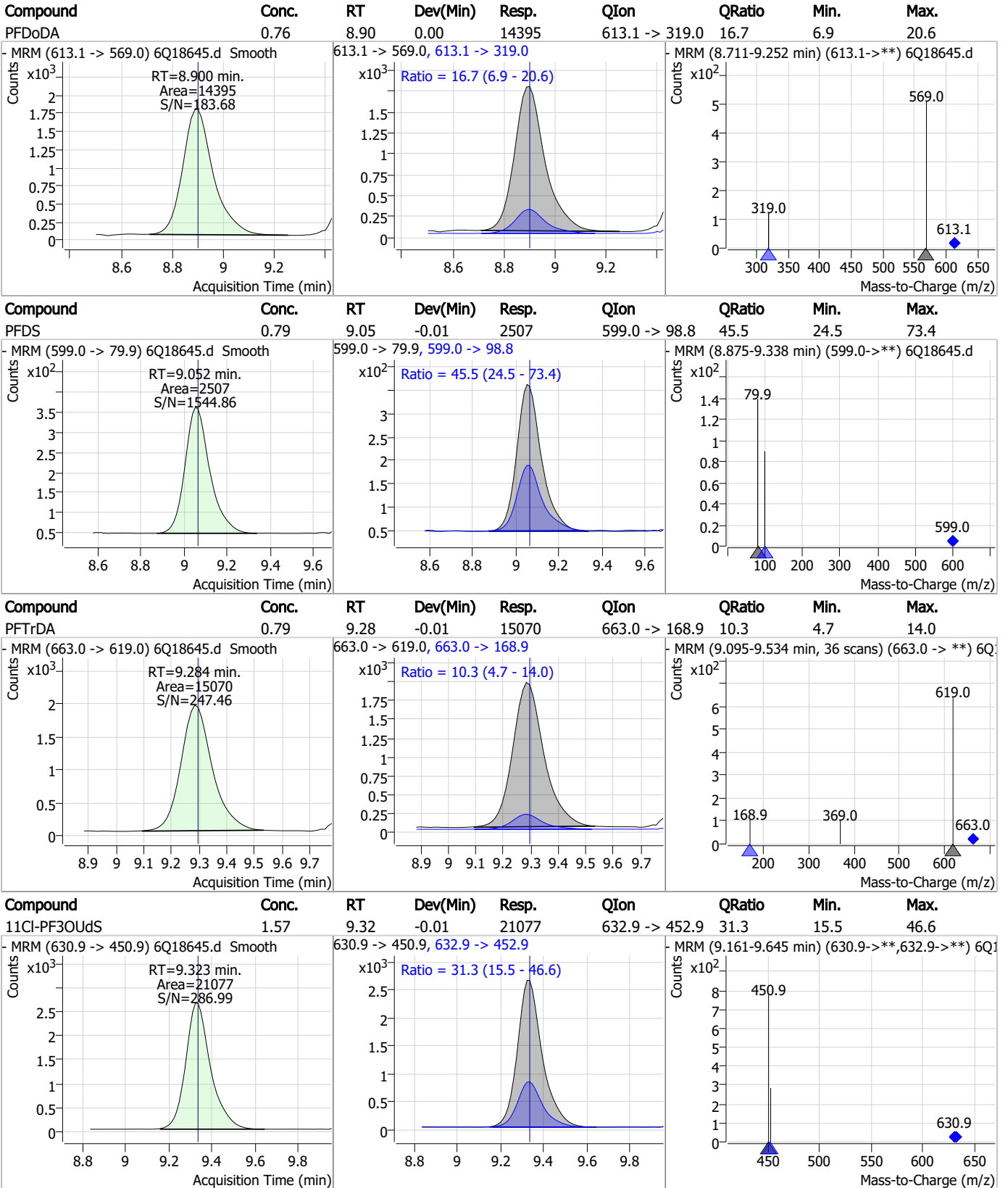


Perfluorinated Compounds by LC/MS/MS



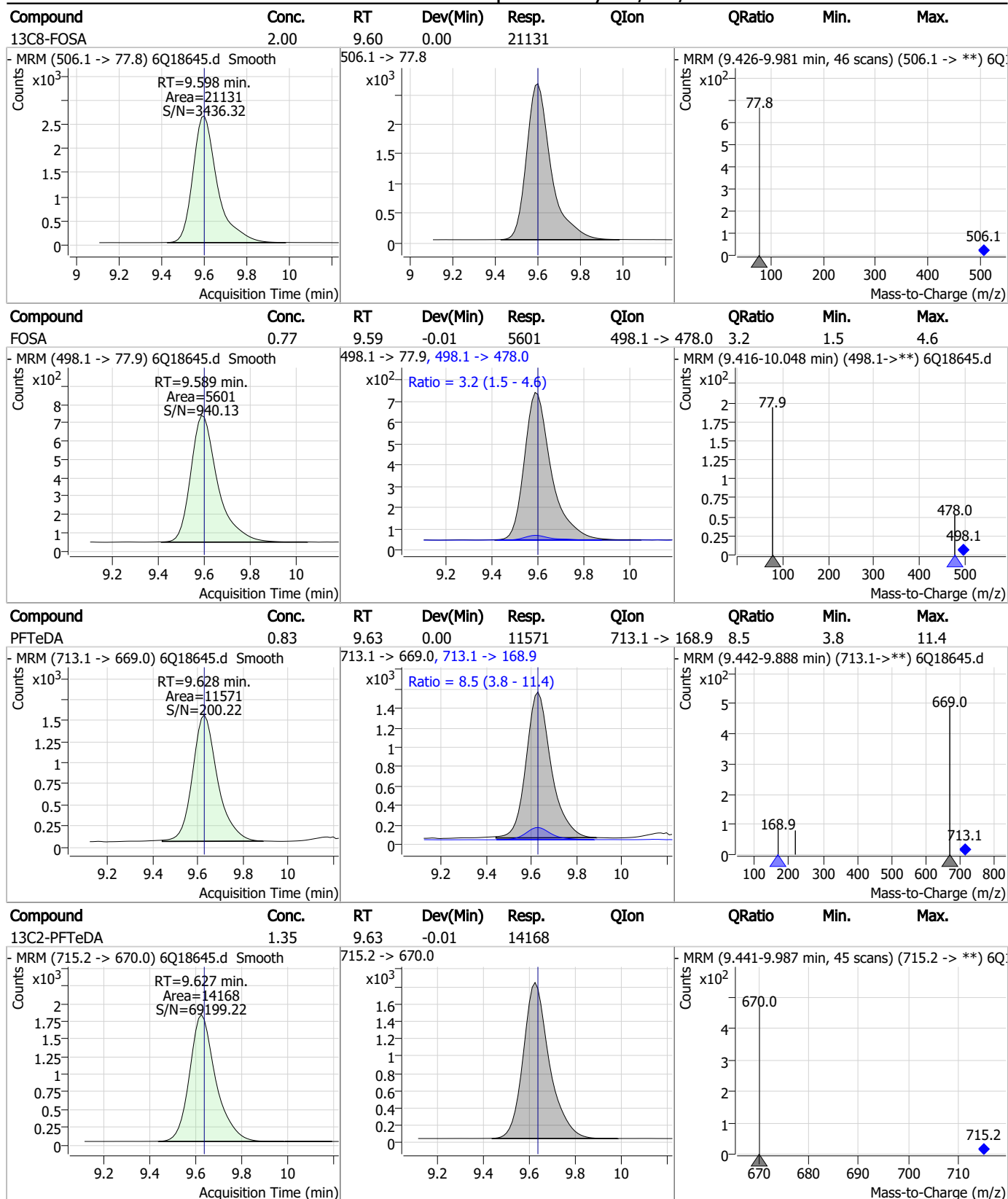
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



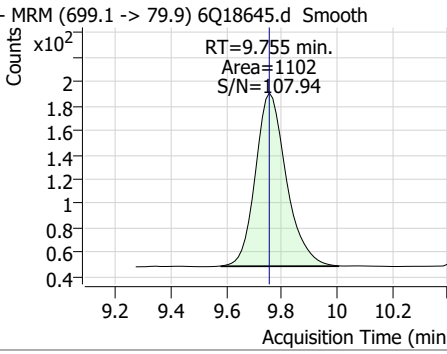
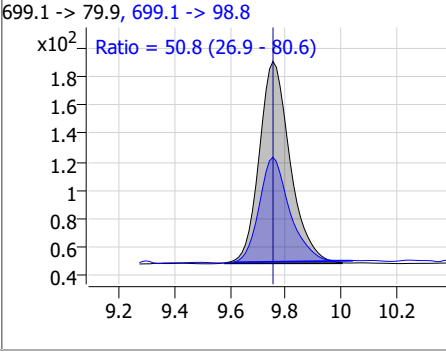
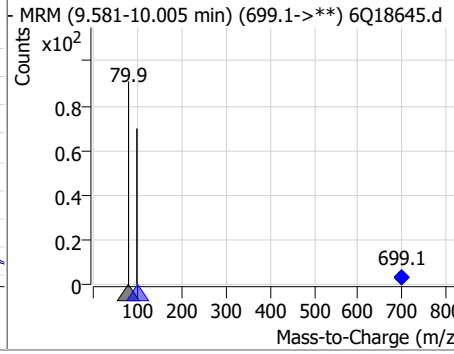
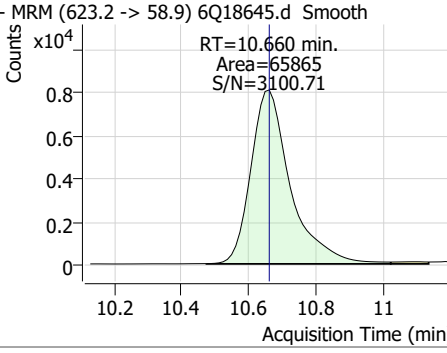
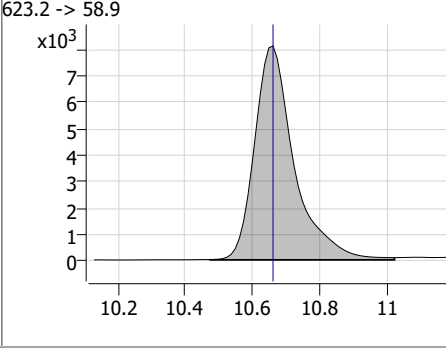
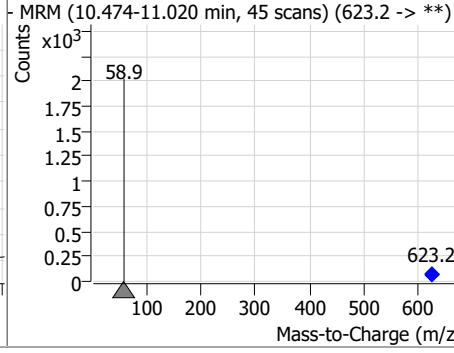
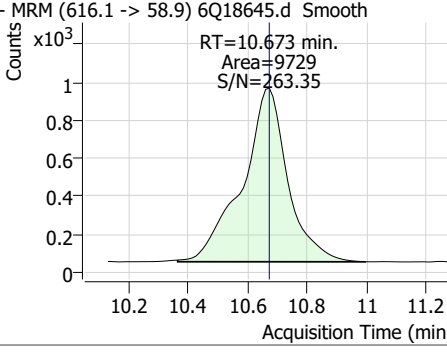
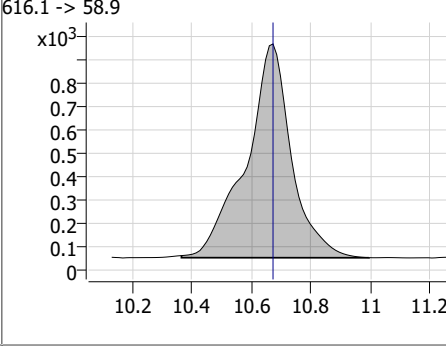
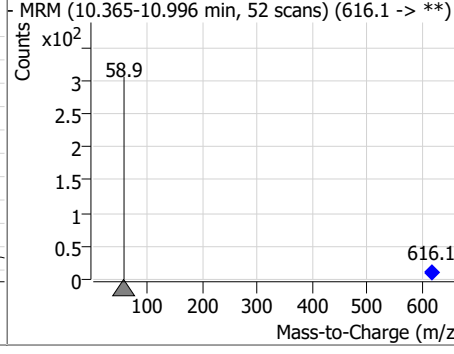
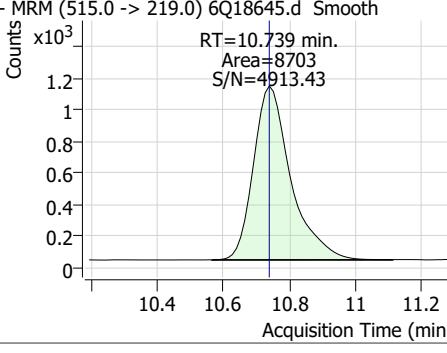
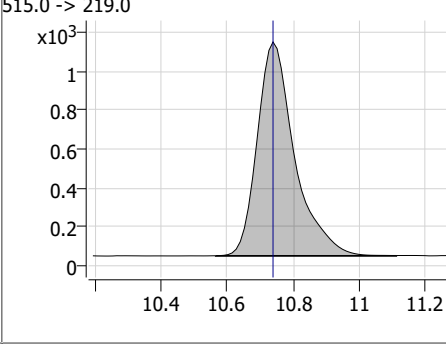
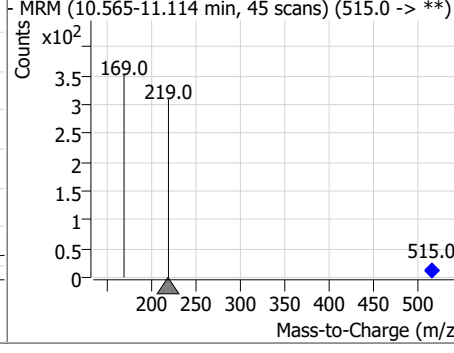
7.3.2 7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

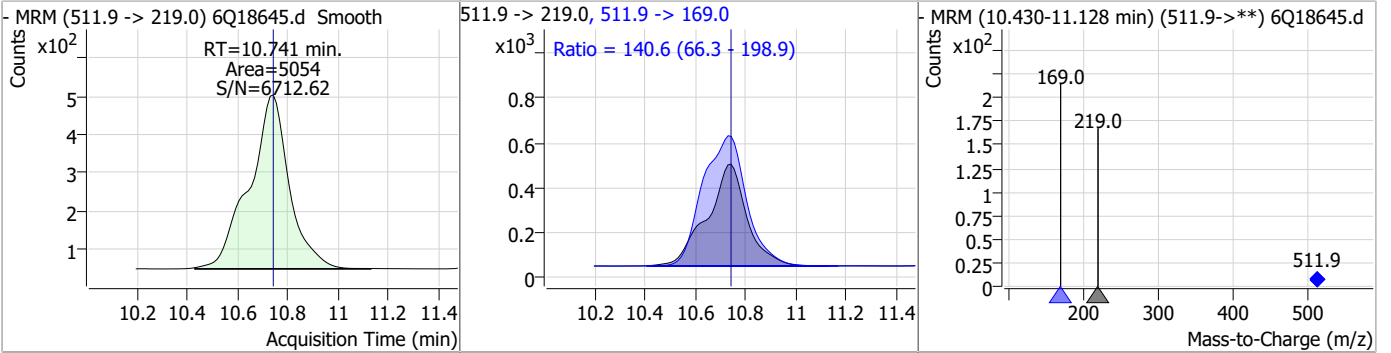
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.78	9.75	0.00	1102	699.1 -> 98.8	50.8	26.9	80.6
- MRM (699.1 -> 79.9) 6Q18645.d Smooth 			699.1 -> 79.9, 699.1 -> 98.8 			- MRM (9.581-10.005 min) (699.1->**) 6Q18645.d 		
d7-MeFOSE	18.96	10.66	0.00	65865				
- MRM (623.2 -> 58.9) 6Q18645.d Smooth 			623.2 -> 58.9 			- MRM (10.474-11.020 min, 45 scans) (623.2 -> **) 6Q18645.d 		
MeFOSE	3.72	10.67	0.00	9729				
- MRM (616.1 -> 58.9) 6Q18645.d Smooth 			616.1 -> 58.9 			- MRM (10.365-10.996 min, 52 scans) (616.1 -> **) 6Q18645.d 		
d3-MeFOSA	2.04	10.74	0.00	8703				
- MRM (515.0 -> 219.0) 6Q18645.d Smooth 			515.0 -> 219.0 			- MRM (10.565-11.114 min, 45 scans) (515.0 -> **) 6Q18645.d 		

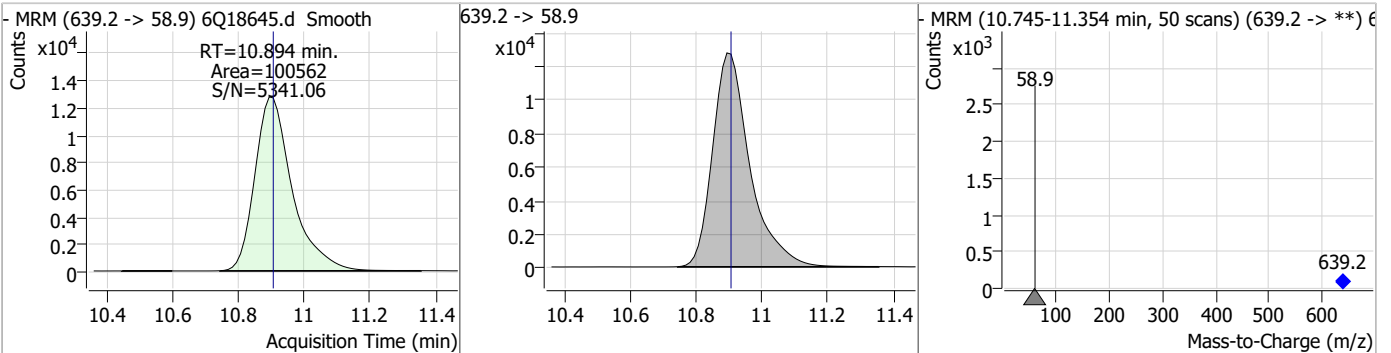
7.3.2
7

Perfluorinated Compounds by LC/MS/MS

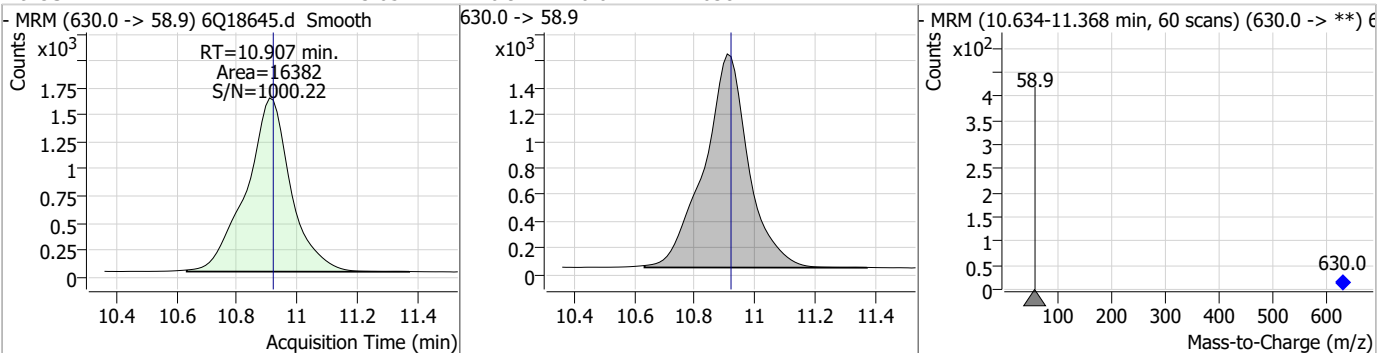
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.58	10.74	0.00	5054	511.9 -> 169.0	140.6	66.3	198.9



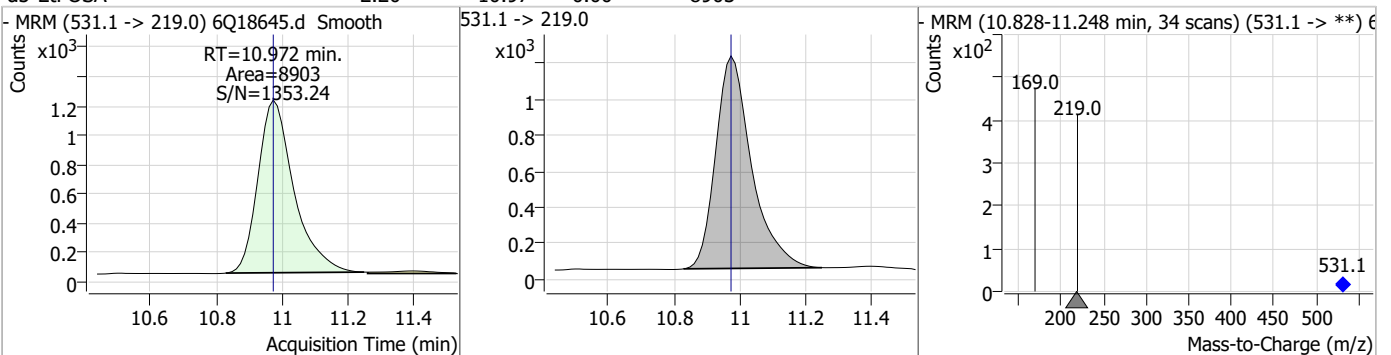
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.14	10.89	-0.01	100562				



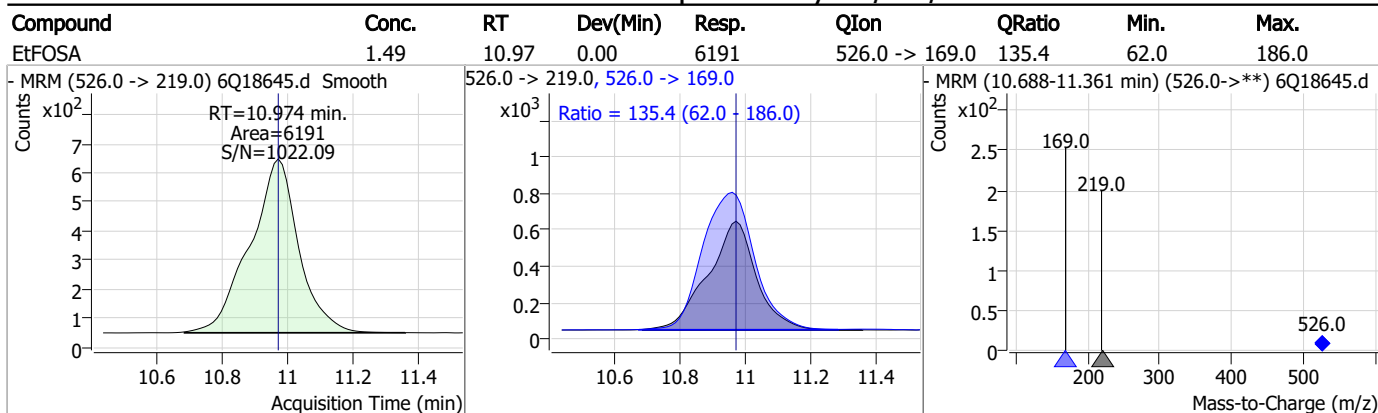
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	3.65	10.91	-0.01	16382				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.20	10.97	0.00	8903				



Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18656.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:57:50 AM
 Sample Name : op97092-ms
 Vial : P2-B2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,540,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	115216	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	55324	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	57671	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	55255	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	85276	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	37811	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	23677	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	30943	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	25735	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	13283	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	25354	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	21457	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	13699	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12425	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3400	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4424	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5127	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	25453	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	36591	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	21795	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	78135	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	117182	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	10086	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10298	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13726	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	63647	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	9089	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	77126	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	28582	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	40762	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	48843	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3400	5.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.1%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4424	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5127	5.74 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.8%		
13C2-PFDoDA	8.900	615.1 -> 570.0	25735	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	13283	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C3-PFBS	5.334	302.1 -> 79.9	21457	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C3-PFHxS	7.130	402.1 -> 79.9	13699	2.70 µg/L	0.000

7.4.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C4-PFBA	2.876	216.8 -> 171.9	115216	7.60 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.0%	
13C4-PFHpA	6.369	367.1 -> 322.0	55255	2.89 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.6%	
13C5-PFHxA	5.417	318.0 -> 273.0	57671	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.6%	
13C5-PFPeA	4.222	268.3 -> 223.0	55324	5.82 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.5%	
13C6-PFDA	8.027	519.1 -> 474.1	23677	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.1%	
13C7-PFUnDA	8.468	570.0 -> 525.1	30943	1.45 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.9%	
13C8-FOSA	9.598	506.1 -> 77.8	25354	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C8-PFOA	7.026	421.1 -> 376.0	85276	2.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.1%	
13C8-PFOS	8.177	507.1 -> 79.9	12425	2.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C9-PFNA	7.545	472.1 -> 427.0	37811	1.41 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.6%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25453	5.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.9%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	36591	11.40 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	10298	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
d5-EtFOSAA	8.267	589.2 -> 419.0	21795	5.41 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
d7-MeFOSE	10.660	623.2 -> 58.9	78135	22.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	117182	25.99 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
d5-EtFOSA	10.972	531.1 -> 219.0	10086	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	50053	10.14 µg/L	96
		327.1 -> 80.9	18715		
6:2FTS	6.801	427.1 -> 407.0	49238	11.33 µg/L	96
		427.1 -> 80.9	15523		
8:2FTS	7.816	527.1 -> 507.0	30399	10.66 µg/L	97
		527.1 -> 80.8	12317		
EtFOSAA	8.280	584.2 -> 419.1	9061	3.23 µg/L	95
		584.2 -> 526.0	4617		
FOSA	9.589	498.1 -> 77.9	24165	2.75 µg/L	100
		498.1 -> 478.0	714		
MeFOSAA	8.085	570.1 -> 419.0	14848	2.84 µg/L	97
		570.1 -> 483.0	3078		
PFBA	2.868	212.8 -> 168.9	41846	10.97 µg/L	100
PFBS	5.335	298.7 -> 79.9	17826	2.44 µg/L	96
		298.7 -> 98.8	6851		
PFDA	8.027	512.9 -> 469.0	71496	2.60 µg/L	100
		512.9 -> 219.0	11387		
PFDoDA	8.900	613.1 -> 569.0	50299	2.85 µg/L	96
		613.1 -> 319.0	7653		
PFDS	9.052	599.0 -> 79.9	7734	2.49 µg/L	98

7.4.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	3681	2.68 µg/L	95
		363.1 -> 319.0	65545		
PFHpS	7.685	363.1 -> 169.0	11134	2.53 µg/L	98
		449.0 -> 79.9	15052		
PFHxA	5.420	449.0 -> 98.9	7691	2.80 µg/L	98
		313.0 -> 269.0	54219		
PFHxS	7.131	313.0 -> 118.9	2838	2.42 µg/L	99
		398.7 -> 79.9	15005		
PFNA	7.545	398.7 -> 98.9	7271	2.74 µg/L	99
		463.0 -> 419.0	73433		
PFNS	8.631	463.0 -> 219.0	14806	2.48 µg/L	96
		548.8 -> 79.9	12355		
PFOA	7.028	548.8 -> 98.9	6369	2.86 µg/L	99
		413.0 -> 369.0	103959		
PFOS	8.166	413.0 -> 169.0	18295	2.70 µg/L	90
		498.9 -> 79.9	15307		
PFPeA	4.224	498.9 -> 98.8	7076	5.49 µg/L	100
		263.0 -> 219.0	72955		
PFPeS	6.422	349.1 -> 79.9	15321	2.48 µg/L	99
		349.1 -> 98.9	7195		
PFTeDA	9.628	713.1 -> 669.0	37776	2.89 µg/L	97
		713.1 -> 168.9	3216		
PFTrDA	9.284	663.0 -> 619.0	49740	2.79 µg/L	95
		663.0 -> 168.9	5559		
PFUnDA	8.468	563.1 -> 519.0	51039	2.54 µg/L	94
		563.1 -> 269.1	9106		
11CI-PF3OUdS	9.336	630.9 -> 450.9	66924	4.87 µg/L	99
		632.9 -> 452.9	20420		
9CI-PF3ONS	8.508	530.8 -> 351.0	114772	5.31 µg/L	91
		532.8 -> 353.0	31617		
ADONA	6.632	376.9 -> 250.9	255048	5.25 µg/L	99
		376.9 -> 84.8	67256		
HFPO-DA	5.783	284.9 -> 168.9	17418	5.62 µg/L	98
		284.9 -> 184.9	2217		
3:3FTCA	3.727	241.0 -> 177.0	8458	9.95 µg/L	97
		241.0 -> 117.0	1137		
5:3FTCA	6.086	341.0 -> 237.1	225218	64.65 µg/L	97
		341.0 -> 217.0	166104		
7:3FTCA	7.523	441.0 -> 316.9	163815	68.67 µg/L	93
		441.0 -> 336.9	379843		
EtFOSA	10.974	526.0 -> 219.0	24000	5.11 µg/L	93
		526.0 -> 169.0	31659		
EtFOSE	10.907	630.0 -> 58.9	66499	12.72 µg/L	100
		511.9 -> 219.0	20187		
MeFOSA	10.741	511.9 -> 169.0	28151	5.33 µg/L	94
		616.1 -> 58.9	41665		
MeFOSE	10.673	699.1 -> 79.9	3385	13.42 µg/L	100
		699.1 -> 98.8	1797		
PFDoDS	9.755	295.0 -> 201.0	13426	2.45 µg/L	99
		295.0 -> 84.9	3492		
NFDHA	5.299	279.0 -> 85.1	49215	5.69 µg/L	98
		229.0 -> 84.9	37023		
PFMBA	4.638	314.8 -> 134.9	123432	5.44 µg/L	100
		314.8 -> 82.9	3990		
PFMPA	3.388			5.26 µg/L	100
PFEESA	5.875			5.02 µg/L	98

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

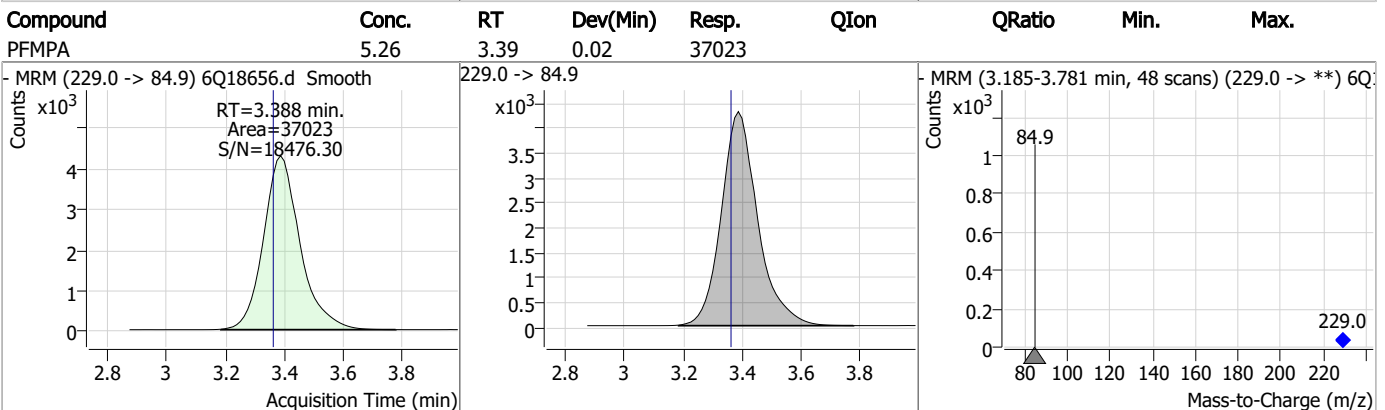
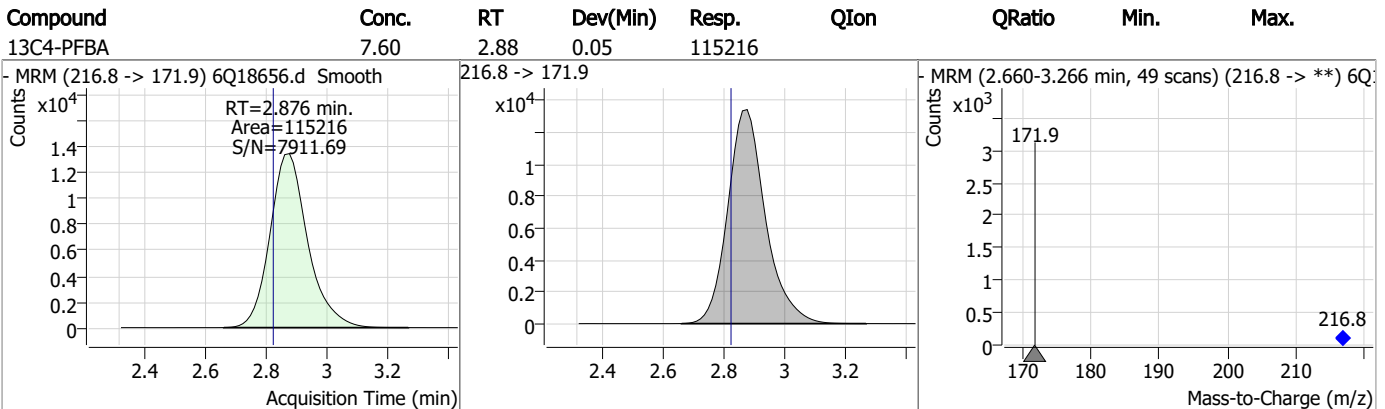
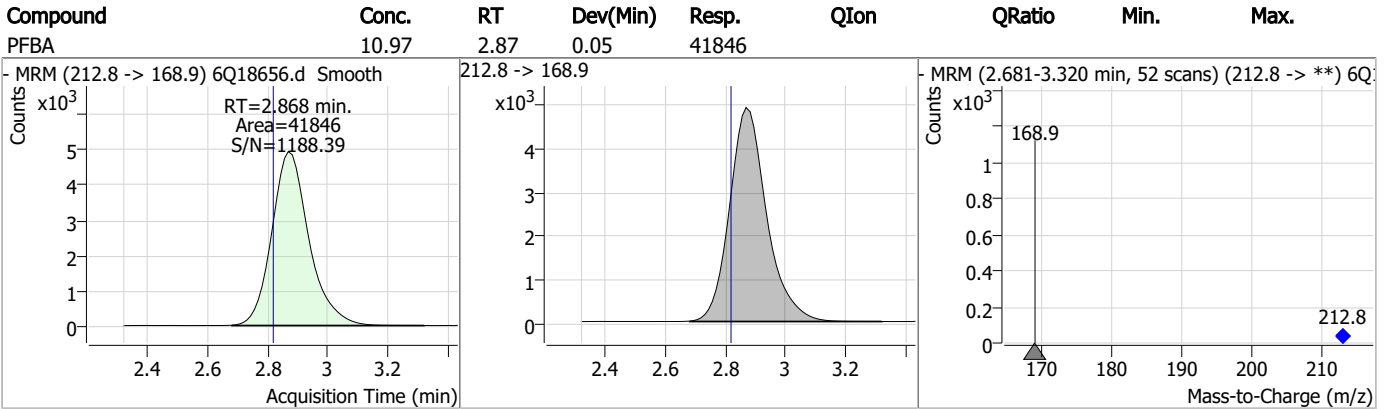
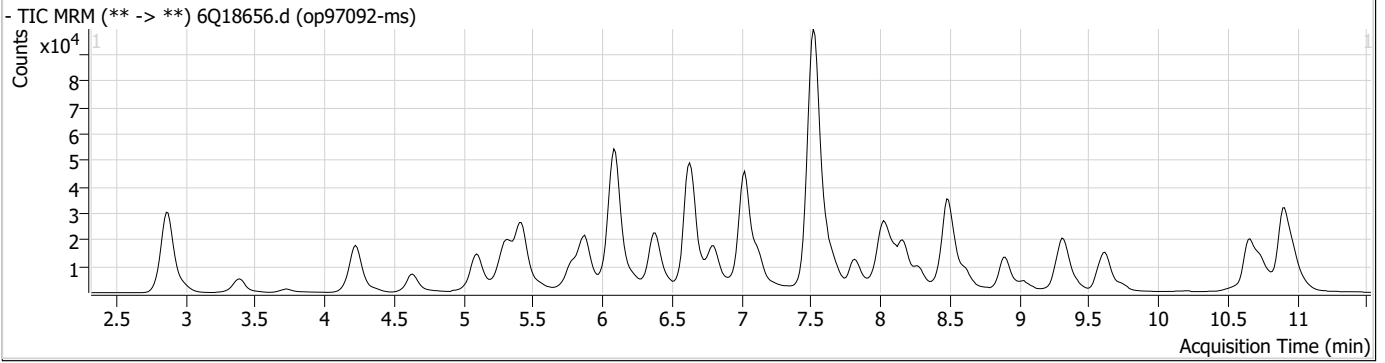
Perfluorinated Compounds by LC/MS/MS

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

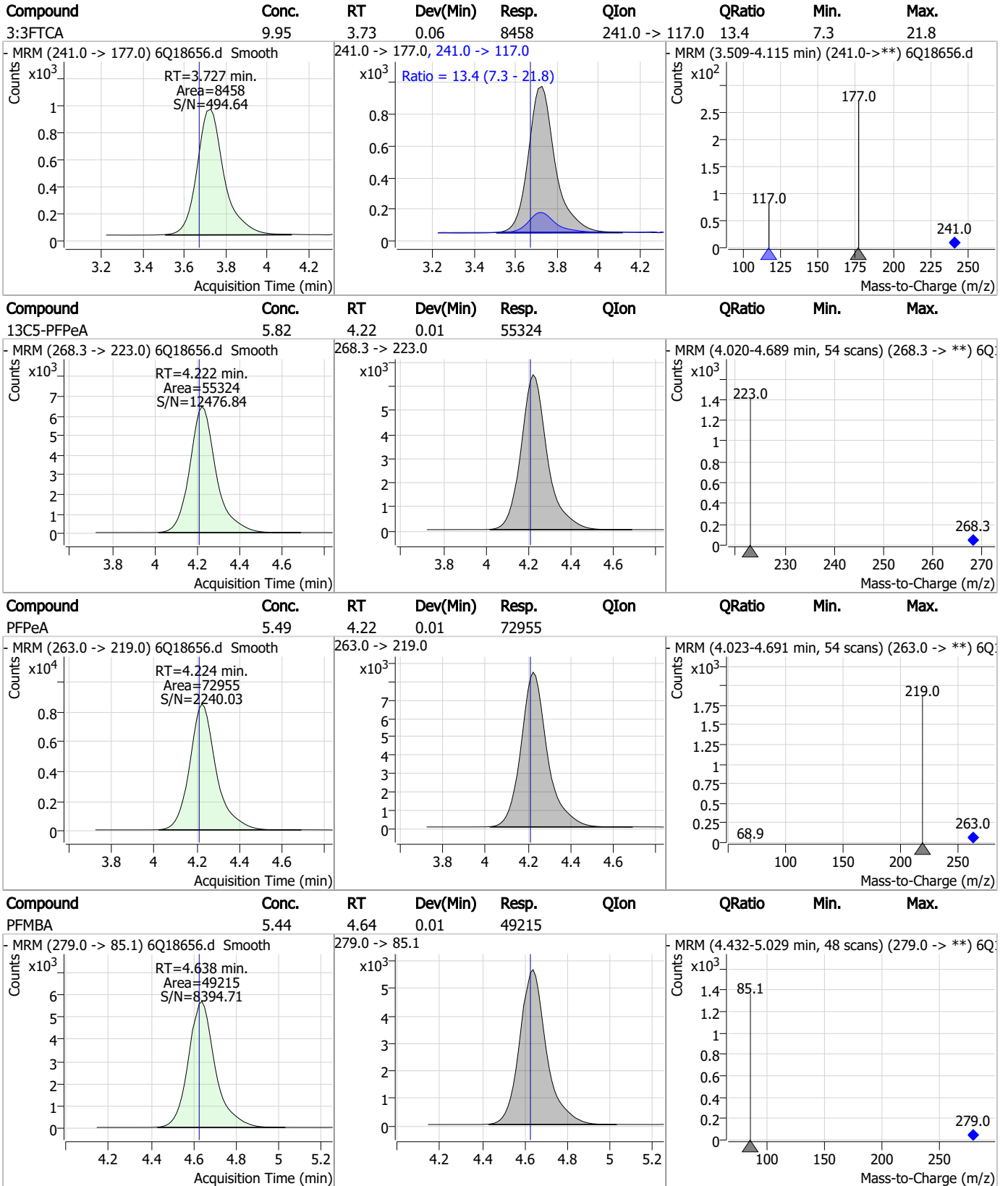
7.4.1

7

Perfluorinated Compounds by LC/MS/MS



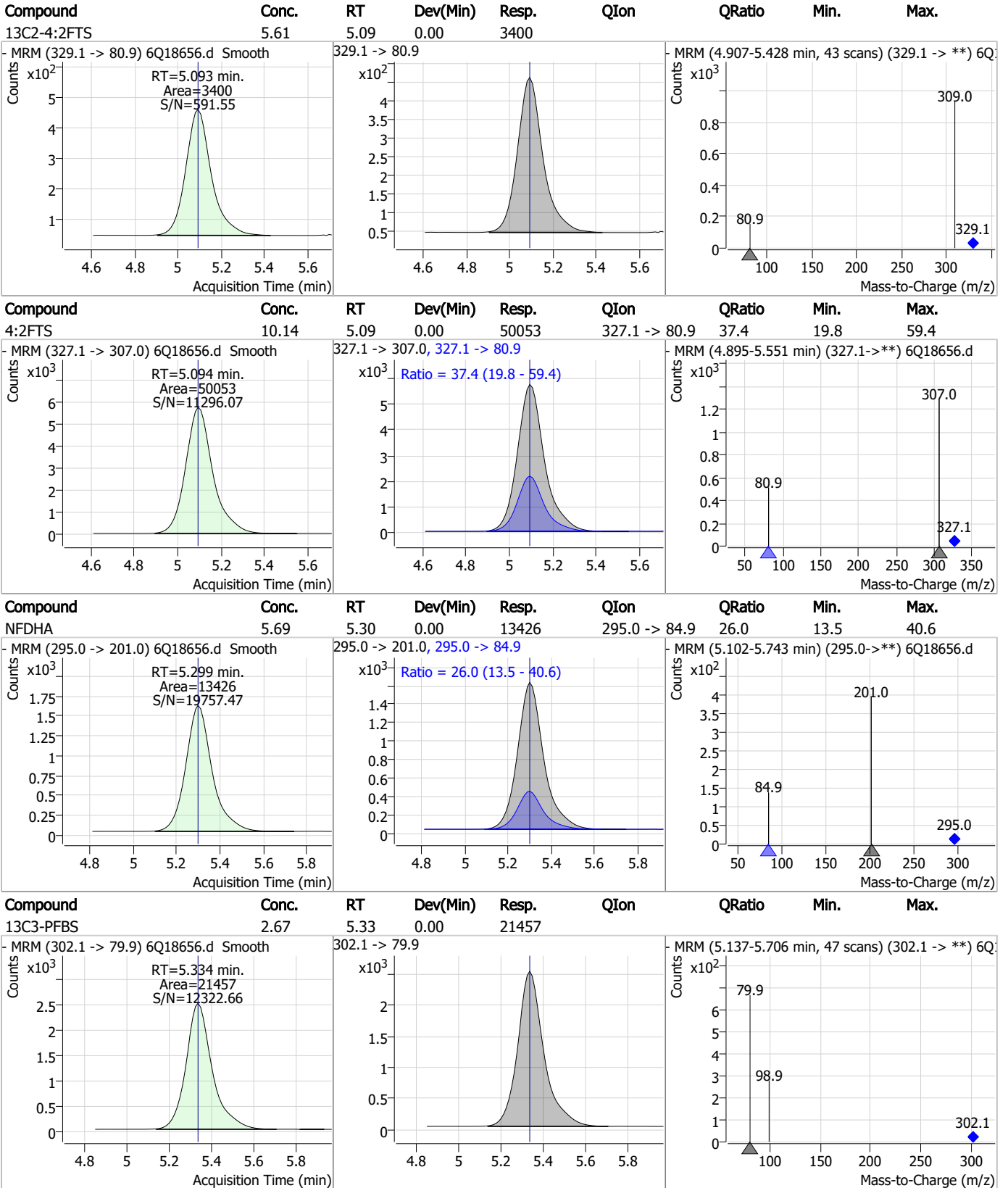
Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Perfluorinated Compounds by LC/MS/MS

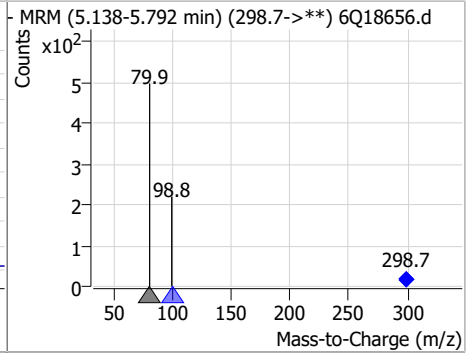
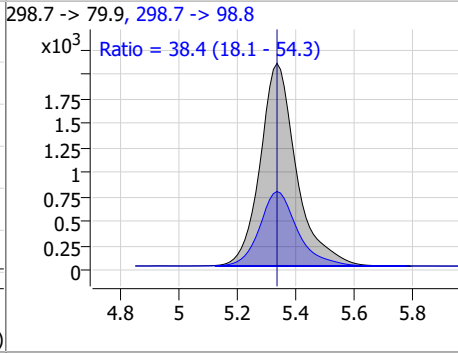
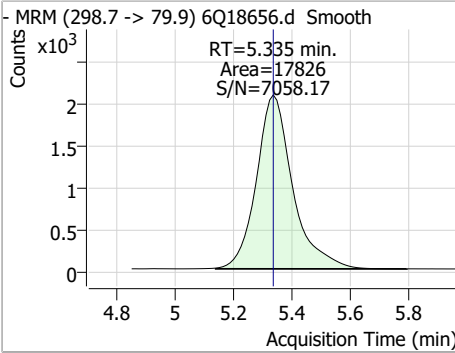


7.4.1

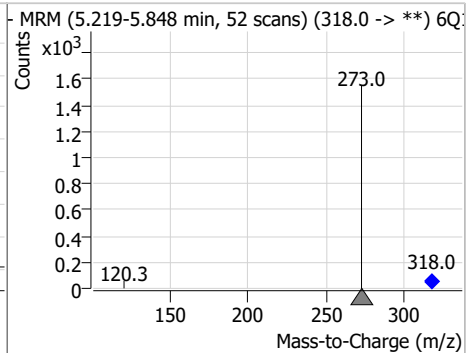
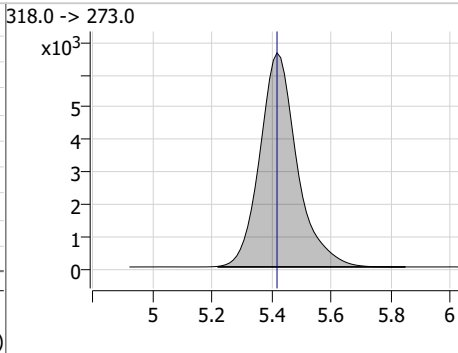
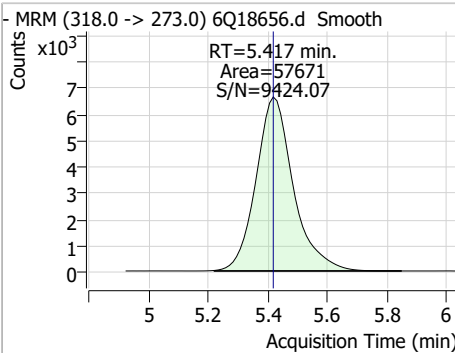
7

Perfluorinated Compounds by LC/MS/MS

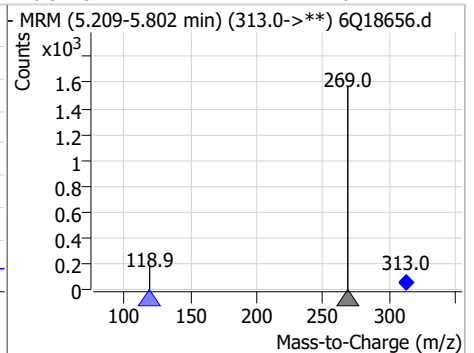
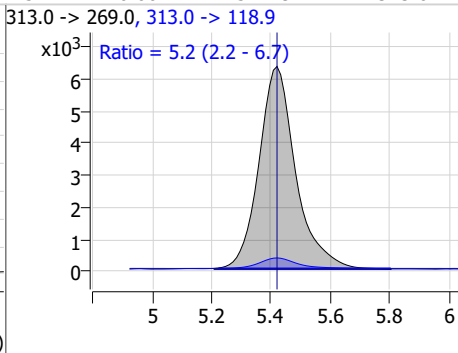
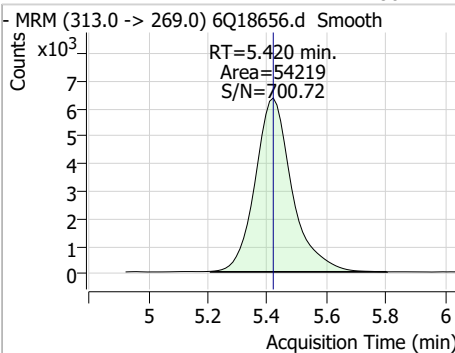
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.44	5.34	0.00	17826	298.7 -> 98.8	38.4	18.1	54.3



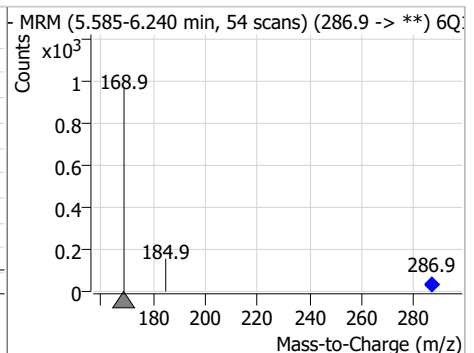
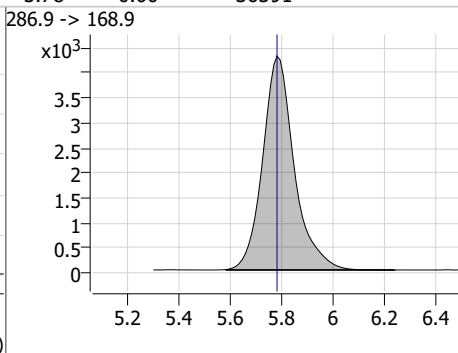
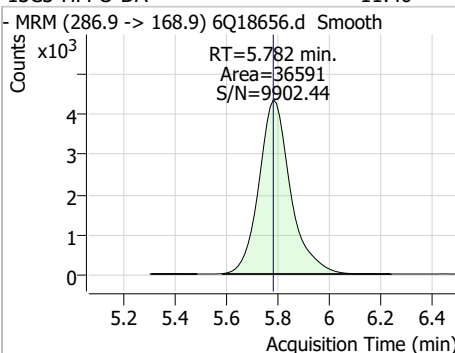
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.79	5.42	0.00	57671				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.80	5.42	0.00	54219	313.0 -> 118.9	5.2	2.2	6.7

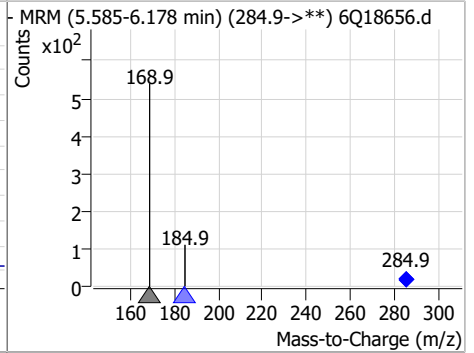
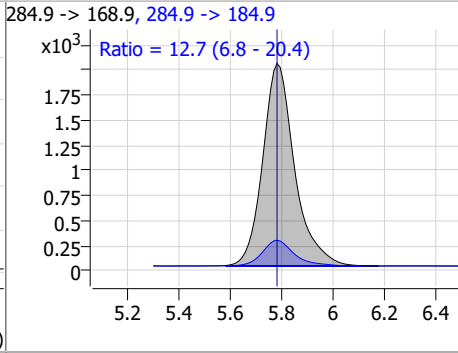
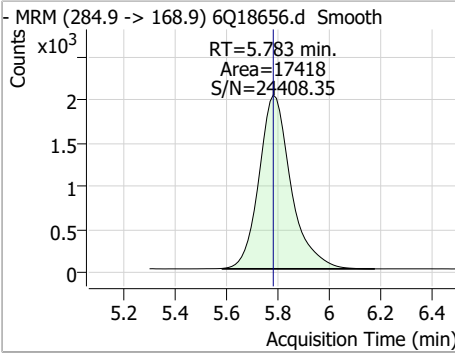


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.40	5.78	0.00	36591				

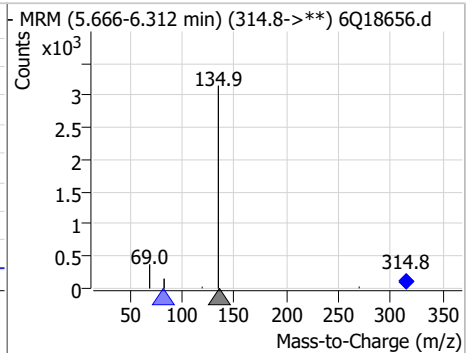
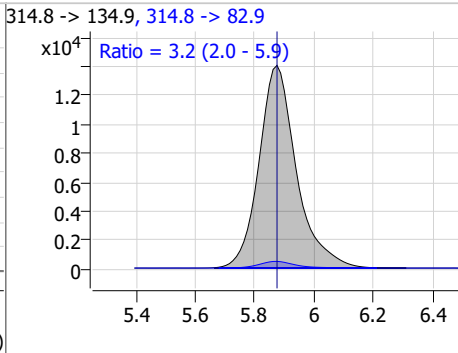
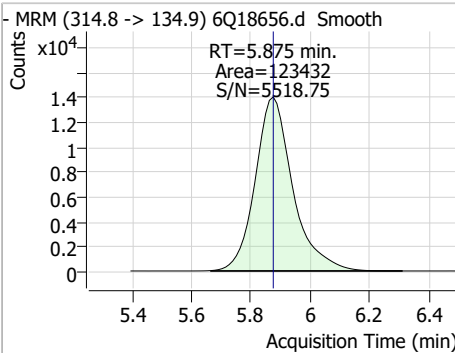


Perfluorinated Compounds by LC/MS/MS

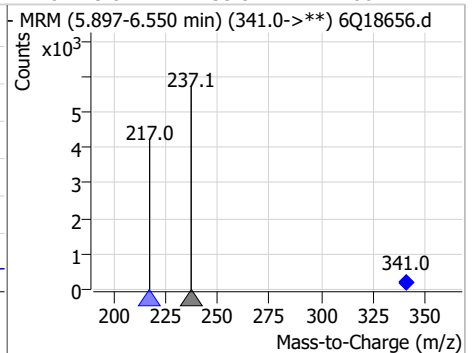
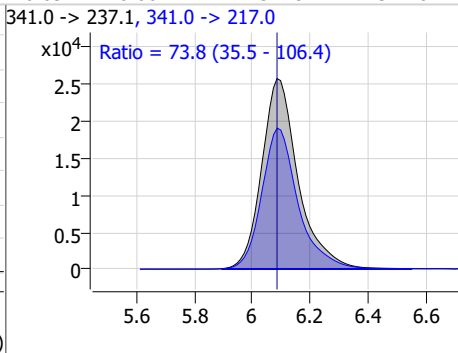
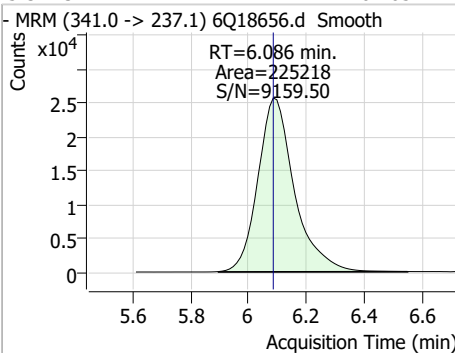
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.62	5.78	0.00	17418	284.9 -> 184.9	12.7	6.8	20.4



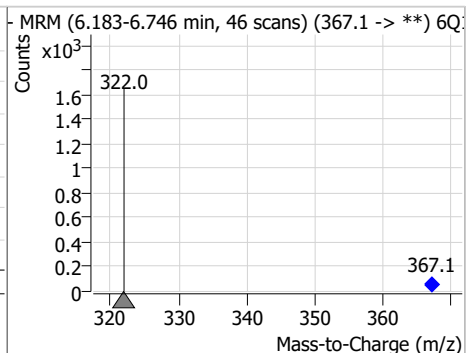
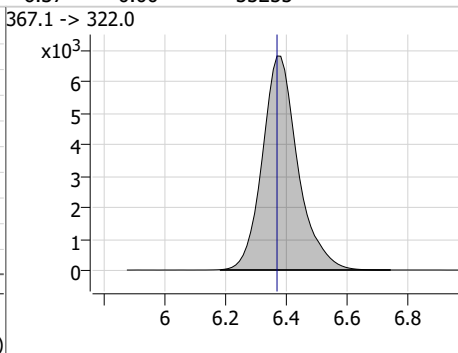
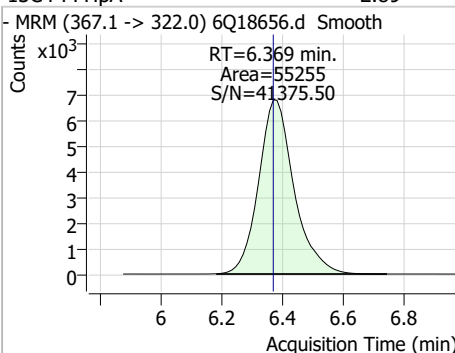
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	5.02	5.88	0.00	123432	314.8 -> 82.9	3.2	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	64.65	6.09	0.00	225218	341.0 -> 217.0	73.8	35.5	106.4

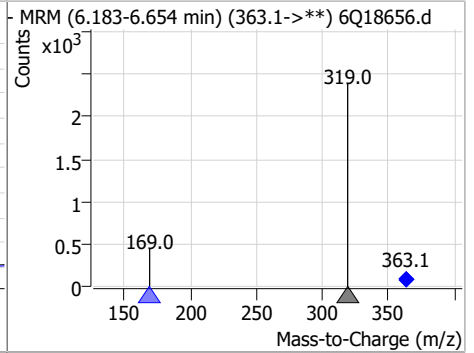
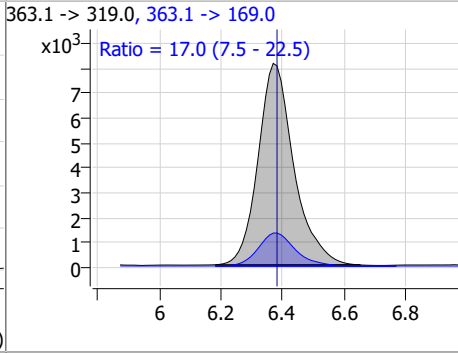
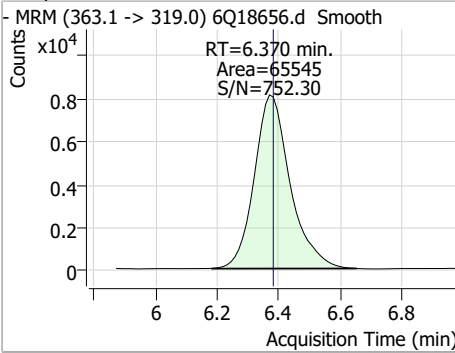


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.89	6.37	0.00	55255	367.1 -> 322.0	-	-	-

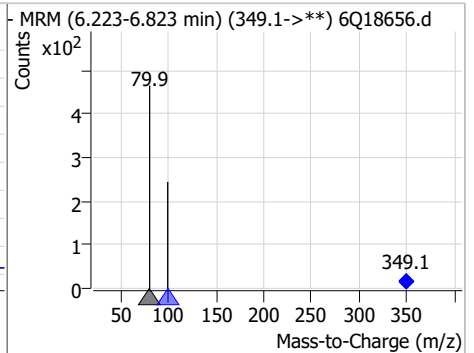
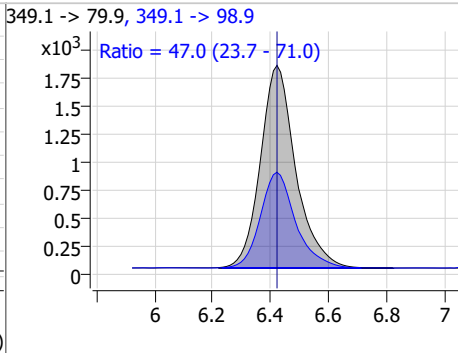
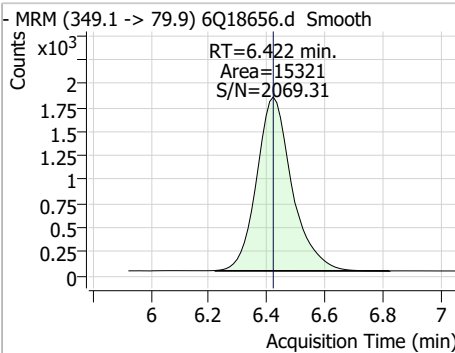


Perfluorinated Compounds by LC/MS/MS

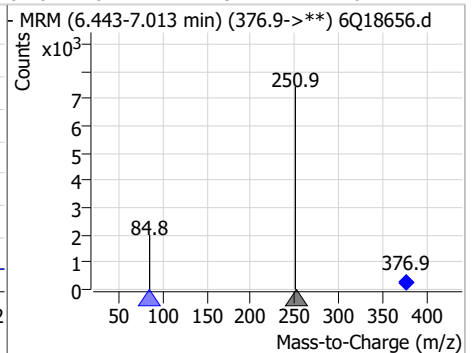
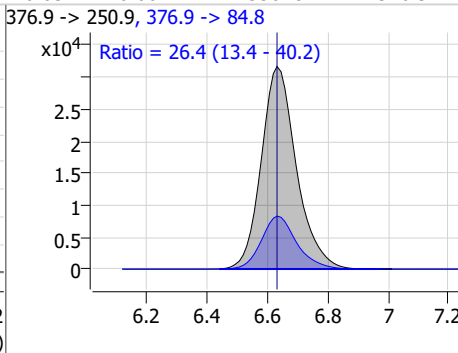
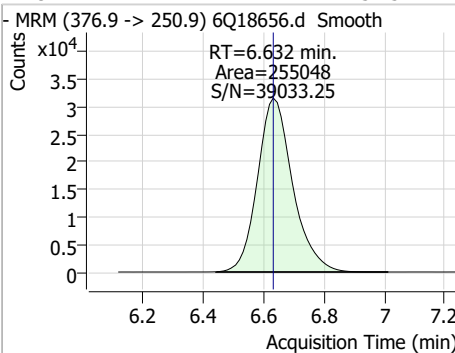
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.68	6.37	-0.01	65545	363.1 -> 169.0	17.0	7.5	22.5



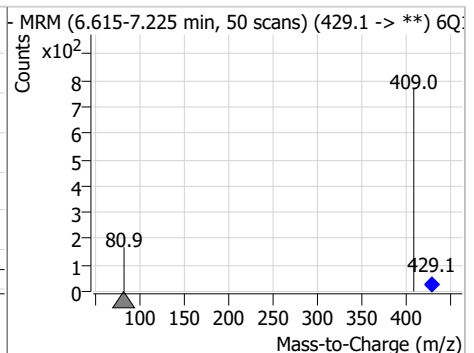
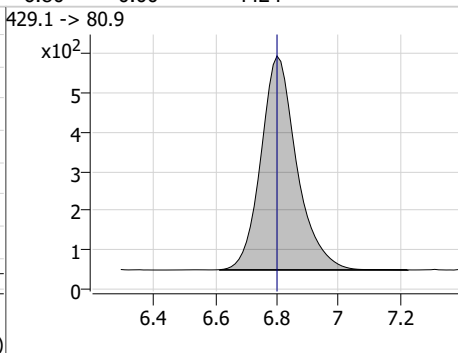
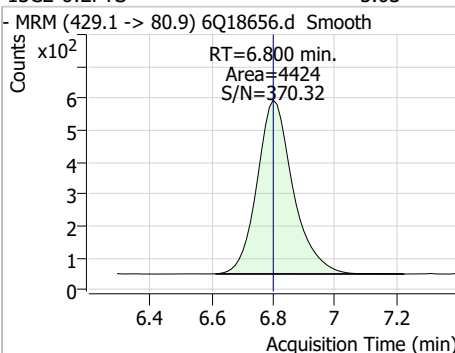
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.48	6.42	0.00	15321	349.1 -> 98.9	47.0	23.7	71.0



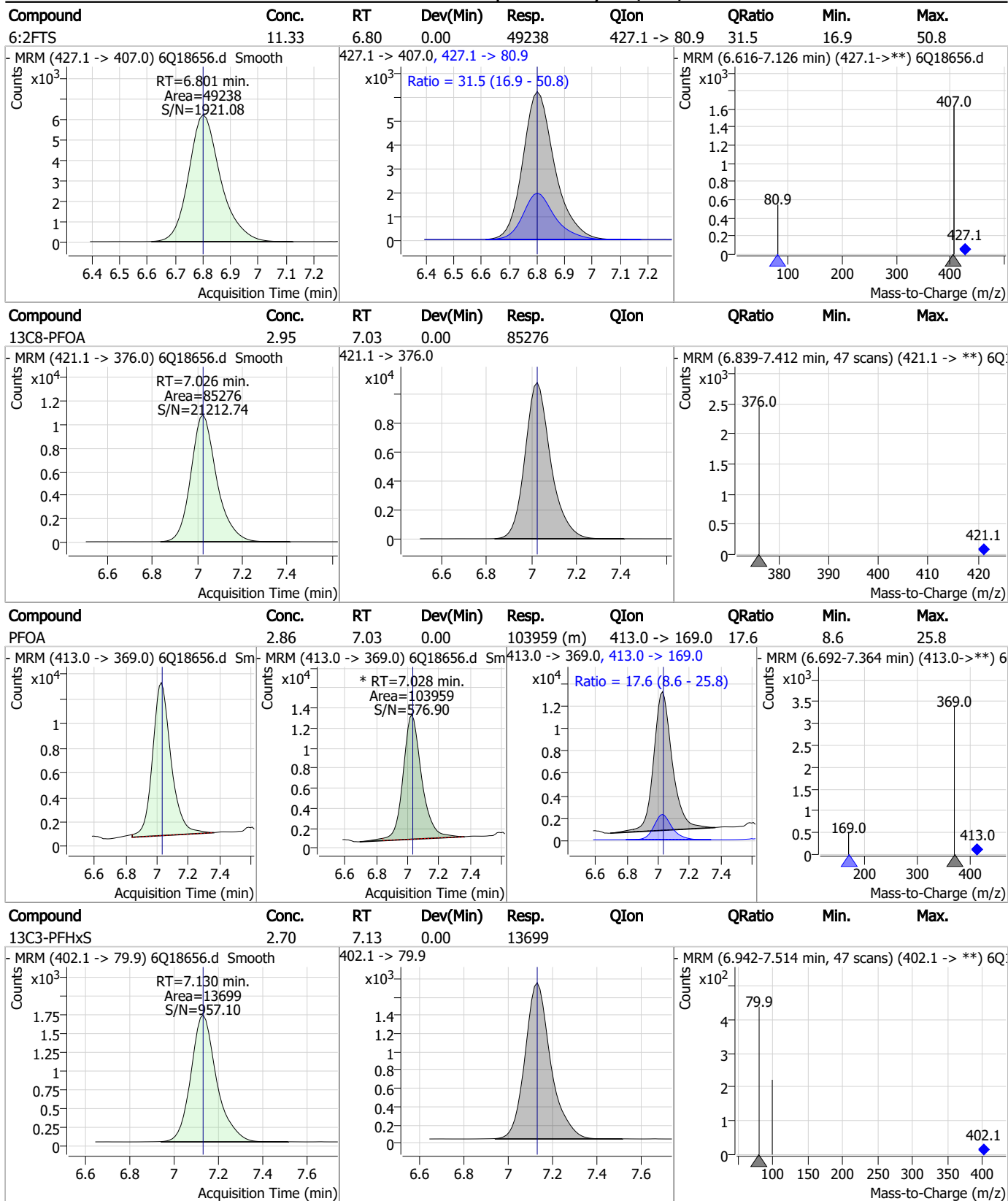
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.25	6.63	0.00	255048	376.9 -> 84.8	26.4	13.4	40.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.03	6.80	0.00	4424	429.1 -> 80.9			



Perfluorinated Compounds by LC/MS/MS

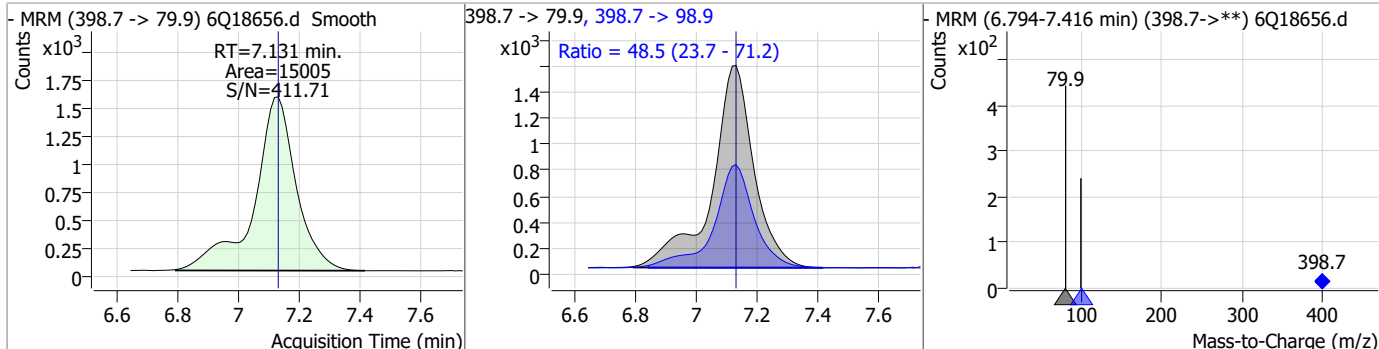


7.4.1

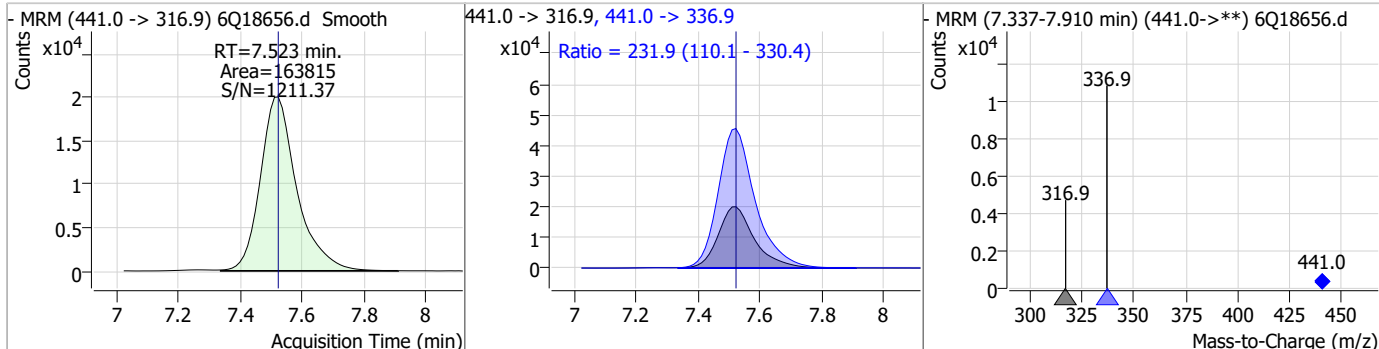
7

Perfluorinated Compounds by LC/MS/MS

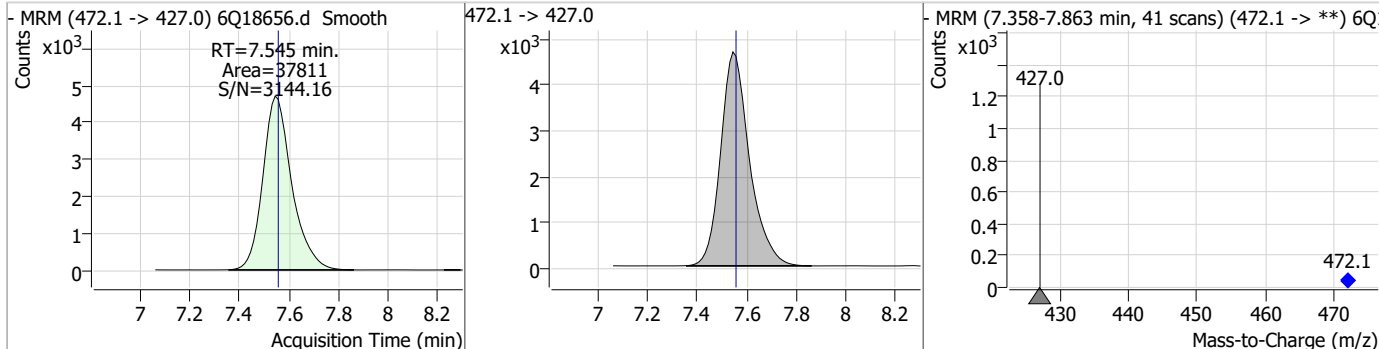
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.42	7.13	0.00	15005	398.7 -> 98.9	48.5	23.7	71.2



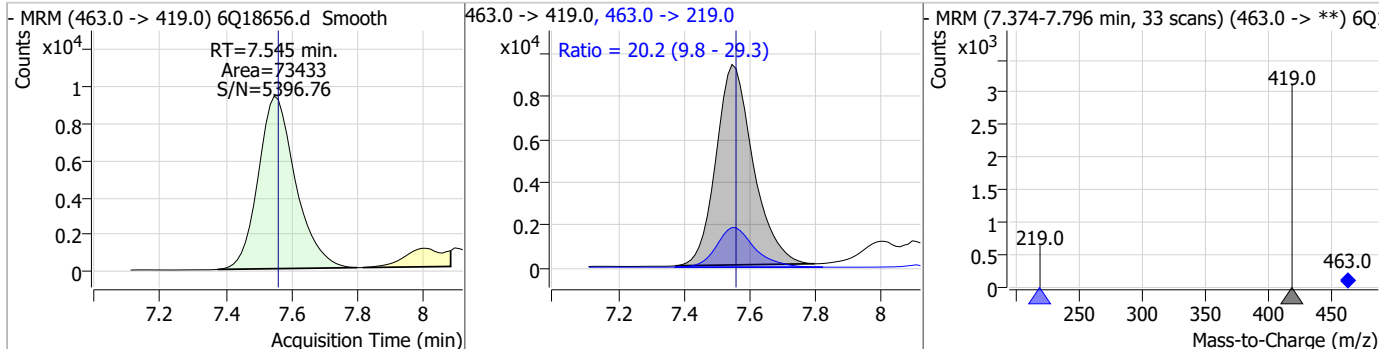
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	68.67	7.52	0.00	163815	441.0 -> 336.9	231.9	110.1	330.4



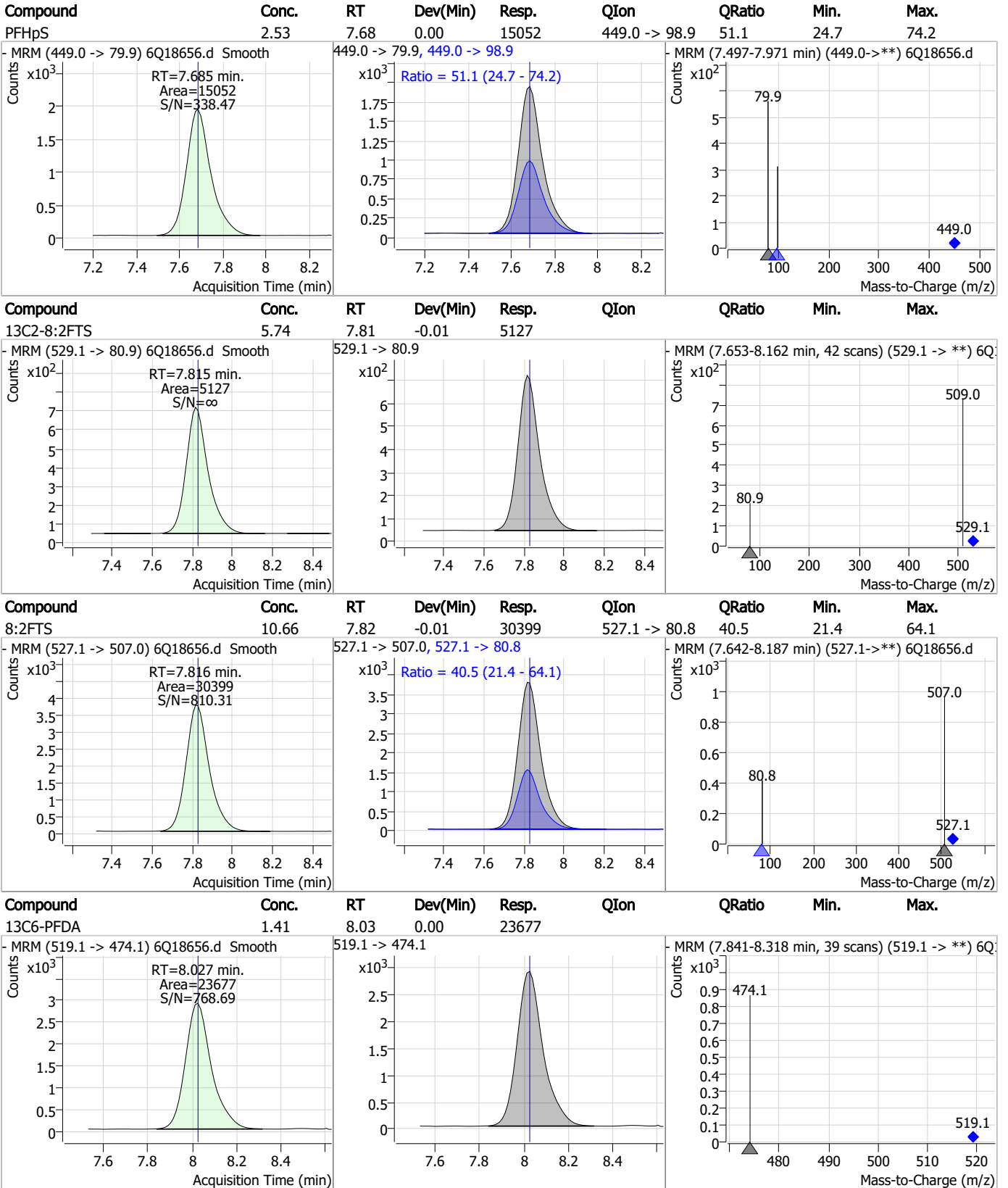
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.41	7.54	-0.01	37811	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.74	7.55	-0.01	73433	463.0 -> 219.0	20.2	9.8	29.3



Perfluorinated Compounds by LC/MS/MS



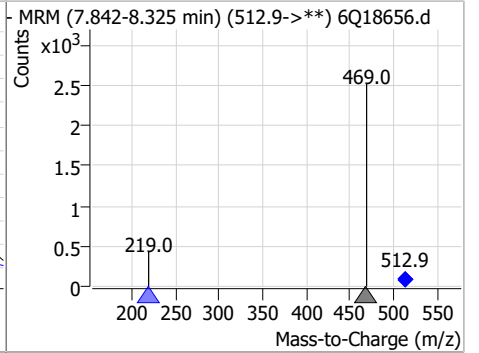
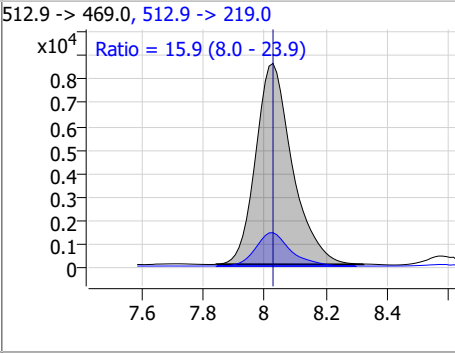
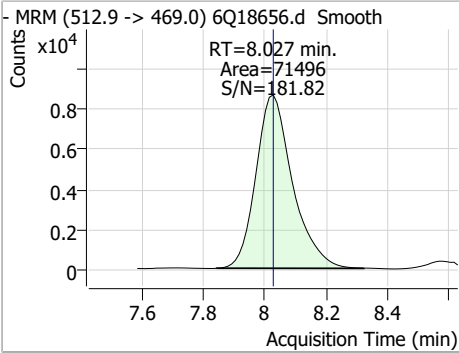
7.4.1

7

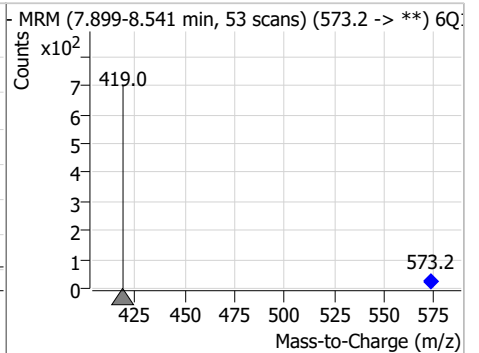
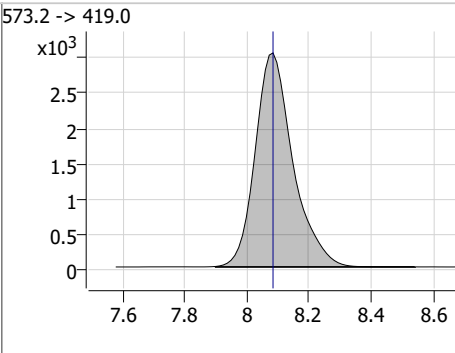
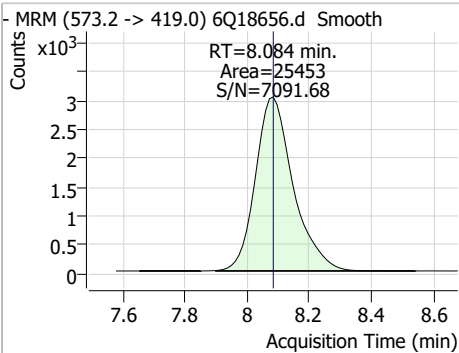


Perfluorinated Compounds by LC/MS/MS

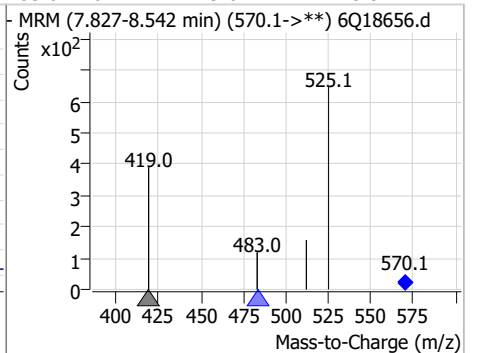
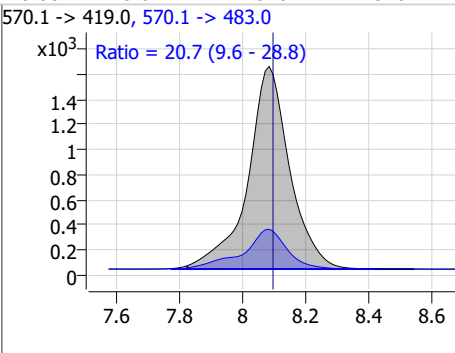
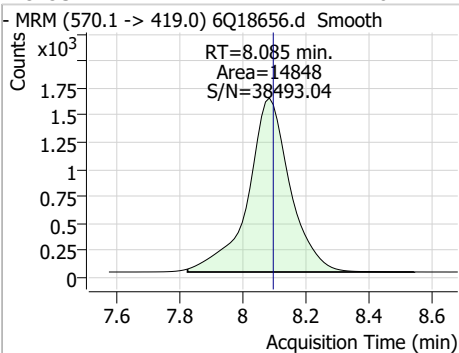
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.60	8.03	0.00	71496	512.9 -> 219.0	15.9	8.0	23.9



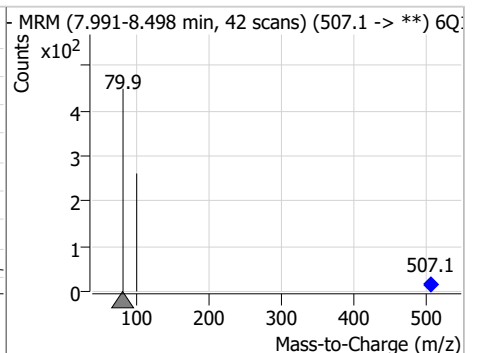
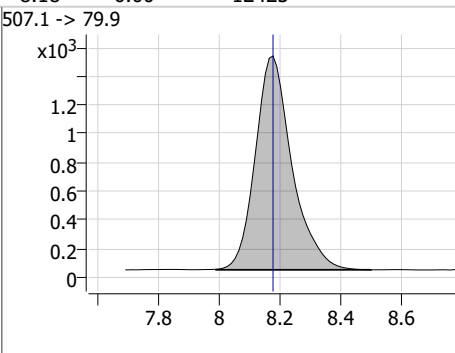
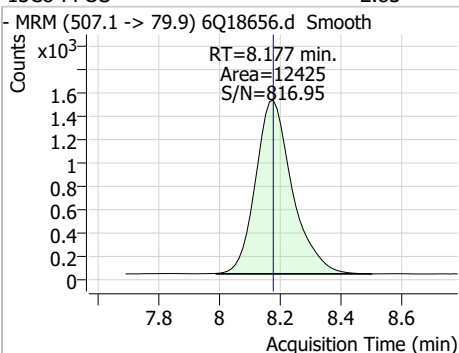
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.74	8.08	0.00	25453				



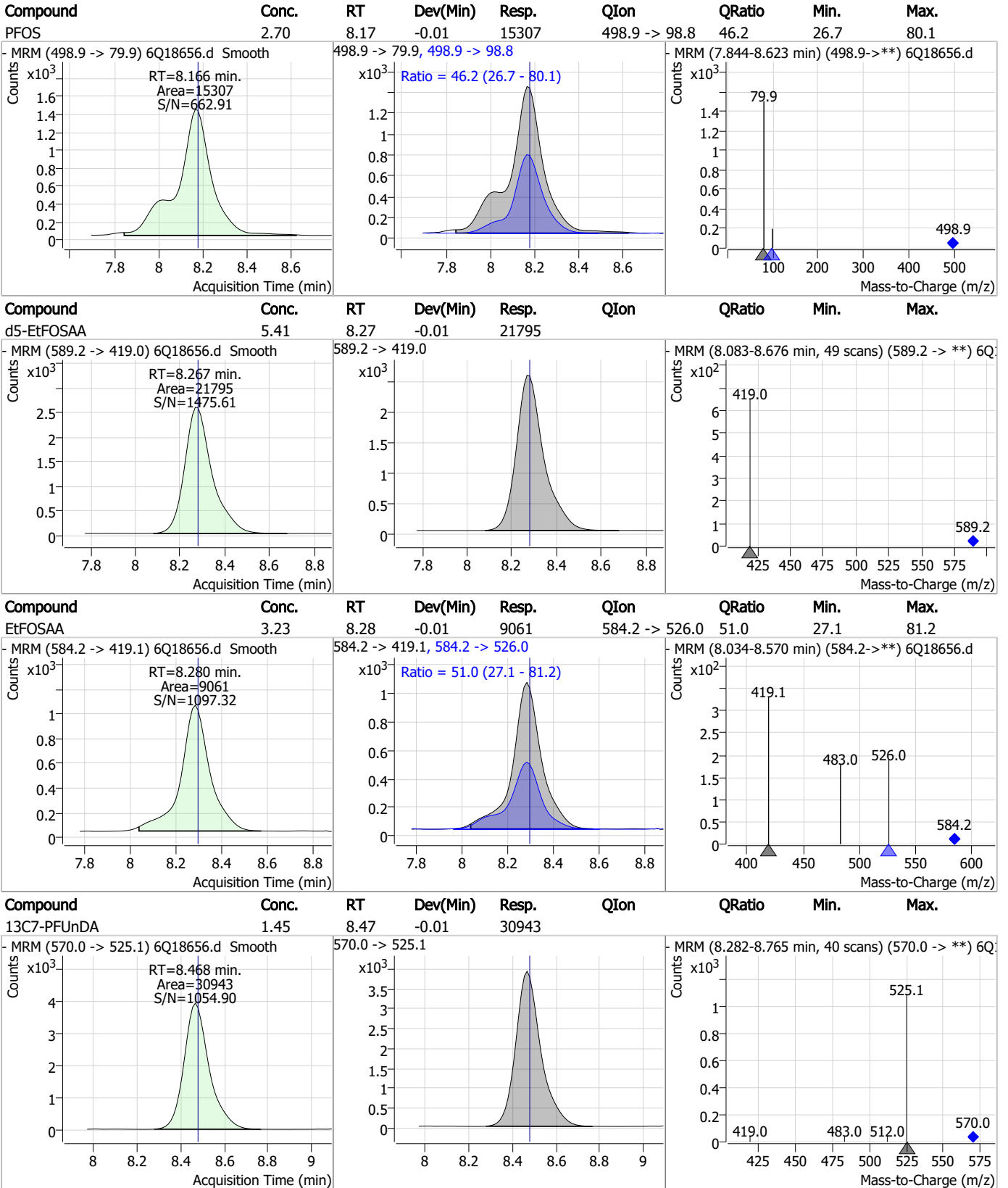
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.84	8.08	-0.01	14848	570.1 -> 483.0	20.7	9.6	28.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.83	8.18	0.00	12425				



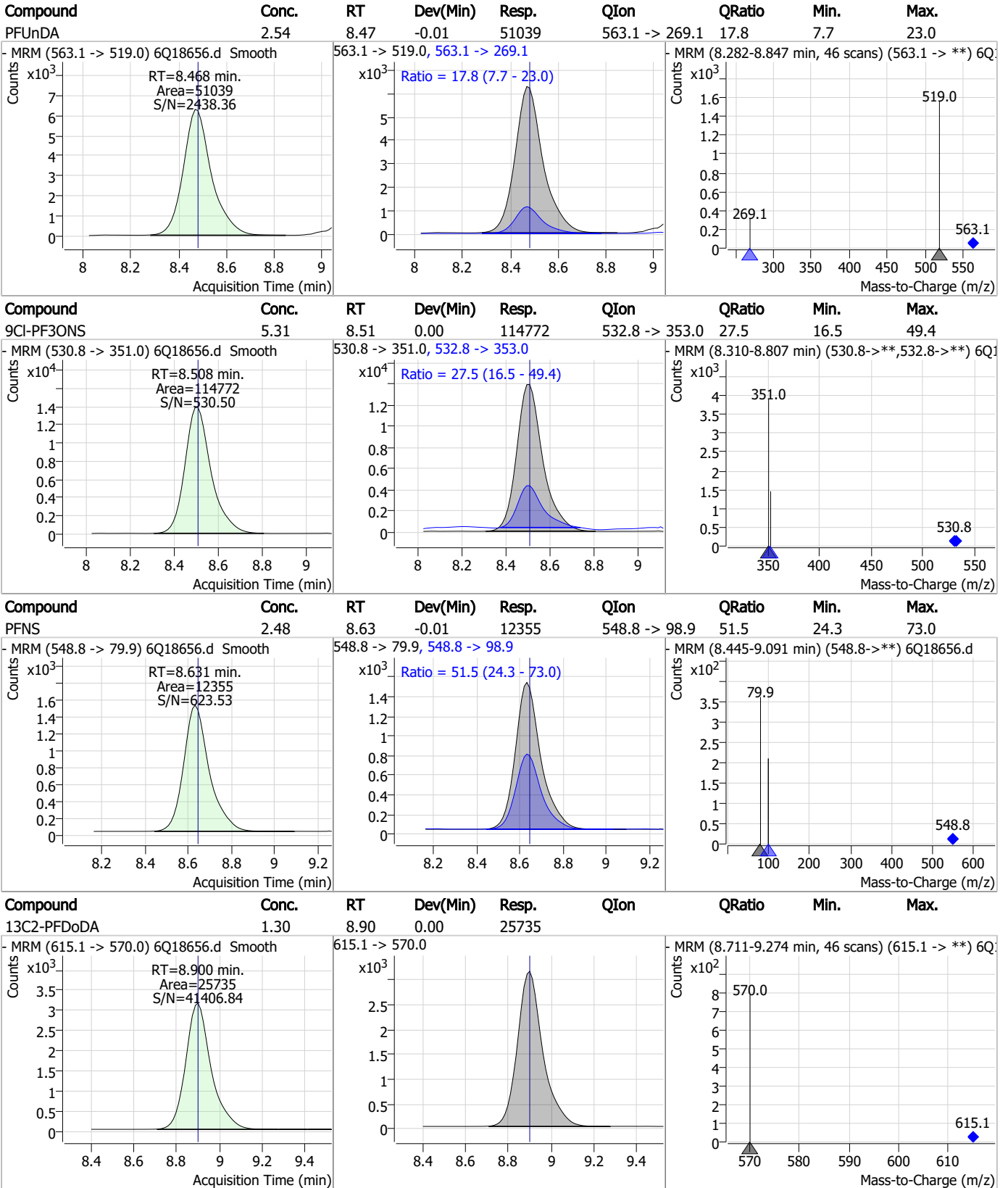
Perfluorinated Compounds by LC/MS/MS



7.4.1

7

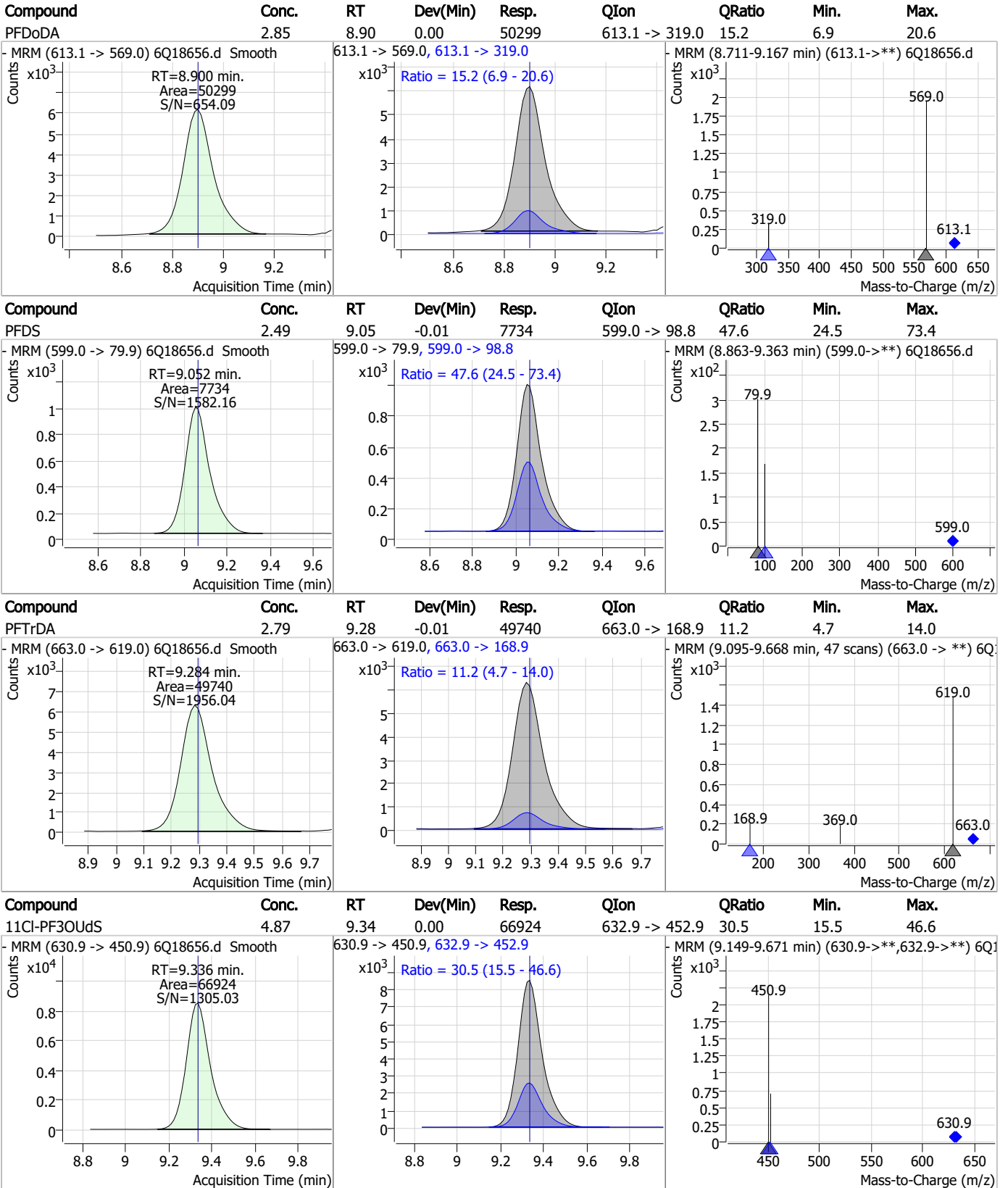
Perfluorinated Compounds by LC/MS/MS



7.4.1

7

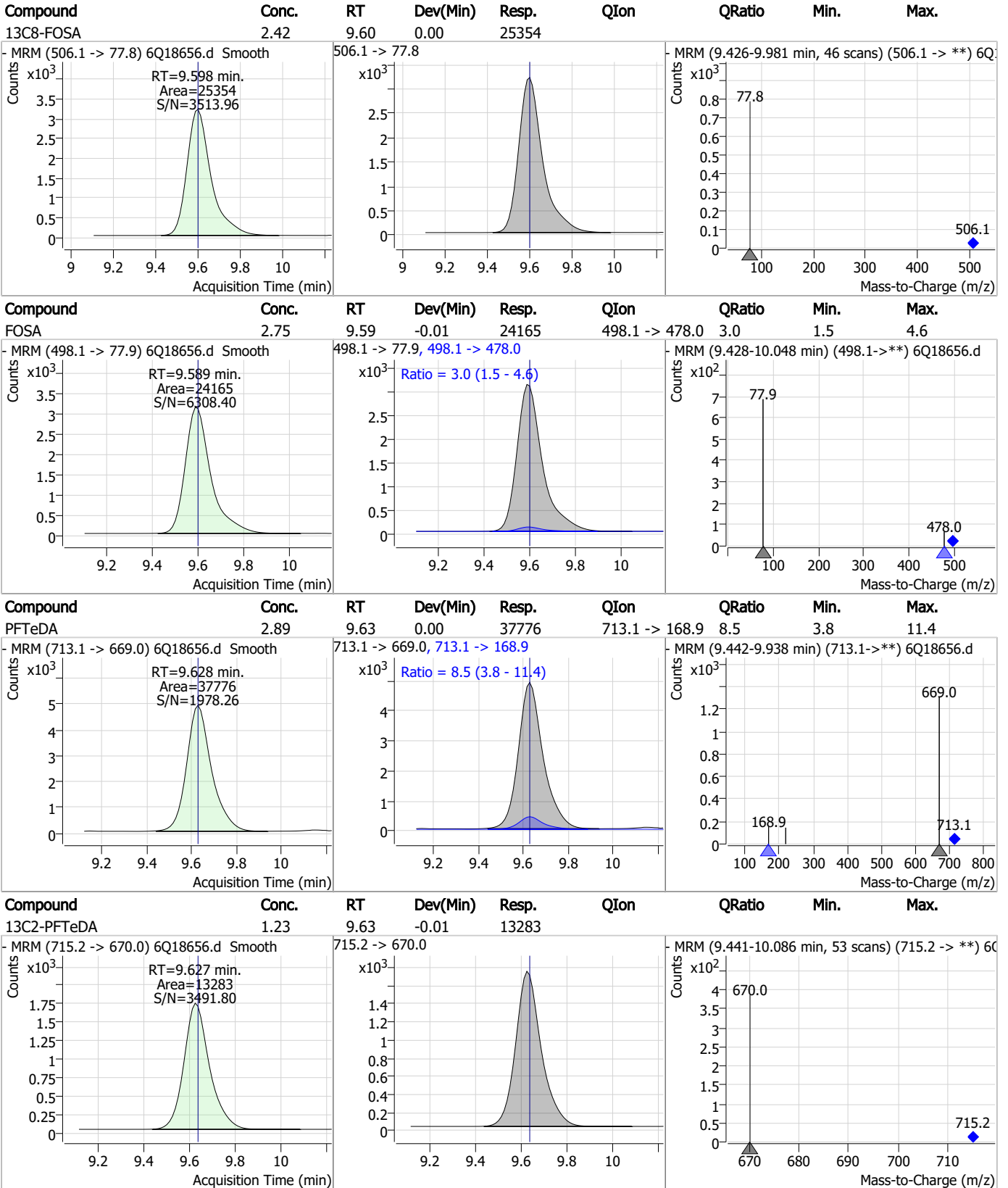
Perfluorinated Compounds by LC/MS/MS



7.4.1

7

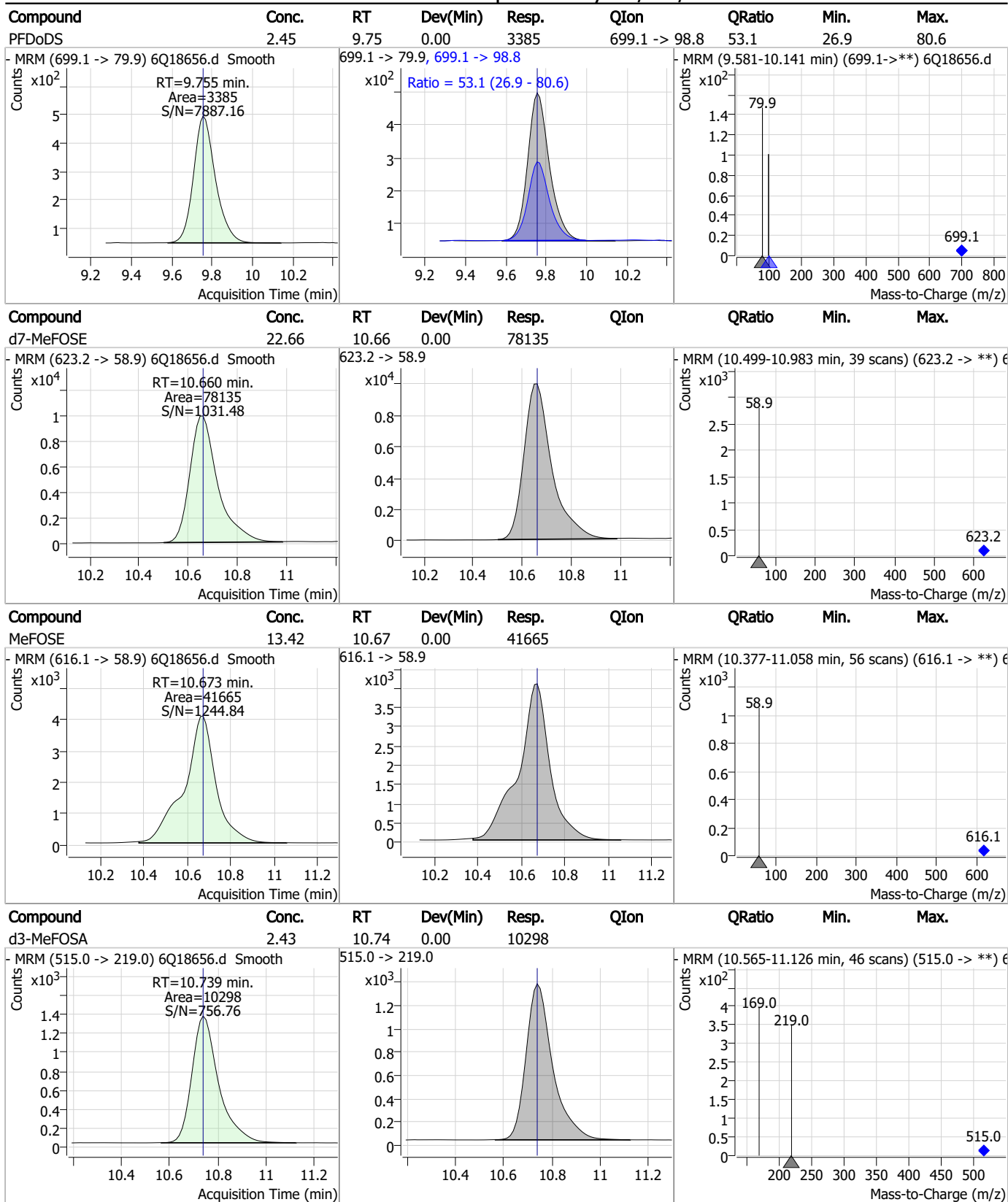
Perfluorinated Compounds by LC/MS/MS



7.4.1

7

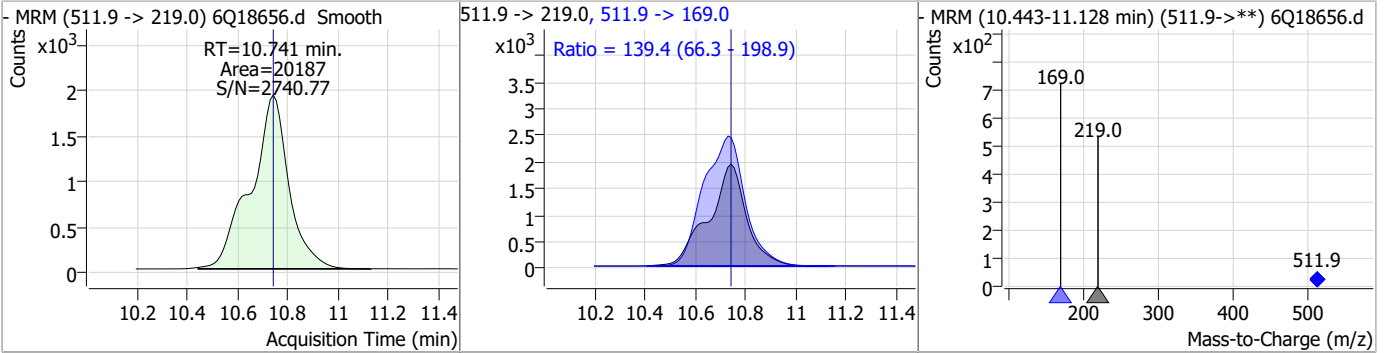
Perfluorinated Compounds by LC/MS/MS



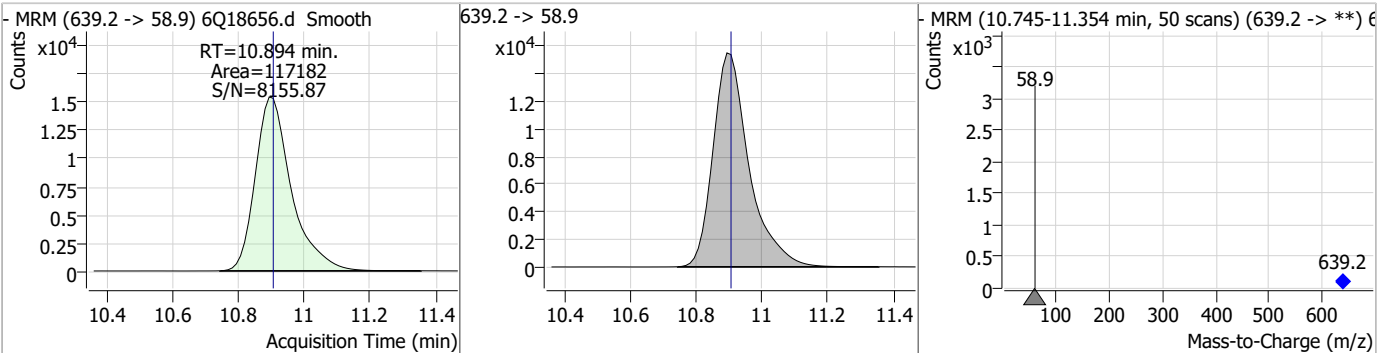
7.4.1
7

Perfluorinated Compounds by LC/MS/MS

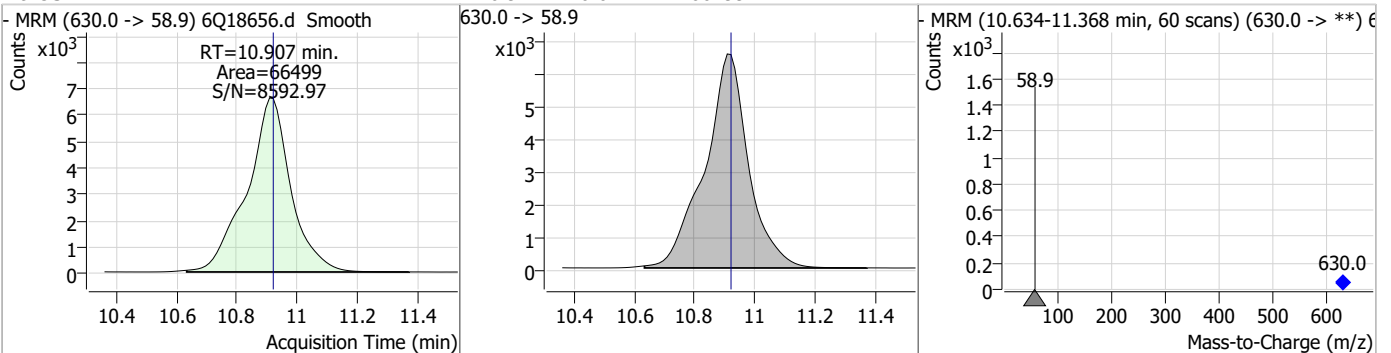
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	5.33	10.74	0.00	20187	511.9 -> 169.0	139.4	66.3	198.9



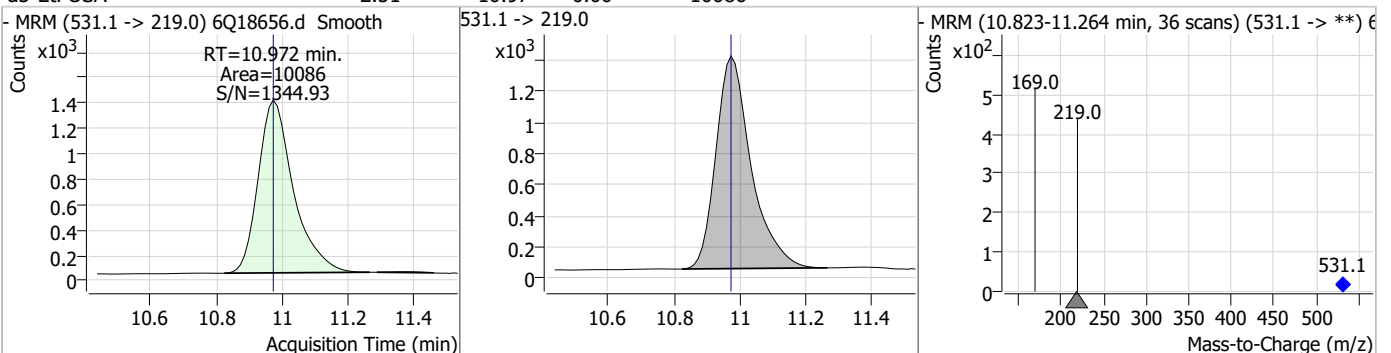
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.99	10.89	-0.01	117182				



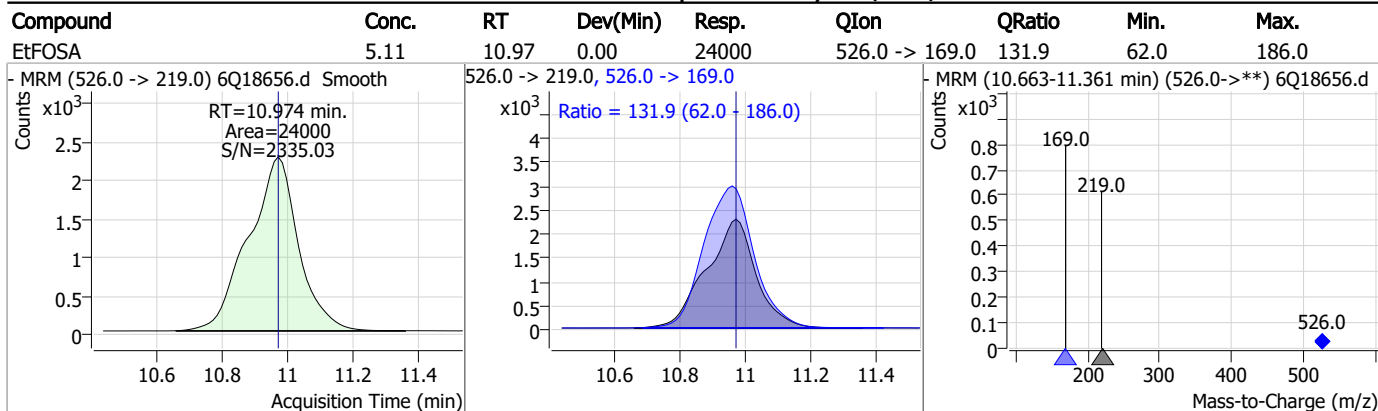
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.72	10.91	-0.01	66499				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.51	10.97	0.00	10086				



Perfluorinated Compounds by LC/MS/MS



7.4.1
7

Manual Integration Approval Summary

Sample Number: OP97092-MS Method: EPA DRAFT 1633
Lab FileID: 6Q18656.D Analyst approved: 06/01/23 14:15 Martha Valls
Injection Time: 06/01/23 09:57 Supervisor approved: 06/01/23 16:37 Norman Farmer

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

7.4.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18658.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 10:26:51 AM
 Sample Name : op97092-dup1
 Vial : P2-B4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,560,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	171202	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	57795	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	62753	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	57048	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	87703	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	39632	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	23691	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	29202	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	24708	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	13755	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	24208	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	22929	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14049	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13052	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3587	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5227	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	5182	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	27191	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	38758	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	23556	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	80256	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	118112	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	9647	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10077	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13925	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	64019	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8877	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	78407	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	28950	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	42812	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	49091	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3587	6.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5227	6.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.6%		
13C2-8:2FTS	7.827	529.1 -> 80.9	5182	5.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.8%		
13C2-PFDoDA	8.900	615.1 -> 570.0	24708	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	13755	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C3-PFBS	5.334	302.1 -> 79.9	22929	2.92 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 116.7%		
13C3-PFHxS	7.130	402.1 -> 79.9	14049	2.83 µg/L	0.000

7.5.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.3%	
13C4-PFBA	2.876	216.8 -> 171.9	171202	11.23 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	57048	2.97 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.8%	
13C5-PFHxA	5.417	318.0 -> 273.0	62753	3.02 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 120.8%	
13C5-PFPeA	4.222	268.3 -> 223.0	57795	6.05 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.1%	
13C6-PFDA	8.027	519.1 -> 474.1	23691	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C7-PFUnDA	8.468	570.0 -> 525.1	29202	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C8-FOSA	9.598	506.1 -> 77.8	24208	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.2%	
13C8-PFOA	7.026	421.1 -> 376.0	87703	2.99 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.4%	
13C8-PFOS	8.177	507.1 -> 79.9	13052	2.93 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.0%	
13C9-PFNA	7.545	472.1 -> 427.0	39632	1.40 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.4%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27191	6.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38758	12.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	10077	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
d5-EtFOSAA	8.279	589.2 -> 419.0	23556	5.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.3%	
d7-MeFOSE	10.660	623.2 -> 58.9	80256	22.95 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d9-EtFOSE	10.894	639.2 -> 58.9	118112	25.82 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d5-EtFOSA	10.972	531.1 -> 219.0	9647	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.608	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

7.5.1
7

Perfluorinated Compounds by LC/MS/MS

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

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

7.5.1
7

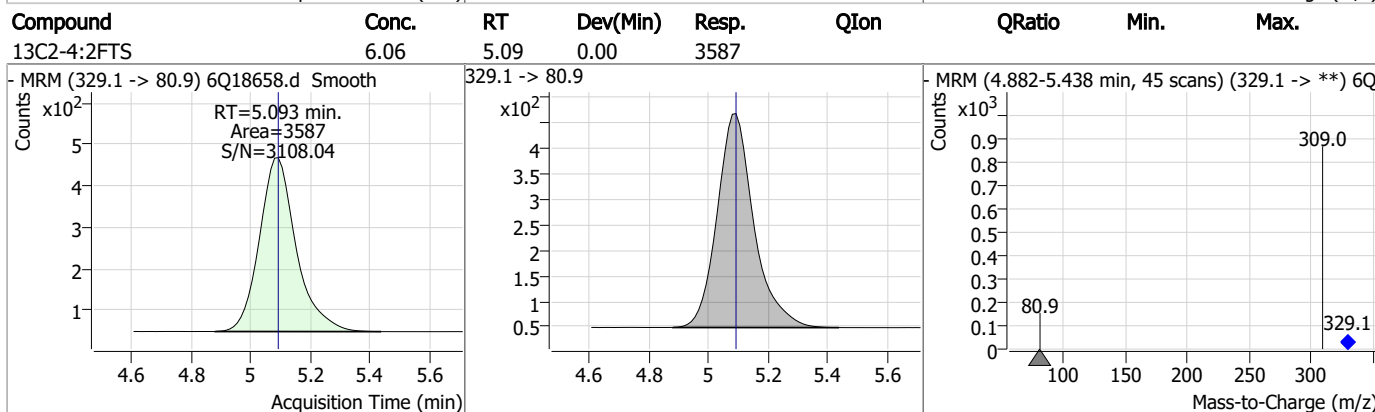
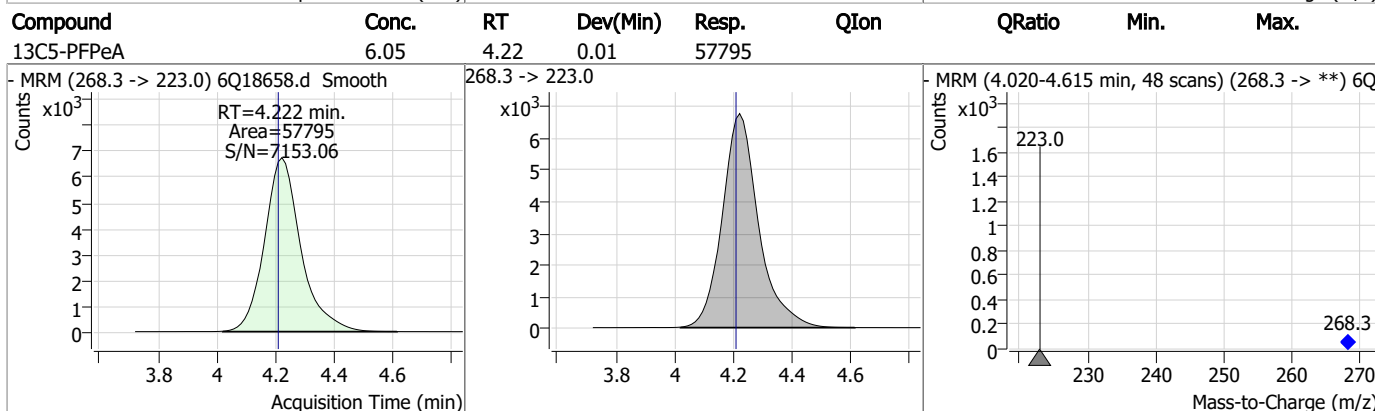
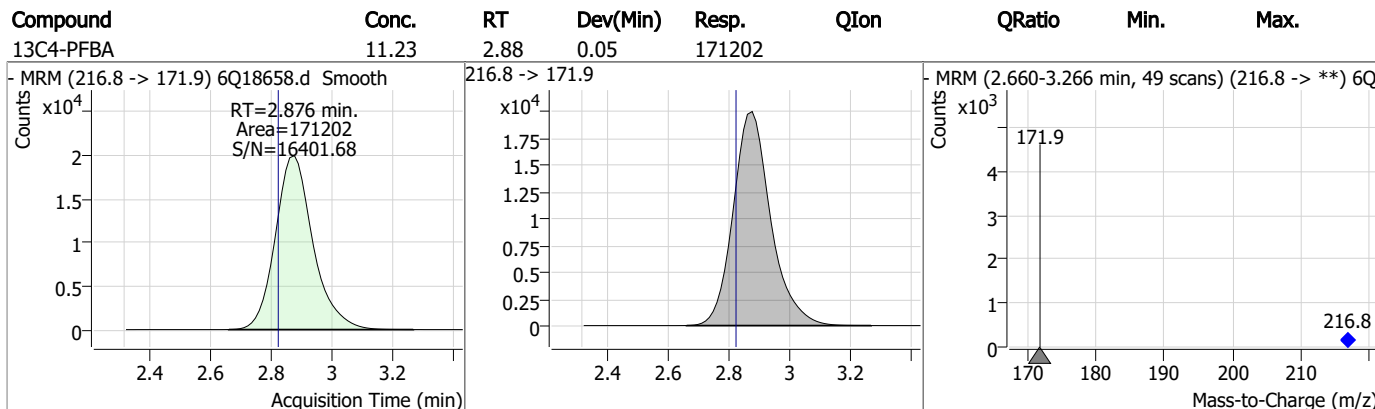
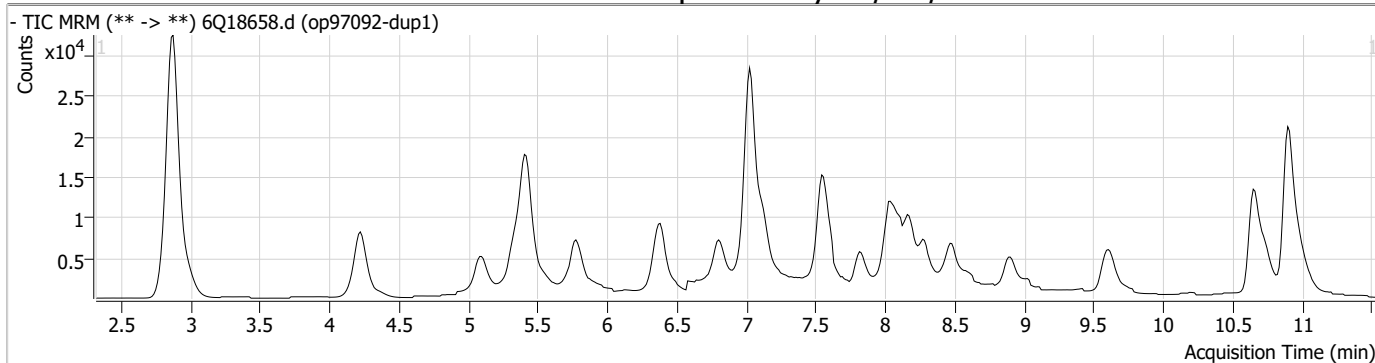
Perfluorinated Compounds by LC/MS/MS

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

7.5.1

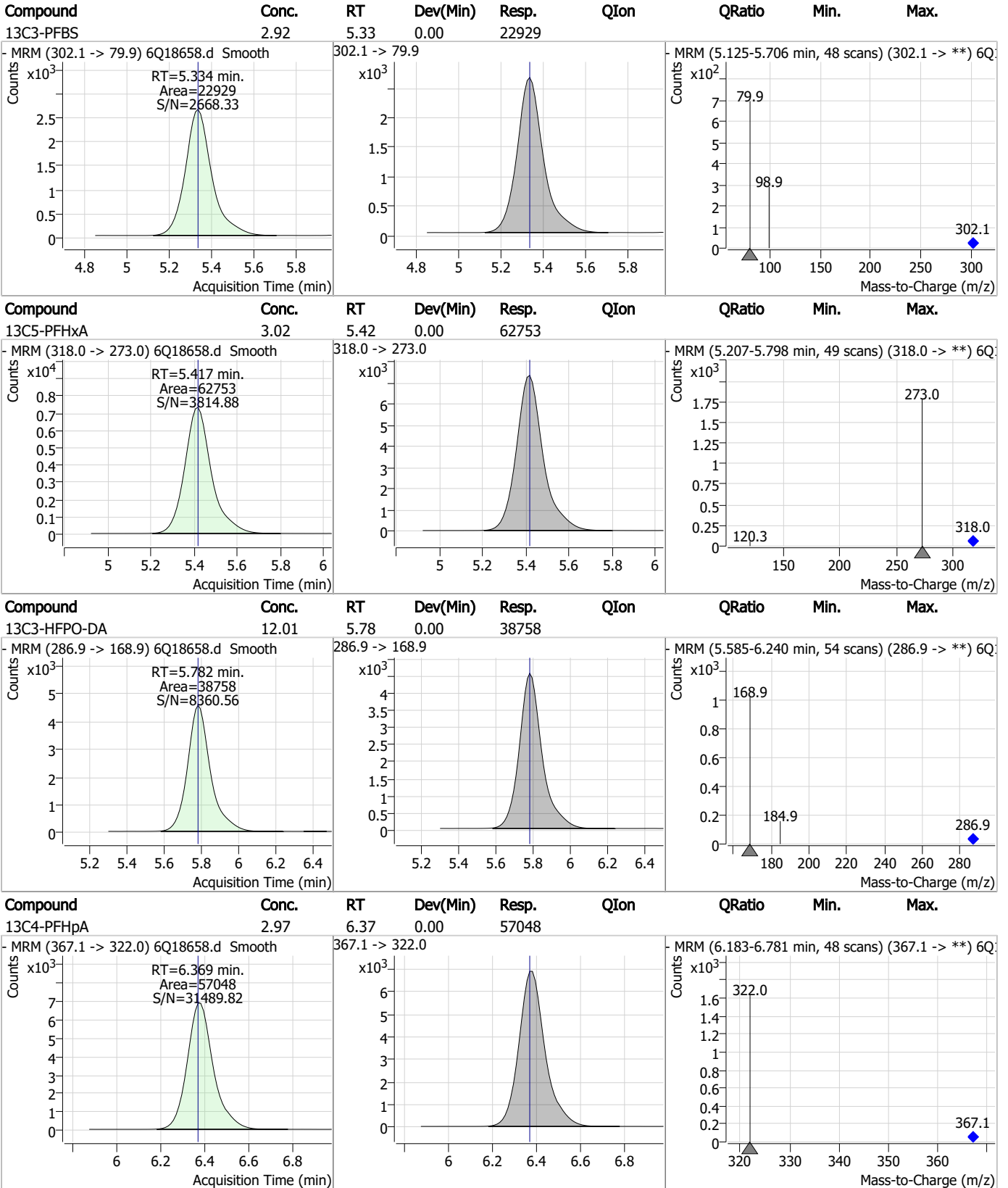
7

Perfluorinated Compounds by LC/MS/MS



7.5.1
7

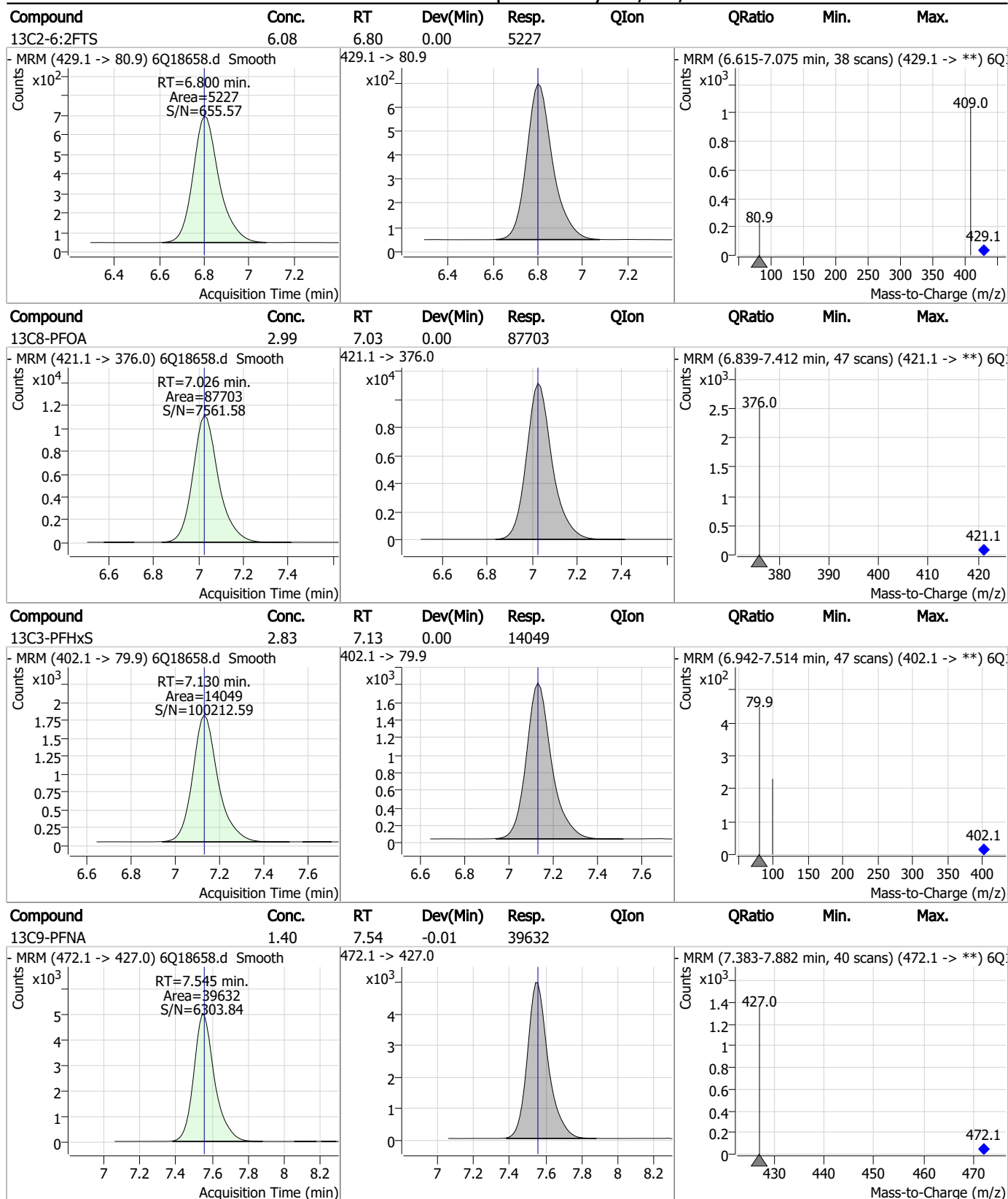
Perfluorinated Compounds by LC/MS/MS



7.5.1

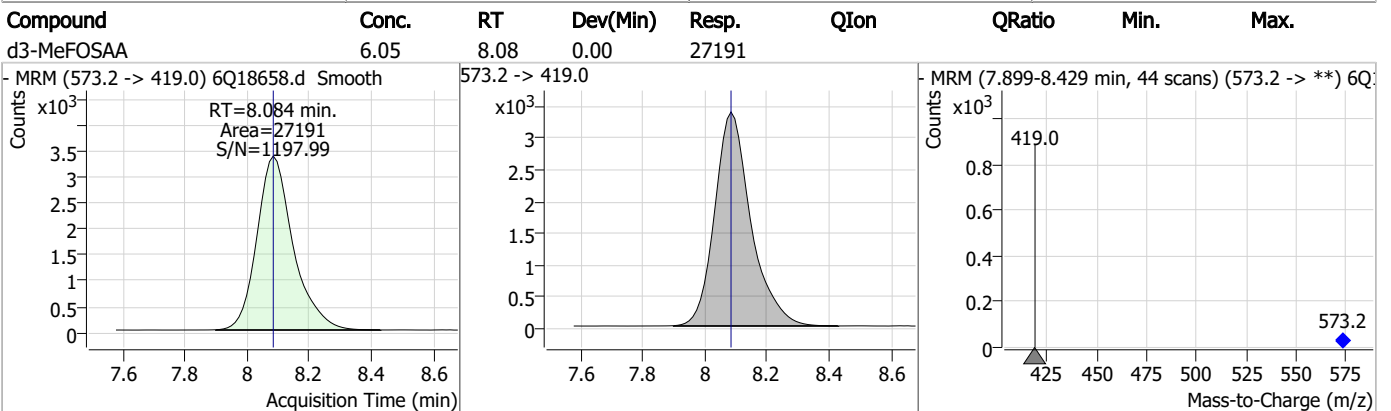
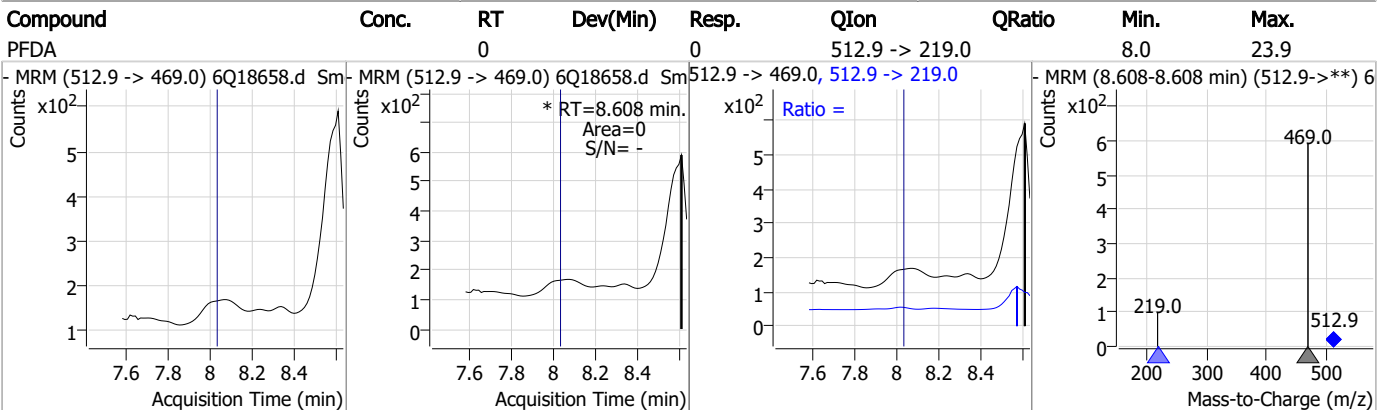
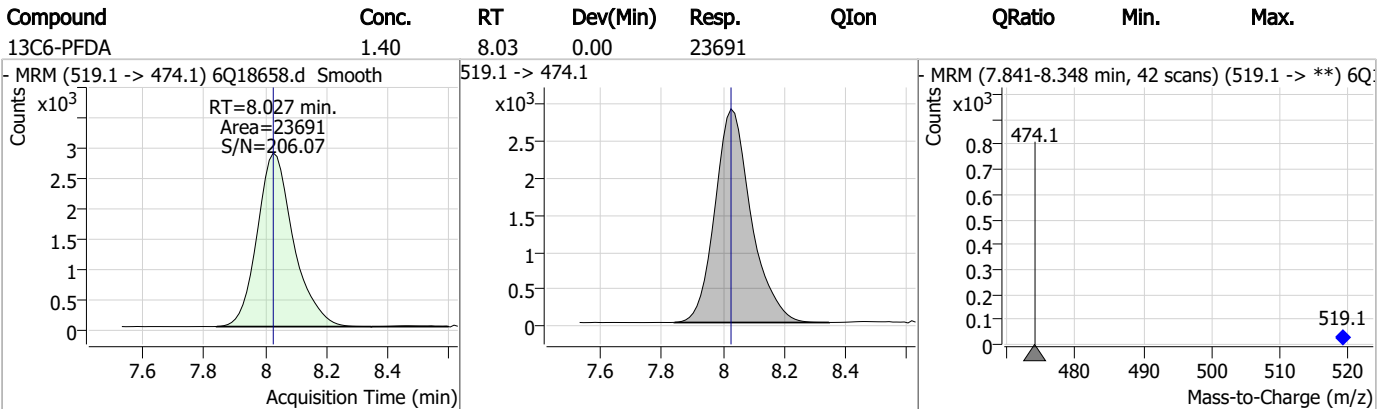
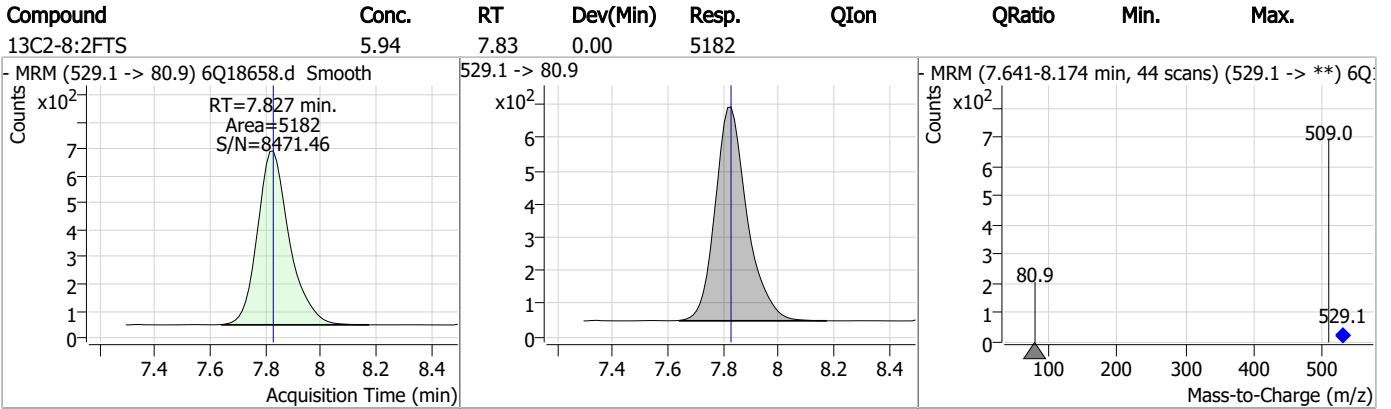
7

Perfluorinated Compounds by LC/MS/MS

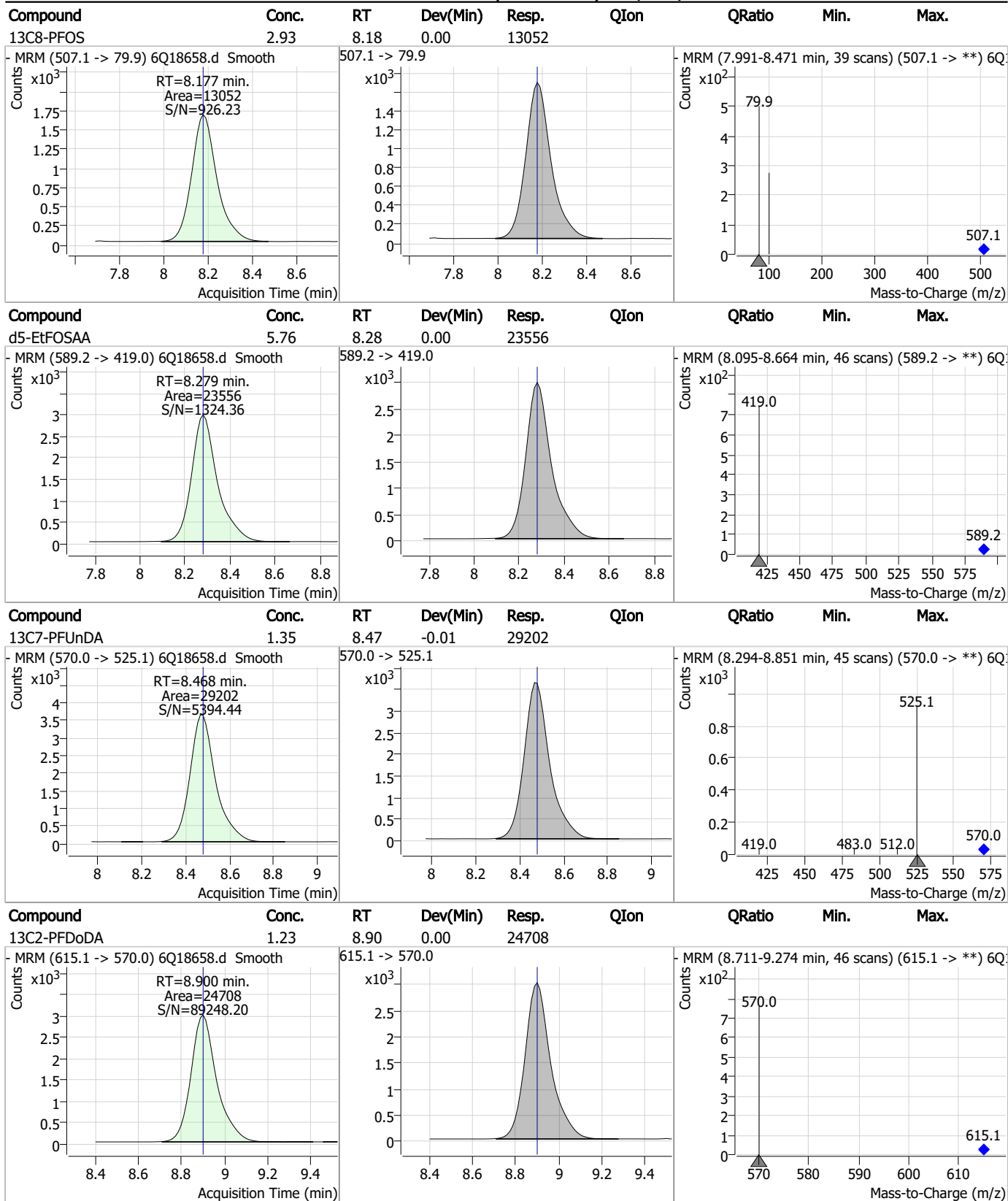


7.5.1
7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.5.1
7

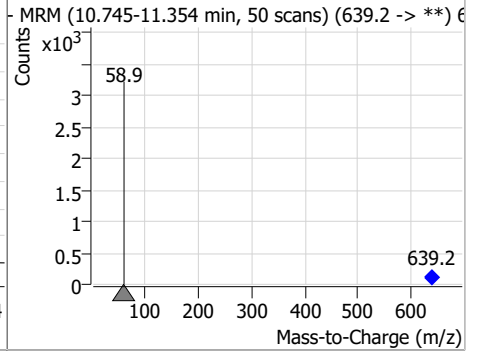
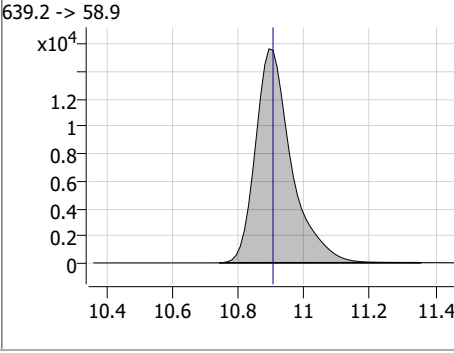
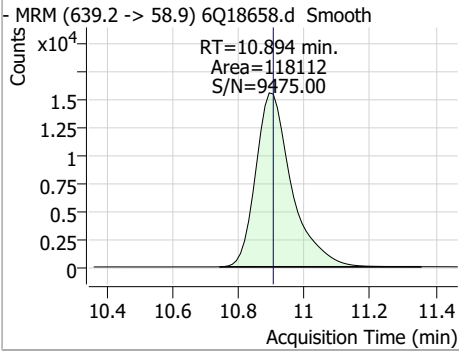
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.28	9.60	0.00	24208				
13C2-PFTeDA	1.26	9.63	-0.01	13755				
d7-MeFOSE	22.95	10.66	0.00	80256				
d3-MeFOSA	2.34	10.74	0.00	10077				

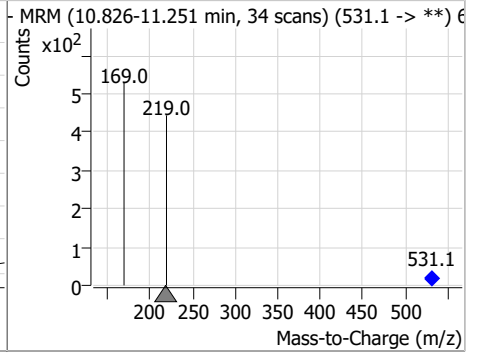
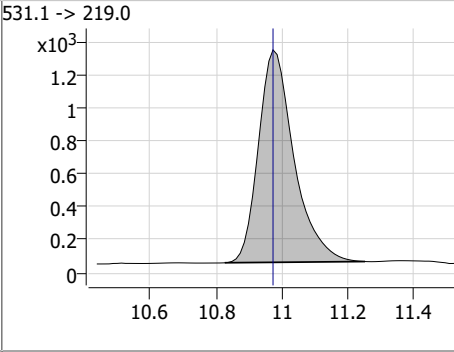
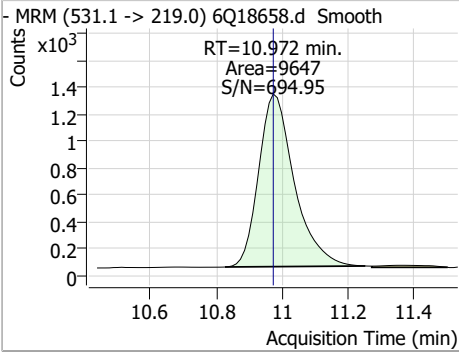
7.5.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.82	10.89	-0.01	118112				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.37	10.97	0.00	9647				



7.5.1

7



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

Perfluorinated Compounds by LC/MS/MS

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

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

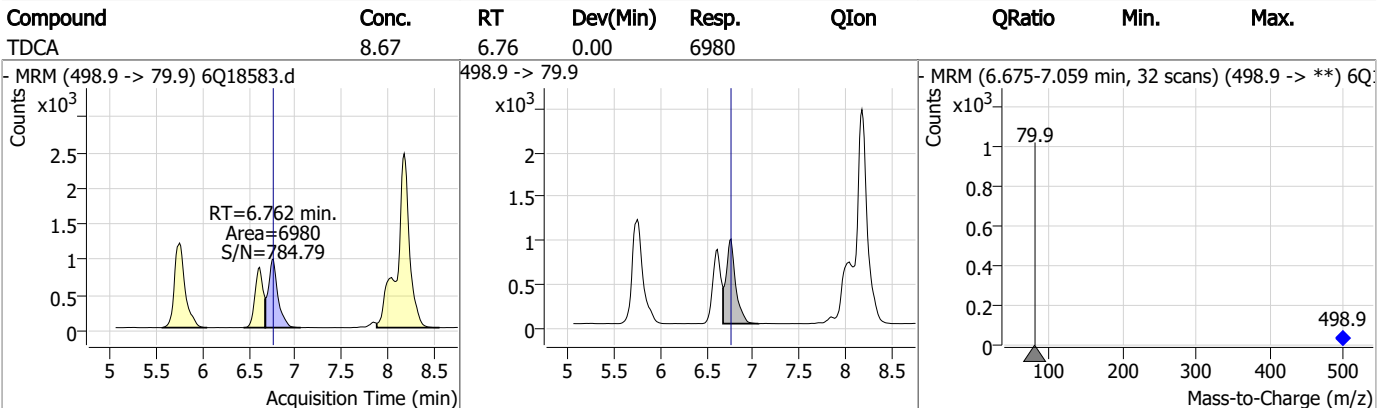
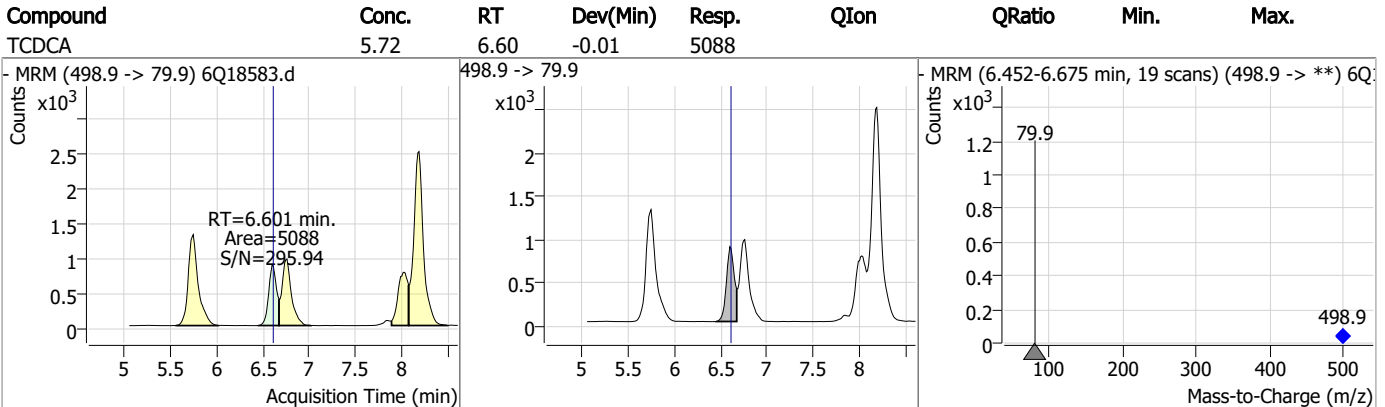
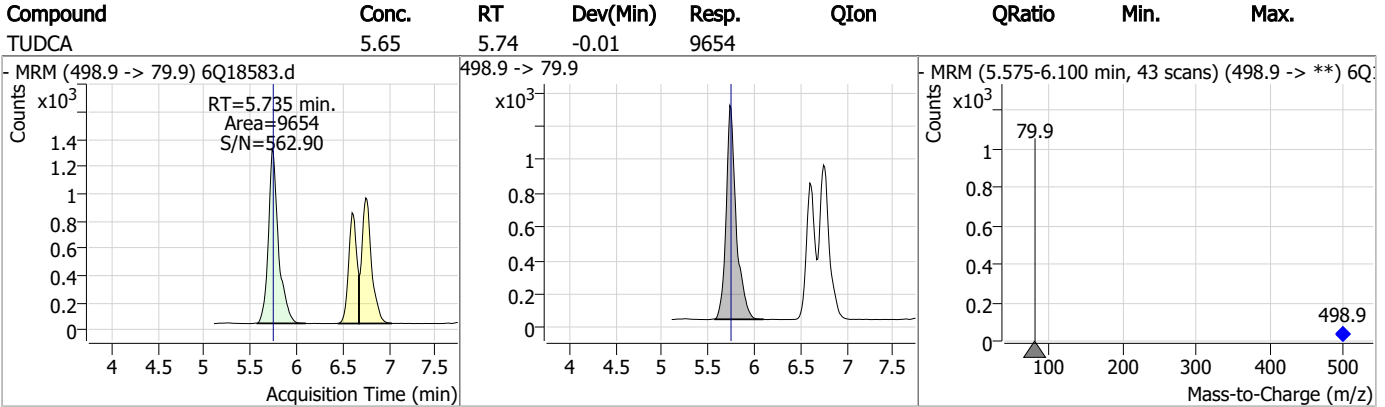
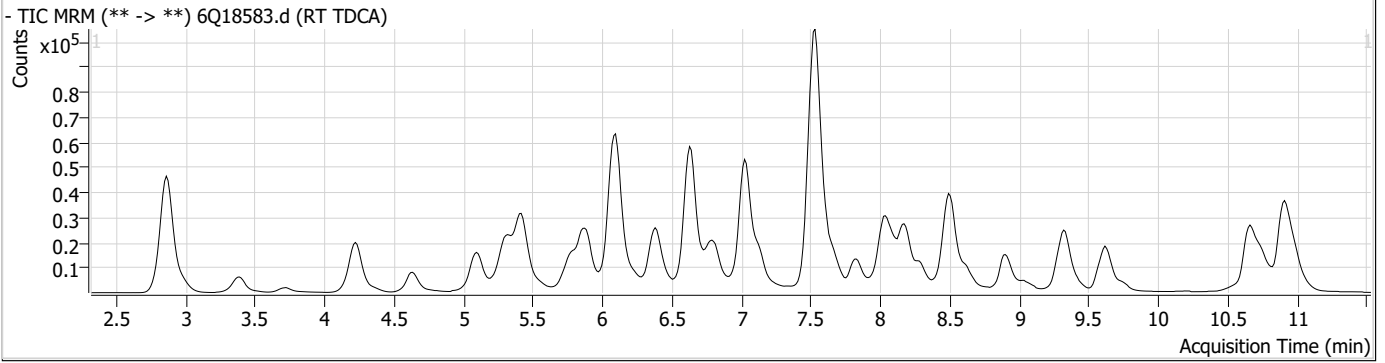
= Qualifier out of range, m = manually integrated, + = Area summed

7.6.1

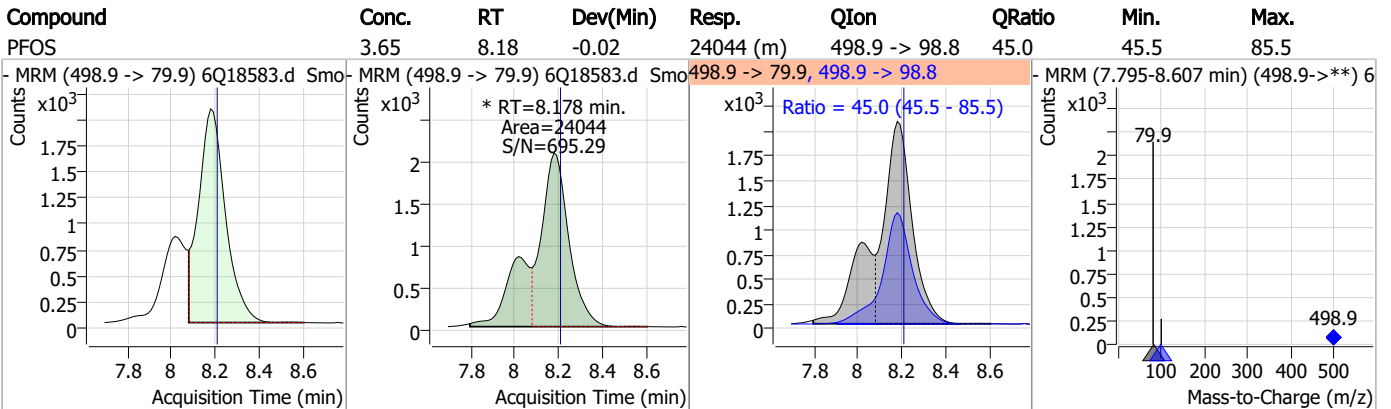
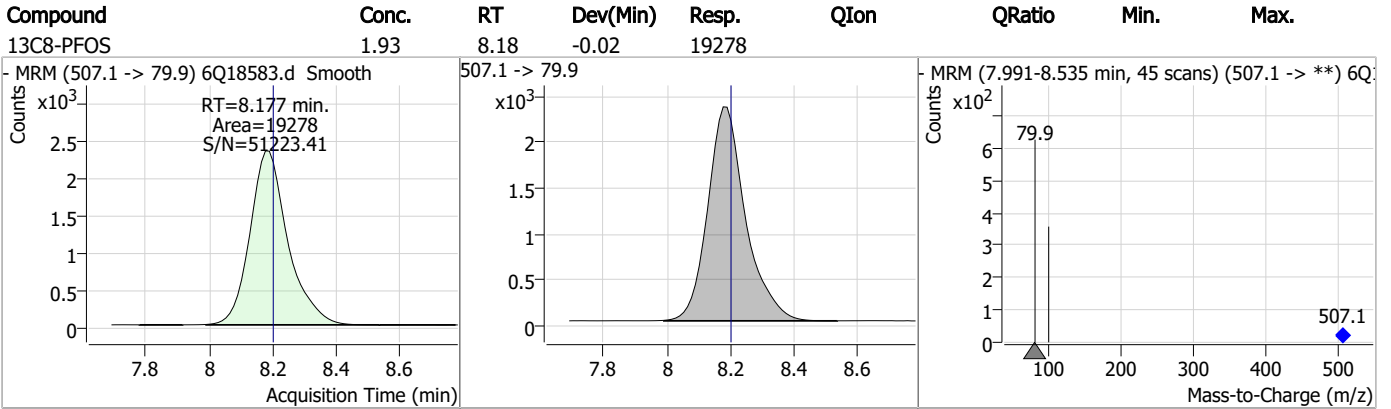
7



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.1

7

Manual Integration Approval Summary

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

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

7.6.1.1

7

Perfluorinated Compounds by LC/MS/MS

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

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

7.6.2
7

Perfluorinated Compounds by LC/MS/MS

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

7.6.2
7

Perfluorinated Compounds by LC/MS/MS

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

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

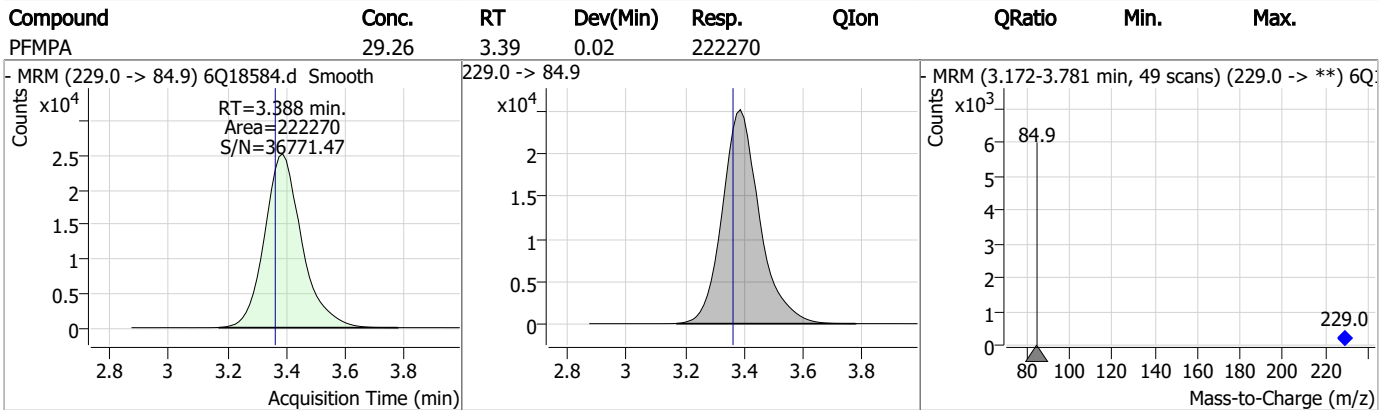
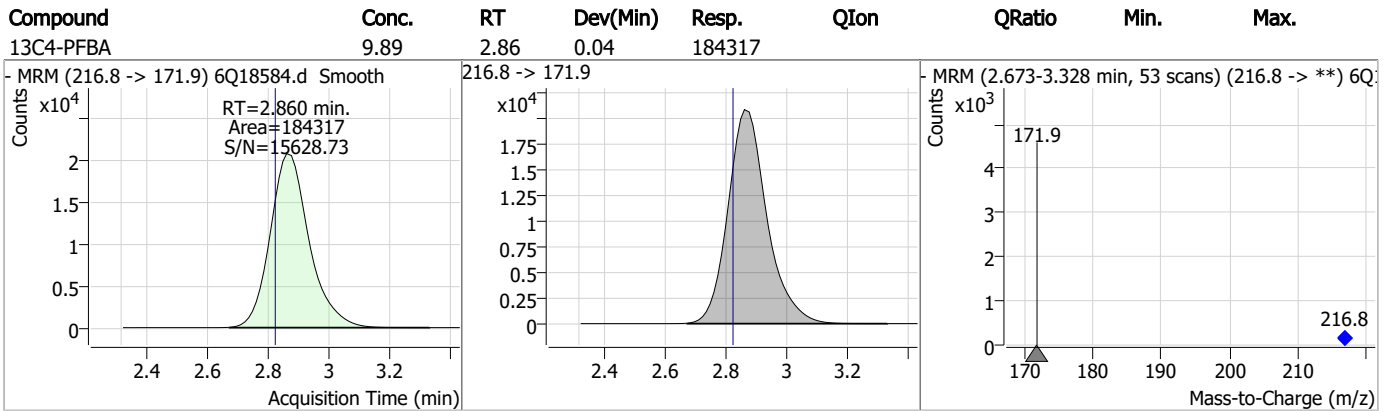
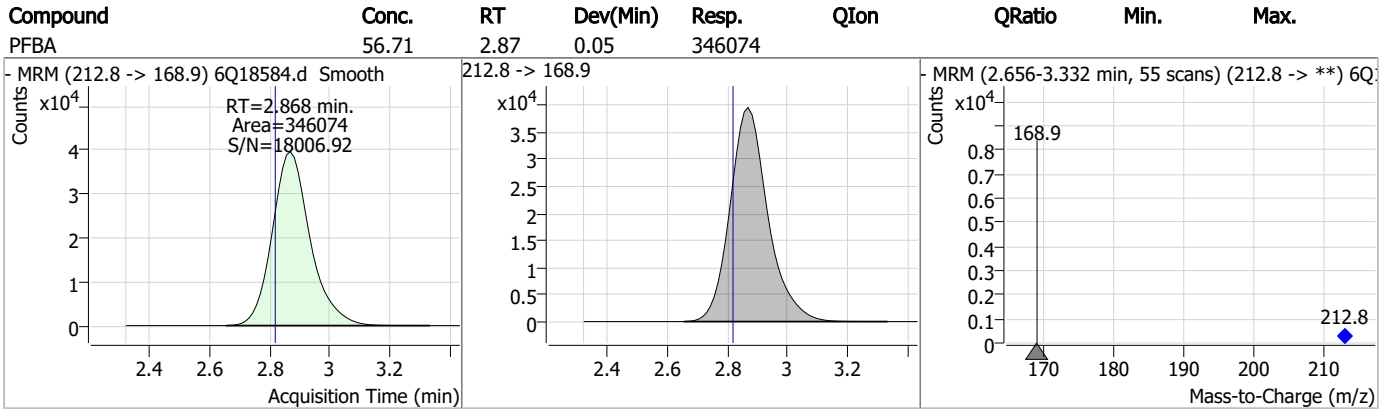
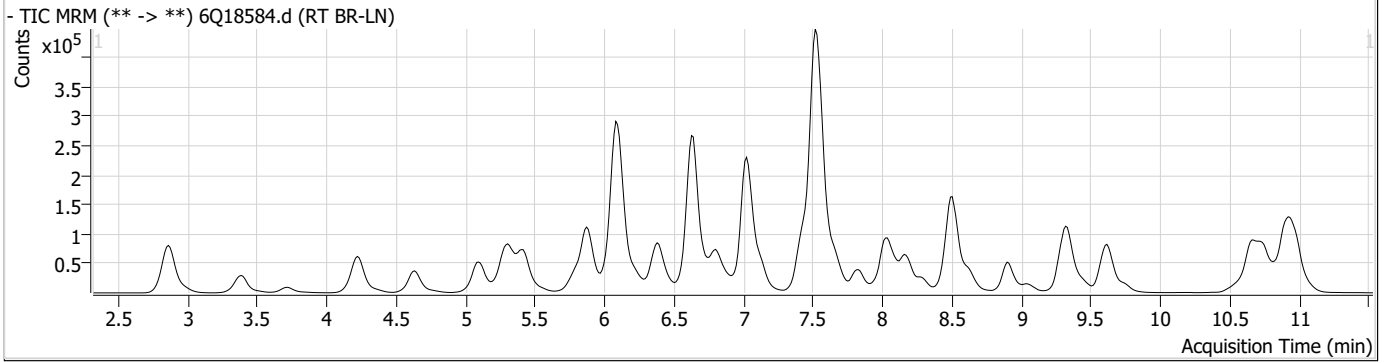
Perfluorinated Compounds by LC/MS/MS

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

7.6.2

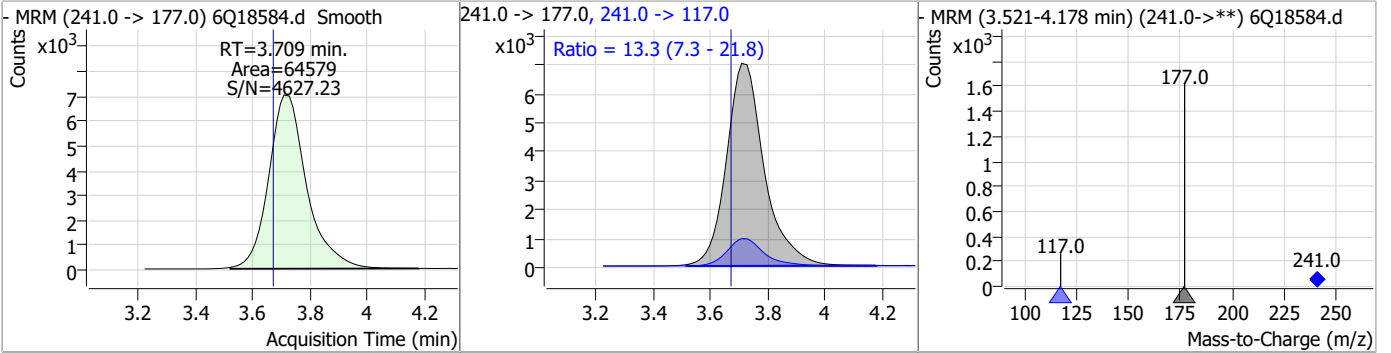
7

Perfluorinated Compounds by LC/MS/MS

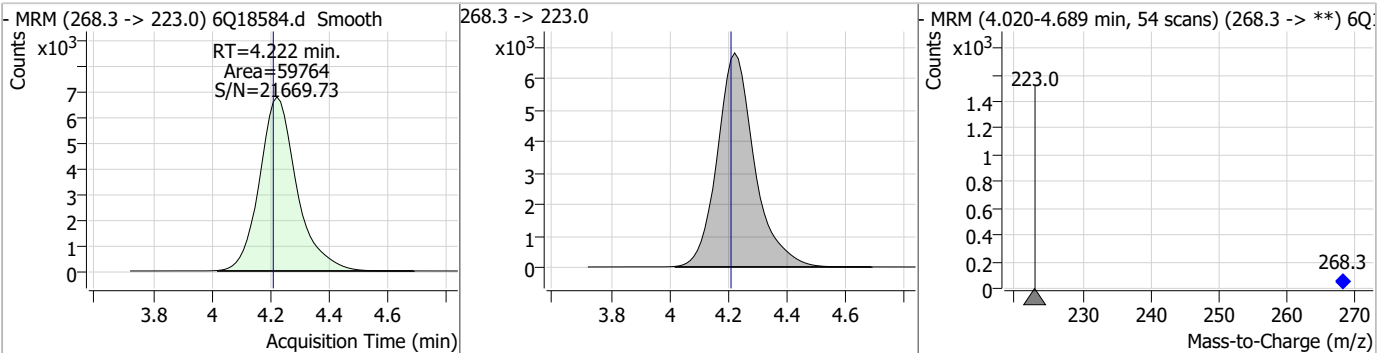


Perfluorinated Compounds by LC/MS/MS

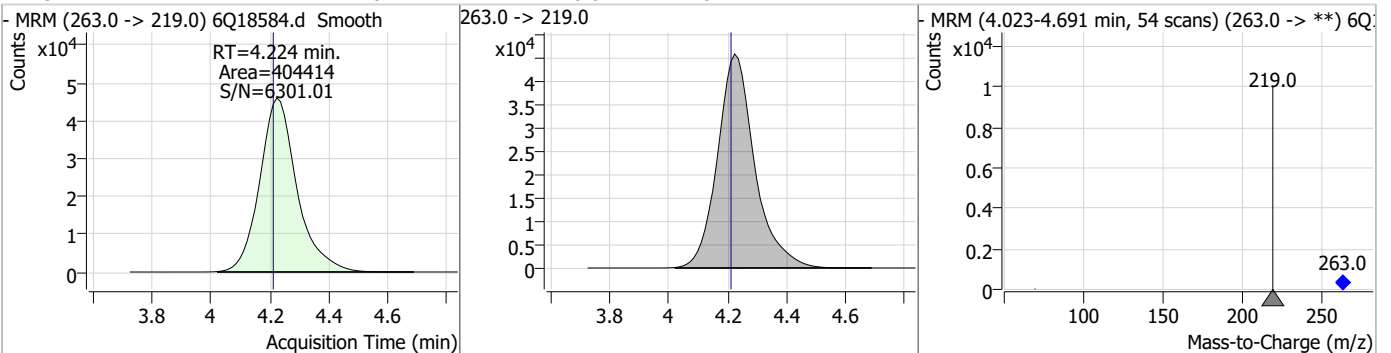
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	70.30	3.71	0.04	64579	241.0 -> 117.0	13.3	7.3	21.8



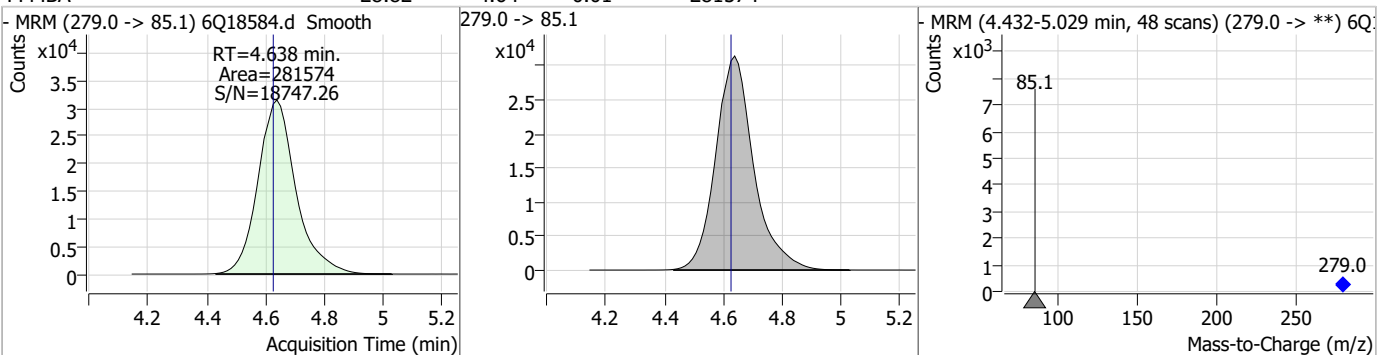
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.88	4.22	0.01	59764				



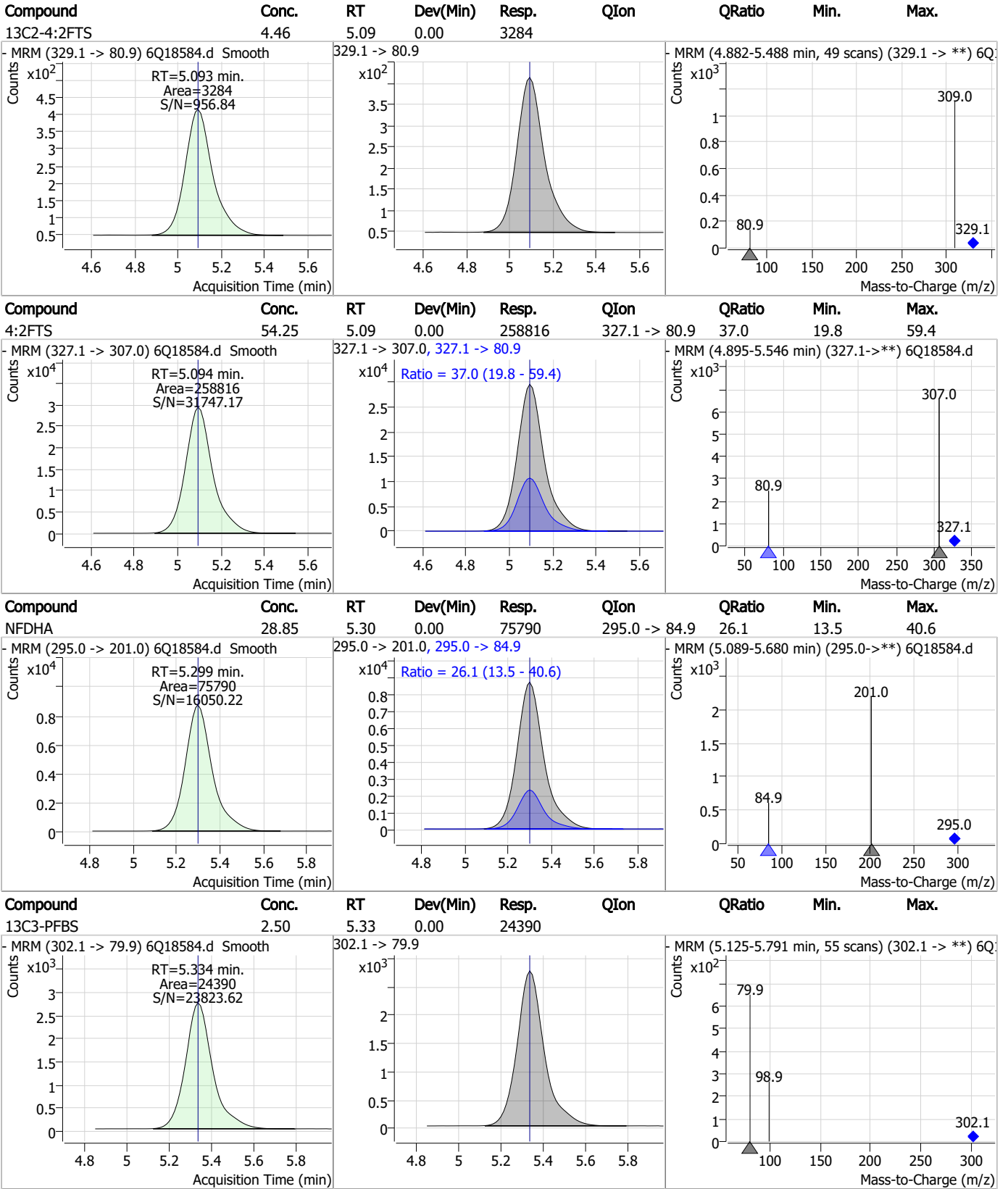
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	28.17	4.22	0.01	404414				



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



Perfluorinated Compounds by LC/MS/MS

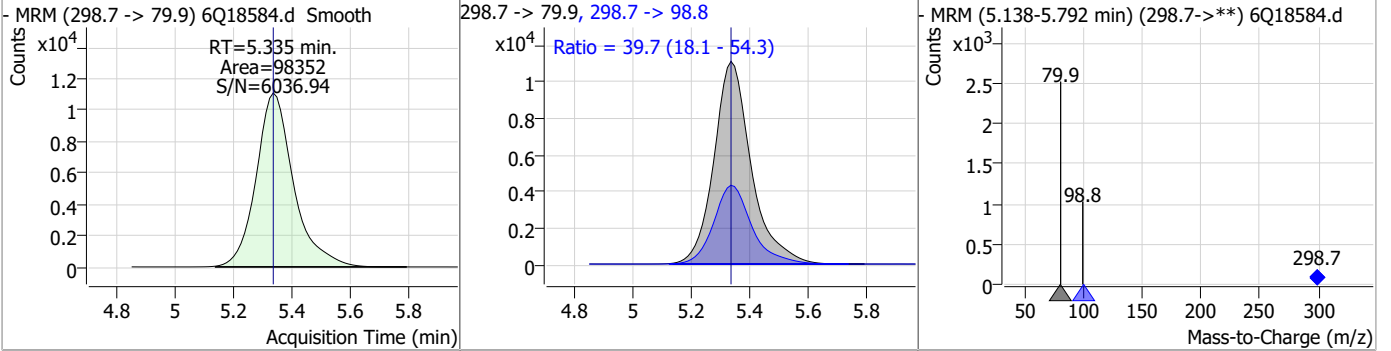


7.6.2

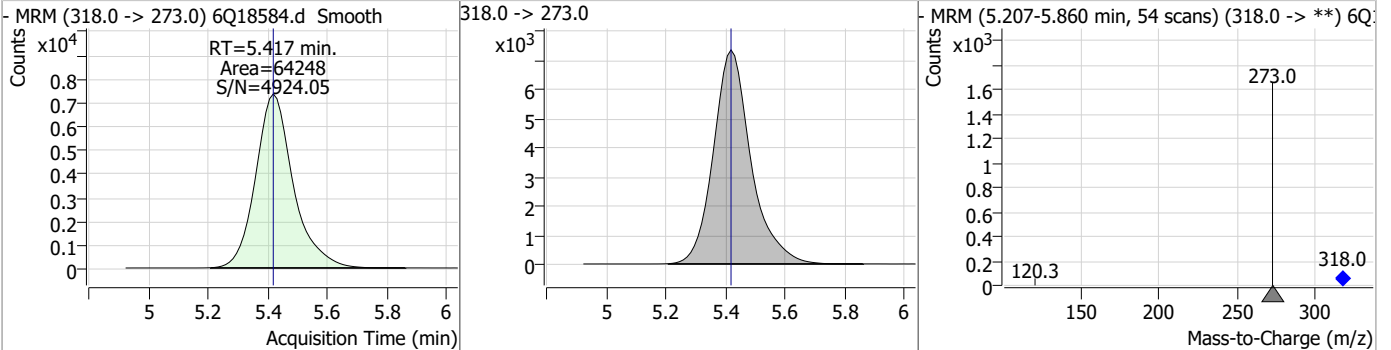
7

Perfluorinated Compounds by LC/MS/MS

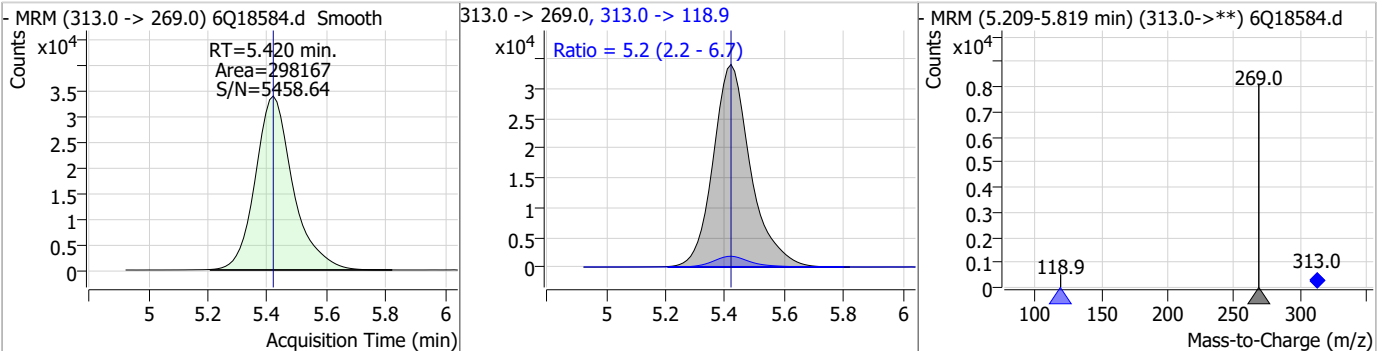
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.85	5.34	0.00	98352	298.7 -> 98.8	39.7	18.1	54.3



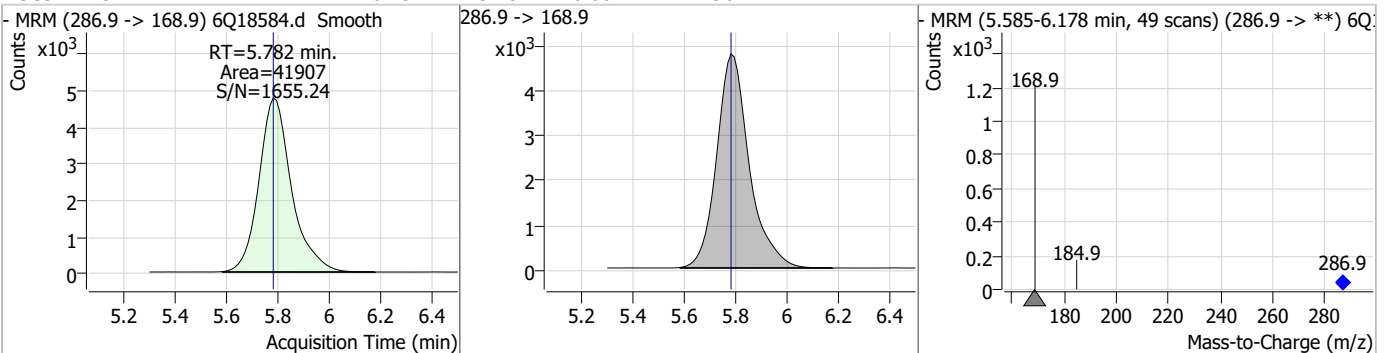
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.41	5.42	0.00	64248				



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

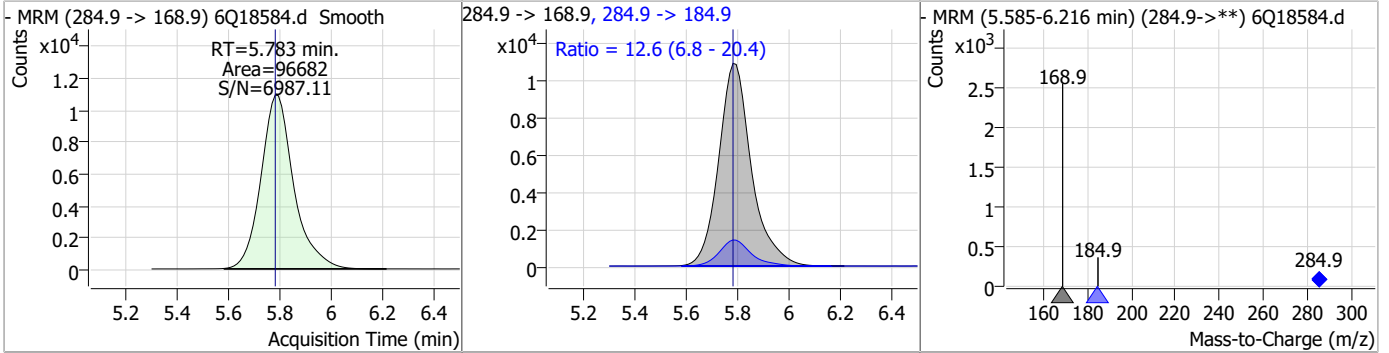


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.13	5.78	0.00	41907				

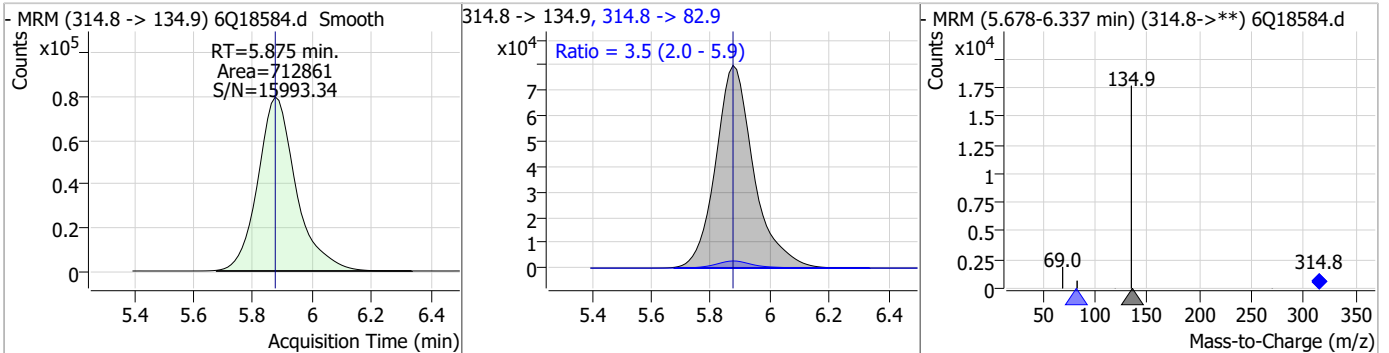


Perfluorinated Compounds by LC/MS/MS

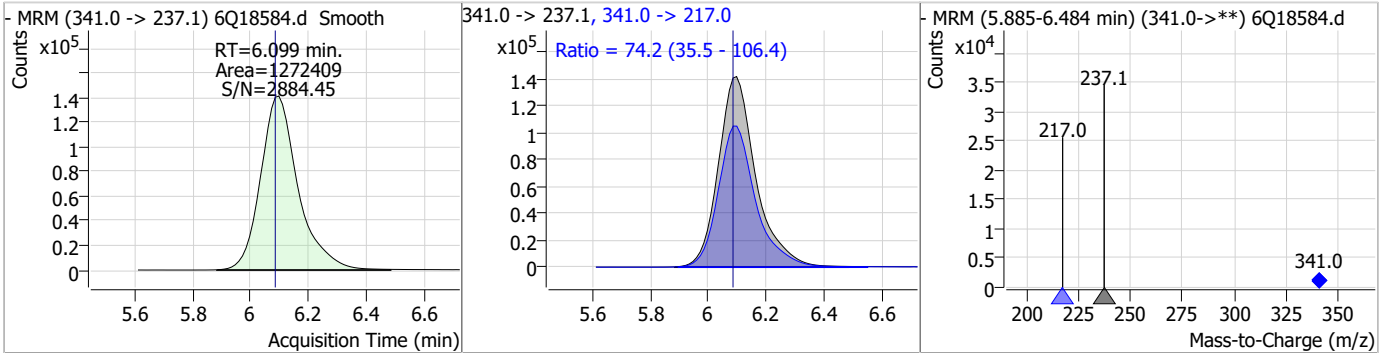
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	27.22	5.78	0.00	96682	284.9 -> 184.9	12.6	6.8	20.4



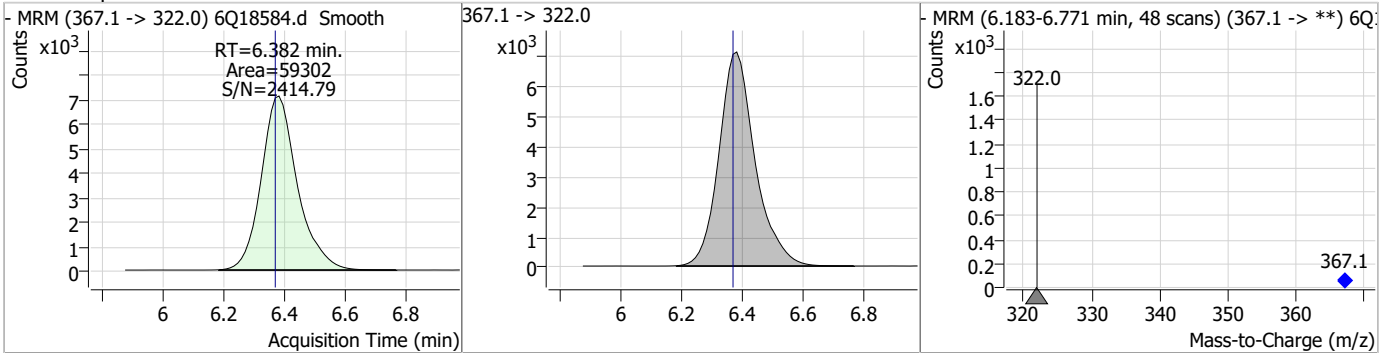
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	26.03	5.88	0.00	712861	314.8 -> 82.9	3.5	2.0	5.9



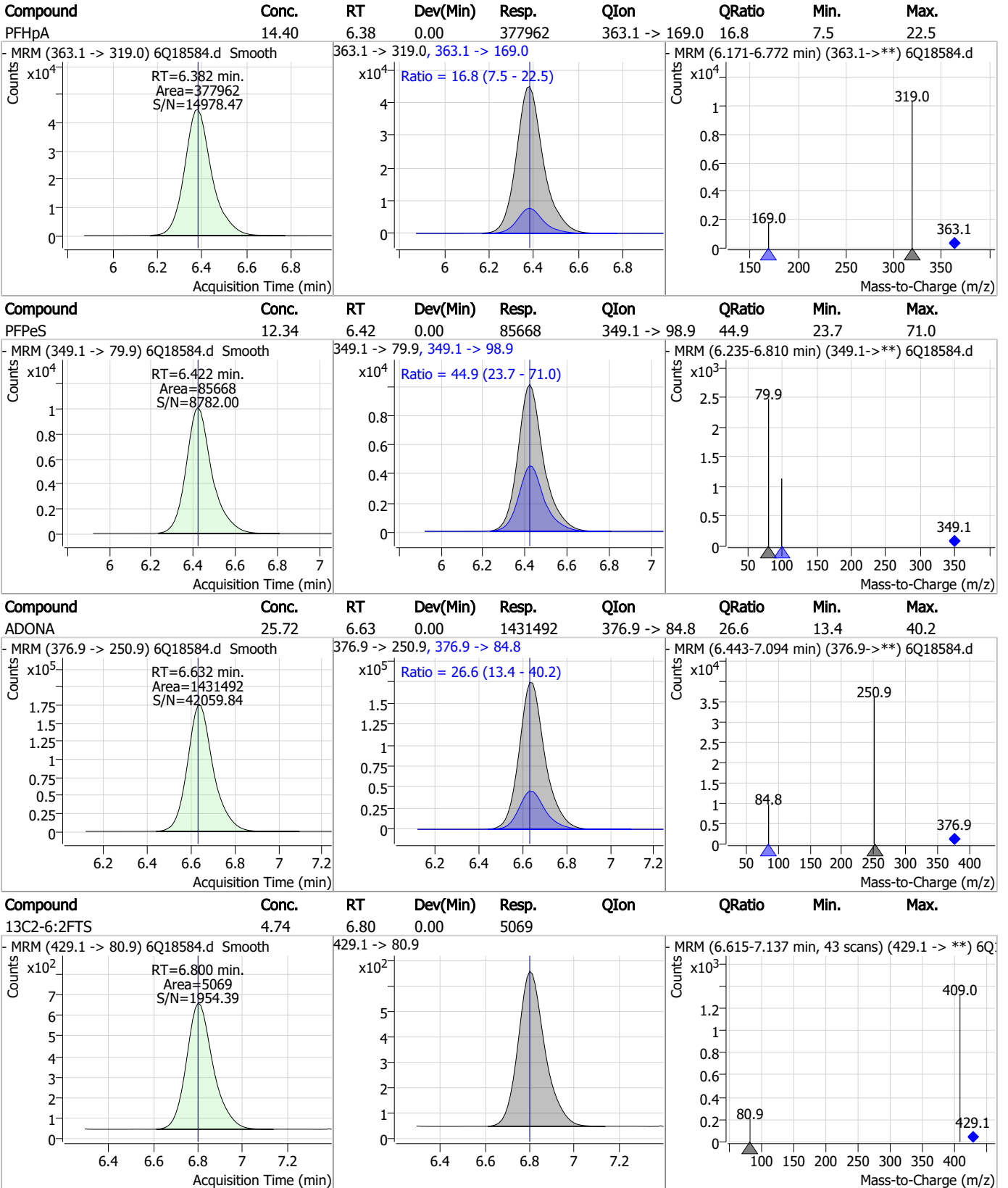
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	327.88	6.10	0.01	1272409	341.0 -> 217.0	74.2	35.5	106.4



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



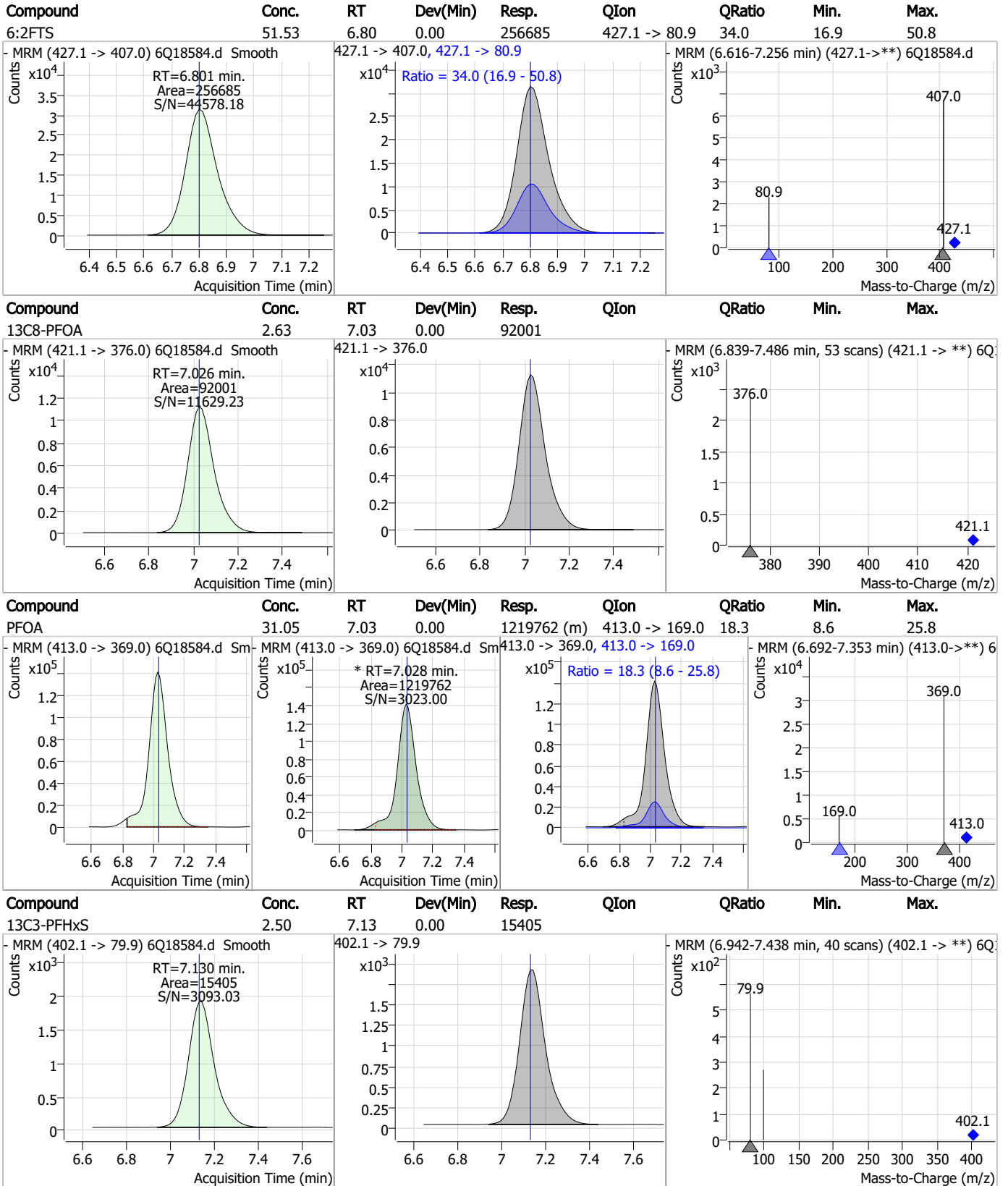
Perfluorinated Compounds by LC/MS/MS



7.6.2

7

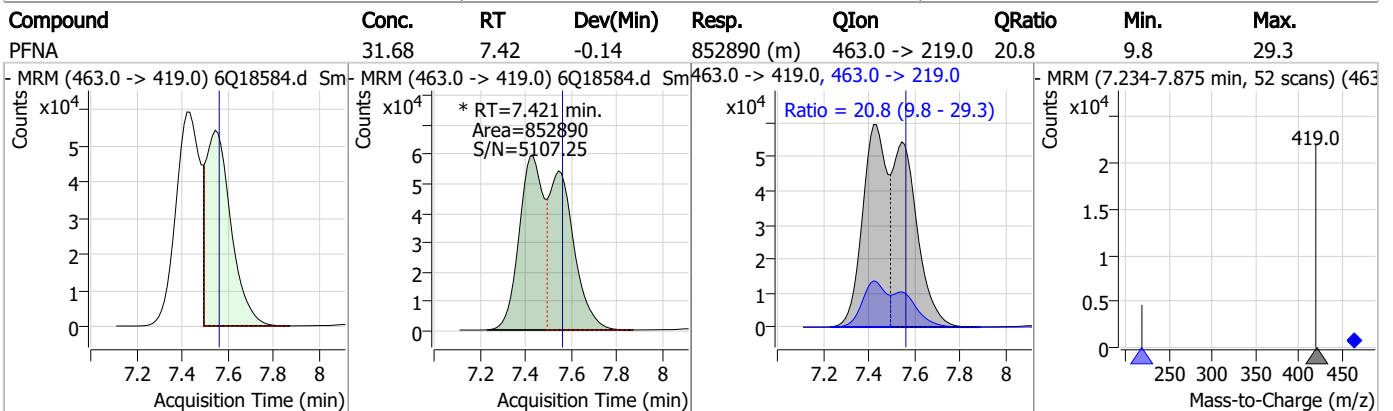
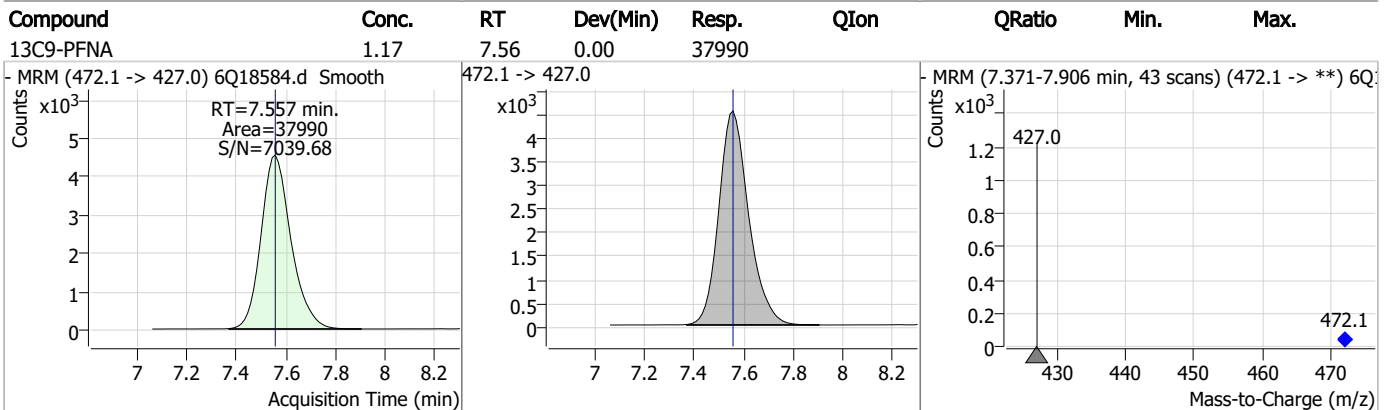
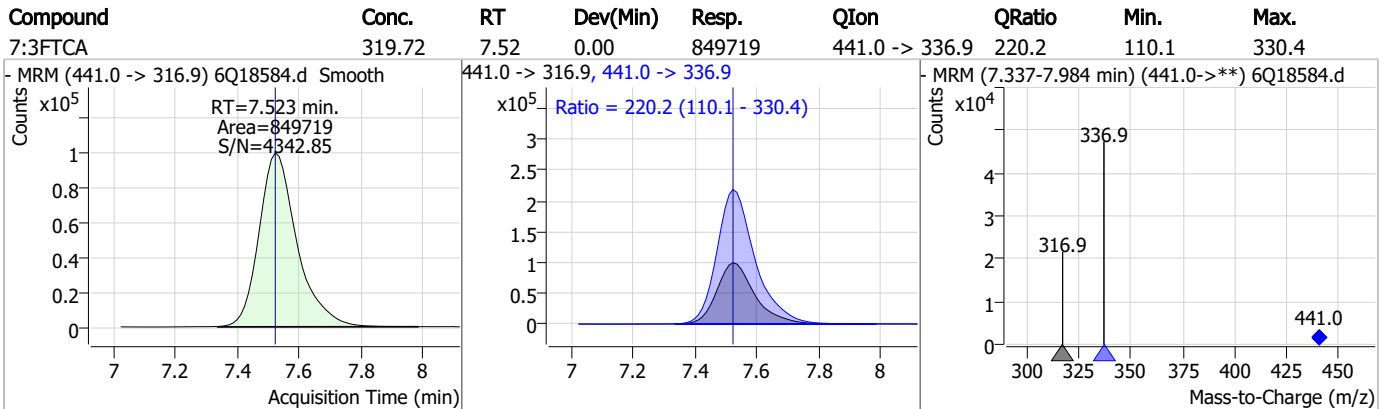
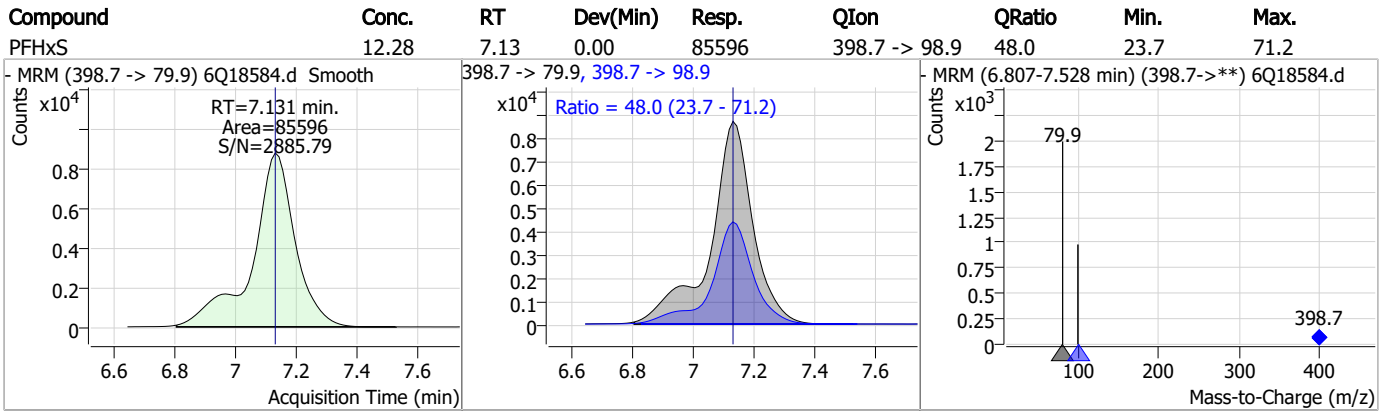
Perfluorinated Compounds by LC/MS/MS



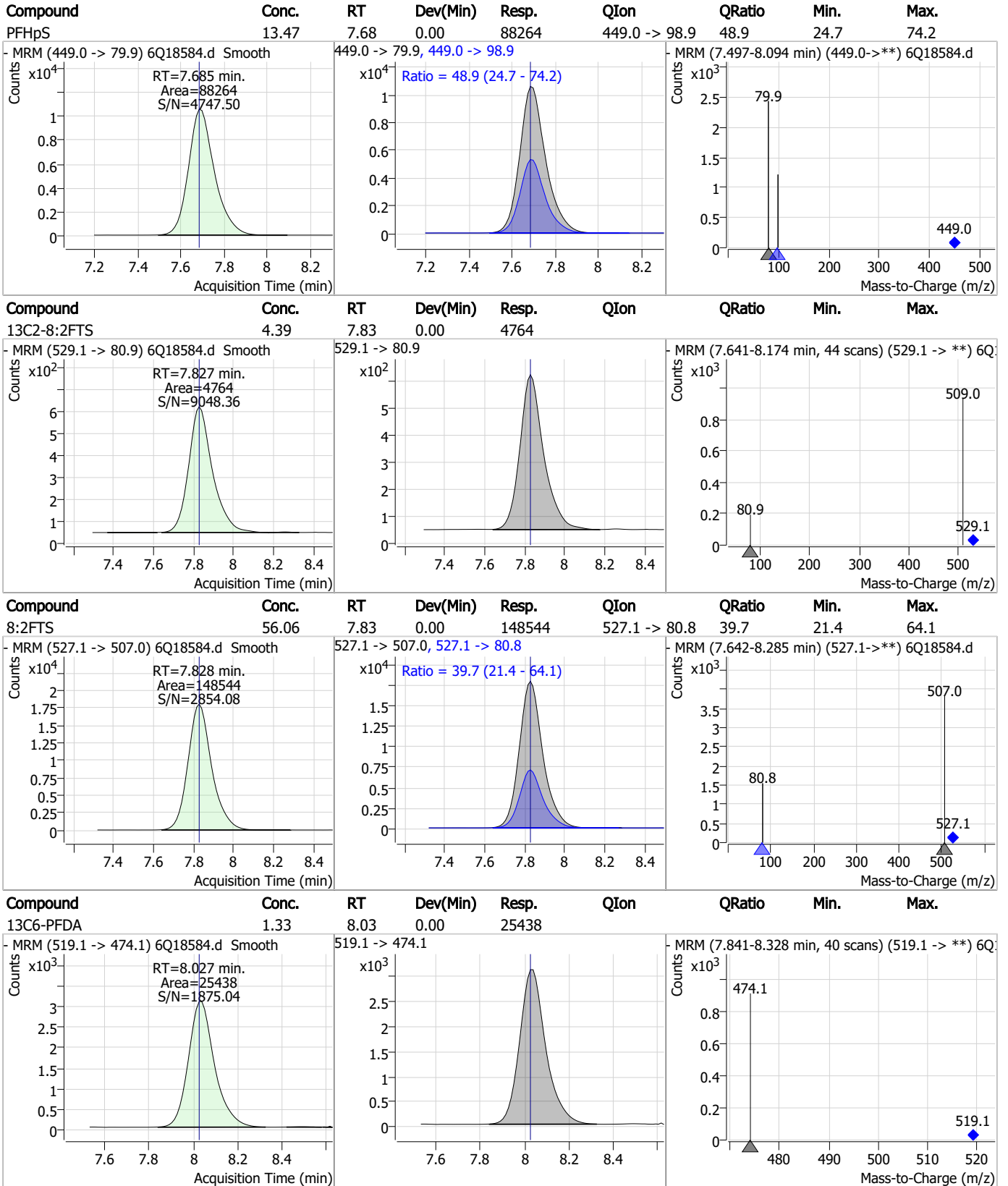
7.6.2

7

Perfluorinated Compounds by LC/MS/MS



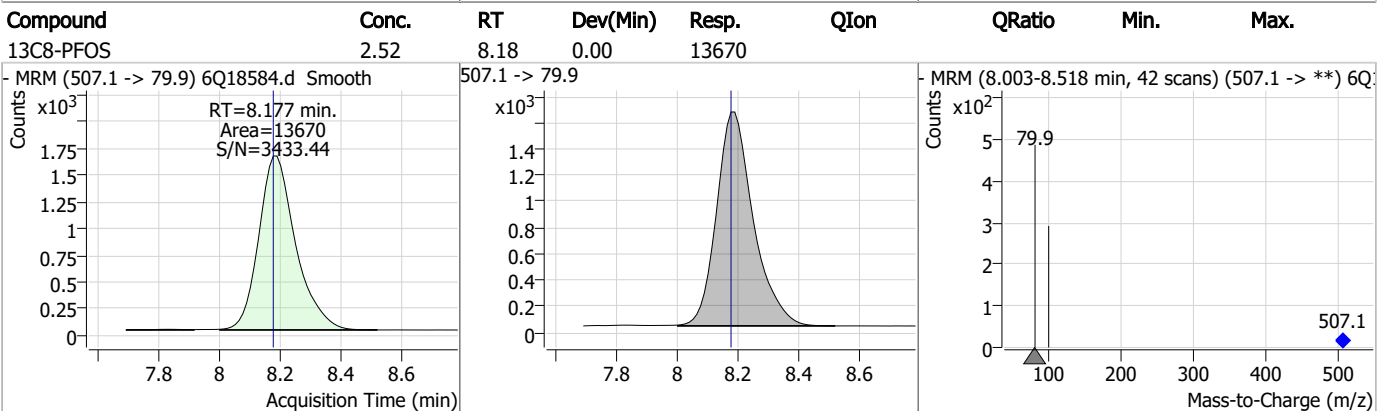
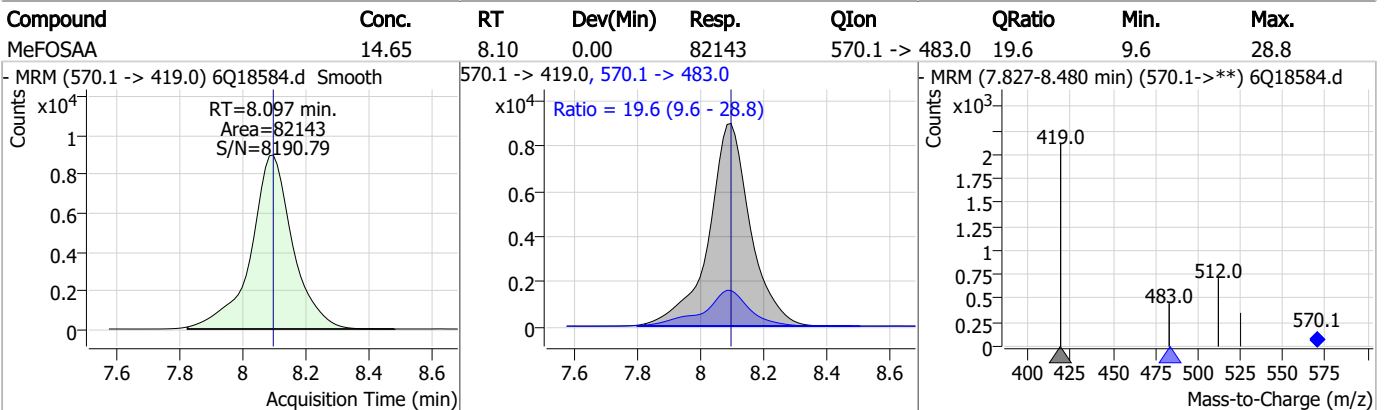
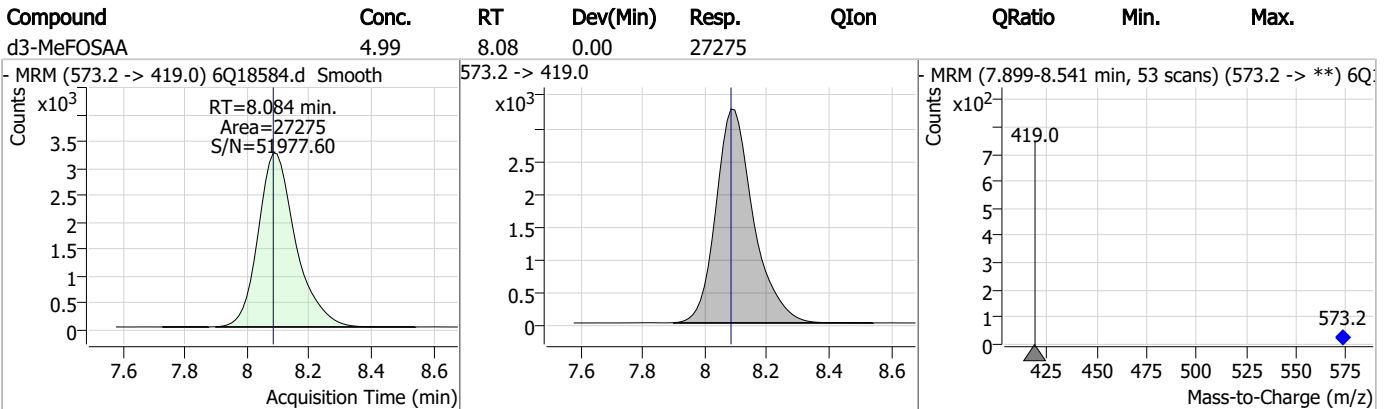
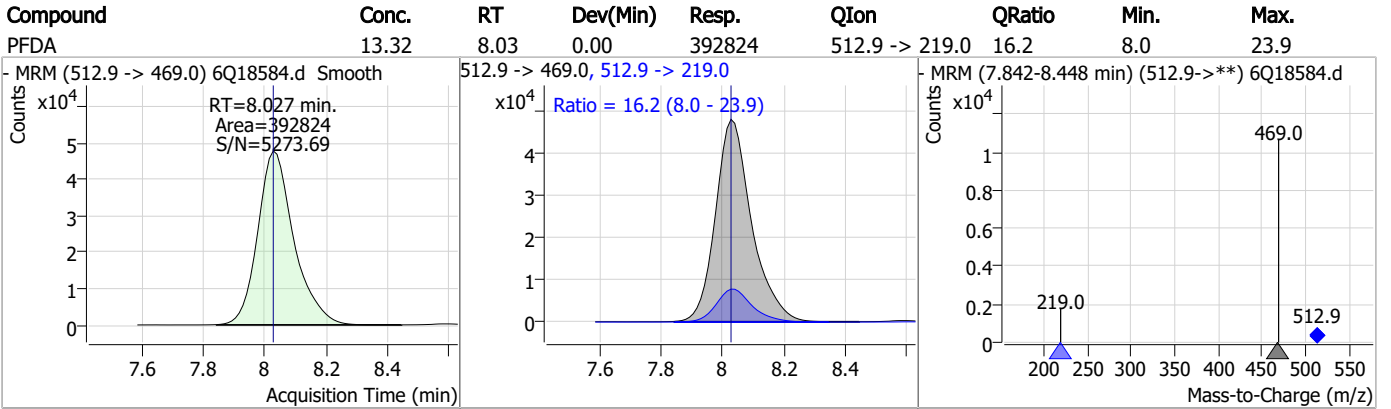
Perfluorinated Compounds by LC/MS/MS



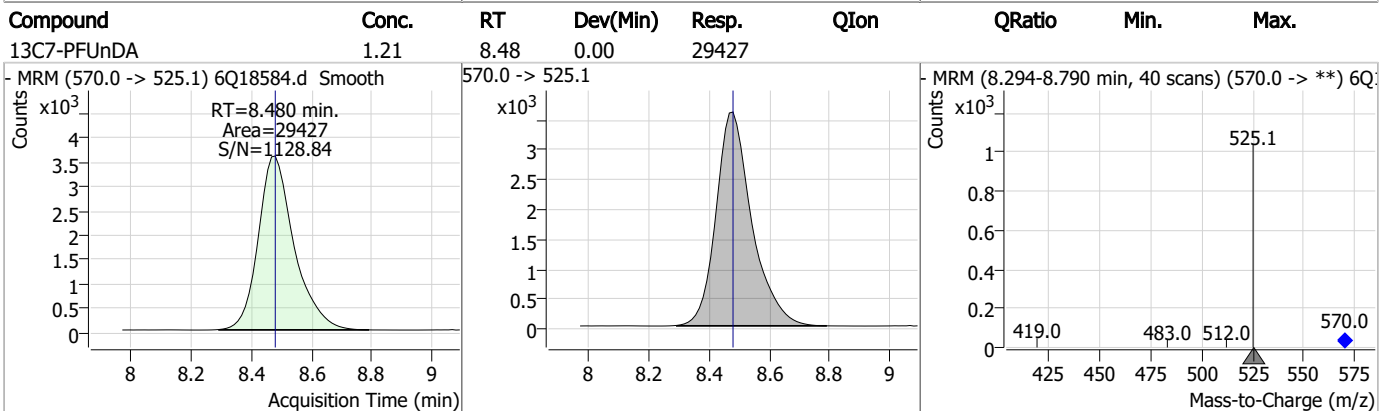
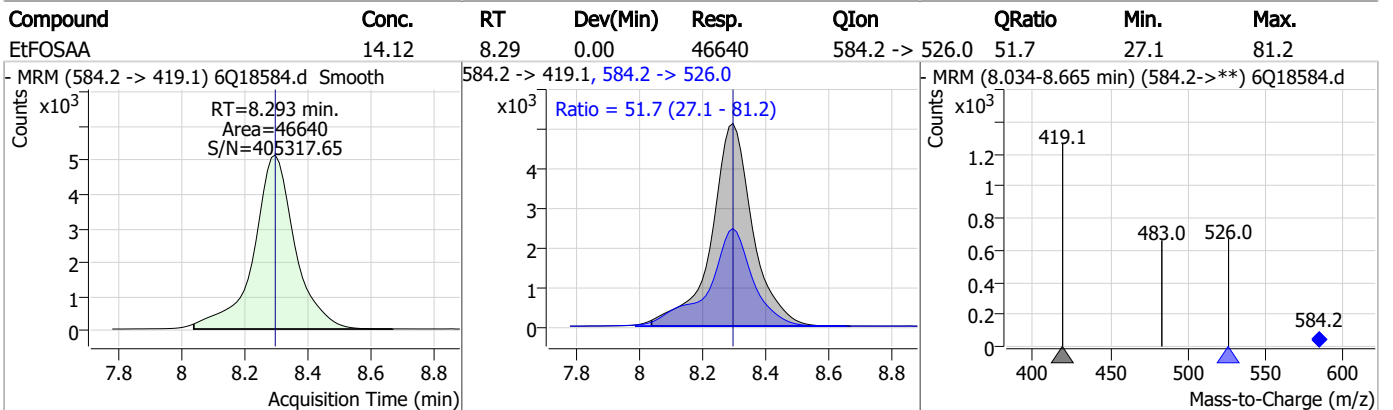
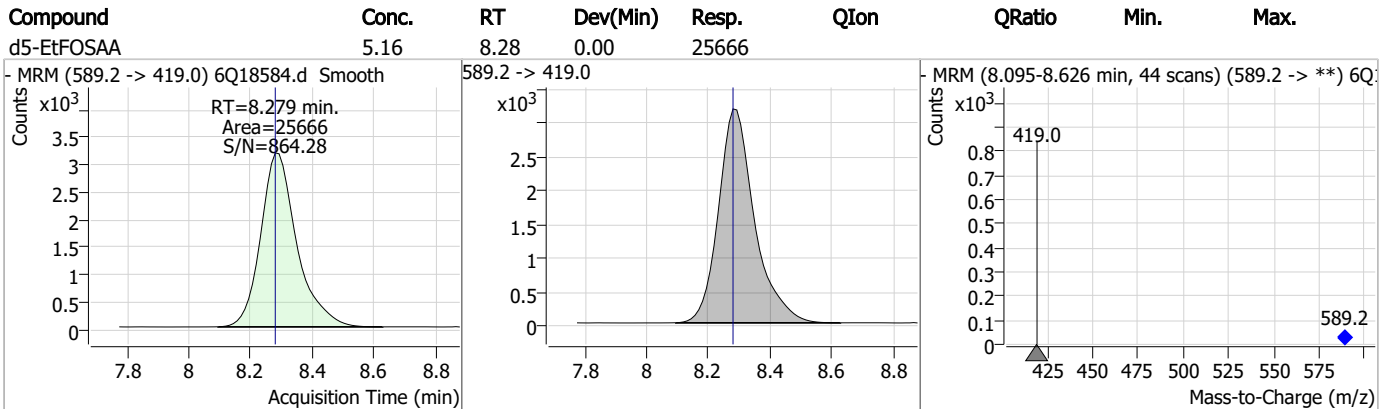
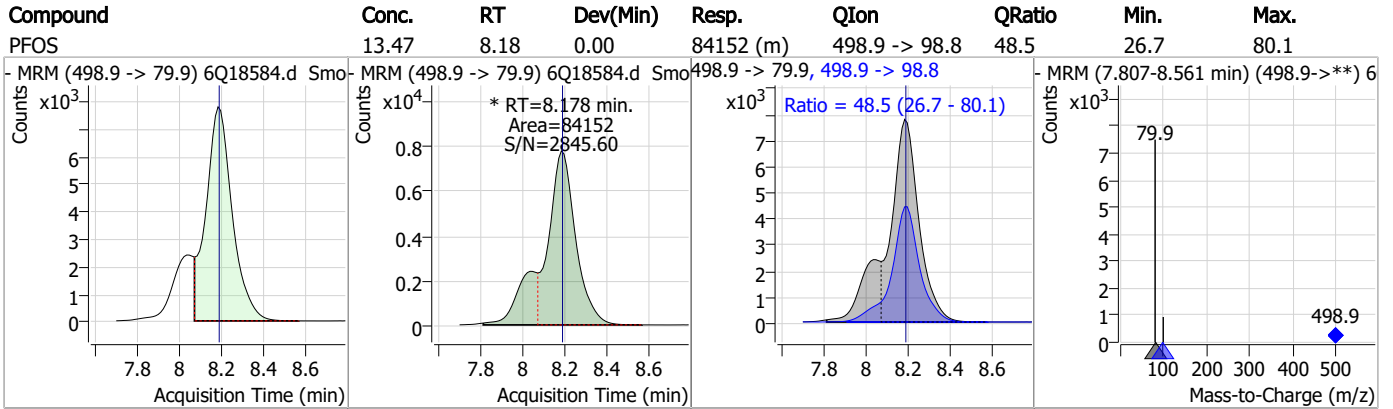
7.6.2

7

Perfluorinated Compounds by LC/MS/MS

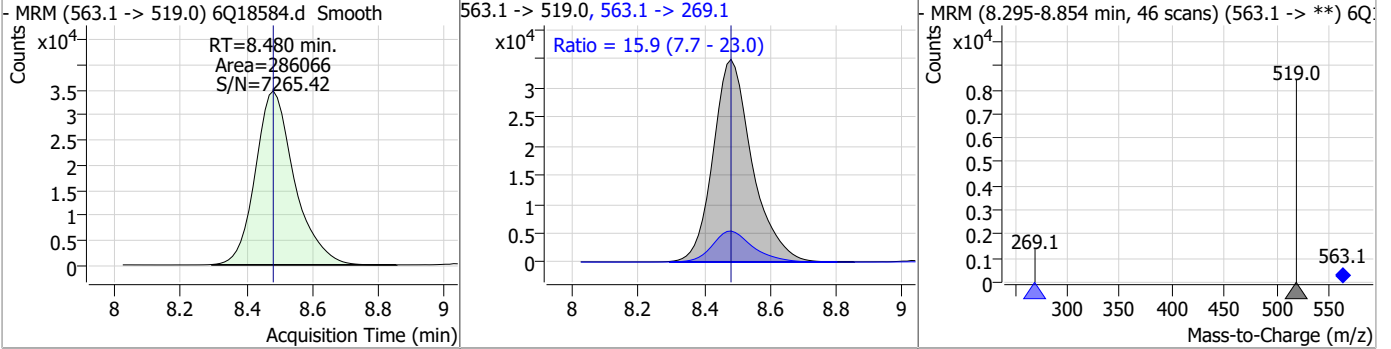


Perfluorinated Compounds by LC/MS/MS

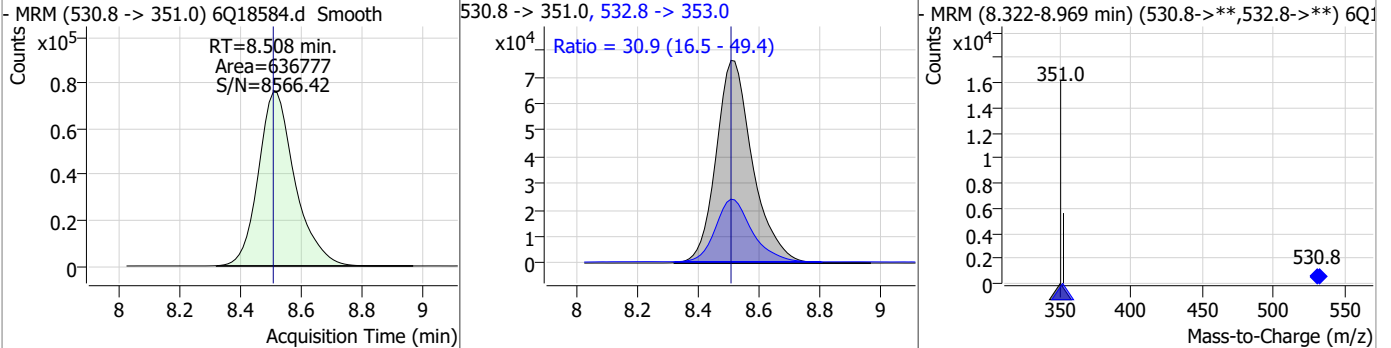


Perfluorinated Compounds by LC/MS/MS

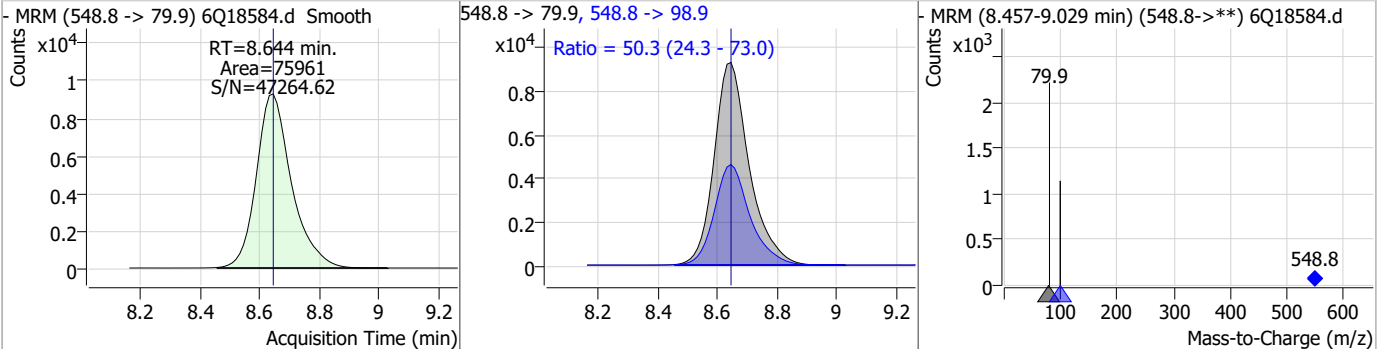
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	14.96	8.48	0.00	286066	563.1 -> 269.1	15.9	7.7	23.0



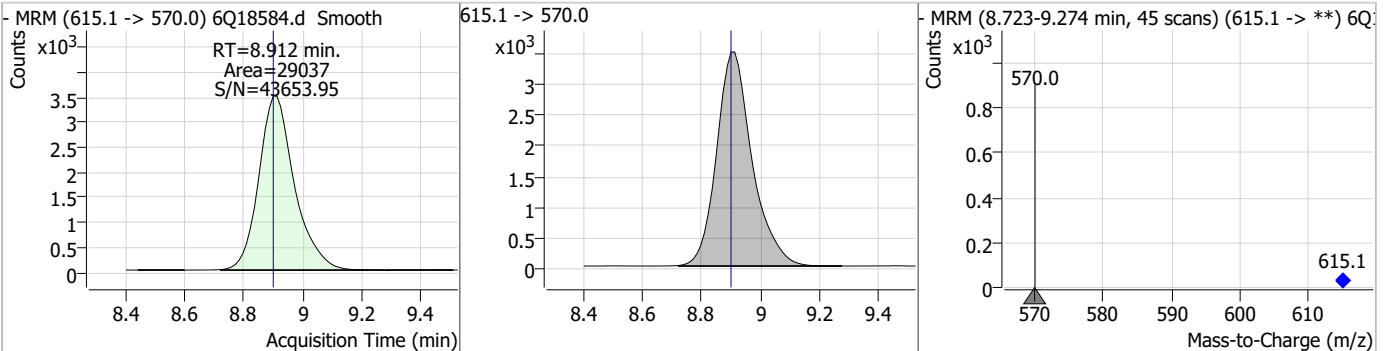
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	25.70	8.51	0.00	636777	532.8 -> 353.0	30.9	16.5	49.4



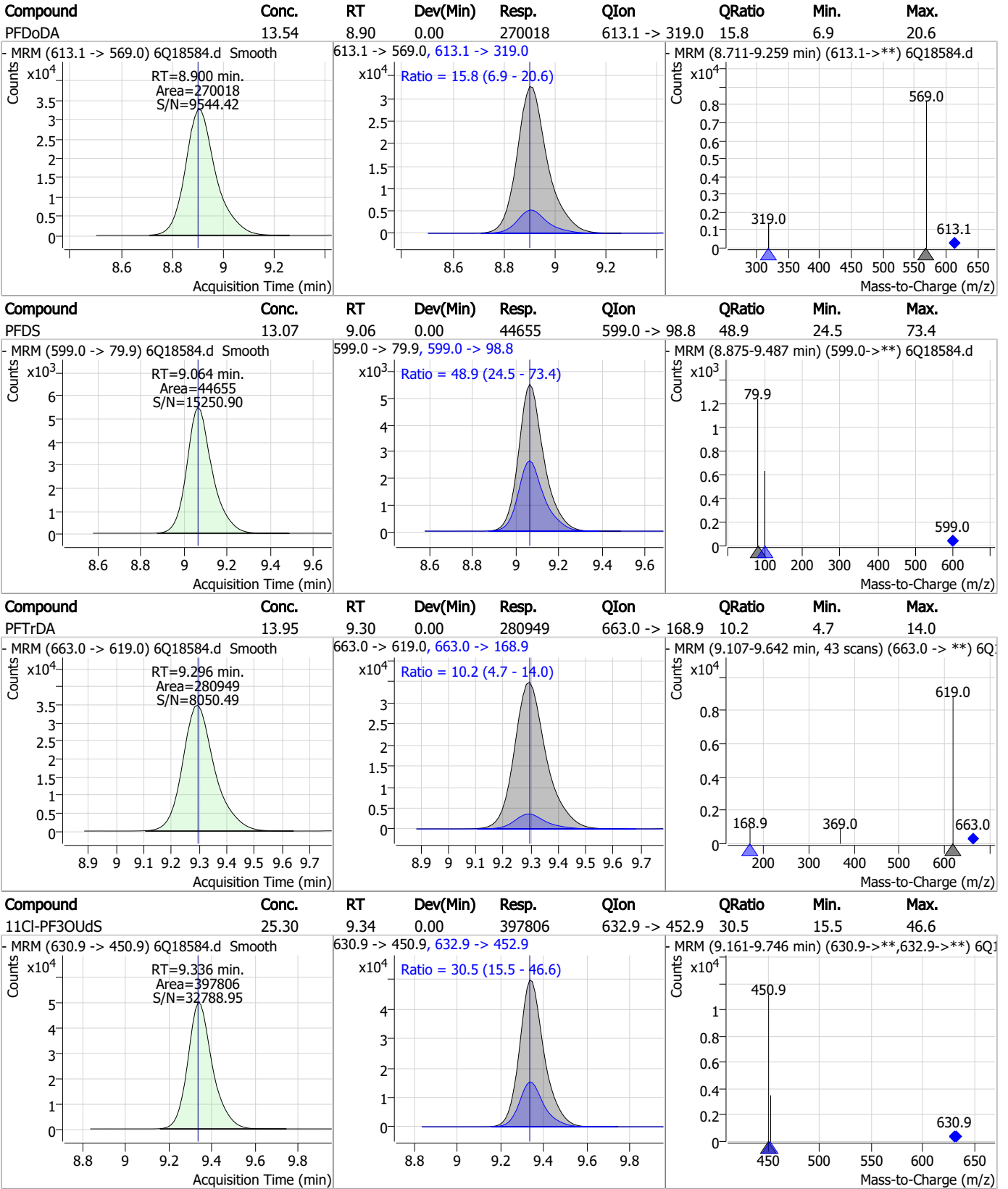
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	13.84	8.64	0.00	75961	548.8 -> 98.9	50.3	24.3	73.0



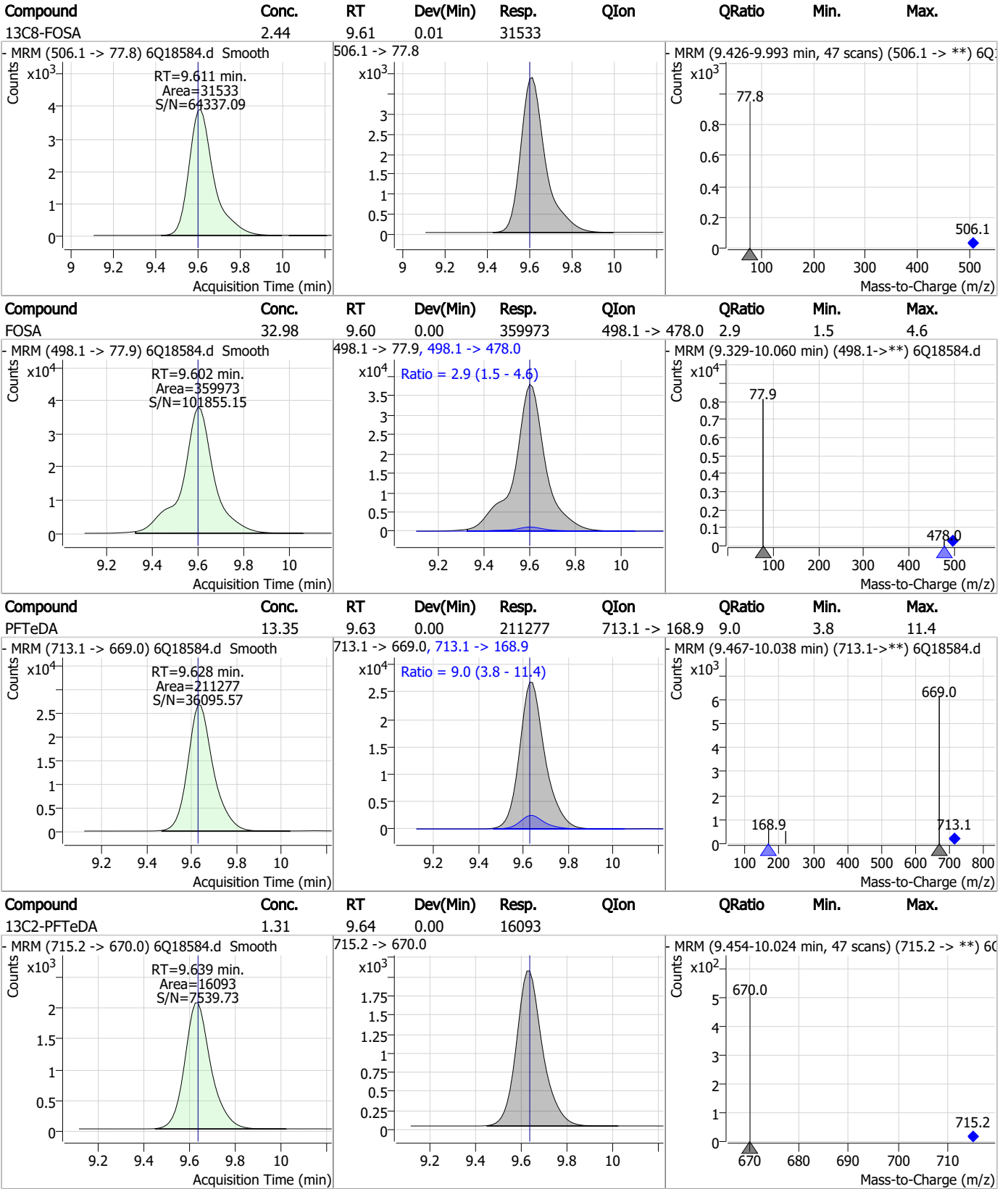
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	8.91	0.01	29037	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS



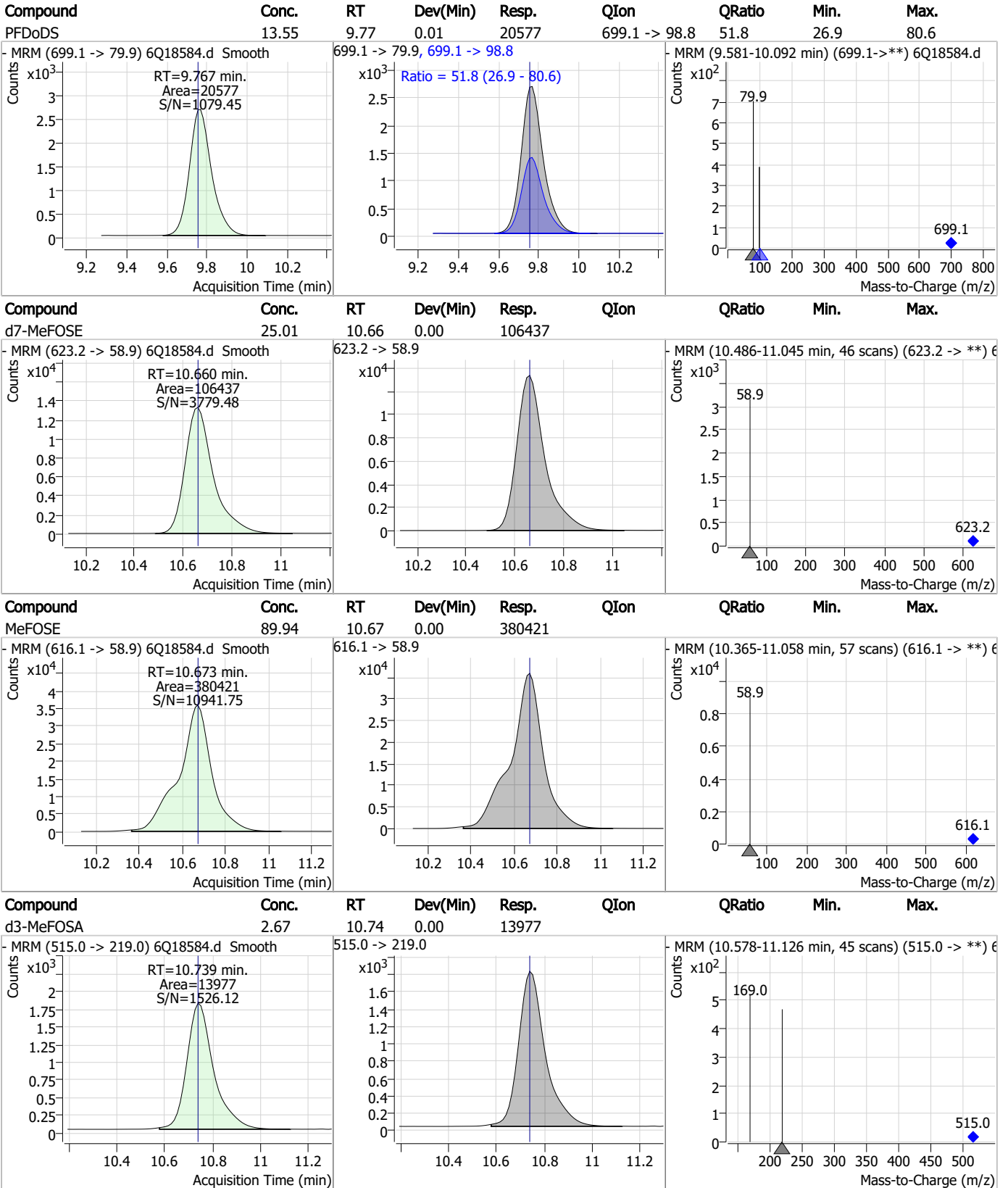
Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Perfluorinated Compounds by LC/MS/MS

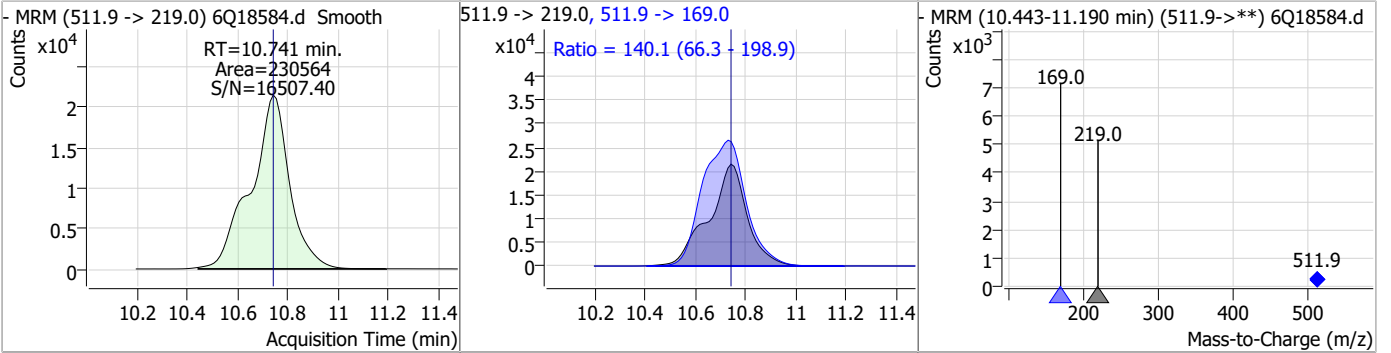


7.6.2

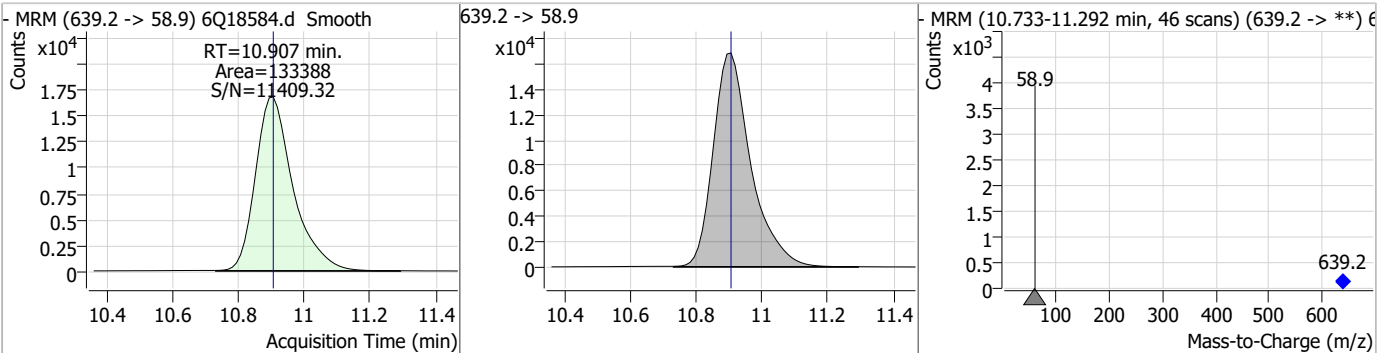
7

Perfluorinated Compounds by LC/MS/MS

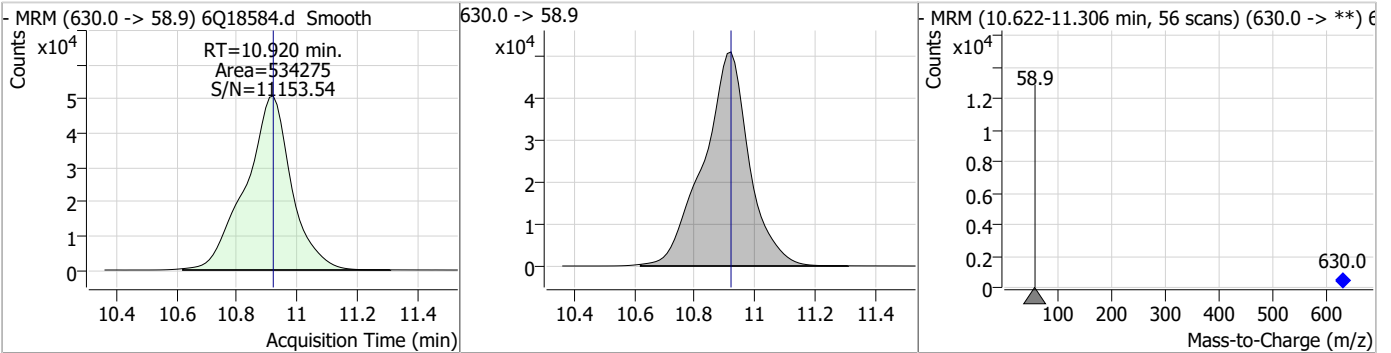
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	44.86	10.74	0.00	230564	511.9 -> 169.0	140.1	66.3	198.9



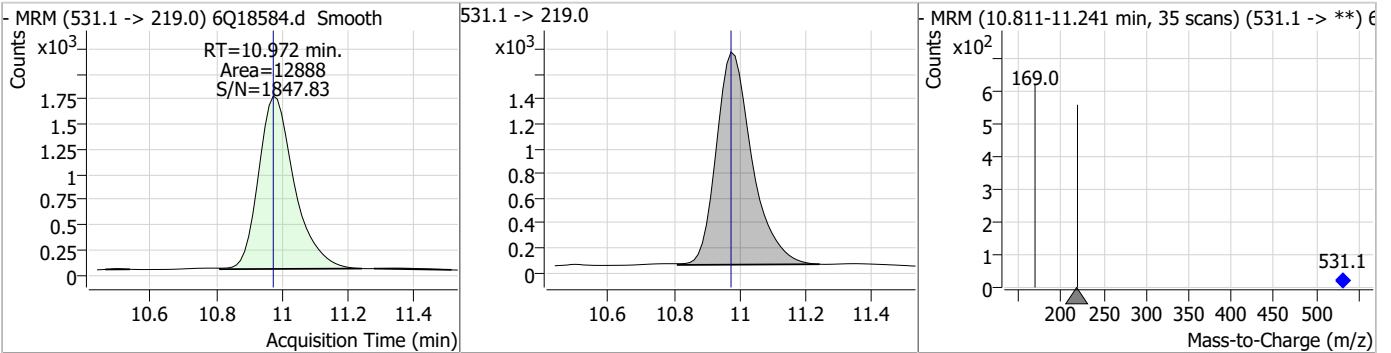
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.96	10.91	0.00	133388				



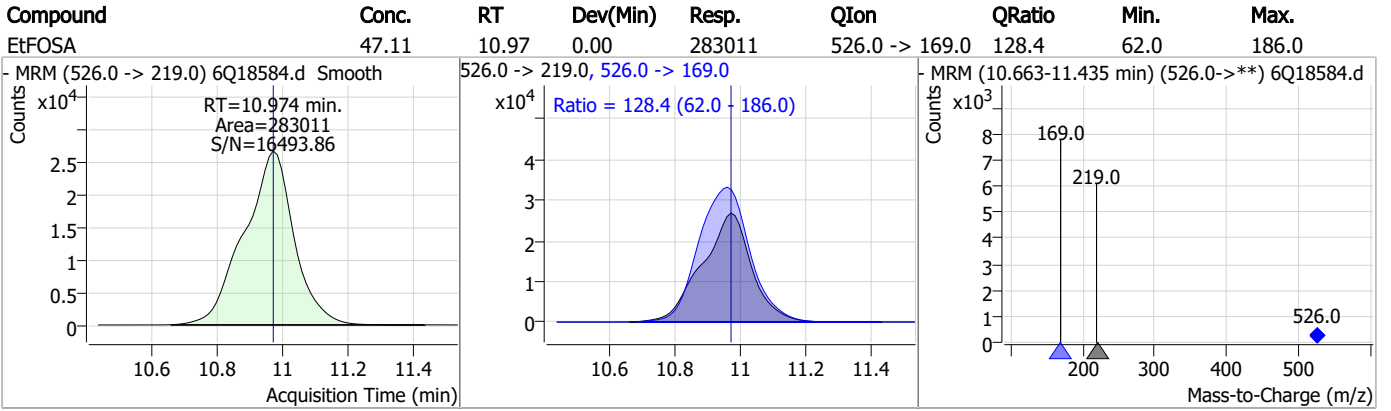
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	89.78	10.92	0.00	534275				



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



Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

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

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

7.6.2.1

7

QQQ Check Tune Report



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

Source Parameters

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

7.7.1

7

QQQ Check Tune Report



Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.95	-0.04	Pass	0.70	0.65	-0.05	Pass	455038
302.00	301.98	-0.02	Pass	0.70	0.68	-0.02	Pass	1143761
601.98	601.92	-0.06	Pass	0.70	0.60	-0.10	Pass	2118549
1033.99	1033.82	-0.17	Pass	0.70	0.59	-0.11	Pass	1683143
1633.95	1633.69	-0.26	Adjust	0.70	0.64	-0.06	Pass	1158862
2233.91	2233.43	-0.48	Adjust	0.70	0.70	0.00	Pass	440499

Analyzer: MS2 Polarity: Negative Width: Unit

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

Analyzer: MS1 Polarity: Negative Width: Wide

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

Analyzer: MS2 Polarity: Negative Width: Wide

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

Analyzer: MS1 Polarity: Negative Width: Widest

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

Analyzer: MS2 Polarity: Negative Width: Widest

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

7.7.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18586.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:16:21 PM
 Sample Name : ic279-1
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	175926	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58775	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	64804	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	58558	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	92083	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	41065	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24385	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	31631	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	28658	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	15918	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	32460	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	23309	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14544	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13033	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3770	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5269	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5181	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	28690	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40509	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25301	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	106215	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	145212	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12992	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12922	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17710	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	73829	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10307	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	97513	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	33316	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50593	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	60249	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3770	5.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5269	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5181	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C2-PFDoDA	8.900	615.1 -> 570.0	28658	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15918	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C3-PFBS	5.334	302.1 -> 79.9	23309	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	14544	2.53 µg/L	0.000

7.7.2
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFBA	2.822	216.8 -> 171.9	175926	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	58558	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	64804	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	58775	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C6-PFDA	8.027	519.1 -> 474.1	24385	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31631	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-FOSA	9.598	506.1 -> 77.8	32460	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-PFOA	7.026	421.1 -> 376.0	92083	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-PFOS	8.177	507.1 -> 79.9	13033	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C9-PFNA	7.545	472.1 -> 427.0	41065	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSAA	8.084	573.2 -> 419.0	28690	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40509	10.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	12922	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25301	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d7-MeFOSE	10.660	623.2 -> 58.9	106215	23.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	145212	24.96 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	12992	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	4574	0.84 µg/L	96
		327.1 -> 80.9	1710		
6:2FTS	6.801	427.1 -> 407.0	4592	0.89 µg/L	98
		427.1 -> 80.9	1605		
8:2FTS	7.816	527.1 -> 507.0	2744	0.95 µg/L	94
		527.1 -> 80.8	1065		
EtFOSAA	8.280	584.2 -> 419.1	788	0.24 µg/L	96
		584.2 -> 526.0	451		
FOSA	9.589	498.1 -> 77.9	2619	0.23 µg/L	98
		498.1 -> 478.0	94		
MeFOSAA	8.085	570.1 -> 419.0	1177	0.20 µg/L	m 93
		570.1 -> 483.0	191		
PFBA	2.818	212.8 -> 168.9	5281	0.91 µg/L	100
PFBS	5.335	298.7 -> 79.9	1603	0.20 µg/L	96
		298.7 -> 98.8	614		
PFDA	8.027	512.9 -> 469.0	6728	0.24 µg/L	100
		512.9 -> 219.0	1068		
PFDODA	8.900	613.1 -> 569.0	4579	0.23 µg/L	95
		613.1 -> 319.0	724		
PFDS	9.052	599.0 -> 79.9	769	0.24 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	392			
PFHpA	6.382	363.1 -> 319.0	6054	0.23	µg/L	95
		363.1 -> 169.0	1031			
PFHpS	7.685	449.0 -> 79.9	1473	0.24	µg/L	95
		449.0 -> 98.9	778			
PFHxA	5.420	313.0 -> 269.0	4961	0.23	µg/L	98
		313.0 -> 118.9	260			
PFHxS	7.131	398.7 -> 79.9	1378	0.21	µg/L	m 94
		398.7 -> 98.9	709			
PFNA	7.545	463.0 -> 419.0	7040	0.24	µg/L	100
		463.0 -> 219.0	1371			
PFNS	8.631	548.8 -> 79.9	1282	0.25	µg/L	96
		548.8 -> 98.9	661			
PFOA	7.028	413.0 -> 369.0	8309	0.21	µg/L	95
		413.0 -> 169.0	1614			
PFOS	8.178	498.9 -> 79.9	1321	0.22	µg/L	92
		498.9 -> 98.8	627			
PFPeA	4.212	263.0 -> 219.0	6565	0.47	µg/L	100
PFPeS	6.422	349.1 -> 79.9	1435	0.22	µg/L	99
		349.1 -> 98.9	691			
PFTeDA	9.628	713.1 -> 669.0	3669	0.23	µg/L	98
		713.1 -> 168.9	310			
PFTrDA	9.284	663.0 -> 619.0	4782	0.24	µg/L	99
		663.0 -> 168.9	457			
PFUnDA	8.468	563.1 -> 519.0	4625	0.23	µg/L	89
		563.1 -> 269.1	917			
11Cl-PF3OUdS	9.336	630.9 -> 450.9	6290	0.41	µg/L	99
		632.9 -> 452.9	2001			
9Cl-PF3ONS	8.508	530.8 -> 351.0	9821	0.41	µg/L	100
		532.8 -> 353.0	3236			
ADONA	6.632	376.9 -> 250.9	23388	0.43	µg/L	100
		376.9 -> 84.8	6321			
HFPO-DA	5.783	284.9 -> 168.9	1549	0.45	µg/L	100
		284.9 -> 184.9	211			
3:3FTCA	3.671	241.0 -> 177.0	1013	1.12	µg/L	93
		241.0 -> 117.0	174			
5:3FTCA	6.086	341.0 -> 237.1	23311	5.96	µg/L	99
		341.0 -> 217.0	16635			
7:3FTCA	7.510	441.0 -> 316.9	15138	5.65	µg/L	94
		441.0 -> 336.9	34923			
EtFOSA	10.974	526.0 -> 219.0	2683	0.44	µg/L	91
		526.0 -> 169.0	3611			
EtFOSE	10.907	630.0 -> 58.9	7379	1.14	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	2165	0.46	µg/L	80
		511.9 -> 169.0	3384			
MeFOSE	10.661	616.1 -> 58.9	4968	1.18	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	331	0.23	µg/L	97
		699.1 -> 98.8	170			
NFDHA	5.288	295.0 -> 201.0	1301	0.49	µg/L	90
		295.0 -> 84.9	286			
PFMBA	4.626	279.0 -> 85.1	4455	0.46	µg/L	100
PFMPA	3.363	229.0 -> 84.9	3329	0.45	µg/L	100
PFEESA	5.875	314.8 -> 134.9	10878	0.39	µg/L	99
		314.8 -> 82.9	403			

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

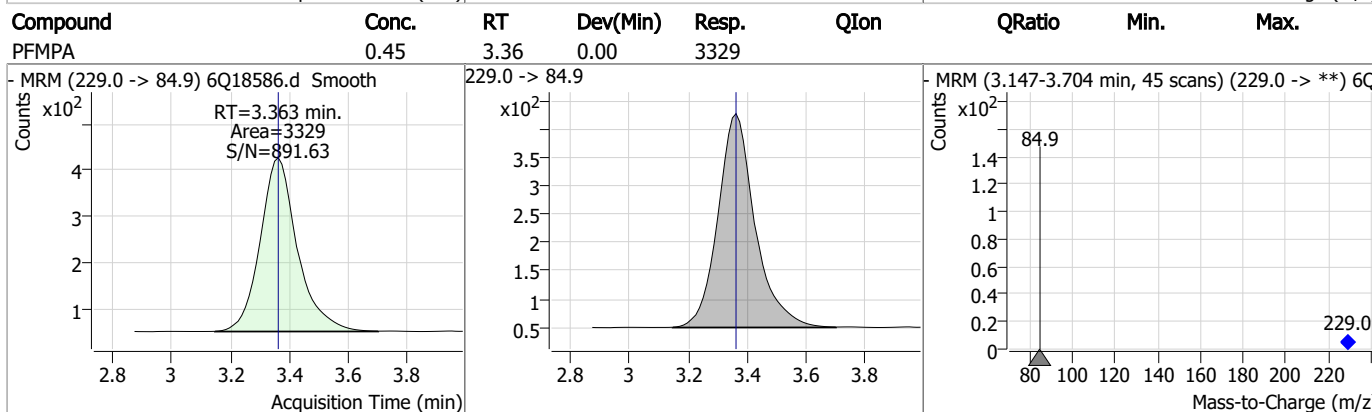
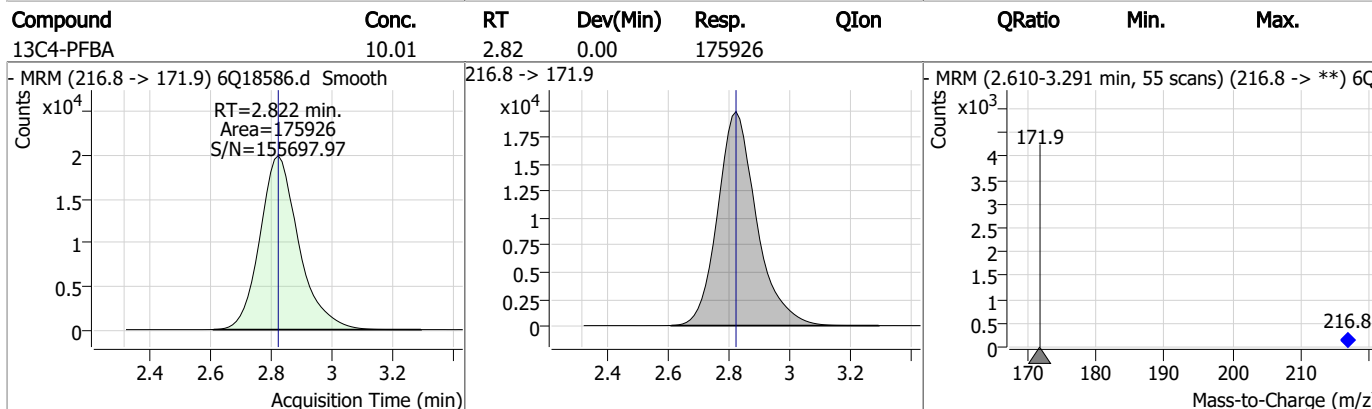
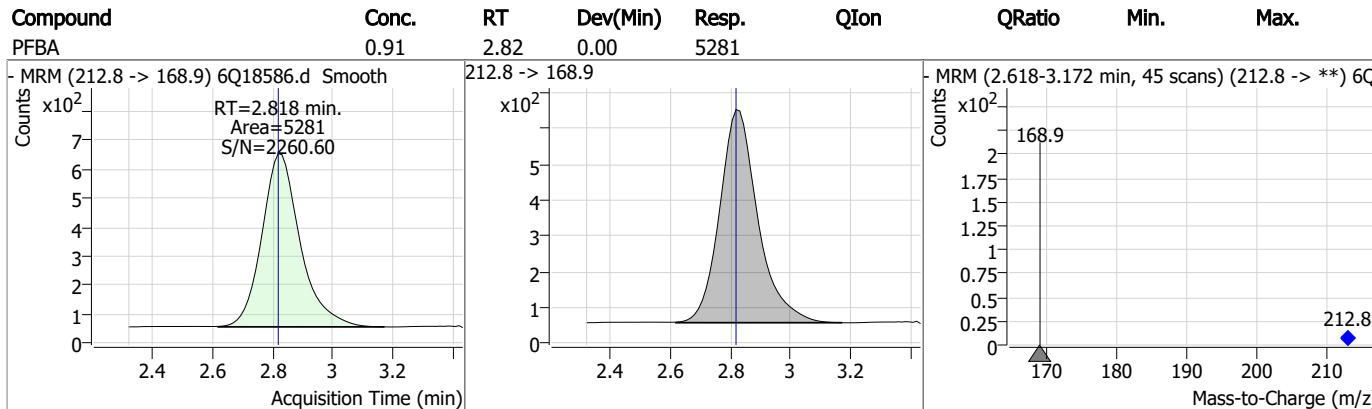
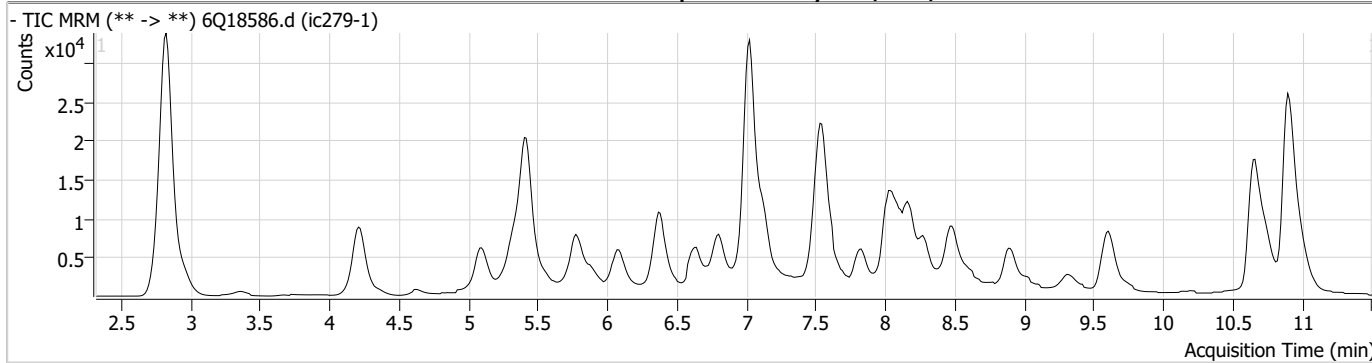
Perfluorinated Compounds by LC/MS/MS

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

7.7.2
7

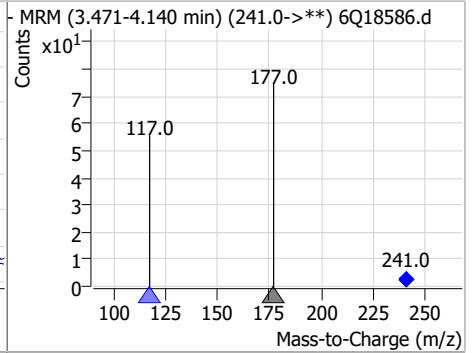
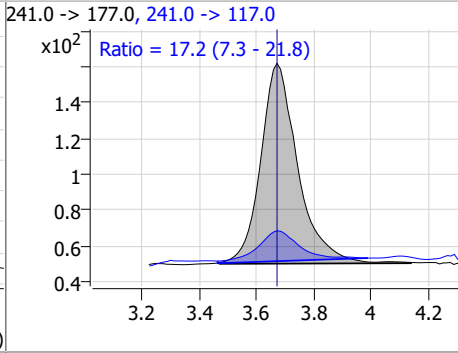
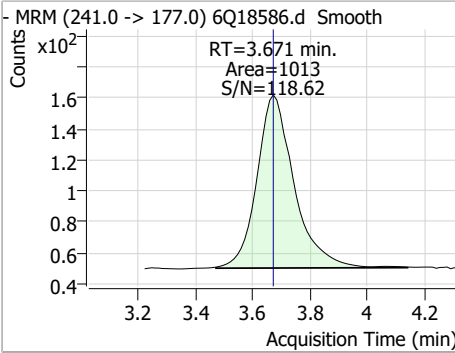


Perfluorinated Compounds by LC/MS/MS

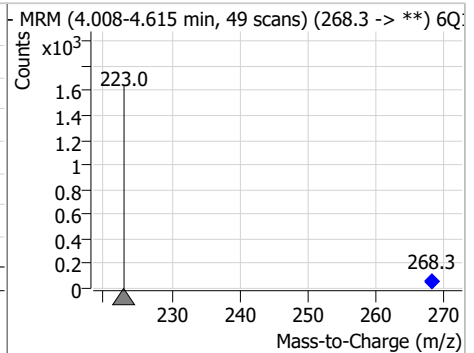
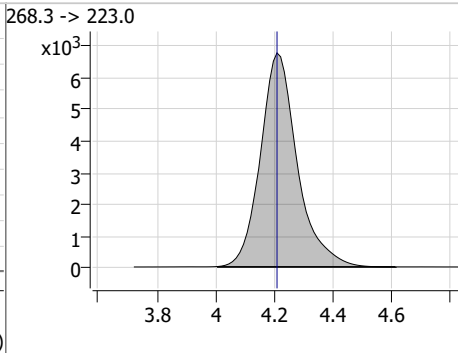
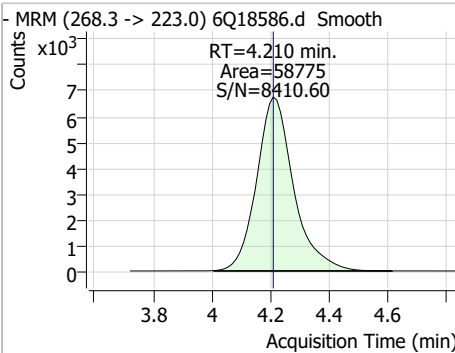


Perfluorinated Compounds by LC/MS/MS

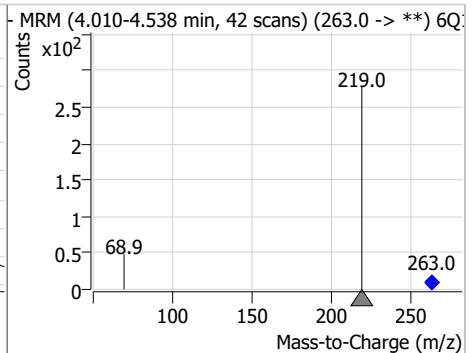
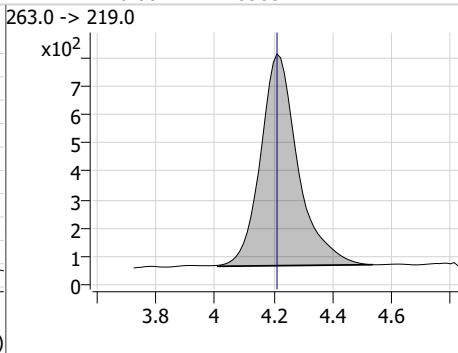
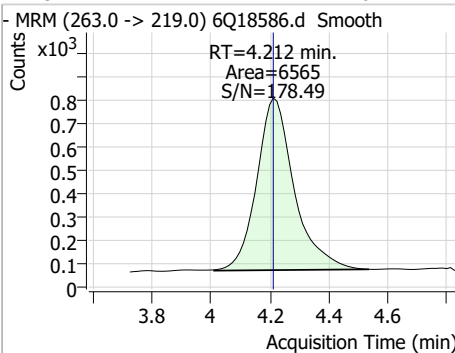
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.12	3.67	0.00	1013	241.0 -> 117.0	17.2	7.3	21.8



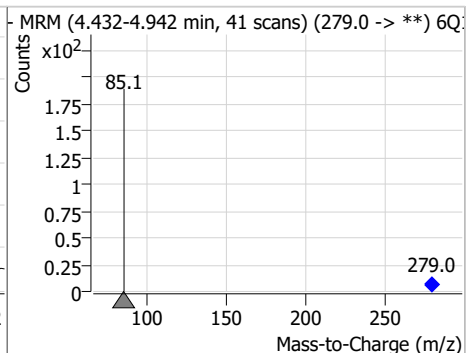
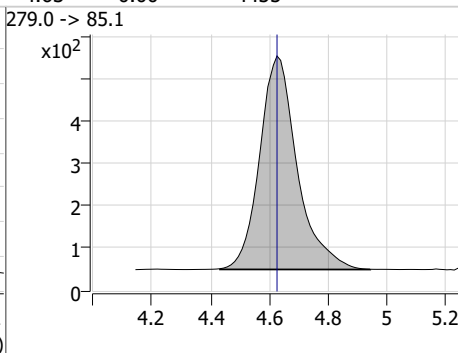
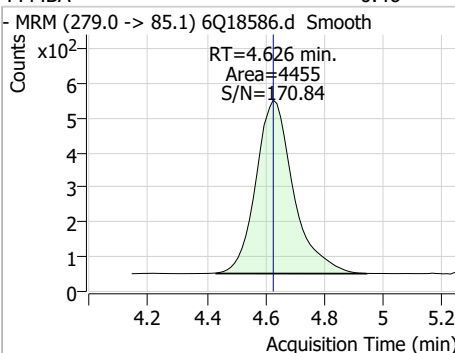
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.02	4.21	0.00	58775	268.3 -> 223.0			



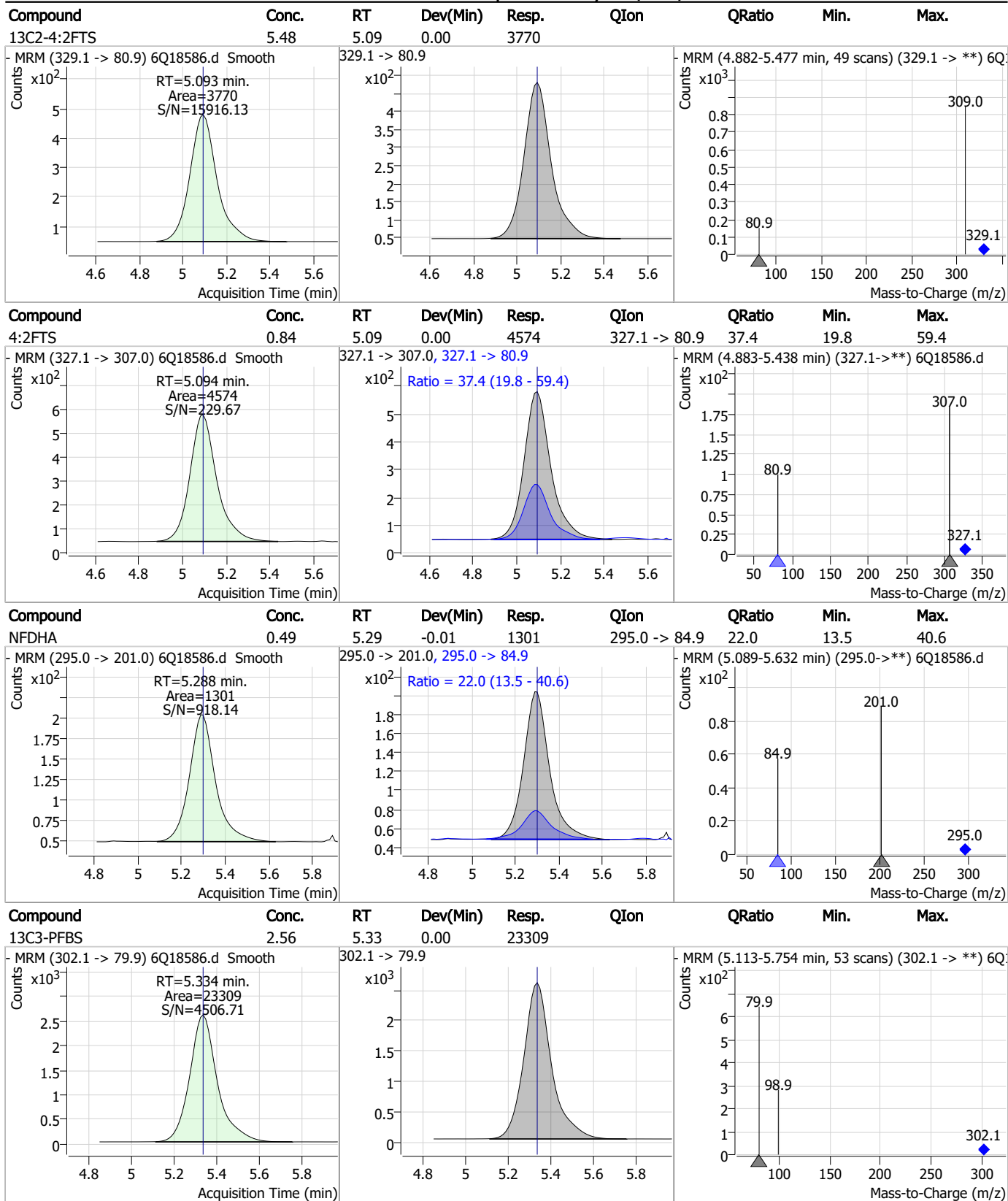
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.47	4.21	0.00	6565	263.0 -> 219.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.46	4.63	0.00	4455	279.0 -> 85.1			



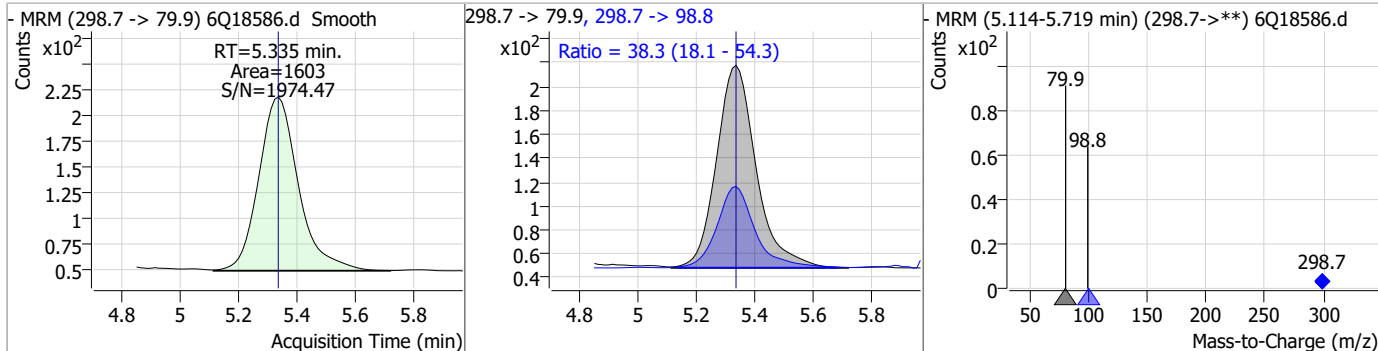
Perfluorinated Compounds by LC/MS/MS



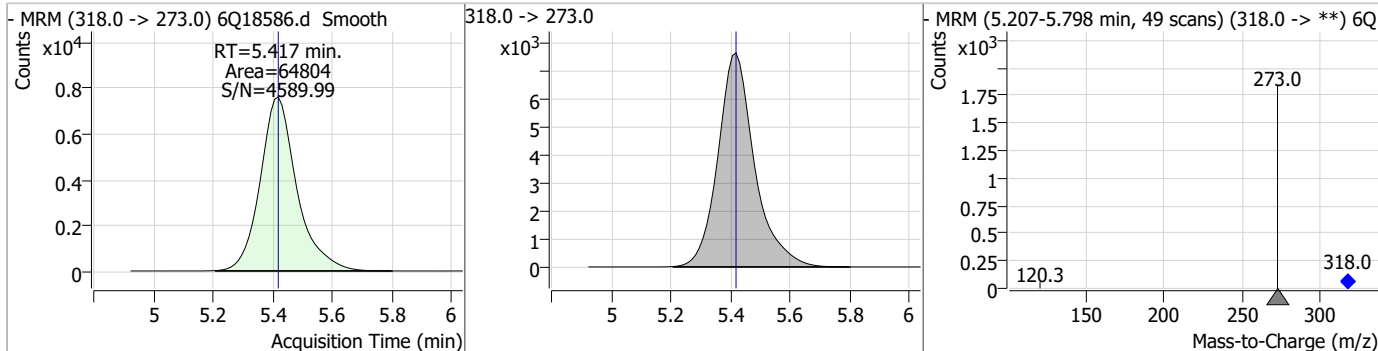
7.7.2
7

Perfluorinated Compounds by LC/MS/MS

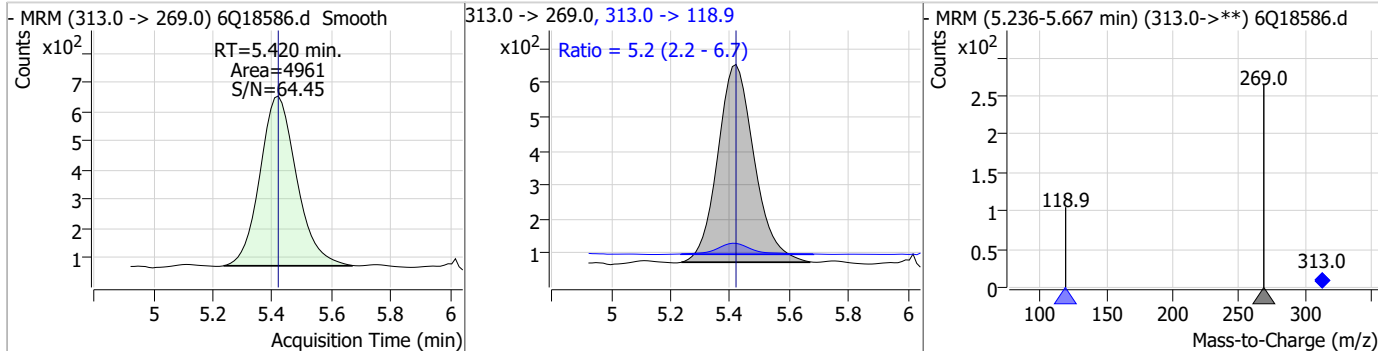
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.20	5.34	0.00	1603	298.7 -> 98.8	38.3	18.1	54.3



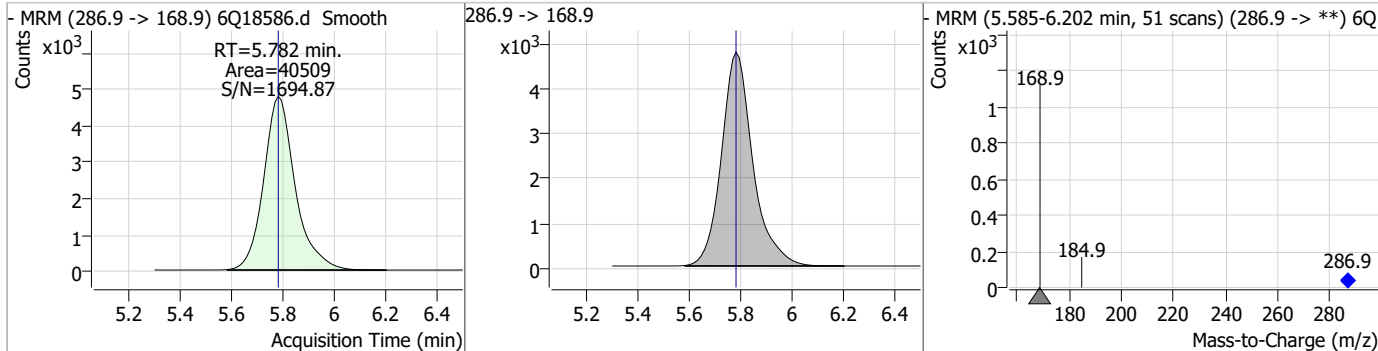
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	5.42	0.00	64804				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.23	5.42	0.00	4961	313.0 -> 118.9	5.2	2.2	6.7



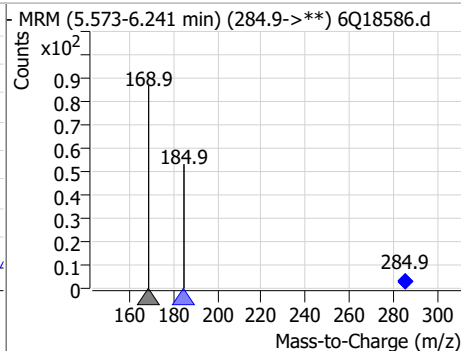
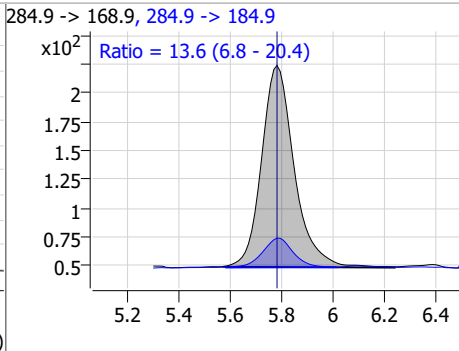
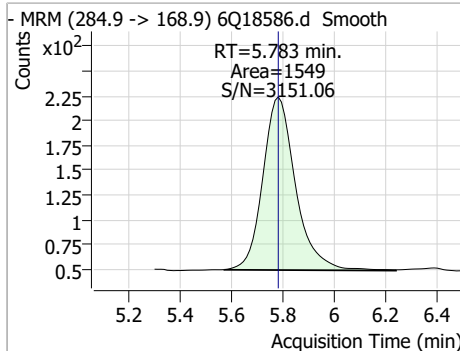
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.23	5.78	0.00	40509				



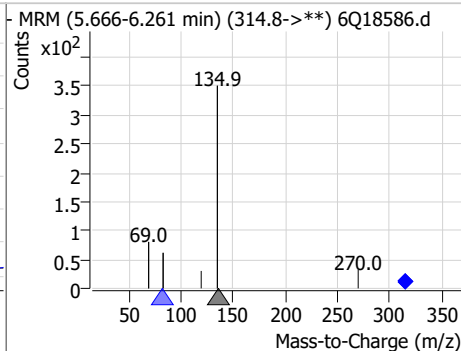
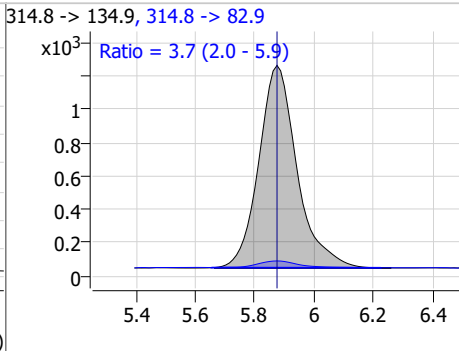
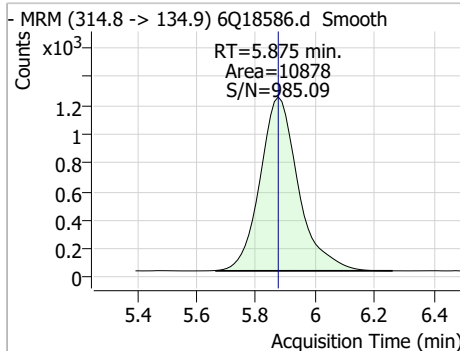
7.7.2
7

Perfluorinated Compounds by LC/MS/MS

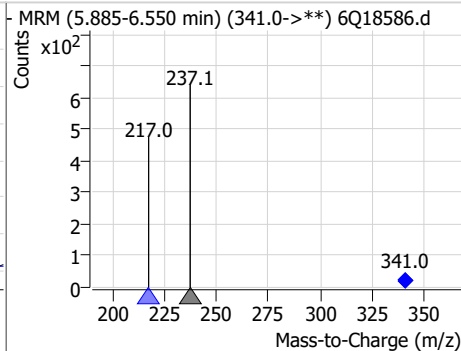
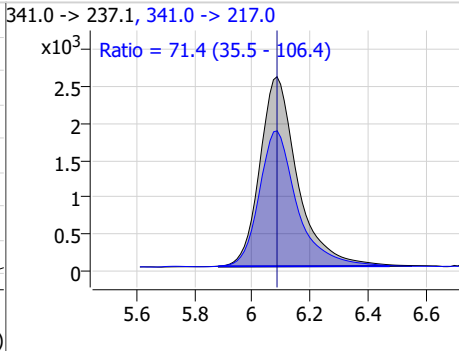
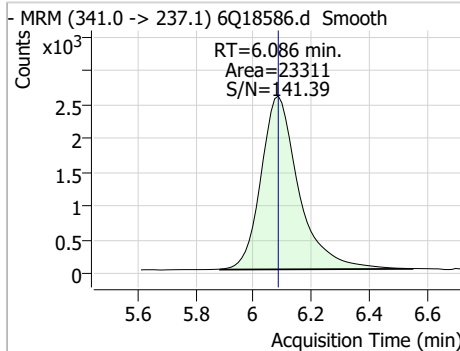
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.45	5.78	0.00	1549	284.9 -> 184.9	13.6	6.8	20.4



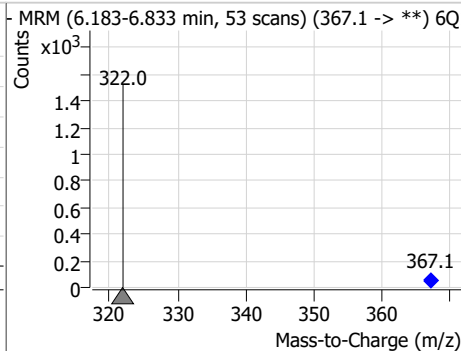
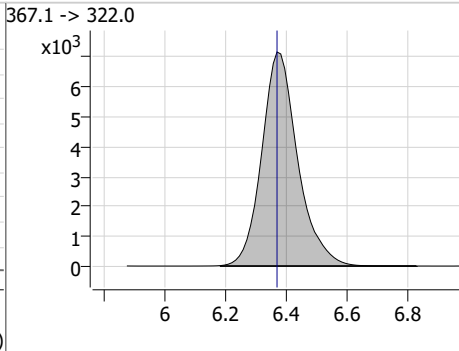
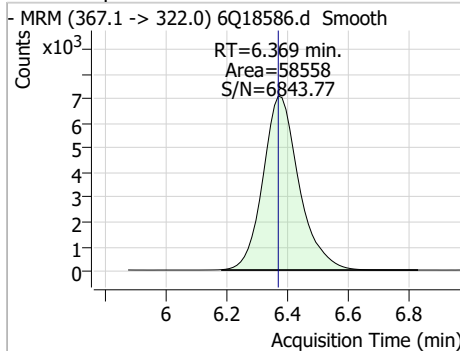
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.39	5.88	0.00	10878	314.8 -> 82.9	3.7	2.0	5.9



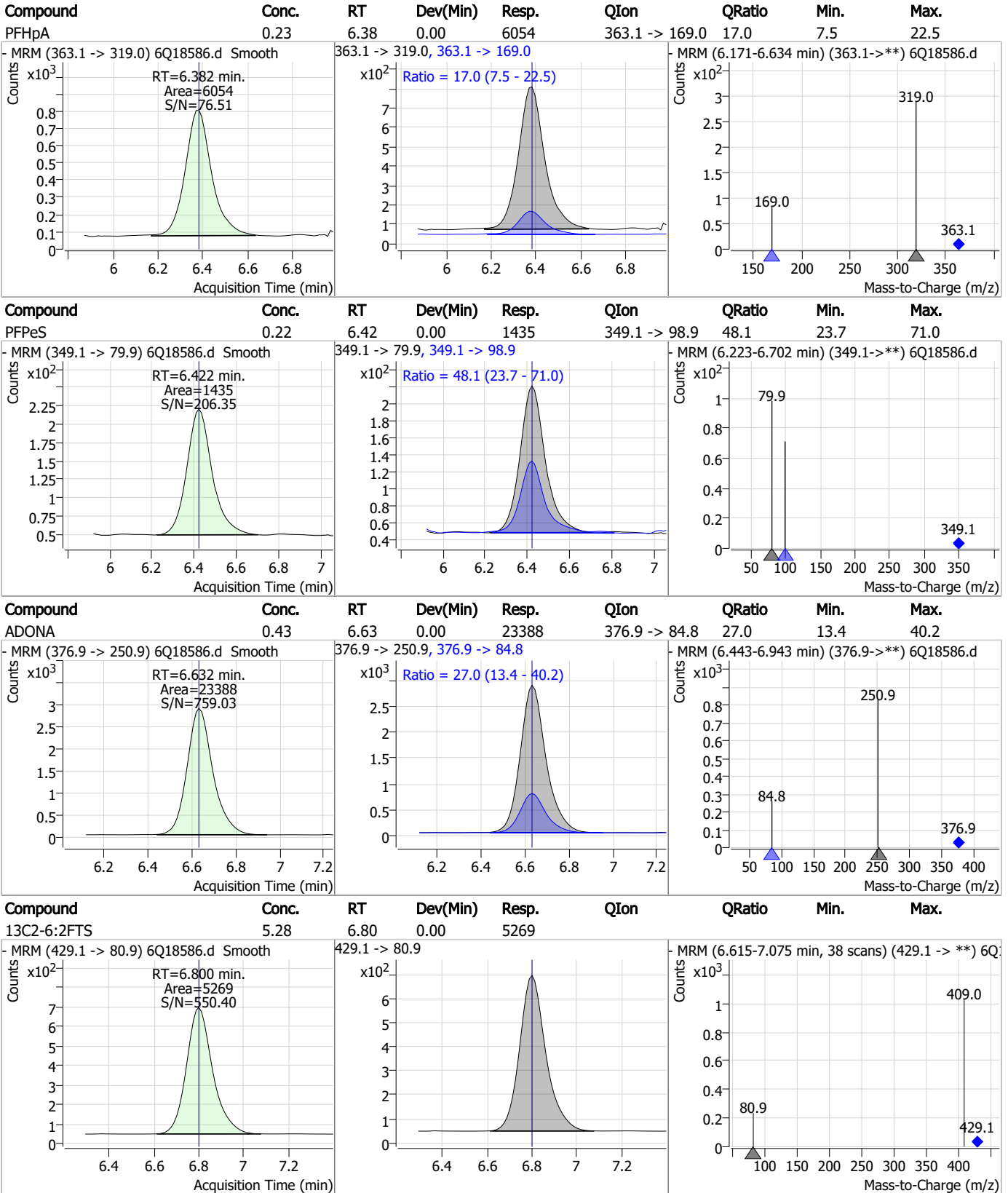
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.96	6.09	0.00	23311	341.0 -> 217.0	71.4	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.48	6.37	0.00	58558	367.1 -> 322.0			



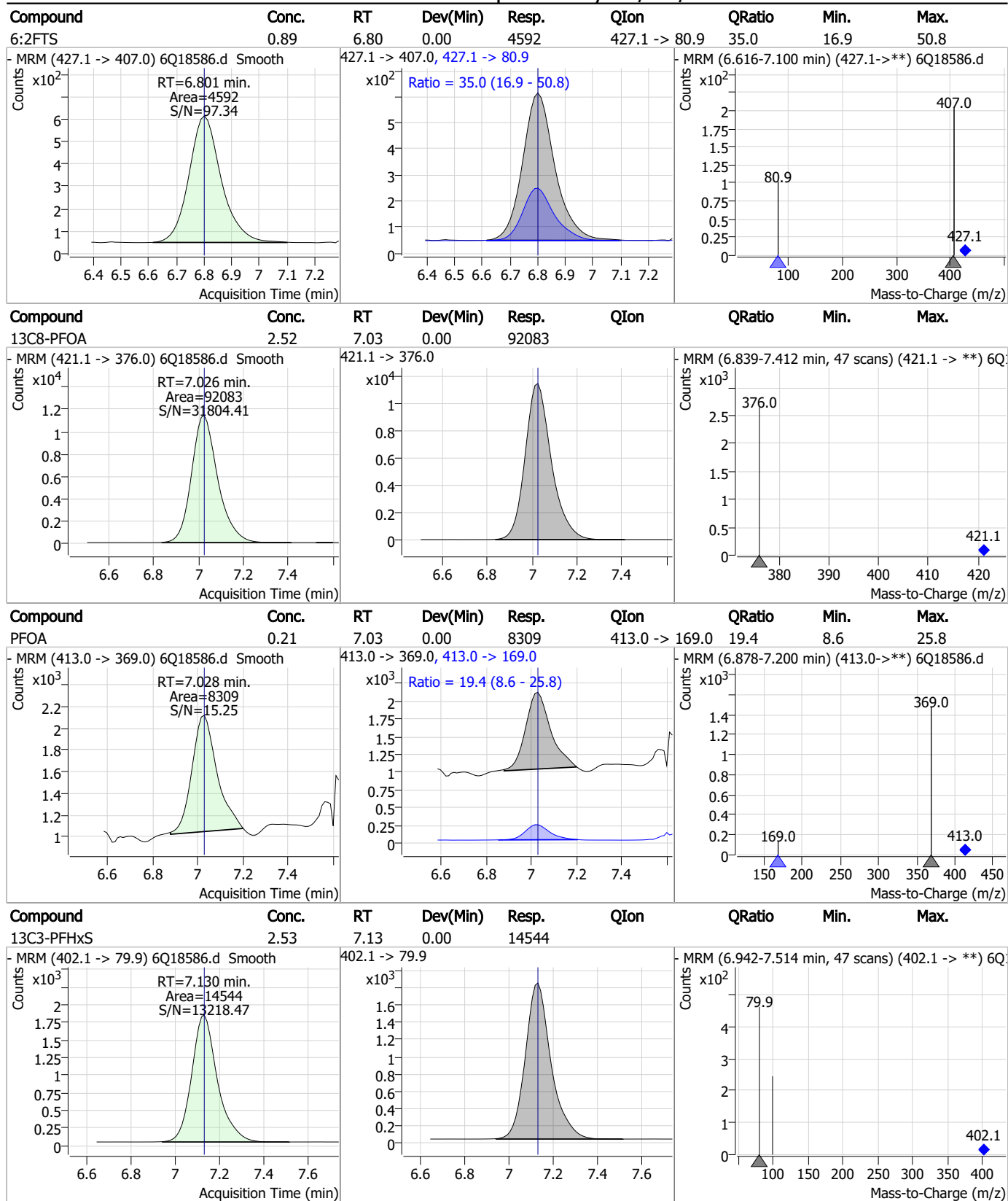
Perfluorinated Compounds by LC/MS/MS



7.7.2

7

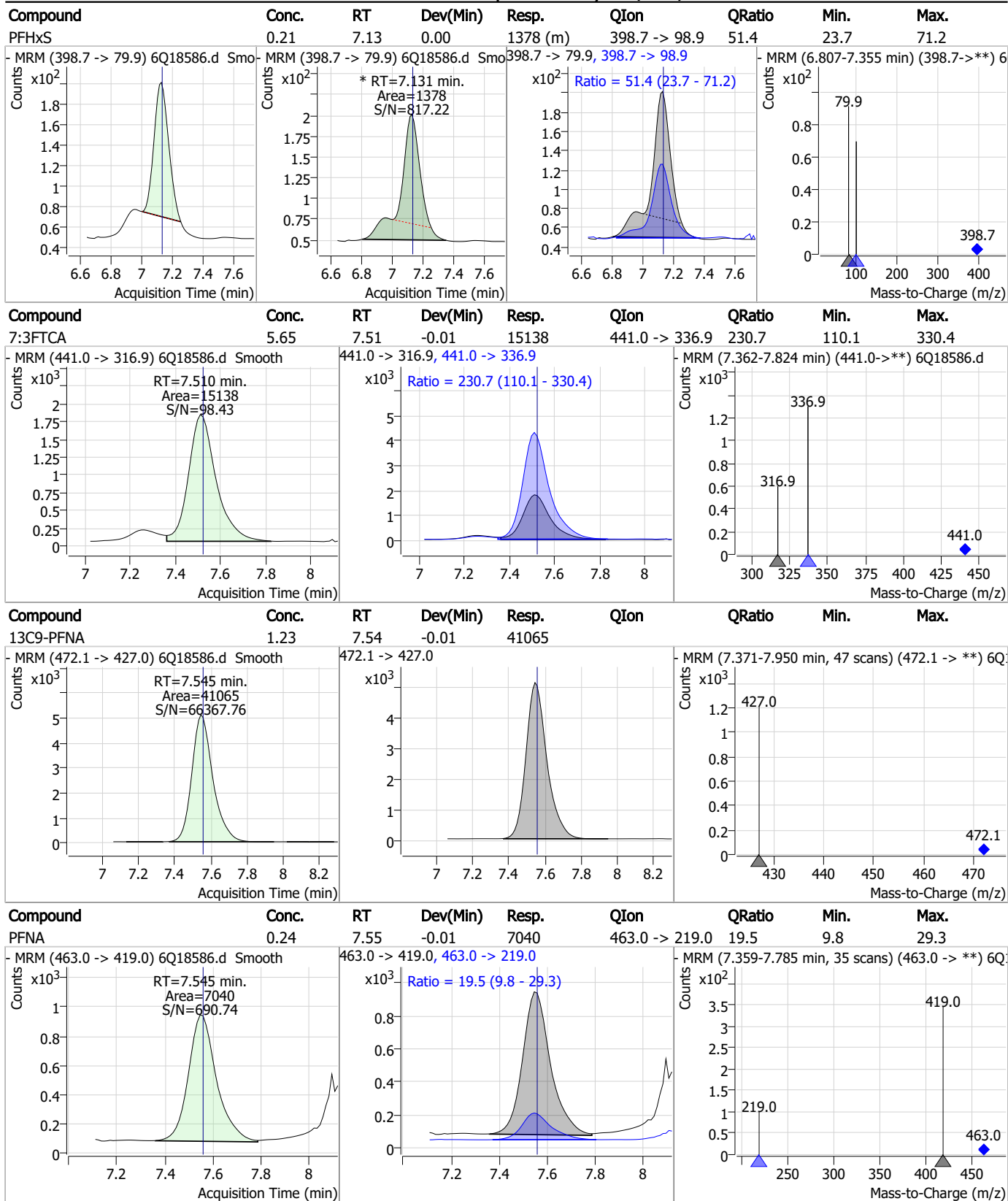
Perfluorinated Compounds by LC/MS/MS



7.7.2
7

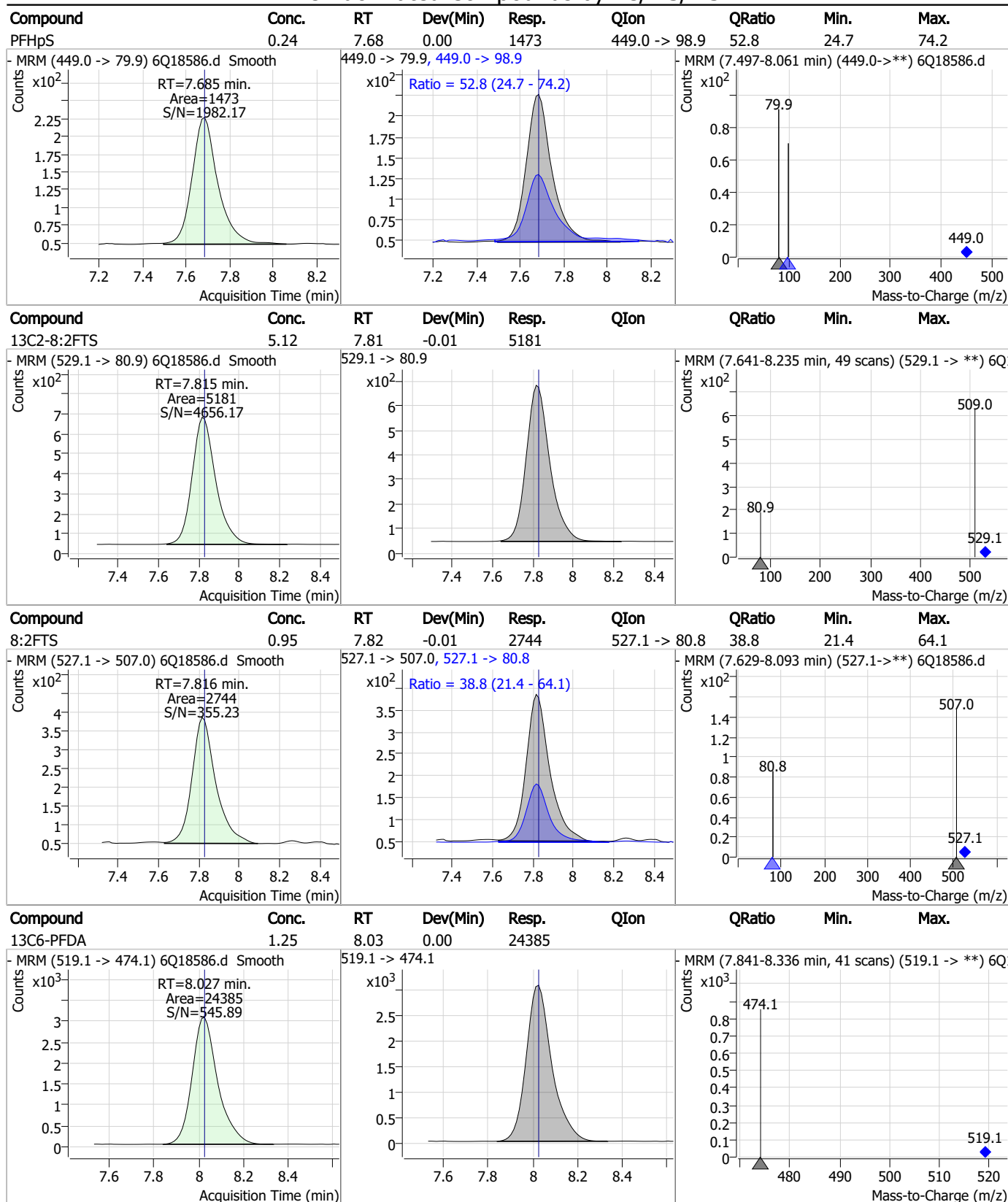


Perfluorinated Compounds by LC/MS/MS



7.7.2
7

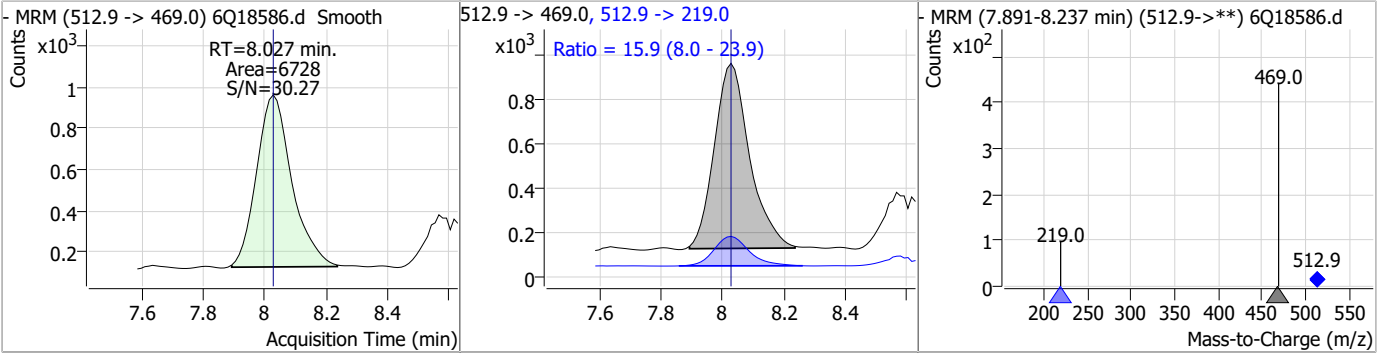
Perfluorinated Compounds by LC/MS/MS



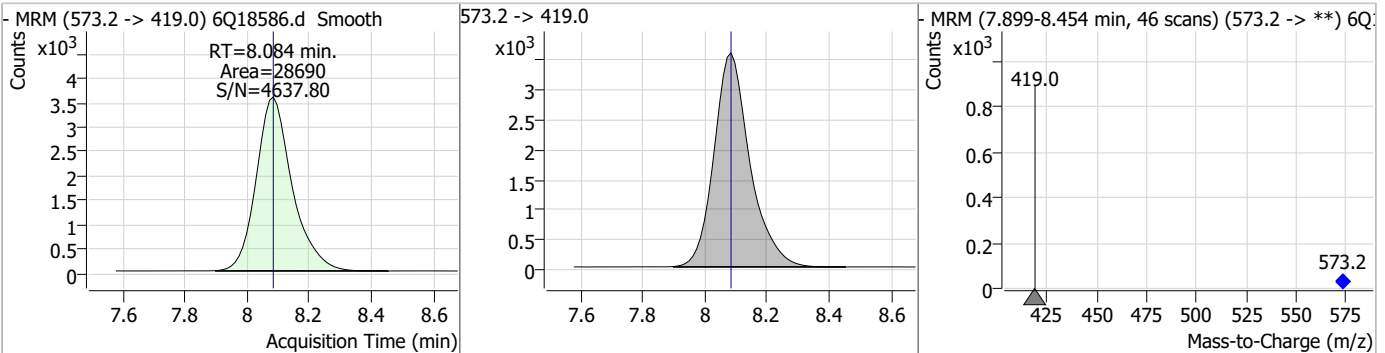
7.7.2
7

Perfluorinated Compounds by LC/MS/MS

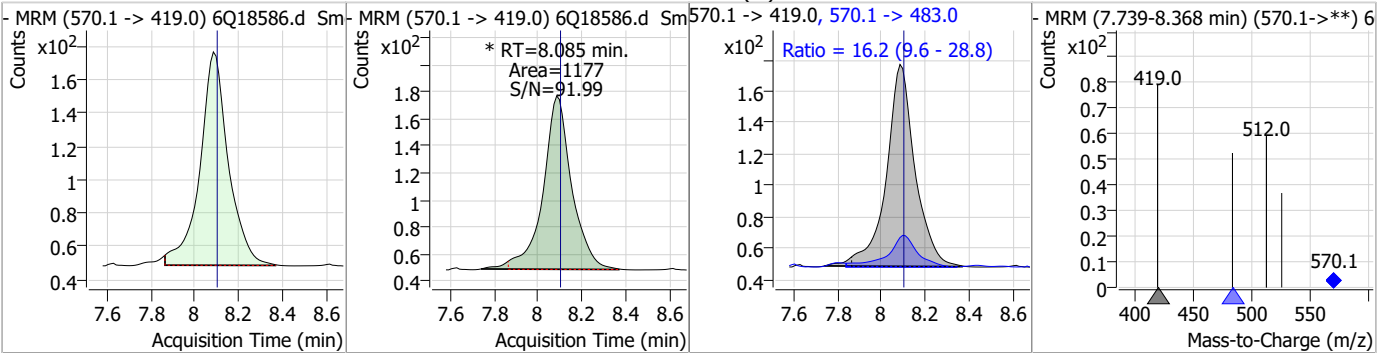
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.24	8.03	0.00	6728	512.9 -> 219.0	15.9	8.0	23.9



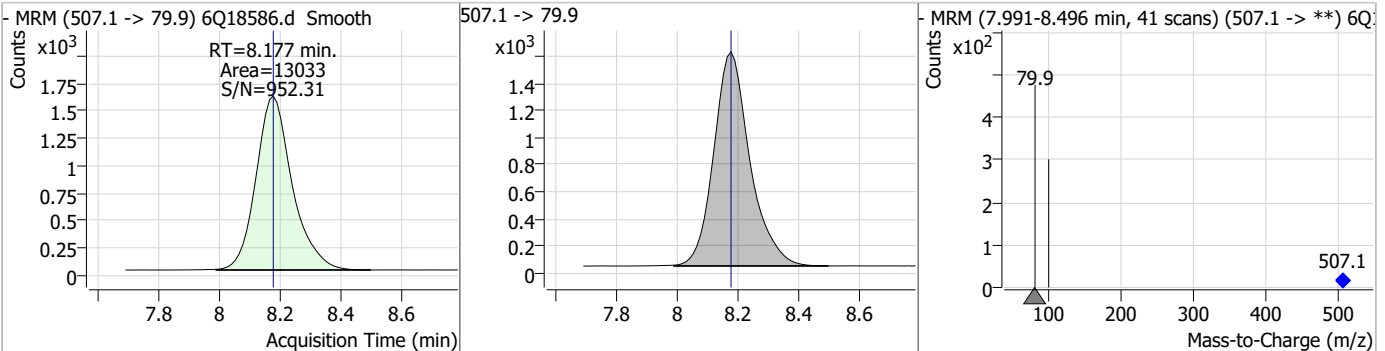
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.02	8.08	0.00	28690				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.20	8.08	-0.01	1177 (m)	570.1 -> 483.0	16.2	9.6	28.8

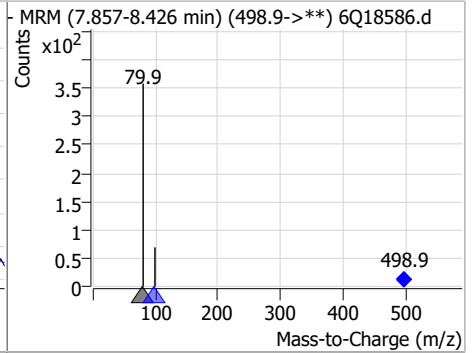
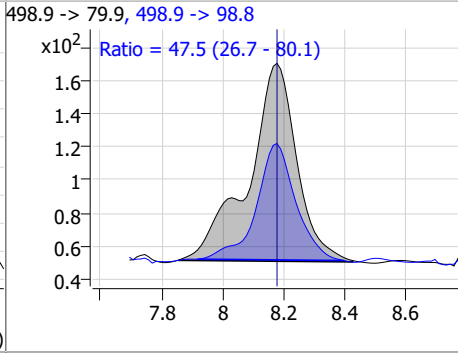
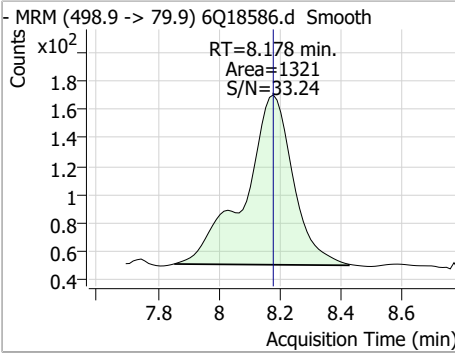


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.30	8.18	0.00	13033				

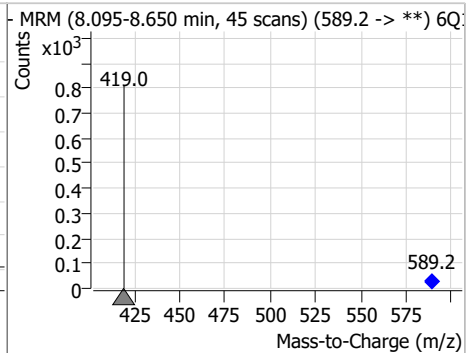
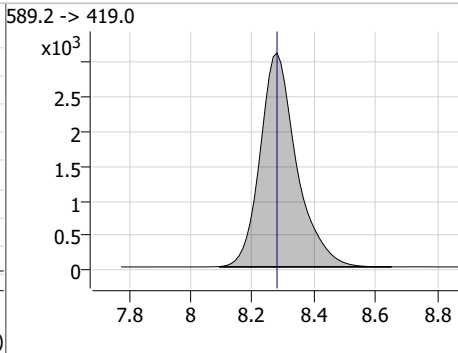
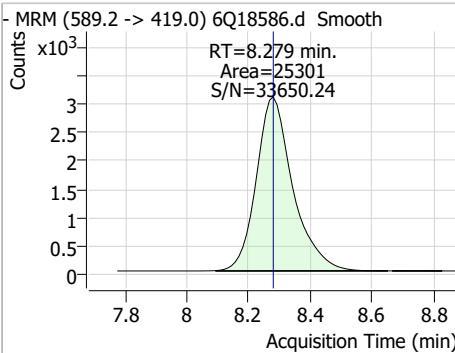


Perfluorinated Compounds by LC/MS/MS

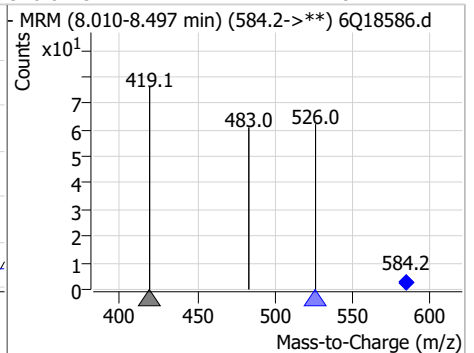
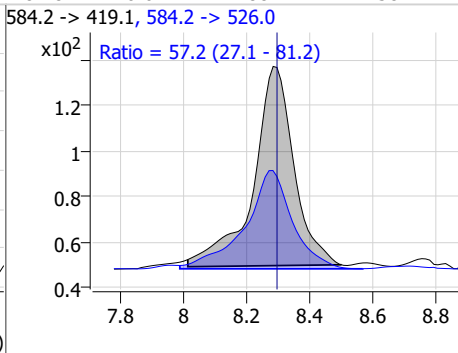
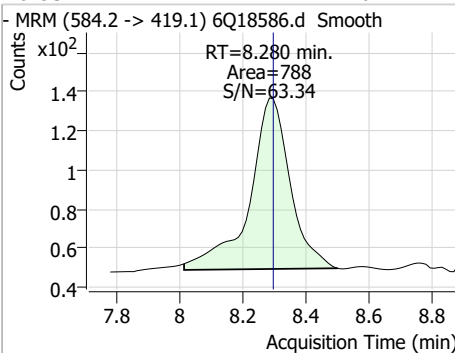
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.22	8.18	0.00	1321	498.9 -> 98.8	47.5	26.7	80.1



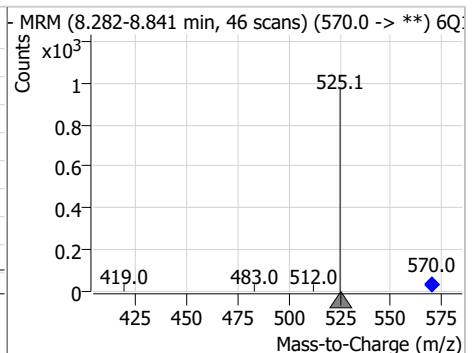
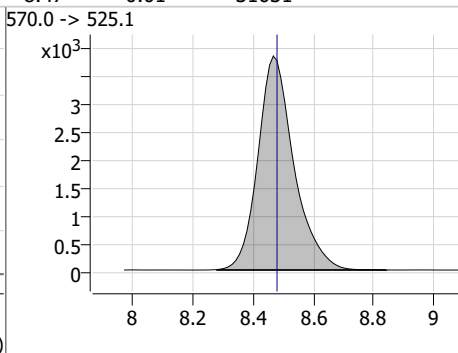
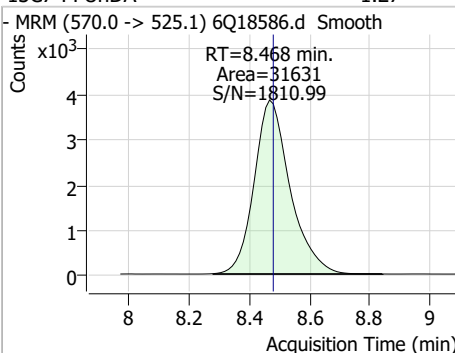
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.87	8.28	0.00	25301				



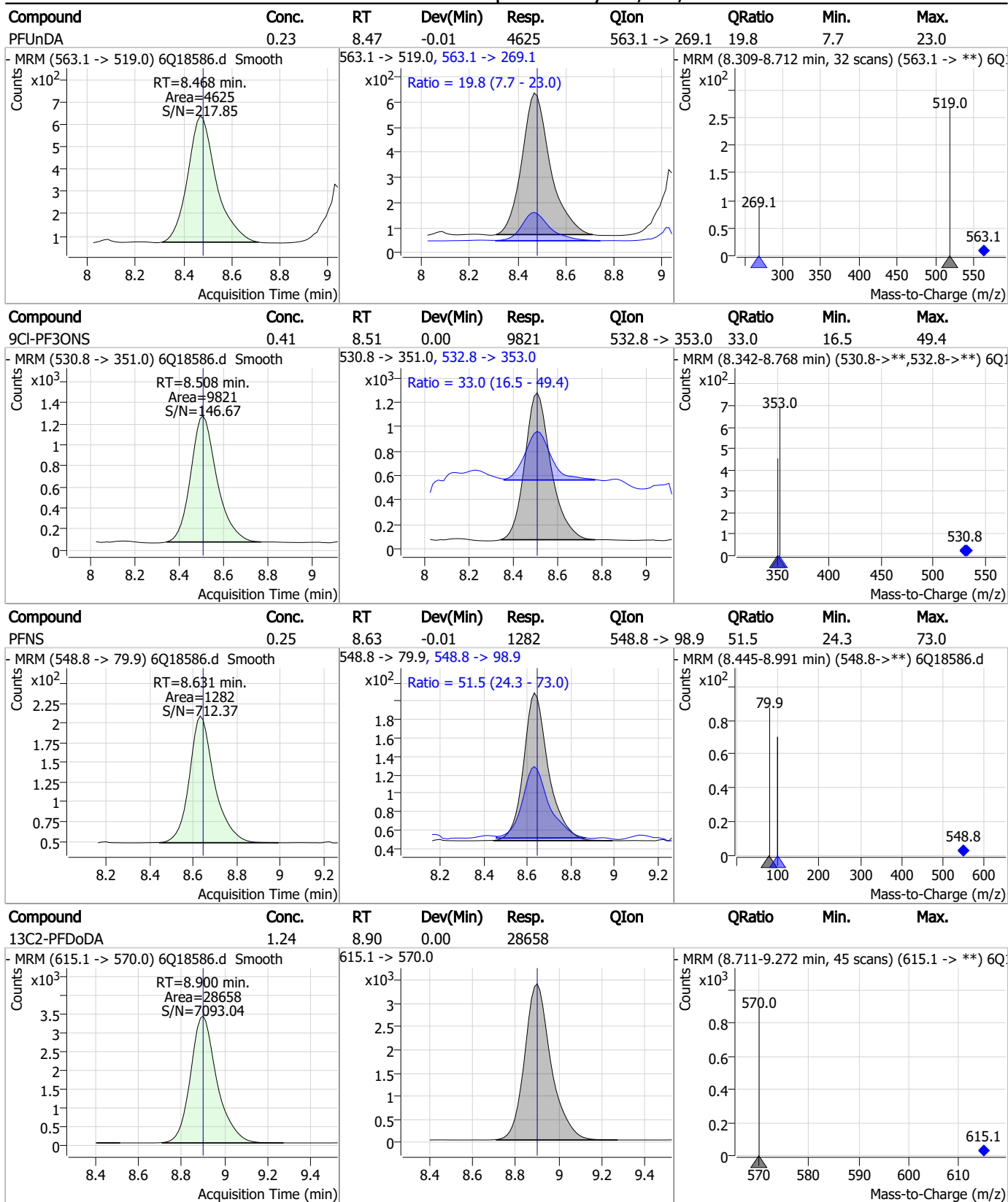
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.24	8.28	-0.01	788	584.2 -> 526.0	57.2	27.1	81.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	8.47	-0.01	31631				

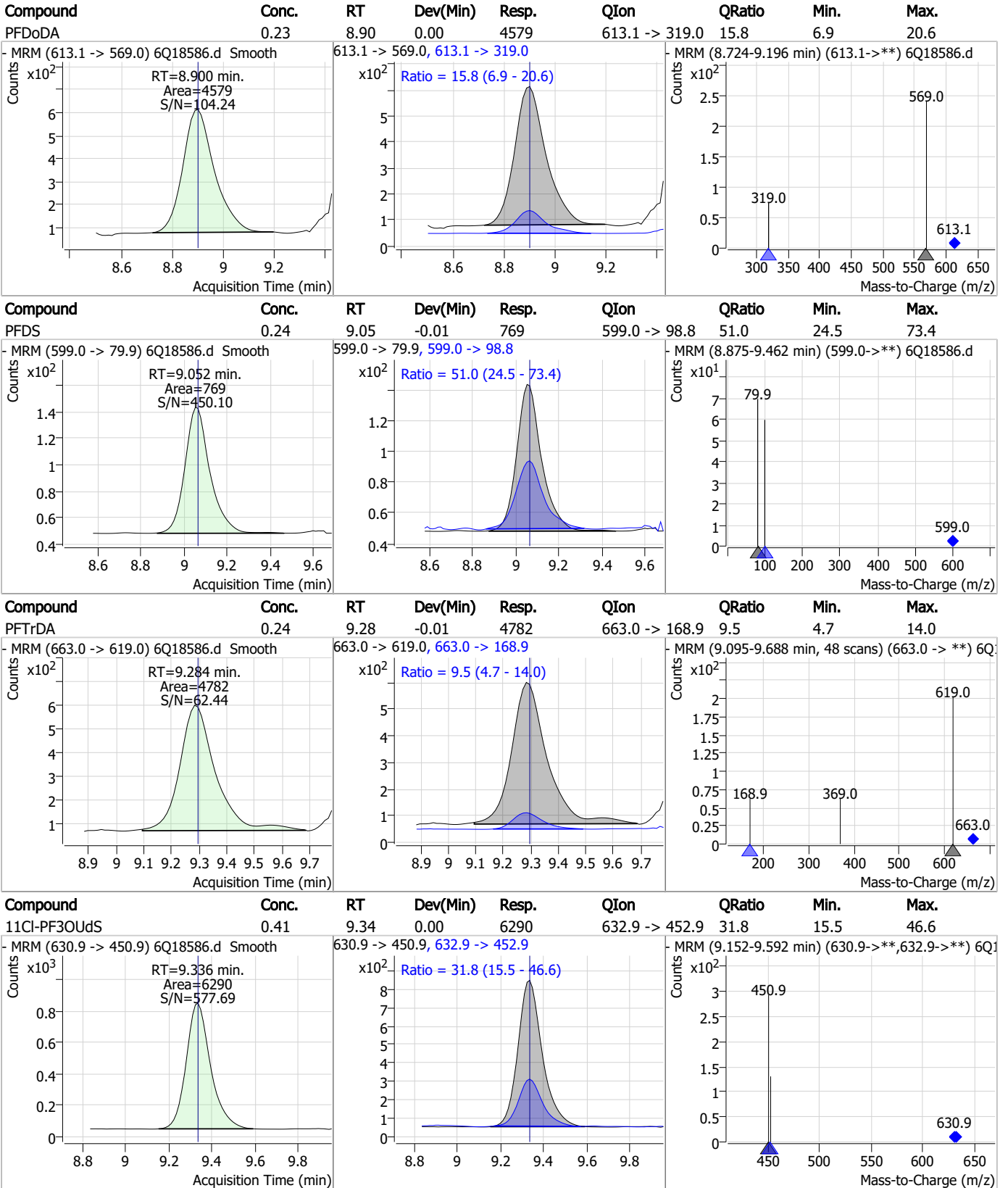


Perfluorinated Compounds by LC/MS/MS

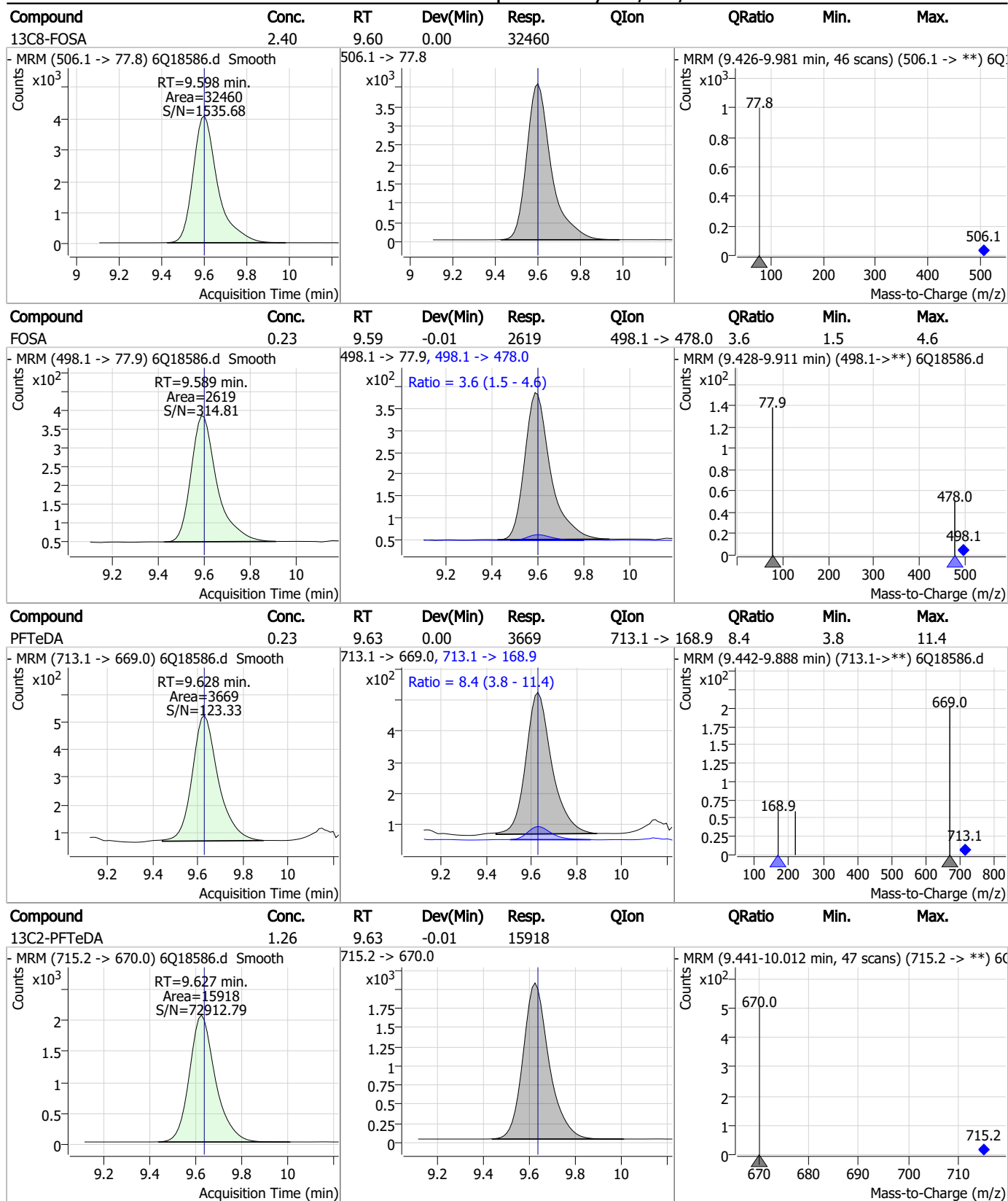


7.7.2
7

Perfluorinated Compounds by LC/MS/MS



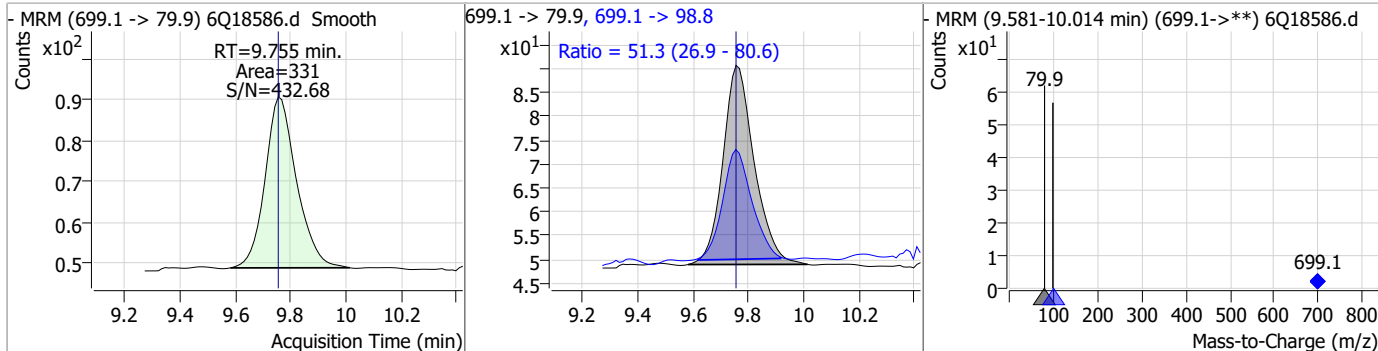
Perfluorinated Compounds by LC/MS/MS



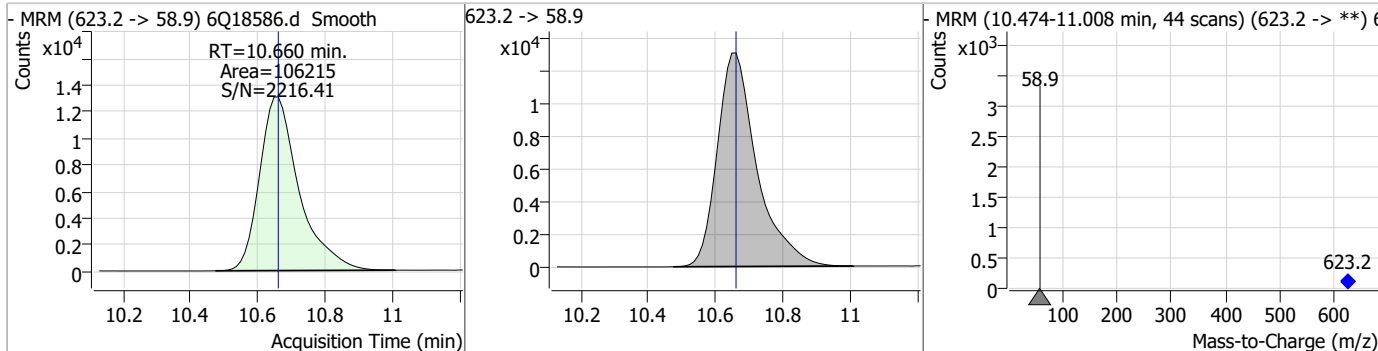
7.7.2
7

Perfluorinated Compounds by LC/MS/MS

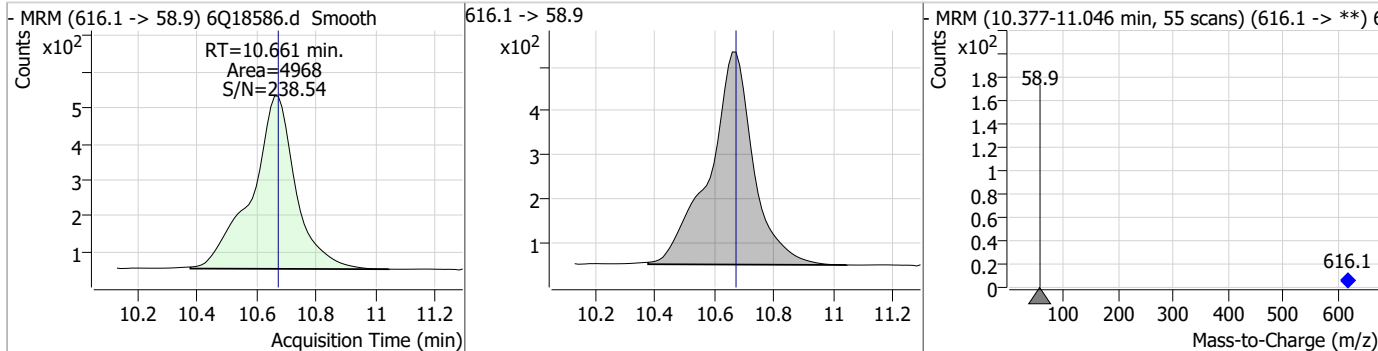
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.23	9.75	0.00	331	699.1 -> 98.8	51.3	26.9	80.6



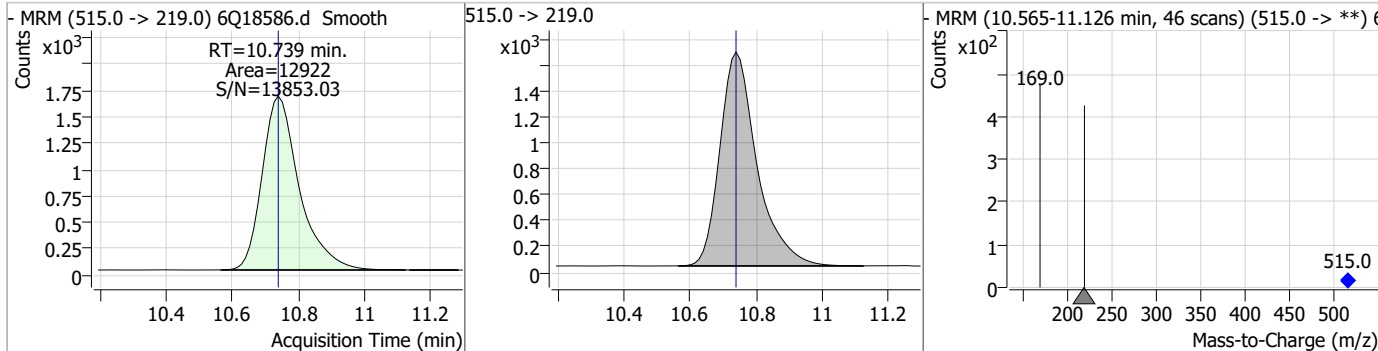
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.88	10.66	0.00	106215				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.18	10.66	-0.01	4968				

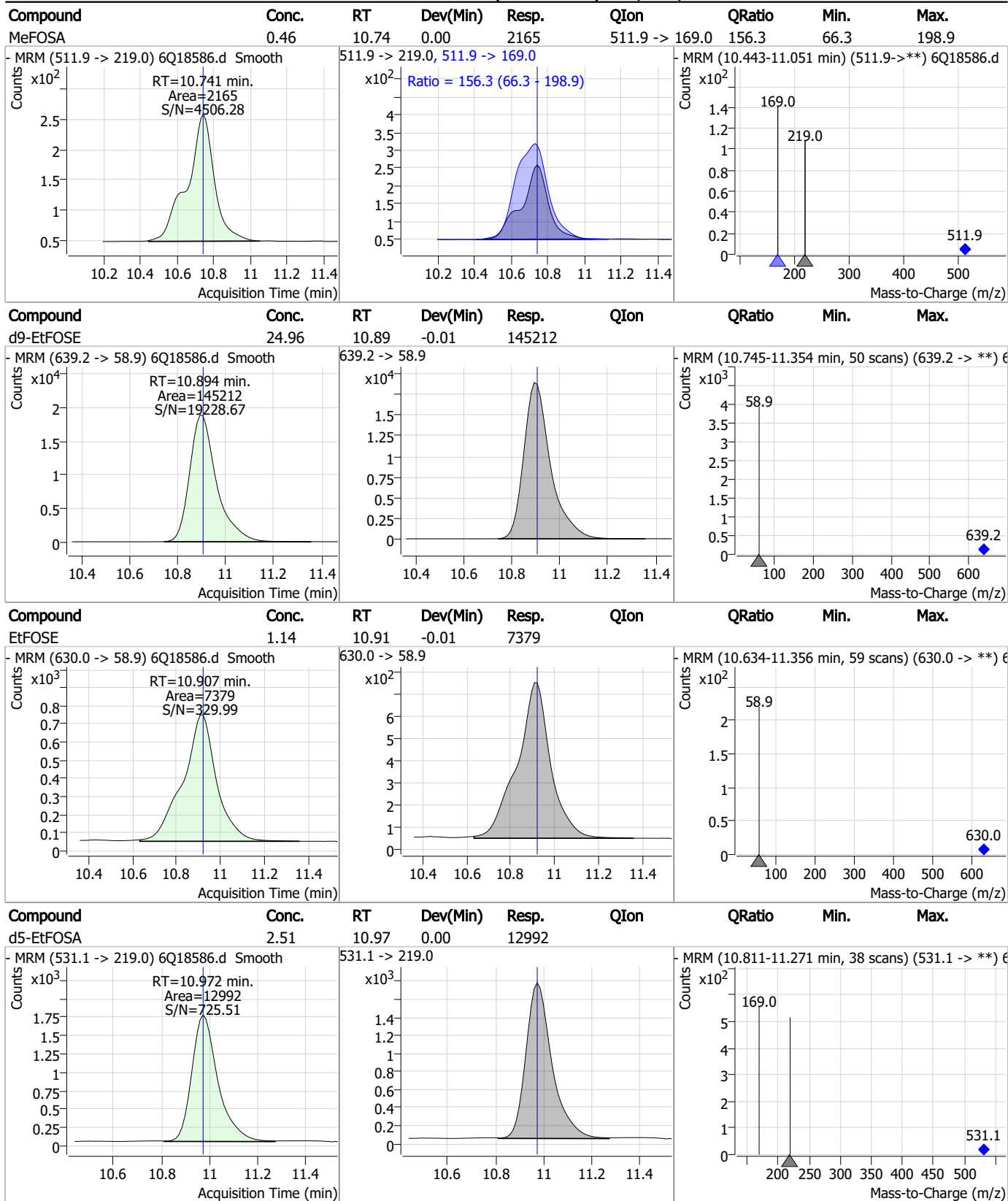


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.36	10.74	0.00	12922				



7.7.2
7

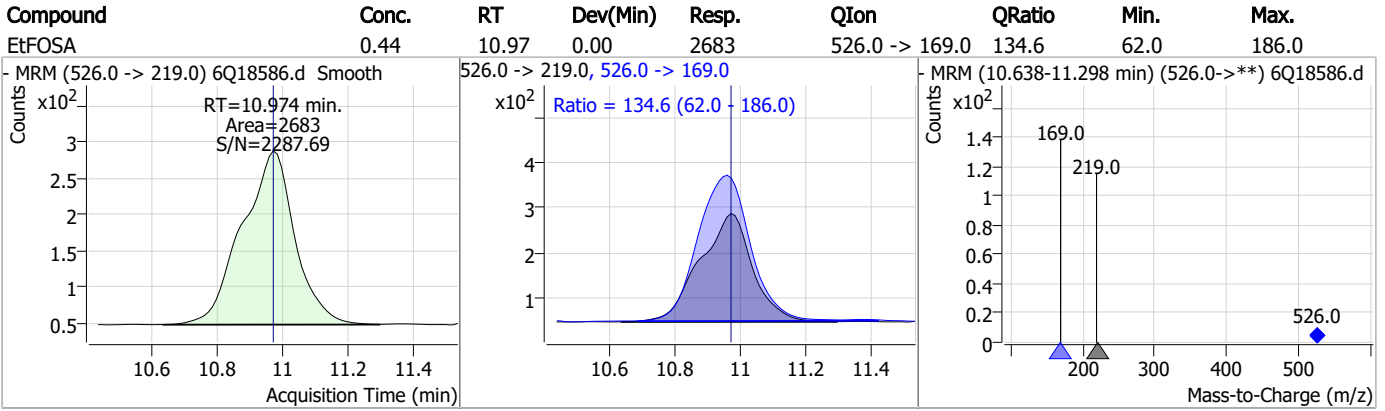
Perfluorinated Compounds by LC/MS/MS



7.7.2
7



Perfluorinated Compounds by LC/MS/MS



7.7.2

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18586.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:16 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
MeFOSAA	2355-31-9		8.09	Split peak

7.7.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18587.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:30:51 PM
 Sample Name : ic279-2
 Vial : P1-A3
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187848	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	63117	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	69879	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	64325	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	96705	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	45166	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	26931	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	34115	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31844	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16834	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35306	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24913	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15879	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14878	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3997	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5904	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5927	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	30777	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	42658	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26923	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	119651	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	150276	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13212	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13947	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18570	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	78663	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11055	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	104993	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	36190	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	53128	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	64575	2.50 µg/L	-0.012

System Monitoring Compounds

13C2-4:2FTS	5.093	329.1 -> 80.9	3997	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5904	5.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5927	5.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31844	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16834	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C3-PFBS	5.322	302.1 -> 79.9	24913	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	15879	2.57 µg/L	0.000

7.7.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C4-PFBA	2.822	216.8 -> 171.9	187848	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	64325	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFHxA	5.417	318.0 -> 273.0	69879	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFPeA	4.210	268.3 -> 223.0	63117	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C6-PFDA	8.014	519.1 -> 474.1	26931	1.27 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	34115	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-FOSA	9.598	506.1 -> 77.8	35306	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOA	7.026	421.1 -> 376.0	96705	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-PFOS	8.177	507.1 -> 79.9	14878	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C9-PFNA	7.545	472.1 -> 427.0	45166	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30777	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42658	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	13947	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26923	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	119651	25.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d9-EtFOSE	10.894	639.2 -> 58.9	150276	24.63 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	13212	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	8300	1.43 µg/L	100
		327.1 -> 80.9	3305		
6:2FTS	6.801	427.1 -> 407.0	8991	1.55 µg/L	96
		427.1 -> 80.9	2856		
8:2FTS	7.816	527.1 -> 507.0	4819	1.46 µg/L	100
		527.1 -> 80.8	2059		
EtFOSAA	8.280	584.2 -> 419.1	1265	0.37 µg/L	72
		584.2 -> 526.0	940		
FOSA	9.589	498.1 -> 77.9	5069	0.41 µg/L	99
		498.1 -> 478.0	143		
MeFOSAA	8.085	570.1 -> 419.0	2704	0.43 µg/L	96
		570.1 -> 483.0	571		
PFBA	2.818	212.8 -> 168.9	10022	1.61 µg/L	100
PFBS	5.323	298.7 -> 79.9	3011	0.36 µg/L	98
		298.7 -> 98.8	1118		
PFDA	8.027	512.9 -> 469.0	12768	0.41 µg/L	94
		512.9 -> 219.0	1732		
PFDODA	8.900	613.1 -> 569.0	8861	0.41 µg/L	97
		613.1 -> 319.0	1333		
PFDS	9.052	599.0 -> 79.9	1548	0.42 µg/L	93

7.7.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	679			
PFHpA	6.370	363.1 -> 319.0	11262	0.40	µg/L	94
		363.1 -> 169.0	1971			
PFHpS	7.685	449.0 -> 79.9	2874	0.40	µg/L	90
		449.0 -> 98.9	1232			
PFHxA	5.407	313.0 -> 269.0	9354	0.40	µg/L	99
		313.0 -> 118.9	466			
PFHxS	7.119	398.7 -> 79.9	2706	0.38	µg/L	m 95
		398.7 -> 98.9	1380			
PFNA	7.545	463.0 -> 419.0	12632	0.39	µg/L	98
		463.0 -> 219.0	2580			
PFNS	8.631	548.8 -> 79.9	2254	0.38	µg/L	85
		548.8 -> 98.9	1334			
PFOA	7.015	413.0 -> 369.0	16855	0.41	µg/L	96
		413.0 -> 169.0	3211			
PFOS	8.166	498.9 -> 79.9	2444	0.36	µg/L	m 99
		498.9 -> 98.8	1293			
PFPeA	4.212	263.0 -> 219.0	12188	0.80	µg/L	100
PFPeS	6.410	349.1 -> 79.9	2857	0.40	µg/L	95
		349.1 -> 98.9	1264			
PFTeDA	9.628	713.1 -> 669.0	6383	0.39	µg/L	93
		713.1 -> 168.9	644			
PFTrDA	9.284	663.0 -> 619.0	8810	0.40	µg/L	96
		663.0 -> 168.9	959			
PFUnDA	8.468	563.1 -> 519.0	9113	0.41	µg/L	94
		563.1 -> 269.1	1628			
11CI-PF3OUdS	9.336	630.9 -> 450.9	11999	0.75	µg/L	99
		632.9 -> 452.9	3648			
9CI-PF3ONS	8.508	530.8 -> 351.0	18045	0.72	µg/L	85
		532.8 -> 353.0	7481			
ADONA	6.632	376.9 -> 250.9	42594	0.75	µg/L	99
		376.9 -> 84.8	11674			
HFPO-DA	5.783	284.9 -> 168.9	2876	0.80	µg/L	97
		284.9 -> 184.9	362			
3:3FTCA	3.671	241.0 -> 177.0	1940	2.00	µg/L	99
		241.0 -> 117.0	271			
5:3FTCA	6.086	341.0 -> 237.1	43016	10.19	µg/L	97
		341.0 -> 217.0	31729			
7:3FTCA	7.510	441.0 -> 316.9	29615	10.25	µg/L	97
		441.0 -> 336.9	63812			
EtFOSA	10.974	526.0 -> 219.0	5236	0.85	µg/L	94
		526.0 -> 169.0	6866			
EtFOSE	10.907	630.0 -> 58.9	13675	2.04	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	4316	0.84	µg/L	94
		511.9 -> 169.0	6039			
MeFOSE	10.661	616.1 -> 58.9	9134	1.92	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	659	0.40	µg/L	98
		699.1 -> 98.8	342			
NFDHA	5.288	295.0 -> 201.0	2337	0.82	µg/L	97
		295.0 -> 84.9	599			
PFMBA	4.626	279.0 -> 85.1	8284	0.80	µg/L	100
PFMPA	3.363	229.0 -> 84.9	6426	0.80	µg/L	100
PFEESA	5.875	314.8 -> 134.9	20510	0.69	µg/L	99
		314.8 -> 82.9	704			

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

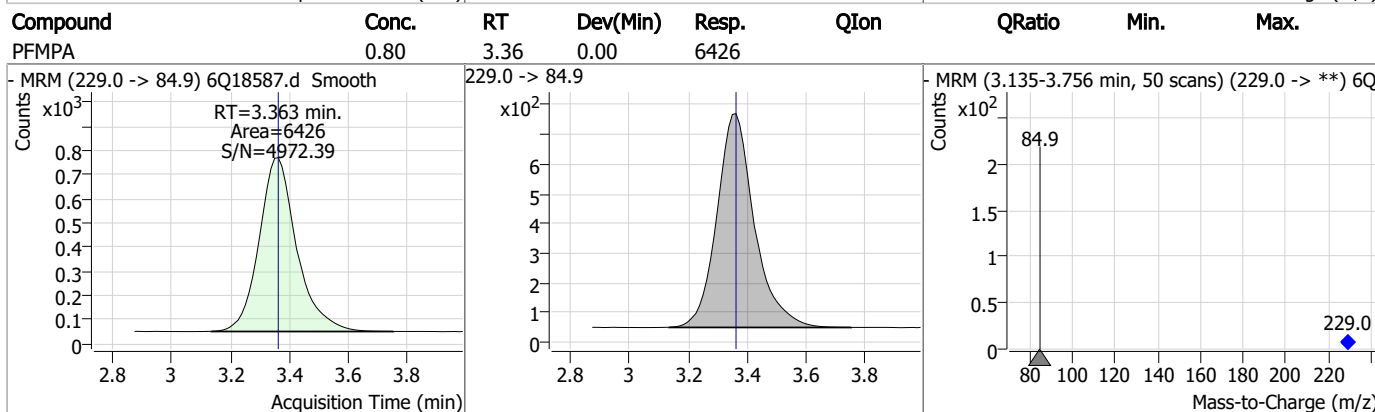
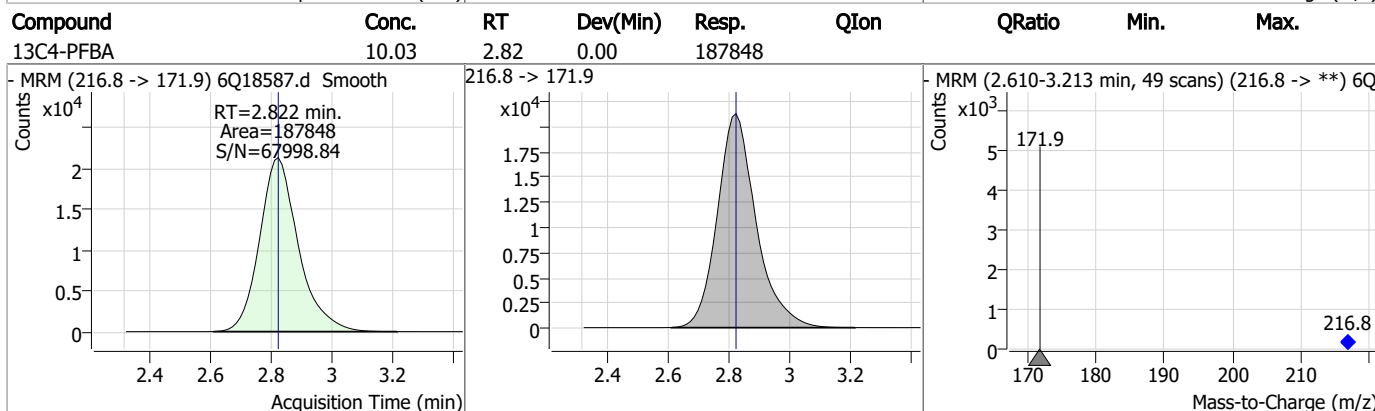
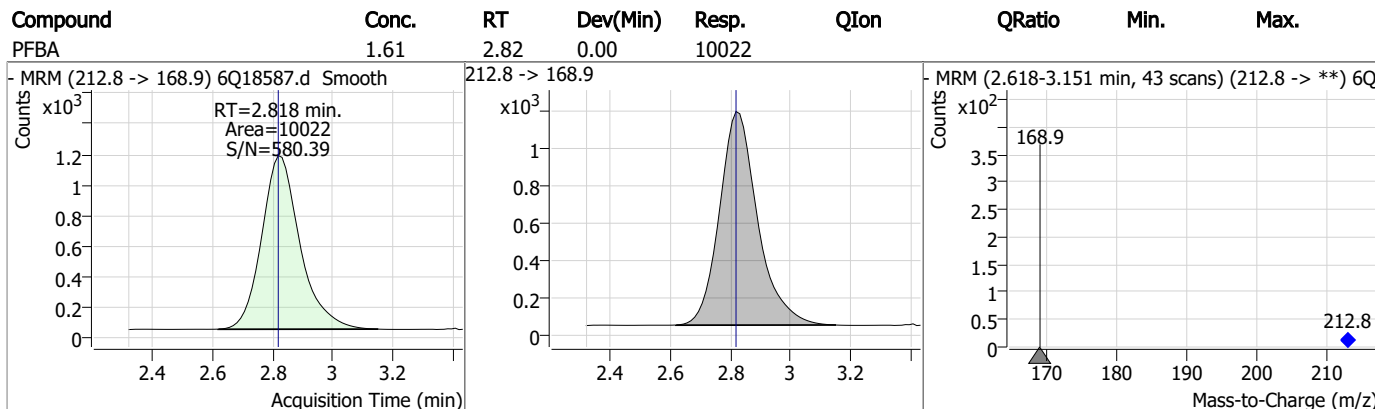
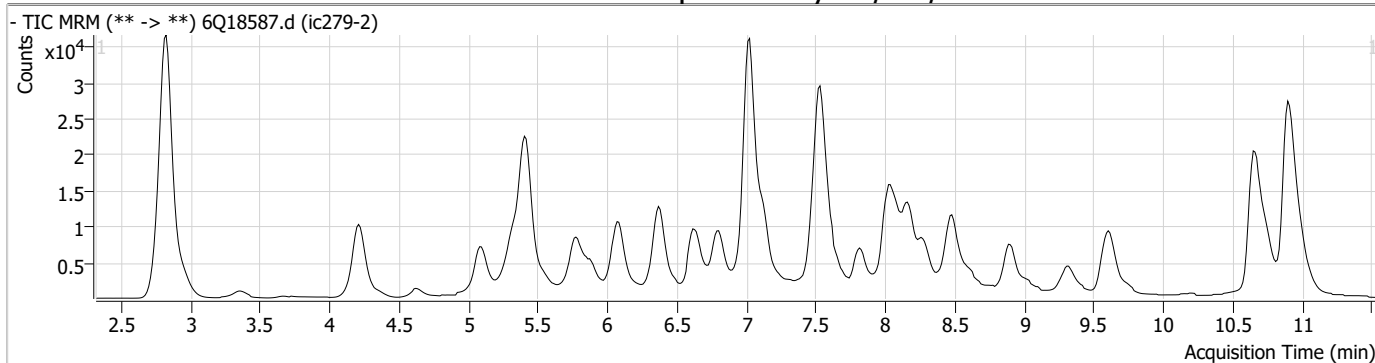
Perfluorinated Compounds by LC/MS/MS

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

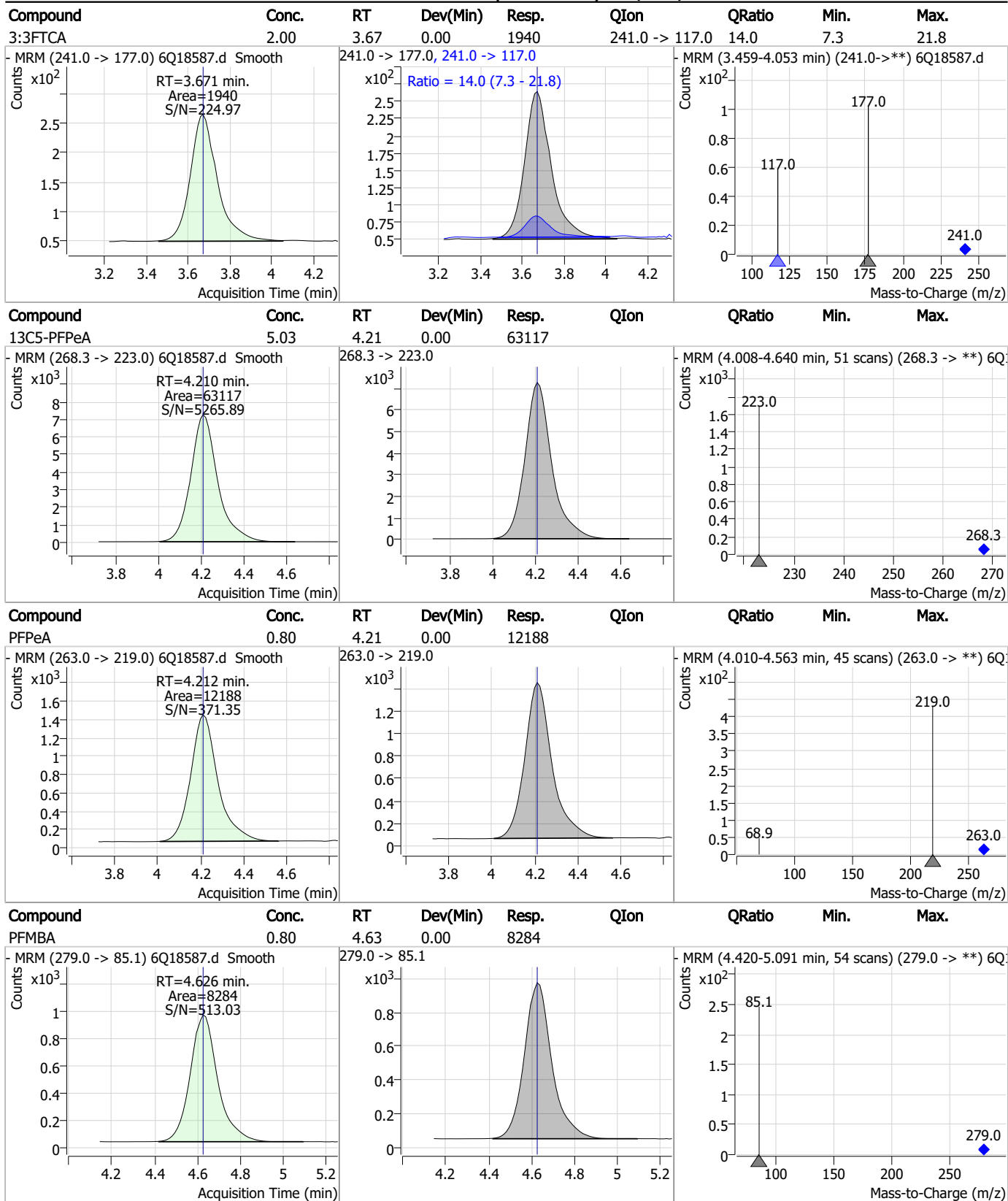
7.7.3
7



Perfluorinated Compounds by LC/MS/MS

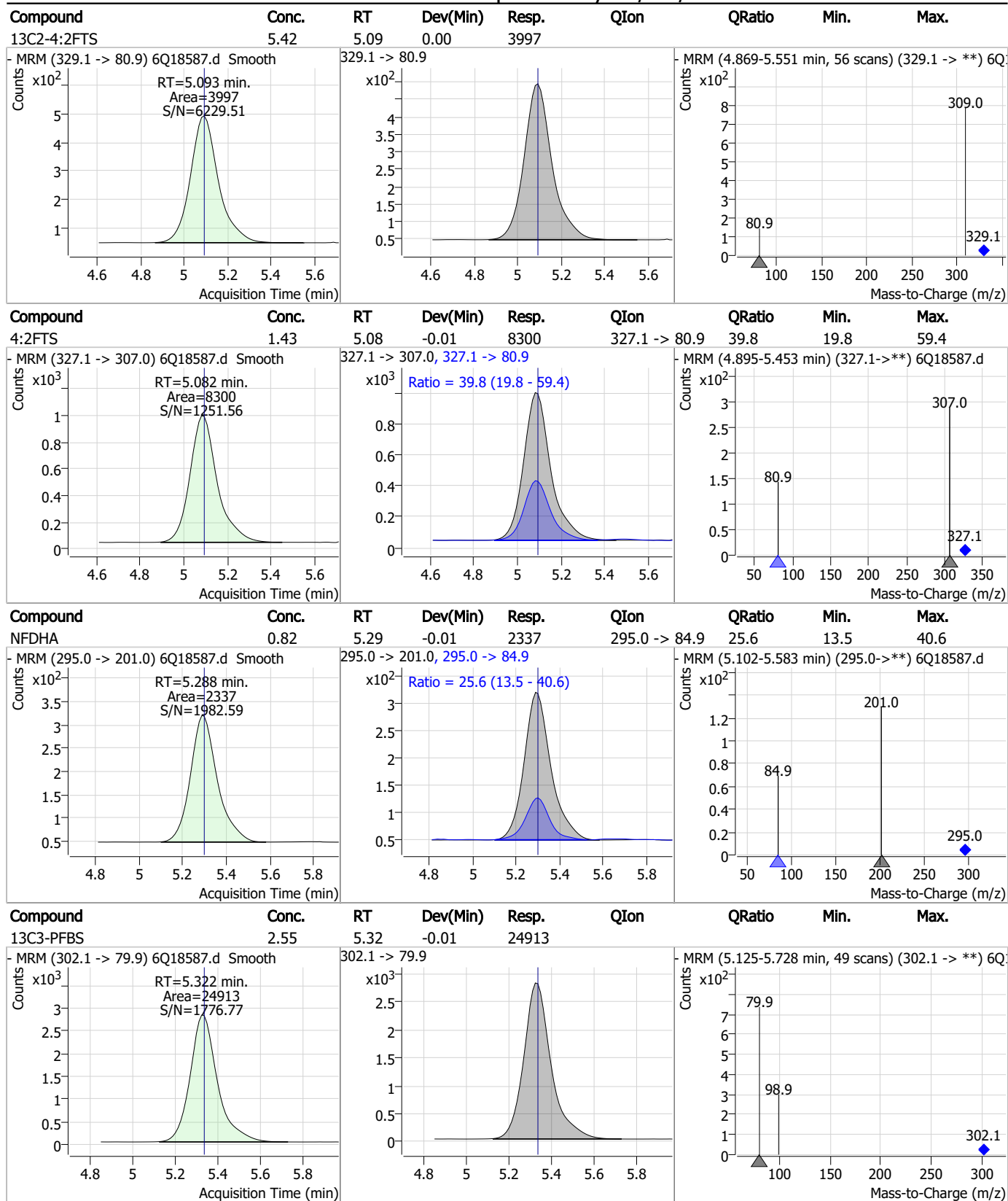


Perfluorinated Compounds by LC/MS/MS



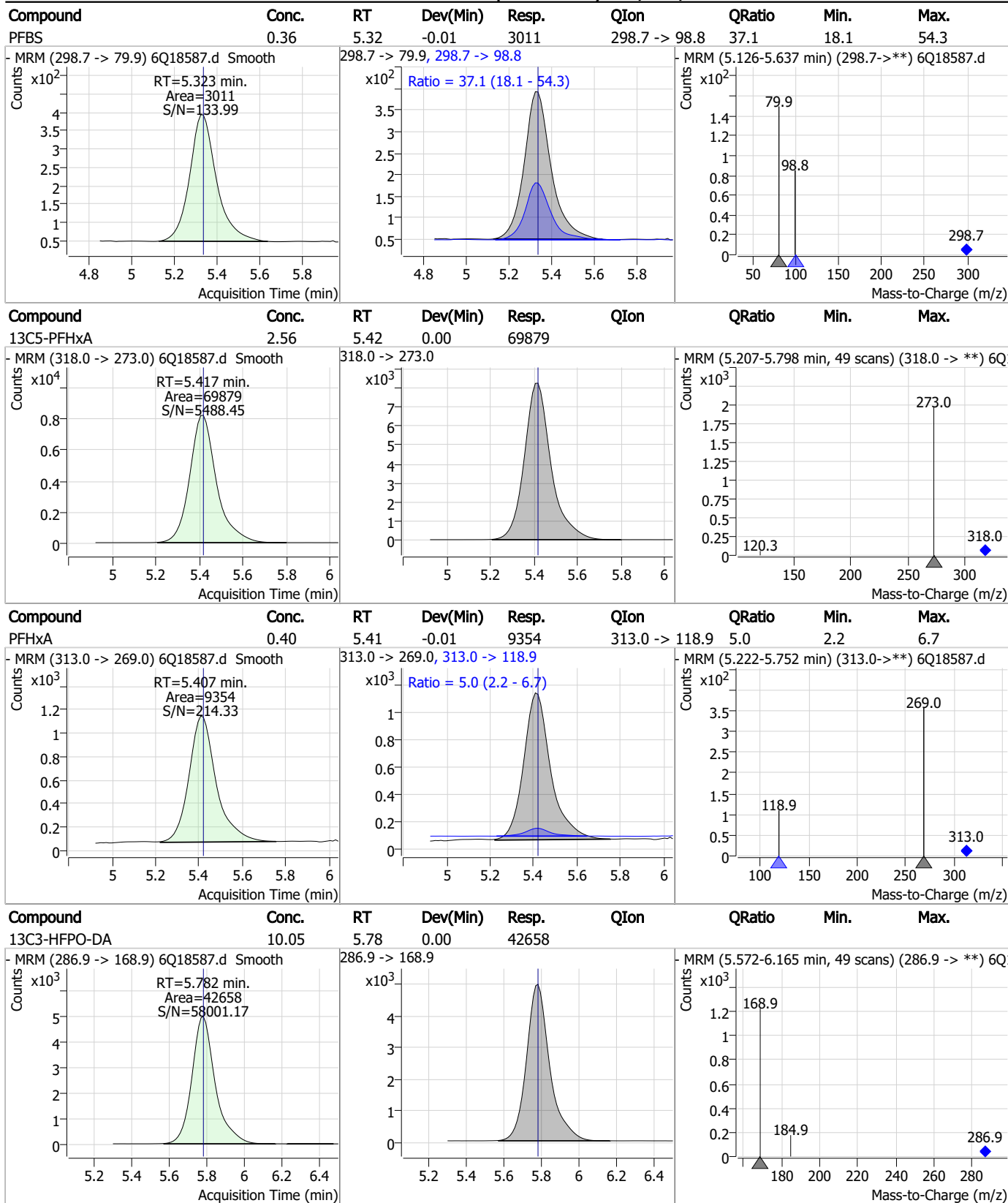
7.7.3
7

Perfluorinated Compounds by LC/MS/MS



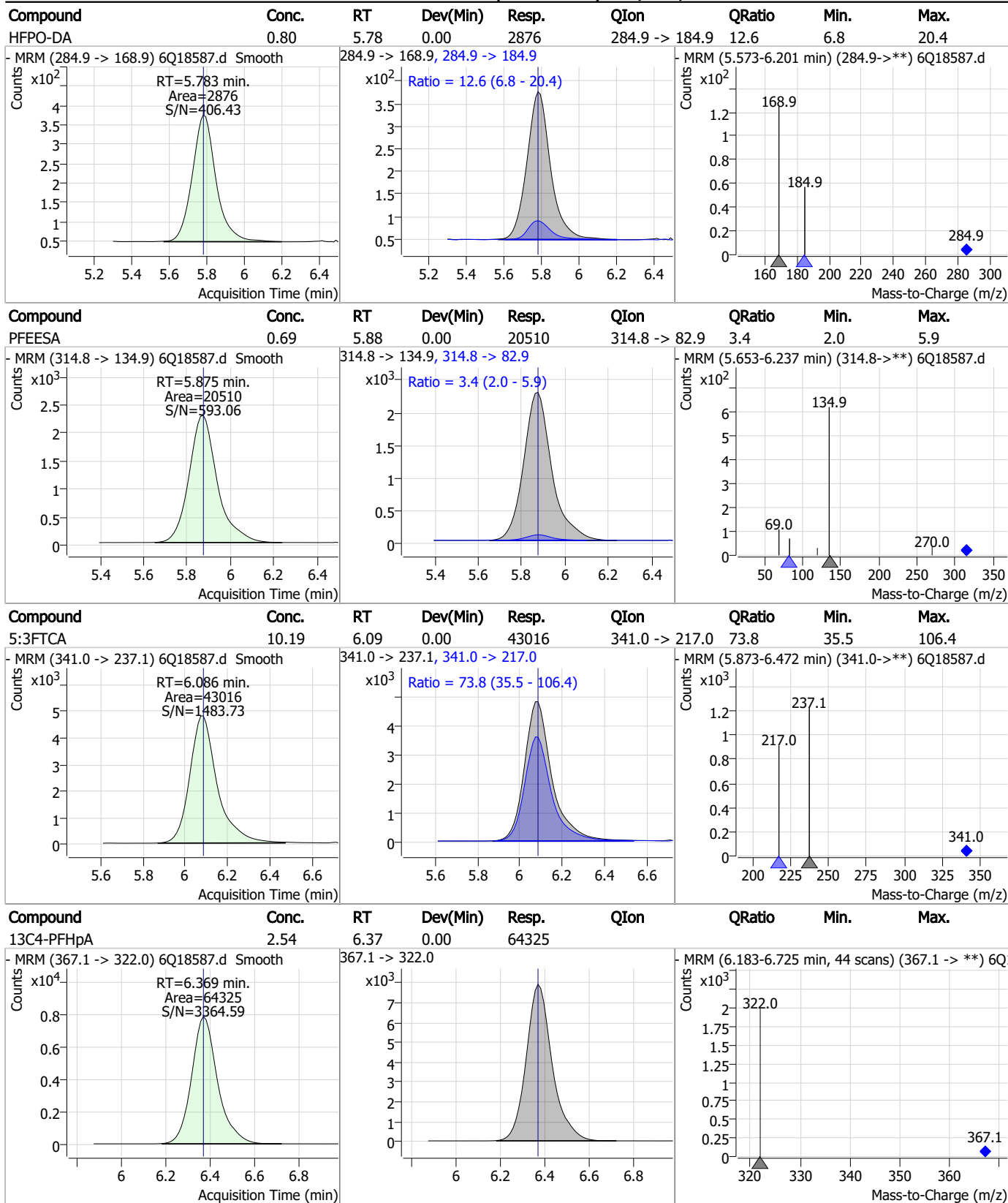
7.7.3
7

Perfluorinated Compounds by LC/MS/MS



7.7.3
7

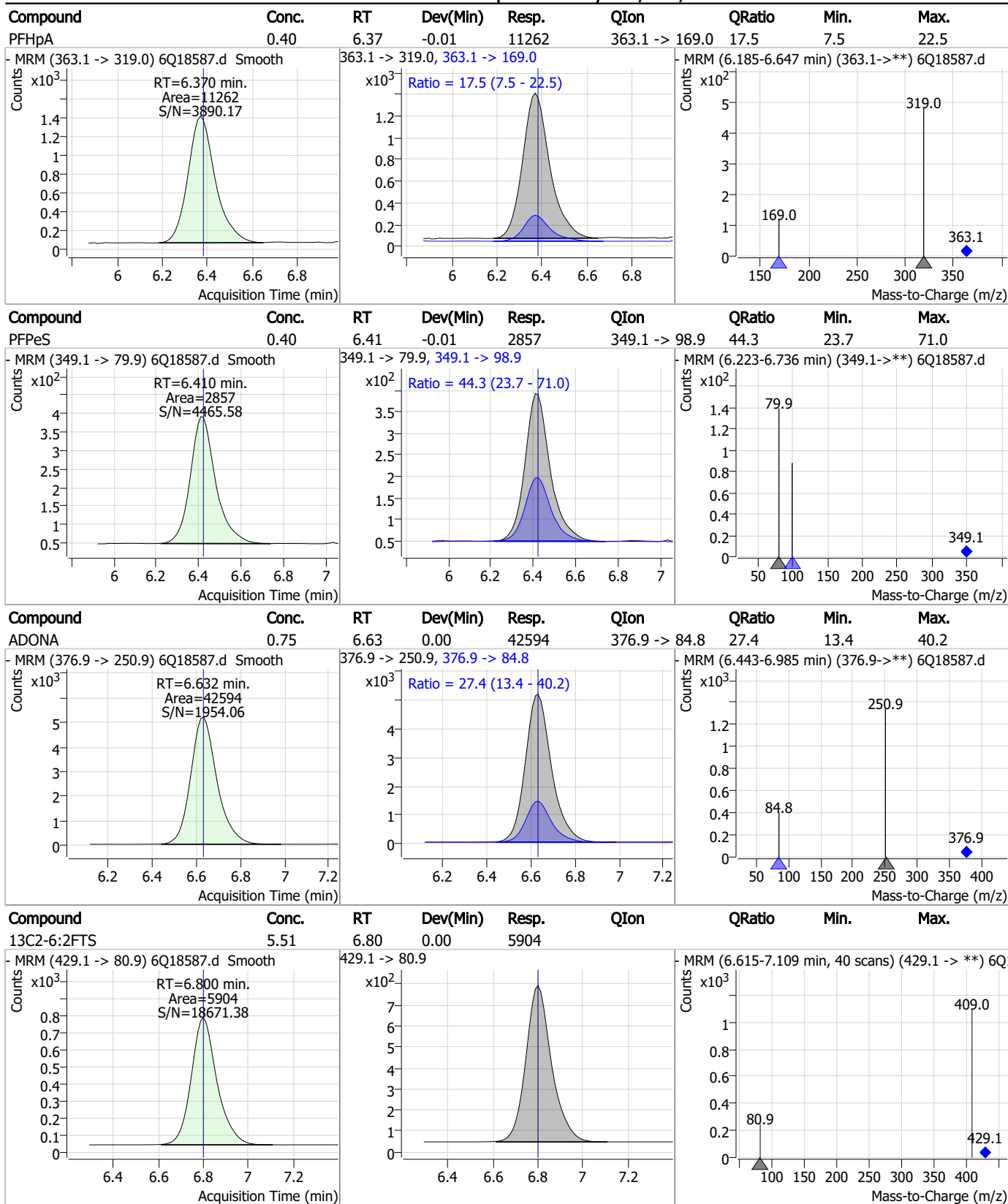
Perfluorinated Compounds by LC/MS/MS



7.7.3

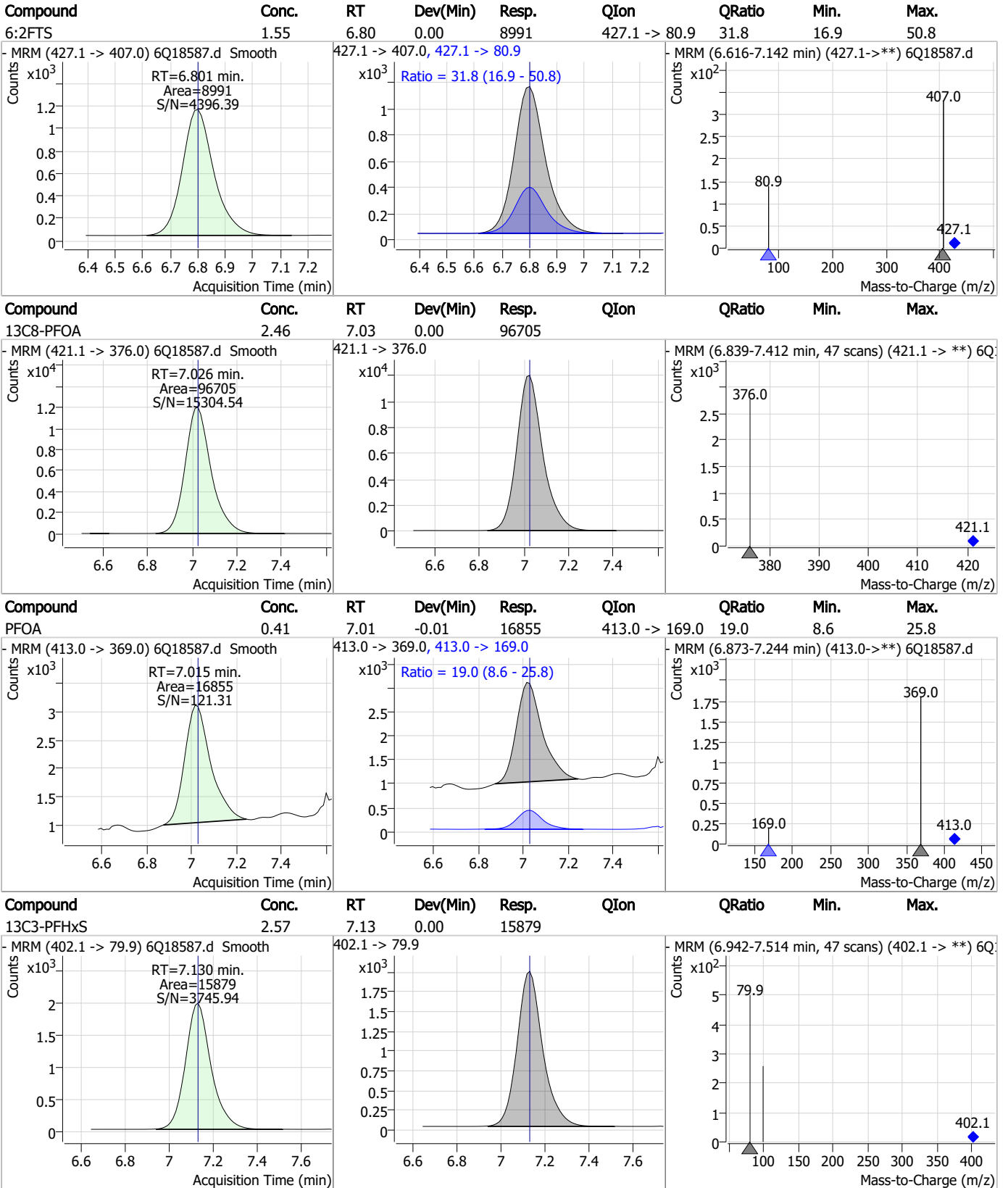
7

Perfluorinated Compounds by LC/MS/MS



7.7.3
7

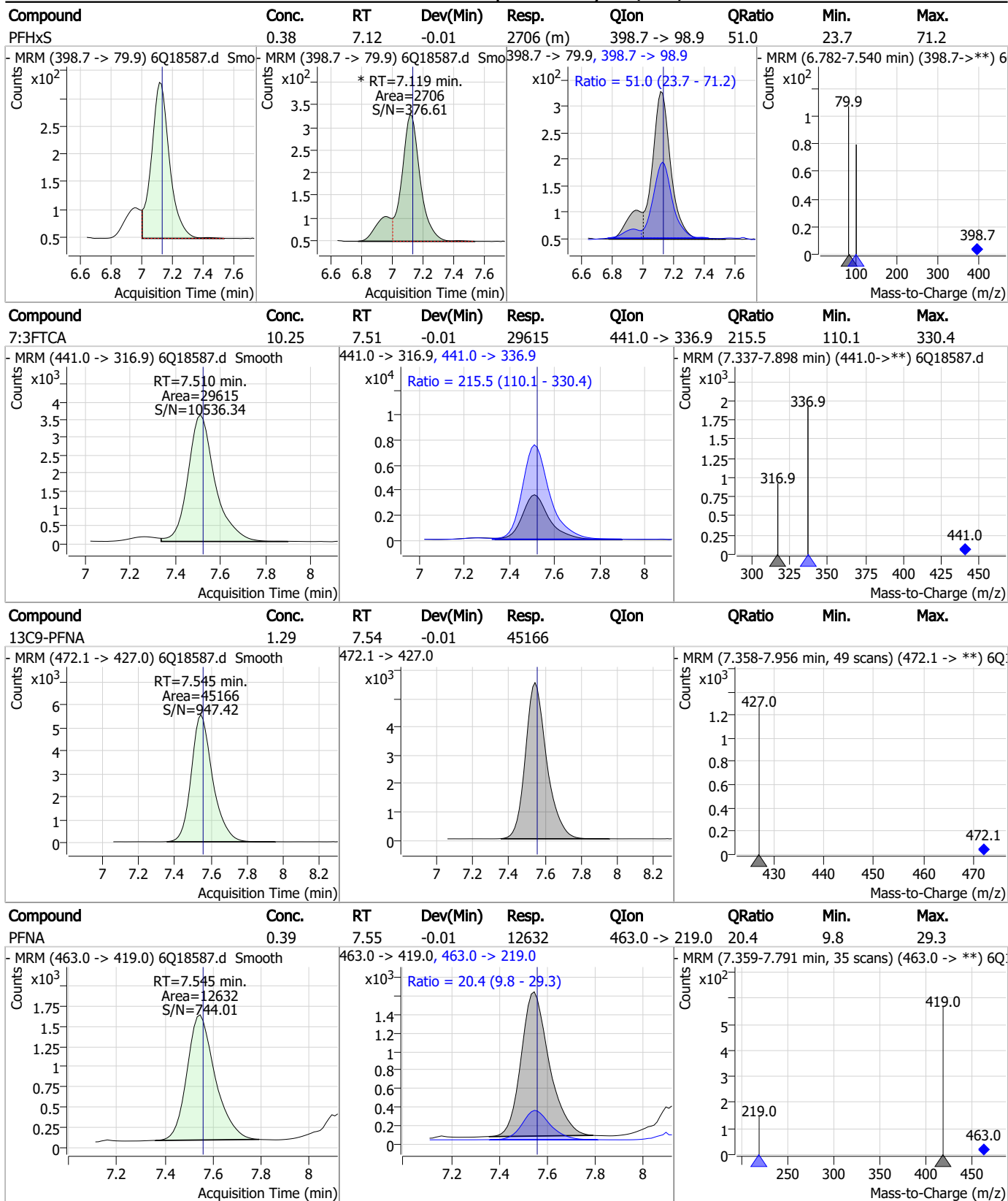
Perfluorinated Compounds by LC/MS/MS



7.7.3

7

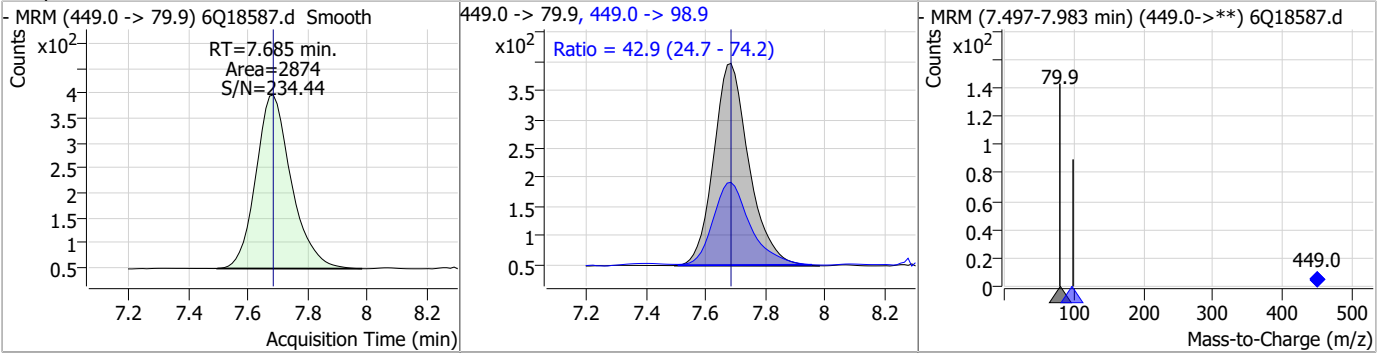
Perfluorinated Compounds by LC/MS/MS



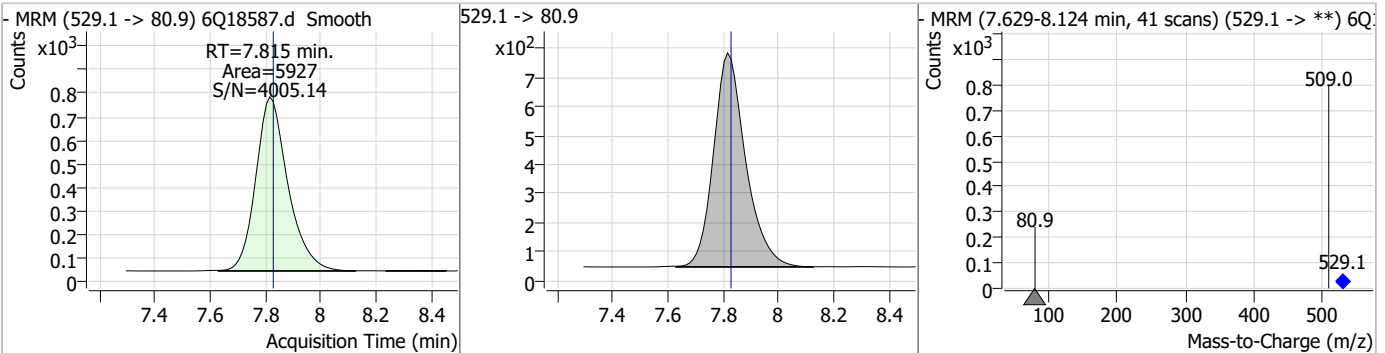
7.7.3
7

Perfluorinated Compounds by LC/MS/MS

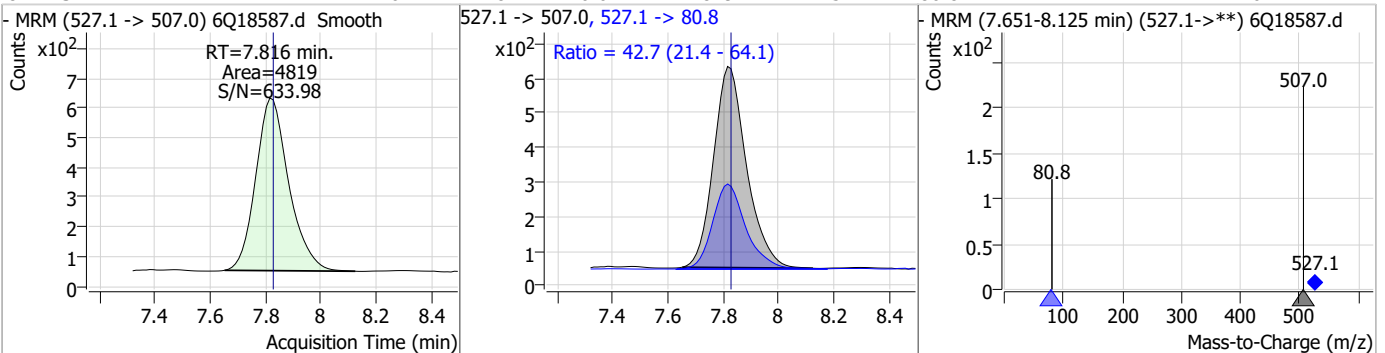
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.40	7.68	0.00	2874	449.0 -> 98.9	42.9	24.7	74.2



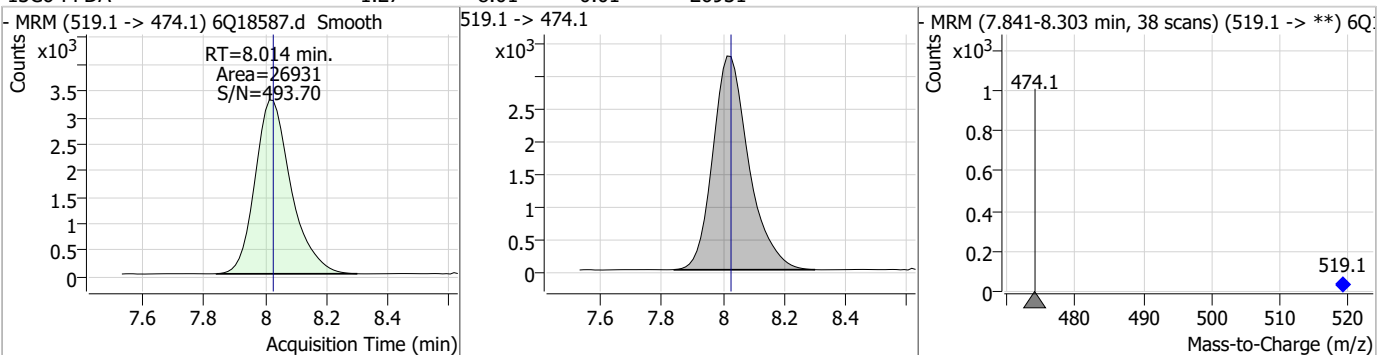
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.46	7.81	-0.01	5927				



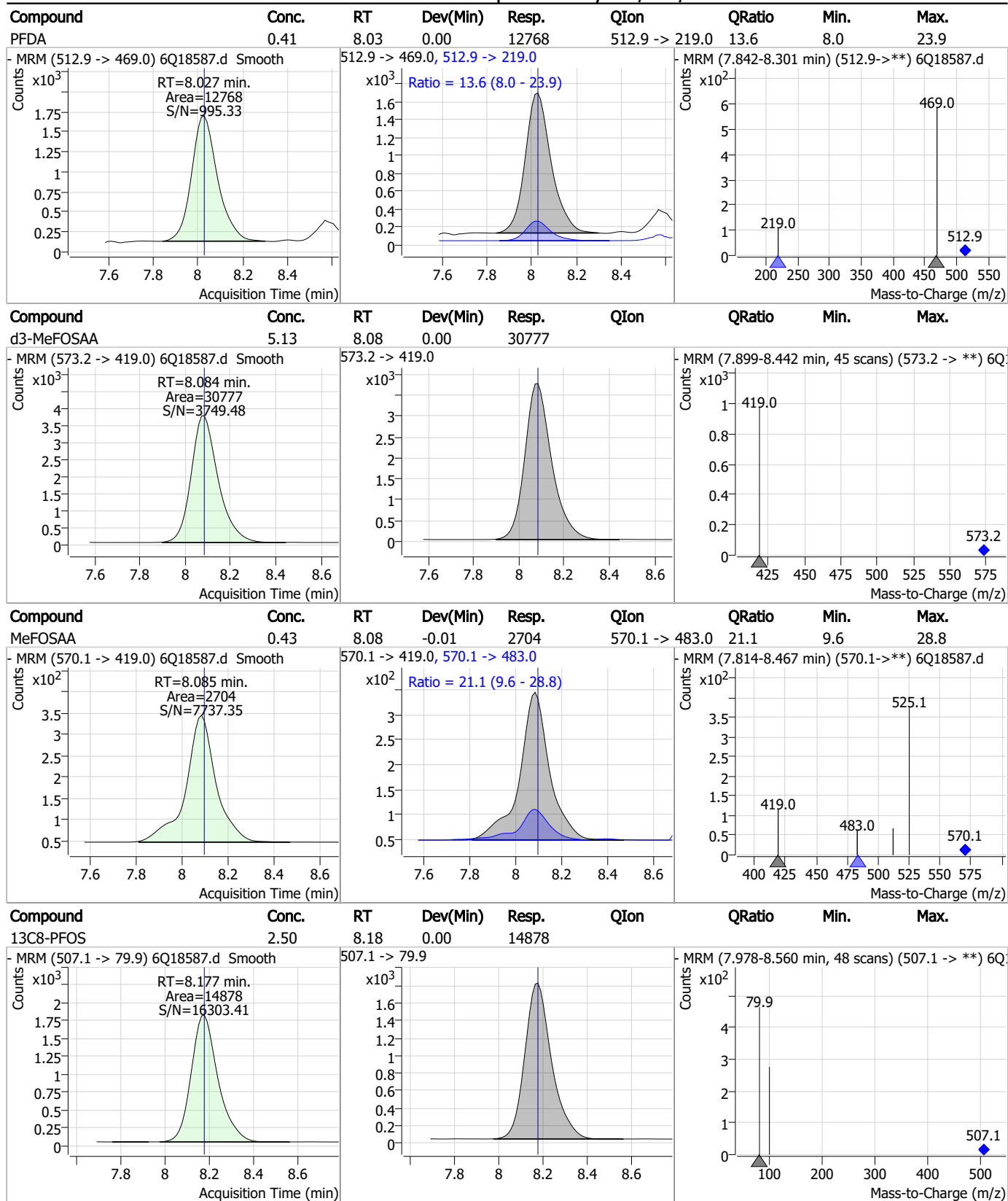
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.46	7.82	-0.01	4819	527.1 -> 80.8	42.7	21.4	64.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.27	8.01	-0.01	26931				



Perfluorinated Compounds by LC/MS/MS

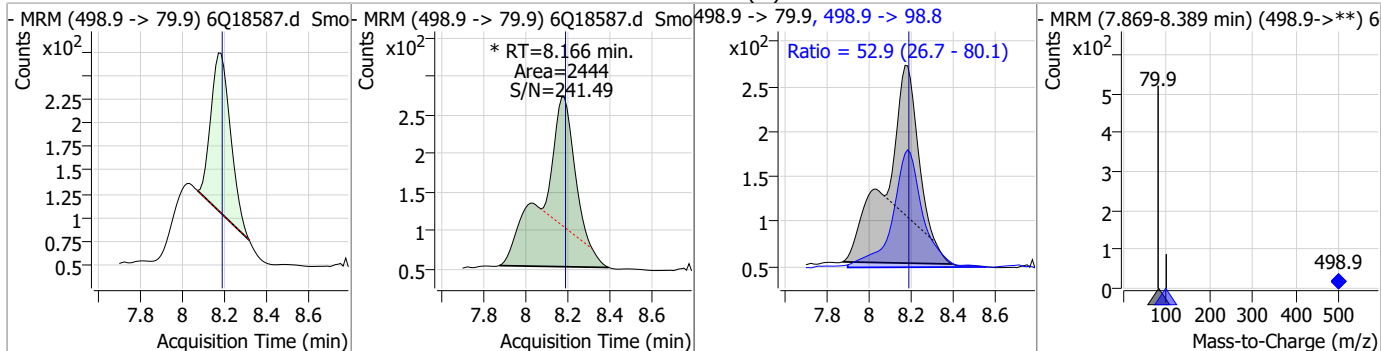


7.7.3

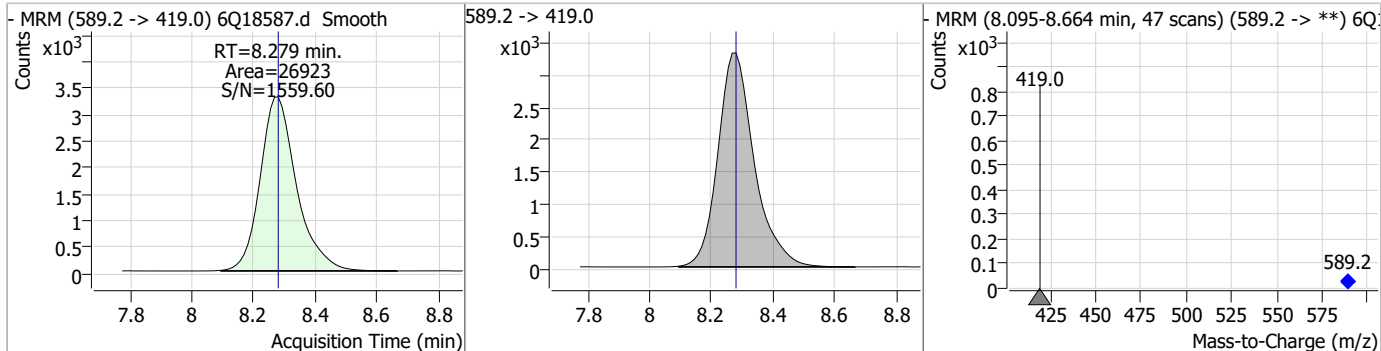
7

Perfluorinated Compounds by LC/MS/MS

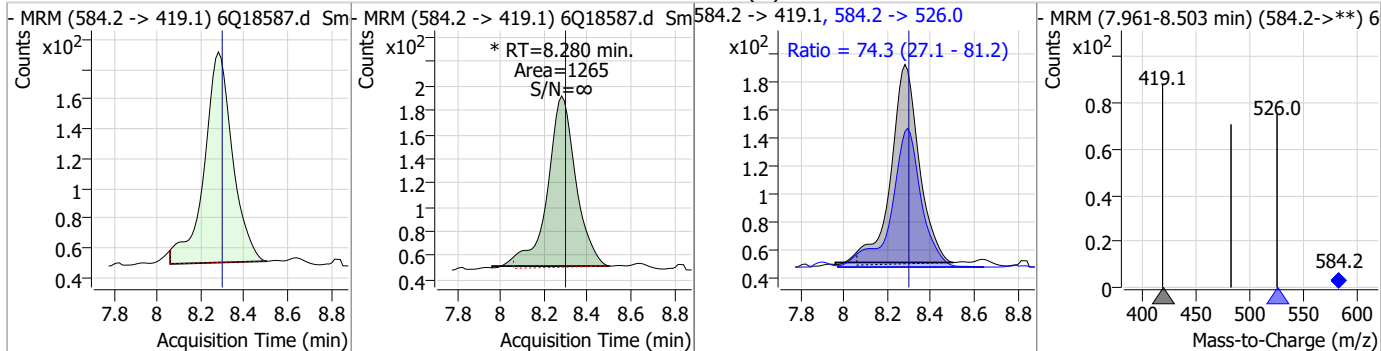
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.36	8.17	-0.01	2444 (m)	498.9 -> 98.8	52.9	26.7	80.1



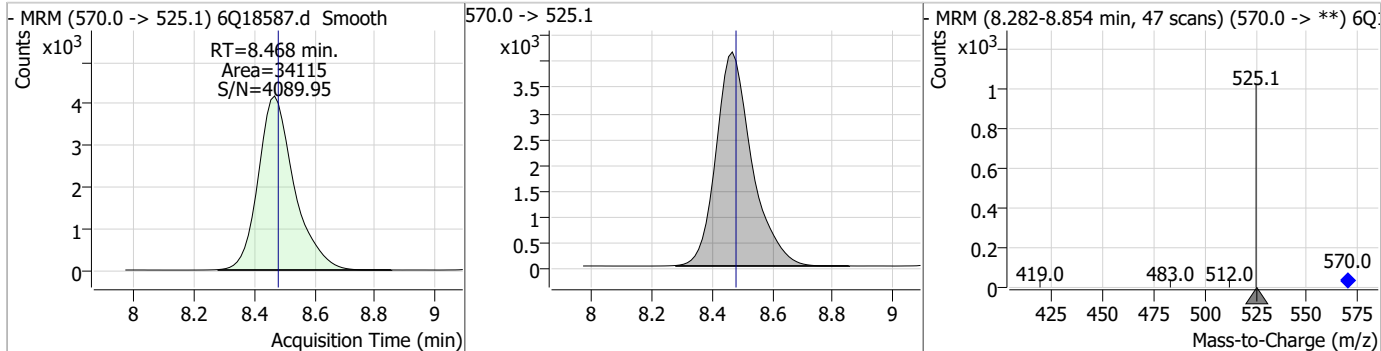
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.94	8.28	0.00	26923				



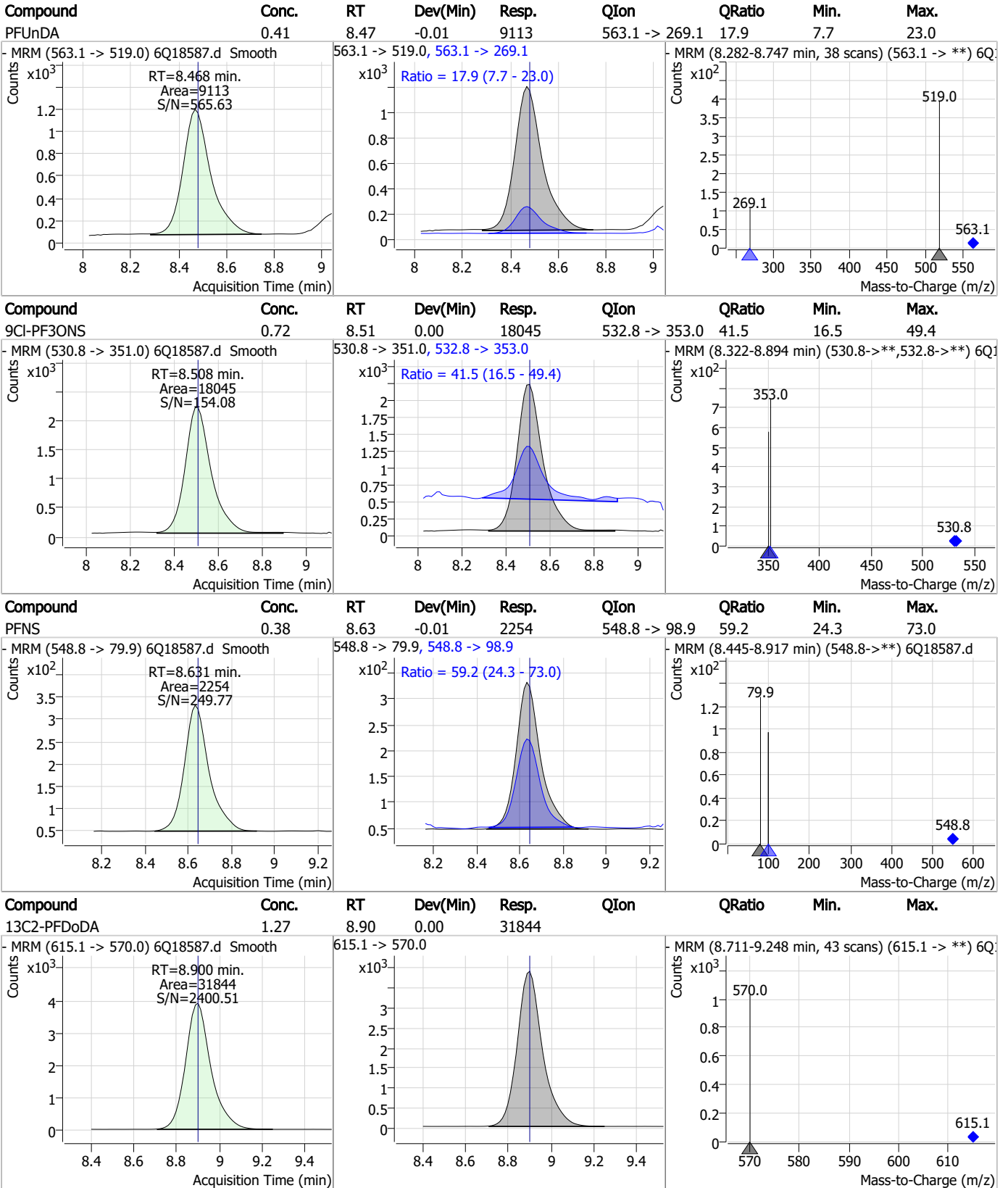
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.37	8.28	-0.01	1265 (m)	584.2 -> 526.0	74.3	27.1	81.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.47	-0.01	34115				



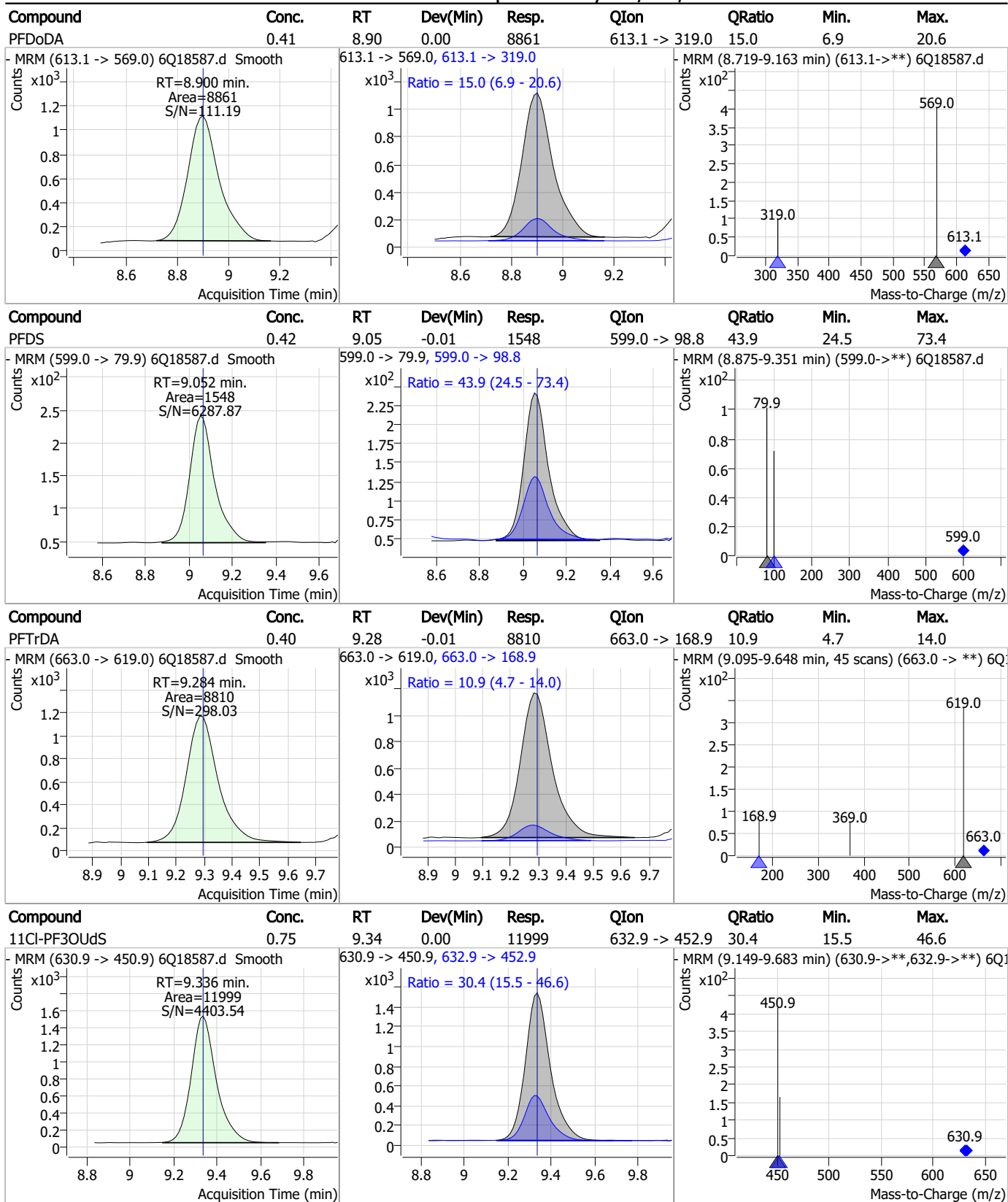
Perfluorinated Compounds by LC/MS/MS



7.7.3

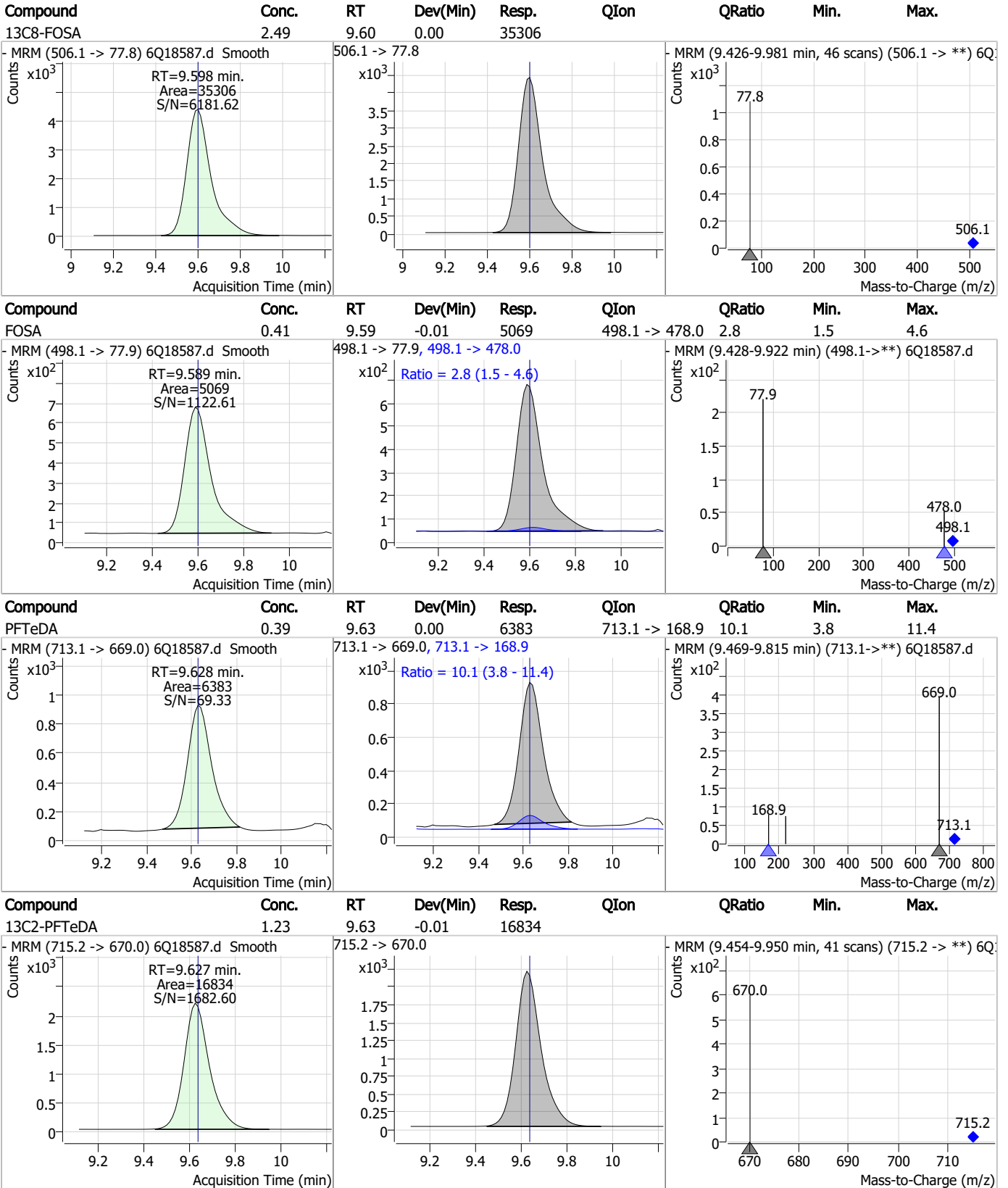
7

Perfluorinated Compounds by LC/MS/MS



7.7.3
7

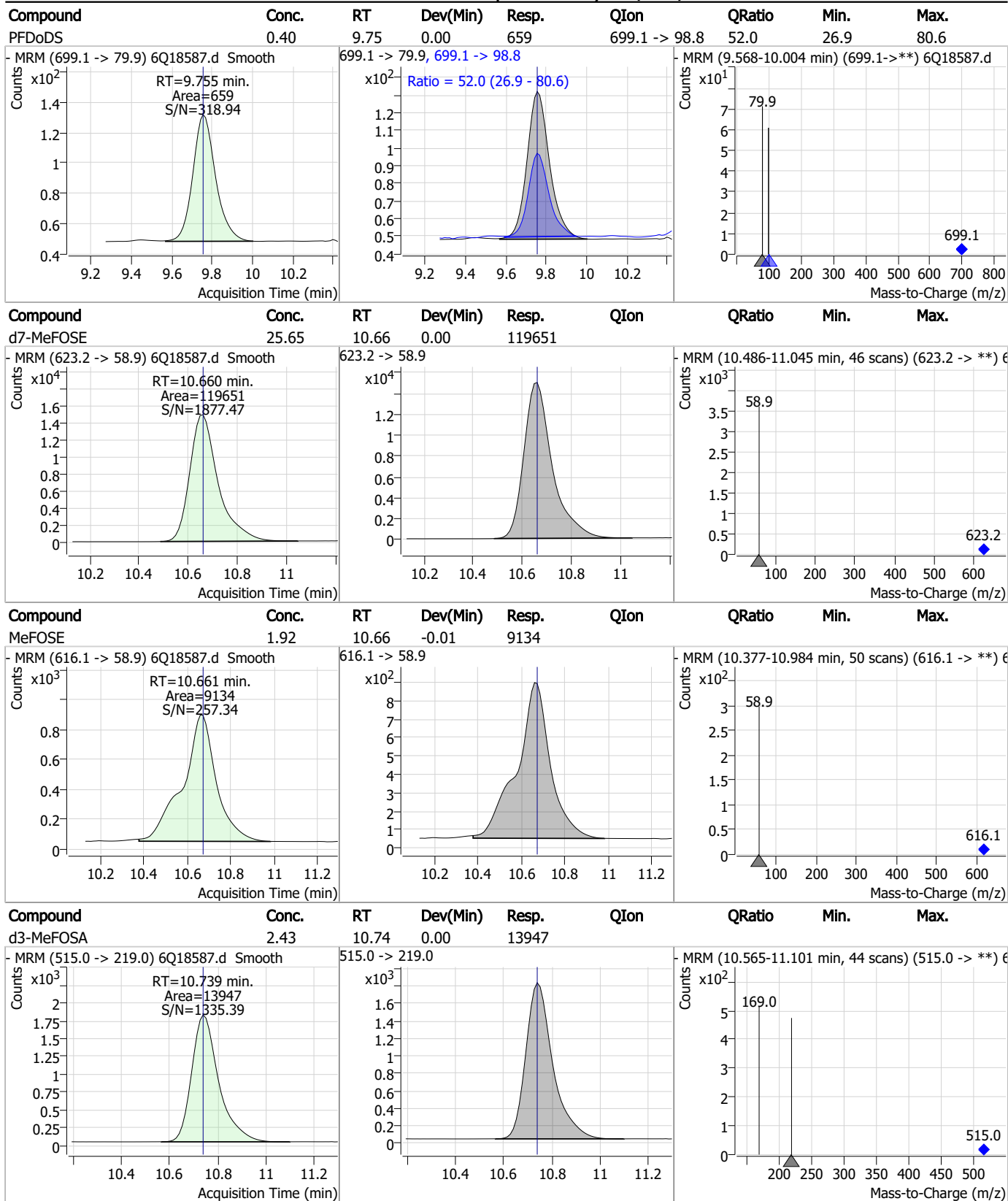
Perfluorinated Compounds by LC/MS/MS



7.7.3

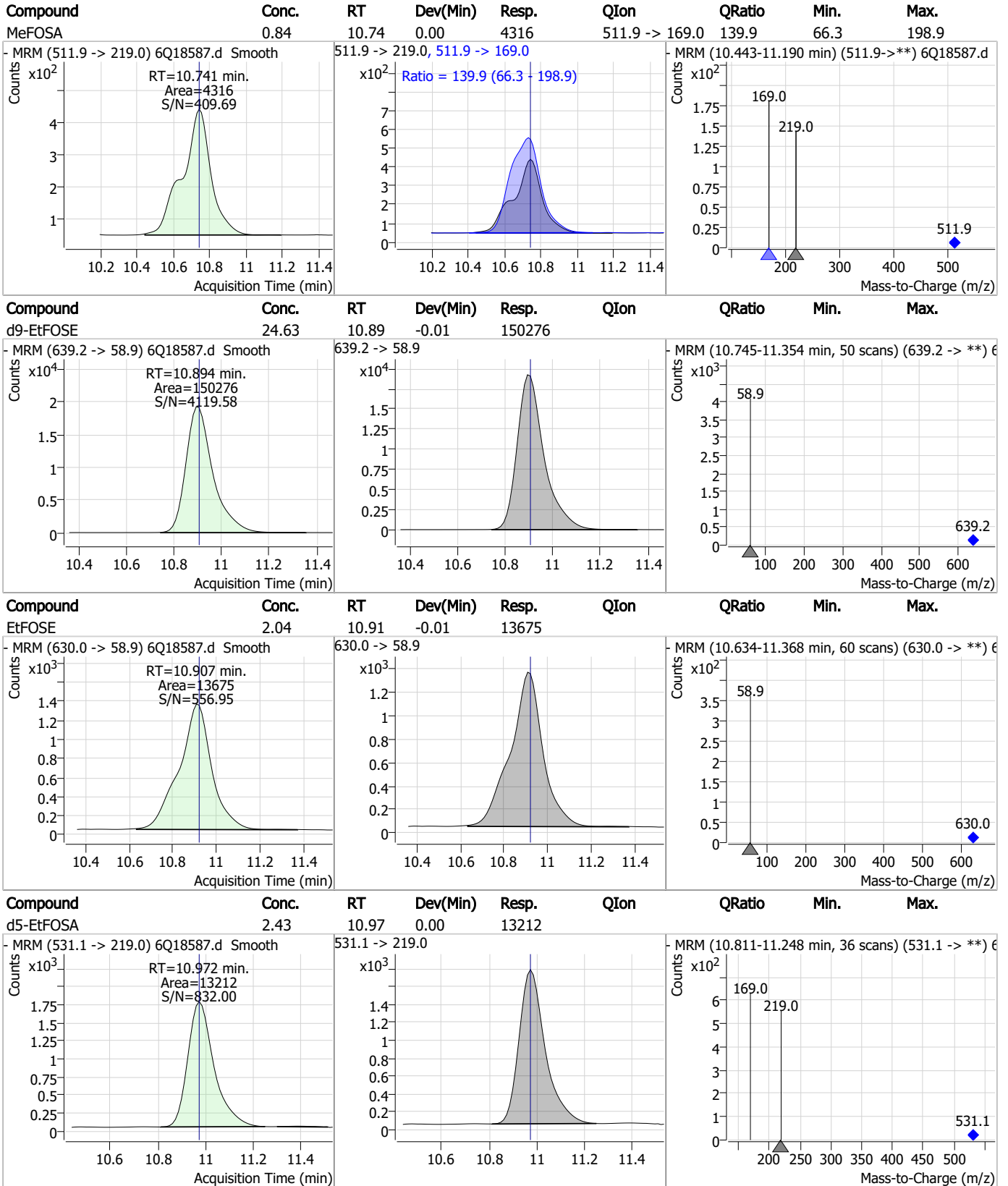
7

Perfluorinated Compounds by LC/MS/MS



7.7.3
7

Perfluorinated Compounds by LC/MS/MS

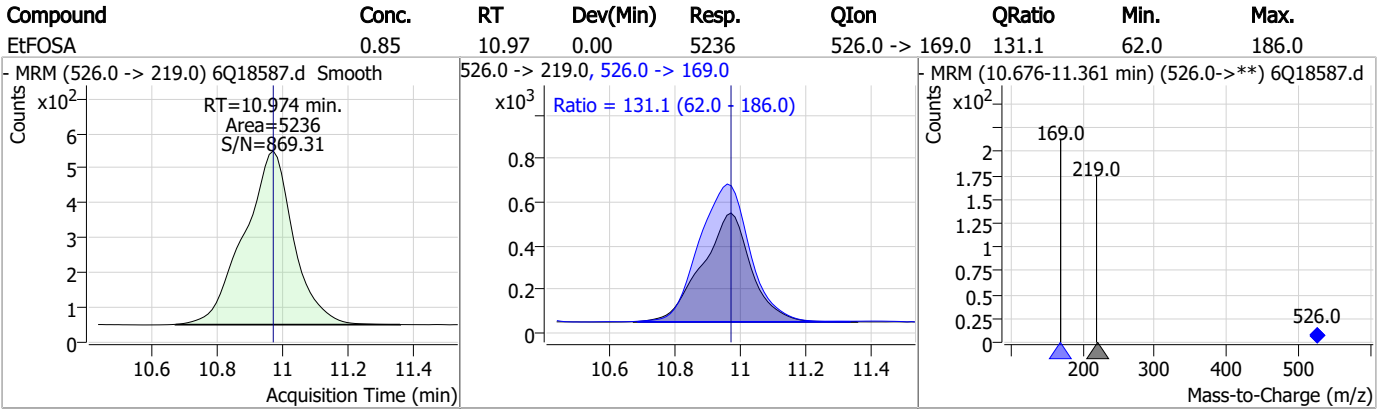


7.7.3

7



Perfluorinated Compounds by LC/MS/MS



7.7.3

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18587.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:30 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak
EtFOSAA	2991-50-6		8.28	Split peak

7.7.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18588.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:45:22 PM
 Sample Name : ic279-3
 Vial : P1-A4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187370	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62639	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	68931	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	62931	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	98434	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	43906	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	28212	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33495	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31515	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17235	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35552	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24967	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15139	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14222	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3844	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5719	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5271	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	27962	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40832	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	27544	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	117703	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	153171	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13351	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14012	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18134	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	78981	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10927	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	103303	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	38097	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	52961	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	63376	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3844	5.27 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5719	5.40 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5271	4.91 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31515	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17235	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C3-PFBS	5.322	302.1 -> 79.9	24967	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFHxS	7.130	402.1 -> 79.9	15139	2.48 µg/L	0.000

7.7.4
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C4-PFBA	2.822	216.8 -> 171.9	187370	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.369	367.1 -> 322.0	62931	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFHxA	5.404	318.0 -> 273.0	68931	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	62639	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C6-PFDA	8.027	519.1 -> 474.1	28212	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33495	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.1%	
13C8-FOSA	9.598	506.1 -> 77.8	35552	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C8-PFOA	7.026	421.1 -> 376.0	98434	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.177	507.1 -> 79.9	14222	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C9-PFNA	7.545	472.1 -> 427.0	43906	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27962	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40832	9.80 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	14012	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
d5-EtFOSAA	8.279	589.2 -> 419.0	27544	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
d7-MeFOSE	10.660	623.2 -> 58.9	117703	25.84 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	153171	25.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	13351	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	26825	4.80 µg/L	94
		327.1 -> 80.9	9707		
6:2FTS	6.801	427.1 -> 407.0	25540	4.54 µg/L	98
		427.1 -> 80.9	8914		
8:2FTS	7.816	527.1 -> 507.0	15451	5.27 µg/L	93
		527.1 -> 80.8	5868		
EtFOSAA	8.280	584.2 -> 419.1	4271	1.21 µg/L	97
		584.2 -> 526.0	2412		
FOSA	9.589	498.1 -> 77.9	14948	1.21 µg/L	100
		498.1 -> 478.0	462		
MeFOSAA	8.085	570.1 -> 419.0	7435	1.29 µg/L	99
		570.1 -> 483.0	1461		
PFBA	2.818	212.8 -> 168.9	30157	4.86 µg/L	100
PFBS	5.323	298.7 -> 79.9	9111	1.07 µg/L	97
		298.7 -> 98.8	3443		
PFDA	8.027	512.9 -> 469.0	35852	1.10 µg/L	99
		512.9 -> 219.0	5917		
PFDODA	8.900	613.1 -> 569.0	26862	1.24 µg/L	95
		613.1 -> 319.0	4178		
PFDS	9.064	599.0 -> 79.9	4370	1.23 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2090			
PFHpA	6.370	363.1 -> 319.0	34372	1.23	µg/L	96
		363.1 -> 169.0	5719			
PFHpS	7.685	449.0 -> 79.9	8125	1.19	µg/L	100
		449.0 -> 98.9	3995			
PFHxA	5.407	313.0 -> 269.0	27090	1.17	µg/L	96
		313.0 -> 118.9	1569			
PFHxS	7.119	398.7 -> 79.9	8079	1.18	µg/L	m 97
		398.7 -> 98.9	3650			
PFNA	7.545	463.0 -> 419.0	37524	1.21	µg/L	100
		463.0 -> 219.0	7401			
PFNS	8.631	548.8 -> 79.9	6966	1.22	µg/L	99
		548.8 -> 98.9	3453			
PFOA	7.028	413.0 -> 369.0	50028	1.19	µg/L	98
		413.0 -> 169.0	8173			
PFOS	8.178	498.9 -> 79.9	7692	1.18	µg/L	m 98
		498.9 -> 98.8	4010			
PFPeA	4.212	263.0 -> 219.0	36747	2.44	µg/L	100
PFPeS	6.410	349.1 -> 79.9	7727	1.13	µg/L	97
		349.1 -> 98.9	3786			
PFTeDA	9.628	713.1 -> 669.0	21136	1.25	µg/L	96
		713.1 -> 168.9	1865			
PFTrDA	9.284	663.0 -> 619.0	26434	1.21	µg/L	97
		663.0 -> 168.9	2776			
PFUnDA	8.468	563.1 -> 519.0	26286	1.21	µg/L	95
		563.1 -> 269.1	4591			
11CI-PF3OUdS	9.336	630.9 -> 450.9	37610	2.45	µg/L	97
		632.9 -> 452.9	11098			
9CI-PF3ONS	8.508	530.8 -> 351.0	57452	2.38	µg/L	100
		532.8 -> 353.0	18801			
ADONA	6.632	376.9 -> 250.9	130357	2.40	µg/L	99
		376.9 -> 84.8	35366			
HFPO-DA	5.770	284.9 -> 168.9	8787	2.54	µg/L	99
		284.9 -> 184.9	1229			
3:3FTCA	3.671	241.0 -> 177.0	5932	6.16	µg/L	99
		241.0 -> 117.0	843			
5:3FTCA	6.074	341.0 -> 237.1	125804	30.22	µg/L	95
		341.0 -> 217.0	94435			
7:3FTCA	7.510	441.0 -> 316.9	81482	28.58	µg/L	84
		441.0 -> 336.9	200432			
EtFOSA	10.974	526.0 -> 219.0	15129	2.43	µg/L	90
		526.0 -> 169.0	20436			
EtFOSE	10.920	630.0 -> 58.9	42639	6.24	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	12710	2.47	µg/L	93
		511.9 -> 169.0	17862			
MeFOSE	10.673	616.1 -> 58.9	28431	6.08	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	2029	1.28	µg/L	95
		699.1 -> 98.8	1015			
NFDHA	5.288	295.0 -> 201.0	6915	2.45	µg/L	93
		295.0 -> 84.9	1612			
PFMBA	4.626	279.0 -> 85.1	25336	2.47	µg/L	100
PFMPA	3.351	229.0 -> 84.9	19888	2.50	µg/L	100
PFEESA	5.862	314.8 -> 134.9	62574	2.13	µg/L	100
		314.8 -> 82.9	2487			

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

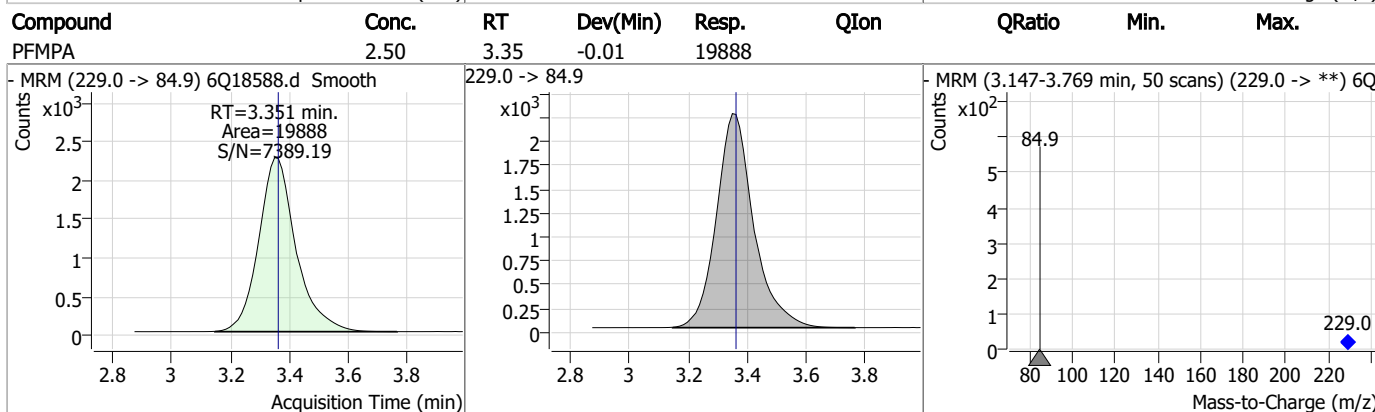
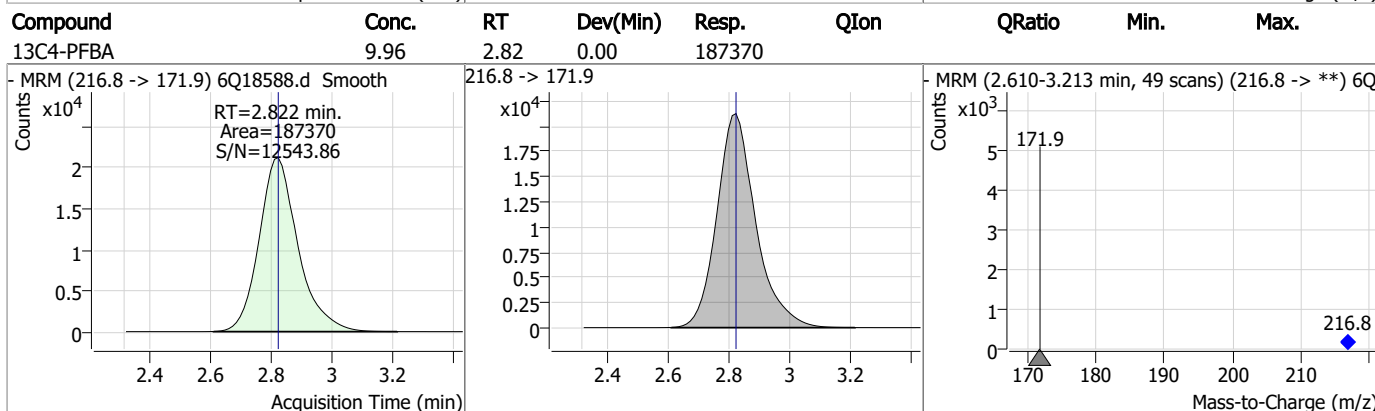
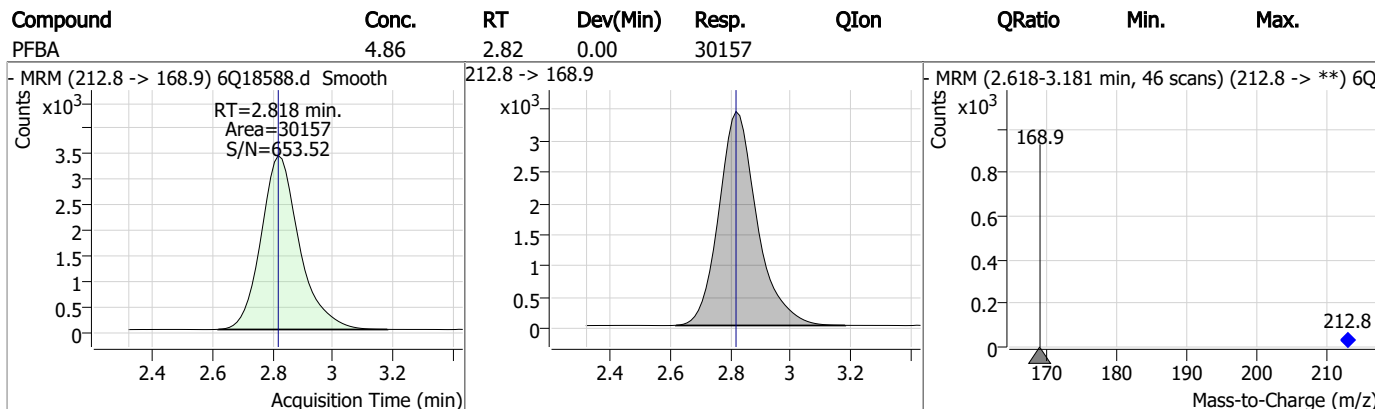
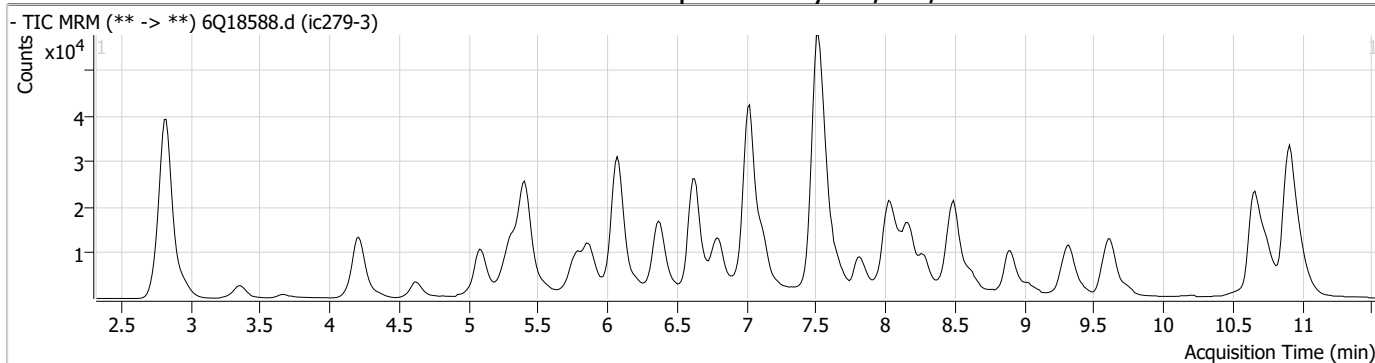
Perfluorinated Compounds by LC/MS/MS

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

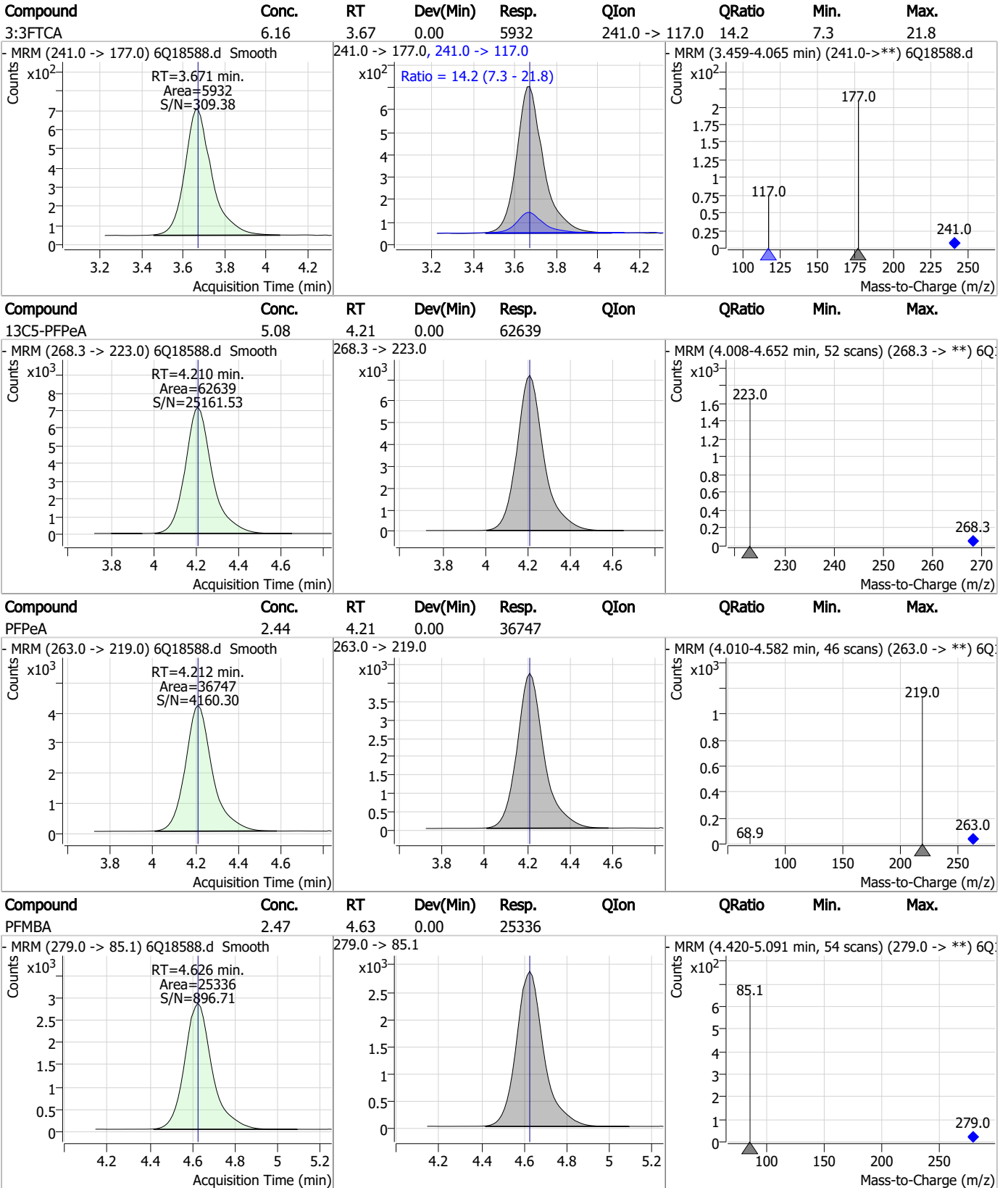
7.7.4

7

Perfluorinated Compounds by LC/MS/MS



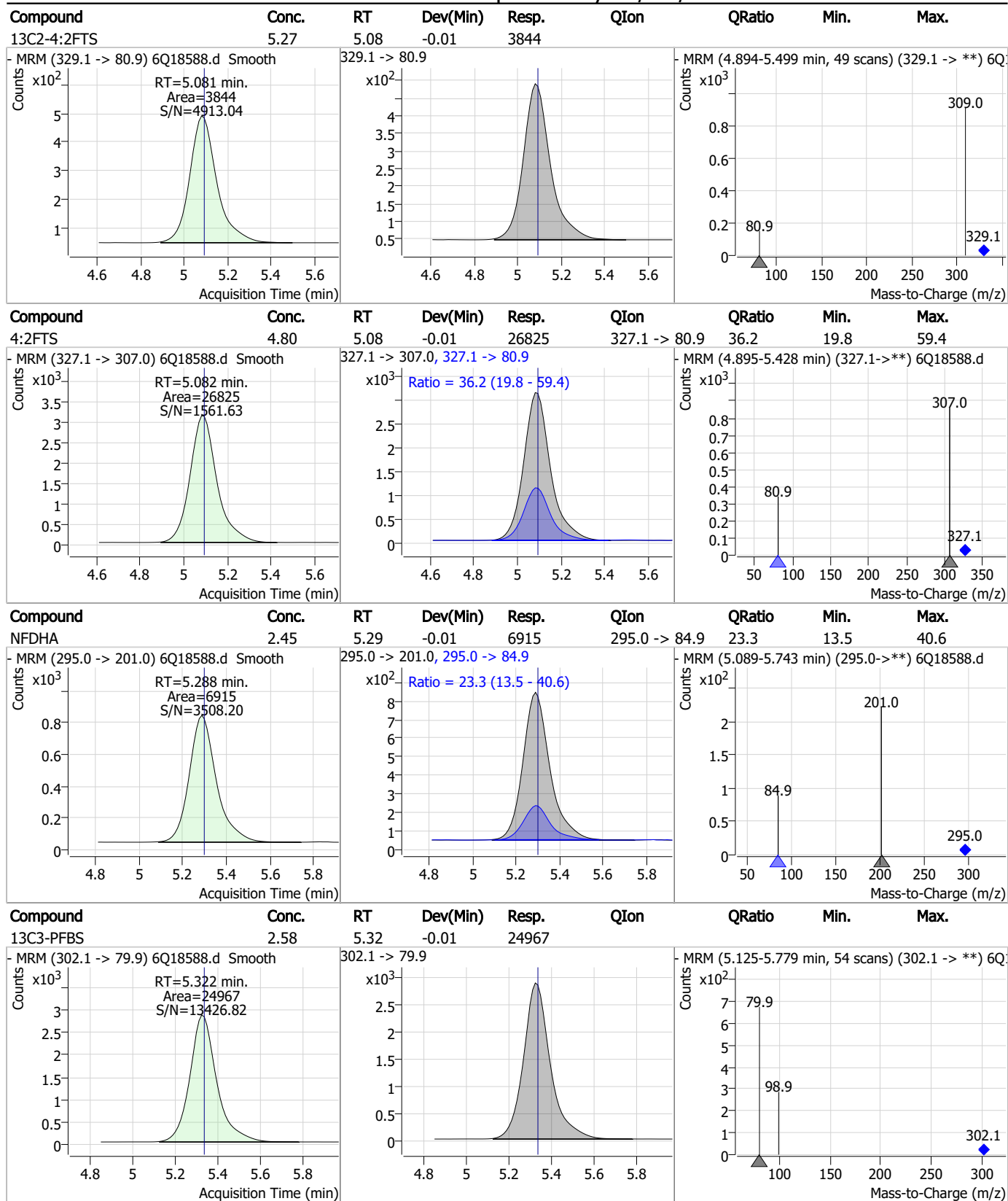
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

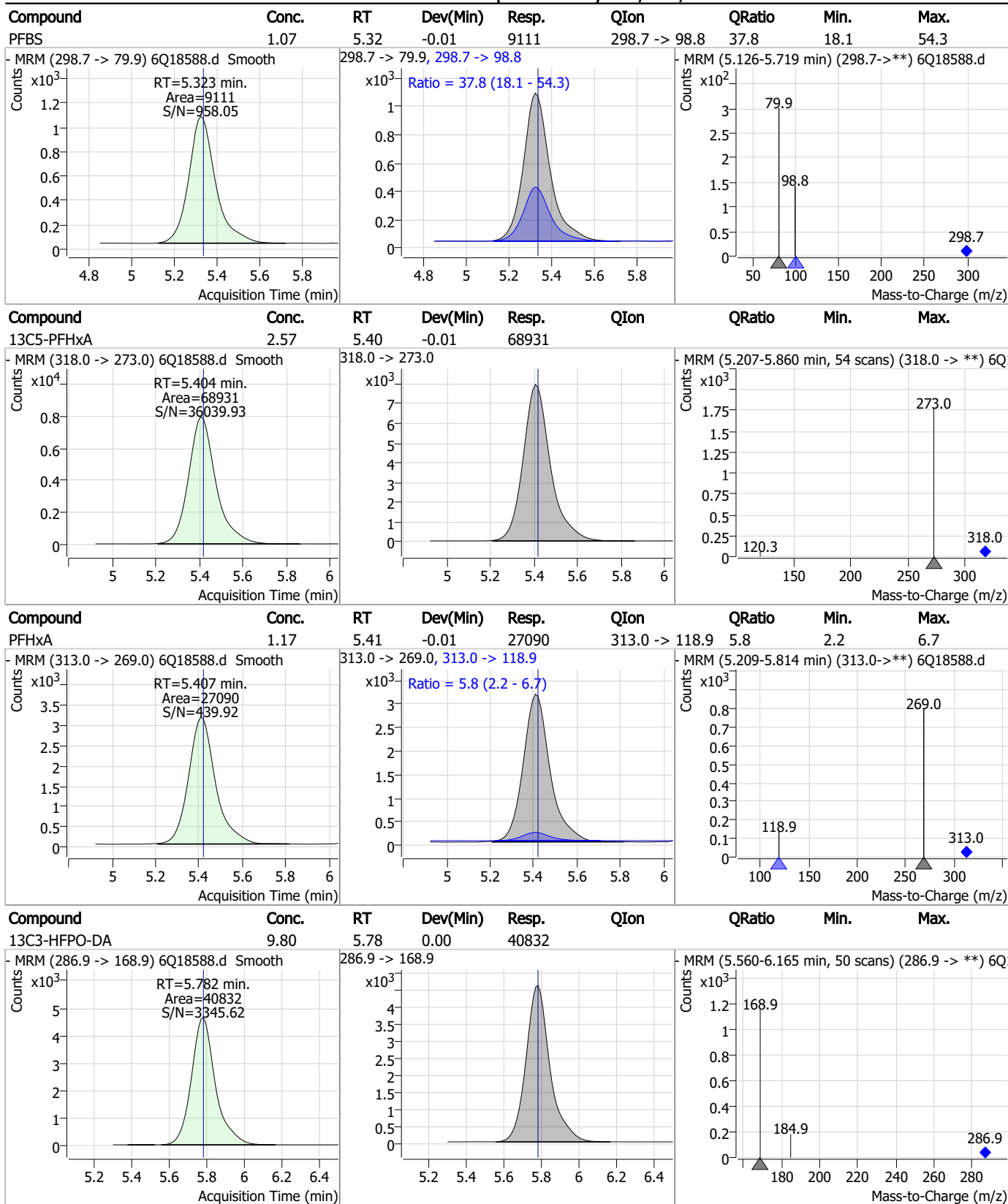
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

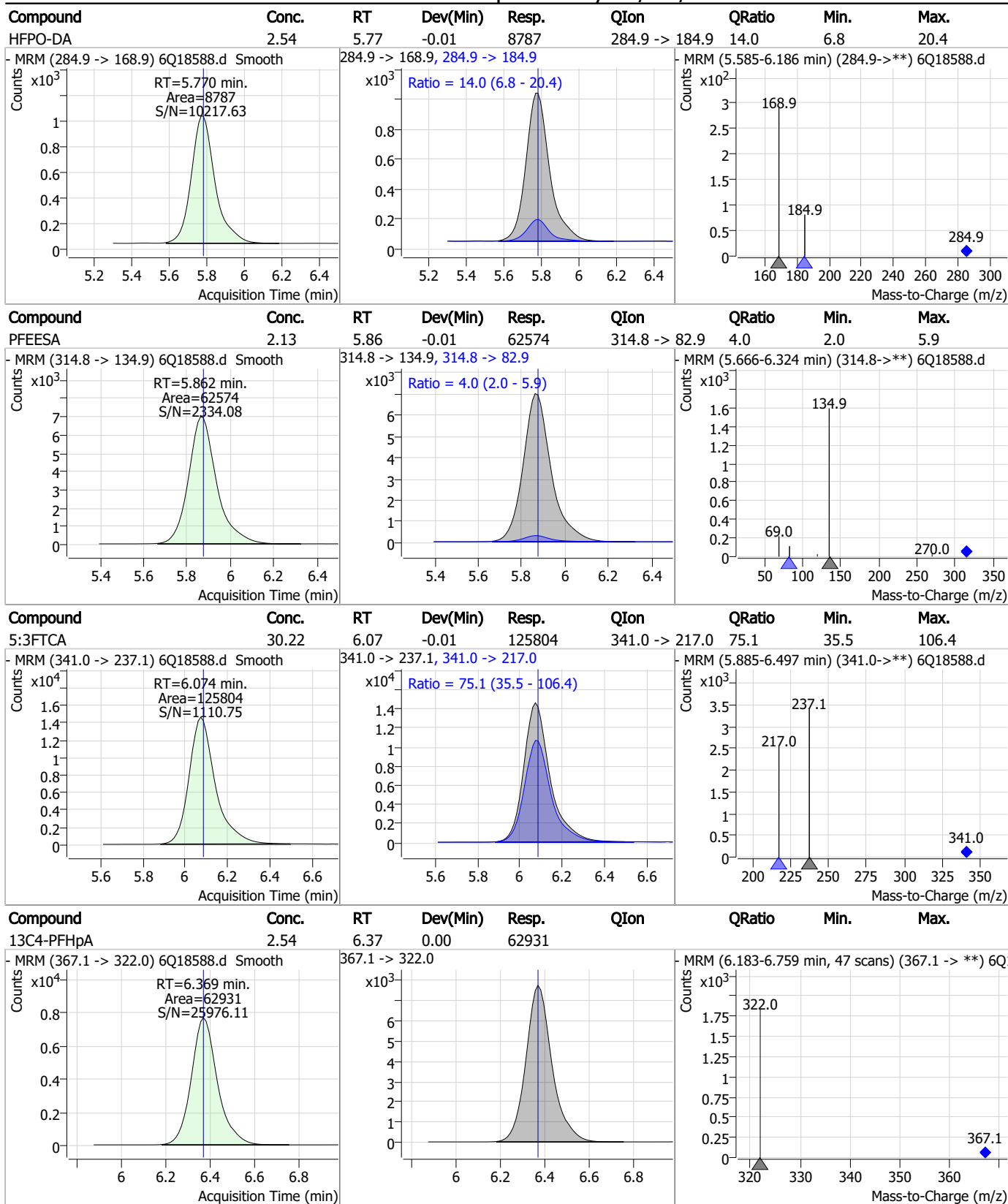
Perfluorinated Compounds by LC/MS/MS



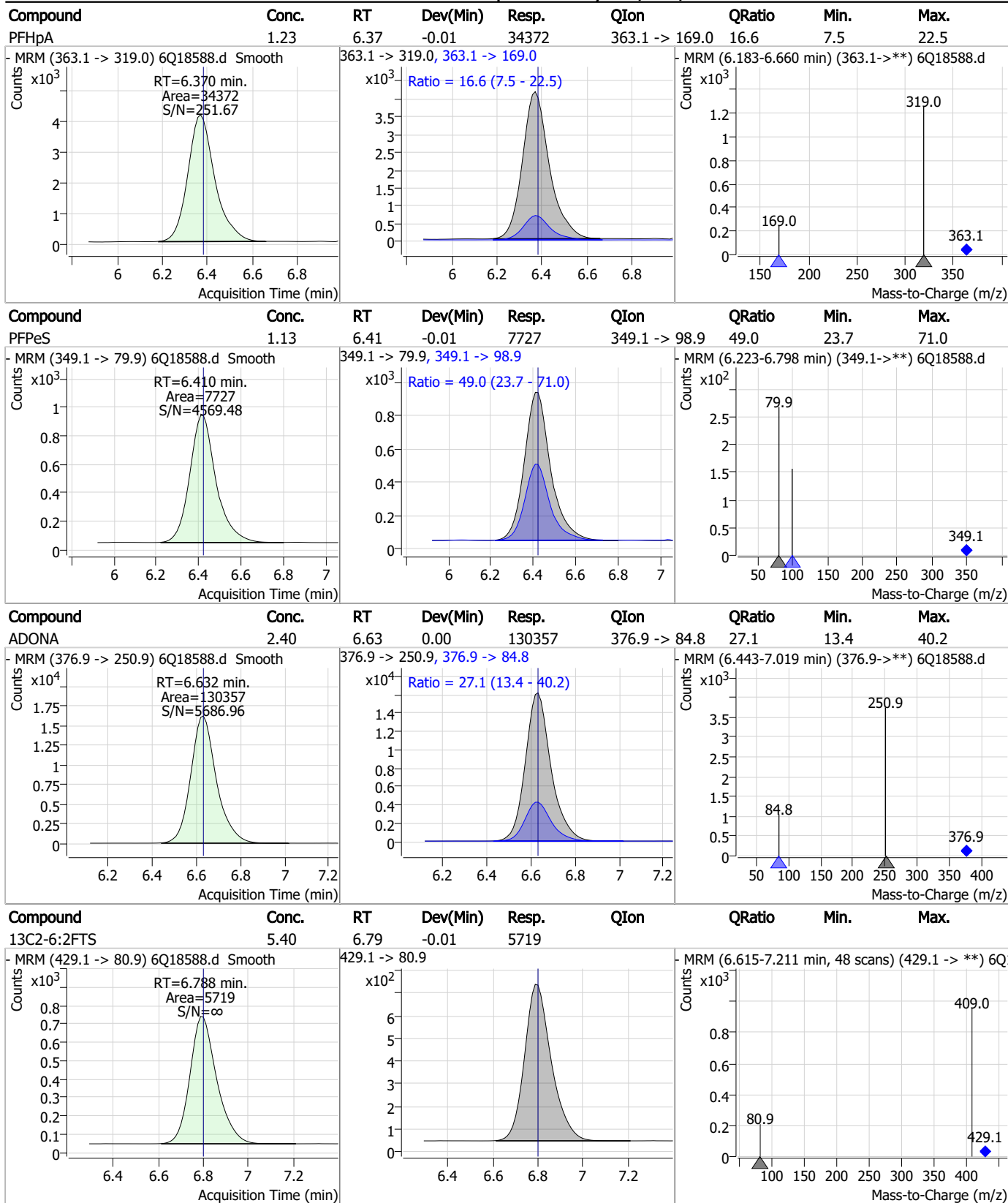
7.7.4

7

Perfluorinated Compounds by LC/MS/MS

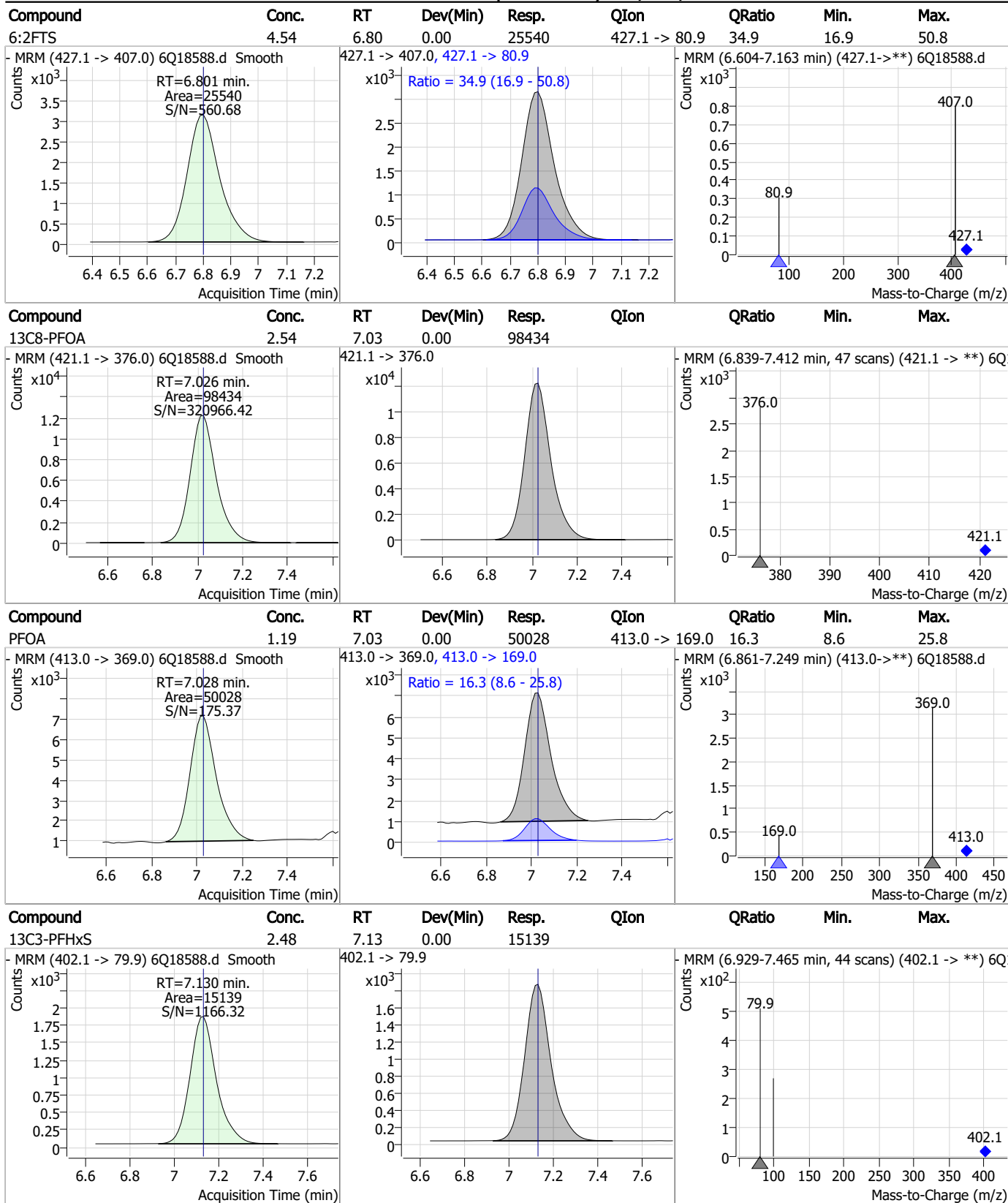


Perfluorinated Compounds by LC/MS/MS



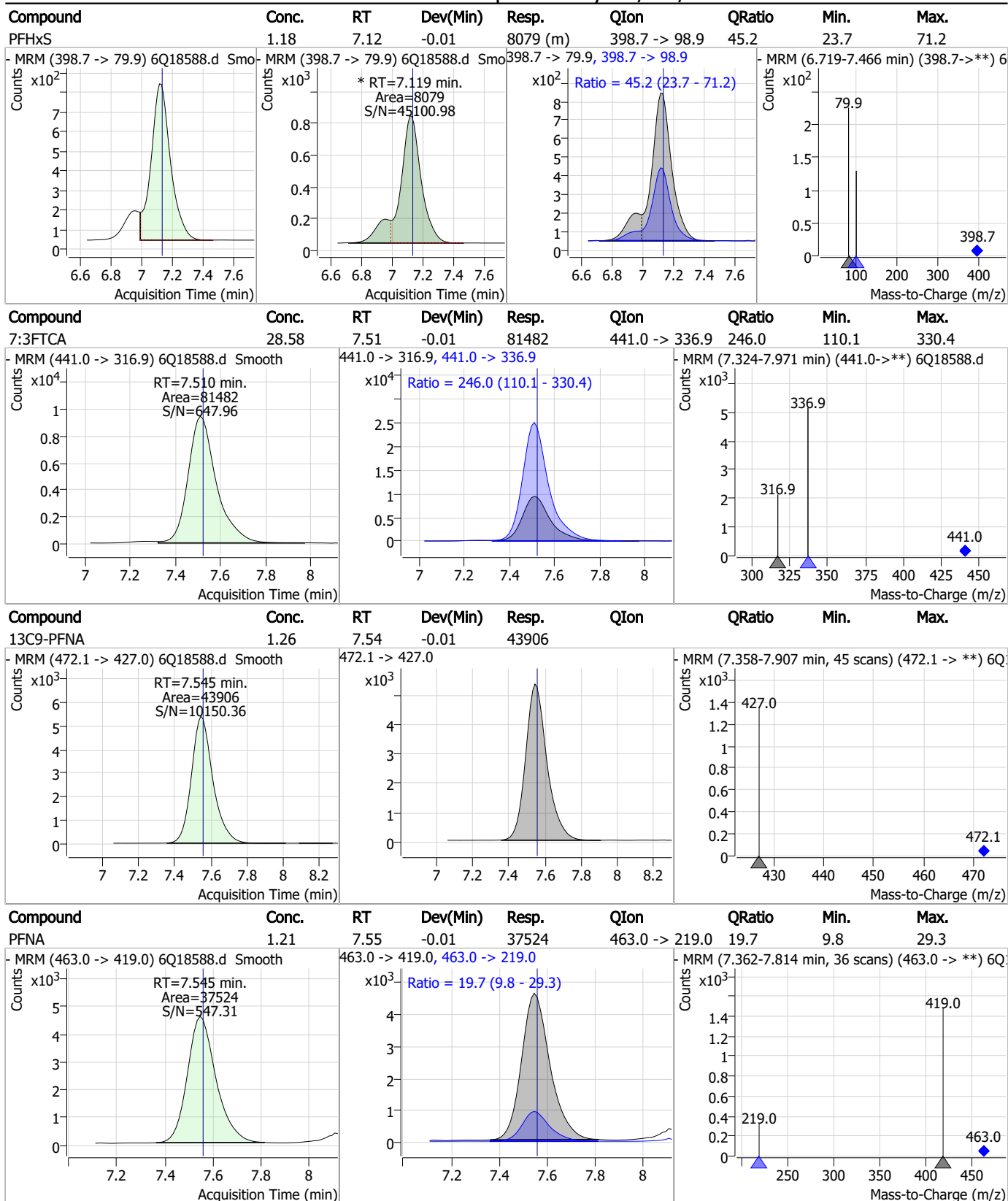
7.7.4
7

Perfluorinated Compounds by LC/MS/MS



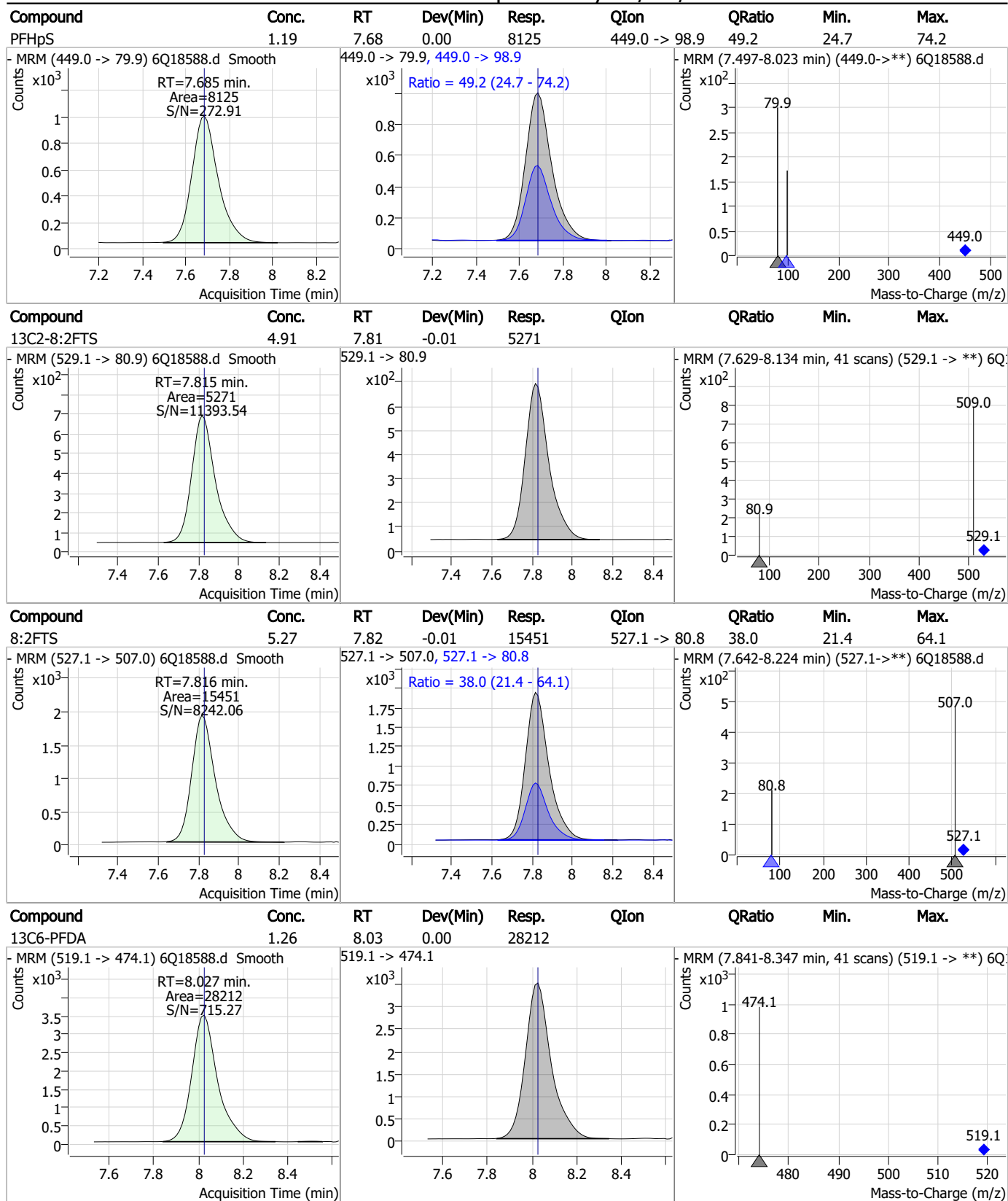
7.7.4
7

Perfluorinated Compounds by LC/MS/MS



7.7.4
7

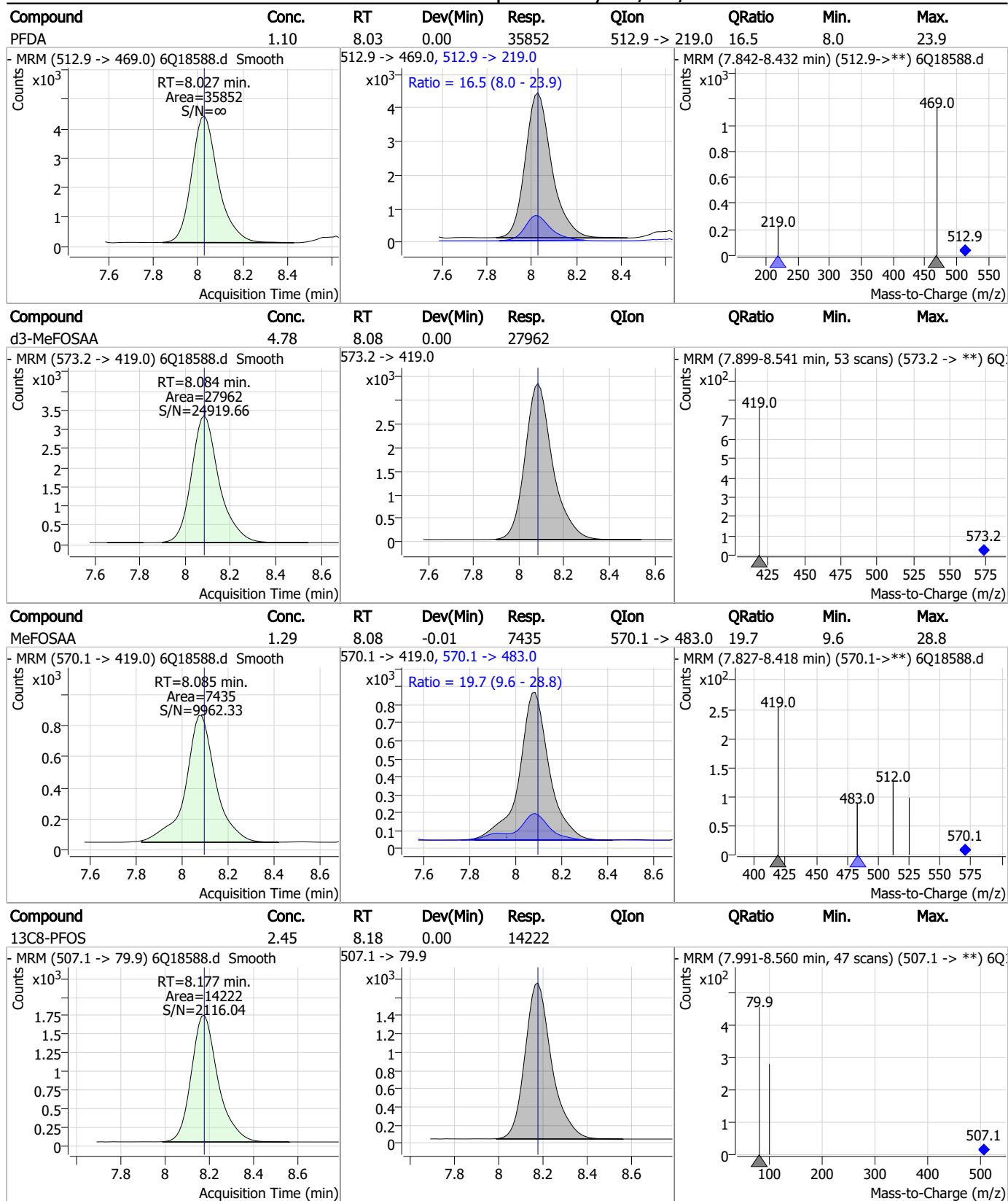
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

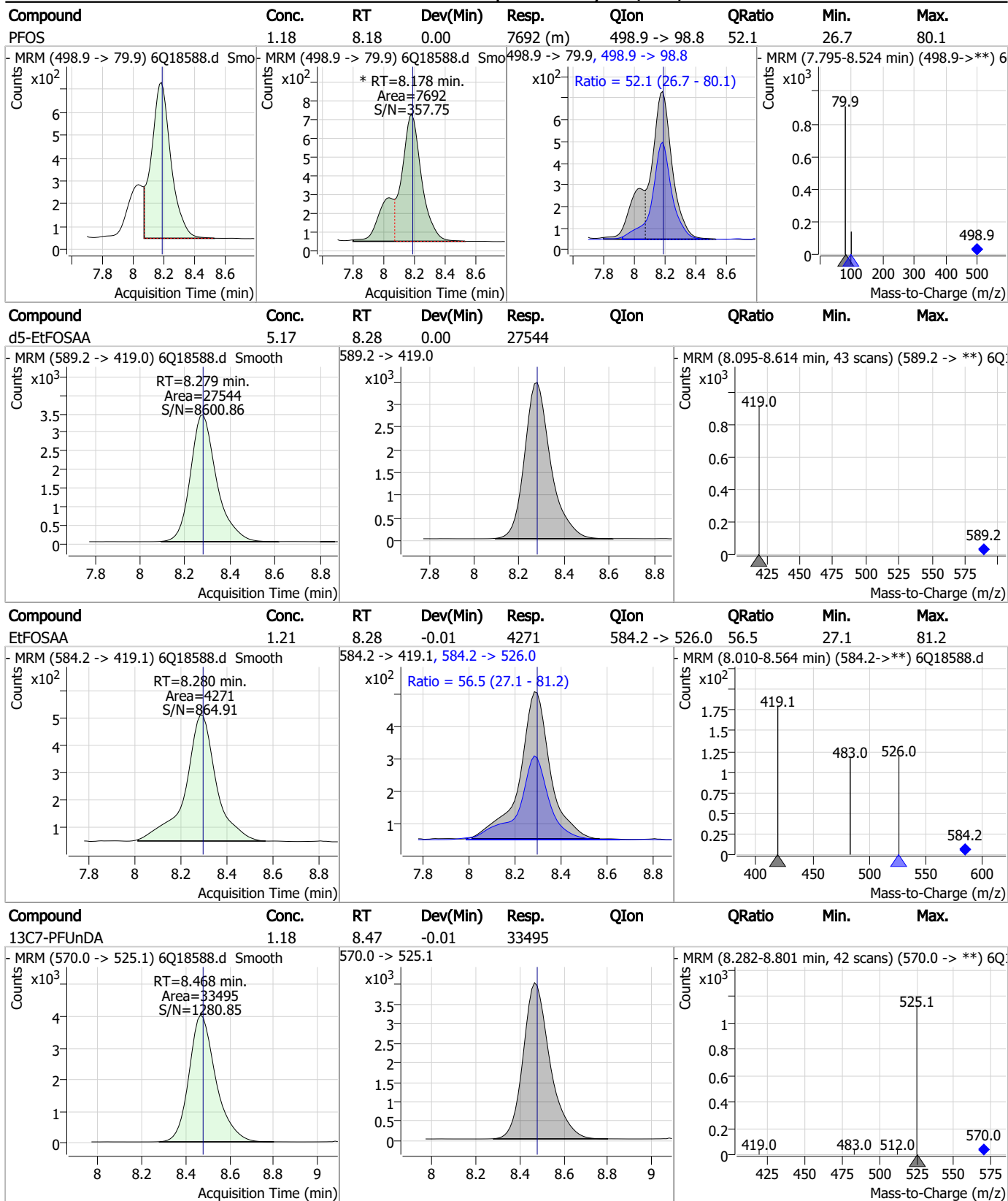
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

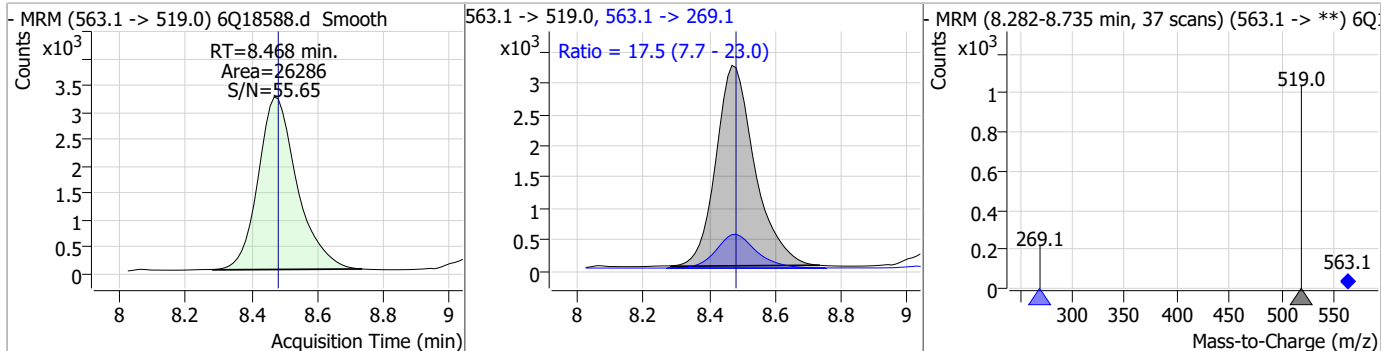
Perfluorinated Compounds by LC/MS/MS



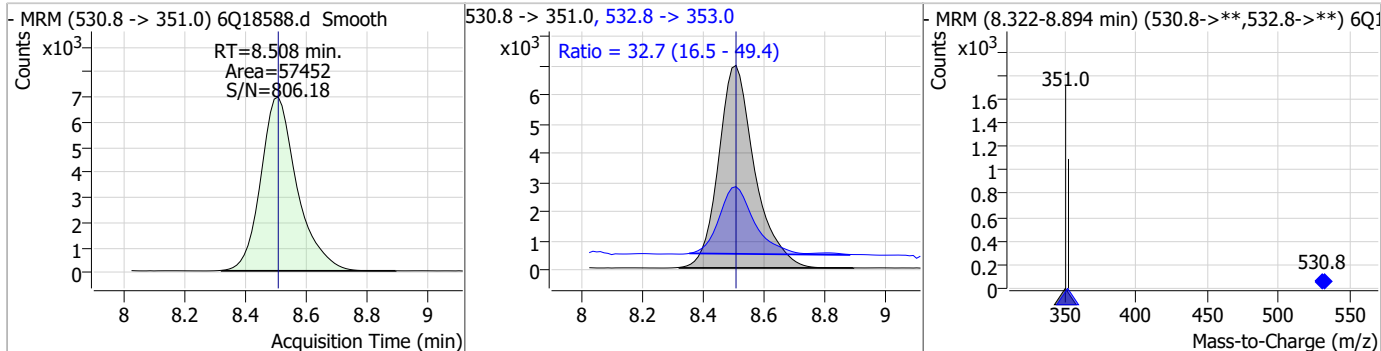
7.7.4
7

Perfluorinated Compounds by LC/MS/MS

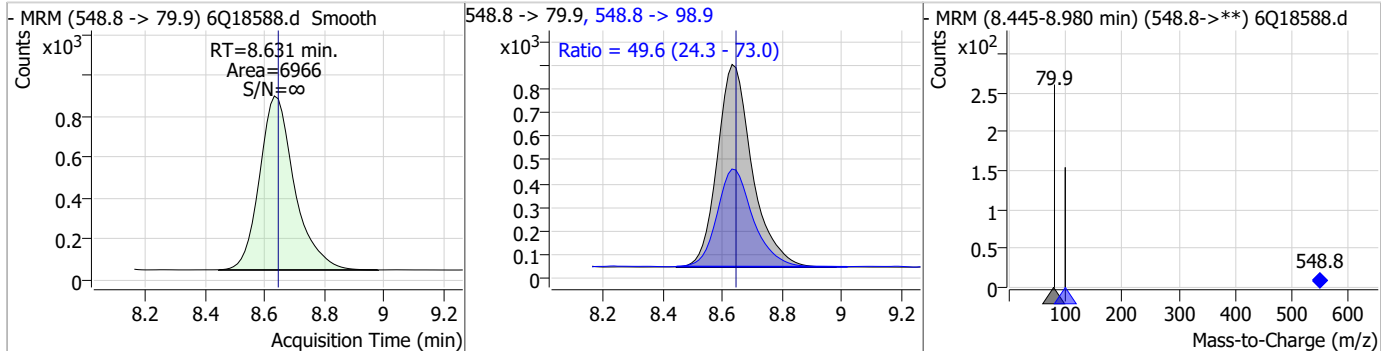
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.21	8.47	-0.01	26286	563.1 -> 269.1	17.5	7.7	23.0



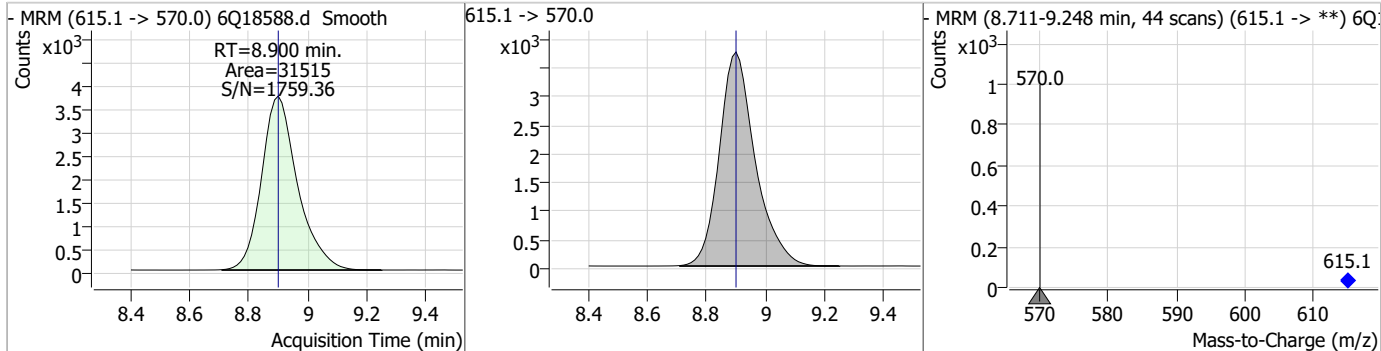
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	2.38	8.51	0.00	57452	532.8 -> 353.0	32.7	16.5	49.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.22	8.63	-0.01	6966	548.8 -> 98.9	49.6	24.3	73.0

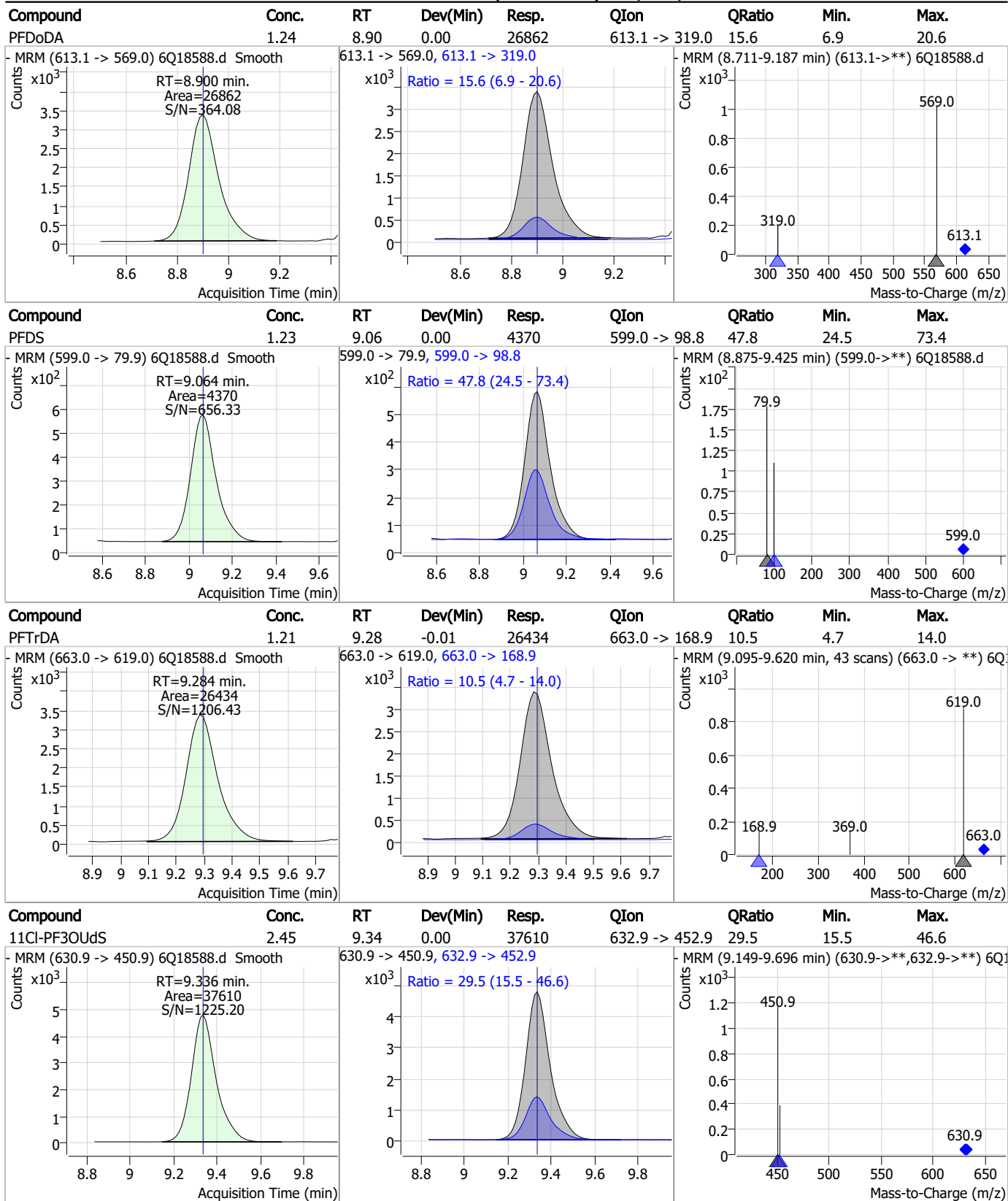


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	8.90	0.00	31515	615.1 -> 570.0			



7.7.4
7

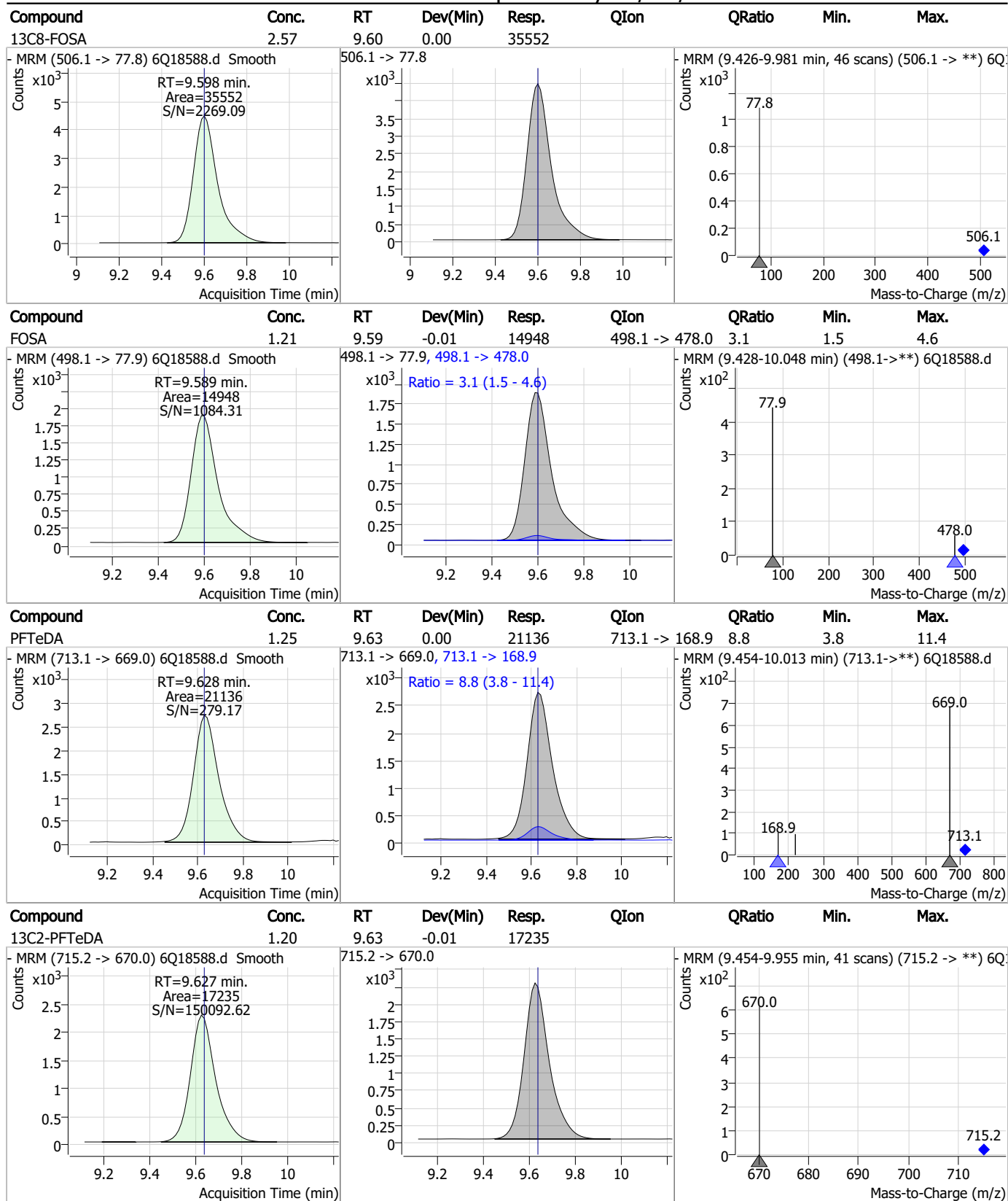
Perfluorinated Compounds by LC/MS/MS



7.7.4
7



Perfluorinated Compounds by LC/MS/MS

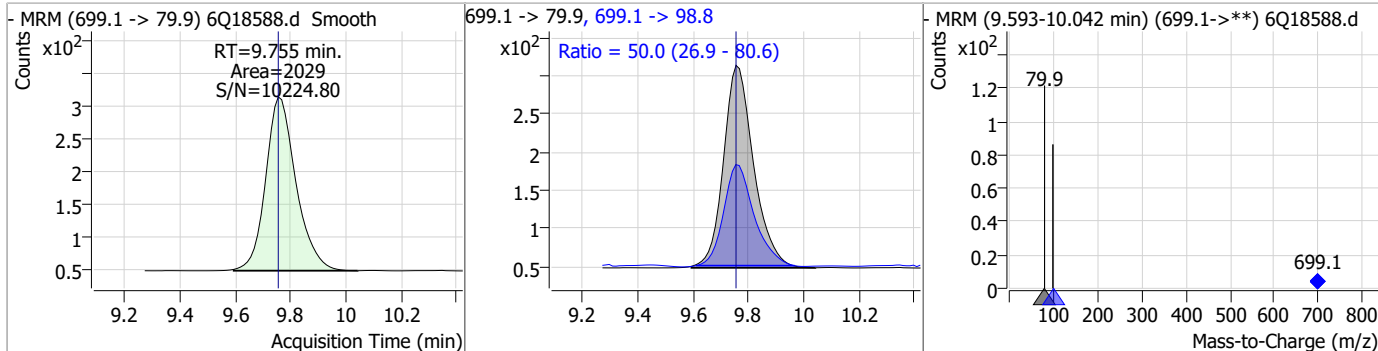


7.7.4

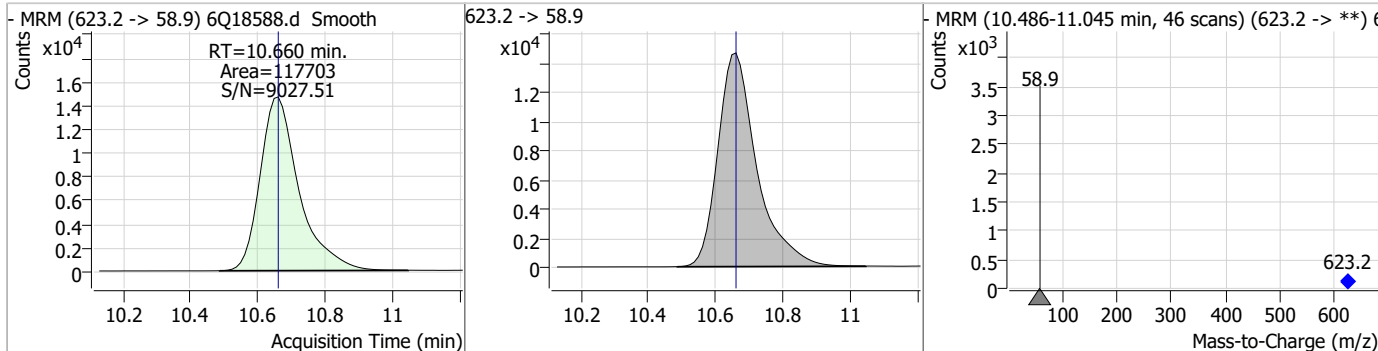
7

Perfluorinated Compounds by LC/MS/MS

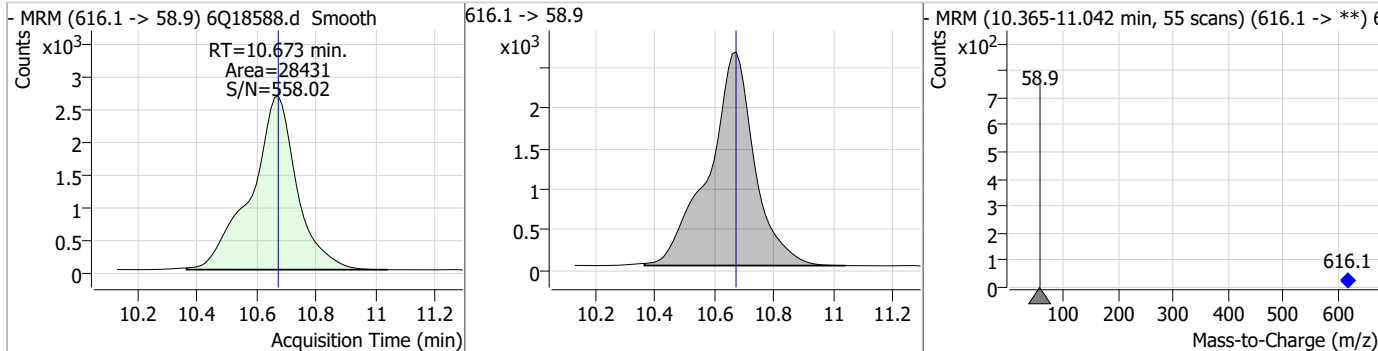
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	1.28	9.75	0.00	2029	699.1 -> 98.8	50.0	26.9	80.6



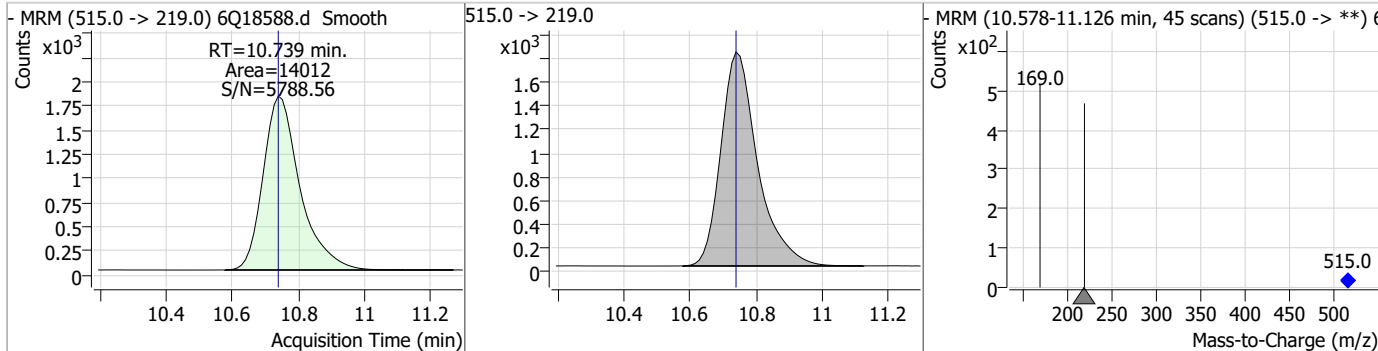
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.84	10.66	0.00	117703				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	6.08	10.67	0.00	28431				

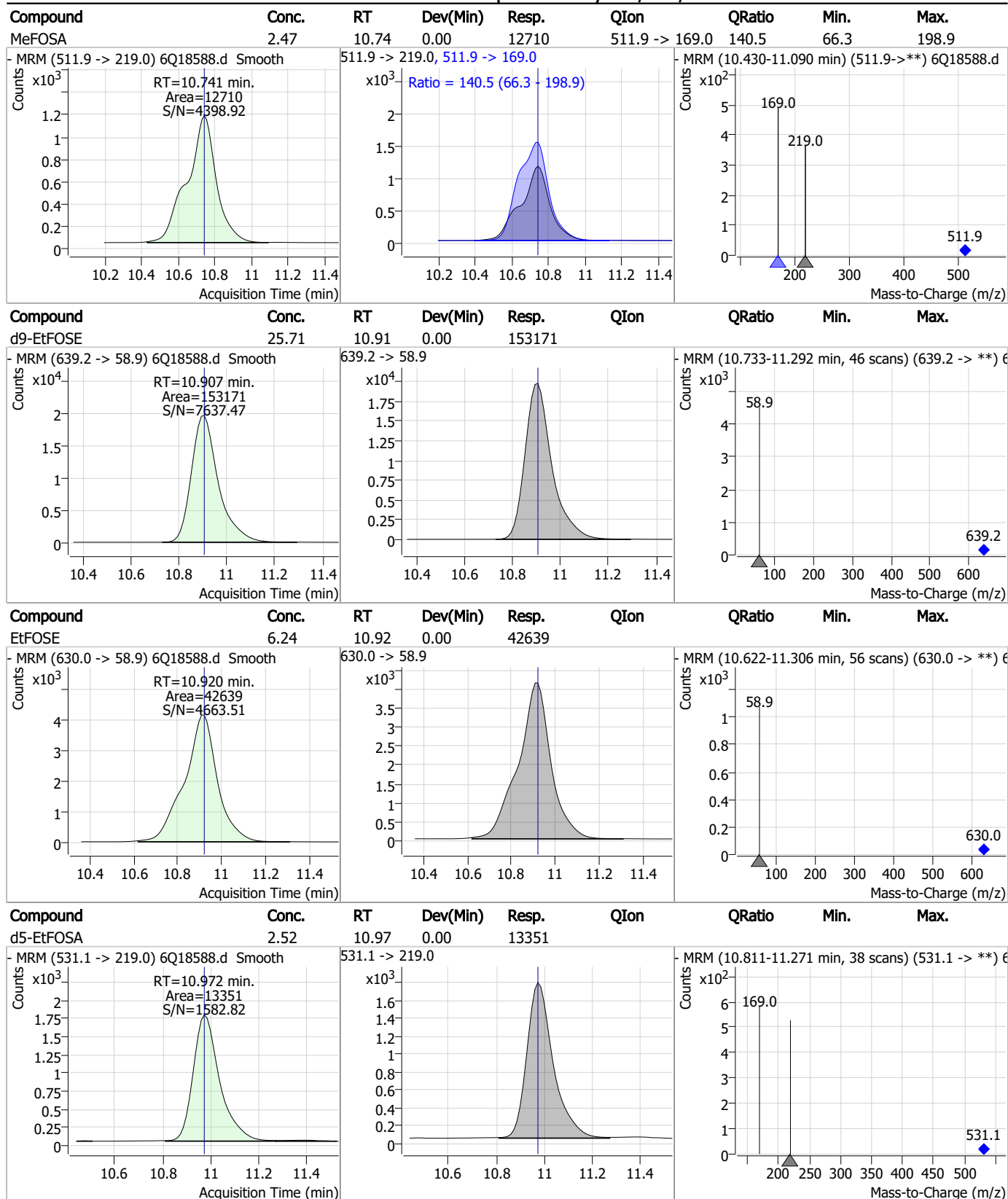


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.50	10.74	0.00	14012				



7.7.4
7

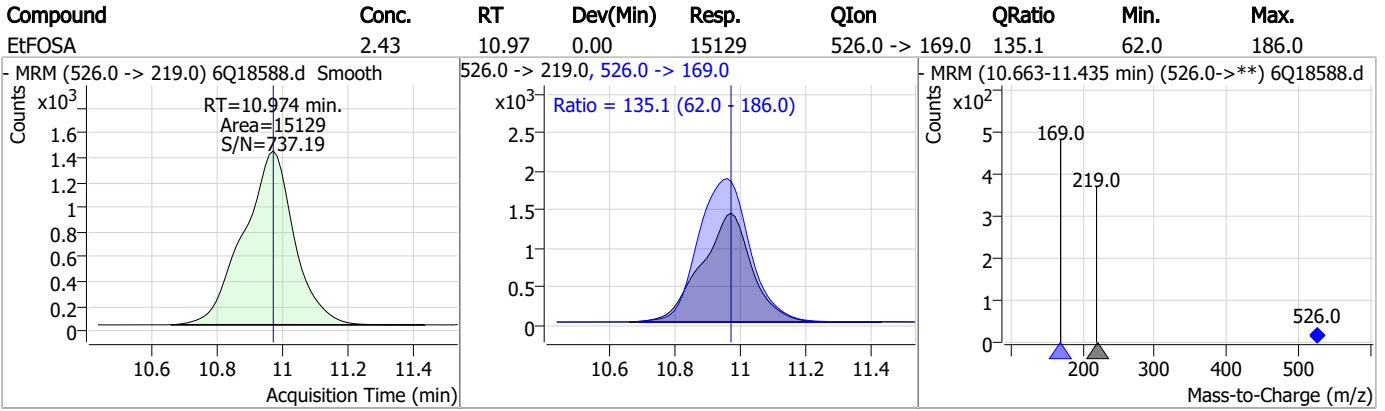
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18588.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:45 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.7.4.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18589.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:59:51 PM
 Sample Name : icc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	189555	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	63493	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	69513	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	64957	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	97956	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	44035	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	25820	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	35422	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31033	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16887	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34925	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24869	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15545	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	15184	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3758	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5472	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5633	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	28440	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	41571	10.00 µg/L	-0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	27173	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	117040	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	153531	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13495	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14341	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	19853	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	78902	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11237	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	103323	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	35484	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	58126	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	66686	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3758	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5472	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5633	5.10 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31033	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16887	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFBS	5.322	302.1 -> 79.9	24869	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C3-PFHxS	7.130	402.1 -> 79.9	15545	2.48 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFBA	2.822	216.8 -> 171.9	189555	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C4-PFHpA	6.369	367.1 -> 322.0	64957	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFHxA	5.404	318.0 -> 273.0	69513	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	63493	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C6-PFDA	8.027	519.1 -> 474.1	25820	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	35422	1.34 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C8-FOSA	9.598	506.1 -> 77.8	34925	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C8-PFOA	7.026	421.1 -> 376.0	97956	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.177	507.1 -> 79.9	15184	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C9-PFNA	7.545	472.1 -> 427.0	44035	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.0%	
d3-MeFOSAA	8.072	573.2 -> 419.0	28440	4.44 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.8%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	41571	9.49 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d3-MeFOSA	10.739	515.0 -> 219.0	14341	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	27173	4.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d7-MeFOSE	10.660	623.2 -> 58.9	117040	23.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
d9-EtFOSE	10.907	639.2 -> 58.9	153531	23.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	13495	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.0%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	51425	9.42 µg/L	96
		327.1 -> 80.9	19128		
6:2FTS	6.801	427.1 -> 407.0	50102	9.32 µg/L	98
		427.1 -> 80.9	16529		
8:2FTS	7.816	527.1 -> 507.0	29747	9.49 µg/L	92
		527.1 -> 80.8	11252		
EtFOSAA	8.280	584.2 -> 419.1	8210	2.35 µg/L	98
		584.2 -> 526.0	4591		
FOSA	9.589	498.1 -> 77.9	29050	2.40 µg/L	99
		498.1 -> 478.0	792		
MeFOSAA	8.085	570.1 -> 419.0	14399	2.46 µg/L	95
		570.1 -> 483.0	3104		
PFBA	2.818	212.8 -> 168.9	59471	9.48 µg/L	100
PFBS	5.323	298.7 -> 79.9	18127	2.14 µg/L	97
		298.7 -> 98.8	6865		
PFDA	8.027	512.9 -> 469.0	74108	2.48 µg/L	99
		512.9 -> 219.0	12035		
PFDODA	8.900	613.1 -> 569.0	52039	2.44 µg/L	96
		613.1 -> 319.0	7920		
PFDS	9.052	599.0 -> 79.9	8728	2.30 µg/L	94

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3939		
PFHpA	6.370	363.1 -> 319.0	66315	2.31 µg/L	97
		363.1 -> 169.0	10881		
PFHpS	7.685	449.0 -> 79.9	15706	2.16 µg/L	98
		449.0 -> 98.9	8011		
PFHxA	5.407	313.0 -> 269.0	56570	2.42 µg/L	98
		313.0 -> 118.9	2891		
PFHxS	7.131	398.7 -> 79.9	15719	2.24 µg/L	100
		398.7 -> 98.9	7434		
PFNA	7.545	463.0 -> 419.0	69229	2.22 µg/L	96
		463.0 -> 219.0	14725		
PFNS	8.631	548.8 -> 79.9	13620	2.23 µg/L	96
		548.8 -> 98.9	7016		
PFOA	7.028	413.0 -> 369.0	101772	2.43 µg/L	100
		413.0 -> 169.0	17392		
PFOS	8.178	498.9 -> 79.9	15311	2.21 µg/L	95
		498.9 -> 98.8	7621		
PFPeA	4.212	263.0 -> 219.0	72565	4.76 µg/L	100
PFPeS	6.410	349.1 -> 79.9	15859	2.26 µg/L	99
		349.1 -> 98.9	7345		
PFTeDA	9.628	713.1 -> 669.0	41426	2.49 µg/L	97
		713.1 -> 168.9	3558		
PFTrDA	9.284	663.0 -> 619.0	54476	2.53 µg/L	97
		663.0 -> 168.9	5606		
PFUnDA	8.468	563.1 -> 519.0	52765	2.29 µg/L	95
		563.1 -> 269.1	9210		
11CI-PF3OUdS	9.336	630.9 -> 450.9	75994	4.87 µg/L	98
		632.9 -> 452.9	22667		
9CI-PF3ONS	8.508	530.8 -> 351.0	118573	4.82 µg/L	96
		532.8 -> 353.0	36306		
ADONA	6.632	376.9 -> 250.9	261173	4.73 µg/L	99
		376.9 -> 84.8	68875		
HFPO-DA	5.770	284.9 -> 168.9	17708	5.03 µg/L	94
		284.9 -> 184.9	2012		
3:3FTCA	3.659	241.0 -> 177.0	11513	11.80 µg/L	99
		241.0 -> 117.0	1602		
5:3FTCA	6.074	341.0 -> 237.1	248699	59.23 µg/L	97
		341.0 -> 217.0	182017		
7:3FTCA	7.510	441.0 -> 316.9	175170	60.92 µg/L	97
		441.0 -> 336.9	376547		
EtFOSA	10.974	526.0 -> 219.0	30802	4.90 µg/L	93
		526.0 -> 169.0	40785		
EtFOSE	10.907	630.0 -> 58.9	82238	12.01 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	25190	4.78 µg/L	94
		511.9 -> 169.0	35040		
MeFOSE	10.673	616.1 -> 58.9	56031	12.05 µg/L	100
PFDoDS	9.755	699.1 -> 79.9	3730	2.21 µg/L	97
		699.1 -> 98.8	2084		
NFDHA	5.288	295.0 -> 201.0	13306	4.68 µg/L	98
		295.0 -> 84.9	3439		
PFMBA	4.626	279.0 -> 85.1	49585	4.78 µg/L	100
PFMPA	3.351	229.0 -> 84.9	38660	4.79 µg/L	100
PFEESA	5.862	314.8 -> 134.9	127899	4.32 µg/L	99
		314.8 -> 82.9	4516		

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

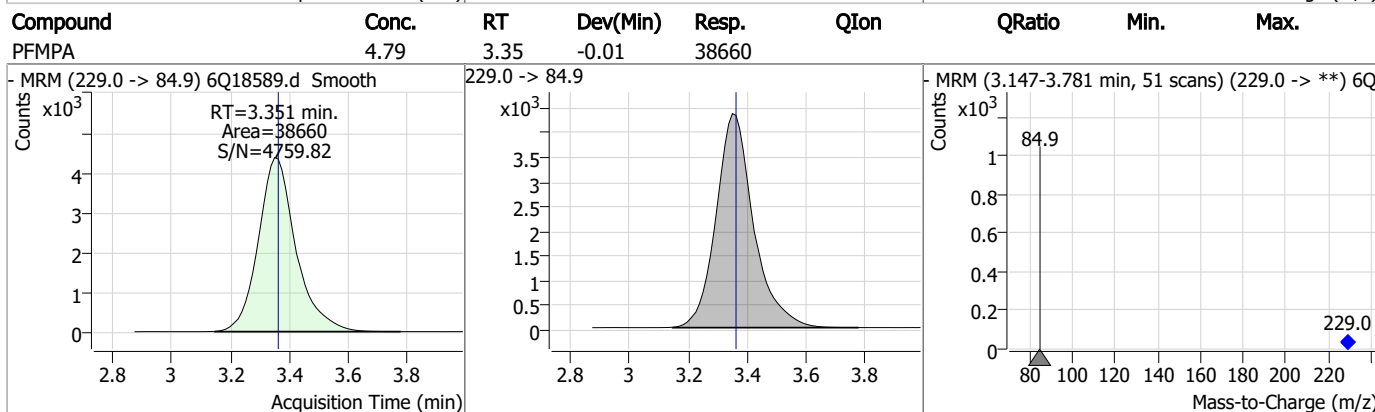
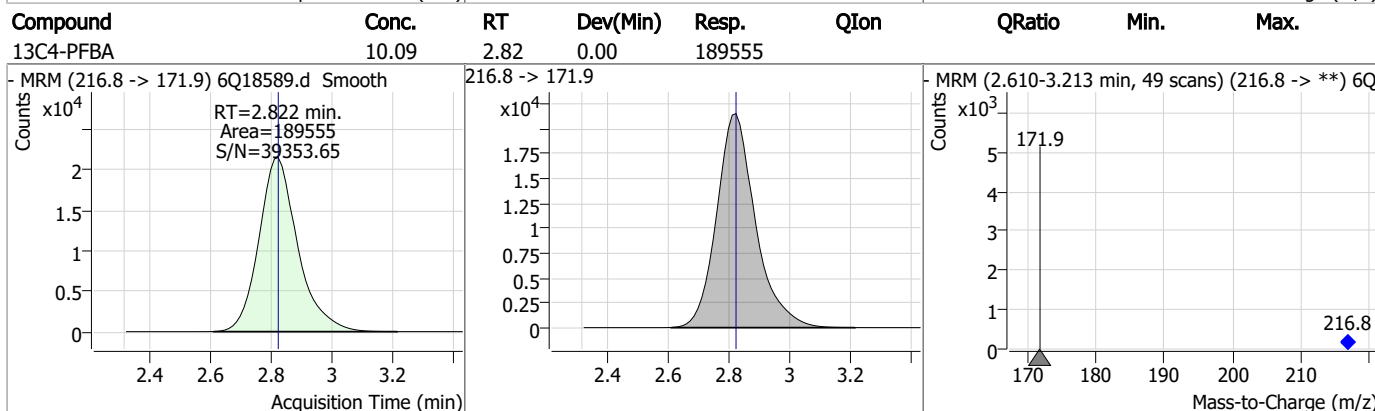
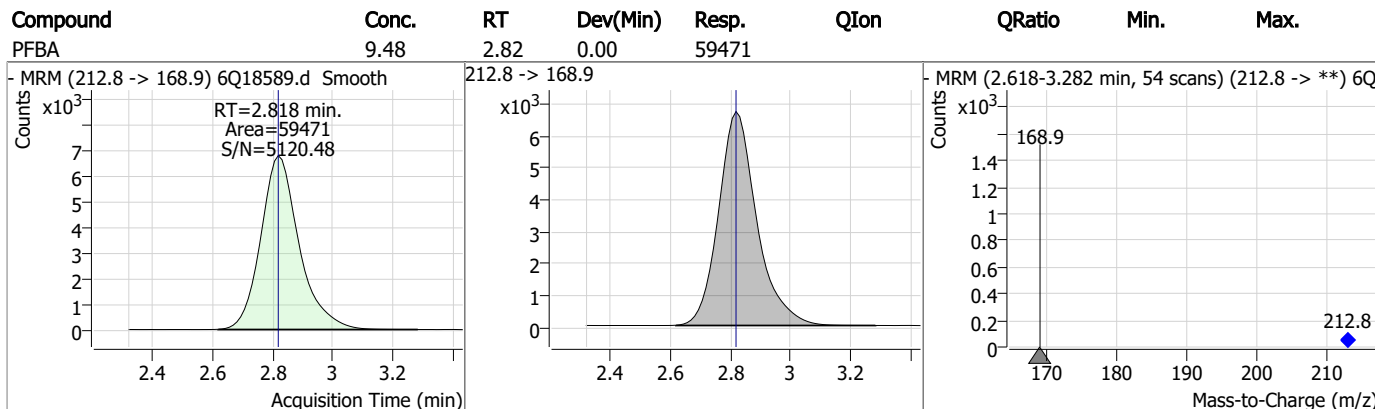
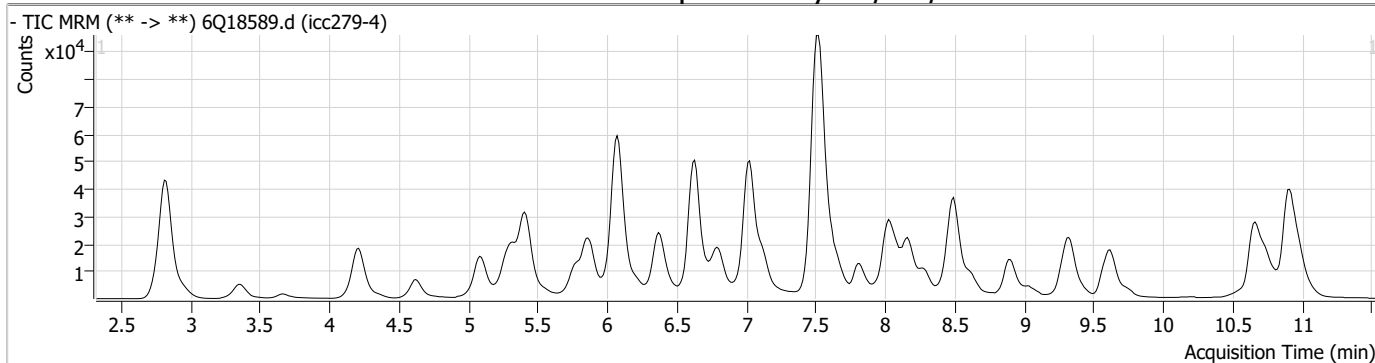
Perfluorinated Compounds by LC/MS/MS

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

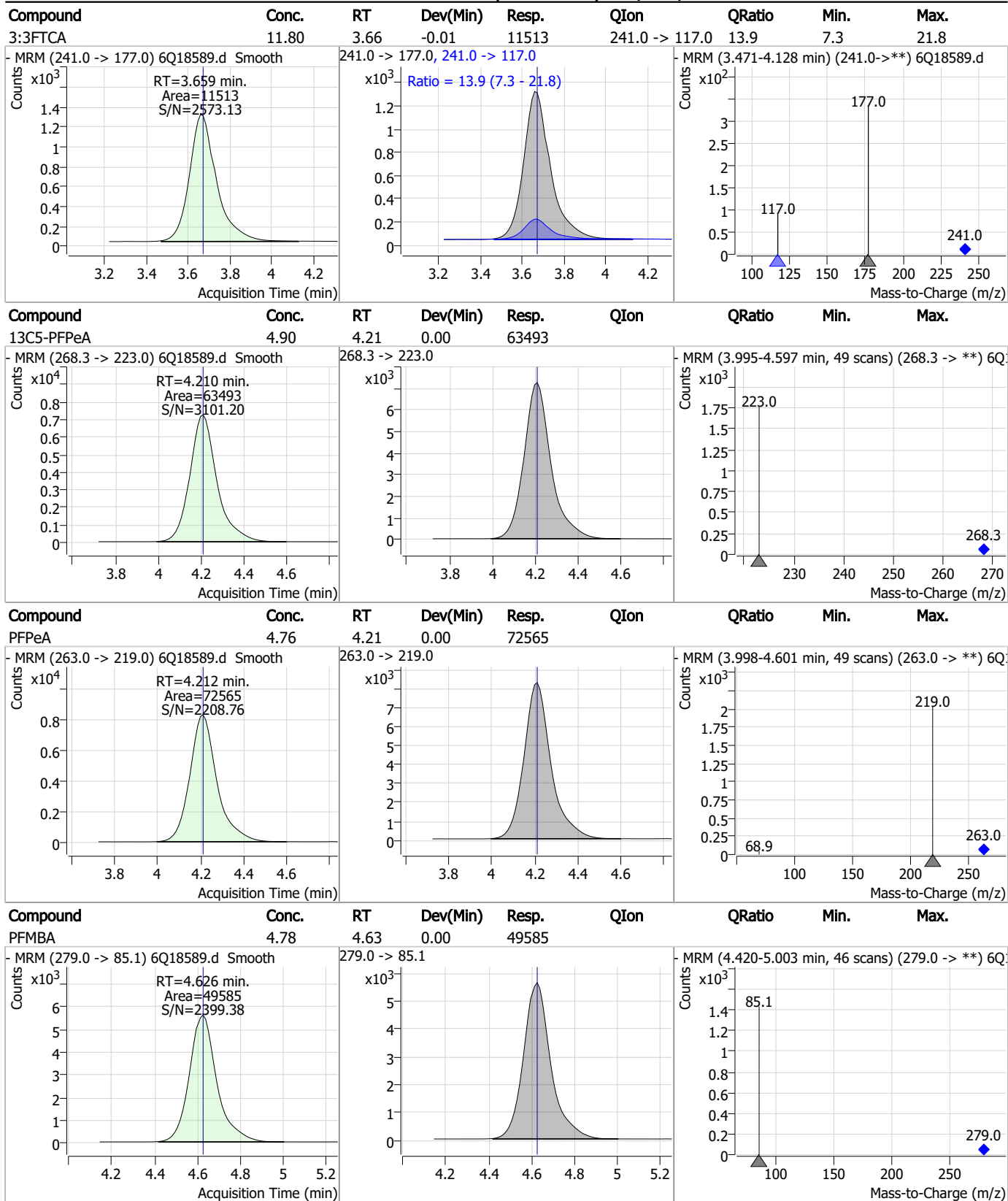
7.7.5
7



Perfluorinated Compounds by LC/MS/MS

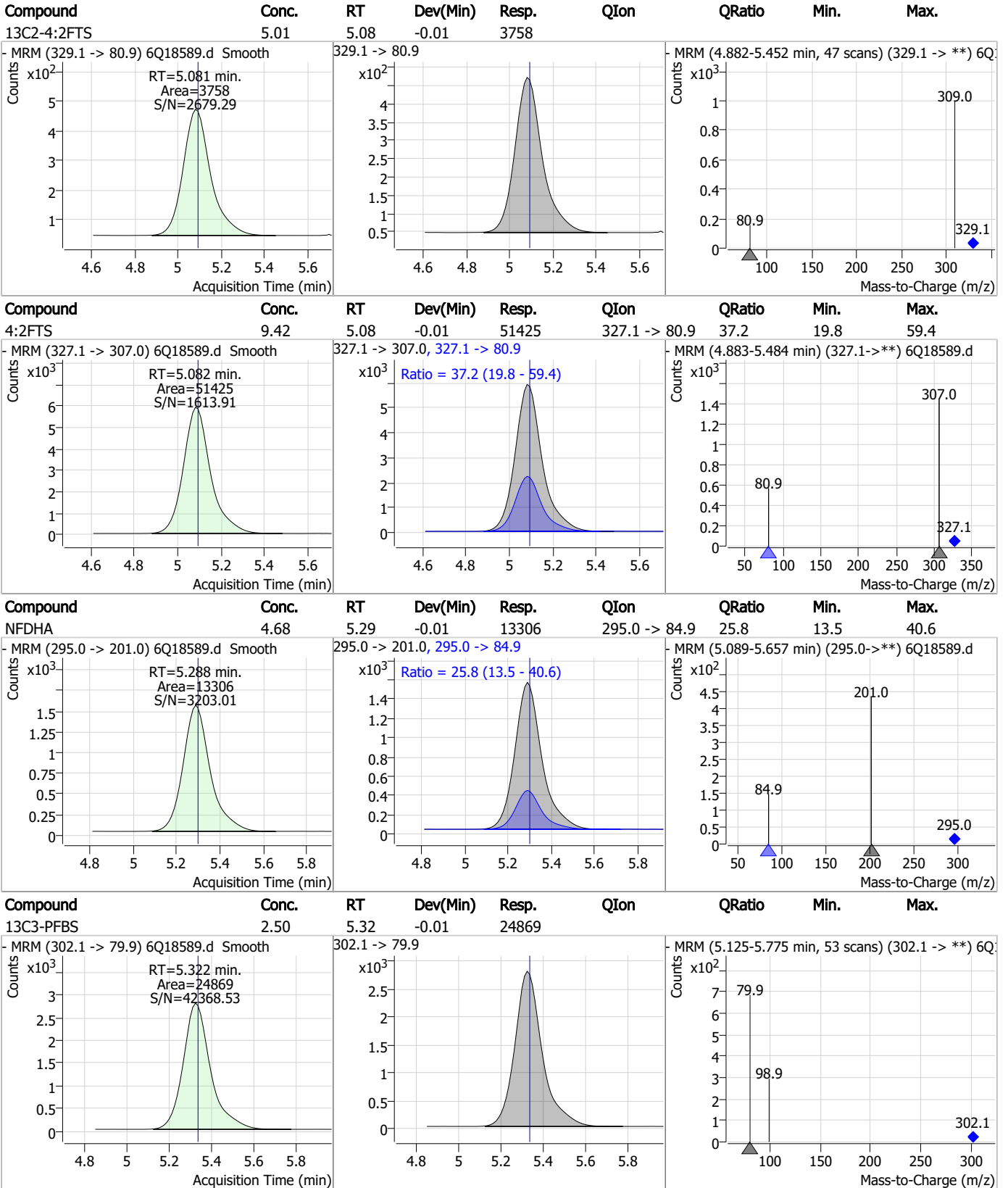


Perfluorinated Compounds by LC/MS/MS



7.7.5
7

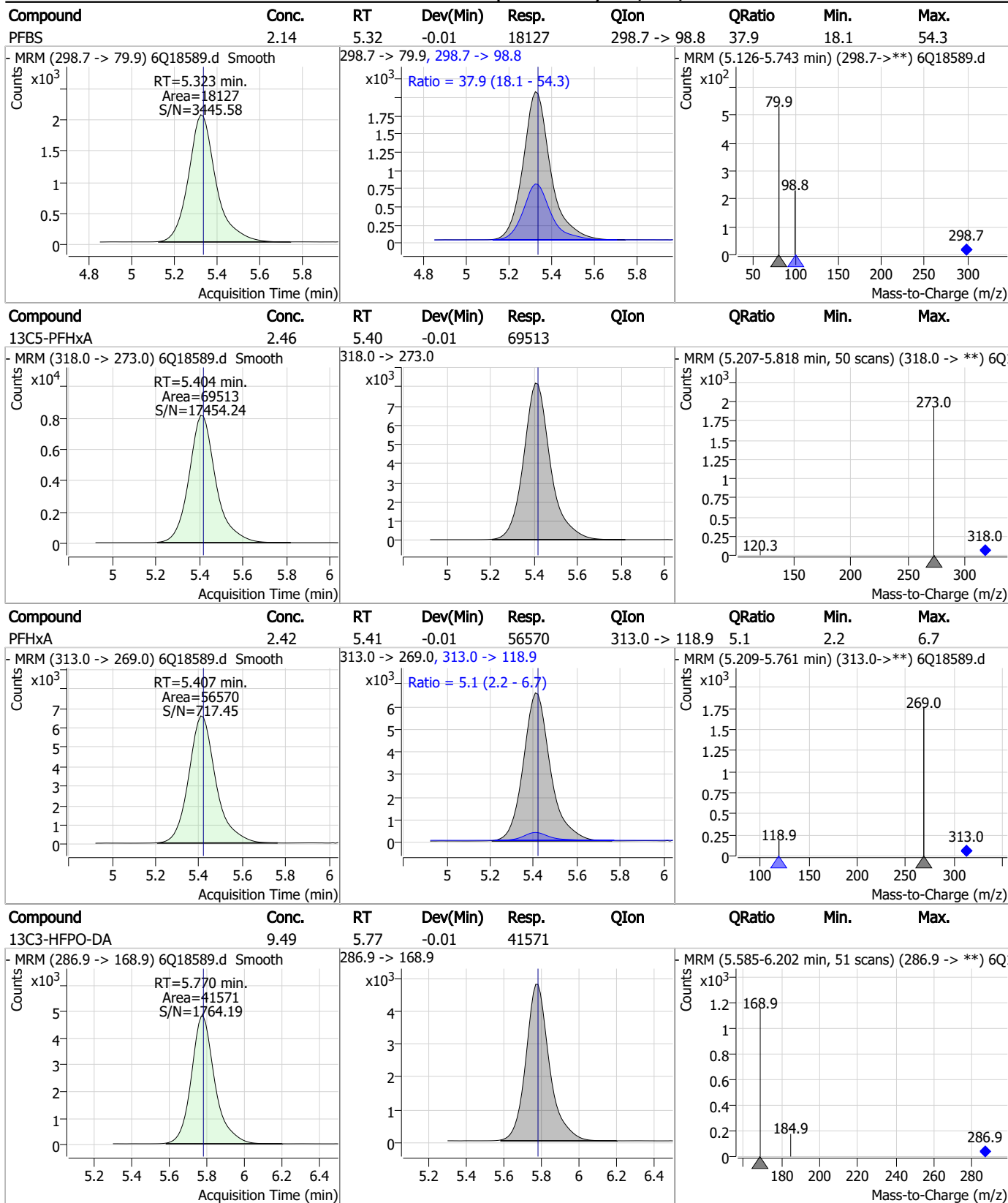
Perfluorinated Compounds by LC/MS/MS



7.7.5

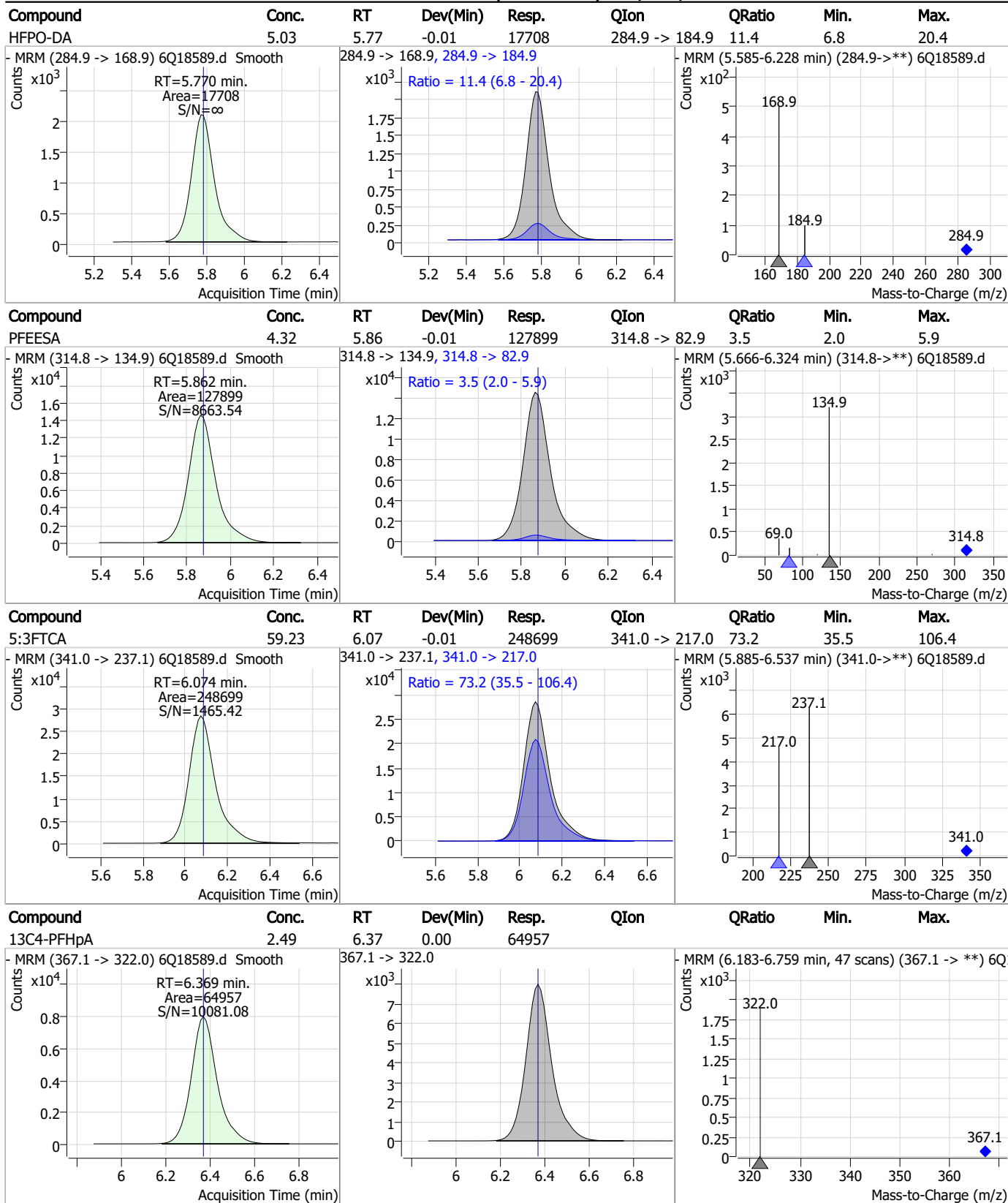
7

Perfluorinated Compounds by LC/MS/MS



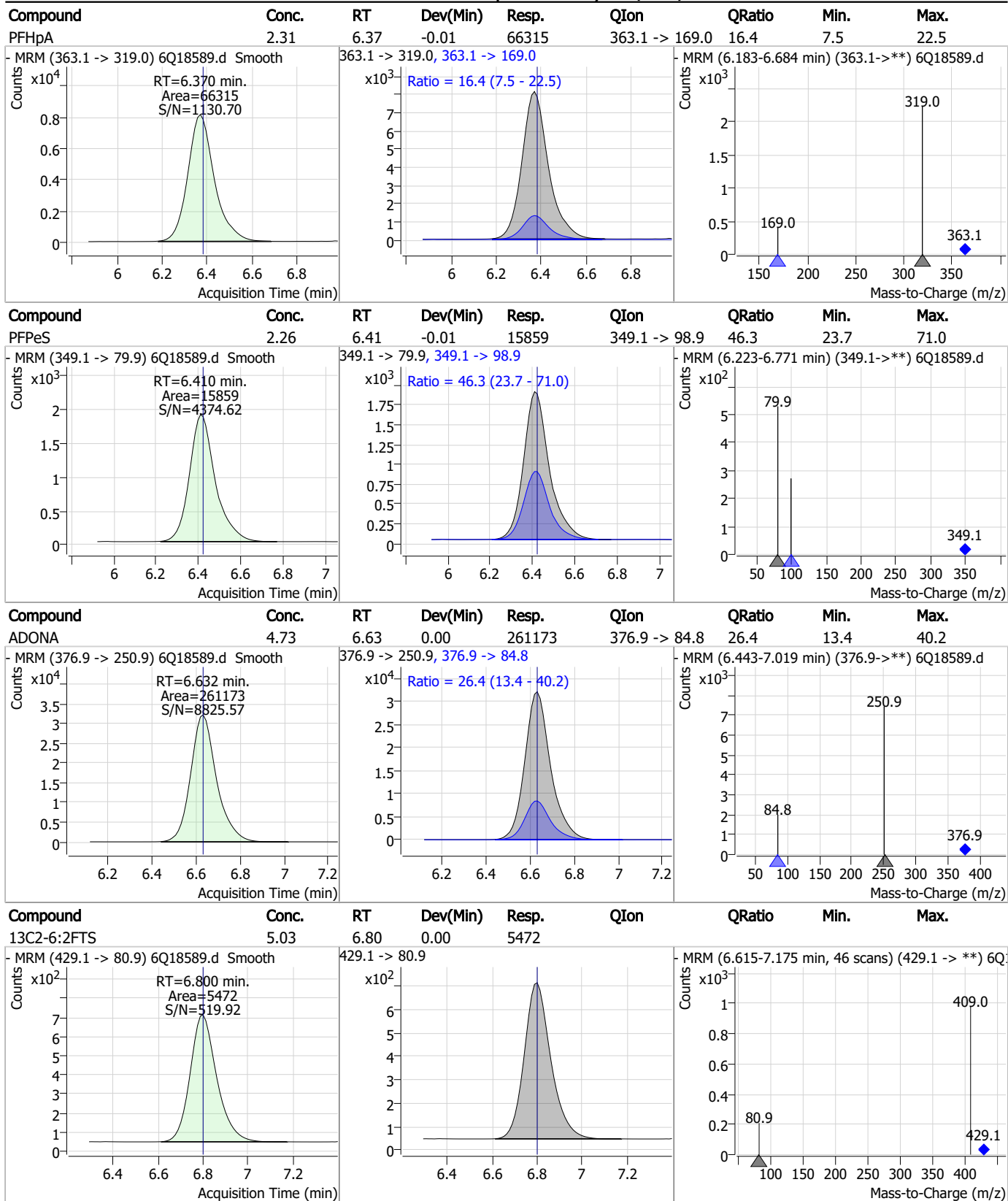
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



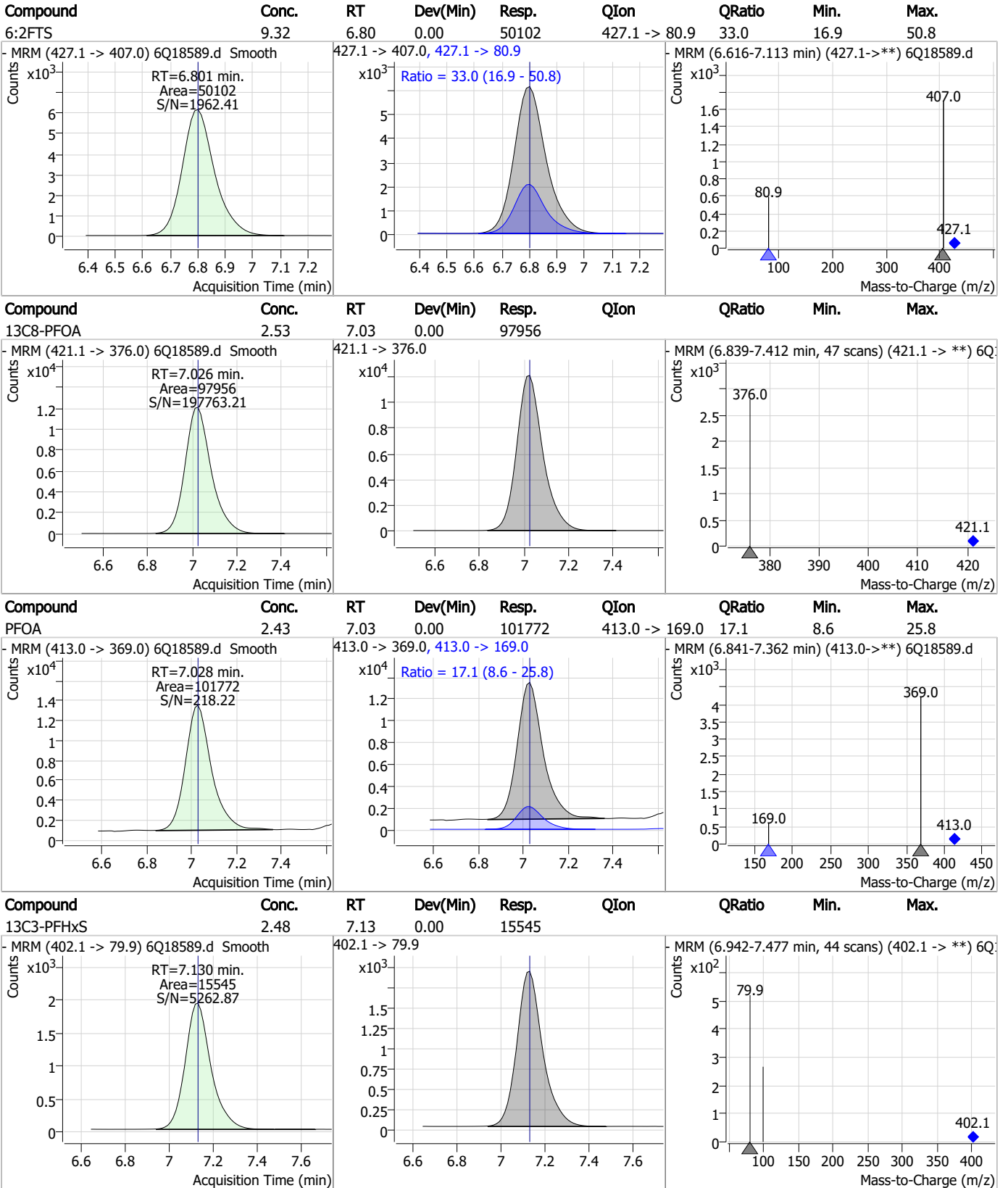
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5
7

Perfluorinated Compounds by LC/MS/MS

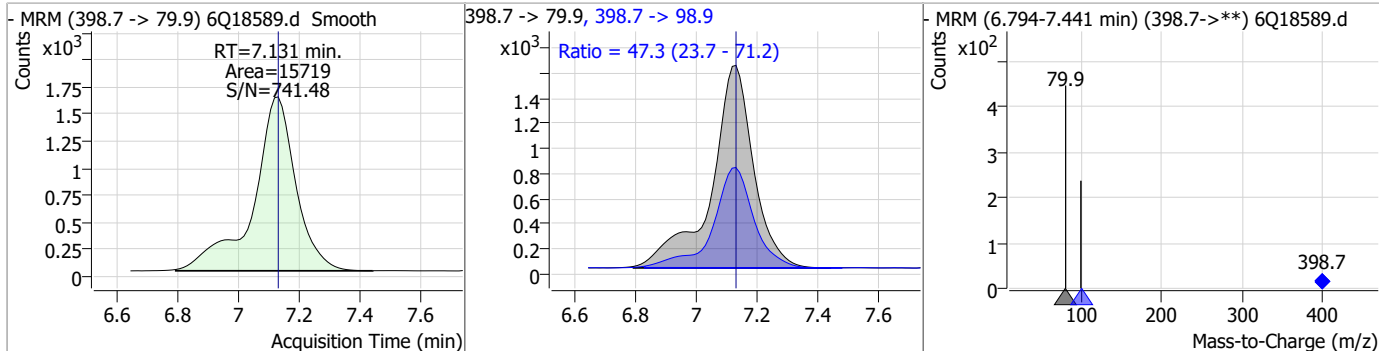


7.7.5

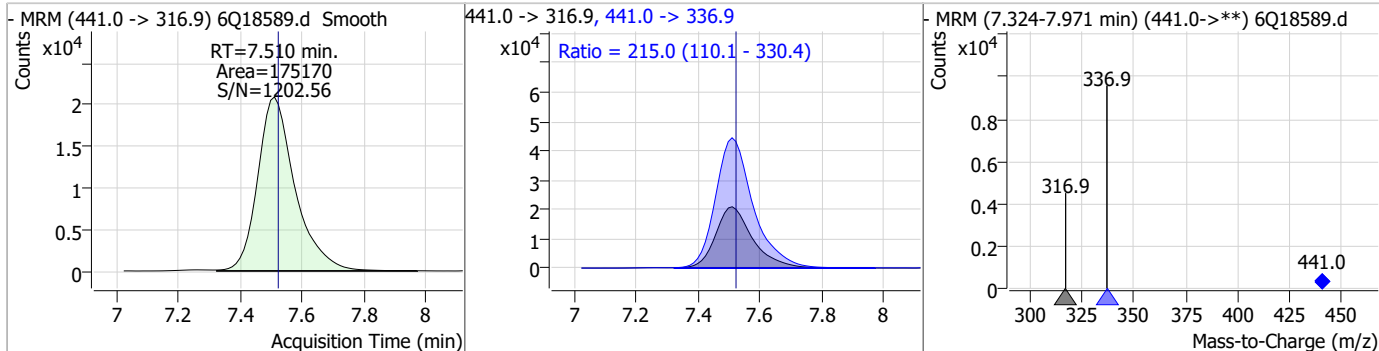
7

Perfluorinated Compounds by LC/MS/MS

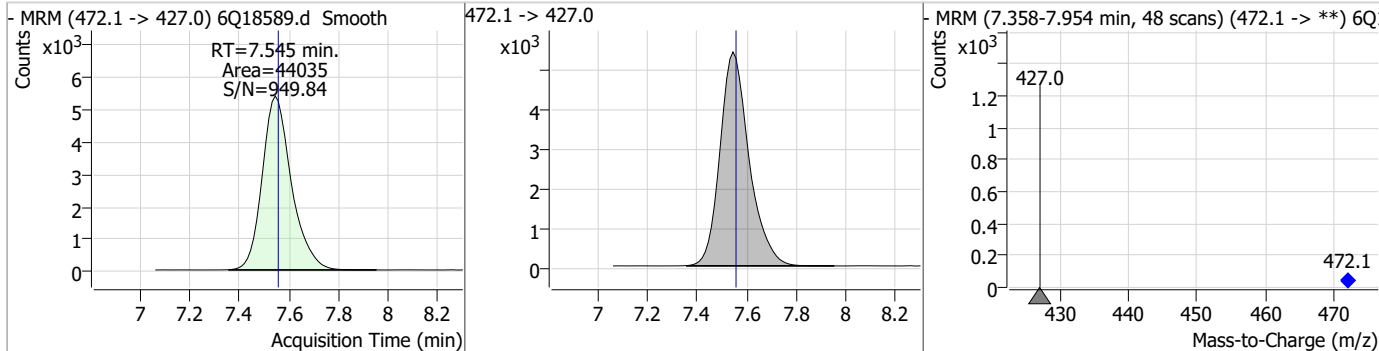
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.24	7.13	0.00	15719	398.7 -> 98.9	47.3	23.7	71.2



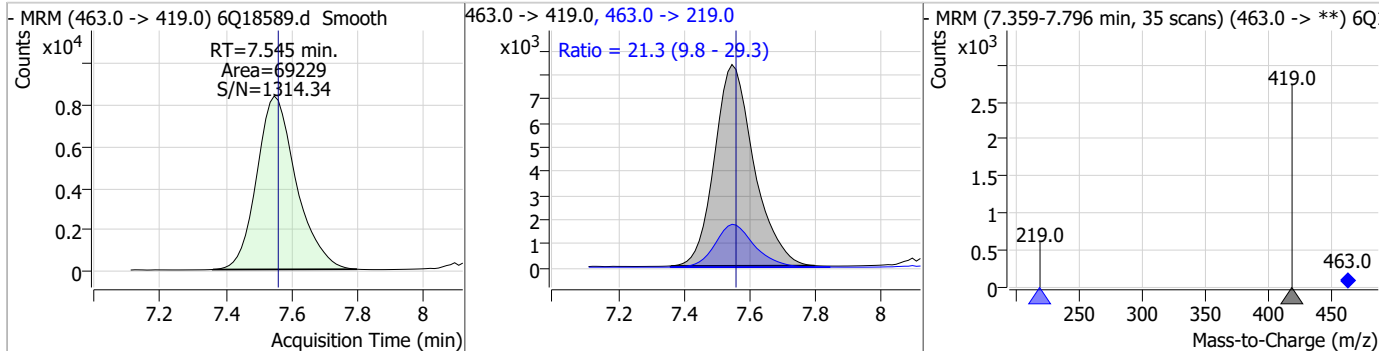
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	60.92	7.51	-0.01	175170	441.0 -> 336.9	215.0	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.15	7.54	-0.01	44035	472.1 -> 427.0			

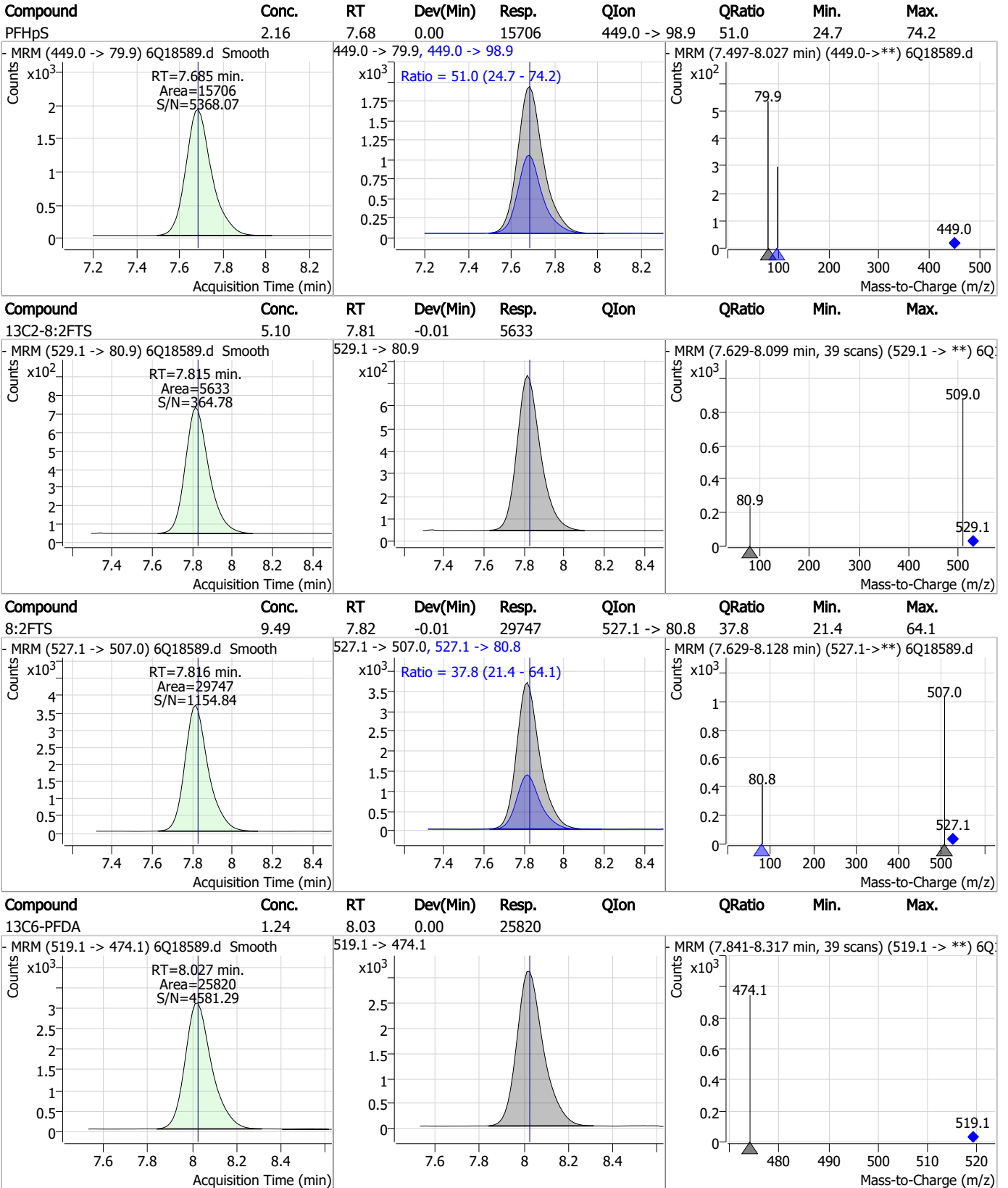


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.22	7.55	-0.01	69229	463.0 -> 219.0	21.3	9.8	29.3

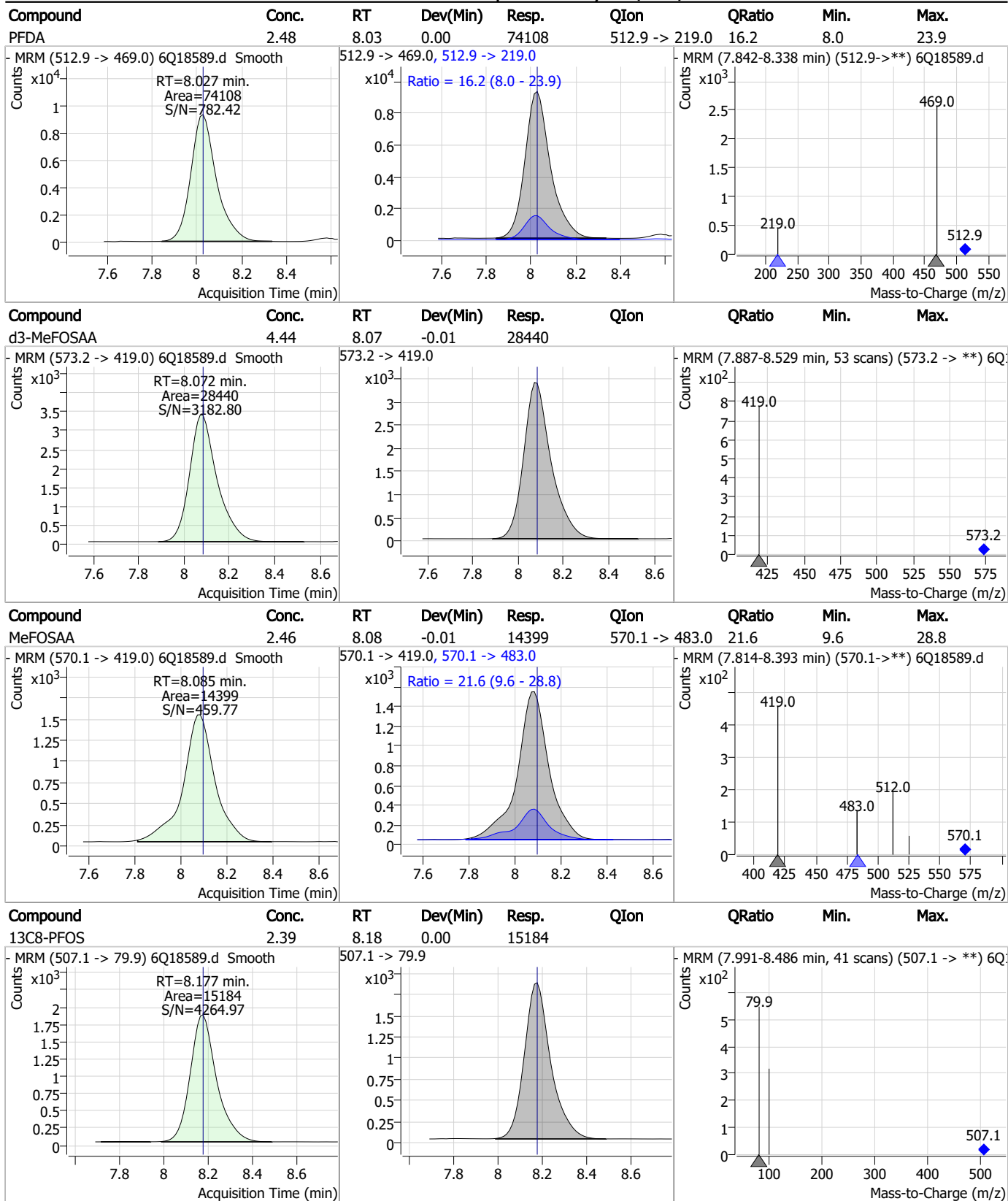


7.7.5
7

Perfluorinated Compounds by LC/MS/MS

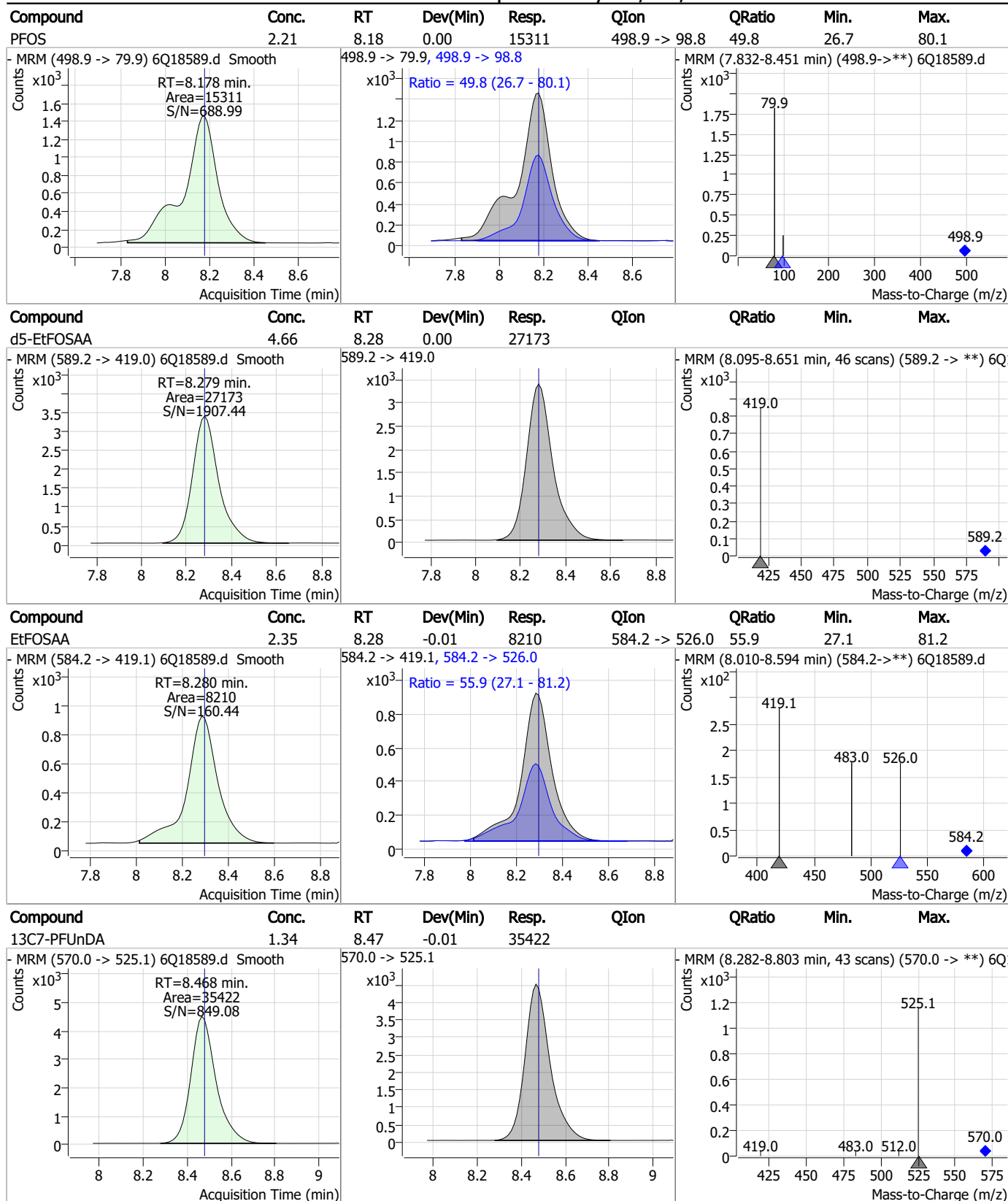


Perfluorinated Compounds by LC/MS/MS



7.7.5
7

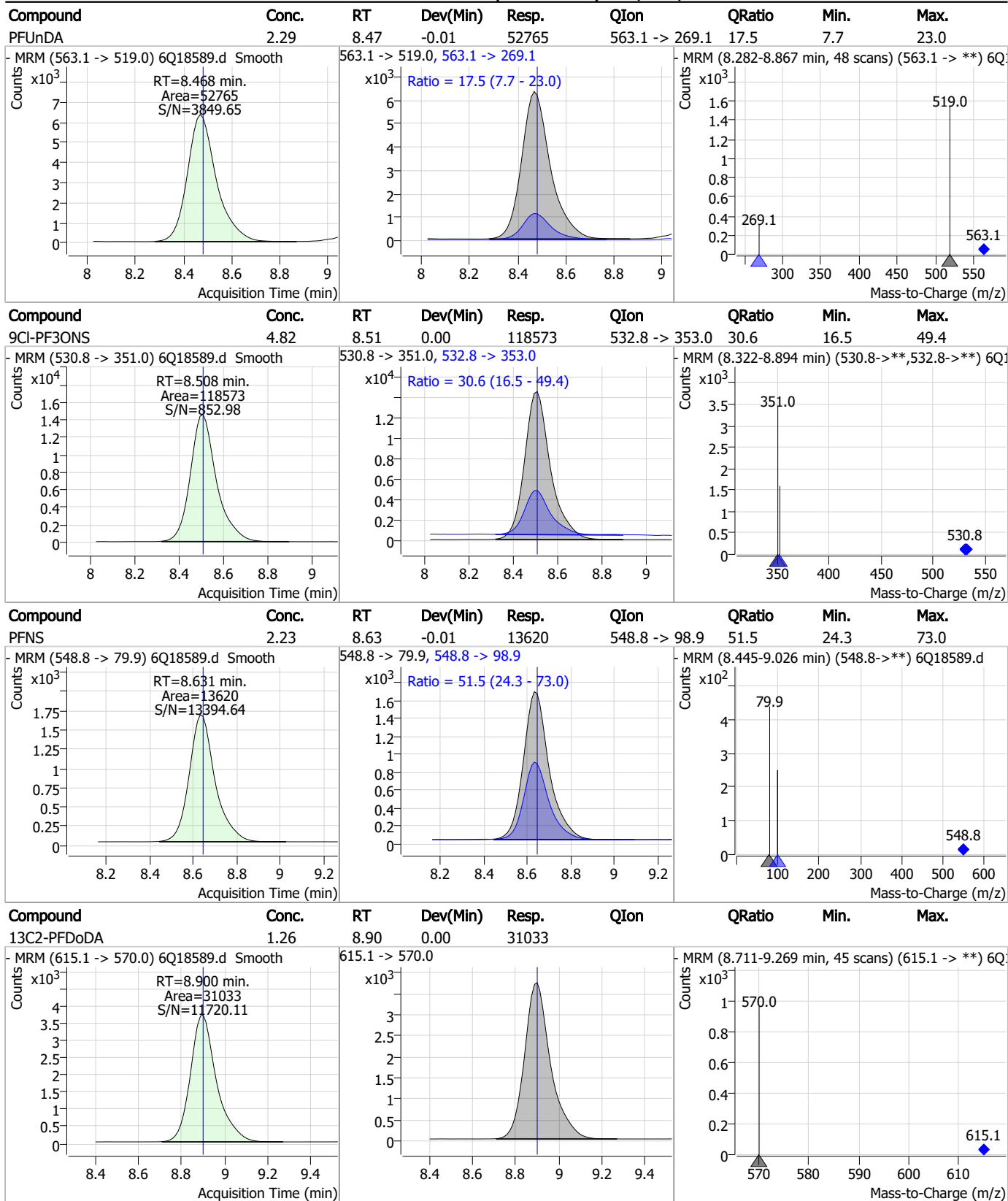
Perfluorinated Compounds by LC/MS/MS



7.7.5

7

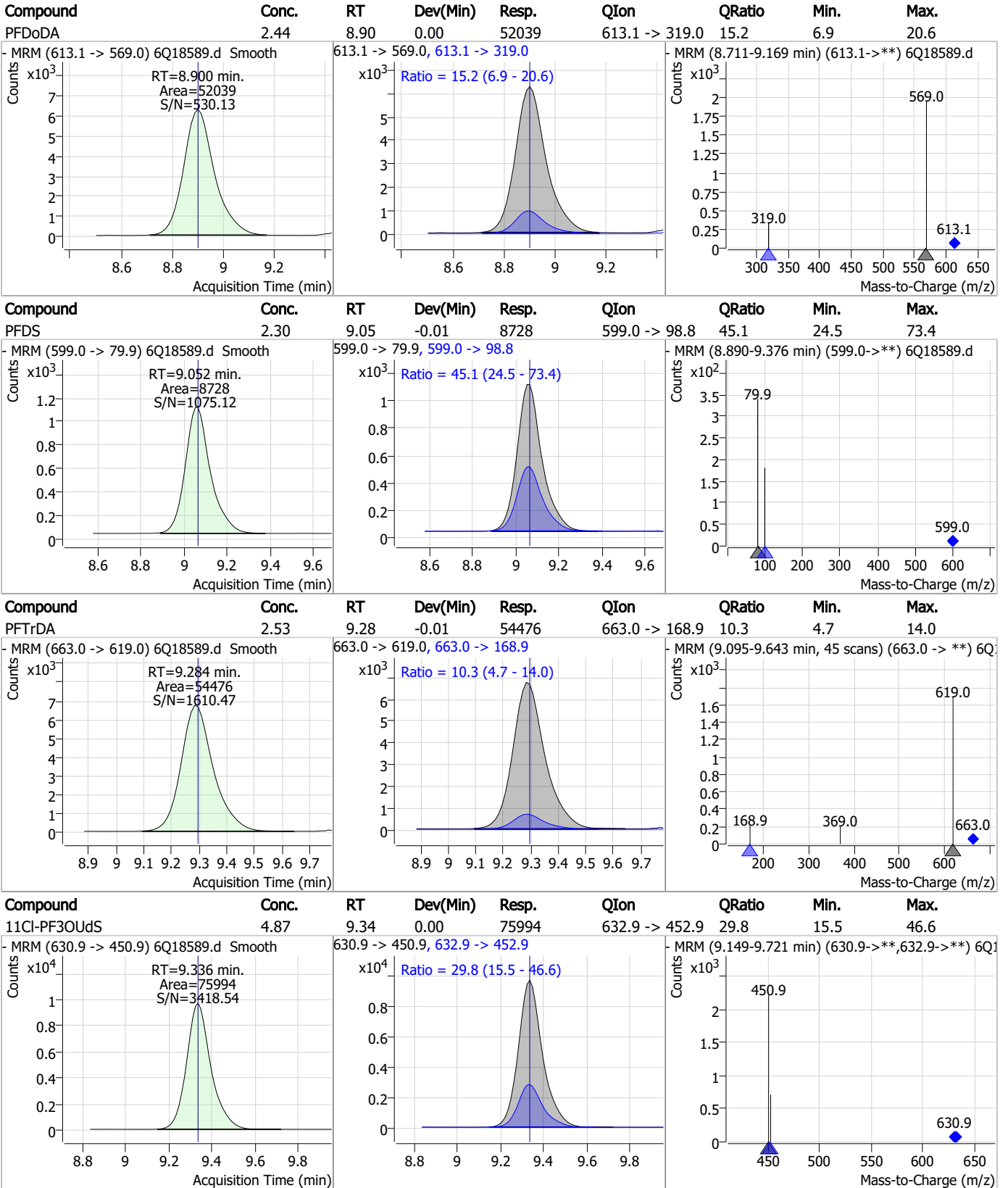
Perfluorinated Compounds by LC/MS/MS



7.7.5
7



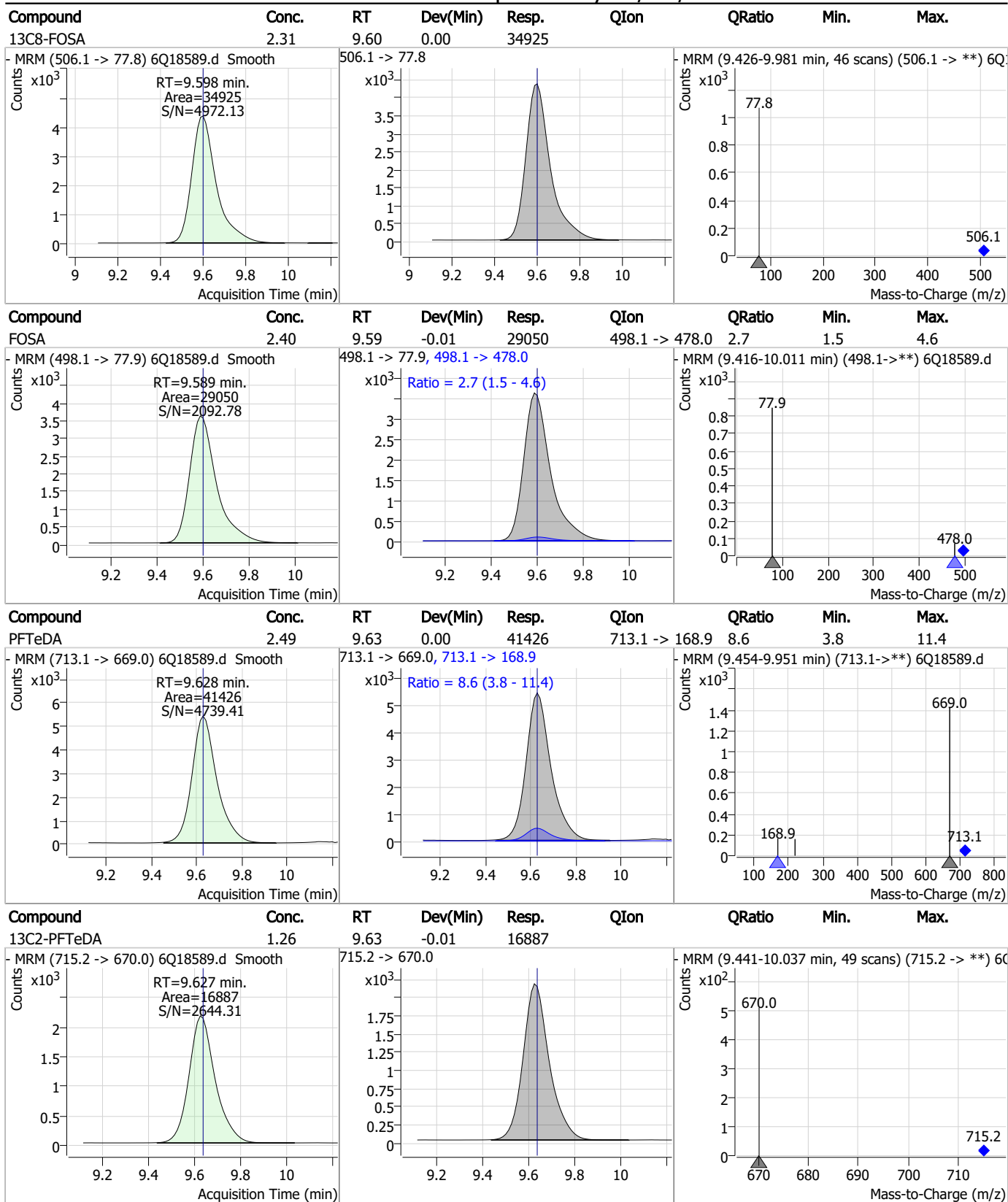
Perfluorinated Compounds by LC/MS/MS



7.7.5

7

Perfluorinated Compounds by LC/MS/MS

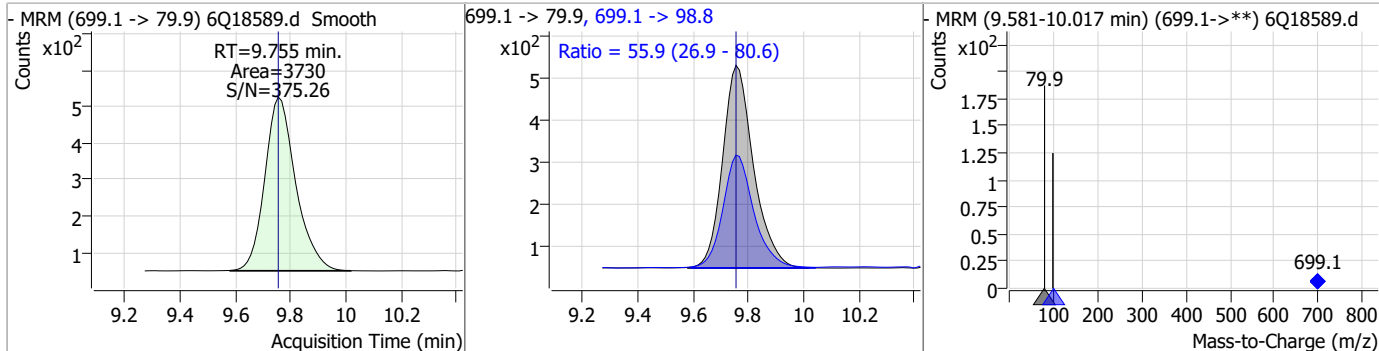


7.7.5

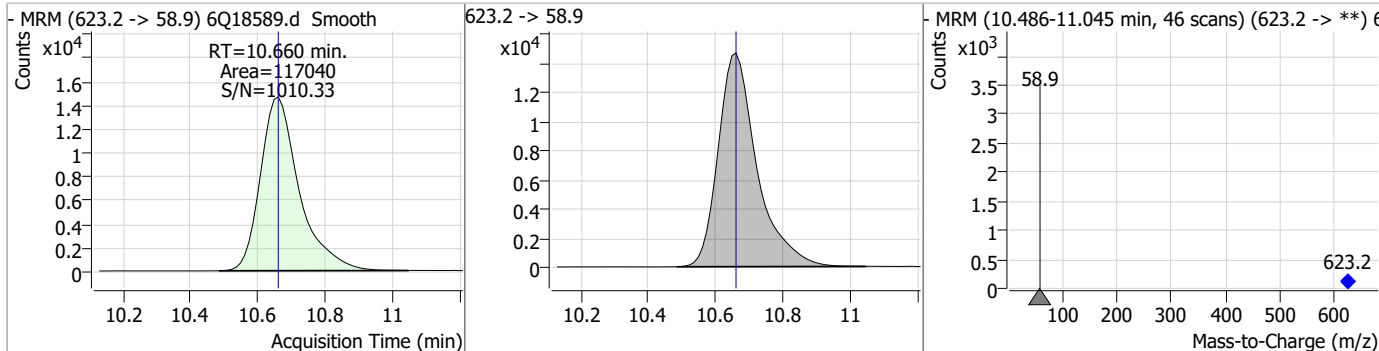
7

Perfluorinated Compounds by LC/MS/MS

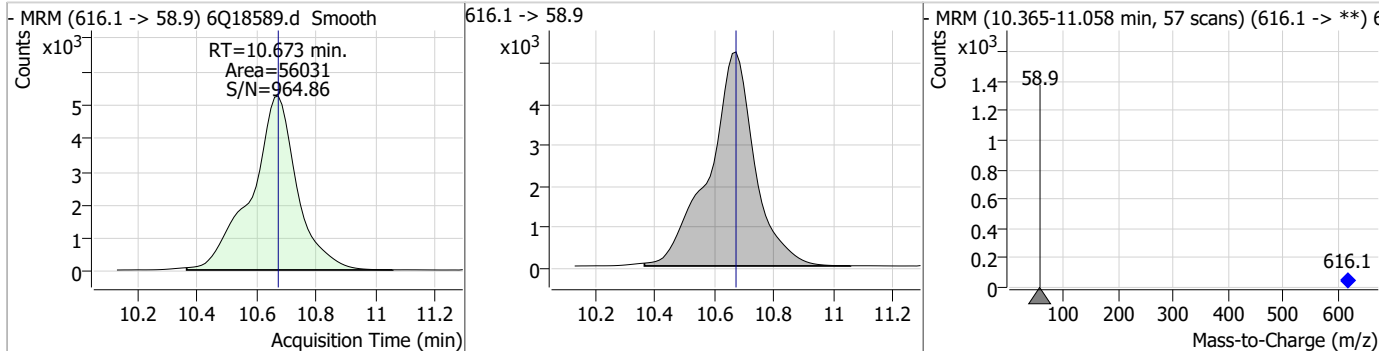
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.21	9.75	0.00	3730	699.1 -> 98.8	55.9	26.9	80.6



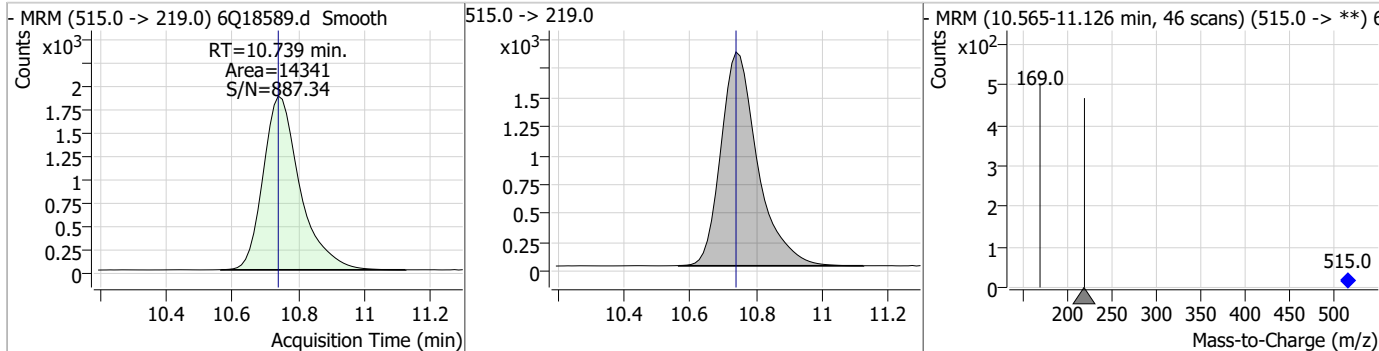
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.47	10.66	0.00	117040				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.05	10.67	0.00	56031				

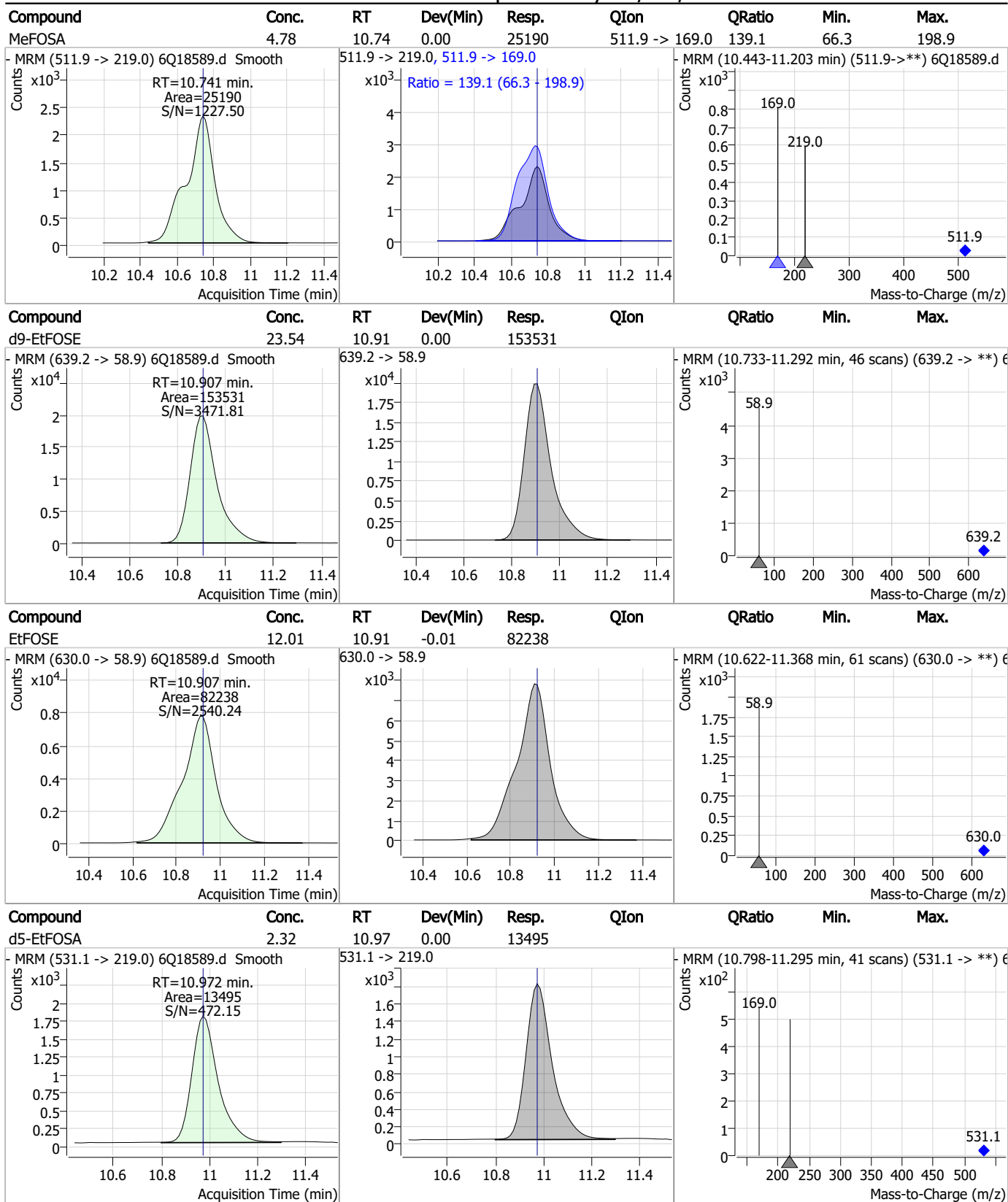


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.34	10.74	0.00	14341				



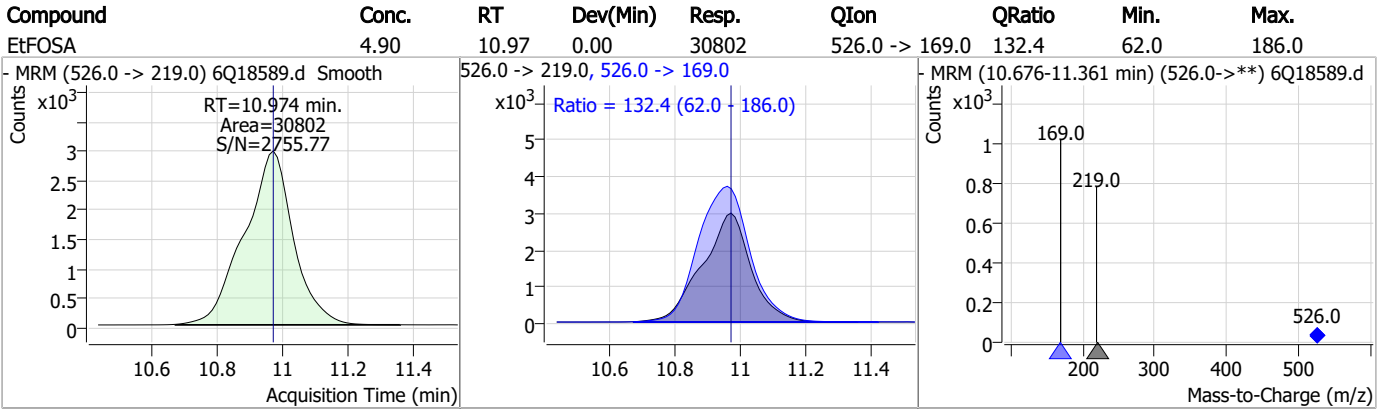
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18590.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:14:21 PM
 Sample Name : ic279-5
 Vial : P1-A6
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187880	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62954	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	67445	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	62246	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	99446	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	45750	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	26521	1.25 µg/L	-0.013
M7-PFUnDA	8.455	570.0 -> 525.1	34273	1.25 µg/L	-0.025
M2-PFDoDA	8.887	615.1 -> 570.0	32244	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	17929	1.25 µg/L	-0.012
M8-FOSA	9.586	506.1 -> 77.8	35190	2.50 µg/L	-0.012
M3-PFBS	5.322	302.1 -> 79.9	24935	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	15616	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	14763	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3776	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5453	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5898	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	32778	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	42108	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	26979	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	120691	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	152625	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13841	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13866	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	18357	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	78647	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10998	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	104265	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	36093	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	52987	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	64076	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3776	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5453	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5898	5.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C2-PFDoDA	8.887	615.1 -> 570.0	32244	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17929	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C3-PFBS	5.322	302.1 -> 79.9	24935	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C3-PFHxS	7.118	402.1 -> 79.9	15616	2.54 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C4-PFBA	2.822	216.8 -> 171.9	187880	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	62246	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	5.404	318.0 -> 273.0	67445	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	62954	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C6-PFDA	8.014	519.1 -> 474.1	26521	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C7-PFUnDA	8.455	570.0 -> 525.1	34273	1.27 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-FOSA	9.586	506.1 -> 77.8	35190	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C8-PFOA	7.013	421.1 -> 376.0	99446	2.55 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C8-PFOS	8.165	507.1 -> 79.9	14763	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C9-PFNA	7.545	472.1 -> 427.0	45750	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.8%	
d3-MeFOSAA	8.072	573.2 -> 419.0	32778	5.53 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42108	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	13866	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
d5-EtFOSAA	8.267	589.2 -> 419.0	26979	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d7-MeFOSE	10.647	623.2 -> 58.9	120691	26.18 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	152625	25.31 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	13841	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	98060	17.88 µg/L	96
		327.1 -> 80.9	36547		
6:2FTS	6.789	427.1 -> 407.0	101082	18.86 µg/L	97
		427.1 -> 80.9	32468		
8:2FTS	7.816	527.1 -> 507.0	55700	16.98 µg/L	96
		527.1 -> 80.8	22317		
EtFOSAA	8.280	584.2 -> 419.1	17051	4.91 µg/L	98
		584.2 -> 526.0	9540		
FOSA	9.589	498.1 -> 77.9	57690	4.74 µg/L	100
		498.1 -> 478.0	1790		
MeFOSAA	8.073	570.1 -> 419.0	30838	4.58 µg/L	99
		570.1 -> 483.0	6087		
PFBA	2.818	212.8 -> 168.9	119132	19.15 µg/L	100
PFBS	5.323	298.7 -> 79.9	35285	4.16 µg/L	97
		298.7 -> 98.8	13354		
PFDA	8.014	512.9 -> 469.0	143973	4.68 µg/L	99
		512.9 -> 219.0	23728		
PFDoDA	8.888	613.1 -> 569.0	103411	4.67 µg/L	96
		613.1 -> 319.0	16004		
PFDS	9.052	599.0 -> 79.9	17202	4.66 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	7926		
PFHpA	6.370	363.1 -> 319.0	134100	4.87 µg/L	97
		363.1 -> 169.0	21692		
PFHpS	7.673	449.0 -> 79.9	32049	4.53 µg/L	98
		449.0 -> 98.9	16285		
PFHxA	5.407	313.0 -> 269.0	107925	4.77 µg/L	98
		313.0 -> 118.9	5659		
PFHxS	7.119	398.7 -> 79.9	30346	4.30 µg/L	100
		398.7 -> 98.9	14465		
PFNA	7.545	463.0 -> 419.0	155123	4.79 µg/L	97
		463.0 -> 219.0	28167		
PFNS	8.631	548.8 -> 79.9	27107	4.57 µg/L	96
		548.8 -> 98.9	13999		
PFOA	7.015	413.0 -> 369.0	199283	4.69 µg/L	99
		413.0 -> 169.0	35542		
PFOS	8.166	498.9 -> 79.9	30197	4.48 µg/L	91
		498.9 -> 98.8	14141		
PFPeA	4.212	263.0 -> 219.0	144374	9.55 µg/L	100
PFPeS	6.410	349.1 -> 79.9	30757	4.37 µg/L	98
		349.1 -> 98.9	14232		
PFTeDA	9.628	713.1 -> 669.0	81291	4.61 µg/L	97
		713.1 -> 168.9	7055		
PFTrDA	9.284	663.0 -> 619.0	108478	4.85 µg/L	97
		663.0 -> 168.9	11146		
PFUnDA	8.468	563.1 -> 519.0	111368	5.00 µg/L	98
		563.1 -> 269.1	16291		
11Cl-PF3OUdS	9.336	630.9 -> 450.9	142513	9.02 µg/L	100
		632.9 -> 452.9	44315		
9Cl-PF3ONS	8.495	530.8 -> 351.0	225942	9.08 µg/L	99
		532.8 -> 353.0	72959		
ADONA	6.632	376.9 -> 250.9	513058	9.17 µg/L	98
		376.9 -> 84.8	141815		
HFPO-DA	5.783	284.9 -> 168.9	33213	9.31 µg/L	98
		284.9 -> 184.9	4234		
3:3FTCA	3.671	241.0 -> 177.0	22809	23.57 µg/L	98
		241.0 -> 117.0	3091		
5:3FTCA	6.074	341.0 -> 237.1	474474	116.47 µg/L	93
		341.0 -> 217.0	364763		
7:3FTCA	7.510	441.0 -> 316.9	344194	123.37 µg/L	99
		441.0 -> 336.9	761300		
EtFOSA	10.974	526.0 -> 219.0	60538	9.38 µg/L	97
		526.0 -> 169.0	77131		
EtFOSE	10.907	630.0 -> 58.9	164750	24.20 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	50777	9.96 µg/L	95
		511.9 -> 169.0	70280		
MeFOSE	10.673	616.1 -> 58.9	108332	22.59 µg/L	100
PFDoDS	9.755	699.1 -> 79.9	7468	4.55 µg/L	98
		699.1 -> 98.8	3886		
NFDHA	5.288	295.0 -> 201.0	26552	9.63 µg/L	98
		295.0 -> 84.9	6879		
PFMBA	4.626	279.0 -> 85.1	98078	9.53 µg/L	100
PFMPA	3.363	229.0 -> 84.9	76163	9.52 µg/L	100
PFEESA	5.862	314.8 -> 134.9	257995	8.98 µg/L	99
		314.8 -> 82.9	9081		

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

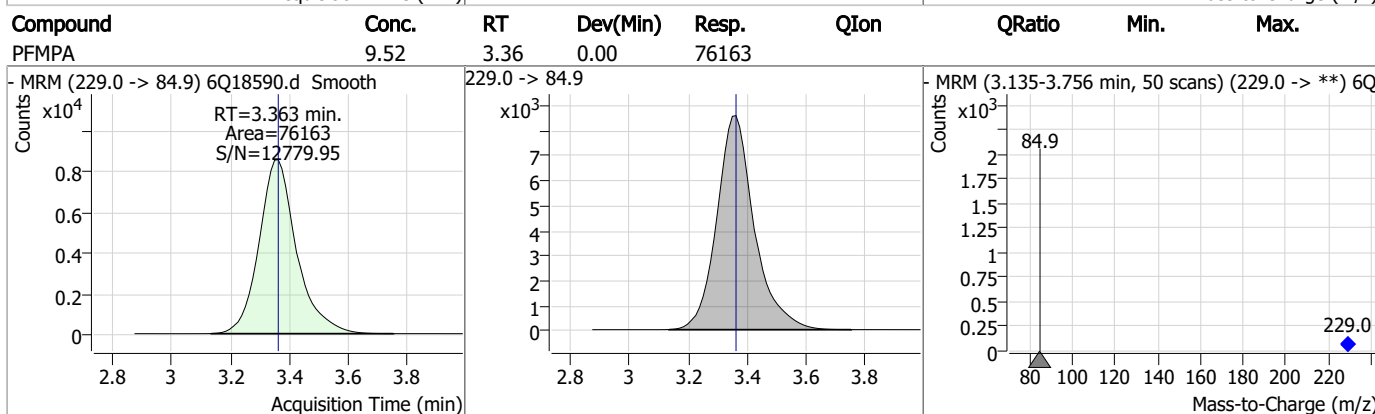
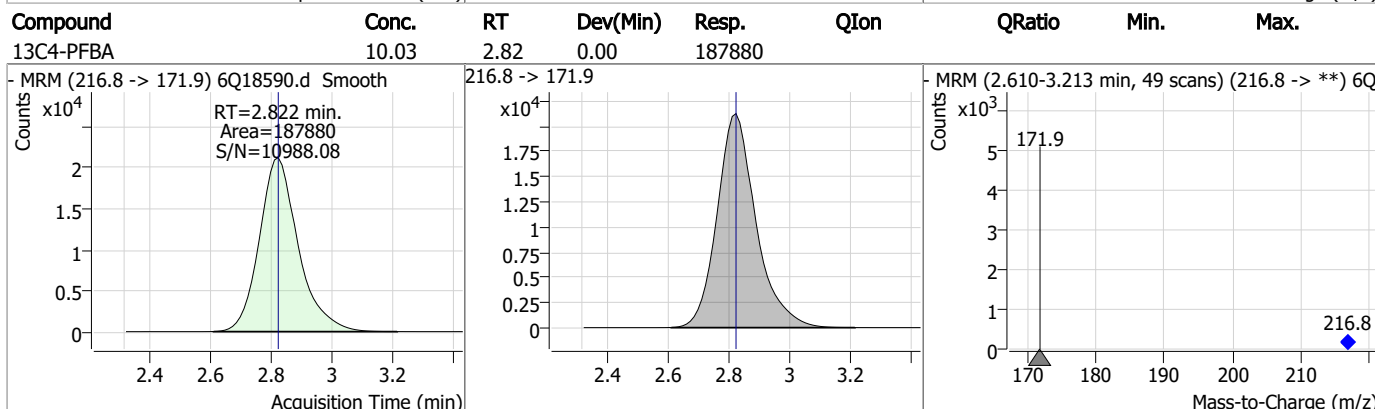
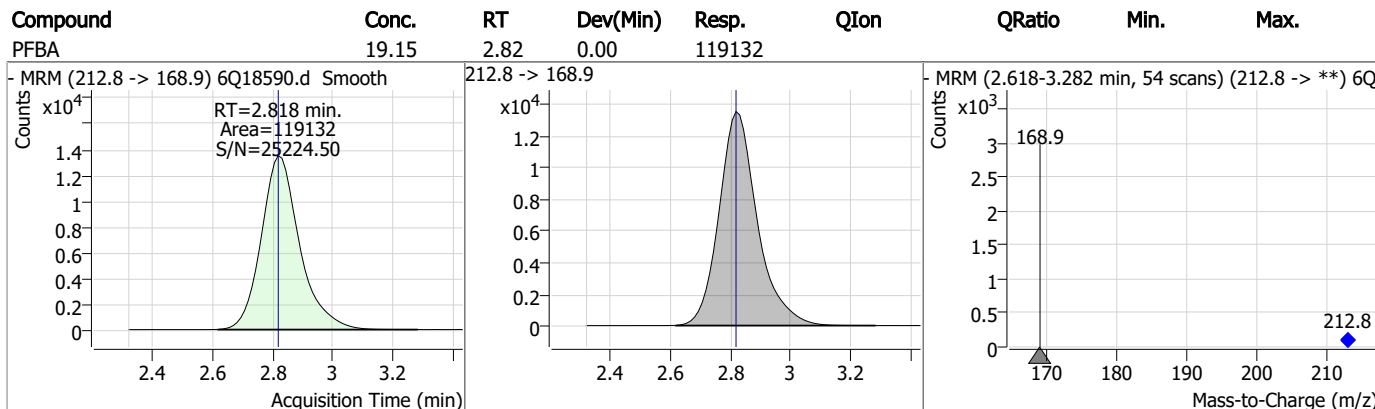
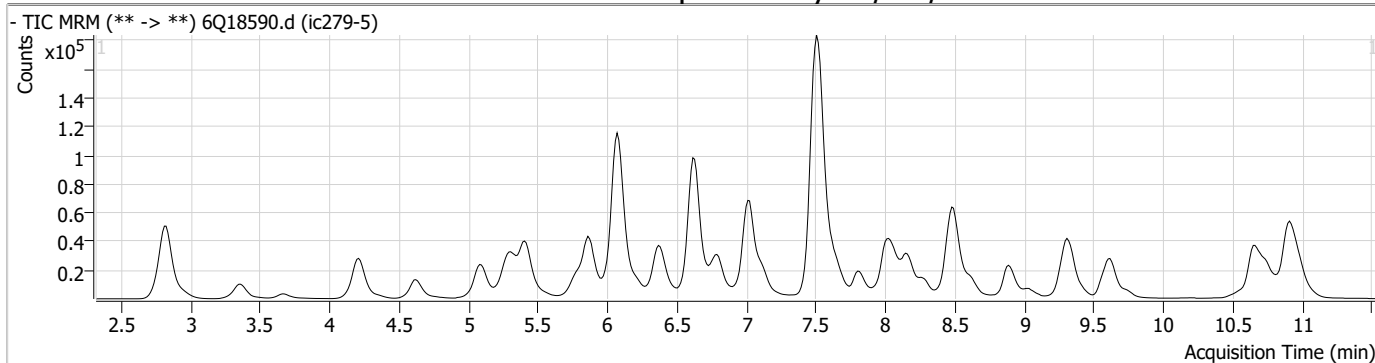
Perfluorinated Compounds by LC/MS/MS

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

7.7.6

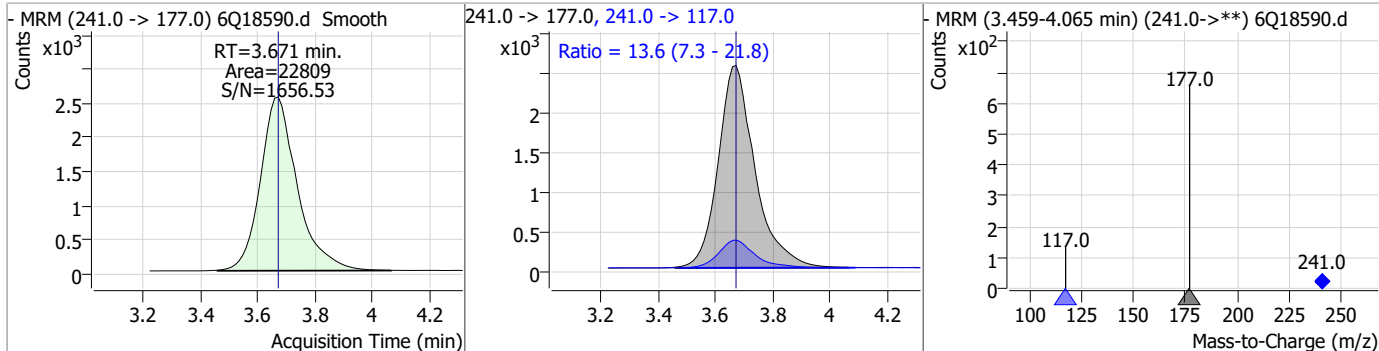
7

Perfluorinated Compounds by LC/MS/MS

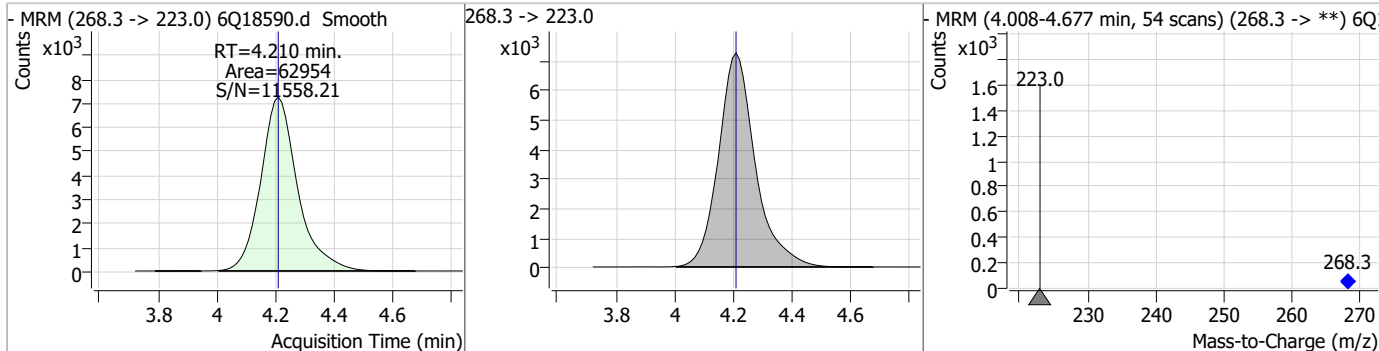


Perfluorinated Compounds by LC/MS/MS

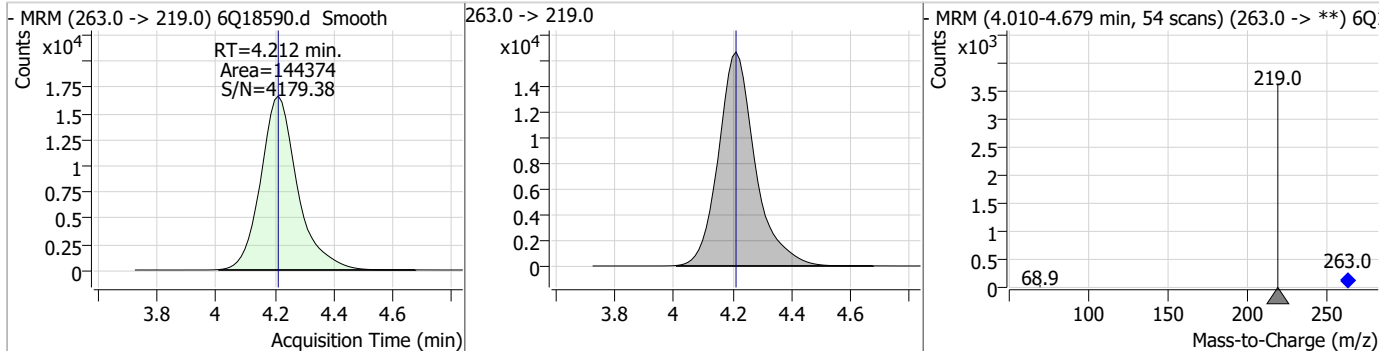
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	23.57	3.67	0.00	22809	241.0 -> 117.0	13.6	7.3	21.8



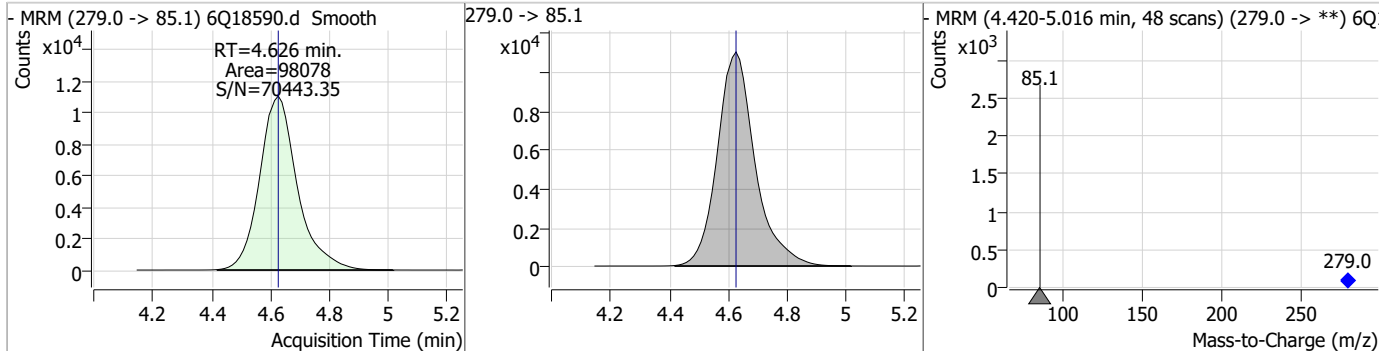
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.05	4.21	0.00	62954				



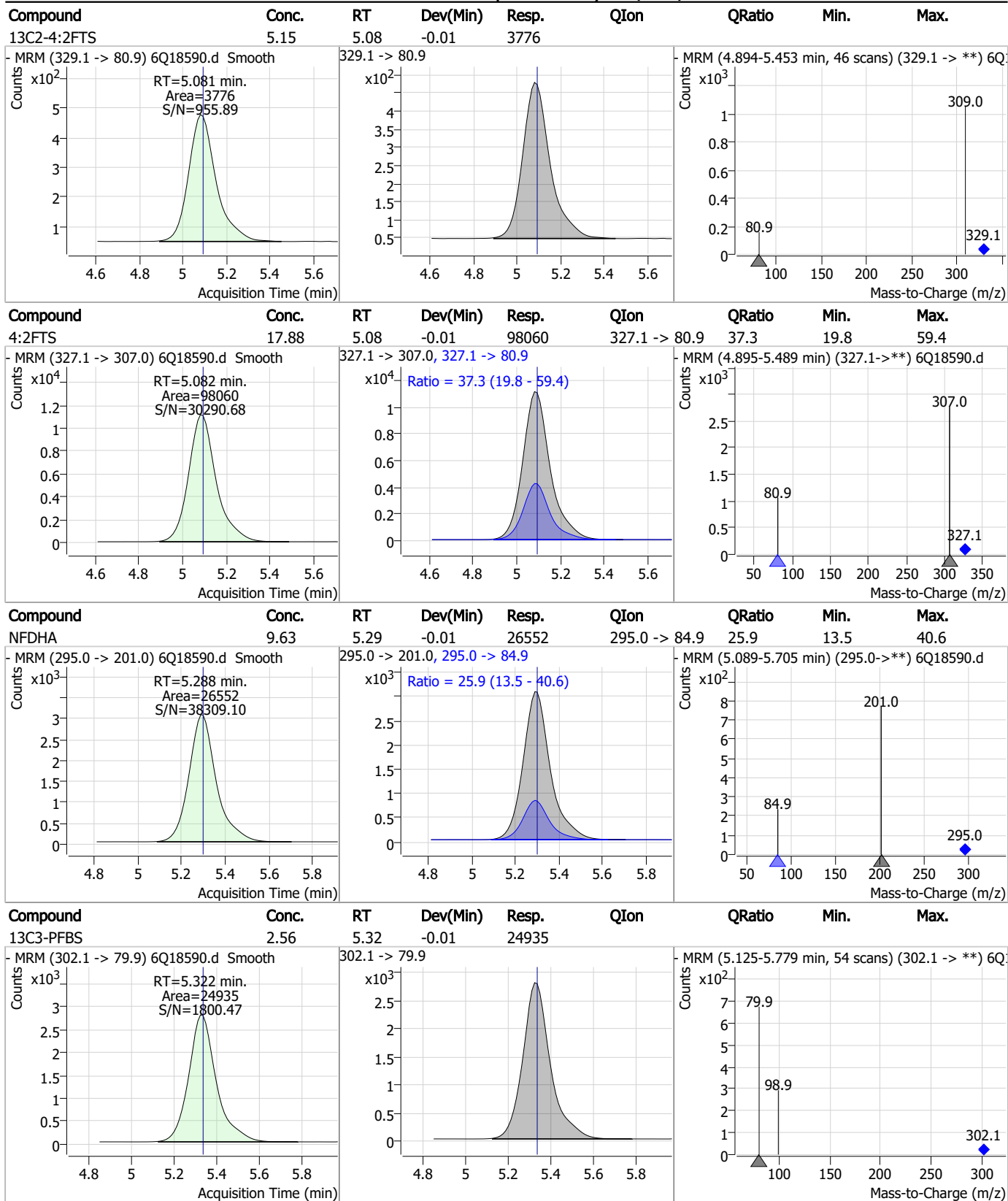
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.55	4.21	0.00	144374				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	9.53	4.63	0.00	98078				

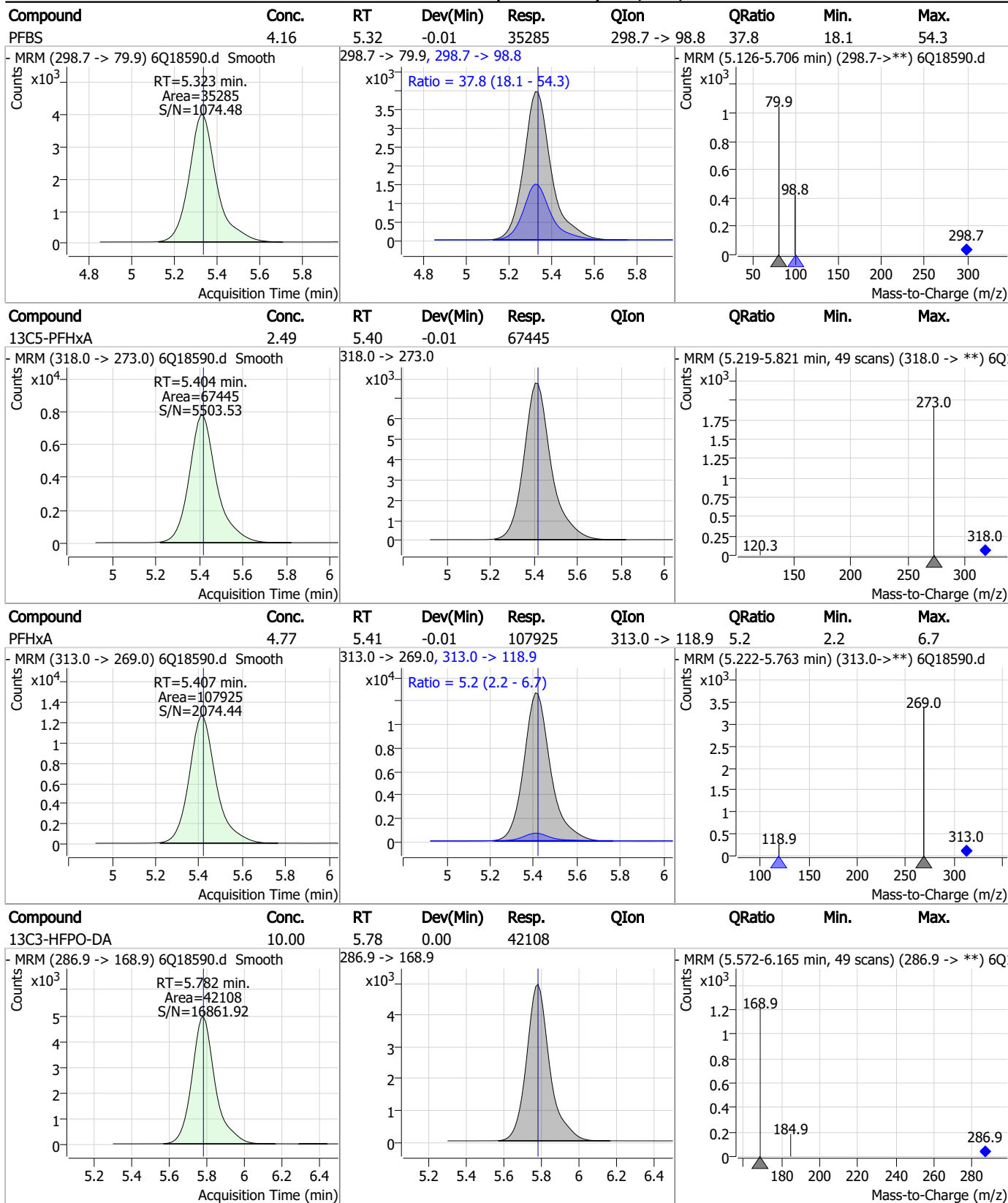


Perfluorinated Compounds by LC/MS/MS



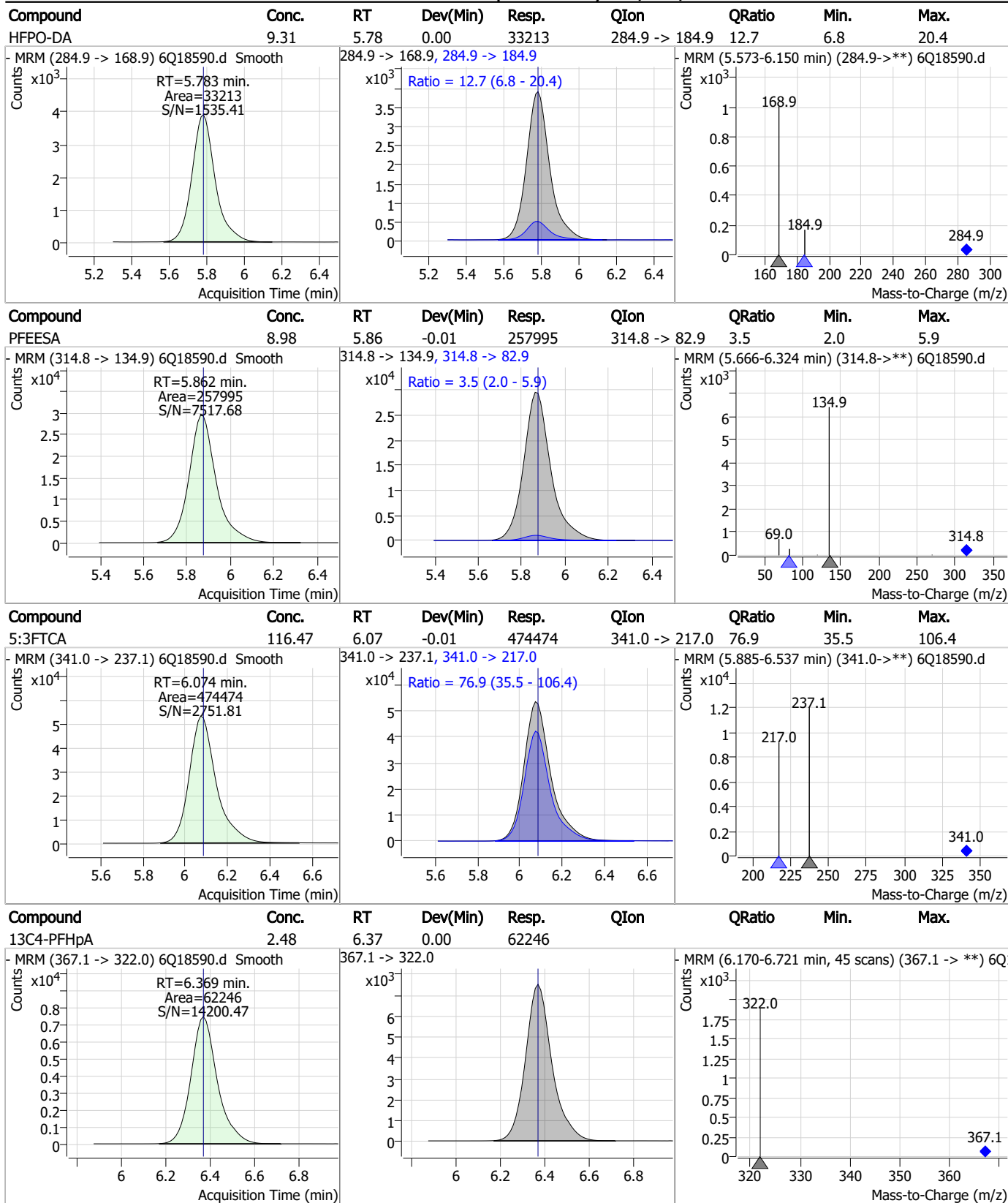
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



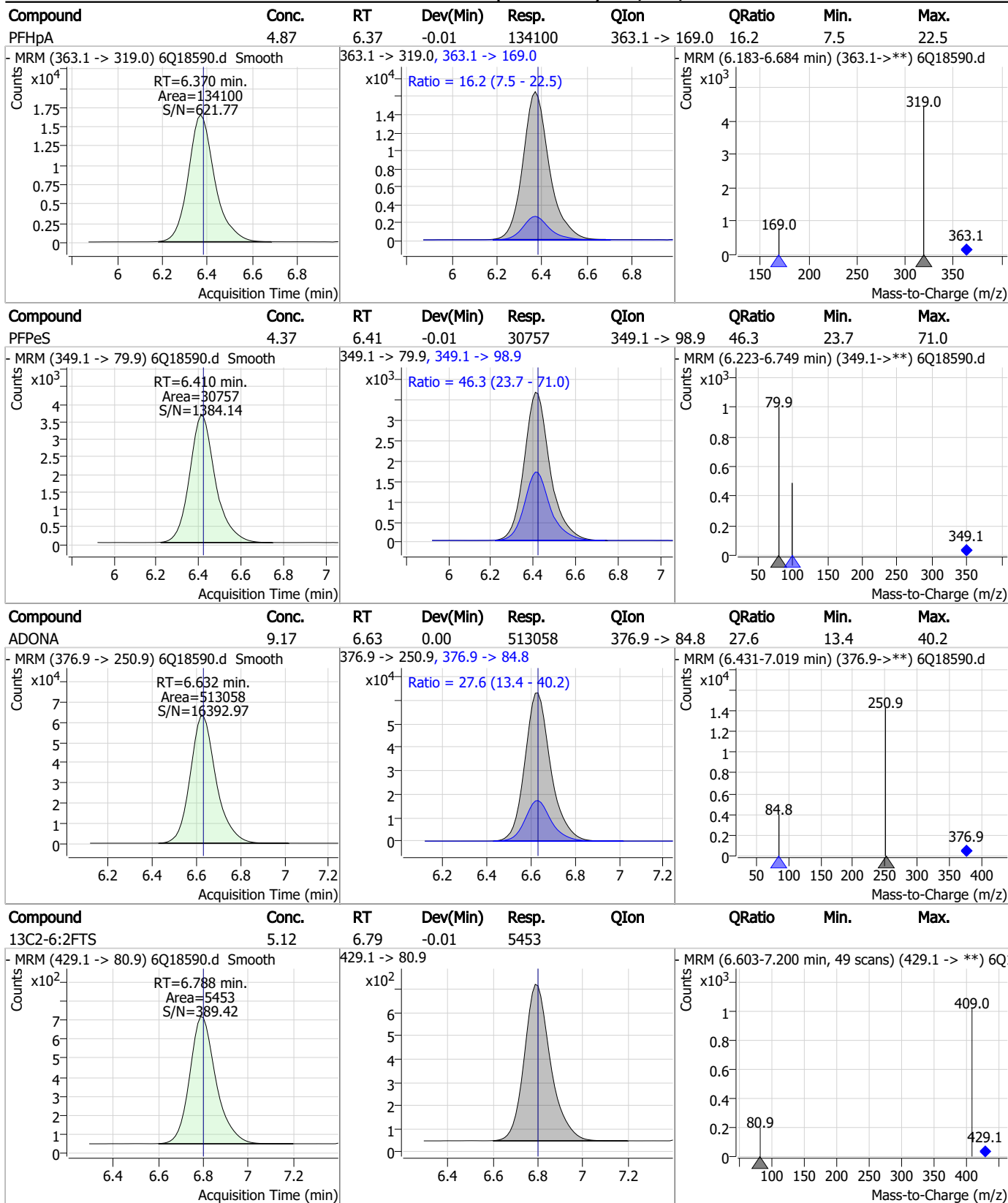
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



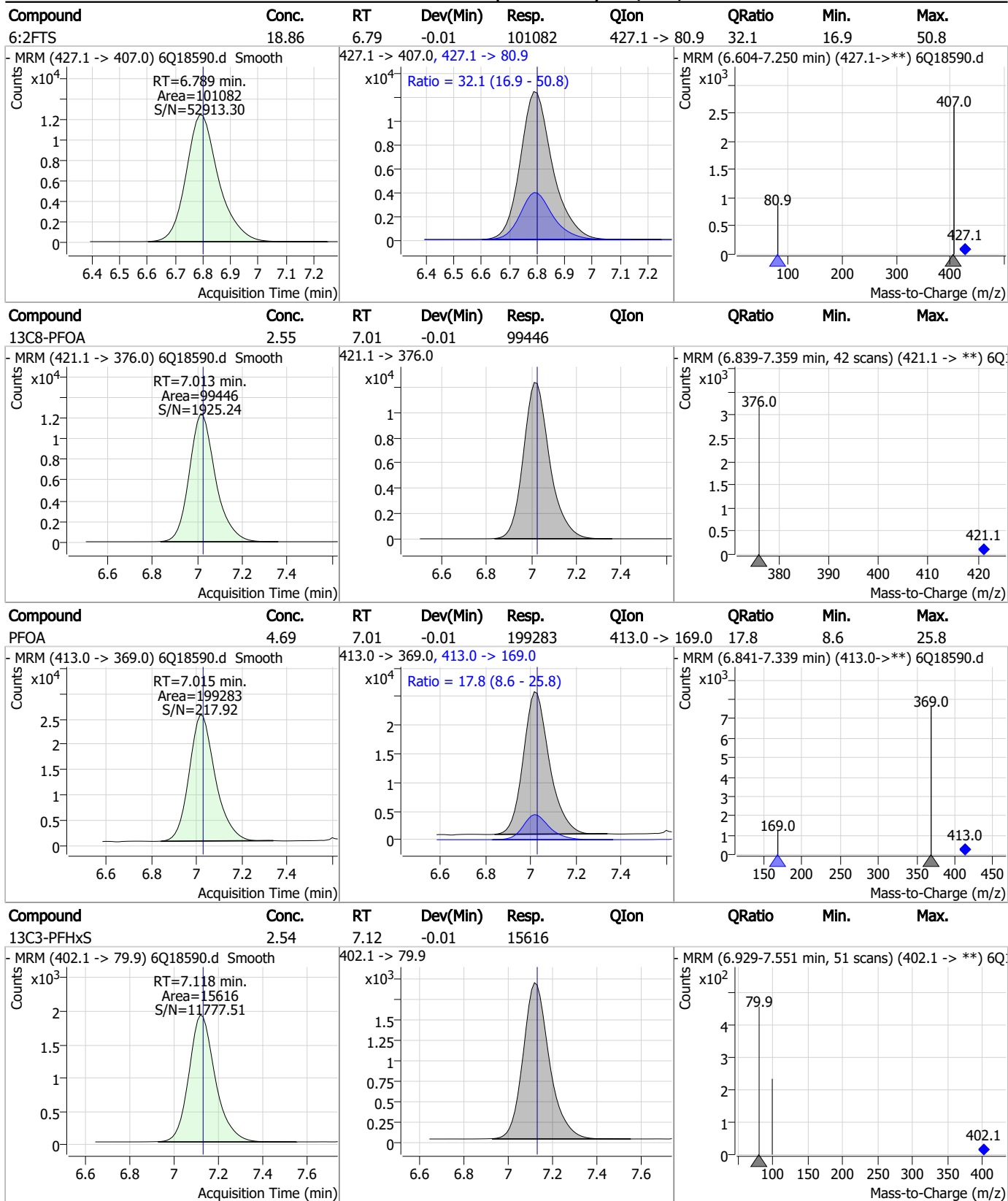
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



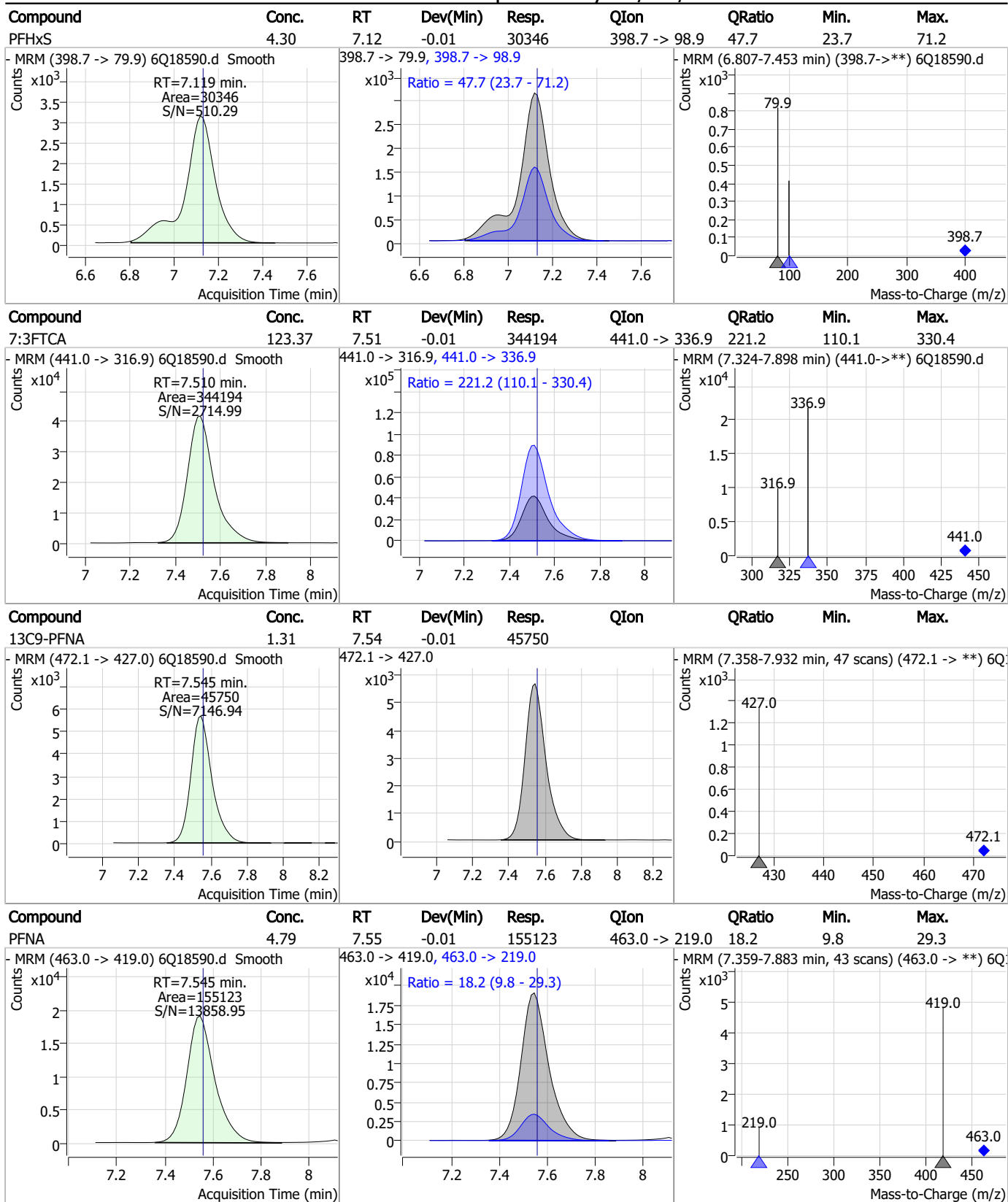
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



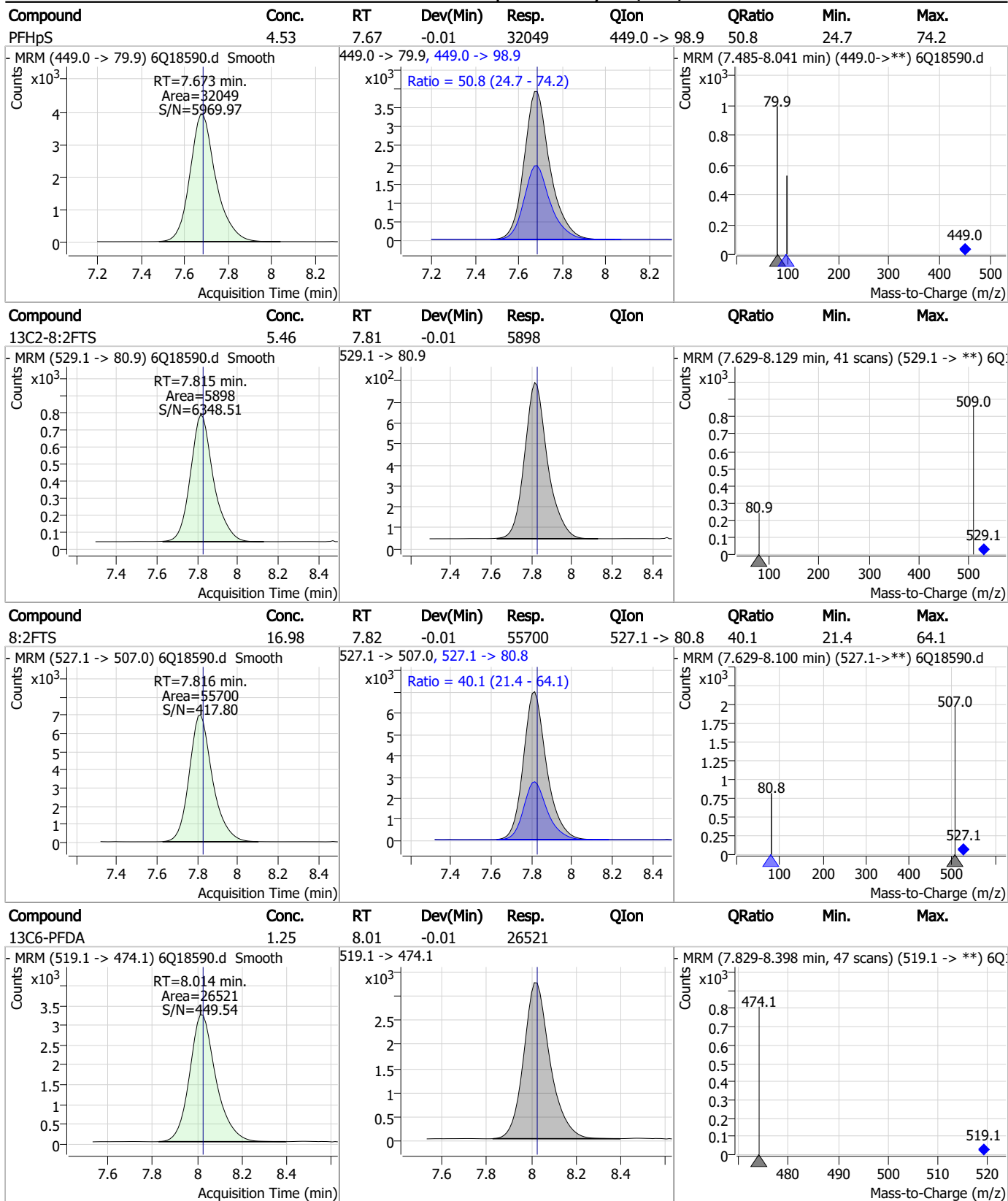
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



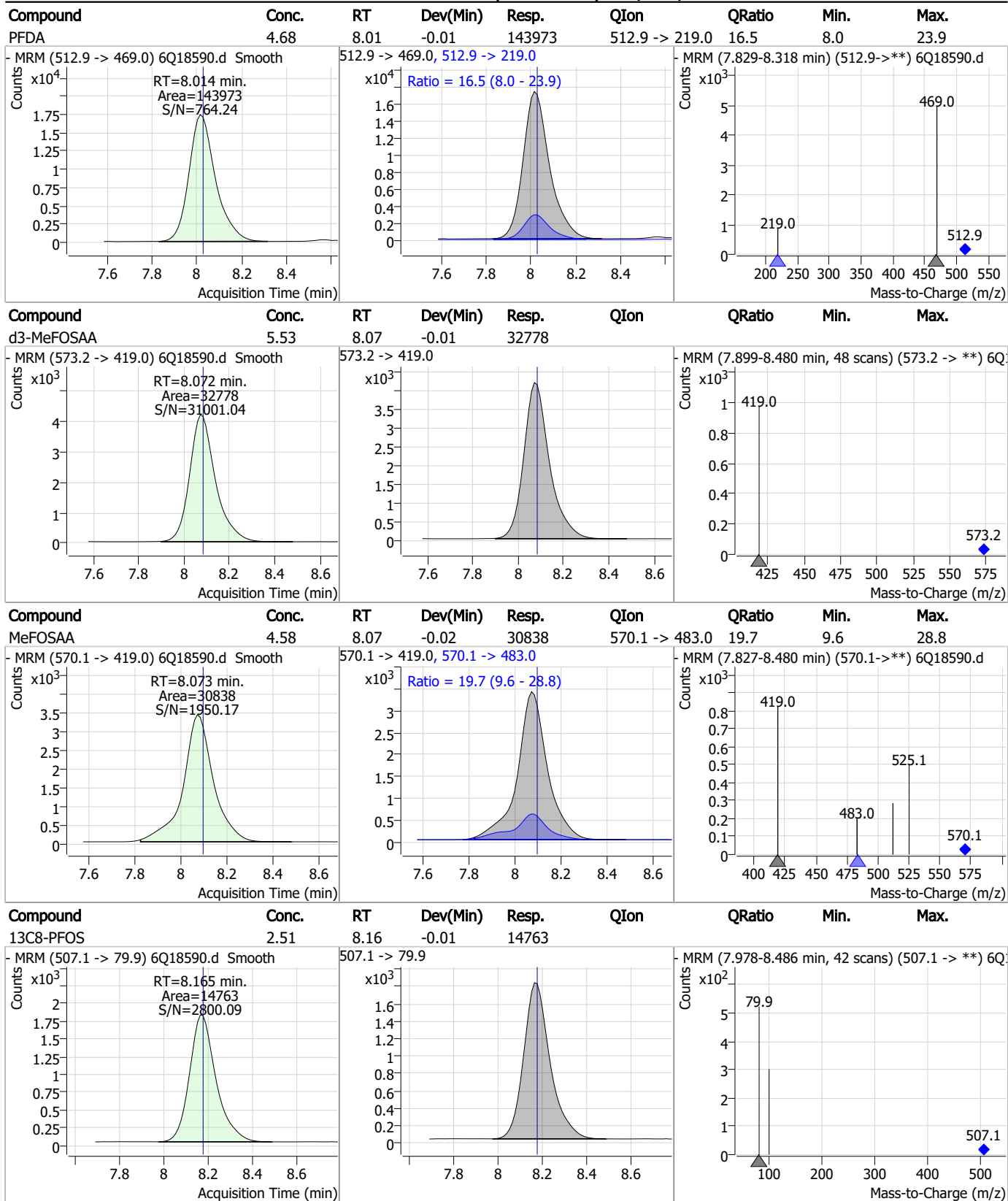
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6
7

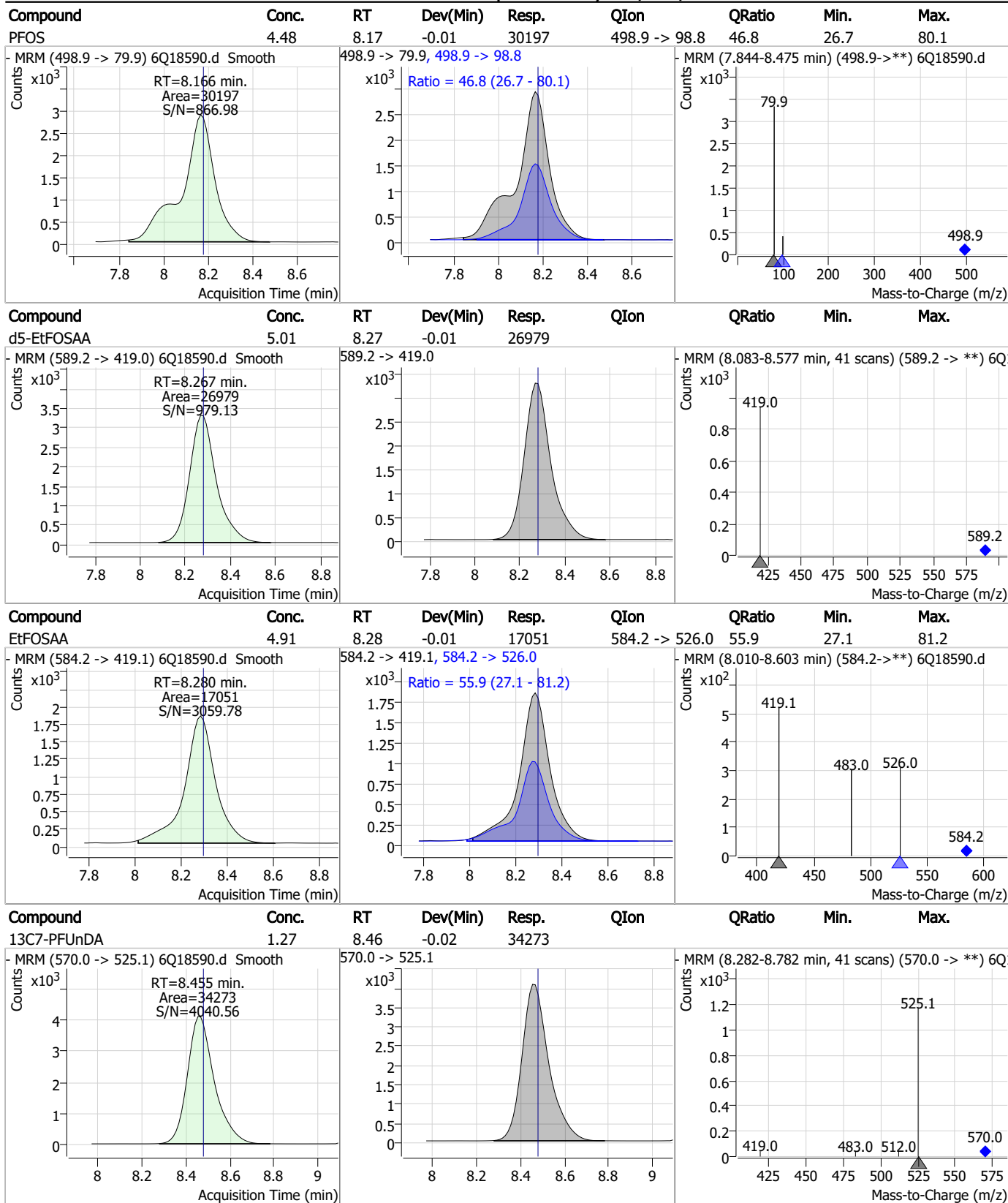
Perfluorinated Compounds by LC/MS/MS



7.7.6

7

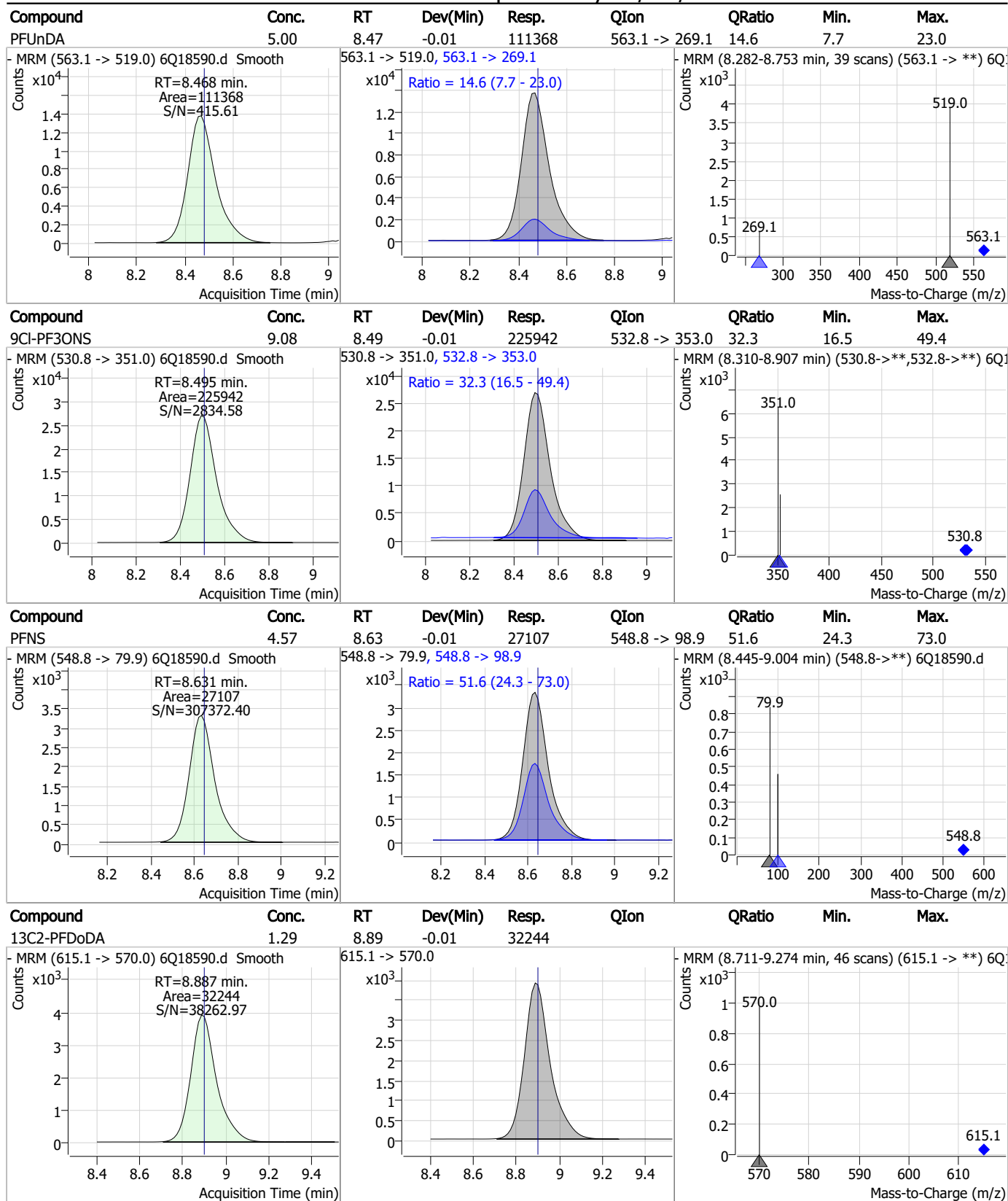
Perfluorinated Compounds by LC/MS/MS



7.7.6
7



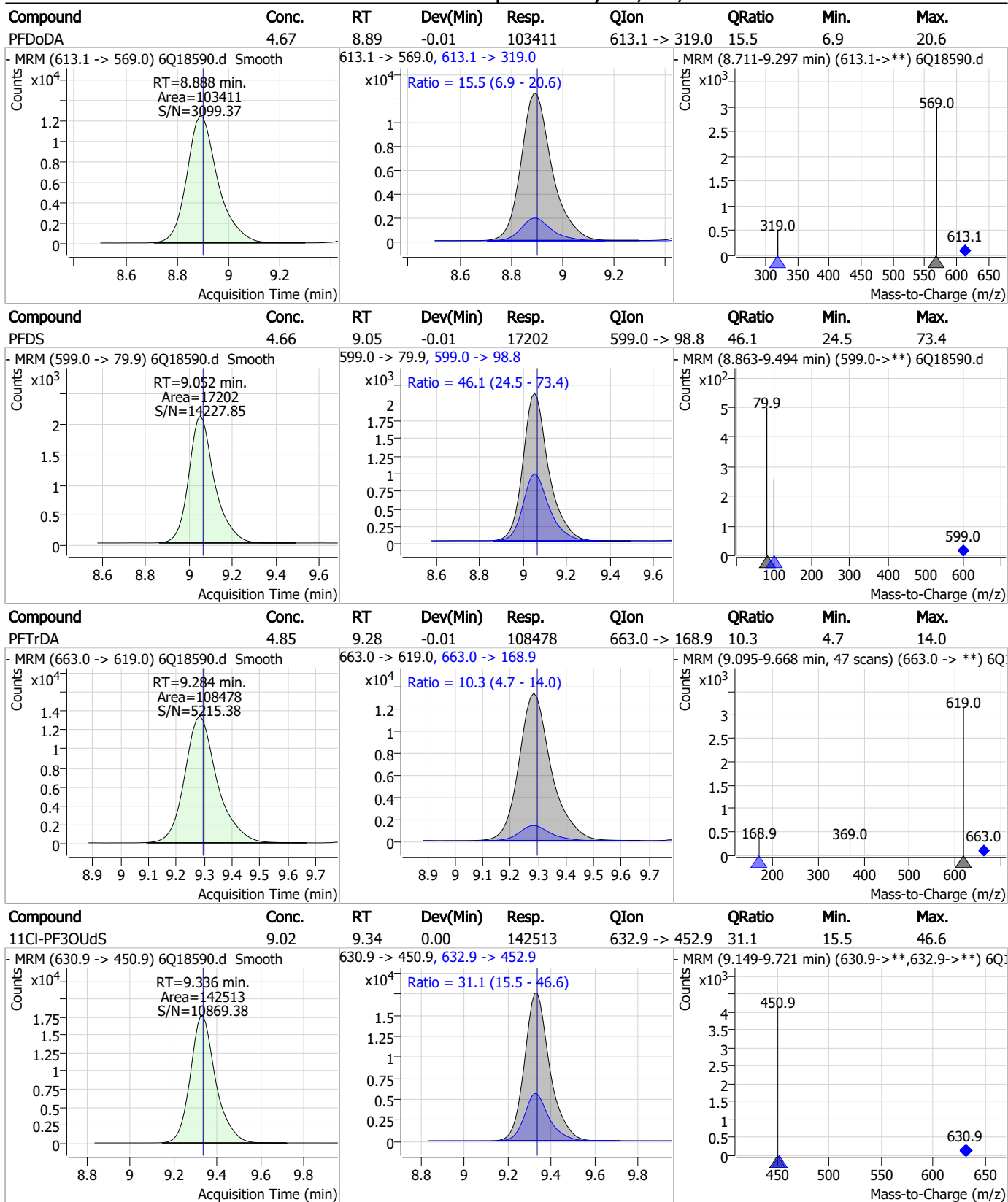
Perfluorinated Compounds by LC/MS/MS



7.7.6

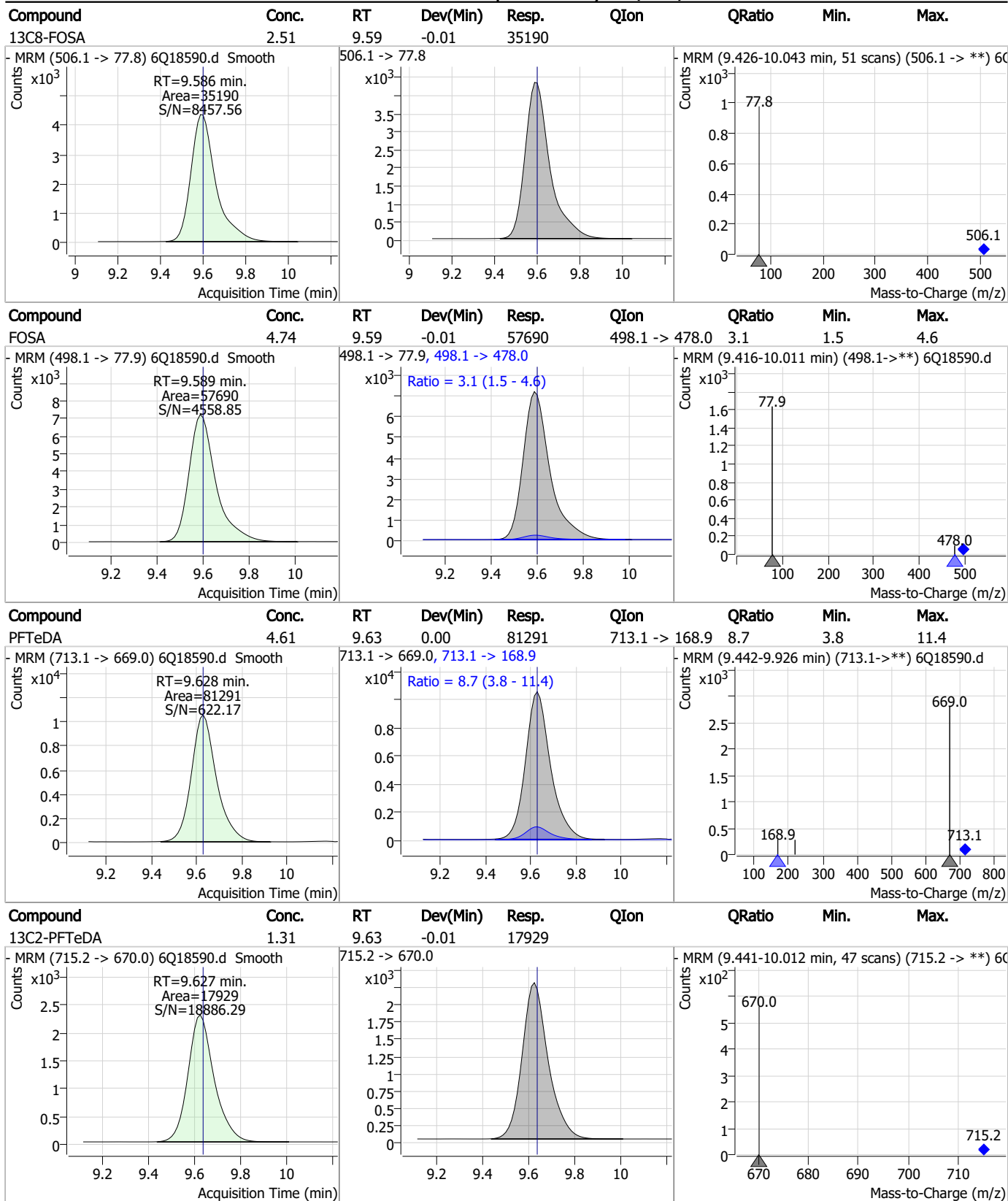
7

Perfluorinated Compounds by LC/MS/MS



7.7.6
7

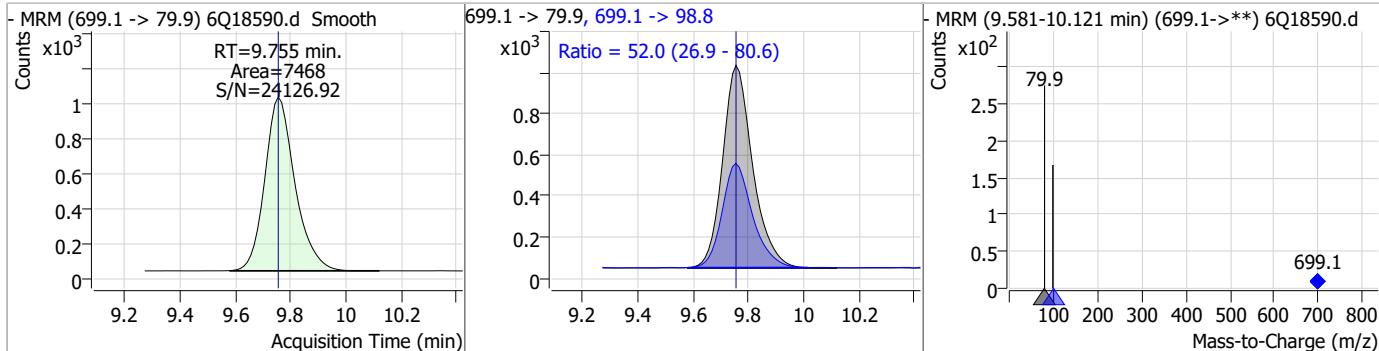
Perfluorinated Compounds by LC/MS/MS



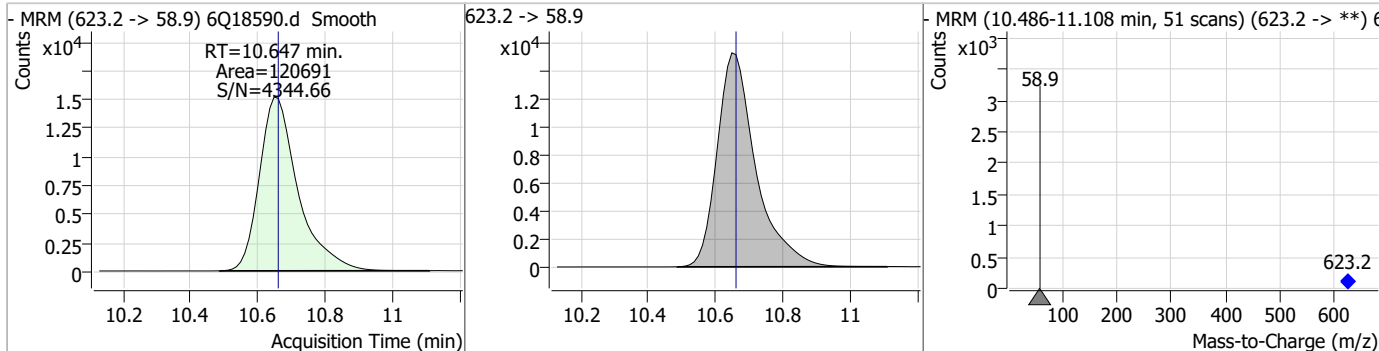
7.7.6
7

Perfluorinated Compounds by LC/MS/MS

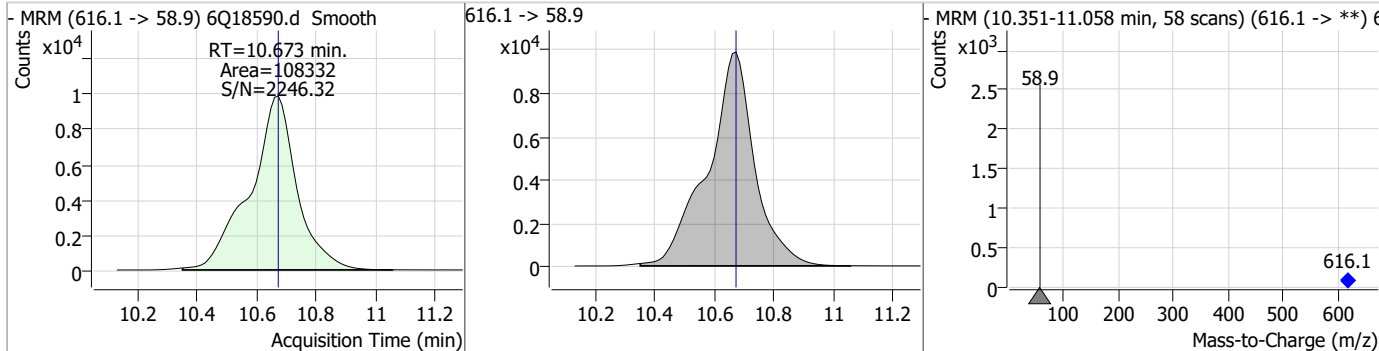
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	4.55	9.75	0.00	7468	699.1 -> 98.8	52.0	26.9	80.6



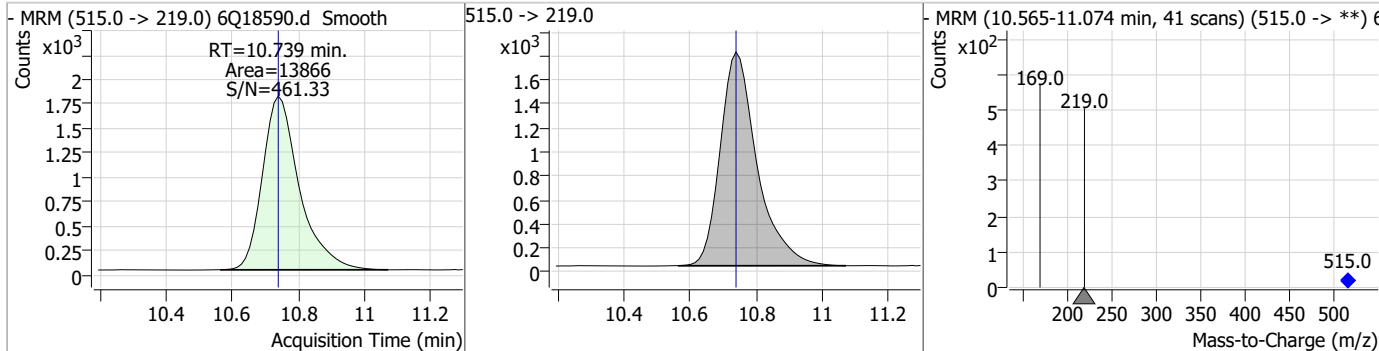
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.18	10.65	-0.01	120691				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.59	10.67	0.00	108332				

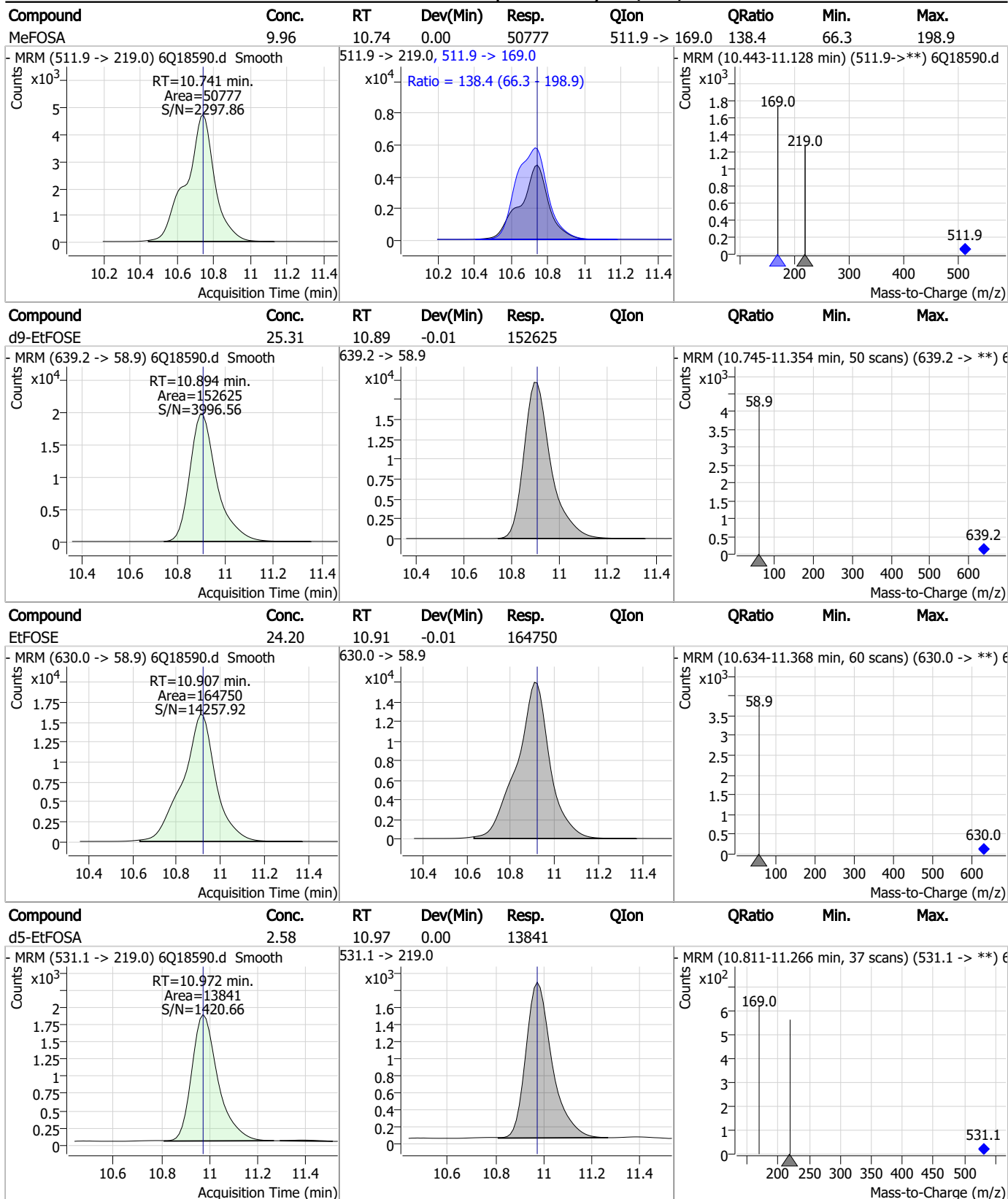


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.44	10.74	0.00	13866				



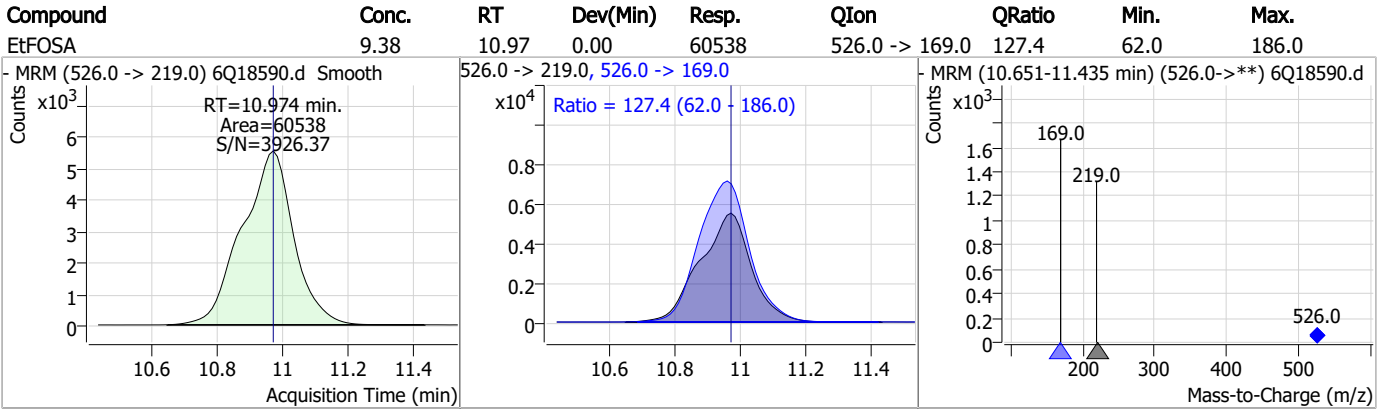
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 06/01/23 14:56

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18591.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:28:50 PM
 Sample Name : ic279-6
 Vial : P1-A7
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187223	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62656	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	68771	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	63077	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	95236	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	43575	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	26462	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33640	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	31346	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	16999	1.25 µg/L	-0.012
M8-FOSA	9.586	506.1 -> 77.8	35644	2.50 µg/L	-0.012
M3-PFBS	5.334	302.1 -> 79.9	24809	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	15368	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	15892	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3628	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5079	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	5275	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	30953	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	42934	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	26452	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	115482	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	156806	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13452	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14515	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17429	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	78677	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	11436	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	104791	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	37496	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	55883	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	64647	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3628	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5079	4.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.7%		
13C2-8:2FTS	7.827	529.1 -> 80.9	5275	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.9%		
13C2-PFDoDA	8.887	615.1 -> 570.0	31346	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16999	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C3-PFBS	5.334	302.1 -> 79.9	24809	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFHxS	7.130	402.1 -> 79.9	15368	2.41 µg/L	0.000

7.7.7
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C4-PFBA	2.822	216.8 -> 171.9	187223	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.369	367.1 -> 322.0	63077	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFHxA	5.404	318.0 -> 273.0	68771	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	62656	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	8.027	519.1 -> 474.1	26462	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33640	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-FOSA	9.586	506.1 -> 77.8	35644	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C8-PFOA	7.026	421.1 -> 376.0	95236	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOS	8.177	507.1 -> 79.9	15892	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C9-PFNA	7.545	472.1 -> 427.0	43575	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.7%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30953	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42934	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	14515	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%	
d5-EtFOSAA	8.267	589.2 -> 419.0	26452	5.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
d7-MeFOSE	10.647	623.2 -> 58.9	115482	26.38 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	156806	27.39 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	13452	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	248579	47.17 µg/L	96
		327.1 -> 80.9	92560		
6:2FTS	6.801	427.1 -> 407.0	246153	49.32 µg/L	99
		427.1 -> 80.9	82513		
8:2FTS	7.816	527.1 -> 507.0	140681	47.95 µg/L	97
		527.1 -> 80.8	57259		
EtFOSAA	8.280	584.2 -> 419.1	42790	12.57 µg/L	96
		584.2 -> 526.0	24496		
FOSA	9.589	498.1 -> 77.9	149971	12.15 µg/L	100
		498.1 -> 478.0	4666		
MeFOSAA	8.085	570.1 -> 419.0	76629	12.04 µg/L	98
		570.1 -> 483.0	15562		
PFBA	2.818	212.8 -> 168.9	308042	49.70 µg/L	100
PFBS	5.323	298.7 -> 79.9	90329	10.70 µg/L	95
		298.7 -> 98.8	35360		
PFDA	8.027	512.9 -> 469.0	379279	12.36 µg/L	100
		512.9 -> 219.0	60207		
PFDoDA	8.888	613.1 -> 569.0	268807	12.49 µg/L	96
		613.1 -> 319.0	40976		
PFDS	9.052	599.0 -> 79.9	42166	10.61 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	20128			
PFHpA	6.370	363.1 -> 319.0	344728	12.35	µg/L	98
		363.1 -> 169.0	55086			
PFHpS	7.685	449.0 -> 79.9	80819	10.61	µg/L	97
		449.0 -> 98.9	38330			
PFHxA	5.420	313.0 -> 269.0	283376	12.27	µg/L	98
		313.0 -> 118.9	14200			
PFHxS	7.131	398.7 -> 79.9	78663	11.32	µg/L	m 99
		398.7 -> 98.9	36605			
PFNA	7.545	463.0 -> 419.0	385428	12.48	µg/L	100
		463.0 -> 219.0	75050			
PFNS	8.631	548.8 -> 79.9	67979	10.66	µg/L	93
		548.8 -> 98.9	36354			
PFOA	7.028	413.0 -> 369.0	523746	12.88	µg/L	99
		413.0 -> 169.0	92825			
PFOS	8.166	498.9 -> 79.9	77612	10.69	µg/L	m 93
		498.9 -> 98.8	37321			
PFPeA	4.212	263.0 -> 219.0	373747	24.84	µg/L	100
PFPeS	6.422	349.1 -> 79.9	80140	11.57	µg/L	97
		349.1 -> 98.9	36129			
PFTeDA	9.628	713.1 -> 669.0	209256	12.51	µg/L	98
		713.1 -> 168.9	17688			
PFTrDA	9.284	663.0 -> 619.0	270193	12.43	µg/L	96
		663.0 -> 168.9	29476			
PFUnDA	8.468	563.1 -> 519.0	275143	12.59	µg/L	98
		563.1 -> 269.1	44300			
11Cl-PF3OUdS	9.323	630.9 -> 450.9	376001	23.34	µg/L	97
		632.9 -> 452.9	110095			
9Cl-PF3ONS	8.495	530.8 -> 351.0	569045	22.42	µg/L	99
		532.8 -> 353.0	191583			
ADONA	6.632	376.9 -> 250.9	1278083	22.41	µg/L	100
		376.9 -> 84.8	340840			
HFPO-DA	5.783	284.9 -> 168.9	86401	23.74	µg/L	97
		284.9 -> 184.9	10545			
3:3FTCA	3.671	241.0 -> 177.0	59768	62.06	µg/L	97
		241.0 -> 117.0	7931			
5:3FTCA	6.086	341.0 -> 237.1	1250433	301.02	µg/L	97
		341.0 -> 217.0	922064			
7:3FTCA	7.510	441.0 -> 316.9	875743	307.84	µg/L	98
		441.0 -> 336.9	1962989			
EtFOSA	10.974	526.0 -> 219.0	152729	24.36	µg/L	88
		526.0 -> 169.0	210391			
EtFOSE	10.907	630.0 -> 58.9	419307	59.94	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	129419	24.25	µg/L	90
		511.9 -> 169.0	187451			
MeFOSE	10.661	616.1 -> 58.9	292024	63.63	µg/L	100
PFDoS	9.755	699.1 -> 79.9	19043	10.79	µg/L	99
		699.1 -> 98.8	10316			
NFDHA	5.288	295.0 -> 201.0	68239	24.27	µg/L	98
		295.0 -> 84.9	17621			
PFMBA	4.626	279.0 -> 85.1	254903	24.89	µg/L	100
PFMPA	3.363	229.0 -> 84.9	197427	24.79	µg/L	100
PFEESA	5.875	314.8 -> 134.9	658465	22.47	µg/L	98
		314.8 -> 82.9	22317			

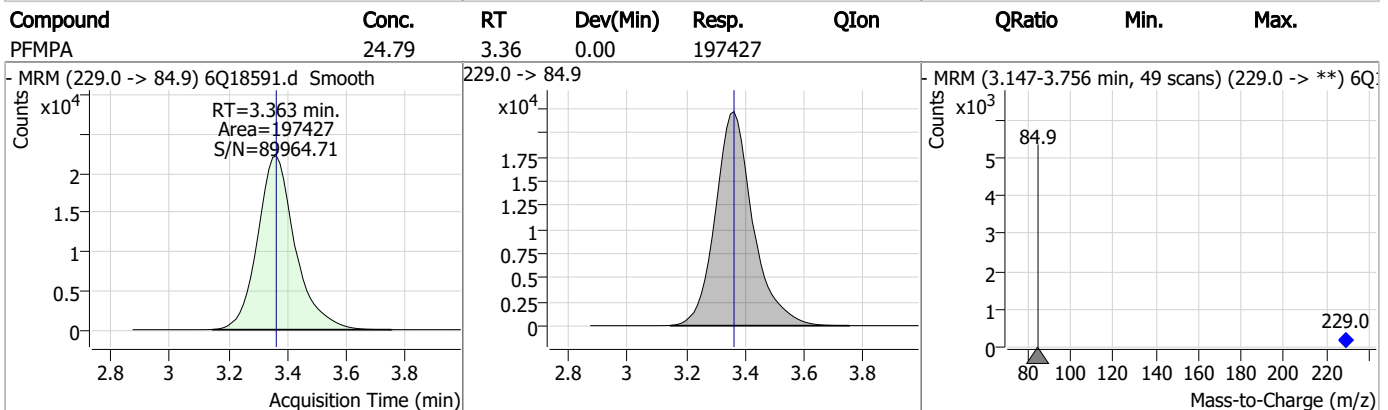
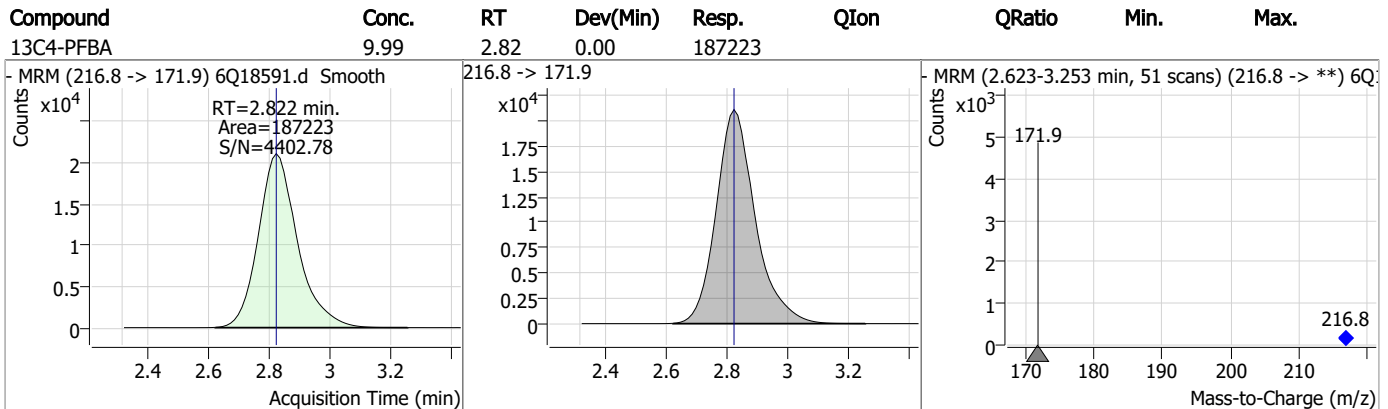
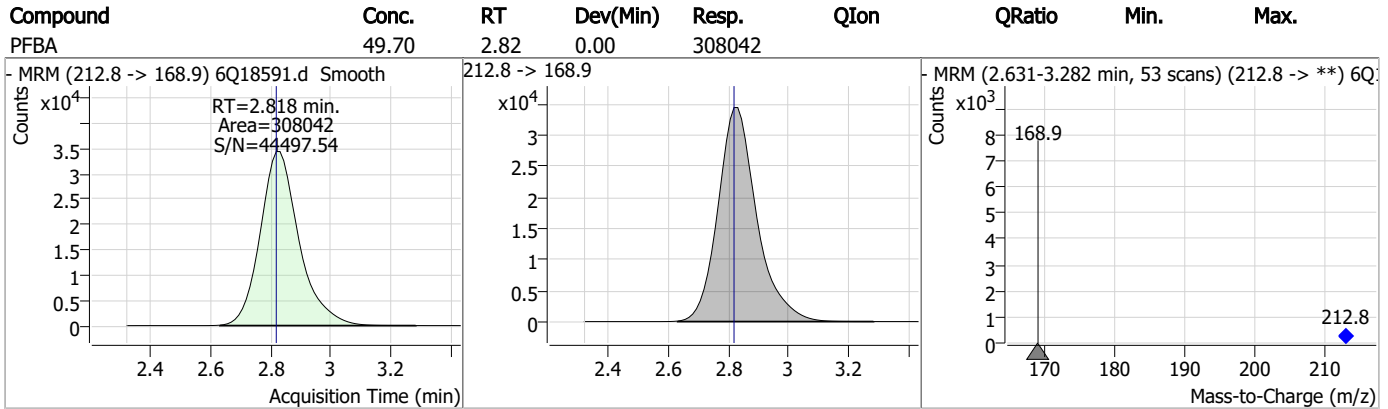
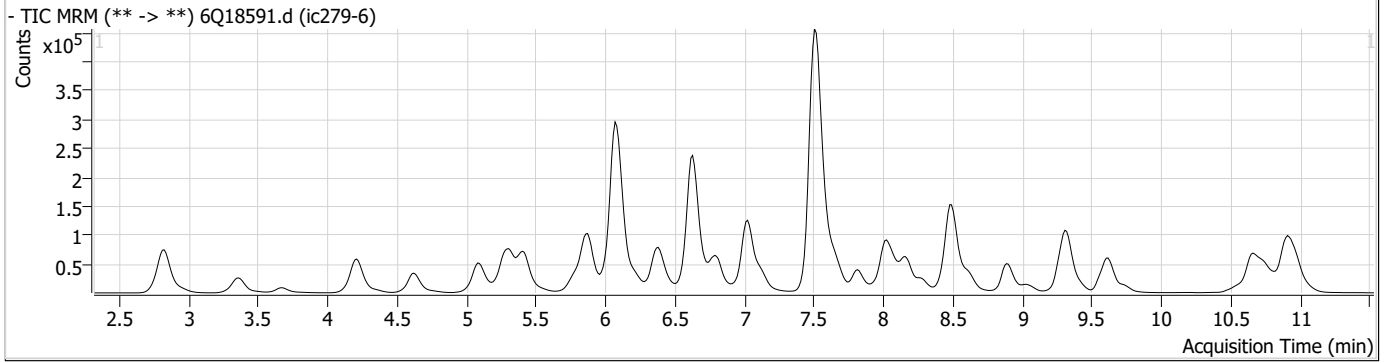
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

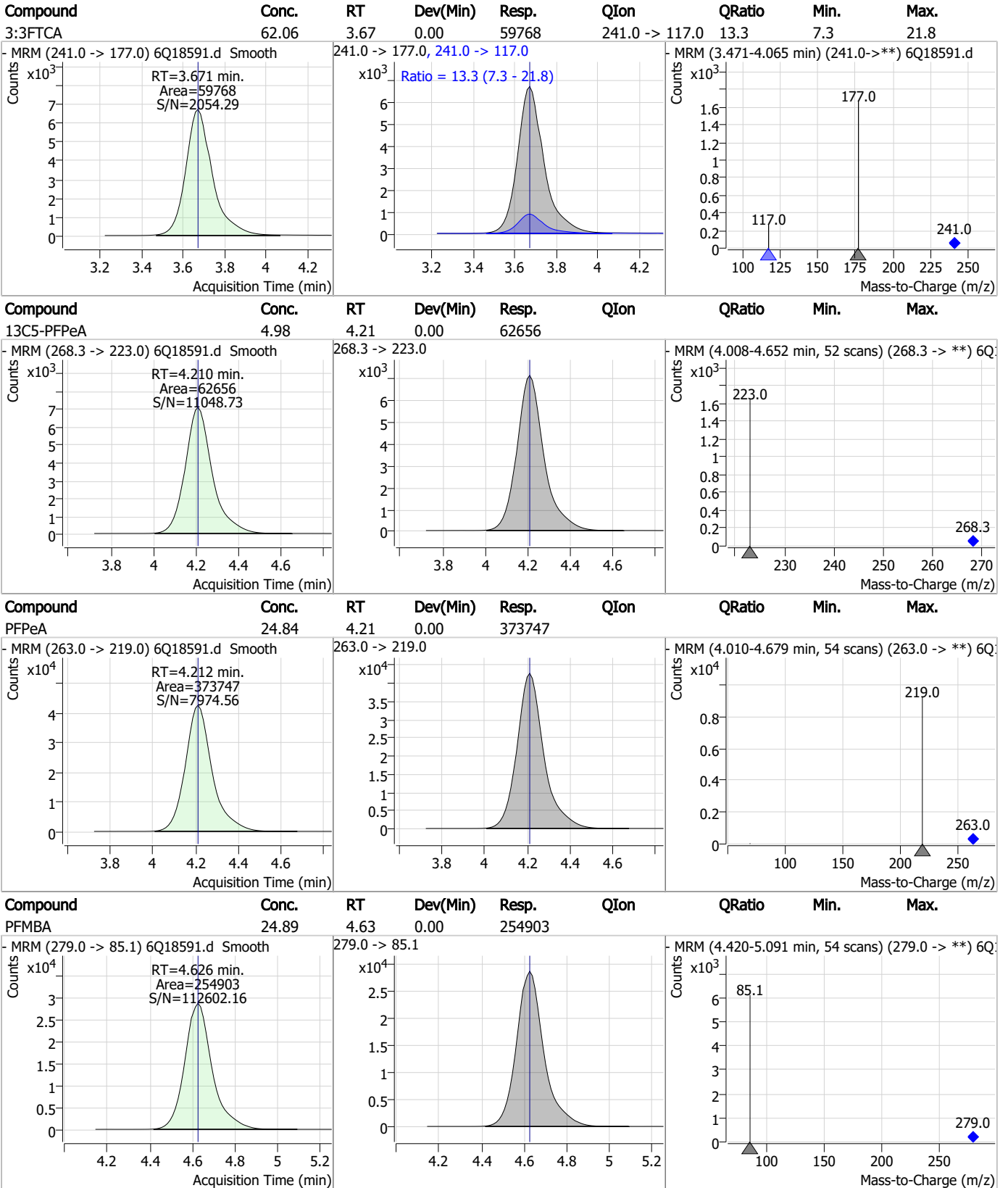
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
----------	----	------------	----------	-------------	----------

7.7.7
7

Perfluorinated Compounds by LC/MS/MS



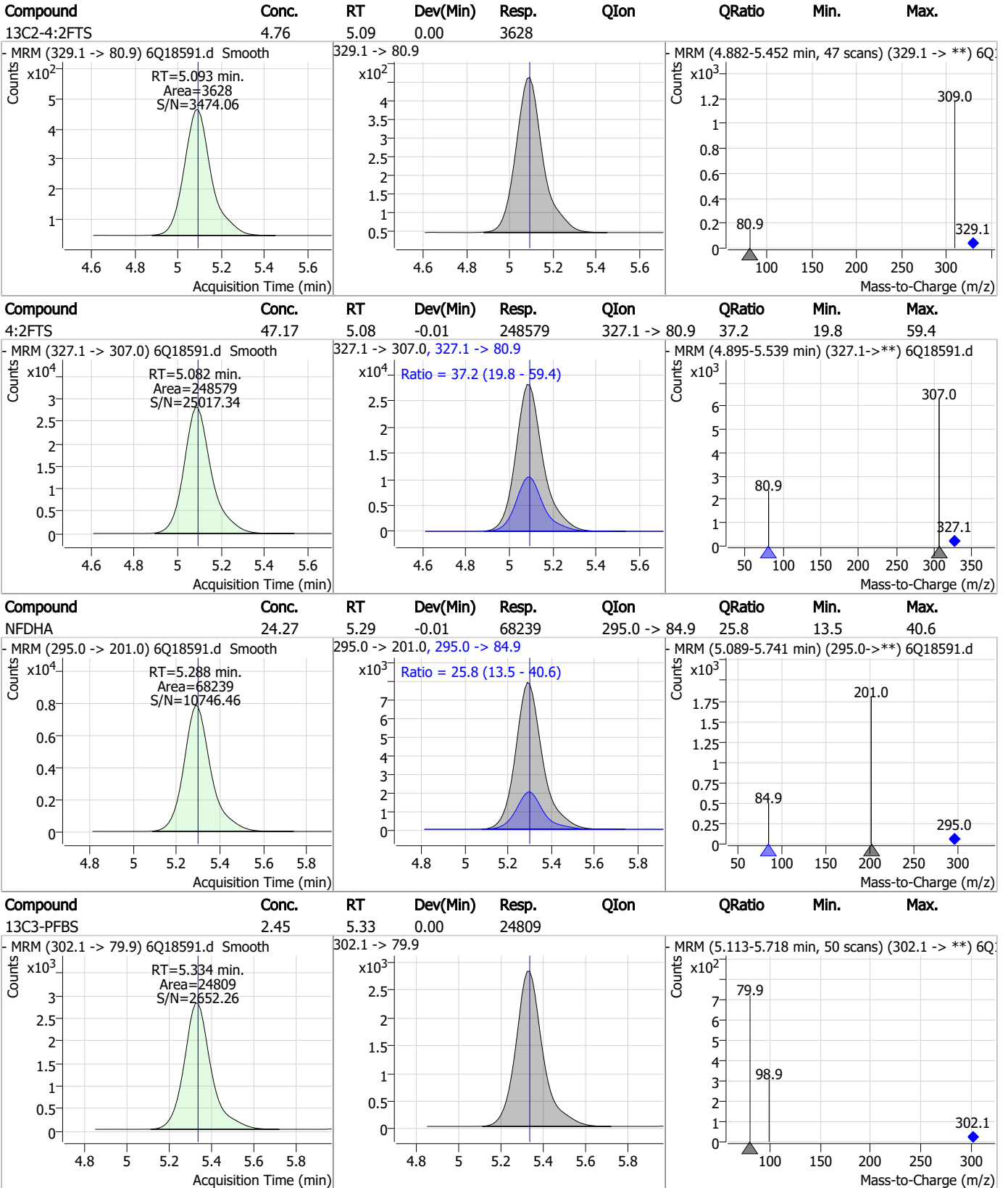
Perfluorinated Compounds by LC/MS/MS



7.7.7

7

Perfluorinated Compounds by LC/MS/MS

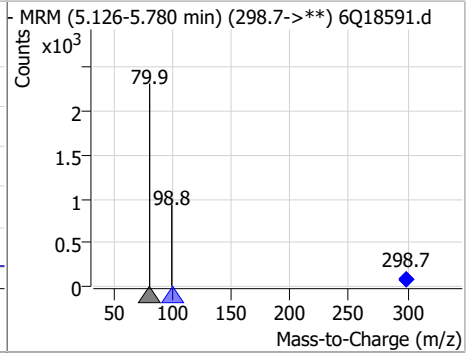
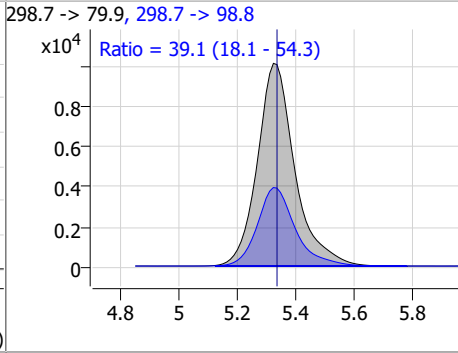
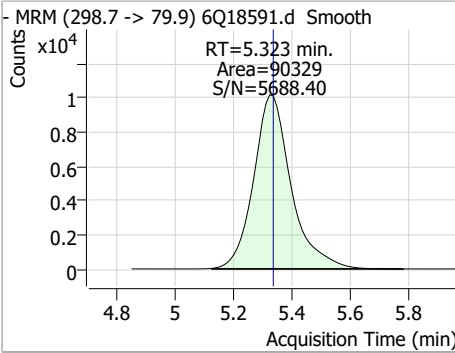


7.7.7

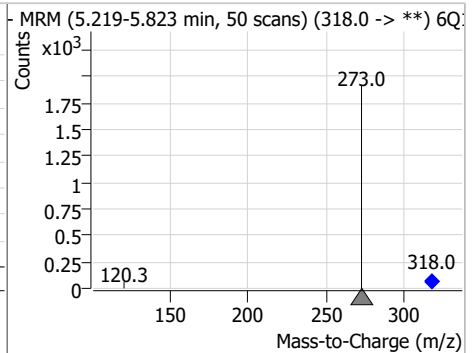
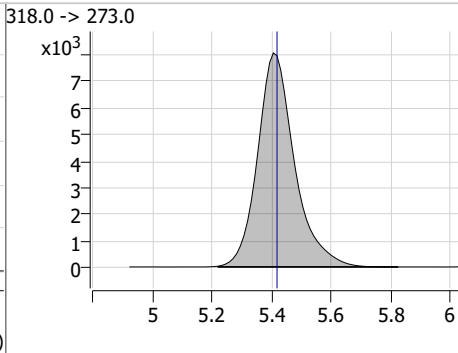
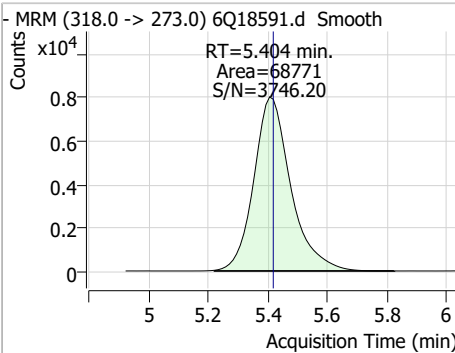
7

Perfluorinated Compounds by LC/MS/MS

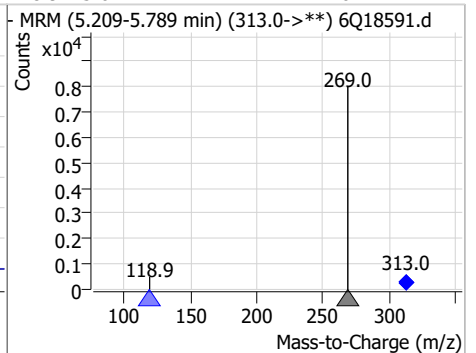
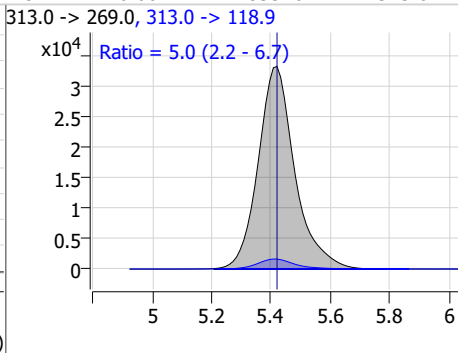
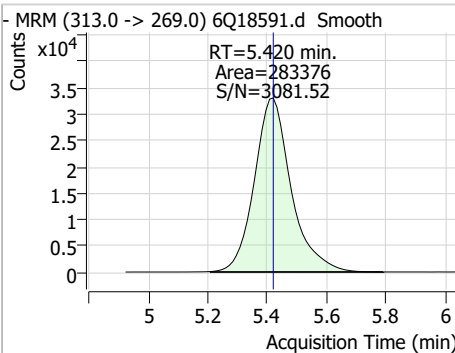
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.70	5.32	-0.01	90329	298.7 -> 98.8	39.1	18.1	54.3



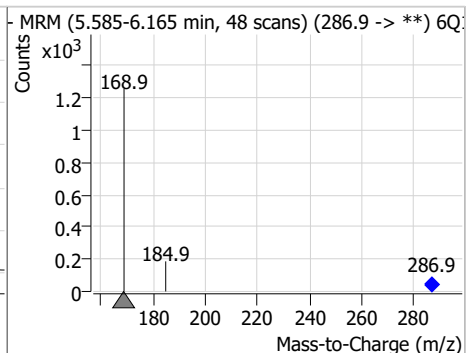
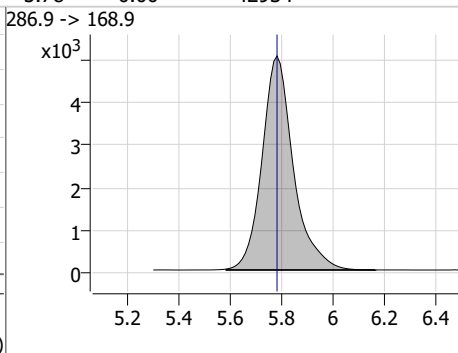
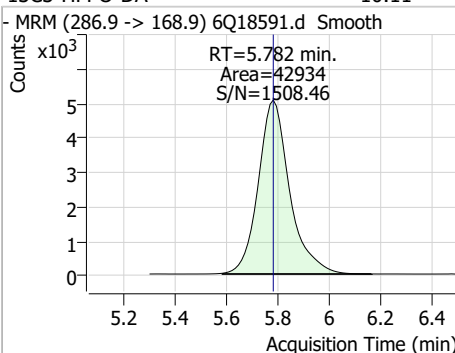
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.51	5.40	-0.01	68771	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.27	5.42	0.00	283376	313.0 -> 118.9	5.0	2.2	6.7

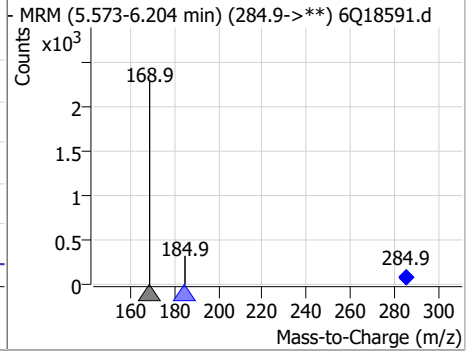
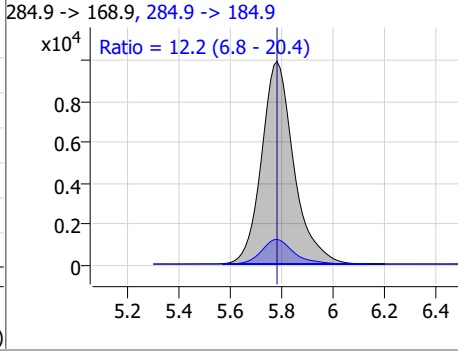
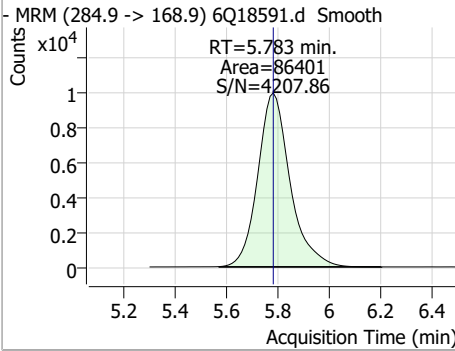


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.11	5.78	0.00	42934	286.9 -> 168.9			

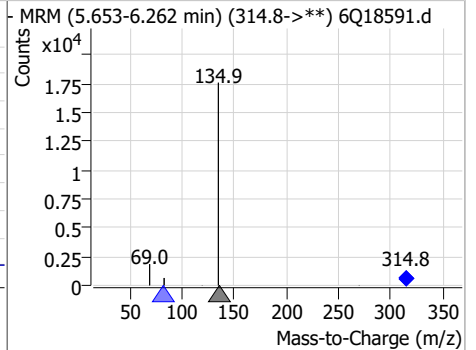
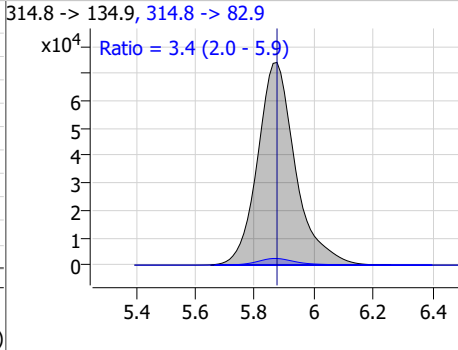
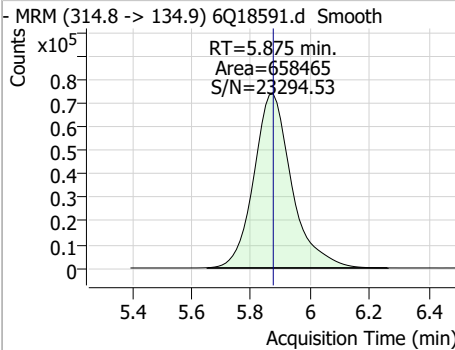


Perfluorinated Compounds by LC/MS/MS

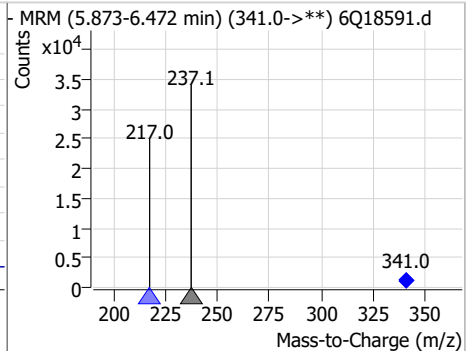
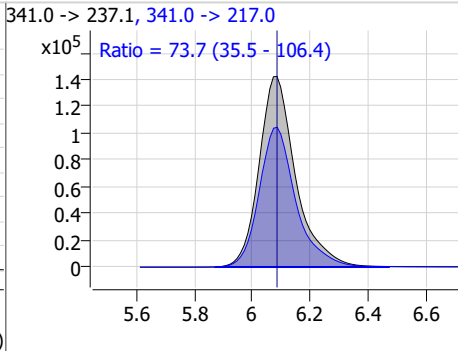
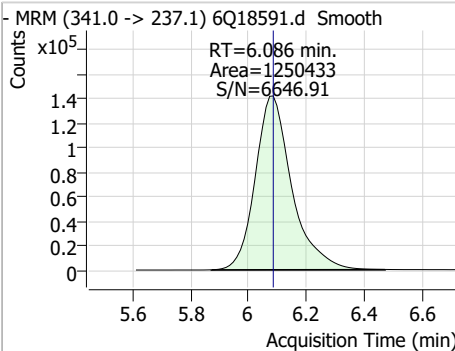
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	23.74	5.78	0.00	86401	284.9 -> 184.9	12.2	6.8	20.4



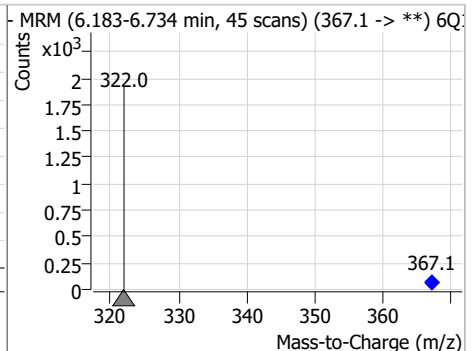
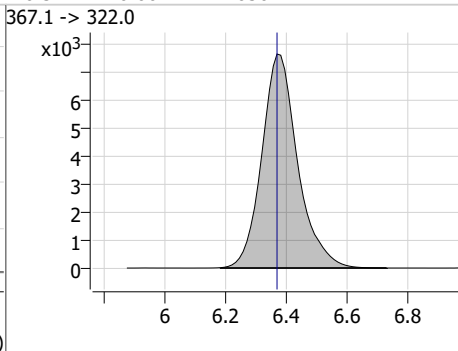
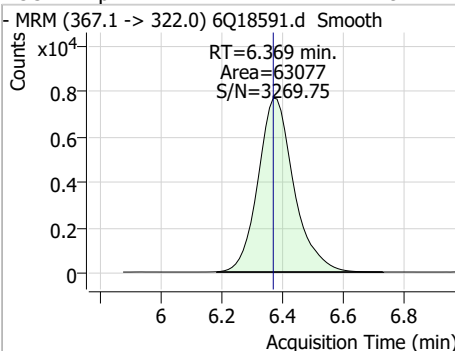
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.47	5.88	0.00	658465	314.8 -> 82.9	3.4	2.0	5.9



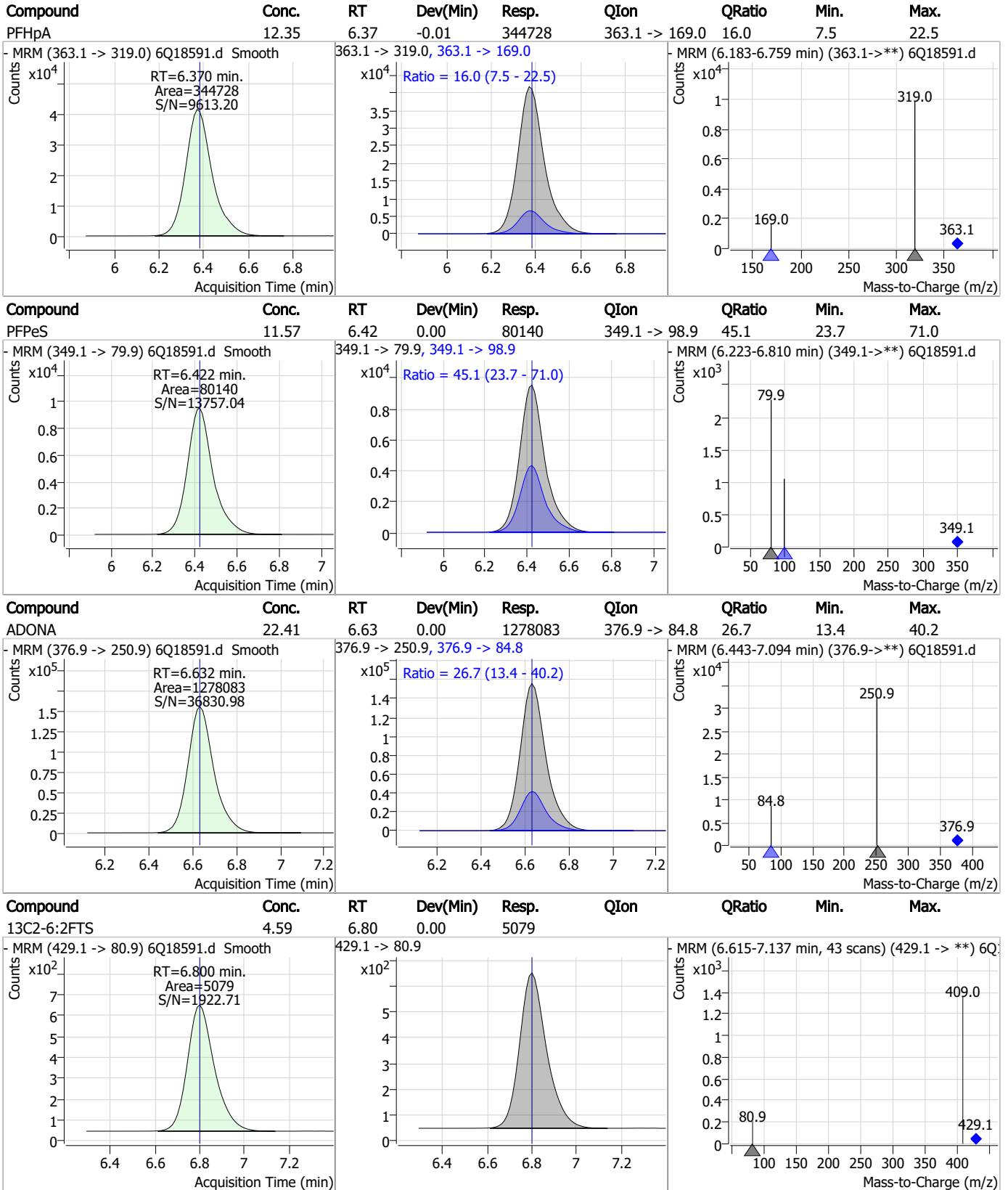
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	301.02	6.09	0.00	1250433	341.0 -> 217.0	73.7	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.37	0.00	63077	367.1 -> 322.0			



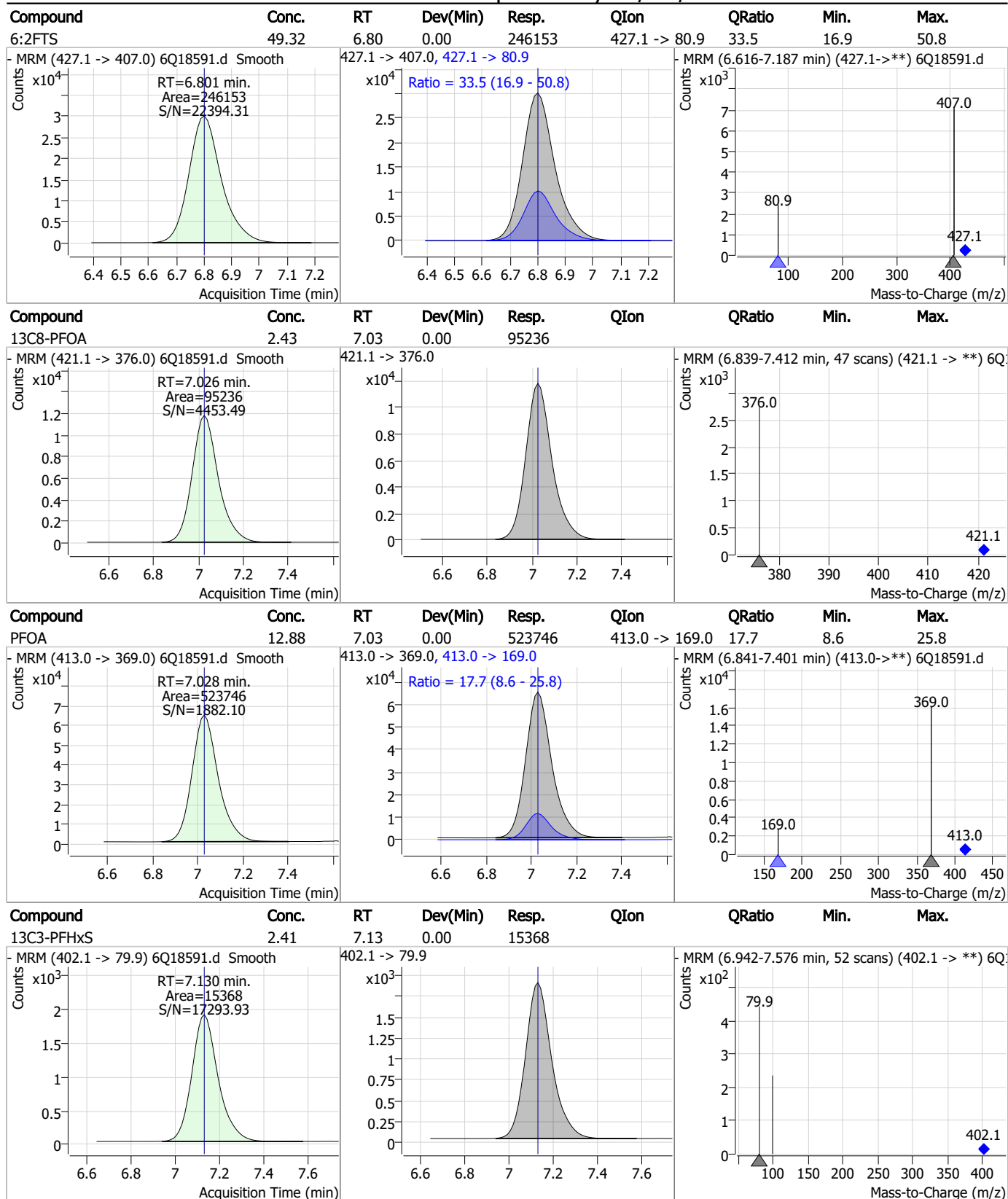
Perfluorinated Compounds by LC/MS/MS



7.7.7

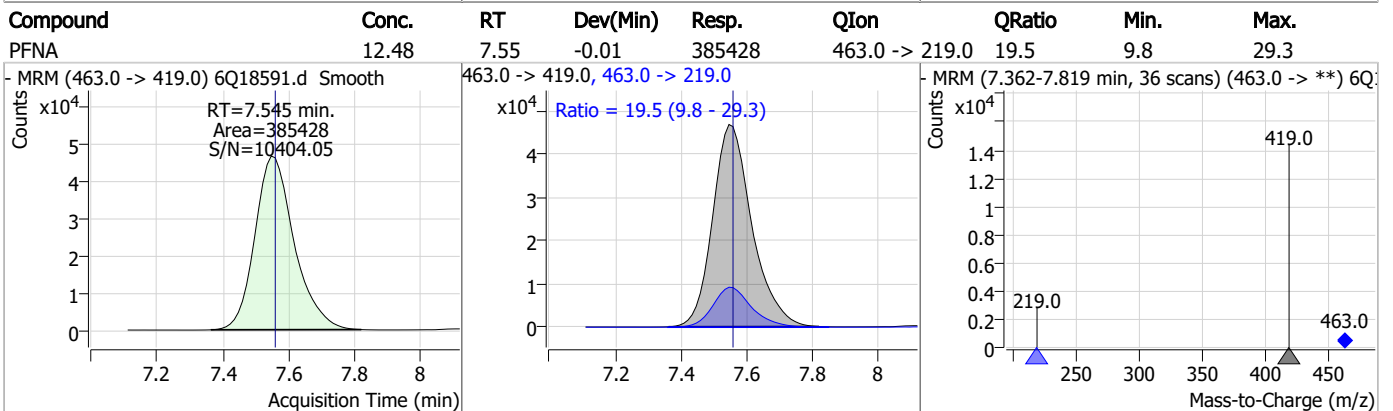
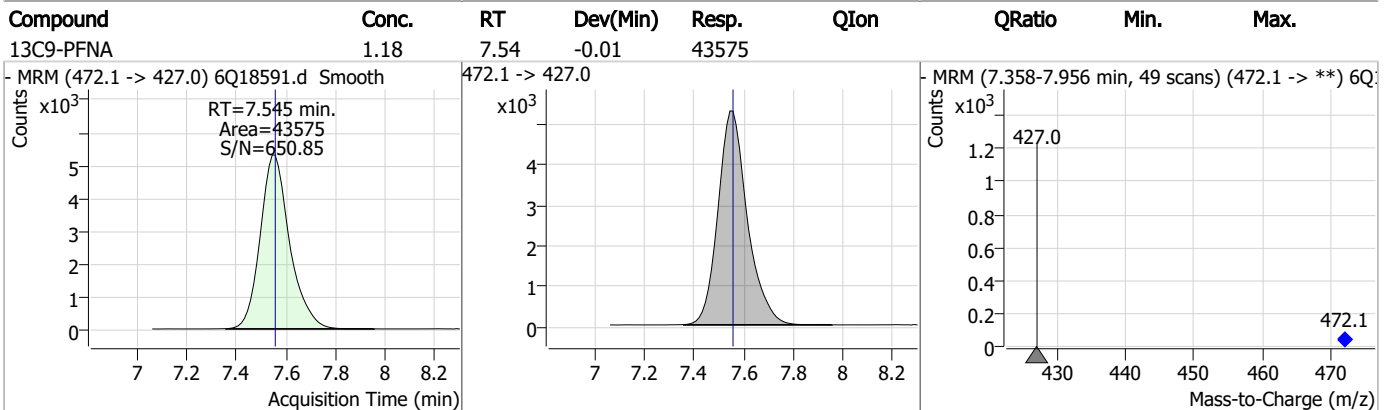
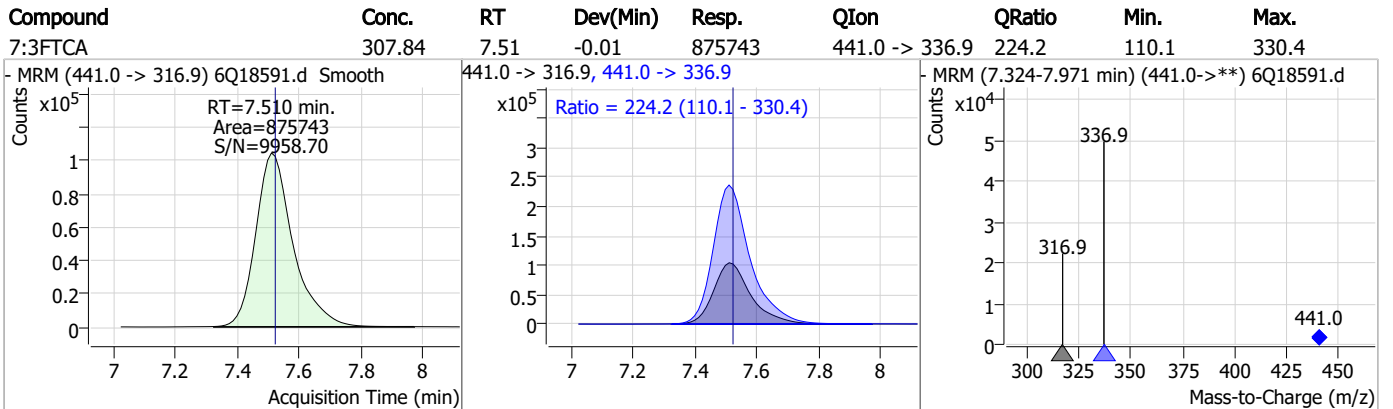
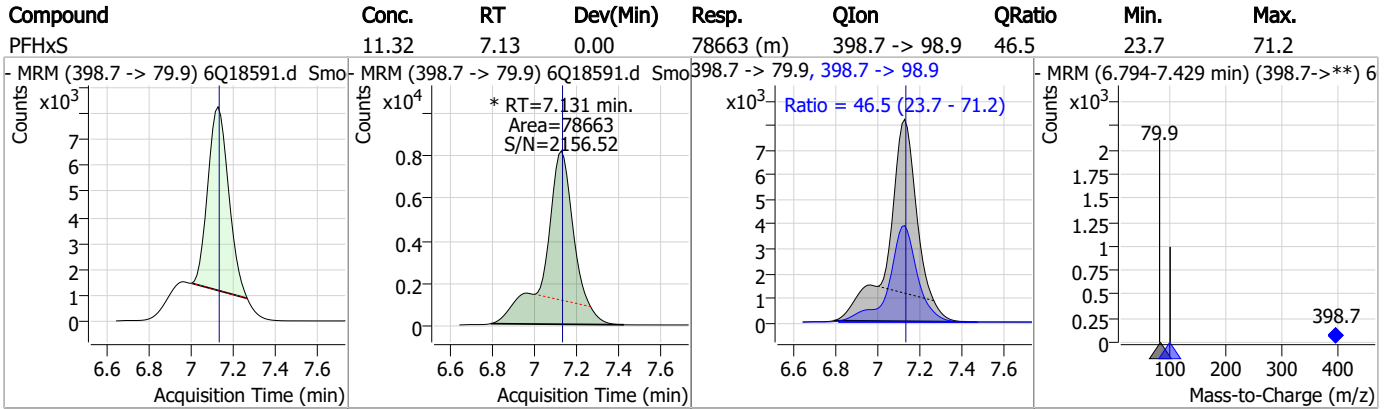
7

Perfluorinated Compounds by LC/MS/MS

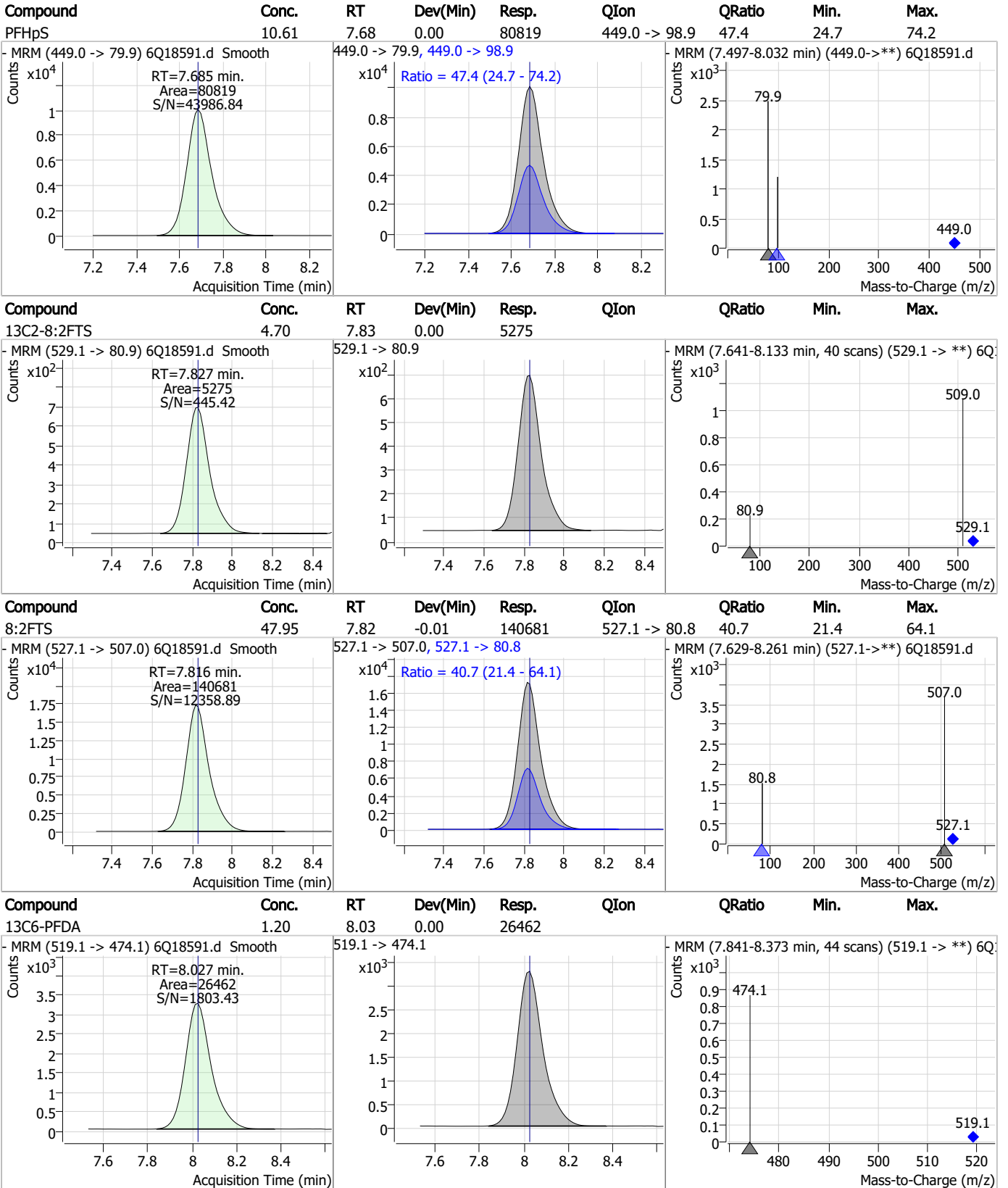


7.7.7
7

Perfluorinated Compounds by LC/MS/MS



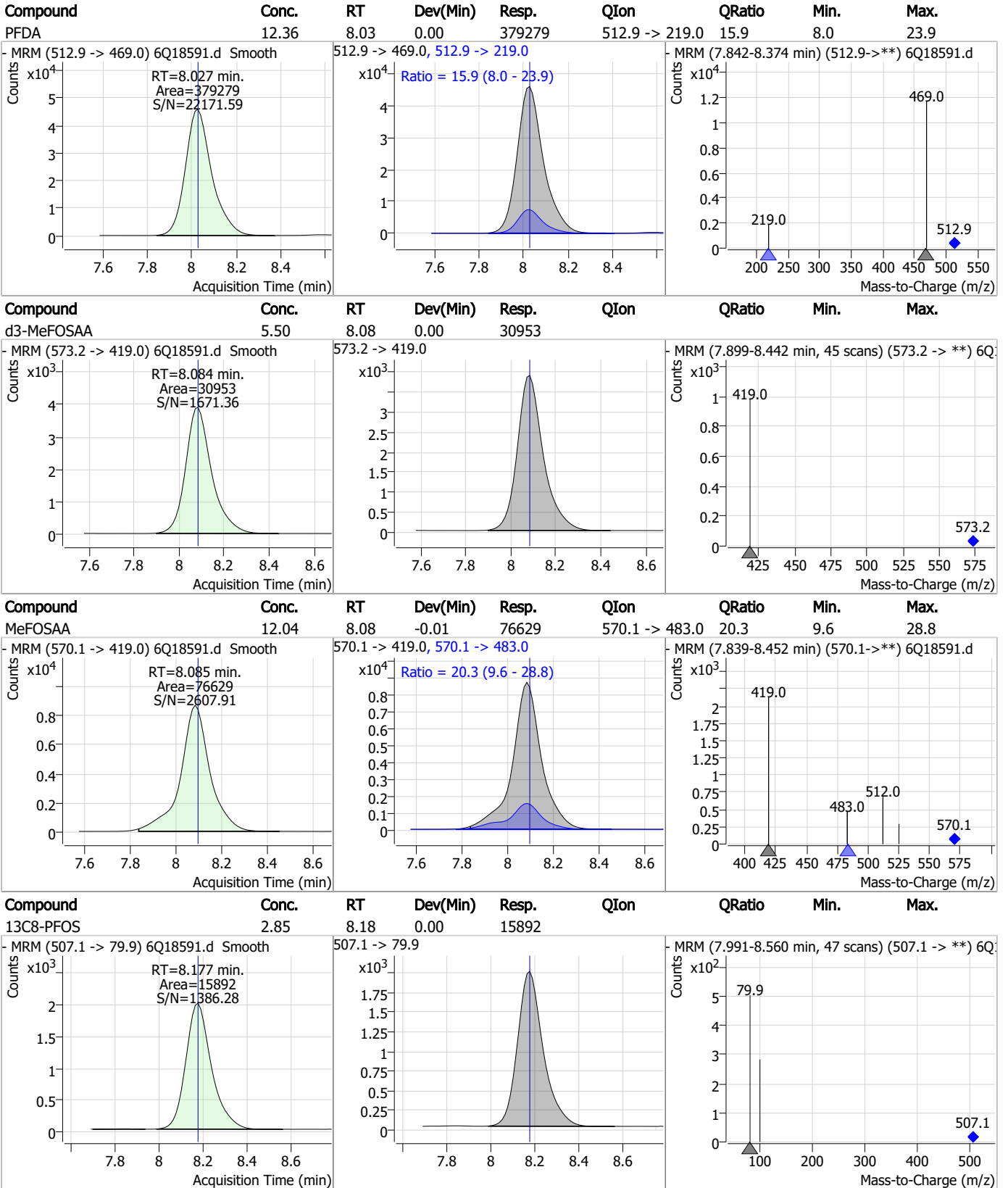
Perfluorinated Compounds by LC/MS/MS



7.7.7

7

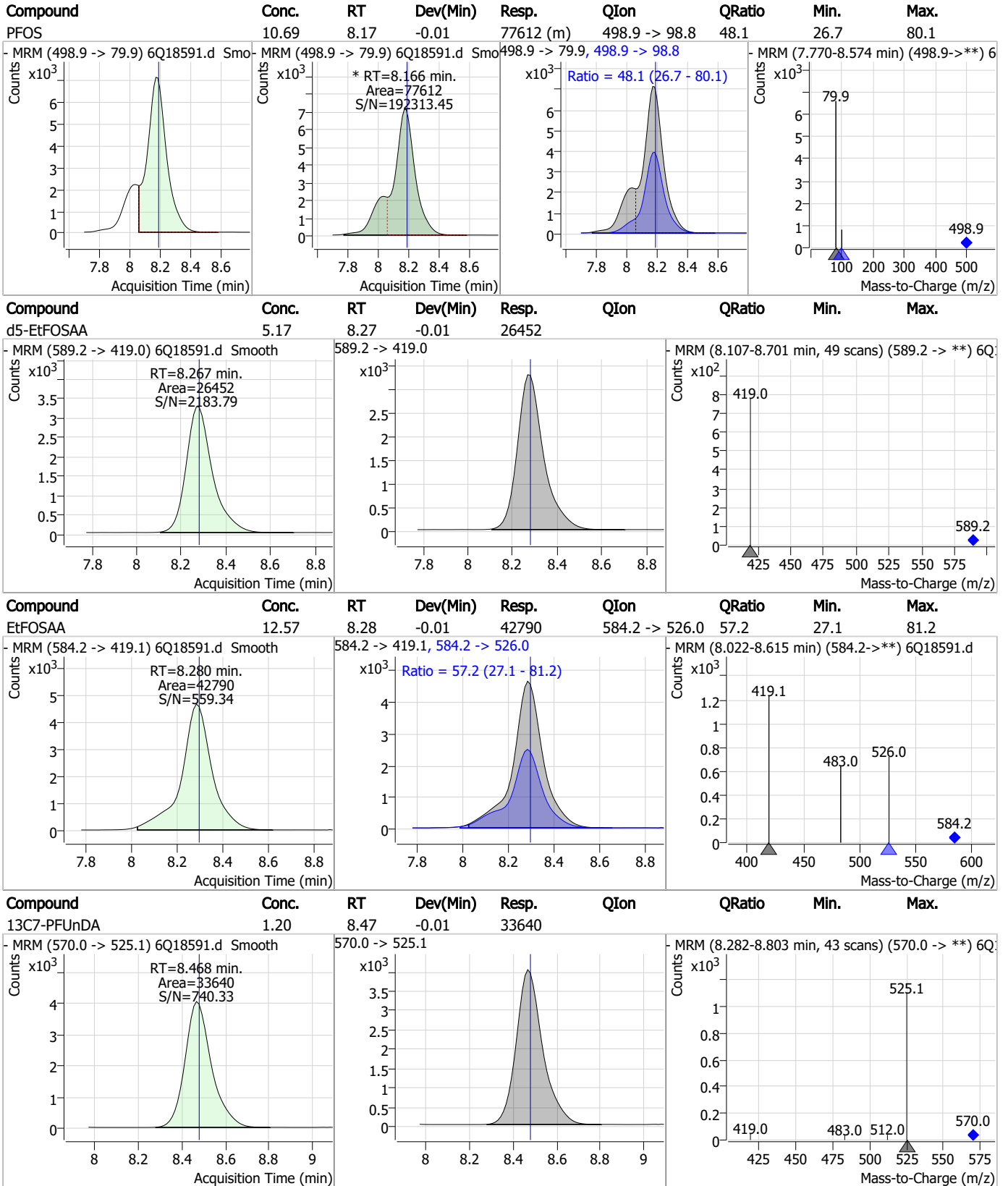
Perfluorinated Compounds by LC/MS/MS



7.7.7

7

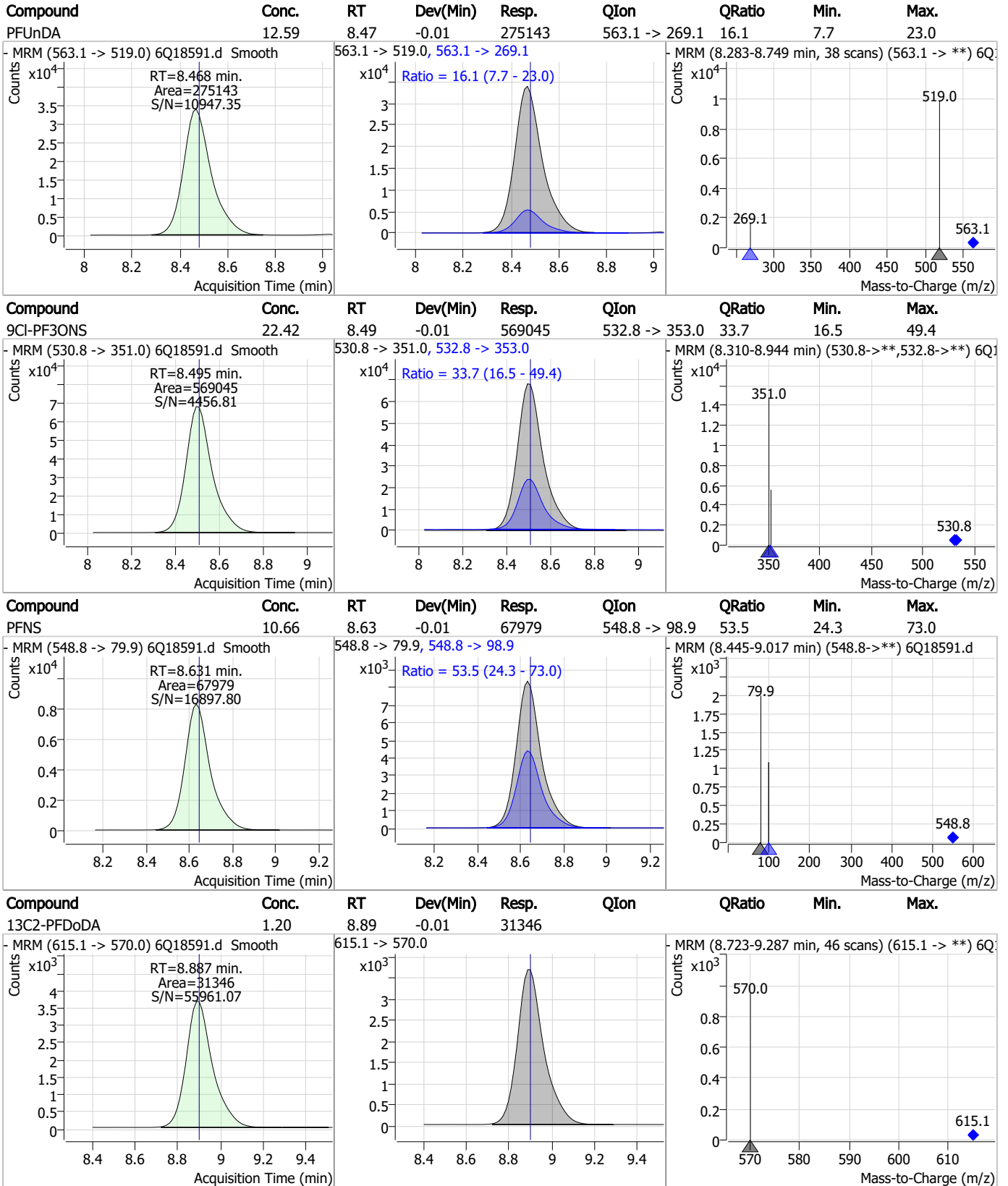
Perfluorinated Compounds by LC/MS/MS



7.7.7

7

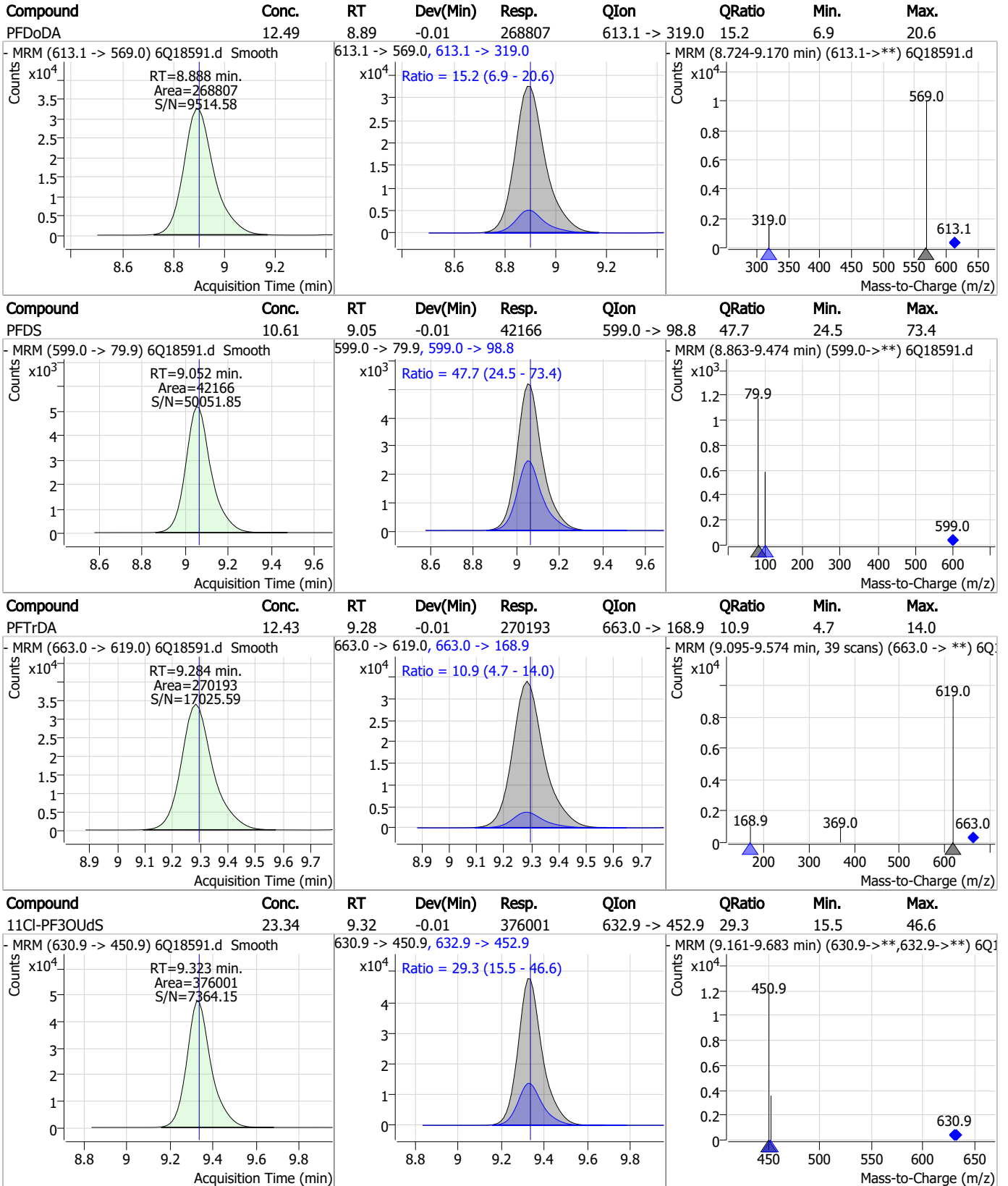
Perfluorinated Compounds by LC/MS/MS



7.7.7

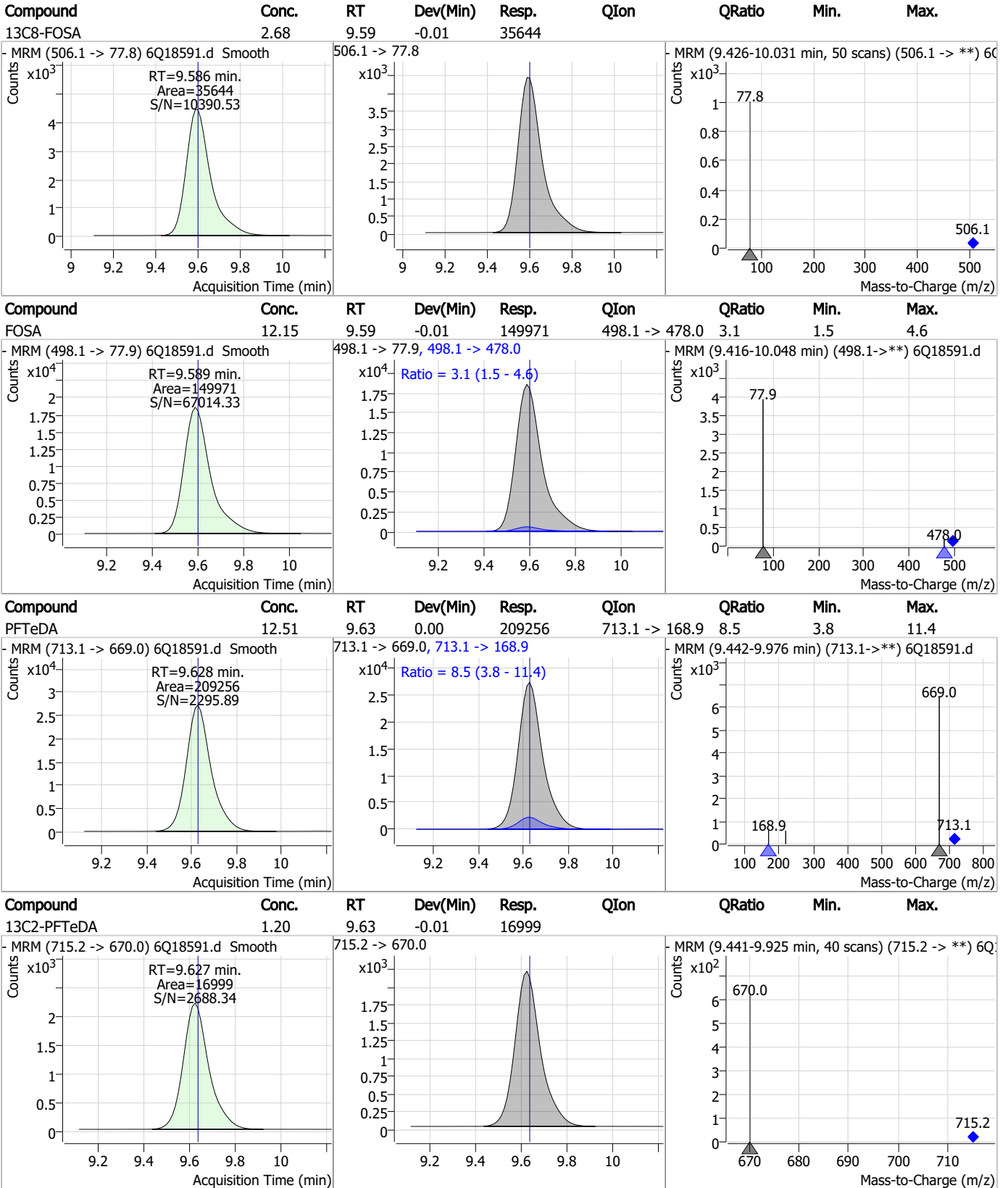
7

Perfluorinated Compounds by LC/MS/MS



7.7.7
7

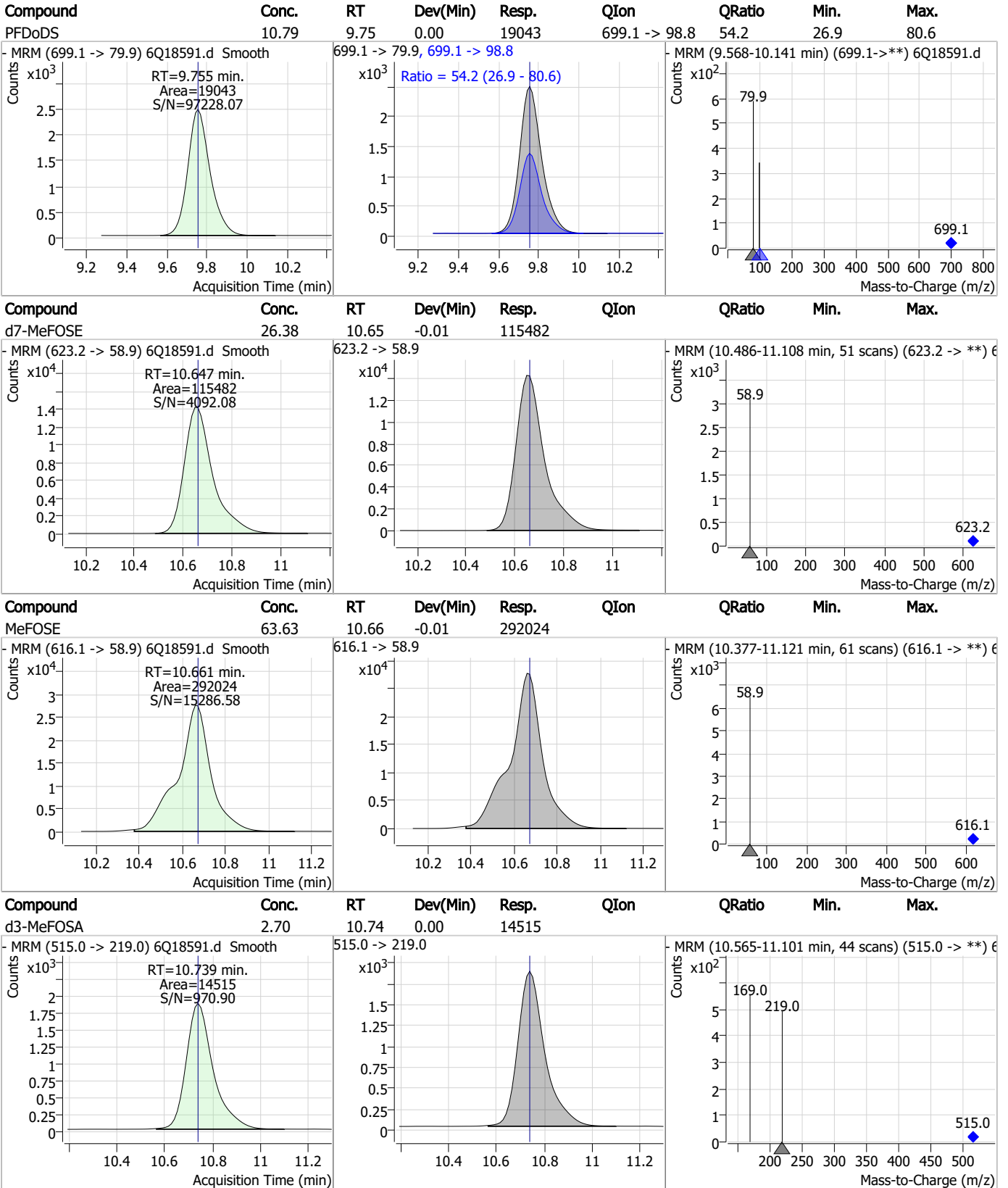
Perfluorinated Compounds by LC/MS/MS



7.7.7

7

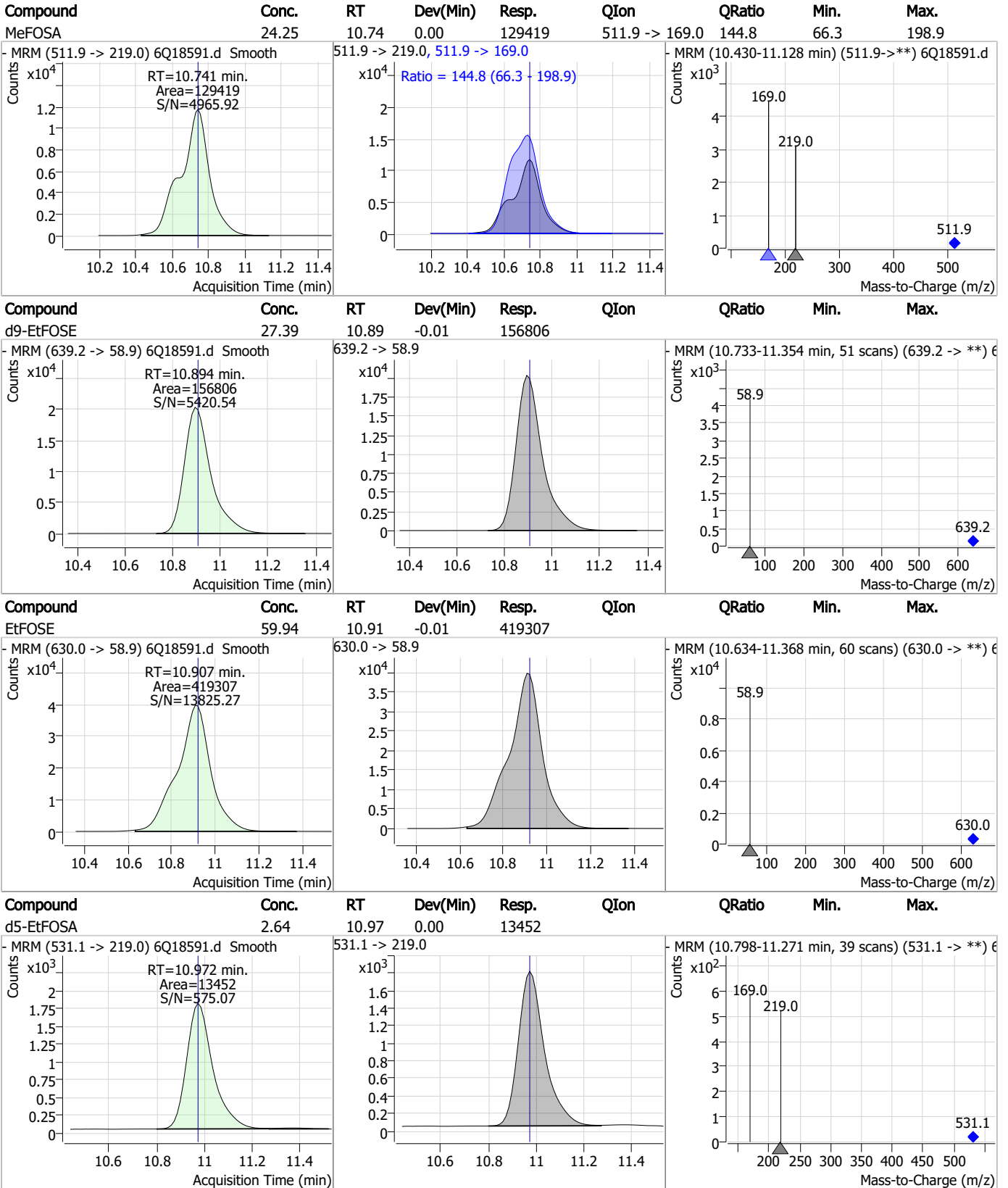
Perfluorinated Compounds by LC/MS/MS



7.7.7

7

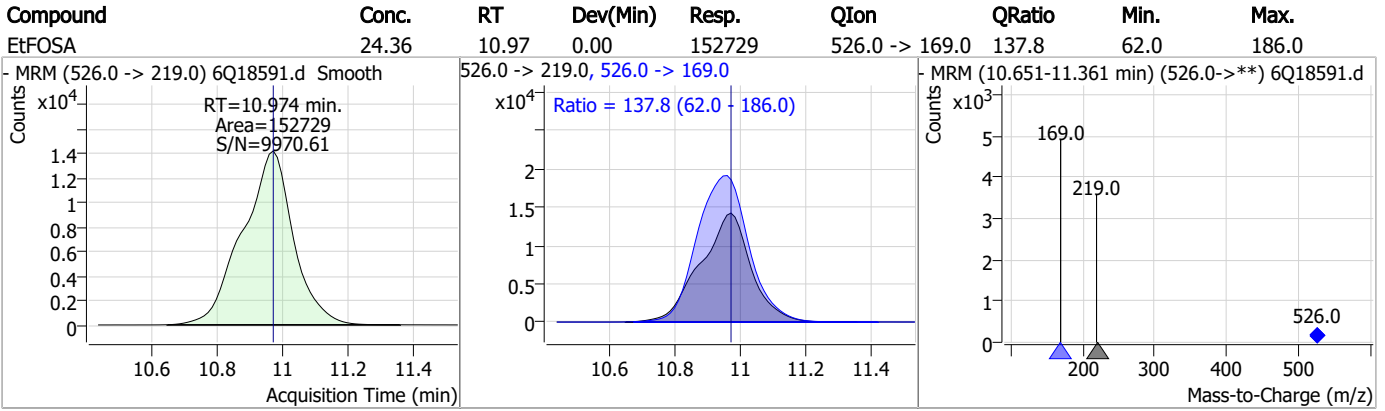
Perfluorinated Compounds by LC/MS/MS



7.7.7

7

Perfluorinated Compounds by LC/MS/MS



7.7.7

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18591.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:28 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.7.7.1

7

Manual Integrations
APPROVED
(compounds with "m" flag)

Norman Farmer
06/01/23 14:56

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18592.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 5/31/2023 6:43:19 PM
Sample Name : ic279-7
Vial : P1-A8
DA Method File : 1633_053123_S6Q279.quantmethod.xml
Batch Name : S6Q279.batch.bin
Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	173909	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	59923	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	64695	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	61221	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	92604	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	41267	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	26149	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33011	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	30068	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16581	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34285	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23470	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15119	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14029	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3287	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4859	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4858	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	28241	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	41014	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25438	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	110296	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	143947	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13006	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13881	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17752	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	73362	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10445	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	97223	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34474	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	49011	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	61263	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3287	4.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4859	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4858	4.73 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	30068	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16581	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C3-PFBS	5.322	302.1 -> 79.9	23470	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	15119	2.59 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C4-PFBA	2.822	216.8 -> 171.9	173909	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	61221	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C5-PFHxA	5.404	318.0 -> 273.0	64695	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	59923	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.027	519.1 -> 474.1	26149	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33011	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-FOSA	9.598	506.1 -> 77.8	34285	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-PFOA	7.026	421.1 -> 376.0	92604	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.177	507.1 -> 79.9	14029	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C9-PFNA	7.545	472.1 -> 427.0	41267	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	28241	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41014	10.19 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSA	10.739	515.0 -> 219.0	13881	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25438	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	110296	24.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d9-EtFOSE	10.894	639.2 -> 58.9	143947	24.68 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	13006	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	461734	96.69 µg/L	96
		327.1 -> 80.9	170644		
6:2FTS	6.801	427.1 -> 407.0	454138	95.12 µg/L	97
		427.1 -> 80.9	145960		
8:2FTS	7.816	527.1 -> 507.0	264319	97.83 µg/L	92
		527.1 -> 80.8	99847		
EtFOSAA	8.280	584.2 -> 419.1	84735	25.89 µg/L	97
		584.2 -> 526.0	44261		
FOSA	9.589	498.1 -> 77.9	295311	24.88 µg/L	100
		498.1 -> 478.0	8483		
MeFOSAA	8.085	570.1 -> 419.0	150677	25.95 µg/L	100
		570.1 -> 483.0	29222		
PFBA	2.818	212.8 -> 168.9	587033	101.96 µg/L	100
PFBS	5.323	298.7 -> 79.9	179888	22.53 µg/L	100
		298.7 -> 98.8	65061		
PFDA	8.027	512.9 -> 469.0	752039	24.80 µg/L	99
		512.9 -> 219.0	115710		
PFDoDA	8.900	613.1 -> 569.0	526213	25.49 µg/L	97
		613.1 -> 319.0	79479		
PFDS	9.052	599.0 -> 79.9	81025	23.10 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	40858			
PFHpA	6.370	363.1 -> 319.0	661062	24.40	µg/L	98
		363.1 -> 169.0	105903			
PFHpS	7.685	449.0 -> 79.9	160648	23.88	µg/L	100
		449.0 -> 98.9	79054			
PFHxA	5.407	313.0 -> 269.0	544910	25.09	µg/L	98
		313.0 -> 118.9	27606			
PFHxS	7.131	398.7 -> 79.9	151573	22.16	µg/L	m 98
		398.7 -> 98.9	73693			
PFNA	7.545	463.0 -> 419.0	715129	24.46	µg/L	99
		463.0 -> 219.0	144309			
PFNS	8.631	548.8 -> 79.9	139044	24.69	µg/L	99
		548.8 -> 98.9	68535			
PFOA	7.028	413.0 -> 369.0	1015265	25.68	µg/L	99
		413.0 -> 169.0	178898			
PFOS	8.178	498.9 -> 79.9	150352	23.45	µg/L	91
		498.9 -> 98.8	70289			
PFPeA	4.212	263.0 -> 219.0	716320	49.77	µg/L	100
PFPeS	6.422	349.1 -> 79.9	157507	23.11	µg/L	96
		349.1 -> 98.9	70365			
PFTeDA	9.628	713.1 -> 669.0	415094	25.45	µg/L	99
		713.1 -> 168.9	33581			
PFTrDA	9.284	663.0 -> 619.0	514804	24.69	µg/L	95
		663.0 -> 168.9	57093			
PFUnDA	8.468	563.1 -> 519.0	552916	25.78	µg/L	100
		563.1 -> 269.1	85701			
11Cl-PF3OUdS	9.336	630.9 -> 450.9	699278	45.44	µg/L	99
		632.9 -> 452.9	220802			
9Cl-PF3ONS	8.508	530.8 -> 351.0	1126698	46.47	µg/L	97
		532.8 -> 353.0	352413			
ADONA	6.632	376.9 -> 250.9	2530342	46.45	µg/L	99
		376.9 -> 84.8	662153			
HFPO-DA	5.783	284.9 -> 168.9	176481	50.77	µg/L	95
		284.9 -> 184.9	20631			
3:3FTCA	3.659	241.0 -> 177.0	116182	126.13	µg/L	96
		241.0 -> 117.0	15056			
5:3FTCA	6.074	341.0 -> 237.1	2422580	619.95	µg/L	100
		341.0 -> 217.0	1724946			
7:3FTCA	7.510	441.0 -> 316.9	1687899	630.71	µg/L	96
		441.0 -> 336.9	3600820			
EtFOSA	10.974	526.0 -> 219.0	298243	49.20	µg/L	91
		526.0 -> 169.0	399918			
EtFOSE	10.907	630.0 -> 58.9	800380	124.63	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	252486	49.46	µg/L	94
		511.9 -> 169.0	353674			
MeFOSE	10.661	616.1 -> 58.9	552583	126.07	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	38653	24.80	µg/L	98
		699.1 -> 98.8	20250			
NFDHA	5.288	295.0 -> 201.0	126994	48.02	µg/L	98
		295.0 -> 84.9	33424			
PFMBA	4.626	279.0 -> 85.1	485738	49.59	µg/L	100
PFMPA	3.351	229.0 -> 84.9	385009	50.54	µg/L	100
PFEESA	5.862	314.8 -> 134.9	1215259	44.07	µg/L	99
		314.8 -> 82.9	42433			

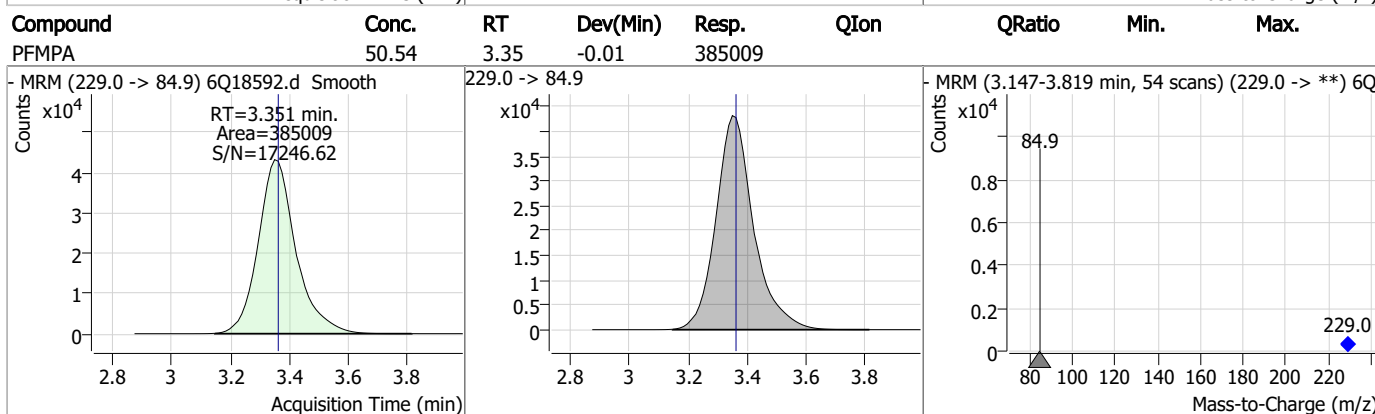
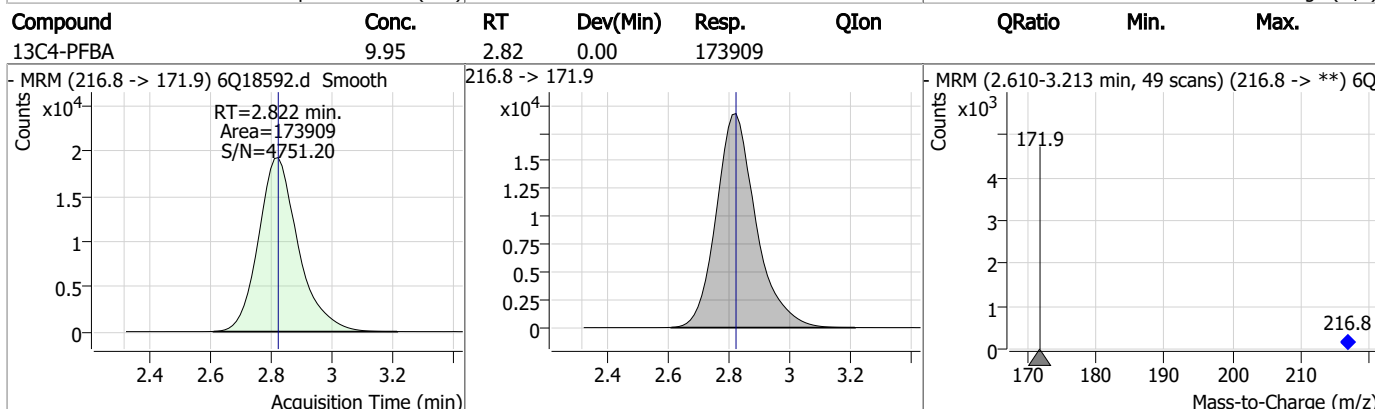
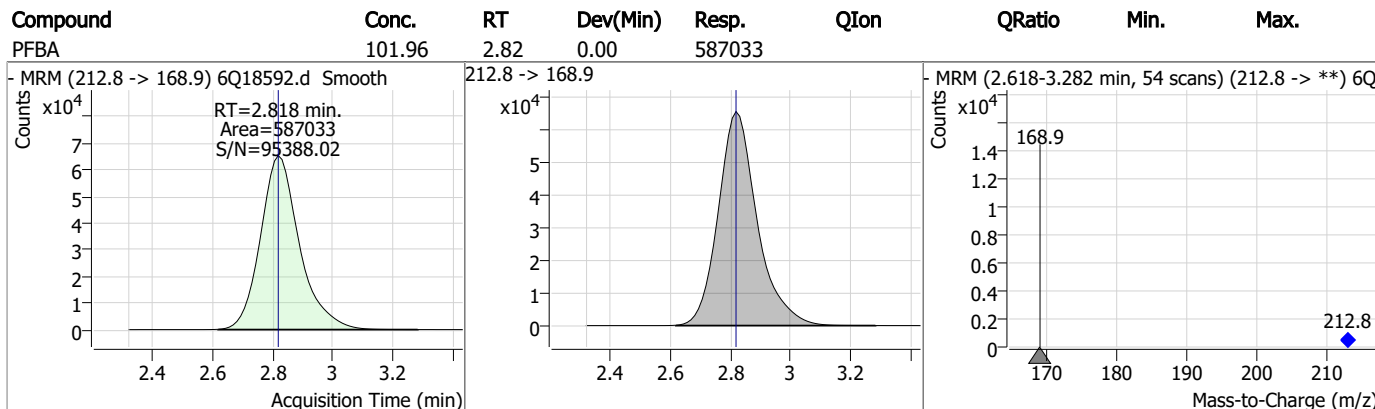
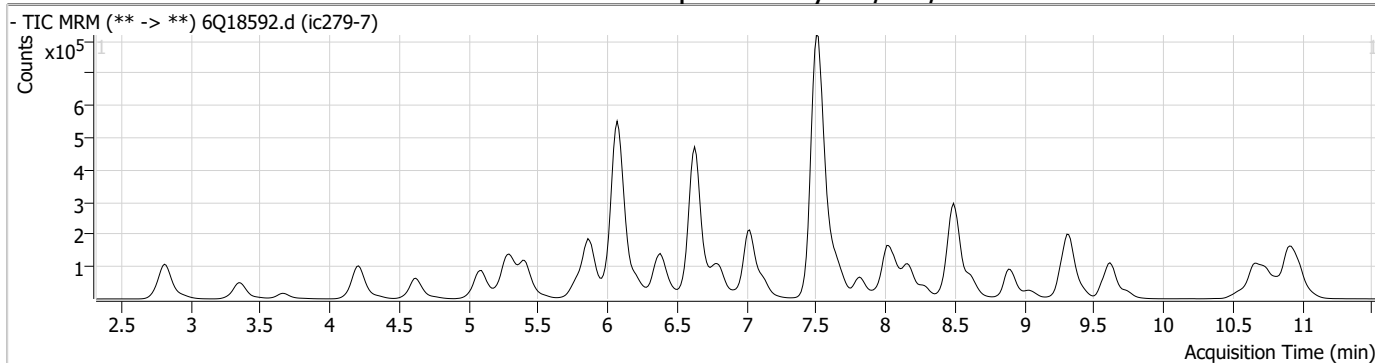
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

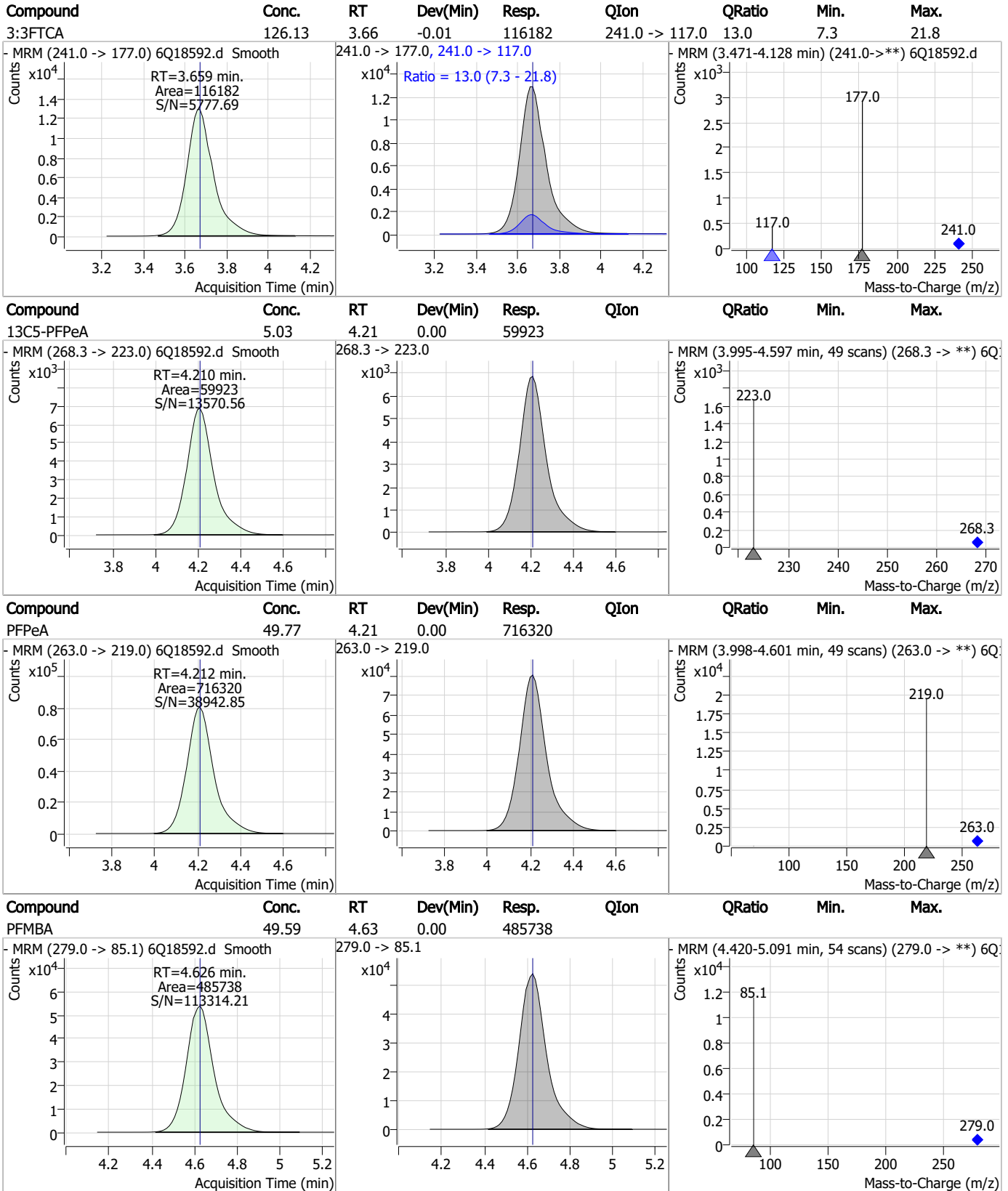
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
----------	----	------------	----------	-------------	----------

7.7.8
7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

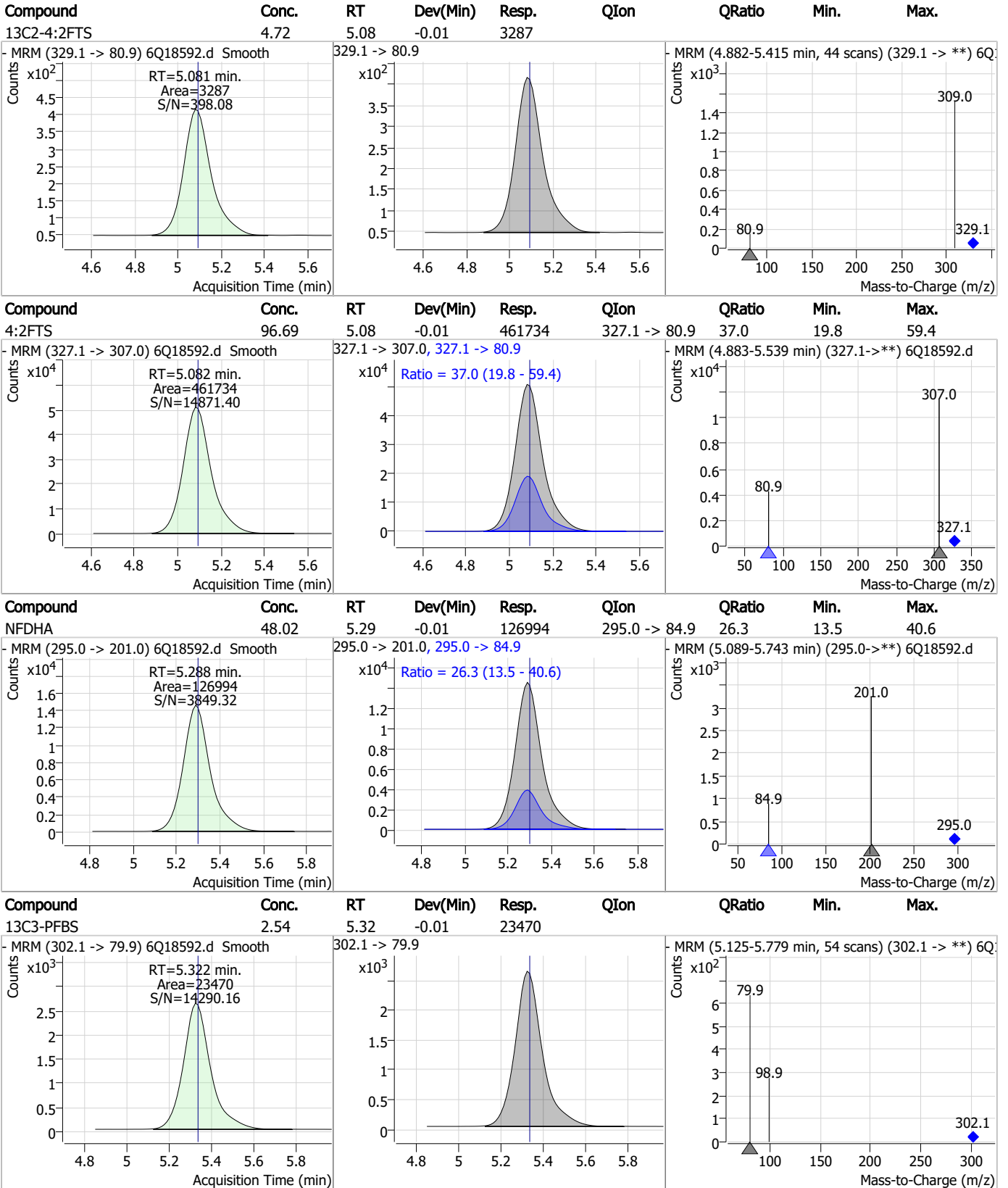


7.7.8

7



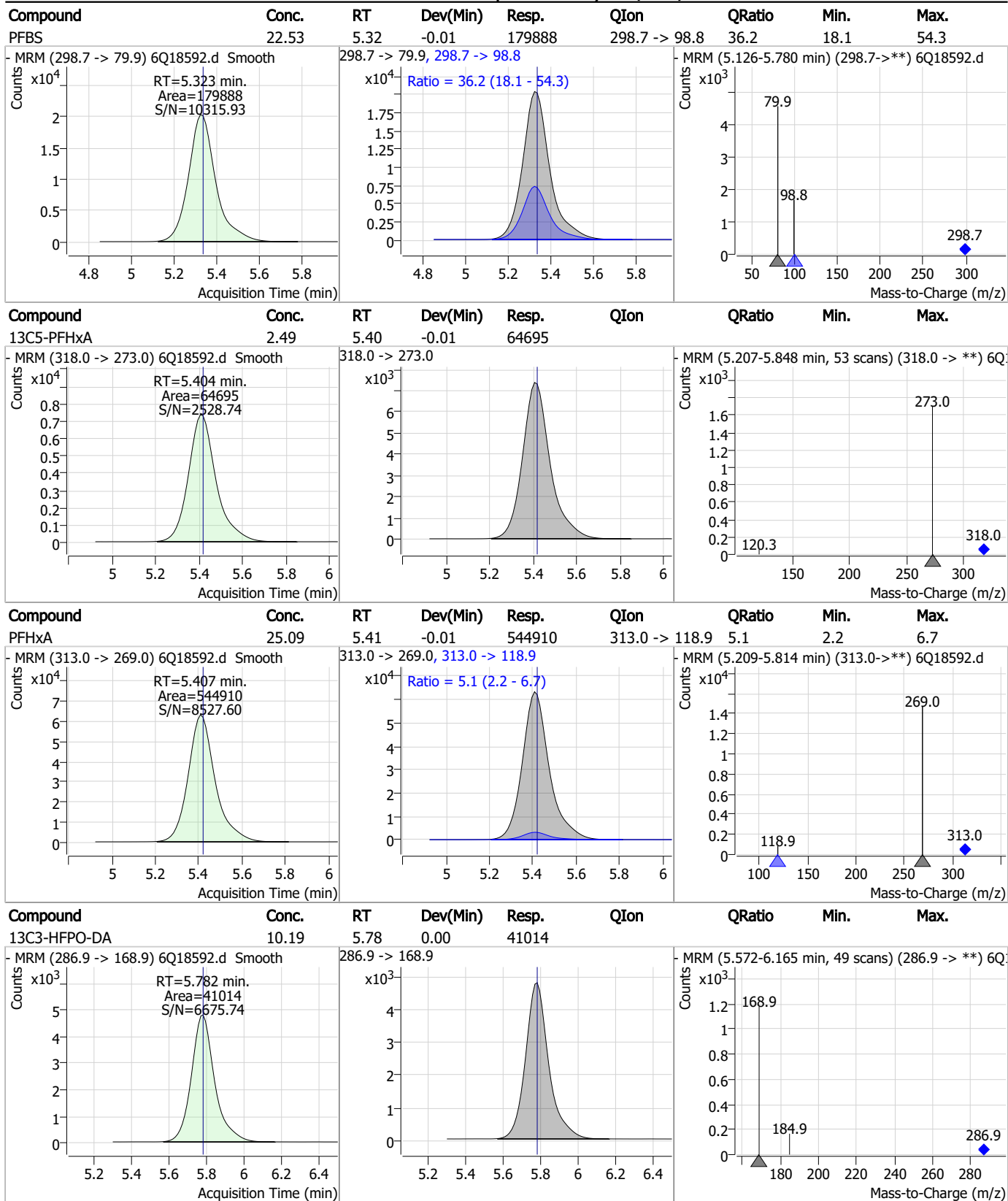
Perfluorinated Compounds by LC/MS/MS



7.7.8

7

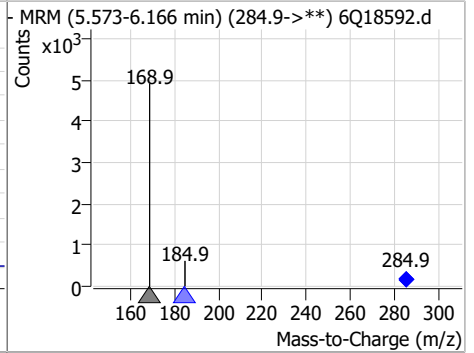
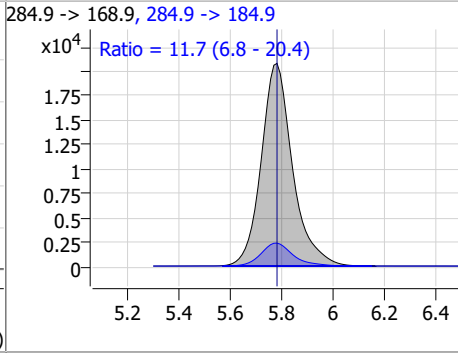
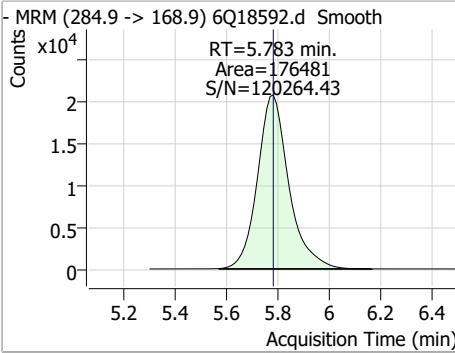
Perfluorinated Compounds by LC/MS/MS



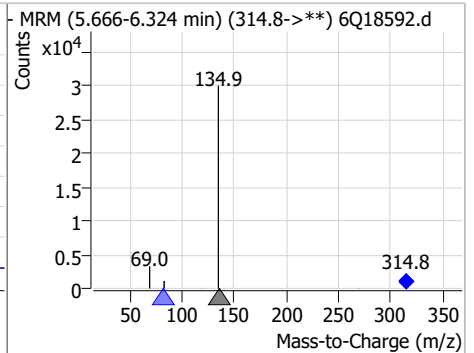
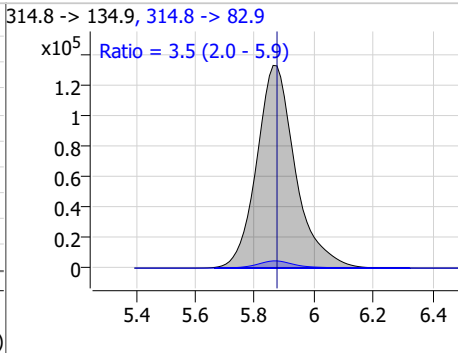
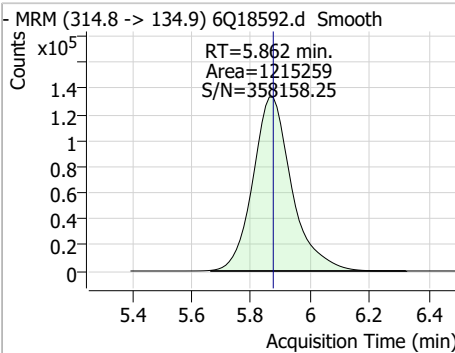
7.7.8
7

Perfluorinated Compounds by LC/MS/MS

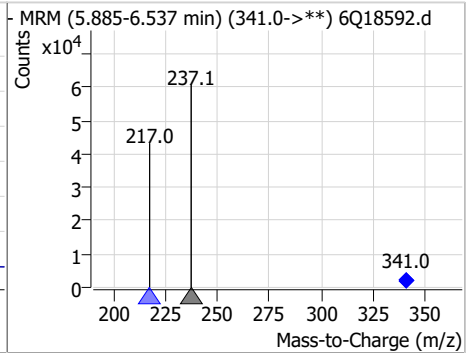
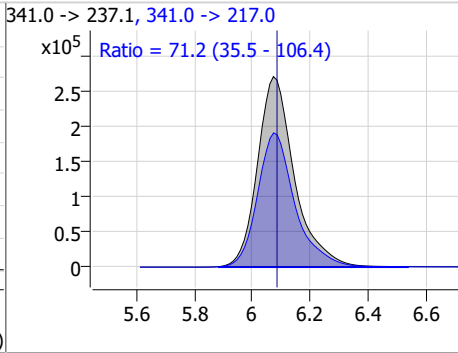
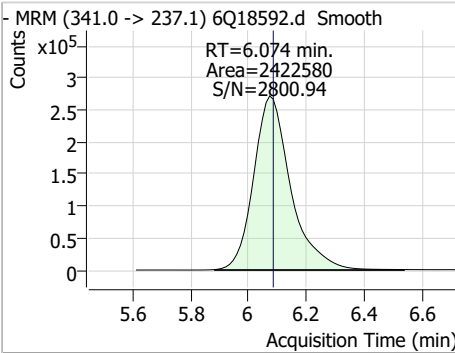
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.77	5.78	0.00	176481	284.9 -> 184.9	11.7	6.8	20.4



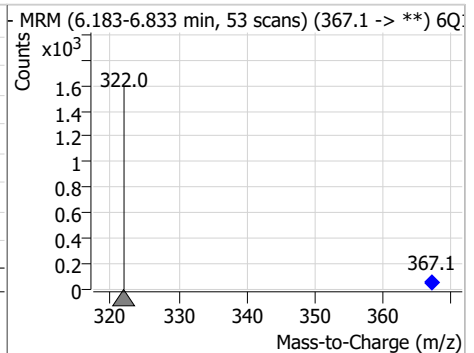
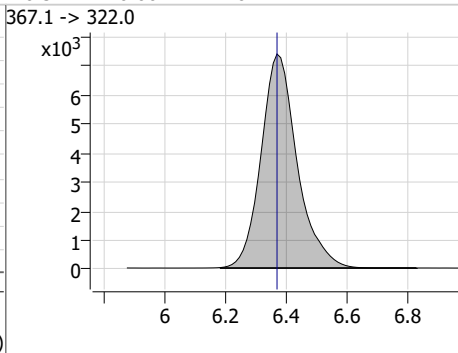
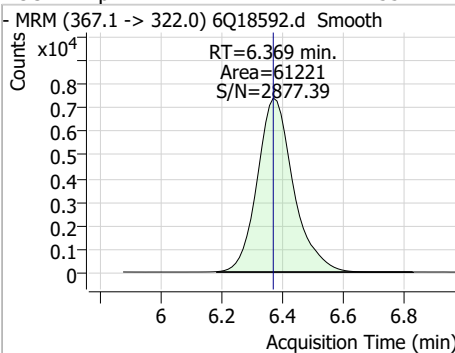
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	44.07	5.86	-0.01	1215259	314.8 -> 82.9	3.5	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	619.95	6.07	-0.01	2422580	341.0 -> 217.0	71.2	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	6.37	0.00	61221	367.1 -> 322.0			

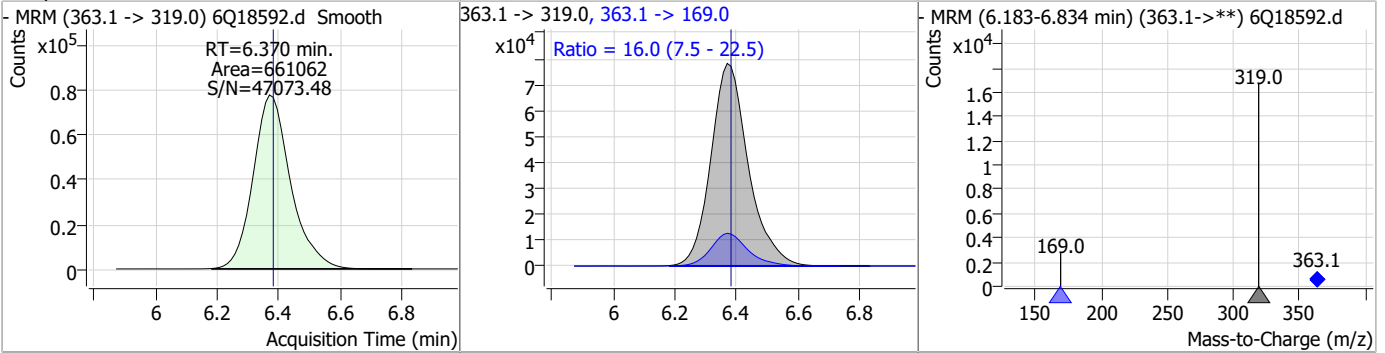


7.7.8

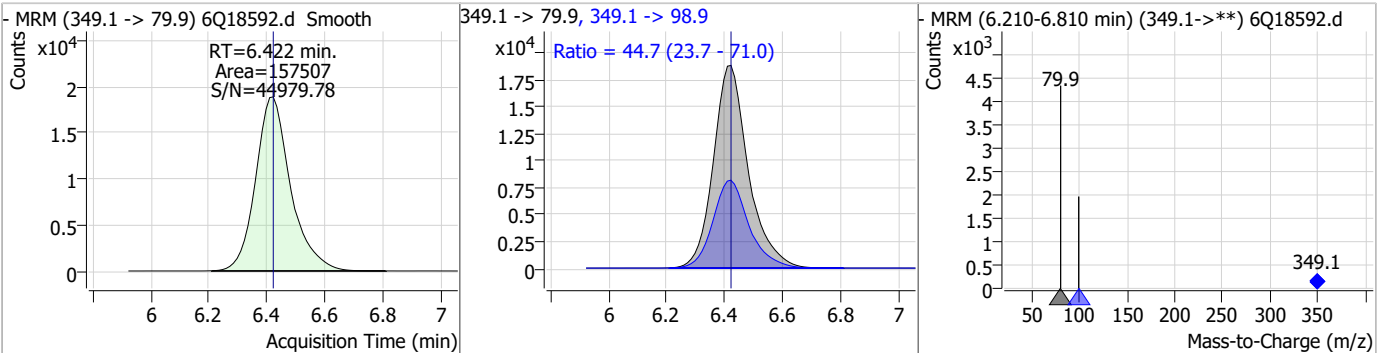
7

Perfluorinated Compounds by LC/MS/MS

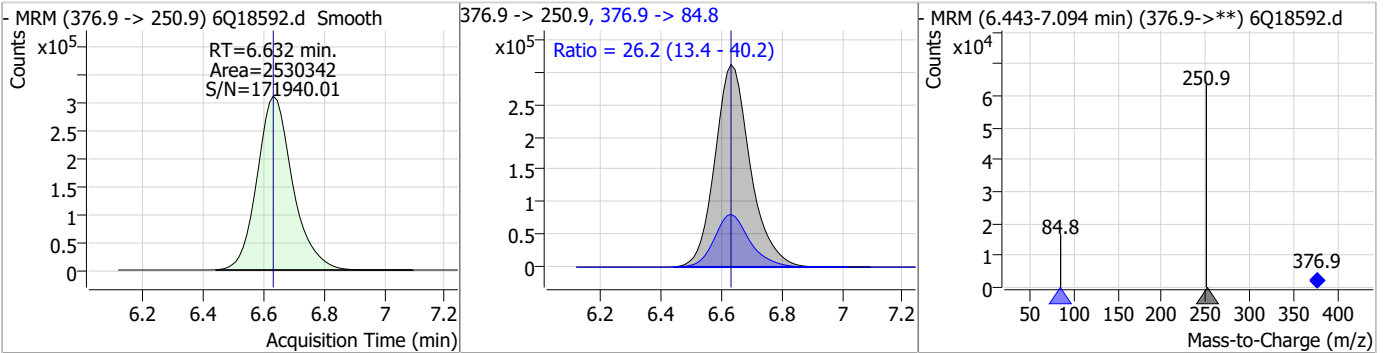
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	24.40	6.37	-0.01	661062	363.1 -> 169.0	16.0	7.5	22.5



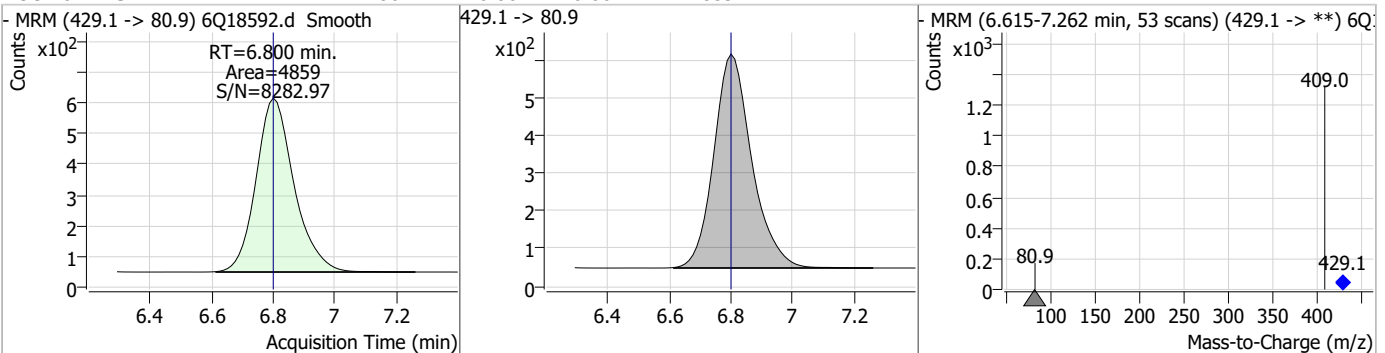
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	23.11	6.42	0.00	157507	349.1 -> 98.9	44.7	23.7	71.0



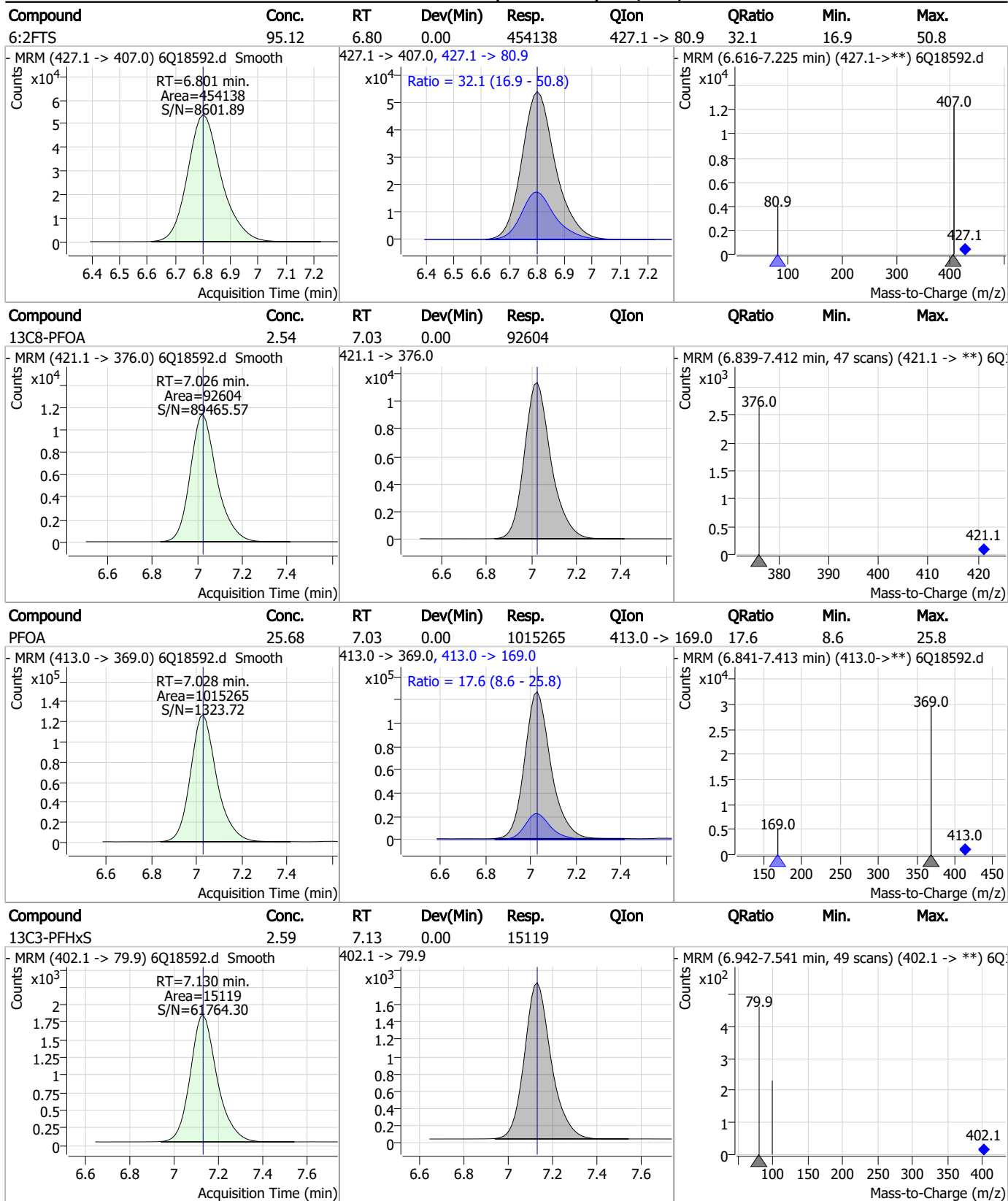
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	46.45	6.63	0.00	2530342	376.9 -> 84.8	26.2	13.4	40.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.80	6.80	0.00	4859	429.1 -> 80.9			

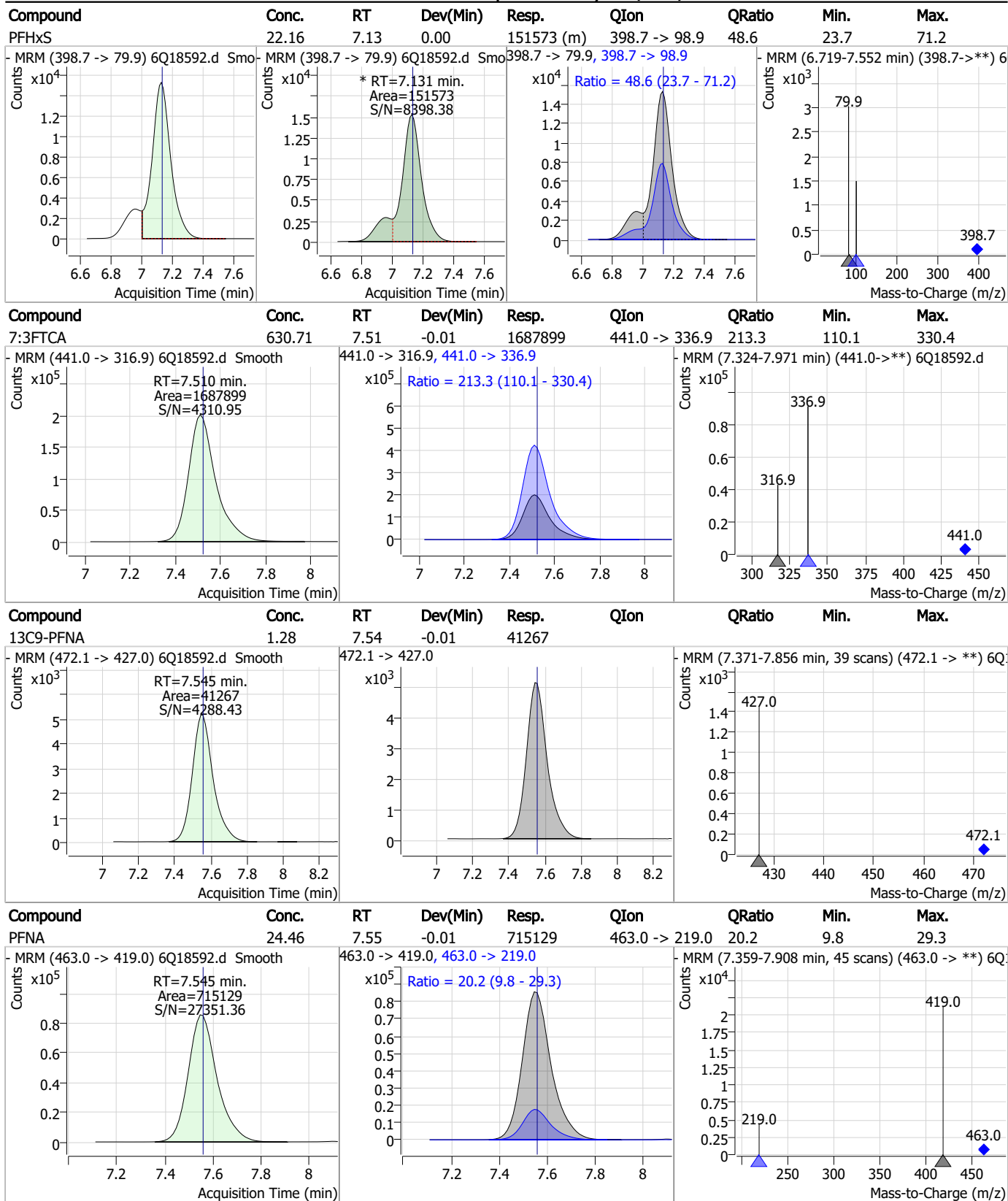


Perfluorinated Compounds by LC/MS/MS



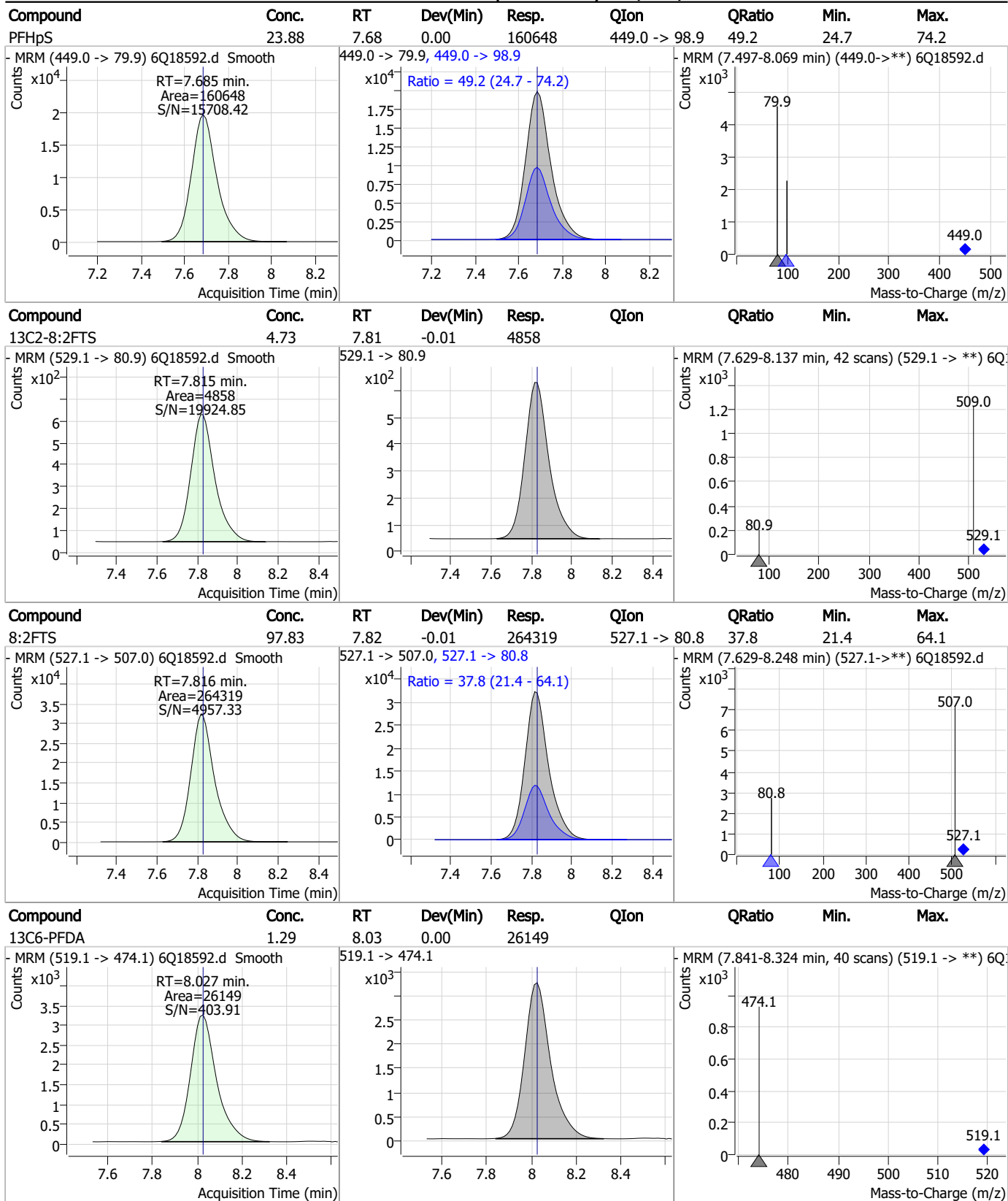
7.7.8
7

Perfluorinated Compounds by LC/MS/MS



7.7.8
7

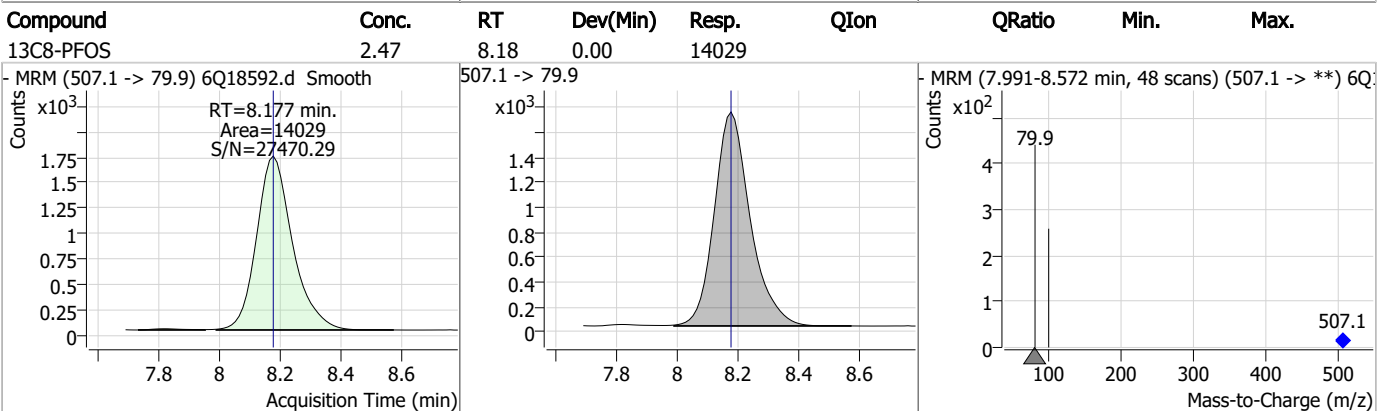
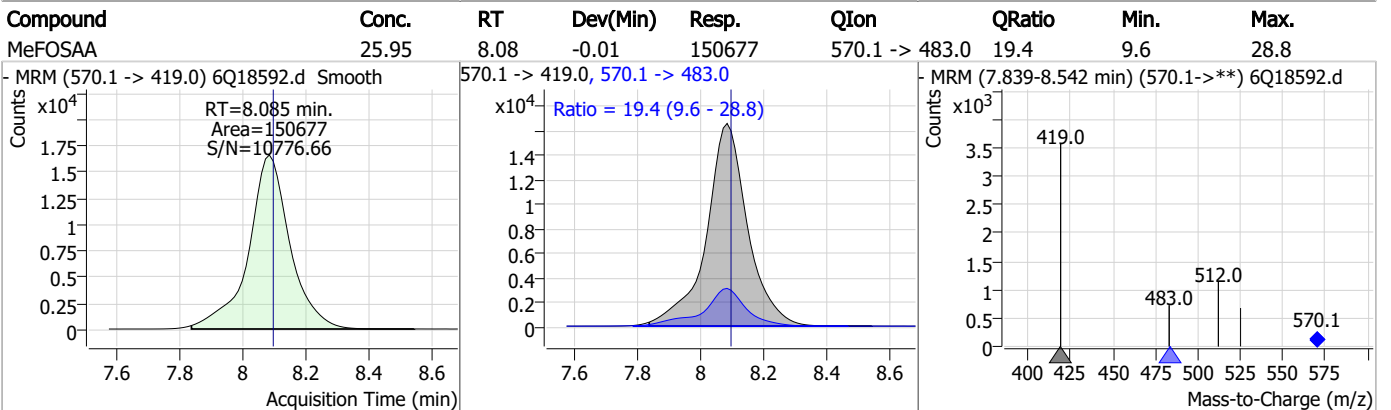
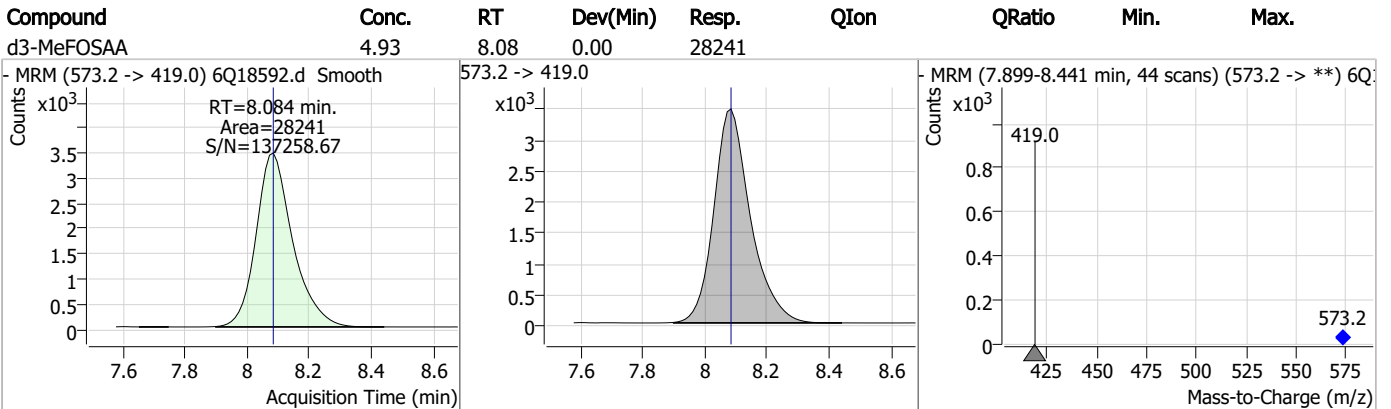
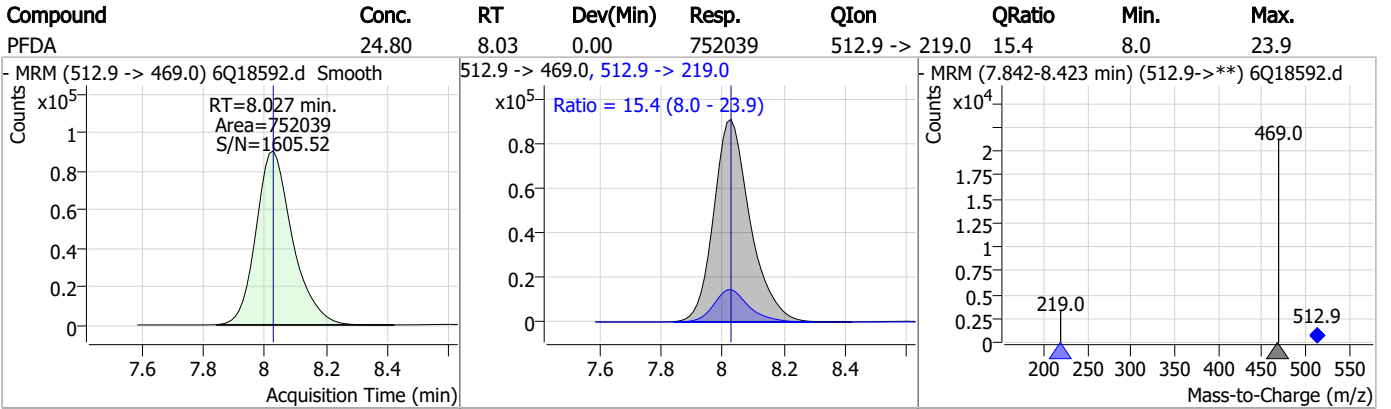
Perfluorinated Compounds by LC/MS/MS



7.7.8
7



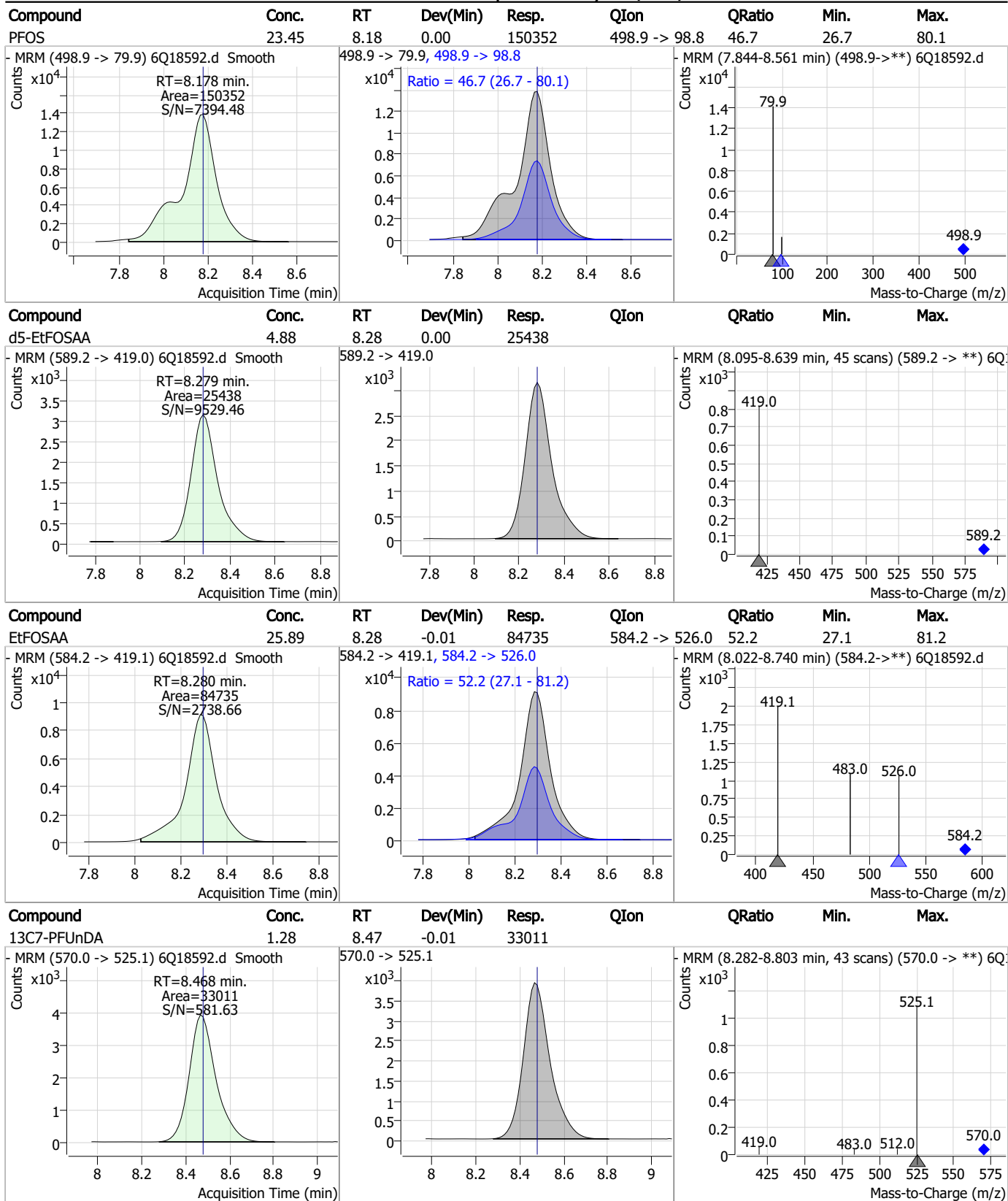
Perfluorinated Compounds by LC/MS/MS



7.7.8

7

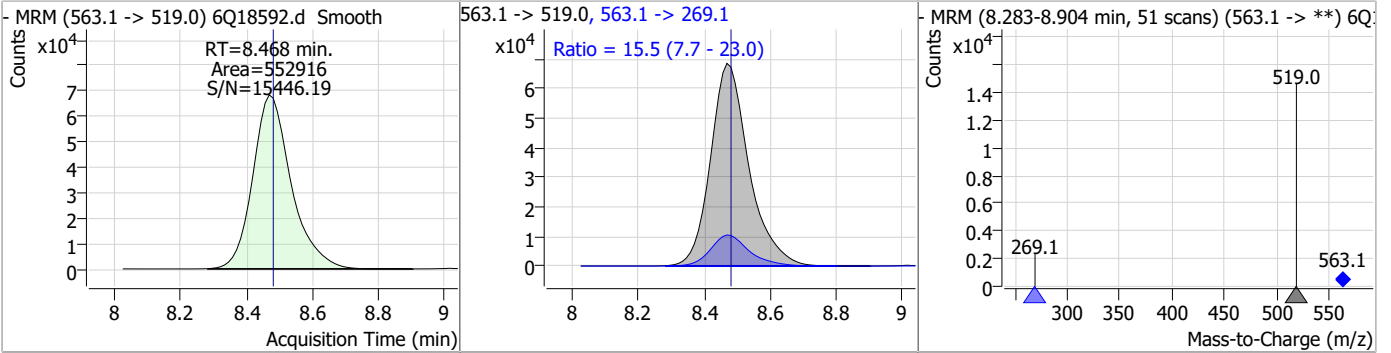
Perfluorinated Compounds by LC/MS/MS



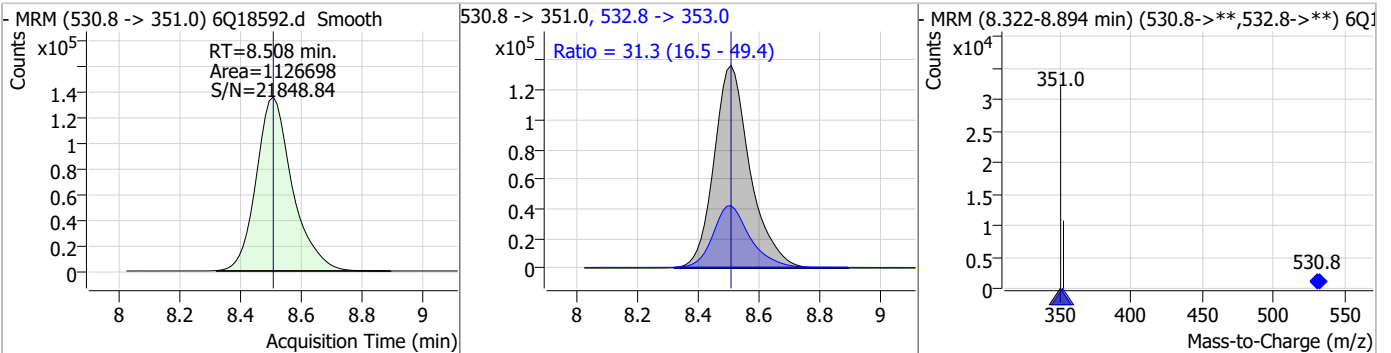
7.7.8
7

Perfluorinated Compounds by LC/MS/MS

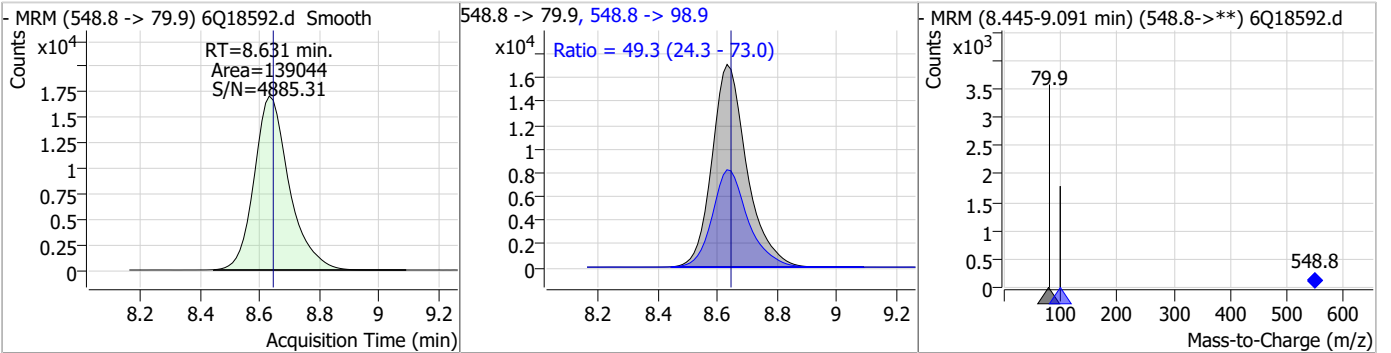
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	25.78	8.47	-0.01	552916	563.1 -> 269.1	15.5	7.7	23.0



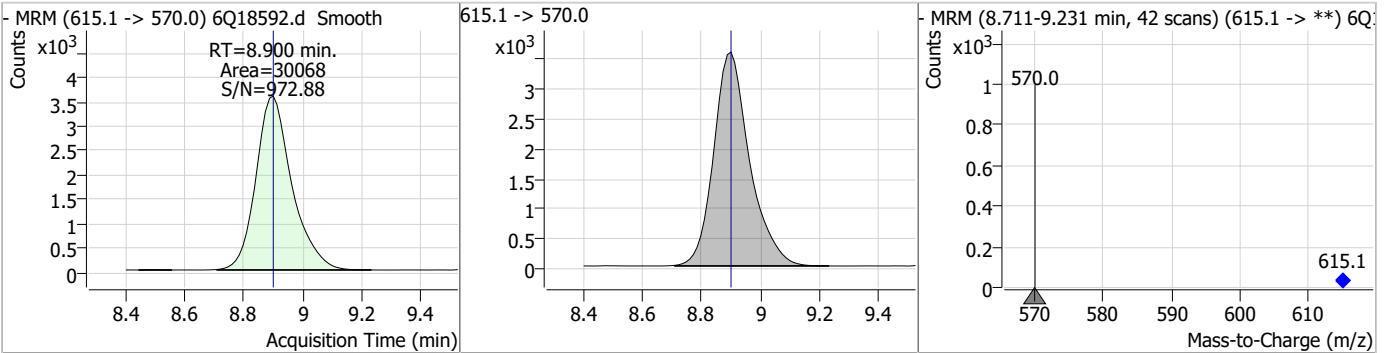
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	46.47	8.51	0.00	1126698	532.8 -> 353.0	31.3	16.5	49.4



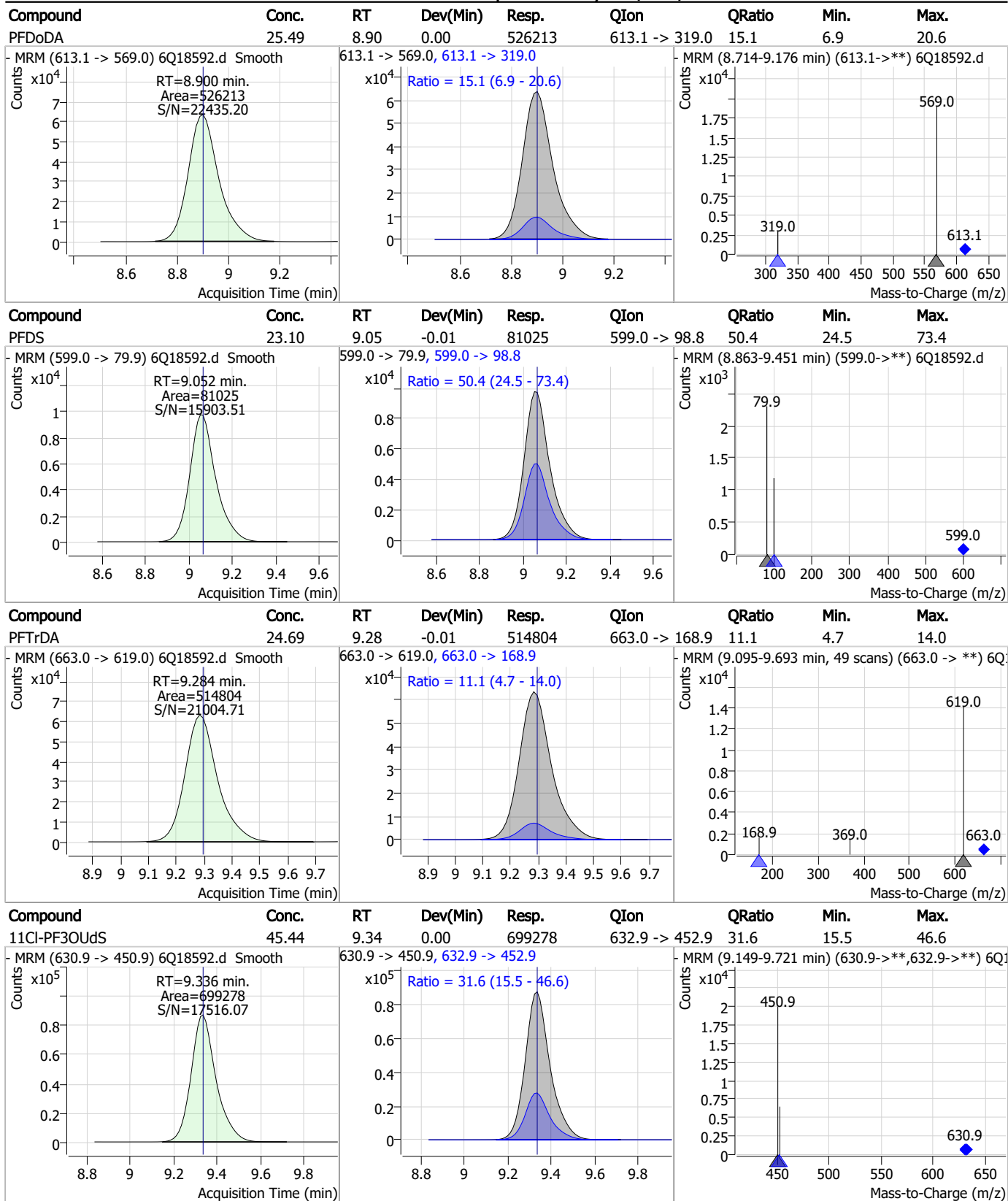
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	24.69	8.63	-0.01	139044	548.8 -> 98.9	49.3	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.26	8.90	0.00	30068	615.1 -> 570.0			

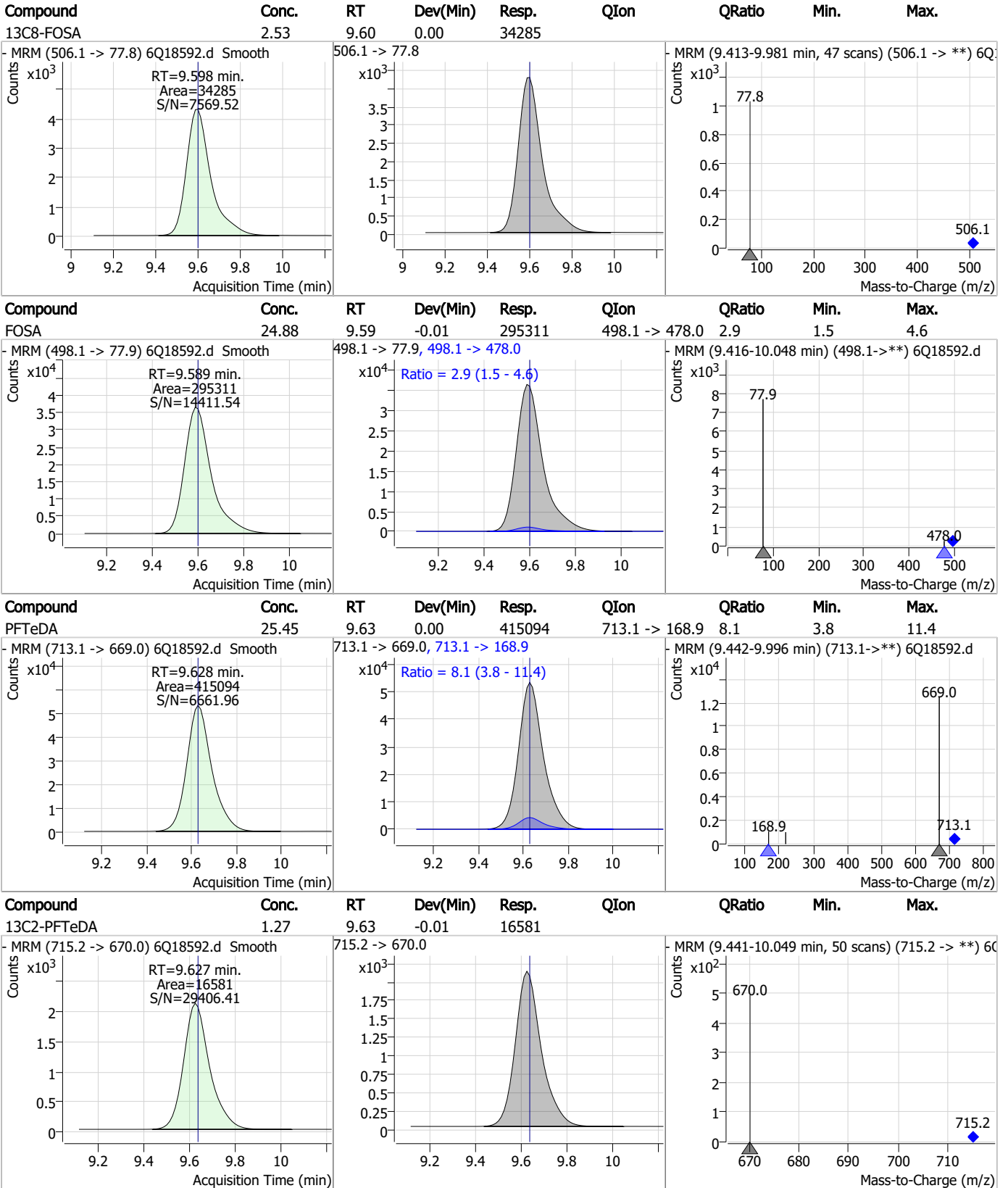


Perfluorinated Compounds by LC/MS/MS



7.7.8
7

Perfluorinated Compounds by LC/MS/MS

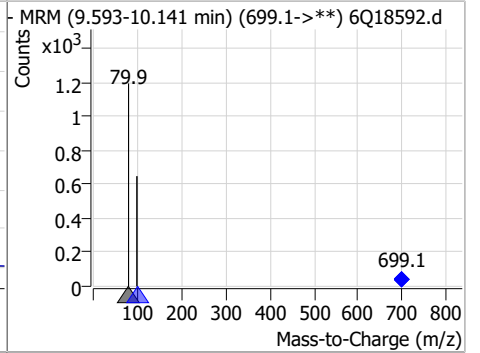
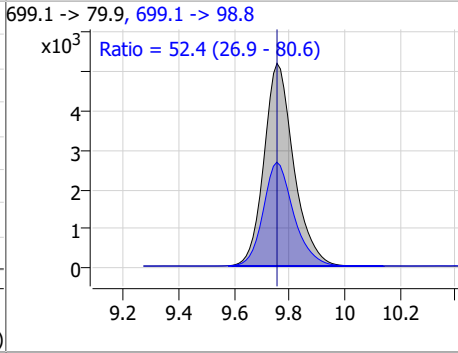
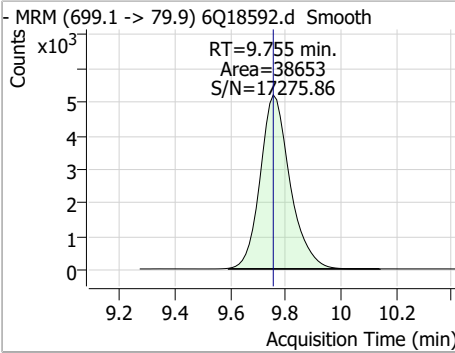


7.7.8

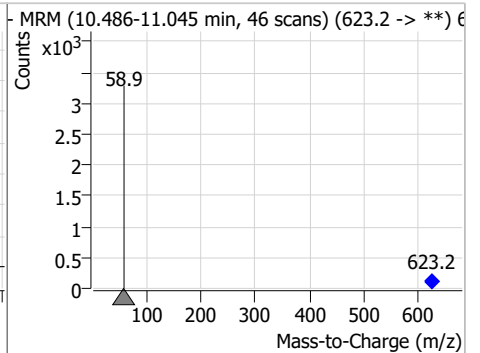
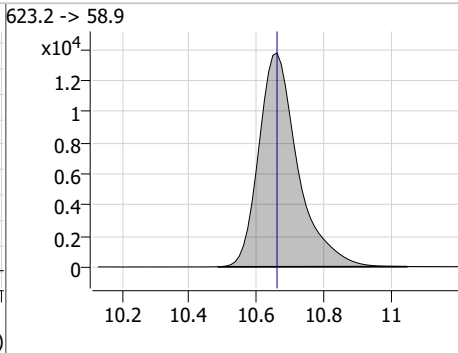
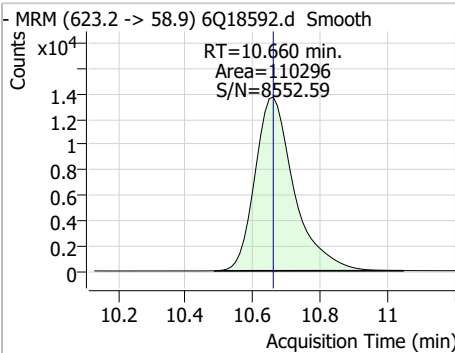
7

Perfluorinated Compounds by LC/MS/MS

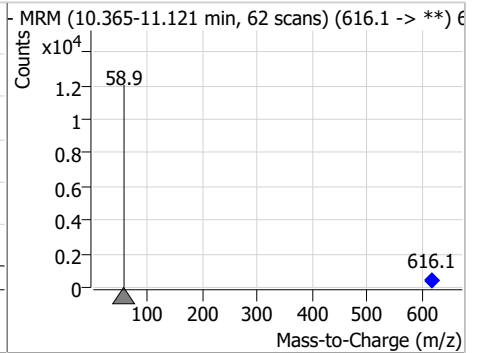
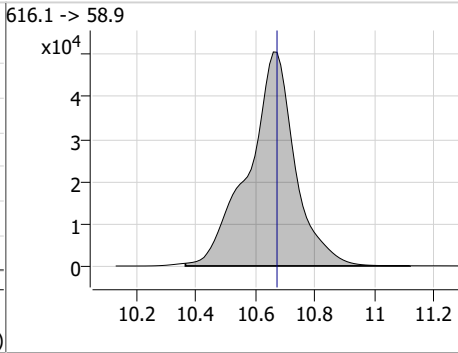
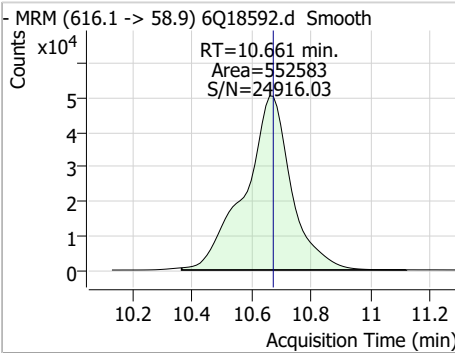
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	24.80	9.75	0.00	38653	699.1 -> 98.8	52.4	26.9	80.6



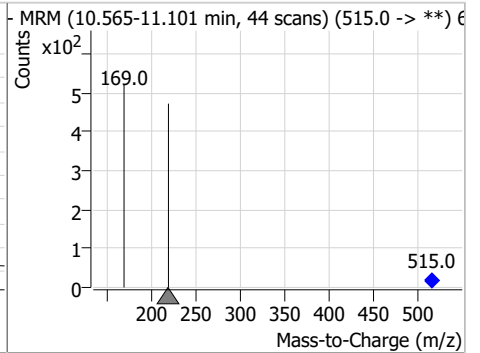
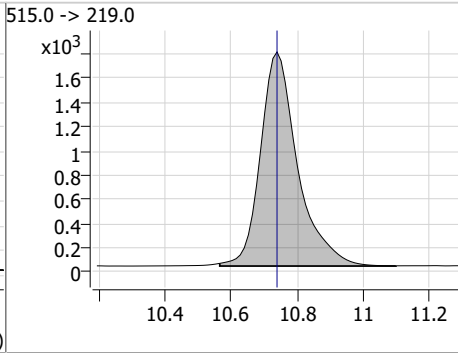
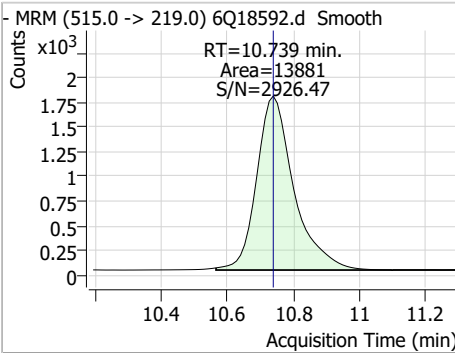
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.74	10.66	0.00	110296				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	126.07	10.66	-0.01	552583				

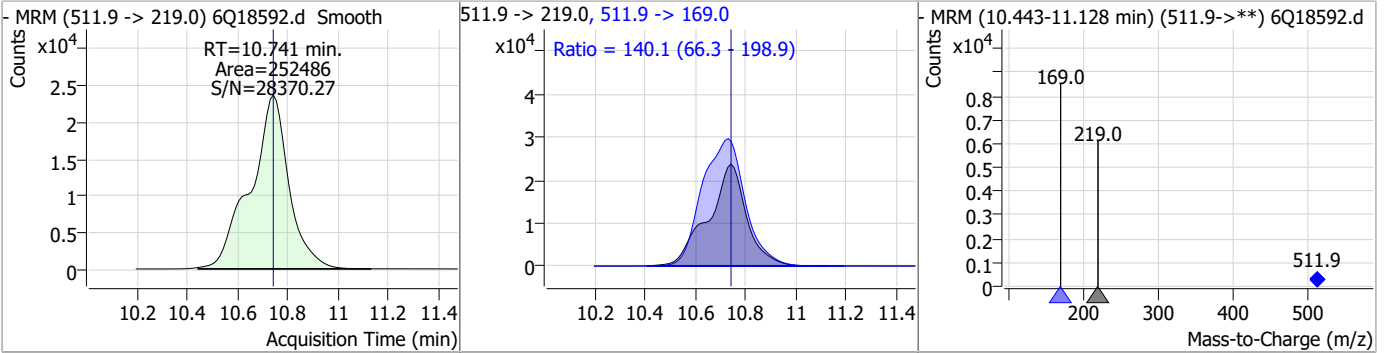


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.53	10.74	0.00	13881				

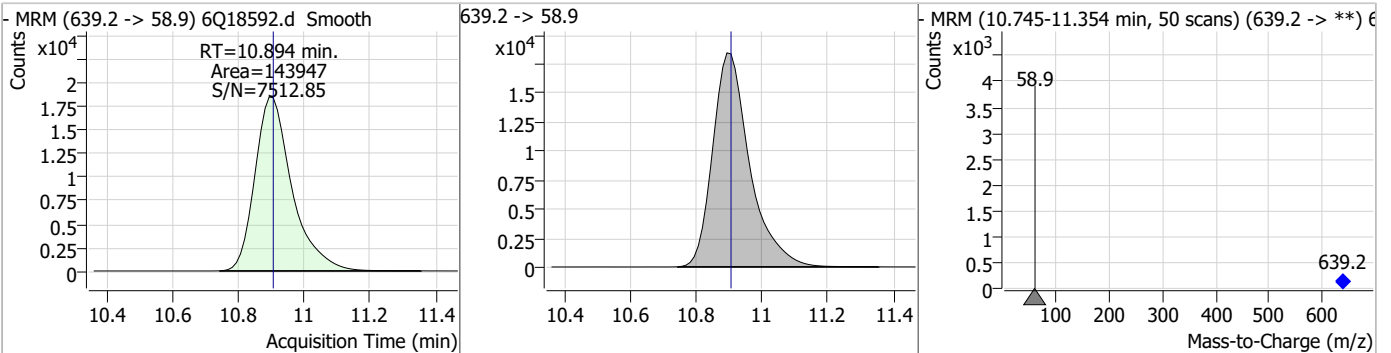


Perfluorinated Compounds by LC/MS/MS

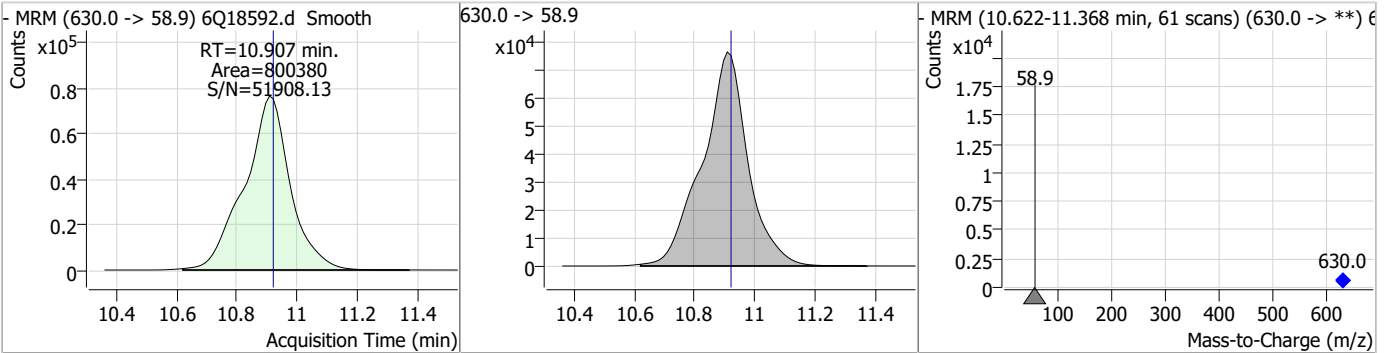
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.46	10.74	0.00	252486	511.9 -> 169.0	140.1	66.3	198.9



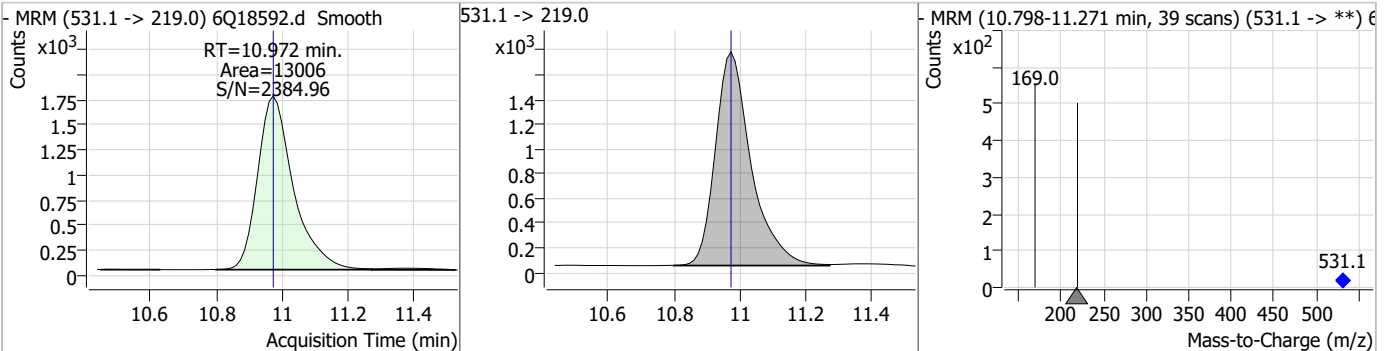
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.68	10.89	-0.01	143947				



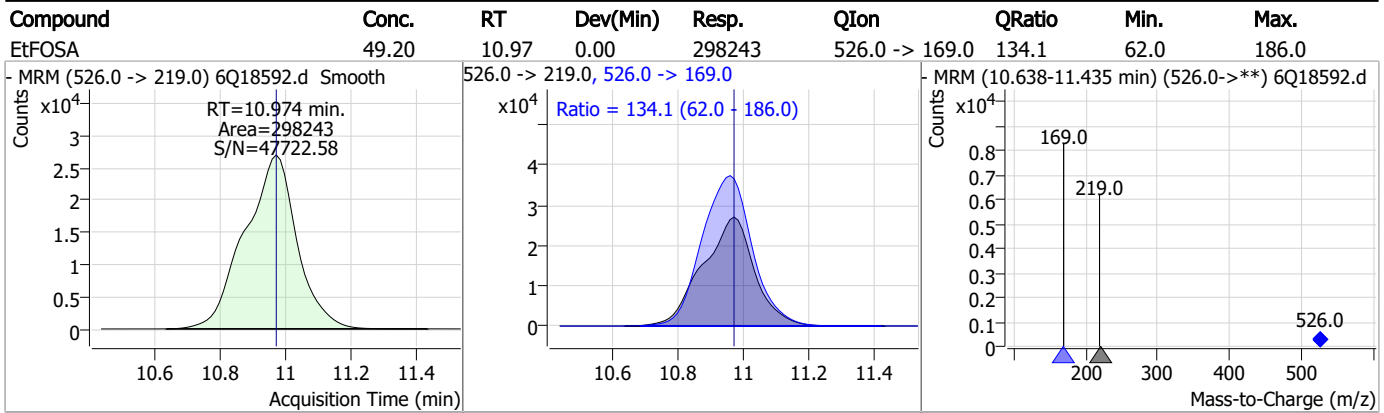
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	124.63	10.91	-0.01	800380				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.50	10.97	0.00	13006				



Perfluorinated Compounds by LC/MS/MS



7.7.8
7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18592.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:43 Supervisor approved: 06/01/23 14:56 Norman Farmer

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

7.7.8.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18593.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:57:48 PM
 Sample Name : ic279-8
 Vial : P1-A9
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	164700	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58183	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	61194	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	57581	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	88048	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	40750	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24672	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	31035	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31036	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16403	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	32407	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	22054	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	14812	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13909	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3073	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4551	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4892	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	25736	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40478	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26530	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	102229	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	133237	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12467	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14213	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17067	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	69548	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11007	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	96660	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34426	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	47576	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	60813	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3073	4.19 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 83.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4551	4.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.4%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4892	4.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.5%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31036	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16403	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C3-PFBS	5.322	302.1 -> 79.9	22054	2.26 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 90.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	14812	2.41 µg/L	0.000

7.7.9
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C4-PFBA	2.822	216.8 -> 171.9	164700	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFHpA	6.369	367.1 -> 322.0	57581	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C5-PFHxA	5.404	318.0 -> 273.0	61194	2.38 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C5-PFPeA	4.210	268.3 -> 223.0	58183	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C6-PFDA	8.027	519.1 -> 474.1	24672	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31035	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C8-FOSA	9.598	506.1 -> 77.8	32407	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOA	7.026	421.1 -> 376.0	88048	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOS	8.177	507.1 -> 79.9	13909	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C9-PFNA	7.545	472.1 -> 427.0	40750	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25736	4.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40478	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	14213	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26530	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
d7-MeFOSE	10.660	623.2 -> 58.9	102229	23.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	133237	23.77 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	12467	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	954876	213.90 µg/L	95
		327.1 -> 80.9	348699		
6:2FTS	6.801	427.1 -> 407.0	895923	200.34 µg/L	99
		427.1 -> 80.9	310885		
8:2FTS	7.816	527.1 -> 507.0	534956	196.60 µg/L	94
		527.1 -> 80.8	208860		
EtFOSAA	8.280	584.2 -> 419.1	202511	59.33 µg/L	96
		584.2 -> 526.0	103330		
FOSA	9.589	498.1 -> 77.9	665967	59.37 µg/L	100
		498.1 -> 478.0	20420		
MeFOSAA	8.085	570.1 -> 419.0	330253	62.41 µg/L	100
		570.1 -> 483.0	63777		
PFBA	2.818	212.8 -> 168.9	1319896	242.06 µg/L	100
PFBS	5.323	298.7 -> 79.9	418240	55.74 µg/L	99
		298.7 -> 98.8	153640		
PFDA	8.027	512.9 -> 469.0	1793791	62.71 µg/L	98
		512.9 -> 219.0	270042		
PFDoDA	8.900	613.1 -> 569.0	1199772	56.30 µg/L	96
		613.1 -> 319.0	183508		
PFDS	9.064	599.0 -> 79.9	193689	55.70 µg/L	98

7.7.9
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	97226			
PFHpA	6.370	363.1 -> 319.0	1584265	62.17	µg/L	97
		363.1 -> 169.0	256962			
PFHpS	7.685	449.0 -> 79.9	381288	57.18	µg/L	98
		449.0 -> 98.9	182291			
PFHxA	5.407	313.0 -> 269.0	1308494	63.69	µg/L	99
		313.0 -> 118.9	64395			
PFHxS	7.131	398.7 -> 79.9	349987	52.24	µg/L	m 97
		398.7 -> 98.9	174081			
PFNA	7.545	463.0 -> 419.0	1836171	63.59	µg/L	98
		463.0 -> 219.0	338668			
PFNS	8.631	548.8 -> 79.9	313808	56.21	µg/L	90
		548.8 -> 98.9	173944			
PFOA	7.028	413.0 -> 369.0	2352092	62.57	µg/L	100
		413.0 -> 169.0	408702			
PFOS	8.178	498.9 -> 79.9	358245	56.35	µg/L	93
		498.9 -> 98.8	173832			
PFPeA	4.212	263.0 -> 219.0	1677106	120.01	µg/L	100
PFPeS	6.422	349.1 -> 79.9	374345	56.08	µg/L	95
		349.1 -> 98.9	164186			
PFTeDA	9.628	713.1 -> 669.0	936983	58.07	µg/L	97
		713.1 -> 168.9	82003			
PFTrDA	9.284	663.0 -> 619.0	1167971	54.26	µg/L	96
		663.0 -> 168.9	124493			
PFUnDA	8.468	563.1 -> 519.0	1166697	57.85	µg/L	97
		563.1 -> 269.1	193233			
11CI-PF3OUdS	9.336	630.9 -> 450.9	1685097	110.95	µg/L	99
		632.9 -> 452.9	516091			
9CI-PF3ONS	8.508	530.8 -> 351.0	2667025	111.44	µg/L	95
		532.8 -> 353.0	808397			
ADONA	6.632	376.9 -> 250.9	5935424	110.40	µg/L	99
		376.9 -> 84.8	1547138			
HFPO-DA	5.783	284.9 -> 168.9	412278	120.17	µg/L	96
		284.9 -> 184.9	48712			
3:3FTCA	3.671	241.0 -> 177.0	277738	310.54	µg/L	96
		241.0 -> 117.0	36199			
5:3FTCA	6.074	341.0 -> 237.1	5595577	1513.86	µg/L	96
		341.0 -> 217.0	4166787			
7:3FTCA	7.510	441.0 -> 316.9	3782443	1494.24	µg/L	90
		441.0 -> 336.9	8936470			
EtFOSA	10.974	526.0 -> 219.0	712424	122.60	µg/L	99
		526.0 -> 169.0	891954			
EtFOSE	10.907	630.0 -> 58.9	1779906	299.44	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	596067	114.04	µg/L	96
		511.9 -> 169.0	818238			
MeFOSE	10.673	616.1 -> 58.9	1264982	311.37	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	90931	58.86	µg/L	98
		699.1 -> 98.8	47551			
NFDHA	5.288	295.0 -> 201.0	293121	117.17	µg/L	98
		295.0 -> 84.9	76201			
PFMBA	4.626	279.0 -> 85.1	1130590	118.88	µg/L	100
PFMPA	3.351	229.0 -> 84.9	900418	121.74	µg/L	100
PFEESA	5.875	314.8 -> 134.9	2873554	110.18	µg/L	99
		314.8 -> 82.9	98610			

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

7.7.9
7

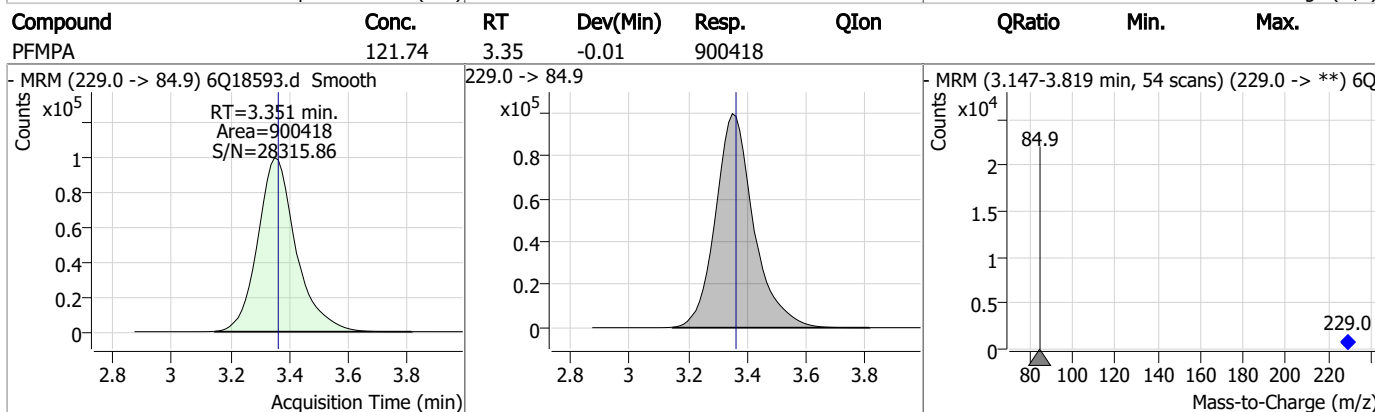
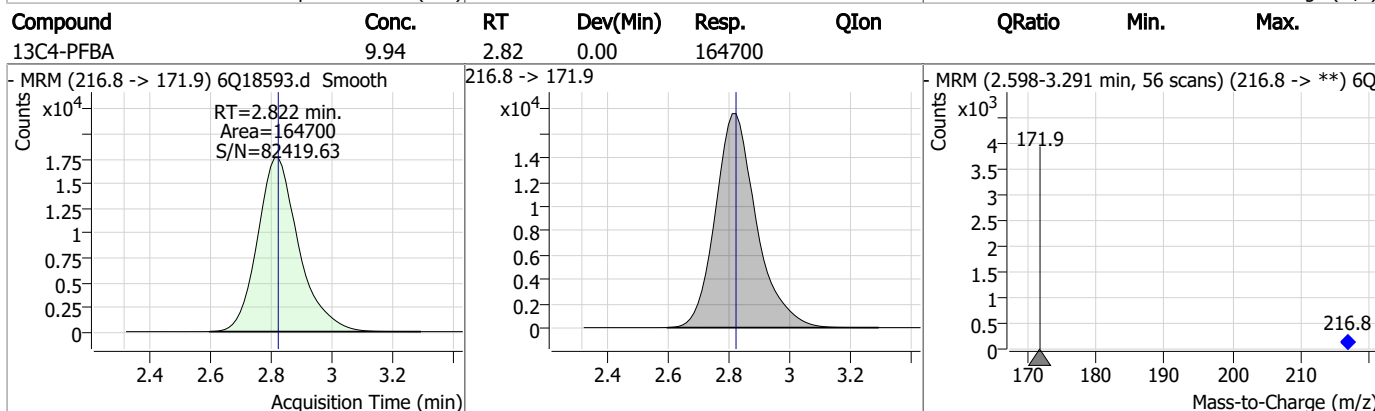
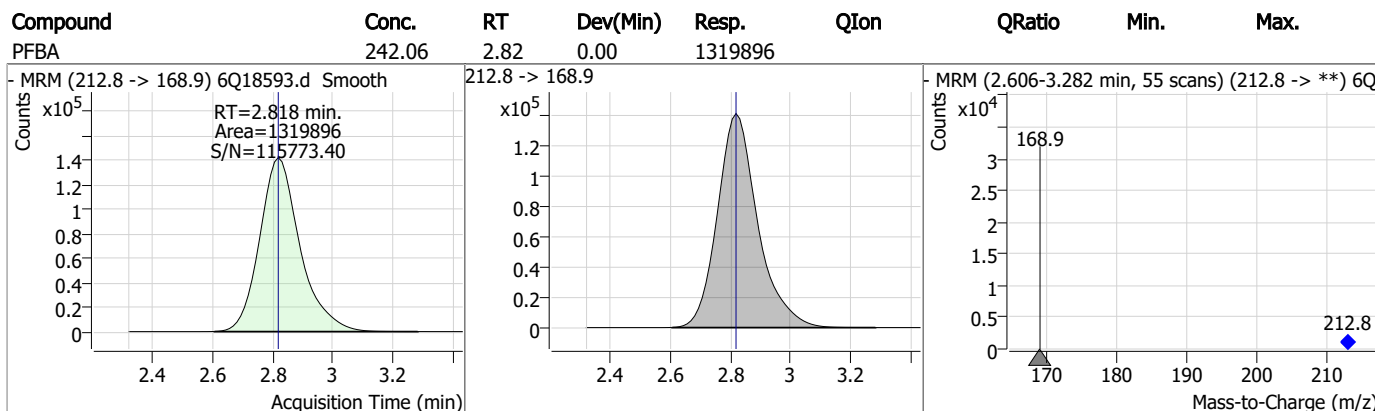
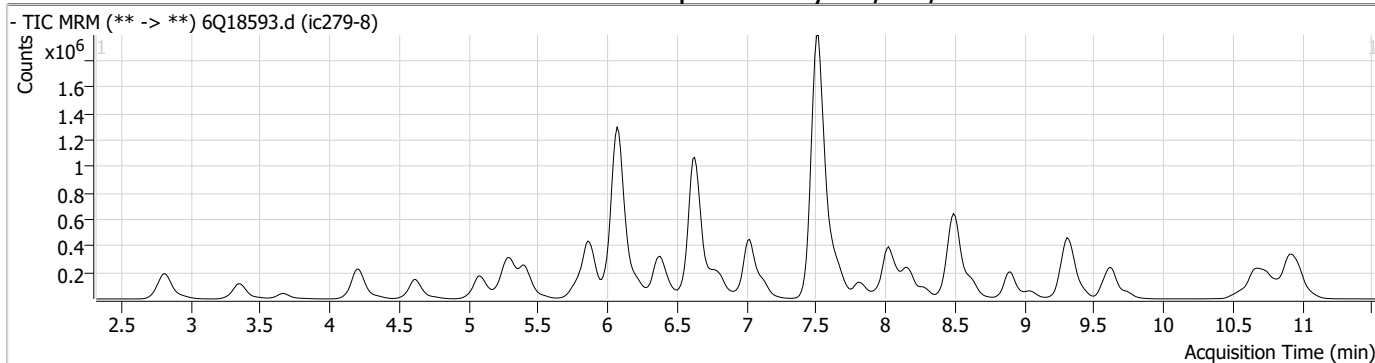
Perfluorinated Compounds by LC/MS/MS

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

7.7.9

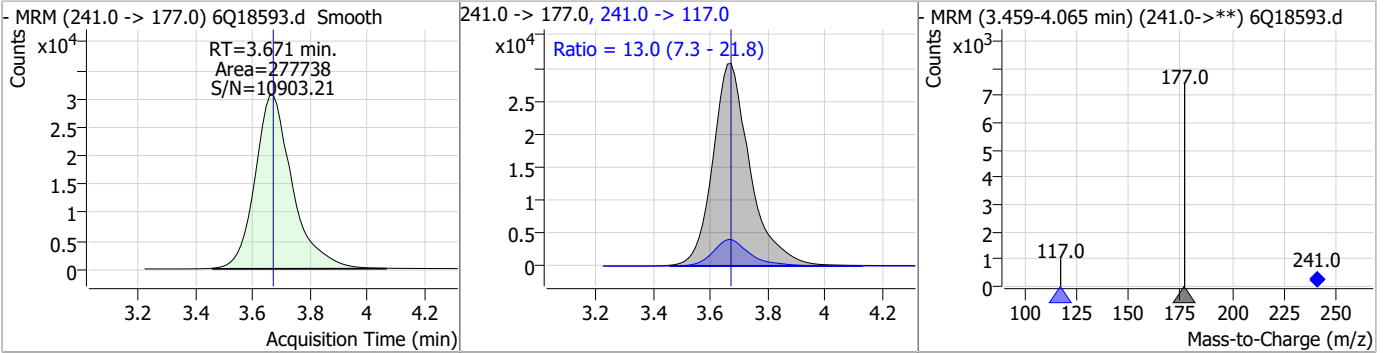
7

Perfluorinated Compounds by LC/MS/MS

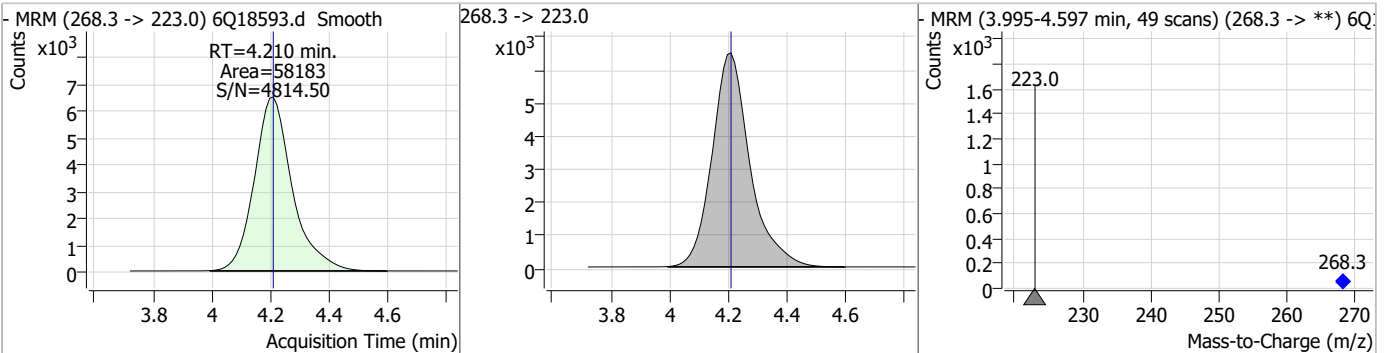


Perfluorinated Compounds by LC/MS/MS

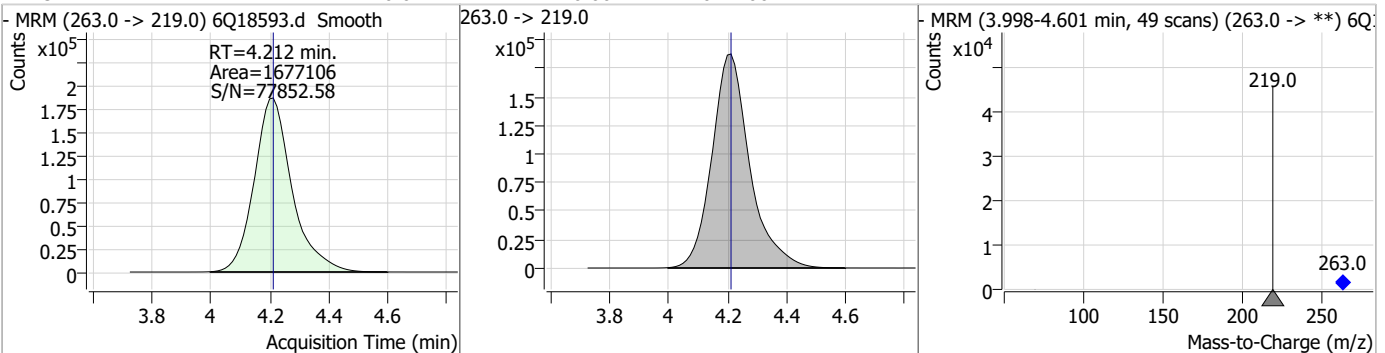
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	310.54	3.67	0.00	277738	241.0 -> 117.0	13.0	7.3	21.8



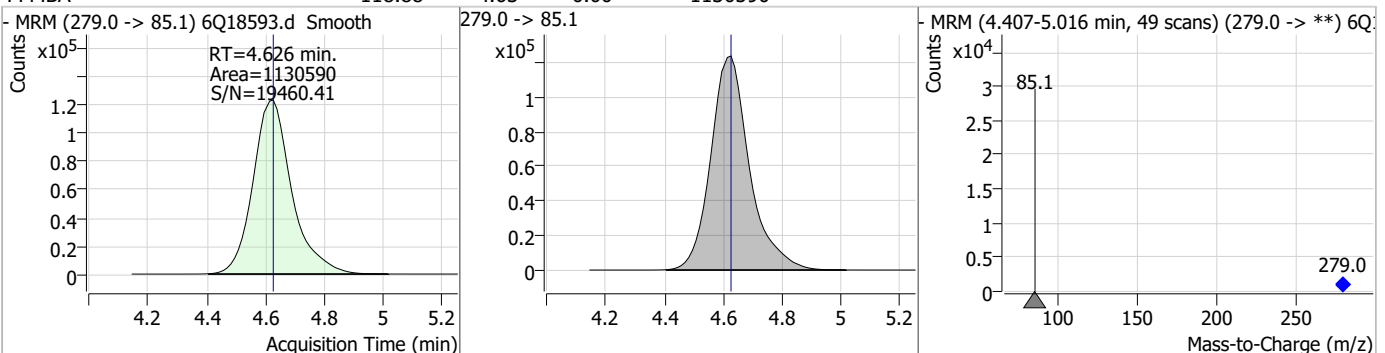
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.92	4.21	0.00	58183				



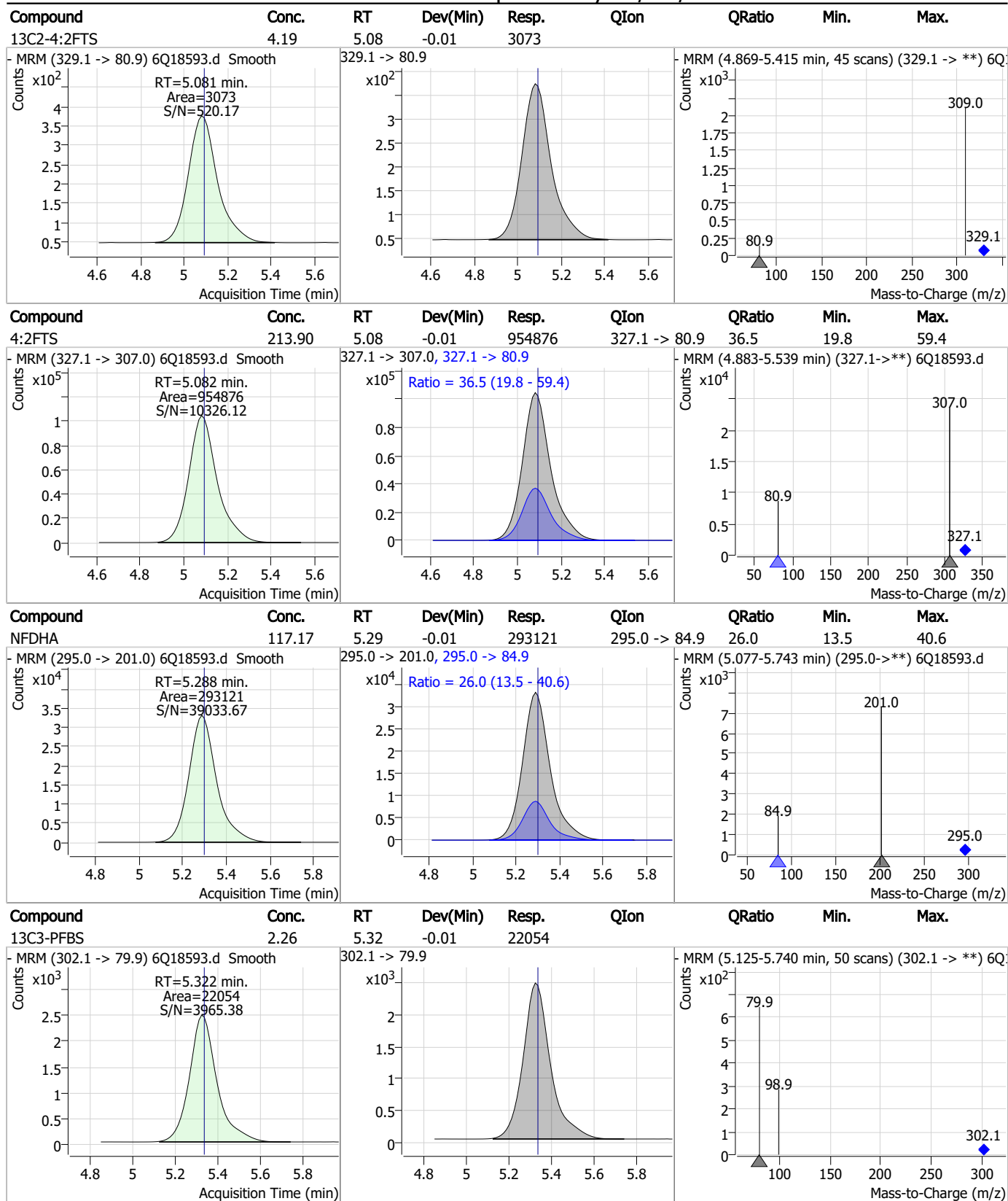
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	120.01	4.21	0.00	1677106				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	118.88	4.63	0.00	1130590				



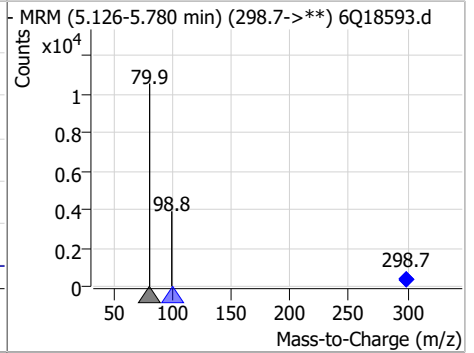
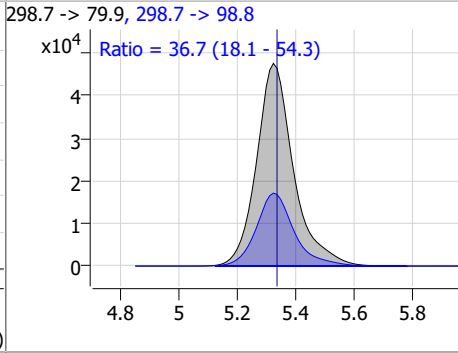
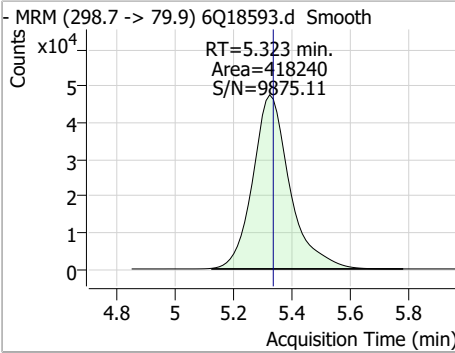
Perfluorinated Compounds by LC/MS/MS



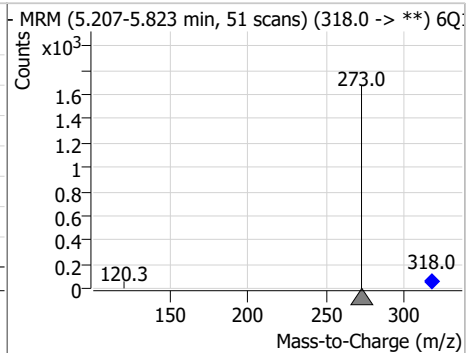
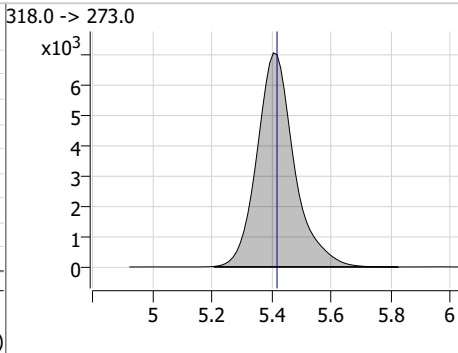
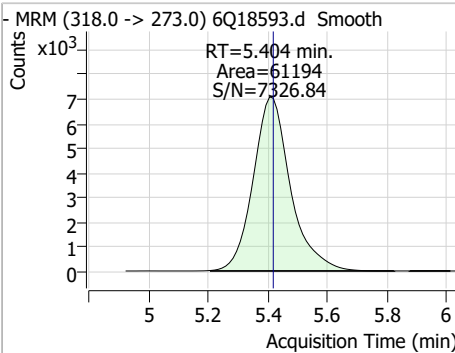
7.7.9
7

Perfluorinated Compounds by LC/MS/MS

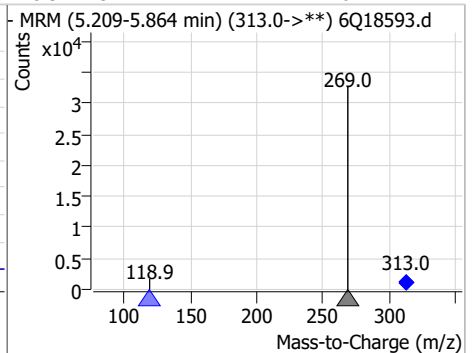
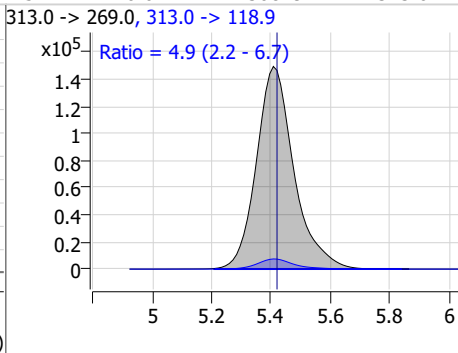
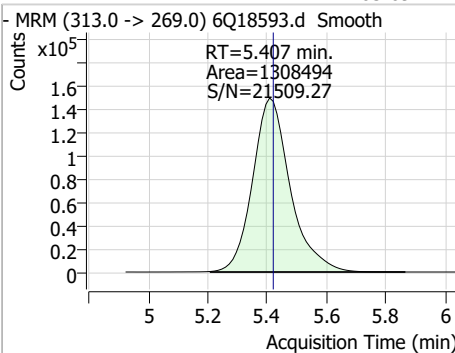
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	55.74	5.32	-0.01	418240	298.7 -> 98.8	36.7	18.1	54.3



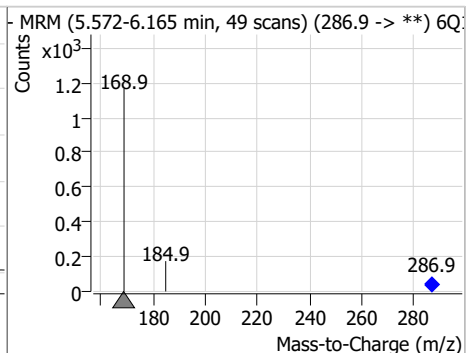
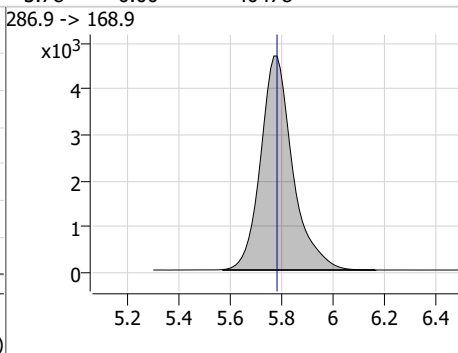
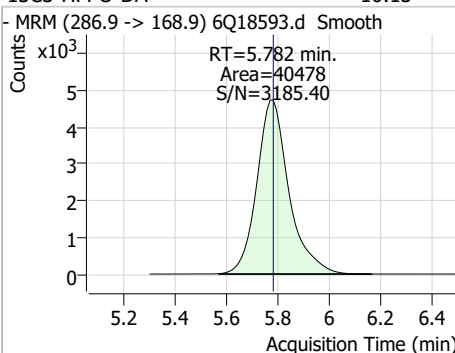
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.38	5.40	-0.01	61194	318.0 -> 273.0	4.9	2.2	6.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	63.69	5.41	-0.01	1308494	313.0 -> 118.9	4.9	2.2	6.7

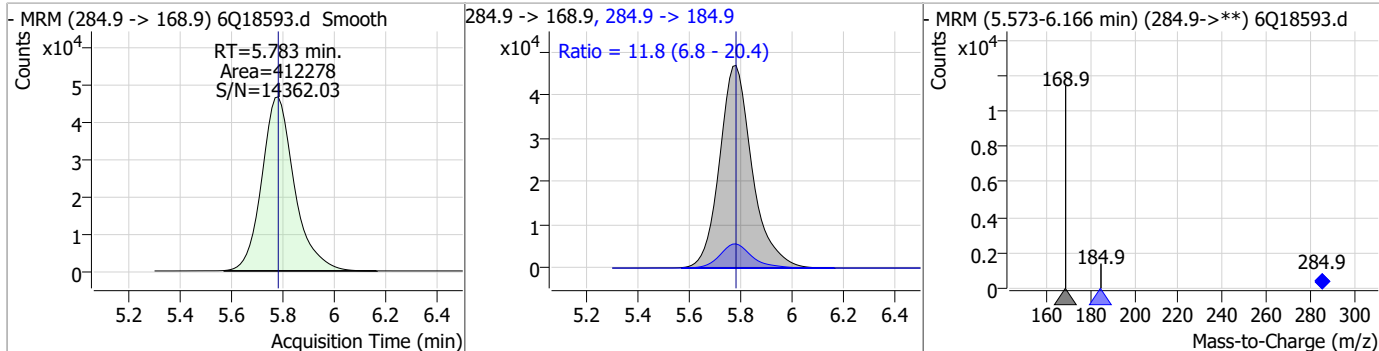


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.13	5.78	0.00	40478	286.9 -> 168.9	4.9	2.2	6.7

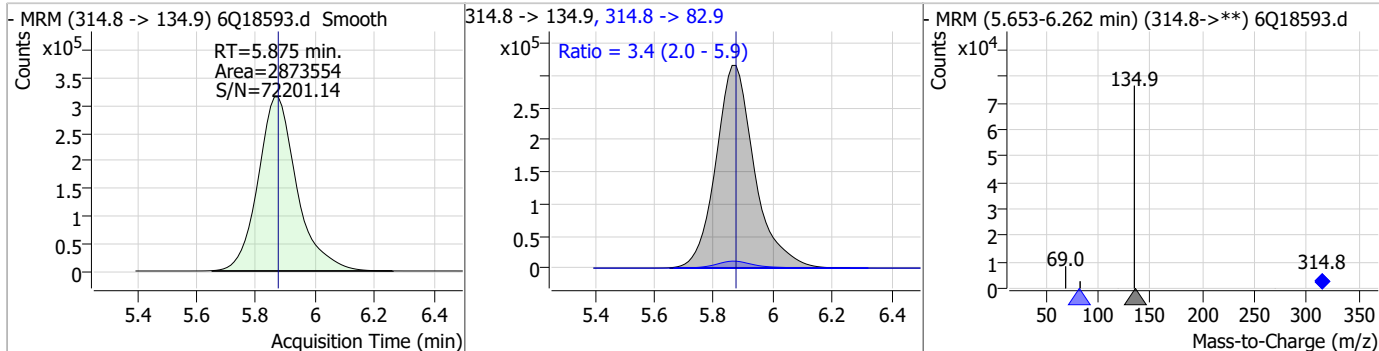


Perfluorinated Compounds by LC/MS/MS

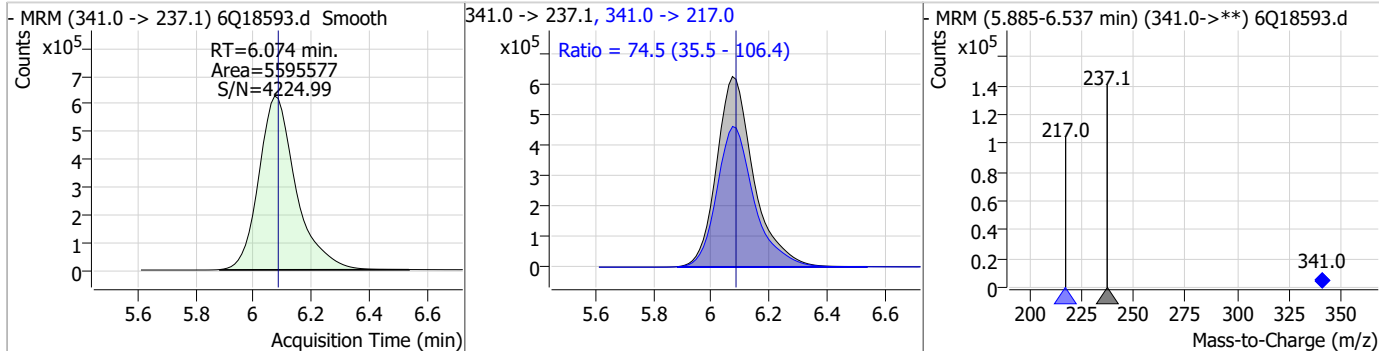
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	120.17	5.78	0.00	412278	284.9 -> 184.9	11.8	6.8	20.4



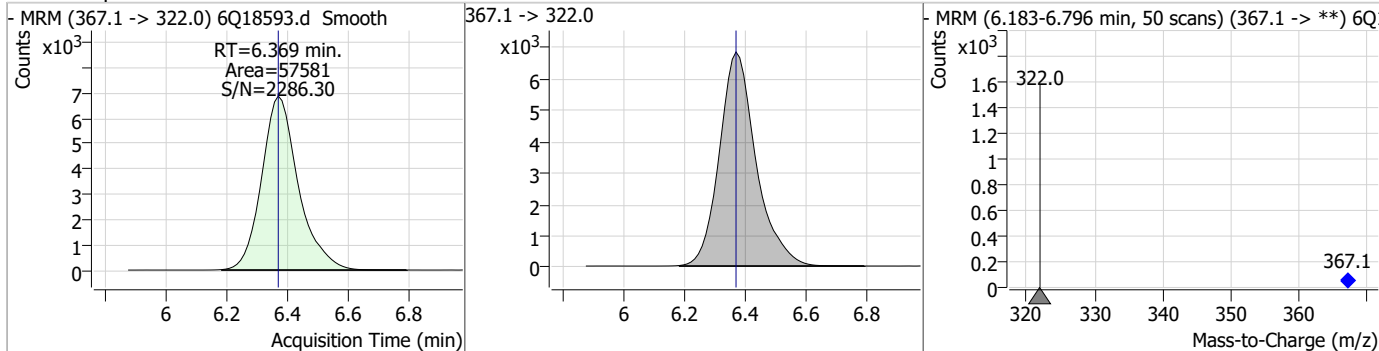
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	110.18	5.88	0.00	2873554	314.8 -> 82.9	3.4	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1513.86	6.07	-0.01	5595577	341.0 -> 217.0	74.5	35.5	106.4

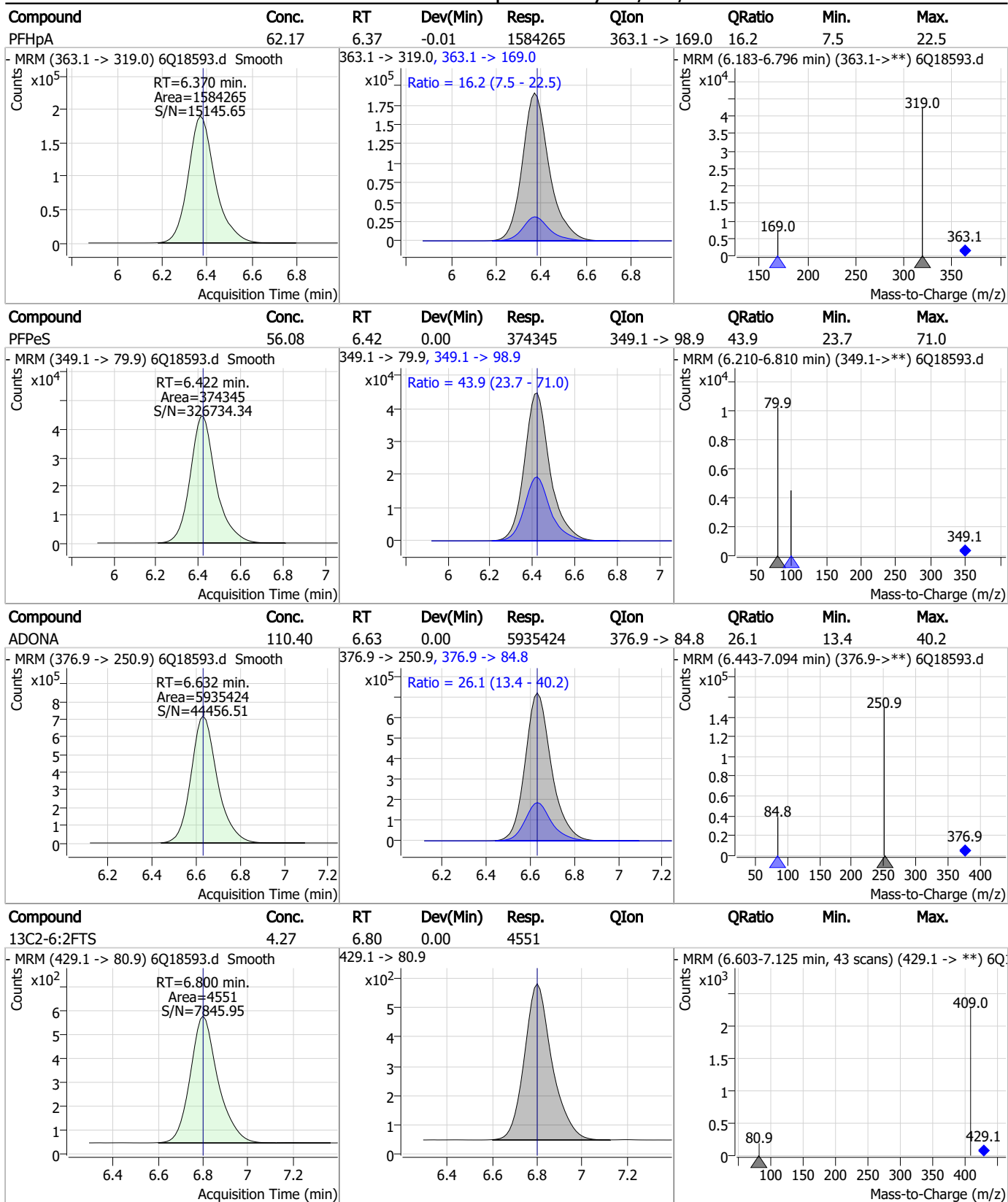


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.42	6.37	0.00	57581	367.1 -> 322.0	-	-	-



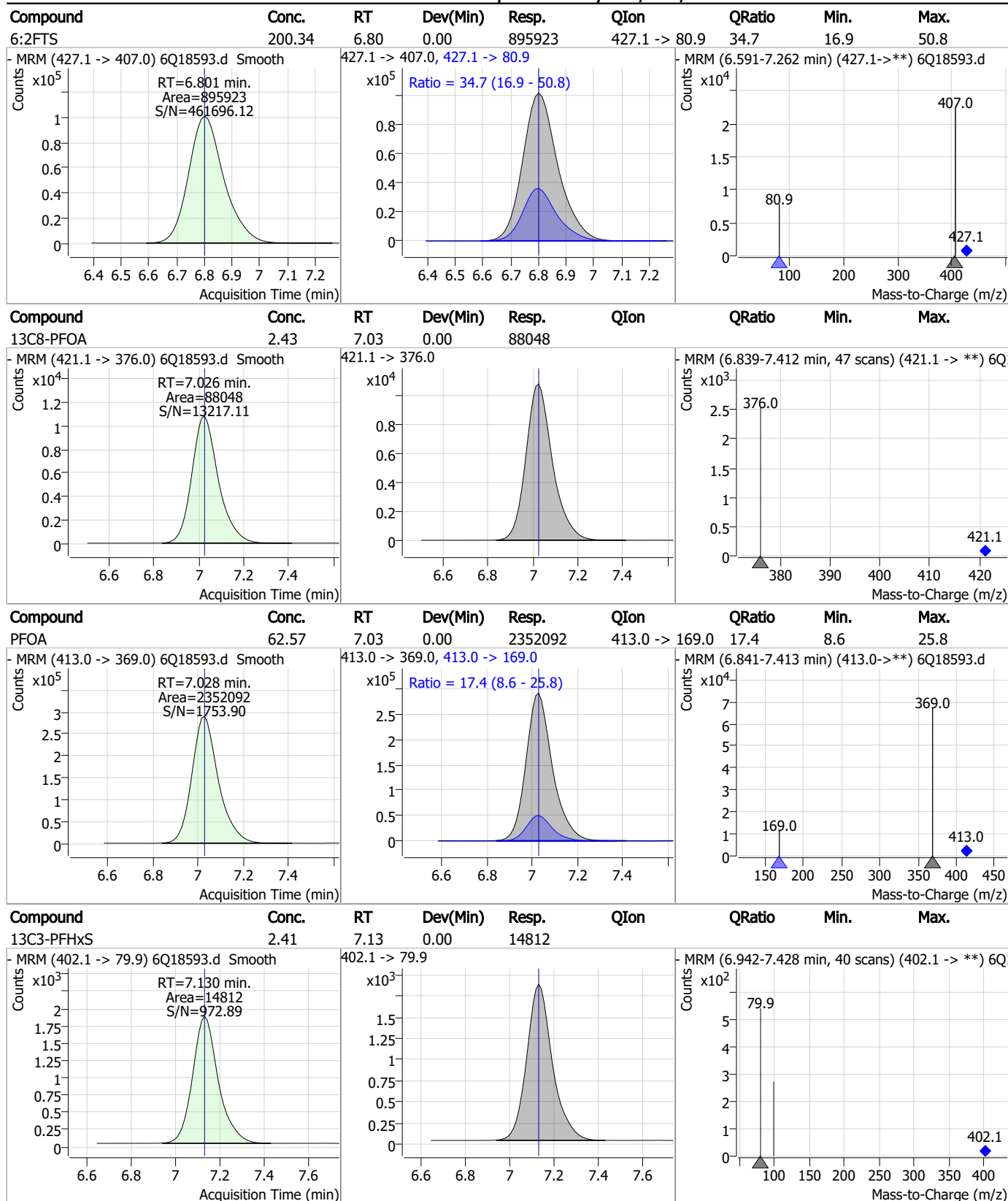
7.7.9
7

Perfluorinated Compounds by LC/MS/MS



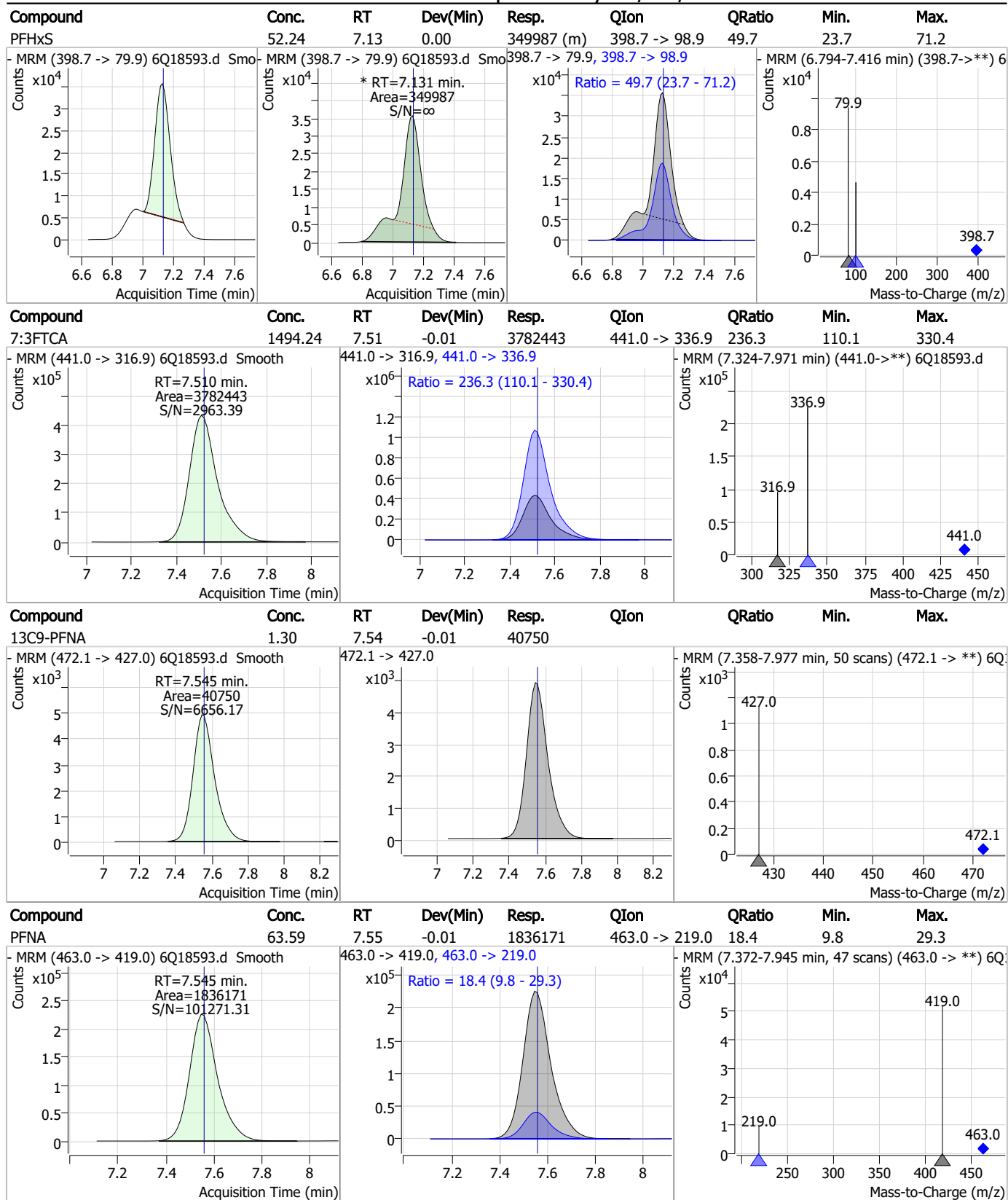
7.7.9
7

Perfluorinated Compounds by LC/MS/MS



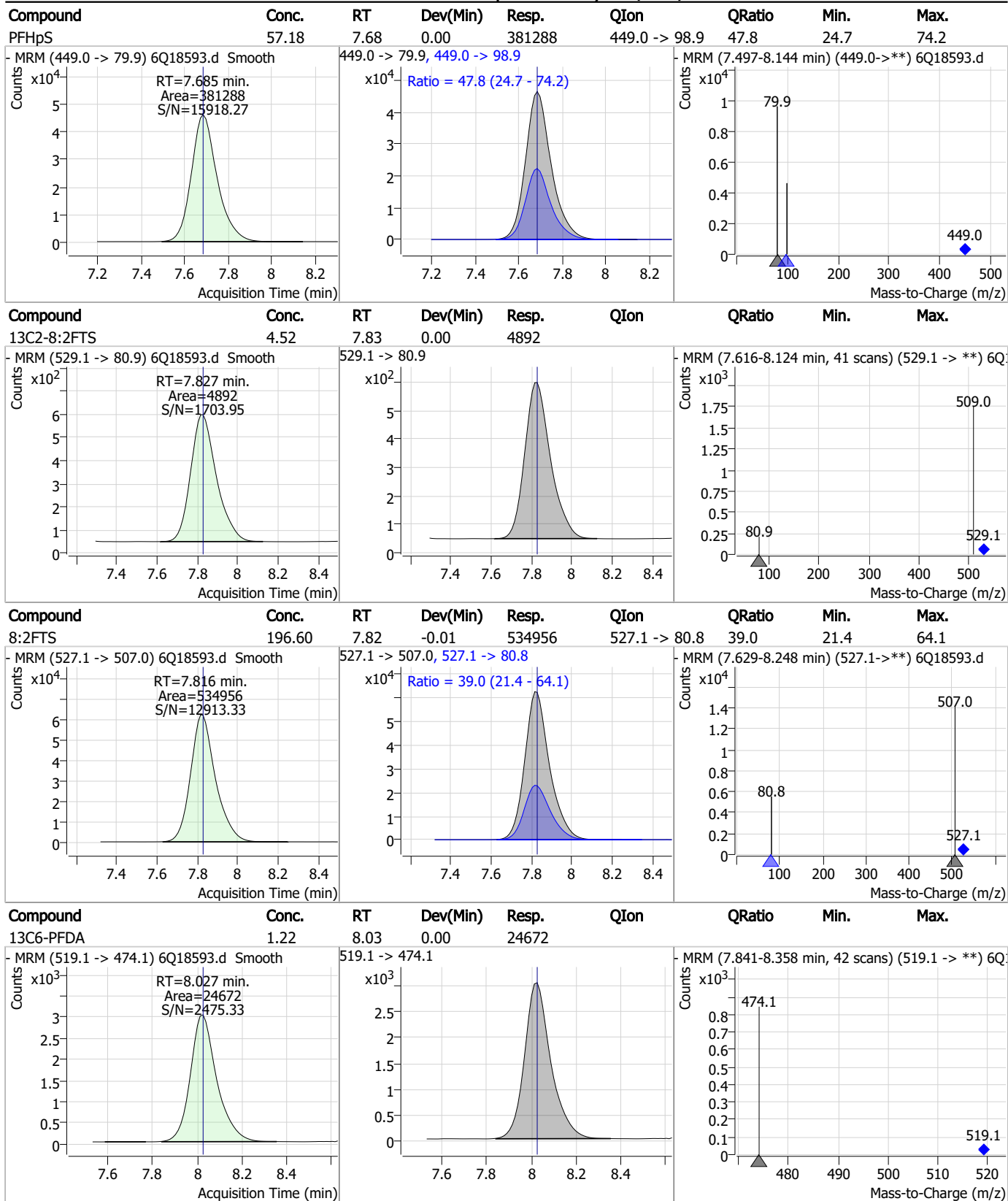
7.7.9
7

Perfluorinated Compounds by LC/MS/MS



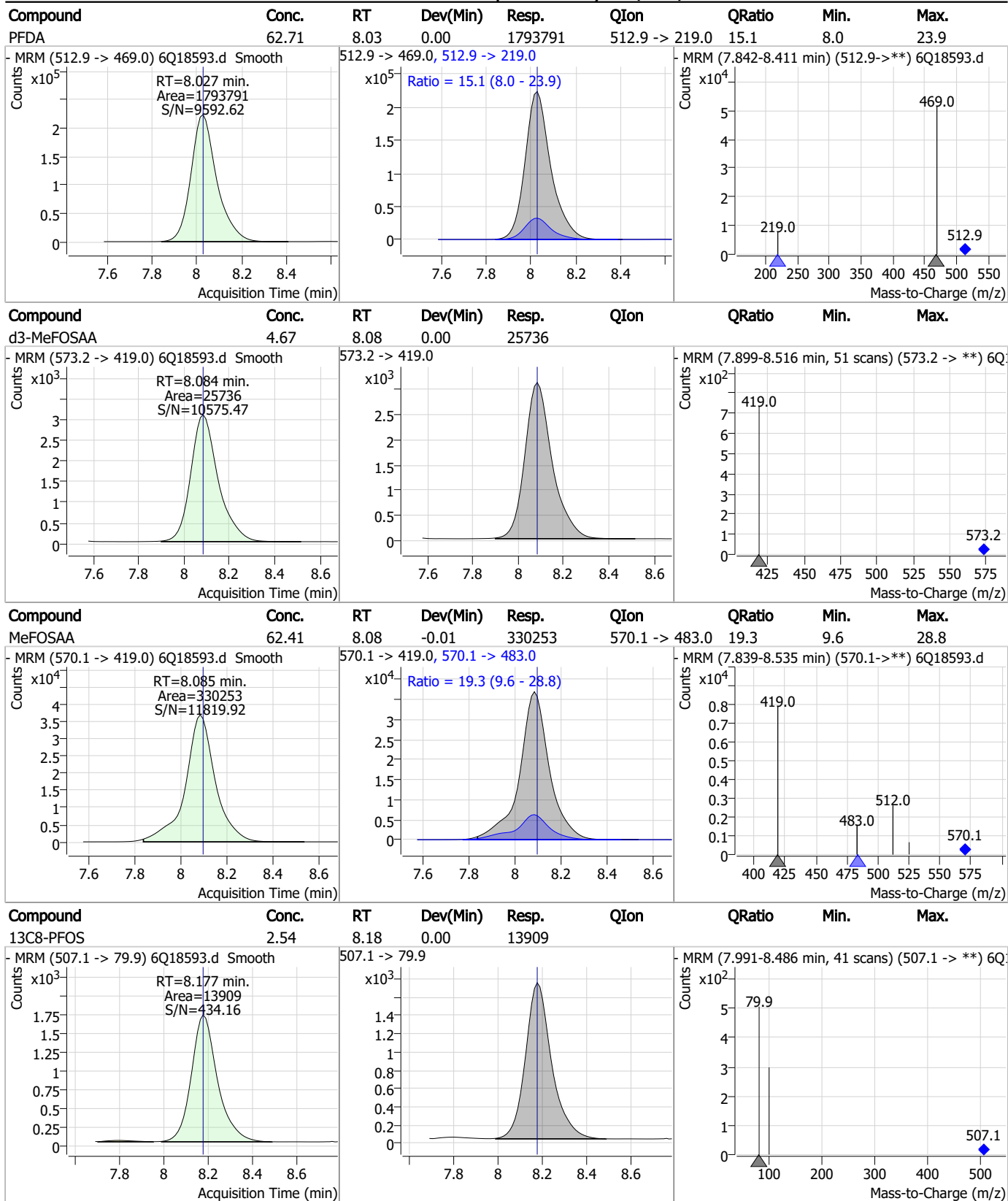
7.7.9
7

Perfluorinated Compounds by LC/MS/MS



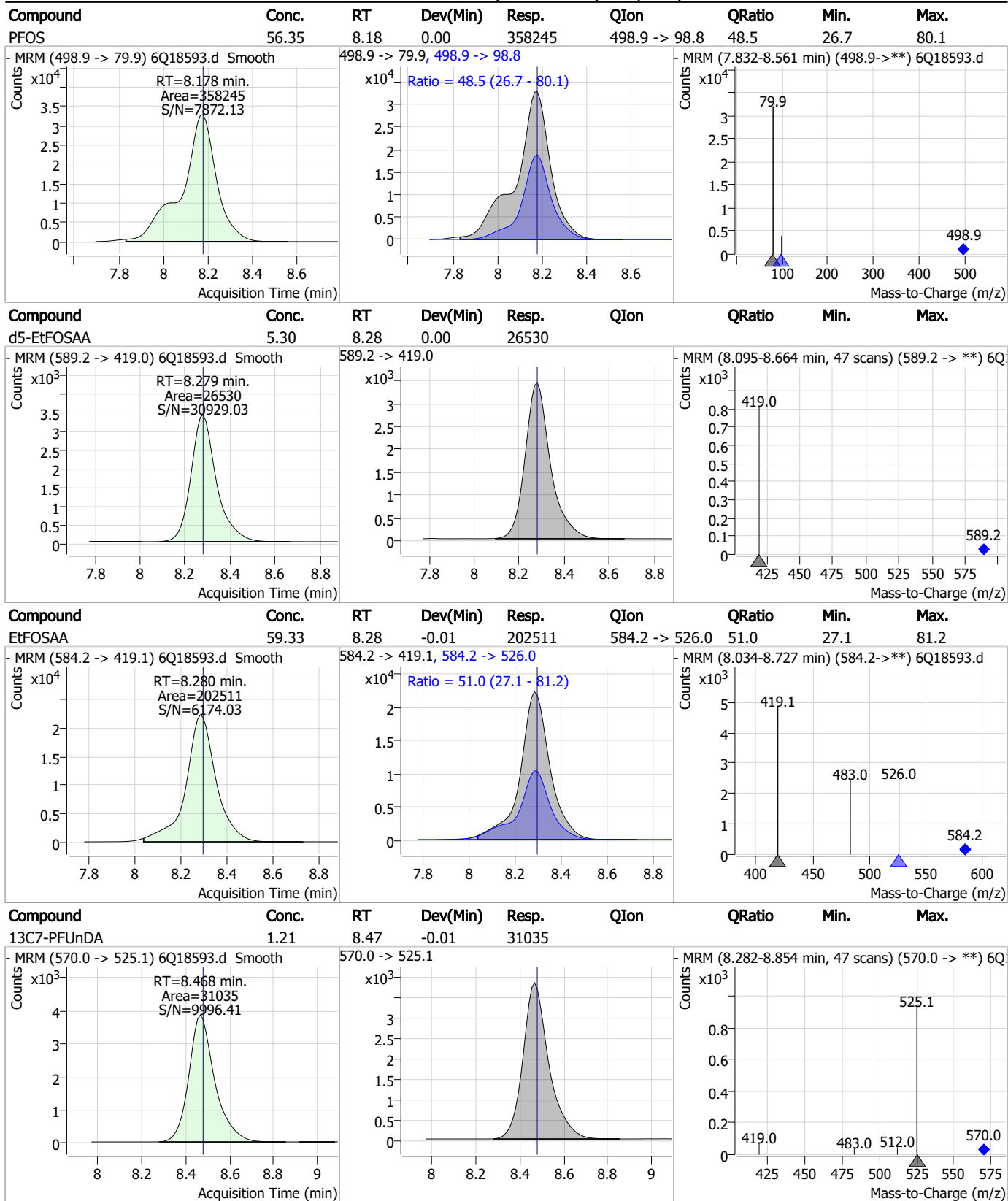
7.7.9
7

Perfluorinated Compounds by LC/MS/MS



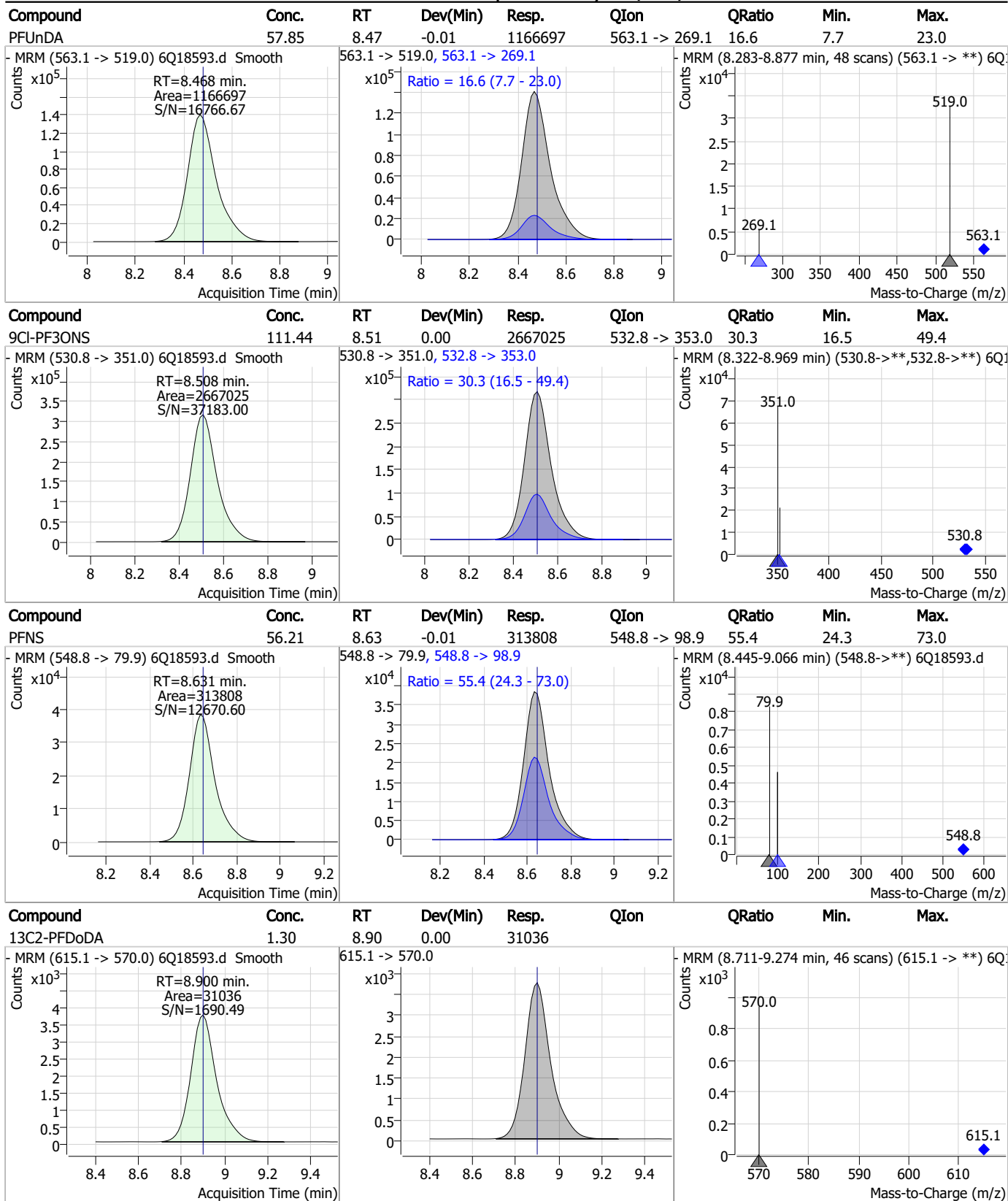
7.7.9
7

Perfluorinated Compounds by LC/MS/MS



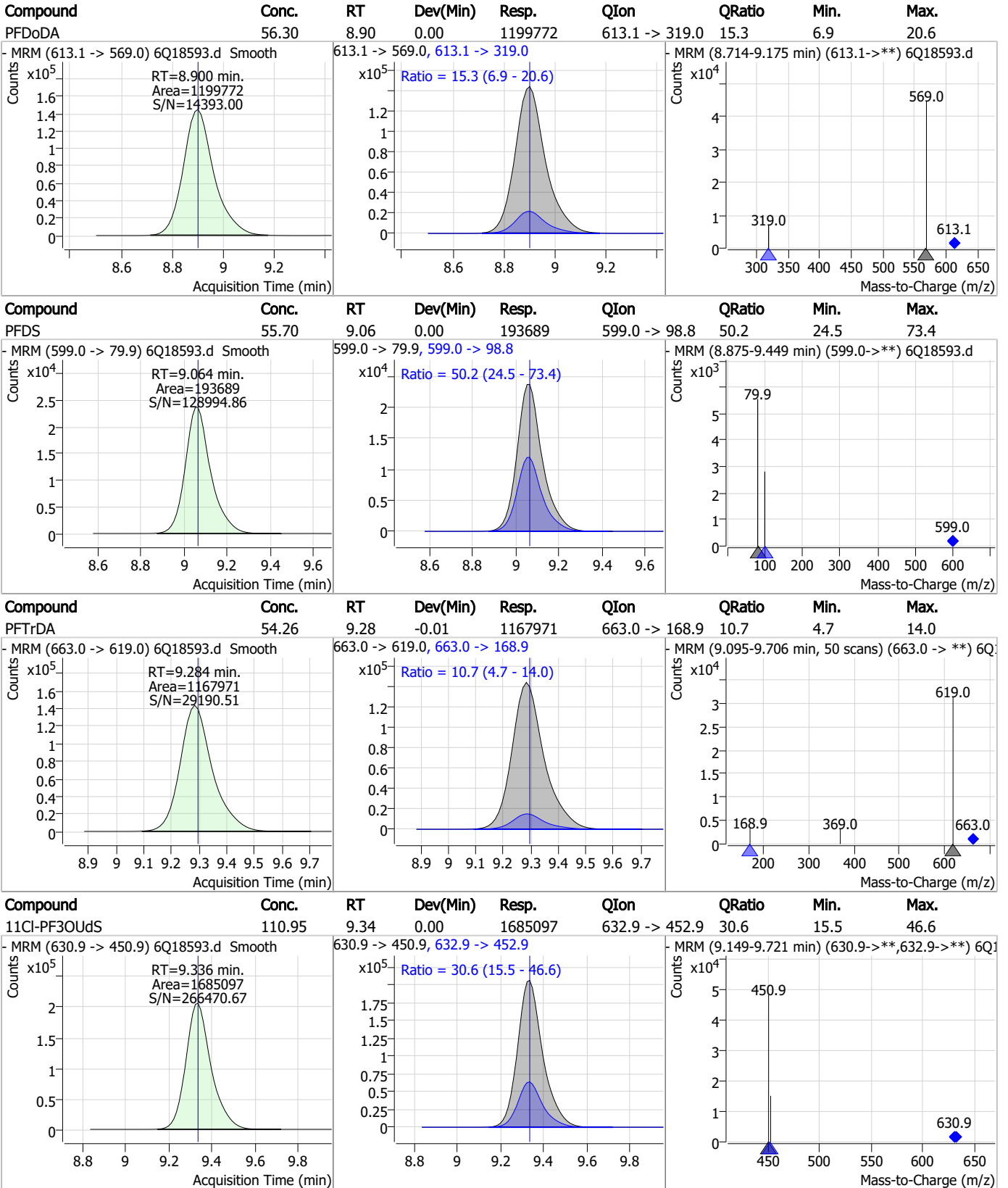
7.7.9
7

Perfluorinated Compounds by LC/MS/MS



7.7.9
7

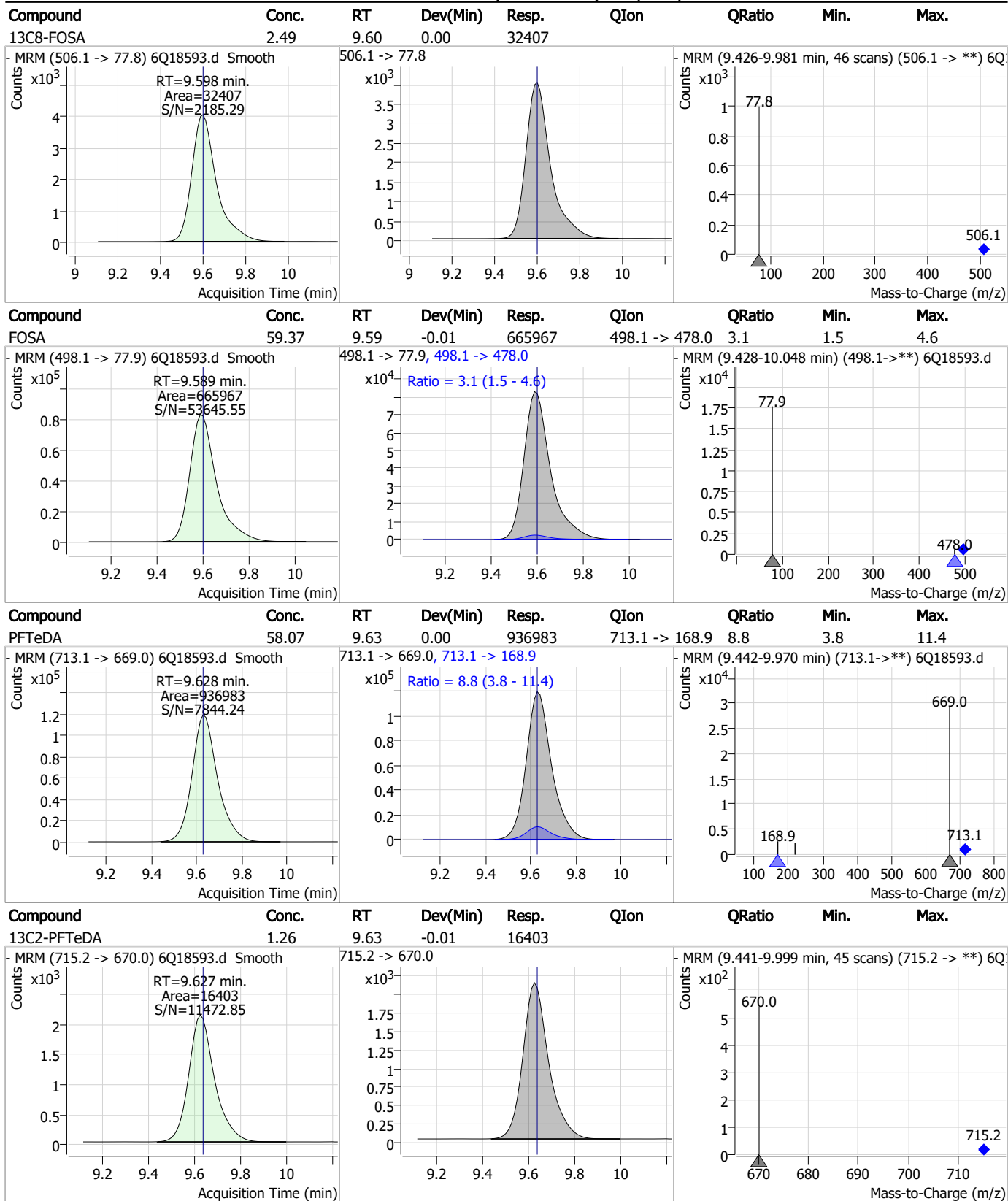
Perfluorinated Compounds by LC/MS/MS



7.7.9

7

Perfluorinated Compounds by LC/MS/MS



7.7.9

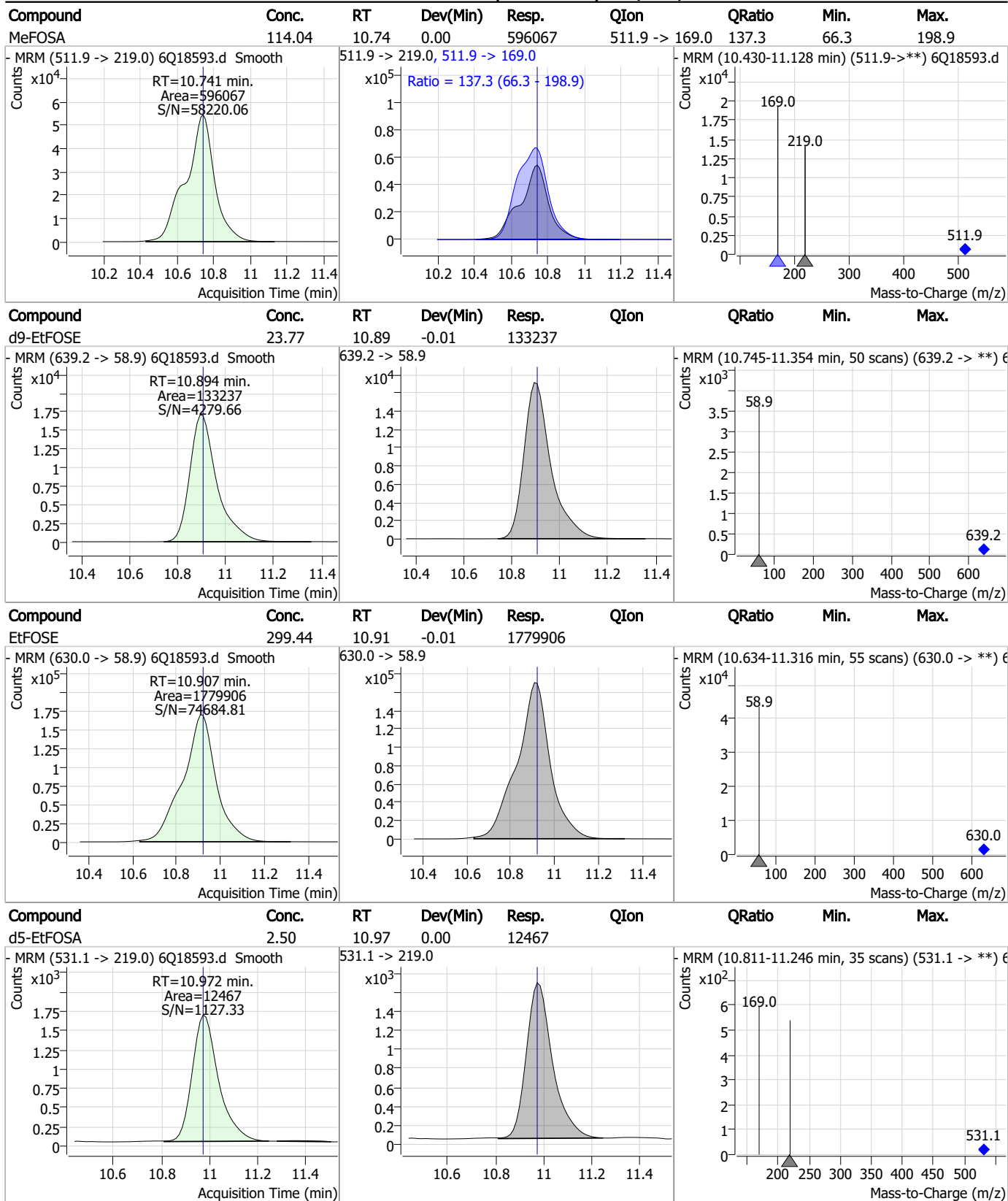
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	58.86	9.75	0.00	90931	699.1 -> 98.8	52.3	26.9	80.6
d7-MeFOSE	23.85	10.66	0.00	102229				
MeFOSE	311.37	10.67	0.00	1264982				
d3-MeFOSA	2.70	10.74	0.00	14213				

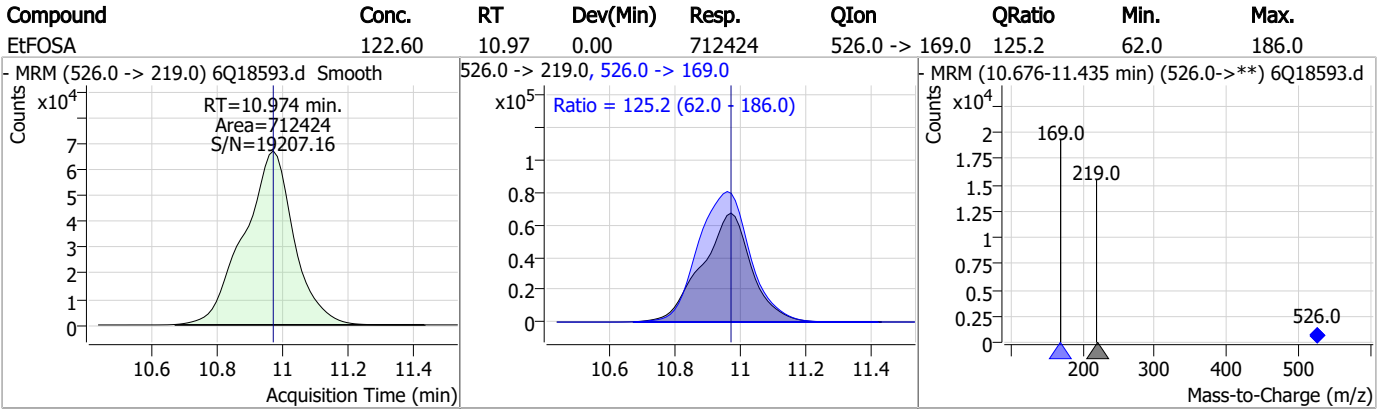
7.7.9
7

Perfluorinated Compounds by LC/MS/MS



7.7.9
7

Perfluorinated Compounds by LC/MS/MS



7.7.9

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18593.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:57 Supervisor approved: 06/01/23 14:56 Norman Farmer

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

7.7.9.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18595.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:26:45 PM
 Sample Name : icv279-4
 Vial : P1-B1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	170457	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	57026	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	63595	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	58610	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	89653	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	40289	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24134	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33620	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	29418	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	15555	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	33177	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	22744	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	13810	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12998	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3600	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5027	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4884	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	27516	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	38707	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26462	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	100839	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	133717	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12229	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12293	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17202	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	71357	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10292	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	98236	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34106	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50284	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	58580	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3600	5.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5027	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4884	4.83 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	29418	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15555	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C3-PFBS	5.322	302.1 -> 79.9	22744	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	13810	2.40 µg/L	0.000

7.7.10
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C4-PFBA	2.822	216.8 -> 171.9	170457	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	58610	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFHxA	5.404	318.0 -> 273.0	63595	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	57026	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C6-PFDA	8.027	519.1 -> 474.1	24134	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33620	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C8-FOSA	9.598	506.1 -> 77.8	33177	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOA	7.026	421.1 -> 376.0	89653	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOS	8.177	507.1 -> 79.9	12998	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C9-PFNA	7.545	472.1 -> 427.0	40289	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.3%	
d3-MeFOSAA	8.072	573.2 -> 419.0	27516	4.96 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38707	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	12293	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26462	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	100839	23.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	133717	23.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	12229	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	48916	9.35 µg/L	99
		327.1 -> 80.9	19622		
6:2FTS	6.801	427.1 -> 407.0	51987	10.52 µg/L	99
		427.1 -> 80.9	17303		
8:2FTS	7.816	527.1 -> 507.0	28525	10.50 µg/L	96
		527.1 -> 80.8	11388		
EtFOSAA	8.280	584.2 -> 419.1	8691	2.55 µg/L	100
		584.2 -> 526.0	4733		
FOSA	9.589	498.1 -> 77.9	29778	2.59 µg/L	99
		498.1 -> 478.0	815		
MeFOSAA	8.085	570.1 -> 419.0	15457	2.73 µg/L	99
		570.1 -> 483.0	2869		
PFBA	2.818	212.8 -> 168.9	59467	10.54 µg/L	100
PFBS	5.323	298.7 -> 79.9	17085	2.21 µg/L	94
		298.7 -> 98.8	6838		
PFDA	8.027	512.9 -> 469.0	73429	2.62 µg/L	98
		512.9 -> 219.0	12351		
PFDODA	8.900	613.1 -> 569.0	50767	2.51 µg/L	94
		613.1 -> 319.0	8133		
PFDS	9.052	599.0 -> 79.9	8551	2.63 µg/L	99

7.7.10
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	4094	2.61	µg/L	98
		363.1 -> 319.0	67586			
PFHpS	7.685	363.1 -> 169.0	10768	2.49	µg/L	93
		449.0 -> 79.9	15515			
PFHxA	5.407	449.0 -> 98.9	8412	2.61	µg/L	99
		313.0 -> 269.0	55703			
PFHxS	7.131	313.0 -> 118.9	2729	2.44	µg/L	98
		398.7 -> 79.9	15232			
PFNA	7.545	398.7 -> 98.9	7474	2.68	µg/L	99
		463.0 -> 419.0	76579			
PFNS	8.631	463.0 -> 219.0	14717	2.49	µg/L	93
		548.8 -> 79.9	12985			
PFOA	7.028	548.8 -> 98.9	6937	2.46	µg/L	96
		413.0 -> 369.0	94175			
PFOS	8.166	413.0 -> 169.0	17844	2.53	µg/L	96
		498.9 -> 79.9	15016			
PFPeA	4.212	498.9 -> 98.8	7539	5.24	µg/L	100
		263.0 -> 219.0	71774			
PFPeS	6.410	349.1 -> 79.9	16466	2.65	µg/L	92
		349.1 -> 98.9	6942			
PFTeDA	9.628	713.1 -> 669.0	40144	2.62	µg/L	97
		713.1 -> 168.9	3528			
PFTrDA	9.284	663.0 -> 619.0	50595	2.48	µg/L	94
		663.0 -> 168.9	5843			
PFUnDA	8.468	563.1 -> 519.0	53459	2.45	µg/L	96
		563.1 -> 269.1	8997			
11CI-PF3OUdS	9.336	630.9 -> 450.9	72474	4.99	µg/L	100
		632.9 -> 452.9	22415			
9CI-PF3ONS	8.508	530.8 -> 351.0	116131	5.07	µg/L	94
		532.8 -> 353.0	34208			
ADONA	6.632	376.9 -> 250.9	254905	4.96	µg/L	98
		376.9 -> 84.8	70354			
HFPO-DA	5.783	284.9 -> 168.9	16543	5.04	µg/L	97
		284.9 -> 184.9	2036			
3:3FTCA	3.659	241.0 -> 177.0	11434	13.04	µg/L	98
		241.0 -> 117.0	1565			
5:3FTCA	6.074	341.0 -> 237.1	250883	65.31	µg/L	99
		341.0 -> 217.0	180428			
7:3FTCA	7.510	441.0 -> 316.9	167621	63.72	µg/L	97
		441.0 -> 336.9	378472			
EtFOSA	10.974	526.0 -> 219.0	29907	5.25	µg/L	94
		526.0 -> 169.0	39103			
EtFOSE	10.907	630.0 -> 58.9	81046	13.59	µg/L	100
		511.9 -> 219.0	25097			
MeFOSA	10.741	511.9 -> 169.0	34435	5.55	µg/L	96
		616.1 -> 58.9	56174			
MeFOSE	10.673	699.1 -> 79.9	3790	14.02	µg/L	100
		699.1 -> 98.8	1984			
PFDoDS	9.755	295.0 -> 201.0	13465	2.63	µg/L	98
		295.0 -> 84.9	3401			
NFDHA	5.288	279.0 -> 85.1	48666	5.18	µg/L	96
		229.0 -> 84.9	38219			
PFMBA	4.626	314.8 -> 134.9	121513	5.27	µg/L	100
		314.8 -> 82.9	4672			
PFMPA	3.351			4.48	µg/L	100
PFEESA	5.862					

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

7.7.10
7

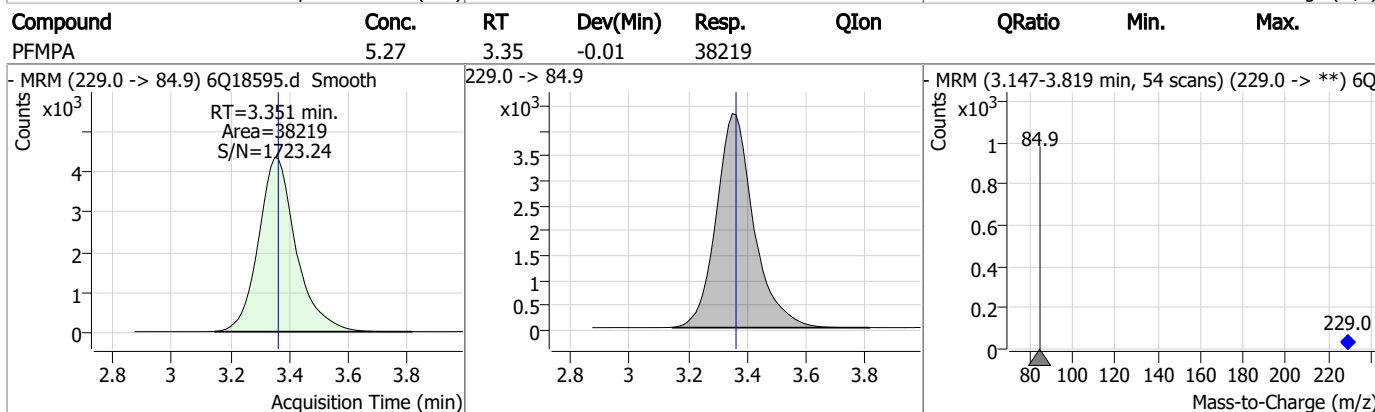
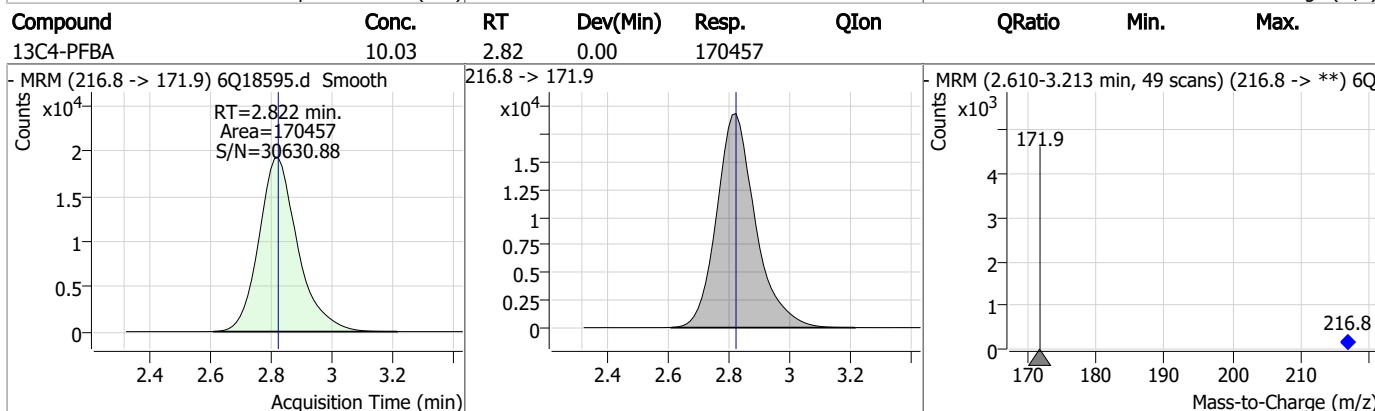
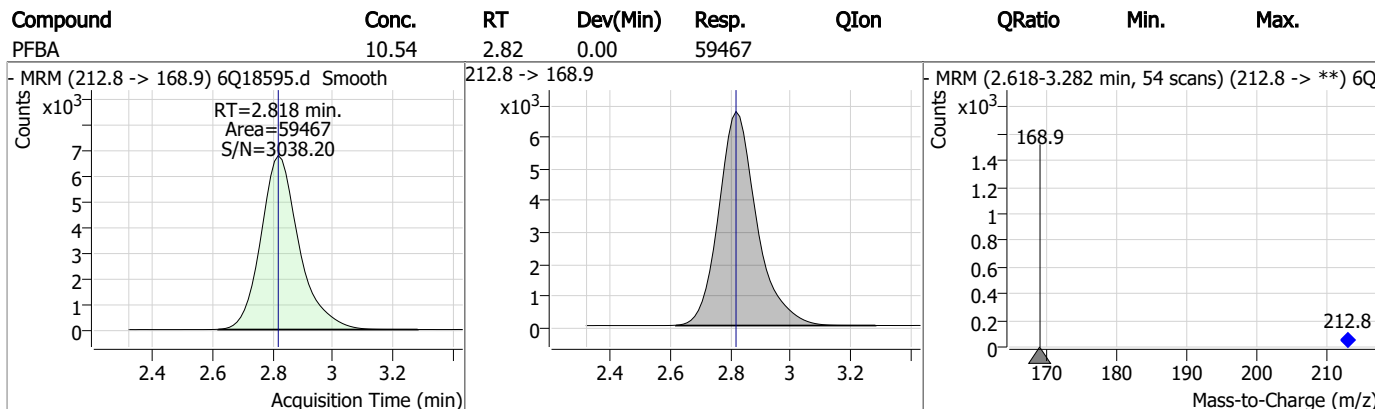
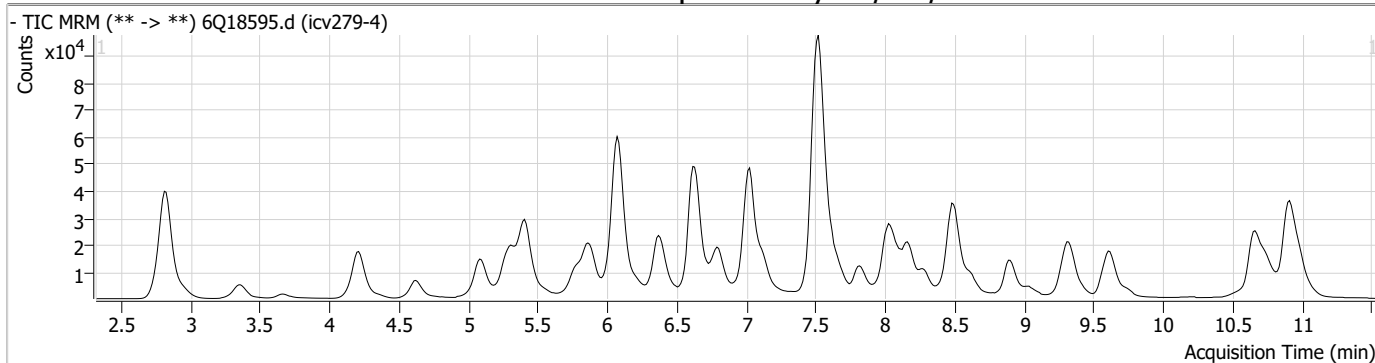
Perfluorinated Compounds by LC/MS/MS

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

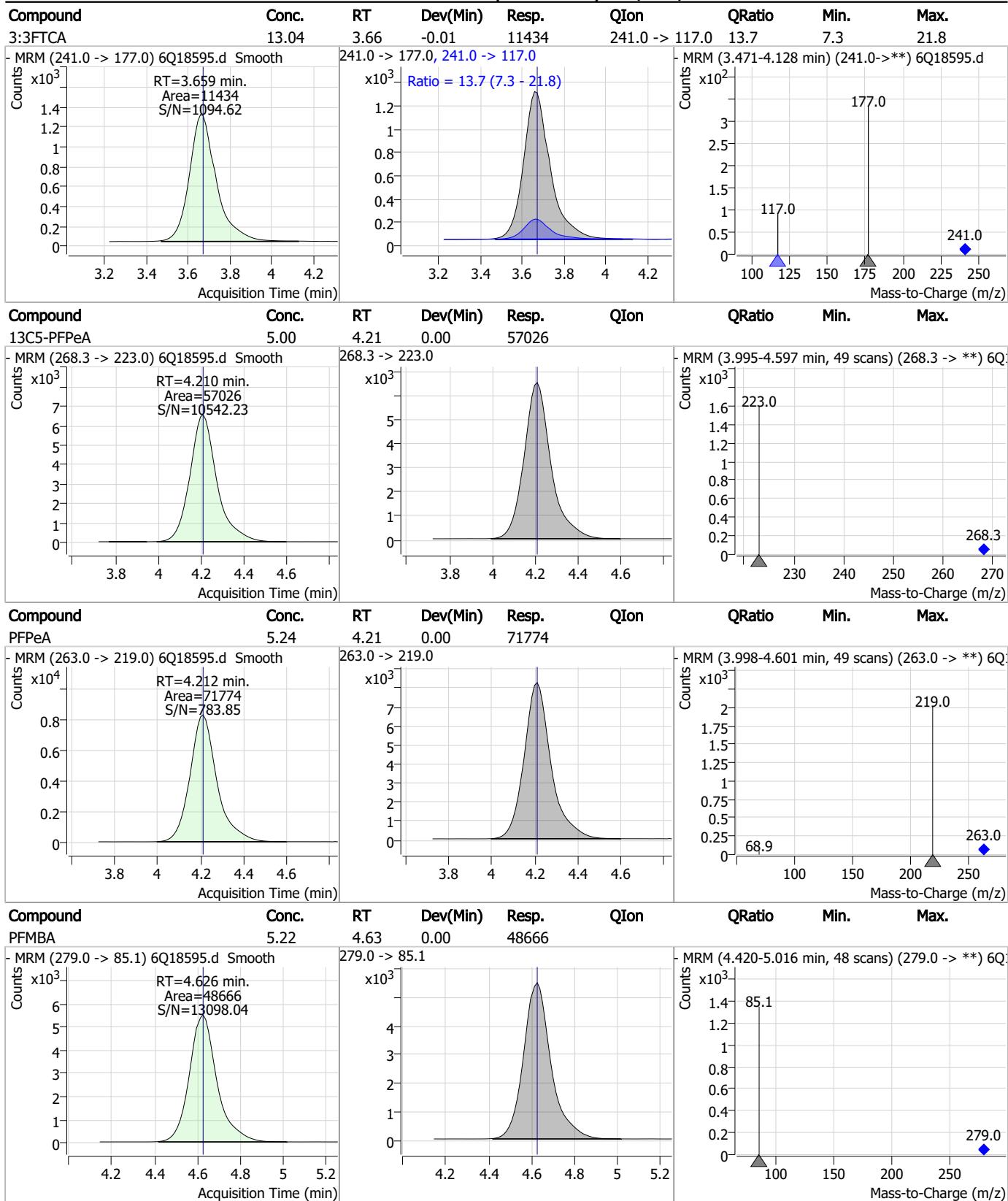
7.7.10

7

Perfluorinated Compounds by LC/MS/MS

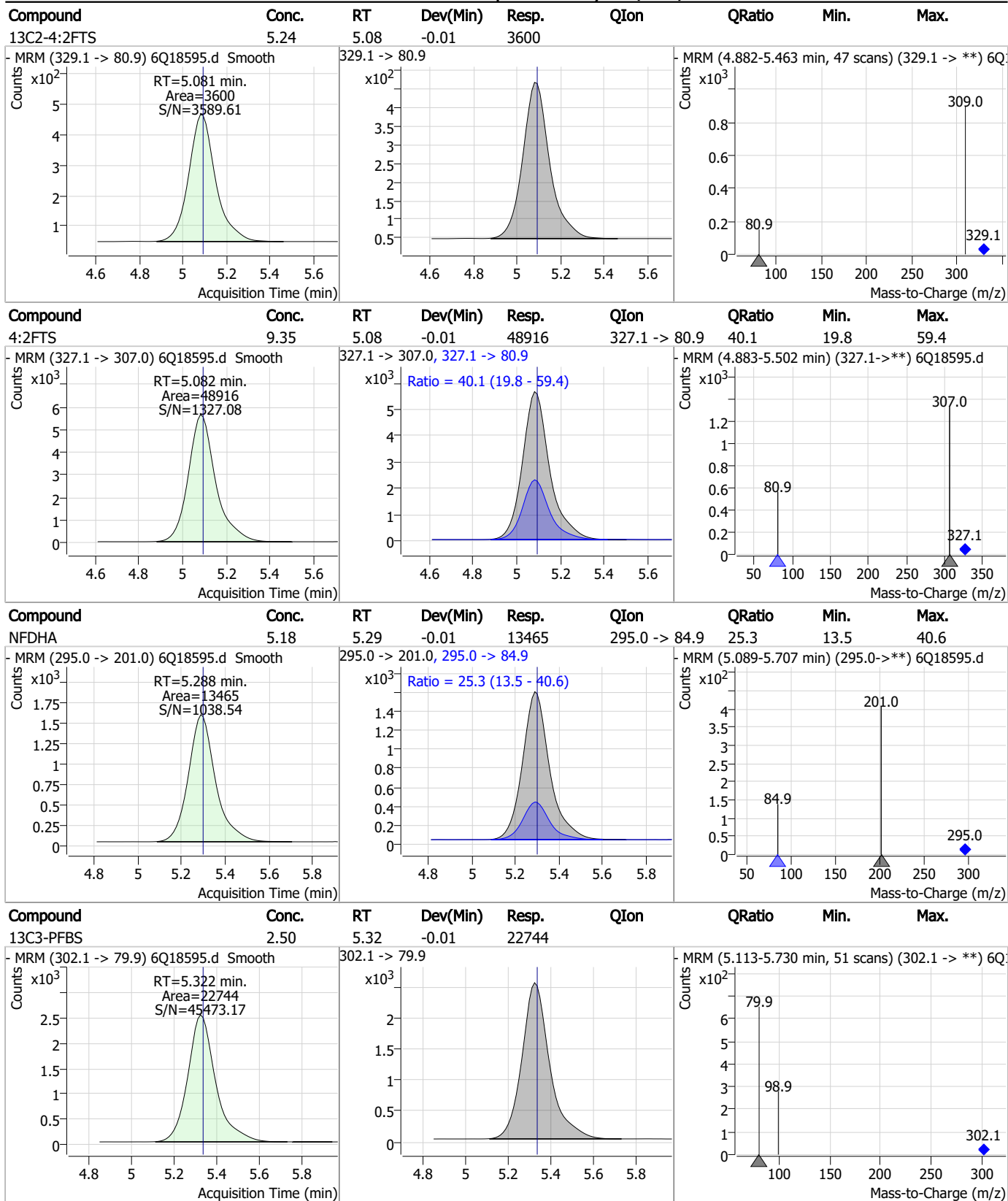


Perfluorinated Compounds by LC/MS/MS



7.7.10
7

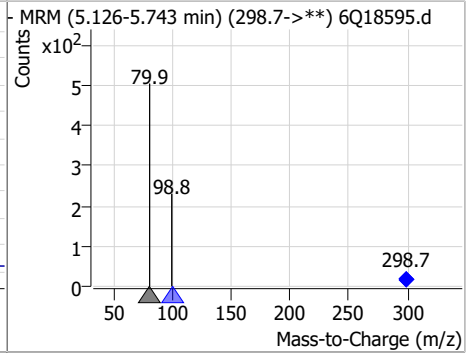
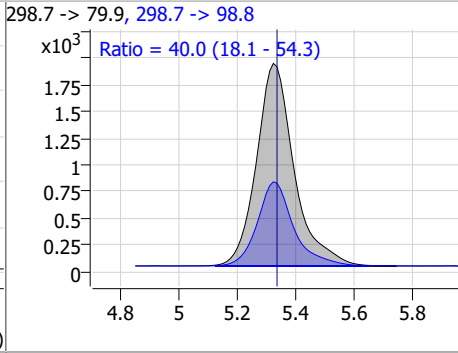
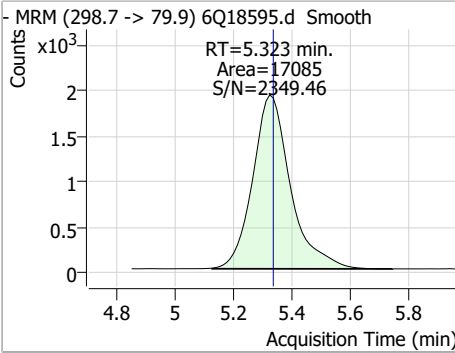
Perfluorinated Compounds by LC/MS/MS



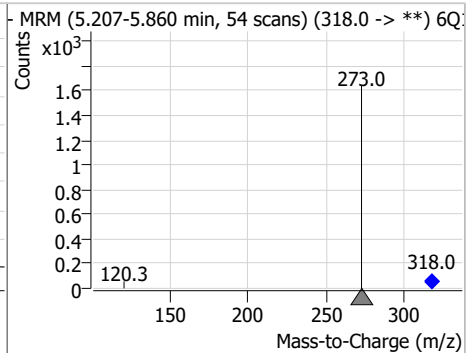
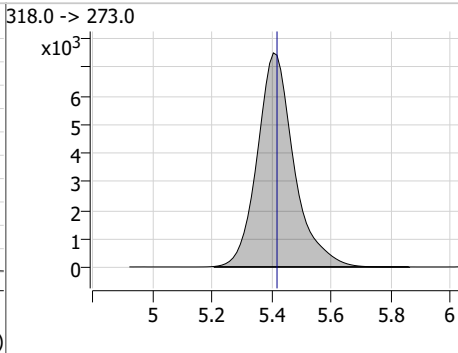
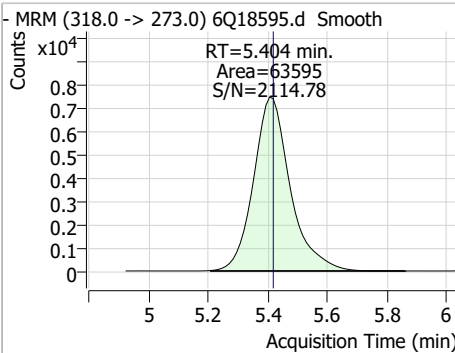
7.7.10
7

Perfluorinated Compounds by LC/MS/MS

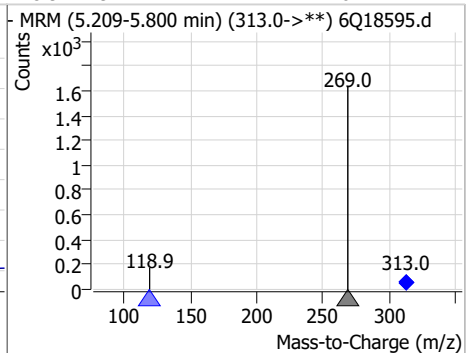
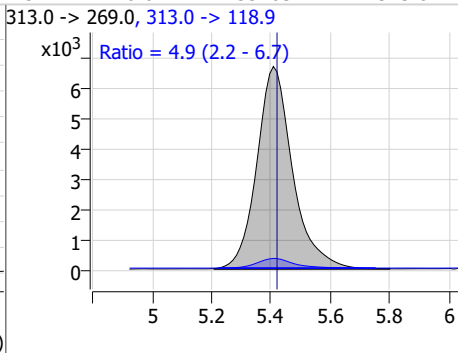
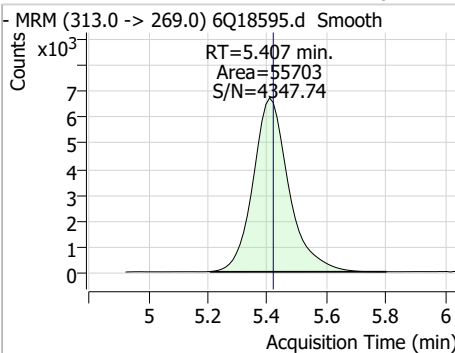
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.21	5.32	-0.01	17085	298.7 -> 98.8	40.0	18.1	54.3



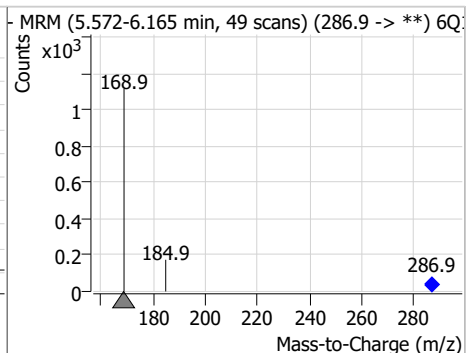
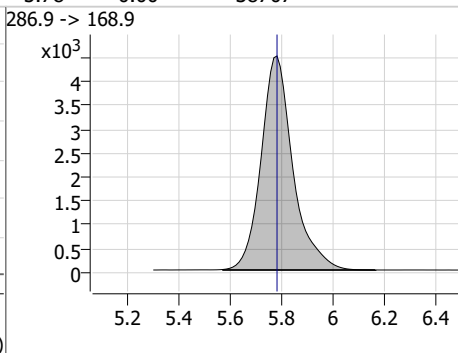
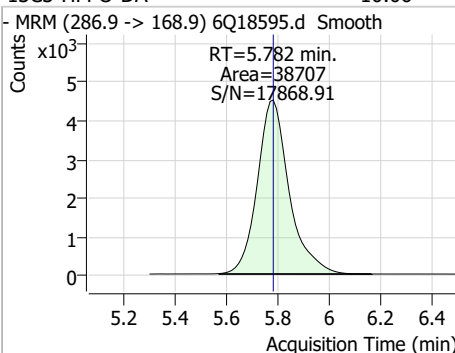
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	5.40	-0.01	63595				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.61	5.41	-0.01	55703	313.0 -> 118.9	4.9	2.2	6.7



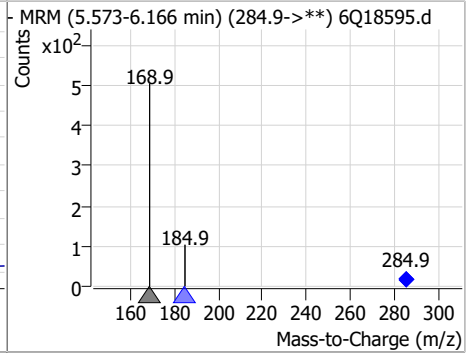
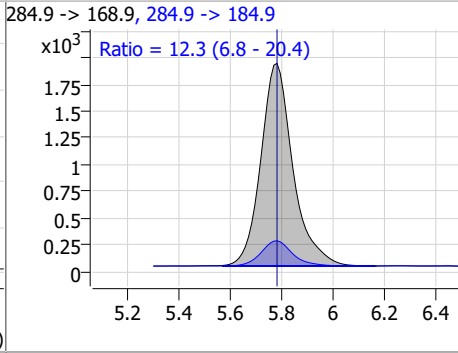
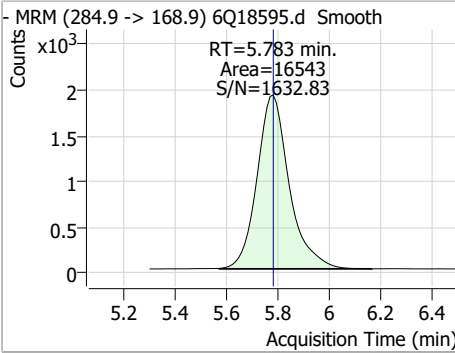
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.06	5.78	0.00	38707				



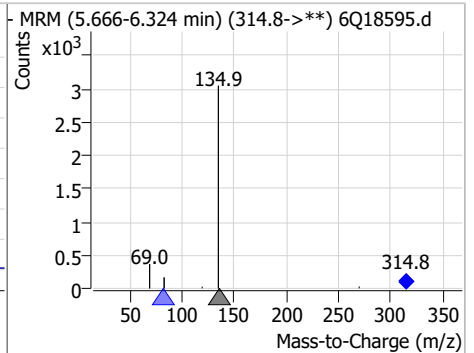
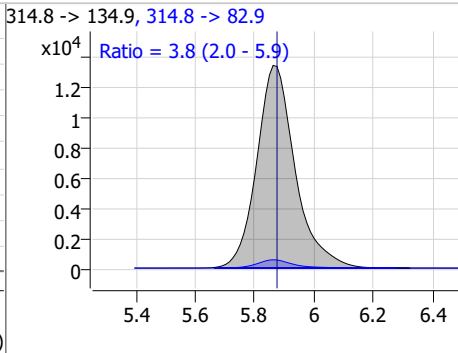
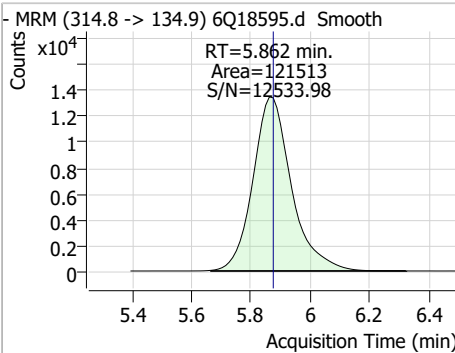
7.7.10
7

Perfluorinated Compounds by LC/MS/MS

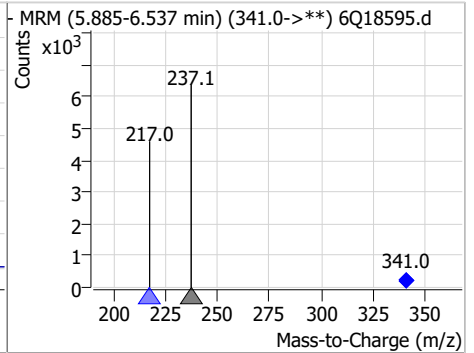
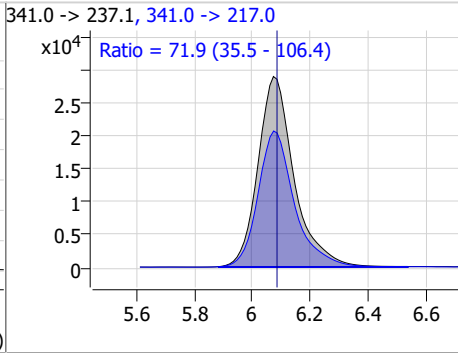
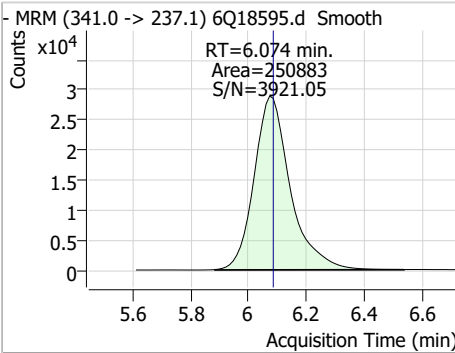
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.04	5.78	0.00	16543	284.9 -> 184.9	12.3	6.8	20.4



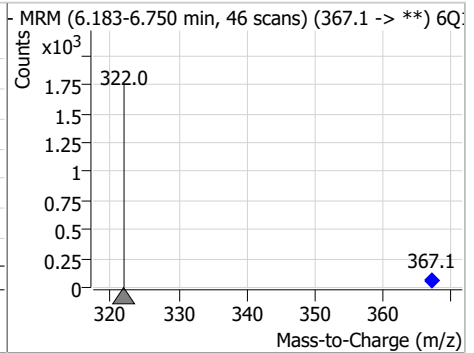
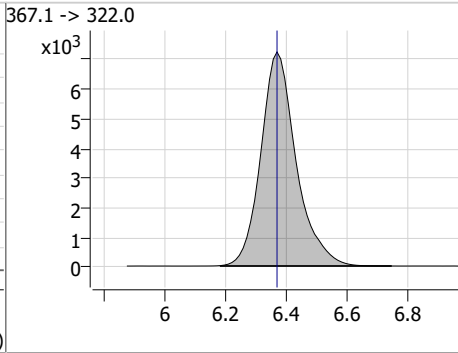
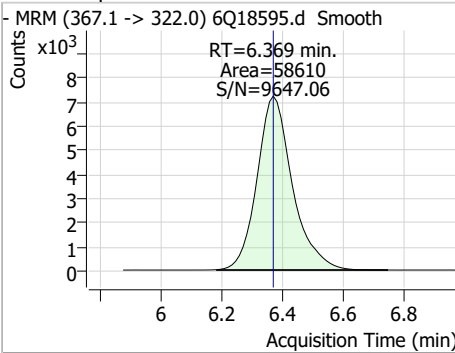
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.48	5.86	-0.01	121513	314.8 -> 82.9	3.8	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	65.31	6.07	-0.01	250883	341.0 -> 217.0	71.9	35.5	106.4

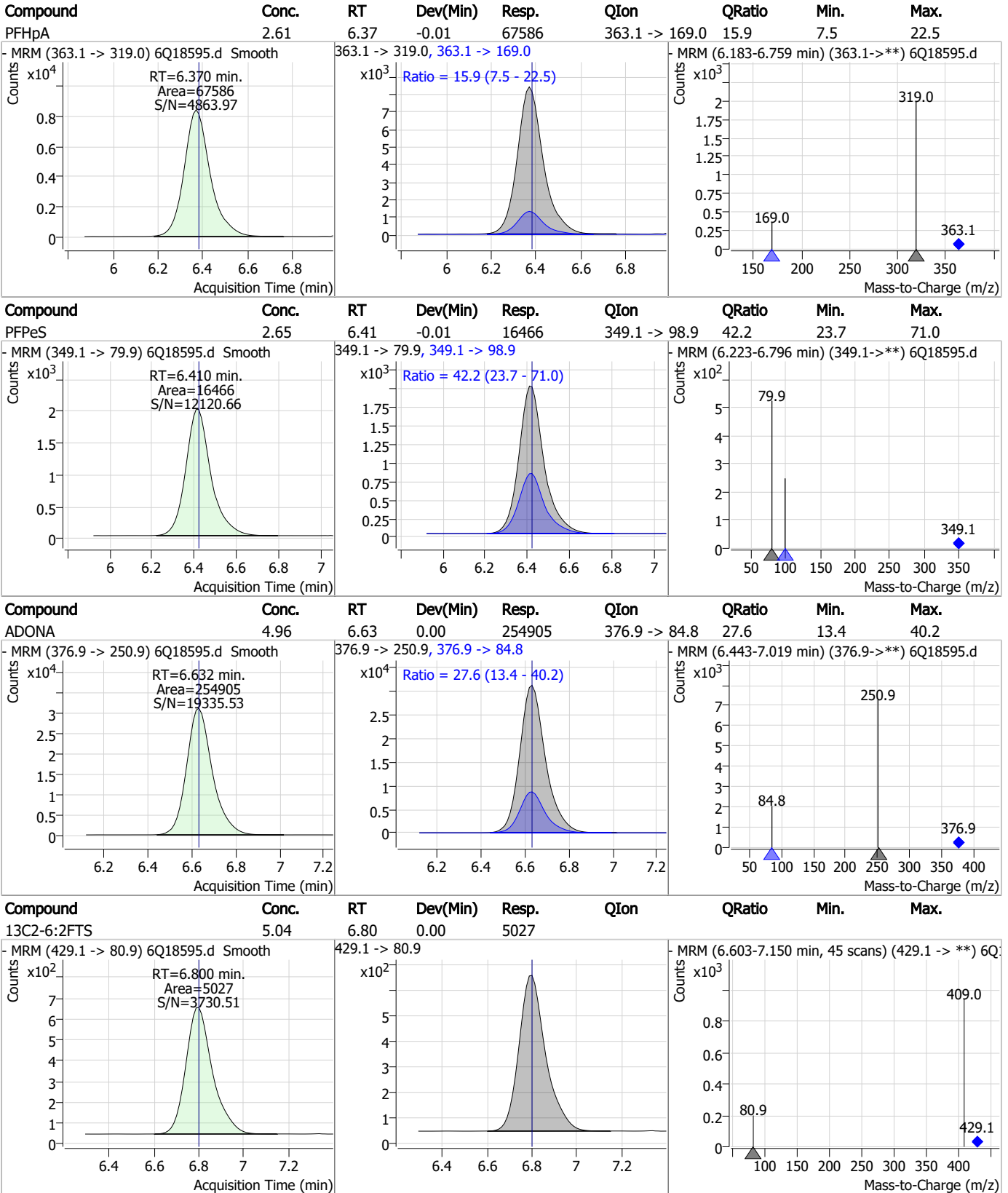


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.37	0.00	58610	367.1 -> 322.0			



7.7.10
7

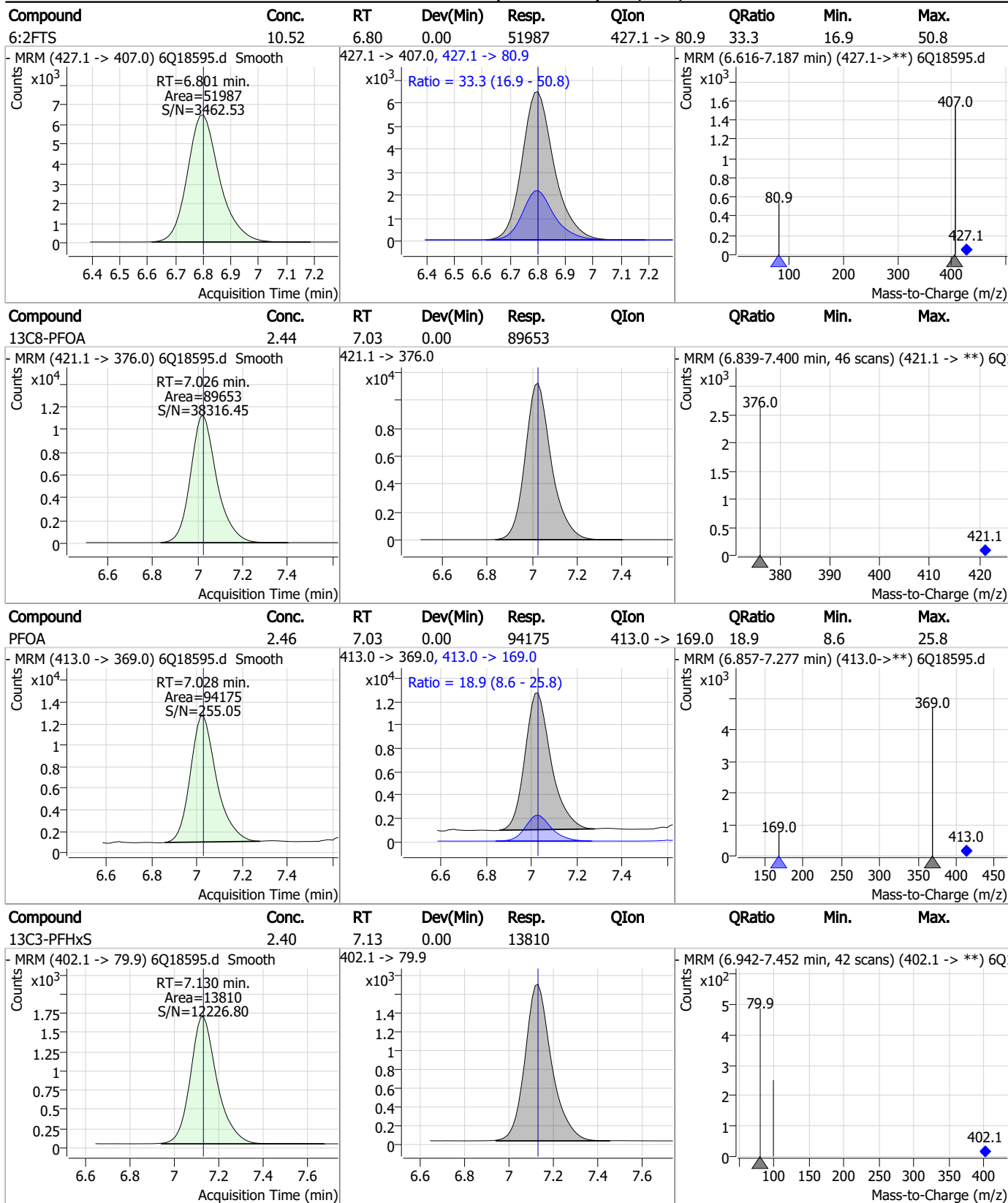
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



Perfluorinated Compounds by LC/MS/MS

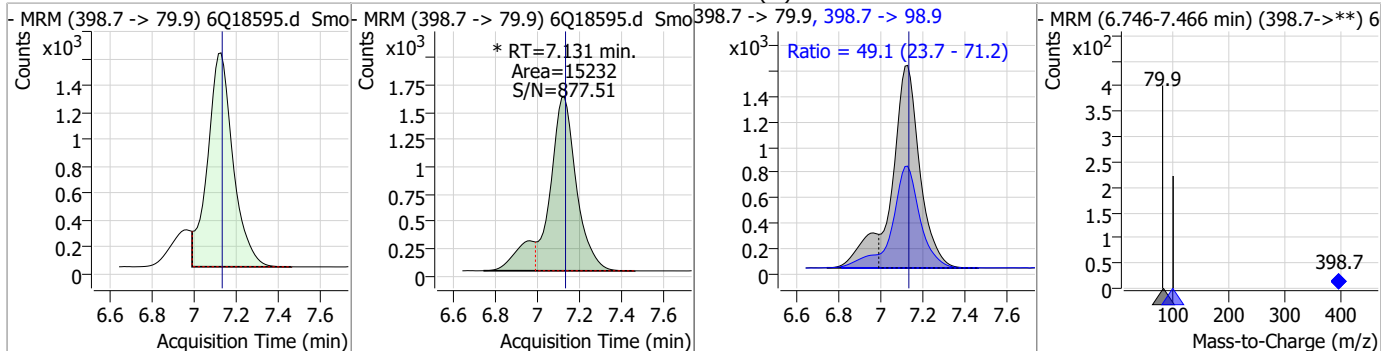


7.7.10 7

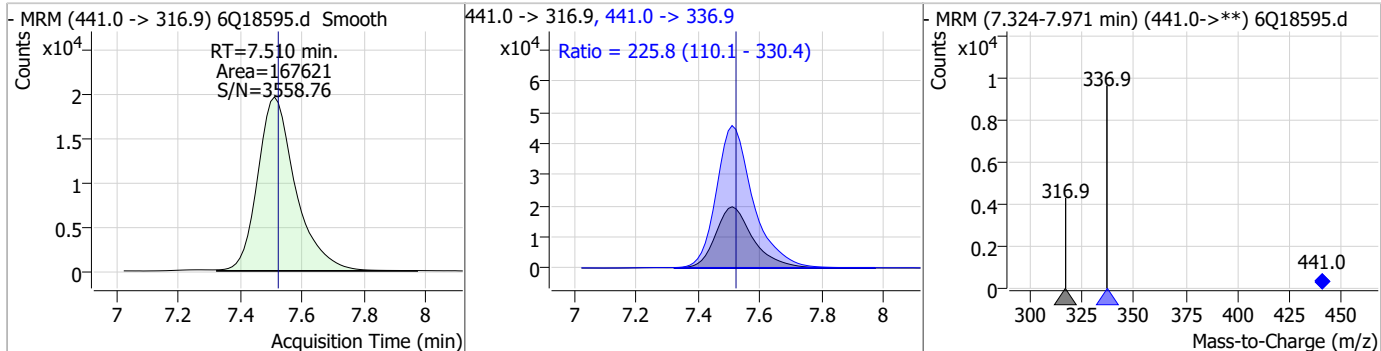


Perfluorinated Compounds by LC/MS/MS

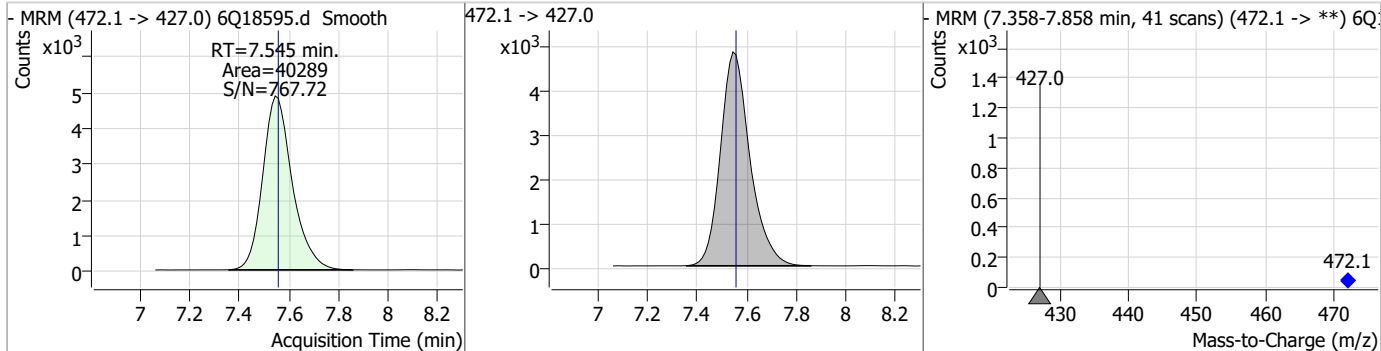
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.44	7.13	0.00	15232 (m)	398.7 -> 98.9	49.1	23.7	71.2



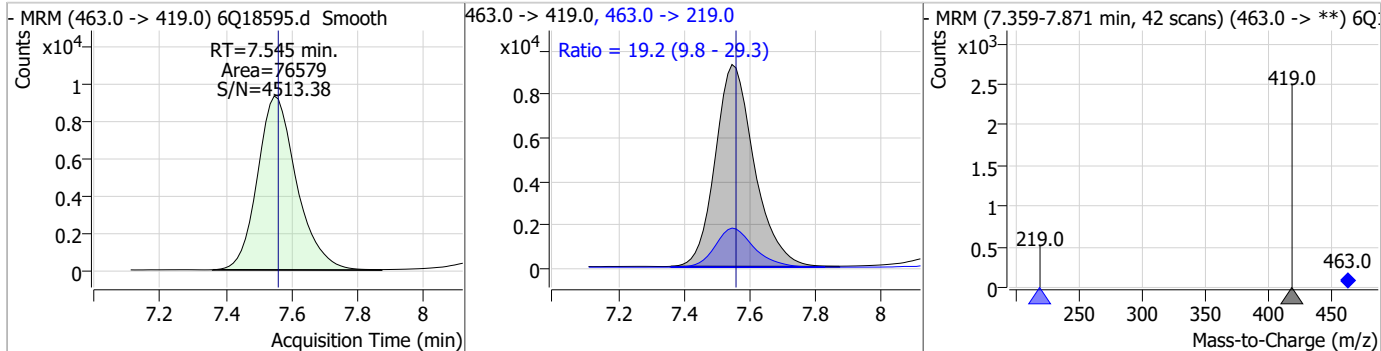
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	63.72	7.51	-0.01	167621	441.0 -> 336.9	225.8	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.22	7.54	-0.01	40289				

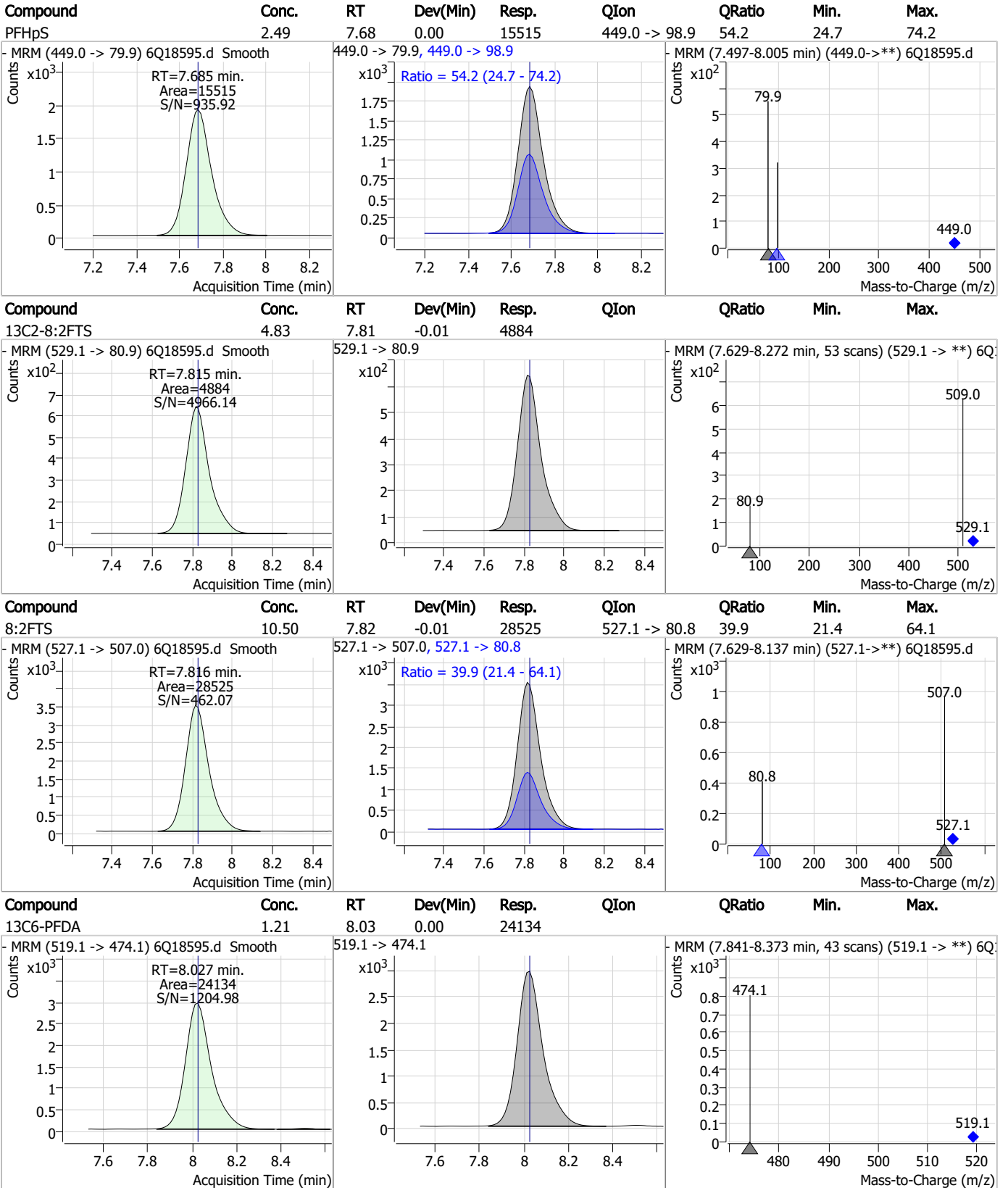


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.68	7.55	-0.01	76579	463.0 -> 219.0	19.2	9.8	29.3



7.7.10 7

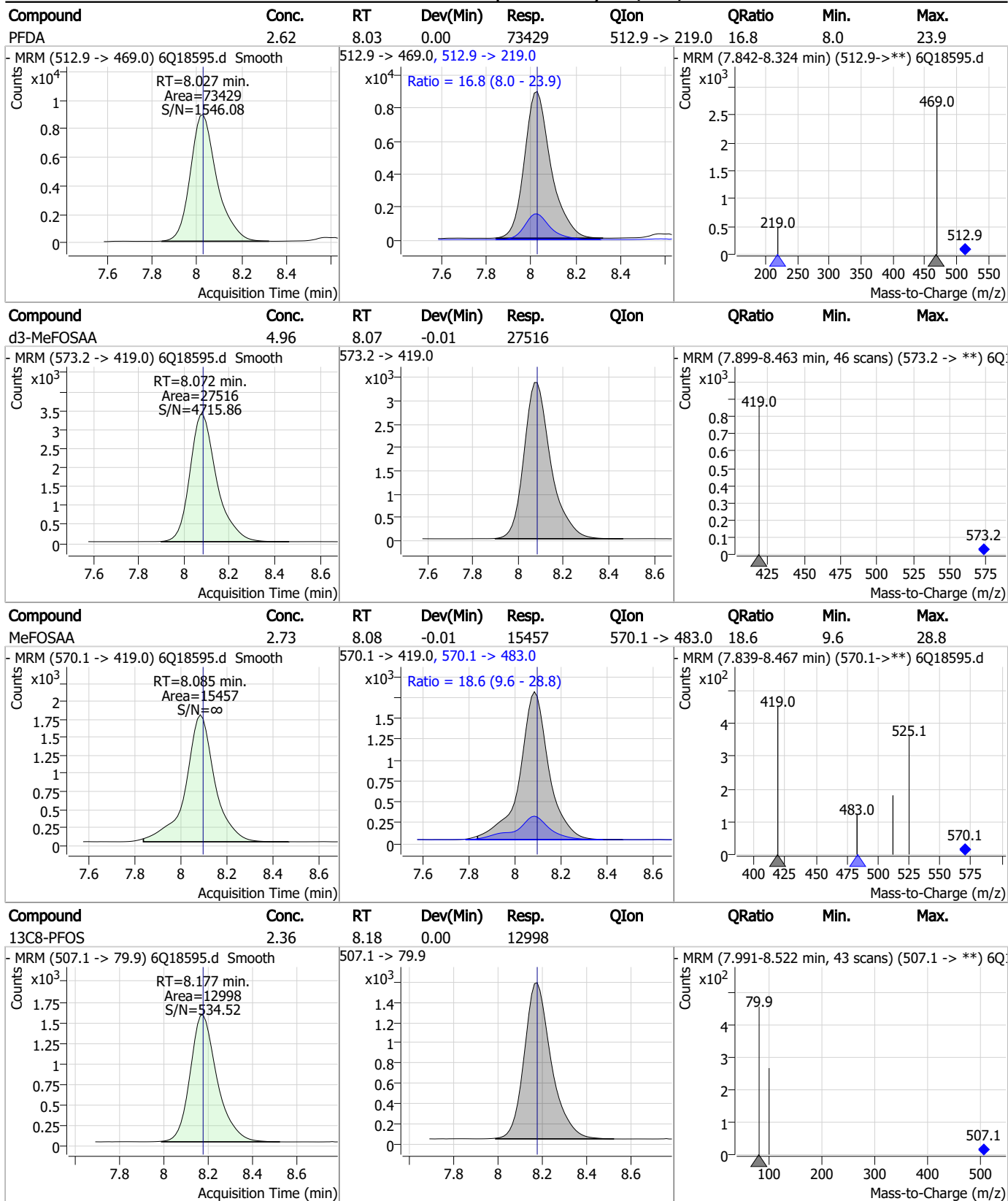
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



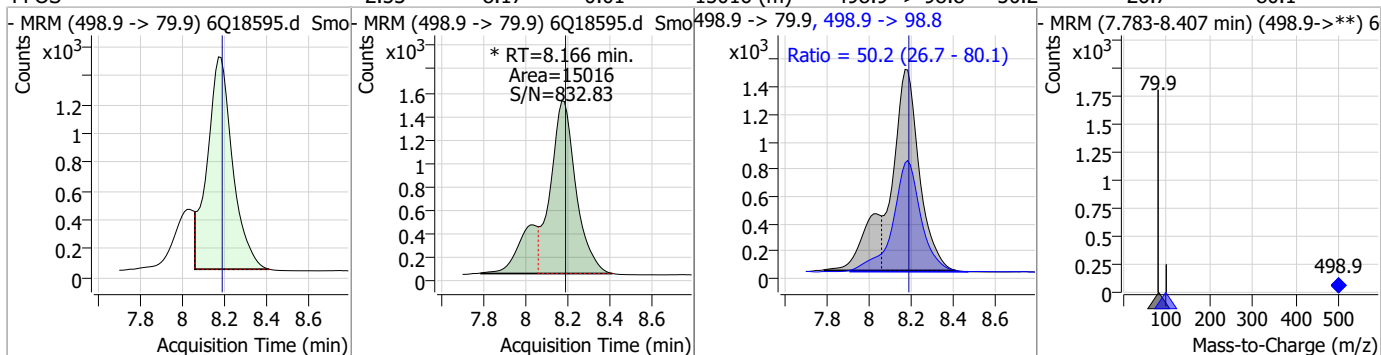
Perfluorinated Compounds by LC/MS/MS



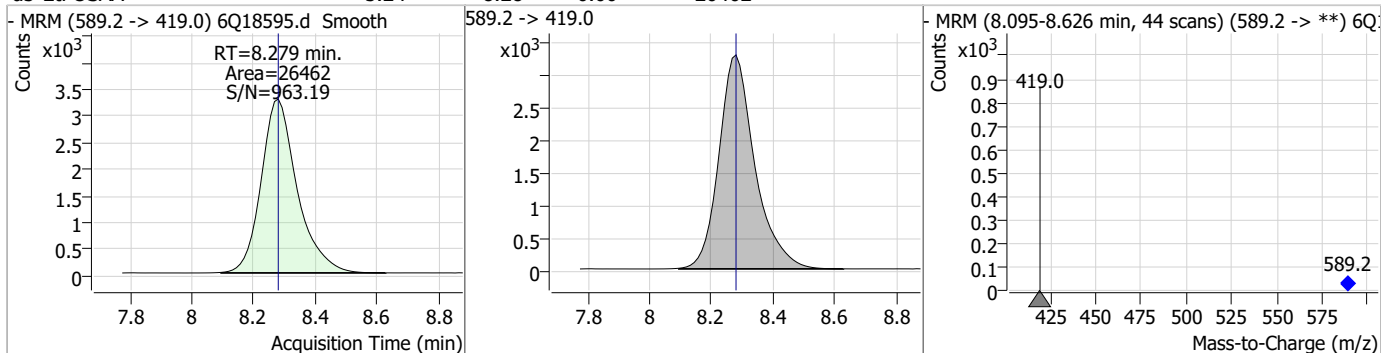
7.7.10
7

Perfluorinated Compounds by LC/MS/MS

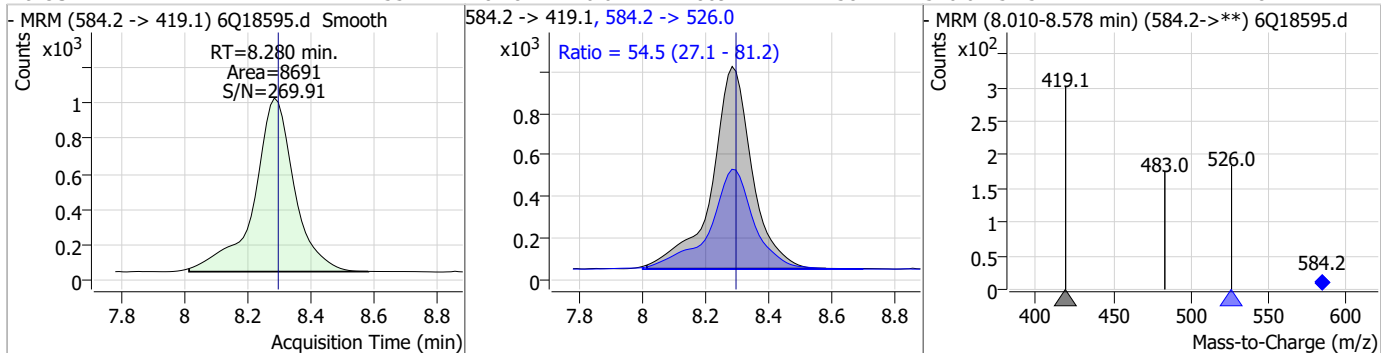
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.53	8.17	-0.01	15016 (m)	498.9 -> 98.8	50.2	26.7	80.1



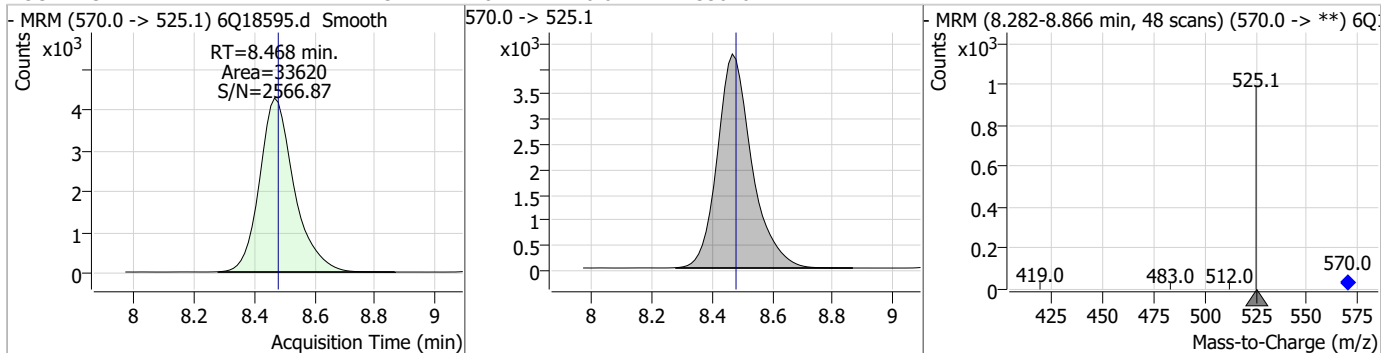
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.24	8.28	0.00	26462				



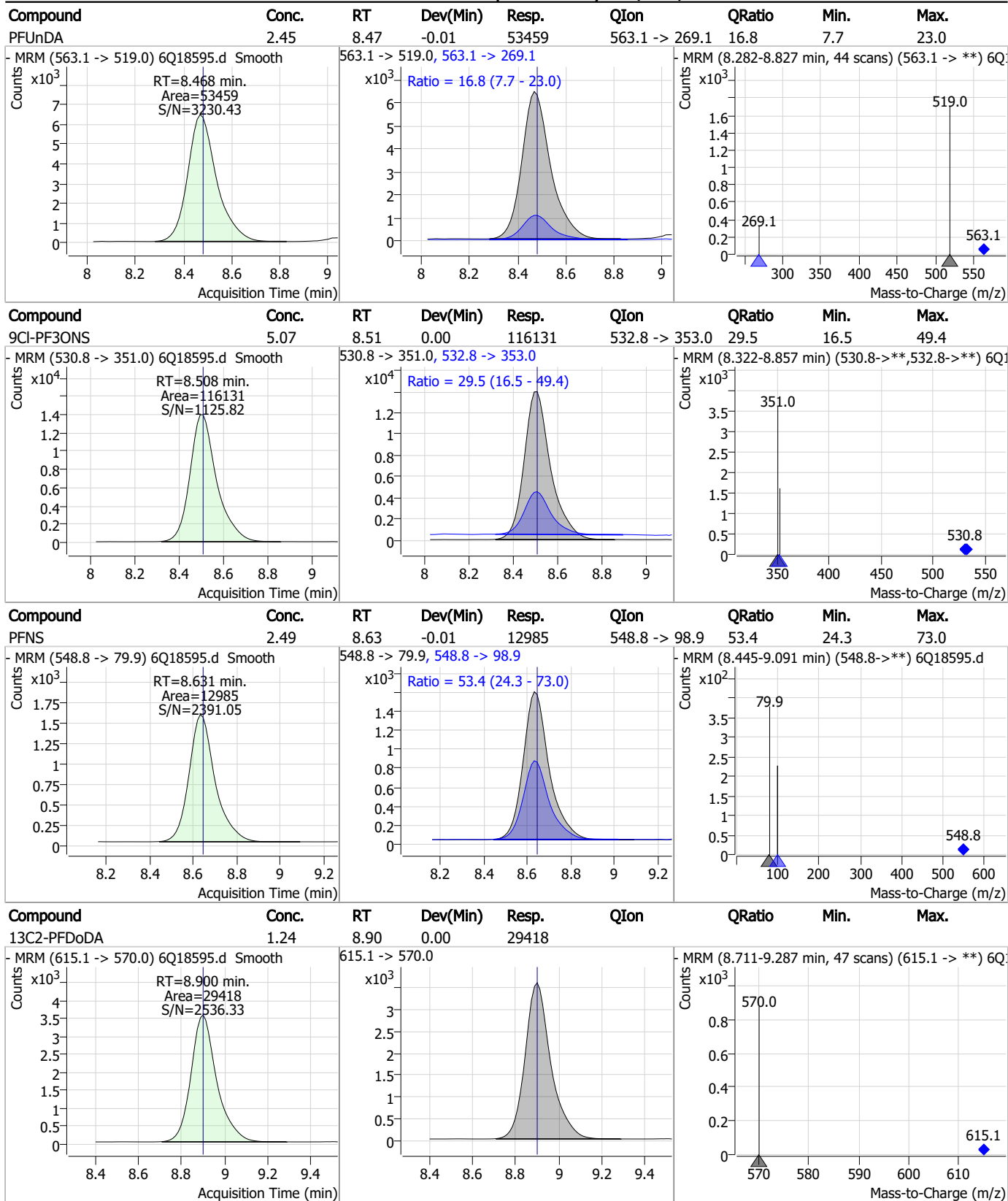
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.55	8.28	-0.01	8691	584.2 -> 526.0	54.5	27.1	81.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.47	-0.01	33620				



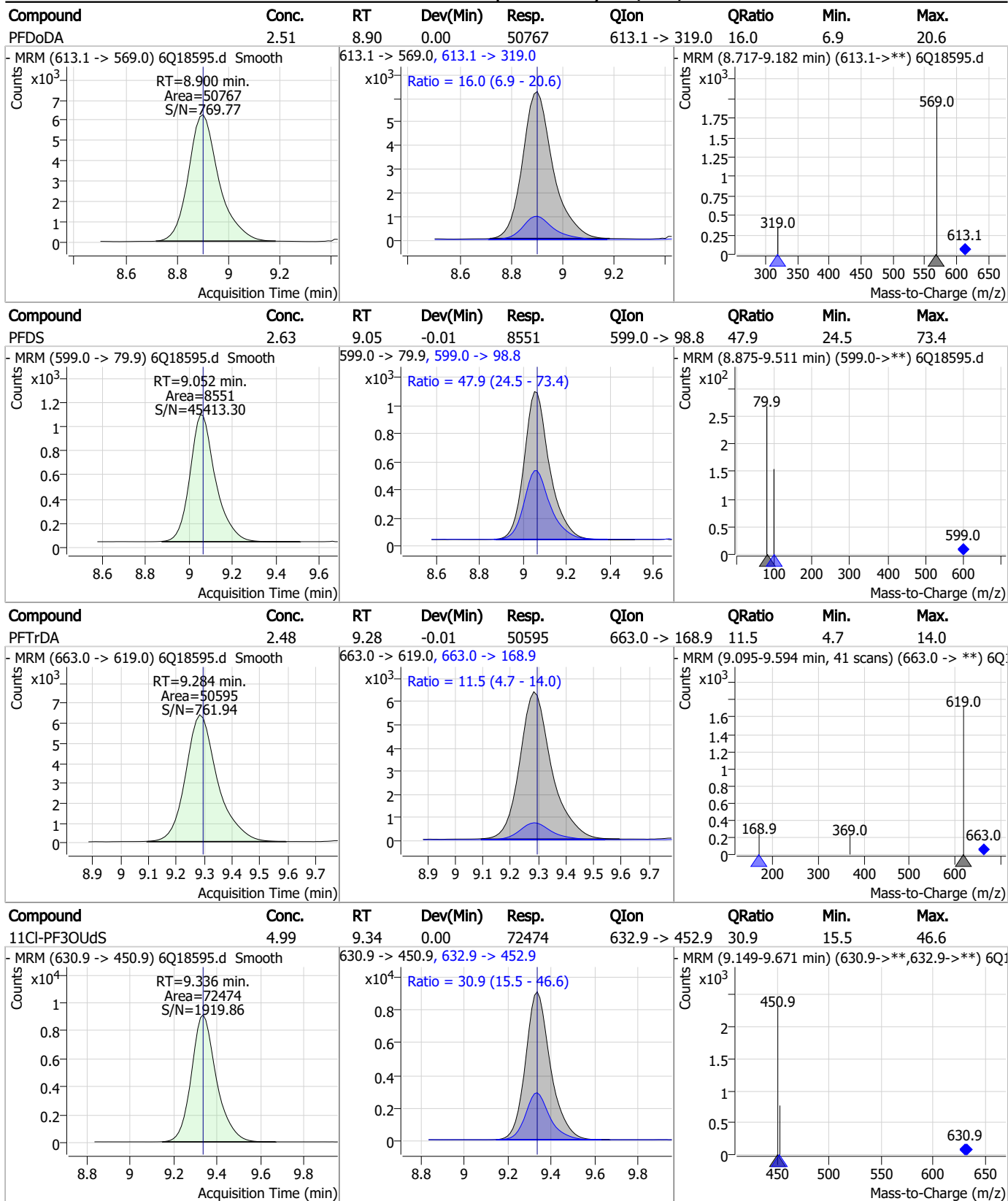
Perfluorinated Compounds by LC/MS/MS



7.7.10 7

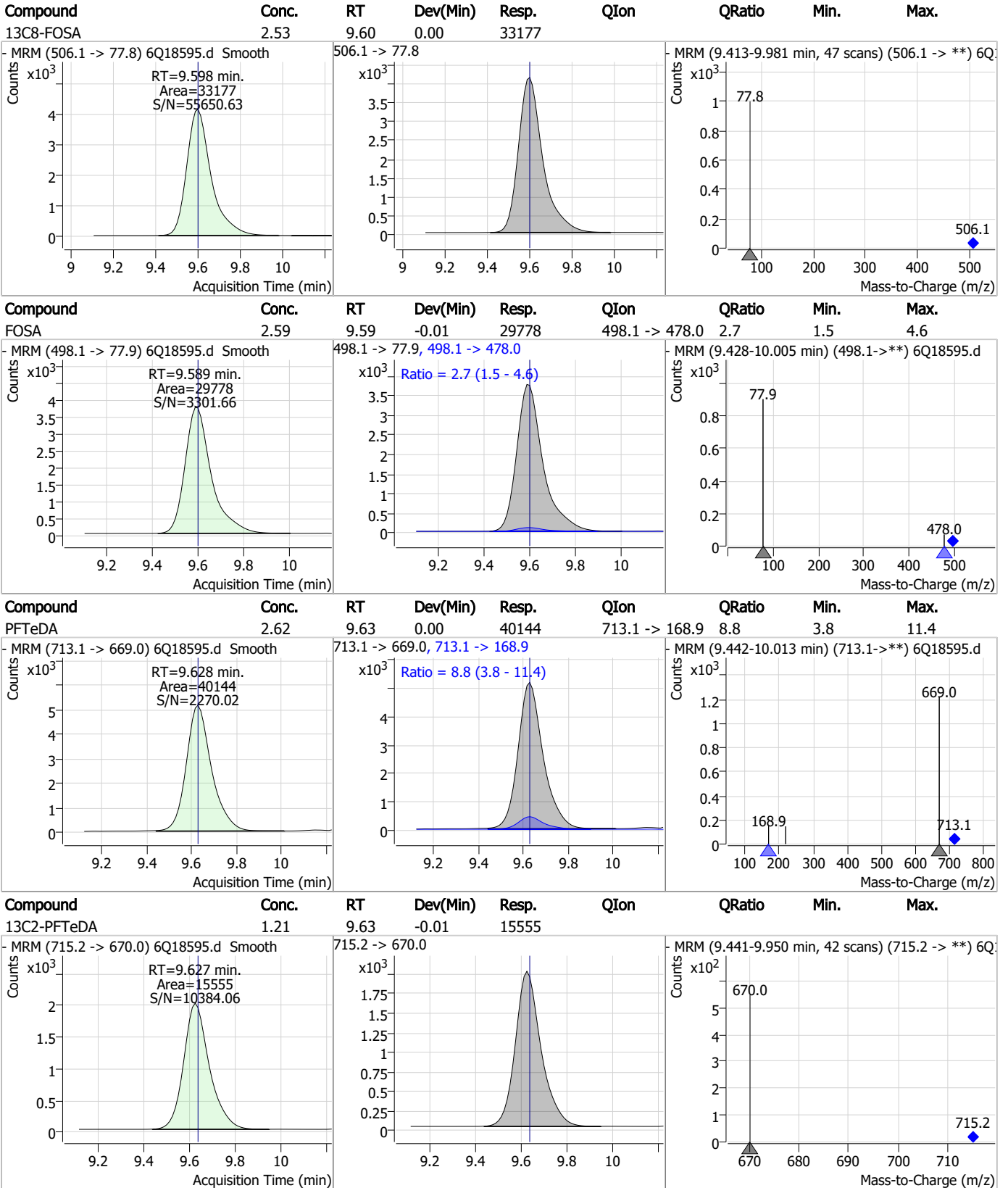


Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS

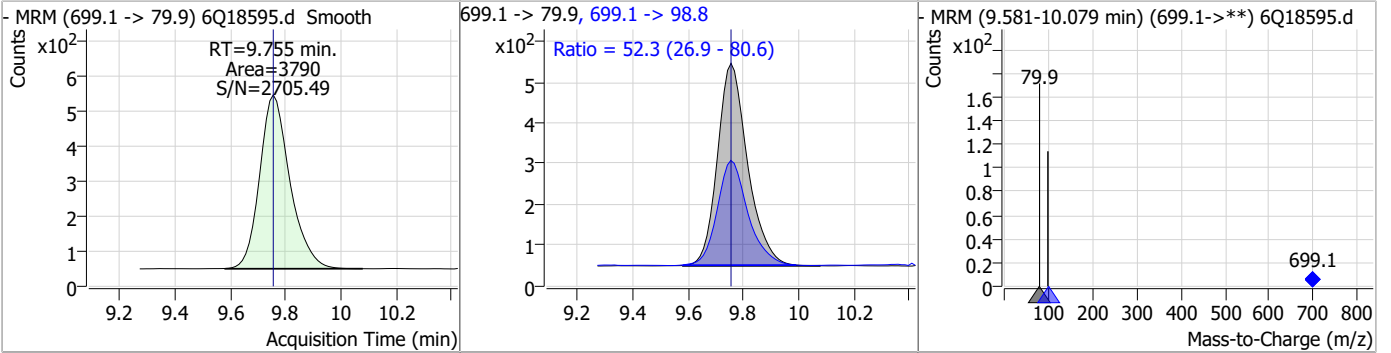


7.7.10 7

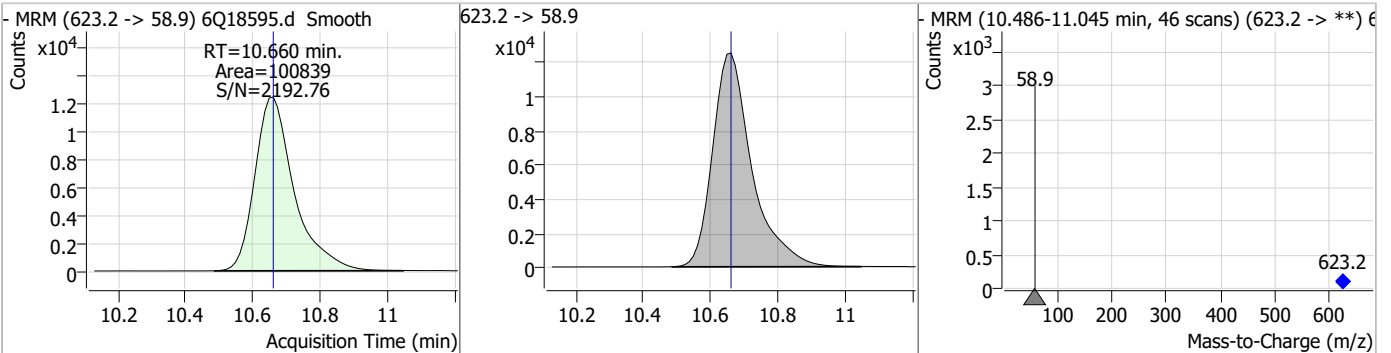


Perfluorinated Compounds by LC/MS/MS

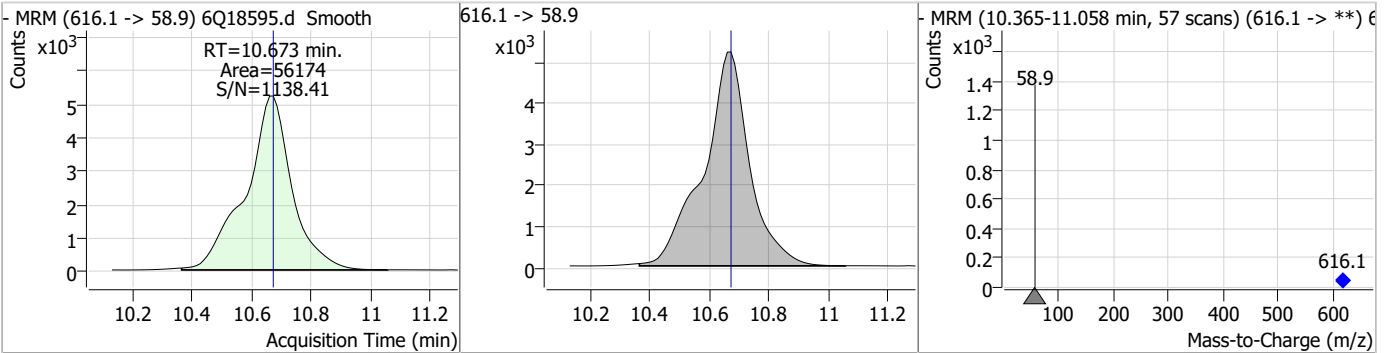
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.63	9.75	0.00	3790	699.1 -> 98.8	52.3	26.9	80.6



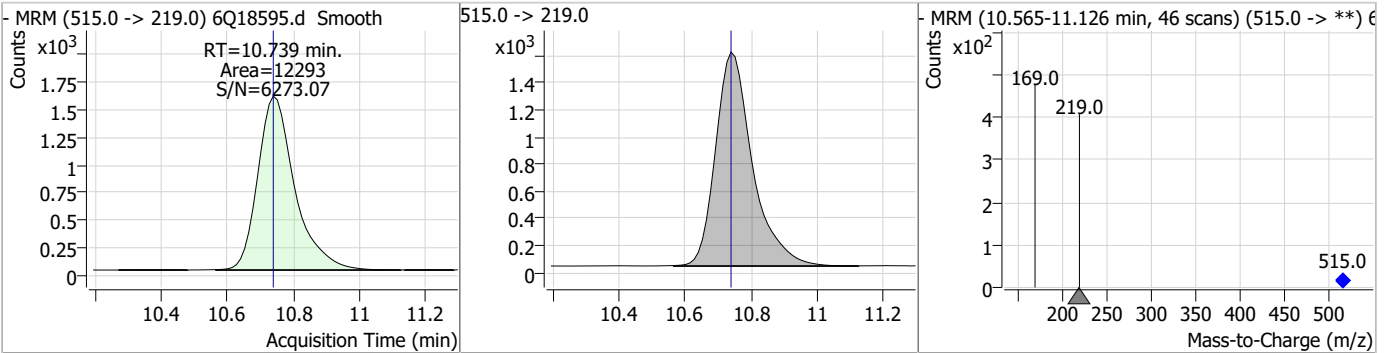
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.34	10.66	0.00	100839				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	14.02	10.67	0.00	56174				

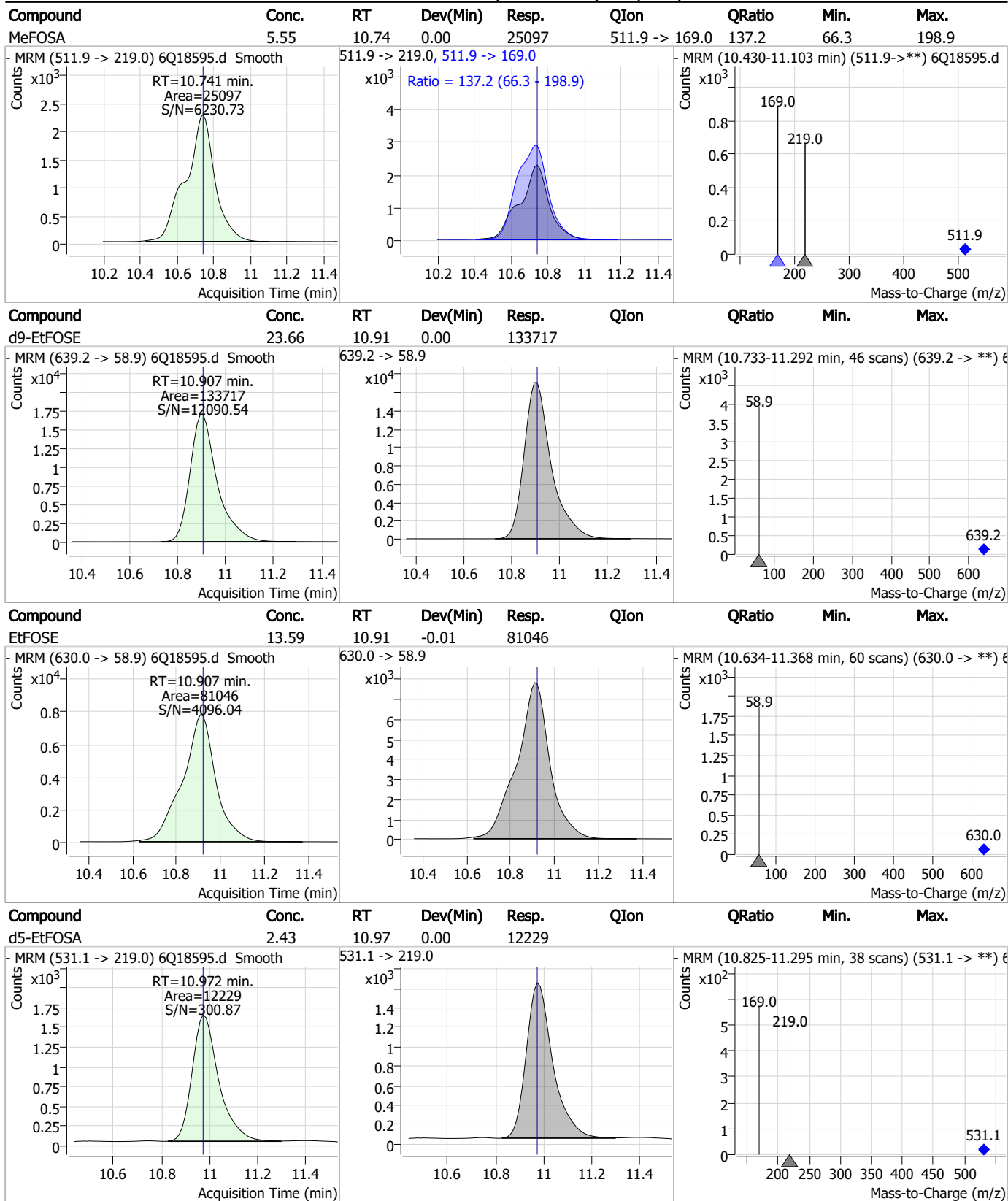


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.31	10.74	0.00	12293				



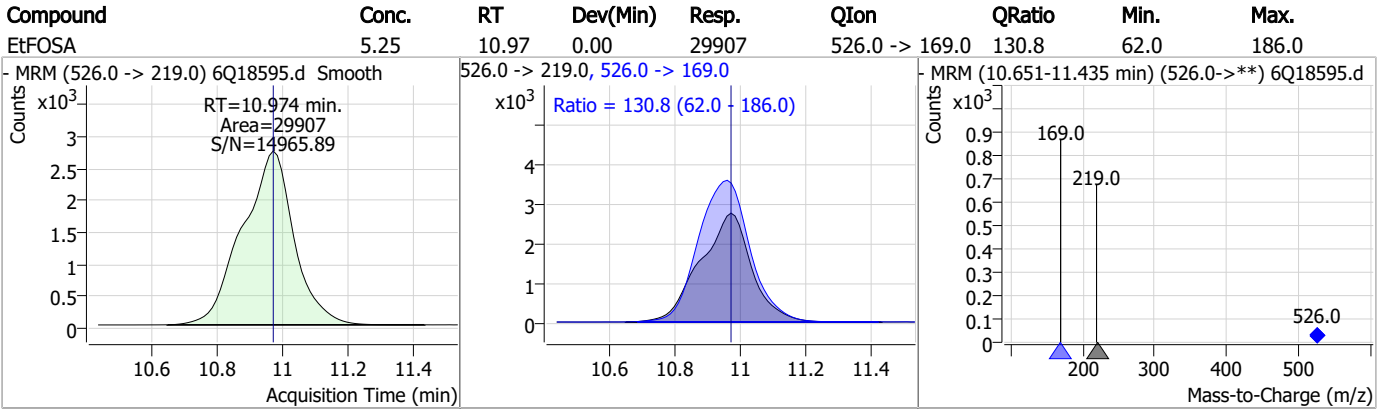
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Manual Integration Approval Summary

Sample Number: S6Q279-ICV279 Method: EPA DRAFT 1633
Lab FileID: 6Q18595.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:26 Supervisor approved: 06/01/23 15:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.7.10.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18596.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:41:13 PM
 Sample Name : icv279-20
 Vial : P1-B2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	186962	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62853	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	68388	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	62709	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	94819	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	43451	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	25438	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	32143	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	32578	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17789	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34684	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	24348	2.50 µg/L	0.000
M3-PFHxS	7.118	402.1 -> 79.9	14940	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	14671	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3772	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5411	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5749	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	28514	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	43052	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	25180	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	115543	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	149096	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13637	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13536	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	18696	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	78415	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11177	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	100296	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	34929	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	53262	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	61388	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3772	5.06 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5411	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5749	5.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	32578	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17789	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C3-PFBS	5.334	302.1 -> 79.9	24348	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C3-PFHxS	7.118	402.1 -> 79.9	14940	2.39 µg/L	-0.012

7.7.11
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C4-PFBA	2.822	216.8 -> 171.9	186962	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	62709	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C5-PFHxA	5.417	318.0 -> 273.0	68388	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C5-PFPeA	4.210	268.3 -> 223.0	62853	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C6-PFDA	8.014	519.1 -> 474.1	25438	1.24 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C7-PFUnDA	8.468	570.0 -> 525.1	32143	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-FOSA	9.598	506.1 -> 77.8	34684	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOA	7.013	421.1 -> 376.0	94819	2.52 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-PFOS	8.165	507.1 -> 79.9	14671	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C9-PFNA	7.545	472.1 -> 427.0	43451	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSAA	8.072	573.2 -> 419.0	28514	4.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	43052	10.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	13536	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
d5-EtFOSAA	8.267	589.2 -> 419.0	25180	4.59 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	115543	24.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	149096	24.28 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	13637	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	106559	19.45 µg/L	99
		327.1 -> 80.9	41236		
6:2FTS	6.789	427.1 -> 407.0	108000	20.31 µg/L	98
		427.1 -> 80.9	35107		
8:2FTS	7.816	527.1 -> 507.0	57936	18.12 µg/L	96
		527.1 -> 80.8	23329		
EtFOSAA	8.280	584.2 -> 419.1	68565	21.17 µg/L	95
		584.2 -> 526.0	34564		
FOSA	9.589	498.1 -> 77.9	212928	17.73 µg/L	99
		498.1 -> 478.0	6898		
MeFOSAA	8.085	570.1 -> 419.0	122540	20.90 µg/L	98
		570.1 -> 483.0	22605		
PFBA	2.818	212.8 -> 168.9	117681	19.01 µg/L	100
PFBS	5.323	298.7 -> 79.9	164900	19.91 µg/L	100
		298.7 -> 98.8	60156		
PFDA	8.014	512.9 -> 469.0	593616	20.13 µg/L	99
		512.9 -> 219.0	93514		
PFDoDA	8.900	613.1 -> 569.0	386783	17.29 µg/L	97
		613.1 -> 319.0	57188		
PFDS	9.052	599.0 -> 79.9	68402	18.65 µg/L	99

7.7.11
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	34080	19.31 µg/L	99
		363.1 -> 319.0	535964		
PFHpS	7.673	363.1 -> 169.0	83630	19.13 µg/L	97
		449.0 -> 79.9	134544		
PFHxA	5.407	449.0 -> 98.9	64128	18.15 µg/L	98
		313.0 -> 269.0	416654		
PFHxS	7.119	313.0 -> 118.9	22162	20.60 µg/L	99
		398.7 -> 79.9	139202		
PFNA	7.545	398.7 -> 98.9	65641	20.84 µg/L	100
		463.0 -> 419.0	641763		
PFNS	8.631	463.0 -> 219.0	125644	19.77 µg/L	100
		548.8 -> 79.9	116407		
PFOA	7.028	548.8 -> 98.9	56297	19.19 µg/L	100
		413.0 -> 369.0	776954		
PFOS	8.166	413.0 -> 169.0	134705	16.71 µg/L	95
		498.9 -> 79.9	112048		
PFPeA	4.212	498.9 -> 98.8	55641	19.67 µg/L	100
		263.0 -> 219.0	296977		
PFPeS	6.422	349.1 -> 79.9	130985	19.45 µg/L	99
		349.1 -> 98.9	62624		
PFTeDA	9.628	713.1 -> 669.0	332044	18.97 µg/L	97
		713.1 -> 168.9	28380		
PFTrDA	9.284	663.0 -> 619.0	360376	15.95 µg/L	94
		663.0 -> 168.9	41925		
PFUnDA	8.468	563.1 -> 519.0	390329	18.69 µg/L	96
		563.1 -> 269.1	66877		
11CI-PF3OUdS	9.336	630.9 -> 450.9	315465	19.53 µg/L	98
		632.9 -> 452.9	94491		
9CI-PF3ONS	8.495	530.8 -> 351.0	510603	20.06 µg/L	97
		532.8 -> 353.0	158372		
ADONA	6.632	376.9 -> 250.9	988864	17.29 µg/L	99
		376.9 -> 84.8	270258		
HFPO-DA	5.783	284.9 -> 168.9	67617	18.53 µg/L	95
		284.9 -> 184.9	7725		
3:3FTCA	3.659	241.0 -> 177.0	18175	18.81 µg/L	97
		241.0 -> 117.0	2385		
5:3FTCA	6.074	341.0 -> 237.1	81054	19.62 µg/L	95
		341.0 -> 217.0	61014		
7:3FTCA	7.510	441.0 -> 316.9	53207	18.81 µg/L	90
		441.0 -> 336.9	125849		
EtFOSA	10.974	526.0 -> 219.0	112015	17.62 µg/L	89
		526.0 -> 169.0	125550		
EtFOSE	10.920	630.0 -> 58.9	660042	99.23 µg/L	100
		511.9 -> 219.0	95732		
MeFOSA	10.741	511.9 -> 169.0	105640	19.23 µg/L	81
		616.1 -> 58.9	449429		
MeFOSE	10.673	699.1 -> 79.9	28833	97.88 µg/L	100
		699.1 -> 98.8	15285		
PFDoDS	9.755	295.0 -> 201.0	53119	17.69 µg/L	99
		295.0 -> 84.9	13945		
NFDHA	5.288	279.0 -> 85.1	201256	19.00 µg/L	98
		229.0 -> 84.9	156145		
PFMBA	4.626	314.8 -> 134.9	490283	19.54 µg/L	100
		314.8 -> 82.9	16928		
PFMPA	3.351			16.82 µg/L	99
PFEESA	5.862				

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

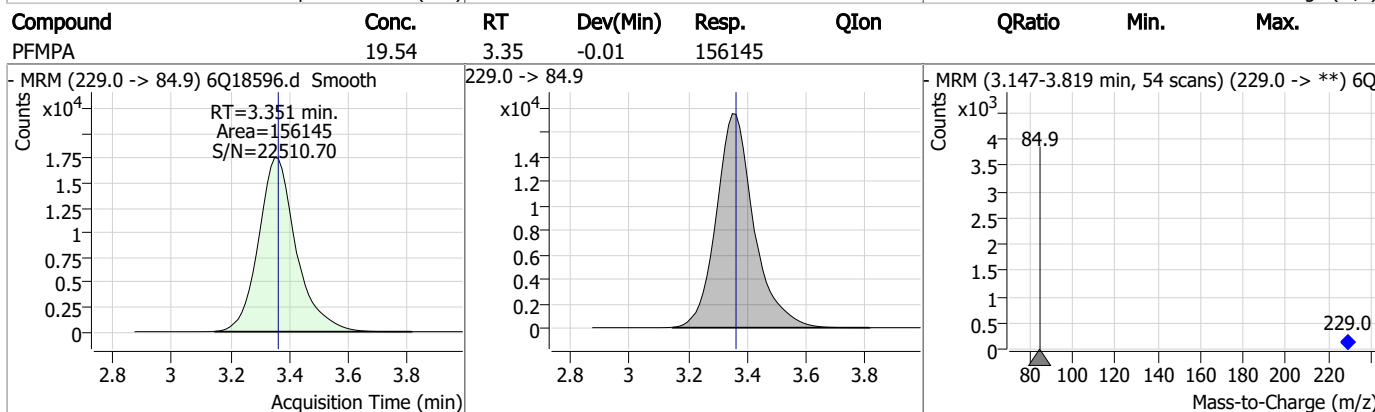
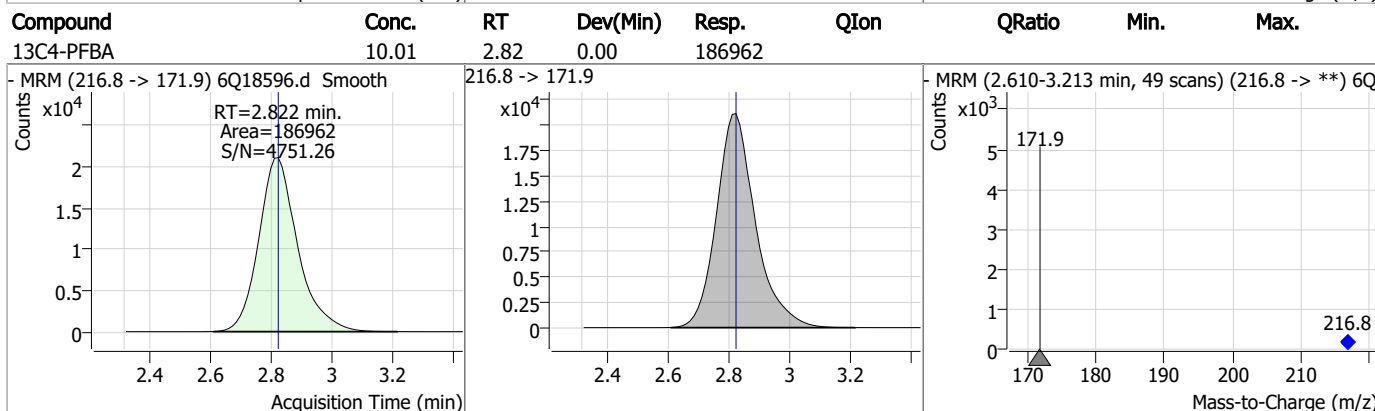
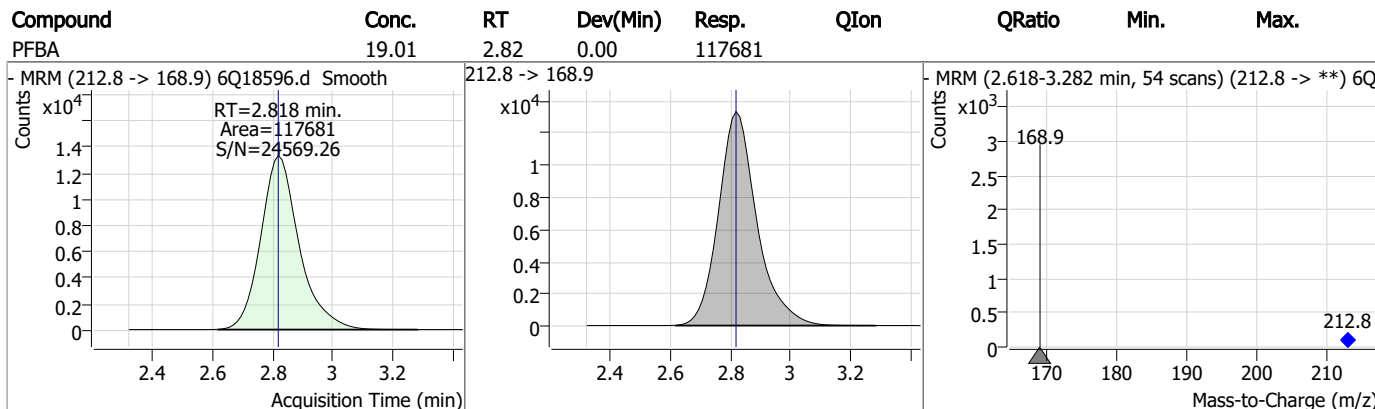
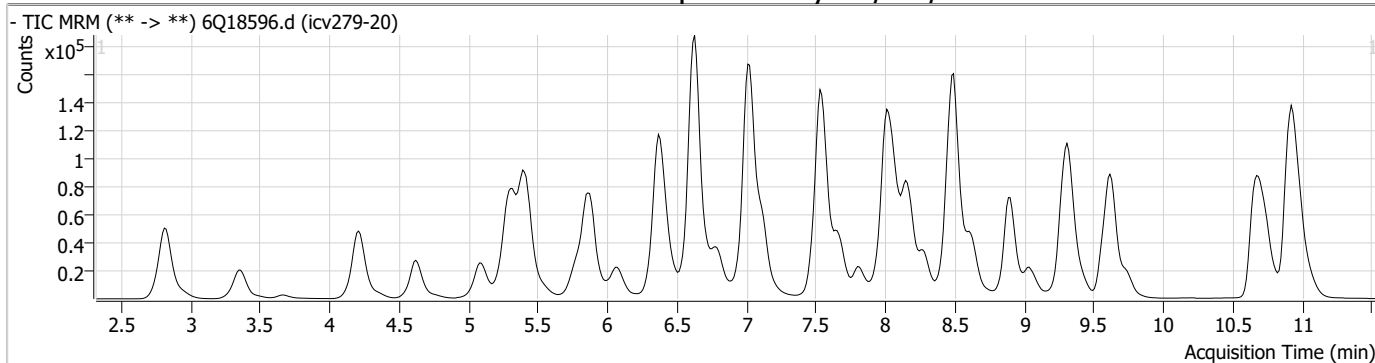
Perfluorinated Compounds by LC/MS/MS

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

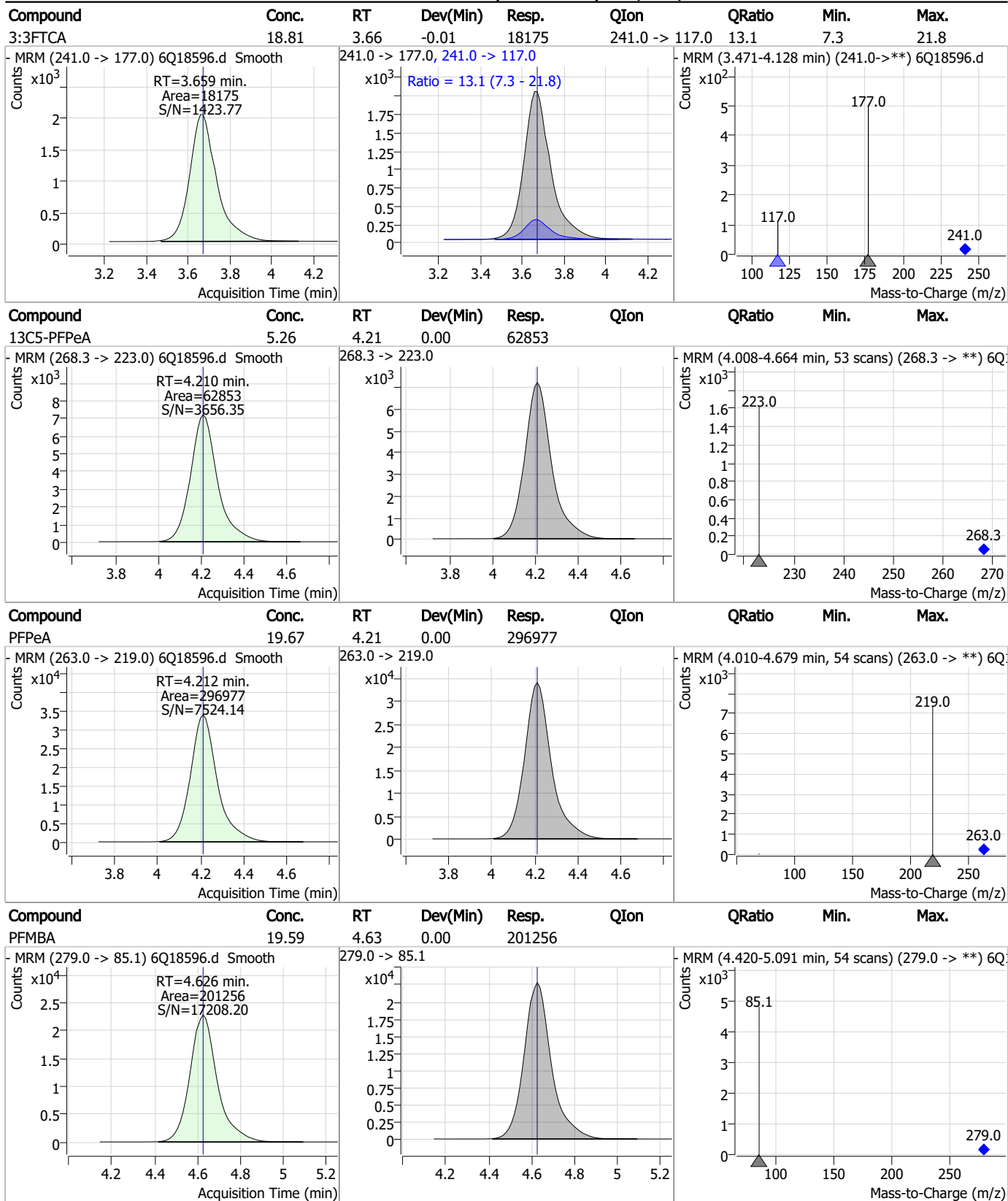
7.7.11

7

Perfluorinated Compounds by LC/MS/MS



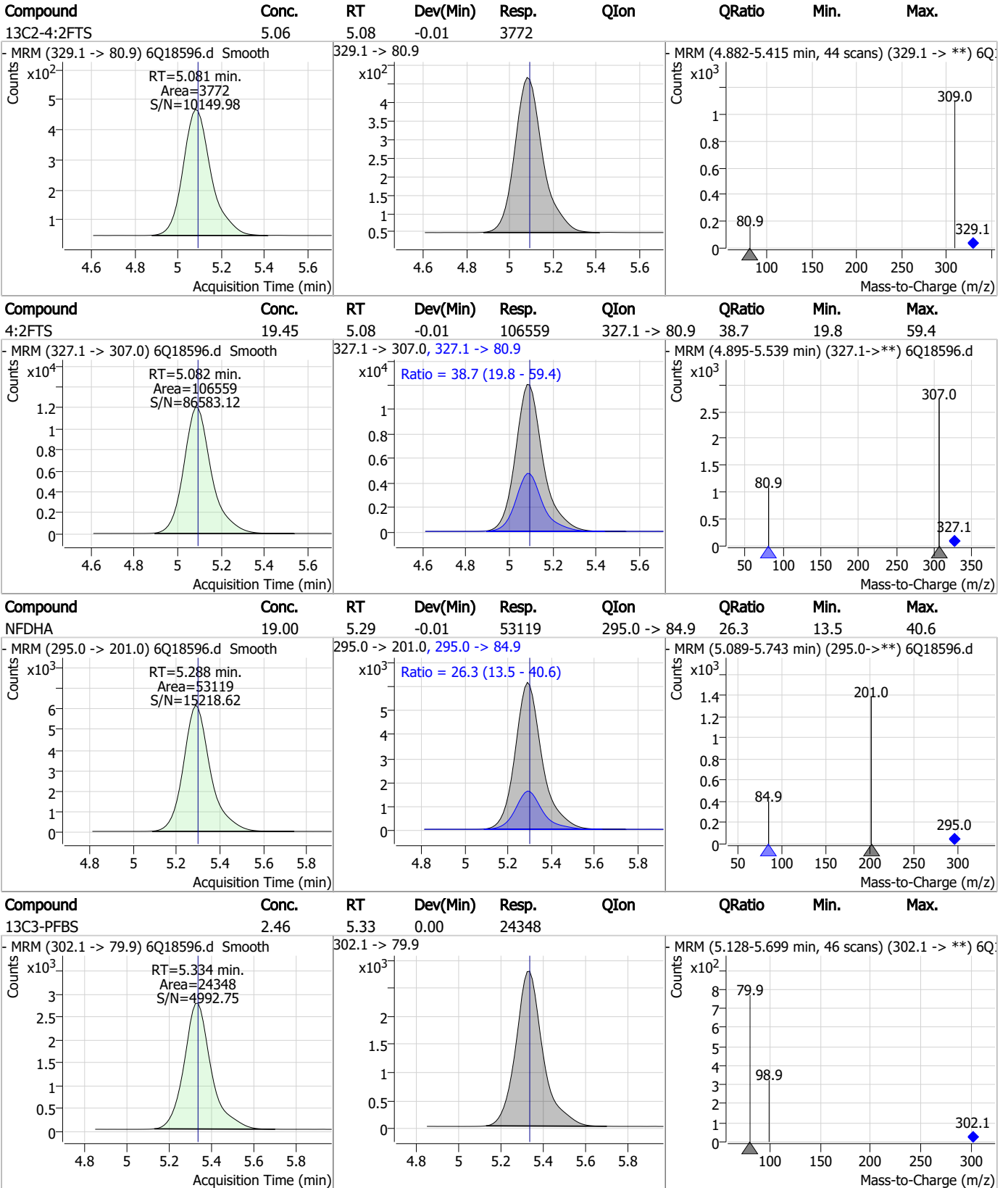
Perfluorinated Compounds by LC/MS/MS



7.7.11

7

Perfluorinated Compounds by LC/MS/MS

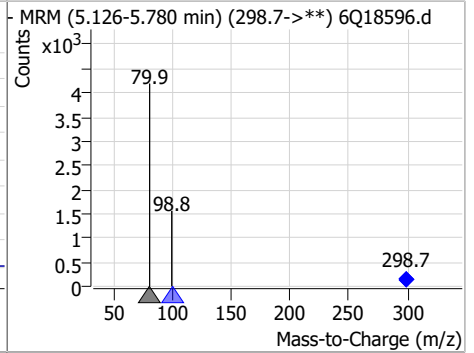
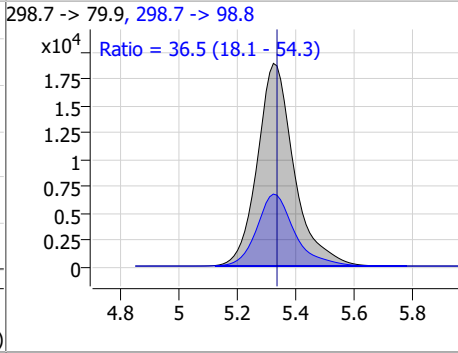
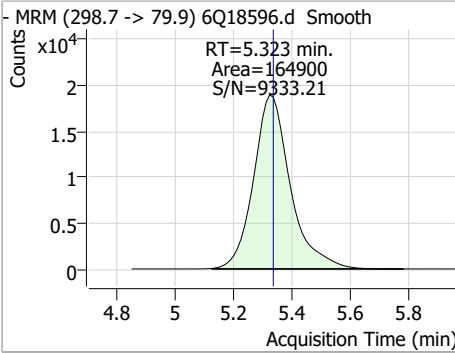


7.7.11

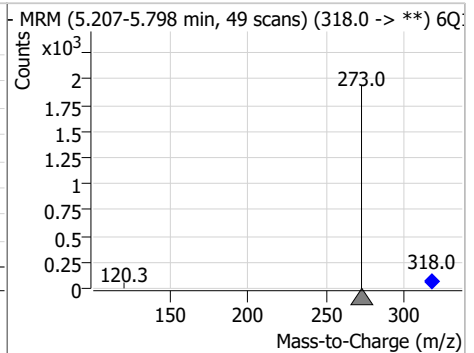
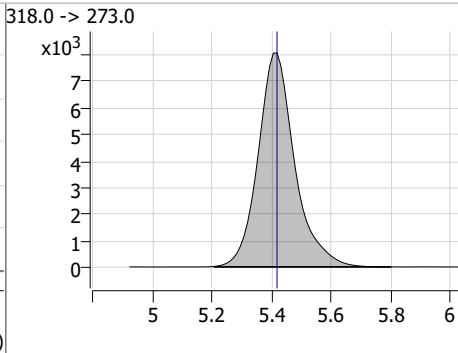
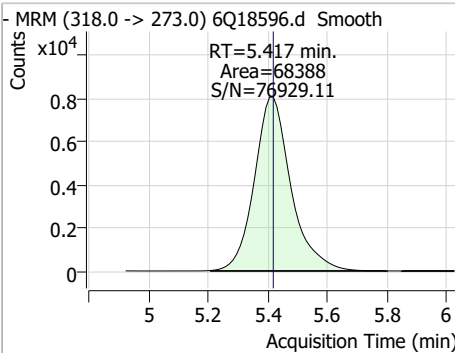
7

Perfluorinated Compounds by LC/MS/MS

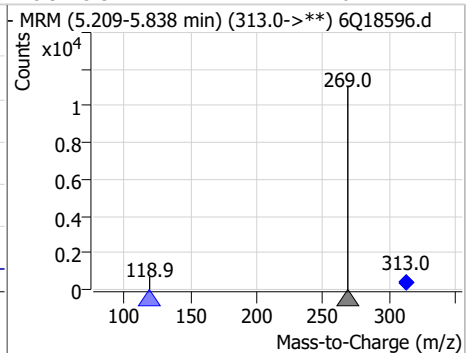
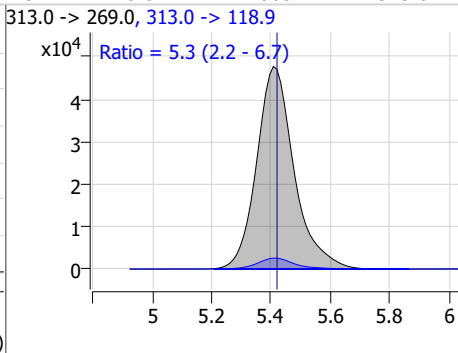
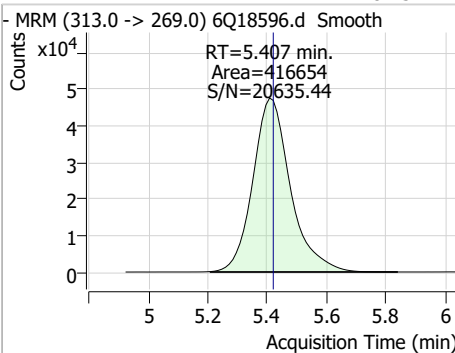
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.91	5.32	-0.01	164900	298.7 -> 98.8	36.5	18.1	54.3



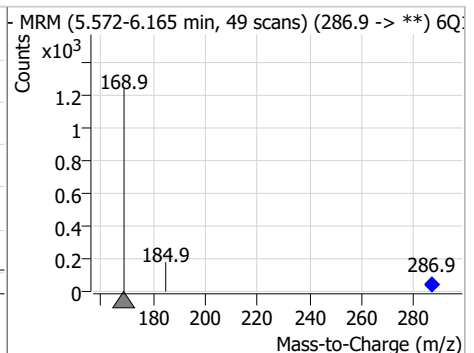
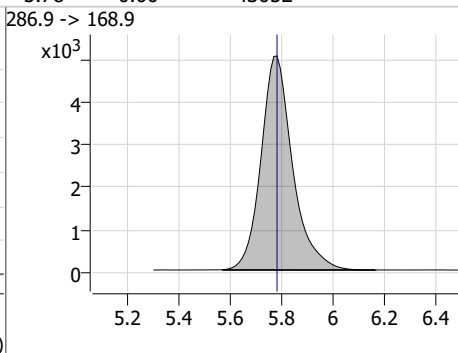
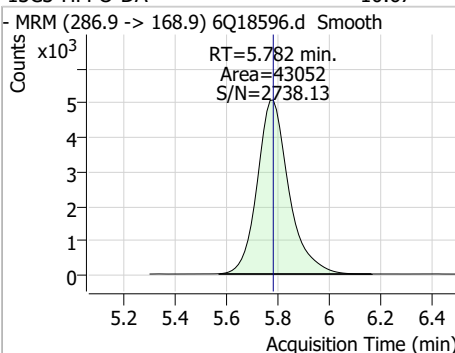
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.63	5.42	0.00	68388	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.15	5.41	-0.01	416654	313.0 -> 118.9	5.3	2.2	6.7

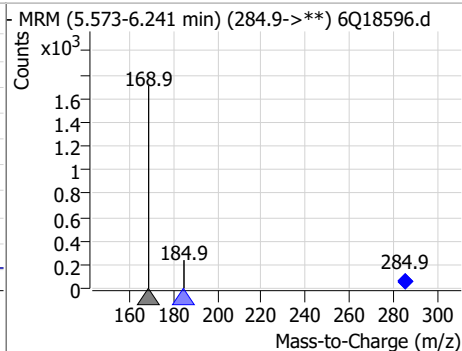
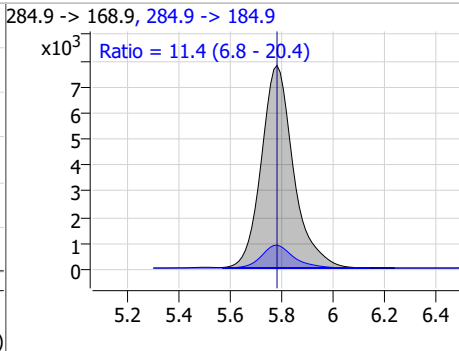
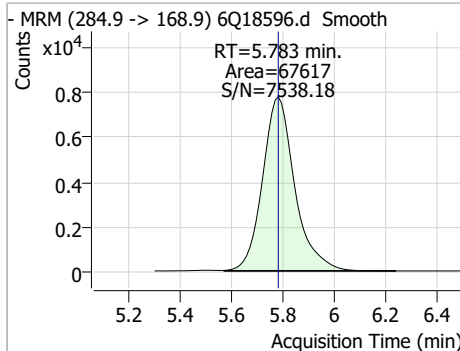


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.67	5.78	0.00	43052	286.9 -> 168.9			

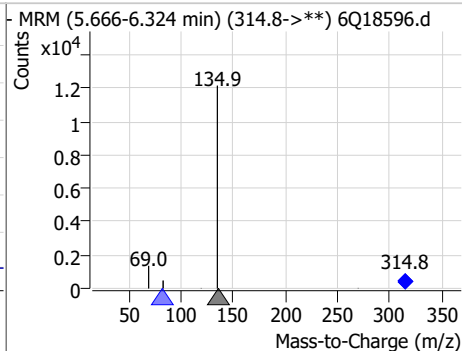
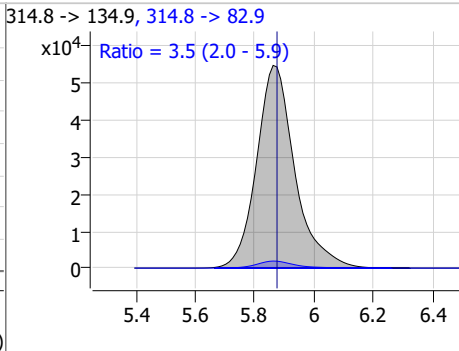
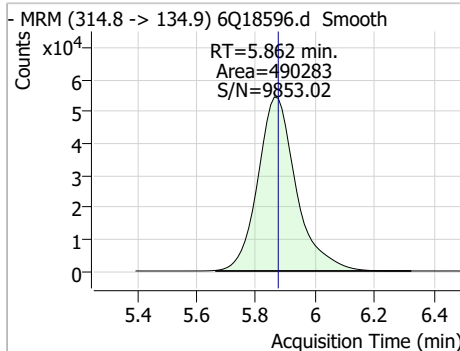


Perfluorinated Compounds by LC/MS/MS

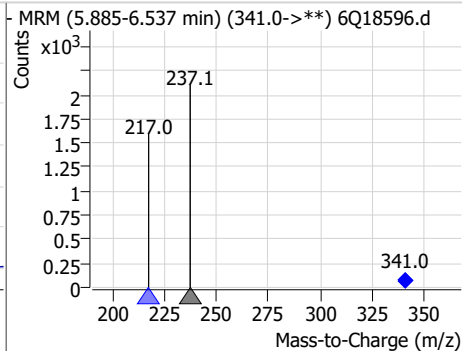
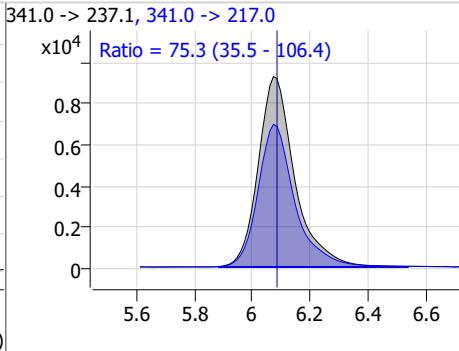
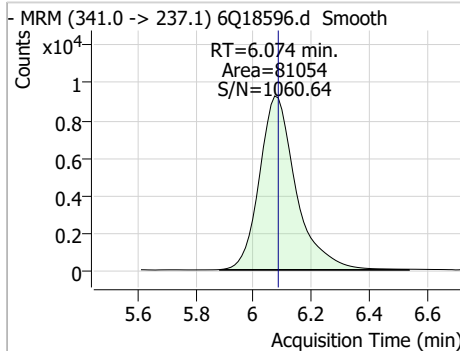
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.53	5.78	0.00	67617	284.9 -> 184.9	11.4	6.8	20.4



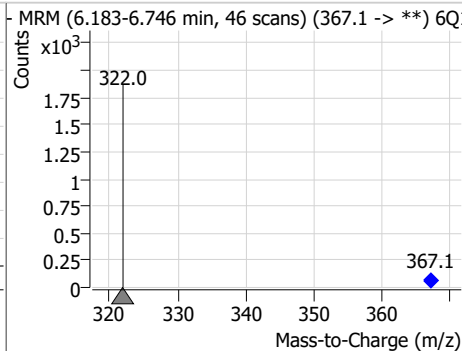
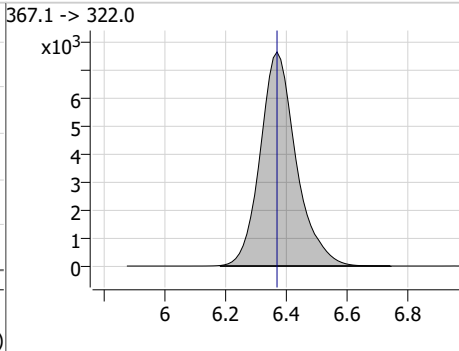
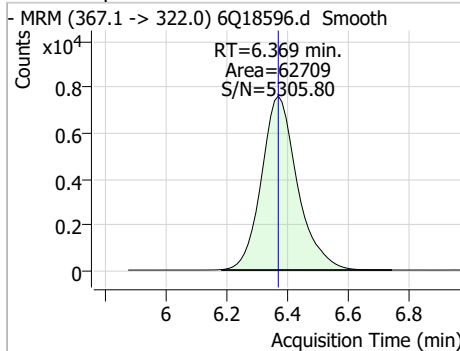
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	16.82	5.86	-0.01	490283	314.8 -> 82.9	3.5	2.0	5.9



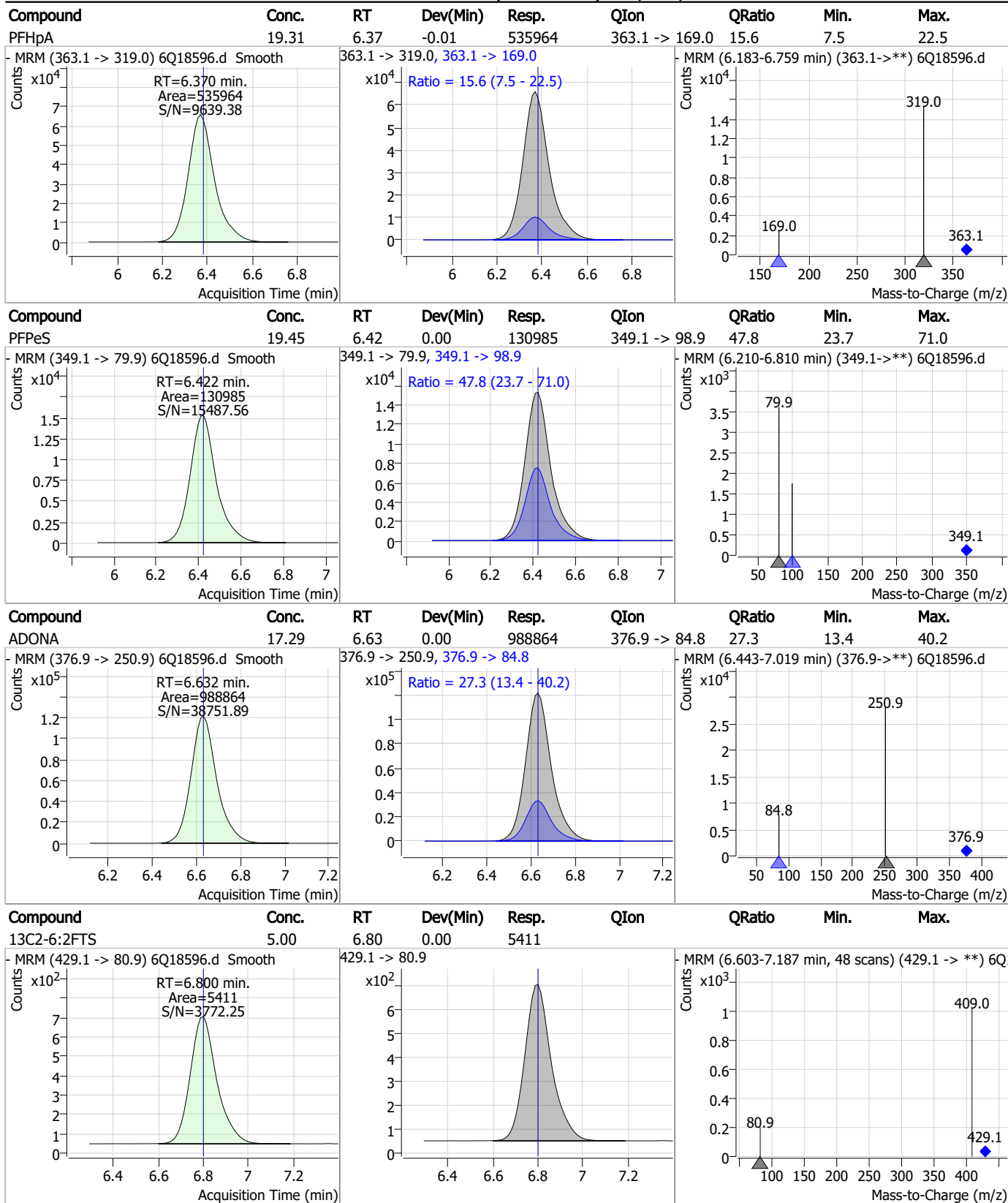
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	19.62	6.07	-0.01	81054	341.0 -> 217.0	75.3	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.61	6.37	0.00	62709	367.1 -> 322.0			



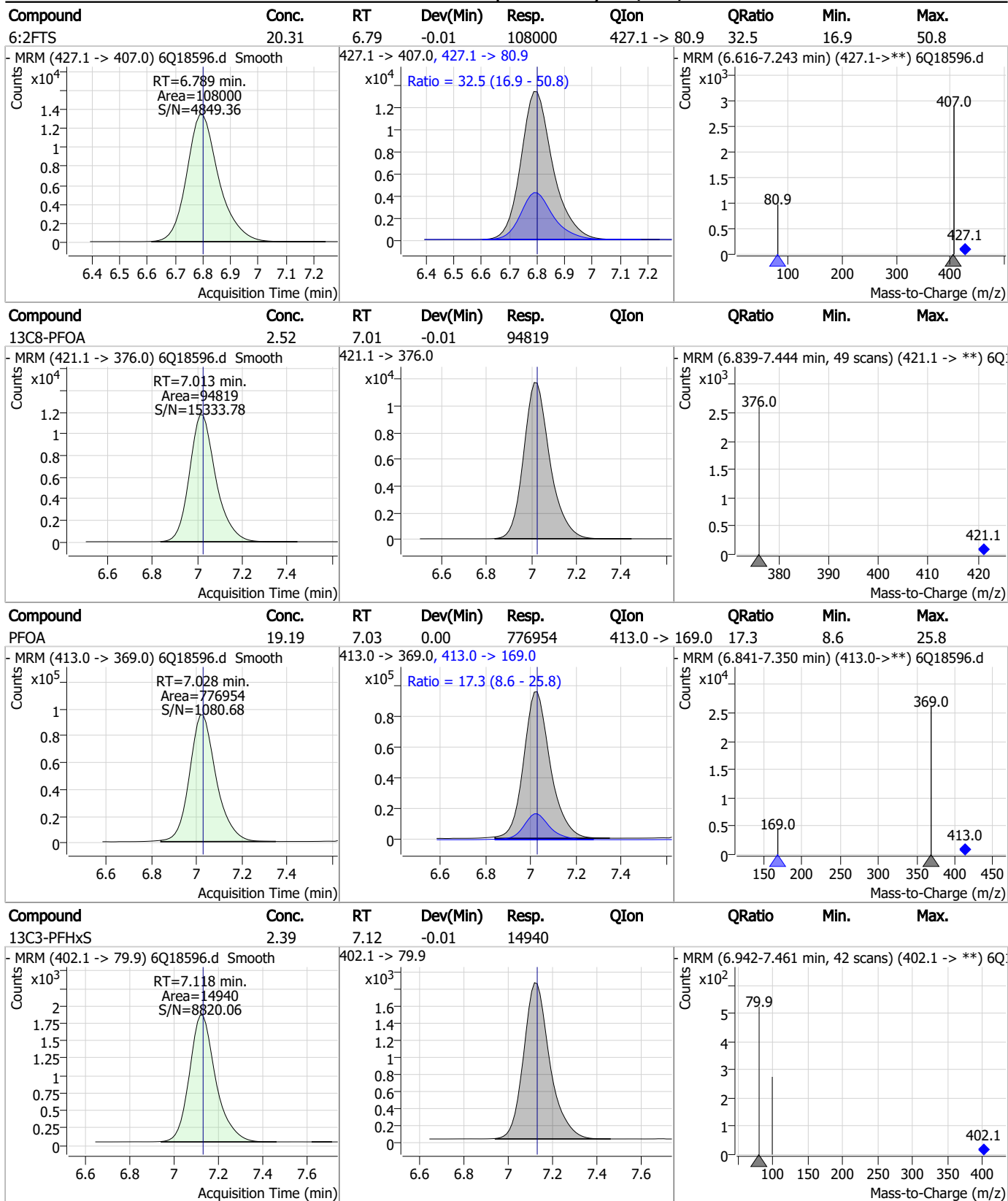
Perfluorinated Compounds by LC/MS/MS



7.7.11
7

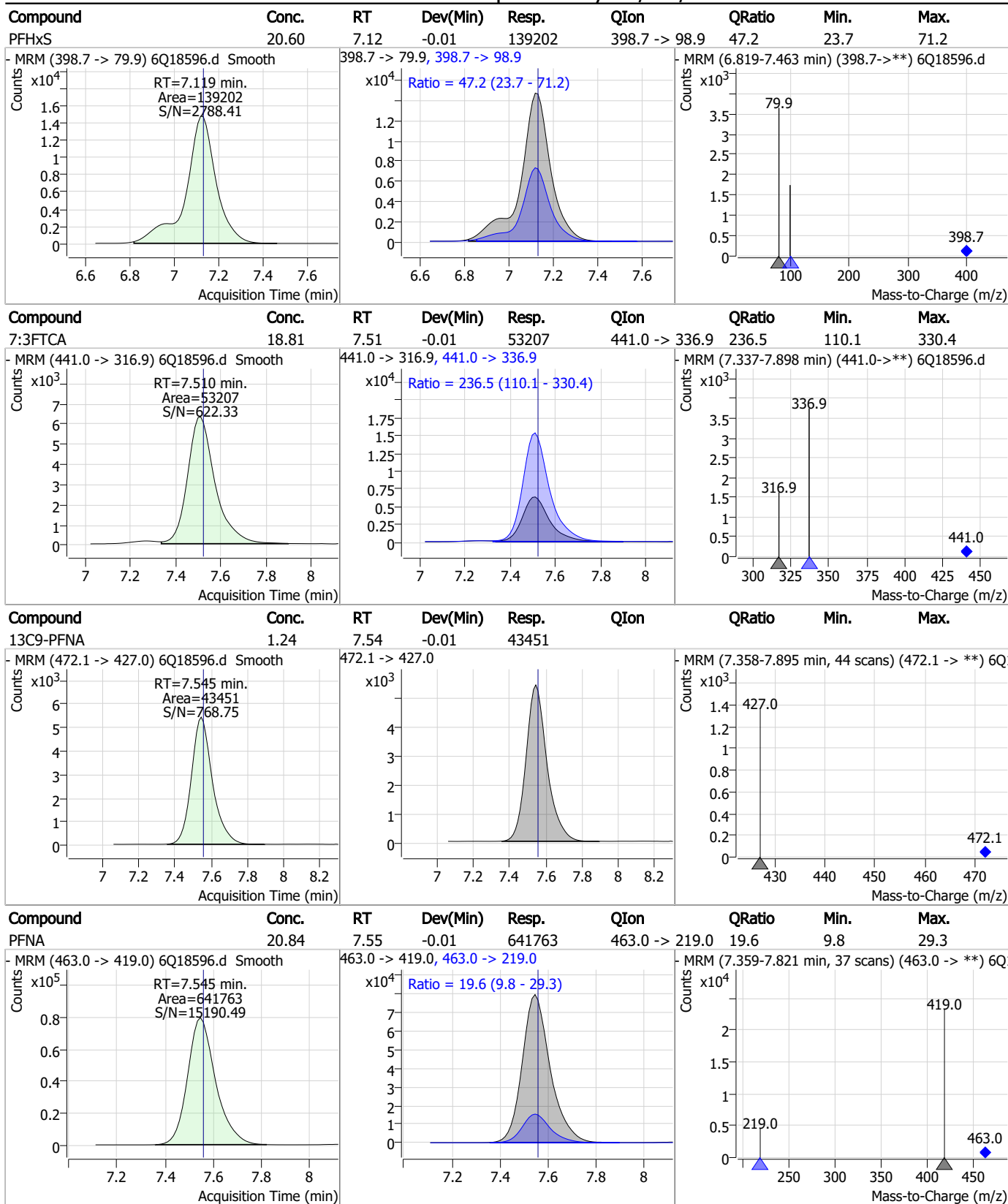


Perfluorinated Compounds by LC/MS/MS



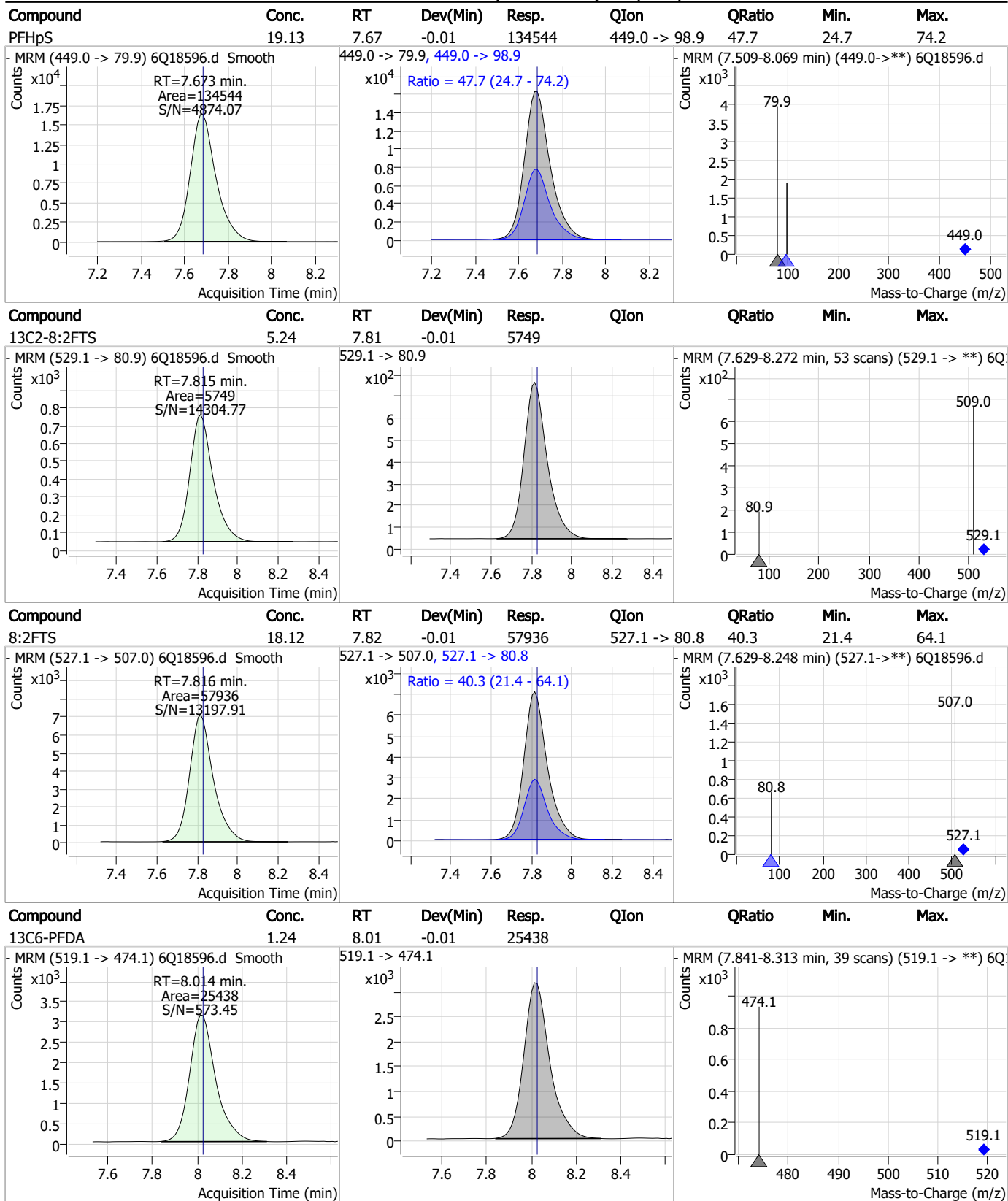
7.7.11

Perfluorinated Compounds by LC/MS/MS



7.7.11

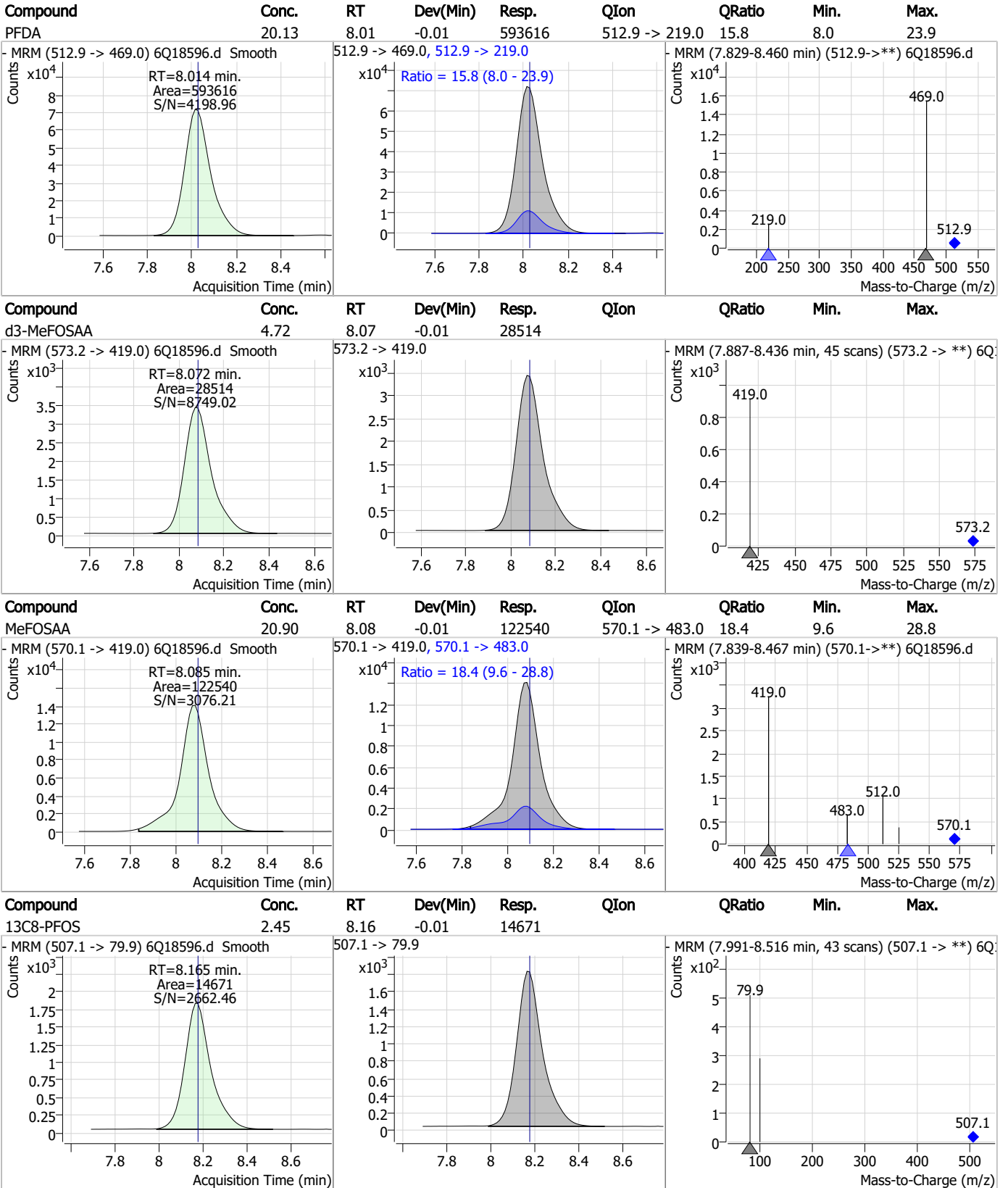
Perfluorinated Compounds by LC/MS/MS



7.7.11
7



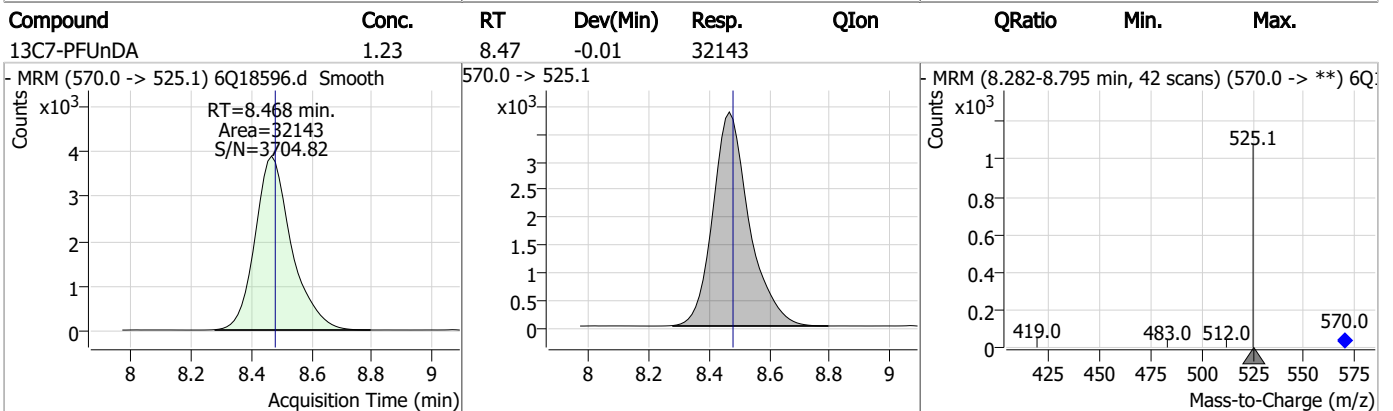
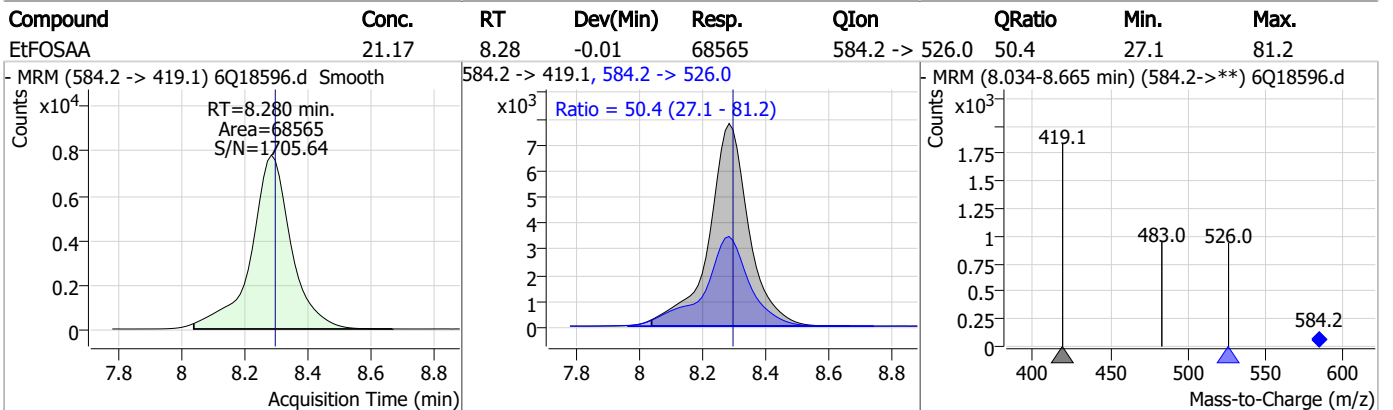
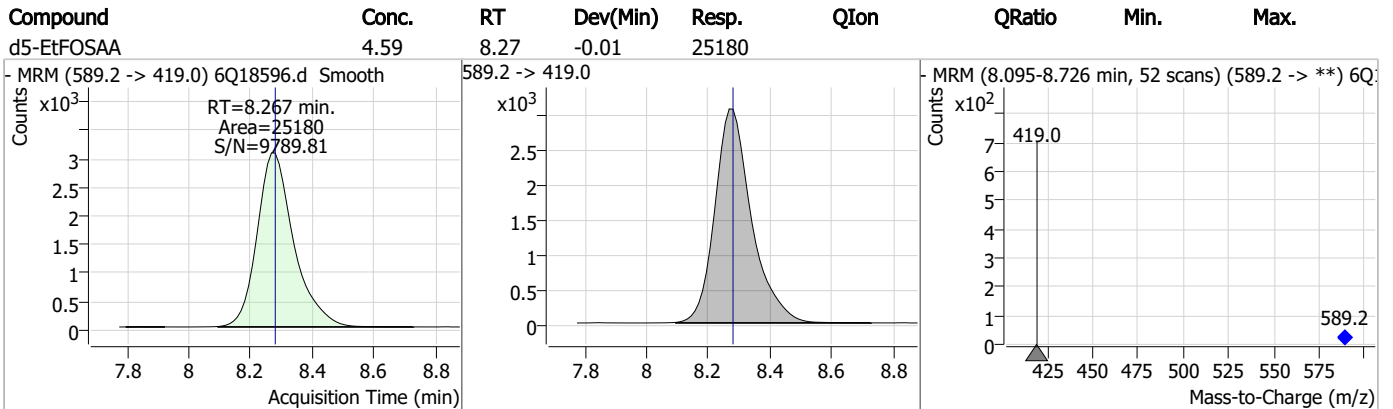
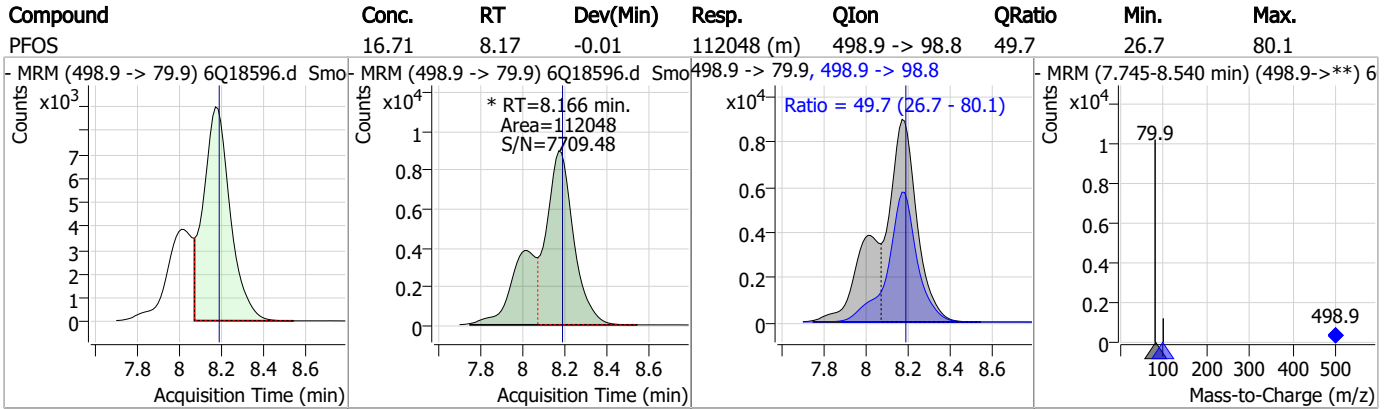
Perfluorinated Compounds by LC/MS/MS



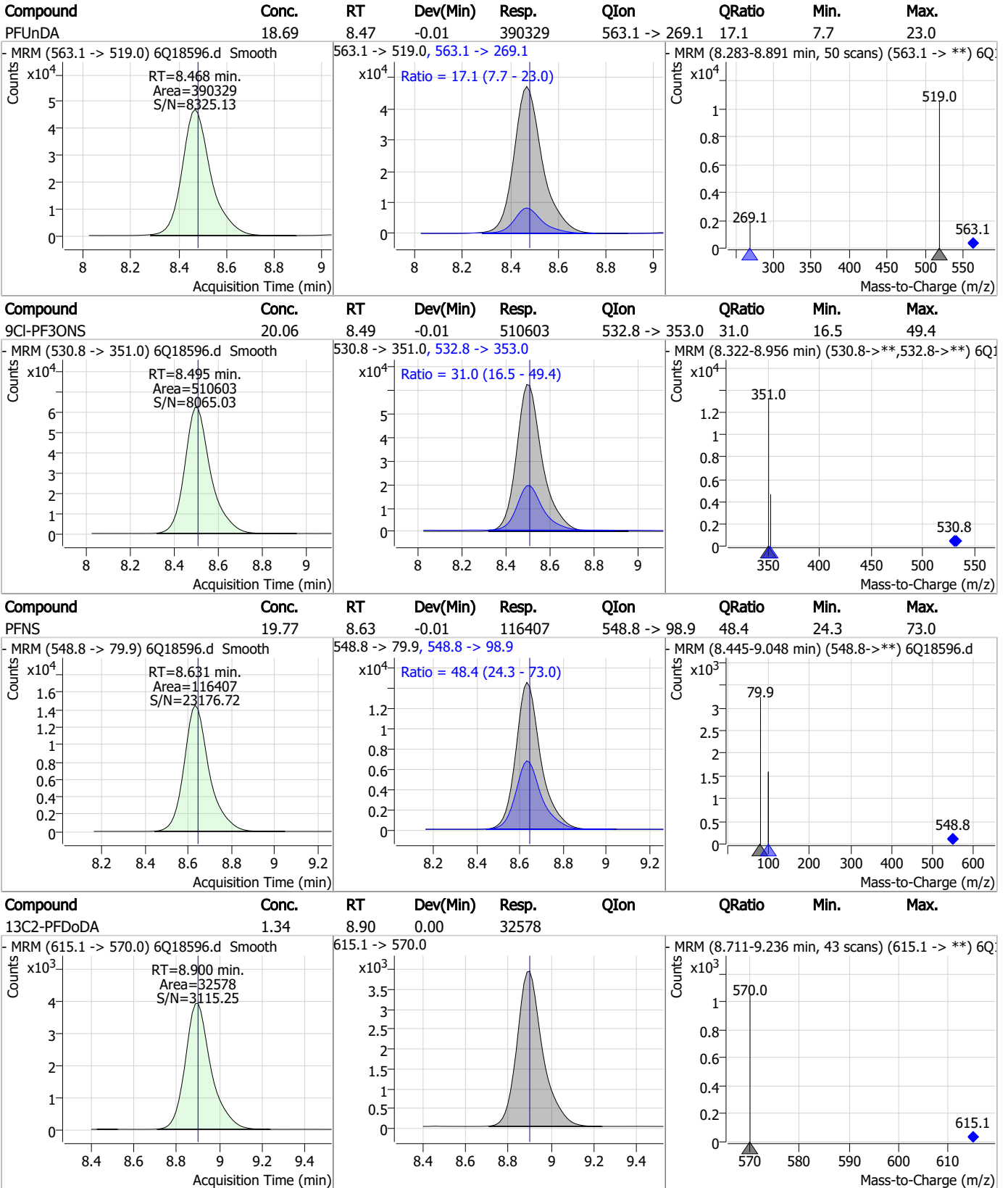
7.7.11

7

Perfluorinated Compounds by LC/MS/MS



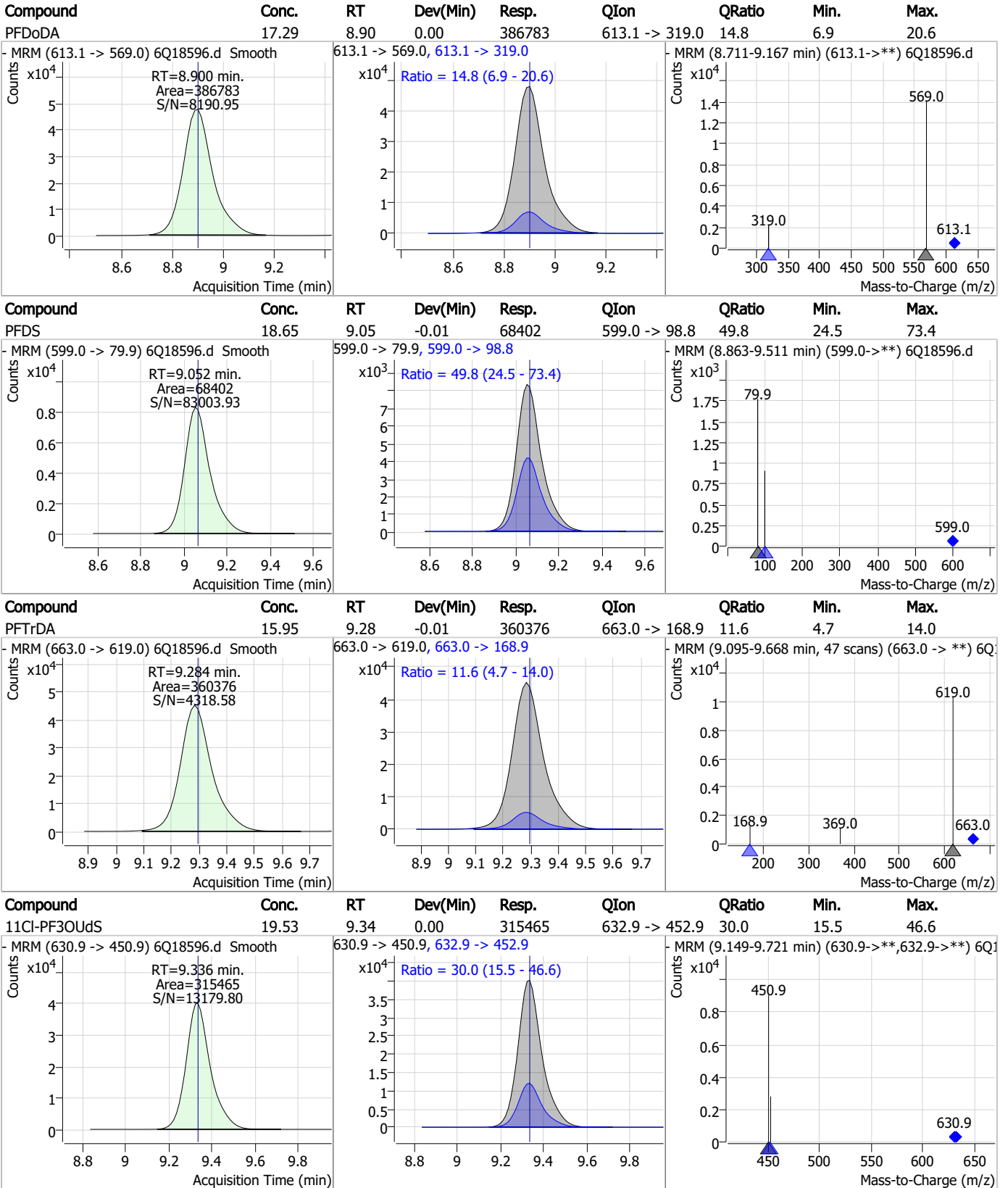
Perfluorinated Compounds by LC/MS/MS



7.7.11

7

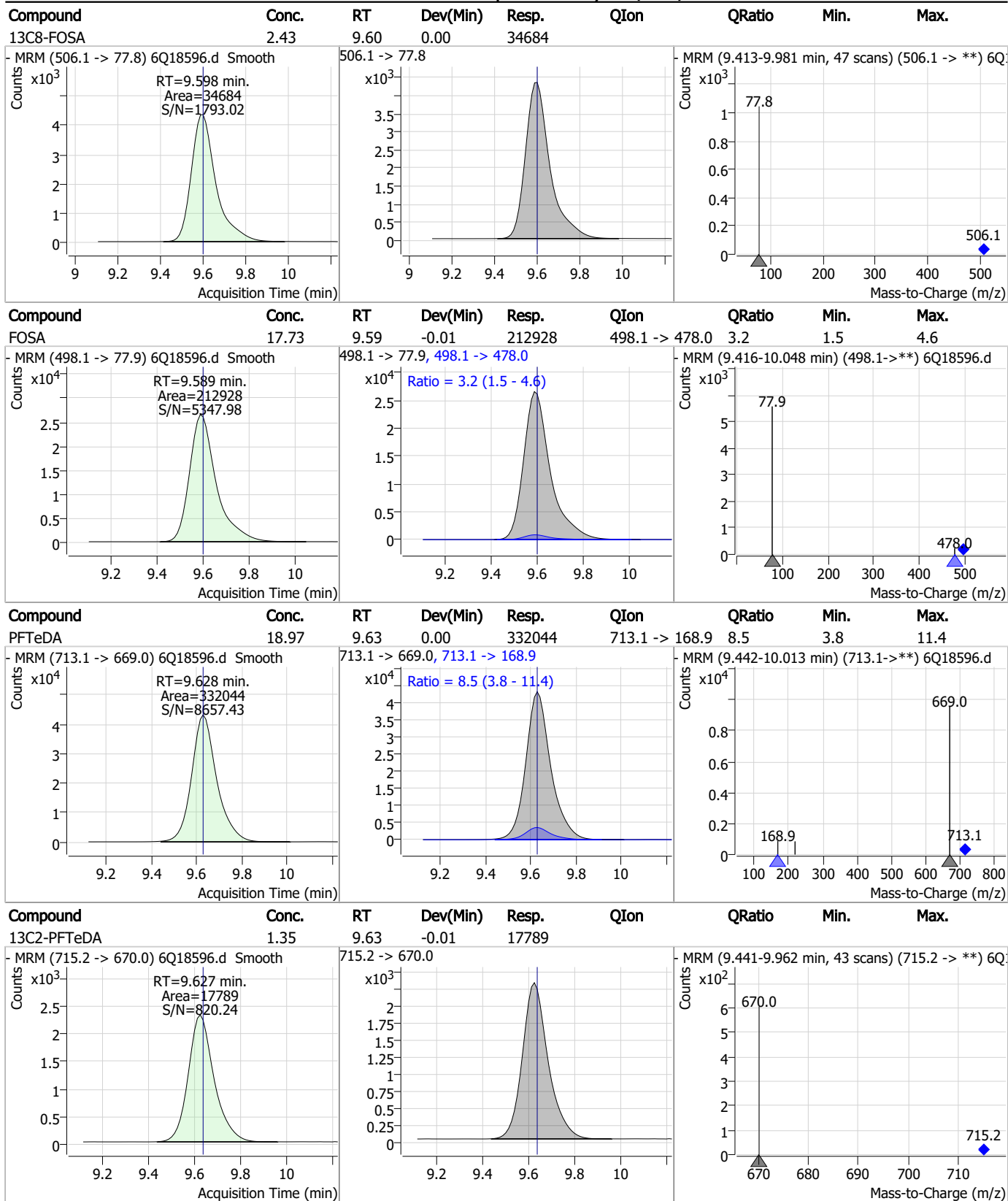
Perfluorinated Compounds by LC/MS/MS



7.7.11
7



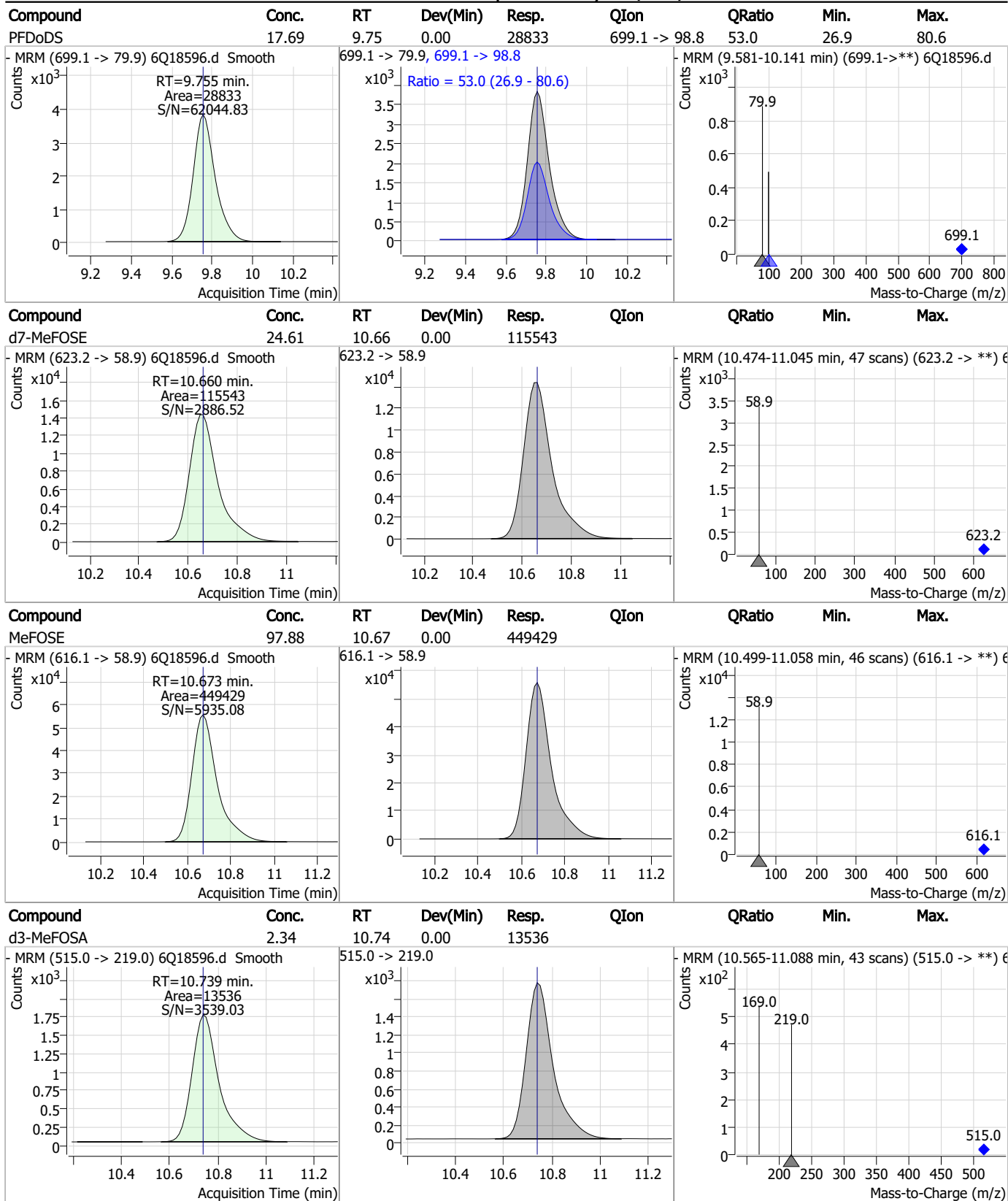
Perfluorinated Compounds by LC/MS/MS



7.7.11
7

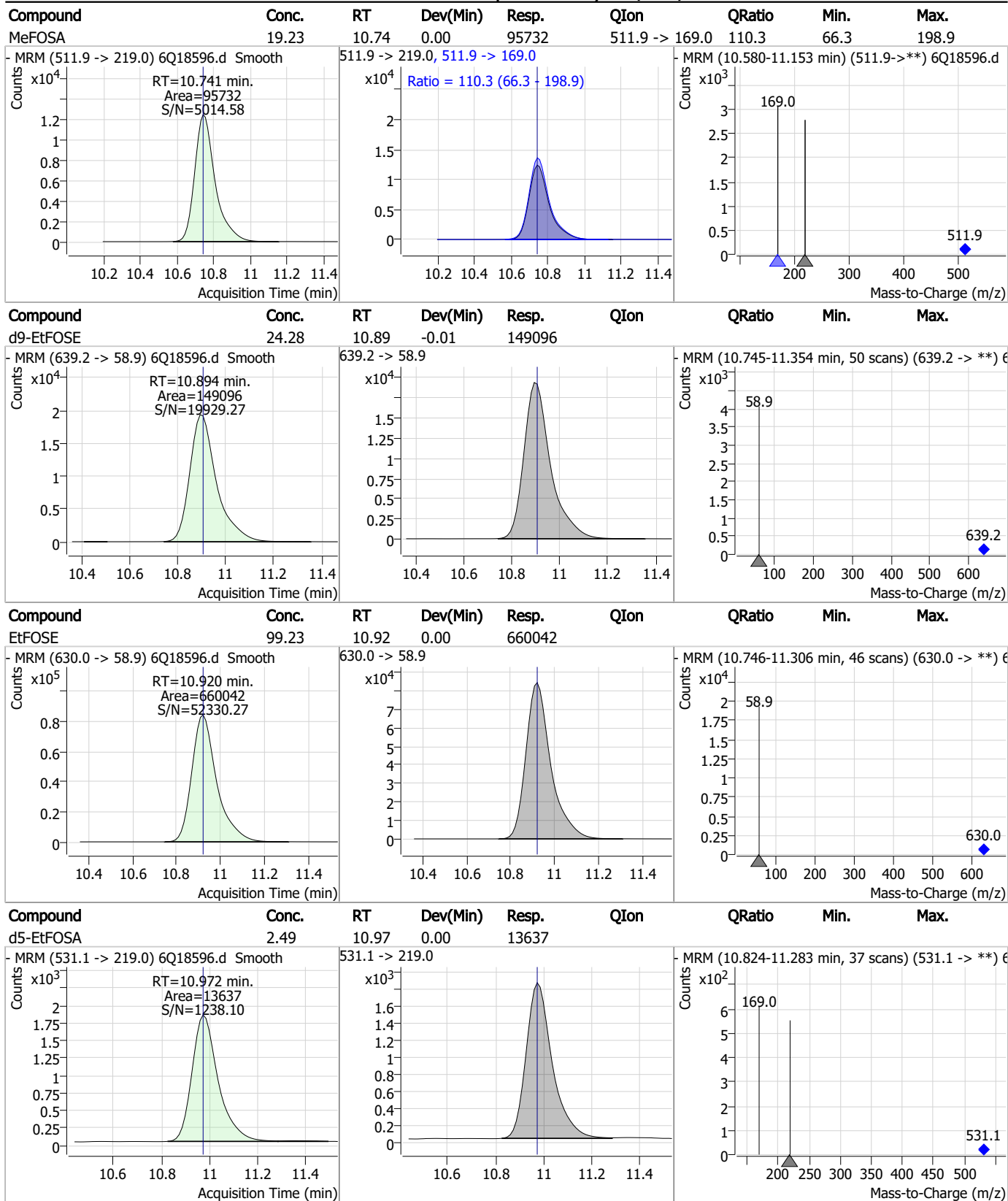


Perfluorinated Compounds by LC/MS/MS



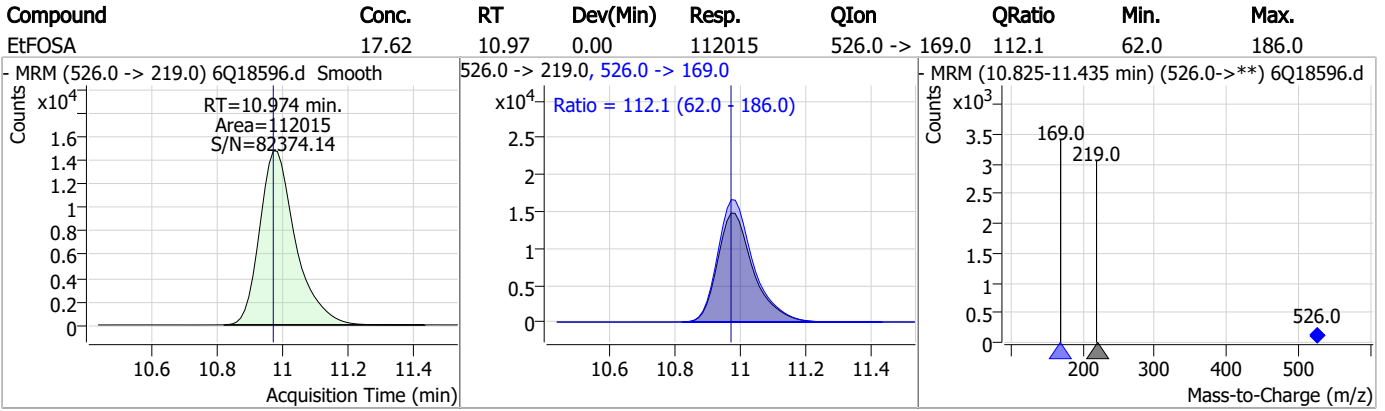
7.7.11
7

Perfluorinated Compounds by LC/MS/MS



7.7.11
7

Perfluorinated Compounds by LC/MS/MS



7.7.11

7

Manual Integration Approval Summary

Sample Number: S6Q279-ICV279 Method: EPA DRAFT 1633
Lab FileID: 6Q18596.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:41 Supervisor approved: 06/01/23 15:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.7.11.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18597.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:55:42 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	186588	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62736	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	68986	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	63323	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	96661	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	42011	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	25785	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	35066	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	30113	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	17321	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35797	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	25233	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15176	2.50 µg/L	0.000
M8-PFOS	8.165	507.1 -> 79.9	14913	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	4010	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5848	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5682	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	30779	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	41544	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26459	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	117042	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	152765	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13878	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13737	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	19062	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	78746	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11240	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	101542	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	37779	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	53844	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	63422	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	4010	5.35 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5848	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5682	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFDoDA	8.887	615.1 -> 570.0	30113	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17321	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C3-PFBS	5.322	302.1 -> 79.9	25233	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.130	402.1 -> 79.9	15176	2.42 µg/L	0.000

7.7.12
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C4-PFBA	2.822	216.8 -> 171.9	186588	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	63323	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFHxA	5.404	318.0 -> 273.0	68986	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	62736	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	8.027	519.1 -> 474.1	25785	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C7-PFUnDA	8.468	570.0 -> 525.1	35066	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-FOSA	9.598	506.1 -> 77.8	35797	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-PFOA	7.026	421.1 -> 376.0	96661	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-PFOS	8.165	507.1 -> 79.9	14913	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C9-PFNA	7.545	472.1 -> 427.0	42011	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.7%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30779	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41544	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	13737	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.3%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26459	4.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
d7-MeFOSE	10.647	623.2 -> 58.9	117042	24.45 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
d9-EtFOSE	10.894	639.2 -> 58.9	152765	24.40 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	13878	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	50559	8.68 µg/L	98
		327.1 -> 80.9	19390		
6:2FTS	6.801	427.1 -> 407.0	52810	9.19 µg/L	97
		427.1 -> 80.9	16999		
8:2FTS	7.816	527.1 -> 507.0	29050	9.19 µg/L	99
		527.1 -> 80.8	12222		
EtFOSAA	8.280	584.2 -> 419.1	8693	2.55 µg/L	95
		584.2 -> 526.0	5034		
FOSA	9.589	498.1 -> 77.9	28963	2.34 µg/L	99
		498.1 -> 478.0	959		
MeFOSAA	8.085	570.1 -> 419.0	14902	2.35 µg/L	96
		570.1 -> 483.0	3109		
PFBA	2.818	212.8 -> 168.9	59285	9.60 µg/L	100
PFBS	5.323	298.7 -> 79.9	18176	2.12 µg/L	100
		298.7 -> 98.8	6576		
PFDA	8.027	512.9 -> 469.0	75675	2.53 µg/L	99
		512.9 -> 219.0	11784		
PFDODA	8.900	613.1 -> 569.0	51834	2.51 µg/L	95
		613.1 -> 319.0	8244		
PFDS	9.052	599.0 -> 79.9	8054	2.16 µg/L	96

7.7.12
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	4150	2.33 µg/L	96
		363.1 -> 319.0	65164		
PFHpS	7.685	363.1 -> 169.0	10978	2.24 µg/L	97
		449.0 -> 79.9	16037		
PFHxA	5.407	449.0 -> 98.9	8276	2.36 µg/L	97
		313.0 -> 269.0	54674		
PFHxS	7.119	313.0 -> 118.9	2997	2.23 µg/L	98
		398.7 -> 79.9	15286		
PFNA	7.545	398.7 -> 98.9	7446	2.60 µg/L	99
		463.0 -> 419.0	77276		
PFNS	8.631	463.0 -> 219.0	14652	2.18 µg/L	89
		548.8 -> 79.9	13031		
PFOA	7.028	548.8 -> 98.9	7286	2.42 µg/L	98
		413.0 -> 369.0	99796		
PFOS	8.166	413.0 -> 169.0	17874	2.15 µg/L	98
		498.9 -> 79.9	14645		
PFPeA	4.212	498.9 -> 98.8	7637	4.80 µg/L	100
		263.0 -> 219.0	72367		
PFPeS	6.422	349.1 -> 79.9	16317	2.39 µg/L	92
		349.1 -> 98.9	6890		
PFTeDA	9.628	713.1 -> 669.0	40007	2.35 µg/L	96
		713.1 -> 168.9	3536		
PFTrDA	9.284	663.0 -> 619.0	52821	2.53 µg/L	96
		663.0 -> 168.9	5615		
PFUnDA	8.468	563.1 -> 519.0	52534	2.31 µg/L	97
		563.1 -> 269.1	8663		
11Cl-PF3OUdS	9.323	630.9 -> 450.9	72410	4.65 µg/L	98
		632.9 -> 452.9	21524		
9Cl-PF3ONS	8.495	530.8 -> 351.0	117295	4.78 µg/L	92
		532.8 -> 353.0	32994		
ADONA	6.632	376.9 -> 250.9	255010	4.62 µg/L	99
		376.9 -> 84.8	66734		
HFPO-DA	5.783	284.9 -> 168.9	16700	4.74 µg/L	96
		284.9 -> 184.9	1992		
3:3FTCA	3.671	241.0 -> 177.0	11373	11.79 µg/L	97
		241.0 -> 117.0	1514		
5:3FTCA	6.074	341.0 -> 237.1	246759	59.22 µg/L	96
		341.0 -> 217.0	182862		
7:3FTCA	7.510	441.0 -> 316.9	173509	60.80 µg/L	93
		441.0 -> 336.9	362606		
EtFOSA	10.974	526.0 -> 219.0	29663	4.59 µg/L	92
		526.0 -> 169.0	39606		
EtFOSE	10.907	630.0 -> 58.9	81929	12.02 µg/L	100
		511.9 -> 219.0	25504		
MeFOSA	10.741	511.9 -> 169.0	34359	5.05 µg/L	98
		616.1 -> 58.9	55465		
MeFOSE	10.673	699.1 -> 79.9	3876	11.92 µg/L	100
		699.1 -> 98.8	1967		
PFDoDS	9.755	295.0 -> 201.0	13110	2.34 µg/L	96
		295.0 -> 84.9	3299		
NFDHA	5.288	279.0 -> 85.1	48531	4.65 µg/L	96
		229.0 -> 84.9	38221		
PFMBA	4.626	314.8 -> 134.9	124838	4.79 µg/L	100
		314.8 -> 82.9	4466		
PFMPA	3.351			4.25 µg/L	99
PFEESA	5.862				

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



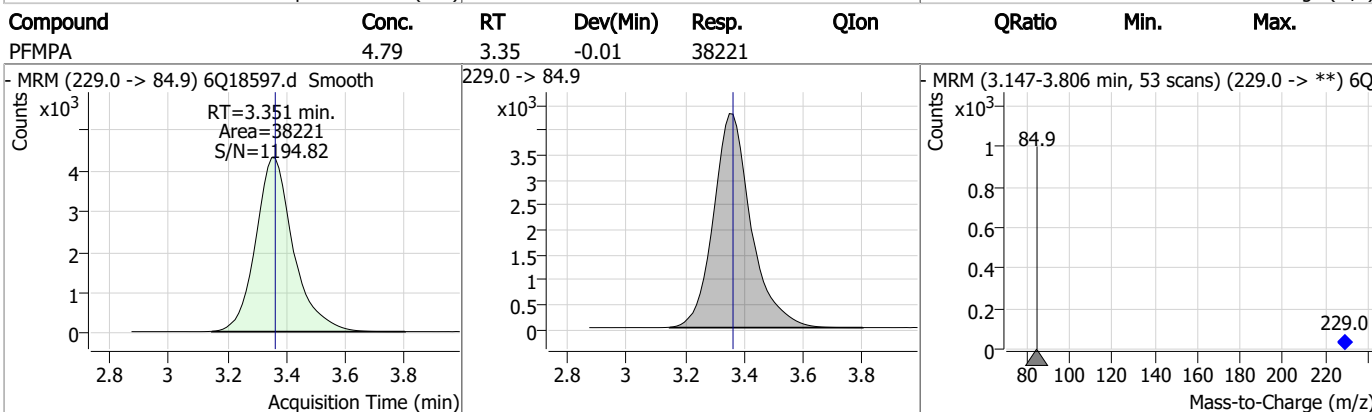
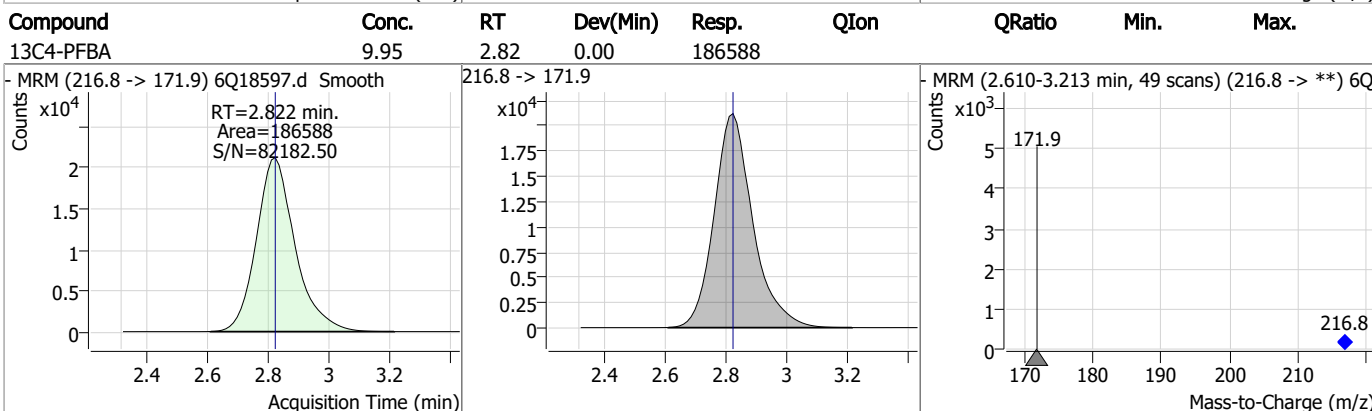
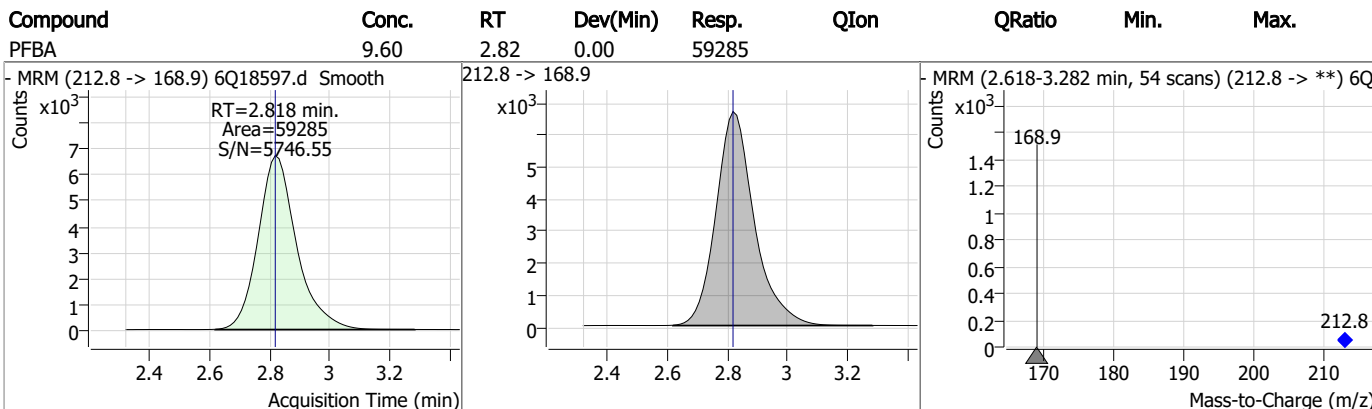
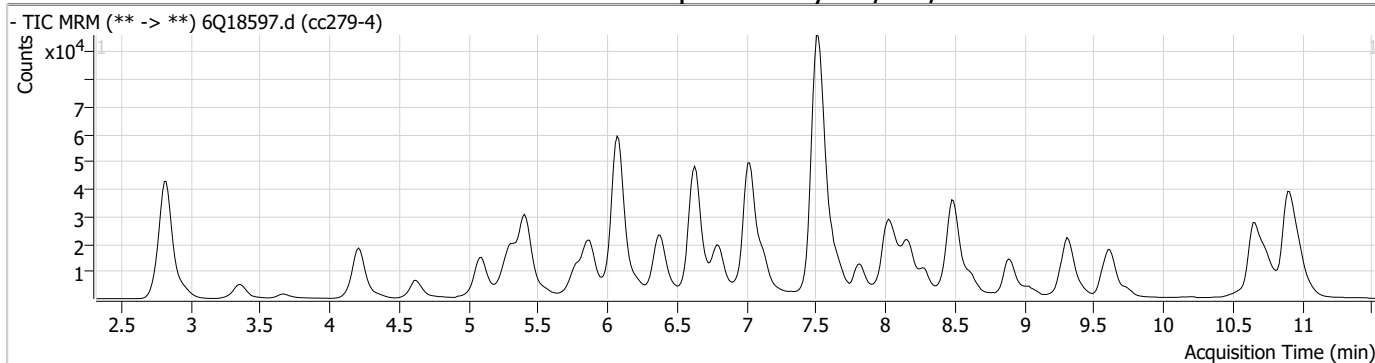
Perfluorinated Compounds by LC/MS/MS

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

7.7.12

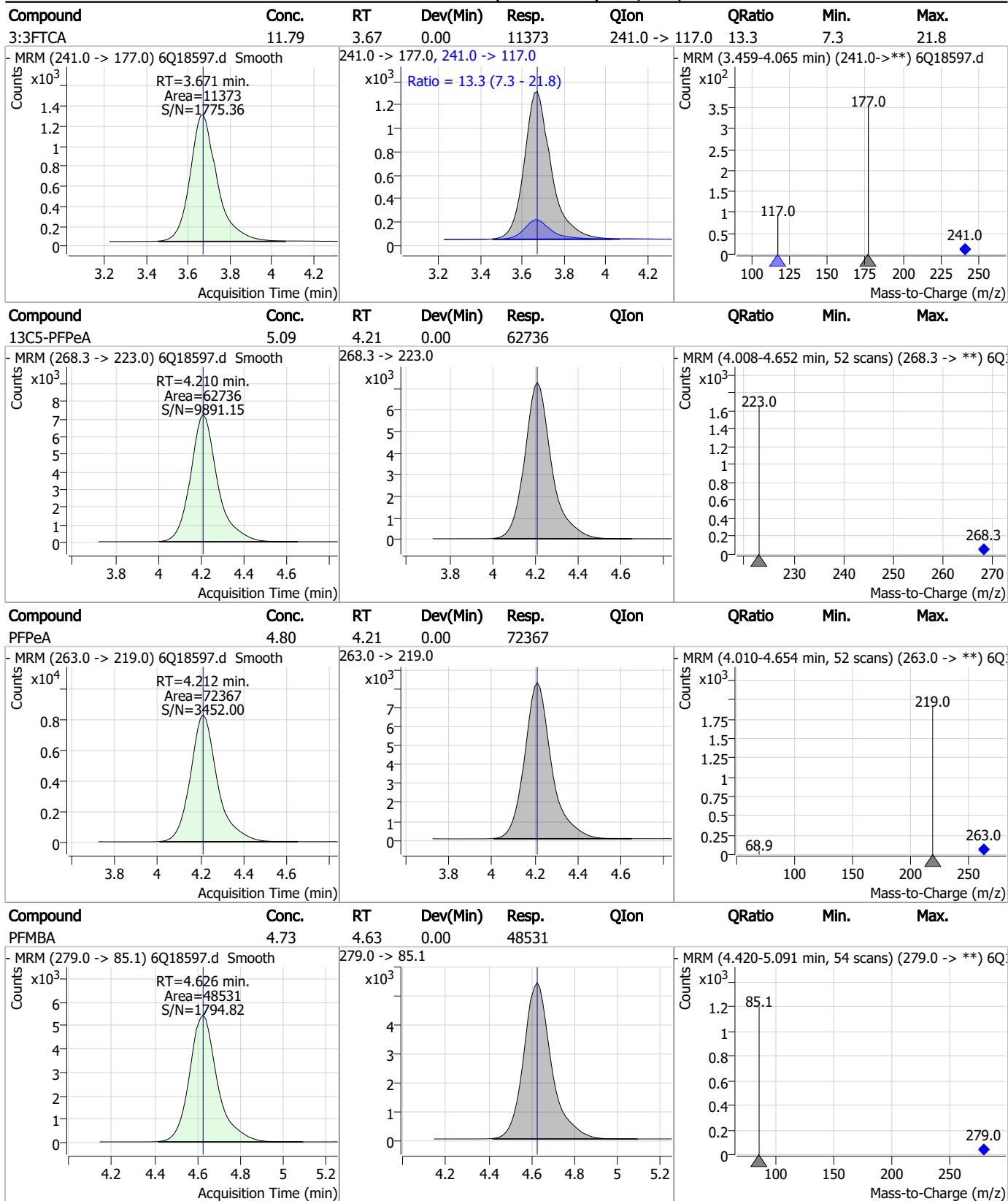
7

Perfluorinated Compounds by LC/MS/MS



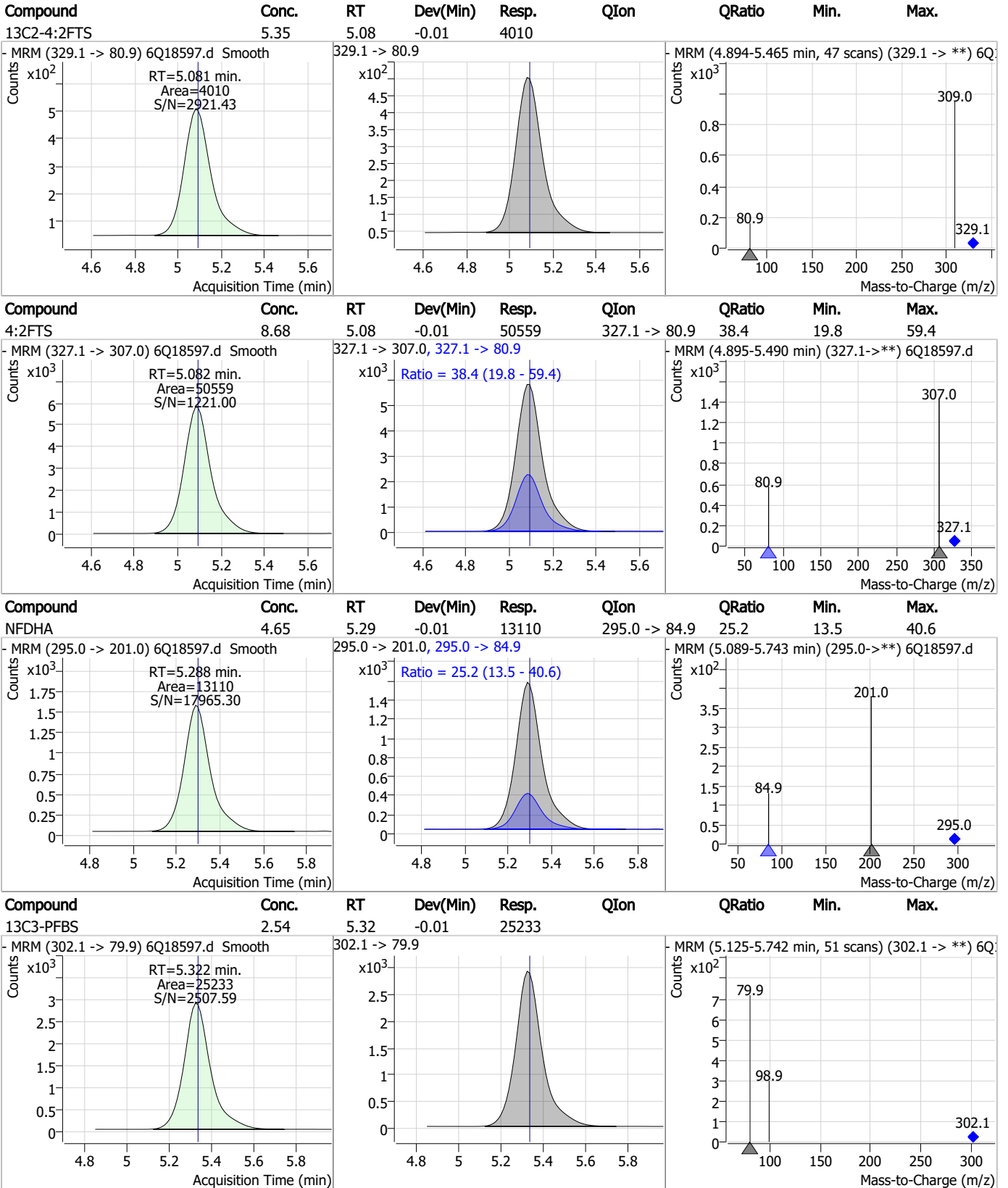
7.7.12
7

Perfluorinated Compounds by LC/MS/MS



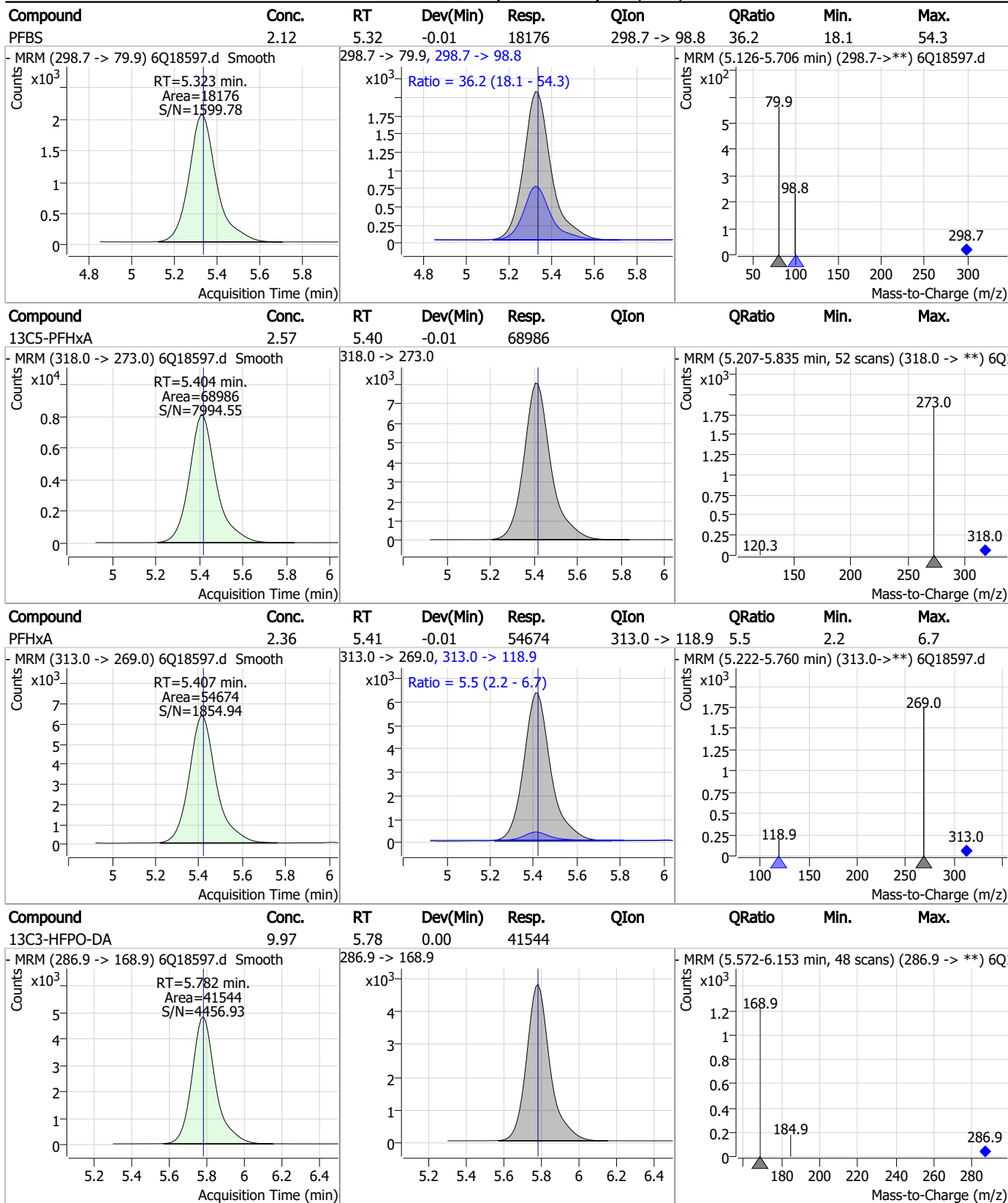
7.7.12

Perfluorinated Compounds by LC/MS/MS



7.7.12
7

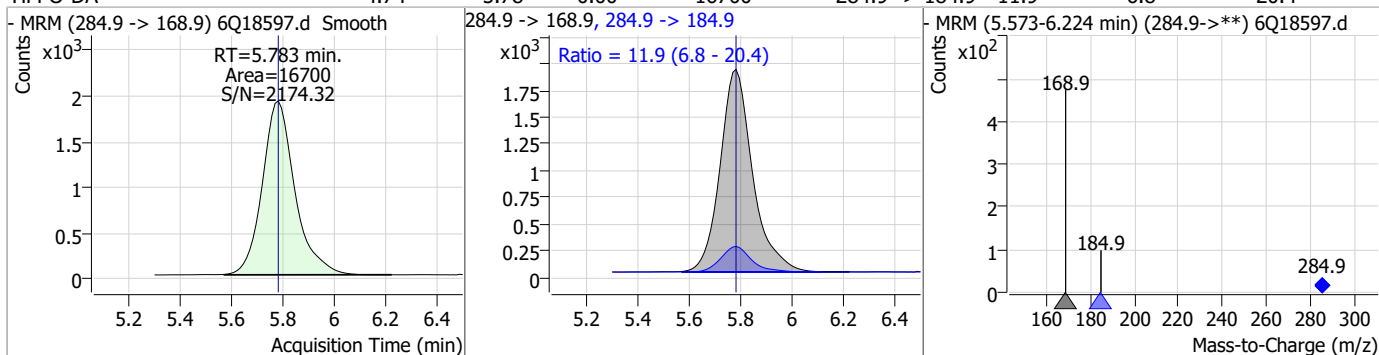
Perfluorinated Compounds by LC/MS/MS



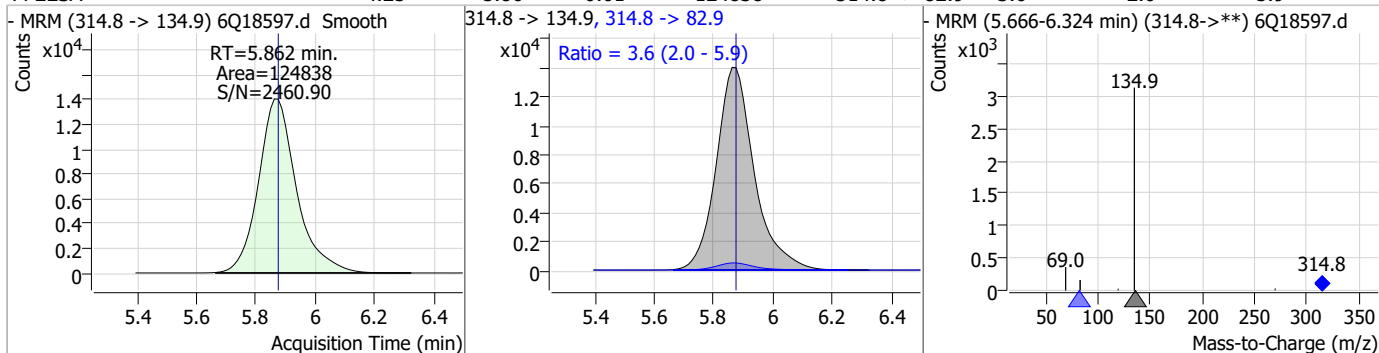
7.7.12

Perfluorinated Compounds by LC/MS/MS

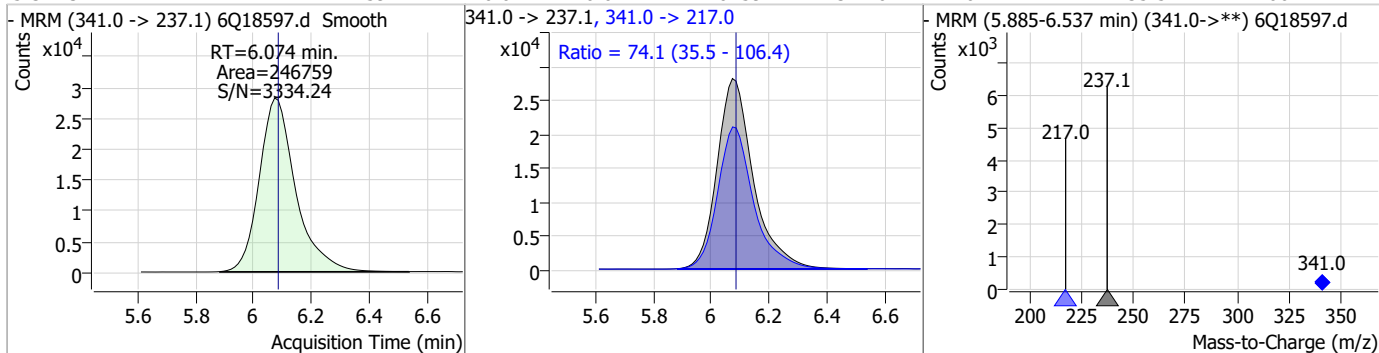
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.74	5.78	0.00	16700	284.9 -> 184.9	11.9	6.8	20.4



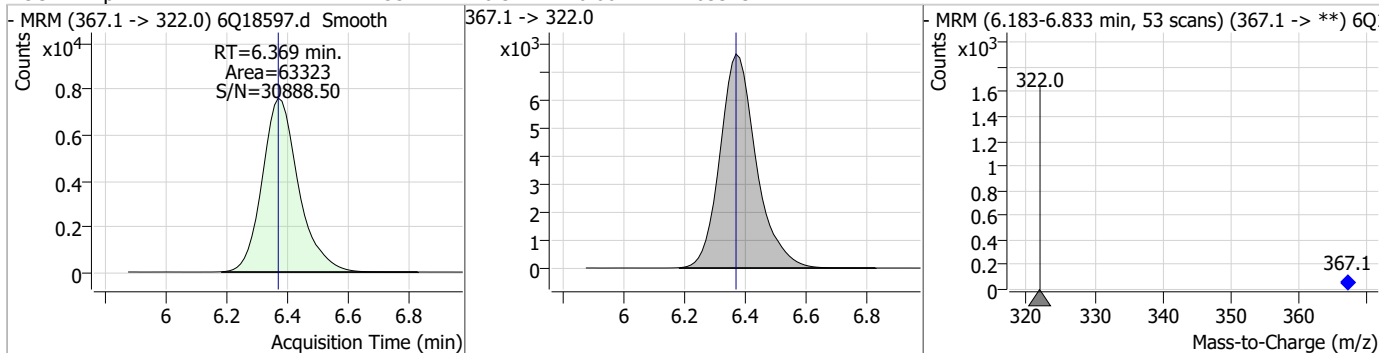
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.25	5.86	-0.01	124838	314.8 -> 82.9	3.6	2.0	5.9



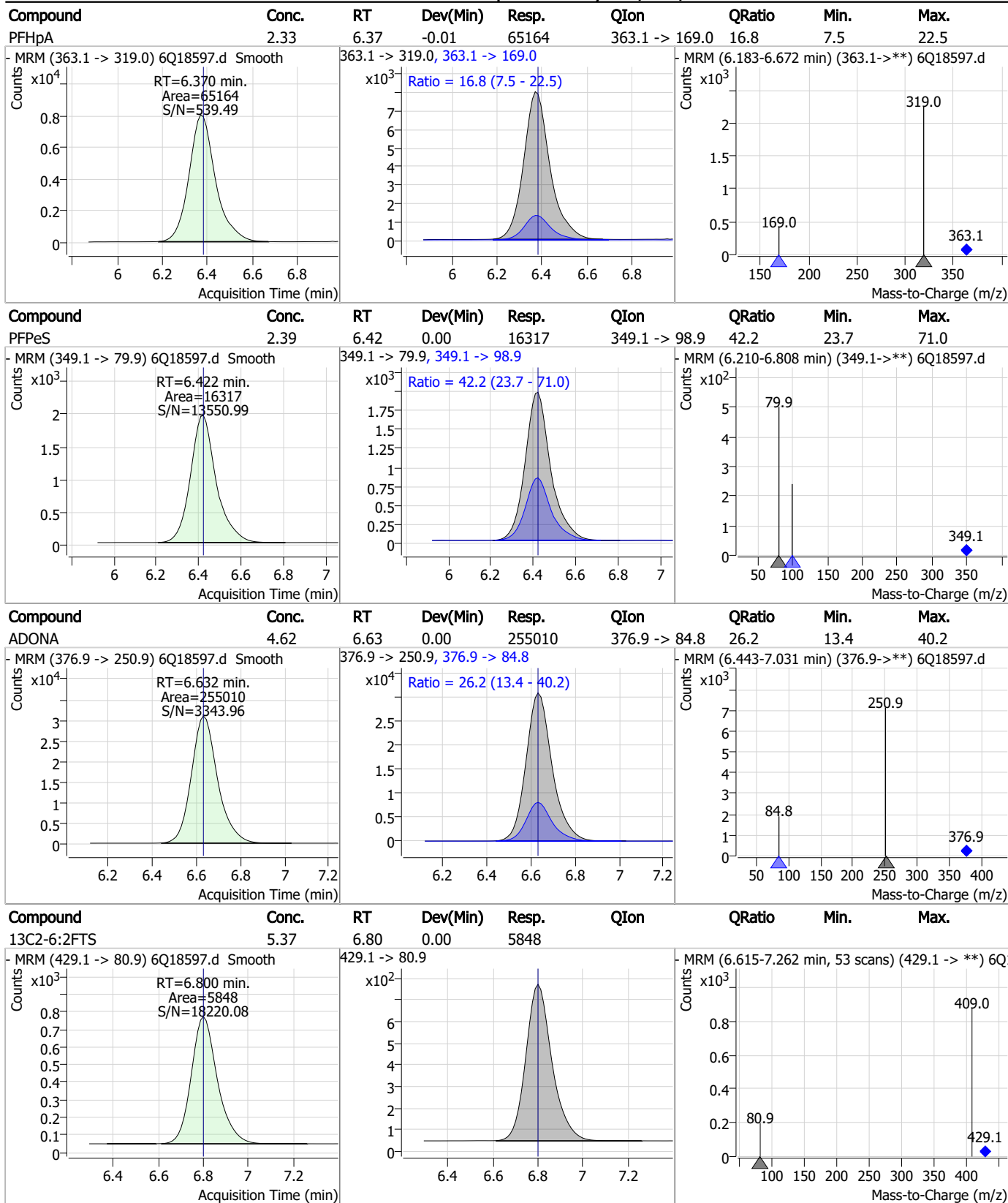
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.22	6.07	-0.01	246759	341.0 -> 217.0	74.1	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.55	6.37	0.00	63323	367.1 -> 322.0			

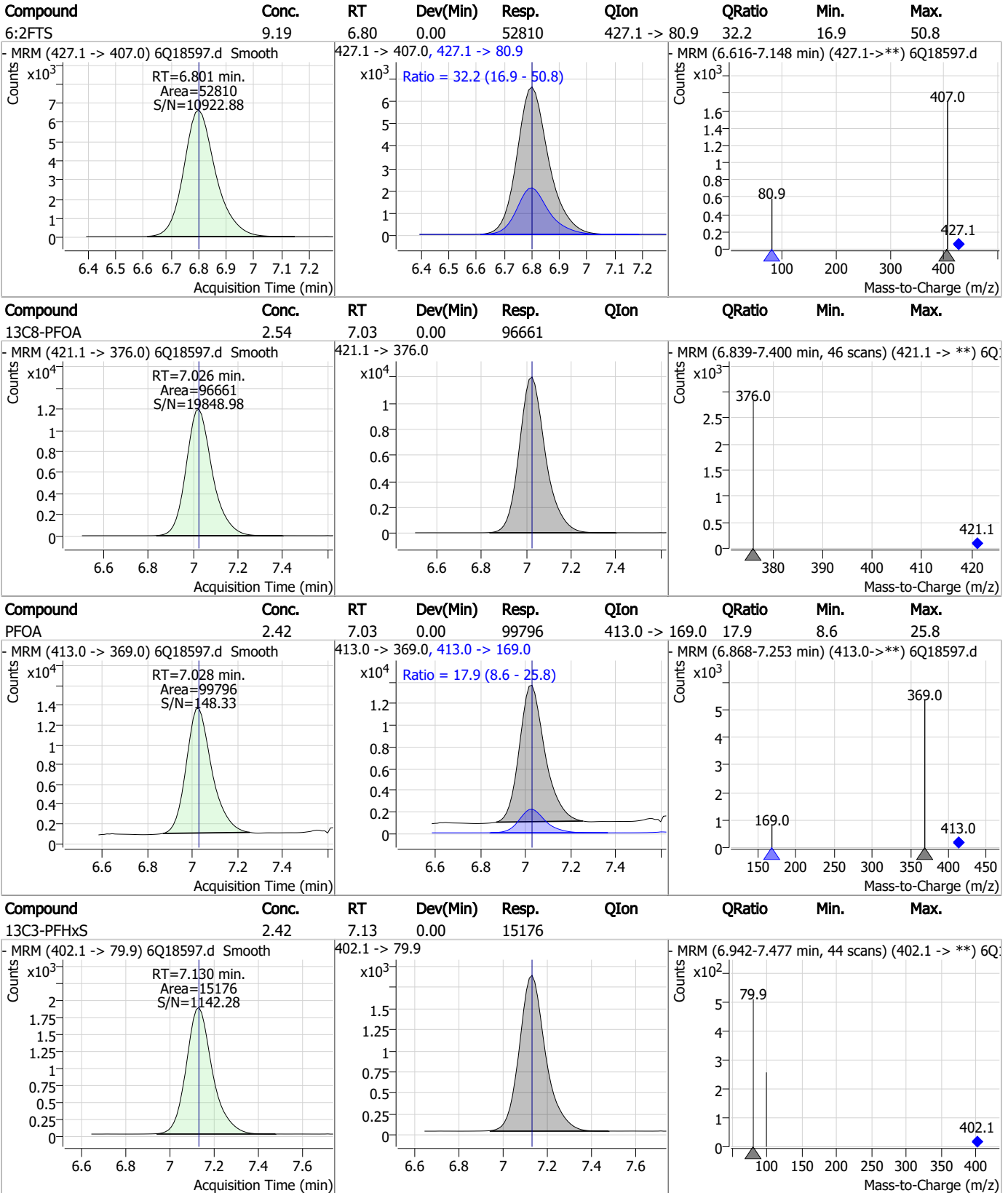


Perfluorinated Compounds by LC/MS/MS



7.7.12 7

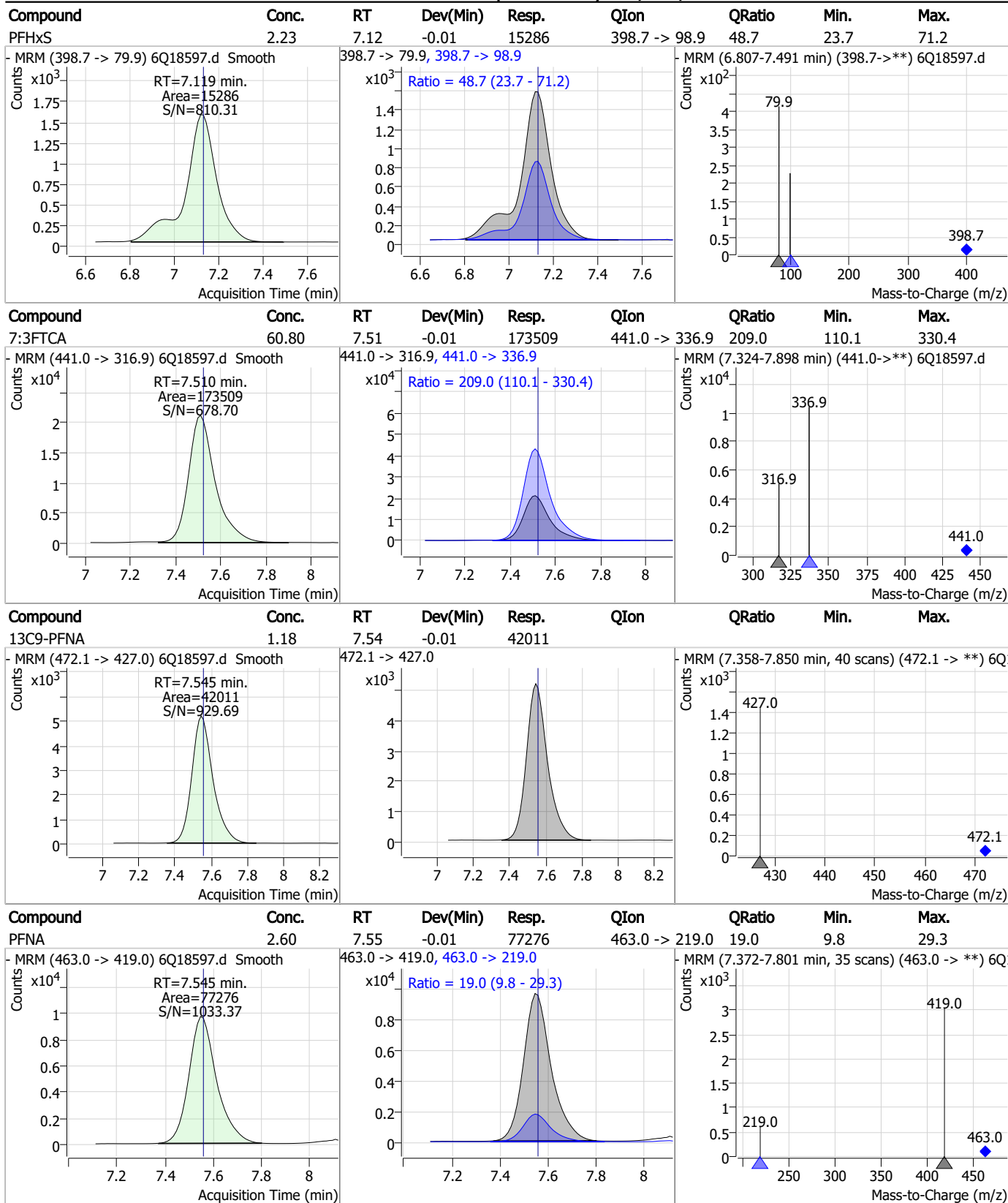
Perfluorinated Compounds by LC/MS/MS



7.7.12
7

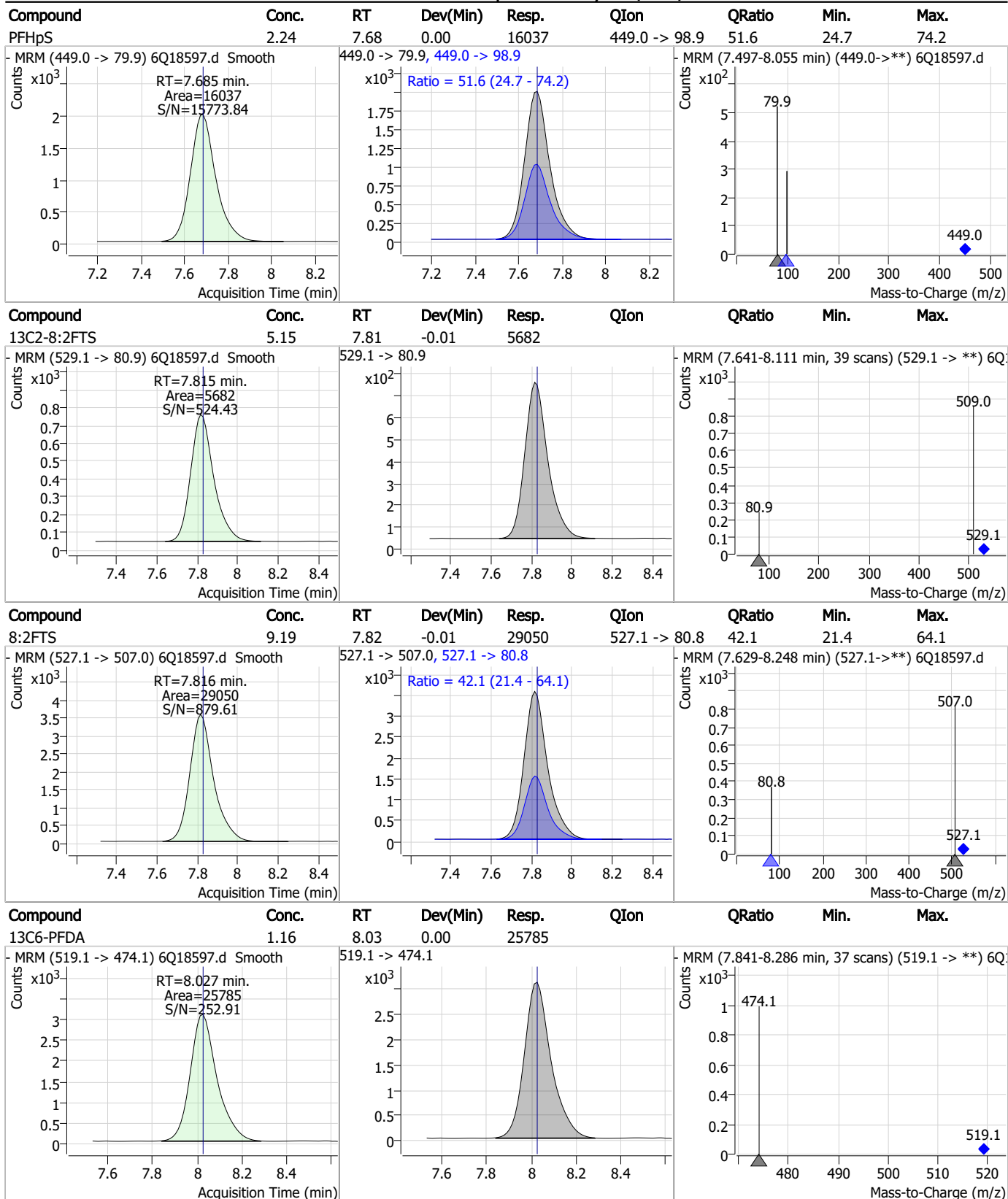


Perfluorinated Compounds by LC/MS/MS



7.7.12
7

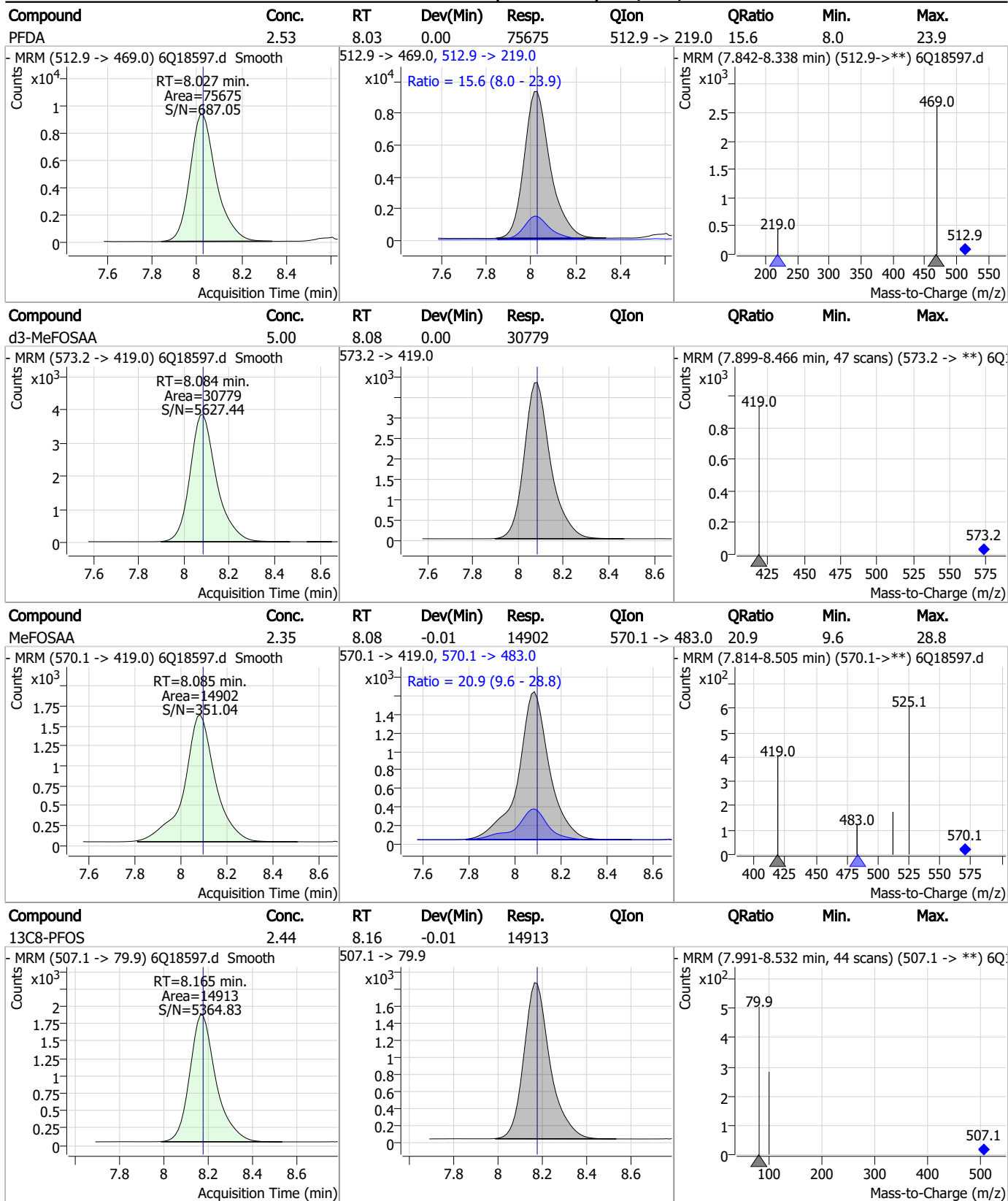
Perfluorinated Compounds by LC/MS/MS



7.7.12
7



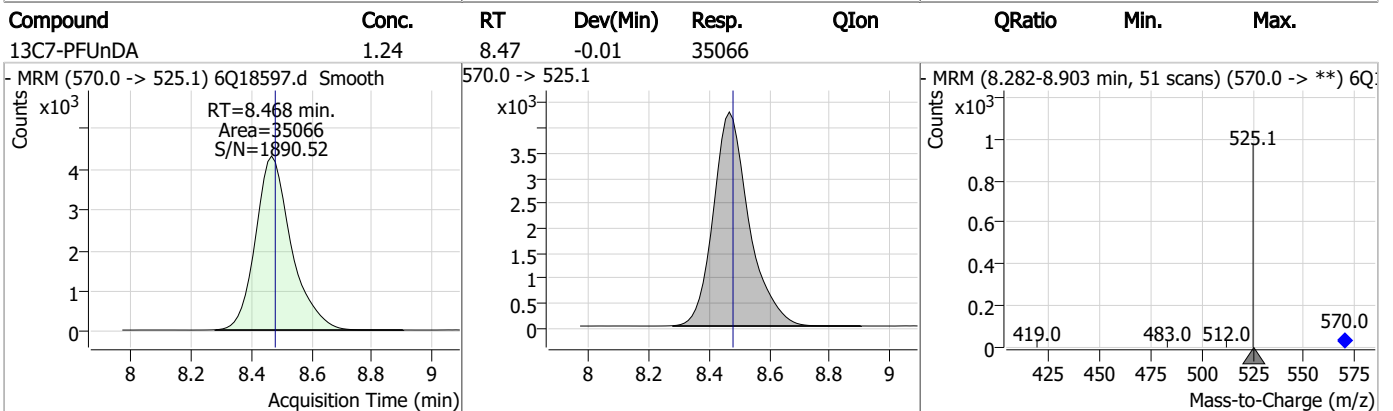
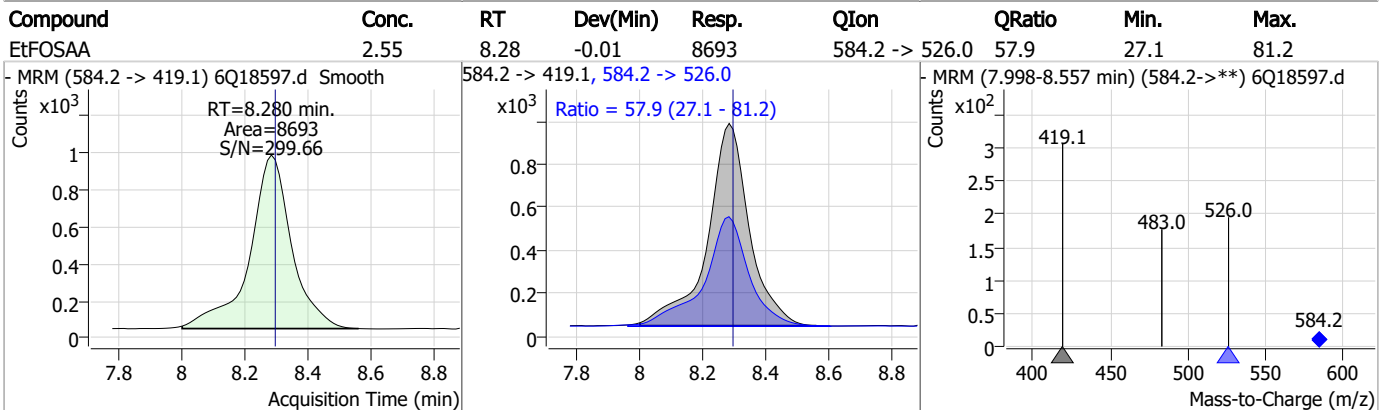
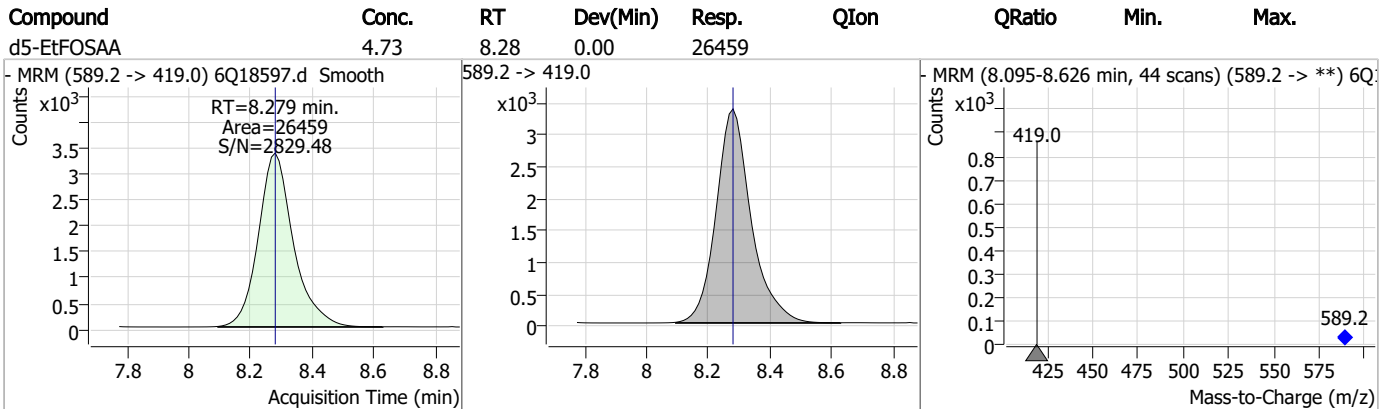
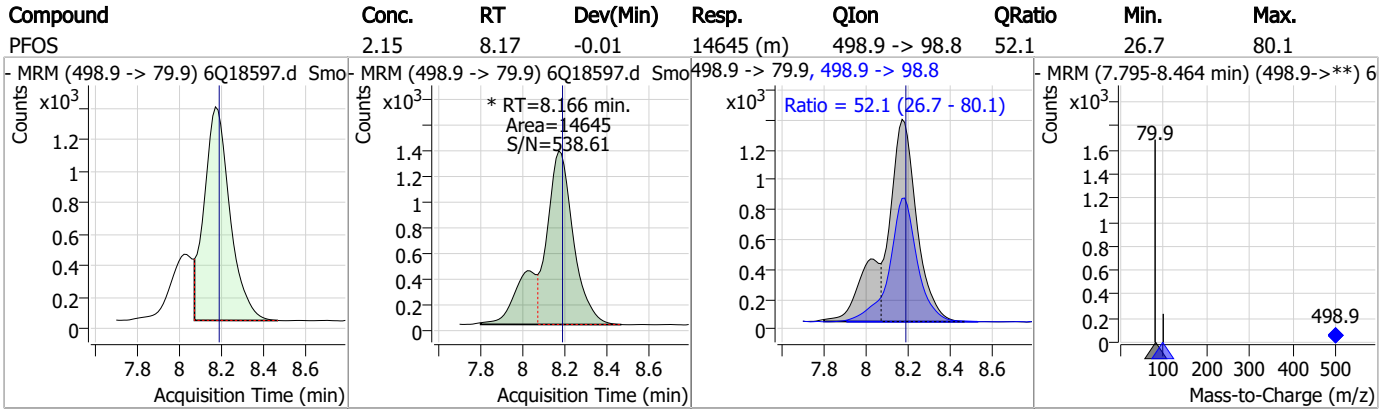
Perfluorinated Compounds by LC/MS/MS



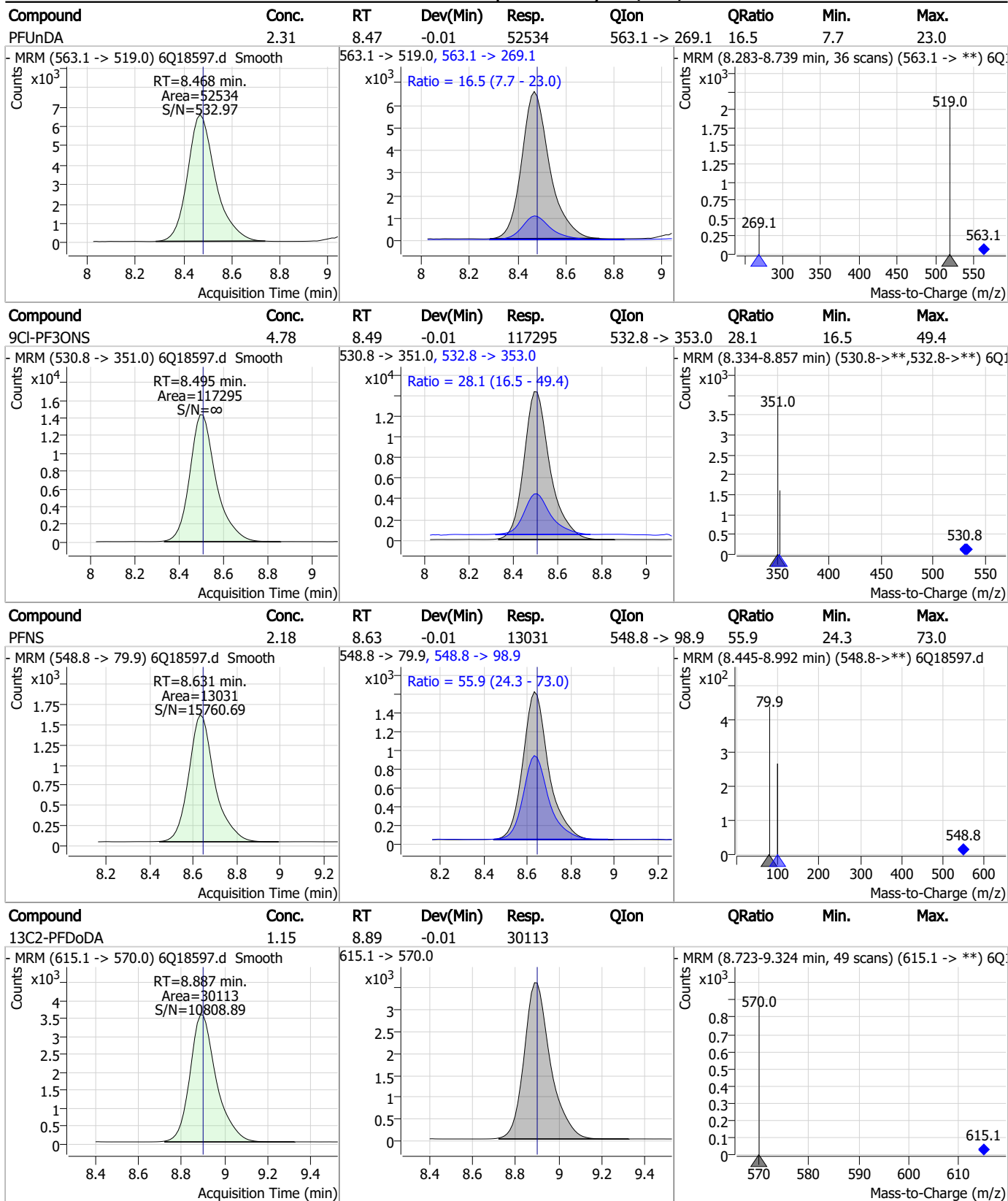
7.7.12
7



Perfluorinated Compounds by LC/MS/MS

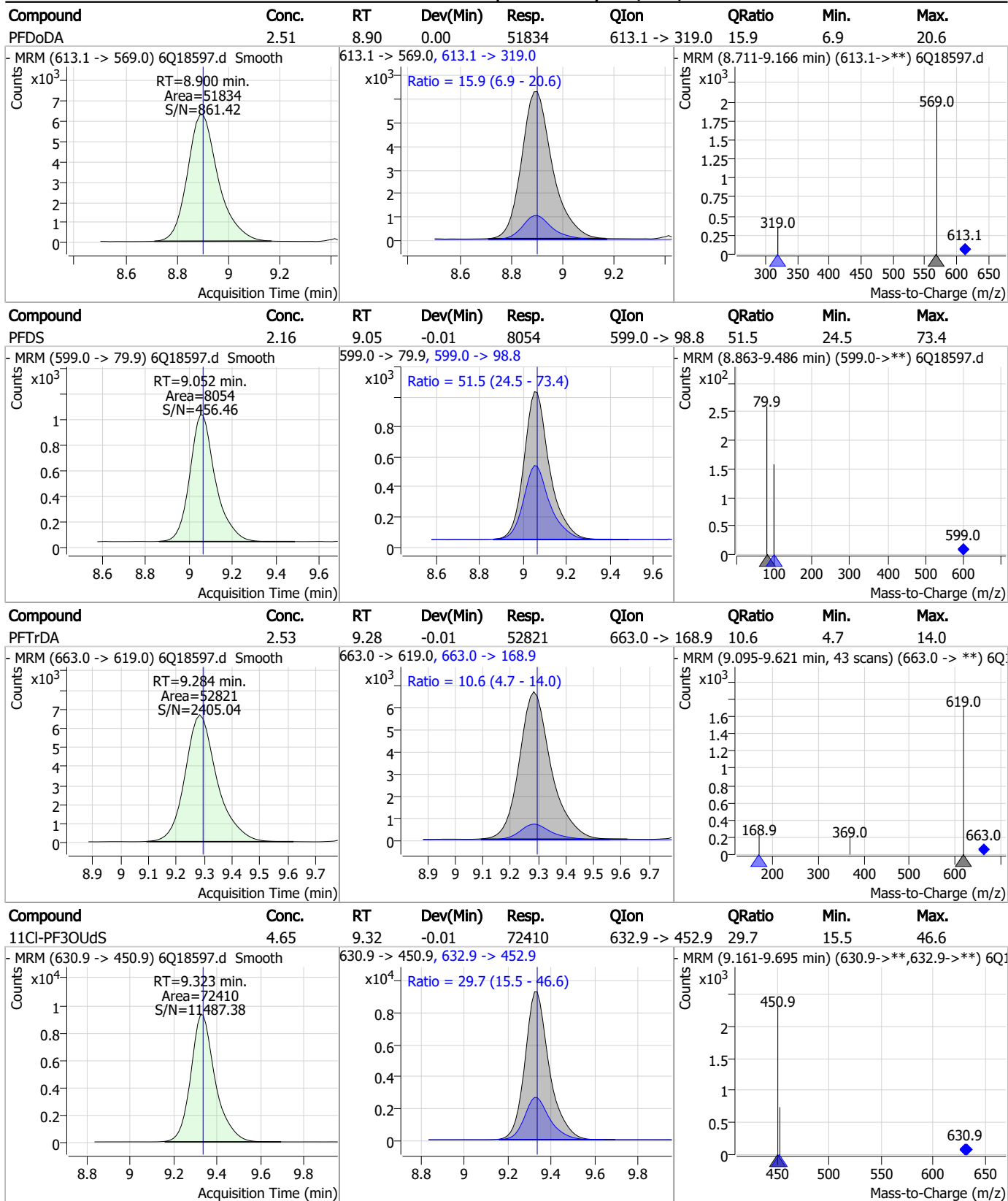


Perfluorinated Compounds by LC/MS/MS



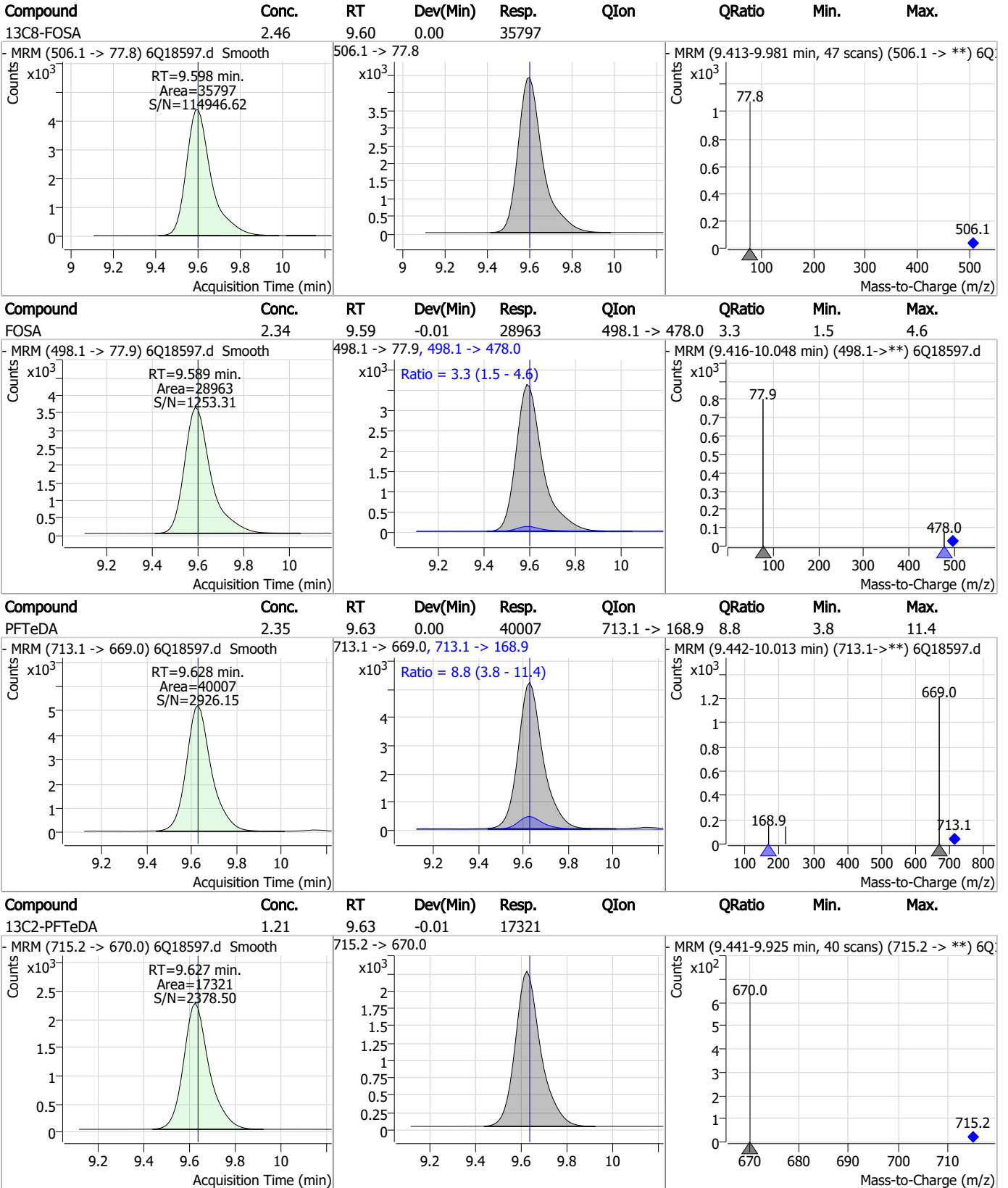
7.7.12
7

Perfluorinated Compounds by LC/MS/MS



7.7.12
7

Perfluorinated Compounds by LC/MS/MS

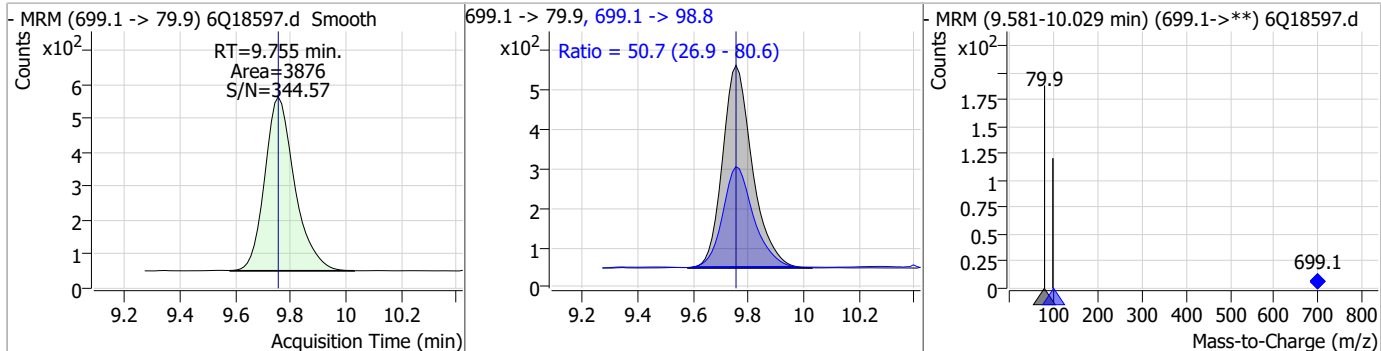


7.7.12 7

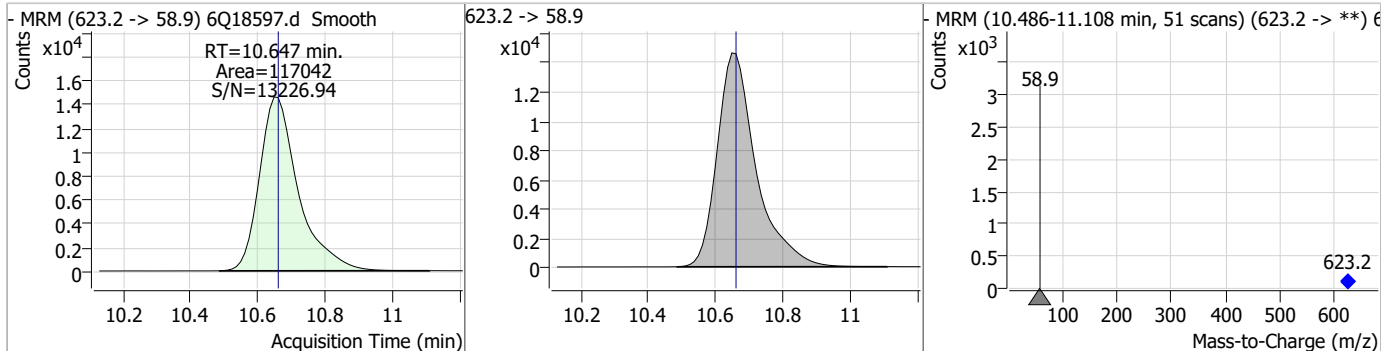


Perfluorinated Compounds by LC/MS/MS

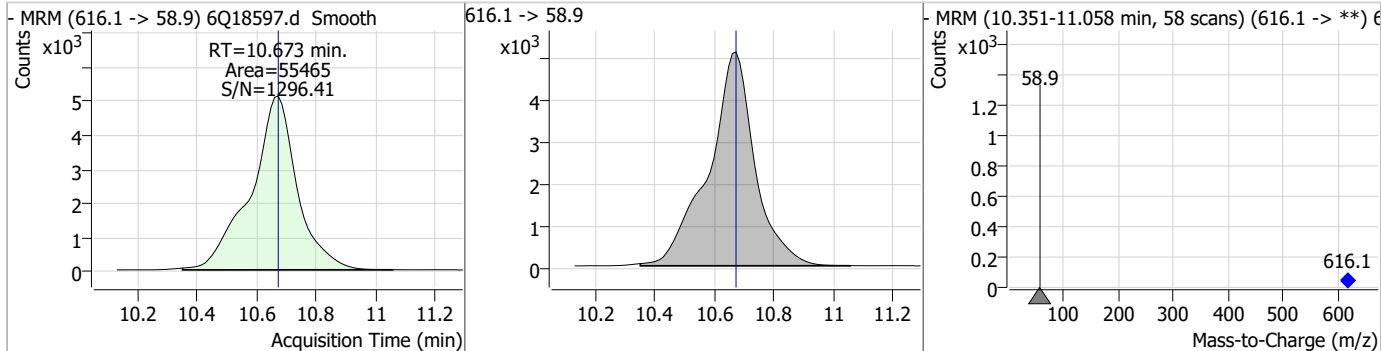
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.34	9.75	0.00	3876	699.1 -> 98.8	50.7	26.9	80.6



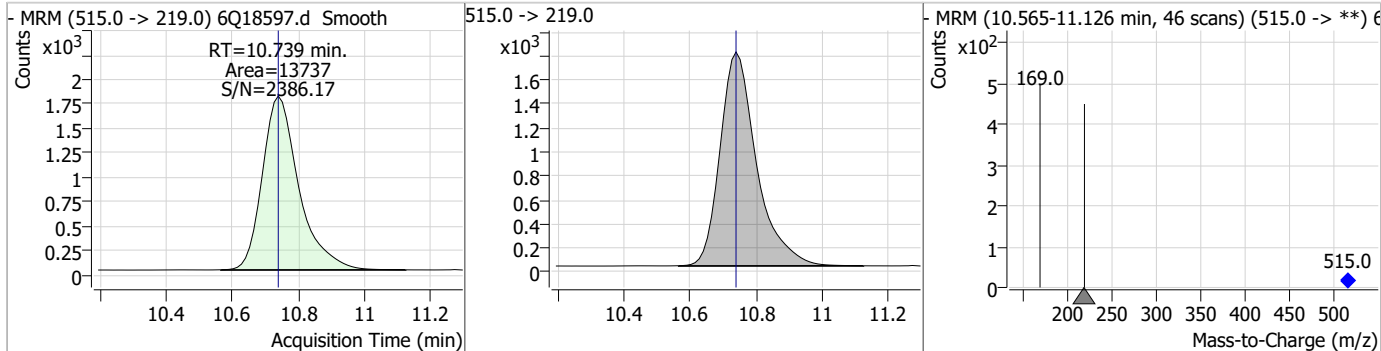
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.45	10.65	-0.01	117042				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.92	10.67	0.00	55465				

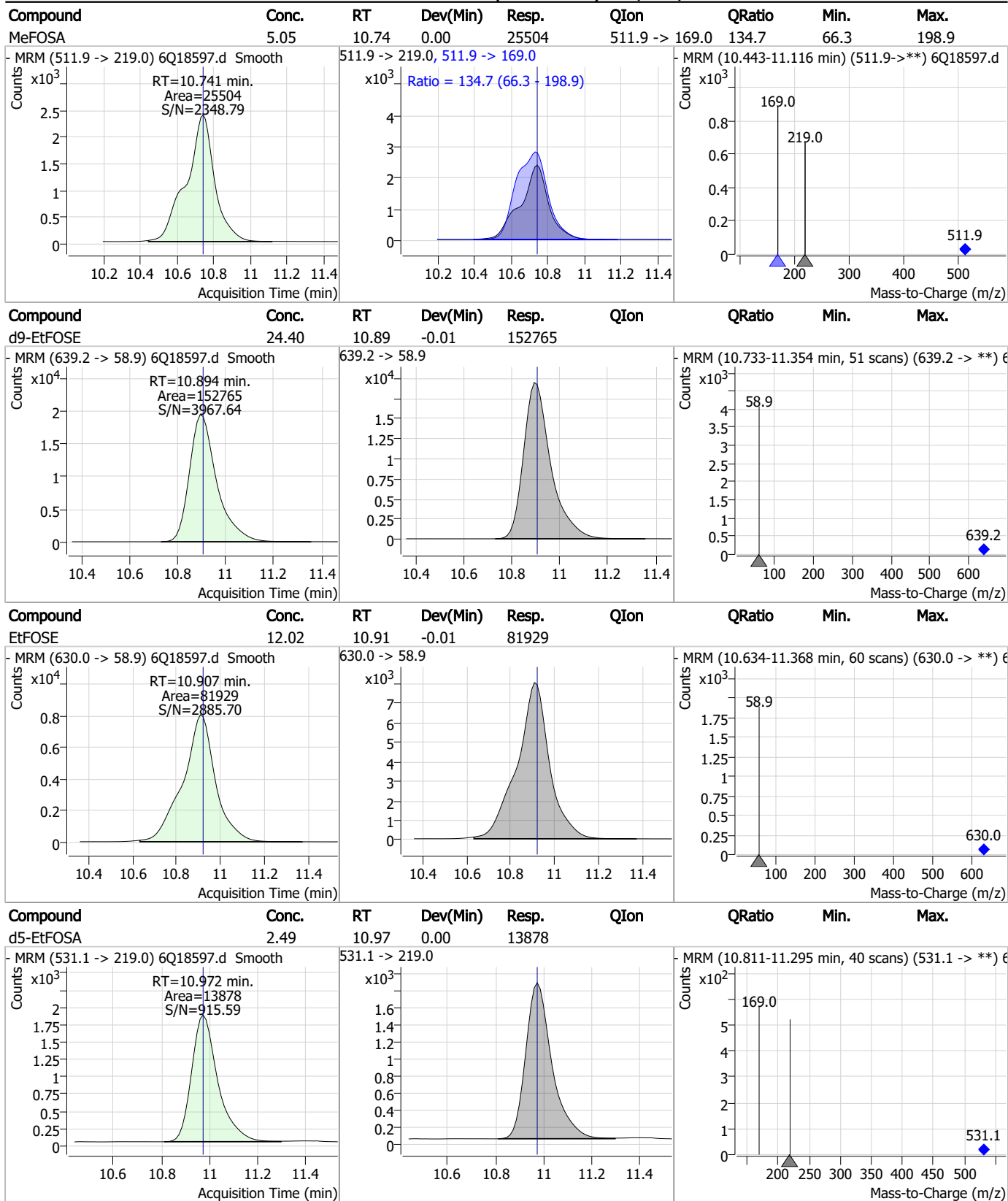


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.33	10.74	0.00	13737				



7.7.12
7

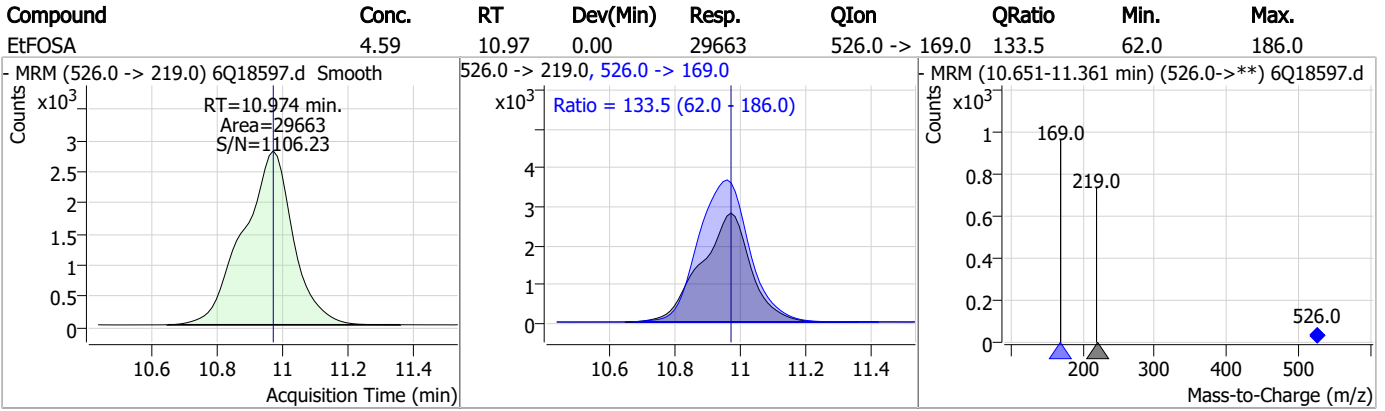
Perfluorinated Compounds by LC/MS/MS



7.7.12
7



Perfluorinated Compounds by LC/MS/MS



7.7.12
7



Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18597.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:55 Supervisor approved: 06/01/23 16:14 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.7.12.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18598.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 8:10:14 PM
 Sample Name : cc279-1.0LL
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	174414	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58759	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	63091	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	60117	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	88165	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	42242	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	23966	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	31165	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	29424	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	15813	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	33723	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23606	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	14691	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	13974	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3752	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5140	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5077	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	27276	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	39893	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	24853	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	108123	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	143721	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12331	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13156	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17844	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	73590	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10237	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	97722	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34124	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50245	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	60430	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3752	5.49 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5140	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5077	5.05 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C2-PFDoDA	8.900	615.1 -> 570.0	29424	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15813	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C3-PFBS	5.322	302.1 -> 79.9	23606	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C3-PFHxS	7.118	402.1 -> 79.9	14691	2.57 µg/L	-0.012

7.7.13
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C4-PFBA	2.822	216.8 -> 171.9	174414	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	60117	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFHxA	5.417	318.0 -> 273.0	63091	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C5-PFPeA	4.210	268.3 -> 223.0	58759	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C6-PFDA	8.027	519.1 -> 474.1	23966	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31165	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C8-FOSA	9.598	506.1 -> 77.8	33723	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-PFOA	7.026	421.1 -> 376.0	88165	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C8-PFOS	8.165	507.1 -> 79.9	13974	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C9-PFNA	7.545	472.1 -> 427.0	42242	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27276	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	39893	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	13156	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	24853	4.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d7-MeFOSE	10.647	623.2 -> 58.9	108123	24.13 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	143721	24.52 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	12331	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.5%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	4842	0.89 µg/L	95
		327.1 -> 80.9	1755		
6:2FTS	6.789	427.1 -> 407.0	4620	0.91 µg/L	97
		427.1 -> 80.9	1476		
8:2FTS	7.816	527.1 -> 507.0	2389	0.85 µg/L	99
		527.1 -> 80.8	1036		
EtFOSAA	8.280	584.2 -> 419.1	826	0.26 µg/L	m 97
		584.2 -> 526.0	464		
FOSA	9.589	498.1 -> 77.9	2646	0.23 µg/L	97
		498.1 -> 478.0	106		
MeFOSAA	8.073	570.1 -> 419.0	1321	0.24 µg/L	85
		570.1 -> 483.0	346		
PFBA	2.818	212.8 -> 168.9	5251	0.91 µg/L	100
PFBS	5.335	298.7 -> 79.9	1663	0.21 µg/L	94
		298.7 -> 98.8	665		
PFDA	8.027	512.9 -> 469.0	6171	0.22 µg/L	91
		512.9 -> 219.0	756		
PFDODA	8.900	613.1 -> 569.0	4616	0.23 µg/L	89
		613.1 -> 319.0	842		
PFDS	9.052	599.0 -> 79.9	793	0.23 µg/L	95

7.7.13
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	358			
PFHpA	6.370	363.1 -> 319.0	5949	0.22	µg/L	92
		363.1 -> 169.0	1092			
PFHpS	7.673	449.0 -> 79.9	1481	0.22	µg/L	91
		449.0 -> 98.9	825			
PFHxA	5.407	313.0 -> 269.0	4821	0.23	µg/L	98
		313.0 -> 118.9	249			
PFHxS	7.119	398.7 -> 79.9	1490	0.22	µg/L	m 95
		398.7 -> 98.9	755			
PFNA	7.545	463.0 -> 419.0	6101	0.20	µg/L	90
		463.0 -> 219.0	1459			
PFNS	8.631	548.8 -> 79.9	1226	0.22	µg/L	95
		548.8 -> 98.9	637			
PFOA	7.028	413.0 -> 369.0	7928	0.21	µg/L	91
		413.0 -> 169.0	1687			
PFOS	8.166	498.9 -> 79.9	1428	0.22	µg/L	m 99
		498.9 -> 98.8	773			
PFPeA	4.212	263.0 -> 219.0	6468	0.46	µg/L	100
PFPeS	6.410	349.1 -> 79.9	1445	0.22	µg/L	99
		349.1 -> 98.9	697			
PFTeDA	9.628	713.1 -> 669.0	3555	0.23	µg/L	97
		713.1 -> 168.9	311			
PFTrDA	9.284	663.0 -> 619.0	5046	0.25	µg/L	96
		663.0 -> 168.9	544			
PFUnDA	8.468	563.1 -> 519.0	4952	0.24	µg/L	95
		563.1 -> 269.1	860			
11CI-PF3OUdS	9.336	630.9 -> 450.9	6005	0.40	µg/L	93
		632.9 -> 452.9	2115			
9CI-PF3ONS	8.495	530.8 -> 351.0	10195	0.43	µg/L	99
		532.8 -> 353.0	3300			
ADONA	6.632	376.9 -> 250.9	22740	0.43	µg/L	97
		376.9 -> 84.8	6394			
HFPO-DA	5.783	284.9 -> 168.9	1537	0.45	µg/L	97
		284.9 -> 184.9	193			
3:3FTCA	3.671	241.0 -> 177.0	1032	1.14	µg/L	99
		241.0 -> 117.0	154			
5:3FTCA	6.074	341.0 -> 237.1	22415	5.88	µg/L	92
		341.0 -> 217.0	17292			
7:3FTCA	7.510	441.0 -> 316.9	15932	6.10	µg/L	95
		441.0 -> 336.9	33750			
EtFOSA	10.974	526.0 -> 219.0	2706	0.47	µg/L	91
		526.0 -> 169.0	3635			
EtFOSE	10.907	630.0 -> 58.9	7110	1.11	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	2336	0.48	µg/L	99
		511.9 -> 169.0	3130			
MeFOSE	10.673	616.1 -> 58.9	5117	1.19	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	349	0.22	µg/L	90
		699.1 -> 98.8	164			
NFDHA	5.288	295.0 -> 201.0	1178	0.46	µg/L	100
		295.0 -> 84.9	317			
PFMBA	4.626	279.0 -> 85.1	4295	0.45	µg/L	100
PFMPA	3.363	229.0 -> 84.9	3360	0.45	µg/L	100
PFEESA	5.862	314.8 -> 134.9	11003	0.41	µg/L	99
		314.8 -> 82.9	394			

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

7.7.13
7

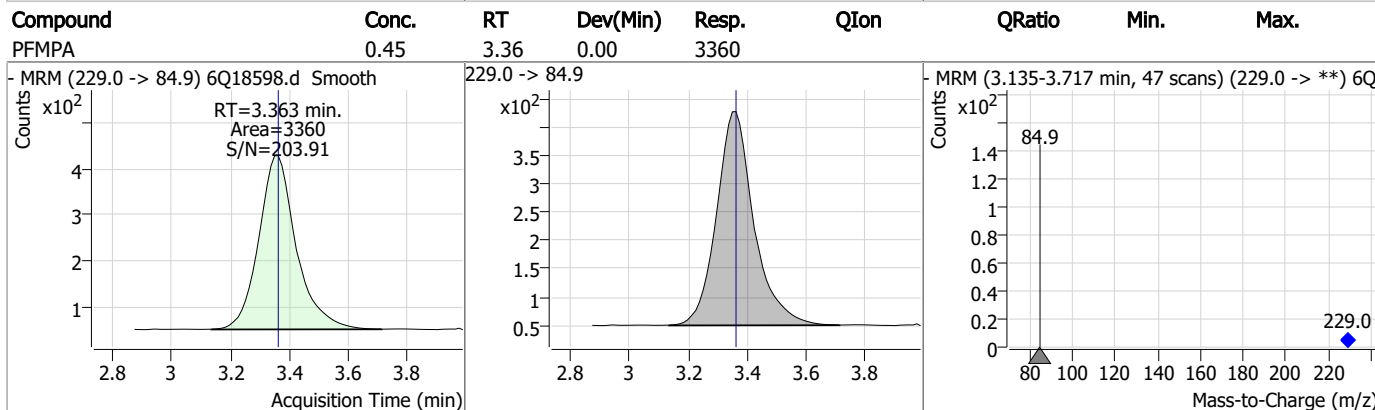
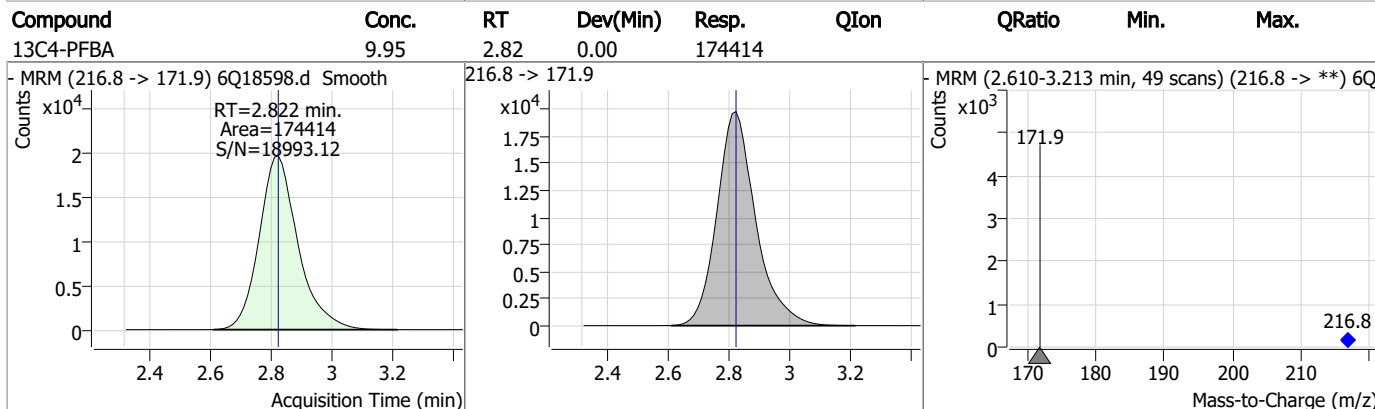
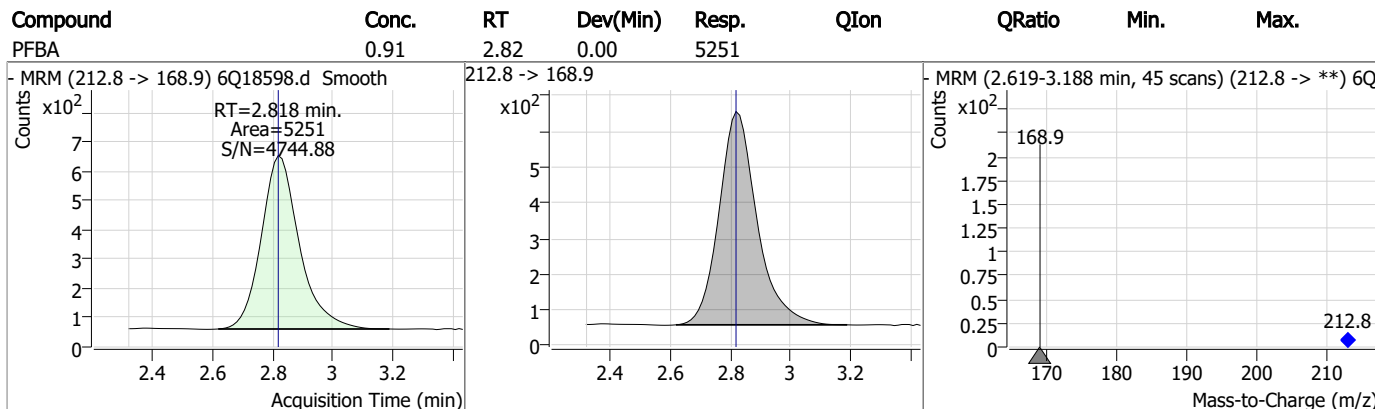
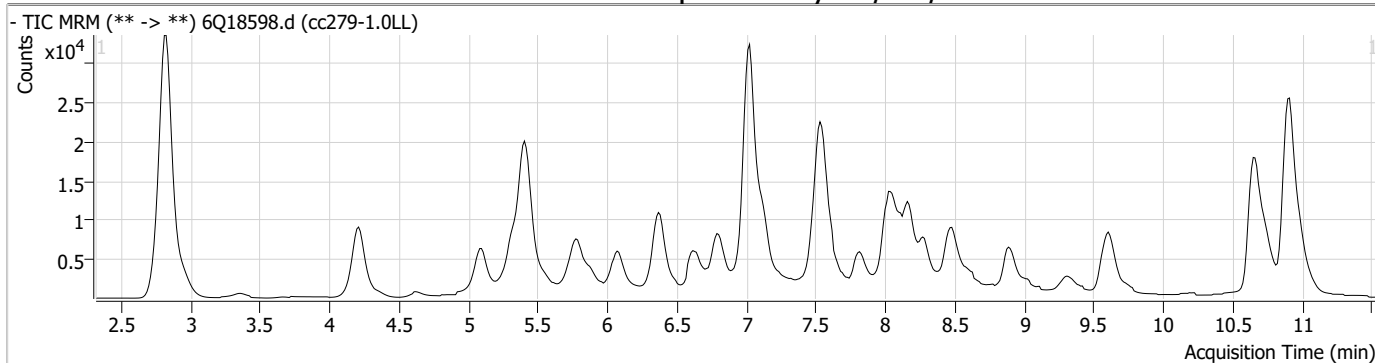
Perfluorinated Compounds by LC/MS/MS

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

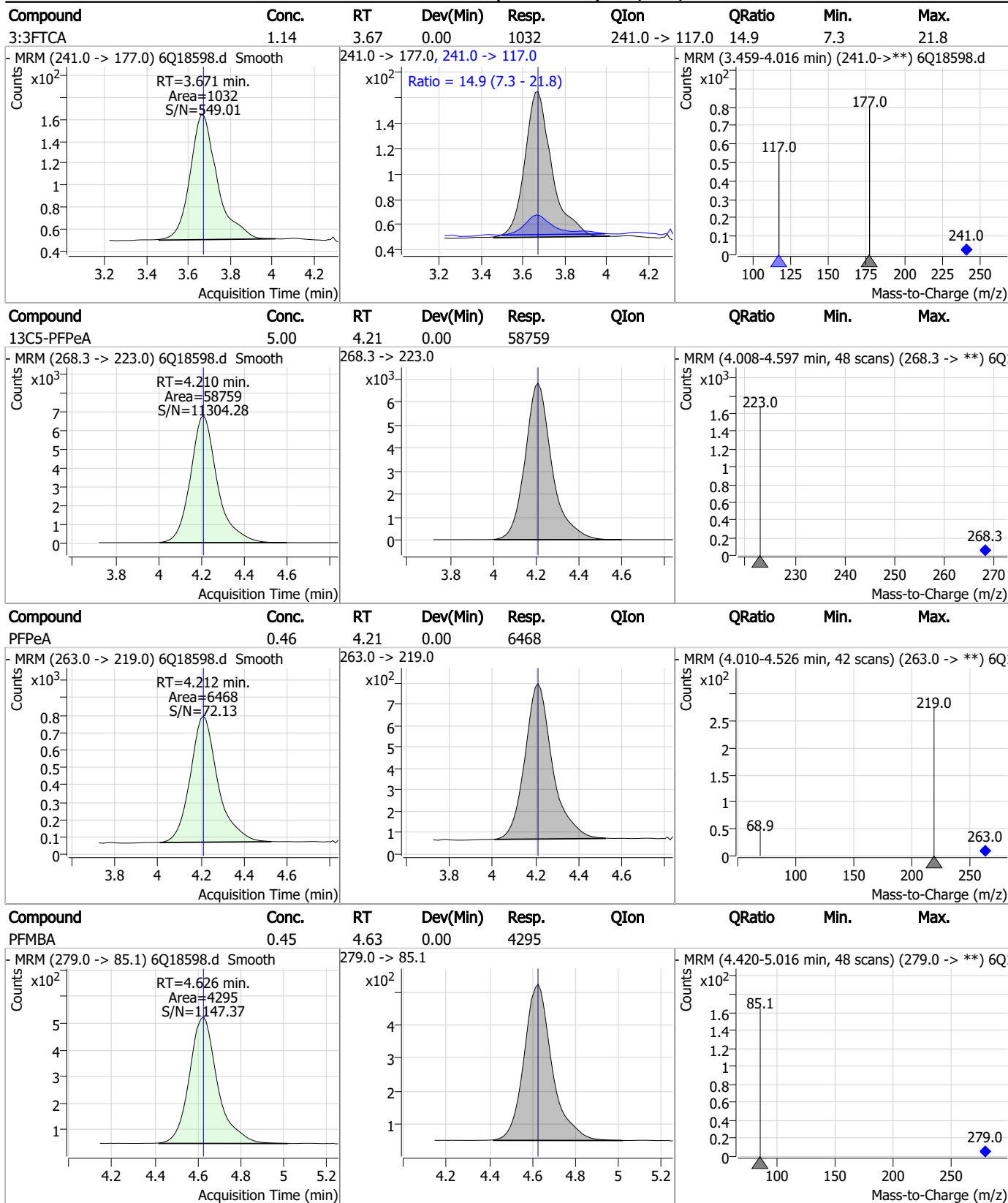
7.7.13

7

Perfluorinated Compounds by LC/MS/MS



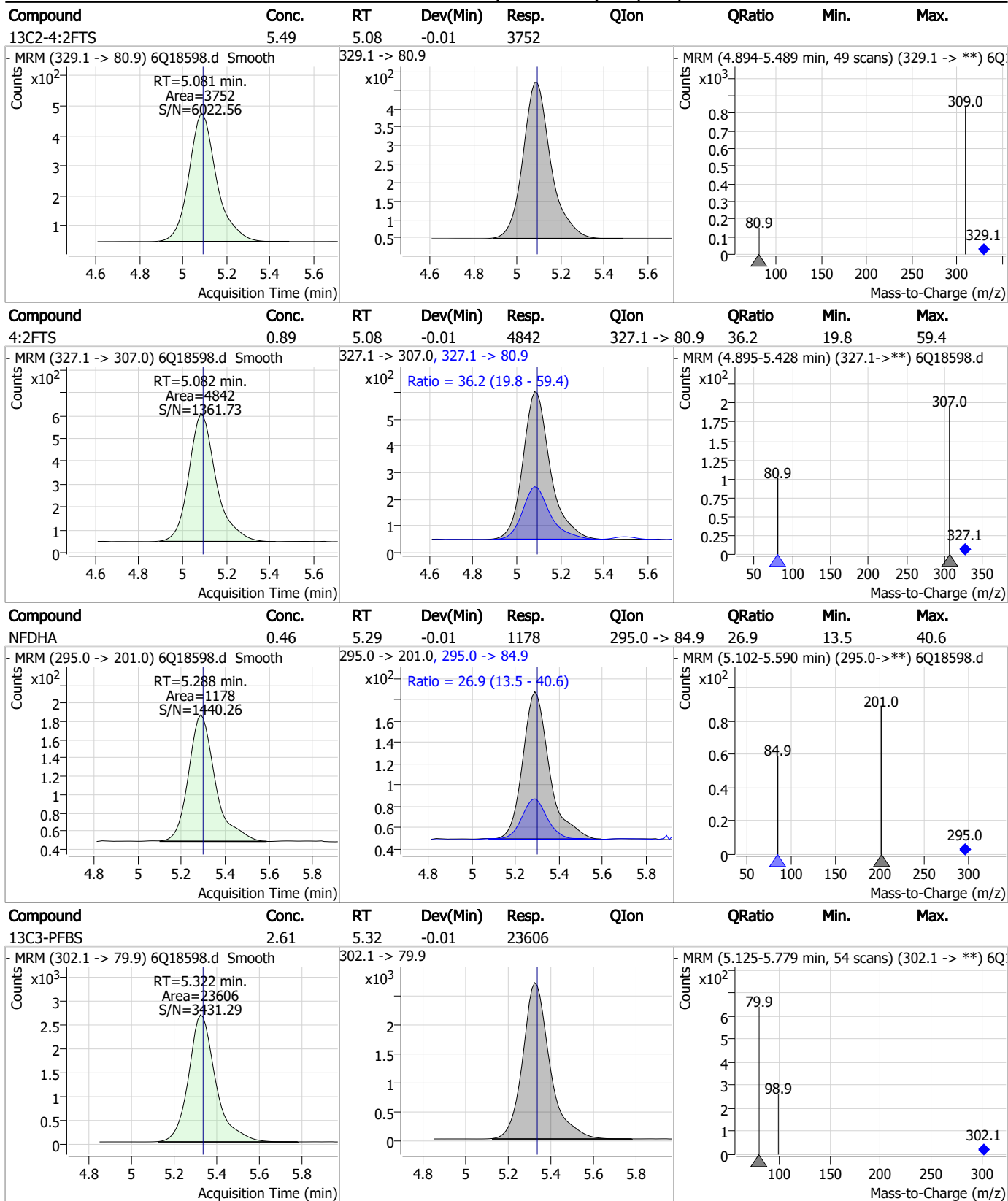
Perfluorinated Compounds by LC/MS/MS



7.7.13

7

Perfluorinated Compounds by LC/MS/MS

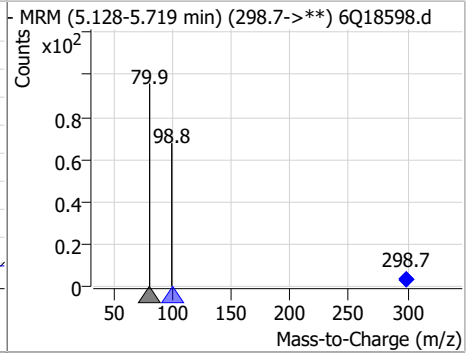
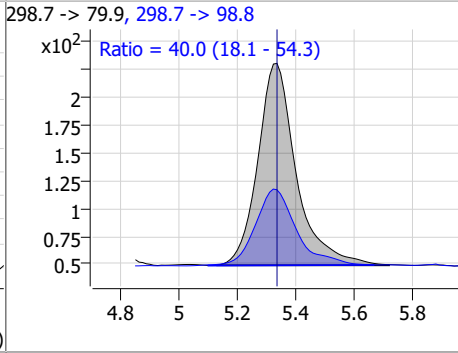
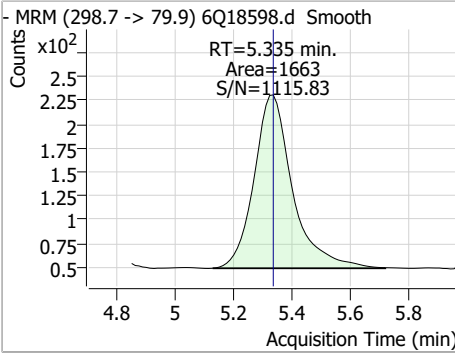


7.7.13
7

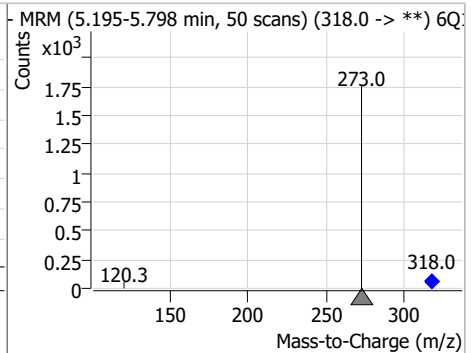
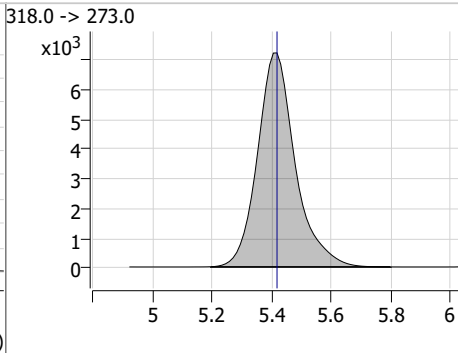
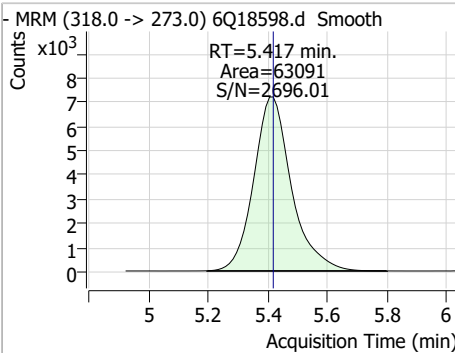


Perfluorinated Compounds by LC/MS/MS

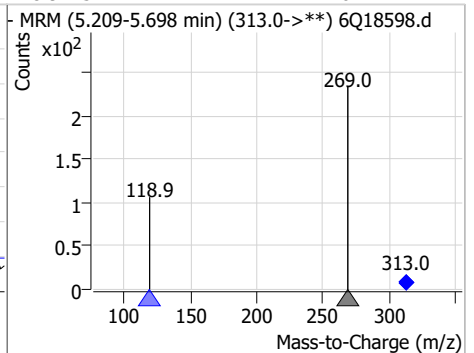
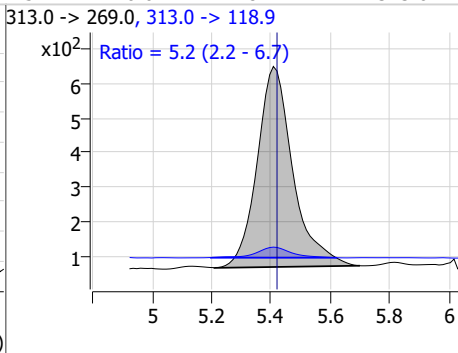
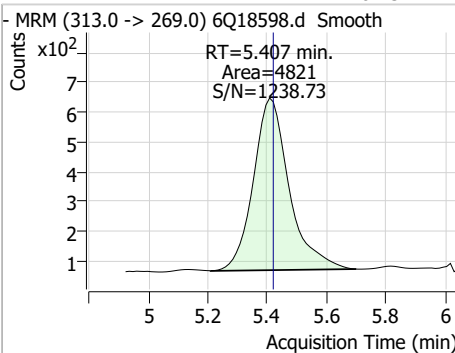
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.21	5.34	0.00	1663	298.7 -> 98.8	40.0	18.1	54.3



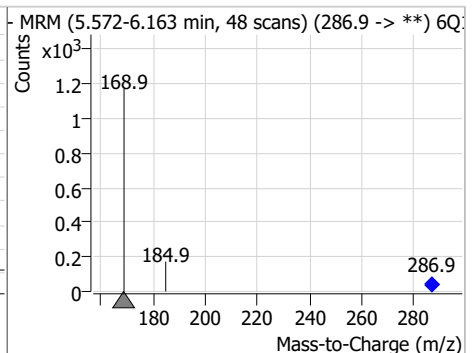
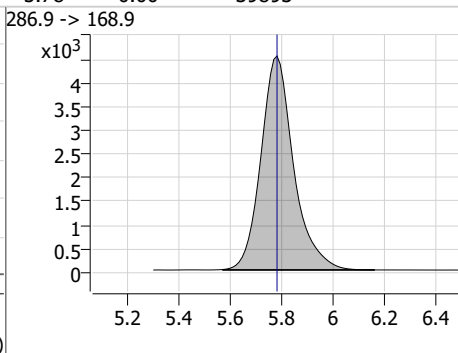
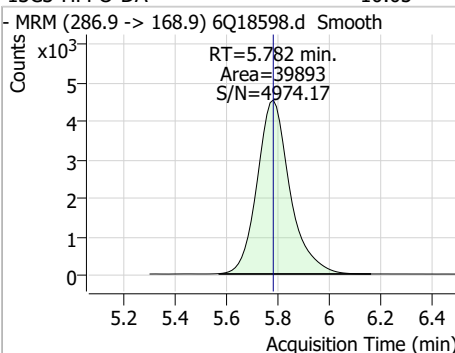
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.47	5.42	0.00	63091				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.23	5.41	-0.01	4821	313.0 -> 118.9	5.2	2.2	6.7

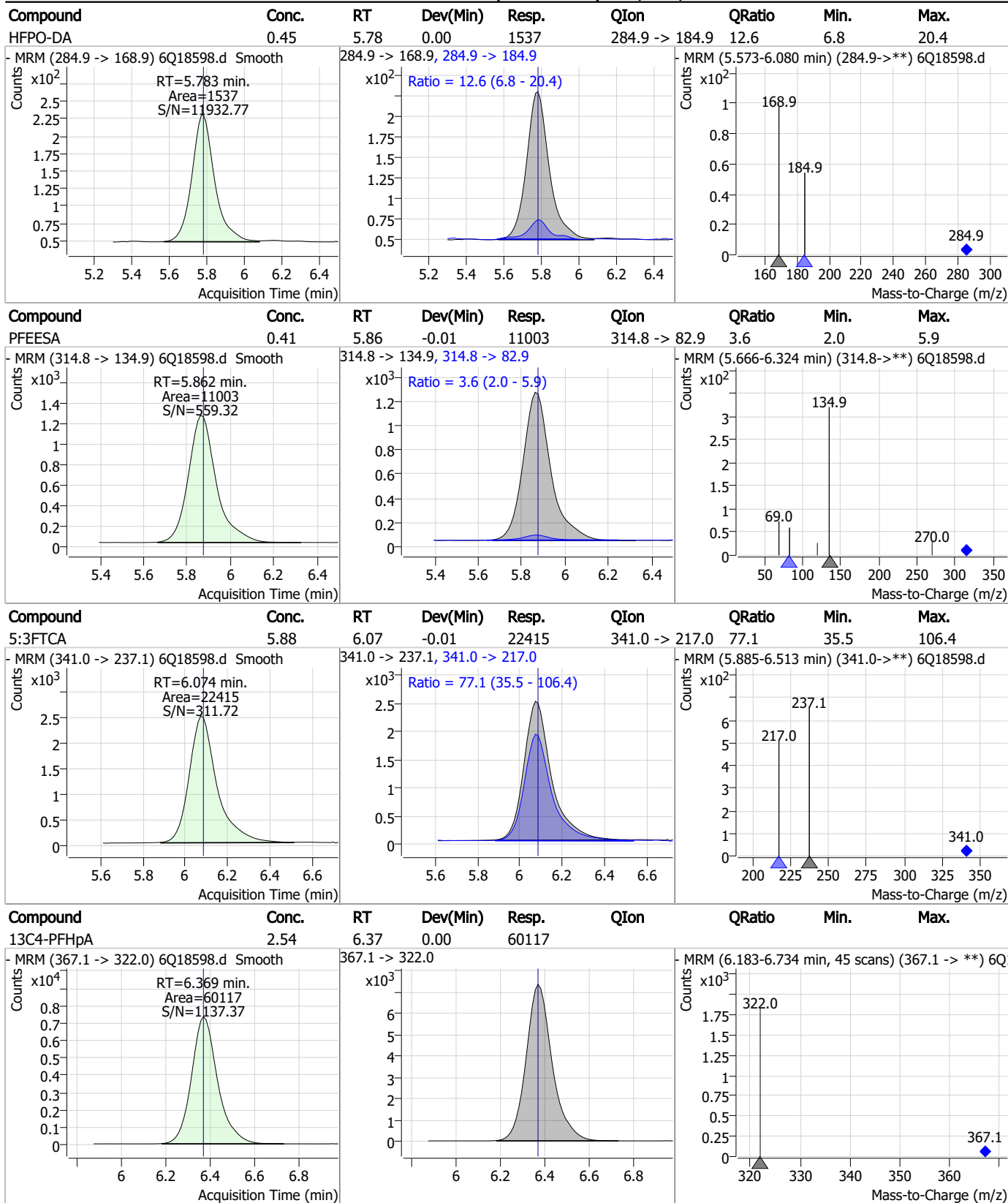


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.05	5.78	0.00	39893				



7.7.13
7

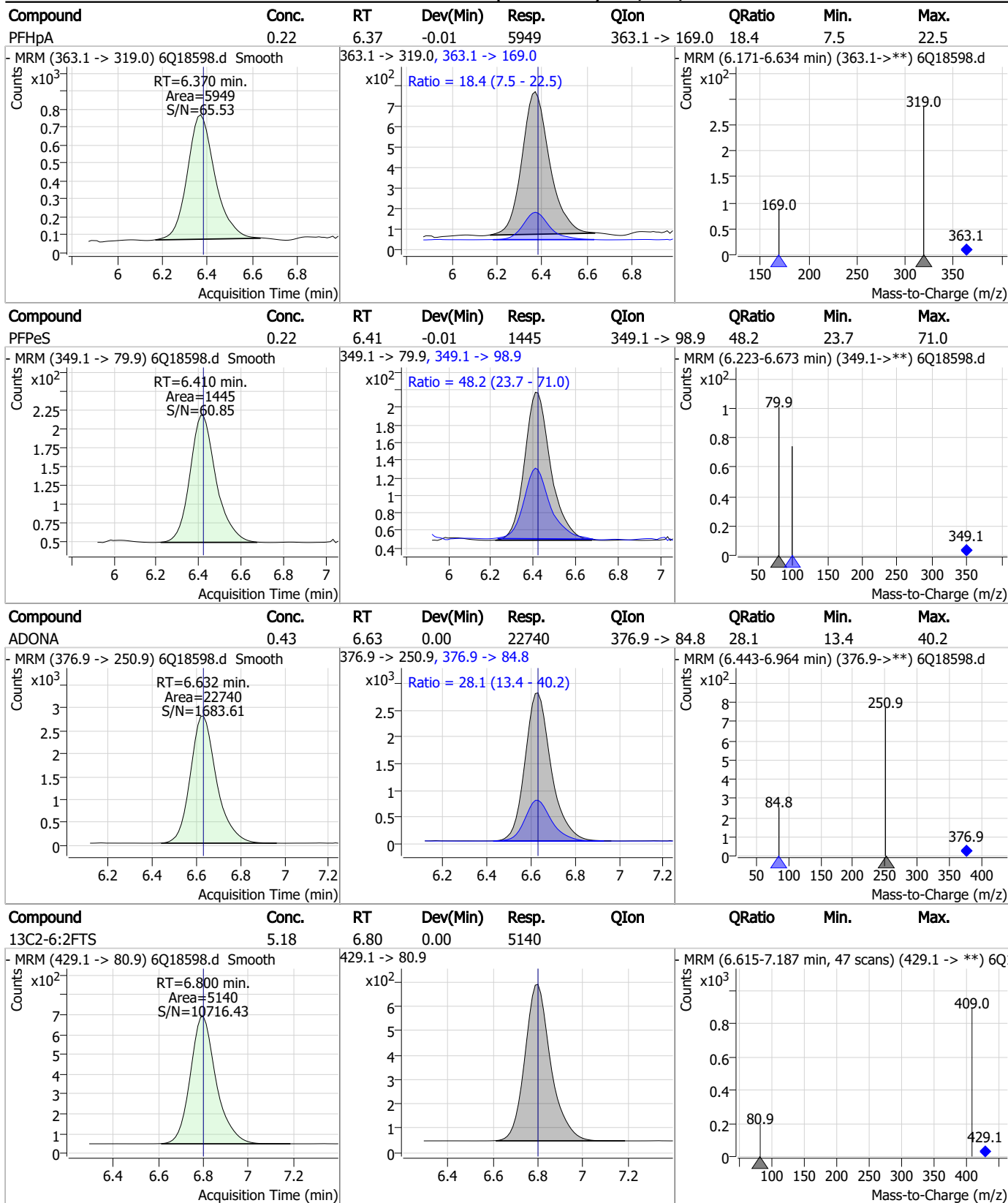
Perfluorinated Compounds by LC/MS/MS



7.7.13

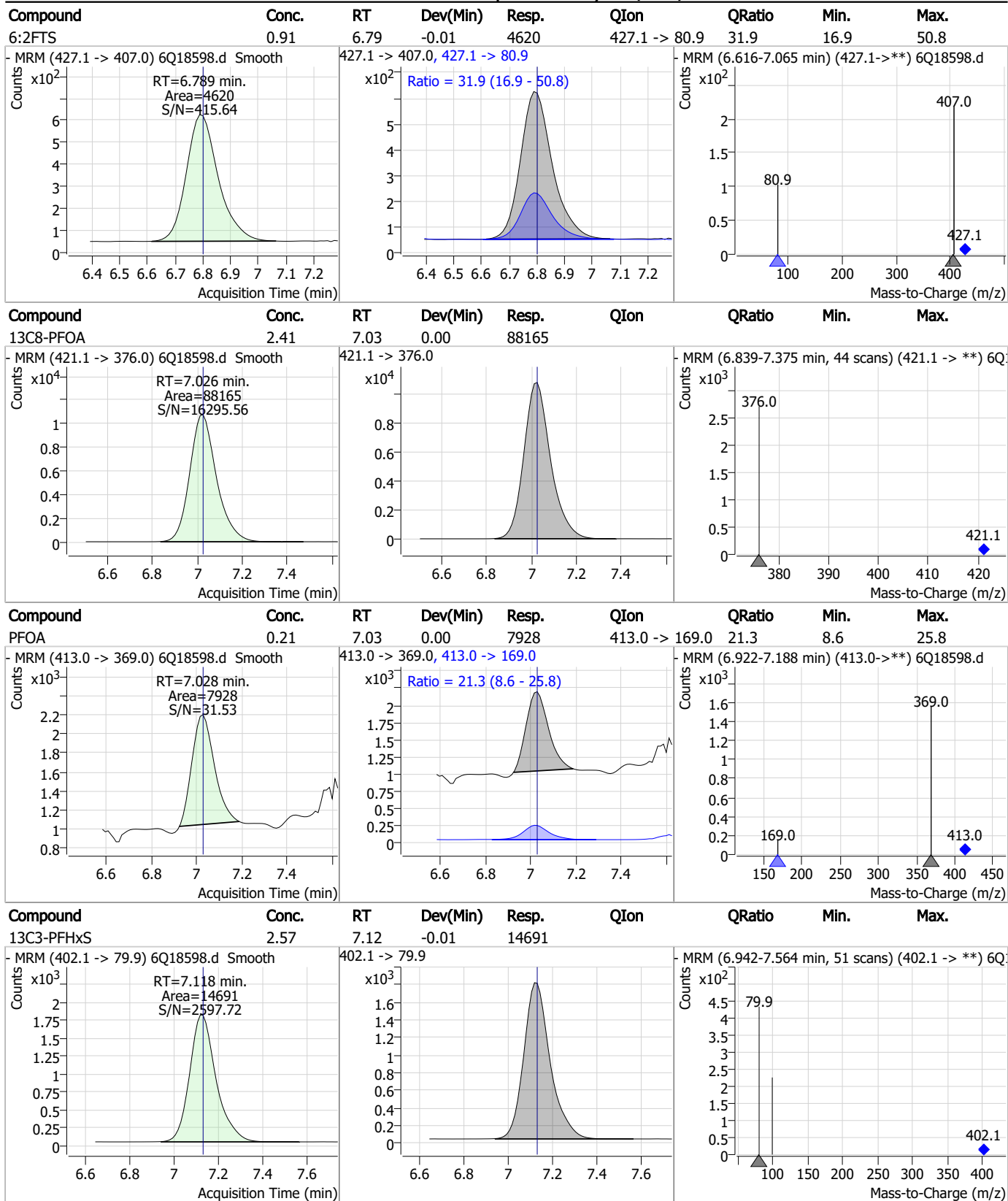
7

Perfluorinated Compounds by LC/MS/MS



7.7.13
7

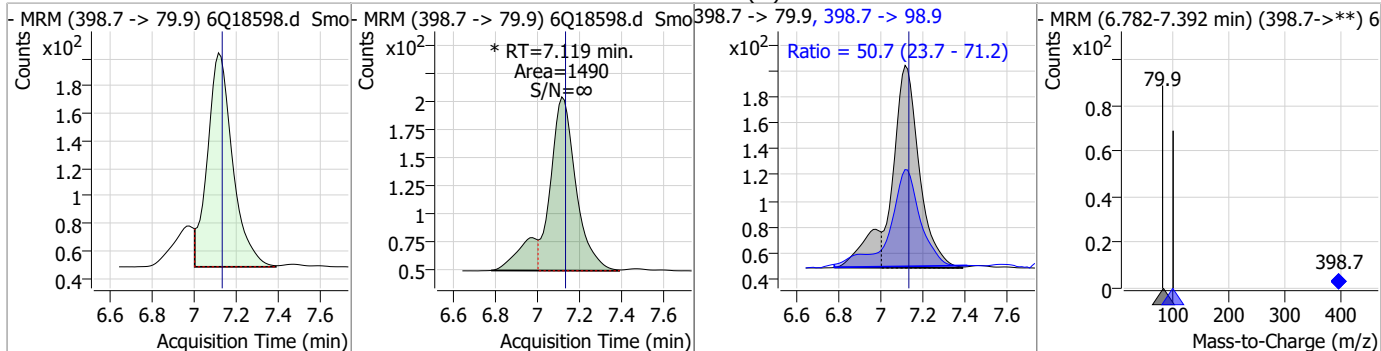
Perfluorinated Compounds by LC/MS/MS



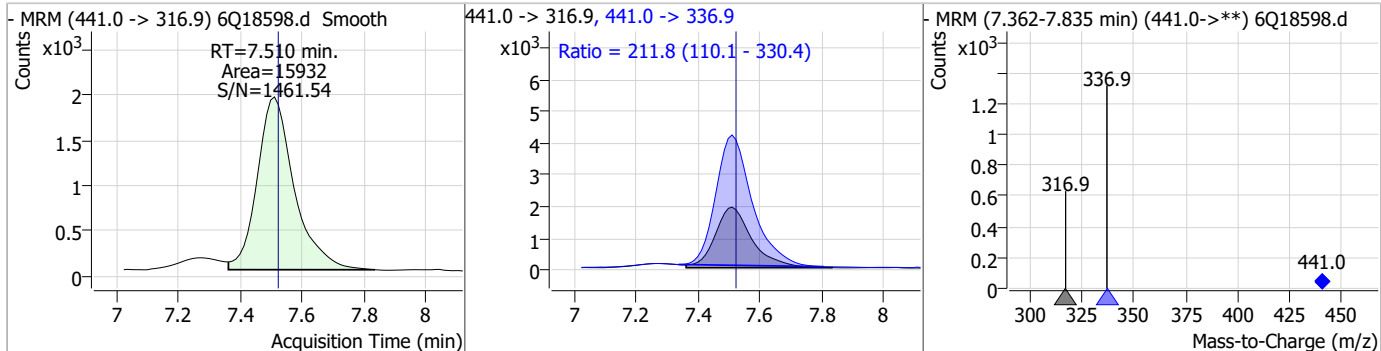
7.7.13
7

Perfluorinated Compounds by LC/MS/MS

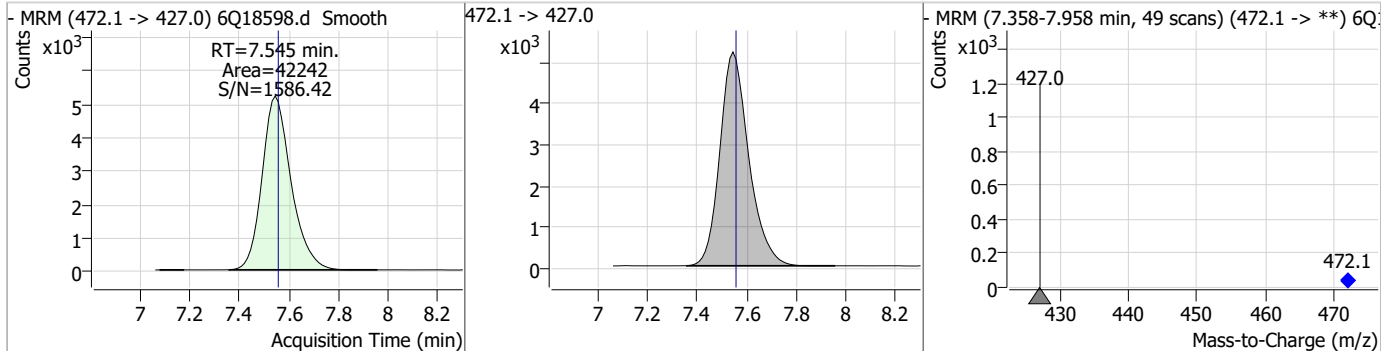
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.22	7.12	-0.01	1490 (m)	398.7 -> 98.9	50.7	23.7	71.2



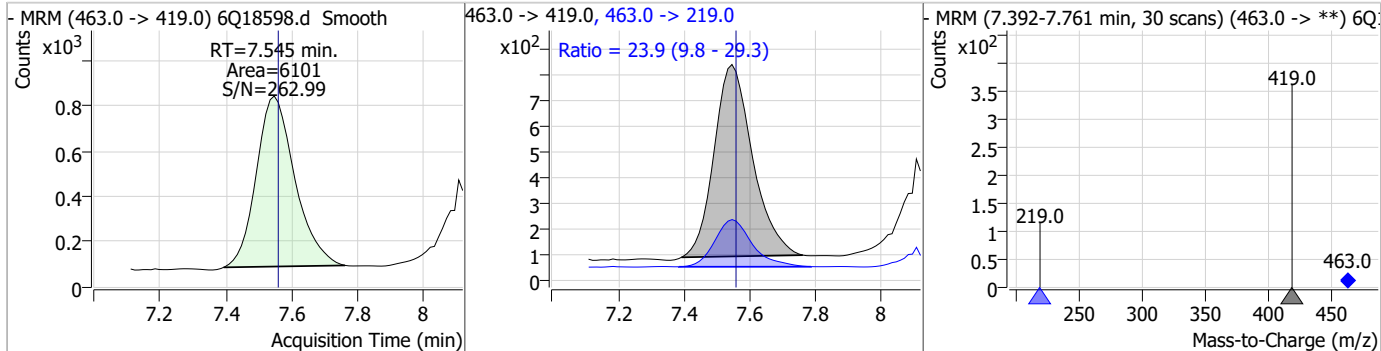
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	6.10	7.51	-0.01	15932	441.0 -> 336.9	211.8	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	7.54	-0.01	42242				

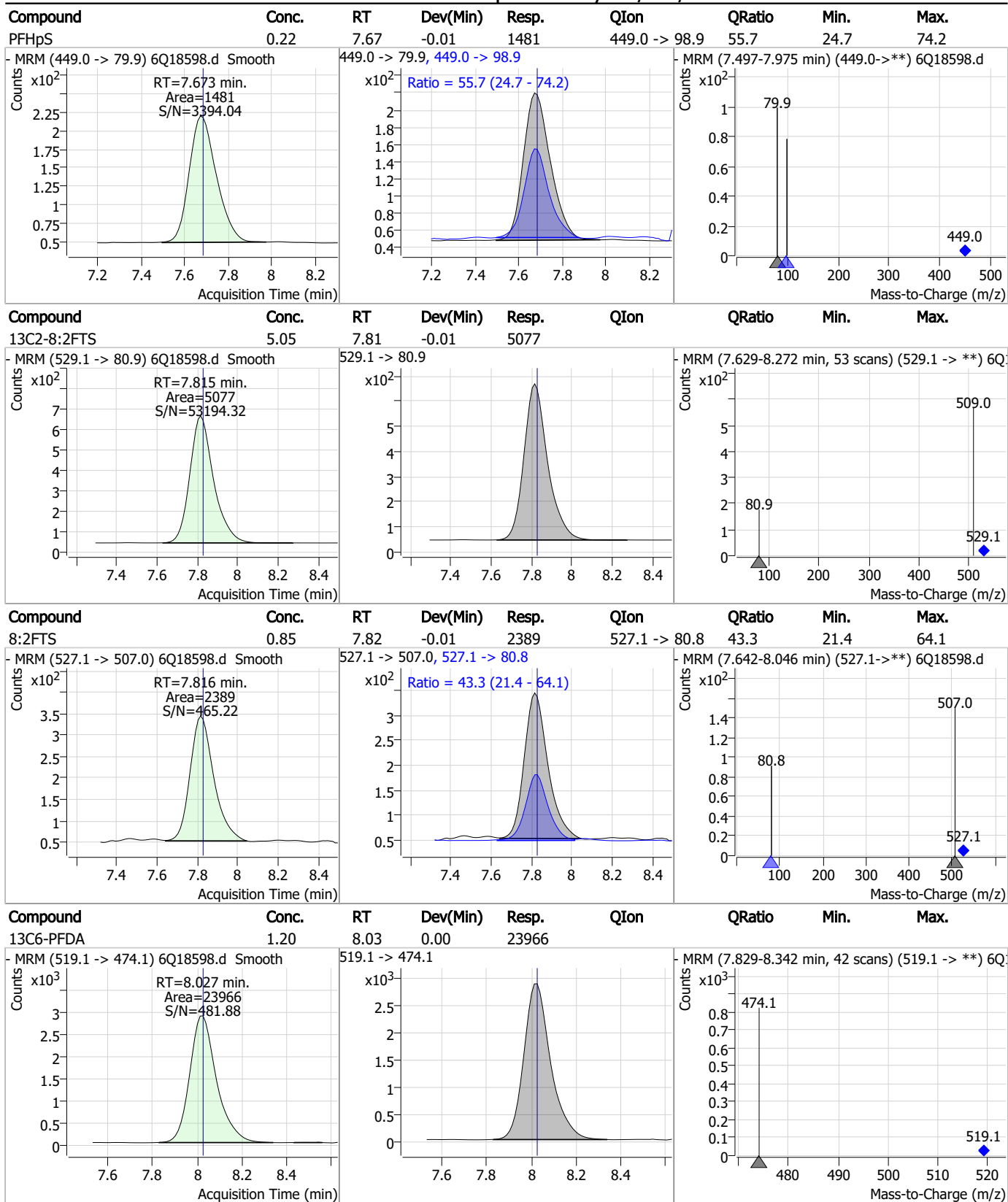


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.20	7.55	-0.01	6101	463.0 -> 219.0	23.9	9.8	29.3



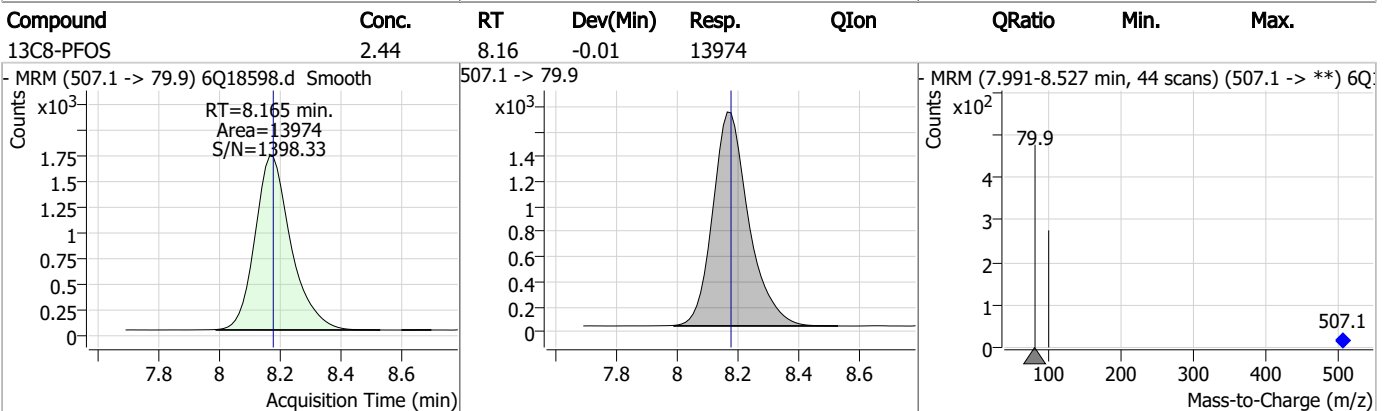
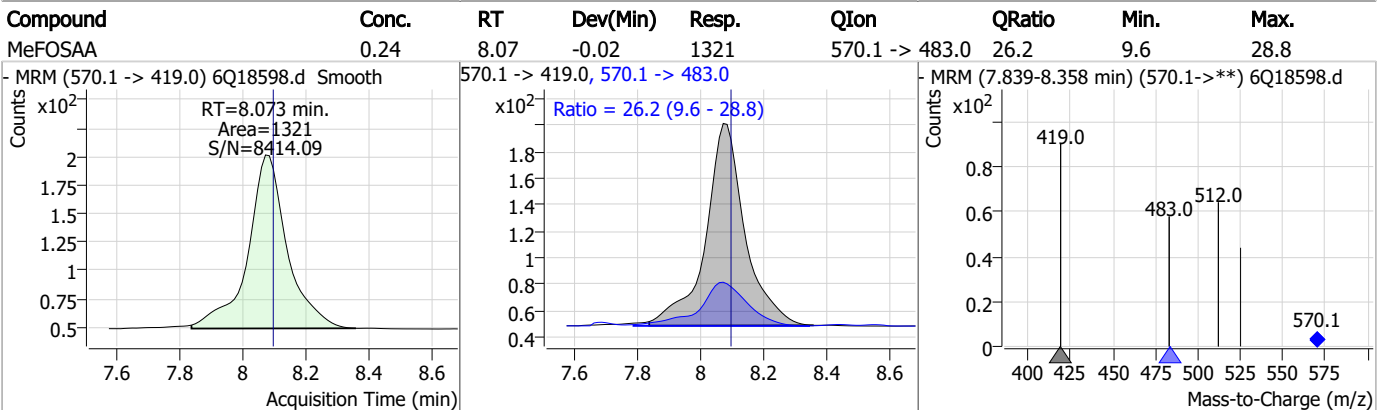
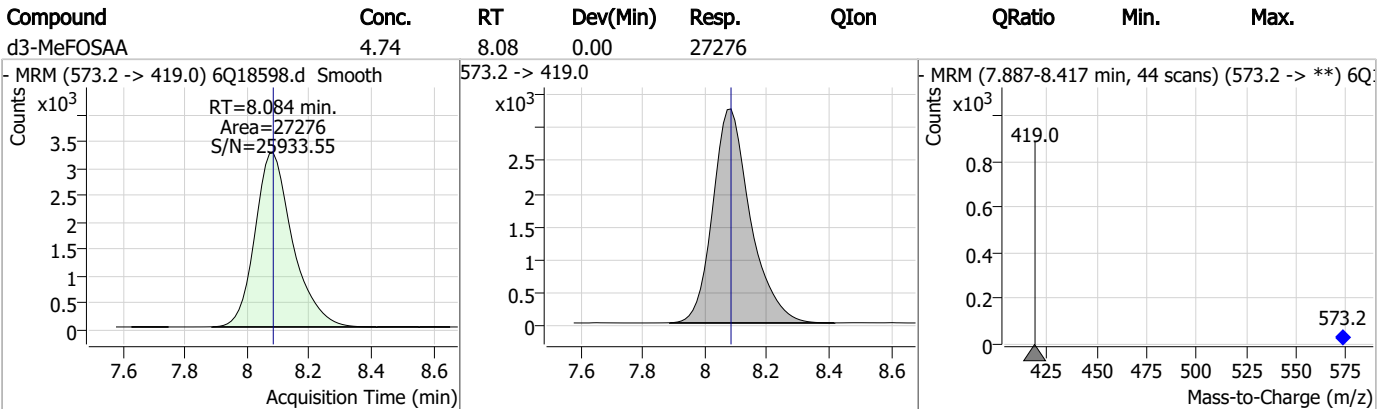
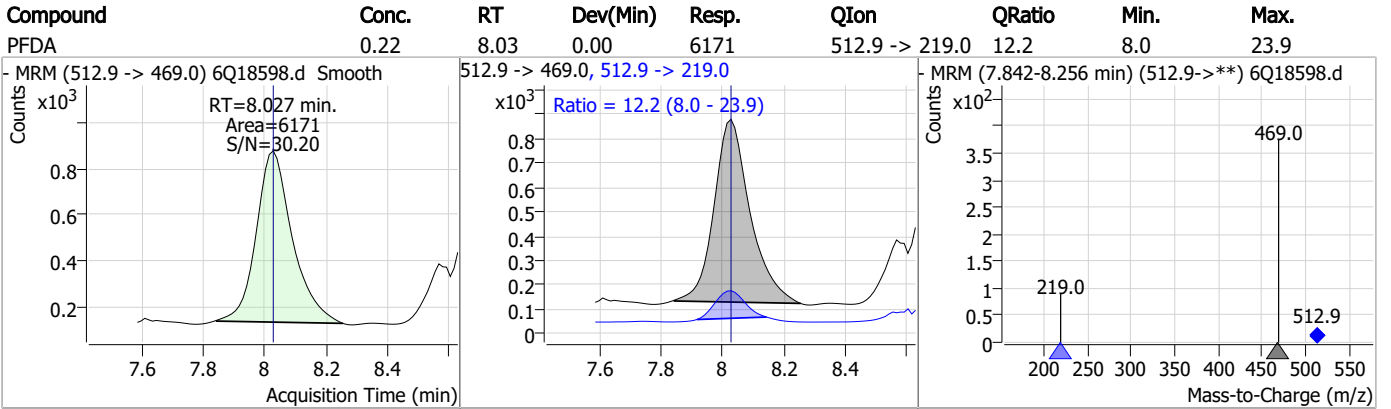
7.7.13
7

Perfluorinated Compounds by LC/MS/MS



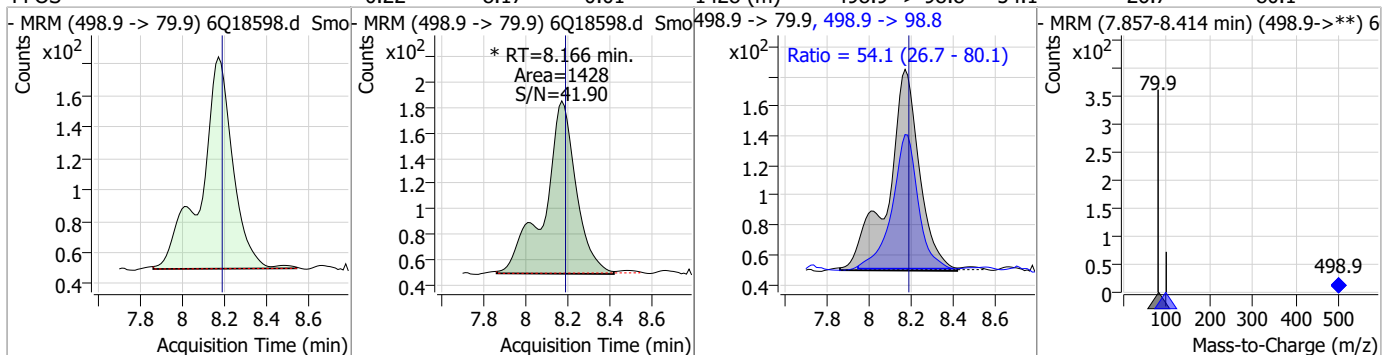
7.7.13
7

Perfluorinated Compounds by LC/MS/MS

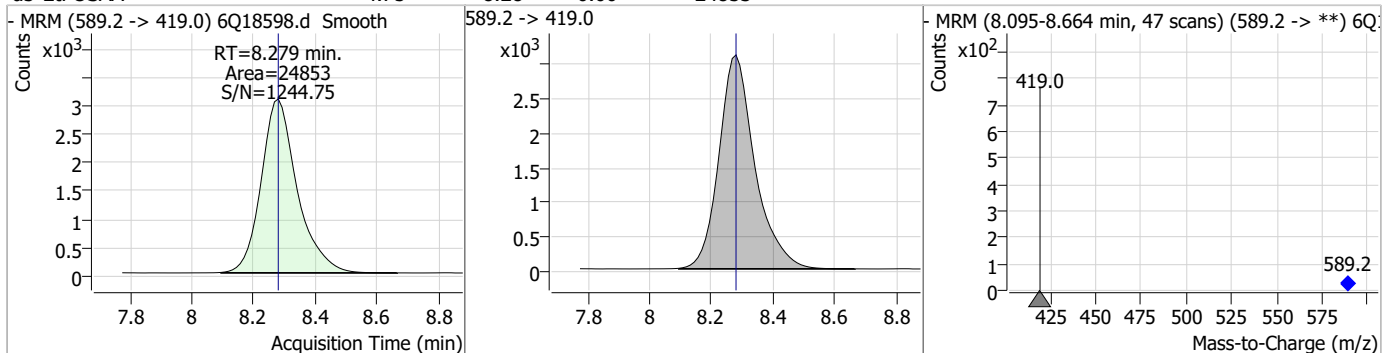


Perfluorinated Compounds by LC/MS/MS

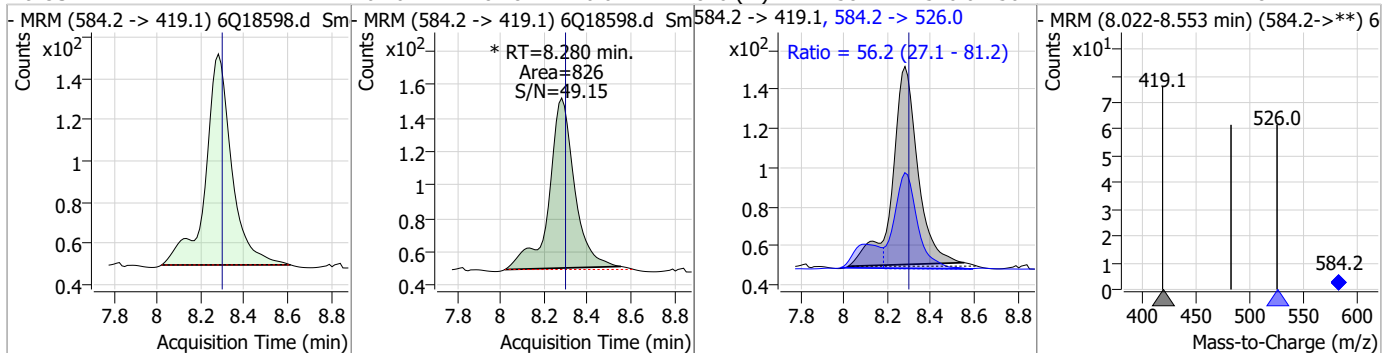
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.22	8.17	-0.01	1428 (m)	498.9 -> 98.8	54.1	26.7	80.1



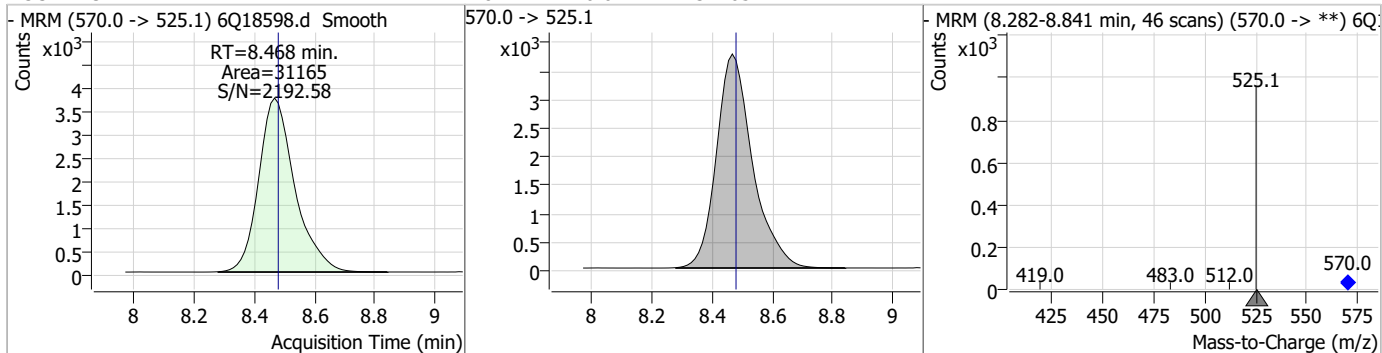
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.75	8.28	0.00	24853				



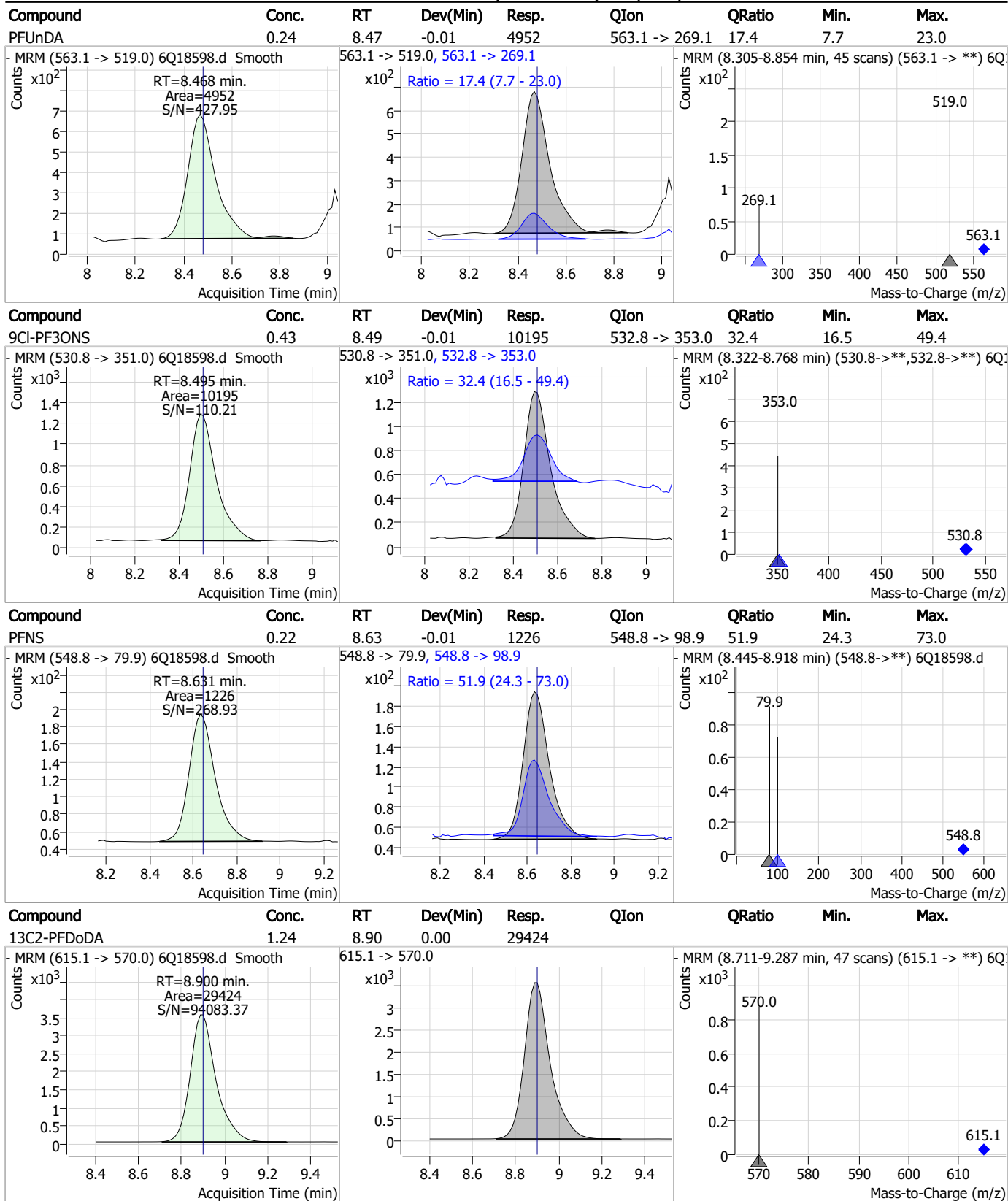
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.26	8.28	-0.01	826 (m)	584.2 -> 526.0	56.2	27.1	81.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.47	-0.01	31165				

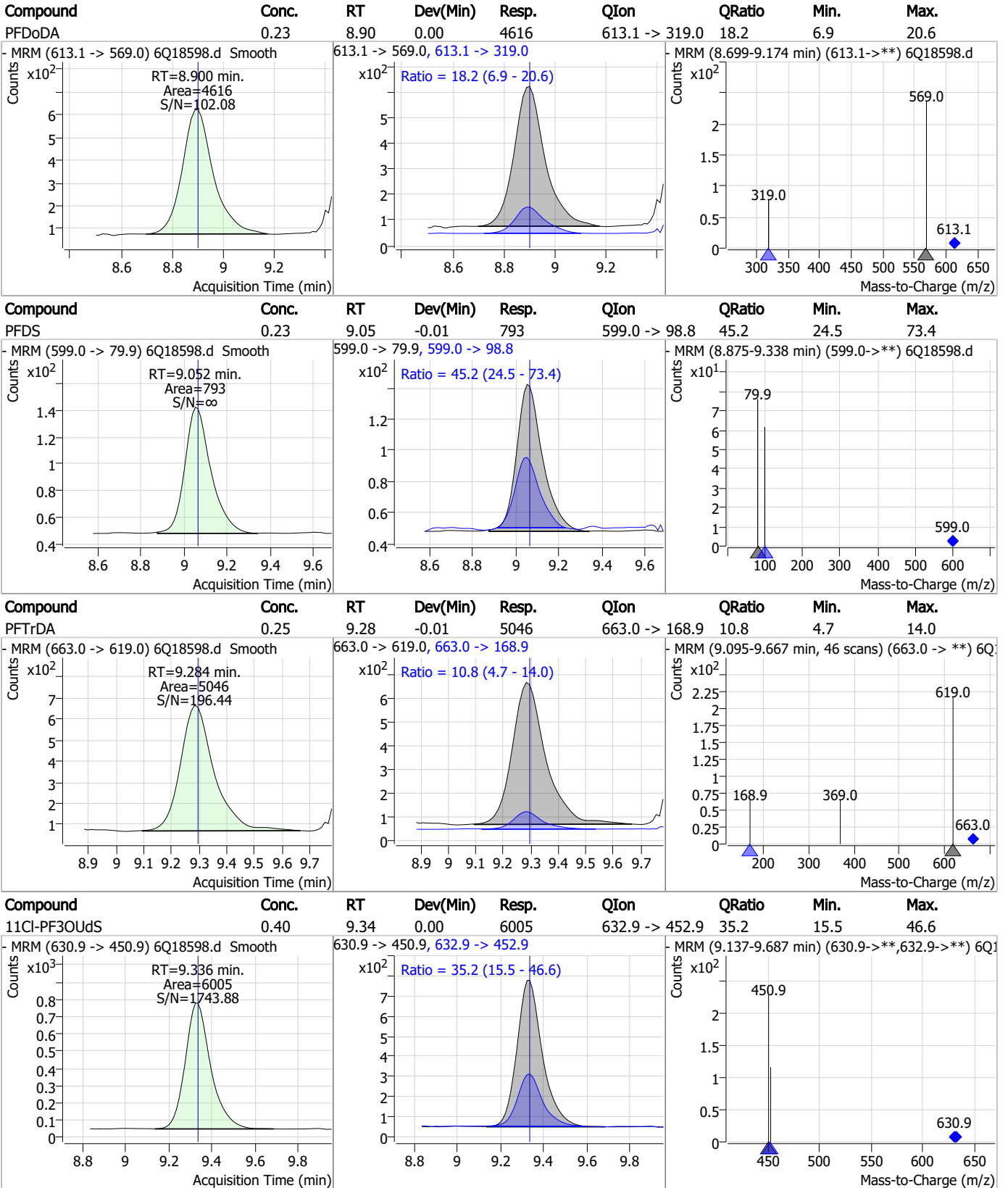


Perfluorinated Compounds by LC/MS/MS



7.7.13
7

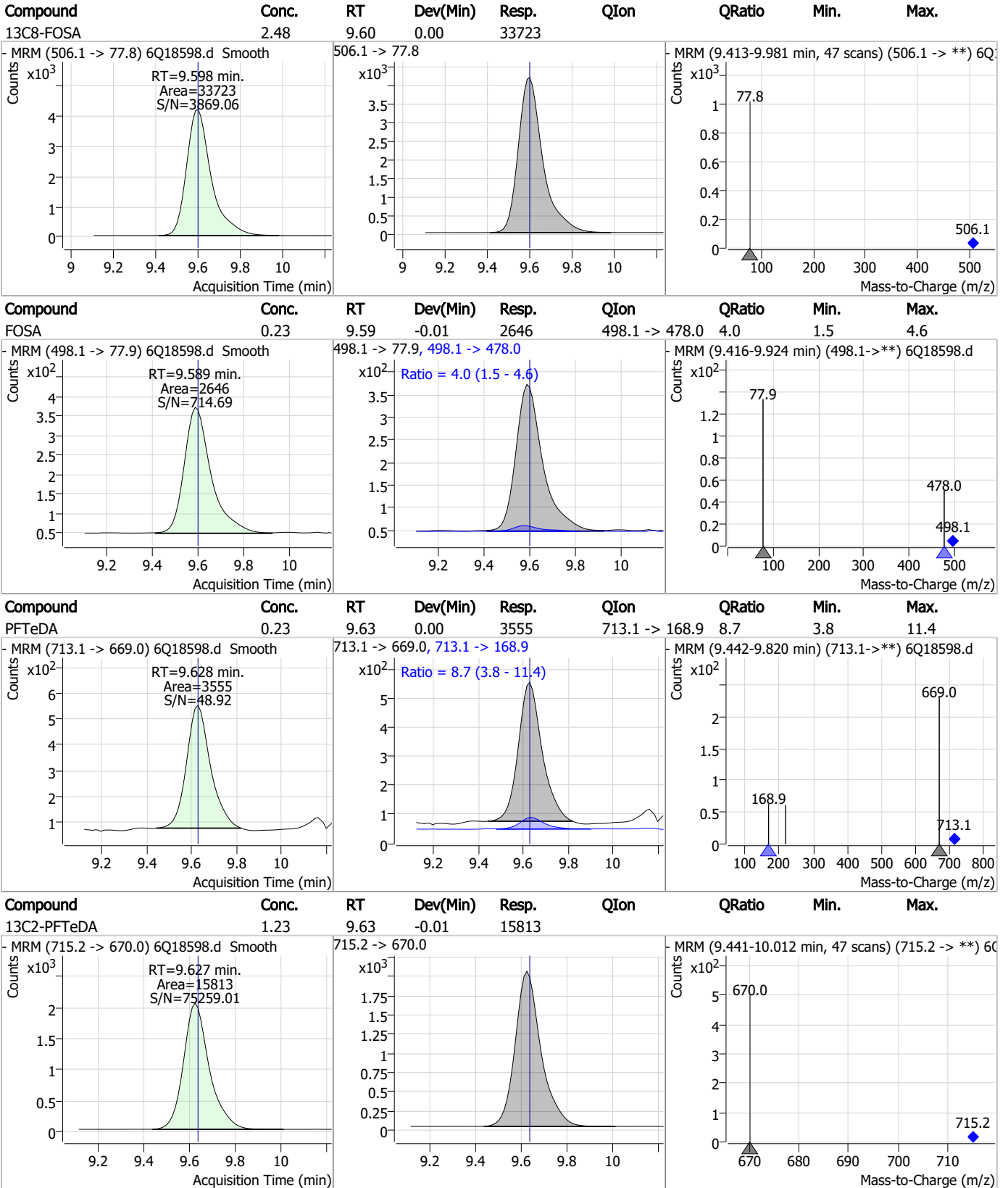
Perfluorinated Compounds by LC/MS/MS



7.7.13
7



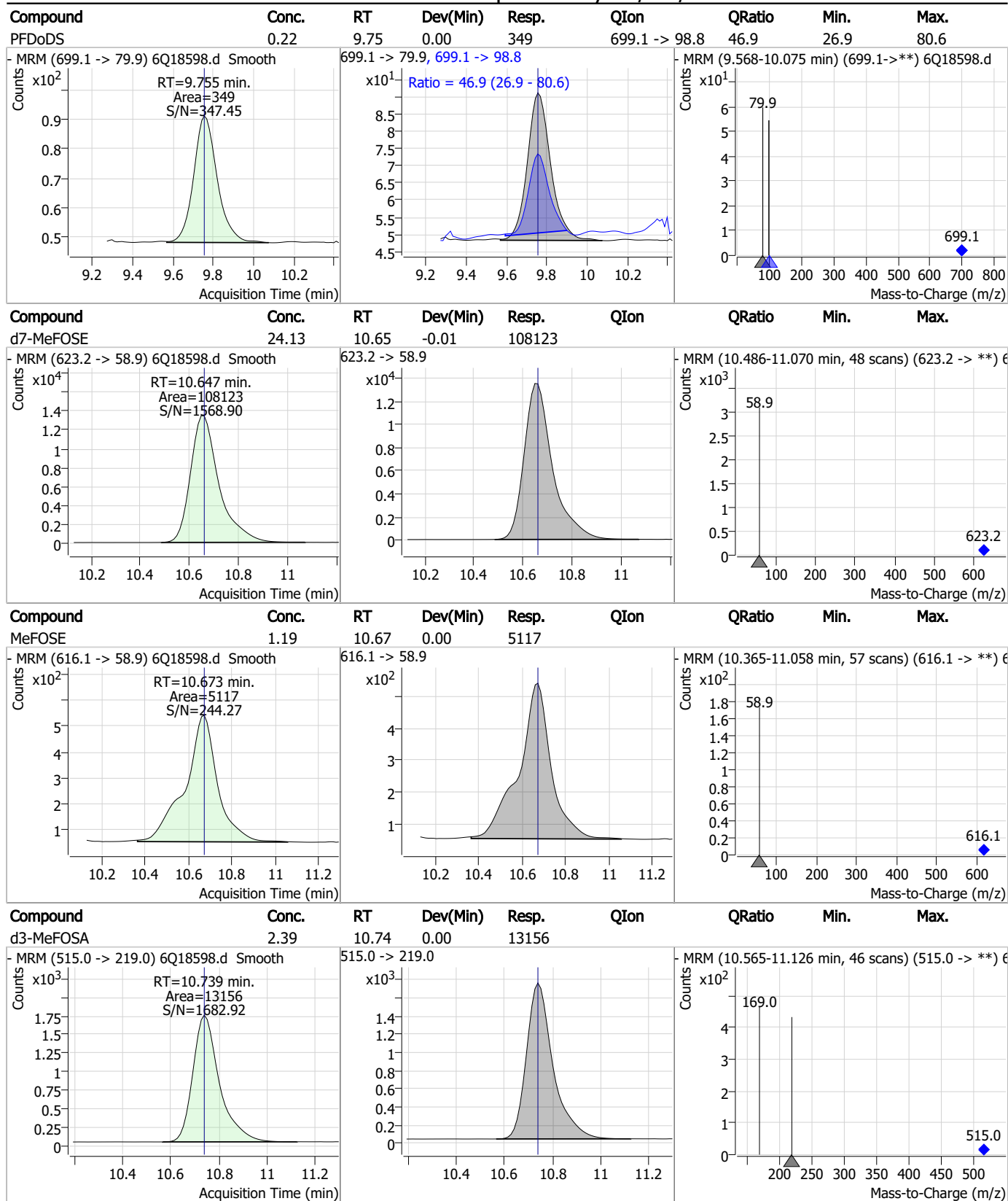
Perfluorinated Compounds by LC/MS/MS



7.7.13 7



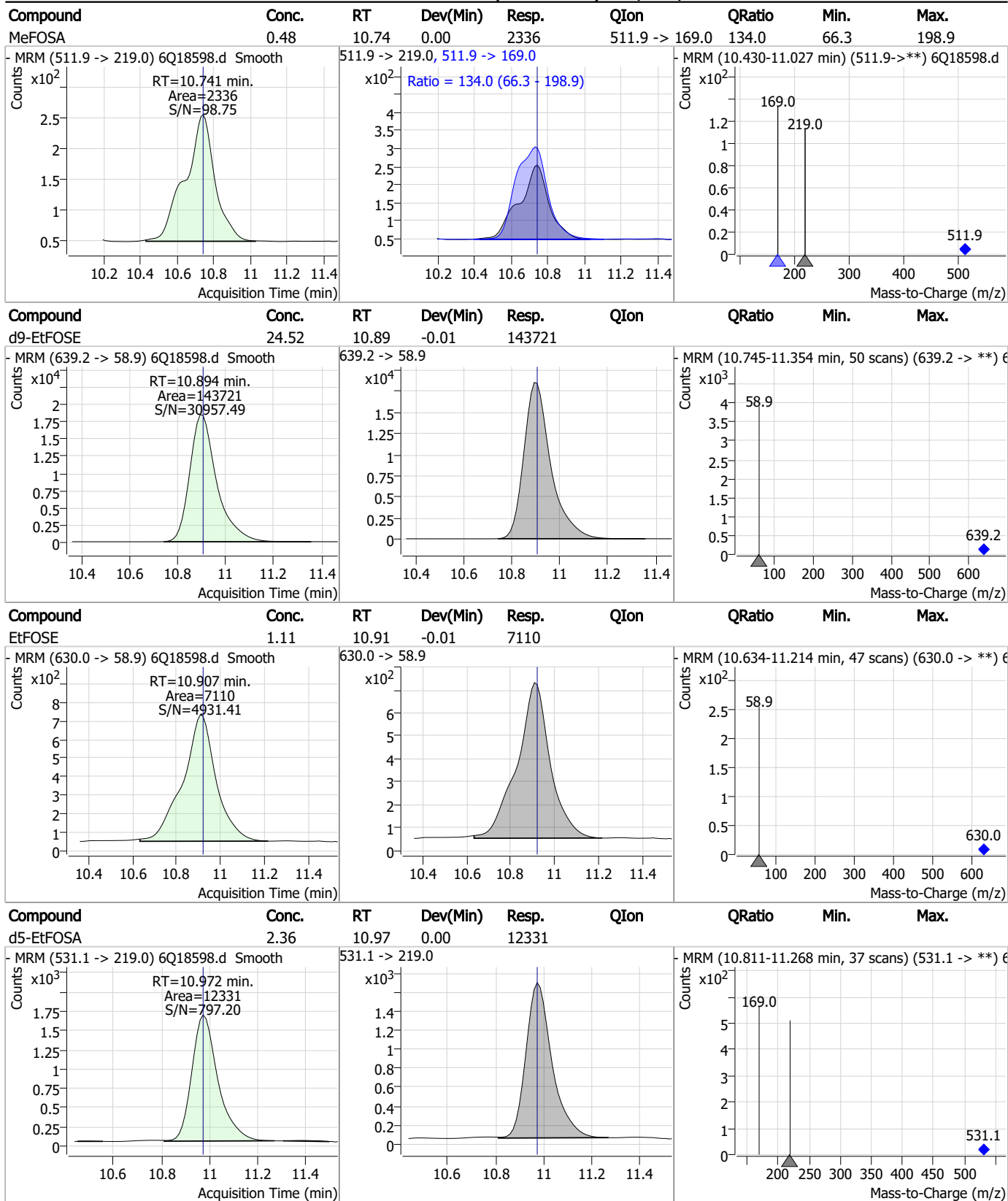
Perfluorinated Compounds by LC/MS/MS



7.7.13

7

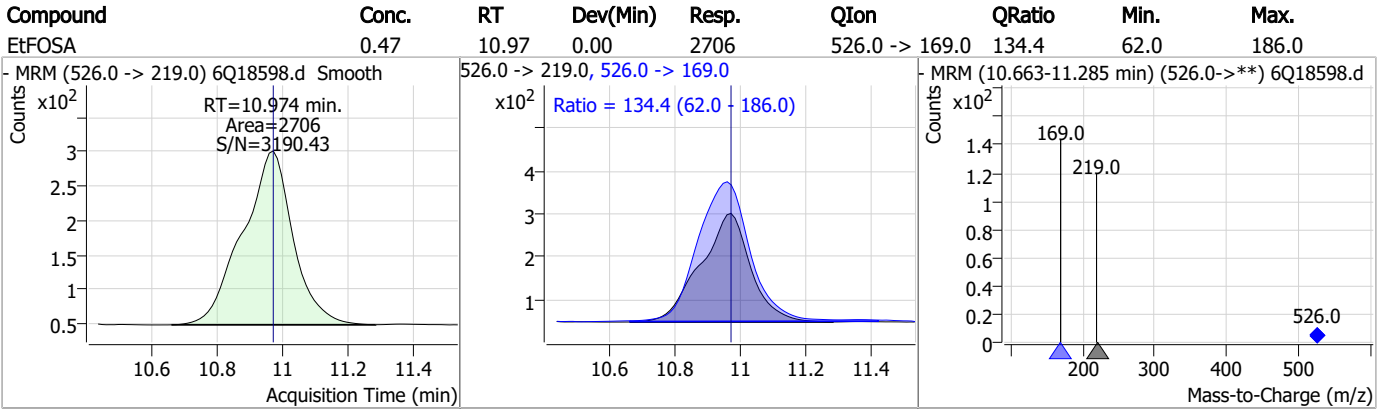
Perfluorinated Compounds by LC/MS/MS



7.7.13

7

Perfluorinated Compounds by LC/MS/MS



7.7.13

7

Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18598.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 20:10 Supervisor approved: 06/01/23 16:14 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak
EtFOSAA	2991-50-6		8.28	Split peak

7.7.13.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18641.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 6:20:34 AM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	193604	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	64803	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	68747	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	66809	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	101290	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	45104	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	27803	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	35188	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	33730	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17603	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	37509	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	25040	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	16140	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14602	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	4259	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5957	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5951	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	27948	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	42232	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	26485	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	120342	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	160430	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	14225	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14192	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	18957	2.50 µg/L	-0.025
13C3-PFBA	2.827	216.0 -> 172.0	80817	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	11033	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	105546	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	37745	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	53000	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	66120	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	4259	5.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5957	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5951	5.49 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.8%		
13C2-PFDoDA	8.900	615.1 -> 570.0	33730	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17603	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFBS	5.334	302.1 -> 79.9	25040	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	16140	2.62 µg/L	0.000

7.7.14
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C4-PFBA	2.822	216.8 -> 171.9	193604	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.369	367.1 -> 322.0	66809	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	68747	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFPeA	4.210	268.3 -> 223.0	64803	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C6-PFDA	8.014	519.1 -> 474.1	27803	1.26 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	35188	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-FOSA	9.598	506.1 -> 77.8	37509	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C8-PFOA	7.026	421.1 -> 376.0	101290	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-PFOS	8.177	507.1 -> 79.9	14602	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C9-PFNA	7.545	472.1 -> 427.0	45104	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27948	4.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.3%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42232	9.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d3-MeFOSA	10.739	515.0 -> 219.0	14192	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
d5-EtFOSAA	8.267	589.2 -> 419.0	26485	4.76 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
d7-MeFOSE	10.660	623.2 -> 58.9	120342	25.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d9-EtFOSE	10.907	639.2 -> 58.9	160430	25.76 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	14225	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	54503	8.81 µg/L	97
		327.1 -> 80.9	20659		
6:2FTS	6.801	427.1 -> 407.0	51806	8.85 µg/L	98
		427.1 -> 80.9	18070		
8:2FTS	7.816	527.1 -> 507.0	31719	9.58 µg/L	93
		527.1 -> 80.8	12077		
EtFOSAA	8.280	584.2 -> 419.1	8617	2.53 µg/L	96
		584.2 -> 526.0	4916		
FOSA	9.589	498.1 -> 77.9	29472	2.27 µg/L	100
		498.1 -> 478.0	891		
MeFOSAA	8.085	570.1 -> 419.0	15964	2.78 µg/L	99
		570.1 -> 483.0	3103		
PFBA	2.831	212.8 -> 168.9	61373	9.58 µg/L	100
PFBS	5.335	298.7 -> 79.9	17775	2.09 µg/L	95
		298.7 -> 98.8	7007		
PFDA	8.014	512.9 -> 469.0	78918	2.45 µg/L	97
		512.9 -> 219.0	11599		
PFDODA	8.900	613.1 -> 569.0	53397	2.31 µg/L	95
		613.1 -> 319.0	8459		
PFDS	9.052	599.0 -> 79.9	8593	2.35 µg/L	98

7.7.14
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	4100	2.27 µg/L	95
		363.1 -> 319.0	66986		
PFHpS	7.685	363.1 -> 169.0	11317	2.37 µg/L	99
		449.0 -> 79.9	16558		
PFHxA	5.407	449.0 -> 98.9	8237	2.38 µg/L	99
		313.0 -> 269.0	54845		
PFHxS	7.131	313.0 -> 118.9	2712	2.12 µg/L	100
		398.7 -> 79.9	15504		
PFNA	7.545	398.7 -> 98.9	7317	2.38 µg/L	99
		463.0 -> 419.0	76221		
PFNS	8.631	463.0 -> 219.0	15116	2.24 µg/L	88
		548.8 -> 79.9	13104		
PFOA	7.028	548.8 -> 98.9	7467	2.33 µg/L	97
		413.0 -> 369.0	100757		
PFOS	8.166	413.0 -> 169.0	18648	2.28 µg/L	98
		498.9 -> 79.9	15205		
PFPeA	4.212	498.9 -> 98.8	7924	4.76 µg/L	100
		263.0 -> 219.0	74090		
PFPeS	6.422	349.1 -> 79.9	16179	2.22 µg/L	97
		349.1 -> 98.9	7376		
PFTeDA	9.628	713.1 -> 669.0	42110	2.43 µg/L	98
		713.1 -> 168.9	3477		
PFTrDA	9.284	663.0 -> 619.0	55755	2.38 µg/L	97
		663.0 -> 168.9	5803		
PFUnDA	8.468	563.1 -> 519.0	55858	2.44 µg/L	97
		563.1 -> 269.1	9262		
11CI-PF3OUdS	9.336	630.9 -> 450.9	71466	4.51 µg/L	99
		632.9 -> 452.9	22500		
9CI-PF3ONS	8.495	530.8 -> 351.0	112295	4.50 µg/L	99
		532.8 -> 353.0	36155		
ADONA	6.632	376.9 -> 250.9	264040	4.71 µg/L	99
		376.9 -> 84.8	69214		
HFPO-DA	5.783	284.9 -> 168.9	16988	4.75 µg/L	99
		284.9 -> 184.9	2251		
3:3FTCA	3.684	241.0 -> 177.0	11721	11.77 µg/L	97
		241.0 -> 117.0	1573		
5:3FTCA	6.086	341.0 -> 237.1	248817	59.92 µg/L	94
		341.0 -> 217.0	187838		
7:3FTCA	7.510	441.0 -> 316.9	176829	62.18 µg/L	98
		441.0 -> 336.9	383951		
EtFOSA	10.974	526.0 -> 219.0	30756	4.64 µg/L	95
		526.0 -> 169.0	39840		
EtFOSE	10.907	630.0 -> 58.9	83477	11.66 µg/L	100
		511.9 -> 219.0	25647		
MeFOSA	10.741	511.9 -> 169.0	36031	4.91 µg/L	93
		616.1 -> 58.9	57270		
MeFOSE	10.673	699.1 -> 79.9	3799	11.97 µg/L	100
		699.1 -> 98.8	2005		
PFDoDS	9.755	295.0 -> 201.0	13457	2.34 µg/L	99
		295.0 -> 84.9	3637		
NFDHA	5.299	279.0 -> 85.1	50850	4.79 µg/L	100
		229.0 -> 84.9	39382		
PFMBA	4.626	314.8 -> 134.9	128876	4.80 µg/L	100
		314.8 -> 82.9	4488		
PFMPA	3.363			4.78 µg/L	100
PFEESA	5.875			4.40 µg/L	99

7.7.14
7

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

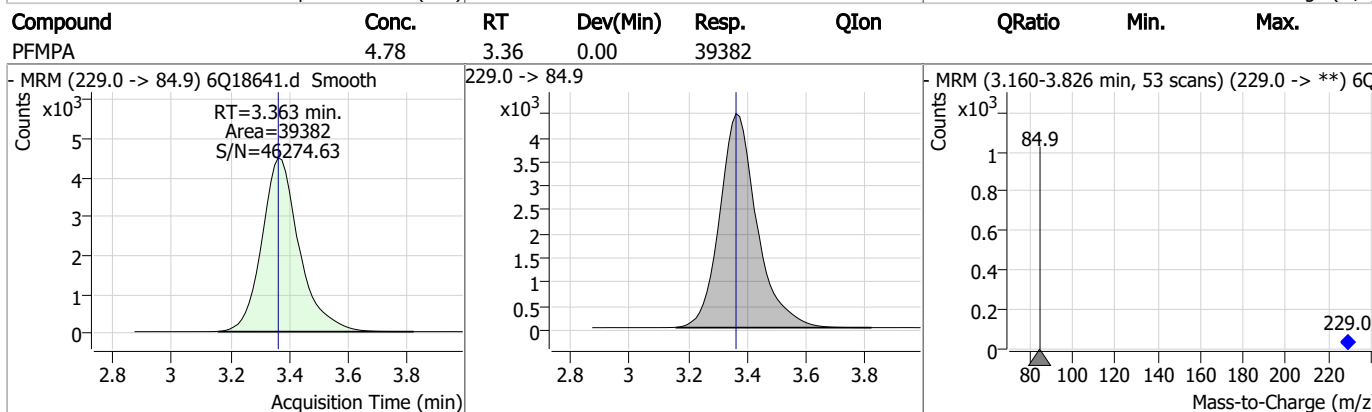
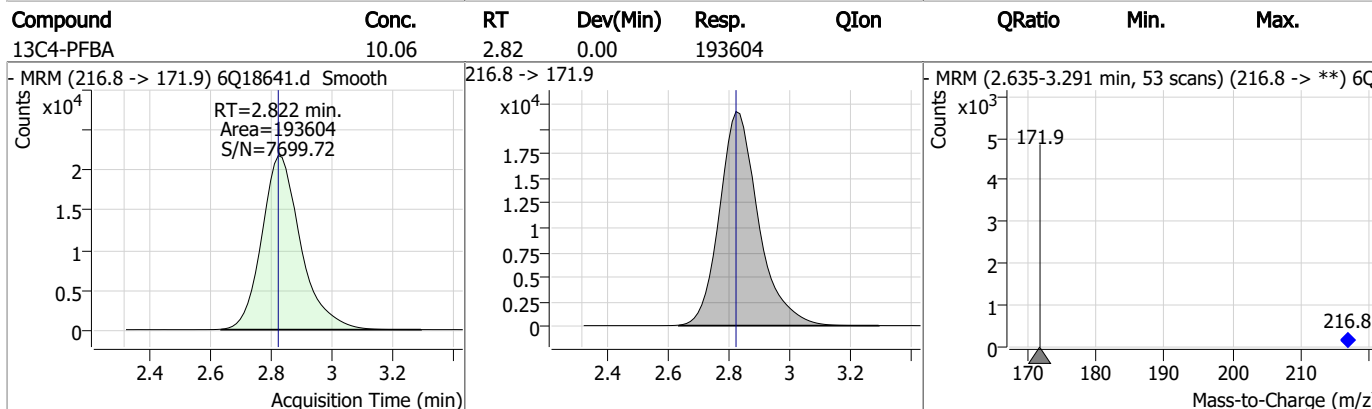
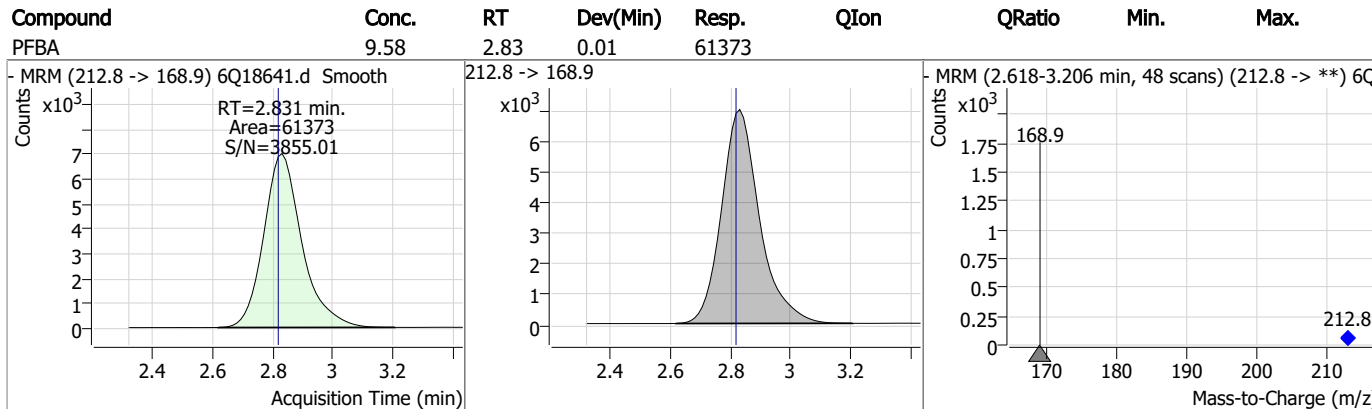
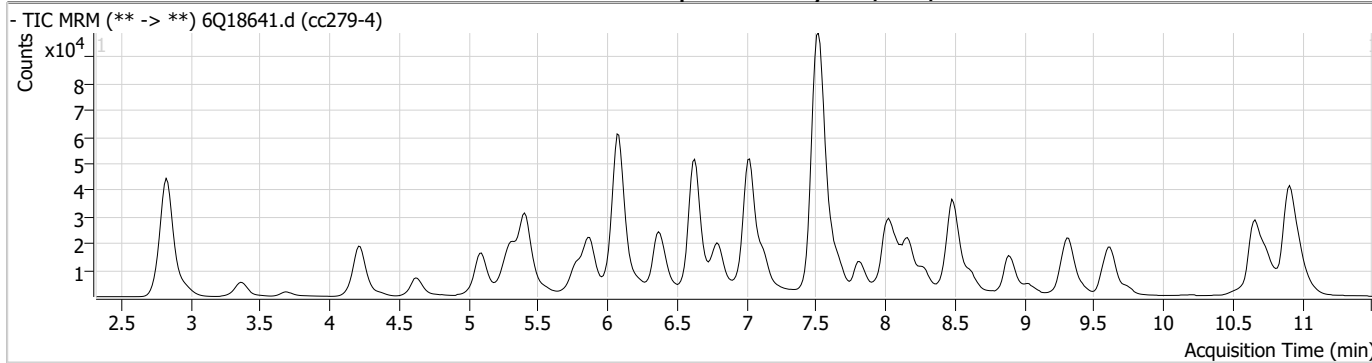
Perfluorinated Compounds by LC/MS/MS

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

7.7.14

7

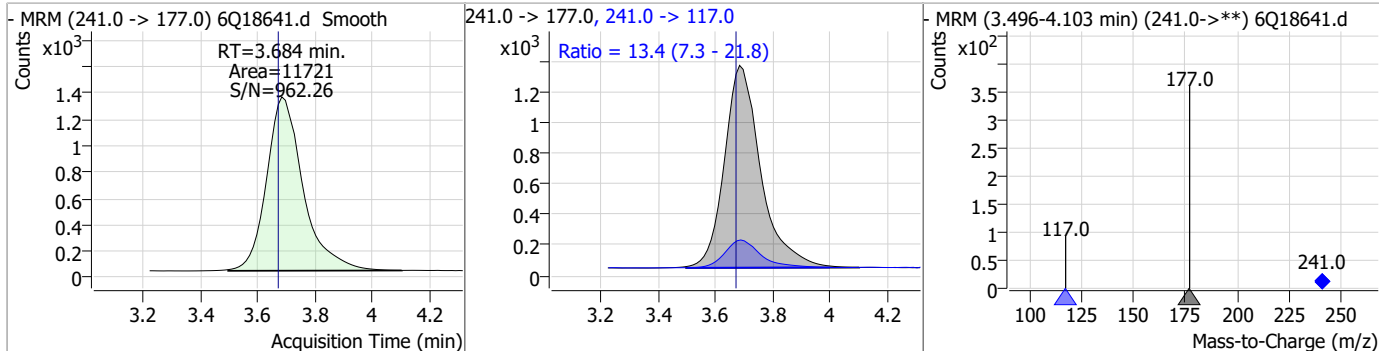
Perfluorinated Compounds by LC/MS/MS



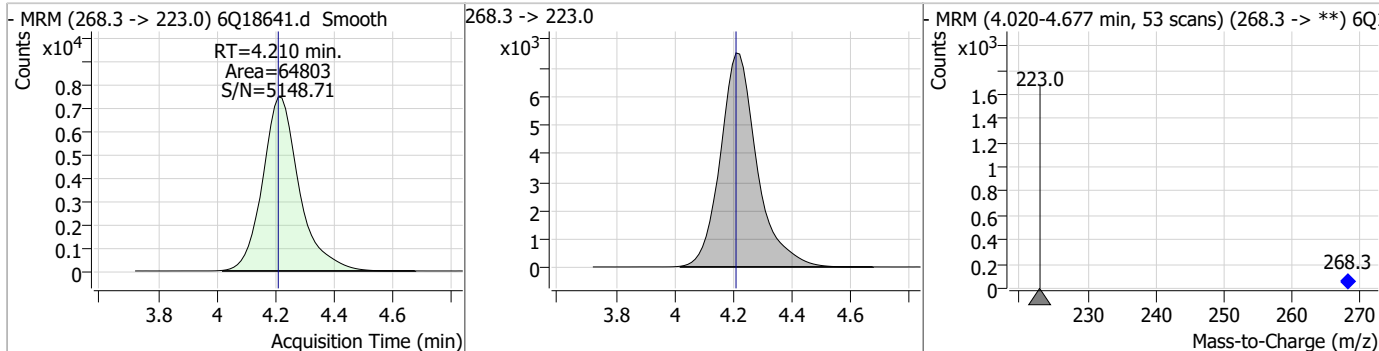
7.7.14
7

Perfluorinated Compounds by LC/MS/MS

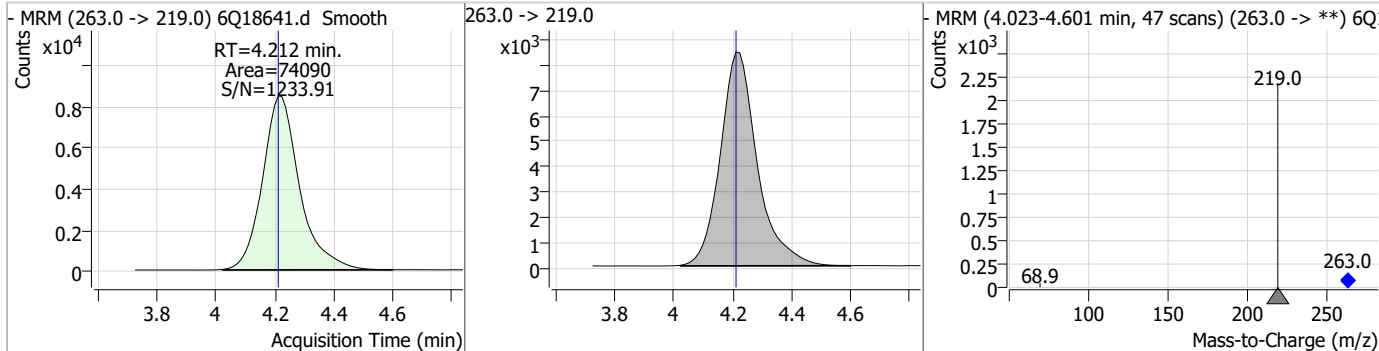
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.77	3.68	0.01	11721	241.0 -> 117.0	13.4	7.3	21.8



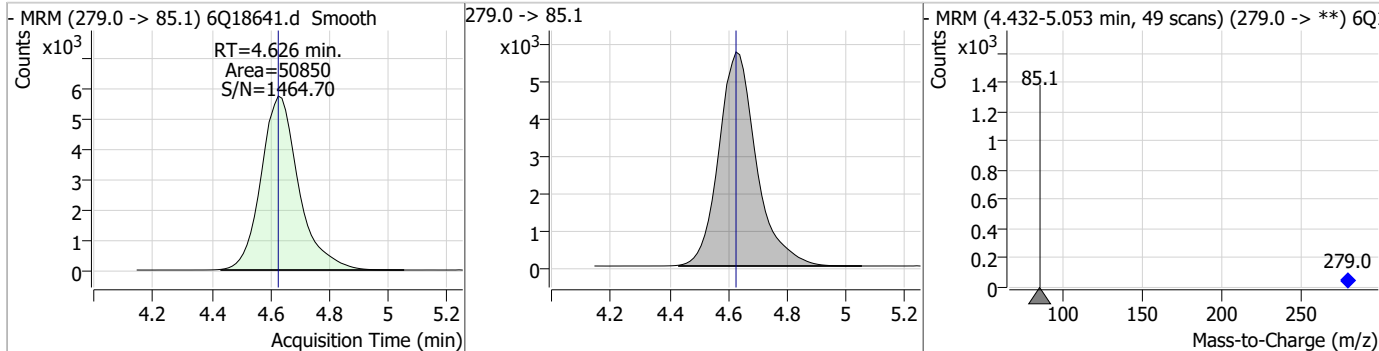
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.04	4.21	0.00	64803				



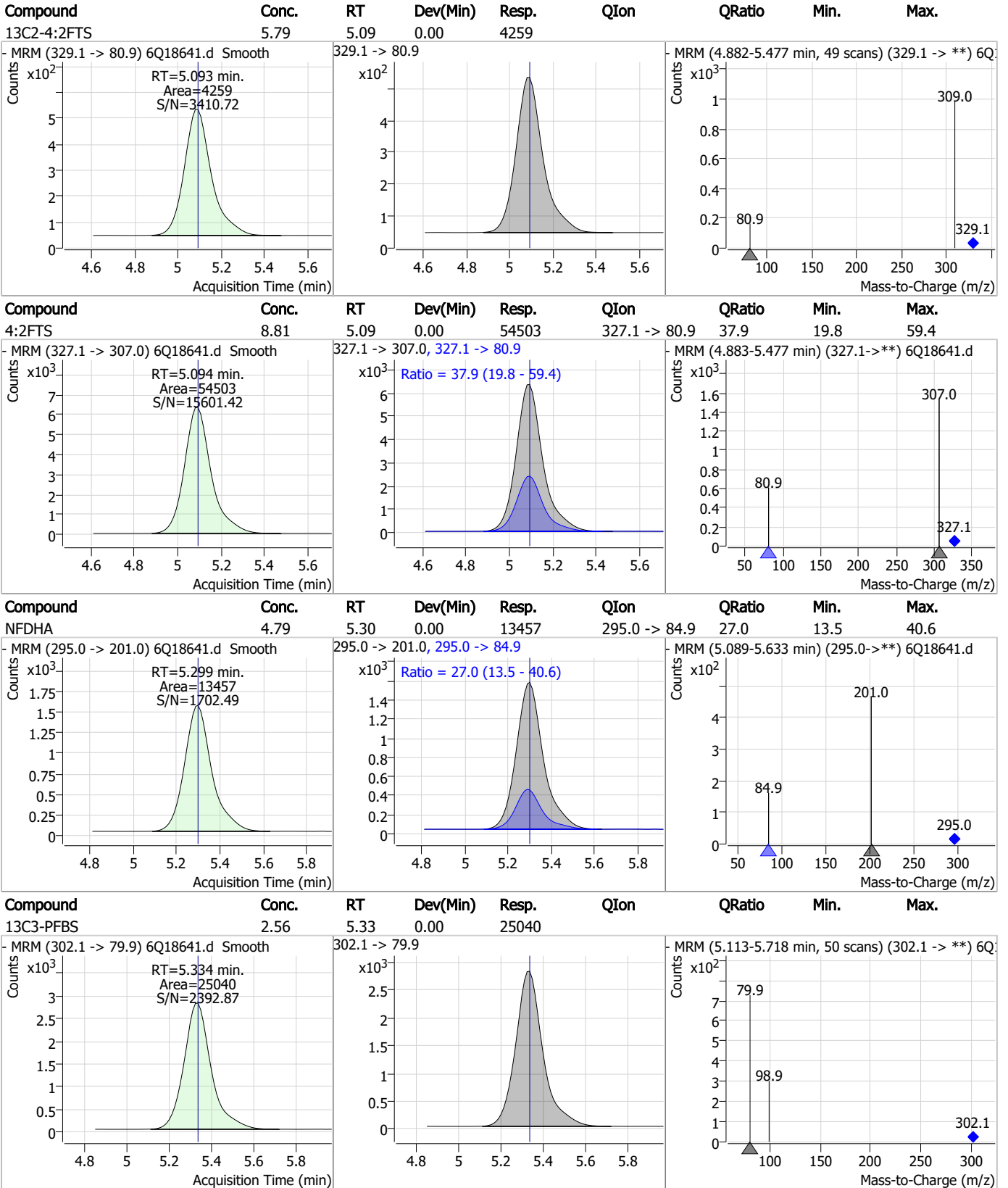
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.76	4.21	0.00	74090				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.80	4.63	0.00	50850				



Perfluorinated Compounds by LC/MS/MS

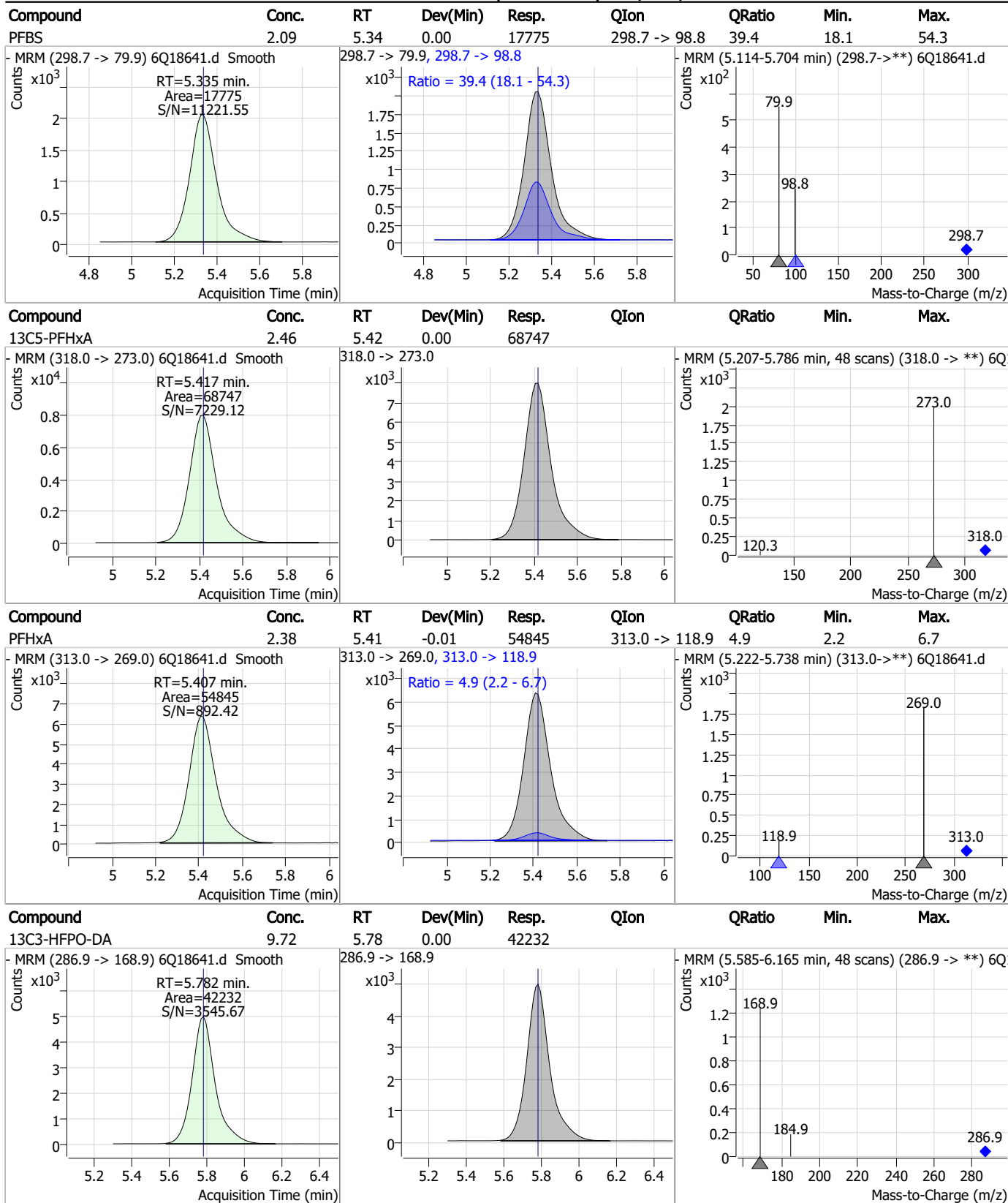


7.7.14

7



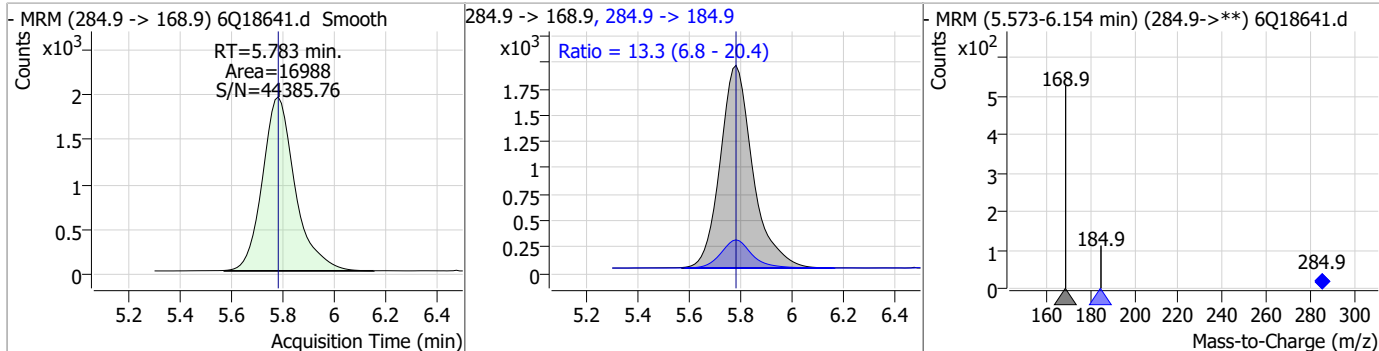
Perfluorinated Compounds by LC/MS/MS



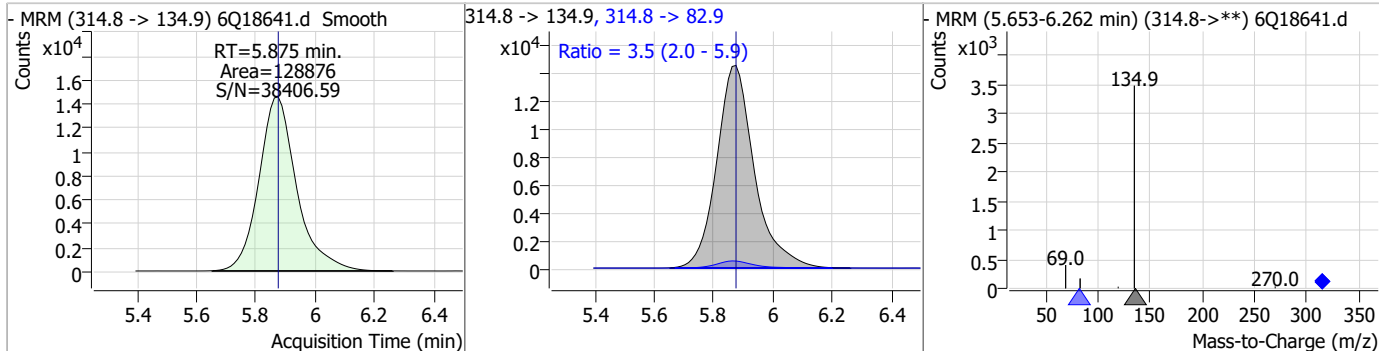
7.7.14

Perfluorinated Compounds by LC/MS/MS

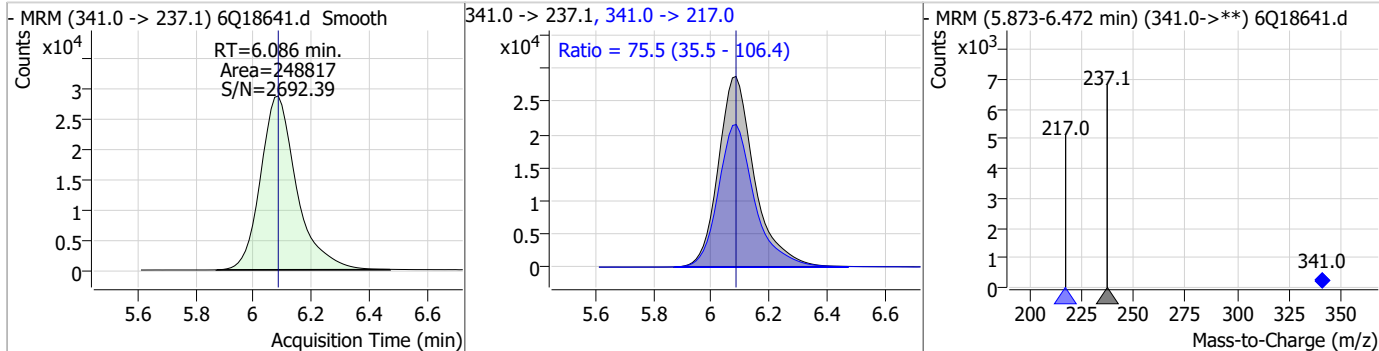
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.75	5.78	0.00	16988	284.9 -> 184.9	13.3	6.8	20.4



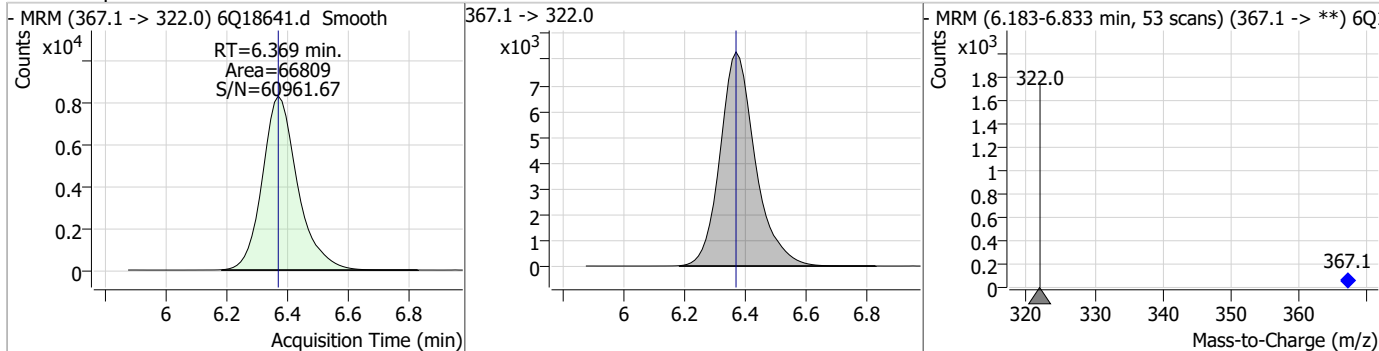
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.40	5.88	0.00	128876	314.8 -> 82.9	3.5	2.0	5.9



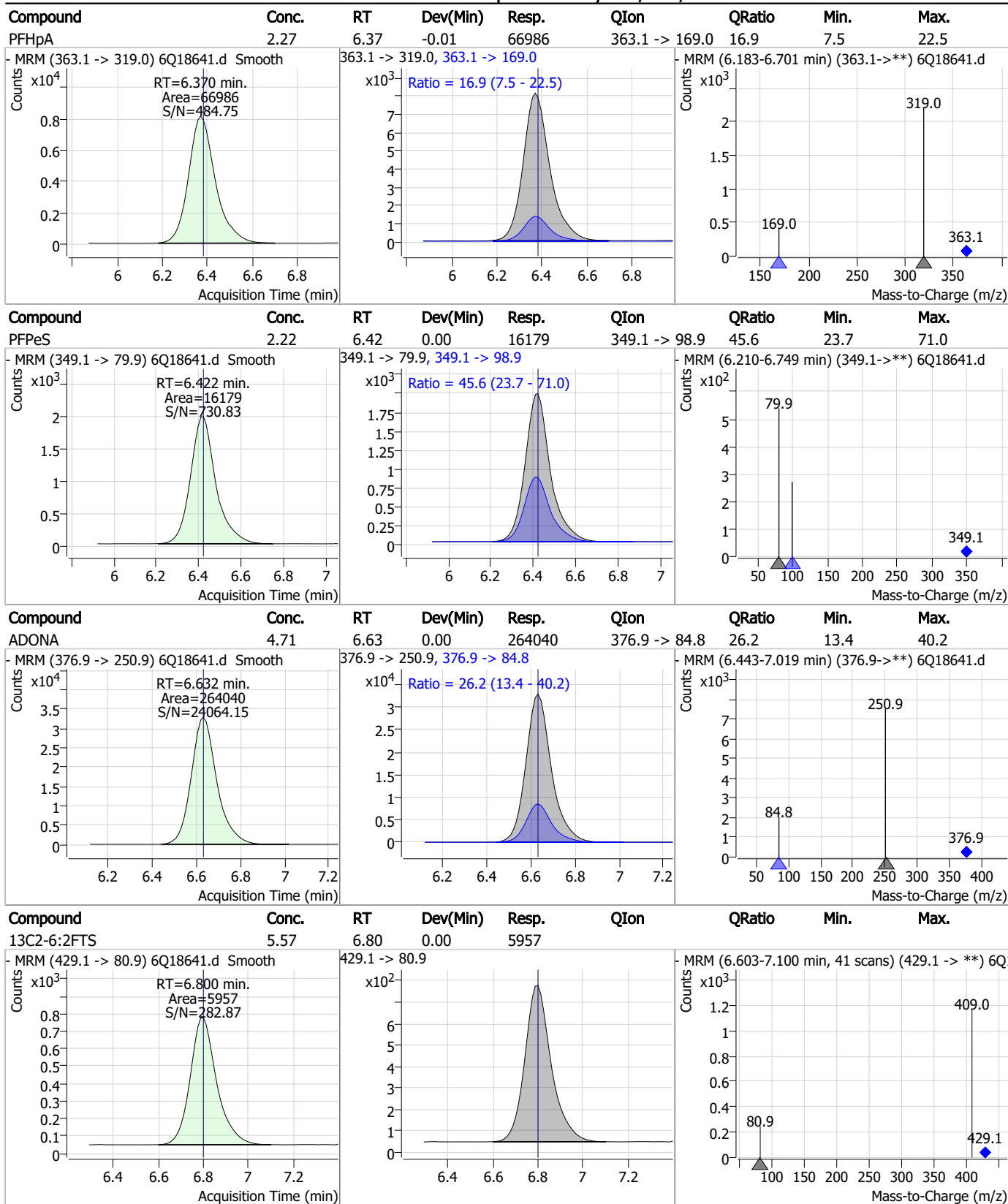
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.92	6.09	0.00	248817	341.0 -> 217.0	75.5	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.58	6.37	0.00	66809	367.1 -> 322.0			

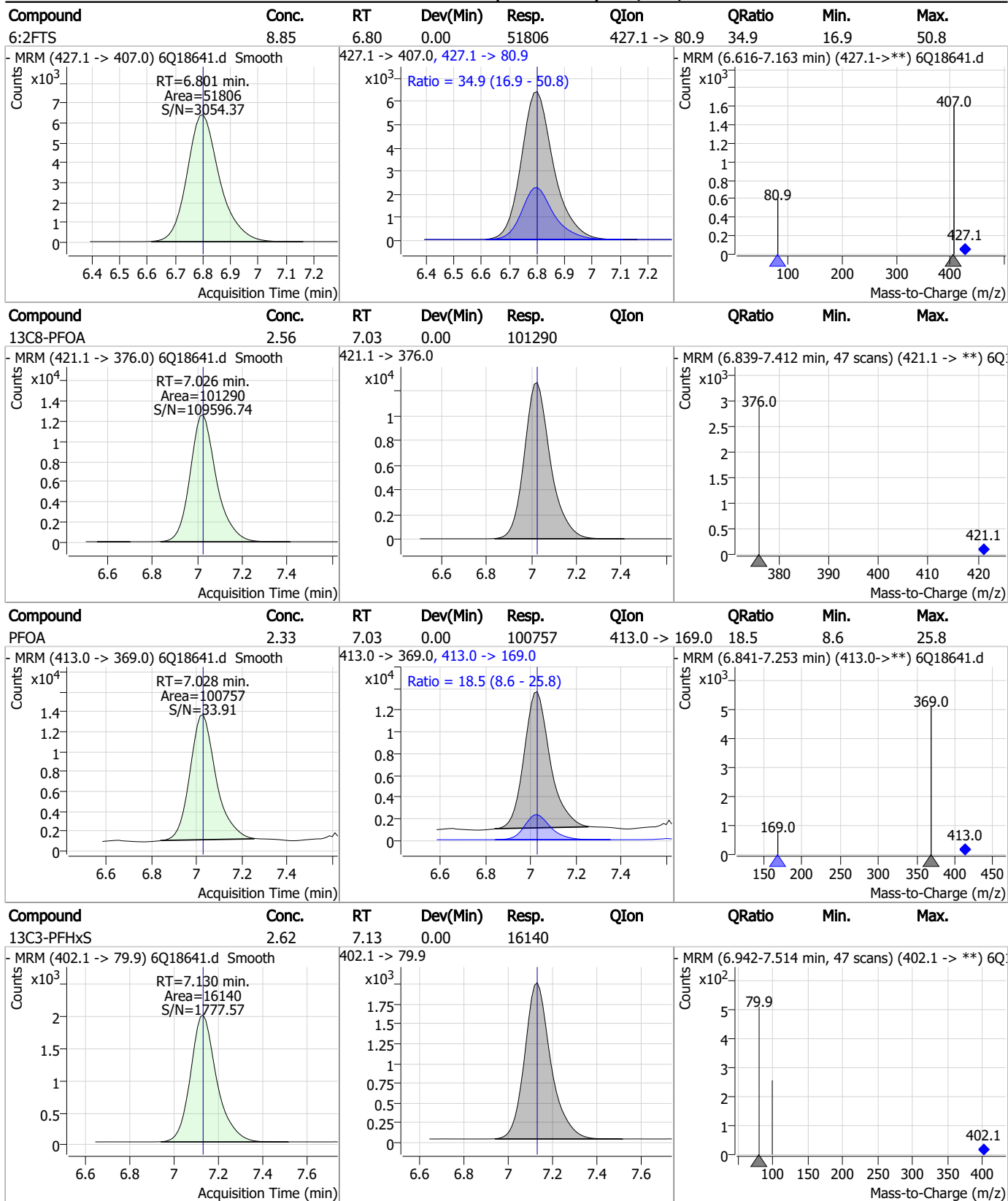


Perfluorinated Compounds by LC/MS/MS



7.7.14
7

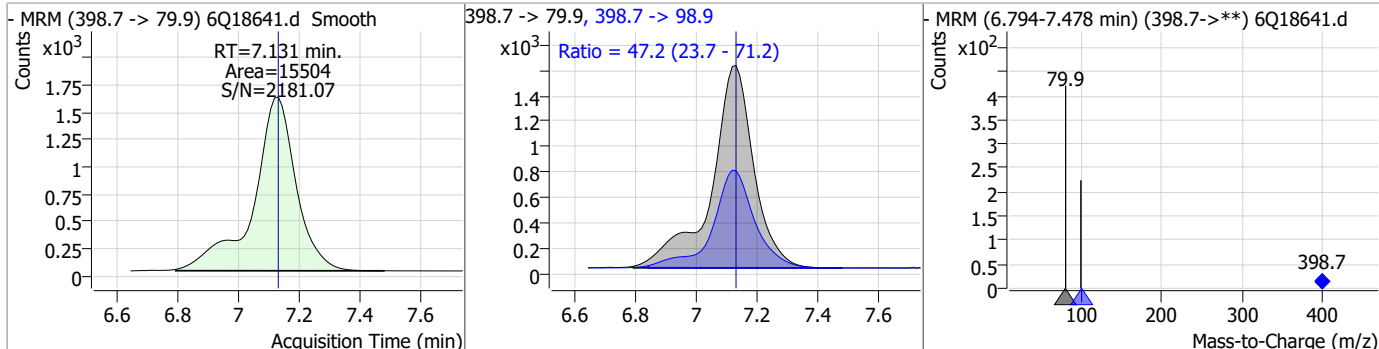
Perfluorinated Compounds by LC/MS/MS



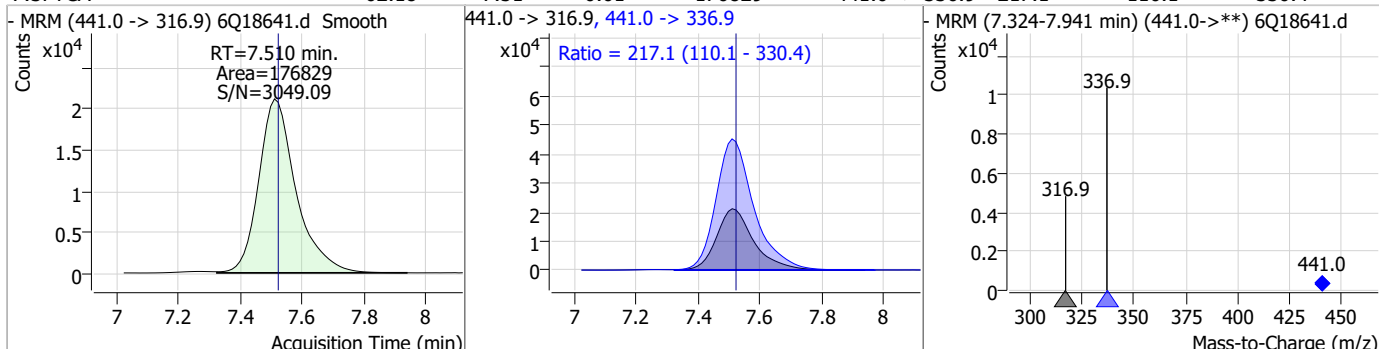
7.7.14

Perfluorinated Compounds by LC/MS/MS

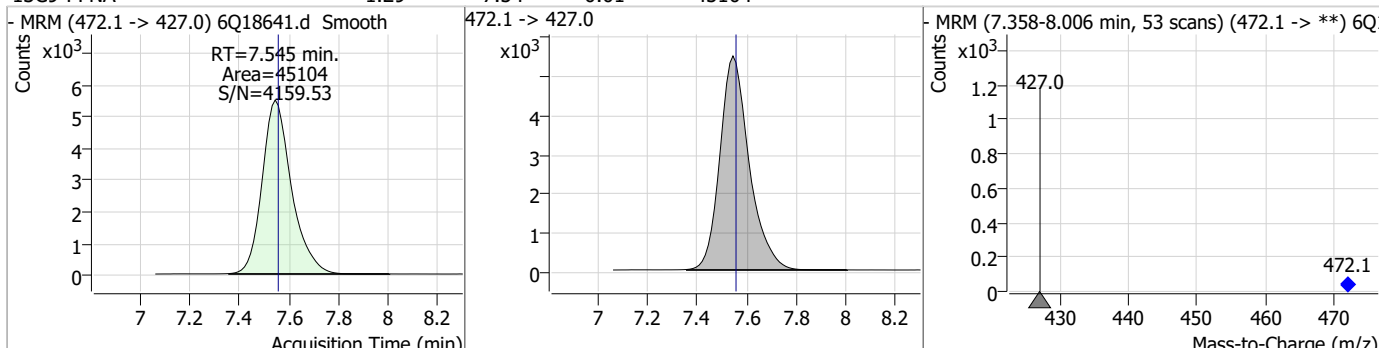
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.12	7.13	0.00	15504	398.7 -> 98.9	47.2	23.7	71.2



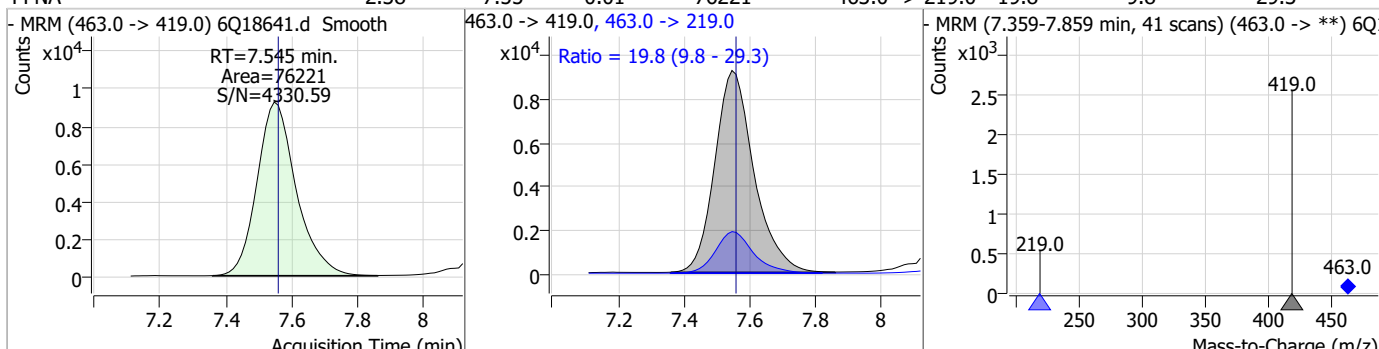
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	62.18	7.51	-0.01	176829	441.0 -> 336.9	217.1	110.1	330.4



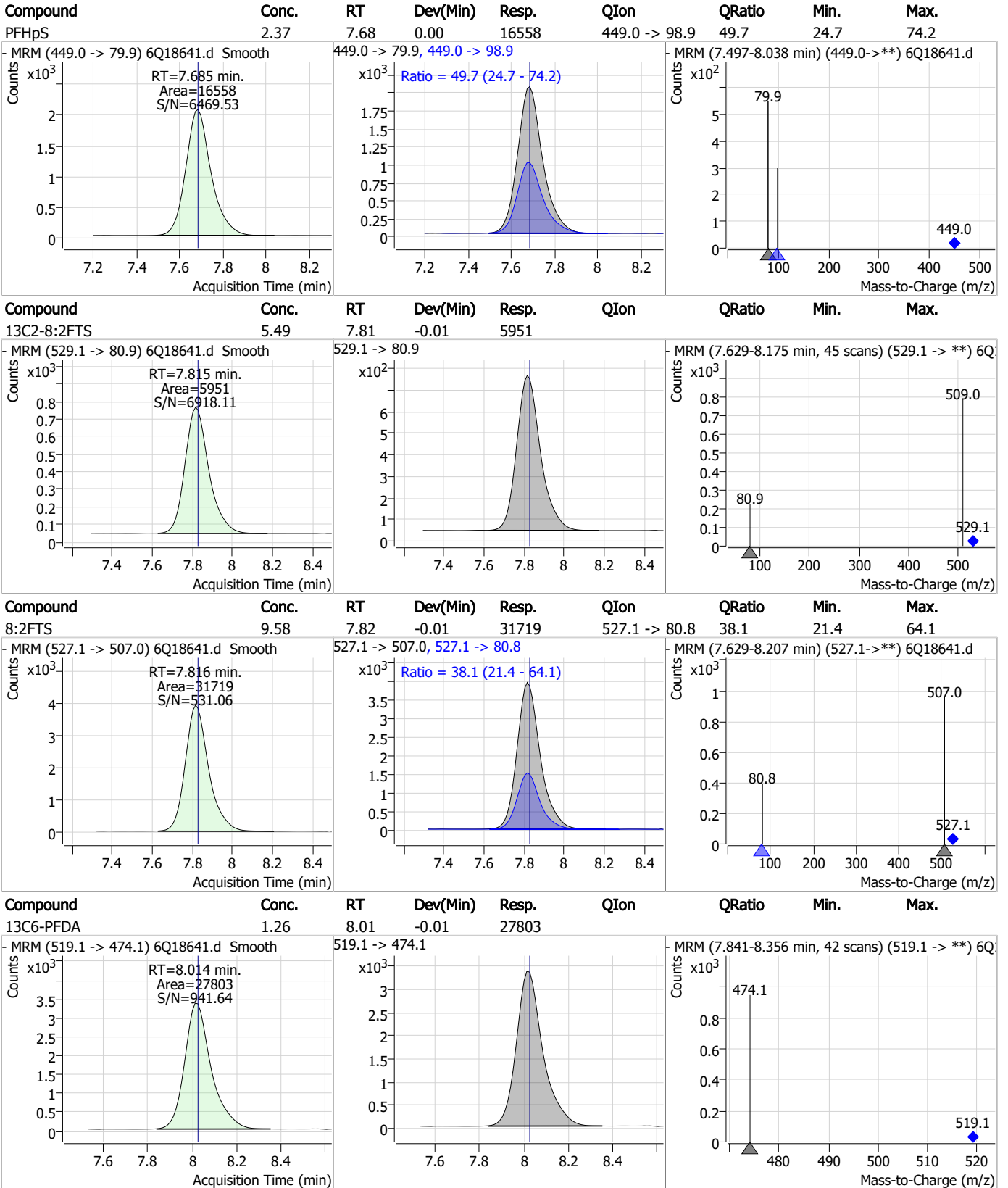
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.29	7.54	-0.01	45104				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.38	7.55	-0.01	76221	463.0 -> 219.0	19.8	9.8	29.3



Perfluorinated Compounds by LC/MS/MS

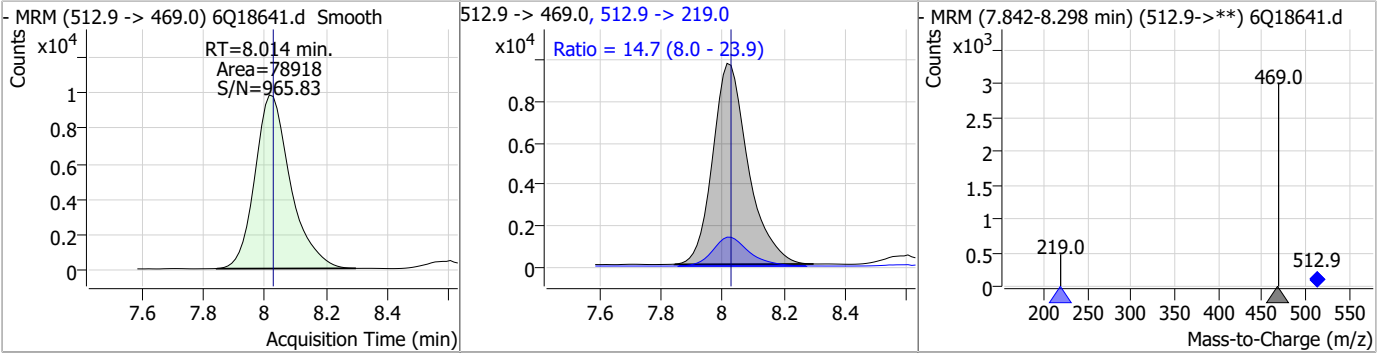


7.7.14

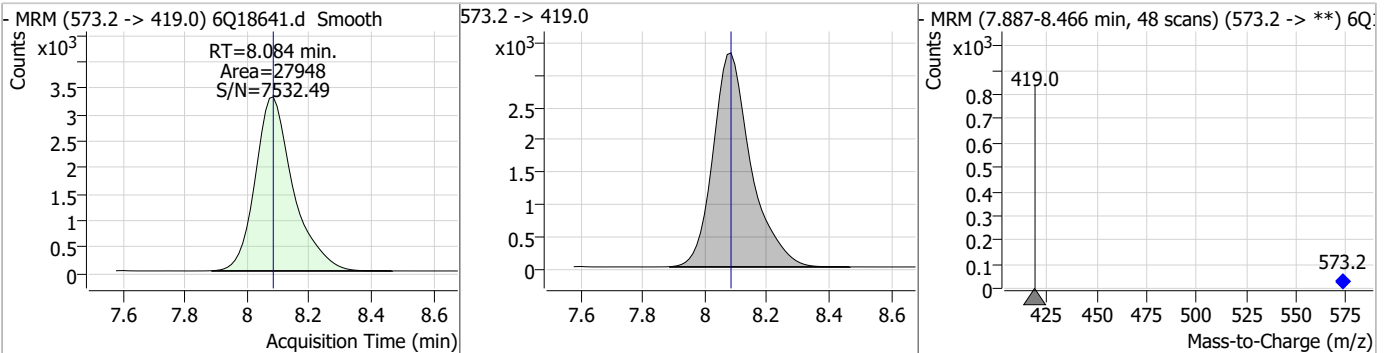


Perfluorinated Compounds by LC/MS/MS

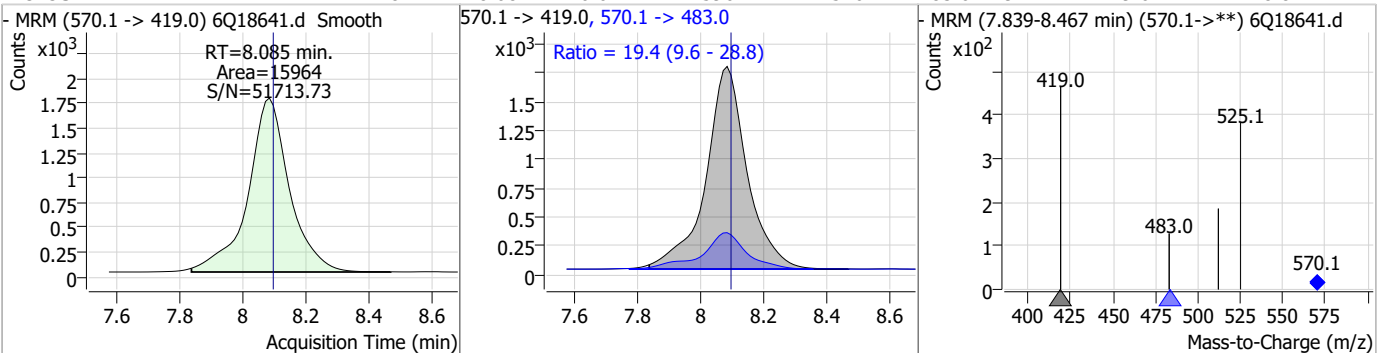
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.45	8.01	-0.01	78918	512.9 -> 219.0	14.7	8.0	23.9



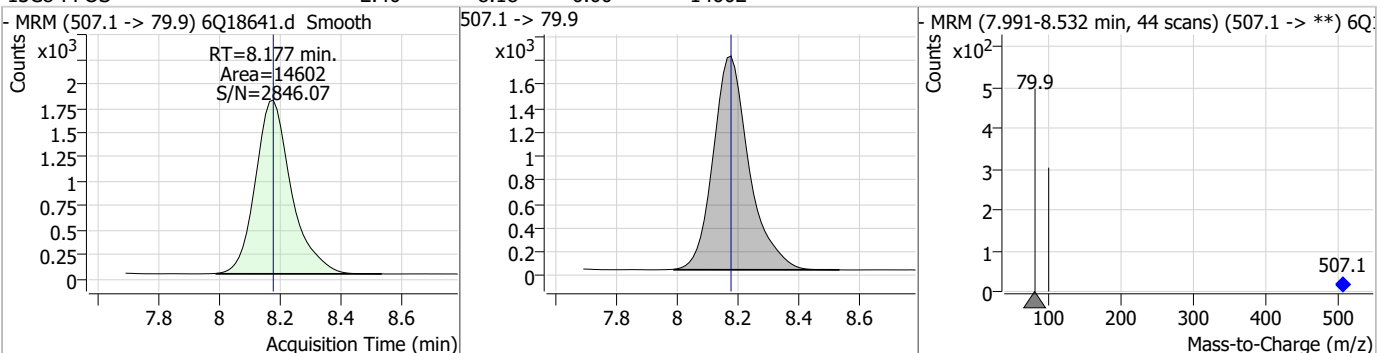
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.57	8.08	0.00	27948				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.78	8.08	-0.01	15964	570.1 -> 483.0	19.4	9.6	28.8

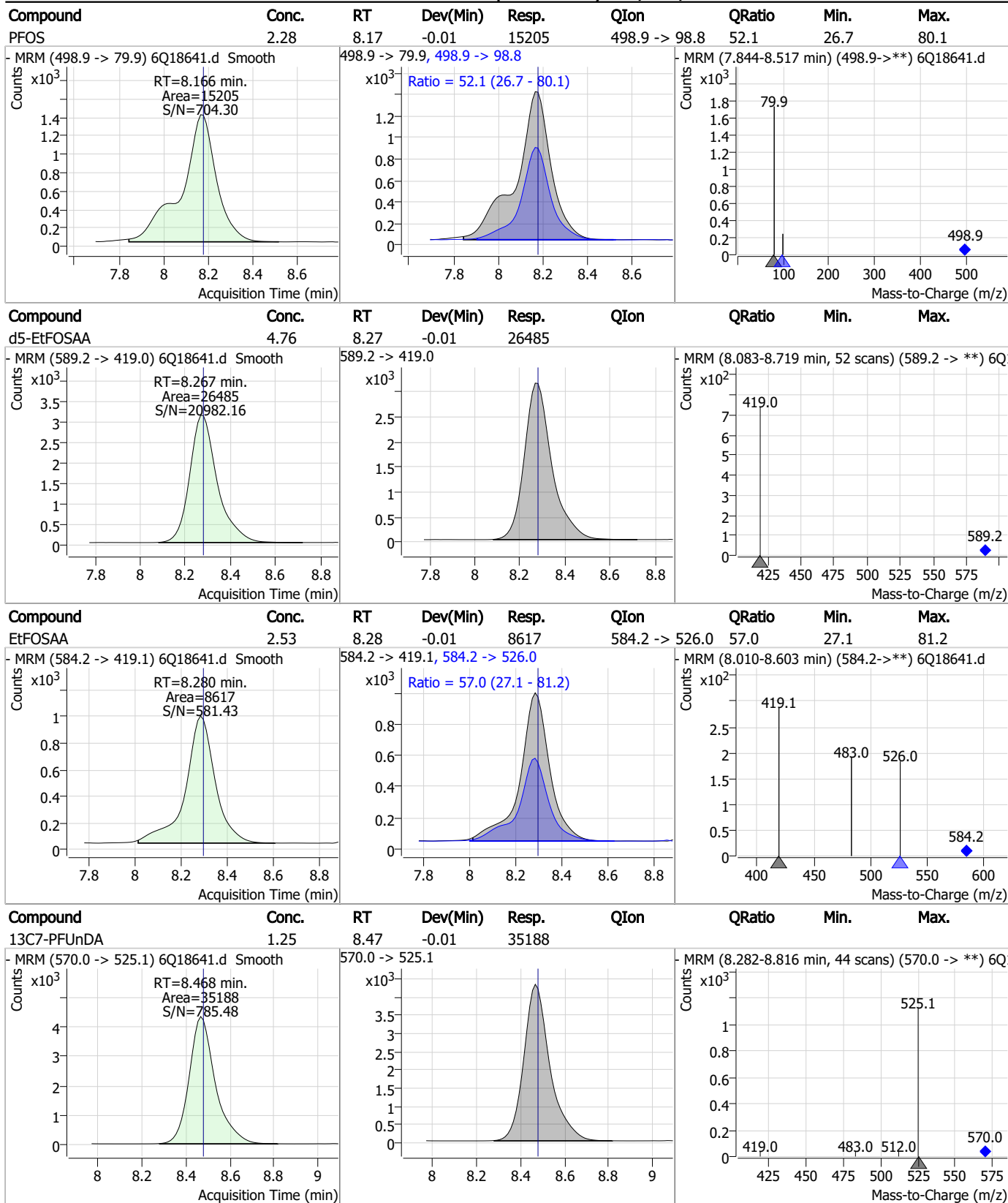


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.40	8.18	0.00	14602				



7.7.14
7

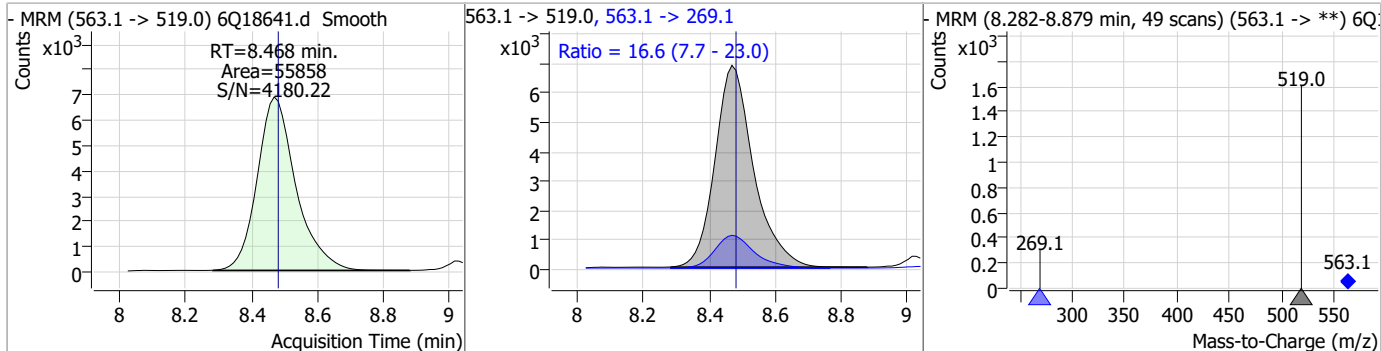
Perfluorinated Compounds by LC/MS/MS



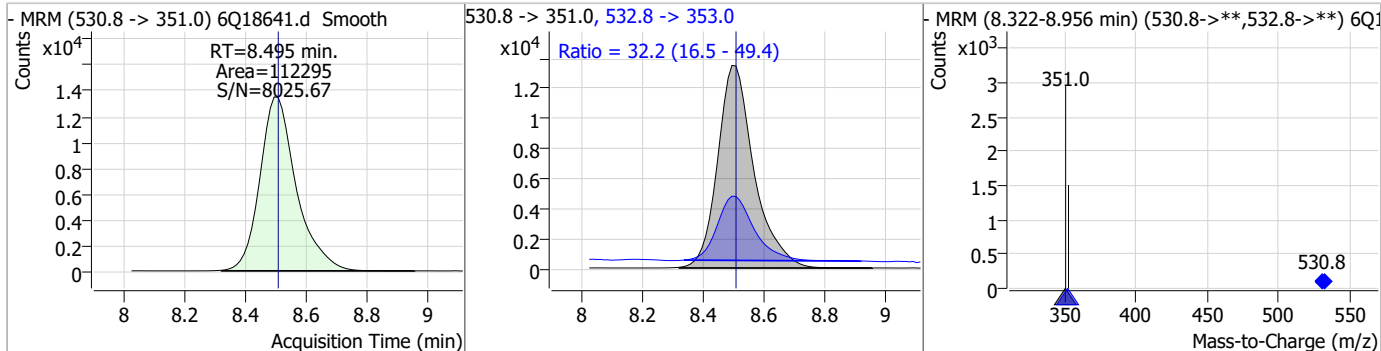
7.7.14
7

Perfluorinated Compounds by LC/MS/MS

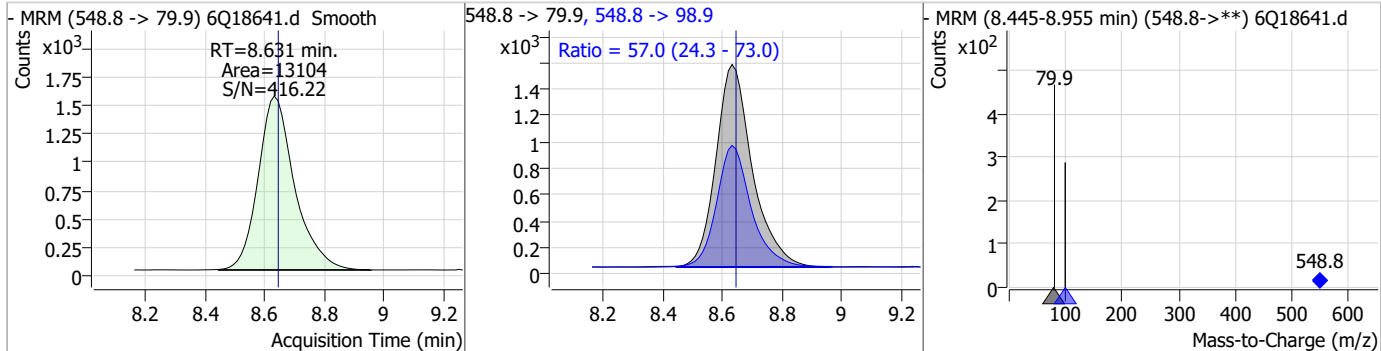
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.44	8.47	-0.01	55858	563.1 -> 269.1	16.6	7.7	23.0



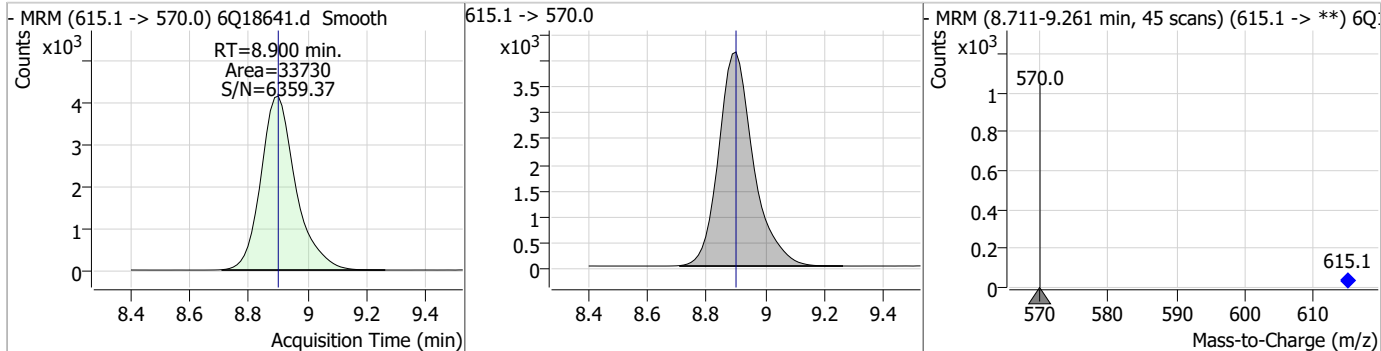
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.50	8.49	-0.01	112295	532.8 -> 353.0	32.2	16.5	49.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.24	8.63	-0.01	13104	548.8 -> 98.9	57.0	24.3	73.0

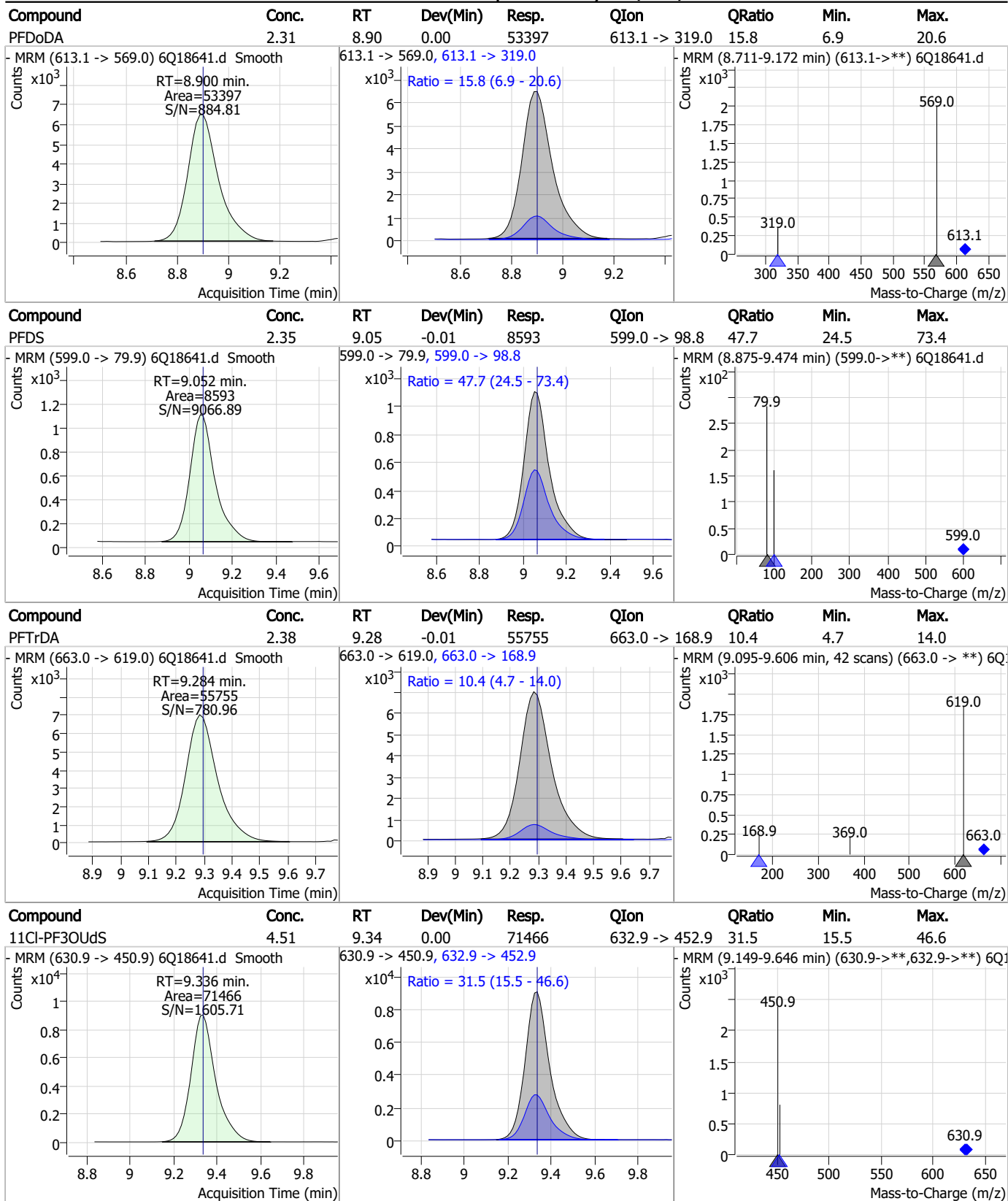


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	8.90	0.00	33730	615.1 -> 570.0			



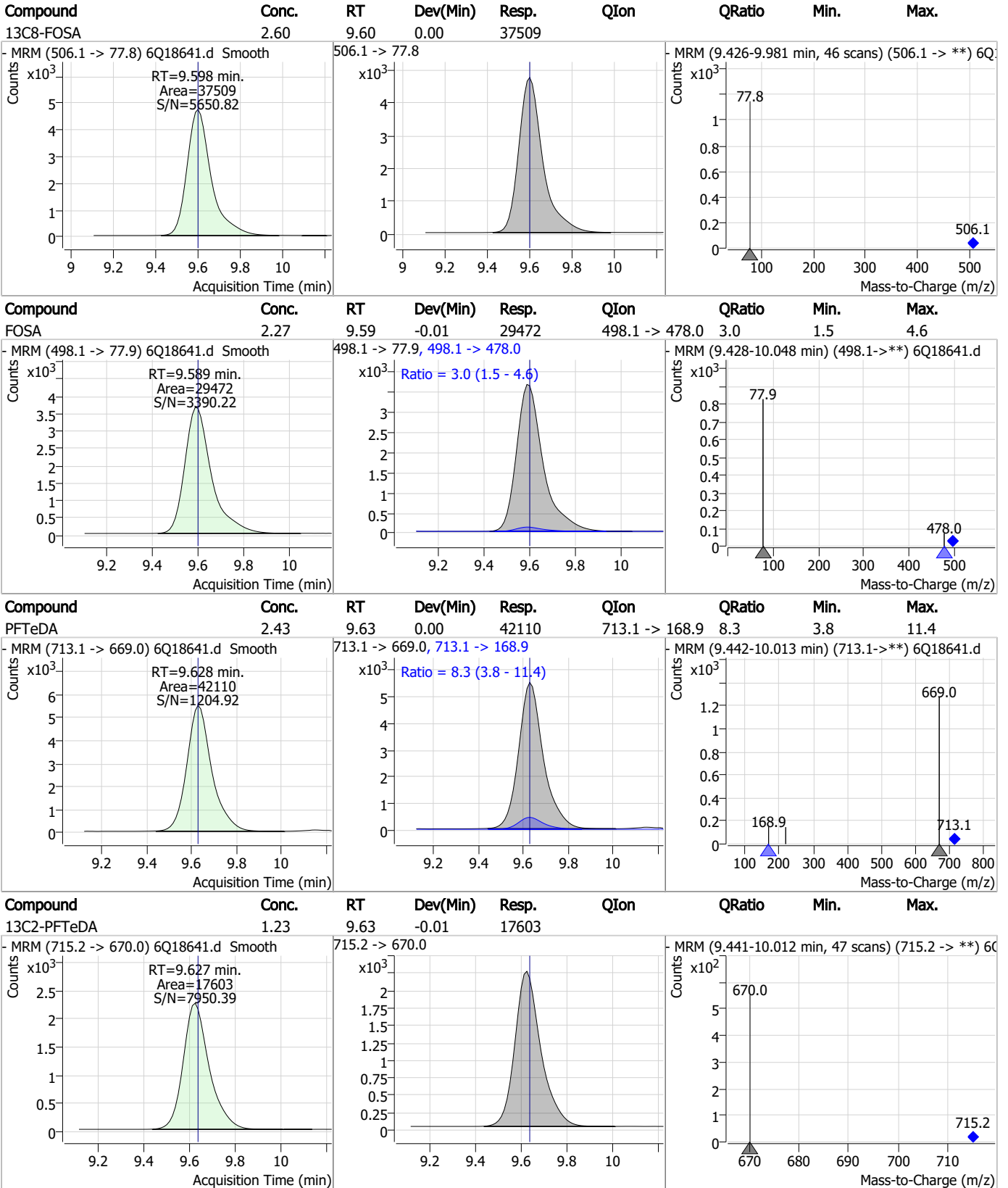
7.7.14
7

Perfluorinated Compounds by LC/MS/MS



7.7.14
7

Perfluorinated Compounds by LC/MS/MS



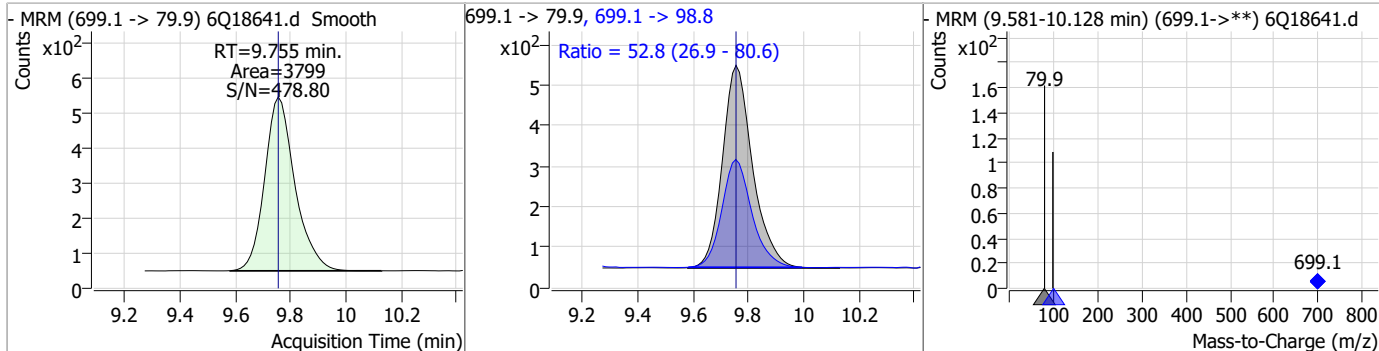
7.7.14

7

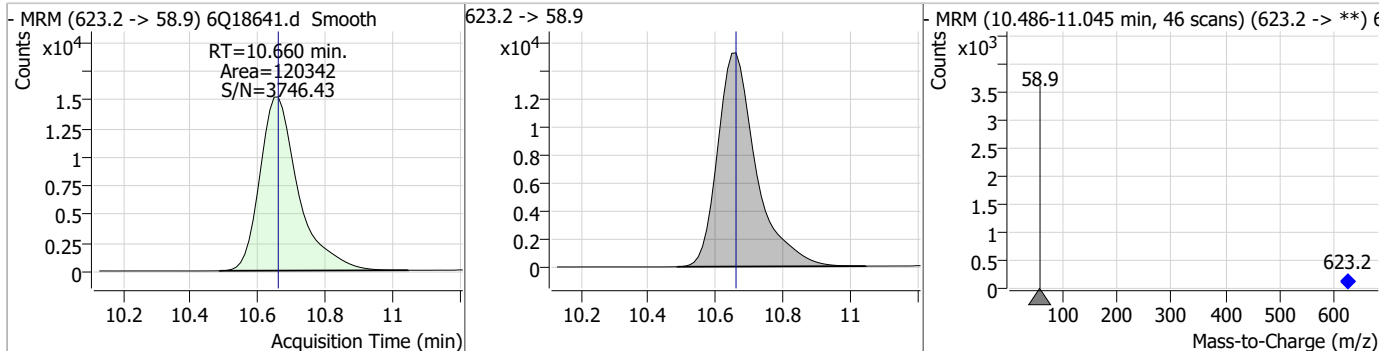


Perfluorinated Compounds by LC/MS/MS

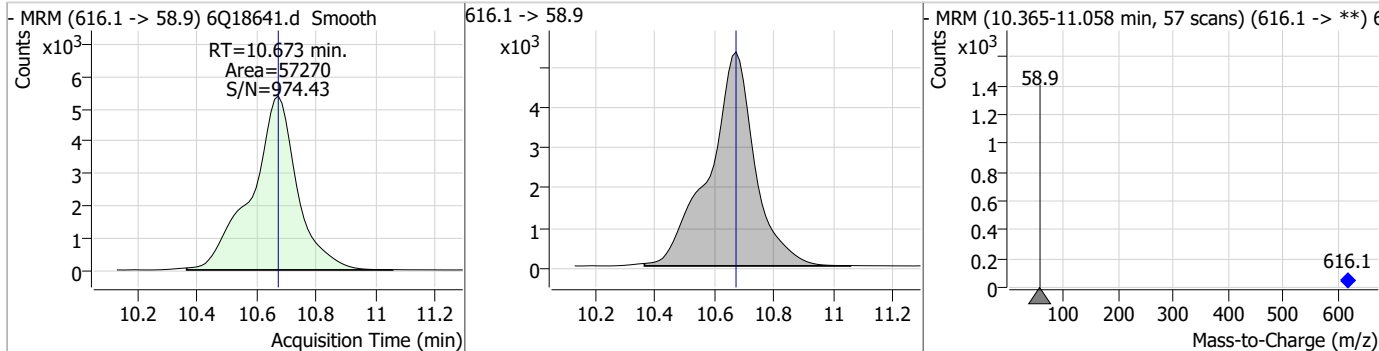
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.34	9.75	0.00	3799	699.1 -> 98.8	52.8	26.9	80.6



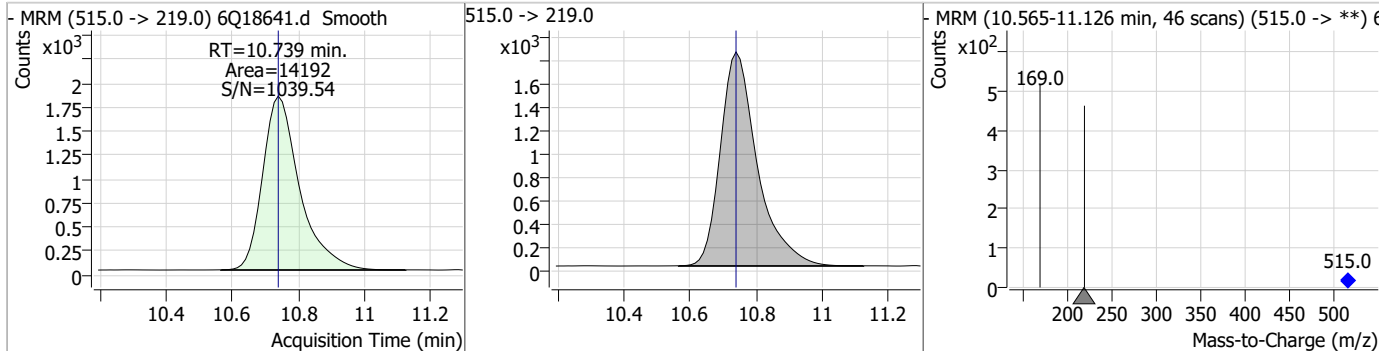
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.28	10.66	0.00	120342				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.97	10.67	0.00	57270				

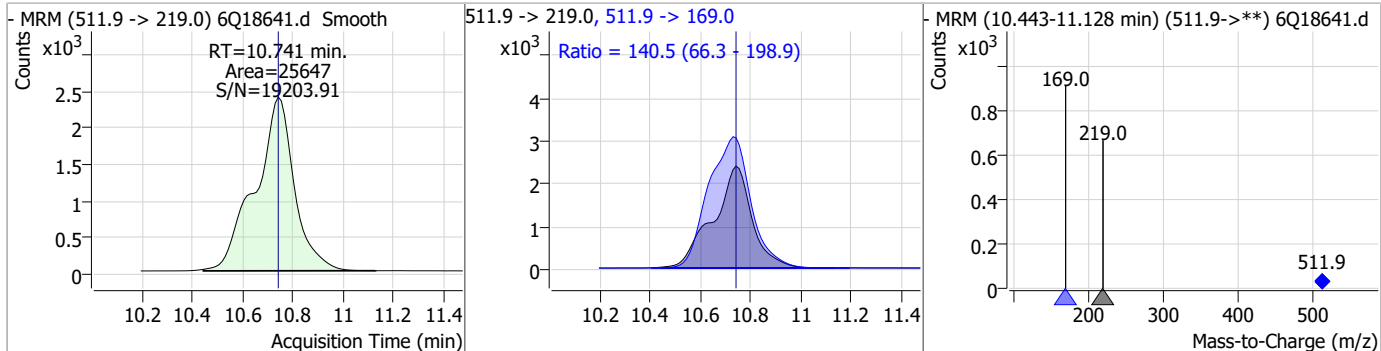


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.42	10.74	0.00	14192				

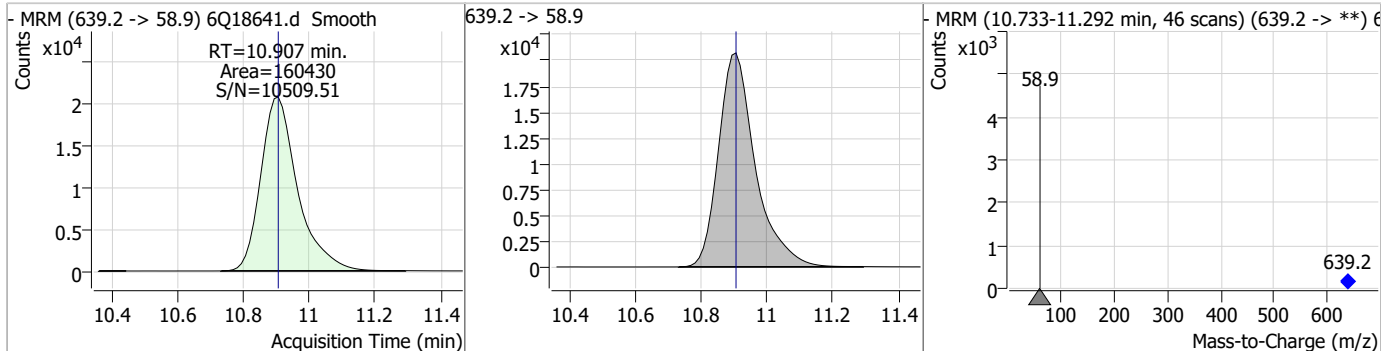


Perfluorinated Compounds by LC/MS/MS

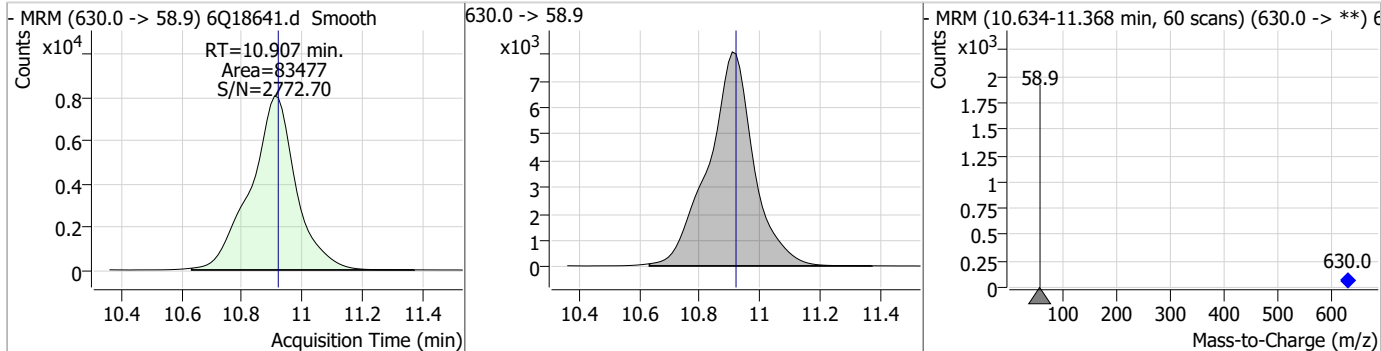
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.91	10.74	0.00	25647	511.9 -> 169.0	140.5	66.3	198.9



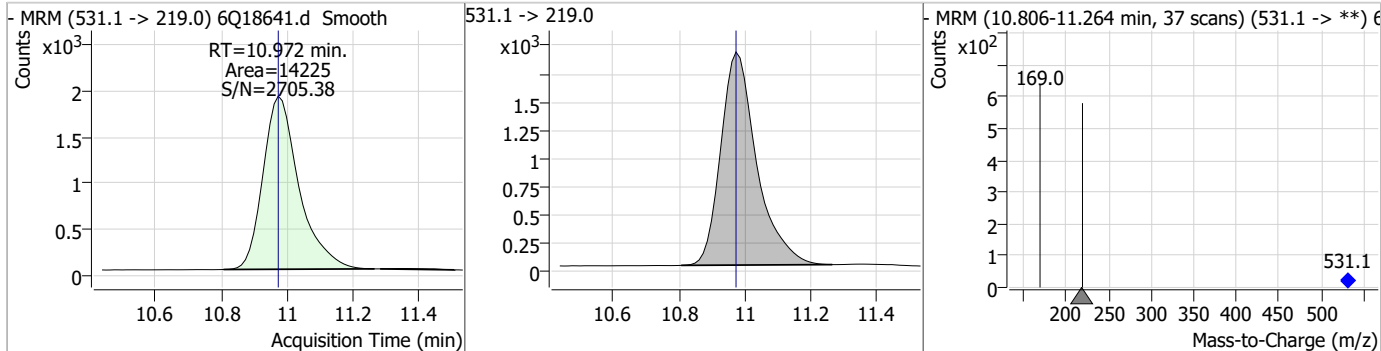
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.76	10.91	0.00	160430				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.66	10.91	-0.01	83477				

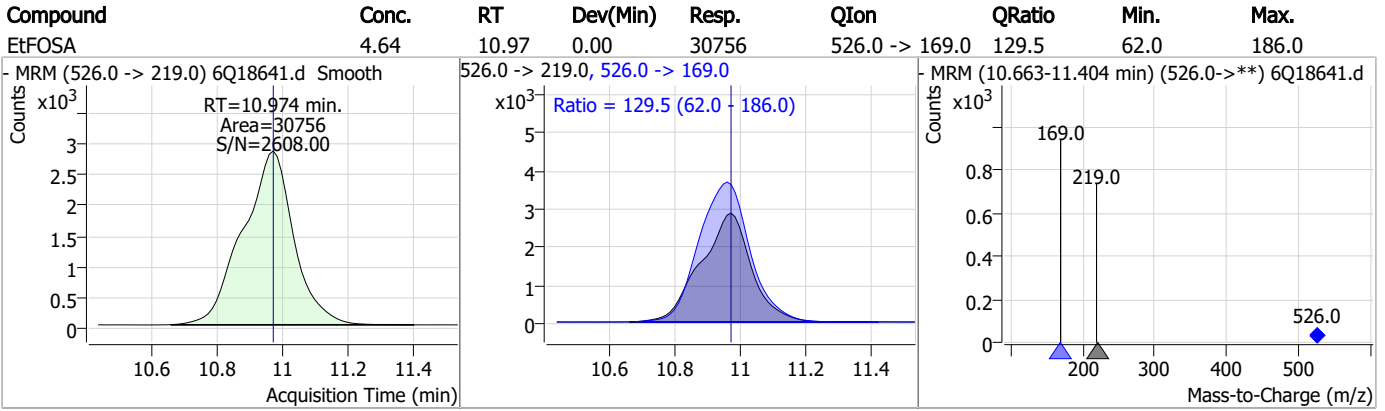


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.57	10.97	0.00	14225				



7.7.14
7

Perfluorinated Compounds by LC/MS/MS



7.7.14

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18642.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 6:35:02 AM
 Sample Name : cc279-1.0LL
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	178884	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	60241	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	66763	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	62959	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	94654	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	45460	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	26274	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	35319	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	30328	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16835	1.25 µg/L	-0.012
M8-FOSA	9.586	506.1 -> 77.8	34201	2.50 µg/L	-0.012
M3-PFBS	5.322	302.1 -> 79.9	23735	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	14601	2.50 µg/L	0.000
M8-PFOS	8.165	507.1 -> 79.9	14144	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3930	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5748	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5317	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	28427	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	39732	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	26464	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	108651	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	139639	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13198	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13117	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18303	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	75157	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10565	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	96494	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	35400	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	52433	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	60721	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3930	5.58 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5748	5.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5317	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-PFDoDA	8.900	615.1 -> 570.0	30328	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16835	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C3-PFBS	5.322	302.1 -> 79.9	23735	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.130	402.1 -> 79.9	14601	2.47 µg/L	0.000

7.7.15
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFBA	2.822	216.8 -> 171.9	178884	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.369	367.1 -> 322.0	62959	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C5-PFHxA	5.417	318.0 -> 273.0	66763	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C5-PFPeA	4.210	268.3 -> 223.0	60241	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C6-PFDA	8.027	519.1 -> 474.1	26274	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	35319	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C8-FOSA	9.586	506.1 -> 77.8	34201	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C8-PFOA	7.026	421.1 -> 376.0	94654	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C8-PFOS	8.165	507.1 -> 79.9	14144	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C9-PFNA	7.545	472.1 -> 427.0	45460	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.2%	
d3-MeFOSAA	8.072	573.2 -> 419.0	28427	4.81 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	39732	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	13117	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%	
d5-EtFOSAA	8.267	589.2 -> 419.0	26464	4.93 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
d7-MeFOSE	10.660	623.2 -> 58.9	108651	23.64 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
d9-EtFOSE	10.907	639.2 -> 58.9	139639	23.22 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	13198	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	5101	0.89 µg/L	93
		327.1 -> 80.9	1796		
6:2FTS	6.801	427.1 -> 407.0	4889	0.87 µg/L	99
		427.1 -> 80.9	1635		
8:2FTS	7.816	527.1 -> 507.0	2814	0.95 µg/L	97
		527.1 -> 80.8	1150		
EtFOSAA	8.268	584.2 -> 419.1	811	0.24 µg/L	80
		584.2 -> 526.0	555		
FOSA	9.589	498.1 -> 77.9	2610	0.22 µg/L	97
		498.1 -> 478.0	105		
MeFOSAA	8.073	570.1 -> 419.0	1415	0.24 µg/L	91
		570.1 -> 483.0	331		
PFBA	2.818	212.8 -> 168.9	5444	0.92 µg/L	100
PFBS	5.323	298.7 -> 79.9	1743	0.22 µg/L	92
		298.7 -> 98.8	709		
PFDA	8.014	512.9 -> 469.0	6432	0.21 µg/L	89
		512.9 -> 219.0	727		
PFDODA	8.888	613.1 -> 569.0	4611	0.22 µg/L	99
		613.1 -> 319.0	645		
PFDS	9.052	599.0 -> 79.9	728	0.21 µg/L	89

7.7.15
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	411	0.22 µg/L	98
		363.1 -> 319.0	6091		
PFHpS	7.673	363.1 -> 169.0	974	0.23 µg/L	93
		449.0 -> 79.9	1544		
PFHxA	5.407	449.0 -> 98.9	693	0.21 µg/L	98
		313.0 -> 269.0	4812		
PFHxS	7.131	313.0 -> 118.9	254	0.21 µg/L	m 88
		398.7 -> 79.9	1408		
PFNA	7.545	398.7 -> 98.9	783	0.20 µg/L	95
		463.0 -> 419.0	6565		
PFNS	8.631	463.0 -> 219.0	1421	0.21 µg/L	88
		548.8 -> 79.9	1176		
PFOA	7.028	548.8 -> 98.9	673	0.22 µg/L	94
		413.0 -> 369.0	8829		
PFOS	8.166	413.0 -> 169.0	1762	0.22 µg/L	96
		498.9 -> 79.9	1421		
PFPeA	4.212	498.9 -> 98.8	723	0.48 µg/L	100
		263.0 -> 219.0	6877		
PFPeS	6.422	349.1 -> 79.9	1485	0.23 µg/L	96
		349.1 -> 98.9	658		
PFTeDA	9.628	713.1 -> 669.0	3903	0.24 µg/L	99
		713.1 -> 168.9	316		
PFTrDA	9.284	663.0 -> 619.0	4785	0.23 µg/L	95
		663.0 -> 168.9	525		
PFUnDA	8.468	563.1 -> 519.0	4750	0.21 µg/L	92
		563.1 -> 269.1	893		
11Cl-PF3OUdS	9.323	630.9 -> 450.9	6584	0.44 µg/L	100
		632.9 -> 452.9	2052		
9Cl-PF3ONS	8.508	530.8 -> 351.0	10283	0.44 µg/L	95
		532.8 -> 353.0	3121		
ADONA	6.632	376.9 -> 250.9	25107	0.48 µg/L	99
		376.9 -> 84.8	6578		
HFPO-DA	5.783	284.9 -> 168.9	1449	0.43 µg/L	99
		284.9 -> 184.9	205		
3:3FTCA	3.671	241.0 -> 177.0	1050	1.13 µg/L	94
		241.0 -> 117.0	124		
5:3FTCA	6.074	341.0 -> 237.1	23791	5.90 µg/L	93
		341.0 -> 217.0	18232		
7:3FTCA	7.510	441.0 -> 316.9	16444	5.95 µg/L	93
		441.0 -> 336.9	34297		
EtFOSA	10.974	526.0 -> 219.0	2842	0.46 µg/L	99
		526.0 -> 169.0	3494		
EtFOSE	10.907	630.0 -> 58.9	7378	1.18 µg/L	100
		511.9 -> 219.0	2305		
MeFOSA	10.741	511.9 -> 169.0	3250	0.48 µg/L	93
		616.1 -> 58.9	4913		
MeFOSE	10.673	699.1 -> 79.9	351	1.14 µg/L	100
		699.1 -> 98.8	192		
PFDoDS	9.755	295.0 -> 201.0	1232	0.22 µg/L	99
		295.0 -> 84.9	287		
NFDHA	5.299	279.0 -> 85.1	4407	0.45 µg/L	100
		229.0 -> 84.9	3450		
PFMBA	4.626	314.8 -> 134.9	11161	0.45 µg/L	100
		314.8 -> 82.9	380		
PFMPA	3.351			0.39 µg/L	98
PFEESA	5.875				

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

7.7.15
7

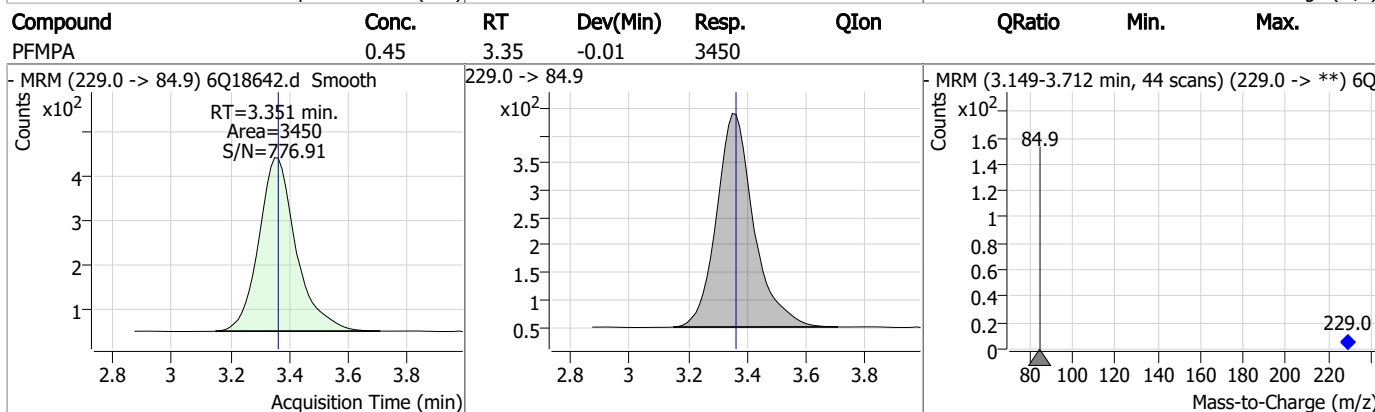
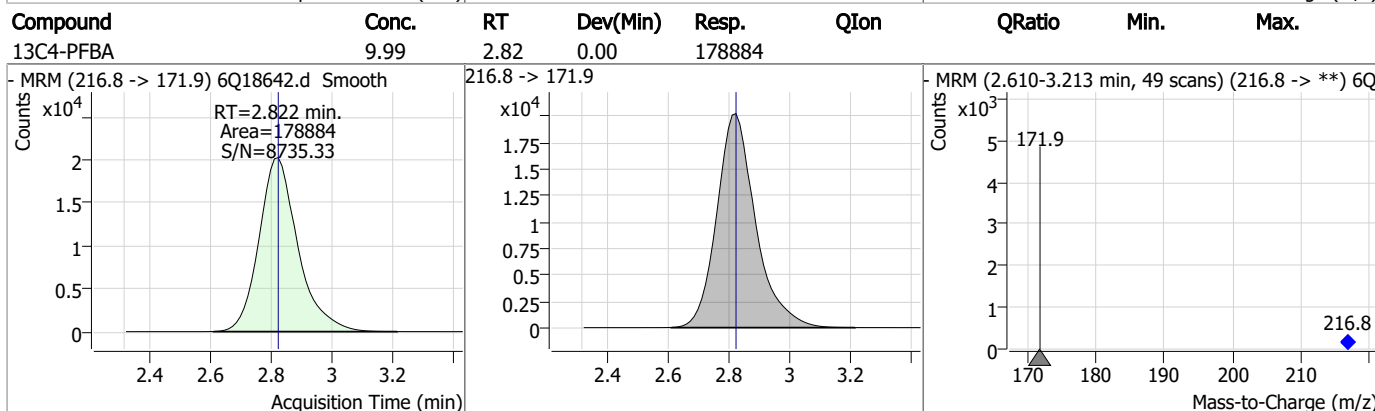
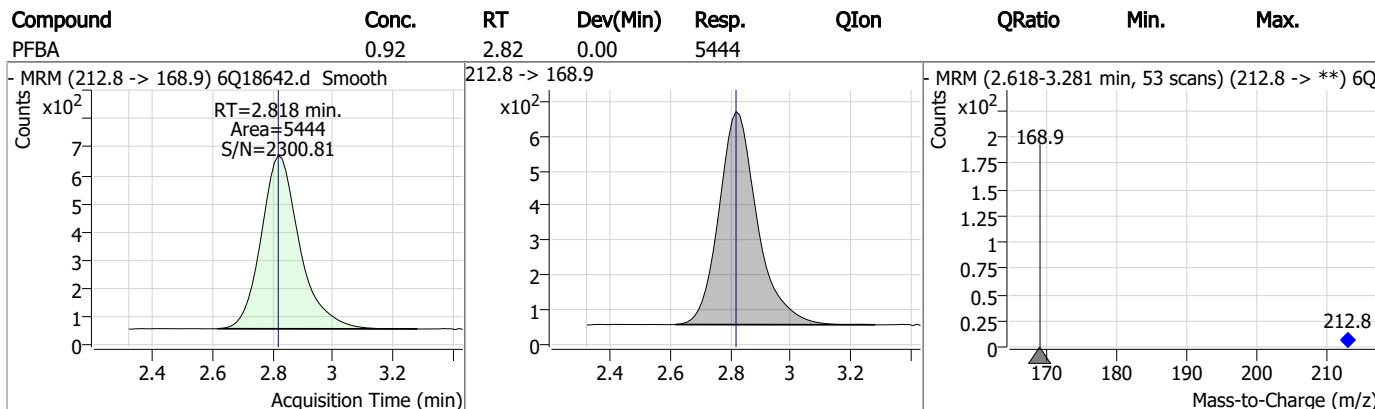
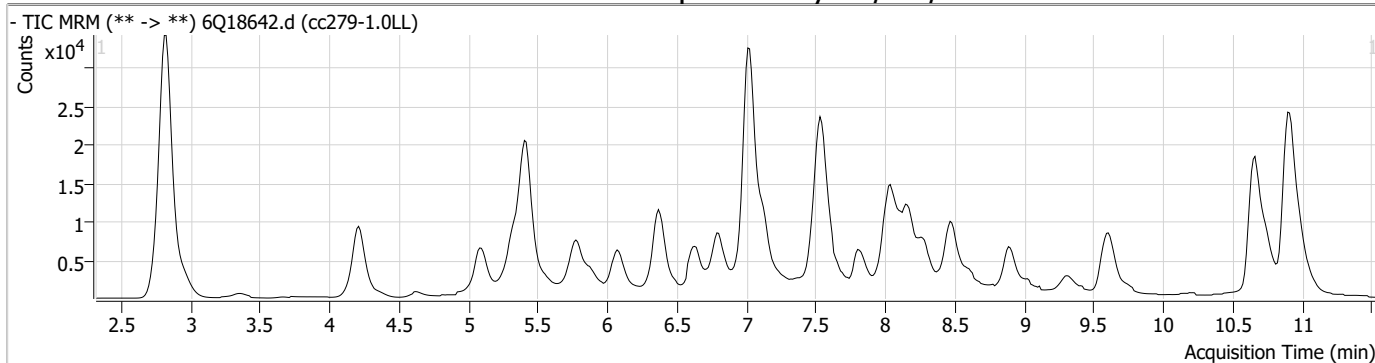
Perfluorinated Compounds by LC/MS/MS

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

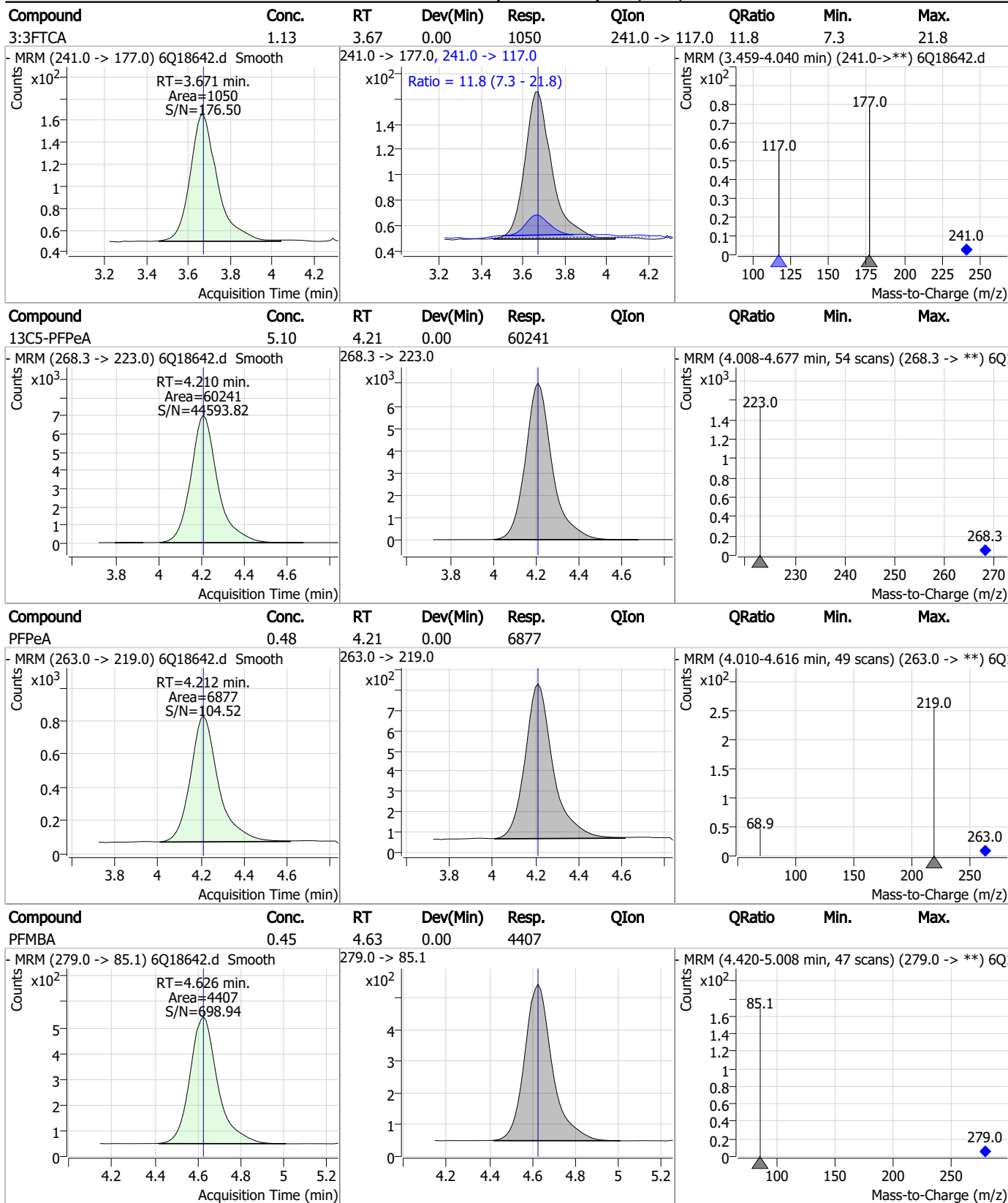
7.7.15

7

Perfluorinated Compounds by LC/MS/MS

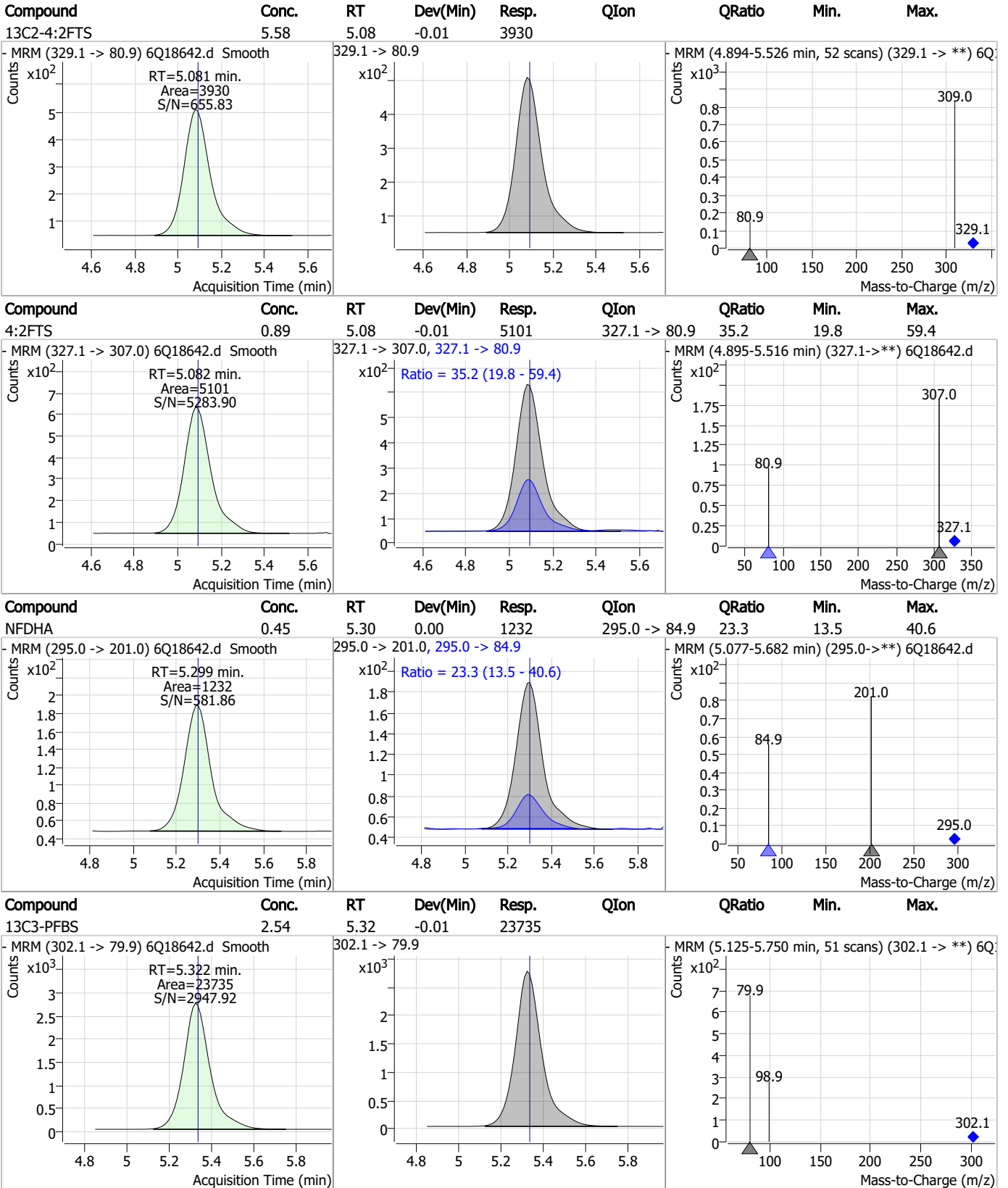


Perfluorinated Compounds by LC/MS/MS



7.7.15

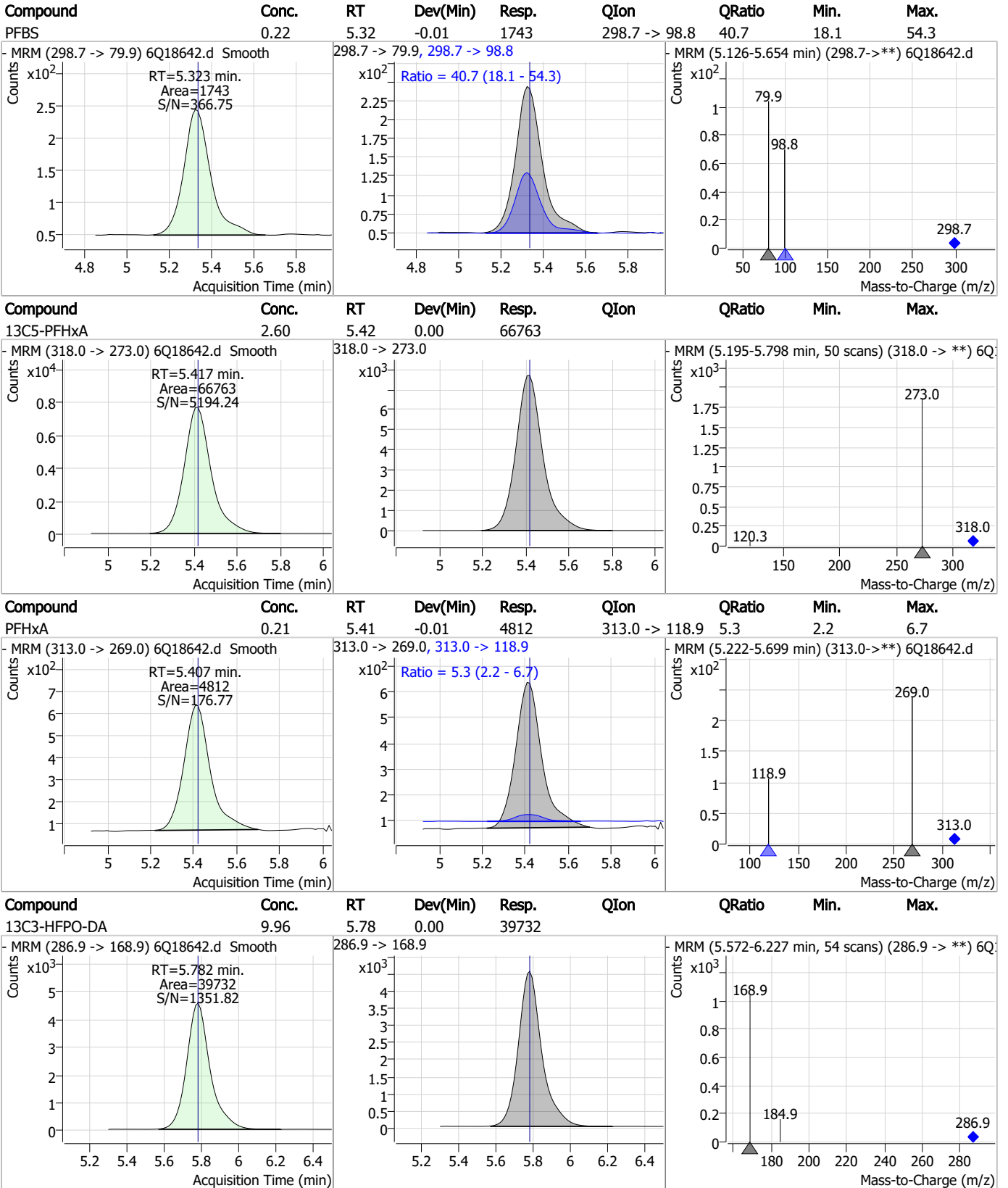
Perfluorinated Compounds by LC/MS/MS



7.7.15 7



Perfluorinated Compounds by LC/MS/MS



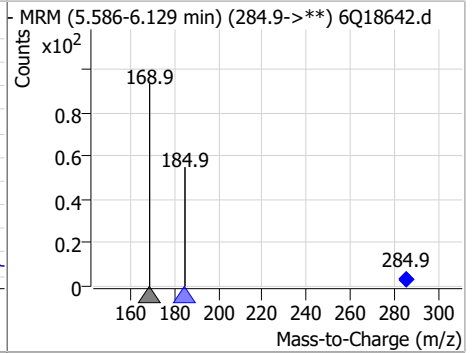
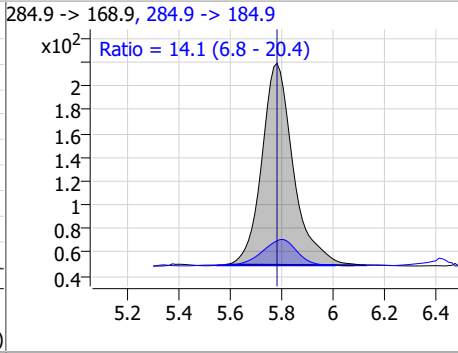
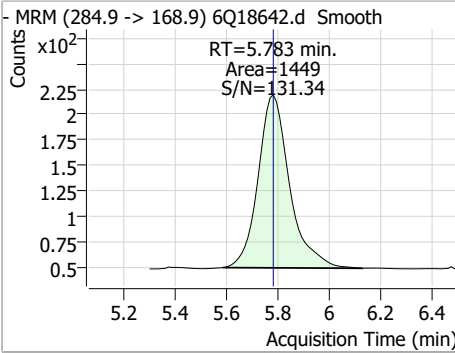
7.7.15

7

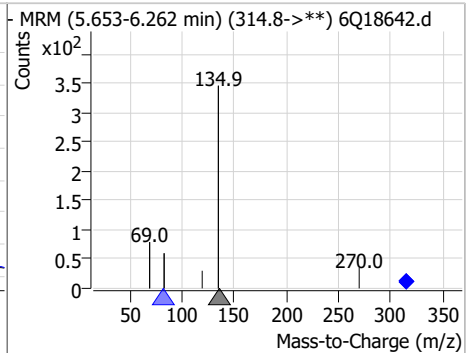
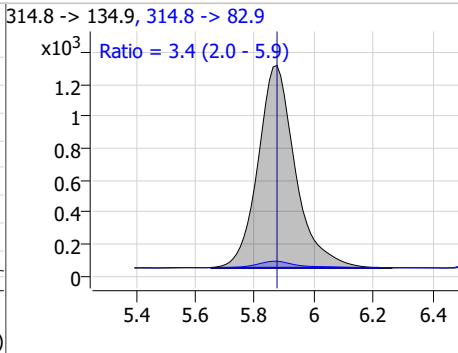
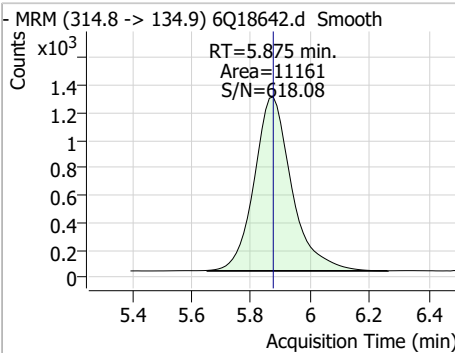


Perfluorinated Compounds by LC/MS/MS

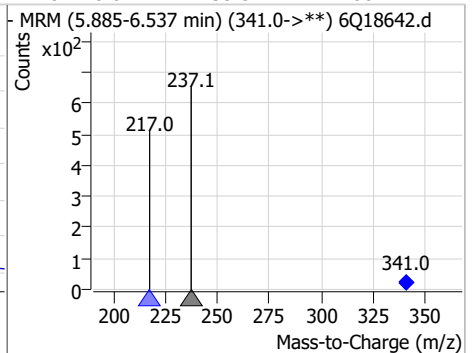
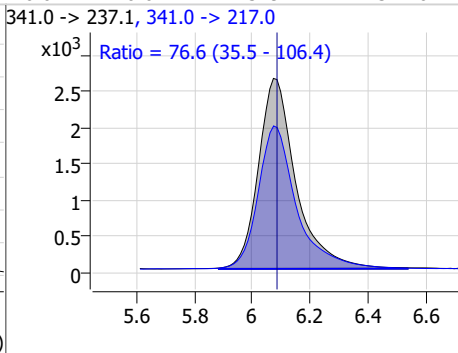
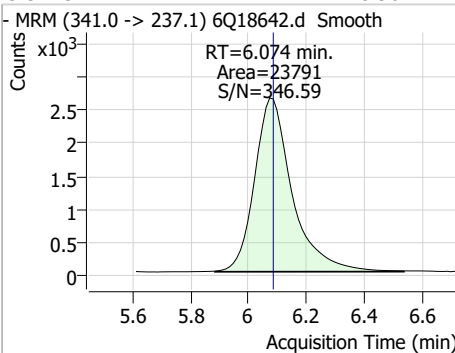
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.43	5.78	0.00	1449	284.9 -> 184.9	14.1	6.8	20.4



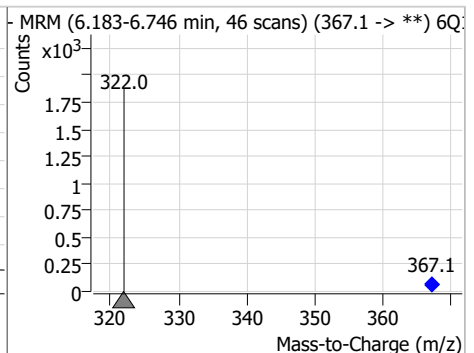
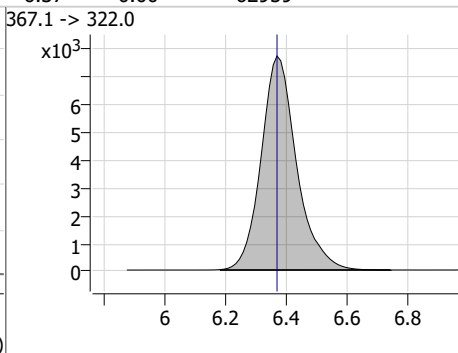
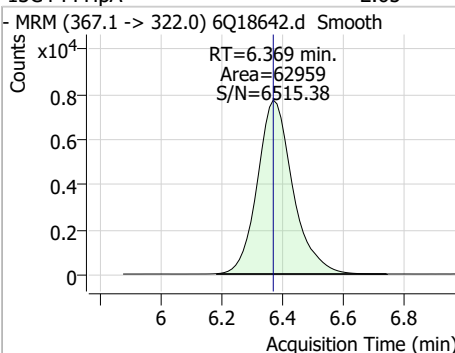
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.39	5.88	0.00	11161	314.8 -> 82.9	3.4	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.90	6.07	-0.01	23791	341.0 -> 217.0	76.6	35.5	106.4

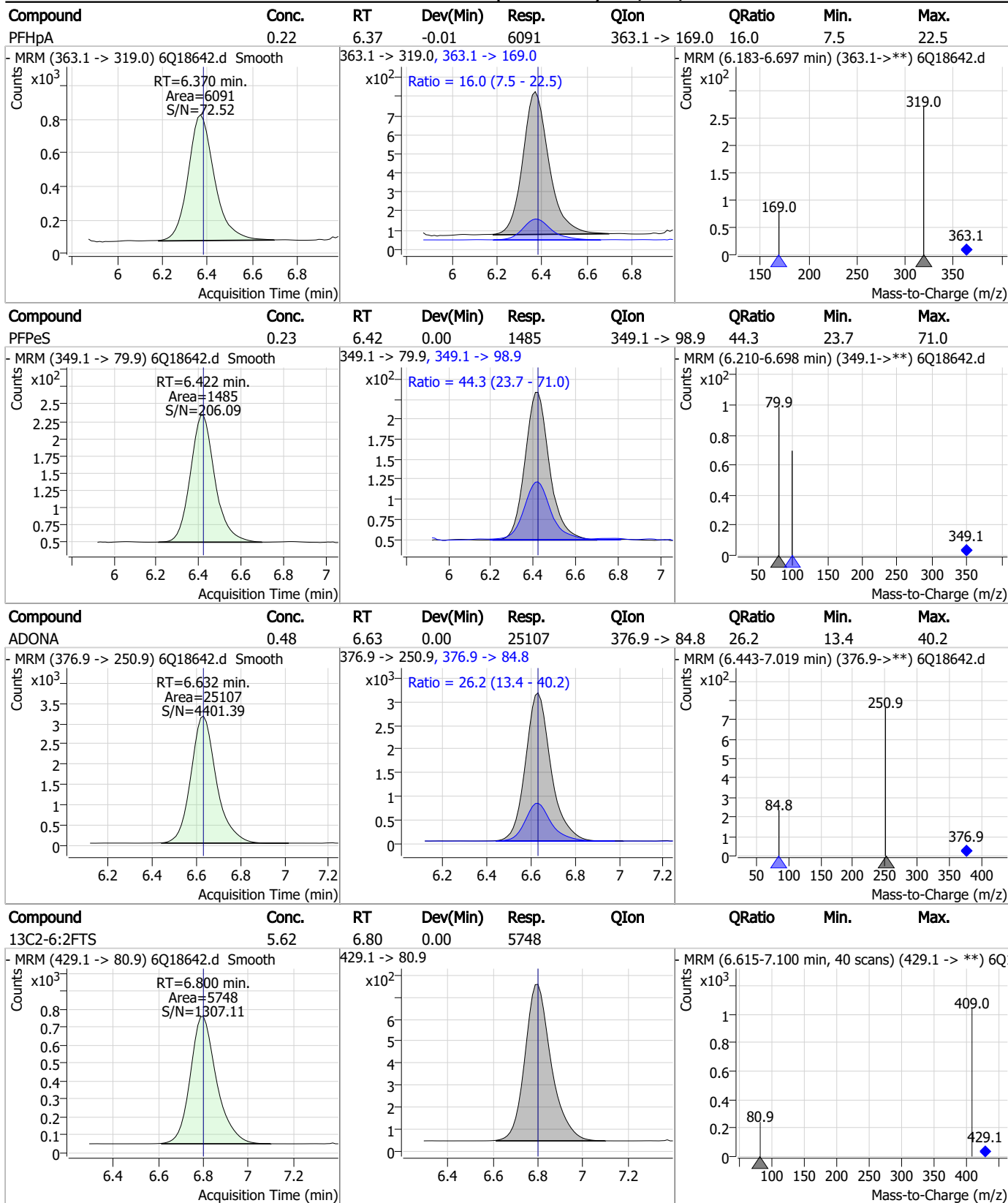


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.65	6.37	0.00	62959	367.1 -> 322.0			



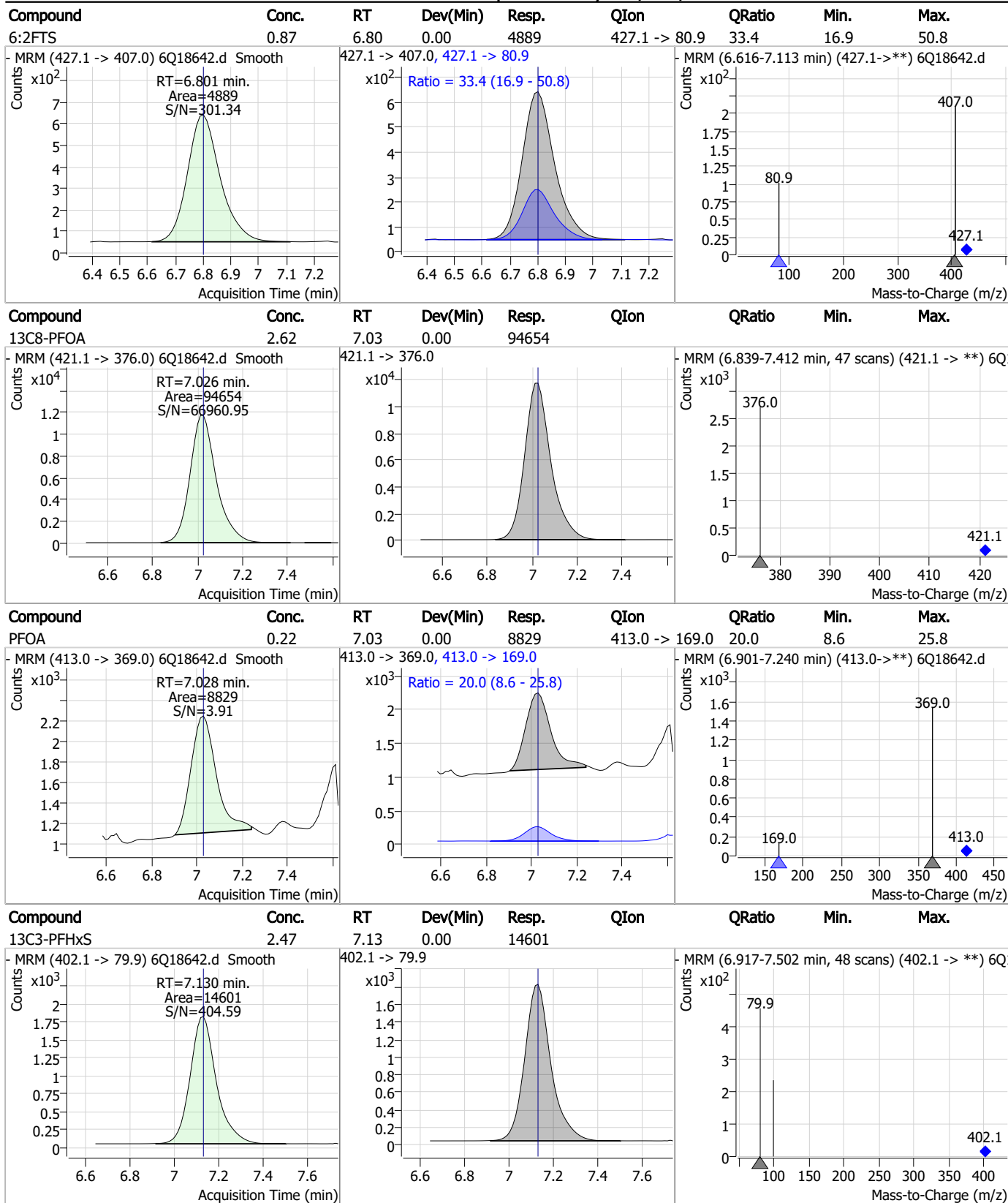
7.7.15
7

Perfluorinated Compounds by LC/MS/MS



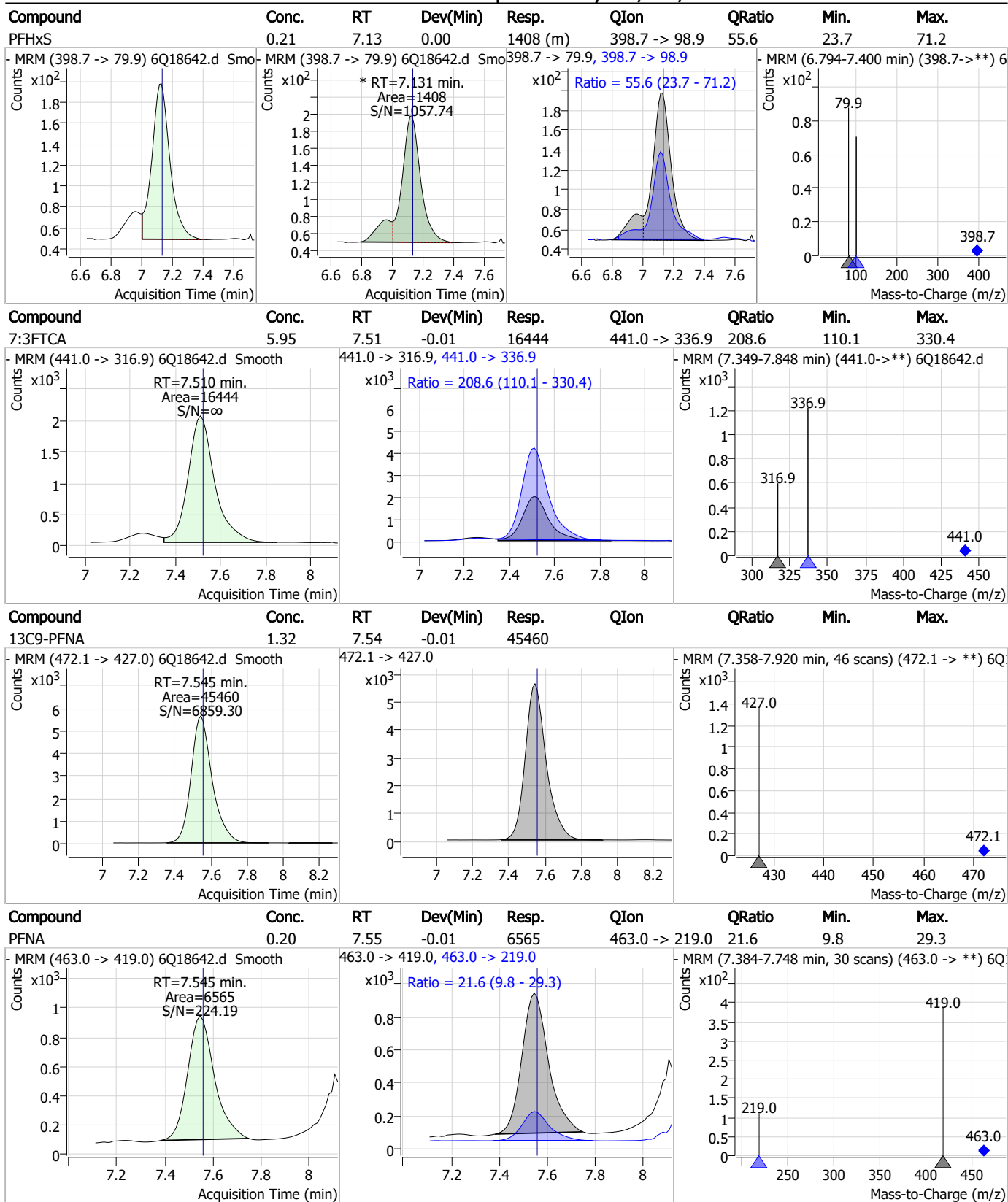
7.7.15
7

Perfluorinated Compounds by LC/MS/MS



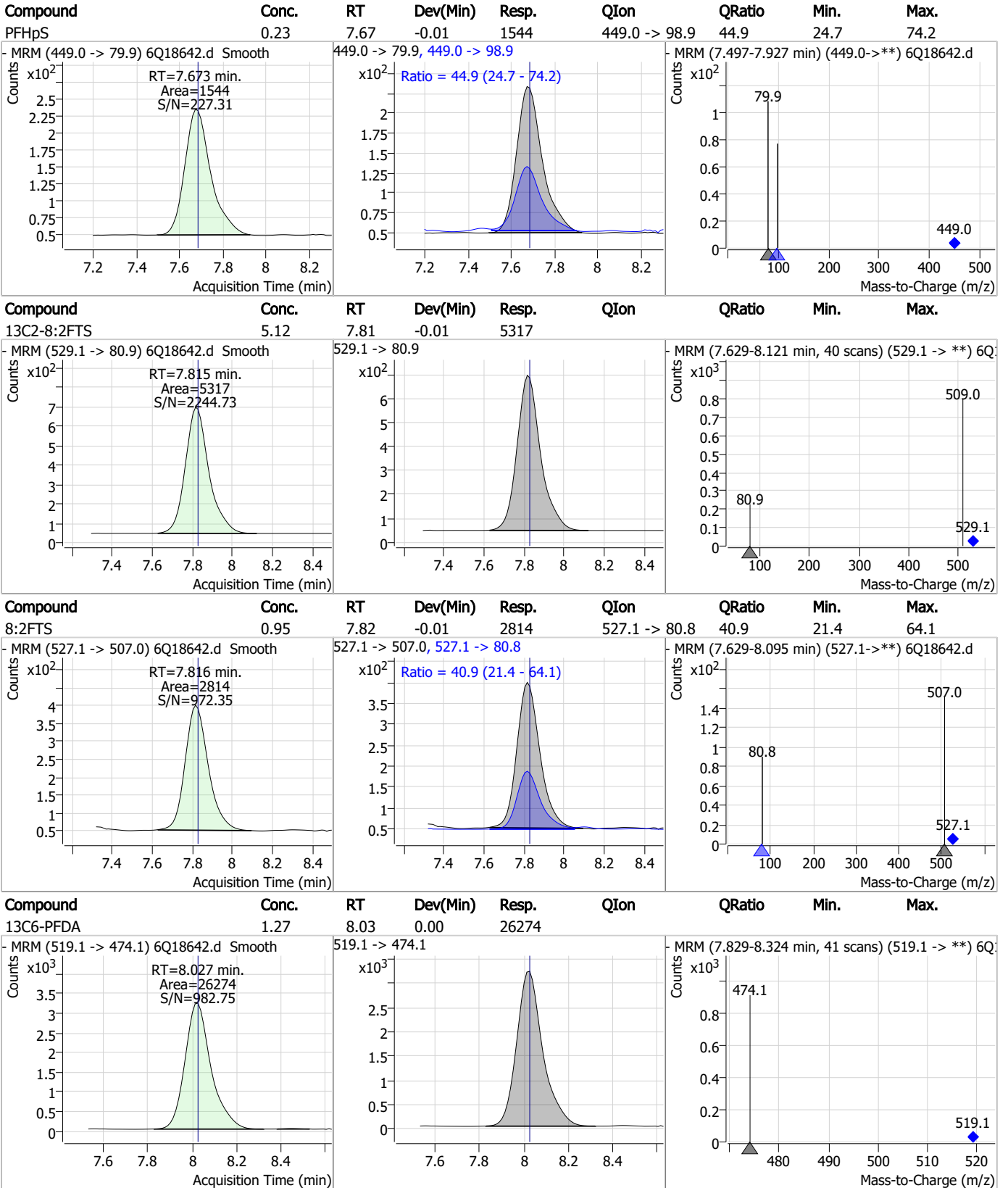
7.7.15
7

Perfluorinated Compounds by LC/MS/MS



7.7.15

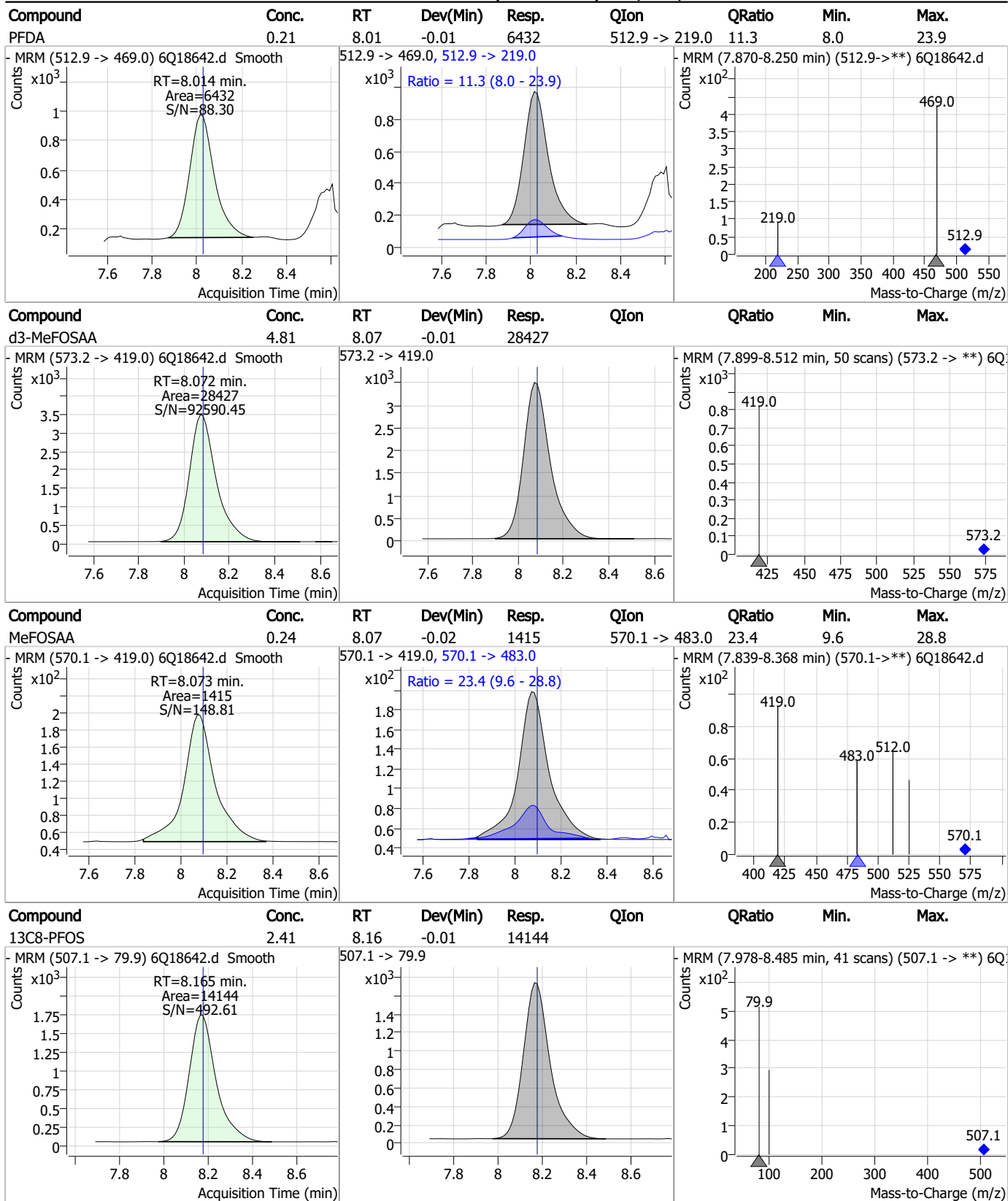
Perfluorinated Compounds by LC/MS/MS



7.7.15
7

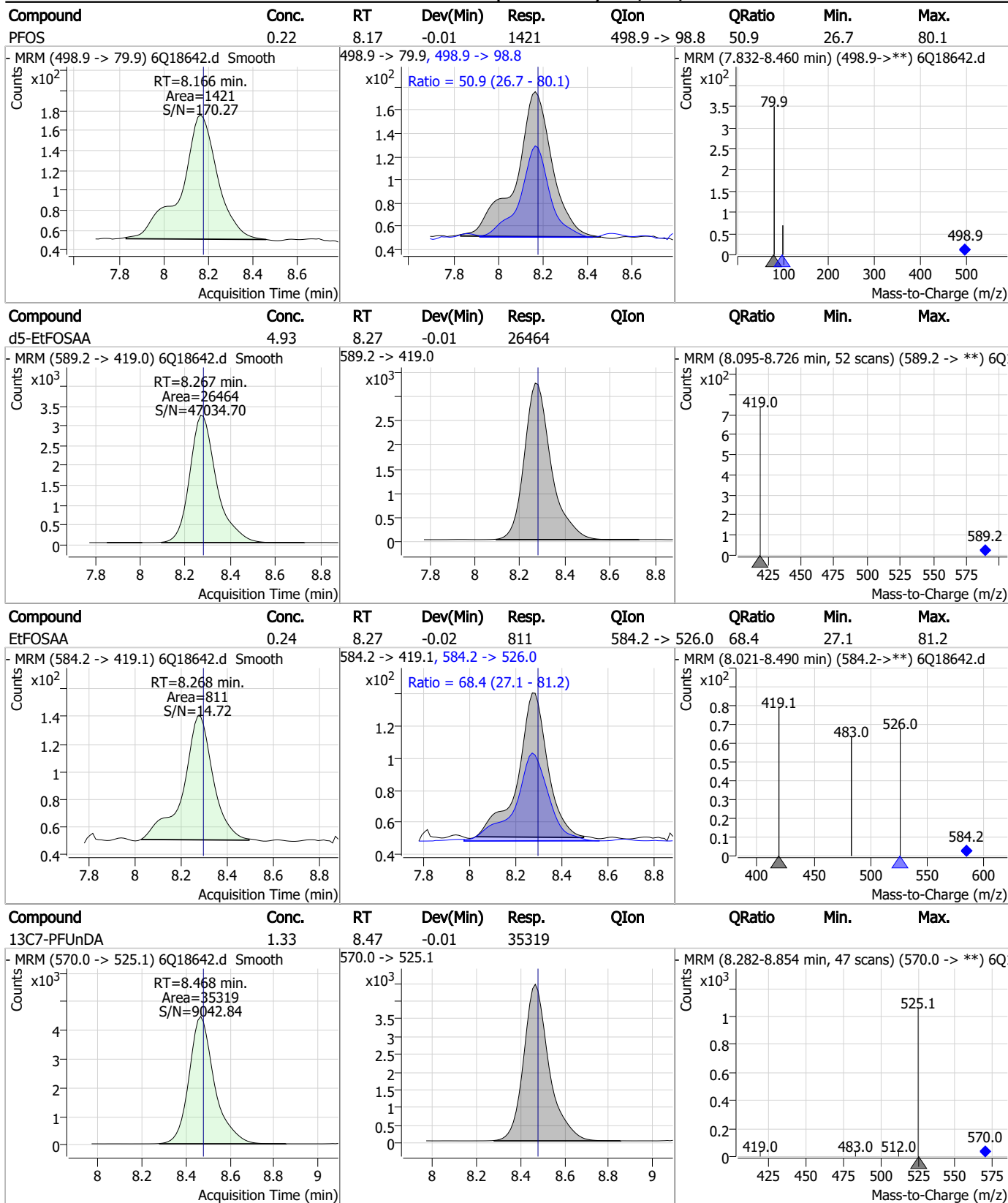


Perfluorinated Compounds by LC/MS/MS



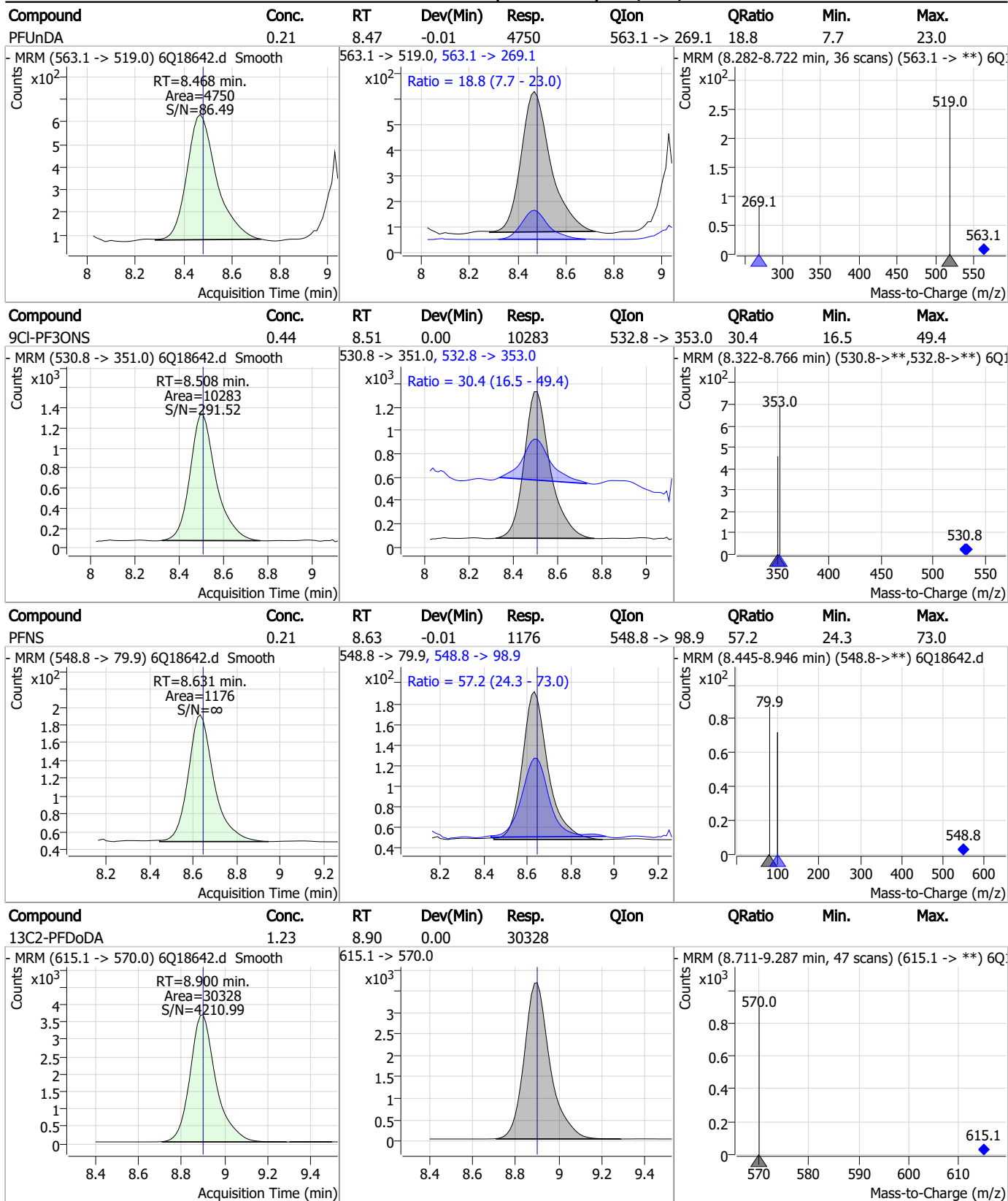
7.7.15

Perfluorinated Compounds by LC/MS/MS



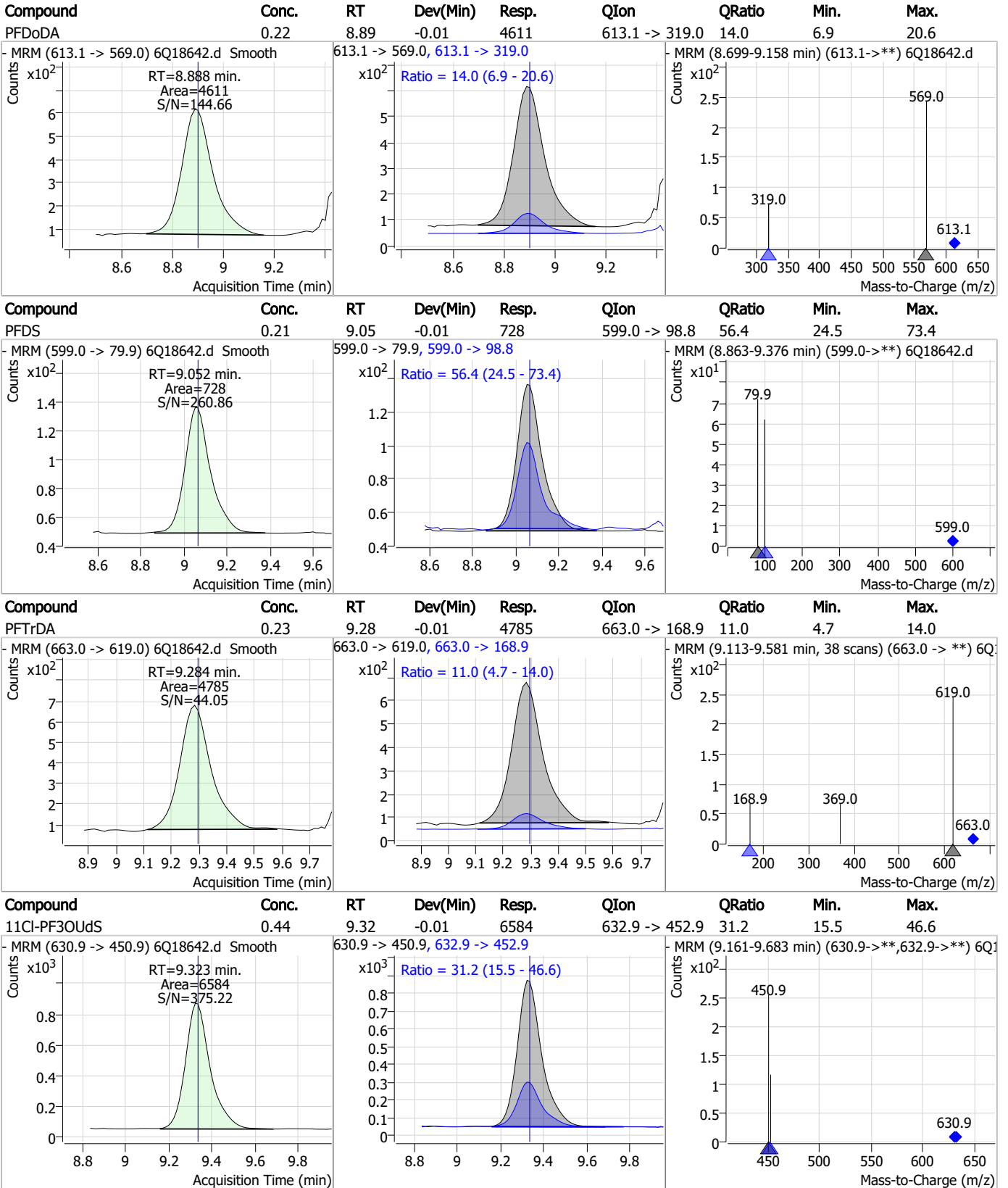
7.7.15
7

Perfluorinated Compounds by LC/MS/MS



7.7.15
7

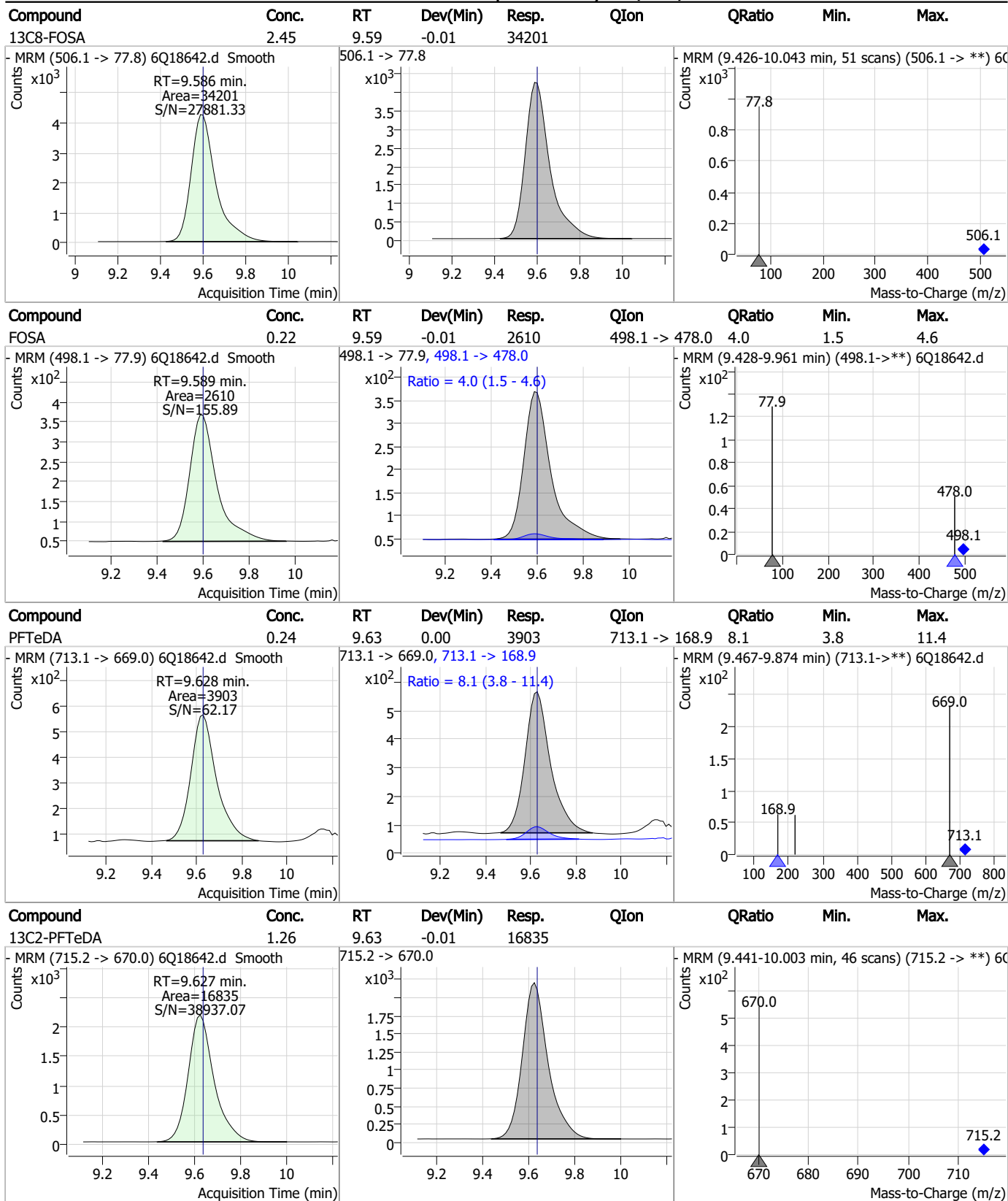
Perfluorinated Compounds by LC/MS/MS



7.7.15
7

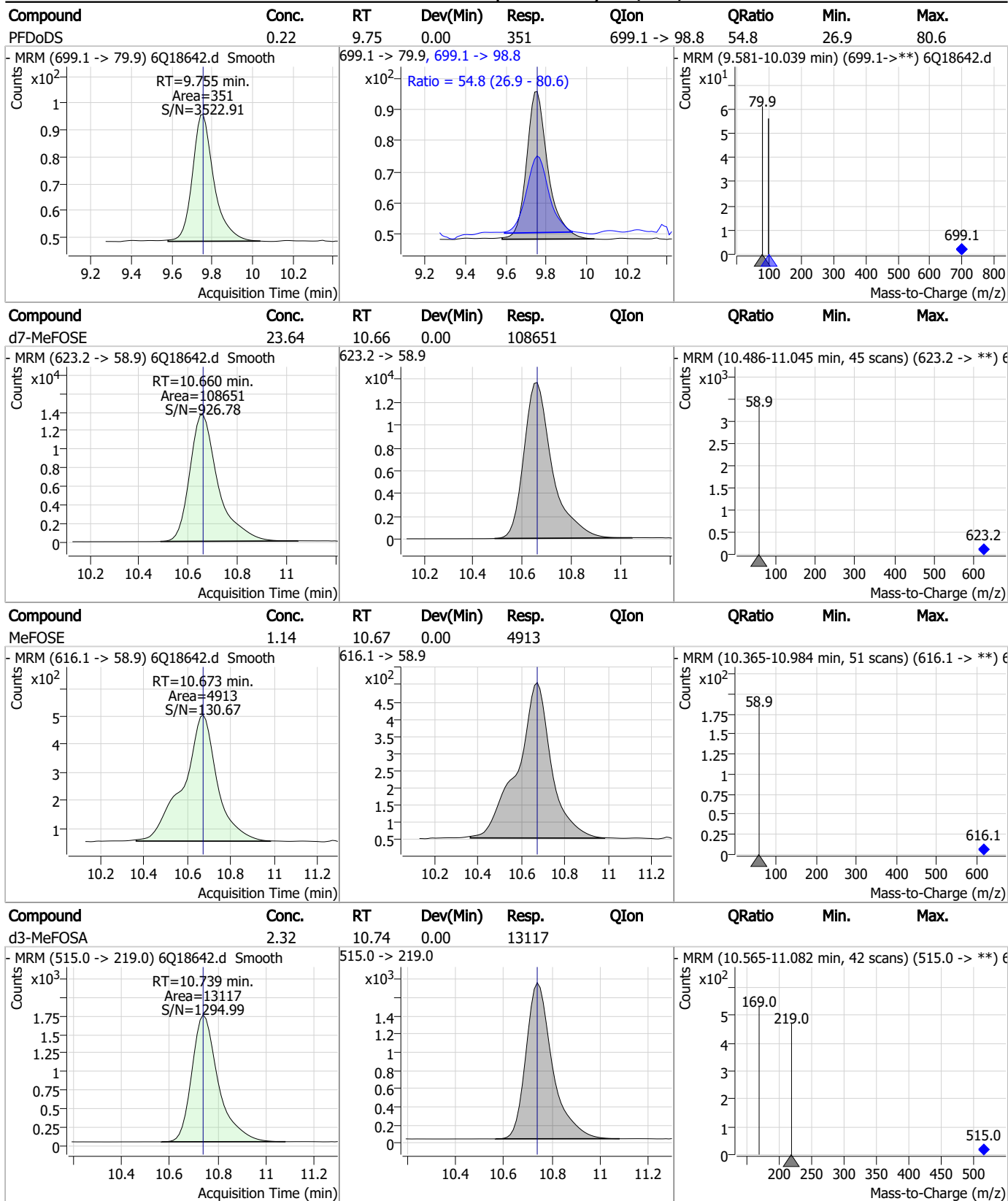


Perfluorinated Compounds by LC/MS/MS



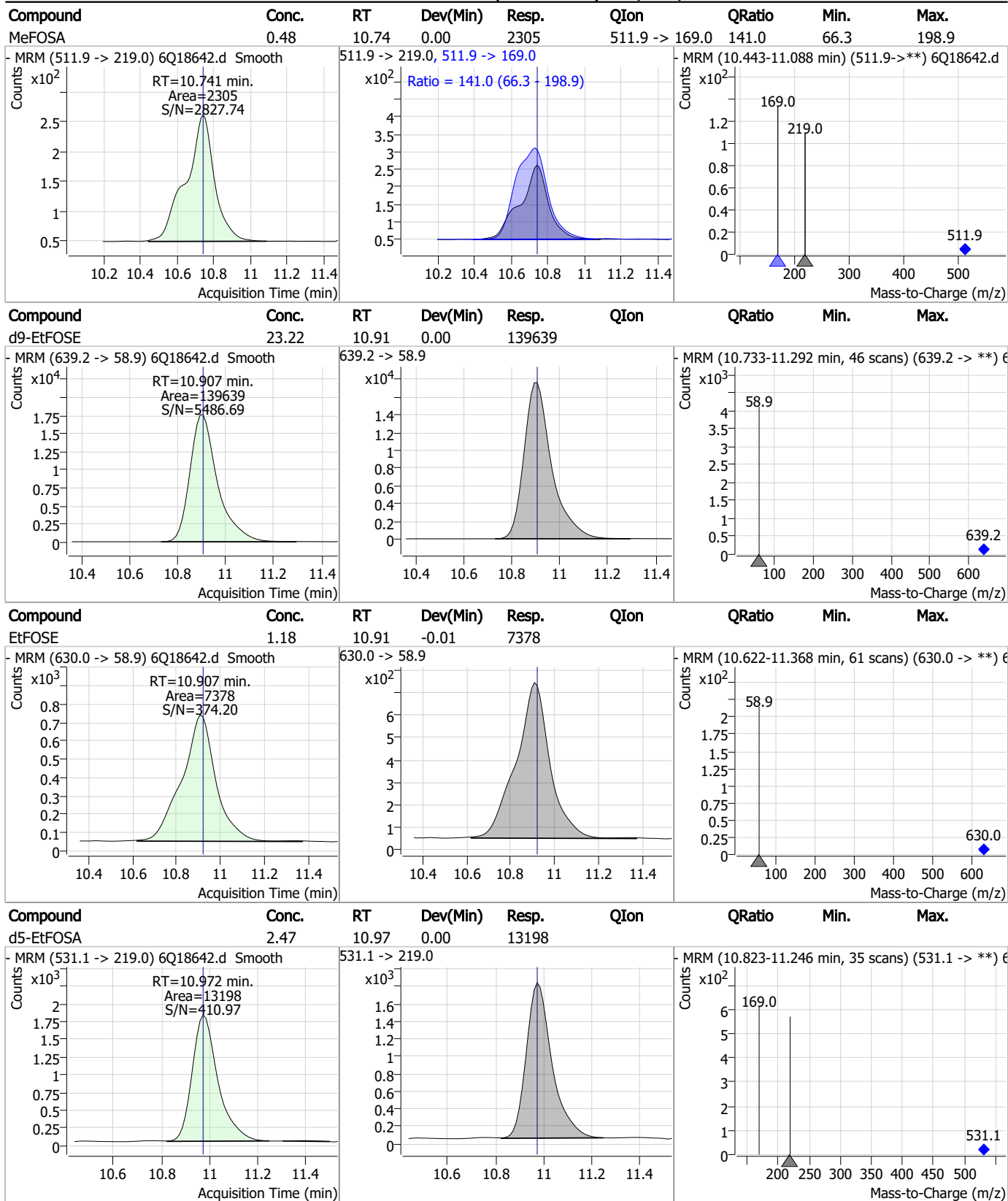
7.7.15 7

Perfluorinated Compounds by LC/MS/MS



7.7.15
7

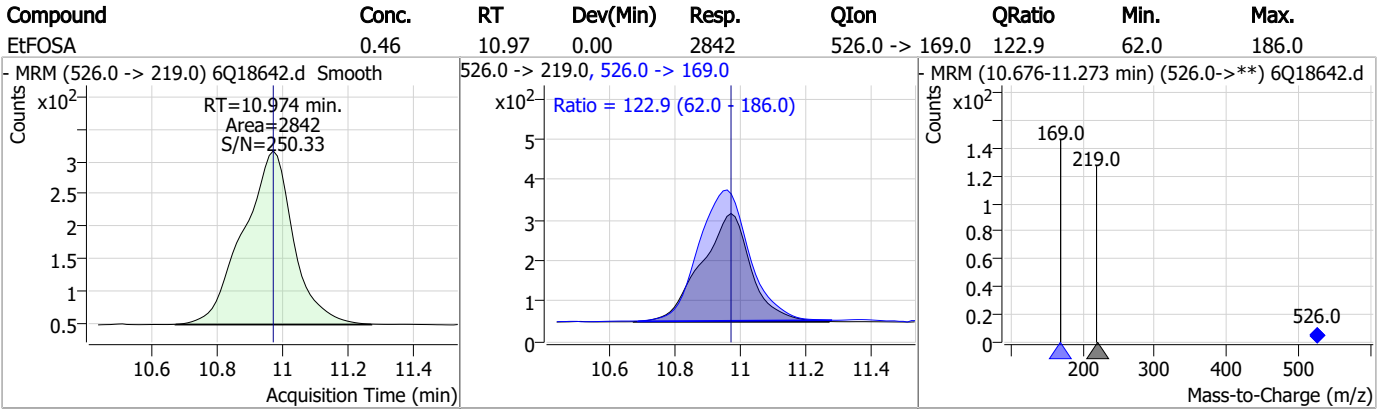
Perfluorinated Compounds by LC/MS/MS



7.7.15

7

Perfluorinated Compounds by LC/MS/MS



7.7.15

7

Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18642.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 06/01/23 06:35 Supervisor approved: 06/01/23 16:14 Norman Farmer

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

7.7.15.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18653.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:14:24 AM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	193677	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	64771	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	71890	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	65846	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	100075	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	47752	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	28228	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	36005	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31688	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	18290	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35263	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	25612	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	16203	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	15145	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	4156	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5945	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5987	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	29455	5.00 µg/L	0.000
M3-HFPO-DA	5.770	286.9 -> 168.9	43982	10.00 µg/L	-0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	29745	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	119470	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	155660	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	14051	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13853	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18611	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	80824	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11225	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	109869	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	38549	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	55056	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	65823	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	4156	5.55 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.0%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5945	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.4%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5987	5.43 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31688	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	18290	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFBS	5.322	302.1 -> 79.9	25612	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFHxS	7.130	402.1 -> 79.9	16203	2.58 µg/L	0.000

7.7.16
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C4-PFBA	2.822	216.8 -> 171.9	193677	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.369	367.1 -> 322.0	65846	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFHxA	5.404	318.0 -> 273.0	71890	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C5-PFPeA	4.210	268.3 -> 223.0	64771	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C6-PFDA	8.027	519.1 -> 474.1	28228	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C7-PFUnDA	8.468	570.0 -> 525.1	36005	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-FOSA	9.598	506.1 -> 77.8	35263	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C8-PFOA	7.013	421.1 -> 376.0	100075	2.43 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOS	8.177	507.1 -> 79.9	15145	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C9-PFNA	7.545	472.1 -> 427.0	47752	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.3%	
d3-MeFOSAA	8.084	573.2 -> 419.0	29455	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	43982	10.17 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	13853	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
d5-EtFOSAA	8.279	589.2 -> 419.0	29745	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.9%	
d7-MeFOSE	10.660	623.2 -> 58.9	119470	25.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d9-EtFOSE	10.907	639.2 -> 58.9	155660	25.46 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	14051	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	52888	8.76 µg/L	97
		327.1 -> 80.9	19944		
6:2FTS	6.789	427.1 -> 407.0	52291	8.95 µg/L	98
		427.1 -> 80.9	18190		
8:2FTS	7.828	527.1 -> 507.0	28364	8.52 µg/L	97
		527.1 -> 80.8	12639		
EtFOSAA	8.280	584.2 -> 419.1	8847	2.31 µg/L	96
		584.2 -> 526.0	4555		
FOSA	9.602	498.1 -> 77.9	28572	2.34 µg/L	100
		498.1 -> 478.0	857		
MeFOSAA	8.085	570.1 -> 419.0	15544	2.57 µg/L	97
		570.1 -> 483.0	3193		
PFBA	2.818	212.8 -> 168.9	61992	9.67 µg/L	100
PFBS	5.323	298.7 -> 79.9	17843	2.05 µg/L	95
		298.7 -> 98.8	6955		
PFDA	8.027	512.9 -> 469.0	77749	2.38 µg/L	97
		512.9 -> 219.0	11511		
PFDODA	8.900	613.1 -> 569.0	53126	2.44 µg/L	97
		613.1 -> 319.0	8002		
PFDS	9.064	599.0 -> 79.9	8250	2.18 µg/L	98

7.7.16
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3918		
PFHpA	6.370	363.1 -> 319.0	66511	2.28 µg/L	98
		363.1 -> 169.0	10572		
PFHpS	7.685	449.0 -> 79.9	15758	2.17 µg/L	96
		449.0 -> 98.9	8182		
PFHxA	5.407	313.0 -> 269.0	55453	2.30 µg/L	98
		313.0 -> 118.9	2888		
PFHxS	7.119	398.7 -> 79.9	15094	2.06 µg/L	97
		398.7 -> 98.9	7461		
PFNA	7.545	463.0 -> 419.0	76439	2.26 µg/L	100
		463.0 -> 219.0	14800		
PFNS	8.631	548.8 -> 79.9	13785	2.27 µg/L	95
		548.8 -> 98.9	7227		
PFOA	7.028	413.0 -> 369.0	98049	2.29 µg/L	95
		413.0 -> 169.0	18842		
PFOS	8.178	498.9 -> 79.9	14691	2.12 µg/L	m 98
		498.9 -> 98.8	7592		
PFPeA	4.212	263.0 -> 219.0	73795	4.74 µg/L	100
PFPeS	6.410	349.1 -> 79.9	15896	2.18 µg/L	100
		349.1 -> 98.9	7486		
PFTeDA	9.628	713.1 -> 669.0	42601	2.37 µg/L	97
		713.1 -> 168.9	3722		
PFTrDA	9.284	663.0 -> 619.0	54158	2.46 µg/L	96
		663.0 -> 168.9	5839		
PFUnDA	8.468	563.1 -> 519.0	52160	2.23 µg/L	93
		563.1 -> 269.1	9463		
11CI-PF3OUdS	9.336	630.9 -> 450.9	74007	4.48 µg/L	98
		632.9 -> 452.9	22255		
9CI-PF3ONS	8.508	530.8 -> 351.0	112125	4.31 µg/L	97
		532.8 -> 353.0	35260		
ADONA	6.632	376.9 -> 250.9	255400	4.37 µg/L	98
		376.9 -> 84.8	71741		
HFPO-DA	5.783	284.9 -> 168.9	16945	4.55 µg/L	100
		284.9 -> 184.9	2323		
3:3FTCA	3.671	241.0 -> 177.0	11732	11.78 µg/L	98
		241.0 -> 117.0	1614		
5:3FTCA	6.074	341.0 -> 237.1	248226	57.16 µg/L	94
		341.0 -> 217.0	187400		
7:3FTCA	7.510	441.0 -> 316.9	184484	62.04 µg/L	90
		441.0 -> 336.9	376319		
EtFOSA	10.974	526.0 -> 219.0	30636	4.68 µg/L	89
		526.0 -> 169.0	41694		
EtFOSE	10.907	630.0 -> 58.9	82052	11.82 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	25620	5.03 µg/L	94
		511.9 -> 169.0	35863		
MeFOSE	10.673	616.1 -> 58.9	55875	11.77 µg/L	100
PFDoDS	9.755	699.1 -> 79.9	3820	2.27 µg/L	97
		699.1 -> 98.8	2122		
NFDHA	5.288	295.0 -> 201.0	14053	4.78 µg/L	95
		295.0 -> 84.9	3474		
PFMBA	4.626	279.0 -> 85.1	49684	4.69 µg/L	100
PFMPA	3.351	229.0 -> 84.9	39671	4.82 µg/L	100
PFEESA	5.862	314.8 -> 134.9	127102	4.15 µg/L	99
		314.8 -> 82.9	4520		

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

7.7.16
7

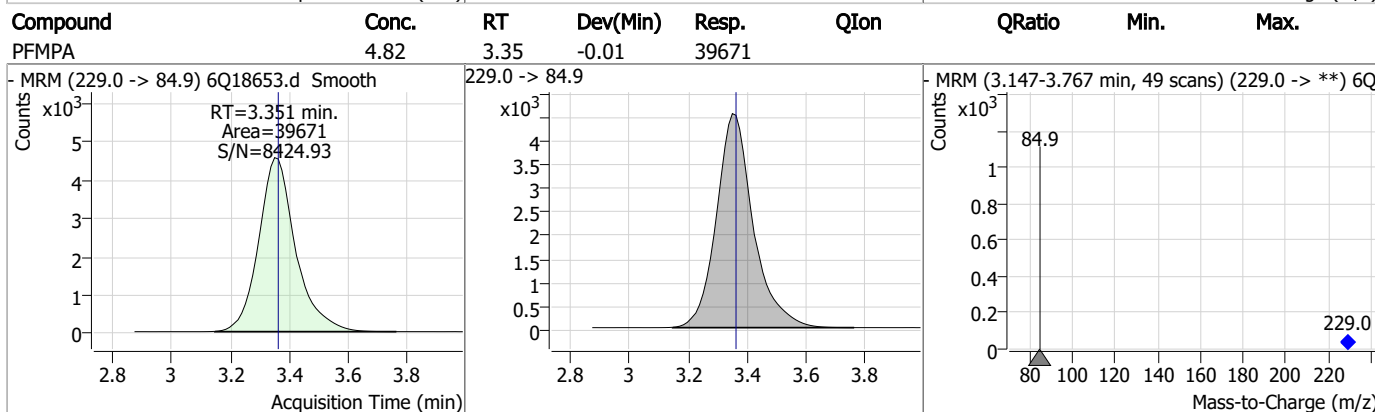
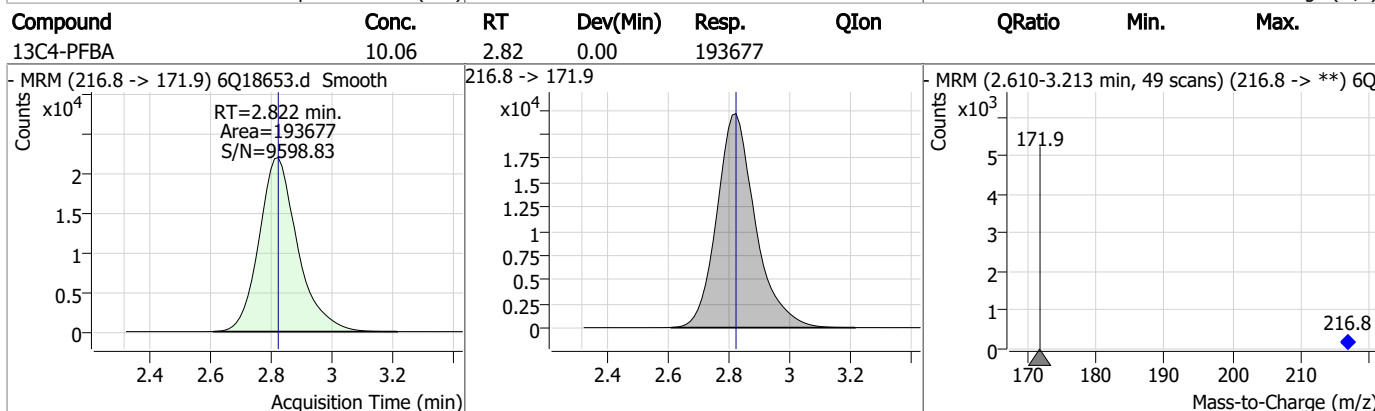
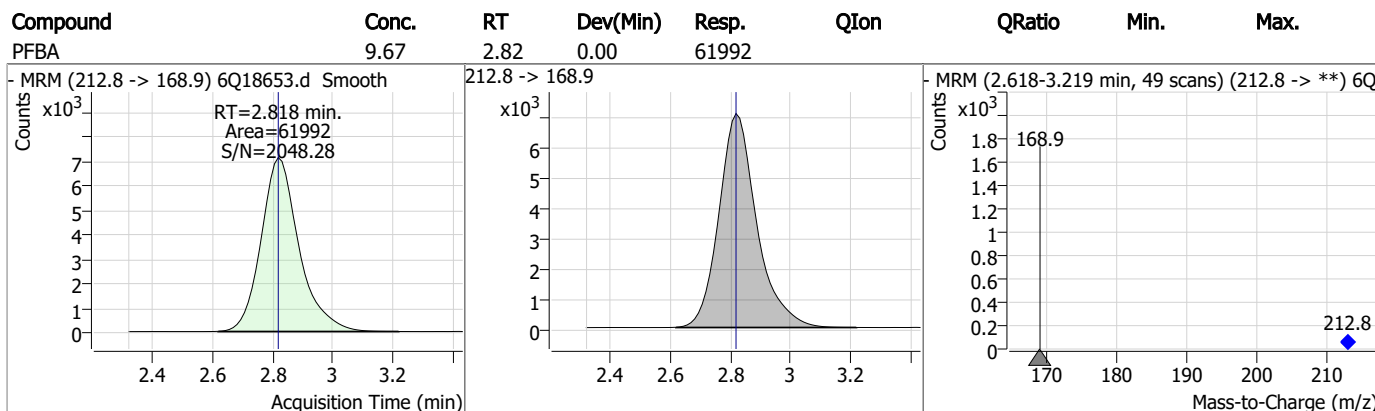
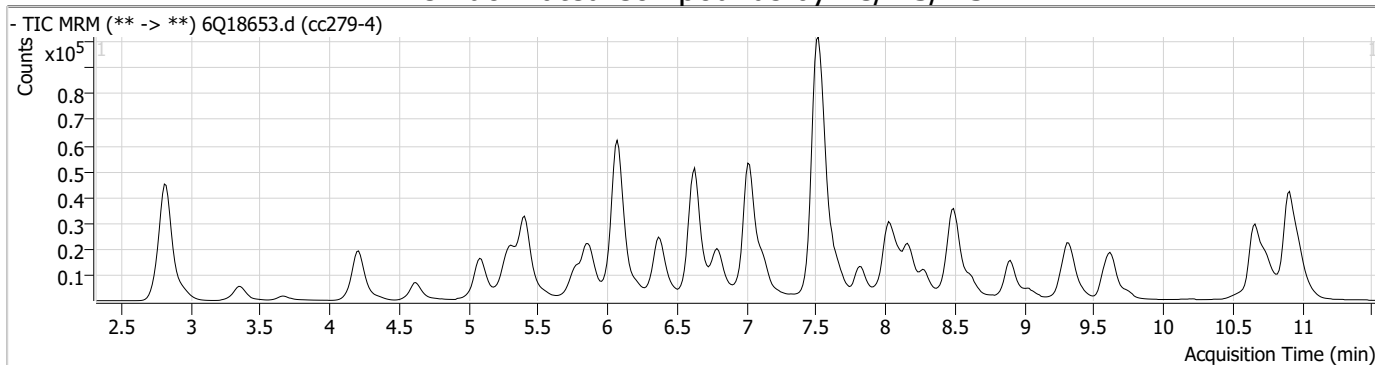
Perfluorinated Compounds by LC/MS/MS

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

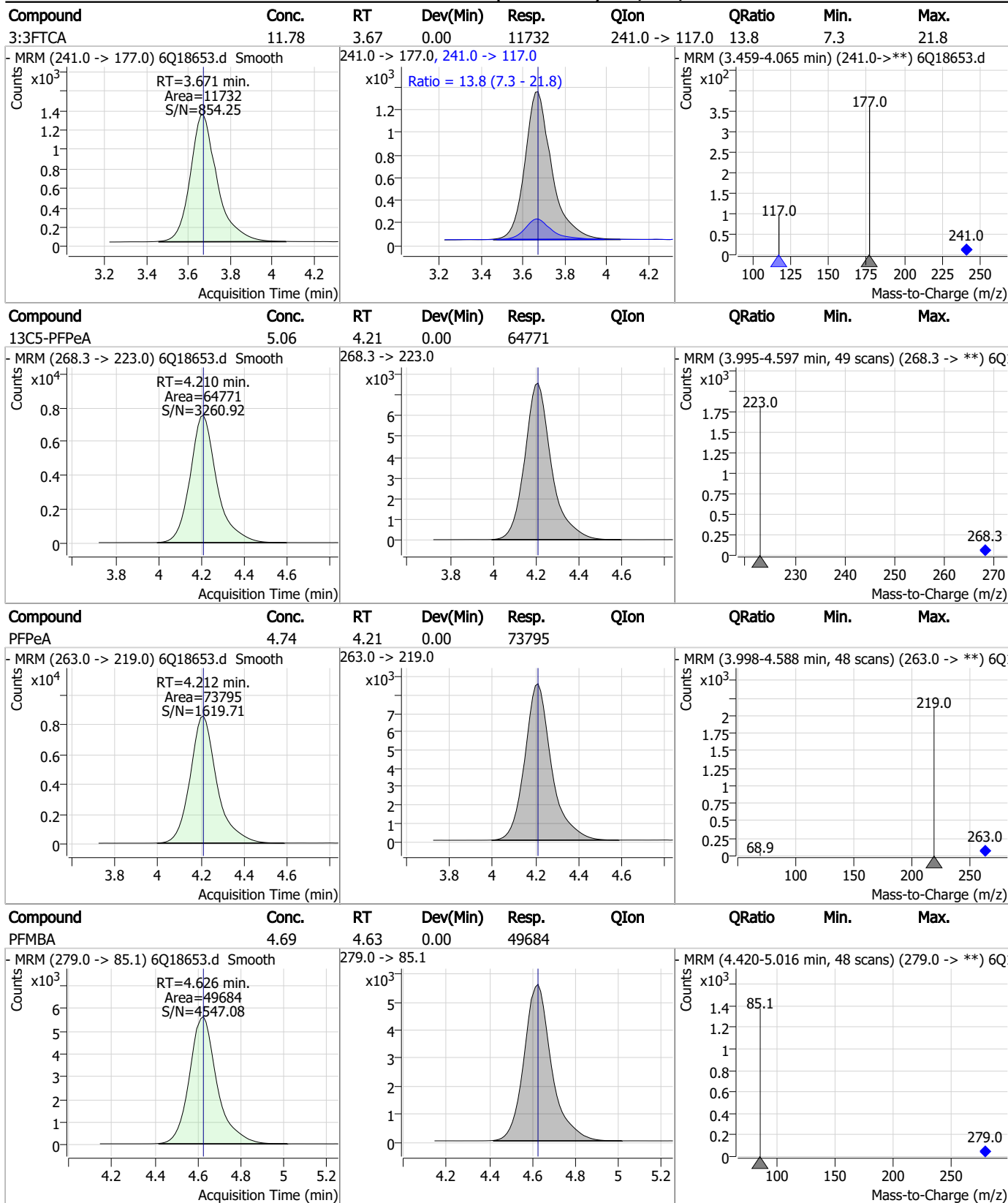
7.7.16

7

Perfluorinated Compounds by LC/MS/MS

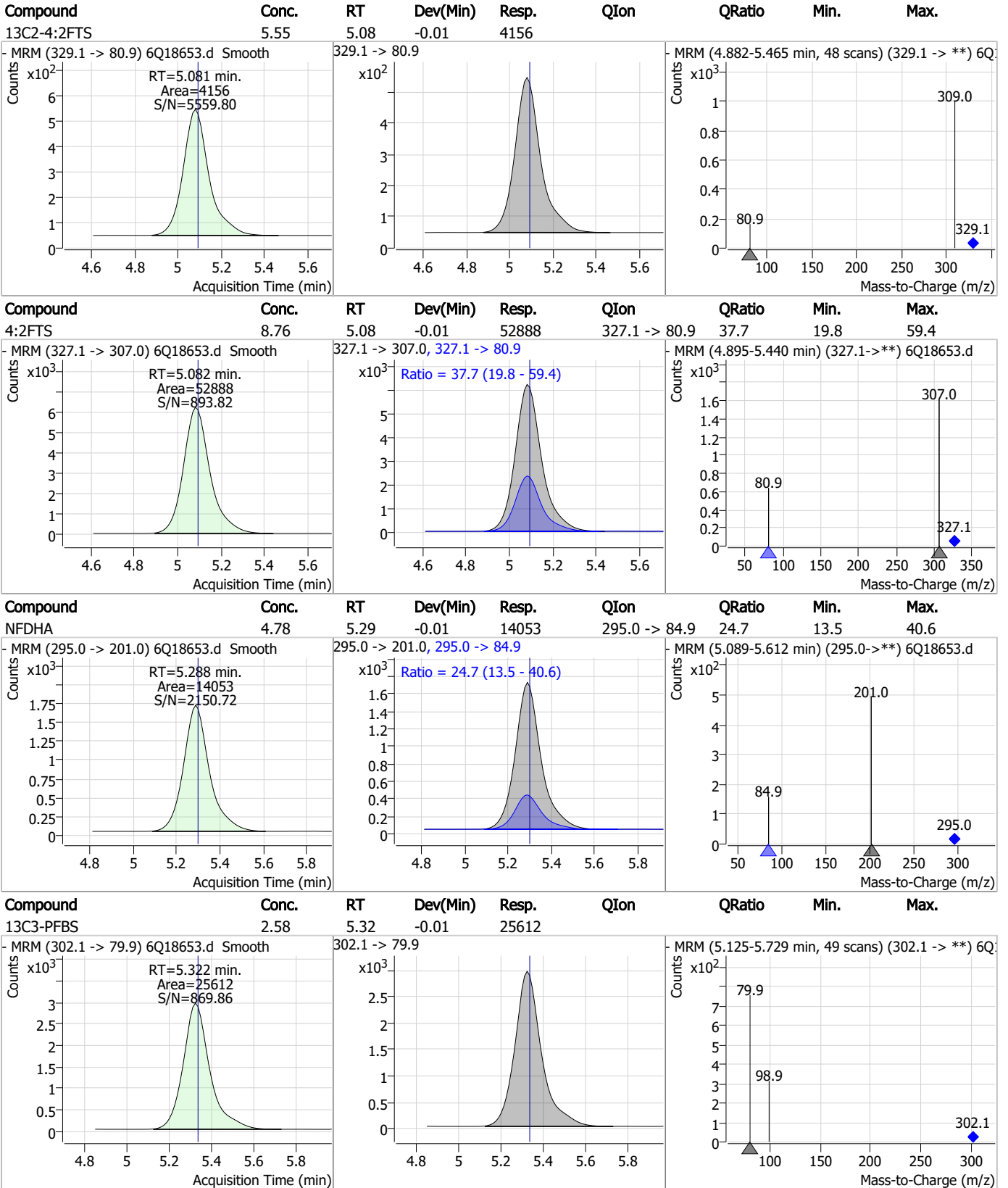


Perfluorinated Compounds by LC/MS/MS



7.7.16

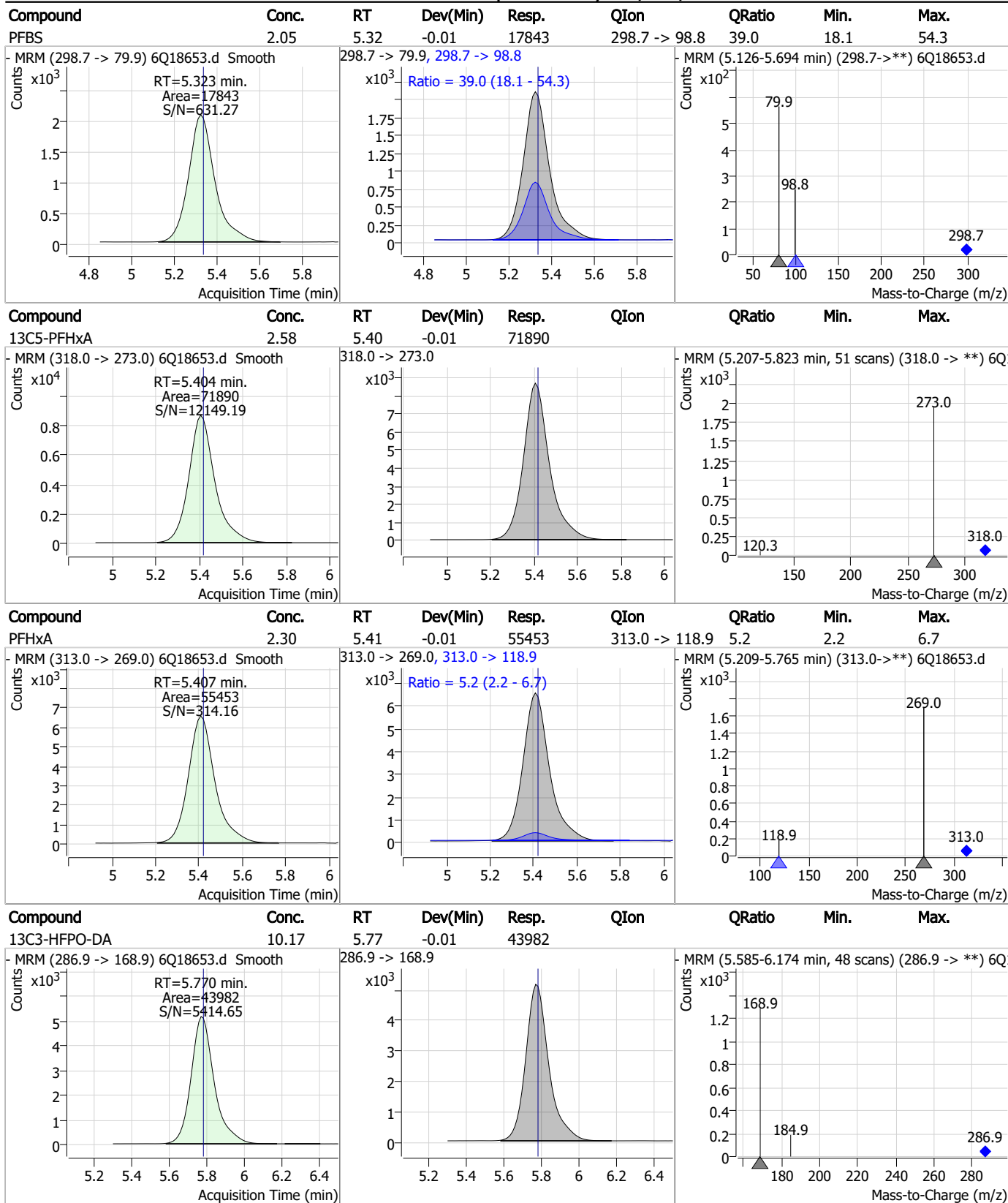
Perfluorinated Compounds by LC/MS/MS



7.7.16 7



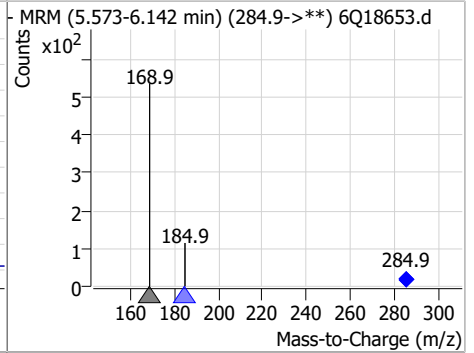
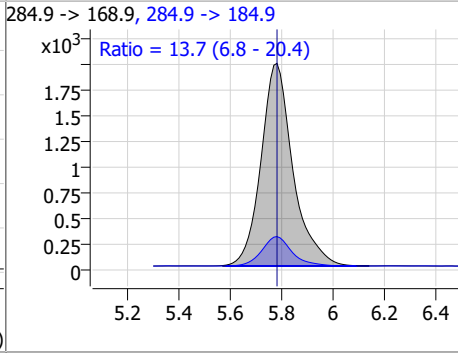
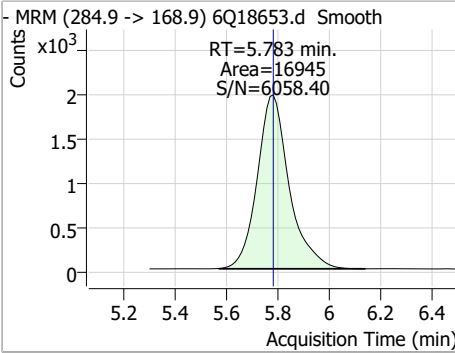
Perfluorinated Compounds by LC/MS/MS



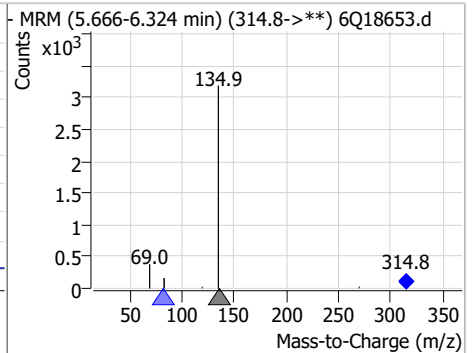
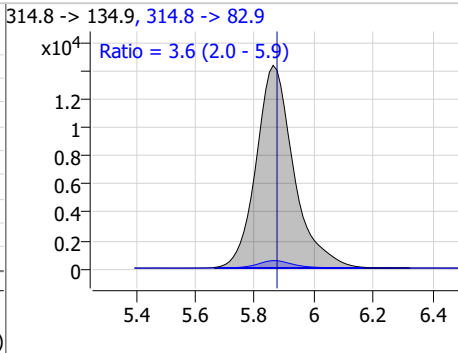
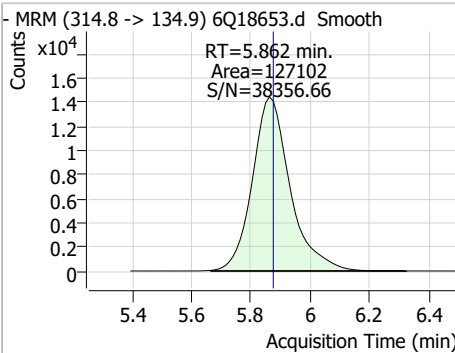
7.7.16

Perfluorinated Compounds by LC/MS/MS

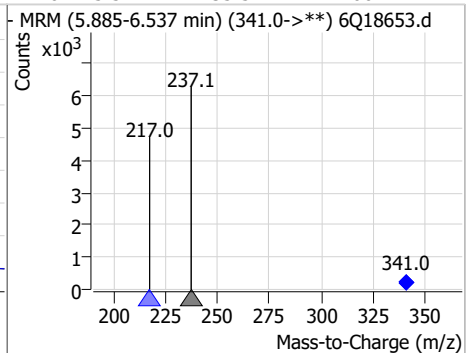
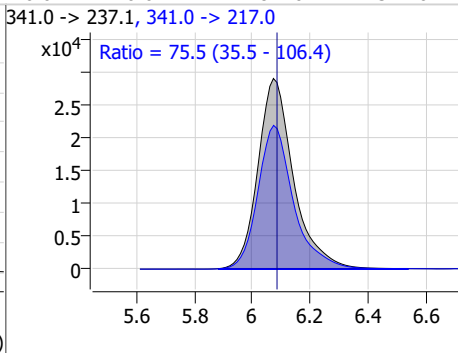
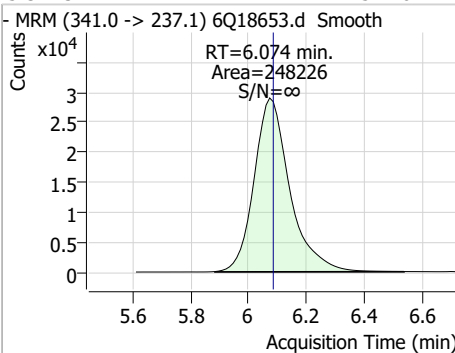
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.55	5.78	0.00	16945	284.9 -> 184.9	13.7	6.8	20.4



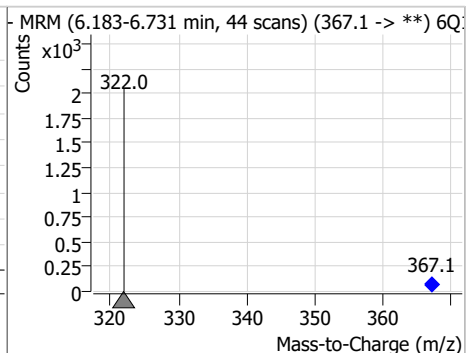
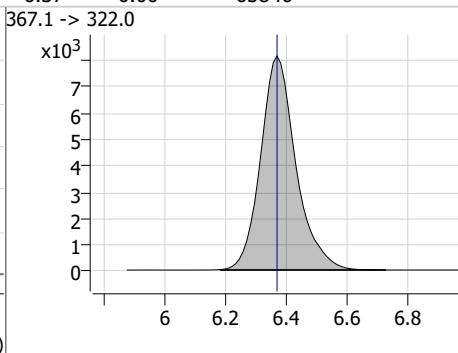
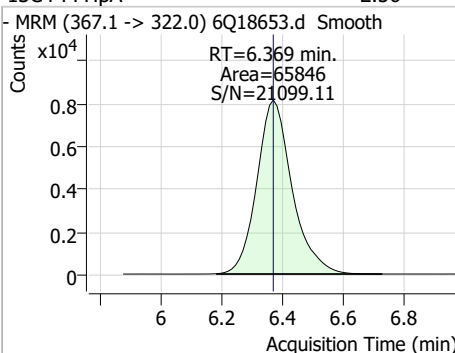
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.15	5.86	-0.01	127102	314.8 -> 82.9	3.6	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	57.16	6.07	-0.01	248226	341.0 -> 217.0	75.5	35.5	106.4

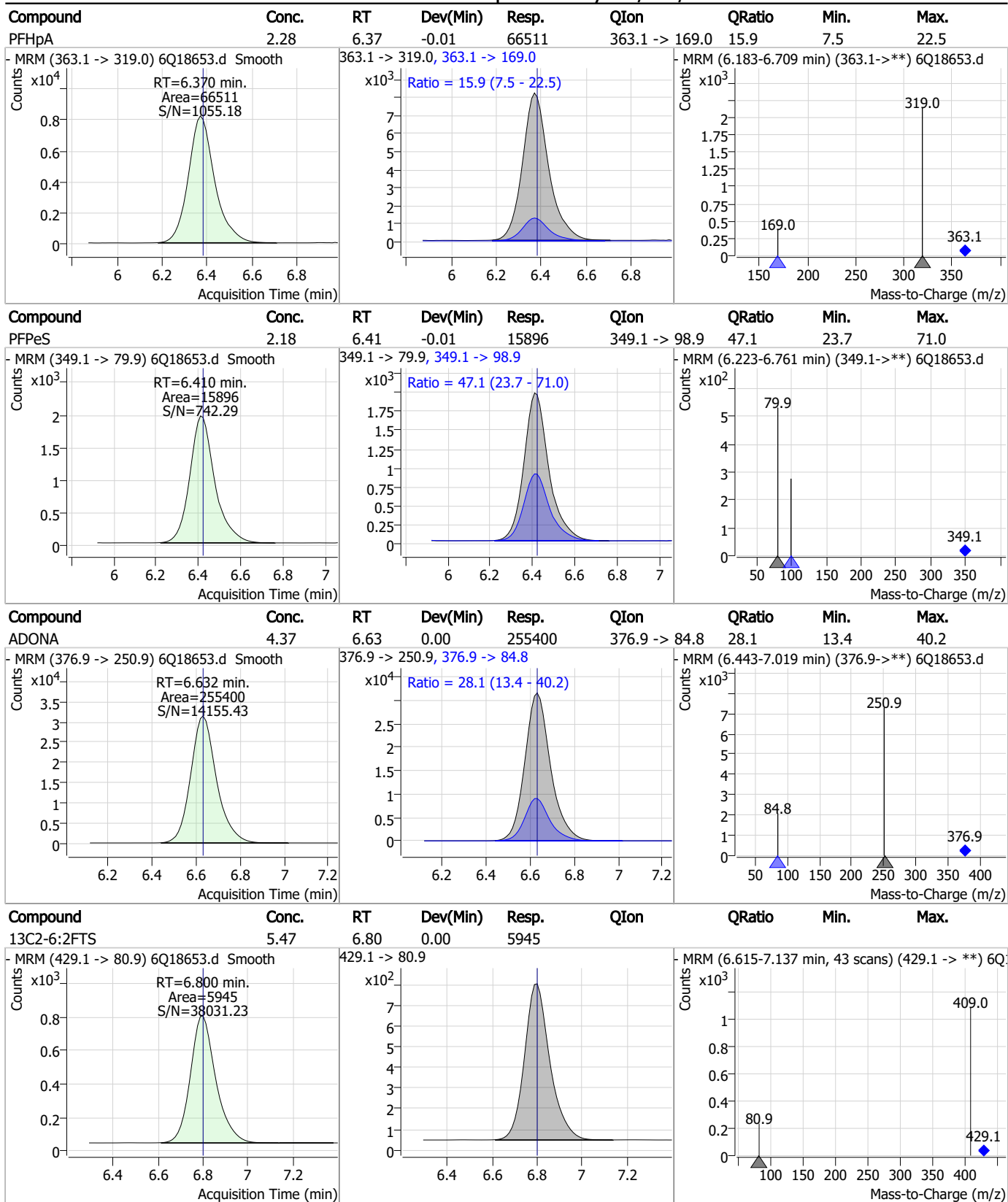


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.37	0.00	65846	367.1 -> 322.0	-	-	-



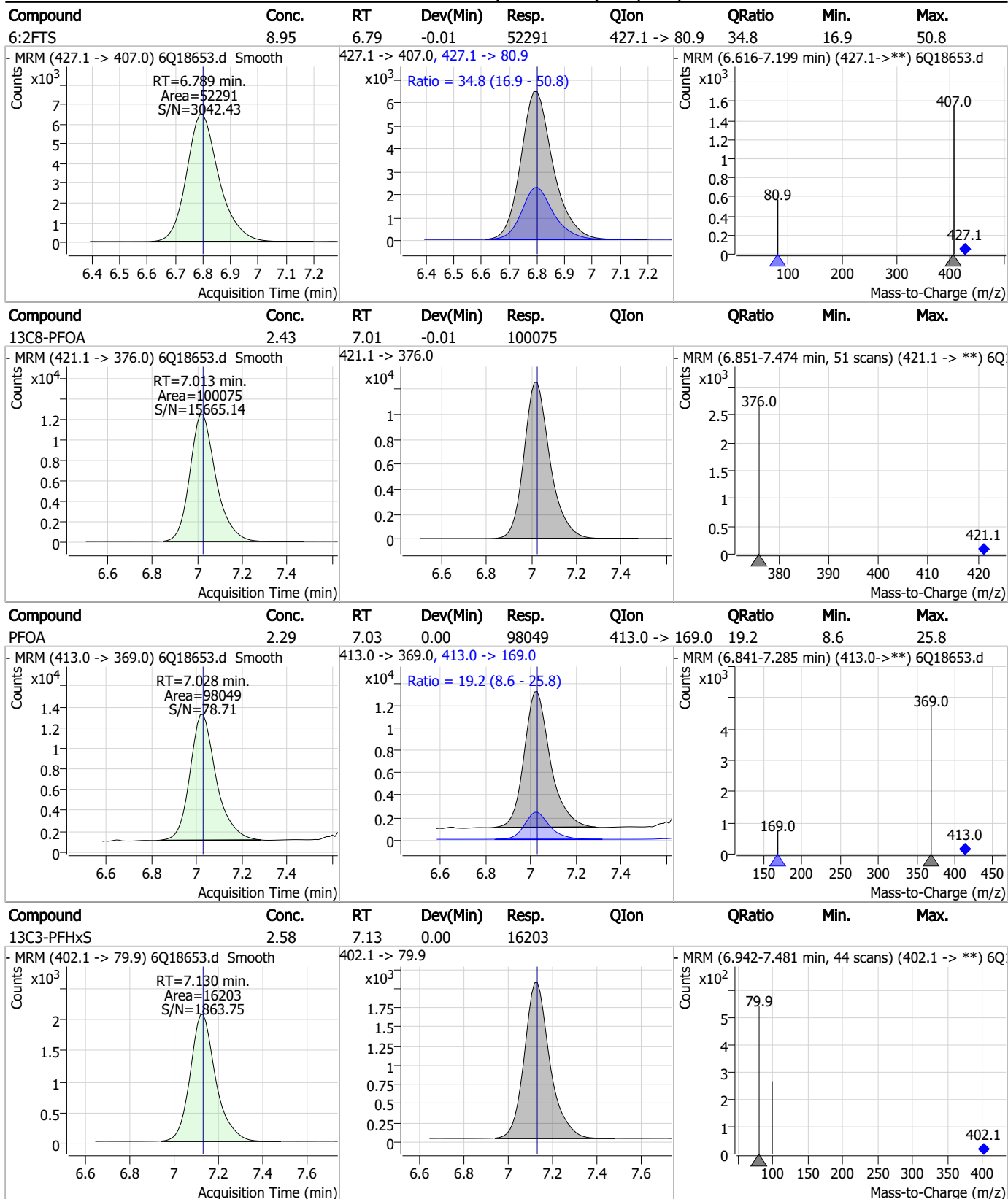
7.7.16
7

Perfluorinated Compounds by LC/MS/MS



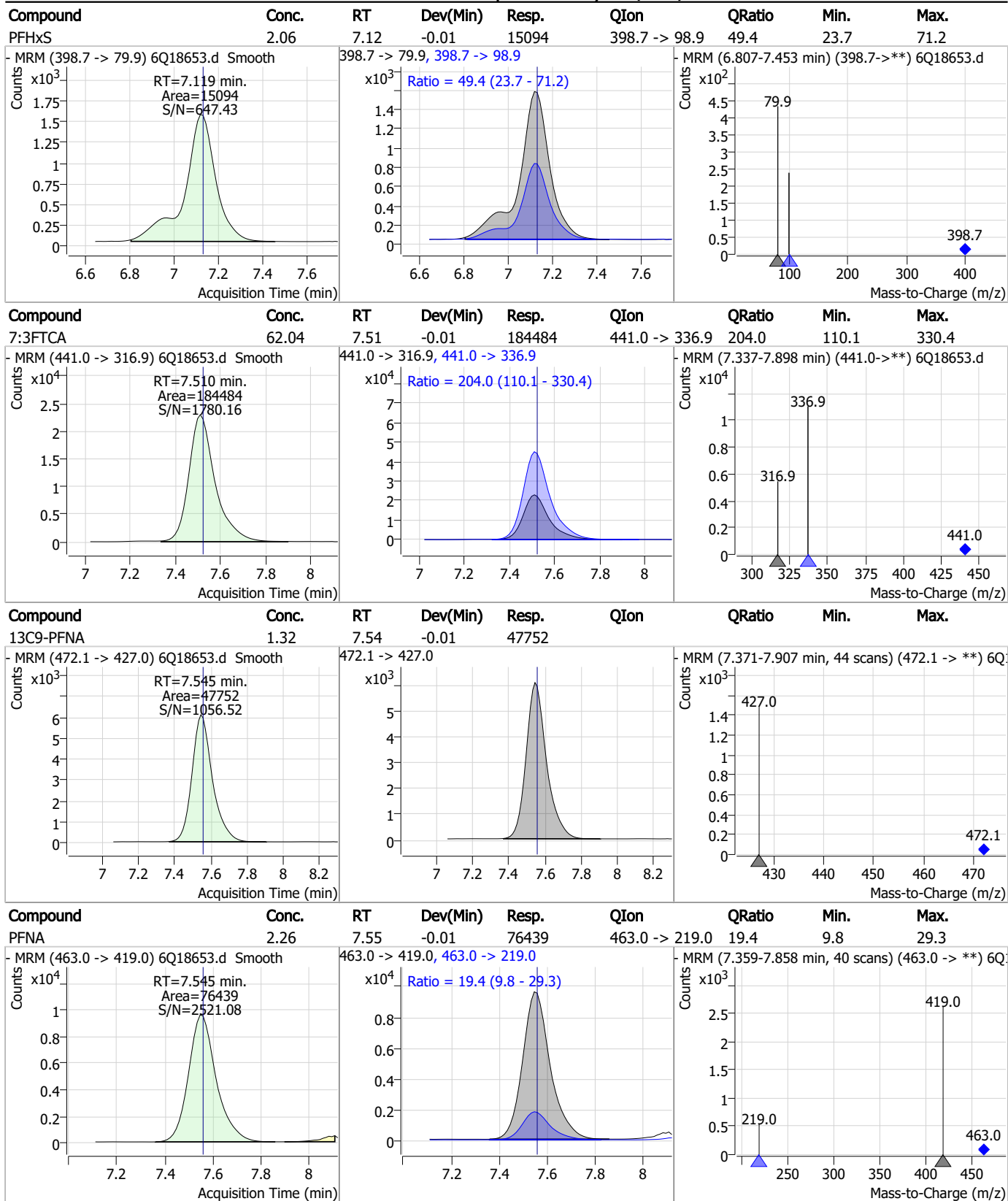
7.7.16
7

Perfluorinated Compounds by LC/MS/MS



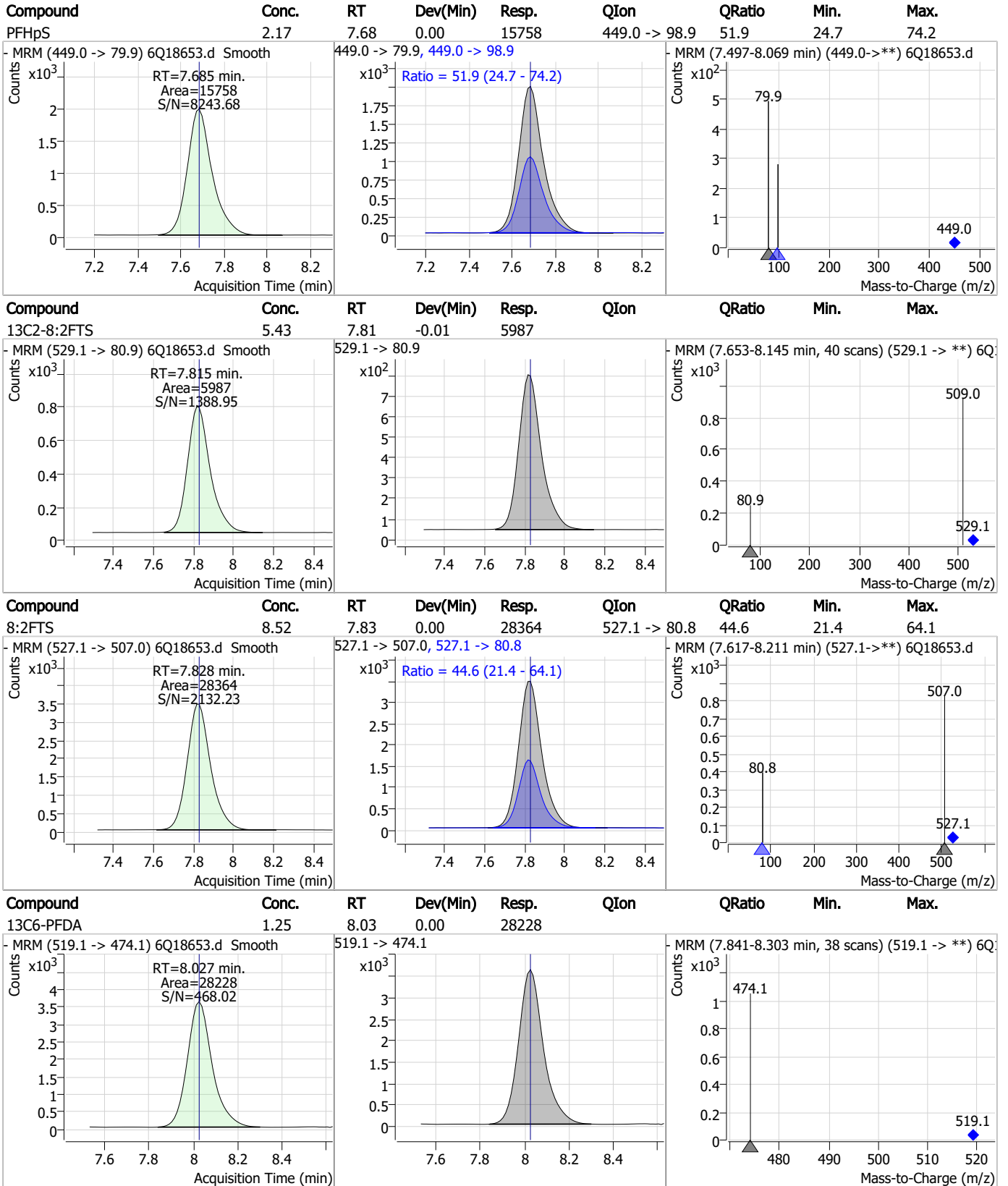
7.7.16

Perfluorinated Compounds by LC/MS/MS



7.7.16
7

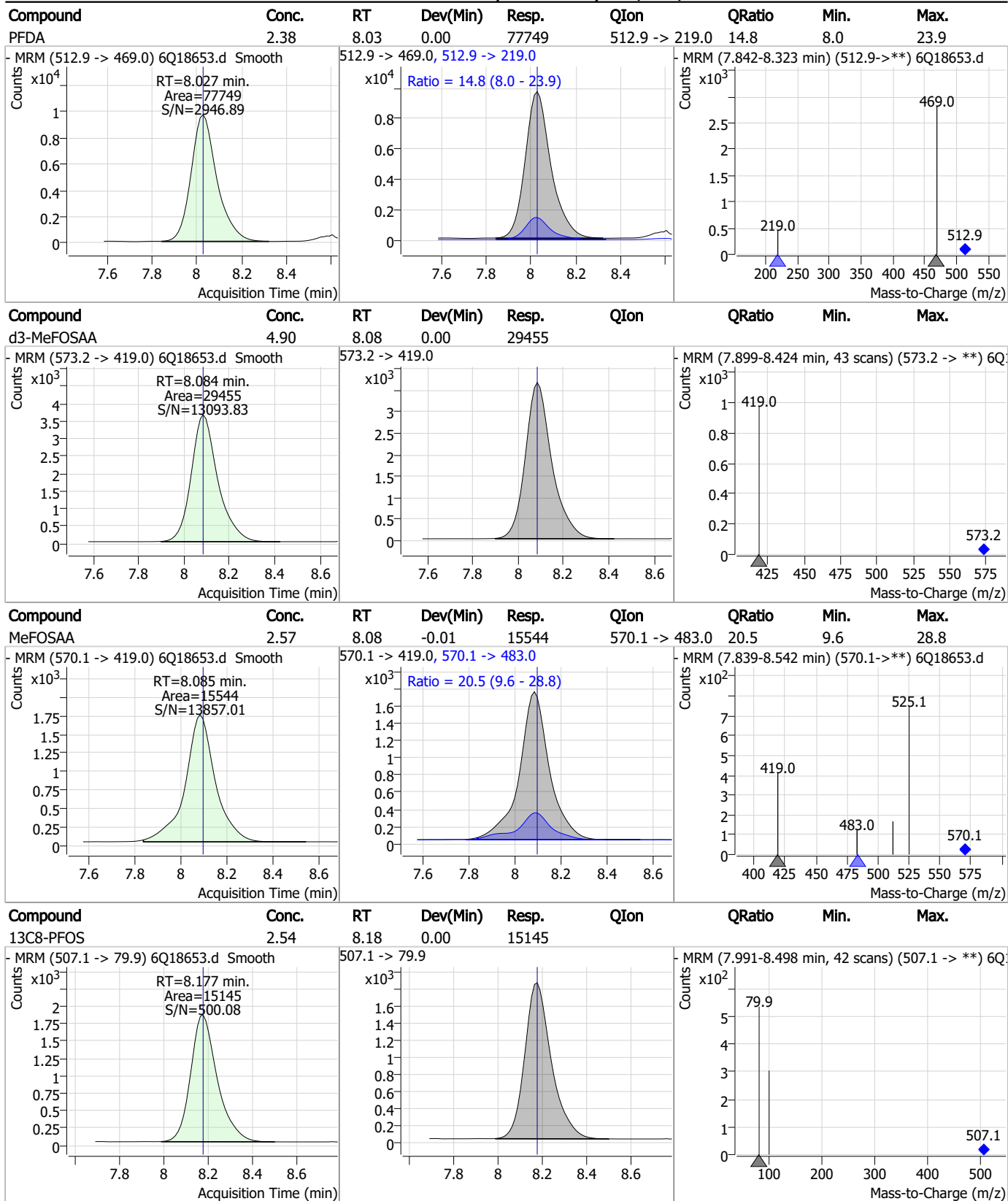
Perfluorinated Compounds by LC/MS/MS



7.7.16
7

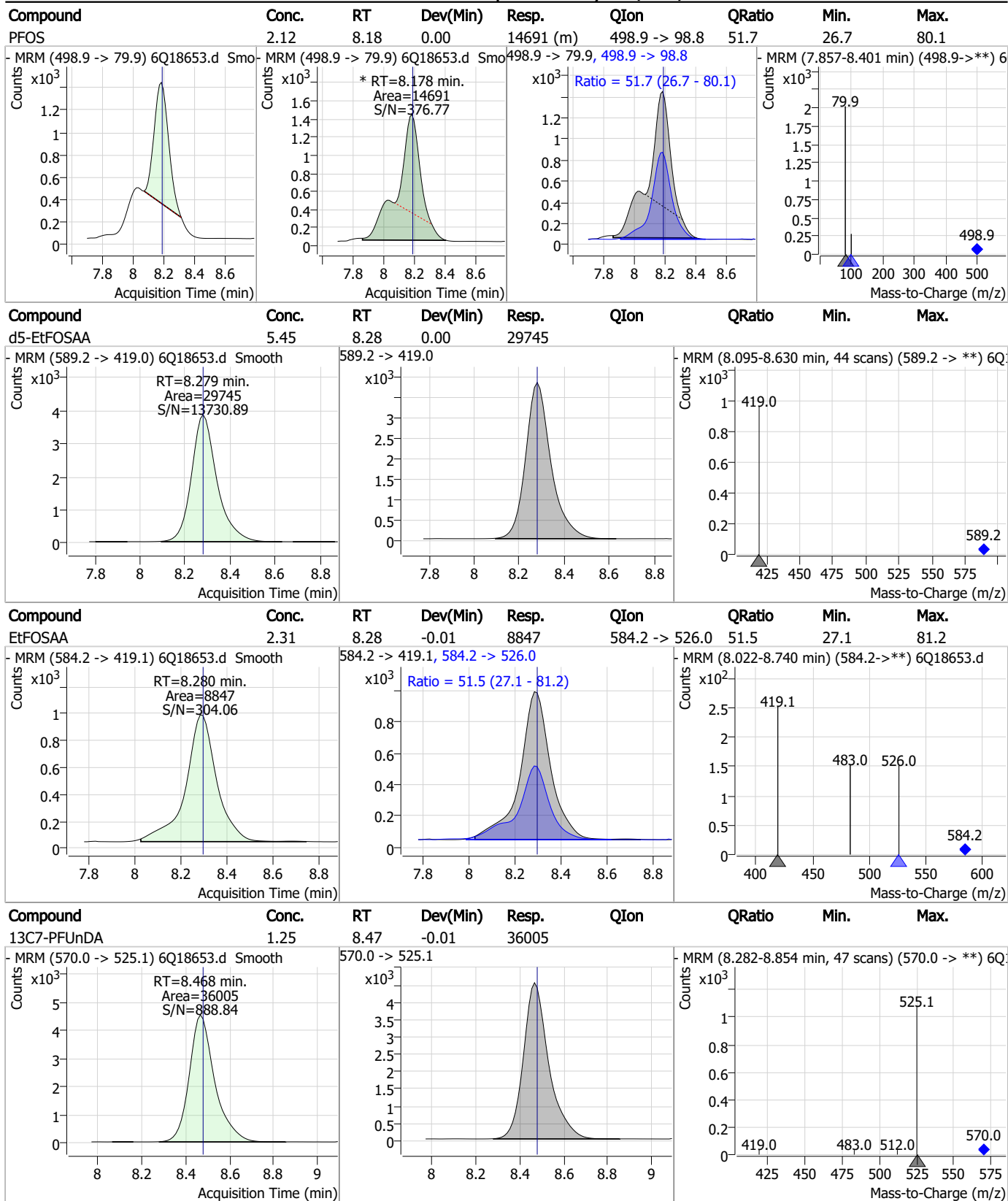


Perfluorinated Compounds by LC/MS/MS



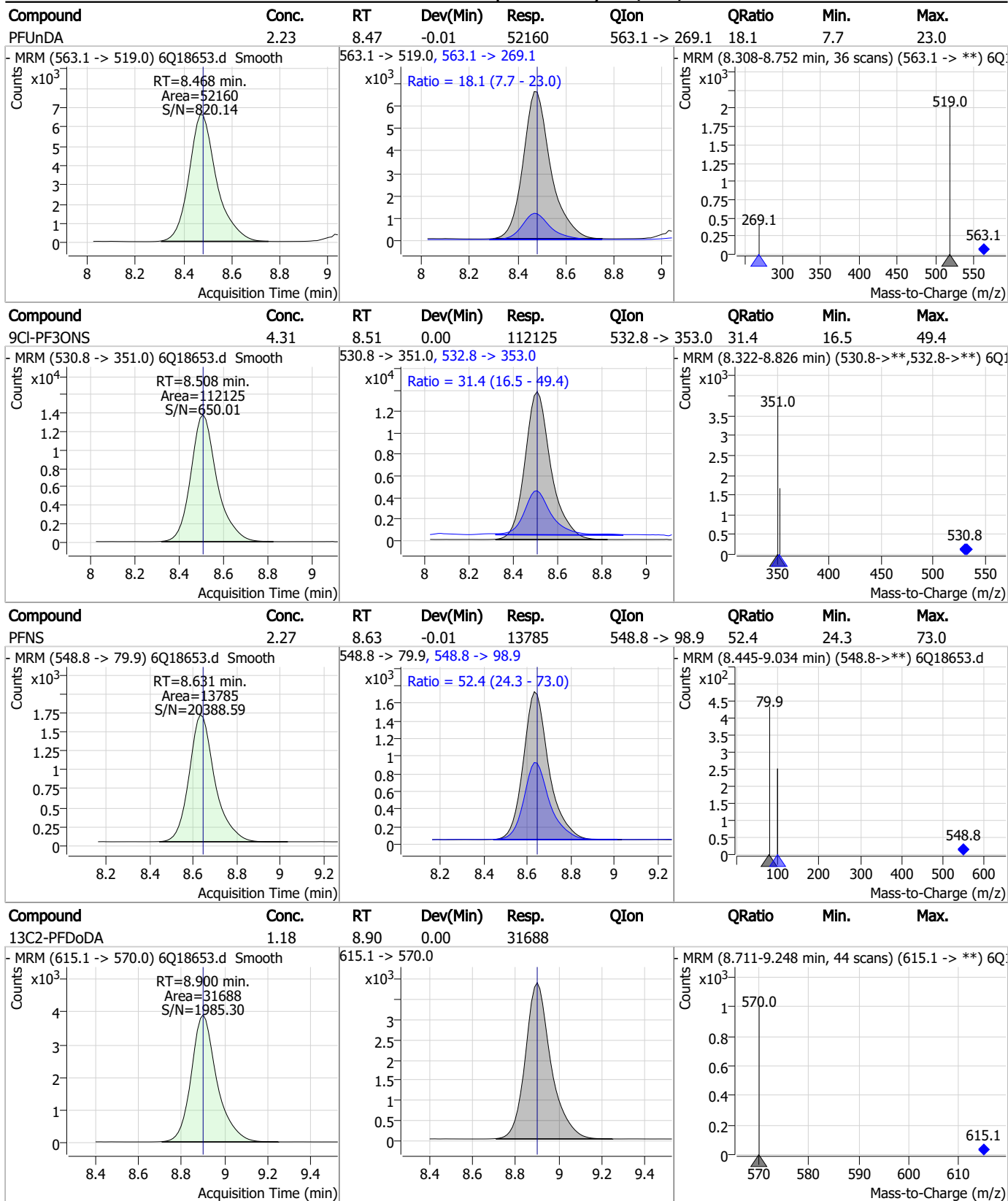
7.7.16
7

Perfluorinated Compounds by LC/MS/MS



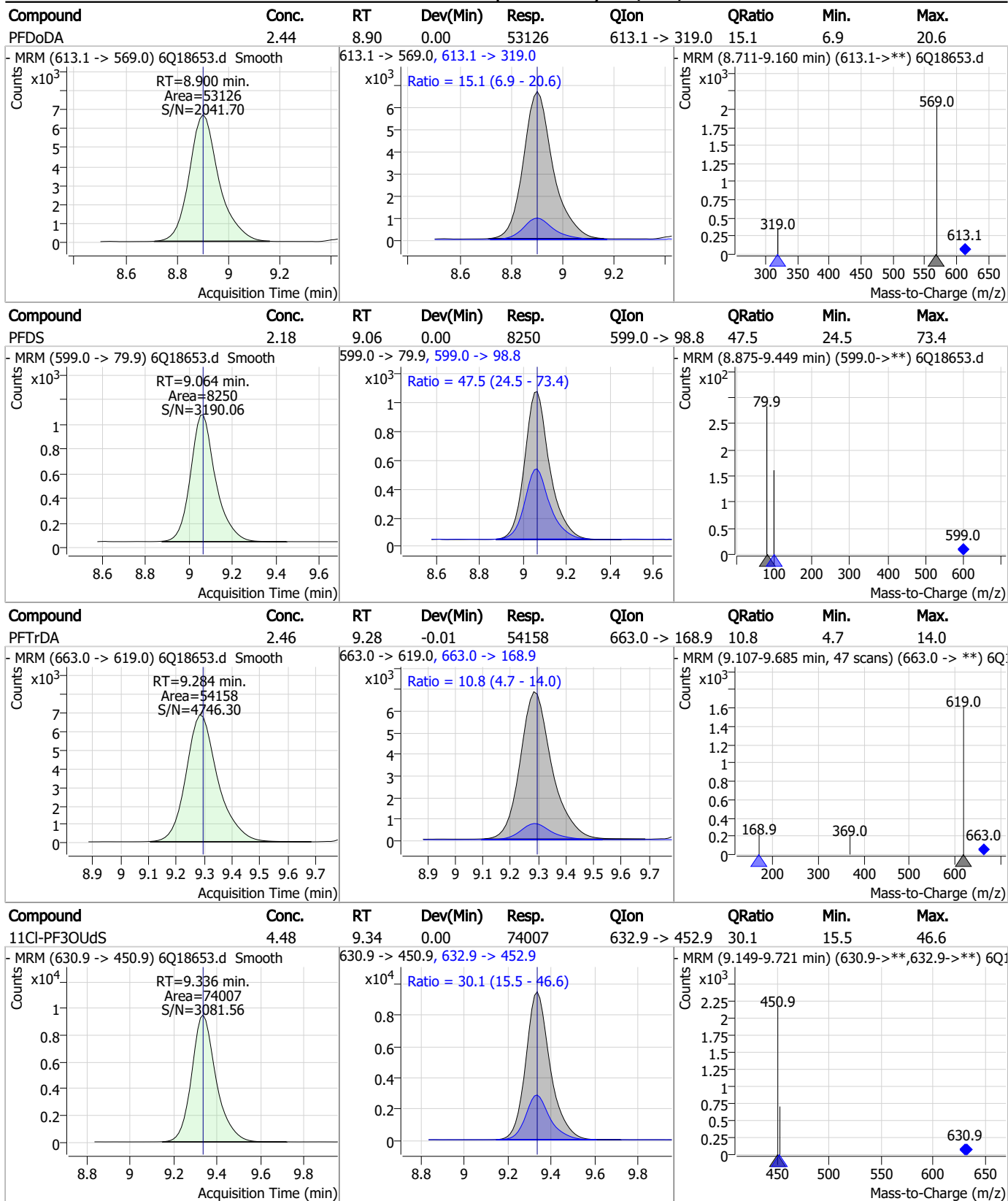
7.7.16
7

Perfluorinated Compounds by LC/MS/MS



7.7.16

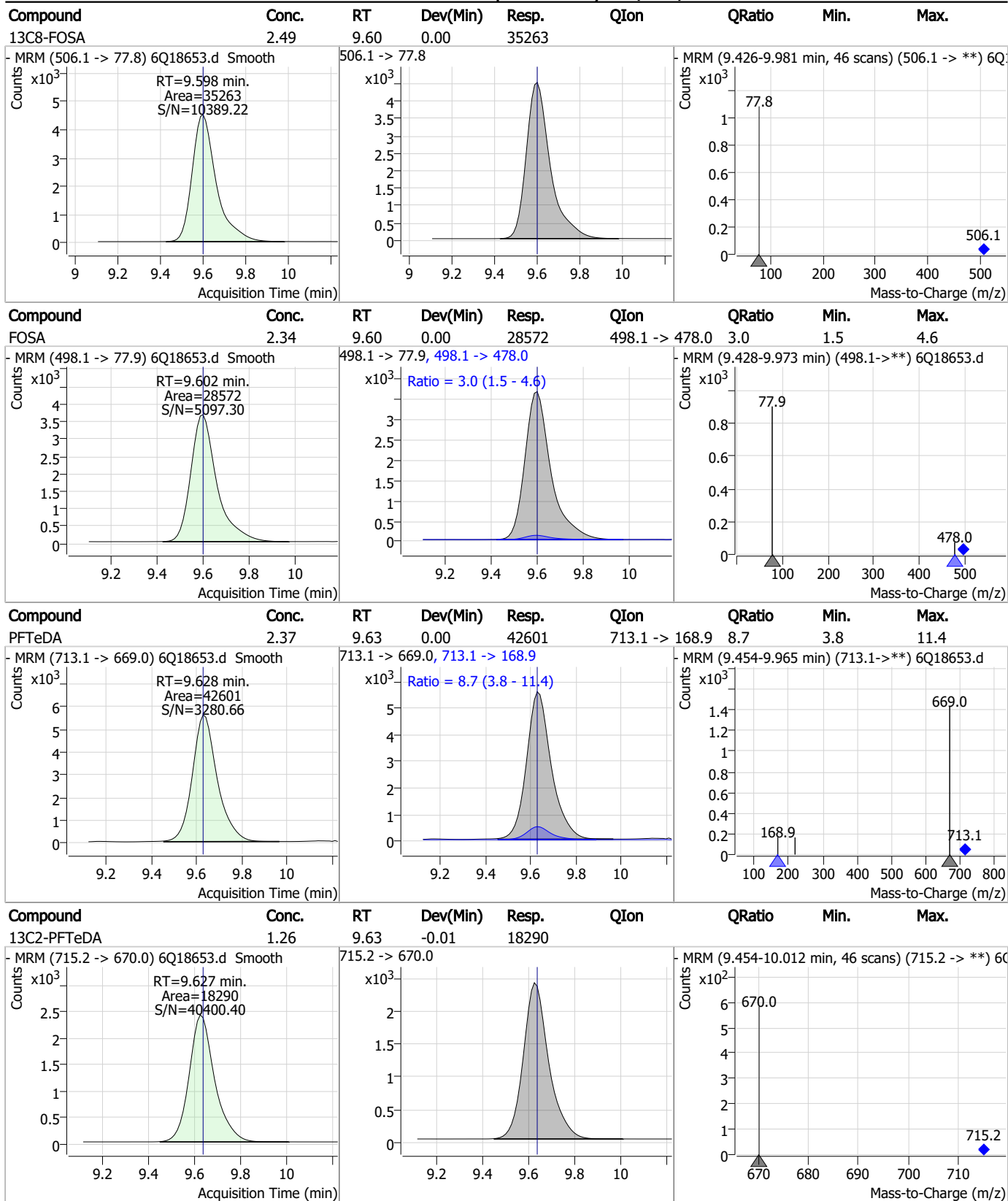
Perfluorinated Compounds by LC/MS/MS



7.7.16
7



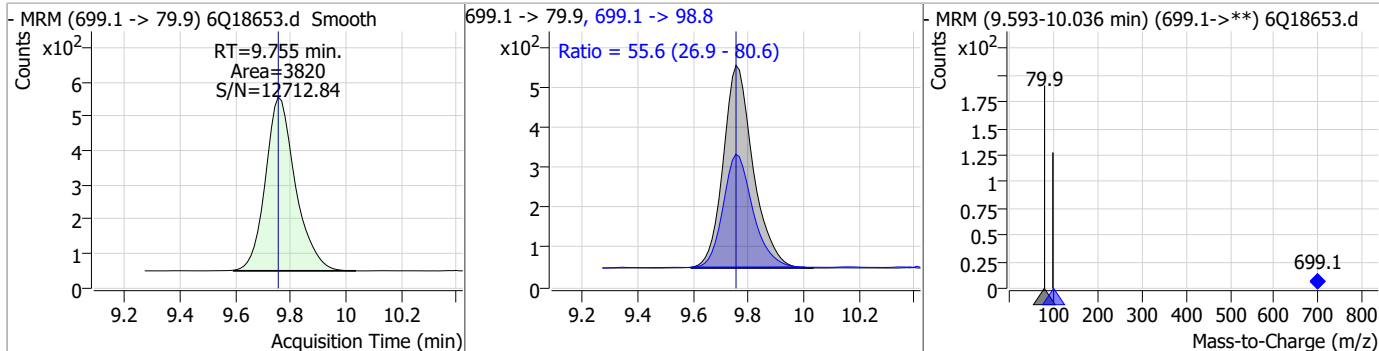
Perfluorinated Compounds by LC/MS/MS



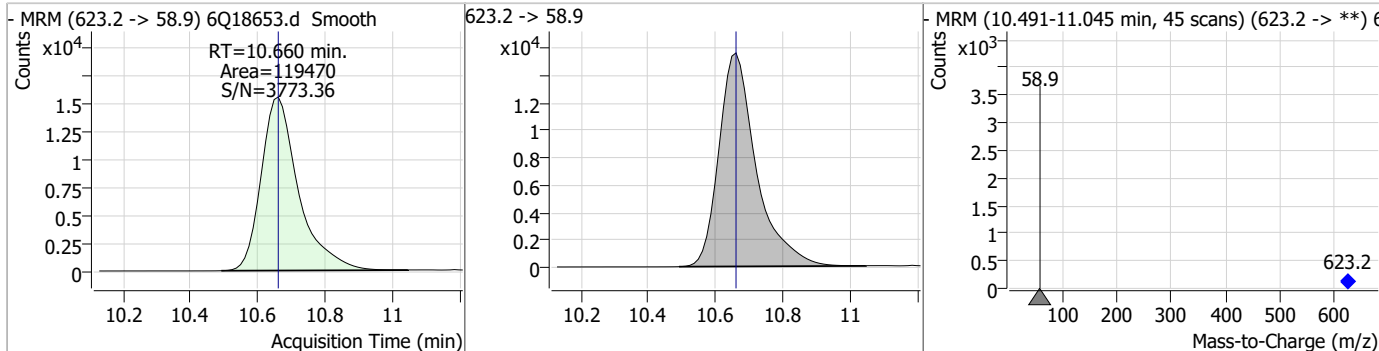
7.7.16
7

Perfluorinated Compounds by LC/MS/MS

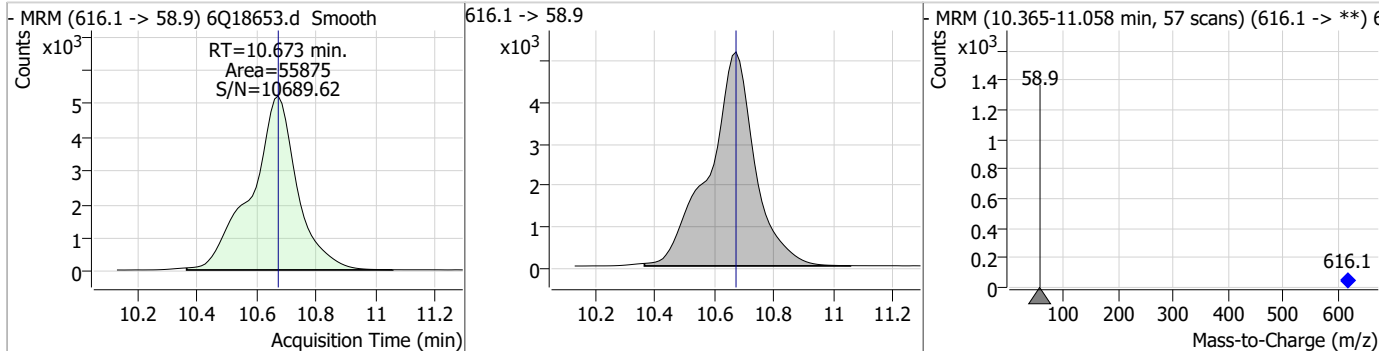
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.27	9.75	0.00	3820	699.1 -> 98.8	55.6	26.9	80.6



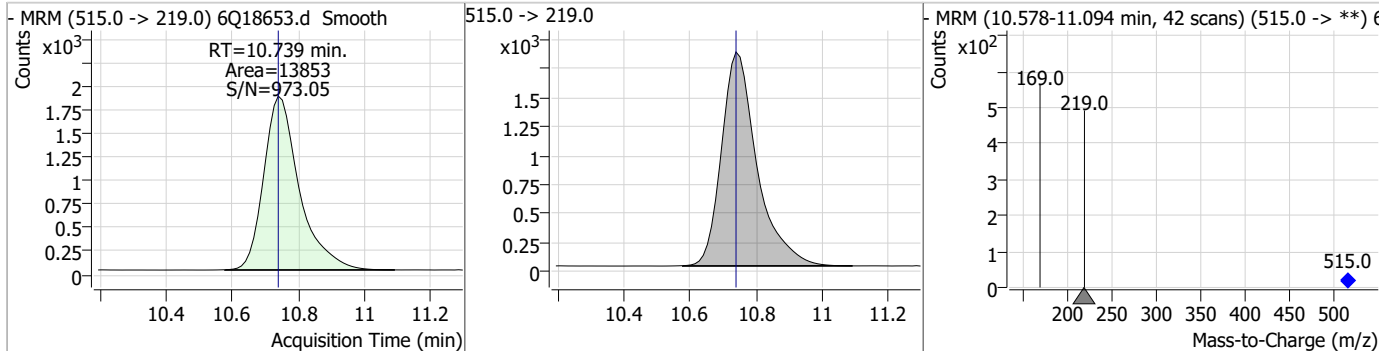
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.56	10.66	0.00	119470				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.77	10.67	0.00	55875				

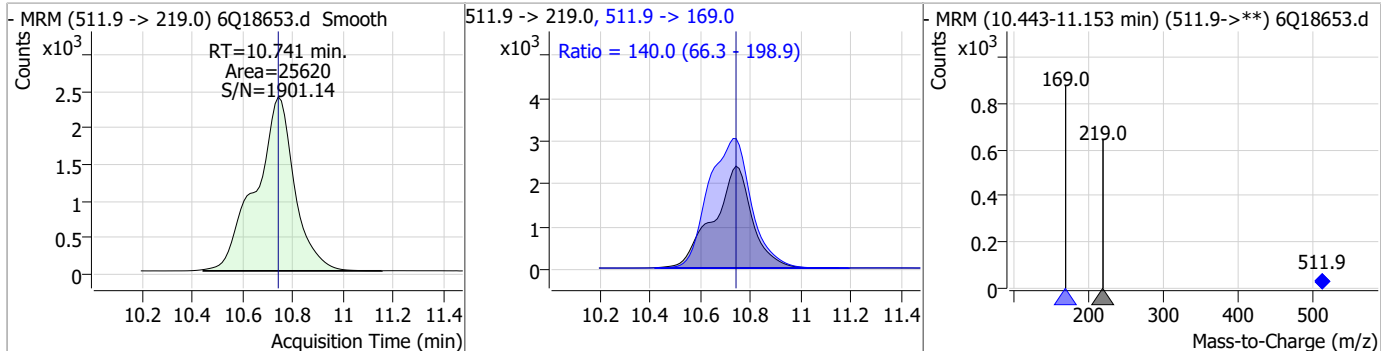


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.41	10.74	0.00	13853				

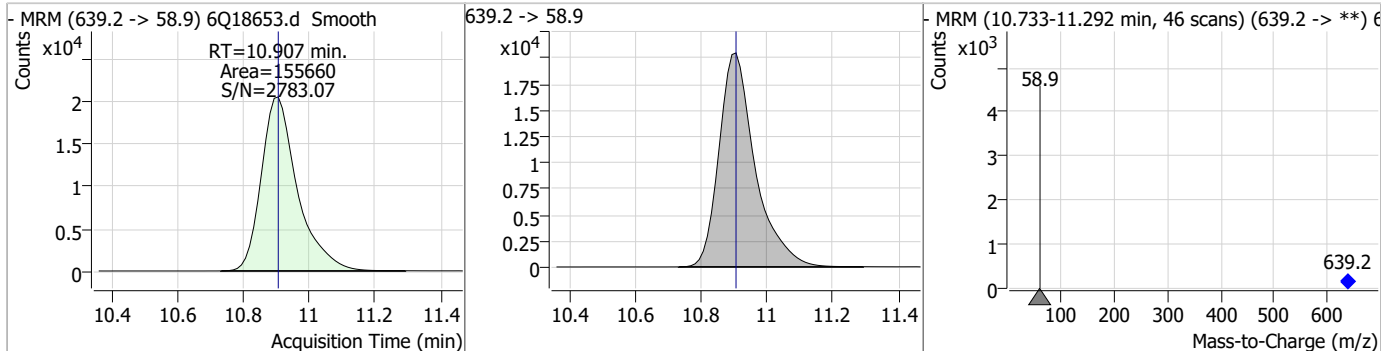


Perfluorinated Compounds by LC/MS/MS

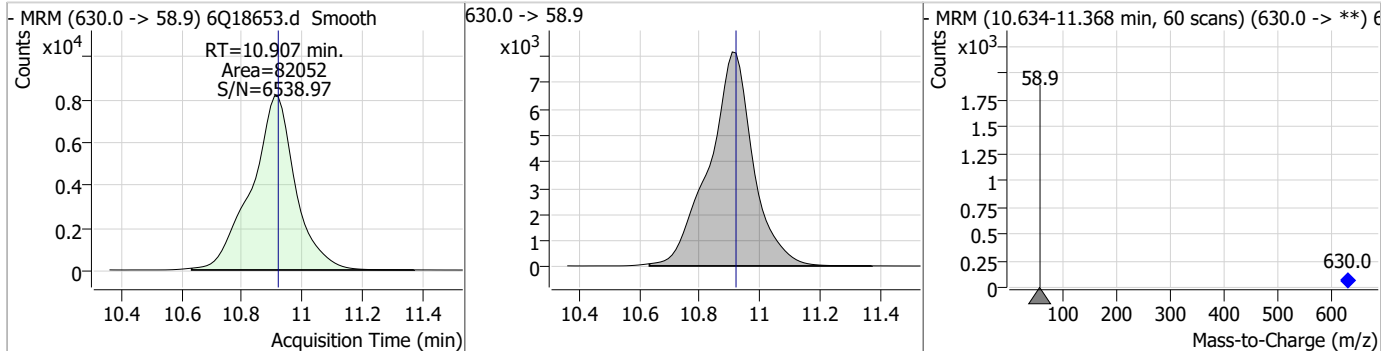
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.03	10.74	0.00	25620	511.9 -> 169.0	140.0	66.3	198.9



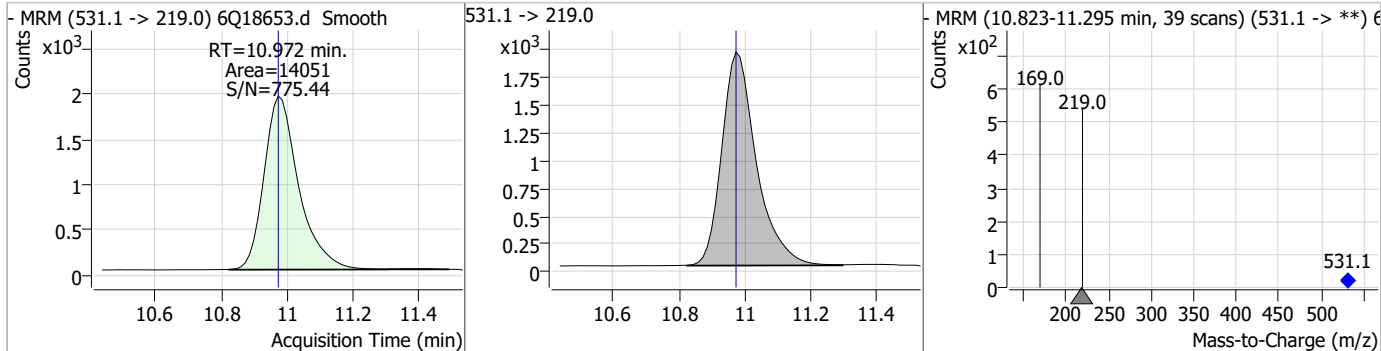
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.46	10.91	0.00	155660				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.82	10.91	-0.01	82052				

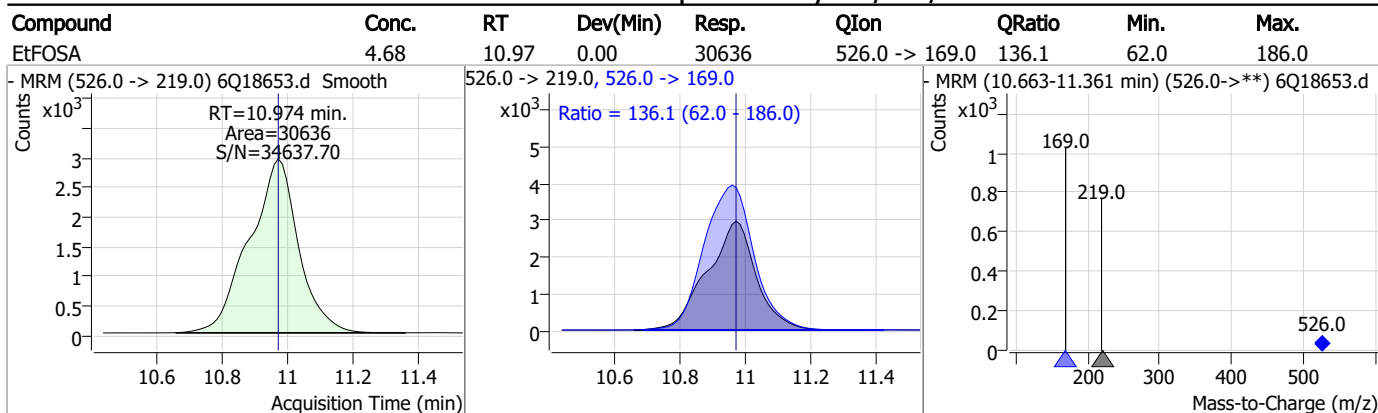


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.58	10.97	0.00	14051				



7.7.16
7

Perfluorinated Compounds by LC/MS/MS



7.7.16

7

Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18653.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 06/01/23 09:14 Supervisor approved: 06/01/23 16:20 Norman Farmer

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

7.7.16.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18665.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 12:08:14 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	193754	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	65257	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	70633	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	68650	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	102565	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	45459	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	28360	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	36791	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	32301	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17937	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35849	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	25832	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15680	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	15205	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	4031	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5740	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	5863	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	30794	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	42905	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	29039	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	119963	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	155644	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13845	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14048	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	19366	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	81627	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11627	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	107504	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	35969	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	55667	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	66952	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	4031	5.20 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5740	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C2-8:2FTS	7.827	529.1 -> 80.9	5863	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	32301	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17937	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C3-PFBS	5.322	302.1 -> 79.9	25832	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFHxS	7.130	402.1 -> 79.9	15680	2.41 µg/L	0.000

7.7.17
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C4-PFBA	2.822	216.8 -> 171.9	193754	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.369	367.1 -> 322.0	68650	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C5-PFHxA	5.404	318.0 -> 273.0	70633	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFPeA	4.210	268.3 -> 223.0	65257	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C6-PFDA	8.027	519.1 -> 474.1	28360	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	36791	1.37 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C8-FOSA	9.598	506.1 -> 77.8	35849	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C8-PFOA	7.026	421.1 -> 376.0	102565	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C8-PFOS	8.177	507.1 -> 79.9	15205	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C9-PFNA	7.545	472.1 -> 427.0	45459	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30794	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42905	9.75 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	14048	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.9%	
d5-EtFOSAA	8.279	589.2 -> 419.0	29039	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d7-MeFOSE	10.660	623.2 -> 58.9	119963	24.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d9-EtFOSE	10.907	639.2 -> 58.9	155644	24.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	13845	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	53892	9.20 µg/L	95
		327.1 -> 80.9	19735		
6:2FTS	6.801	427.1 -> 407.0	54663	9.69 µg/L	98
		427.1 -> 80.9	17911		
8:2FTS	7.816	527.1 -> 507.0	31069	9.53 µg/L	95
		527.1 -> 80.8	12310		
EtFOSAA	8.280	584.2 -> 419.1	9057	2.42 µg/L	100
		584.2 -> 526.0	4916		
FOSA	9.589	498.1 -> 77.9	29248	2.36 µg/L	100
		498.1 -> 478.0	913		
MeFOSAA	8.085	570.1 -> 419.0	16433	2.60 µg/L	99
		570.1 -> 483.0	3250		
PFBA	2.818	212.8 -> 168.9	62120	9.68 µg/L	100
PFBS	5.323	298.7 -> 79.9	18168	2.07 µg/L	99
		298.7 -> 98.8	6642		
PFDA	8.027	512.9 -> 469.0	77758	2.36 µg/L	100
		512.9 -> 219.0	12525		
PFDoDA	8.900	613.1 -> 569.0	52324	2.36 µg/L	93
		613.1 -> 319.0	8735		
PFDS	9.052	599.0 -> 79.9	8444	2.22 µg/L	97

7.7.17
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	3976	2.24	µg/L	96
		363.1 -> 319.0	68134			
PFHpS	7.685	363.1 -> 169.0	11283	2.25	µg/L	100
		449.0 -> 79.9	16430			
PFHxA	5.407	449.0 -> 98.9	8122	2.43	µg/L	98
		313.0 -> 269.0	57534			
PFHxS	7.131	313.0 -> 118.9	2955	2.27	µg/L	98
		398.7 -> 79.9	16128			
PFNA	7.545	398.7 -> 98.9	7457	2.39	µg/L	99
		463.0 -> 419.0	76994			
PFNS	8.631	463.0 -> 219.0	15215	2.20	µg/L	91
		548.8 -> 79.9	13402			
PFOA	7.028	548.8 -> 98.9	7356	2.26	µg/L	96
		413.0 -> 369.0	98949			
PFOS	8.178	413.0 -> 169.0	18814	2.13	µg/L	99
		498.9 -> 79.9	14794			
PFPeA	4.212	498.9 -> 98.8	7785	4.77	µg/L	100
		263.0 -> 219.0	74806			
PFPeS	6.422	349.1 -> 79.9	15886	2.25	µg/L	97
		349.1 -> 98.9	7179			
PFTeDA	9.628	713.1 -> 669.0	42958	2.43	µg/L	97
		713.1 -> 168.9	3787			
PFTrDA	9.284	663.0 -> 619.0	55347	2.47	µg/L	95
		663.0 -> 168.9	6225			
PFUnDA	8.468	563.1 -> 519.0	53281	2.23	µg/L	96
		563.1 -> 269.1	9036			
11CI-PF3OUdS	9.336	630.9 -> 450.9	73314	4.55	µg/L	99
		632.9 -> 452.9	23249			
9CI-PF3ONS	8.508	530.8 -> 351.0	117769	4.64	µg/L	98
		532.8 -> 353.0	37344			
ADONA	6.632	376.9 -> 250.9	255792	4.49	µg/L	99
		376.9 -> 84.8	69603			
HFPO-DA	5.783	284.9 -> 168.9	17891	4.92	µg/L	96
		284.9 -> 184.9	2152			
3:3FTCA	3.659	241.0 -> 177.0	11841	11.80	µg/L	98
		241.0 -> 117.0	1627			
5:3FTCA	6.074	341.0 -> 237.1	253177	59.34	µg/L	97
		341.0 -> 217.0	185193			
7:3FTCA	7.510	441.0 -> 316.9	175731	60.14	µg/L	99
		441.0 -> 336.9	383358			
EtFOSA	10.974	526.0 -> 219.0	31206	4.84	µg/L	94
		526.0 -> 169.0	40648			
EtFOSE	10.920	630.0 -> 58.9	83220	11.98	µg/L	100
		511.9 -> 219.0	25067			
MeFOSA	10.741	511.9 -> 169.0	36193	4.85	µg/L	90
		616.1 -> 58.9	56325			
MeFOSE	10.673	699.1 -> 79.9	3826	11.81	µg/L	100
		699.1 -> 98.8	2184			
PFDoDS	9.755	295.0 -> 201.0	13642	2.27	µg/L	95
		295.0 -> 84.9	3892			
NFDHA	5.288	279.0 -> 85.1	50383	4.72	µg/L	100
		229.0 -> 84.9	39611			
PFMBA	4.626	314.8 -> 134.9	128096	4.77	µg/L	100
		314.8 -> 82.9	4005			
PFMPA	3.351			4.26	µg/L	98
PFEESA	5.862					

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

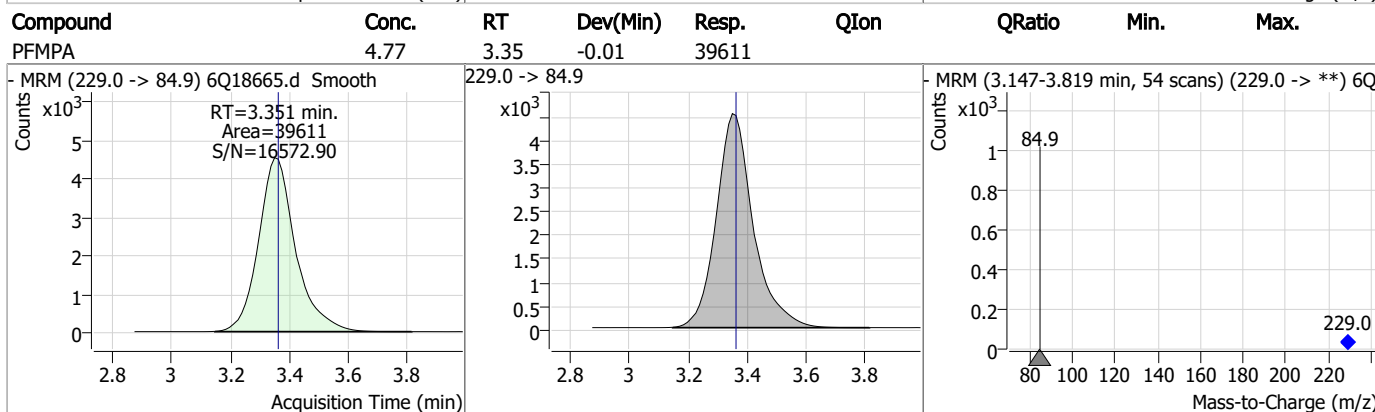
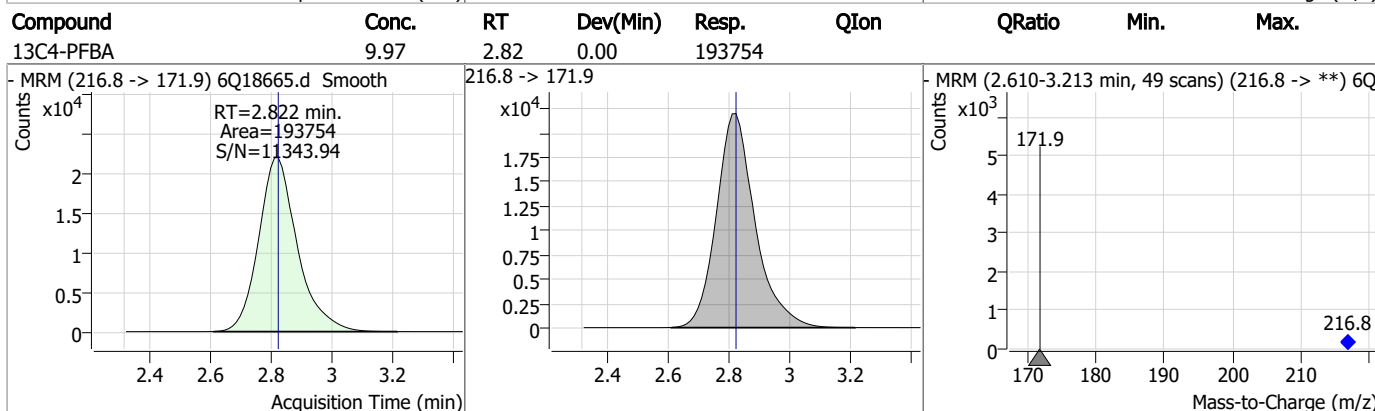
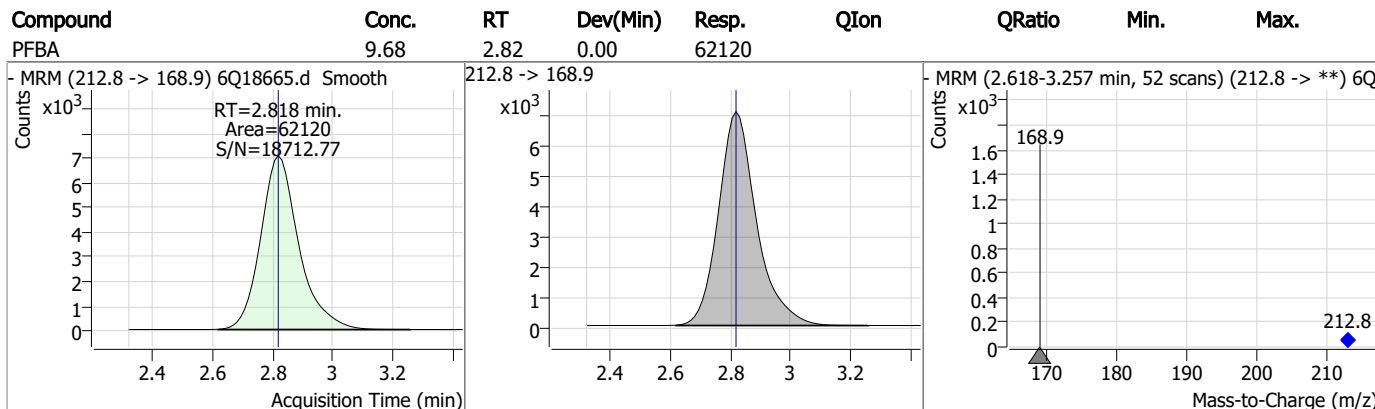
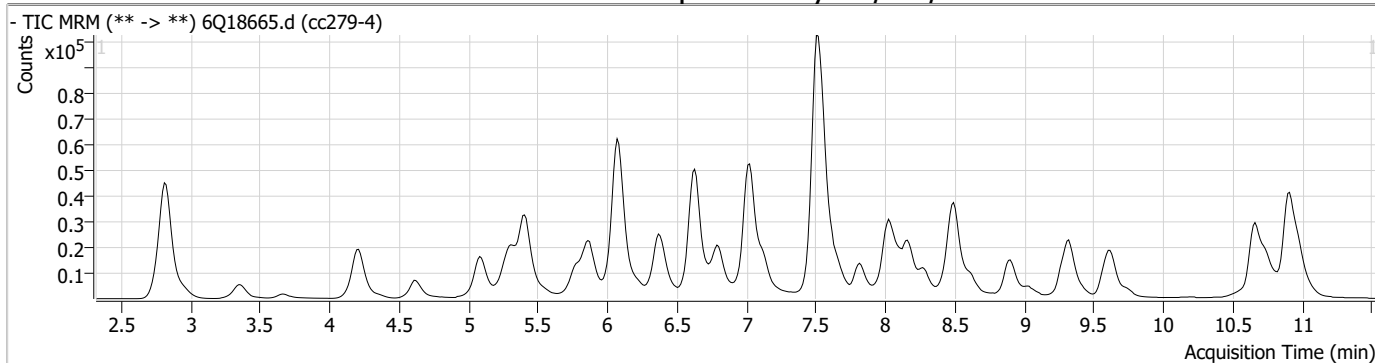
Perfluorinated Compounds by LC/MS/MS

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

7.7.17

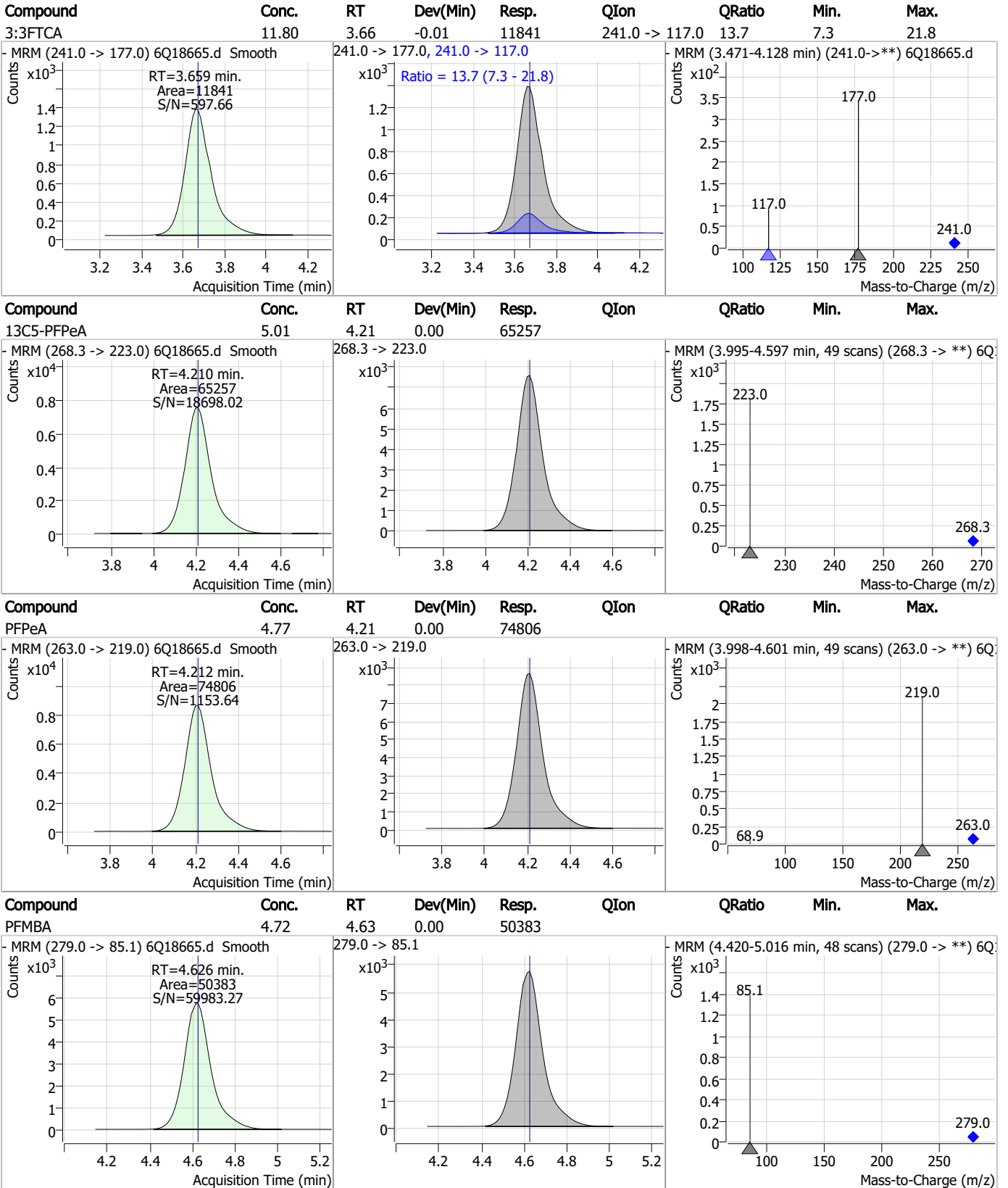
7

Perfluorinated Compounds by LC/MS/MS



7.7.17
7

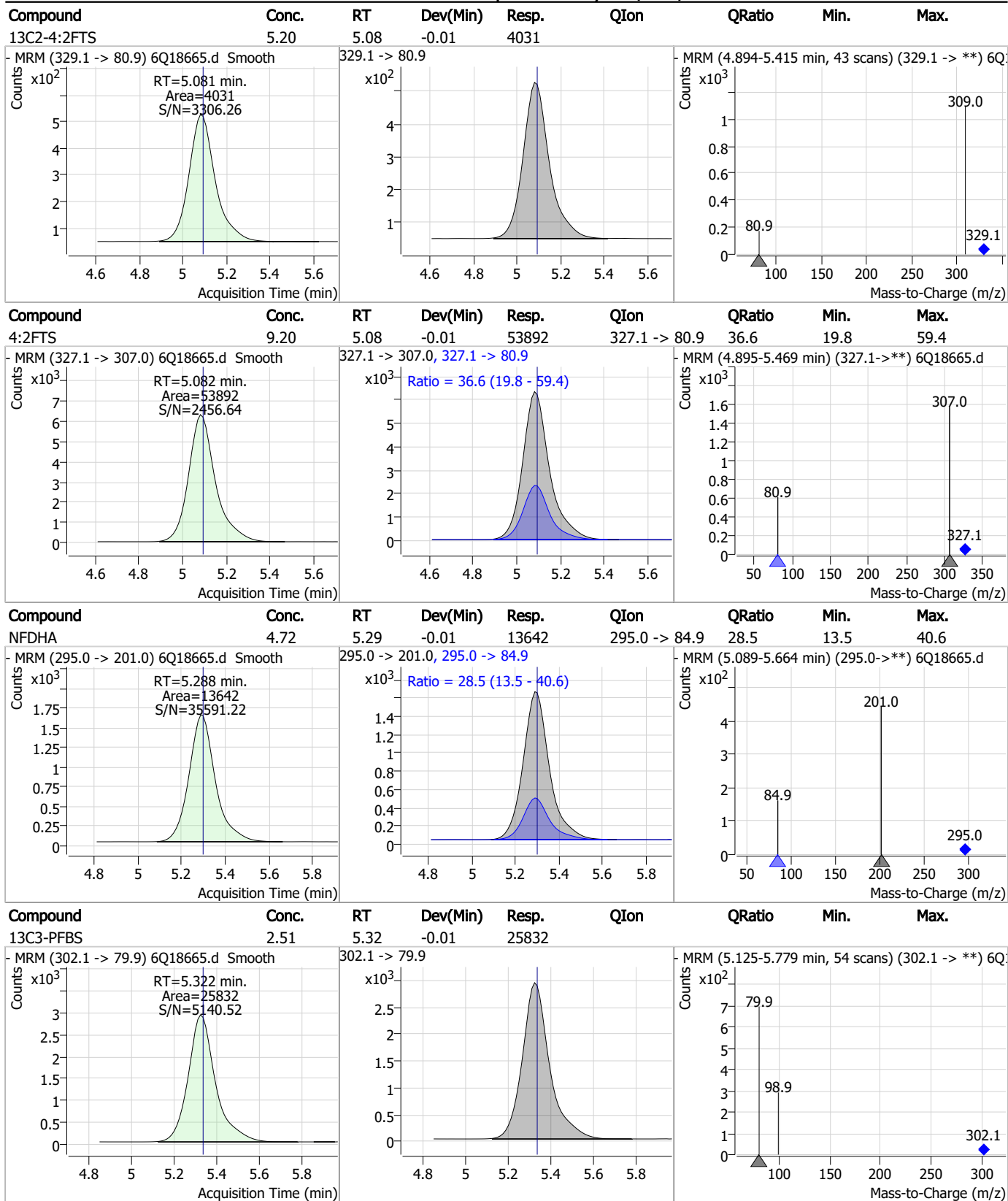
Perfluorinated Compounds by LC/MS/MS



7.7.17



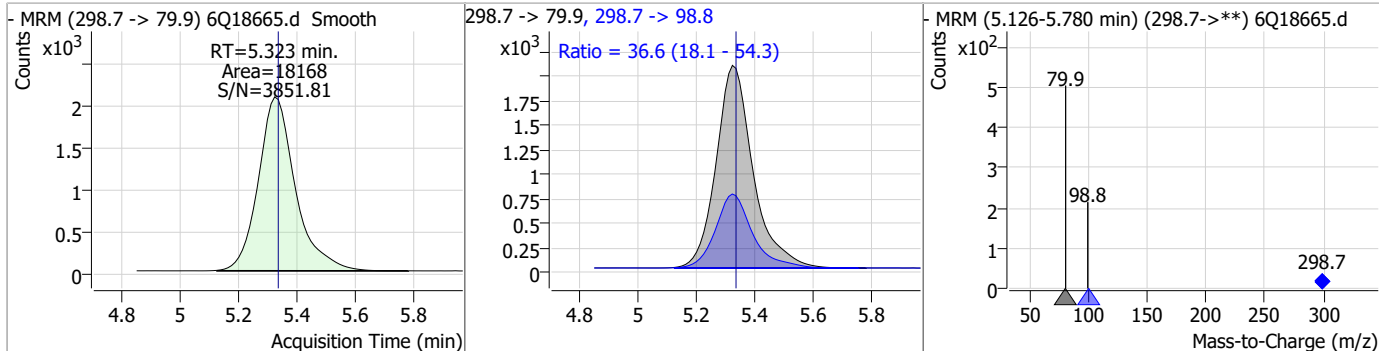
Perfluorinated Compounds by LC/MS/MS



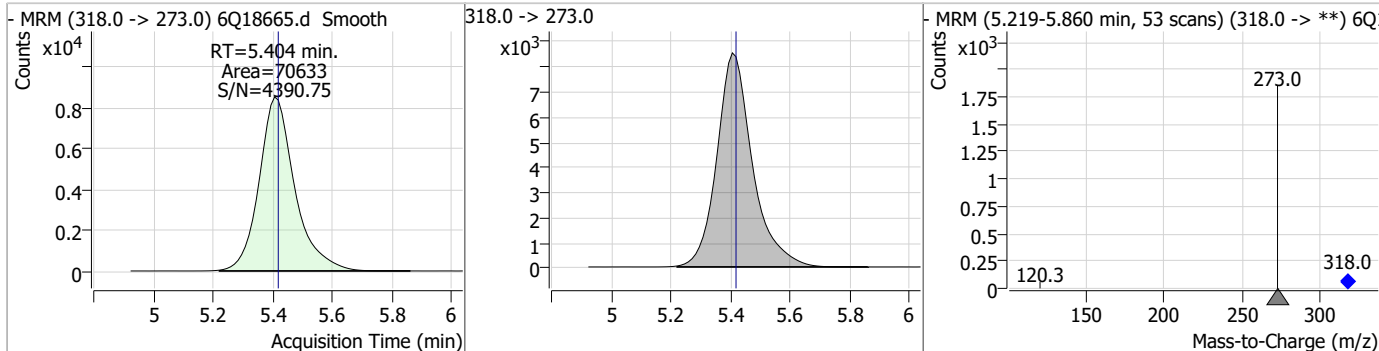
7.7.17

Perfluorinated Compounds by LC/MS/MS

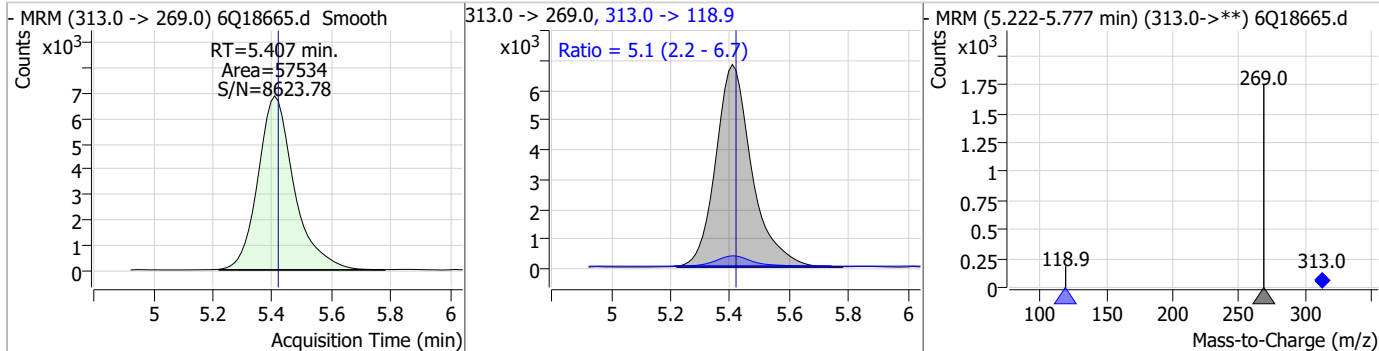
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.07	5.32	-0.01	18168	298.7 -> 98.8	36.6	18.1	54.3



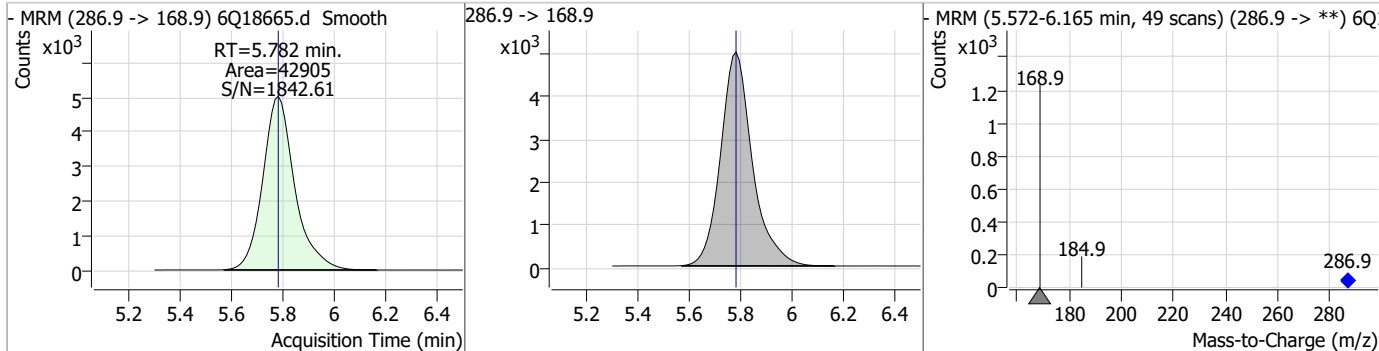
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.49	5.40	-0.01	70633				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.43	5.41	-0.01	57534	313.0 -> 118.9	5.1	2.2	6.7



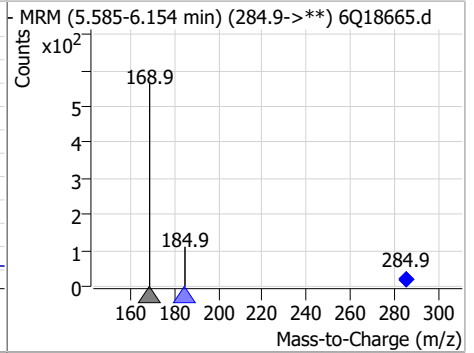
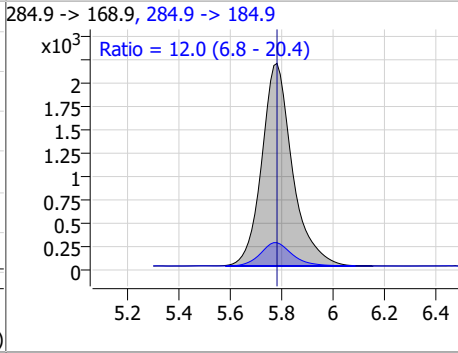
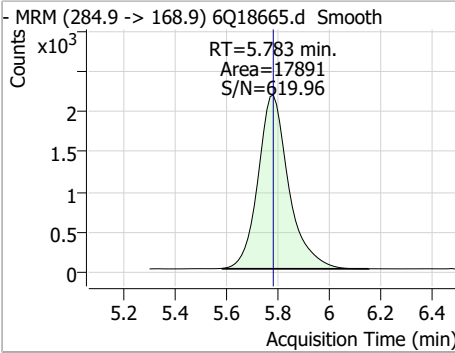
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.75	5.78	0.00	42905				



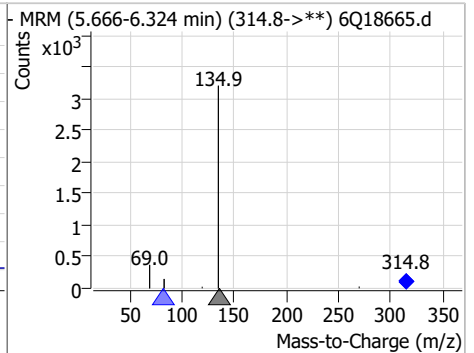
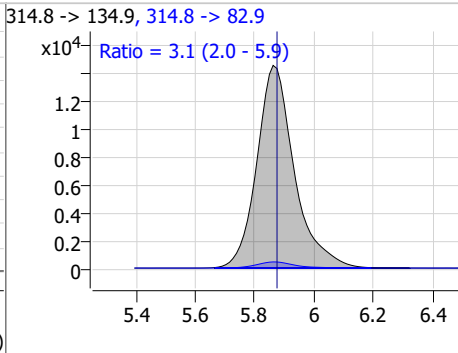
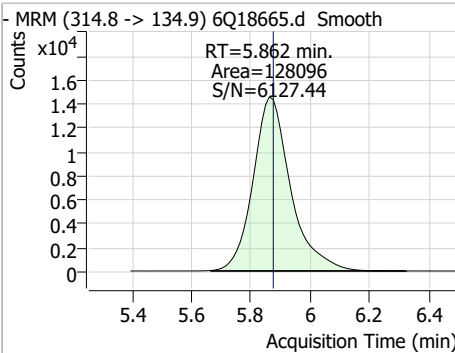
7.7.17

Perfluorinated Compounds by LC/MS/MS

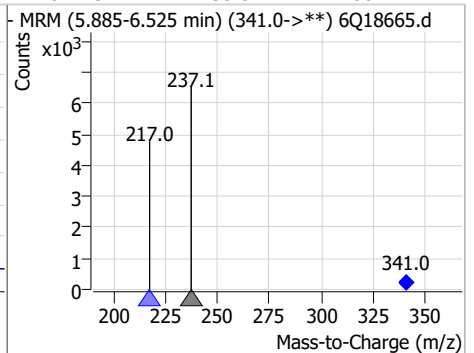
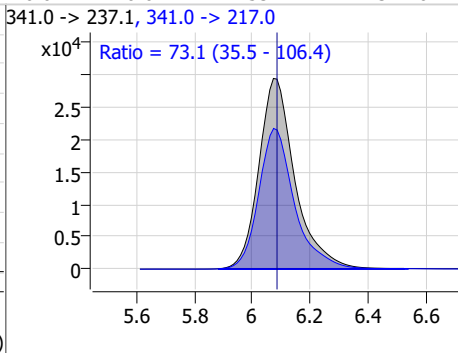
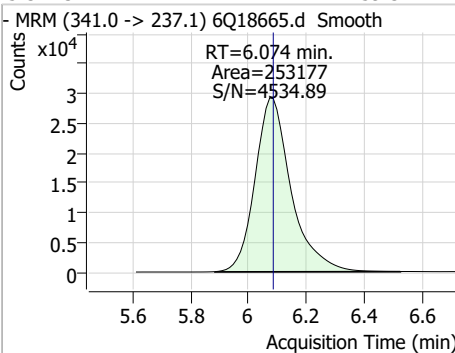
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.92	5.78	0.00	17891	284.9 -> 184.9	12.0	6.8	20.4



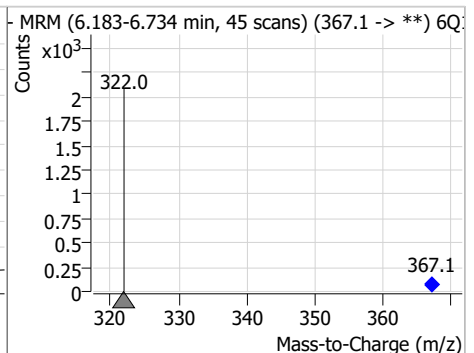
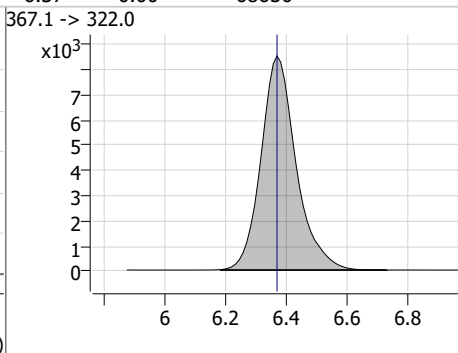
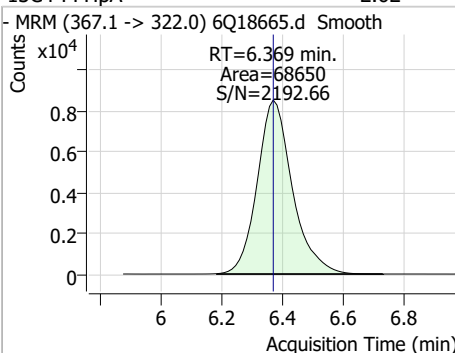
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.26	5.86	-0.01	128096	314.8 -> 82.9	3.1	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.34	6.07	-0.01	253177	341.0 -> 217.0	73.1	35.5	106.4

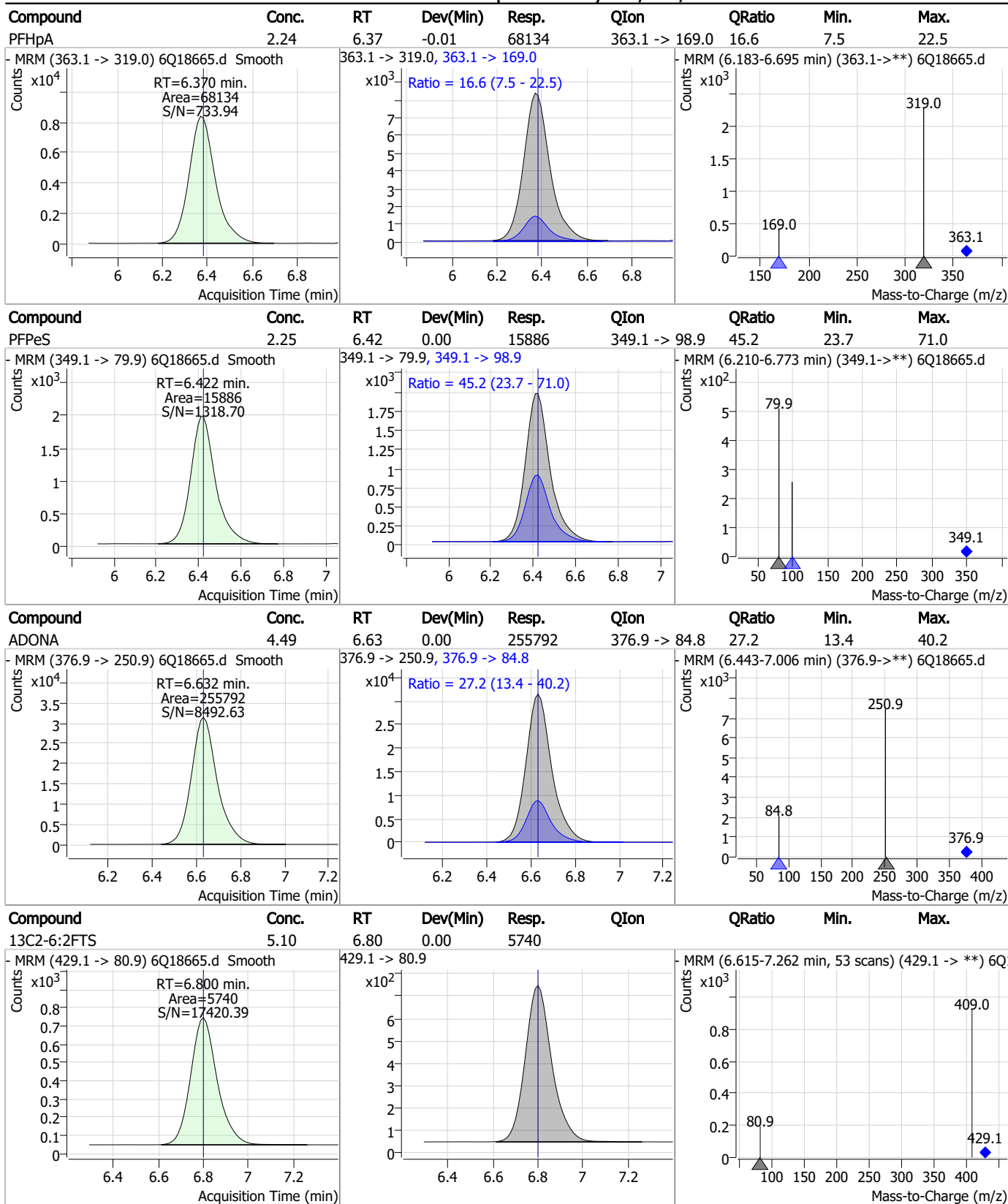


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.62	6.37	0.00	68650	367.1 -> 322.0			



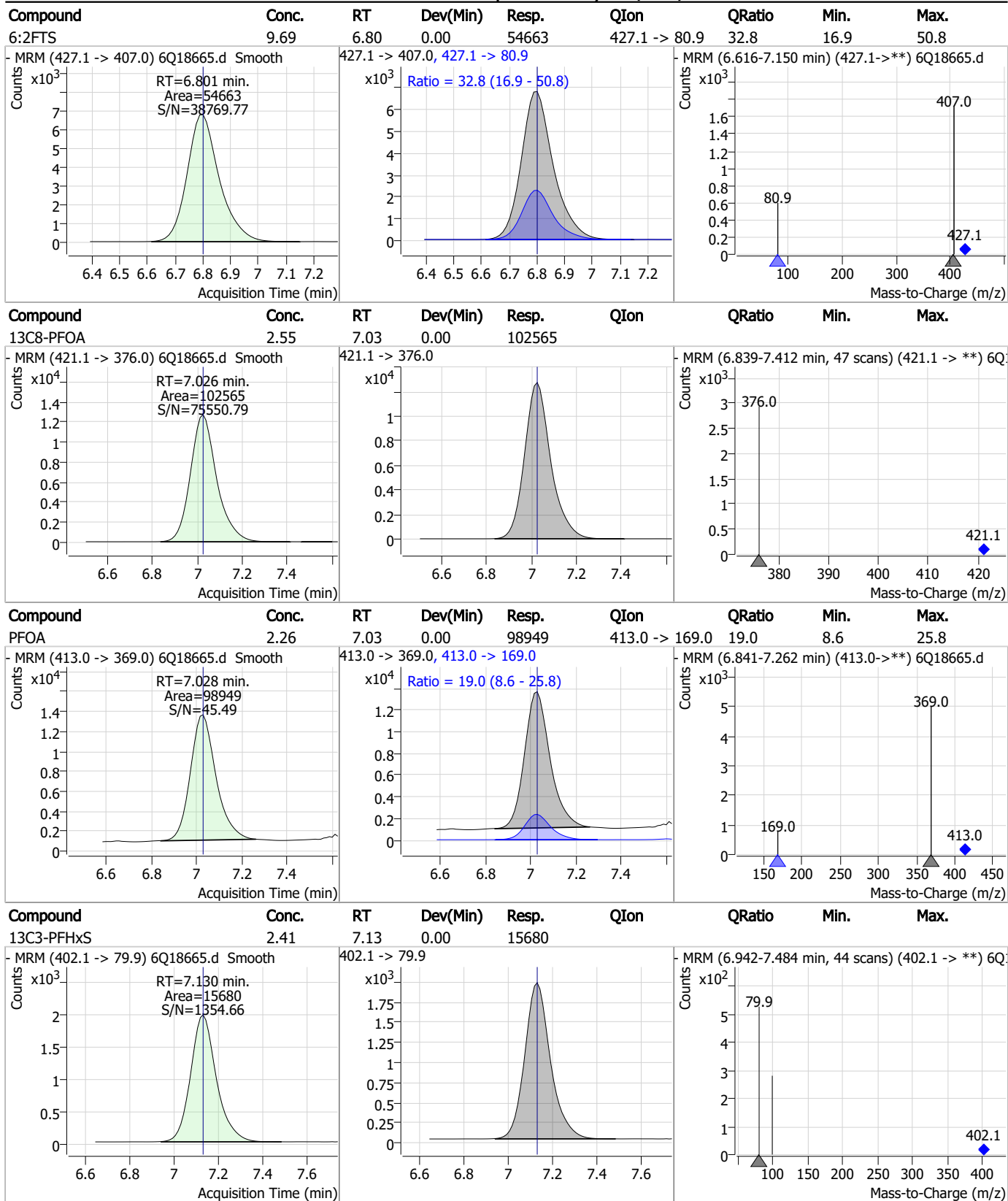
7.7.17

Perfluorinated Compounds by LC/MS/MS



7.7.17

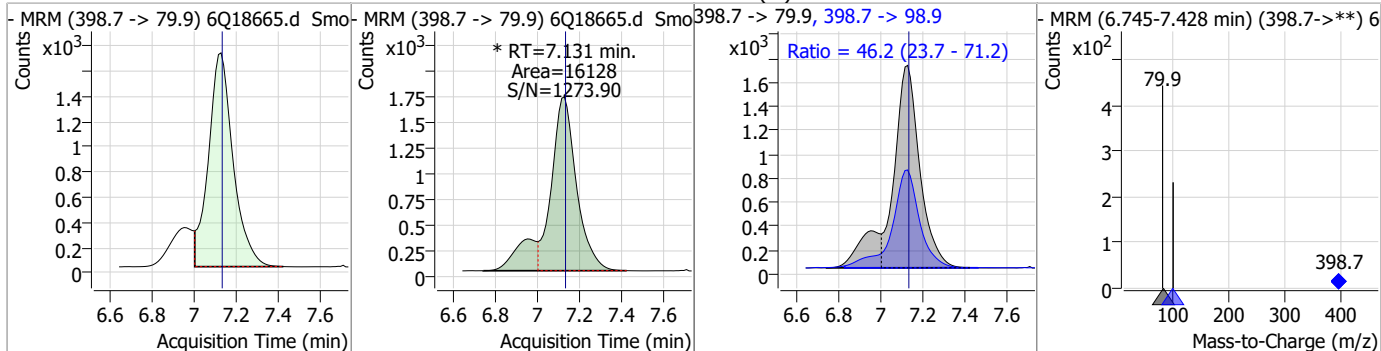
Perfluorinated Compounds by LC/MS/MS



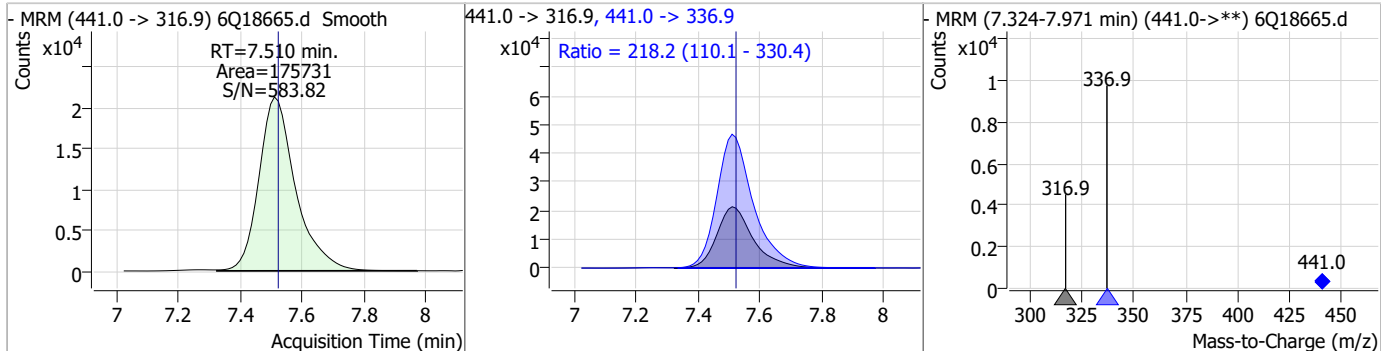
7.7.17

Perfluorinated Compounds by LC/MS/MS

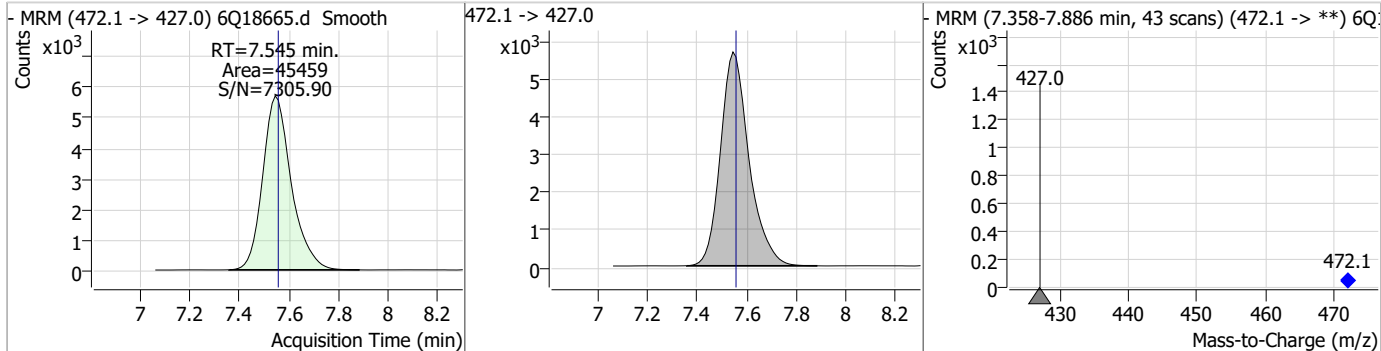
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.27	7.13	0.00	16128 (m)	398.7 -> 98.9	46.2	23.7	71.2



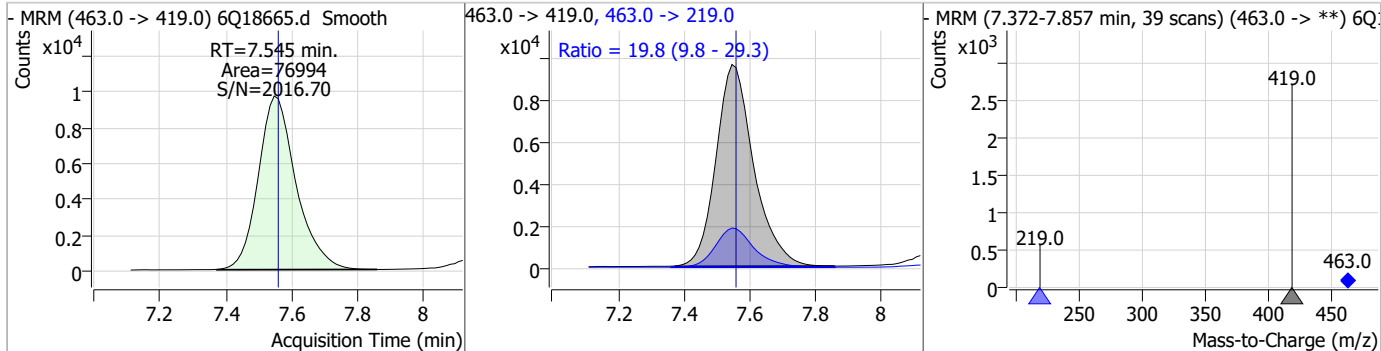
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	60.14	7.51	-0.01	175731	441.0 -> 336.9	218.2	110.1	330.4



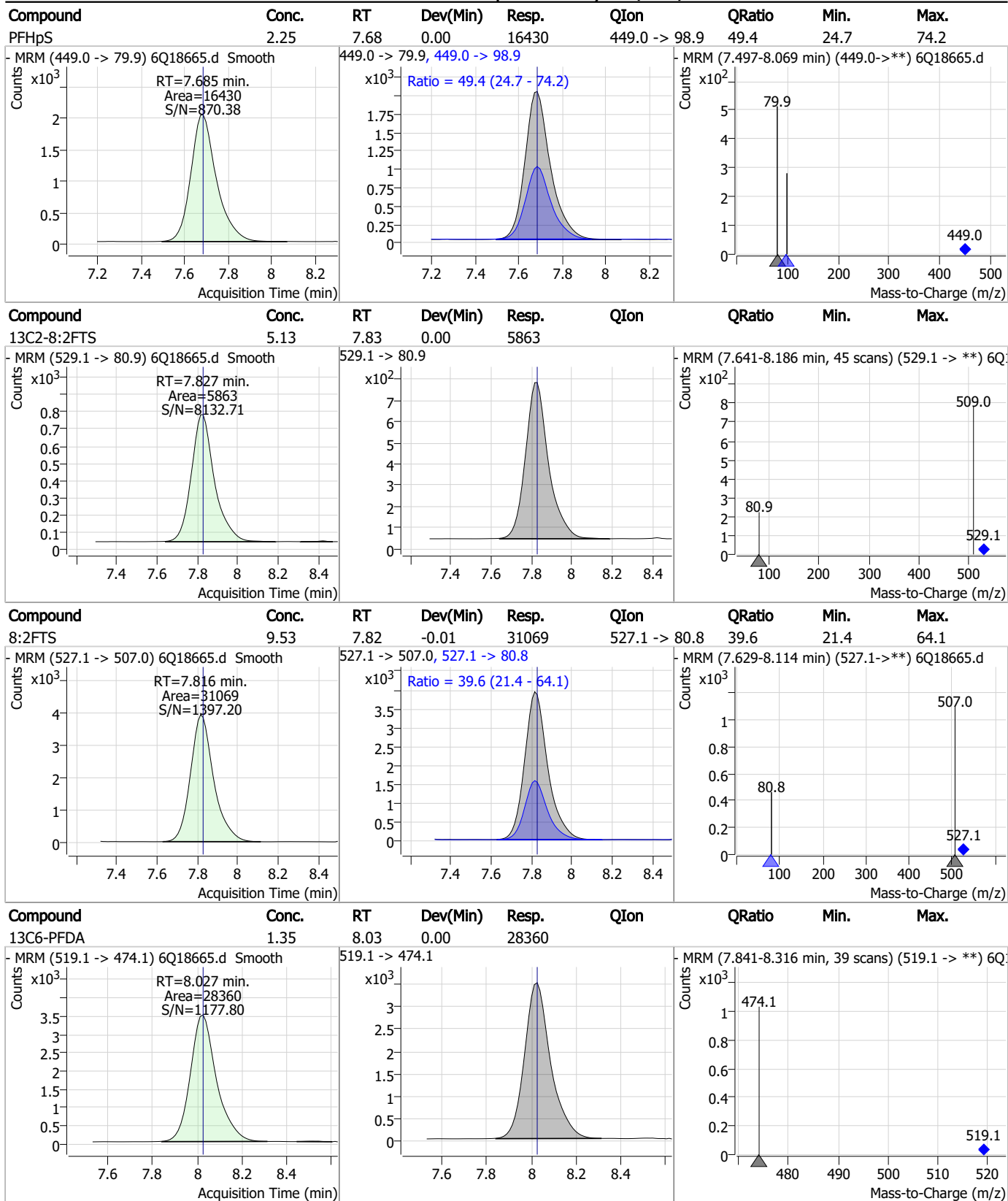
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	7.54	-0.01	45459				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.39	7.55	-0.01	76994	463.0 -> 219.0	19.8	9.8	29.3

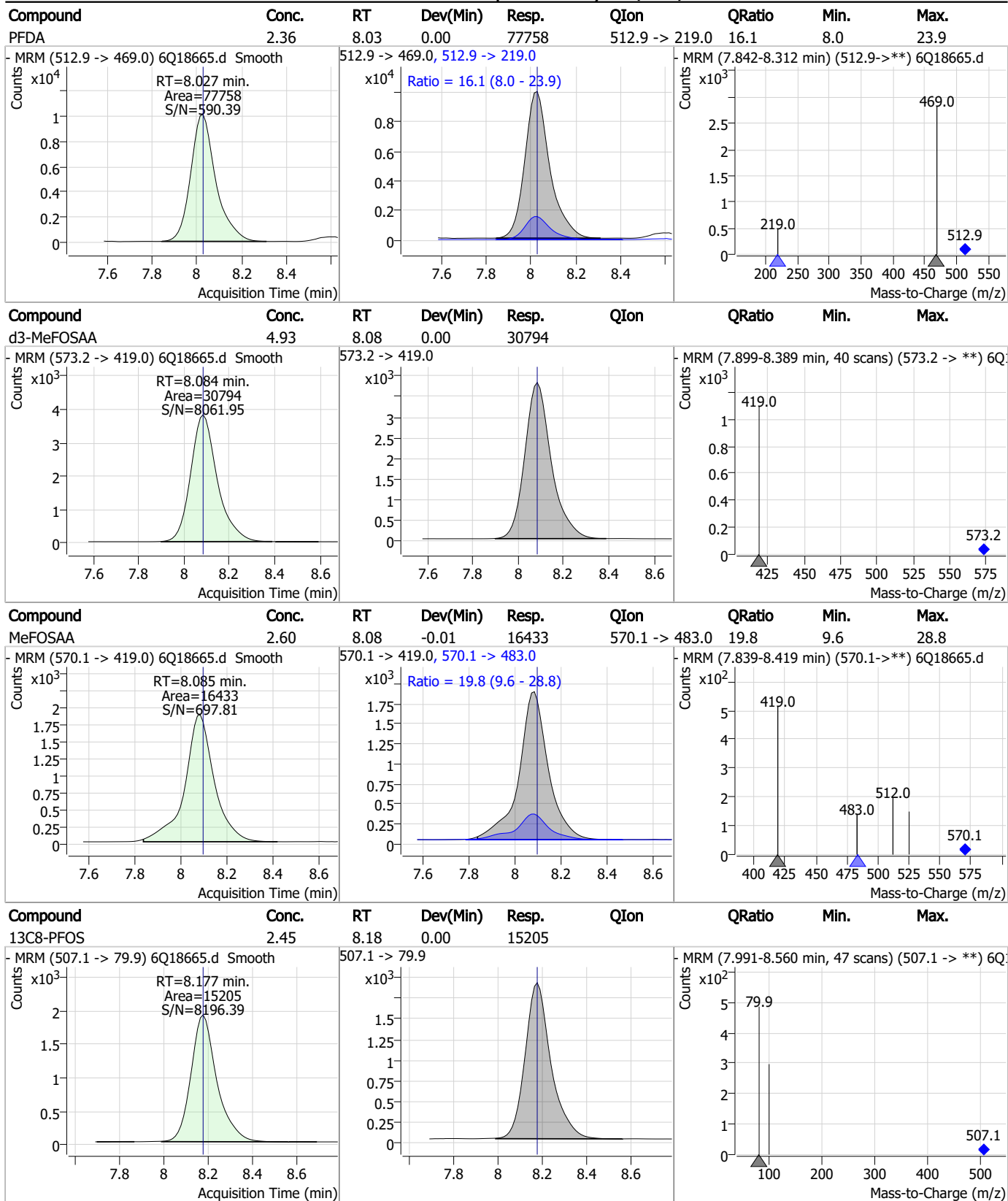


Perfluorinated Compounds by LC/MS/MS



7.7.17

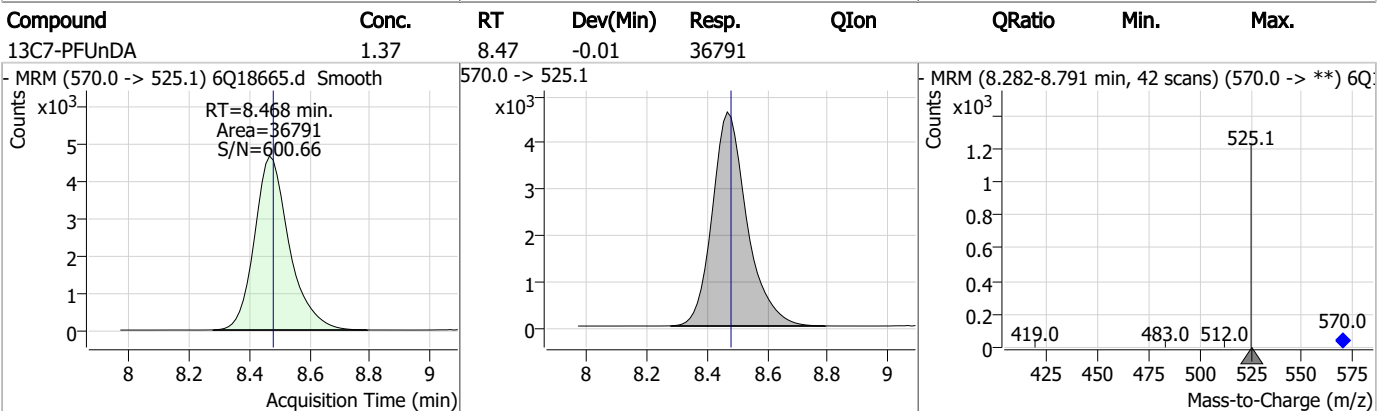
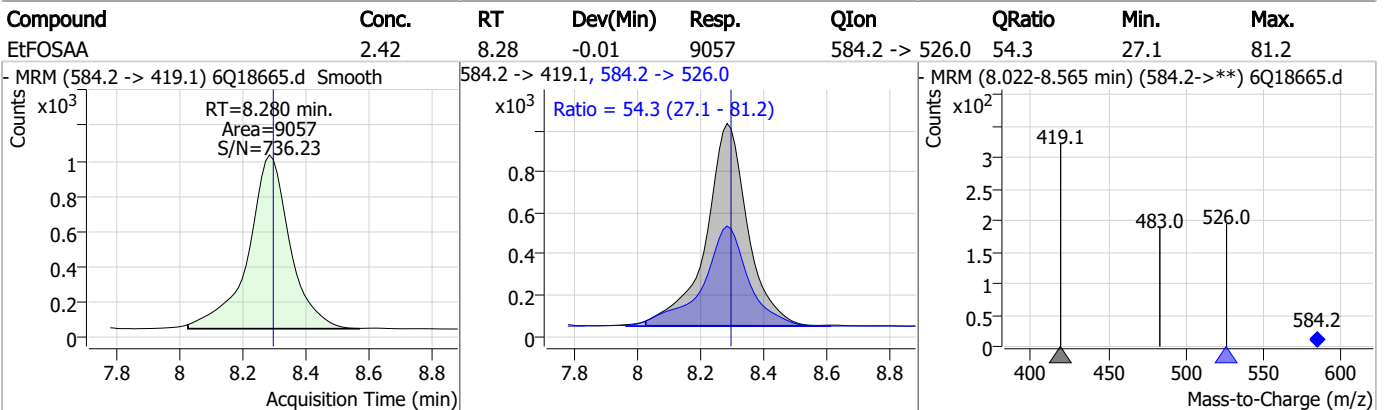
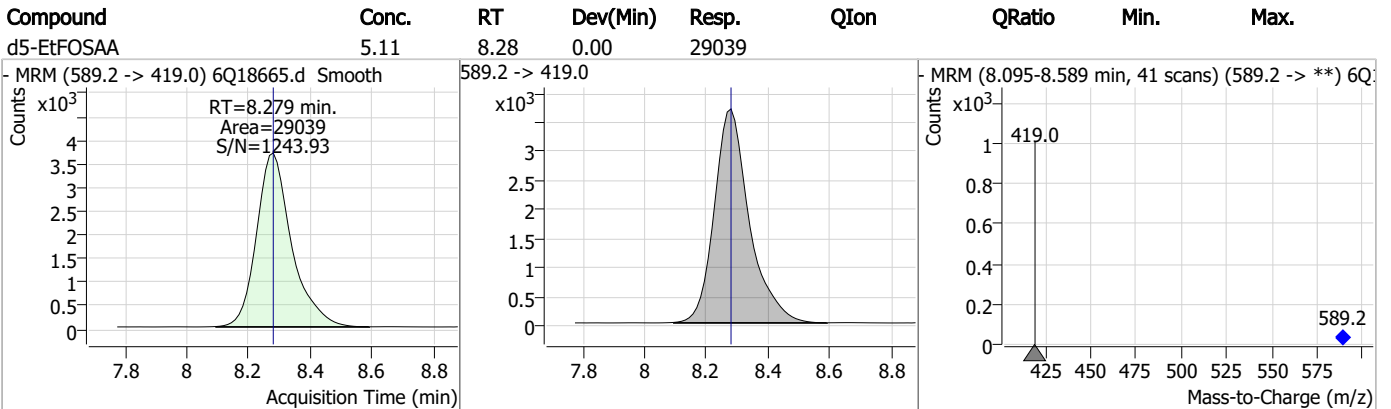
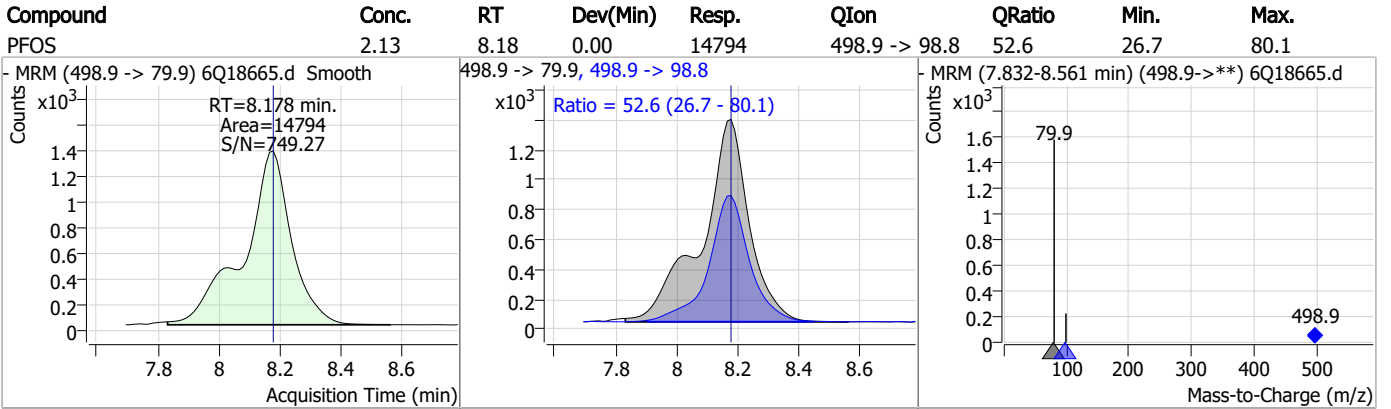
Perfluorinated Compounds by LC/MS/MS



7.7.17

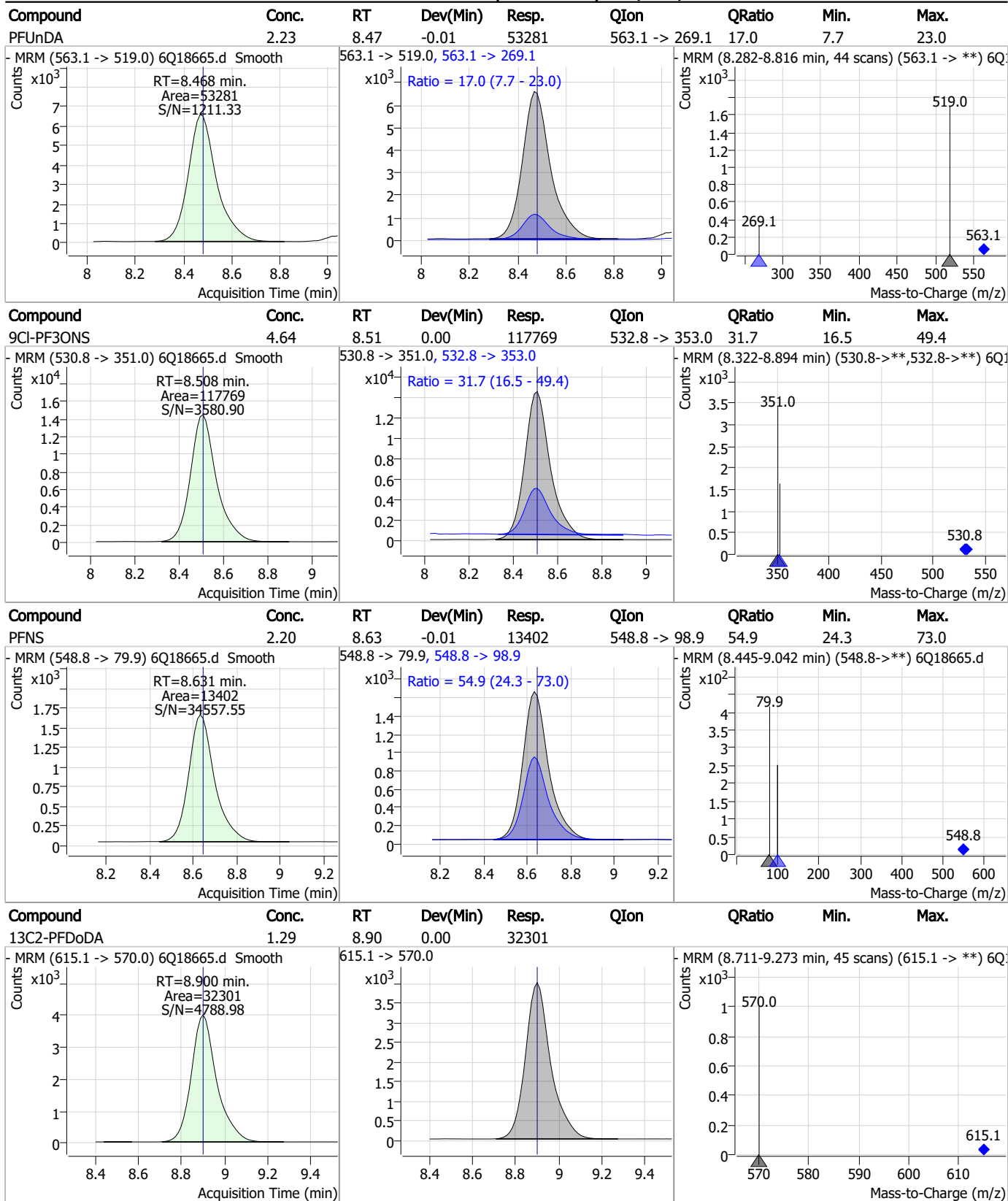


Perfluorinated Compounds by LC/MS/MS



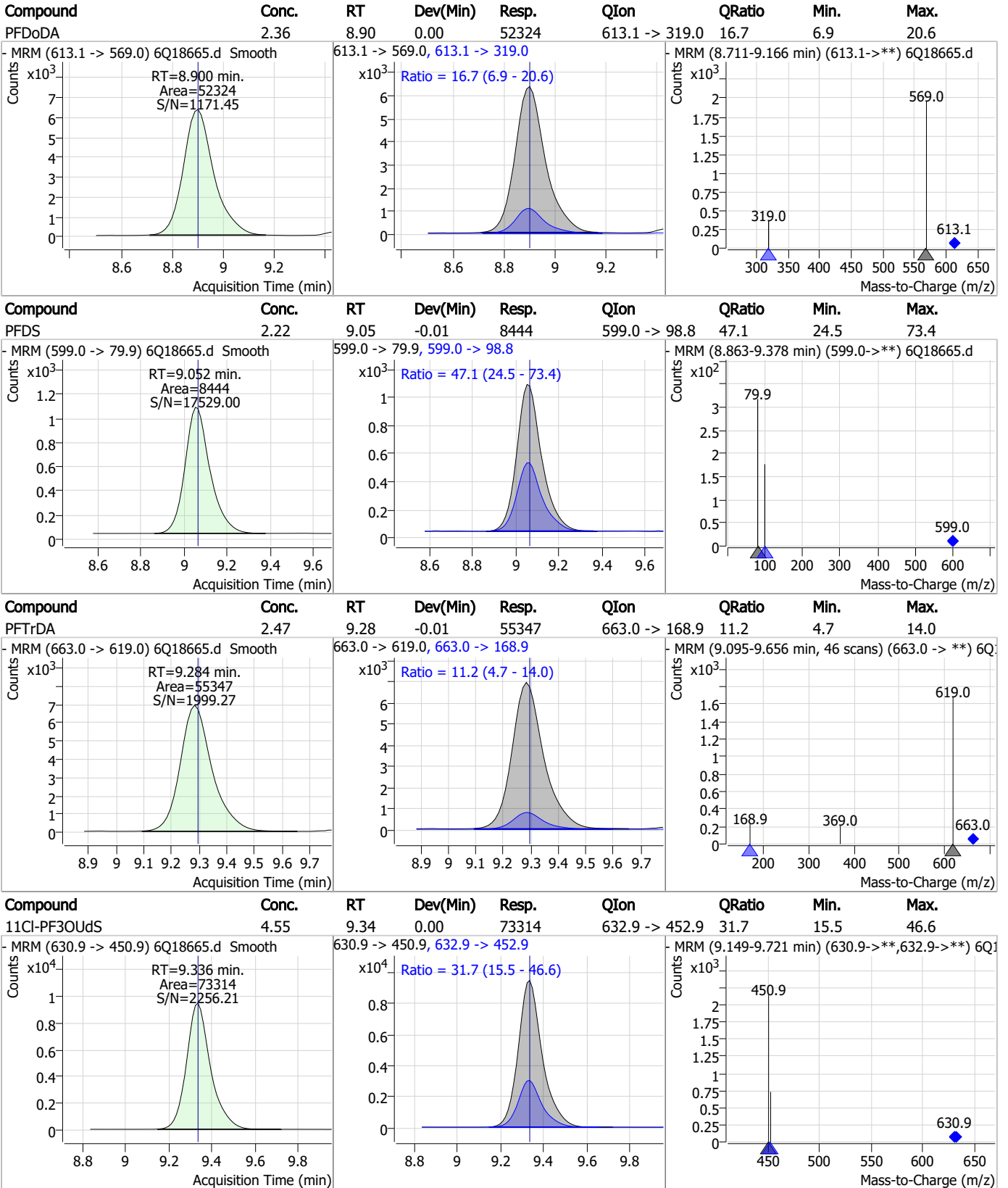
7.7.17

Perfluorinated Compounds by LC/MS/MS



7.7.17

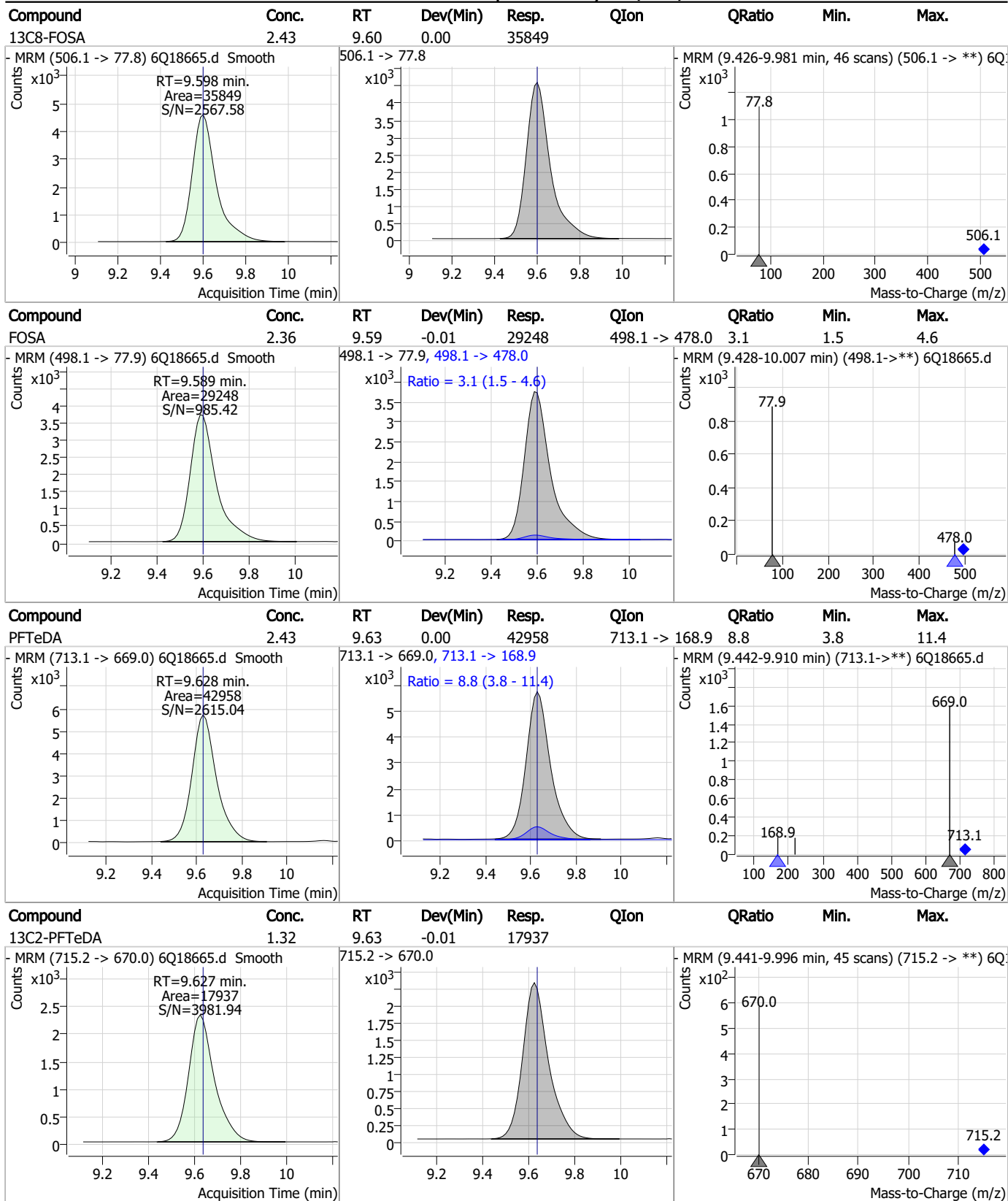
Perfluorinated Compounds by LC/MS/MS



7.7.17



Perfluorinated Compounds by LC/MS/MS



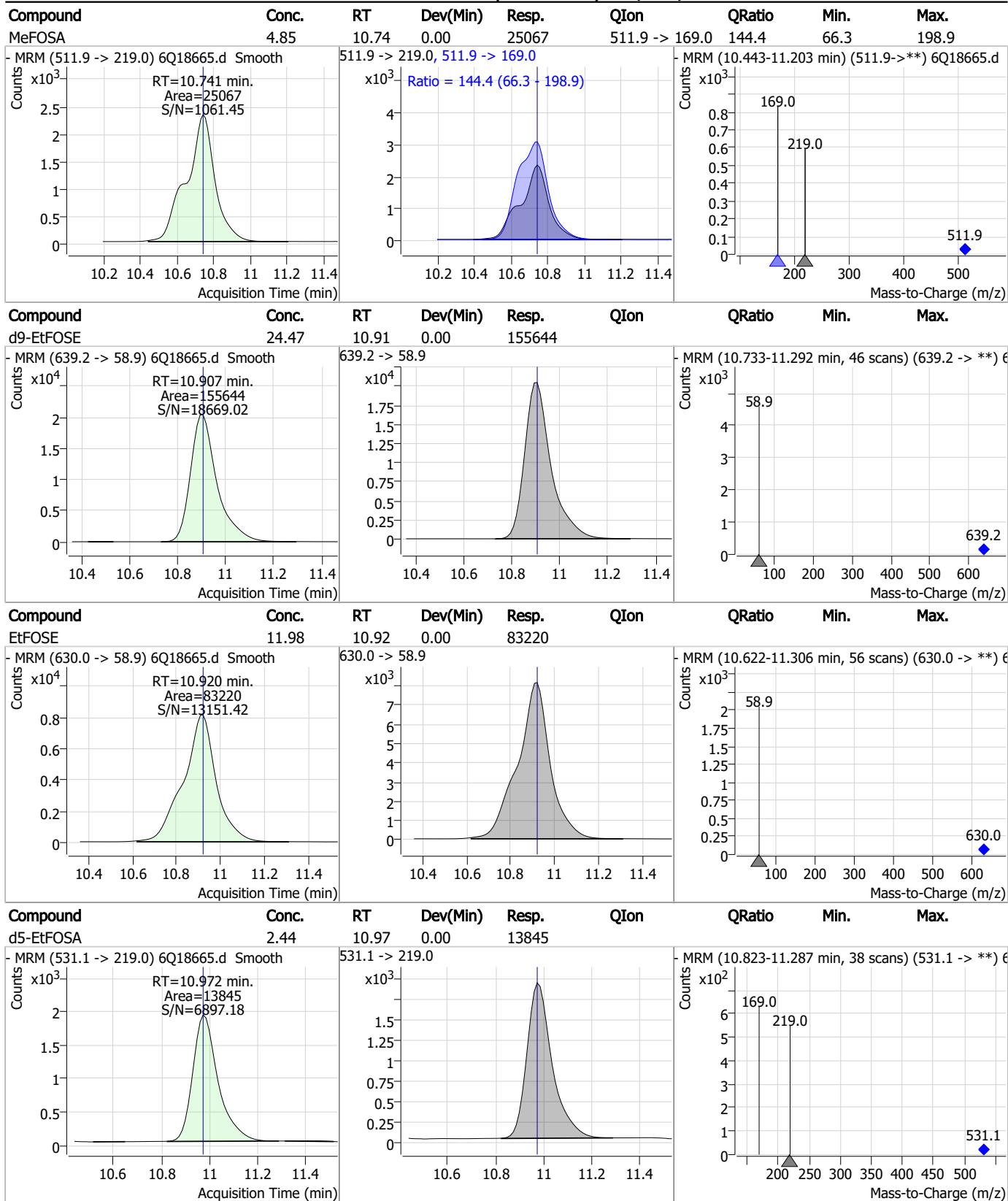
7.7.17

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.27	9.75	0.00	3826	699.1 -> 98.8	57.1	26.9	80.6
d7-MeFOSE	24.66	10.66	0.00	119963	623.2 -> 58.9	57.1	26.9	80.6
MeFOSE	11.81	10.67	0.00	56325	616.1 -> 58.9	57.1	26.9	80.6
d3-MeFOSA	2.35	10.74	0.00	14048	515.0 -> 219.0	57.1	26.9	80.6

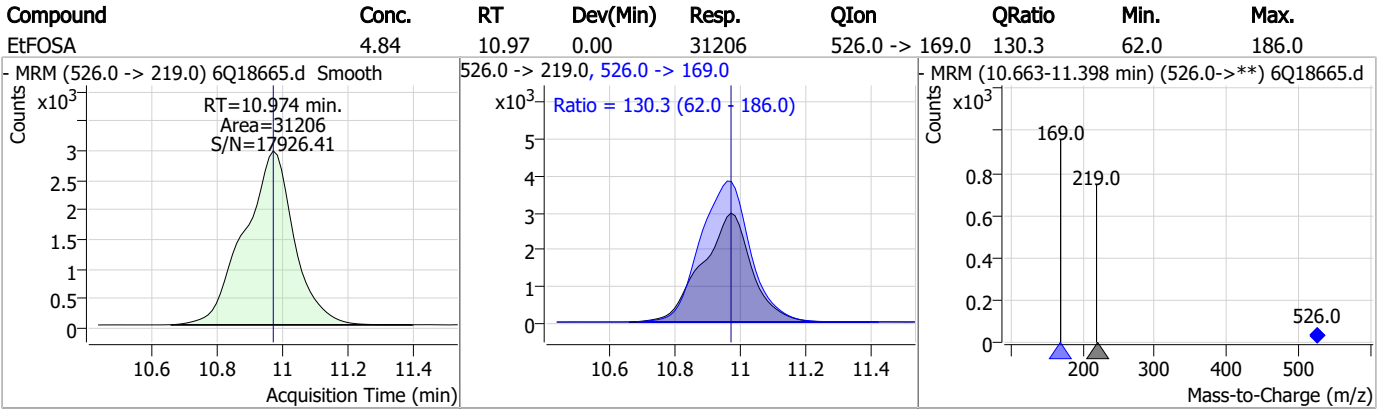
7.7.17

Perfluorinated Compounds by LC/MS/MS



7.7.17

Perfluorinated Compounds by LC/MS/MS



7.7.17

7

Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18665.D Analyst approved: 06/01/23 14:15 Martha Valls
Injection Time: 06/01/23 12:08 Supervisor approved: 06/01/23 16:14 Norman Farmer

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

7.7.17.1

7

SGS ORLANDO

DATE:	05/31/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_053123_S6Q279
CAL DATE:	05/31/23
ANALYST:	M. Valls
RUN BATCH:	S6Q279

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W5% ACN 220225 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2127D
ICV STD LOT #:	LCMS 2127C/2125A
ISTD/ID STD LOT #:	11765/11764

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q18557.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
2	6Q18558.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
3	6Q18559.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
4	6Q18560.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
5	6Q18561.d	P1-A9	High Std	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
6	6Q18562.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
7	6Q18563.d	P1-A5	cc278-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	surr high
8	6Q18564.d	P1-A2	cc278-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	surr failing high, re-calibrate
9	6Q18565.d	P6-B5	op97070-bs	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	rr samples
10	6Q18566.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
11	6Q18567.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
12	6Q18568.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
13	6Q18569.d	P1-A1	ic279-0	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
14	6Q18570.d	P1-A2	ic279-1	1633full.m	Calibration	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	Eitfossa fail high, RR curve
15	6Q18571.d	P1-A3	ic279-2	1633full.m	Calibration	3.2/500	OP96663.S6Q279.500,,,5.0,1,water	↓
16	6Q18572.d	P1-A4	ic279-3	1633full.m	Calibration	10/500	OP96663.S6Q279.500,,,5.0,1,water	↓
17	6Q18573.d	P1-A5	icc279-4	1633full.m	Calibration	20/500	OP96663.S6Q279.500,,,5.0,1,water	↓
18	6Q18574.d	P1-A6	ic279-5	1633full.m	Calibration	40/500	OP96663.S6Q279.500,,,5.0,1,water	↓
19	6Q18575.d	P1-A7	ic279-6	1633full.m	Calibration	100/500	OP96663.S6Q279.500,,,5.0,1,water	↓
20	6Q18576.d	P1-A8	ic279-7	1633full.m	Calibration	200/500	OP96663.S6Q279.500,,,5.0,1,water	↓
21	6Q18577.d	P1-A9	ic279-8	1633full.m	Calibration	1x	OP96663.S6Q279.500,,,5.0,1,water	↓
22	6Q18578.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	rr icv
23	6Q18579.d	P1-B1	icv279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	↓
24	6Q18580.d	P1-B2	icv279-20	1633full.m	QC	100/500	OP96663.S6Q279.500,,,5.0,1,water	↓
25	6Q18581.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
26	6Q18582.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
27	6Q18583.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
28	6Q18584.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
29	6Q18585.d	P1-A1	ic279-0	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
30	6Q18586.d	P1-A2	ic279-1	1633full.m	Calibration	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	✓
31	6Q18587.d	P1-A3	ic279-2	1633full.m	Calibration	3.2/500	OP96663.S6Q279.500,,,5.0,1,water	✓
32	6Q18588.d	P1-A4	ic279-3	1633full.m	Calibration	10/500	OP96663.S6Q279.500,,,5.0,1,water	✓
33	6Q18589.d	P1-A5	icc279-4	1633full.m	Calibration	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
34	6Q18590.d	P1-A6	ic279-5	1633full.m	Calibration	40/500	OP96663.S6Q279.500,,,5.0,1,water	✓
35	6Q18591.d	P1-A7	ic279-6	1633full.m	Calibration	100/500	OP96663.S6Q279.500,,,5.0,1,water	✓



LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

36	6Q18592.d	P1-A8	ic279-7	1633full.m	Calibration	200/500	OP96663.S6Q279.500,,,5.0,1,water	✓
37	6Q18593.d	P1-A9	ic279-8	1633full.m	Calibration	1x	OP96663.S6Q279.500,,,5.0,1,water	✓
38	6Q18594.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
39	6Q18595.d	P1-B1	icv279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
40	6Q18596.d	P1-B2	icv279-20	1633full.m	QC	100/500	OP96663.S6Q279.500,,,5.0,1,water	✓
41	6Q18597.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
42	6Q18598.d	P1-A2	cc279-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	✓
43	6Q18599.d	P6-B5	op97070-bs	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	✓
44	6Q18600.d	P6-B6	op97070-llbs:3	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	✓
45	6Q18601.d	P6-B7	op97070-mb	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	✓
46	6Q18602.d	P6-B9	FC6278-1	1633full.m	Sample		OP97070.S6Q279.540,,,5.0,1,water	✓
47	6Q18603.d	P6-C1	op97070-ms	1633full.m	Sample		OP97070.S6Q279.530,,,5.0,1,water	✓
48	6Q18604.d	P6-C2	FC6278-2	1633full.m	Sample		OP97070.S6Q279.570,,,5.0,1,water	✓
49	6Q18605.d	P6-C3	FC6278-3	1633full.m	Sample		OP97070.S6Q279.540,,,5.0,1,water	✓
50	6Q18606.d	P6-C4	op97070-dup	1633full.m	Sample		OP97070.S6Q279.520,,,5.0,1,water	✓
51	6Q18607.d	P6-C5	FC6278-4	1633full.m	Sample		OP97070.S6Q279.570,,,5.0,1,water	✓
52	6Q18608.d	P6-C7	FC5956-1	1633full.m	Sample		OP97070.S6Q279.5,,,5.0,1,water	rf10x
53	6Q18609.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
54	6Q18610.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
55	6Q18611.d	P6-C6	FC6278-5	1633full.m	Sample		OP97070.S6Q279.540,,,5.0,1,water	✓
56	6Q18612.d	P6-C8	op97024-bs	1633full.m	Sample		OP97024.S6Q279.500,,,5.0,1,soil	✓
57	6Q18613.d	P6-C9	op97024-llbs:2	1633full.m	Sample		OP97024.S6Q279.500,,,5.0,1,soil	✓
58	6Q18614.d	P6-D1	op97024-mb	1633full.m	Sample		OP97024.S6Q279.500,,,5.0,1,soil	✓
59	6Q18615.d	P6-D2	FC6086-1	1633full.m	Sample		OP97024.S6Q279.4.97,,,5.0,1,soil	✓
60	6Q18616.d	P6-D3	op97024-ms	1633full.m	Sample		OP97024.S6Q279.5.01,,,5.0,1,soil	✓
61	6Q18617.d	P6-D4	op97024-mnsd	1633full.m	Sample		OP97024.S6Q279.4.98,,,5.0,1,soil	✓
62	6Q18618.d	P6-D5	FC6086-2	1633full.m	Sample		OP97024.S6Q279.4.96,,,5.0,1,soil	✓
63	6Q18619.d	P6-D6	FC6086-3	1633full.m	Sample		OP97024.S6Q279.5.01,,,5.0,1,soil	✓
64	6Q18620.d	P6-D7	FC6086-4	1633full.m	Sample		OP97024.S6Q279.5.00,,,5.0,1,soil	✓
65	6Q18621.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
66	6Q18622.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
67	6Q18623.d	P6-D8	FC6086-5	1633full.m	Sample		OP97024.S6Q279.5.05,,,5.0,1,soil	✓
68	6Q18624.d	P6-D9	FC6086-6	1633full.m	Sample		OP97024.S6Q279.4.98,,,5.0,1,soil	✓
69	6Q18625.d	P6-E1	FC6086-7	1633full.m	Sample		OP97024.S6Q279.4.96,,,5.0,1,soil	✓
70	6Q18626.d	P6-E2	FC6086-8	1633full.m	Sample		OP97024.S6Q279.4.98,,,5.0,1,soil	✓
71	6Q18627.d	P6-E3	FC6086-9	1633full.m	Sample		OP97024.S6Q279.4.99,,,5.0,1,soil	✓
72	6Q18628.d	P6-E4	FC6086-10	1633full.m	Sample		OP97024.S6Q279.5.03,,,5.0,1,soil	✓
73	6Q18629.d	P6-E5	FC6086-11	1633full.m	Sample		OP97024.S6Q279.4.96,,,5.0,1,soil	Redo due to double NIS
74	6Q18630.d	P6-E6	FC6086-12	1633full.m	Sample		OP97024.S6Q279.5.02,,,5.0,1,soil	↓
75	6Q18631.d	P6-E7	FC6086-13	1633full.m	Sample		OP97024.S6Q279.5.03,,,5.0,1,soil	↓
76	6Q18632.d	P6-E8	FC6086-14	1633full.m	Sample		OP97024.S6Q279.5.03,,,5.0,1,soil	↓
77	6Q18633.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	↓
78	6Q18634.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓



LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

79	6Q18635.d	P6-E9	FC6086-15	1633full.m	Sample	OP97024,S6Q279,5.00,,,5.0,1,soil	↓
80	6Q18636.d	P6-F1	FC6086-16	1633full.m	Sample	OP97024,S6Q279,4.99,,,5.0,1,soil	↓
81	6Q18637.d	P6-F2	FC6086-17	1633full.m	Sample	OP97024,S6Q279,5.04,,,5.0,1,soil	↓
82	6Q18638.d	P6-F3	FC6086-18	1633full.m	Sample	OP97024,S6Q279,4.98,,,5.0,1,soil	↓
83	6Q18639.d	P6-F4	FC6086-19	1633full.m	Sample	OP97024,S6Q279,5.01,,,5.0,1,soil	↓
84	6Q18640.d	P6-F5	FC5956-1	1633full.m	Sample	OP97070,S6Q279,5,,,5.0,5,water	rr, missing vial.
85	6Q18641.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
86	6Q18642.d	P1-A2	cc279-1,0LL	1633full.m	QC	1.6/500	✓
87	6Q18643.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
88	6Q18644.d	P2-A1	op97092-bs	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
89	6Q18645.d	P2-A2	op97092-llbs:3	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
90	6Q18646.d	P2-A3	op97092-mb	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
91	6Q18647.d	P2-A4	FC5851-5	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
92	6Q18648.d	P2-A5	FC5885-4	1633full.m	Sample	OP97092,S6Q279,60,,,5.0,1,water	rr10x
93	6Q18649.d	P2-A6	FC5963-1	1633full.m	Sample	OP97092,S6Q279,526,,,5.0,1,water	rr1x for co
94	6Q18650.d	P2-A7	FC5963-8	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
95	6Q18651.d	P2-A8	op97092-dup2	1633full.m	Sample	OP97092,S6Q279,68,,,5.0,1,water	✓
96	6Q18652.d	P2-A9	FC6238-3	1633full.m	Sample	OP97092,S6Q279,60,,,5.0,1,water	✓
97	6Q18653.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
98	6Q18654.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
99	6Q18655.d	P2-B1	FC6325-1	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
100	6Q18656.d	P2-B2	op97092-ms	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
101	6Q18657.d	P2-B3	FC6325-2	1633full.m	Sample	OP97092,S6Q279,540,,,5.0,1,water	✓
102	6Q18658.d	P2-B4	op97092-dup1	1633full.m	Sample	OP97092,S6Q279,560,,,5.0,1,water	✓
103	6Q18659.d	P2-B5	FC6325-3	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
104	6Q18660.d	P2-B6	FC6006-5	1633full.m	Sample	OP97093,S6Q279,565,,,5.0,5,water	✓
105	6Q18661.d	P2-B7	FC6063-1	1633full.m	Sample	OP97093,S6Q279,500,,,5.0,10,water	Redo, surr fail low
106	6Q18662.d	P2-B8	FC6125-1	1633full.m	Sample	OP97093,S6Q279,545,,,5.0,1,water	✓
107	6Q18663.d	P6-B8	FC5956-1	1633full.m	Sample	OP97070,S6Q279,1,,,5.0,1,water	✓
108	6Q18664.d	P2-B9	FC5956-1	1633full.m	Sample	OP97070,S6Q279,5,,,5.0,5,water	dilution not use.
109	6Q18665.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
110	6Q18666.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
111	6Q18667.d	P2-C1	FC5885-4	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
112	6Q18668.d	P2-C2	FC5963-1	1633full.m	Sample	OP97092,S6Q279,60,,,5.0,10,water	✓
113	6Q18669.d	P2-C3	FC6114-1	1633full.m	Sample	OP97092,S6Q279,526,,,5.0,1,water	✓
114	6Q18670.d	P1-A5	ecc279-4	1633full.m	QC	25/400	✓
115	6Q18671.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
116	6Q18672.d	P1-F1	List 40 surr test	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCN75 2125A-E	FULL 2.5f 40 spike (Cal std)	11750	PROA 28 Comp.	Alcalde	3/3/28	5/10/24	1.0ppm	400ul	4.0ml	100ppb	955formol 581420	5/22/23	8/23/23	MS
		LCMS 2067	40 2.5f Pdd on #1	Sgs-Std.		8/23/23	1.0ppm	400ul			(2.400ml)			
		LCMS 2117	40 2.5f Pdd on #2			11/8/23	1.0ppm	400ul						
		LCMS 2101	FOSE Std.			7/19/23	5.0ppm	400ul		500ppb				
		11804 A-5	MPK - GUES	Wellington Labs	01/1/28	05/23/24	1.0ppm	1.2ml	2.5ml	0.5ppm	PS1400H 05123231133123	5/24/23	10/28/23	MS
LCMS 2127A-E	PFC ID SURT (10 ppb)	11635A	H3HPPO-DA		01/1/28	01/1/24	50ppm	20ul						MS
		11491	D-N-NEBASAN		05/01/27	03/01/24	50ppm	20ul						MS
		11399B 11807	PERC HxH	Wellington	4/17/28	5/24/24	1.4 ppm	25ul	4ml	6.25 125 250ppb	1633 MIV	5/24/23	10/28/23	MS
		LCN75 2097AB	BE LN ET-NE	Sgs Labs	NA	10/28/23	2 ppm			125 512.5ppb (2.088ml)				
		11801B 11808	PERC MxT	Wellington	3/24/26	5/22/24	2ppm							
		11802B 11809	PERC MxG		12/1/27	5/22/24	2 ppm							
		11803B 11810	PERC MxT		3/28/28	5/22/24	4-30 ppm	3/20ul		312 1160ppb				
LCMS 2128A-J	PFC ID SURT (10 PPB)	F-5 11819	MPK - GUES	Wellington Labs	01/1/28	06/01/24	1.0ppm	1.2ml	2.5ml	0.5ppm	PS1400H 060123123123	5/24/23	10/28/23	MS
		11635A	H3HPPO-DA		11/08/28	01/14/24	50ppm	24ul						MS
		11584	D-N-NEBASAN		11/1/27	06/01/24	50ppm	24ul						MS
						06/01/23								

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



Organic Standards Preparation Log

SGS - Orlando Std #	Name Description	Parent Std #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2095A-5	(10ppb) PFC TD SURF	11669	HPAC-2UES	Wellington Labs	01/08/28	03/08/24	1.0ppm	2.4mL	~50mL	0.5ppm	95/1024 SI.422	03/08/23	09/08/23	NS
LCMS 2096A-B	1633 OPDIE Cud. Std.	11672	PFC-MXH	Wellington	8/8/27	3/23/24	1-4 ppm	250uL	4mL	0.25 ppm 0.25 ppm 0.25 ppm	1633 MIX	3/08/23	9/08/23	MS
		11431	d-N-HPAC-DM		05/06/27	09/13/24	50ppm	48uL						NS
		11585	HPAC-DM		11/08/28	01/08/24	50ppm	48uL						NS
		11672	PFC-MXH		2/23/28	3/30/24	1-10 ppm	250uL						
		11686	PFC-MXI		1/11/25	3/23/24	2ppm	500uL						
		11074A	PFC-MXF		12/1/27	3/10/24	20ppm	250uL						
		11074B	PFC-MXF		9/14/26	3/03/24	4-20 ppm	312uL						
		11660	PFC-MXS		10/10/27	10/28/23	50ppm	200uL						
		11498	br-N Effosa		10/28/23	10/28/23	50ppm	200uL						
		11495	br-N methse		10/28/23	10/28/23	50ppm	500uL						
		11494	br-N effose		10/28/23	10/28/23	50ppm	500uL						
LCMS 2097A	BR-LN metet for 1633	11497	br-N methsa	Wellington	08/23/27	10/28/23	50ppm	200uL	5mL	2ppm 5ppm 5ppm	1633 MIX	4/16/23	10/28/23	MS

* tested
on 3/02
10/21

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

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCM29 2067	40 L1st std. ADD-ON #1	10726A	10:2 FTS	Wellington	3/3/26	3/21/23	50ppm	80uL	4.0mL	1ppm	95% meth 5% H2O	2/8/23	3/21/23 8/23/23	MV
		10840	PFD05		7/9/26	10/18/23							8/23/23	
		10829	N- MeTosA		8/3/26	8/23/23								
		10837	N- EFTosA		8/3/26	8/23/23								
		10842	PFHxDA		9/3/26	10/18/23								
		10841	PFD0A		5/7/26	10/18/23								
		1116B	3:3FTCA PERPA		2/3/27	2/8/24								
		10685A	5:3FTCA PERPA		11/1/25	8/23/23								
		1116A	7:3FTCA FHPA		11/2/25	2/8/24								
		11332	PFECHS		3/2/27	10/18/23								
		10762B	PFEESA		5/3/25	10/18/23								
		10763B	PMBBA PESOHKA		3/3/25	10/18/23								
		10764	PFMPA PF406A		3/3/25	2/8/24								
		10765B	NEHDA 3.6-08PA		3/3/25	10/18/23								
					NG	02/10/23								

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

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2115	1.57 40 Scan Add-on 1516 spike mix	11523	df-N-Meiose	Wellington	1/23/27	5/9/24	50 ppm	200 uL	2 ml	5 ppm (1/5)	95% MeOH 5% H ₂ O	5/19/23	8/23/23	NV
		11460	dg-N-Etfose		1/23/27	12/6/23		200 uL		5 ppm				
		11115	M2-PTHXDA		1/23/28	8/23/23		40 uL		1 ppm				
		10836	D-N-Etfose		12/30/25	8/23/23		40 uL		1 ppm				
LCMS 2116	Full List (40) Spike (cal mix)	11053	PROA 200 28 Comp.	Absolute	11/9/27	4/18/24	1.0 ppm	400 uL	4.0 ml	100 ppb	95% MeOH 5% H ₂ O (2.400 ml)	5/19/23	8/23/23	NV
		LCMS 2067	40 List Add on #1	Eqs old.		8/23/23	1.0 ppm	400 uL						
		LCMS 2117	40 List Add on #2			5/18/23	1.0 ppm	400 uL						
		LCMS 2054	Fose Std.			7/24/23	5.0 ppm	4800 uL		500 ppb				
LCMS 2117	40 List Add on #2	11250	FO5A-1	Wellington	11/10/26	11/8/23	50 ppm	80 uL	4.0 ml	1 ppm	95% MeOH 5% H ₂ O	5/19/23	11/8/23	MU
		11249	FHXSA-1		2/29/26	11/3/23	50 ppm	80 uL						
		111408	L-PRRS		7/12/26	5/9/24	50 ppm	80 uL						
		LCMS 2118A	PIC ID Sum (10 ppb)	Wellington	1/18/28	5/10/24	1.0 ppm	2.4 ml	5.0 ml	0.5 ppm	95% MeOH 5% H ₂ O	5/10/23	11/10/23	MU
		11775A	NRFAC 24 ES		11/8/25	4/24/24	50 ppm	48 uL						
		1635A	M3 HD DA		5/16/27	3/13/24	50 ppm	48 uL						
		11431	d-11 Mehsam											

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

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



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2098A	1033 OPike Cal std.	11072A	PFAC MYH	Wellington	8/8/23	3/23/24	1-4 ppm	250ul	4ml	0.25 250ppb	1033 mix	9/10/23	10/10/23	MS
LCMS 2097		11072B	8-1n Et, 4c	Sgs 1stbd	9/9	10/28/23	3ppm	250ul		0.25ppb				
LCMS 11075		11074B	PFAC MYE	Wellington	11/1/23	3/30/24	2ppm	250ul		125ppb				
LCMS 11072B		11075	PFAC MYG	Wellington	12/1/23	3/30/24	2ppm	250ul		125ppb				
LCMS 11070	(Interim) 537.1 Du std.	11072B	PFAC MYT	Wellington Labs	9/14/20	3/23/24	4-20 ppm	312ul	4ml	312/1100 ppb				
LCMS 10436A		10436A	MAVIA ETS		11/05/23	04/06/24		80ul		10ppm				NS
LCMS 10592B		10592B	d3-N-METCSAA		10/22/23	05/15/23		160ul		20ppm				NS
LCMS 10492A		10492A	MPFOS		11/02/23	03/22/24		80ul		10ppm				NS
LCMS 11069		11069	WARFA		12/01/20	03/22/24		80ul		10ppm				NS
LCMS 11026	Full List (40) List 40 spike (S6)	11026	PF0A 28 Comp.	Absolute	11/9/23	4/11/24	1.0ppm	400ul	4.0ml	100ppb	95% MeOH 5% H2O	4/11/23	7/24/23	MS
LCMS 2067		2067	40 List #2	Sgs std.	8/23/23		1.0ppm	400ul			(2.14031)			
LCMS 2070		2070	40 List #2		5/12/23		1.0ppm	400ul						
LCMS 2054		2054	FOSG std.		7/24/23		5.0ppm	400ul		500ppb				
LCMS 11336	Fose std.	11336	N-et Fose	Wellington	5/13/23	9/19/23	50ppm	200ul	2.0ml	5ppm	95% MeOH 5% H2O	4/11/23	9/19/23	MS
LCMS 11338		11338	N-me Fose	Wellington	5/13/23	9/19/23	50ppm	200ul						

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

(1,000)



11494



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSE

2-(N-Methylperfluorooctanesulfonamido)ethanol Isomeric Mix

PRODUCT CODE: br-NMeFOSE
LOT NUMBER: brNMeFOSE0922
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 09/02/2022
LAST TESTED: (mm/dd/yyyy) 09/07/2022 (HRGC/LRMS)
 10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 10/07/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS Data (SIR)
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

brNMeFOSE0922 (1 of 7)
 rev1

7.9.1
7

11495



**WELLINGTON
LABORATORIES**

**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

br-NEtFOSE

**2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

PRODUCT CODE: br-NEtFOSE
LOT NUMBER: brNEtFOSE1022
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 09/12/2022
LAST TESTED: (mm/dd/yyyy) 09/12/2022 (HRGC/LRMS)
10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 10/07/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS Data (SIR)
Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

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

brNEtFOSE1022 (1 of 7)
rev1

7.9.1

7

11497



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSA

N-Methylperfluorooctanesulfonamide Isomeric Mix

PRODUCT CODE: br-NMeFOSA
LOT NUMBER: brNMeFOSA0822
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 08/18/2022
LAST TESTED: (mm/dd/yyyy) 08/23/2022
EXPIRY DATE: (mm/dd/yyyy) 08/23/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (SIR)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

brNMeFOSA0822 (1 of 6)
 rev1

7.9.1

7

11498



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide Isomeric Mix

PRODUCT CODE:	br-NEtFOSA
LOT NUMBER:	brNEtFOSA0922
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	08/23/2022
LAST TESTED: (mm/dd/yyyy)	10/07/2022
EXPIRY DATE: (mm/dd/yyyy)	10/07/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (SIR)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

brNEtFOSA0922 (1 of 6)
rev1

7.9.1

7

11799 A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0423
SOLVENT(S):	Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	04/06/2023
LAST TESTED: (mm/dd/yyyy)	04/19/2023
EXPIRY DATE: (mm/dd/yyyy)	04/19/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

PFACMXH0423 (1 of 11)
rev1

7.9.1
7

Table A: PFAC-MXH; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUdA	1000		23
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		24
N-Methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-Ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

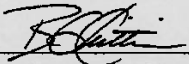
^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

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

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

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

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 05/11/2023
(mm/dd/yyyy)

11801A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

PRODUCT CODE:

PFAC-MXF

LOT NUMBER:

PFACMXF0323

SOLVENT(S):

Methanol / Water (<1%)

DATE PREPARED: (mm/dd/yyyy)

03/23/2023

LAST TESTED: (mm/dd/yyyy)

03/24/2023

EXPIRY DATE: (mm/dd/yyyy)

03/24/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUS), and hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

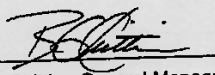
PFACMXF0323 (1 of 5)
rev0

7.9.1
7

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

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 03/29/2023
(mm/dd/yyyy)

11802 A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture

PRODUCT CODE:	PFAC-MXG
LOT NUMBER:	PFACMXG1122
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	11/30/2022
LAST TESTED: (mm/dd/yyyy)	12/01/2022
EXPIRY DATE: (mm/dd/yyyy)	12/01/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

PFACMXG1122 (1 of 5)
rev0

7.9.1

7

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

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11803 A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:
LOT NUMBER:
SOLVENT(S):
DATE PREPARED: (mm/dd/yyyy)
LAST TESTED: (mm/dd/yyyy)
EXPIRY DATE: (mm/dd/yyyy)
RECOMMENDED STORAGE:

PFAC-MXJ
PFACMXJ0323
Methanol
03/27/2023
03/28/2023
03/28/2028
Refrigerate ampoule

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
Tel: 519-822-2849 • Fax: 519-822-2849 • info@well-labs.com

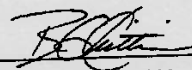
7.9.1
7

Concentrations (µg/mL; ± 5% in methanol)

Table A:

PFAC-MXJ; Components and

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: 
B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

PFACMXJ0323 (3 of 5)
rev0

11807
rec'd 10/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

PRODUCT CODE: PFAC-MXH
LOT NUMBER: PFACMXH0423
SOLVENT(S): Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 04/06/2023
LAST TESTED: (mm/dd/yyyy) 04/19/2023
EXPIRY DATE: (mm/dd/yyyy) 04/19/2028
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₆, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

PFACMXH0423 (1 of 11)
rev1

**Table A: PFAC-MXH; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUDA	1000		23
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		24
N-Methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-Ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

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

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

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

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

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager

Date: 05/11/2023

(mm/dd/yyyy)

11808
rec'd. 05/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXF
<u>LOT NUMBER:</u>	PFACMXF0323
<u>SOLVENT(S):</u>	Methanol / Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	03/23/2023
<u>LAST TESTED:</u> (mm/dd/yyyy)	03/24/2023
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	03/24/2026
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

PFACMXF0323 (1 of 5)
rev0

7.9.1
7

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

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 03/29/2023
(mm/dd/yyyy)

11809
rec'd: 05/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

**Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture**

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG1122
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	11/30/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	12/01/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	12/01/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

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

PFACMXG1122 (1 of 5)
rev0

7.9.1
7

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

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11810
rec'd: 05/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0323
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	03/27/2023
LAST TESTED: (mm/dd/yyyy)	03/28/2023
EXPIRY DATE: (mm/dd/yyyy)	03/28/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

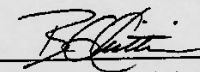
- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

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

Certified By: 
 B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

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

PFACMXJ0323 (3 of 5)
 rev0

7.9.1
 7

10685A



WELLINGTON LABORATORIES

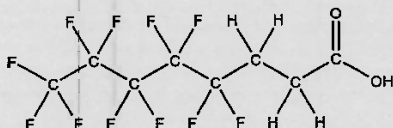
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA1120

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA: C₈H₅F₁₁O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/11/2020
EXPIRY DATE: (mm/dd/yyyy) 11/11/2025
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 342.11
SOLVENT(S): Methanol

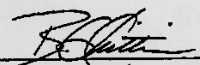
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid (C₈H₃F₁₁O₂) as an impurity determined by ¹⁹F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

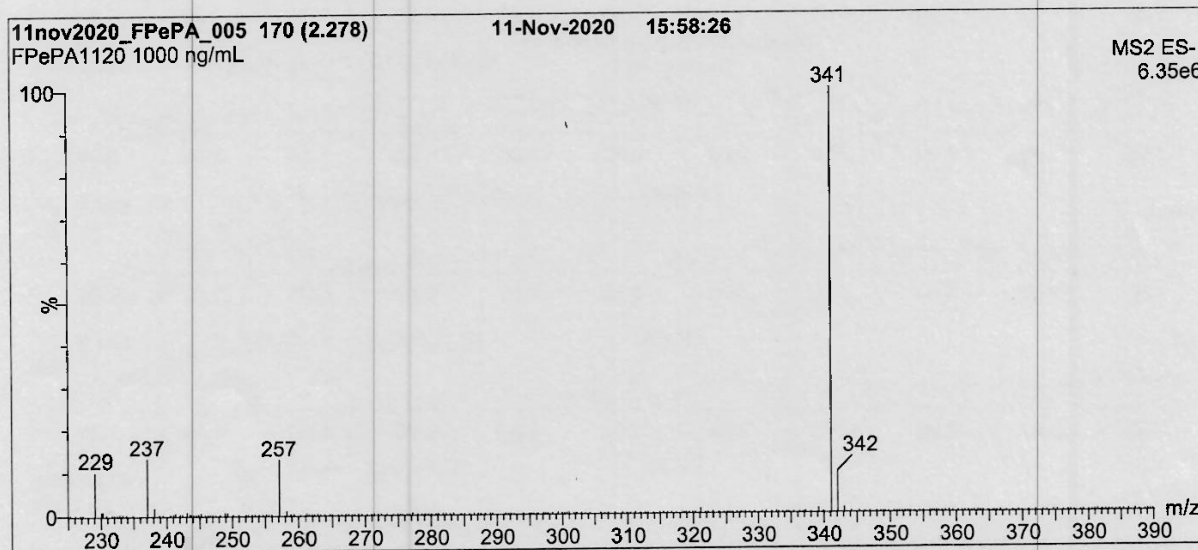
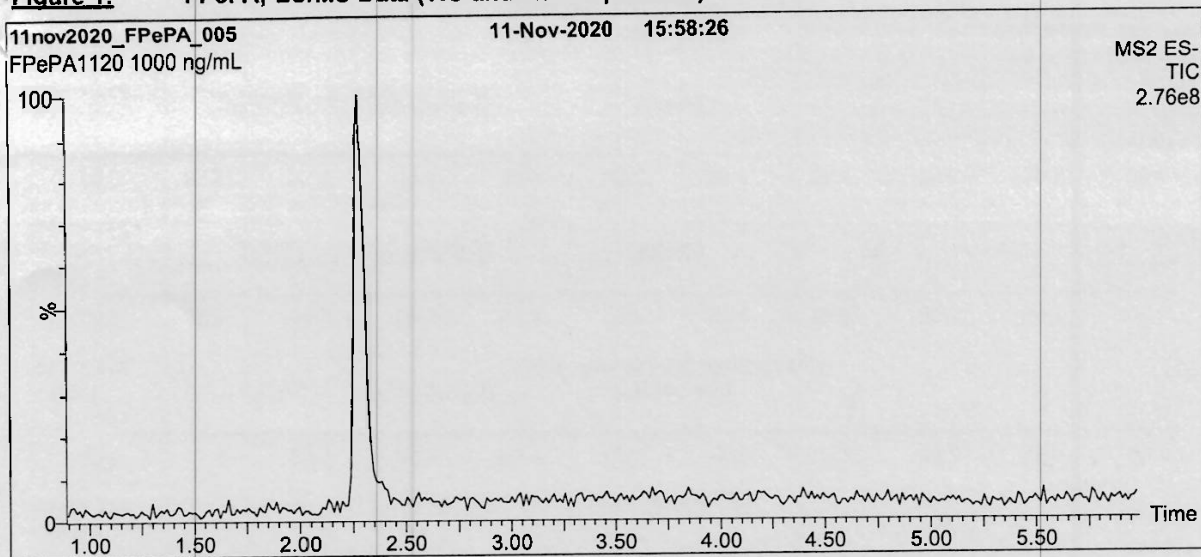
Form#:27, Issued 2004-11-10
Revision#:8, Revised 2020-09-10

FPePA1120 (1 of 4)
rev0

7.9.1

7

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



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{1a}
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

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

10726 A

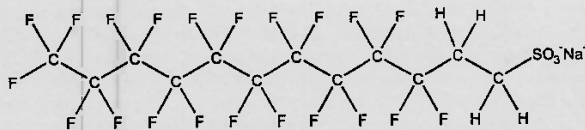


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: C₁₂H₄F₂₁SO₃Na **MOLECULAR WEIGHT:** 650.18
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
48.3 ± 2.4 µg/mL (10:2FTS acid)
48.2 ± 2.4 µg/mL (10:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/03/2021
EXPIRY DATE: (mm/dd/yyyy) 03/03/2026
RECOMMENDED STORAGE: Refrigerate ampoule

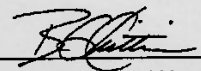
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 03/05/2021
B.G. Chittim, General Manager (mm/dd/yyyy)

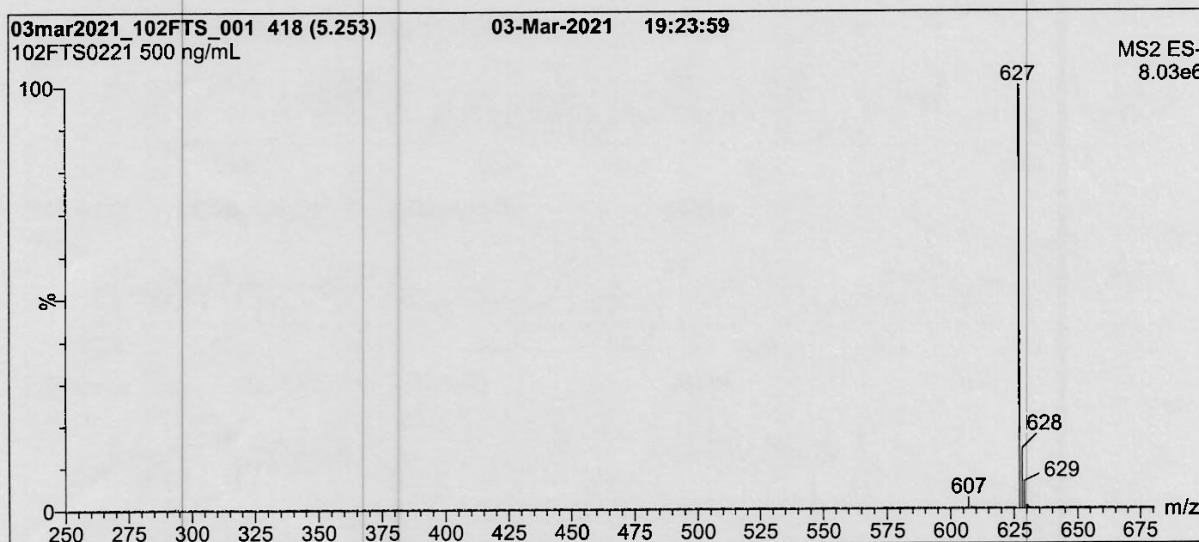
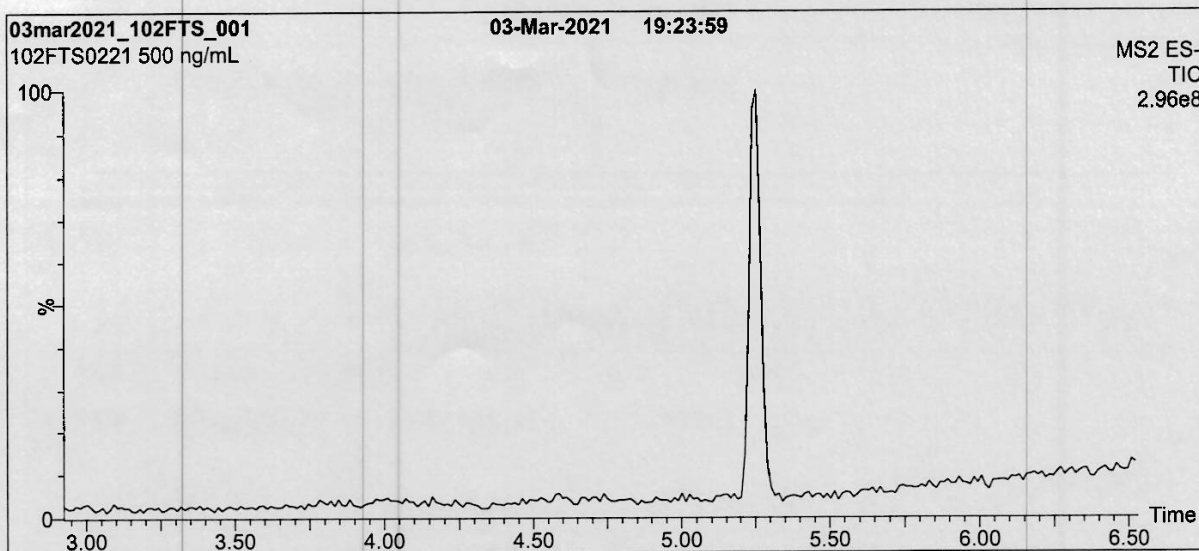
Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

7.9.1

7

Figure 1: 10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

10762 A-B



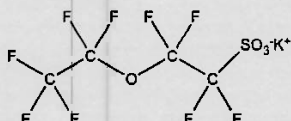
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFEESA *retd
8/20/21
WPH* **LOT NUMBER:** PFEESA0520

COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE: **CAS #:** 117205-07-9



MOLECULAR FORMULA: C₄F₉SO₄K **MOLECULAR WEIGHT:** 354.19

CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt) **SOLVENT(S):** Methanol

44.6 ± 2.2 µg/ml (PFEESA acid)

44.5 ± 2.2 µg/ml (PFEESA anion)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 05/13/2020

EXPIRY DATE: (mm/dd/yyyy) 05/13/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

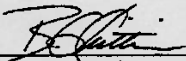
Figure 1: LC/MS Data (TIC and Mass Spectrum)

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 05/29/2020
(mm/dd/yyyy)
 B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

PFEESA0520 (1 of 4)
 rev0

7.9.1
7

10763 A-B



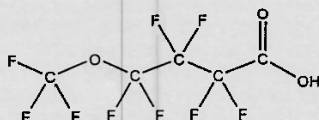
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA
COMPOUND: Perfluoro-5-oxahexanoic acid
SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)
STRUCTURE:

re'd
with
8/20/21

LOT NUMBER: PF5OHxA0320
CAS #: 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 280.05
SOLVENT(S): Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/31/2020
EXPIRY DATE: (mm/dd/yyyy) 03/31/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

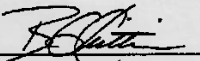
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager
Date: 12/21/2020
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

PF5OHxA0320 (1 of 4)
 rev1

7.9.1

7

10764A-B

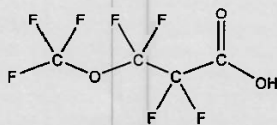


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

rec'd
WPH
8/20/21

PRODUCT CODE: PF4OPeA **LOT NUMBER:** PF4OPeA0320
COMPOUND: Perfluoro-4-oxapentanoic acid
SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA) **CAS #:** 377-73-1
STRUCTURE:



MOLECULAR FORMULA: C₄HF₇O₃ **MOLECULAR WEIGHT:** 230.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/31/2020
EXPIRY DATE: (mm/dd/yyyy) 03/31/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

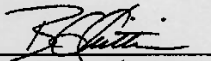
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 12/21/2020
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

PF4OPeA0320 (1 of 4)
 rev1

7.9.1

7

10765 A-13



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

rec'd
WPU
8/20/21

LOT NUMBER:

36OPFHpA0320

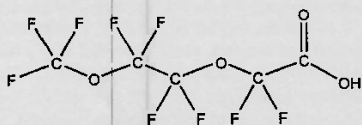
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₇H₂F₁₀O₄

MOLECULAR WEIGHT:

296.04

CONCENTRATION:

50.0 ± 2.5 µg/ml

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 05/27/2020
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

10829



WELLINGTON LABORATORIES

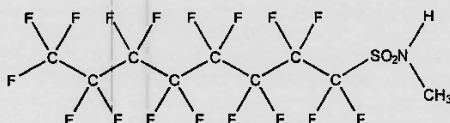
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



*rec'd
with
10/5/21*

MOLECULAR FORMULA: C₈H₄F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/03/2021
EXPIRY DATE: (mm/dd/yyyy) 08/03/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

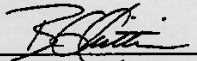
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/04/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

NMeFOSA0721M (1 of 4)
rev0

7.9.1
7



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

10837

LOT NUMBER:

NEtFOSA0821M

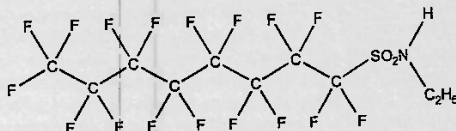
COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:

CAS #:

4151-50-2



MOLECULAR FORMULA:

C₁₀H₉F₁₇NO₂S

MOLECULAR WEIGHT:

527.20

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/12/2021

EXPIRY DATE: (mm/dd/yyyy)

08/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

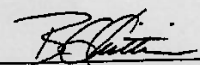
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

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



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

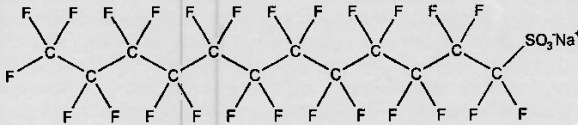
10840

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

LOT NUMBER: LPFDoS0721

STRUCTURE:

CAS #: 1260224-54-1



MOLECULAR FORMULA: C₁₂F₂₅SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
48.5 ± 2.4 µg/mL (PFDoS acid)
48.4 ± 2.4 µg/mL (PFDoS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/09/2021
EXPIRY DATE: (mm/dd/yyyy) 07/09/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 722.14
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 07/16/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

LPFDoS0721 (1 of 4)
rev0



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

10847 NS 01/18/23

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

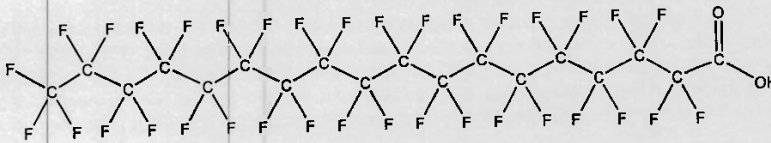
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈H₃₅O₂

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2026

RECOMMENDED STORAGE:

Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 09/28/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

7.9.1
7



WELLINGTON LABORATORIES

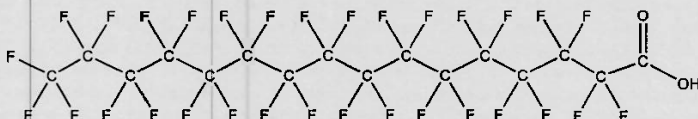
CERTIFICATE OF ANALYSIS DOCUMENTATION

10842 NG on 18/23

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0421

COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **MOLECULAR WEIGHT:** 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

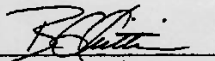
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 05/25/2021
 B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

PFHxDA0421 (1 of 4)
 rev0

7.9.1
7

1116 A-B ^{nw}

1116B on the back nw



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHpPA

LOT NUMBER:

FHpPA1020

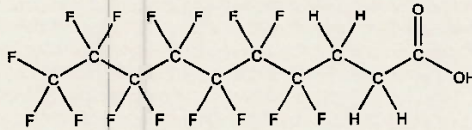
COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #:

812-70-4



MOLECULAR FORMULA:

C₁₀H₅F₁₅O₂

MOLECULAR WEIGHT:

442.12

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

11/27/2020

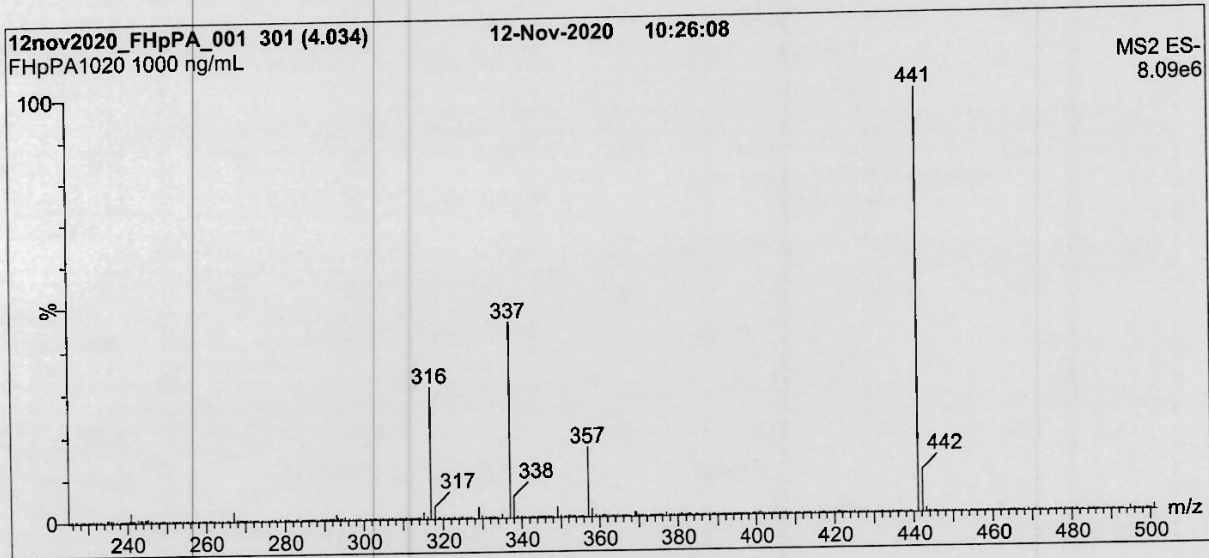
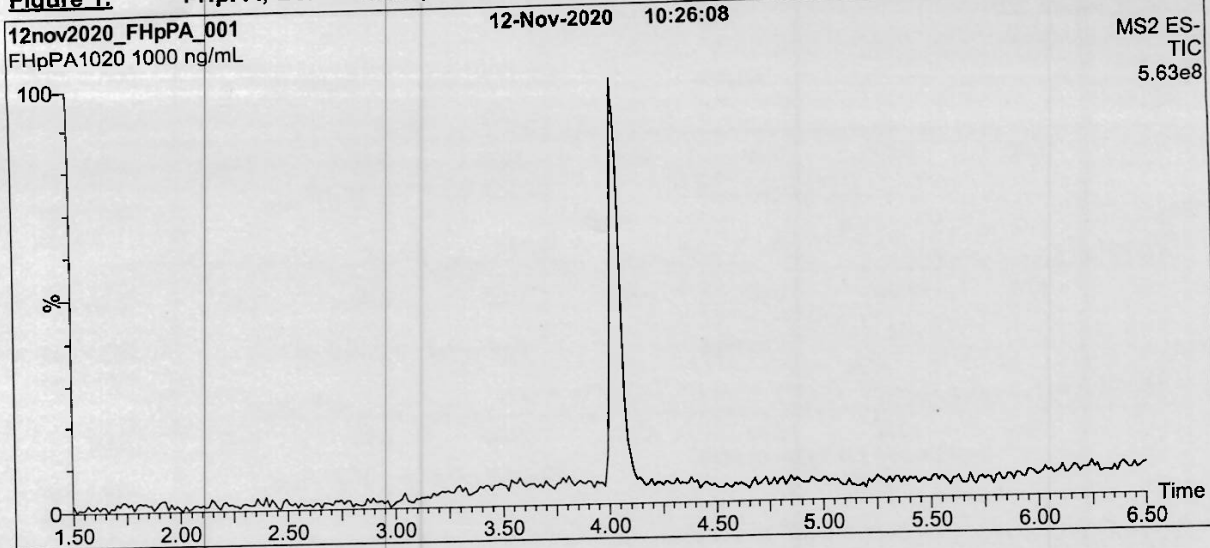
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

FHpPA1020 (1 of 4)
rev0

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



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

FPr PA(3:3 FTA) 1116 B



WELLINGTON
LABORATORIES

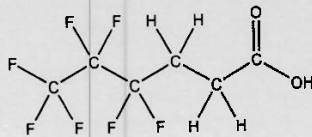
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: C₆H₅F₇O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

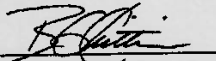
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid (C₈H₃F₉O₂) as an impurity determined by ¹⁹F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager
Date: 02/04/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

11140



WELLINGTON LABORATORIES

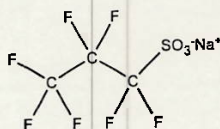
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFPrS
COMPOUND: Sodium perfluoro-1-propanesulfonate

LOT NUMBER: LPFPrS0721

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: C₃F₇SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
46.0 ± 2.3 µg/mL (PFPrS acid)
45.8 ± 2.3 µg/mL (PFPrS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/12/2021
EXPIRY DATE: (mm/dd/yyyy) 07/12/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 272.07
SOLVENT(S): Methanol

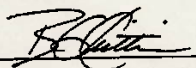
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager
Date: 08/04/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

LPFPrS0721 (1 of 4)
rev0

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

7.9.1
7

11252 11249
7/1/22 KA



WELLINGTON LABORATORIES

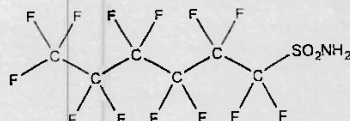
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHxSA-I
COMPOUND: Perfluoro-1-hexanesulfonamide

LOT NUMBER: FHxSA12211

STRUCTURE:

CAS #: 41997-13-1



MOLECULAR FORMULA: C₆H₂F₁₃NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/29/2021
EXPIRY DATE: (mm/dd/yyyy) 12/29/2026
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 399.13
SOLVENT(S): Isopropanol

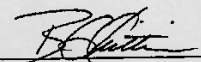
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 01/10/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

FHxSA12211 (1 of 4)
rev0

7.9.1

7

11250 2x 7/11/22



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FBSA-I

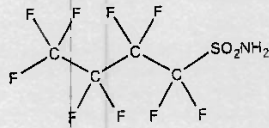
LOT NUMBER: FBSA11211

COMPOUND:

Perfluoro-1-butanesulfonamide

STRUCTURE:

CAS #: 30334-69-1



MOLECULAR FORMULA:

C₄H₂F₁₀NO₂S

MOLECULAR WEIGHT: 299.11

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S): Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/10/2021

EXPIRY DATE: (mm/dd/yyyy)

11/10/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 11/10/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

FBSA11211 (1 of 4)
rev0

11332



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

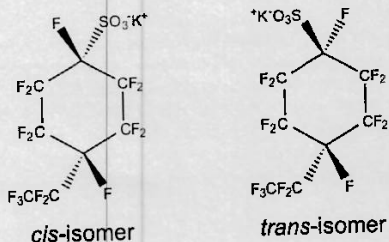
PRODUCT CODE:
COMPOUND:

PFECHS
Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

LOT NUMBER: PFECHS0222

CAS #: 335-24-0

STRUCTURE:



MOLECULAR FORMULA:
CONCENTRATION:

C₈F₁₅SO₃K
50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)

MOLECULAR WEIGHT: 500.22
SOLVENT(S): Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/28/2022

EXPIRY DATE: (mm/dd/yyyy)

03/28/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 03/30/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

7.9.1
7

11336



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSE-M

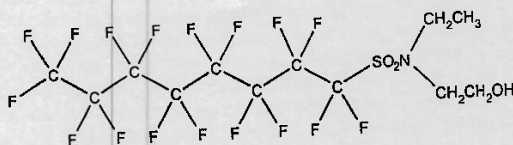
LOT NUMBER: NEtFOSE0622M

COMPOUND:

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

CAS #: 1691-99-2

STRUCTURE:



MOLECULAR FORMULA:

C₁₂H₁₀F₁₇NO₃S

MOLECULAR WEIGHT: 571.25

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)
05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 07/13/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

NEtFOSE0622M (1 of 5)
rev0

11338



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

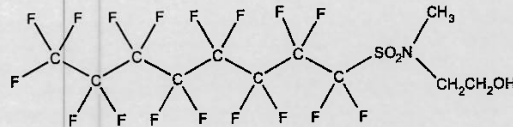
NMeFOSE0522M

COMPOUND:

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

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:**C₁₁H₉F₁₇NO₃S**MOLECULAR WEIGHT:**

557.22

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 06/14/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com



Certified Reference Material CRM



ANAB ISO 7034 Accredited
AR-1535 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: **AR299A**
Part Description: **PERFORMIC ACID (PFA)**
Batch: **901129**
Purity: **99.99%**
Net Weight: **1.0**
Gross Weight: **6.0178**
Tare Weight: **5.0180**
Net Content: **0.9998**

Expiration Date: **03/15/22**
Recomm. Storage: **10°C**
NIST Test ID: **6017B**

Volume(s) shown below were combined and diluted to (mL):
Note: All assigned values are action concentrations.

Requested By: *[Signature]*
Prepared By: *[Signature]*
Checked By: *[Signature]*
Date: **03/15/22**

Prepared By: *[Signature]*
Date: **03/15/22**

Component	Part Number	Lot	Dilution Factor	Head Volume (mL)	Uncertainty (1σ)	Concentration (μg/mL)	Total Concentration (μg)	Purity (%)	Uncertainty (1σ)	Final Purity (%)	SGS Information (System Status, On/Off)	Lab Use
-----------	-------------	-----	-----------------	------------------	------------------	-----------------------	--------------------------	------------	------------------	------------------	---	---------

1. Perfluoro-1-butanolic acid (PFBA)	99942	110492	0.02	2.00	0.017	50.1	1.00	0.02	0.02	375.22-4	NA	NA
2. Perfluoro-2-butanolic acid (PFBA)	99943	017173	0.02	2.00	0.017	50.3	1.01	0.02	0.02	2706.90-3	NA	NA
3. Perfluoro-3-butanolic acid (PFBA)	99199	017112	0.02	2.00	0.017	50.2	1.00	0.02	0.02	307.24-4	NA	NA
4. Perfluoro-4-butanolic acid (PFBA)	99197	110952	0.02	2.00	0.017	50.1	1.00	0.02	0.02	375.85-9	NA	NA
5. Perfluoro-1-butanolic acid (PFBA)	99502	006522	0.02	2.00	0.017	50.2	1.00	0.02	0.02	335.87-1 (L)	NA	1st 10mL only
6. Perfluoro-2-butanolic acid (PFBA)	99500	110952	0.02	2.00	0.017	50.1	1.00	0.02	0.02	375.95-1	NA	NA
7. Perfluoro-3-butanolic acid (PFBA)	99195	110952	0.02	2.00	0.017	50.0	1.00	0.02	0.02	335.76-2	NA	1st 10mL only
8. Perfluoro-4-butanolic acid (PFBA)	99265	071522	0.02	2.00	0.017	50.2	1.00	0.02	0.02	2059.94-8	NA	NA
9. Perfluoro-1-butanolic acid (PFBA)	99198	071522	0.02	2.00	0.017	50.1	1.00	0.02	0.02	307.55-1	NA	NA
10. Perfluoro-2-butanolic acid (PFBA)	99196	110102	0.02	2.00	0.017	50.1	1.00	0.02	0.02	2760.94-8	NA	NA
11. Perfluoro-3-butanolic acid (PFBA)	99503	023022	0.02	2.00	0.017	50.1	1.00	0.02	0.02	375.06-7	NA	NA
12. Perfluoro-4-butanolic acid (PFBA)	3677	FC5040221	0.02	2.00	0.017	50.0	1.00	0.05	0.05	2355.51-8 (L)	NA	NA
13. Perfluoro-1-butanolic acid (PFBA)	4183	EMERG04A121	0.02	2.00	0.017	50.0	1.00	0.05	0.05	2991.50-8 (L)	NA	NA
14. Perfluoro-2-butanolic acid (PFBA)	99194	006522	0.02	2.00	0.017	50.2	1.00	0.02	0.02	375.73-5	NA	NA
15. Perfluoro-3-butanolic acid (PFBA)	99194	001522	0.02	2.00	0.017	50.1	1.00	0.02	0.02	370.91-4	NA	NA
16. Perfluoro-4-butanolic acid (PFBA)	99198	020952	0.02	2.00	0.017	47.6	1.00	0.02	0.02	355.45-4 (L)	NA	NA
17. Perfluoro-1-butanolic acid (PFBA)	3072	LP17H50322	0.02	2.10	0.017	47.6	1.00	0.05	0.05	375.92-8	NA	NA
18. Perfluoro-2-butanolic acid (PFBA)	99501	020952	0.02	2.00	0.017	50.1	1.00	0.02	0.02	1783.28-1 (L)	NA	NA
19. Perfluoro-3-butanolic acid (PFBA)	3677	LP17H51122	0.02	2.10	0.017	48.0	1.01	0.05	0.05	6629.9-12-1	NA	NA
20. Perfluoro-4-butanolic acid (PFBA)	3677	LP17H51122	0.02	2.10	0.017	48.2	1.01	0.05	0.05	335.77-3	NA	NA
21. Perfluoro-1-butanolic acid (PFBA)	6671	063622	0.02	2.00	0.017	50.2	1.00	0.05	0.05	727.124-72-4	NA	NA
22. Perfluoro-2-butanolic acid (PFBA)	6671	063622	0.02	2.00	0.017	50.2	1.00	0.05	0.05	210.98-7-2	NA	NA
23. Perfluoro-3-butanolic acid (PFBA)	6671	063622	0.02	2.00	0.017	50.2	1.00	0.05	0.05	301.08-5-4	NA	NA
24. Perfluoro-4-butanolic acid (PFBA)	6671	063622	0.02	2.00	0.017	50.1	1.00	0.05	0.05	182.82-13-4	NA	NA
25. Perfluoro-1-butanolic acid (PFBA)	4183	EMERG04A121	0.02	2.00	0.017	49.1	1.00	0.05	0.05	2782.61-26-2	NA	NA
26. Perfluoro-2-butanolic acid (PFBA)	4183	EMERG04A121	0.02	2.00	0.017	48.8	1.00	0.05	0.05	2782.61-26-1	NA	NA
27. Perfluoro-3-butanolic acid (PFBA)	4183	EMERG04A121	0.02	2.00	0.017	47.1	1.00	0.05	0.05	2782.61-26-1	NA	NA
28. Perfluoro-4-butanolic acid (PFBA)	4183	EMERG04A121	0.02	2.00	0.017	47.1	1.00	0.05	0.05	8190.05-14-4	NA	NA

Perfluoro-1-butanolic acid (PFBA)	99902	006022	0.02	2.00	0.004	48.8	0.99	0.010	0.010	335.47-1 (L)	NA	1st 10mL only
Perfluoro-2-butanolic acid (PFBA)	99902	006022	0.02	2.00	0.004	0.9	0.01	0.001	0.001	335.67-1 (L)	NA	1st 10mL only
Perfluoro-3-butanolic acid (PFBA)	99198	020952	0.02	2.00	0.017	44.0	0.88	0.02	0.02	335.45-4 (L)	NA	NA
Perfluoro-4-butanolic acid (PFBA)	99198	020952	0.02	2.00	0.017	6.0	0.12	0.000	0.000	335.45-4 (L)	NA	NA
Perfluoro-1-butanolic acid (PFBA)	99501	020952	0.02	2.00	0.017	36.1	0.78	0.02	0.02	1783.28-1 (L)	NA	NA
Perfluoro-2-butanolic acid (PFBA)	99501	020952	0.02	2.00	0.017	7.5	0.15	0.003	0.003	1783.28-1 (L)	NA	NA
Perfluoro-3-butanolic acid (PFBA)	99501	020952	0.02	2.00	0.017	4.0	0.08	0.002	0.002	1783.28-1 (L)	NA	NA
Perfluoro-4-butanolic acid (PFBA)	99501	020952	0.02	2.00	0.017	0.5	0.010	0.000	0.000	1783.28-1 (L)	NA	NA
Perfluoro-1-butanolic acid (PFBA)	4182	EMERG04A121	0.02	2.00	0.017	36.0	0.72	0.04	0.04	2355.51-8 (L)	NA	NA
Perfluoro-2-butanolic acid (PFBA)	4182	EMERG04A121	0.02	2.00	0.017	6.5	0.13	0.011	0.011	2355.51-8 (L)	NA	NA
Perfluoro-3-butanolic acid (PFBA)	4182	EMERG04A121	0.02	2.00	0.017	5.0	0.10	0.005	0.005	2355.51-8 (L)	NA	NA
Perfluoro-4-butanolic acid (PFBA)	4182	EMERG04A121	0.02	2.00	0.017	2.5	0.05	0.009	0.009	2355.51-8 (L)	NA	NA
Perfluoro-1-butanolic acid (PFBA)	4183	EMERG04A121	0.02	2.00	0.017	36.6	0.73	0.04	0.04	2991.50-8 (L)	NA	NA
Perfluoro-2-butanolic acid (PFBA)	4183	EMERG04A121	0.02	2.00	0.017	7.7	0.15	0.009	0.009	2991.50-8 (L)	NA	NA
Perfluoro-3-butanolic acid (PFBA)	4183	EMERG04A121	0.02	2.00	0.017	5.3	0.11	0.005	0.005	2991.50-8 (L)	NA	NA
Perfluoro-4-butanolic acid (PFBA)	4183	EMERG04A121	0.02	2.00	0.017	0.4	0.007	0.000	0.000	2991.50-8 (L)	NA	NA

A suitable standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wilmington Labs, Cat. No. T-PFOA or equivalent). This standard should be used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 1.2.2) with a quantitative PFOA standard containing the branched and linear isomers becomes commercially available. 1

* Concentrations for branched and linear isomers are based on LDKs chromatographic analysis only.

The certified value is the concentration calculated from gravimetric and isotopic measurements, with an uncertainty stated. The uncertainty is based on the relative standard deviation (RSD) of the certified value, which is typically 0.1% to 0.5%. Standards are certified to ±0.5% of the stated value, unless otherwise stated.

All standards, after opening, should be stored in a cool, dry place and sealed properly to prevent degradation.

For more information, please contact Absolute Standards, Inc. at 800-368-1131 or www.absolutestandards.com.

NIST Reference Standard 1577, U.S. Government Printing Office, Washington, DC, 1994.

11750
Rec'd: 04/17/23

11764 A-5
rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled PFAS Injection
Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-IS
LOT NUMBER: MPFACHIFIS1122
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 11/28/2022
LAST TESTED: (mm/dd/yyyy) 11/29/2022
EXPIRY DATE: (mm/dd/yyyy) 11/29/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄, C₆, C₈-C₁₀) and two mass-labelled (¹⁸O and ¹³C) perfluoroalkanesulfonates (C₆ and C₈). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per ¹³C or >94% per ¹⁸O.

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

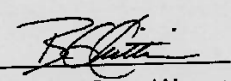
MPFACHIFIS1122 (1 of 5)
rev0

7.9.1
7

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

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(2,3,4- ¹³ C ₃)butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- ¹³ C ₂)hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- ¹³ C ₄)octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- ¹³ C ₅)nonanoic acid	MPFNA	250		5
Perfluoro-n-(1,2- ¹³ C ₂)decanoic acid	MPFDA	250		7
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-hexane(¹⁸ O ₂)sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4- ¹³ C ₄)octanesulfonate	MPFOS	500	479	6

* Concentrations have been rounded to three significant figures.

Certified By: 
R.G. Chittim, General Manager

Date: 12/05/2022
(mm/dd/yyyy)

11765 A-J
Rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-ES
LOT NUMBER: MPFACHIFES1022
SOLVENT(S): Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 10/28/2022
LAST TESTED: (mm/dd/yyyy) 11/23/2022
EXPIRY DATE: (mm/dd/yyyy) 11/23/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄-C₁₂, C₁₄), three mass-labelled (¹³C) perfluoroalkanesulfonates (C₄, C₆, and C₈), three mass-labelled (one ¹³C and two ²H) perfluoro-1-octanesulfonamides, three mass-labelled (¹³C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (²H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (²H) perfluorooctanesulfonamidoethanols, and mass-labelled (¹³C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ¹³C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual ²H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

MPFACHIFES1022 (1 of 7)
rev0

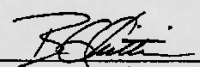
7.9.1

7

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

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₂)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₃)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₅)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₆)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₇)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₇)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₈)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDcA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₂ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₂ -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 11/24/2022
(mm/dd/yyyy)

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 05/26/23 10:30

Method: EPA 1633 Draft (QSM)

Date/Time: 5/30/23 14:49

Balance ID: _____

Batch#: OP97092 Ext. By: GH

Conc. By: _____ Viald By: _____

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP 97092 MB	/	500	7	N/A	25		5	A4	
OP 97092 BS	/	500	7						
OP 97092 LLBS	/	500	7			200			
FC 5851-5AL	2	550	6			60			
FC 5885-4AL	1	60	6						
FC 5943-1AL	3	526	6						
8 AL	3	550	6						
FC 6238-3AL	1	60	7						
FC 6325-1	2	550	6						
	2	570	6						
	3	550	6	N/A	25		5	A4	
FC 5943-8 th DUP2	1	68	6	N/A	25		5	A4	
OP FC 6325-1 MS	3	540	6	N/A	25	200	5	A4	
OP MSD									
OP FC 6325-2 DUP1	3	560	6	N/A	25		5	A4	

Comments:

EIS (SURR) ID: 11806 H-J Conc: 250-5000 ng/lth Exp. Date: 05/18/23 Inj. By: GH Ver. By: DBL
 SPIKE 1 ID: LMS 2124B Conc: VARIED Exp. Date: 10/28/23 Inj. By: GH Ver. By: DBL
 SPIKE 2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11820D-E Conc: 250-1000 ng/lth Exp. Date: 5/24/24 Inj. By: MV Ver. By: NG

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

Methanol Lot # 224279 1% NH4OH MeOH PF416 SPE Lot # 0736233-03
 Water Lot# OP97000 0.3M Formic Acid PF413 Syringe filter Lot #
 Acetic Acid# 194003 3% NH4OH Sol pH paper Lot# 215322
 0.1M Formic PF415 5% Formic Acid Carbon Lot# 99687

Relinquished By: [Signature]
 Accepted By: [Signature]

Date: 05/26/23
 Date: 5/30/23

7.10.1
7