NAVFAC
Naval Facilities Engineering Command

Off-Base Drinking Water Sample Results, Combined Level 2 and Level 4 Laboratory Report, and the Sample Location Figure, SDG FA42949

Naval Air Station Cecil Field
Jacksonville, Florida

July 2019

N60200_009853
CECIL_FIELD_NAS
SSIC 5000-33c

LABORATORY DATA PACKAGE FA42949 NAS CECIL FIELD FL

04/11/2017

ACCUTEST LABORATORIES

e-Hardcopy 2.0
Automated Report

Technical Report for

Resolution Consultants

NAS Cecil Field PFAS; Jacksonville, FL

0888817799

SGS Accutest Job Number: FA42949

Sampling Date: 04/11/17

Report to:

Resolution Consultants
5724 Summer Trees Dr
Memphis, TN 38134
tcantwell@ensafe.com; kwimble@ensafe.com

ATTN: Kara Wimble

Total number of pages in report: **174**

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

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(L-A-B L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AK, AR, GA, IA, KY, MA, NV, OK, OR, UT, WA

Sections: 1 2 3 4 5 6 7

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Sample Summary

Resolution Consultants

Job No: FA42949

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

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA42949-1	04/11/17	09:03	RB	04/12/17	DW	Drinking Water	COJ-47-0417
FA42949-2	04/11/17	09:05	RB	04/12/17	DW	Drinking Water FB	FB-COJ-47-0417

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Resolution Consultants **Job** FA42949

Site: NAS Cecil Field PFAS; Jacksonville, FL **Report** 4/27/2017 3:13:42

1 Sample and 1 Field Blank were collected on 04/11/2017 and were received at SGS Accutest Southeast (SASE) on 04/12/2017 properly preserved, at 3.6 Deg. C and intact. These Samples received an SASE job number of FA42949. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

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

Extractables by GCMS By Method EPA 537

Matrix: DW **Batch ID:** OP64782

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA42949-1MS, FA42949-1MSD were used as the QC samples indicated.

Sample(s) FA42949-2 has surrogates outside control limits. Probable cause is due to matrix interference.

FA42949-2 for 13C2-PFDA: Outside control limits. However, sample was ND.

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

Narrative prepared by:

_____ Date: April 27, 2017

Lovelie Metzgar, QA Officer (signature on file)

Summary of Hits

Job Number: FA42949
Account: Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL
Collected: 04/11/17

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

FA42949-1 **COJ-47-0417**

No hits reported in this sample.

FA42949-2 **FB-COJ-47-0417**

No hits reported in this sample.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID: COJ-47-0417
Lab Sample ID: FA42949-1
Matrix: DW - Drinking Water
Method: EPA 537 EPA 537
Project: NAS Cecil Field PFAS; Jacksonville, FL

Date Sampled: 04/11/17
Date Received: 04/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q802.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23
Run #2							

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

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS								
335-67-1	Perfluorooctanoic acid	0.0031 U		0.0077	0.0031	0.0019	ug/l	
PERFLUOROALKYLSULFONATES								
375-73-5	Perfluorobutanesulfonic acid	0.0058 U		0.0077	0.0058	0.0038	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0031 U		0.0077	0.0031	0.0019	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFHxA	87%		70-130%
	13C2-PFDA	101%		70-130%

U = Not detected LOD = Limit of Detection
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: FB-COJ-47-0417
Lab Sample ID: FA42949-2 **Date Sampled:** 04/11/17
Matrix: DW - Drinking Water FB **Date Received:** 04/12/17
Method: EPA 537 EPA 537 **Percent Solids:** n/a
Project: NAS Cecil Field PFAS; Jacksonville, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q805.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS								
335-67-1	Perfluorooctanoic acid	0.0032 U		0.0080	0.0032	0.0020	ug/l	
PERFLUOROALKYLSULFONATES								
375-73-5	Perfluorobutanesulfonic acid	0.0060 U		0.0080	0.0060	0.0040	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0032 U		0.0080	0.0032	0.0020	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFHxA	76%		70-130%
	13C2-PFDA	131% [a]		70-130%

(a) Outside control limits. However, sample was ND.

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5 Limits

FA42949

RESOLUTION CONSULTANTS

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

COC No. **RB041117-1** | Page **1** of **1**

Project Name: **Former NAS Cecil Field - Jacksonville, FL - PFC Sampling** | PO No. **22064** | Project No: **0888817799** Phase: **FI** Task: **WS**

Site Location: **Former NAS Cecil Field - Off-Site PFC Sampling**

CTO No. **JMA8** | RC Task Order Manager: **Kara Wimble**

Sampler/Site Phone# **Robert Bailey/904-301-4504**

Lab Name: **SGS Accutest** | Turnaround Time (specify): **7-Day TAT**

Sample Analysis Requested (*Enter number of containers for each test*)

Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	Date (mm/dd/yy)	Time (Military) (hhmm)	Matrix Code (1)	Sample Type (2)	Field Filtered (Y/N)	(3)→ Total No. of Containers	Trizma: EPA Method 537 with no modifications*											Extra Volume for MS/MSD	HOLD
1	COJ-47-0417	COJ-47-0417	4/11/2017	9:03	WP	N	N	2	2												
2	FB-COJ-47-0417	COJ-47-0417	4/11/2017	9:05	WQ	FB	N	2	2												

***Field* Comments:**

*** Analytes include: perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutanesulfonic acid (PFBS)**

***Lab* Comments:**

Sample Shipment and Delivery Details

Number of coolers in shipment: 1

Relinquished by (signature)	Date	Time	Received by (signature)	Date	Time
1 Robert Bailey	04/11/17	1427	1 James Lloyd	4-11-17	1440
2 James Lloyd	4-11-17	1700	2	04/12/17	800
3			3		

Samples Iced?(check) Yes X No

Method of Shipment: Accutest courier

Airbill No: NA

Date Shipped: **04/11/2017**

3.6

(1) AA=Ambient air, **AQ**=Air quality control, **ASB**=Asbestos, **CK**=Caulk, **DS**=Storm drain sediment, **GS**=Soil gas, **IC**=IDW Concrete, **IDD**=IDW Solid, **IDS**=IDW soil, **IDW**=IDW Water, **LF**=Free Product, **MA**=Mastic, **PC**=Paint Chips, **SC**=Cement/Concrete, **SE**=Sediment, **SL**=Sludge, **SO**=Soil, **SQ**=Soil/Solid quality control, **SSD**=Subsurface sediment, **SU**=Surface soil (<6 in), **SW**=Swab or wipe, **TA**=Animal tissue, **TP**=Plant tissue, **TQ**=Tissue quality control, **WG**=Ground water, **WL**=Leachate, **WO**=Ocean water, **WP**=Drinking water, **WQ**=Water quality control, **WR**=Ground water effluent, **WS**=Surface water, **WU**=Storm water, **WW**=Waste water

(2) Sample Type: AB=Ambient Blk, **EB**=Equipment Blk, **FB**=Field Blk, **FD**=Field Duplicate Sample, **IDW**=Investigative-Derived Waste, **MIS**=Incremental Sampling Methodology, **N**=Normal Environmental Sample, **TB**=Trip Blk

(3) Preservative added: HA=Hydrochloric Acid, **NI**=Nitric Acid, **SH**=Sodium Hydroxide, **SA**=Sulfuric Acid, **ME**=Methanol, **SB**=sodium bisulfate, **ST**=Sodium Thiosulfate If **NO preservative** added leave blank

Rev 5/12

5.1.5

FA42949: Chain of Custody

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SGS ACCUTEST - ORLANDO SAMPLE RECEIPT CONFIRMATION

SGS ACCUTEST'S JOB NUMBER: FA42949 CLIENT: Resolution Cons. PROJECT: Former NAS

DATE/TIME RECEIVED: 04/12/17 800 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER DELIVERY OTHER: _____

AIRBILL NUMBERS: _____

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [x] TRIP BLANK NOT PROVIDED
- [x] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR +0.4
- [ ] OBSERVED TEMPS: 3.2
- [ ] CORRECTED TEMPS: 3.6 (USED FOR LIMS)

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#_____

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

TEST STRIP LOT#s pH 0-3 230315 pH 10-12 219813A OTHER (specify) _____

SUMMARY OF COMMENTS: _____

TECHNICIAN SIGNATURE/DATE 04/12/17 REVIEWER SIGNATURE/DATE 04-12-17

NF 02/16 receipt confirmation 020116.xls

5.1 5

QC Evaluation: DOD QSM5 Limits

Job Number: FA42949
Account: Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL
Collected: 04/11/17

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

No Exceptions found.

* Sample used for QC is not from job FA42949

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64782-MB	2Q801.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23

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

FA42949-1, FA42949-2

CAS No.	Compound	Result	RL	MDL	Units	Q
335-67-1	Perfluorooctanoic acid	ND	0.0077	0.0019	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0077	0.0038	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0077	0.0019	ug/l	

CAS No.	Surrogate Recoveries		Limits
	13C2-PFHxA	105%	70-130%
	13C2-PFDA	114%	70-130%

Blank Spike Summary

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64782-BS	2Q800.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23

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

FA42949-1, FA42949-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
335-67-1	Perfluorooctanoic acid	0.0769	0.0820	107	70-130
375-73-5	Perfluorobutanesulfonic acid	0.0769	0.0800	104	70-130
1763-23-1	Perfluorooctanesulfonic acid	0.0769	0.0749	97	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
	13C2-PFHxA	107%	70-130%
	13C2-PFDA	111%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64782-MS	2Q803.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23
OP64782-MSD	2Q804.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23
FA42949-1	2Q802.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23

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

FA42949-1, FA42949-2

CAS No.	Compound	FA42949-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
335-67-1	Perfluorooctanoic acid	0.0077	U	0.154	0.161	105	0.154	0.158	103	2	70-130/30
375-73-5	Perfluorobutanesulfonic acid	0.0077	U	0.154	0.156	101	0.154	0.150	97	4	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	0.0077	U	0.154	0.133	86	0.154	0.141	92	6	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	FA42949-1	Limits
	13C2-PFHxA	101%	108%	87%	70-130%
	13C2-PFDA	105%	114%	101%	70-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Check Std:	S2Q23-CC18	**Injection Date:**	04/27/17
Lab File ID:	2Q798.D	**Injection Time:**	09:06
Instrument ID:	GCMS2Q	**Method:**	EPA 537

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Initial Cal [a]	77062	4.23	159216	6.65	78218	6.64	57710	7.20	34998	7.47	94157	10.66
Check Std [b]	85348	4.32	201927	6.75	90447	6.74	66625	7.31	40257	7.47	113852	11.06
Upper Limit [c]	107887	5.32	222902	7.75	109505	7.74	80794	8.31	48997	8.47	131820	12.06
Lower Limit [d]	53943	3.32	111451	5.75	54753	5.74	40397	6.31	24499	6.47	65910	10.06

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP64782-BS	79263	4.29	191596	6.74	81784	6.73	61419	7.30	37375	7.47	104528	10.99
OP64782-MB	68988	4.27	158452	6.72	72868	6.71	53498	7.29	33256	7.47	92287	10.95
FA42949-1	63375	4.27	163412	6.72	73068	6.71	55353	7.29	31197	7.46	95689	10.94
OP64782-MS	69181	4.27	182145	6.71	78202	6.70	57302	7.28	33347	7.47	101490	10.96
OP64782-MSD	75019	4.26	184277	6.71	78835	6.70	58159	7.28	34342	7.46	100380	10.90
FA42949-2	30775[e]	4.26	171997	6.71	56708	6.70	56778	7.28	30501	7.46	97045	10.89
ZZZZZZ	76157	4.25	184168	6.71	85825	6.69	60847	7.28	35889	7.46	106956	10.94
ZZZZZZ	68165	4.25	183746	6.70	82427	6.69	60745	7.26	35667	7.46	107638	10.93
ZZZZZZ	64786	4.25	177426	6.70	76146	6.69	58591	7.26	32227	7.46	99204	10.89
ZZZZZZ	57133	4.25	173835	6.70	74420	6.69	57645	7.26	34009	7.46	101002	10.91
S2Q23-ECC18	88498	4.25	208692	6.70	92398	6.69	67608	7.26	40389	7.46	120735	10.91

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

(a) Initial Cal is: S2Q18-ICC18 2Q655.D 04/20/17 13:13. Area is AVERAGE of initial cal points.
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +40% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -30% of initial standard area; Retention time -1 minutes of check standard.
(e) Response outside of control limits; ISTD does not reference any reported target analytes.

Semivolatile Surrogate Recovery Summary

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Method: EPA 537 **Matrix:** DW

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
FA42949-1	2Q802.D	87	101
FA42949-2	2Q805.D	76	131* [a]
OP64782-BS	2Q800.D	107	111
OP64782-MB	2Q801.D	105	114
OP64782-MS	2Q803.D	101	105
OP64782-MSD	2Q804.D	108	114

Surrogate Compounds	Recovery Limits
S1 = 13C2-PFHxA	70-130%
S2 = 13C2-PFDA	70-130%

(a) Outside control limits. However, sample was ND.

Initial Calibration Summary

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q18-ICC18
Lab FileID: 2Q655.D

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0420_LIST_S2Q18\S2Q18.batch.bin

Level ID : Calibration File
1 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q651.d
2 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q652.d
3 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q653.d
4 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q654.d
5 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q655.d
6 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q656.d
7 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Compound	1	2	3	4	5	6	7	AvgRF	%RSD	r^2
1) 13C2-6:2FTS	----------ISTD----------									
8) 4:2FTS	0.5439	0.5459	0.5345	0.5374	0.4892	0.5027	0.5077	0.5230	4.338	0.9995
9) 6:2FTS	-----	1.1352	1.0675	1.0557	0.9739	0.9634	0.9636	1.0266	6.898	0.9993
10) 8:2FTS	1.6663	1.6728	1.6625	1.6921	1.5507	1.5905	1.6117	1.6352	3.163	0.9996
3) 13C2-PFDoDA	----------ISTD----------									
19) PFDoDA	0.9060	0.9297	0.9083	0.9190	0.8505	0.9094	0.9372	0.9086	3.099	0.9996
31) PFTeDA	0.4345	0.4371	0.4318	0.4343	0.3962	0.4245	0.4420	0.4286	3.559	0.9993
32) PFTrDA	0.7809	0.7694	0.7711	0.7818	0.7223	0.7750	0.8091	0.7728	3.354	0.9994
33) PFUnDA	0.9073	0.8879	0.8779	0.8873	0.8215	0.8600	0.8974	0.8770	3.268	0.9985
5) 13C2-PFOA	----------ISTD----------									
2) 13C2-PFDA	1.3869	1.4181	1.3535	1.3743	1.2810	1.3950	1.4227	1.3759	3.507	0.9984
4) 13C2-PFHxA	0.9750	1.0479	1.0267	1.0364	0.9711	1.0614	1.0680	1.0266	3.818	0.9987
16) PFBA	0.4748	0.5318	0.5137	0.5159	0.4818	0.5228	0.5359	0.5110	4.649	0.9984
18) PFDA	1.0186	1.0187	0.9665	0.9766	0.9006	0.9736	1.0136	0.9812	4.293	0.9978
21) PFHpA	1.6423	1.4730	1.4128	1.4109	1.3074	1.4206	1.4665	1.4476	7.013	0.9986
23) PFHxA	0.4742	0.5078	0.4891	0.4767	0.4527	0.4935	0.4989	0.4847	3.794	0.9996
25) PFNA	1.1263	0.9385	0.9201	0.8924	0.8036	0.8867	0.9120	0.9256	10.636	0.9977
27) PFOA	0.9605	0.8457	0.8362	0.8326	0.7694	0.8479	0.8388	0.8473	6.694	0.9985
6) 13C3-PFPeA	----------ISTD----------									
29) PFPeA	1.5154	1.5656	1.4956	1.5117	1.4189	1.5044	1.5422	1.5077	3.048	0.9989
30) PFPeS	0.1734	0.1915	0.1872	0.1883	0.1775	0.1881	0.1940	0.1857	4.029	0.9987
7) 13C4-PFOS	----------ISTD----------									
17) PFBS	0.7614	0.7709	0.7757	0.7798	0.7414	0.7884	0.8143	0.7760	2.917	0.9986
20) PFDS	0.5220	0.5547	0.5462	0.5487	0.5249	0.5573	0.5779	0.5474	3.528	0.9997
22) PFHpS	0.8012	0.8342	0.8168	0.8222	0.7913	0.8358	0.8645	0.8237	2.944	0.9986
24) PFHxS	0.8075	0.8214	0.8108	0.8095	0.7715	0.8190	0.8571	0.8138	3.098	0.9980
26) PFNS	0.4808	0.5040	0.5004	0.4985	0.4714	0.4980	0.5153	0.4955	2.973	0.9987
28) PFOS	1.1322	1.1479	1.1431	1.1299	1.0613	1.1354	1.1823	1.1331	3.205	0.9981
11) d3-MeFOSAA	----------ISTD----------									
12) d5-EtFOSAA	0.8411	0.6125	0.5388	0.5228	0.5075	0.5045	0.5765	0.5862	20.291	0.9954
13) EtFOSAA	-----	0.5259	0.4906	0.4539	0.4378	0.4479	0.5192	0.4792	7.939	0.9942
14) FOSA	1.0873	1.0855	1.1177	1.1044	1.0530	1.0209	1.1121	1.0830	3.218	0.9968
15) MeFOSAA	-----	0.6142	0.5865	0.6084	0.5819	0.5706	0.6565	0.6030	5.130	0.9942

*(value) - Average RF below (value)

Initial Calibration Verification

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q18-ICV18
Lab FileID: 2Q659.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0420_LIST_S2Q18\S2Q18.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0420_LIST_S2Q18\2Q651.d
2:D:\MassHunter\Data\0420_LIST_S2Q18\2Q652.d
3:D:\MassHunter\Data\0420_LIST_S2Q18\2Q653.d
4:D:\MassHunter\Data\0420_LIST_S2Q18\2Q654.d
5:D:\MassHunter\Data\0420_LIST_S2Q18\2Q655.d
6:D:\MassHunter\Data\0420_LIST_S2Q18\2Q656.d
7:D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Data File: 2Q659
Type : QC
Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	0.000	0.0	0.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	0.000	0.0	0.0
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	24.064	20.3	120.3
6:2FTS	20.000	22.507	12.5	112.5
8:2FTS	20.000	22.545	12.7	112.7
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	0.000	0.0	0.0
EtFOSAA	20.000	23.571	17.9	117.9
FOSA	20.000	21.566	7.8	107.8
MeFOSAA	20.000	24.228	21.1	121.1
PFBA	20.000	21.001	5.0	105.0
PFBS	20.000	20.876	4.4	104.4
PFDA	20.000	21.111	5.6	105.6
PFDoDA	20.000	22.315	11.6	111.6
PFDS	20.000	22.350	11.7	111.7
PFHpA	20.000	21.559	7.8	107.8
PFHpS	20.000	21.058	5.3	105.3
PFHxA	20.000	21.933	9.7	109.7
PFHxS	20.000	22.038	10.2	110.2
PFNA	20.000	21.312	6.6	106.6
PFNS	20.000	22.659	13.3	113.3
PFOA	20.000	21.282	6.4	106.4
PFOS	20.000	19.618	-1.9	98.1
PFPeA	20.000	21.052	5.3	105.3
PFPeS	20.000	22.045	10.2	110.2
PFTeDA	20.000	22.537	12.7	112.7
PFTrDA	20.000	22.394	12.0	112.0
PFUnDA	20.000	21.206	6.0	106.0

CC Criteria: +/- 25%

Continuing Calibration Summary

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q23-CC18
Lab FileID: 2Q798.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0427_LIST_S2Q23\S2Q23.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0420_LIST_S2Q18\2Q651.d
2:D:\MassHunter\Data\0420_LIST_S2Q18\2Q652.d
3:D:\MassHunter\Data\0420_LIST_S2Q18\2Q653.d
4:D:\MassHunter\Data\0420_LIST_S2Q18\2Q654.d
5:D:\MassHunter\Data\0420_LIST_S2Q18\2Q655.d
6:D:\MassHunter\Data\0420_LIST_S2Q18\2Q656.d
7:D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Data File: 2Q798
Type : QC
Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.392	-3.0	97.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	17.997	-10.0	90.0
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.158	-4.2	95.8
6:2FTS	20.000	19.568	-2.2	97.8
8:2FTS	20.000	20.593	3.0	103.0
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.704	-6.5	93.5
EtFOSAA	20.000	18.340	-8.3	91.7
FOSA	20.000	16.603	-17.0	83.0
MeFOSAA	20.000	19.405	-3.0	97.0
PFBA	20.000	16.175	-19.1	80.9
PFBS	20.000	17.616	-11.9	88.1
PFDA	20.000	18.807	-6.0	94.0
PFDoDA	20.000	19.956	-0.2	99.8
PFDS	20.000	18.273	-8.6	91.4
PFHpA	20.000	18.583	-7.1	92.9
PFHpS	20.000	18.552	-7.2	92.8
PFHxA	20.000	18.867	-5.7	94.3
PFHxS	20.000	15.556	-22.2	77.8
PFNA	20.000	19.206	-4.0	96.0
PFNS	20.000	18.623	-6.9	93.1
PFOA	20.000	18.204	-9.0	91.0
PFOS	20.000	16.182	-19.1	80.9
PFPeA	20.000	18.677	-6.6	93.4
PFPeS	20.000	19.291	-3.5	96.5
PFTeDA	20.000	17.690	-11.6	88.4
PFTrDA	20.000	19.172	-4.1	95.9
PFUnDA	20.000	18.955	-5.2	94.8

CC Criteria: +/- 25%

Continuing Calibration Summary

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q23-CC18
Lab FileID: 2Q799.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0427_LIST_S2Q23\S2Q23.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0420_LIST_S2Q18\2Q651.d
2:D:\MassHunter\Data\0420_LIST_S2Q18\2Q652.d
3:D:\MassHunter\Data\0420_LIST_S2Q18\2Q653.d
4:D:\MassHunter\Data\0420_LIST_S2Q18\2Q654.d
5:D:\MassHunter\Data\0420_LIST_S2Q18\2Q655.d
6:D:\MassHunter\Data\0420_LIST_S2Q18\2Q656.d
7:D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Data File: 2Q799
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	2.000	2.104	5.2	105.2
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	2.000	1.953	-2.3	97.7
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	2.000	2.051	2.5	102.5
6:2FTS	2.000	2.710	# 35.5	135.5
8:2FTS	2.000	2.283	14.1	114.1
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	2.000	5.176	# 158.8	258.8
EtFOSAA	2.000	4.618	# 130.9	230.9
FOSA	2.000	1.734	-13.3	86.7
MeFOSAA	2.000	4.221	# 111.0	211.0
PFBA	2.000	1.596	-20.2	79.8
PFBS	2.000	1.565	-21.7	78.3
PFDA	2.000	2.109	5.5	105.5
PFDoDA	2.000	2.193	9.7	109.7
PFDS	2.000	2.007	0.4	100.4
PFHpA	2.000	2.109	5.5	105.5
PFHpS	2.000	1.945	-2.7	97.3
PFHxA	2.000	2.208	10.4	110.4
PFHxS	2.000	1.717	-14.2	85.8
PFNA	2.000	2.420	21.0	121.0
PFNS	2.000	2.039	2.0	102.0
PFOA	2.000	2.215	10.8	110.8
PFOS	2.000	1.521	-23.9	76.1
PFPeA	2.000	1.970	-1.5	98.5
PFPeS	2.000	2.422	21.1	121.1
PFTeDA	2.000	2.036	1.8	101.8
PFTrDA	2.000	2.172	8.6	108.6
PFUnDA	2.000	2.069	3.4	103.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA42949
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q23-ECC18
Lab FileID: 2Q810.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0427_LIST_S2Q23\S2Q23.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\0420_LIST_S2Q18\2Q651.d
2:D:\MassHunter\Data\0420_LIST_S2Q18\2Q652.d
3:D:\MassHunter\Data\0420_LIST_S2Q18\2Q653.d
4:D:\MassHunter\Data\0420_LIST_S2Q18\2Q654.d
5:D:\MassHunter\Data\0420_LIST_S2Q18\2Q655.d
6:D:\MassHunter\Data\0420_LIST_S2Q18\2Q656.d
7:D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Data File: 2Q810
Type : QC
Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.647	-1.8	98.2
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	18.147	-9.3	90.7
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.544	-2.3	97.7
6:2FTS	20.000	19.585	-2.1	97.9
8:2FTS	20.000	20.076	0.4	100.4
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	24.215	21.1	121.1
EtFOSAA	20.000	19.690	-1.5	98.5
FOSA	20.000	18.000	-10.0	90.0
MeFOSAA	20.000	20.252	1.3	101.3
PFBA	20.000	16.087	-19.6	80.4
PFBS	20.000	17.358	-13.2	86.8
PFDA	20.000	18.839	-5.8	94.2
PFDoDA	20.000	19.362	-3.2	96.8
PFDS	20.000	18.737	-6.3	93.7
PFHpA	20.000	18.949	-5.3	94.7
PFHpS	20.000	18.726	-6.4	93.6
PFHxA	20.000	19.171	-4.1	95.9
PFHxS	20.000	18.465	-7.7	92.3
PFNA	20.000	18.826	-5.9	94.1
PFNS	20.000	18.354	-8.2	91.8
PFOA	20.000	19.113	-4.4	95.6
PFOS	20.000	17.954	-10.2	89.8
PFPeA	20.000	18.325	-8.4	91.6
PFPeS	20.000	18.719	-6.4	93.6
PFTeDA	20.000	17.364	-13.2	86.8
PFTrDA	20.000	19.229	-3.9	96.1
PFUnDA	20.000	18.256	-8.7	91.3

CC Criteria: +/- 25%

GC/MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

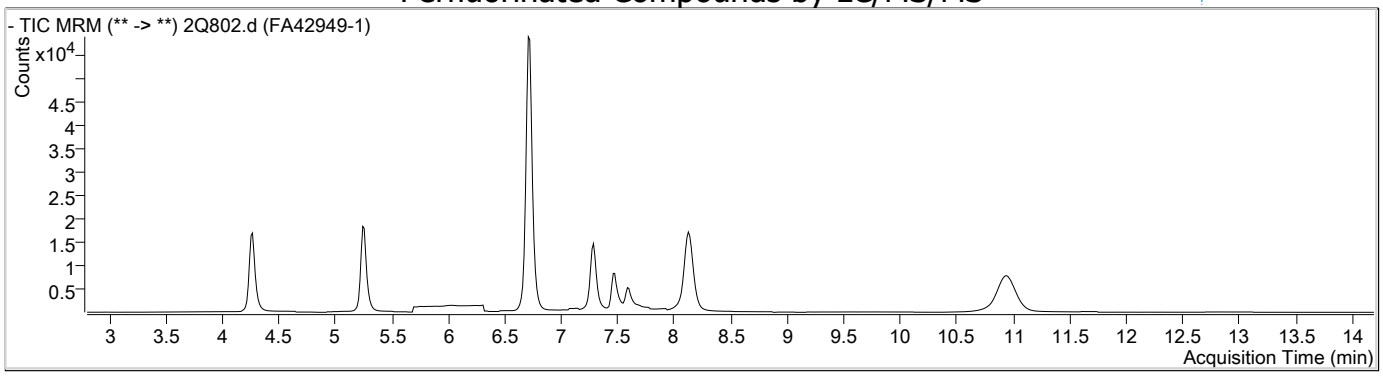
Data File	:	2Q802.d
Operator	:	NANCYF
Acq. Method	:	dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time	:	4/27/2017 10:50:20 AM
Sample Name	:	FA42949-1
Vial	:	Vial 15
DA Method File	:	PFCLISTDW_0420_S2Q18.m
Batch Name	:	S2Q23.batch.bin
Last Calib Update	:	4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.723	429.0 -> 409.0	163412	20.00	µg/L	0.075
13C2-PFDoDA	10.939	615.0 -> 570.0	95689	20.00	µg/L	0.275
13C2-PFOA	6.713	415.0 -> 370.0	73068	20.00	µg/L	0.076
13C3-PFPeA	4.272	266.0 -> 222.0	63375	20.00	µg/L	0.037
13C4-PFOS	7.289	503.0 -> 80.0	55353	20.00	µg/L	0.090
d3-MeFOSAA	7.462	573.0 -> 419.0	31197	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-PFDA	8.130	515.0 -> 470.0	103635	20.27	µg/L	0.161
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 101.4%		
13C2-PFHxA	5.247	315.0 -> 270.0	67451	17.48	µg/L	0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 87.4%		
d5-EtFOSAA	7.585	589.0 -> 419.0	16139	20.93	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 104.6%		
Target Compounds						**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	6.724	427.0 -> 407.0	1761	0.22	µg/L	100
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	7.598	584.0 -> 419.0	932	1.38	µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	7.476	570.0 -> 419.0	710	0.89	µg/L	100
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.023	363.0 -> 319.0	646	0.13	µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.262	313.0 -> 269.0	491	0.30	µg/L	85
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	7.369	463.0 -> 419.0	356	0.11	µg/L	55
PFNS	-	549.0 -> 99.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	4.325	263.0 -> 219.0	372	0.08	µg/L	100
PFPeS	-	349.0 -> 99.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

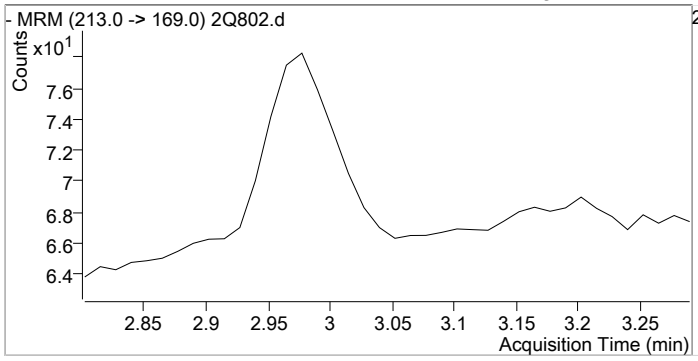
 # = Qualifier out of range, m = manually integrated, + = Area summed

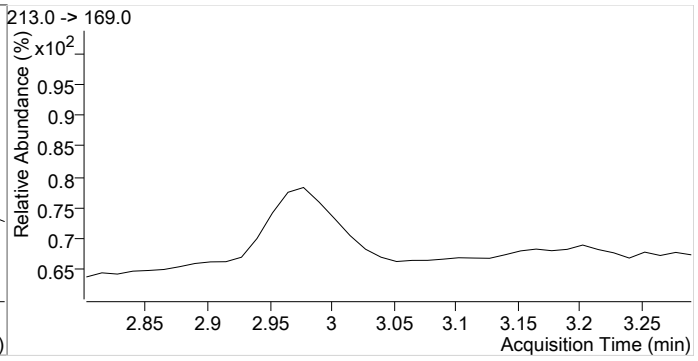
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

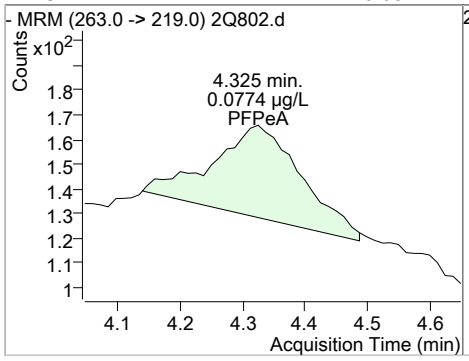


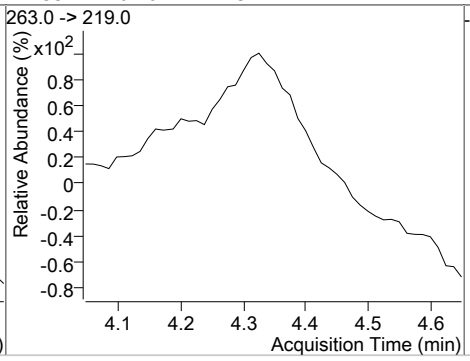
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFBA	N.D.	2.94		

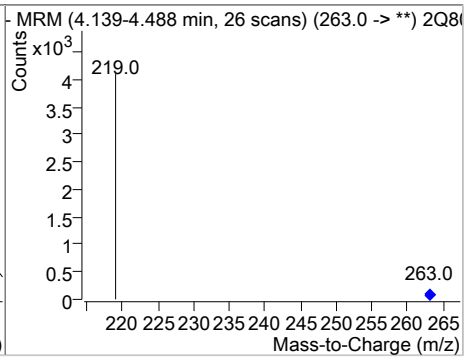




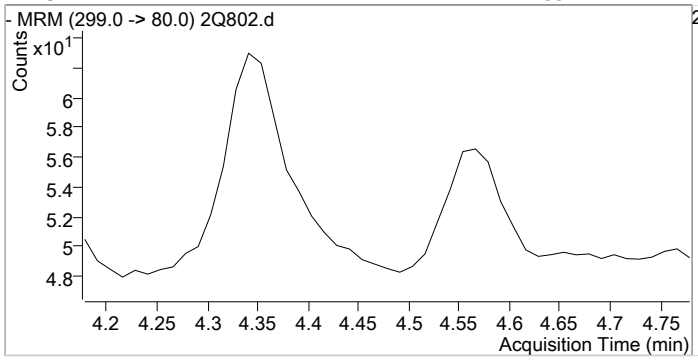
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.08	4.33	0.10	372				

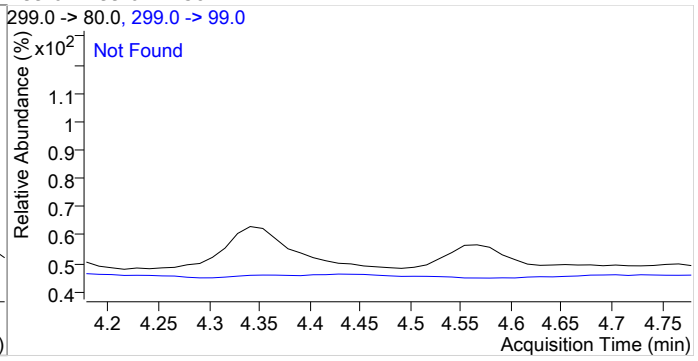






Compound	Conc.	Exp RT	QIon	Exp Ratio
PFBS	N.D.	4.35	299.0 -> 99.0	38.1

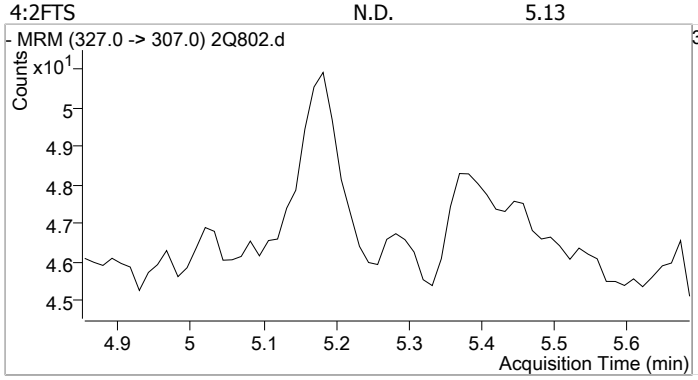


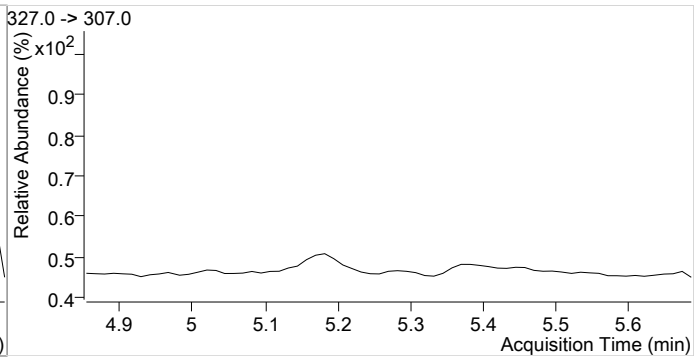


Perfluorinated Compounds by LC/MS/MS

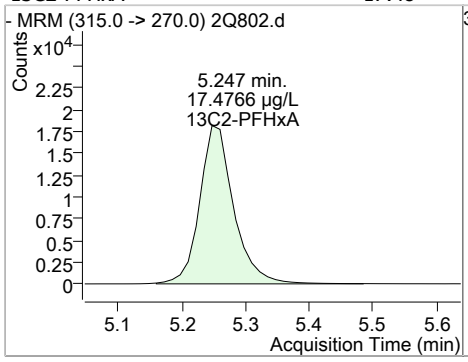
Agilent Technologies

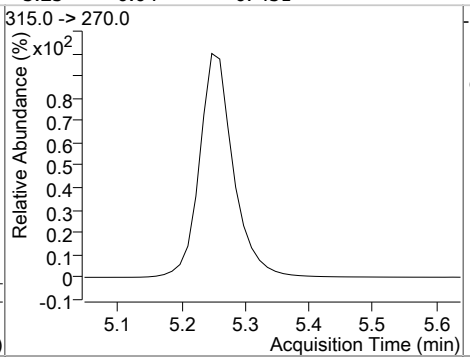
Compound	Conc.	Exp RT	QIon	Exp Ratio
4:2FTS	N.D.	5.13		

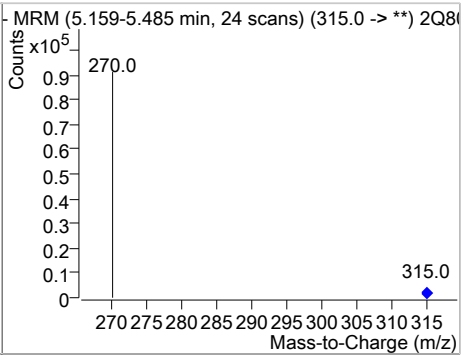




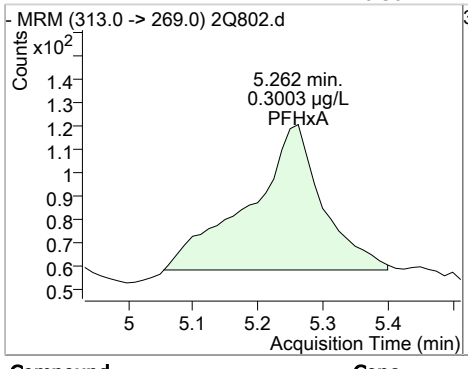
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	17.48	5.25	0.04	67451				

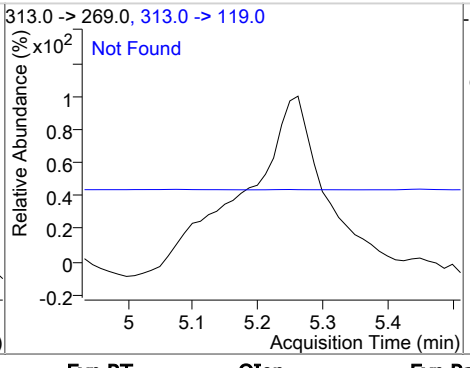


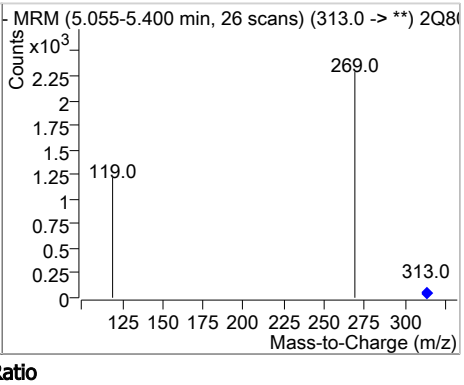




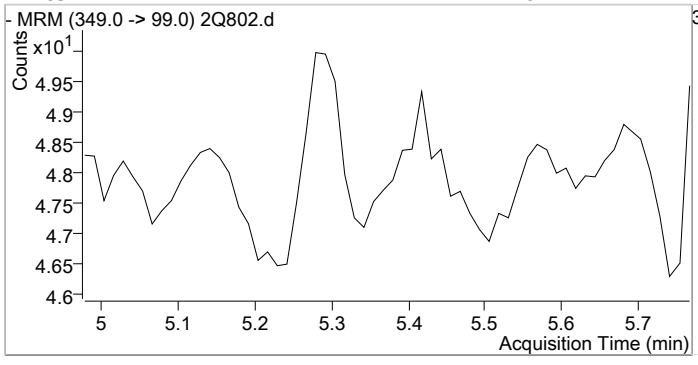
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.30	5.26	0.05	491	313.0 -> 119.0		4.0	6.0

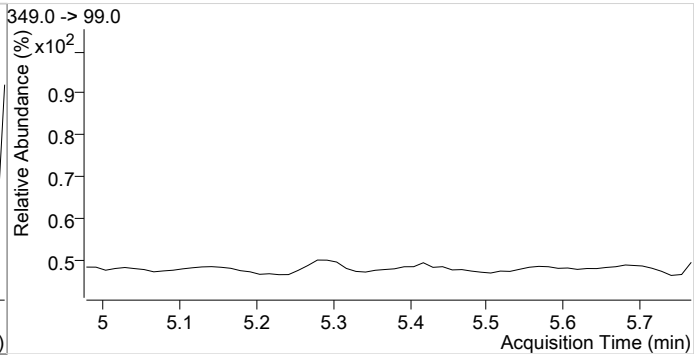






Compound	Conc.	Exp RT	QIon	Exp Ratio
PFPeS	N.D.	5.24		

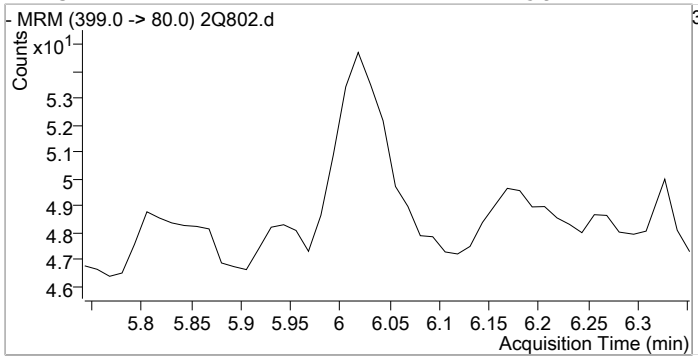


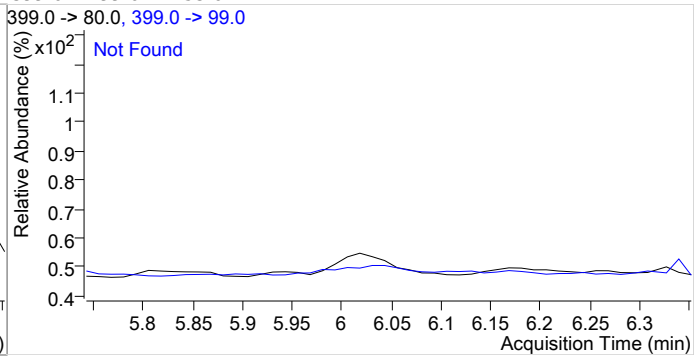


Perfluorinated Compounds by LC/MS/MS

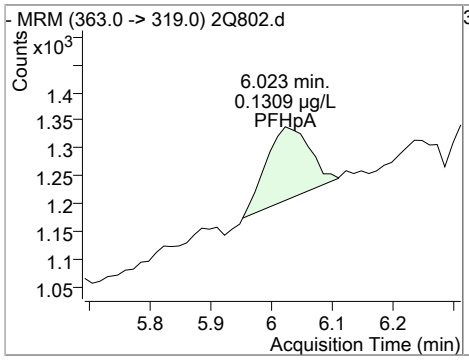
Agilent Technologies

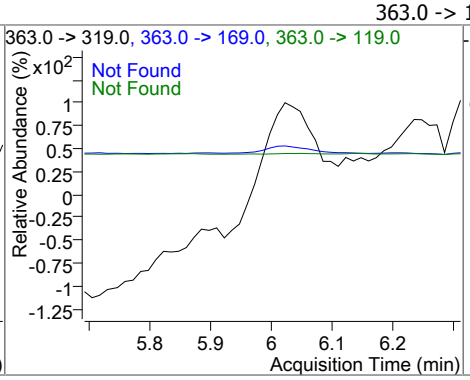
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFHxS	N.D.	5.97	399.0 -> 99.0	53.6

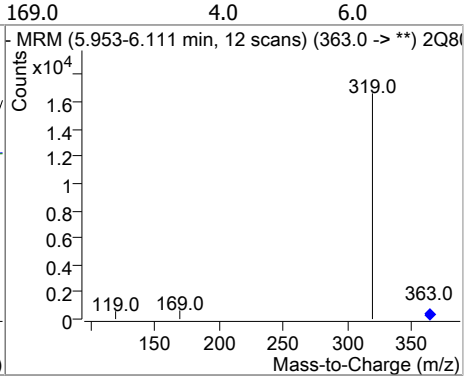




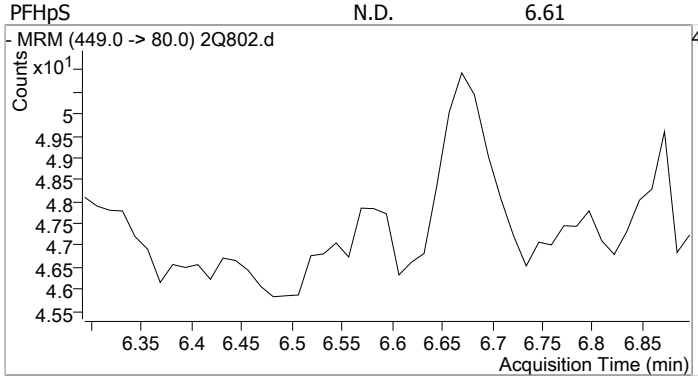
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.13	6.02	0.04	646	363.0 -> 119.0		4.0	6.0
					363.0 -> 169.0		4.0	6.0

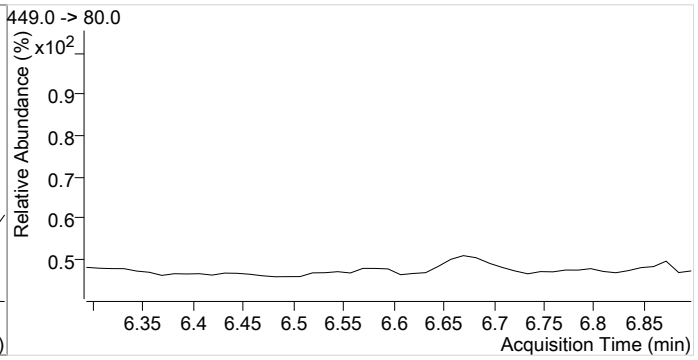




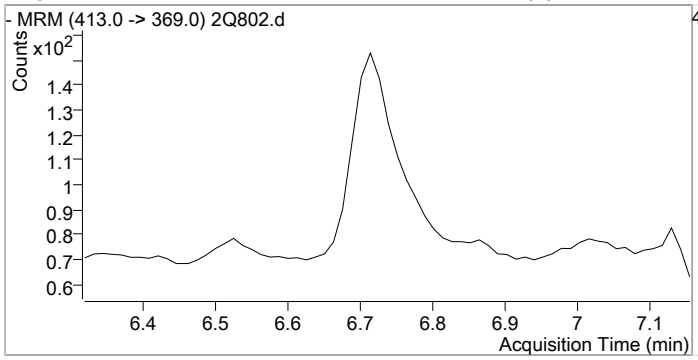


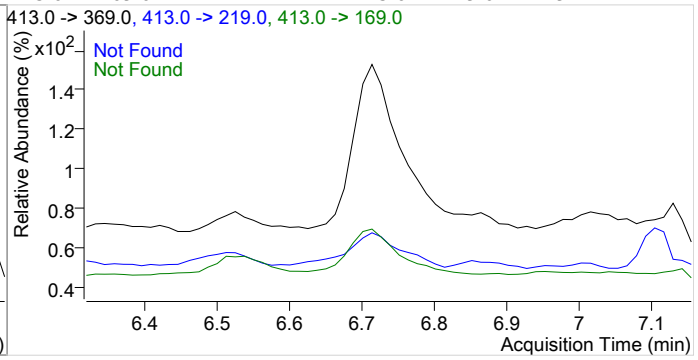
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFHpS	N.D.	6.61		





Compound	Conc.	Exp RT	QIon	Exp Ratio	QIon	Exp Ratio
PFOA	N.D.	6.64	413.0 -> 169.0	27.2	413.0 -> 219.0	12.9

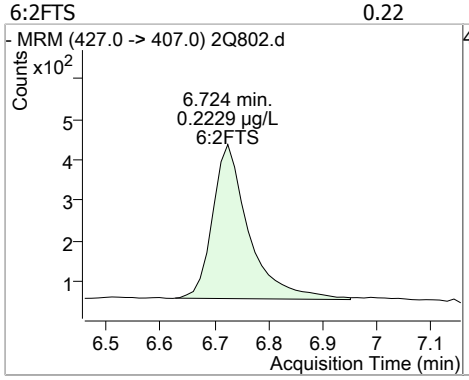


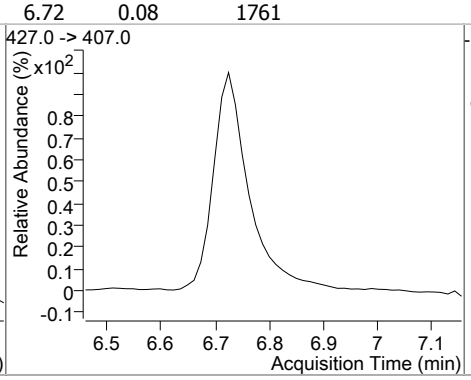


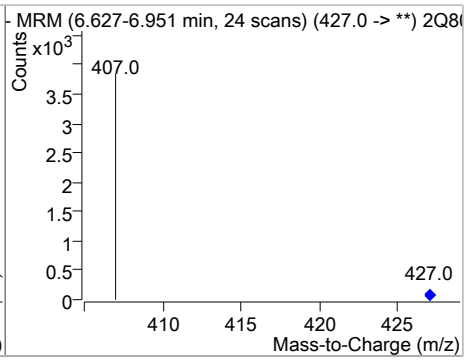
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

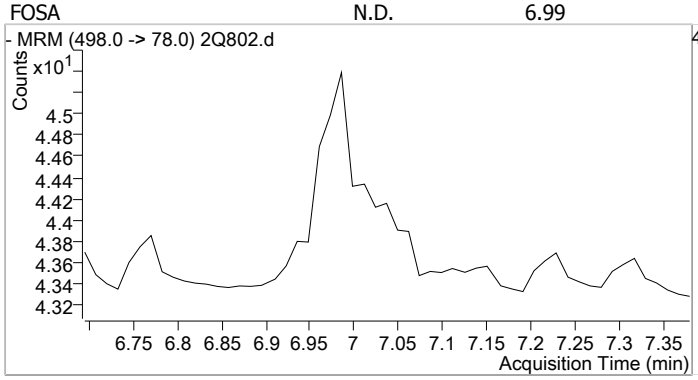
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.22	6.72	0.08	1761				

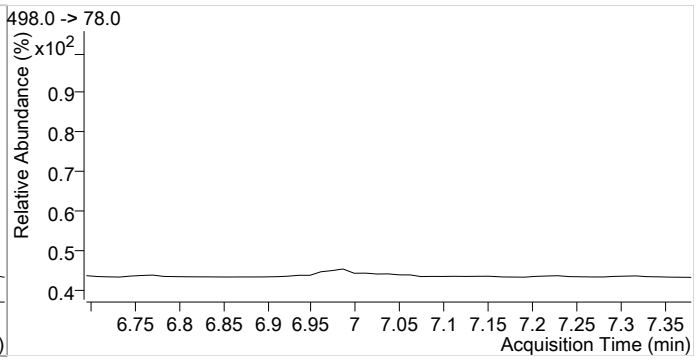




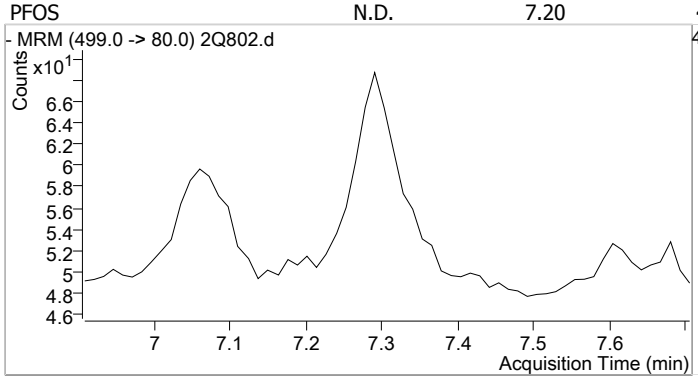


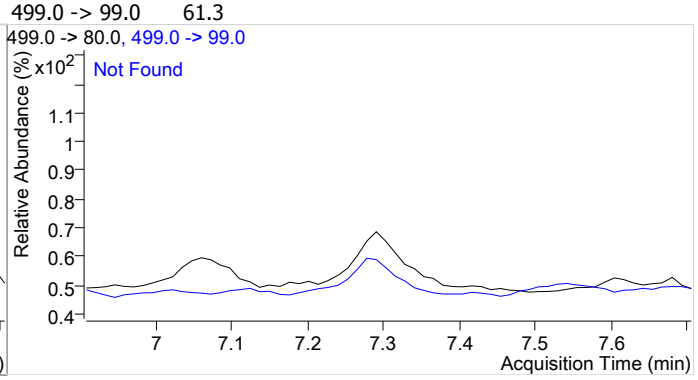
Compound	Conc.	Exp RT	QIon	Exp Ratio
FOSA	N.D.	6.99		



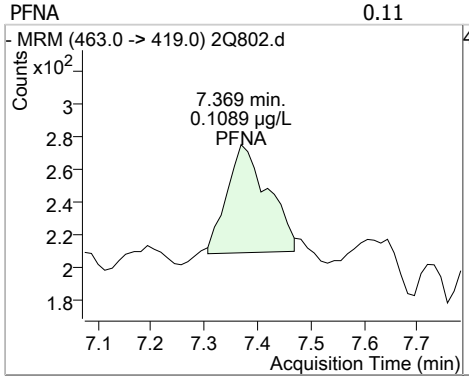


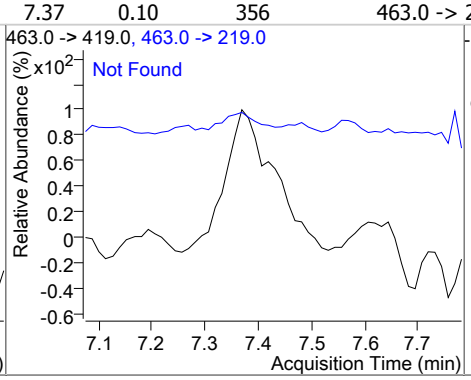
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFOS	N.D.	7.20	499.0 -> 99.0	61.3

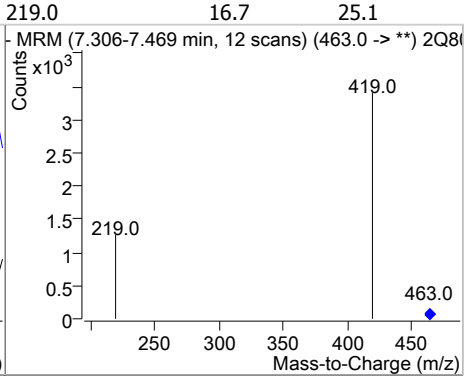




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.11	7.37	0.10	356	463.0 -> 219.0		16.7	25.1







7.11.1

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Perfluorinated Compounds by LC/MS/MS

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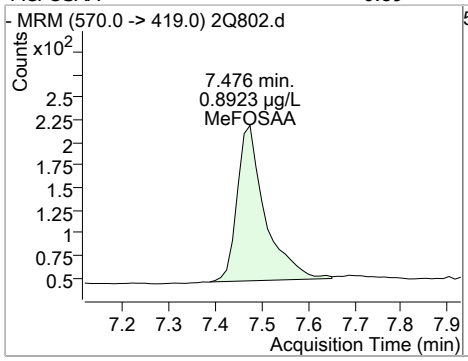
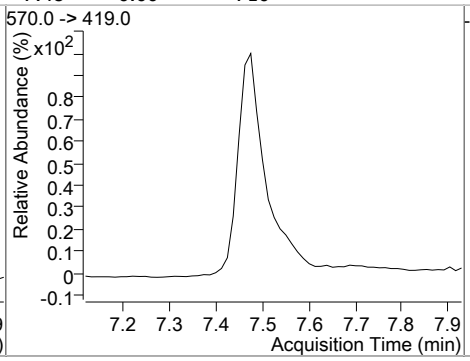
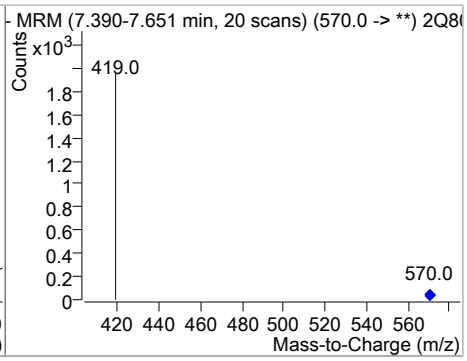
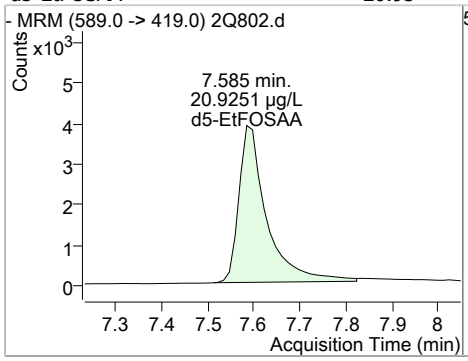
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.89	7.48	0.00	710				

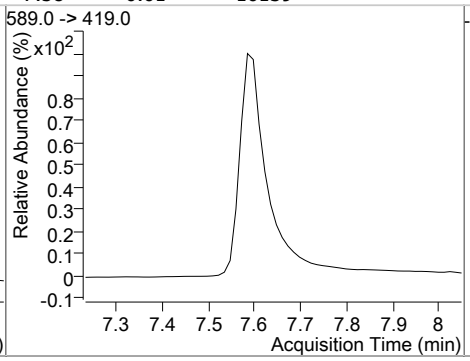


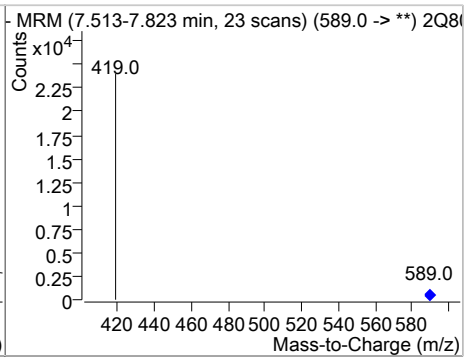




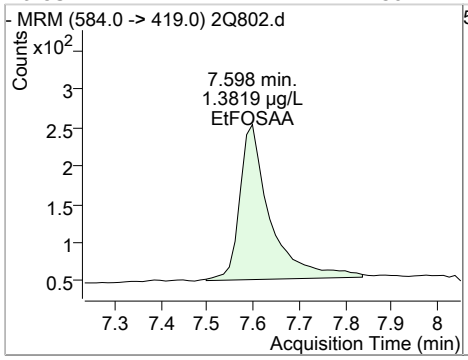
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.93	7.58	-0.01	16139				

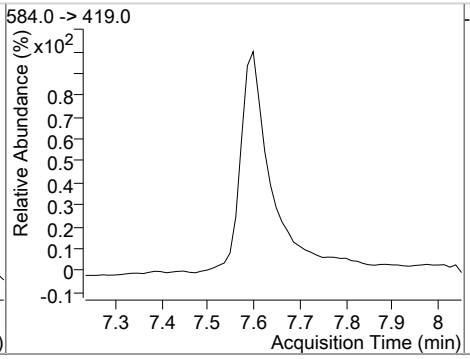


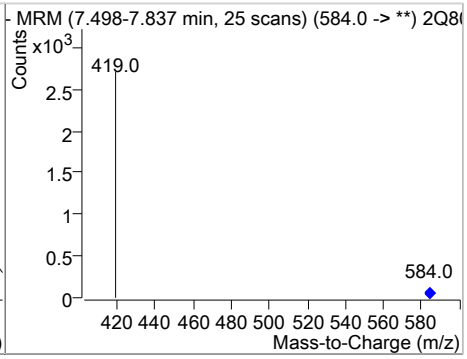




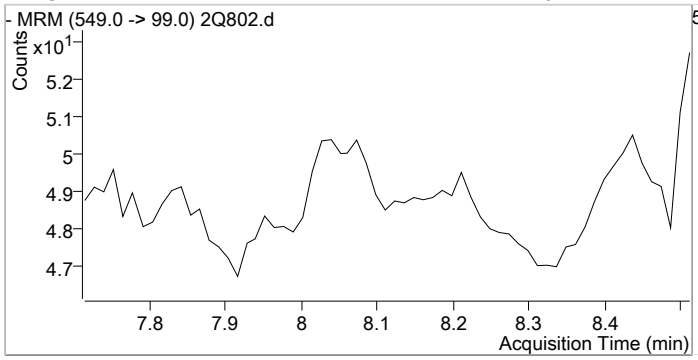
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.38	7.60	0.00	932				

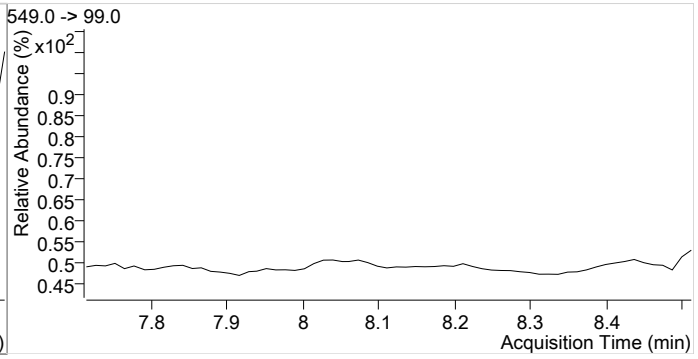






Compound	Conc.	Exp RT	QIon	Exp Ratio
PFNS	N.D.	7.87		





Perfluorinated Compounds by LC/MS/MS

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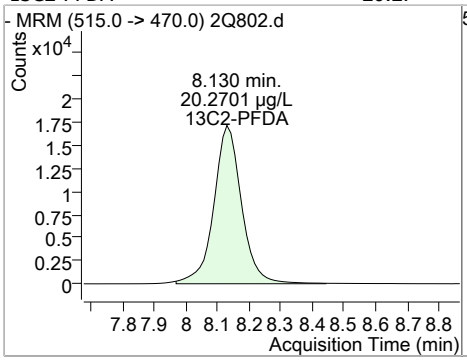
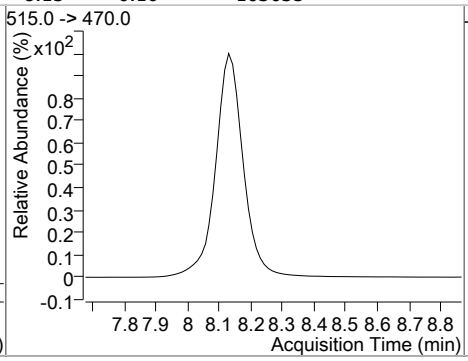
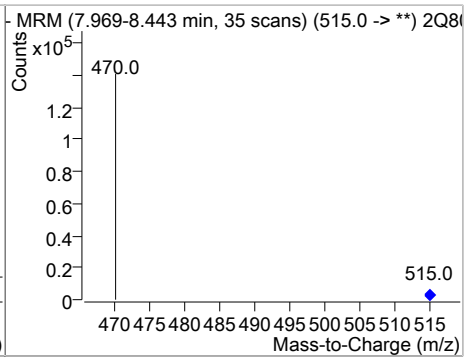
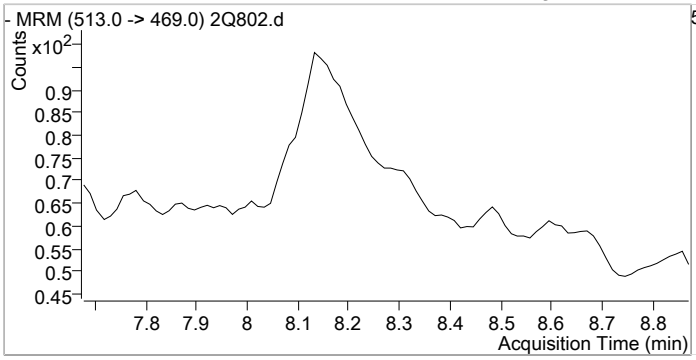
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	20.27	8.13	0.16	103635				

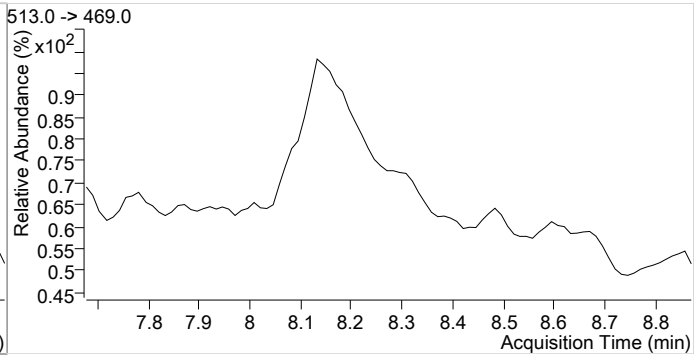




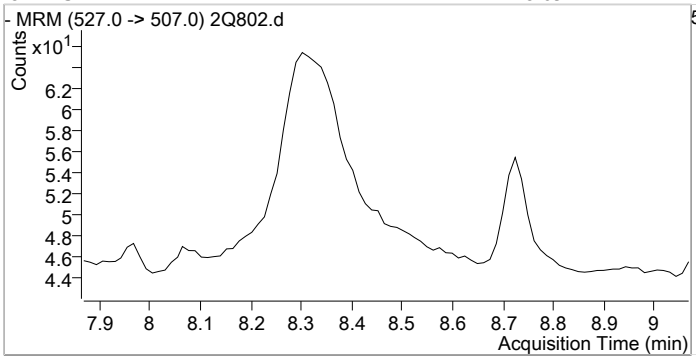


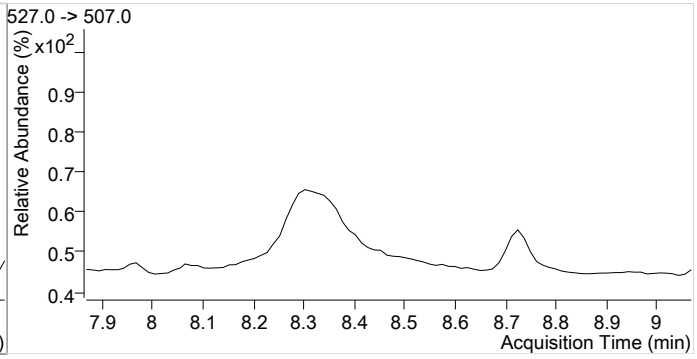
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFDA	N.D.	7.97		



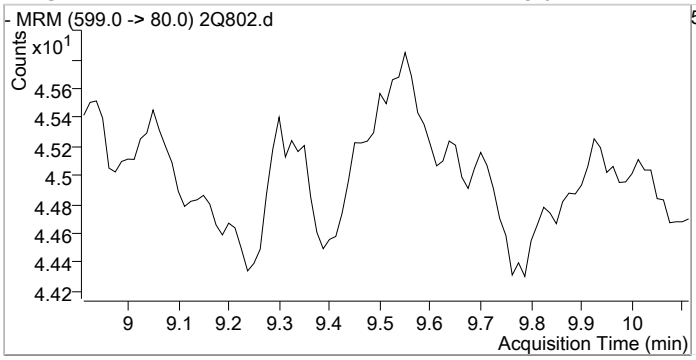


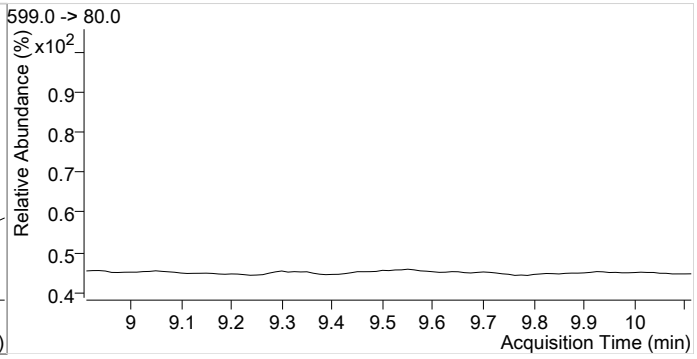
Compound	Conc.	Exp RT	QIon	Exp Ratio
8:2FTS	N.D.	8.09		





Compound	Conc.	Exp RT	QIon	Exp Ratio
PFDS	N.D.	9.02		

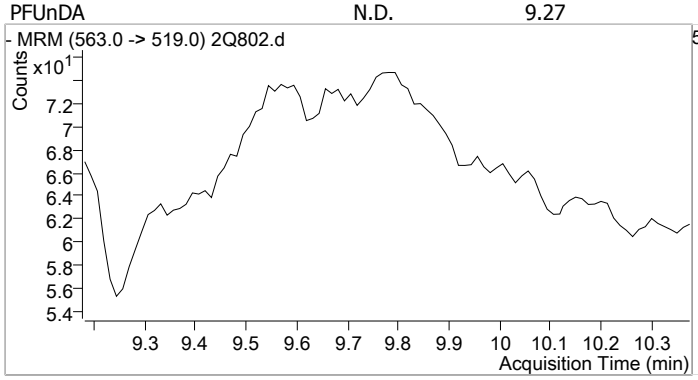


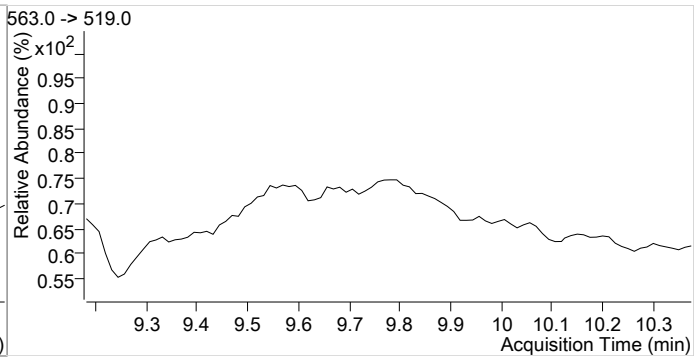


Perfluorinated Compounds by LC/MS/MS

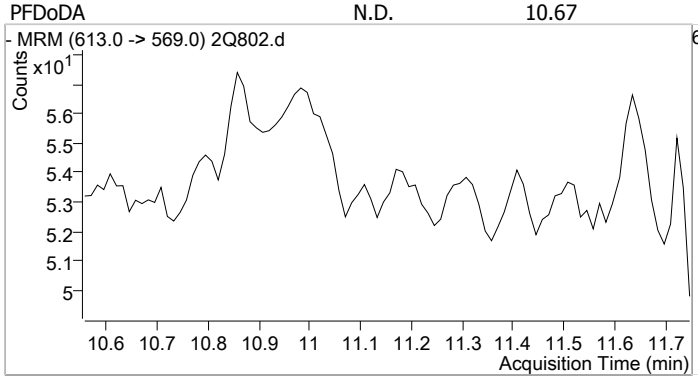
Agilent Technologies

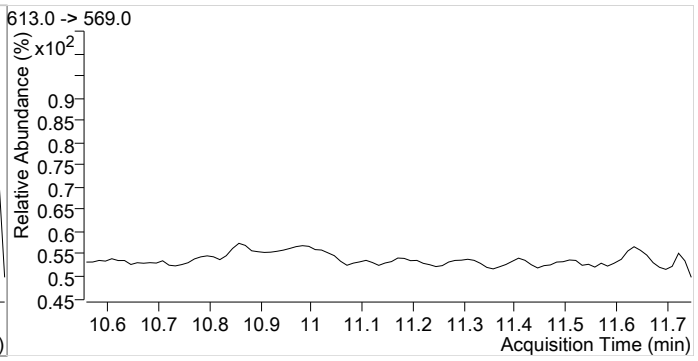
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFUnDA	N.D.	9.27		



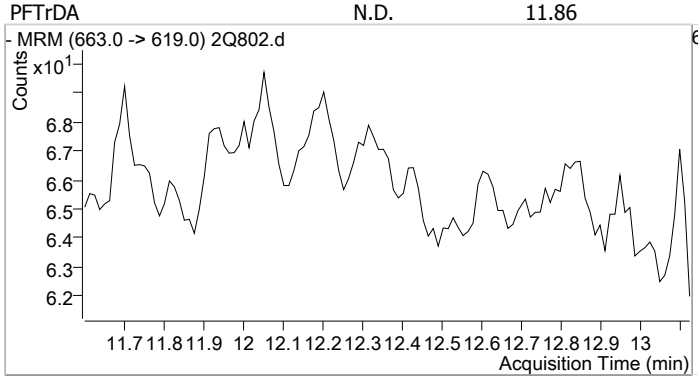


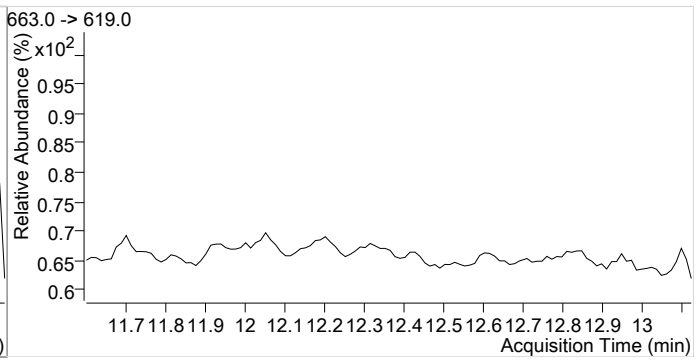
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFDoDA	N.D.	10.67		



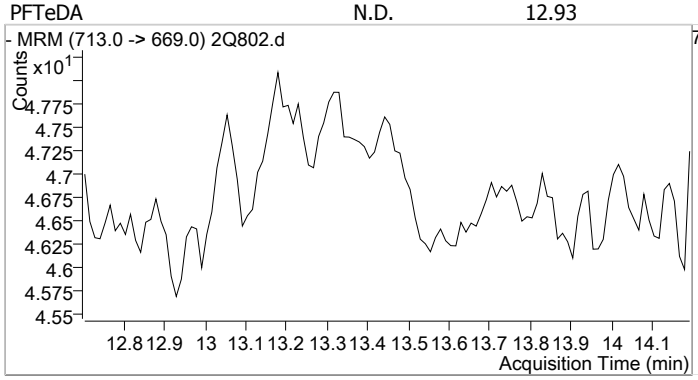


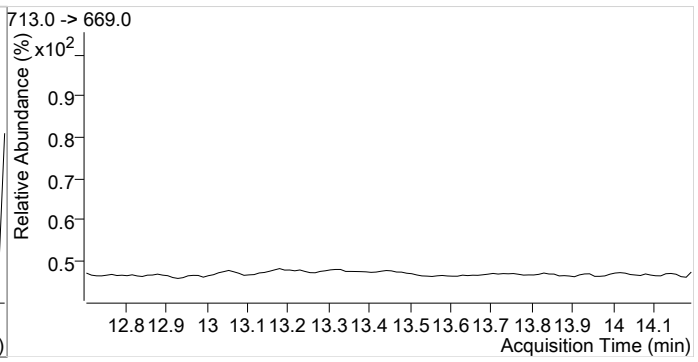
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFTrDA	N.D.	11.86		





Compound	Conc.	Exp RT	QIon	Exp Ratio
PFTeDA	N.D.	12.93		





Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

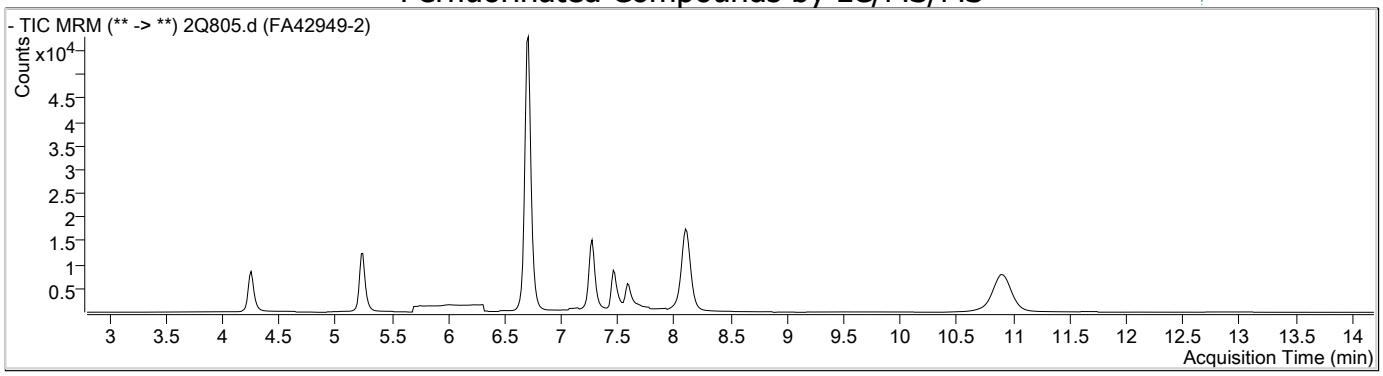
Data File	:	2Q805.d
Operator	:	NANCYF
Acq. Method	:	dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time	:	4/27/2017 11:49:37 AM
Sample Name	:	FA42949-2
Vial	:	Vial 18
DA Method File	:	PFCLISTDW_0420_S2Q18.m
Batch Name	:	S2Q23.batch.bin
Last Calib Update	:	4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.710	429.0 -> 409.0	171997	20.00	µg/L	0.063
13C2-PFDoDA	10.889	615.0 -> 570.0	97045	20.00	µg/L	0.225
13C2-PFOA	6.701	415.0 -> 370.0	56708	20.00	µg/L	0.064
13C3-PFPeA	4.259	266.0 -> 222.0	30775	20.00	µg/L	0.025
13C4-PFOS	7.276	503.0 -> 80.0	56778	20.00	µg/L	0.077
d3-MeFOSAA	7.462	573.0 -> 419.0	30501	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-PFDA	8.105	515.0 -> 470.0	103906	26.19	µg/L	0.135
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 130.9%		
13C2-PFHxA	5.247	315.0 -> 270.0	45520	15.20	µg/L	0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 76.0%		
d5-EtFOSAA	7.585	589.0 -> 419.0	17970	23.55	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 117.7%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	6.712	427.0 -> 407.0	1794	0.22	µg/L	100
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	7.598	584.0 -> 419.0	2701	4.06	µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	7.476	570.0 -> 419.0	2597	3.30	µg/L	100
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	8.120	513.0 -> 469.0	617	0.22	µg/L	100
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.011	363.0 -> 319.0	749	0.20	µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.237	313.0 -> 269.0	514	0.40	µg/L	85
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	7.382	463.0 -> 419.0	636	0.25	µg/L	55
PFNS	-	549.0 -> 99.0	-	N.D.		
PFOA	6.715	413.0 -> 369.0	366	0.16	µg/L	54
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	4.338	263.0 -> 219.0	773	0.33	µg/L	100
PFPeS	-	349.0 -> 99.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

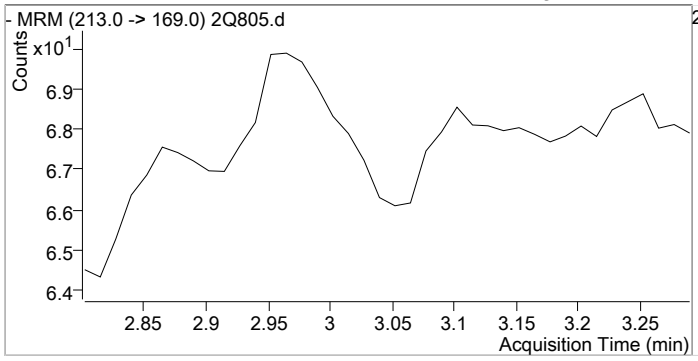
 # = Qualifier out of range, m = manually integrated, + = Area summed

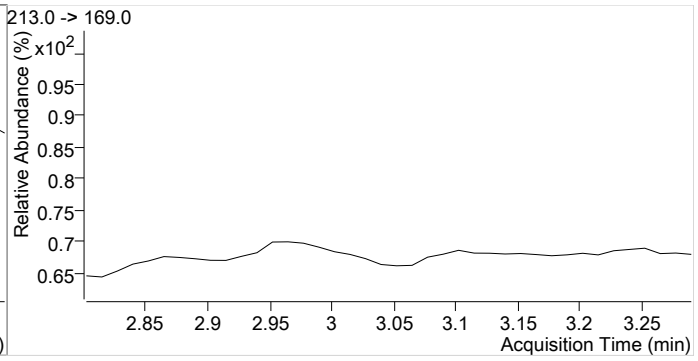
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

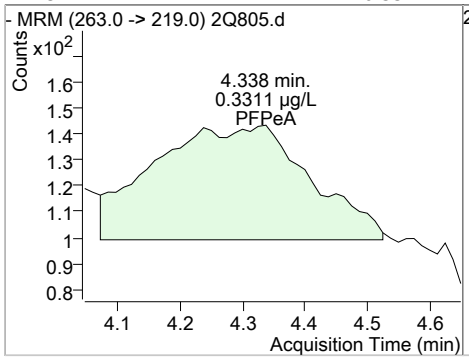


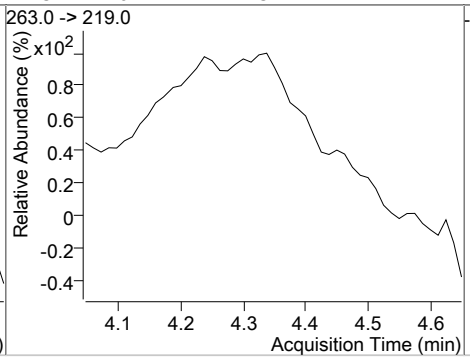
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFBA	N.D.	2.94		

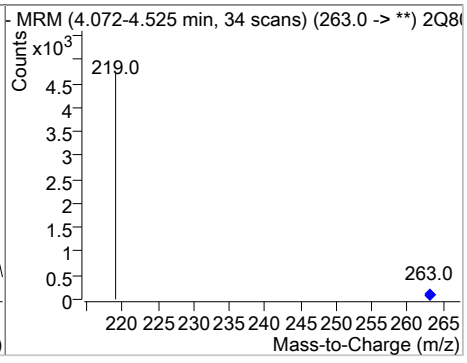




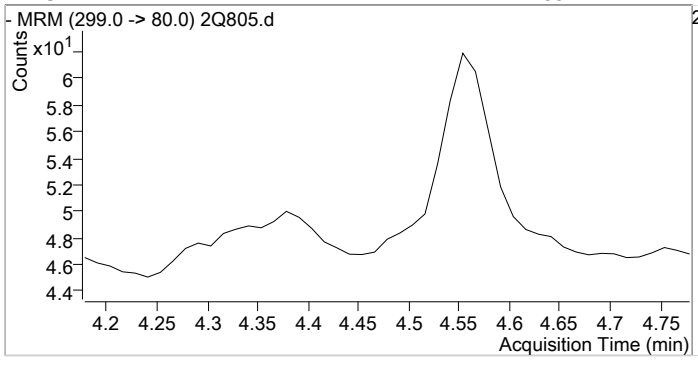
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.33	4.34	0.11	773				

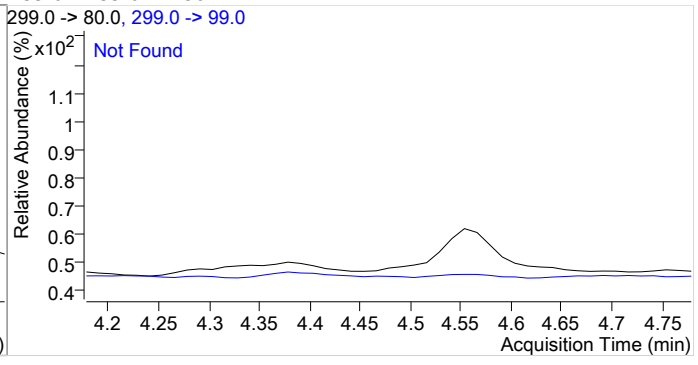






Compound	Conc.	Exp RT	QIon	Exp Ratio
PFBS	N.D.	4.35	299.0 -> 99.0	38.1

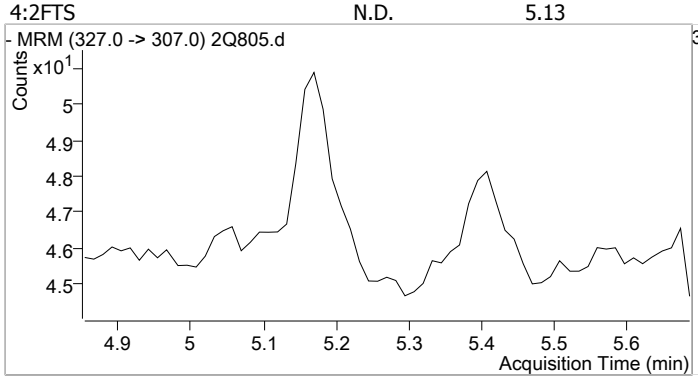


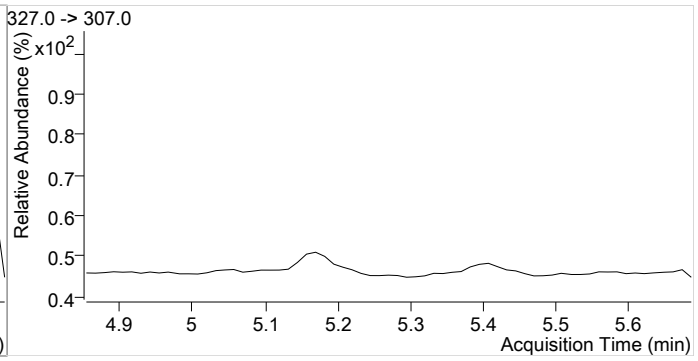


Perfluorinated Compounds by LC/MS/MS

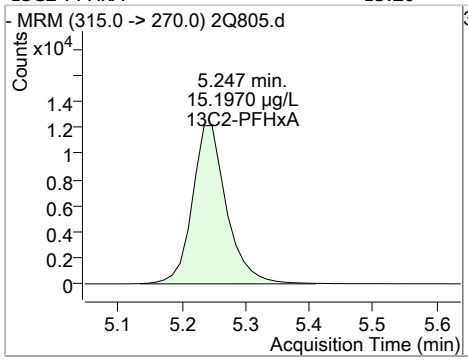
Agilent Technologies

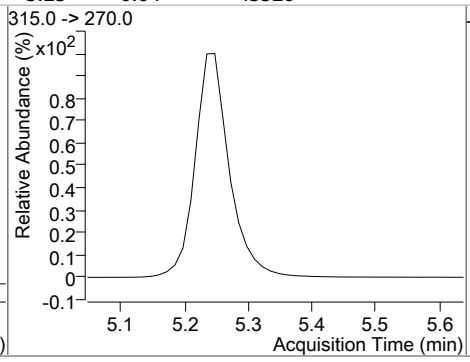
Compound	Conc.	Exp RT	QIon	Exp Ratio
4:2FTS	N.D.	5.13		

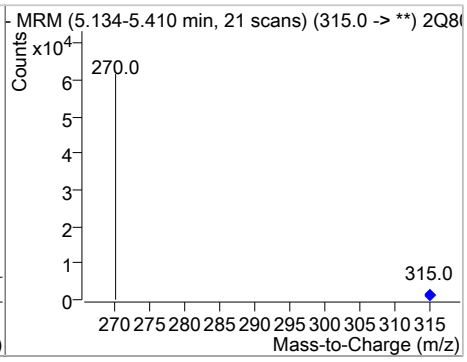




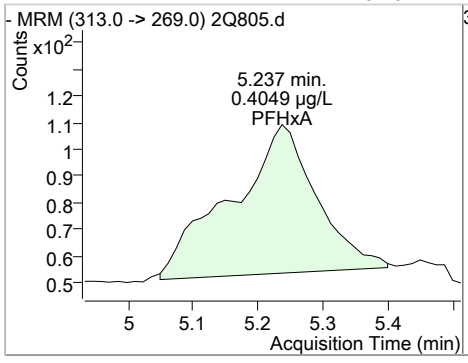
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	15.20	5.25	0.04	45520				

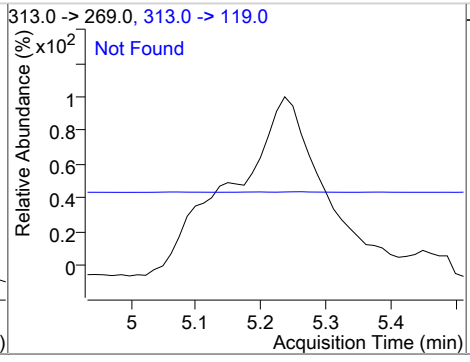


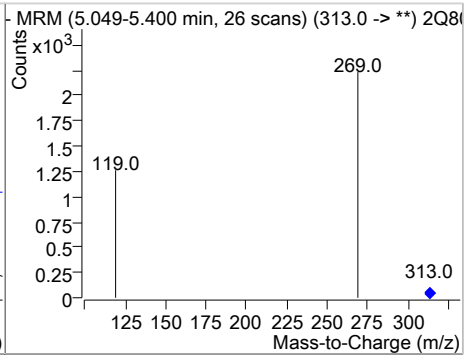




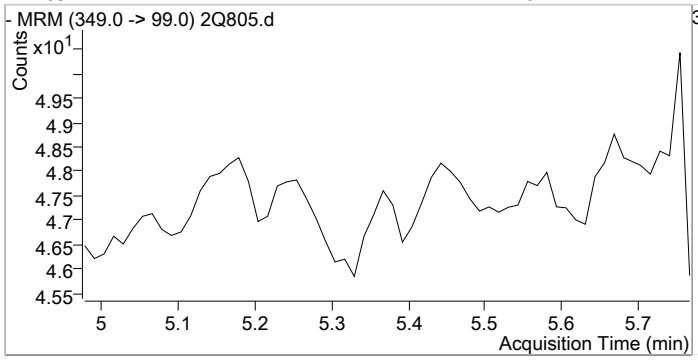
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.40	5.24	0.03	514	313.0 -> 119.0		4.0	6.0

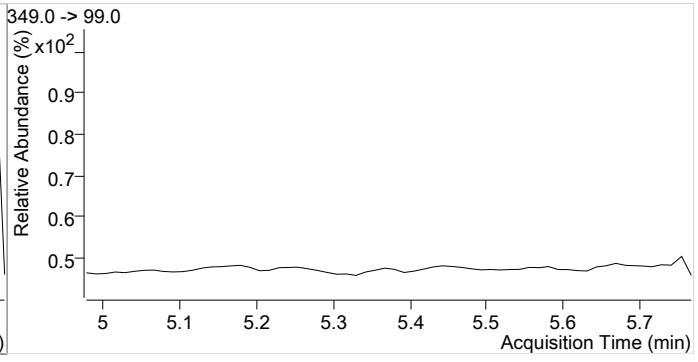






Compound	Conc.	Exp RT	QIon	Exp Ratio
PFPeS	N.D.	5.24		





Perfluorinated Compounds by LC/MS/MS

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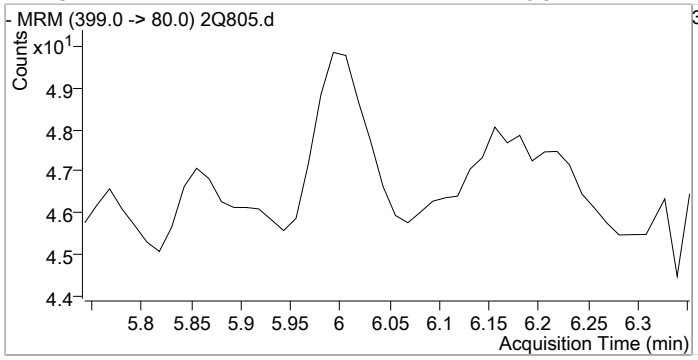
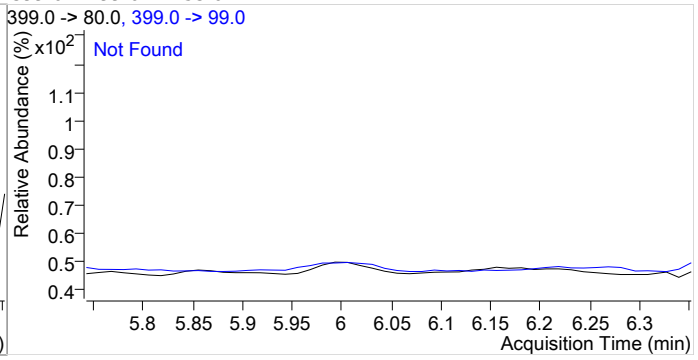
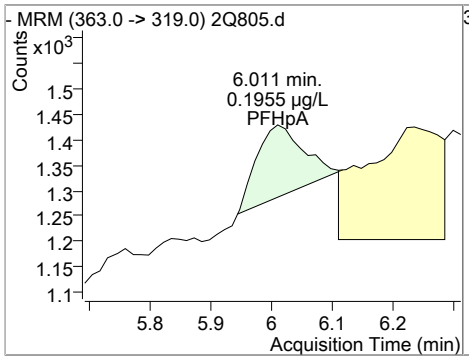
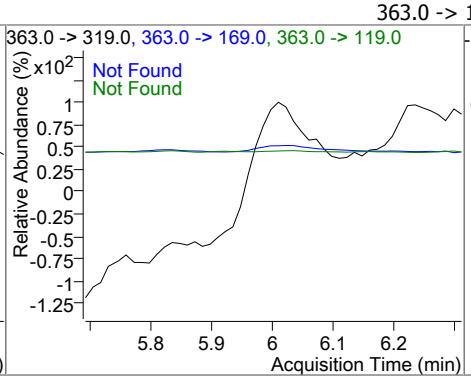
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFHxS	N.D.	5.97	399.0 -> 99.0	53.6

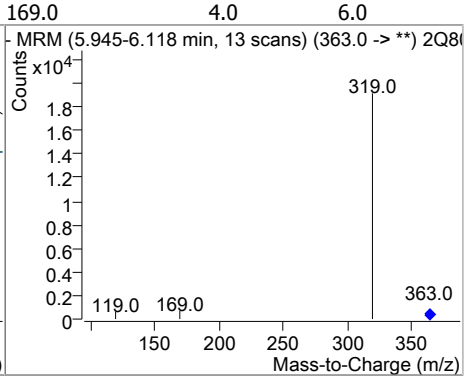




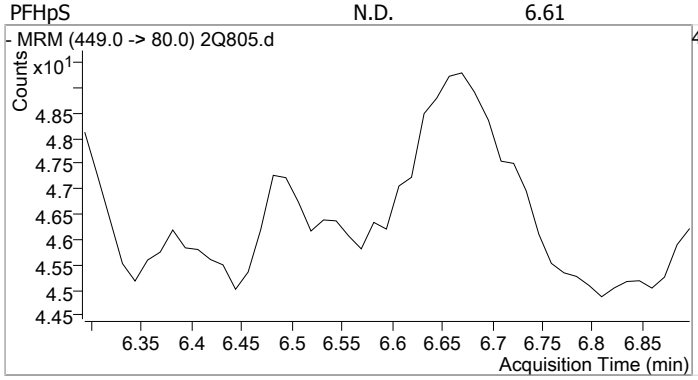
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.20	6.01	0.03	749	363.0 -> 119.0		4.0	6.0
					363.0 -> 169.0		4.0	6.0

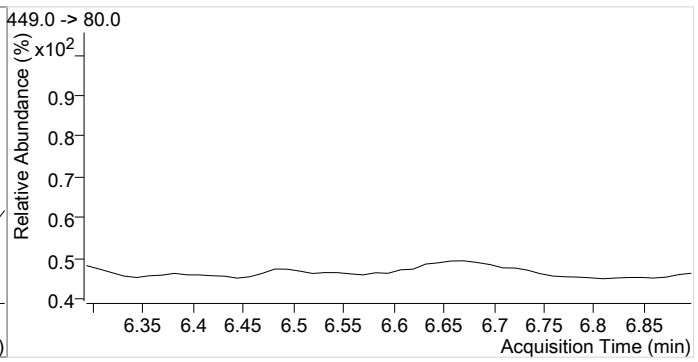




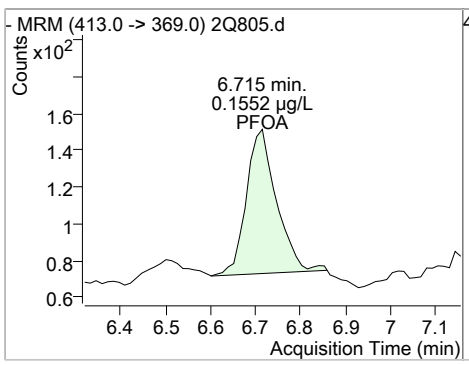


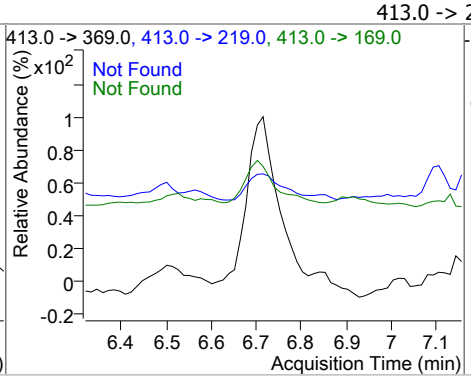
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFHpS	N.D.	6.61		

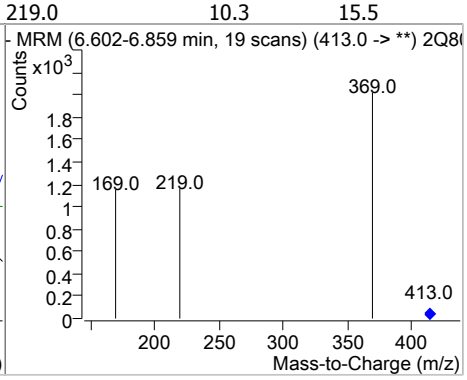




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.16	6.72	0.08	366	413.0 -> 169.0		21.8	32.6
					413.0 -> 219.0		10.3	15.5







Perfluorinated Compounds by LC/MS/MS

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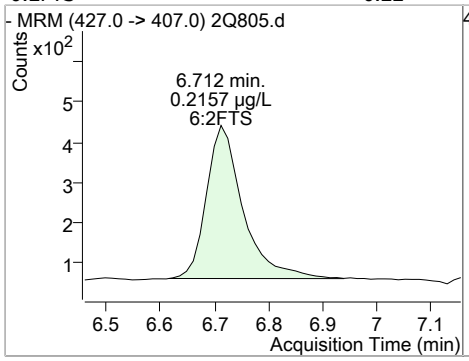
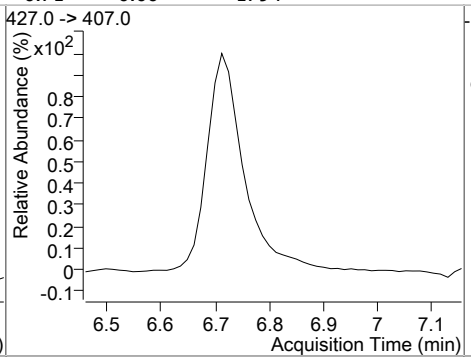
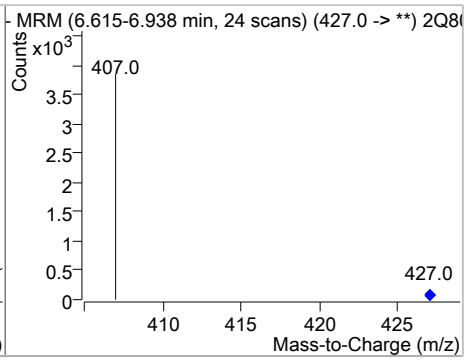
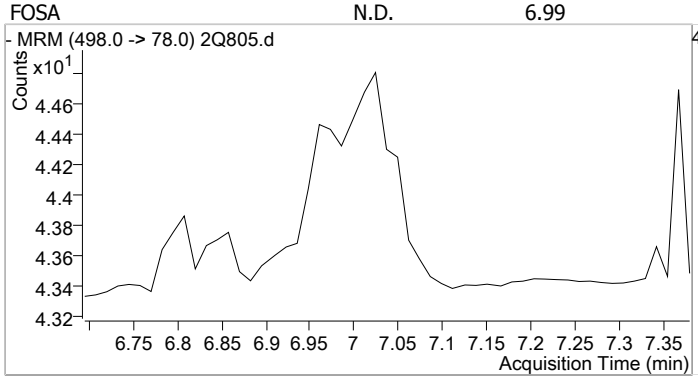
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.22	6.71	0.06	1794				

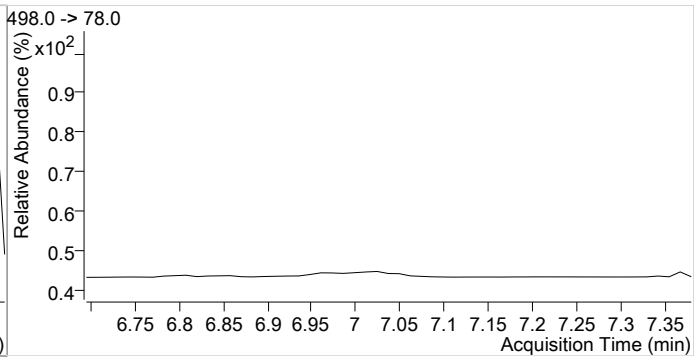




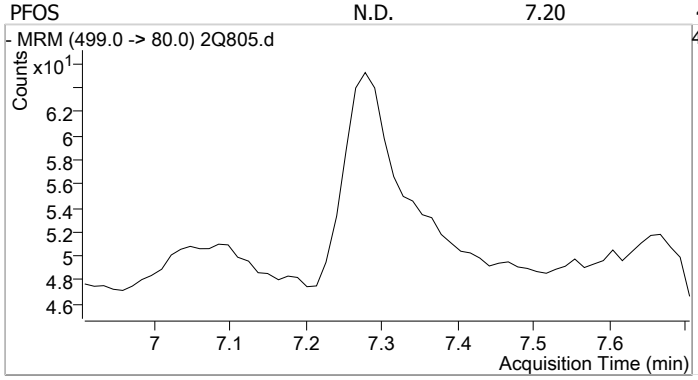


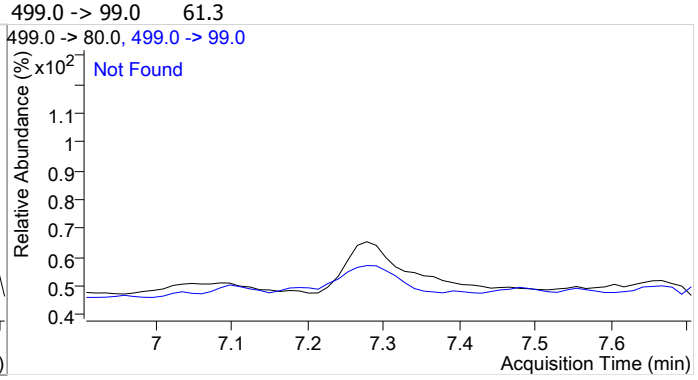
Compound	Conc.	Exp RT	QIon	Exp Ratio
FOSA	N.D.	6.99		



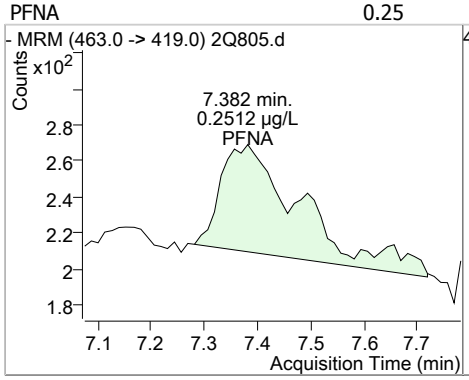


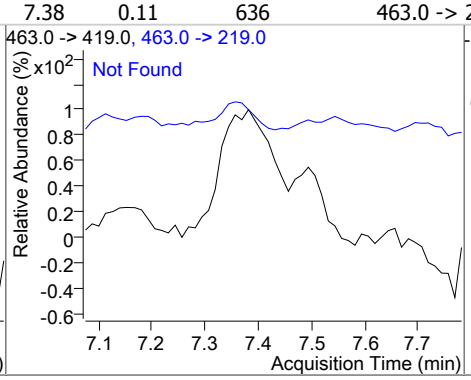
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFOS	N.D.	7.20	499.0 -> 99.0	61.3

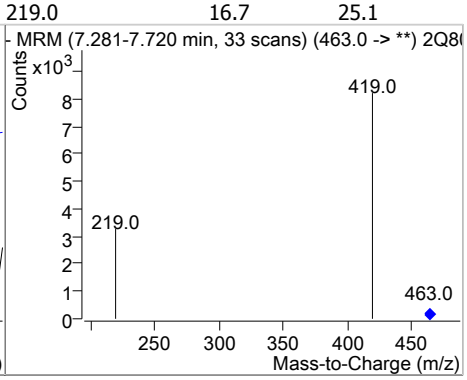




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.25	7.38	0.11	636	463.0 -> 219.0		16.7	25.1



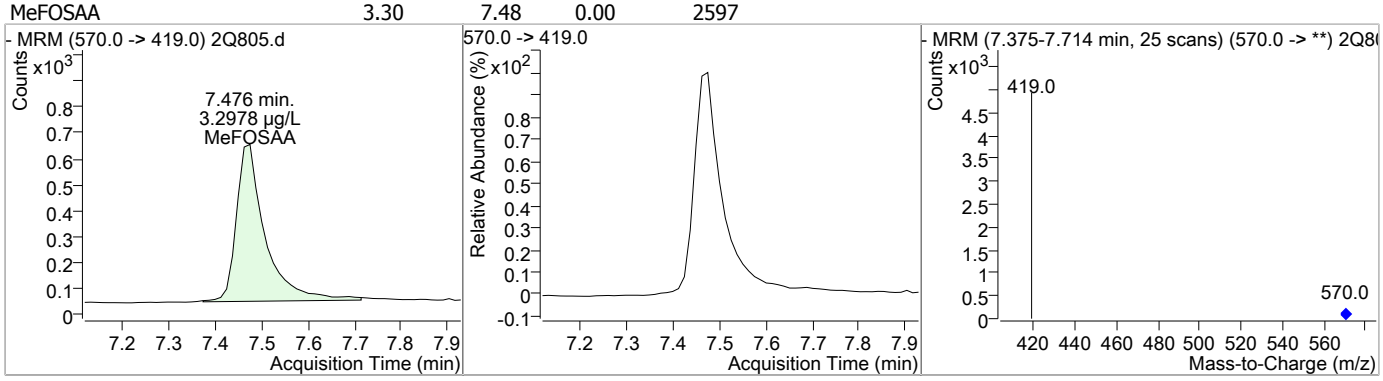




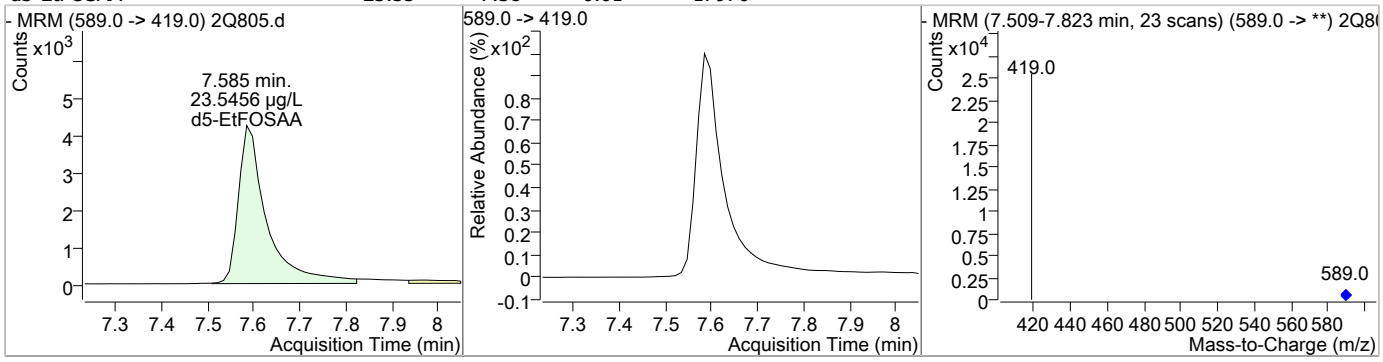
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

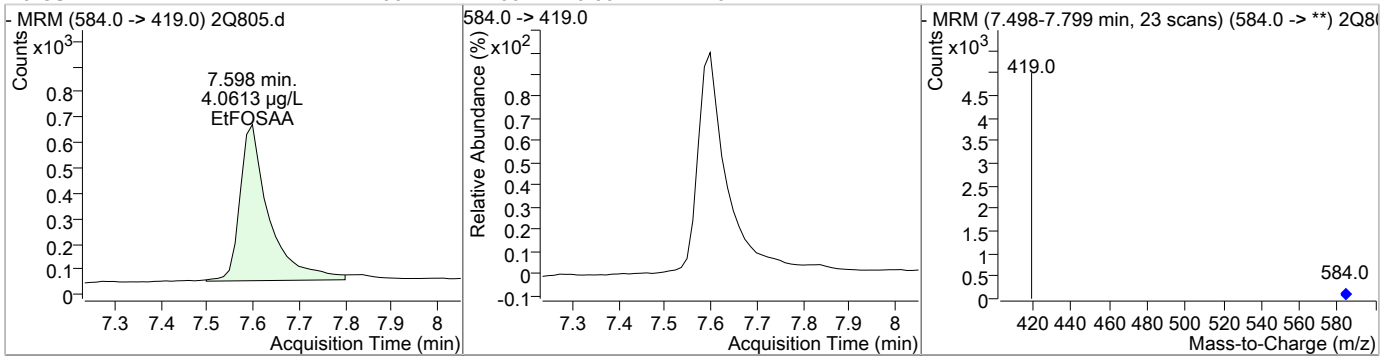
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	3.30	7.48	0.00	2597				



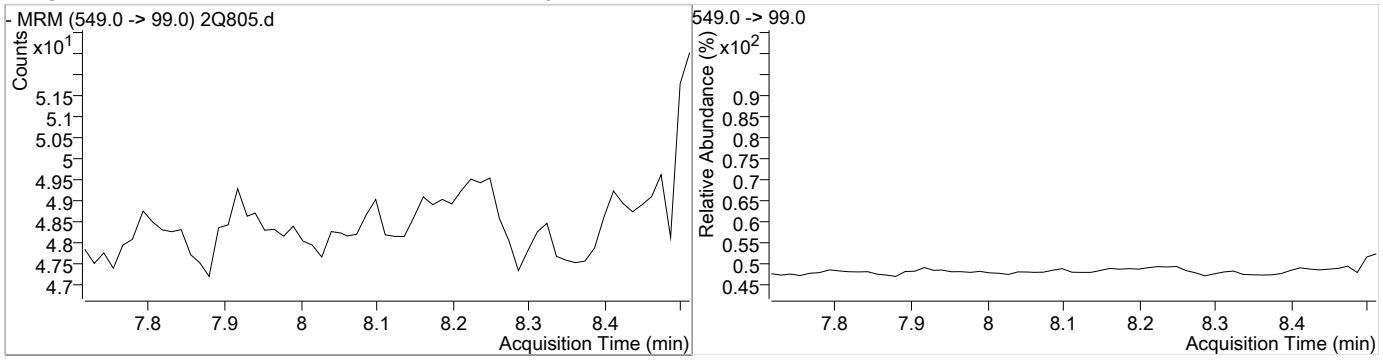
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.55	7.58	-0.01	17970				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.06	7.60	0.00	2701				



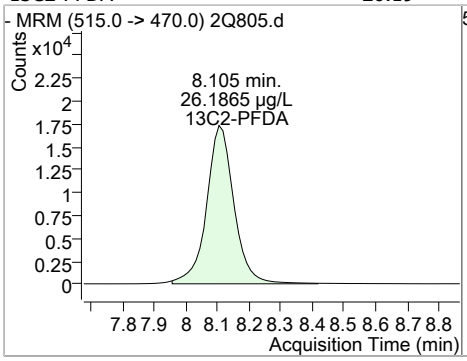
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFNS	N.D.	7.87		

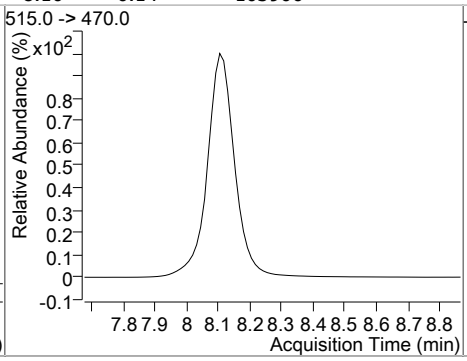


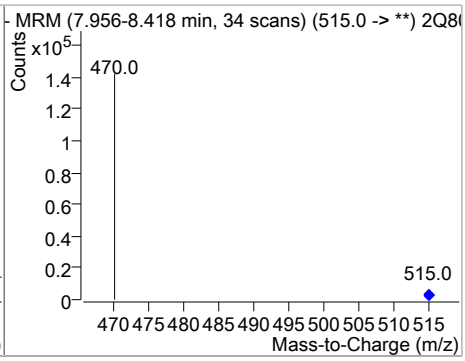
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

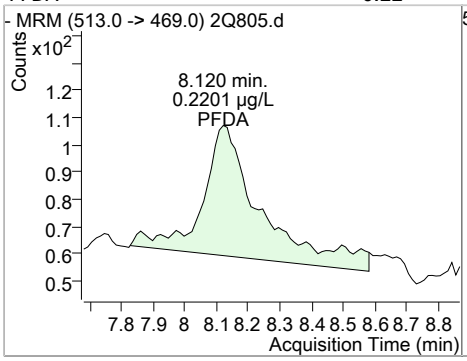
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	26.19	8.10	0.14	103906				

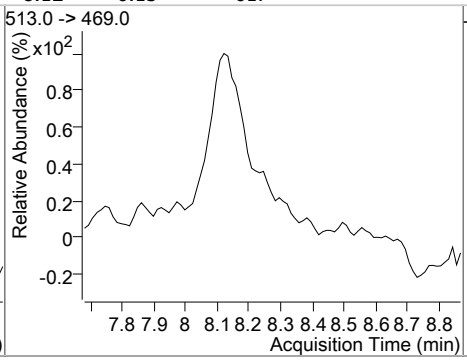


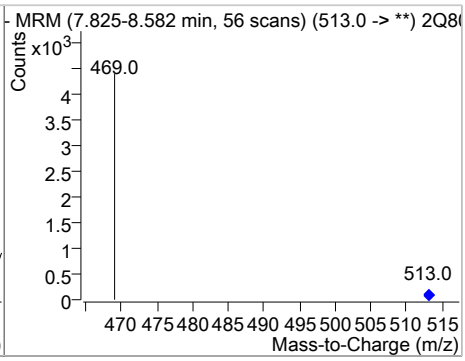




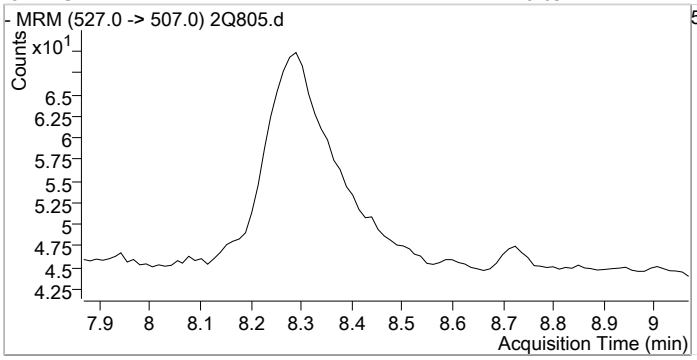
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.22	8.12	0.15	617				

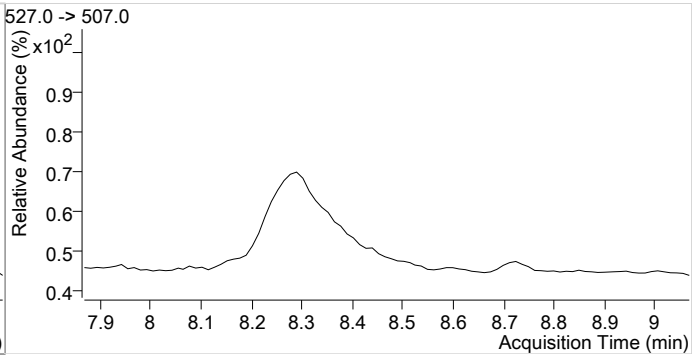




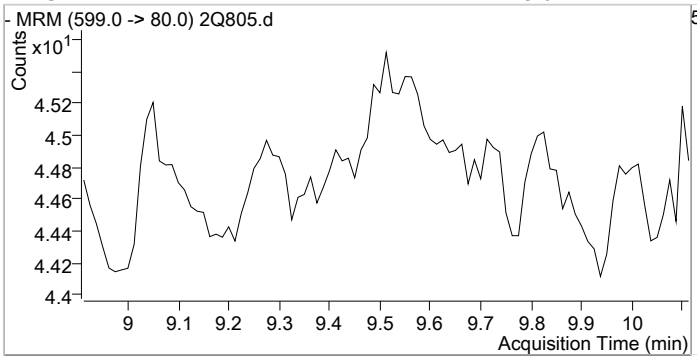


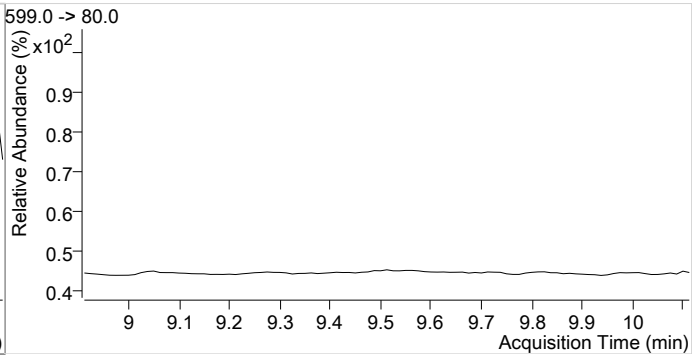
Compound	Conc.	Exp RT	QIon	Exp Ratio
8:2FTS	N.D.	8.09		





Compound	Conc.	Exp RT	QIon	Exp Ratio
PFDS	N.D.	9.02		





Perfluorinated Compounds by LC/MS/MS

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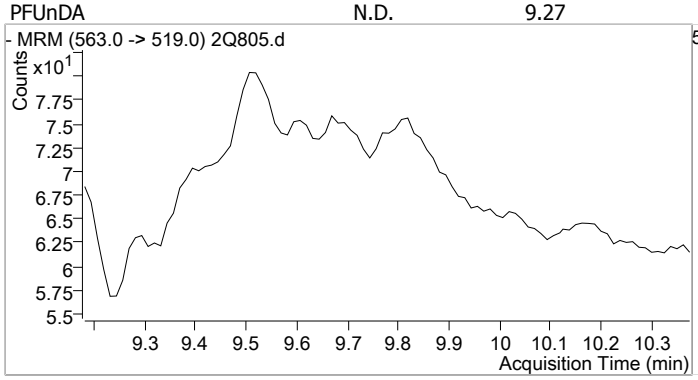
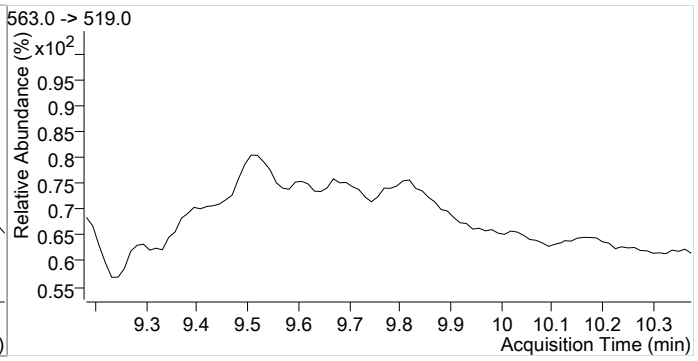
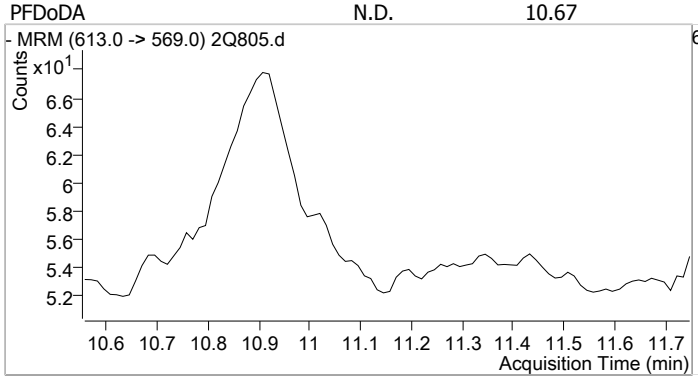
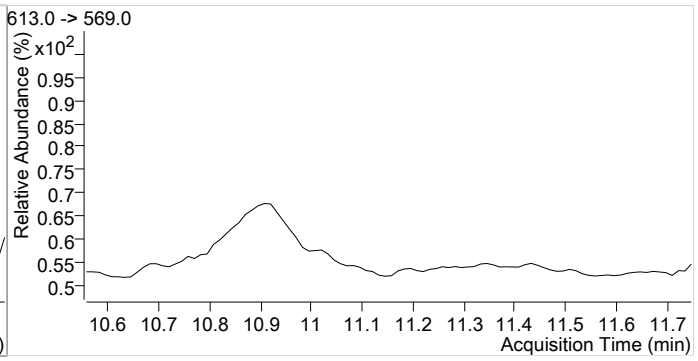
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFUnDA	N.D.	9.27		



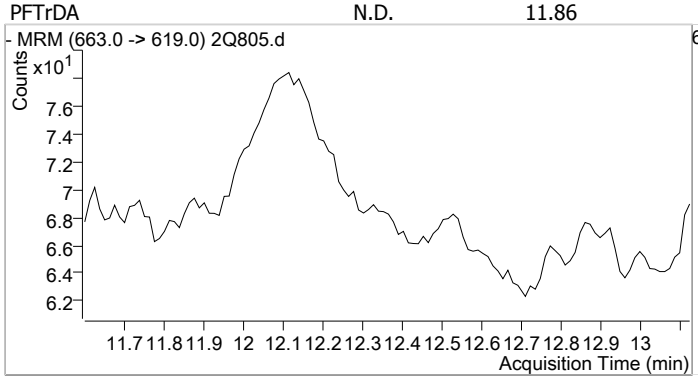


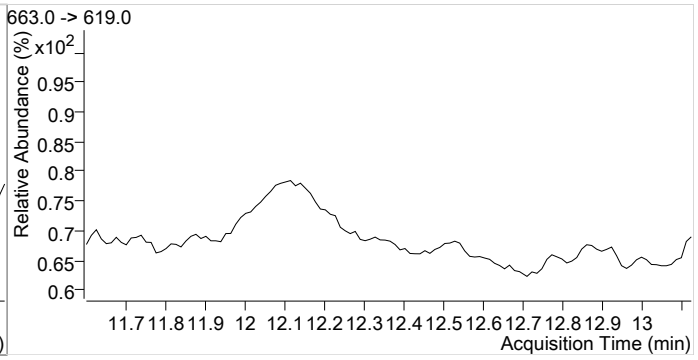
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFDoDA	N.D.	10.67		



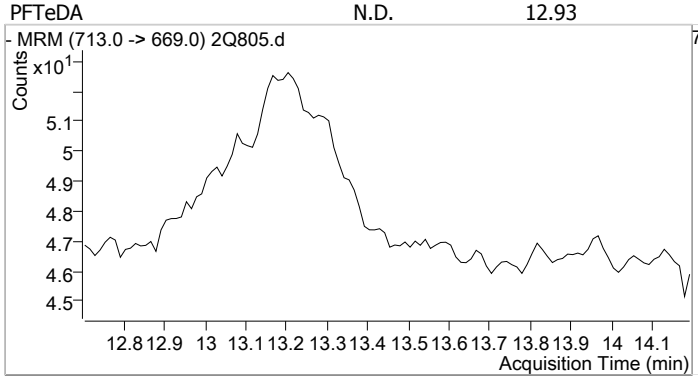


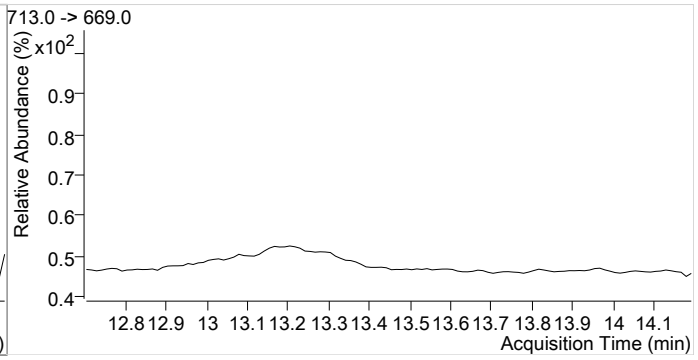
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFTrDA	N.D.	11.86		





Compound	Conc.	Exp RT	QIon	Exp Ratio
PFTeDA	N.D.	12.93		





Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

Data File	:	2Q801.d
Operator	:	NANCYF
Acq. Method	:	dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time	:	4/27/2017 10:30:34 AM
Sample Name	:	OP64782-MB
Vial	:	Vial 14
DA Method File	:	PFCLISTDW_0420_S2Q18.m
Batch Name	:	S2Q23.batch.bin
Last Calib Update	:	4/27/2017 2:25:49 PM

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.723	429.0 -> 409.0	158452	20.00	µg/L	0.075
13C2-PFDoDA	10.951	615.0 -> 570.0	92287	20.00	µg/L	0.288
13C2-PFOA	6.713	415.0 -> 370.0	72868	20.00	µg/L	0.076
13C3-PFPeA	4.272	266.0 -> 222.0	68988	20.00	µg/L	0.037
13C4-PFOS	7.289	503.0 -> 80.0	53498	20.00	µg/L	0.090
d3-MeFOSAA	7.475	573.0 -> 419.0	33256	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	8.142	515.0 -> 470.0	115863	22.72	µg/L	0.173
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 113.6%		
13C2-PFHxA	5.260	315.0 -> 270.0	80798	20.99	µg/L	0.050
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 105.0%		
d5-EtFOSAA	7.597	589.0 -> 419.0	18110	21.93	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 109.6%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	6.724	427.0 -> 407.0	3073	0.40	µg/L	100
8:2FTS	8.302	527.0 -> 507.0	2525	0.20	µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	2947	4.06	µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	7.476	570.0 -> 419.0	2844	3.31	µg/L	100
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	8.145	513.0 -> 469.0	1084	0.30	µg/L	100
PFDoDA	10.945	613.0 -> 569.0	1222	0.32	µg/L	100
PFDS	9.325	599.0 -> 80.0	506	0.37	µg/L	100
PFHpA	6.036	363.0 -> 319.0	873	0.18	µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.262	313.0 -> 269.0	503	0.31	µg/L	85
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	7.369	463.0 -> 419.0	744	0.23	µg/L	55
PFNS	-	549.0 -> 99.0	-	N.D.		
PFOA	6.728	413.0 -> 369.0	419	0.14	µg/L	54
PFOS	7.290	499.0 -> 80.0	908	0.29	µg/L	97
PFPeA	4.275	263.0 -> 219.0	516	0.10	µg/L	100
PFPeS	-	349.0 -> 99.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	12.140	663.0 -> 619.0	556	0.17	µg/L	100
PFUnDA	9.569	563.0 -> 519.0	1568	0.39	µg/L	100

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

Perfluorinated Compounds by LC/MS/MS

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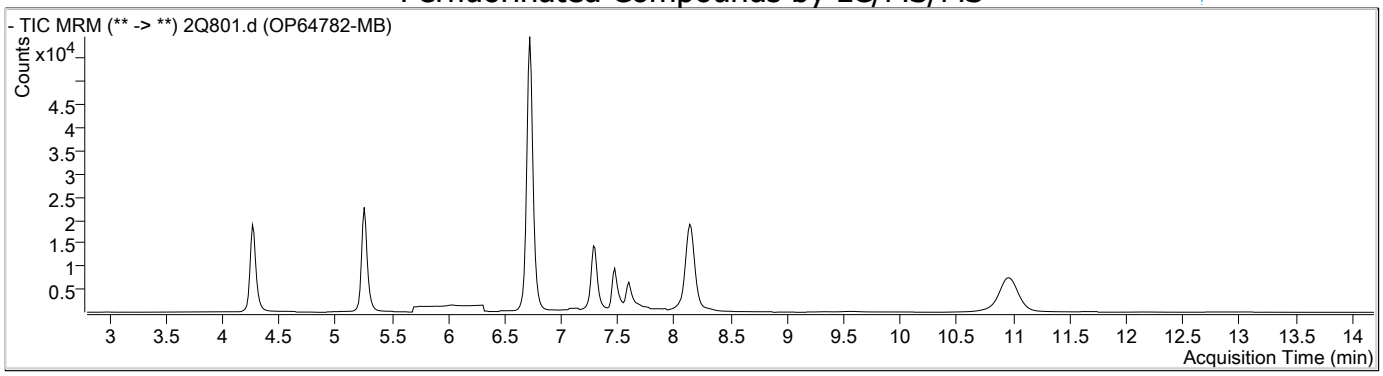
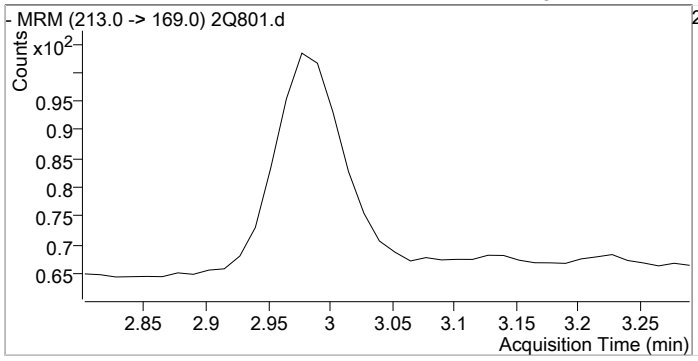
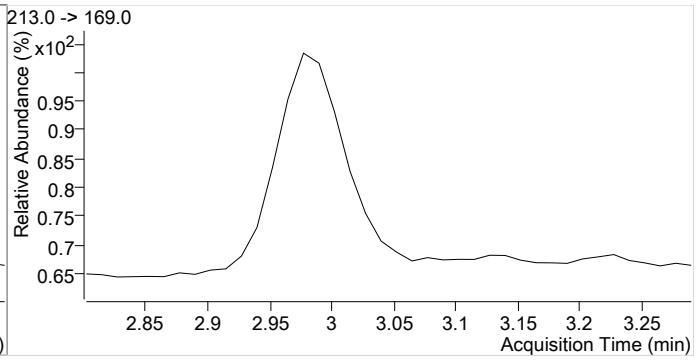
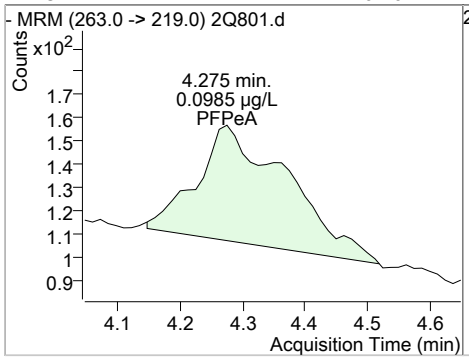


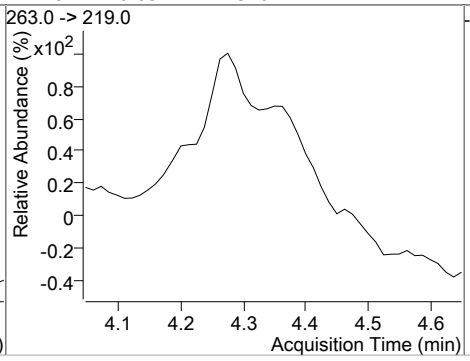
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFBA	N.D.	2.94		

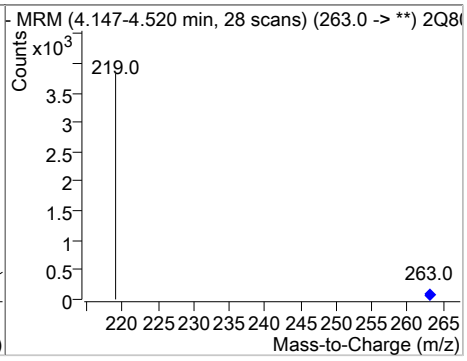




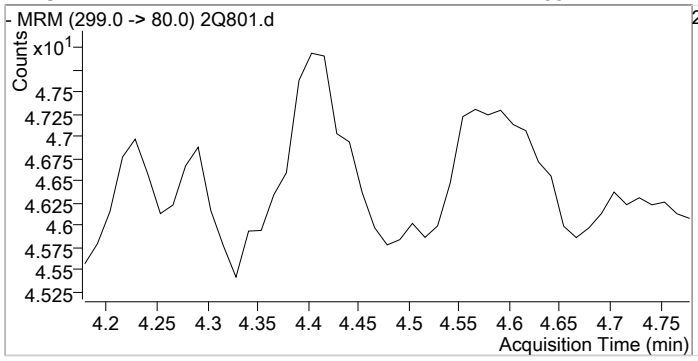
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.10	4.28	0.05	516				

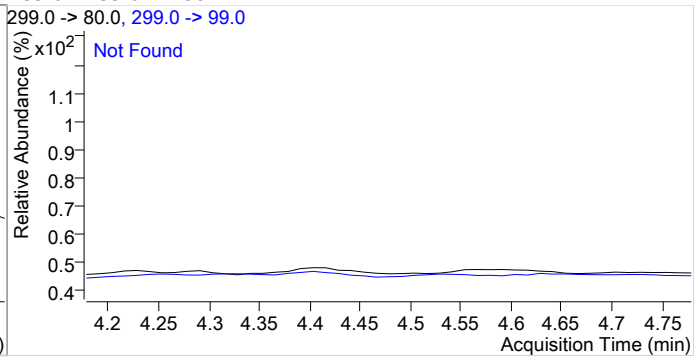






Compound	Conc.	Exp RT	QIon	Exp Ratio
PFBS	N.D.	4.35	299.0 -> 99.0	38.1





Perfluorinated Compounds by LC/MS/MS

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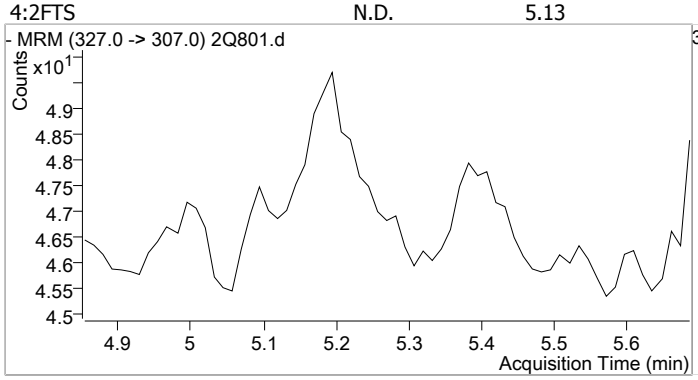
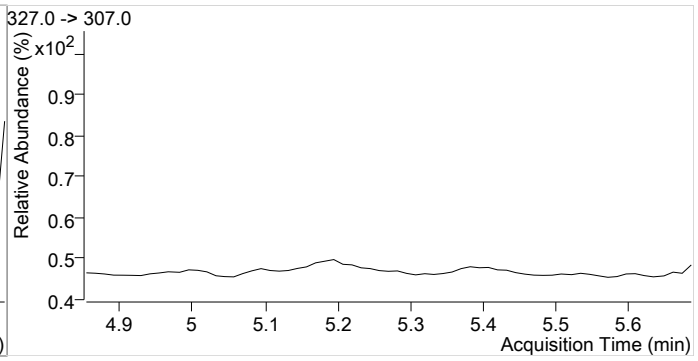
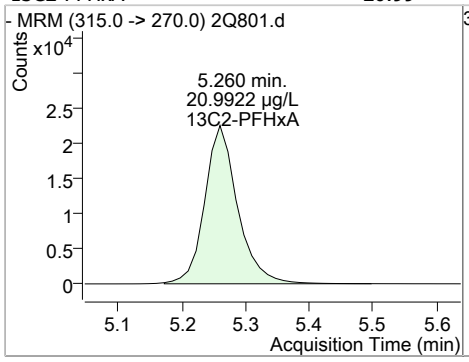
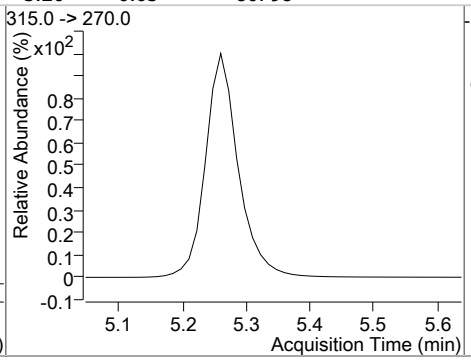
Compound	Conc.	Exp RT	QIon	Exp Ratio
4:2FTS	N.D.	5.13		

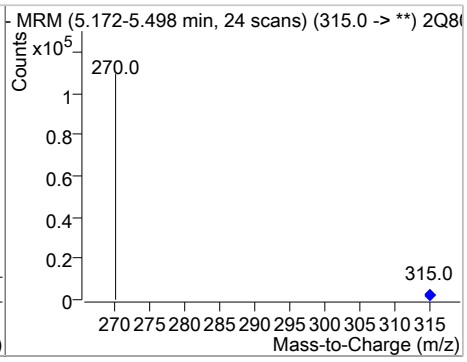




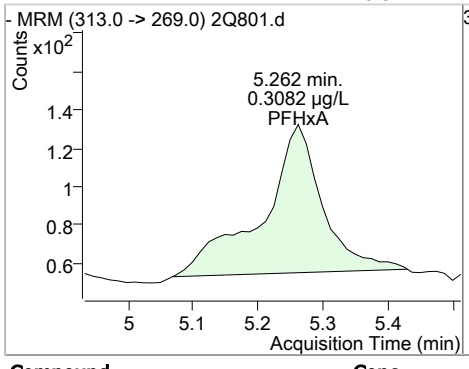
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	20.99	5.26	0.05	80798				

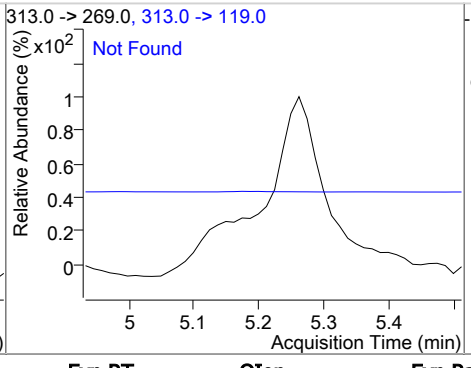


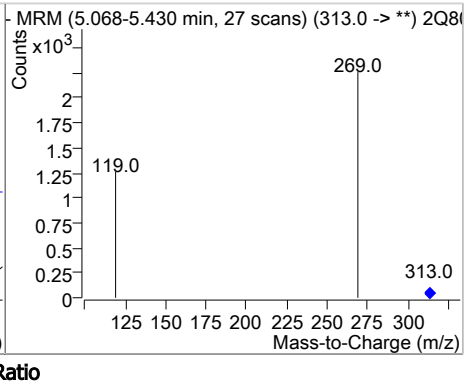




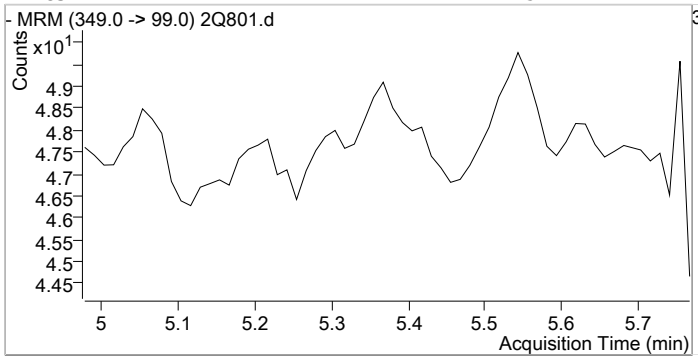
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.31	5.26	0.05	503	313.0 -> 119.0		4.0	6.0

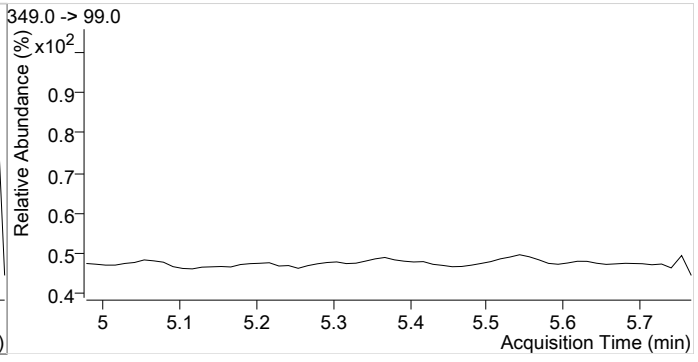






Compound	Conc.	Exp RT	QIon	Exp Ratio
PFPeS	N.D.	5.24		





7.2.1

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Perfluorinated Compounds by LC/MS/MS

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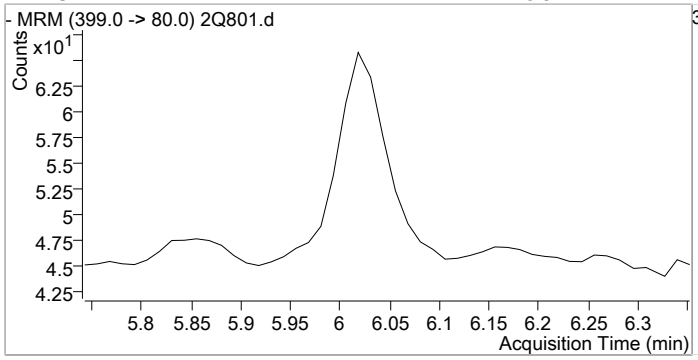
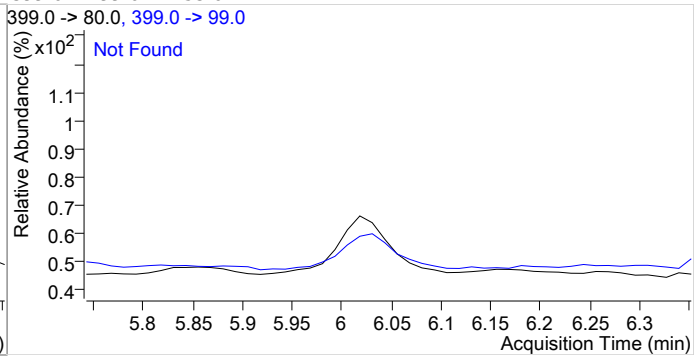
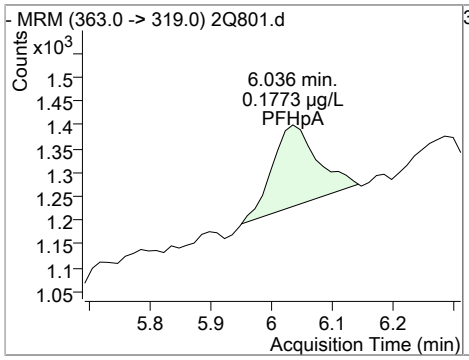
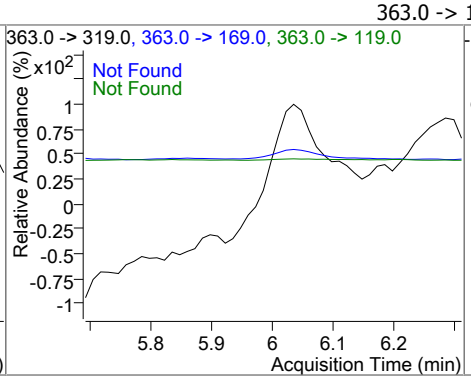
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFHxS	N.D.	5.97	399.0 -> 99.0	53.6

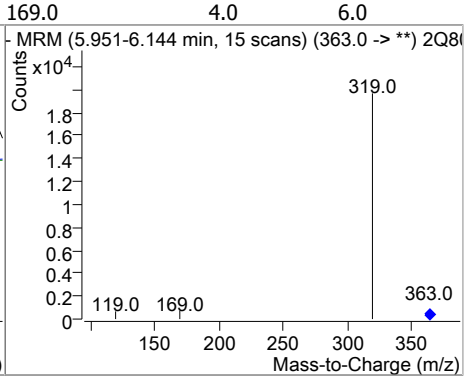




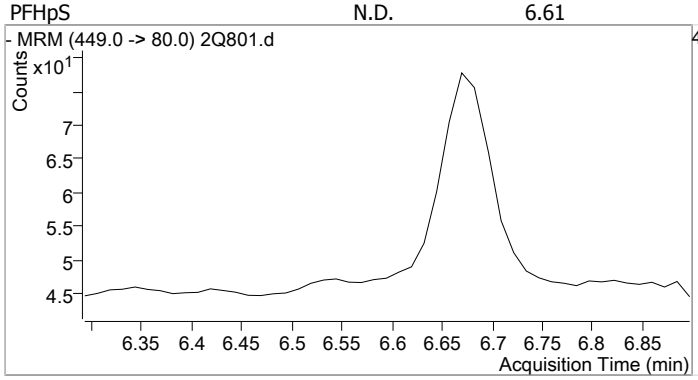
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.18	6.04	0.05	873	363.0 -> 119.0		4.0	6.0
					363.0 -> 169.0		4.0	6.0

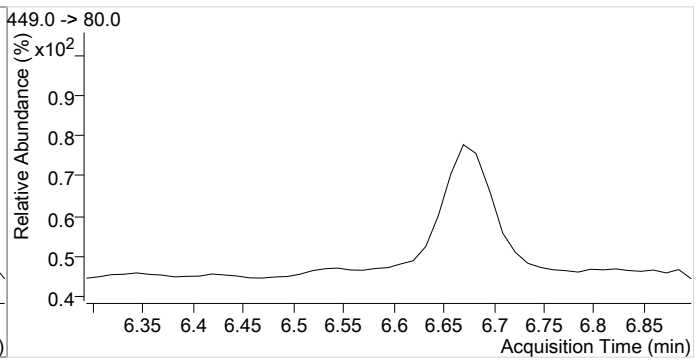




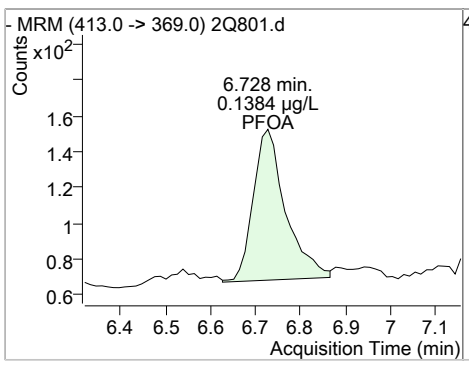


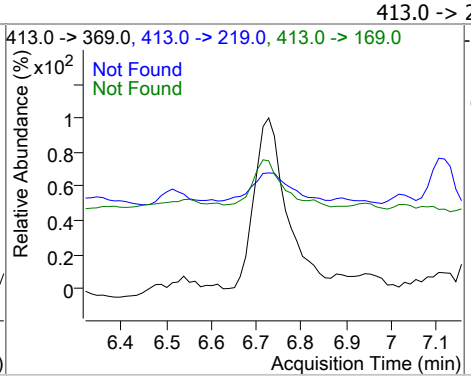
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFHpS	N.D.	6.61		

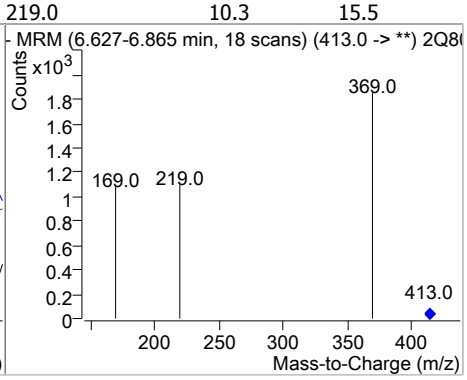




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.14	6.73	0.09	419	413.0 -> 169.0		21.8	32.6
					413.0 -> 219.0		10.3	15.5







Perfluorinated Compounds by LC/MS/MS

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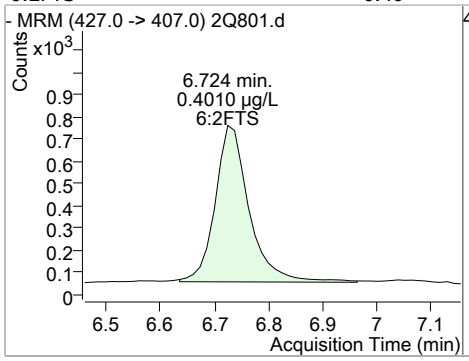
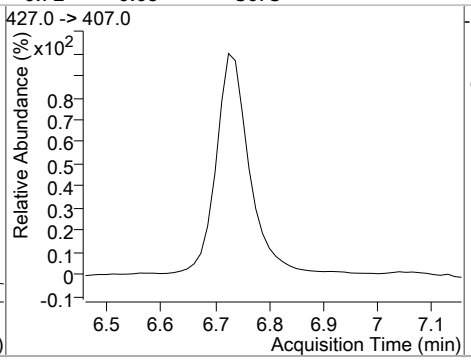
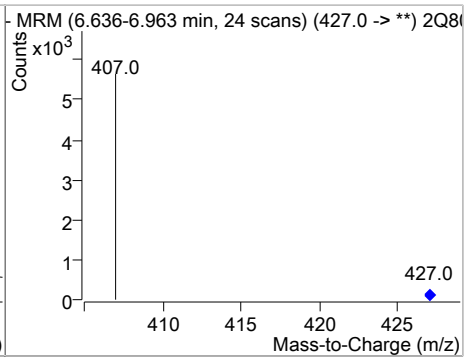
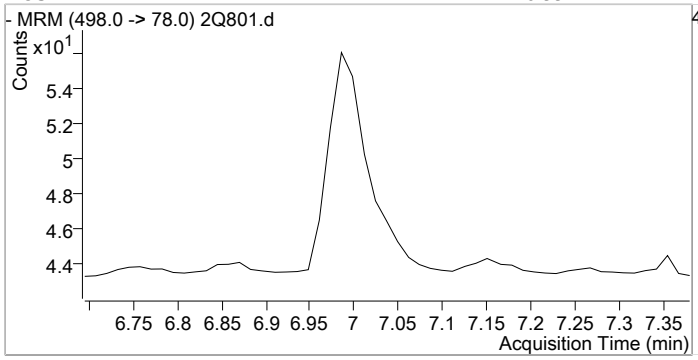
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.40	6.72	0.08	3073				

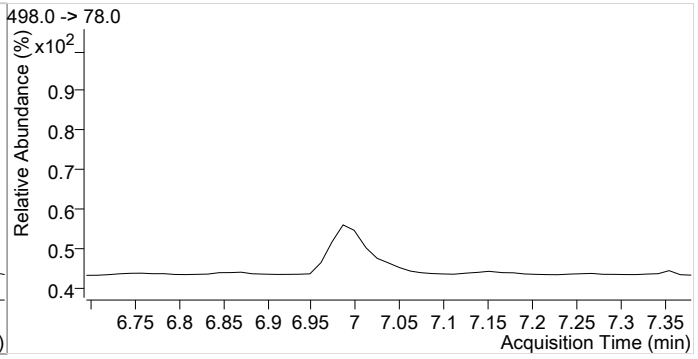




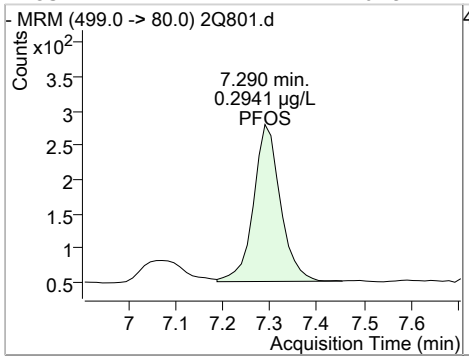


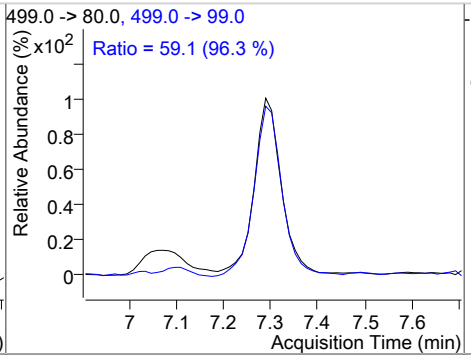
Compound	Conc.	Exp RT	QIon	Exp Ratio
FOSA	N.D.	6.99		

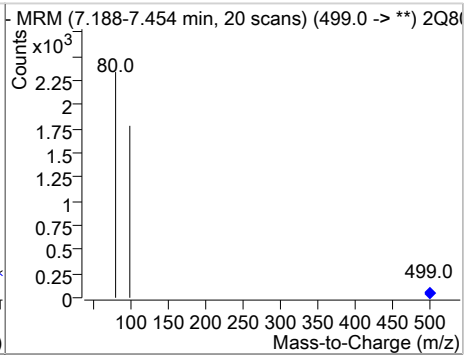




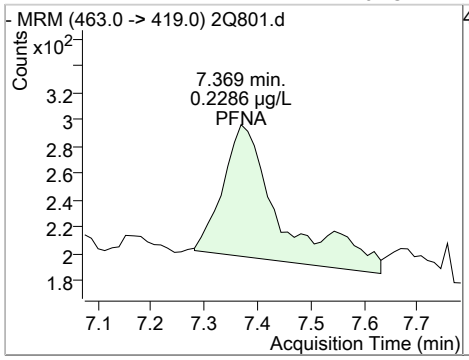
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.29	7.29	0.09	908	499.0 -> 99.0	59.1	49.1	73.6

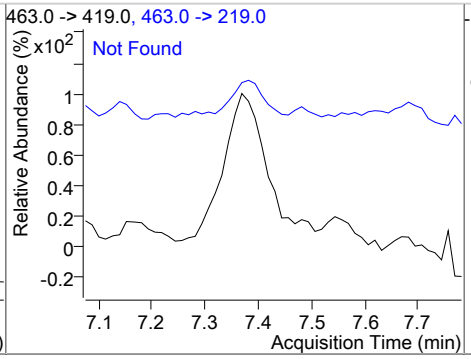


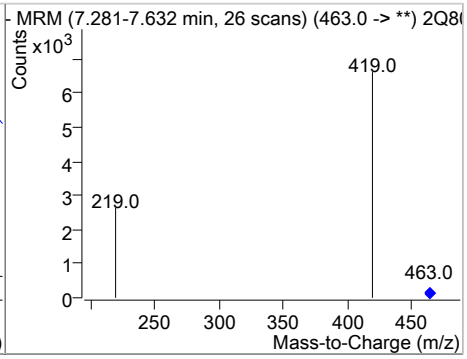




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.23	7.37	0.10	744	463.0 -> 219.0		16.7	25.1







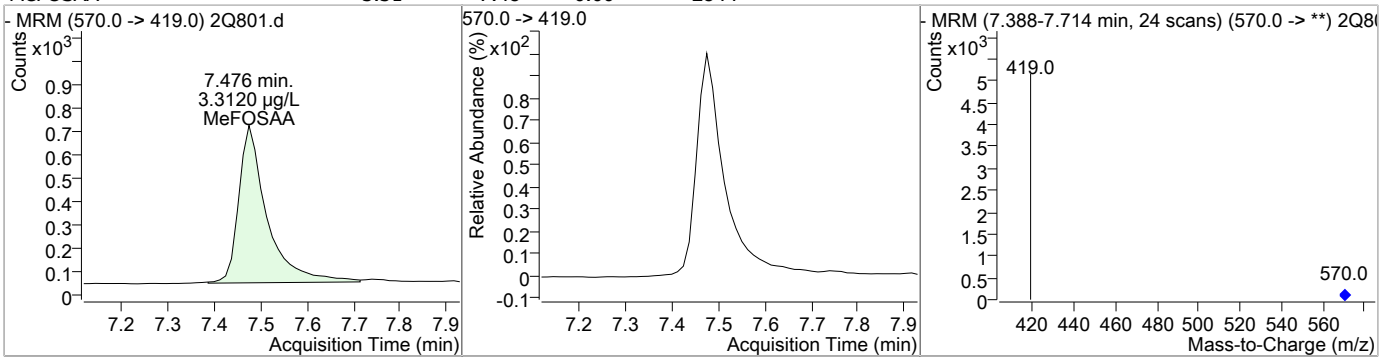
7.2.1

7

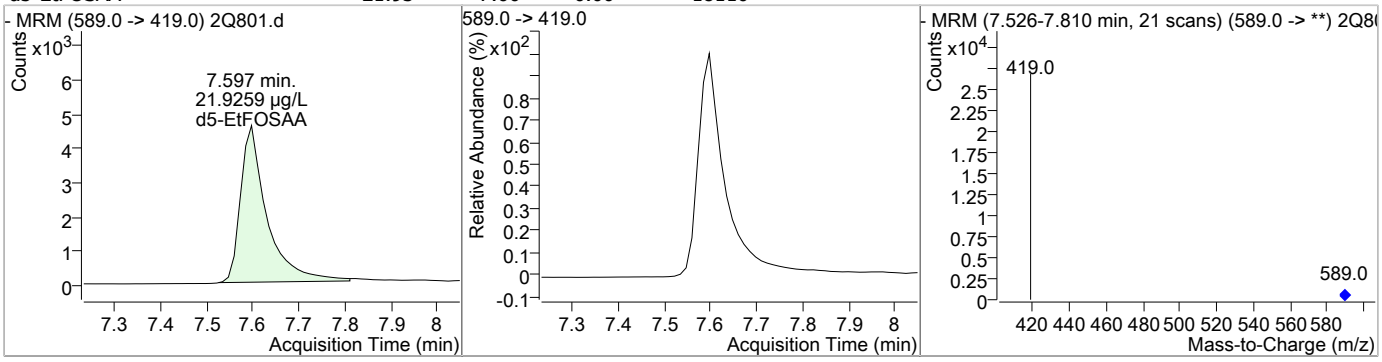
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

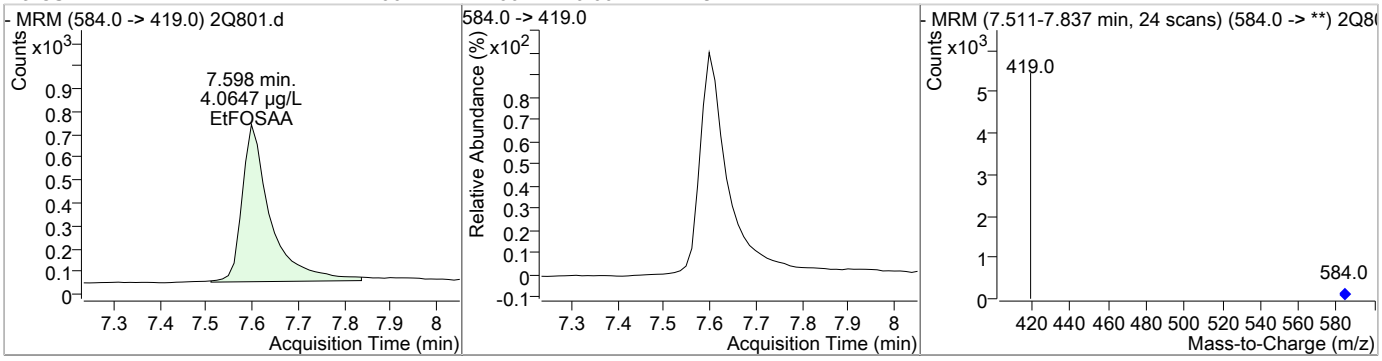
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	3.31	7.48	0.00	2844				



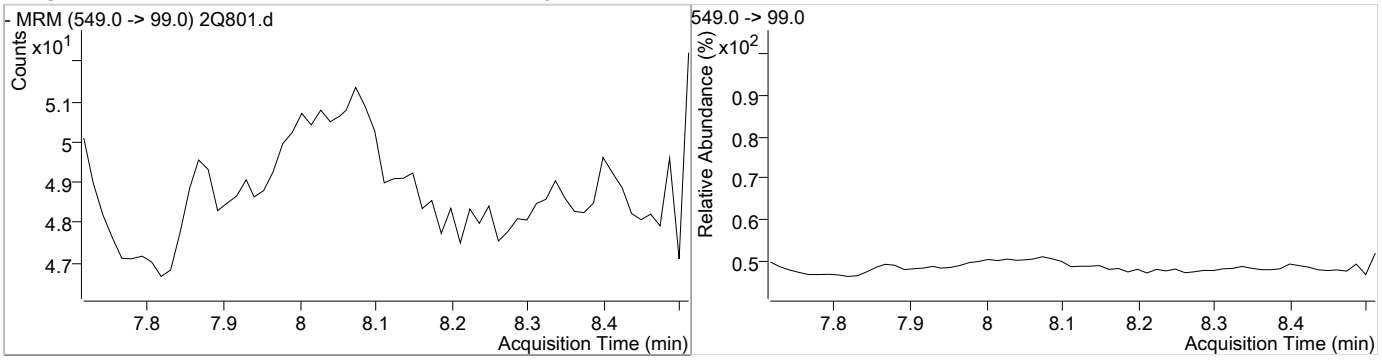
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.93	7.60	0.00	18110				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.06	7.60	0.00	2947				



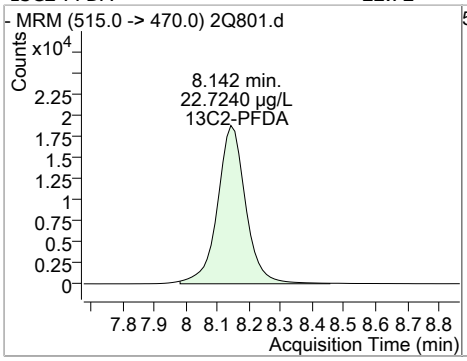
Compound	Conc.	Exp RT	QIon	Exp Ratio
PFNS	N.D.	7.87		

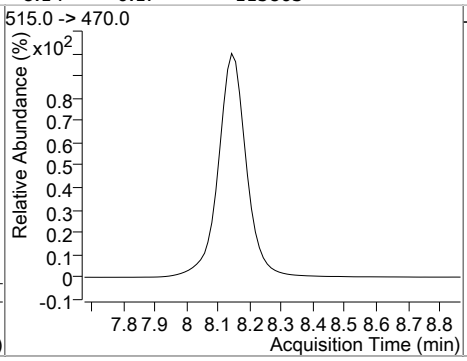


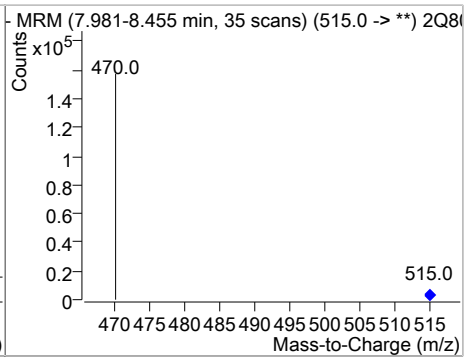
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

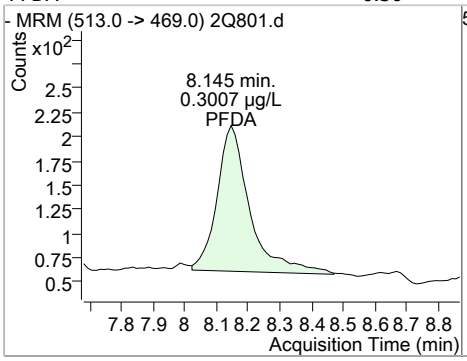
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	22.72	8.14	0.17	115863				

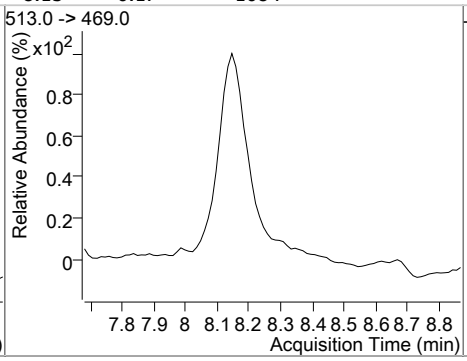


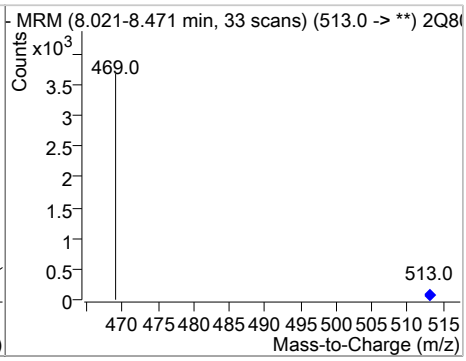




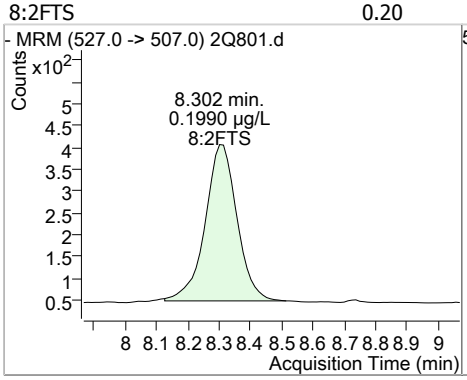
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.30	8.15	0.17	1084				

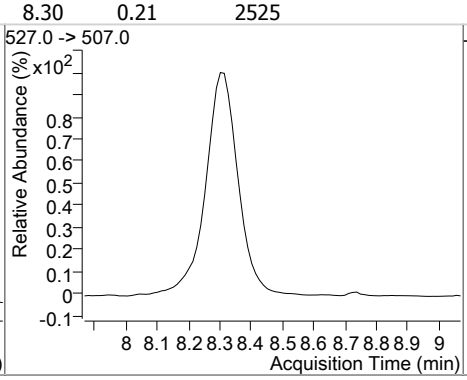


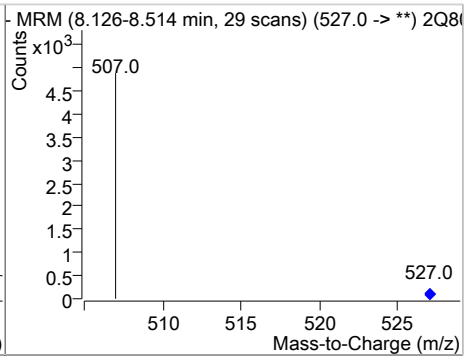




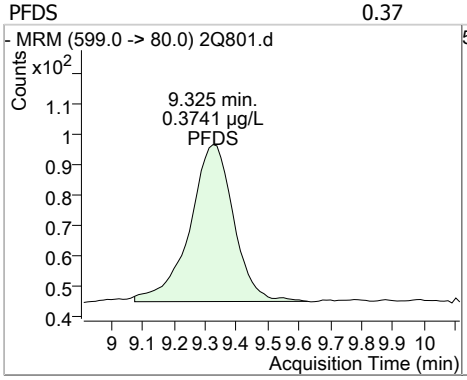
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.20	8.30	0.21	2525				

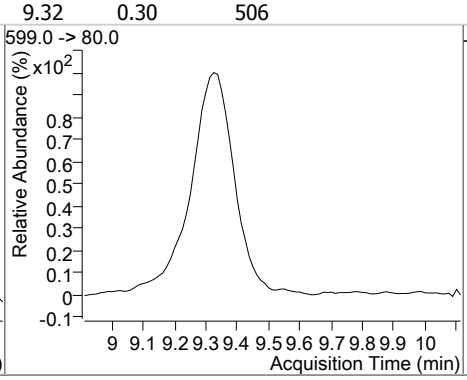


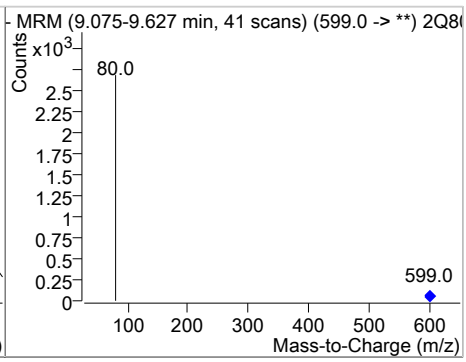




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.37	9.32	0.30	506				



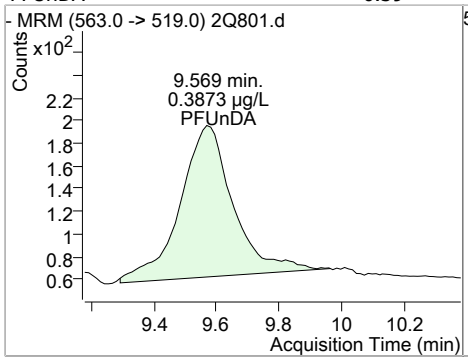


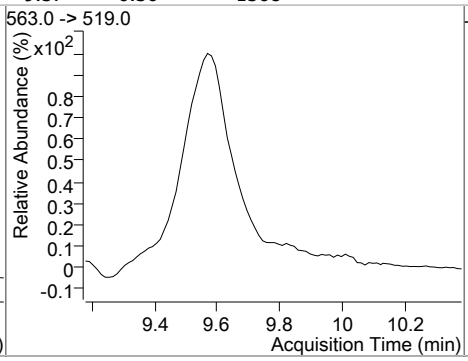


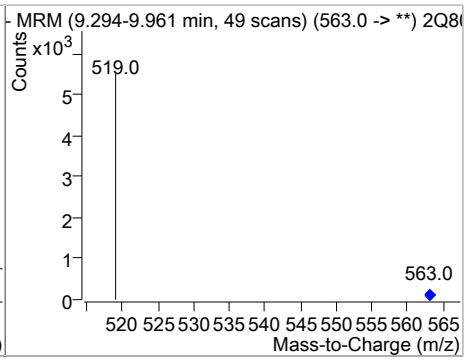
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

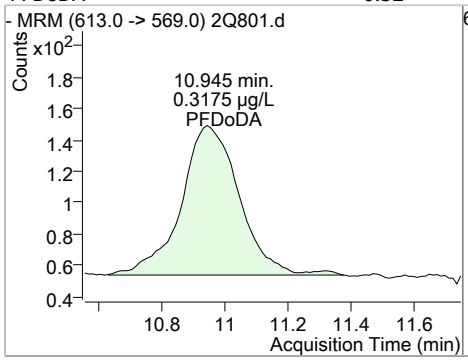
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.39	9.57	0.30	1568				

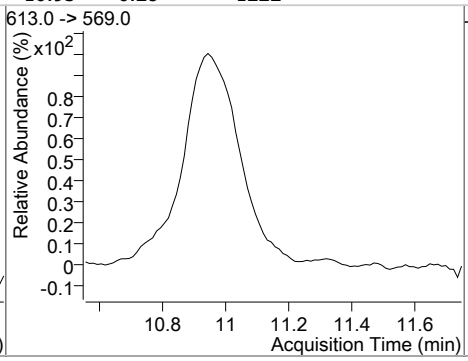


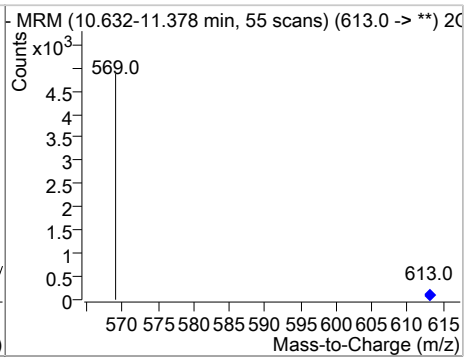




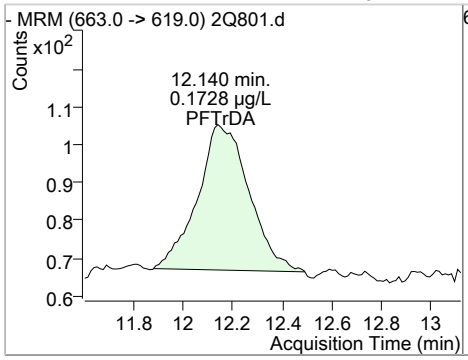
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.32	10.95	0.28	1222				

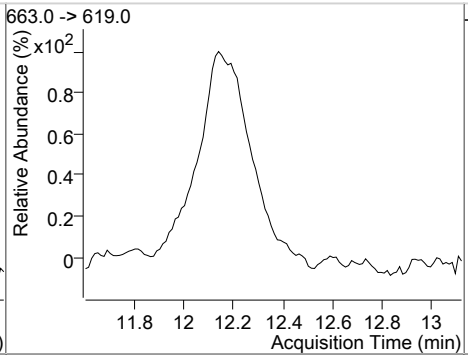


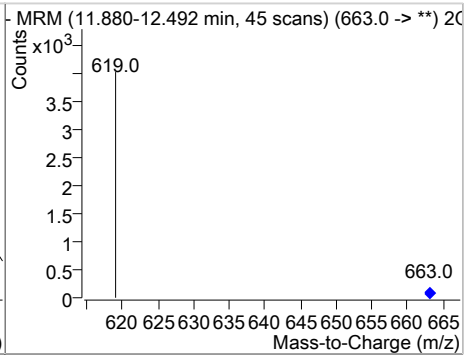




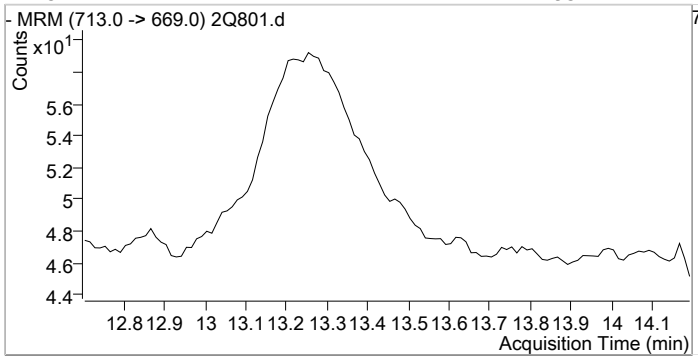
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.17	12.14	0.28	556				

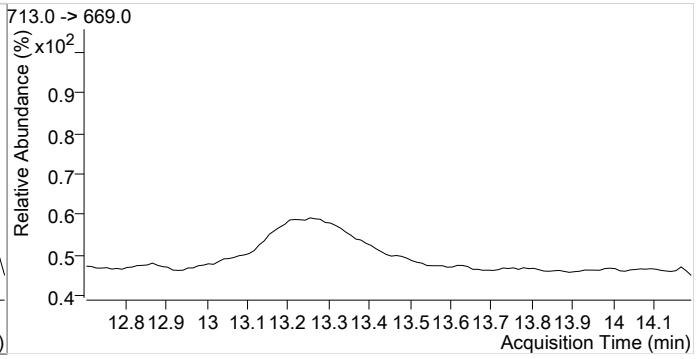






Compound	Conc.	Exp RT	QIon	Exp Ratio
PFTeDA	N.D.	12.93		





Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

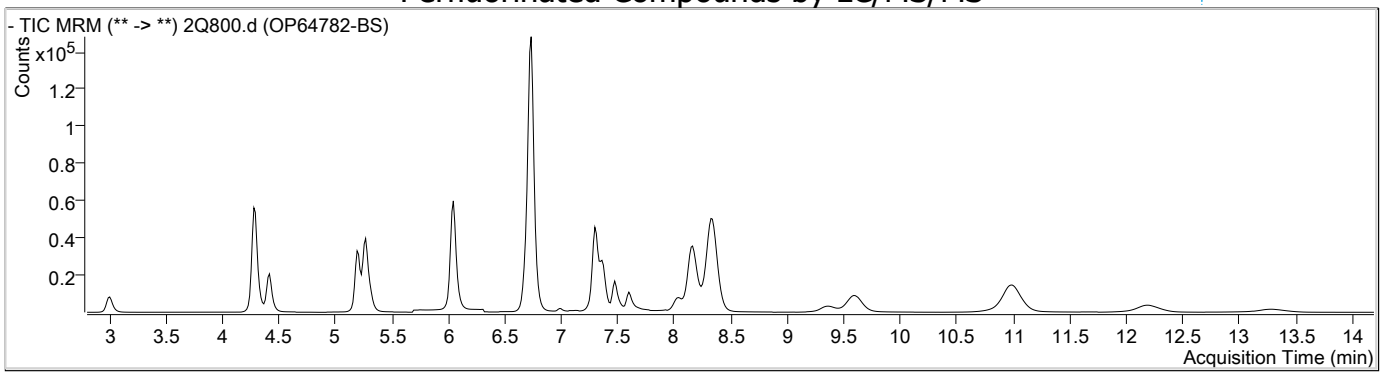
Data File	:	2Q800.d
Operator	:	NANCYF
Acq. Method	:	dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time	:	4/27/2017 10:10:49 AM
Sample Name	:	OP64782-BS
Vial	:	Vial 13
DA Method File	:	PFCLISTDW_0420_S2Q18.m
Batch Name	:	S2Q23.batch.bin
Last Calib Update	:	4/27/2017 2:25:49 PM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.735	429.0 -> 409.0	191596	20.00	µg/L		0.088
13C2-PFDoDA	10.989	615.0 -> 570.0	104528	20.00	µg/L		0.325
13C2-PFOA	6.726	415.0 -> 370.0	81784	20.00	µg/L		0.089
13C3-PFPeA	4.285	266.0 -> 222.0	79263	20.00	µg/L		0.050
13C4-PFOS	7.301	503.0 -> 80.0	61419	20.00	µg/L		0.102
d3-MeFOSAA	7.475	573.0 -> 419.0	37375	20.00	µg/L		0.000
System Monitoring Compounds							
13C2-PFDA	8.167	515.0 -> 470.0	127142	22.22	µg/L		0.198
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 111.1%			
13C2-PFHxA	5.272	315.0 -> 270.0	92038	21.31	µg/L		0.063
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 106.5%			
d5-EtFOSAA	7.597	589.0 -> 419.0	19151	20.74	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 103.7%			
Target Compounds							**QValue**
4:2FTS	5.195	327.0 -> 307.0	114092	23.57	µg/L		100
6:2FTS	6.737	427.0 -> 407.0	209059	22.57	µg/L		100
8:2FTS	8.327	527.0 -> 507.0	361702	23.58	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	17464	20.44	µg/L		100
FOSA	6.986	498.0 -> 78.0	4593	2.29	µg/L		100
MeFOSAA	7.476	570.0 -> 419.0	23213	21.99	µg/L		100
PFBA	3.002	213.0 -> 169.0	33608	15.62	µg/L		100
PFBS	4.416	299.0 -> 80.0	50964	20.79	µg/L		99
PFDA	8.158	513.0 -> 469.0	87635	21.67	µg/L		100
PFDoDA	10.983	613.0 -> 569.0	79225	17.45	µg/L		100
PFDS	9.350	599.0 -> 80.0	28119	17.29	µg/L		100
PFHpA	6.048	363.0 -> 319.0	126475	22.18	µg/L	#	93
PFHpS	6.682	449.0 -> 80.0	53207	20.45	µg/L		100
PFHxA	5.275	313.0 -> 269.0	42770	22.21	µg/L		85
PFHxS	6.031	399.0 -> 80.0	58259	22.71	µg/L		93
PFNA	7.369	463.0 -> 419.0	80444	22.02	µg/L		98
PFNS	8.027	549.0 -> 99.0	31631	20.39	µg/L		100
PFOA	6.728	413.0 -> 369.0	72507	21.33	µg/L		97
PFOS	7.303	499.0 -> 80.0	69032	19.48	µg/L		97
PFPeA	4.288	263.0 -> 219.0	131267	21.83	µg/L		100
PFPeS	5.305	349.0 -> 99.0	16861	22.35	µg/L		100
PFTeDA	13.278	713.0 -> 669.0	29167	13.91	µg/L		100
PFTrDA	12.190	663.0 -> 619.0	58288	15.28	µg/L		100
PFUnDA	9.594	563.0 -> 519.0	94121	20.52	µg/L		100

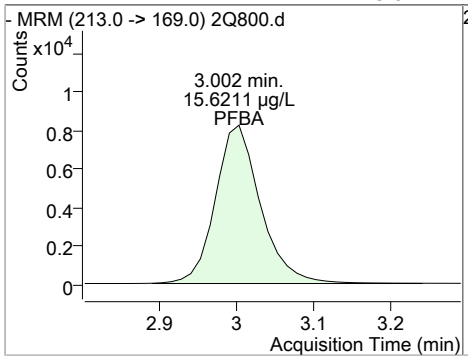
 # = Qualifier out of range, m = manually integrated, + = Area summed

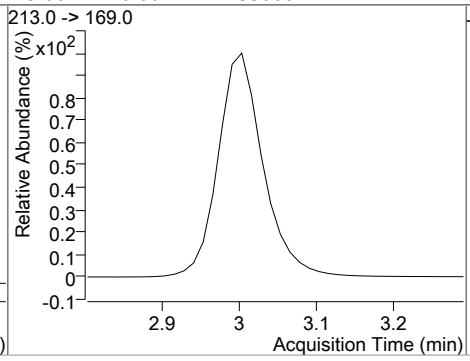
Perfluorinated Compounds by LC/MS/MS

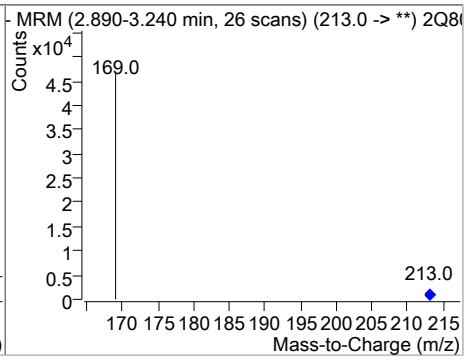
Agilent Technologies



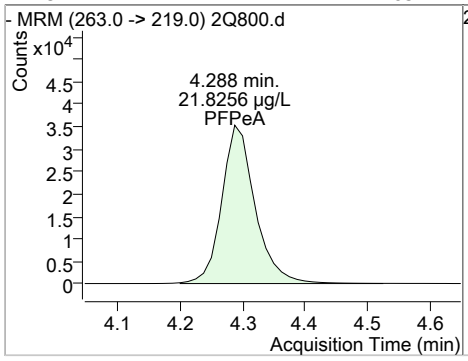
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	15.62	3.00	0.06	33608				

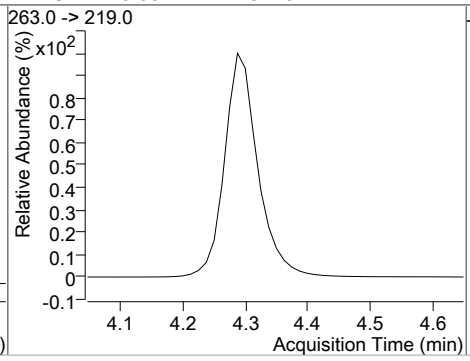


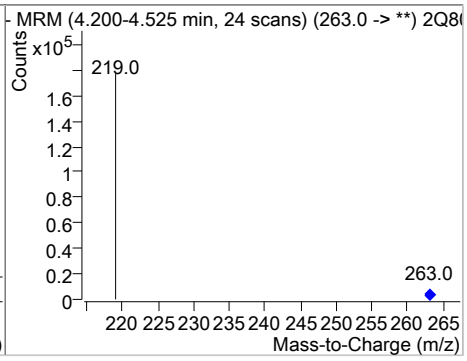




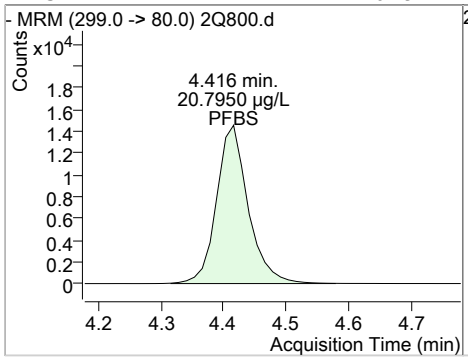
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.83	4.29	0.06	131267				

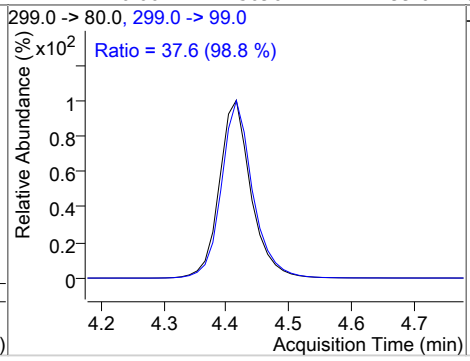


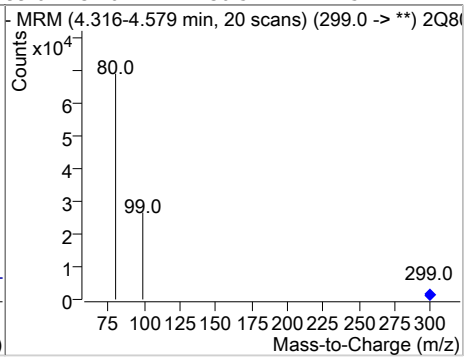




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.79	4.42	0.06	50964	299.0 -> 99.0	37.6	30.5	45.7



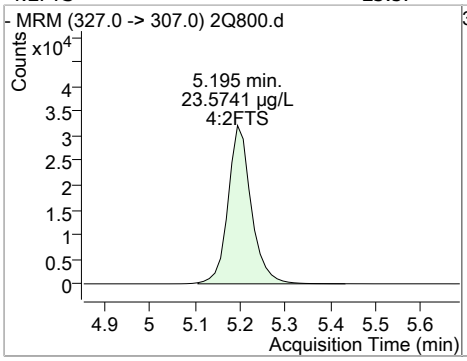


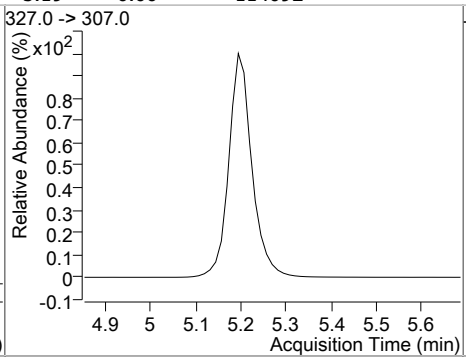


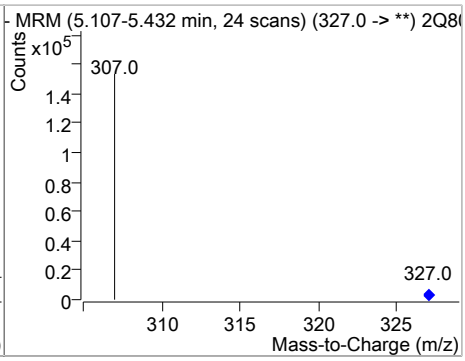
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

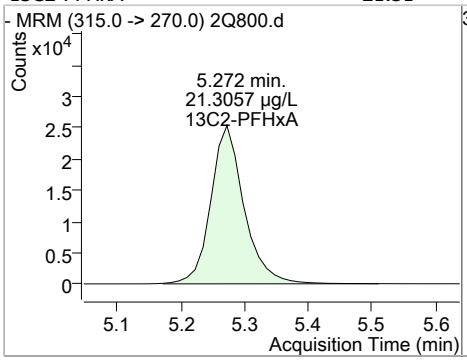
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	23.57	5.19	0.06	114092				

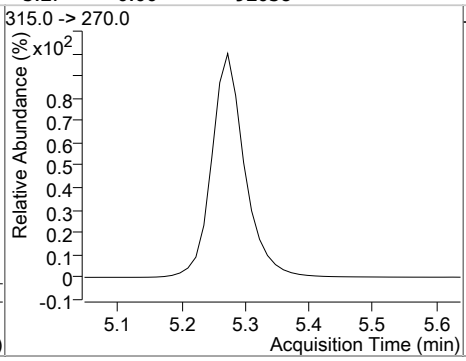


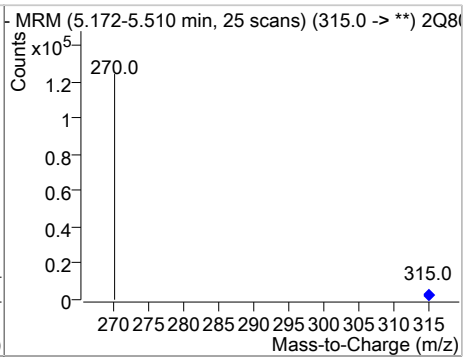




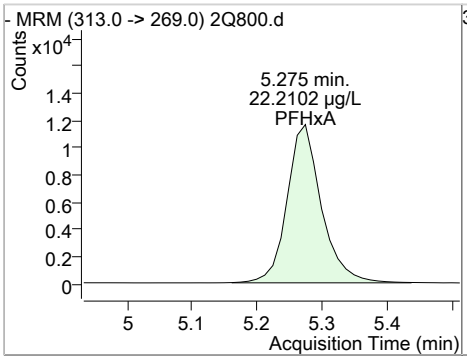
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	21.31	5.27	0.06	92038				

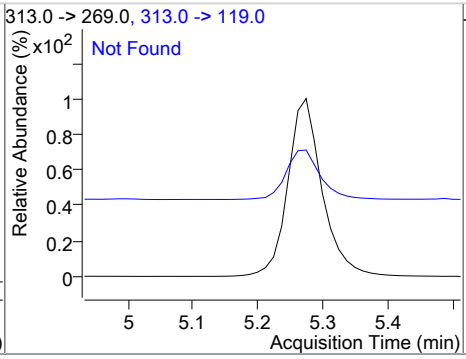


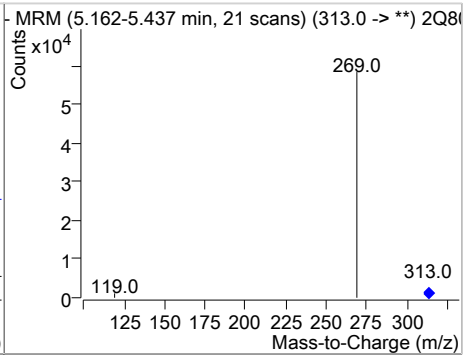




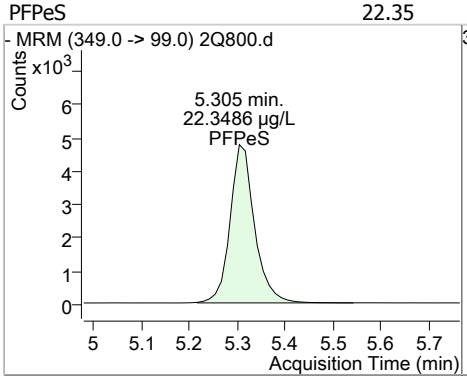
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	22.21	5.27	0.06	42770	313.0 -> 119.0		4.0	6.0

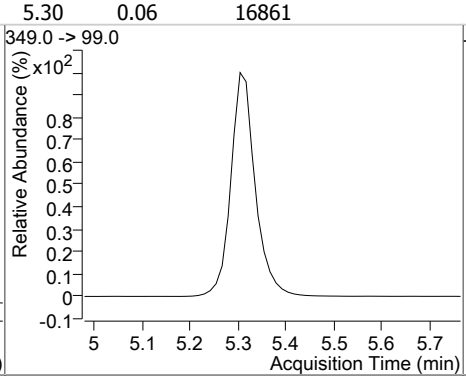


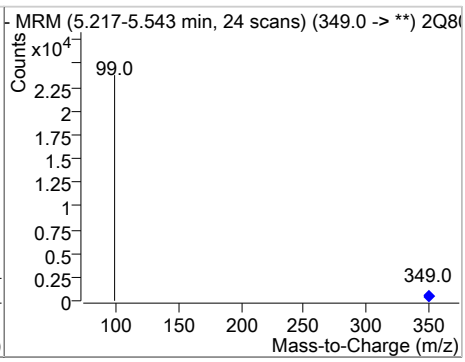




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.35	5.30	0.06	16861				







Perfluorinated Compounds by LC/MS/MS

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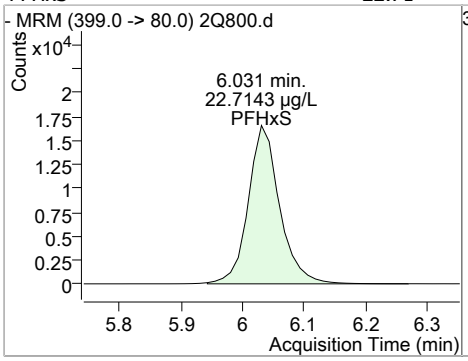
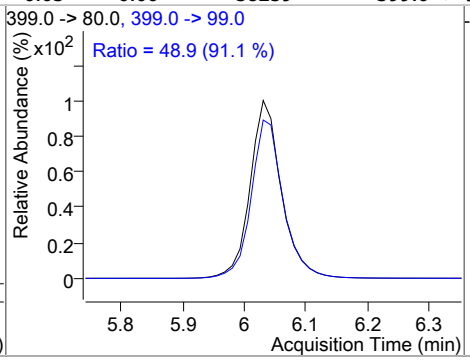
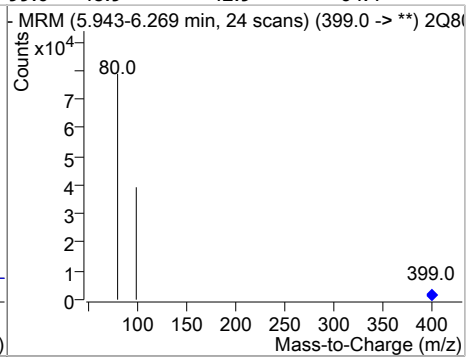
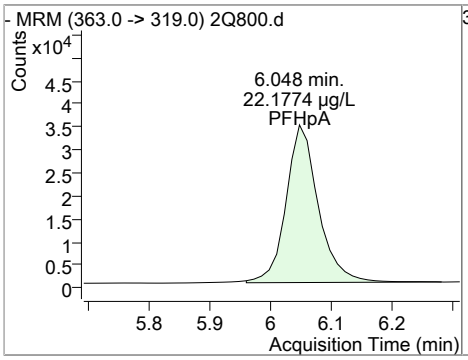
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.71	6.03	0.06	58259	399.0 -> 99.0	48.9	42.9	64.4

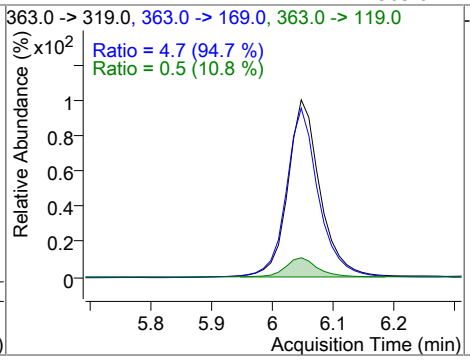


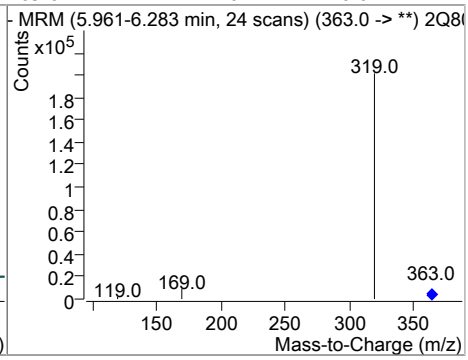




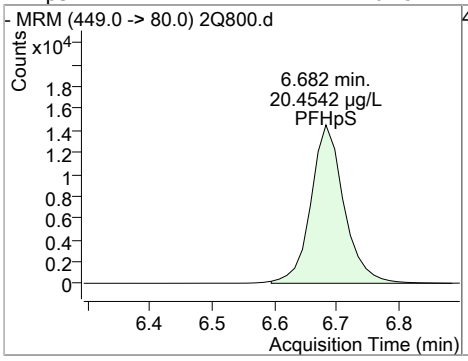
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.18	6.05	0.06	126475	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.7	4.0	6.0

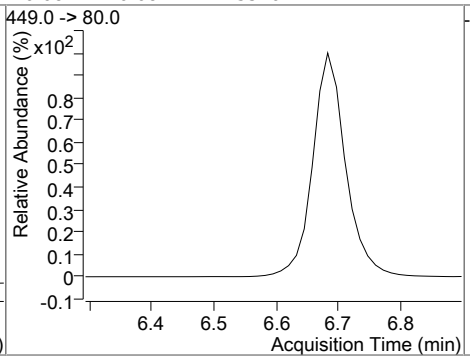


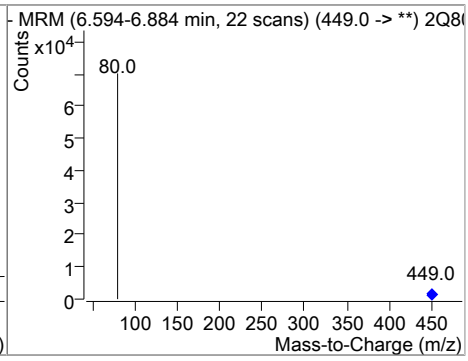




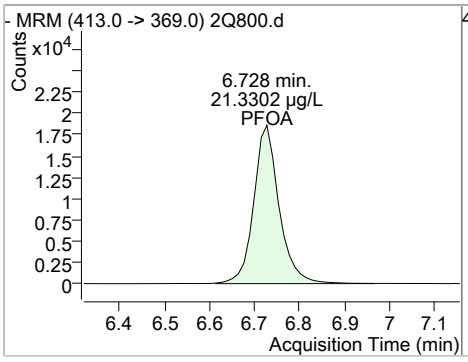
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.45	6.68	0.08	53207				

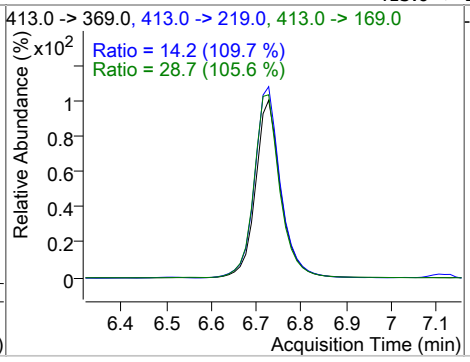


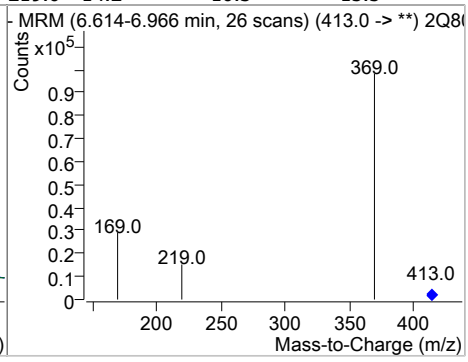




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.33	6.73	0.09	72507	413.0 -> 169.0	28.7	21.8	32.6
					413.0 -> 219.0	14.2	10.3	15.5







Perfluorinated Compounds by LC/MS/MS

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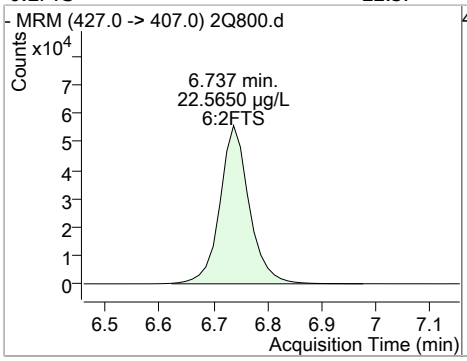
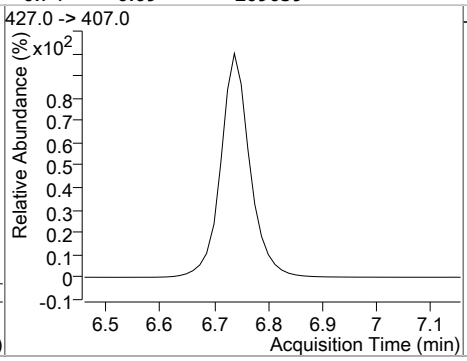
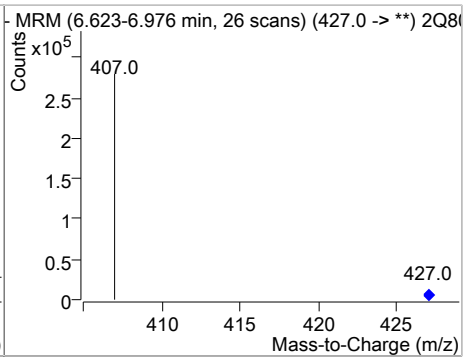
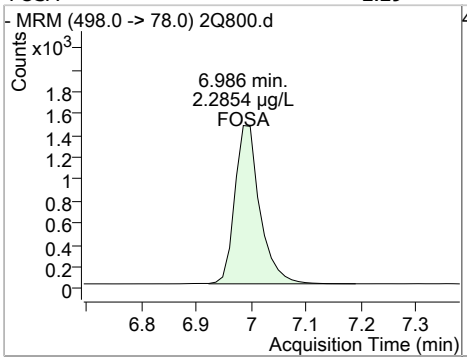
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.57	6.74	0.09	209059				

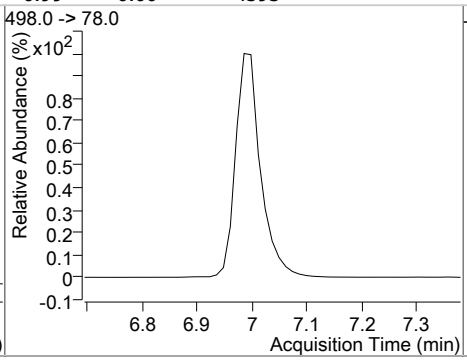


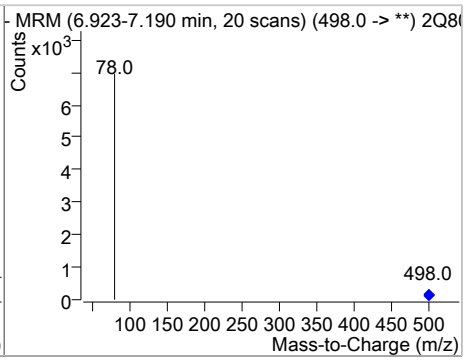




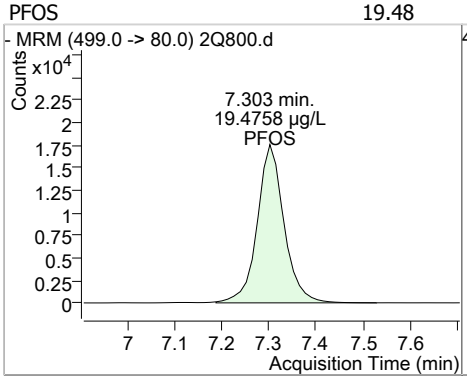
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.29	6.99	0.00	4593				

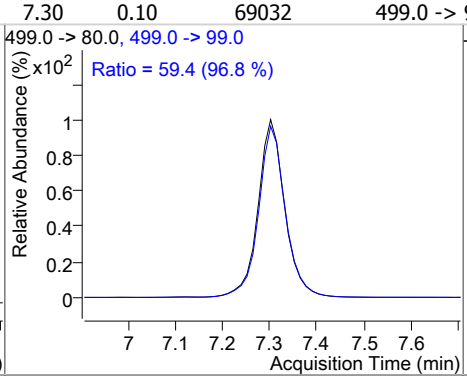


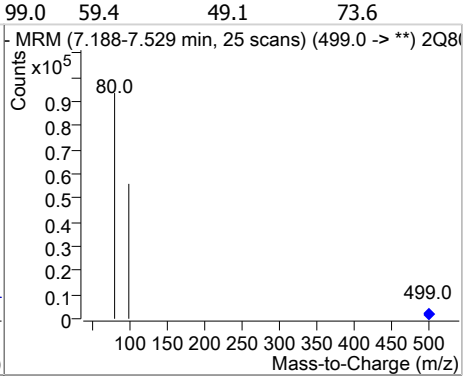




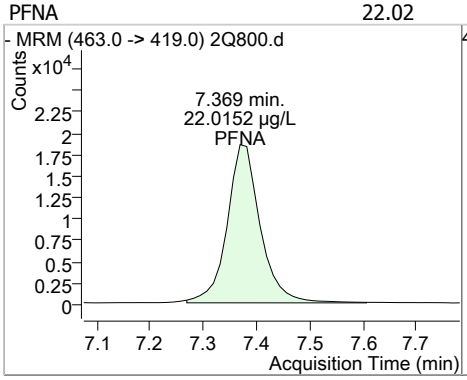
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.48	7.30	0.10	69032	499.0 -> 99.0	59.4	49.1	73.6

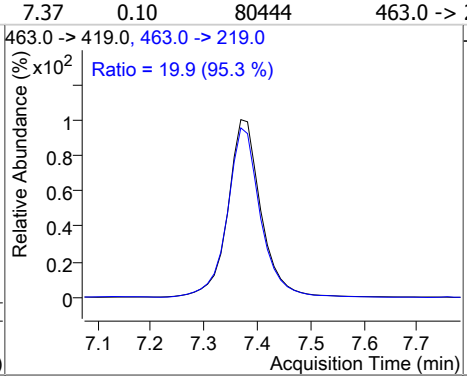


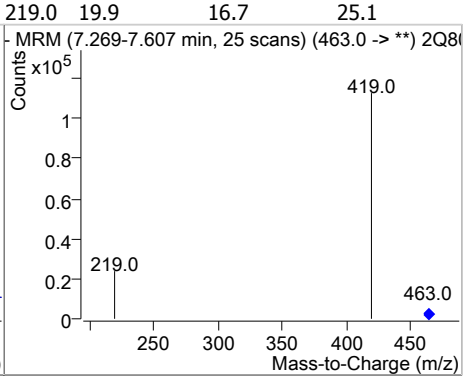




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	22.02	7.37	0.10	80444	463.0 -> 219.0	19.9	16.7	25.1







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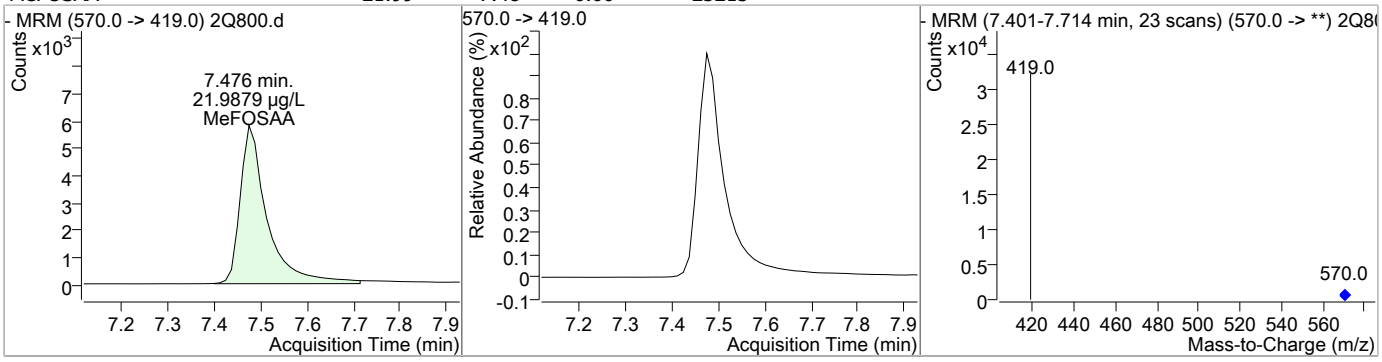
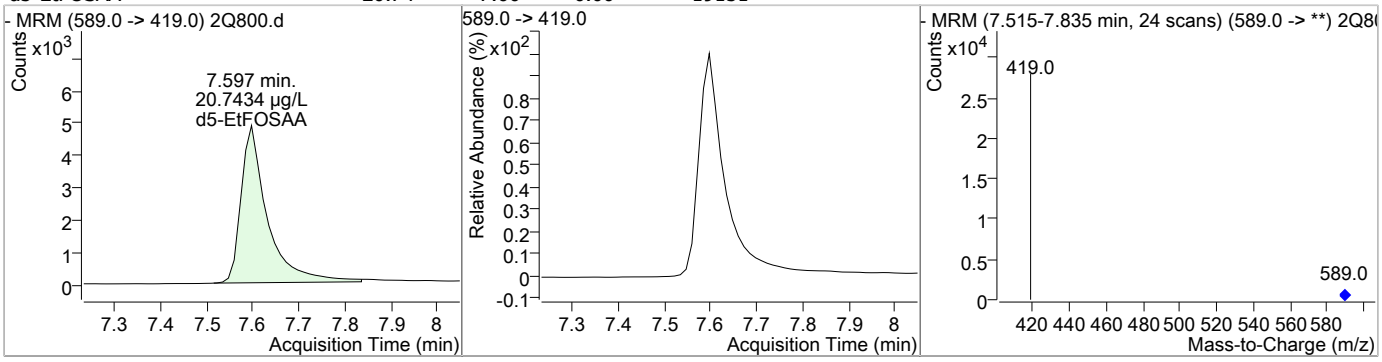
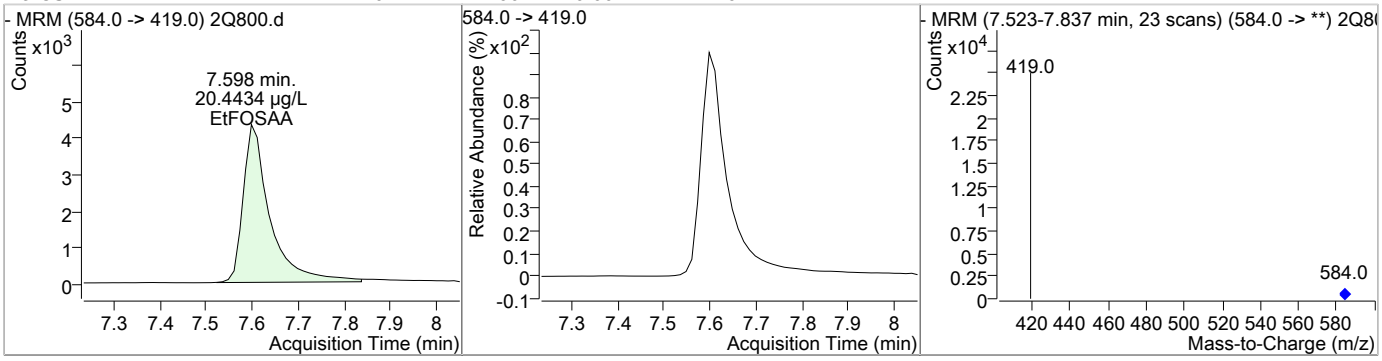
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.99	7.48	0.00	23213				



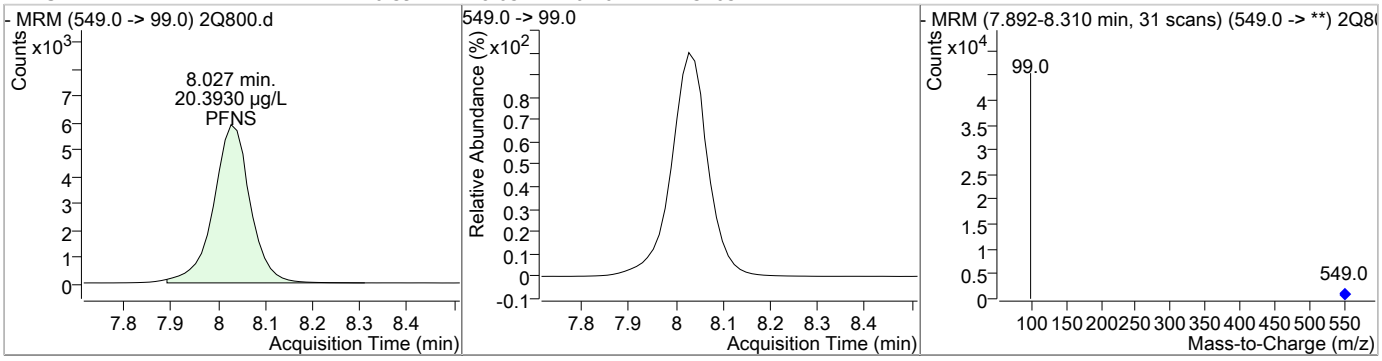
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.74	7.60	0.00	19151				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.44	7.60	0.00	17464				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.39	8.03	0.16	31631				



Perfluorinated Compounds by LC/MS/MS

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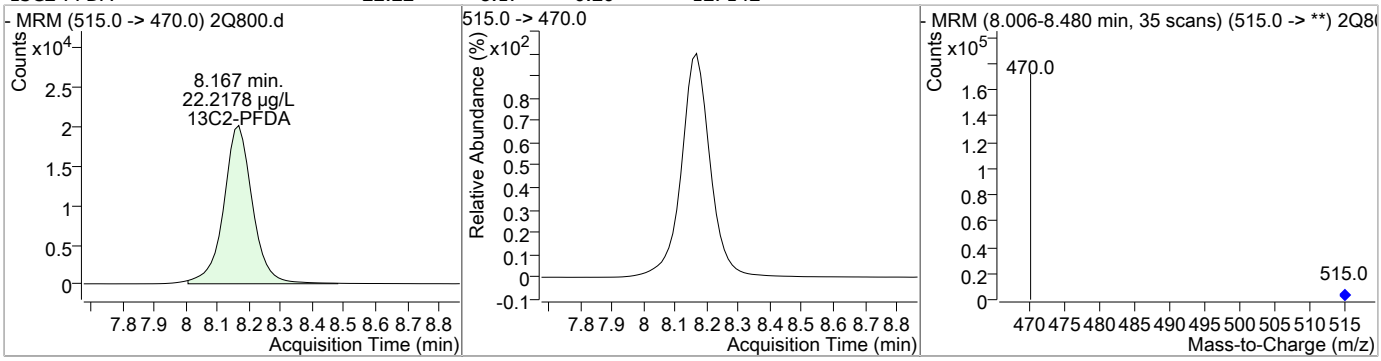
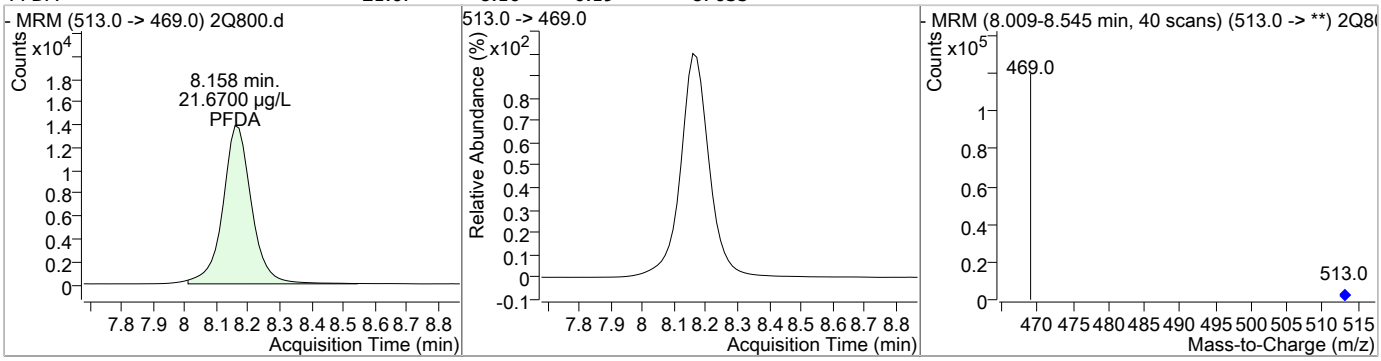
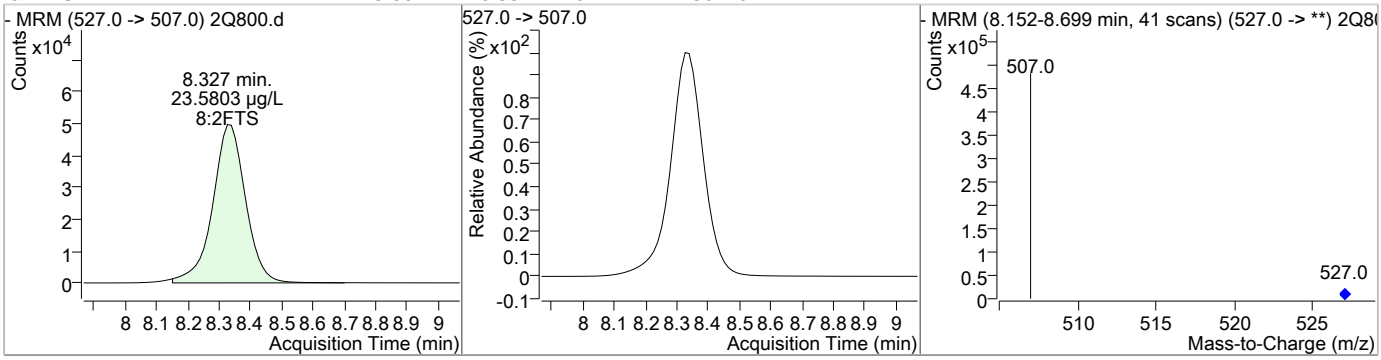
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	22.22	8.17	0.20	127142				



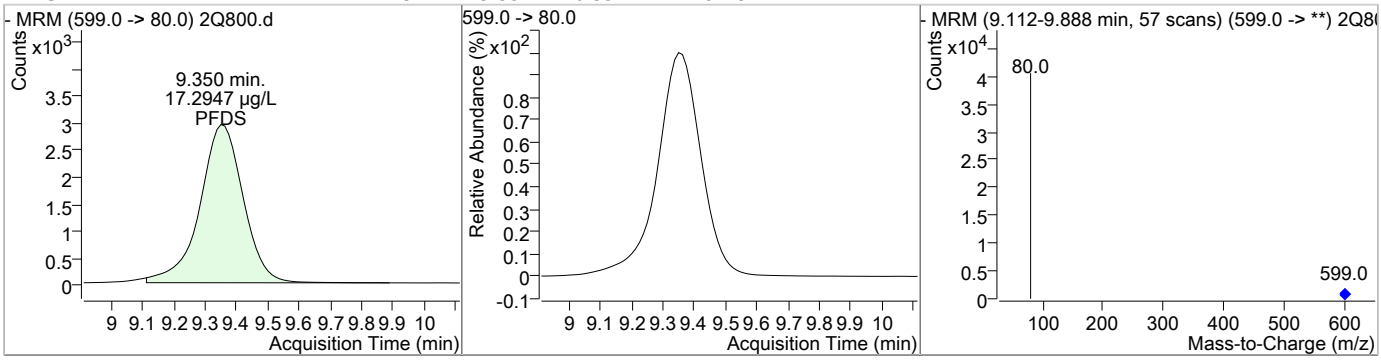
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.67	8.16	0.19	87635				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	23.58	8.33	0.24	361702				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.29	9.35	0.33	28119				



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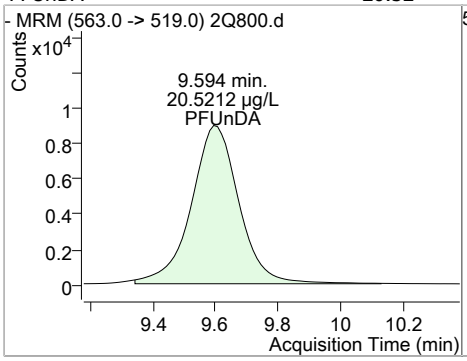
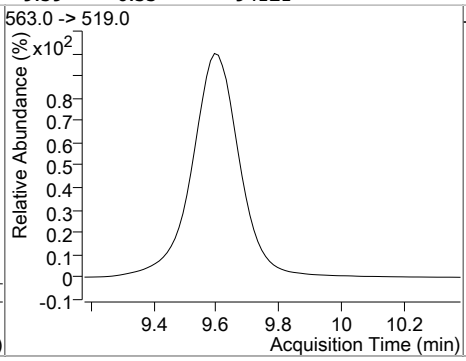
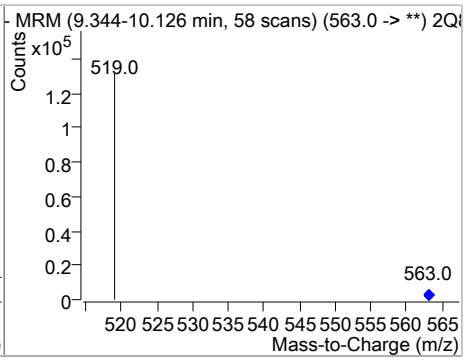
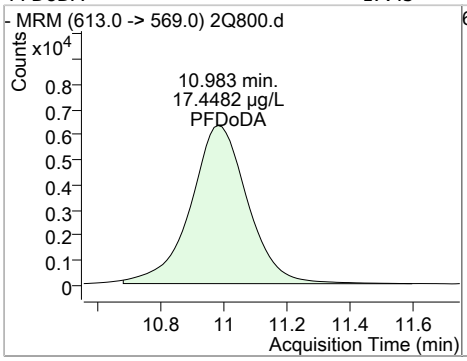
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.52	9.59	0.33	94121				

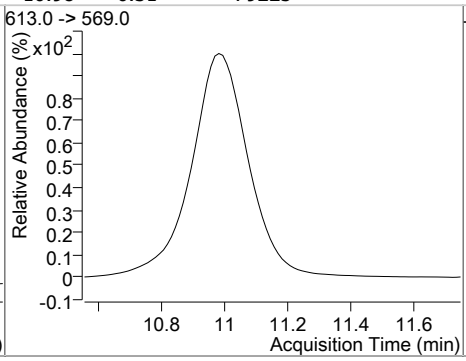


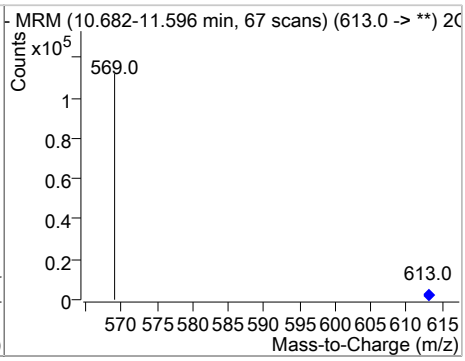




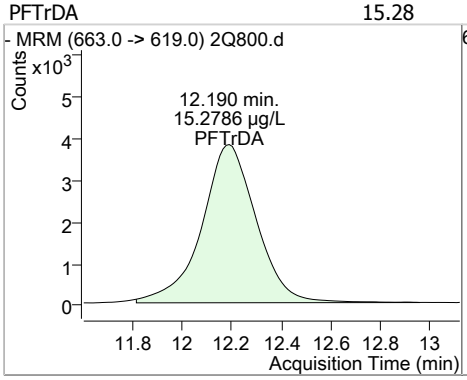
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	17.45	10.98	0.31	79225				

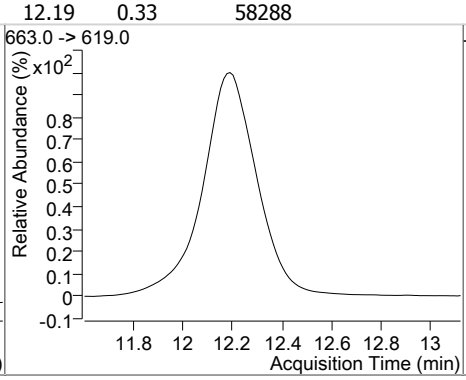


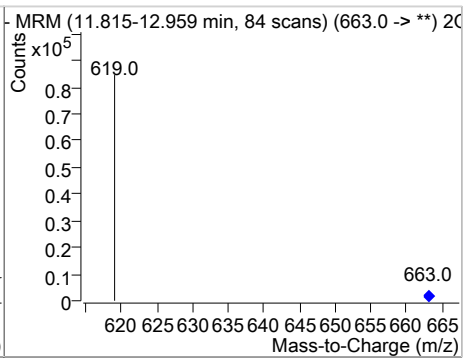




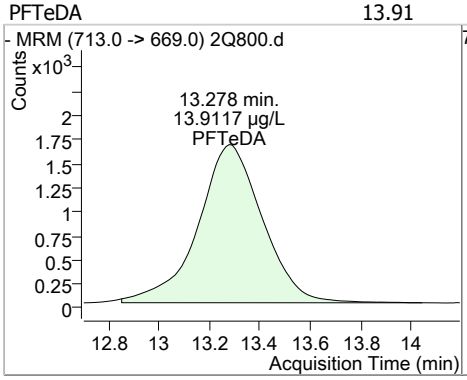
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	15.28	12.19	0.33	58288				

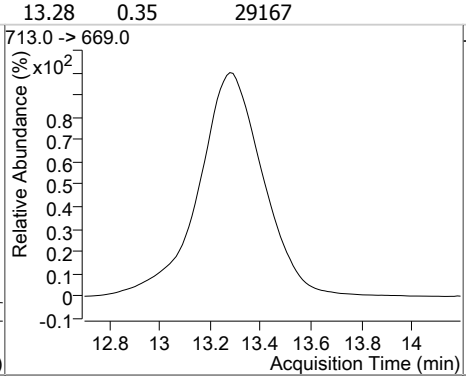


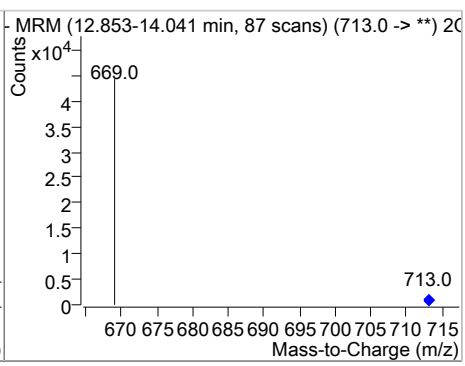




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.91	13.28	0.35	29167				







Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

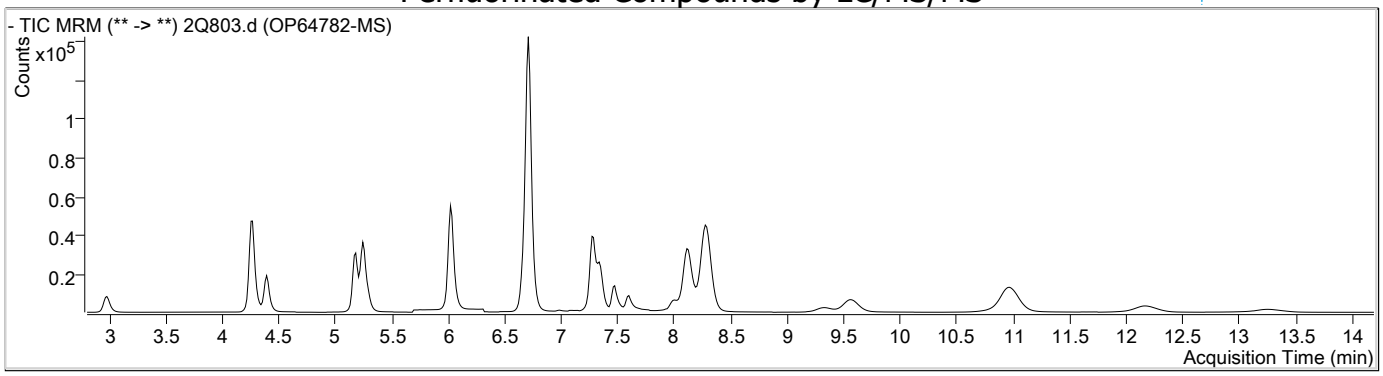
Data File	:	2Q803.d
Operator	:	NANCYF
Acq. Method	:	dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time	:	4/27/2017 11:10:06 AM
Sample Name	:	OP64782-MS
Vial	:	Vial 16
DA Method File	:	PFCLISTDW_0420_S2Q18.m
Batch Name	:	S2Q23.batch.bin
Last Calib Update	:	4/27/2017 2:25:49 PM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.710	429.0 -> 409.0	182145	20.00	µg/L		0.063
13C2-PFDoDA	10.964	615.0 -> 570.0	101490	20.00	µg/L		0.300
13C2-PFOA	6.701	415.0 -> 370.0	78202	20.00	µg/L		0.064
13C3-PFPeA	4.272	266.0 -> 222.0	69181	20.00	µg/L		0.037
13C4-PFOS	7.276	503.0 -> 80.0	57302	20.00	µg/L		0.077
d3-MeFOSAA	7.475	573.0 -> 419.0	33347	20.00	µg/L		0.000
System Monitoring Compounds							
13C2-PFDA	8.117	515.0 -> 470.0	114436	20.91	µg/L		0.148
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 104.6%			
13C2-PFHxA	5.247	315.0 -> 270.0	83836	20.30	µg/L		0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 101.5%			
d5-EtFOSAA	7.597	589.0 -> 419.0	17104	20.76	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 103.8%			
Target Compounds							**QValue**
4:2FTS	5.182	327.0 -> 307.0	106847	23.22	µg/L		100
6:2FTS	6.712	427.0 -> 407.0	198177	22.50	µg/L		100
8:2FTS	8.277	527.0 -> 507.0	308962	21.19	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	12481	16.56	µg/L		100
FOSA	6.986	498.0 -> 78.0	1671	0.93	µg/L		100
MeFOSAA	7.476	570.0 -> 419.0	18251	19.59	µg/L		100
PFBA	2.977	213.0 -> 169.0	33885	16.47	µg/L		100
PFBS	4.391	299.0 -> 80.0	46272	20.24	µg/L		100
PFDA	8.120	513.0 -> 469.0	75431	19.51	µg/L		100
PFDoDA	10.958	613.0 -> 569.0	61266	14.01	µg/L		100
PFDS	9.325	599.0 -> 80.0	21115	14.04	µg/L		100
PFHpA	6.036	363.0 -> 319.0	113837	20.91	µg/L	#	93
PFHpS	6.657	449.0 -> 80.0	49712	20.48	µg/L		100
PFHxA	5.250	313.0 -> 269.0	37991	20.70	µg/L		85
PFHxS	6.018	399.0 -> 80.0	53421	22.32	µg/L		93
PFNA	7.344	463.0 -> 419.0	74513	21.33	µg/L		97
PFNS	7.990	549.0 -> 99.0	23092	15.96	µg/L		100
PFOA	6.702	413.0 -> 369.0	67987	20.92	µg/L		98
PFOS	7.278	499.0 -> 80.0	57291	17.32	µg/L		97
PFPeA	4.263	263.0 -> 219.0	111956	21.33	µg/L		100
PFPeS	5.292	349.0 -> 99.0	15365	23.33	µg/L		100
PFTeDA	13.253	713.0 -> 669.0	26985	13.28	µg/L		100
PFTrDA	12.165	663.0 -> 619.0	49863	13.53	µg/L		100
PFUnDA	9.569	563.0 -> 519.0	68861	15.46	µg/L		100

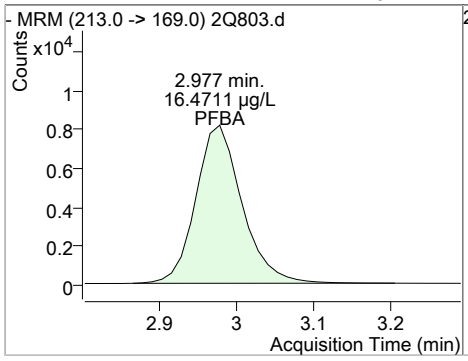
 # = Qualifier out of range, m = manually integrated, + = Area summed

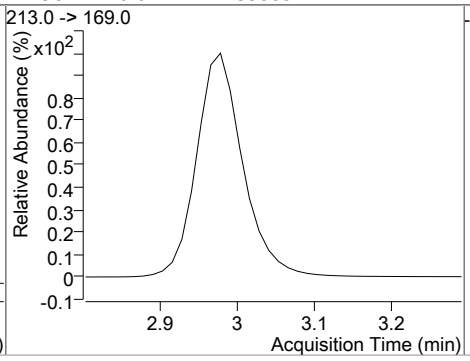
Perfluorinated Compounds by LC/MS/MS

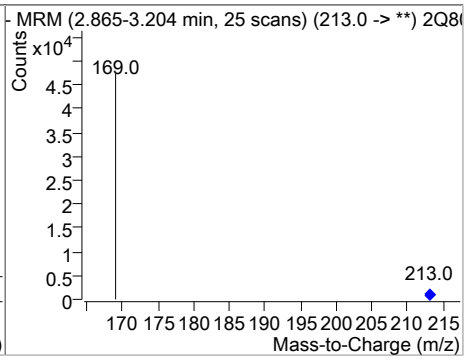
Agilent Technologies



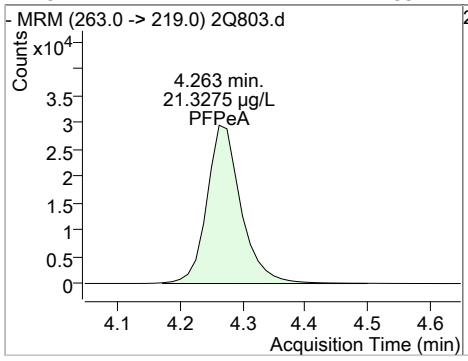
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	16.47	2.98	0.04	33885				

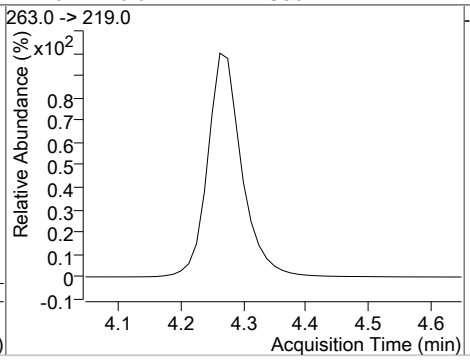


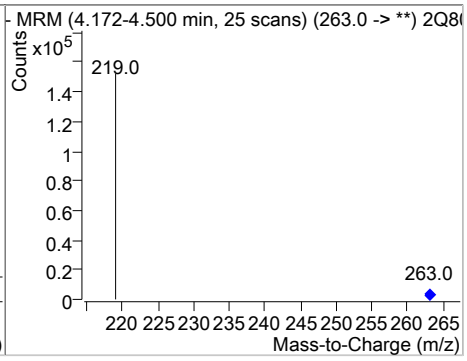




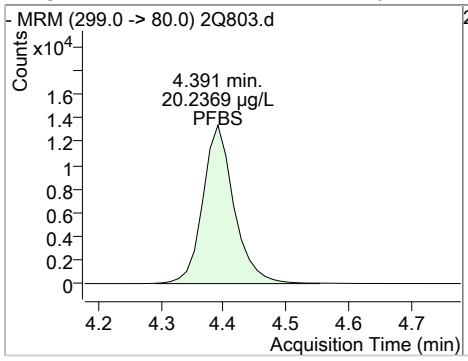
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.33	4.26	0.04	111956				

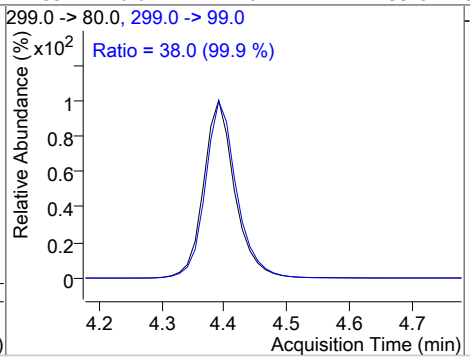


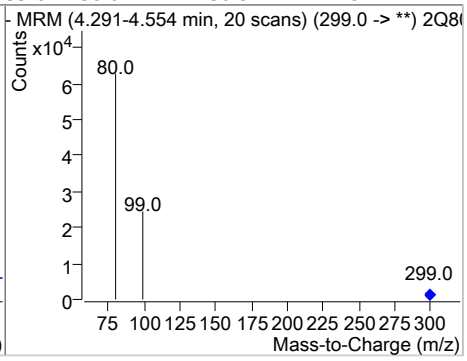




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.24	4.39	0.04	46272	299.0 -> 99.0	38.0	30.5	45.7



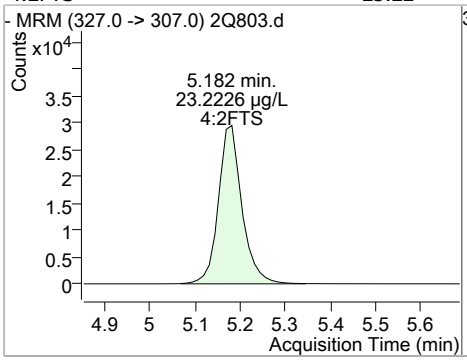


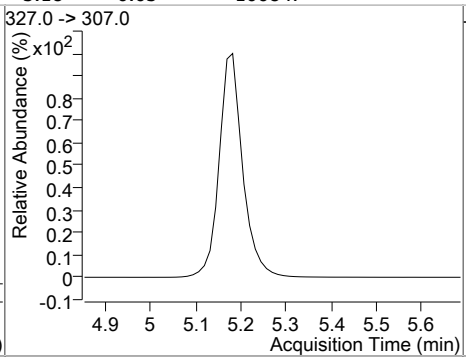


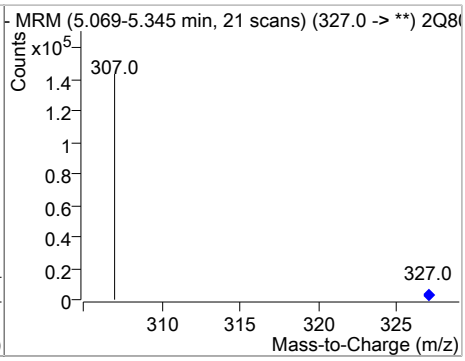
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

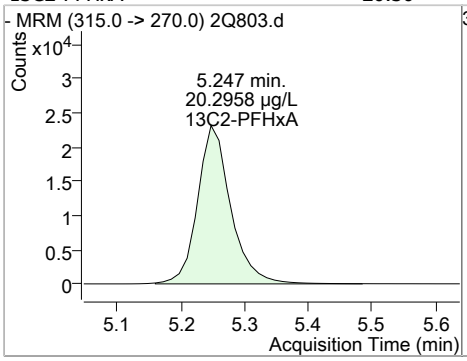
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	23.22	5.18	0.05	106847				

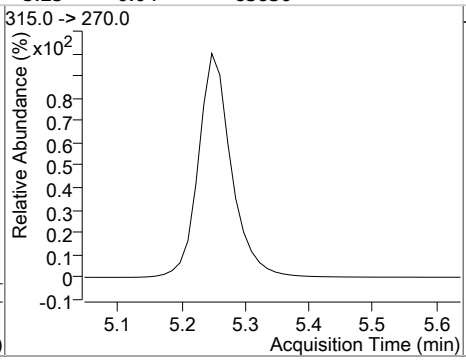


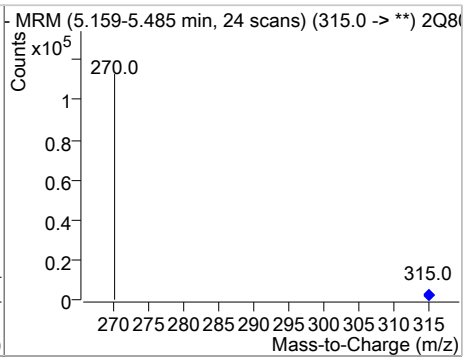




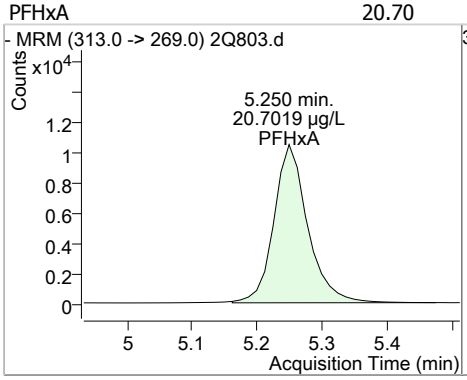
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	20.30	5.25	0.04	83836				

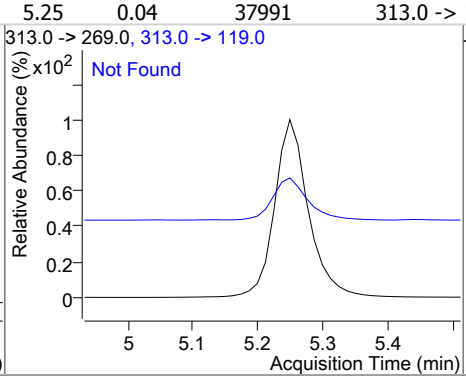


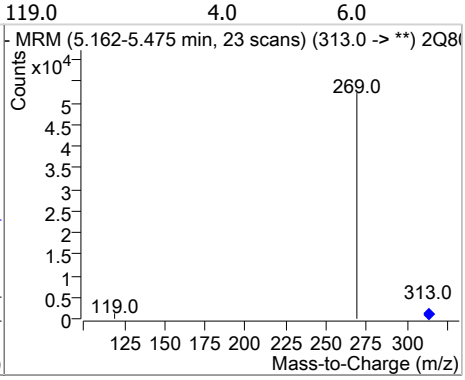




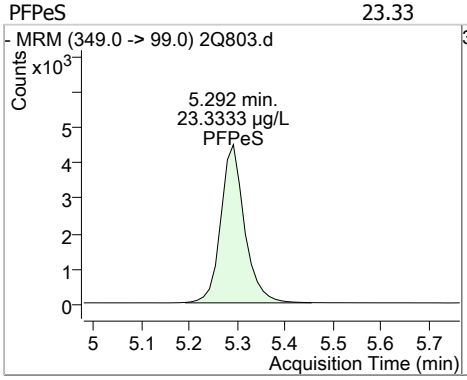
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.70	5.25	0.04	37991	313.0 -> 119.0		4.0	6.0

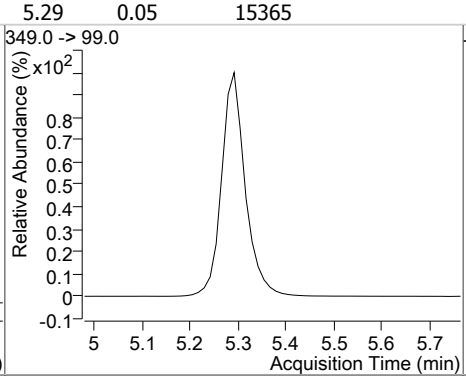


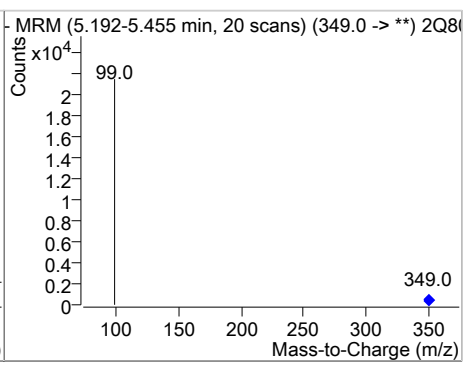




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	23.33	5.29	0.05	15365				



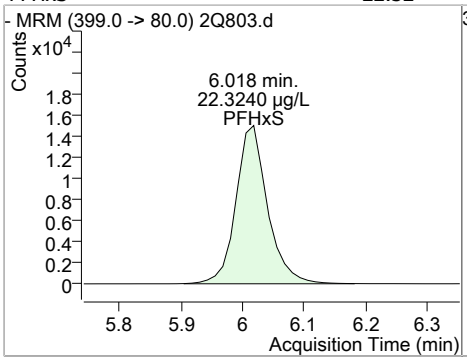


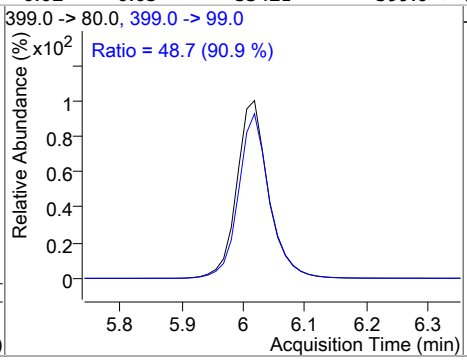


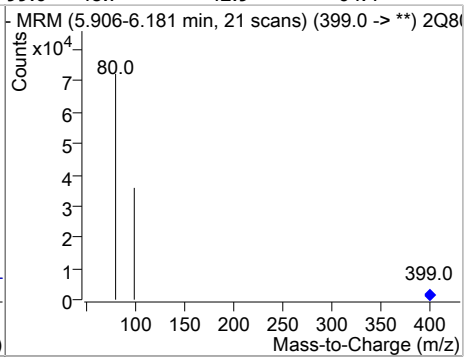
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

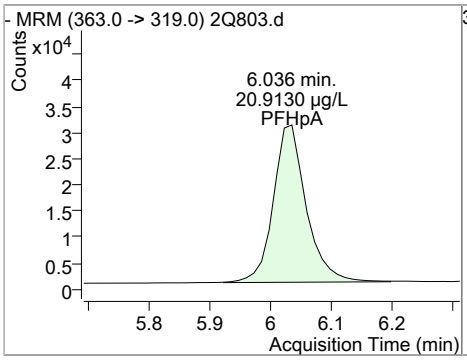
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.32	6.02	0.05	53421	399.0 -> 99.0	48.7	42.9	64.4

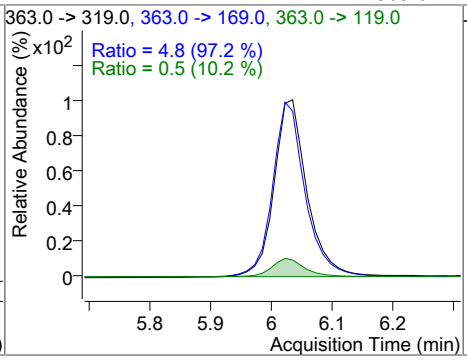


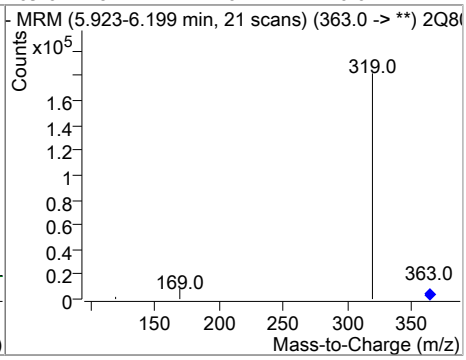




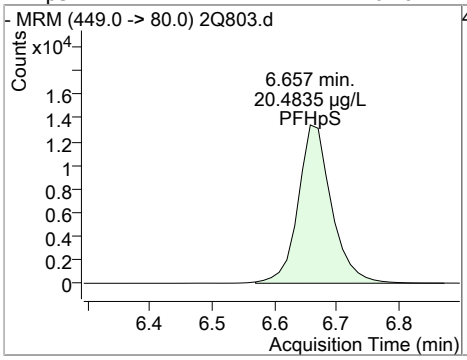
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.91	6.04	0.05	113837	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.8	4.0	6.0

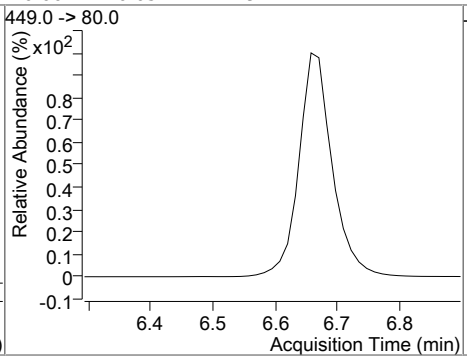


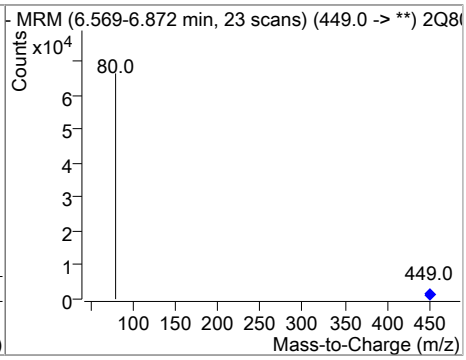




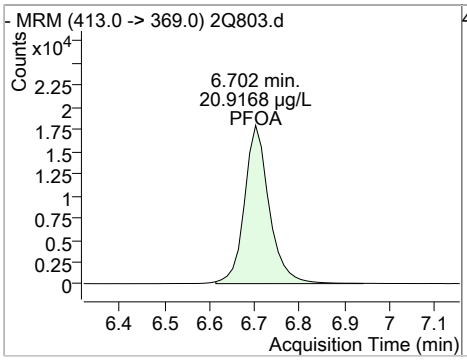
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.48	6.66	0.05	49712				

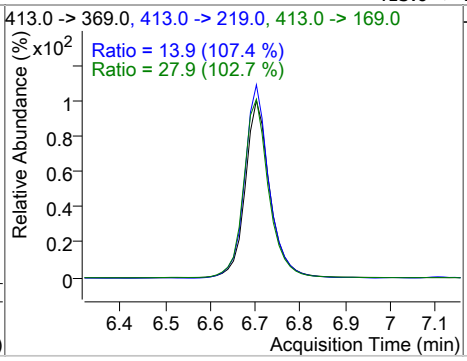


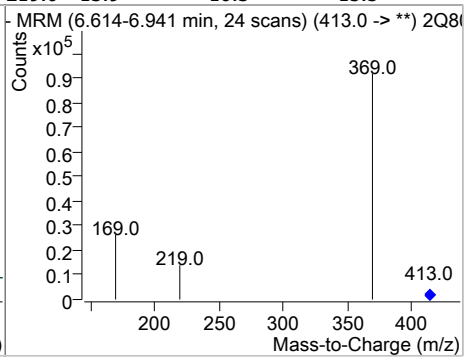




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.92	6.70	0.06	67987	413.0 -> 169.0	27.9	21.8	32.6
					413.0 -> 219.0	13.9	10.3	15.5



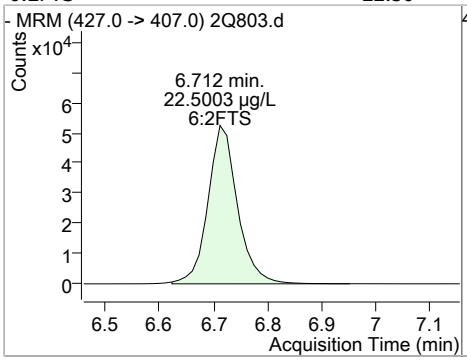


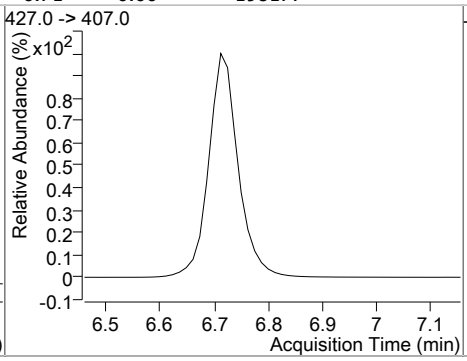


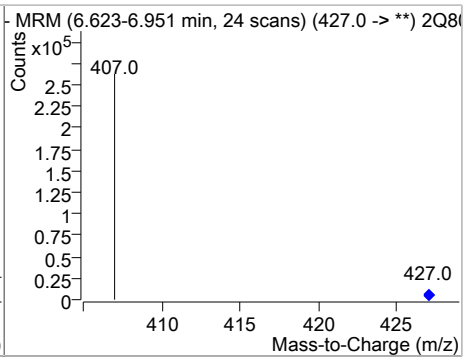
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

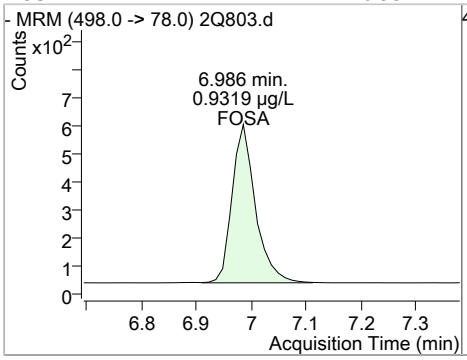
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.50	6.71	0.06	198177				

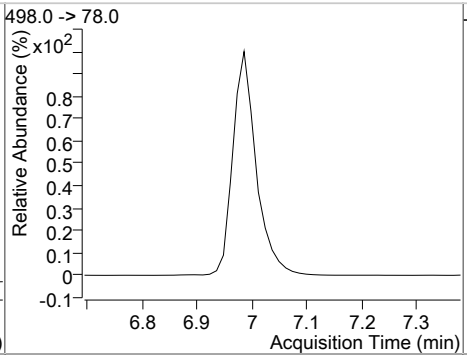


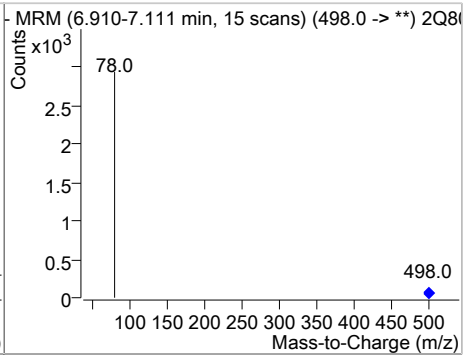




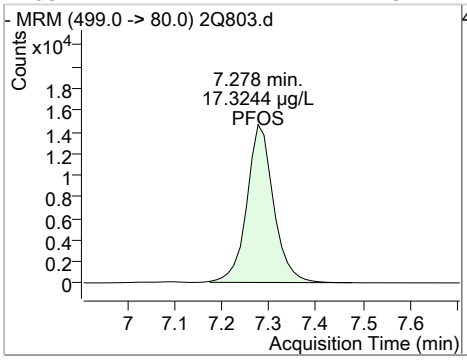
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.93	6.99	0.00	1671				

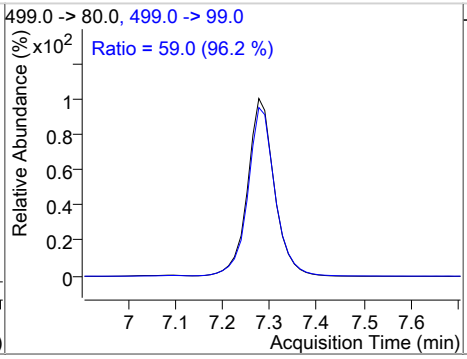


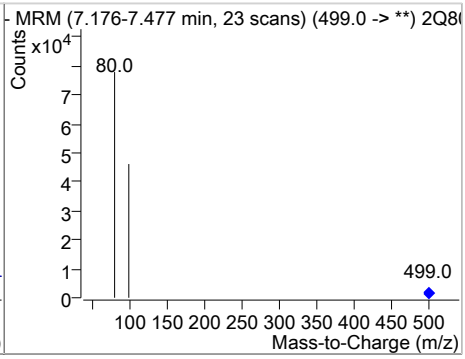




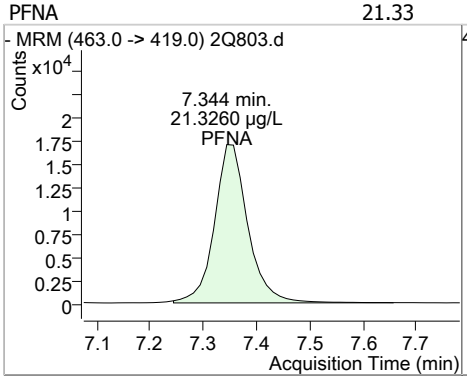
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.32	7.28	0.08	57291	499.0 -> 99.0	59.0	49.1	73.6

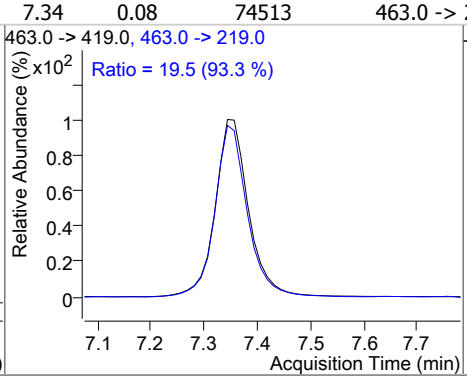


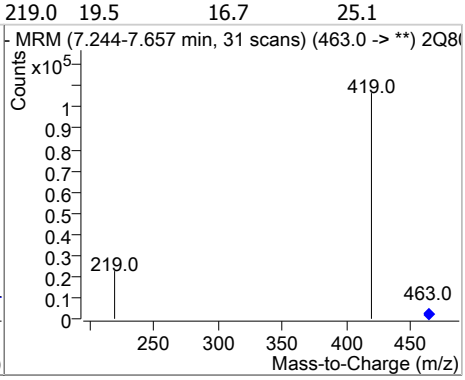




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.33	7.34	0.08	74513	463.0 -> 219.0	19.5	16.7	25.1



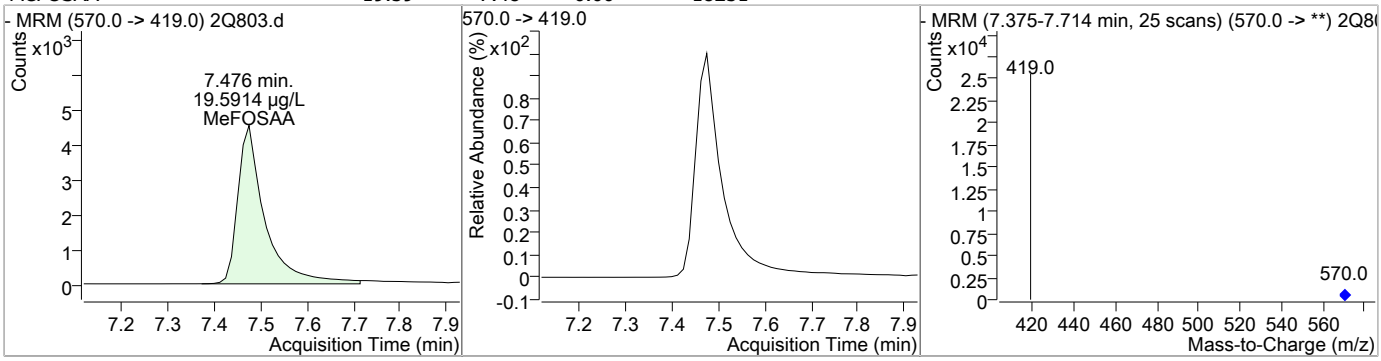




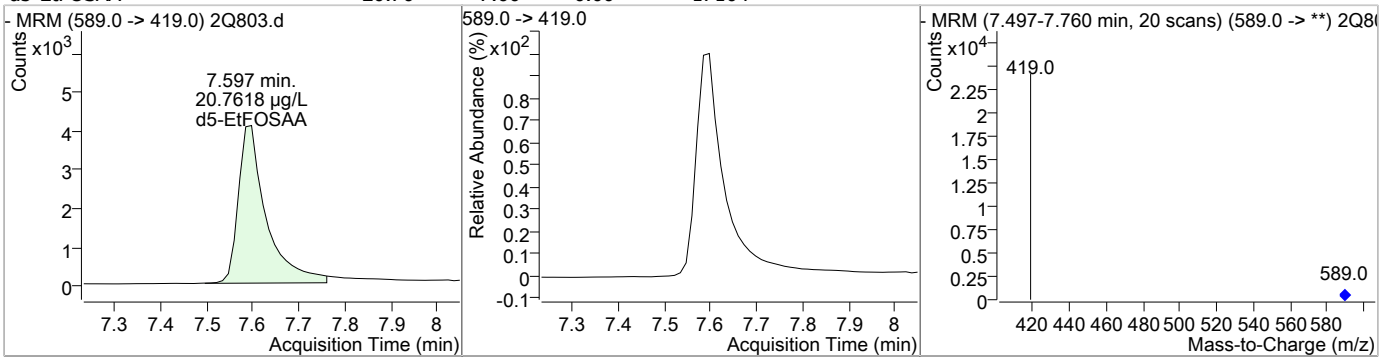
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

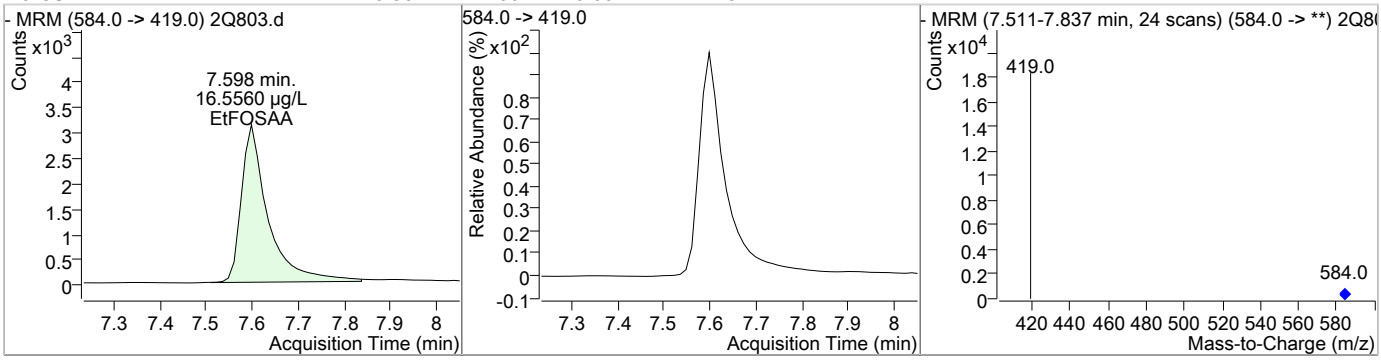
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.59	7.48	0.00	18251				



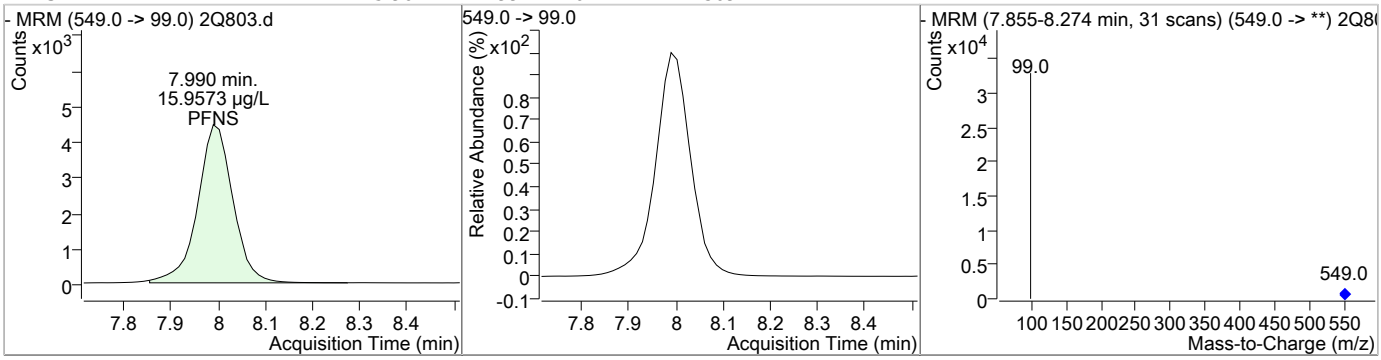
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.76	7.60	0.00	17104				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	16.56	7.60	0.00	12481				



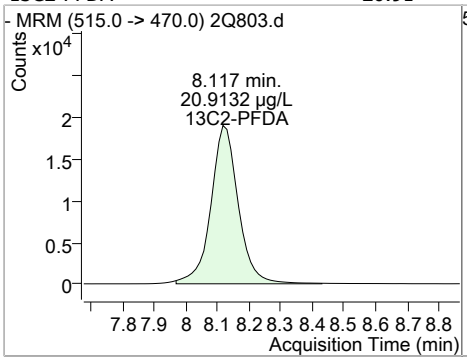
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	15.96	7.99	0.12	23092				

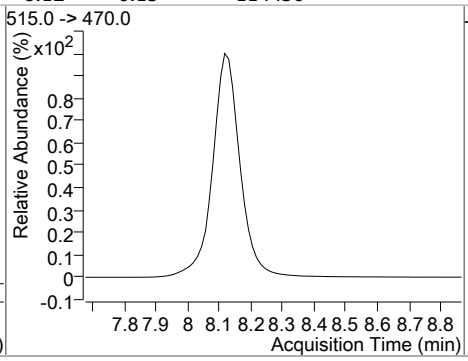


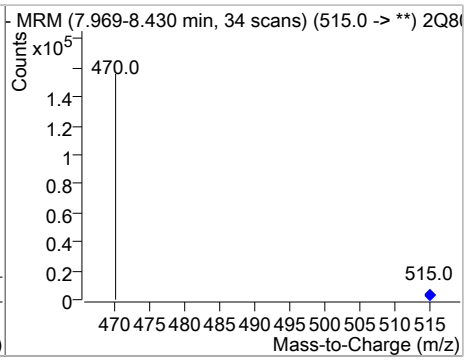
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

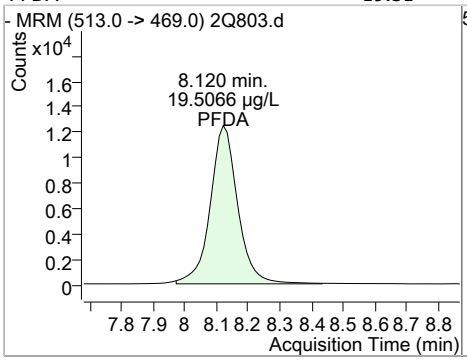
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	20.91	8.12	0.15	114436				

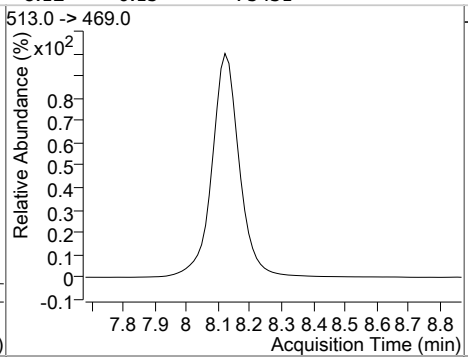


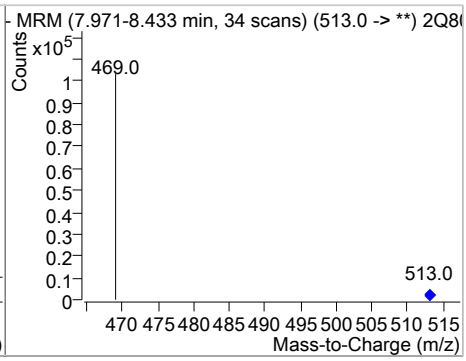




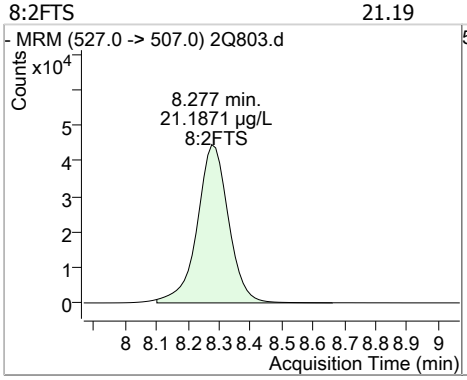
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.51	8.12	0.15	75431				

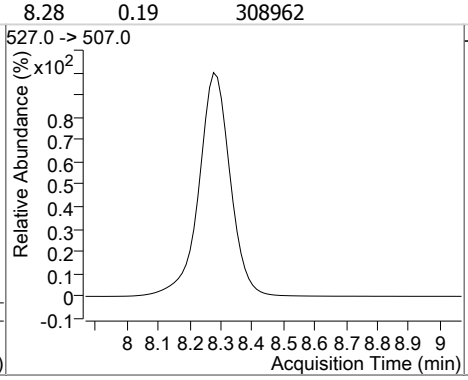


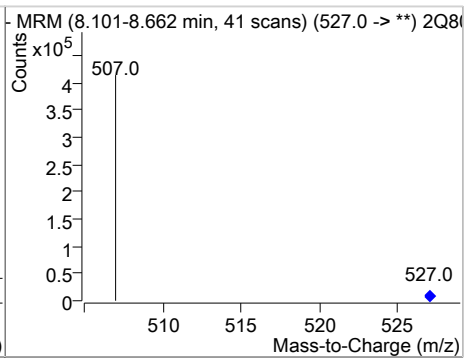




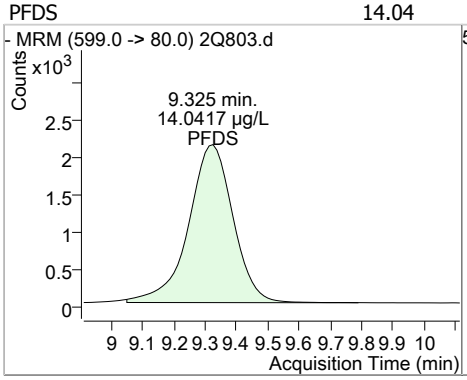
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.19	8.28	0.19	308962				

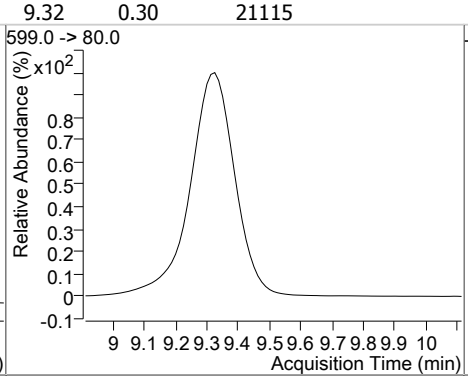


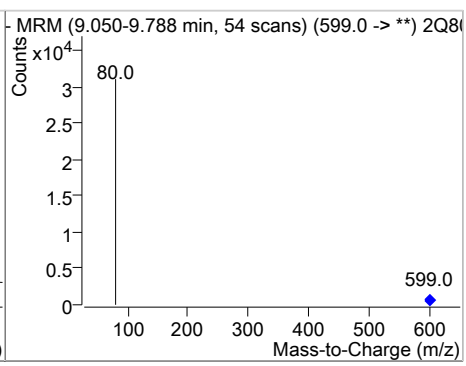




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	14.04	9.32	0.30	21115				



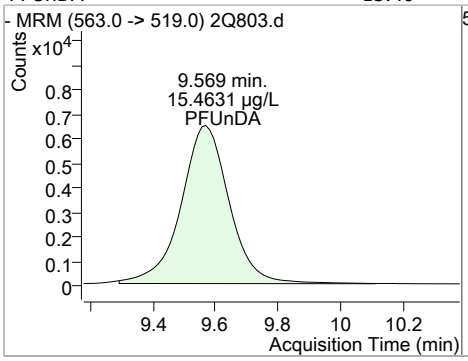


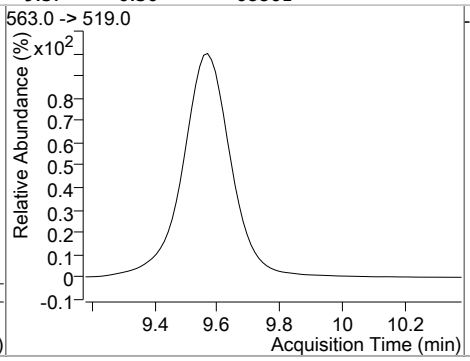


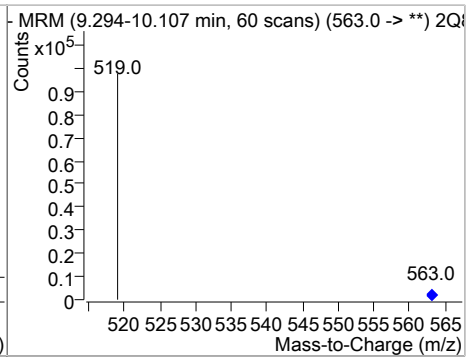
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

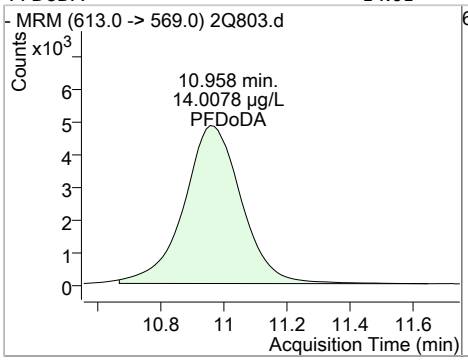
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	15.46	9.57	0.30	68861				

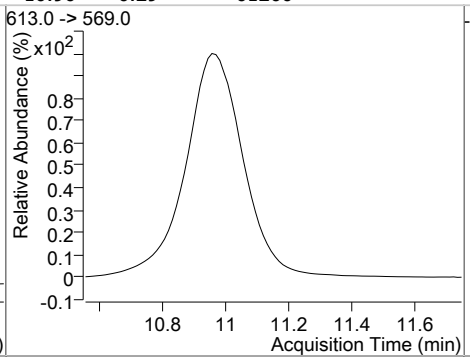


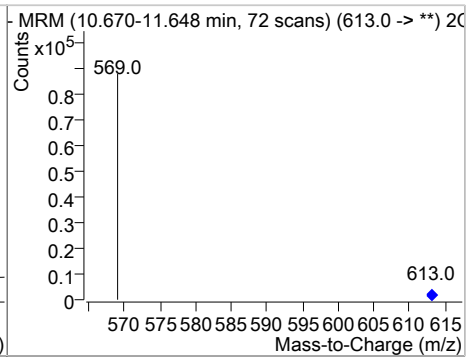




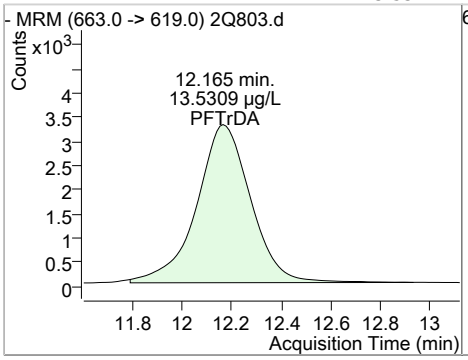
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	14.01	10.96	0.29	61266				

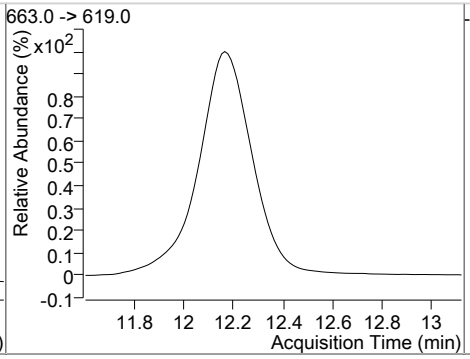


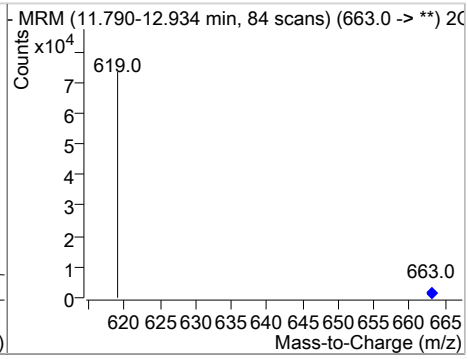




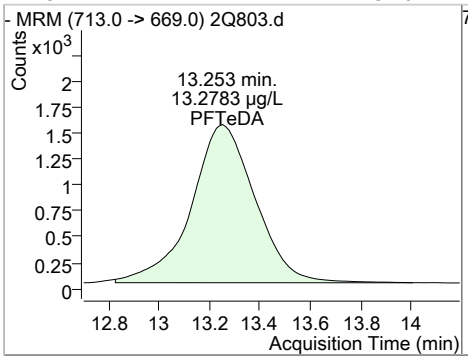
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	13.53	12.16	0.30	49863				

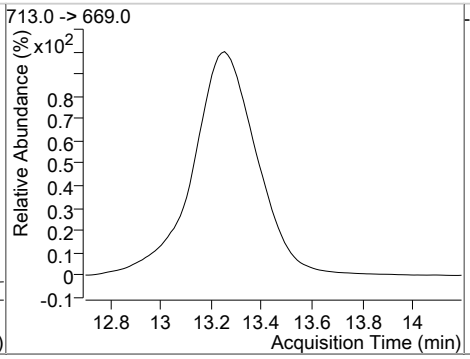


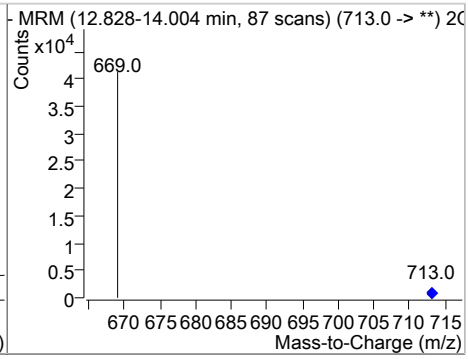




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.28	13.25	0.33	26985				







Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

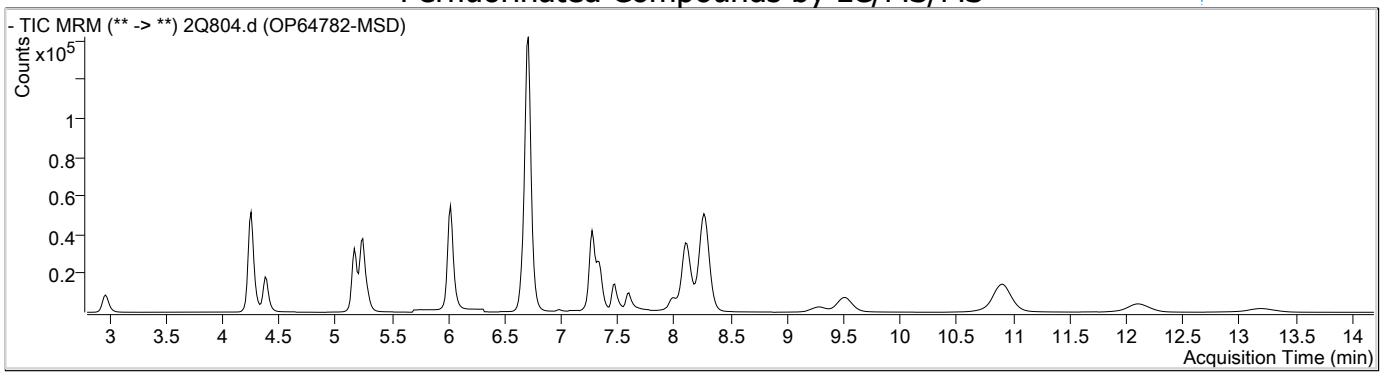
Data File	:	2Q804.d
Operator	:	NANCYF
Acq. Method	:	dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time	:	4/27/2017 11:29:53 AM
Sample Name	:	OP64782-MSD
Vial	:	Vial 17
DA Method File	:	PFCLISTDW_0420_S2Q18.m
Batch Name	:	S2Q23.batch.bin
Last Calib Update	:	4/27/2017 2:25:49 PM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.710	429.0 -> 409.0	184277	20.00	µg/L		0.063
13C2-PFDoDA	10.901	615.0 -> 570.0	100380	20.00	µg/L		0.238
13C2-PFOA	6.701	415.0 -> 370.0	78835	20.00	µg/L		0.064
13C3-PFPeA	4.259	266.0 -> 222.0	75019	20.00	µg/L		0.025
13C4-PFOS	7.276	503.0 -> 80.0	58159	20.00	µg/L		0.077
d3-MeFOSAA	7.462	573.0 -> 419.0	34342	20.00	µg/L		-0.012
System Monitoring Compounds							
13C2-PFDA	8.105	515.0 -> 470.0	125769	22.80	µg/L		0.135
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 114.0%			
13C2-PFHxA	5.247	315.0 -> 270.0	90255	21.67	µg/L		0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 108.4%			
d5-EtFOSAA	7.585	589.0 -> 419.0	19754	23.04	µg/L		-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 115.2%			
Target Compounds							**QValue**
4:2FTS	5.170	327.0 -> 307.0	111483	23.95	µg/L		100
6:2FTS	6.712	427.0 -> 407.0	200304	22.48	µg/L		100
8:2FTS	8.264	527.0 -> 507.0	334629	22.68	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	16037	20.43	µg/L		100
FOSA	6.986	498.0 -> 78.0	2519	1.36	µg/L		100
MeFOSAA	7.476	570.0 -> 419.0	21939	22.56	µg/L		100
PFBA	2.965	213.0 -> 169.0	37322	18.00	µg/L		100
PFBS	4.378	299.0 -> 80.0	45110	19.44	µg/L		99
PFDA	8.108	513.0 -> 469.0	79012	20.27	µg/L		100
PFDoDA	10.895	613.0 -> 569.0	72213	16.59	µg/L		100
PFDS	9.275	599.0 -> 80.0	23556	15.38	µg/L		100
PFHpA	6.023	363.0 -> 319.0	115237	21.00	µg/L	#	93
PFHpS	6.657	449.0 -> 80.0	52488	21.31	µg/L		100
PFHxA	5.250	313.0 -> 269.0	40037	21.60	µg/L		85
PFHxS	6.006	399.0 -> 80.0	52120	21.46	µg/L		93
PFNA	7.344	463.0 -> 419.0	74085	21.03	µg/L		98
PFNS	7.990	549.0 -> 99.0	27681	18.85	µg/L		100
PFOA	6.703	413.0 -> 369.0	67435	20.58	µg/L		97
PFOS	7.278	499.0 -> 80.0	61342	18.28	µg/L		96
PFPeA	4.263	263.0 -> 219.0	116049	20.39	µg/L		100
PFPeS	5.280	349.0 -> 99.0	15836	22.18	µg/L		100
PFTeDA	13.191	713.0 -> 669.0	32769	16.18	µg/L		100
PFTrDA	12.102	663.0 -> 619.0	63782	17.31	µg/L		100
PFUnDA	9.519	563.0 -> 519.0	76890	17.46	µg/L		100

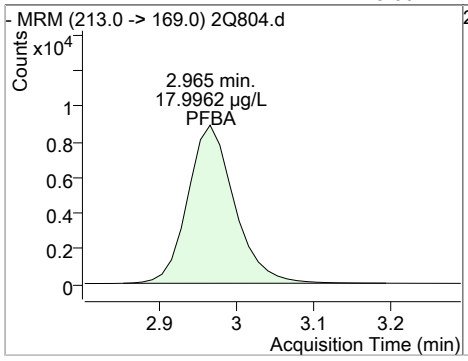
 # = Qualifier out of range, m = manually integrated, + = Area summed

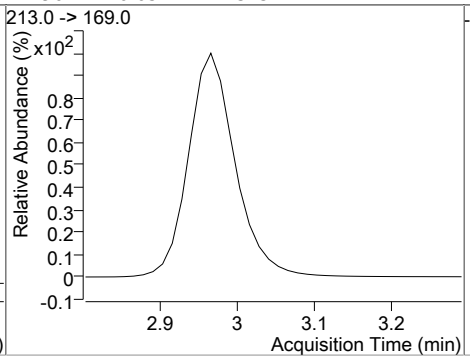
Perfluorinated Compounds by LC/MS/MS

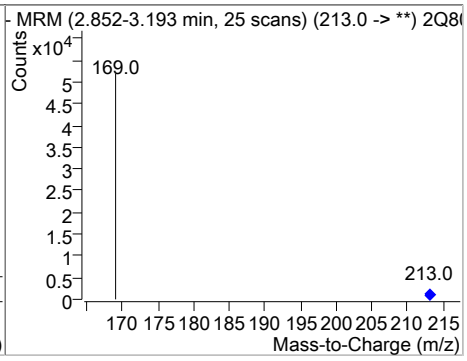
Agilent Technologies



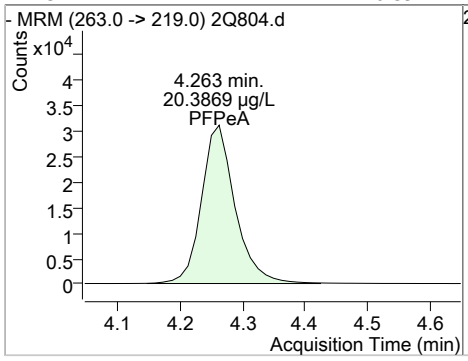
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.00	2.96	0.03	37322				

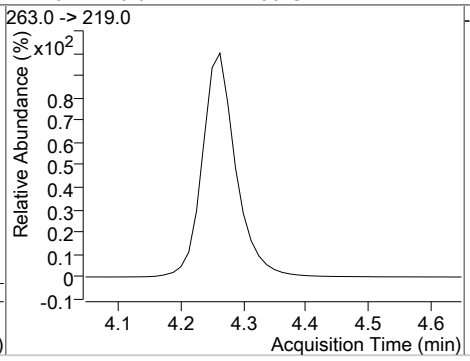


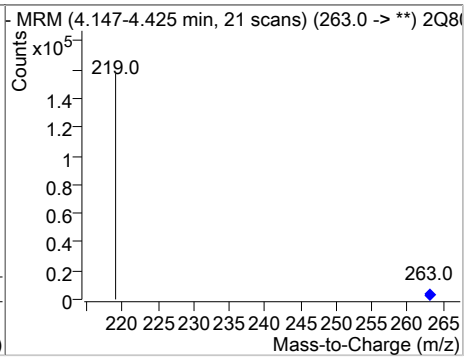




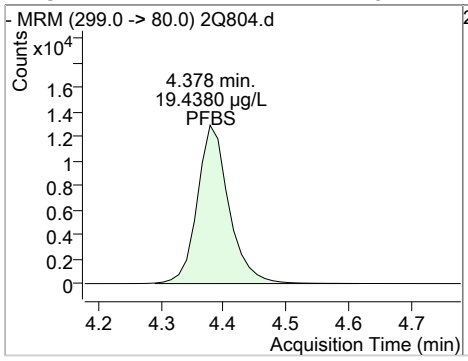
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.39	4.26	0.04	116049				

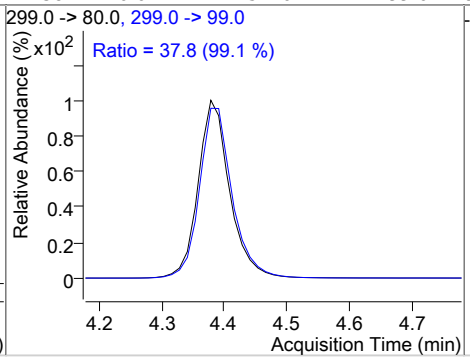


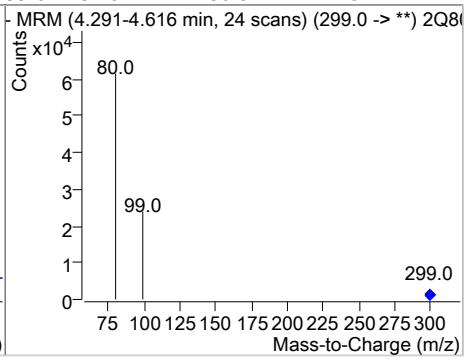




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.44	4.38	0.02	45110	299.0 -> 99.0	37.8	30.5	45.7



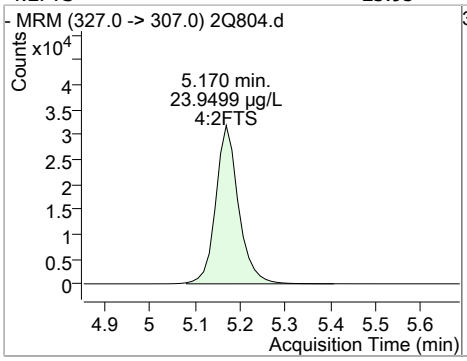


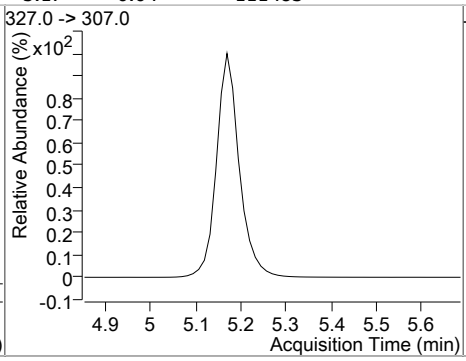


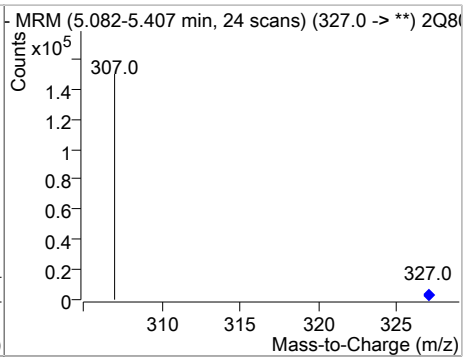
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

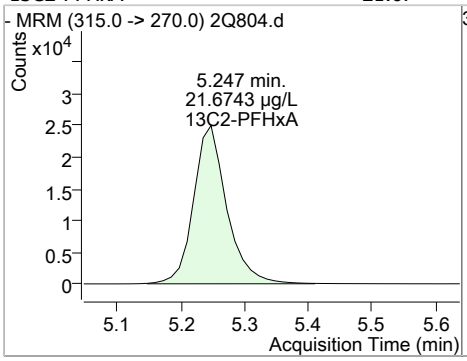
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	23.95	5.17	0.04	111483				

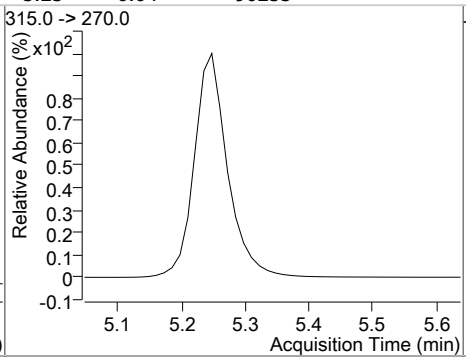


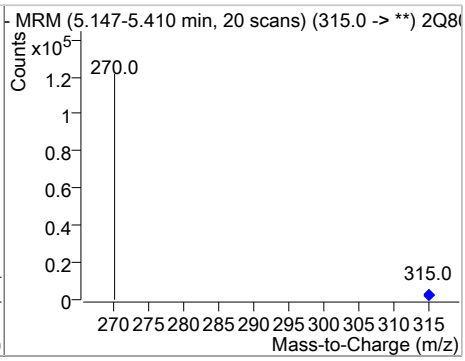




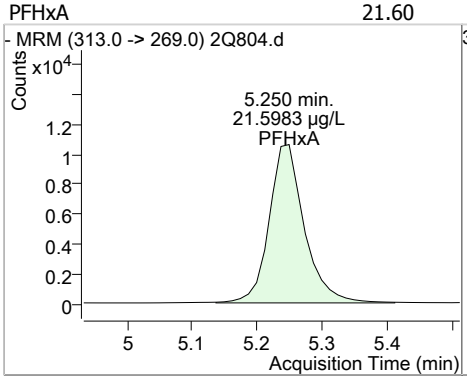
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	21.67	5.25	0.04	90255				

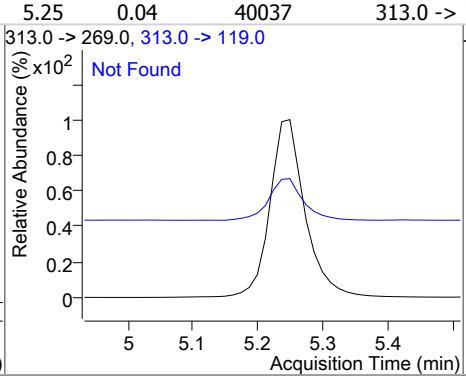


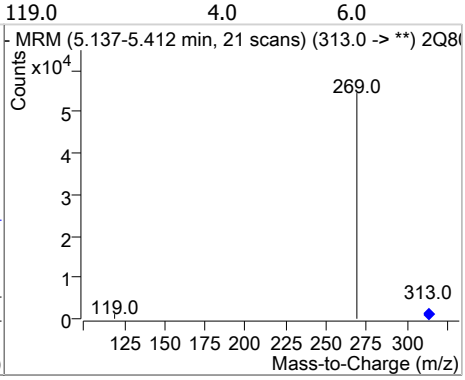




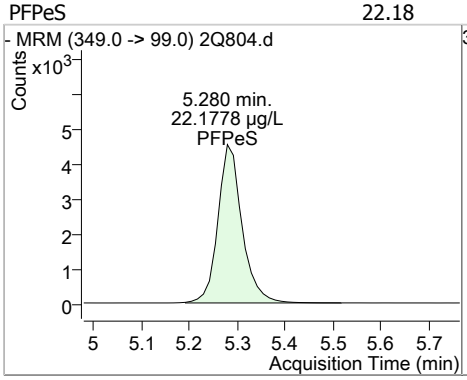
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.60	5.25	0.04	40037	313.0 -> 119.0		4.0	6.0

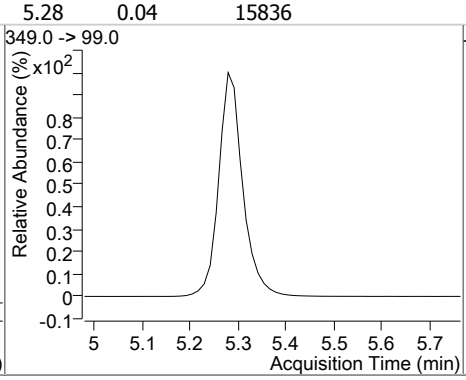


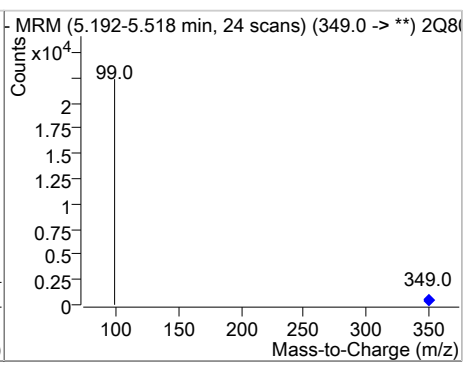




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.18	5.28	0.04	15836				







Perfluorinated Compounds by LC/MS/MS

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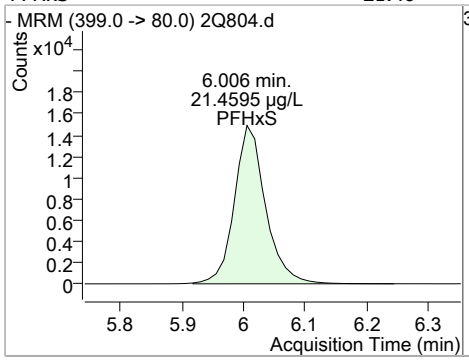
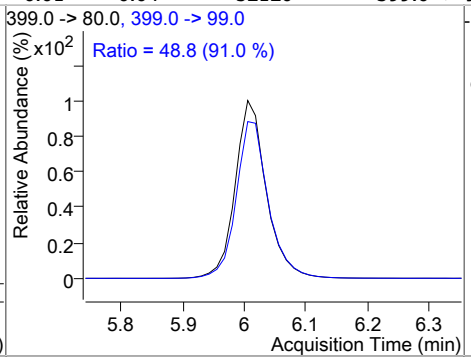
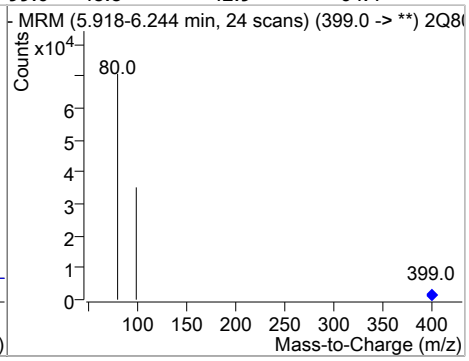
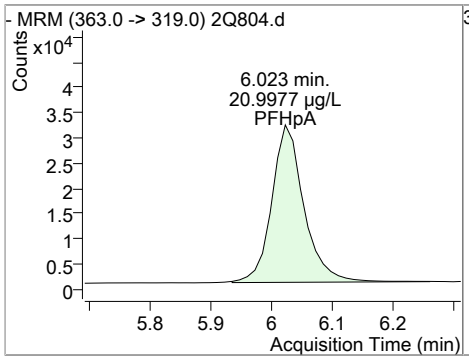
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	21.46	6.01	0.04	52120	399.0 -> 99.0	48.8	42.9	64.4

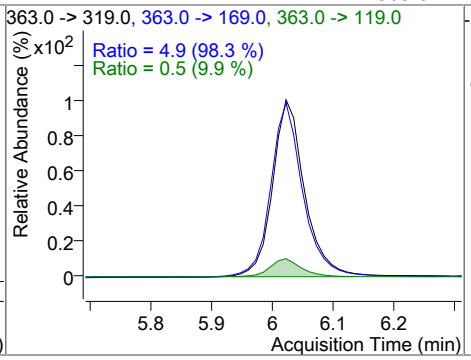


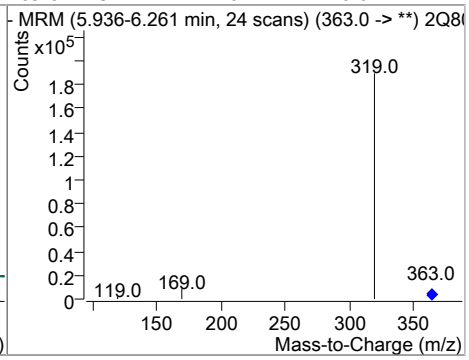




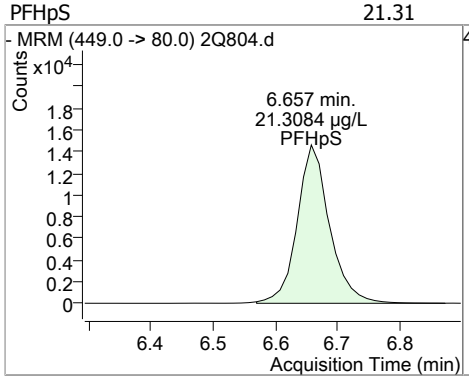
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.00	6.02	0.04	115237	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.9	4.0	6.0

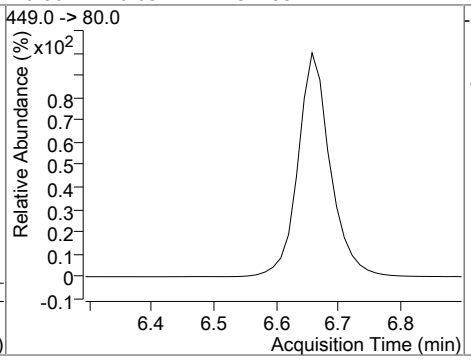


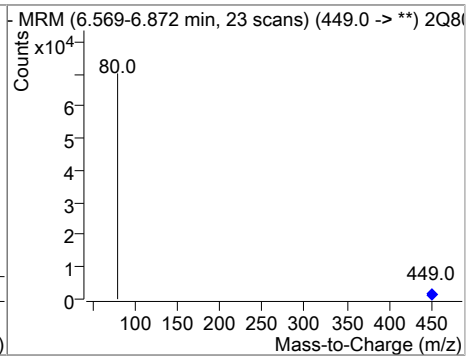




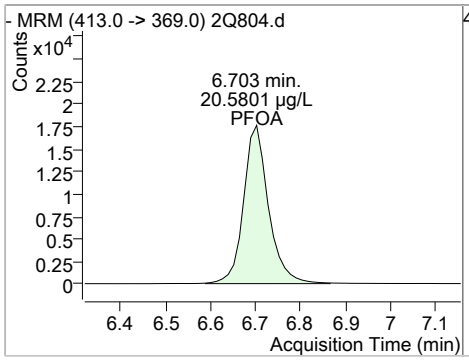
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.31	6.66	0.05	52488				

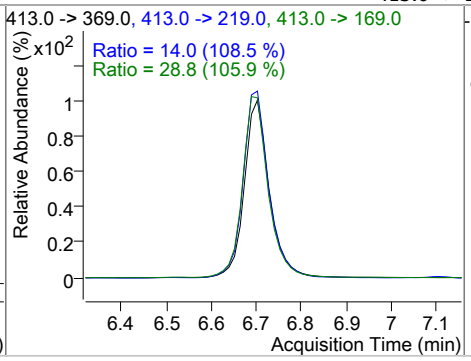


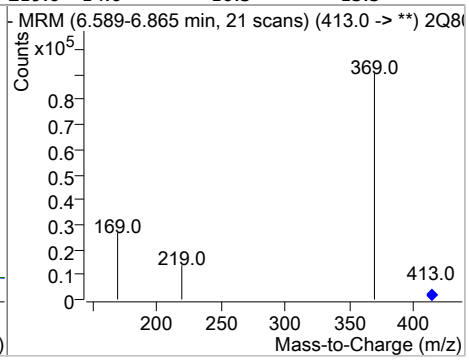




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.58	6.70	0.06	67435	413.0 -> 169.0	28.8	21.8	32.6
					413.0 -> 219.0	14.0	10.3	15.5







Perfluorinated Compounds by LC/MS/MS

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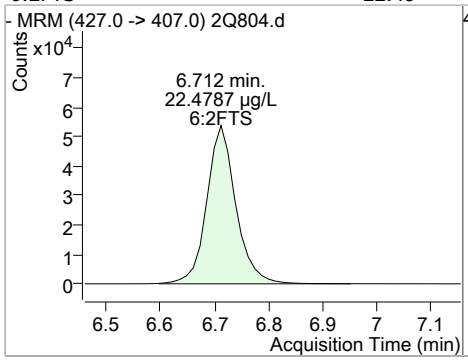
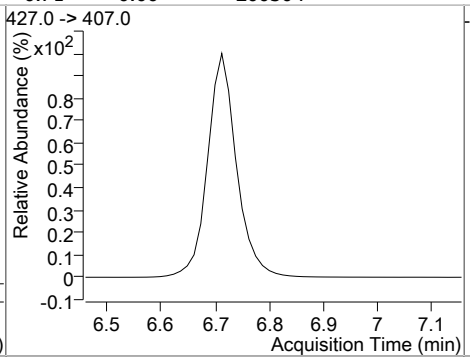
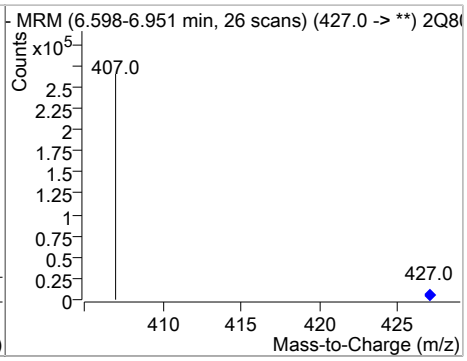
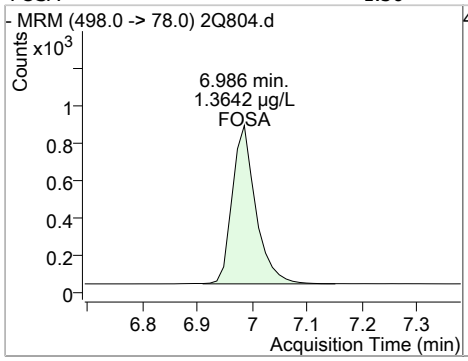
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.48	6.71	0.06	200304				

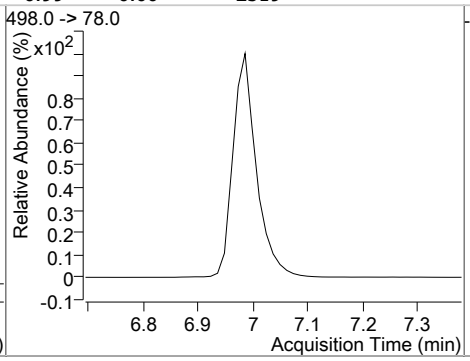


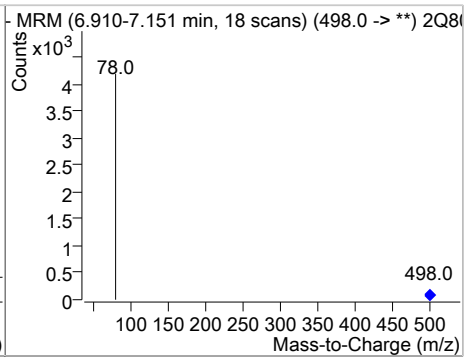




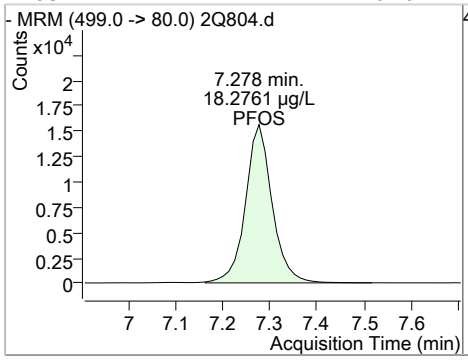
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.36	6.99	0.00	2519				

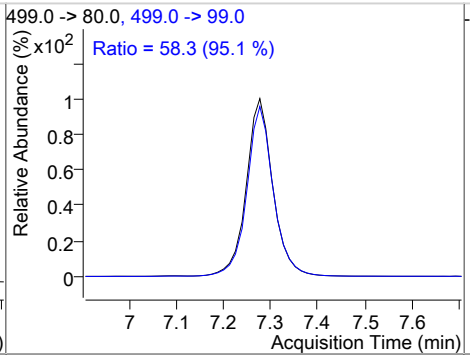


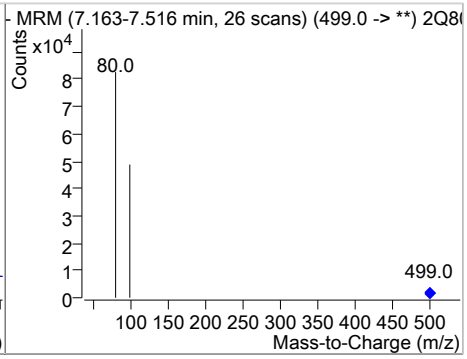




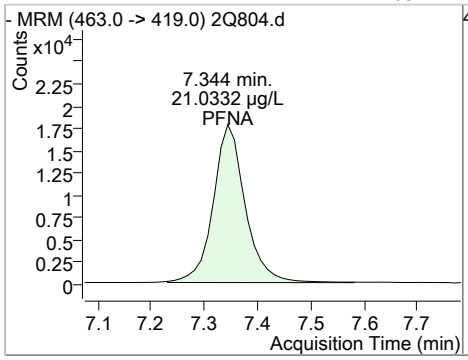
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.28	7.28	0.08	61342	499.0 -> 99.0	58.3	49.1	73.6

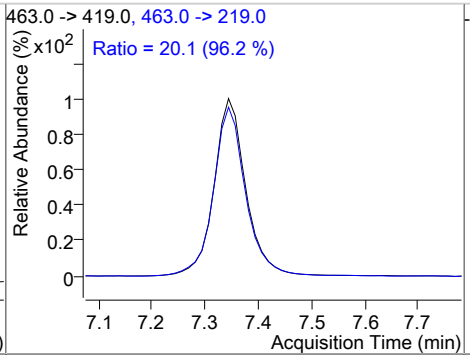


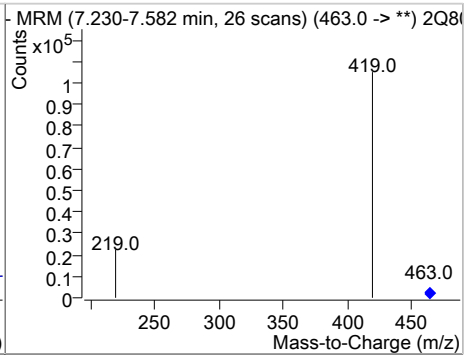




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.03	7.34	0.08	74085	463.0 -> 219.0	20.1	16.7	25.1







Perfluorinated Compounds by LC/MS/MS

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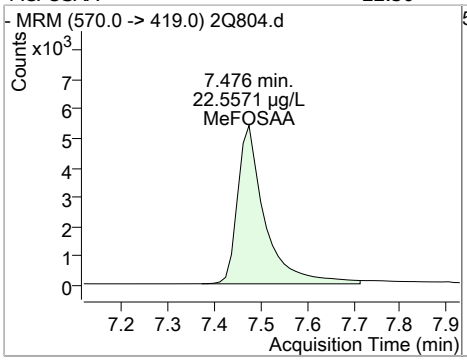
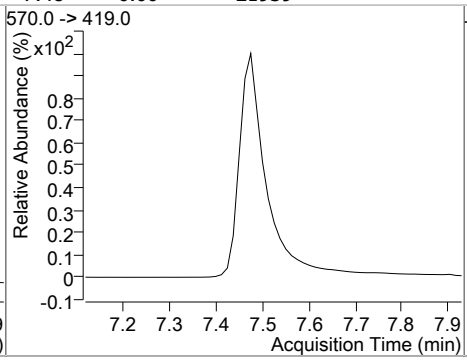
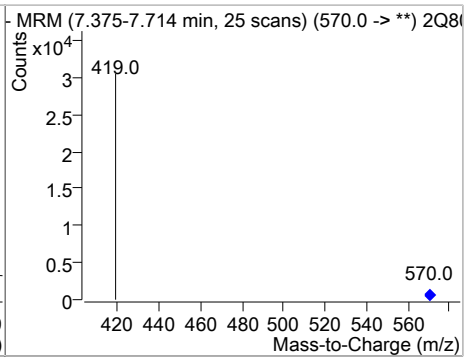
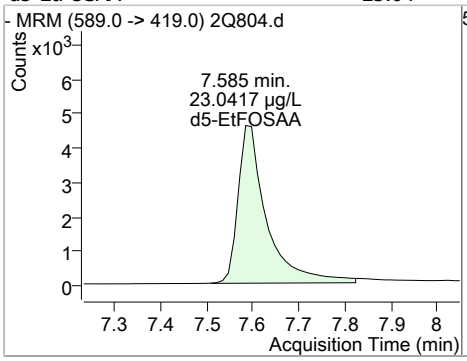
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	22.56	7.48	0.00	21939				

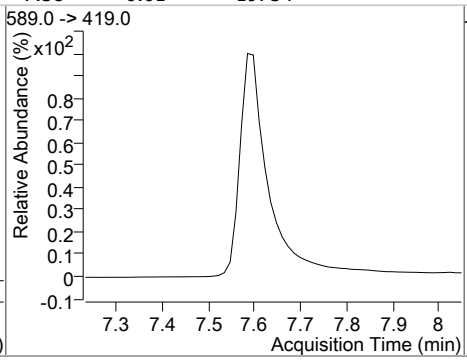


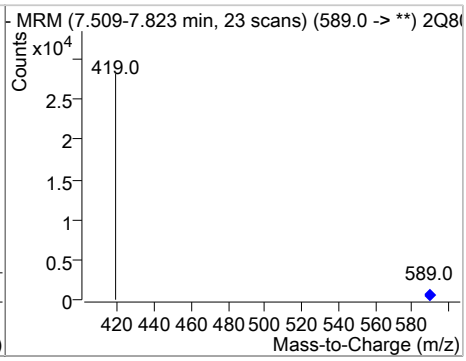




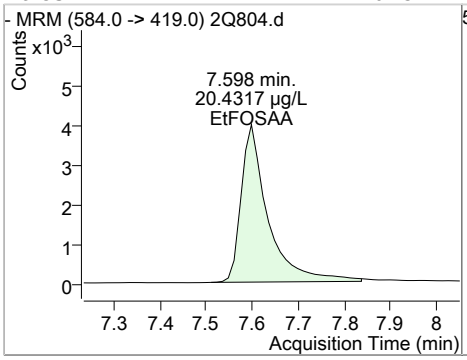
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.04	7.58	-0.01	19754				

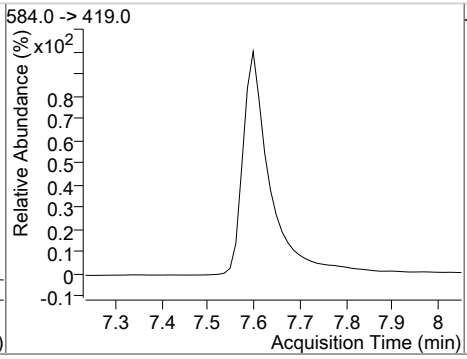


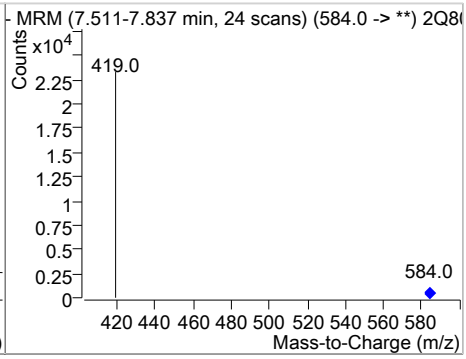




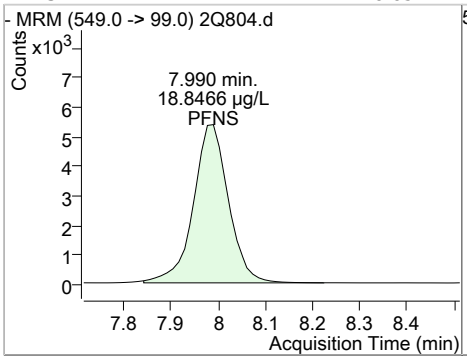
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.43	7.60	0.00	16037				

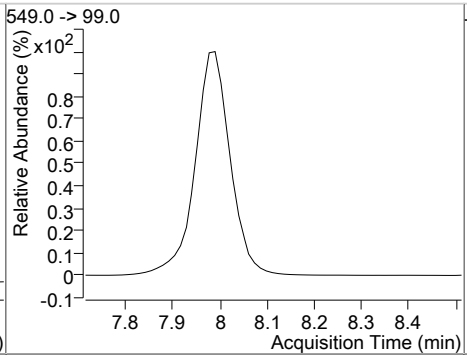


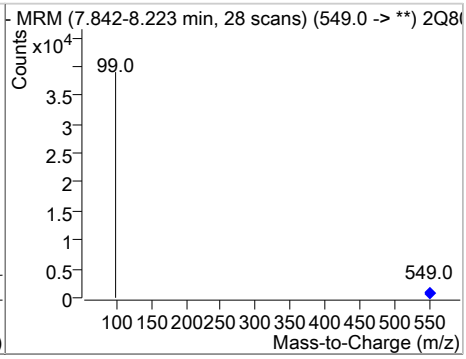




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.85	7.99	0.12	27681				







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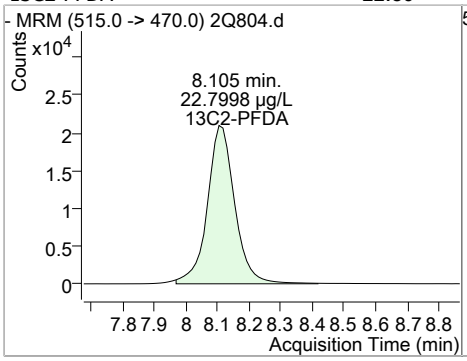
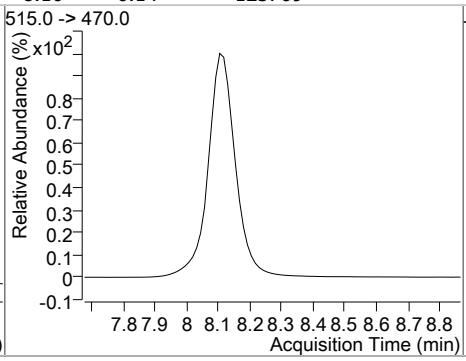
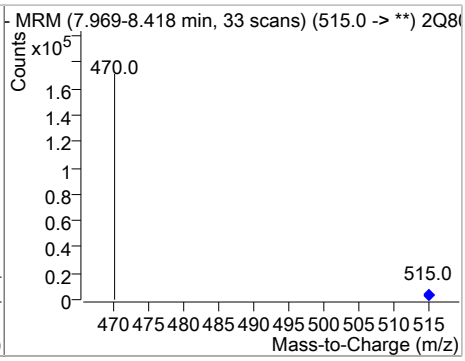
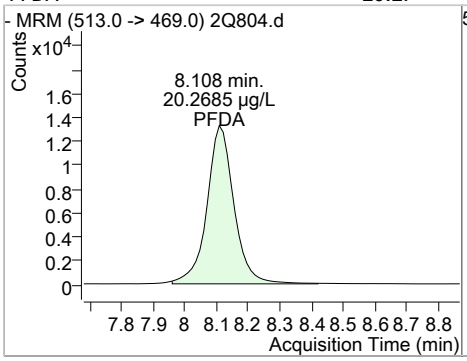
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	22.80	8.10	0.14	125769				

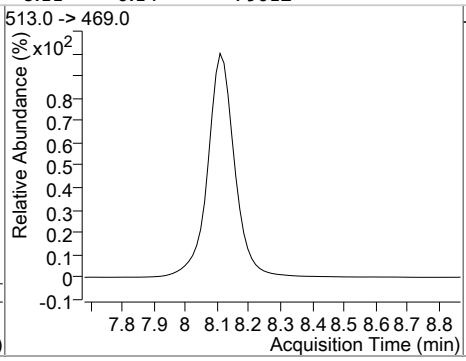


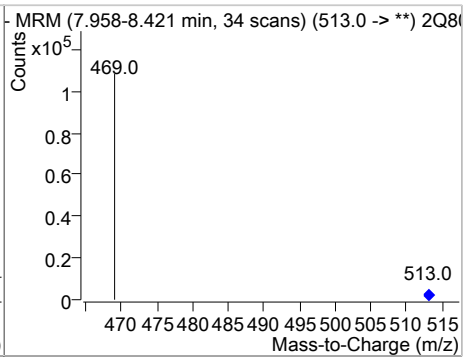




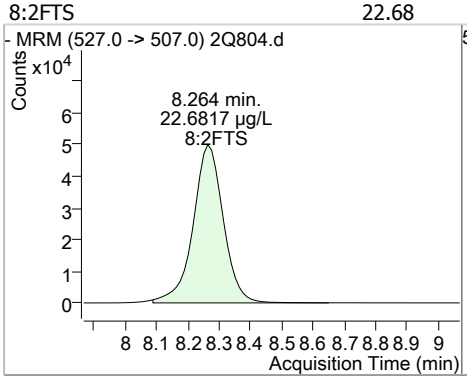
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.27	8.11	0.14	79012				

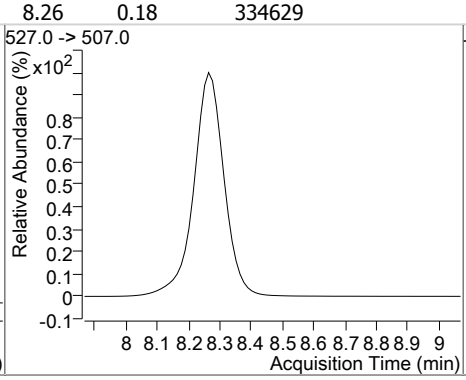


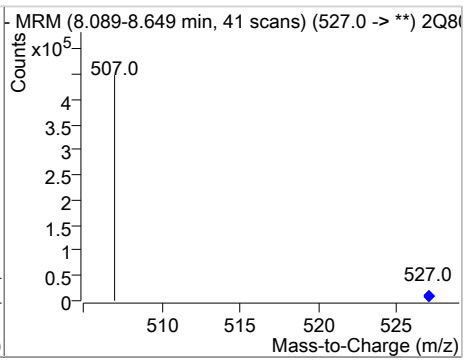




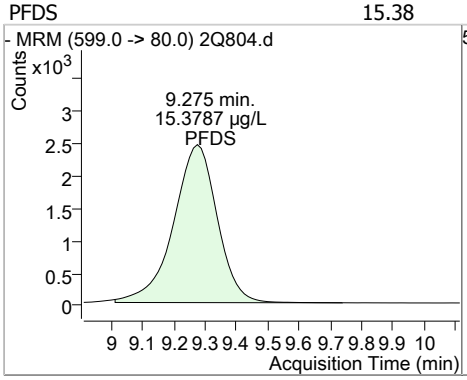
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	22.68	8.26	0.18	334629				

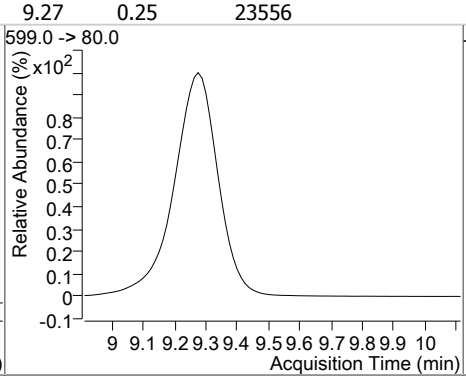


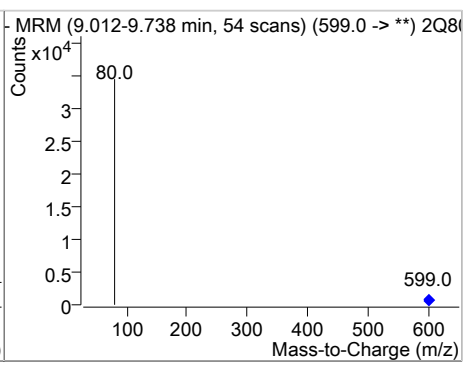




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	15.38	9.27	0.25	23556				



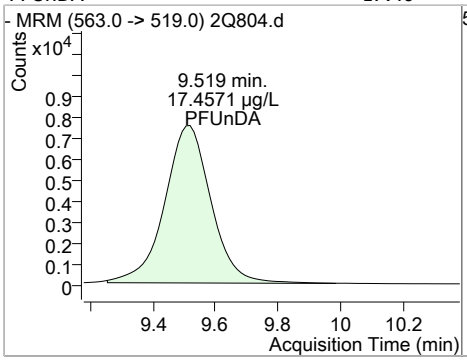


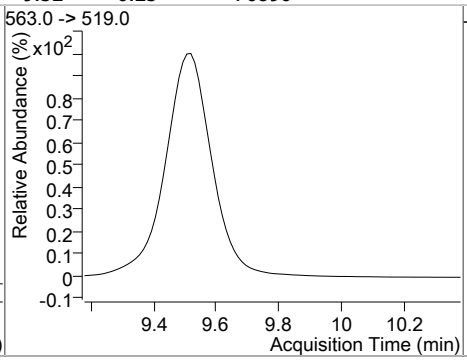


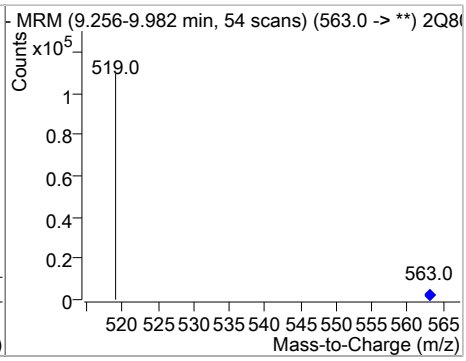
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

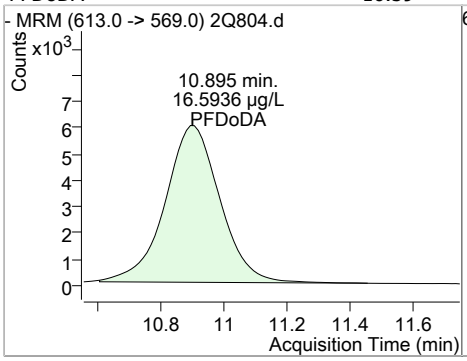
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	17.46	9.52	0.25	76890				

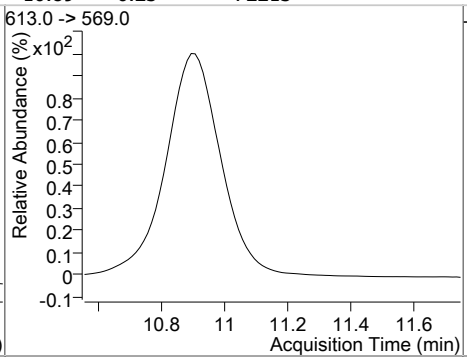


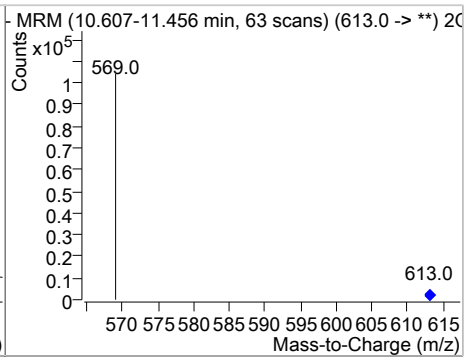




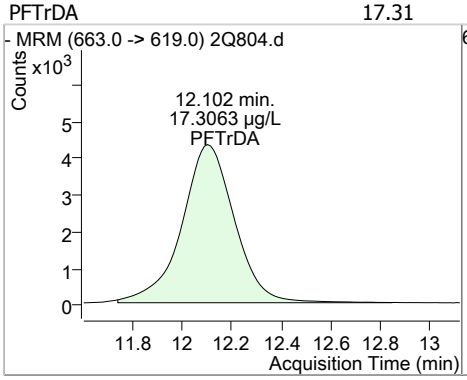
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	16.59	10.89	0.23	72213				

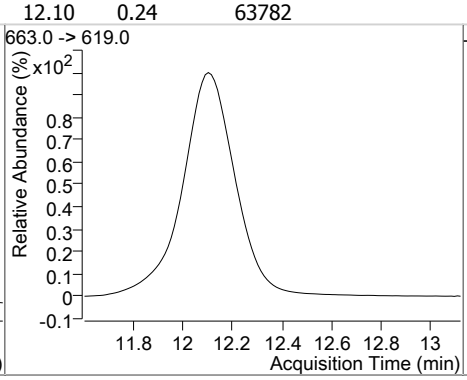


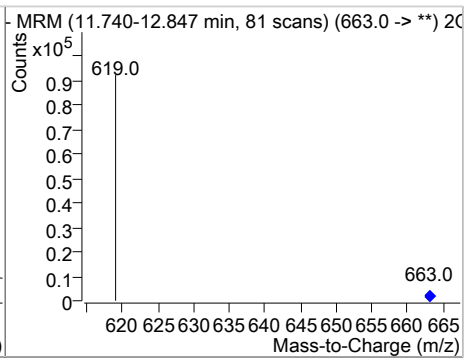




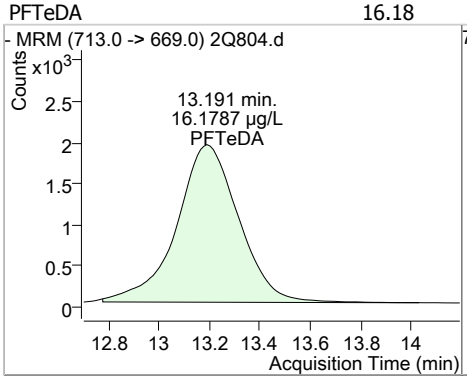
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	17.31	12.10	0.24	63782				

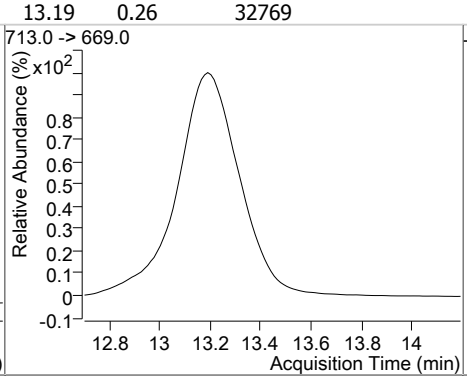


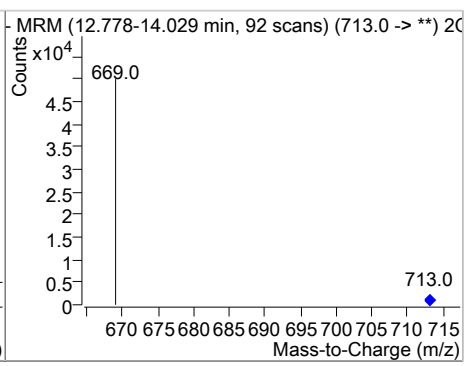




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	16.18	13.19	0.26	32769				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
04/21/17 11:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q651.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/20/2017 11:54:23 AM
Sample Name : IC18-1
Vial : Vial 2
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : S2Q18.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.660	429.0 -> 409.0	146593	20.00	µg/L		0.013
13C2-PFDoDA	10.714	615.0 -> 570.0	95399	20.00	µg/L		0.050
13C2-PFOA	6.651	415.0 -> 370.0	81433	20.00	µg/L		0.013
13C3-PFPeA	4.247	266.0 -> 222.0	77778	20.00	µg/L		0.013
13C4-PFOS	7.214	503.0 -> 80.0	57060	20.00	µg/L		0.014
d3-MeFOSAA	7.474	573.0 -> 419.0	34386	20.00	µg/L		0.000
System Monitoring Compounds							
13C2-PFDA	7.994	515.0 -> 470.0	5647	0.99	µg/L		0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 5.0%			
13C2-PFHxA	5.222	315.0 -> 270.0	3970	0.92	µg/L		0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 4.6%			
d5-EtFOSAA	7.597	589.0 -> 419.0	1446	1.87	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 9.3%			
Target Compounds							**QValue**
4:2FTS	5.144	327.0 -> 307.0	3987	1.08	µg/L		100
6:2FTS	6.662	427.0 -> 407.0	10182	1.44	µg/L		100
8:2FTS	8.114	527.0 -> 507.0	12214	1.04	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	1377	1.85	µg/L		100
FOSA	6.986	498.0 -> 78.0	1869	1.01	µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	1515	1.72	µg/L		100
PFBA	2.952	213.0 -> 169.0	1933	0.90	µg/L		100
PFBS	4.366	299.0 -> 80.0	2172	0.95	µg/L		98
PFDA	7.996	513.0 -> 469.0	4148	1.03	µg/L		100
PFDoDA	10.707	613.0 -> 569.0	4321	1.08	µg/L		100
PFDS	9.062	599.0 -> 80.0	1489	1.03	µg/L		100
PFHpA	5.986	363.0 -> 319.0	6687	1.21	µg/L	#m	93
PFHpS	6.620	449.0 -> 80.0	2286	0.95	µg/L		100
PFHxA	5.225	313.0 -> 269.0	1931	1.06	µg/L	#	86
PFHxS	5.981	399.0 -> 80.0	2304	0.97	µg/L	m	92
PFNA	7.281	463.0 -> 419.0	4586	1.26	µg/L		97
PFNS	7.879	549.0 -> 99.0	1372	0.95	µg/L		100
PFOA	6.652	413.0 -> 369.0	3911	1.16	µg/L	#	96
PFOS	7.215	499.0 -> 80.0	3230	0.98	µg/L	m	86
PFPeA	4.250	263.0 -> 219.0	5893	1.00	µg/L		100
PFPeS	5.255	349.0 -> 99.0	674	0.91	µg/L		100
PFTeDA	12.978	713.0 -> 669.0	2073	1.12	µg/L		100
PFTrDA	11.915	663.0 -> 619.0	3725	1.12	µg/L		100
PFUnDA	9.306	563.0 -> 519.0	4328	1.03	µg/L		100

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

Perfluorinated Compounds by LC/MS/MS

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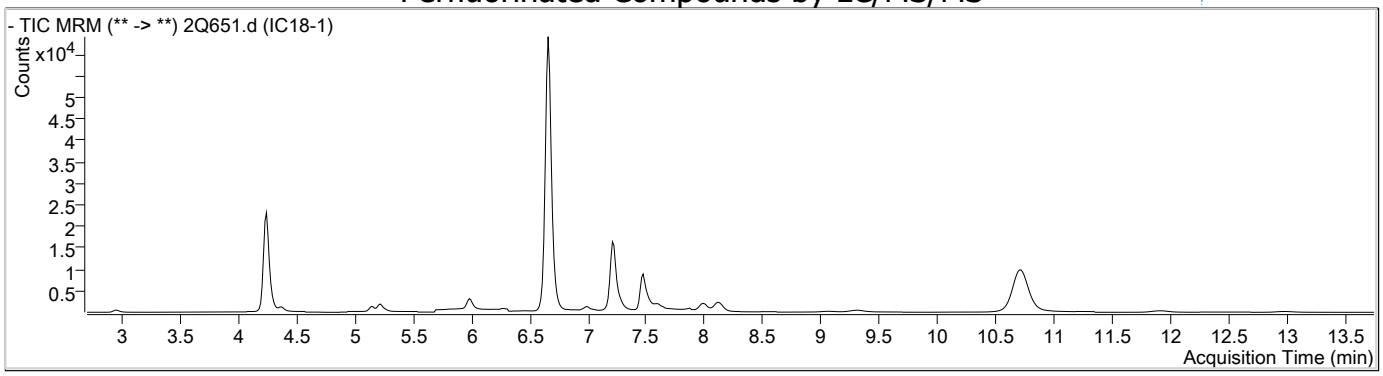
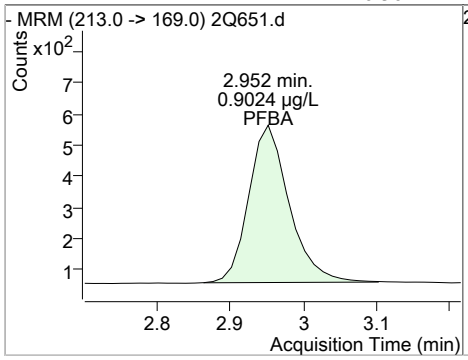
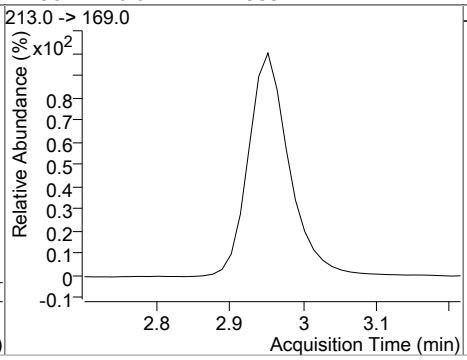
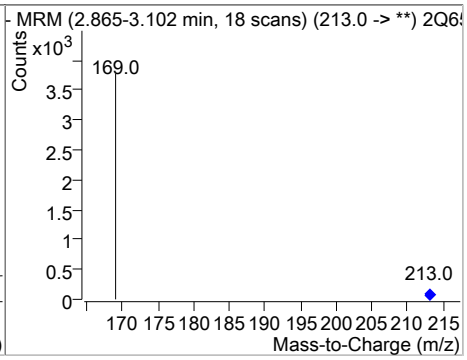


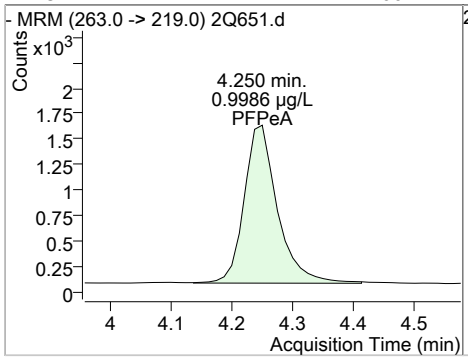
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.90	2.95	0.01	1933				

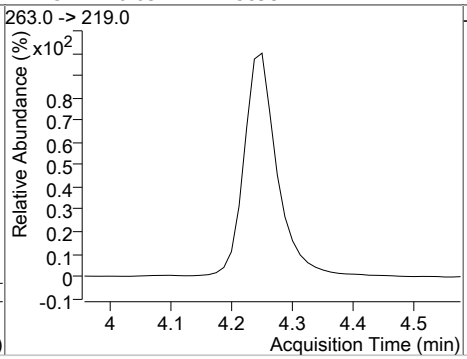


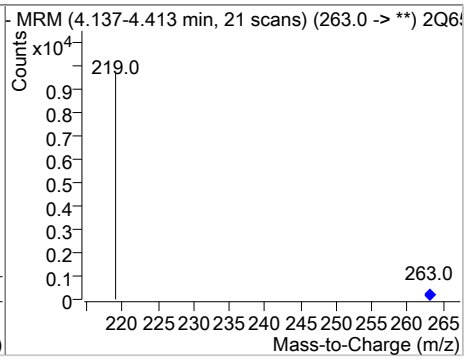




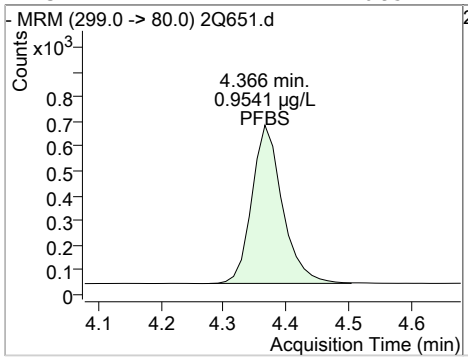
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.00	4.25	0.03	5893				

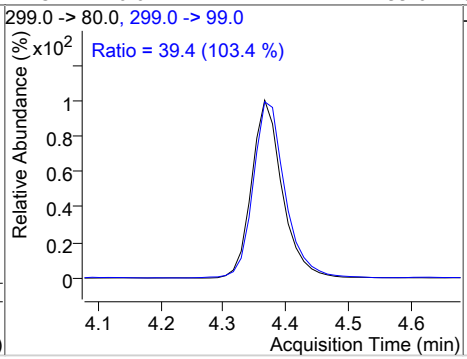


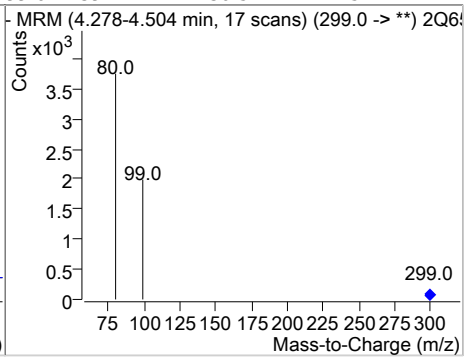




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.95	4.37	0.01	2172	299.0 -> 99.0	39.4	30.5	45.7







Perfluorinated Compounds by LC/MS/MS

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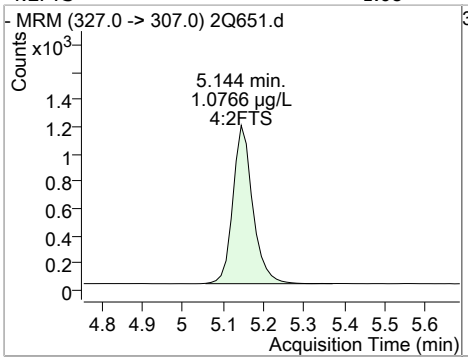
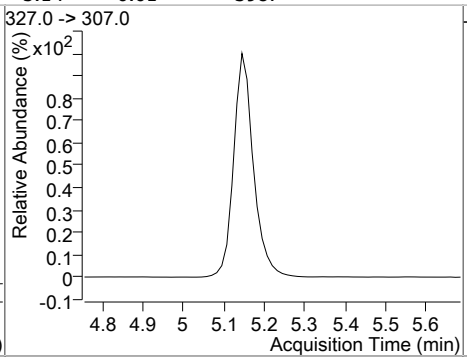
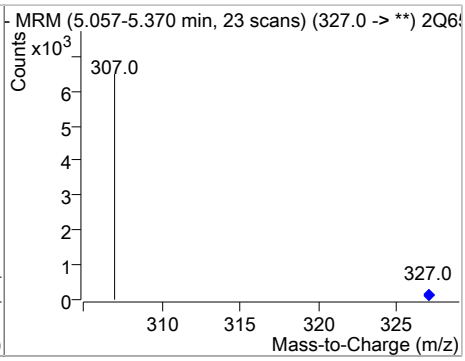
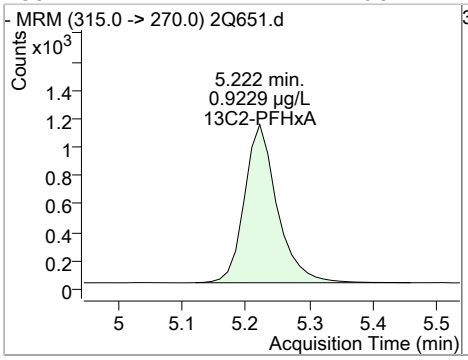
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.08	5.14	0.01	3987				

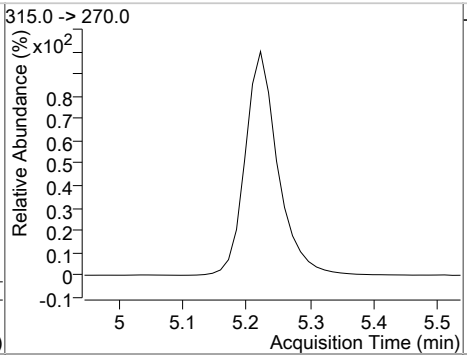


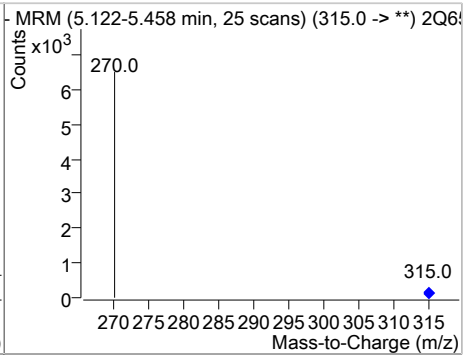




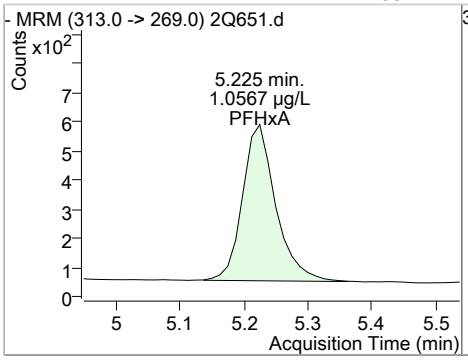
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	0.92	5.22	0.01	3970				

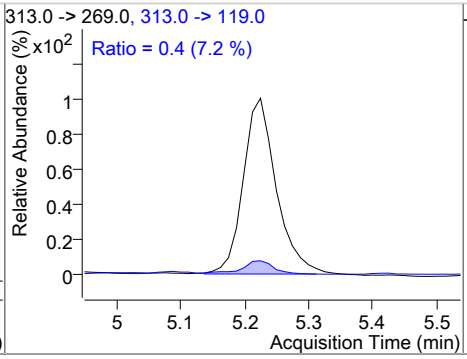


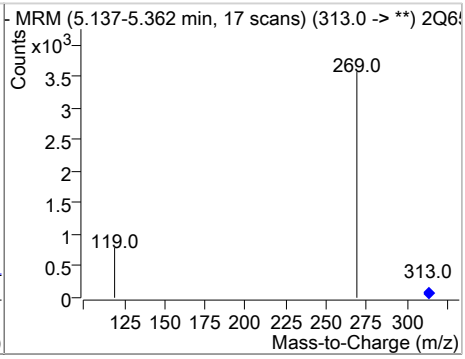




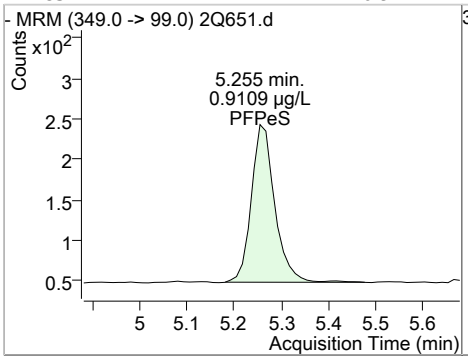
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.06	5.22	0.01	1931	313.0 -> 119.0	0.4	4.0	6.0

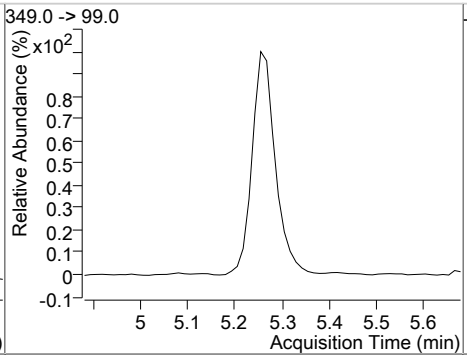


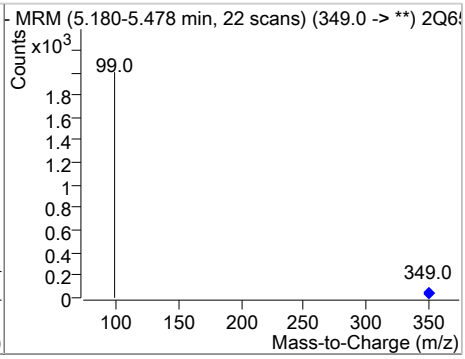




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.91	5.25	0.01	674				



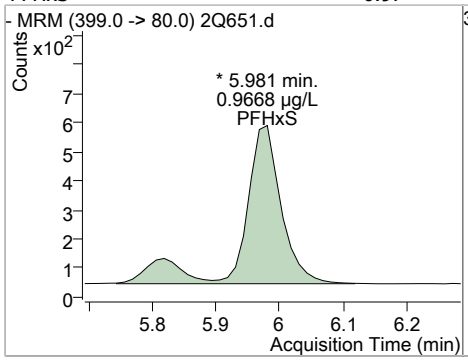


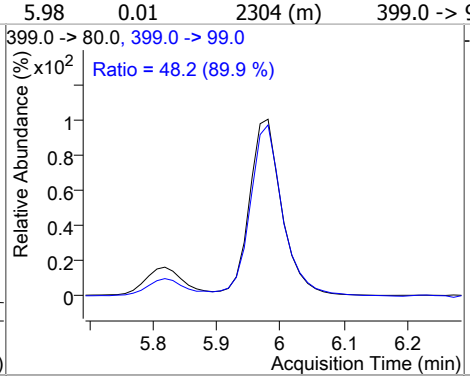


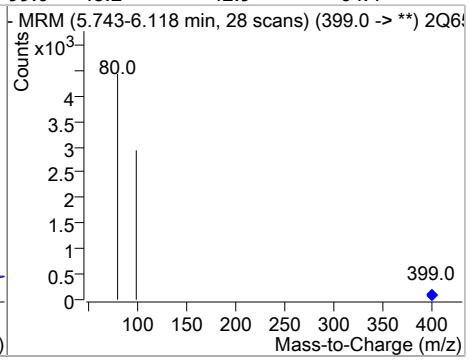
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

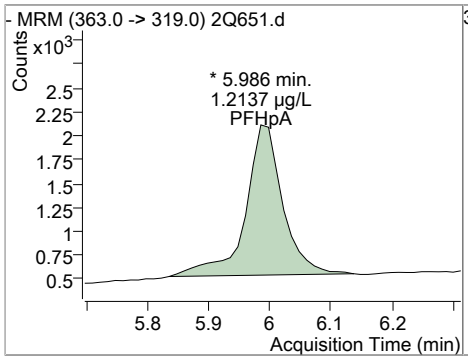
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.97	5.98	0.01	2304 (m)	399.0 -> 99.0	48.2	42.9	64.4

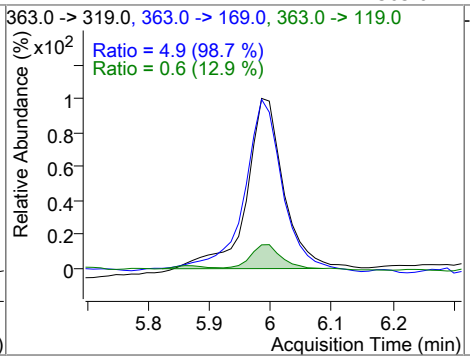


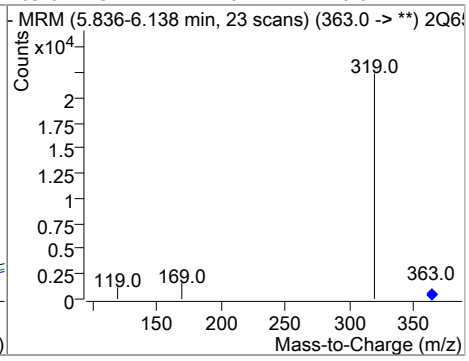




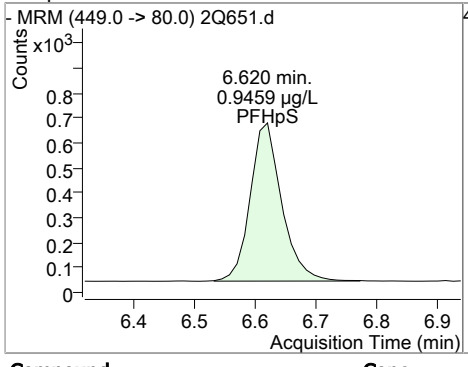
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.21	5.99	0.00	6687 (m)	363.0 -> 119.0	0.6	4.0	6.0
					363.0 -> 169.0	4.9	4.0	6.0

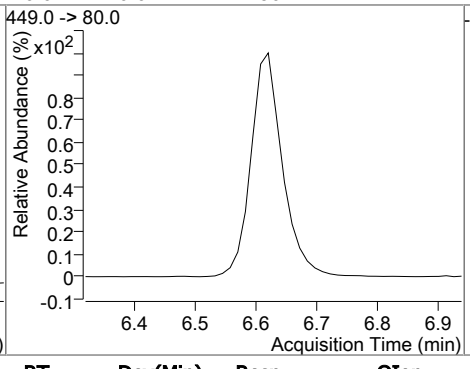


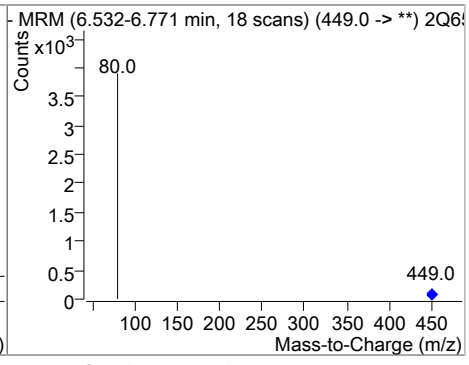




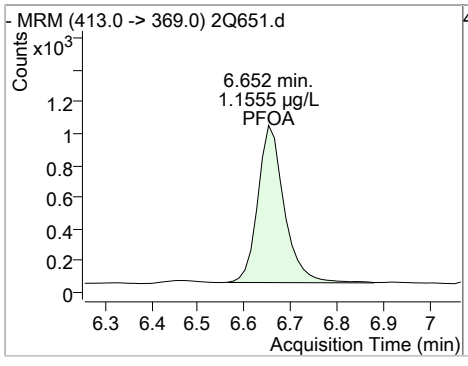
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.95	6.62	0.01	2286				

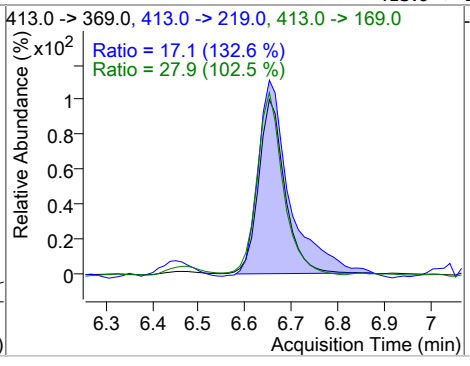


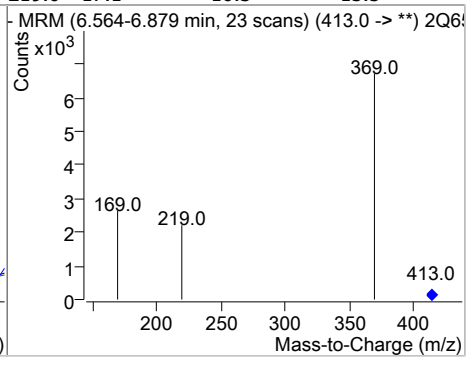




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.16	6.65	0.01	3911	413.0 -> 169.0	27.9	21.8	32.6
					413.0 -> 219.0	17.1	10.3	15.5







Perfluorinated Compounds by LC/MS/MS

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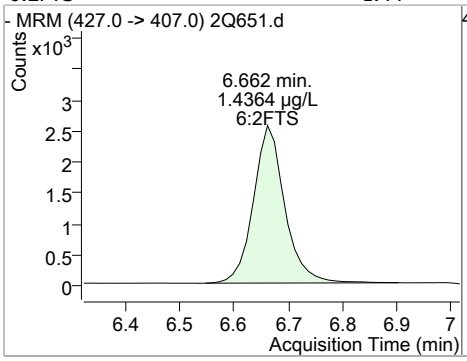
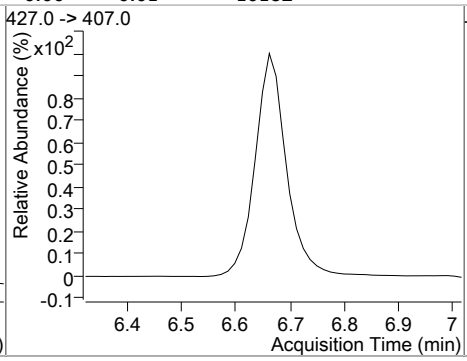
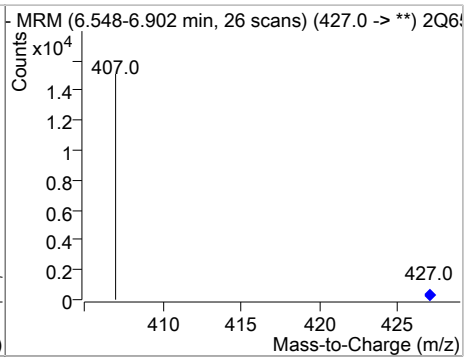
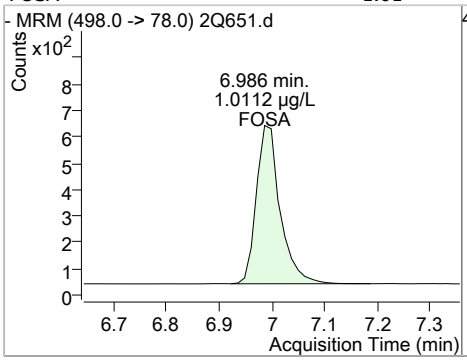
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.44	6.66	0.01	10182				

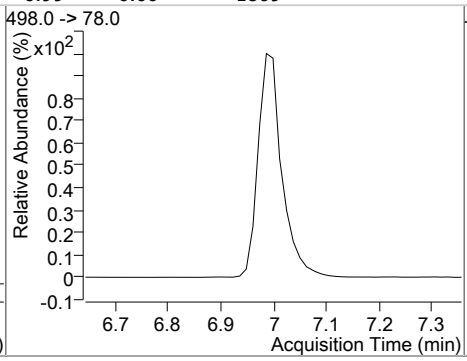


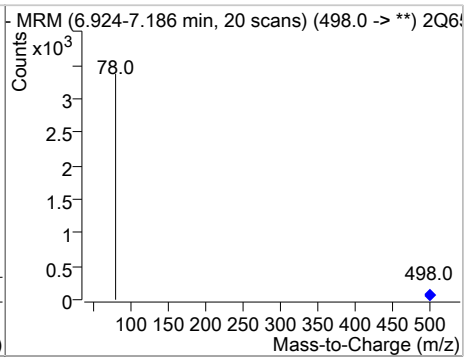




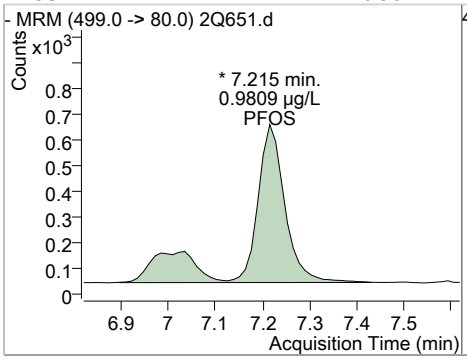
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.01	6.99	0.00	1869				

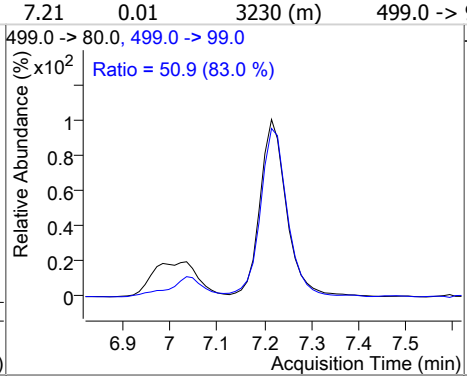


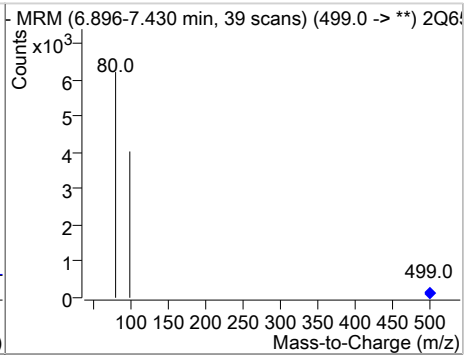




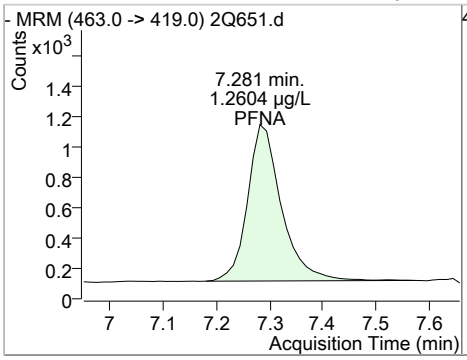
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.98	7.21	0.01	3230 (m)	499.0 -> 99.0	50.9	49.1	73.6

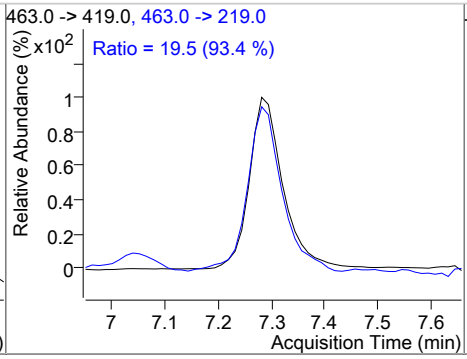


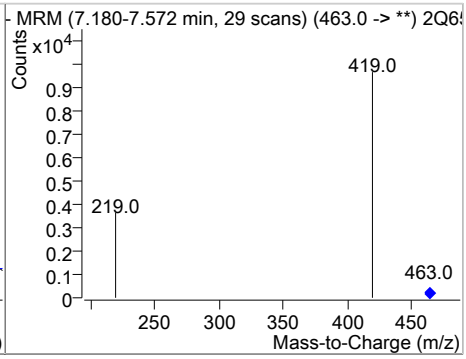




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.26	7.28	0.01	4586	463.0 -> 219.0	19.5	16.7	25.1







Perfluorinated Compounds by LC/MS/MS

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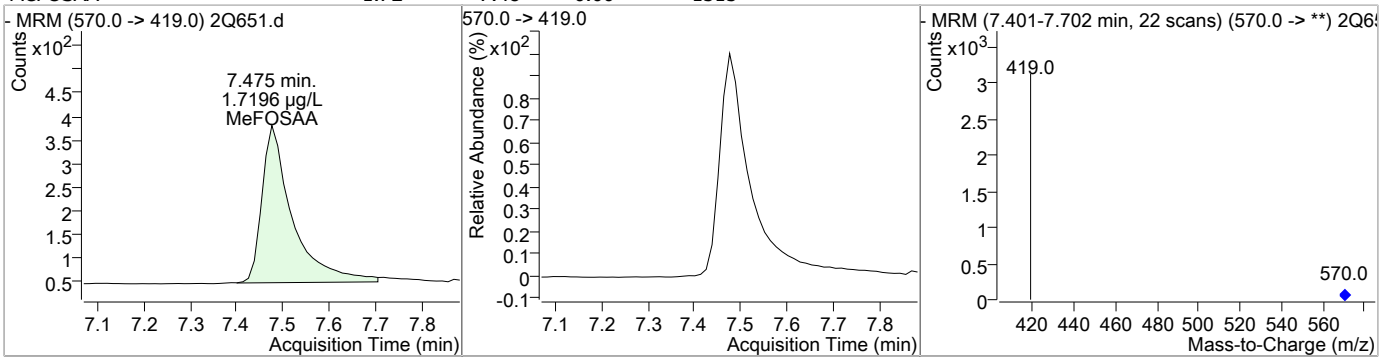
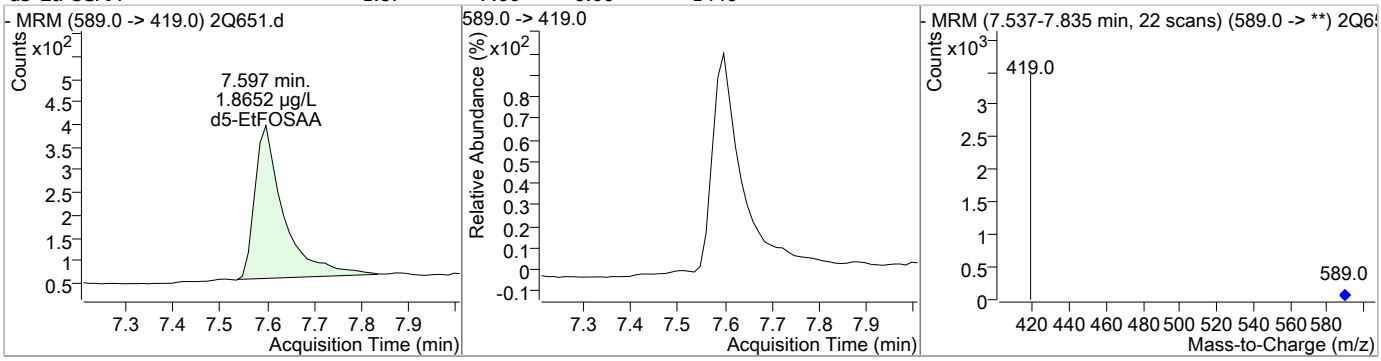
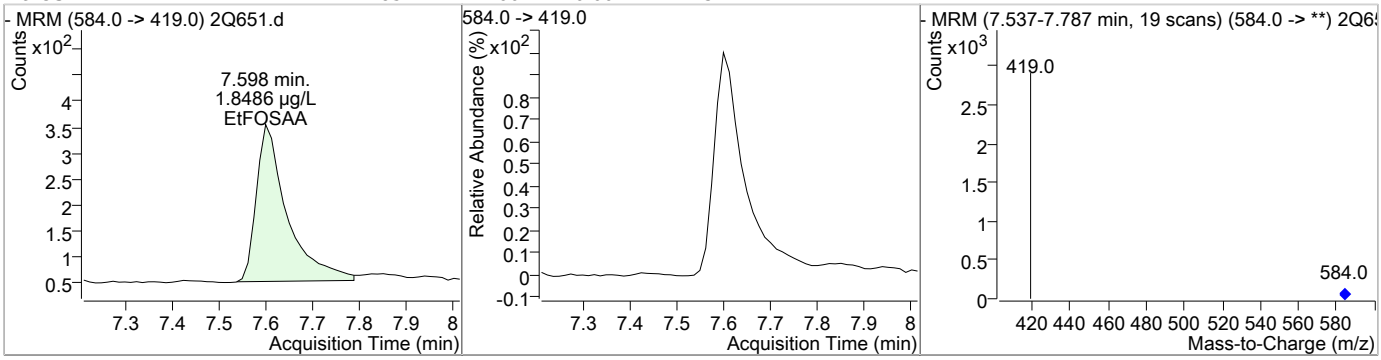
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.72	7.48	0.00	1515				



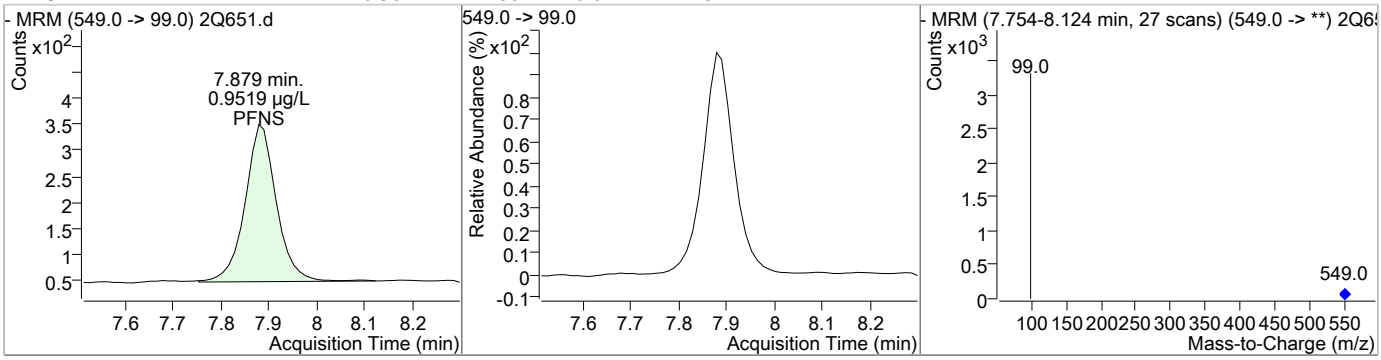
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.87	7.60	0.00	1446				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.85	7.60	0.00	1377				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.95	7.88	0.01	1372				



Perfluorinated Compounds by LC/MS/MS

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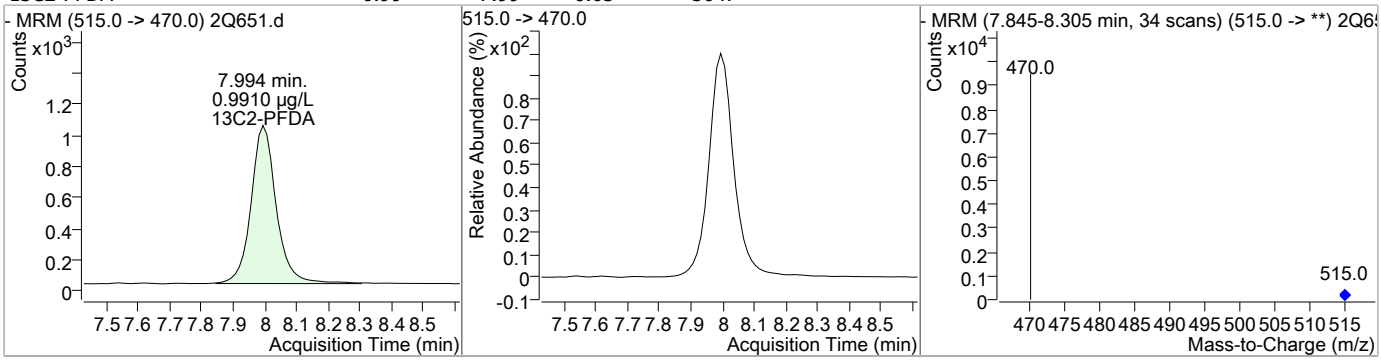
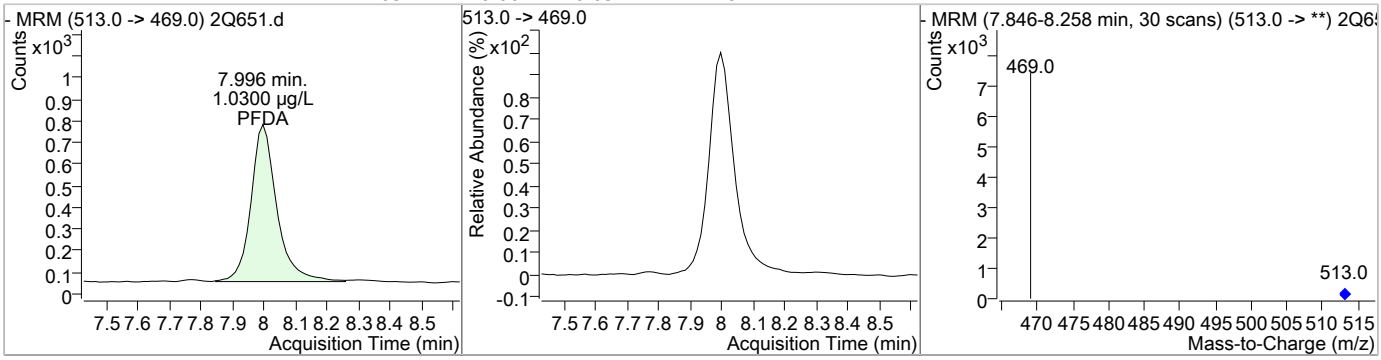
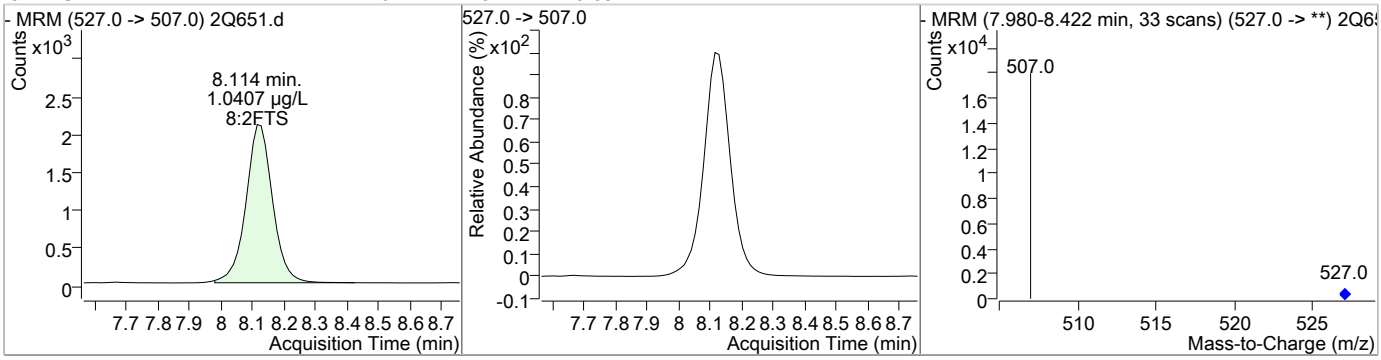
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	0.99	7.99	0.03	5647				



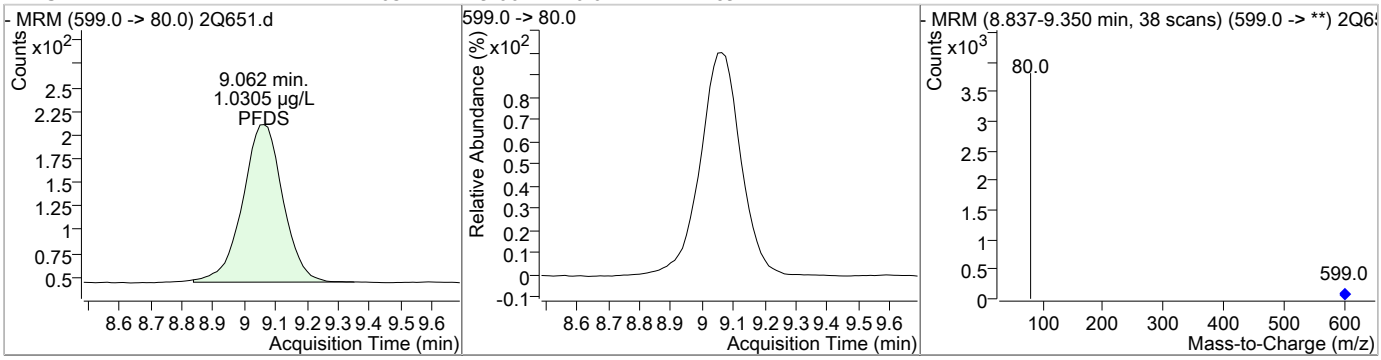
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.03	8.00	0.03	4148				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	8.11	0.03	12214				



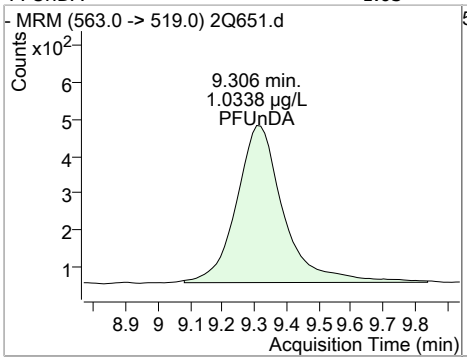
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.03	9.06	0.04	1489				

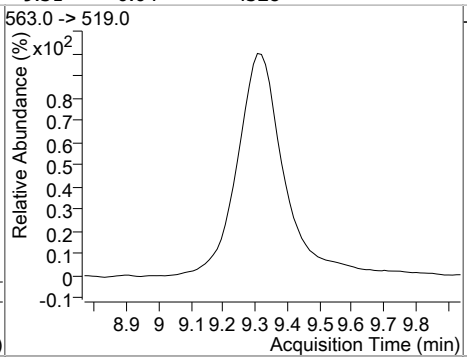


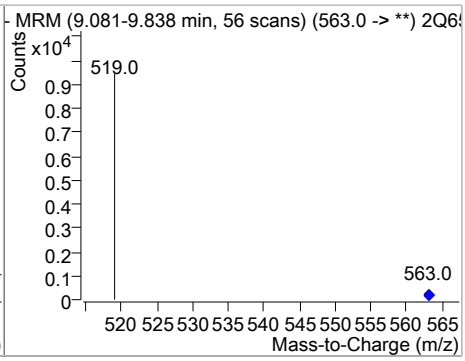
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

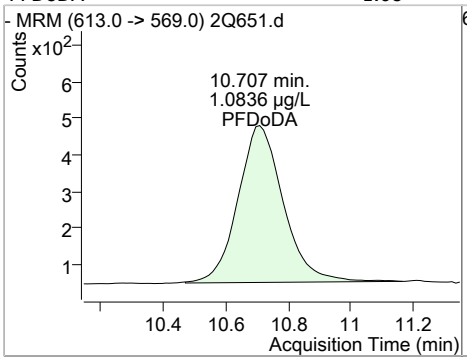
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.03	9.31	0.04	4328				

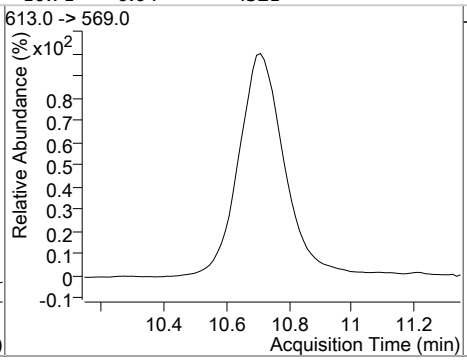


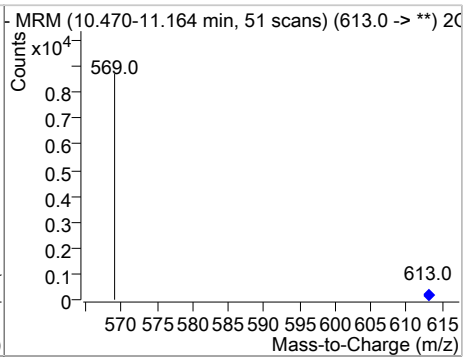




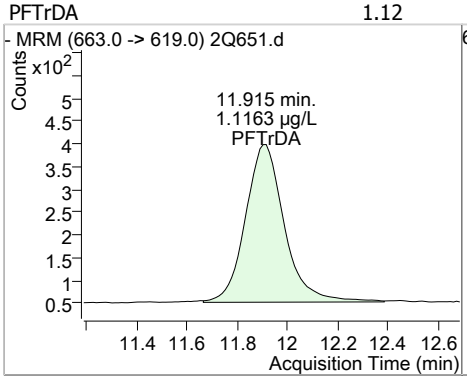
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.08	10.71	0.04	4321				

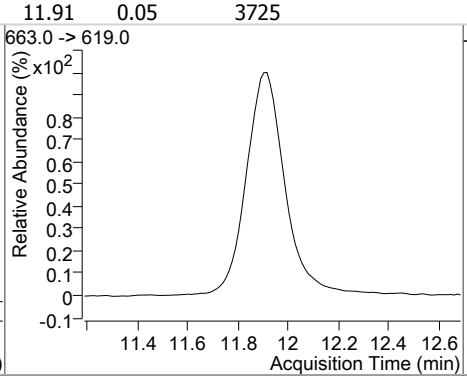


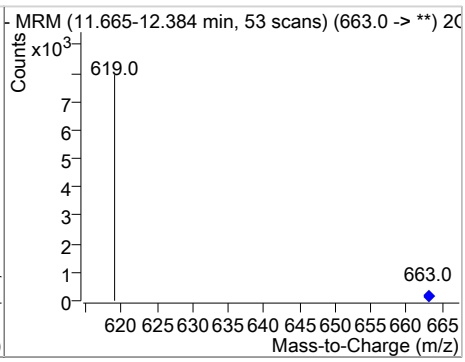




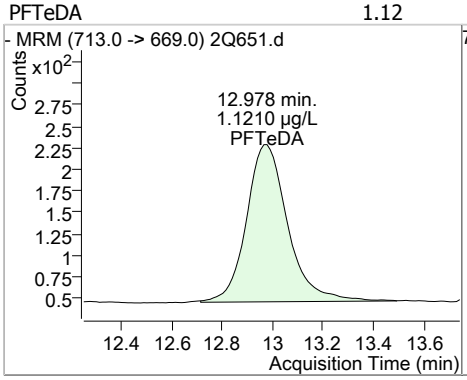
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.12	11.91	0.05	3725				

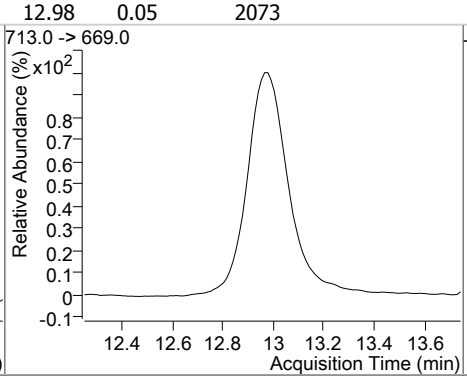


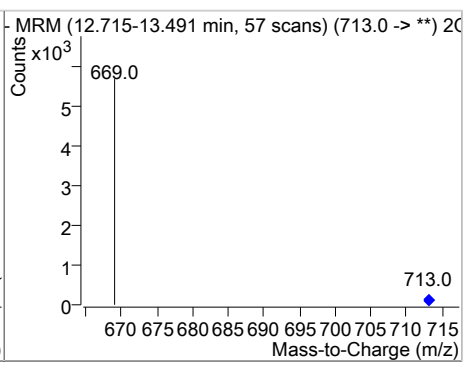




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.12	12.98	0.05	2073				







Manual Integration Approval Summary

Sample Number:	S2Q18-IC18	**Method:**	EPA 537 MOD
Lab FileID:	2Q651.D	**Analyst approved:**	04/21/17 09:46 Nancy Saunders
Injection Time:	04/20/17 11:54	**Supervisor approved:**	04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.98	Split peak
Perfluoroheptanoic acid	375-85-9		5.99	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
04/21/17 11:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q652.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/20/2017 12:14:08 PM
Sample Name : IC18-2
Vial : Vial 3
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : S2Q18.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.660	429.0 -> 409.0	145491	20.00	µg/L		0.013
13C2-PFDoDA	10.651	615.0 -> 570.0	90132	20.00	µg/L		-0.013
13C2-PFOA	6.651	415.0 -> 370.0	73705	20.00	µg/L		0.013
13C3-PFPeA	4.234	266.0 -> 222.0	73997	20.00	µg/L		0.000
13C4-PFOS	7.214	503.0 -> 80.0	55828	20.00	µg/L		0.014
d3-MeFOSAA	7.474	573.0 -> 419.0	34397	20.00	µg/L		0.000
System Monitoring Compounds							
13C2-PFDA	7.982	515.0 -> 470.0	10452	2.03	µg/L		0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.1%			
13C2-PFHxA	5.210	315.0 -> 270.0	7723	1.98	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 9.9%			
d5-EtFOSAA	7.597	589.0 -> 419.0	2107	2.71	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 13.5%			
Target Compounds							**QValue**
4:2FTS	5.144	327.0 -> 307.0	7942	2.16	µg/L		100
6:2FTS	6.662	427.0 -> 407.0	16517	2.35	µg/L		100
8:2FTS	8.102	527.0 -> 507.0	24338	2.09	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	1809	2.42	µg/L		100
FOSA	6.999	498.0 -> 78.0	3734	2.02	µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	2113	2.39	µg/L		100
PFBA	2.940	213.0 -> 169.0	3920	2.02	µg/L		100
PFBS	4.366	299.0 -> 80.0	4304	1.93	µg/L		99
PFDA	7.984	513.0 -> 469.0	7508	2.06	µg/L		100
PFDoDA	10.645	613.0 -> 569.0	8380	2.22	µg/L		100
PFDS	9.025	599.0 -> 80.0	3097	2.18	µg/L		100
PFHpA	5.986	363.0 -> 319.0	10857	2.17	µg/L	#	93
PFHpS	6.607	449.0 -> 80.0	4657	1.97	µg/L		100
PFHxA	5.212	313.0 -> 269.0	3743	2.26	µg/L	#	85
PFHxS	5.968	399.0 -> 80.0	4586	1.97	µg/L	m	94
PFNA	7.281	463.0 -> 419.0	6918	2.10	µg/L		98
PFNS	7.879	549.0 -> 99.0	2814	2.00	µg/L		100
PFOA	6.652	413.0 -> 369.0	6233	2.03	µg/L		96
PFOS	7.215	499.0 -> 80.0	6408	1.99	µg/L	#m	82
PFPeA	4.238	263.0 -> 219.0	11585	2.06	µg/L		100
PFPeS	5.255	349.0 -> 99.0	1417	2.01	µg/L		100
PFTeDA	12.903	713.0 -> 669.0	3940	2.25	µg/L		100
PFTrDA	11.840	663.0 -> 619.0	6935	2.19	µg/L		100
PFUnDA	9.269	563.0 -> 519.0	8003	2.02	µg/L		100

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

Perfluorinated Compounds by LC/MS/MS

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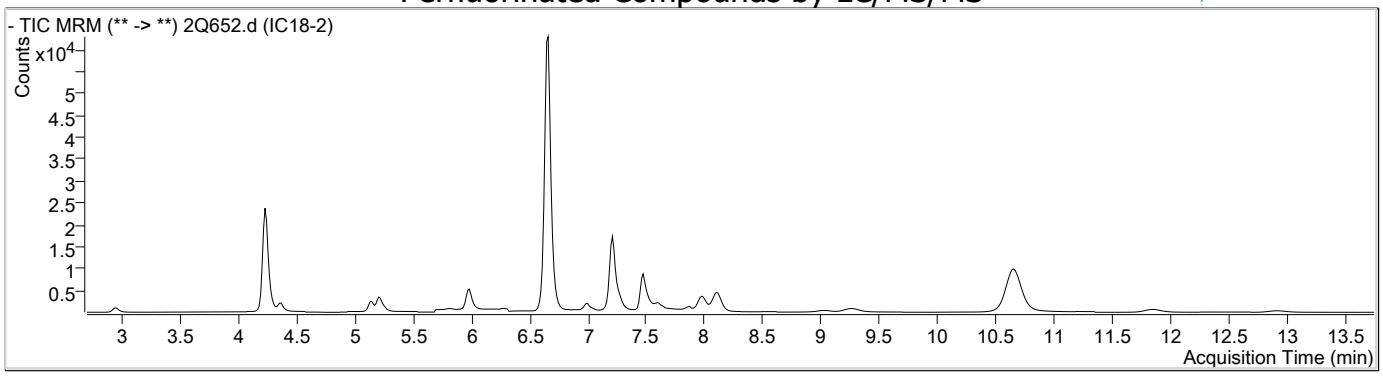
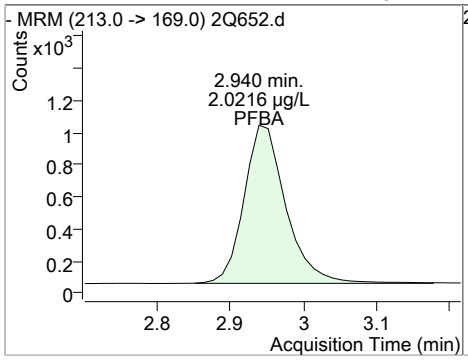
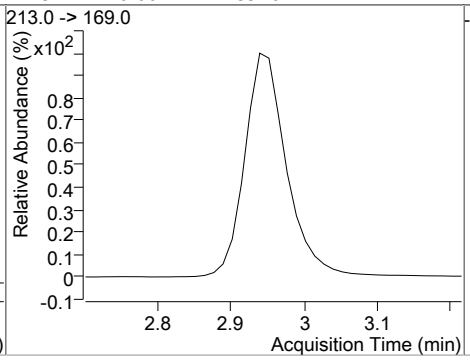
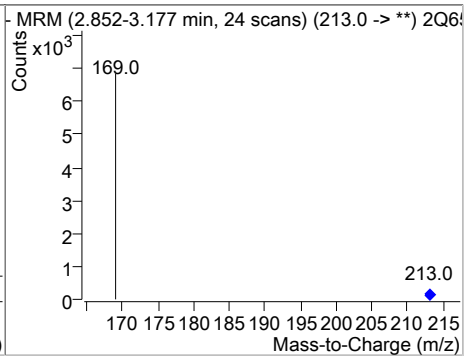


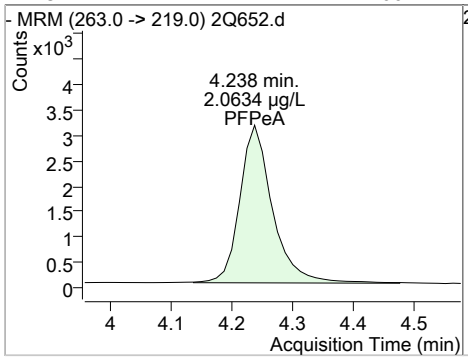
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.02	2.94	0.00	3920				

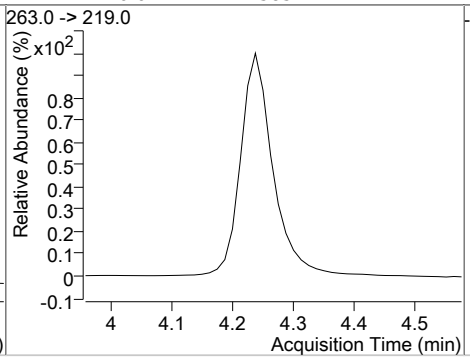


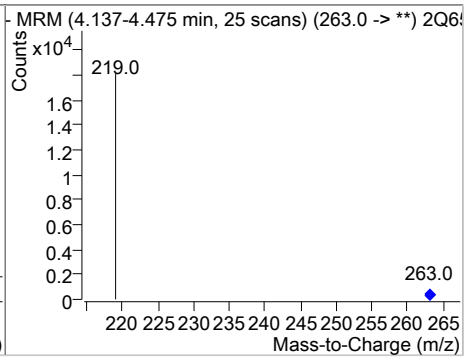




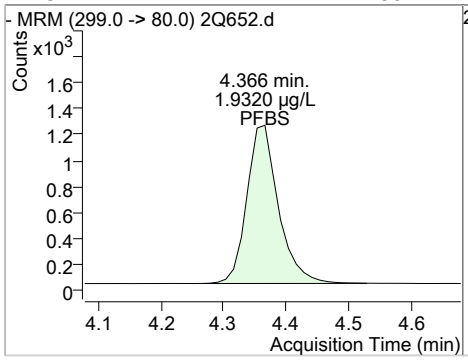
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.06	4.24	0.01	11585				

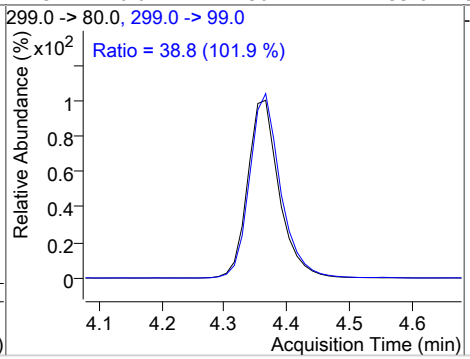


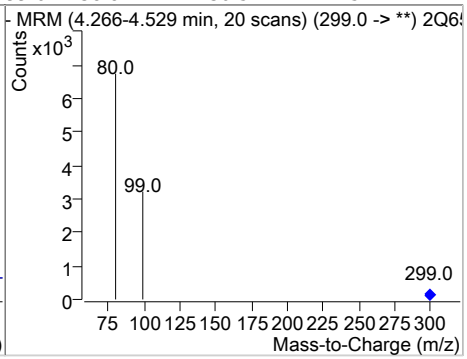




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.93	4.37	0.01	4304	299.0 -> 99.0	38.8	30.5	45.7







Perfluorinated Compounds by LC/MS/MS

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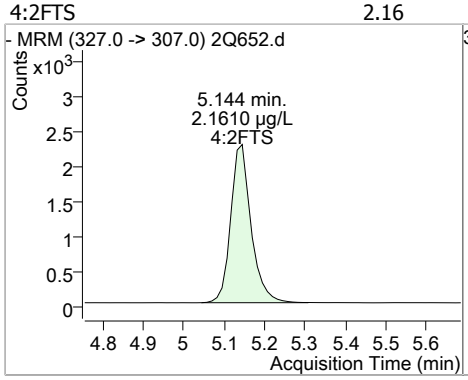
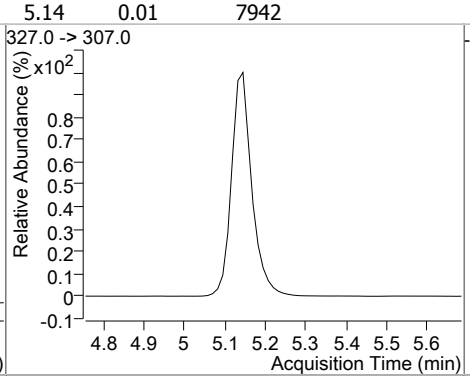
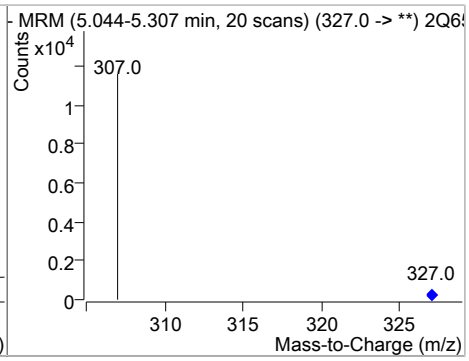
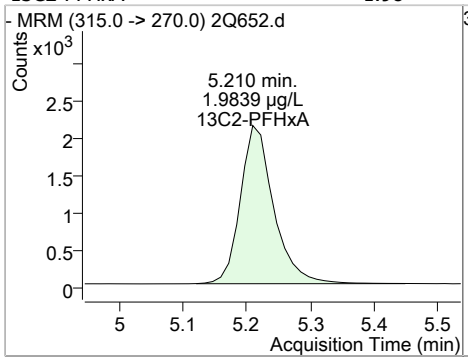
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.16	5.14	0.01	7942				

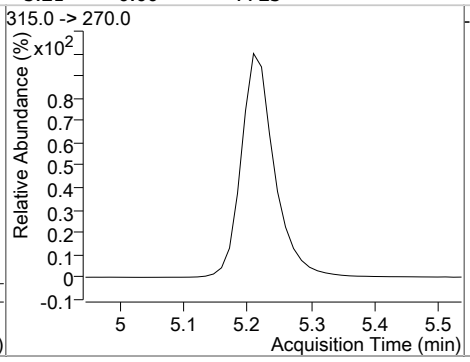


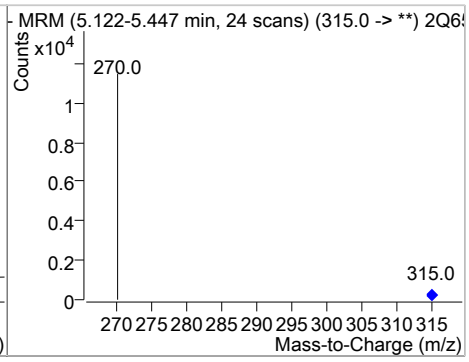




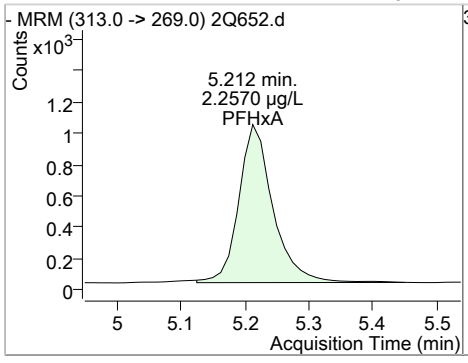
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	1.98	5.21	0.00	7723				

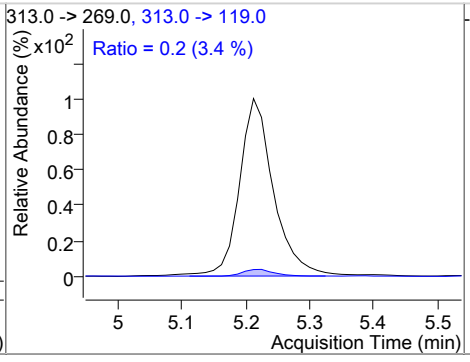


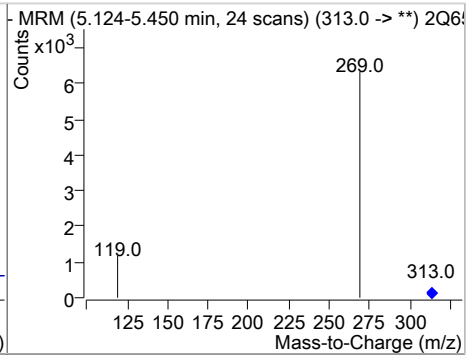




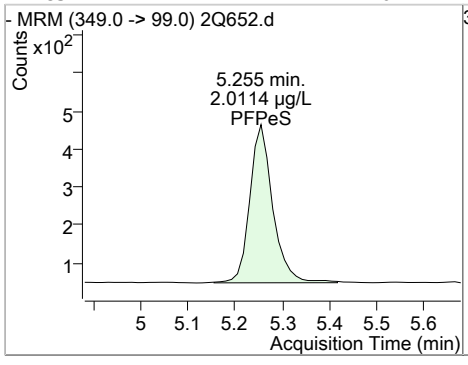
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.26	5.21	0.00	3743	313.0 -> 119.0	0.2	4.0	6.0

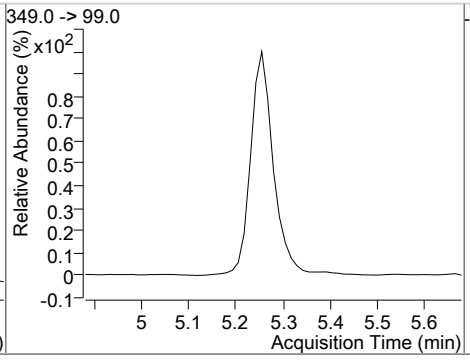


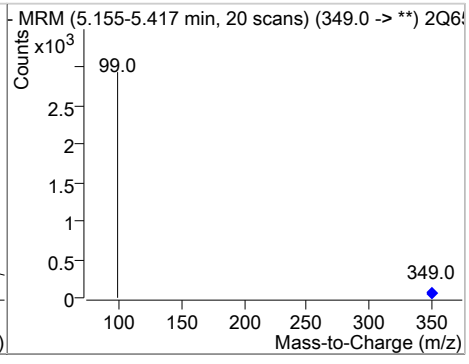




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.01	5.25	0.01	1417				



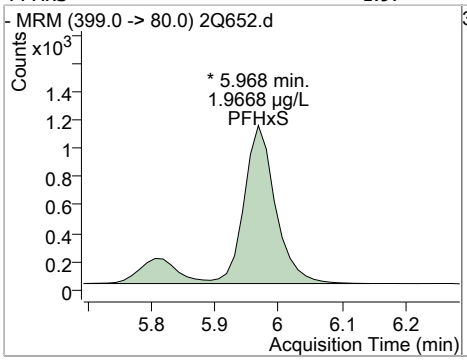


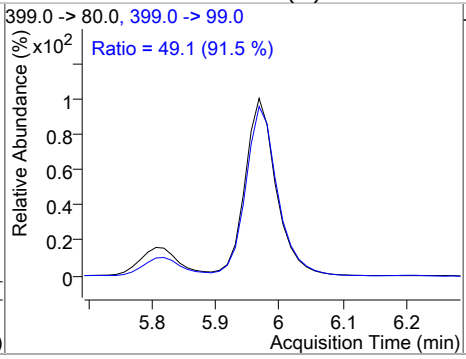


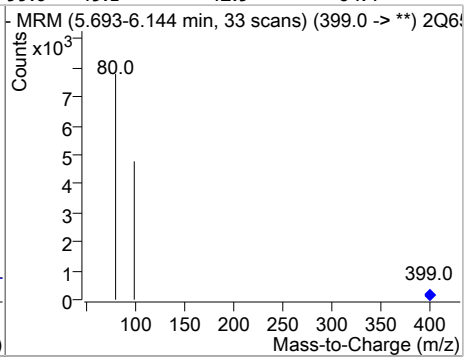
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

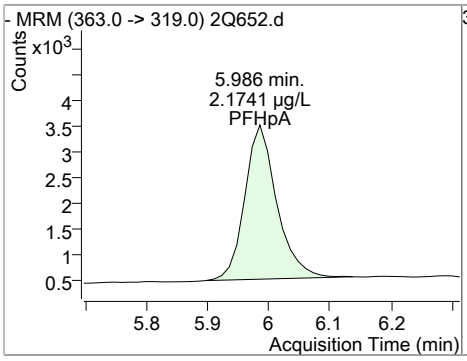
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.97	5.97	0.00	4586 (m)	399.0 -> 99.0	49.1	42.9	64.4

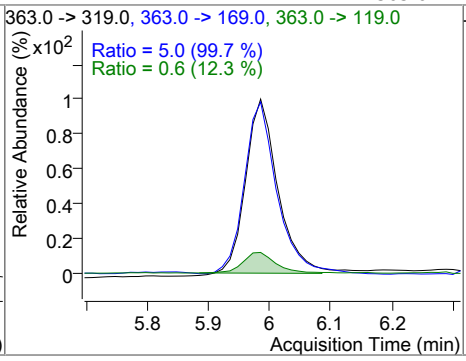


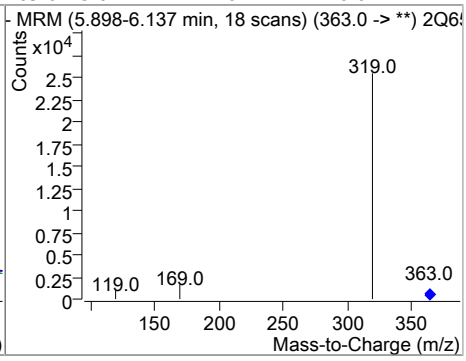




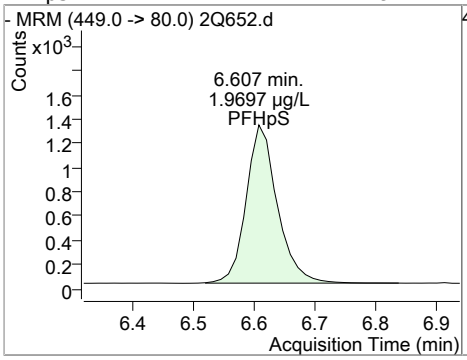
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.17	5.99	0.00	10857	363.0 -> 119.0	0.6	4.0	6.0
					363.0 -> 169.0	5.0	4.0	6.0

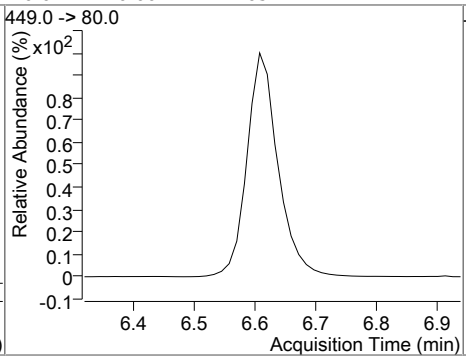


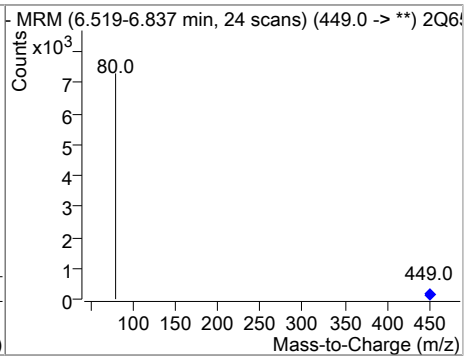




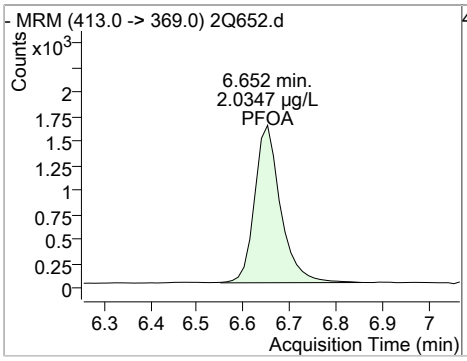
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.97	6.61	0.00	4657				

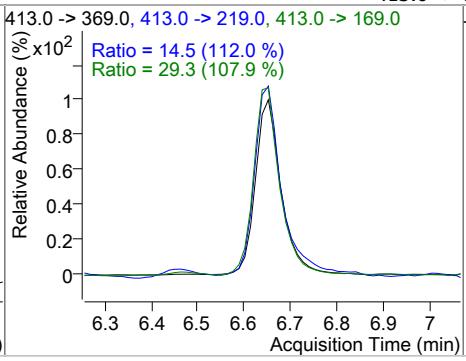


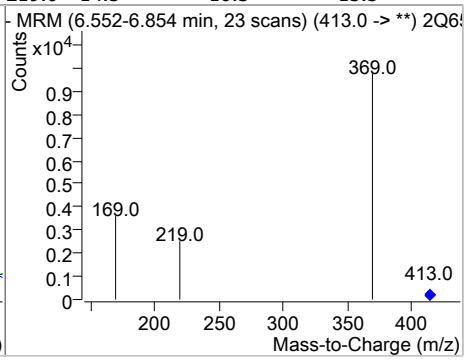




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.03	6.65	0.01	6233	413.0 -> 169.0	29.3	21.8	32.6
					413.0 -> 219.0	14.5	10.3	15.5



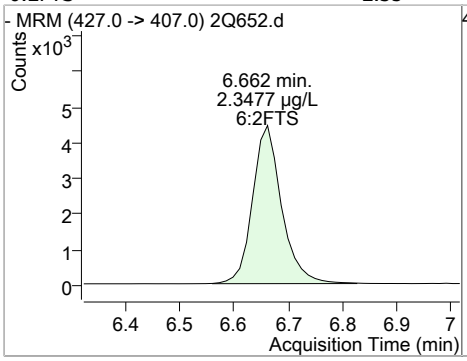


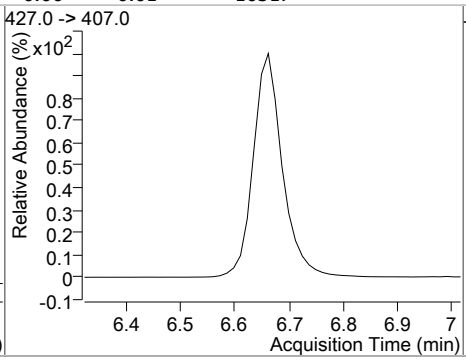


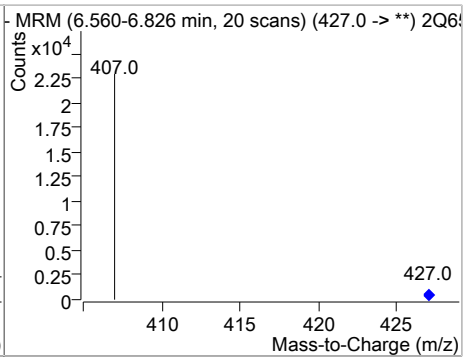
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

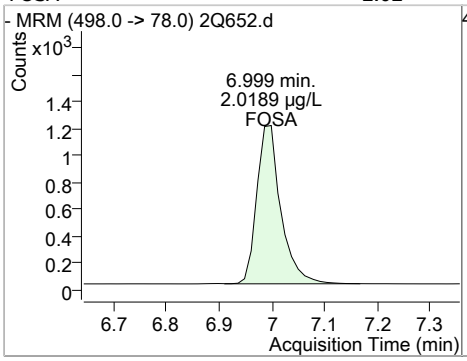
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.35	6.66	0.01	16517				

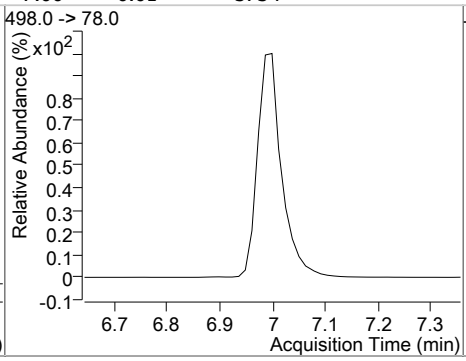


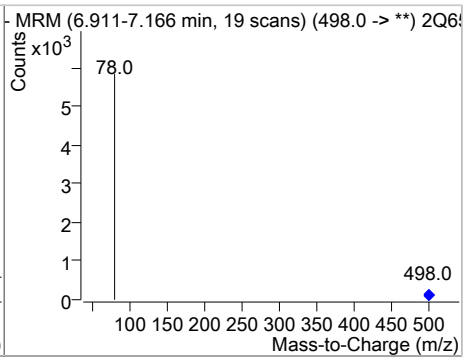




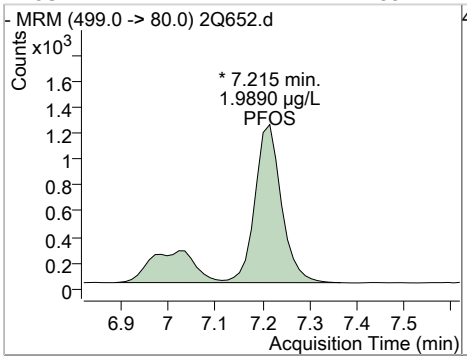
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.02	7.00	0.01	3734				

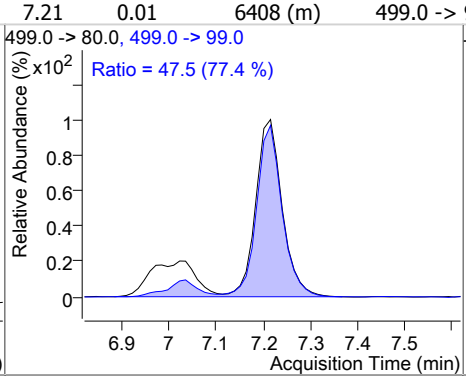


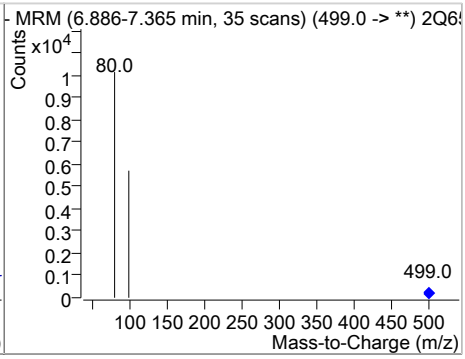




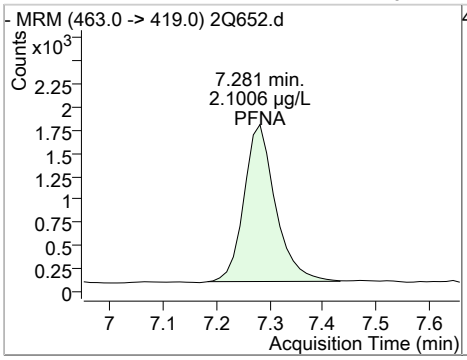
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.99	7.21	0.01	6408 (m)	499.0 -> 99.0	47.5	49.1	73.6

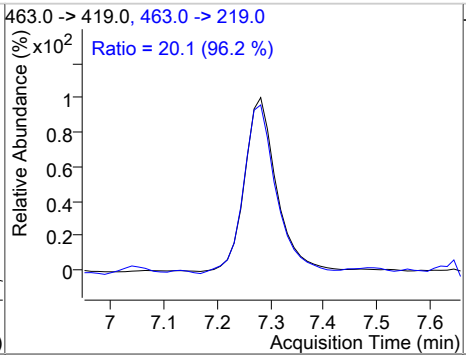


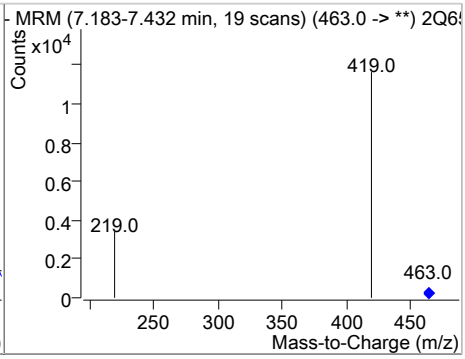




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.10	7.28	0.01	6918	463.0 -> 219.0	20.1	16.7	25.1







Perfluorinated Compounds by LC/MS/MS

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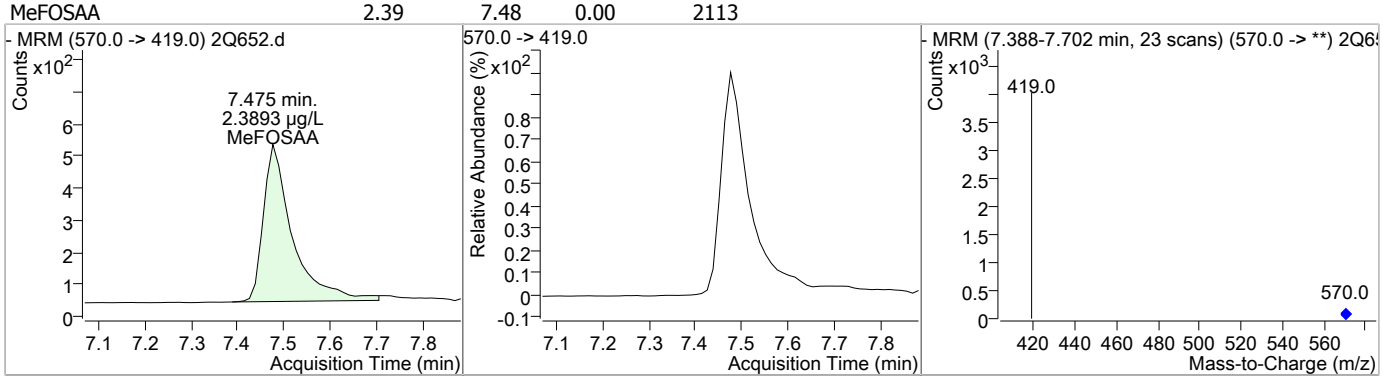
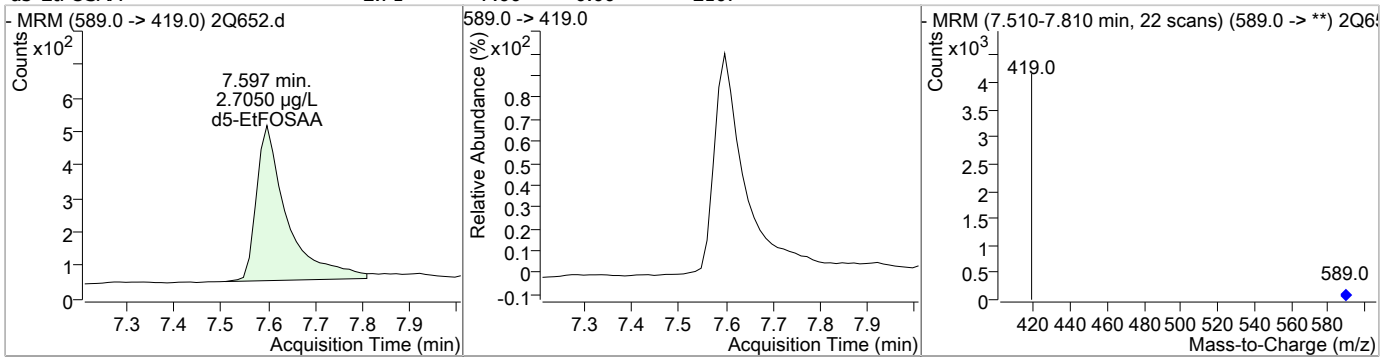
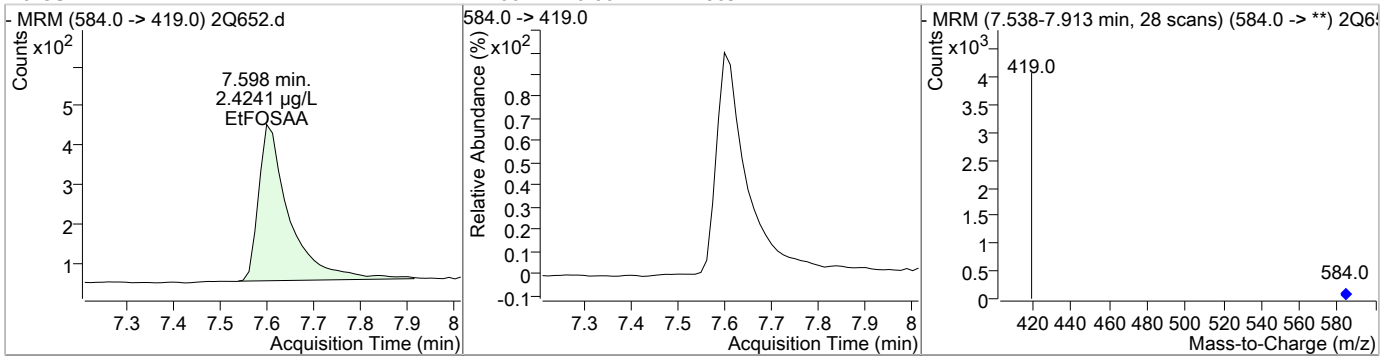
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.39	7.48	0.00	2113				



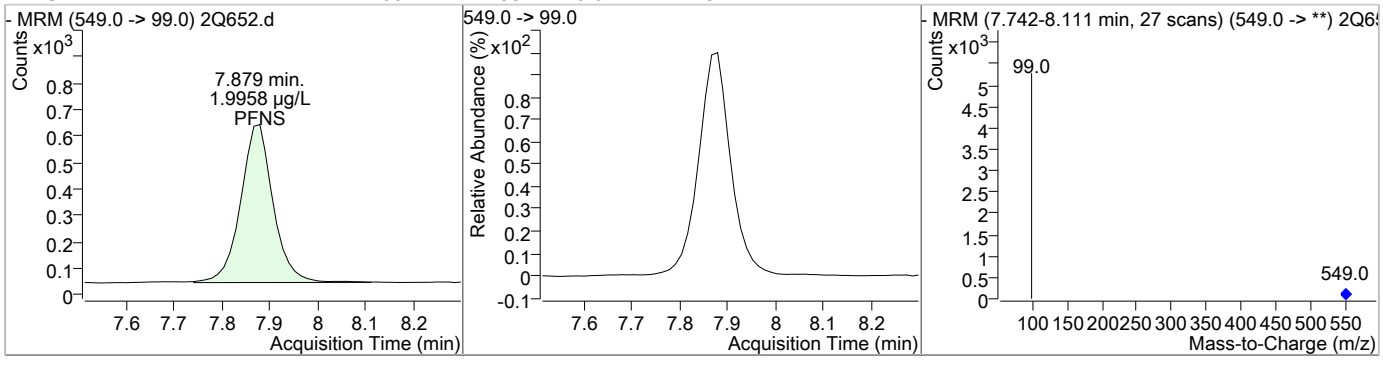
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.71	7.60	0.00	2107				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.42	7.60	0.00	1809				



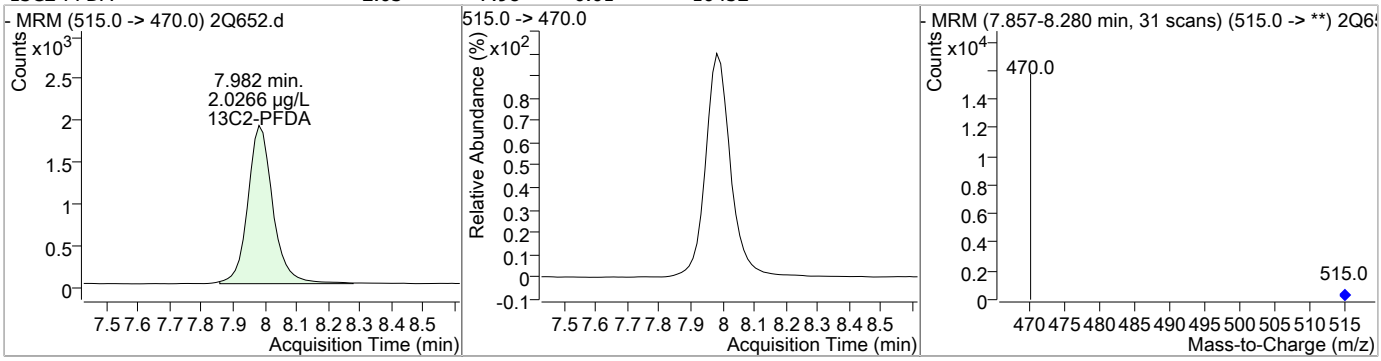
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.00	7.88	0.01	2814				



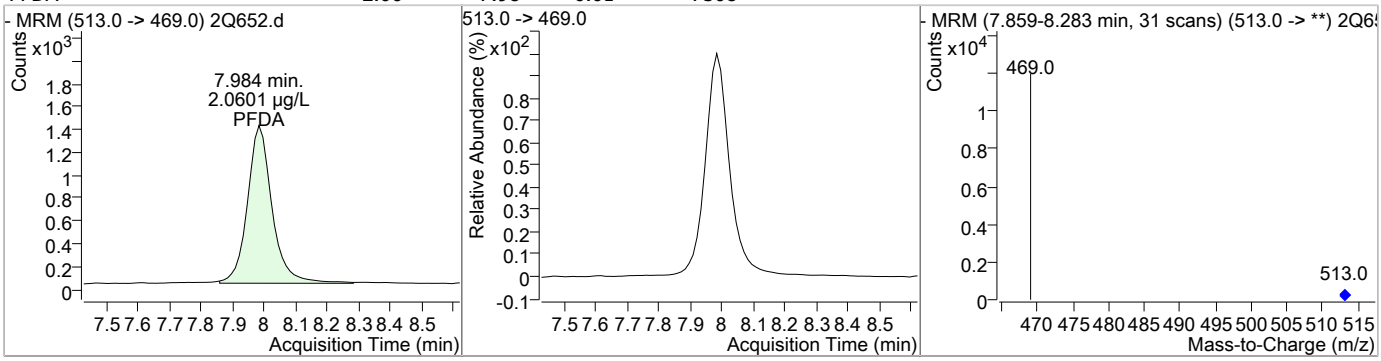
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

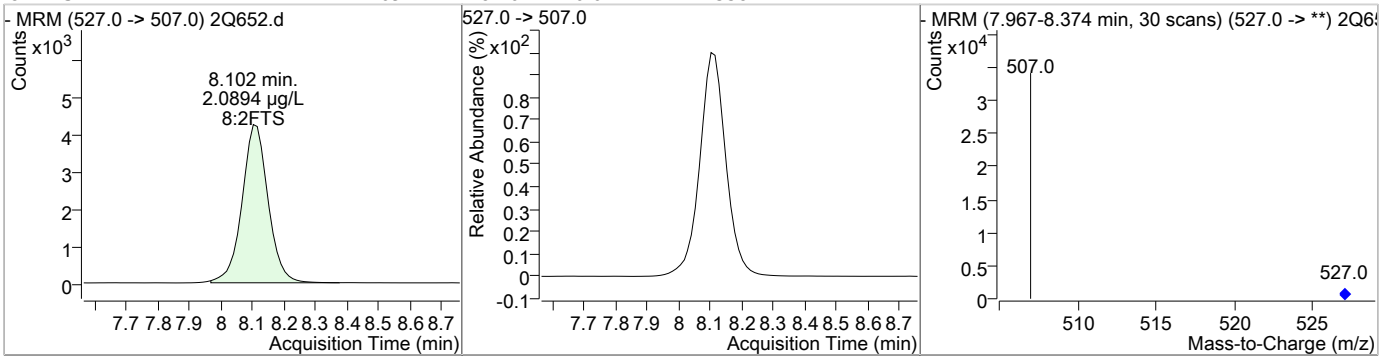
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	2.03	7.98	0.01	10452				



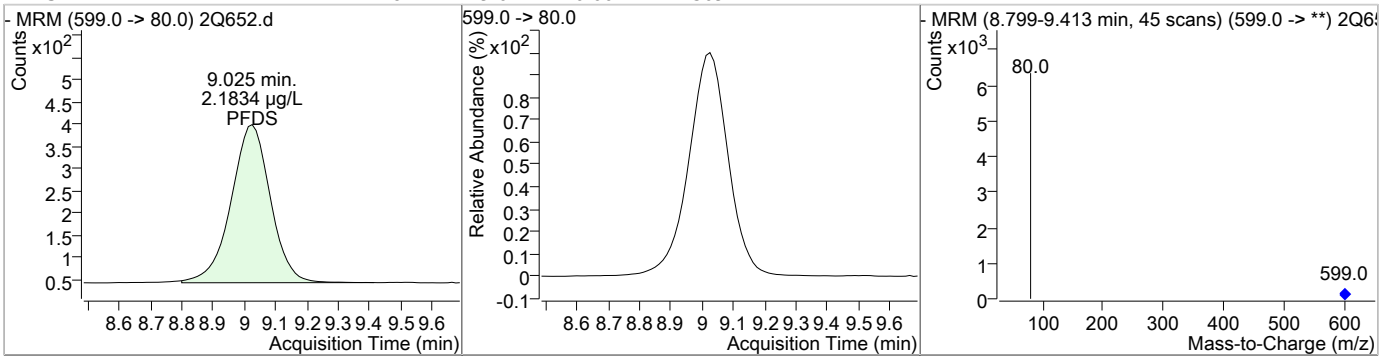
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.06	7.98	0.01	7508				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.09	8.10	0.01	24338				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.18	9.02	0.00	3097				



Perfluorinated Compounds by LC/MS/MS

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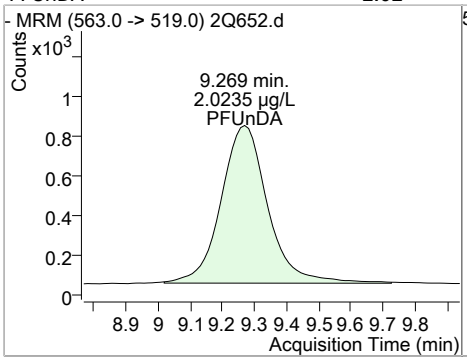
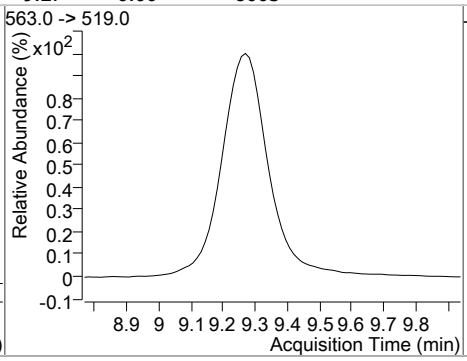
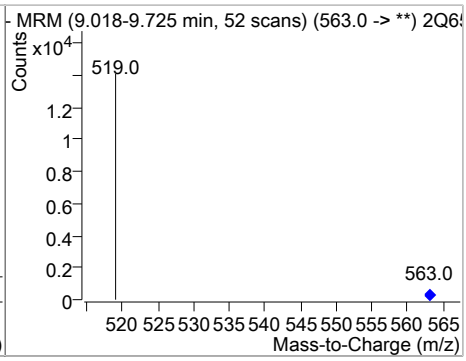
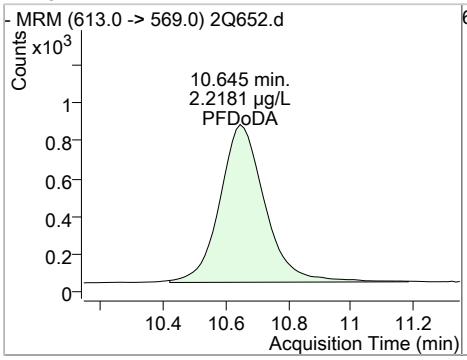
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.02	9.27	0.00	8003				

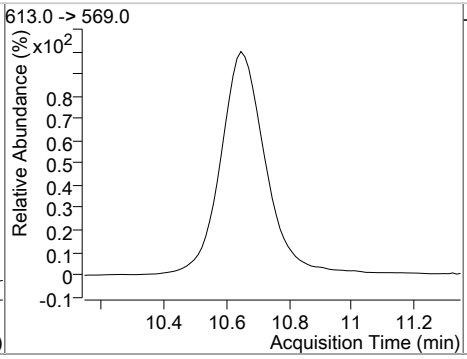


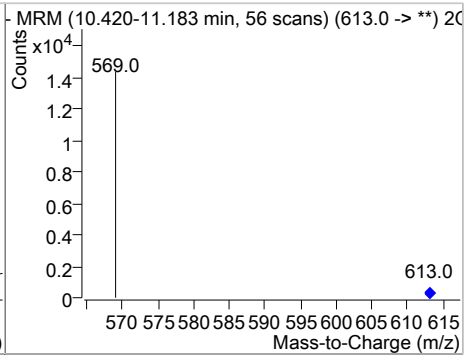




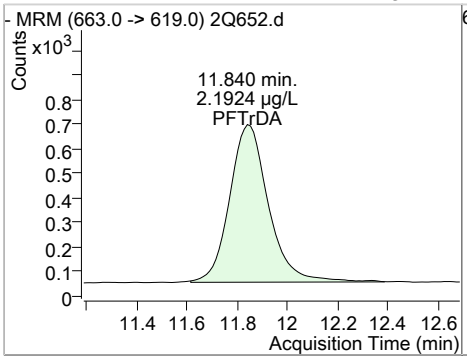
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.22	10.64	-0.03	8380				

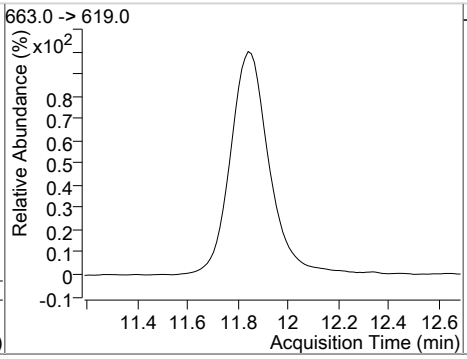


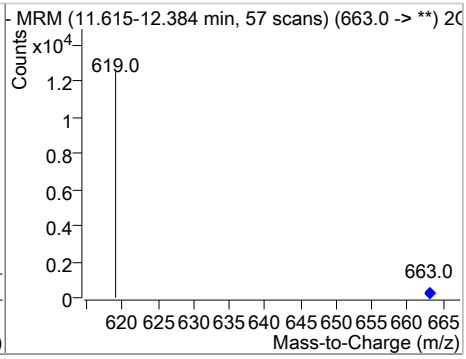




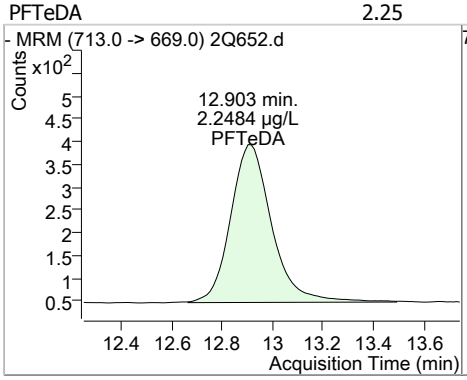
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.19	11.84	-0.03	6935				

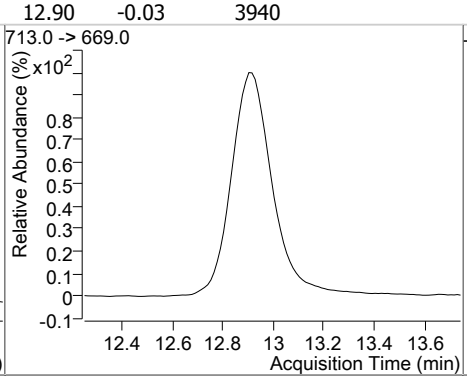


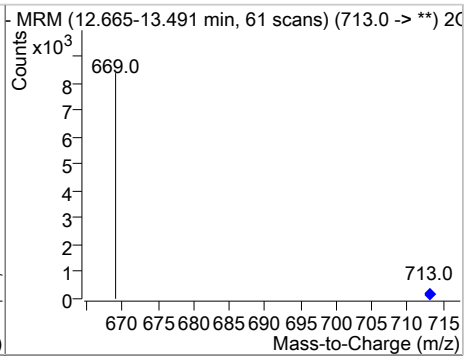




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.25	12.90	-0.03	3940				







Manual Integration Approval Summary

Sample Number:	S2Q18-IC18	**Method:**	EPA 537 MOD	
Lab FileID:	2Q652.D	**Analyst approved:**	04/21/17 09:46	Nancy Saunders
Injection Time:	04/20/17 12:14	**Supervisor approved:**	04/21/17 11:22	Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
04/21/17 11:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q653.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/20/2017 12:33:51 PM
Sample Name : IC18-5
Vial : Vial 4
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : S2Q18.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.660	429.0 -> 409.0	149408	20.00	µg/L		0.013
13C2-PFDoDA	10.651	615.0 -> 570.0	89183	20.00	µg/L		-0.013
13C2-PFOA	6.651	415.0 -> 370.0	74588	20.00	µg/L		0.013
13C3-PFPeA	4.234	266.0 -> 222.0	74514	20.00	µg/L		0.000
13C4-PFOS	7.214	503.0 -> 80.0	56334	20.00	µg/L		0.014
d3-MeFOSAA	7.474	573.0 -> 419.0	32584	20.00	µg/L		0.000
System Monitoring Compounds							
13C2-PFDA	7.982	515.0 -> 470.0	25239	4.84	µg/L		0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 24.2%			
13C2-PFHxA	5.210	315.0 -> 270.0	19144	4.86	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 24.3%			
d5-EtFOSAA	7.597	589.0 -> 419.0	4389	5.86	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 29.3%			
Target Compounds							**QValue**
4:2FTS	5.132	327.0 -> 307.0	19964	5.29	µg/L		100
6:2FTS	6.649	427.0 -> 407.0	39875	5.52	µg/L		100
8:2FTS	8.102	527.0 -> 507.0	62098	5.19	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	3997	5.60	µg/L		100
FOSA	6.986	498.0 -> 78.0	9105	5.20	µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	4778	5.61	µg/L		100
PFBA	2.940	213.0 -> 169.0	9579	4.88	µg/L		100
PFBS	4.353	299.0 -> 80.0	10925	4.86	µg/L		100
PFDA	7.971	513.0 -> 469.0	18022	4.89	µg/L		100
PFDoDA	10.645	613.0 -> 569.0	20252	5.38	µg/L		100
PFDS	9.025	599.0 -> 80.0	7692	5.33	µg/L		100
PFHpA	5.986	363.0 -> 319.0	26345	5.19	µg/L	#	93
PFHpS	6.607	449.0 -> 80.0	11503	4.82	µg/L		100
PFHxA	5.212	313.0 -> 269.0	9120	5.39	µg/L	#	86
PFHxS	5.968	399.0 -> 80.0	11419	4.85	µg/L	m	93
PFNA	7.269	463.0 -> 419.0	17156	5.15	µg/L		97
PFNS	7.867	549.0 -> 99.0	7047	4.95	µg/L		100
PFOA	6.652	413.0 -> 369.0	15593	5.03	µg/L		99
PFOS	7.201	499.0 -> 80.0	16099	4.95	µg/L	m	85
PFPeA	4.238	263.0 -> 219.0	27861	4.93	µg/L		100
PFPeS	5.255	349.0 -> 99.0	3487	4.92	µg/L		100
PFTeDA	12.903	713.0 -> 669.0	9627	5.50	µg/L		100
PFTrDA	11.840	663.0 -> 619.0	17193	5.44	µg/L		100
PFUnDA	9.269	563.0 -> 519.0	19572	5.00	µg/L		100

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

Perfluorinated Compounds by LC/MS/MS

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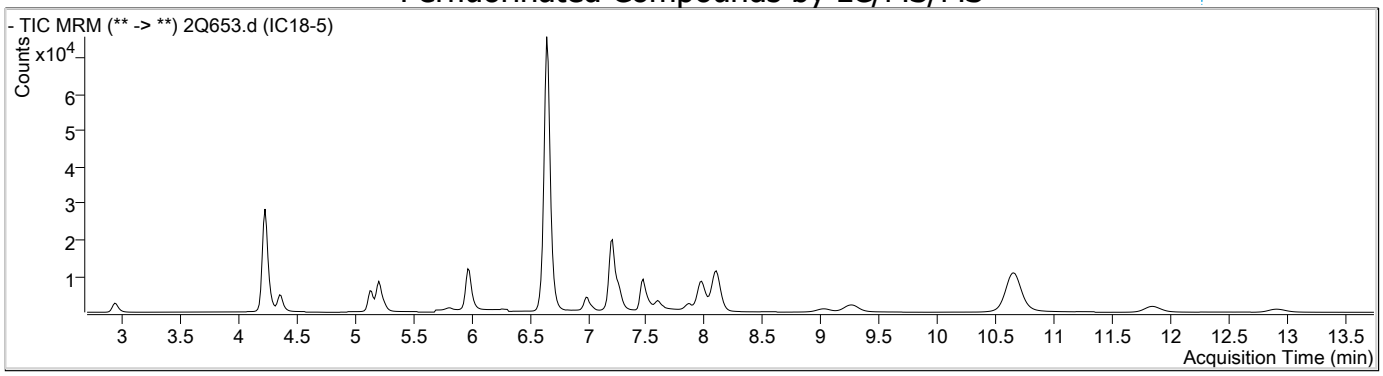
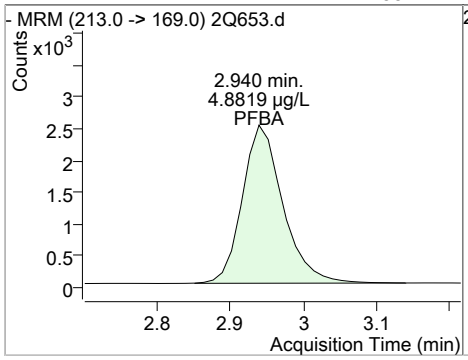
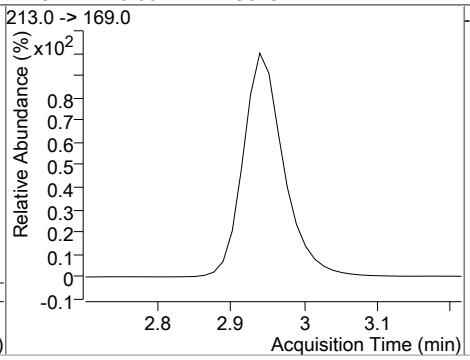
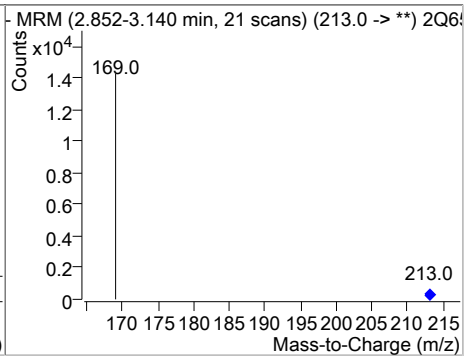


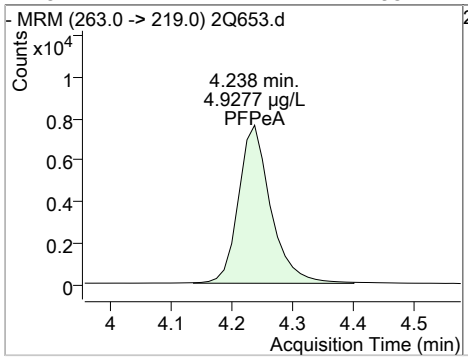
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.88	2.94	0.00	9579				

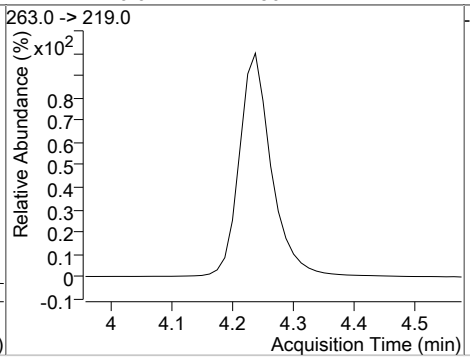


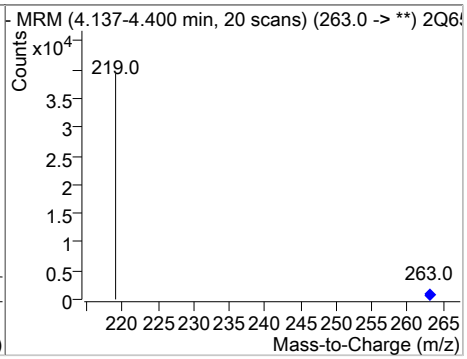




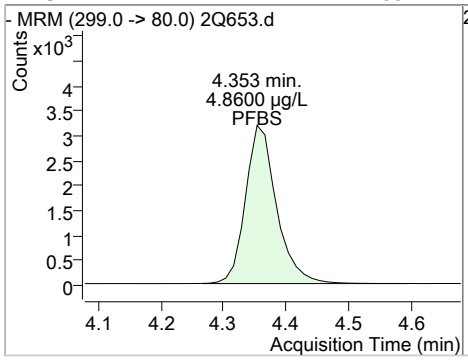
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.93	4.24	0.01	27861				

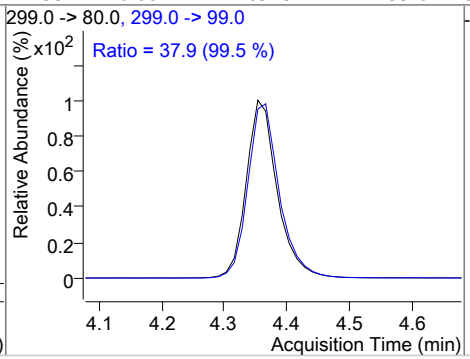


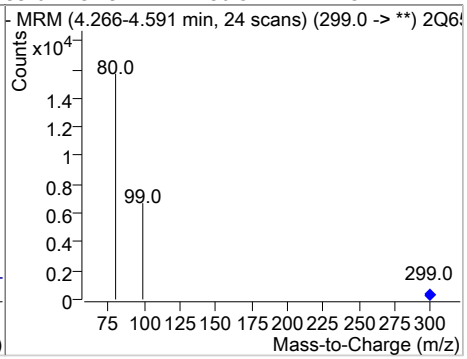




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.86	4.35	0.00	10925	299.0 -> 99.0	37.9	30.5	45.7







Perfluorinated Compounds by LC/MS/MS

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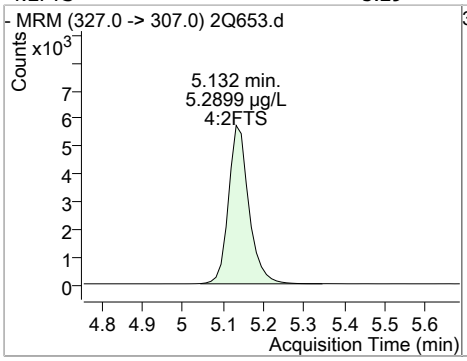
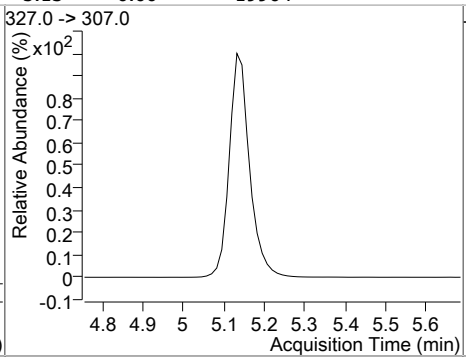
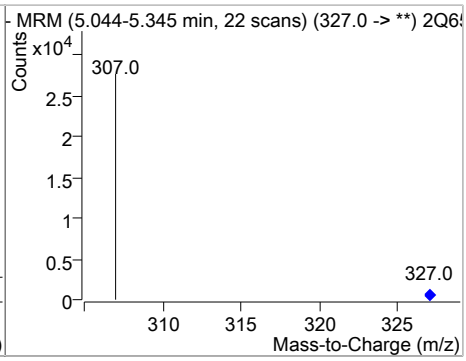
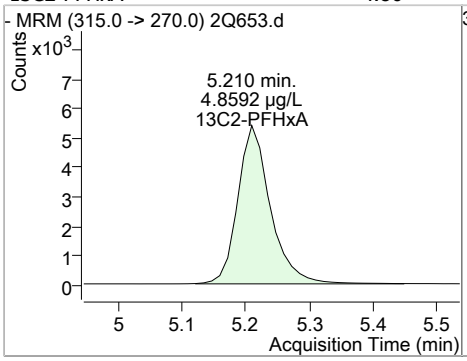
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.29	5.13	0.00	19964				

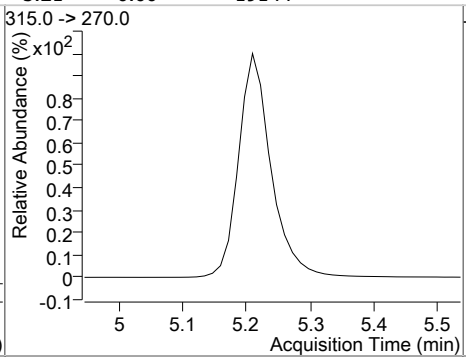


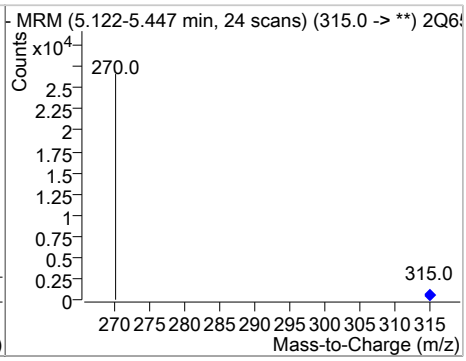




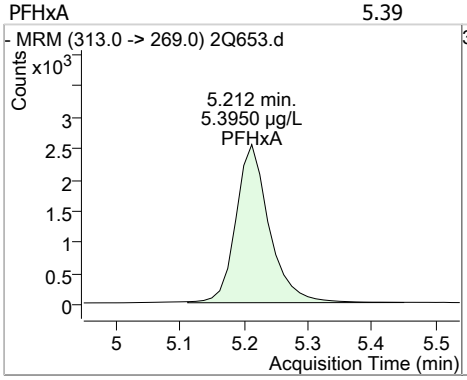
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	4.86	5.21	0.00	19144				

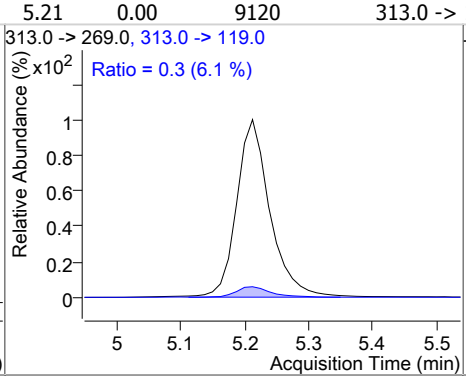


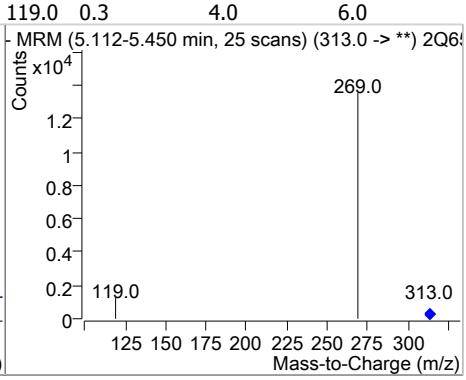




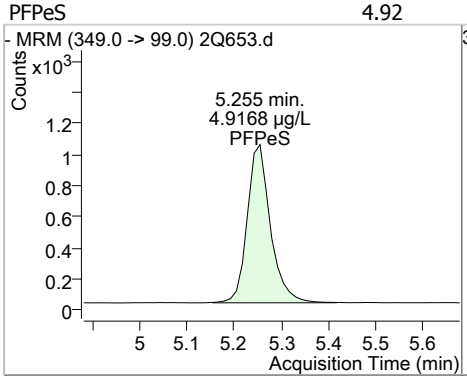
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	5.39	5.21	0.00	9120	313.0 -> 119.0	0.3	4.0	6.0

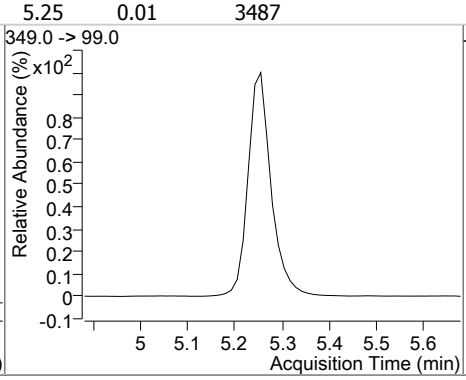


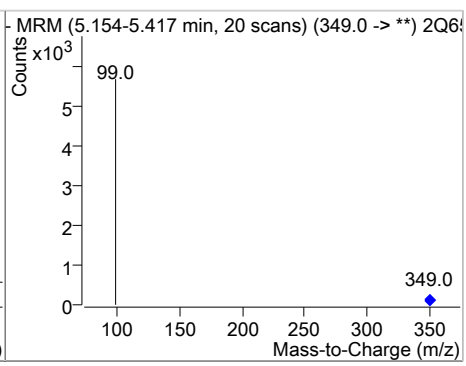




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.92	5.25	0.01	3487				



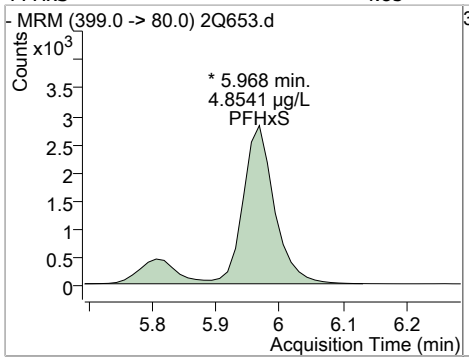


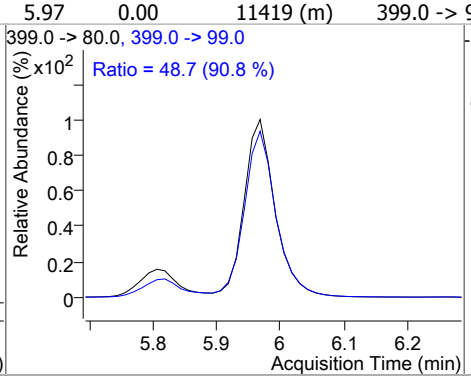


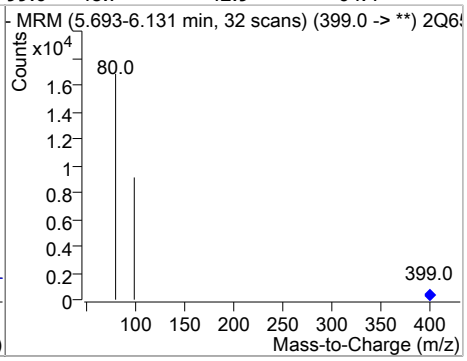
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

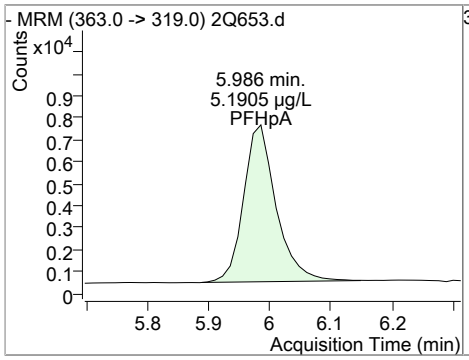
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.85	5.97	0.00	11419 (m)	399.0 -> 99.0	48.7	42.9	64.4

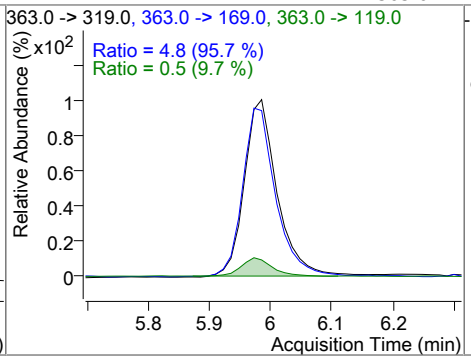


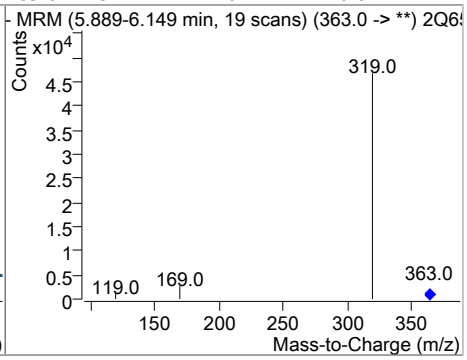




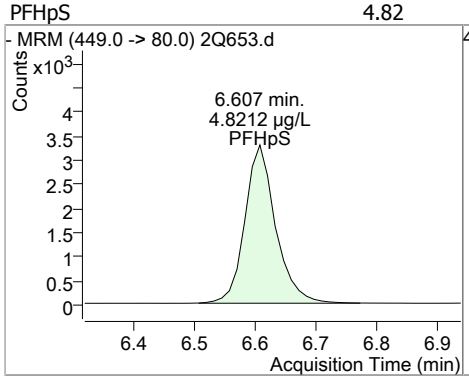
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	5.19	5.99	0.00	26345	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.8	4.0	6.0

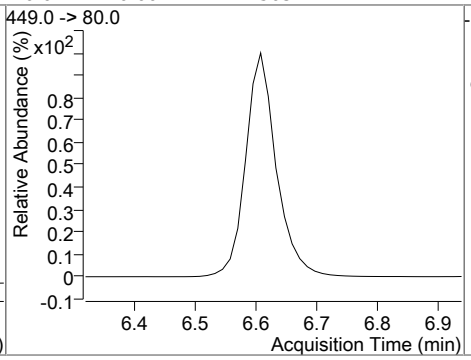


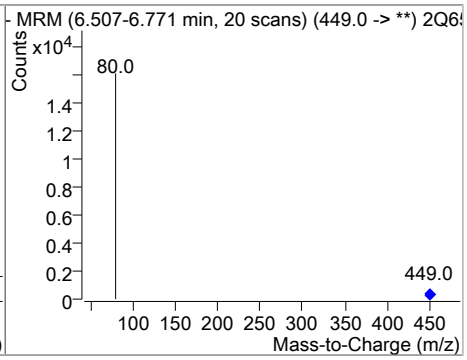




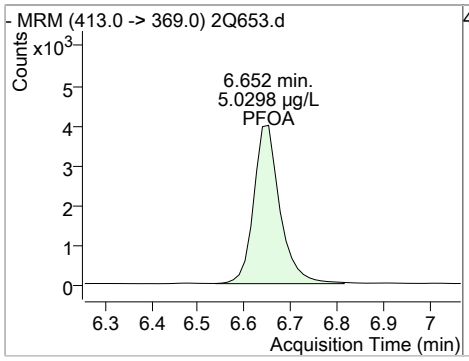
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.82	6.61	0.00	11503				

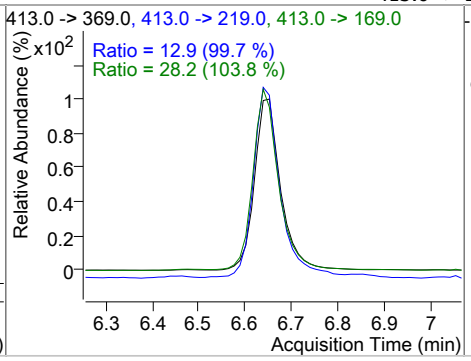


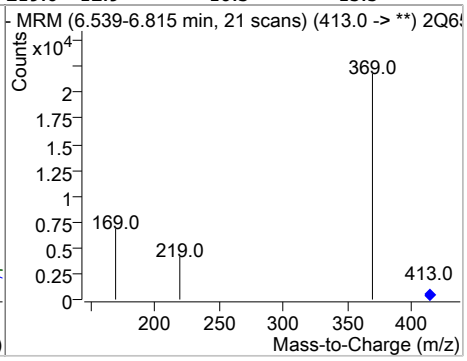




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.03	6.65	0.01	15593	413.0 -> 169.0	28.2	21.8	32.6
					413.0 -> 219.0	12.9	10.3	15.5



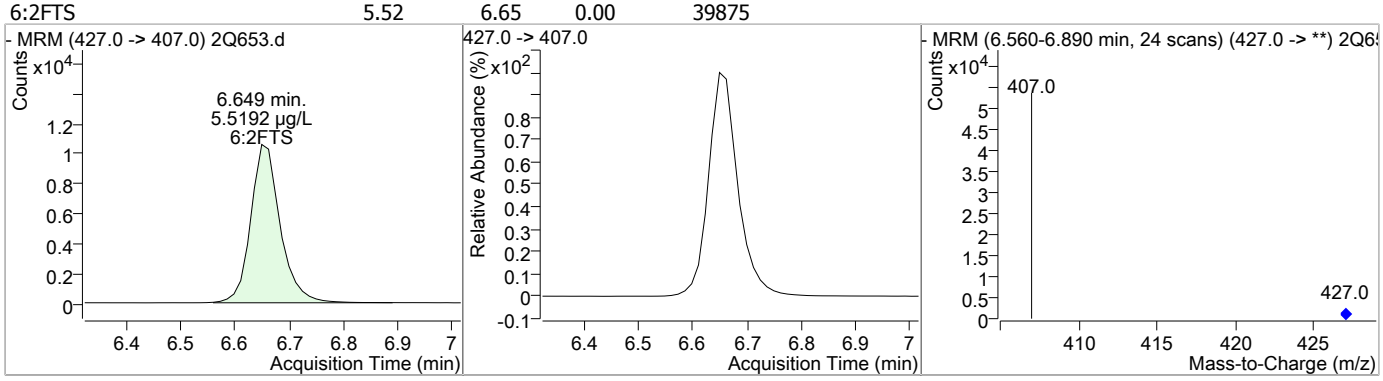




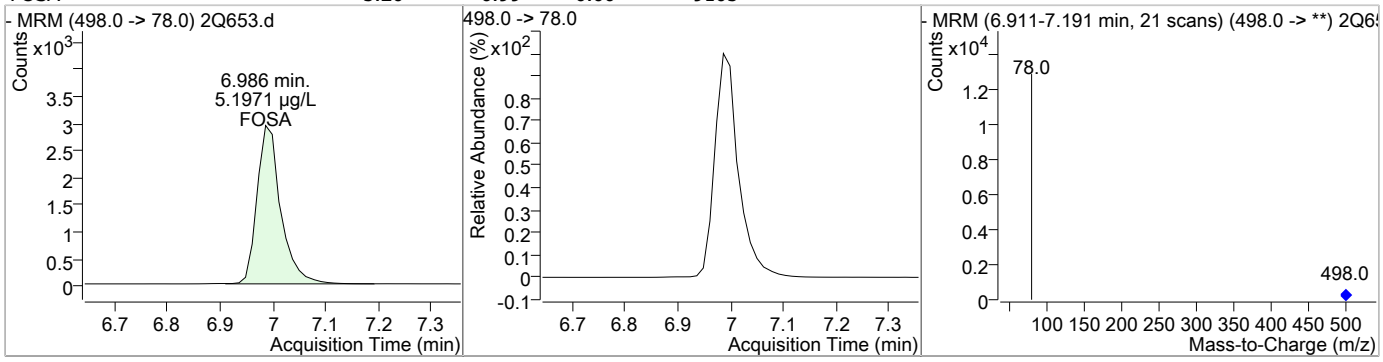
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

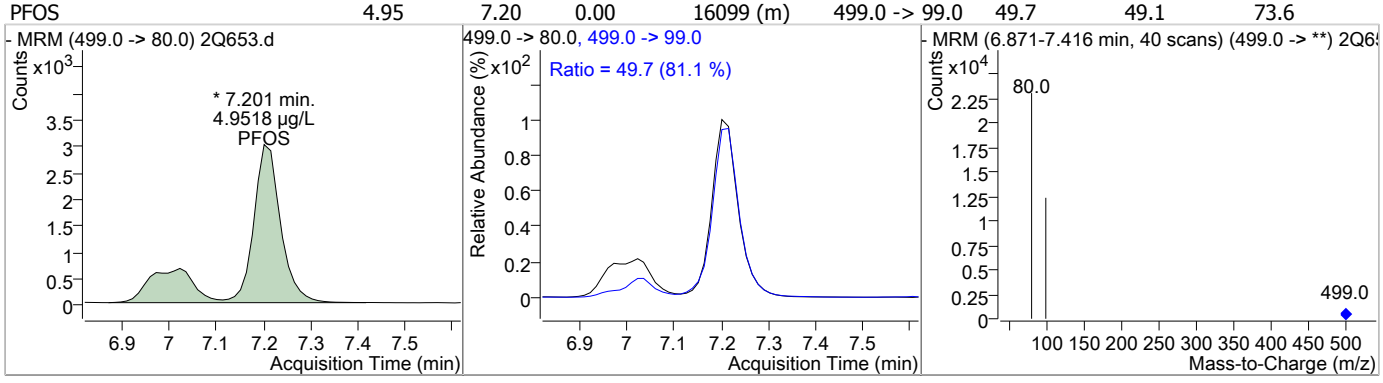
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.52	6.65	0.00	39875				



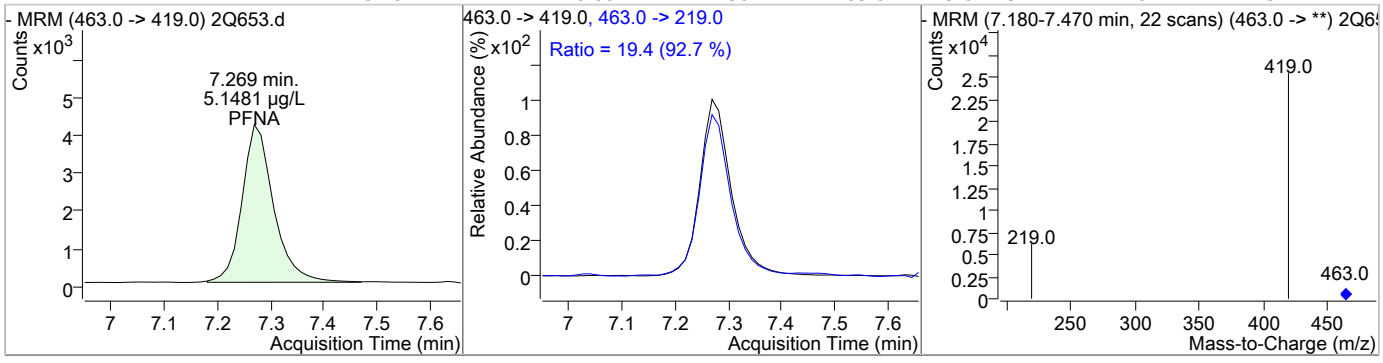
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.20	6.99	0.00	9105				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.95	7.20	0.00	16099 (m)	499.0 -> 99.0	49.7	49.1	73.6



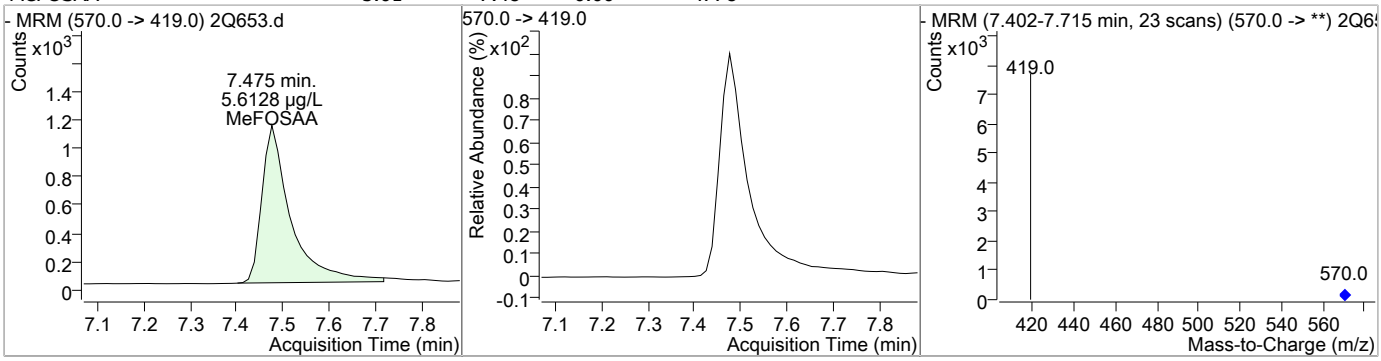
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.15	7.27	0.00	17156	463.0 -> 219.0	19.4	16.7	25.1



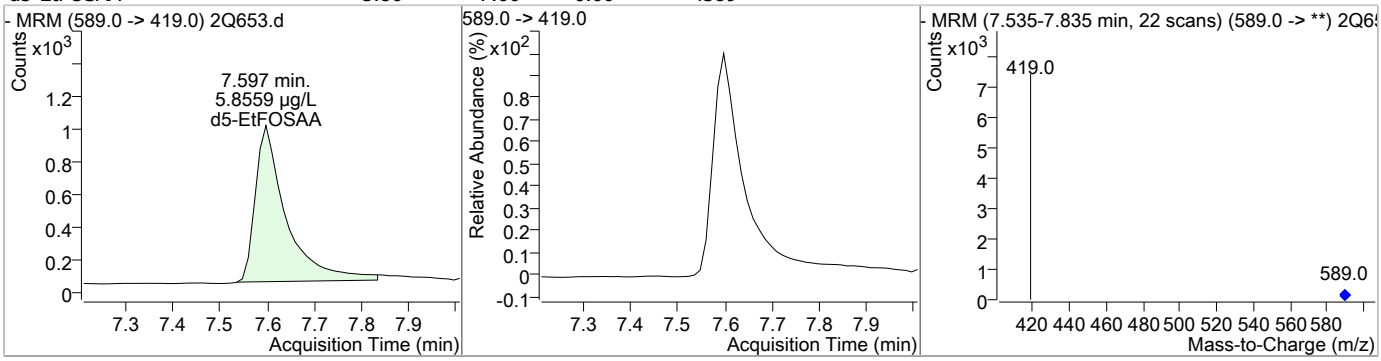
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

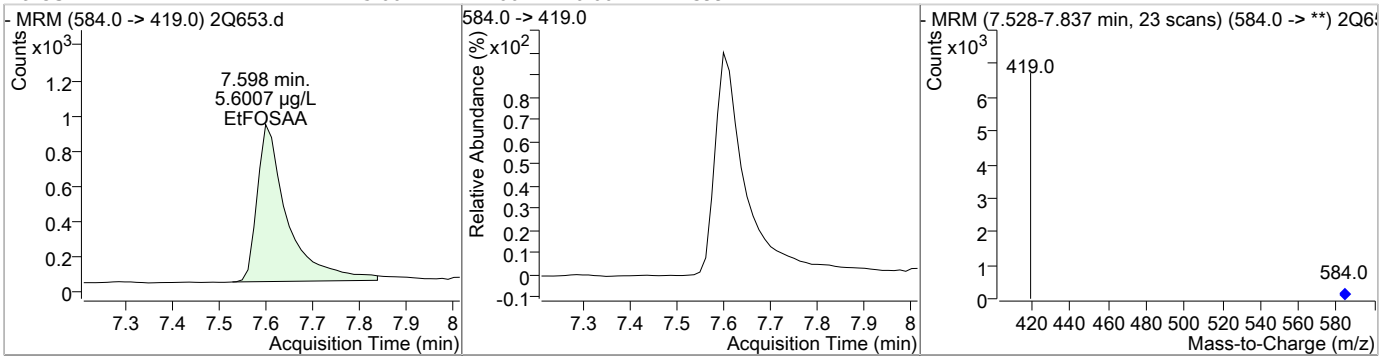
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.61	7.48	0.00	4778				



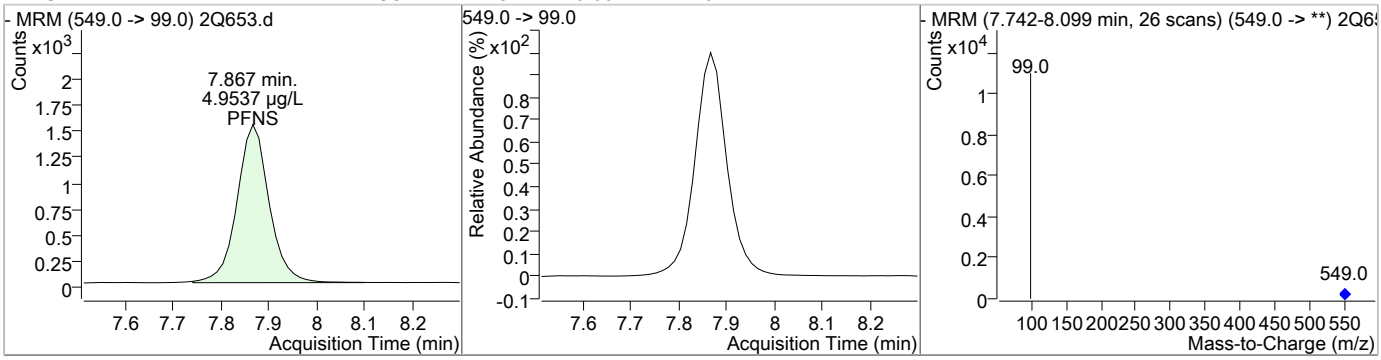
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.86	7.60	0.00	4389				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.60	7.60	0.00	3997				



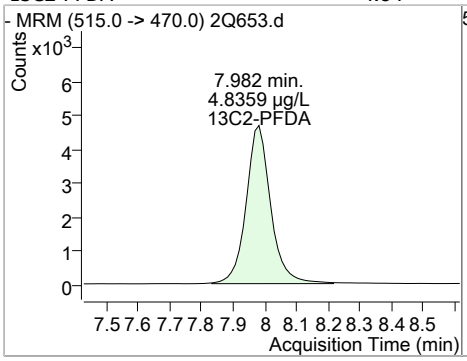
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.95	7.87	0.00	7047				

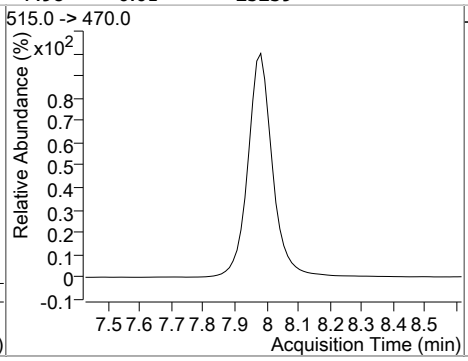


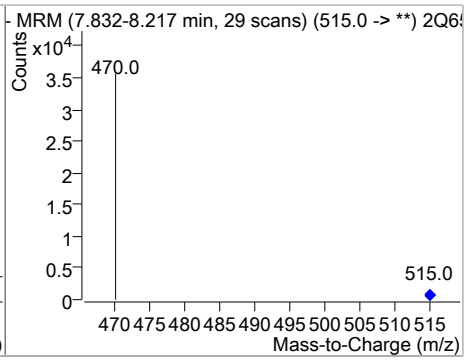
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

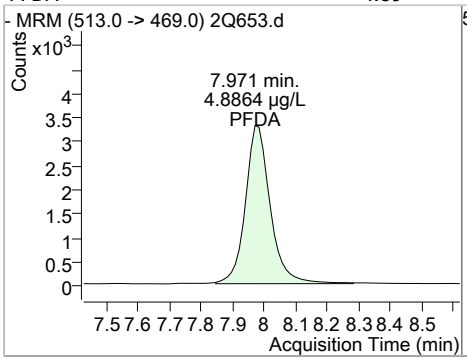
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	4.84	7.98	0.01	25239				

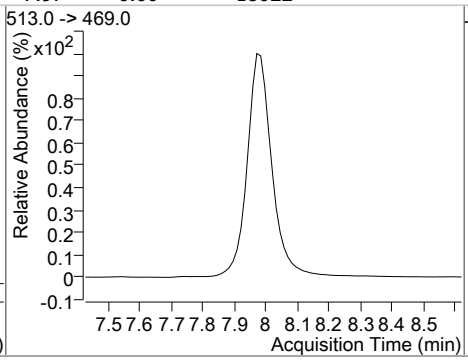


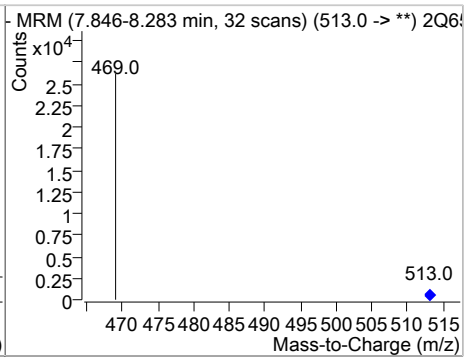




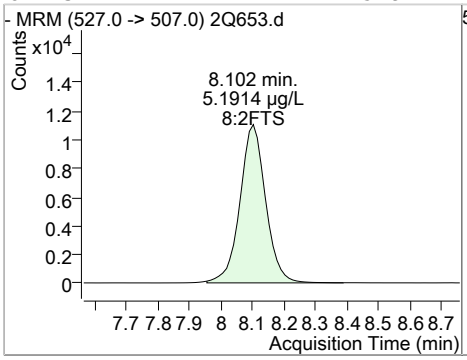
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.89	7.97	0.00	18022				

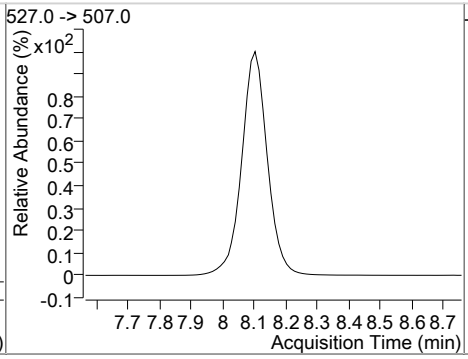


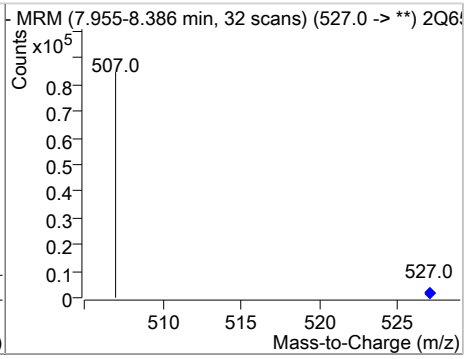




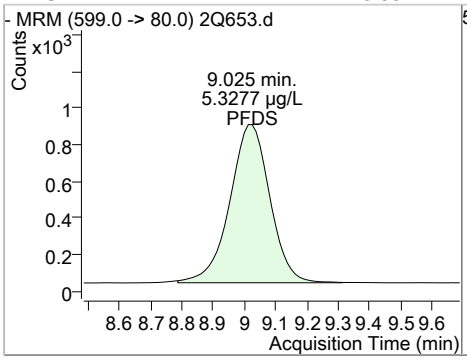
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.19	8.10	0.01	62098				

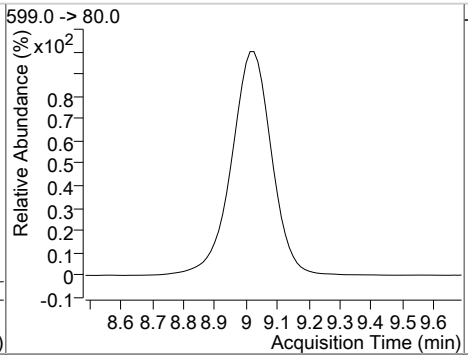


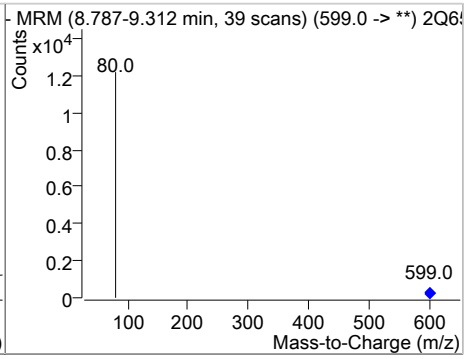




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.33	9.02	0.00	7692				



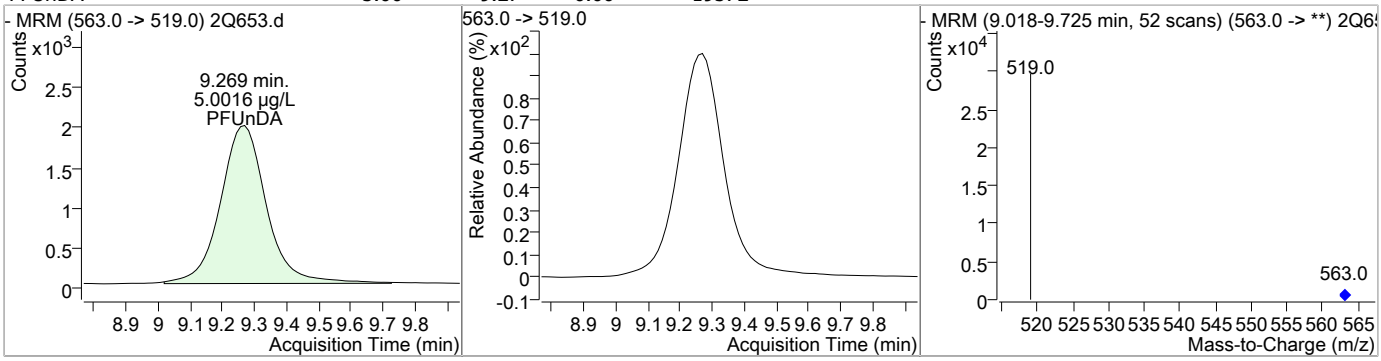




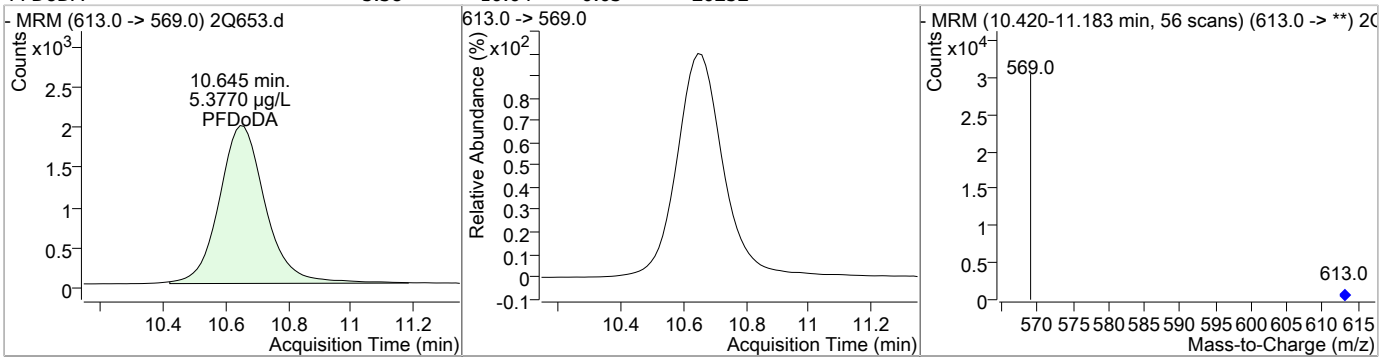
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

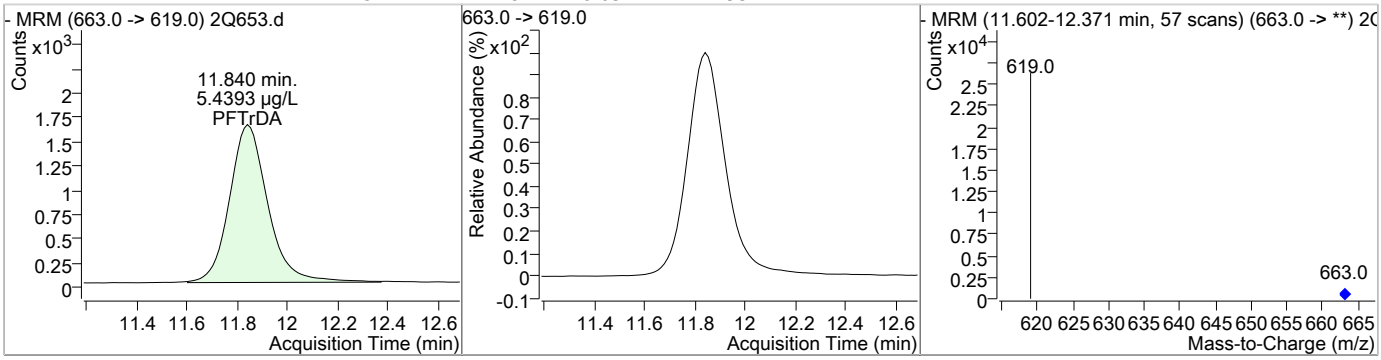
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	5.00	9.27	0.00	19572				



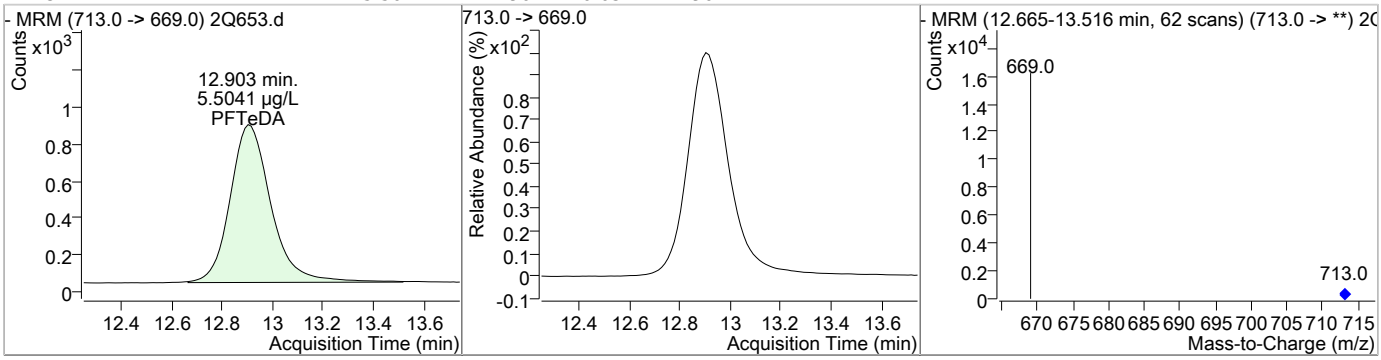
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.38	10.64	-0.03	20252				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.44	11.84	-0.03	17193				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.50	12.90	-0.03	9627				



Manual Integration Approval Summary

Sample Number:	S2Q18-IC18	**Method:**	EPA 537 MOD
Lab FileID:	2Q653.D	**Analyst approved:**	04/21/17 09:46 Nancy Saunders
Injection Time:	04/20/17 12:33	**Supervisor approved:**	04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
04/21/17 11:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q654.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/20/2017 12:53:35 PM
Sample Name : IC18-10
Vial : Vial 5
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : S2Q18.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.660	429.0 -> 409.0	151398	20.00	µg/L		0.013
13C2-PFDoDA	10.676	615.0 -> 570.0	90119	20.00	µg/L		0.013
13C2-PFOA	6.651	415.0 -> 370.0	75500	20.00	µg/L		0.013
13C3-PFPeA	4.234	266.0 -> 222.0	74532	20.00	µg/L		0.000
13C4-PFOS	7.214	503.0 -> 80.0	56977	20.00	µg/L		0.014
d3-MeFOSAA	7.474	573.0 -> 419.0	34214	20.00	µg/L		0.000
System Monitoring Compounds							
13C2-PFDA	7.982	515.0 -> 470.0	51879	9.82	µg/L		0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 49.1%			
13C2-PFHxA	5.210	315.0 -> 270.0	39125	9.81	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 49.1%			
d5-EtFOSAA	7.597	589.0 -> 419.0	8943	11.08	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 55.4%			
Target Compounds							**QValue**
4:2FTS	5.132	327.0 -> 307.0	40678	10.64	µg/L		100
6:2FTS	6.649	427.0 -> 407.0	79916	10.92	µg/L		100
8:2FTS	8.102	527.0 -> 507.0	128092	10.57	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	7765	10.22	µg/L		100
FOSA	6.986	498.0 -> 78.0	18892	10.27	µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	10408	11.32	µg/L		100
PFBA	2.940	213.0 -> 169.0	19476	9.81	µg/L		100
PFBS	4.353	299.0 -> 80.0	22215	9.77	µg/L		100
PFDA	7.971	513.0 -> 469.0	36869	9.88	µg/L		100
PFDoDA	10.670	613.0 -> 569.0	41408	10.74	µg/L		100
PFDS	9.025	599.0 -> 80.0	15632	10.55	µg/L		100
PFHpA	5.986	363.0 -> 319.0	53261	10.29	µg/L	#	93
PFHpS	6.607	449.0 -> 80.0	23423	9.71	µg/L		100
PFHxA	5.212	313.0 -> 269.0	17995	10.40	µg/L	#	86
PFHxS	5.968	399.0 -> 80.0	23060	9.69	µg/L	m	94
PFNA	7.269	463.0 -> 419.0	33687	9.99	µg/L		98
PFNS	7.867	549.0 -> 99.0	14200	9.87	µg/L		100
PFOA	6.639	413.0 -> 369.0	31431	10.02	µg/L		99
PFOS	7.201	499.0 -> 80.0	32188	9.79	µg/L	m	85
PFPeA	4.238	263.0 -> 219.0	56336	9.96	µg/L		100
PFPeS	5.242	349.0 -> 99.0	7019	9.89	µg/L		100
PFTeDA	12.928	713.0 -> 669.0	19571	10.91	µg/L		100
PFTrDA	11.865	663.0 -> 619.0	35228	10.85	µg/L		100
PFUnDA	9.269	563.0 -> 519.0	39980	10.11	µg/L		100

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

Perfluorinated Compounds by LC/MS/MS

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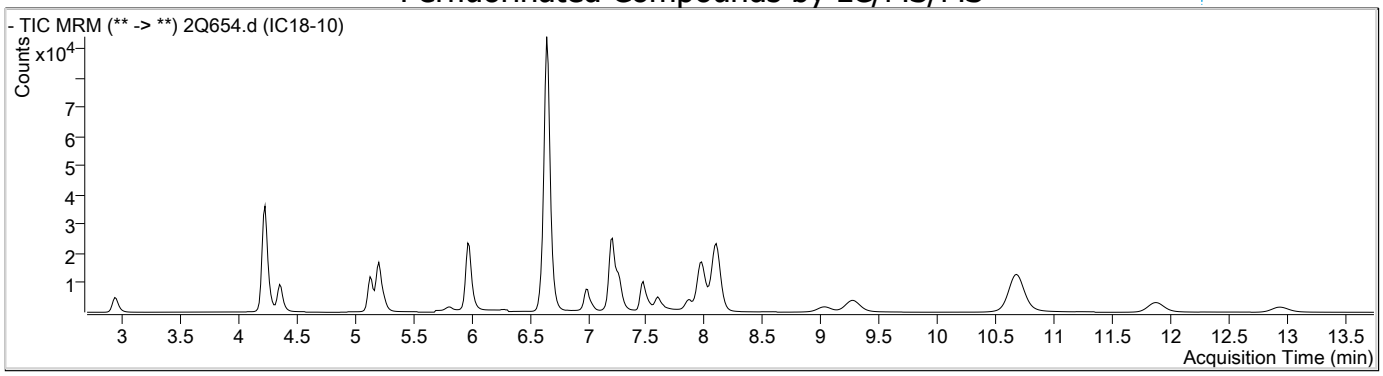
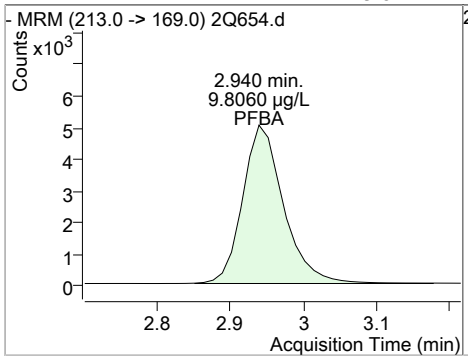
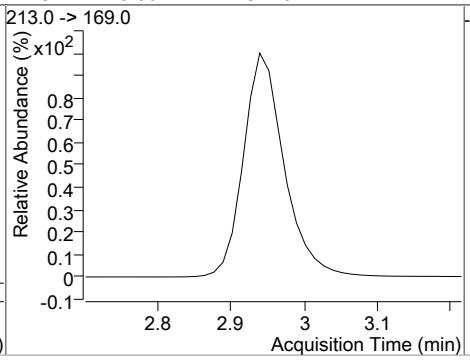
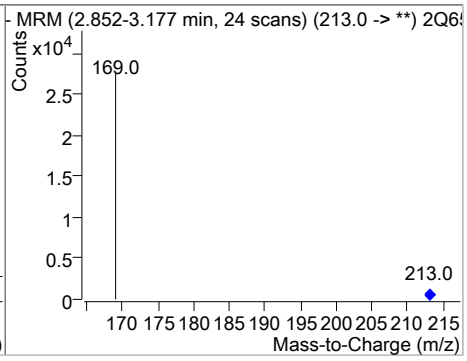


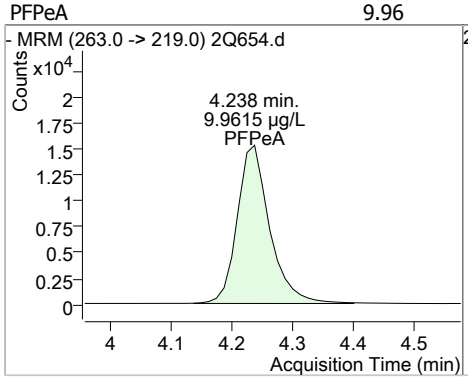
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.81	2.94	0.00	19476				

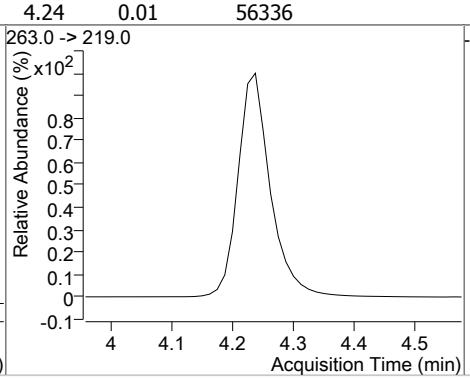


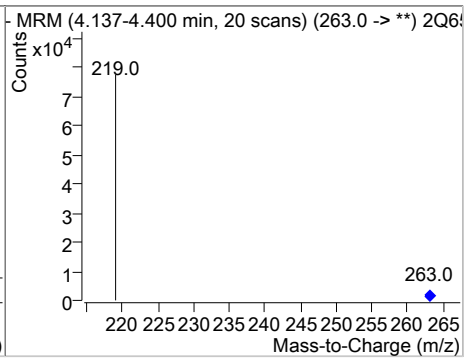




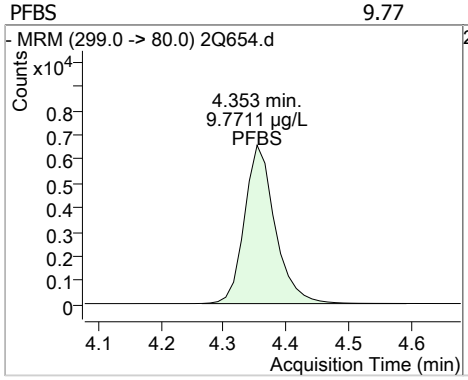
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.96	4.24	0.01	56336				

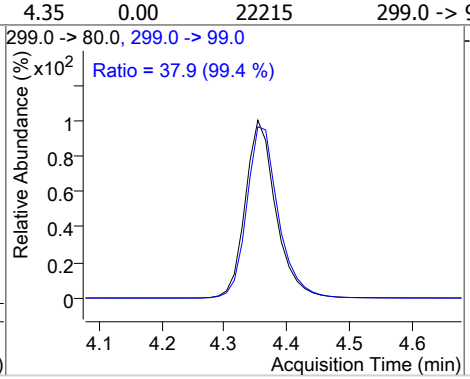


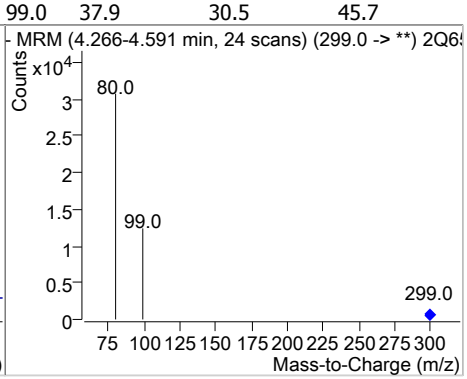




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.77	4.35	0.00	22215	299.0 -> 99.0	37.9	30.5	45.7



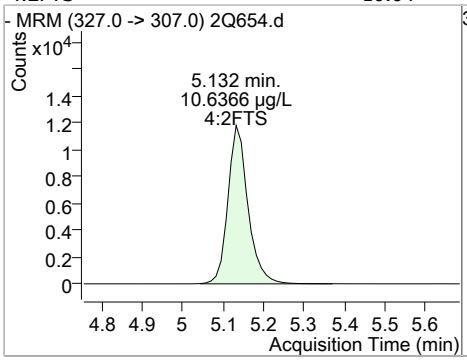


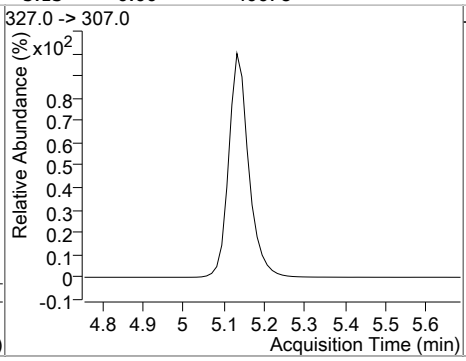


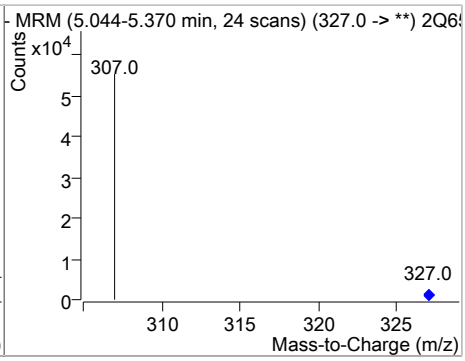
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

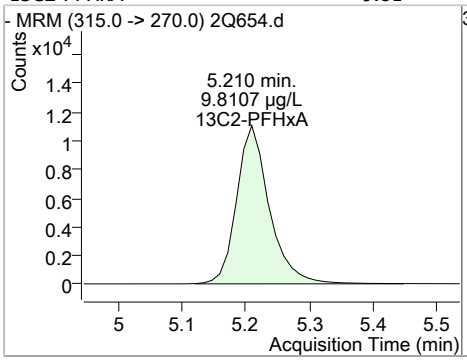
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.64	5.13	0.00	40678				

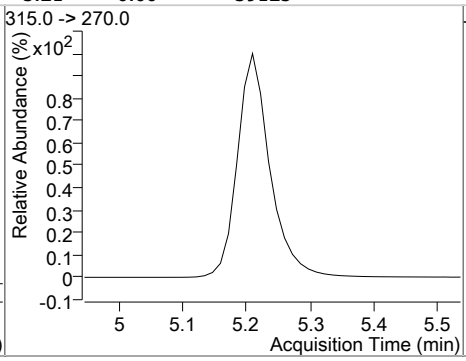


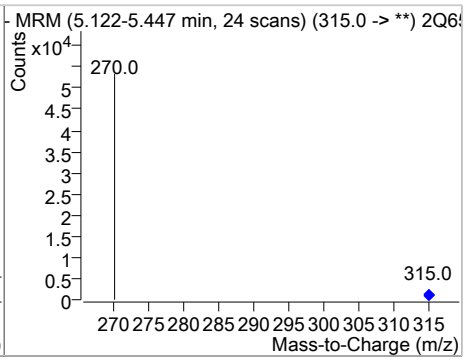




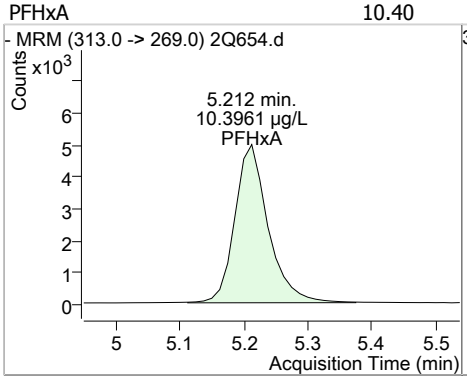
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	9.81	5.21	0.00	39125				

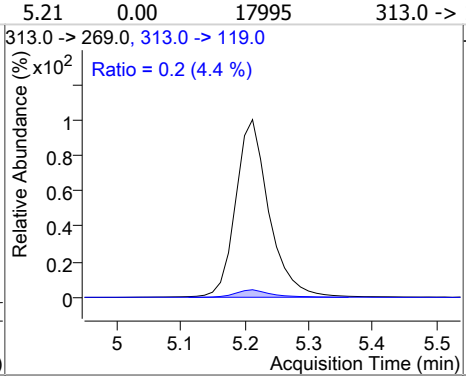


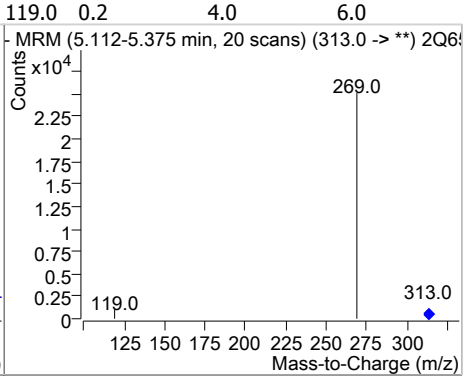




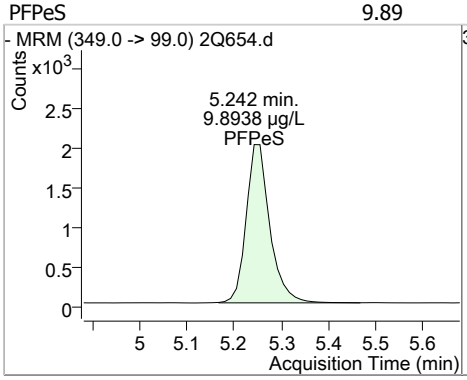
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	10.40	5.21	0.00	17995	313.0 -> 119.0	0.2	4.0	6.0

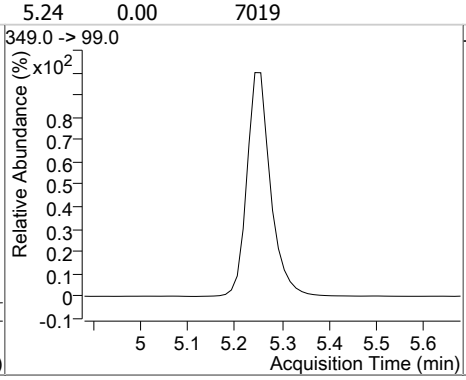


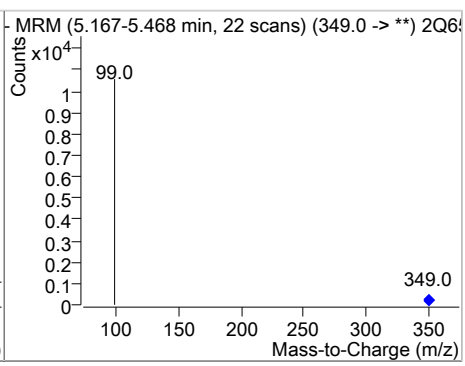




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.89	5.24	0.00	7019				







Perfluorinated Compounds by LC/MS/MS

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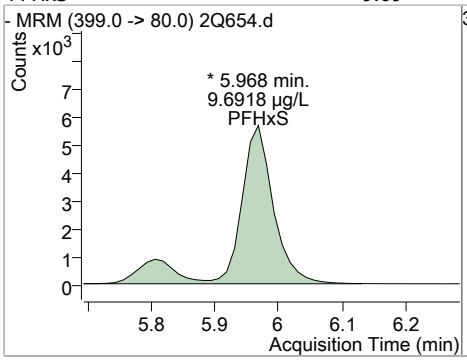
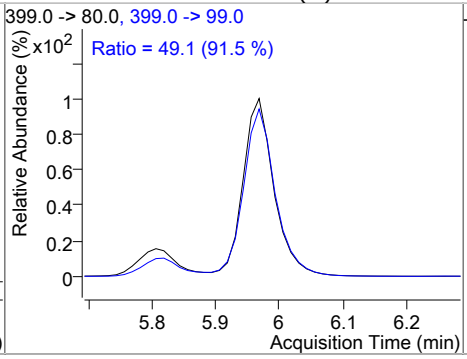
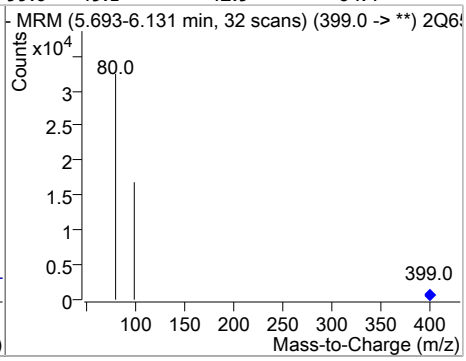
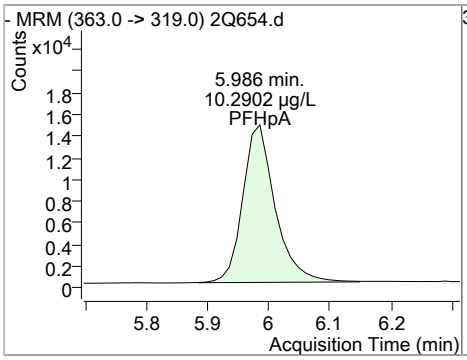
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.69	5.97	0.00	23060 (m)	399.0 -> 99.0	49.1	42.9	64.4

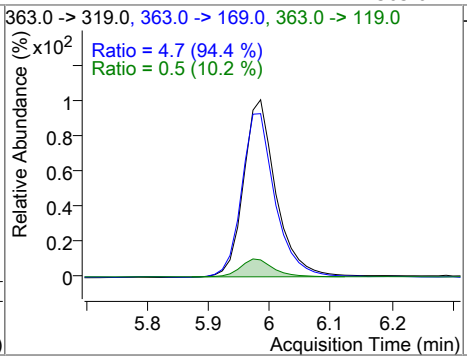


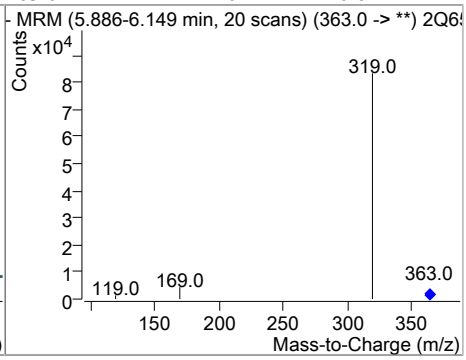




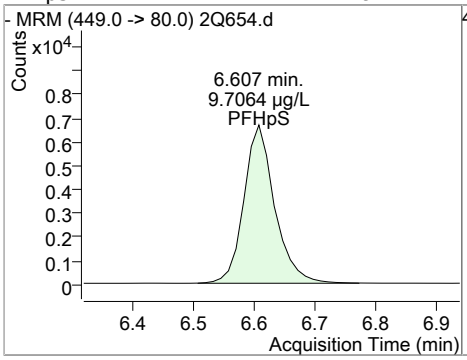
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	10.29	5.99	0.00	53261	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.7	4.0	6.0

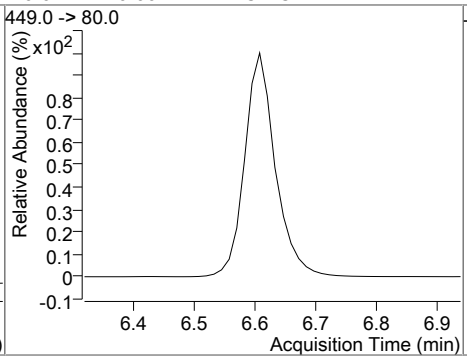


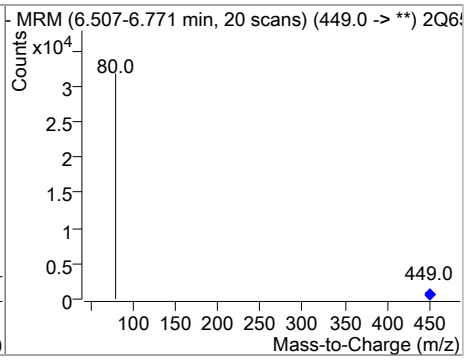




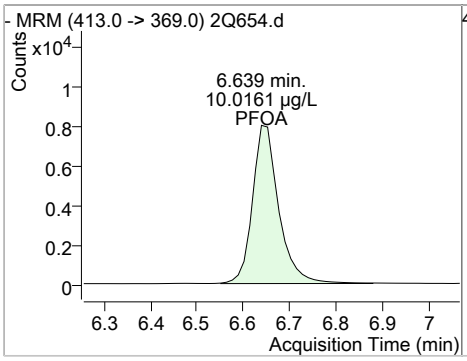
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.71	6.61	0.00	23423				

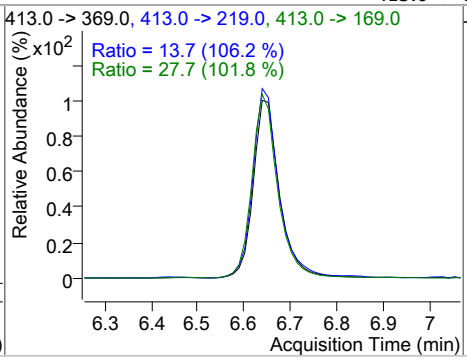


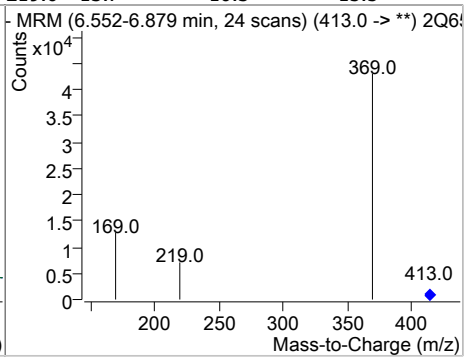




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	10.02	6.64	0.00	31431	413.0 -> 169.0	27.7	21.8	32.6
					413.0 -> 219.0	13.7	10.3	15.5







Perfluorinated Compounds by LC/MS/MS

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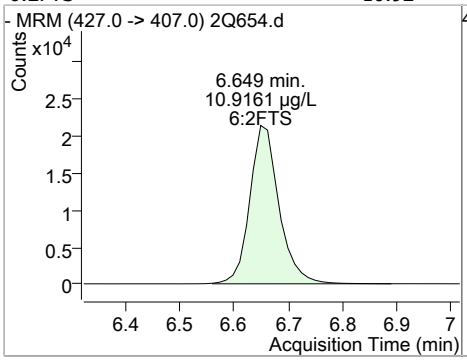
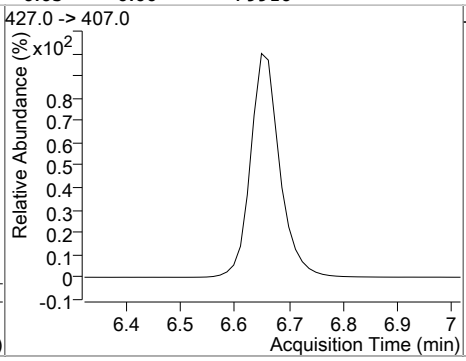
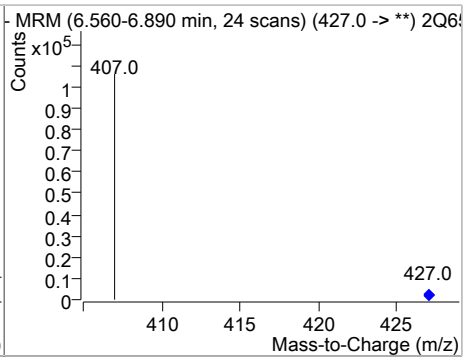
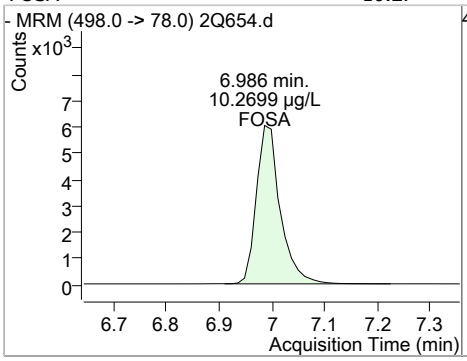
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.92	6.65	0.00	79916				

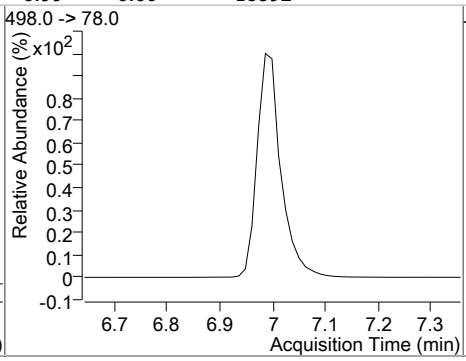


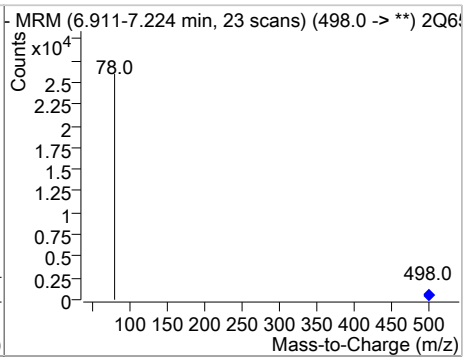




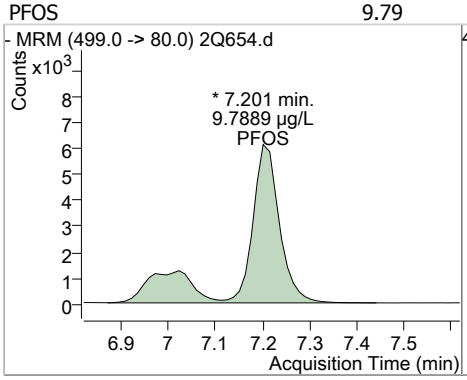
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	10.27	6.99	0.00	18892				

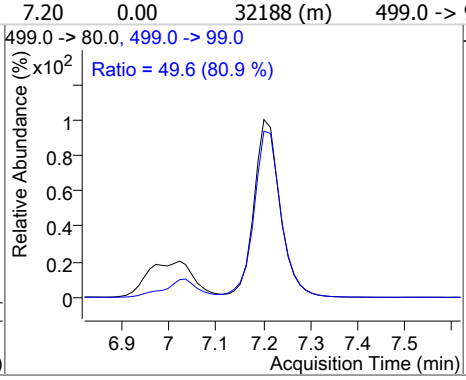


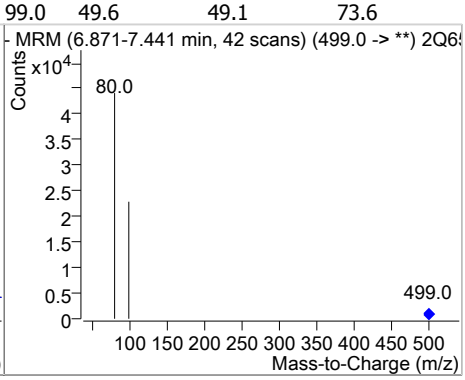




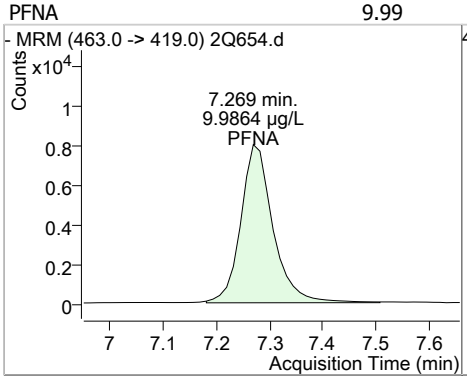
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.79	7.20	0.00	32188 (m)	499.0 -> 99.0	49.6	49.1	73.6

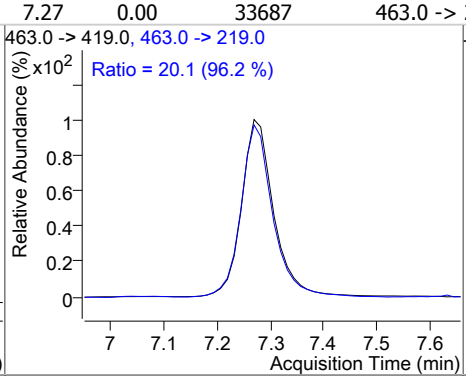


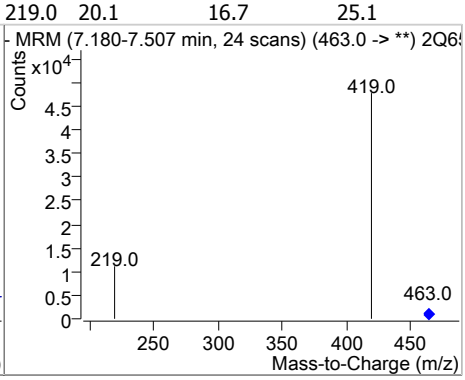




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.99	7.27	0.00	33687	463.0 -> 219.0	20.1	16.7	25.1







Perfluorinated Compounds by LC/MS/MS

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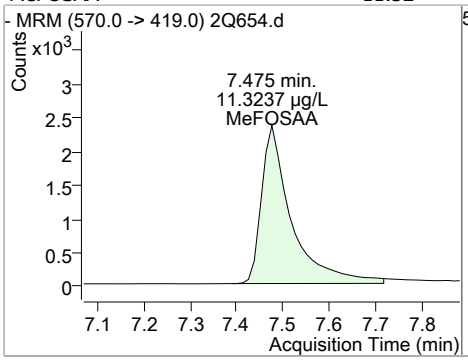
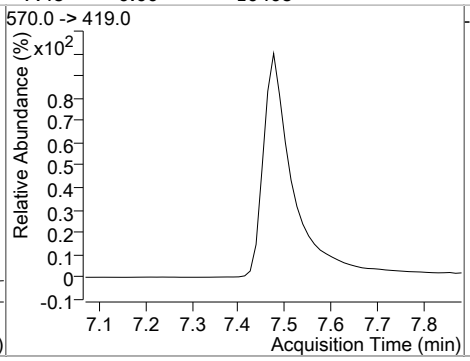
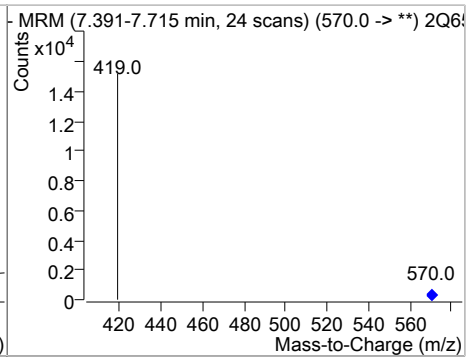
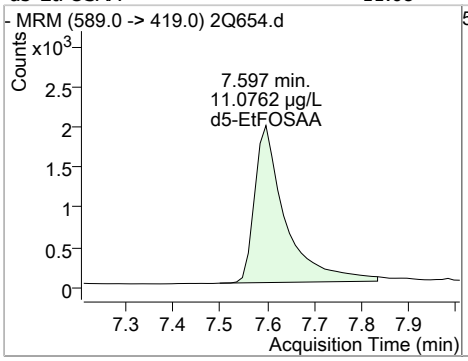
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	11.32	7.48	0.00	10408				

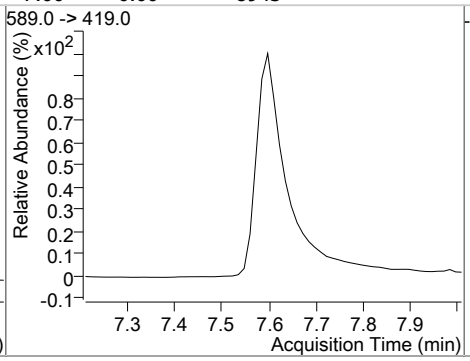


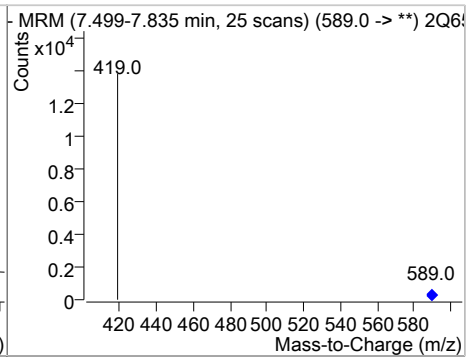




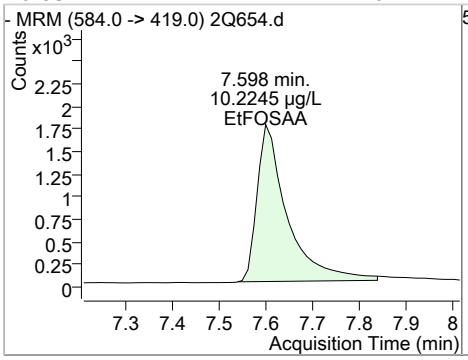
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.08	7.60	0.00	8943				

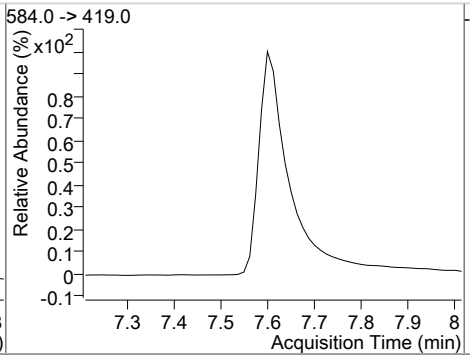


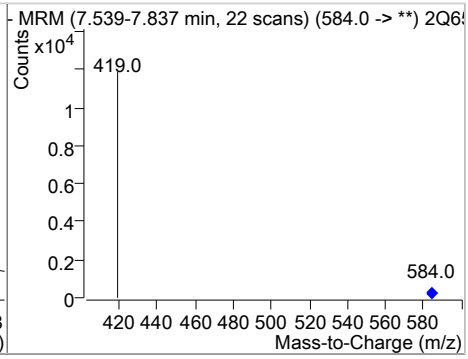




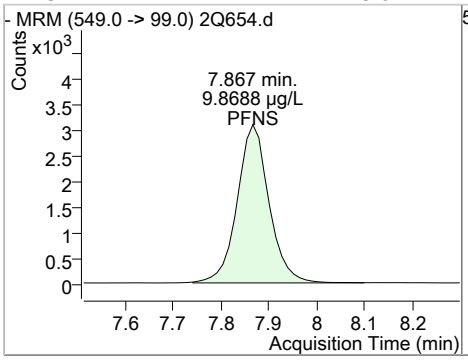
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	10.22	7.60	0.00	7765				

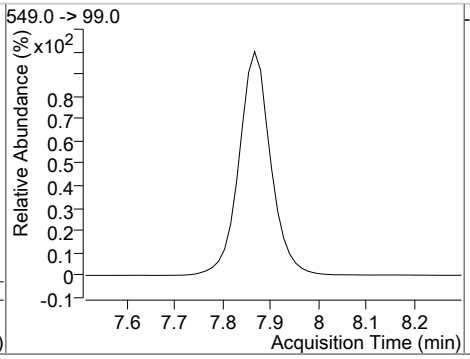


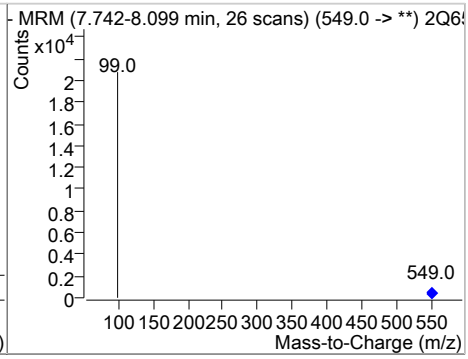




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.87	7.87	0.00	14200				







Perfluorinated Compounds by LC/MS/MS

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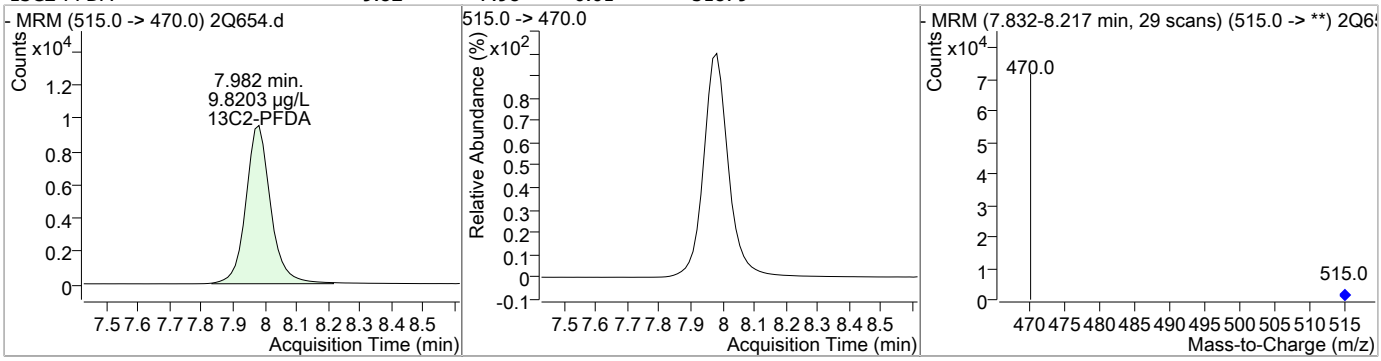
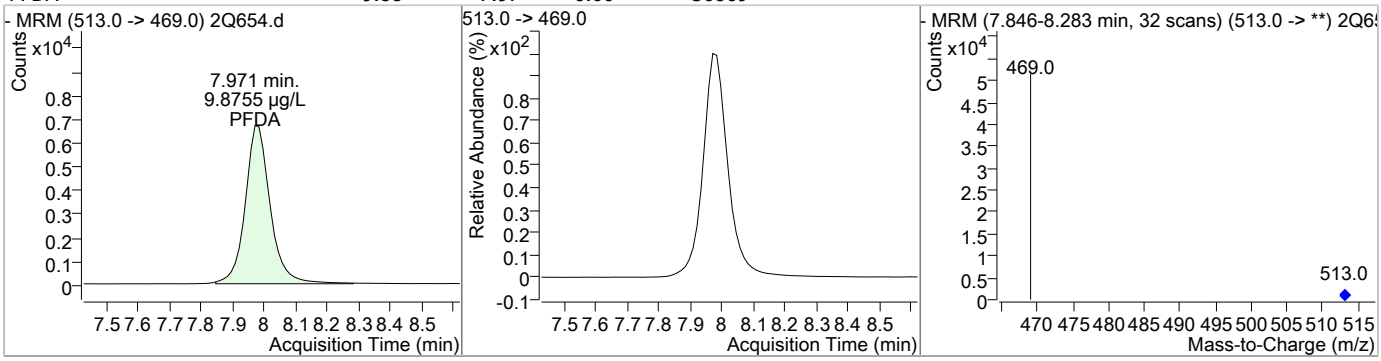
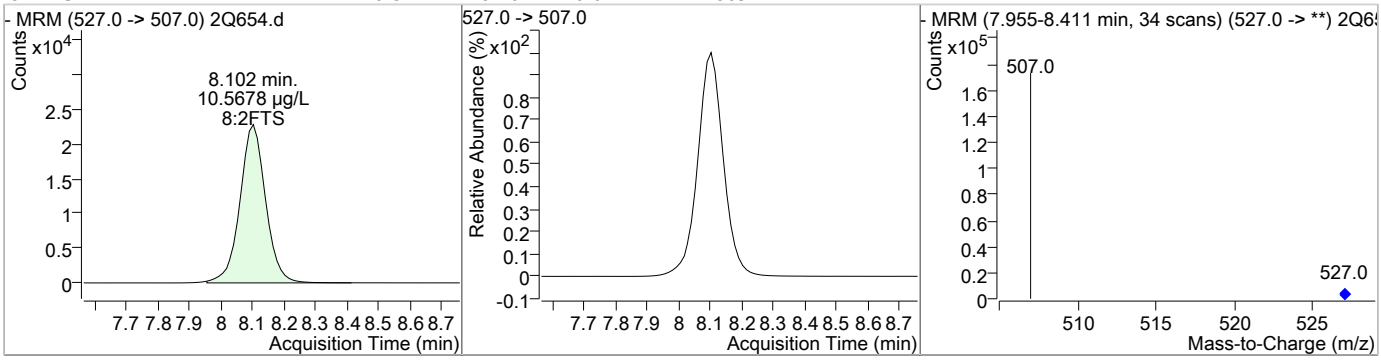
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	9.82	7.98	0.01	51879				



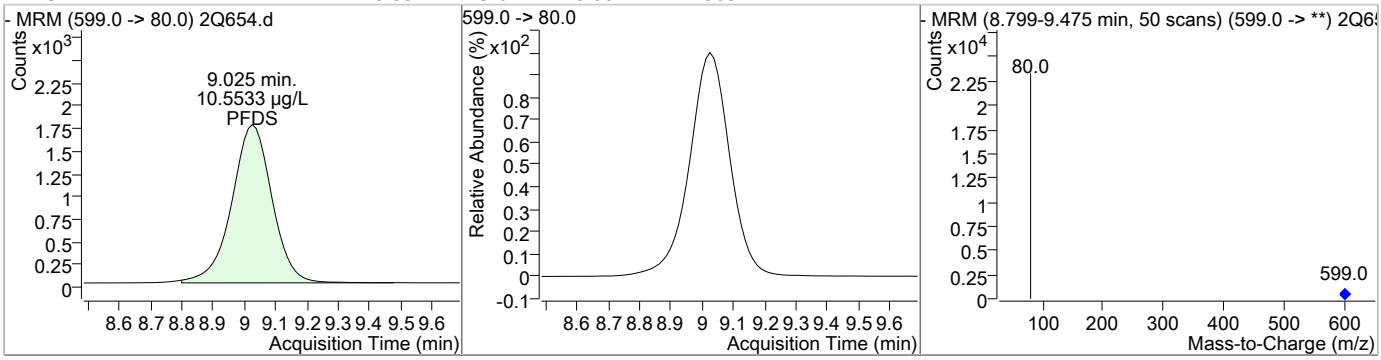
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.88	7.97	0.00	36869				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.57	8.10	0.01	128092				



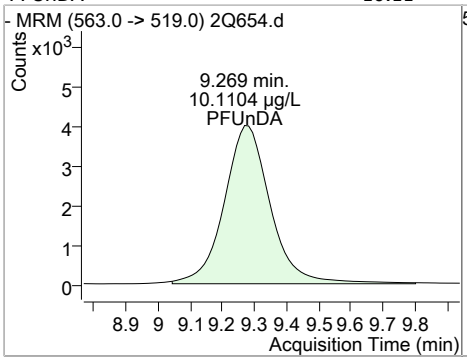
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	10.55	9.02	0.00	15632				

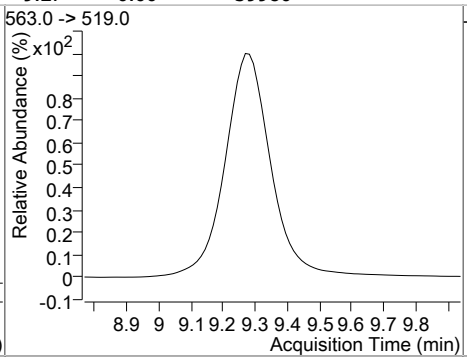


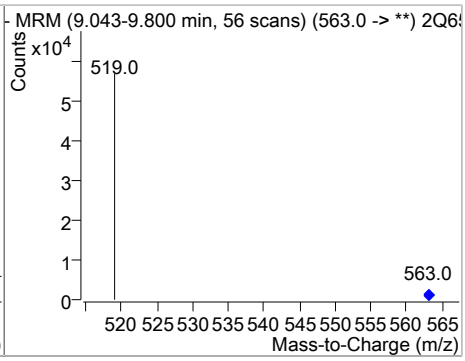
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

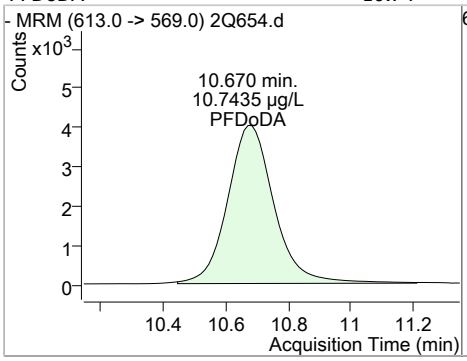
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	10.11	9.27	0.00	39980				

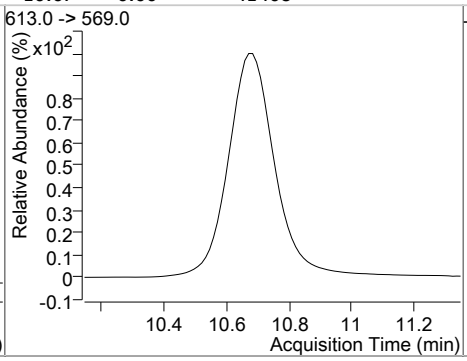


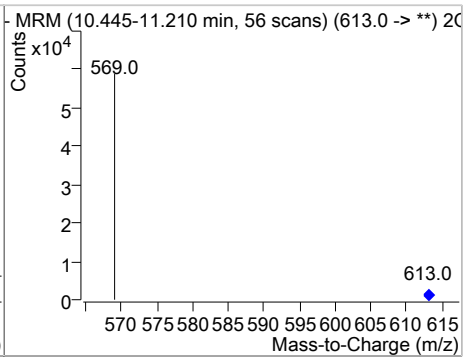




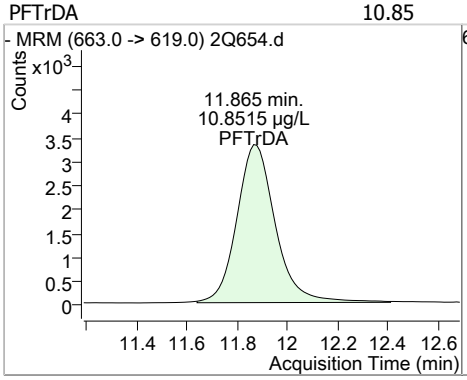
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	10.74	10.67	0.00	41408				

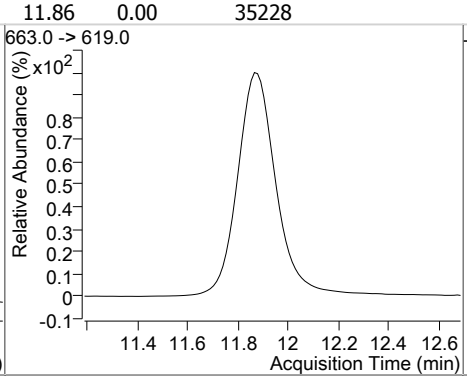


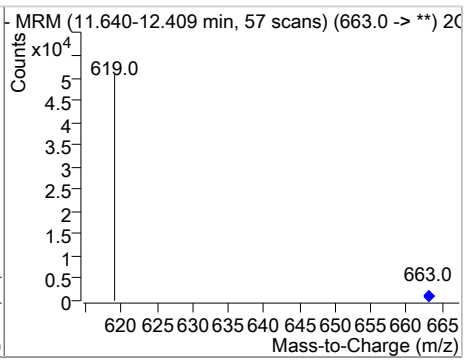




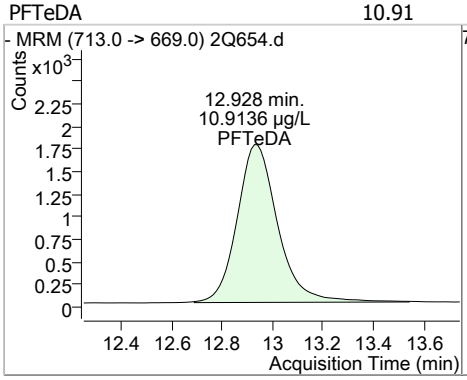
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	10.85	11.86	0.00	35228				

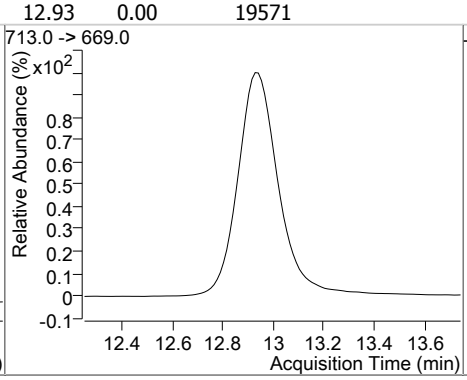


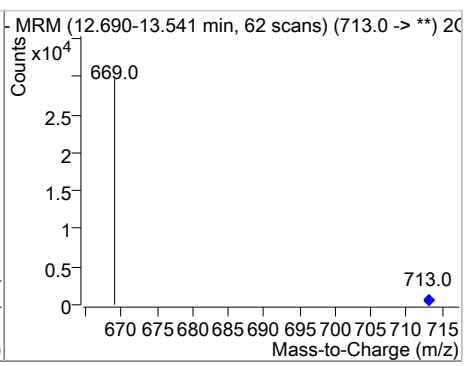




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	10.91	12.93	0.00	19571				







Manual Integration Approval Summary

Sample Number:	S2Q18-IC18	**Method:**	EPA 537 MOD
Lab FileID:	2Q654.D	**Analyst approved:**	04/21/17 09:46 Nancy Saunders
Injection Time:	04/20/17 12:53	**Supervisor approved:**	04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
04/21/17 11:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q655.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/20/2017 1:13:18 PM
Sample Name : ICC18-20
Vial : Vial 6
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : S2Q18.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.648	429.0 -> 409.0	174056	20.00	µg/L		0.000
13C2-PFDoDA	10.664	615.0 -> 570.0	101125	20.00	µg/L		0.000
13C2-PFOA	6.637	415.0 -> 370.0	84279	20.00	µg/L		0.000
13C3-PFPeA	4.234	266.0 -> 222.0	82762	20.00	µg/L		0.000
13C4-PFOS	7.199	503.0 -> 80.0	61486	20.00	µg/L		0.000
d3-MeFOSAA	7.474	573.0 -> 419.0	36374	20.00	µg/L		0.000
System Monitoring Compounds							
13C2-PFDA	7.969	515.0 -> 470.0	107957	18.31	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 91.5%			
13C2-PFHxA	5.210	315.0 -> 270.0	81843	18.38	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 91.9%			
d5-EtFOSAA	7.597	589.0 -> 419.0	18459	20.56	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 102.8%			
Target Compounds							QValue
4:2FTS	5.132	327.0 -> 307.0	85144	19.37	µg/L		100
6:2FTS	6.649	427.0 -> 407.0	169510	20.14	µg/L		100
8:2FTS	8.089	527.0 -> 507.0	269915	19.37	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	15926	19.22	µg/L		100
FOSA	6.986	498.0 -> 78.0	38302	19.58	µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	21165	20.72	µg/L		100
PFBA	2.940	213.0 -> 169.0	40607	18.32	µg/L		100
PFBS	4.353	299.0 -> 80.0	45584	18.58	µg/L		99
PFDA	7.971	513.0 -> 469.0	75901	18.21	µg/L		100
PFDoDA	10.670	613.0 -> 569.0	86004	19.49	µg/L		100
PFDS	9.025	599.0 -> 80.0	32276	19.70	µg/L		100
PFHpA	5.986	363.0 -> 319.0	110187	18.84	µg/L	#	93
PFHpS	6.607	449.0 -> 80.0	48655	18.68	µg/L		100
PFHxA	5.212	313.0 -> 269.0	38157	19.35	µg/L	#	86
PFHxS	5.968	399.0 -> 80.0	47438	18.47	µg/L	m	95
PFNA	7.269	463.0 -> 419.0	67724	17.99	µg/L		98
PFNS	7.867	549.0 -> 99.0	28984	18.67	µg/L		100
PFOA	6.639	413.0 -> 369.0	64840	18.51	µg/L		98
PFOS	7.201	499.0 -> 80.0	65253	18.39	µg/L	m	86
PFPeA	4.225	263.0 -> 219.0	117428	18.70	µg/L		100
PFPeS	5.242	349.0 -> 99.0	14687	18.64	µg/L		100
PFTeDA	12.928	713.0 -> 669.0	40066	19.47	µg/L		100
PFTrDA	11.865	663.0 -> 619.0	73047	19.55	µg/L		100
PFUnDA	9.269	563.0 -> 519.0	83071	18.72	µg/L		100

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

Perfluorinated Compounds by LC/MS/MS

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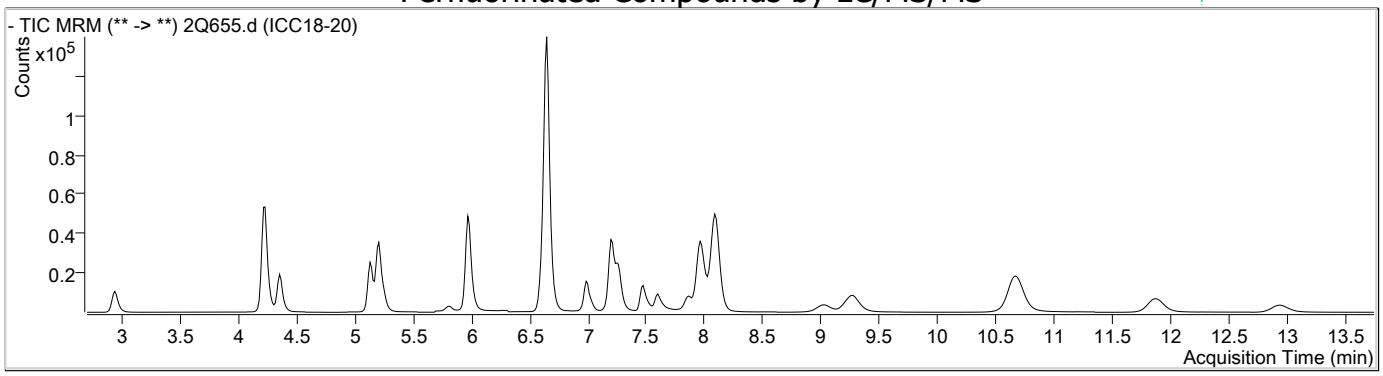
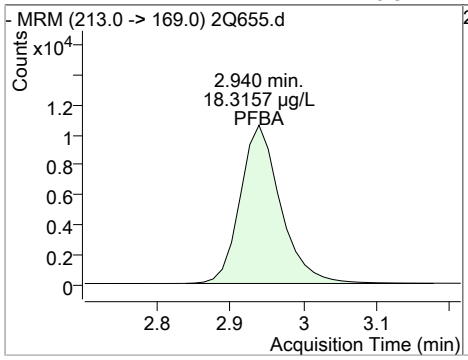
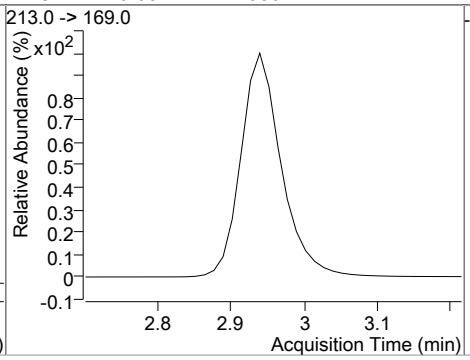
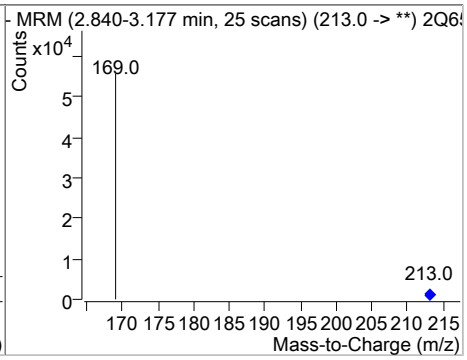


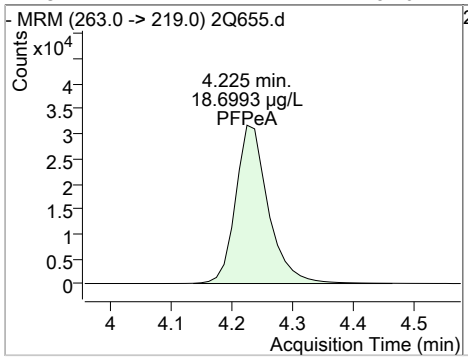
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.32	2.94	0.00	40607				

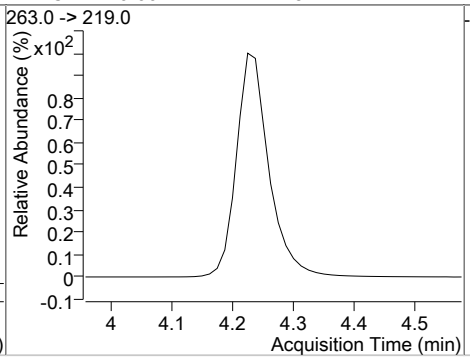


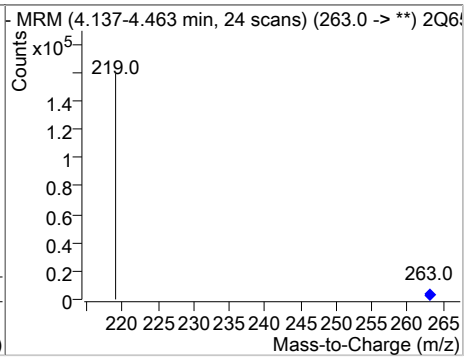




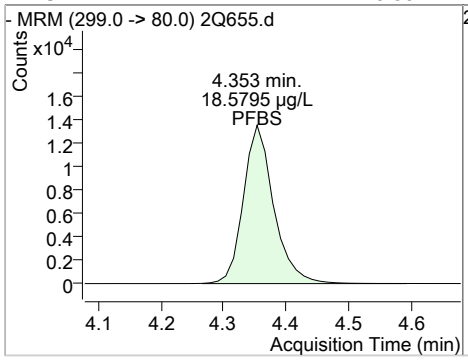
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.70	4.23	0.00	117428				

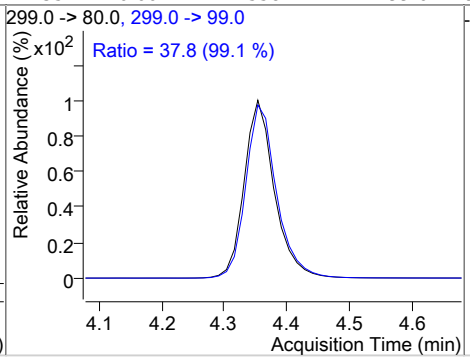


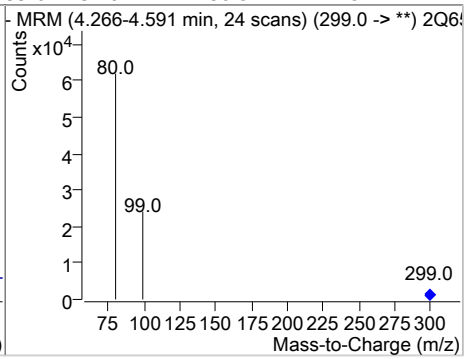




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.58	4.35	0.00	45584	299.0 -> 99.0	37.8	30.5	45.7







Perfluorinated Compounds by LC/MS/MS

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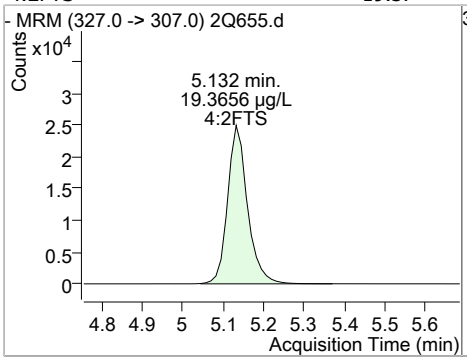
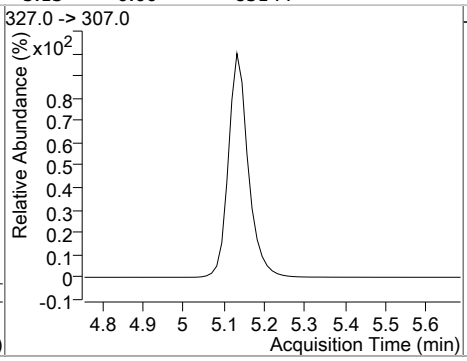
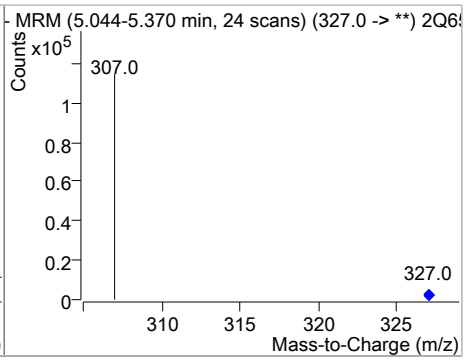
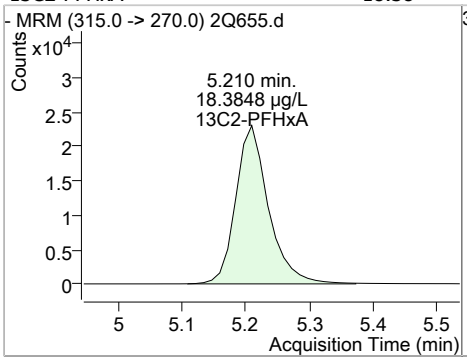
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.37	5.13	0.00	85144				

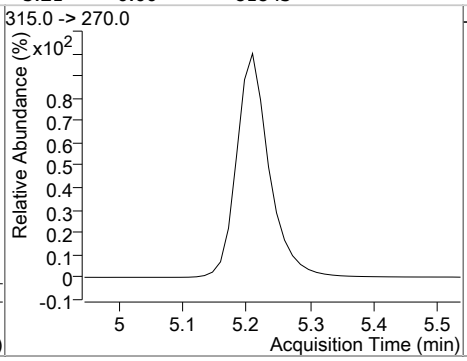


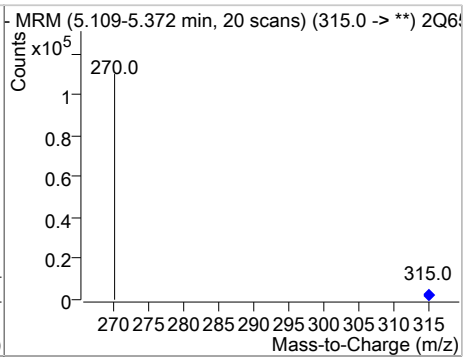




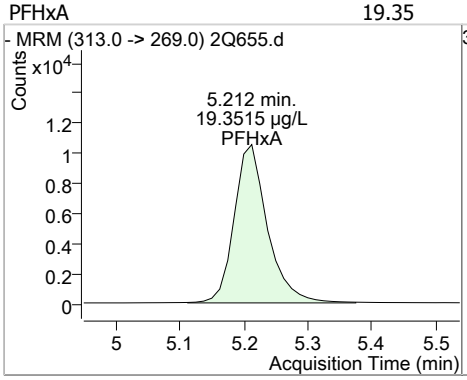
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	18.38	5.21	0.00	81843				

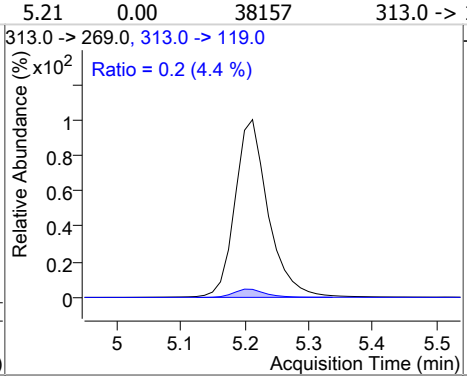


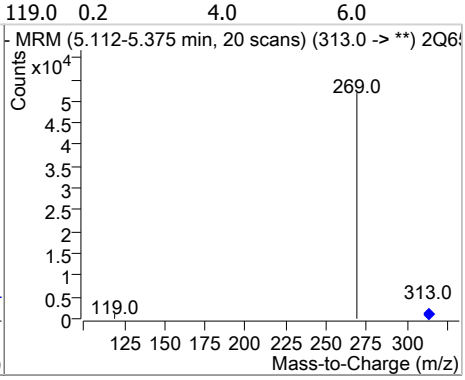




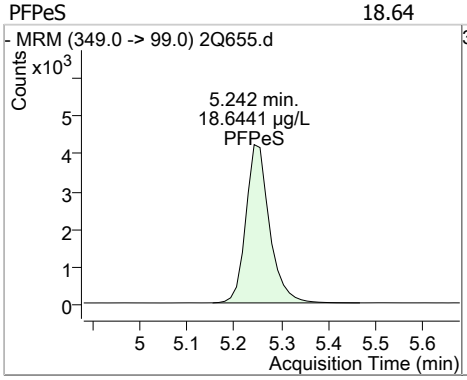
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.35	5.21	0.00	38157	313.0 -> 119.0	0.2	4.0	6.0

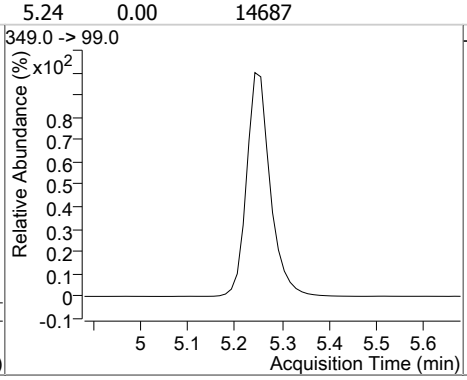


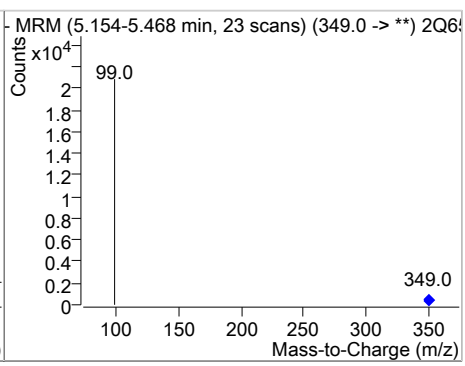




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.64	5.24	0.00	14687				







Perfluorinated Compounds by LC/MS/MS

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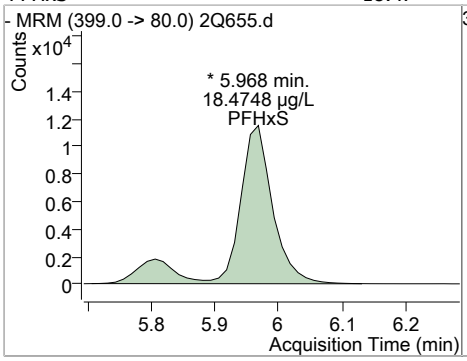
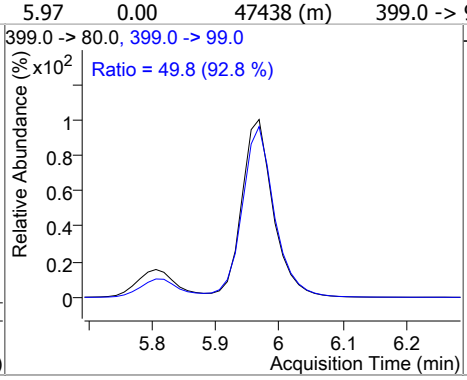
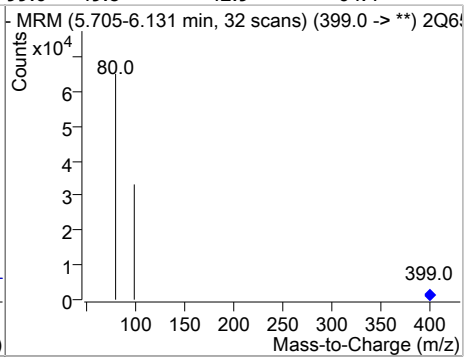
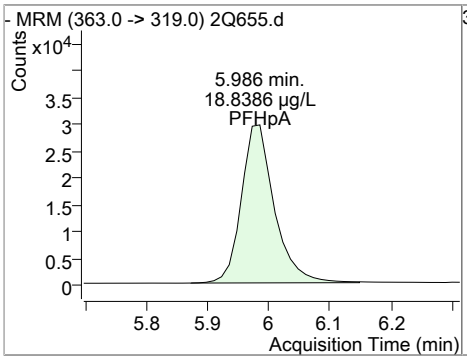
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.47	5.97	0.00	47438 (m)	399.0 -> 99.0	49.8	42.9	64.4

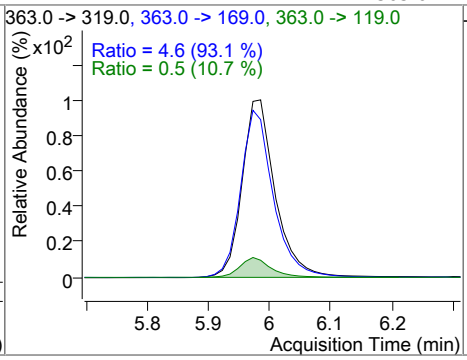


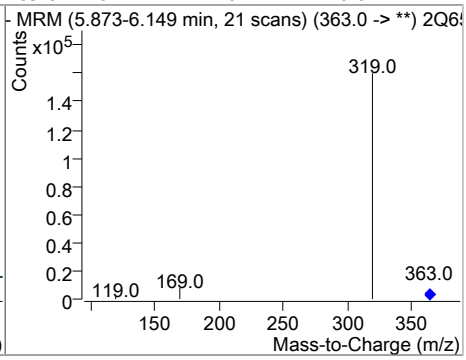




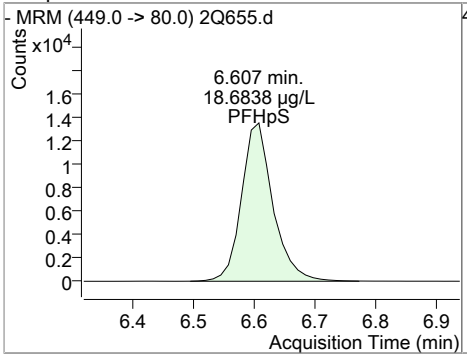
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.84	5.99	0.00	110187	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.6	4.0	6.0

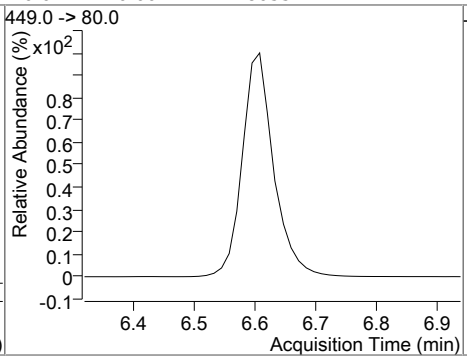


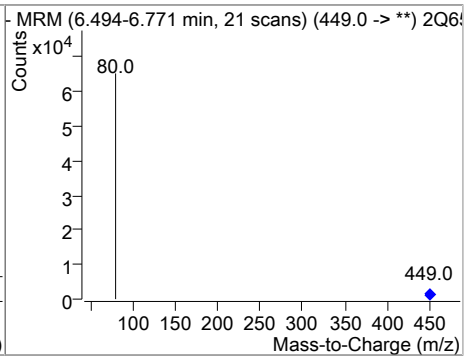




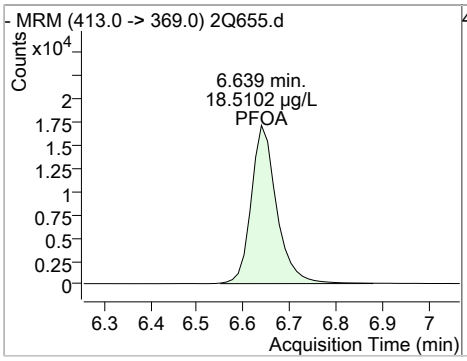
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.68	6.61	0.00	48655				

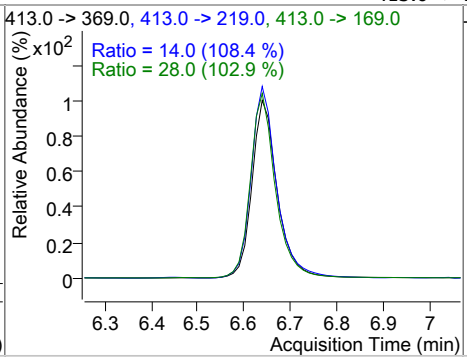


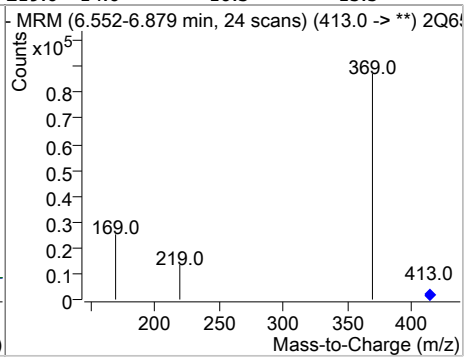




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.51	6.64	0.00	64840	413.0 -> 169.0	28.0	21.8	32.6
					413.0 -> 219.0	14.0	10.3	15.5



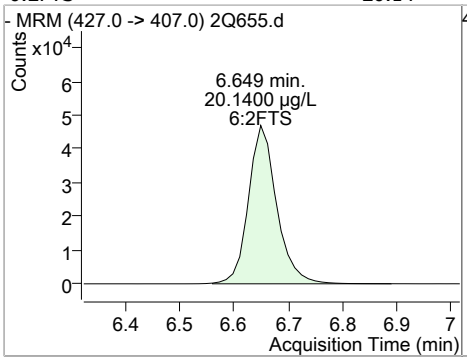


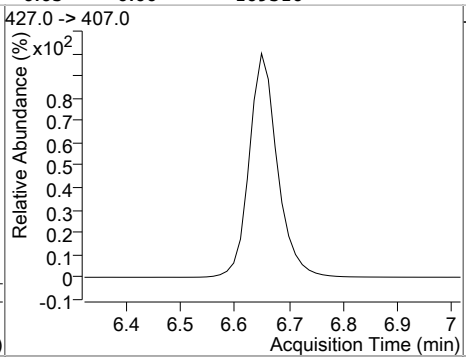


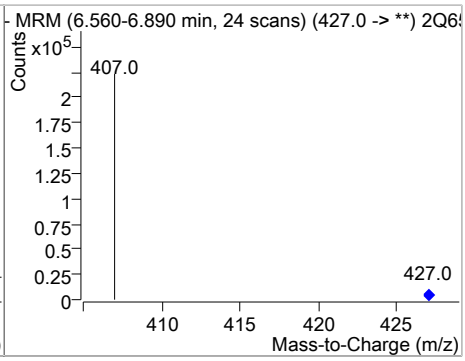
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

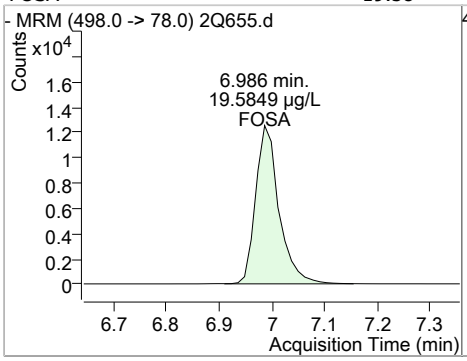
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.14	6.65	0.00	169510				

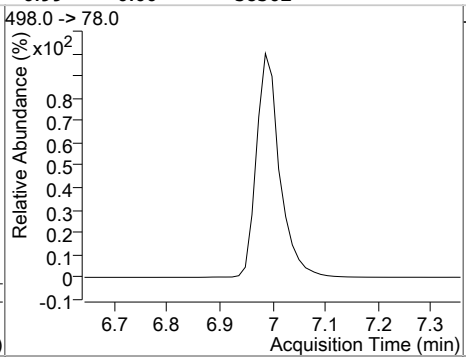


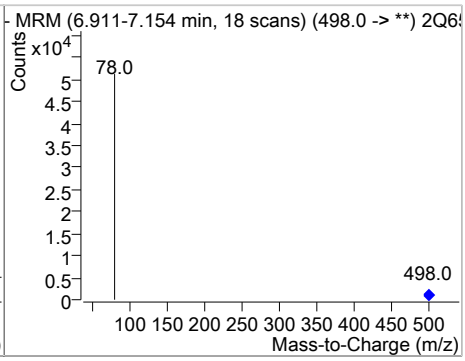




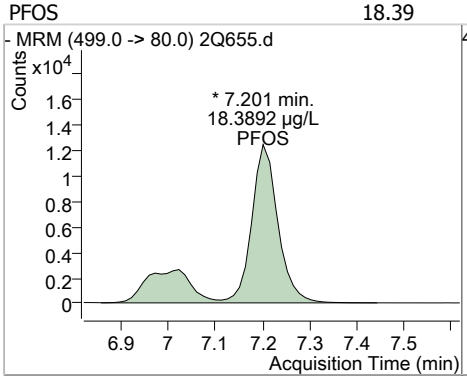
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.58	6.99	0.00	38302				

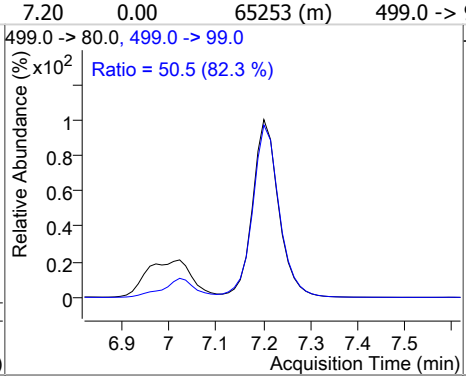


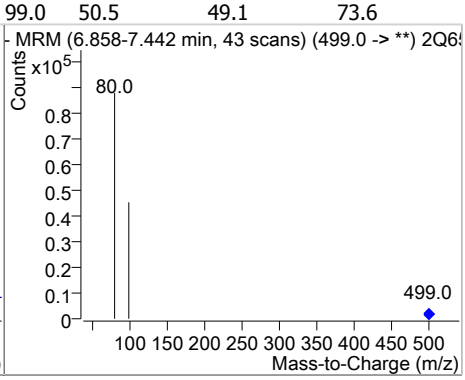




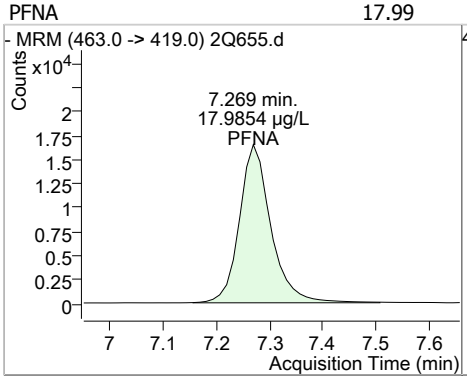
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.39	7.20	0.00	65253 (m)	499.0 -> 99.0	50.5	49.1	73.6

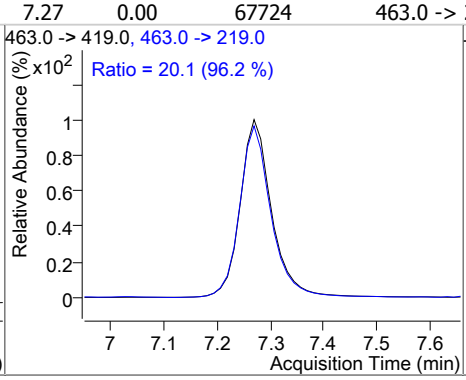


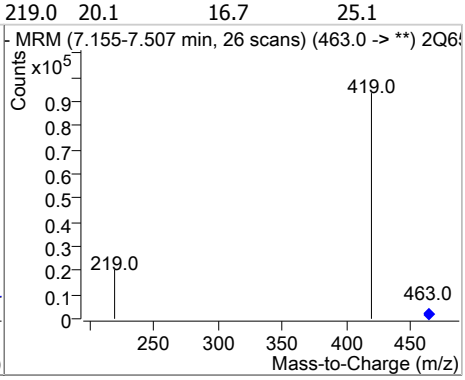




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	17.99	7.27	0.00	67724	463.0 -> 219.0	20.1	16.7	25.1



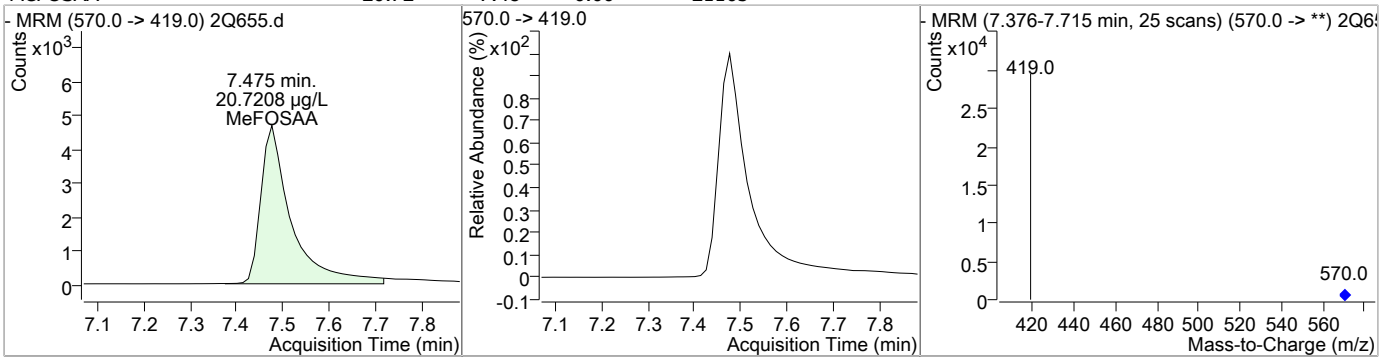




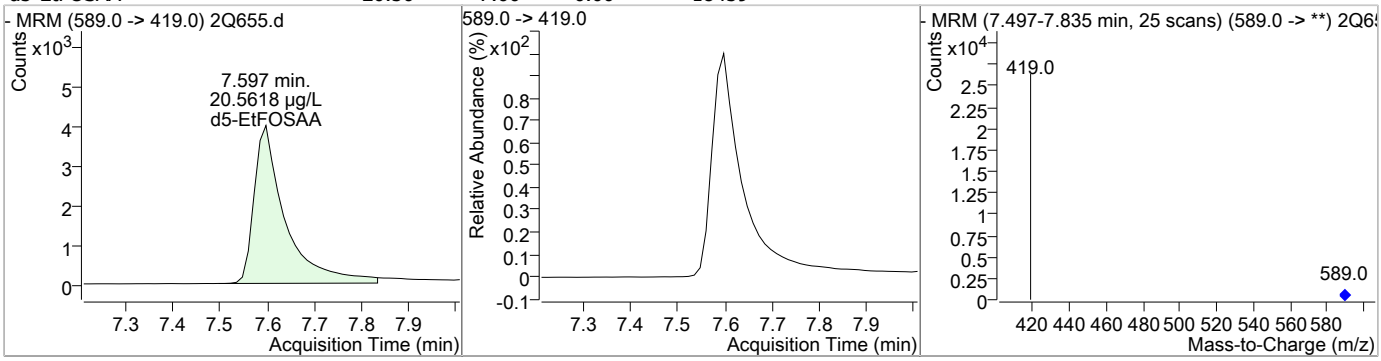
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

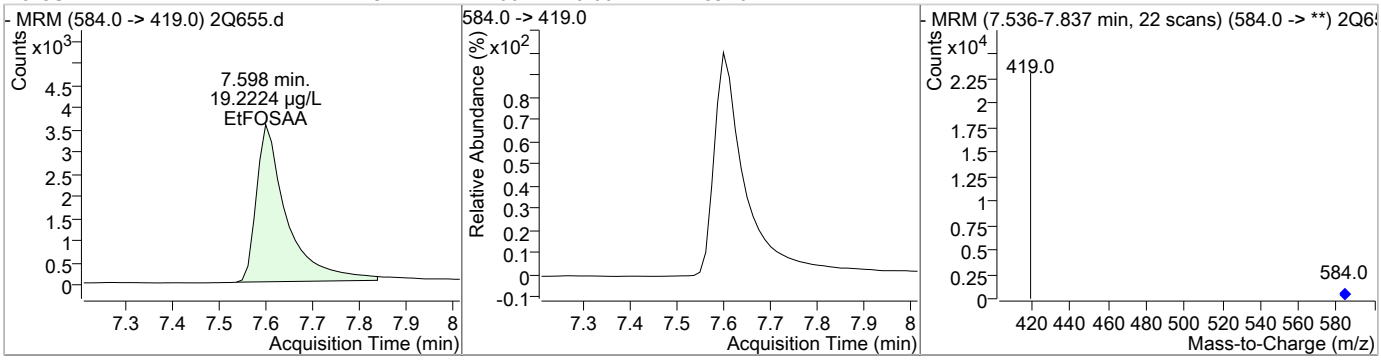
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.72	7.48	0.00	21165				



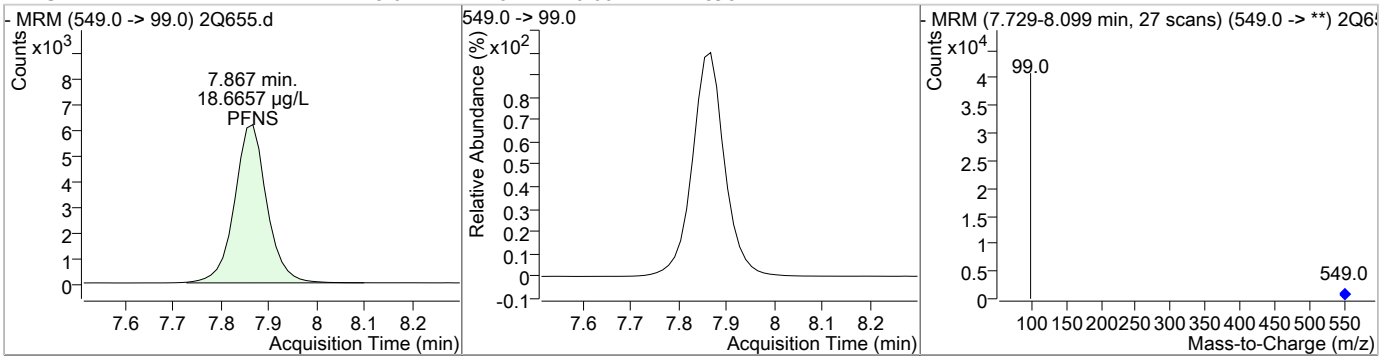
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.56	7.60	0.00	18459				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.22	7.60	0.00	15926				



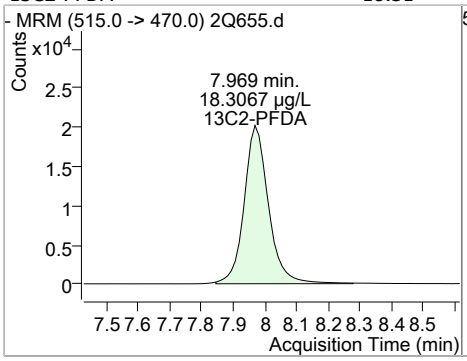
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.67	7.87	0.00	28984				

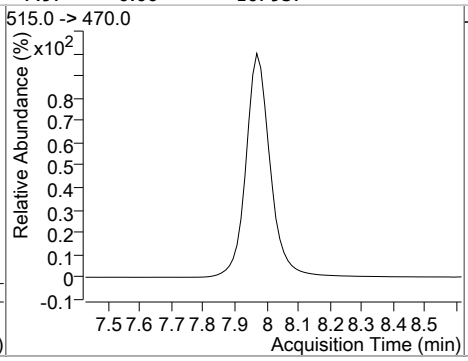


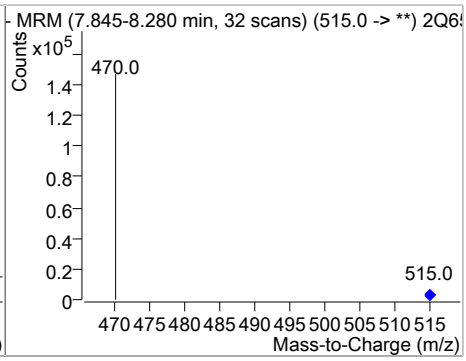
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

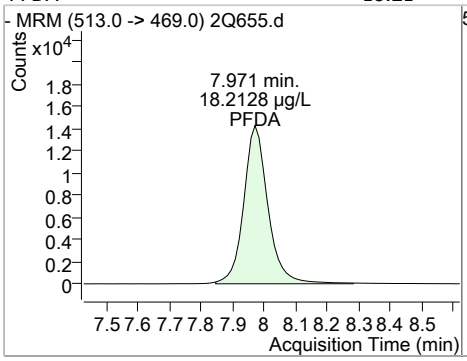
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	18.31	7.97	0.00	107957				

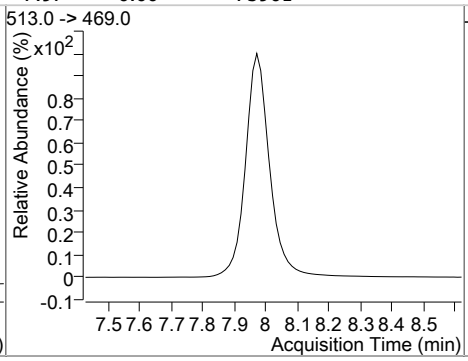


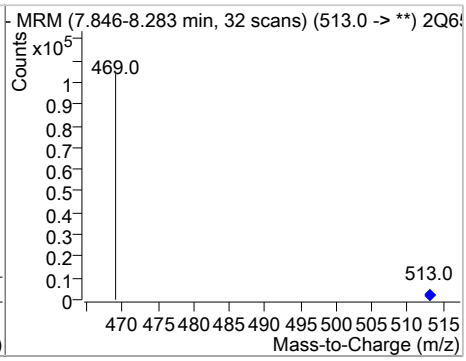




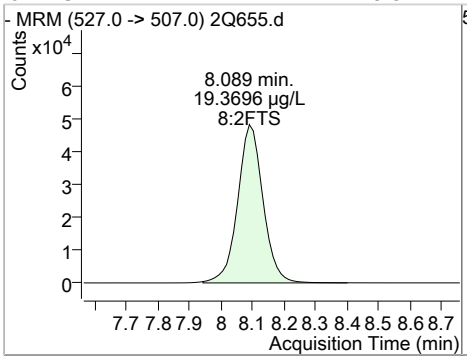
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.21	7.97	0.00	75901				

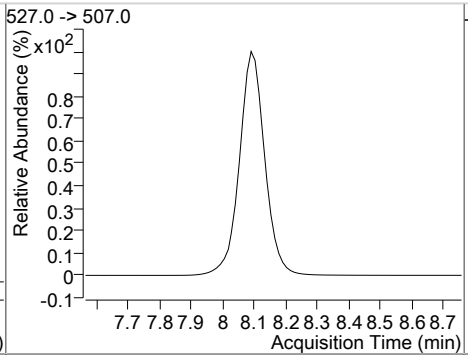


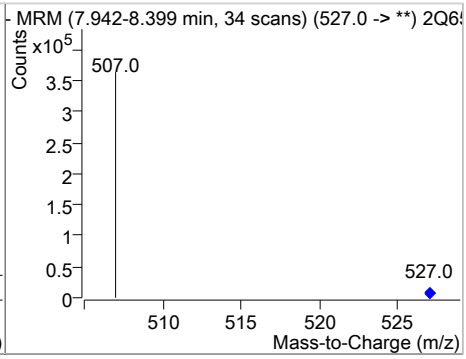




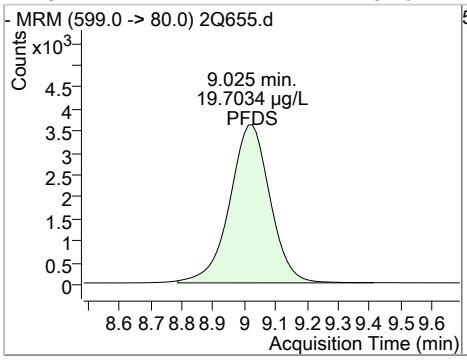
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.37	8.09	0.00	269915				

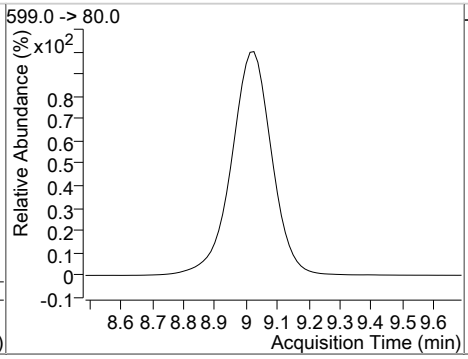


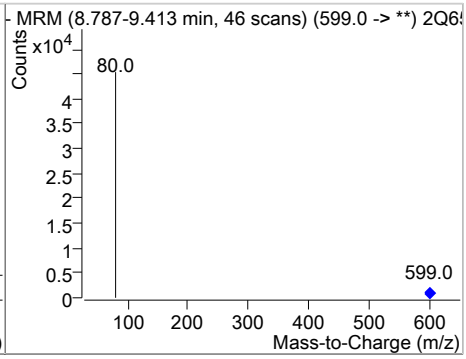




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.70	9.02	0.00	32276				



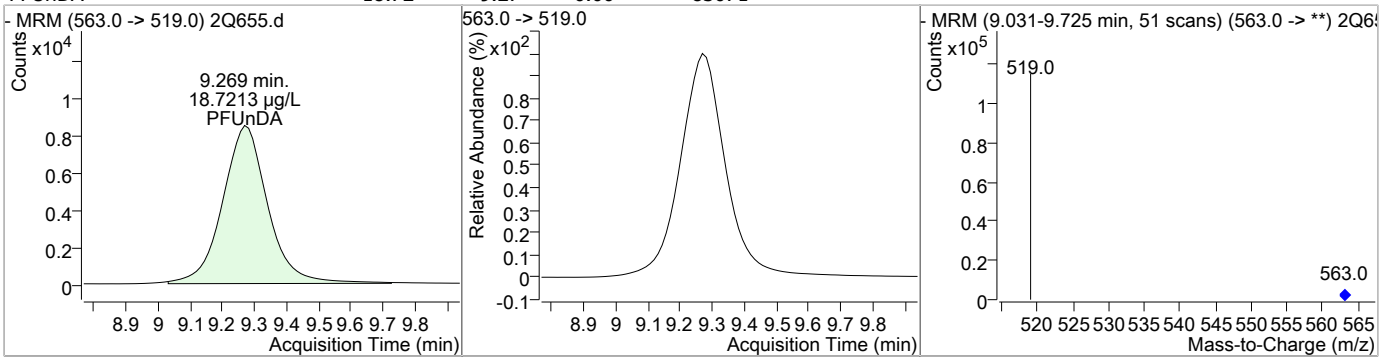




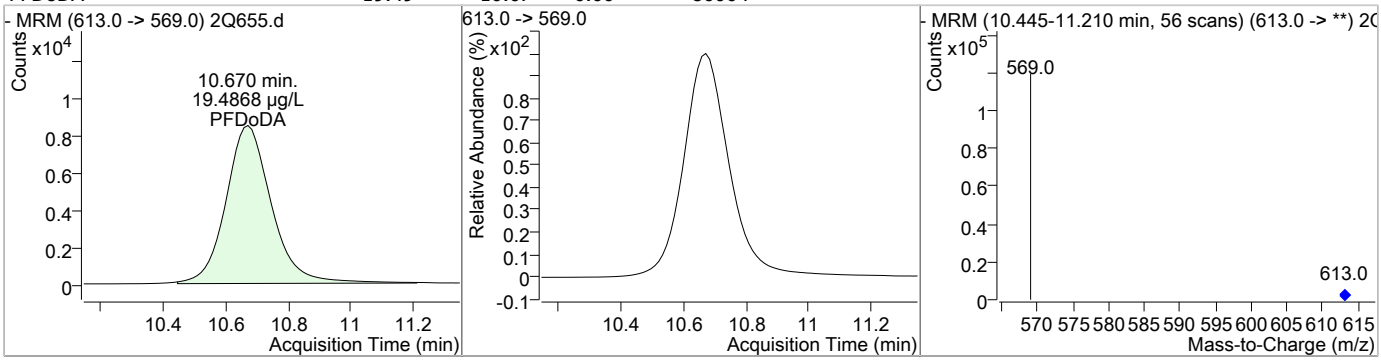
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

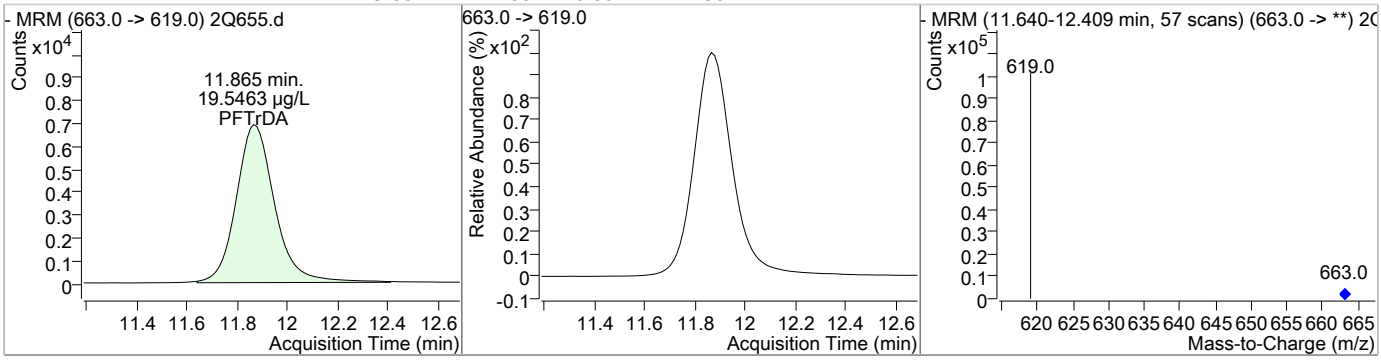
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.72	9.27	0.00	83071				



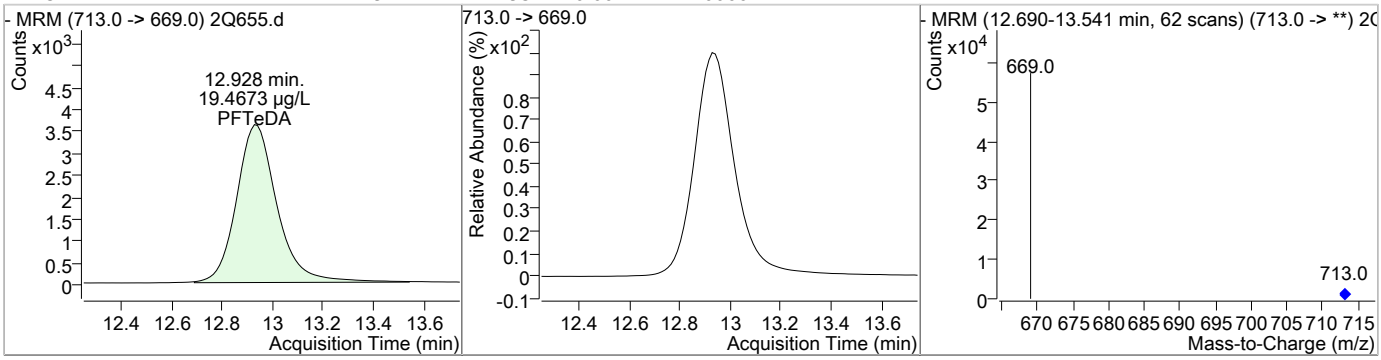
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.49	10.67	0.00	86004				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.55	11.86	0.00	73047				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.47	12.93	0.00	40066				



7.5.5

7

Manual Integration Approval Summary

Sample Number:	S2Q18-ICC18	**Method:**	EPA 537 MOD	
Lab FileID:	2Q655.D	**Analyst approved:**	04/21/17 09:46	Nancy Saunders
Injection Time:	04/20/17 13:13	**Supervisor approved:**	04/21/17 11:22	Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
04/21/17 11:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q656.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/20/2017 1:33:02 PM
Sample Name : IC18-40
Vial : Vial 7
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : S2Q18.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.648	429.0 -> 409.0	169693	20.00	µg/L		0.000
13C2-PFDoDA	10.664	615.0 -> 570.0	95637	20.00	µg/L		0.000
13C2-PFOA	6.637	415.0 -> 370.0	77698	20.00	µg/L		0.000
13C3-PFPeA	4.222	266.0 -> 222.0	77130	20.00	µg/L		-0.013
13C4-PFOS	7.199	503.0 -> 80.0	57707	20.00	µg/L		0.000
d3-MeFOSAA	7.462	573.0 -> 419.0	37333	20.00	µg/L		-0.013
System Monitoring Compounds							
13C2-PFDA	7.969	515.0 -> 470.0	216770	39.87	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 199.4%			
13C2-PFHxA	5.210	315.0 -> 270.0	164933	40.19	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 200.9%			
d5-EtFOSAA	7.597	589.0 -> 419.0	37670	37.86	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 189.3%			
Target Compounds							QValue
4:2FTS	5.132	327.0 -> 307.0	170604	39.80	µg/L		100
6:2FTS	6.649	427.0 -> 407.0	326949	39.84	µg/L		100
8:2FTS	8.089	527.0 -> 507.0	539797	39.73	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	33444	37.40	µg/L		100
FOSA	6.986	498.0 -> 78.0	76229	37.98	µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	42603	37.69	µg/L		100
PFBA	2.940	213.0 -> 169.0	81236	39.74	µg/L		100
PFBS	4.353	299.0 -> 80.0	90994	39.52	µg/L		99
PFDA	7.959	513.0 -> 469.0	151294	39.38	µg/L		100
PFDoDA	10.657	613.0 -> 569.0	173937	39.82	µg/L		100
PFDS	9.012	599.0 -> 80.0	64318	39.73	µg/L		100
PFHpA	5.973	363.0 -> 319.0	220762	39.75	µg/L	#	93
PFHpS	6.594	449.0 -> 80.0	96459	39.47	µg/L		100
PFHxA	5.200	313.0 -> 269.0	76691	40.30	µg/L	#	86
PFHxS	5.956	399.0 -> 80.0	94522	39.22	µg/L	m	94
PFNA	7.269	463.0 -> 419.0	137792	39.69	µg/L		98
PFNS	7.854	549.0 -> 99.0	57477	39.44	µg/L		100
PFOA	6.639	413.0 -> 369.0	131759	40.80	µg/L		98
PFOS	7.201	499.0 -> 80.0	131036	39.35	µg/L	m	85
PFPeA	4.225	263.0 -> 219.0	232061	39.65	µg/L		100
PFPeS	5.242	349.0 -> 99.0	29023	39.53	µg/L		100
PFTeDA	12.916	713.0 -> 669.0	81191	39.63	µg/L		100
PFTrDA	11.852	663.0 -> 619.0	148239	39.63	µg/L		100
PFUnDA	9.256	563.0 -> 519.0	164495	39.20	µg/L		100

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

Perfluorinated Compounds by LC/MS/MS

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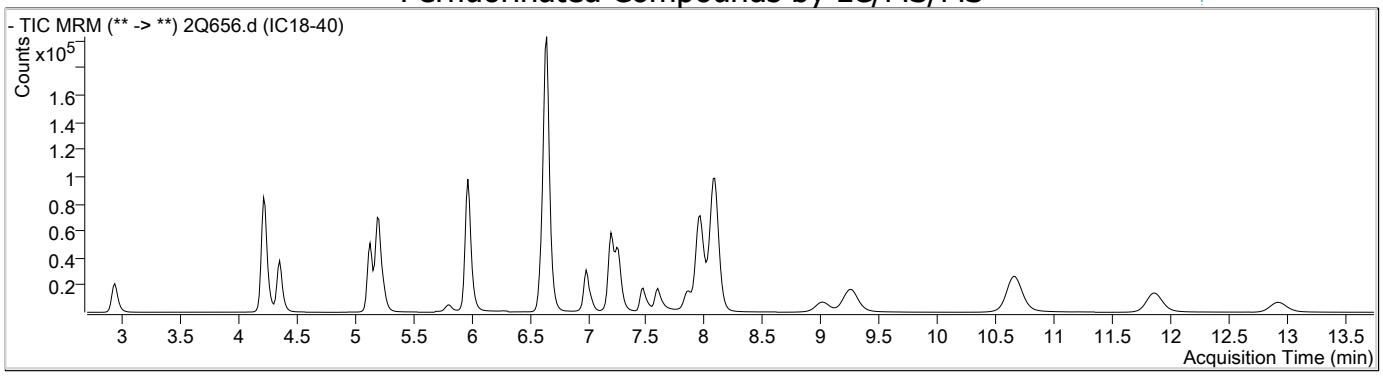
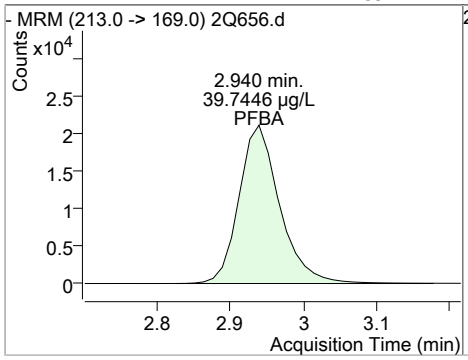
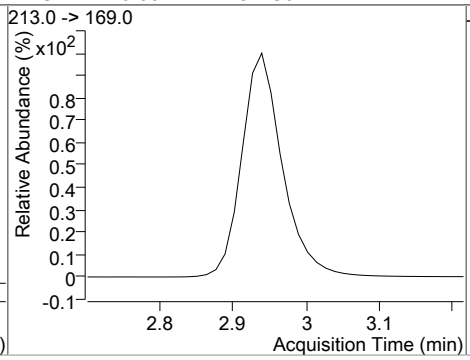
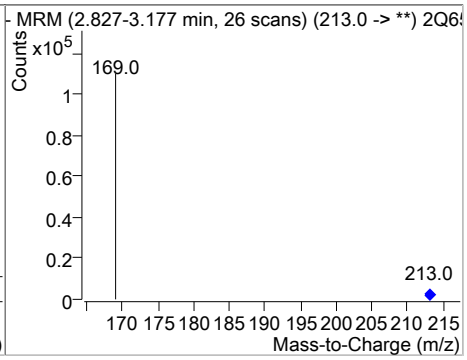


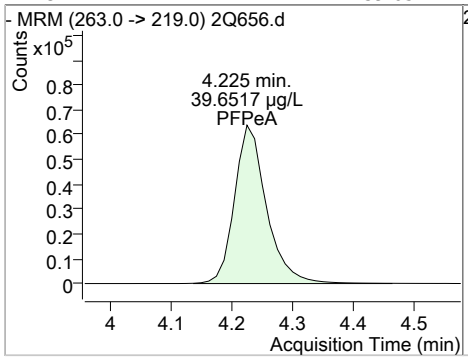
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	39.74	2.94	0.00	81236				

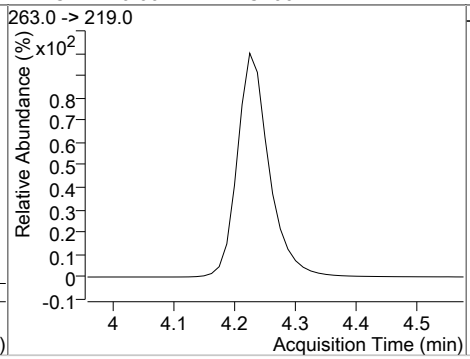


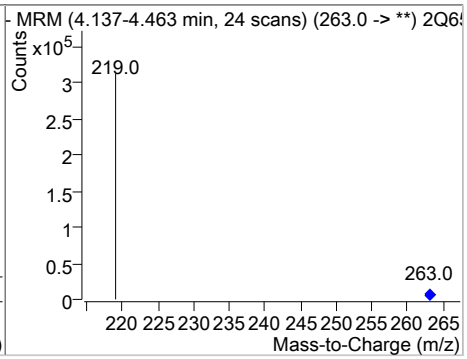




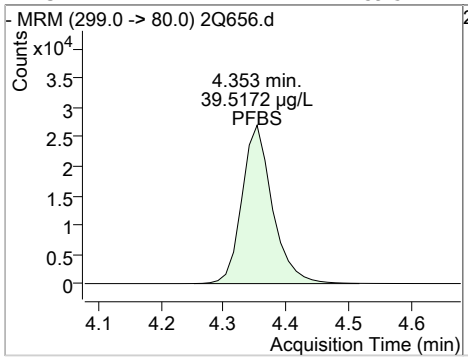
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	39.65	4.23	0.00	232061				

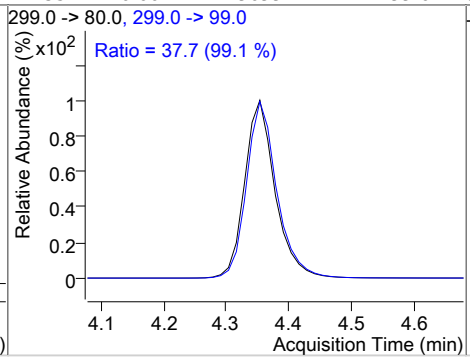


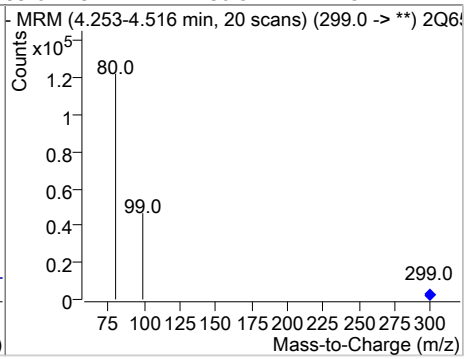




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	39.52	4.35	0.00	90994	299.0 -> 99.0	37.7	30.5	45.7



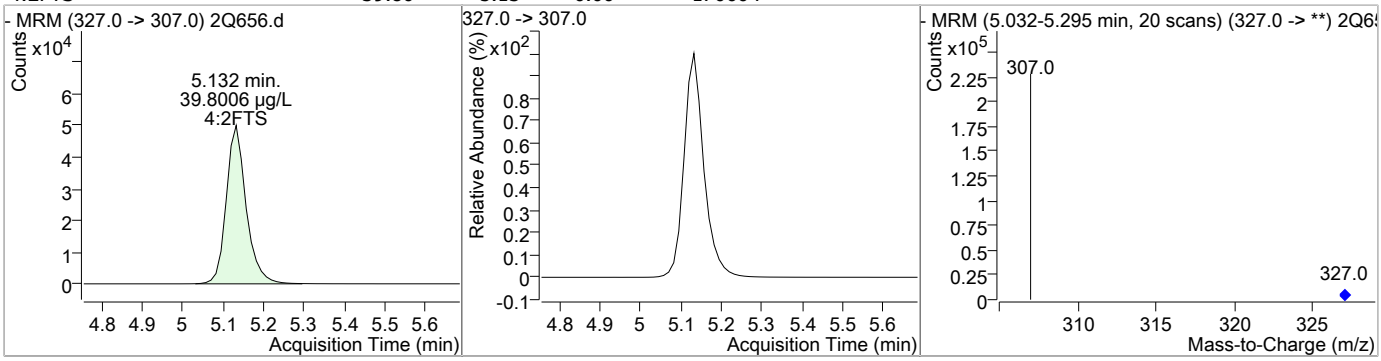




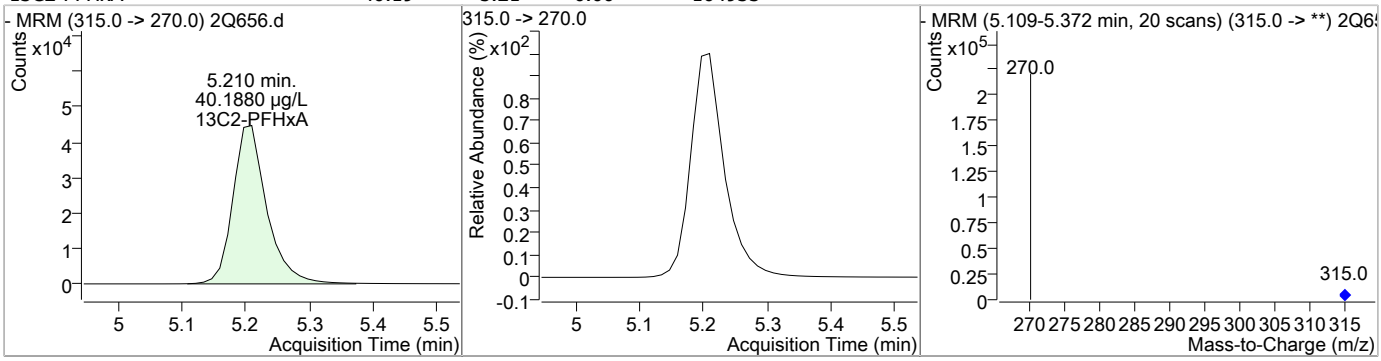
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

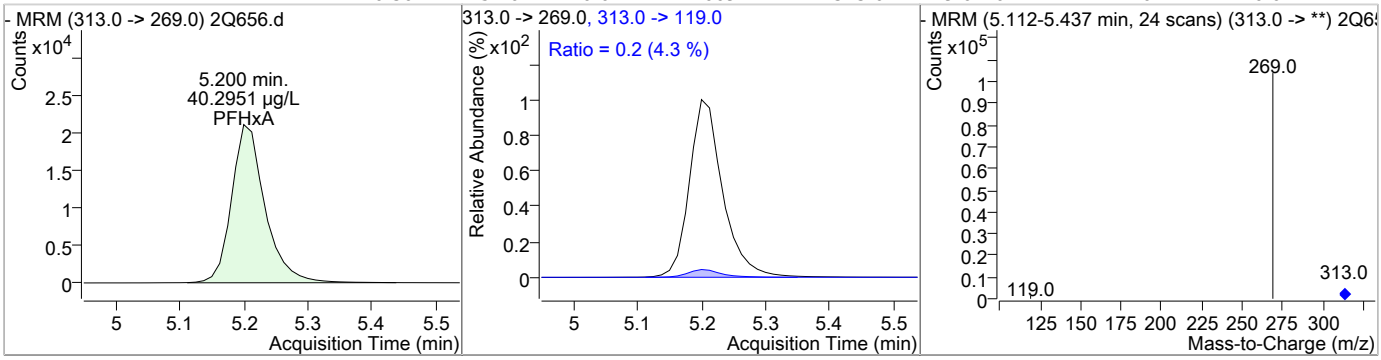
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	39.80	5.13	0.00	170604				



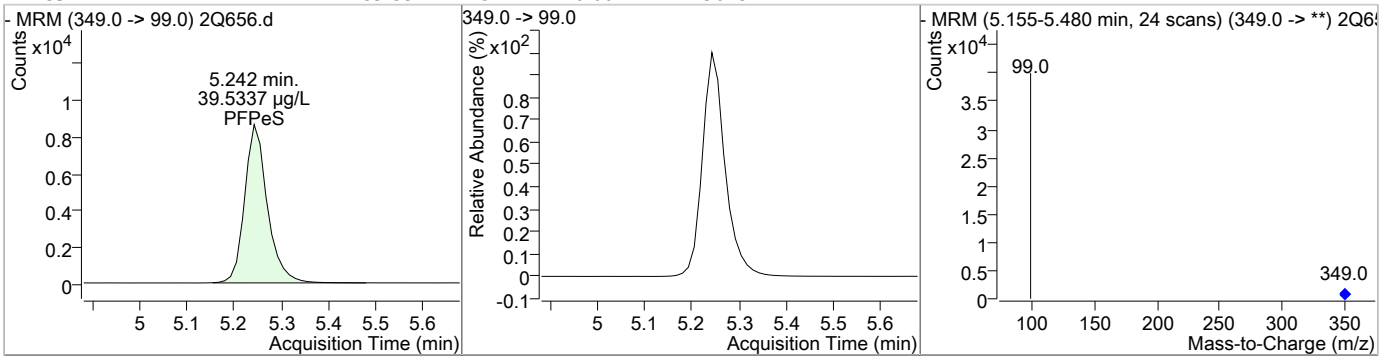
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	40.19	5.21	0.00	164933				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	40.30	5.20	-0.01	76691	313.0 -> 119.0	0.2	4.0	6.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	39.53	5.24	0.00	29023				



Perfluorinated Compounds by LC/MS/MS

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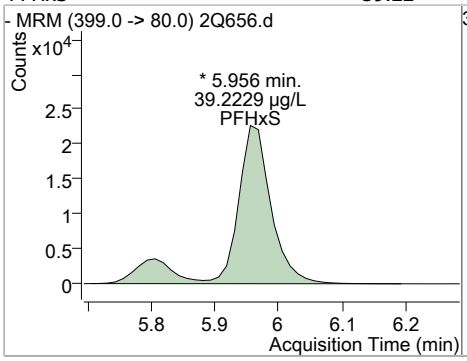
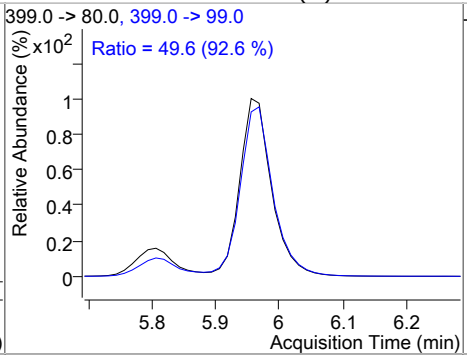
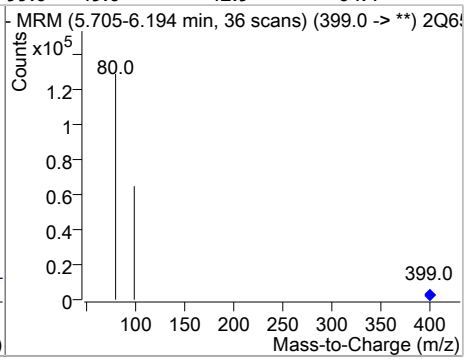
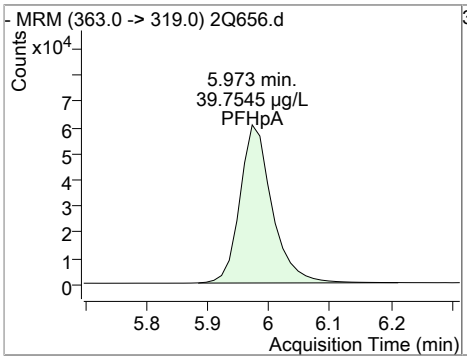
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	39.22	5.96	-0.01	94522 (m)	399.0 -> 99.0	49.6	42.9	64.4

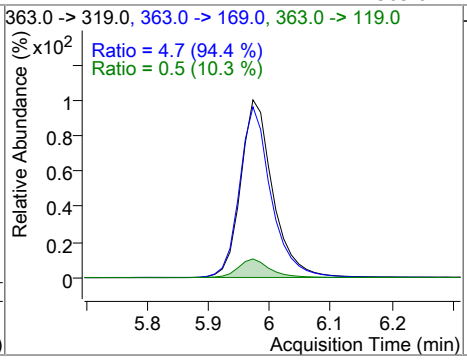


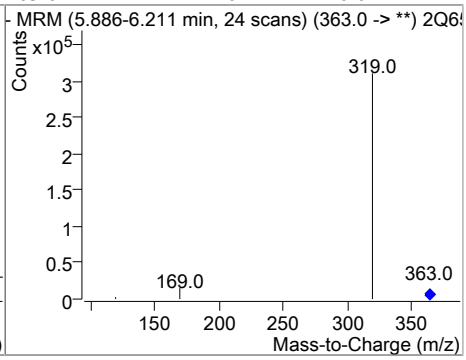




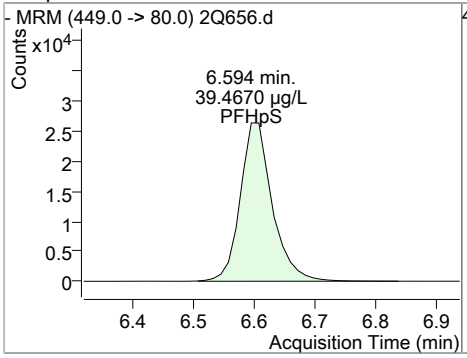
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	39.75	5.97	-0.01	220762	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.7	4.0	6.0

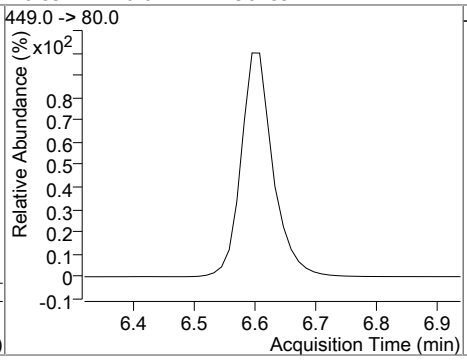


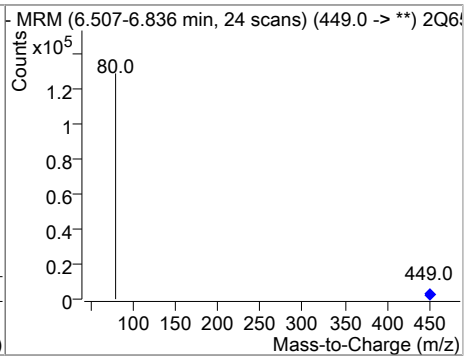




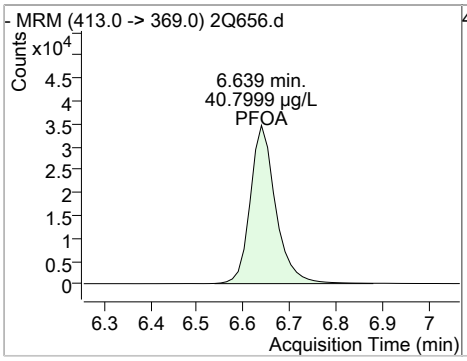
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	39.47	6.59	-0.01	96459				

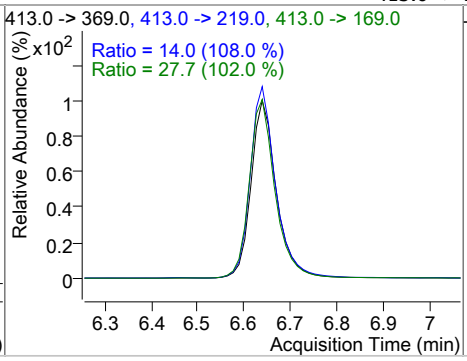


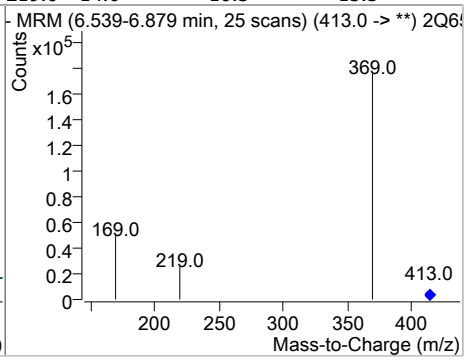




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	40.80	6.64	0.00	131759	413.0 -> 169.0	27.7	21.8	32.6
					413.0 -> 219.0	14.0	10.3	15.5



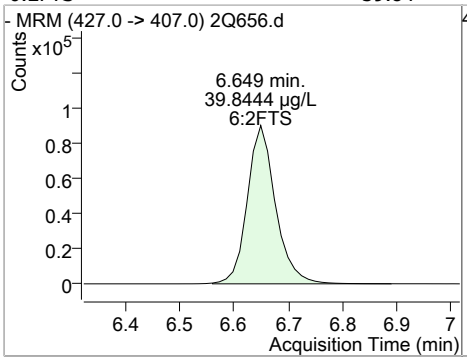


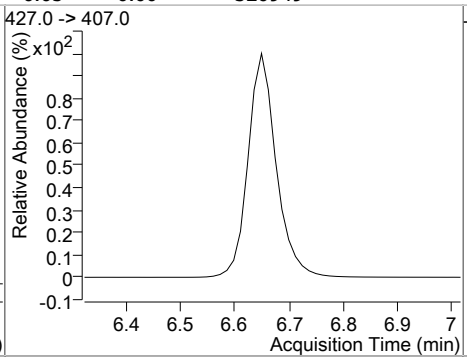


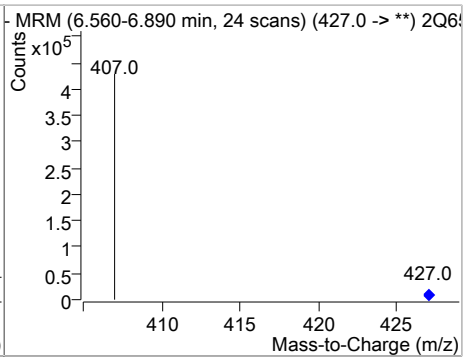
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

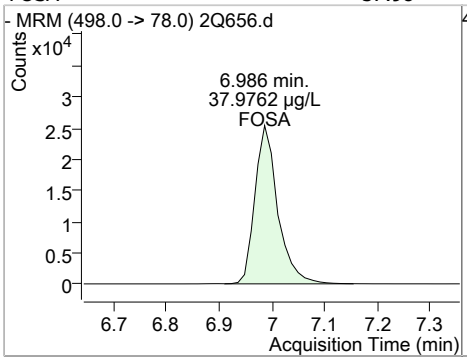
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	39.84	6.65	0.00	326949				

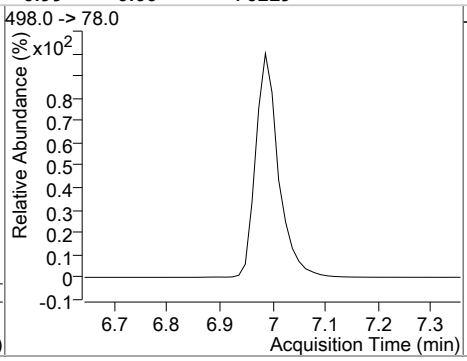


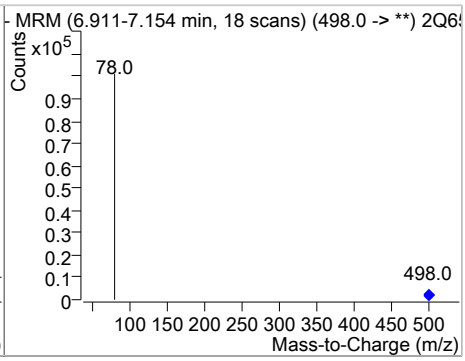




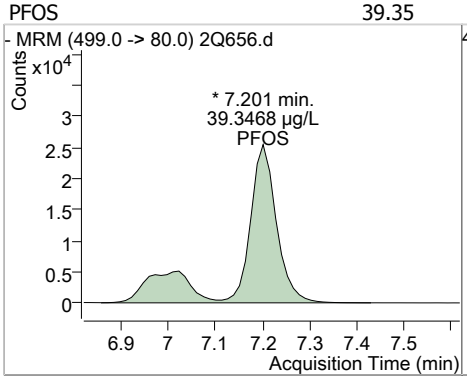
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	37.98	6.99	0.00	76229				

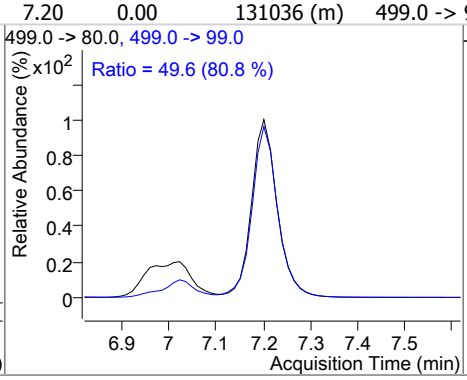


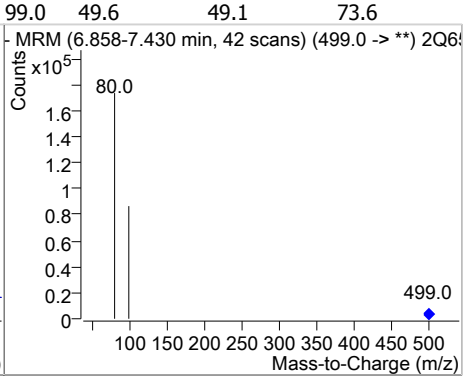




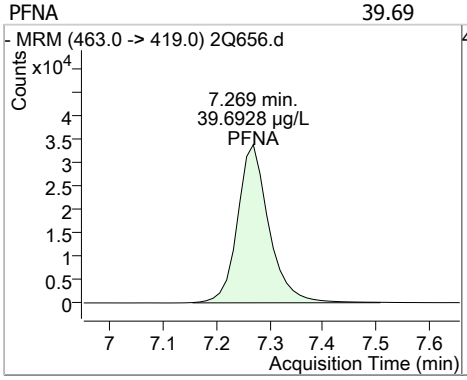
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	39.35	7.20	0.00	131036 (m)	499.0 -> 99.0	49.6	49.1	73.6

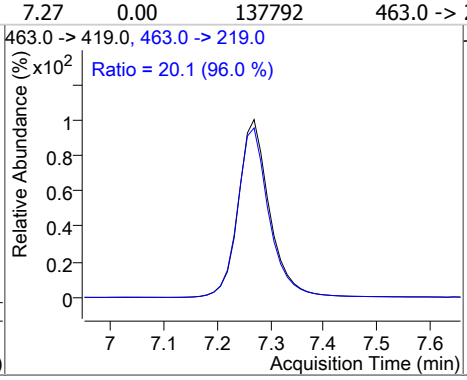


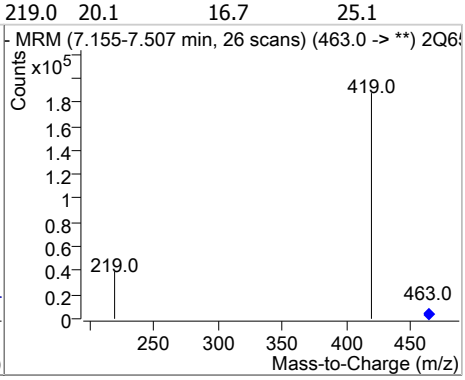




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	39.69	7.27	0.00	137792	463.0 -> 219.0	20.1	16.7	25.1







Perfluorinated Compounds by LC/MS/MS

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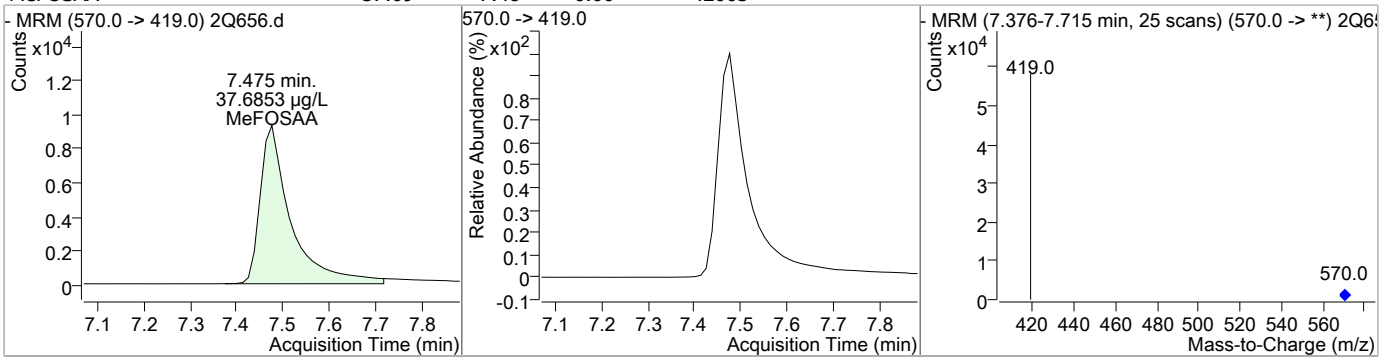
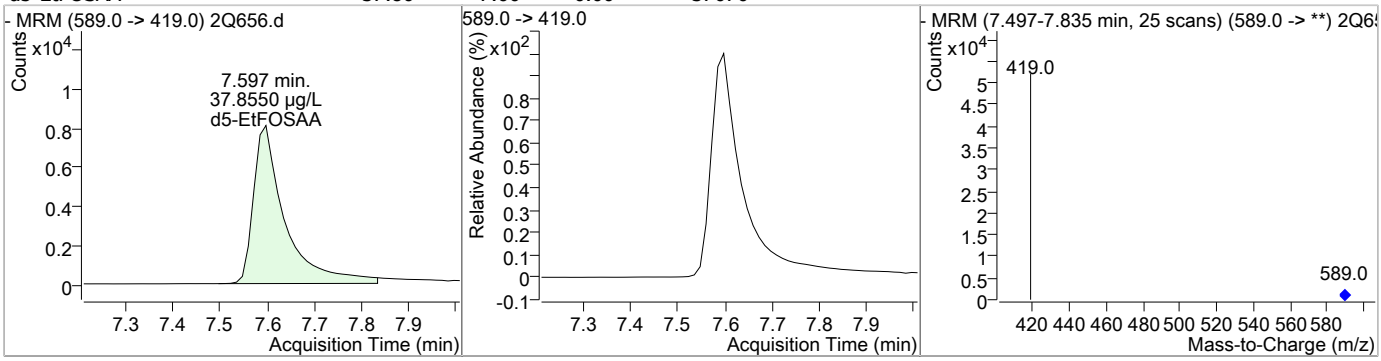
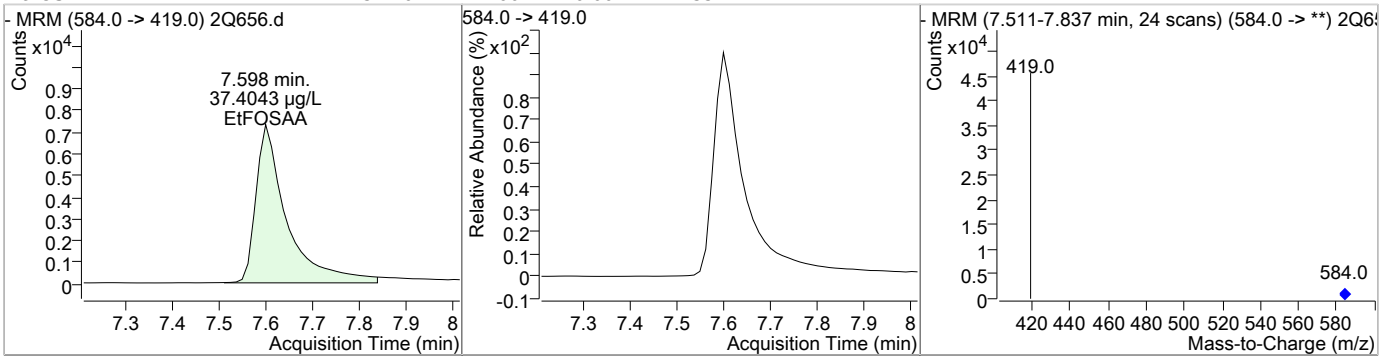
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	37.69	7.48	0.00	42603				



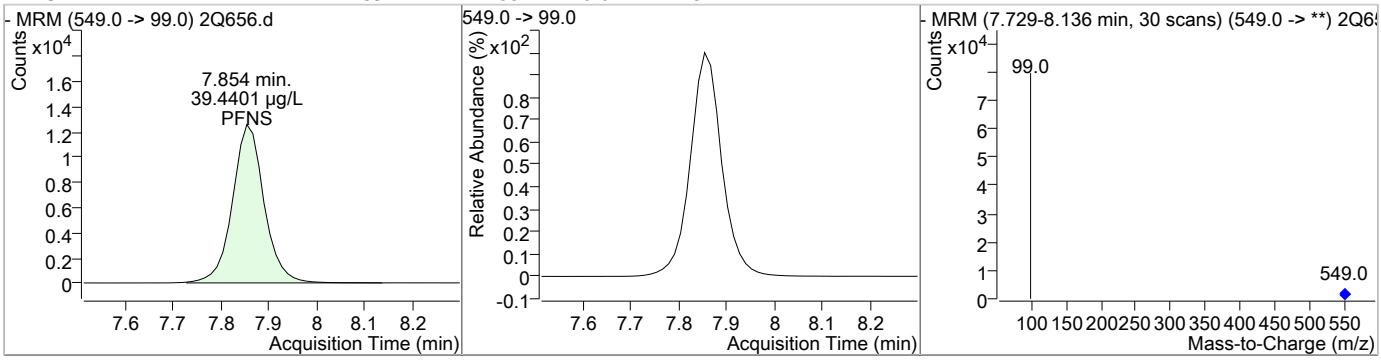
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	37.86	7.60	0.00	37670				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	37.40	7.60	0.00	33444				



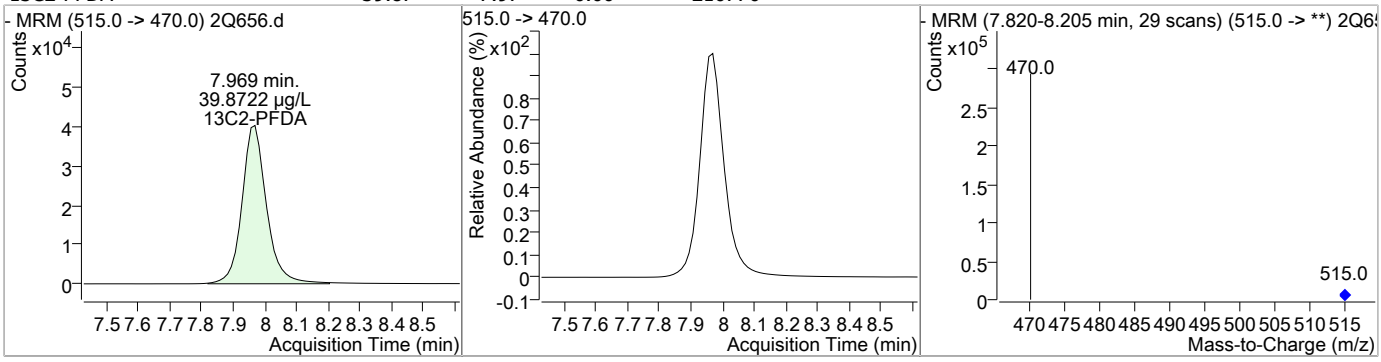
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	39.44	7.85	-0.01	57477				



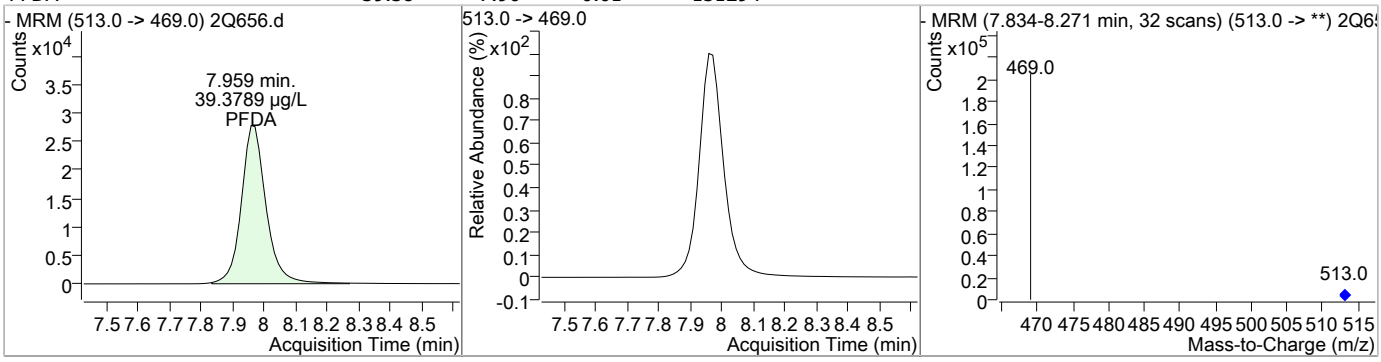
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

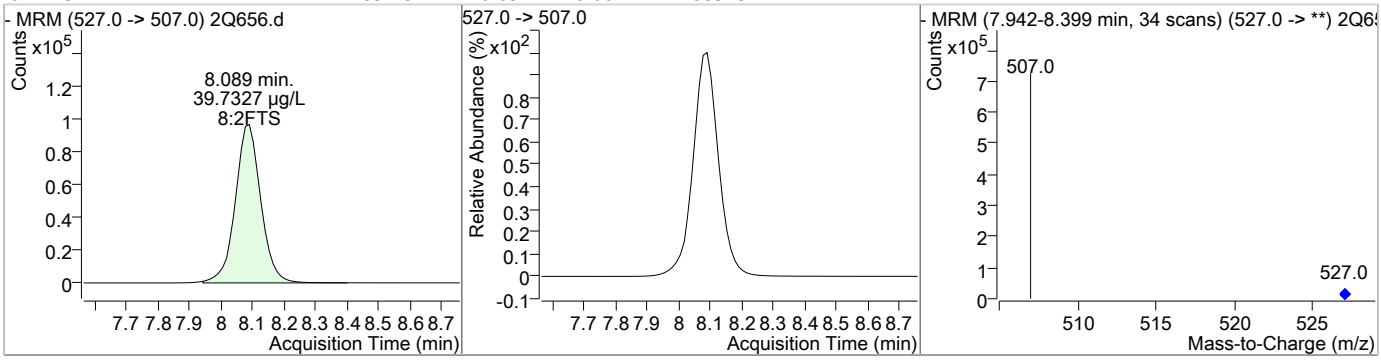
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	39.87	7.97	0.00	216770				



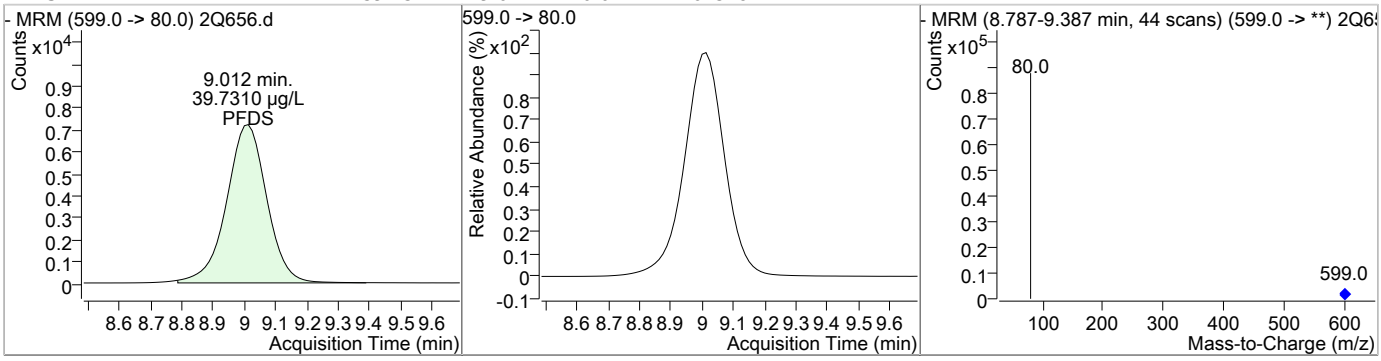
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	39.38	7.96	-0.01	151294				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	39.73	8.09	0.00	539797				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	39.73	9.01	-0.01	64318				



Perfluorinated Compounds by LC/MS/MS

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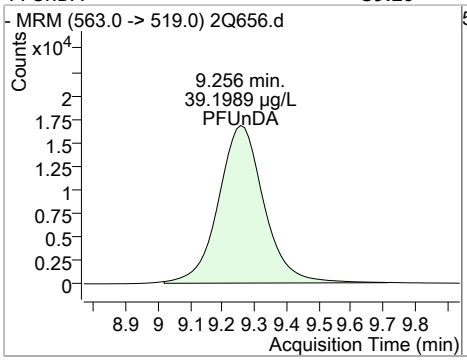
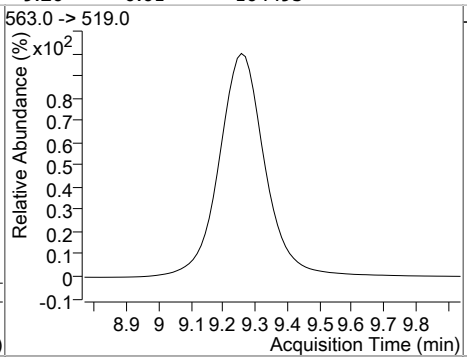
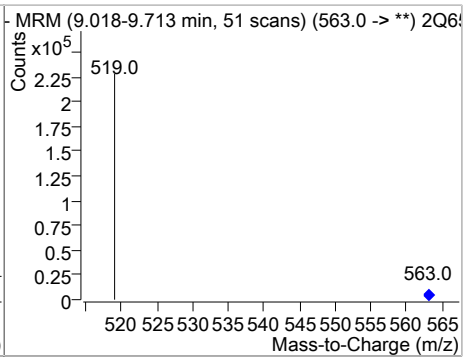
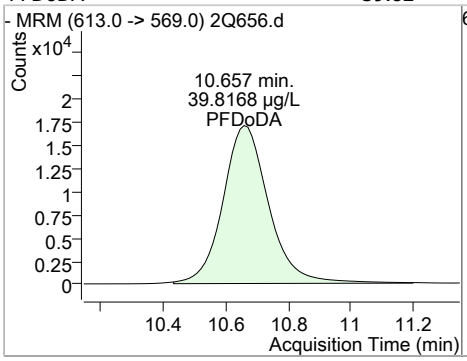
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	39.20	9.26	-0.01	164495				

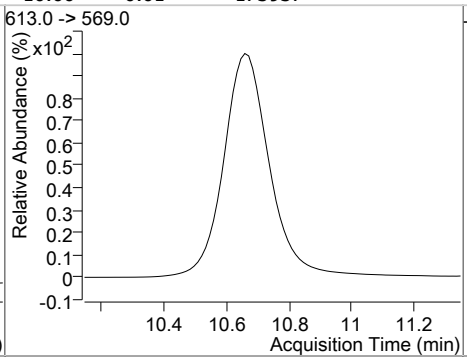


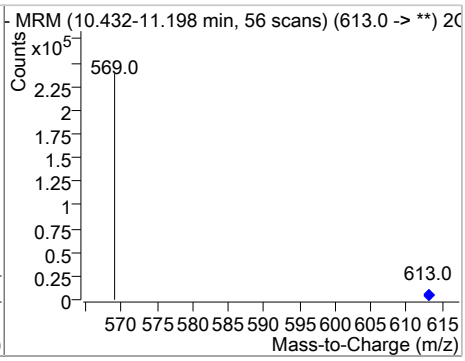




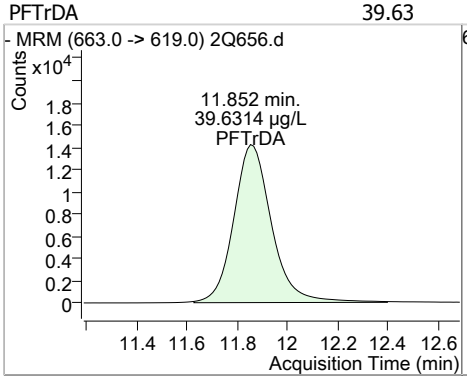
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	39.82	10.66	-0.01	173937				

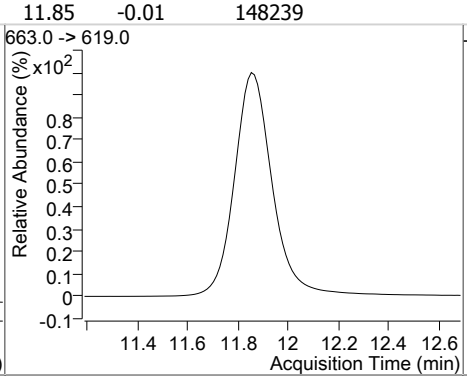


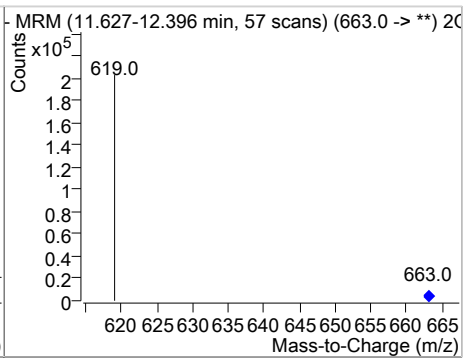




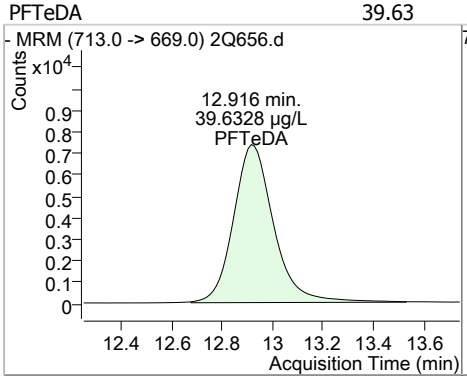
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	39.63	11.85	-0.01	148239				

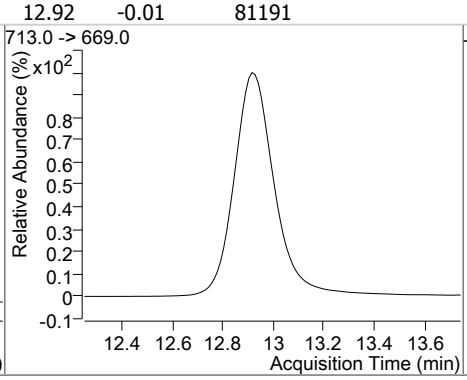


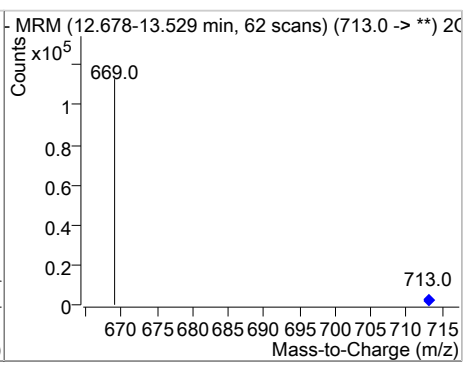




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	39.63	12.92	-0.01	81191				







Manual Integration Approval Summary

Sample Number:	S2Q18-IC18	**Method:**	EPA 537 MOD
Lab FileID:	2Q656.D	**Analyst approved:**	04/21/17 09:46 Nancy Saunders
Injection Time:	04/20/17 13:33	**Supervisor approved:**	04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.96	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

2Q657.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 04/21/17 11:22

Perfluorinated Compounds by LC/MS/MS

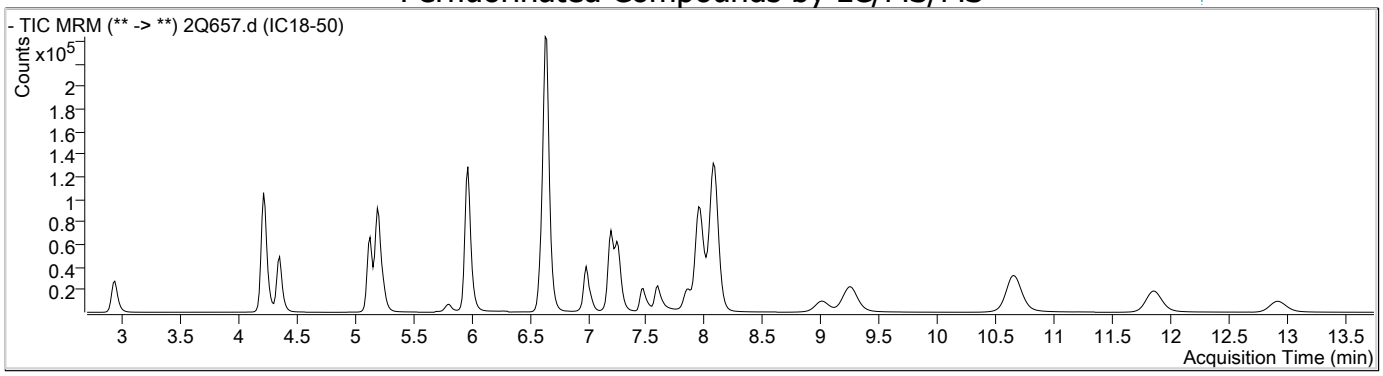
Data File	:	2Q657.d
Operator	:	NANCYF
Acq. Method	:	dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time	:	4/20/2017 1:53:01 PM
Sample Name	:	IC18-50
Vial	:	Vial 8
DA Method File	:	PFCLISTDW_0420_S2Q18.m
Batch Name	:	S2Q18.batch.bin
Last Calib Update	:	4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.648	429.0 -> 409.0	177873	20.00	µg/L		0.000
13C2-PFDoDA	10.651	615.0 -> 570.0	97502	20.00	µg/L		-0.013
13C2-PFOA	6.637	415.0 -> 370.0	80320	20.00	µg/L		0.000
13C3-PFPeA	4.222	266.0 -> 222.0	78721	20.00	µg/L		-0.013
13C4-PFOS	7.199	503.0 -> 80.0	58581	20.00	µg/L		0.000
d3-MeFOSAA	7.462	573.0 -> 419.0	35696	20.00	µg/L		-0.013
System Monitoring Compounds							
13C2-PFDA	7.957	515.0 -> 470.0	285676	50.83	µg/L		-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 254.2%			
13C2-PFHxA	5.197	315.0 -> 270.0	214460	50.55	µg/L		-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 252.7%			
d5-EtFOSAA	7.597	589.0 -> 419.0	51446	51.16	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 255.8%			
Target Compounds							QValue
4:2FTS	5.132	327.0 -> 307.0	225772	50.25	µg/L		100
6:2FTS	6.649	427.0 -> 407.0	428504	49.82	µg/L		100
8:2FTS	8.077	527.0 -> 507.0	716709	50.33	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	46332	52.13	µg/L		100
FOSA	6.986	498.0 -> 78.0	99247	51.71	µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	58587	51.23	µg/L		100
PFBA	2.940	213.0 -> 169.0	107611	50.93	µg/L		100
PFBS	4.353	299.0 -> 80.0	119255	51.02	µg/L		99
PFDA	7.959	513.0 -> 469.0	203528	51.25	µg/L		100
PFDoDA	10.657	613.0 -> 569.0	228436	50.16	µg/L		100
PFDS	9.000	599.0 -> 80.0	84636	50.18	µg/L		100
PFHpA	5.973	363.0 -> 319.0	294462	50.54	µg/L	#	93
PFHpS	6.594	449.0 -> 80.0	126613	51.03	µg/L		100
PFHxA	5.200	313.0 -> 269.0	100182	49.89	µg/L	#	86
PFHxS	5.956	399.0 -> 80.0	125523	51.31	µg/L	m	94
PFNA	7.269	463.0 -> 419.0	183128	51.03	µg/L		98
PFNS	7.854	549.0 -> 99.0	75469	51.01	µg/L		100
PFOA	6.639	413.0 -> 369.0	168435	50.45	µg/L		97
PFOS	7.201	499.0 -> 80.0	173143	51.21	µg/L	#m	84
PFPeA	4.225	263.0 -> 219.0	303509	50.81	µg/L		100
PFPeS	5.242	349.0 -> 99.0	38173	50.95	µg/L		100
PFTeDA	12.916	713.0 -> 669.0	107737	50.26	µg/L		100
PFTrDA	11.852	663.0 -> 619.0	197227	50.26	µg/L		100
PFUnDA	9.256	563.0 -> 519.0	218740	51.13	µg/L		100

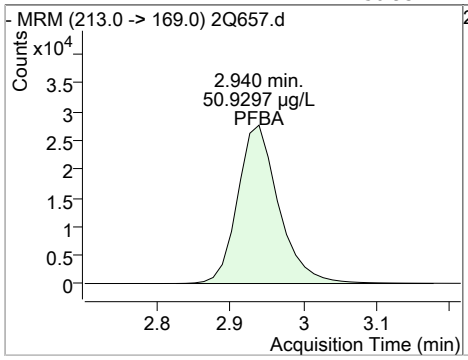
 # = Qualifier out of range, m = manually integrated, + = Area summed

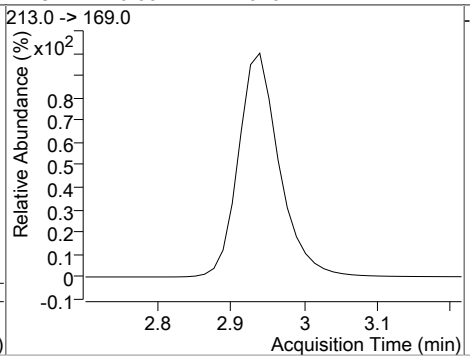
Perfluorinated Compounds by LC/MS/MS

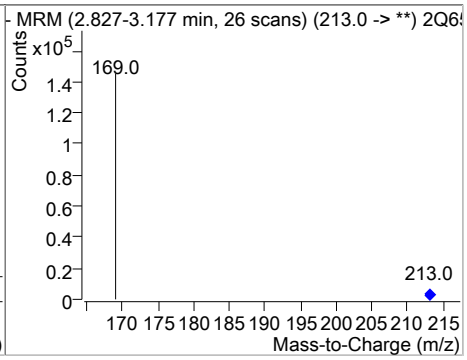
Agilent Technologies



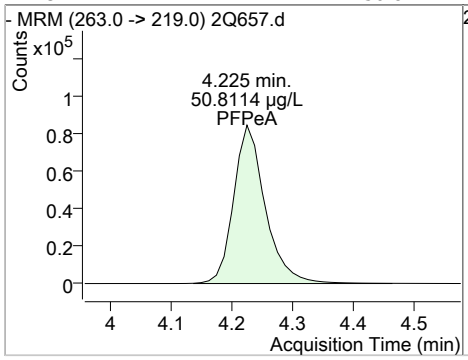
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	50.93	2.94	0.00	107611				

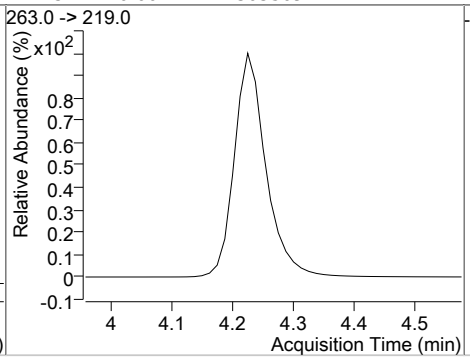


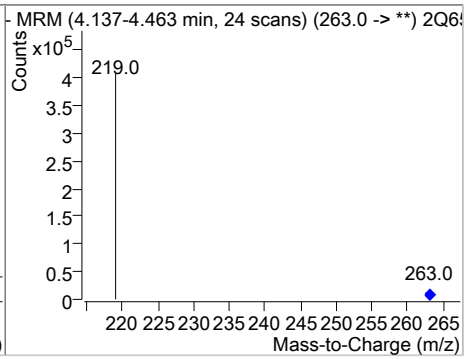




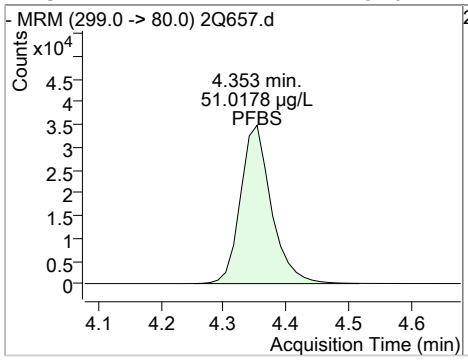
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.81	4.23	0.00	303509				

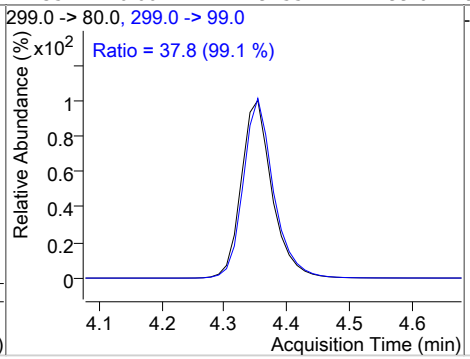


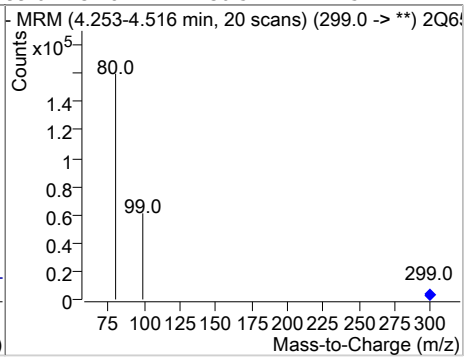




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	51.02	4.35	0.00	119255	299.0 -> 99.0	37.8	30.5	45.7







Perfluorinated Compounds by LC/MS/MS

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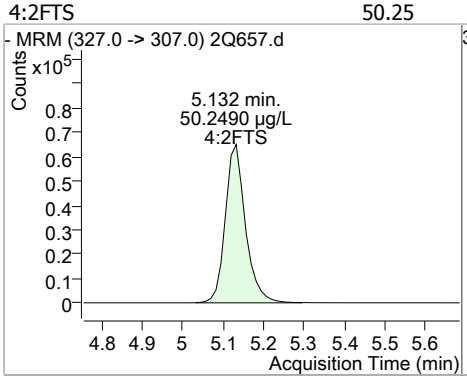
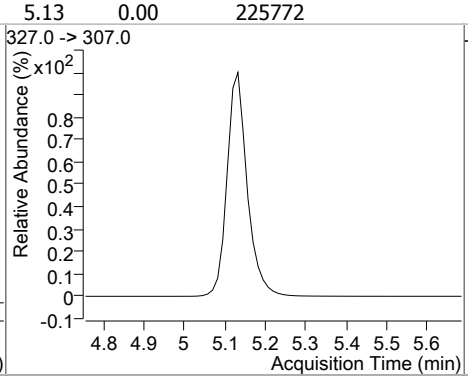
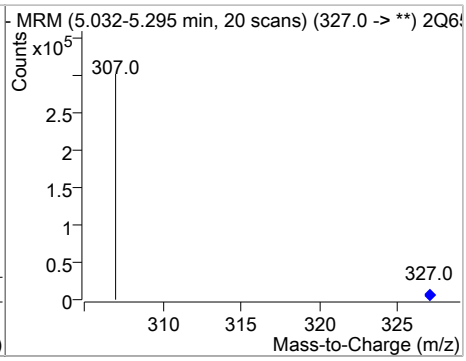
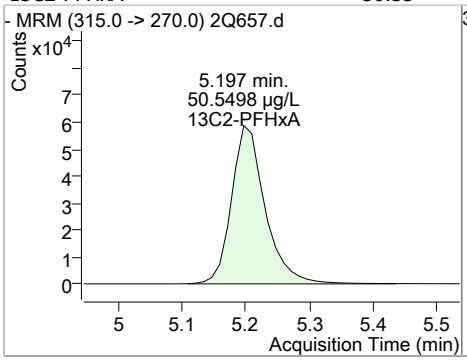
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	50.25	5.13	0.00	225772				

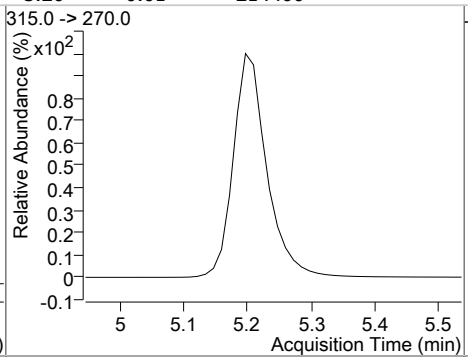


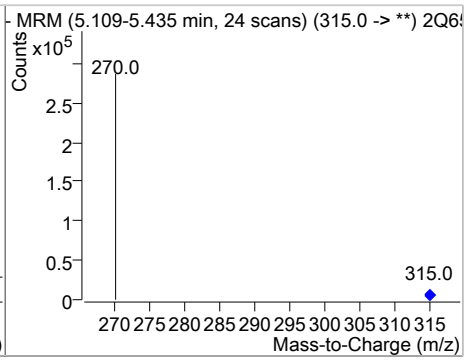




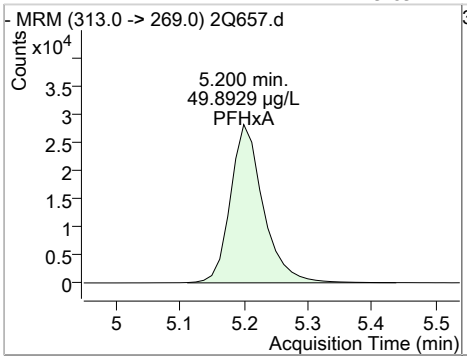
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	50.55	5.20	-0.01	214460				

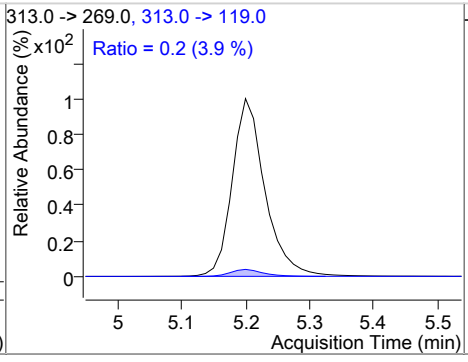


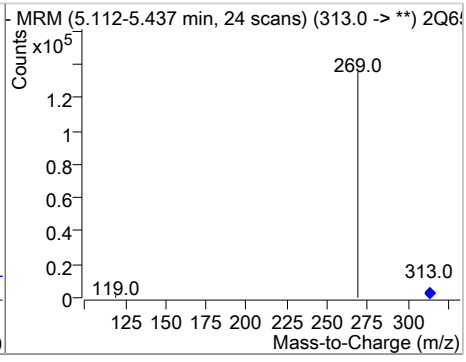




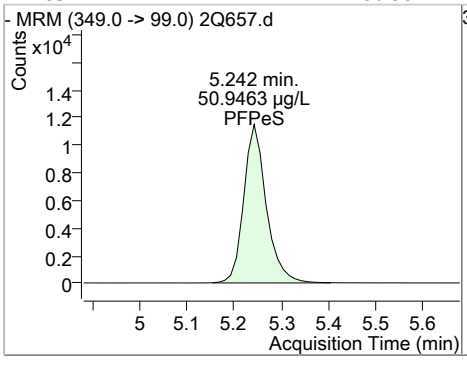
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	49.89	5.20	-0.01	100182	313.0 -> 119.0	0.2	4.0	6.0

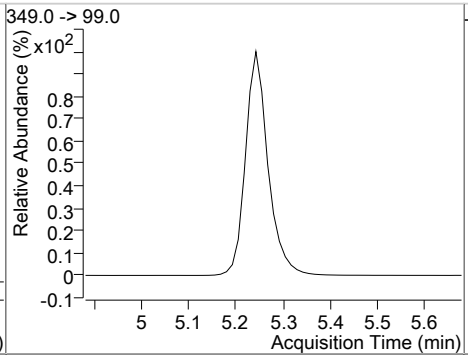


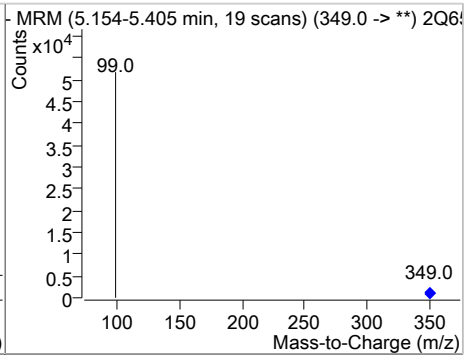




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	50.95	5.24	0.00	38173				







Perfluorinated Compounds by LC/MS/MS

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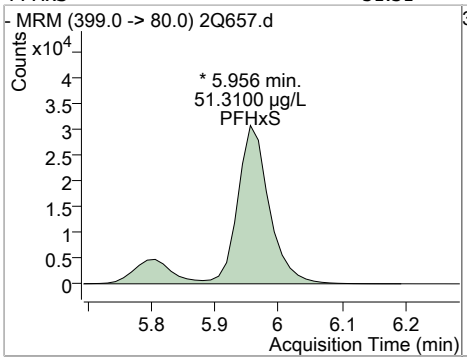
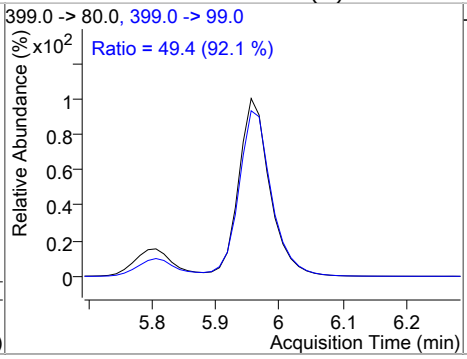
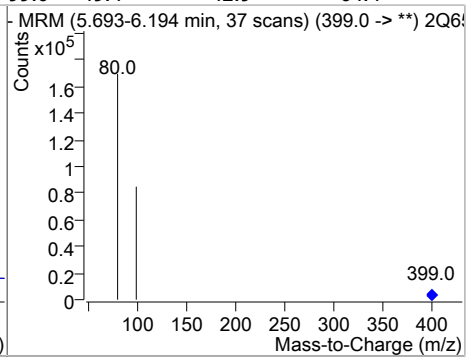
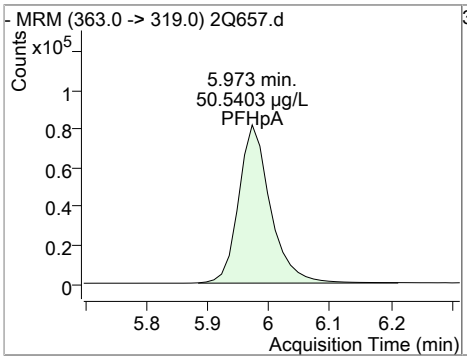
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	51.31	5.96	-0.01	125523 (m)	399.0 -> 99.0	49.4	42.9	64.4

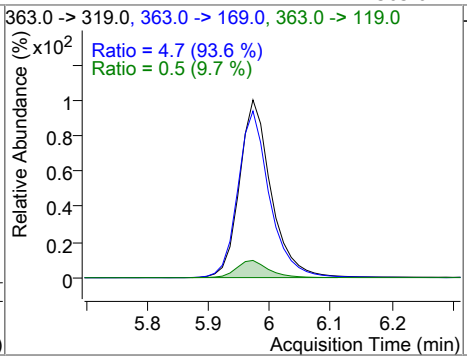


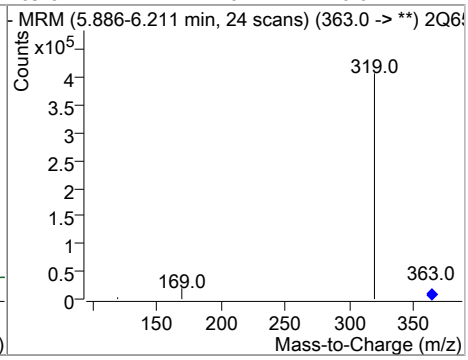




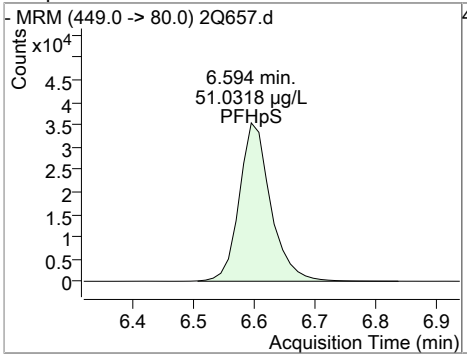
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.54	5.97	-0.01	294462	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.7	4.0	6.0

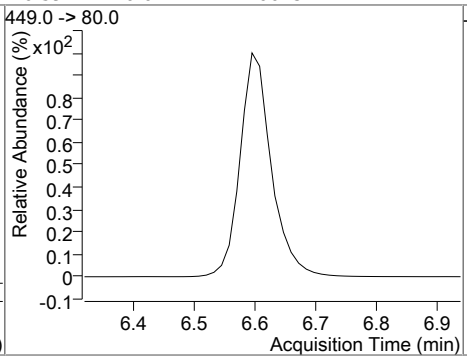


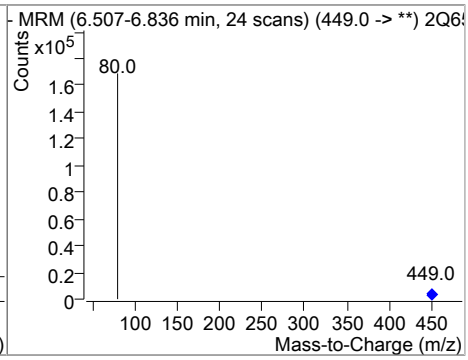




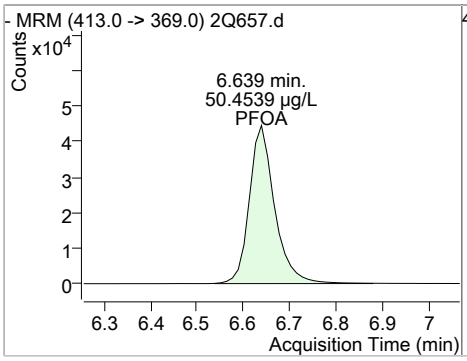
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	51.03	6.59	-0.01	126613				

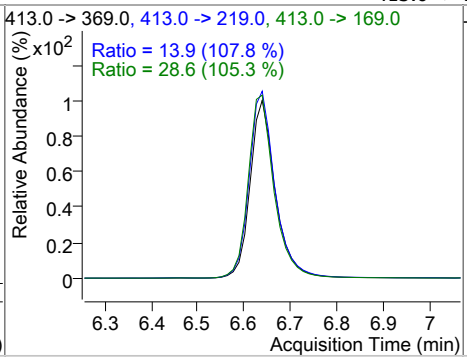


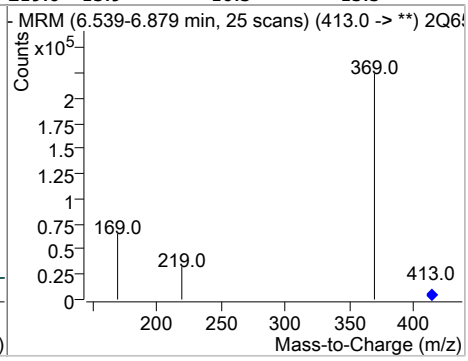




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	50.45	6.64	0.00	168435	413.0 -> 169.0	28.6	21.8	32.6
					413.0 -> 219.0	13.9	10.3	15.5



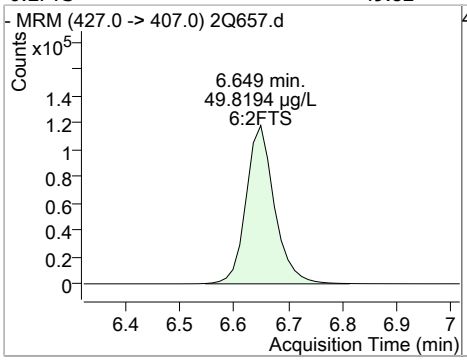


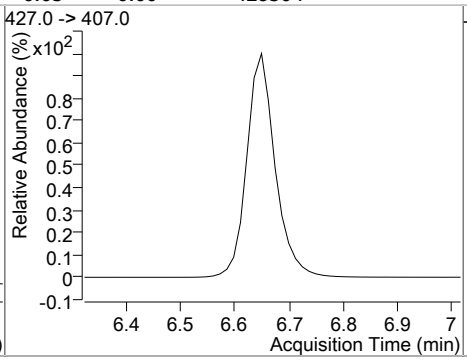


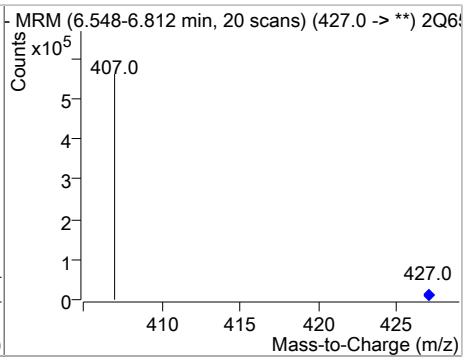
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

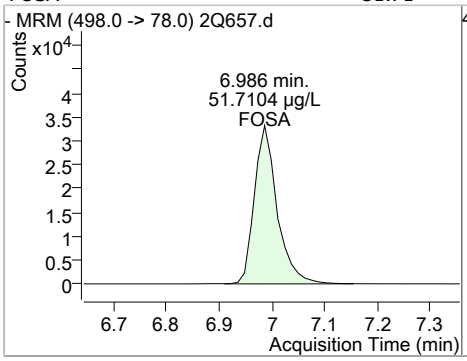
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	49.82	6.65	0.00	428504				

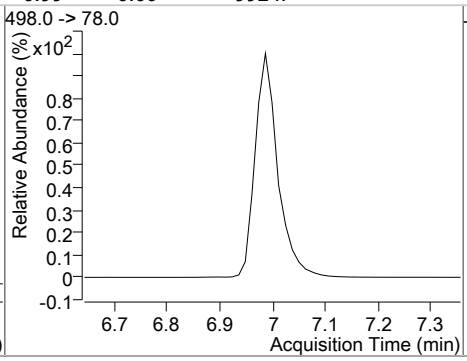


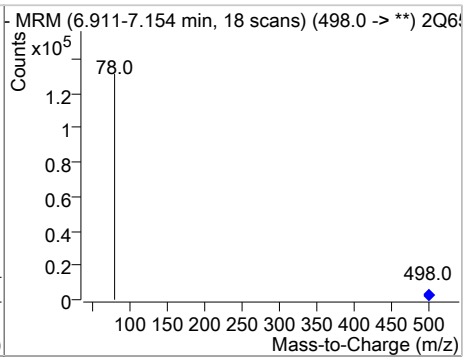




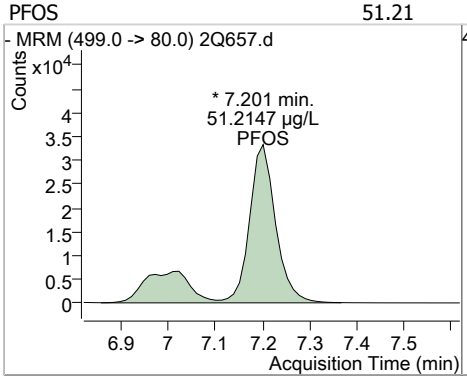
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	51.71	6.99	0.00	99247				

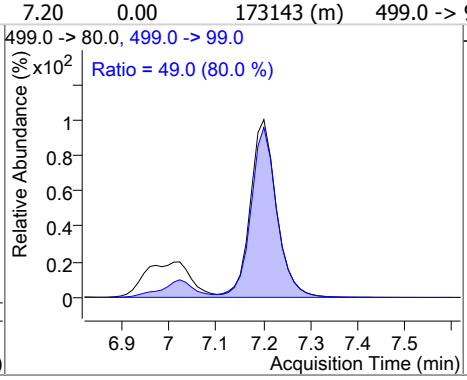


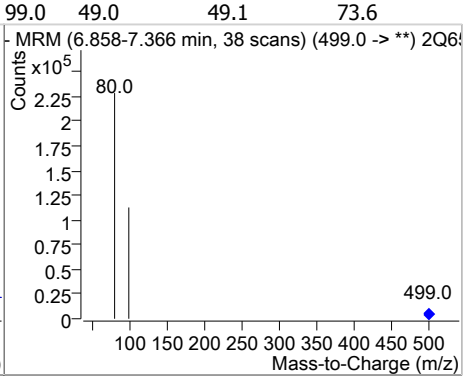




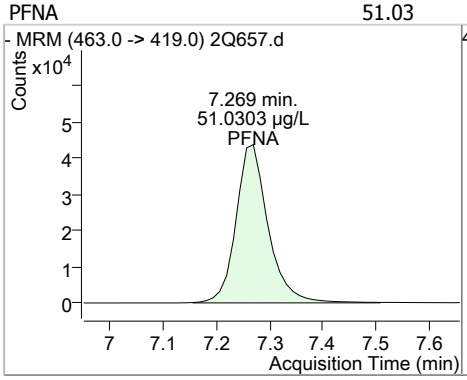
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	51.21	7.20	0.00	173143 (m)	499.0 -> 99.0	49.0	49.1	73.6

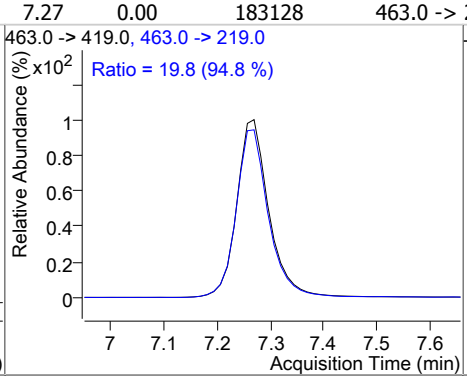


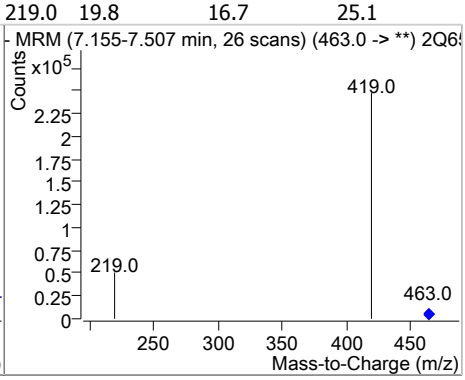




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	51.03	7.27	0.00	183128	463.0 -> 219.0	19.8	16.7	25.1







Perfluorinated Compounds by LC/MS/MS

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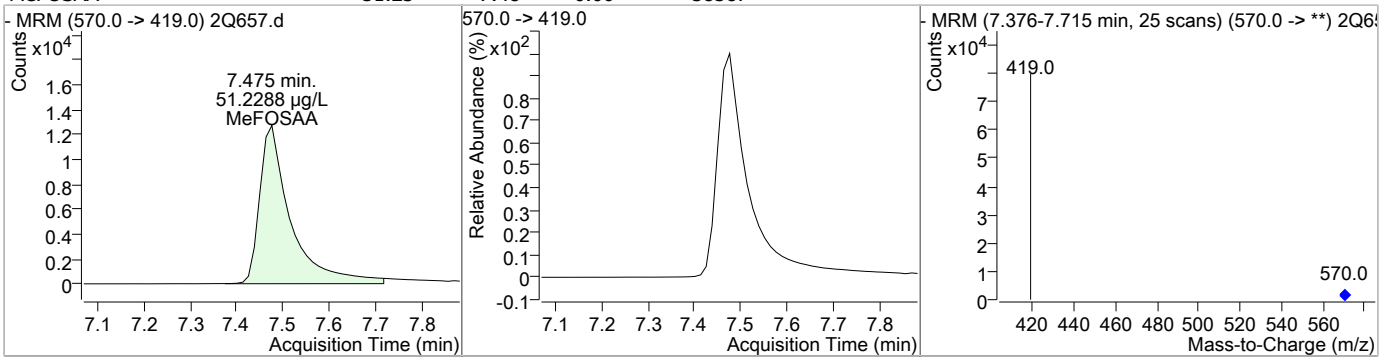
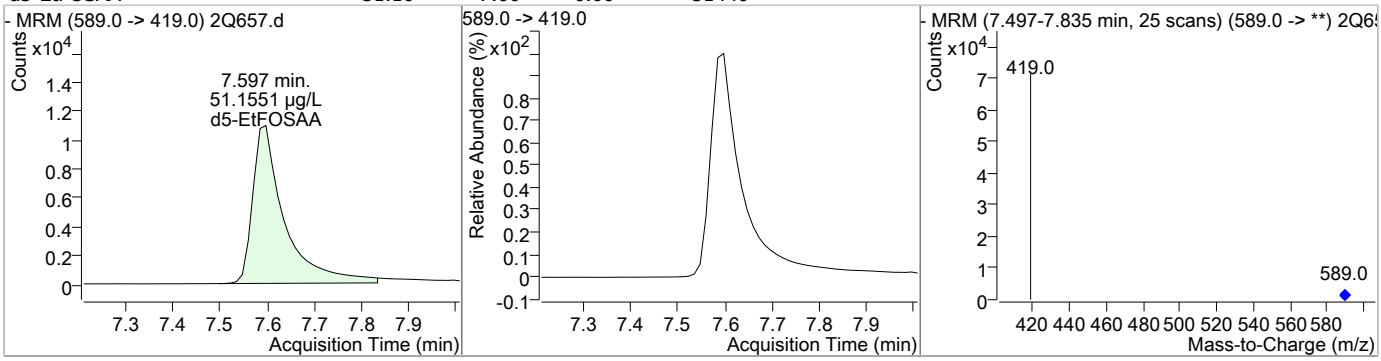
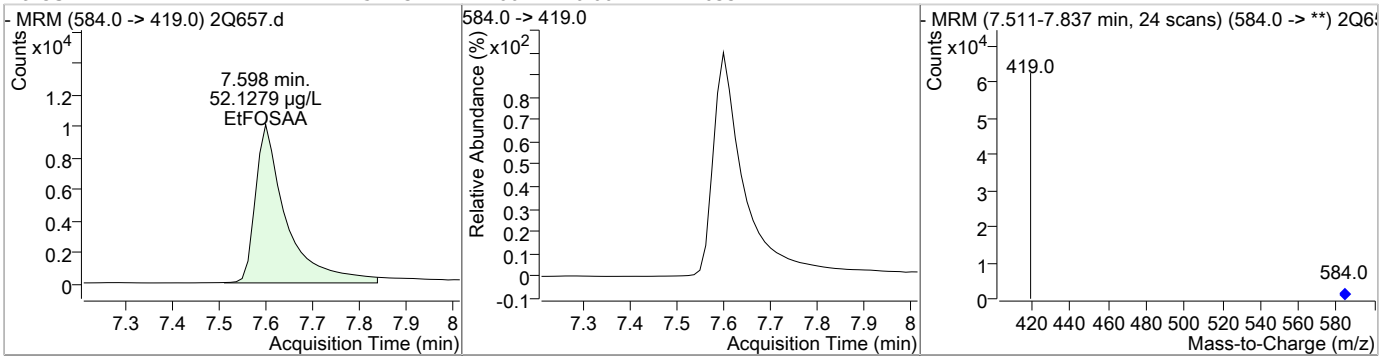
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	51.23	7.48	0.00	58587				



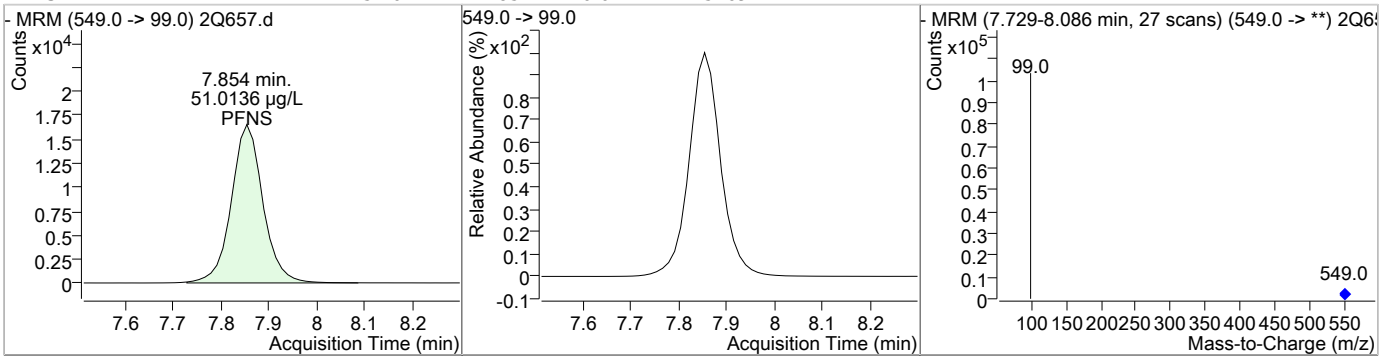
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	51.16	7.60	0.00	51446				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	52.13	7.60	0.00	46332				



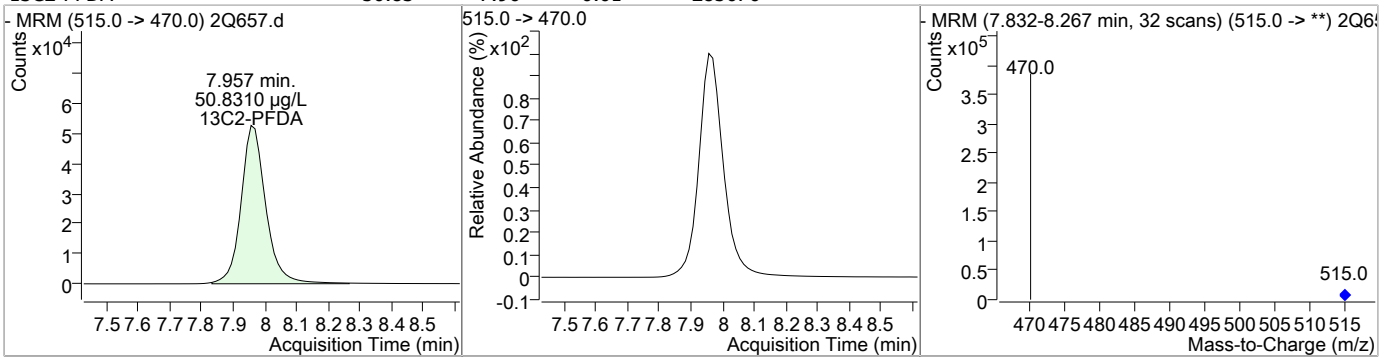
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	51.01	7.85	-0.01	75469				



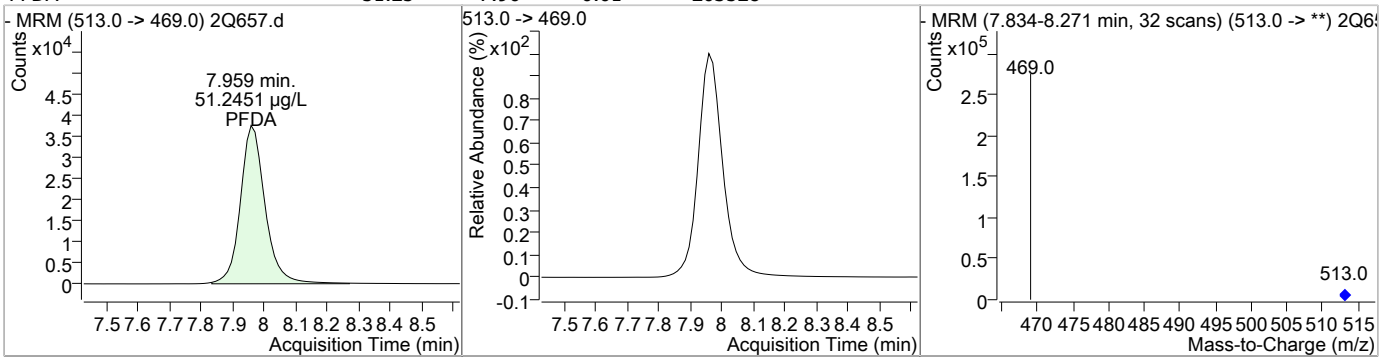
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

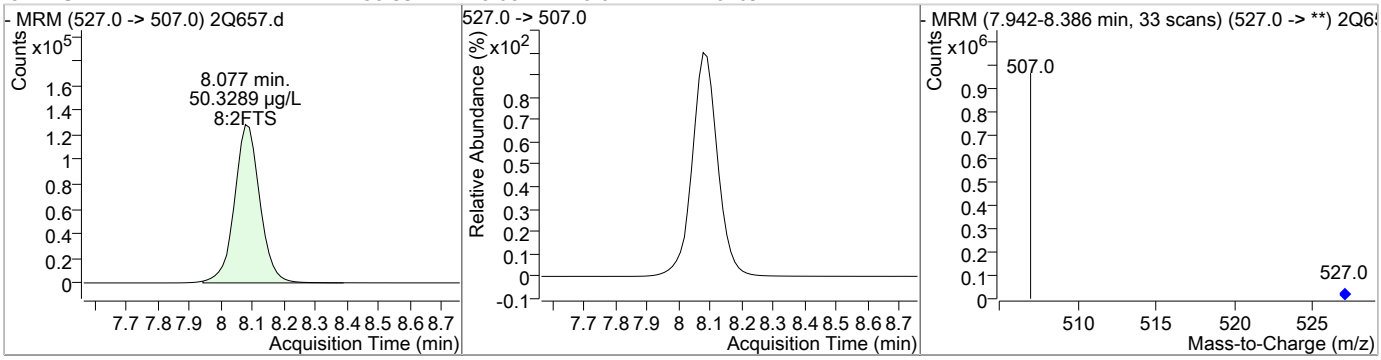
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	50.83	7.96	-0.01	285676				



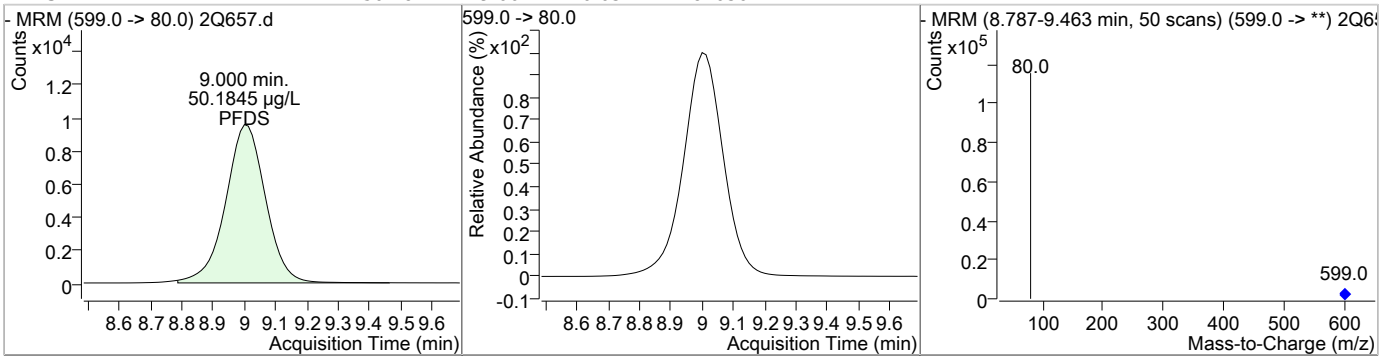
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	51.25	7.96	-0.01	203528				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	50.33	8.08	-0.01	716709				



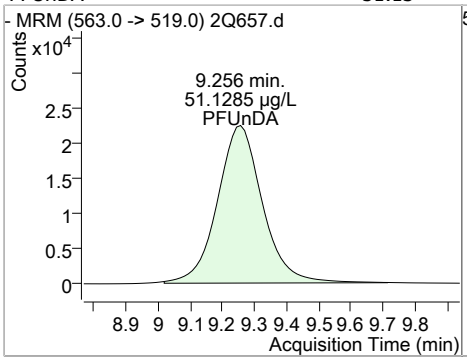
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	50.18	9.00	-0.03	84636				

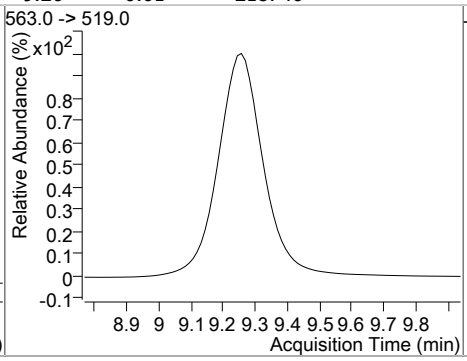


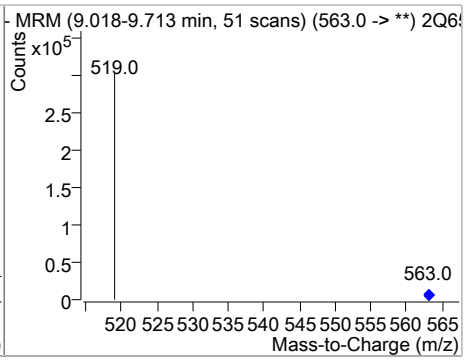
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

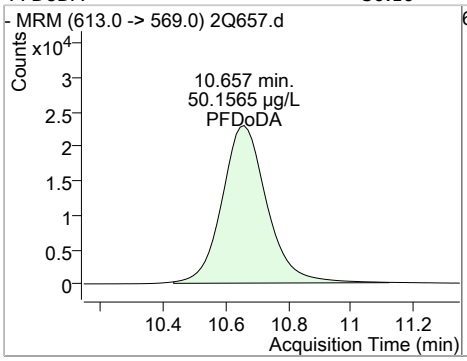
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	51.13	9.26	-0.01	218740				

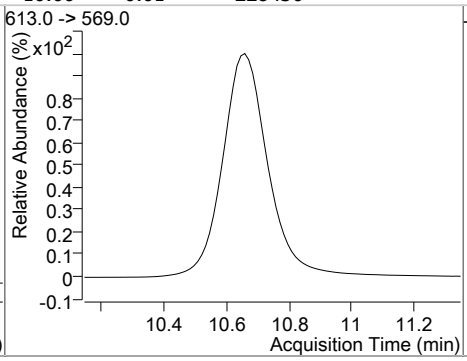


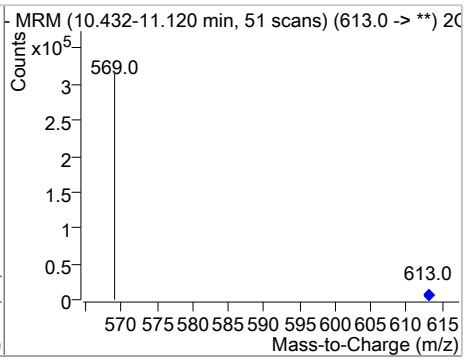




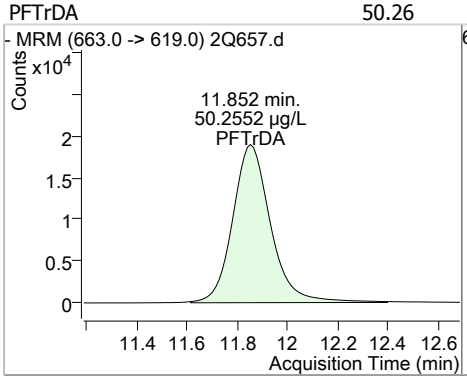
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	50.16	10.66	-0.01	228436				

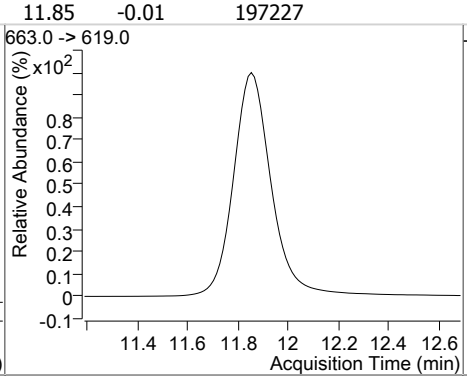


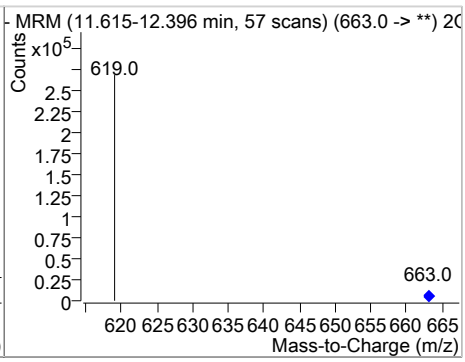




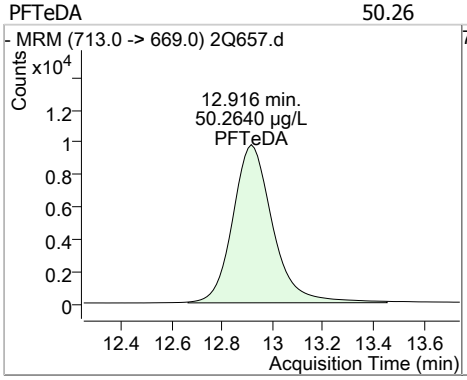
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	50.26	11.85	-0.01	197227				

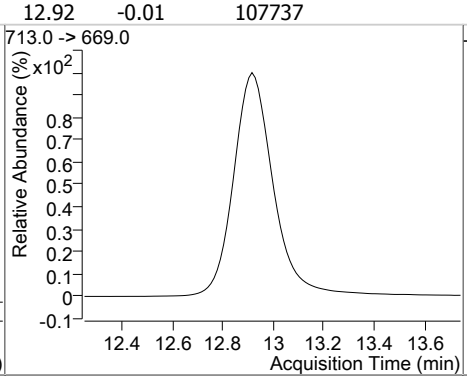


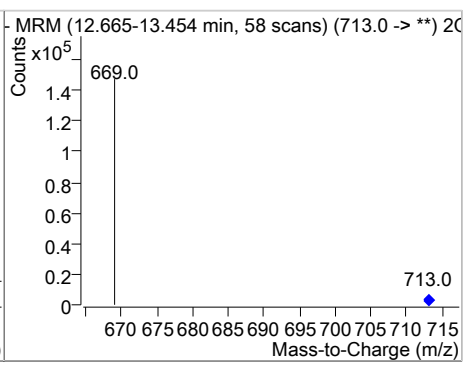




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	50.26	12.92	-0.01	107737				







Manual Integration Approval Summary

Sample Number:	S2Q18-IC18	**Method:**	EPA 537 MOD
Lab FileID:	2Q657.D	**Analyst approved:**	04/21/17 09:46 Nancy Saunders
Injection Time:	04/20/17 13:53	**Supervisor approved:**	04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.96	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

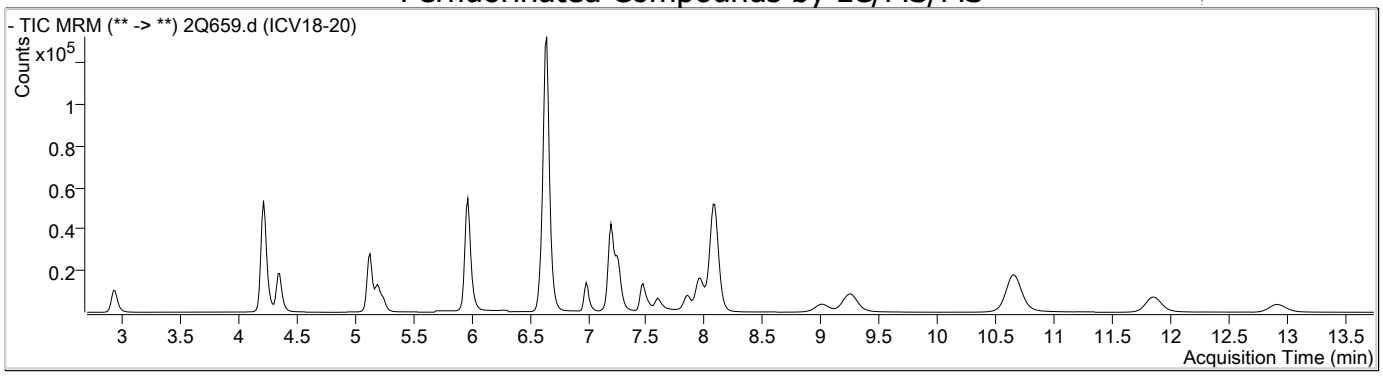
Data File	:	2Q659.d
Operator	:	NANCYF
Acq. Method	:	dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time	:	4/20/2017 2:34:37 PM
Sample Name	:	ICV18-20
Vial	:	Vial 9
DA Method File	:	PFCLISTDW_0420_S2Q18.m
Batch Name	:	S2Q18.batch.bin
Last Calib Update	:	4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.648	429.0 -> 409.0	158830	20.00	µg/L		0.000
13C2-PFDoDA	10.651	615.0 -> 570.0	91721	20.00	µg/L		-0.013
13C2-PFOA	6.637	415.0 -> 370.0	75324	20.00	µg/L		0.000
13C3-PFPeA	4.222	266.0 -> 222.0	74004	20.00	µg/L		-0.013
13C4-PFOS	7.199	503.0 -> 80.0	55296	20.00	µg/L		0.000
d3-MeFOSAA	7.474	573.0 -> 419.0	34720	20.00	µg/L		0.000
System Monitoring Compounds							
13C2-PFDA	7.969	515.0 -> 470.0	0	0.00	µg/L	m	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%			
13C2-PFHxA	-	315.0 -> 270.0	-	N.D.			
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%			
d5-EtFOSAA	7.597	589.0 -> 419.0	0	0.00	µg/L	m	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	5.132	327.0 -> 307.0	96548	24.06	µg/L		100
6:2FTS	6.649	427.0 -> 407.0	172861	22.51	µg/L		100
8:2FTS	8.077	527.0 -> 507.0	286680	22.54	µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	18871	23.57	µg/L		100
FOSA	6.986	498.0 -> 78.0	40260	21.57	µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	24006	24.23	µg/L		100
PFBA	2.940	213.0 -> 169.0	41613	21.00	µg/L		100
PFBS	4.341	299.0 -> 80.0	46062	20.88	µg/L		100
PFDA	7.959	513.0 -> 469.0	78630	21.11	µg/L		100
PFDoDA	10.657	613.0 -> 569.0	89904	22.31	µg/L		100
PFDS	9.000	599.0 -> 80.0	33156	22.35	µg/L		100
PFHpA	5.973	363.0 -> 319.0	113139	21.56	µg/L	#	93
PFHpS	6.594	449.0 -> 80.0	49317	21.06	µg/L		100
PFHxA	5.200	313.0 -> 269.0	38876	21.93	µg/L	#	86
PFHxS	5.956	399.0 -> 80.0	50890	22.04	µg/L		94
PFNA	7.269	463.0 -> 419.0	71725	21.31	µg/L		97
PFNS	7.854	549.0 -> 99.0	31642	22.66	µg/L		100
PFOA	6.639	413.0 -> 369.0	66629	21.28	µg/L		99
PFOS	7.201	499.0 -> 80.0	62605	19.62	µg/L		96
PFPeA	4.225	263.0 -> 219.0	118214	21.05	µg/L		100
PFPeS	5.242	349.0 -> 99.0	15528	22.05	µg/L		100
PFTeDA	12.916	713.0 -> 669.0	42406	22.54	µg/L		100
PFTrDA	11.852	663.0 -> 619.0	76534	22.39	µg/L		100
PFUnDA	9.256	563.0 -> 519.0	85345	21.21	µg/L		100

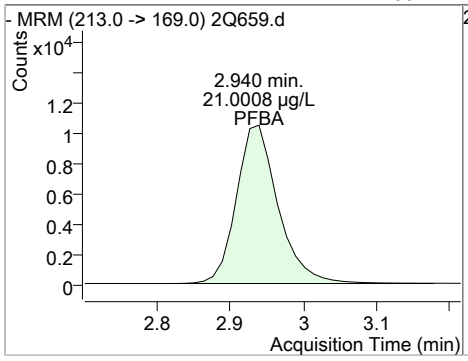
 # = Qualifier out of range, m = manually integrated, + = Area summed

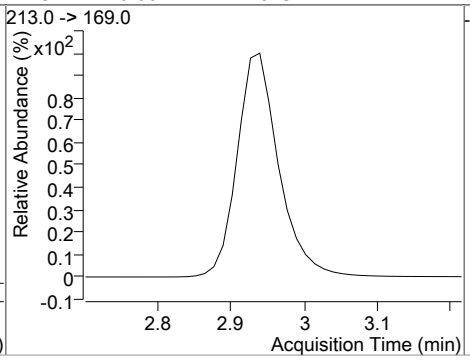
Perfluorinated Compounds by LC/MS/MS

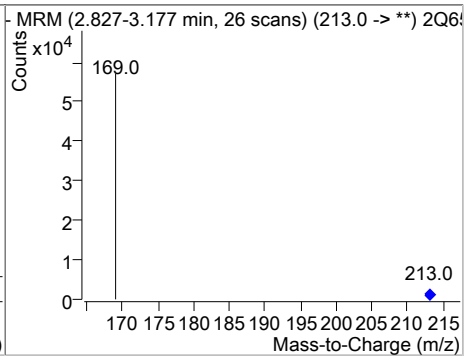
Agilent Technologies



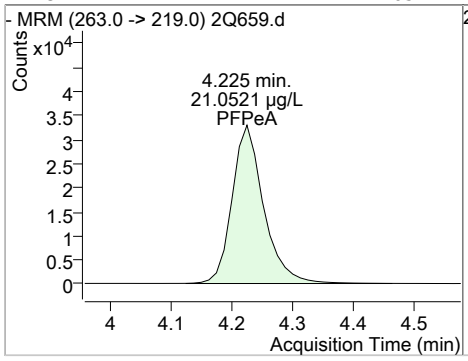
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.00	2.94	0.00	41613				

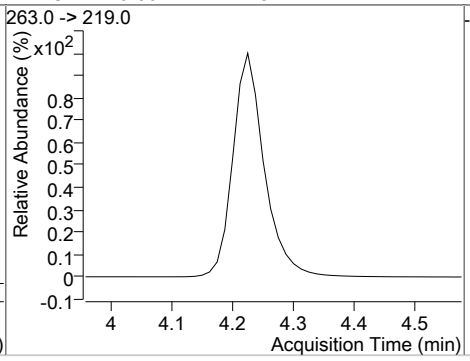


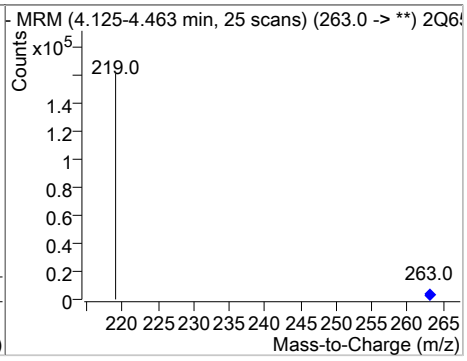




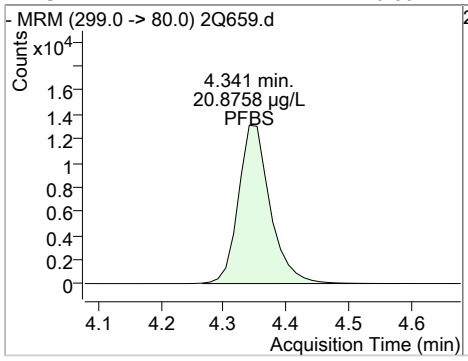
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.05	4.23	0.00	118214				

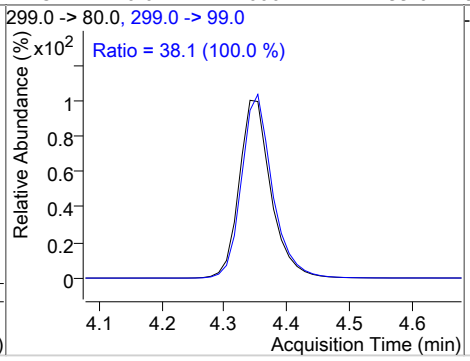


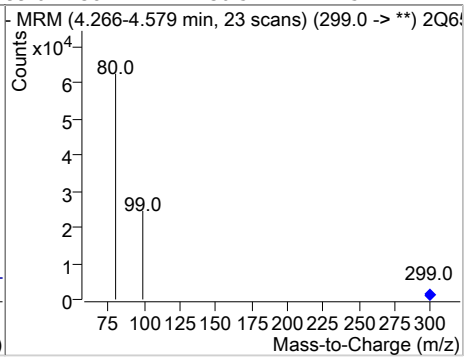




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.88	4.34	-0.01	46062	299.0 -> 99.0	38.1	30.5	45.7



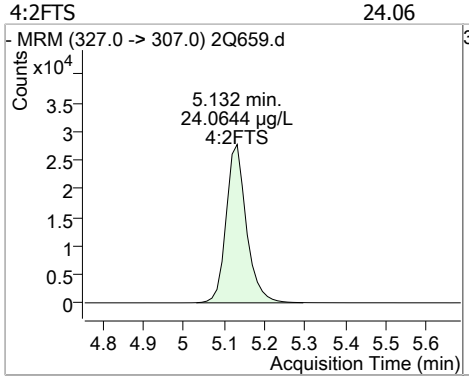


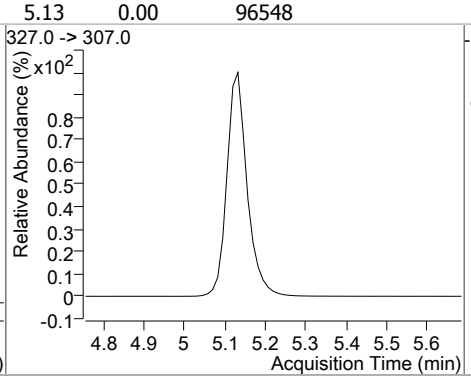


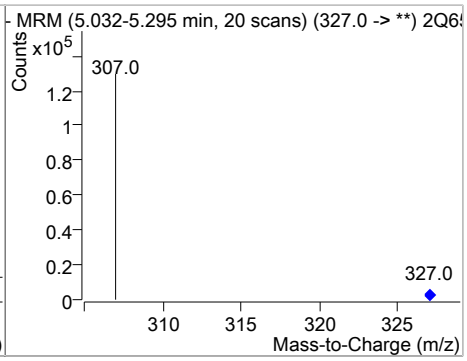
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

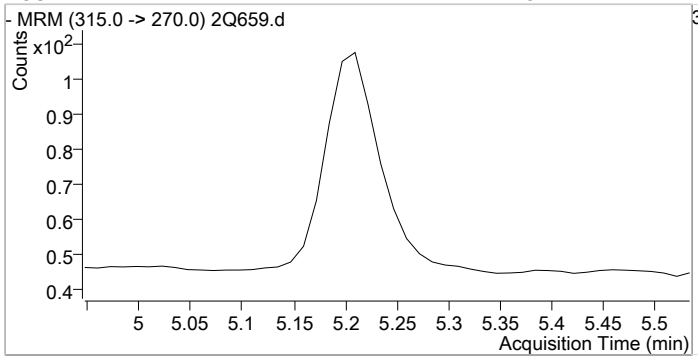
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	24.06	5.13	0.00	96548				

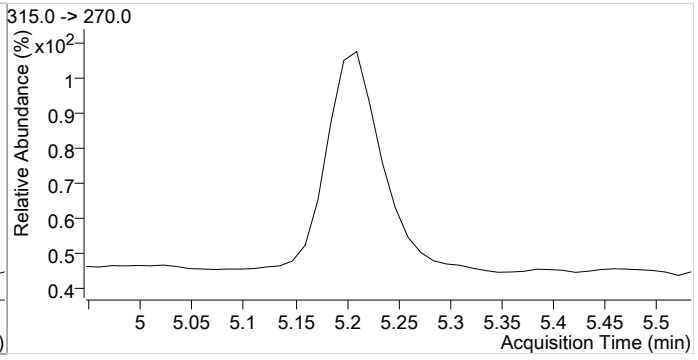




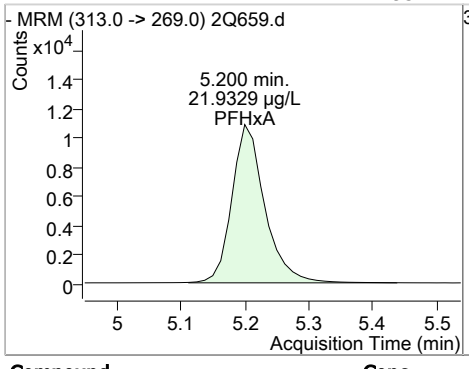


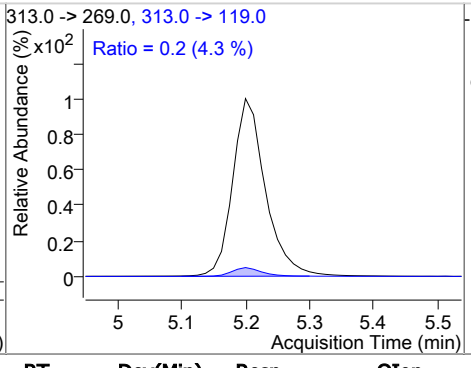
Compound	Conc.	Exp RT	QIon	Exp Ratio
13C2-PFHxA	N.D.	5.21		

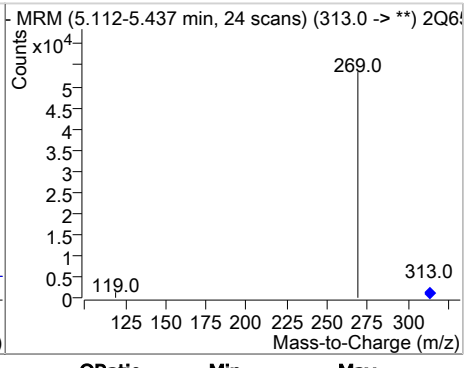




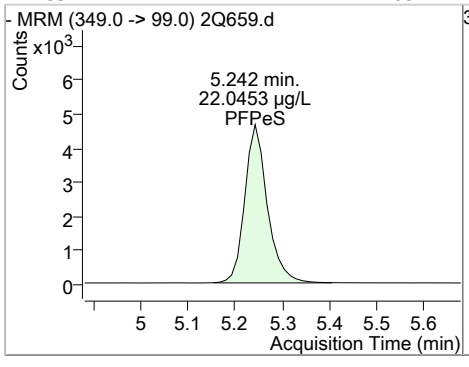
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.93	5.20	-0.01	38876	313.0 -> 119.0	0.2	4.0	6.0

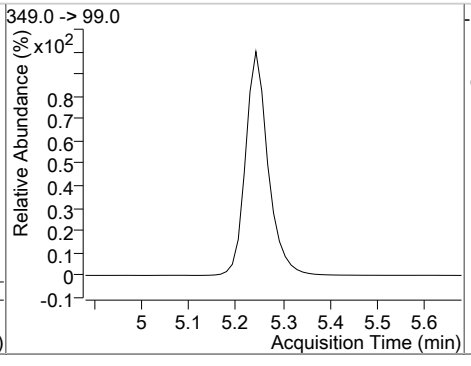


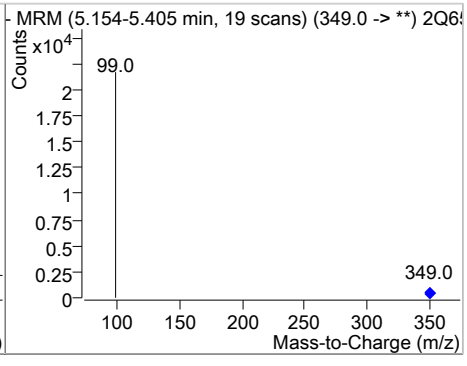




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.05	5.24	0.00	15528				



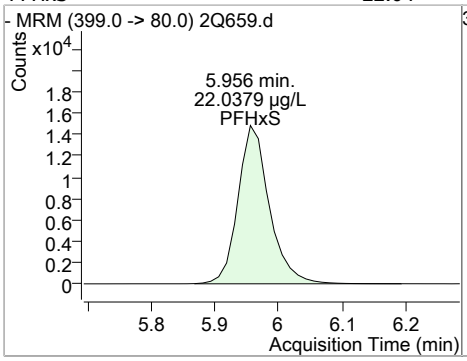


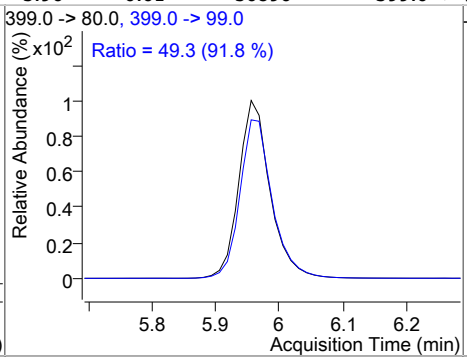


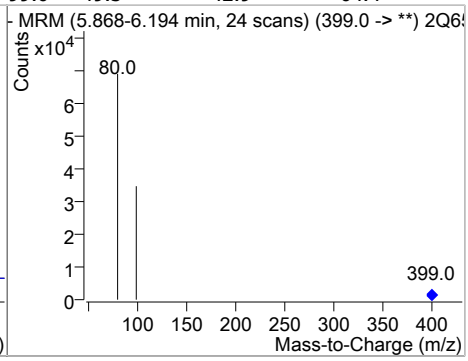
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

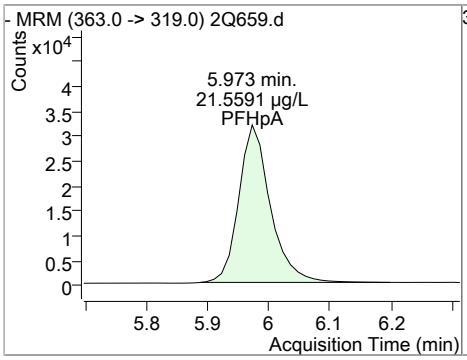
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.04	5.96	-0.01	50890	399.0 -> 99.0	49.3	42.9	64.4

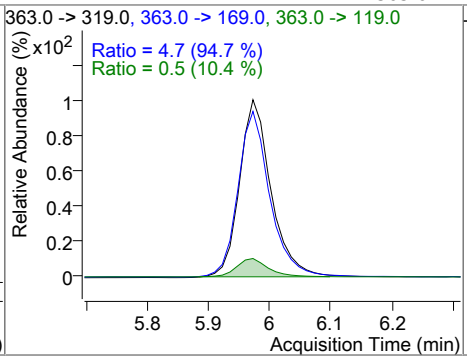


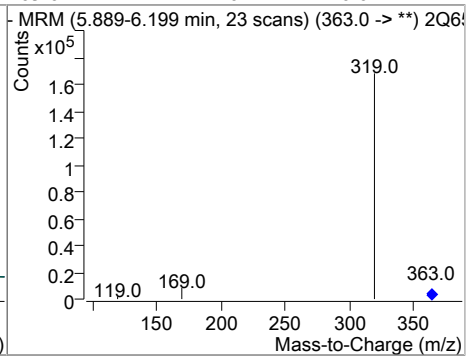




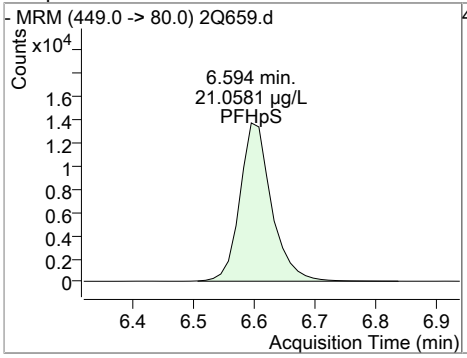
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.56	5.97	-0.01	113139	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.7	4.0	6.0

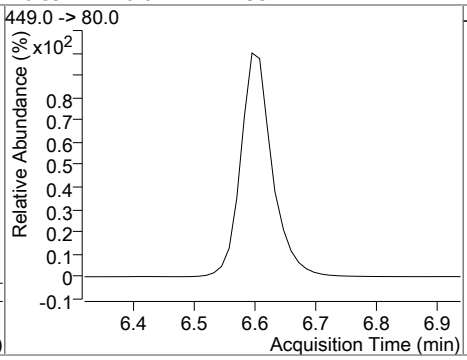


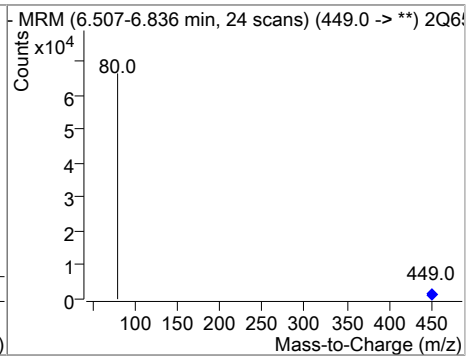




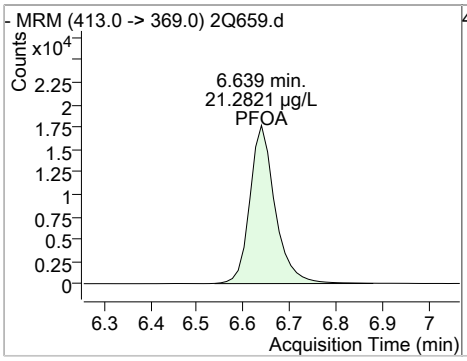
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.06	6.59	-0.01	49317				

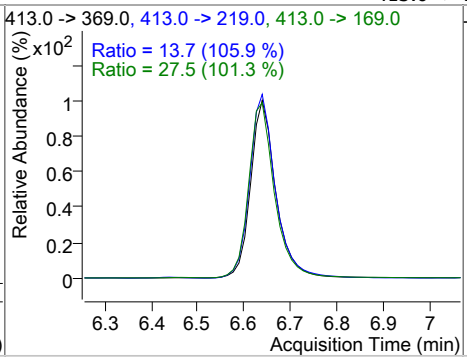


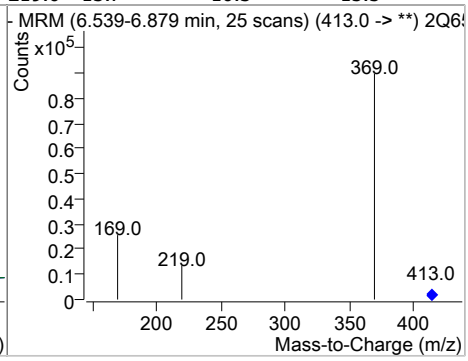




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.28	6.64	0.00	66629	413.0 -> 169.0	27.5	21.8	32.6
					413.0 -> 219.0	13.7	10.3	15.5







Perfluorinated Compounds by LC/MS/MS

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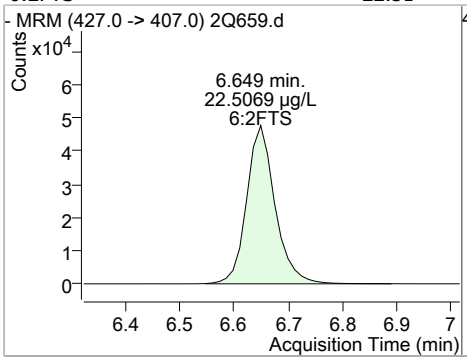
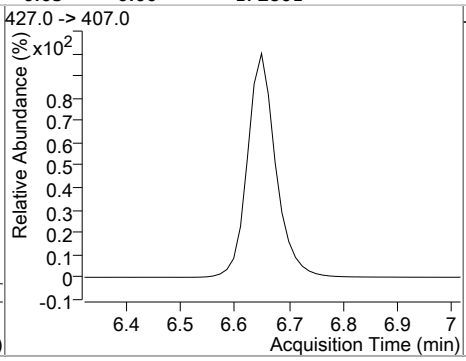
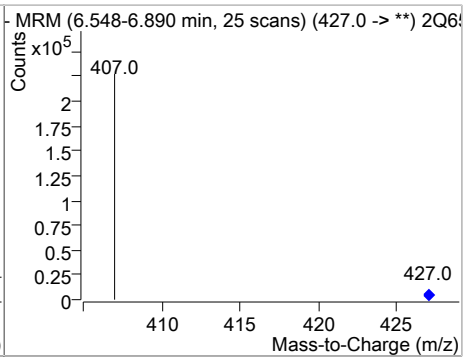
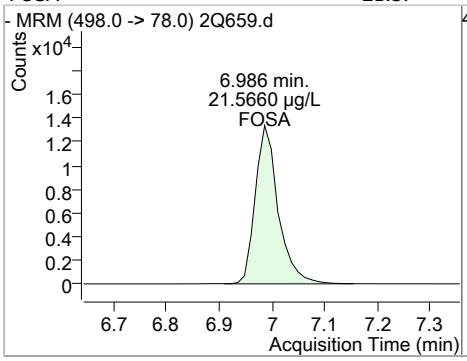
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.51	6.65	0.00	172861				

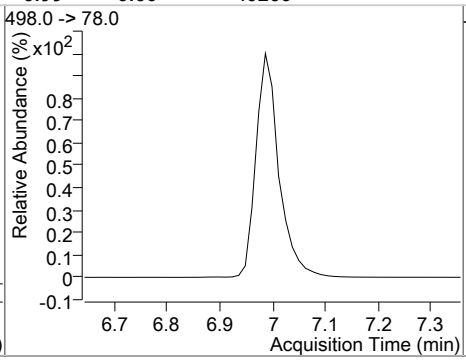


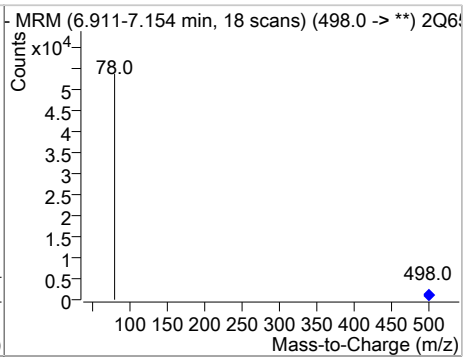




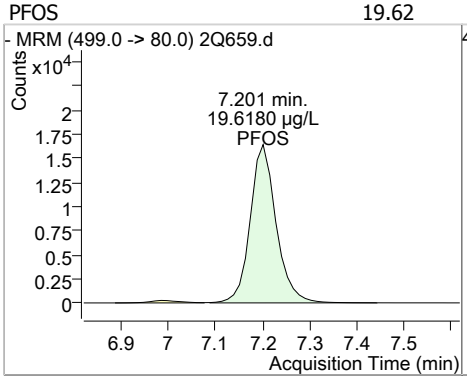
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.57	6.99	0.00	40260				

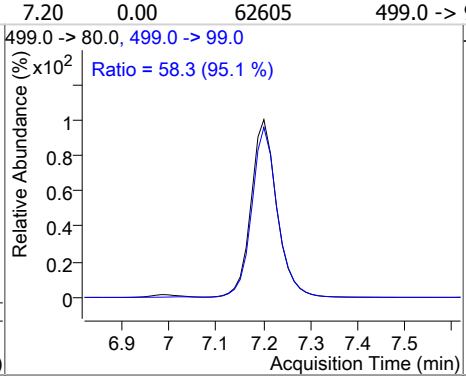


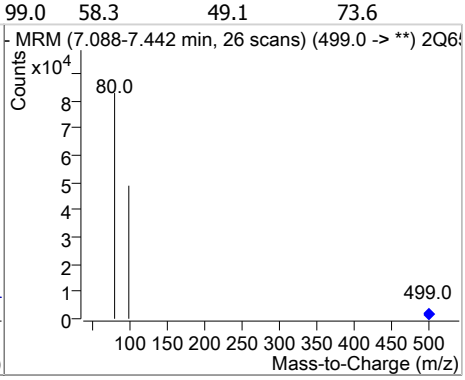




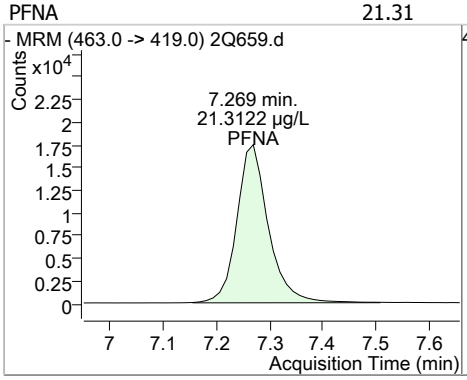
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.62	7.20	0.00	62605	499.0 -> 99.0	58.3	49.1	73.6

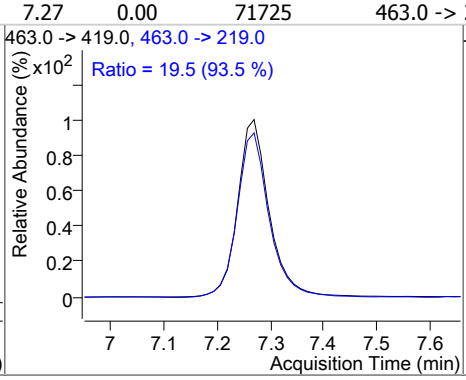


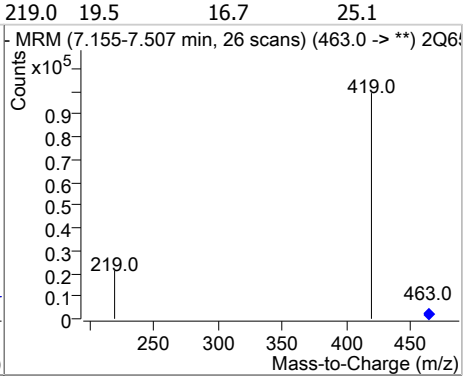




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.31	7.27	0.00	71725	463.0 -> 219.0	19.5	16.7	25.1







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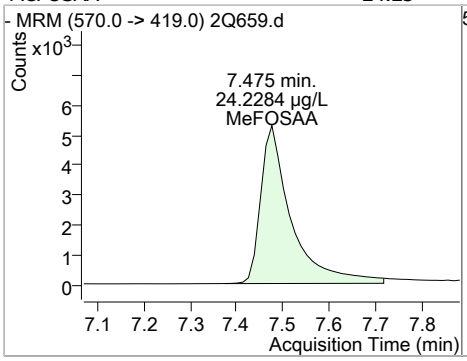
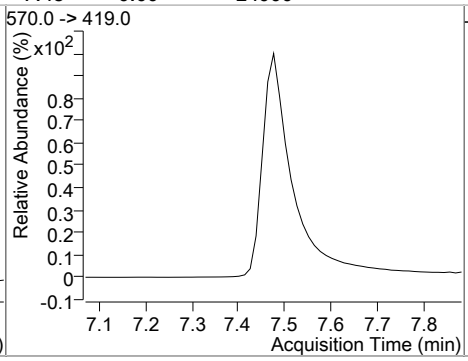
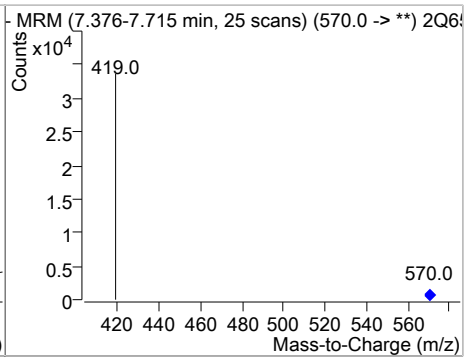
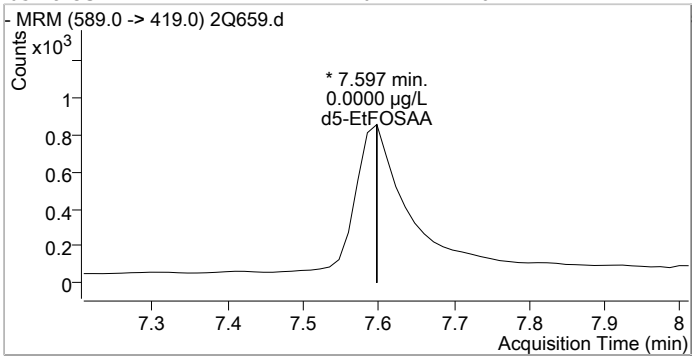
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	24.23	7.48	0.00	24006				

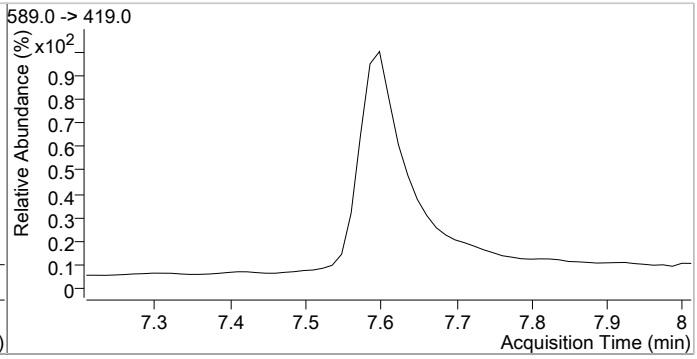




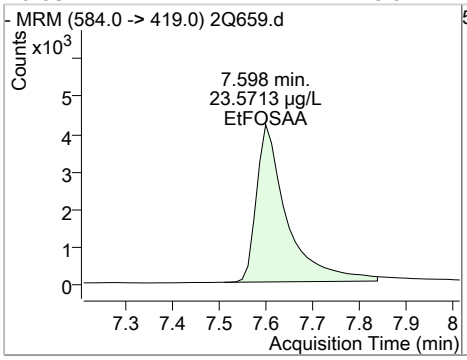


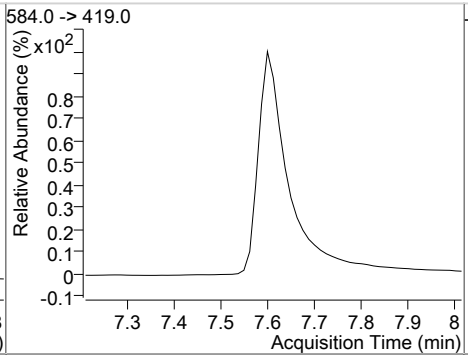
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	d	0		0				

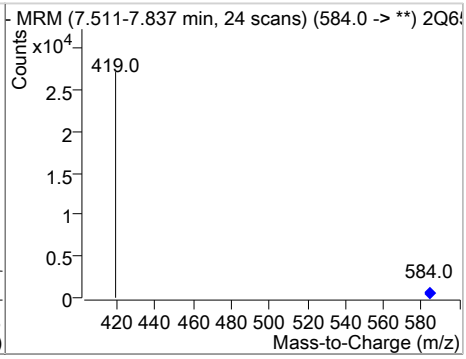




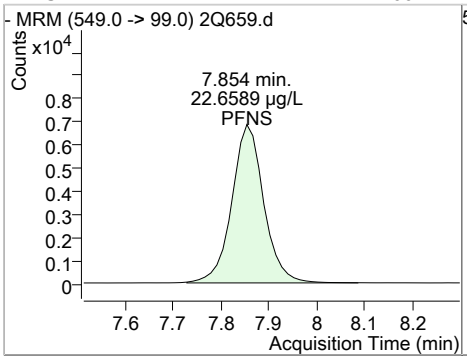
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.57	7.60	0.00	18871				

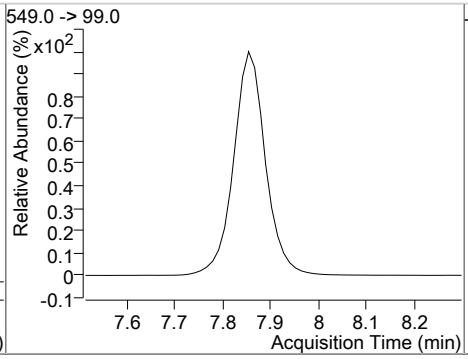


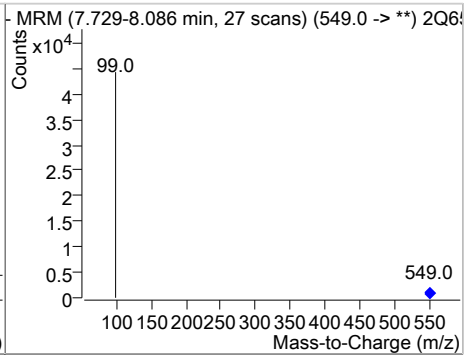




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.66	7.85	-0.01	31642				







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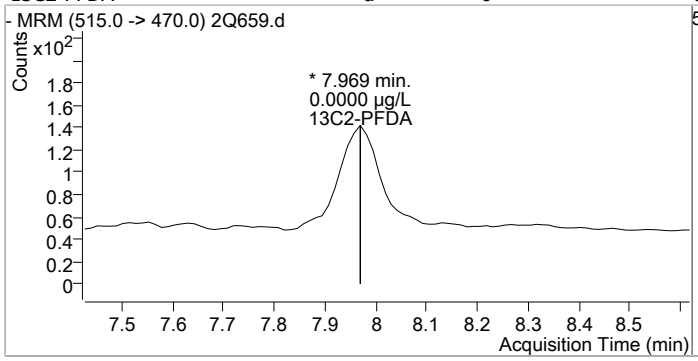
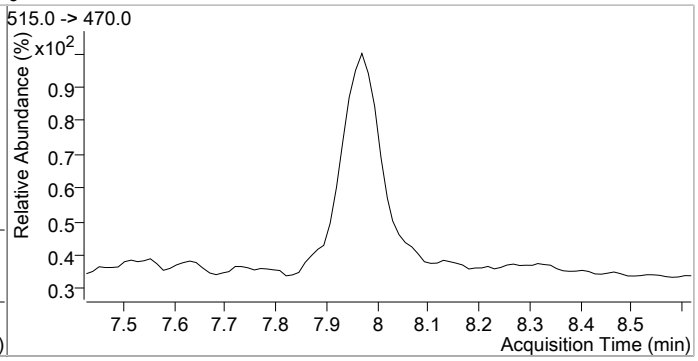
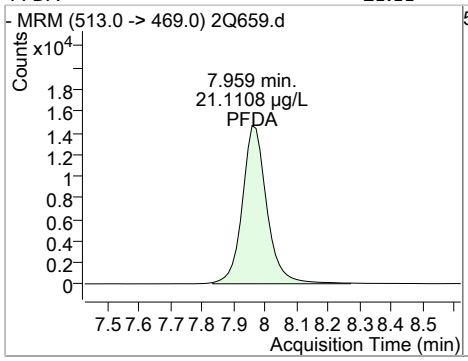
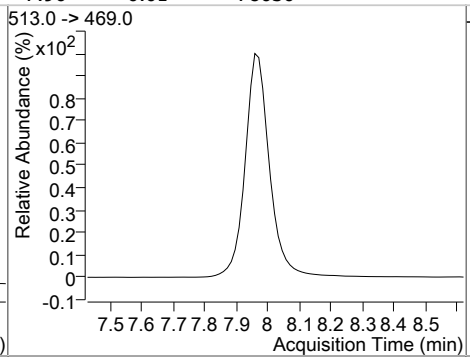
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	d	0		0				

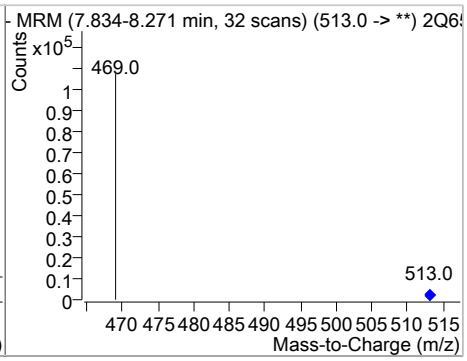




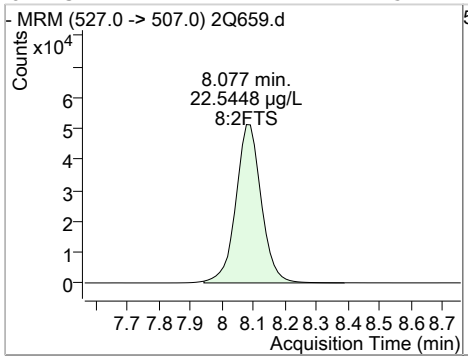
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.11	7.96	-0.01	78630				

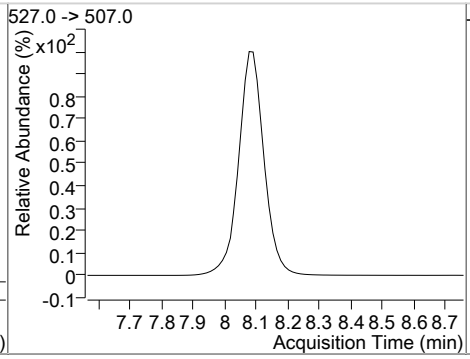


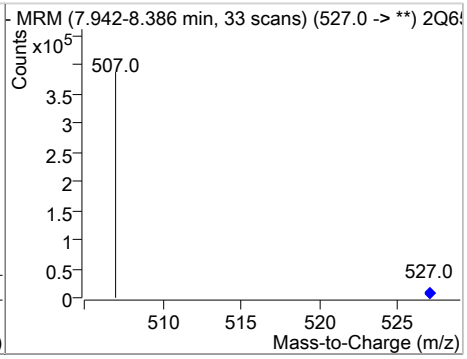




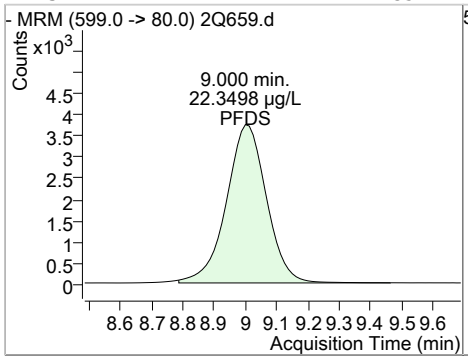
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	22.54	8.08	-0.01	286680				

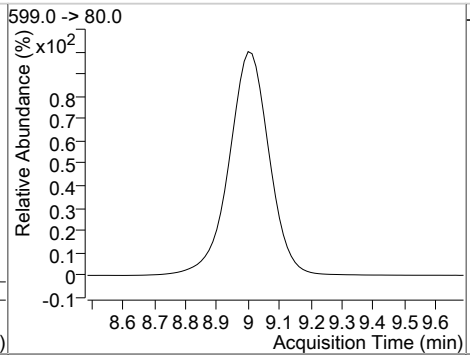


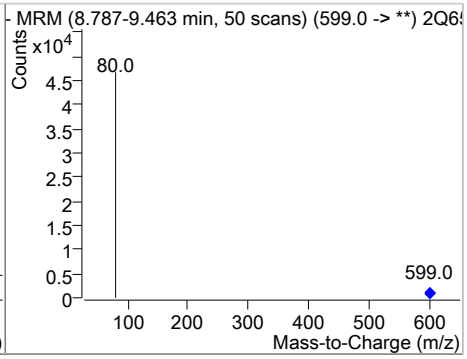




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	22.35	9.00	-0.03	33156				







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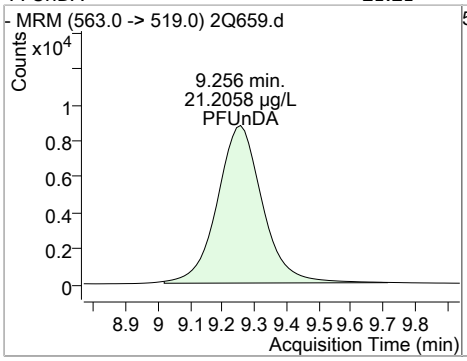
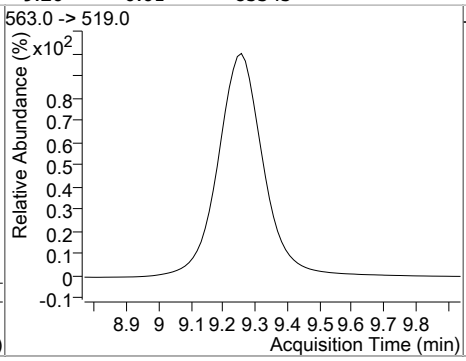
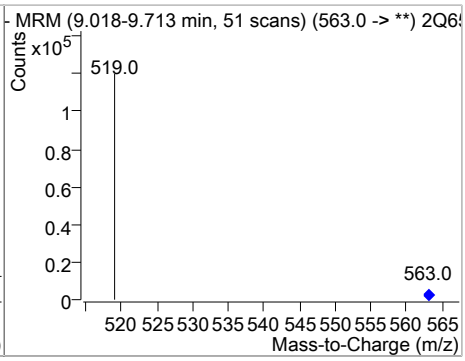
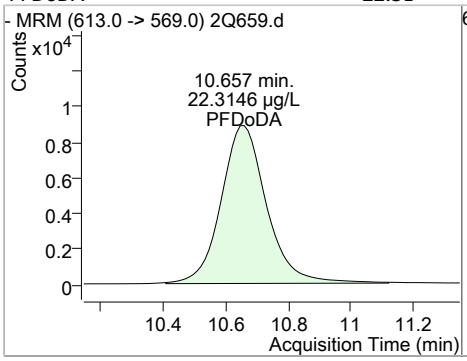
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.21	9.26	-0.01	85345				

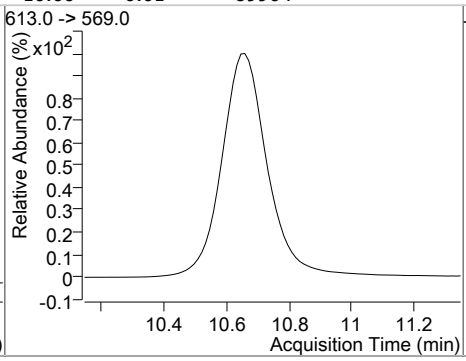


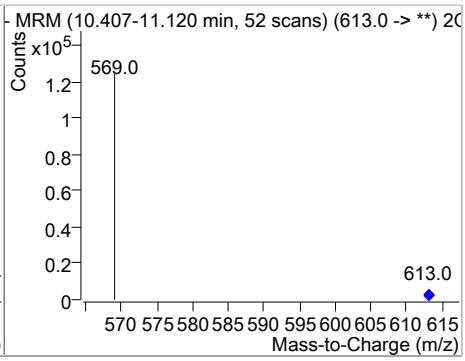




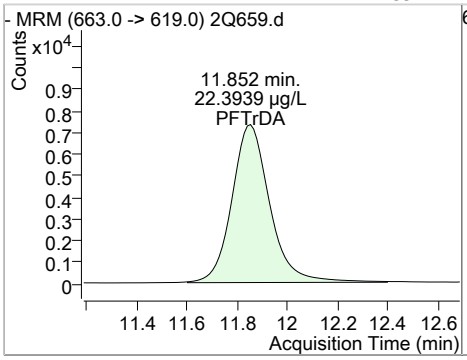
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.31	10.66	-0.01	89904				

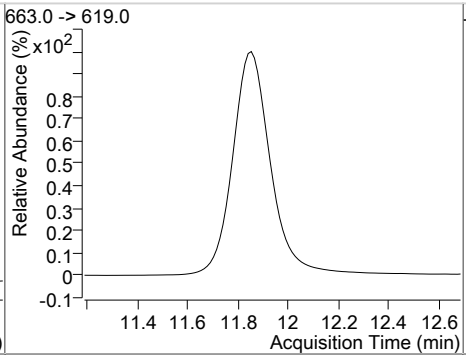


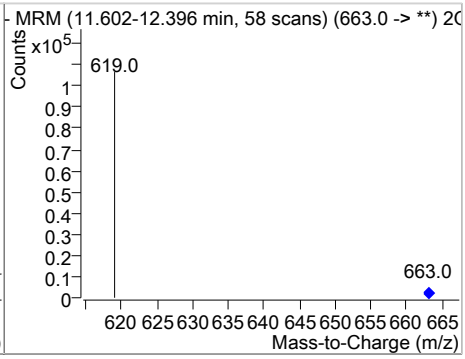




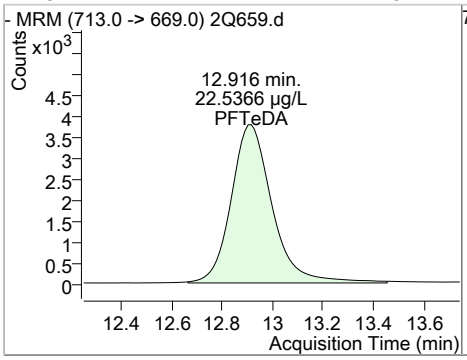
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.39	11.85	-0.01	76534				

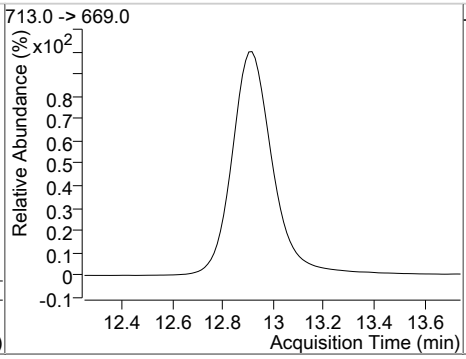


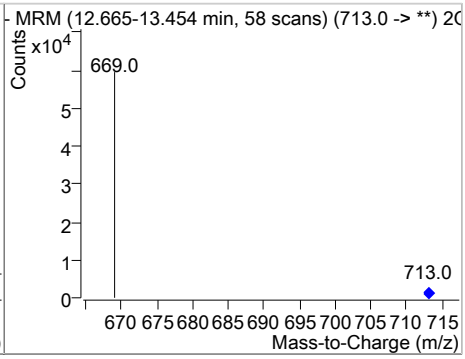




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	22.54	12.92	-0.01	42406				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
04/27/17 14:49

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q798.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/27/2017 9:06:41 AM
Sample Name : CC18-20
Vial : Vial 2
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : S2Q23.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
13C2-6:2FTS	6.748	429.0 -> 409.0	201927	20.00	µg/L		0.100
13C2-PFDoDA	11.064	615.0 -> 570.0	113852	20.00	µg/L		0.400
13C2-PFOA	6.739	415.0 -> 370.0	90447	20.00	µg/L		0.101
13C3-PFPeA	4.322	266.0 -> 222.0	85348	20.00	µg/L		0.088
13C4-PFOS	7.314	503.0 -> 80.0	66625	20.00	µg/L		0.115
d3-MeFOSAA	7.475	573.0 -> 419.0	40257	20.00	µg/L		0.000
System Monitoring Compounds							
13C2-PFDA	8.180	515.0 -> 470.0	122726	19.39	µg/L		0.211
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 97.0%			
13C2-PFHxA	5.297	315.0 -> 270.0	85979	18.00	µg/L		0.088
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 90.0%			
d5-EtFOSAA	7.597	589.0 -> 419.0	18425	18.70	µg/L		0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 93.5%			
Target Compounds							QValue
4:2FTS	5.220	327.0 -> 307.0	97721	19.16	µg/L		100
6:2FTS	6.749	427.0 -> 407.0	191072	19.57	µg/L		100
8:2FTS	8.352	527.0 -> 507.0	332907	20.59	µg/L		100
EtFOSAA	7.611	584.0 -> 419.0	16776	18.34	µg/L		100
FOSA	6.998	498.0 -> 78.0	35938	16.60	µg/L		100
MeFOSAA	7.488	570.0 -> 419.0	21805	19.41	µg/L		100
PFBA	3.040	213.0 -> 169.0	38487	16.18	µg/L		100
PFBS	4.441	299.0 -> 80.0	46833	17.62	µg/L		99
PFDA	8.170	513.0 -> 469.0	84113	18.81	µg/L		100
PFDoDA	11.058	613.0 -> 569.0	99265	19.96	µg/L		100
PFDS	9.412	599.0 -> 80.0	32312	18.27	µg/L		100
PFHpA	6.061	363.0 -> 319.0	116603	18.58	µg/L	#	93
PFHpS	6.696	449.0 -> 80.0	52349	18.55	µg/L		100
PFHxA	5.287	313.0 -> 269.0	39880	18.87	µg/L		85
PFHxS	6.043	399.0 -> 80.0	43280	15.56	µg/L		97
PFNA	7.382	463.0 -> 419.0	77613	19.21	µg/L		96
PFNS	8.040	549.0 -> 99.0	31333	18.62	µg/L		100
PFOA	6.740	413.0 -> 369.0	68436	18.20	µg/L		97
PFOS	7.315	499.0 -> 80.0	62219	16.18	µg/L	m	84
PFPeA	4.325	263.0 -> 219.0	120950	18.68	µg/L		100
PFPeS	5.330	349.0 -> 99.0	15671	19.29	µg/L		100
PFTeDA	13.341	713.0 -> 669.0	40800	17.69	µg/L		100
PFTrDA	12.265	663.0 -> 619.0	80579	19.17	µg/L		100
PFUnDA	9.669	563.0 -> 519.0	94694	18.96	µg/L		100

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

Perfluorinated Compounds by LC/MS/MS

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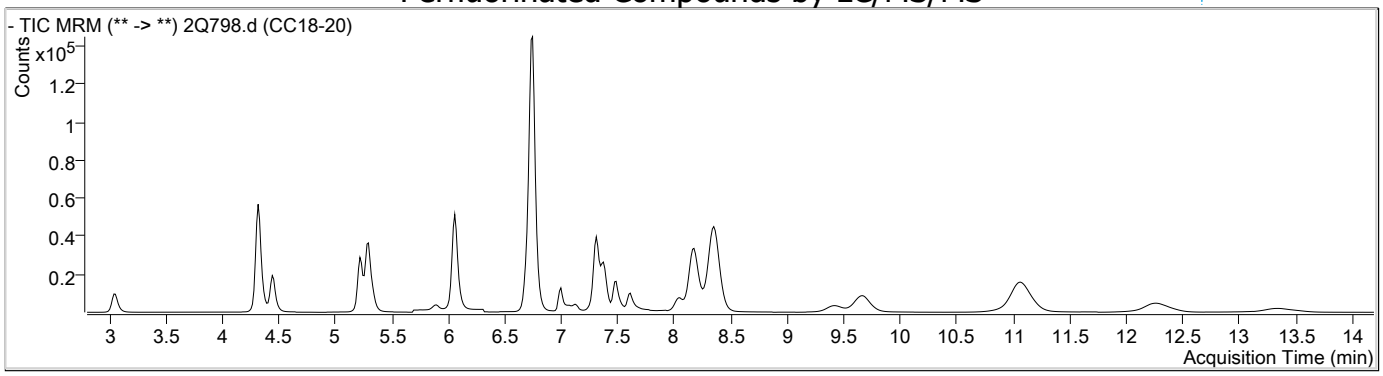
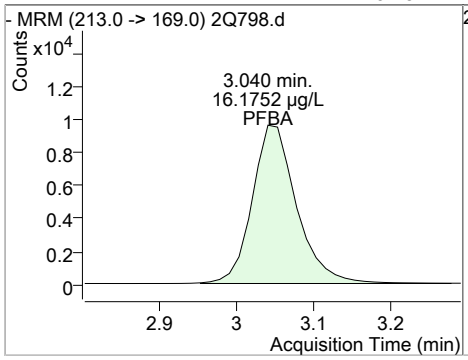
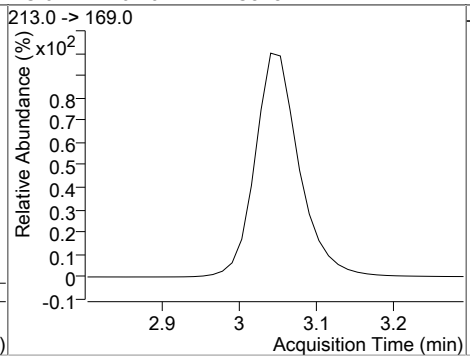
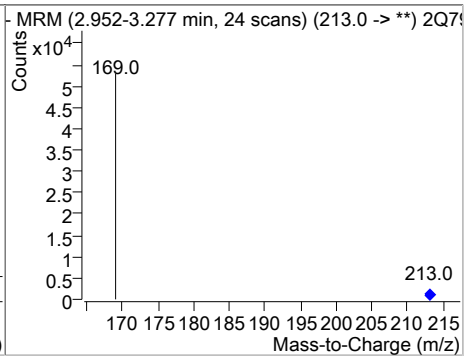


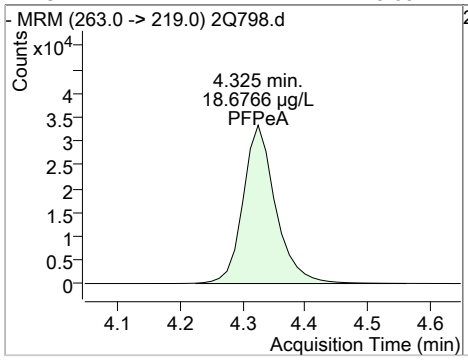
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	16.18	3.04	0.10	38487				

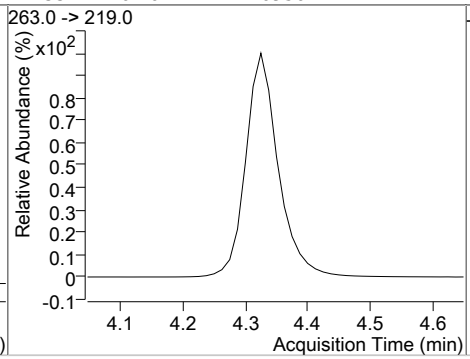


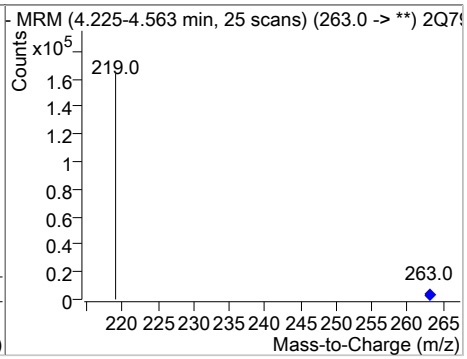




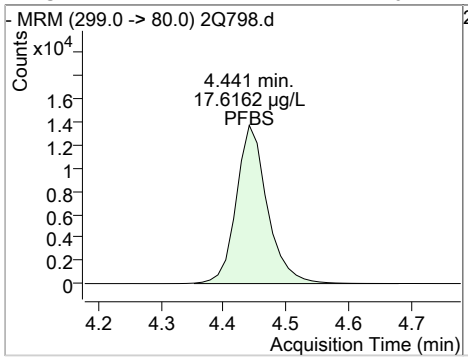
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.68	4.33	0.10	120950				

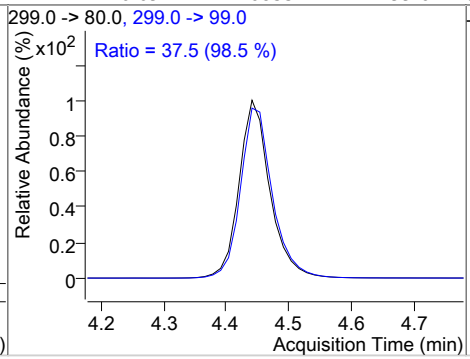


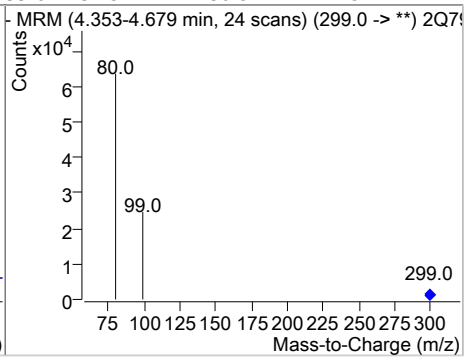




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	17.62	4.44	0.09	46833	299.0 -> 99.0	37.5	30.5	45.7







Perfluorinated Compounds by LC/MS/MS

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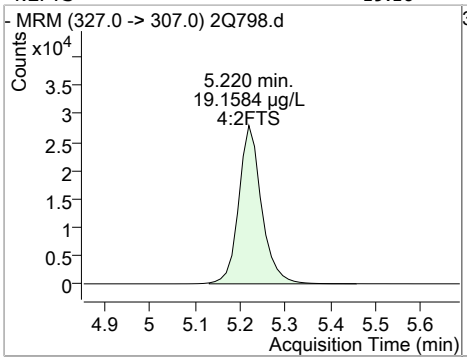
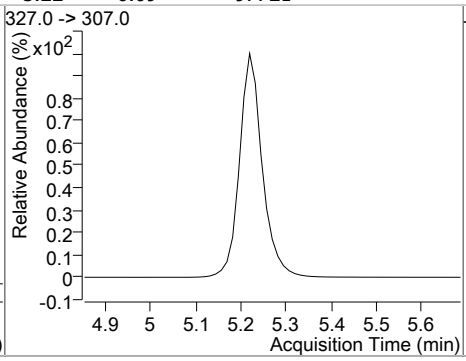
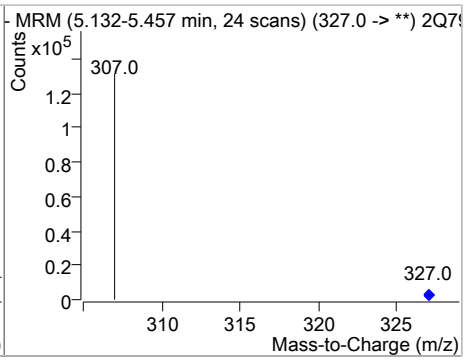
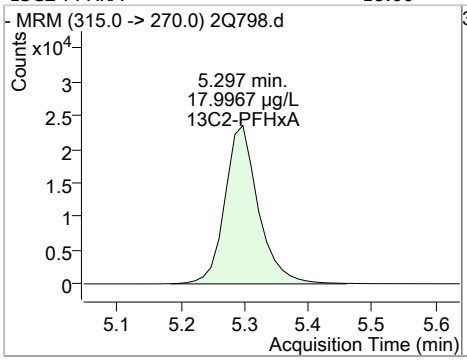
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.16	5.22	0.09	97721				

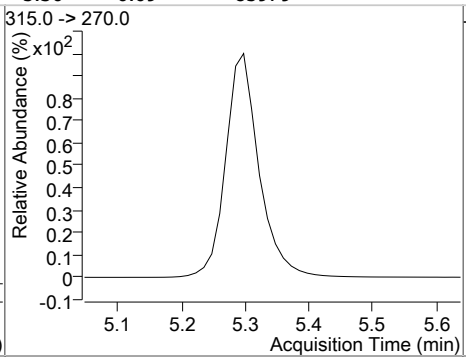


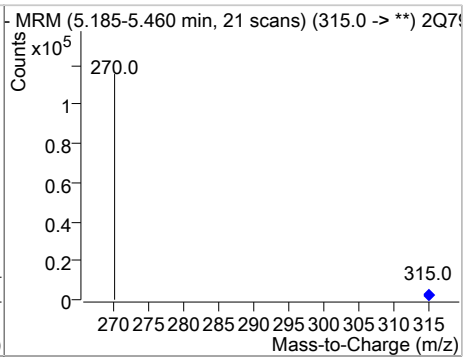




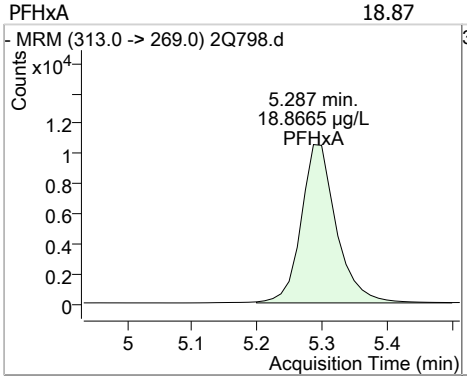
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	18.00	5.30	0.09	85979				

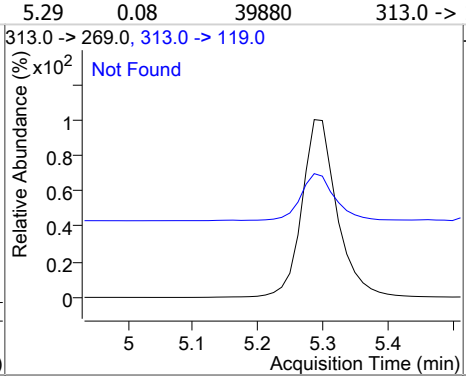


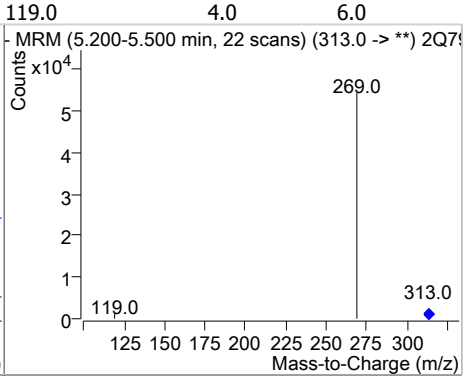




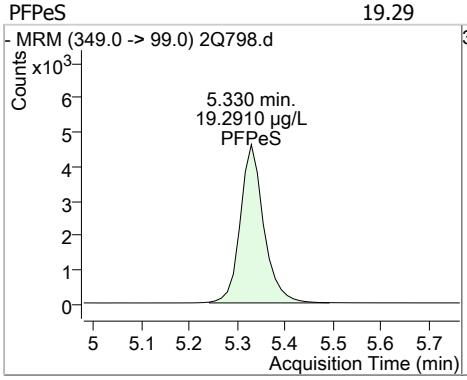
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.87	5.29	0.08	39880	313.0 -> 119.0		4.0	6.0

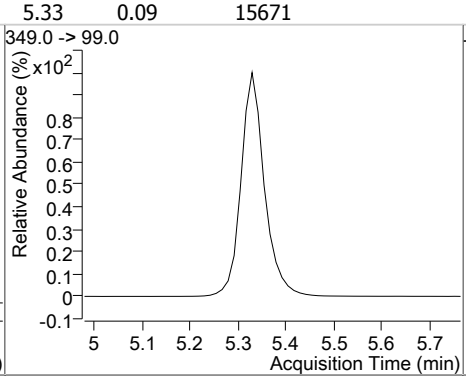


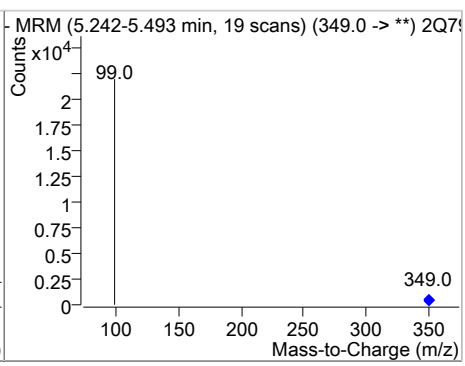




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.29	5.33	0.09	15671				







Perfluorinated Compounds by LC/MS/MS

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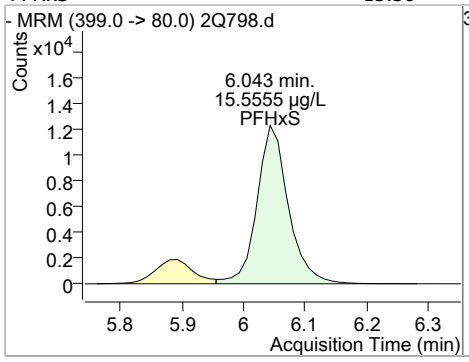
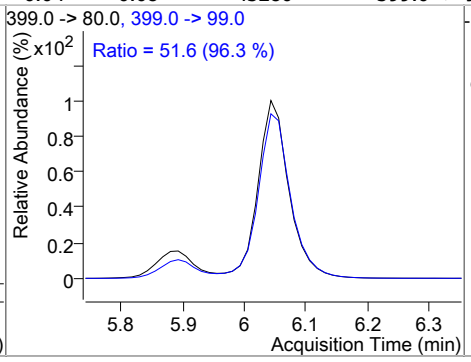
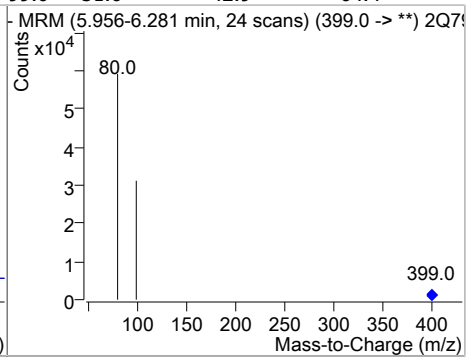
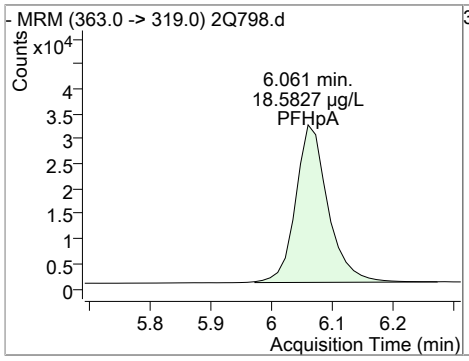
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	15.56	6.04	0.08	43280	399.0 -> 99.0	51.6	42.9	64.4

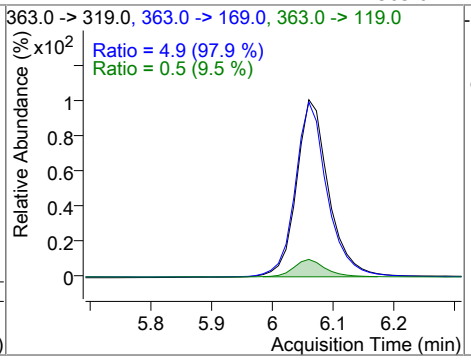


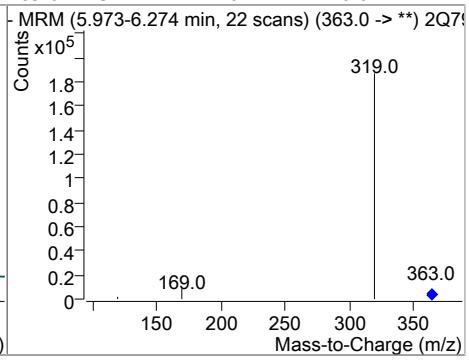




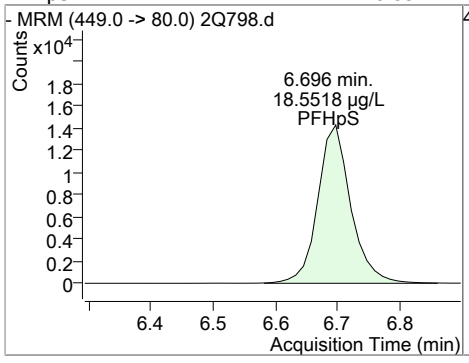
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.58	6.06	0.08	116603	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.9	4.0	6.0

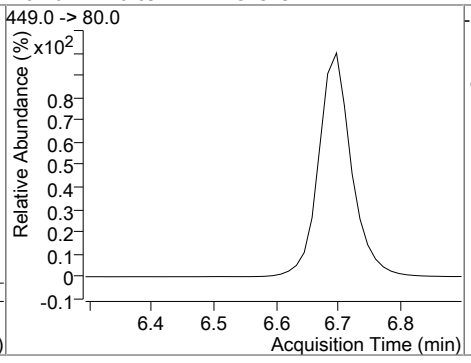


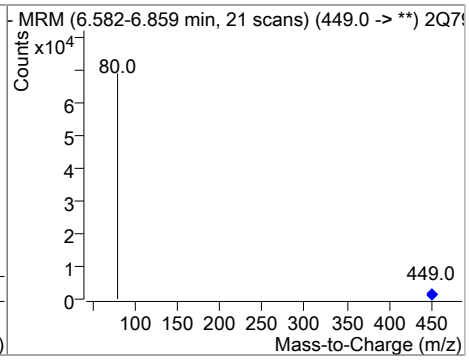




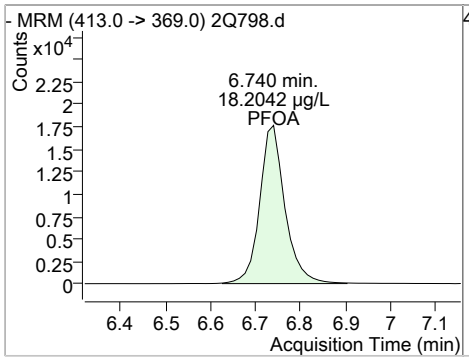
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.55	6.70	0.09	52349				

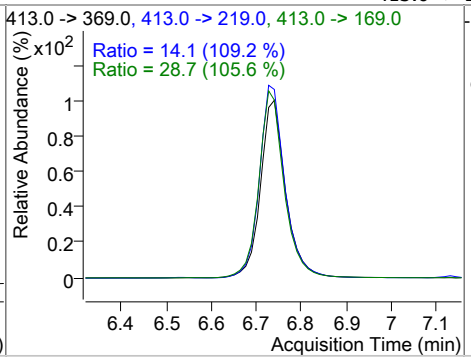


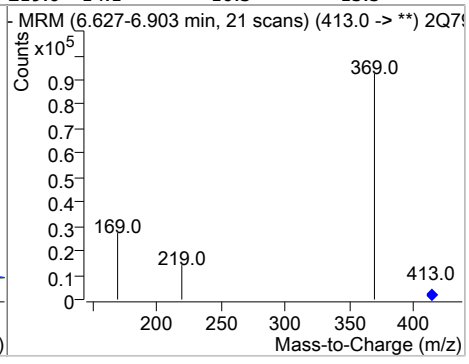




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.20	6.74	0.10	68436	413.0 -> 169.0	28.7	21.8	32.6
					413.0 -> 219.0	14.1	10.3	15.5







Perfluorinated Compounds by LC/MS/MS

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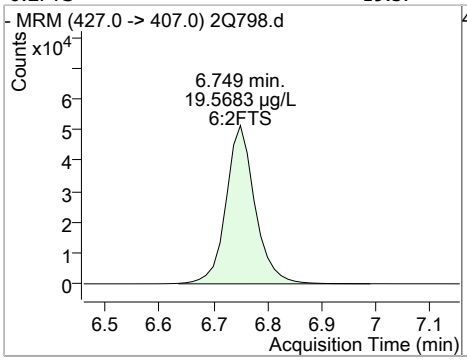
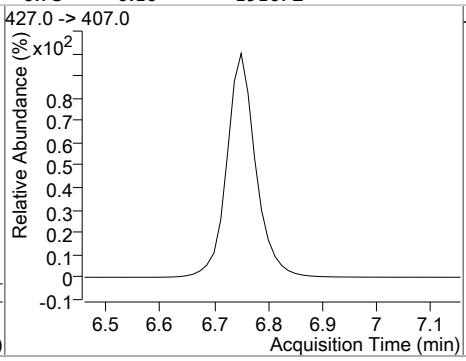
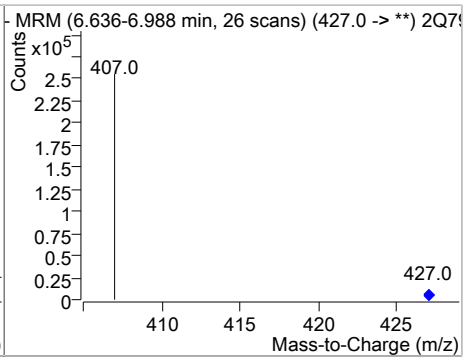
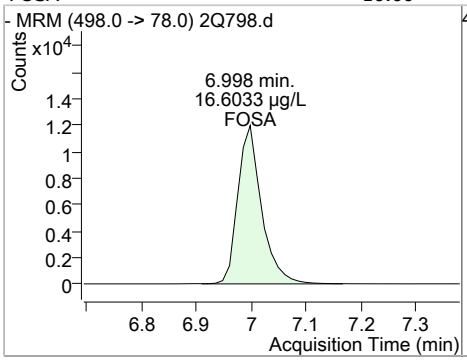
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.57	6.75	0.10	191072				

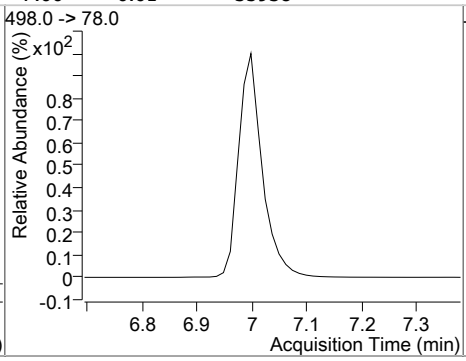


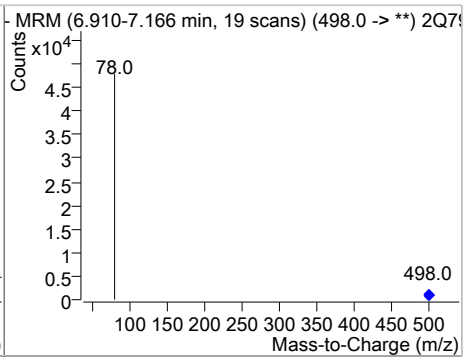




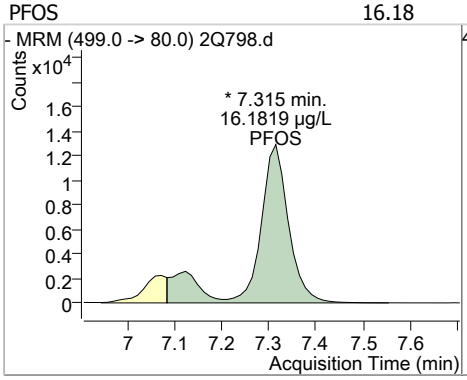
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	16.60	7.00	0.01	35938				

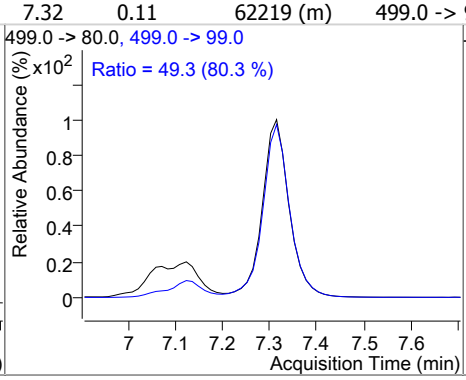


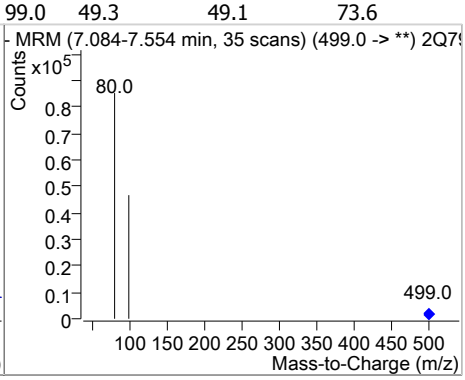




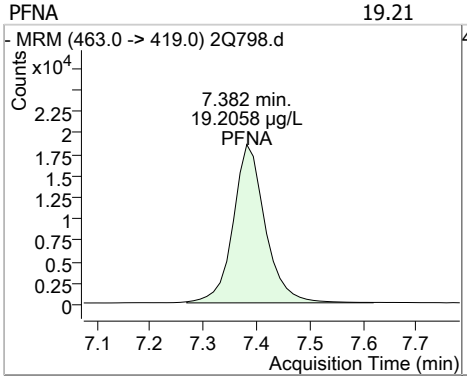
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.18	7.32	0.11	62219 (m)	499.0 -> 99.0	49.3	49.1	73.6

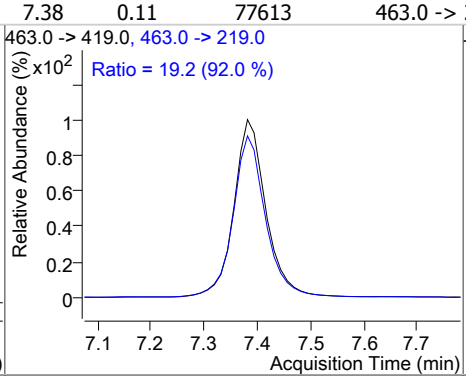


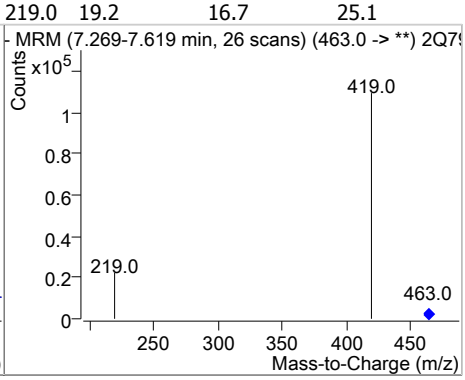




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.21	7.38	0.11	77613	463.0 -> 219.0	19.2	16.7	25.1



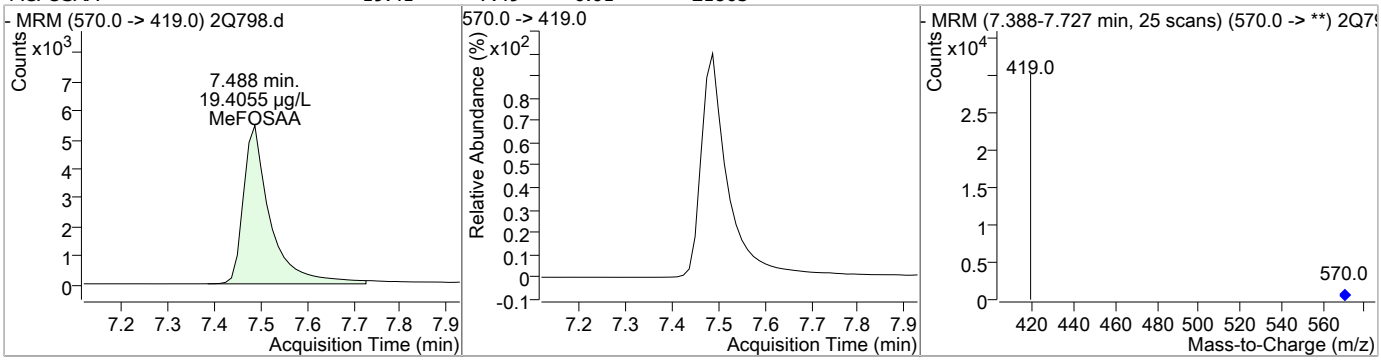




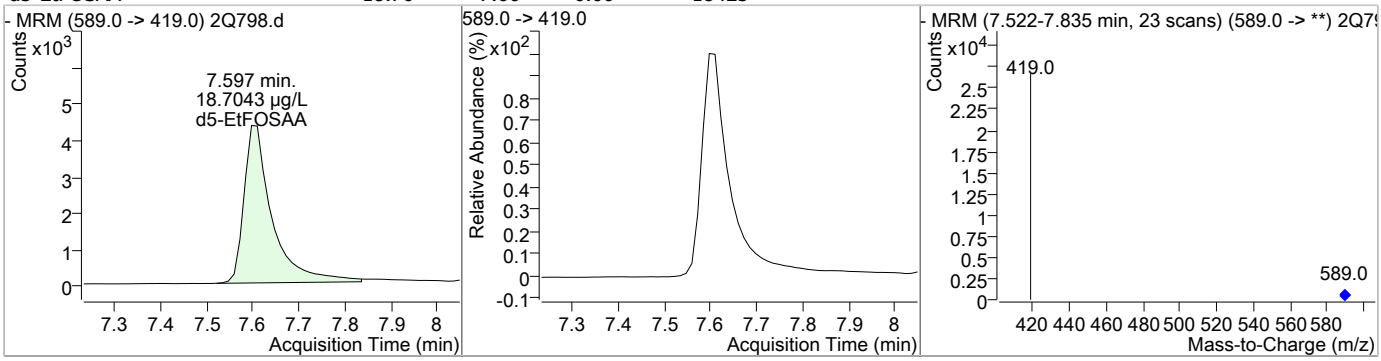
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

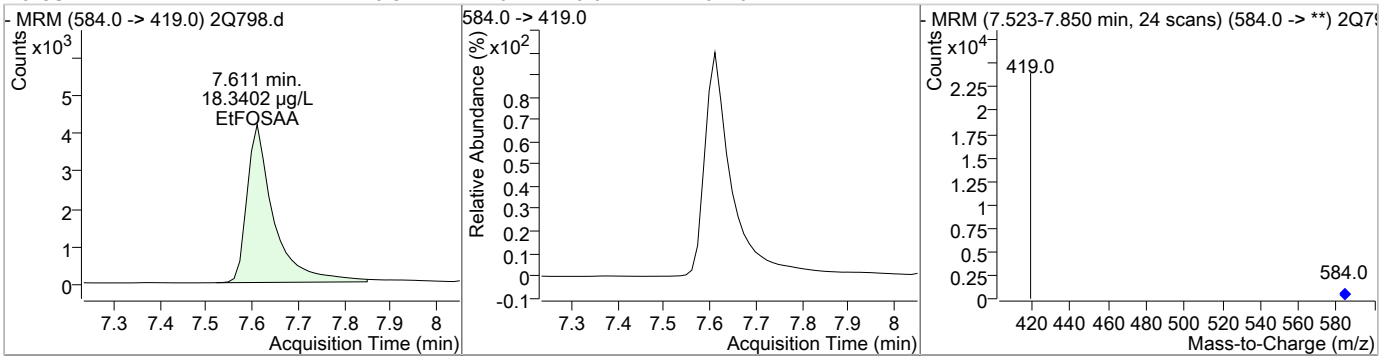
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.41	7.49	0.01	21805				



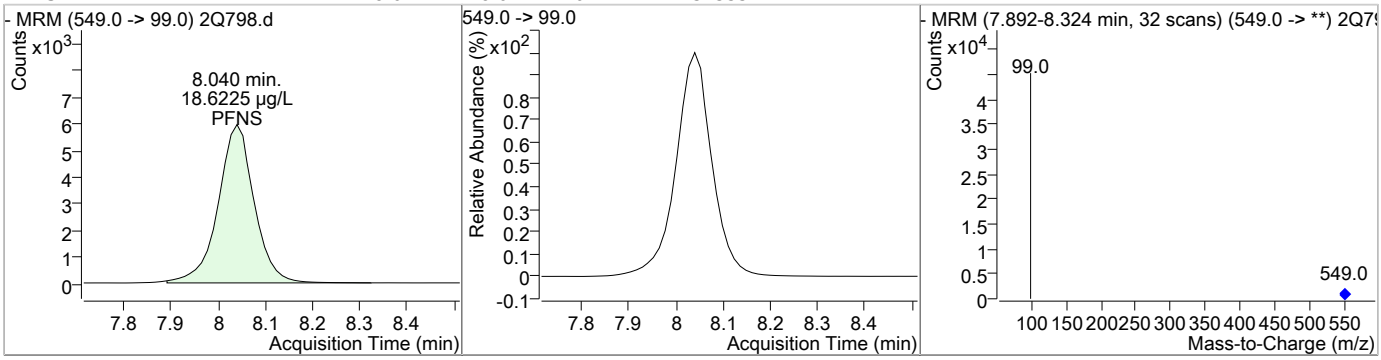
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.70	7.60	0.00	18425				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.34	7.61	0.01	16776				



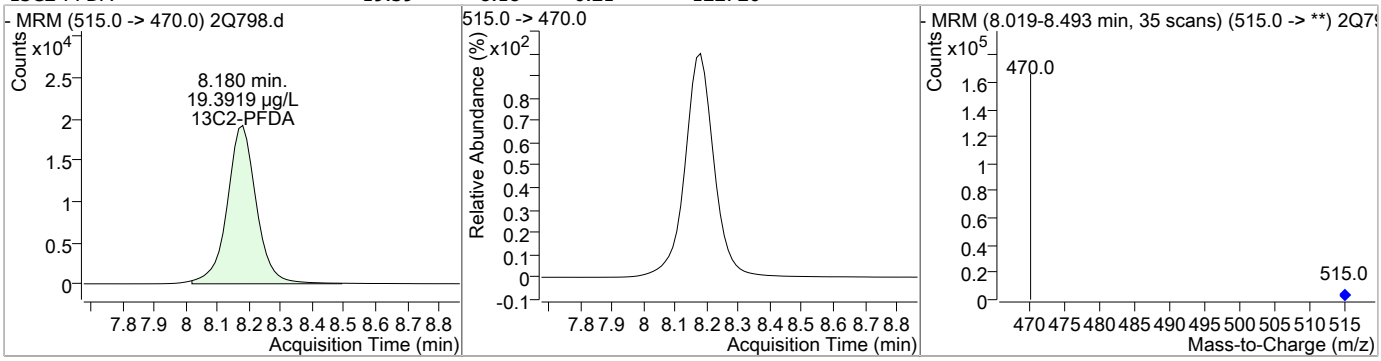
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.62	8.04	0.17	31333				



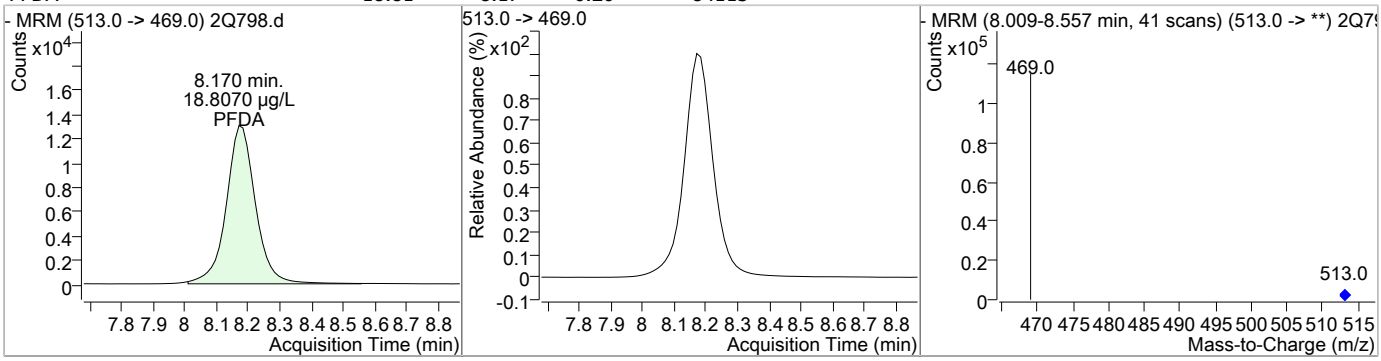
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

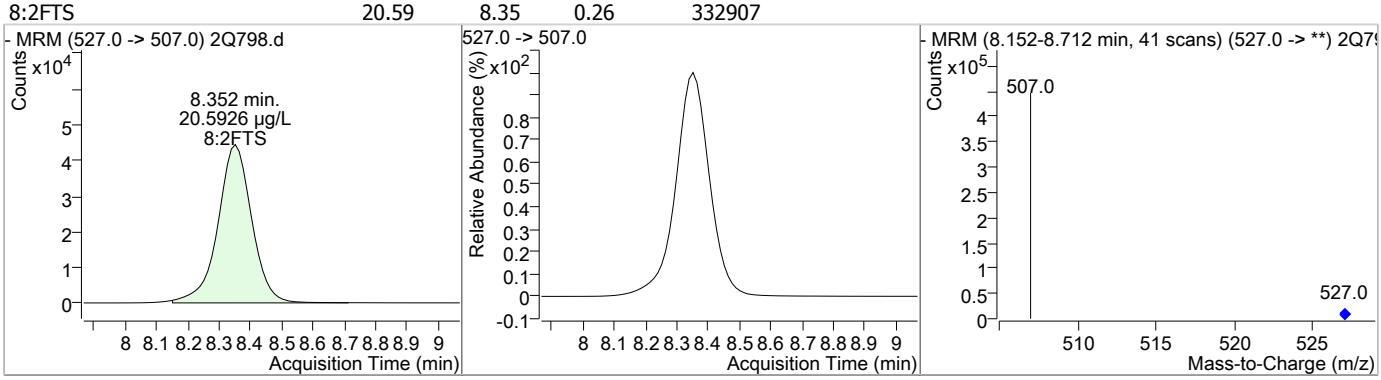
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	19.39	8.18	0.21	122726				



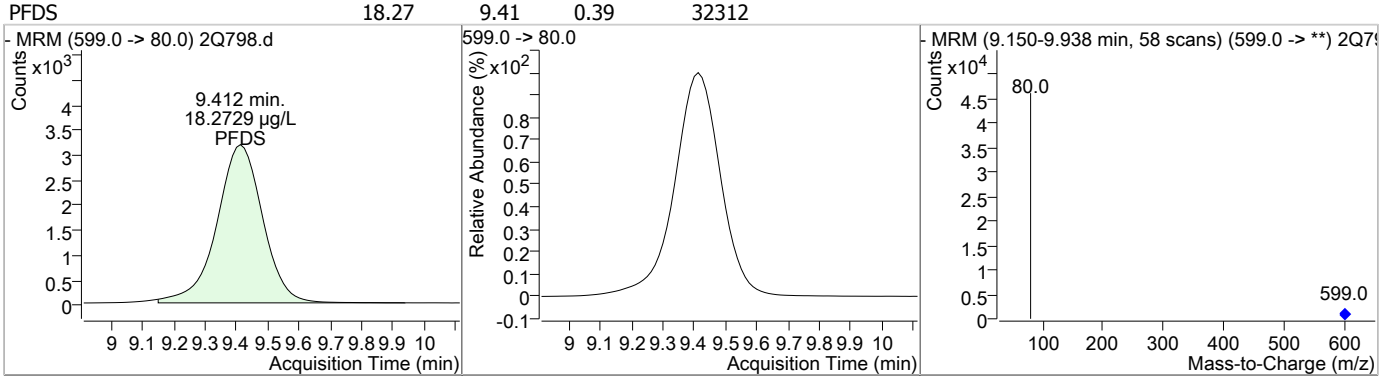
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.81	8.17	0.20	84113				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.59	8.35	0.26	332907				



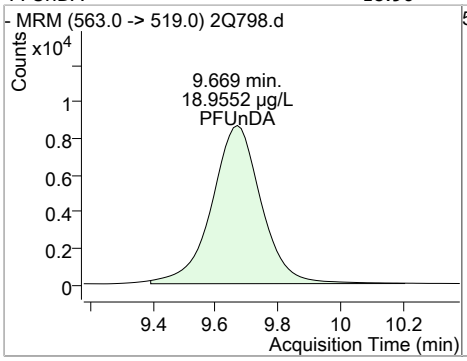
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.27	9.41	0.39	32312				

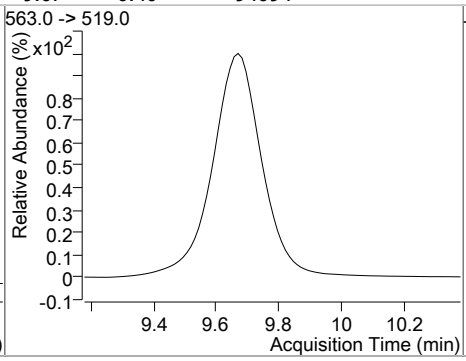


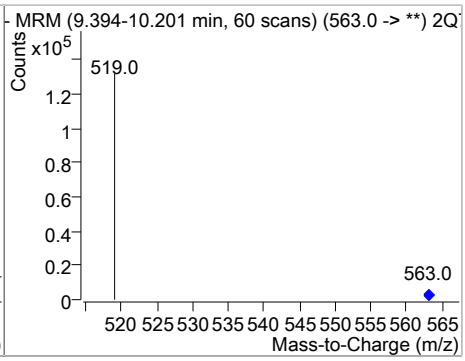
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

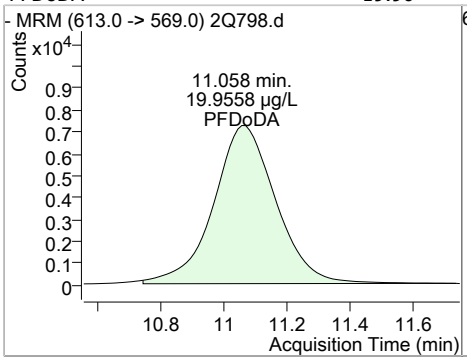
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.96	9.67	0.40	94694				

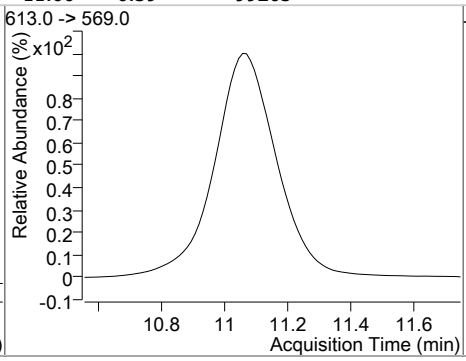


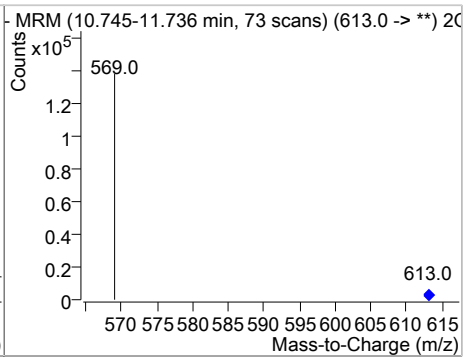




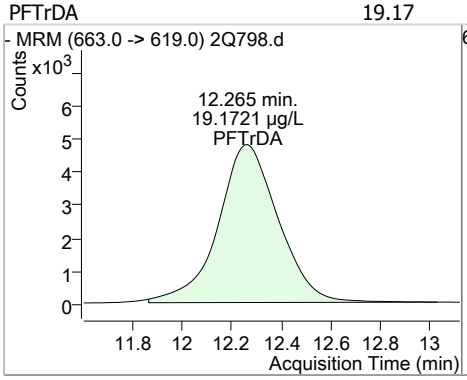
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.96	11.06	0.39	99265				

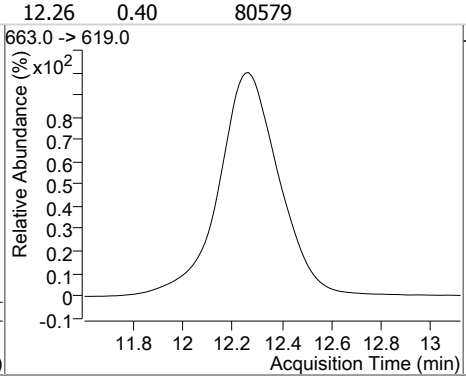


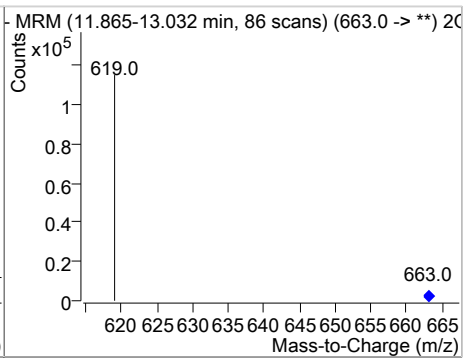




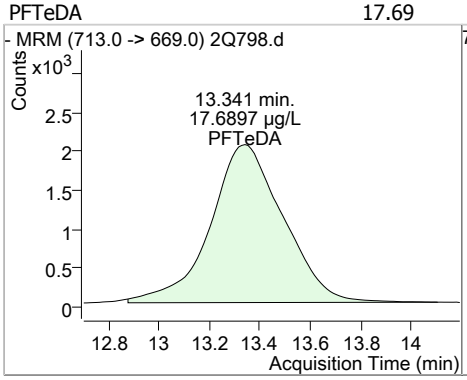
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.17	12.26	0.40	80579				

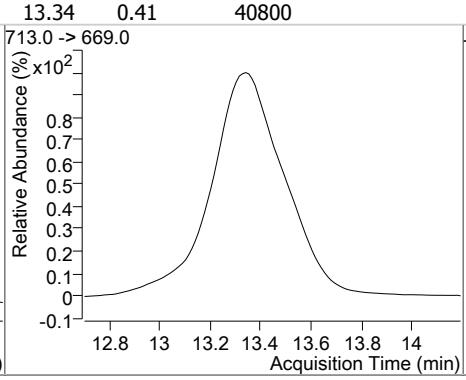


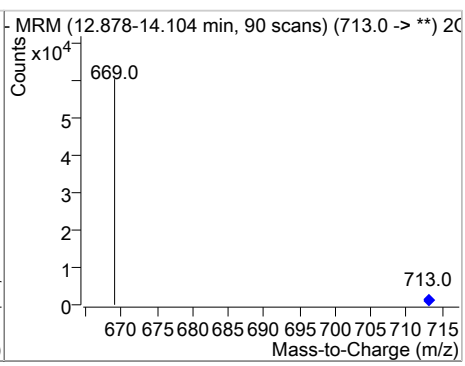




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.69	13.34	0.41	40800				







Manual Integration Approval Summary

Sample Number:	S2Q23-CC18	**Method:**	EPA 537
Lab FileID:	2Q798.D	**Analyst approved:**	04/27/17 14:42 Mike Eger
Injection Time:	04/27/17 09:06	**Supervisor approved:**	04/27/17 14:49 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		7.32	Split peak

Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

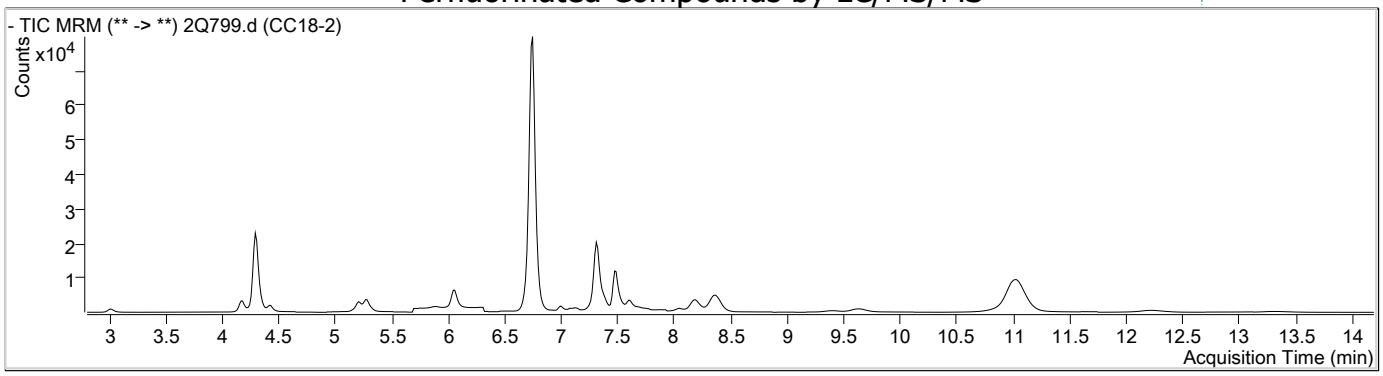
Data File	:	2Q799.d
Operator	:	NANCYF
Acq. Method	:	dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time	:	4/27/2017 9:42:30 AM
Sample Name	:	CC18-2
Vial	:	Vial 4
DA Method File	:	PFCLISTDW_0420_S2Q18.m
Batch Name	:	S2Q23.batch.bin
Last Calib Update	:	4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.748	429.0 -> 409.0	200415	20.00 µg/L	0.100
13C2-PFDoDA	11.026	615.0 -> 570.0	111498	20.00 µg/L	0.363
13C2-PFOA	6.739	415.0 -> 370.0	87133	20.00 µg/L	0.101
13C3-PFPeA	4.297	266.0 -> 222.0	73981	20.00 µg/L	0.063
13C4-PFOS	7.314	503.0 -> 80.0	67978	20.00 µg/L	0.115
d3-MeFOSAA	7.475	573.0 -> 419.0	41408	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	8.180	515.0 -> 470.0	12828	2.10 µg/L	0.211
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.5%	
13C2-PFHxA	5.285	315.0 -> 270.0	8989	1.95 µg/L	0.075
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 9.8%	
d5-EtFOSAA	7.597	589.0 -> 419.0	4913	5.18 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 25.9%	
Target Compounds					QValue
4:2FTS	5.207	327.0 -> 307.0	10381	2.05 µg/L	100
6:2FTS	6.749	427.0 -> 407.0	26264	2.71 µg/L	100
8:2FTS	8.364	527.0 -> 507.0	36625	2.28 µg/L	100
EtFOSAA	7.611	584.0 -> 419.0	4176	4.62 µg/L	100
FOSA	6.998	498.0 -> 78.0	3860	1.73 µg/L	100
MeFOSAA	7.488	570.0 -> 419.0	4534	4.22 µg/L	100
PFBA	3.015	213.0 -> 169.0	3658	1.60 µg/L	100
PFBS	4.416	299.0 -> 80.0	4246	1.57 µg/L	89
PFDA	8.183	513.0 -> 469.0	9087	2.11 µg/L	100
PFDoDA	11.020	613.0 -> 569.0	10250	2.19 µg/L	100
PFDS	9.387	599.0 -> 80.0	3465	2.01 µg/L	100
PFHpA	6.061	363.0 -> 319.0	12451	2.11 µg/L	92
PFHpS	6.696	449.0 -> 80.0	5601	1.95 µg/L	100
PFHxA	5.275	313.0 -> 269.0	4329	2.21 µg/L	85
PFHxS	6.043	399.0 -> 80.0	4873	1.72 µg/L	98
PFNA	7.382	463.0 -> 419.0	9421	2.42 µg/L	98
PFNS	8.052	549.0 -> 99.0	3501	2.04 µg/L	100
PFOA	6.740	413.0 -> 369.0	8022	2.22 µg/L	97
PFOS	7.315	499.0 -> 80.0	5967	1.52 µg/L	100
PFPeA	4.300	263.0 -> 219.0	11058	1.97 µg/L	100
PFPeS	5.317	349.0 -> 99.0	1705	2.42 µg/L	100
PFTeDA	13.303	713.0 -> 669.0	4411	2.04 µg/L	100
PFTrDA	12.215	663.0 -> 619.0	8500	2.17 µg/L	100
PFUnDA	9.644	563.0 -> 519.0	10122	2.07 µg/L	100

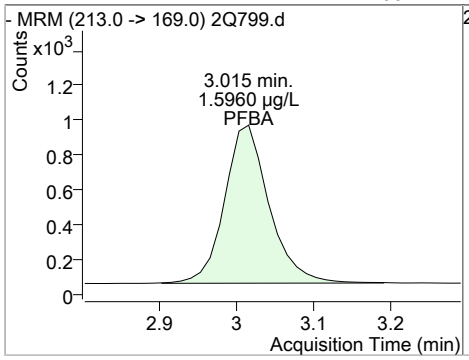
 # = Qualifier out of range, m = manually integrated, + = Area summed

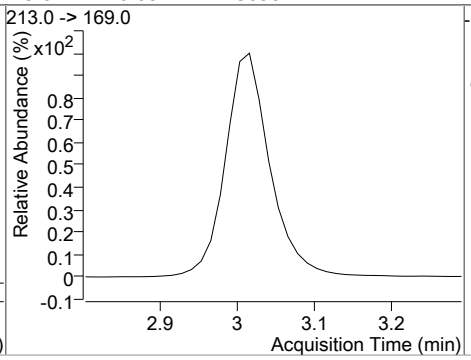
Perfluorinated Compounds by LC/MS/MS

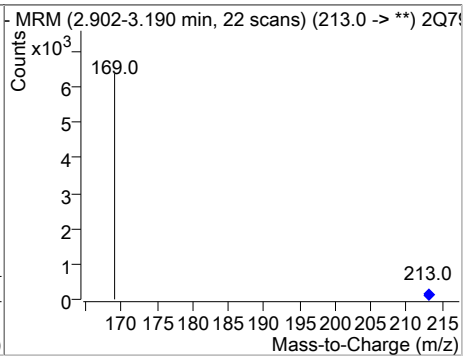
Agilent Technologies



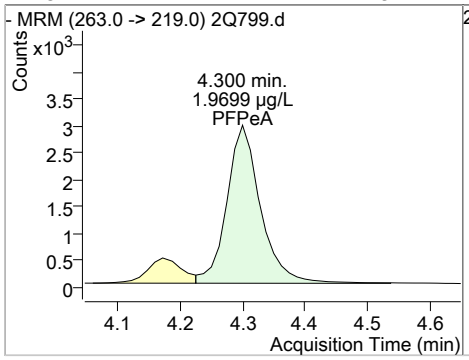
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.60	3.01	0.08	3658				

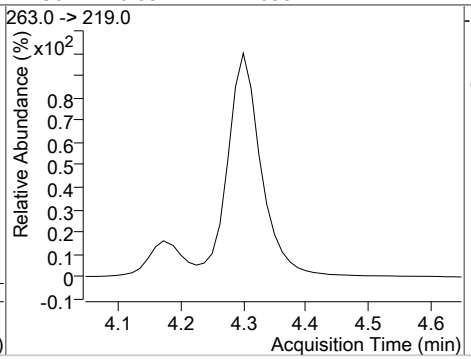


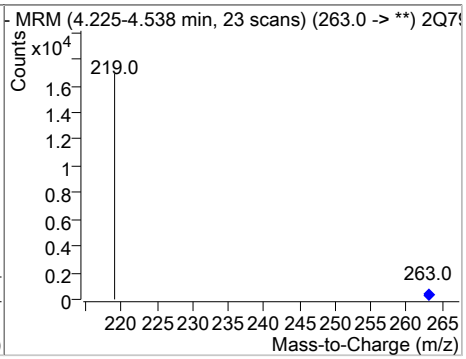




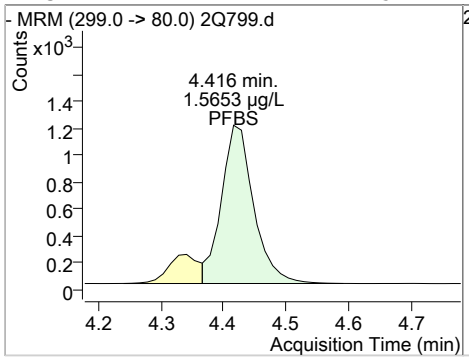
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.97	4.30	0.08	11058				

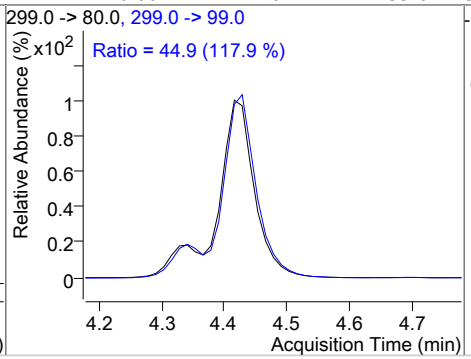


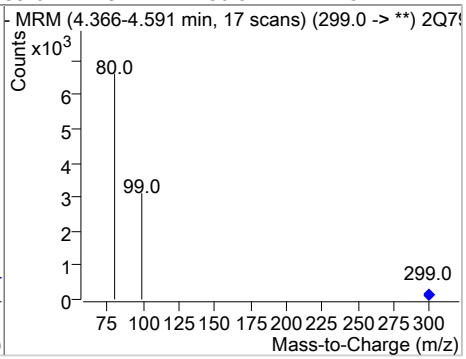




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.57	4.42	0.06	4246	299.0 -> 99.0	44.9	30.5	45.7



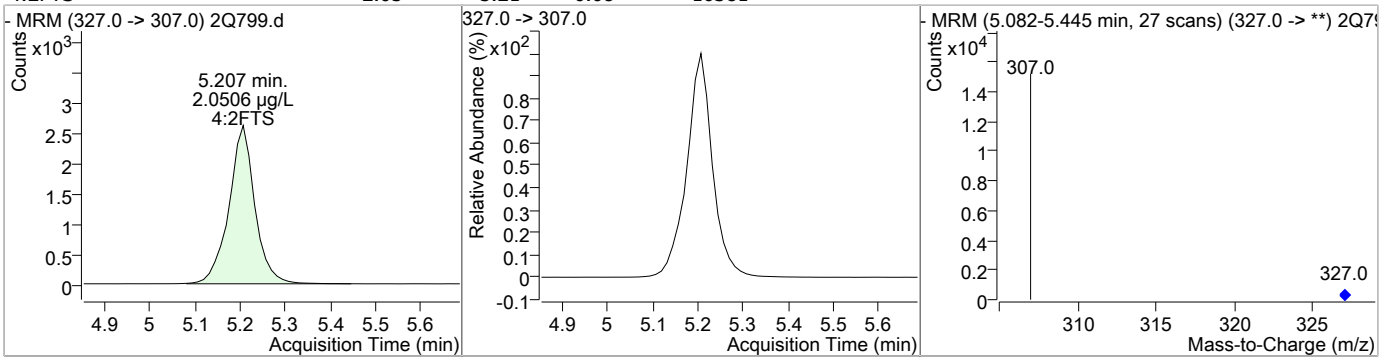




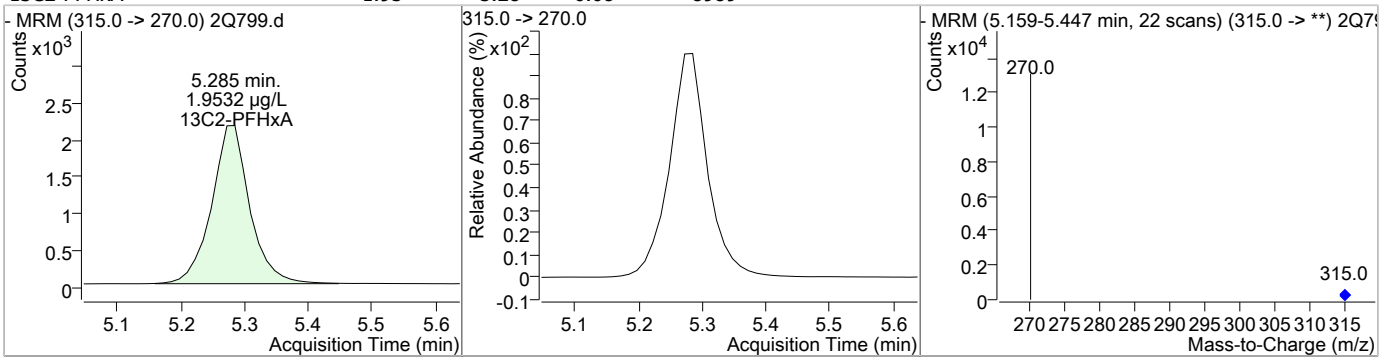
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

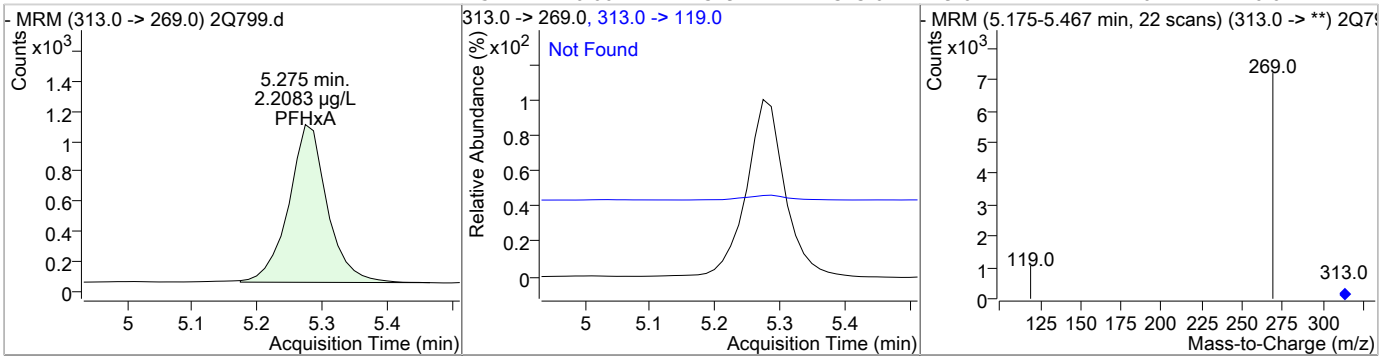
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.05	5.21	0.08	10381				



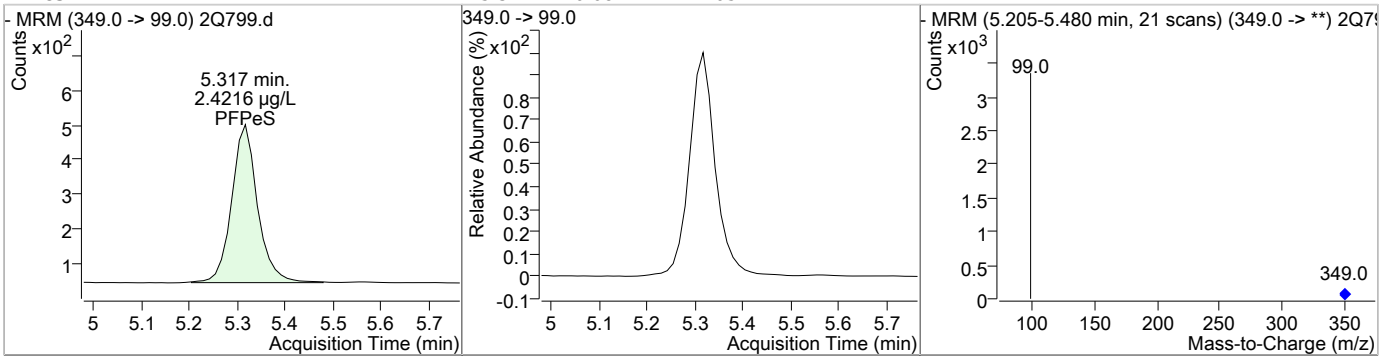
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	1.95	5.28	0.08	8989				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.21	5.27	0.06	4329	313.0 -> 119.0		4.0	6.0



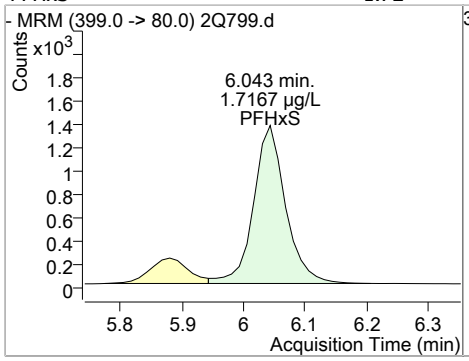
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.42	5.32	0.08	1705				

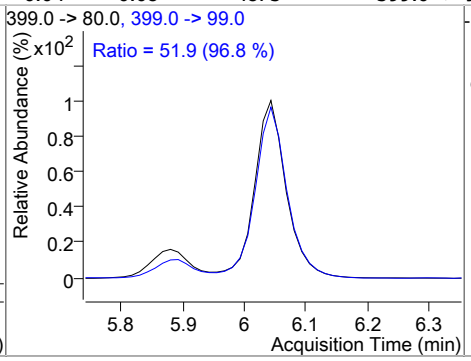


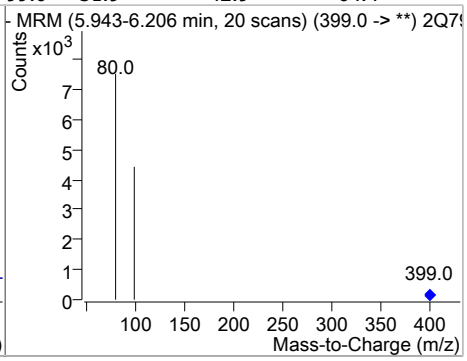
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

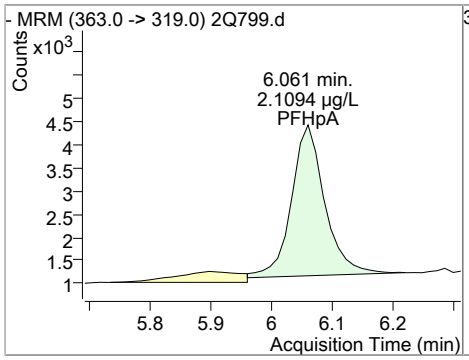
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.72	6.04	0.08	4873	399.0 -> 99.0	51.9	42.9	64.4

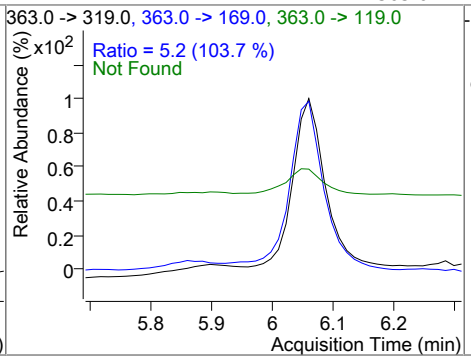


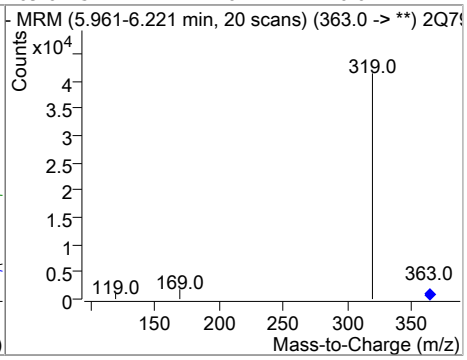




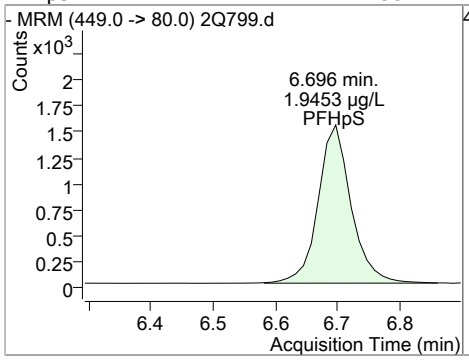
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.11	6.06	0.08	12451	363.0 -> 119.0		4.0	6.0
					363.0 -> 169.0	5.2	4.0	6.0

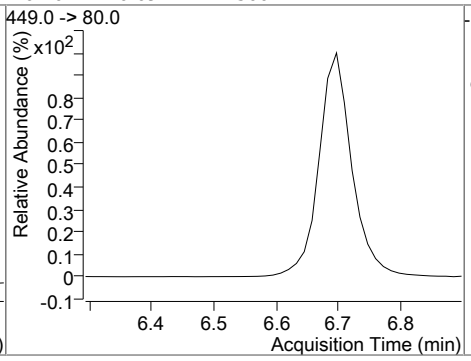


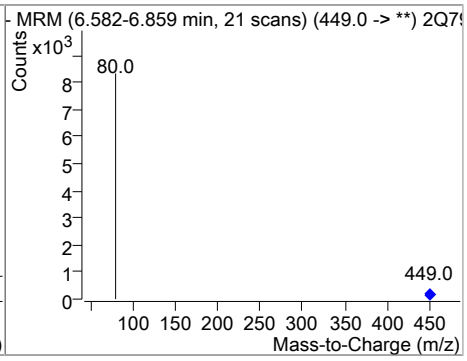




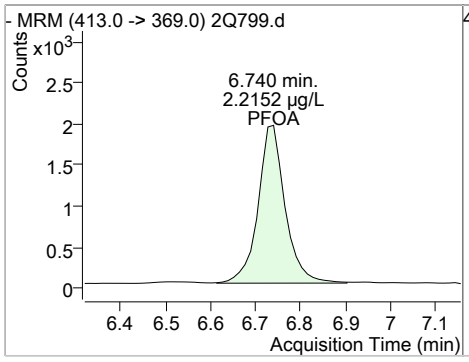
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.95	6.70	0.09	5601				

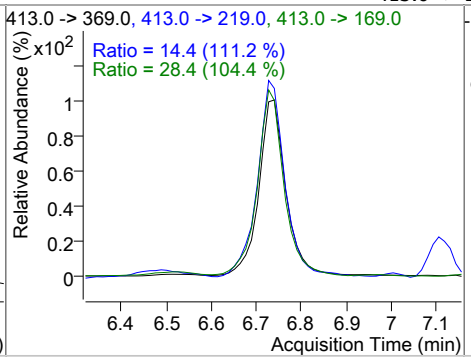


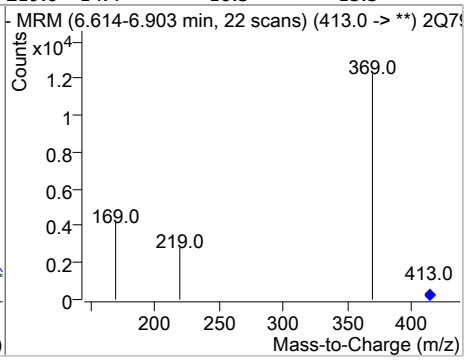




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.22	6.74	0.10	8022	413.0 -> 169.0	28.4	21.8	32.6
					413.0 -> 219.0	14.4	10.3	15.5







Perfluorinated Compounds by LC/MS/MS

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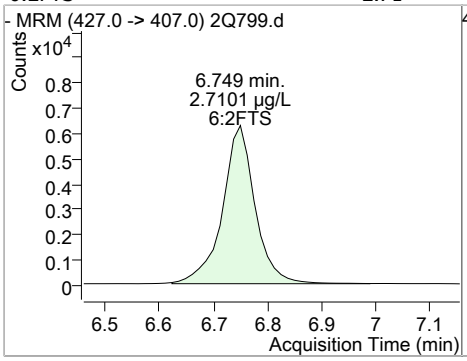
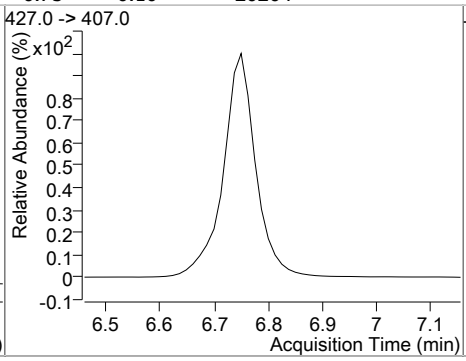
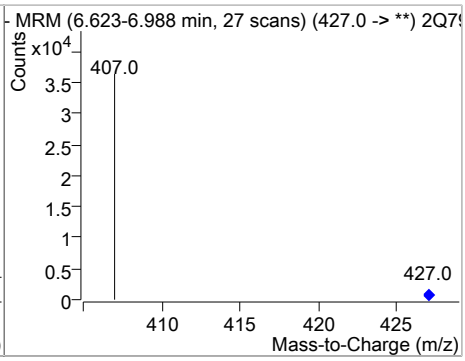
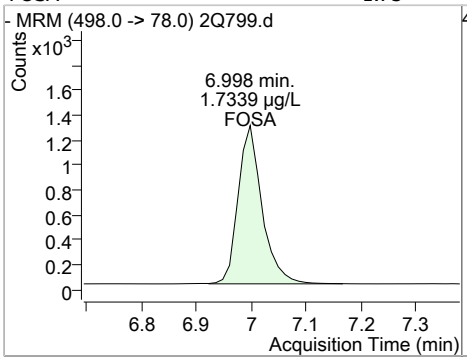
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.71	6.75	0.10	26264				

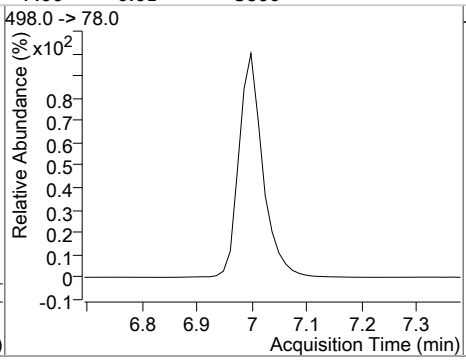


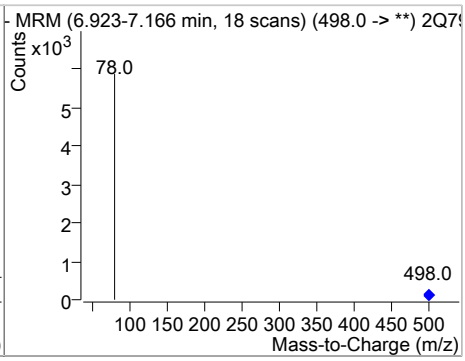




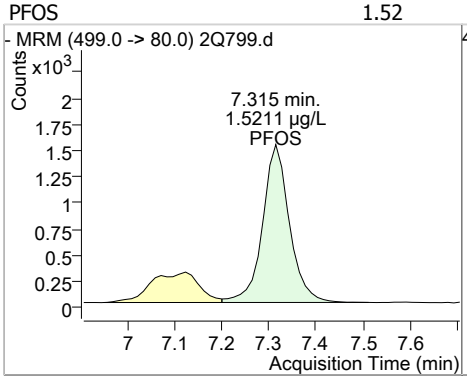
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.73	7.00	0.01	3860				

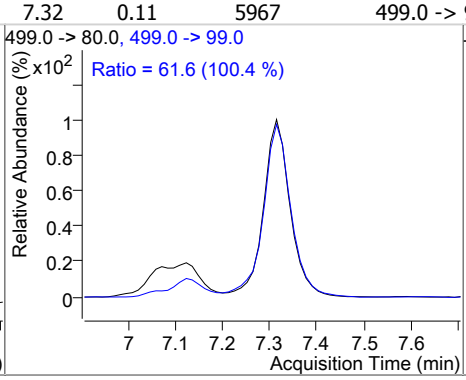


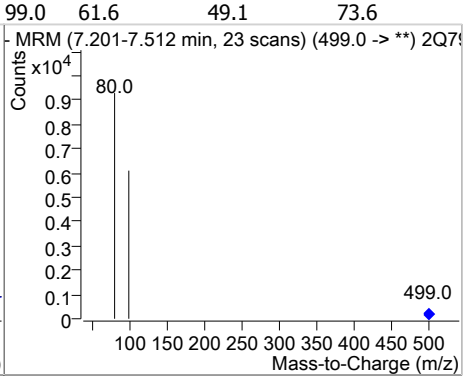




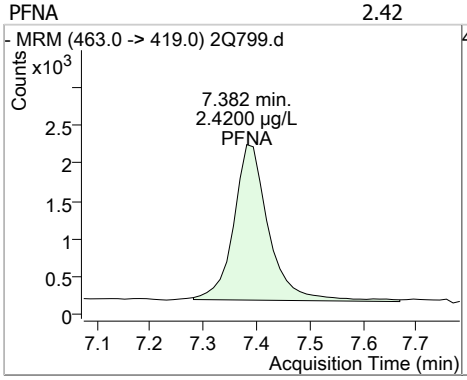
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.52	7.32	0.11	5967	499.0 -> 99.0	61.6	49.1	73.6

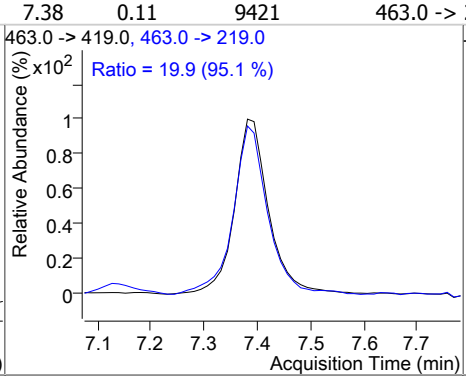


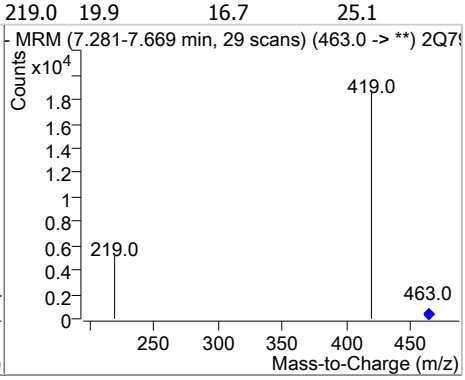




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.42	7.38	0.11	9421	463.0 -> 219.0	19.9	16.7	25.1







Perfluorinated Compounds by LC/MS/MS

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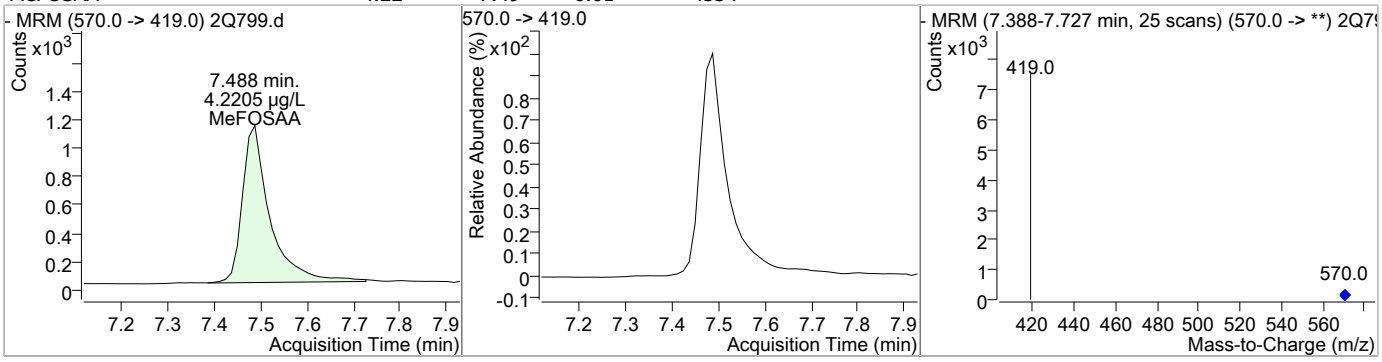
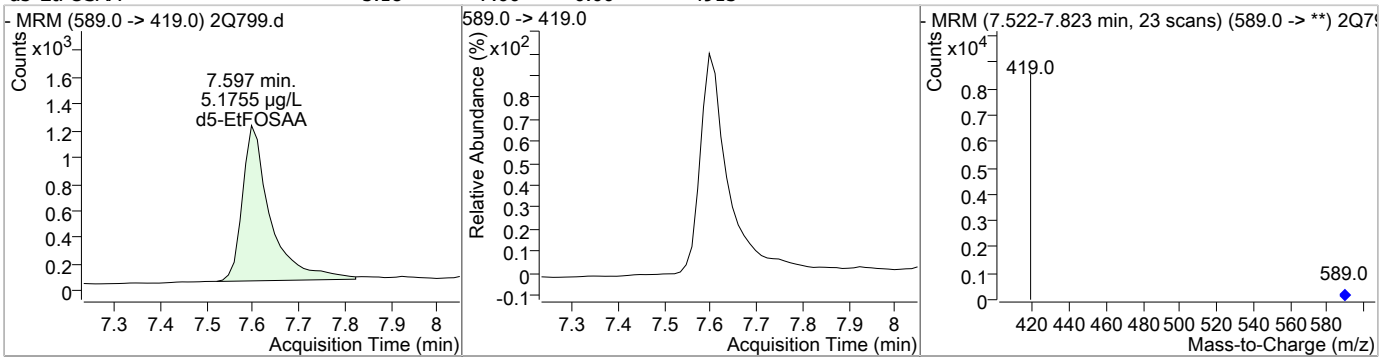
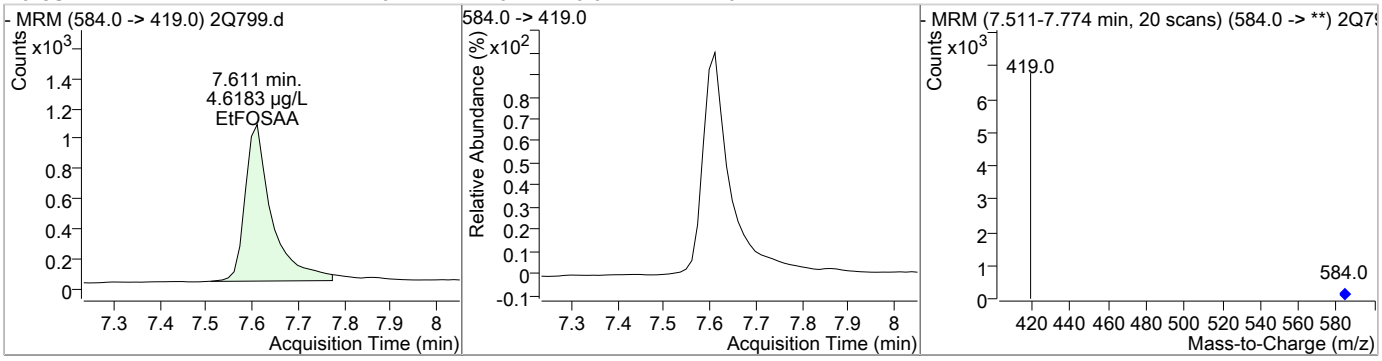
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.22	7.49	0.01	4534				



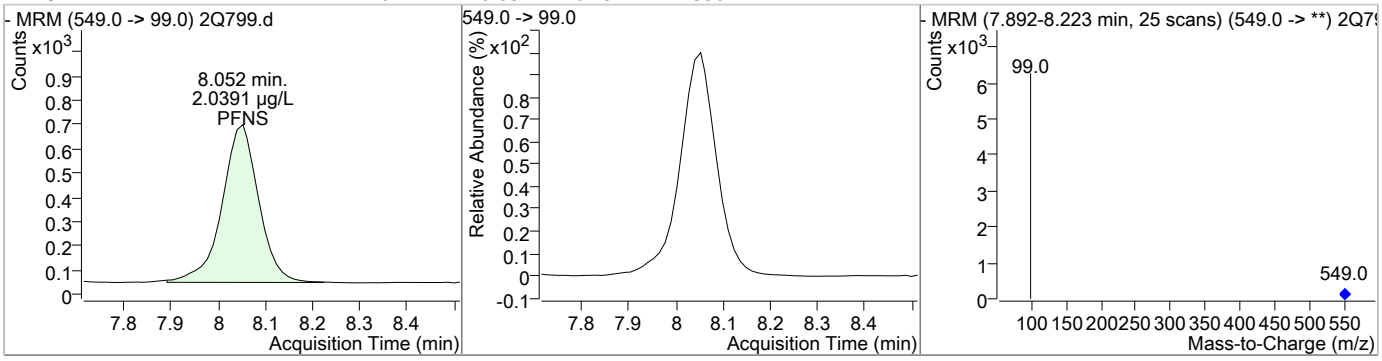
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.18	7.60	0.00	4913				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.62	7.61	0.01	4176				



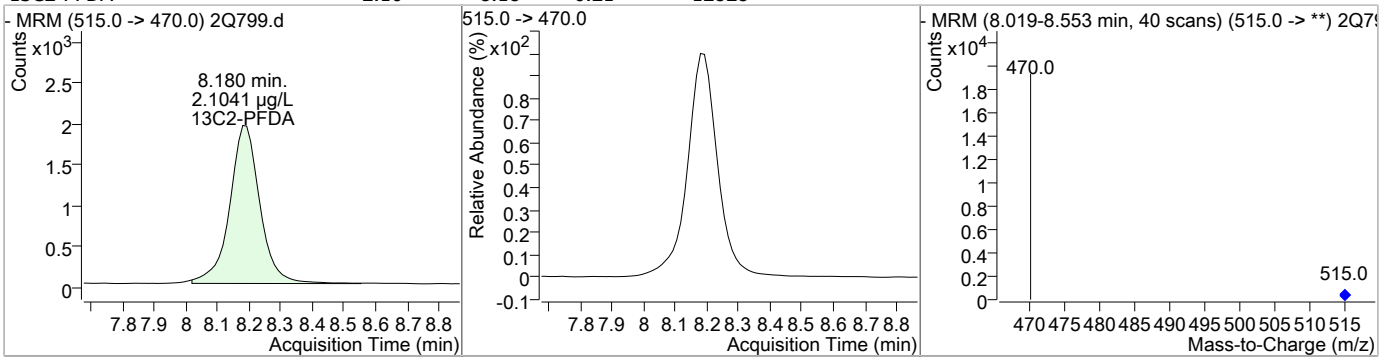
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.04	8.05	0.19	3501				



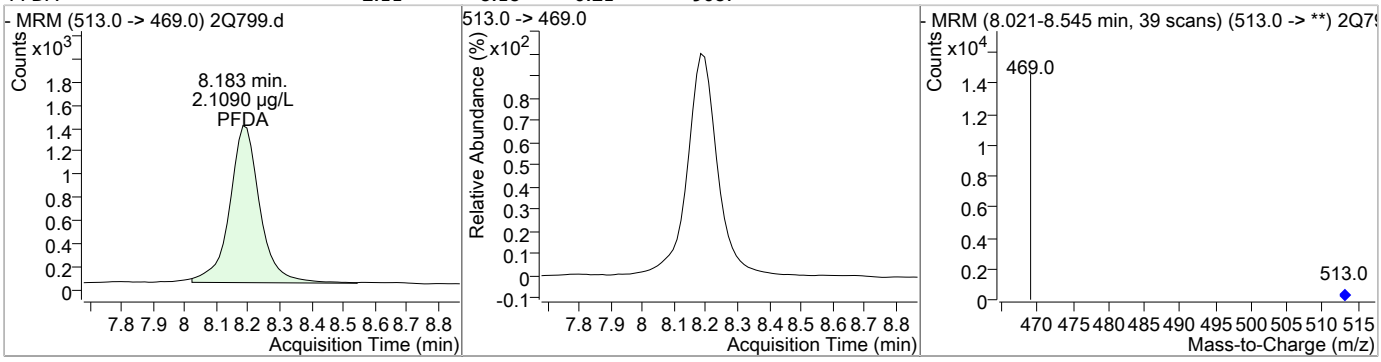
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

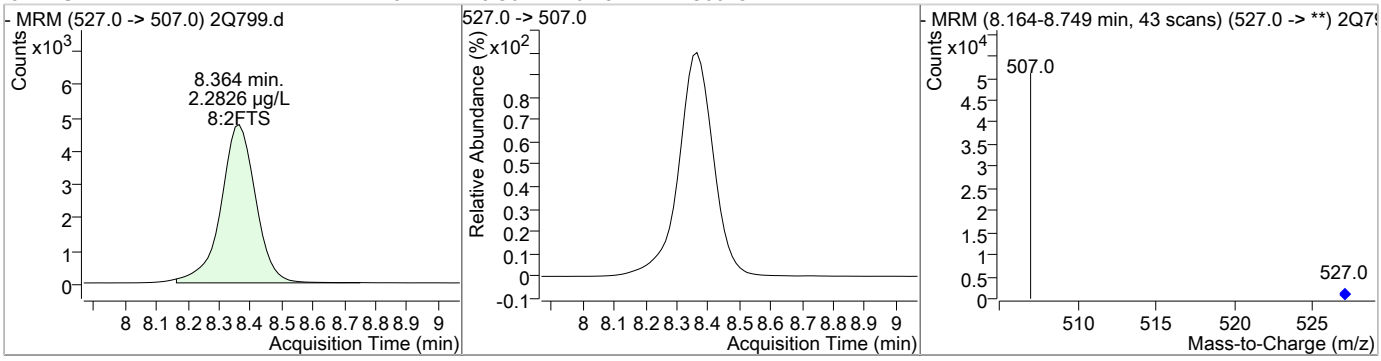
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	2.10	8.18	0.21	12828				



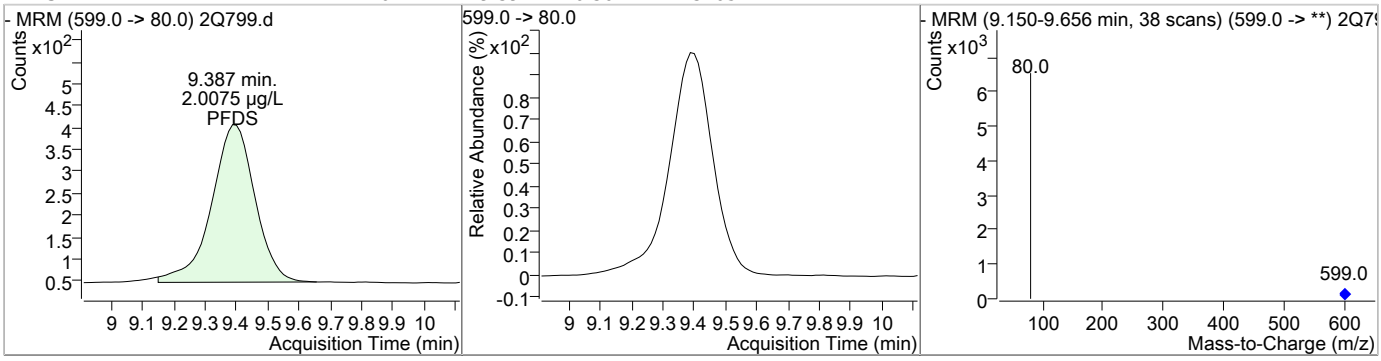
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.11	8.18	0.21	9087				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.28	8.36	0.28	36625				



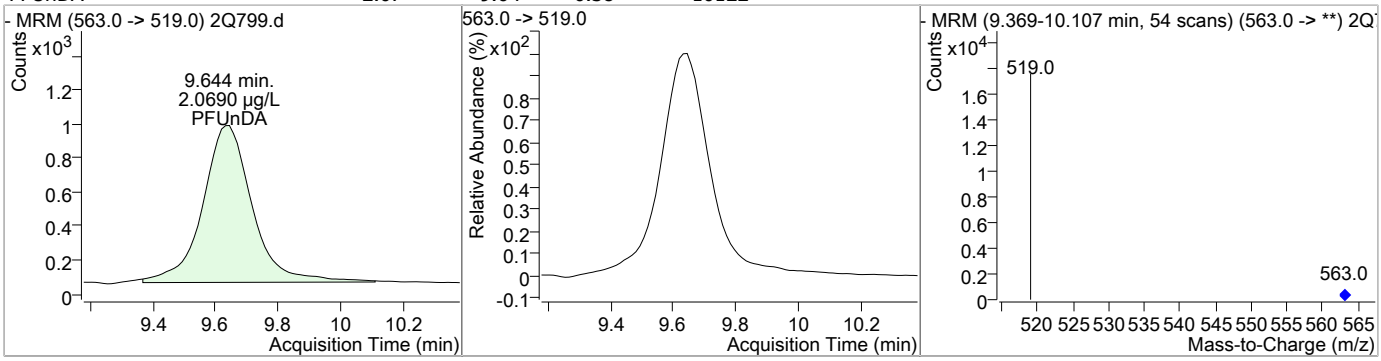
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.01	9.39	0.36	3465				



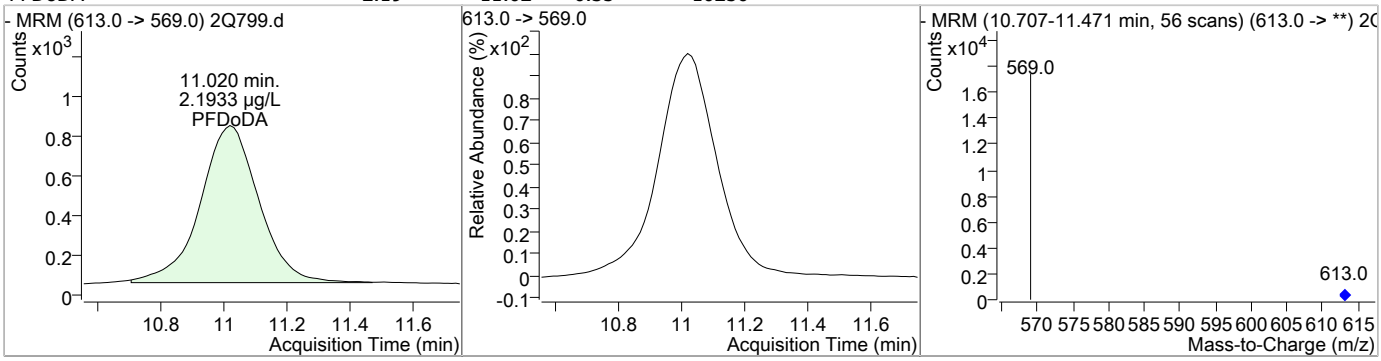
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

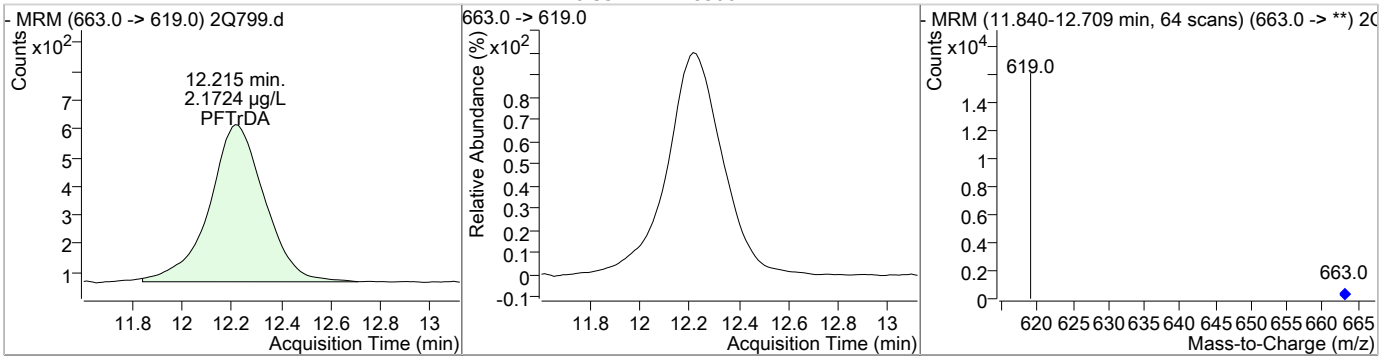
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.07	9.64	0.38	10122				



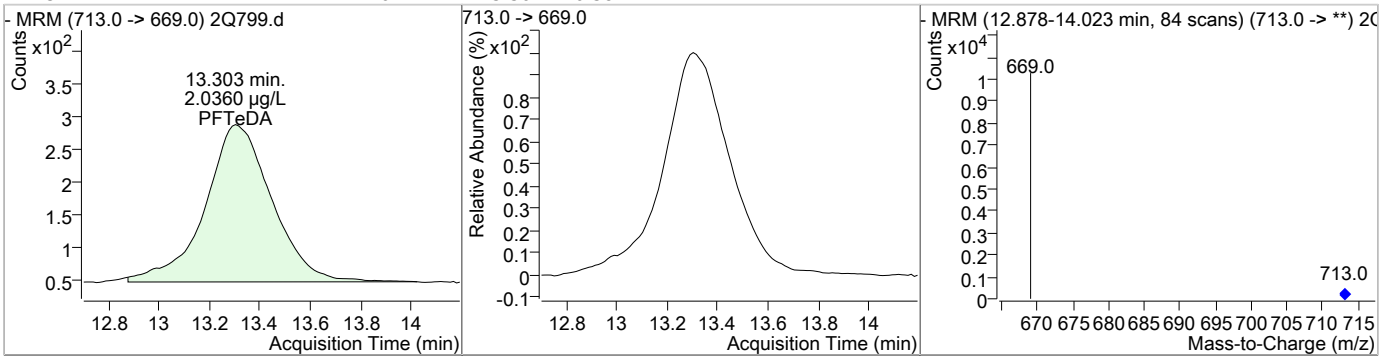
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.19	11.02	0.35	10250				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.17	12.21	0.35	8500				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.04	13.30	0.38	4411				



Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
04/27/17 14:49

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q810.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/27/2017 1:28:19 PM
Sample Name : ECC18-20
Vial : Vial 2
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : S2Q23.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Internal Standards						
13C2-6:2FTS	6.698	429.0 -> 409.0	208692	20.00 µg/L		0.050
13C2-PFDoDA	10.914	615.0 -> 570.0	120735	20.00 µg/L		0.250
13C2-PFOA	6.687	415.0 -> 370.0	92398	20.00 µg/L		0.050
13C3-PFPeA	4.247	266.0 -> 222.0	88498	20.00 µg/L		0.012
13C4-PFOS	7.264	503.0 -> 80.0	67608	20.00 µg/L		0.064
d3-MeFOSAA	7.462	573.0 -> 419.0	40389	20.00 µg/L		-0.012
System Monitoring Compounds						
13C2-PFDA	8.080	515.0 -> 470.0	127024	19.65 µg/L		0.110
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 98.2%		
13C2-PFHxA	5.235	315.0 -> 270.0	88569	18.15 µg/L		0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 90.7%		
d5-EtFOSAA	7.585	589.0 -> 419.0	24546	24.21 µg/L		-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 121.1%		
Target Compounds						QValue
4:2FTS	5.157	327.0 -> 307.0	103025	19.54 µg/L		100
6:2FTS	6.699	427.0 -> 407.0	197638	19.58 µg/L		100
8:2FTS	8.227	527.0 -> 507.0	335426	20.08 µg/L		100
EtFOSAA	7.586	584.0 -> 419.0	18139	19.69 µg/L		100
FOSA	6.973	498.0 -> 78.0	39088	18.00 µg/L		100
MeFOSAA	7.463	570.0 -> 419.0	22920	20.25 µg/L		100
PFBA	2.952	213.0 -> 169.0	39102	16.09 µg/L		100
PFBS	4.366	299.0 -> 80.0	46827	17.36 µg/L		100
PFDA	8.083	513.0 -> 469.0	86075	18.84 µg/L		100
PFDoDA	10.920	613.0 -> 569.0	101995	19.36 µg/L		100
PFDS	9.262	599.0 -> 80.0	33663	18.74 µg/L		100
PFHpA	6.011	363.0 -> 319.0	121527	18.95 µg/L	#	93
PFHpS	6.645	449.0 -> 80.0	53621	18.73 µg/L		100
PFHxA	5.225	313.0 -> 269.0	41427	19.17 µg/L		85
PFHxS	5.993	399.0 -> 80.0	52133	18.46 µg/L	m	93
PFNA	7.331	463.0 -> 419.0	77719	18.83 µg/L		98
PFNS	7.952	549.0 -> 99.0	31336	18.35 µg/L		100
PFOA	6.677	413.0 -> 369.0	73401	19.11 µg/L		99
PFOS	7.252	499.0 -> 80.0	70052	17.95 µg/L	m	87
PFPeA	4.238	263.0 -> 219.0	123056	18.33 µg/L		100
PFPeS	5.267	349.0 -> 99.0	15767	18.72 µg/L		100
PFTeDA	13.203	713.0 -> 669.0	42433	17.36 µg/L		100
PFTrDA	12.127	663.0 -> 619.0	85717	19.23 µg/L		100
PFUnDA	9.506	563.0 -> 519.0	96717	18.26 µg/L		100

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

Perfluorinated Compounds by LC/MS/MS

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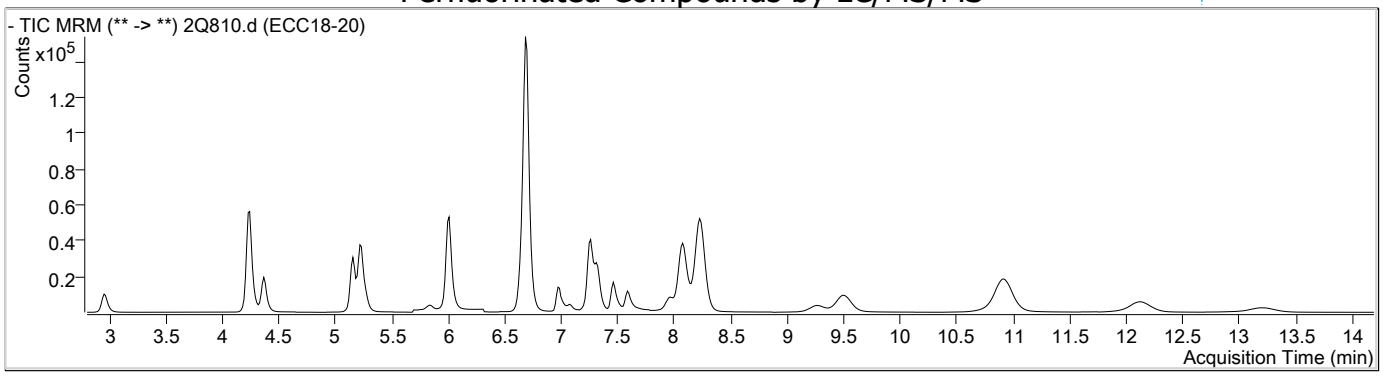
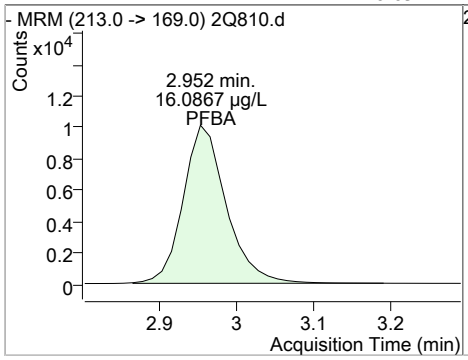
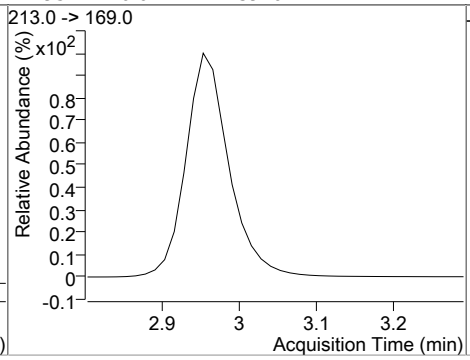
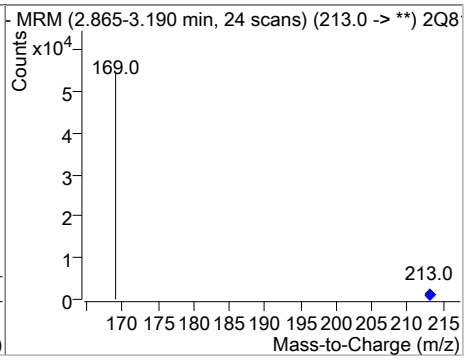


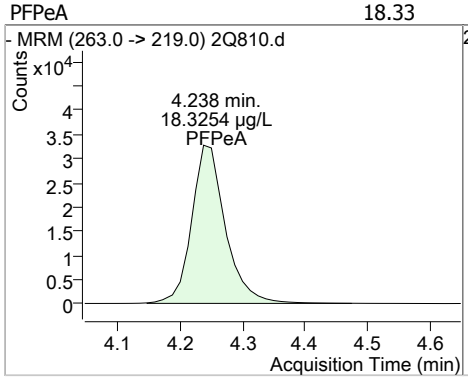
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	16.09	2.95	0.01	39102				

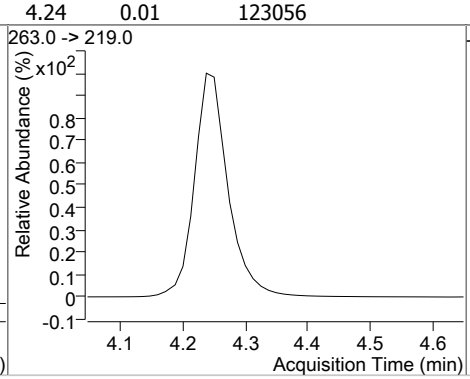


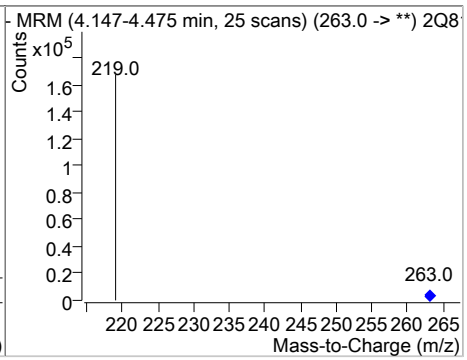




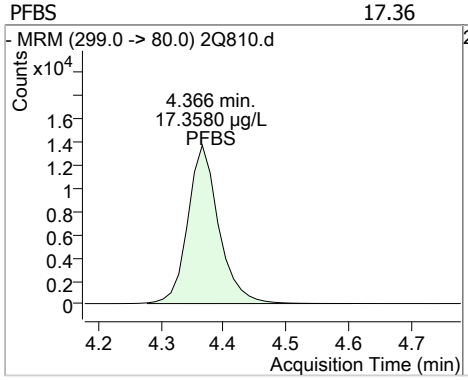
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.33	4.24	0.01	123056				

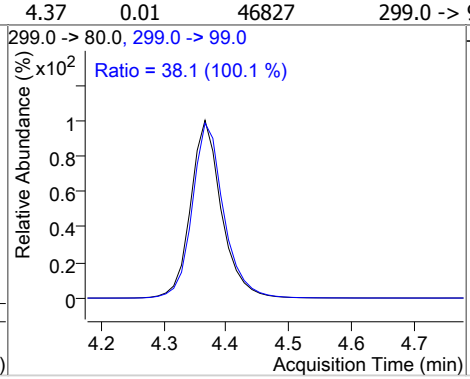


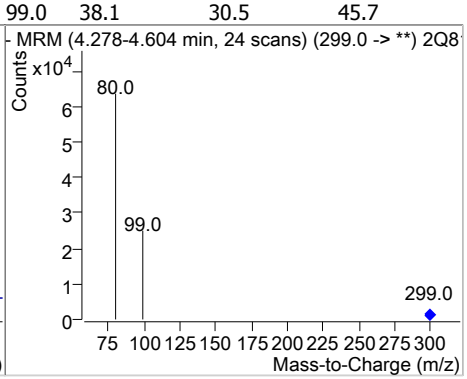




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	17.36	4.37	0.01	46827	299.0 -> 99.0	38.1	30.5	45.7







Perfluorinated Compounds by LC/MS/MS

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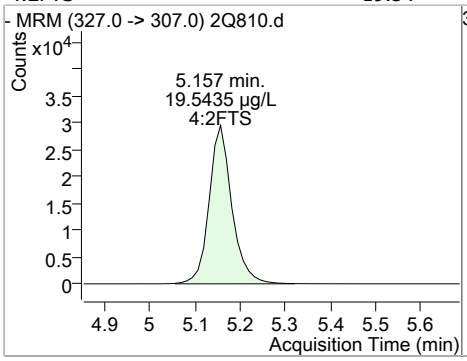
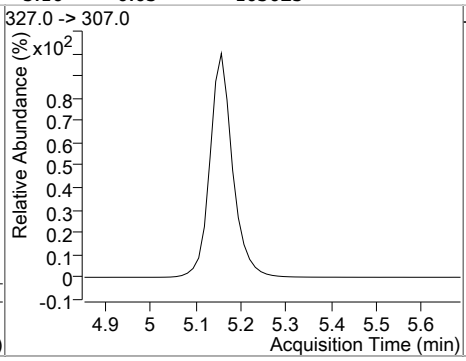
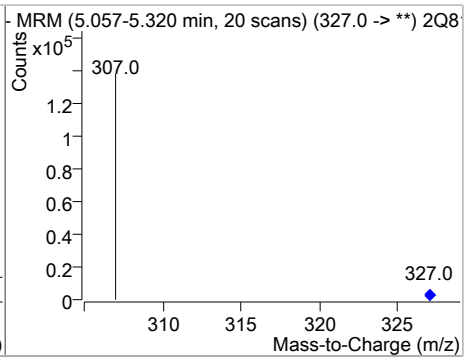
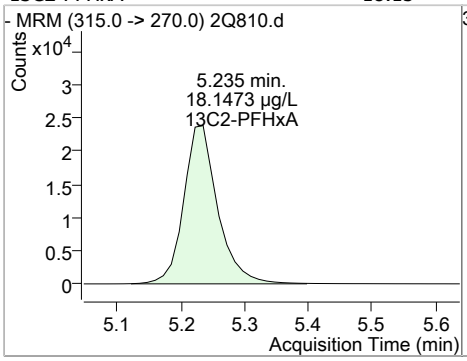
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.54	5.16	0.03	103025				

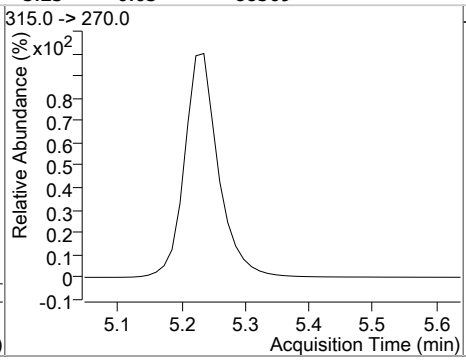


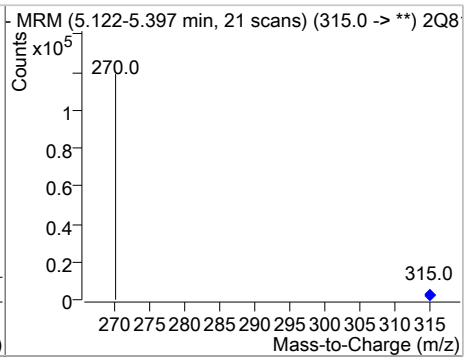




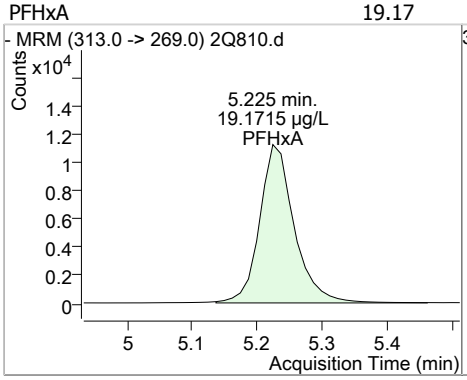
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	18.15	5.23	0.03	88569				

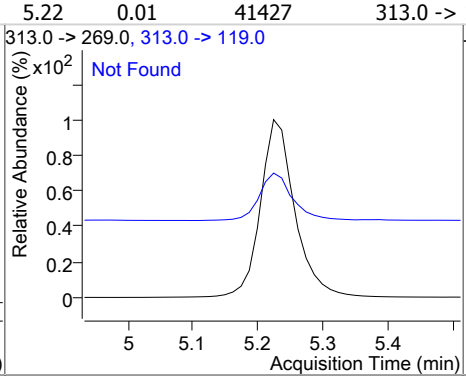


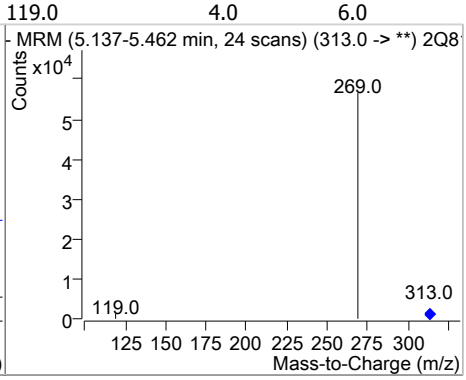




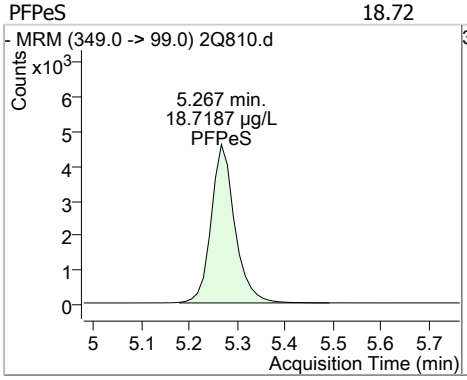
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.17	5.22	0.01	41427	313.0 -> 119.0		4.0	6.0

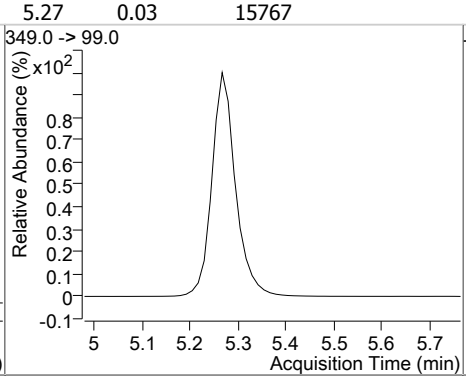


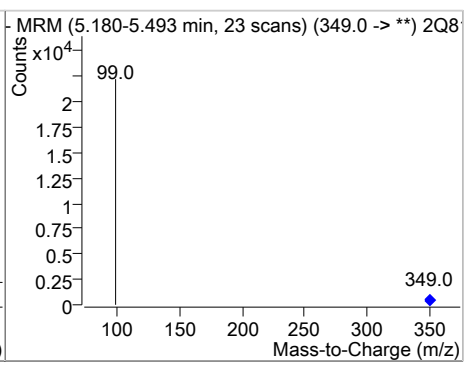




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.72	5.27	0.03	15767				



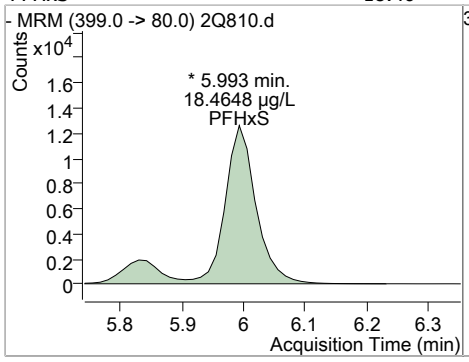


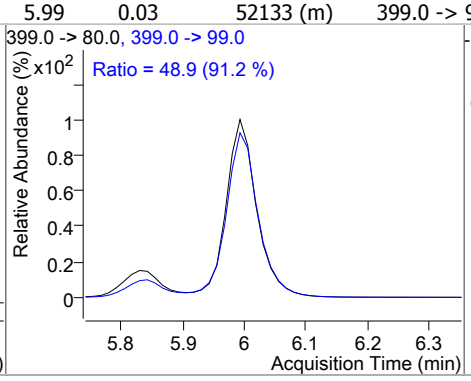


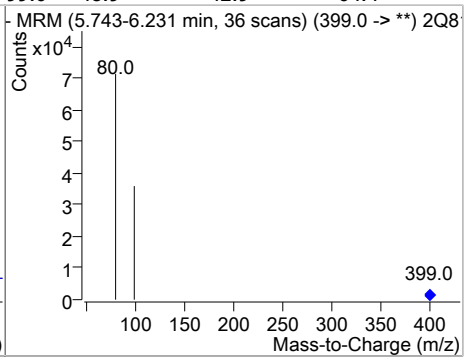
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

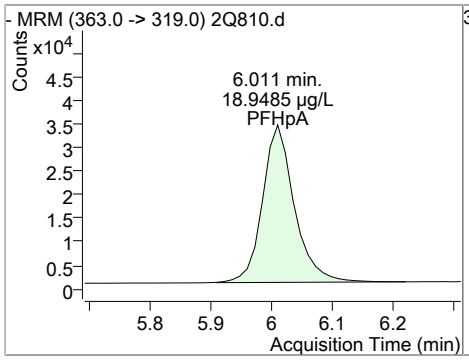
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.46	5.99	0.03	52133 (m)	399.0 -> 99.0	48.9	42.9	64.4

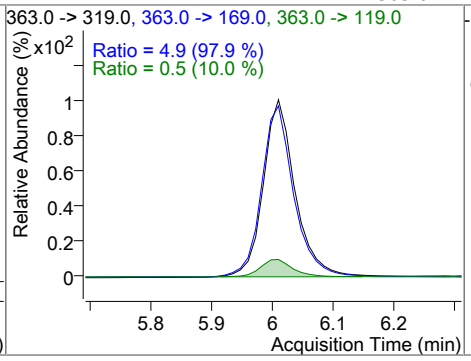


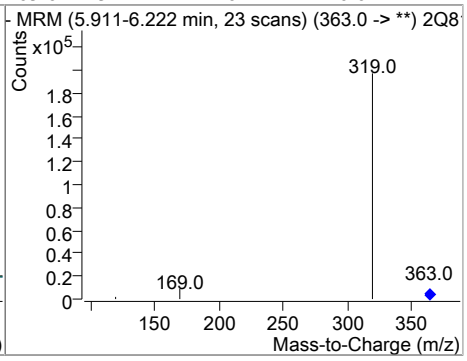




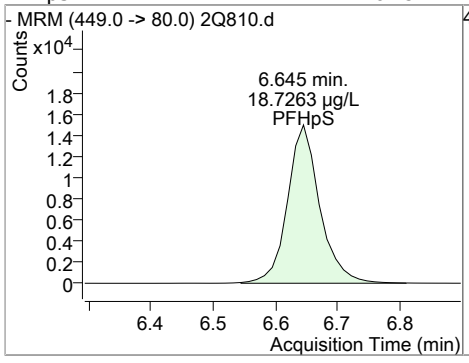
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.95	6.01	0.03	121527	363.0 -> 119.0	0.5	4.0	6.0
					363.0 -> 169.0	4.9	4.0	6.0

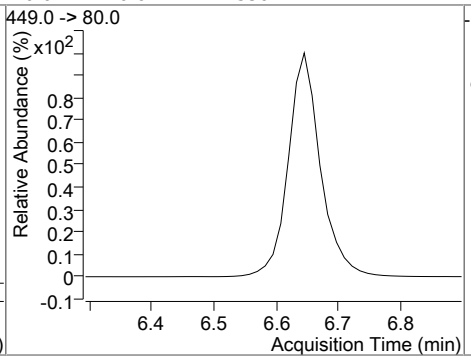


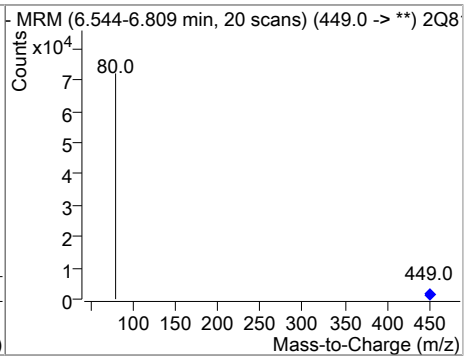




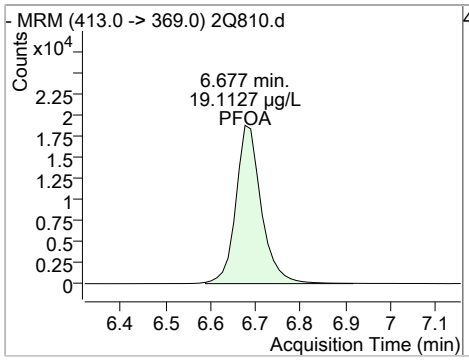
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.73	6.64	0.04	53621				

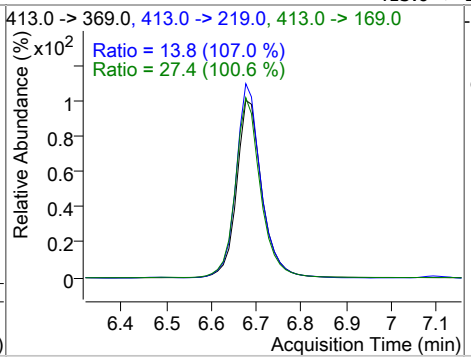


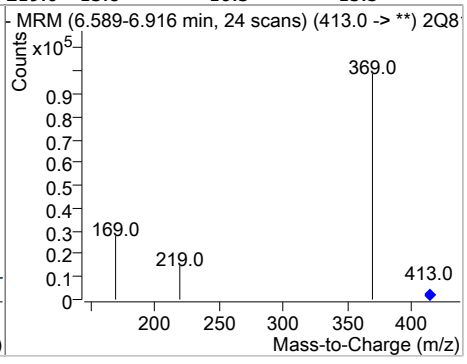




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.11	6.68	0.04	73401	413.0 -> 169.0	27.4	21.8	32.6
					413.0 -> 219.0	13.8	10.3	15.5



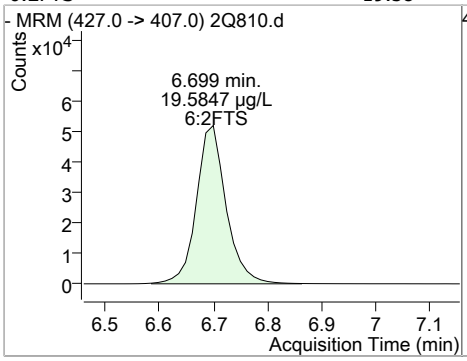


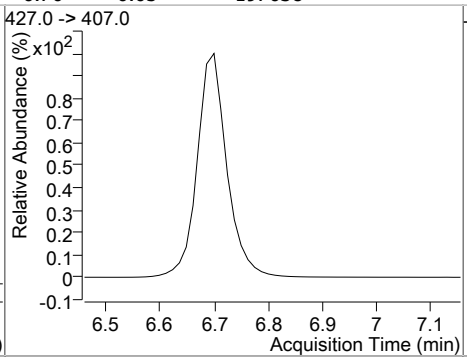


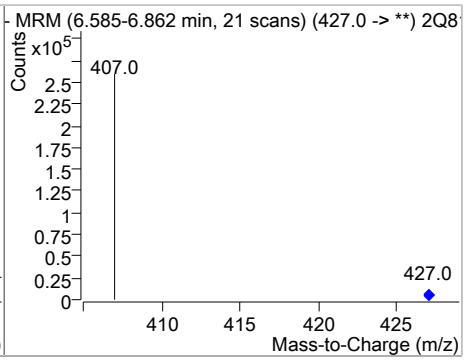
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

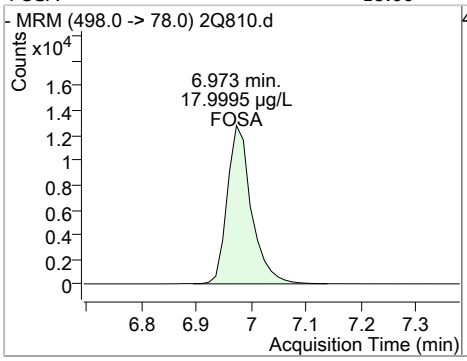
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.58	6.70	0.05	197638				

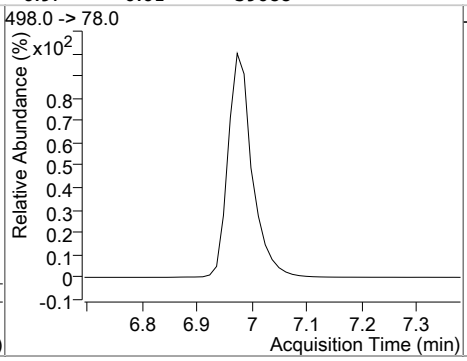


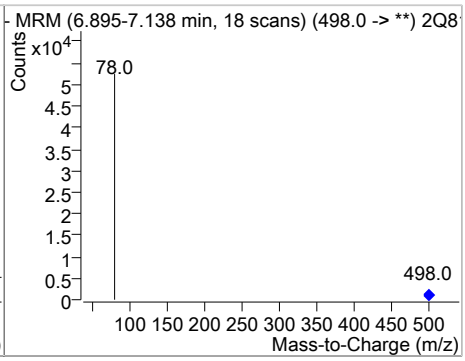




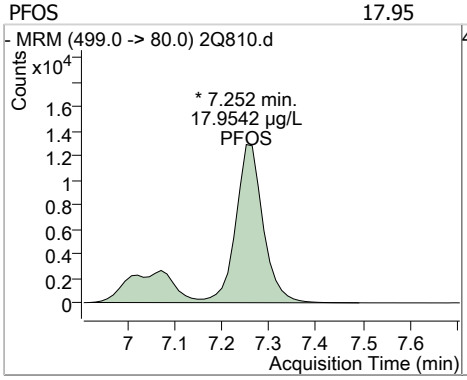
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.00	6.97	-0.01	39088				

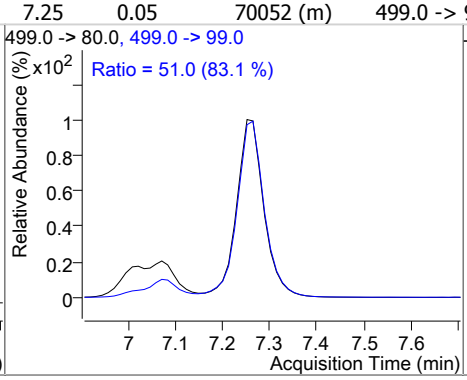


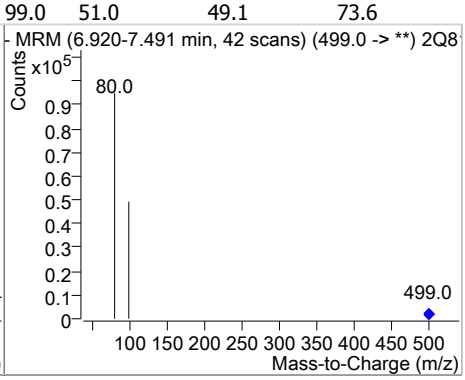




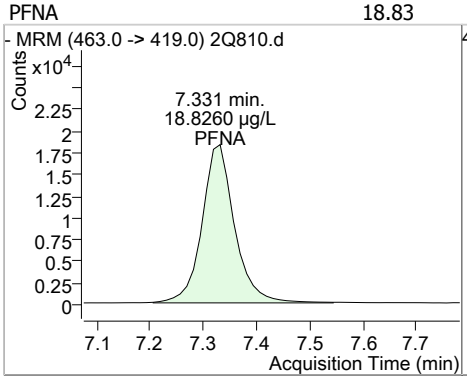
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.95	7.25	0.05	70052 (m)	499.0 -> 99.0	51.0	49.1	73.6

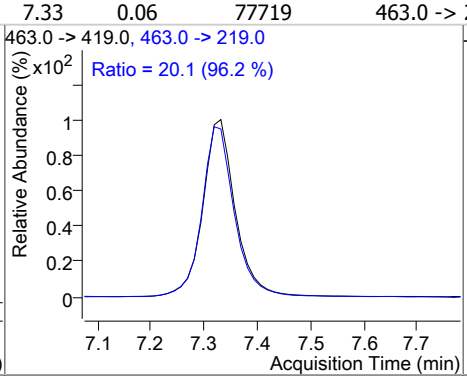


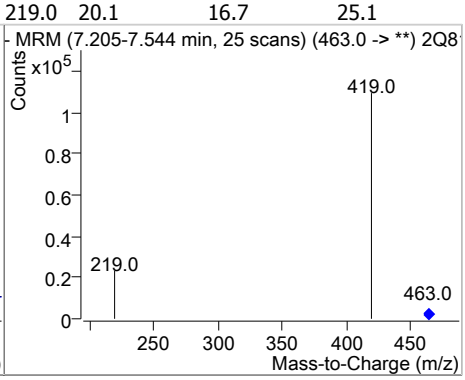




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.83	7.33	0.06	77719	463.0 -> 219.0	20.1	16.7	25.1







Perfluorinated Compounds by LC/MS/MS

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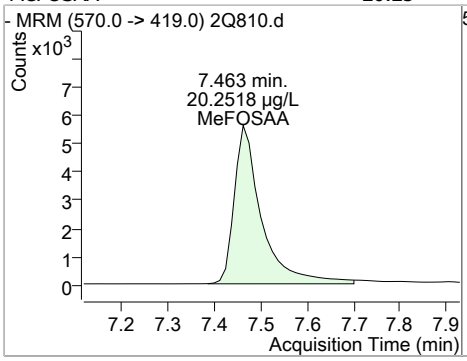
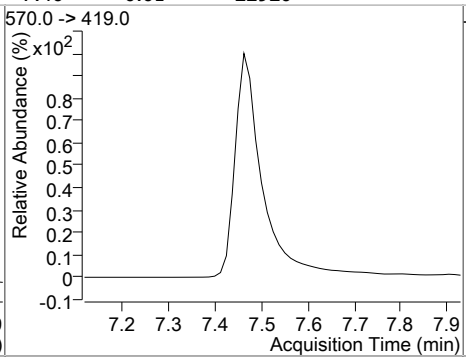
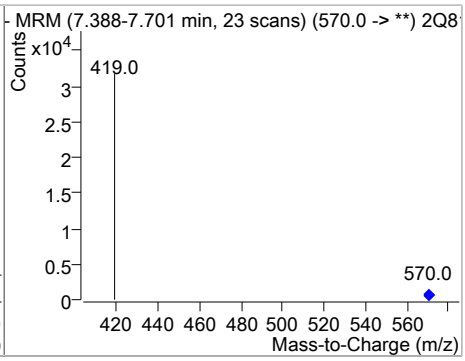
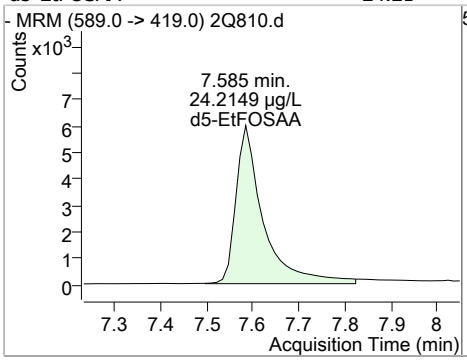
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.25	7.46	-0.01	22920				

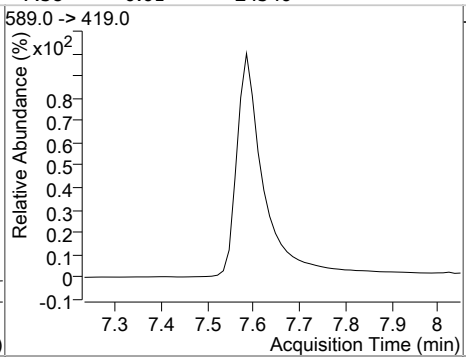


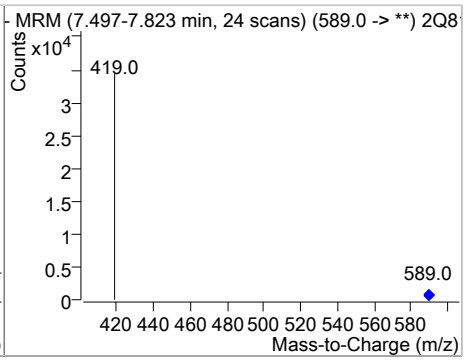




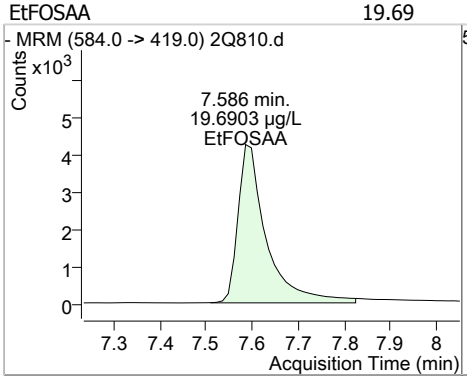
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	24.21	7.58	-0.01	24546				

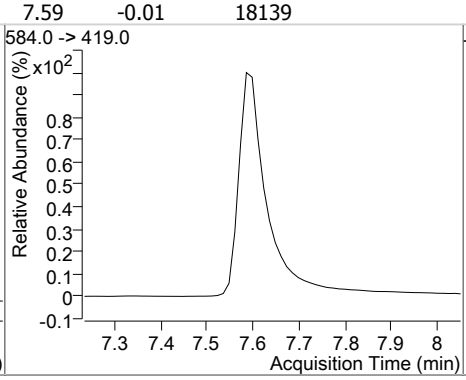


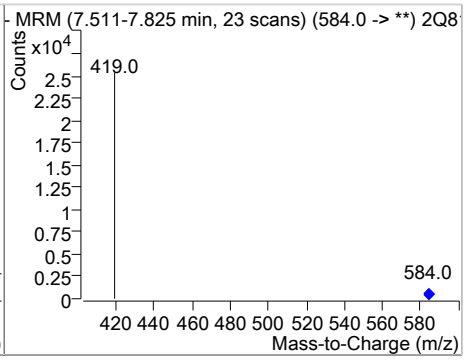




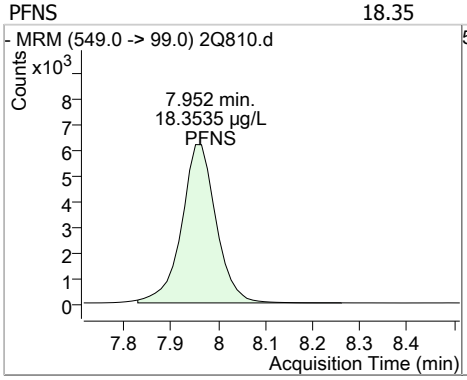
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.69	7.59	-0.01	18139				

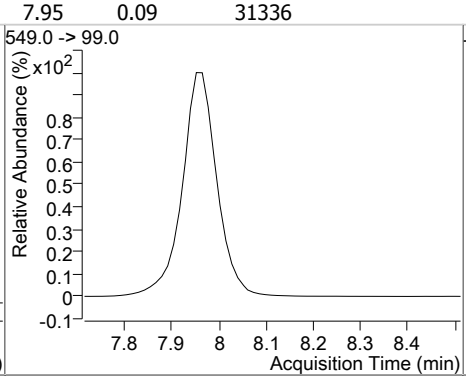


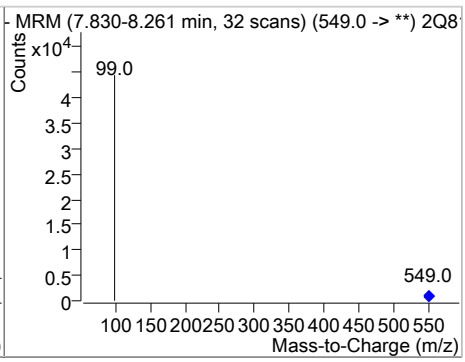




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.35	7.95	0.09	31336				







Perfluorinated Compounds by LC/MS/MS

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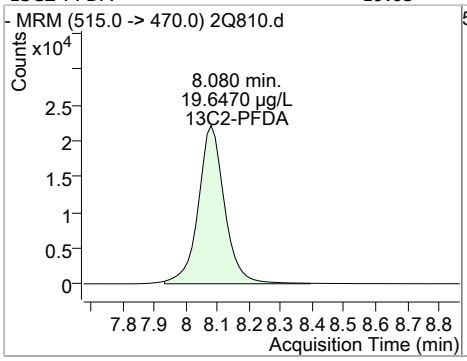
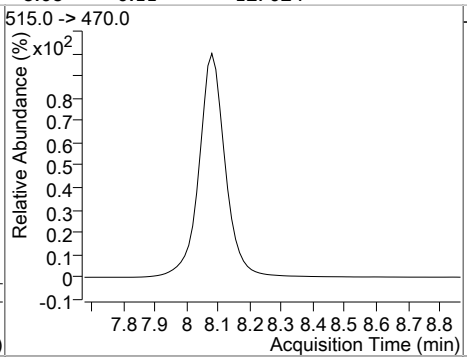
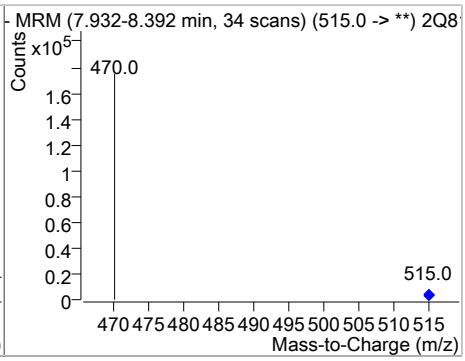
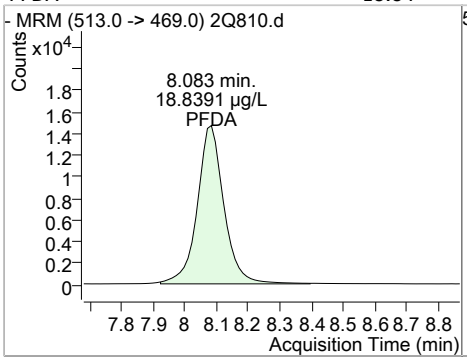
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	19.65	8.08	0.11	127024				

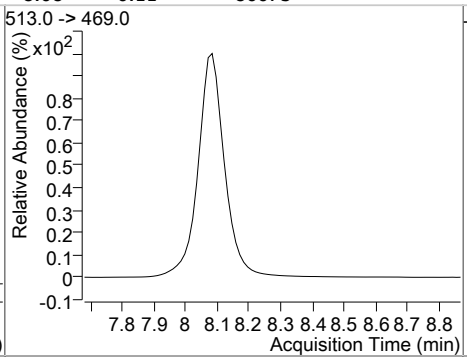


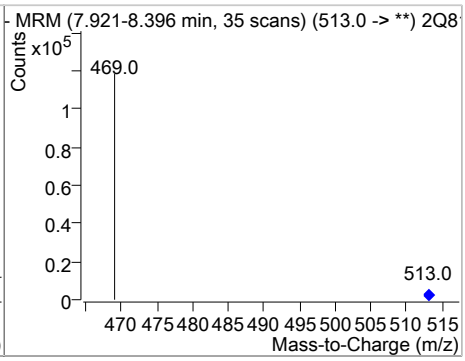




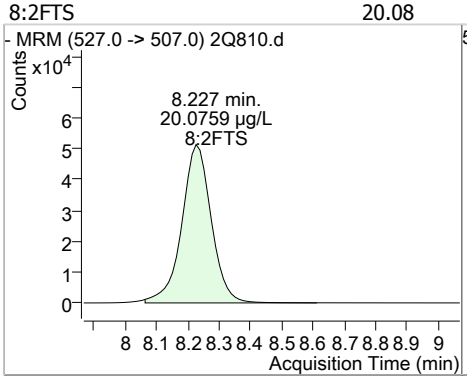
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.84	8.08	0.11	86075				

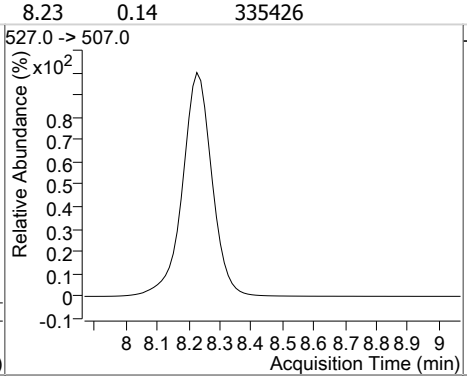


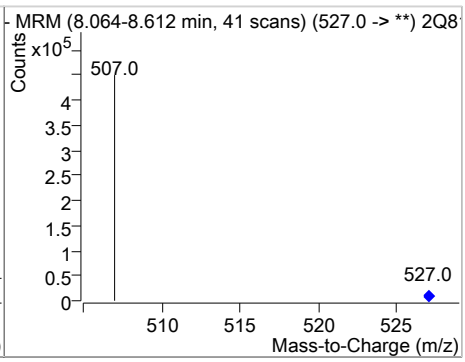




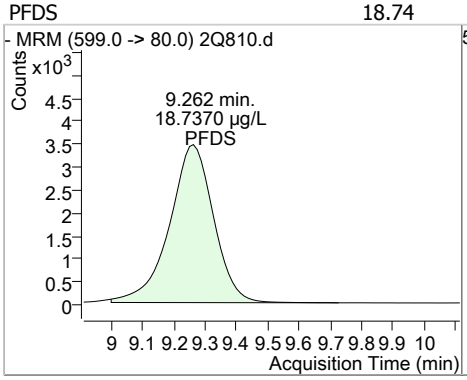
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.08	8.23	0.14	335426				

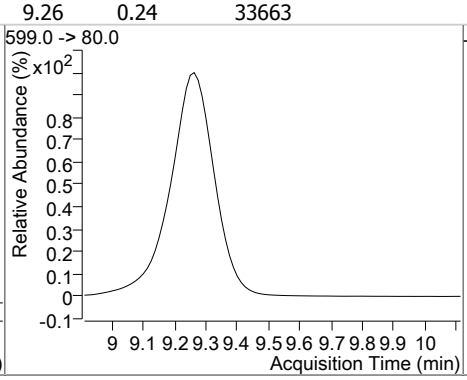


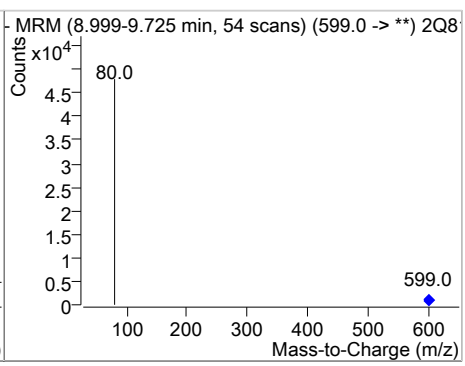




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.74	9.26	0.24	33663				



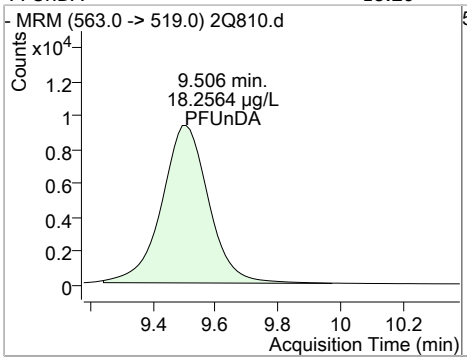


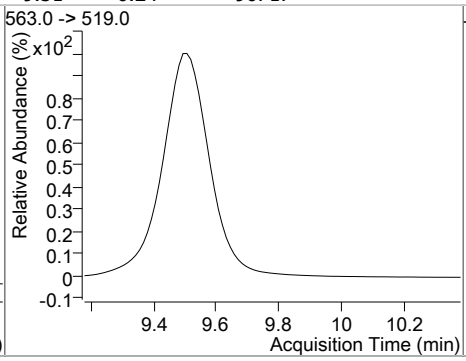


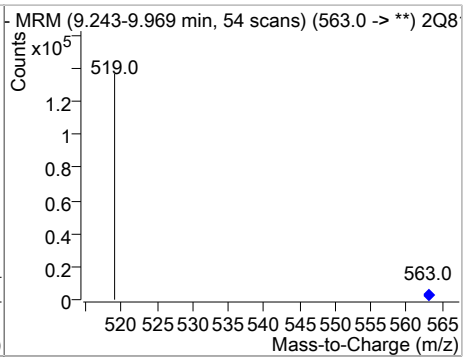
Perfluorinated Compounds by LC/MS/MS

Agilent Technologies

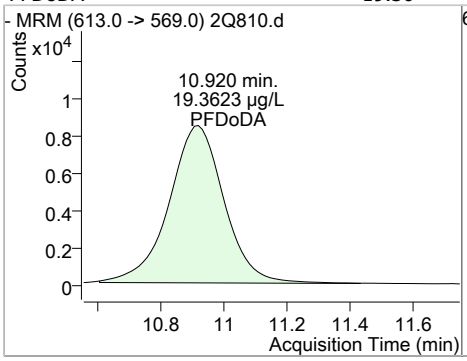
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.26	9.51	0.24	96717				

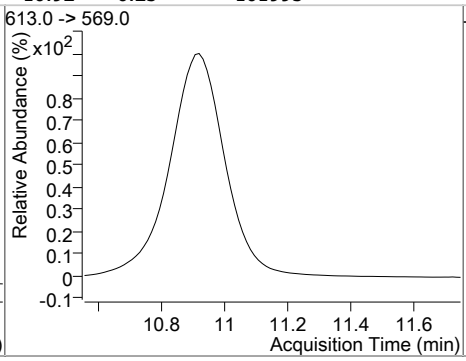


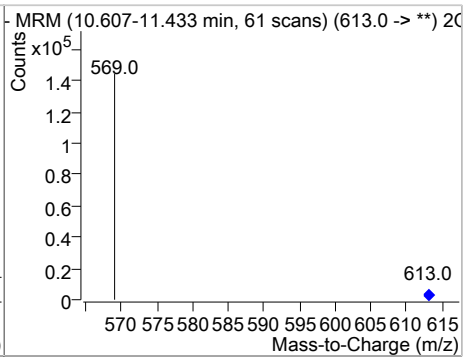




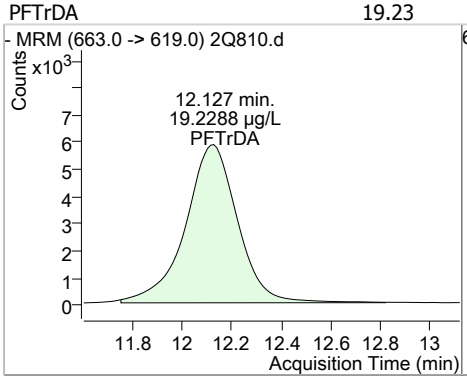
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.36	10.92	0.25	101995				

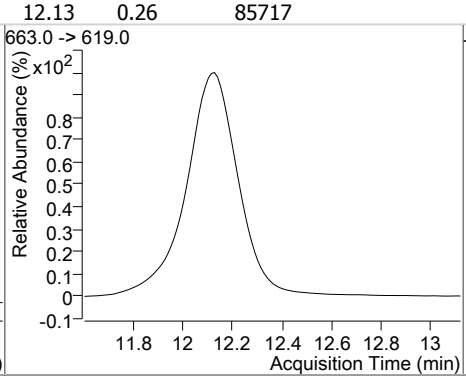


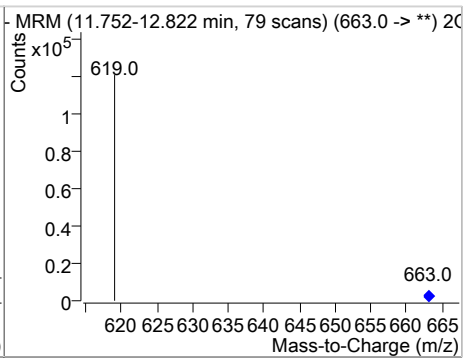




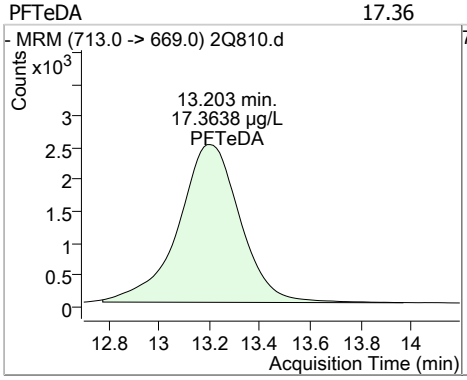
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.23	12.13	0.26	85717				

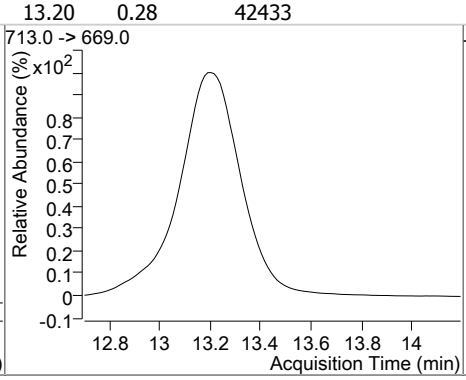


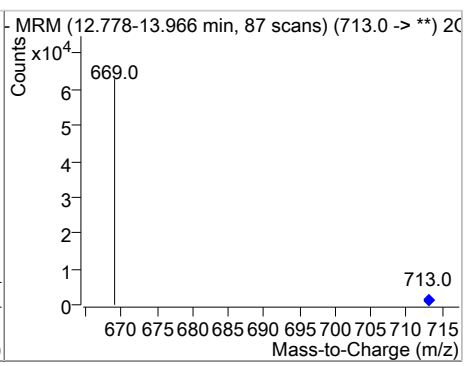




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.36	13.20	0.28	42433				







Manual Integration Approval Summary

Sample Number:	S2Q23-ECC18	**Method:**	EPA 537
Lab FileID:	2Q810.D	**Analyst approved:**	04/27/17 14:42 Mike Eger
Injection Time:	04/27/17 13:28	**Supervisor approved:**	04/27/17 14:49 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.99	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.25	Split peak

SGS ACCUTEST-ORLANDO **LCMS2-2Q ANALYSIS LOG**

DATE:	04-20-17
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	330

METHODS:	537 MOD
ACQ. METHOD:	dMRM PFOA PFOS List
PROC. METHOD:	PFCList-DW 04202018
CALIB. DATE:	04-20-17
RUN BATCH:	S2Q 18

ANALYST:	MS
ELUENT A LOT #:	167421
ELUENT B LOT #:	166751
WATER LOT #:	167421
ISTD Lot #:	LC836

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 644	1	CCB	PFC	—	—				✓
2Q 45	1	CCB	↓	—	—				✓
2Q 46	1	CCB		—	—				✓
2Q 47	2	CC16-20		LC838	100/500				SS ↓ Am Curve
2Q 48	1	CCB		—	—				✓
2Q 49	1	CCB		—	—				✓
2Q 50	2	IC18-1		LC838	5/500				X Fix AT RR
2Q 51	2	-1		↓	↓		SP		✓
2Q 52	3	-2			10/500		SP		✓
2Q 53	4	-5			25/500		SP		✓
2Q 54	5	-10			50/500		SP		✓
2Q 55	6	ICC18-20			100/500		SP		✓
2Q 56	7	IC18-40			200/500		SP		✓
2Q 57	8	-50		↓	250/500		SP		✓
2Q 58	1	CCB		—	—				✓
2Q 59	9	ICV18-20		LC817/819 840663	5/100 5/500				Pass
2Q 60	10	OP64645-BS		OP64645	1X				✓
2Q 61	11	FA42757-3		↓	10X		SP		✓ Report Etime From 1X
2Q 62	12	-25			10X		SP	±	✓ ↓
2Q 63	13	-4	↓	↓	1X		SP		✓

*< Conductivity Limit For Perchlorate by SW846 6850

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

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

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

LCMS2-2Q ANALYSIS LOG

DATE:	04-20-17
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	330

METHODS:	537 mod
ACQ. METHOD:	dmrm pfoa pfos list
PROC. METHOD:	pfclist DW 0420 S2Q18
CALIB. DATE:	04-2017
RUN BATCH:	S2Q 18

ANALYST:	NAS
ELUENT A LOT #:	167421 w AcetAte
ELUENT B LOT #:	166751
WATER LOT #:	167421
ISTD Lot #:	LL836

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 664	14	OP64707-BS	PFC	OP64707	1x				✓
2Q 65	15	-MB							✓ ME, ERAR
2Q 66	15	-MB							BDL
2Q 67	16	FA43168-1							BDL
2Q 68	17	-2					SP		✓
2Q 69	18	-3					SP		✓
2Q 70	19	-4					SP		✓
2Q 71	6	CC18-20		LC838	100/500		SP		Pass
2Q 72	1	CCB		—					✓
2Q 73	1	CCB		—					✓
2Q 74	20	FA42877-1		OP64707	1x		SP		✓
2Q 75	24	-3					SP		✓ RR 10x, 100x
2Q 76	25	-4					SP		✓ RR 5x
2Q 77	26	-5					SP		✓ RR 5x
2Q 78	27	-6					SP		✓ RR 10x, 50x
2Q 79	28	-8					SP OP I		✓ RR 20x
2Q 80	29	-9					SP		✓ RR 20x, 50x
2Q 81	21	-2					SP		✓ RR 5x
2Q 82	22	OP64707-MS					SP		
2Q 83	23	-MSD					SP		

*< Conductivity Limit For Perchlorate by SW846 6850

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

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

LCMS2_2Q_log.xls ME rev. 06/16

41 of 100

Analyst's Signature: [signature]

SGS ACCUTEST-ORLANDO

DATE:	04-20-17
COLUMN TYPE:	Poroshell II EC18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	330

LCMS2-2Q ANALYSIS LOG

METHODS:	537 mod
ACQ. METHOD:	dmam PFOA PFOS List
PROC. METHOD:	PFC List 0420 S2Q18
CALIB. DATE:	04-20-17
RUN BATCH: S2Q	18

ANALYST:	MAS
ELUENT A LOT #:	167421 10 mM Acetic
ELUENT B LOT #:	166751 L
WATER LOT #:	167421
ISTD Lot #:	LL936

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 0684	6	CCIB 20	PFC	LL936	10/TW		SP		PASS
2Q 85	1	CCB		—	—				✓
2Q 86	1	CCB		—	—				✓
2Q 87	30	FA 42877-11		OP64707	1X		SP		✓ AA 20X
2Q 88	31	-16		"	"				BDL
2Q 89	6	ECCIB 20		LL936	100/TW		SP		PASS
2Q 90	1	CCB		—	—				✓
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									

MAS 04-21-17

*< Conductivity Limit For Perchlorate by SW846 6850

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

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

SGS ACCUTEST-ORLANDO

DATE:	4/27/17
COLUMN TYPE:	Poroshell EC-18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	321

LCMS2-2Q ANALYSIS LOG

METHODS:	537
ACQ. METHOD:	alwrm_PFOA-PFOS_LIST
PROC. METHOD:	PFCLIST DW 0420 S2Q18
CALIB. DATE:	4/20/17
RUN BATCH: S2Q	23

ANALYST:	MC
ELUENT A LOT #:	167421 "Acetic Acid"
ELUENT B LOT #:	167751
WATER LOT #:	167421
ISTD Lot #:	LC 836

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 795	1	CCB	537						
2Q 96	1	CCB							
2Q 97	1	CCB							
2Q 98	2	CC18-20		LC838	100/500		SP		PASS
2Q 99	4	CC18-2		〃	10/500		SP		PASS +/- 30%
2Q 800	13	OP64782-BS		64782	1				—
2Q 01	14	〃 -MB							ND
2Q 02	15	FA42949-1							〃
2Q 03	16	OP64782-MS					~~SP~~ w 4/27/17		—
2Q 04	17	〃 -MSD					~~SP~~ 〃		〃
2Q 05	18	FA42949-2							BDC
2Q 06	19	FA42950-1							
2Q 07	20	〃 -2							
2Q 08	21	FA42951-1							
2Q 09	22	〃 -2		〃	〃				〃
2Q 10	2	ECC18-20		LC838	100/500		SP		PASS
2Q 11	1	CCB	〃	—	—				—
2Q									
2Q									
2Q									

*< Conductivity Limit For Perchlorate by SW846 6850

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

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

Analyst's Signature: M Eger

SGS ACCUTEST - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 04/25/17 1300 Started {mm/dd/yy 24:00}

Date/Time: 04/25/17 1800 Finished {mm/dd/yy 24:00}

Prep Method: 3535A or Method (circle)

Analytical Method: LC537 DW

Batch#: OP64782 Ext. By: MB Conc. By: AA Vialed By: MB

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Comments
OP64782 MB	X	260	6	n/a	20ul		1ml	
OP64782 BS	X	260	↓	↓	↓	10+10ul	↓	
FA42949-1	1	260	↓	↓	↓	↓	↓	
-2	1	250	↓	↓	↓	↓	↓	
FA42950-1	1	260	↓	↓	↓	↓	↓	
-2	1	260	↓	↓	↓	↓	↓	
FA42951-1	1	250	↓	↓	↓	↓	↓	
-2	1	260	↓	↓	↓	↓	↓	
				MB 04/28/17				
FA42949-1 MS	2	130	6	n/a	20ul	10+10ul	1ml	
-1 MSD	2	130	↓	↓	↓	↓	↓	
DUP								

Comments:

Surr.1 ID: LC834 Conc: 100ppm Exp. Date: 10/05/17 Inj. By: MB Ver. By MB

Surr.2 ID: — Conc: — Exp. Date: — Inj. By: — Ver. By —

Spk.1 ID: LC839 Conc: 2ppm Exp. Date: 08/25/17 Inj. By: MB Ver. By MB

Spk.2 ID: B487A Conc: 2ppm Exp. Date: 04/19/18 Inj. By: MB Ver. By MB

Initial Bath Temp (Therm ID): —

Observed Temp °C: — Corr. Temp °C: —

Exchange Bath/N-Evap Temp (Therm ID): N-EVAP

Observed Temp °C: — Corr. Temp °C: —

Methanol Lot # 170794 SPE Lot # 5308-0072 pH Paper # 23001/6

Acetonitrile Lot # — SPE Lot # — Reagent # —

Water Lot# OP64208 Syringe Filter Lot# — Solvent # —

Relinquished By: Ahmad Date: 04/26/17

Accepted By: Date: 04/26/17

NF 02/16 extwater_spe 020116.xls

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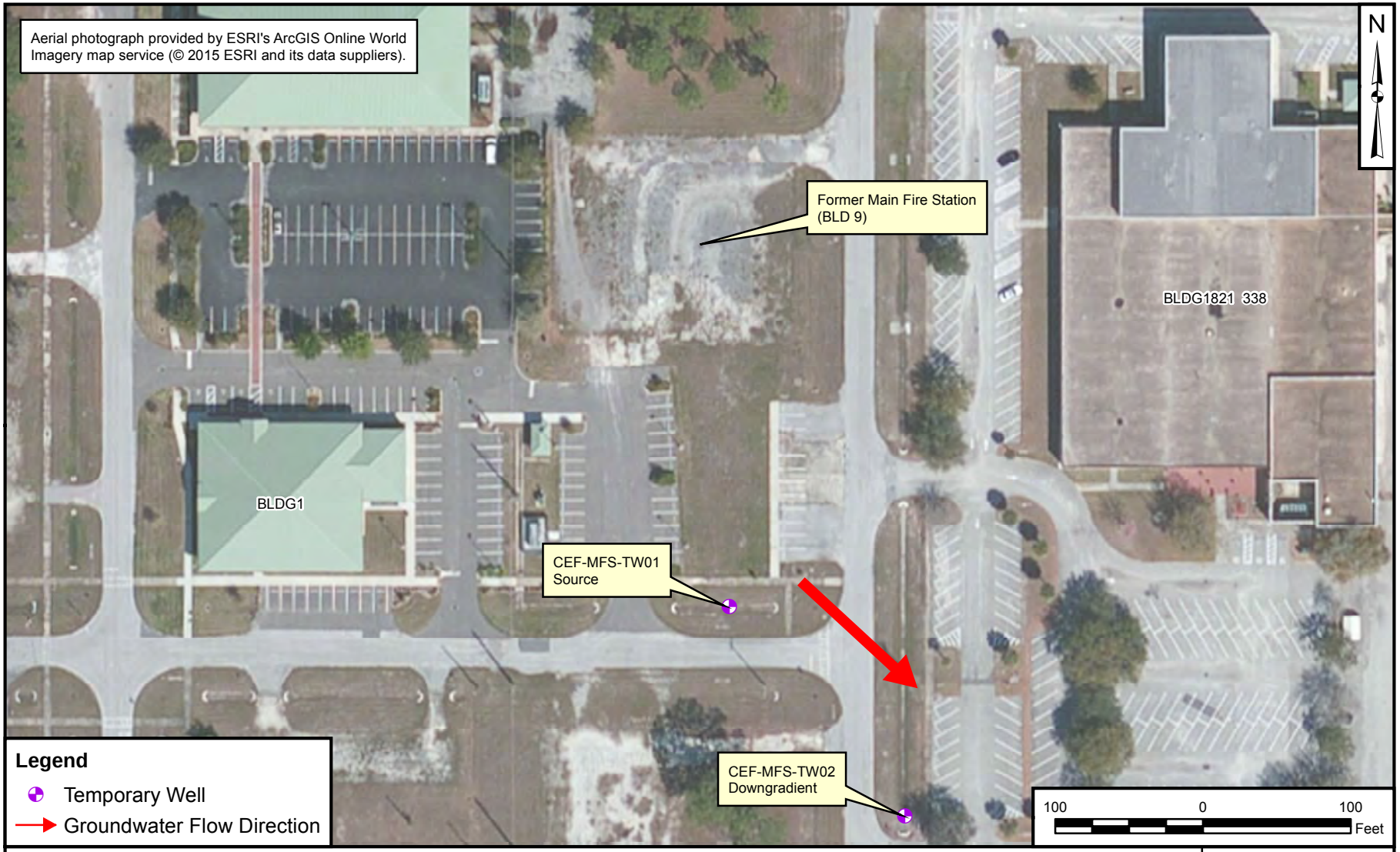

NAVFAC

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

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

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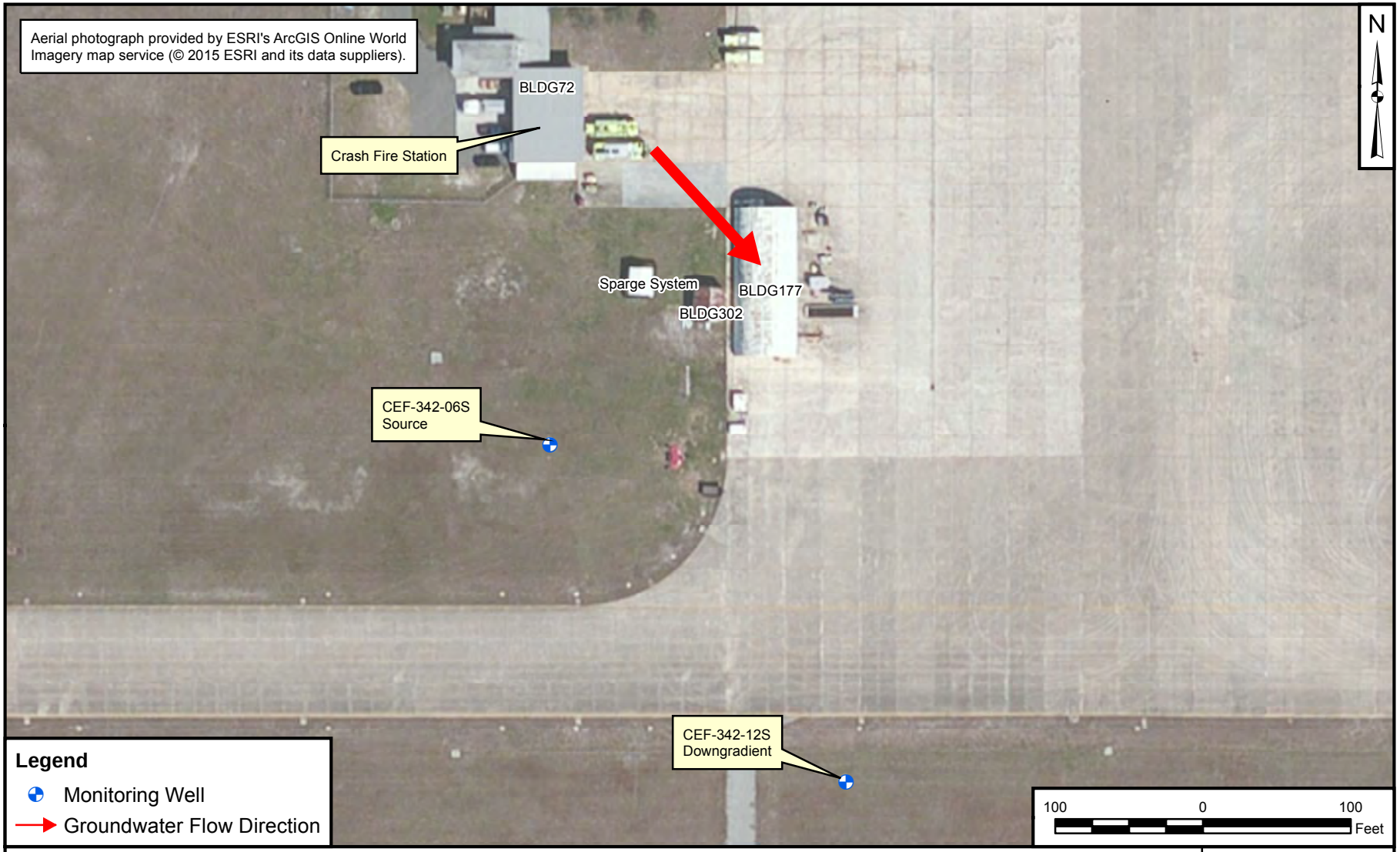
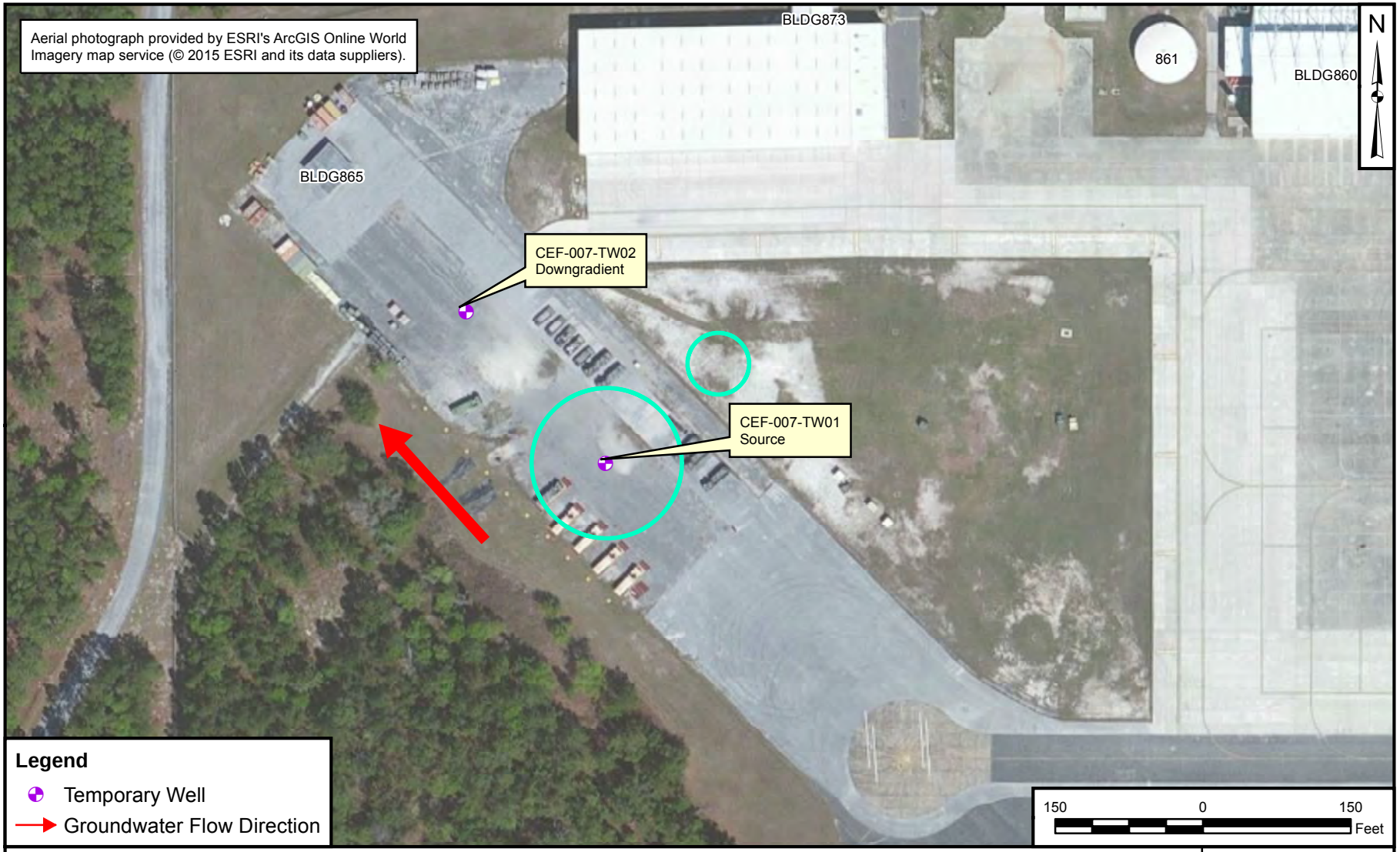


NAVFAC

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

CTO	
JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER	
17-2	

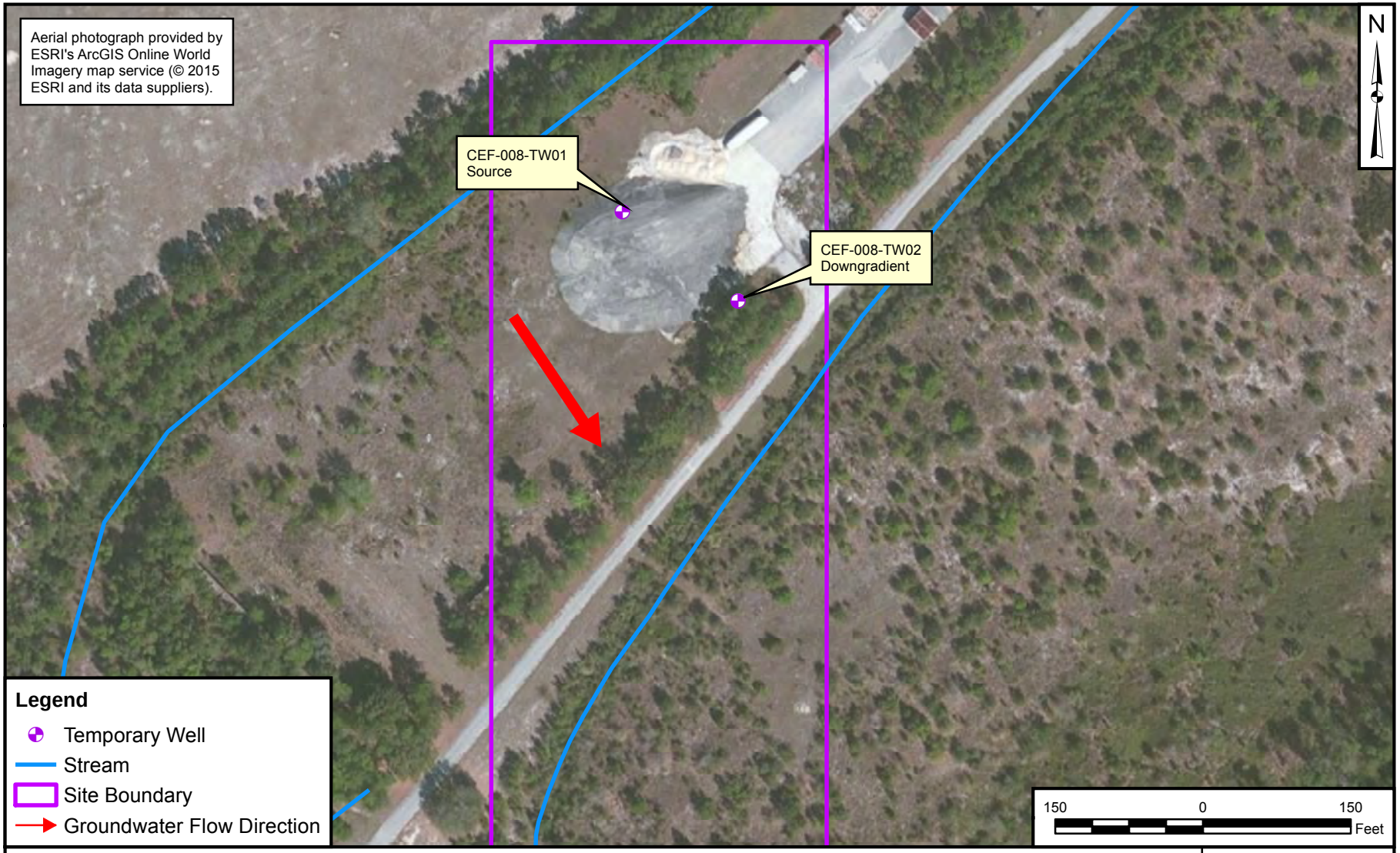
PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\SITE07_SITE_MAP.MXD 03/27/17 JEE



SITE LOCATION
SITE 7
NAS CECIL FIELD
CECIL FIELD, FLORIDA

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

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\SITE08_SITE_MAP.MXD 03/27/17 JEE

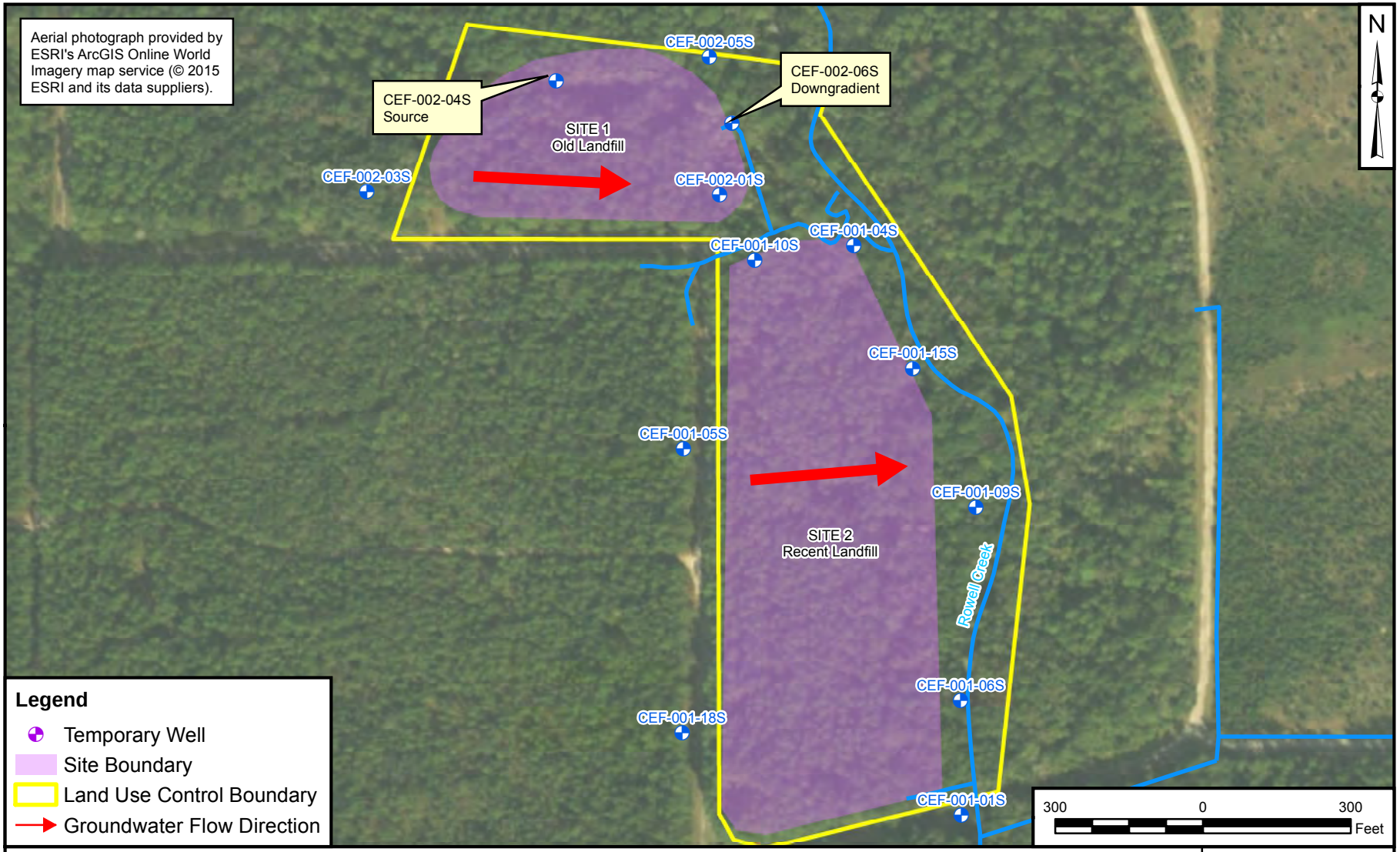


NAVFAC

SITE LOCATION
SITE 8
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO	
JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER	
17-4	

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\SITE01-02_SITE_MAP.MXD 03/27/17 JEE

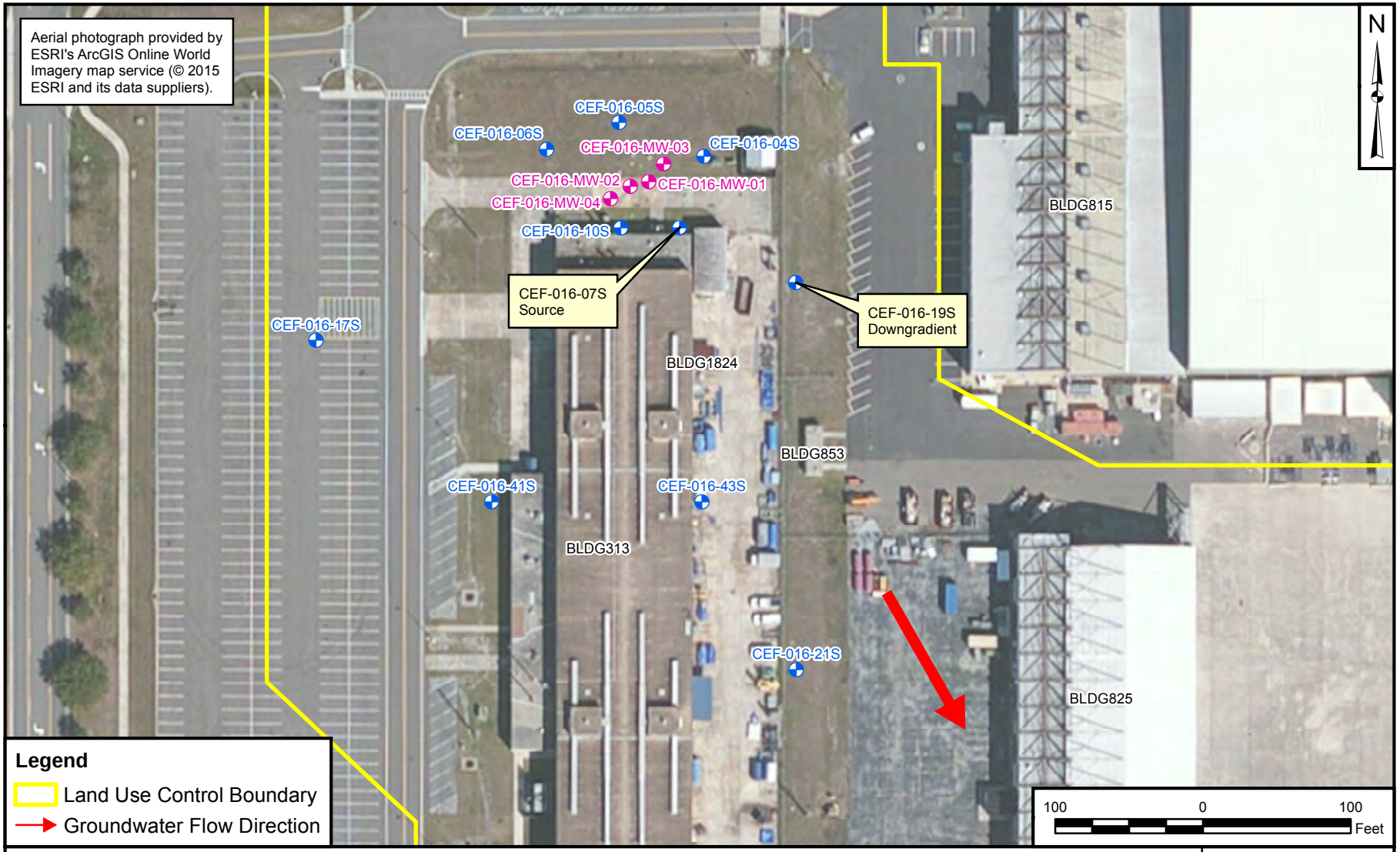


NAVFAC

SITE LOCATION
SITES 1 & 2
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO	
JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER	
17-5	

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\SITE16_SITE_MAP.MXD 03/27/17 JEE

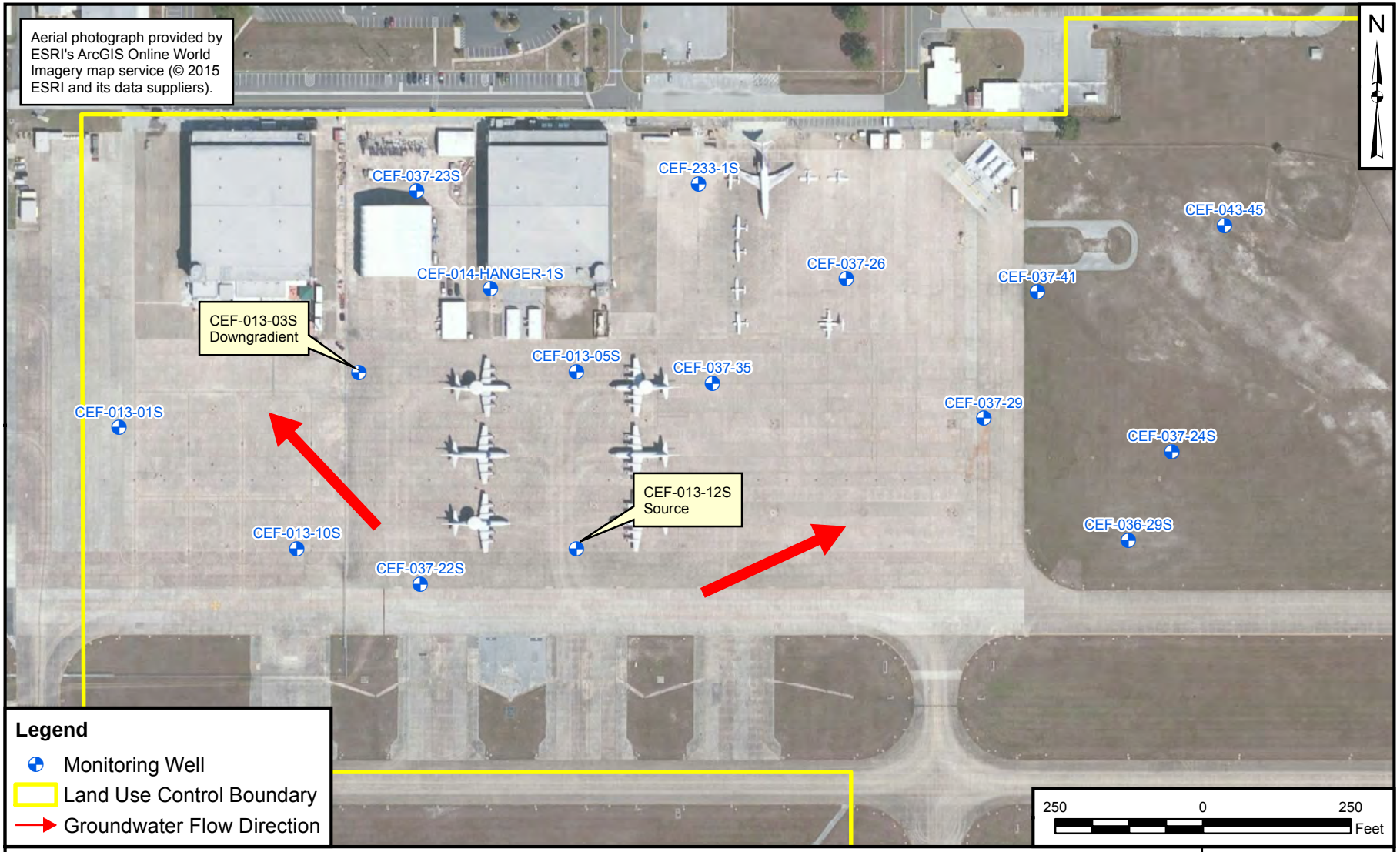


NAVFAC

SITE LOCATION
SITE 16
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO	
JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER	
17-6	

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\SITE36-37_SITE_MAP.MXD 03/27/17 JEE

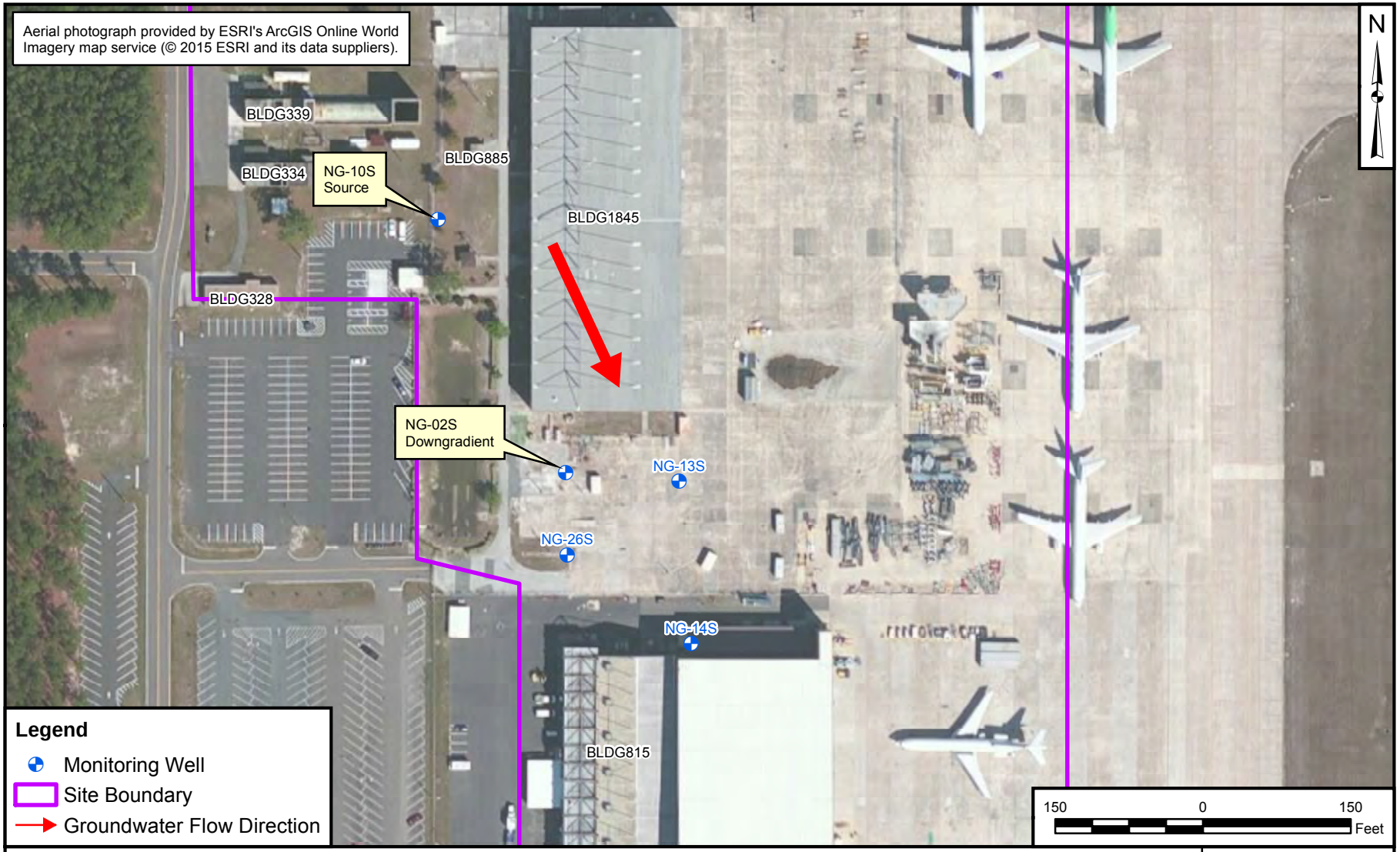


NAVFAC

SITE LOCATION
SITES 36 & 37
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO	
JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER	
17-7	

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\SITE59_SITE_MAP.MXD 03/27/17 JEE

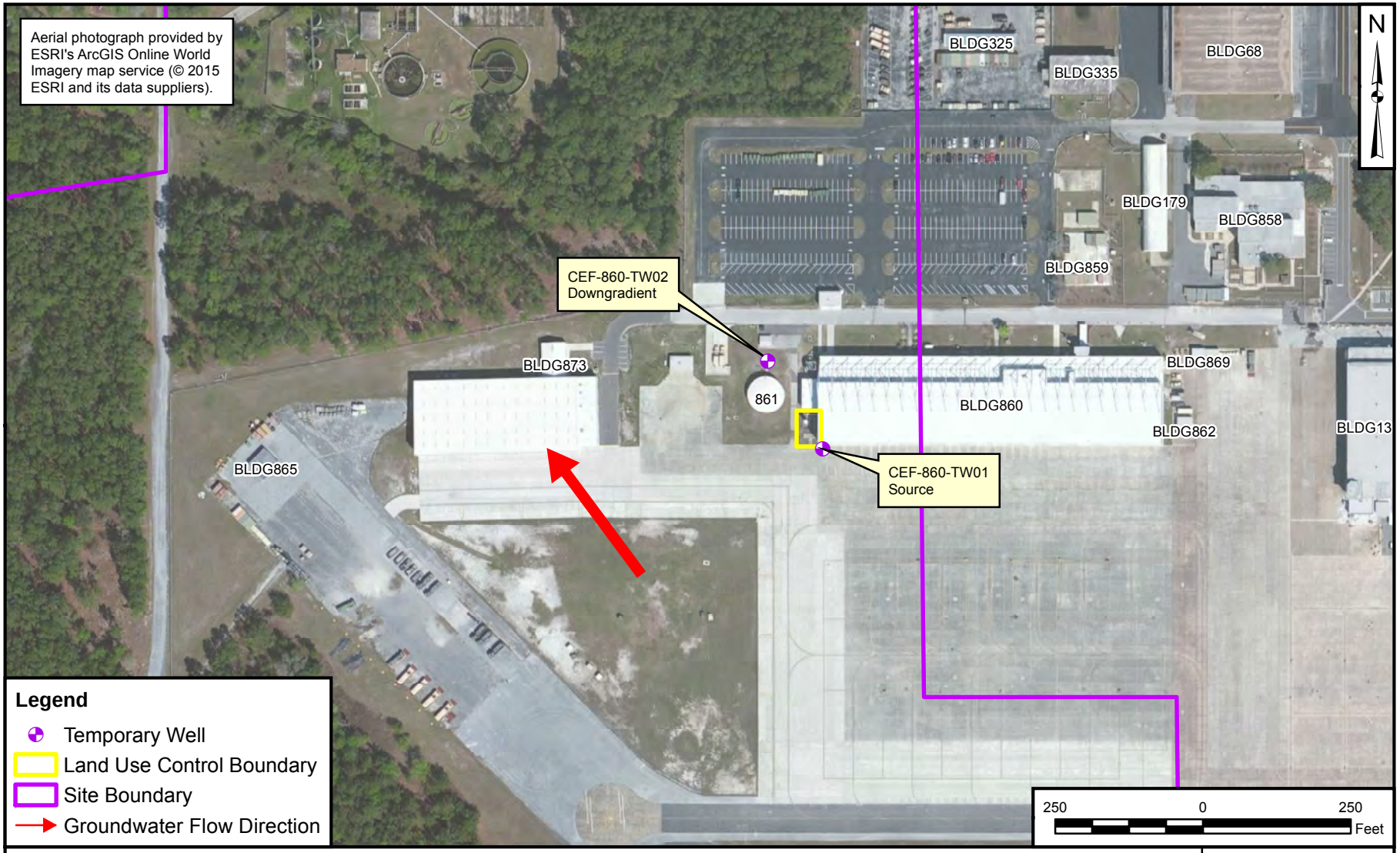


NAVFAC

SITE LOCATION
SITE 59
NAS CECIL FIELD
CECIL FIELD, FLORIDA

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

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\BULDING860_SITE_MAP.MXD 03/27/17 JEE

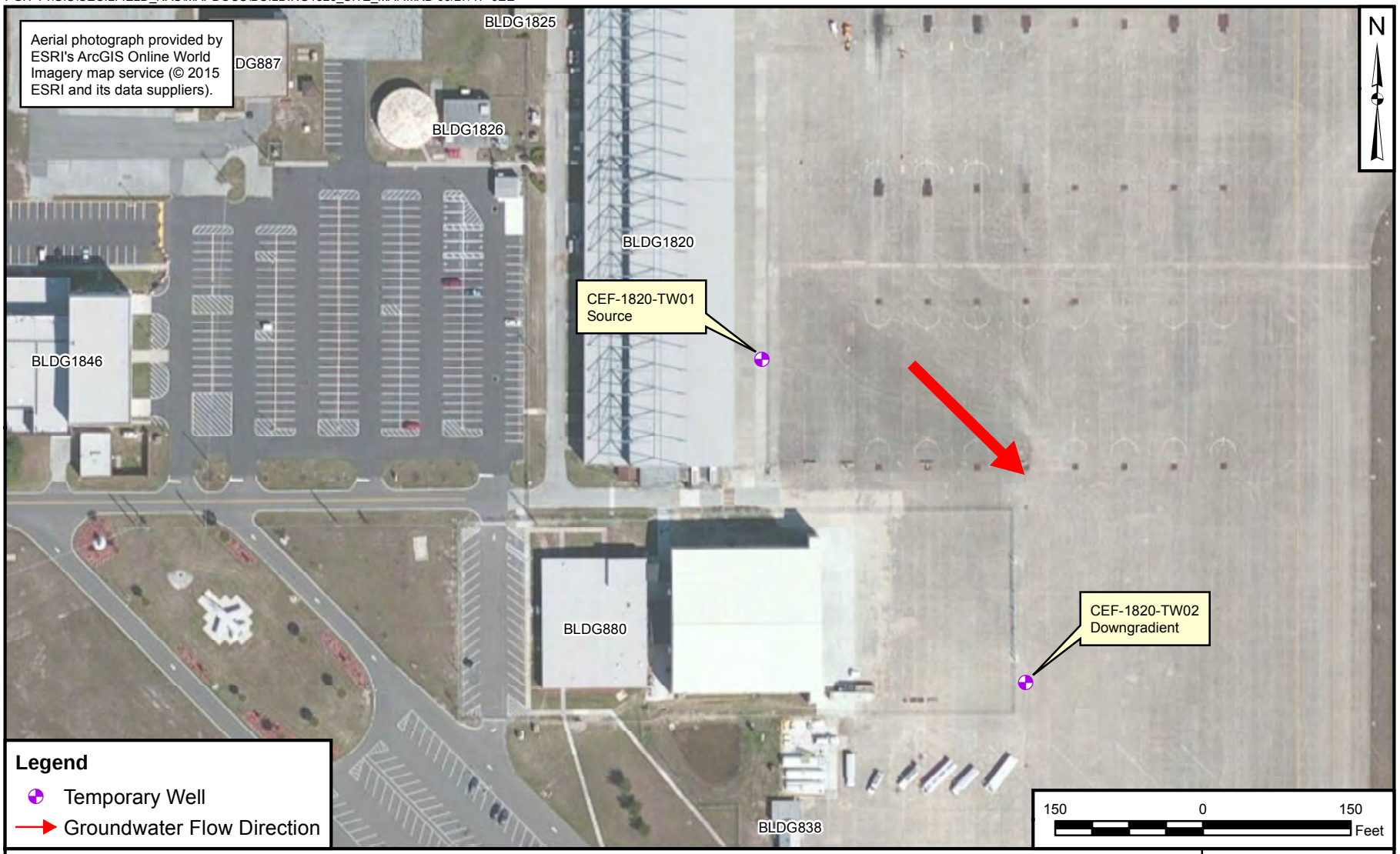


NAVFAC

SITE LOCATION
BUILDING 860
NAS CECIL FIELD
CECIL FIELD, FLORIDA

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

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\BUILDING1820_SITE_MAP.MXD 03/27/17 JEE

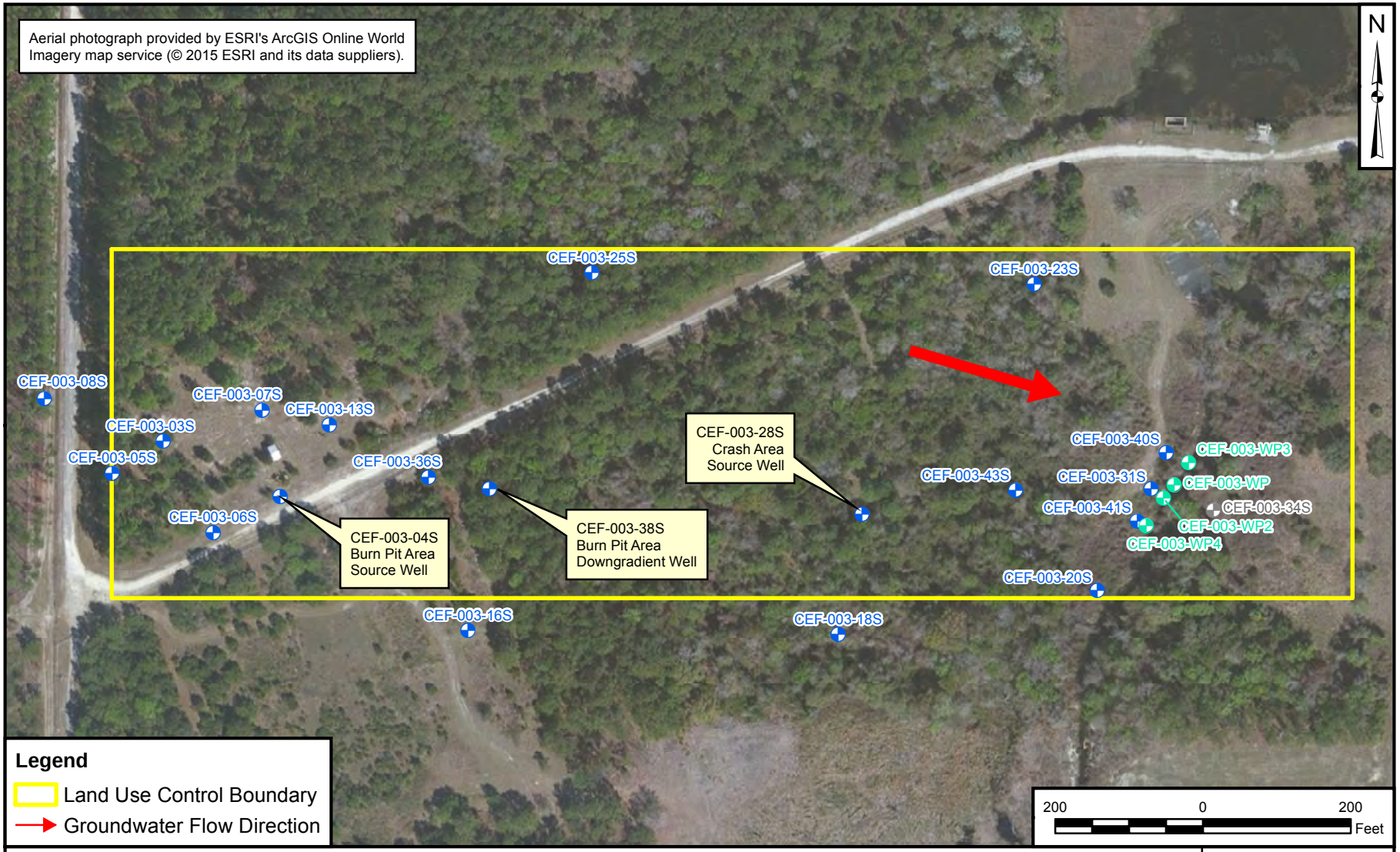


NAVFAC

SITE LOCATION
BUILDING 1820
NAS CECIL FIELD
CECIL FIELD, FLORIDA

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

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\SITE03_SITE_MAP.MXD 03/27/17 JEE



NAVFAC

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

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

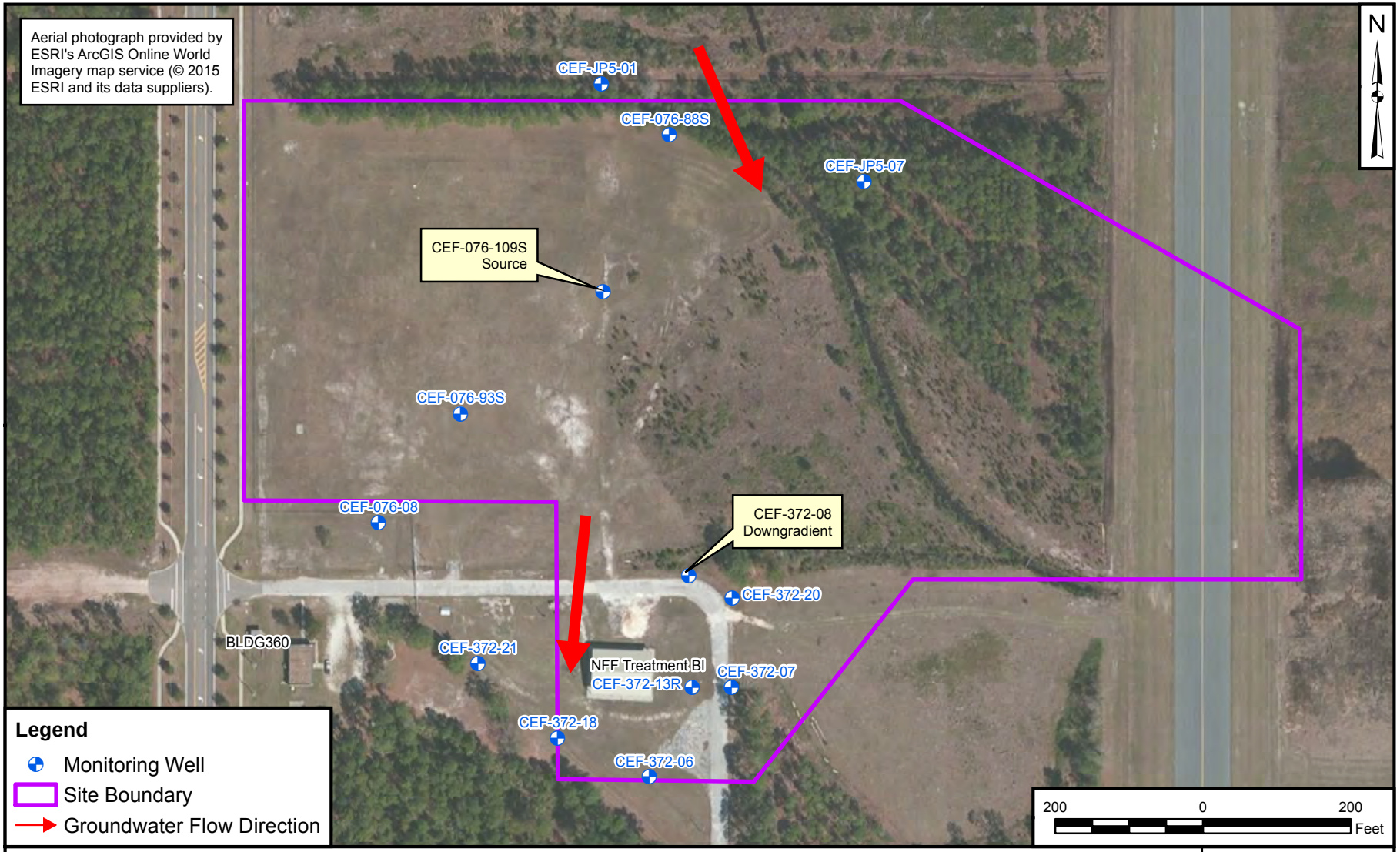
PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\OCALA_CRASH_SITE_MAP.MXD 03/27/17 JEE

NAVFAC

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

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

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\NORTH_FUEL_FARM_SITE_MAP.MXD 03/27/17 JEE

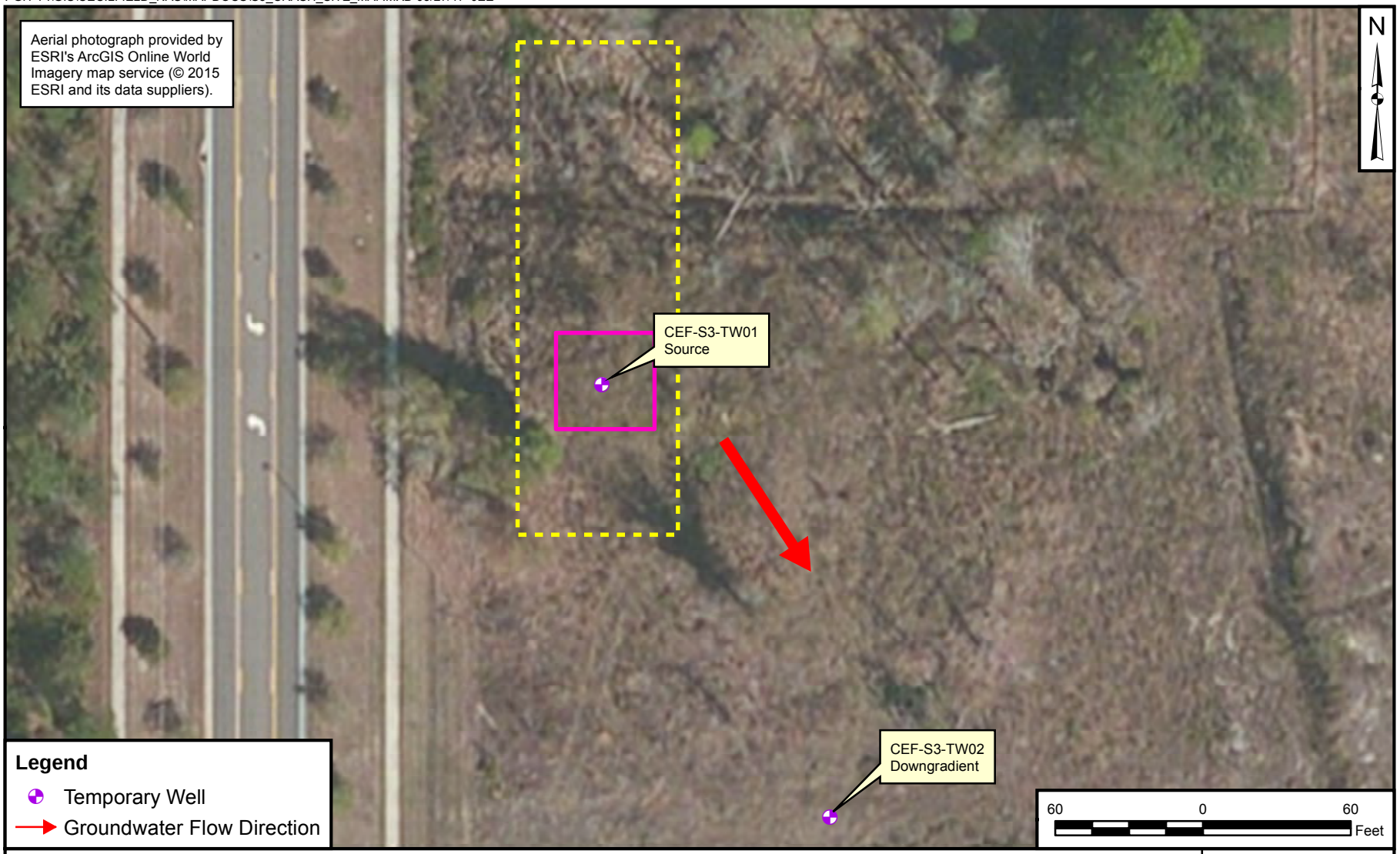


NAVFAC

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

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

PGH P:\GIS\CECILFIELD_NAS\MAPDOCS\S3_CRASH_SITE_MAP.MXD 03/27/17 JEE



NAVFAC

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

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