THE Chazen COMPANIES®
Civil Engineers
Land Surveyors
Planners
Environmental & Safety Professionals
Landscape Architects
Transportation Planners & Engineers
Proud to be Employee Owned

HUDSON VALLEY OFFICE
21 Fox Street
Poughkeepsie, NY 12601
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www.chazencompanies.com

January 31, 2020

Mr. Kevin Winn, P.E.
Commissioner of Public Works
Town of Bedford Highway Department
301 Adams Street
Bedford, NY 10507

Re: Katonah Well – Emerging Contaminants Sampling
NYSDEC Site. No 360007
Jay Street, Town of Bedford, Westchester County, New York
Chazen Project #41433.00

Dear Commissioner Winn:

In response to Robert Strang's June 14, 2019 letter to the Town of Bedford, The Chazen Companies (Chazen) has completed targeted emerging contaminants sampling at the Katonah Well Site, as requested by New York State Department of Environmental Conservation (NYSDEC). Following your approval of sampling methods and locations, two groundwater samples were collected for analysis of 1,4-Dioxane and per-and polyfluoroalkyl substances (PFAS). A brief summary of the sampling effort and analytical results is provided below. A sampling location map, laboratory report, and data usability summary report (DUSR) are attached, and the validated results have been uploaded to NYSDEC's online environmental quality information system (EQUIS).

Sampling Activities

In advance of the sampling, Chazen visited the site on November 12, 2019 to prepare the target wells specifically for PFAS/1,4-Dioxane analysis. The existing low-density polyethylene (LDPE) tubing in upgradient well **MW-11R** and downgradient well **MW-4R** that had been used during prior sampling events was removed and replaced with high-density tubing (HDPE), a material acceptable for use in PFAS sampling. The wells were then purged from the top of the water column to flush out stagnant water in contact with the prior LDPE tubing. Purge water was containerized on site inside the municipal well building and is being allowed to evaporate. The well construction logs are attached for reference.

The two wells were left undisturbed for approximately one month to allow groundwater to equilibrate with the replacement sample tubing. Sampling for PFAS and 1-4-Dioxane analysis was then performed on December 16, 2019 using discreet low-flow methods and following guidance within NYSDEC's "Collection of Groundwater Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) from Monitoring Wells Sample Protocol" document. Quality control (QC) samples required for data validation included one field duplicate, one MS/MSD, and one equipment blank. The low-flow field sampling logs are attached for reference.

Samples were analyzed by York Analytical Laboratory of Stratford, CT, and reported results were validated by Laboratory Data Consultants of Carlsbad, CA.

Validated Results

A brief discussion of the validated results is provided below. The data validation report indicates all laboratory results are usable as reported or usable with minorqualification due to sample matrix or laboratory quality control outliers.

PFAS

PFAS compounds were present in all both samples at variable concentrations. Total PFAS concentrations were reported at 130.2 ng/L (MW-4R) and 194 ng/L (MW-11R). A summary table of compounds detected in one or more wells is provided below:

Compound	MW-4R (downgradient)		MW-11R (upgradient)	
Perfluorobutanesulfonic acid (PFBS)	10.8		14.6	
Perfluorohexanoic acid (PFHxA)	22.6		37.0	
Perfluoroheptanoic acid (PFHpA)	6.88		11.3	
Perfluorobutanoic acid (PFBA)	11.4		15.8	
Perfluoropentanoic acid (PFPeA)	28.5		42.3	
Perfluorohexanesulfonic acid (PFHxS)	22.4	J	39.3	
Perfluorooctanoic acid (PFOA)	12.5		15.2	
Perfluorooctanesulfonic acid (PFOS)	15.1	J	19.0	
TOTAL PFAS	**130.2**		**194.5**	

Results in ng/L

U - indicates compound was not reported above the method detection limit.

J - indicates reported concentration is estimated.

1,4-Dioxane:

1,4-Dioxane was not detected in the samples collected from either well at or above the Limit of Quantification of 0.20 µg/l.

Conclusions

Based on the data, eight PFCs were detected in the two on-site wells that were sampled. The reported concentrations of PFCs are less than the current USEPA Health risk advisory of 70 ng/l. However, except for the concentration of PFHpA in MW-4R, the reported concentrations exceed the proposed NYSDEC/NYSDOH health risk standard of 10 ng/l.

A comparison the individual compounds and total PFCs in the two wells indicates that concentrations are consistently higher in upgradient-most well MW-11R.

Closing

If you have any questions regarding this data submission, please feel free to contact me at 845-486-1521 or wolsen@chazencompanies.com.

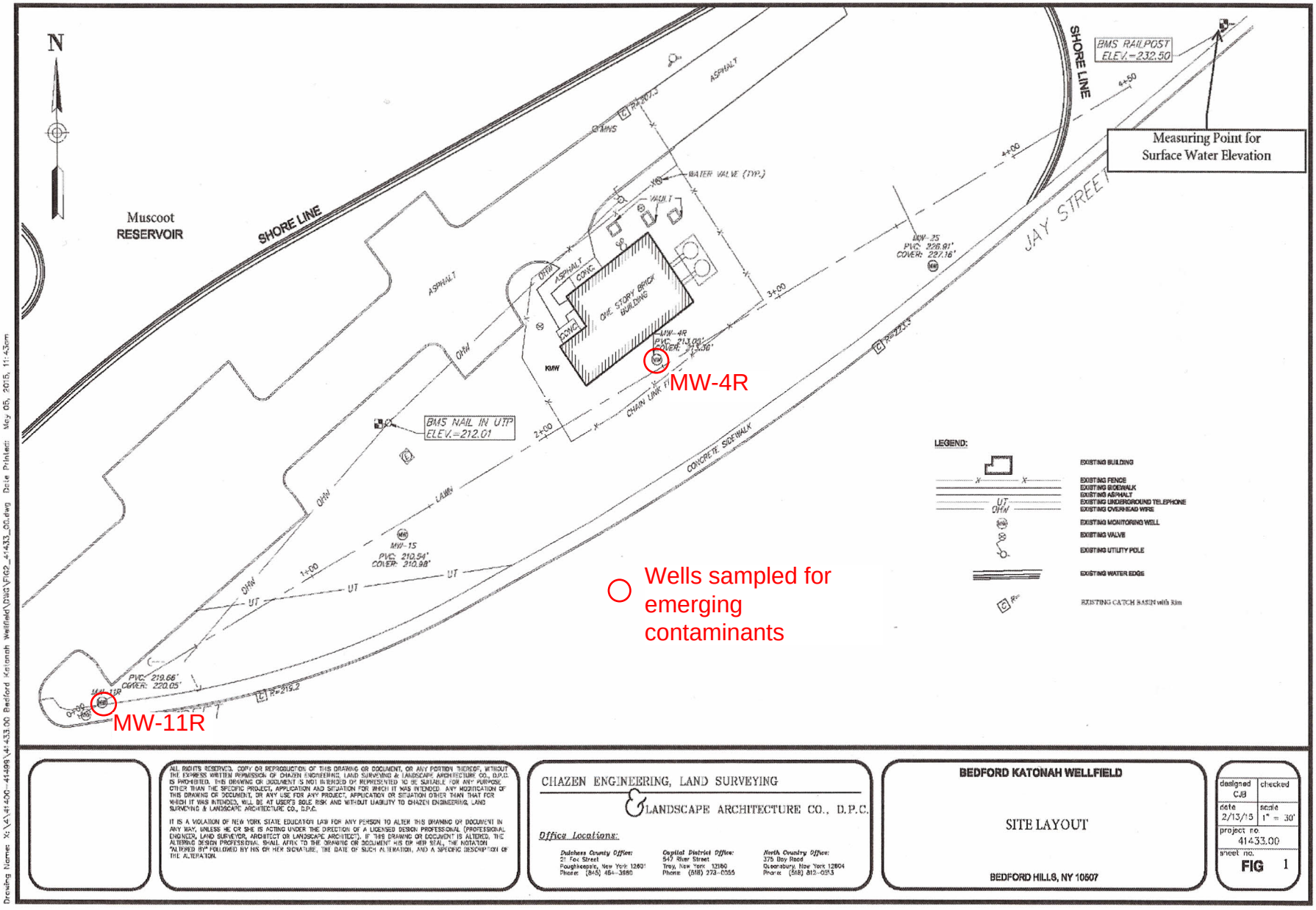
Sincerely,



Will Olsen, P.G.
Hydrogeologist

Attachments: sampling map, well logs, field sampling logs, lab report, DUSR

cc: Kevin McGrath, P.G., Chazen



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BEDFORD KATONAH WELLFIELD

SITE LAYOUT

BEDFORD HILLS, NY 10607

designed CJB	checked
date 2/13/15	scale 1" = 30'
project no. 41433.00	
sheet no. FIG 1	

Drawing Name: X:\41400-41499\41433.00 Bedford Katonah Wellfield\Dwg\FIG2_41433_00.dwg Date Printed: May 05, 2015, 11:43am

THE Chazen COMPANIES	21 Fox Street Poughkeepsie, NY 12601 Phn: (845) 454-3980 Fax: (845) 454-4026	**PROJECT:** Katonah Municipal Well **LOCATION:** Jay Street, Village of Katonah, Town of Bedford, NY **CLIENT:** Town of Bedford **PROJECT NO.:** 41433.00		**Test Boring/Well No.:**	**MW-4R**
				Sheet	1 of 3
				Total Depth:	102 ft.
Contractor: Cascade Drilling	**Start Date:** October 28, 2014	**Northing:** 884740.4645		**Borehole Dia.:**	6 in.
Drill Rig: Boart Longyear - 100C	**Finish Date:** October 31, 2014	**Easting:** 716971.6959		**Rock Depth:**	>102 ft.
Driller: Kevin Smith	**El. Datum:** NAVD88	**Longitude:** na		**Water Depth:**	12 ft.
Geologist: William Olsen	**G.S. Elevation:** 210.55	**Latitude:** na		**Well Depth:**	100 ft.

Depth (Ft)	Approx. Elevation (Ft)	Casing Blows	Sample No.	Blow Counts	Recovery(%)	PID reading (ppm)	Soil Type	Stratum and Field Descriptions:		Well Diagram	Field Notes, Well Notes, Comments:
					77	0.0					
2	209		1					sandy FILL (0-5 ft)	mostly m Sand, some gravel, little f-c gravel, little silt, brick fragments, brown, loose, dry		Well finished with 2.5-foot stick-up and locking guard pipe
						0.0					
4	207										*Top of PVC Casing Elv = 213.05 ft*
						0.0					
					77						
6	205					0.0					Tremie-grouted Portand/bentonite seal
			2								
8	203					0.0		SAND, SILT, and GRAVEL (5-13 ft)	mosty sand, silt, and gravel, few cobbles, loose, dry to 12 feet		
10	201				63	0.0					
12	199		3			0.0					
14	197					0.0					
					72				mostly f-c Sand and f-c Gravel, little silt, brown to dark brown, rust discoloration at water table, wet		
16	195										
18	193								Sand layer: mostly m-c Sand, some silt and clay, brown, wet		2-inch diameter solid PVC riser
20	191		4			0.0					
22	189										
24	187					0.0					
26	185				90			SAND and GRAVEL (13-99 ft)			
28	183										
30	181		5			0.0			mostly f-c Sand and f-c Gravel, little to trace cobbles, trace silt, brown, moderately washed, some rust discoloration, wet		
32	179										
34	177					0.0					
36	175				13						
38	173		6								
40	171					0.0					

METHODS: **HSA**- Hollow Stem Auger, **RWH**- Rotary Wash, **SSA**- Solid Stem Auger, **CPT**- Cone Penetrometer

SAMPLE TYPES: **AS**-Auger, **WS**-Wash, **SS**-Split Spoon, **RC**-Rock Core, **GS**-Grab, **ST**-Shelby Tube, **PS**-Piston

STANDARD 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.

NOTES:

ADDITIONAL NOTES: 1. 2. 3

DRILLING INFORMATION

Method: Sonic

Method:

	Casing	Sample Core
Type:	Steel	Steel
Diam.:	6"	4"
Weight:		
Fall:		

THE Chazen COMPANIES	21 Fox Street Poughkeepsie, NY 12601 Phn: (845) 454-3980 Fax: (845) 454-4026	**PROJECT:** Katonah Municipal Well Field **LOCATION:** Jay Street, Village of Katonah, Town of Bedford, NY **CLIENT:** Town of Bedford **PROJECT NO.:** 41433.00		**Test Boring/Well No.:**	**MW-4R**
				Sheet	2 of 3
				Total Depth:	102 ft.
Contractor: Cascade Drilling	**Start Date:** October 28, 2014	**Northing:** 884740.4645		**Borehole Dia.:**	6 in.
Drill Rig: Boart Longyear - 100C	**Finish Date:** October 31, 2014	**Easting:** 716971.6959		**Rock Depth:**	>102 ft.
Driller: Kevin Smith	**El. Datum:** NAVD88	**Longitude:** na		**Water Depth:**	12 ft.
Geologist: William Olsen	**G.S. Elevation:** 210.55	**Latitude:** na		**Well Depth:**	100 ft.

Depth (Ft)	Approx. Elevation (Ft)	Casing Blows	Sample No.	Blow Counts	Recovery(%)	PID reading (ppm)	Soil Type	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
					13	0.0				
42	169		6							
44	167					0.0				
46	165		7		57			mostly m-c Sand and f-c gravel, few cobbles, mostly m-c Sand and f-c Gravel, few cobbles, trace f sand and silt, brown, abundant mica, moderately washed, wet		Tremie-grouted Portand/bentonite seal
48	163									
50	161					0.0				
52	159									2-inch diameter solid PVC riser
54	157					0.0				
56	155		8		17					Poor recoveries likely due to cobbles >4 inches
58	153									
60	151					0.0		SAND and GRAVEL (13-99ft)		Till-like layer: mostly m-c Sand and f Gravel, f sand to clay matrix support, grey, well
62	149									
64	147					0.0				
66	145		9		0					
68	143									
70	141					0.0				No recovery 65-75 feet, probable cobble stuck in core barrell tip
72	139									
74	137					0.0				3/8-inch bentonite chips
76	135		10		33					#0 sand pack
78	133									#2 sand pack
80	131					0.0				

METHODS: **HSA**- Hollow Stem Auger, **RWH**- Rotary Wash, **SSA**- Solid Stem Auger, **CPT**- Cone Penetrometer

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ADDITIONAL NOTES: 1. 2. 3

DRILLING INFORMATION

Method: Sonic

Method:

	Casing	Sample Core
Type:	Steel	Steel
Diam.:	6"	4"
Weight:		
Fall:		

THE Chazen COMPANIES	21 Fox Street Poughkeepsie, NY 12601 Phn: (845) 454-3980 Fax: (845) 454-4026	**PROJECT:** Katonah Municipal Well Field **LOCATION:** Jay Street, Village of Katonah, Town of Bedford, NY **CLIENT:** Town of Bedford **PROJECT NO.:** 41433.00		**Test Boring/Well No.:**	**MW-4R**
				Sheet	3 of 3
				Total Depth:	102 ft.
Contractor: Cascade Drilling		**Start Date:** October 28, 2014	**Northing:** 884740.4645	**Borehole Dia.:**	6 in.
Drill Rig: Boart Longyear - 100C		**Finish Date:** October 31, 2014	**Easting:** 716971.6959	**Rock Depth:**	>102 ft.
Driller: Kevin Smith		**El. Datum:** NAVD88	**Longitude:** na	**Water Depth:**	12 ft.
Geologist: William Olsen		**G.S. Elevation:** 210.55	**Latitude:** na	**Well Depth:**	100 ft.

Depth (Ft)	Approx. Elevation (Ft)	Casing Blows	Sample No.	Blow Counts	Recovery(%)	PID reading (ppm)	Soil Type	Stratum and Field Descriptions:		Well Diagram	Field Notes, Well Notes, Comments:
					33						
82	129		10			0.0					Poor sample recoveries likely due to cobbles >4 inches
84	127										
86	125		11		15						
88	123							SAND and GRAVEL (13-99 ft)	mostly m-c Sand, some gravel, trace cobbles, grey, wet		#2 sand pack
90	121					0.0					
92	119										
94	117										
96	115		12		62	0.0					2-inch diameter 20-slot PVC well screen (approx. 131-111 feet NAVD88)
98	113					0.0					
100	111							SAND (99-102 ft)	f Sand, grey, moderately dense, wet		
102	109					0.0					
								End of Boring at 102 feet bgs			
104	107										
106	105										
108	103										
110	101										
112	99										
114	97										
116	95										
118	93										
120	91										

METHODS: **HSA**- Hollow Stem Auger, **RWH**- Rotary Wash, **SSA**- Solid Stem Auger, **CPT**- Cone Penetrometer

SAMPLE TYPES: **AS**-Auger, **WS**-Wash, **SS**-Split Spoon, **RC**-Rock Core, **GS**-Grab, **ST**-Shelby Tube, **PS**-Piston

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ADDITIONAL NOTES: 1. 2. 3

DRILLING INFORMATION

Method: Sonic

Method:

	Casing	Sample Core
Type:	Steel	Steel
Diam.:	6"	4"
Weight:		
Fall:		

THE Chazen COMPANIES	21 Fox Street Poughkeepsie, NY 12601 Phn: (845) 454-3980 Fax: (845) 454-4026	**PROJECT:** Katonah Municipal Well **LOCATION:** Jay Street, Village of Katonah, Town of Bedford, NY **CLIENT:** Town of Bedford **PROJECT NO.:** 41433.00			**Test Boring/Well No.:**	**MW-11R**	
					Sheet	1 of 2	
					Total Depth:	68	ft.
Contractor: Cascade Drilling		**Start Date:** November 5, 2014	**Northing:**	884622.1400	**Borehole Dia.:**	6	in.
Drill Rig: Boart Longyear - 100C		**Finish Date:** November 6, 2014	**Easting:**	716763.8631	**Rock Depth:**	>68	ft.
Driller: Kevin Smith		**El. Datum:** NAVD88	**Longitude:**	na	**Water Depth:**	21.5	ft.
Geologist: William Olsen		**G.S. Elevation:** 220.23	**Latitude:**	na	**Well Depth:**	66	ft.

Depth (Ft)	Approx. Elevation (Ft)	Casing Blows	Sample No.	Blow Counts	Recovery(%)	PID reading (ppm)	Soil Type	Stratum and Field Descriptions:		Well Diagram	Field Notes, Well Notes, Comments:
					87	0.0		SOIL (0-2 ft)	silty sand, dark brown, dry		Well finished with metal flush mount
2	218		1								
						0.0					*Top of PVC Casing Elv = 219.66 ft*
4	216										
						0.0					
6	214		2		90						Tremie-grouted Portand/bentonite seal
						0.0					
8	212										
						0.0					
10	210		3		53	0.0		SAND (2-20 ft)	mostly f-c Sand, little f-c gravel, few cobbles, trace silt, brown to reddish-brown, dry		
12	208										
						0.0					
14	206										
						0.0					
16	204										2-inch diameter solid PVC riser
						0.0					
18	202										
						0.0					
20	200										
			4		47			SAND and GRAVEL (20-33 ft)	mostly m-c Sand and f Gravel, some c gravel, and f sand, few cobbles, trace silt, brown, wet below 22 ft		
22	198					0.0					
24	196										
26	194		5		?						
						0.0					
28	192										
30	190		6		65						
						0.0					
32	188										
34	186										
36	184							GRAVEL (33-44 ft)	mostly f-c Gravel, few sand and cobbles, well washed, wet		
38	182					0.0					
40	180										

METHODS: **HSA**- Hollow Stem Auger, **RWH**- Rotary Wash, **SSA**- Solid Stem Auger, **CPT**- Cone Penetrometer

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NOTES:

ADDITIONAL NOTES: 1. 2. 3

DRILLING INFORMATION

Method: Sonic

Method:

	Casing	Sample Core
Type:	Steel	Steel
Diam.:	6"	4"
Weight:		
Fall:		

THE Chazen COMPANIES	21 Fox Street Poughkeepsie, NY 12601 Phn: (845) 454-3980 Fax: (845) 454-4026	**PROJECT:** Katonah Municipal Well Field **LOCATION:** Jay Street, Village of Katonah, Town of Bedford, NY **CLIENT:** Town of Bedford **PROJECT NO.:** 41433.00		**Test Boring/Well No.:**	**MW-11R**
				Sheet	2 of 2
				Total Depth:	68 ft.
Contractor: Cascade Drilling	**Start Date:** November 5, 2014	**Northing:** 884622.1400		**Borehole Dia.:**	6 in.
Drill Rig: Boart Longyear - 100C	**Finish Date:** November 6, 2014	**Easting:** 716763.8631		**Rock Depth:**	>68 ft.
Driller: Kevin Smith	**El. Datum:** NAVD88	**Longitude:** na		**Water Depth:**	21.5 ft.
Geologist: William Olsen	**G.S. Elevation:** 220.23	**Latitude:** na		**Well Depth:**	66 ft.

Depth (Ft)	Approx. Elevation (Ft)	Casing Blows	Sample No.	Blow Counts	Recovery(%)	PID reading (ppm)	Soil Type	Stratum and Field Descriptions:		Well Diagram	Field Notes, Well Notes, Comments:
					77			SAND and GRAVEL (40-43 ft)	m Sand grading to f-c Gravel, brown, wet		
42	178					0.0					Tremie-grouted Portand/bentonite seal
44	176		7					SAND (43--47 ft)	m Sand, brown, uniform, wet		
46	174										
48	172					0.0		SAND and GRAVEL (47-50 ft)	mostly f-c Gravel, some f-c sand, trace silt and cobbles, brown, wet		3/8-inch bentonite chips
50	170				53						
52	168		8			0.0					
54	166										#0 sand pack
56	164				53			GRAVEL (50-67 ft)	mostly f-c Gravel, few cobbles, little sand and silt, dark brown, moderately washed, wet, some decomposed mica-rich cobbles		
58	162					0.0					2-inch diameter 20-slot PVC well screen (156-166 feet NAVD88)
60	160		9								
62	158					0.0					
64	156										
66	154				89						
			10			0					
68	152							S&G with fines	Sand and Gravel with fines, till-like, wet		#2 sand pack
									End of Boring at 68 feet bgs		
70	150										
72	148										
74	146										
76	144										
78	142										
80	140										

METHODS: **HSA**- Hollow Stem Auger, **RWH**- Rotary Wash, **SSA**- Solid Stem Auger, **CPT**- Cone Penetrometer

SAMPLE TYPES: **AS**-Auger, **WS**-Wash, **SS**-Split Spoon, **RC**-Rock Core, **GS**-Grab, **ST**-Shelby Tube, **PS**-Piston

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NOTES:

ADDITIONAL NOTES: 1. 2. 3

DRILLING INFORMATION

Method: Sonic

Method:

	Casing	Sample Core
Type:	Steel	Steel
Diam.:	6"	4"
Weight:		
Fall:		

The Chazen Companies

FIELD DATA SHEET

SAMPLE INFORMATION:

Sample ID:	KMW-MW-4R	Sample Time:	10:45	Sample Matrix *(circle)*:	
Well ID:	MW-4R	Sample Date:	12-16-19	**Groundwater**	Soil
Project Name:	Katonah Municipal WCM	Sample Tech(s):	WGD	Surface Water	Air
Sample Location:	Katonah, NY	Project and Task #:	41433.00	Drinking Water	Other:
		Project Manager:	KM		

WELL INFORMATION:

Well Condition: Good - HDPE tubing installed last month.

Lock Type: _____ Key #: _____

PURGE DATA:

Measuring Point: TOPVC
Depth to Bottom: 101.50
Depth to Water: 13.94
Water Column Height: *(A)* _____
(depth to bottom - depth to water)

# of Volumes to be Purged: *(C)* _____

Gal. to be Purged: *(AxBxC)* _____

(B)

Pipe Width	Gal/Foot
1.0"	0.041
1.5"	~~0.092~~
2.0"	0.163
2.5"	0.255
3.0"	0.367
4.0"	0.653
6.0"	1.469
8.0"	2.611

Purge Method: Low Flow - Mini-Monsoon
Start Date: _____
Start Time: _____
Stop Time: _____
Purge Rate (gpm): _____
Elapsed Time (min): _____
Well Vol. Purged (#): _____
Purge Vol. (gal): ~5
Well went dry? (No) Yes
Conditions: (No Odor) Odor
(Clear) Slightly-Turbid Turbid

FIELD RESULTS:

Gal purged (gal)	Date & Time	Depth to Water (ft)	Temp (deg C)	SpCond (uS/cm)	Cond. (uS/cm)	TURB. VISUAL	TDS (g/L)		DO (mg/L)	pH	ORP (mV)	Odor
	10:22	13.94	10.6	1,636	—	Clear	1.0725	—	6.07	7.51	216.3	None
	10:27	13.94	10.4	1,663	—	Clear	1.0790	—	3.75	7.45	214.4	None
	10:32	13.94	10.2	1,656	—	Clear	1.0920	—	3.55	7.43	222.3	None
	10:37	13.94	10.5	1,668	—	Clear	1.0855	—	3.21	7.41	225.0	None
	10:42	13.94	10.6	1,662	—	Clear	1.0792	—	3.05	7.40	230.9	None
	10:45	13.94	10.7	1,645	—	Clear	1.0725	—	2.99	7.38	236.6	None

SAMPLE INFORMATION:

Sample Method: Submersible *(Peristaltic, Submersible, Dedicated or Disp. Bailer, Waterra, Dir. Instrument Reading, etc.)*
Sample Type: **Grab** Composite
Weather: Overcast
Sample Depth(ft): ~90'
Barometric Pres.: _____
Air Temp.(°F): 30s
Wind: Calm
Notes: _____

LAB REQUESTS:

Laboratory Name: ~~Con-Test Laboratory~~ York
Analysis/Method: PFAS, 1,4-Dioxane VOC
Turn Around Time: Norm

QA/QC: Duplicate Equip. Blank Field Blank Trip Blank MS/MSD

The Chazen Companies

FIELD DATA SHEET

SAMPLE INFORMATION:

Sample ID: KMW-MW-11R
Well ID: MW-11R
Project Name: Katonah Municipal Well
Sample Location: Katonah, NY

Sample Time: 12:47
Sample Date: 12-16-19
Sample Tech(s): WGD
Project and Task #: 414.33.005
Project Manager: KM

Sample Matrix *(circle)*: **Groundwater** Surface Water Drinking Water Soil Air Other:

WELL INFORMATION:

Well Condition: GOOD - HDPE tubing installed last month
Lock Type:
Key #:

PURGE DATA:

Measuring Point: TOPVC
Depth to Bottom: 65.55
Depth to Water: 20.47
Water Column Height: *(A)*
(depth to bottom - depth to water)
# of Volumes to be Purged: *(C)*
Gal. to be Purged: *(AxBxC)*

Pipe Width	Gal/Foot *(B)*
1.0"	0.041
1.5"	0.092
2.0"	0.163
2.5"	0.255
3.0"	0.367
4.0"	0.653
6.0"	1.469
8.0"	2.611

Purge Method: Low-Flow - Mini-Monsoon
Start Date:
Start Time:
Stop Time:
Purge Rate (gpm):
Elapsed Time (min):
Well Vol. Purged (#):
Purge Vol. (gal): ~4
Well went dry? No Yes
Conditions: No Odor Clear Odor Slightly-Turbid Turbid

FIELD RESULTS:

Gal purged gal	Date & Time	Depth to Water ft	Temp deg C	SpCond uS/cm	Cond. uS/cm	Turb.	TDS g/L		DO mg/L	pH	ORP mV	Odor
	12:27	20.47	9.4	1,114	—	Clear	0.7215	-	8.09	7.70	251.0	None
	12:32	20.47	11.2	1,113	—	Clear	0.7215	-	6.65	7.71	256.4	None
	12:37	20.47	11.3	1,114	—	Clear	0.7215	-	6.23	7.65	262.4	None
	12:42	20.47	11.4	1,114	—	Clear	0.7215	-	6.33	7.63	264.9	None
	12:47	20.47	11.3	1,115	—	Clear	0.7200	-	6.28	7.61	267.1	None

SAMPLE INFORMATION:

Sample Method: *(Peristaltic, Submersible, Dedicated or Disp. Bailer, Waterra, Dir. Instrument Reading, etc.)*
Sample Type: **Grab** Composite
Weather: Overcast
Notes:
Sample Depth(ft):
Barometric Pres.:
Air Temp.(°F): 30s
Wind: Calm

LAB REQUESTS:

Laboratory Name: ~~Con-Test Laboratory~~ York
Analysis/Method: PFAS, 1,4-Dioxane VOCs
Turn Around Time: Normal

QA/QC: Duplicate Equip. Blank Field Blank Trip Blank

KMW-EB (PFAS, 1,4-Dioxane only)
13:00

Technical Report

prepared for:

Chazen Environmental Services (Poughkeepsie)
21 Fox Street
Poughkeepsie NY, 12601
Attention: Will Olsen

Report Date: 12/27/2019
Client Project ID: 41433.00 TASK 0600 Katonah Municipal Well
York Project (SDG) No.: 19L0685

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 12/27/2019
Client Project ID: 41433.00 TASK 0600 Katonah Municipal Well
York Project (SDG) No.: 19L0685

Chazen Environmental Services (Poughkeepsie)
21 Fox Street
Poughkeepsie NY, 12601
Attention: Will Olsen

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on December 17, 2019 and listed below. The project was identified as your project: **41433.00 TASK 0600 Katonah Municipal Well**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

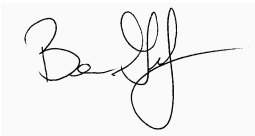
The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19L0685-01	KMW-MW-4R	Water	12/16/2019	12/17/2019
19L0685-02	KMW-MW-11R	Water	12/16/2019	12/17/2019
19L0685-03	KMW-FD	Water	12/16/2019	12/17/2019
19L0685-04	KMW-EB	Water	12/16/2019	12/17/2019

General Notes for York Project (SDG) No.: 19L0685

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 12/27/2019

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: KMW-MW-4R

York Sample ID: 19L0685-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 10:45 am	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1	EPA 8270D SIM Certifications: NJDEP,NELAC-NY10854	12/20/2019 07:56	12/26/2019 14:40	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*64.0 %*	*50-130*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	*** Perfluorobutanesulfonic acid (PFBS)**	**10.8**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
307-24-4	*** Perfluorohexanoic acid (PFHxA)**	**22.6**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
375-85-9	*** Perfluoroheptanoic acid (PFHpA)**	**6.88**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
355-46-4	*** Perfluorohexanesulfonic acid (PFHxS)**	**22.4**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
335-67-1	*** Perfluorooctanoic acid (PFOA)**	**12.5**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**15.1**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
2706-90-3	*** Perfluoropentanoic acid (PFPeA)**	**28.5**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT

Sample Information

Client Sample ID: KMW-MW-4R

York Sample ID: 19L0685-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 10:45 am	12/17/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT
375-22-4	*** Perfluoro-n-butanoic acid (PFBA)**	**11.4**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 10:57	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*78.1 %*	*25-150*
Surrogate: M5PFHxA	*79.7 %*	*25-150*
Surrogate: M4PFHpA	*84.5 %*	*25-150*
Surrogate: M3PFHxS	*76.7 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*81.0 %*	*25-150*
Surrogate: M6PFDA	*83.4 %*	*25-150*
Surrogate: M7PFUdA	*65.0 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*59.8 %*	*25-150*
Surrogate: M2PFTeDA	*32.6 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*77.7 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*76.6 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*79.4 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*65.3 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*67.4 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*68.3 %*	*25-150*
Surrogate: M2-6:2 FTS	*141 %*	*25-150*
Surrogate: M2-8:2 FTS	*120 %*	*25-150*
Surrogate: M9PFNA	*83.6 %*	*25-150*

Sample Information

Client Sample ID: KMW-MW-11R **York Sample ID:** 19L0685-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:47 pm	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1	EPA 8270D SIM Certifications: NJDEP,NELAC-NY10854	12/20/2019 07:56	12/26/2019 14:57	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*64.0 %*	*50-130*

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	*** Perfluorobutanesulfonic acid (PFBS)**	**14.6**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
307-24-4	*** Perfluorohexanoic acid (PFHxA)**	**37.0**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
375-85-9	*** Perfluoroheptanoic acid (PFHpA)**	**11.3**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
355-46-4	*** Perfluorohexanesulfonic acid (PFHxS)**	**39.3**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
335-67-1	*** Perfluorooctanoic acid (PFOA)**	**15.2**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**19.0**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
2706-90-3	*** Perfluoropentanoic acid (PFPeA)**	**42.3**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT

Sample Information

Client Sample ID: **KMW-MW-11R** **York Sample ID:** **19L0685-02**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:47 pm	12/17/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT
375-22-4	*** Perfluoro-n-butanoic acid (PFBA)**	**15.8**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:18	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*63.7 %*	*25-150*
Surrogate: M5PFHxA	*63.4 %*	*25-150*
Surrogate: M4PFHpA	*67.7 %*	*25-150*
Surrogate: M3PFHxS	*62.0 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*63.6 %*	*25-150*
Surrogate: M6PFDA	*60.2 %*	*25-150*
Surrogate: M7PFUdA	*51.5 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*51.5 %*	*25-150*
Surrogate: M2PFTeDA	*34.8 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*61.0 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*59.7 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*62.8 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*55.3 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*53.6 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*55.2 %*	*25-150*
Surrogate: M2-6:2 FTS	*110 %*	*25-150*
Surrogate: M2-8:2 FTS	*89.1 %*	*25-150*
Surrogate: M9PFNA	*69.3 %*	*25-150*

Sample Information

Client Sample ID: **KMW-FD** **York Sample ID:** **19L0685-03**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:00 am	12/17/2019

Sample Information

Client Sample ID: KMW-FD

York Sample ID: 19L0685-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:00 am	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1	EPA 8270D SIM Certifications: NJDEP,NELAC-NY10854	12/20/2019 07:56	12/26/2019 15:14	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*64.0 %*	*50-130*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	*** Perfluorobutanesulfonic acid (PFBS)**	**11.2**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
307-24-4	*** Perfluorohexanoic acid (PFHxA)**	**22.2**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
375-85-9	*** Perfluoroheptanoic acid (PFHpA)**	**6.89**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
355-46-4	*** Perfluorohexanesulfonic acid (PFHxS)**	**22.3**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
335-67-1	*** Perfluorooctanoic acid (PFOA)**	**12.5**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**16.5**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
2706-90-3	*** Perfluoropentanoic acid (PFPeA)**	**29.0**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT

Sample Information

Client Sample ID: **KMW-FD** **York Sample ID:** **19L0685-03**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:00 am	12/17/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT
375-22-4	*** Perfluoro-n-butanoic acid (PFBA)**	**11.4**		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 12:45	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*68.6 %*	*25-150*
Surrogate: M5PFHxA	*70.4 %*	*25-150*
Surrogate: M4PFHpA	*74.3 %*	*25-150*
Surrogate: M3PFHxS	*67.9 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*69.1 %*	*25-150*
Surrogate: M6PFDA	*66.6 %*	*25-150*
Surrogate: M7PFUdA	*60.1 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*50.3 %*	*25-150*
Surrogate: M2PFTeDA	*19.1 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*67.6 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*64.6 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*69.1 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*27.9 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*59.9 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*57.3 %*	*25-150*
Surrogate: M2-6:2 FTS	*117 %*	*25-150*
Surrogate: M2-8:2 FTS	*102 %*	*25-150*
Surrogate: M9PFNA	*72.6 %*	*25-150*

Sample Information

Client Sample ID: **KMW-EB** **York Sample ID:** **19L0685-04**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 1:00 pm	12/17/2019

Sample Information

Client Sample ID: KMW-EB **York Sample ID:** 19L0685-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 1:00 pm	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1	EPA 8270D SIM Certifications: NJDEP,NELAC-NY10854	12/20/2019 07:56	12/26/2019 15:32	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*68.0 %*	*50-130*

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
1763-23-1	* Perfluorooctanesulfonic acid (PFOS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT

Sample Information

Client Sample ID: KMW-EB

York Sample ID: 19L0685-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 1:00 pm	12/17/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ng/L	2.00	1	EPA 537m Certifications:	12/18/2019 16:57	12/20/2019 13:12	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*67.8 %*	*25-150*
Surrogate: M5PFHxA	*68.7 %*	*25-150*
Surrogate: M4PFHpA	*70.6 %*	*25-150*
Surrogate: M3PFHxS	*67.1 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*68.0 %*	*25-150*
Surrogate: M6PFDA	*63.9 %*	*25-150*
Surrogate: M7PFUdA	*63.6 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*60.4 %*	*25-150*
Surrogate: M2PFTeDA	*33.4 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*65.7 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*69.7 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*68.9 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*59.3 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*66.0 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*65.4 %*	*25-150*
Surrogate: M2-6:2 FTS	*111 %*	*25-150*
Surrogate: M2-8:2 FTS	*106 %*	*25-150*
Surrogate: M9PFNA	*76.6 %*	*25-150*

Analytical Batch Summary

Batch ID: BL91039 **Preparation Method:** SPE Ext-PFAS-EPA 537.1M **Prepared By:** WL

YORK Sample ID	Client Sample ID	Preparation Date
19L0685-01	KMW-MW-4R	12/18/19
19L0685-02	KMW-MW-11R	12/18/19
19L0685-03	KMW-FD	12/18/19
19L0685-04	KMW-EB	12/18/19
BL91039-BLK1	Blank	12/18/19
BL91039-BS1	LCS	12/18/19
BL91039-MS2	Matrix Spike	12/18/19
BL91039-MSD2	Matrix Spike Dup	12/18/19

Batch ID: BL91138 **Preparation Method:** EPA 3535A **Prepared By:** CTD

YORK Sample ID	Client Sample ID	Preparation Date
19L0685-01	KMW-MW-4R	12/20/19
19L0685-02	KMW-MW-11R	12/20/19
19L0685-03	KMW-FD	12/20/19
19L0685-04	KMW-EB	12/20/19
BL91138-BLK1	Blank	12/20/19
BL91138-BS1	LCS	12/20/19
BL91138-MS1	Matrix Spike	12/20/19
BL91138-MSD1	Matrix Spike Dup	12/20/19

Semivolatile Organic Compounds by GC/MS/SIM - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91138 - EPA 3535A											
Blank (BL91138-BLK1)								Prepared: 12/20/2019 Analyzed: 12/26/2019			
1,4-Dioxane	ND	0.200	ug/L								
Surrogate: 1,4-Dioxane-d8	*3.00*		*"*	*5.00*		*60.0*	*50-130*				
LCS (BL91138-BS1)								Prepared: 12/20/2019 Analyzed: 12/26/2019			
1,4-Dioxane	3.40	0.200	ug/L	5.00		68.0	50-130				
Surrogate: 1,4-Dioxane-d8	*3.20*		*"*	*5.00*		*64.0*	*50-130*				
Matrix Spike (BL91138-MS1)	*Source sample: 19L0685-01 (KMW-MW-4R)							Prepared: 12/20/2019 Analyzed: 12/26/2019			
1,4-Dioxane	3.60	0.200	ug/L	5.00	ND	72.0	50-130				
Surrogate: 1,4-Dioxane-d8	*3.40*		*"*	*5.00*		*68.0*	*50-130*				
Matrix Spike Dup (BL91138-MSD1)	*Source sample: 19L0685-01 (KMW-MW-4R)							Prepared: 12/20/2019 Analyzed: 12/26/2019			
1,4-Dioxane	3.40	0.200	ug/L	5.00	ND	68.0	50-130		5.71	30	
Surrogate: 1,4-Dioxane-d8	*3.40*		*"*	*5.00*		*68.0*	*50-130*				

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91039 - SPE Ext-PFAS-EPA 537.1M											
Blank (BL91039-BLK1)											
Perfluorobutanesulfonic acid (PFBS)	ND	2.00	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	2.00	"								
Perfluoroheptanoic acid (PFHpA)	ND	2.00	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	2.00	"								
Perfluorooctanoic acid (PFOA)	ND	2.00	"								
Perfluorooctanesulfonic acid (PFOS)	ND	2.00	"								
Perfluorononanoic acid (PFNA)	ND	2.00	"								
Perfluorodecanoic acid (PFDA)	ND	2.00	"								
Perfluoroundecanoic acid (PFUnA)	ND	2.00	"								
Perfluorododecanoic acid (PFDoA)	ND	2.00	"								
Perfluorotridecanoic acid (PFTrDA)	ND	2.00	"								
Perfluorotetradecanoic acid (PFTA)	ND	2.00	"								
N-MeFOSAA	ND	2.00	"								
N-EtFOSAA	ND	2.00	"								
Perfluoropentanoic acid (PFPeA)	ND	2.00	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	2.00	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	2.00	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	2.00	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	5.00	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	2.00	"								
Perfluoro-n-butanoic acid (PFBA)	ND	2.00	"								
Surrogate: M3PFBS	*51.6*		"	*74.3*		*69.5*	*25-150*				
Surrogate: M5PFHxA	*54.0*		"	*80.0*		*67.5*	*25-150*				
Surrogate: M4PFHpA	*52.9*		"	*80.0*		*66.1*	*25-150*				
Surrogate: M3PFHxS	*51.3*		"	*75.7*		*67.8*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*52.6*		"	*80.0*		*65.7*	*25-150*				
Surrogate: M6PFDA	*49.5*		"	*80.0*		*61.8*	*25-150*				
Surrogate: M7PFUdA	*58.1*		"	*80.0*		*72.7*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*45.8*		"	*80.0*		*57.2*	*25-150*				
Surrogate: M2PFTeDA	*41.5*		"	*80.0*		*51.8*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*55.4*		"	*80.0*		*69.2*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*51.7*		"	*76.6*		*67.6*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*57.3*		"	*80.0*		*71.7*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*50.7*		"	*80.0*		*63.3*	*10-150*				
Surrogate: d3-N-MeFOSAA	*53.0*		"	*80.0*		*66.2*	*25-150*				
Surrogate: d5-N-EtFOSAA	*52.6*		"	*80.0*		*65.8*	*25-150*				
Surrogate: M2-6:2 FTS	*79.9*		"	*75.9*		*105*	*25-150*				
Surrogate: M2-8:2 FTS	*78.9*		"	*76.6*		*103*	*25-150*				
Surrogate: M9PFNA	*54.7*		"	*80.0*		*68.4*	*25-150*				

Prepared: 12/18/2019 Analyzed: 12/20/2019

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91039 - SPE Ext-PFAS-EPA 537.1M											
LCS (BL91039-BS1)									Prepared: 12/18/2019 Analyzed: 12/20/2019		
Perfluorobutanesulfonic acid (PFBS)	88.3	2.00	ng/L	70.8		125	50-130				
Perfluorohexanoic acid (PFHxA)	95.5	2.00	"	80.0		119	50-130				
Perfluoroheptanoic acid (PFHpA)	91.8	2.00	"	80.0		115	50-130				
Perfluorohexanesulfonic acid (PFHxS)	67.9	2.00	"	59.2		115	50-130				
Perfluorooctanoic acid (PFOA)	82.6	2.00	"	80.0		103	50-130				
Perfluorooctanesulfonic acid (PFOS)	67.5	2.00	"	58.4		116	50-130				
Perfluorononanoic acid (PFNA)	93.3	2.00	"	76.8		122	50-130				
Perfluorodecanoic acid (PFDA)	99.1	2.00	"	80.0		124	50-130				
Perfluoroundecanoic acid (PFUnA)	88.5	2.00	"	80.0		111	50-130				
Perfluorododecanoic acid (PFDoA)	95.3	2.00	"	80.0		119	50-130				
Perfluorotridecanoic acid (PFTrDA)	85.3	2.00	"	80.0		107	50-130				
Perfluorotetradecanoic acid (PFTA)	90.1	2.00	"	80.0		113	50-130				
N-MeFOSAA	91.3	2.00	"	80.0		114	50-130				
N-EtFOSAA	94.1	2.00	"	80.0		118	50-130				
Perfluoropentanoic acid (PFPeA)	92.1	2.00	"	80.0		115	50-130				
Perfluoro-1-octanesulfonamide (FOSA)	92.0	2.00	"	80.0		115	50-130				
Perfluoro-1-heptanesulfonic acid (PFHpS)	94.2	2.00	"	79.6		118	50-130				
Perfluoro-1-decanesulfonic acid (PFDS)	80.1	2.00	"	77.2		104	50-130				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	88.4	5.00	"	76.0		116	50-130				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	92.9	2.00	"	76.8		121	50-130				
Perfluoro-n-butanoic acid (PFBA)	93.2	2.00	"	80.0		117	50-130				
Surrogate: M3PFBS	*56.4*		*"*	*74.3*		*75.9*	*25-150*				
Surrogate: M5PFHxA	*62.2*		*"*	*80.0*		*77.7*	*25-150*				
Surrogate: M4PFHpA	*60.9*		*"*	*80.0*		*76.1*	*25-150*				
Surrogate: M3PFHxS	*55.2*		*"*	*75.7*		*72.9*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*60.4*		*"*	*80.0*		*75.5*	*25-150*				
Surrogate: M6PFDA	*59.7*		*"*	*80.0*		*74.6*	*25-150*				
Surrogate: M7PFUdA	*53.6*		*"*	*80.0*		*67.0*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*46.6*		*"*	*80.0*		*58.2*	*25-150*				
Surrogate: M2PFTeDA	*45.3*		*"*	*80.0*		*56.6*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*61.3*		*"*	*80.0*		*76.6*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*55.3*		*"*	*76.6*		*72.2*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*62.7*		*"*	*80.0*		*78.3*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*57.1*		*"*	*80.0*		*71.4*	*10-150*				
Surrogate: d3-N-MeFOSAA	*59.1*		*"*	*80.0*		*73.8*	*25-150*				
Surrogate: d5-N-EtFOSAA	*55.5*		*"*	*80.0*		*69.3*	*25-150*				
Surrogate: M2-6:2 FTS	*75.9*		*"*	*75.9*		*100*	*25-150*				
Surrogate: M2-8:2 FTS	*68.2*		*"*	*76.6*		*89.0*	*25-150*				
Surrogate: M9PFNA	*57.9*		*"*	*80.0*		*72.4*	*25-150*				

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91039 - SPE Ext-PFAS-EPA 537.1M											
Matrix Spike (BL91039-MS2)	*Source sample: 19L0685-01 (KMW-MW-4R)							Prepared: 12/18/2019 Analyzed: 12/20/2019			
Perfluorobutanesulfonic acid (PFBS)	103	2.00	ng/L	70.8	10.8	131	25-150				
Perfluorohexanoic acid (PFHxA)	118	2.00	"	80.0	22.6	119	25-150				
Perfluoroheptanoic acid (PFHpA)	104	2.00	"	80.0	6.88	122	25-150				
Perfluorohexanesulfonic acid (PFHxS)	115	2.00	"	59.2	22.4	156	25-150	High Bias			
Perfluorooctanoic acid (PFOA)	94.4	2.00	"	80.0	12.5	102	25-150				
Perfluorooctanesulfonic acid (PFOS)	116	2.00	"	58.4	15.1	173	25-150	High Bias			
Perfluorononanoic acid (PFNA)	87.5	2.00	"	76.8	ND	114	25-150				
Perfluorodecanoic acid (PFDA)	103	2.00	"	80.0	ND	129	25-150				
Perfluoroundecanoic acid (PFUnA)	94.0	2.00	"	80.0	ND	117	25-150				
Perfluorododecanoic acid (PFDoA)	95.5	2.00	"	80.0	ND	119	25-150				
Perfluorotridecanoic acid (PFTrDA)	79.4	2.00	"	80.0	ND	99.3	25-150				
Perfluorotetradecanoic acid (PFTA)	101	2.00	"	80.0	ND	126	25-150				
N-MeFOSAA	98.0	2.00	"	80.0	ND	123	25-150				
N-EtFOSAA	97.7	2.00	"	80.0	ND	122	25-150				
Perfluoropentanoic acid (PFPeA)	128	2.00	"	80.0	28.5	125	25-150				
Perfluoro-1-octanesulfonamide (FOSA)	96.2	2.00	"	80.0	ND	120	25-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	105	2.00	"	79.6	ND	132	25-150				
Perfluoro-1-decanesulfonic acid (PFDS)	83.8	2.00	"	77.2	ND	108	25-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	91.4	5.00	"	76.0	ND	120	25-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	102	2.00	"	76.8	ND	133	25-150				
Perfluoro-n-butanoic acid (PFBA)	109	2.00	"	80.0	11.4	122	25-150				
Surrogate: M3PFBS	*53.5*		*"*	*74.3*		*71.9*	*25-150*				
Surrogate: M5PFHxA	*56.6*		*"*	*80.0*		*70.7*	*25-150*				
Surrogate: M4PFHpA	*57.7*		*"*	*80.0*		*72.1*	*25-150*				
Surrogate: M3PFHxS	*51.4*		*"*	*75.7*		*67.9*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*58.4*		*"*	*80.0*		*73.0*	*25-150*				
Surrogate: M6PFDA	*48.6*		*"*	*80.0*		*60.8*	*25-150*				
Surrogate: M7PFUdA	*45.1*		*"*	*80.0*		*56.4*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*46.9*		*"*	*80.0*		*58.6*	*25-150*				
Surrogate: M2PFTeDA	*33.2*		*"*	*80.0*		*41.5*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*55.8*		*"*	*80.0*		*69.8*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*51.0*		*"*	*76.6*		*66.6*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*55.4*		*"*	*80.0*		*69.3*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*48.0*		*"*	*80.0*		*60.0*	*10-150*				
Surrogate: d3-N-MeFOSAA	*48.3*		*"*	*80.0*		*60.4*	*25-150*				
Surrogate: d5-N-EtFOSAA	*48.0*		*"*	*80.0*		*60.0*	*25-150*				
Surrogate: M2-6:2 FTS	*89.5*		*"*	*75.9*		*118*	*25-150*				
Surrogate: M2-8:2 FTS	*63.7*		*"*	*76.6*		*83.1*	*25-150*				
Surrogate: M9PFNA	*62.0*		*"*	*80.0*		*77.5*	*25-150*				

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91039 - SPE Ext-PFAS-EPA 537.1M											
Matrix Spike Dup (BL91039-MSD2)	*Source sample: 19L0685-01 (KMW-MW-4R)								Prepared: 12/18/2019 Analyzed: 12/20/2019		
Perfluorobutanesulfonic acid (PFBS)	104	2.00	ng/L	70.8	10.8	132	25-150		0.534	35	
Perfluorohexanoic acid (PFHxA)	119	2.00	"	80.0	22.6	120	25-150		0.667	35	
Perfluoroheptanoic acid (PFHpA)	101	2.00	"	80.0	6.88	117	25-150		3.43	35	
Perfluorohexanesulfonic acid (PFHxS)	114	2.00	"	59.2	22.4	155	25-150	High Bias	0.961	35	
Perfluorooctanoic acid (PFOA)	105	2.00	"	80.0	12.5	116	25-150		10.7	35	
Perfluorooctanesulfonic acid (PFOS)	121	2.00	"	58.4	15.1	181	25-150	High Bias	4.08	35	
Perfluorononanoic acid (PFNA)	82.6	2.00	"	76.8	ND	107	25-150		5.84	35	
Perfluorodecanoic acid (PFDA)	114	2.00	"	80.0	ND	143	25-150		10.0	35	
Perfluoroundecanoic acid (PFUnA)	109	2.00	"	80.0	ND	136	25-150		14.7	35	
Perfluorododecanoic acid (PFDoA)	96.4	2.00	"	80.0	ND	121	25-150		0.942	35	
Perfluorotridecanoic acid (PFTrDA)	78.1	2.00	"	80.0	ND	97.6	25-150		1.67	35	
Perfluorotetradecanoic acid (PFTA)	114	2.00	"	80.0	ND	142	25-150		12.0	35	
N-MeFOSAA	96.0	2.00	"	80.0	ND	120	25-150		2.13	35	
N-EtFOSAA	98.1	2.00	"	80.0	ND	123	25-150		0.472	35	
Perfluoropentanoic acid (PFPeA)	125	2.00	"	80.0	28.5	120	25-150		2.63	35	
Perfluoro-1-octanesulfonamide (FOSA)	96.4	2.00	"	80.0	ND	121	25-150		0.163	35	
Perfluoro-1-heptanesulfonic acid (PFHpS)	108	2.00	"	79.6	ND	135	25-150		2.52	35	
Perfluoro-1-decanesulfonic acid (PFDS)	86.4	2.00	"	77.2	ND	112	25-150		3.13	35	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	92.1	5.00	"	76.0	ND	121	25-150		0.753	35	
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	102	2.00	"	76.8	ND	133	25-150		0.198	35	
Perfluoro-n-butanoic acid (PFBA)	108	2.00	"	80.0	11.4	121	25-150		0.154	35	
Surrogate: M3PFBS	*52.0*		"	*74.3*		*70.0*	*25-150*				
Surrogate: M5PFHxA	*55.4*		"	*80.0*		*69.3*	*25-150*				
Surrogate: M4PFHpA	*56.1*		"	*80.0*		*70.2*	*25-150*				
Surrogate: M3PFHxS	*51.3*		"	*75.7*		*67.7*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*54.3*		"	*80.0*		*67.9*	*25-150*				
Surrogate: M6PFDA	*48.7*		"	*80.0*		*60.9*	*25-150*				
Surrogate: M7PFUdA	*44.8*		"	*80.0*		*56.0*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*50.0*		"	*80.0*		*62.5*	*25-150*				
Surrogate: M2PFTeDA	*35.1*		"	*80.0*		*43.9*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*54.8*		"	*80.0*		*68.5*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*49.3*		"	*76.6*		*64.4*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*55.8*		"	*80.0*		*69.8*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*45.1*		"	*80.0*		*56.3*	*10-150*				
Surrogate: d3-N-MeFOSAA	*50.3*		"	*80.0*		*62.8*	*25-150*				
Surrogate: d5-N-EtFOSAA	*48.1*		"	*80.0*		*60.1*	*25-150*				
Surrogate: M2-6:2 FTS	*87.1*		"	*75.9*		*115*	*25-150*				
Surrogate: M2-8:2 FTS	*61.0*		"	*76.6*		*79.5*	*25-150*				
Surrogate: M9PFNA	*56.5*		"	*80.0*		*70.6*	*25-150*				

Sample and Data Qualifiers Relating to This Work Order

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615
132-02 89th Ave, Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19L0685

Page 1 of 1

YOUR Information	Report To:	Invoice To:
Company: The Chazen Companies	Company: Chazen	Company: Chazen
Address: 21 Fox Street Poughkeepsie, NY 12601	Address:	Address:
Phone: 845-454-3980	Phone.:	Phone.:
Contact: Will Olsen	Contact: Will Olsen	Contact: Accounts Payable
E-mail: wolsen@chazencompanies.com	E-mail:	E-mail:

YOUR Project Number: 41433.00 TASK 0600

YOUR Project Name: KATONAH MUNICIPAL WELL

YOUR PO#: 6186

Turn-Around Time

RUSH - Next Day	
RUSH - Two Day	
RUSH - Three Day	
RUSH - Four Day	
Standard (5-7 Day)	X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below)
William G. Olsen

Matrix Codes
S - soil / solid
GW - groundwater
DW - drinking water
WW - wastewater
O - Oil ; Other

Samples From
New York X
New Jersey
Connecticut
Pennsylvania
Other

Report / EDD Type (circle selections)
Summary Report; QA Report; NY ASP A Package; NY ASP B Package; CT RCP; CT RCP DQA/DUE; NJDEP Reduced Deliverables; NJDKQP; Standard Excel EDD; EQuIS (Standard); NYSDEC EQuIS; NJDEP SRP HazSite; Other:

YORK Reg. Comp.
Compared to the following Regulation(s): (please fill in)
TOGS 1.1.1

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
KMW-MW-4R	GW	12-16-19 10:45	NY-21 1,4 PFAS, 1,4-Dioxane	2 x 250ml 1 x AMBER
KMW-MW-11R	GW	12:47		1 x
KMW-MW-4R-MS/MSD	GW	10:45		4 x 250ml 1 x AMBER
KMW-FD	GW	XX:XX		2 x 250ml; 1 x AMBER
KMW-EB	D.I.	13:00		1 x 250ml 1 x AMBER

Comments: Samples placed in secure Chazen refrigerator @ 16:45 on 12-16-19.

Preservation: (check all that apply)
HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction
Field Filtered ___
Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
William G. Olsen / Chazen	12-16-19 16:45	Tomt / York	12/17/19 1515	Tomt / York	12/17/19
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
VZW4Y / York	12-16-19 1717	VZW4Y / York	12-16-19 17:17		
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time / Temp. Received at Lab
				[signature]	12/18/19 @ 1717. Degrees C

Table of Contents for York SDG 19L0685

19L0685 Table of Contents
19L0685 QA Summary Report....1
Introduction and Sample Cross Reference....2
General Notes Relating to this Report....3
Sample Results....4
KMW-MW-4R....4
Semivolatile Organic Compounds by GC/MS/SIM....4
PFAS Target compounds by LC/MS-MS....4
KMW-MW-11R....5
Semivolatile Organic Compounds by GC/MS/SIM....5
KMW-MW-11R....6
Semivolatile Organic Compounds by GC/MS/SIM....6
PFAS Target compounds by LC/MS-MS....6
KMW-FD....7
Semivolatile Organic Compounds by GC/MS/SIM....7
PFAS Target compounds by LC/MS-MS....8
KMW-EB....9
Semivolatile Organic Compounds by GC/MS/SIM....9
PFAS Target compounds by LC/MS-MS....10
Case Narrative....12
Quality Batch Summary....17
QA/QC Summary Data....18
Semivolatile Organic Compounds by GC/MS/SIM EPA 8270D SIM....18
PFAS Target compounds by LC/MS-MS EPA 537m....19
Chains of Custody....24
19L0685 ASP-B Data Package....26
19L0685 1,4-Dioxane data....26
SVOA QC Summary....28
Surrogate Summary Seq: Y9L2705....29
Matrix Spike Results - Batch: BL91138....30
Blank Spike Results - Batch: BL91138....32
Batch Summary - Batch: BL91138....33
Blank Results - Batch: BL91138....34
Mass Spec Tune - Seq: Y9L0317....35
Mass Spec Tune - Seq: Y9L2705....36
Sequence Summary - Seq: Y9L0317....37
Sequence Summary - Seq: Y9L2705....38
Internal Std. Summary Seq: Y9L0317....39

Internal Std. Summary Seq: Y9L2705....40
Hold Time Summary....41
Reporting Limits Summary....42
SVOA Sample Data....43
Sample Results and Raw Data....44
KMW-MW-4R....44
KMW-MW-11R....49
KMW-FD....54
KMW-EB....59
SVOA Standards Data....63
Initial Calibration - Cal: YL90004....64
Initial Calibration Raw Data - Cal: YL90004....67
Initial Calibration Check - Cal: YL90004....103
Continuing Calibration Check - Seq: Y9L2705....108
SVOA Raw QC Data....113
Mass Spec Tune Raw Data - Seq: Y9L0317....114
Mass Spec Tune Raw Data - Seq: Y9L2705....115
Blank Raw Data - Batch: BL91138....116
Matrix Spike Raw Data - Batch: BL91138....122
Blank Spike Raw Data - Batch: BL91138....131
Preparation Benchsheets - Batch: BL91138....136
Isotope Dilution Calculation Data....138
19L0685 PFAs data....140
PFAS QC Summary....142
Surrogate Summary Seq: Y9L1909....143
Matrix Spike Results - Batch: BL91039....156
Blank Spike Results - Batch: BL91039....158
Batch Summary - Batch: BL91039....159
Blank Results - Batch: BL91039....160
Sequence Summary - Seq: Y9L1909....162
Internal Std. Summary Seq: Y9L1909....163
Hold Time Summary....165
Reporting Limits Summary....166
PFAS Sample Data....168
Sample Results and Raw Data....169
KMW-MW-4R....169
KMW-MW-11R....184
KMW-FD....199
KMW-EB....214
PFAS Standards Data....229

Initial Calibration - Cal: YL90023.....230
Initial Calibration Raw Data - Cal: YL90023.....236
Initial Calibration Check - Cal: YL90023.....327
Continuing Calibration Check - Seq: Y9L1909.....342
PFAS Raw QC Data.....398
Blank Raw Data - Batch: BL91039.....399
Matrix Spike Raw Data - Batch: BL91039.....415
Blank Spike Raw Data - Batch: BL91039.....442
Preparation Benchsheets - Batch: BL91039.....456
Isotope Dilution Calculation Data.....458

Technical Report

prepared for:

Chazen Environmental Services (Poughkeepsie)
21 Fox Street
Poughkeepsie NY, 12601
Attention: Will Olsen

Report Date: 01/06/2020
Client Project ID: 41433.00 TASK 0600 Katonah Municipal Well
York Project (SDG) No.: 19L0685

Report Date: 01/06/2020
Client Project ID: 41433.00 TASK 0600 Katonah Municipal Well
York Project (SDG) No.: 19L0685

Chazen Environmental Services (Poughkeepsie)
21 Fox Street
Poughkeepsie NY, 12601
Attention: Will Olsen

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on December 17, 2019 and listed below. The project was identified as your project: **41433.00 TASK 0600 Katonah Municipal Well**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19L0685-01	KMW-MW-4R	Water	12/16/2019	12/17/2019
19L0685-02	KMW-MW-11R	Water	12/16/2019	12/17/2019
19L0685-03	KMW-FD	Water	12/16/2019	12/17/2019
19L0685-04	KMW-EB	Water	12/16/2019	12/17/2019

General Notes for York Project (SDG) No.: 19L0685

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 01/06/2020

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: KMW-MW-4R

York Sample ID: 19L0685-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 10:45 am	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1	EPA 8270D SIM	12/20/2019 07:56	12/26/2019 14:40	KH
						Certifications:	NJDEP,NELAC-NY10854			

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*64.0 %*	*50-130*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* **Perfluorobutanesulfonic acid (PFBS)**	**10.8**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
307-24-4	* **Perfluorohexanoic acid (PFHxA)**	**22.6**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
375-85-9	* **Perfluoroheptanoic acid (PFHpA)**	**6.88**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
355-46-4	* **Perfluorohexanesulfonic acid (PFHxS)**	**22.4**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
335-67-1	* **Perfluorooctanoic acid (PFOA)**	**12.5**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
1763-23-1	* **Perfluorooctanesulfonic acid (PFOS)**	**15.1**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
2706-90-3	* **Perfluoropentanoic acid (PFPeA)**	**28.5**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
						Certifications:				

Sample Information

Client Sample ID: KMW-MW-4R **York Sample ID:** 19L0685-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 10:45 am	12/17/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT
375-22-4	* **Perfluoro-n-butanoic acid (PFBA)**	**11.4**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 10:57	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*78.1 %*	*25-150*
Surrogate: M5PFHxA	*79.7 %*	*25-150*
Surrogate: M4PFHpA	*84.5 %*	*25-150*
Surrogate: M3PFHxS	*76.7 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic aci	*81.0 %*	*25-150*
Surrogate: M6PFDA	*83.4 %*	*25-150*
Surrogate: M7PFUdA	*65.0 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecan	*59.8 %*	*25-150*
Surrogate: M2PFTeDA	*32.6 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic aci	*77.7 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfon	*76.6 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic ac	*79.4 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfon	*65.3 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*67.4 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*68.3 %*	*25-150*
Surrogate: M2-6:2 FTS	*141 %*	*25-150*
Surrogate: M2-8:2 FTS	*120 %*	*25-150*
Surrogate: M9PFNA	*83.6 %*	*25-150*

Sample Information

Client Sample ID: KMW-MW-11R **York Sample ID:** 19L0685-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:47 pm	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: **KMW-MW-11R** **York Sample ID:** **19L0685-02**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:47 pm	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1	EPA 8270D SIM	12/20/2019 07:56	12/26/2019 14:57	KH
						Certifications:	NJDEP,NELAC-NY10854			

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*64.0 %*	*50-130*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* **Perfluorobutanesulfonic acid (PFBS)**	**14.6**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
307-24-4	* **Perfluorohexanoic acid (PFHxA)**	**37.0**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
375-85-9	* **Perfluoroheptanoic acid (PFHpA)**	**11.3**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
355-46-4	* **Perfluorohexanesulfonic acid (PFHxS)**	**39.3**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
335-67-1	* **Perfluorooctanoic acid (PFOA)**	**15.2**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
1763-23-1	* **Perfluorooctanesulfonic acid (PFOS)**	**19.0**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
2706-90-3	* **Perfluoropentanoic acid (PFPeA)**	**42.3**		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
						Certifications:				

Sample Information

Client Sample ID: KMW-MW-11R **York Sample ID:** 19L0685-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:47 pm	12/17/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT
375-22-4	* **Perfluoro-n-butanoic acid (PFBA)**	**15.8**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:18	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*63.7 %*	*25-150*
Surrogate: M5PFHxA	*63.4 %*	*25-150*
Surrogate: M4PFHpA	*67.7 %*	*25-150*
Surrogate: M3PFHxS	*62.0 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid	*63.6 %*	*25-150*
Surrogate: M6PFDA	*60.2 %*	*25-150*
Surrogate: M7PFUdA	*51.5 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic	*51.5 %*	*25-150*
Surrogate: M2PFTeDA	*34.8 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid	*61.0 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic	*59.7 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid	*62.8 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic	*55.3 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*53.6 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*55.2 %*	*25-150*
Surrogate: M2-6:2 FTS	*110 %*	*25-150*
Surrogate: M2-8:2 FTS	*89.1 %*	*25-150*
Surrogate: M9PFNA	*69.3 %*	*25-150*

Sample Information

Client Sample ID: KMW-FD **York Sample ID:** 19L0685-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:00 am	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1 Certifications: NJDEP,NELAC-NY10854	EPA 8270D SIM	12/20/2019 07:56	12/26/2019 15:14	KH

Sample Information

Client Sample ID: KMW-FD

York Sample ID: 19L0685-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:00 am	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate Recoveries	**Result**		**Acceptance Range**						
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*64.0 %*		*50-130*						

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	*** Perfluorobutanesulfonic acid (PFBS)**	**11.2**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
307-24-4	*** Perfluorohexanoic acid (PFHxA)**	**22.2**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
375-85-9	*** Perfluoroheptanoic acid (PFHpA)**	**6.89**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
355-46-4	*** Perfluorohexanesulfonic acid (PFHxS)**	**22.3**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
335-67-1	*** Perfluorooctanoic acid (PFOA)**	**12.5**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**16.5**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
2706-90-3	*** Perfluoropentanoic acid (PFPeA)**	**29.0**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT

Sample Information

Client Sample ID: KMW-FD **York Sample ID:** 19L0685-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 12:00 am	12/17/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT
375-22-4	* **Perfluoro-n-butanoic acid (PFBA)**	**11.4**		ng/L	2.00	1 Certifications:	EPA 537m	12/18/2019 16:57	12/20/2019 12:45	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*68.6 %*	*25-150*
Surrogate: M5PFHxA	*70.4 %*	*25-150*
Surrogate: M4PFHpA	*74.3 %*	*25-150*
Surrogate: M3PFHxS	*67.9 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic aci	*69.1 %*	*25-150*
Surrogate: M6PFDA	*66.6 %*	*25-150*
Surrogate: M7PFUdA	*60.1 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecan	*50.3 %*	*25-150*
Surrogate: M2PFTeDA	*19.1 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic aci	*67.6 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfon	*64.6 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic ac	*69.1 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfon	*27.9 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*59.9 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*57.3 %*	*25-150*
Surrogate: M2-6:2 FTS	*117 %*	*25-150*
Surrogate: M2-8:2 FTS	*102 %*	*25-150*
Surrogate: M9PFNA	*72.6 %*	*25-150*

Sample Information

Client Sample ID: KMW-EB **York Sample ID:** 19L0685-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 1:00 pm	12/17/2019

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1 Certifications: NJDEP,NELAC-NY10854	EPA 8270D SIM	12/20/2019 07:56	12/26/2019 15:32	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*68.0 %*	*50-130*

Sample Information

Client Sample ID: KMW-EB **York Sample ID:** 19L0685-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 1:00 pm	12/17/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
1763-23-1	* Perfluorooctanesulfonic acid (PFOS)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ng/L	2.00	1	EPA 537m	12/18/2019 16:57	12/20/2019 13:12	KT
						Certifications:				

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*67.8 %*	*25-150*

Sample Information

Client Sample ID: **KMW-EB** **York Sample ID:** **19L0685-04**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19L0685	41433.00 TASK 0600 Katonah Municipal Well	Water	December 16, 2019 1:00 pm	12/17/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: M5PFHxA	*68.7 %*			*25-150*					
	Surrogate: M4PFHpA	*70.6 %*			*25-150*					
	Surrogate: M3PFHxS	*67.1 %*			*25-150*					
	Surrogate: Perfluoro-n-[13C8]octanoic aci	*68.0 %*			*25-150*					
	Surrogate: M6PFDA	*63.9 %*			*25-150*					
	Surrogate: M7PFUdA	*63.6 %*			*25-150*					
	Surrogate: Perfluoro-n-[1,2-13C2]dodecan	*60.4 %*			*25-150*					
	Surrogate: M2PFTeDA	*33.4 %*			*10-150*					
	Surrogate: Perfluoro-n-[13C4]butanoic aci	*65.7 %*			*25-150*					
	Surrogate: Perfluoro-1-[13C8]octanesulfon	*69.7 %*			*25-150*					
	Surrogate: Perfluoro-n-[13C5]pentanoic ac	*68.9 %*			*25-150*					
	Surrogate: Perfluoro-1-[13C8]octanesulfon	*59.3 %*			*10-150*					
	Surrogate: d3-N-MeFOSAA	*66.0 %*			*25-150*					
	Surrogate: d5-N-EtFOSAA	*65.4 %*			*25-150*					
	Surrogate: M2-6:2 FTS	*111 %*			*25-150*					
	Surrogate: M2-8:2 FTS	*106 %*			*25-150*					
	Surrogate: M9PFNA	*76.6 %*			*25-150*					

Case Narrative

Client: Chazen Environmental Services (Poughkeepsie)
Client Project ID: 41433.00 TASK 0600 Katonah Municipal Well
Prepared for: Will Olsen

Introduction

This Case Narrative applies only to the samples submitted to our laboratory on **12/17/2019 17:17** as detailed on the chain-of-custody form.

The 4 sample(s) were received intact in a custody-sealed cooler unless otherwise noted. Upon receipt, cooler temperature(s) was determined using a NIST traceable digital infrared thermometer. The cooler temperature was acceptable (≤ 6°C) and documented as:

Cooler	Temp C°
Default Cooler	**1.7**

Chain-of-custody was maintained from receipt through analysis in the laboratory.

Methodology

All preparation and analyses were conducted according to the appropriate EPA methods detailed in the report.

Sample and Analysis Qualifiers

Laboratory ID	Sample Name	Matrix
19L0685-01	KMW-MW-4R	Water
19L0685-02	KMW-MW-11R	Water
19L0685-03	KMW-FD	Water
19L0685-04	KMW-EB	Water

QC Sample Non-Conformances

Any QC sample non-conformances (CCV, LCS, DUP, MS) are detailed in the data package and in the attached tables.

No other problems were encountered during analysis.

York Project/SDG no.: 19L0685 Statement

We certify that these data are in compliance with SOP requirements both technically and for completeness for other than the conditions stated above. Release of the data contained in the hard copy report and any electronic deliverables has been authorized by the Laboratory Manager as verified by the signature on this laboratory report.

Approved by: *Ben Gulizia*
Laboratory Director

Date: 1/6/2020

York Analytical Laboratories, Inc.

Formulae Used for Sample Calculations

VOLATILE ORGANICS

1. Volatiles in Air-ppbv

Cx (ppbv) = Compound concentration, ppbv (parts per billion by volume)

$$Cx = \frac{(Ax)(Cis)(DF)}{(Ais)(RRF)}$$

2. Volatiles in Air-ug/m³

Cx (ug/m³)= Compound concentration in ug/m³

$$Cx\ (ug/m^3) = \frac{(ppbv \times Molecular\ wt.)}{(24.040)}$$

3. Volatile Organics (water and soil), ug/L or ug/kg

Soils/Waters

$$Cx = \frac{(Ax)(IS)(DF)}{(Ais)(RRF)(V)(\%\ solids)}$$

Medium Level Soils

$$Cx = \frac{(Ax)(IS)(VT)(1000)(DF)}{(Ais)(RRF)(VA)(V)(\%\ solids)}$$

4. Semi-Volatiles (waters and soils)

$$Cx = \frac{(Ax)(IS)(VE)(DF)}{(Ais)(RRF)(Volume\ injected,\ uL)(V)(\%\ solids)}$$

5. Pesticides/PCB (waters and soils), DRO, CTETPH

$$Cx = \frac{(Ax)(VE)(DF)}{(CF)(Volume\ injected,\ uL)(V)(\%\ solids)}$$

WHERE:

Cx = concentration of analyte as ug/L or ug/kg
Ax = Area of the characteristic ion for the compound to be measured, counts.
Ais = Area of the characteristic ion for the specific internal standard, counts.
IS = Concentration of the internal standard spiking mixture, ng
RRF = Mean relative response factor from the initial calibration.
DF = Dilution factor calculated as described in section 2. If no dilution is performed, DF= 1
V = Volume for liquids in mL, weight for soils/solids in grams.
VA = volume of MeOH aliquot for medium level soils
VE = final volume of concentrated extract

VT = volume of MeOH for volatiles medium level soils
CF = calibration factor for external calibration used in GC pest/pcb
Cis = Concentration of the internal standard spiking mixture, ppbv

Case Narrative Non-Conformance Summary

Laboratory:	York Analytical Laboratories, Inc.	Client:	Chazen Environmental Services (Poughkeepsie)
Project:	41433.00 TASK 0600 Katonah Municipal Well	Lab Project No:	19L0685
Laboratory Sample ID(s):	19L0685-01 - 19L0685-04	Sampling Date(s):	12/16/2019 - 12/16/2019
Review Date(s):	01/06/2020 - 01/06/2020	Laboratory Reviewer(s):	DEB

QC Sample Nonconformances

Batch ID: BL91039 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
BL91039-MS2	Perfluorohexanesulfonic acid (PFHxS) - 355-46-4	115 ng/L	Matrix Spike (KMW-MW-4R)	156	25-150	High Bias				
BL91039-MS2	Perfluorooctanesulfonic acid (PFOS) - 1763-23-1	116 ng/L	Matrix Spike (KMW-MW-4R)	173	25-150	High Bias				
BL91039-MSD2	Perfluorohexanesulfonic acid (PFHxS) - 355-46-4	114 ng/L	Matrix Spike Dup (KMW-MW-4R)	155	25-150	High Bias	0.961	35		
BL91039-MSD2	Perfluorooctanesulfonic acid (PFOS) - 1763-23-1	121 ng/L	Matrix Spike Dup (KMW-MW-4R)	181	25-150	High Bias	4.08	35		

Batch Summary

Batch ID: BL91039 **General Method:** PFAS Target compounds by LC/MS-MS

YORK Sample ID	Client Sample ID
19L0685-01	KMW-MW-4R
19L0685-02	KMW-MW-11R
19L0685-03	KMW-FD
19L0685-04	KMW-EB
BL91039-BLK1	Blank
BL91039-BS1	LCS
BL91039-MS2	Matrix Spike
BL91039-MSD2	Matrix Spike Dup

No Sample Nonconformances Found

Notes: Other nonconformances, if any, are detailed in the Data Quality Assessment worksheets.

For multiple surrogate analyses such as semi-volatiles, volatiles, etc, single surrogate excursions do not necessarily indicate a bias in the sample. Samples with multiple surrogate excursions may exhibit a bias in the results.

Definitions:
LCS - Laboratory Control Sample
LCS dup - Laboratory Control Sample Duplicate
MS - Matrix Spike
MSD - Matrix Spike Duplicate
BS - Blank Spike also called LCS
BSD - Blank Spike Duplicate also called LCS dup
SRM - Standard Reference Material
DUP - Duplicate

QC DATA QUALIFIERS

LabID	Analysis	Analyte	Qualifier	Definition
BL91039-MSD2	PFAS, NYSDEC Target List	Perfluorooctanesulfonic acid (PFOS)	QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.
BL91039-MSD2	PFAS, NYSDEC Target List	Perfluorohexanesulfonic acid (PFHxS)	QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.
BL91039-MS2	PFAS, NYSDEC Target List	Perfluorooctanesulfonic acid (PFOS)	QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.
BL91039-MS2	PFAS, NYSDEC Target List	Perfluorohexanesulfonic acid (PFHxS)	QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.

Analytical Batch Summary

Batch ID: BL91039 **Preparation Method:** SPE Ext-PFAS-EPA 537.1M **Prepared By:** WL

YORK Sample ID	Client Sample ID	Preparation Date
19L0685-01	KMW-MW-4R	12/18/19
19L0685-02	KMW-MW-11R	12/18/19
19L0685-03	KMW-FD	12/18/19
19L0685-04	KMW-EB	12/18/19
BL91039-BLK1	Blank	12/18/19
BL91039-BS1	LCS	12/18/19
BL91039-MS2	Matrix Spike	12/18/19
BL91039-MSD2	Matrix Spike Dup	12/18/19

Batch ID: BL91138 **Preparation Method:** EPA 3535A **Prepared By:** CTD

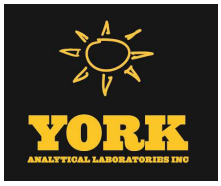
YORK Sample ID	Client Sample ID	Preparation Date
19L0685-01	KMW-MW-4R	12/20/19
19L0685-02	KMW-MW-11R	12/20/19
19L0685-03	KMW-FD	12/20/19
19L0685-04	KMW-EB	12/20/19
BL91138-BLK1	Blank	12/20/19
BL91138-BS1	LCS	12/20/19
BL91138-MS1	Matrix Spike	12/20/19
BL91138-MSD1	Matrix Spike Dup	12/20/19

Semivolatile Organic Compounds by GC/MS/SIM - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91138 - EPA 3535A											
Blank (BL91138-BLK1)								Prepared: 12/20/2019 Analyzed: 12/26/2019			
1,4-Dioxane	ND	0.200	ug/L								
Surrogate: 1,4-Dioxane-d8	*3.00*		"	*5.00*		*60.0*	*50-130*				
LCS (BL91138-BS1)								Prepared: 12/20/2019 Analyzed: 12/26/2019			
1,4-Dioxane	5.32	0.200	ug/L	5.00		106	50-130				
Surrogate: 1,4-Dioxane-d8	*3.20*		"	*5.00*		*64.0*	*50-130*				
Matrix Spike (BL91138-MS1)	*Source sample: 19L0685-01 (KMW-MW-4R)							Prepared: 12/20/2019 Analyzed: 12/26/2019			
1,4-Dioxane	5.30	0.200	ug/L	5.00	ND	106	50-130				
Surrogate: 1,4-Dioxane-d8	*3.40*		"	*5.00*		*68.0*	*50-130*				
Matrix Spike Dup (BL91138-MSD1)	*Source sample: 19L0685-01 (KMW-MW-4R)							Prepared: 12/20/2019 Analyzed: 12/26/2019			
1,4-Dioxane	5.00	0.200	ug/L	5.00	ND	100	50-130		5.83	30	
Surrogate: 1,4-Dioxane-d8	*3.40*		"	*5.00*		*68.0*	*50-130*				

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91039 - SPE Ext-PFAS-EPA 537.1M											
Blank (BL91039-BLK1)											
Prepared: 12/18/2019 Analyzed: 12/20/2019											
Perfluorobutanesulfonic acid (PFBS)	ND	2.00	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	2.00	"								
Perfluoroheptanoic acid (PFHpA)	ND	2.00	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	2.00	"								
Perfluorooctanoic acid (PFOA)	ND	2.00	"								
Perfluorooctanesulfonic acid (PFOS)	ND	2.00	"								
Perfluorononanoic acid (PFNA)	ND	2.00	"								
Perfluorodecanoic acid (PFDA)	ND	2.00	"								
Perfluoroundecanoic acid (PFUnA)	ND	2.00	"								
Perfluorododecanoic acid (PFDoA)	ND	2.00	"								
Perfluorotridecanoic acid (PFTrDA)	ND	2.00	"								
Perfluorotetradecanoic acid (PFTA)	ND	2.00	"								
N-MeFOSAA	ND	2.00	"								
N-EtFOSAA	ND	2.00	"								
Perfluoropentanoic acid (PFPeA)	ND	2.00	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	2.00	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	2.00	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	2.00	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	5.00	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	2.00	"								
Perfluoro-n-butanoic acid (PFBA)	ND	2.00	"								
Surrogate: M3PFBS	*51.6*		"	*74.3*		*69.5*	*25-150*				
Surrogate: M5PFHxA	*54.0*		"	*80.0*		*67.5*	*25-150*				
Surrogate: M4PFHpA	*52.9*		"	*80.0*		*66.1*	*25-150*				
Surrogate: M3PFHxS	*51.3*		"	*75.7*		*67.8*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*52.6*		"	*80.0*		*65.7*	*25-150*				
Surrogate: M6PFDA	*49.5*		"	*80.0*		*61.8*	*25-150*				
Surrogate: M7PFUdA	*58.1*		"	*80.0*		*72.7*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*45.8*		"	*80.0*		*57.2*	*25-150*				
Surrogate: M2PFTeDA	*41.5*		"	*80.0*		*51.8*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*55.4*		"	*80.0*		*69.2*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*51.7*		"	*76.6*		*67.6*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*57.3*		"	*80.0*		*71.7*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*50.7*		"	*80.0*		*63.3*	*10-150*				
Surrogate: d3-N-MeFOSAA	*53.0*		"	*80.0*		*66.2*	*25-150*				
Surrogate: d5-N-EtFOSAA	*52.6*		"	*80.0*		*65.8*	*25-150*				
Surrogate: M2-6:2 FTS	*79.9*		"	*75.9*		*105*	*25-150*				
Surrogate: M2-8:2 FTS	*78.9*		"	*76.6*		*103*	*25-150*				
Surrogate: M9PFNA	*54.7*		"	*80.0*		*68.4*	*25-150*				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91039 - SPE Ext-PFAS-EPA 537.1M											
LCS (BL91039-BS1)								Prepared: 12/18/2019 Analyzed: 12/20/2019			
Perfluorobutanesulfonic acid (PFBS)	88.3	2.00	ng/L	70.8		125	50-130				
Perfluorohexanoic acid (PFHxA)	95.5	2.00	"	80.0		119	50-130				
Perfluoroheptanoic acid (PFHpA)	91.8	2.00	"	80.0		115	50-130				
Perfluorohexanesulfonic acid (PFHxS)	67.9	2.00	"	59.2		115	50-130				
Perfluorooctanoic acid (PFOA)	82.6	2.00	"	80.0		103	50-130				
Perfluorooctanesulfonic acid (PFOS)	67.5	2.00	"	58.4		116	50-130				
Perfluorononanoic acid (PFNA)	93.3	2.00	"	76.8		122	50-130				
Perfluorodecanoic acid (PFDA)	99.1	2.00	"	80.0		124	50-130				
Perfluoroundecanoic acid (PFUnA)	88.5	2.00	"	80.0		111	50-130				
Perfluorododecanoic acid (PFDoA)	95.3	2.00	"	80.0		119	50-130				
Perfluorotridecanoic acid (PFTrDA)	85.3	2.00	"	80.0		107	50-130				
Perfluorotetradecanoic acid (PFTA)	90.1	2.00	"	80.0		113	50-130				
N-MeFOSAA	91.3	2.00	"	80.0		114	50-130				
N-EtFOSAA	94.1	2.00	"	80.0		118	50-130				
Perfluoropentanoic acid (PFPeA)	92.1	2.00	"	80.0		115	50-130				
Perfluoro-1-octanesulfonamide (FOSA)	92.0	2.00	"	80.0		115	50-130				
Perfluoro-1-heptanesulfonic acid (PFHpS)	94.2	2.00	"	79.6		118	50-130				
Perfluoro-1-decanesulfonic acid (PFDS)	80.1	2.00	"	77.2		104	50-130				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	88.4	5.00	"	76.0		116	50-130				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	92.9	2.00	"	76.8		121	50-130				
Perfluoro-n-butanoic acid (PFBA)	93.2	2.00	"	80.0		117	50-130				
Surrogate: M3PFBS	*56.4*		"	*74.3*		*75.9*	*25-150*				
Surrogate: M5PFHxA	*62.2*		"	*80.0*		*77.7*	*25-150*				
Surrogate: M4PFHpA	*60.9*		"	*80.0*		*76.1*	*25-150*				
Surrogate: M3PFHxS	*55.2*		"	*75.7*		*72.9*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*60.4*		"	*80.0*		*75.5*	*25-150*				
Surrogate: M6PFDA	*59.7*		"	*80.0*		*74.6*	*25-150*				
Surrogate: M7PFUdA	*53.6*		"	*80.0*		*67.0*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*46.6*		"	*80.0*		*58.2*	*25-150*				
Surrogate: M2PFTeDA	*45.3*		"	*80.0*		*56.6*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*61.3*		"	*80.0*		*76.6*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*55.3*		"	*76.6*		*72.2*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*62.7*		"	*80.0*		*78.3*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*57.1*		"	*80.0*		*71.4*	*10-150*				
Surrogate: d3-N-MeFOSAA	*59.1*		"	*80.0*		*73.8*	*25-150*				
Surrogate: d5-N-EtFOSAA	*55.5*		"	*80.0*		*69.3*	*25-150*				
Surrogate: M2-6:2 FTS	*75.9*		"	*75.9*		*100*	*25-150*				
Surrogate: M2-8:2 FTS	*68.2*		"	*76.6*		*89.0*	*25-150*				
Surrogate: M9PFNA	*57.9*		"	*80.0*		*72.4*	*25-150*				

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91039 - SPE Ext-PFAS-EPA 537.1M											
Matrix Spike (BL91039-MS2)	*Source sample: 19L0685-01 (KMW-MW-4R)							Prepared: 12/18/2019 Analyzed: 12/20/2019			
Perfluorobutanesulfonic acid (PFBS)	103	2.00	ng/L	70.8	10.8	131	25-150				
Perfluorohexanoic acid (PFHxA)	118	2.00	"	80.0	22.6	119	25-150				
Perfluoroheptanoic acid (PFHpA)	104	2.00	"	80.0	6.88	122	25-150				
Perfluorohexanesulfonic acid (PFHxS)	115	2.00	"	59.2	22.4	156	25-150	High Bias			
Perfluorooctanoic acid (PFOA)	94.4	2.00	"	80.0	12.5	102	25-150				
Perfluorooctanesulfonic acid (PFOS)	116	2.00	"	58.4	15.1	173	25-150	High Bias			
Perfluorononanoic acid (PFNA)	87.5	2.00	"	76.8	ND	114	25-150				
Perfluorodecanoic acid (PFDA)	103	2.00	"	80.0	ND	129	25-150				
Perfluoroundecanoic acid (PFUnA)	94.0	2.00	"	80.0	ND	117	25-150				
Perfluorododecanoic acid (PFDoA)	95.5	2.00	"	80.0	ND	119	25-150				
Perfluorotridecanoic acid (PFTrDA)	79.4	2.00	"	80.0	ND	99.3	25-150				
Perfluorotetradecanoic acid (PFTA)	101	2.00	"	80.0	ND	126	25-150				
N-MeFOSAA	98.0	2.00	"	80.0	ND	123	25-150				
N-EtFOSAA	97.7	2.00	"	80.0	ND	122	25-150				
Perfluoropentanoic acid (PFPeA)	128	2.00	"	80.0	28.5	125	25-150				
Perfluoro-1-octanesulfonamide (FOSA)	96.2	2.00	"	80.0	ND	120	25-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	105	2.00	"	79.6	ND	132	25-150				
Perfluoro-1-decanesulfonic acid (PFDS)	83.8	2.00	"	77.2	ND	108	25-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	91.4	5.00	"	76.0	ND	120	25-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	102	2.00	"	76.8	ND	133	25-150				
Perfluoro-n-butanoic acid (PFBA)	109	2.00	"	80.0	11.4	122	25-150				
Surrogate: M3PFBS	*53.5*		"	*74.3*		*71.9*	*25-150*				
Surrogate: M5PFHxA	*56.6*		"	*80.0*		*70.7*	*25-150*				
Surrogate: M4PFHpA	*57.7*		"	*80.0*		*72.1*	*25-150*				
Surrogate: M3PFHxS	*51.4*		"	*75.7*		*67.9*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*58.4*		"	*80.0*		*73.0*	*25-150*				
Surrogate: M6PFDA	*48.6*		"	*80.0*		*60.8*	*25-150*				
Surrogate: M7PFUdA	*45.1*		"	*80.0*		*56.4*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*46.9*		"	*80.0*		*58.6*	*25-150*				
Surrogate: M2PFTeDA	*33.2*		"	*80.0*		*41.5*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*55.8*		"	*80.0*		*69.8*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*51.0*		"	*76.6*		*66.6*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*55.4*		"	*80.0*		*69.3*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*48.0*		"	*80.0*		*60.0*	*10-150*				
Surrogate: d3-N-MeFOSAA	*48.3*		"	*80.0*		*60.4*	*25-150*				
Surrogate: d5-N-EtFOSAA	*48.0*		"	*80.0*		*60.0*	*25-150*				
Surrogate: M2-6:2 FTS	*89.5*		"	*75.9*		*118*	*25-150*				
Surrogate: M2-8:2 FTS	*63.7*		"	*76.6*		*83.1*	*25-150*				
Surrogate: M9PFNA	*62.0*		"	*80.0*		*77.5*	*25-150*				

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BL91039 - SPE Ext-PFAS-EPA 537.1M											
Matrix Spike Dup (BL91039-MSD2)	*Source sample: 19L0685-01 (KMW-MW-4R)								Prepared: 12/18/2019 Analyzed: 12/20/2019		
Perfluorobutanesulfonic acid (PFBS)	104	2.00	ng/L	70.8	10.8	132	25-150		0.534	35	
Perfluorohexanoic acid (PFHxA)	119	2.00	"	80.0	22.6	120	25-150		0.667	35	
Perfluoroheptanoic acid (PFHpA)	101	2.00	"	80.0	6.88	117	25-150		3.43	35	
Perfluorohexanesulfonic acid (PFHxS)	114	2.00	"	59.2	22.4	155	25-150	High Bias	0.961	35	
Perfluorooctanoic acid (PFOA)	105	2.00	"	80.0	12.5	116	25-150		10.7	35	
Perfluorooctanesulfonic acid (PFOS)	121	2.00	"	58.4	15.1	181	25-150	High Bias	4.08	35	
Perfluorononanoic acid (PFNA)	82.6	2.00	"	76.8	ND	107	25-150		5.84	35	
Perfluorodecanoic acid (PFDA)	114	2.00	"	80.0	ND	143	25-150		10.0	35	
Perfluoroundecanoic acid (PFUnA)	109	2.00	"	80.0	ND	136	25-150		14.7	35	
Perfluorododecanoic acid (PFDoA)	96.4	2.00	"	80.0	ND	121	25-150		0.942	35	
Perfluorotridecanoic acid (PFTrDA)	78.1	2.00	"	80.0	ND	97.6	25-150		1.67	35	
Perfluorotetradecanoic acid (PFTA)	114	2.00	"	80.0	ND	142	25-150		12.0	35	
N-MeFOSAA	96.0	2.00	"	80.0	ND	120	25-150		2.13	35	
N-EtFOSAA	98.1	2.00	"	80.0	ND	123	25-150		0.472	35	
Perfluoropentanoic acid (PFPeA)	125	2.00	"	80.0	28.5	120	25-150		2.63	35	
Perfluoro-1-octanesulfonamide (FOSA)	96.4	2.00	"	80.0	ND	121	25-150		0.163	35	
Perfluoro-1-heptanesulfonic acid (PFHpS)	108	2.00	"	79.6	ND	135	25-150		2.52	35	
Perfluoro-1-decanesulfonic acid (PFDS)	86.4	2.00	"	77.2	ND	112	25-150		3.13	35	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	92.1	5.00	"	76.0	ND	121	25-150		0.753	35	
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	102	2.00	"	76.8	ND	133	25-150		0.198	35	
Perfluoro-n-butanoic acid (PFBA)	108	2.00	"	80.0	11.4	121	25-150		0.154	35	
Surrogate: M3PFBS	*52.0*		"	*74.3*		*70.0*	*25-150*				
Surrogate: M5PFHxA	*55.4*		"	*80.0*		*69.3*	*25-150*				
Surrogate: M4PFHpA	*56.1*		"	*80.0*		*70.2*	*25-150*				
Surrogate: M3PFHxS	*51.3*		"	*75.7*		*67.7*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*54.3*		"	*80.0*		*67.9*	*25-150*				
Surrogate: M6PFDA	*48.7*		"	*80.0*		*60.9*	*25-150*				
Surrogate: M7PFUdA	*44.8*		"	*80.0*		*56.0*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*50.0*		"	*80.0*		*62.5*	*25-150*				
Surrogate: M2PFTeDA	*35.1*		"	*80.0*		*43.9*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*54.8*		"	*80.0*		*68.5*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*49.3*		"	*76.6*		*64.4*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*55.8*		"	*80.0*		*69.8*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*45.1*		"	*80.0*		*56.3*	*10-150*				
Surrogate: d3-N-MeFOSAA	*50.3*		"	*80.0*		*62.8*	*25-150*				
Surrogate: d5-N-EtFOSAA	*48.1*		"	*80.0*		*60.1*	*25-150*				
Surrogate: M2-6:2 FTS	*87.1*		"	*75.9*		*115*	*25-150*				
Surrogate: M2-8:2 FTS	*61.0*		"	*76.6*		*79.5*	*25-150*				
Surrogate: M9PFNA	*56.5*		"	*80.0*		*70.6*	*25-150*				

Sample and Data Qualifiers Relating to This Work Order

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

Laboratory Chain-of-Custody Record

York Project (SDG) No.: 19L0685

Samples Received: 12/17/2019 17:17 **By:** Krys Trafalski **Logged In:** 12/17/2019 16:27 **By:** Tom Gabrielson

Sample Conditions:

- [X] Custody Seals
- [X] Containers Intact
- [X] COC/Labels Agree
- [X] Preservation Confirmed
- [X] Cooler Temperature Confirmed
- [X] COC Complete
- [X] Chain of Custody Form Received
- [X] Appropriate Sample Volumes Received
- [X] Appropriate Sample Containers Submitted
- [X] Samples Submitted within Holding Times
- [ ] Corrective Action Form Required

Preparation Chain-of-Custody

Sample ID	Reason Prep	Prep Start Date	Prep End Date	Prep Analyst
19L0685-01	EPA 3535A	12/20/2019 7:56	12/20/2019 7:56	Cailee T. D'Amico
19L0685-02	EPA 3535A	12/20/2019 7:56	12/20/2019 7:56	Cailee T. D'Amico
19L0685-03	EPA 3535A	12/20/2019 7:56	12/20/2019 7:56	Cailee T. D'Amico
19L0685-04	EPA 3535A	12/20/2019 7:56	12/20/2019 7:56	Cailee T. D'Amico
19L0685-01	SPE Ext-PFAS-EPA 537.1M	12/18/2019 16:57	12/18/2019 16:57	WLi
19L0685-02	SPE Ext-PFAS-EPA 537.1M	12/18/2019 16:57	12/18/2019 16:57	WLi
19L0685-03	SPE Ext-PFAS-EPA 537.1M	12/18/2019 16:57	12/18/2019 16:57	WLi
19L0685-04	SPE Ext-PFAS-EPA 537.1M	12/18/2019 16:57	12/18/2019 16:57	WLi

Analysis Chain-of-Custody

Sample ID	Reason Analysis	Analysis Start Date	Analysis End Date	Analyst
19L0685-01	PFAS, NYSDEC Target List	12/18/2019 16:57	12/20/2019 10:57	Krys Trafalski
19L0685-02	PFAS, NYSDEC Target List	12/18/2019 16:57	12/20/2019 12:18	Krys Trafalski
19L0685-03	PFAS, NYSDEC Target List	12/18/2019 16:57	12/20/2019 12:45	Krys Trafalski
19L0685-04	PFAS, NYSDEC Target List	12/18/2019 16:57	12/20/2019 13:12	Krys Trafalski
19L0685-01	Semi-Volatiles, 1,4-Dioxane by 8270-S	12/20/2019 7:56	12/26/2019 14:40	Kimberly Holbrook
19L0685-02	Semi-Volatiles, 1,4-Dioxane by 8270-S	12/20/2019 7:56	12/26/2019 14:57	Kimberly Holbrook
19L0685-03	Semi-Volatiles, 1,4-Dioxane by 8270-S	12/20/2019 7:56	12/26/2019 15:14	Kimberly Holbrook
19L0685-04	Semi-Volatiles, 1,4-Dioxane by 8270-S	12/20/2019 7:56	12/26/2019 15:32	Kimberly Holbrook

York Analytical Laboratories, Inc.
120 Research Drive
Stratford, CT 06615
132-02 89th Ave
Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19L0685

Page 1 of 1

YOUR Information	Report To:	Invoice To:	YOUR Project Number	Turn-Around Time
Company: The Chazen Companies	Company: Chazen	Company: Chazen	41433.00 TASK 0600	RUSH - Next Day
Address: 21 Fox Street Poughkeepsie, NY 12601	Address:	Address:	YOUR Project Name: KATONAH MUNICIPAL WELL	RUSH - Two Day
Phone: 845-454-3980	Phone.:	Phone.:		RUSH - Three Day
Contact: Will Olsen	Contact: Will Olsen	Contact: Accounts Payable		RUSH - Four Day
E-mail: wolsen@chazencompanies.com	E-mail:	E-mail:	YOUR PO#: 6186	Standard (5-7 Day) X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below)
William G. Olsen

Matrix Codes
S - soil / solid
GW - groundwater
DW - drinking water
WW - wastewater
O - Oil ; Other

Samples From
New York X
New Jersey
Connecticut
Pennsylvania
Other

Report / EDD Type (circle selections)
Summary Report; QA Report; NY ASP A Package; NY ASP B Package; CT RCP; CT RCP DQA/DUE; NJDEP Reduced Deliverables; NJDKQP; Standard Excel EDD; EQuIS (Standard); NYSDEC EQuIS; NJDEP SRP HazSite; Other:

YORK Reg. Comp.
Compared to the following Regulation(s): (please fill in)
TOGS 1.1.1

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
KMW-MW-4R	GW	12-16-19 10:45	NY-21 1,4 PFAS, 1,4-Dioxane	2 x 250ml 1 x AMBER
KMW-MW-11R	GW	12:47		1 x
KMW-MW-4R-MS/MSD	GW	10:45		4 x 250ml 1 x AMBER
KMW-FD	GW	XX:XX		2 x 250ml; 1 x AMBER
KMW-EB	D.I.	13:00		1 x 250ml 1 x AMBER

Comments: Samples placed in secure Chazen refrigerator @ 16:45 on 12-16-19.

Preservation: (check all that apply)
HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction
Field Filtered ___
Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
William G. Olsen / Chazen	12-16-19 16:45	Tomt / York	12/17/19 1515	Tomt / York	12/17/19
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
VZW4Y / York	12-16-19 1717	VZW4Y / York	12-16-19 17:17		
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Temp. Received at Lab
				12/18/19 @	1717. Degrees C

York Analytical Laboratories, Inc.
SDG: 19L0685
CLASS: SVOA
METHOD: EPA 8270D SIM

DATA PACKAGE COVER PAGE

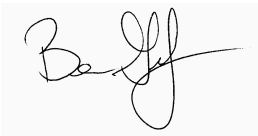
EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Client Sample Id:	Lab Sample Id:
KMW-MW-4R	19L0685-01
KMW-MW-11R	19L0685-02
KMW-FD	19L0685-03
KMW-EB	19L0685-04

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the project narrative. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the

Signature:  Name: Benjamin Gulizia

Date: 12/31/2019 Title: Laboratory Director

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Sequence: Y9L2705 Instrument: MSBNA8

Calibration: YL90004

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (Y9L2705-CCV1)			Lab File ID: E80002999.D		Analyzed: 12/26/19 13:08			
1,4-Dioxane-d8	0.500	94.0	80 - 120	5.881	5.868444	0.0126	+/-1.00	
Blank (BL91138-BLK1)			Lab File ID: E80003000.D		Analyzed: 12/26/19 13:29			
1,4-Dioxane-d8	5.00	60.0	50 - 130	5.887	5.868444	0.0186	+/-1.00	
LCS (BL91138-BS1)			Lab File ID: E80003001.D		Analyzed: 12/26/19 13:47			
1,4-Dioxane-d8	5.00	64.0	50 - 130	5.887	5.868444	0.0186	+/-1.00	
Matrix Spike (BL91138-MS1)			Lab File ID: E80003002.D		Analyzed: 12/26/19 14:05			
1,4-Dioxane-d8	5.00	68.0	50 - 130	5.887	5.868444	0.0186	+/-1.00	
Matrix Spike Dup (BL91138-MSD1)			Lab File ID: E80003003.D		Analyzed: 12/26/19 14:22			
1,4-Dioxane-d8	5.00	68.0	50 - 130	5.876	5.868444	0.0076	+/-1.00	
KMW-MW-4R (19L0685-01)			Lab File ID: E80003004.D		Analyzed: 12/26/19 14:40			
1,4-Dioxane-d8	5.00	64.0	50 - 130	5.881	5.868444	0.0126	+/-1.00	
KMW-MW-11R (19L0685-02)			Lab File ID: E80003005.D		Analyzed: 12/26/19 14:57			
1,4-Dioxane-d8	5.00	64.0	50 - 130	5.881	5.868444	0.0126	+/-1.00	
KMW-FD (19L0685-03)			Lab File ID: E80003006.D		Analyzed: 12/26/19 15:14			
1,4-Dioxane-d8	5.00	64.0	50 - 130	5.879	5.868444	0.0106	+/-1.00	
KMW-EB (19L0685-04)			Lab File ID: E80003007.D		Analyzed: 12/26/19 15:32			
1,4-Dioxane-d8	5.00	68.0	50 - 130	5.884	5.868444	0.0156	+/-1.00	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270D SIM

KMW-MW-4R

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water		
Batch:	BL91138	Laboratory ID:	BL91138-MS1
Preparation:	EPA 3535A	Initial/Final:	100 mL / 2 mL

Source Sample Name: KMW-MW-4R

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,4-Dioxane	5.00	ND	3.60	72.0	50 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

KMW-MW-4R

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water		
Batch:	BL91138	Laboratory ID:	BL91138-MSD1
Preparation:	EPA 3535A	Initial/Final:	100 mL / 2 mL

Source Sample Name: KMW-MW-4R

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,4-Dioxane	5.00	3.40	68.0	5.71	30	50 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water		
Batch:	BL91138	Laboratory ID:	BL91138-BS1
Preparation:	EPA 3535A	Initial/Final:	100 mL / 2 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
1,4-Dioxane	5.00	3.40	68.0	50 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM IV **PREPARATION BATCH SUMMARY**

EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Batch: BL91138 Batch Matrix: Water Preparation: EPA 3535A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
KMW-MW-4R	19L0685-01	E80003004.D	12/20/19 07:56	
KMW-MW-11R	19L0685-02	E80003005.D	12/20/19 07:56	
KMW-FD	19L0685-03	E80003006.D	12/20/19 07:56	
KMW-EB	19L0685-04	E80003007.D	12/20/19 07:56	
Blank	BL91138-BLK1	E80003000.D	12/20/19 07:56	
LCS	BL91138-BS1	E80003001.D	12/20/19 07:56	
KMW-MW-4R	BL91138-MS1	E80003002.D	12/20/19 07:56	
KMW-MW-4R	BL91138-MSD1	E80003003.D	12/20/19 07:56	

FORM I

METHOD BLANK DATA SHEET

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	BL91138-BLK1	File ID:	E80003000.D
Prepared:	12/20/19 07:56	Preparation:	EPA 3535A	Initial/Final:	100 mL / 2 mL
Analyzed:	12/26/19 13:29	Instrument:	MSBNA8		
Batch:	BL91138	Sequence:	Y9L2705	Calibration:	YL90004

CAS NO.	COMPOUND	CONC. (ug/L)	Q
123-91-1	1,4-Dioxane	0.200	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,4-Dioxane-d8	5.00	3.00	60.0	50 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Tetrahydrofuran-d8	314810	4.565	251364	4.562	

FORM V MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Lab File ID:	E80002903.D	Injection Date:	12/02/19
Instrument ID:	MSBNA8	Injection Time:	16:54
Sequence:	Y9L0317	Lab Sample ID:	Y9L0317-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10 - 80% of 198	44.8	PASS
68	Less than 2% of 69	0.964	PASS
69	Less than 100% of 198	45.5	PASS
70	Less than 2% of 69	0.563	PASS
127	10 - 80% of 198	52	PASS
197	Less than 2% of 198	0.626	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.9	PASS
275	10 - 60% of 198	26.1	PASS
365	1 - 100% of 198	4.12	PASS
441	0.01 - 24% of 442	13.3	PASS
442	50 - 100% of 198	79.6	PASS
443	15 - 24% of 442	19.9	PASS

FORM V MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Lab File ID:	E80002997.D	Injection Date:	12/26/19
Instrument ID:	MSBNA8	Injection Time:	12:05
Sequence:	Y9L2705	Lab Sample ID:	Y9L2705-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10 - 80% of 198	37.5	PASS
68	Less than 2% of 69	1.72	PASS
69	Less than 100% of 198	39.2	PASS
70	Less than 2% of 69	0.333	PASS
127	10 - 80% of 198	48.8	PASS
197	Less than 2% of 198	0.467	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.25	PASS
275	10 - 60% of 198	28.6	PASS
365	1 - 100% of 198	4.81	PASS
441	0.01 - 24% of 442	14.3	PASS
442	50 - 100% of 198	98.7	PASS
443	15 - 24% of 442	18.5	PASS

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Sequence:	Y9L0317	Instrument:	MSBNA8
		Calibration:	YL90004

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y9L0317-TUN1	E80002903.D	12/02/19 16:54
Cal Standard	Y9L0317-CAL1	E80002904.D	12/02/19 17:29
Cal Standard	Y9L0317-CAL2	E80002905.D	12/02/19 17:47
Cal Standard	Y9L0317-CAL3	E80002906.D	12/02/19 18:05
Cal Standard	Y9L0317-CAL4	E80002907.D	12/02/19 18:23
Cal Standard	Y9L0317-CAL5	E80002908.D	12/02/19 18:40
Cal Standard	Y9L0317-CAL6	E80002909.D	12/02/19 18:58
Cal Standard	Y9L0317-CAL7	E80002910.D	12/02/19 19:15
Cal Standard	Y9L0317-CAL8	E80002911.D	12/02/19 19:33
Cal Standard	Y9L0317-CAL9	E80002912.D	12/02/19 19:50
Secondary Cal Check	Y9L0317-SCV1	E80002913.D	12/02/19 20:07

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Sequence:	Y9L2705	Instrument:	MSBNA8
		Calibration:	YL90004

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y9L2705-TUN1	E80002997.D	12/26/19 12:05
Calibration Check	Y9L2705-CCV1	E80002999.D	12/26/19 13:08
Blank	BL91138-BLK1	E80003000.D	12/26/19 13:29
LCS	BL91138-BS1	E80003001.D	12/26/19 13:47
KMW-MW-4R	BL91138-MS1	E80003002.D	12/26/19 14:05
KMW-MW-4R	BL91138-MSD1	E80003003.D	12/26/19 14:22
KMW-MW-4R	19L0685-01	E80003004.D	12/26/19 14:40
KMW-MW-11R	19L0685-02	E80003005.D	12/26/19 14:57
KMW-FD	19L0685-03	E80003006.D	12/26/19 15:14
KMW-EB	19L0685-04	E80003007.D	12/26/19 15:32

FORM VIII **INTERNAL STANDARD AREA AND RT SUMMARY**
EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L0317 Instrument: MSBNA8
Calibration: YL90004

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (Y9L0317-CAL1)			Lab File ID: E80002904.D			Analyzed: 12/02/19 17:29			
Tetrahydrofuran-d8	113204	4.529	142390	4.553	80	50 - 200	-0.0240	+/-0.50	
Cal Standard (Y9L0317-CAL2)			Lab File ID: E80002905.D			Analyzed: 12/02/19 17:47			
Tetrahydrofuran-d8	129293	4.536	142390	4.553	91	50 - 200	-0.0170	+/-0.50	
Cal Standard (Y9L0317-CAL3)			Lab File ID: E80002906.D			Analyzed: 12/02/19 18:05			
Tetrahydrofuran-d8	139948	4.546	142390	4.553	98	50 - 200	-0.0070	+/-0.50	
Cal Standard (Y9L0317-CAL4)			Lab File ID: E80002907.D			Analyzed: 12/02/19 18:23			
Tetrahydrofuran-d8	142537	4.529	142390	4.553	100	50 - 200	-0.0240	+/-0.50	
Cal Standard (Y9L0317-CAL5)			Lab File ID: E80002908.D			Analyzed: 12/02/19 18:40			
Tetrahydrofuran-d8	151187	4.539	142390	4.553	106	50 - 200	-0.0140	+/-0.50	
Cal Standard (Y9L0317-CAL6)			Lab File ID: E80002909.D			Analyzed: 12/02/19 18:58			
Tetrahydrofuran-d8	142390	4.553	142390	4.553	100	50 - 200	0.0000	+/-0.50	
Cal Standard (Y9L0317-CAL7)			Lab File ID: E80002910.D			Analyzed: 12/02/19 19:15			
Tetrahydrofuran-d8	137672	4.524	142390	4.553	97	50 - 200	-0.0290	+/-0.50	
Cal Standard (Y9L0317-CAL8)			Lab File ID: E80002911.D			Analyzed: 12/02/19 19:33			
Tetrahydrofuran-d8	139012	4.527	142390	4.553	98	50 - 200	-0.0260	+/-0.50	
Cal Standard (Y9L0317-CAL9)			Lab File ID: E80002912.D			Analyzed: 12/02/19 19:50			
Tetrahydrofuran-d8	132484	4.52	142390	4.553	93	50 - 200	-0.0330	+/-0.50	
Secondary Cal Check (Y9L0317-SCV1)			Lab File ID: E80002913.D			Analyzed: 12/02/19 20:07			
Tetrahydrofuran-d8	136020	4.555	142390	4.553	96	50 - 200	0.0020	+/-0.50	

FORM VIII **INTERNAL STANDARD AREA AND RT SUMMARY**

EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Sequence: Y9L2705 Instrument: MSBNA8

Calibration: YL90004

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (Y9L2705-CCV1)			Lab File ID: E80002999.D			Analyzed: 12/26/19 13:08			
Tetrahydrofuran-d8	251364	4.562				50 - 200		+/-0.50	
Blank (BL91138-BLK1)			Lab File ID: E80003000.D			Analyzed: 12/26/19 13:29			
Tetrahydrofuran-d8	314810	4.565	251364	4.562	125	50 - 200	0.0030	+/-0.50	
LCS (BL91138-BS1)			Lab File ID: E80003001.D			Analyzed: 12/26/19 13:47			
Tetrahydrofuran-d8	307592	4.565	251364	4.562	122	50 - 200	0.0030	+/-0.50	
Matrix Spike (BL91138-MS1)			Lab File ID: E80003002.D			Analyzed: 12/26/19 14:05			
Tetrahydrofuran-d8	310375	4.57	251364	4.562	123	50 - 200	0.0080	+/-0.50	
Matrix Spike Dup (BL91138-MSD1)			Lab File ID: E80003003.D			Analyzed: 12/26/19 14:22			
Tetrahydrofuran-d8	309337	4.548	251364	4.562	123	50 - 200	-0.0140	+/-0.50	
KMW-MW-4R (19L0685-01)			Lab File ID: E80003004.D			Analyzed: 12/26/19 14:40			
Tetrahydrofuran-d8	323554	4.56	251364	4.562	129	50 - 200	-0.0020	+/-0.50	
KMW-MW-11R (19L0685-02)			Lab File ID: E80003005.D			Analyzed: 12/26/19 14:57			
Tetrahydrofuran-d8	305683	4.558	251364	4.562	122	50 - 200	-0.0040	+/-0.50	
KMW-FD (19L0685-03)			Lab File ID: E80003006.D			Analyzed: 12/26/19 15:14			
Tetrahydrofuran-d8	315388	4.553	251364	4.562	125	50 - 200	-0.0090	+/-0.50	
KMW-EB (19L0685-04)			Lab File ID: E80003007.D			Analyzed: 12/26/19 15:32			
Tetrahydrofuran-d8	318090	4.567	251364	4.562	127	50 - 200	0.0050	+/-0.50	

HOLDING TIME SUMMARY

EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
KMW-MW-4R	12/16/19 10:45	12/17/19 17:17	12/20/19 07:56	3.88	7.00	12/26/19 14:40	6.28	28.00	
KMW-MW-11R	12/16/19 12:47	12/17/19 17:17	12/20/19 07:56	3.80	7.00	12/26/19 14:57	6.29	28.00	
KMW-FD	12/16/19 00:00	12/17/19 17:17	12/20/19 07:56	4.33	7.00	12/26/19 15:14	6.30	28.00	
KMW-EB	12/16/19 13:00	12/17/19 17:17	12/20/19 07:56	3.79	7.00	12/26/19 15:32	6.32	28.00	

METHOD DETECTION AND REPORTING LIMITS

EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc. **SDG:** 19L0685

Client: Chazen Environmental Services (Poughkeepsie) **Project:** 41433.00 TASK 0600 Katonah Municipal V

Matrix: Water **Instrument:** MSBNA8

Analyte	LOD	LOQ	Units
1,4-Dioxane	0.200	0.200	ug/L

FORM I **ORGANIC ANALYSIS DATA SHEET**

EPA 8270D SIM

KMW-MW-4R

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-01	File ID:	E80003004.D
Sampled:	12/16/19 10:45	Prepared:	12/20/19 07:56	Analyzed:	12/26/19 14:40
Solids:		Preparation:	EPA 3535A	Initial/Final:	100 mL / 2 mL
Batch:	BL91138	Sequence:	Y9L2705	Calibration:	YL90004
Instrument:	MSBNA8				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
123-91-1	1,4-Dioxane	1	0.200	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,4-Dioxane-d8	5.00	3.20	64.0	50 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Tetrahydrofuran-d8	323554	4.56	251364	4.562	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003004.D
Acq On : 26 Dec 2019 2:40 pm
Operator : KH
Sample : 19L0685-01
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 26 16:02:04 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

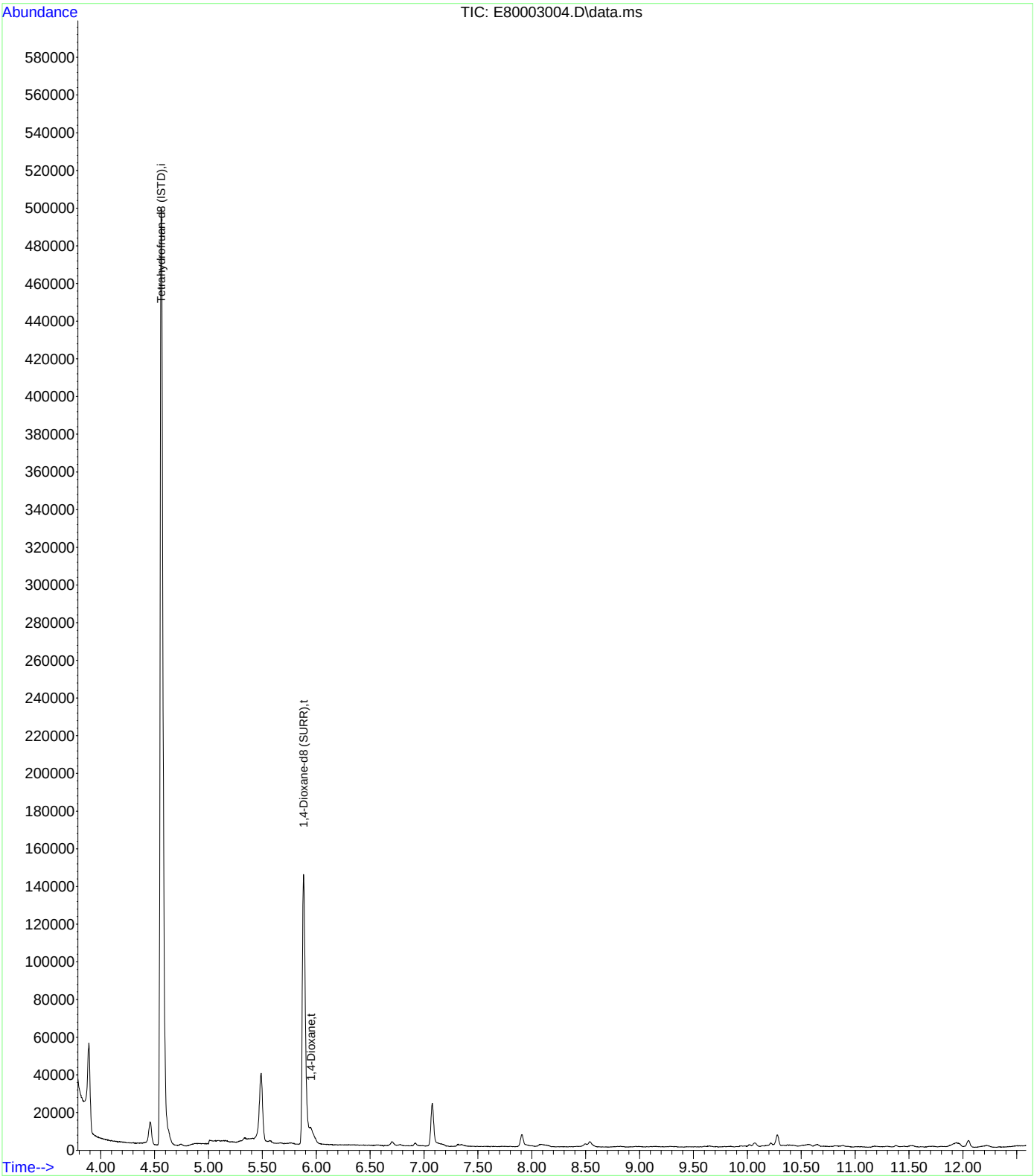
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.560	48	323554	0.50	ug/mL	# 0.03
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.881	96	181892m	0.16	ug/mL	
3) 1,4-Dioxane	5.951	88	4677	0.00	ug/mL	82

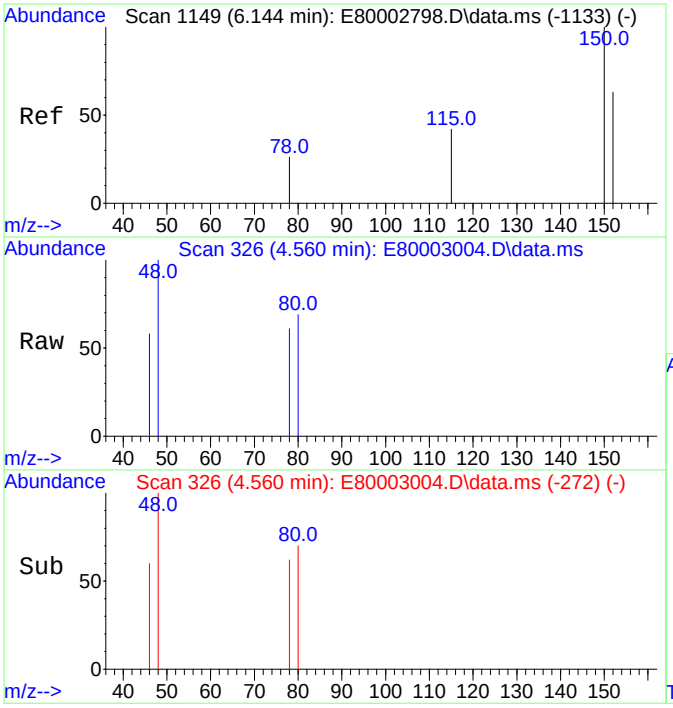
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003004.D
Acq On : 26 Dec 2019 2:40 pm
Operator : KH
Sample : 19L0685-01
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 26 16:02:04 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

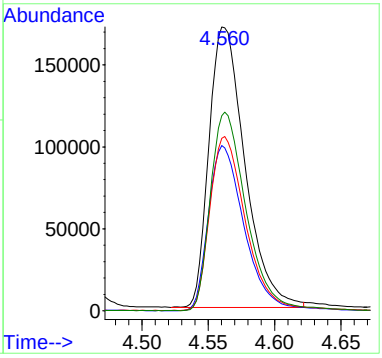


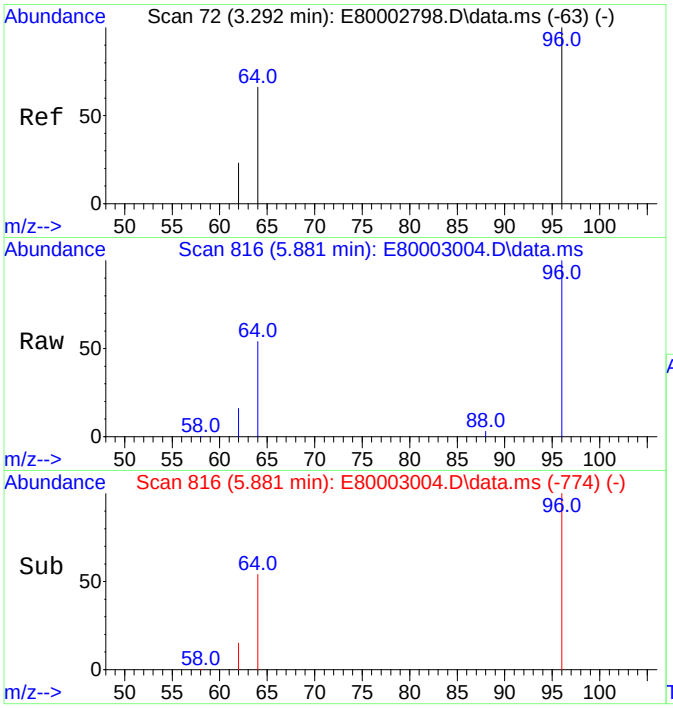


#1
Tetrahydrofuran-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.560 min Scan# 326
Delta R.T. 0.029 min
Lab File: E80003004.D
Acq: 26 Dec 2019 2:40 pm

Tgt Ion: 48 Resp: 323554

Ion	Ratio	Lower	Upper
48	100		
46	58.1	27.7	83.0
78	61.3	20.7	62.1
80	69.8	22.5	67.5#

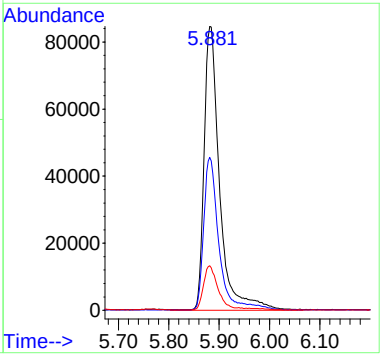


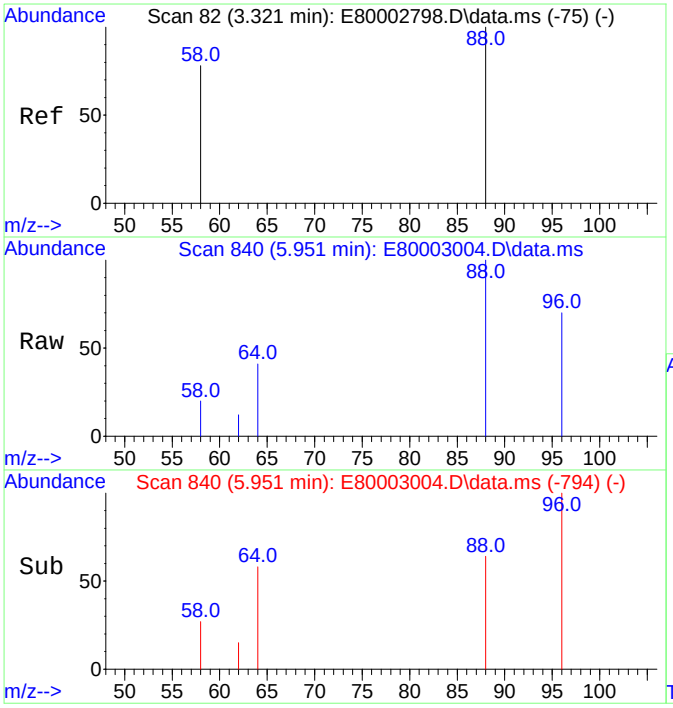


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.16 ug/mL m
RT: 5.881 min Scan# 816
Delta R.T. 0.021 min
Lab File: E80003004.D
Acq: 26 Dec 2019 2:40 pm

Tgt Ion: 96 Resp: 181892

Ion	Ratio	Lower	Upper
96	100		
64	51.8	47.4	88.0
62	14.7	14.8	27.4#

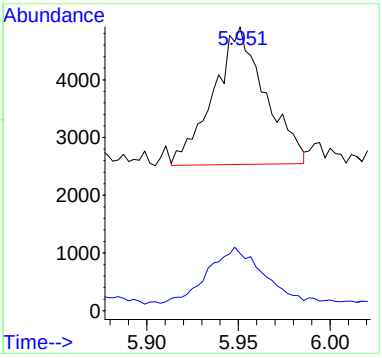




#3
1,4-Dioxane
Concen: 0.00 ug/mL
RT: 5.951 min Scan# 840
Delta R.T. 0.033 min
Lab File: E80003004.D
Acq: 26 Dec 2019 2:40 pm

Tgt Ion: 88 Resp: 4677

Ion	Ratio	Lower	Upper
88	100		
58	46.5	42.2	78.4



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8270D SIM

KMW-MW-11R

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-02	File ID:	E80003005.D
Sampled:	12/16/19 12:47	Prepared:	12/20/19 07:56	Analyzed:	12/26/19 14:57
Solids:		Preparation:	EPA 3535A	Initial/Final:	100 mL / 2 mL
Batch:	BL91138	Sequence:	Y9L2705	Calibration:	YL90004
Instrument:	MSBNA8				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
123-91-1	1,4-Dioxane	1	0.200	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,4-Dioxane-d8	5.00	3.20	64.0	50 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Tetrahydrofuran-d8	305683	4.558	251364	4.562	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003005.D
Acq On : 26 Dec 2019 2:57 pm
Operator : KH
Sample : 19L0685-02
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 26 16:02:07 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

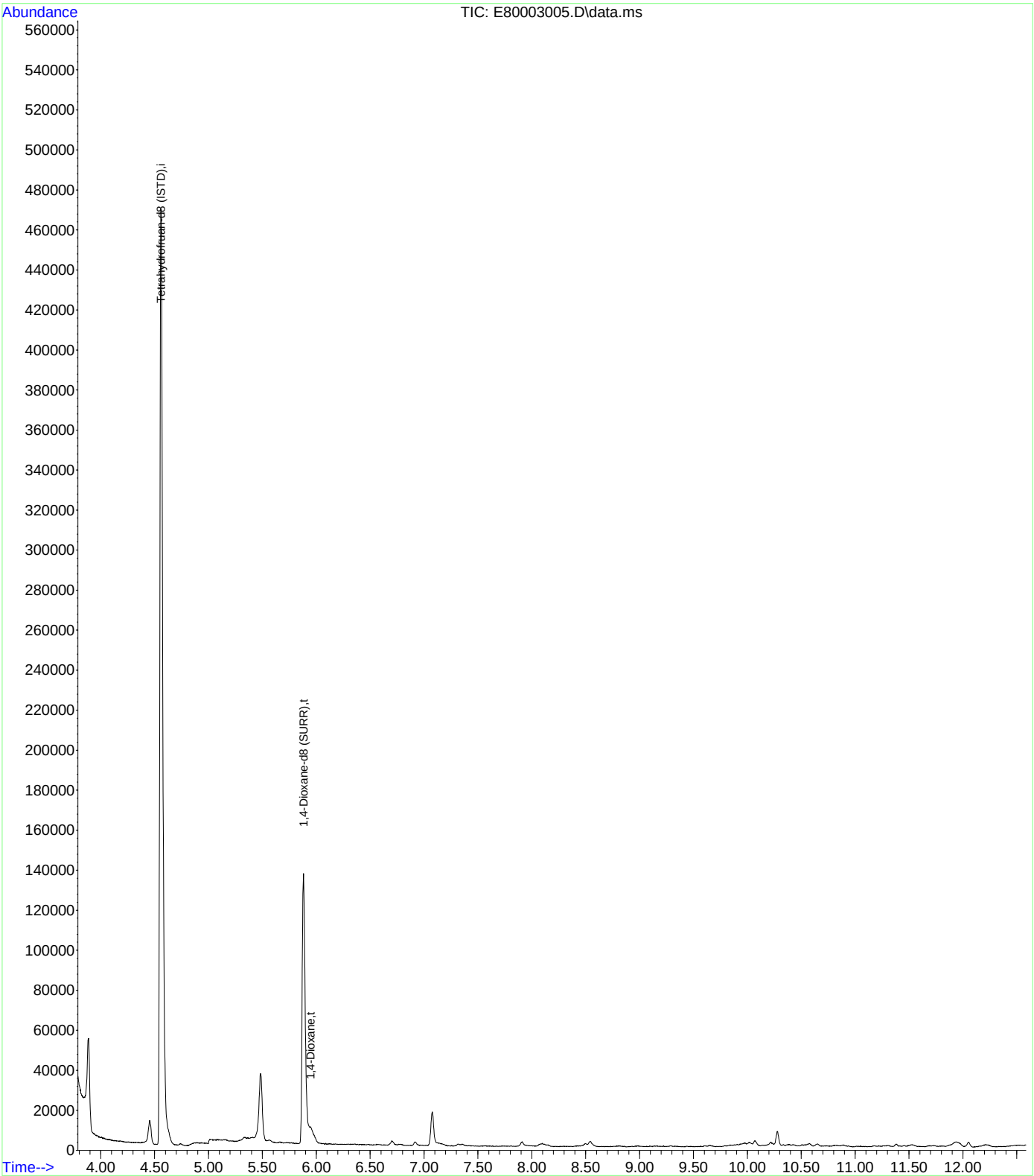
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.558	48	305683	0.50	ug/mL	# 0.03
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.881	96	171160m	0.16	ug/mL	
3) 1,4-Dioxane	5.945	88	3558	0.00	ug/mL	88

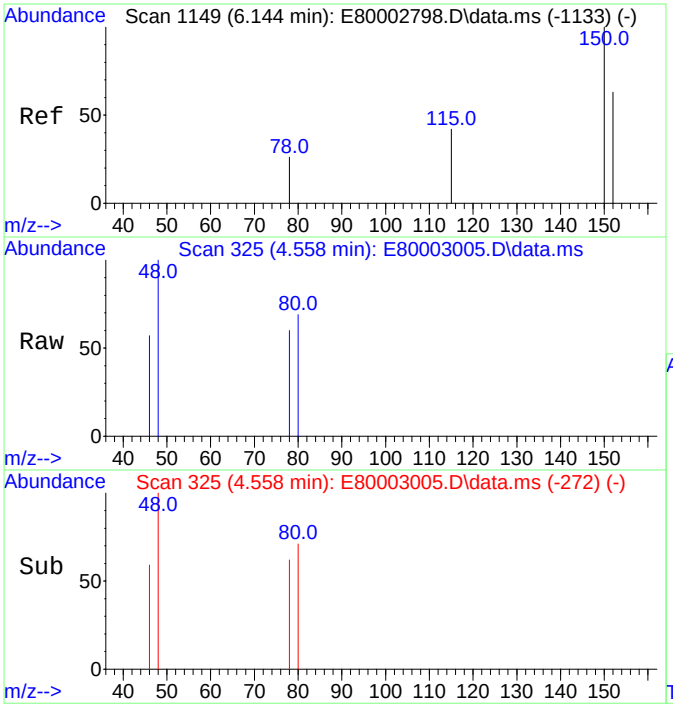
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003005.D
Acq On : 26 Dec 2019 2:57 pm
Operator : KH
Sample : 19L0685-02
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 26 16:02:07 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

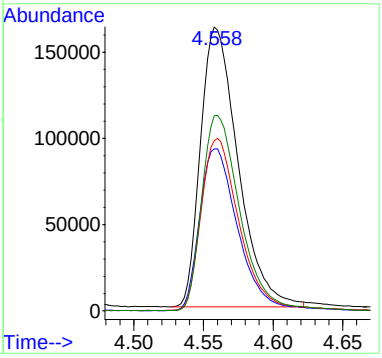


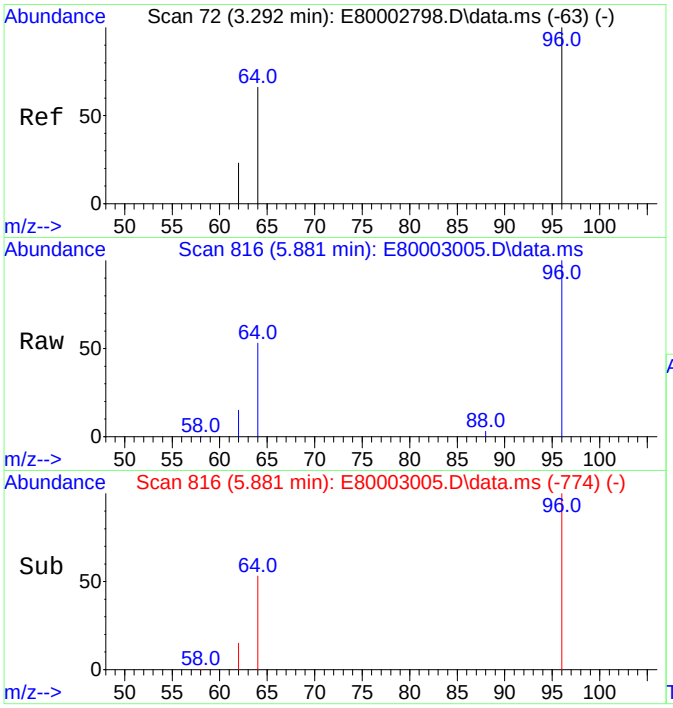


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.558 min Scan# 325
Delta R.T. 0.027 min
Lab File: E80003005.D
Acq: 26 Dec 2019 2:57 pm

Tgt Ion: 48 Resp: 305683

Ion	Ratio	Lower	Upper
48	100		
46	58.4	27.7	83.0
78	61.8	20.7	62.1
80	70.3	22.5	67.5#

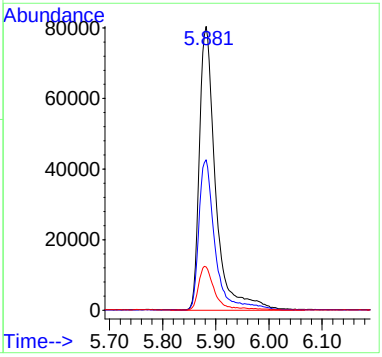


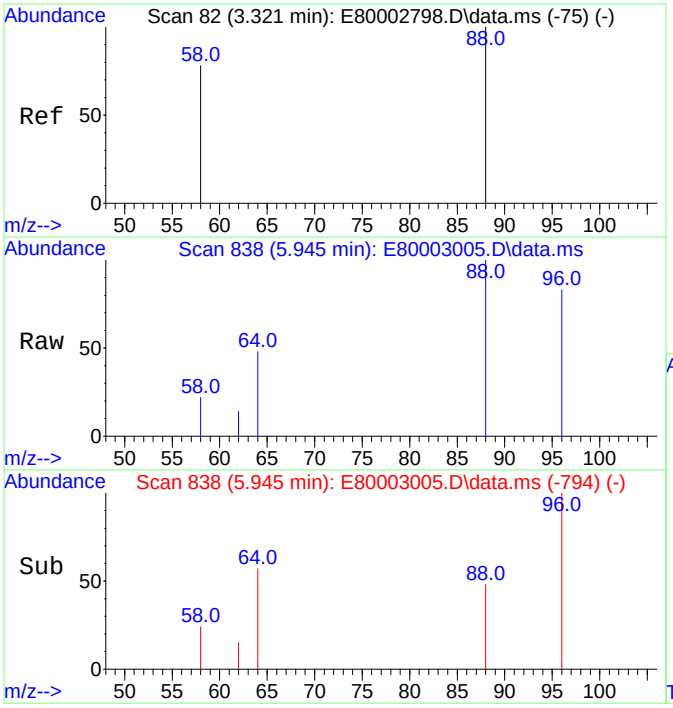


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.16 ug/mL m
RT: 5.881 min Scan# 816
Delta R.T. 0.021 min
Lab File: E80003005.D
Acq: 26 Dec 2019 2:57 pm

Tgt Ion: 96 Resp: 171160

Ion	Ratio	Lower	Upper
96	100		
64	51.7	47.4	88.0
62	14.6	14.8	27.4#

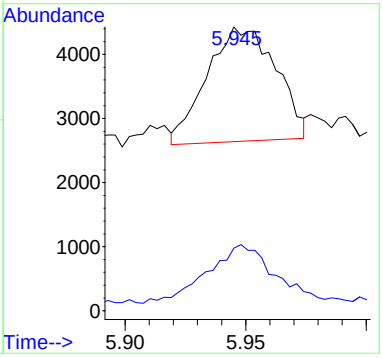




#3
1,4-Dioxane
Concen: 0.00 ug/mL
RT: 5.945 min Scan# 838
Delta R.T. 0.027 min
Lab File: E80003005.D
Acq: 26 Dec 2019 2:57 pm

Tgt Ion: 88 Resp: 3558

Ion	Ratio	Lower	Upper
88	100		
58	51.4	42.2	78.4



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8270D SIM

KMW-FD

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-03	File ID:	E80003006.D
Sampled:	12/16/19 00:00	Prepared:	12/20/19 07:56	Analyzed:	12/26/19 15:14
Solids:		Preparation:	EPA 3535A	Initial/Final:	100 mL / 2 mL
Batch:	BL91138	Sequence:	Y9L2705	Calibration:	YL90004
Instrument:	MSBNA8				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
123-91-1	1,4-Dioxane	1	0.200	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,4-Dioxane-d8	5.00	3.20	64.0	50 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Tetrahydrofuran-d8	315388	4.553	251364	4.562	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003006.D
Acq On : 26 Dec 2019 3:14 pm
Operator : KH
Sample : 19L0685-03
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 16:02:11 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

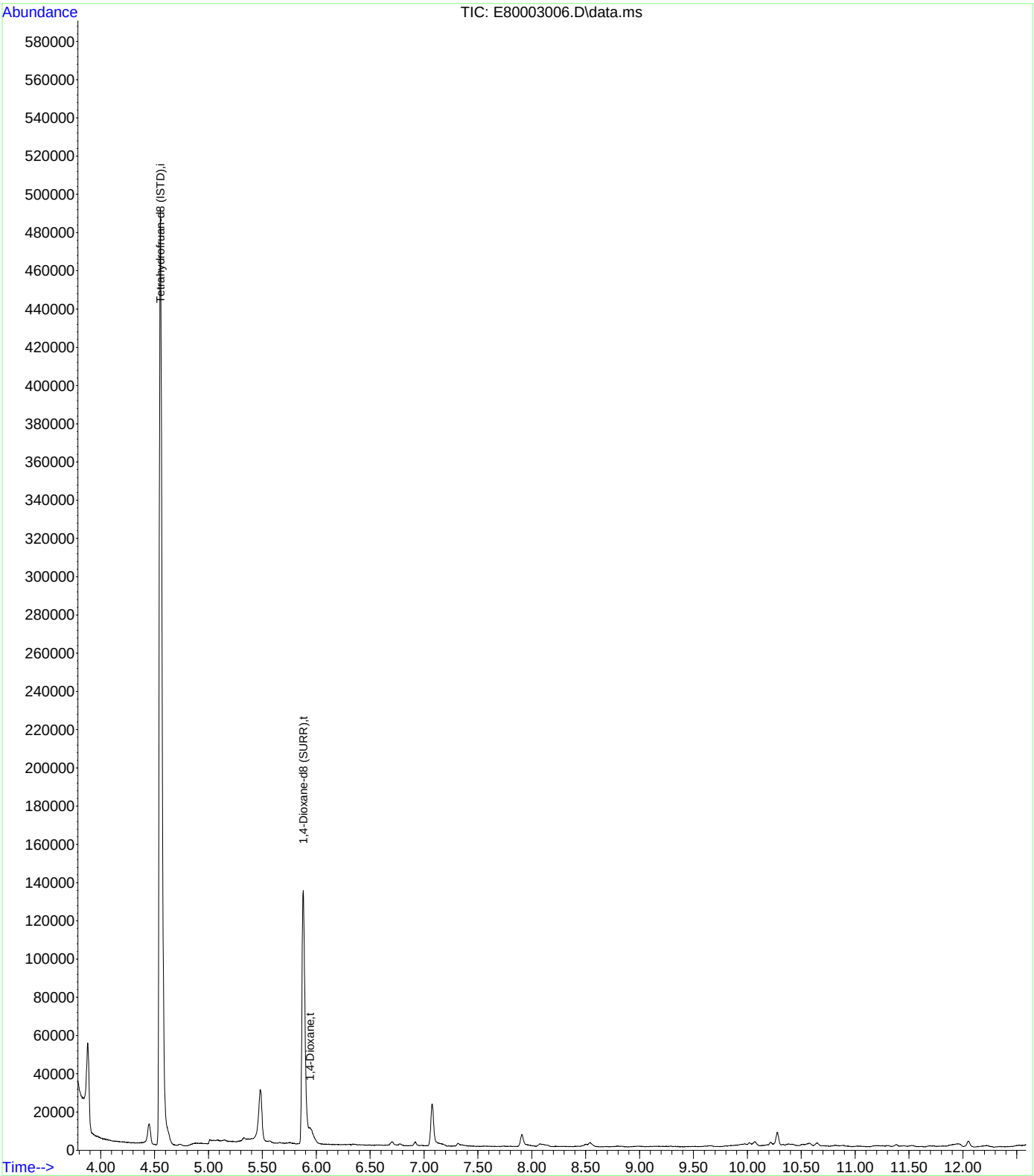
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.553	48	315388	0.50	ug/mL	# 0.02
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.879	96	170223m	0.16	ug/mL	
3) 1,4-Dioxane	5.942	88	4936	0.00	ug/mL	# 73

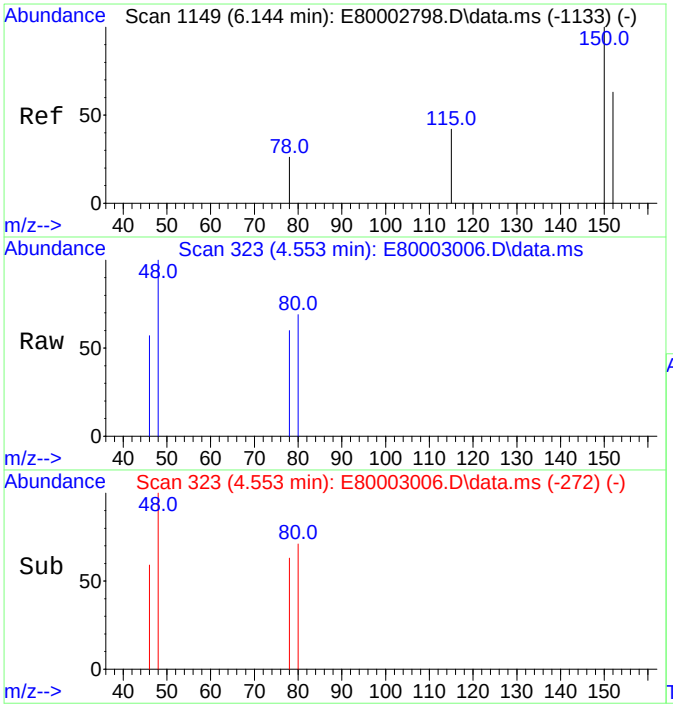
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003006.D
Acq On : 26 Dec 2019 3:14 pm
Operator : KH
Sample : 19L0685-03
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 16:02:11 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

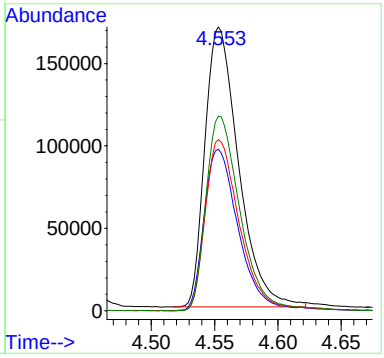


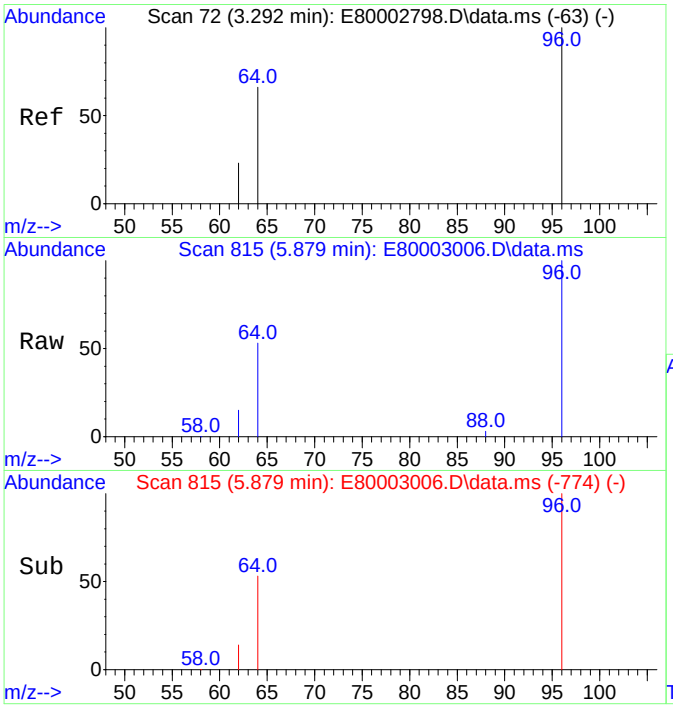


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.553 min Scan# 323
Delta R.T. 0.022 min
Lab File: E80003006.D
Acq: 26 Dec 2019 3:14 pm

Tgt Ion: 48 Resp: 315388

Ion	Ratio	Lower	Upper
48	100		
46	58.1	27.7	83.0
78	61.4	20.7	62.1
80	70.0	22.5	67.5#

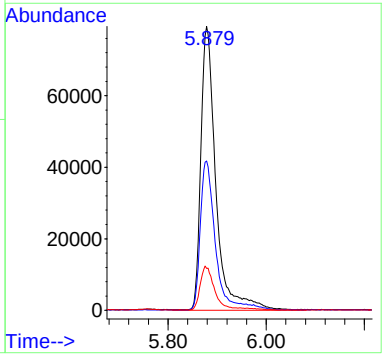


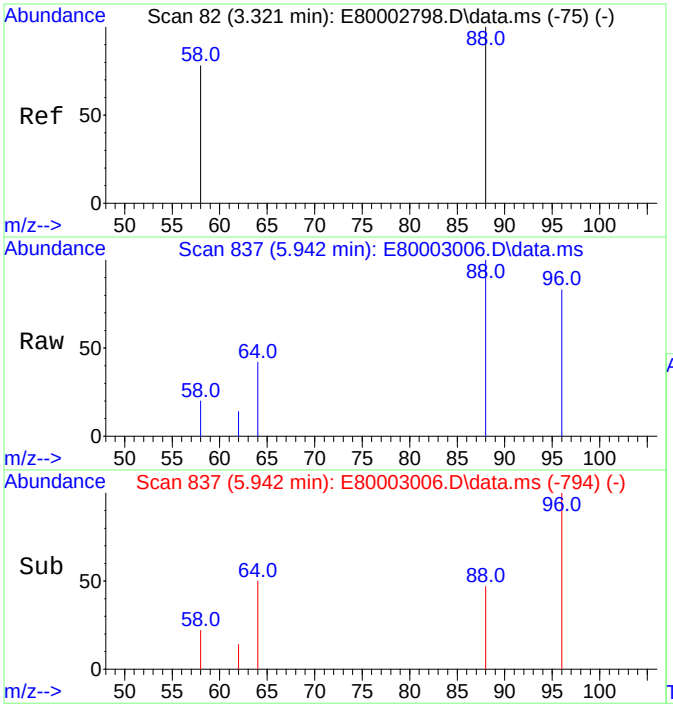


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.16 ug/mL m
RT: 5.879 min Scan# 815
Delta R.T. 0.018 min
Lab File: E80003006.D
Acq: 26 Dec 2019 3:14 pm

Tgt Ion: 96 Resp: 170223

Ion	Ratio	Lower	Upper
96	100		
64	51.6	47.4	88.0
62	14.9	14.8	27.4

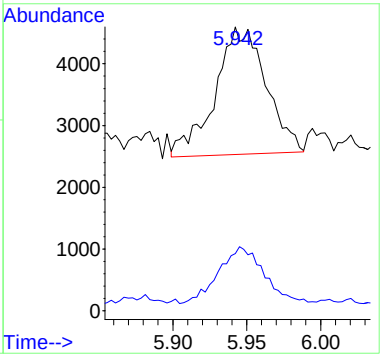




#3
1,4-Dioxane
Concen: 0.00 ug/mL
RT: 5.942 min Scan# 837
Delta R.T. 0.024 min
Lab File: E80003006.D
Acq: 26 Dec 2019 3:14 pm

Tgt Ion: 88 Resp: 4936

Ion	Ratio	Lower	Upper
88	100		
58	39.9	42.2	78.4#



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8270D SIM

KMW-EB

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-04	File ID:	E80003007.D
Sampled:	12/16/19 13:00	Prepared:	12/20/19 07:56	Analyzed:	12/26/19 15:32
Solids:		Preparation:	EPA 3535A	Initial/Final:	100 mL / 2 mL
Batch:	BL91138	Sequence:	Y9L2705	Calibration:	YL90004
Instrument:	MSBNA8				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
123-91-1	1,4-Dioxane	1	0.200	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,4-Dioxane-d8	5.00	3.40	68.0	50 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Tetrahydrofuran-d8	318090	4.567	251364	4.562	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003007.D
Acq On : 26 Dec 2019 3:32 pm
Operator : KH
Sample : 19L0685-04
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 26 17:44:08 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

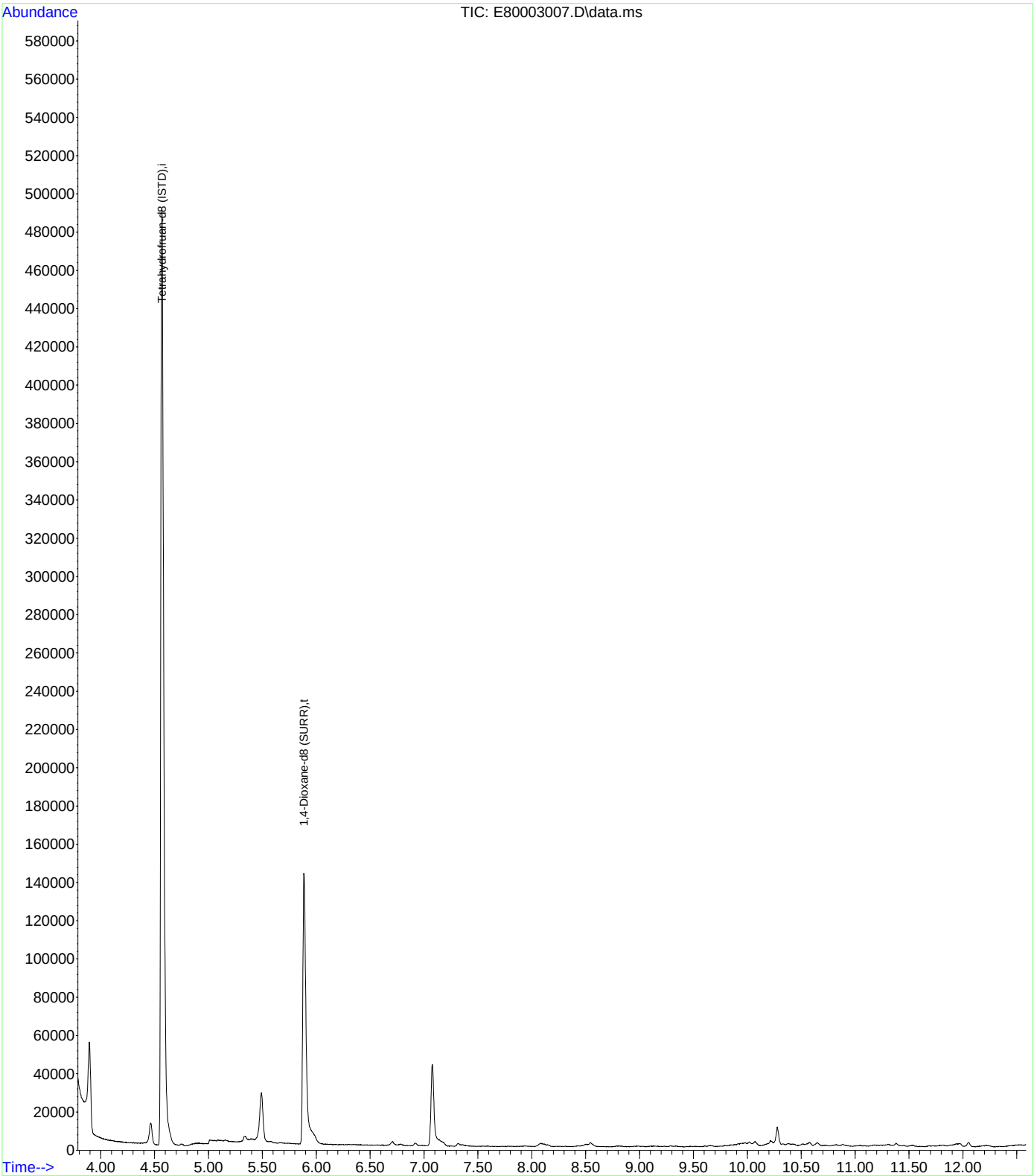
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.567	48	318090	0.50	ug/mL	# 0.04
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.884	96	184824m	0.17	ug/mL	

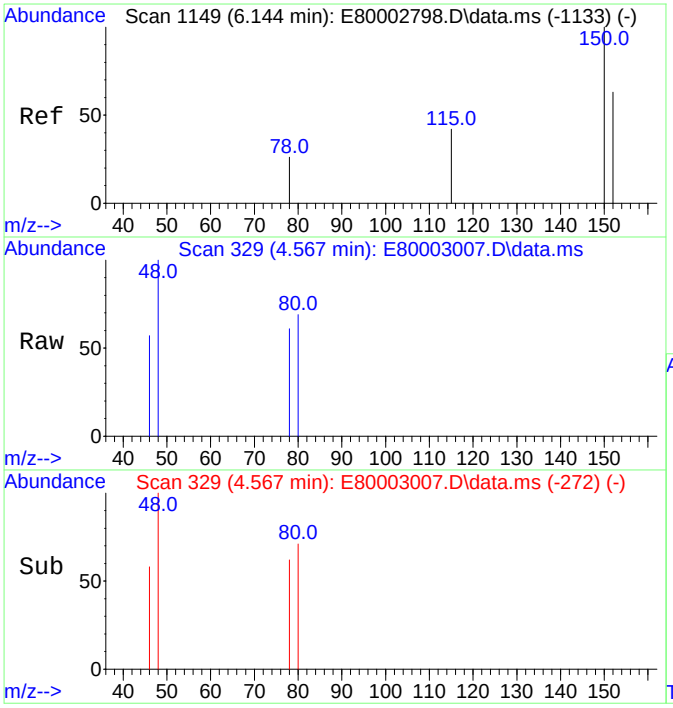
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003007.D
Acq On : 26 Dec 2019 3:32 pm
Operator : KH
Sample : 19L0685-04
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 26 17:44:08 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

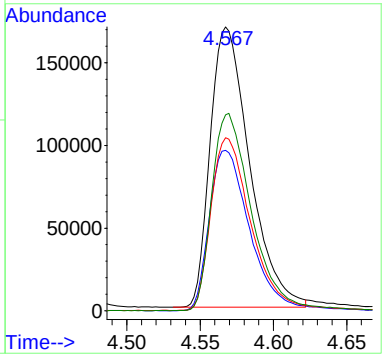


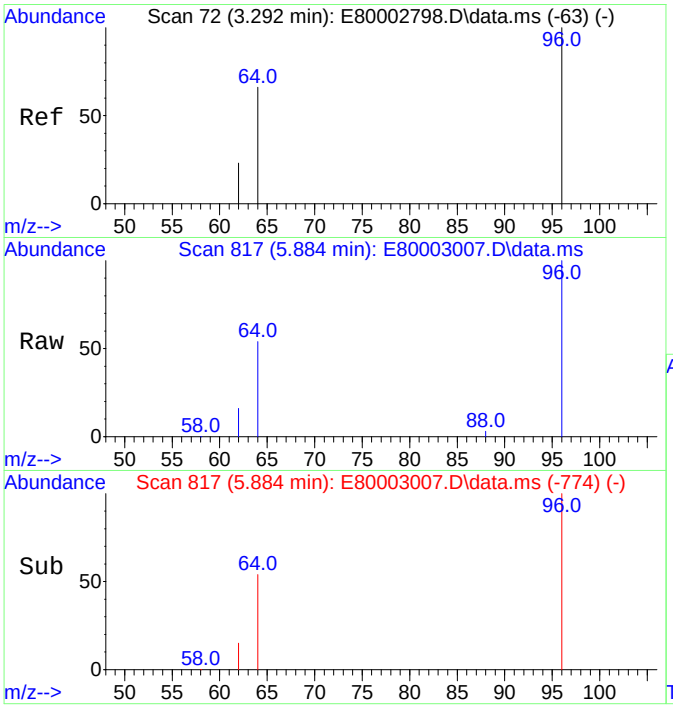


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.567 min Scan# 329
Delta R.T. 0.036 min
Lab File: E80003007.D
Acq: 26 Dec 2019 3:32 pm

Tgt Ion: 48 Resp: 318090

Ion	Ratio	Lower	Upper
48	100		
46	58.0	27.7	83.0
78	61.6	20.7	62.1
80	69.9	22.5	67.5#

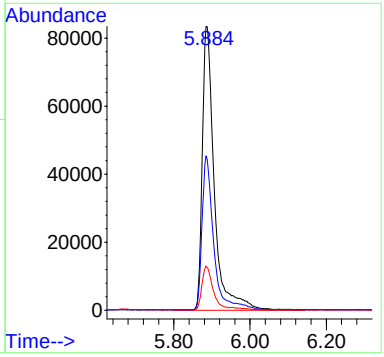




#2
1,4-Dioxane-d8 (SURR)
Concen: 0.17 ug/mL m
RT: 5.884 min Scan# 817
Delta R.T. 0.024 min
Lab File: E80003007.D
Acq: 26 Dec 2019 3:32 pm

Tgt Ion: 96 Resp: 184824

Ion	Ratio	Lower	Upper
96	100		
64	51.4	47.4	88.0
62	13.9	14.8	27.4#



FORM VI

INITIAL CALIBRATION DATA

EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc.

Client: Chazen Environmental Services (Poughkeepsie)

Calibration: YL90004

SDG: 19L0685

Project: 41433.00 TASK 0600 Katonah Municipal Wel

Instrument: MSBNA8

Calibration Date: 12/02/19 00:20

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
1,4-Dioxane	0.01	1.961061	0.02	1.827632	0.05	1.459971	0.1	1.466847	0.25	1.611977	0.5	1.527038
1,4-Dioxane-d8	0.01	2.082524	0.02	2.006102	0.05	1.624318	0.1	1.619369	0.25	1.720862	0.5	1.62739

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc.

Client: Chazen Environmental Services (Poughkeepsie)

Calibration: YL90004

SDG: 19L0685

Project: 41433.00 TASK 0600 Katonah Municipal Wel

Instrument: MSBNA8

Calibration Date: 12/02/19 00:20

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
1,4-Dioxane	1	1.487517	2	1.455076	5	1.473651						
1,4-Dioxane-d8	1	1.6336	2	1.58077	5	1.604631						

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Calibration:	YL90004	Instrument:	MSBNA8
		Calibration Date:	12/02/19 00:20

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,4-Dioxane	1.585641	11.64481	5.925	0.2087935			20	
1,4-Dioxane-d8	1.722174	10.88749	5.868444	0.2389916			20	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002904.D
Acq On : 2 Dec 2019 5:29 pm
Operator : KH
Sample : SEQ-CAL1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.01 ppm
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 03 09:56:18 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Nov 05 09:08:44 2019
Response via : Initial Calibration

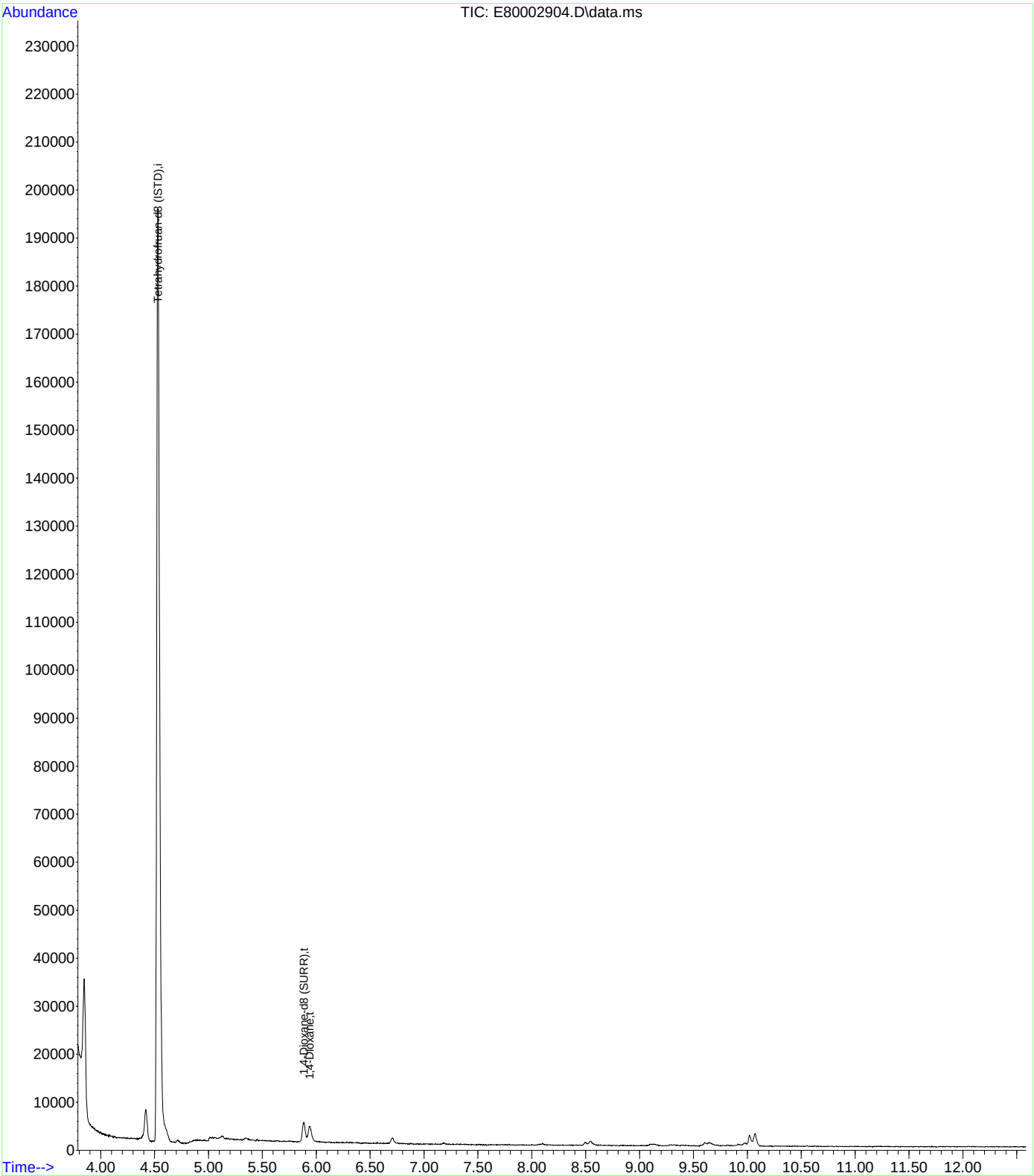
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.529	48	113204	0.50	ug/mL	#-0.02
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.884	96	4715	0.01	ug/mL#	80
3) 1,4-Dioxane	5.937	88	4440	0.01	ug/mL	86

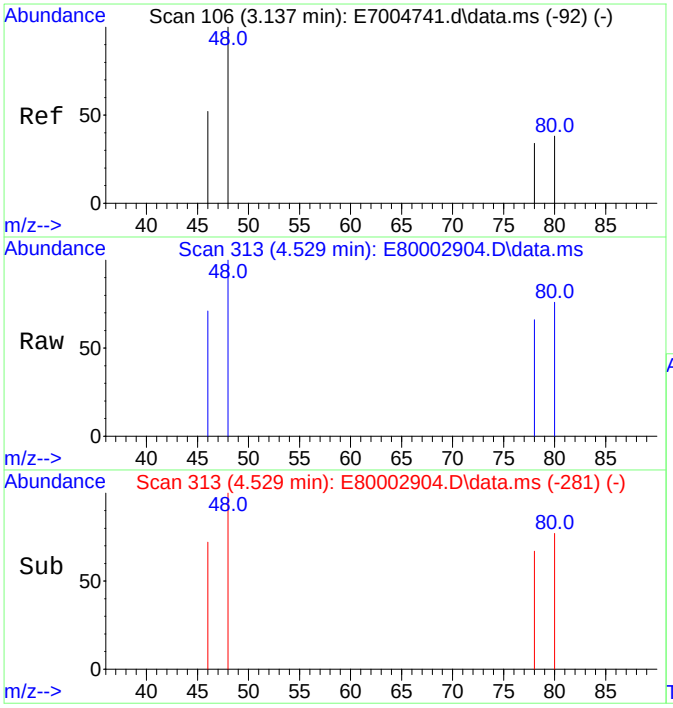
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002904.D
Acq On : 2 Dec 2019 5:29 pm
Operator : KH
Sample : SEQ-CAL1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.01 ppm
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 03 09:56:18 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Nov 05 09:08:44 2019
Response via : Initial Calibration

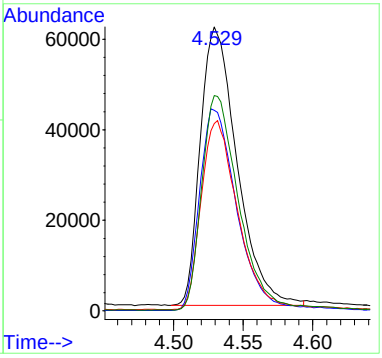


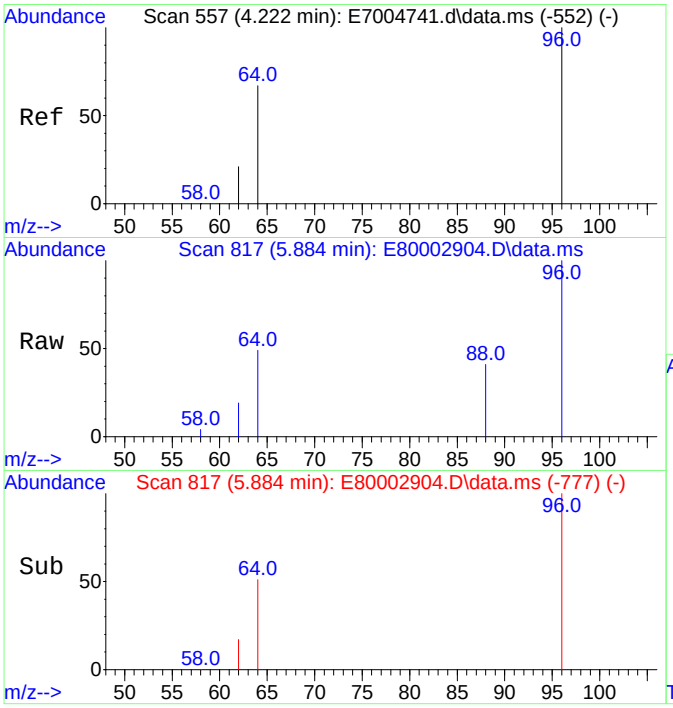


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.529 min Scan# 313
Delta R.T. -0.023 min
Lab File: E80002904.D
Acq: 2 Dec 2019 5:29 pm

Tgt Ion: 48 Resp: 113204

Ion	Ratio	Lower	Upper
48	100		
46	74.2	27.7	83.0
78	68.1	20.7	62.1#
80	76.4	22.5	67.5#

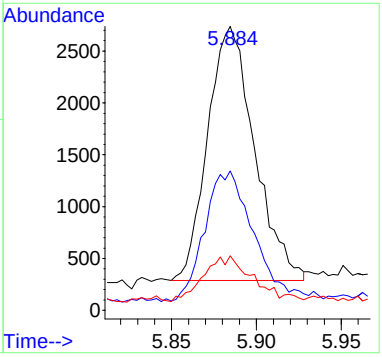


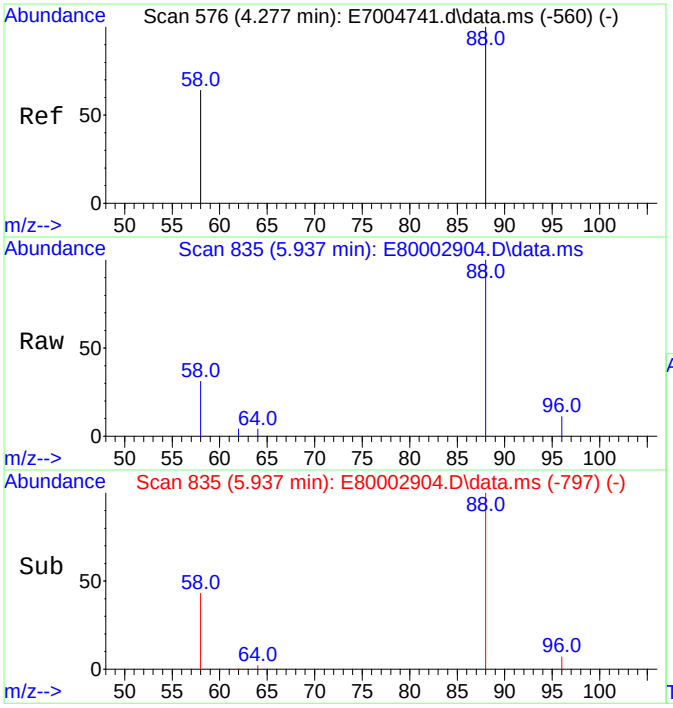


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.01 ug/mL
RT: 5.884 min Scan# 817
Delta R.T. 0.016 min
Lab File: E80002904.D
Acq: 2 Dec 2019 5:29 pm

Tgt Ion: 96 Resp: 4715

Ion	Ratio	Lower	Upper
96	100		
64	52.9	47.4	88.0
62	8.9	14.8	27.4#

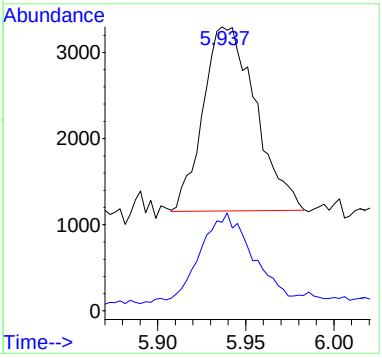




#3
1,4-Dioxane
Concen: 0.01 ug/mL
RT: 5.937 min Scan# 835
Delta R.T. 0.011 min
Lab File: E80002904.D
Acq: 2 Dec 2019 5:29 pm

Tgt Ion: 88 Resp: 4440

Ion	Ratio	Lower	Upper
88	100		
58	49.8	42.2	78.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002905.D
Acq On : 2 Dec 2019 5:47 pm
Operator : KH
Sample : SEQ-CAL2
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.02 ppm
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 03 09:58:03 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 09:57:51 2019
Response via : Initial Calibration

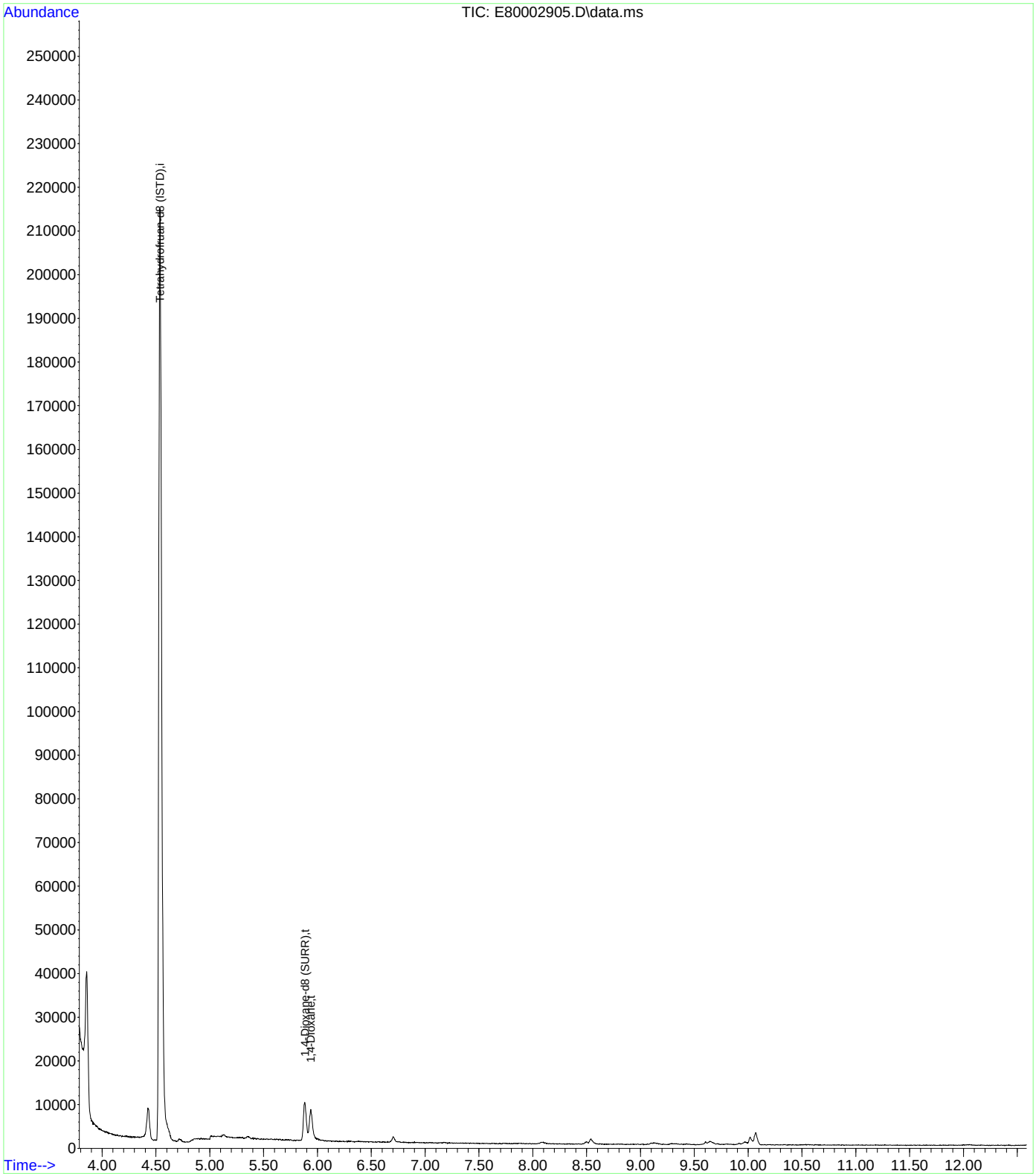
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.536	48	129293	0.50	ug/mL	# 0.00
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.884	96	10375	0.03	ug/mL	82
3) 1,4-Dioxane	5.936	88	9452	0.03	ug/mL	83

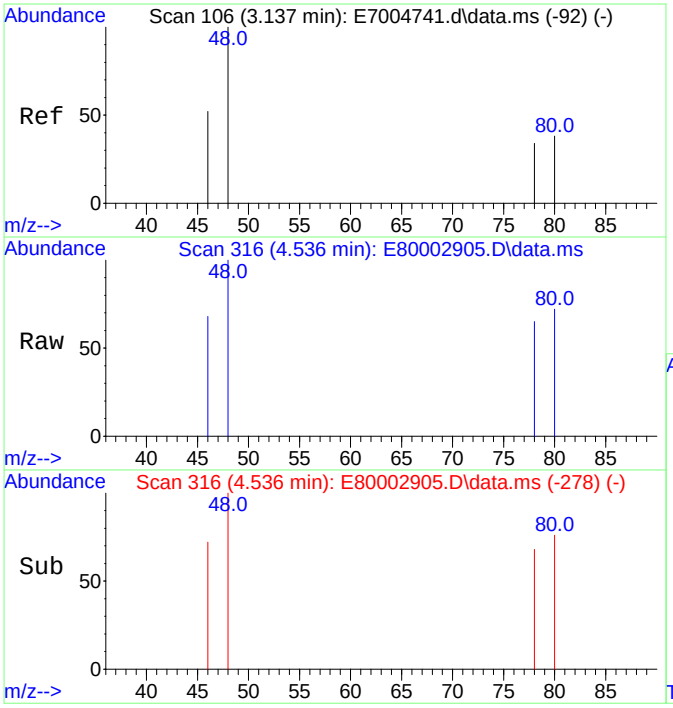
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002905.D
Acq On : 2 Dec 2019 5:47 pm
Operator : KH
Sample : SEQ-CAL2
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.02 ppm
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 03 09:58:03 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 09:57:51 2019
Response via : Initial Calibration

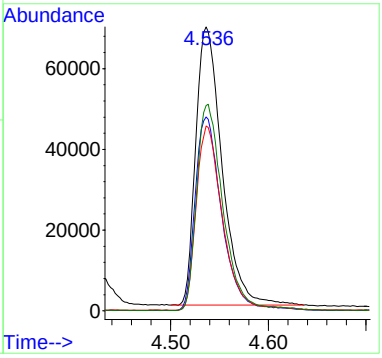


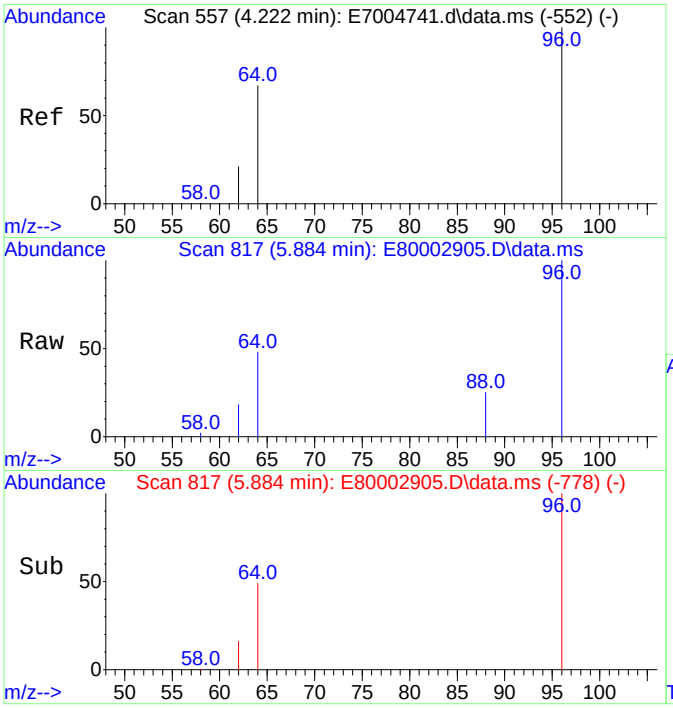


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.536 min Scan# 316
Delta R.T. -0.010 min
Lab File: E80002905.D
Acq: 2 Dec 2019 5:47 pm

Tgt Ion: 48 Resp: 129293

Ion	Ratio	Lower	Upper
48	100		
46	70.5	27.7	83.0
78	65.9	20.7	62.1#
80	73.4	22.5	67.5#

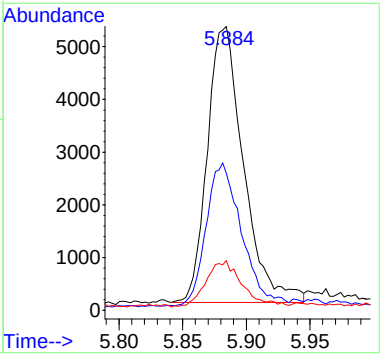


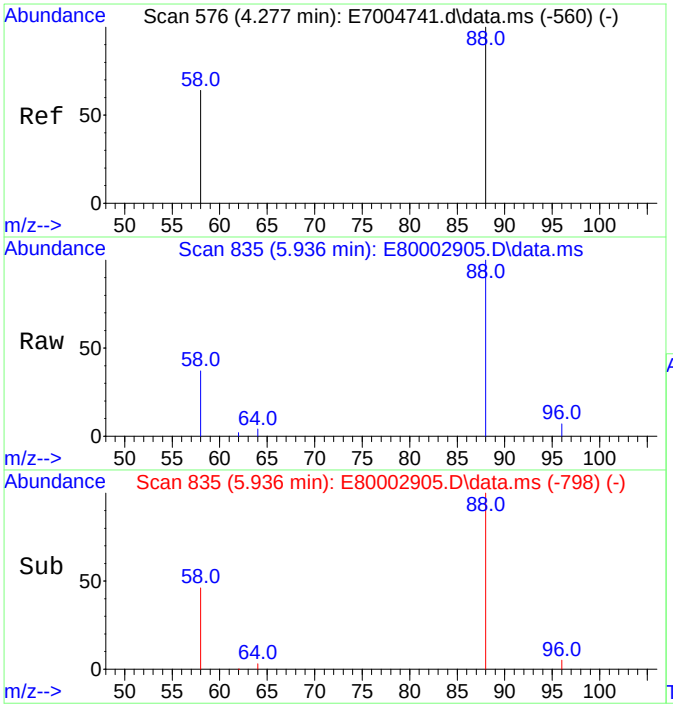


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.03 ug/mL
RT: 5.884 min Scan# 817
Delta R.T. 0.012 min
Lab File: E80002905.D
Acq: 2 Dec 2019 5:47 pm

Tgt Ion: 96 Resp: 10375

Ion	Ratio	Lower	Upper
96	100		
64	50.6	47.4	88.0
62	16.7	14.8	27.4

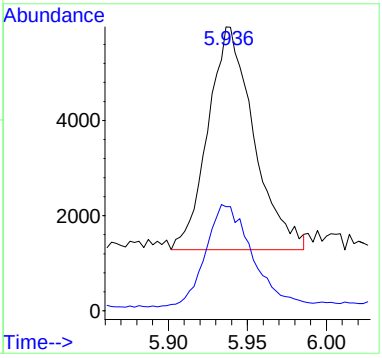




#3
1,4-Dioxane
Concen: 0.03 ug/mL
RT: 5.936 min Scan# 835
Delta R.T. 0.008 min
Lab File: E80002905.D
Acq: 2 Dec 2019 5:47 pm

Tgt Ion: 88 Resp: 9452

Ion	Ratio	Lower	Upper
88	100		
58	47.2	42.2	78.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002906.D
Acq On : 2 Dec 2019 6:05 pm
Operator : KH
Sample : SEQ-CAL3
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.05 ppm
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 03 09:56:43 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Nov 05 09:08:44 2019
Response via : Initial Calibration

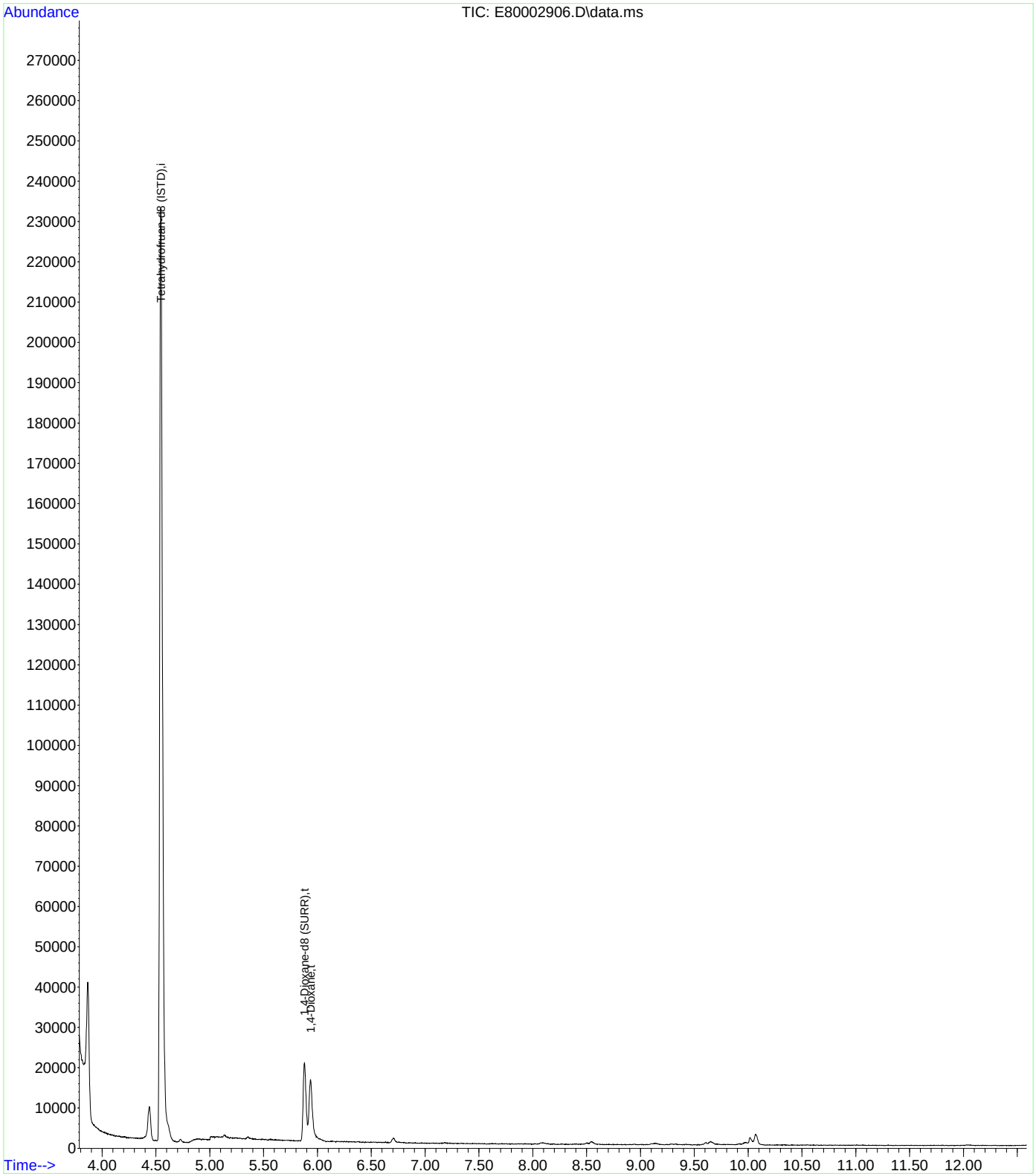
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.546	48	139948	0.50	ug/mL	# 0.00
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.879	96	22732	0.06	ug/mL	83
3) 1,4-Dioxane	5.937	88	20432	0.05	ug/mL	85

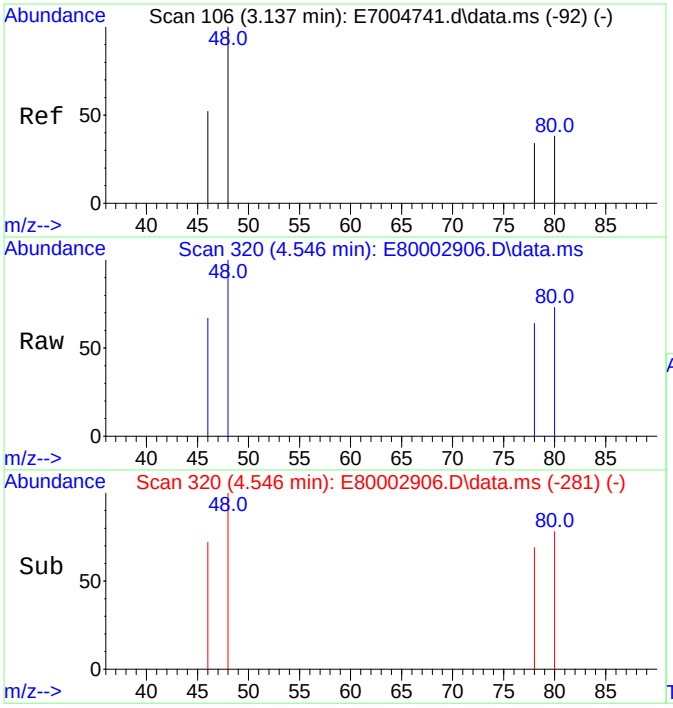
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002906.D
Acq On : 2 Dec 2019 6:05 pm
Operator : KH
Sample : SEQ-CAL3
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.05 ppm
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 03 09:56:43 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Nov 05 09:08:44 2019
Response via : Initial Calibration

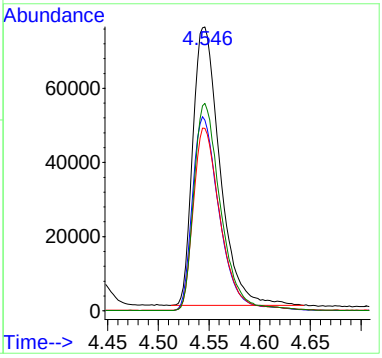


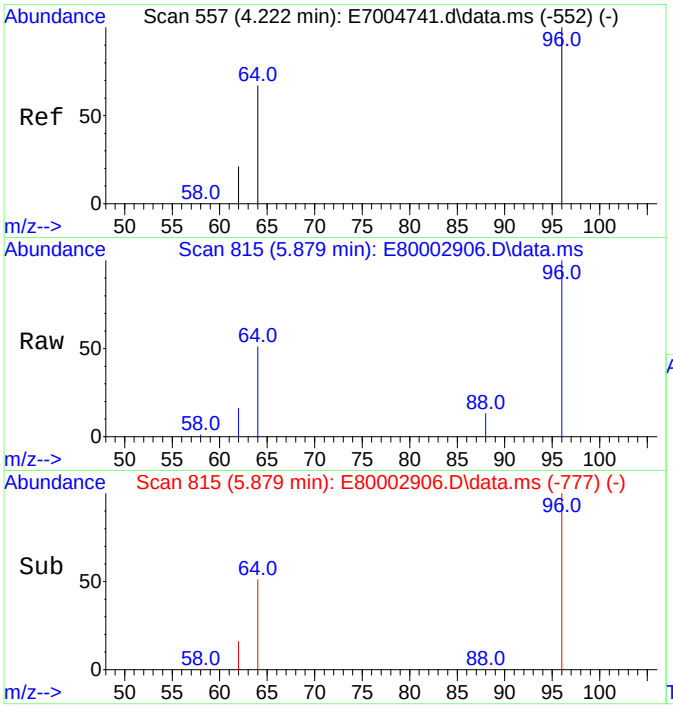


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.546 min Scan# 320
Delta R.T. -0.006 min
Lab File: E80002906.D
Acq: 2 Dec 2019 6:05 pm

Tgt Ion: 48 Resp: 139948

Ion	Ratio	Lower	Upper
48	100		
46	69.3	27.7	83.0
78	65.4	20.7	62.1#
80	73.8	22.5	67.5#

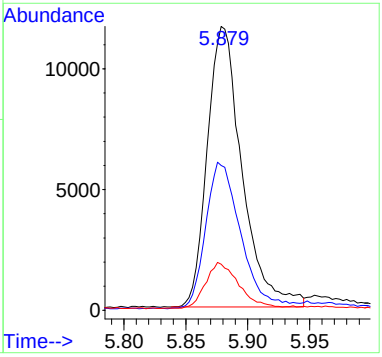


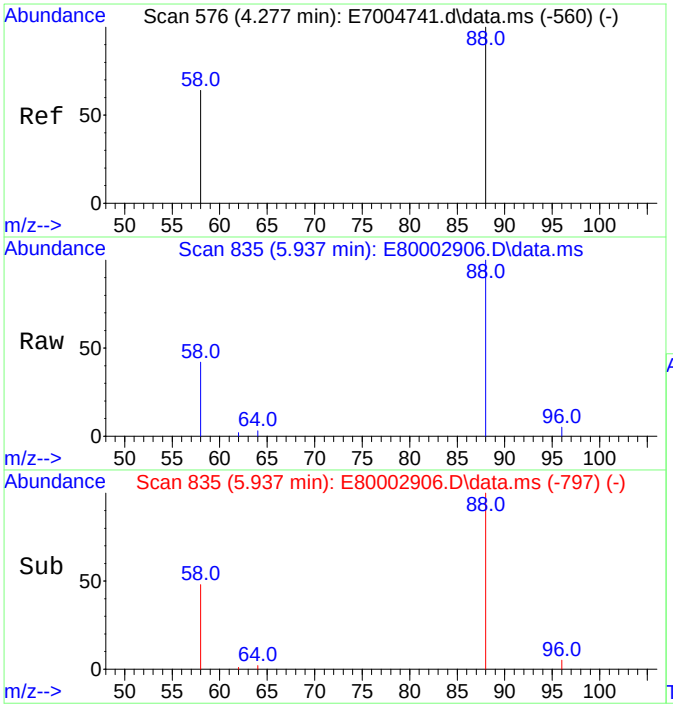


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.06 ug/mL
RT: 5.879 min Scan# 815
Delta R.T. 0.010 min
Lab File: E80002906.D
Acq: 2 Dec 2019 6:05 pm

Tgt Ion: 96 Resp: 22732

Ion	Ratio	Lower	Upper
96	100		
64	53.1	47.4	88.0
62	15.6	14.8	27.4

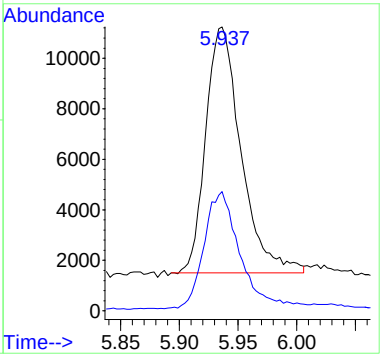




#3
1,4-Dioxane
Concen: 0.05 ug/mL
RT: 5.937 min Scan# 835
Delta R.T. 0.011 min
Lab File: E80002906.D
Acq: 2 Dec 2019 6:05 pm

Tgt Ion: 88 Resp: 20432

Ion	Ratio	Lower	Upper
88	100		
58	48.6	42.2	78.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002907.D
Acq On : 2 Dec 2019 6:23 pm
Operator : KH
Sample : SEQ-CAL4
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.10 ppm
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Dec 03 09:59:13 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 09:59:02 2019
Response via : Initial Calibration

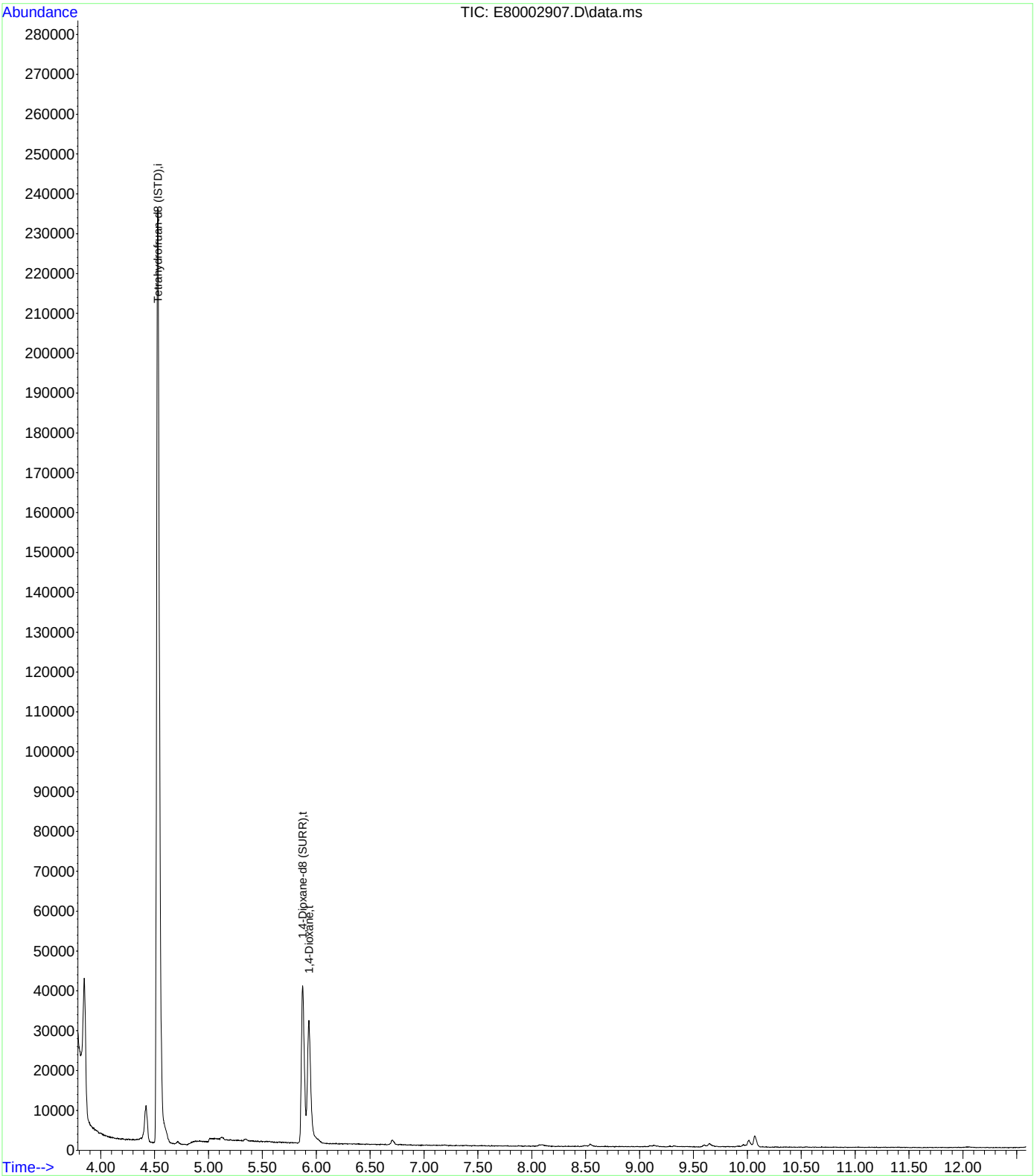
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.529	48	142537	0.50	ug/mL	#-0.01
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.873	96	46164	0.11	ug/mL	82
3) 1,4-Dioxane	5.931	88	41816	0.10	ug/mL	82

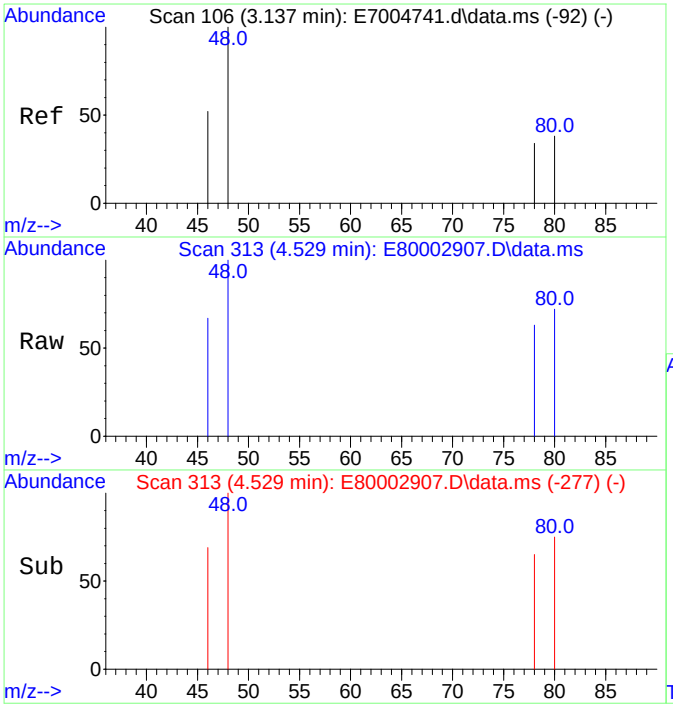
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002907.D
Acq On : 2 Dec 2019 6:23 pm
Operator : KH
Sample : SEQ-CAL4
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.10 ppm
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Dec 03 09:59:13 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 09:59:02 2019
Response via : Initial Calibration

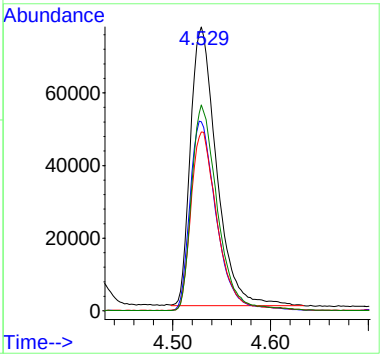


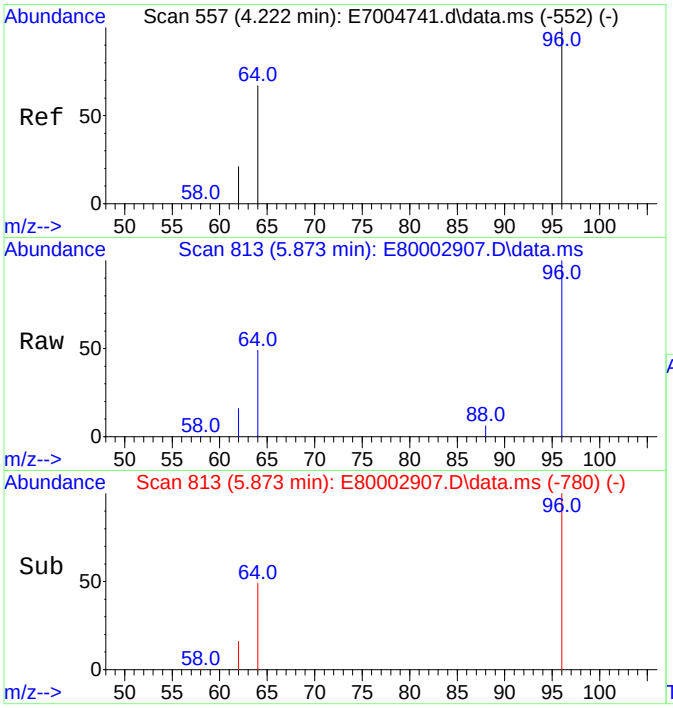


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.529 min Scan# 313
Delta R.T. -0.014 min
Lab File: E80002907.D
Acq: 2 Dec 2019 6:23 pm

Tgt Ion: 48 Resp: 142537

Ion	Ratio	Lower	Upper
48	100		
46	68.7	27.7	83.0
78	64.6	20.7	62.1#
80	73.3	22.5	67.5#

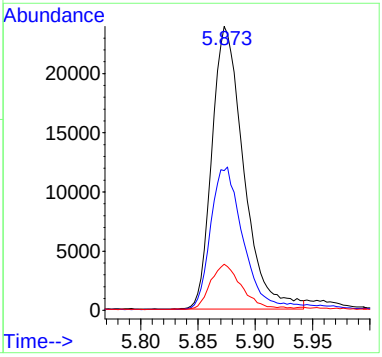


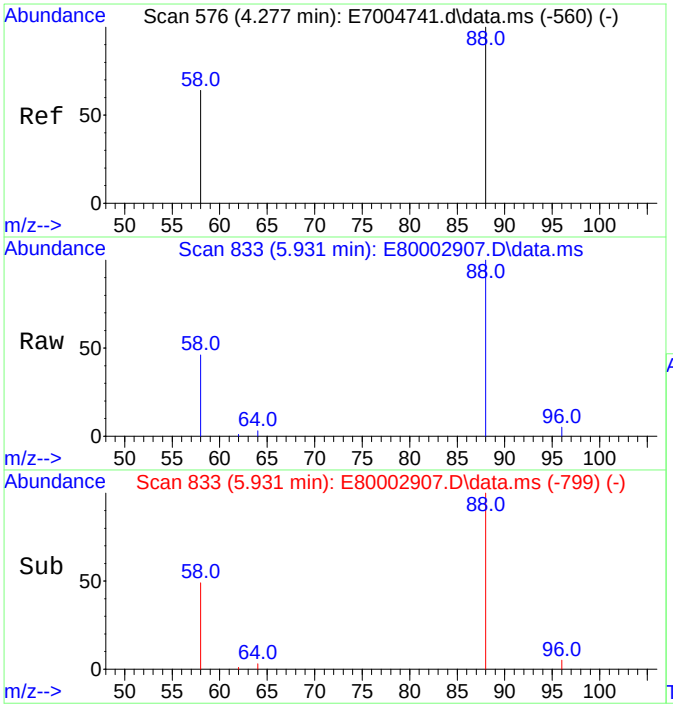


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.11 ug/mL
RT: 5.873 min Scan# 813
Delta R.T. -0.005 min
Lab File: E80002907.D
Acq: 2 Dec 2019 6:23 pm

Tgt Ion: 96 Resp: 46164

Ion	Ratio	Lower	Upper
96	100		
64	51.8	47.4	88.0
62	15.5	14.8	27.4

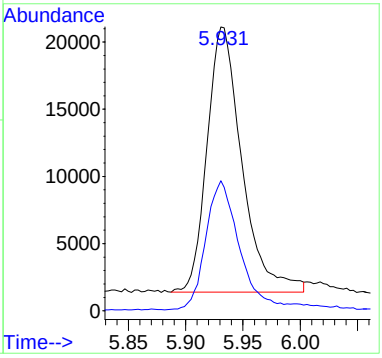




#3
1,4-Dioxane
Concen: 0.10 ug/mL
RT: 5.931 min Scan# 833
Delta R.T. -0.002 min
Lab File: E80002907.D
Acq: 2 Dec 2019 6:23 pm

Tgt Ion: 88 Resp: 41816

Ion	Ratio	Lower	Upper
88	100		
58	46.6	42.2	78.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002908.D
Acq On : 2 Dec 2019 6:40 pm
Operator : KH
Sample : SEQ-CAL5
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.25 ppm
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 03 09:59:54 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 09:59:37 2019
Response via : Initial Calibration

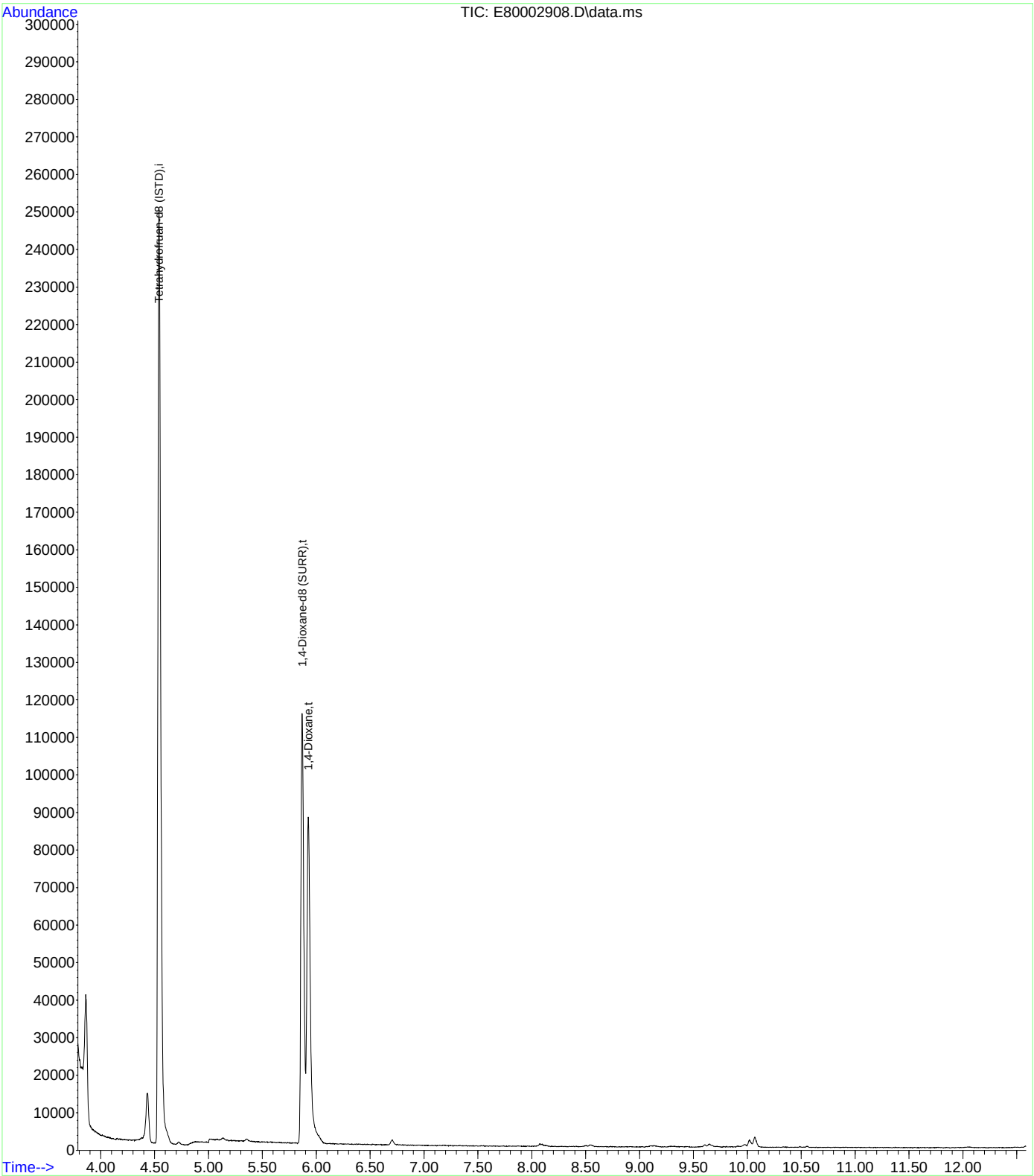
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.539	48	151187	0.50	ug/mL	# 0.00
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.870	96	130086	0.28	ug/mL	82
3) 1,4-Dioxane	5.925	88	121855	0.27	ug/mL	80

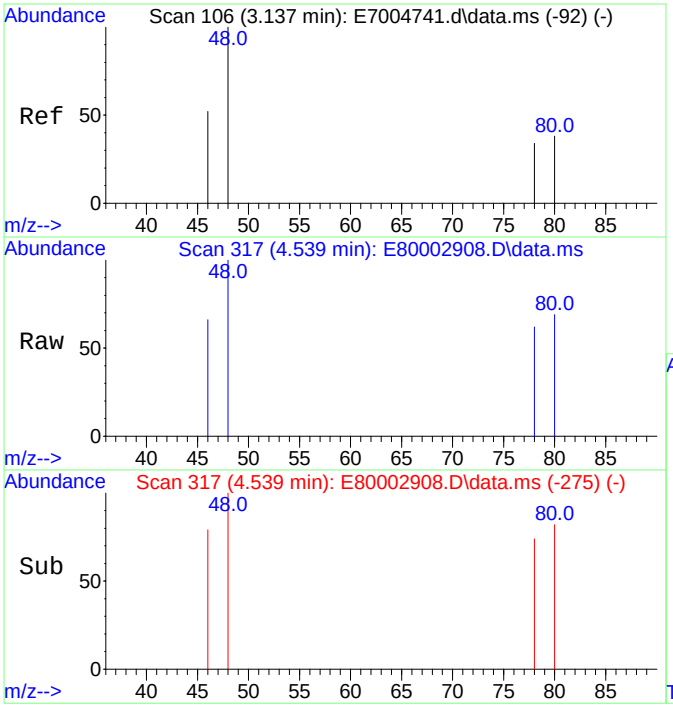
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002908.D
Acq On : 2 Dec 2019 6:40 pm
Operator : KH
Sample : SEQ-CAL5
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.25 ppm
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 03 09:59:54 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 09:59:37 2019
Response via : Initial Calibration

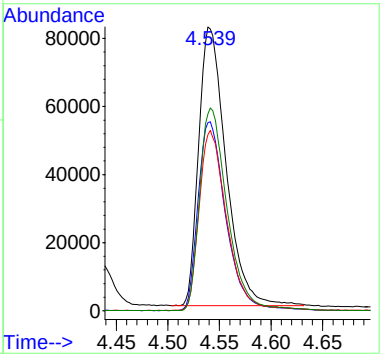


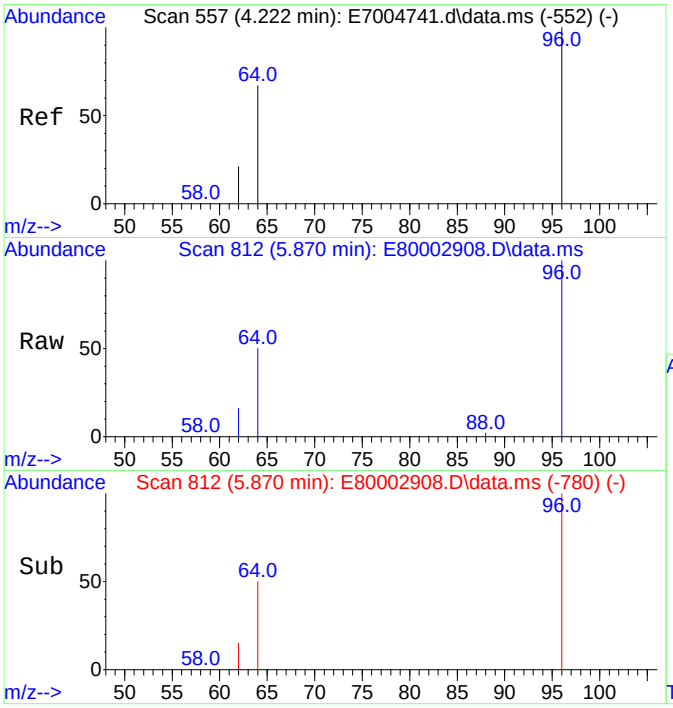


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.539 min Scan# 317
Delta R.T. -0.001 min
Lab File: E80002908.D
Acq: 2 Dec 2019 6:40 pm

Tgt Ion: 48 Resp: 151187

Ion	Ratio	Lower	Upper
48	100		
46	68.6	27.7	83.0
78	64.9	20.7	62.1#
80	73.3	22.5	67.5#

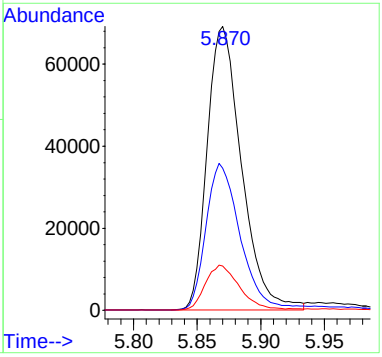


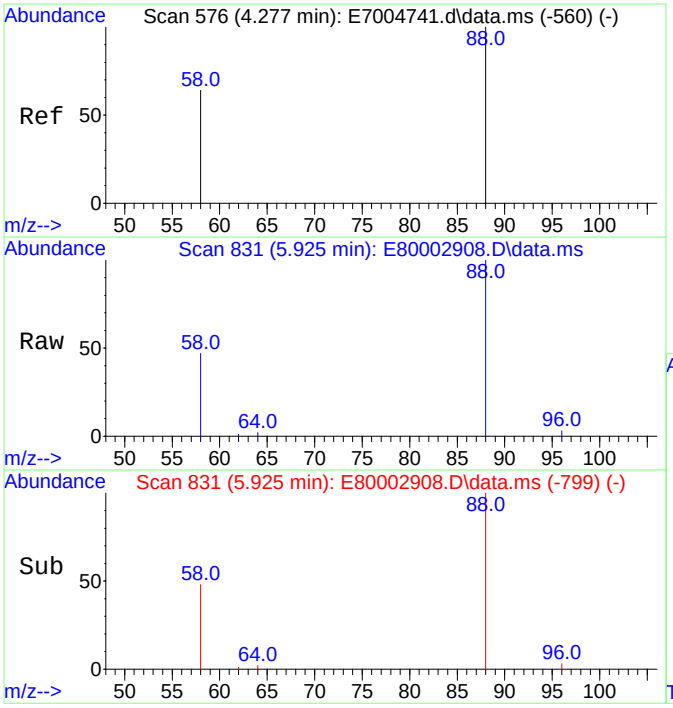


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.28 ug/mL
RT: 5.870 min Scan# 812
Delta R.T. -0.006 min
Lab File: E80002908.D
Acq: 2 Dec 2019 6:40 pm

Tgt Ion: 96 Resp: 130086

Ion	Ratio	Lower	Upper
96	100		
64	51.6	47.4	88.0
62	15.6	14.8	27.4

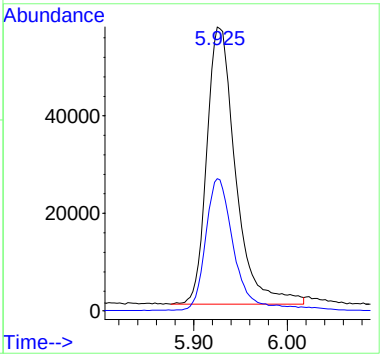




#3
1,4-Dioxane
Concen: 0.27 ug/mL
RT: 5.925 min Scan# 831
Delta R.T. -0.007 min
Lab File: E80002908.D
Acq: 2 Dec 2019 6:40 pm

Tgt Ion: 88 Resp: 121855

Ion	Ratio	Lower	Upper
88	100		
58	44.9	42.2	78.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002909.D
Acq On : 2 Dec 2019 6:58 pm
Operator : KH
Sample : SEQ-CAL6
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.50 ppm
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 03 10:00:27 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:00:08 2019
Response via : Initial Calibration

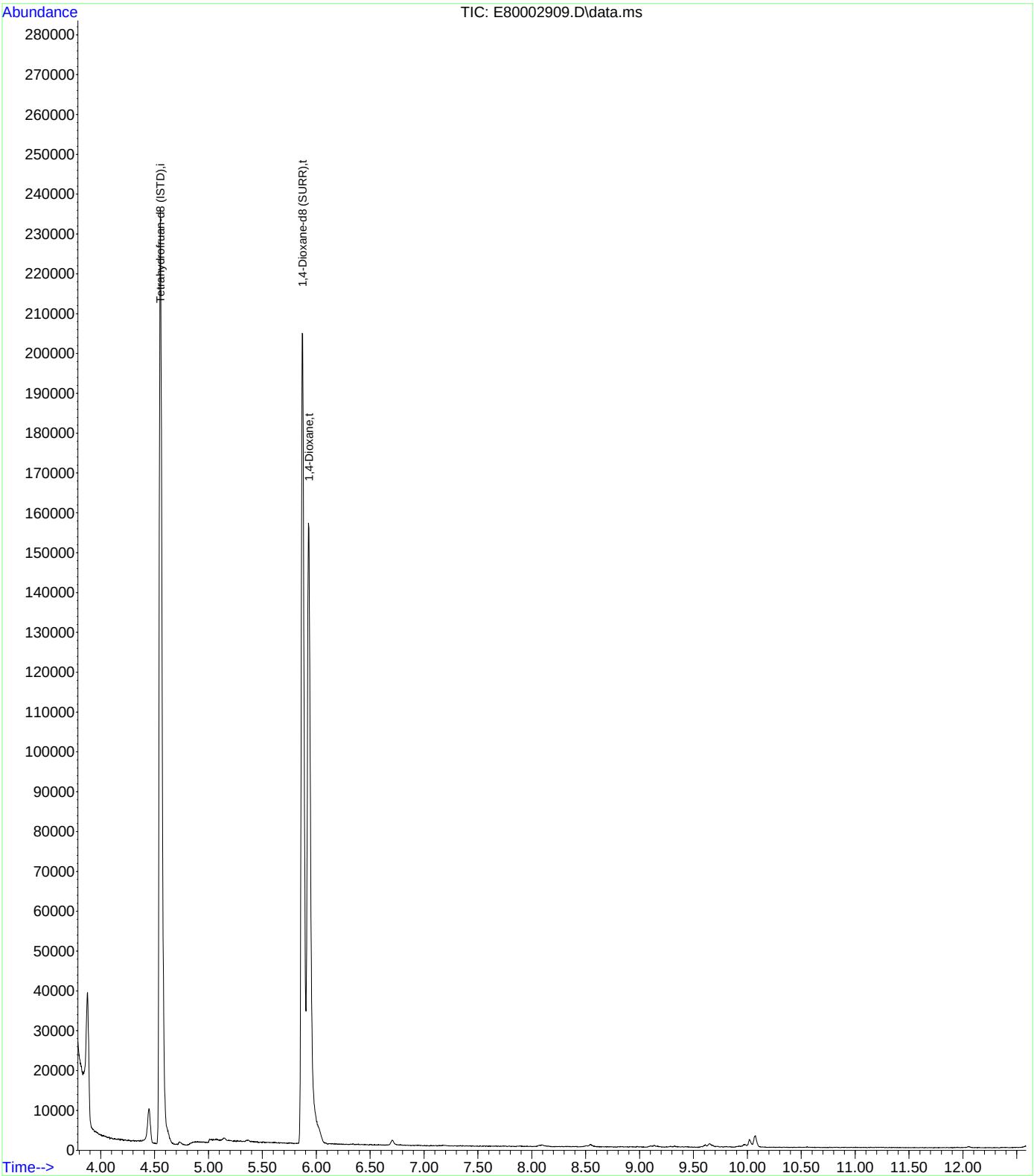
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.553	48	142390	0.50	ug/mL	# 0.01
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.873	96	231724	0.51	ug/mL	84
3) 1,4-Dioxane	5.931	88	217435	0.51	ug/mL	82

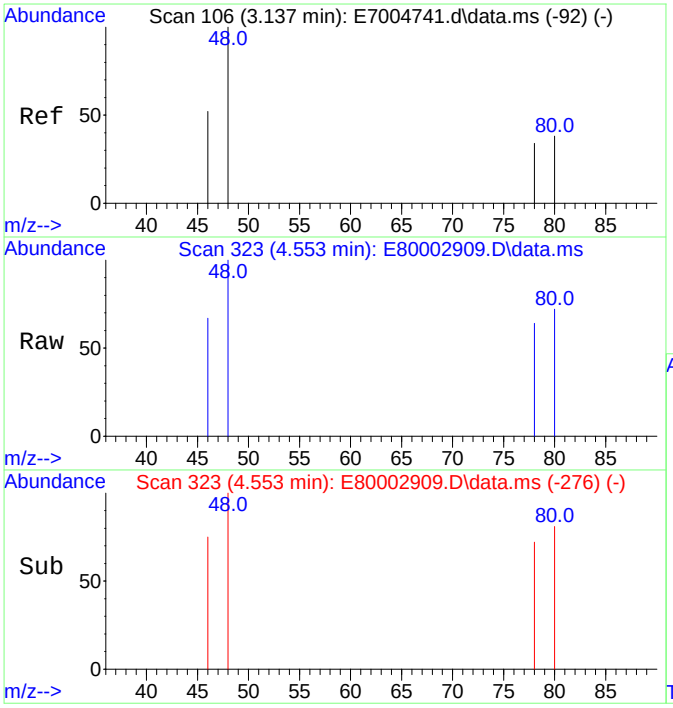
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002909.D
Acq On : 2 Dec 2019 6:58 pm
Operator : KH
Sample : SEQ-CAL6
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 0.50 ppm
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 03 10:00:27 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:00:08 2019
Response via : Initial Calibration

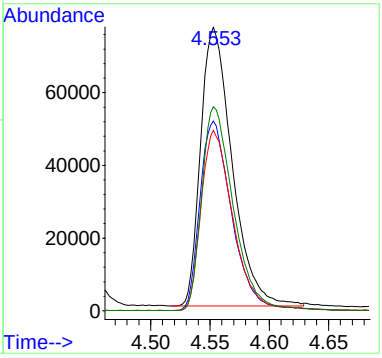


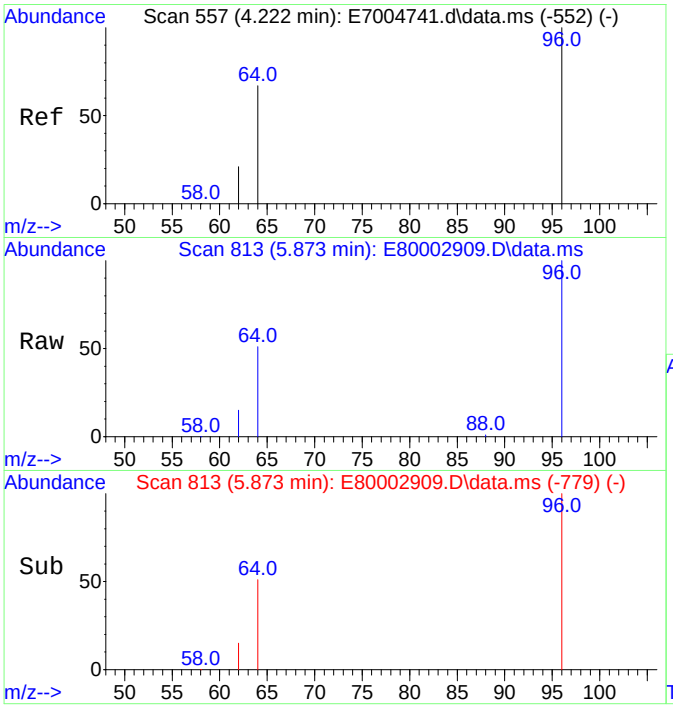


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.553 min Scan# 323
Delta R.T. 0.013 min
Lab File: E80002909.D
Acq: 2 Dec 2019 6:58 pm

Tgt Ion: 48 Resp: 142390

Ion	Ratio	Lower	Upper
48	100		
46	68.5	27.7	83.0
78	64.9	20.7	62.1#
80	73.1	22.5	67.5#

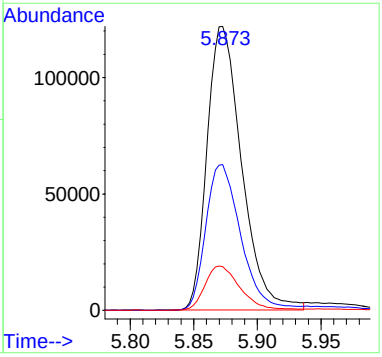


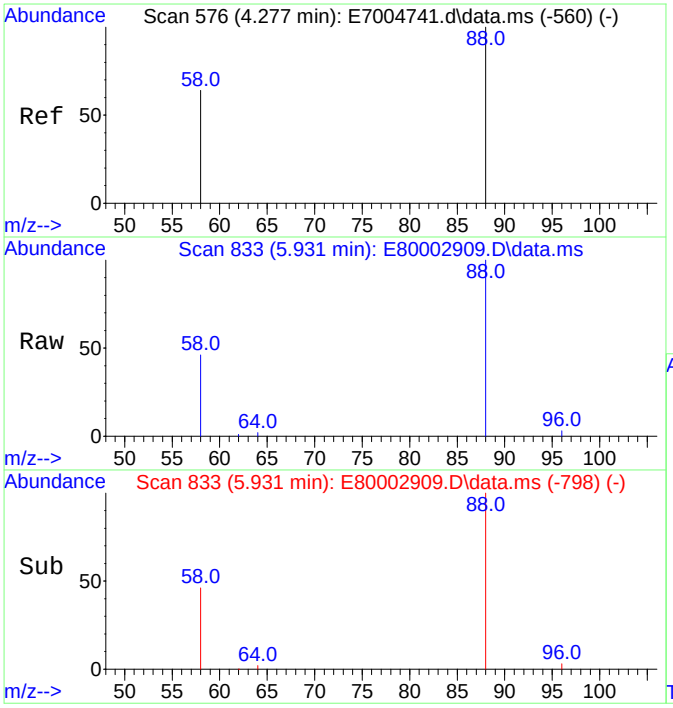


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.51 ug/mL
RT: 5.873 min Scan# 813
Delta R.T. -0.002 min
Lab File: E80002909.D
Acq: 2 Dec 2019 6:58 pm

Tgt Ion: 96 Resp: 231724

Ion	Ratio	Lower	Upper
96	100		
64	53.3	47.4	88.0
62	15.8	14.8	27.4

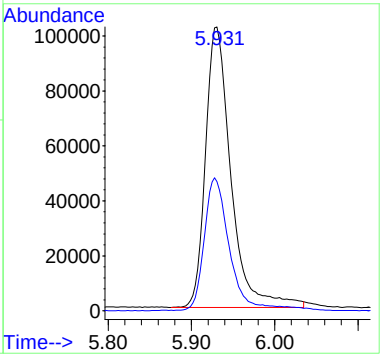




#3
1,4-Dioxane
Concen: 0.51 ug/mL
RT: 5.931 min Scan# 833
Delta R.T. 0.000 min
Lab File: E80002909.D
Acq: 2 Dec 2019 6:58 pm

Tgt Ion: 88 Resp: 217435

Ion	Ratio	Lower	Upper
88	100		
58	46.5	42.2	78.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002910.D
Acq On : 2 Dec 2019 7:15 pm
Operator : KH
Sample : SEQ-CAL7
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 1.0 ppm
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 03 10:01:00 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:00:46 2019
Response via : Initial Calibration

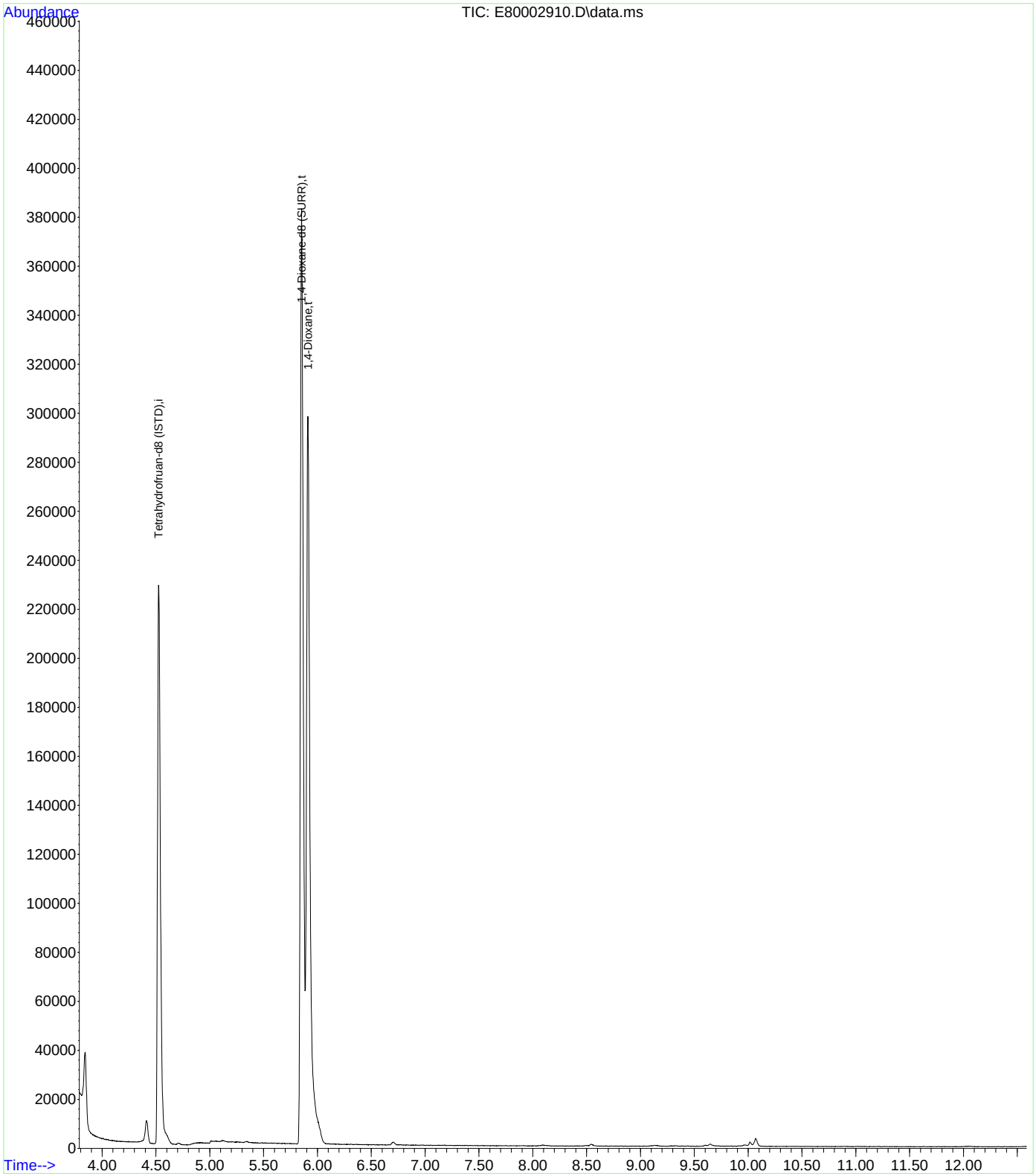
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.524	48	137672	0.50	ug/mL	#-0.02
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.853	96	449802	1.00	ug/mL	82
3) 1,4-Dioxane	5.910	88	409579	0.97	ug/mL	82

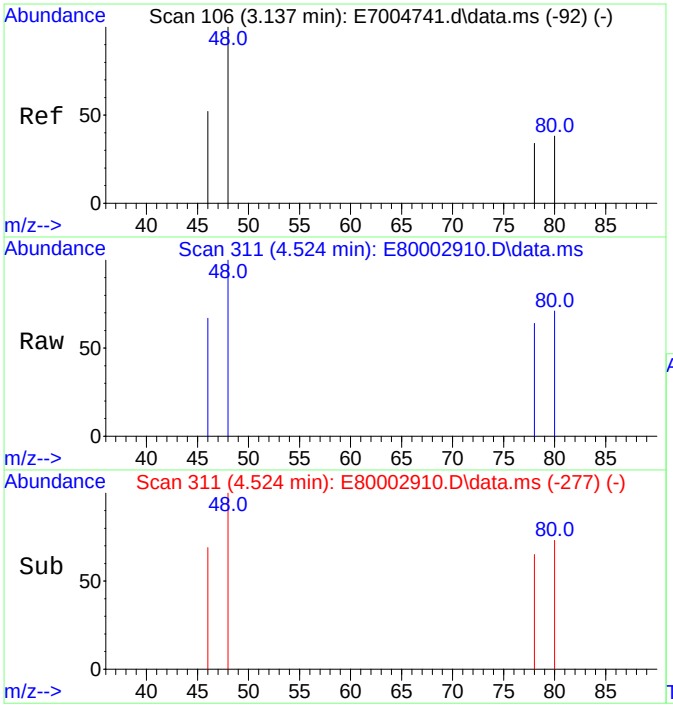
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002910.D
Acq On : 2 Dec 2019 7:15 pm
Operator : KH
Sample : SEQ-CAL7
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 1.0 ppm
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 03 10:01:00 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:00:46 2019
Response via : Initial Calibration

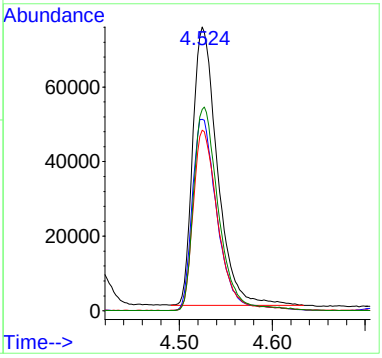


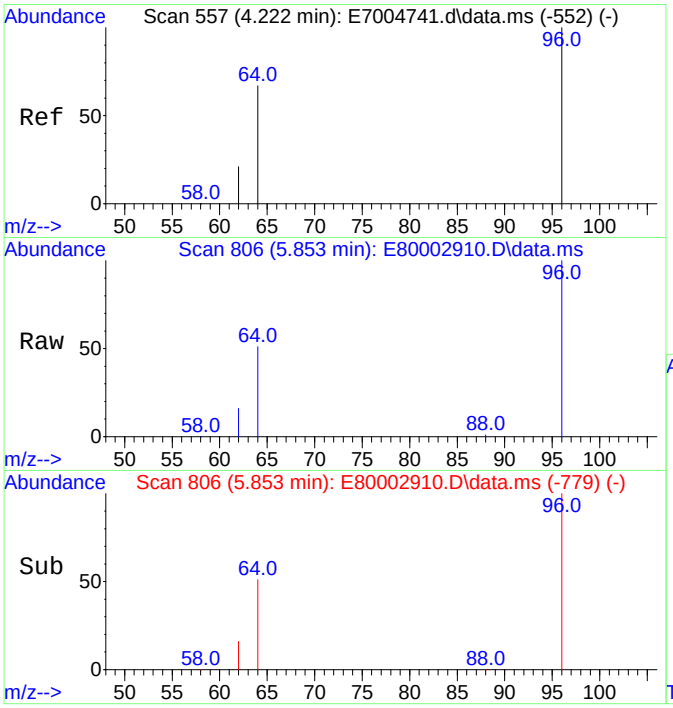


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.524 min Scan# 311
Delta R.T. -0.019 min
Lab File: E80002910.D
Acq: 2 Dec 2019 7:15 pm

Tgt Ion: 48 Resp: 137672

Ion	Ratio	Lower	Upper
48	100		
46	69.9	27.7	83.0
78	65.3	20.7	62.1#
80	72.9	22.5	67.5#

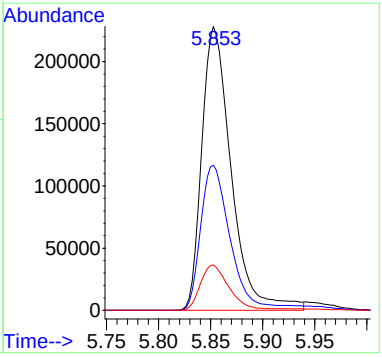


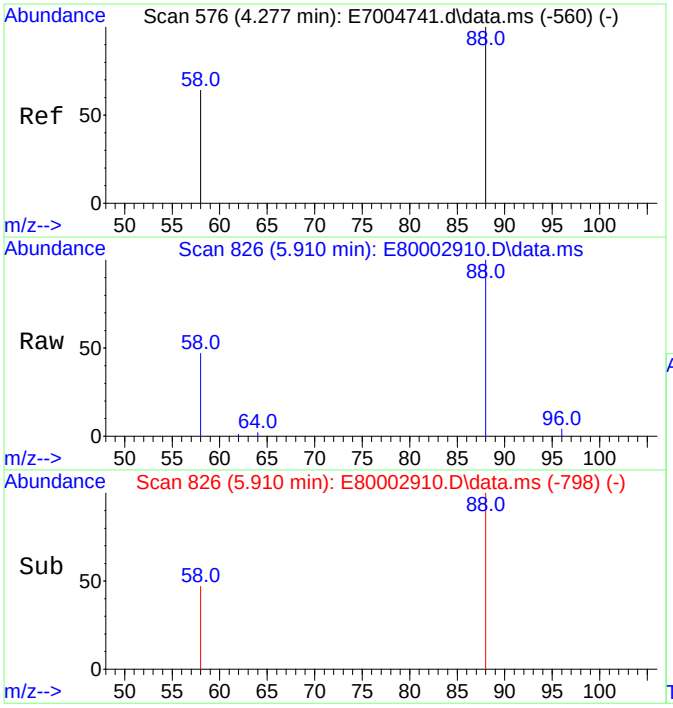


#2
1,4-Dioxane-d8 (SURR)
Concen: 1.00 ug/mL
RT: 5.853 min Scan# 806
Delta R.T. -0.022 min
Lab File: E80002910.D
Acq: 2 Dec 2019 7:15 pm

Tgt Ion: 96 Resp: 449802

Ion	Ratio	Lower	Upper
96	100		
64	51.6	47.4	88.0
62	15.7	14.8	27.4

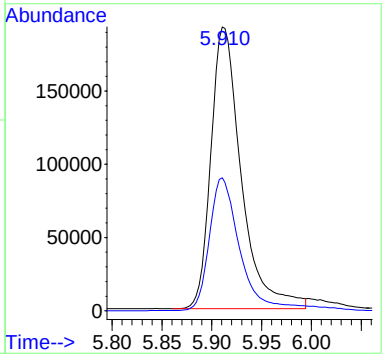




#3
1,4-Dioxane
Concen: 0.97 ug/mL
RT: 5.910 min Scan# 826
Delta R.T. -0.020 min
Lab File: E80002910.D
Acq: 2 Dec 2019 7:15 pm

Tgt Ion: 88 Resp: 409579

Ion	Ratio	Lower	Upper
88	100		
58	46.6	42.2	78.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002911.D
Acq On : 2 Dec 2019 7:33 pm
Operator : KH
Sample : SEQ-CAL8
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 2.0 ppm
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Dec 03 10:01:28 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:01:14 2019
Response via : Initial Calibration

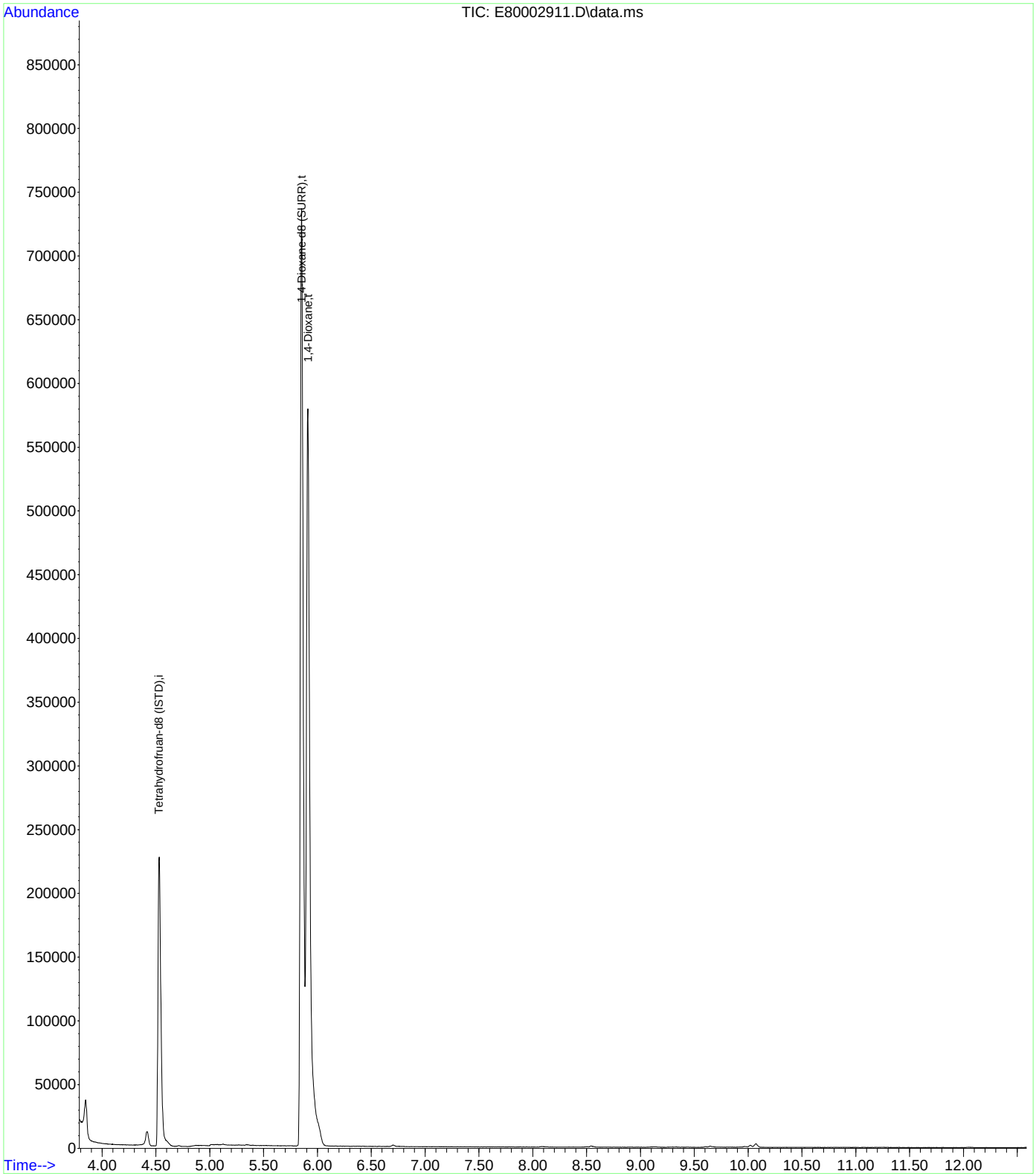
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.527	48	139012	0.50	ug/mL	#-0.01
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.853	96	878984	1.90	ug/mL	81
3) 1,4-Dioxane	5.910	88	809092	1.87	ug/mL	82

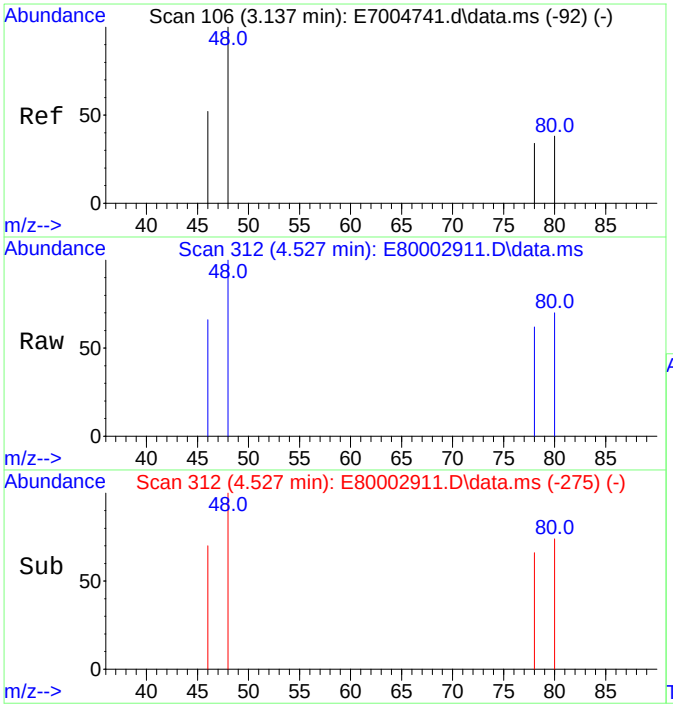
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002911.D
Acq On : 2 Dec 2019 7:33 pm
Operator : KH
Sample : SEQ-CAL8
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 2.0 ppm
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Dec 03 10:01:28 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:01:14 2019
Response via : Initial Calibration

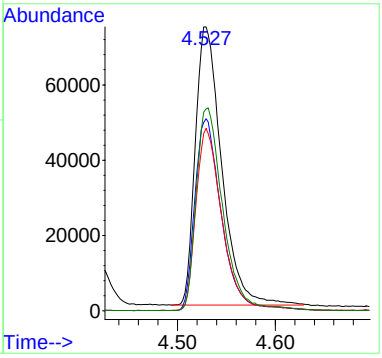


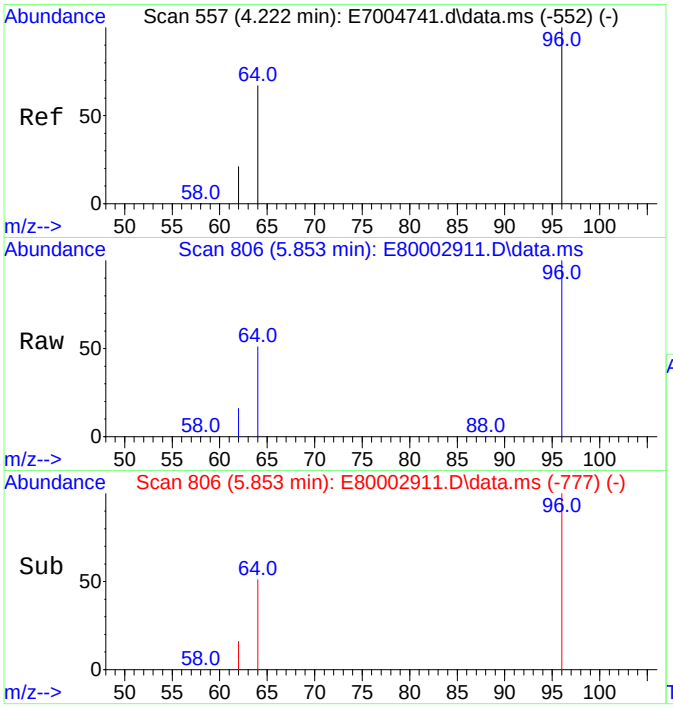


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.527 min Scan# 312
Delta R.T. -0.011 min
Lab File: E80002911.D
Acq: 2 Dec 2019 7:33 pm

Tgt Ion: 48 Resp: 139012

Ion	Ratio	Lower	Upper
48	100		
46	69.5	27.7	83.0
78	64.8	20.7	62.1#
80	73.5	22.5	67.5#

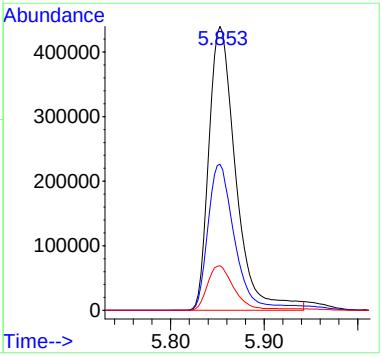


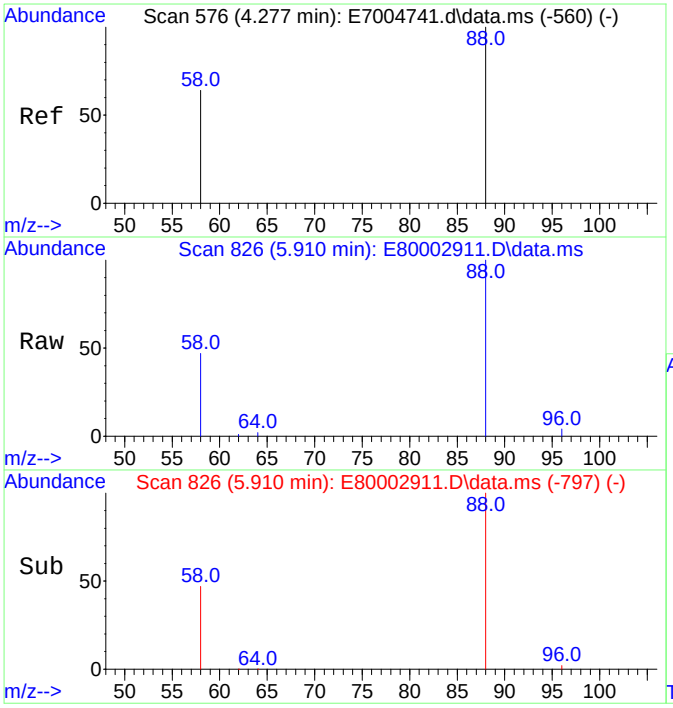


#2
1,4-Dioxane-d8 (SURR)
Concen: 1.90 ug/mL
RT: 5.853 min Scan# 806
Delta R.T. -0.016 min
Lab File: E80002911.D
Acq: 2 Dec 2019 7:33 pm

Tgt Ion: 96 Resp: 878984

Ion	Ratio	Lower	Upper
96	100		
64	50.9	47.4	88.0
62	15.7	14.8	27.4

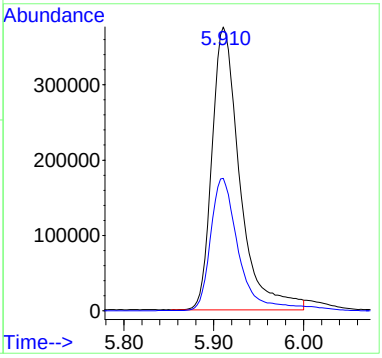




#3
1,4-Dioxane
Concen: 1.87 ug/mL
RT: 5.910 min Scan# 826
Delta R.T. -0.015 min
Lab File: E80002911.D
Acq: 2 Dec 2019 7:33 pm

Tgt Ion: 88 Resp: 809092

Ion	Ratio	Lower	Upper
88	100		
58	46.6	42.2	78.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002912.D
Acq On : 2 Dec 2019 7:50 pm
Operator : KH
Sample : SEQ-CAL9
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 5.0 ppm
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Dec 03 10:01:58 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:01:42 2019
Response via : Initial Calibration

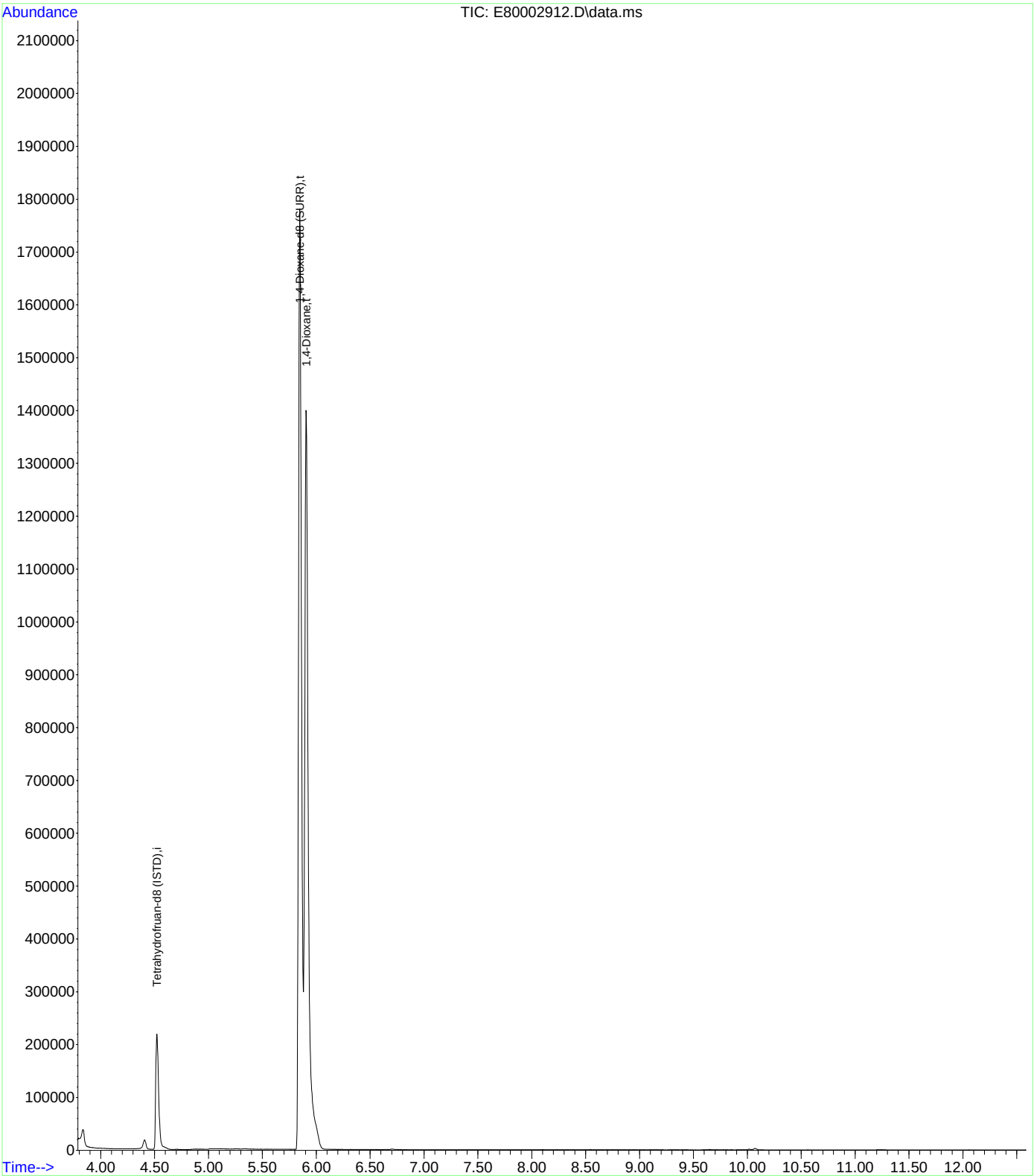
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.520	48	132484	0.50	ug/mL	#-0.02
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.847	96	2125879	4.73	ug/mL	82
3) 1,4-Dioxane	5.908	88	1952352	4.69	ug/mL	82

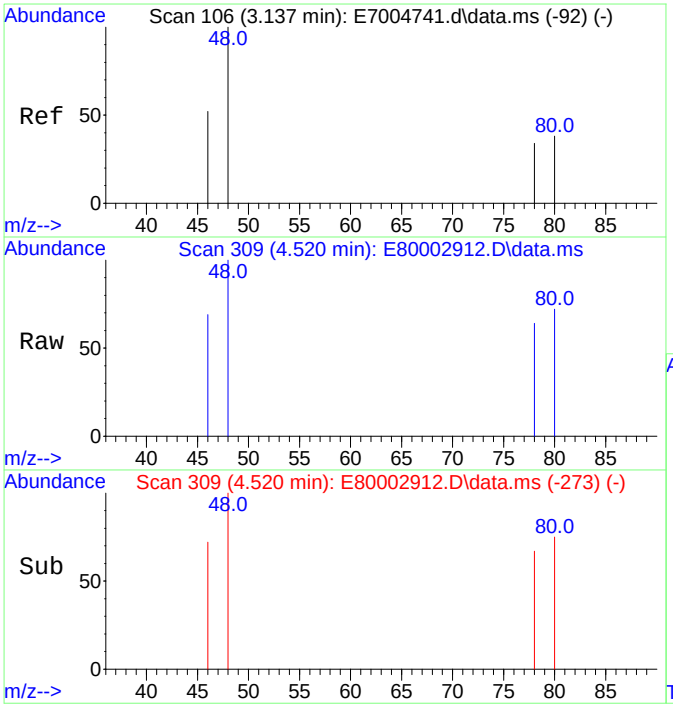
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002912.D
Acq On : 2 Dec 2019 7:50 pm
Operator : KH
Sample : SEQ-CAL9
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER 5.0 ppm
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Dec 03 10:01:58 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:01:42 2019
Response via : Initial Calibration

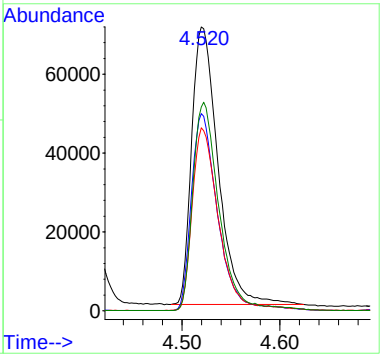


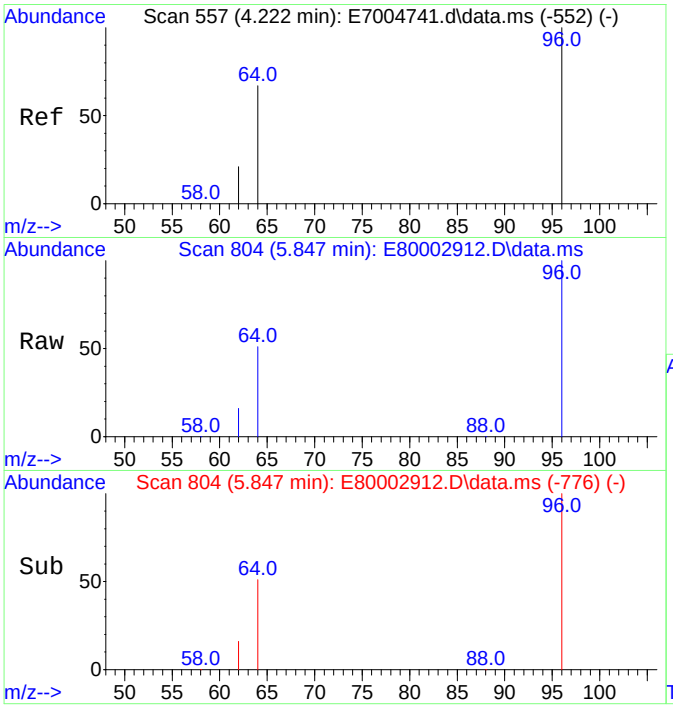


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.520 min Scan# 309
Delta R.T. -0.015 min
Lab File: E80002912.D
Acq: 2 Dec 2019 7:50 pm

Tgt Ion: 48 Resp: 132484

Ion	Ratio	Lower	Upper
48	100		
46	70.5	27.7	83.0
78	65.7	20.7	62.1#
80	74.6	22.5	67.5#

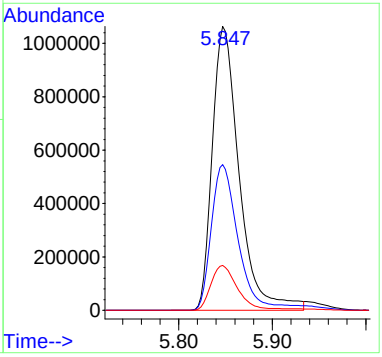


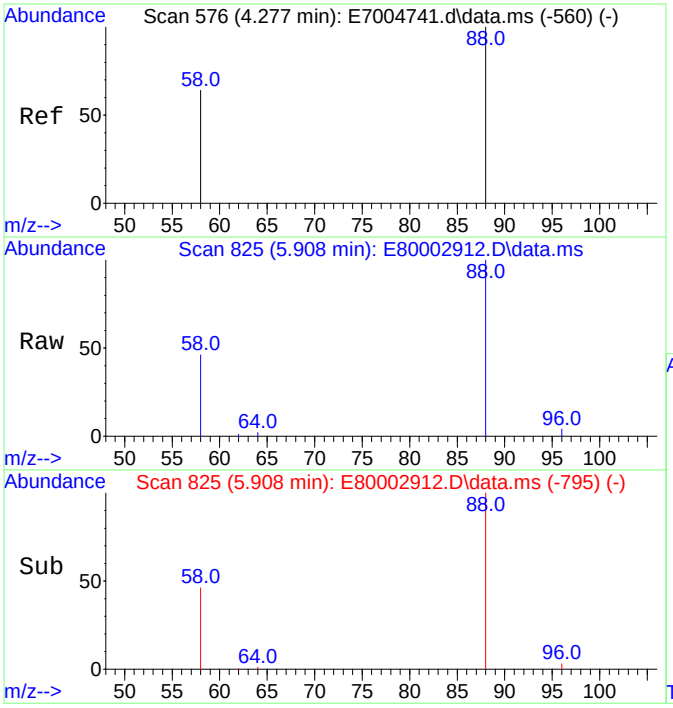


#2
1,4-Dioxane-d8 (SURR)
Concen: 4.73 ug/mL
RT: 5.847 min Scan# 804
Delta R.T. -0.018 min
Lab File: E80002912.D
Acq: 2 Dec 2019 7:50 pm

Tgt Ion: 96 Resp: 2125879

Ion	Ratio	Lower	Upper
96	100		
64	51.6	47.4	88.0
62	16.0	14.8	27.4

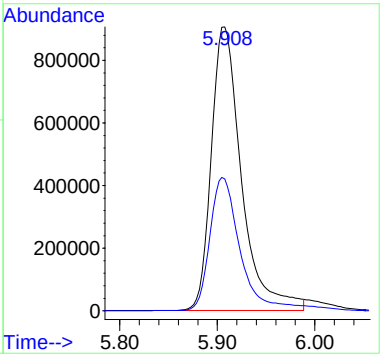




#3
1,4-Dioxane
Concen: 4.69 ug/mL
RT: 5.908 min Scan# 825
Delta R.T. -0.014 min
Lab File: E80002912.D
Acq: 2 Dec 2019 7:50 pm

Tgt Ion: 88 Resp: 1952352

Ion	Ratio	Lower	Upper
88	100		
58	46.6	42.2	78.4



SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270D SIM

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal W
Calibration: YL90004
Laboratory ID: Y9L0317-SCV1
Sequence: Y9L0317
Standard ID: Y19J288

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DIFF	QC LIMIT
1,4-Dioxane	0.500	0.490	-2.0	20.00
1,4-Dioxane-d8	0.500	0.480	-4.0	20.00

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002913.D
Acq On : 2 Dec 2019 8:07 pm
Operator : KH
Sample : SEQ-SCV1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER SECOND SOURCE 0.5 ppm
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 03 10:03:10 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

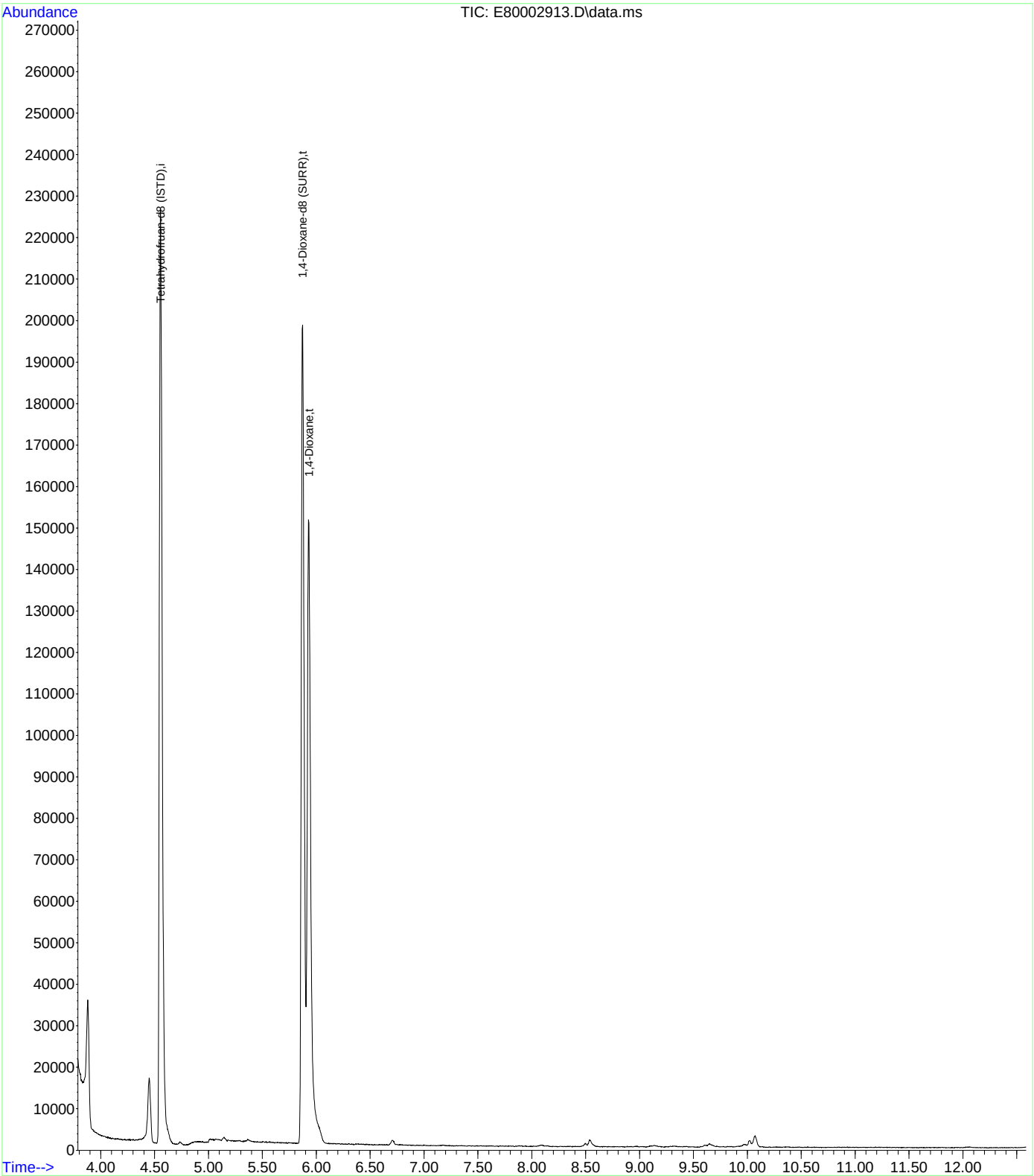
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.555	48	136020	0.50	ug/mL	# 0.02
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.873	96	227006	0.48	ug/mL	83
3) 1,4-Dioxane	5.931	88	212459	0.49	ug/mL	81

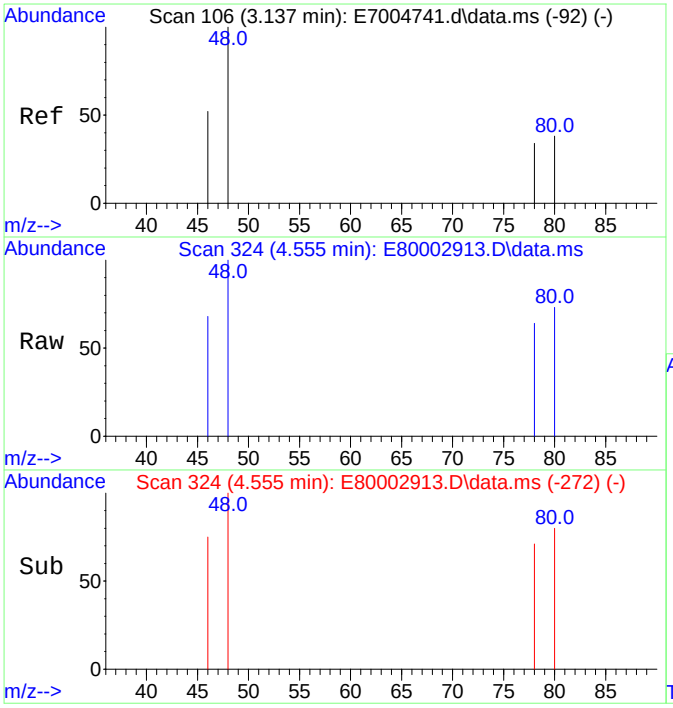
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\120219\
Data File : E80002913.D
Acq On : 2 Dec 2019 8:07 pm
Operator : KH
Sample : SEQ-SCV1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV82120219A WATER SECOND SOURCE 0.5 ppm
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 03 10:03:10 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

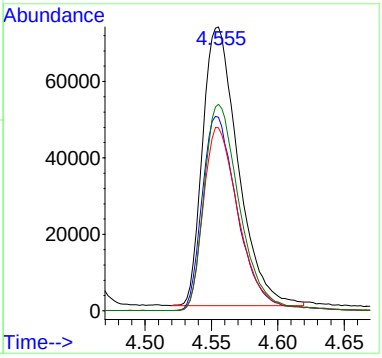


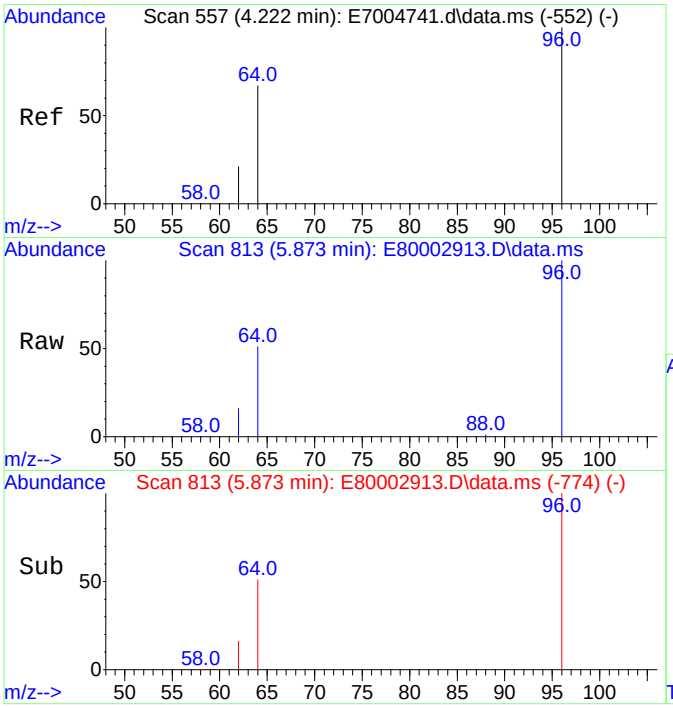


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.555 min Scan# 324
Delta R.T. 0.024 min
Lab File: E80002913.D
Acq: 2 Dec 2019 8:07 pm

Tgt Ion: 48 Resp: 136020

Ion	Ratio	Lower	Upper
48	100		
46	69.5	27.7	83.0
78	65.4	20.7	62.1#
80	73.6	22.5	67.5#

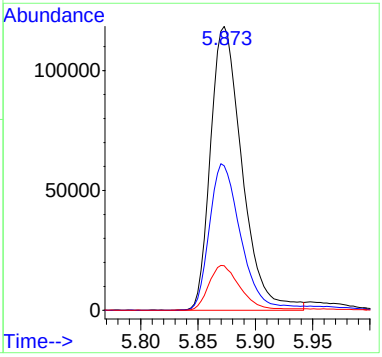


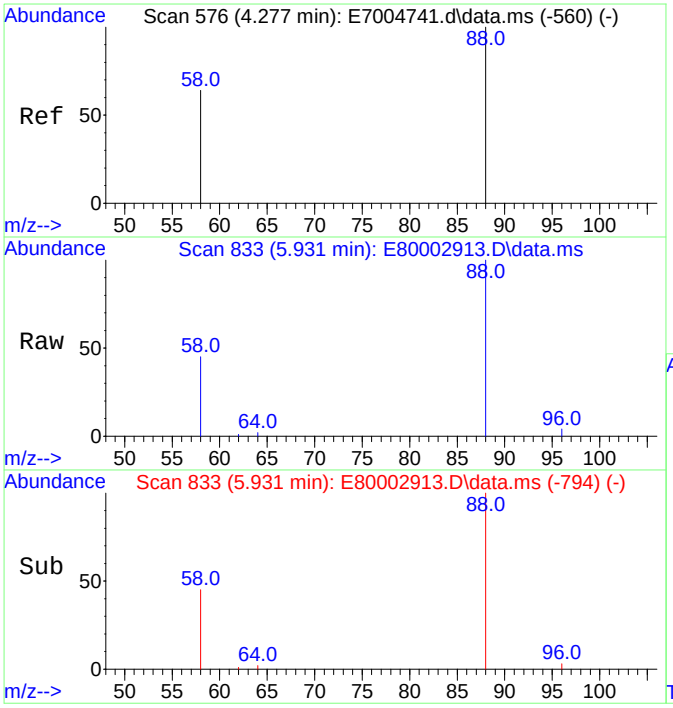


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.48 ug/mL
RT: 5.873 min Scan# 813
Delta R.T. 0.012 min
Lab File: E80002913.D
Acq: 2 Dec 2019 8:07 pm

Tgt Ion: 96 Resp: 227006

Ion	Ratio	Lower	Upper
96	100		
64	52.8	47.4	88.0
62	15.7	14.8	27.4

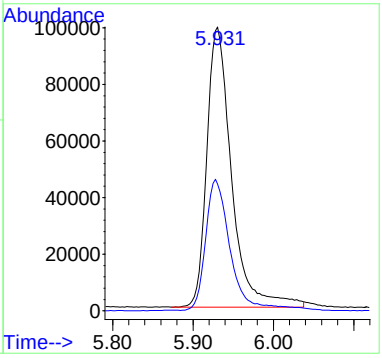




#3
1,4-Dioxane
Concen: 0.49 ug/mL
RT: 5.931 min Scan# 833
Delta R.T. 0.012 min
Lab File: E80002913.D
Acq: 2 Dec 2019 8:07 pm

Tgt Ion: 88 Resp: 212459

Ion	Ratio	Lower	Upper
88	100		
58	46.3	42.2	78.4



FORM VII

CONTINUING CALIBRATION CHECK

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Instrument ID:	MSBNA8	Calibration:	YL90004
Lab File ID:	E80002999.D	Calibration Date:	12/02/19 00:20
Sequence:	Y9L2705	Injection Date:	12/26/19
Lab Sample ID:	Y9L2705-CCV1	Injection Time:	13:08

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,4-Dioxane	A	0.500	0.490	1.585641	1.549983		-2.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80002999.D
Acq On : 26 Dec 2019 1:08 pm
Operator : KH
Sample : SEQ-CCV1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 13:21:49 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

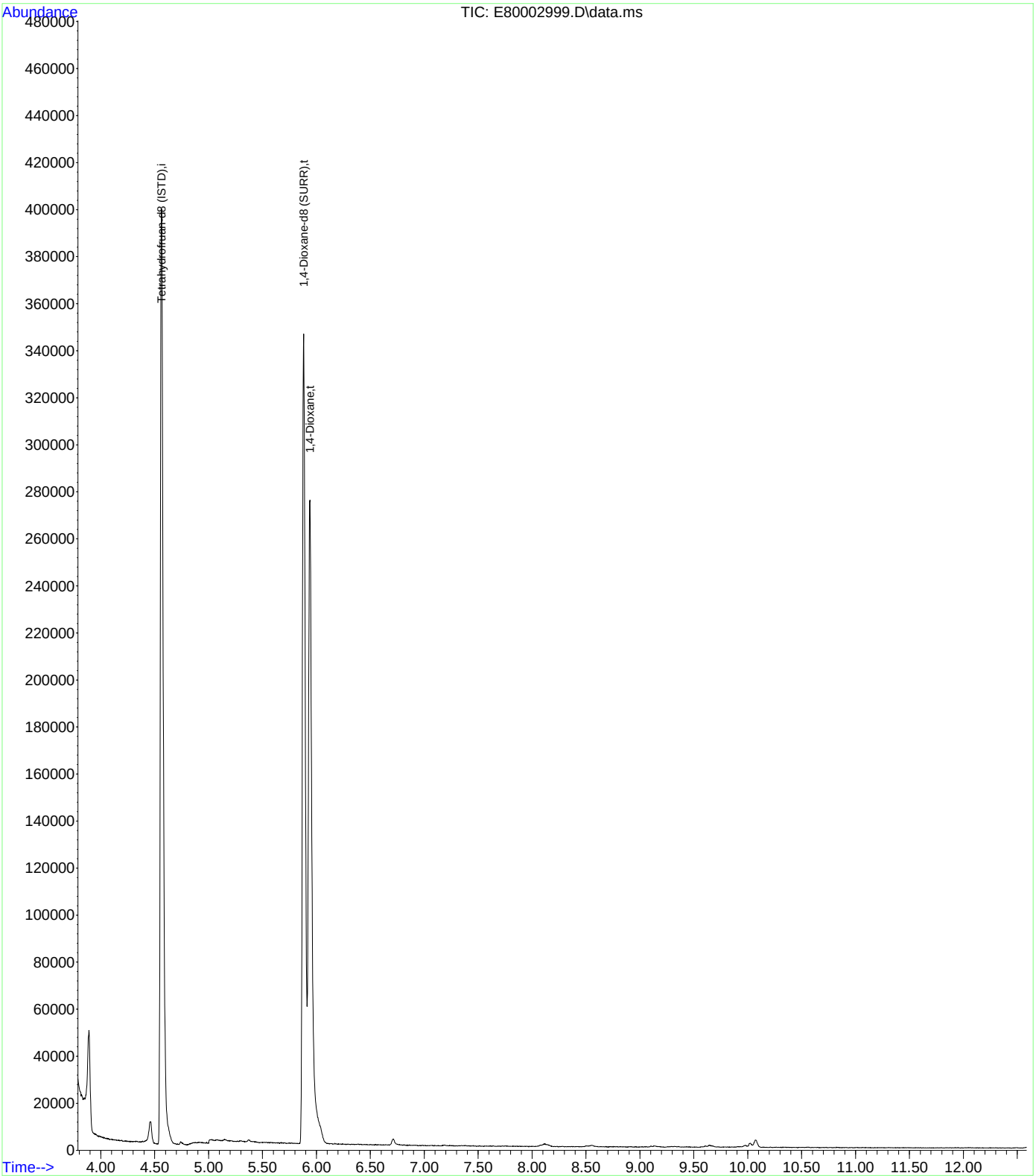
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.562	48	251364	0.50	ug/mL	# 0.03
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.881	96	409909m	0.47	ug/mL	
3) 1,4-Dioxane	5.939	88	389610	0.49	ug/mL	81

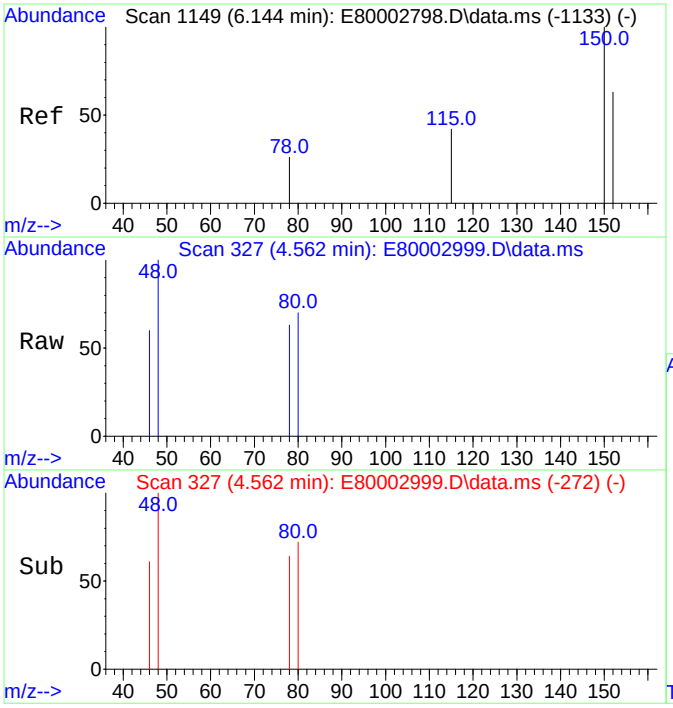
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80002999.D
Acq On : 26 Dec 2019 1:08 pm
Operator : KH
Sample : SEQ-CCV1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 13:21:49 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

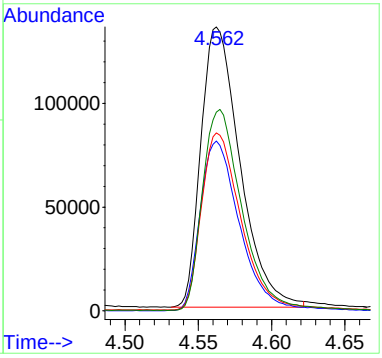


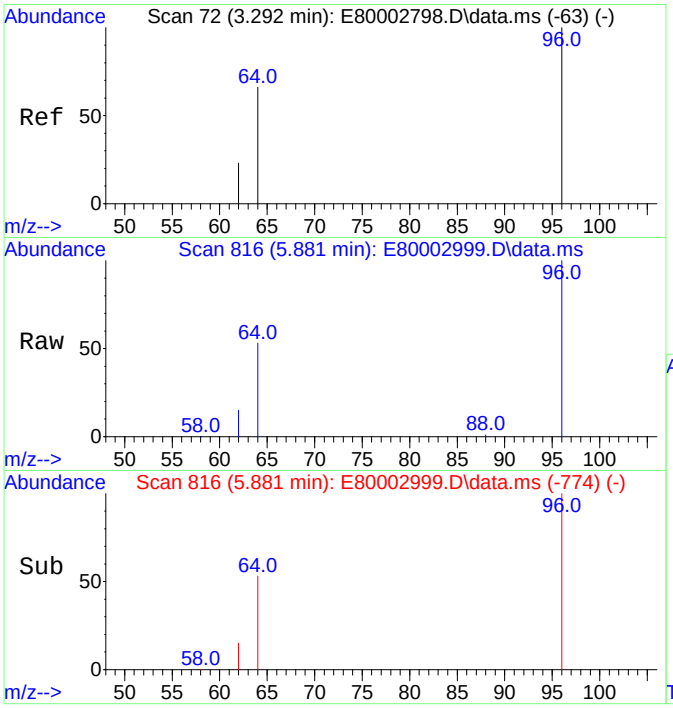


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.562 min Scan# 327
Delta R.T. 0.031 min
Lab File: E80002999.D
Acq: 26 Dec 2019 1:08 pm

Tgt Ion: 48 Resp: 251364

Ion	Ratio	Lower	Upper
48	100		
46	60.4	27.7	83.0
78	63.3	20.7	62.1#
80	71.8	22.5	67.5#

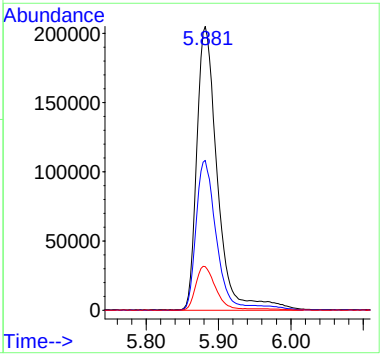


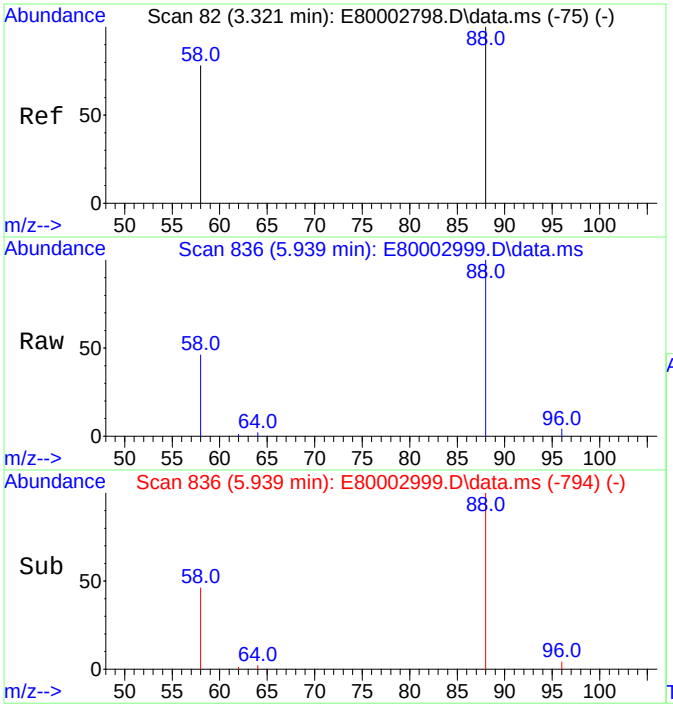


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.47 ug/mL m
RT: 5.881 min Scan# 816
Delta R.T. 0.021 min
Lab File: E80002999.D
Acq: 26 Dec 2019 1:08 pm

Tgt Ion: 96 Resp: 409909

Ion	Ratio	Lower	Upper
96	100		
64	52.5	47.4	88.0
62	14.8	14.8	27.4#

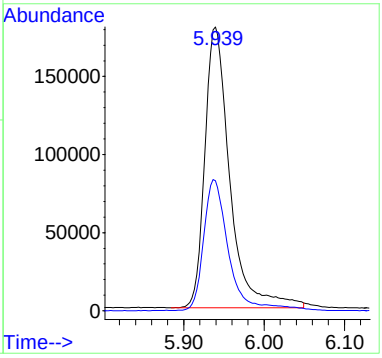




#3
1,4-Dioxane
Concen: 0.49 ug/mL
RT: 5.939 min Scan# 836
Delta R.T. 0.021 min
Lab File: E80002999.D
Acq: 26 Dec 2019 1:08 pm

Tgt Ion: 88 Resp: 389610

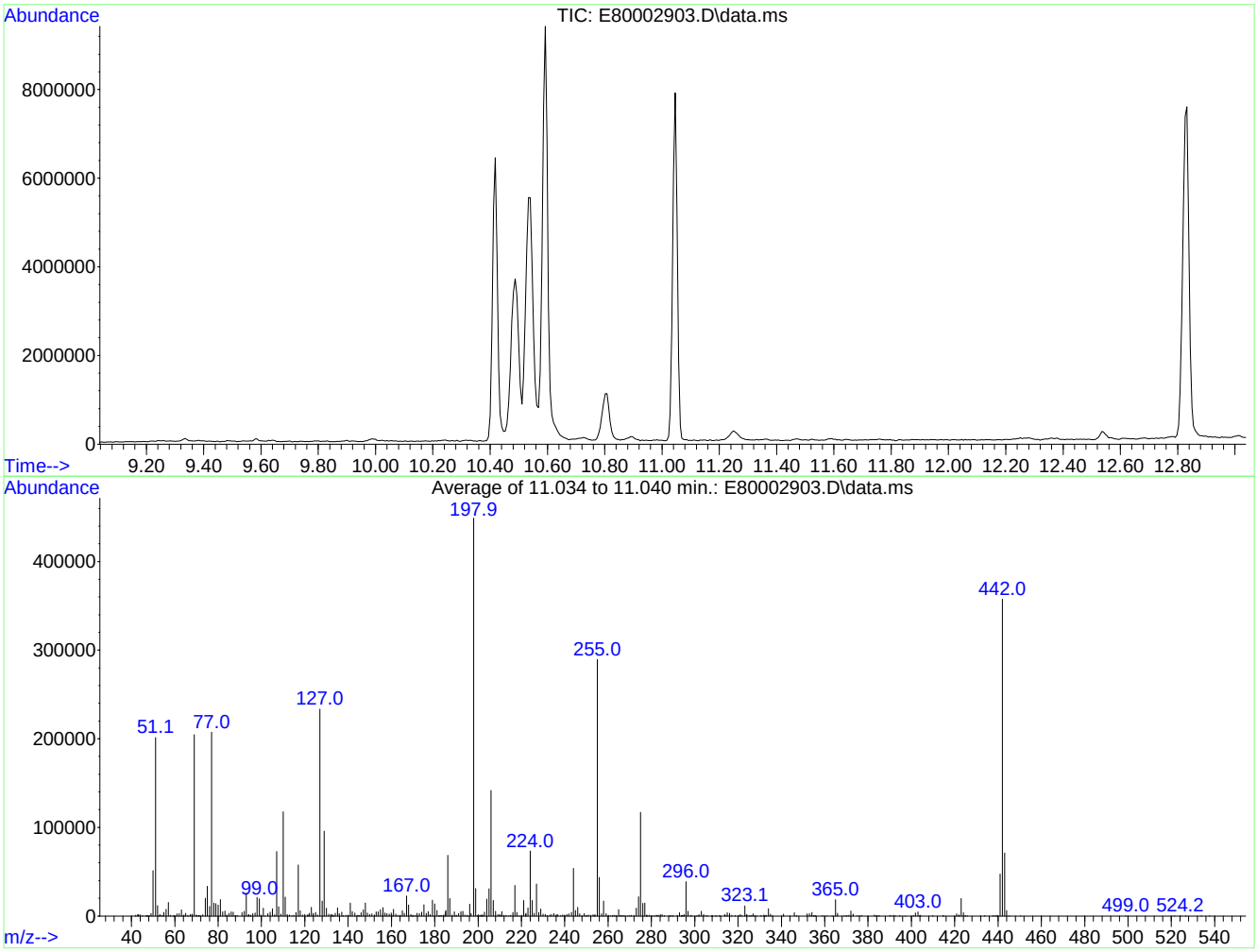
Ion	Ratio	Lower	Upper
88	100		
58	46.1	42.2	78.4



Data Path : C:\msdchem\1\data\120219\
Data File : E80002903.D
Acq On : 2 Dec 2019 4:54 pm
Operator : KH
Sample : SEQ-TUN1
InstName : MSBNA8
Misc : QBSV82120219A WATER
ALS Vial : 11 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\BNA8M003.M
Title : 8270D Semi Volatiles Calibration BNA_7
Last Update : Mon Aug 12 14:26:45 2019



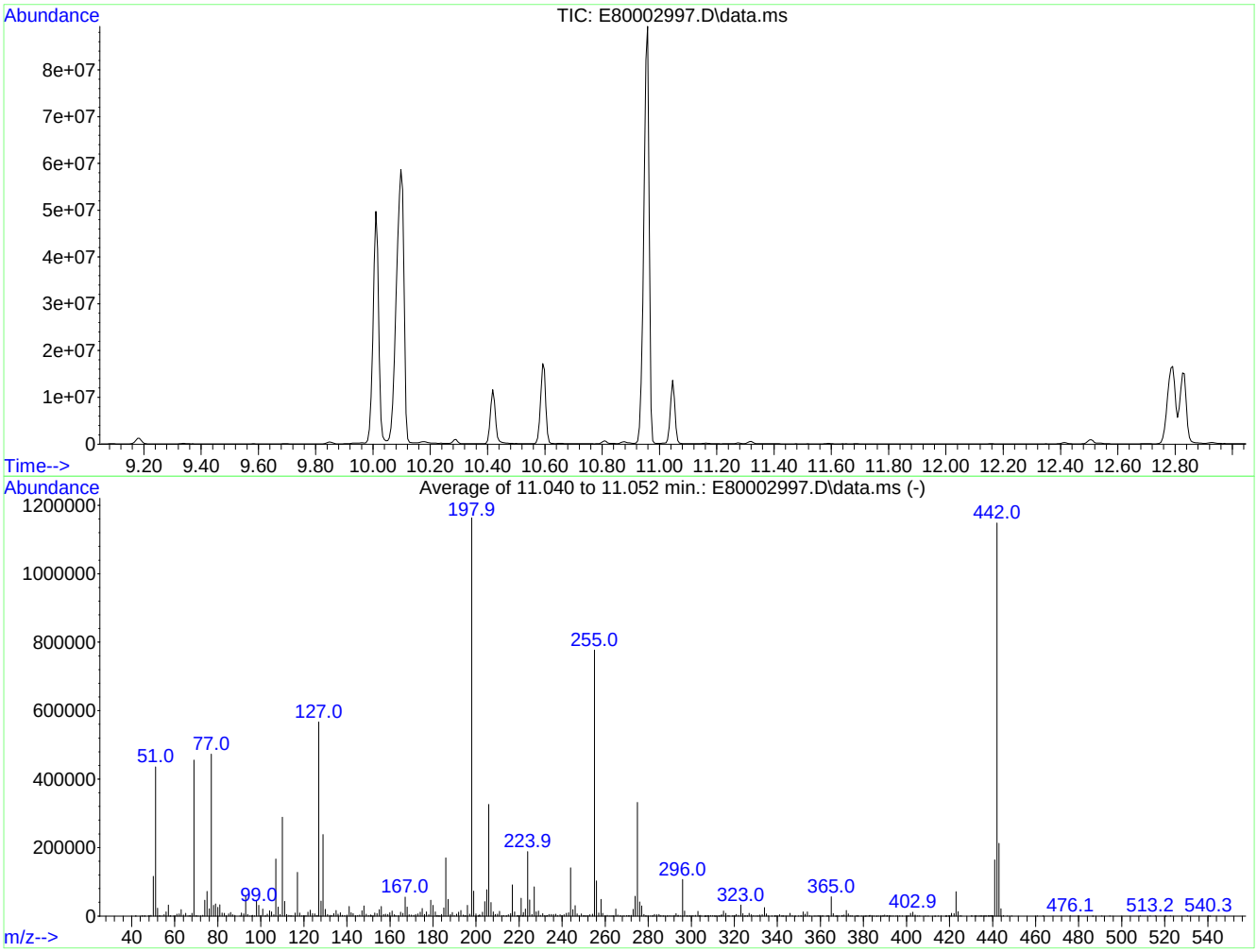
Spectrum Information: Average of 11.034 to 11.040 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	44.8	201152	PASS
68	69	0.00	2	1.0	1971	PASS
69	198	0.00	99	45.5	204512	PASS
70	69	0.00	2	0.6	1152	PASS
127	198	10	80	52.0	233472	PASS
197	198	0.00	2	0.6	2812	PASS
198	198	100	100	100.0	449120	PASS
199	198	5	9	6.9	30984	PASS
275	198	10	60	26.1	116996	PASS
365	198	1	100	4.1	18521	PASS
441	442	0.01	24	13.3	47420	PASS
442	198	50	100	79.6	357568	PASS
443	442	15	24	19.9	71188	PASS

Data Path : C:\msdchem\1\data\122619\
Data File : E80002997.D
Acq On : 26 Dec 2019 12:05 pm
Operator : KH
Sample : SEQ-TUN1
InstName : MSBNA8
Misc : QBSV8122619A TUNE=Y19J065
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\BN8DIOXSMSOILQ04.M
Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
Last Update : Tue Dec 03 13:48:53 2019



Spectrum Information: Average of 11.040 to 11.052 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	37.5	435944	PASS
68	69	0.00	2	1.7	7846	PASS
69	198	0.00	100	39.2	455715	PASS
70	69	0.00	2	0.3	1518	PASS
127	198	40	60	48.8	567214	PASS
197	198	0.00	1	0.5	5432	PASS
198	198	100	100	100.0	1162967	PASS
199	198	5	9	6.3	72732	PASS
275	198	10	30	28.6	332103	PASS
365	198	1	100	4.8	55947	PASS
441	442	0.01	23	14.3	164345	PASS
442	198	50	100	98.7	1148347	PASS
443	442	15	24	18.5	212422	PASS

METHOD BLANK RAW DATA

SDG: 19L0685
CLASS: SVOA
METHOD: EPA 8270D SIM

FORM I

METHOD BLANK DATA SHEET

EPA 8270D SIM

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	BL91138-BLK1	File ID:	E80003000.D
Prepared:	12/20/19 07:56	Preparation:	EPA 3535A	Initial/Final:	100 mL / 2 mL
Analyzed:	12/26/19 13:29	Instrument:	MSBNA8		
Batch:	BL91138	Sequence:	Y9L2705	Calibration:	YL90004

CAS NO.	COMPOUND	CONC. (ug/L)	Q
123-91-1	1,4-Dioxane	0.200	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,4-Dioxane-d8	5.00	3.00	60.0	50 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Tetrahydrofuran-d8	314810	4.565	251364	4.562	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003000.D
Acq On : 26 Dec 2019 1:29 pm
Operator : KH
Sample : BL91138-BLK1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 16:01:49 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

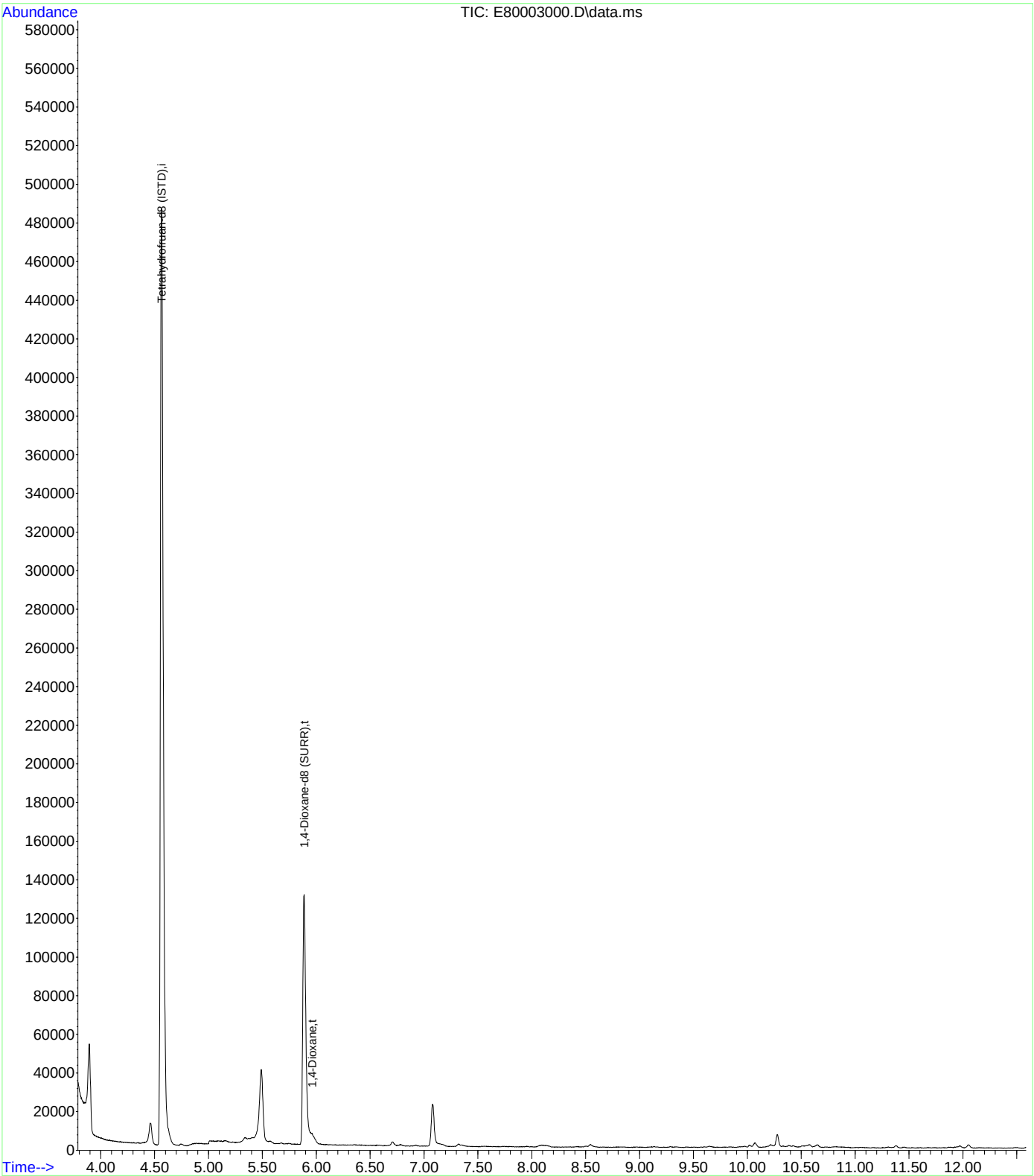
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.565	48	314810	0.50	ug/mL	# 0.03
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.887	96	165570m	0.15	ug/mL	
3) 1,4-Dioxane	5.962	88	745	0.00	ug/mL	95

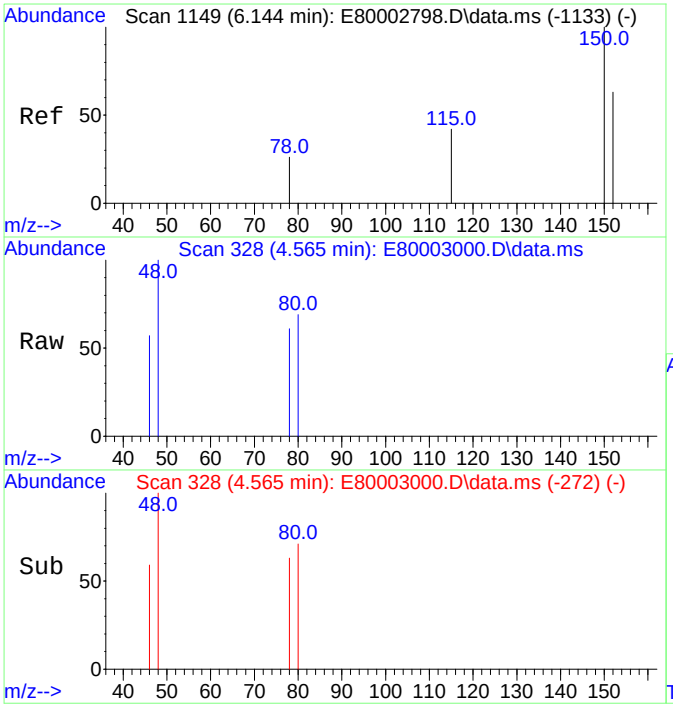
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003000.D
Acq On : 26 Dec 2019 1:29 pm
Operator : KH
Sample : BL91138-BLK1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 16:01:49 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

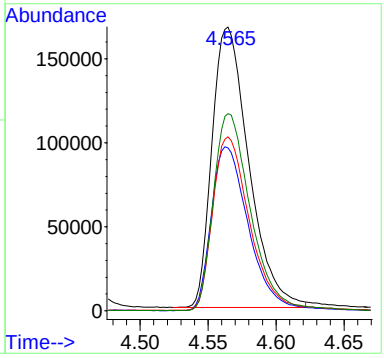


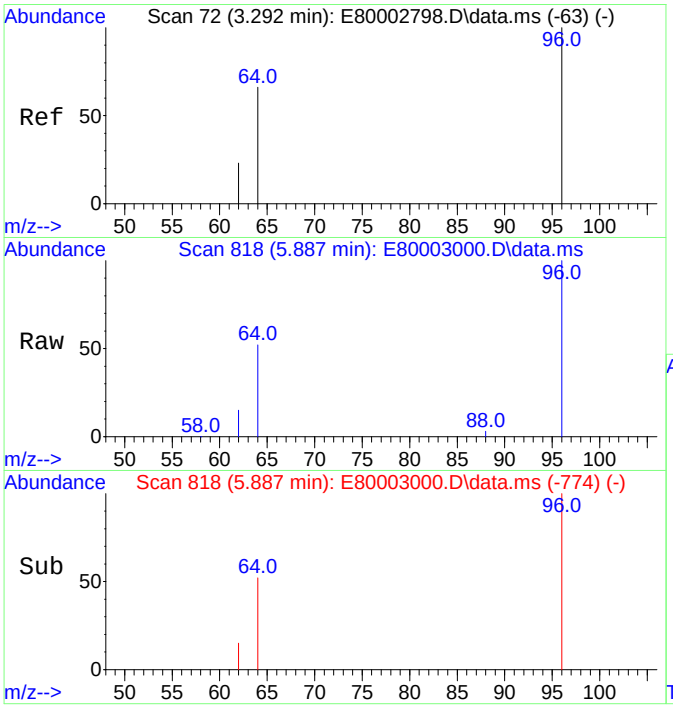


#1
Tetrahydrofuran-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.565 min Scan# 328
Delta R.T. 0.034 min
Lab File: E80003000.D
Acq: 26 Dec 2019 1:29 pm

Tgt Ion: 48 Resp: 314810

Ion	Ratio	Lower	Upper
48	100		
46	58.9	27.7	83.0
78	61.7	20.7	62.1
80	70.1	22.5	67.5#

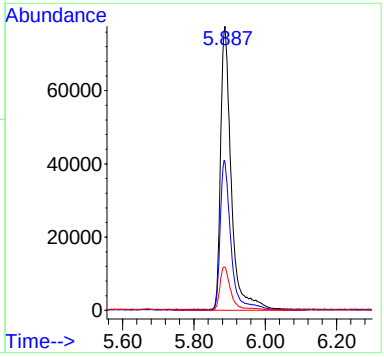


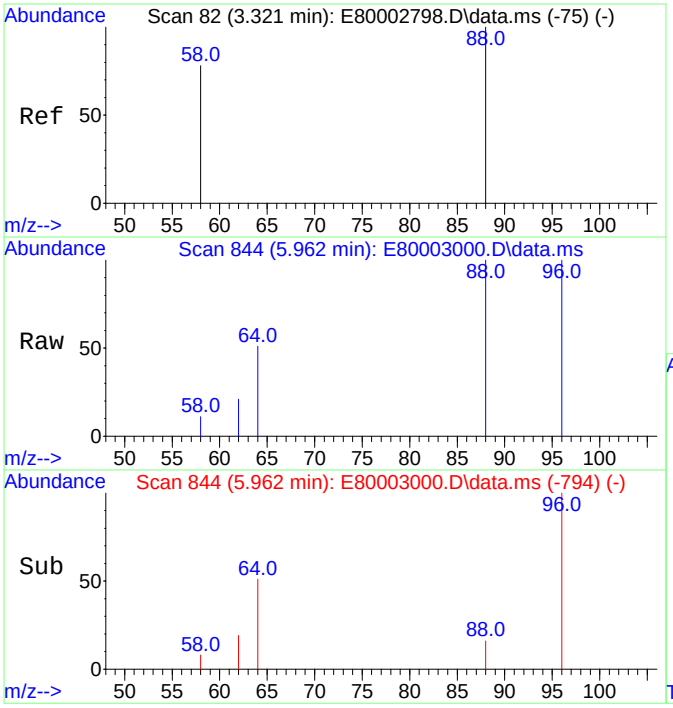


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.15 ug/mL m
RT: 5.887 min Scan# 818
Delta R.T. 0.027 min
Lab File: E80003000.D
Acq: 26 Dec 2019 1:29 pm

Tgt Ion: 96 Resp: 165570

Ion	Ratio	Lower	Upper
96	100		
64	51.0	47.4	88.0
62	14.4	14.8	27.4#

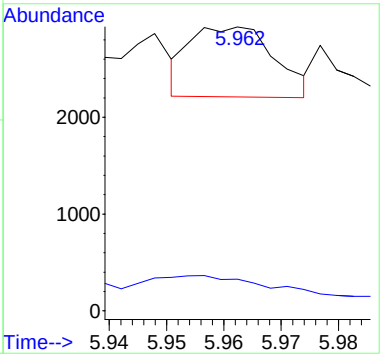




#3
1,4-Dioxane
Concen: 0.00 ug/mL
RT: 5.962 min Scan# 844
Delta R.T. 0.044 min
Lab File: E80003000.D
Acq: 26 Dec 2019 1:29 pm

Tgt Ion: 88 Resp: 745

Ion	Ratio	Lower	Upper
88	100		
58	63.8	42.2	78.4



MATRIX SPIKE RAW DATA

SDG: 19L0685
CLASS: SVOA
METHOD: EPA 8270D SIM

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003002.D
Acq On : 26 Dec 2019 2:05 pm
Operator : KH
Sample : BL91138-MS1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 16:01:57 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

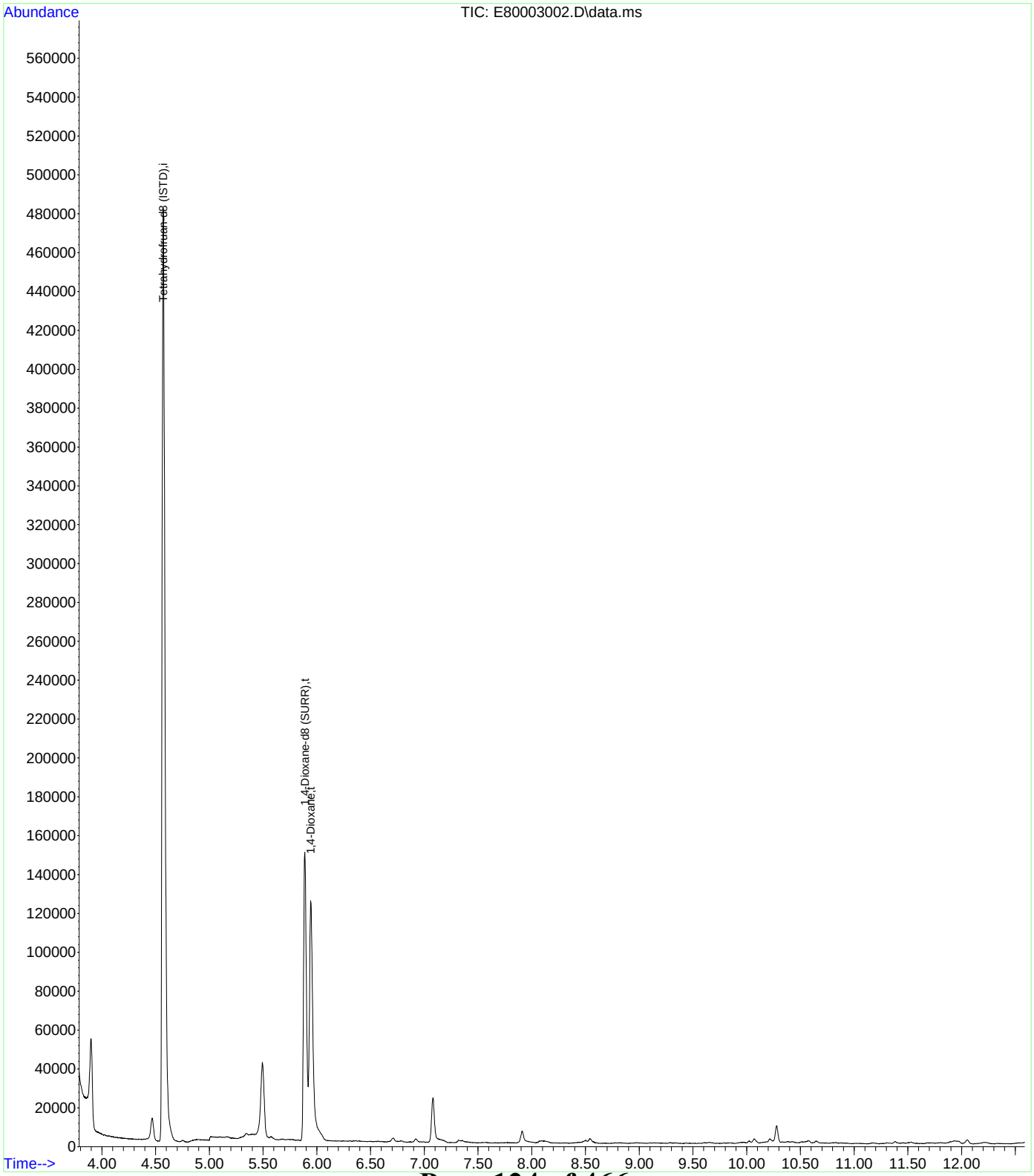
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.570	48	310375	0.50	ug/mL	# 0.04
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.887	96	179528m	0.17	ug/mL	
3) 1,4-Dioxane	5.942	88	175980	0.18	ug/mL	82

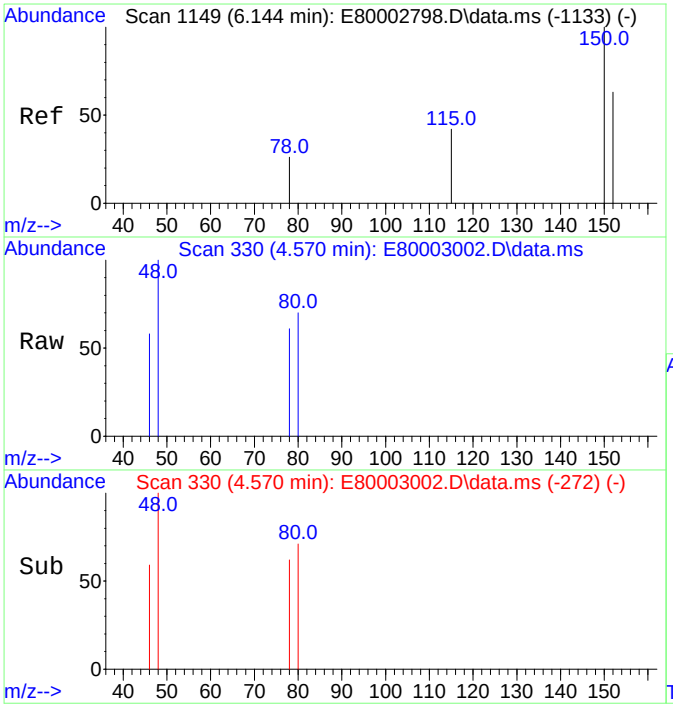
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003002.D
Acq On : 26 Dec 2019 2:05 pm
Operator : KH
Sample : BL91138-MS1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 16:01:57 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

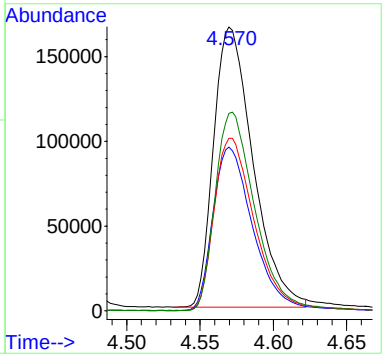


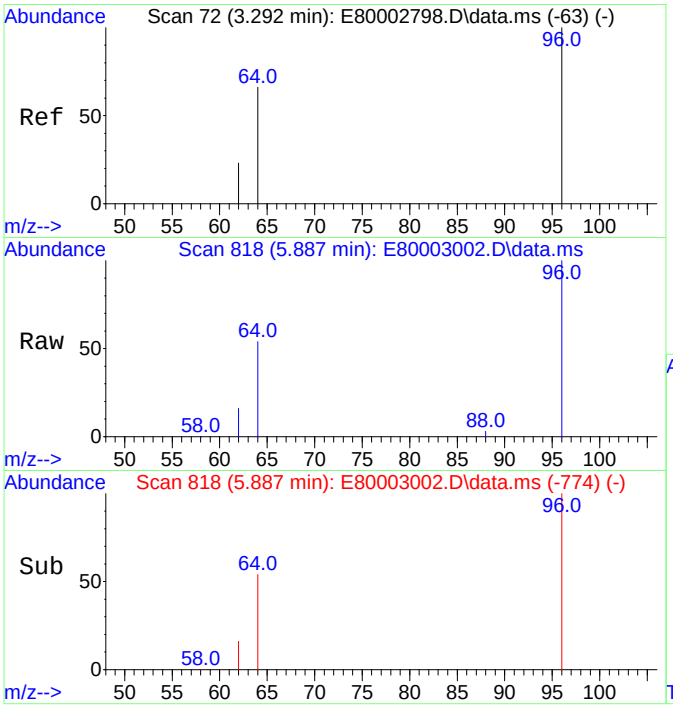


#1
Tetrahydrofruan-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.570 min Scan# 330
Delta R.T. 0.039 min
Lab File: E80003002.D
Acq: 26 Dec 2019 2:05 pm

Tgt Ion: 48 Resp: 310375

Ion	Ratio	Lower	Upper
48	100		
46	58.5	27.7	83.0
78	62.0	20.7	62.1
80	70.5	22.5	67.5#

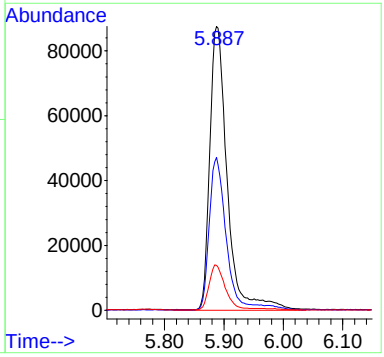


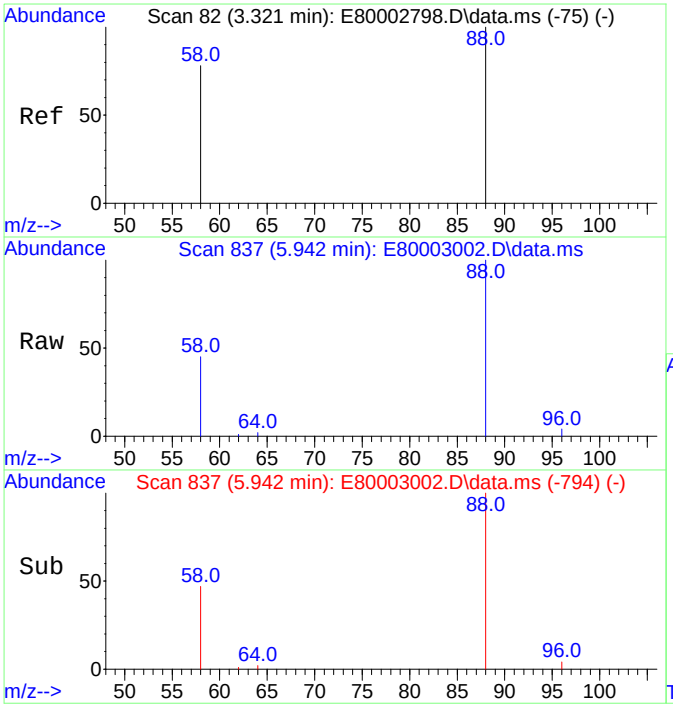


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.17 ug/mL m
RT: 5.887 min Scan# 818
Delta R.T. 0.027 min
Lab File: E80003002.D
Acq: 26 Dec 2019 2:05 pm

Tgt Ion: 96 Resp: 179528

Ion	Ratio	Lower	Upper
96	100		
64	51.3	47.4	88.0
62	14.7	14.8	27.4#

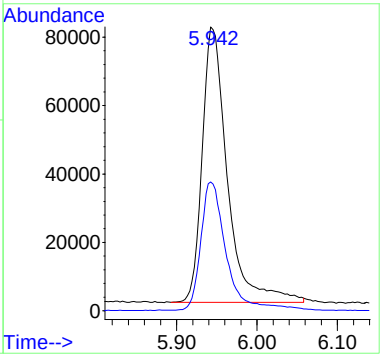




#3
1,4-Dioxane
Concen: 0.18 ug/mL
RT: 5.942 min Scan# 837
Delta R.T. 0.024 min
Lab File: E80003002.D
Acq: 26 Dec 2019 2:05 pm

Tgt Ion: 88 Resp: 175980

Ion	Ratio	Lower	Upper
88	100		
58	46.3	42.2	78.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003003.D
Acq On : 26 Dec 2019 2:22 pm
Operator : KH
Sample : BL91138-MSD1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 26 16:02:01 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

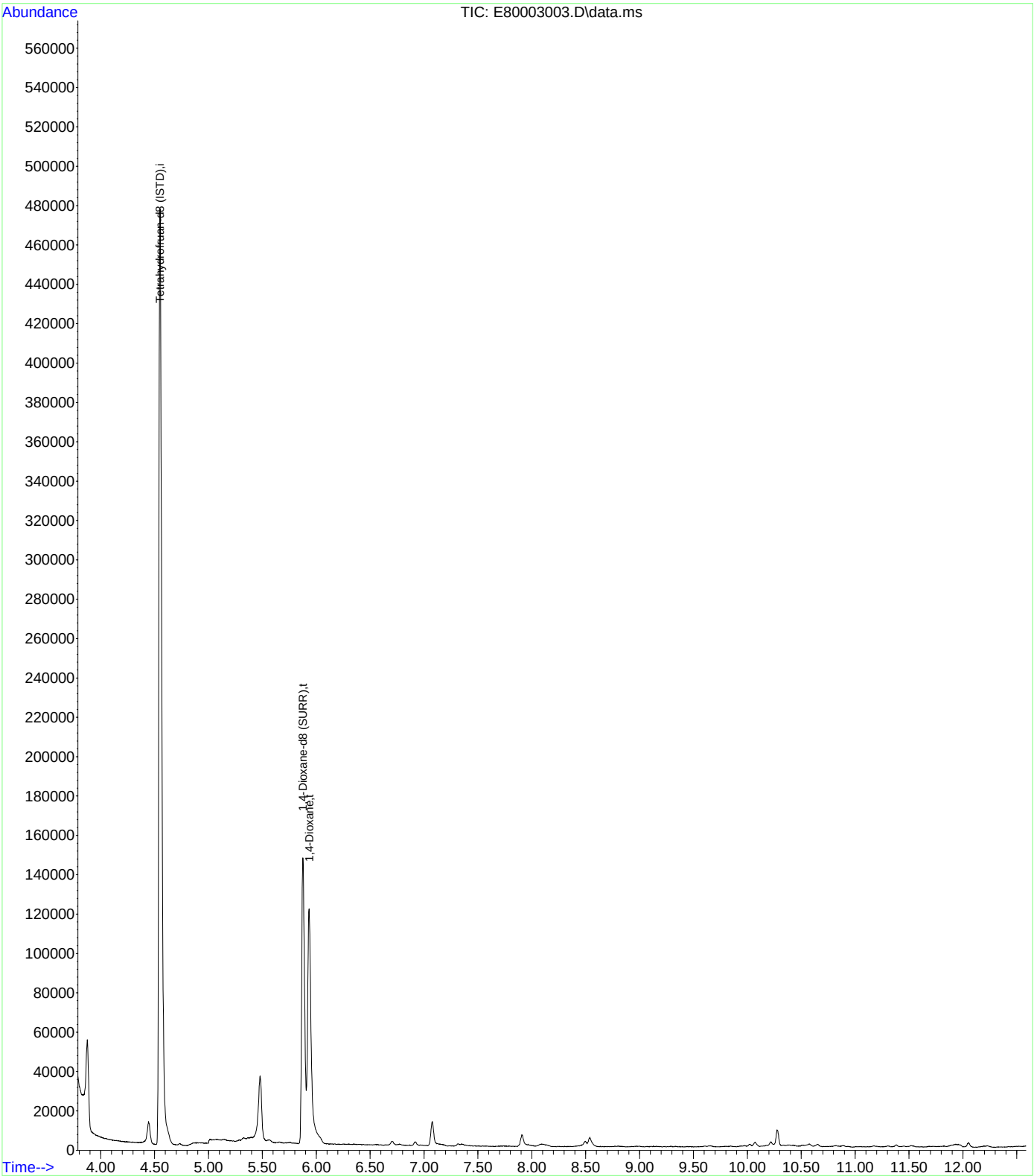
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.548	48	309337	0.50	ug/mL	# 0.02
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.876	96	177915m	0.17	ug/mL	
3) 1,4-Dioxane	5.934	88	168836	0.17	ug/mL	80

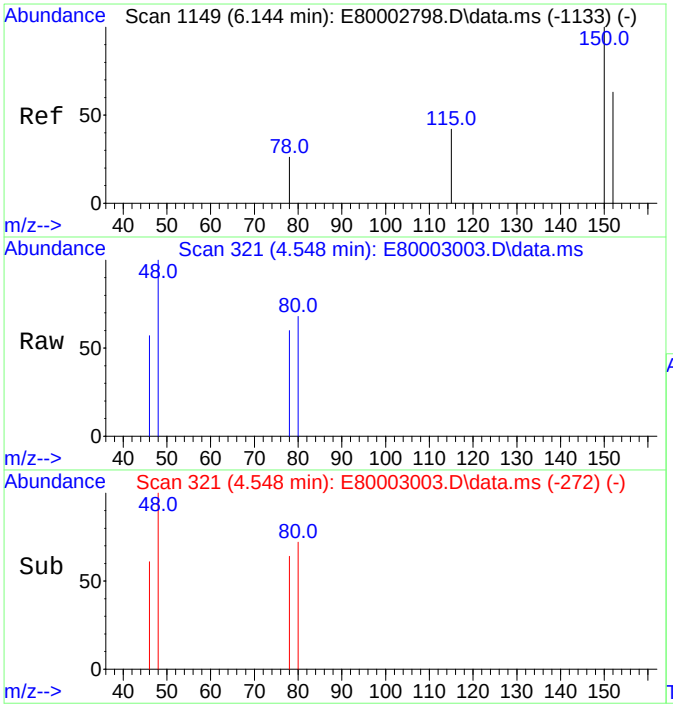
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003003.D
Acq On : 26 Dec 2019 2:22 pm
Operator : KH
Sample : BL91138-MSD1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 26 16:02:01 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

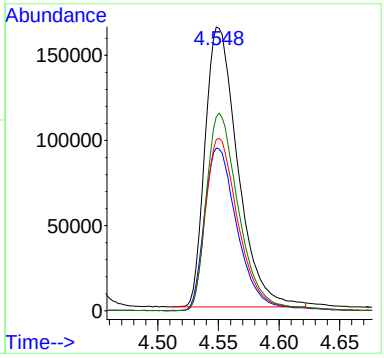


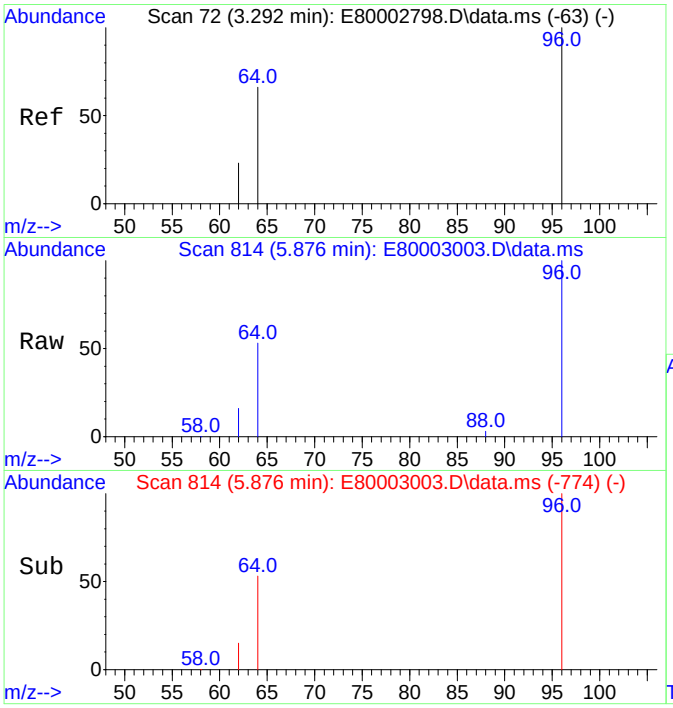


#1
Tetrahydrofuran-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.548 min Scan# 321
Delta R.T. 0.017 min
Lab File: E80003003.D
Acq: 26 Dec 2019 2:22 pm

Tgt Ion: 48 Resp: 309337

Ion	Ratio	Lower	Upper
48	100		
46	58.5	27.7	83.0
78	61.6	20.7	62.1
80	69.8	22.5	67.5#

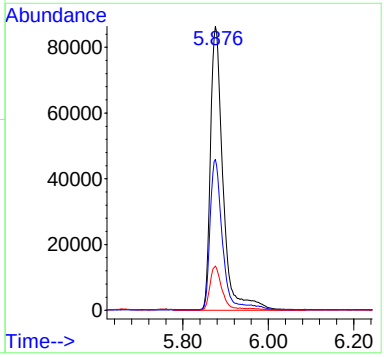


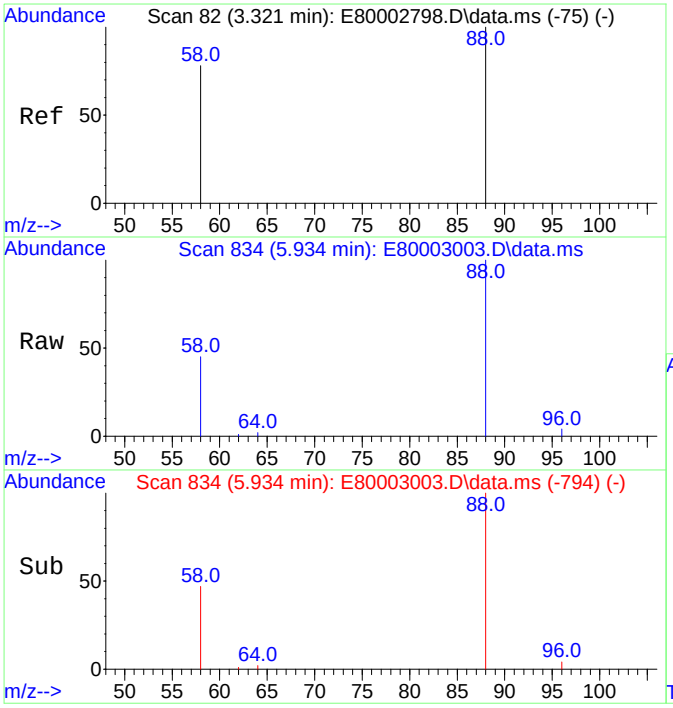


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.17 ug/mL m
RT: 5.876 min Scan# 814
Delta R.T. 0.015 min
Lab File: E80003003.D
Acq: 26 Dec 2019 2:22 pm

Tgt Ion: 96 Resp: 177915

Ion	Ratio	Lower	Upper
96	100		
64	51.2	47.4	88.0
62	14.2	14.8	27.4#

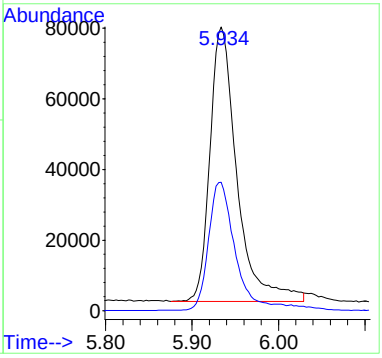




#3
1,4-Dioxane
Concen: 0.17 ug/mL
RT: 5.934 min Scan# 834
Delta R.T. 0.015 min
Lab File: E80003003.D
Acq: 26 Dec 2019 2:22 pm

Tgt Ion: 88 Resp: 168836

Ion	Ratio	Lower	Upper
88	100		
58	44.9	42.2	78.4



LCS RAW DATA

SDG: 19L0685
CLASS: SVOA
METHOD: EPA 8270D SIM

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003001.D
Acq On : 26 Dec 2019 1:47 pm
Operator : KH
Sample : BL91138-BS1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 26 16:01:53 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

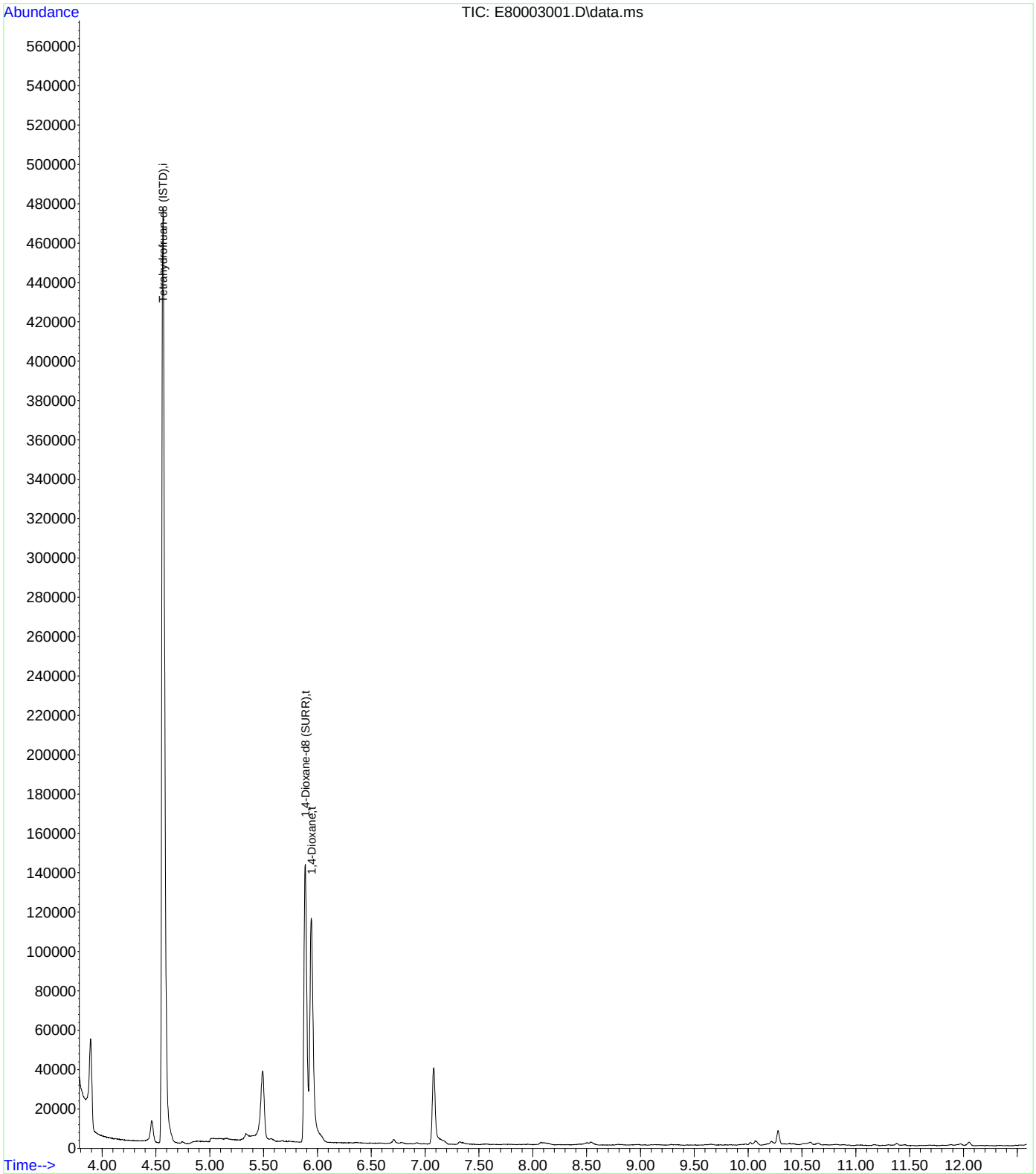
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tetrahydrofruan-d8 (ISTD)	4.565	48	307592	0.50	ug/mL	# 0.03
Target Compounds						Qvalue
2) 1,4-Dioxane-d8 (SURR)	5.887	96	169690m	0.16	ug/mL	
3) 1,4-Dioxane	5.945	88	161652	0.17	ug/mL	82

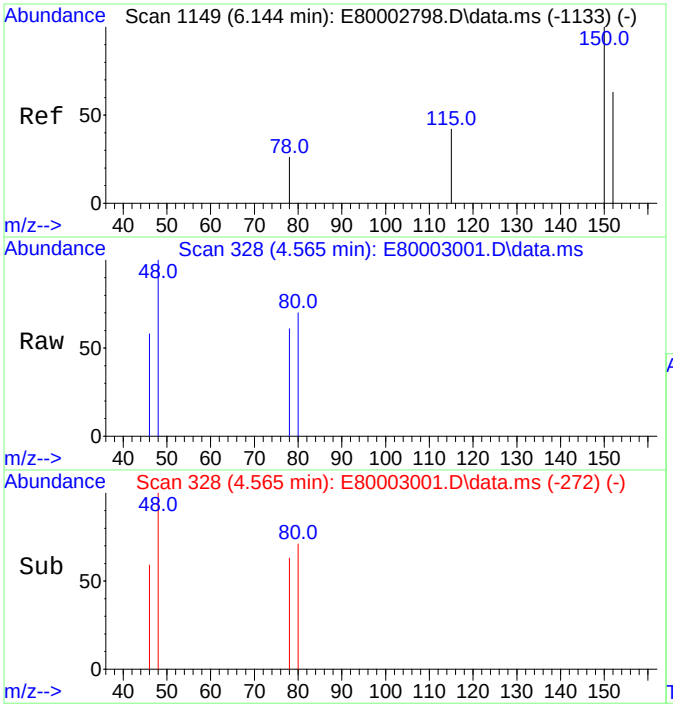
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\122619\
Data File : E80003001.D
Acq On : 26 Dec 2019 1:47 pm
Operator : KH
Sample : BL91138-BS1
InstName : MSBNA8
DataAcq Meth:BNA8DIOX.M
Misc : QBSV8122619A WATER
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 26 16:01:53 2019
Quant Method : C:\msdchem\1\methods\BN8DIOXSM04.M
Quant Title : EPA 8270D SIM 1,4-DIOXANE ISOTOPE DILUTION
QLast Update : Tue Dec 03 10:02:11 2019
Response via : Initial Calibration

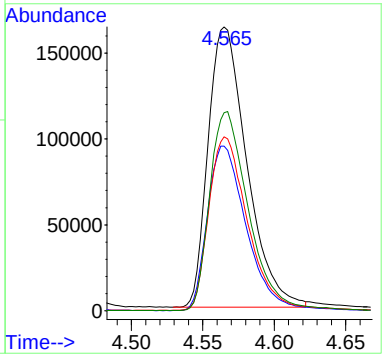


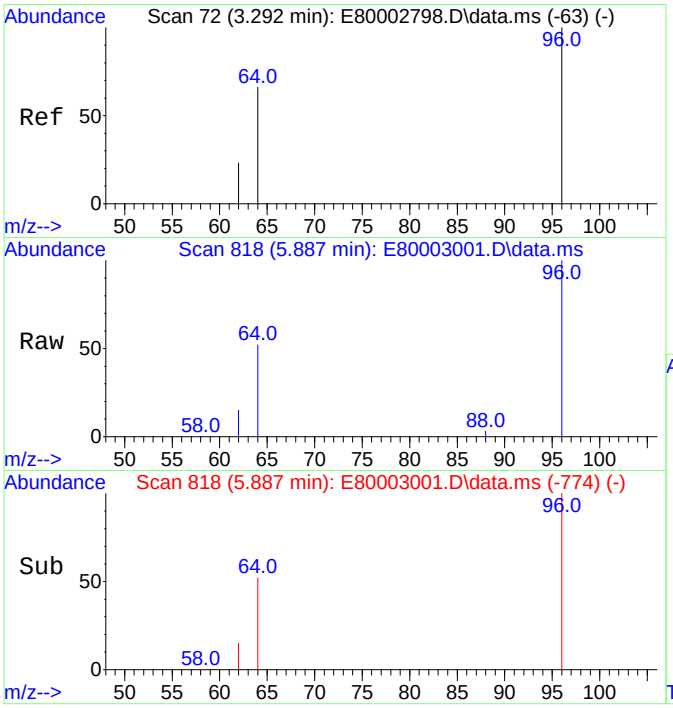


#1
Tetrahydrofuran-d8 (ISTD)
Concen: 0.50 ug/mL
RT: 4.565 min Scan# 328
Delta R.T. 0.034 min
Lab File: E80003001.D
Acq: 26 Dec 2019 1:47 pm

Tgt Ion: 48 Resp: 307592

Ion	Ratio	Lower	Upper
48	100		
46	58.8	27.7	83.0
78	61.5	20.7	62.1
80	70.3	22.5	67.5#

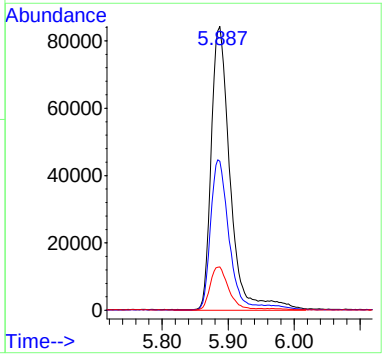


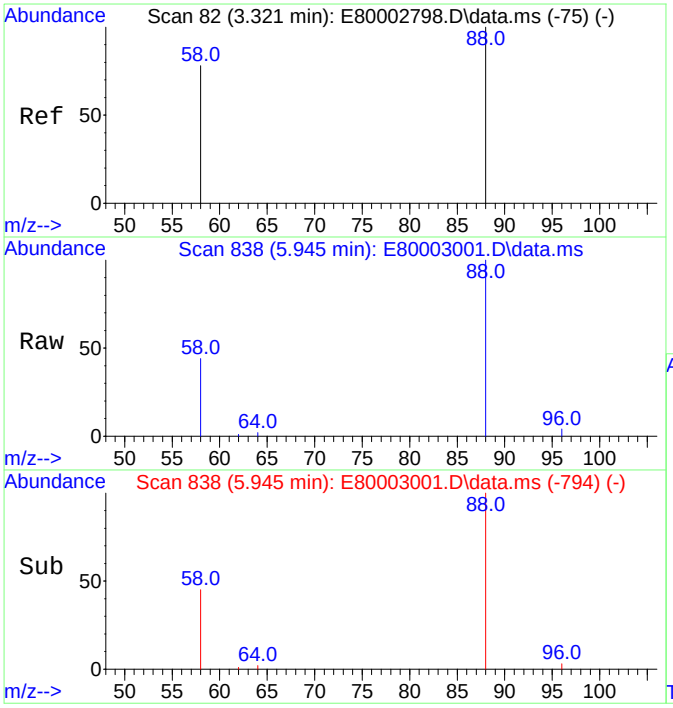


#2
1,4-Dioxane-d8 (SURR)
Concen: 0.16 ug/mL m
RT: 5.887 min Scan# 818
Delta R.T. 0.027 min
Lab File: E80003001.D
Acq: 26 Dec 2019 1:47 pm

Tgt Ion: 96 Resp: 169690

Ion	Ratio	Lower	Upper
96	100		
64	50.3	47.4	88.0
62	14.6	14.8	27.4#

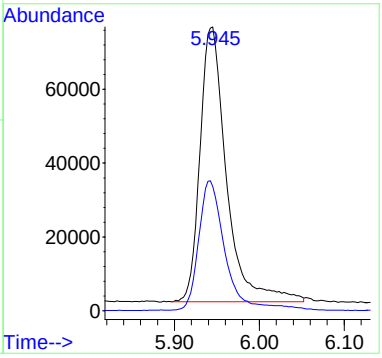




#3
1,4-Dioxane
Concen: 0.17 ug/mL
RT: 5.945 min Scan# 838
Delta R.T. 0.027 min
Lab File: E80003001.D
Acq: 26 Dec 2019 1:47 pm

Tgt Ion: 88 Resp: 161652

Ion	Ratio	Lower	Upper
88	100		
58	46.6	42.2	78.4



BENCHSHEETS

SDG: 19L0685

CLASS: SVOA

METHOD: EPA 8270D SIM

PREPARATION BENCH SHEET-AQUEOUS: BL91138

Prepared: **12/20/2019 07:56**

York Analytical Laboratories, Inc.

Printed: 12/27/2019 6:28:43PM

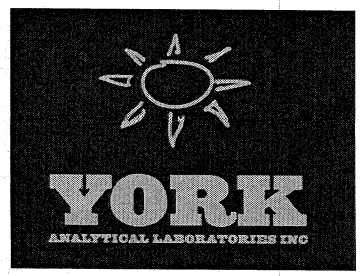
Matrix: Water **Preparation EPA 3535A** **Surrogate used: Y19J302** **100** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data Initial	pH Data Acid	pH Data Basic	Decanted Y/N	Comments
19L0685-01 A	Semi-Volatiles, 1,4	100	2							7			
19L0685-02 A	Semi-Volatiles, 1,4	100	2							7			
19L0685-03 A	Semi-Volatiles, 1,4	100	2							7			
19L0685-04 A	Semi-Volatiles, 1,4	100	2							7			
BL91138-BLK1	QC	100	2							7			
BL91138-BS1	QC	100	2	Y19J303	100					7			
BL91138-MS1	QC	100	2	Y19J303	100			19L0685-01		7			
BL91138-MSD1	QC	100	2	Y19J303	100			19L0685-01		7			

Reagents:

ID Number	Description	Lot Number	ID Number	Description	Lot Number
Y19D057	Methanol P&T	18100286	Y19L239	Methylene Chloride HW	DX474-US

Preparation Performed by **CTD** **Date:** **12/20/2019 07:56**



1,4-Dioxane 8270 SIM Isotope Dilution Factored Data

	Enter	*Dilution Adjusted*	Enter	Enter into Element		Enter	
Sample ID	**1,4-Dioxane-d8 found, ug/mL**	**1,4-Dioxane-d8 found, ug/mL**	**1,4-Dioxane Detected, ug/mL**	**1,4-Dioxane ug/ml, Corrected**	**Dilution Factor**	**Source Sample for QC**	**SURR, %R**
	SURROGATE	SURROGATE				% R for QC	
BL91138-BLK1	0.15	0.15	0	0.000	1.000		60.0
BL91138-BS1	0.16	0.16	0.17	0.266	1.000	106.25	64.0
BL91138-MS1	0.17	0.17	0.18	0.265	1.000		68.0
BL91138-MSD1	0.17	0.17	0.17	0.250	1.000		68.0
19L0685-01	0.2	0.2	0	0.000	1.000		80.0
19L0685-02	0.16	0.16	0	0.000	1.000		64.0
19L0685-03	0.16	0.16	0	0.000	1.000		64.0
19L0685-04	0.17	0.17	0	0.000	1.000		68.0

York Analytical Laboratories, Inc.
SDG: 19L0685
CLASS: PFAS
METHOD: EPA 537m

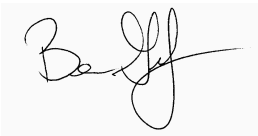
DATA PACKAGE COVER PAGE

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well

Client Sample Id:	Lab Sample Id:
KMW-MW-4R	19L0685-01
KMW-MW-11R	19L0685-02
KMW-FD	19L0685-03
KMW-EB	19L0685-04

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the project narrative. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the

Signature: 
Name: Benjamin Gulizia

Date: 12/31/2019
Title: Laboratory Director

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Sequence: Y9L1909 Instrument: LCQQQ

Calibration: YL90023

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (Y9L1909-SCV1)			Lab File ID: QQQ2827.d		Analyzed: 12/19/19 22:23			
M3PFBS	4.64	101	70 - 130	8.785067	8.785079	0.0000	+/-1.00	
M5PFHxA	5.00	104	70 - 130	10.40325	10.39967	0.0036	+/-1.00	
M4PFHpA	5.00	98.8	70 - 130	11.96893	11.96179	0.0071	+/-1.00	
M3PFHxS	4.73	99.5	70 - 130	12.10172	12.09587	0.0059	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.00	99.9	70 - 130	13.1342	13.12344	0.0108	+/-1.00	
M6PFDA	5.00	101	70 - 130	14.87142	14.85941	0.0120	+/-1.00	
M7PFUdA	5.00	111	70 - 130	15.53447	15.53449	0.0000	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.00	118	70 - 130	16.11183	16.11424	-0.0024	+/-1.00	
M2PFTeDA	5.00	99.1	70 - 130	17.05485	17.05011	0.0047	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.00	101	70 - 130	4.004083	4.012421	-0.0083	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.78	101	70 - 130	14.08888	14.08285	0.0060	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.00	102	70 - 130	8.039033	8.043814	-0.0048	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.00	105	70 - 130	15.5388	15.52803	0.0108	+/-1.00	
d3-N-MeFOSAA	5.00	98.9	70 - 130	15.2061	15.19887	0.0072	+/-1.00	
d5-N-EtFOSAA	5.00	107	70 - 130	15.5498	15.54623	0.0036	+/-1.00	
M2-6:2 FTS	4.74	96.4	70 - 130	13.07385	13.06535	0.0085	+/-1.00	
M2-8:2 FTS	4.79	111	70 - 130	14.85363	14.84884	0.0048	+/-1.00	
M9PFNA	5.00	100	70 - 130	14.07358	14.06736	0.0062	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (Y9L1909-CCV1)			Lab File ID: QQQ2829.d		Analyzed: 12/19/19 23:17			
M3PFBS	4.64	104	70 - 130	8.768383	8.785079	-0.0167	+/-1.00	
M5PFHxA	5.00	104	70 - 130	10.3698	10.39967	-0.0299	+/-1.00	
M4PFHpA	5.00	98.6	70 - 130	11.93552	11.96179	-0.0263	+/-1.00	
M3PFHxS	4.73	104	70 - 130	12.06825	12.09587	-0.0276	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.00	106	70 - 130	13.1007	13.12344	-0.0227	+/-1.00	
M6PFDA	5.00	101	70 - 130	14.84618	14.85941	-0.0132	+/-1.00	
M7PFUdA	5.00	104	70 - 130	15.5177	15.53449	-0.0168	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.00	97.6	70 - 130	16.0951	16.11424	-0.0191	+/-1.00	
M2PFTeDA	5.00	99.5	70 - 130	17.03818	17.05011	-0.0119	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.00	103	70 - 130	4.020767	4.012421	0.0083	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.78	101	70 - 130	14.0634	14.08285	-0.0195	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.00	104	70 - 130	8.0307	8.043814	-0.0131	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.00	102	70 - 130	15.51363	15.52803	-0.0144	+/-1.00	
d3-N-MeFOSAA	5.00	101	70 - 130	15.18073	15.19887	-0.0181	+/-1.00	
d5-N-EtFOSAA	5.00	99.0	70 - 130	15.52463	15.54623	-0.0216	+/-1.00	
M2-6:2 FTS	4.74	103	70 - 130	13.0399	13.06535	-0.0255	+/-1.00	
M2-8:2 FTS	4.79	112	70 - 130	14.82842	14.84884	-0.0204	+/-1.00	
M9PFNA	5.00	101	70 - 130	14.04798	14.06736	-0.0194	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Sequence: Y9L1909 Instrument: LCQQQ

Calibration: YL90023

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (Y9L1909-CCV2)			Lab File ID: QQQ2840.d		Analyzed: 12/20/19 04:13			
M3PFBS	4.64	104	70 - 130	8.751667	8.785079	-0.0334	+/-1.00	
M5PFHxA	5.00	103	70 - 130	10.35307	10.39967	-0.0466	+/-1.00	
M4PFHpA	5.00	104	70 - 130	11.91042	11.96179	-0.0514	+/-1.00	
M3PFHxS	4.73	104	70 - 130	12.04258	12.09587	-0.0533	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.00	106	70 - 130	13.08392	13.12344	-0.0395	+/-1.00	
M6PFDA	5.00	98.4	70 - 130	14.82933	14.85941	-0.0301	+/-1.00	
M7PFUdA	5.00	106	70 - 130	15.50927	15.53449	-0.0252	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.00	115	70 - 130	16.08668	16.11424	-0.0276	+/-1.00	
M2PFTeDA	5.00	103	70 - 130	17.03817	17.05011	-0.0119	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.00	104	70 - 130	4.012417	4.012421	0.0000	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.78	108	70 - 130	14.04657	14.08285	-0.0363	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.00	104	70 - 130	8.013984	8.043814	-0.0298	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.00	105	70 - 130	15.50522	15.52803	-0.0228	+/-1.00	
d3-N-MeFOSAA	5.00	104	70 - 130	15.1723	15.19887	-0.0266	+/-1.00	
d5-N-EtFOSAA	5.00	104	70 - 130	15.51622	15.54623	-0.0300	+/-1.00	
M2-6:2 FTS	4.74	101	70 - 130	13.0231	13.06535	-0.0423	+/-1.00	
M2-8:2 FTS	4.79	110	70 - 130	14.81155	14.84884	-0.0373	+/-1.00	
M9PFNA	5.00	101	70 - 130	14.03078	14.06736	-0.0366	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Surrogate Compound	Spike Level ng/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Blank (BL91039-BLK1)			Lab File ID: QQQ2843.d		Analyzed: 12/20/19 05:34			
M3PFBS	74.3	69.5	25 - 150	8.776733	8.785079	-0.0083	+/-1.00	
M5PFHxA	80.0	67.5	25 - 150	10.38653	10.39967	-0.0131	+/-1.00	
M4PFHpA	80.0	66.1	25 - 150	11.95223	11.96179	-0.0096	+/-1.00	
M3PFHxS	75.7	67.8	25 - 150	12.08498	12.09587	-0.0109	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	65.7	25 - 150	13.12583	13.12344	0.0024	+/-1.00	
M6PFDA	80.0	61.8	25 - 150	14.86302	14.85941	0.0036	+/-1.00	
M7PFUdA	80.0	72.7	25 - 150	15.54288	15.53449	0.0084	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	57.2	25 - 150	16.12022	16.11424	0.0060	+/-1.00	
M2PFTeDA	80.0	51.8	10 - 150	17.05487	17.05011	0.0048	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	69.2	25 - 150	3.995733	4.012421	-0.0167	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	67.6	25 - 150	14.0805	14.08285	-0.0023	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	71.7	25 - 150	8.030684	8.043814	-0.0131	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	63.3	10 - 150	15.53882	15.52803	0.0108	+/-1.00	
d3-N-MeFOSAA	80.0	66.2	25 - 150	15.20612	15.19887	0.0073	+/-1.00	
d5-N-EtFOSAA	80.0	65.8	25 - 150	15.55822	15.54623	0.0120	+/-1.00	
M2-6:2 FTS	75.9	105	25 - 150	13.0571	13.06535	-0.0083	+/-1.00	
M2-8:2 FTS	76.6	103	25 - 150	14.85365	14.84884	0.0048	+/-1.00	
M9PFNA	80.0	68.4	25 - 150	14.0736	14.06736	0.0062	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Sequence: Y9L1909 Instrument: LCQQQ

Calibration: YL90023

Surrogate Compound	Spike Level ng/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
LCS (BL91039-BS1)			Lab File ID: QQQ2844.d		Analyzed: 12/20/19 06:01			
M3PFBS	74.3	75.9	25 - 150	8.776733	8.785079	-0.0083	+/-1.00	
M5PFHxA	80.0	77.7	25 - 150	10.38653	10.39967	-0.0131	+/-1.00	
M4PFHpA	80.0	76.1	25 - 150	11.95223	11.96179	-0.0096	+/-1.00	
M3PFHxS	75.7	72.9	25 - 150	12.08498	12.09587	-0.0109	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	75.5	25 - 150	13.11745	13.12344	-0.0060	+/-1.00	
M6PFDA	80.0	74.6	25 - 150	14.86302	14.85941	0.0036	+/-1.00	
M7PFUdA	80.0	67.0	25 - 150	15.54288	15.53449	0.0084	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	58.2	25 - 150	16.12023	16.11424	0.0060	+/-1.00	
M2PFTeDA	80.0	56.6	10 - 150	17.05488	17.05011	0.0048	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	76.6	25 - 150	3.995733	4.012421	-0.0167	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	72.2	25 - 150	14.0889	14.08285	0.0061	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	78.3	25 - 150	8.030684	8.043814	-0.0131	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	71.4	10 - 150	15.53882	15.52803	0.0108	+/-1.00	
d3-N-MeFOSAA	80.0	73.8	25 - 150	15.20612	15.19887	0.0073	+/-1.00	
d5-N-EtFOSAA	80.0	69.3	25 - 150	15.54983	15.54623	0.0036	+/-1.00	
M2-6:2 FTS	75.9	100	25 - 150	13.0571	13.06535	-0.0083	+/-1.00	
M2-8:2 FTS	76.6	89.0	25 - 150	14.84523	14.84884	-0.0036	+/-1.00	
M9PFNA	80.0	72.4	25 - 150	14.0736	14.06736	0.0062	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (Y9L1909-CCV3)			Lab File ID: QQQ2851.d		Analyzed: 12/20/19 09:09			
M3PFBS	4.64	102	70 - 130	8.760016	8.785079	-0.0251	+/-1.00	
M5PFHxA	5.00	106	70 - 130	10.3698	10.39967	-0.0299	+/-1.00	
M4PFHpA	5.00	102	70 - 130	11.9355	11.96179	-0.0263	+/-1.00	
M3PFHxS	4.73	99.5	70 - 130	12.06825	12.09587	-0.0276	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.00	105	70 - 130	13.11745	13.12344	-0.0060	+/-1.00	
M6PFDA	5.00	95.4	70 - 130	14.863	14.85941	0.0036	+/-1.00	
M7PFUdA	5.00	109	70 - 130	15.54287	15.53449	0.0084	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.00	106	70 - 130	16.12858	16.11424	0.0143	+/-1.00	
M2PFTeDA	5.00	126	70 - 130	17.05487	17.05011	0.0048	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.00	98.9	70 - 130	3.962367	4.012421	-0.0501	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.78	100	70 - 130	14.0805	14.08285	-0.0023	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.00	102	70 - 130	8.013984	8.043814	-0.0298	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.00	100	70 - 130	15.53882	15.52803	0.0108	+/-1.00	
d3-N-MeFOSAA	5.00	101	70 - 130	15.20612	15.19887	0.0073	+/-1.00	
d5-N-EtFOSAA	5.00	103	70 - 130	15.54982	15.54623	0.0036	+/-1.00	
M2-6:2 FTS	4.74	100	70 - 130	13.04827	13.06535	-0.0171	+/-1.00	
M2-8:2 FTS	4.79	105	70 - 130	14.84523	14.84884	-0.0036	+/-1.00	
M9PFNA	5.00	104	70 - 130	14.06478	14.06736	-0.0026	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Surrogate Compound	Spike Level ng/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
KMW-MW-4R (19L0685-01)			Lab File ID: QQQ2855.d		Analyzed: 12/20/19 10:57			
M3PFBS	74.3	78.1	25 - 150	8.718266	8.785079	-0.0668	+/-1.00	
M5PFHxA	80.0	79.7	25 - 150	10.3029	10.39967	-0.0968	+/-1.00	
M4PFHpA	80.0	84.5	25 - 150	11.86027	11.96179	-0.1015	+/-1.00	
M3PFHxS	75.7	76.7	25 - 150	11.99905	12.09587	-0.0968	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	81.0	25 - 150	13.0498	13.12344	-0.0736	+/-1.00	
M6PFDA	80.0	83.4	25 - 150	14.82092	14.85941	-0.0385	+/-1.00	
M7PFUdA	80.0	65.0	25 - 150	15.50928	15.53449	-0.0252	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	59.8	25 - 150	16.09508	16.11424	-0.0192	+/-1.00	
M2PFTeDA	80.0	32.6	10 - 150	17.04652	17.05011	-0.0036	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	77.7	25 - 150	4.03745	4.012421	0.0250	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	76.6	25 - 150	14.03818	14.08285	-0.0447	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	79.4	25 - 150	7.997283	8.043814	-0.0465	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	65.3	10 - 150	15.50522	15.52803	-0.0228	+/-1.00	
d3-N-MeFOSAA	80.0	67.4	25 - 150	15.17232	15.19887	-0.0266	+/-1.00	
d5-N-EtFOSAA	80.0	68.3	25 - 150	15.52462	15.54623	-0.0216	+/-1.00	
M2-6:2 FTS	75.9	141	25 - 150	12.98957	13.06535	-0.0758	+/-1.00	
M2-8:2 FTS	76.6	120	25 - 150	14.81157	14.84884	-0.0373	+/-1.00	
M9PFNA	80.0	83.6	25 - 150	14.0224	14.06736	-0.0450	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Surrogate Compound	Spike Level ng/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Matrix Spike (BL91039-MS2)			Lab File ID: QQQ2856.d		Analyzed: 12/20/19 11:24			
M3PFBS	74.3	71.9	25 - 150	8.743317	8.785079	-0.0418	+/-1.00	
M5PFHxA	80.0	70.7	25 - 150	10.36145	10.39967	-0.0382	+/-1.00	
M4PFHpA	80.0	72.1	25 - 150	11.93552	11.96179	-0.0263	+/-1.00	
M3PFHxS	75.7	67.9	25 - 150	12.06825	12.09587	-0.0276	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	73.0	25 - 150	13.11745	13.12344	-0.0060	+/-1.00	
M6PFDA	80.0	60.8	25 - 150	14.87143	14.85941	0.0120	+/-1.00	
M7PFUdA	80.0	56.4	25 - 150	15.55128	15.53449	0.0168	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	58.6	25 - 150	16.1286	16.11424	0.0144	+/-1.00	
M2PFTeDA	80.0	41.5	10 - 150	17.07157	17.05011	0.0215	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	69.8	25 - 150	3.9874	4.012421	-0.0250	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	66.6	25 - 150	14.0805	14.08285	-0.0023	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	69.3	25 - 150	8.005633	8.043814	-0.0382	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	60.0	10 - 150	15.54722	15.52803	0.0192	+/-1.00	
d3-N-MeFOSAA	80.0	60.4	25 - 150	15.21453	15.19887	0.0157	+/-1.00	
d5-N-EtFOSAA	80.0	60.0	25 - 150	15.56662	15.54623	0.0204	+/-1.00	
M2-6:2 FTS	75.9	118	25 - 150	13.05712	13.06535	-0.0082	+/-1.00	
M2-8:2 FTS	76.6	83.1	25 - 150	14.85365	14.84884	0.0048	+/-1.00	
M9PFNA	80.0	77.5	25 - 150	14.0736	14.06736	0.0062	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Surrogate Compound	Spike Level ng/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (BL91039-MSD2)			Lab File ID: QQQ2857.d		Analyzed: 12/20/19 11:51			
M3PFBS	74.3	70.0	25 - 150	8.760016	8.785079	-0.0251	+/-1.00	
M5PFHxA	80.0	69.3	25 - 150	10.3698	10.39967	-0.0299	+/-1.00	
M4PFHpA	80.0	70.2	25 - 150	11.92717	11.96179	-0.0346	+/-1.00	
M3PFHxS	75.7	67.7	25 - 150	12.06827	12.09587	-0.0276	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	67.9	25 - 150	13.10908	13.12344	-0.0144	+/-1.00	
M6PFDA	80.0	60.9	25 - 150	14.86303	14.85941	0.0036	+/-1.00	
M7PFUdA	80.0	56.0	25 - 150	15.5429	15.53449	0.0084	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	62.5	25 - 150	16.12023	16.11424	0.0060	+/-1.00	
M2PFTeDA	80.0	43.9	10 - 150	17.06323	17.05011	0.0131	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	68.5	25 - 150	3.979067	4.012421	-0.0334	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	64.4	25 - 150	14.08052	14.08285	-0.0023	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	69.8	25 - 150	8.013984	8.043814	-0.0298	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	56.3	10 - 150	15.53883	15.52803	0.0108	+/-1.00	
d3-N-MeFOSAA	80.0	62.8	25 - 150	15.20615	15.19887	0.0073	+/-1.00	
d5-N-EtFOSAA	80.0	60.1	25 - 150	15.55825	15.54623	0.0120	+/-1.00	
M2-6:2 FTS	75.9	115	25 - 150	13.04828	13.06535	-0.0171	+/-1.00	
M2-8:2 FTS	76.6	79.5	25 - 150	14.84525	14.84884	-0.0036	+/-1.00	
M9PFNA	80.0	70.6	25 - 150	14.0648	14.06736	-0.0026	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Surrogate Compound	Spike Level ng/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
KMW-MW-11R (19L0685-02)			Lab File ID: QQQ2858.d		Analyzed: 12/20/19 12:18			
M3PFBS	74.3	63.7	25 - 150	8.743317	8.785079	-0.0418	+/-1.00	
M5PFHxA	80.0	63.4	25 - 150	10.34472	10.39967	-0.0549	+/-1.00	
M4PFHpA	80.0	67.7	25 - 150	11.91878	11.96179	-0.0430	+/-1.00	
M3PFHxS	75.7	62.0	25 - 150	12.05095	12.09587	-0.0449	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	63.6	25 - 150	13.10068	13.12344	-0.0228	+/-1.00	
M6PFDA	80.0	60.2	25 - 150	14.86302	14.85941	0.0036	+/-1.00	
M7PFUdA	80.0	51.5	25 - 150	15.54288	15.53449	0.0084	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	51.5	25 - 150	16.1286	16.11424	0.0144	+/-1.00	
M2PFTeDA	80.0	34.8	10 - 150	17.06322	17.05011	0.0131	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	61.0	25 - 150	3.97905	4.012421	-0.0334	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	59.7	25 - 150	14.0805	14.08285	-0.0023	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	62.8	25 - 150	7.997283	8.043814	-0.0465	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	55.3	10 - 150	15.53882	15.52803	0.0108	+/-1.00	
d3-N-MeFOSAA	80.0	53.6	25 - 150	15.20613	15.19887	0.0073	+/-1.00	
d5-N-EtFOSAA	80.0	55.2	25 - 150	15.55823	15.54623	0.0120	+/-1.00	
M2-6:2 FTS	75.9	110	25 - 150	13.03988	13.06535	-0.0255	+/-1.00	
M2-8:2 FTS	76.6	89.1	25 - 150	14.84523	14.84884	-0.0036	+/-1.00	
M9PFNA	80.0	69.3	25 - 150	14.06477	14.06736	-0.0026	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Surrogate Compound	Spike Level ng/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
KMW-FD (19L0685-03)			Lab File ID: QQQ2859.d		Analyzed: 12/20/19 12:45			
M3PFBS	74.3	68.6	25 - 150	8.734966	8.785079	-0.0501	+/-1.00	
M5PFHxA	80.0	70.4	25 - 150	10.32798	10.39967	-0.0717	+/-1.00	
M4PFHpA	80.0	74.3	25 - 150	11.90207	11.96179	-0.0597	+/-1.00	
M3PFHxS	75.7	67.9	25 - 150	12.03422	12.09587	-0.0617	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	69.1	25 - 150	13.08392	13.12344	-0.0395	+/-1.00	
M6PFDA	80.0	66.6	25 - 150	14.85458	14.85941	-0.0048	+/-1.00	
M7PFUdA	80.0	60.1	25 - 150	15.53448	15.53449	0.0000	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	50.3	25 - 150	16.12022	16.11424	0.0060	+/-1.00	
M2PFTeDA	80.0	19.1	10 - 150	17.05487	17.05011	0.0048	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	67.6	25 - 150	3.979067	4.012421	-0.0334	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	64.6	25 - 150	14.06338	14.08285	-0.0195	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	69.1	25 - 150	7.988934	8.043814	-0.0549	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	27.9	10 - 150	15.53042	15.52803	0.0024	+/-1.00	
d3-N-MeFOSAA	80.0	59.9	25 - 150	15.19772	15.19887	-0.0011	+/-1.00	
d5-N-EtFOSAA	80.0	57.3	25 - 150	15.54143	15.54623	-0.0048	+/-1.00	
M2-6:2 FTS	75.9	117	25 - 150	13.02312	13.06535	-0.0422	+/-1.00	
M2-8:2 FTS	76.6	102	25 - 150	14.83682	14.84884	-0.0120	+/-1.00	
M9PFNA	80.0	72.6	25 - 150	14.04797	14.06736	-0.0194	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Surrogate Compound	Spike Level ng/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
KMW-EB (19L0685-04)			Lab File ID: QQQ2860.d		Analyzed: 12/20/19 13:12			
M3PFBS	74.3	67.8	25 - 150	8.743317	8.785079	-0.0418	+/-1.00	
M5PFHxA	80.0	68.7	25 - 150	10.34472	10.39967	-0.0549	+/-1.00	
M4PFHpA	80.0	70.6	25 - 150	11.90207	11.96179	-0.0597	+/-1.00	
M3PFHxS	75.7	67.1	25 - 150	12.04258	12.09587	-0.0533	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	68.0	25 - 150	13.10068	13.12344	-0.0228	+/-1.00	
M6PFDA	80.0	63.9	25 - 150	14.84617	14.85941	-0.0132	+/-1.00	
M7PFUdA	80.0	63.6	25 - 150	15.53447	15.53449	0.0000	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	60.4	25 - 150	16.11183	16.11424	-0.0024	+/-1.00	
M2PFTeDA	80.0	33.4	10 - 150	17.05487	17.05011	0.0048	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	65.7	25 - 150	3.970717	4.012421	-0.0417	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	69.7	25 - 150	14.06338	14.08285	-0.0195	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	68.9	25 - 150	8.005633	8.043814	-0.0382	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	59.3	10 - 150	15.53042	15.52803	0.0024	+/-1.00	
d3-N-MeFOSAA	80.0	66.0	25 - 150	15.1893	15.19887	-0.0096	+/-1.00	
d5-N-EtFOSAA	80.0	65.4	25 - 150	15.54142	15.54623	-0.0048	+/-1.00	
M2-6:2 FTS	75.9	111	25 - 150	13.03148	13.06535	-0.0339	+/-1.00	
M2-8:2 FTS	76.6	106	25 - 150	14.83682	14.84884	-0.0120	+/-1.00	
M9PFNA	80.0	76.6	25 - 150	14.04797	14.06736	-0.0194	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Sequence: Y9L1909 Instrument: LCQQQ

Calibration: YL90023

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (Y9L1909-CCV4)				Lab File ID: QQQ2862.d		Analyzed: 12/20/19 14:06		
M3PFBS	4.64	96.4	70 - 130	8.751667	8.785079	-0.0334	+/-1.00	
M5PFHxA	5.00	94.8	70 - 130	10.35307	10.39967	-0.0466	+/-1.00	
M4PFHpA	5.00	101	70 - 130	11.91042	11.96179	-0.0514	+/-1.00	
M3PFHxS	4.73	94.5	70 - 130	12.05095	12.09587	-0.0449	+/-1.00	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.00	94.4	70 - 130	13.10068	13.12344	-0.0228	+/-1.00	
M6PFDA	5.00	82.1	70 - 130	14.86302	14.85941	0.0036	+/-1.00	
M7PFUdA	5.00	95.7	70 - 130	15.54288	15.53449	0.0084	+/-1.00	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.00	87.6	70 - 130	16.1286	16.11424	0.0144	+/-1.00	
M2PFTeDA	5.00	80.6	70 - 130	17.06322	17.05011	0.0131	+/-1.00	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.00	94.1	70 - 130	3.962367	4.012421	-0.0501	+/-1.00	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.78	90.8	70 - 130	14.07208	14.08285	-0.0108	+/-1.00	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.00	96.7	70 - 130	8.005633	8.043814	-0.0382	+/-1.00	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.00	92.3	70 - 130	15.53882	15.52803	0.0108	+/-1.00	
d3-N-MeFOSAA	5.00	91.3	70 - 130	15.20613	15.19887	0.0073	+/-1.00	
d5-N-EtFOSAA	5.00	93.9	70 - 130	15.55823	15.54623	0.0120	+/-1.00	
M2-6:2 FTS	4.74	99.9	70 - 130	13.03987	13.06535	-0.0255	+/-1.00	
M2-8:2 FTS	4.79	93.8	70 - 130	14.84523	14.84884	-0.0036	+/-1.00	
M9PFNA	5.00	91.7	70 - 130	14.05637	14.06736	-0.0110	+/-1.00	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 537m

KMW-MW-4R

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Matrix: Water
Batch: BL91039
Laboratory ID: BL91039-MS2
Preparation: SPE Ext-PFAS-EPA 537.1M
Initial/Final: 125 mL / 1 mL
Source Sample Name: KMW-MW-4R

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC. #	QC LIMITS REC.
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	76.8	ND	102	133	25 - 150
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	76.0	ND	91.4	120	25 - 150
N-EtFOSAA	80.0	ND	97.7	122	25 - 150
N-MeFOSAA	80.0	ND	98.0	123	25 - 150
Perfluoro-1-decanesulfonic acid (PFDS)	77.2	ND	83.8	108	25 - 150
Perfluoro-1-heptanesulfonic acid (PFHpS)	79.6	ND	105	132	25 - 150
Perfluoro-1-octanesulfonamide (FOSA)	80.0	ND	96.2	120	25 - 150
Perfluorobutanesulfonic acid (PFBS)	70.8	10.8	103	131	25 - 150
Perfluorodecanoic acid (PFDA)	80.0	ND	103	129	25 - 150
Perfluorododecanoic acid (PFDoA)	80.0	ND	95.5	119	25 - 150
Perfluoroheptanoic acid (PFHpA)	80.0	6.88	104	122	25 - 150
Perfluorohexanesulfonic acid (PFHxS)	59.2	22.4	115	156 *	25 - 150
Perfluorohexanoic acid (PFHxA)	80.0	22.6	118	119	25 - 150
Perfluoro-n-butanoic acid (PFBA)	80.0	11.4	109	122	25 - 150
Perfluorononanoic acid (PFNA)	76.8	ND	87.5	114	25 - 150
Perfluorooctanesulfonic acid (PFOS)	58.4	15.1	116	173 *	25 - 150
Perfluorooctanoic acid (PFOA)	80.0	12.5	94.4	102	25 - 150
Perfluoropentanoic acid (PFPeA)	80.0	28.5	128	125	25 - 150
Perfluorotetradecanoic acid (PFTA)	80.0	ND	101	126	25 - 150
Perfluorotridecanoic acid (PFTrDA)	80.0	ND	79.4	99.3	25 - 150
Perfluoroundecanoic acid (PFUnA)	80.0	ND	94.0	117	25 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 537m

KMW-MW-4R

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Matrix: Water
Batch: BL91039
Laboratory ID: BL91039-MSD2
Preparation: SPE Ext-PFAS-EPA 537.1M
Initial/Final: 125 mL / 1 mL
Source Sample Name: KMW-MW-4R

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	76.8	102	133	0.198	35	25 - 150
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	76.0	92.1	121	0.753	35	25 - 150
N-EtFOSAA	80.0	98.1	123	0.472	35	25 - 150
N-MeFOSAA	80.0	96.0	120	2.13	35	25 - 150
Perfluoro-1-decanesulfonic acid (PFDS)	77.2	86.4	112	3.13	35	25 - 150
Perfluoro-1-heptanesulfonic acid (PFHpS)	79.6	108	135	2.52	35	25 - 150
Perfluoro-1-octanesulfonamide (FOSA)	80.0	96.4	121	0.163	35	25 - 150
Perfluorobutanesulfonic acid (PFBS)	70.8	104	132	0.534	35	25 - 150
Perfluorodecanoic acid (PFDA)	80.0	114	143	10.0	35	25 - 150
Perfluorododecanoic acid (PFDoA)	80.0	96.4	121	0.942	35	25 - 150
Perfluoroheptanoic acid (PFHpA)	80.0	101	117	3.43	35	25 - 150
Perfluorohexanesulfonic acid (PFHxS)	59.2	114	155 *	0.961	35	25 - 150
Perfluorohexanoic acid (PFHxA)	80.0	119	120	0.667	35	25 - 150
Perfluoro-n-butanoic acid (PFBA)	80.0	108	121	0.154	35	25 - 150
Perfluorononanoic acid (PFNA)	76.8	82.6	107	5.84	35	25 - 150
Perfluorooctanesulfonic acid (PFOS)	58.4	121	181 *	4.08	35	25 - 150
Perfluorooctanoic acid (PFOA)	80.0	105	116	10.7	35	25 - 150
Perfluoropentanoic acid (PFPeA)	80.0	125	120	2.63	35	25 - 150
Perfluorotetradecanoic acid (PFTA)	80.0	114	142	12.0	35	25 - 150
Perfluorotridecanoic acid (PFTrDA)	80.0	78.1	97.6	1.67	35	25 - 150
Perfluoroundecanoic acid (PFUnA)	80.0	109	136	14.7	35	25 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water		
Batch:	BL91039	Laboratory ID:	BL91039-BS1
Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC. #	QC LIMITS REC.
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	76.8	92.9	121	50 - 130
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	76.0	88.4	116	50 - 130
N-EtFOSAA	80.0	94.1	118	50 - 130
N-MeFOSAA	80.0	91.3	114	50 - 130
Perfluoro-1-decanesulfonic acid (PFDS)	77.2	80.1	104	50 - 130
Perfluoro-1-heptanesulfonic acid (PFHpS)	79.6	94.2	118	50 - 130
Perfluoro-1-octanesulfonamide (FOSA)	80.0	92.0	115	50 - 130
Perfluorobutanesulfonic acid (PFBS)	70.8	88.3	125	50 - 130
Perfluorodecanoic acid (PFDA)	80.0	99.1	124	50 - 130
Perfluorododecanoic acid (PFDoA)	80.0	95.3	119	50 - 130
Perfluoroheptanoic acid (PFHpA)	80.0	91.8	115	50 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.2	67.9	115	50 - 130
Perfluorohexanoic acid (PFHxA)	80.0	95.5	119	50 - 130
Perfluoro-n-butanoic acid (PFBA)	80.0	93.2	117	50 - 130
Perfluorononanoic acid (PFNA)	76.8	93.3	122	50 - 130
Perfluorooctanesulfonic acid (PFOS)	58.4	67.5	116	50 - 130
Perfluorooctanoic acid (PFOA)	80.0	82.6	103	50 - 130
Perfluoropentanoic acid (PFPeA)	80.0	92.1	115	50 - 130
Perfluorotetradecanoic acid (PFTA)	80.0	90.1	113	50 - 130
Perfluorotridecanoic acid (PFTrDA)	80.0	85.3	107	50 - 130
Perfluoroundecanoic acid (PFUnA)	80.0	88.5	111	50 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM IV **PREPARATION BATCH SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Batch: BL91039 Batch Matrix: Water Preparation: SPE Ext-PFAS-EPA 537.1M

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
KMW-MW-4R	19L0685-01	QQQ2855.d	12/18/19 16:57	
KMW-MW-11R	19L0685-02	QQQ2858.d	12/18/19 16:57	
KMW-FD	19L0685-03	QQQ2859.d	12/18/19 16:57	
KMW-EB	19L0685-04	QQQ2860.d	12/18/19 16:57	
Blank	BL91039-BLK1	QQQ2843.d	12/18/19 16:57	
LCS	BL91039-BS1	QQQ2844.d	12/18/19 16:57	
KMW-MW-4R	BL91039-MS2	QQQ2856.d	12/18/19 16:57	
KMW-MW-4R	BL91039-MSD2	QQQ2857.d	12/18/19 16:57	

FORM I

METHOD BLANK DATA SHEET

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	BL91039-BLK1	File ID:	QQQ2843.d
Prepared:	12/18/19 16:57	Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Analyzed:	12/20/19 05:34	Instrument:	~~LCQQQ~~		
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023

CAS NO.	COMPOUND	CONC. (ng/L)	Q
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	2.00	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	5.00	U
2991-50-6	N-EtFOSAA	2.00	U
2355-31-9	N-MeFOSAA	2.00	U
335-77-3	Perfluoro-1-decanesulfonic acid (PFDS)	2.00	U
375-92-8	Perfluoro-1-heptanesulfonic acid (PFHpS)	2.00	U
754-91-6	Perfluoro-1-octanesulfonamide (FOSA)	2.00	U
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00	U
335-76-2	Perfluorodecanoic acid (PFDA)	2.00	U
307-55-1	Perfluorododecanoic acid (PFDoA)	2.00	U
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.00	U
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.00	U
307-24-4	Perfluorohexanoic acid (PFHxA)	2.00	U
375-22-4	Perfluoro-n-butanoic acid (PFBA)	2.00	U
375-95-1	Perfluorononanoic acid (PFNA)	2.00	U
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00	U
335-67-1	Perfluorooctanoic acid (PFOA)	2.00	U
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.00	U
376-06-7	Perfluorotetradecanoic acid (PFTA)	2.00	U
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	2.00	U
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.00	U

SYSTEM MONITORING COMPOUND	ADDED (ng/L)	CONC (ng/L)	% REC	QC LIMITS	Q
d3-N-MeFOSAA	80.0	53.0	66.2	25 - 150	
d5-N-EtFOSAA	80.0	52.6	65.8	25 - 150	
M2-6:2 FTS	75.9	79.9	105	25 - 150	
M2-8:2 FTS	76.6	78.9	103	25 - 150	
M2PFTeDA	80.0	41.5	51.8	10 - 150	
M3PFBS	74.3	51.6	69.5	25 - 150	
M3PFHxS	75.7	51.3	67.8	25 - 150	
M4PFHpA	80.0	52.9	66.1	25 - 150	

FORM I

METHOD BLANK DATA SHEET

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	BL91039-BLK1	File ID:	QQQ2843.d
Prepared:	12/18/19 16:57	Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Analyzed:	12/20/19 05:34	Instrument:	LCQQQ		
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023

SYSTEM MONITORING COMPOUND	ADDED (ng/L)	CONC (ng/L)	% REC	QC LIMITS	Q
M5PFHxA	80.0	54.0	67.5	25 - 150	
M6PFDA	80.0	49.5	61.8	25 - 150	
M7PFUdA	80.0	58.1	72.7	25 - 150	
M9PFNA	80.0	54.7	68.4	25 - 150	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	50.7	63.3	10 - 150	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	51.7	67.6	25 - 150	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	45.8	57.2	25 - 150	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	55.4	69.2	25 - 150	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	57.3	71.7	25 - 150	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	52.6	65.7	25 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
MPFOA	243614.1	13.12667	229731.7	13.08475	

FORM V **ANALYSIS BATCH (SEQUENCE) SUMMARY**

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Sequence:	Y9L1909	Instrument:	LCQQQ
		Calibration:	YL90023

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	Y9L1909-CAL1	QQQ2820.d	12/19/19 19:14
Cal Standard	Y9L1909-CAL2	QQQ2821.d	12/19/19 19:41
Cal Standard	Y9L1909-CAL3	QQQ2822.d	12/19/19 20:08
Cal Standard	Y9L1909-CAL4	QQQ2823.d	12/19/19 20:35
Cal Standard	Y9L1909-CAL5	QQQ2824.d	12/19/19 21:02
Cal Standard	Y9L1909-CAL6	QQQ2825.d	12/19/19 21:29
Cal Standard	Y9L1909-CAL7	QQQ2826.d	12/19/19 21:56
Secondary Cal Check	Y9L1909-SCV1	QQQ2827.d	12/19/19 22:23
Calibration Check	Y9L1909-CCV1	QQQ2829.d	12/19/19 23:17
Calibration Check	Y9L1909-CCV2	QQQ2840.d	12/20/19 04:13
Blank	BL91039-BLK1	QQQ2843.d	12/20/19 05:34
LCS	BL91039-BS1	QQQ2844.d	12/20/19 06:01
Calibration Check	Y9L1909-CCV3	QQQ2851.d	12/20/19 09:09
KMW-MW-4R	19L0685-01	QQQ2855.d	12/20/19 10:57
KMW-MW-4R	BL91039-MS2	QQQ2856.d	12/20/19 11:24
KMW-MW-4R	BL91039-MSD2	QQQ2857.d	12/20/19 11:51
KMW-MW-11R	19L0685-02	QQQ2858.d	12/20/19 12:18
KMW-FD	19L0685-03	QQQ2859.d	12/20/19 12:45
KMW-EB	19L0685-04	QQQ2860.d	12/20/19 13:12
Calibration Check	Y9L1909-CCV4	QQQ2862.d	12/20/19 14:06

FORM VIII **INTERNAL STANDARD AREA AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Sequence: Y9L1909 Instrument: LCQQQ

Calibration: YL90023

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (Y9L1909-CAL1)			Lab File ID: QQQ2820.d			Analyzed: 12/19/19 19:14			
MPFOA	244672.7	13.12667	219914.6	13.14343	111	50 - 200	-0.0168	+/-0.33	
Cal Standard (Y9L1909-CAL2)			Lab File ID: QQQ2821.d			Analyzed: 12/19/19 19:41			
MPFOA	239647.5	13.08477	219914.6	13.14343	109	50 - 200	-0.0587	+/-0.33	
Cal Standard (Y9L1909-CAL3)			Lab File ID: QQQ2822.d			Analyzed: 12/19/19 20:08			
MPFOA	231471.3	13.12667	219914.6	13.14343	105	50 - 200	-0.0168	+/-0.33	
Cal Standard (Y9L1909-CAL4)			Lab File ID: QQQ2823.d			Analyzed: 12/19/19 20:35			
MPFOA	225675	13.1099	219914.6	13.14343	103	50 - 200	-0.0335	+/-0.33	
Cal Standard (Y9L1909-CAL5)			Lab File ID: QQQ2824.d			Analyzed: 12/19/19 21:02			
MPFOA	219914.6	13.14343	219914.6	13.14343	100	50 - 200	0.0000	+/-0.33	
Cal Standard (Y9L1909-CAL6)			Lab File ID: QQQ2825.d			Analyzed: 12/19/19 21:29			
MPFOA	222478.4	13.14345	219914.6	13.14343	101	50 - 200	0.0000	+/-0.33	
Cal Standard (Y9L1909-CAL7)			Lab File ID: QQQ2826.d			Analyzed: 12/19/19 21:56			
MPFOA	205262.8	13.13503	219914.6	13.14343	93	50 - 200	-0.0084	+/-0.33	
Secondary Cal Check (Y9L1909-SCV1)			Lab File ID: QQQ2827.d			Analyzed: 12/19/19 22:23			
MPFOA	223142.7	13.13503	219914.6	13.14343	101	50 - 200	-0.0084	+/-0.33	
Calibration Check (Y9L1909-CCV1)			Lab File ID: QQQ2829.d			Analyzed: 12/19/19 23:17			
MPFOA	222826.2	13.10992	219914.6	13.14343	101	50 - 200	-0.0335	+/-0.33	
Calibration Check (Y9L1909-CCV2)			Lab File ID: QQQ2840.d			Analyzed: 12/20/19 04:13			
MPFOA	229731.7	13.08475	222826.2	13.10992	103	50 - 200	-0.0252	+/-0.33	
Blank (BL91039-BLK1)			Lab File ID: QQQ2843.d			Analyzed: 12/20/19 05:34			
MPFOA	243614.1	13.12667	229731.7	13.08475	106	50 - 200	0.0419	+/-0.33	
LCS (BL91039-BS1)			Lab File ID: QQQ2844.d			Analyzed: 12/20/19 06:01			
MPFOA	232088.5	13.11828	229731.7	13.08475	101	50 - 200	0.0335	+/-0.33	
Calibration Check (Y9L1909-CCV3)			Lab File ID: QQQ2851.d			Analyzed: 12/20/19 09:09			
MPFOA	214702.8	13.1099	229731.7	13.08475	93	50 - 200	0.0252	+/-0.33	
KMW-MW-4R (19L0685-01)			Lab File ID: QQQ2855.d			Analyzed: 12/20/19 10:57			
MPFOA	211782.2	13.05055	214702.8	13.1099	99	50 - 200	-0.0594	+/-0.33	
Matrix Spike (BL91039-MS2)			Lab File ID: QQQ2856.d			Analyzed: 12/20/19 11:24			
MPFOA	219278.5	13.1183	214702.8	13.1099	102	50 - 200	0.0084	+/-0.33	
Matrix Spike Dup (BL91039-MSD2)			Lab File ID: QQQ2857.d			Analyzed: 12/20/19 11:51			
MPFOA	227364.7	13.1183	214702.8	13.1099	106	50 - 200	0.0084	+/-0.33	
KMW-MW-11R (19L0685-02)			Lab File ID: QQQ2858.d			Analyzed: 12/20/19 12:18			
MPFOA	258188.9	13.1099	214702.8	13.1099	120	50 - 200	0.0000	+/-0.33	
KMW-FD (19L0685-03)			Lab File ID: QQQ2859.d			Analyzed: 12/20/19 12:45			
MPFOA	242323	13.08477	214702.8	13.1099	113	50 - 200	-0.0251	+/-0.33	

FORM VIII **INTERNAL STANDARD AREA AND RT SUMMARY**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Sequence: Y9L1909
Instrument: LCQQQ
Calibration: YL90023

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
KMW-EB (19L0685-04)			Lab File ID: QQQ2860.d			Analyzed: 12/20/19 13:12			
MPFOA	234764.9	13.09313	214702.8	13.1099	109	50 - 200	-0.0168	+/-0.33	
Calibration Check (Y9L1909-CCV4)			Lab File ID: QQQ2862.d			Analyzed: 12/20/19 14:06			
MPFOA	231630.5	13.10152	214702.8	13.1099	108	50 - 200	-0.0084	+/-0.33	

HOLDING TIME SUMMARY

EPA 537m

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Well

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
KMW-MW-4R	12/16/19 10:45	12/17/19 17:17	12/18/19 16:57	2.26	14.00	12/20/19 10:57	1.75	28.00	
KMW-MW-11R	12/16/19 12:47	12/17/19 17:17	12/18/19 16:57	2.17	14.00	12/20/19 12:18	1.81	28.00	
KMW-FD	12/16/19 00:00	12/17/19 17:17	12/18/19 16:57	2.71	14.00	12/20/19 12:45	1.83	28.00	
KMW-EB	12/16/19 13:00	12/17/19 17:17	12/18/19 16:57	2.16	14.00	12/20/19 13:12	1.84	28.00	

METHOD DETECTION AND REPORTING LIMITS

EPA 537m

Laboratory: York Analytical Laboratories, Inc. **SDG:** 19L0685

Client: Chazen Environmental Services (Poughkeepsie) **Project:** 41433.00 TASK 0600 Katonah Municipal V

Matrix: Water **Instrument:** LCQQQ

Analyte	LOD	LOQ	Units
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	5.00	5.00	ng/L
	0.750	0.750	ug/kg
N-EtFOSAA	2.00	2.00	ng/L
	0.750	0.750	ug/kg
N-MeFOSAA	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluoro-1-decanesulfonic acid (PFDS)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluoro-1-heptanesulfonic acid (PFHpS)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluoro-1-octanesulfonamide (FOSA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluorobutanesulfonic acid (PFBS)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluorodecanoic acid (PFDA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluorododecanoic acid (PFDoA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluoroheptanoic acid (PFHpA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluorohexanoic acid (PFHxA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluoro-n-butanoic acid (PFBA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluorononanoic acid (PFNA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluorooctanesulfonic acid (PFOS)	2.00	2.00	ng/L

METHOD DETECTION AND REPORTING LIMITS

EPA 537m

Laboratory: York Analytical Laboratories, Inc. **SDG:** 19L0685

Client: Chazen Environmental Services (Poughkeepsie) **Project:** 41433.00 TASK 0600 Katonah Municipal V

Matrix: Soil **Instrument:** LCQQQ

Analyte	LOD	LOQ	Units
Perfluorooctanesulfonic acid (PFOS)	0.750	0.750	ug/kg
Perfluorooctanoic acid (PFOA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluoropentanoic acid (PFPeA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluorotetradecanoic acid (PFTA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg
Perfluorotridecanoic acid (PFTrDA)	0.750	0.750	ug/kg
	2.00	2.00	ng/L
Perfluoroundecanoic acid (PFUnA)	2.00	2.00	ng/L
	0.750	0.750	ug/kg

FORM I **ORGANIC ANALYSIS DATA SHEET**

EPA 537m

KMW-MW-4R

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-01	File ID:	QQQ2855.d
Sampled:	12/16/19 10:45	Prepared:	12/18/19 16:57	Analyzed:	12/20/19 10:57
Solids:		Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023
Instrument:	LCQQQ				

CAS NO.	COMPOUND	DILUTION	CONC. (ng/L)	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1	10.8	
307-24-4	Perfluorohexanoic acid (PFHxA)	1	22.6	
375-85-9	Perfluoroheptanoic acid (PFHpA)	1	6.88	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1	22.4	
335-67-1	Perfluorooctanoic acid (PFOA)	1	12.5	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1	15.1	
375-95-1	Perfluorononanoic acid (PFNA)	1	2.00	U
335-76-2	Perfluorodecanoic acid (PFDA)	1	2.00	U
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1	2.00	U
307-55-1	Perfluorododecanoic acid (PFDoA)	1	2.00	U
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	1	2.00	U
376-06-7	Perfluorotetradecanoic acid (PFTA)	1	2.00	U
2355-31-9	N-MeFOSAA	1	2.00	U
2991-50-6	N-EtFOSAA	1	2.00	U
2706-90-3	Perfluoropentanoic acid (PFPeA)	1	28.5	
754-91-6	Perfluoro-1-octanesulfonamide (FOSA)	1	2.00	U
375-92-8	Perfluoro-1-heptanesulfonic acid (PFHpS)	1	2.00	U
335-77-3	Perfluoro-1-decanesulfonic acid (PFDS)	1	2.00	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	1	5.00	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	1	2.00	U
375-22-4	Perfluoro-n-butanoic acid (PFBA)	1	11.4	

SYSTEM MONITORING COMPOUND	ADDED (ng/L)	CONC (ng/L)	% REC	QC LIMITS	Q
M3PFBS	74.3	58.0	78.1	25 - 150	
M5PFHxA	80.0	63.8	79.7	25 - 150	
M4PFHpA	80.0	67.6	84.5	25 - 150	
M3PFHxS	75.7	58.0	76.7	25 - 150	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	64.8	81.0	25 - 150	
M6PFDA	80.0	66.8	83.4	25 - 150	
M7PFUdA	80.0	52.0	65.0	25 - 150	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	47.8	59.8	25 - 150	
M2PFTeDA	80.0	26.1	32.6	10 - 150	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	62.1	77.7	25 - 150	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	58.7	76.6	25 - 150	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	63.5	79.4	25 - 150	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	52.2	65.3	10 - 150	
d3-N-MeFOSAA	80.0	53.9	67.4	25 - 150	
d5-N-EtFOSAA	80.0	54.6	68.3	25 - 150	
M2-6:2 FTS	75.9	107	141	25 - 150	
M2-8:2 FTS	76.6	91.8	120	25 - 150	
M9PFNA	80.0	66.9	83.6	25 - 150	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 537m

KMW-MW-4R

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-01	File ID:	QQQ2855.d
Sampled:	12/16/19 10:45	Prepared:	12/18/19 16:57	Analyzed:	12/20/19 10:57
Solids:		Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023
Instrument:	LCQQQ				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
MPFOA	211782.2	13.05055	214702.8	13.1099	

* Values outside of QC limits

Data File	QQQ2855.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 10:57:37 AM
Sample Name	19L0685-01	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

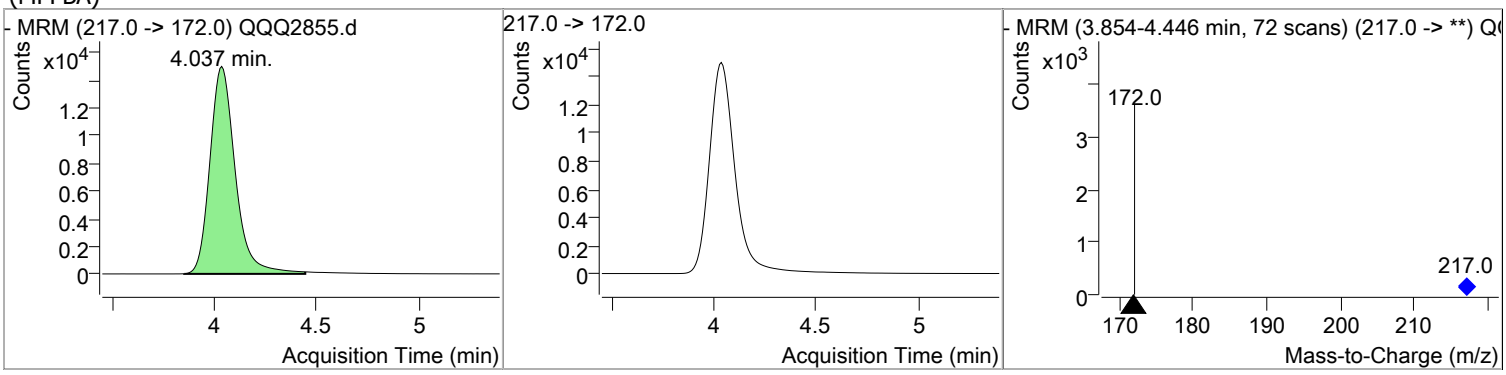
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.051	417.0 -> 372.0	211782	10.0000	ng/ml	0.017
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	4.037	217.0 -> 172.0	128812	7.7651	ng/ml	-0.150
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 77.65%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	7.997	268.0 -> 223.0	179489	7.9365	ng/ml	-0.117
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 79.37%		
M3PFBS	8.718	302.0 -> 79.9	51802	7.2560	ng/ml	-0.100
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 72.56%		
M2-4-2FTS	10.158	329.0 -> 309.0	75906	11.7960	ng/ml	-0.100
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 117.96%		
M5PFHxA	10.303	318.0 -> 273.0	169892	7.9742	ng/ml	-0.100
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 79.74%		
M4PFHpA	11.860	367.0 -> 322.0	49755	8.4472	ng/ml	-0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 84.47%		
M3PFHxS	11.999	402.0 -> 80.0	35562	7.2514	ng/ml	-0.044
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 72.51%		
M2-6-2FTS	12.990	429.0 -> 409.0	70443	13.4213	ng/ml	0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 134.21%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.050	421.0 -> 376.0	90754	8.1010	ng/ml	0.025
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 81.01%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.022	472.0 -> 427.0	95788	8.3567	ng/ml	0.118
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 83.57%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.038	507.0 -> 80.0	27535	7.3332	ng/ml	0.127
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 73.33%		
M2-8-2FTS	14.812	529.0 -> 509.0	45596	11.4765	ng/ml	0.194
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 114.76%		
M6PFDA	14.821	519.0 -> 473.9	76211	8.3445	ng/ml	0.194
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 83.45%		
d3-N-MeFOSAA	15.172	573.0 -> 418.8	49438	6.7425	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 67.42%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.505	506.0 -> 78.0	38138	6.5264	ng/ml	0.311
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 65.26%		
M7PFUdA	15.509	570.0 -> 525.0	60649	6.5024	ng/ml	0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 65.02%		
d5-N-EtFOSAA	15.525	589.0 -> 418.8	43685	6.8282	ng/ml	0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 68.28%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.095	615.0 -> 570.0	54586	5.9770	ng/ml	0.320
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 59.77%		
M2PFTeDA	17.047	715.0 -> 670.0	27788	3.2628	ng/ml	0.409
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 32.63%		

Target Compounds	QValue

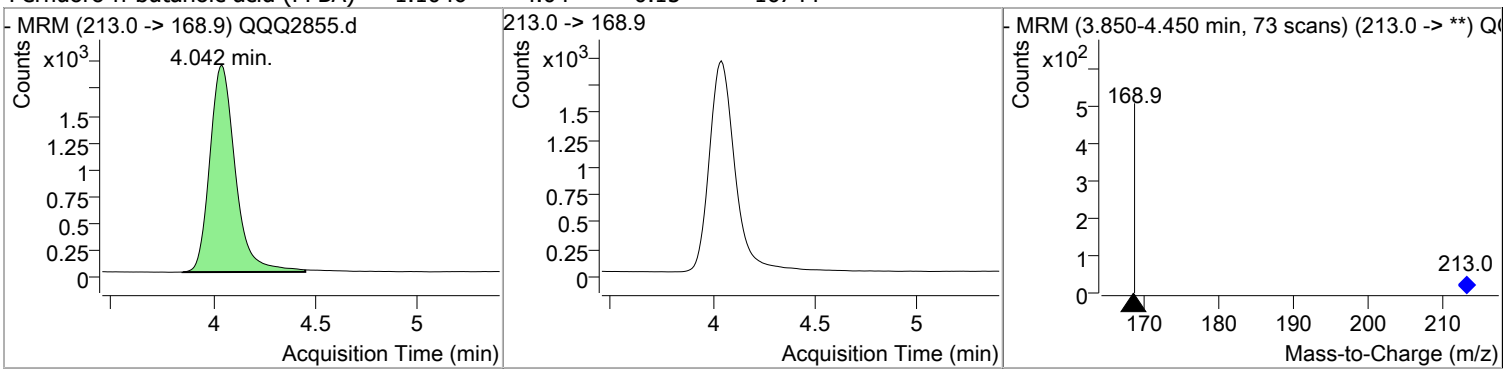
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.042	213.0 -> 168.9	16744	1.1046	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	7.999	263.0 -> 219.0	56441	2.8294	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.713	298.9 -> 79.9	6384	0.9792	ng/ml		100
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.385	327.0 -> 307.0	101	0.0000	ng/ml	#	1
Perfluorohexanoic acid (PFHxA)	10.297	313.0 -> 268.9	40990	2.2481	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.608	348.9 -> 79.9	3719	0.6347	ng/ml		96
Perfluoroheptanoic acid (PFHpA)	11.861	363.0 -> 318.8	10075	0.7269	ng/ml		100
Perfluorohexanesulfonic acid (PFHxS)	12.001	398.9 -> 79.9	10257	2.0341	ng/ml	m	94
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	12.990	427.0 -> 407.0	263	0.0475	ng/ml	#	76
Perfluorooctanoic acid (PFOA)	13.060	413.0 -> 368.8	13615	1.2650	ng/ml		100
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.107	448.9 -> 80.0	375	0.1030	ng/ml	#	83
Perfluorononanoic acid (PFNA)	14.023	463.0 -> 418.8	287	0.0330	ng/ml	#	79
Perfluorooctanesulfonic acid (PFOS)	14.039	498.9 -> 79.9	6208	1.3877	ng/ml	#m	71
Perfluorononanesulfonate (L-PFNS)	14.533	548.9 -> 79.9	5	0.0015	ng/ml	#	69
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.736	527.0 -> 507.0	5	0.0000	ng/ml		49
Perfluorodecanoic acid (PFDA)	14.594	513.0 -> 468.8	45	0.0060	ng/ml	#	69
N-MeFOSAA	15.190	570.0 -> 418.9	50	0.0064	ng/ml	#	44
Perfluoro-1-octanesulfonamide (FOSA)	15.211	497.9 -> 78.0	2	0.0003	ng/ml	#	1
Perfluoro-1-decanesulfonate (L-PFDS)	15.474	598.9 -> 98.9	28	0.0093	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.316	563.0 -> 519.0	12	0.0013	ng/ml	#	66
N-EtFOSAA	15.534	584.0 -> 418.8	66	0.0106	ng/ml	#	74
Perfluorododecanoic acid (PFDoA)	15.734	613.0 -> 568.8	8	0.0012	ng/ml		94
Perfluorotridecanoic acid (PFTrDA)	16.271	663.0 -> 618.8	21	0.0027	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.049	713.0 -> 669.0	110	0.0134	ng/ml		99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

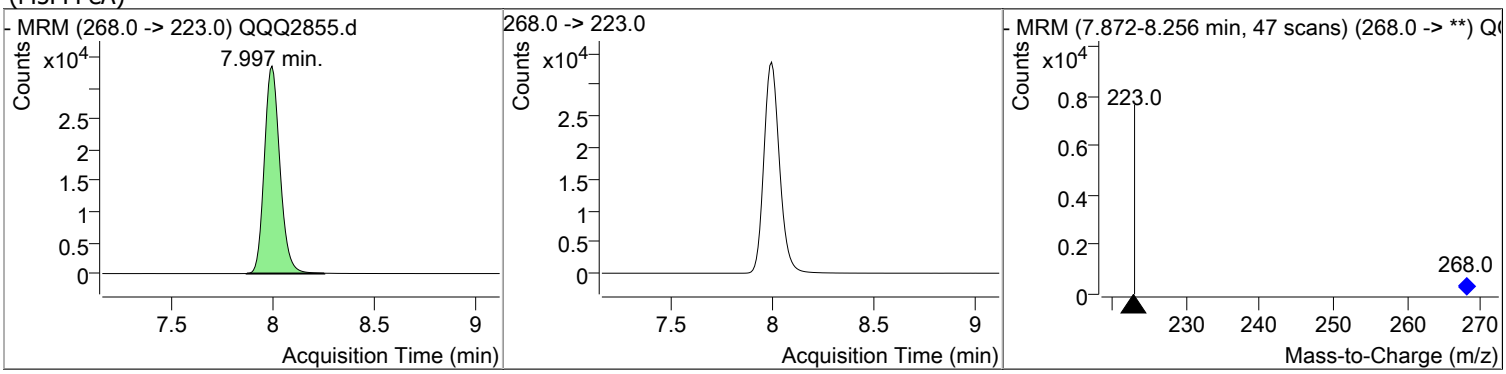
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	7.7651	4.04	-0.15	128812				



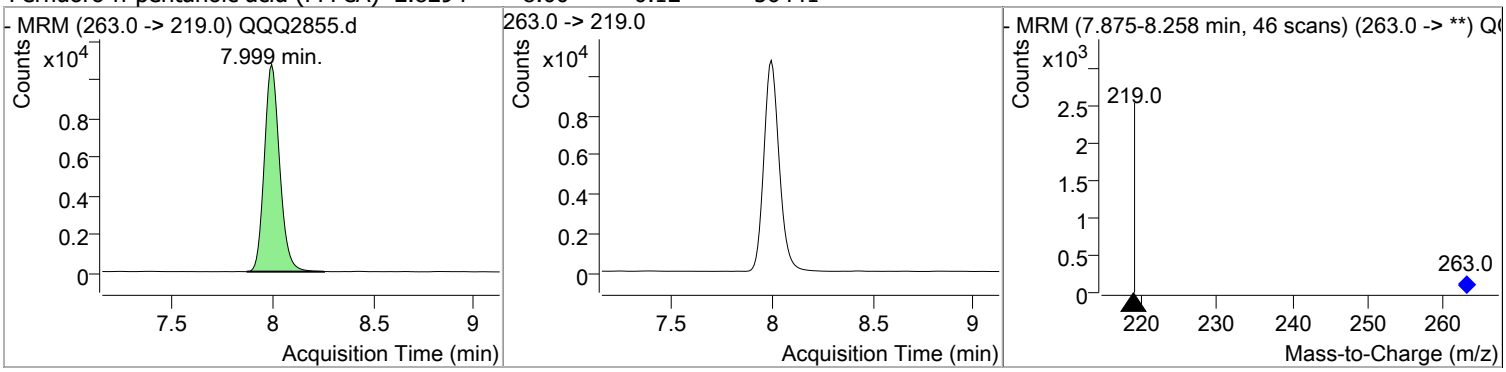
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	1.1046	4.04	-0.15	16744				



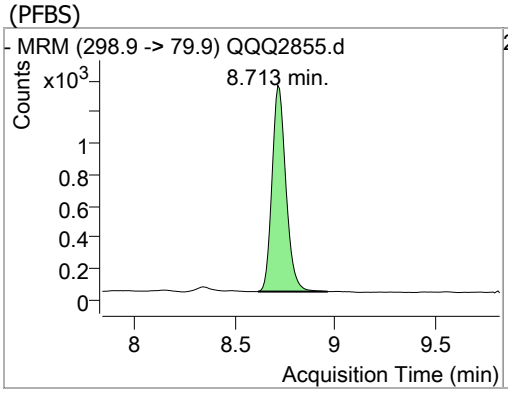
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	7.9365	8.00	-0.12	179489				

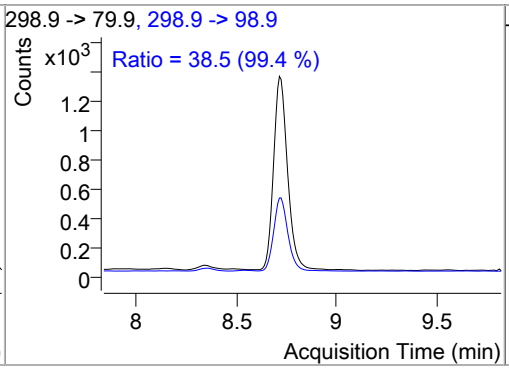


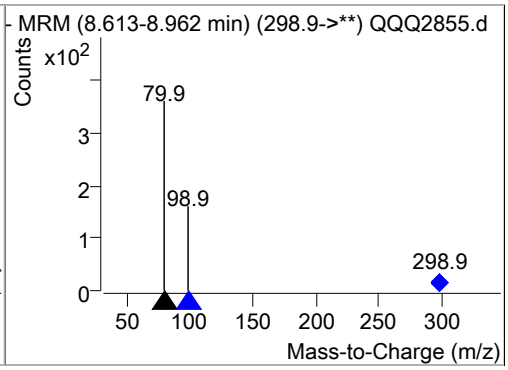
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	2.8294	8.00	-0.12	56441				



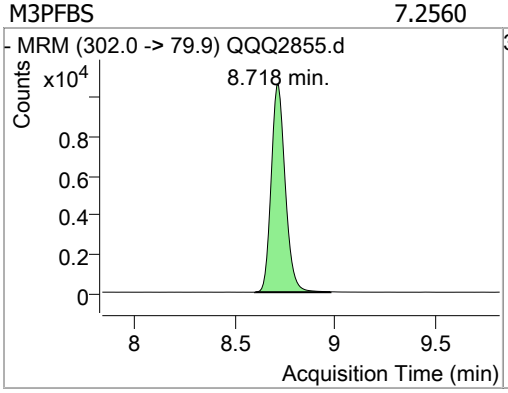
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	0.9792	8.71	-0.10	6384	298.9 -> 98.9	38.5	31.0	46.5

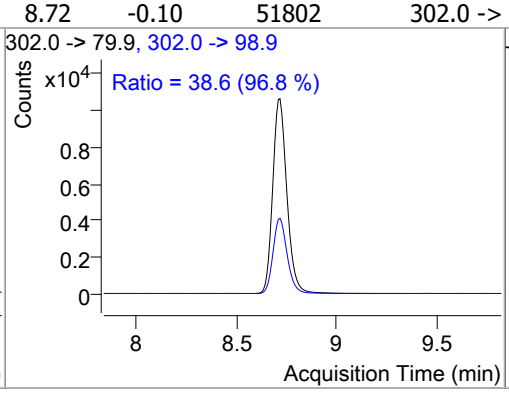


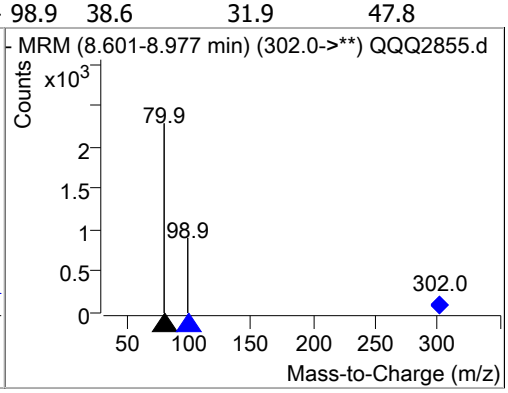




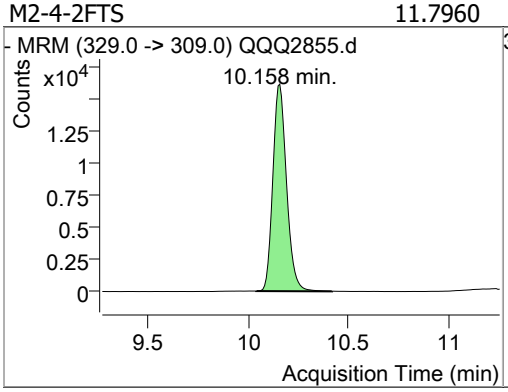
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	7.2560	8.72	-0.10	51802	302.0 -> 98.9	38.6	31.9	47.8

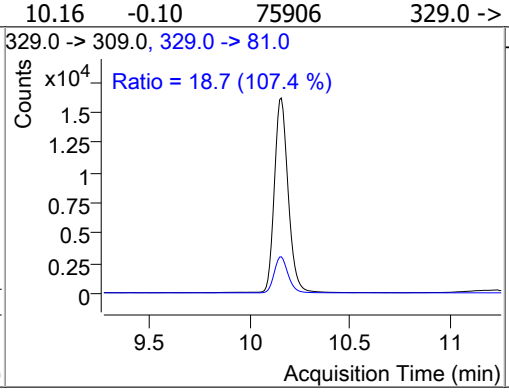


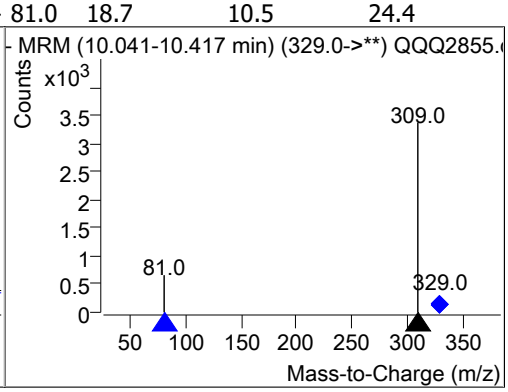




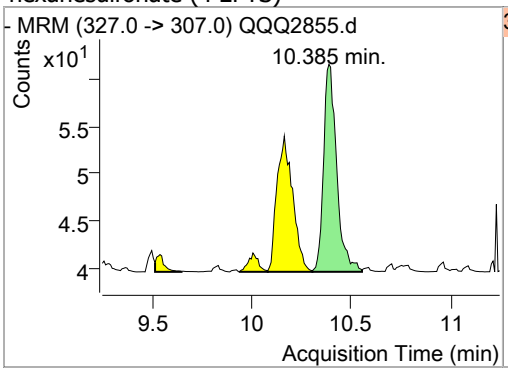
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	11.7960	10.16	-0.10	75906	329.0 -> 81.0	18.7	10.5	24.4

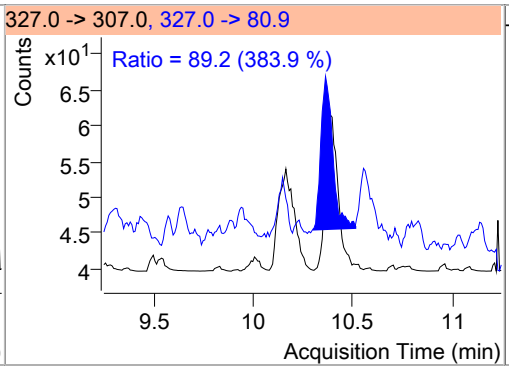


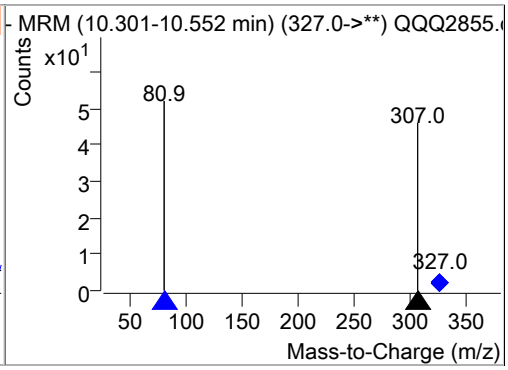




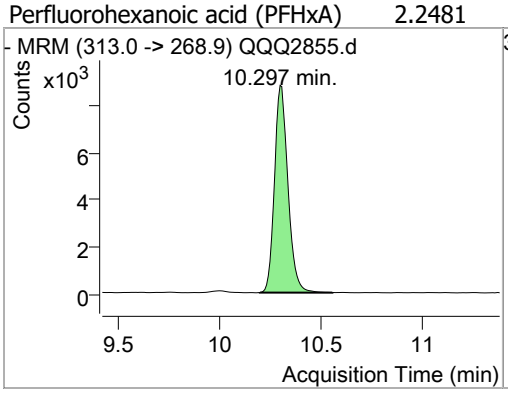
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	0.0000	10.39	0.13	101	327.0 -> 80.9	89.2	13.9	32.5

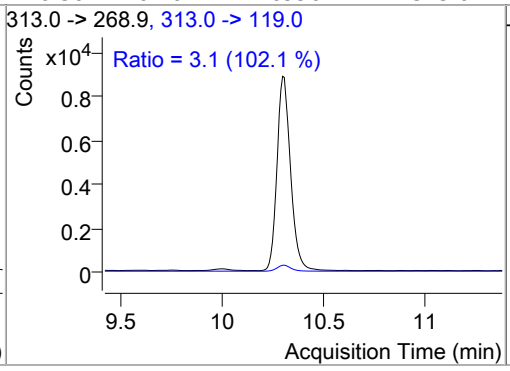


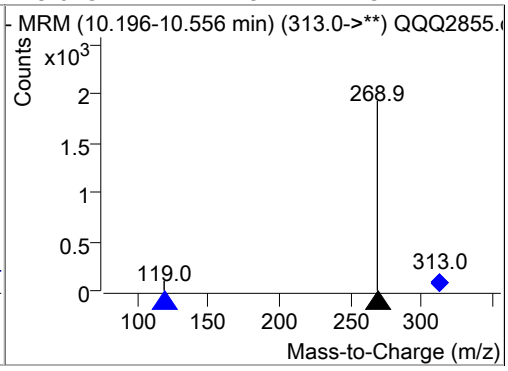




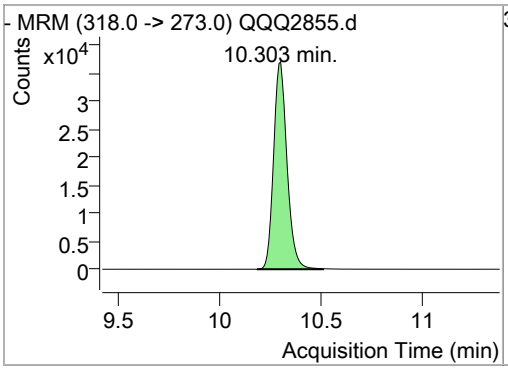
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	2.2481	10.30	-0.10	40990	313.0 -> 119.0	3.1	2.5	3.7

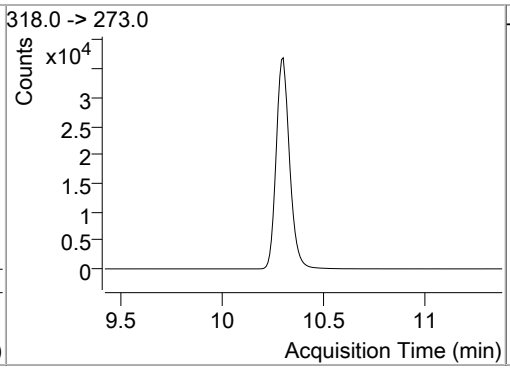


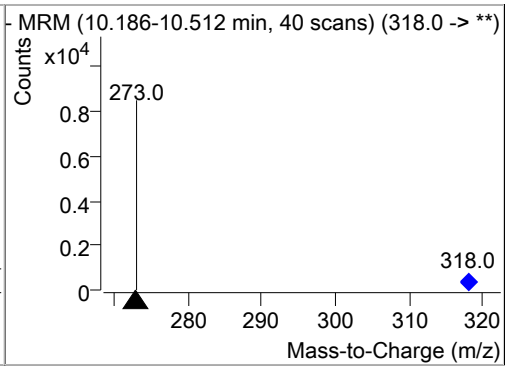




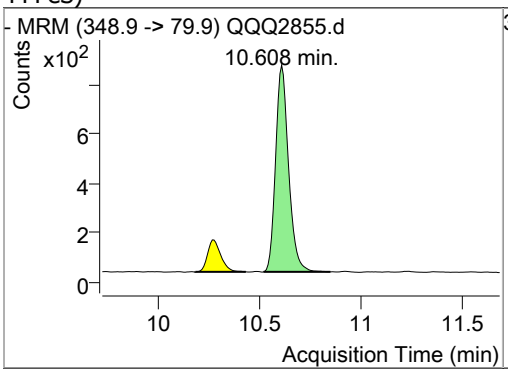
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	7.9742	10.30	-0.10	169892				

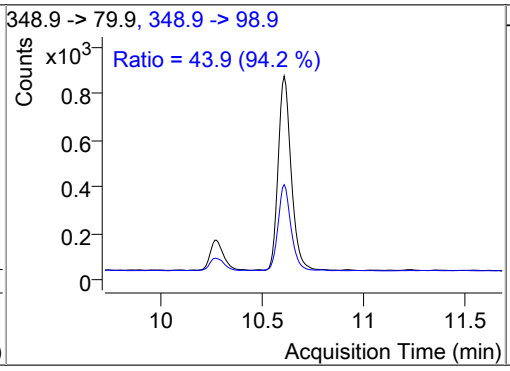


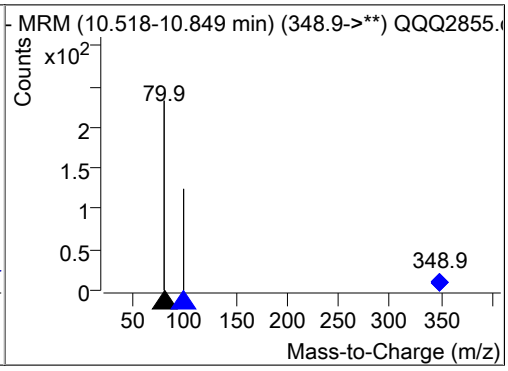




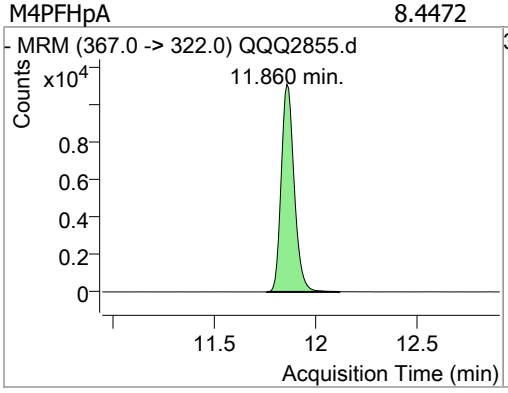
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	0.6347	10.61	-0.09	3719	348.9 -> 98.9	43.9	37.3	56.0

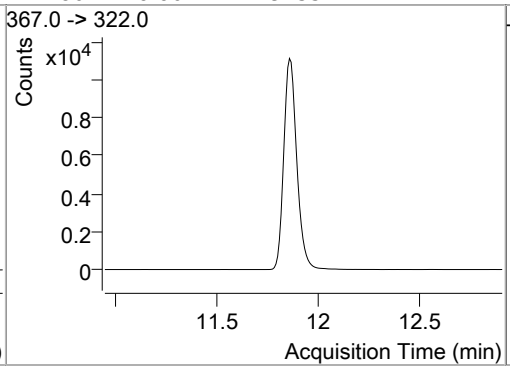


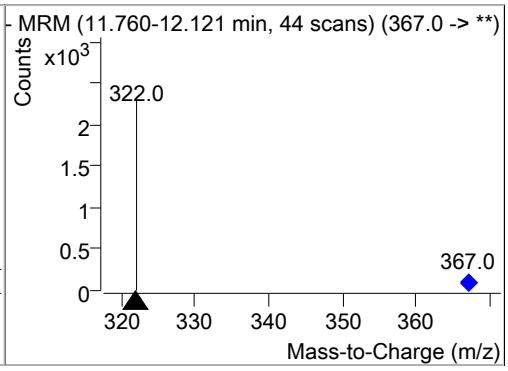




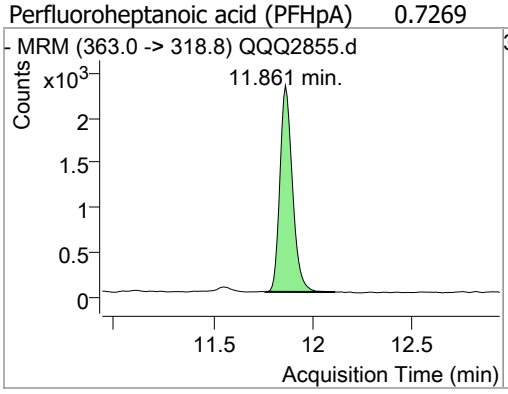
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	8.4472	11.86	-0.06	49755				

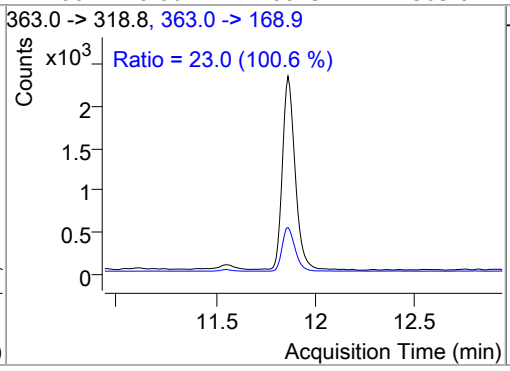


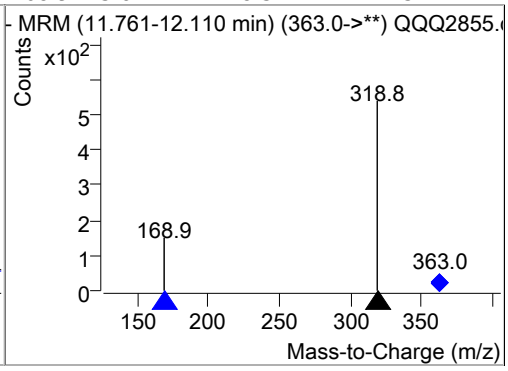




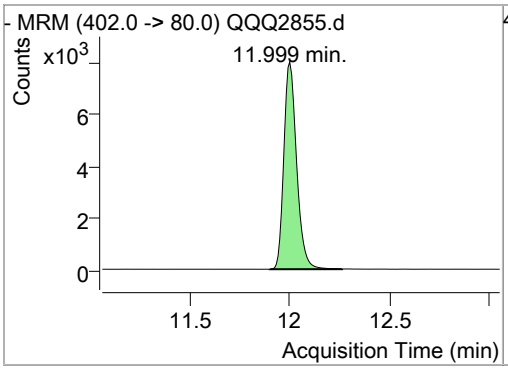
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	0.7269	11.86	-0.06	10075	363.0 -> 168.9	23.0	18.3	27.5

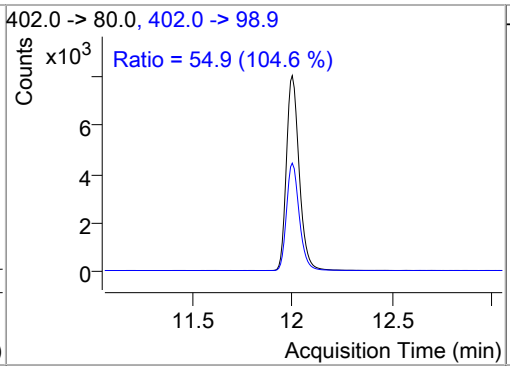


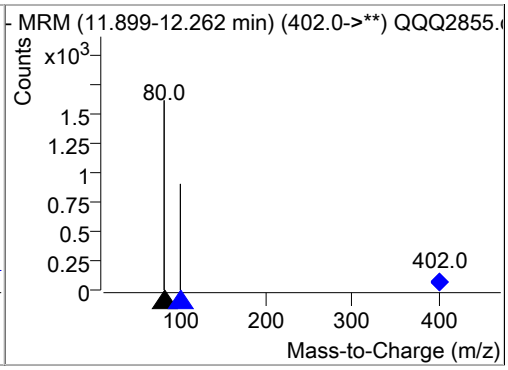




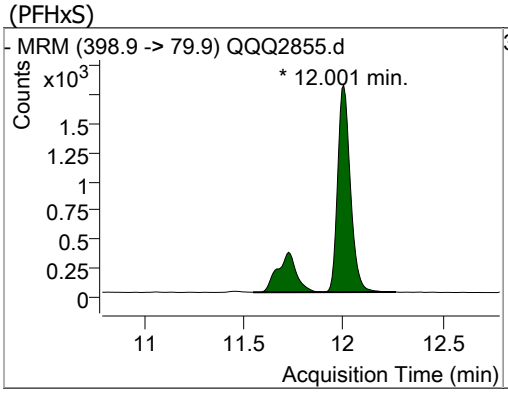
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	7.2514	12.00	-0.04	35562	402.0 -> 98.9	54.9	42.0	62.9

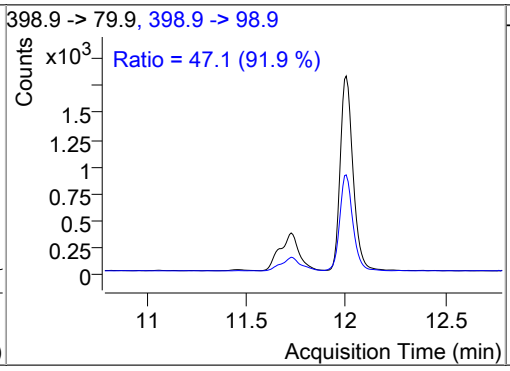


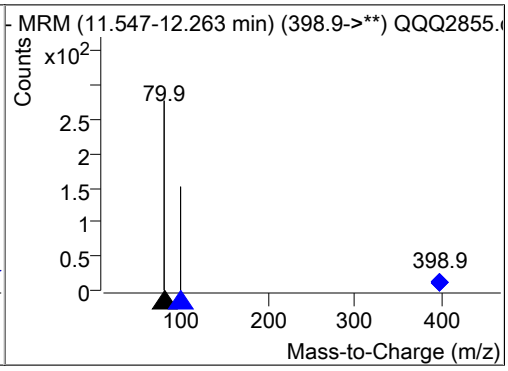




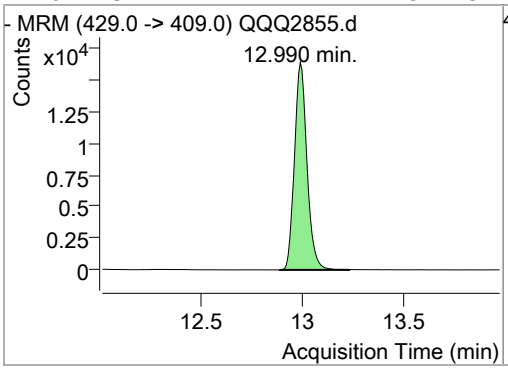
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	2.0341	12.00	-0.04	10257 (m)	398.9 -> 98.9	47.1	41.0	61.5

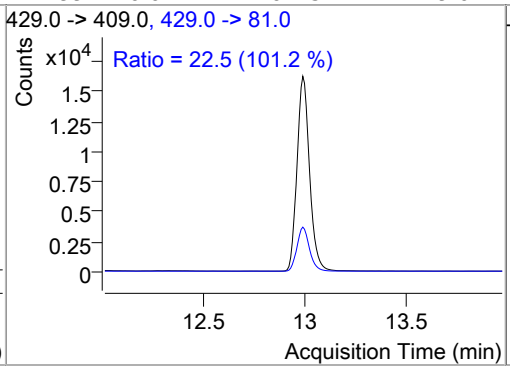


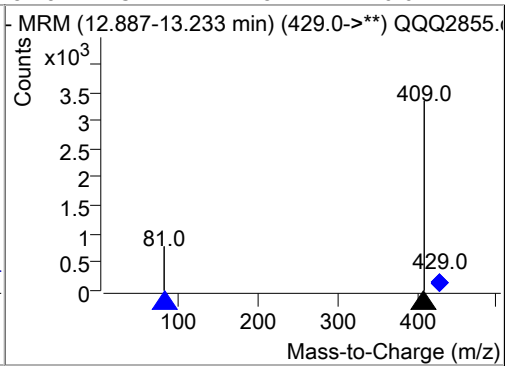




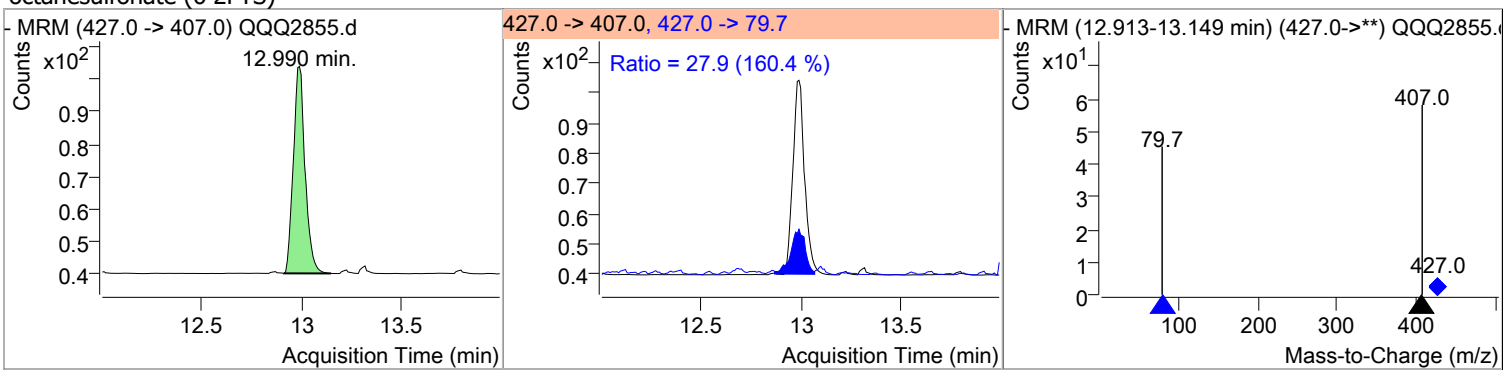
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	13.4213	12.99	0.02	70443	429.0 -> 81.0	22.5	17.8	26.6



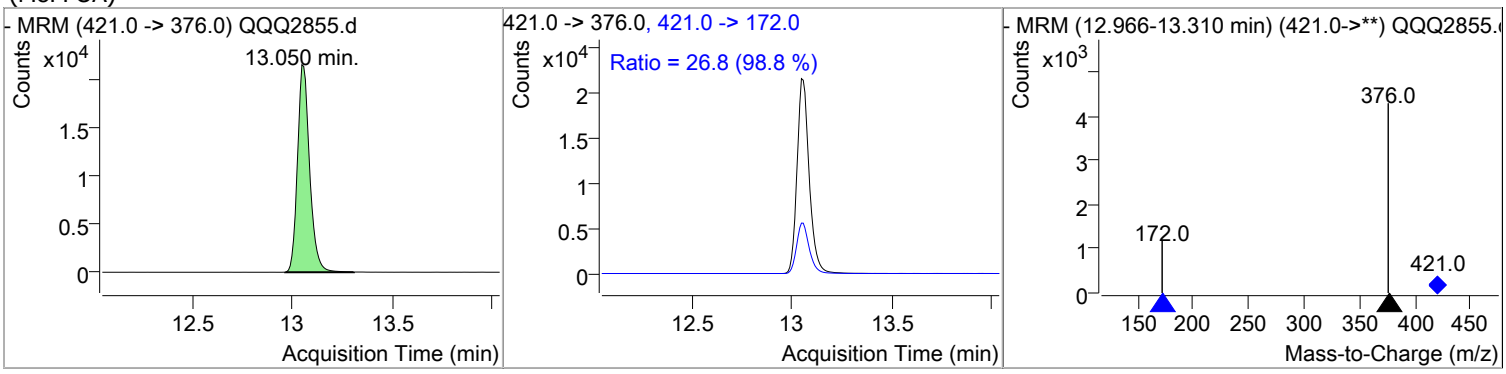




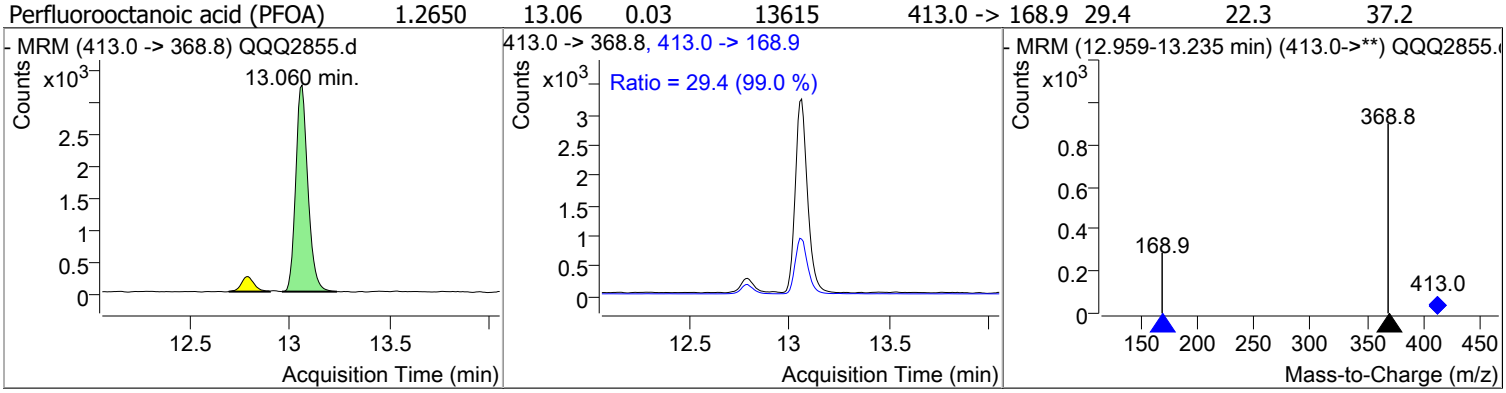
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	0.0475	12.99	0.02	263	427.0 -> 79.7	27.9	13.9	20.8



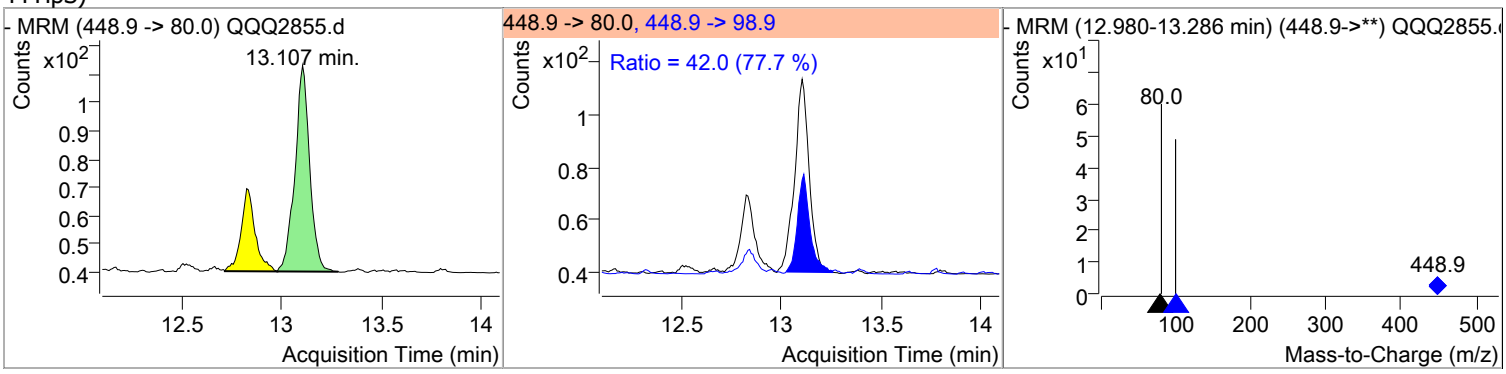
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	8.1010	13.05	0.03	90754	421.0 -> 172.0	26.8	21.7	32.6



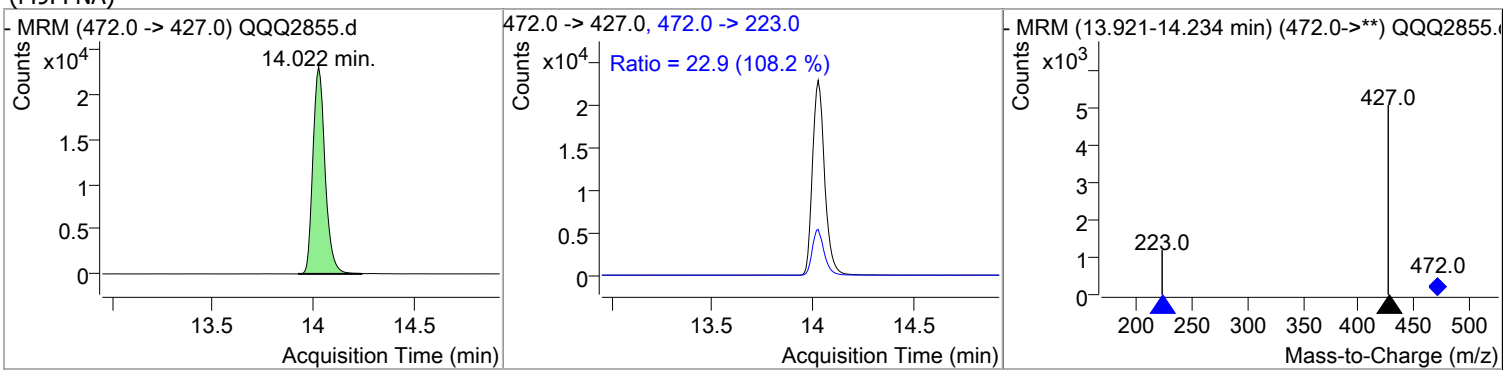
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	1.2650	13.06	0.03	13615	413.0 -> 168.9	29.4	22.3	37.2



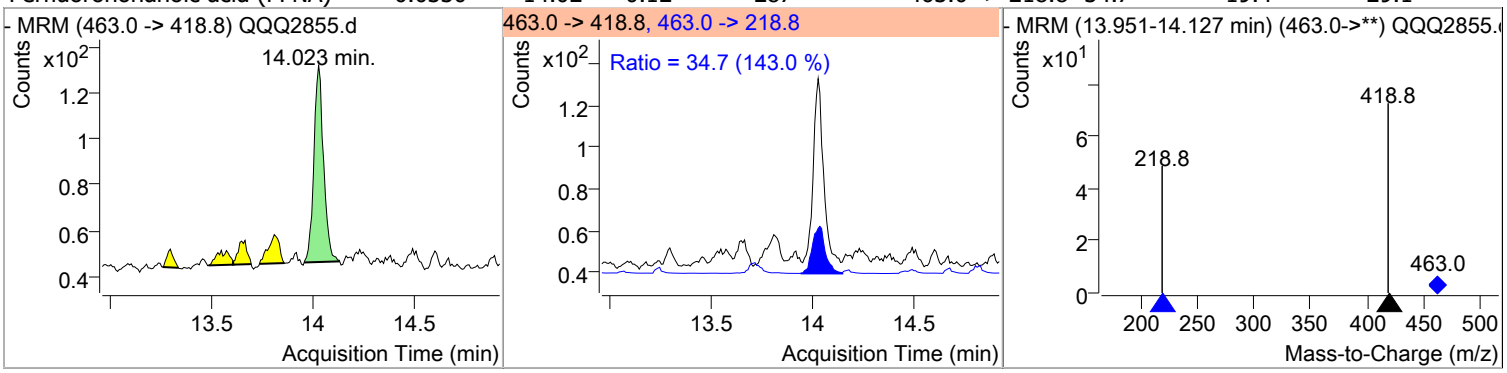
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	0.1030	13.11	0.03	375	448.9 -> 98.9	42.0	43.3	64.9



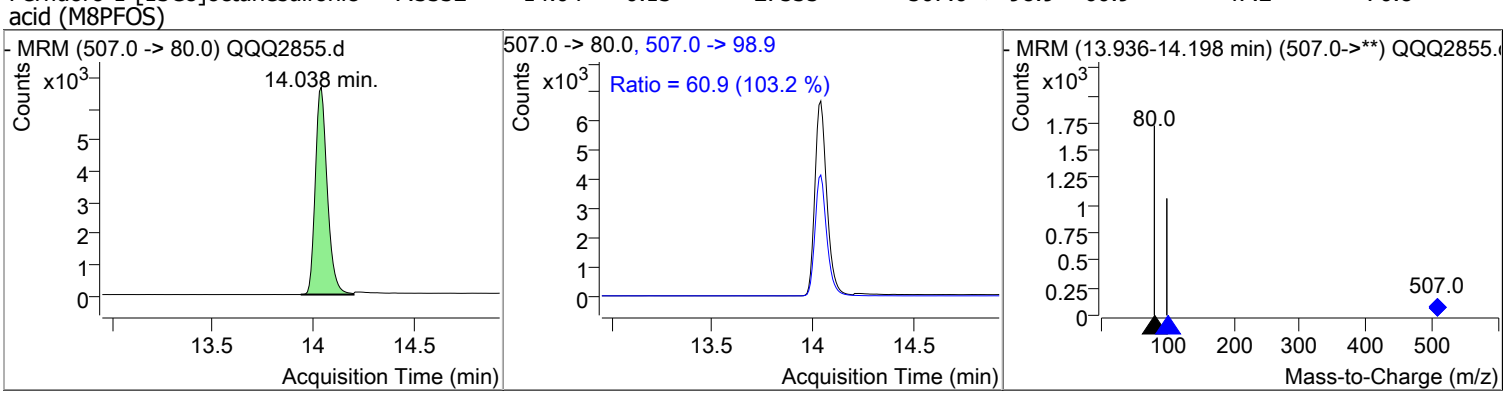
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	8.3567	14.02	0.12	95788	472.0 -> 223.0	22.9	16.9	25.4



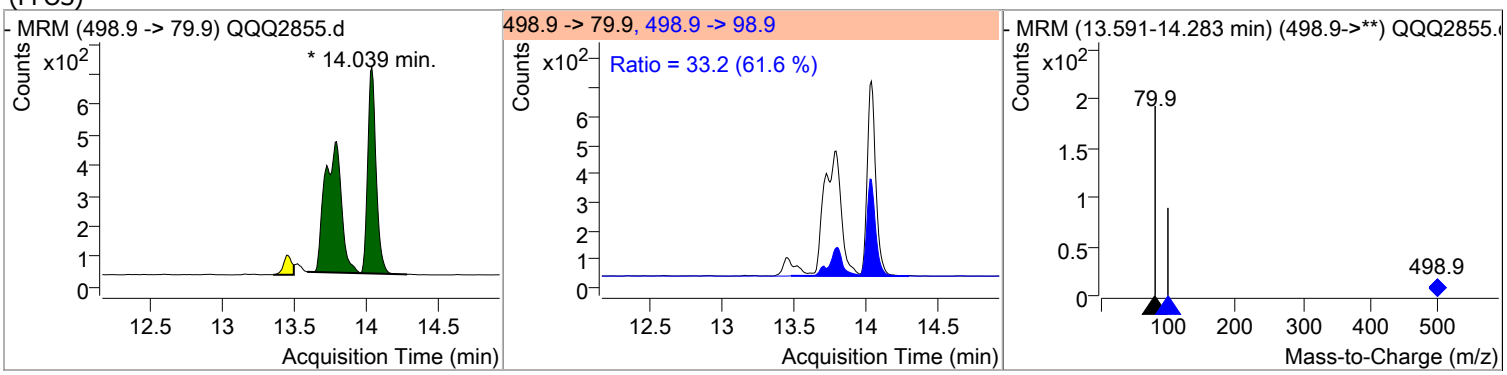
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	0.0330	14.02	0.12	287	463.0 -> 218.8	34.7	19.4	29.1



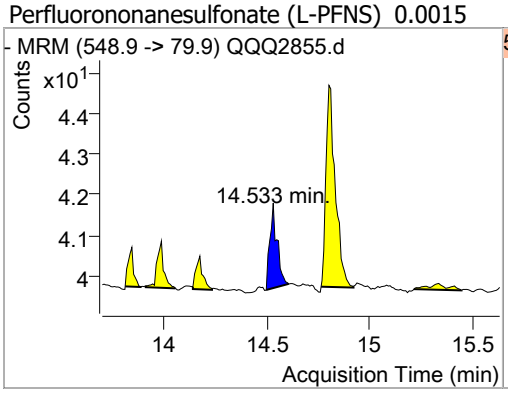
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	7.3332	14.04	0.13	27535	507.0 -> 98.9	60.9	47.2	70.8

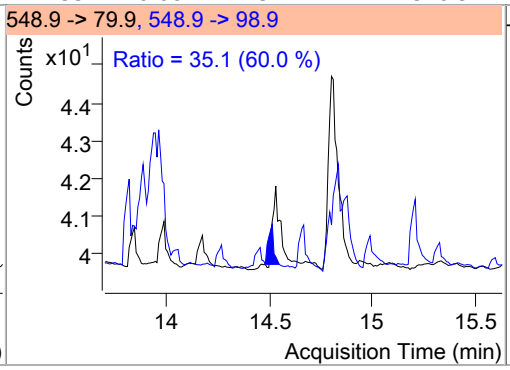


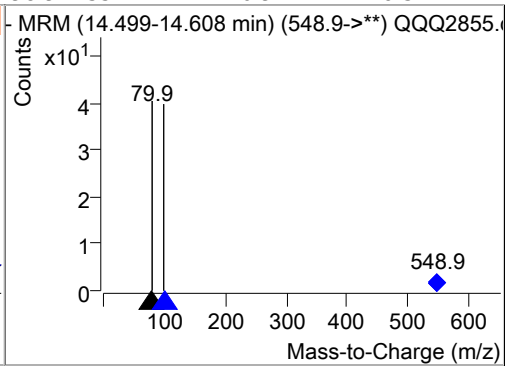
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	1.3877	14.04	0.13	6208 (m)	498.9 -> 98.9	33.2	43.1	64.6



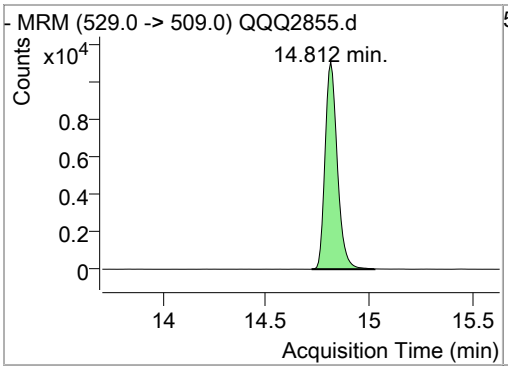
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	0.0015	14.53	-0.08	5	548.9 -> 98.9	35.1	46.9	70.3

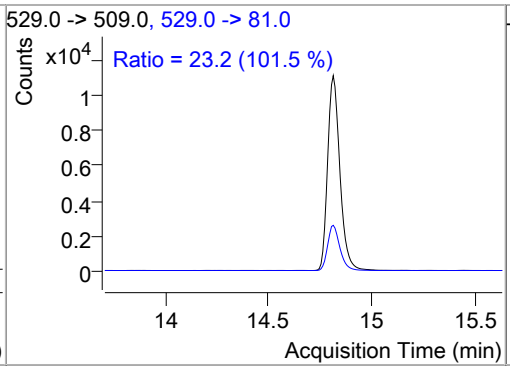


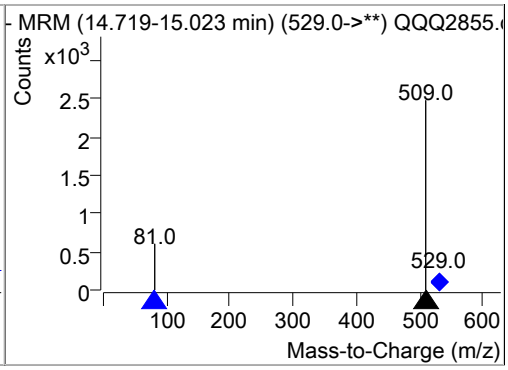




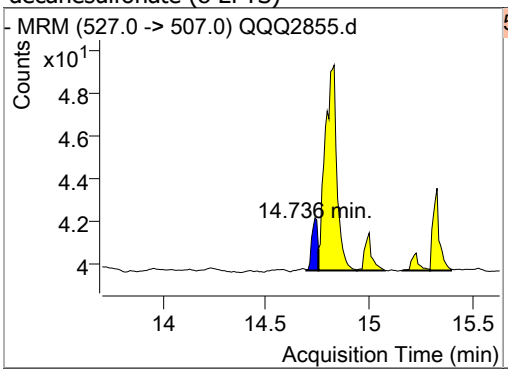
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	11.4765	14.81	0.19	45596	529.0 -> 81.0	23.2	18.3	27.4

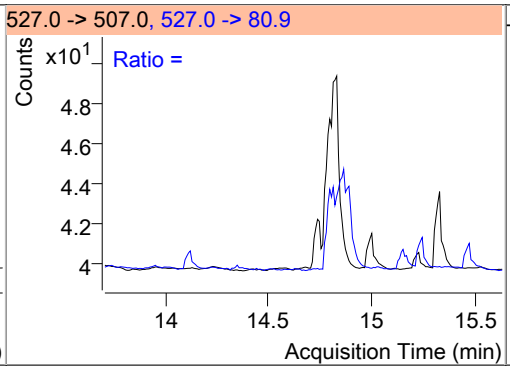


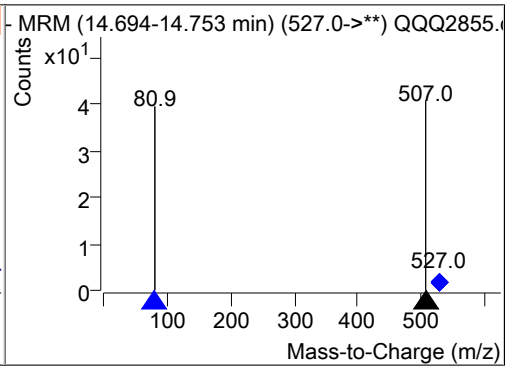




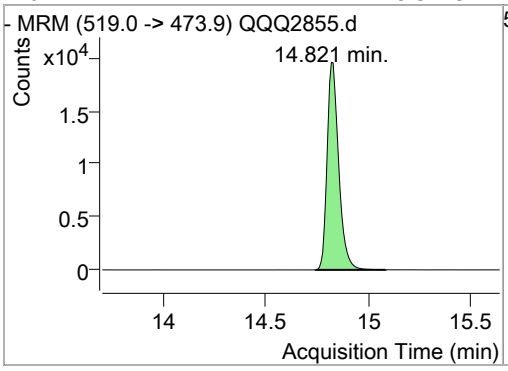
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	0.0000	14.74	0.12	5	527.0 -> 80.9		20.6	30.9

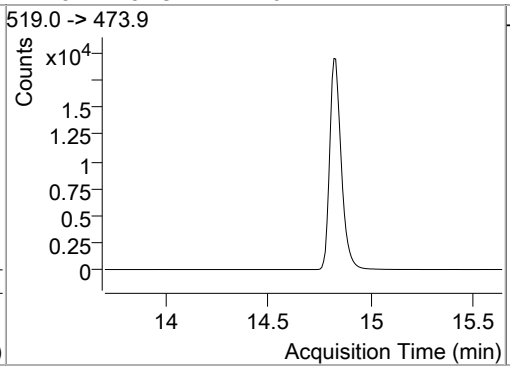


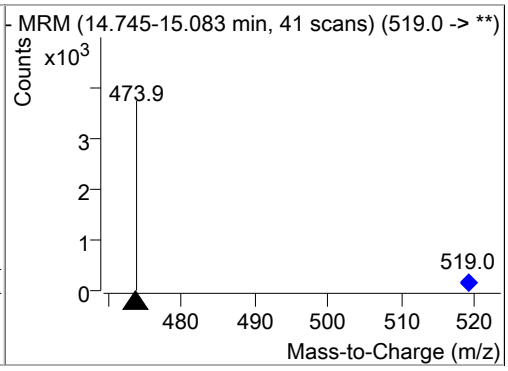




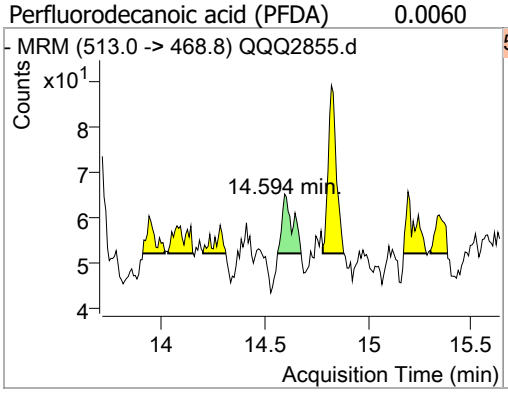
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	8.3445	14.82	0.19	76211				

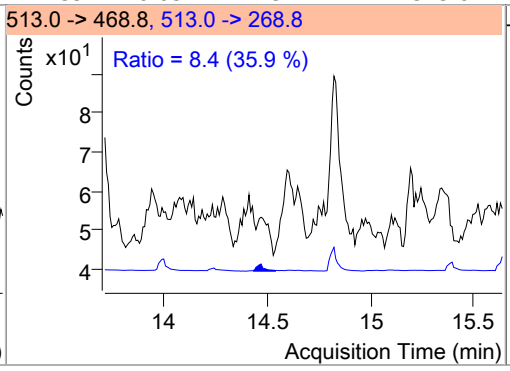


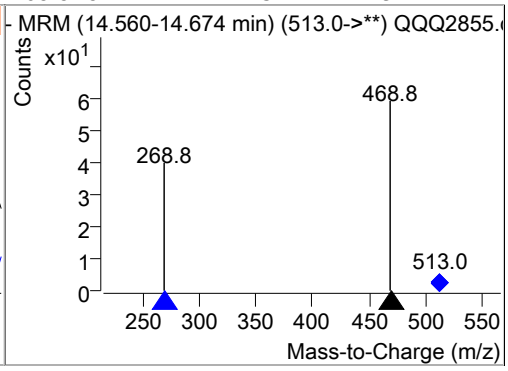




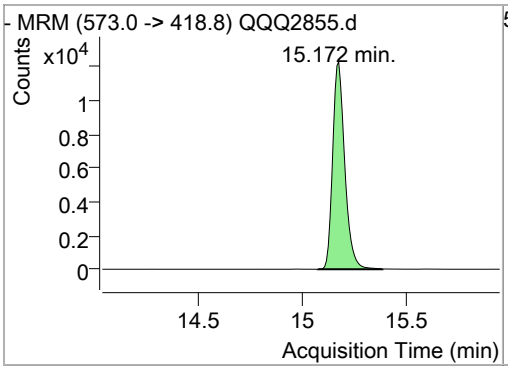
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	0.0060	14.59	-0.03	45	513.0 -> 268.8	8.4	17.5	29.1

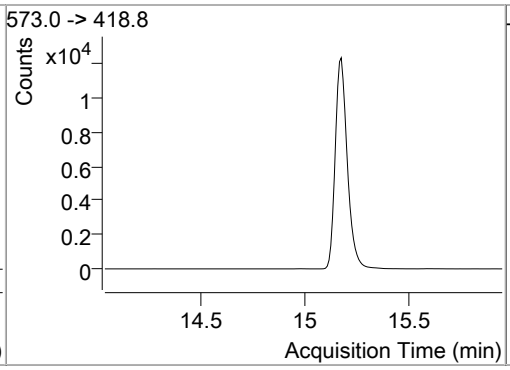


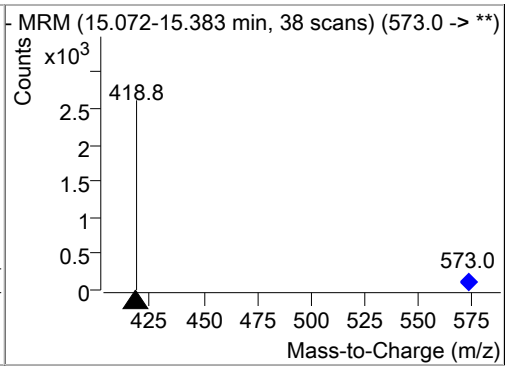




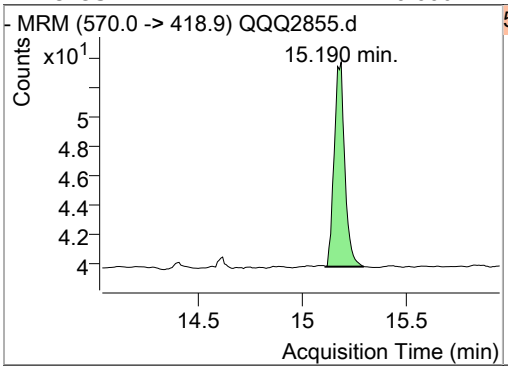
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	6.7425	15.17	0.24	49438				

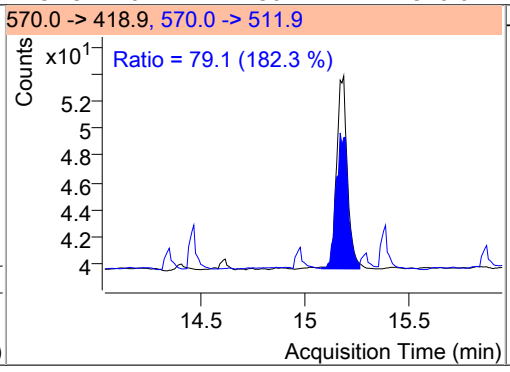


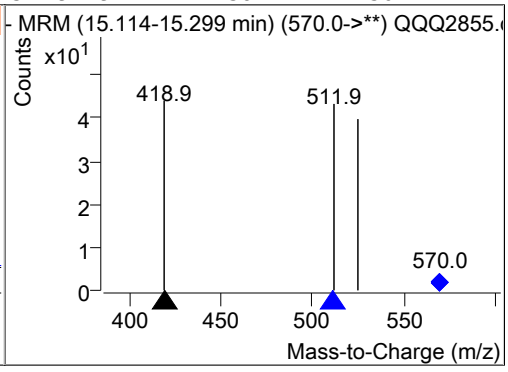




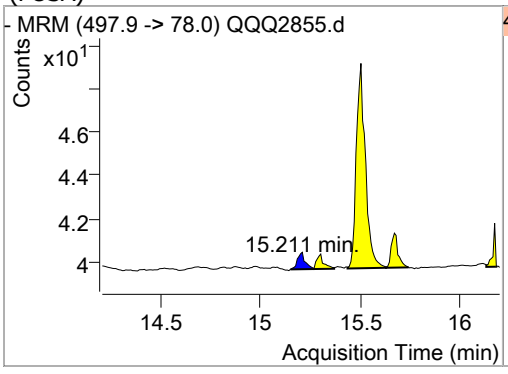
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	0.0064	15.19	0.24	50	570.0 -> 511.9	79.1	30.4	56.4

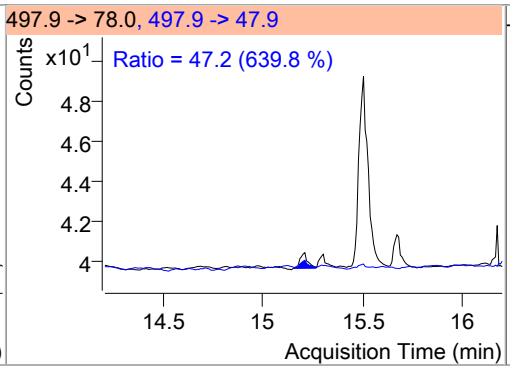


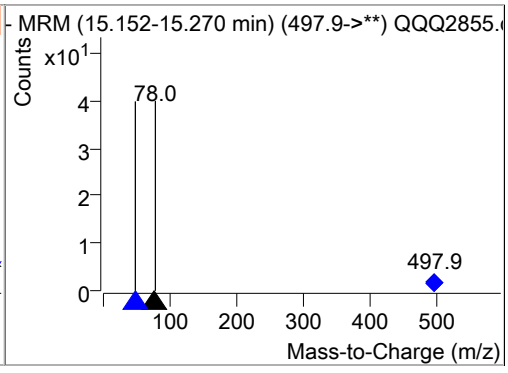




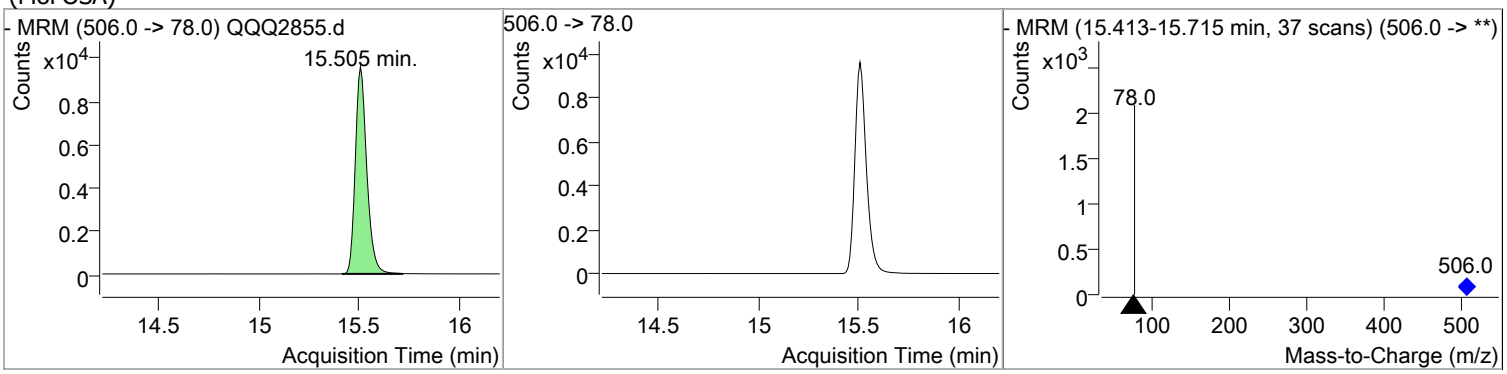
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	0.0003	15.21	0.03	2	497.9 -> 47.9	47.2	5.9	8.8



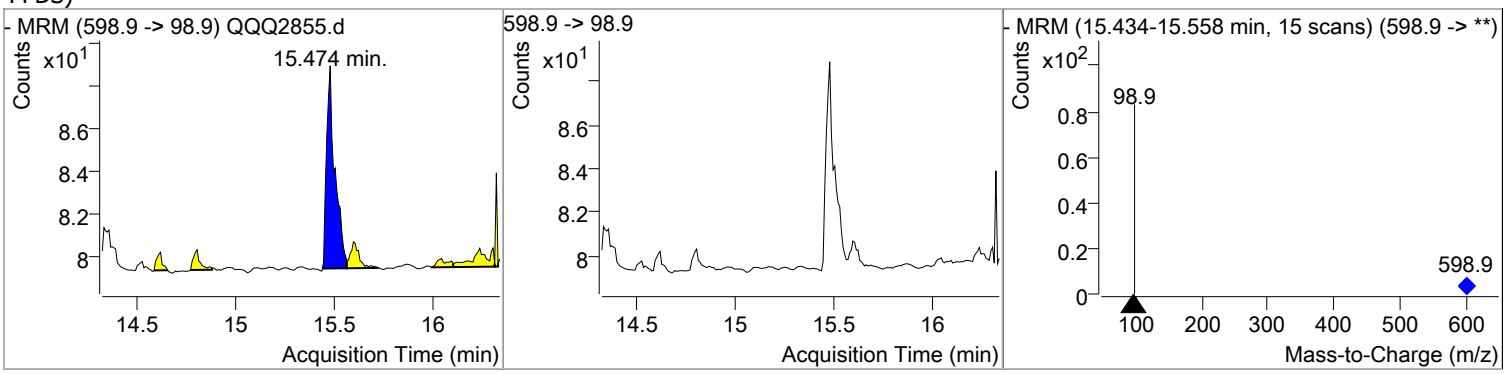




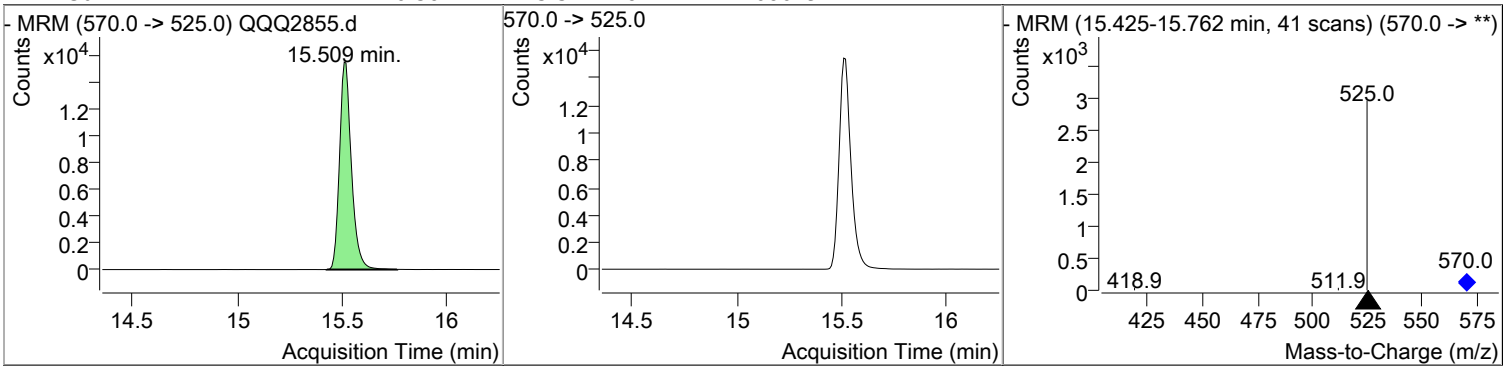
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	6.5264	15.51	0.31	38138				



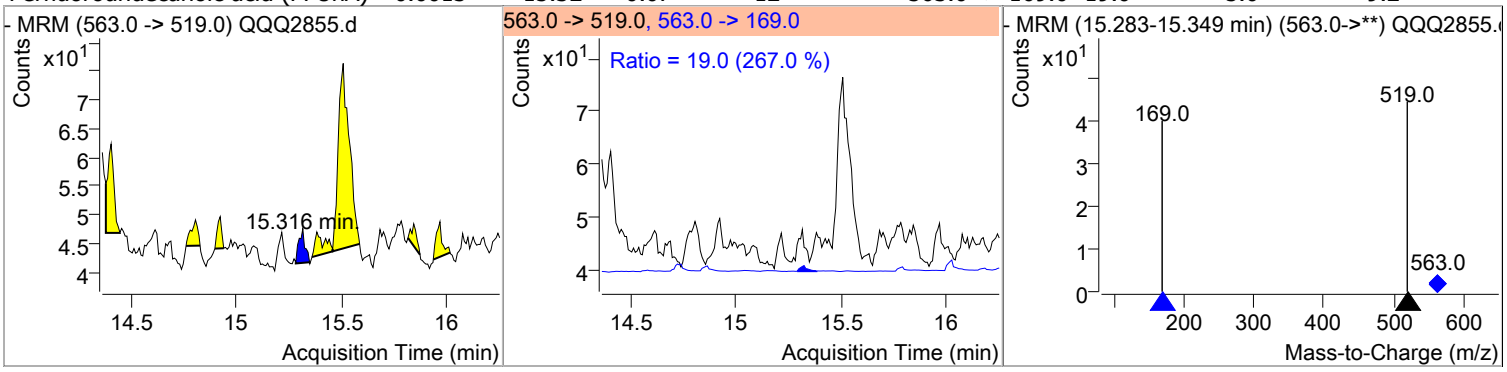
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	0.0093	15.47	0.26	28				



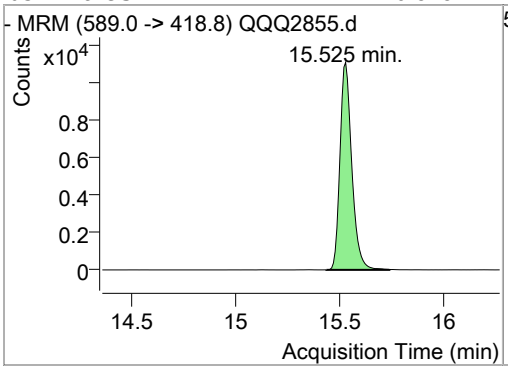
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	6.5024	15.51	0.27	60649				

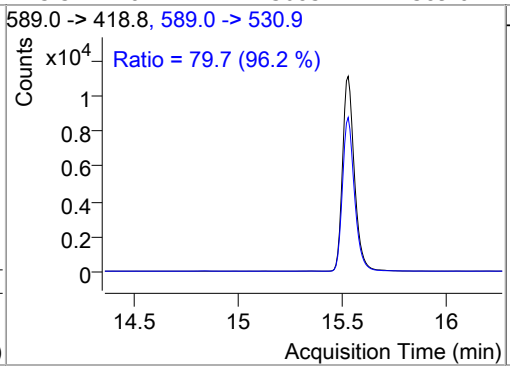


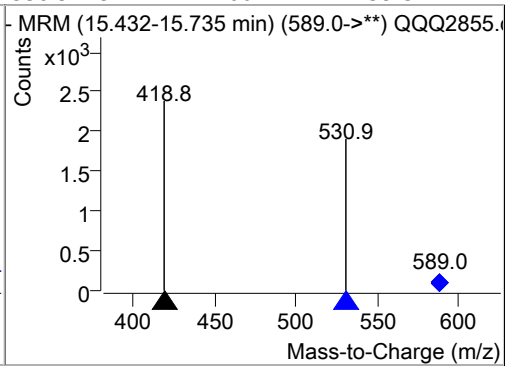
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	0.0013	15.32	0.07	12	563.0 -> 169.0	19.0	5.0	9.2



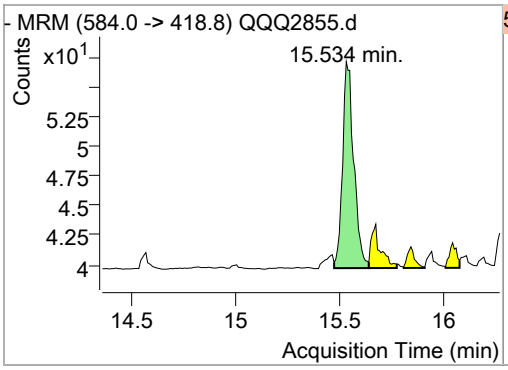
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	6.8282	15.52	0.27	43685	589.0 -> 530.9	79.7	66.2	99.3

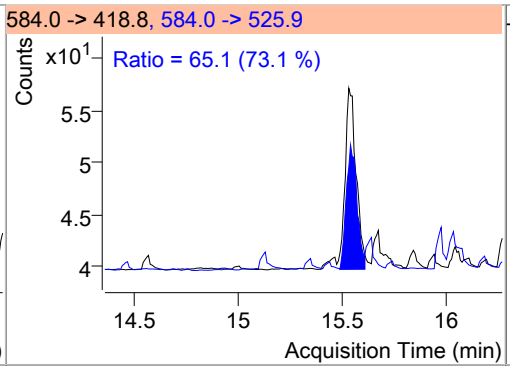


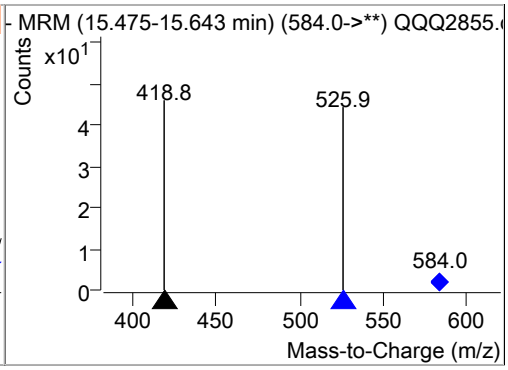




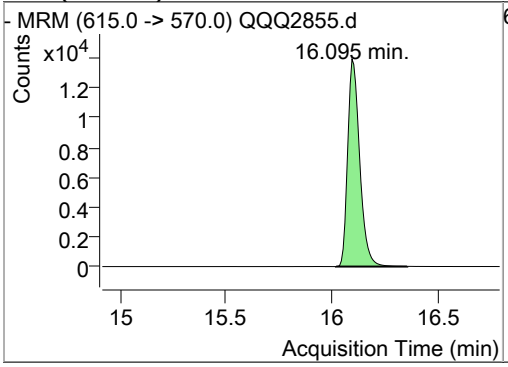
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	0.0106	15.53	0.27	66	584.0 -> 525.9	65.1	71.3	107.0

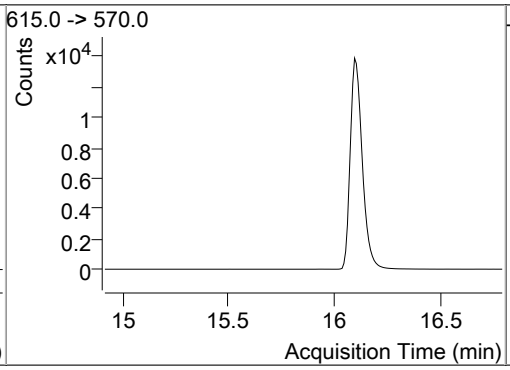


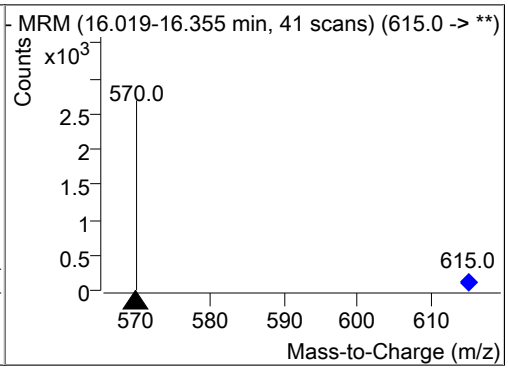




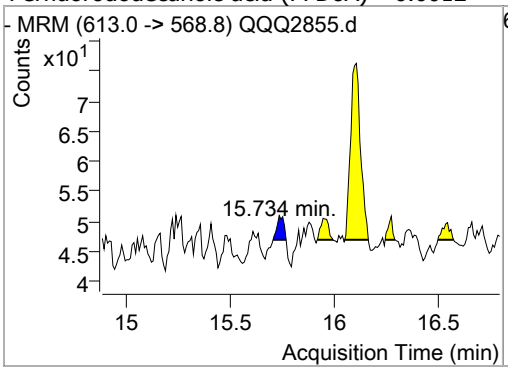
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.9770	16.10	0.32	54586				

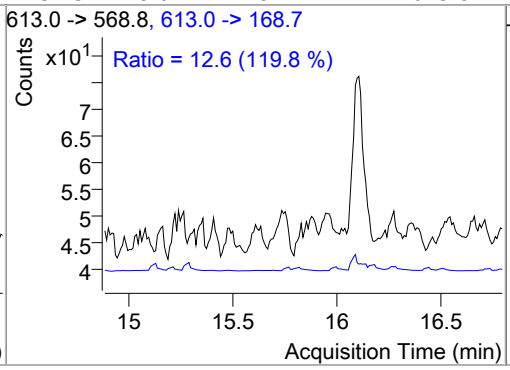


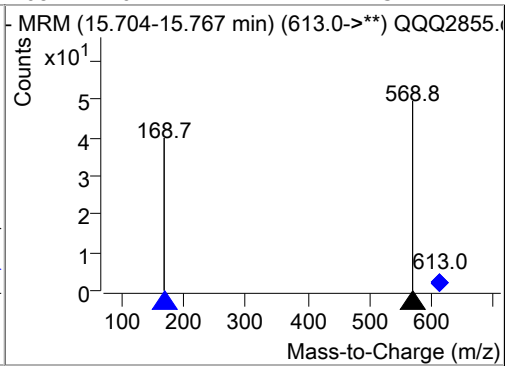




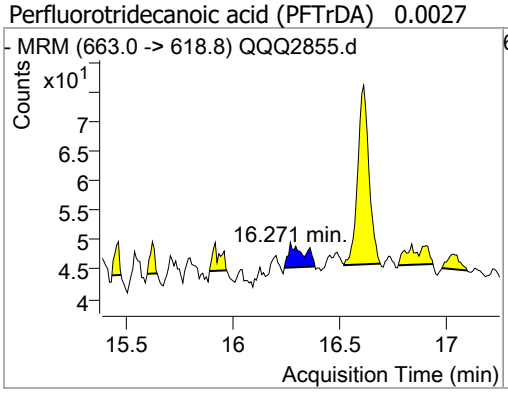
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	0.0012	15.73	-0.04	8	613.0 -> 168.7	12.6	7.4	13.7

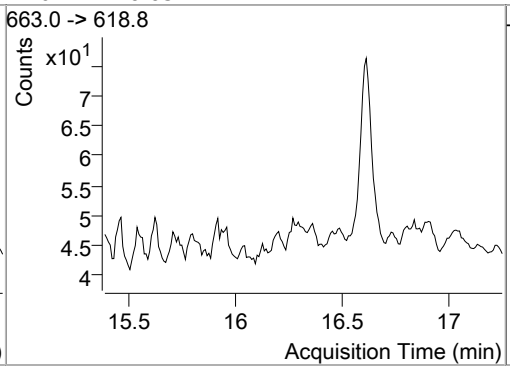


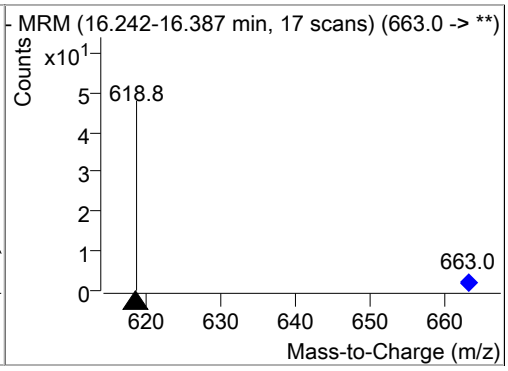




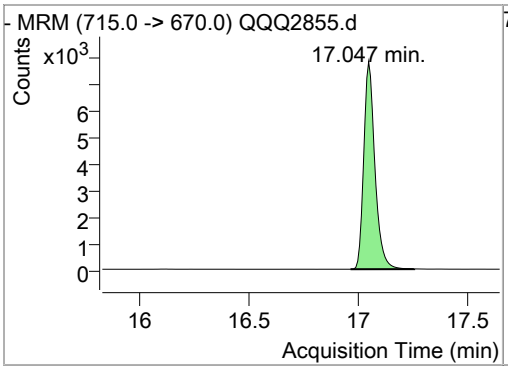
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	0.0027	16.27	0.03	21				

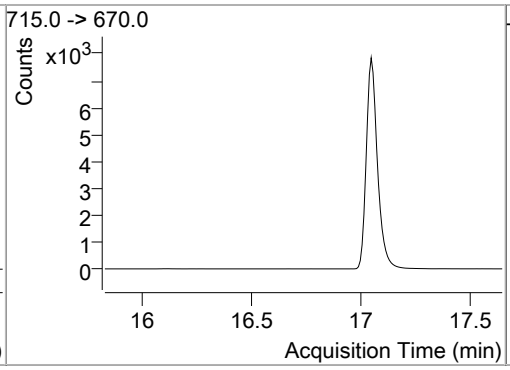


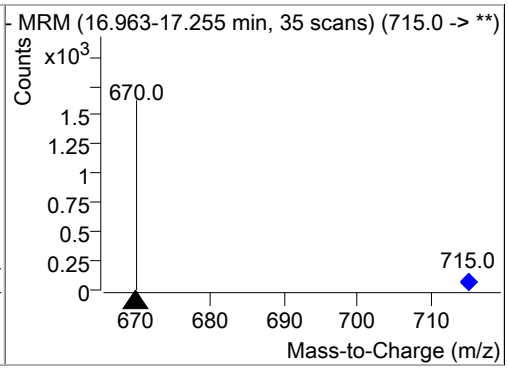




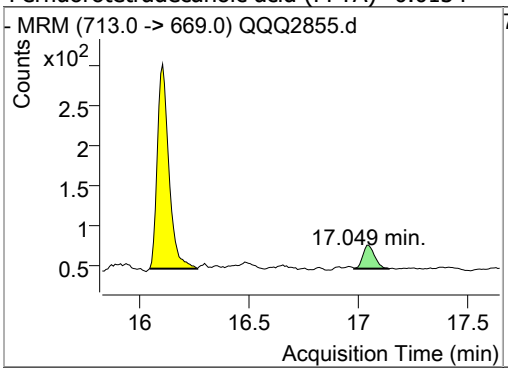
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	3.2628	17.05	0.41	27788				

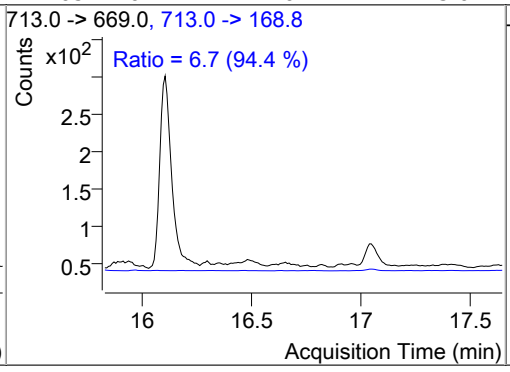


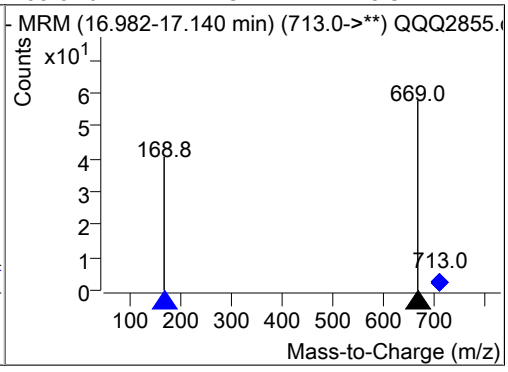




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	0.0134	17.05	0.41	110	713.0 -> 168.8	6.7	5.7	8.5







FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 537m

KMW-MW-11R

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-02	File ID:	QQQ2858.d
Sampled:	12/16/19 12:47	Prepared:	12/18/19 16:57	Analyzed:	12/20/19 12:18
Solids:		Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023
Instrument:	LCQQQ				

CAS NO.	COMPOUND	DILUTION	CONC. (ng/L)	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1	14.6	
307-24-4	Perfluorohexanoic acid (PFHxA)	1	37.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	1	11.3	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1	39.3	
335-67-1	Perfluorooctanoic acid (PFOA)	1	15.2	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1	19.0	
375-95-1	Perfluorononanoic acid (PFNA)	1	2.00	U
335-76-2	Perfluorodecanoic acid (PFDA)	1	2.00	U
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1	2.00	U
307-55-1	Perfluorododecanoic acid (PFDoA)	1	2.00	U
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	1	2.00	U
376-06-7	Perfluorotetradecanoic acid (PFTA)	1	2.00	U
2355-31-9	N-MeFOSAA	1	2.00	U
2991-50-6	N-EtFOSAA	1	2.00	U
2706-90-3	Perfluoropentanoic acid (PFPeA)	1	42.3	
754-91-6	Perfluoro-1-octanesulfonamide (FOSA)	1	2.00	U
375-92-8	Perfluoro-1-heptanesulfonic acid (PFHpS)	1	2.00	U
335-77-3	Perfluoro-1-decanesulfonic acid (PFDS)	1	2.00	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	1	5.00	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	1	2.00	U
375-22-4	Perfluoro-n-butanoic acid (PFBA)	1	15.8	

SYSTEM MONITORING COMPOUND	ADDED (ng/L)	CONC (ng/L)	% REC	QC LIMITS	Q
M3PFBS	74.3	47.3	63.7	25 - 150	
M5PFHxA	80.0	50.7	63.4	25 - 150	
M4PFHpA	80.0	54.2	67.7	25 - 150	
M3PFHxS	75.7	46.9	62.0	25 - 150	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	50.9	63.6	25 - 150	
M6PFDA	80.0	48.2	60.2	25 - 150	
M7PFUdA	80.0	41.2	51.5	25 - 150	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	41.2	51.5	25 - 150	
M2PFTeDA	80.0	27.8	34.8	10 - 150	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	48.8	61.0	25 - 150	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	45.7	59.7	25 - 150	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	50.3	62.8	25 - 150	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	44.3	55.3	10 - 150	
d3-N-MeFOSAA	80.0	42.9	53.6	25 - 150	
d5-N-EtFOSAA	80.0	44.1	55.2	25 - 150	
M2-6:2 FTS	75.9	83.2	110	25 - 150	
M2-8:2 FTS	76.6	68.3	89.1	25 - 150	
M9PFNA	80.0	55.5	69.3	25 - 150	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 537m

KMW-MW-11R

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-02	File ID:	QQQ2858.d
Sampled:	12/16/19 12:47	Prepared:	12/18/19 16:57	Analyzed:	12/20/19 12:18
Solids:		Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023
Instrument:	LCQQQ				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
MPFOA	258188.9	13.1099	214702.8	13.1099	

* Values outside of QC limits

Quantitation Results Report (Not Reviewed)

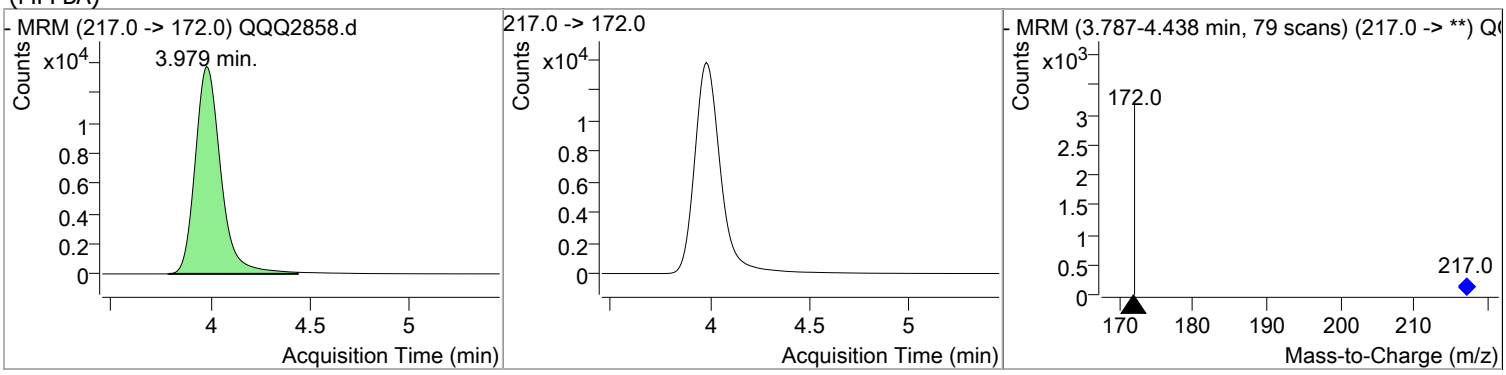
Data File	QQQ2858.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 12:18:30 PM
Sample Name	19L0685-02	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.110	417.0 -> 372.0	258189	10.0000	ng/ml	0.076
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.979	217.0 -> 172.0	123423	6.1029	ng/ml	-0.209
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 61.03%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	7.997	268.0 -> 223.0	173194	6.2817	ng/ml	-0.117
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 62.82%		
M3PFBS	8.743	302.0 -> 79.9	51483	5.9151	ng/ml	-0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 59.15%		
M2-4-2FTS	10.208	329.0 -> 309.0	73634	9.3050	ng/ml	-0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 93.05%		
M5PFHxA	10.345	318.0 -> 273.0	164629	6.3383	ng/ml	-0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.38%		
M4PFHpA	11.919	367.0 -> 322.0	48625	6.7715	ng/ml	0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 67.71%		
M3PFHxS	12.051	402.0 -> 80.0	35063	5.8646	ng/ml	0.008
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 58.65%		
M2-6-2FTS	13.040	429.0 -> 409.0	66517	10.3955	ng/ml	0.067
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 103.95%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.101	421.0 -> 376.0	86831	6.3577	ng/ml	0.076
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.58%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.065	472.0 -> 427.0	96893	6.9338	ng/ml	0.161
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.34%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.081	507.0 -> 80.0	26146	5.7117	ng/ml	0.169
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 57.12%		
M2-8-2FTS	14.845	529.0 -> 509.0	43828	8.5363	ng/ml	0.227
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 85.36%		
M6PFDA	14.863	519.0 -> 473.9	67047	6.0216	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.22%		
d3-N-MeFOSAA	15.206	573.0 -> 418.8	47940	5.3631	ng/ml	0.270
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 53.63%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	39410	5.5319	ng/ml	0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 55.32%		
M7PFUdA	15.543	570.0 -> 525.0	58573	5.1511	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.51%		
d5-N-EtFOSAA	15.558	589.0 -> 418.8	43041	5.5183	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 55.18%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.129	615.0 -> 570.0	57321	5.1483	ng/ml	0.353
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.48%		
M2PFTeDA	17.063	715.0 -> 670.0	36112	3.4780	ng/ml	0.426
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 34.78%		
Target Compounds						QValue

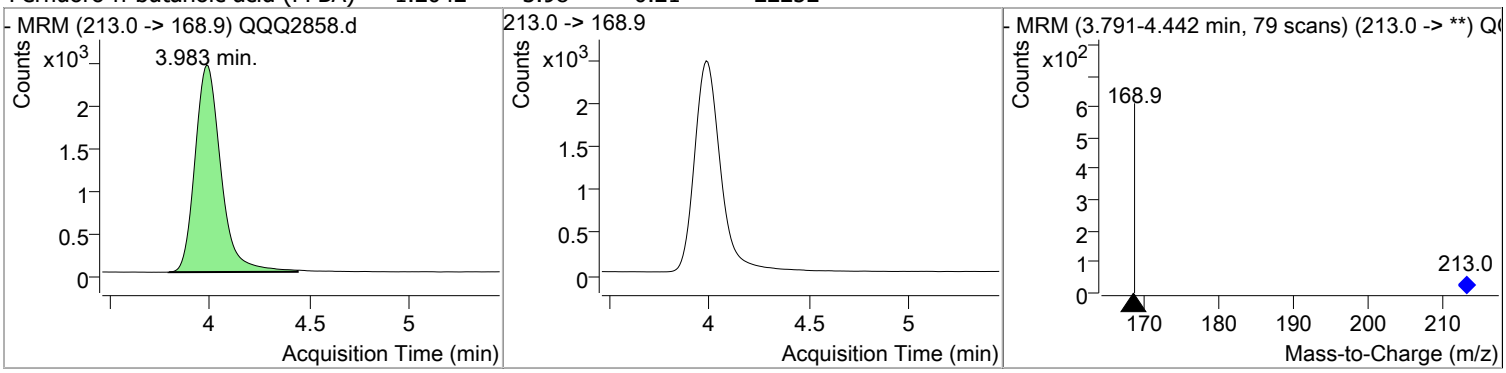
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	3.983	213.0 -> 168.9	22252	1.2042	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	7.999	263.0 -> 219.0	80862	3.3251	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.738	298.9 -> 79.9	8559	1.0769	ng/ml		100
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.435	327.0 -> 307.0	202	0.0000	ng/ml	#	36
Perfluorohexanoic acid (PFHxA)	10.347	313.0 -> 268.9	65107	2.9290	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.666	348.9 -> 79.9	5521	0.7729	ng/ml		98
Perfluoroheptanoic acid (PFHpA)	11.920	363.0 -> 318.8	16105	0.9532	ng/ml		99
Perfluorohexanesulfonic acid (PFHxS)	12.052	398.9 -> 79.9	17714	2.8816	ng/ml	m	95
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.032	427.0 -> 407.0	361	0.0535	ng/ml	#	84
Perfluorooctanoic acid (PFOA)	13.102	413.0 -> 368.8	15839	1.2071	ng/ml		92
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.157	448.9 -> 80.0	369	0.0832	ng/ml		91
Perfluorononanoic acid (PFNA)	14.065	463.0 -> 418.8	575	0.0544	ng/ml	#	89
Perfluorooctanesulfonic acid (PFOS)	14.081	498.9 -> 79.9	7388	1.3546	ng/ml	#m	72
Perfluorononanesulfonate (L-PFNS)	14.693	548.9 -> 79.9	2	0.0005	ng/ml	#	61
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.863	527.0 -> 507.0	82	0.0000	ng/ml		94
Perfluorodecanoic acid (PFDA)	14.594	513.0 -> 468.8	66	0.0072	ng/ml	#	60
N-MeFOSAA	15.198	570.0 -> 418.9	100	0.0104	ng/ml	#	58
Perfluoro-1-octanesulfonamide (FOSA)	15.321	497.9 -> 78.0	28	0.0037	ng/ml	#	91
Perfluoro-1-decanesulfonate (L-PFDS)	15.432	598.9 -> 98.9	4	0.0012	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.350	563.0 -> 519.0	11	0.0009	ng/ml	#	1
N-EtFOSAA	15.567	584.0 -> 418.8	81	0.0107	ng/ml	#	76
Perfluorododecanoic acid (PFDoA)	15.801	613.0 -> 568.8	17	0.0021	ng/ml	#	87
Perfluorotridecanoic acid (PFTrDA)	16.221	663.0 -> 618.8	7	0.0007	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	157	0.0157	ng/ml		99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

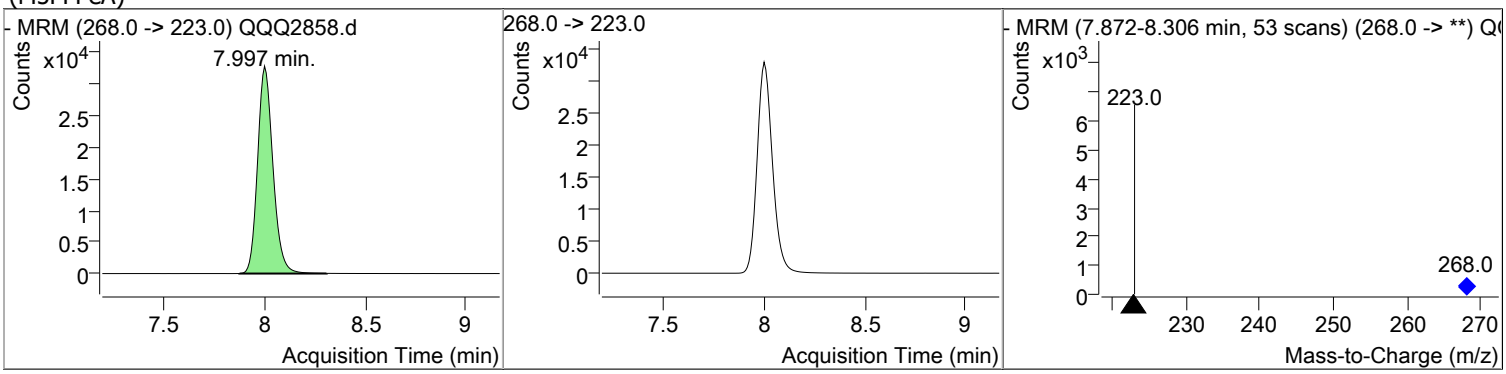
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	6.1029	3.98	-0.21	123423				



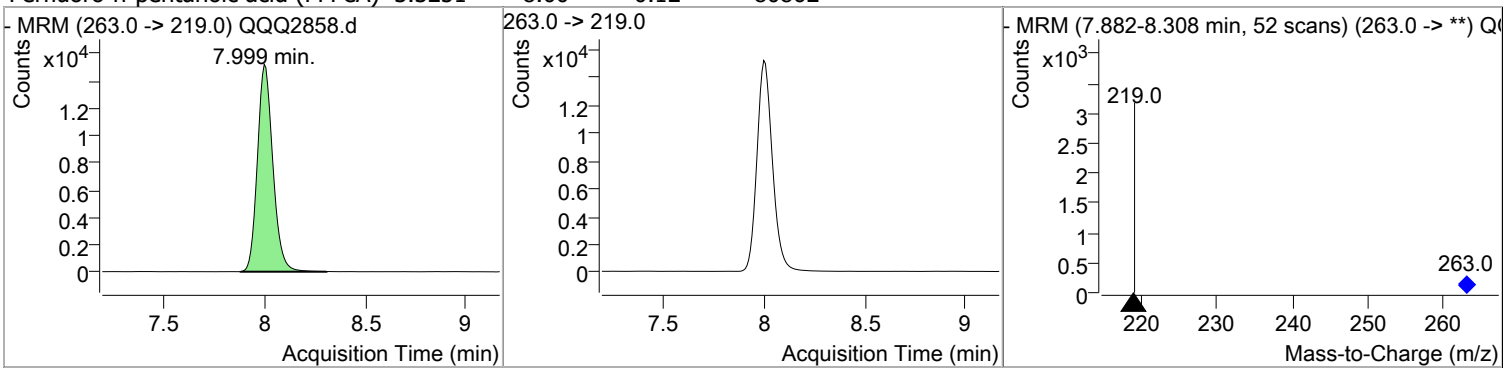
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	1.2042	3.98	-0.21	22252				



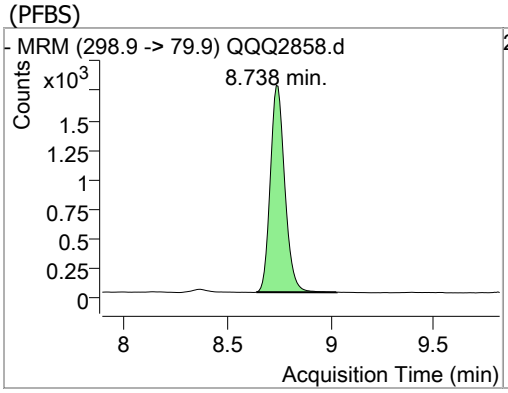
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	6.2817	8.00	-0.12	173194				

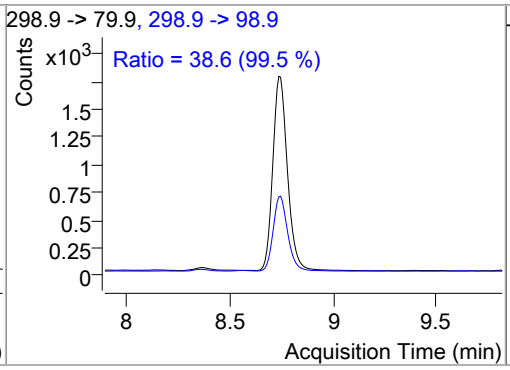


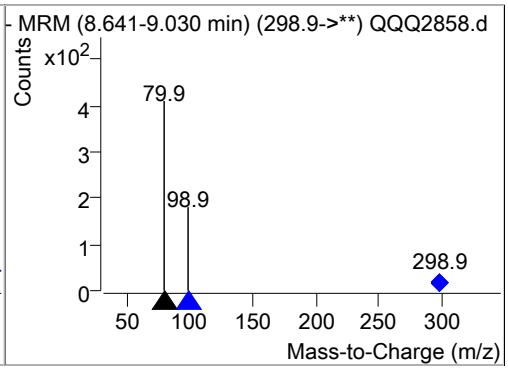
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	3.3251	8.00	-0.12	80862				



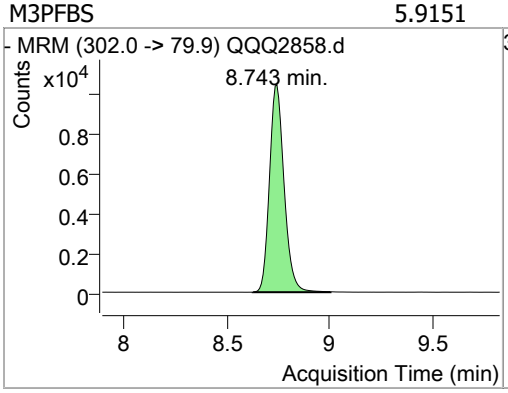
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	1.0769	8.74	-0.08	8559	298.9 -> 98.9	38.6	31.0	46.5

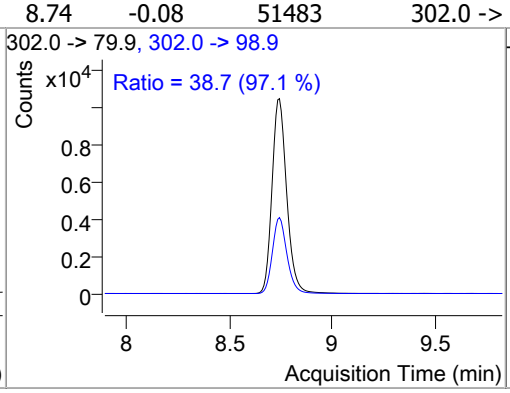


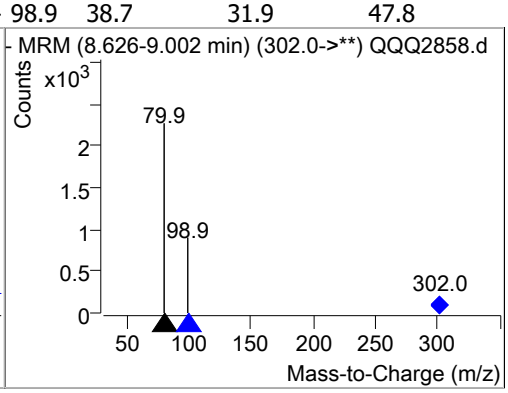




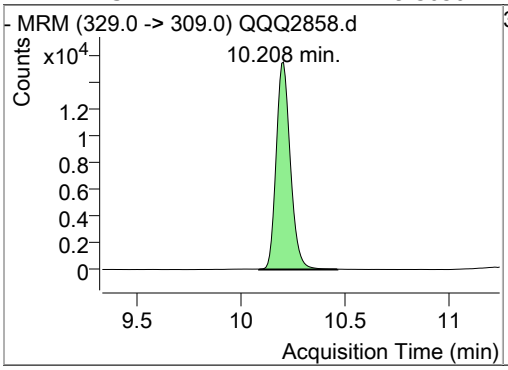
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	5.9151	8.74	-0.08	51483	302.0 -> 98.9	38.7	31.9	47.8

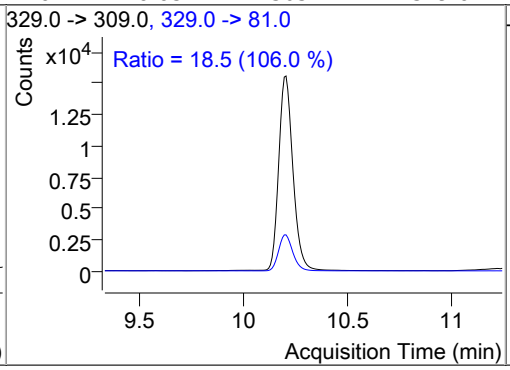


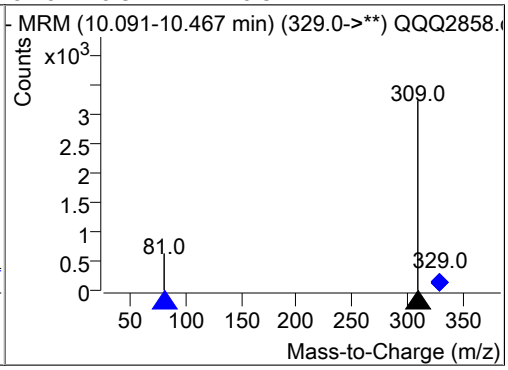




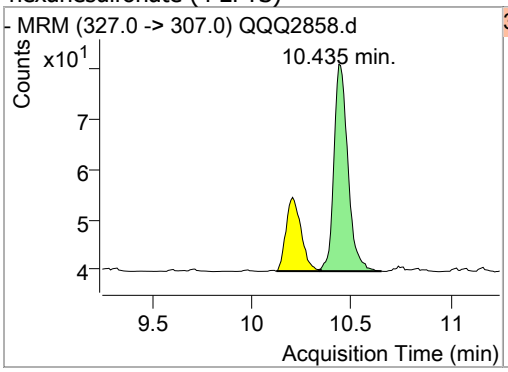
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	9.3050	10.21	-0.05	73634	329.0 -> 81.0	18.5	10.5	24.4

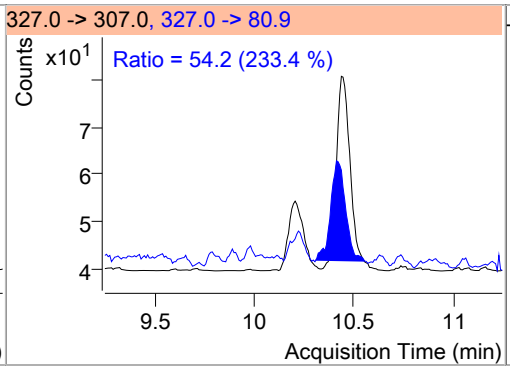


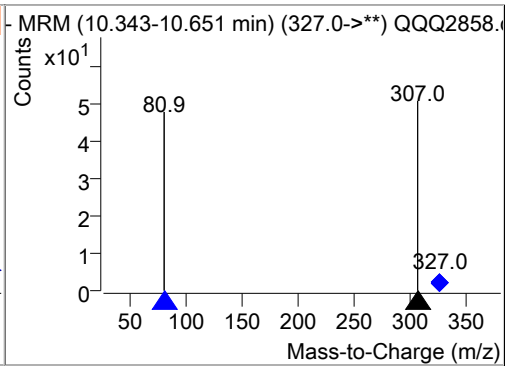




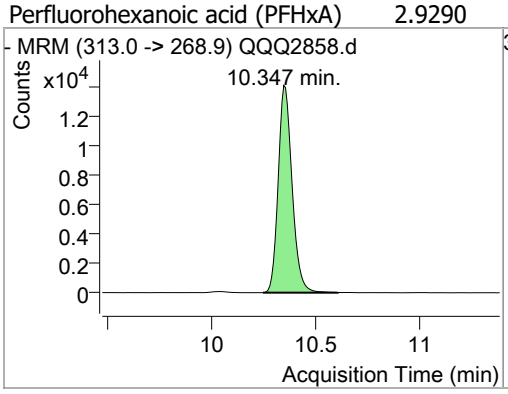
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	0.0000	10.44	0.18	202	327.0 -> 80.9	54.2	13.9	32.5

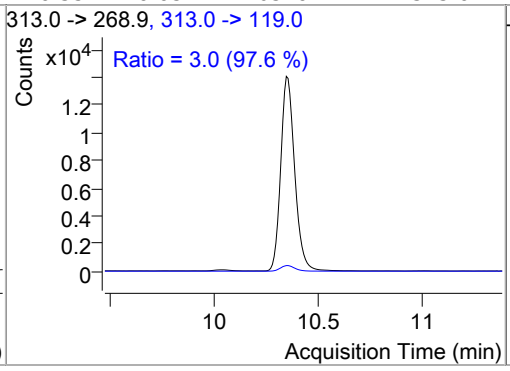


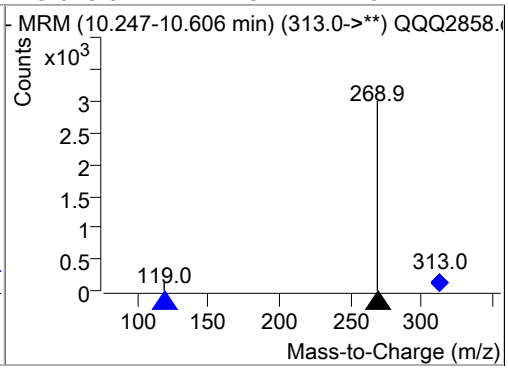




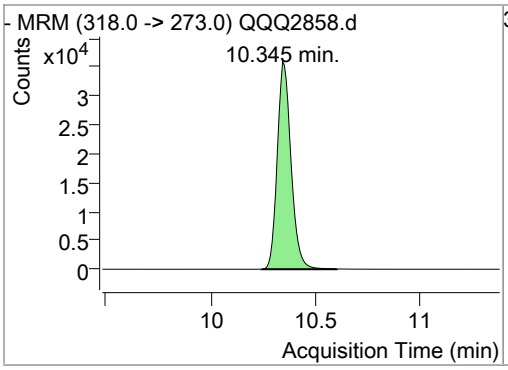
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	2.9290	10.35	-0.05	65107	313.0 -> 119.0	3.0	2.5	3.7

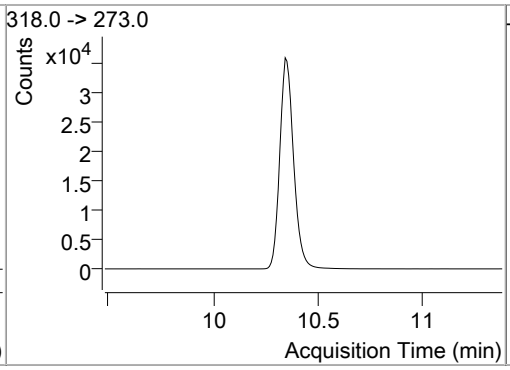


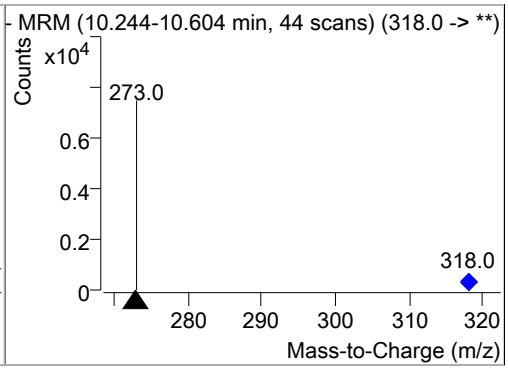




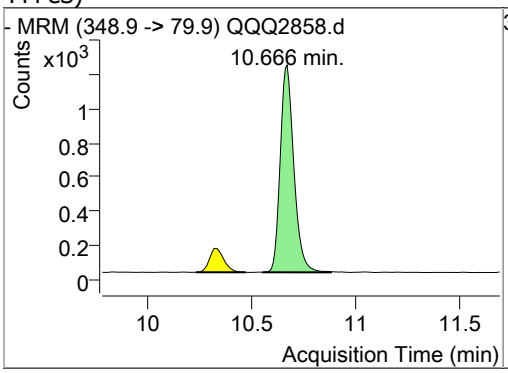
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	6.3383	10.34	-0.06	164629				

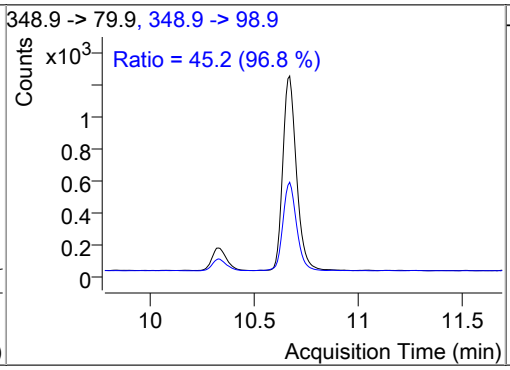


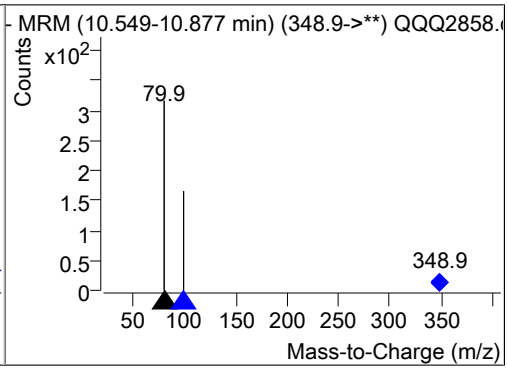




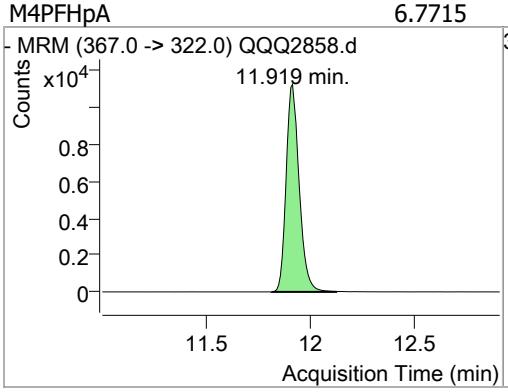
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	0.7729	10.67	-0.03	5521	348.9 -> 98.9	45.2	37.3	56.0

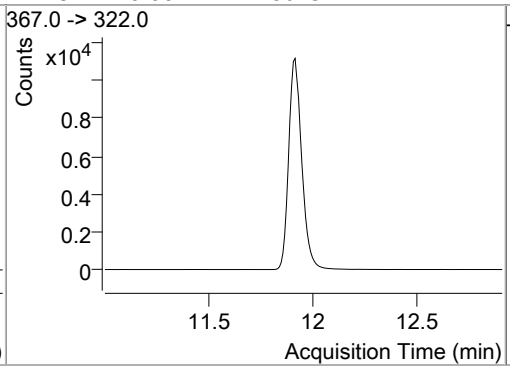


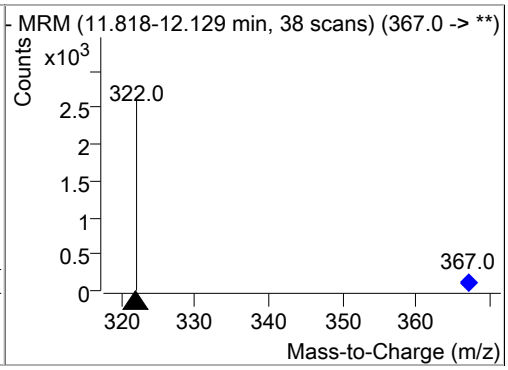




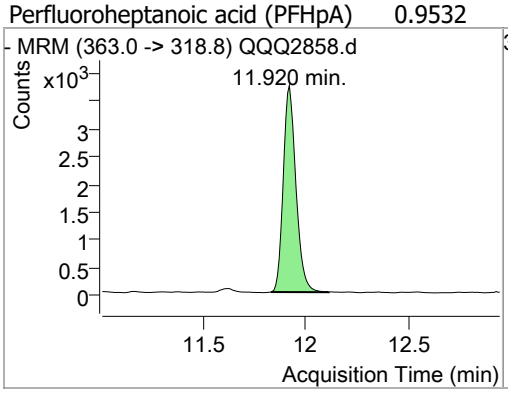
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	6.7715	11.92	0.00	48625				

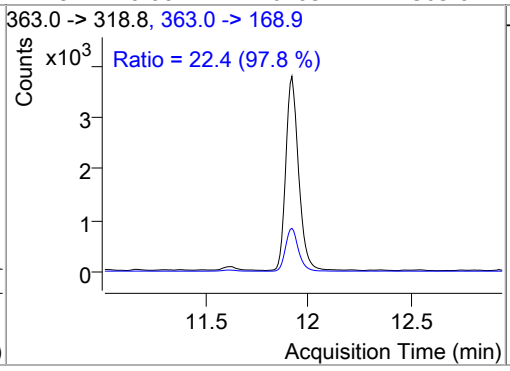


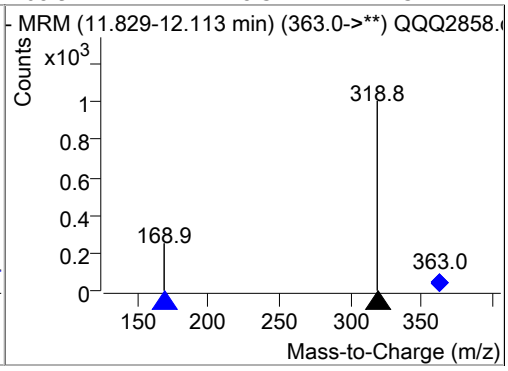




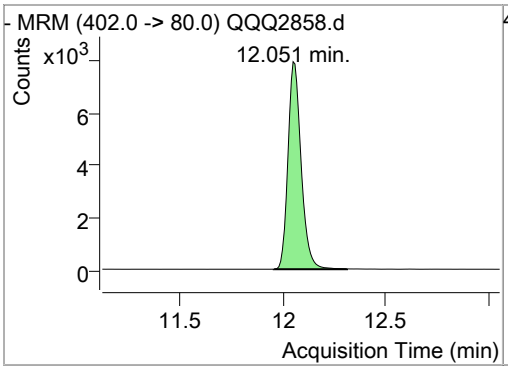
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	0.9532	11.92	0.00	16105	363.0 -> 168.9	22.4	18.3	27.5

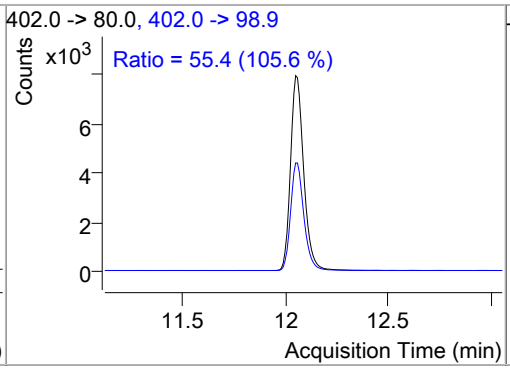


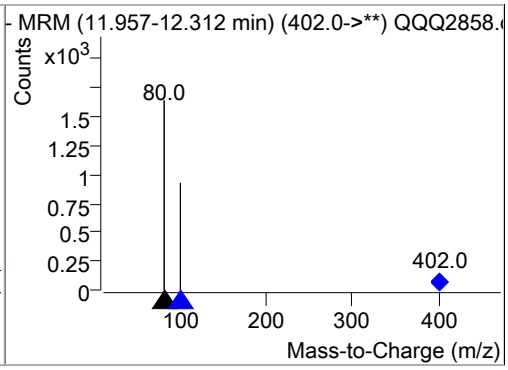




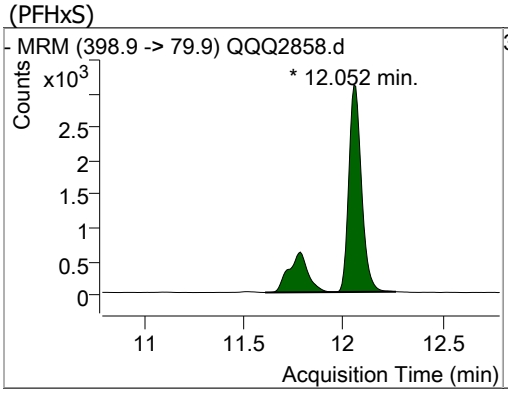
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	5.8646	12.05	0.01	35063	402.0 -> 98.9	55.4	42.0	62.9

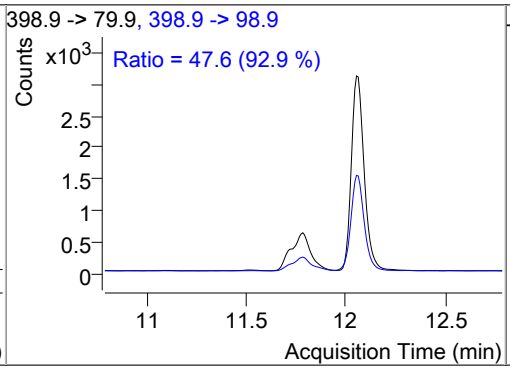


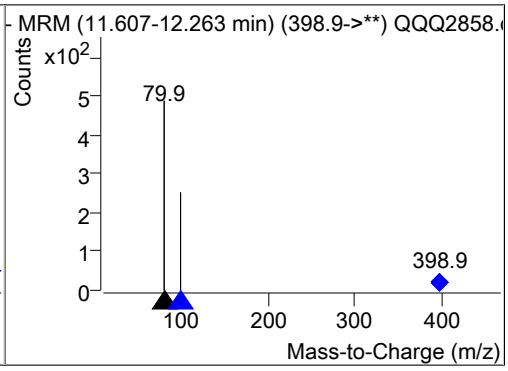




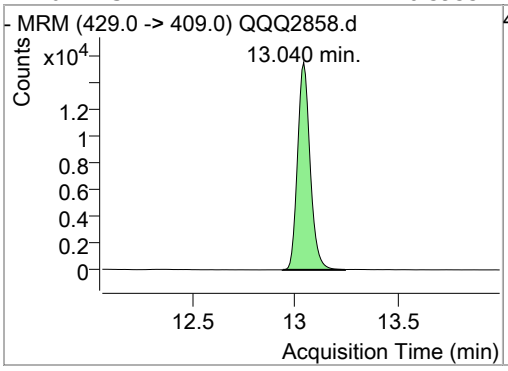
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	2.8816	12.05	0.01	17714 (m)	398.9 -> 98.9	47.6	41.0	61.5

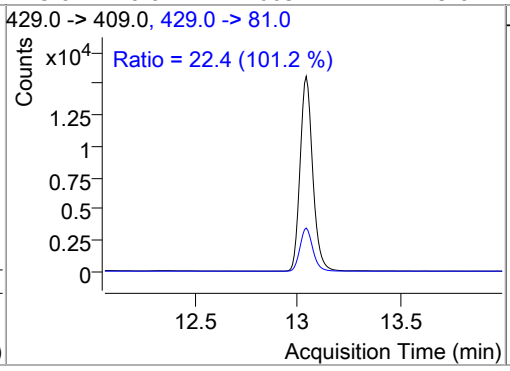


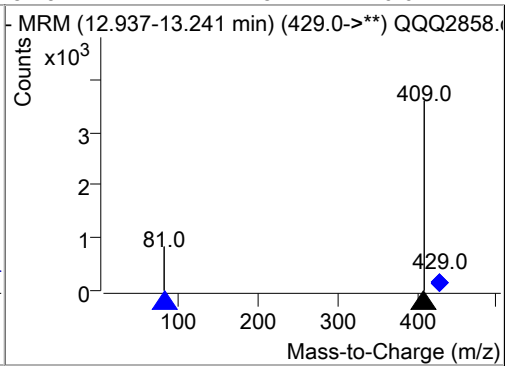




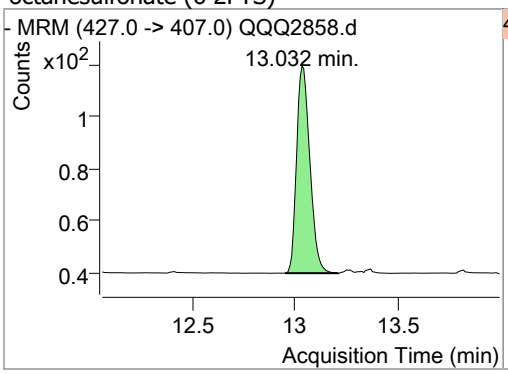
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	10.3955	13.04	0.07	66517	429.0 -> 81.0	22.4	17.8	26.6

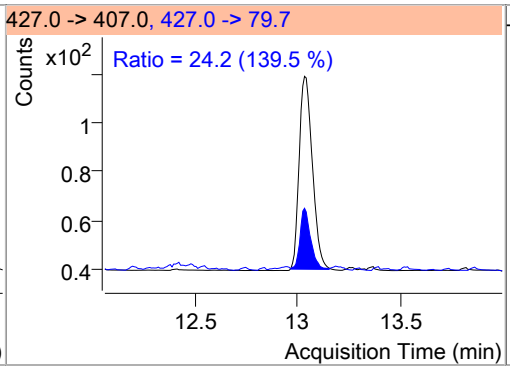


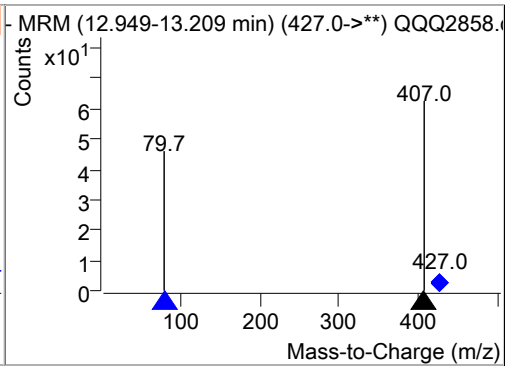




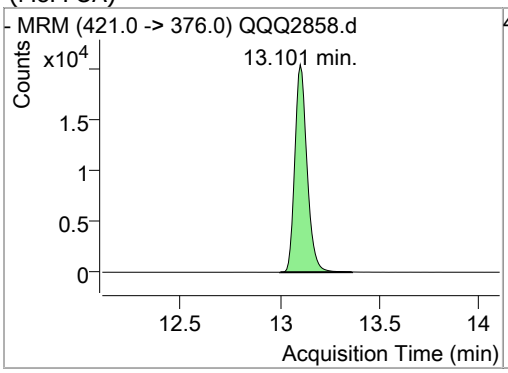
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	0.0535	13.03	0.06	361	427.0 -> 79.7	24.2	13.9	20.8

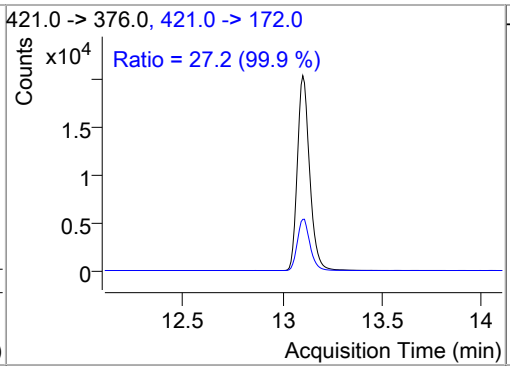


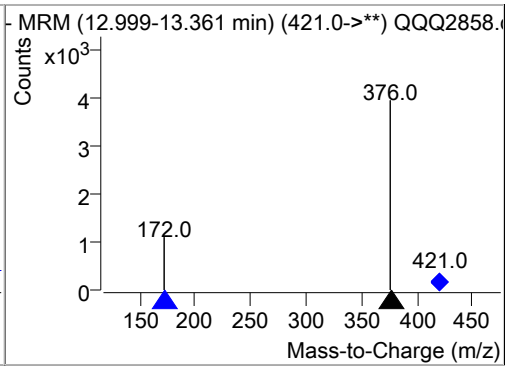




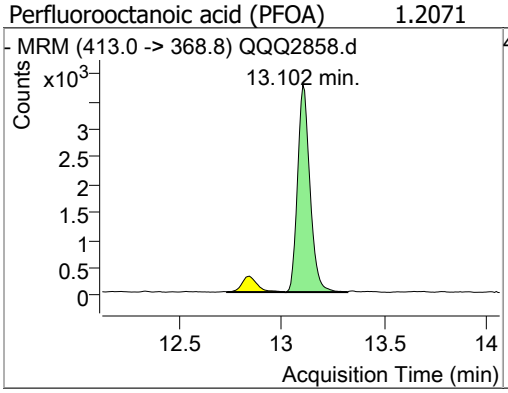
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	6.3577	13.10	0.08	86831	421.0 -> 172.0	27.2	21.7	32.6

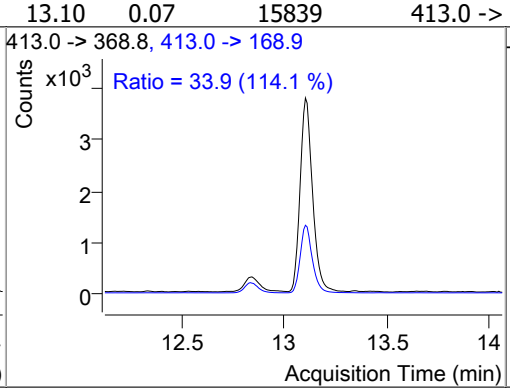


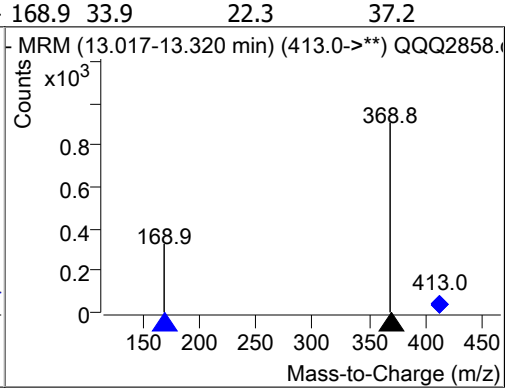




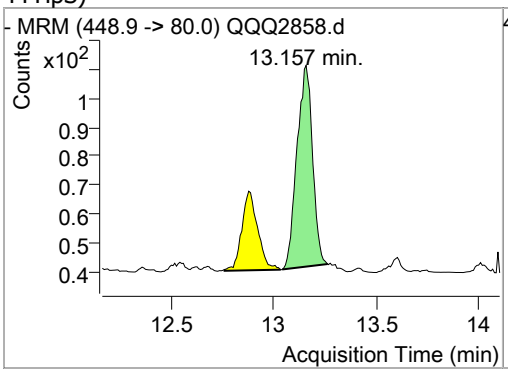
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	1.2071	13.10	0.07	15839	413.0 -> 168.9	33.9	22.3	37.2

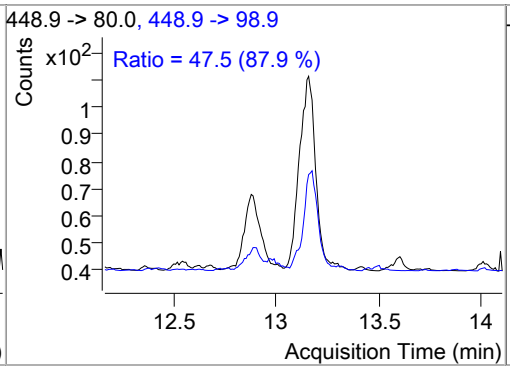


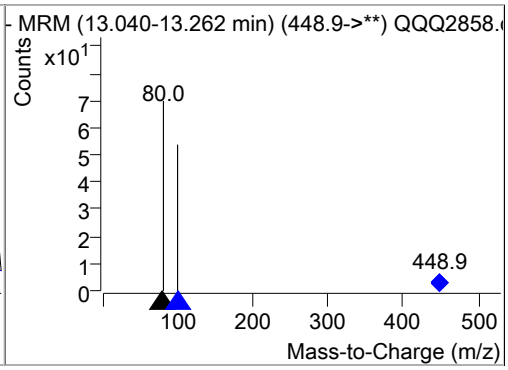




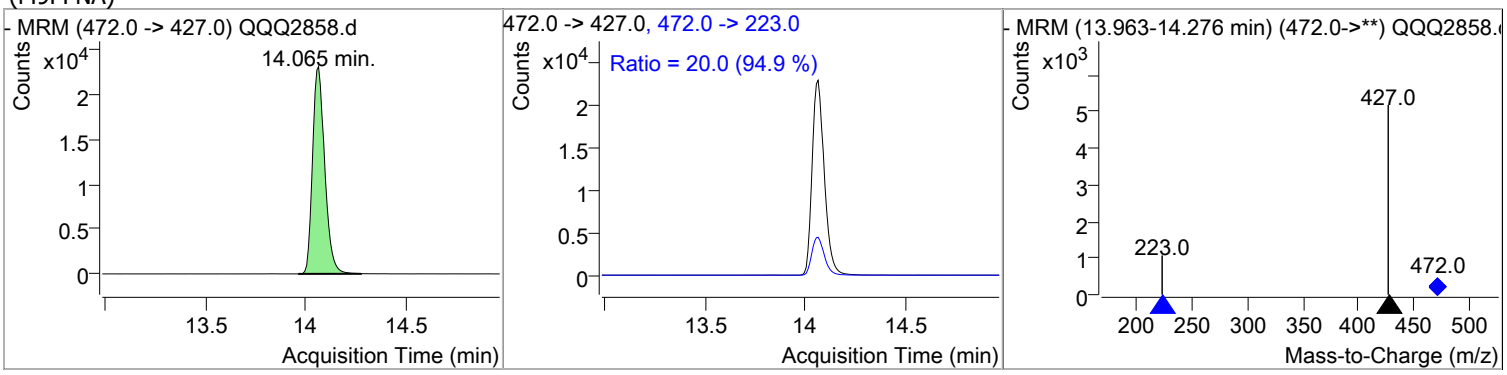
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	0.0832	13.16	0.08	369	448.9 -> 98.9	47.5	43.3	64.9



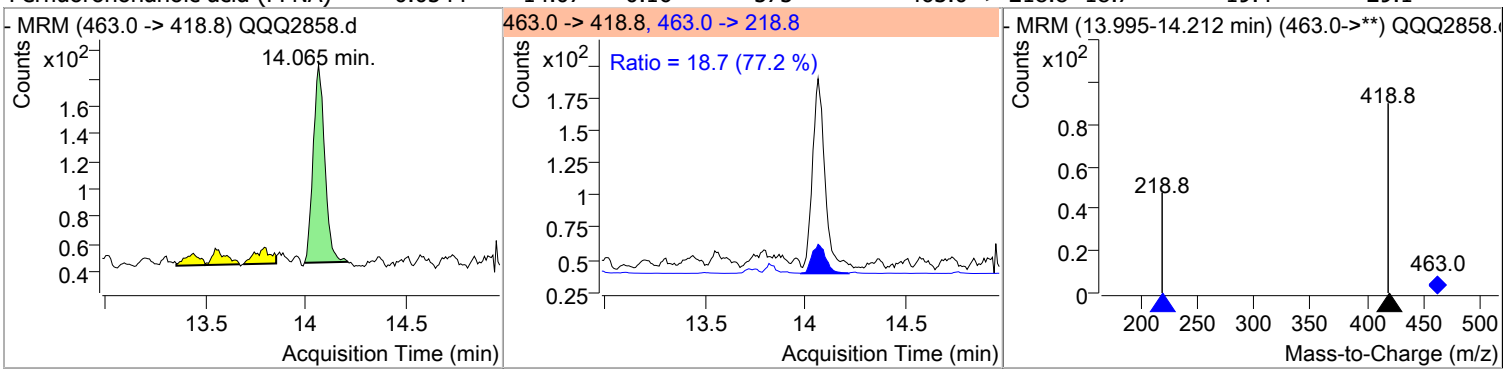




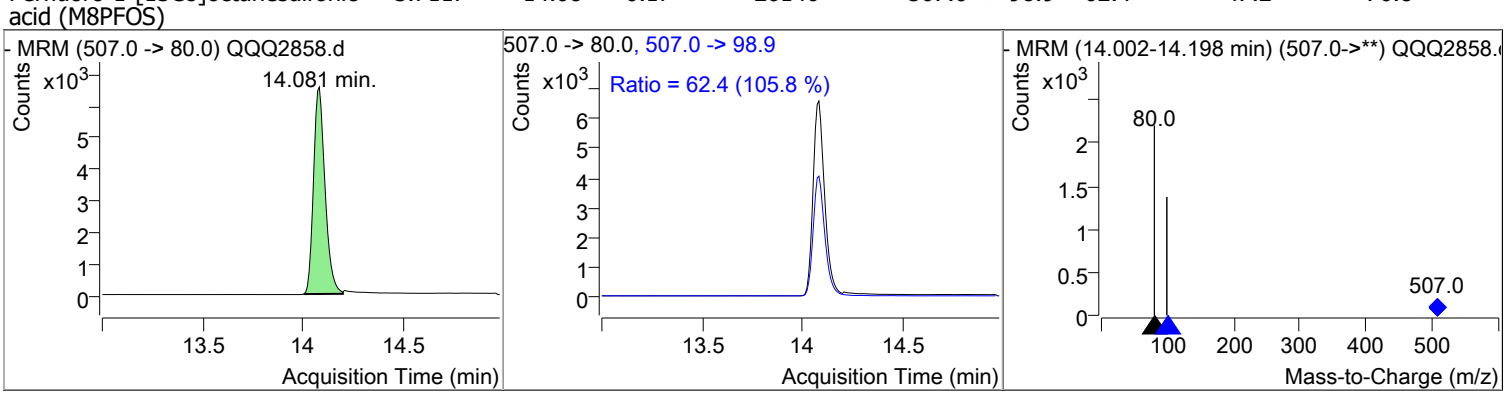
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	6.9338	14.06	0.16	96893	472.0 -> 223.0	20.0	16.9	25.4



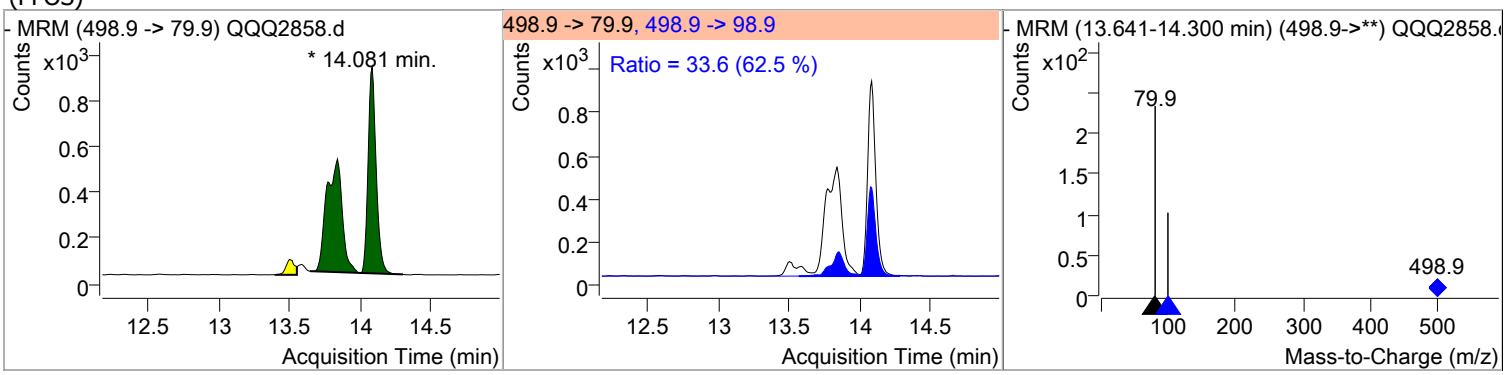
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	0.0544	14.07	0.16	575	463.0 -> 218.8	18.7	19.4	29.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	5.7117	14.08	0.17	26146	507.0 -> 98.9	62.4	47.2	70.8

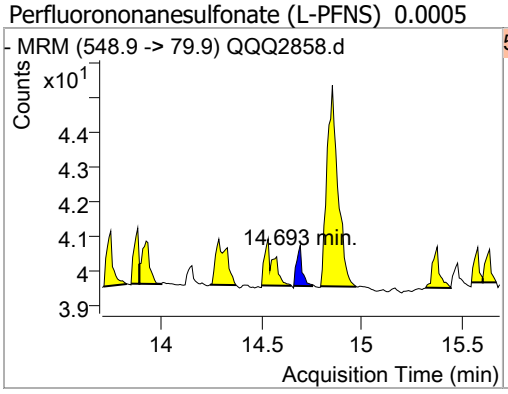


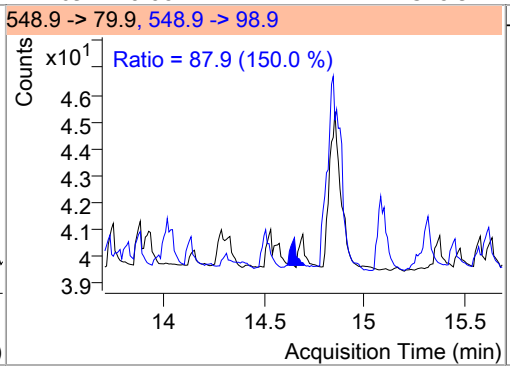
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	1.3546	14.08	0.17	7388 (m)	498.9 -> 98.9	33.6	43.1	64.6

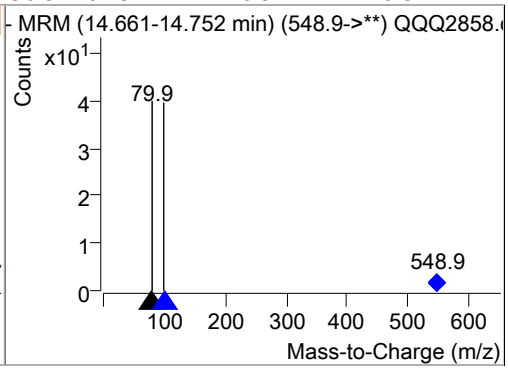


Quantitation Results Report (Not Reviewed)

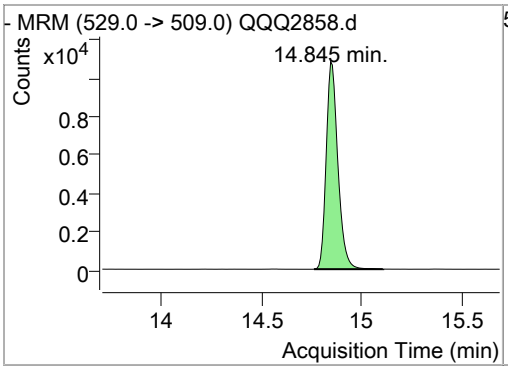
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	0.0005	14.69	0.08	2	548.9 -> 98.9	87.9	46.9	70.3

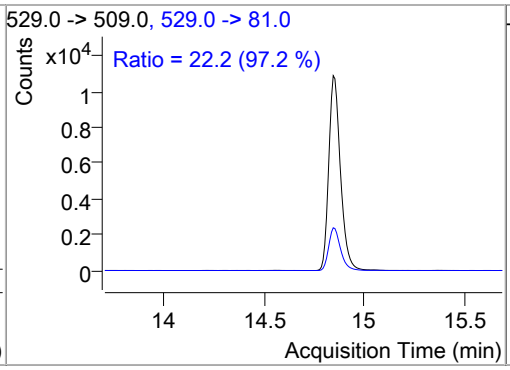


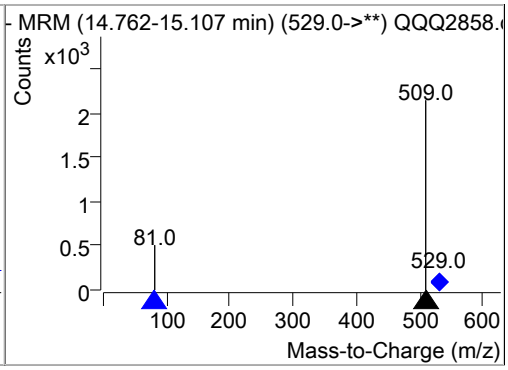




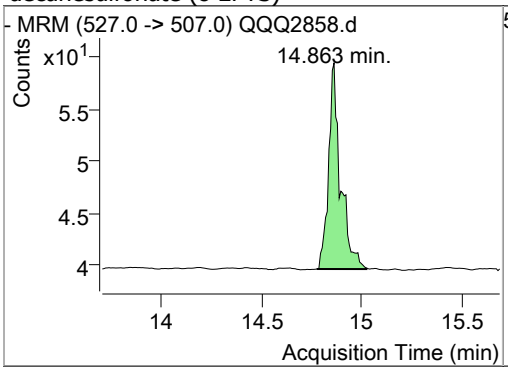
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	8.5363	14.85	0.23	43828	529.0 -> 81.0	22.2	18.3	27.4

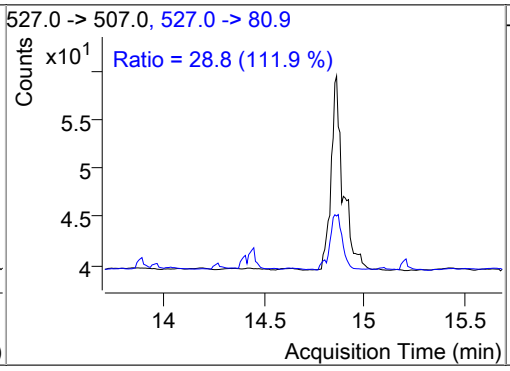


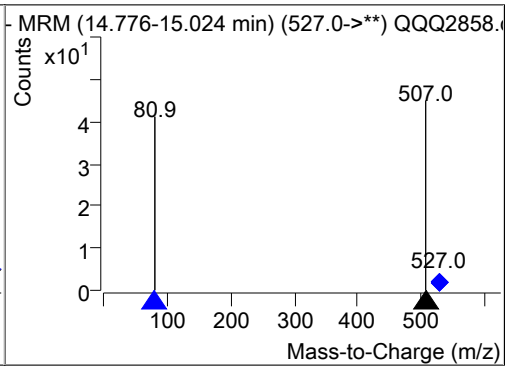




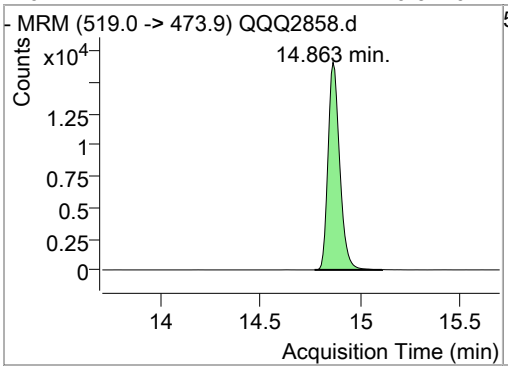
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	0.0000	14.86	0.24	82	527.0 -> 80.9	28.8	20.6	30.9

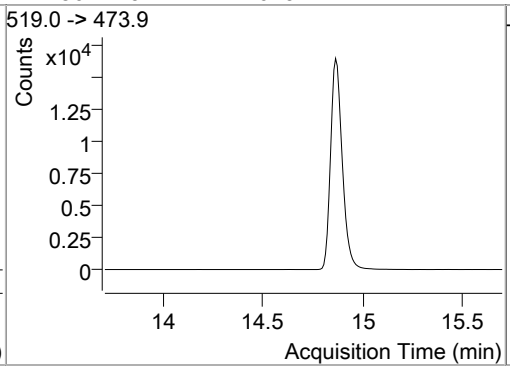


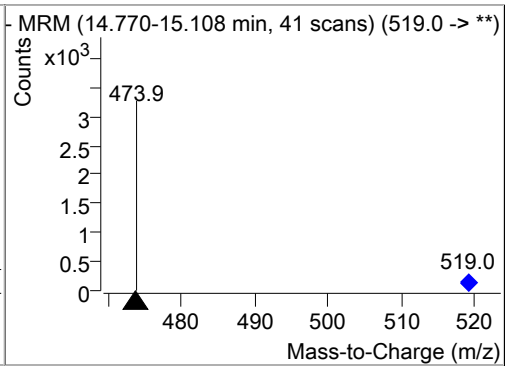




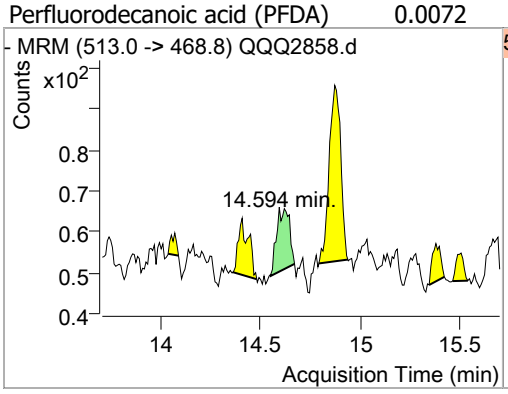
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	6.0216	14.86	0.24	67047				

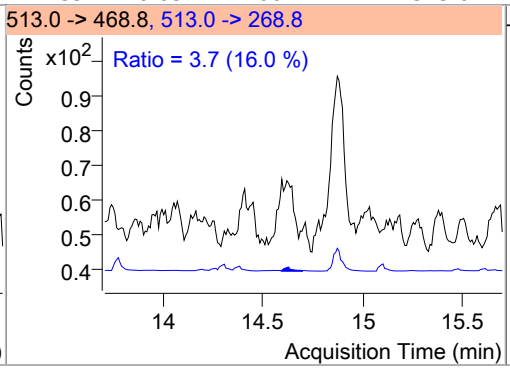


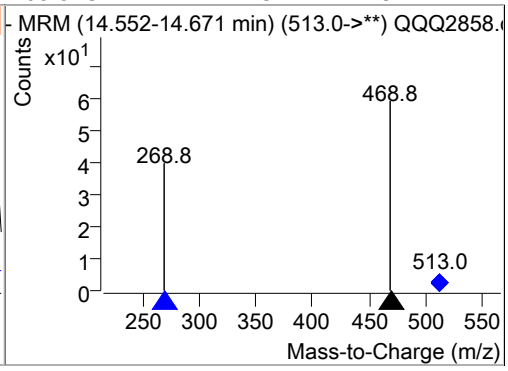




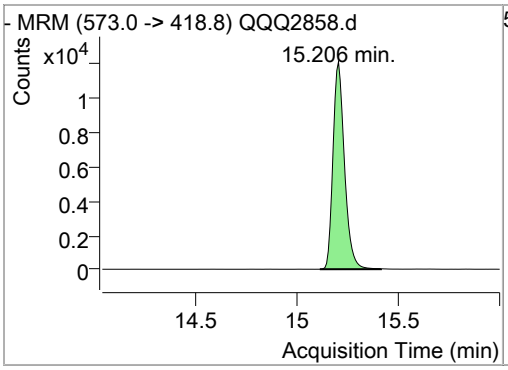
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	0.0072	14.59	-0.03	66	513.0 -> 268.8	3.7	17.5	29.1

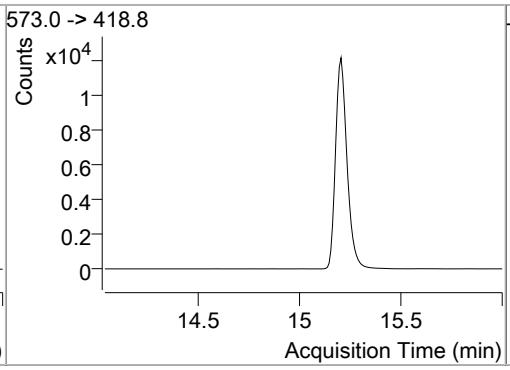


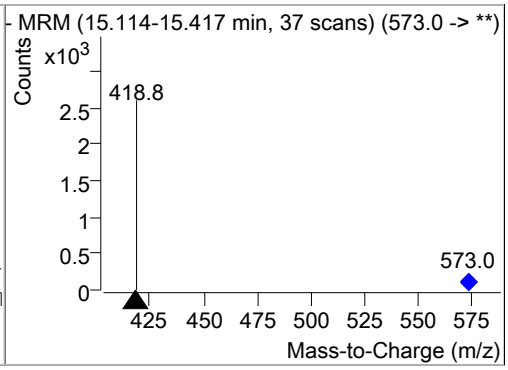




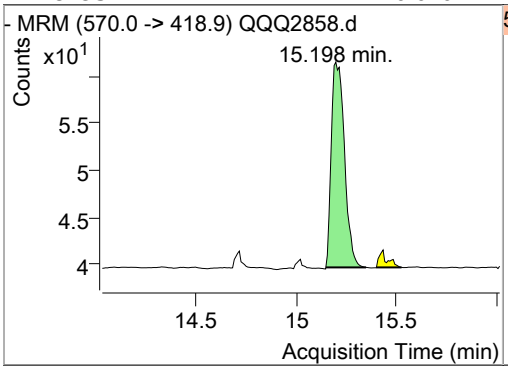
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	5.3631	15.21	0.27	47940				

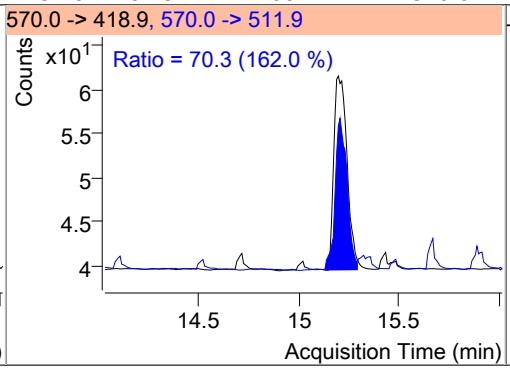


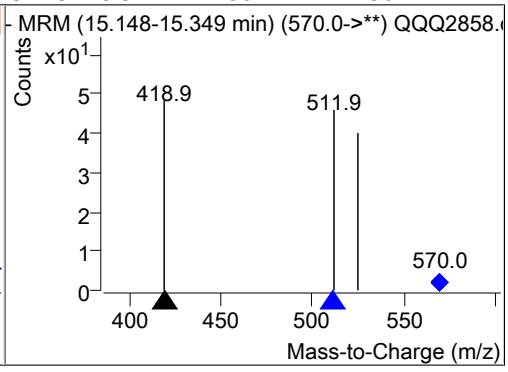




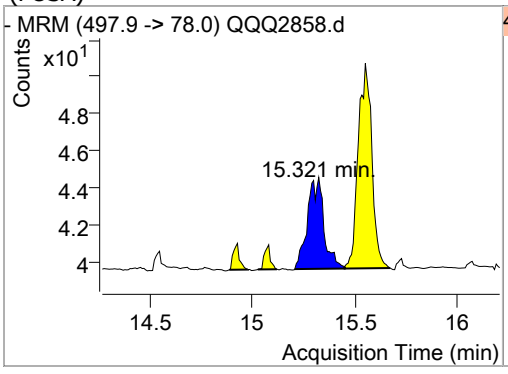
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	0.0104	15.20	0.25	100	570.0 -> 511.9	70.3	30.4	56.4

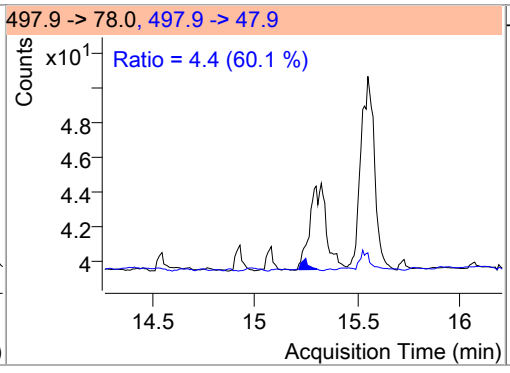


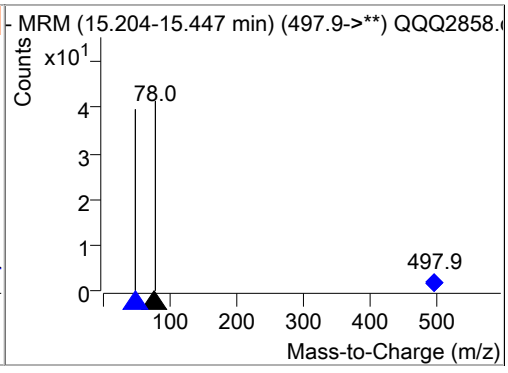




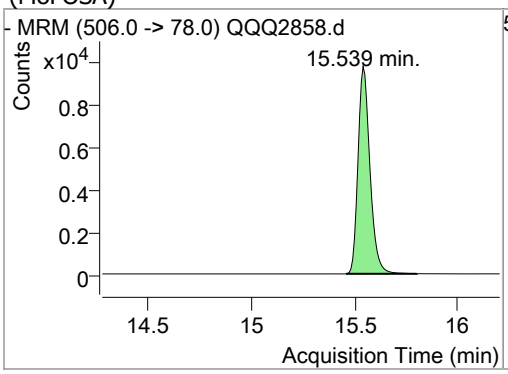
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	0.0037	15.32	0.13	28	497.9 -> 47.9	4.4	5.9	8.8

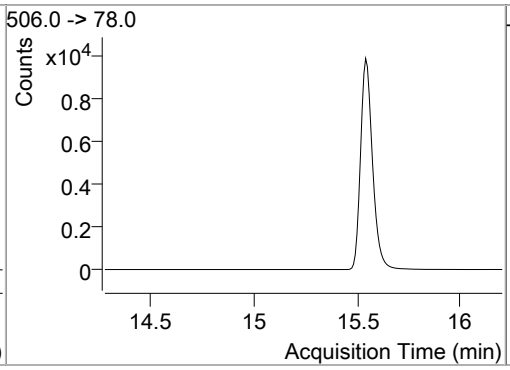


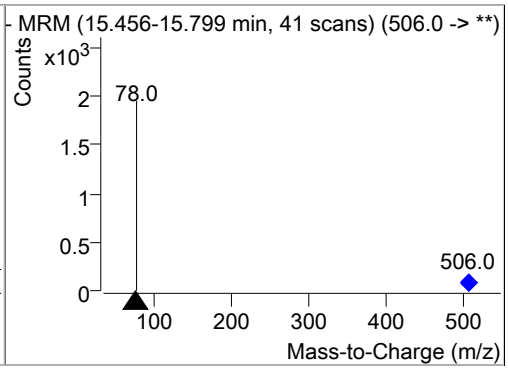




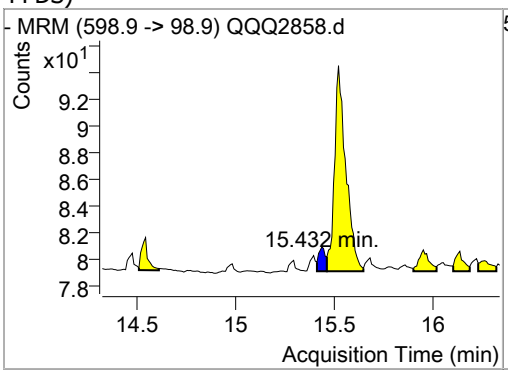
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.5319	15.54	0.34	39410				

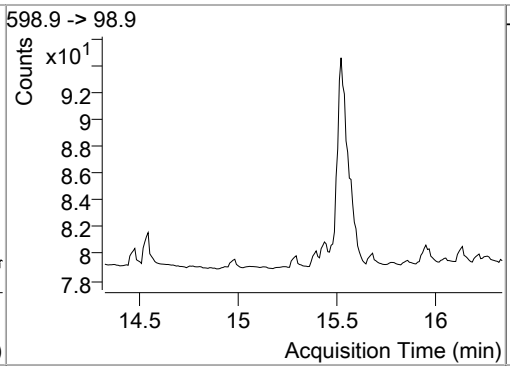


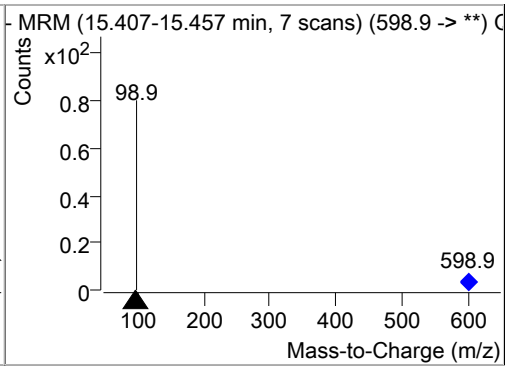




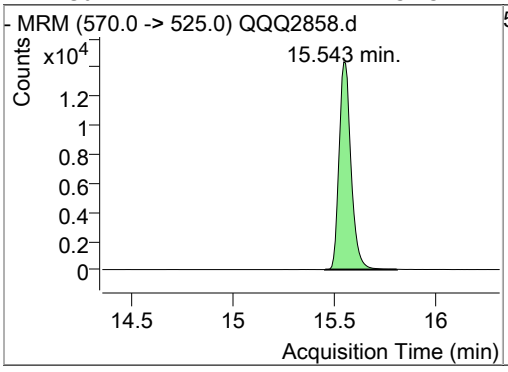
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	0.0012	15.43	0.22	4				

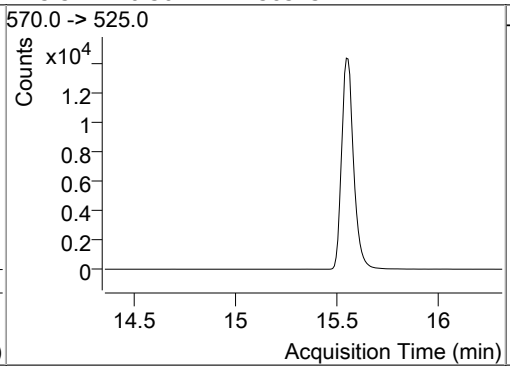


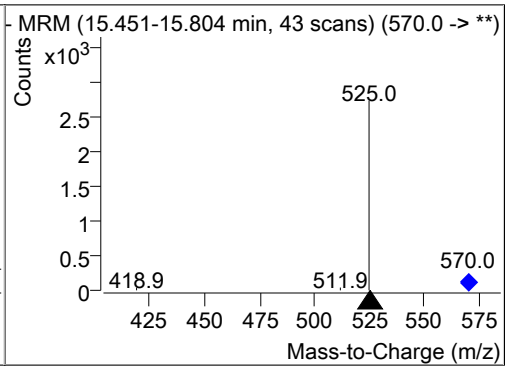




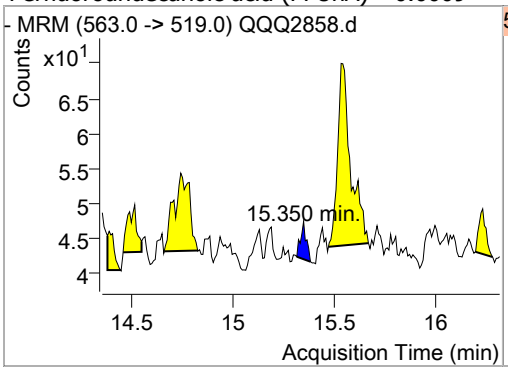
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	5.1511	15.54	0.30	58573				

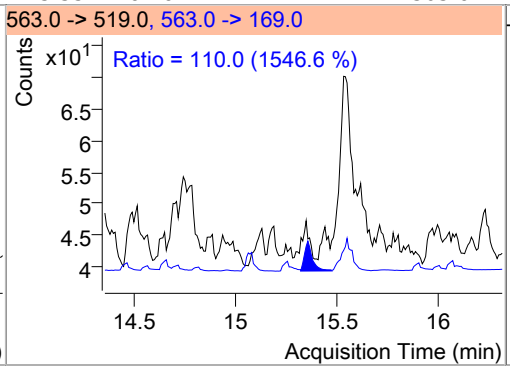


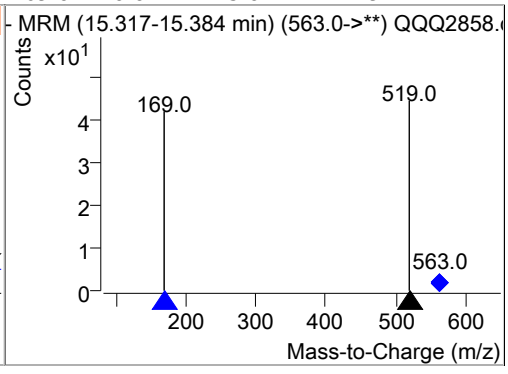




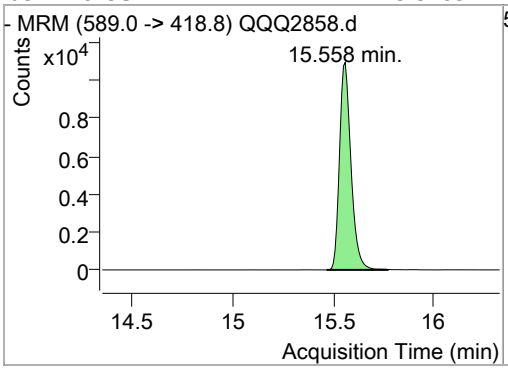
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	0.0009	15.35	0.10	11	563.0 -> 169.0	110.0	5.0	9.2

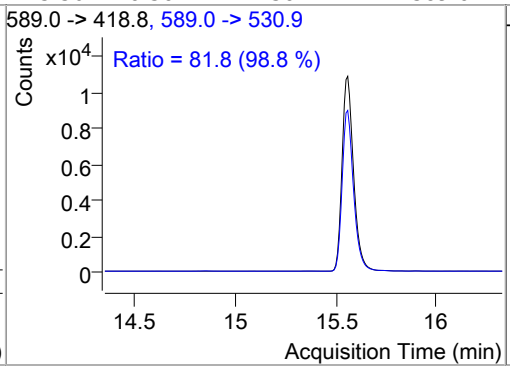


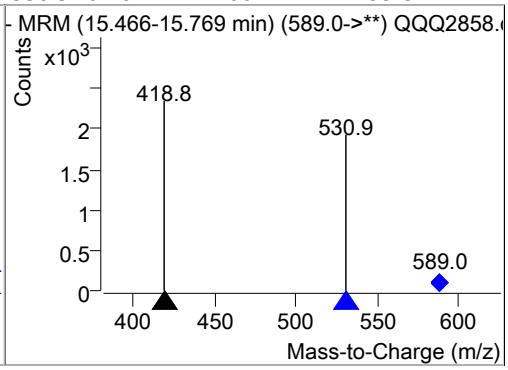




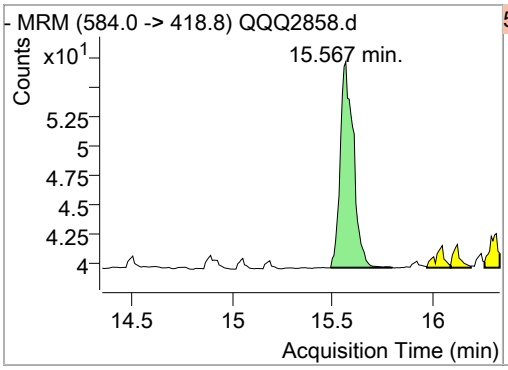
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	5.5183	15.56	0.30	43041	589.0 -> 530.9	81.8	66.2	99.3

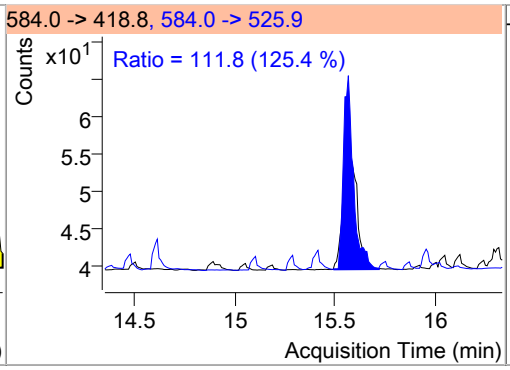


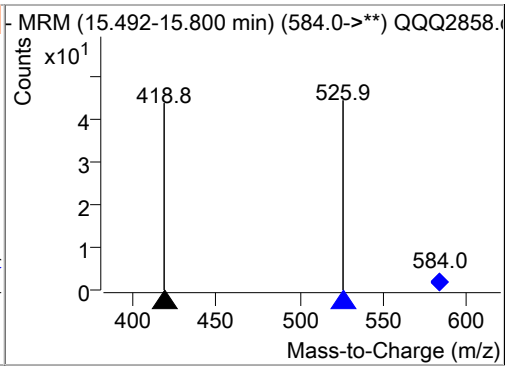




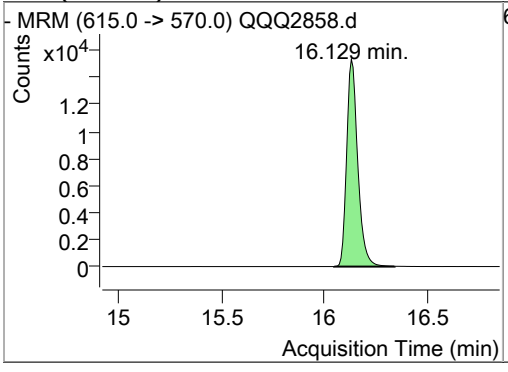
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	0.0107	15.57	0.30	81	584.0 -> 525.9	111.8	71.3	107.0

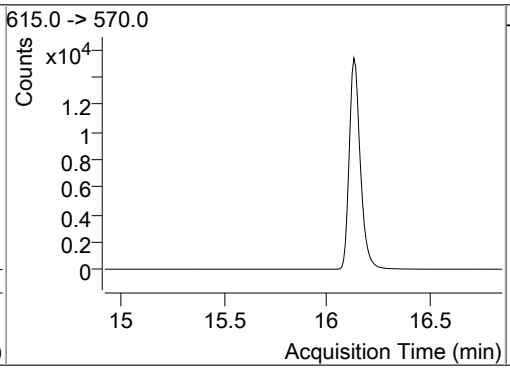


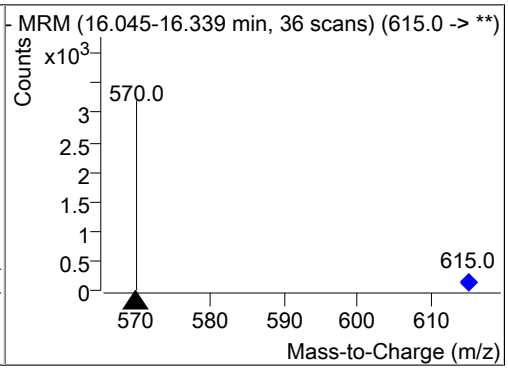




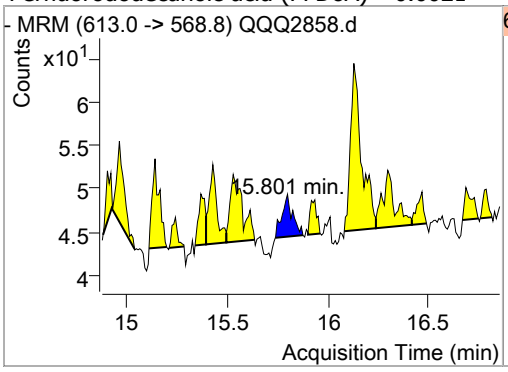
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.1483	16.13	0.35	57321				

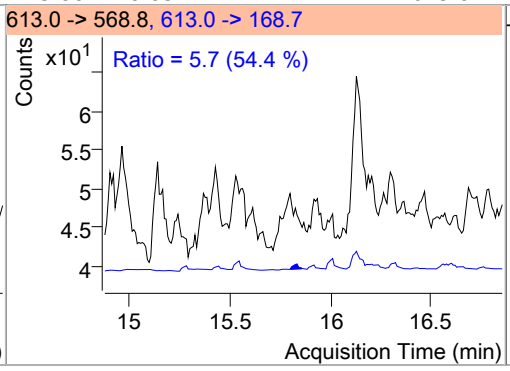


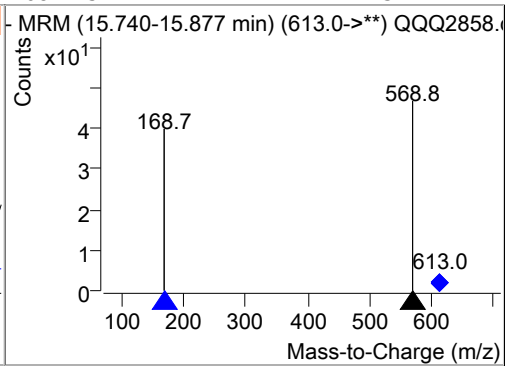




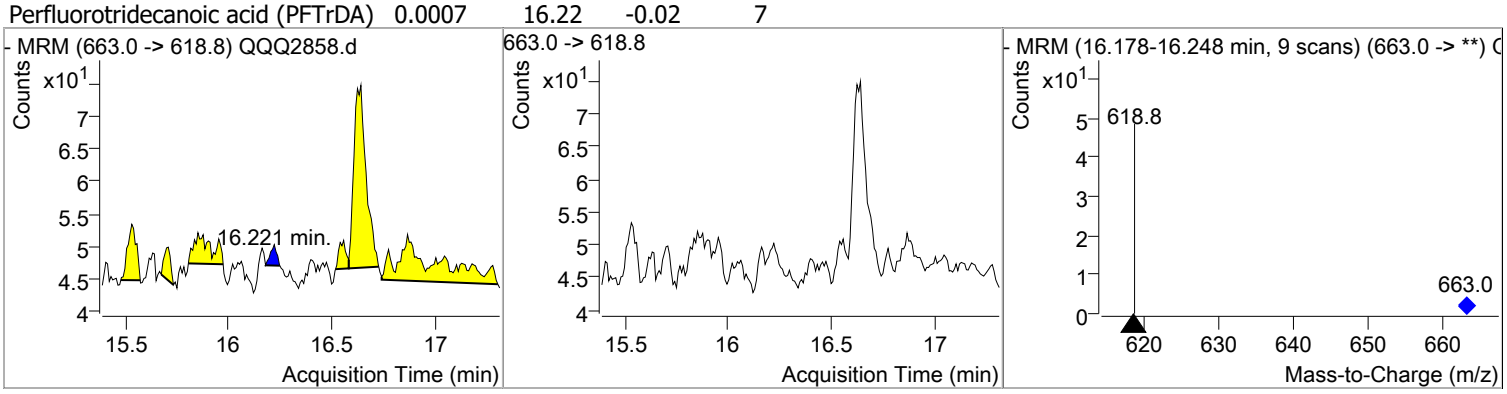
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	0.0021	15.80	0.03	17	613.0 -> 168.7	5.7	7.4	13.7



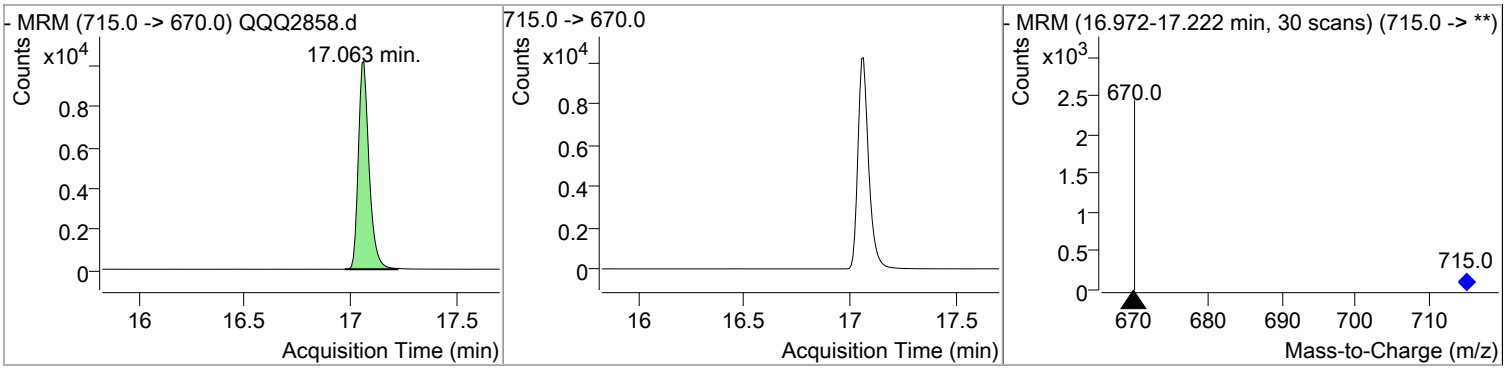




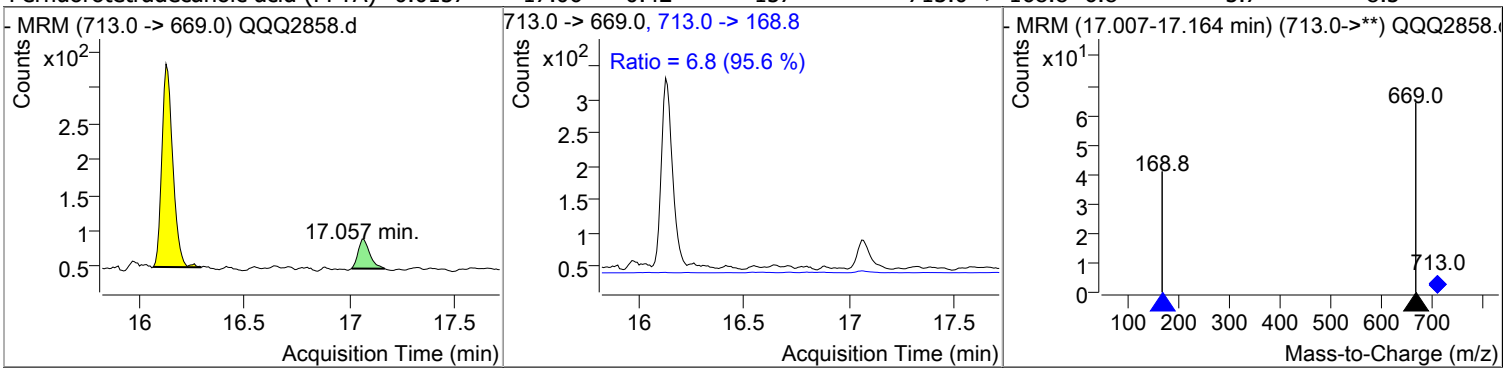
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	0.0007	16.22	-0.02	7				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	3.4780	17.06	0.43	36112				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	0.0157	17.06	0.42	157	713.0 -> 168.8	6.8	5.7	8.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 537m

KMW-FD

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-03	File ID:	QQQ2859.d
Sampled:	12/16/19 00:00	Prepared:	12/18/19 16:57	Analyzed:	12/20/19 12:45
Solids:		Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023
Instrument:	LCQQQ				

CAS NO.	COMPOUND	DILUTION	CONC. (ng/L)	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1	11.2	
307-24-4	Perfluorohexanoic acid (PFHxA)	1	22.2	
375-85-9	Perfluoroheptanoic acid (PFHpA)	1	6.89	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1	22.3	
335-67-1	Perfluorooctanoic acid (PFOA)	1	12.5	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1	16.5	
375-95-1	Perfluorononanoic acid (PFNA)	1	2.00	U
335-76-2	Perfluorodecanoic acid (PFDA)	1	2.00	U
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1	2.00	U
307-55-1	Perfluorododecanoic acid (PFDoA)	1	2.00	U
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	1	2.00	U
376-06-7	Perfluorotetradecanoic acid (PFTA)	1	2.00	U
2355-31-9	N-MeFOSAA	1	2.00	U
2991-50-6	N-EtFOSAA	1	2.00	U
2706-90-3	Perfluoropentanoic acid (PFPeA)	1	29.0	
754-91-6	Perfluoro-1-octanesulfonamide (FOSA)	1	2.00	U
375-92-8	Perfluoro-1-heptanesulfonic acid (PFHpS)	1	2.00	U
335-77-3	Perfluoro-1-decanesulfonic acid (PFDS)	1	2.00	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	1	5.00	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	1	2.00	U
375-22-4	Perfluoro-n-butanoic acid (PFBA)	1	11.4	

SYSTEM MONITORING COMPOUND	ADDED (ng/L)	CONC (ng/L)	% REC	QC LIMITS	Q
M3PFBS	74.3	51.0	68.6	25 - 150	
M5PFHxA	80.0	56.3	70.4	25 - 150	
M4PFHpA	80.0	59.5	74.3	25 - 150	
M3PFHxS	75.7	51.4	67.9	25 - 150	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	55.3	69.1	25 - 150	
M6PFDA	80.0	53.3	66.6	25 - 150	
M7PFUdA	80.0	48.1	60.1	25 - 150	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	40.2	50.3	25 - 150	
M2PFTeDA	80.0	15.2	19.1	10 - 150	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	54.0	67.6	25 - 150	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	49.5	64.6	25 - 150	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	55.3	69.1	25 - 150	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	22.3	27.9	10 - 150	
d3-N-MeFOSAA	80.0	47.9	59.9	25 - 150	
d5-N-EtFOSAA	80.0	45.8	57.3	25 - 150	
M2-6:2 FTS	75.9	88.6	117	25 - 150	
M2-8:2 FTS	76.6	78.1	102	25 - 150	
M9PFNA	80.0	58.1	72.6	25 - 150	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 537m

KMW-FD

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-03	File ID:	QQQ2859.d
Sampled:	12/16/19 00:00	Prepared:	12/18/19 16:57	Analyzed:	12/20/19 12:45
Solids:		Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023
Instrument:	LCQQQ				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
MPFOA	242323	13.08477	214702.8	13.1099	

* Values outside of QC limits

Quantitation Results Report (Not Reviewed)

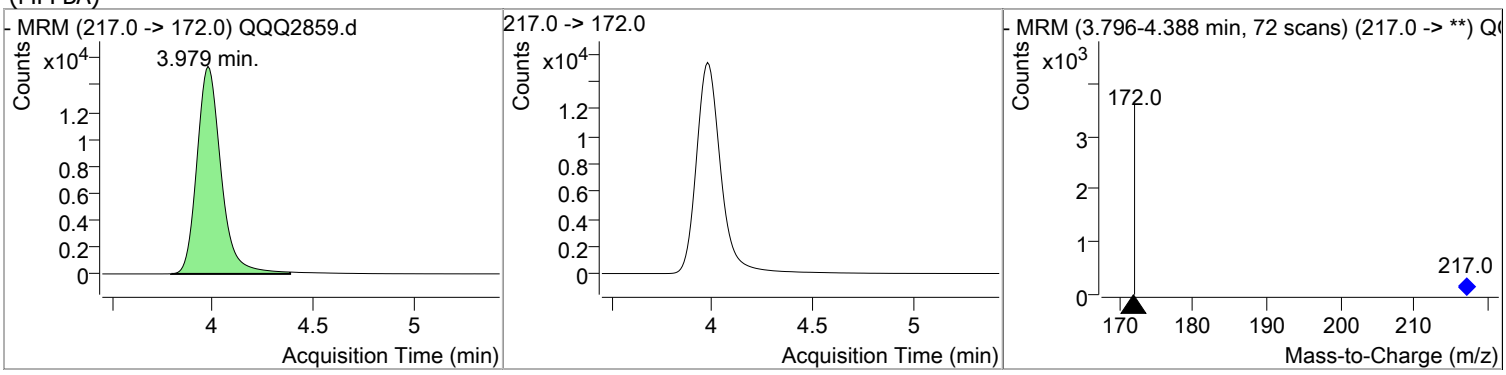
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Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
MPFOA	13.085	417.0 -> 372.0	242323	10.0000	ng/ml		0.051
System Monitoring Compounds							
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.979	217.0 -> 172.0	128216	6.7550	ng/ml		-0.209
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 67.55%			
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	7.989	268.0 -> 223.0	178918	6.9142	ng/ml		-0.125
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.14%			
M3PFBS	8.735	302.0 -> 79.9	52093	6.3771	ng/ml		-0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.77%			
M2-4-2FTS	10.191	329.0 -> 309.0	78054	10.5591	ng/ml		-0.067
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 105.59%			
M5PFHxA	10.328	318.0 -> 273.0	171561	7.0377	ng/ml		-0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 70.38%			
M4PFHpA	11.902	367.0 -> 322.0	50107	7.4348	ng/ml		-0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 74.35%			
M3PFHxS	12.034	402.0 -> 80.0	36049	6.4244	ng/ml		-0.008
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 64.24%			
M2-6-2FTS	13.023	429.0 -> 409.0	66478	11.0696	ng/ml		0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 110.70%			
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.084	421.0 -> 376.0	88539	6.9072	ng/ml		0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.07%			
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.048	472.0 -> 427.0	95277	7.2645	ng/ml		0.144
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 72.65%			
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.063	507.0 -> 80.0	26562	6.1826	ng/ml		0.152
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 61.83%			
M2-8-2FTS	14.837	529.0 -> 509.0	45918	9.7674	ng/ml		0.219
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 97.67%			
M6PFDA	14.855	519.0 -> 473.9	69649	6.6649	ng/ml		0.227
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 66.65%			
d3-N-MeFOSAA	15.198	573.0 -> 418.8	50218	5.9857	ng/ml		0.261
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 59.86%			
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.530	506.0 -> 78.0	18635	2.7870	ng/ml		0.336
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 27.87%			
M7PFUdA	15.534	570.0 -> 525.0	64103	6.0065	ng/ml		0.294
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.07%			
d5-N-EtFOSAA	15.541	589.0 -> 418.8	41945	5.7299	ng/ml		0.286
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 57.30%			
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.120	615.0 -> 570.0	52513	5.0253	ng/ml		0.345
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.25%			
M2PFTeDA	17.055	715.0 -> 670.0	18571	1.9058	ng/ml		0.418
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 19.06%		*	
Target Compounds							QValue

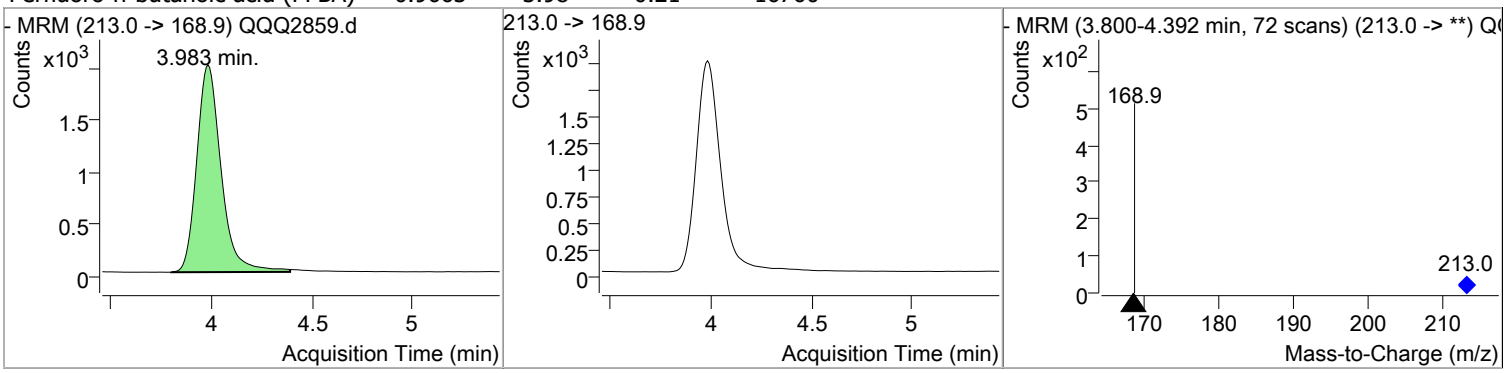
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	3.983	213.0 -> 168.9	16760	0.9663	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	7.990	263.0 -> 219.0	57153	2.5040	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.729	298.9 -> 79.9	6635	0.8894	ng/ml		98
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.418	327.0 -> 307.0	95	0.0000	ng/ml	#	1
Perfluorohexanoic acid (PFHxA)	10.339	313.0 -> 268.9	40675	1.9497	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.641	348.9 -> 79.9	3776	0.5632	ng/ml		100
Perfluoroheptanoic acid (PFHpA)	11.903	363.0 -> 318.8	10150	0.6401	ng/ml		98
Perfluorohexanesulfonic acid (PFHxS)	12.035	398.9 -> 79.9	10348	1.7936	ng/ml	m	91
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.024	427.0 -> 407.0	260	0.0410	ng/ml	#	92
Perfluorooctanoic acid (PFOA)	13.094	413.0 -> 368.8	13238	1.0750	ng/ml		96
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.148	448.9 -> 80.0	394	0.0948	ng/ml	#	77
Perfluorononanoic acid (PFNA)	14.049	463.0 -> 418.8	464	0.0467	ng/ml	#	88
Perfluorooctanesulfonic acid (PFOS)	14.064	498.9 -> 79.9	6529	1.2755	ng/ml	#m	67
Perfluorononanesulfonate (L-PFNS)	14.618	548.9 -> 79.9	1	0.0003	ng/ml		22
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.677	527.0 -> 507.0	3	0.0000	ng/ml		49
Perfluorodecanoic acid (PFDA)	14.603	513.0 -> 468.8	14	0.0016	ng/ml		94
N-MeFOSAA	14.996	570.0 -> 418.9	4	0.0005	ng/ml	#	1
Perfluoro-1-octanesulfonamide (FOSA)	15.010	497.9 -> 78.0	1	0.0002	ng/ml	#	45
Perfluoro-1-decanesulfonate (L-PFDS)	15.331	598.9 -> 98.9	3	0.0008	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.258	563.0 -> 519.0	8	0.0007	ng/ml	#	46
N-EtFOSAA	15.576	584.0 -> 418.8	40	0.0057	ng/ml		97
Perfluorododecanoic acid (PFDoA)	16.121	613.0 -> 568.8	92	0.0119	ng/ml	#	74
Perfluorotridecanoic acid (PFTrDA)	16.296	663.0 -> 618.8	10	0.0012	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	111	0.0118	ng/ml		99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

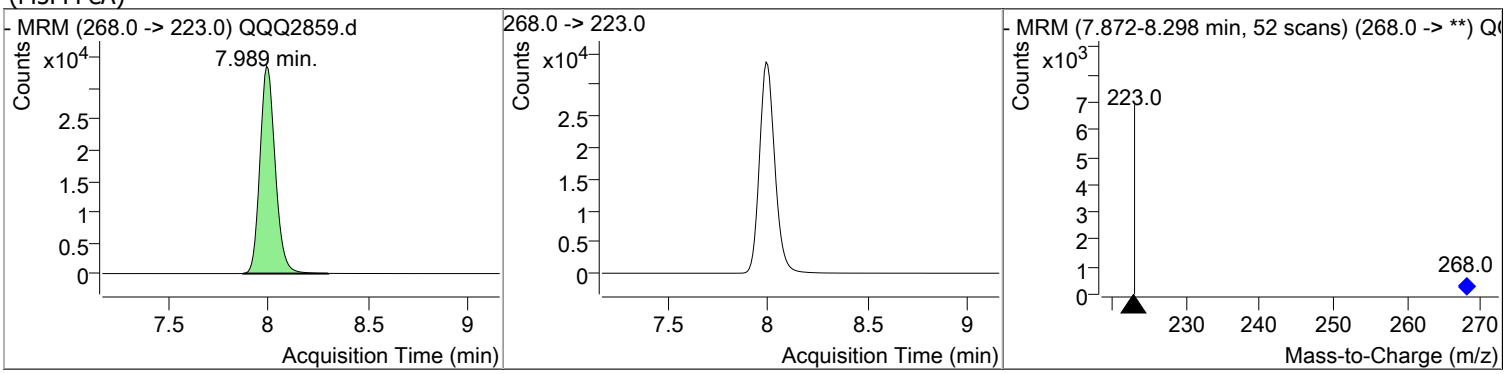
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	6.7550	3.98	-0.21	128216				



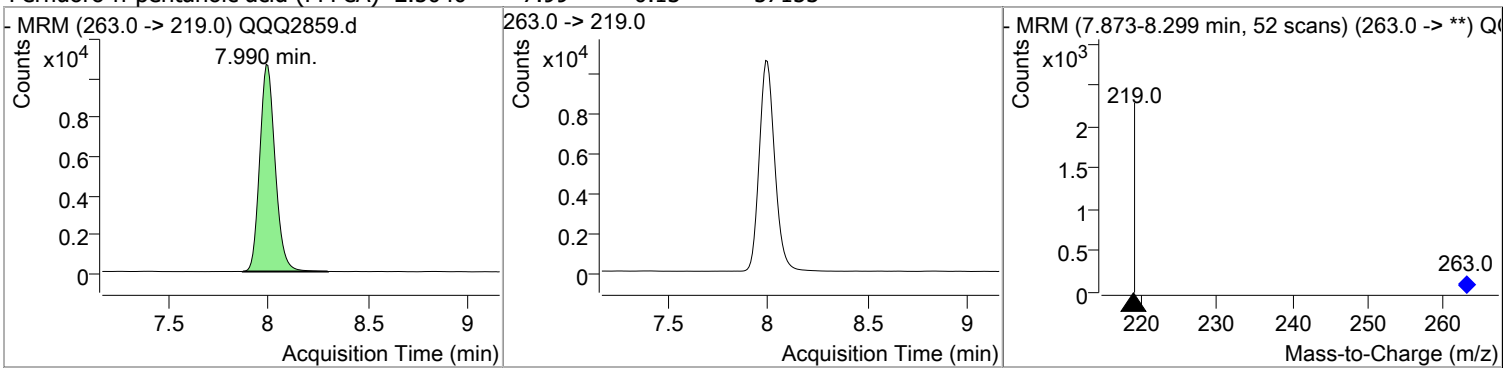
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	0.9663	3.98	-0.21	16760				



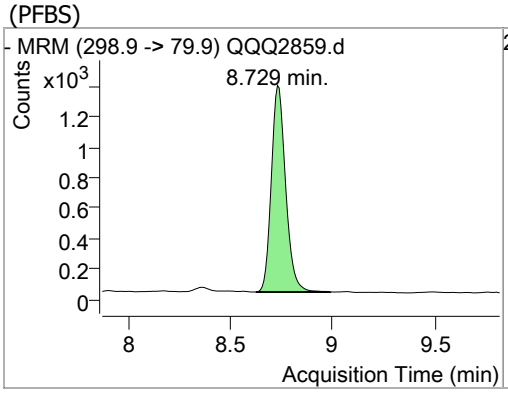
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	6.9142	7.99	-0.13	178918				

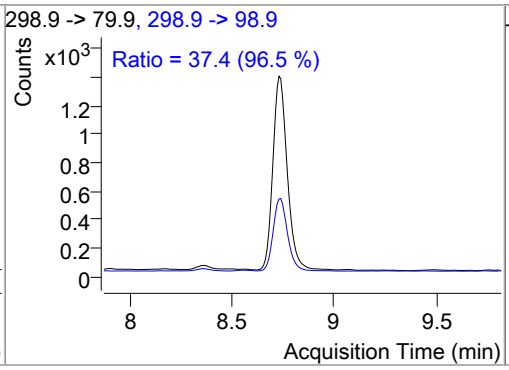


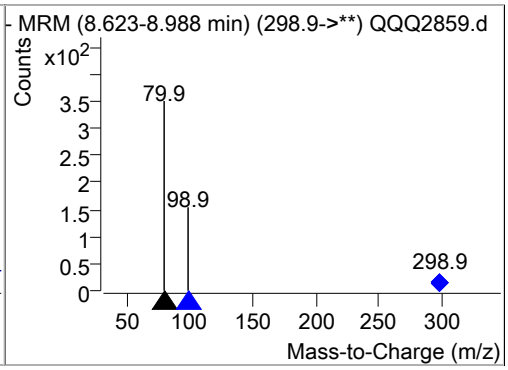
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	2.5040	7.99	-0.13	57153				



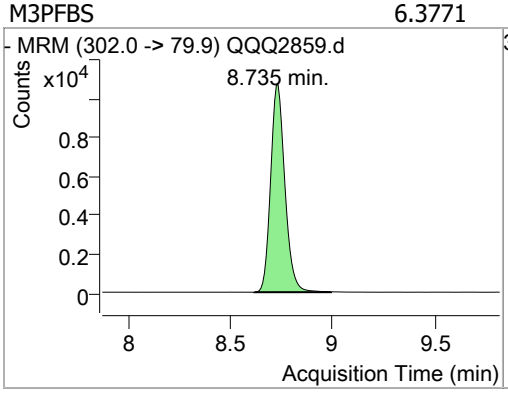
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	0.8894	8.73	-0.08	6635	298.9 -> 98.9	37.4	31.0	46.5

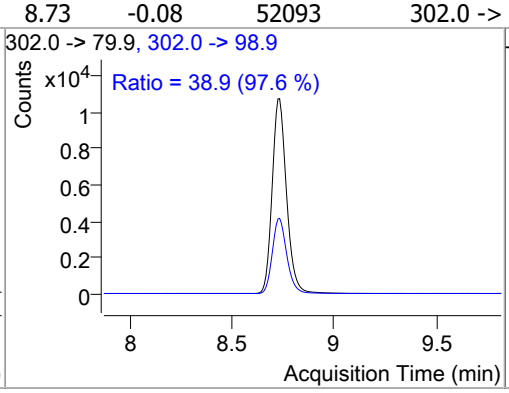


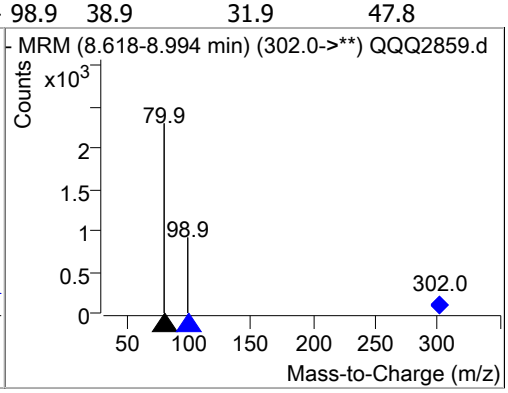




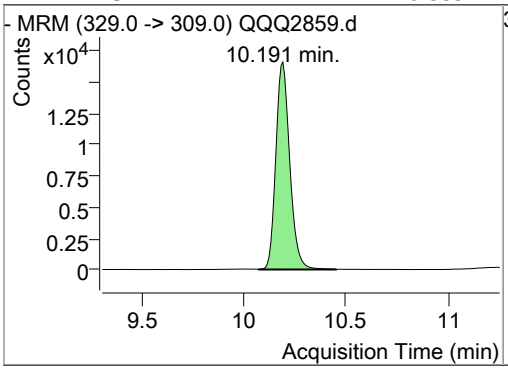
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	6.3771	8.73	-0.08	52093	302.0 -> 98.9	38.9	31.9	47.8

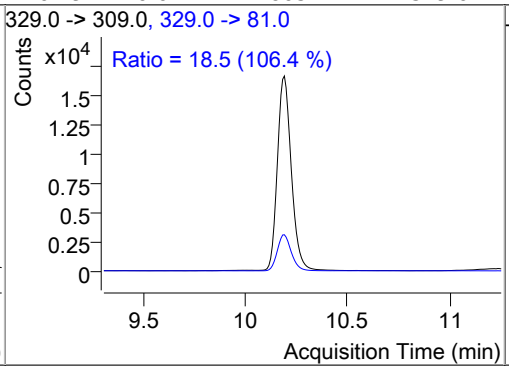


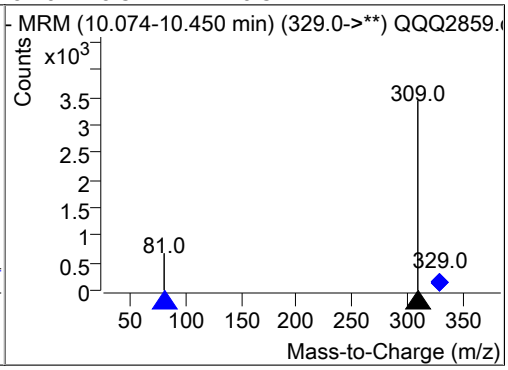




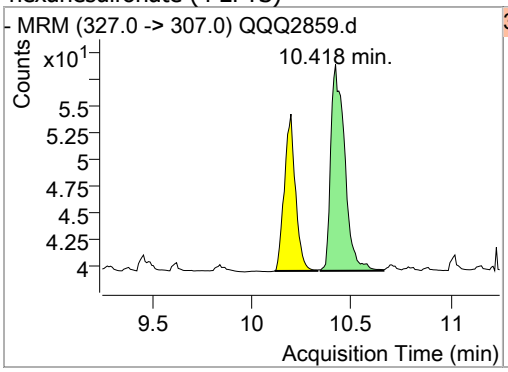
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	10.5591	10.19	-0.07	78054	329.0 -> 81.0	18.5	10.5	24.4

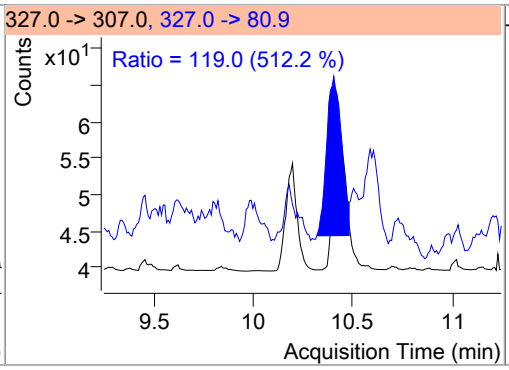


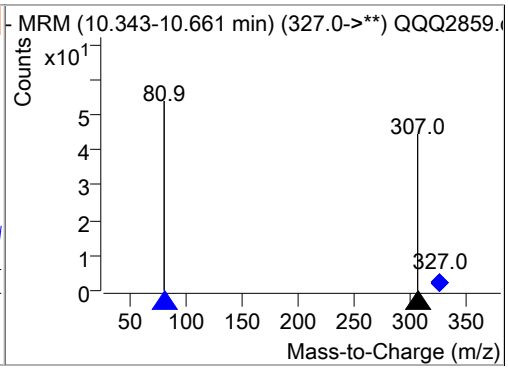




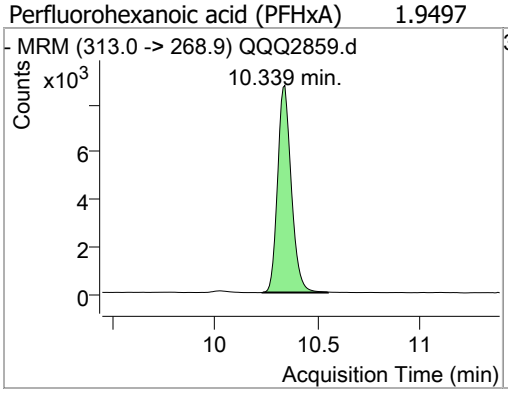
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	0.0000	10.42	0.16	95	327.0 -> 80.9	119.0	13.9	32.5

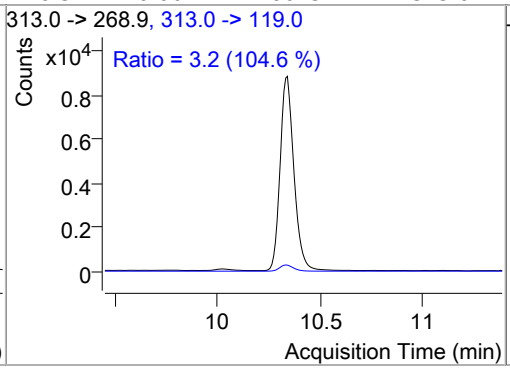


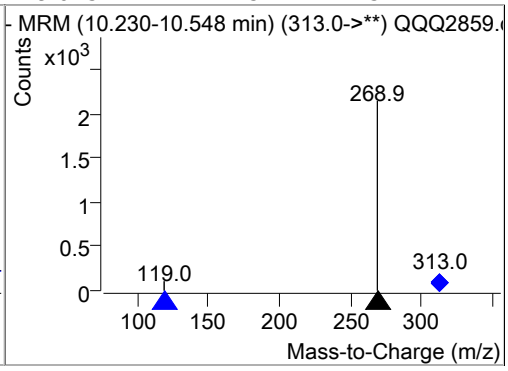




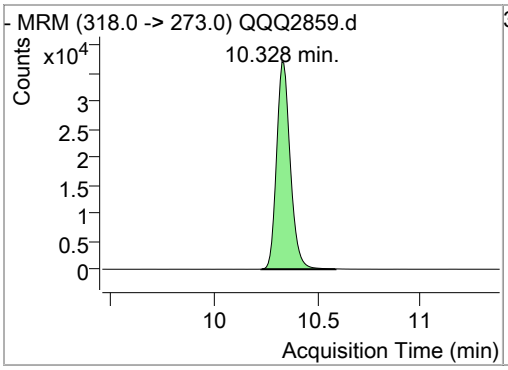
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	1.9497	10.34	-0.06	40675	313.0 -> 119.0	3.2	2.5	3.7

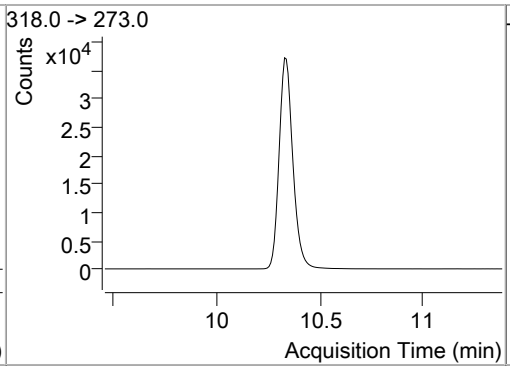


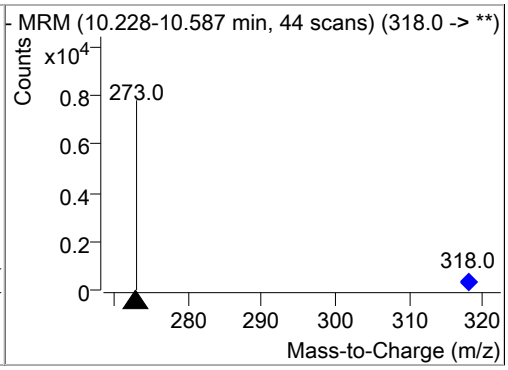




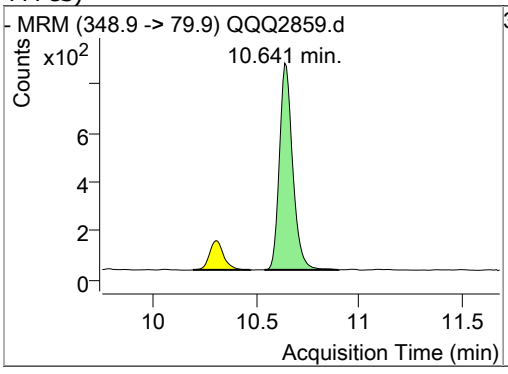
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	7.0377	10.33	-0.08	171561				

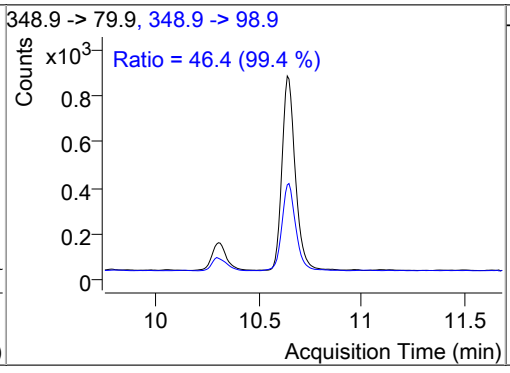


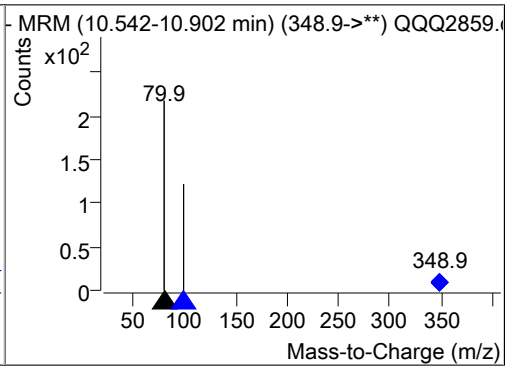




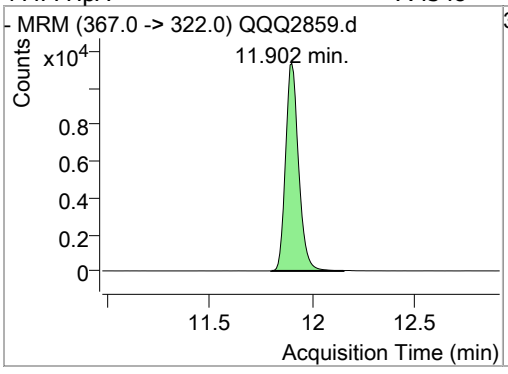
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	0.5632	10.64	-0.06	3776	348.9 -> 98.9	46.4	37.3	56.0

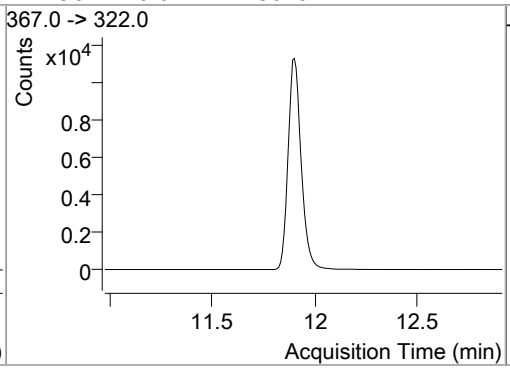


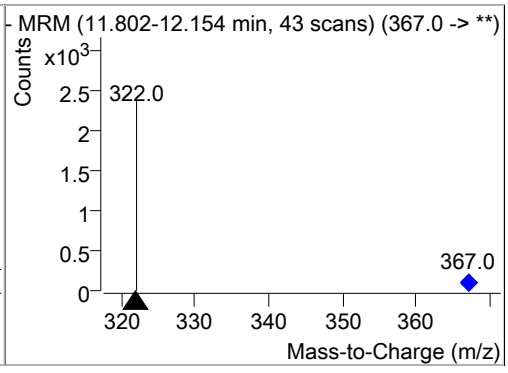




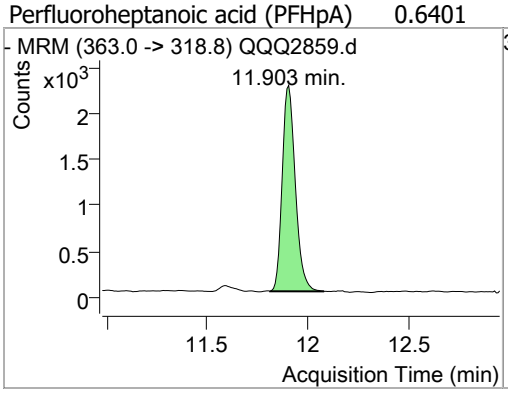
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	7.4348	11.90	-0.02	50107				

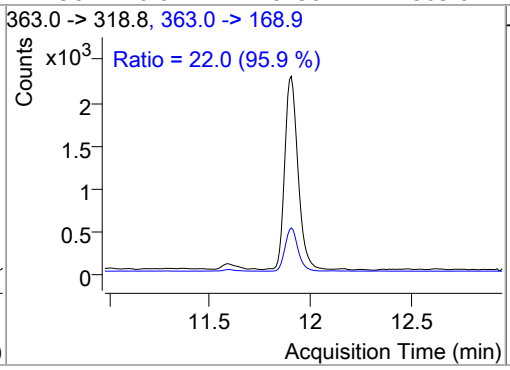


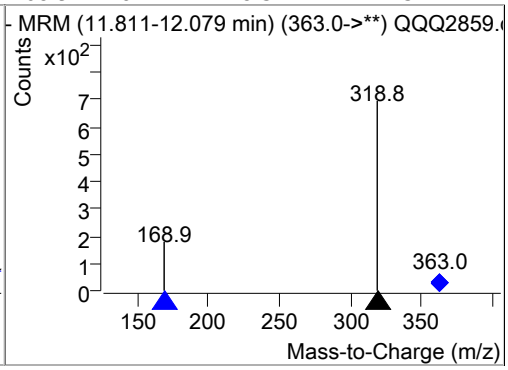




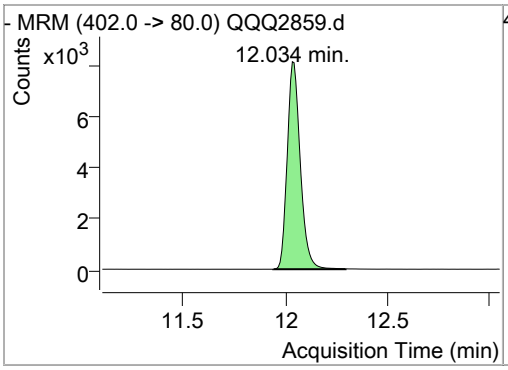
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	0.6401	11.90	-0.02	10150	363.0 -> 168.9	22.0	18.3	27.5

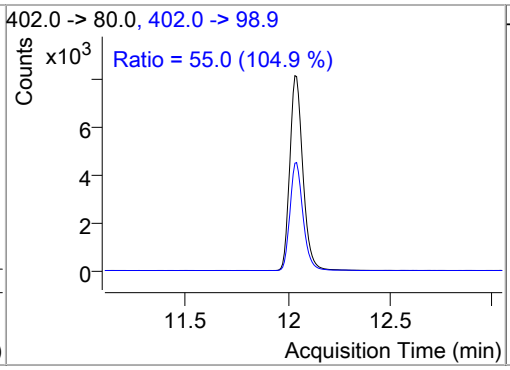


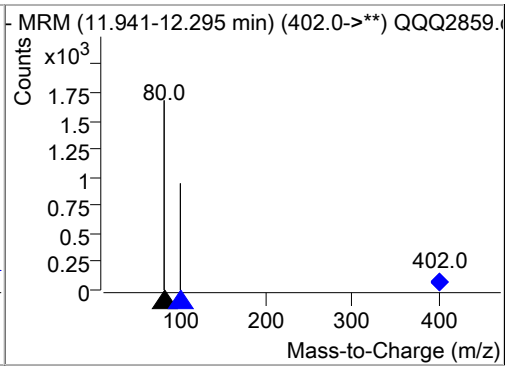




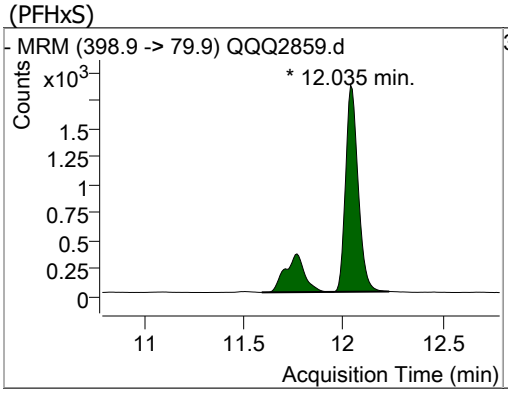
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	6.4244	12.03	-0.01	36049	402.0 -> 98.9	55.0	42.0	62.9

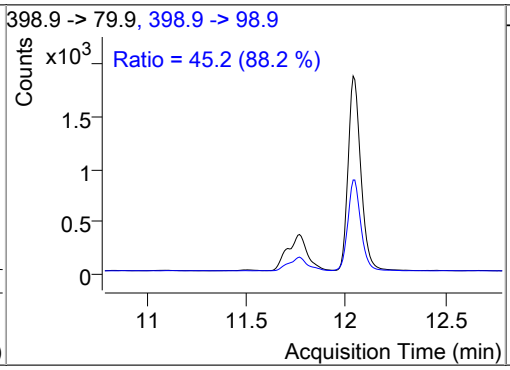


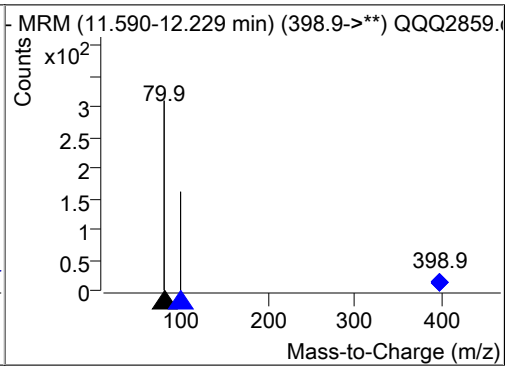




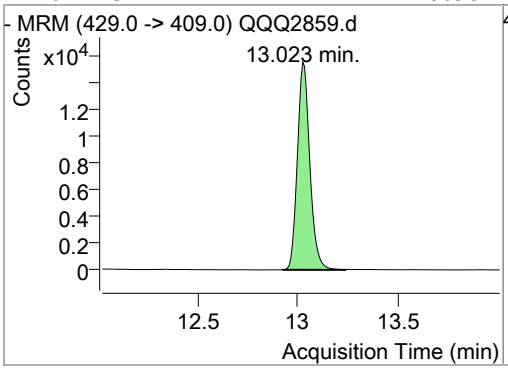
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	1.7936	12.04	-0.01	10348 (m)	398.9 -> 98.9	45.2	41.0	61.5

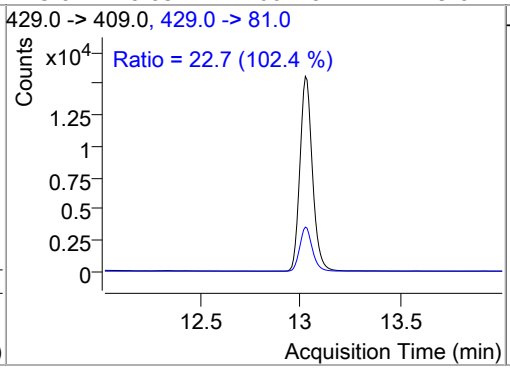


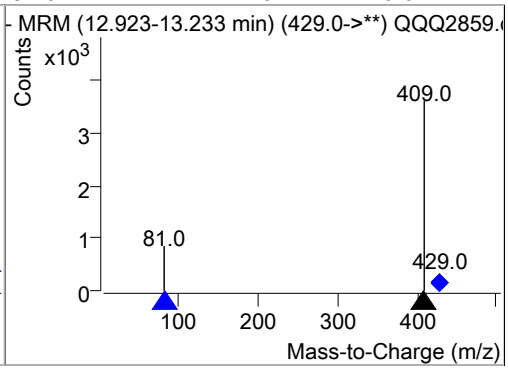




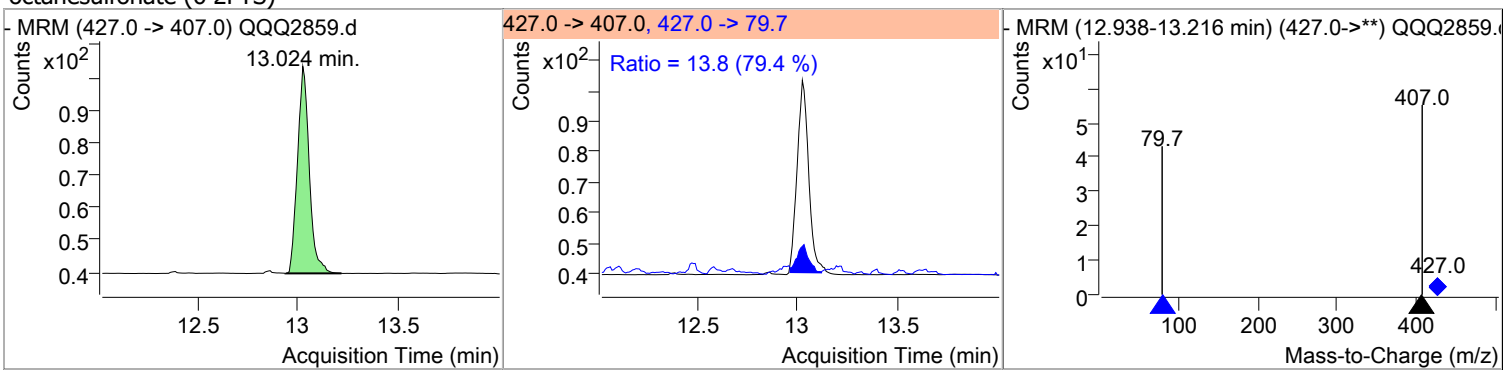
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	11.0696	13.02	0.05	66478	429.0 -> 81.0	22.7	17.8	26.6



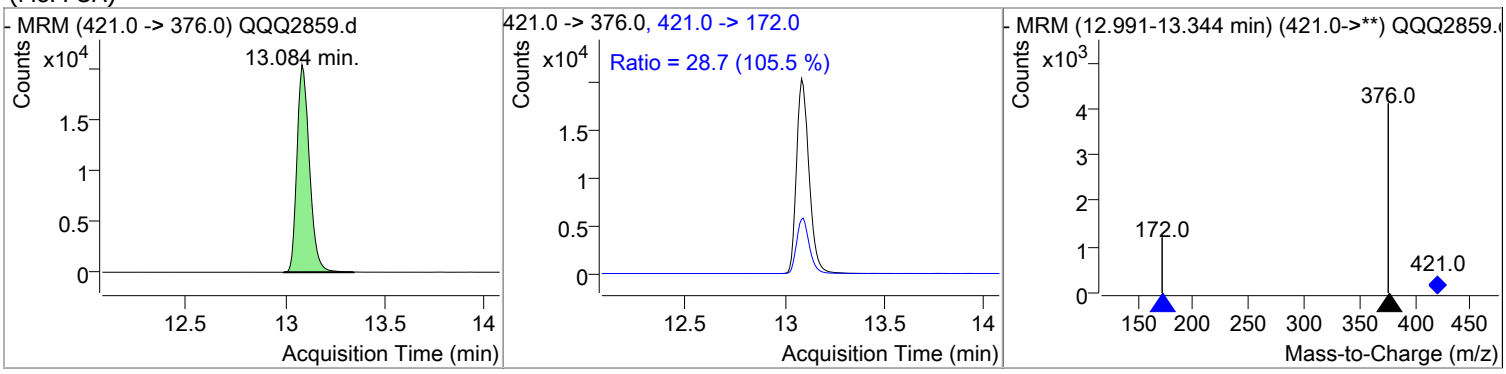




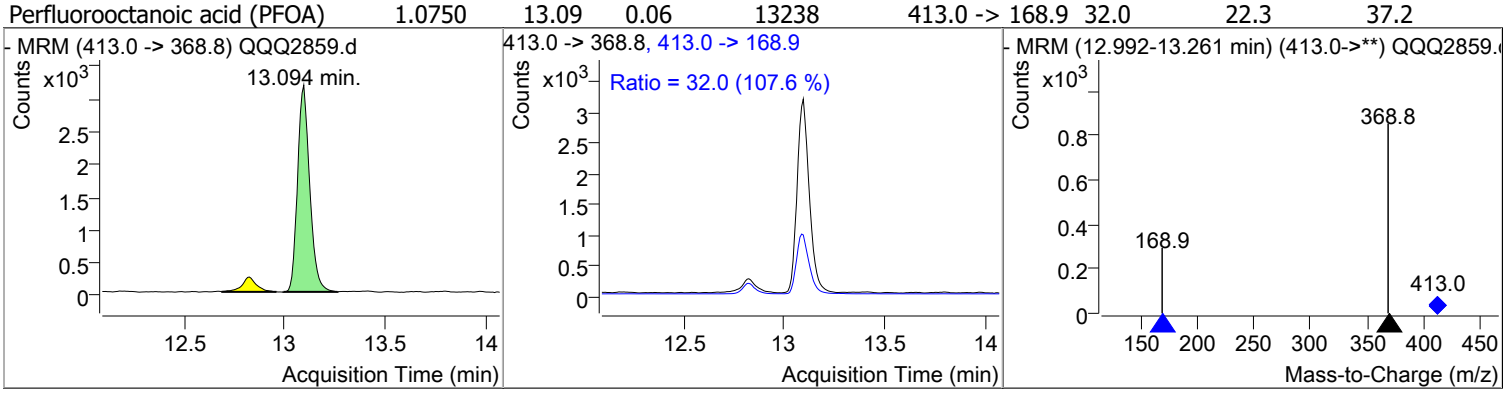
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	0.0410	13.02	0.05	260	427.0 -> 79.7	13.8	13.9	20.8



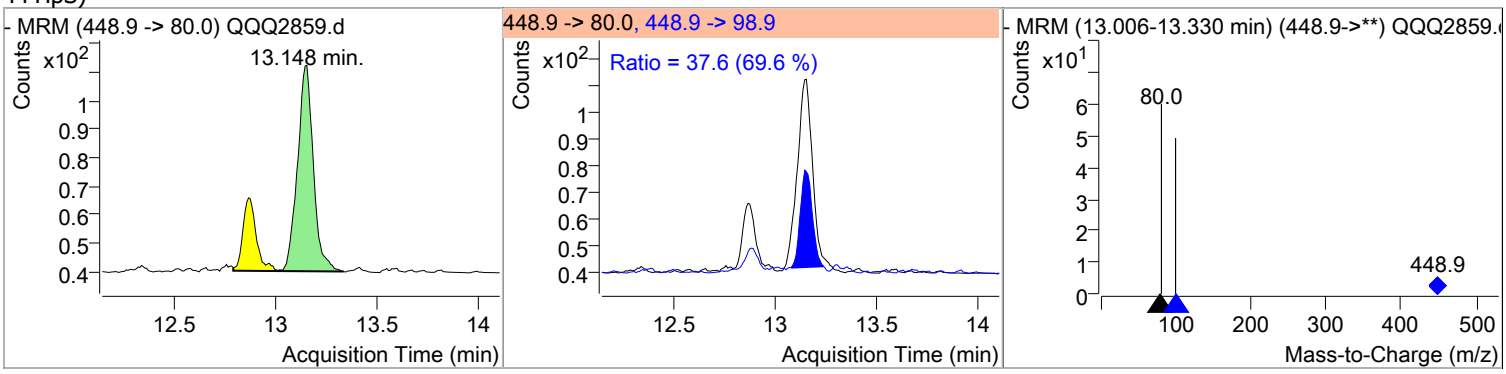
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	6.9072	13.08	0.06	88539	421.0 -> 172.0	28.7	21.7	32.6



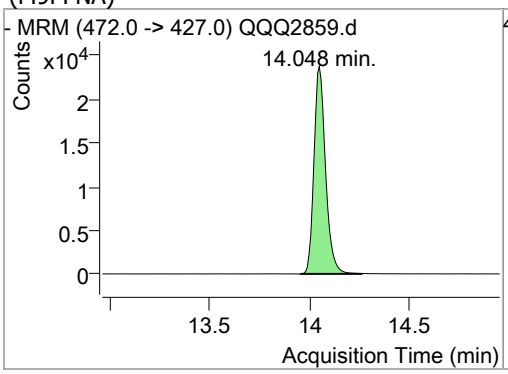
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	1.0750	13.09	0.06	13238	413.0 -> 168.9	32.0	22.3	37.2

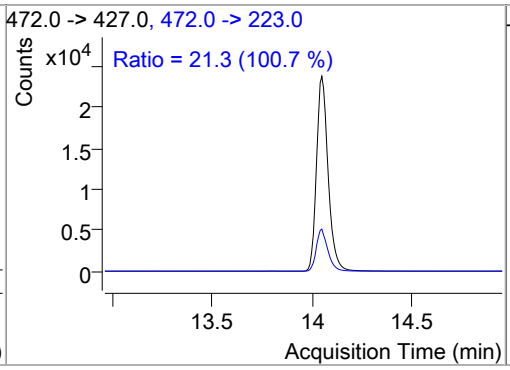


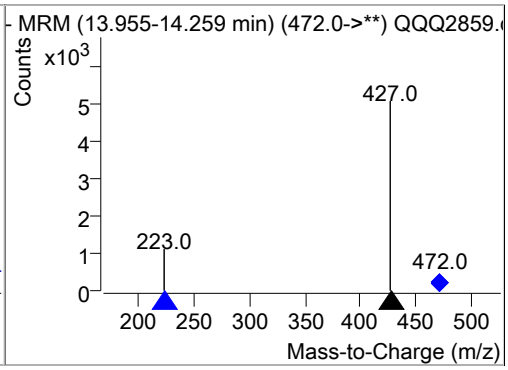
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	0.0948	13.15	0.07	394	448.9 -> 98.9	37.6	43.3	64.9



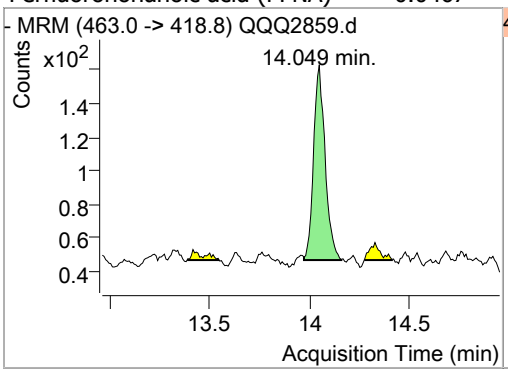
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	7.2645	14.05	0.14	95277	472.0 -> 223.0	21.3	16.9	25.4

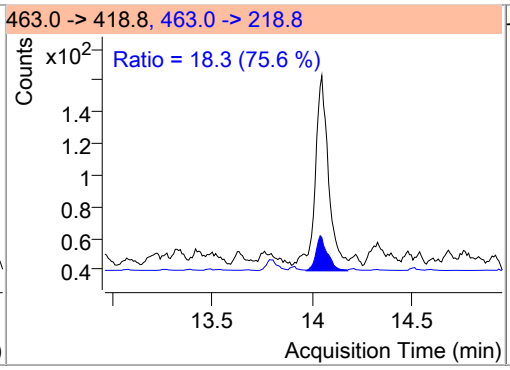


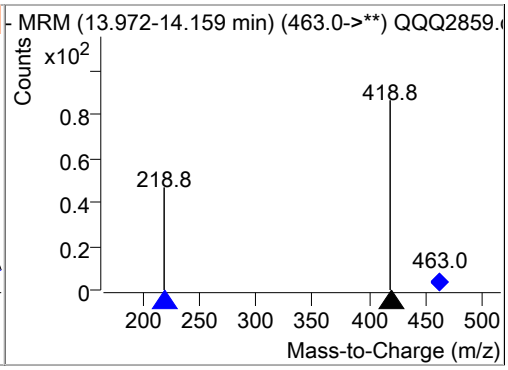




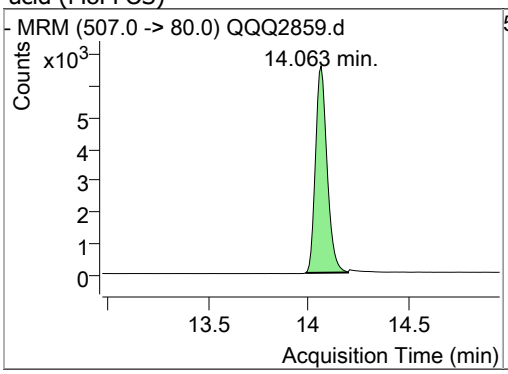
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	0.0467	14.05	0.14	464	463.0 -> 218.8	18.3	19.4	29.1

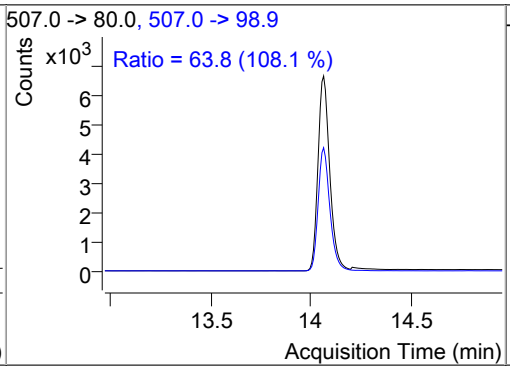


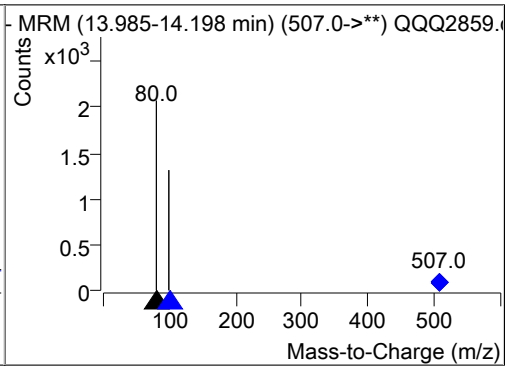




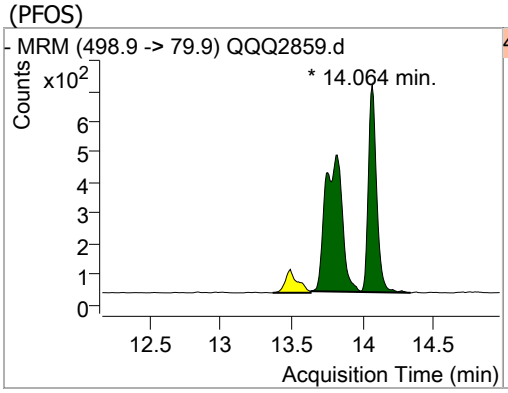
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	6.1826	14.06	0.15	26562	507.0 -> 98.9	63.8	47.2	70.8

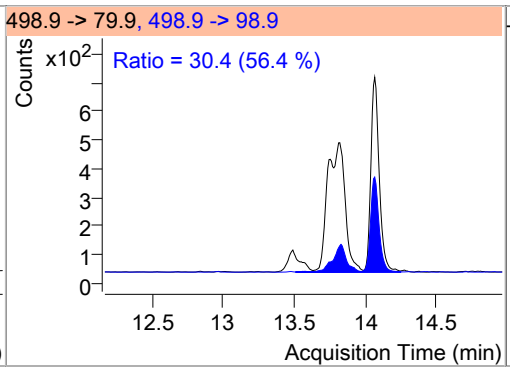


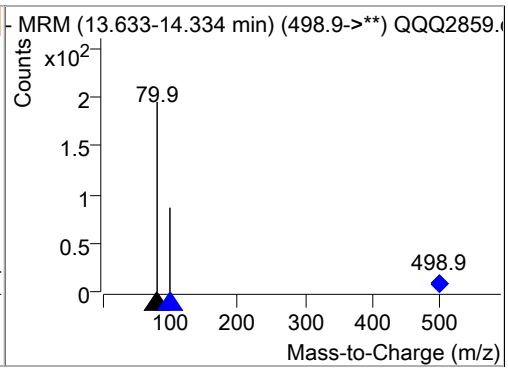




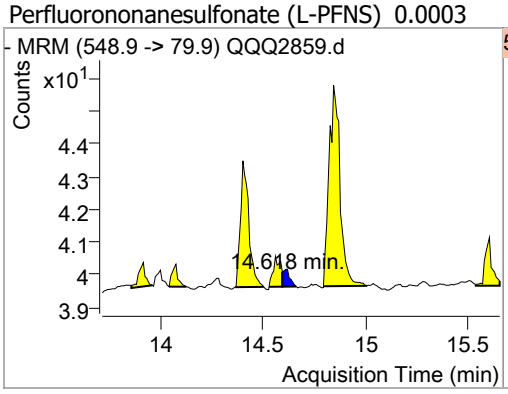
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	1.2755	14.06	0.15	6529 (m)	498.9 -> 98.9	30.4	43.1	64.6

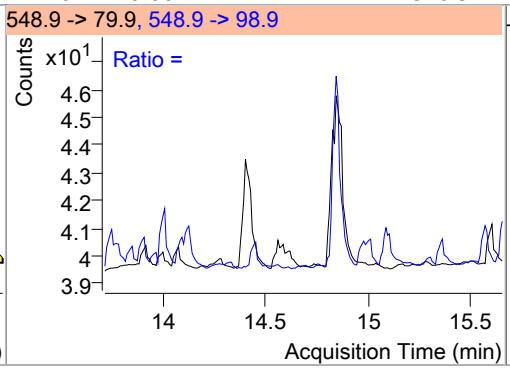


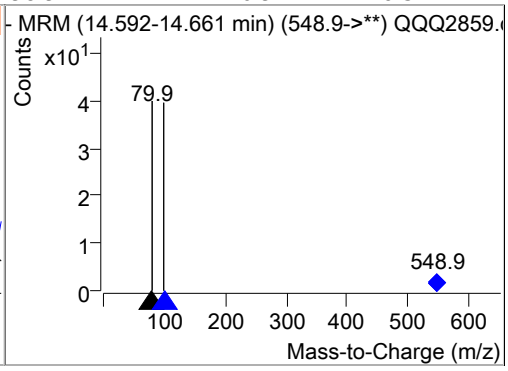




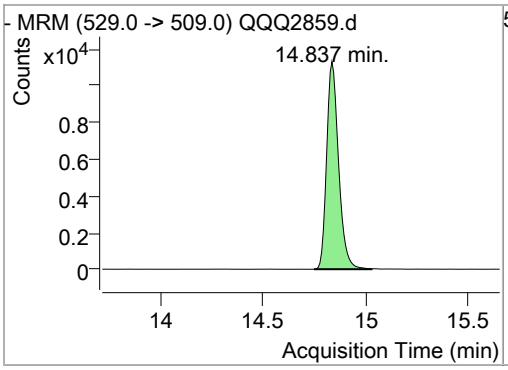
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	0.0003	14.62	0.00	1	548.9 -> 98.9		46.9	70.3

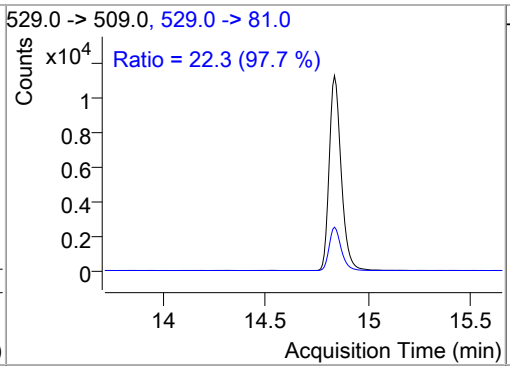


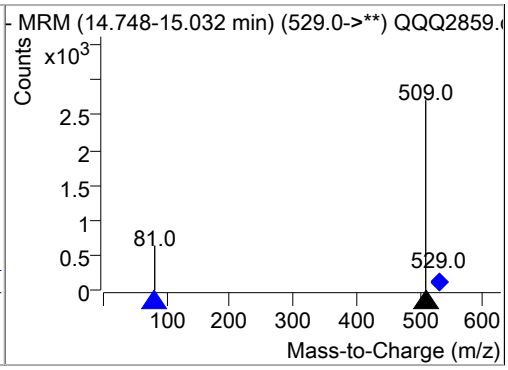




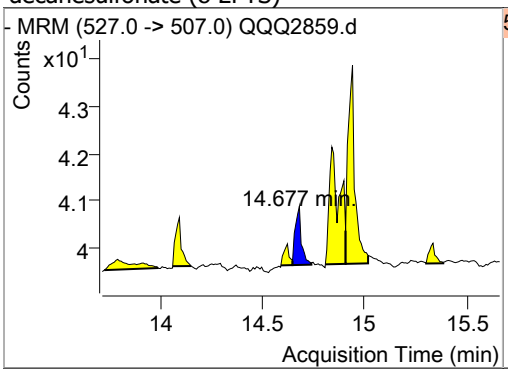
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	9.7674	14.84	0.22	45918	529.0 -> 81.0	22.3	18.3	27.4

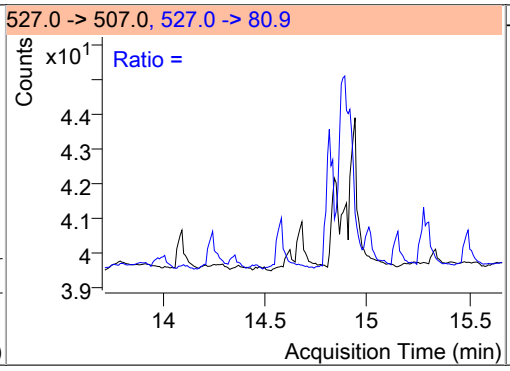


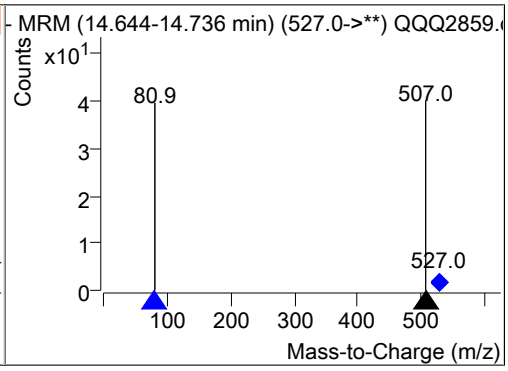




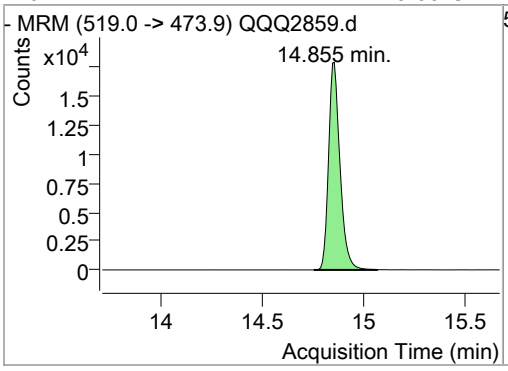
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	0.0000	14.68	0.06	3	527.0 -> 80.9		20.6	30.9

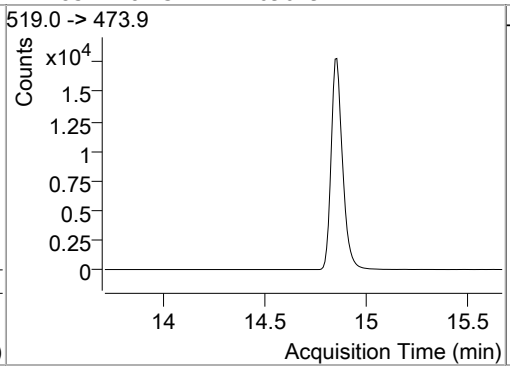


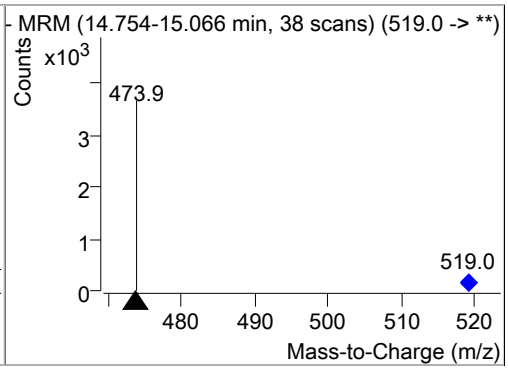




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	6.6649	14.85	0.23	69649				

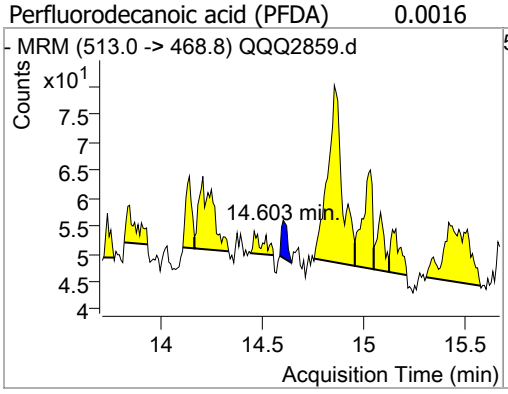


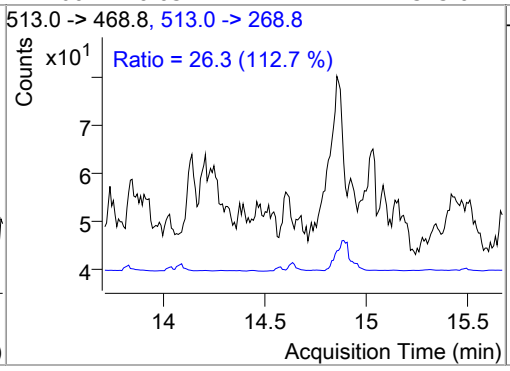


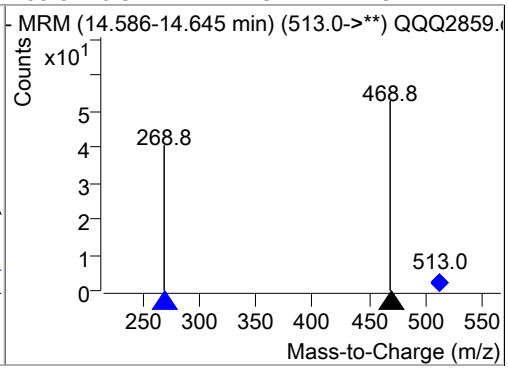


Quantitation Results Report (Not Reviewed)

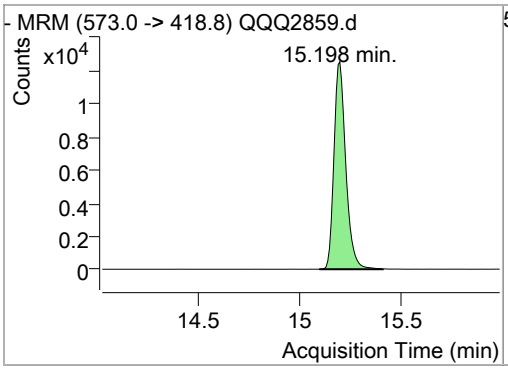
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	0.0016	14.60	-0.03	14	513.0 -> 268.8	26.3	17.5	29.1

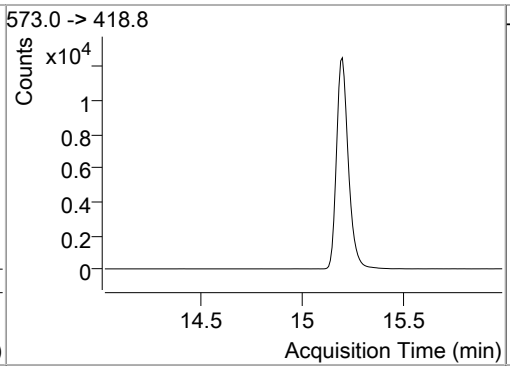


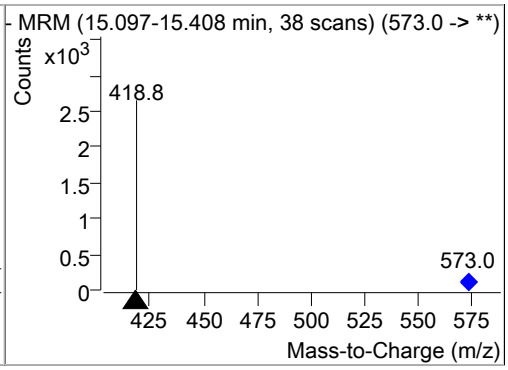




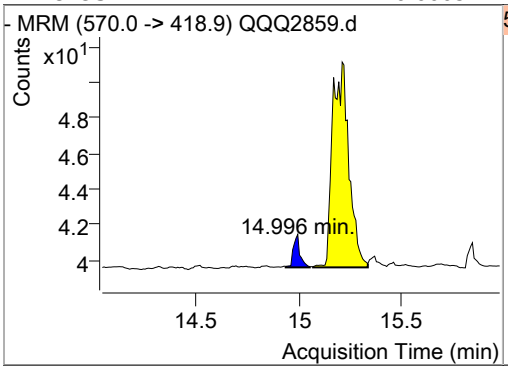
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	5.9857	15.20	0.26	50218				

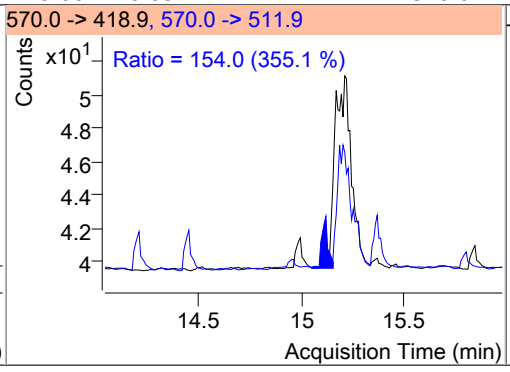


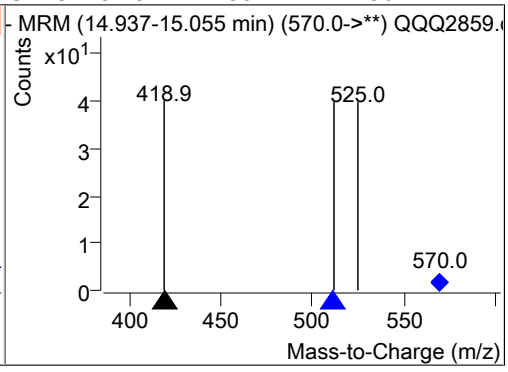




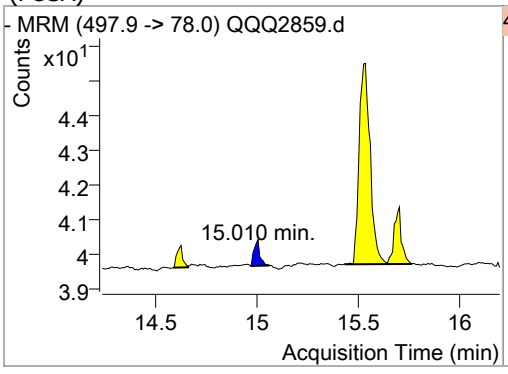
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	0.0005	15.00	0.05	4	570.0 -> 511.9	154.0	30.4	56.4

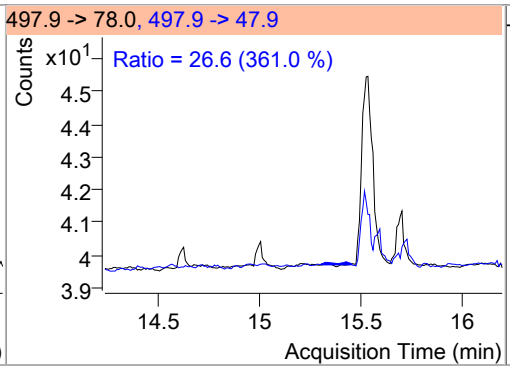


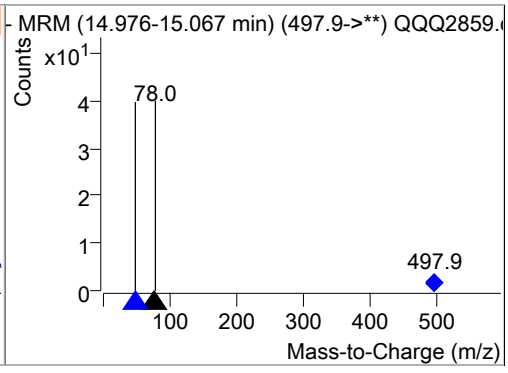




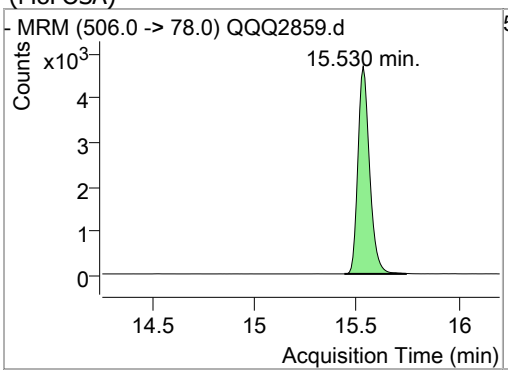
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	0.0002	15.01	-0.18	1	497.9 -> 47.9	26.6	5.9	8.8

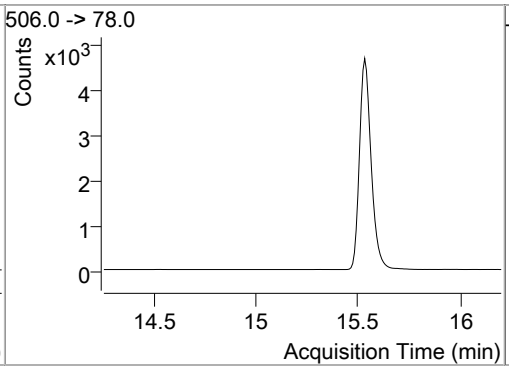


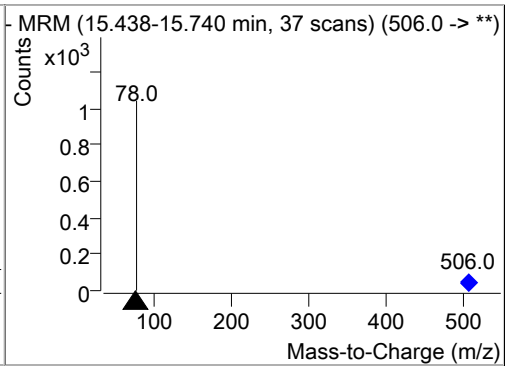




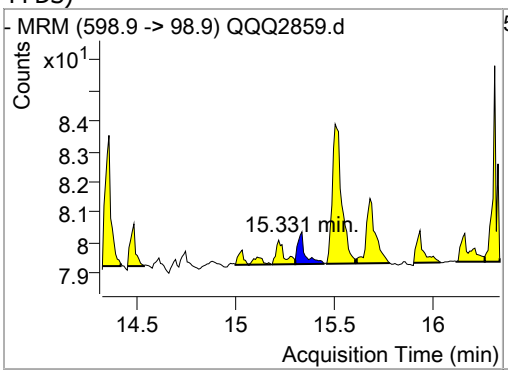
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	2.7870	15.53	0.34	18635				

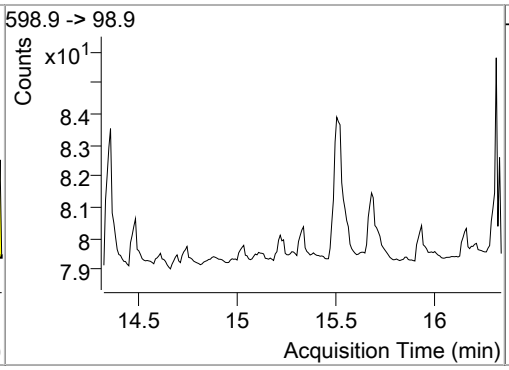


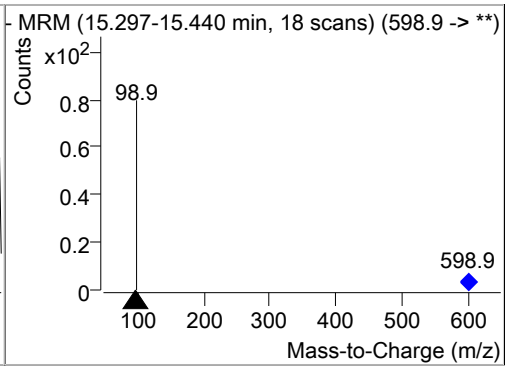




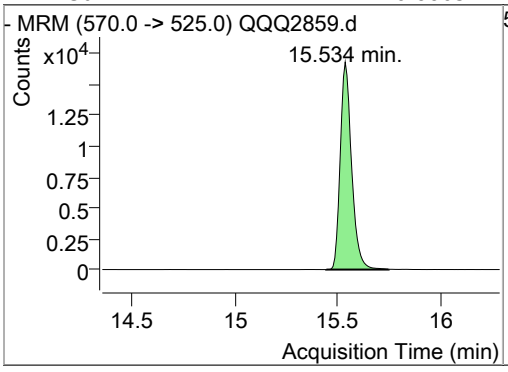
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	0.0008	15.33	0.12	3				

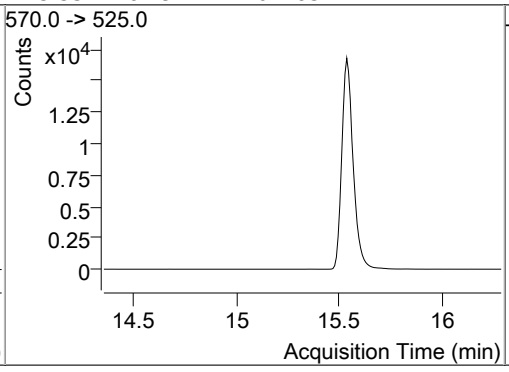


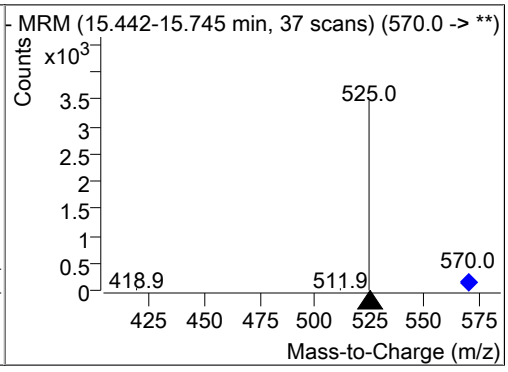




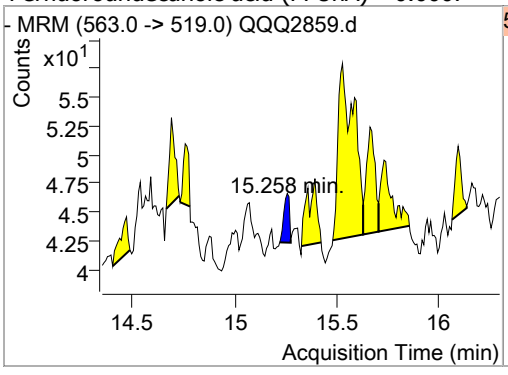
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	6.0065	15.53	0.29	64103				

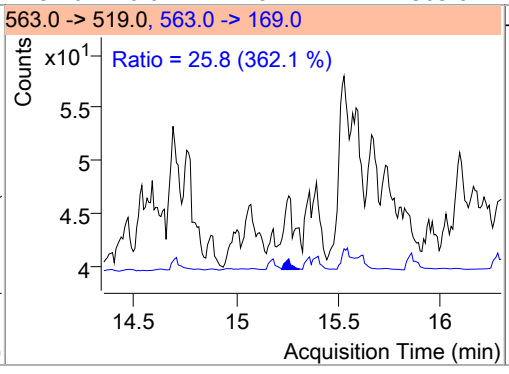


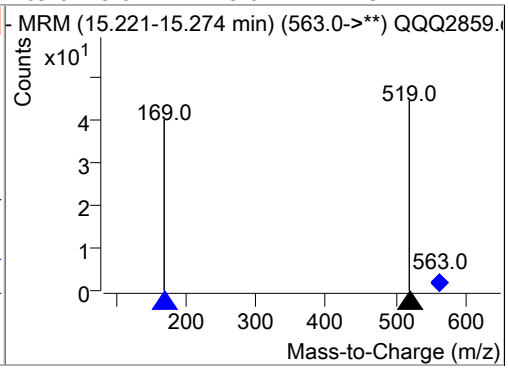




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	0.0007	15.26	0.01	8	563.0 -> 169.0	25.8	5.0	9.2

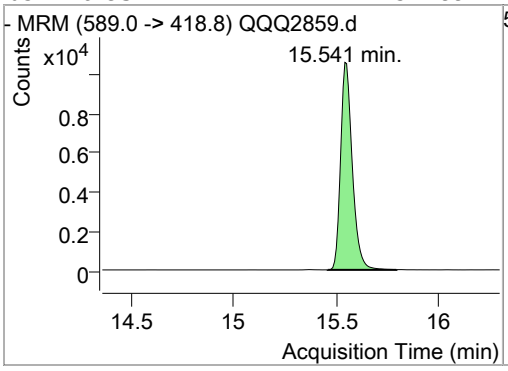


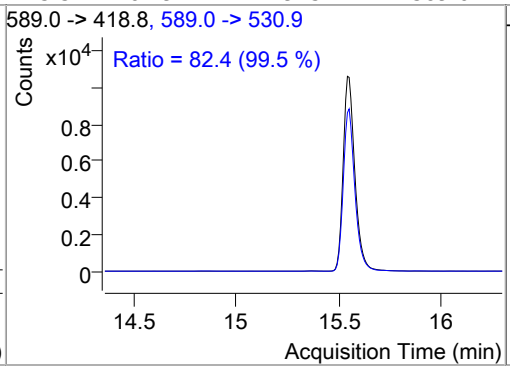


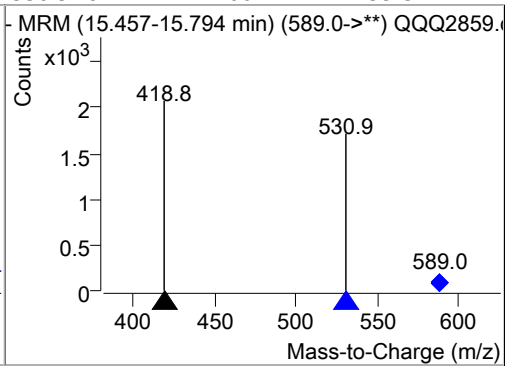


Quantitation Results Report (Not Reviewed)

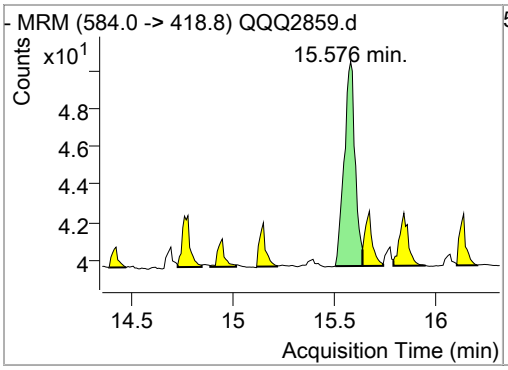
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	5.7299	15.54	0.29	41945	589.0 -> 530.9	82.4	66.2	99.3

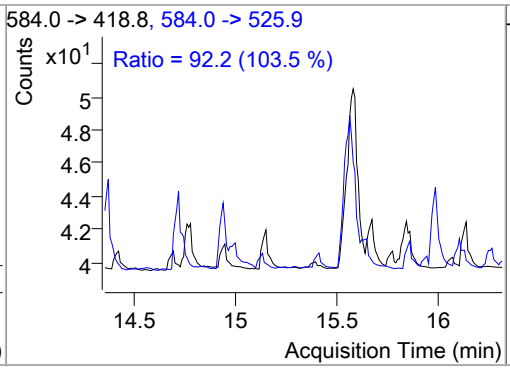


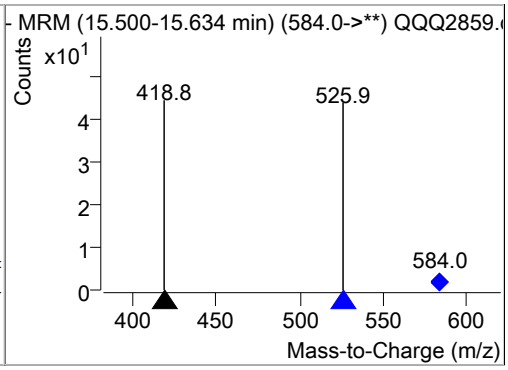




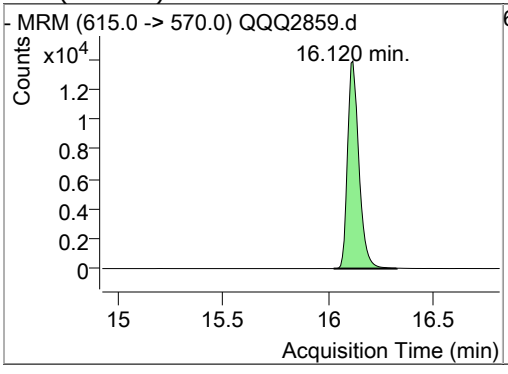
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	0.0057	15.58	0.31	40	584.0 -> 525.9	92.2	71.3	107.0

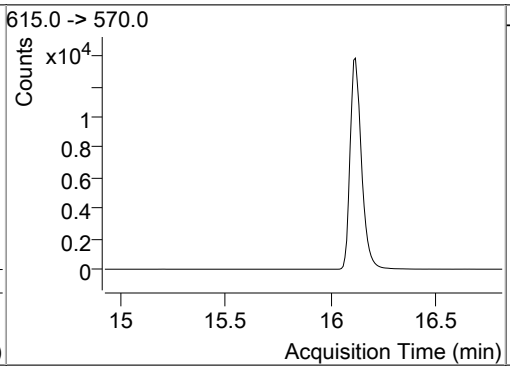


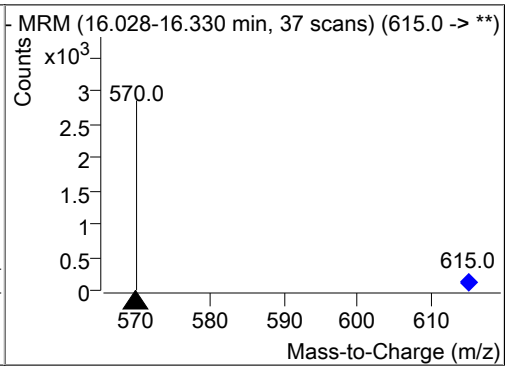




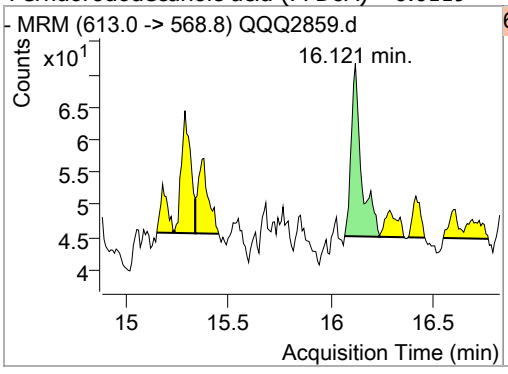
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.0253	16.12	0.35	52513				

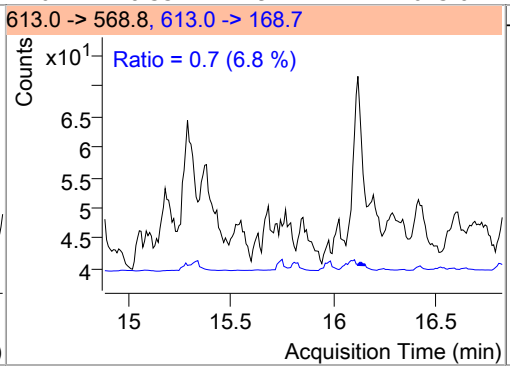


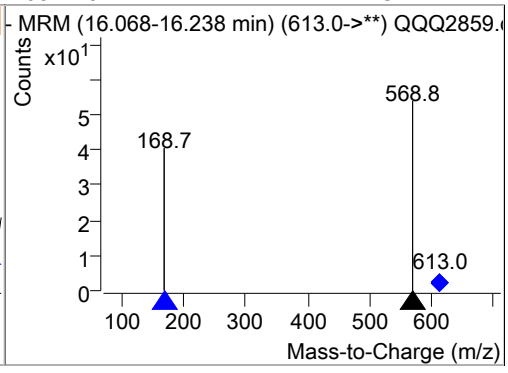




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	0.0119	16.12	0.35	92	613.0 -> 168.7	0.7	7.4	13.7

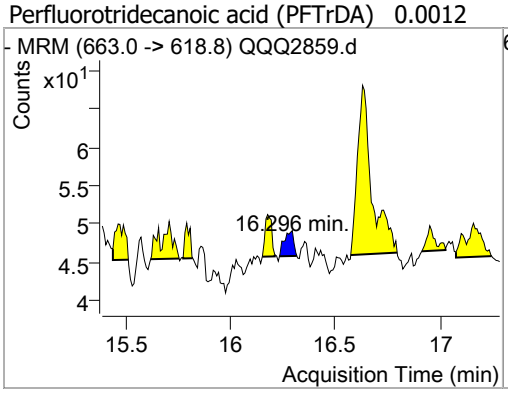


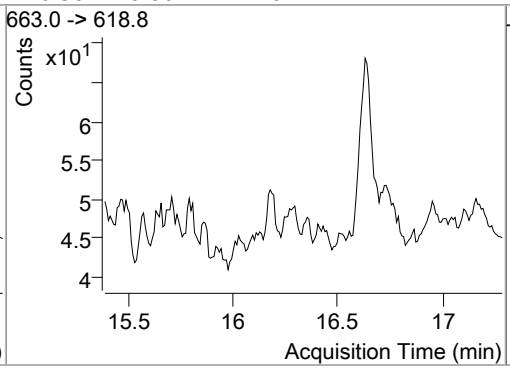


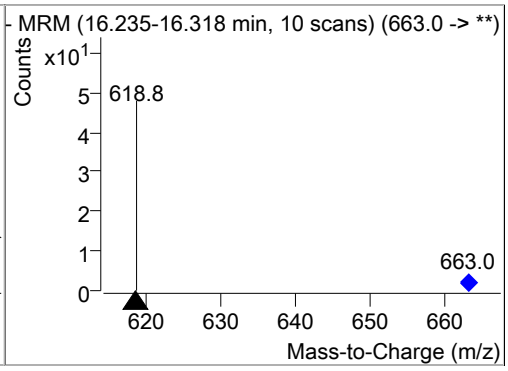


Quantitation Results Report (Not Reviewed)

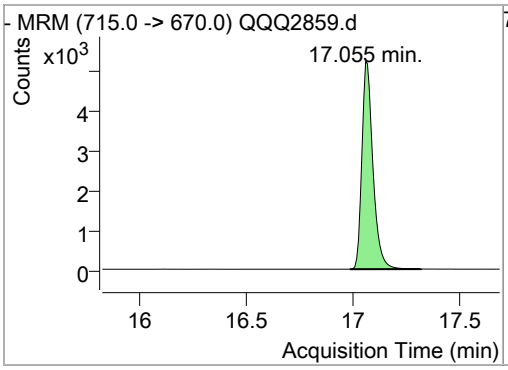
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	0.0012	16.30	0.06	10				

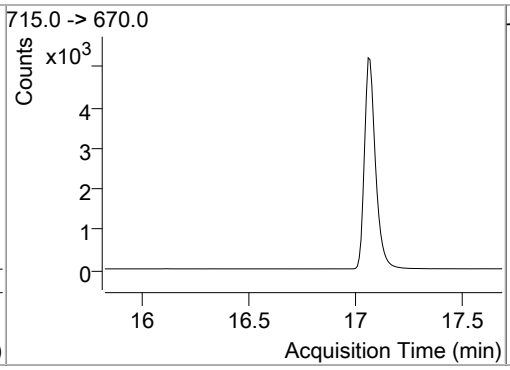


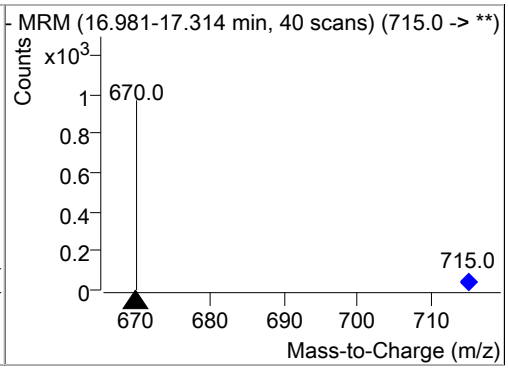




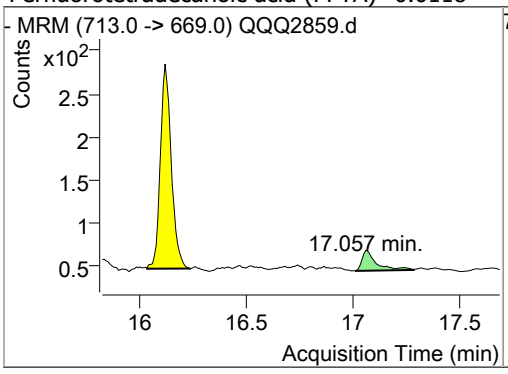
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	1.9058	17.05	0.42	18571				

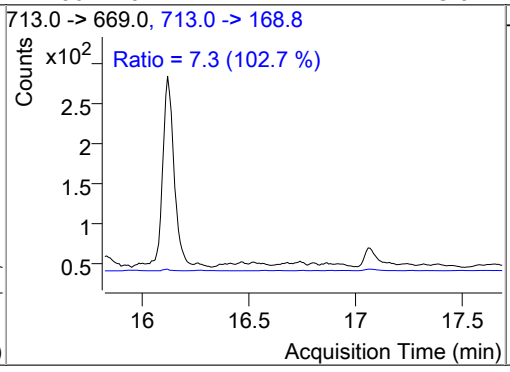


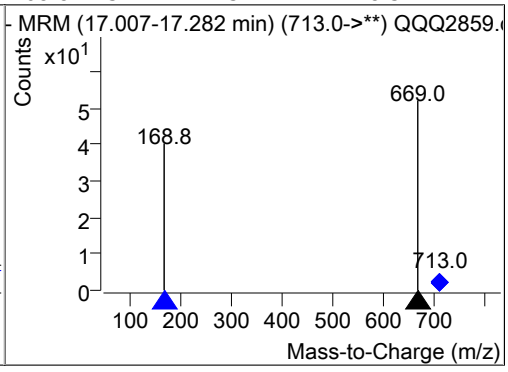




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	0.0118	17.06	0.42	111	713.0 -> 168.8	7.3	5.7	8.5







FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 537m

KMW-EB

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-04	File ID:	QQQ2860.d
Sampled:	12/16/19 13:00	Prepared:	12/18/19 16:57	Analyzed:	12/20/19 13:12
Solids:		Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023
Instrument:	LCQQQ				

CAS NO.	COMPOUND	DILUTION	CONC. (ng/L)	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1	2.00	U
307-24-4	Perfluorohexanoic acid (PFHxA)	1	2.00	U
375-85-9	Perfluoroheptanoic acid (PFHpA)	1	2.00	U
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1	2.00	U
335-67-1	Perfluorooctanoic acid (PFOA)	1	2.00	U
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1	2.00	U
375-95-1	Perfluorononanoic acid (PFNA)	1	2.00	U
335-76-2	Perfluorodecanoic acid (PFDA)	1	2.00	U
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1	2.00	U
307-55-1	Perfluorododecanoic acid (PFDoA)	1	2.00	U
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	1	2.00	U
376-06-7	Perfluorotetradecanoic acid (PFTA)	1	2.00	U
2355-31-9	N-MeFOSAA	1	2.00	U
2991-50-6	N-EtFOSAA	1	2.00	U
2706-90-3	Perfluoropentanoic acid (PFPeA)	1	2.00	U
754-91-6	Perfluoro-1-octanesulfonamide (FOSA)	1	2.00	U
375-92-8	Perfluoro-1-heptanesulfonic acid (PFHpS)	1	2.00	U
335-77-3	Perfluoro-1-decanesulfonic acid (PFDS)	1	2.00	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	1	5.00	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	1	2.00	U
375-22-4	Perfluoro-n-butanoic acid (PFBA)	1	2.00	U

SYSTEM MONITORING COMPOUND	ADDED (ng/L)	CONC (ng/L)	% REC	QC LIMITS	Q
M3PFBS	74.3	50.4	67.8	25 - 150	
M5PFHxA	80.0	54.9	68.7	25 - 150	
M4PFHpA	80.0	56.5	70.6	25 - 150	
M3PFHxS	75.7	50.8	67.1	25 - 150	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	54.4	68.0	25 - 150	
M6PFDA	80.0	51.1	63.9	25 - 150	
M7PFUdA	80.0	50.8	63.6	25 - 150	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	48.3	60.4	25 - 150	
M2PFTeDA	80.0	26.7	33.4	10 - 150	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	52.6	65.7	25 - 150	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	53.3	69.7	25 - 150	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	55.1	68.9	25 - 150	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	47.4	59.3	10 - 150	
d3-N-MeFOSAA	80.0	52.8	66.0	25 - 150	
d5-N-EtFOSAA	80.0	52.3	65.4	25 - 150	
M2-6:2 FTS	75.9	84.3	111	25 - 150	
M2-8:2 FTS	76.6	81.3	106	25 - 150	
M9PFNA	80.0	61.3	76.6	25 - 150	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 537m

KMW-EB

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	19L0685-04	File ID:	QQQ2860.d
Sampled:	12/16/19 13:00	Prepared:	12/18/19 16:57	Analyzed:	12/20/19 13:12
Solids:		Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023
Instrument:	LCQQQ				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
MPFOA	234764.9	13.09313	214702.8	13.1099	

* Values outside of QC limits

Quantitation Results Report (Not Reviewed)

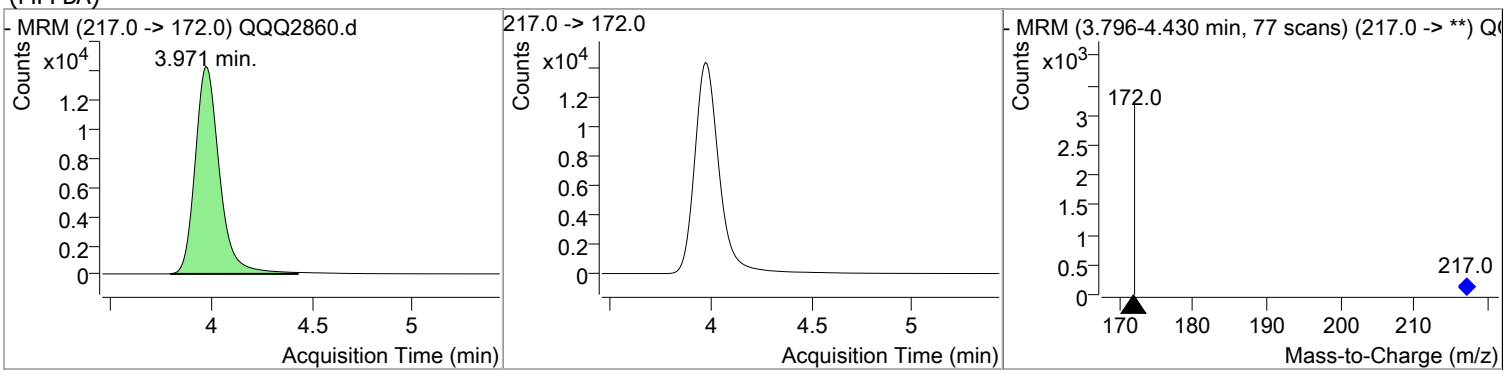
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Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 1:12:22 PM
Sample Name	19L0685-04	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.093	417.0 -> 372.0	234765	10.0000	ng/ml	0.059
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.971	217.0 -> 172.0	120823	6.5705	ng/ml	-0.217
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 65.70%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.006	268.0 -> 223.0	172702	6.8888	ng/ml	-0.109
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 68.89%		
M3PFBS	8.743	302.0 -> 79.9	49858	6.3000	ng/ml	-0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.00%		
M2-4-2FTS	10.200	329.0 -> 309.0	80163	11.2181	ng/ml	-0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 112.18%		
M5PFHxA	10.345	318.0 -> 273.0	162197	6.8677	ng/ml	-0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 68.68%		
M4PFHpA	11.902	367.0 -> 322.0	46094	7.0595	ng/ml	-0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 70.59%		
M3PFHxS	12.043	402.0 -> 80.0	34519	6.3497	ng/ml	0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.50%		
M2-6-2FTS	13.031	429.0 -> 409.0	61273	10.5313	ng/ml	0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 105.31%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.101	421.0 -> 376.0	84414	6.7974	ng/ml	0.076
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 67.97%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.048	472.0 -> 427.0	97350	7.6615	ng/ml	0.144
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 76.62%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.063	507.0 -> 80.0	27753	6.6678	ng/ml	0.152
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 66.68%		
M2-8-2FTS	14.837	529.0 -> 509.0	45934	10.1647	ng/ml	0.219
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 101.65%		
M6PFDA	14.846	519.0 -> 473.9	64728	6.3934	ng/ml	0.219
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.93%		
d3-N-MeFOSAA	15.189	573.0 -> 418.8	53652	6.6009	ng/ml	0.253
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 66.01%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.530	506.0 -> 78.0	38391	5.9265	ng/ml	0.336
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 59.27%		
M7PFUdA	15.534	570.0 -> 525.0	65711	6.3554	ng/ml	0.294
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.55%		
d5-N-EtFOSAA	15.541	589.0 -> 418.8	46368	6.5381	ng/ml	0.286
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 65.38%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.112	615.0 -> 570.0	61105	6.0358	ng/ml	0.337
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.36%		
M2PFTeDA	17.055	715.0 -> 670.0	31534	3.3402	ng/ml	0.418
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 33.40%		
Target Compounds						QValue

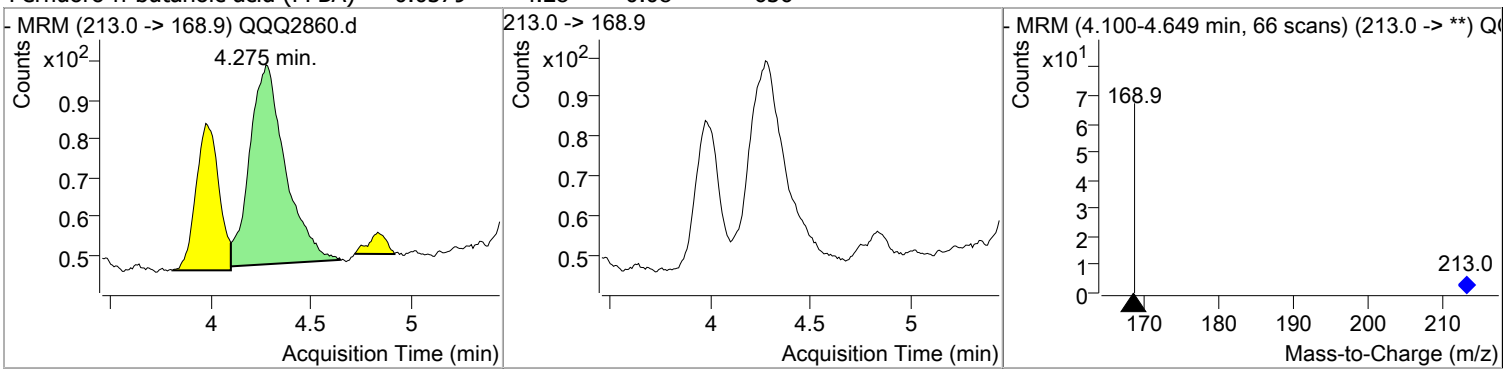
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.275	213.0 -> 168.9	636	0.0379	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	7.999	263.0 -> 219.0	387	0.0175	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.738	298.9 -> 79.9	65	0.0090	ng/ml		96
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.201	327.0 -> 307.0	72	0.0000	ng/ml	#	68
Perfluorohexanoic acid (PFHxA)	10.548	313.0 -> 268.9	19	0.0010	ng/ml	#	71
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.658	348.9 -> 79.9	34	0.0052	ng/ml		89
Perfluoroheptanoic acid (PFHpA)	11.903	363.0 -> 318.8	200	0.0130	ng/ml		99
Perfluorohexanesulfonic acid (PFHxS)	12.044	398.9 -> 79.9	60	0.0107	ng/ml		88
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.032	427.0 -> 407.0	230	0.0375	ng/ml		99
Perfluorooctanoic acid (PFOA)	13.094	413.0 -> 368.8	605	0.0507	ng/ml		96
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.157	448.9 -> 80.0	12	0.0031	ng/ml		93
Perfluorononanoic acid (PFNA)	14.049	463.0 -> 418.8	92	0.0096	ng/ml	#	88
Perfluorooctanesulfonic acid (PFOS)	14.064	498.9 -> 79.9	558	0.1126	ng/ml	#m	70
Perfluorononanesulfonate (L-PFNS)	14.836	548.9 -> 79.9	8	0.0021	ng/ml	#	41
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.568	527.0 -> 507.0	2	0.0000	ng/ml	#	33
Perfluorodecanoic acid (PFDA)	14.670	513.0 -> 468.8	33	0.0040	ng/ml		52
N-MeFOSAA	15.206	570.0 -> 418.9	49	0.0056	ng/ml	#	74
Perfluoro-1-octanesulfonamide (FOSA)	15.270	497.9 -> 78.0	2	0.0004	ng/ml	#	35
Perfluoro-1-decanesulfonate (L-PFDS)	15.381	598.9 -> 98.9	2	0.0006	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.308	563.0 -> 519.0	6	0.0005	ng/ml	#	66
N-EtFOSAA	15.416	584.0 -> 418.8	8	0.0011	ng/ml		5
Perfluorododecanoic acid (PFDoA)	15.759	613.0 -> 568.8	38	0.0051	ng/ml	#	79
Perfluorotridecanoic acid (PFTrDA)	16.423	663.0 -> 618.8	8	0.0010	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	81	0.0089	ng/ml	#	89

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

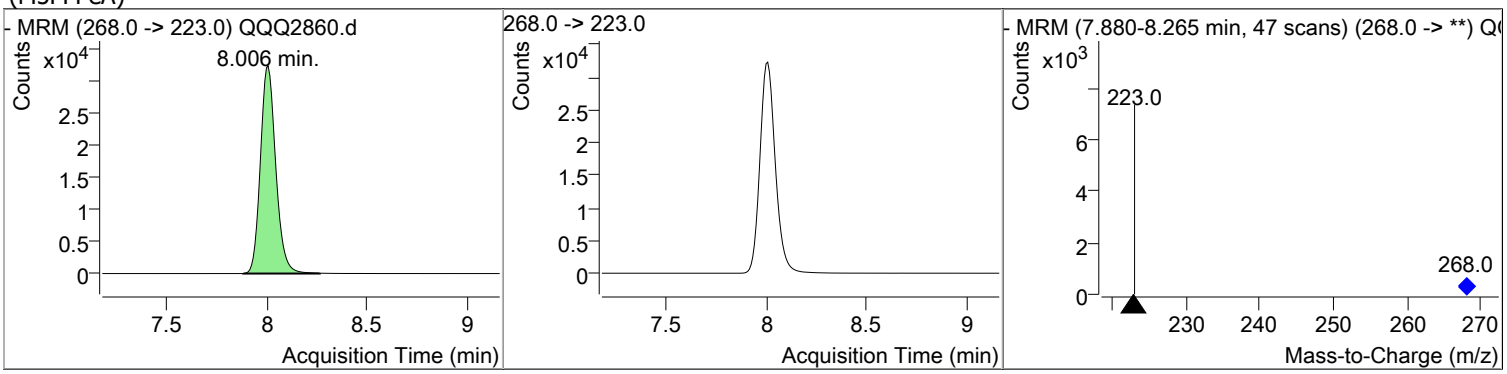
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	6.5705	3.97	-0.22	120823				



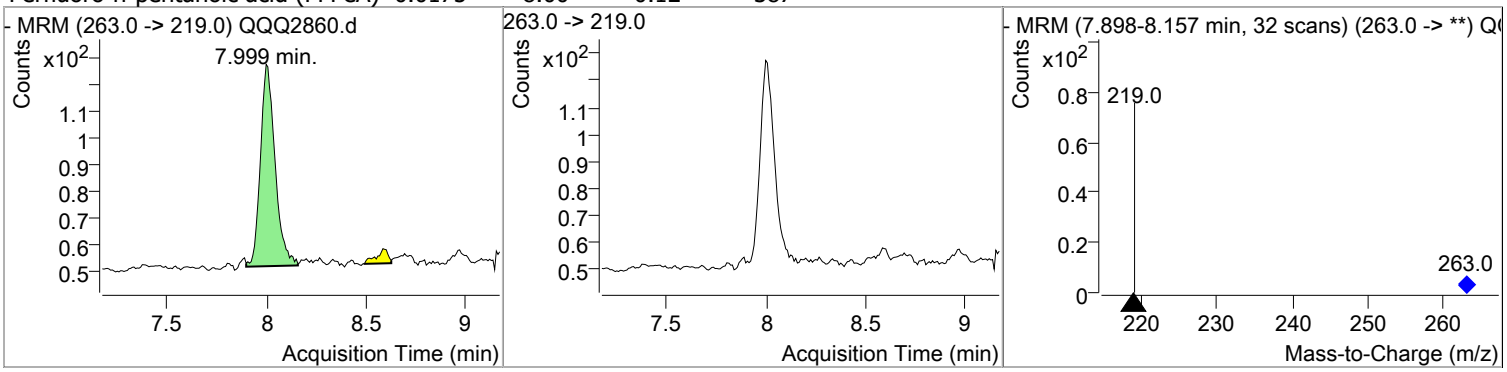
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	0.0379	4.28	0.08	636				



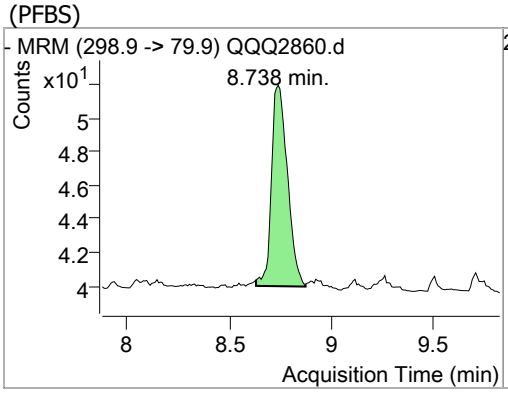
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	6.8888	8.01	-0.11	172702				

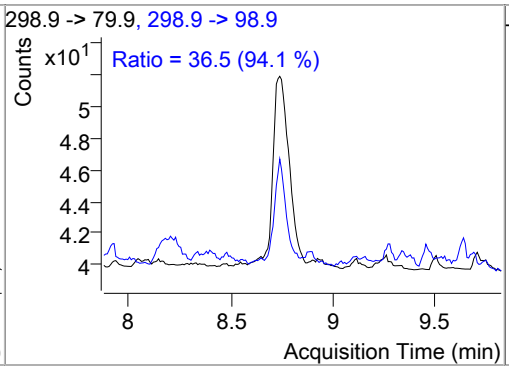


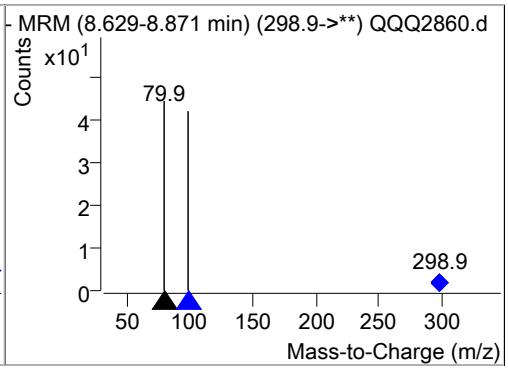
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	0.0175	8.00	-0.12	387				



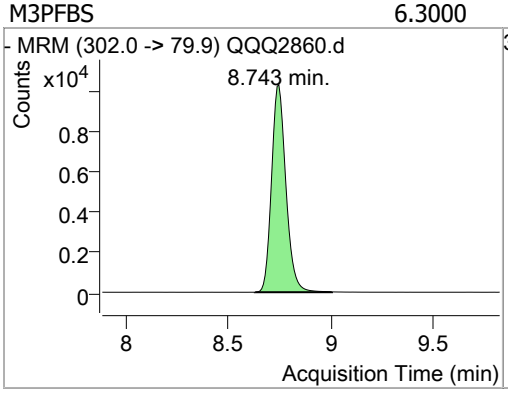
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	0.0090	8.74	-0.08	65	298.9 -> 98.9	36.5	31.0	46.5

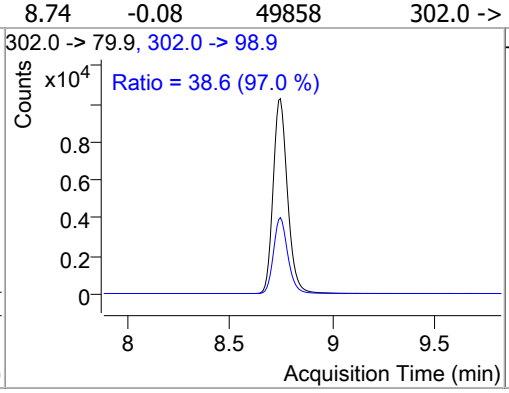


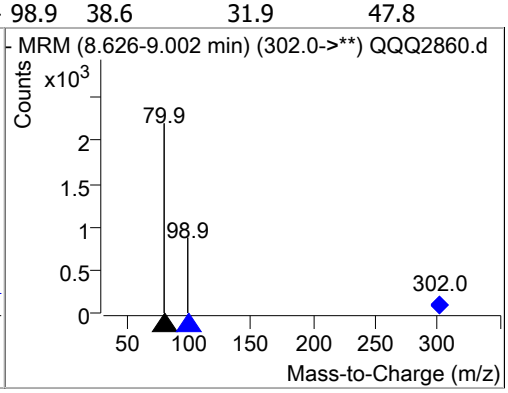




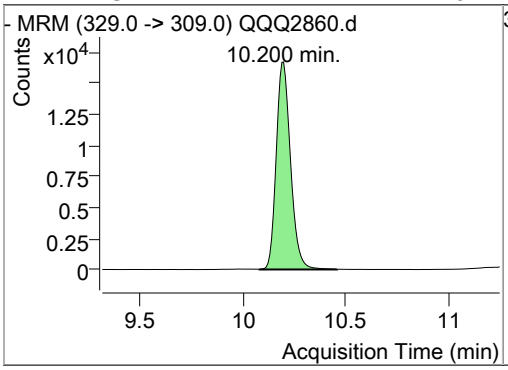
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	6.3000	8.74	-0.08	49858	302.0 -> 98.9	38.6	31.9	47.8

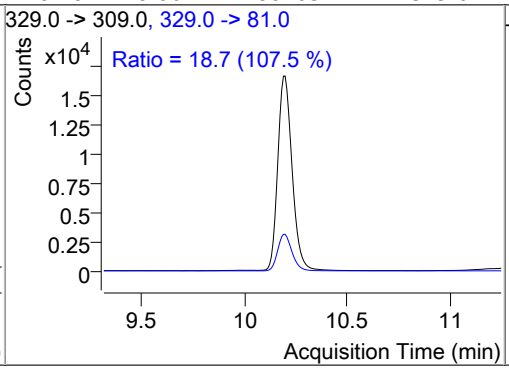


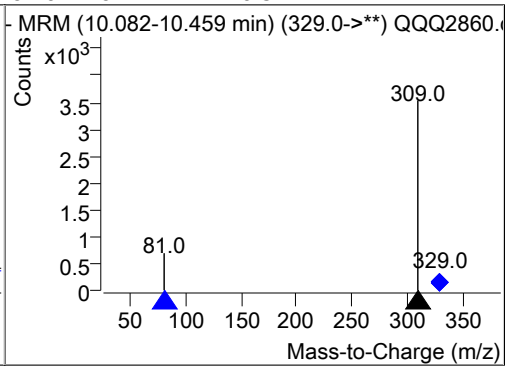




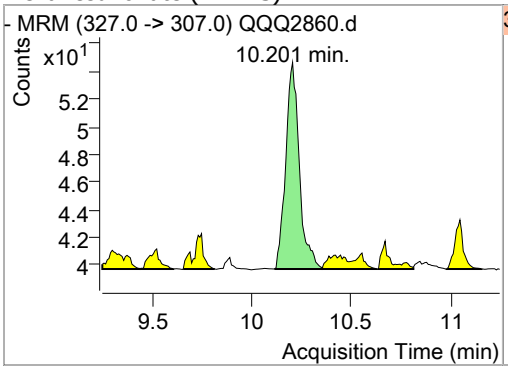
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	11.2181	10.20	-0.06	80163	329.0 -> 81.0	18.7	10.5	24.4

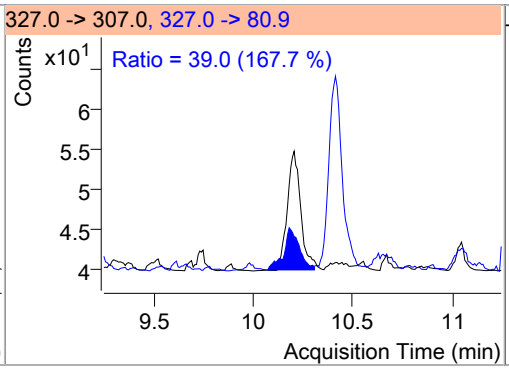


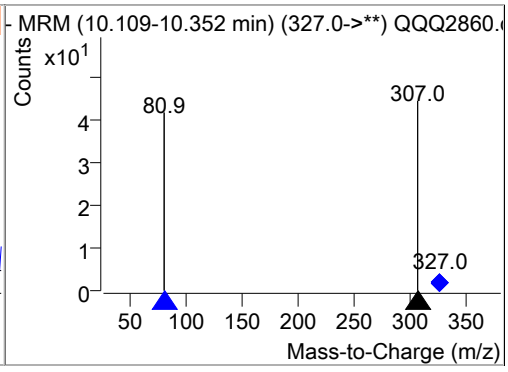




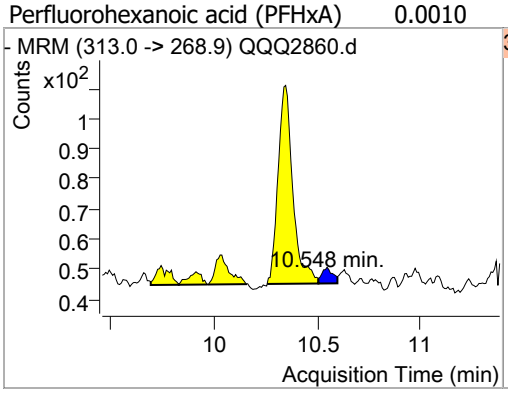
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	0.0000	10.20	-0.06	72	327.0 -> 80.9	39.0	13.9	32.5

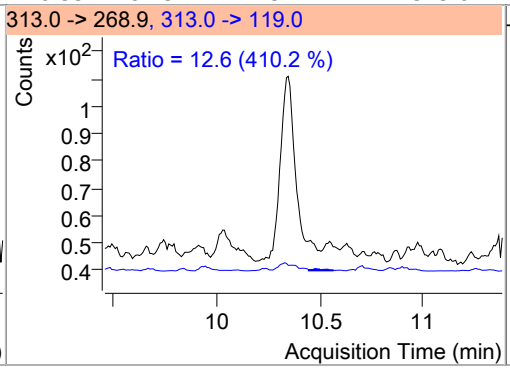


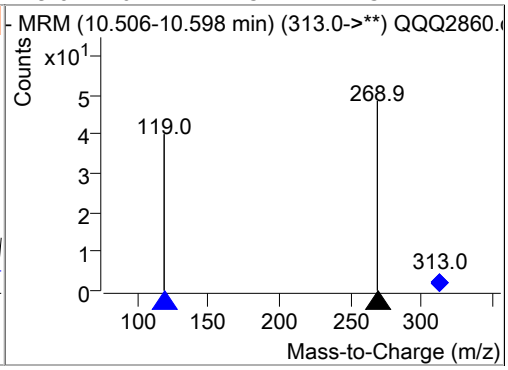




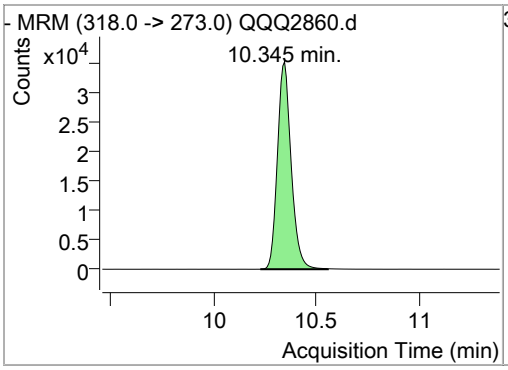
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	0.0010	10.55	0.15	19	313.0 -> 119.0	12.6	2.5	3.7

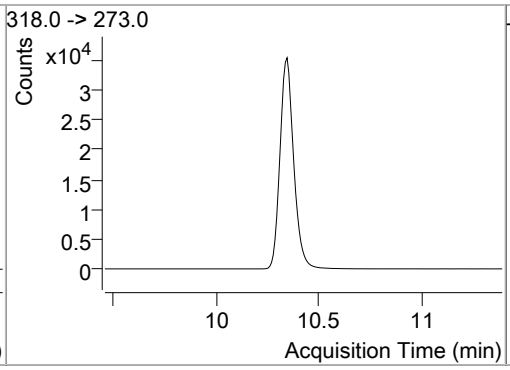


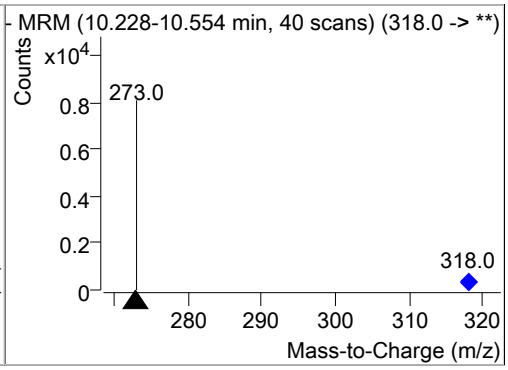




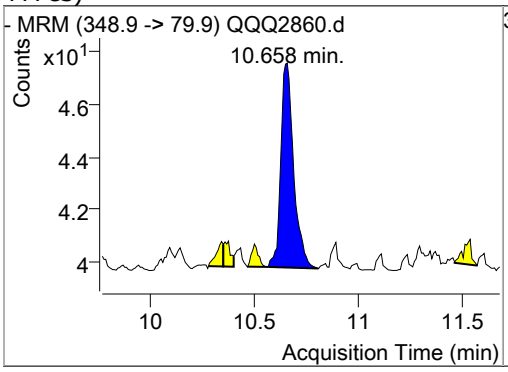
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	6.8677	10.34	-0.06	162197				

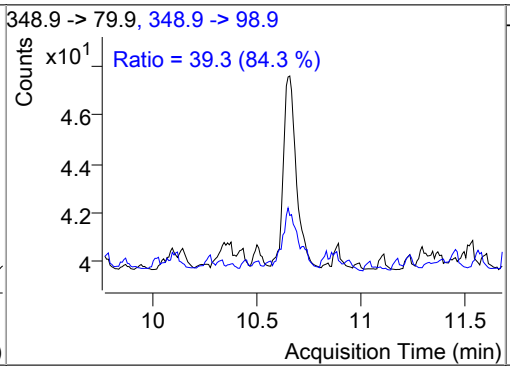


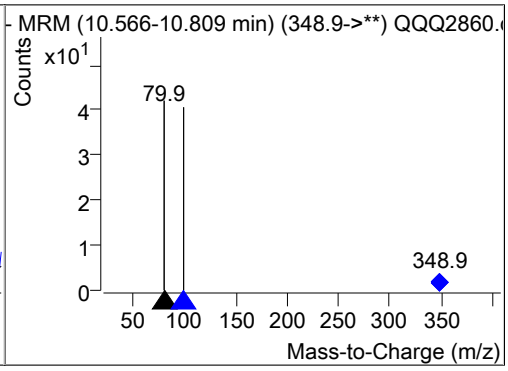




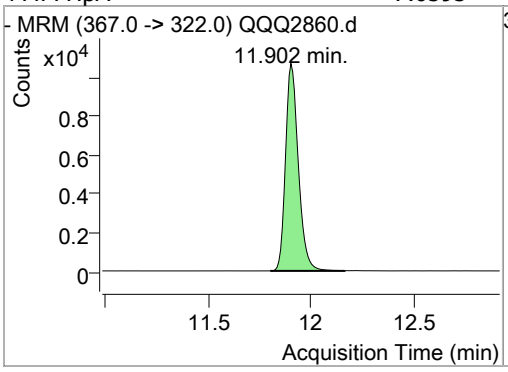
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	0.0052	10.66	-0.04	34	348.9 -> 98.9	39.3	37.3	56.0

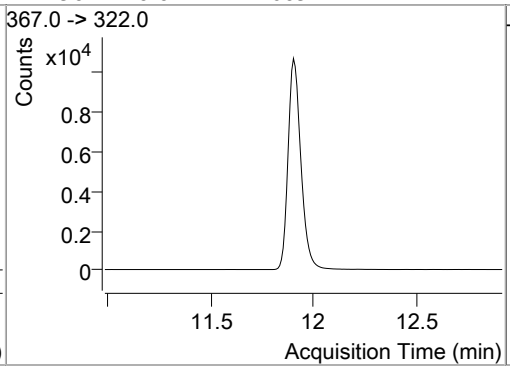


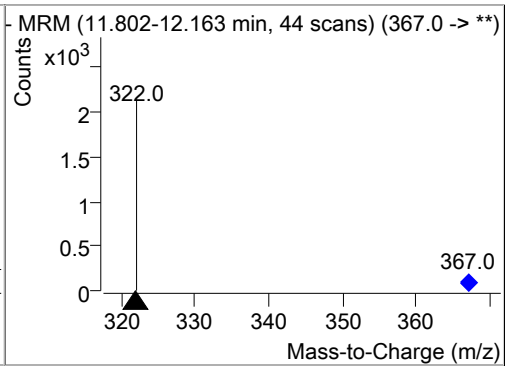




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	7.0595	11.90	-0.02	46094				

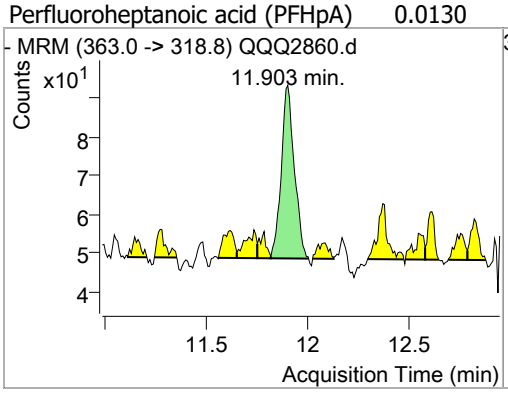


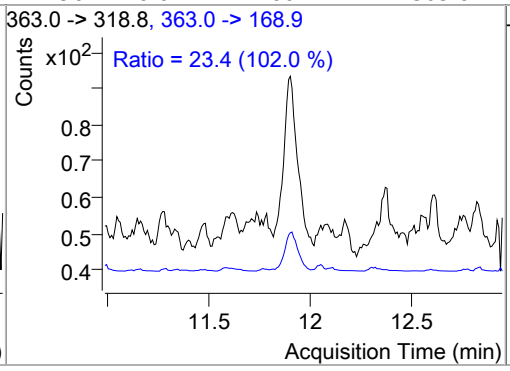


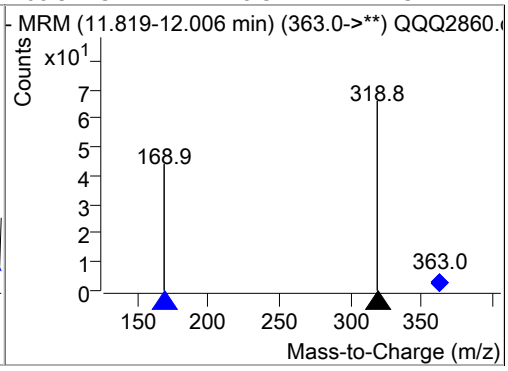


Quantitation Results Report (Not Reviewed)

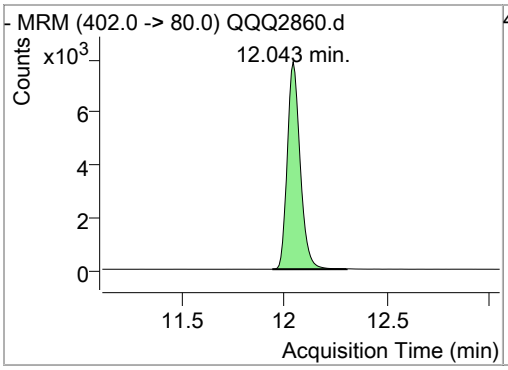
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	0.0130	11.90	-0.02	200	363.0 -> 168.9	23.4	18.3	27.5

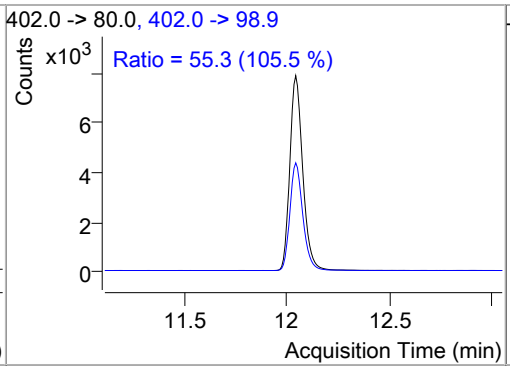


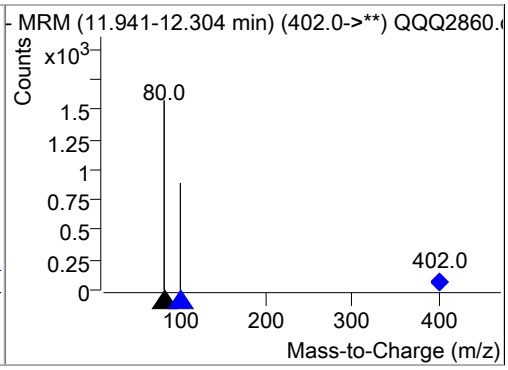




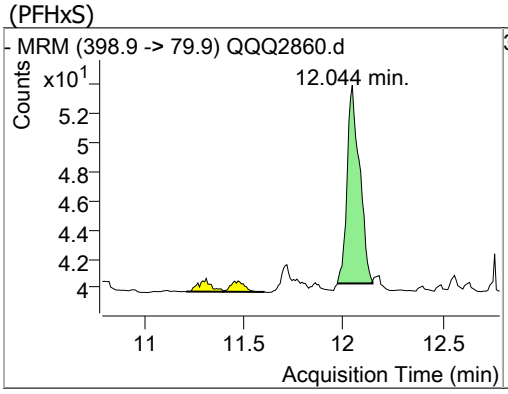
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	6.3497	12.04	0.00	34519	402.0 -> 98.9	55.3	42.0	62.9

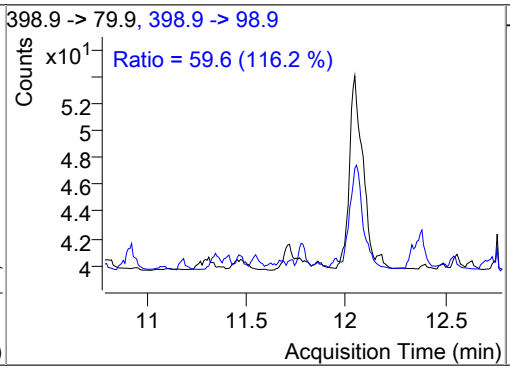


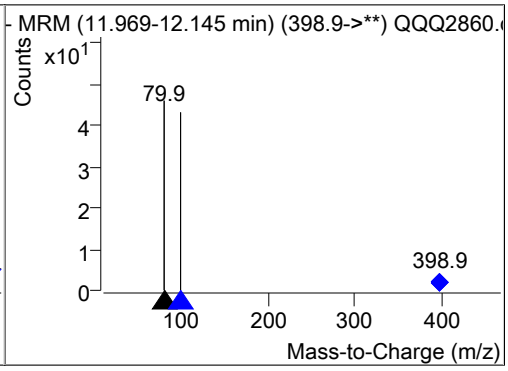




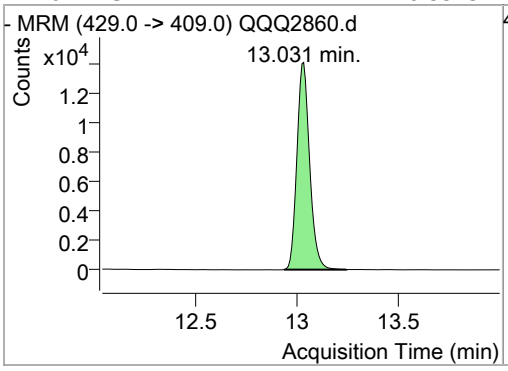
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	0.0107	12.04	0.00	60	398.9 -> 98.9	59.6	41.0	61.5

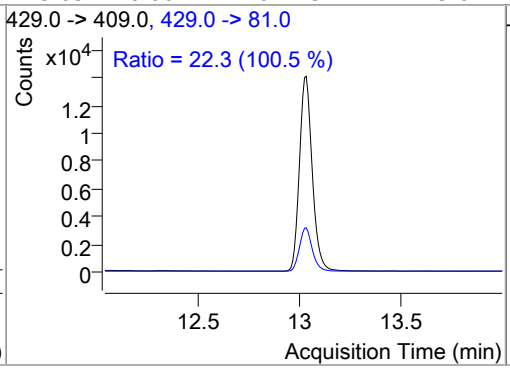


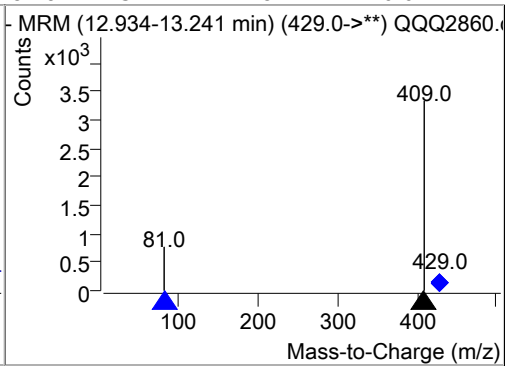




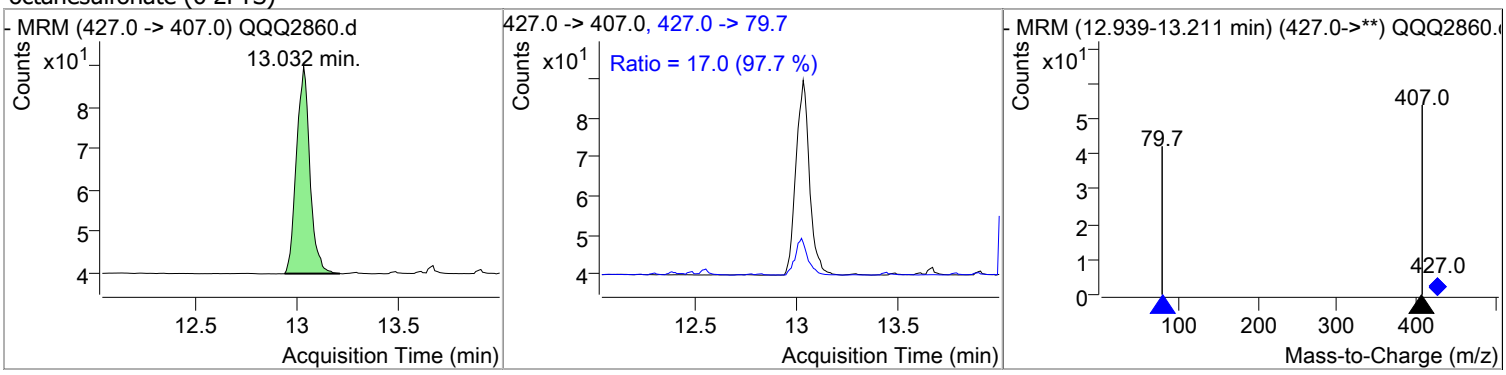
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	10.5313	13.03	0.06	61273	429.0 -> 81.0	22.3	17.8	26.6



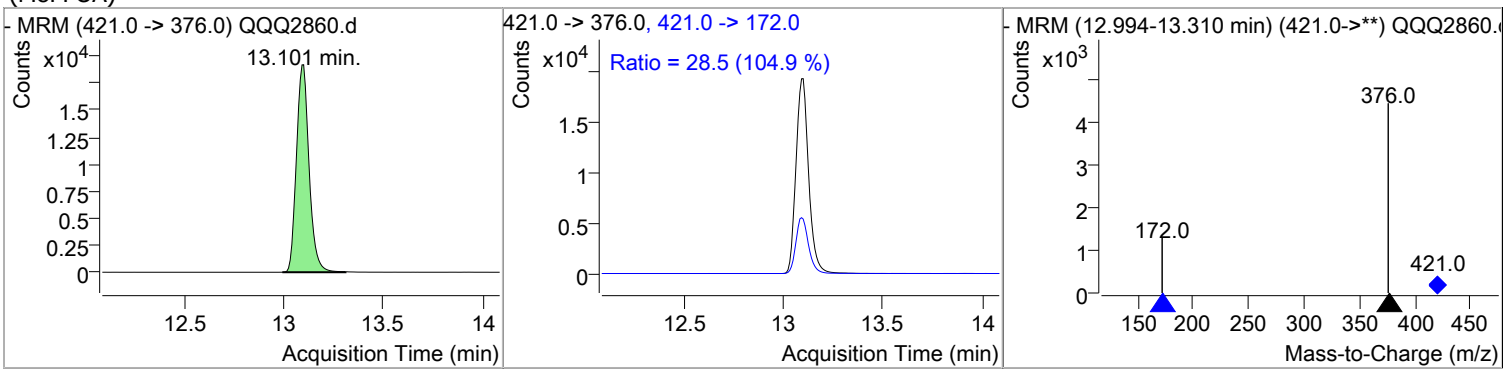




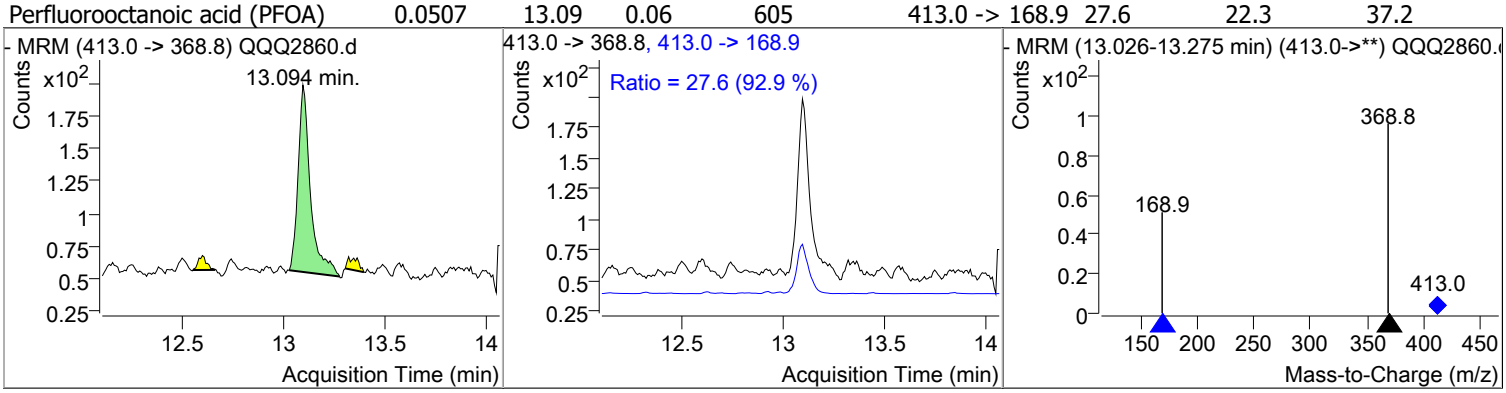
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	0.0375	13.03	0.06	230	427.0 -> 79.7	17.0	13.9	20.8



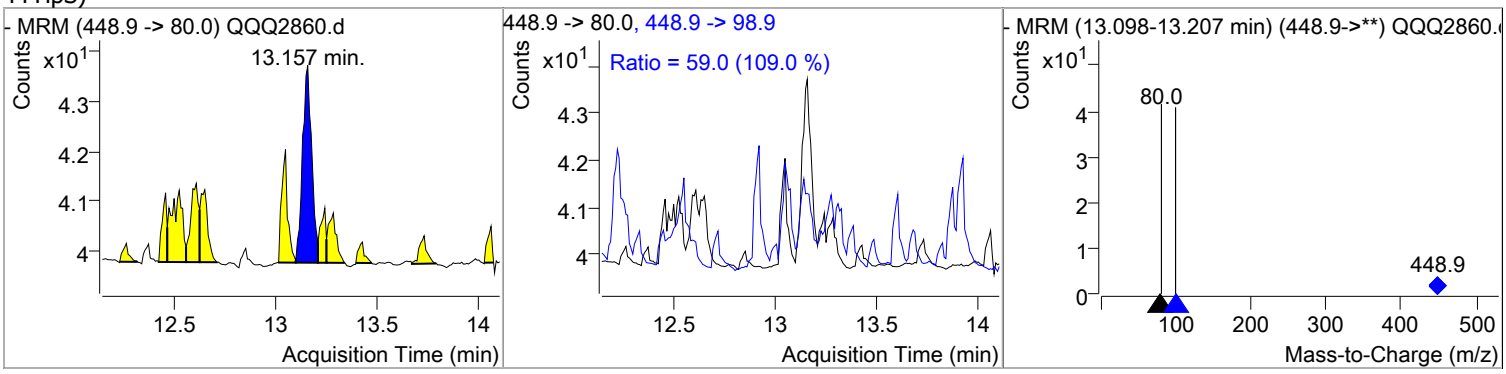
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	6.7974	13.10	0.08	84414	421.0 -> 172.0	28.5	21.7	32.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	0.0507	13.09	0.06	605	413.0 -> 168.9	27.6	22.3	37.2

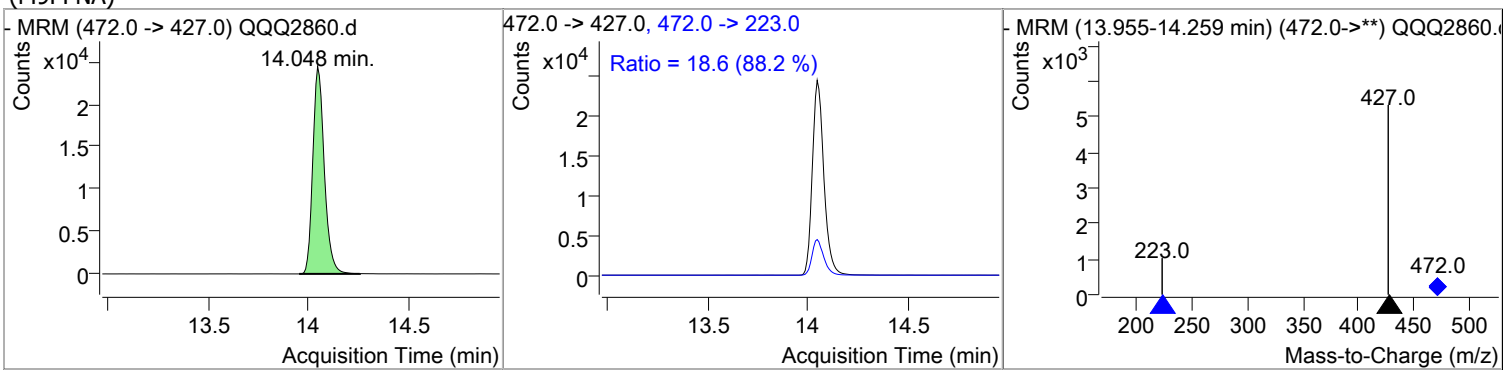


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	0.0031	13.16	0.08	12	448.9 -> 98.9	59.0	43.3	64.9

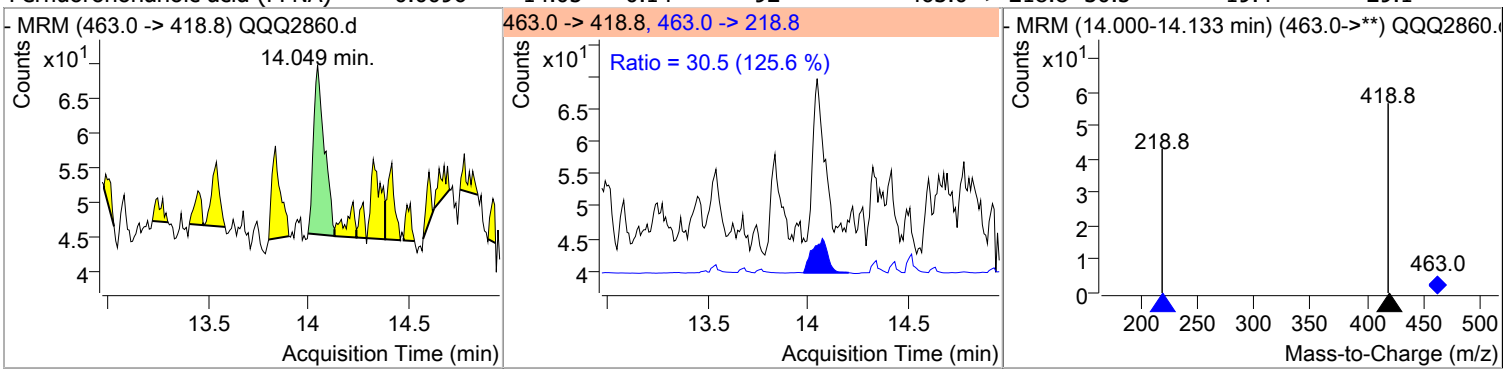


Quantitation Results Report (Not Reviewed)

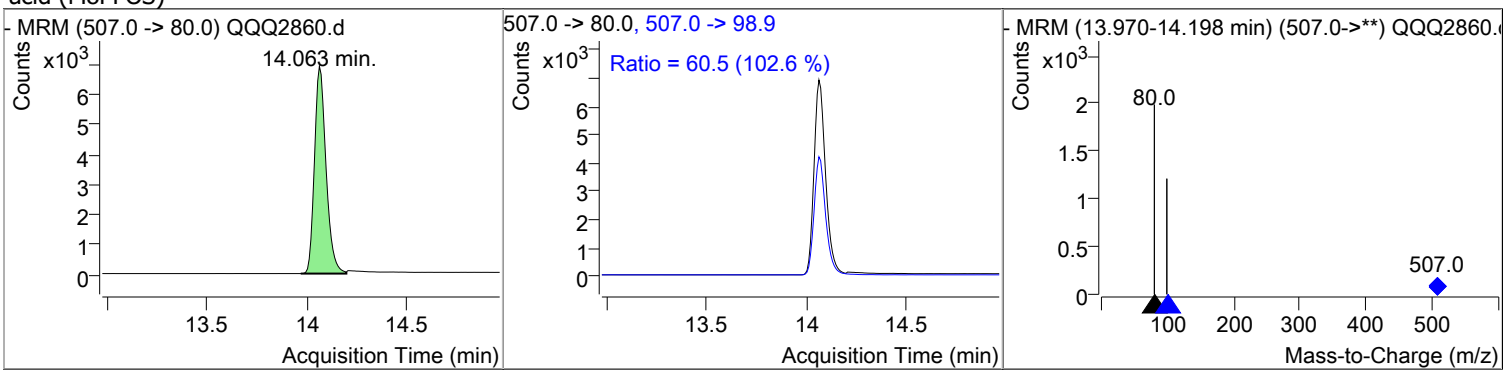
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	7.6615	14.05	0.14	97350	472.0 -> 223.0	18.6	16.9	25.4



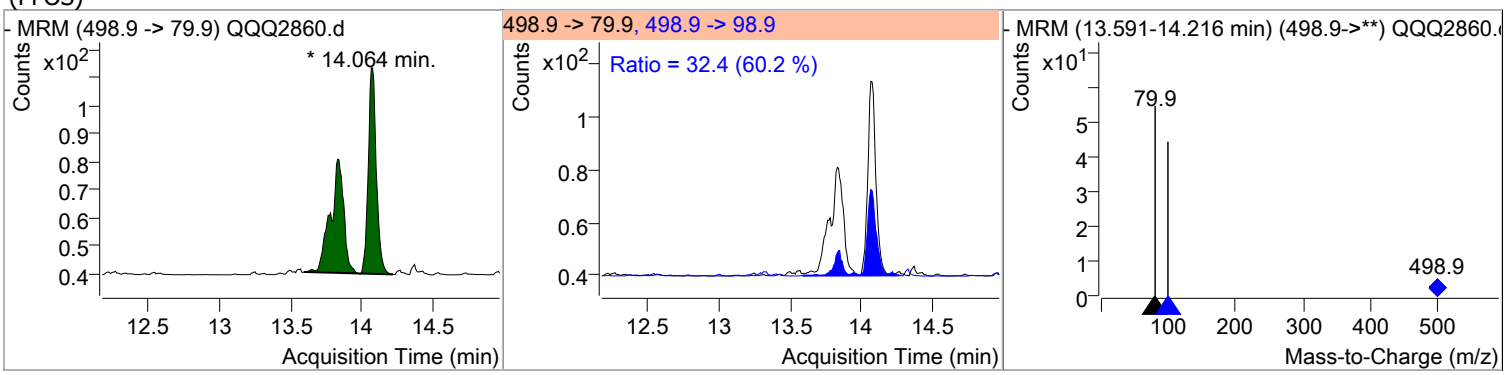
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	0.0096	14.05	0.14	92	463.0 -> 218.8	30.5	19.4	29.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	6.6678	14.06	0.15	27753	507.0 -> 98.9	60.5	47.2	70.8

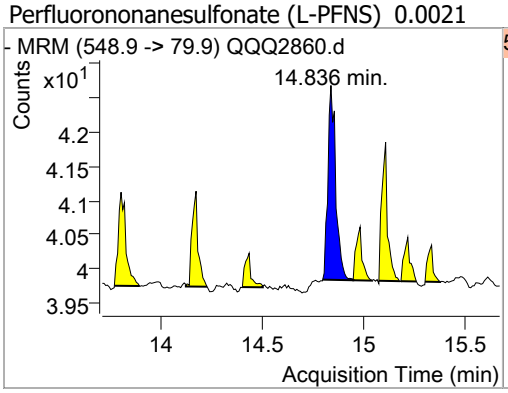


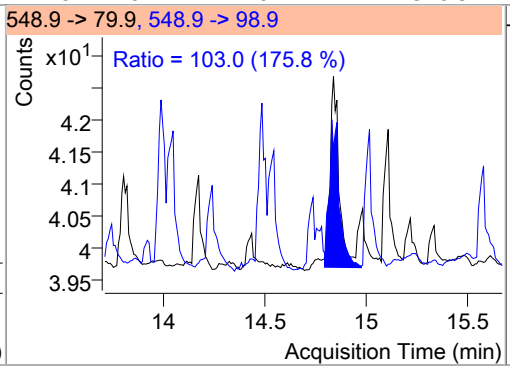
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	0.1126	14.06	0.15	558 (m)	498.9 -> 98.9	32.4	43.1	64.6

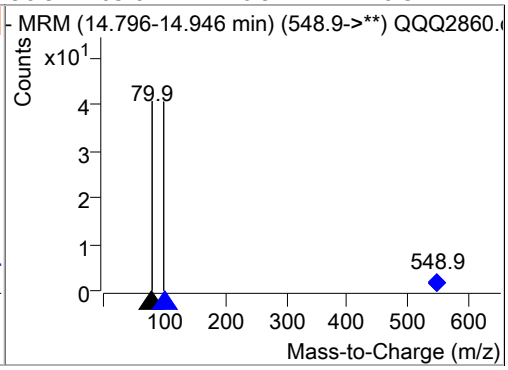


Quantitation Results Report (Not Reviewed)

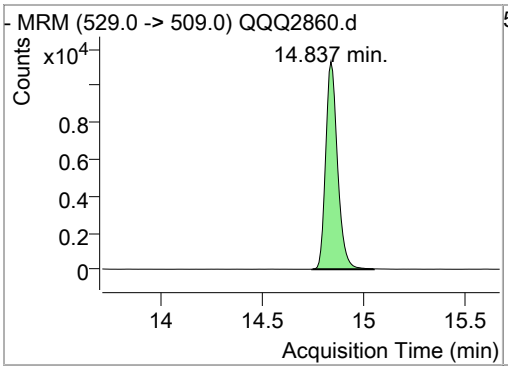
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	0.0021	14.84	0.22	8	548.9 -> 98.9	103.0	46.9	70.3

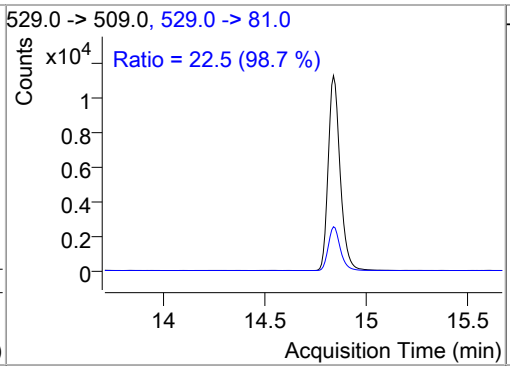


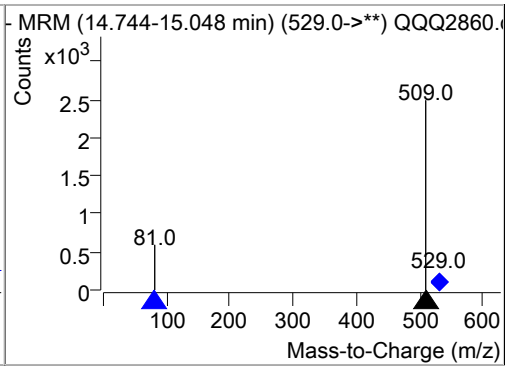




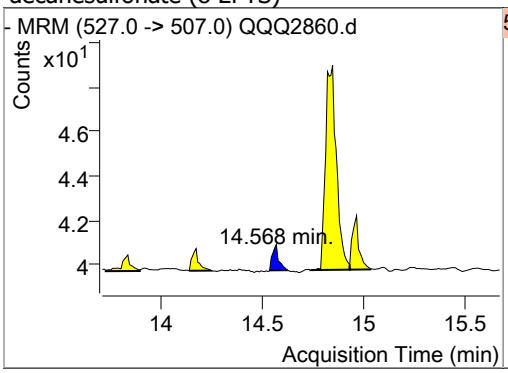
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	10.1647	14.84	0.22	45934	529.0 -> 81.0	22.5	18.3	27.4

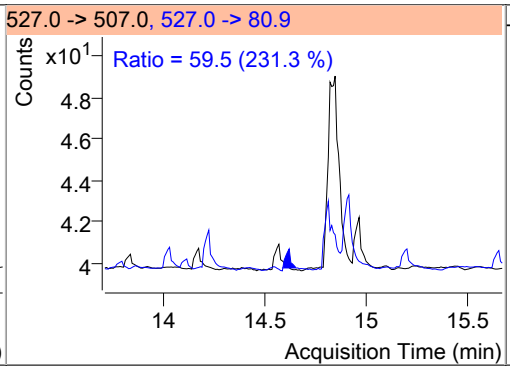


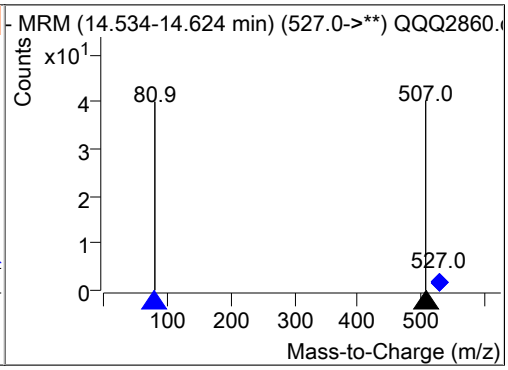




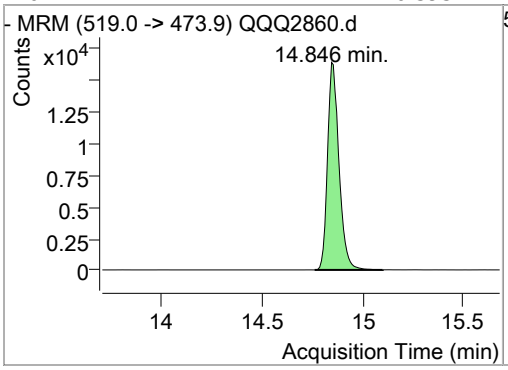
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	0.0000	14.57	-0.05	2	527.0 -> 80.9	59.5	20.6	30.9

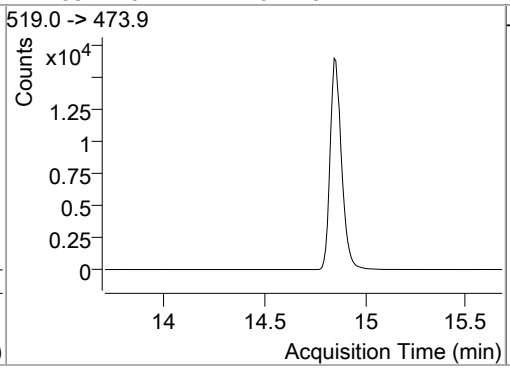


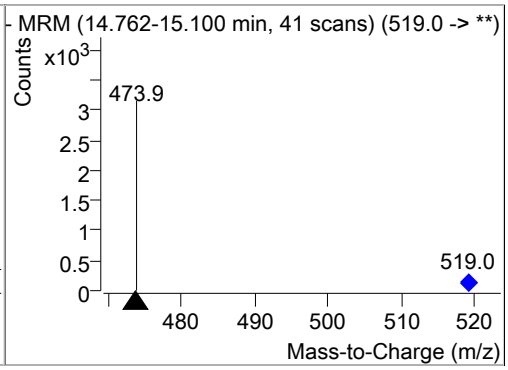




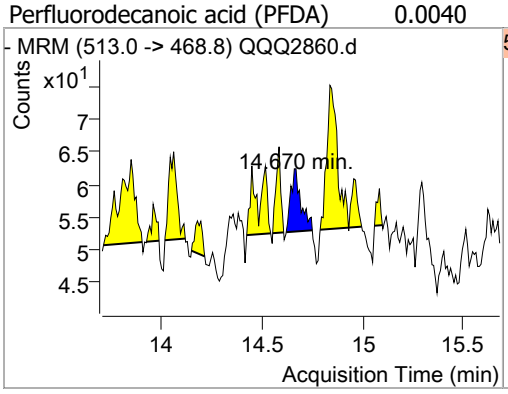
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	6.3934	14.85	0.22	64728				

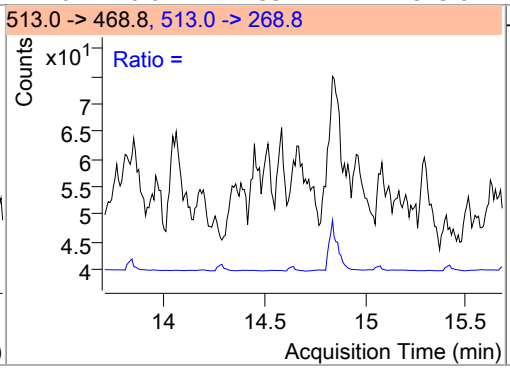


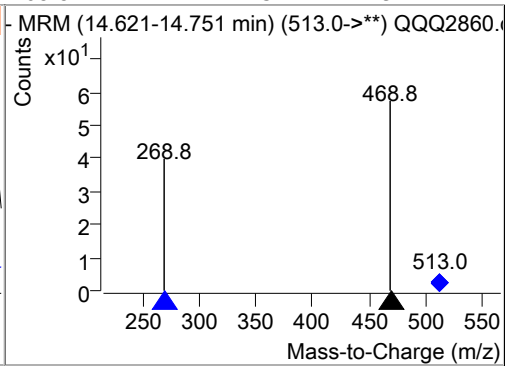




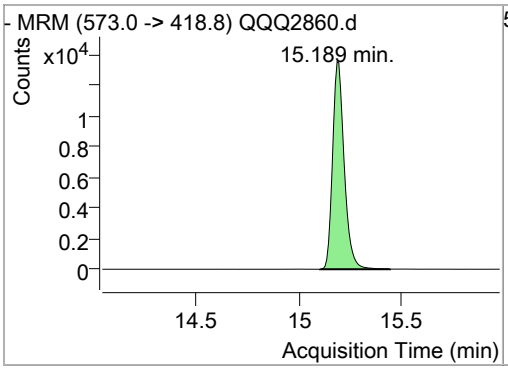
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	0.0040	14.67	0.04	33	513.0 -> 268.8		17.5	29.1

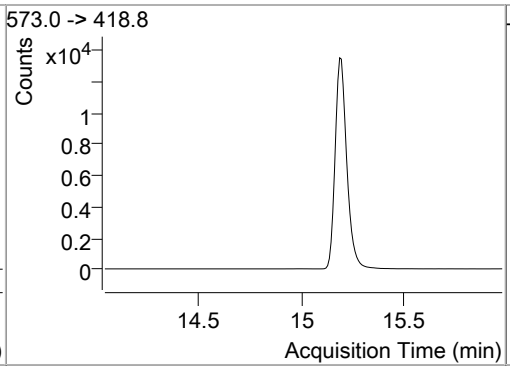


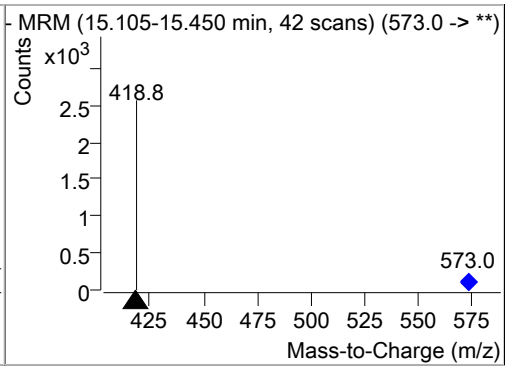




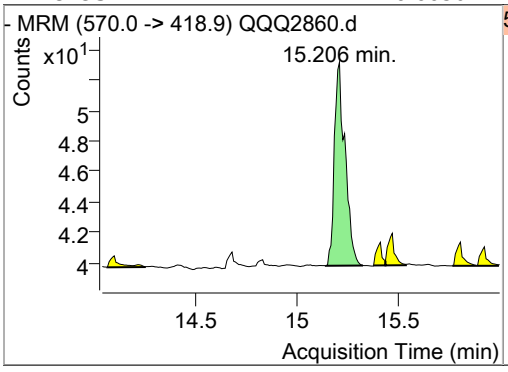
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	6.6009	15.19	0.25	53652				

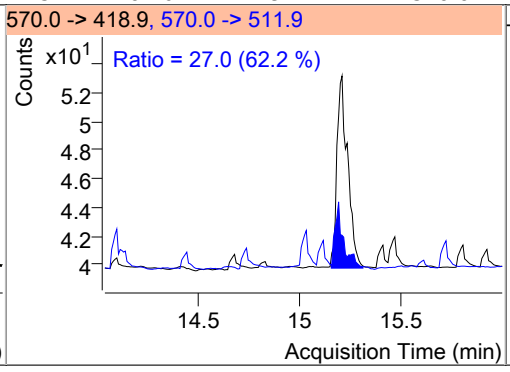


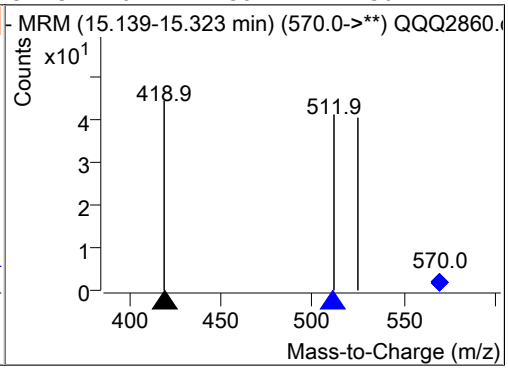




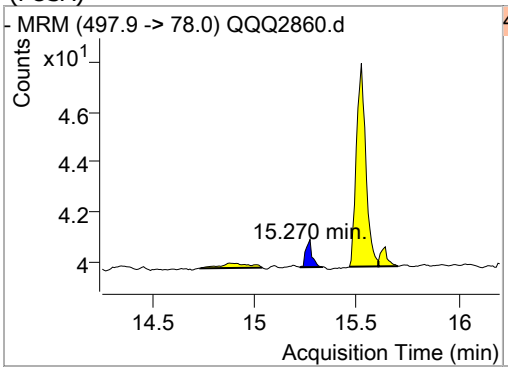
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	0.0056	15.21	0.26	49	570.0 -> 511.9	27.0	30.4	56.4

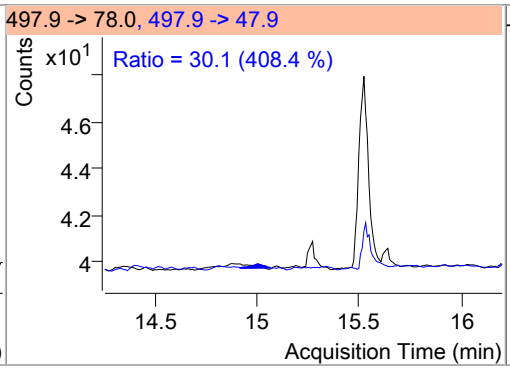


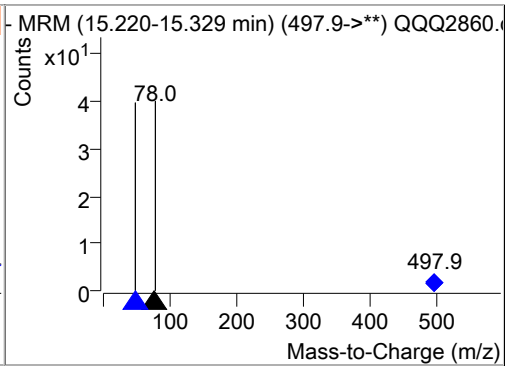




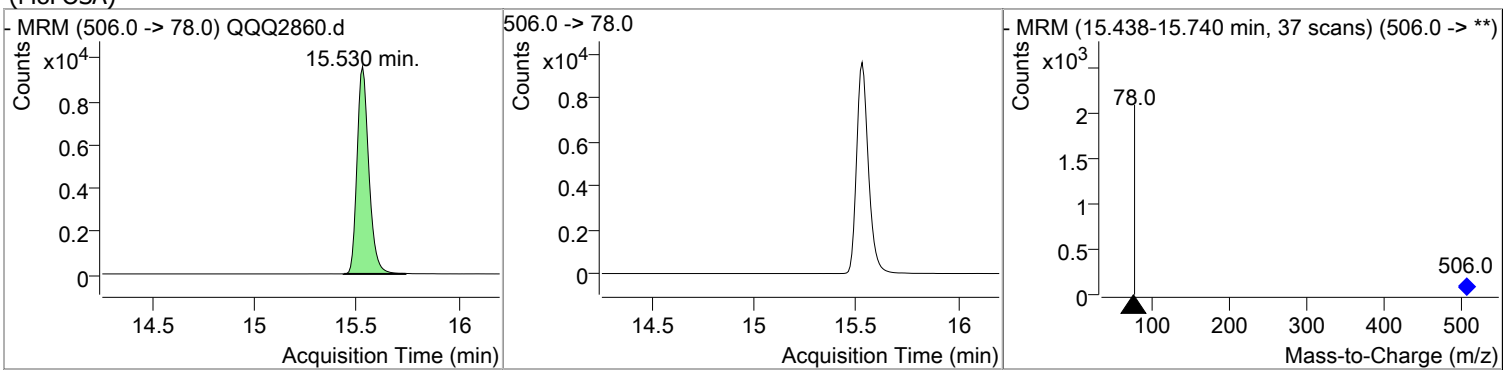
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	0.0004	15.27	0.08	2	497.9 -> 47.9	30.1	5.9	8.8



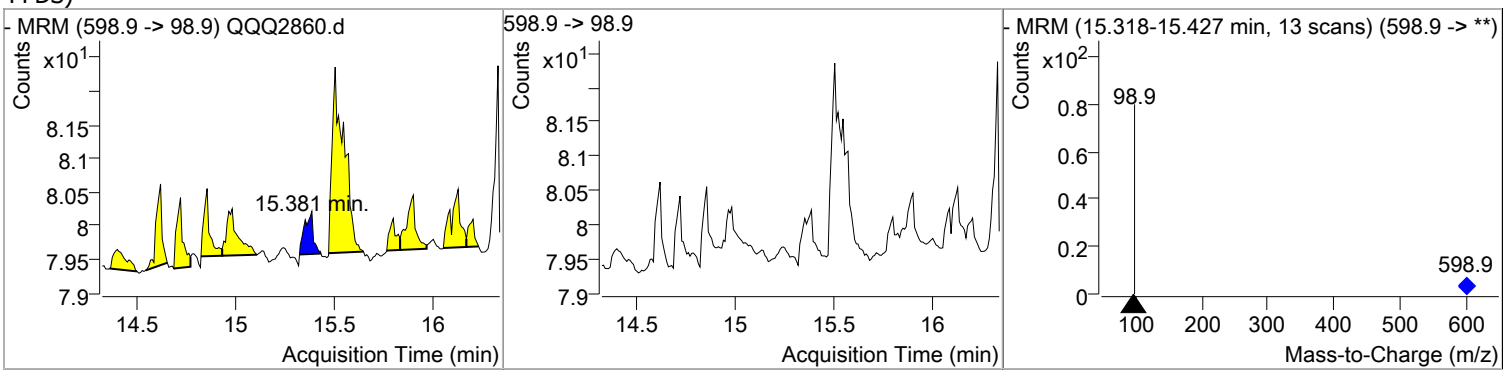




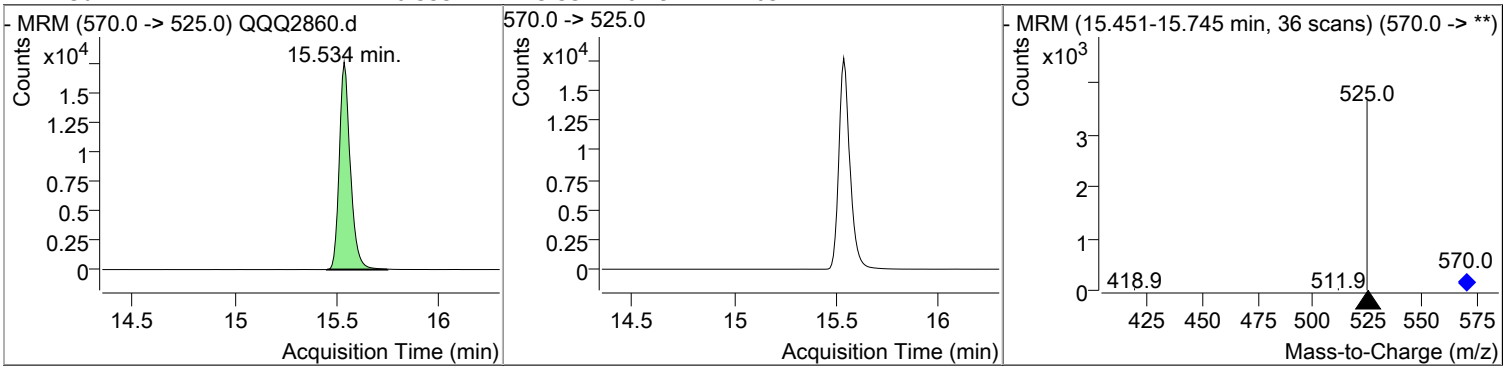
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.9265	15.53	0.34	38391				



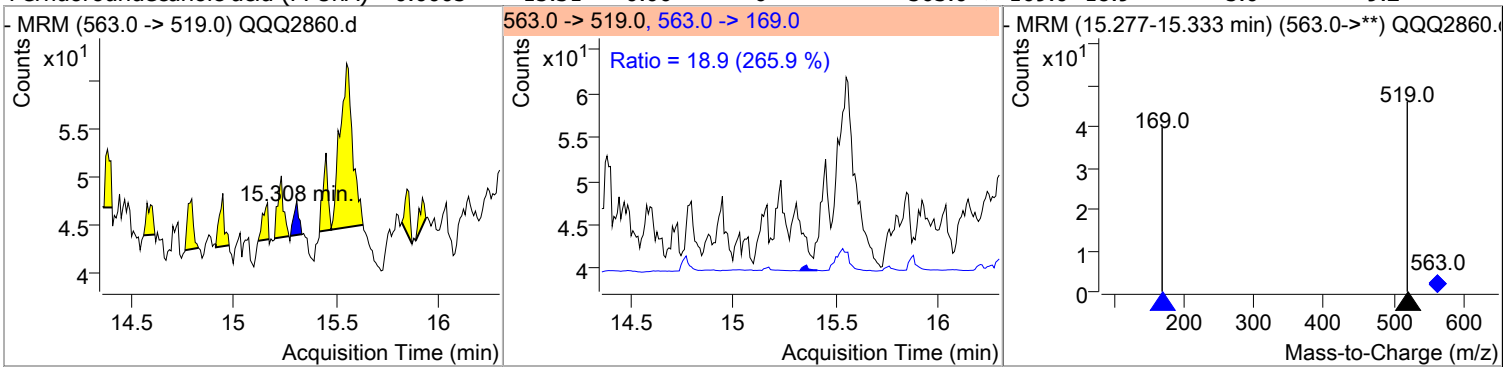
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	0.0006	15.38	0.17	2				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	6.3554	15.53	0.29	65711				

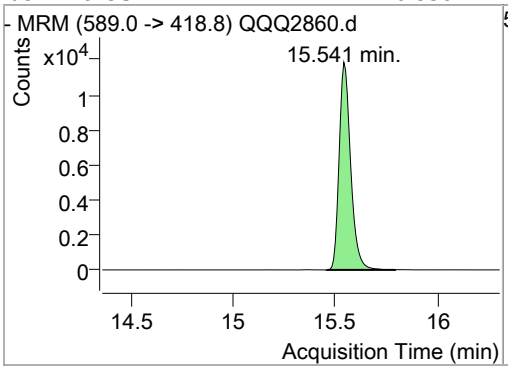


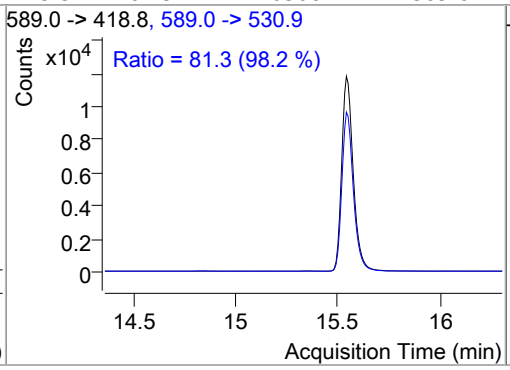
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	0.0005	15.31	0.06	6	563.0 -> 169.0	18.9	5.0	9.2

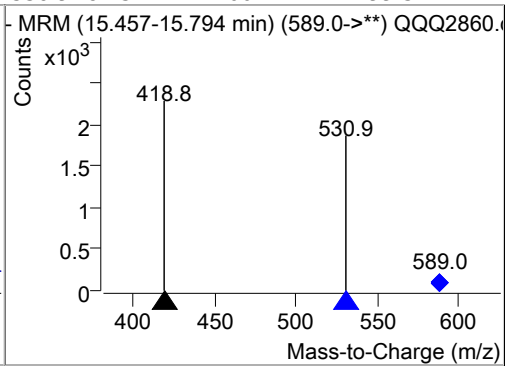


Quantitation Results Report (Not Reviewed)

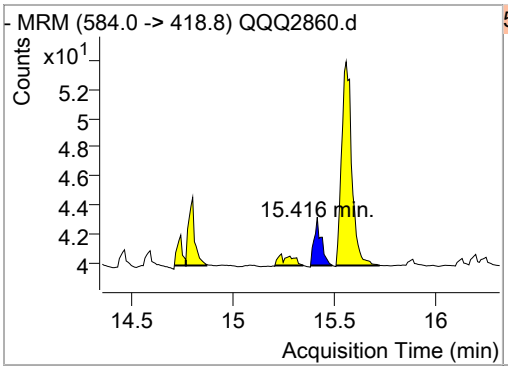
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	6.5381	15.54	0.29	46368	589.0 -> 530.9	81.3	66.2	99.3

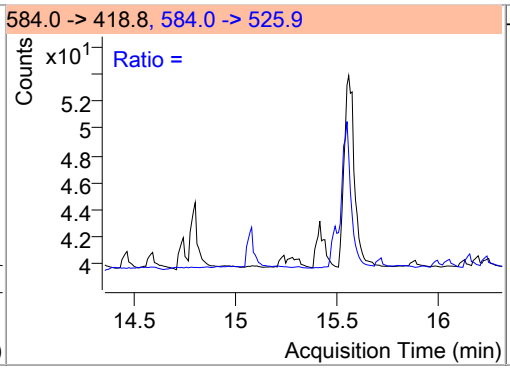


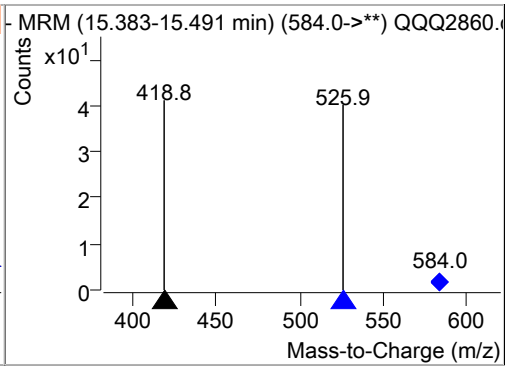




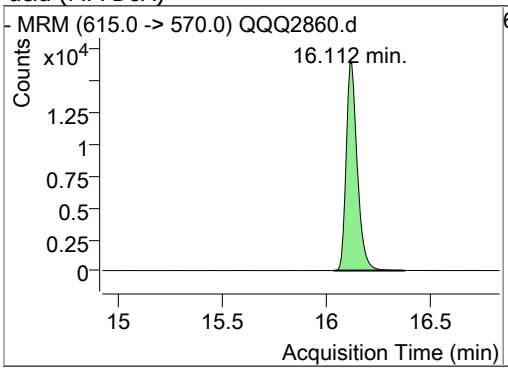
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	0.0011	15.42	0.15	8	584.0 -> 525.9		71.3	107.0

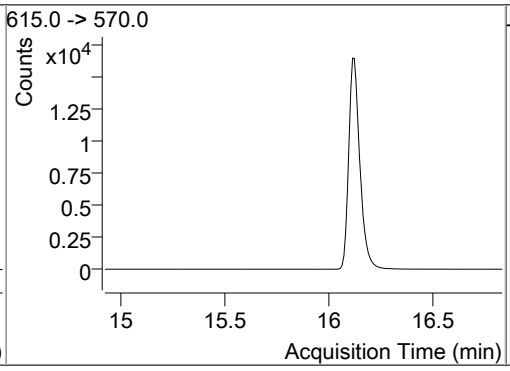


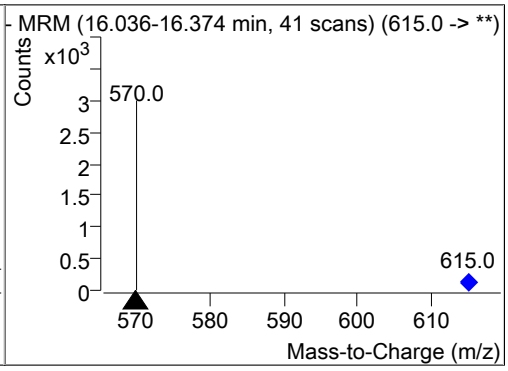




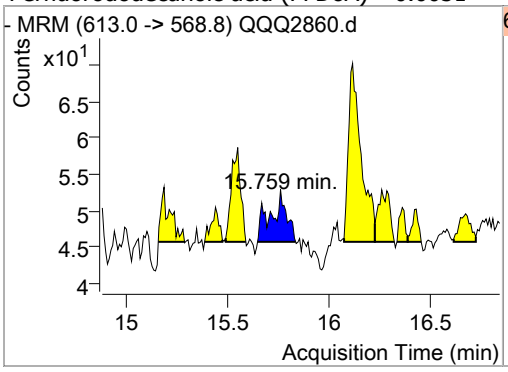
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	6.0358	16.11	0.34	61105				

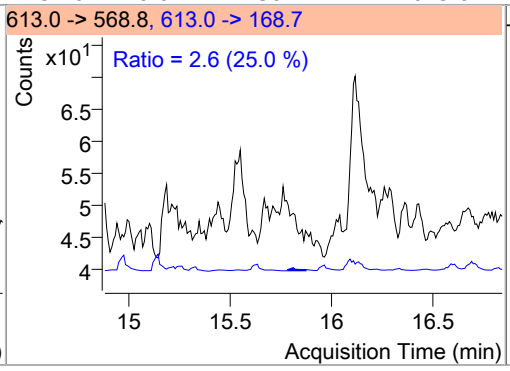


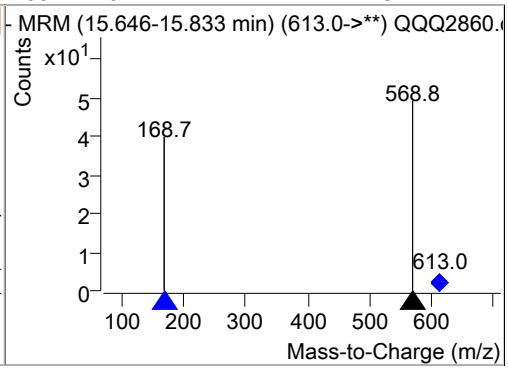




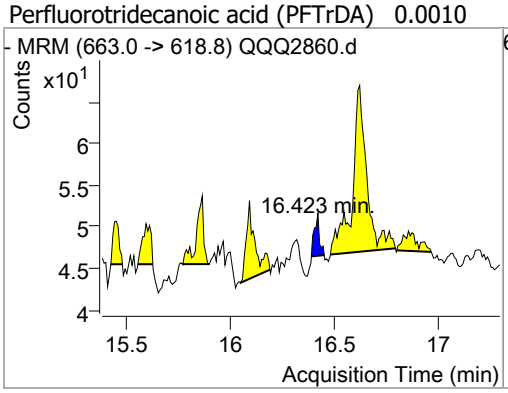
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	0.0051	15.76	-0.02	38	613.0 -> 168.7	2.6	7.4	13.7

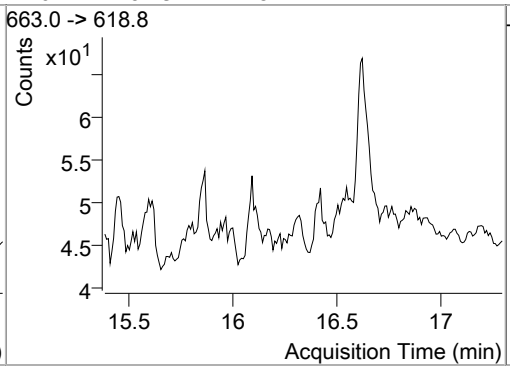


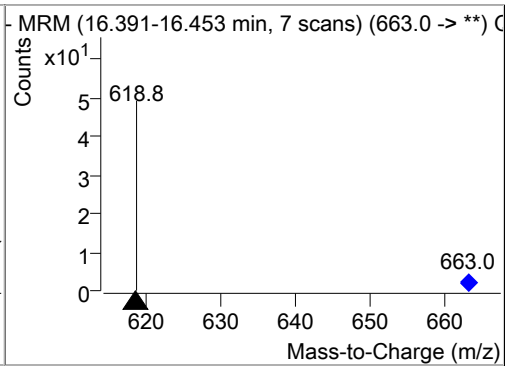




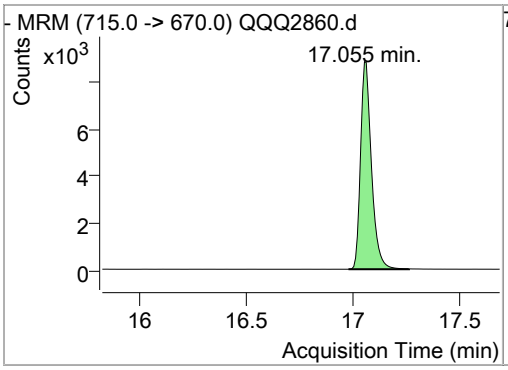
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	0.0010	16.42	0.19	8				

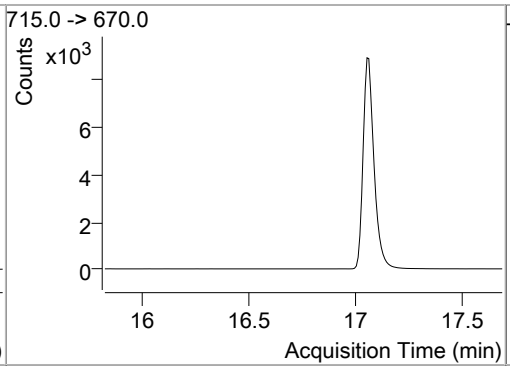


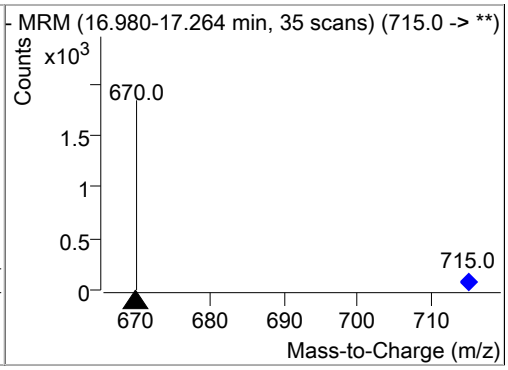




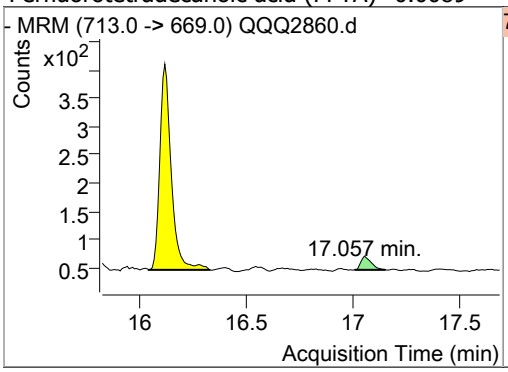
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	3.3402	17.05	0.42	31534				

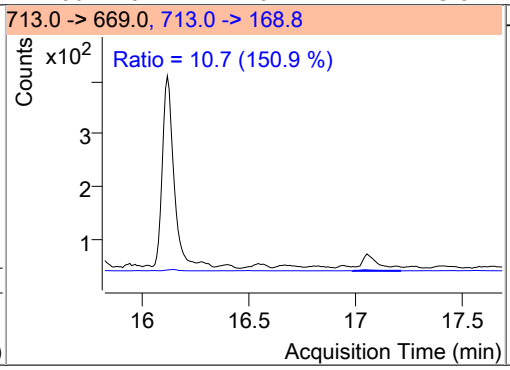


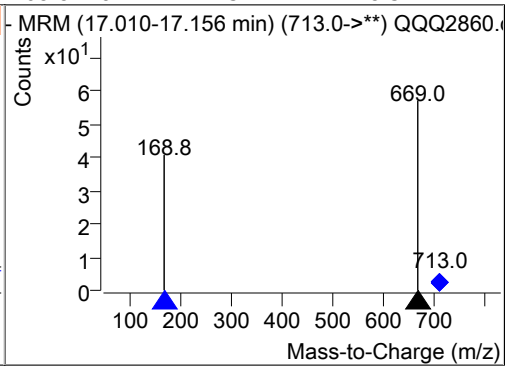




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	0.0089	17.06	0.42	81	713.0 -> 168.8	10.7	5.7	8.5







FORM VI

INITIAL CALIBRATION DATA

EPA 537m

Laboratory: York Analytical Laboratories, Inc.

SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie)

Project: 41433.00 TASK 0600 Katonah Municipal Wel

Calibration: YL90023

Instrument: LCQQQ

Calibration Date: 12/23/19 13:19

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
1H,1H,2H,2H-Perfluorodecan esulfonic acid (8:2 FTS)	0.24	0.285955	0.48	0.2693116	0.96	0.2266864	2.4	0.2176821	4.8	0.1923474	9.6	0.1634124
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.238	0.3462994	0.475	0.3137681	0.95	0.2577733	2.38	0.2522403	4.75	0.2334396	9.5	0.2161988
d3-N-MeFOSAA	0.25	0.3834622	0.5	0.3345382	1	0.3339796	2.5	0.3261492	5	0.34064	10	0.3387004
d5-N-EtFOSAA	0.25	0.3707541	0.5	0.3215438	1	0.296385	2.5	0.2935288	5	0.295168	10	0.2706134
M2-6:2 FTS	0.237	0.3099392	0.474	0.2600133	0.949	0.2571439	2.37	0.2484961	4.74	0.2346167	9.49	0.2148127
M2-8:2 FTS	0.24	0.3698504	0.479	0.3220789	0.958	0.2763417	2.4	0.2450314	4.79	0.2323705	9.58	0.1887461
M2PFTeDA	0.25	0.4288032	0.5	0.3854152	1	0.380496	2.5	0.3862535	5	0.4145371	10	0.3980706
M3PFBS	0.232	0.3775917	0.464	0.3410862	0.929	0.3312679	2.32	0.3377924	4.64	0.3307498	9.29	0.3193016
M3PFHxS	0.236	0.2536673	0.473	0.235721	0.946	0.2288574	2.36	0.2361745	4.73	0.2296541	9.46	0.220509
M4PFHpA	0.25	0.2855769	0.5	0.2756944	1	0.2560831	2.5	0.2785468	5	0.2863315	10	0.2726303
M5PFHxA	0.25	1.063416	0.5	0.9491315	1	0.9347984	2.5	0.9914239	5	1.028621	10	1.021627
M6PFDA	0.25	0.5041239	0.5	0.4355461	1	0.4191443	2.5	0.3822506	5	0.4249428	10	0.428989
M7PFUdA	0.25	0.5584538	0.5	0.4260897	1	0.4079213	2.5	0.4209992	5	0.4337334	10	0.4218171
M9PFNA	0.25	0.6412808	0.5	0.5460545	1	0.5258699	2.5	0.508054	5	0.5286721	10	0.5233807
N-EtFOSAA	0.25	0.3317493	0.5	0.3034998	1	0.28765	2.5	0.2859964	5	0.2876722	10	0.2689596
N-MeFOSAA	0.25	0.4103281	0.5	0.3555391	1	0.3572526	2.5	0.3531734	5	0.3646157	10	0.3704806
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	0.25	0.2903343	0.5	0.2761498	1	0.2738946	2.5	0.2767334	5	0.2807972	10	0.2667904
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	0.239	0.2109116	0.478	0.1779562	0.957	0.1736274	2.39	0.1723119	4.78	0.1767266	9.57	0.1707809
Perfluoro-1-decanesulfonic acid (PFDS)	0.241	0.1598524	0.482	0.1446459	0.965	0.1395564	2.41	0.1462581	4.82	0.1446529	9.65	0.1342333
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.249	0.1817067	0.498	0.1713833	0.995	0.1631411	2.49	0.1744807	4.98	0.1669271	9.95	0.1686224
Perfluoro-1-octanesulfonamide (FOSA)	0.25	0.2898383	0.5	0.2849094	1	0.2910093	2.5	0.2937727	5	0.2874972	10	0.2796269
Perfluorobutanesulfonic acid (PFBS)	0.221	0.3351164	0.442	0.314712	0.885	0.2991098	2.21	0.3133654	4.42	0.3049648	8.85	0.2941542
Perfluorodecanoic acid (PFDA)	0.25	0.4235405	0.5	0.3633252	1	0.3540876	2.5	0.3266102	5	0.3675114	10	0.3403408
Perfluorododecanoic acid (PFDoA)	0.25	0.4028765	0.5	0.3307934	1	0.2941857	2.5	0.2987225	5	0.30459	10	0.3170637
Perfluoroheptanoic acid (PFHpA)	0.25	0.6883825	0.5	0.6291428	1	0.6431653	2.5	0.6331133	5	0.6659485	10	0.6361872
Perfluorohexanesulfonic acid (PFHxS)	0.185	0.2810274	0.37	0.2438038	0.74	0.2337017	1.85	0.2408616	3.7	0.229185	7.4	0.2176432

FORM VI

INITIAL CALIBRATION DATA

EPA 537m

Laboratory: York Analytical Laboratories, Inc.

SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie)

Project: 41433.00 TASK 0600 Katonah Municipal Wel

Calibration: YL90023

Instrument: LCQQQ

Calibration Date: 12/23/19 13:19

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
Perfluorohexanoic acid (PFHxA)	0.25	0.9288664	0.5	0.7932791	1	0.8226973	2.5	0.8624367	5	0.8725935	10	0.8541089
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.25	0.5071436	0.5	0.4320253	1	0.4090672	2.5	0.4371125	5	0.4426562	10	0.405781
Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.25	0.7609694	0.5	0.7350154	1	0.7343636	2.5	0.785874	5	0.7927779	10	0.8023902
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	0.25	1.097081	0.5	1.007414	1	1.023822	2.5	1.058896	5	1.066189	10	1.074813
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	0.25	0.5559937	0.5	0.5013563	1	0.4847495	2.5	0.5465188	5	0.5406266	10	0.5405612
Perfluoro-n-butanoic acid (PFBA)	0.25	0.7063897	0.5	0.6545688	1	0.6847678	2.5	0.7200231	5	0.722683	10	0.7308983
Perfluorononanoic acid (PFNA)	0.24	0.5056233	0.48	0.4333367	0.96	0.3756633	2.4	0.4024816	4.8	0.4257018	9.6	0.374652
Perfluorooctanesulfonic acid (PFOS)	0.182	0.2573667	0.365	0.2150435	0.73	0.2127601	1.82	0.2128	3.65	0.2026925	7.3	0.1923414
Perfluorooctanoic acid (PFOA)	0.25	0.6067711	0.5	0.5089698	1	0.4754732	2.5	0.4699946	5	0.5178884	10	0.4763424
Perfluoropentanoic acid (PFPeA)	0.25	0.9840993	0.5	0.8850374	1	0.8939484	2.5	0.9287554	5	0.930433	10	0.9538768
Perfluorotetradecanoic acid (PFTA)	0.25	0.4247395	0.5	0.3937561	1	0.3702136	2.5	0.3653197	5	0.3905782	10	0.3728605
Perfluorotridecanoic acid (PFTrDA)	0.25	0.4291812	0.5	0.3509606	1	0.3314736	2.5	0.3324893	5	0.3434207	10	0.3368749
Perfluoroundecanoic acid (PFUnA)	0.25	0.4925185	0.5	0.5386999	1	0.4701654	2.5	0.382269	5	0.4151037	10	0.4223014

FORM VI INITIAL CALIBRATION DATA (Continued)

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Wel
Calibration: YL90023
Instrument: LCQQQ
Calibration Date: 12/23/19 13:19

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
1H,1H,2H,2H-Perfluorodecan esulfonic acid (8:2 FTS)	19.2	0.1418294										
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	19	0.2085119										
d3-N-MeFOSAA	20	0.3660437										
d5-N-EtFOSAA	20	0.2666143										
M2-6:2 FTS	19	0.2088429										
M2-8:2 FTS	19.2	0.161276										
M2PFTeDA	20	0.4213823										
M3PFBS	18.6	0.3205238										
M3PFHxS	18.9	0.2186115										
M4PFHpA	20	0.292003										
M5PFHxA	20	1.052929										
M6PFDA	20	0.4237317										
M7PFUdA	20	0.4138719										
M9PFNA	20	0.5153311										
N-EtFOSAA	20	0.2743015										
N-MeFOSAA	20	0.3911142										
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	20	0.2668063										
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	19.1	0.1585533										
Perfluoro-1-decanesulfonic acid (PFDS)	19.3	0.1352129										
Perfluoro-1-heptanesulfonic acid (PFHpS)	19.9	0.1761987										
Perfluoro-1-octanesulfonamid e (FOSA)	20	0.2820925										
Perfluorobutanesulfonic acid (PFBS)	17.7	0.2924912										
Perfluorodecanoic acid (PFDA)	20	0.318872										
Perfluorododecanoic acid (PFDoA)	20	0.2907914										
Perfluoroheptanoic acid (PFHpA)	20	0.6849256										
Perfluorohexanesulfonic acid (PFHxS)	14.8	0.2204096										

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 537m

Laboratory: York Analytical Laboratories, Inc. SDG: 19L0685

Client: Chazen Environmental Services (Poughkeepsie) Project: 41433.00 TASK 0600 Katonah Municipal Wel

Calibration: YL90023 Instrument: LCQQQ

Calibration Date: 12/23/19 13:19

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
Perfluorohexanoic acid (PFHxA)	20	0.89253										
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	20	0.384842										
Perfluoro-n-[13C4]butanoic acid (MPFBA)	20	0.8716334										
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	20	1.146881										
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	20	0.5330486										
Perfluoro-n-butanoic acid (PFBA)	20	0.7907429										
Perfluorononanoic acid (PFNA)	19.2	0.3507709										
Perfluorooctanesulfonic acid (PFOS)	14.6	0.1799572										
Perfluorooctanoic acid (PFOA)	20	0.502098										
Perfluoropentanoic acid (PFPeA)	20	1.017118										
Perfluorotetradecanoic acid (PFTA)	20	0.3977567										
Perfluorotridecanoic acid (PFTrDA)	20	0.3838604										
Perfluoroundecanoic acid (PFUnA)	20	0.4307013										

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Calibration: YL90023
Instrument: LCQQQ
Calibration Date: 12/23/19 13:19

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	0.2138892	24.62718	14.84812	0.1169844		0.9990262	0.99	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	0.2611759	19.56652	13.06258	0.1532874			20	
d3-N-MeFOSAA	0.3462162	5.962431	15.19887	0.1222239			20	
d5-N-EtFOSAA	0.3020868	11.70079	15.54623	0.1168108			20	
M2-6:2 FTS	0.247695	13.66883	13.06535	0.1453484			20	
M2-8:2 FTS	0.2565279	28.43049	14.84884	0.1172858		0.9985881	0.99	
M2PFTeDA	0.4021368	4.817663	17.05011	0.1222229			20	
M3PFBS	0.3369019	5.83863	8.785079	0.4145155			20	
M3PFHxS	0.231885	5.063952	12.09587	0.2282449			20	
M4PFHpA	0.2781237	4.24821	11.96179	0.2229141			20	
M5PFHxA	1.005992	4.932169	10.39967	0.3797438			20	
M6PFDA	0.4312469	8.455609	14.85941	0.1218555			20	
M7PFUdA	0.4404123	11.96696	15.53449	9.816403E-02			20	
M9PFNA	0.5412347	8.438983	14.06736	0.1341976			20	
N-EtFOSAA	0.2914041	7.181336	15.55761	0.1055725			20	
N-MeFOSAA	0.3717862	5.74134	15.20395	0.1047954			20	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	0.2759294	2.969352	15.52803	0.1030123			20	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	0.1772668	9.104331	14.08285	0.1323079			20	
Perfluoro-1-decanesulfonic acid (PFDS)	0.1434874	6.020432	15.50488	0.1010721			20	
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.17178	3.632883	13.18319	0.1445671			20	
Perfluoro-1-octanesulfonamide (FOSA)	0.2869638	1.760038	15.52832	0.1027611			20	
Perfluorobutanesulfonic acid (PFBS)	0.307702	4.836758	8.78786	0.4140765			20	
Perfluorodecanoic acid (PFDA)	0.3563268	9.747482	14.86372	0.122933			20	
Perfluorododecanoic acid (PFDoA)	0.3198605	12.24428	16.11228	9.546805E-02			20	
Perfluoroheptanoic acid (PFHpA)	0.6544093	3.829872	11.96262	0.2221294			20	
Perfluorohexanesulfonic acid (PFHxS)	0.2380903	8.931435	12.09688	0.2272042			20	
Perfluorohexanoic acid (PFHxA)	0.8609303	5.15918	10.40195	0.3795075			20	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.4312326	9.08998	16.11424	0.1031605			20	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.7832891	6.053179	4.012421	0.6895062			20	

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal Well
Calibration: YL90023
Instrument: LCQQQ
Calibration Date: 12/23/19 13:19

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	1.067871	4.329066	8.043814	0.4015974			20	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	0.5289792	4.907302	13.12344	0.1554658			20	
Perfluoro-n-butanoic acid (PFBA)	0.7157248	5.903113	4.017788	0.6719378			20	
Perfluorononanoic acid (PFNA)	0.4097471	12.5743	14.07039	0.1206092			20	
Perfluorooctanesulfonic acid (PFOS)	0.2104231	11.56137	14.08249	0.1404934			20	
Perfluorooctanoic acid (PFOA)	0.5082197	9.296535	13.1247	0.1314397			20	
Perfluoropentanoic acid (PFPeA)	0.9418955	5.020894	8.045207	0.4010919			20	
Perfluorotetradecanoic acid (PFTA)	0.3878892	5.309186	17.04862	0.1168064			20	
Perfluorotridecanoic acid (PFTrDA)	0.358323	10.06076	16.61615	0.1021929			20	
Perfluoroundecanoic acid (PFUnA)	0.4502513	11.83132	15.53535	0.1125374			20	

Quantitation Results Report (Not Reviewed)

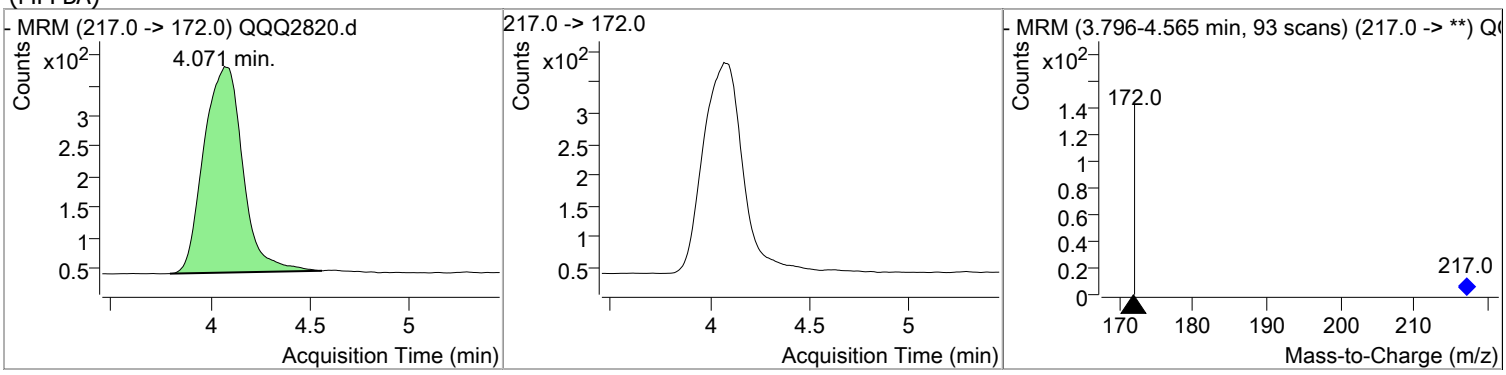
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Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	0.25 ng/mL
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
MPFOA	13.127	417.0 -> 372.0	244673	10.0000	ng/ml		0.093
System Monitoring Compounds							
Perfluoro-n-[13C4]butanoic acid (MPFBA)	4.071	217.0 -> 172.0	4655	0.2429	ng/ml		-0.117
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.43%		*	
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.114	268.0 -> 223.0	6711	0.2568	ng/ml		0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.57%		*	
M3PFBS	8.860	302.0 -> 79.9	2143	0.2599	ng/ml		0.042
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.60%		*	
M2-4-2FTS	10.333	329.0 -> 309.0	3154	0.1562	ng/ml		0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 1.56%		*	
M5PFHxA	10.479	318.0 -> 273.0	6505	0.2643	ng/ml		0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.64%		*	
M4PFHpA	12.002	367.0 -> 322.0	1747	0.2567	ng/ml		0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.57%		*	
M3PFHxS	12.136	402.0 -> 80.0	1465	0.2585	ng/ml		0.093
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.59%		*	
M2-6-2FTS	13.074	429.0 -> 409.0	1797	0.2964	ng/ml		0.101
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.96%		*	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.134	421.0 -> 376.0	3401	0.2628	ng/ml		0.110
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.63%		*	
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.056	472.0 -> 427.0	3923	0.2962	ng/ml		0.152
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.96%		*	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.072	507.0 -> 80.0	1233	0.2843	ng/ml		0.161
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.84%		*	
M2-8-2FTS	14.828	529.0 -> 509.0	2172	0.1213	ng/ml		0.210
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 1.21%		*	
M6PFDA	14.838	519.0 -> 473.9	3084	0.2922	ng/ml		0.210
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.92%		*	
d3-N-MeFOSAA	15.172	573.0 -> 418.8	2346	0.2769	ng/ml		0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.77%		*	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.505	506.0 -> 78.0	1776	0.2631	ng/ml		0.311
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.63%		*	
M7PFUdA	15.509	570.0 -> 525.0	3416	0.3170	ng/ml		0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 3.17%		*	
d5-N-EtFOSAA	15.516	589.0 -> 418.8	2268	0.3068	ng/ml		0.261
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 3.07%		*	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.087	615.0 -> 570.0	3102	0.2940	ng/ml		0.312
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.94%		*	
M2PFTeDA	17.005	715.0 -> 670.0	2623	0.2666	ng/ml		0.368
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 2.67%		*	
Target Compounds							QValue

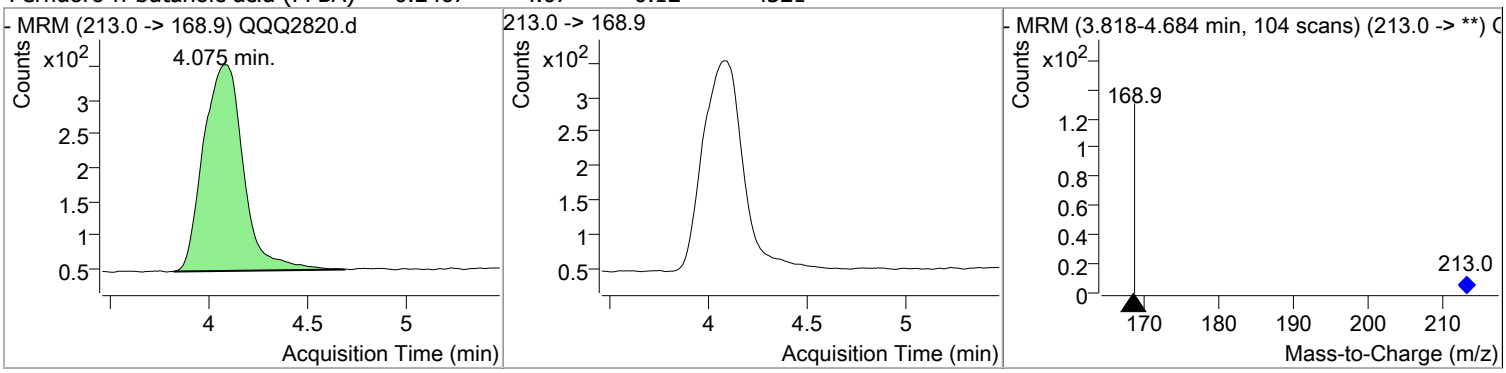
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.075	213.0 -> 168.9	4321	0.2467	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	8.116	263.0 -> 219.0	6020	0.2612	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.863	298.9 -> 79.9	1812	0.2406	ng/ml		99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.335	327.0 -> 307.0	2731	0.1760	ng/ml		96
Perfluorohexanoic acid (PFHxA)	10.481	313.0 -> 268.9	5682	0.2697	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.793	348.9 -> 79.9	1740	0.2570	ng/ml		100
Perfluoroheptanoic acid (PFHpA)	12.003	363.0 -> 318.8	4211	0.2630	ng/ml		98
Perfluorohexanesulfonic acid (PFHxS)	12.137	398.9 -> 79.9	1272	0.2184	ng/ml		99
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.066	427.0 -> 407.0	2017	0.3155	ng/ml		97
Perfluorooctanoic acid (PFOA)	13.127	413.0 -> 368.8	3712	0.2985	ng/ml		97
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.190	448.9 -> 80.0	1107	0.2635	ng/ml		91
Perfluorononanoic acid (PFNA)	14.057	463.0 -> 418.8	2969	0.2962	ng/ml		93
Perfluorooctanesulfonic acid (PFOS)	14.064	498.9 -> 79.9	1146	0.2217	ng/ml		90
Perfluorononanesulfonate (L-PFNS)	14.828	548.9 -> 79.9	1008	0.2636	ng/ml		99
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.829	527.0 -> 507.0	1679	0.1028	ng/ml		93
Perfluorodecanoic acid (PFDA)	14.838	513.0 -> 468.8	2591	0.2972	ng/ml	#	86
N-MeFOSAA	15.181	570.0 -> 418.9	2510	0.2759	ng/ml		98
Perfluoro-1-octanesulfonamide (FOSA)	15.506	497.9 -> 78.0	1773	0.2525	ng/ml		98
Perfluoro-1-decanesulfonate (L-PFDS)	15.482	598.9 -> 98.9	943	0.2684	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.510	563.0 -> 519.0	3013	0.2735	ng/ml		98
N-EtFOSAA	15.534	584.0 -> 418.8	2029	0.2846	ng/ml		97
Perfluorododecanoic acid (PFDoA)	16.087	613.0 -> 568.8	2464	0.3149	ng/ml		97
Perfluorotridecanoic acid (PFTrDA)	16.582	663.0 -> 618.8	2625	0.2994	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.007	713.0 -> 669.0	2598	0.2738	ng/ml		98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

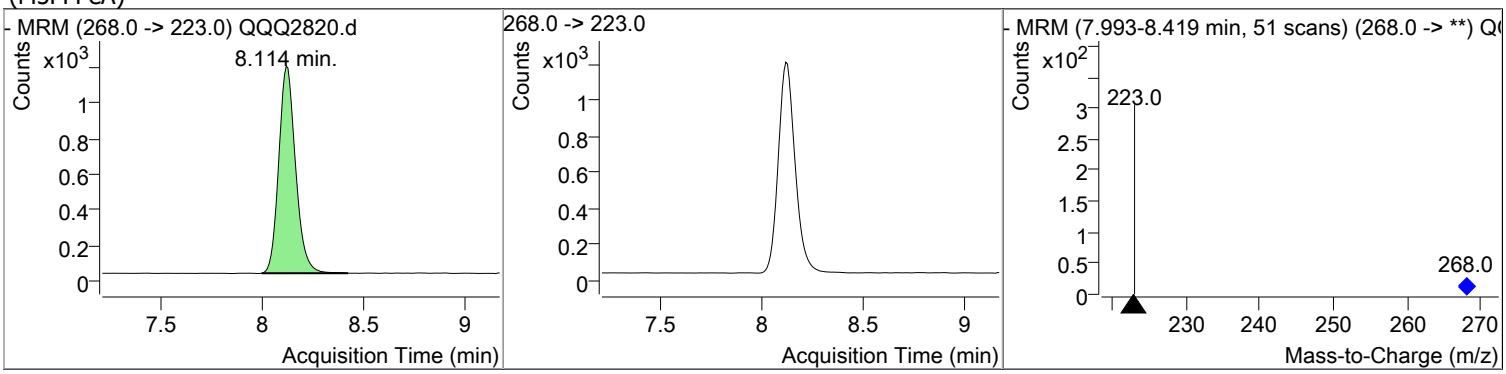
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.2429	4.07	-0.12	4655				



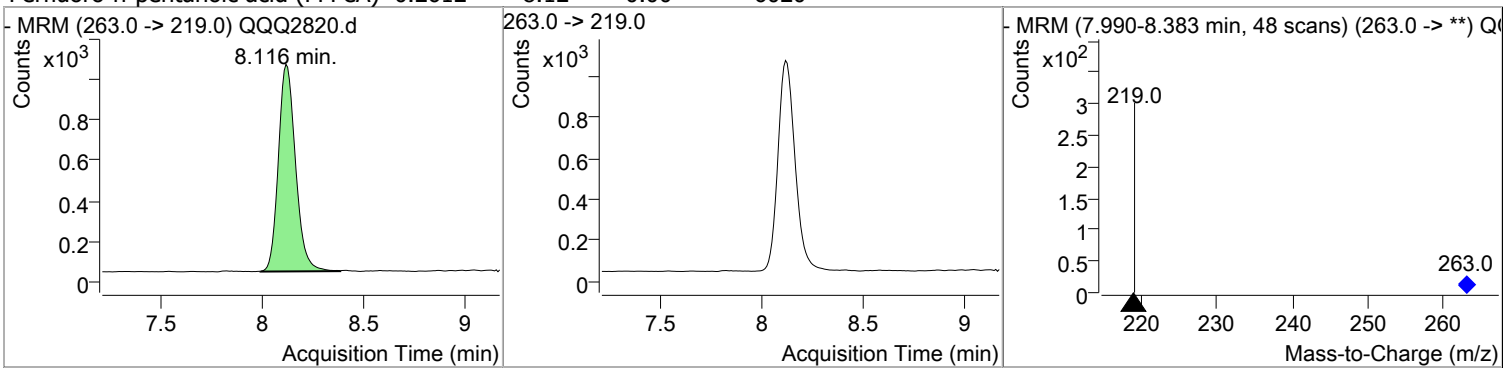
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	0.2467	4.07	-0.12	4321				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	0.2568	8.11	0.00	6711				

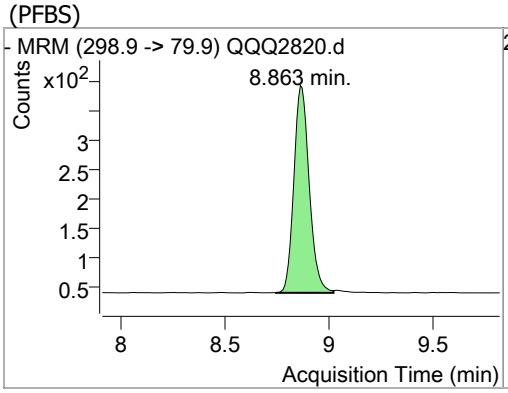


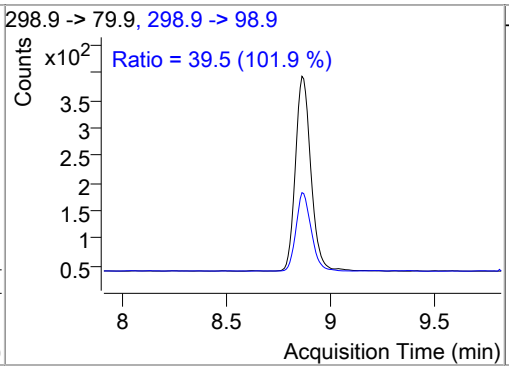
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	0.2612	8.12	0.00	6020				

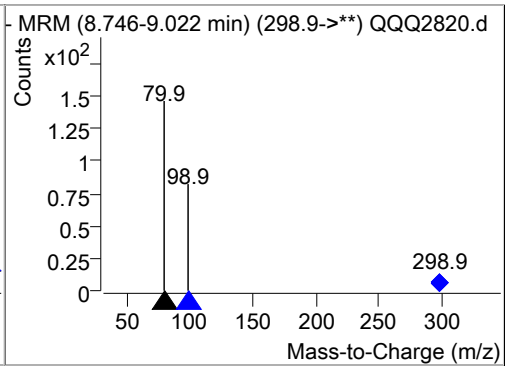


Quantitation Results Report (Not Reviewed)

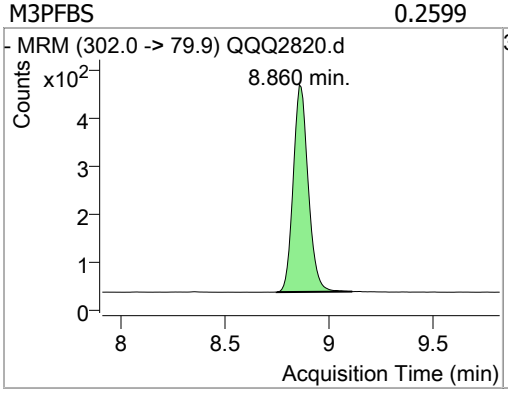
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	0.2406	8.86	0.05	1812	298.9 -> 98.9	39.5	31.0	46.5

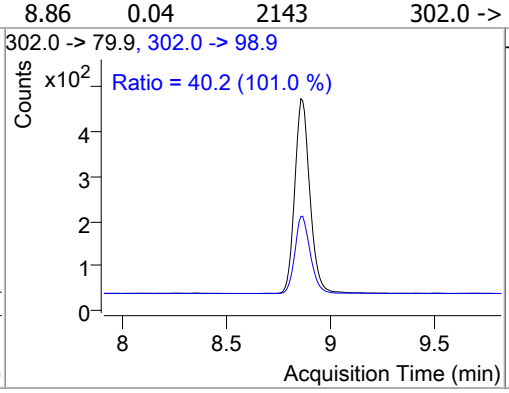


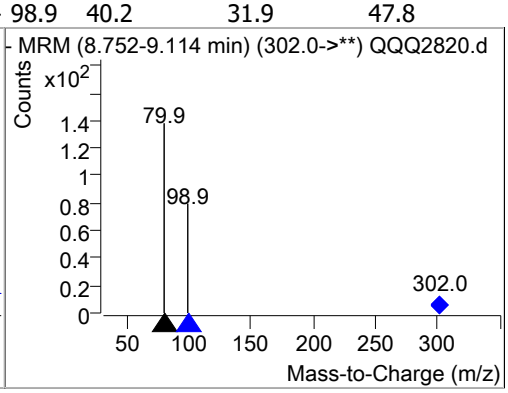




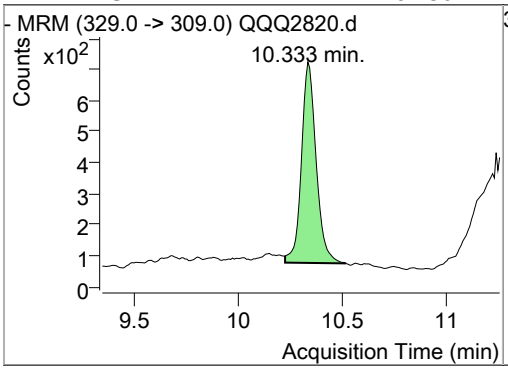
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	0.2599	8.86	0.04	2143	302.0 -> 98.9	40.2	31.9	47.8

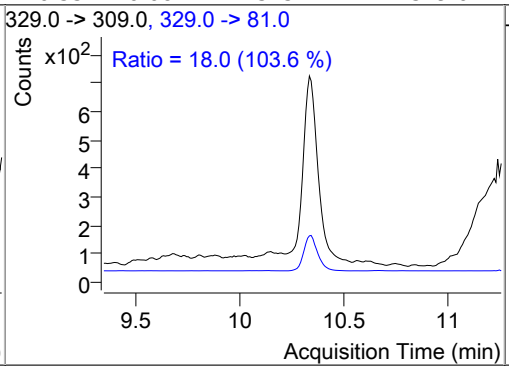


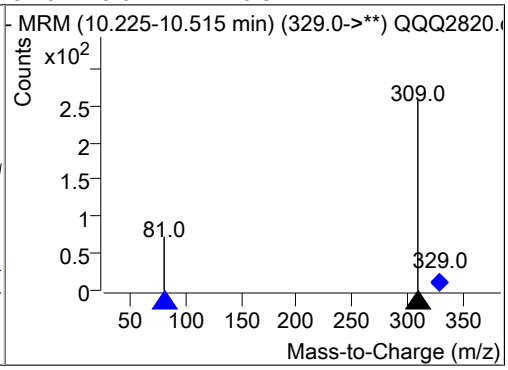




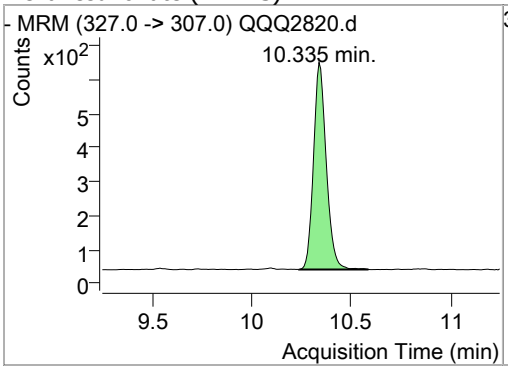
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	0.1562	10.33	0.08	3154	329.0 -> 81.0	18.0	10.5	24.4

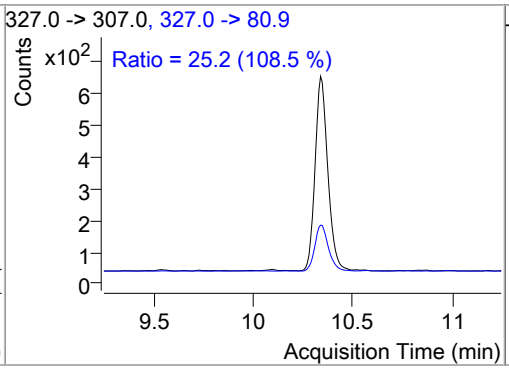


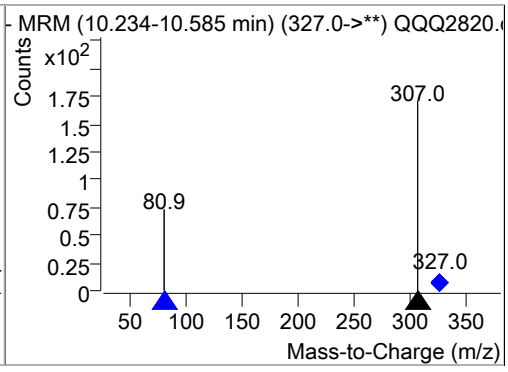




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	0.1760	10.33	0.08	2731	327.0 -> 80.9	25.2	13.9	32.5

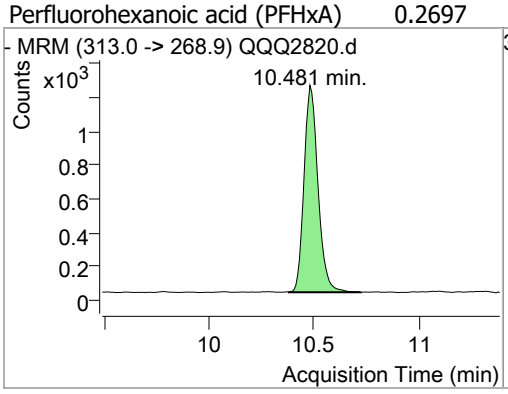


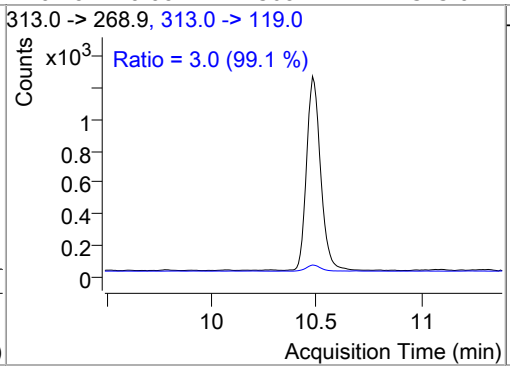


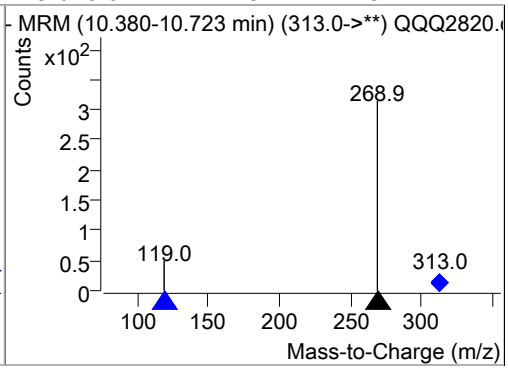


Quantitation Results Report (Not Reviewed)

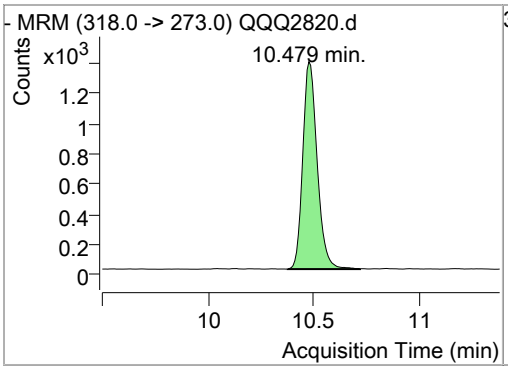
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	0.2697	10.48	0.08	5682	313.0 -> 119.0	3.0	2.5	3.7

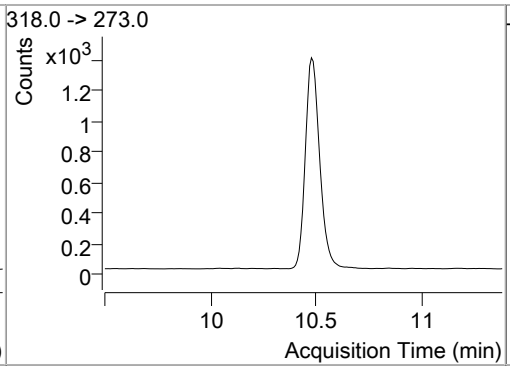


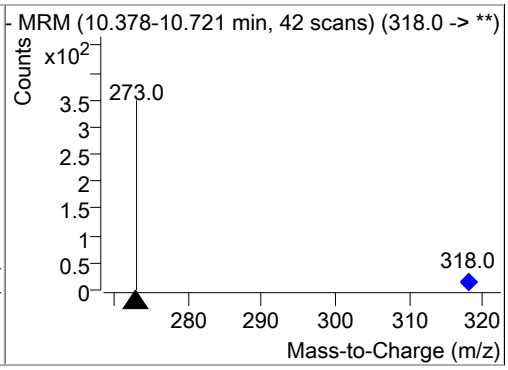




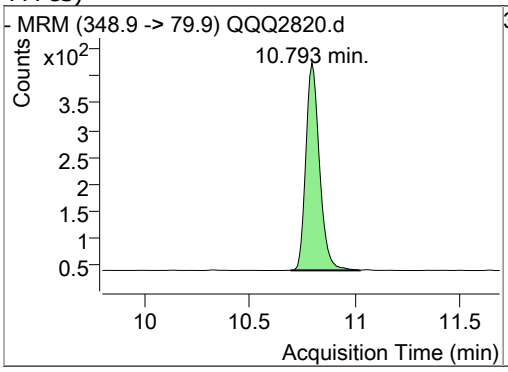
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	0.2643	10.48	0.08	6505				

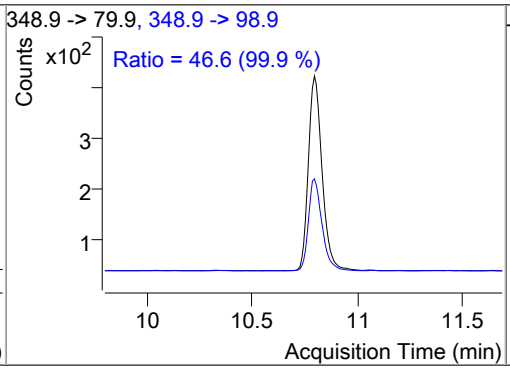


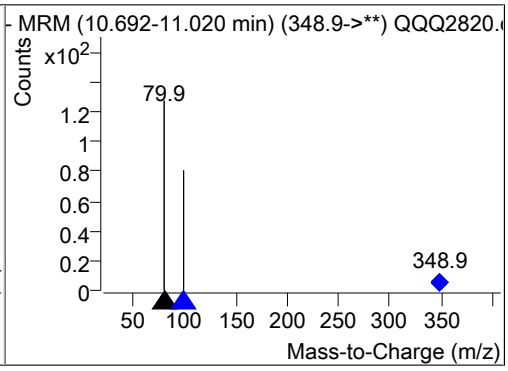




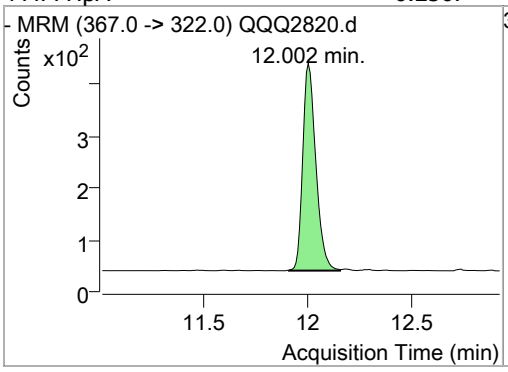
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	0.2570	10.79	0.09	1740	348.9 -> 98.9	46.6	37.3	56.0

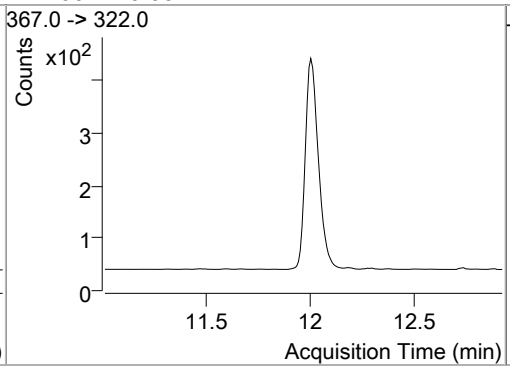


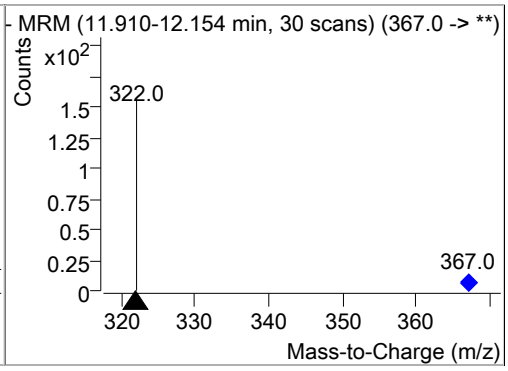




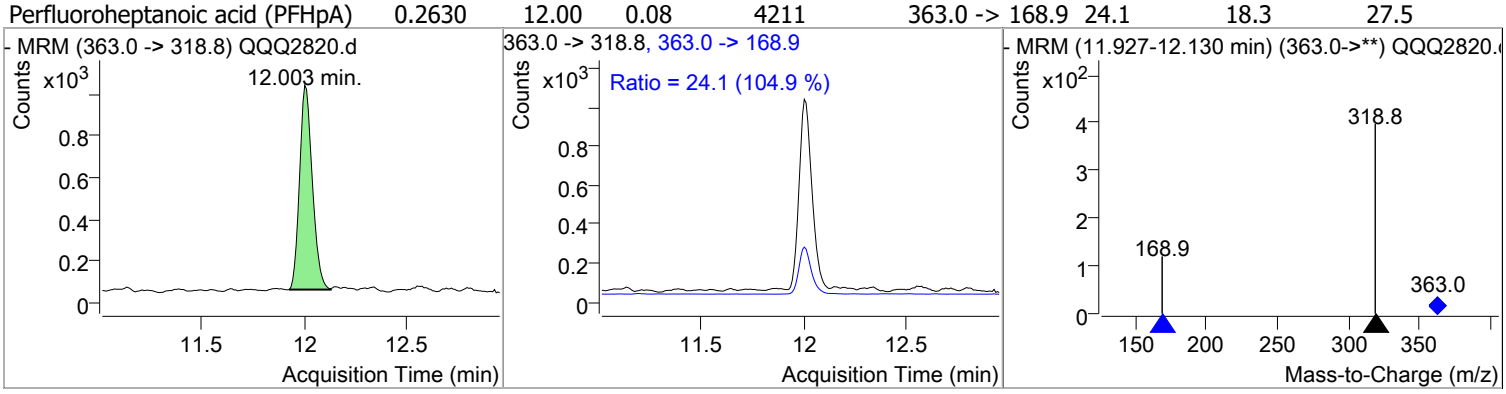
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	0.2567	12.00	0.08	1747				



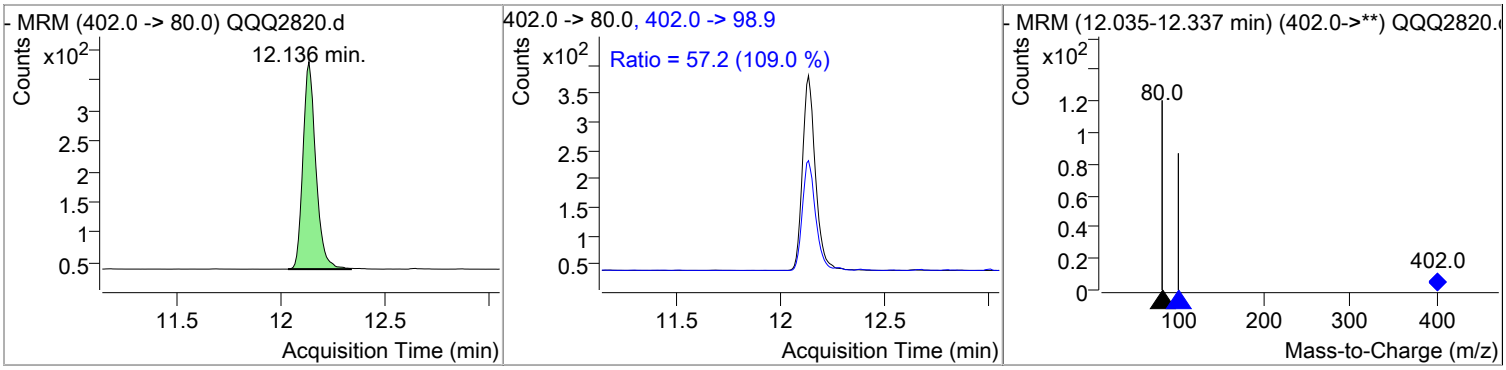




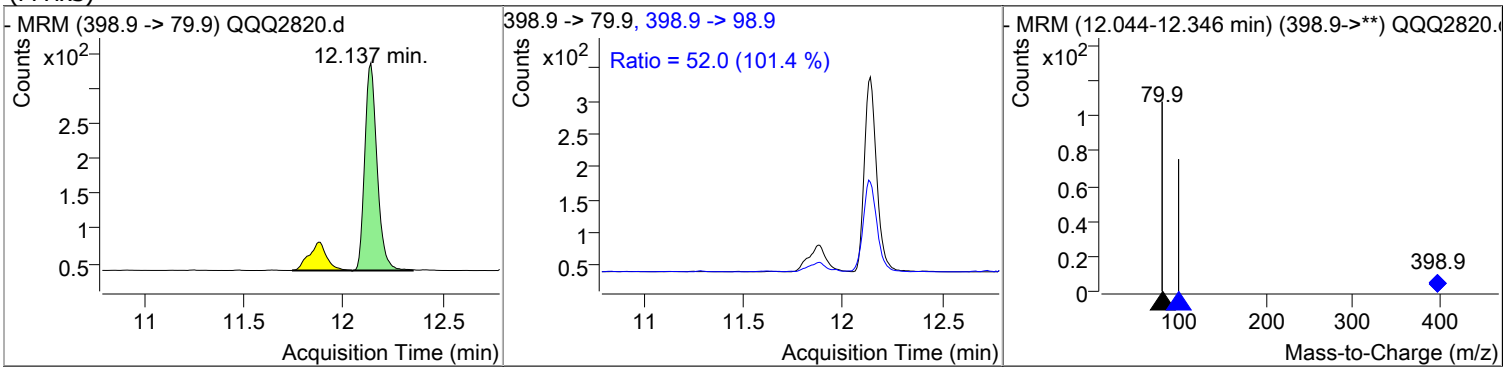
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	0.2630	12.00	0.08	4211	363.0 -> 168.9	24.1	18.3	27.5



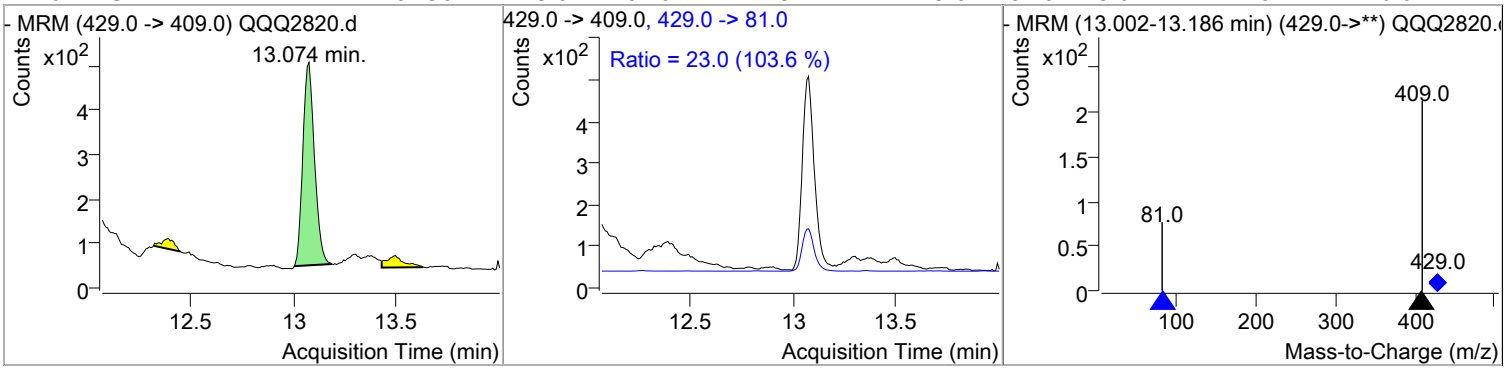
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	0.2585	12.14	0.09	1465	402.0 -> 98.9	57.2	42.0	62.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	0.2184	12.14	0.09	1272	398.9 -> 98.9	52.0	41.0	61.5

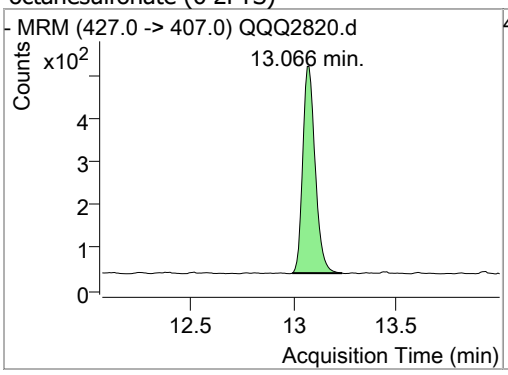


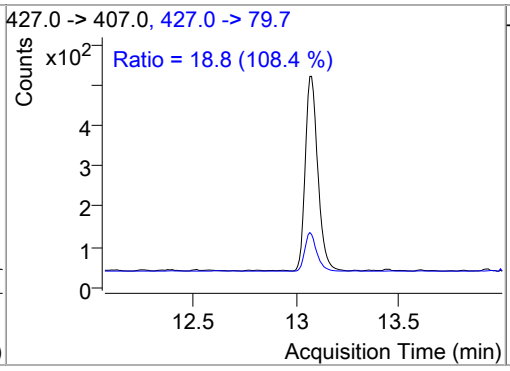
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	0.2964	13.07	0.10	1797	429.0 -> 81.0	23.0	17.8	26.6

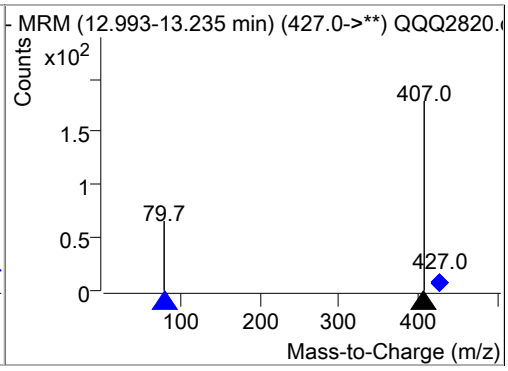


Quantitation Results Report (Not Reviewed)

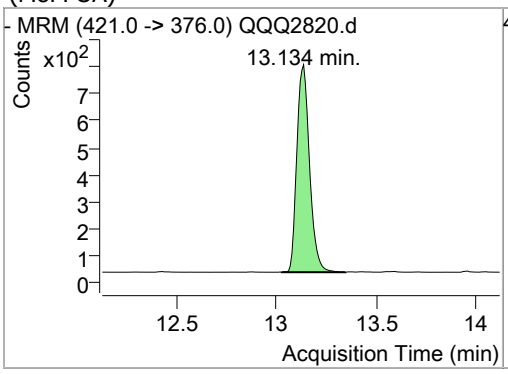
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	0.3155	13.07	0.09	2017	427.0 -> 79.7	18.8	13.9	20.8

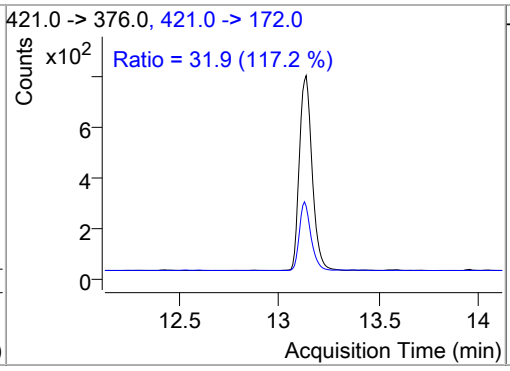


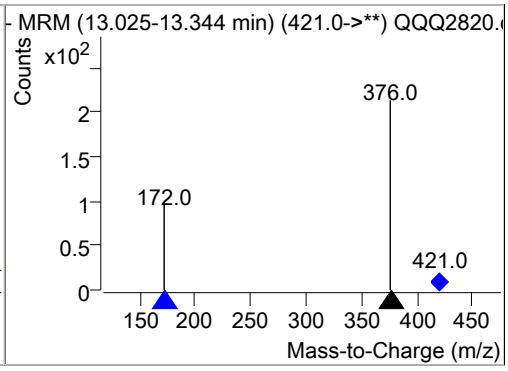




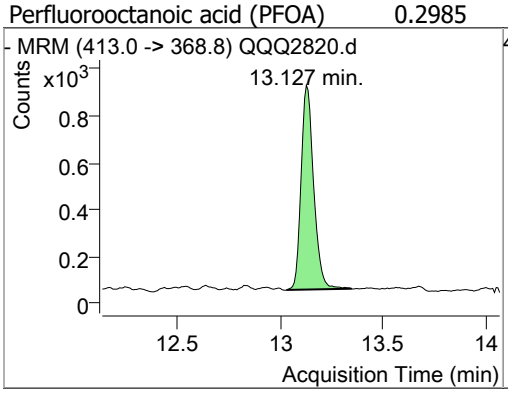
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	0.2628	13.13	0.11	3401	421.0 -> 172.0	31.9	21.7	32.6

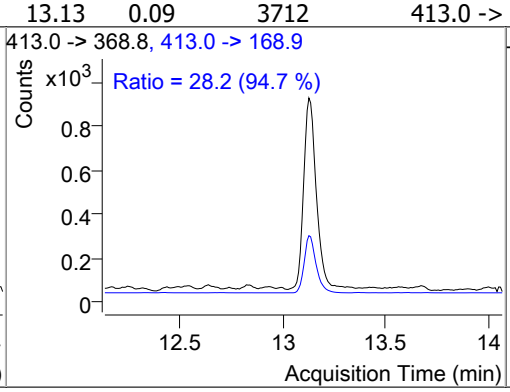


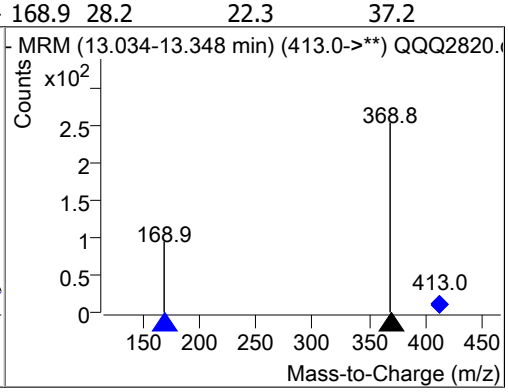




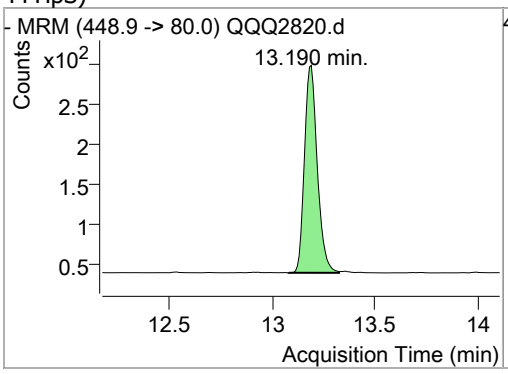
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	0.2985	13.13	0.09	3712	413.0 -> 168.9	28.2	22.3	37.2

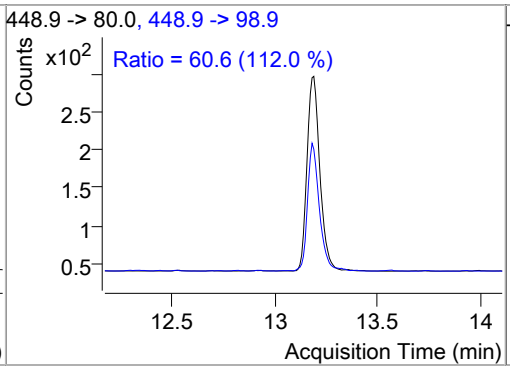


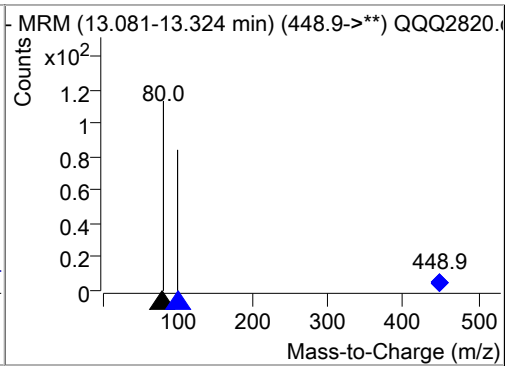




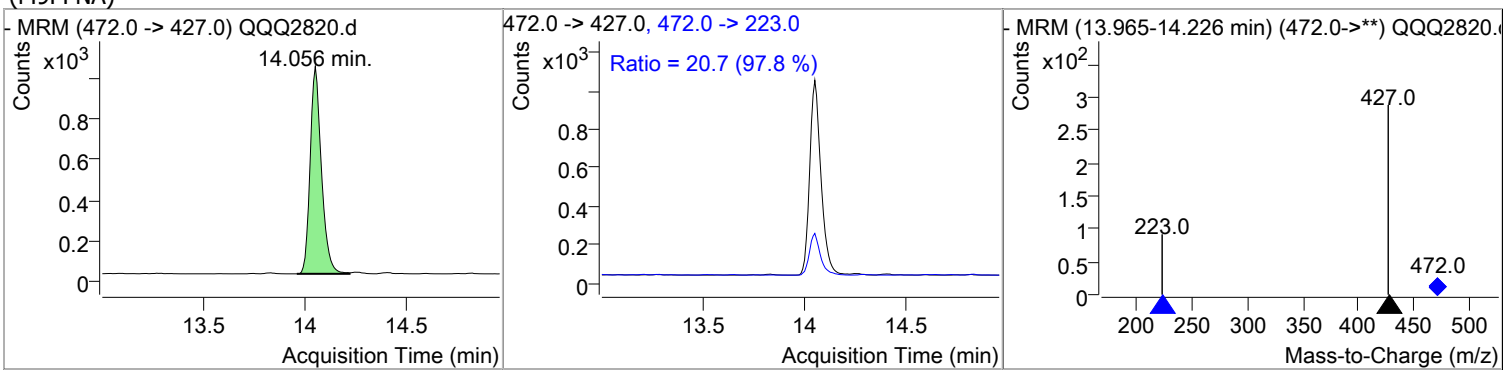
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	0.2635	13.19	0.11	1107	448.9 -> 98.9	60.6	43.3	64.9



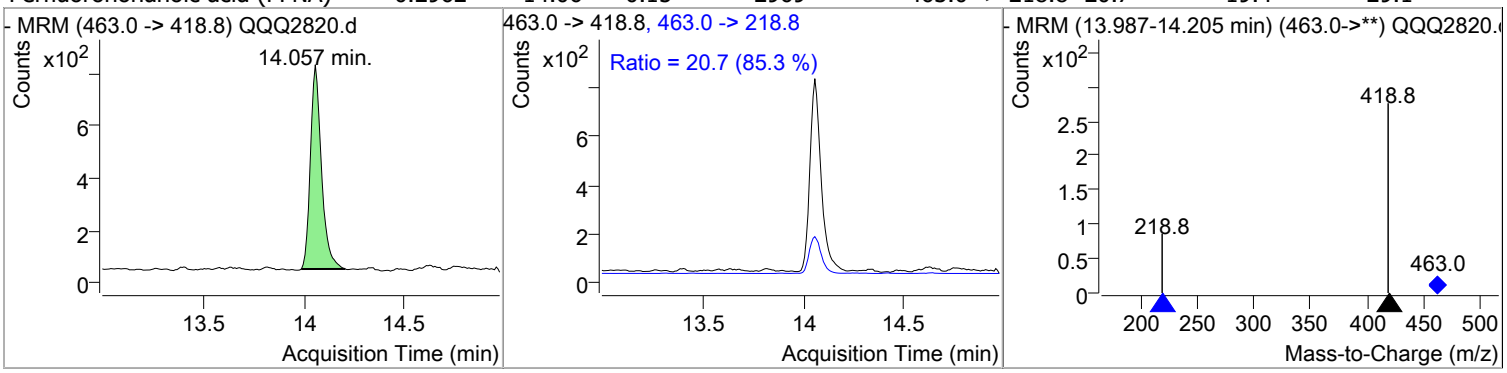




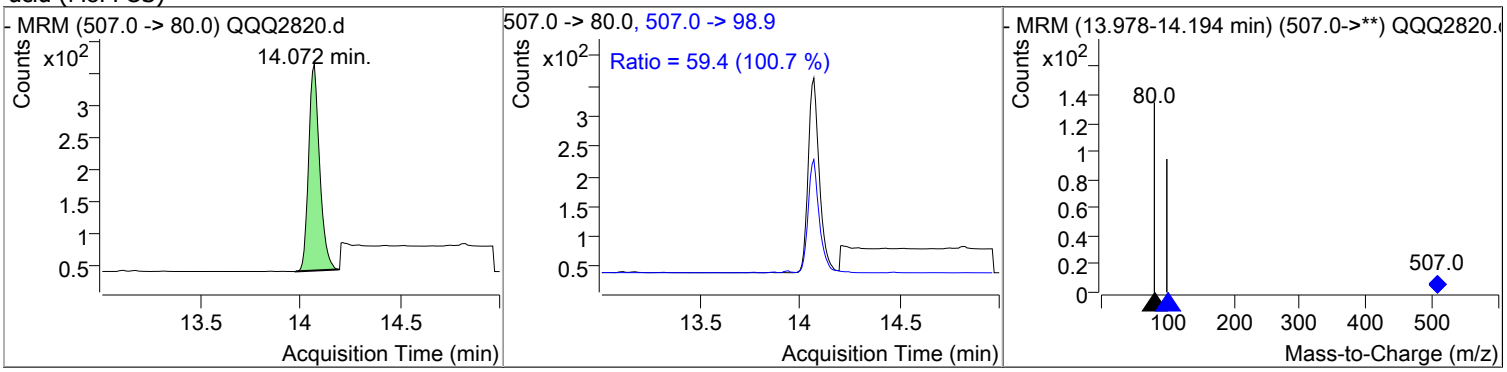
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	0.2962	14.06	0.15	3923	472.0 -> 223.0	20.7	16.9	25.4



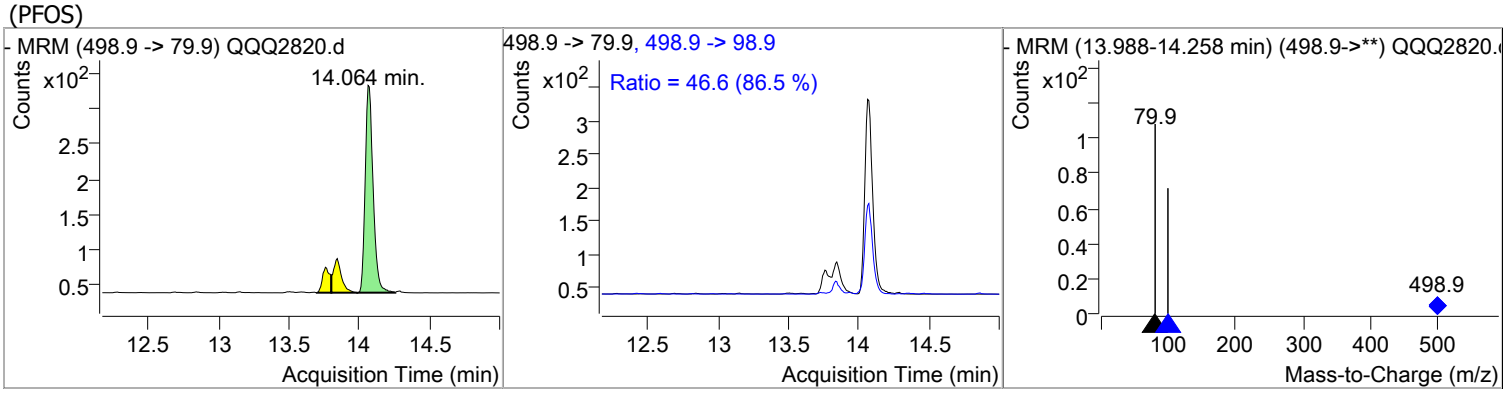
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	0.2962	14.06	0.15	2969	463.0 -> 218.8	20.7	19.4	29.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	0.2843	14.07	0.16	1233	507.0 -> 98.9	59.4	47.2	70.8

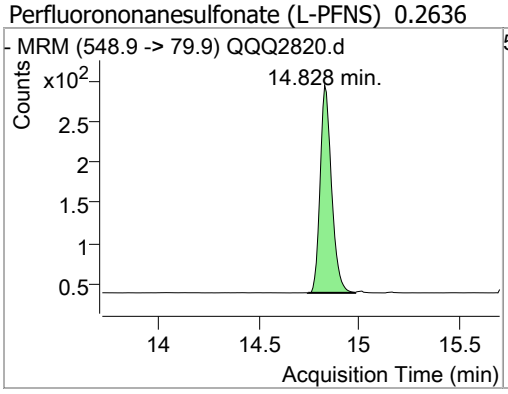


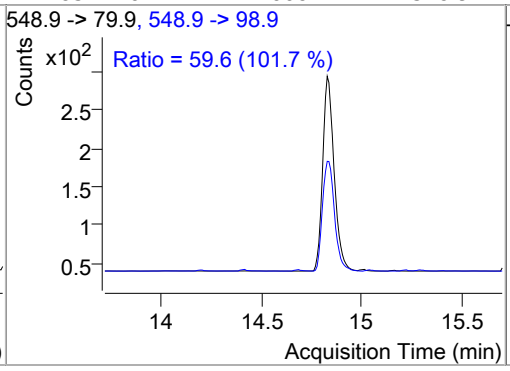
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	0.2217	14.06	0.15	1146	498.9 -> 98.9	46.6	43.1	64.6

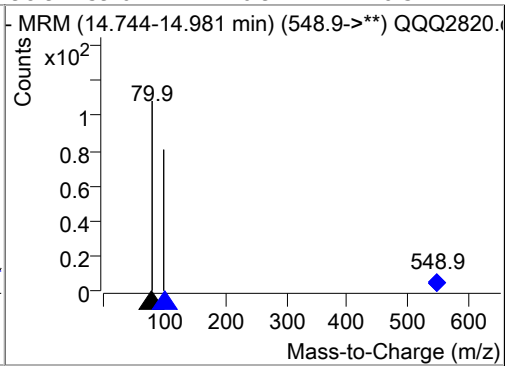


Quantitation Results Report (Not Reviewed)

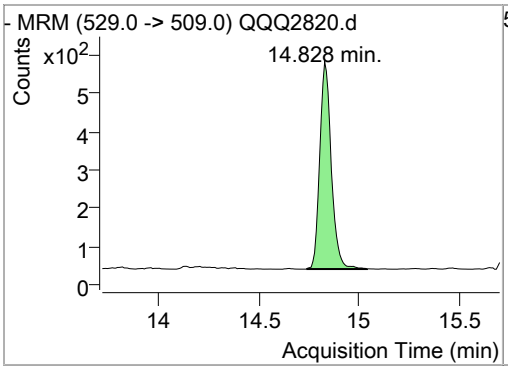
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	0.2636	14.83	0.21	1008	548.9 -> 98.9	59.6	46.9	70.3

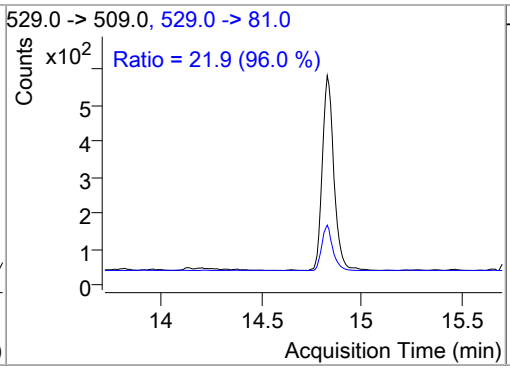


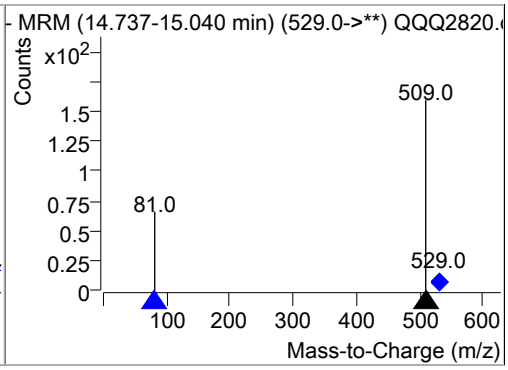




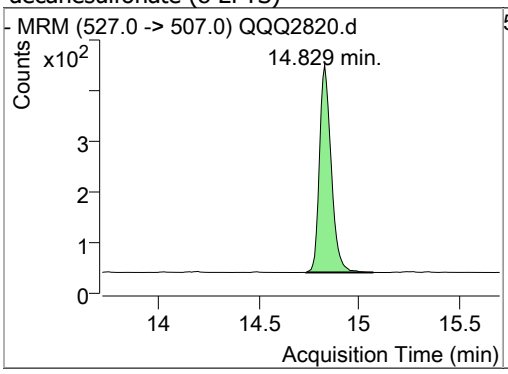
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	0.1213	14.83	0.21	2172	529.0 -> 81.0	21.9	18.3	27.4

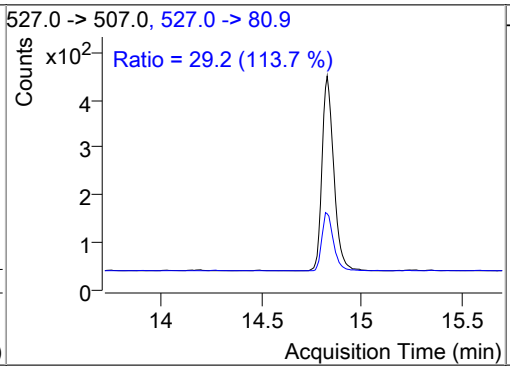


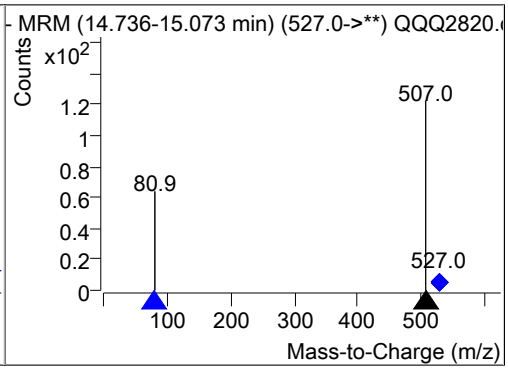




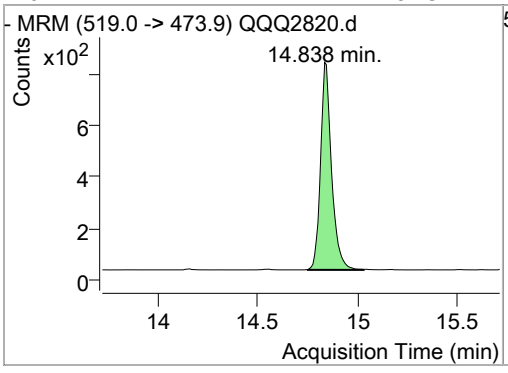
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	0.1028	14.83	0.21	1679	527.0 -> 80.9	29.2	20.6	30.9

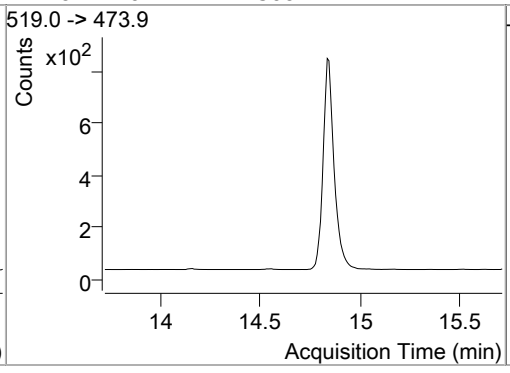


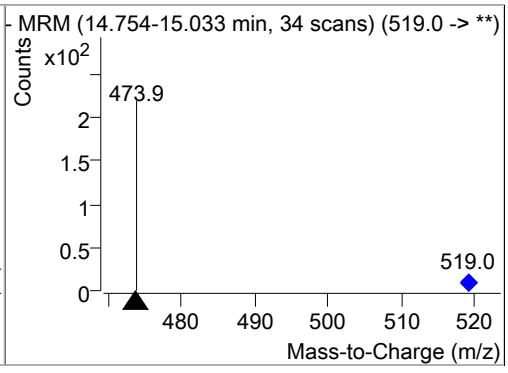




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	0.2922	14.84	0.21	3084				

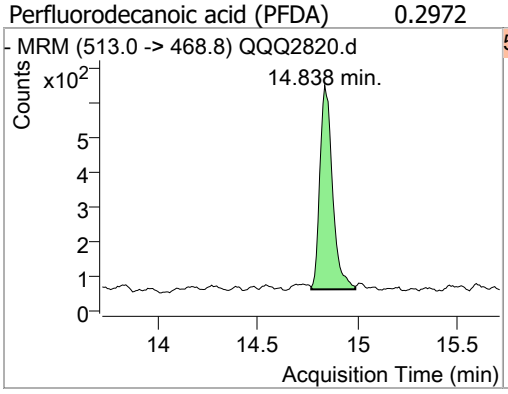


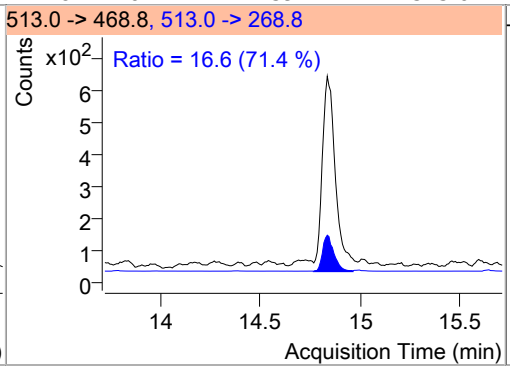


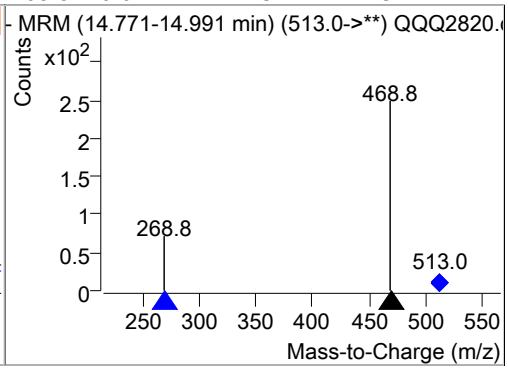


Quantitation Results Report (Not Reviewed)

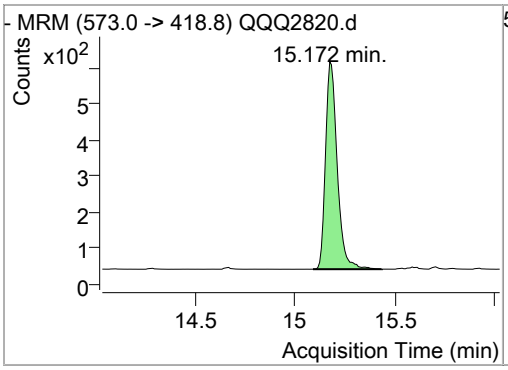
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	0.2972	14.84	0.21	2591	513.0 -> 268.8	16.6	17.5	29.1

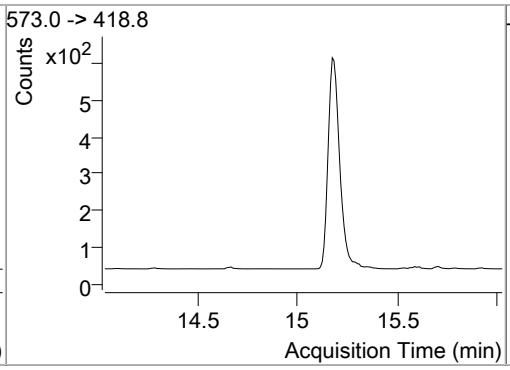


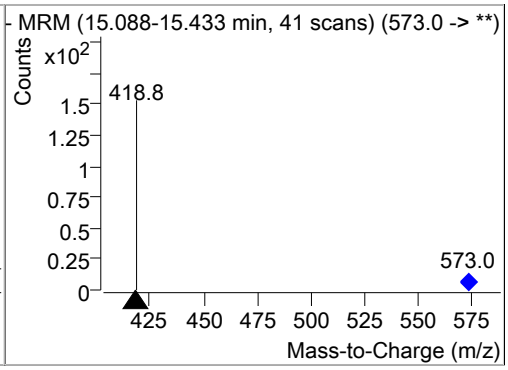




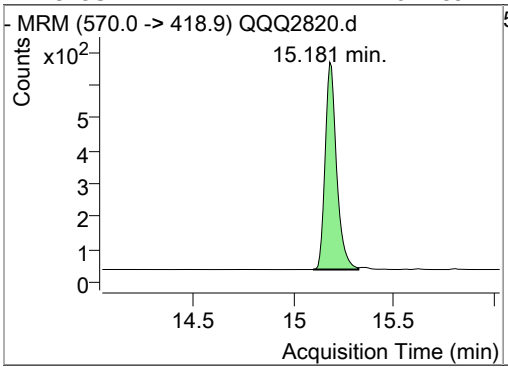
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	0.2769	15.17	0.24	2346				

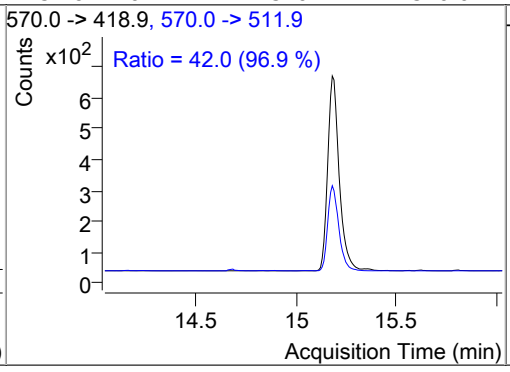


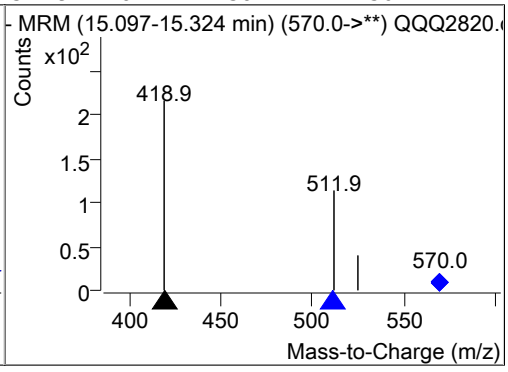




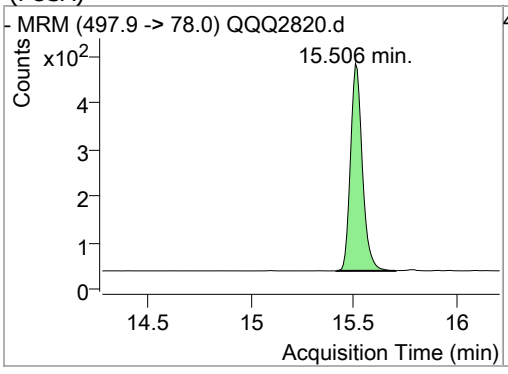
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	0.2759	15.18	0.24	2510	570.0 -> 511.9	42.0	30.4	56.4

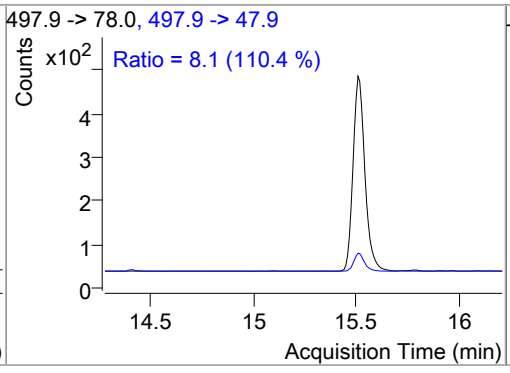


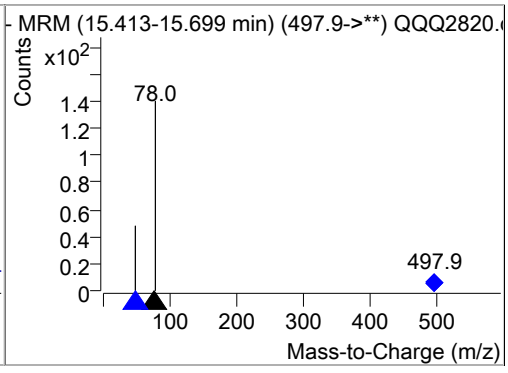




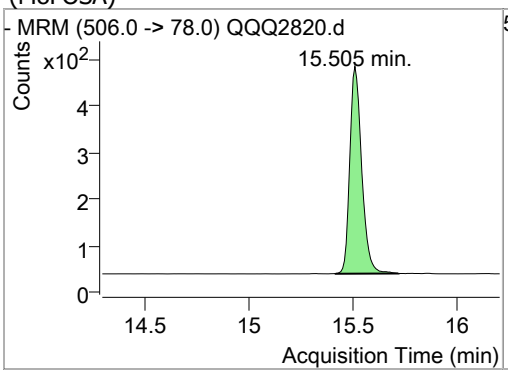
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	0.2525	15.51	0.32	1773	497.9 -> 47.9	8.1	5.9	8.8

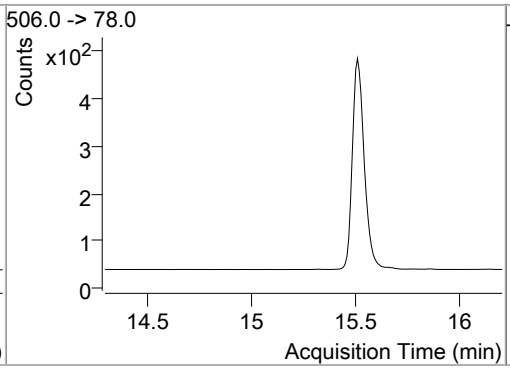


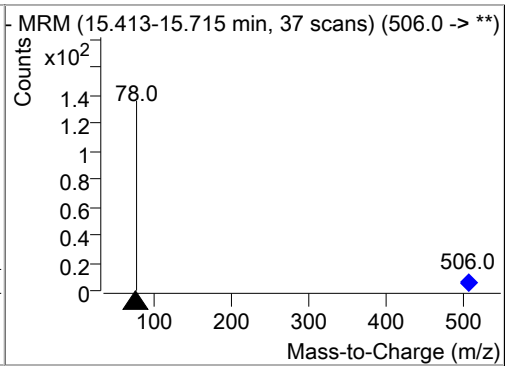




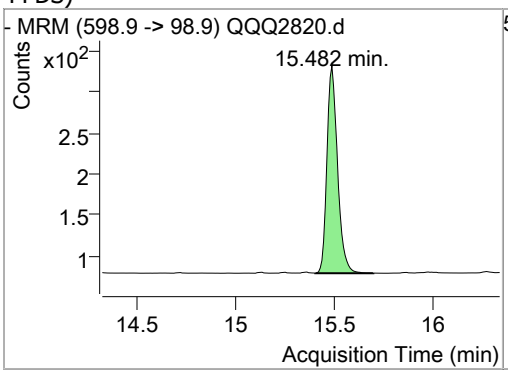
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	0.2631	15.51	0.31	1776				

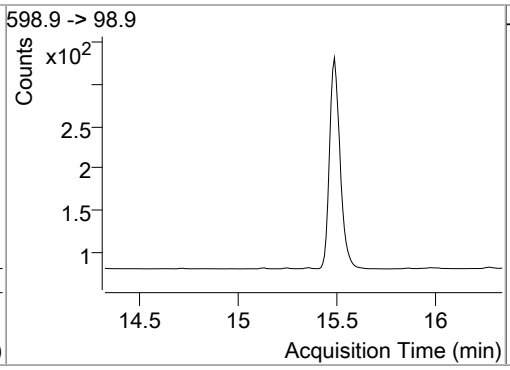


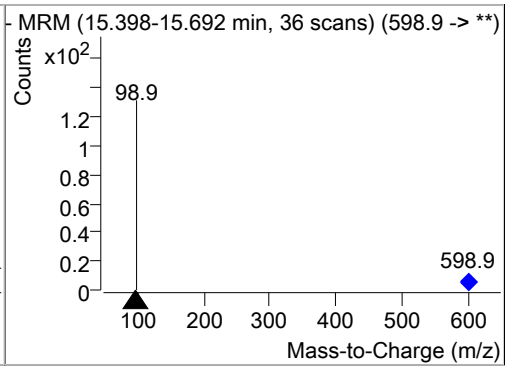




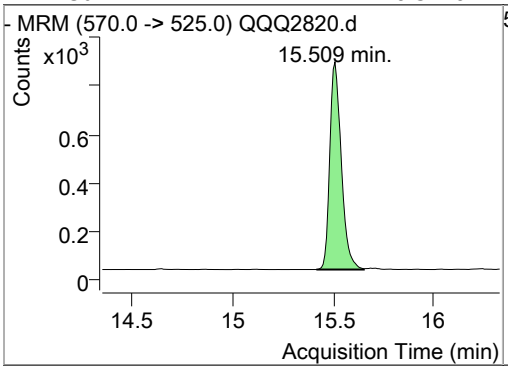
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	0.2684	15.48	0.27	943				

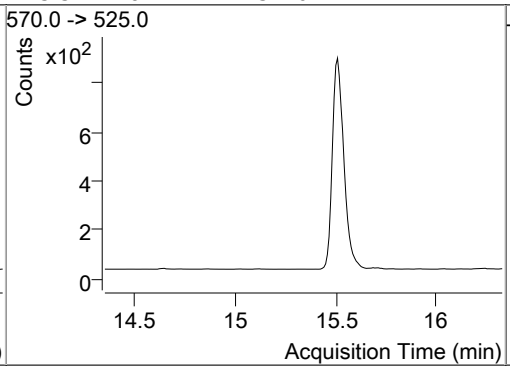


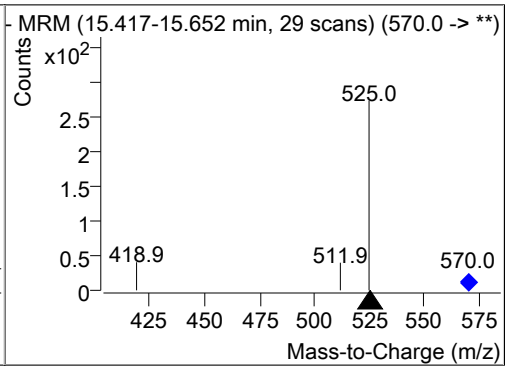




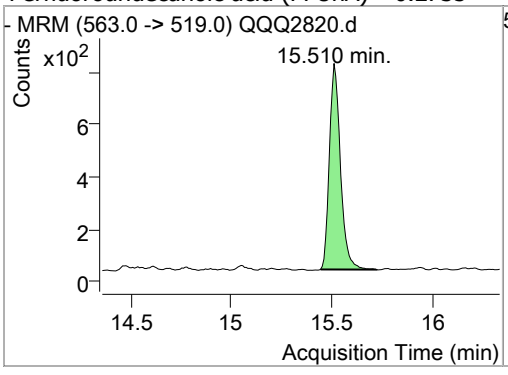
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	0.3170	15.51	0.27	3416				

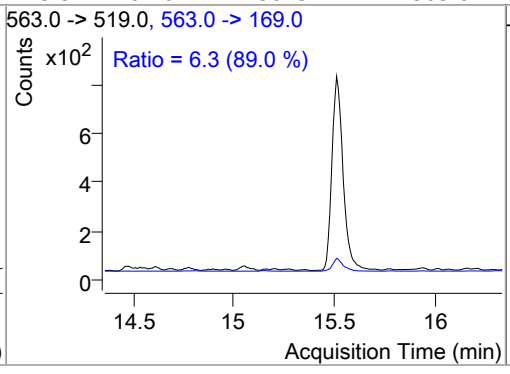


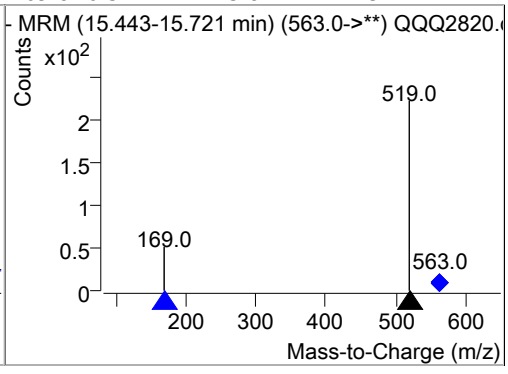




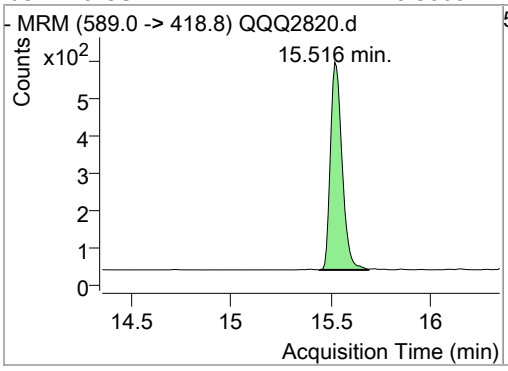
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	0.2735	15.51	0.26	3013	563.0 -> 169.0	6.3	5.0	9.2

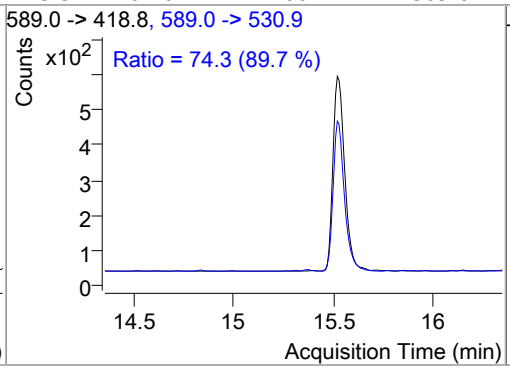


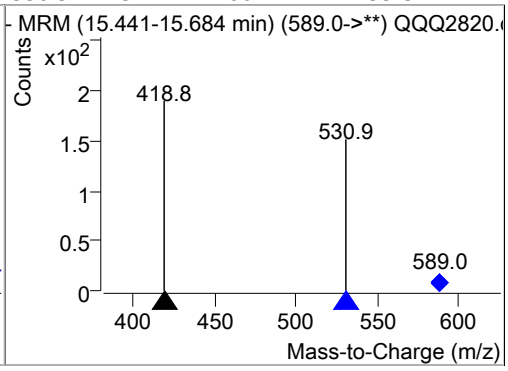




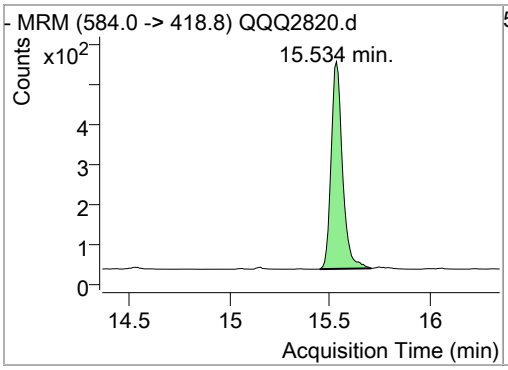
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	0.3068	15.52	0.26	2268	589.0 -> 530.9	74.3	66.2	99.3

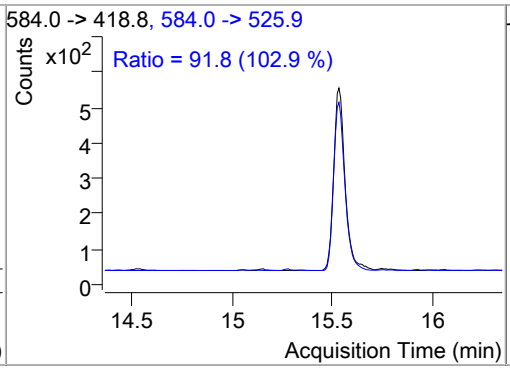


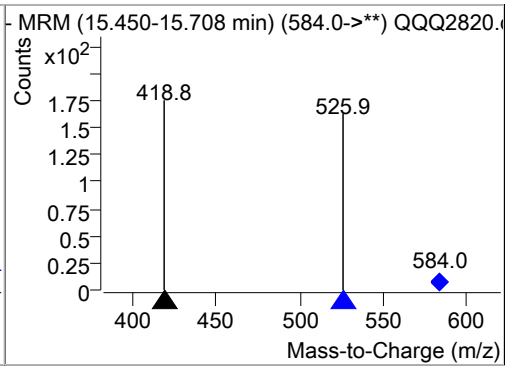




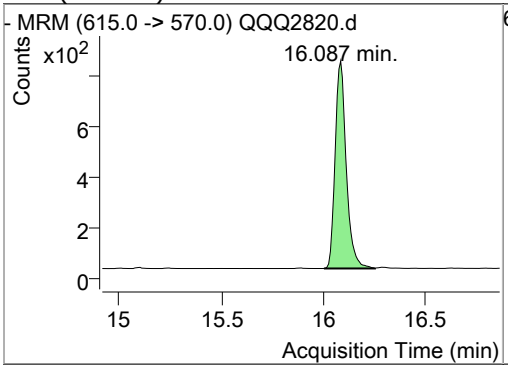
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	0.2846	15.53	0.27	2029	584.0 -> 525.9	91.8	71.3	107.0

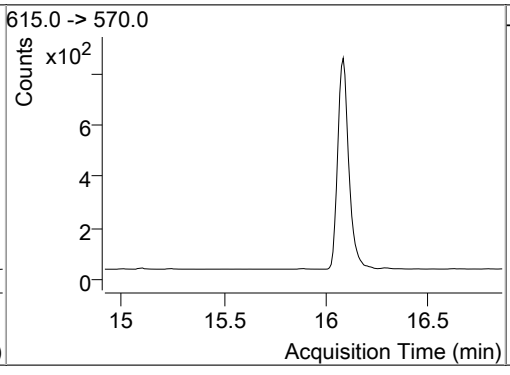


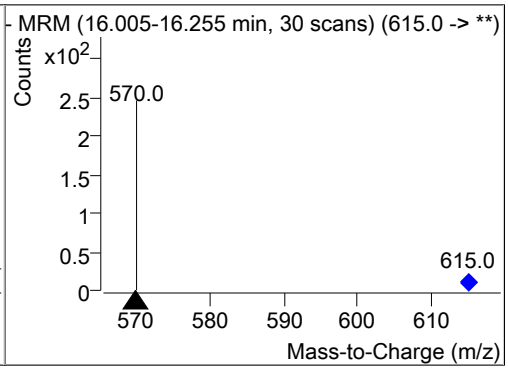




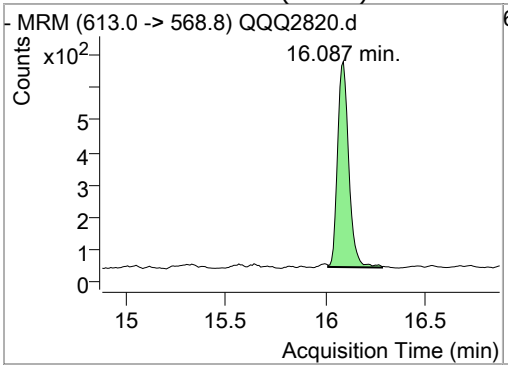
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.2940	16.09	0.31	3102				

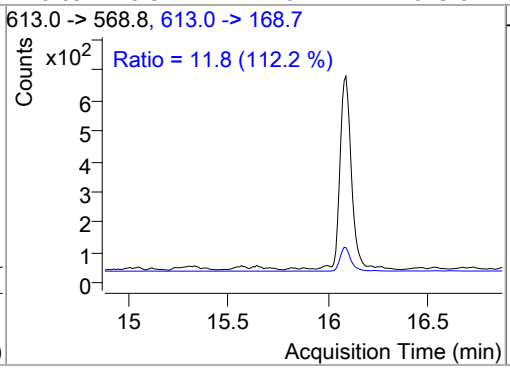


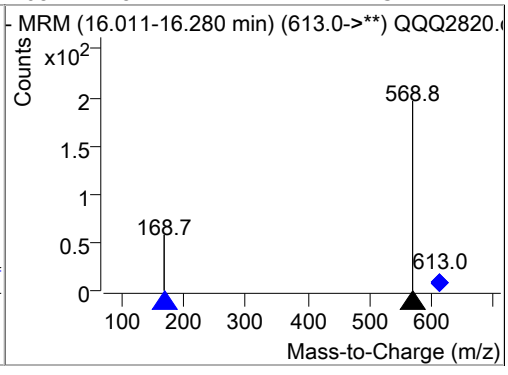




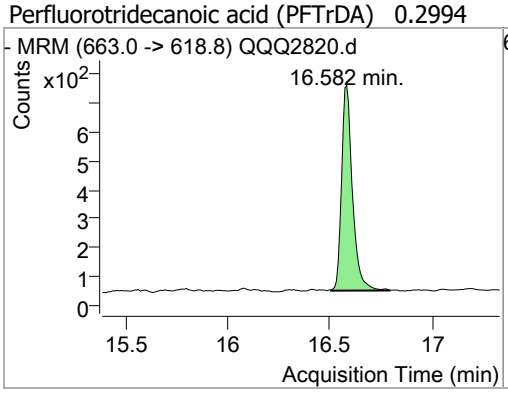
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	0.3149	16.09	0.31	2464	613.0 -> 168.7	11.8	7.4	13.7

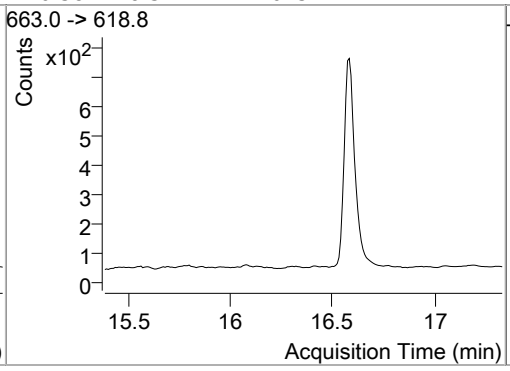


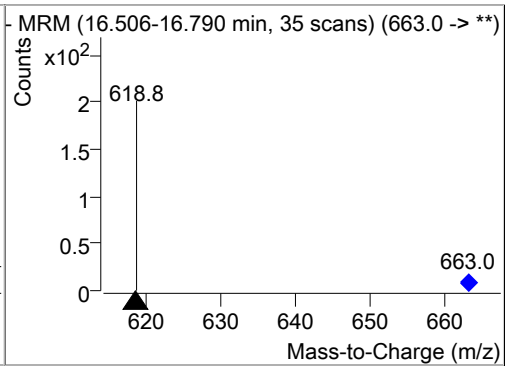




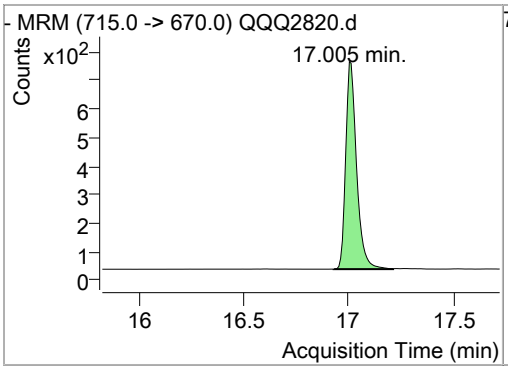
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	0.2994	16.58	0.34	2625				

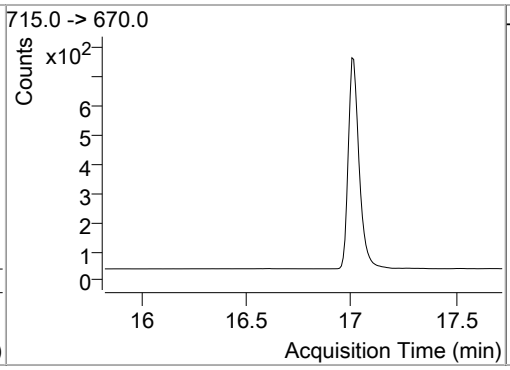


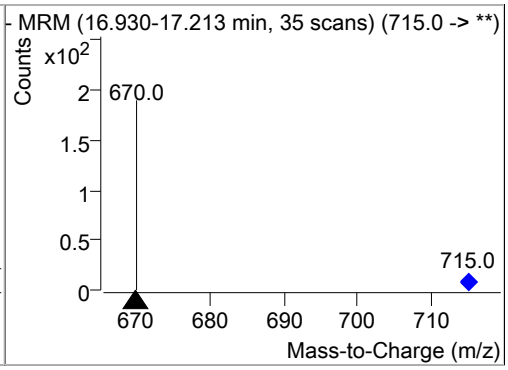




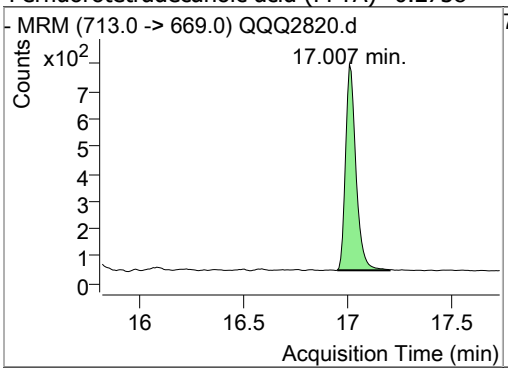
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	0.2666	17.00	0.37	2623				

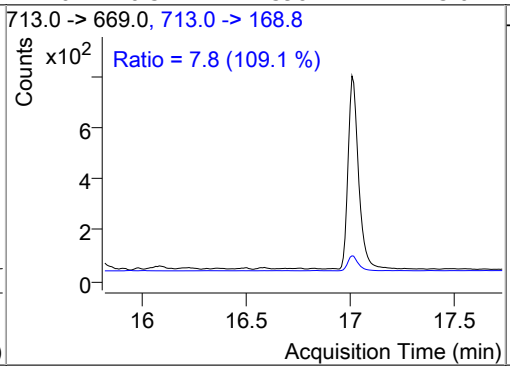


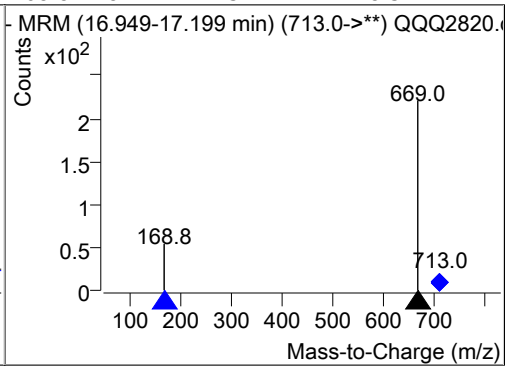




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	0.2738	17.01	0.37	2598	713.0 -> 168.8	7.8	5.7	8.5







Data File	QQQ2821.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/19/2019 7:41:48 PM
Sample Name	SEQ-CAL2	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	0.5 ng/mL
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

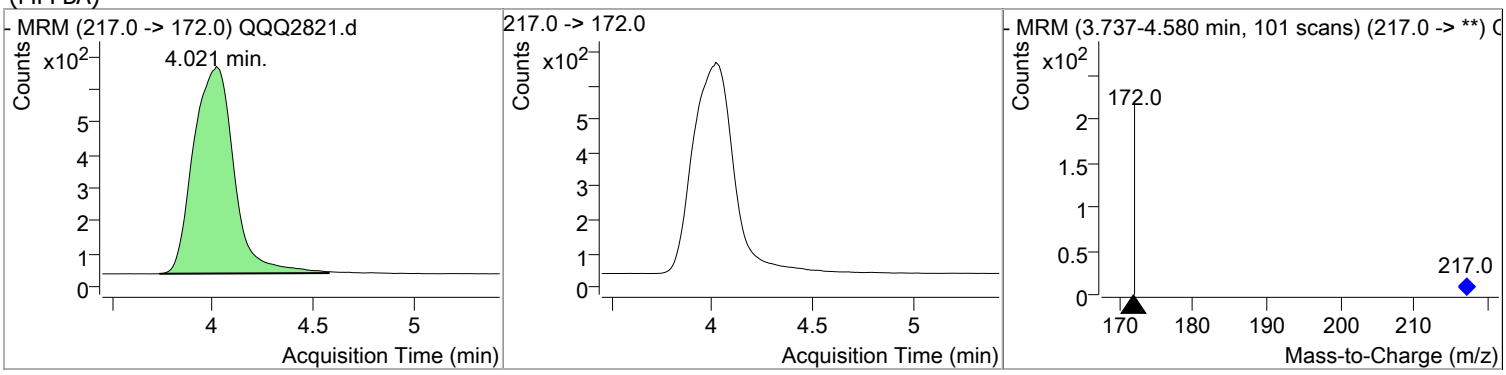
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
MPFOA	13.085	417.0 -> 372.0	239647	10.0000	ng/ml		0.051
System Monitoring Compounds							
Perfluoro-n-[13C4]butanoic acid (MPFBA)	4.021	217.0 -> 172.0	8807	0.4692	ng/ml		-0.167
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.69%		*	
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.014	268.0 -> 223.0	12071	0.4717	ng/ml		-0.100
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.72%		*	
M3PFBS	8.743	302.0 -> 79.9	3793	0.4695	ng/ml		-0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.69%		*	
M2-4-2FTS	10.208	329.0 -> 309.0	5215	0.4515	ng/ml		-0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.51%		*	
M5PFHxA	10.353	318.0 -> 273.0	11373	0.4717	ng/ml		-0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.72%		*	
M4PFHpA	11.919	367.0 -> 322.0	3303	0.4956	ng/ml		0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.96%		*	
M3PFHxS	12.051	402.0 -> 80.0	2672	0.4815	ng/ml		0.008
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.81%		*	
M2-6-2FTS	13.032	429.0 -> 409.0	2954	0.4973	ng/ml		0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.97%		*	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.084	421.0 -> 376.0	6007	0.4739	ng/ml		0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.74%		*	
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.031	472.0 -> 427.0	6543	0.5045	ng/ml		0.127
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 5.04%		*	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.047	507.0 -> 80.0	2039	0.4798	ng/ml		0.135
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.80%		*	
M2-8-2FTS	14.820	529.0 -> 509.0	3697	0.4231	ng/ml		0.202
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.23%		*	
M6PFDA	14.829	519.0 -> 473.9	5219	0.5050	ng/ml		0.202
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 5.05%		*	
d3-N-MeFOSAA	15.172	573.0 -> 418.8	4009	0.4831	ng/ml		0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.83%		*	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.505	506.0 -> 78.0	3309	0.5004	ng/ml		0.311
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 5.00%		*	
M7PFUdA	15.518	570.0 -> 525.0	5106	0.4837	ng/ml		0.278
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.84%		*	
d5-N-EtFOSAA	15.525	589.0 -> 418.8	3853	0.5322	ng/ml		0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 5.32%		*	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.095	615.0 -> 570.0	5177	0.5009	ng/ml		0.320
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 5.01%		*	
M2PFTeDA	17.047	715.0 -> 670.0	4618	0.4792	ng/ml		0.409
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 4.79%		*	

Target Compounds QValue

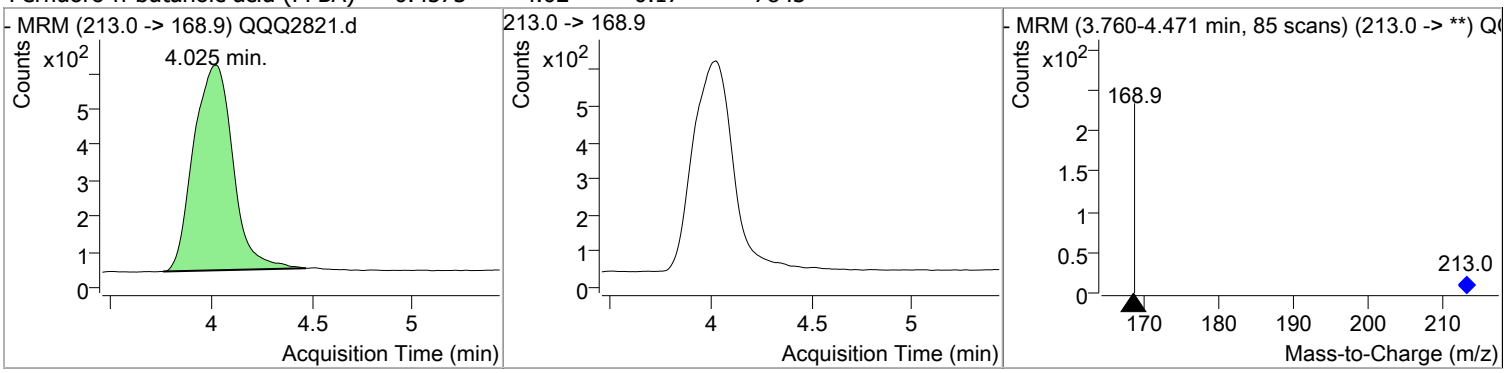
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.025	213.0 -> 168.9	7843	0.4573	ng/ml	100
Perfluoro-n-pentanoic acid (PFPeA)	8.015	263.0 -> 219.0	10605	0.4698	ng/ml	100
Perfluorobutanesulfonic acid (PFBS)	8.746	298.9 -> 79.9	3334	0.4519	ng/ml	99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.209	327.0 -> 307.0	4528	0.4460	ng/ml	98
Perfluorohexanoic acid (PFHxA)	10.355	313.0 -> 268.9	9505	0.4607	ng/ml	99
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.666	348.9 -> 79.9	3079	0.4644	ng/ml	98
Perfluoroheptanoic acid (PFHpA)	11.920	363.0 -> 318.8	7539	0.4807	ng/ml	100
Perfluorohexanesulfonic acid (PFHxS)	12.052	398.9 -> 79.9	2162	0.3789	ng/ml	99
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.024	427.0 -> 407.0	3572	0.5705	ng/ml	96
Perfluorooctanoic acid (PFOA)	13.094	413.0 -> 368.8	6099	0.5007	ng/ml	94
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.148	448.9 -> 80.0	2045	0.4971	ng/ml	97
Perfluorononanoic acid (PFNA)	14.040	463.0 -> 418.8	4985	0.5076	ng/ml	96
Perfluorooctanesulfonic acid (PFOS)	14.047	498.9 -> 79.9	1881	0.3716	ng/ml	93
Perfluorononanesulfonate (L-PFNS)	14.820	548.9 -> 79.9	1882	0.5023	ng/ml	98
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.820	527.0 -> 507.0	3098	0.4307	ng/ml	96
Perfluorodecanoic acid (PFDA)	14.838	513.0 -> 468.8	4353	0.5098	ng/ml	94
N-MeFOSAA	15.181	570.0 -> 418.9	4260	0.4781	ng/ml	92
Perfluoro-1-octanesulfonamide (FOSA)	15.506	497.9 -> 78.0	3414	0.4964	ng/ml	99
Perfluoro-1-decanesulfonate (L-PFDS)	15.482	598.9 -> 98.9	1671	0.4857	ng/ml	100
Perfluoroundecanoic acid (PFUnA)	15.510	563.0 -> 519.0	6455	0.5982	ng/ml	95
N-EtFOSAA	15.534	584.0 -> 418.8	3637	0.5208	ng/ml	98
Perfluorododecanoic acid (PFDoA)	16.096	613.0 -> 568.8	3964	0.5171	ng/ml	100
Perfluorotridecanoic acid (PFTrDA)	16.607	663.0 -> 618.8	4205	0.4897	ng/ml	100
Perfluorotetradecanoic acid (PFTA)	17.040	713.0 -> 669.0	4718	0.5076	ng/ml	97

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

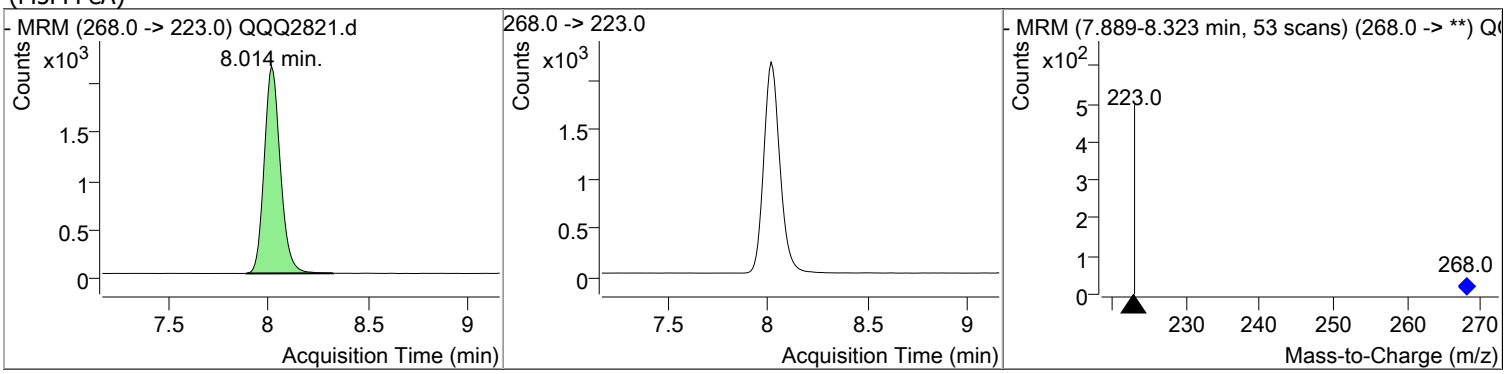
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.4692	4.02	-0.17	8807				



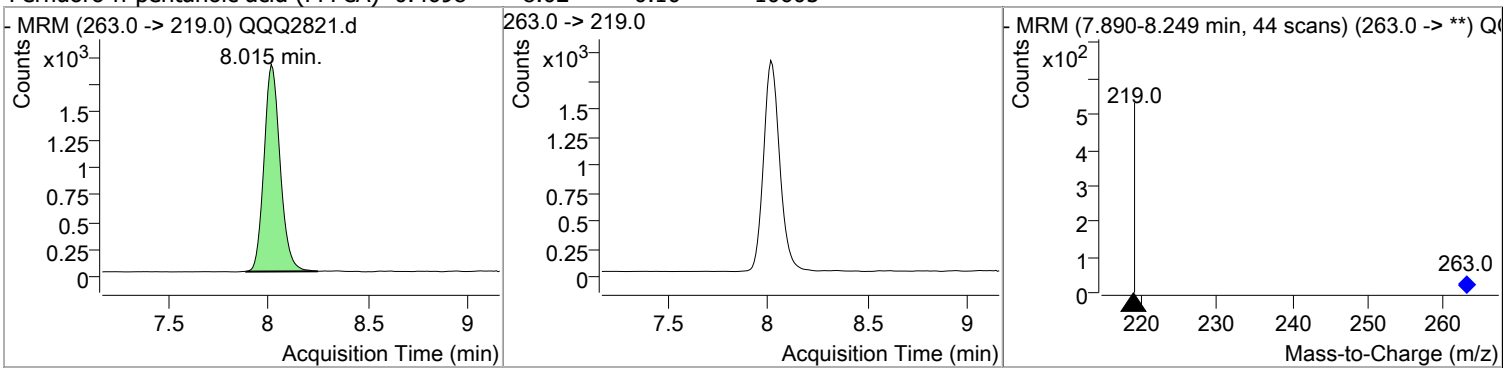
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	0.4573	4.02	-0.17	7843				



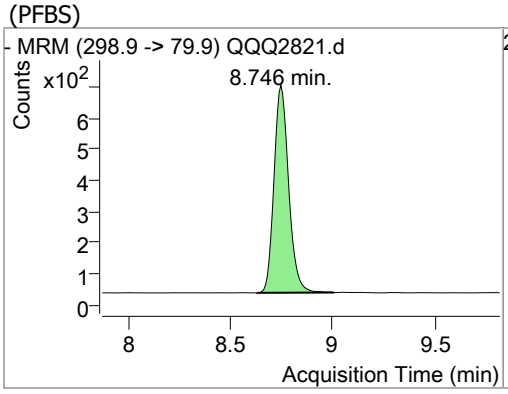
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	0.4717	8.01	-0.10	12071				

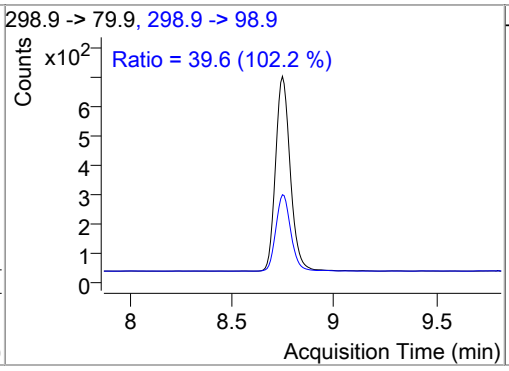


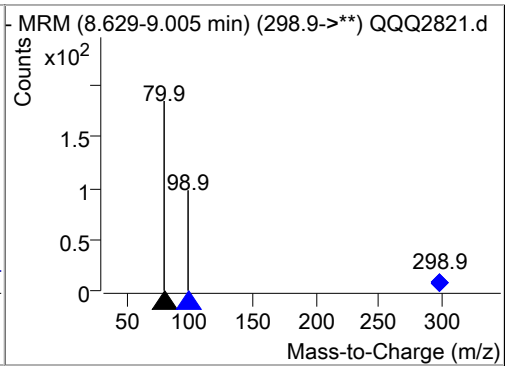
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	0.4698	8.02	-0.10	10605				



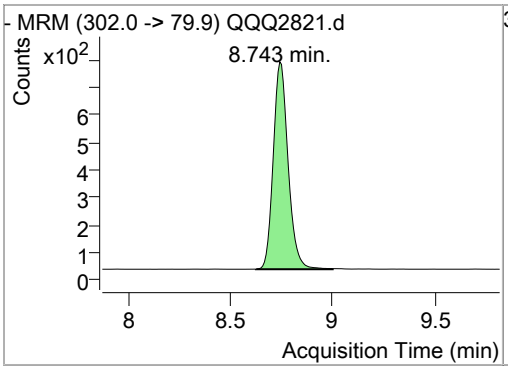
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	0.4519	8.75	-0.07	3334	298.9 -> 98.9	39.6	31.0	46.5

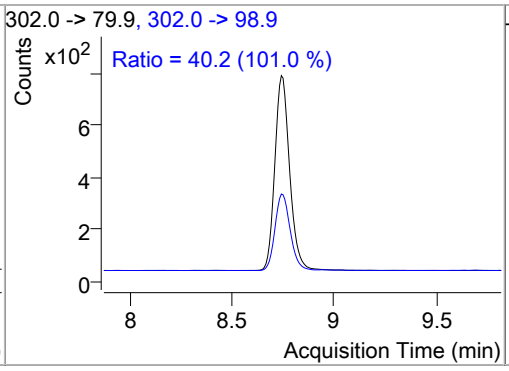


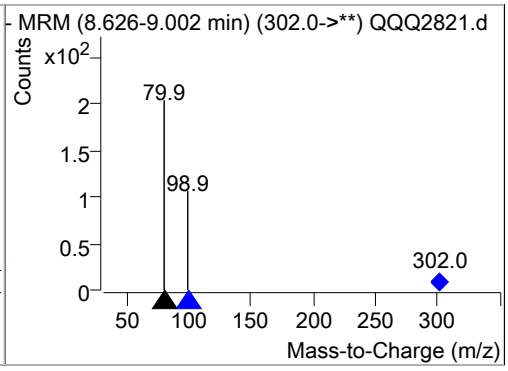




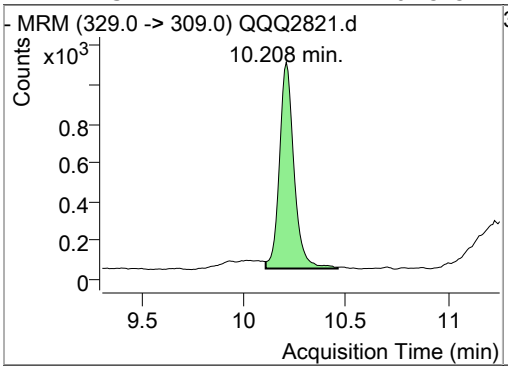
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	0.4695	8.74	-0.08	3793	302.0 -> 98.9	40.2	31.9	47.8

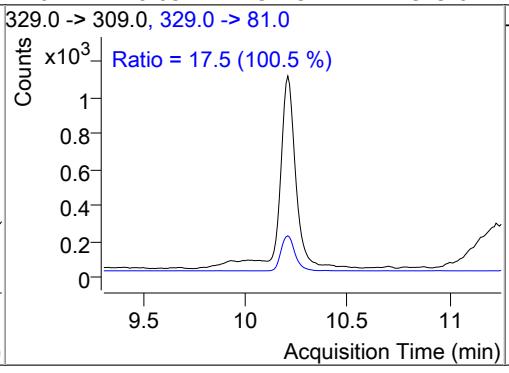


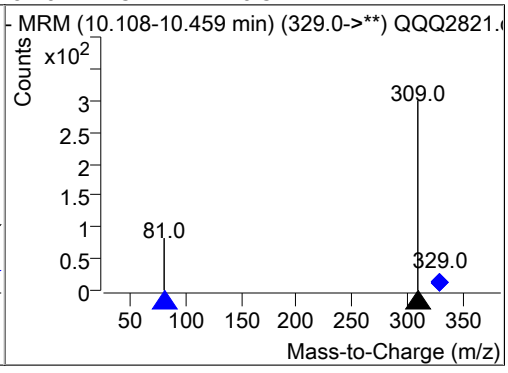




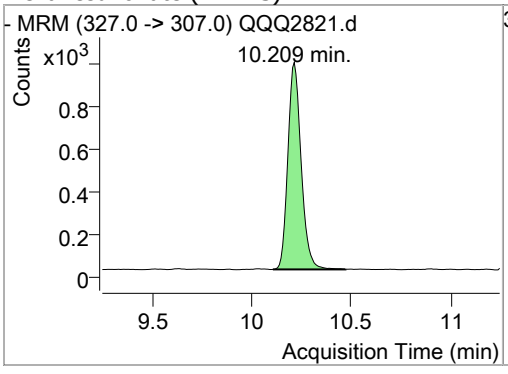
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	0.4515	10.21	-0.05	5215	329.0 -> 81.0	17.5	10.5	24.4

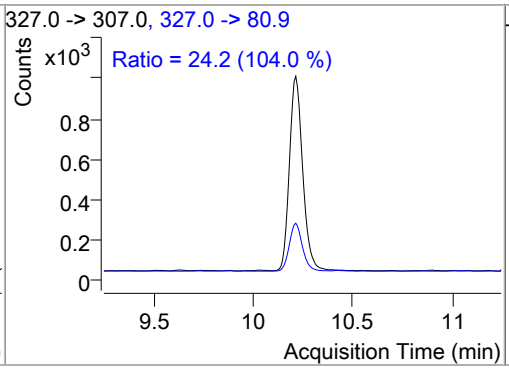


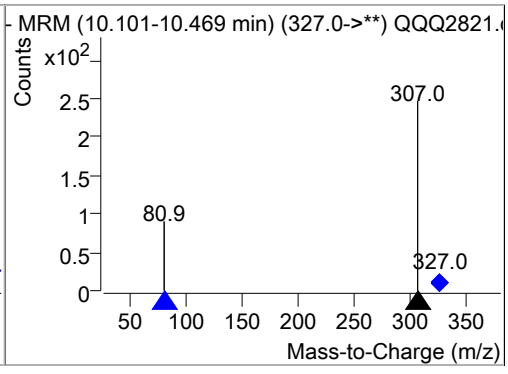




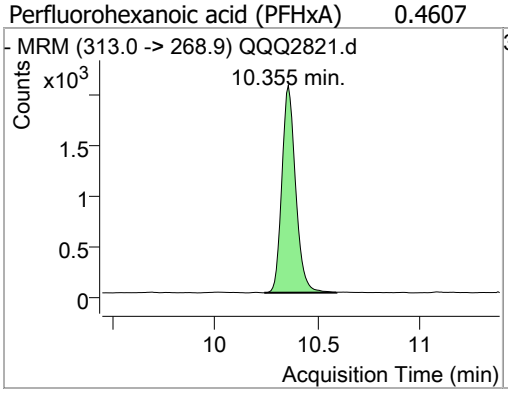
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	0.4460	10.21	-0.05	4528	327.0 -> 80.9	24.2	13.9	32.5

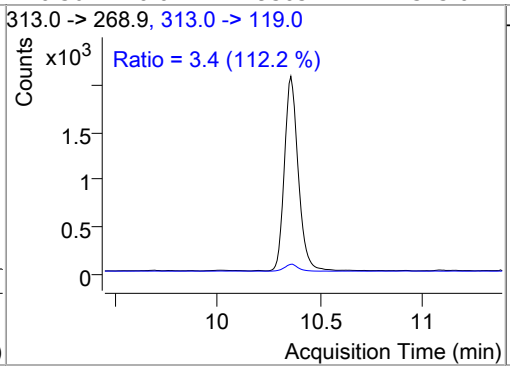


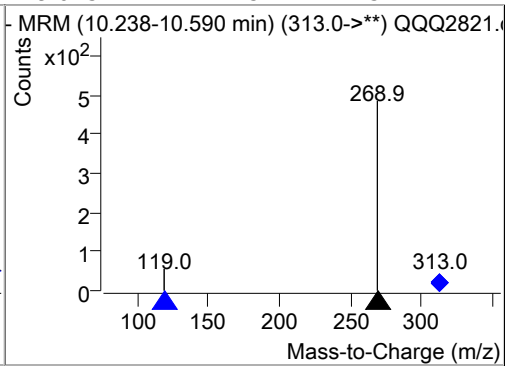




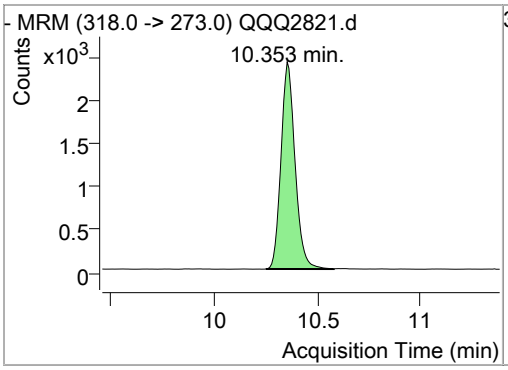
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	0.4607	10.36	-0.04	9505	313.0 -> 119.0	3.4	2.5	3.7

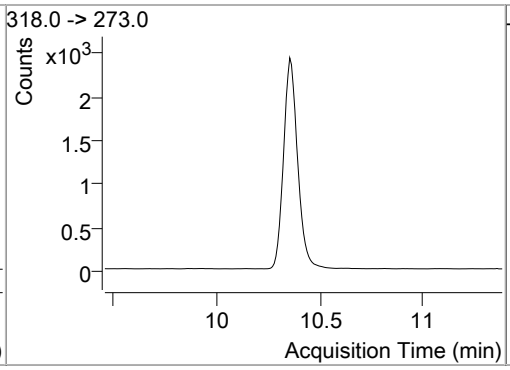


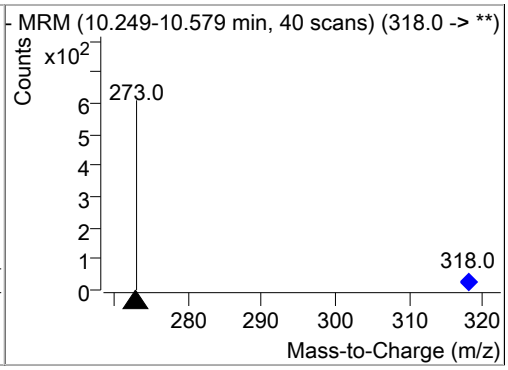




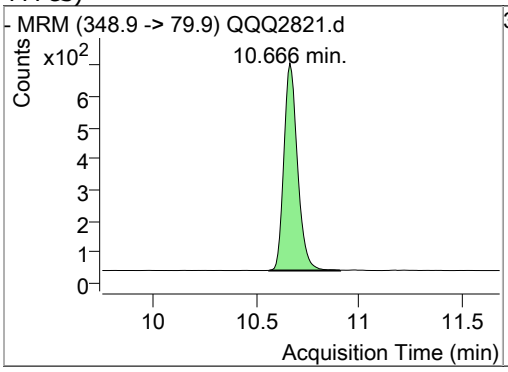
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	0.4717	10.35	-0.05	11373				

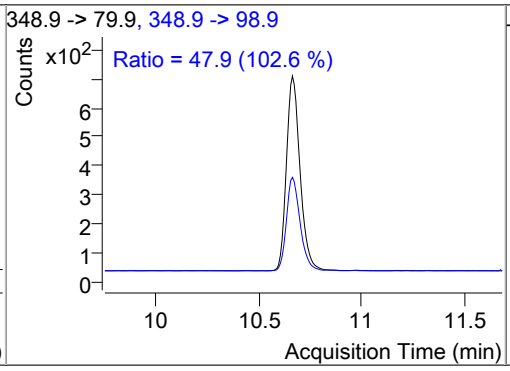


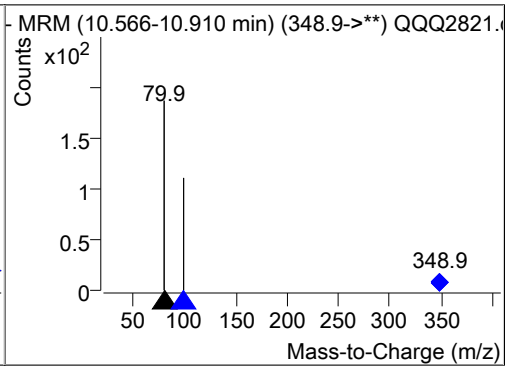




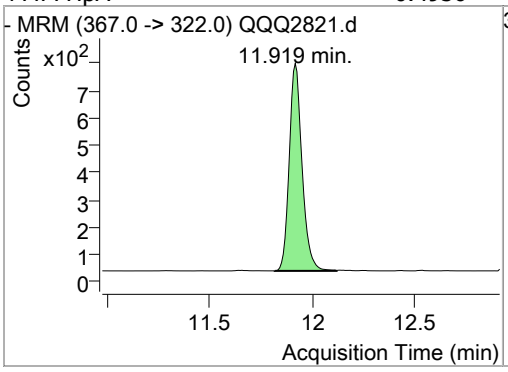
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	0.4644	10.67	-0.03	3079	348.9 -> 98.9	47.9	37.3	56.0

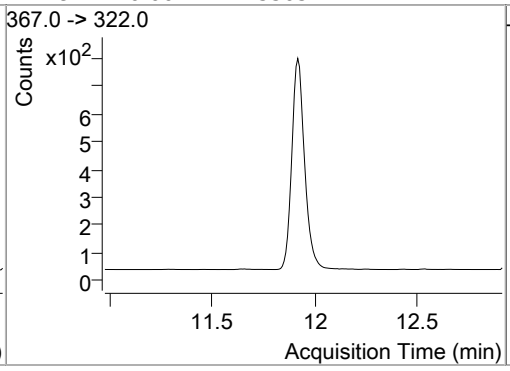


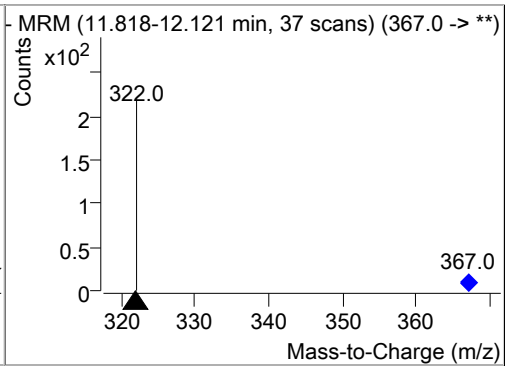




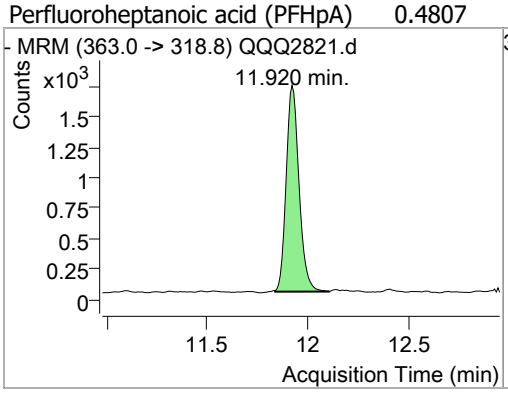
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	0.4956	11.92	0.00	3303				

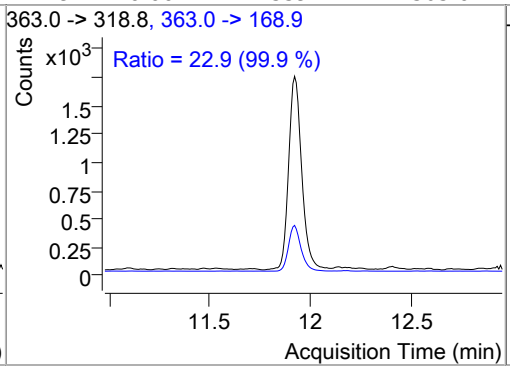


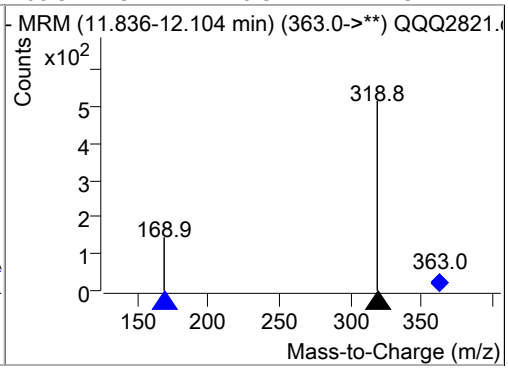




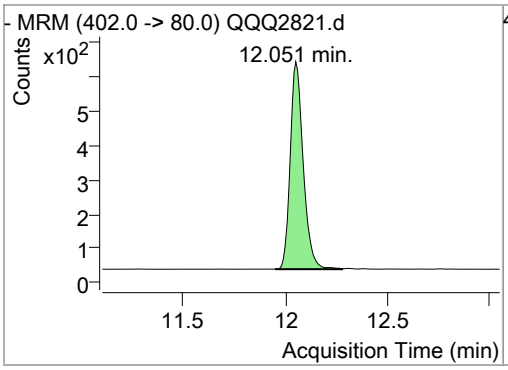
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	0.4807	11.92	0.00	7539	363.0 -> 168.9	22.9	18.3	27.5

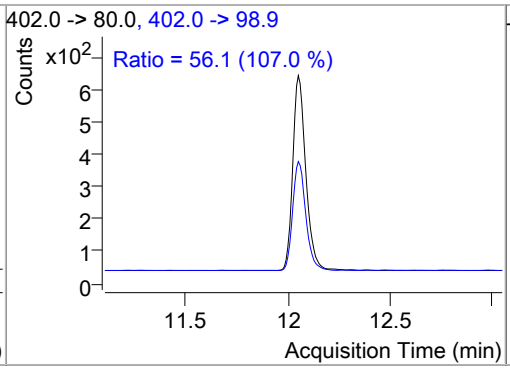


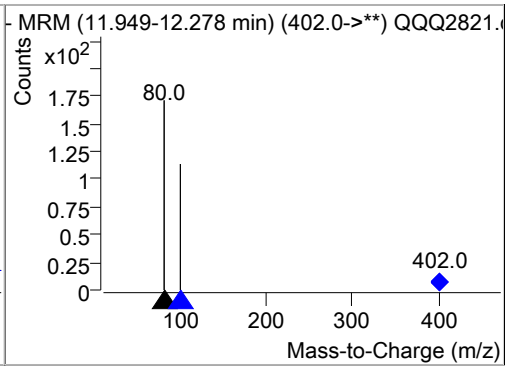




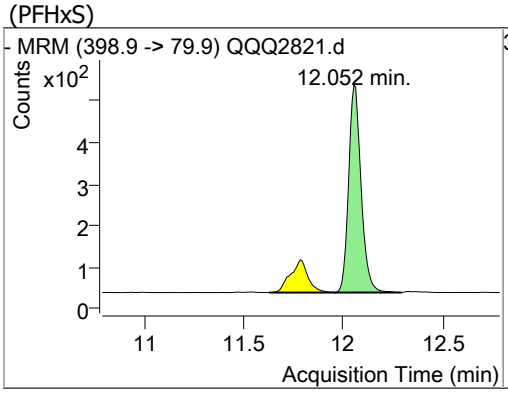
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	0.4815	12.05	0.01	2672	402.0 -> 98.9	56.1	42.0	62.9

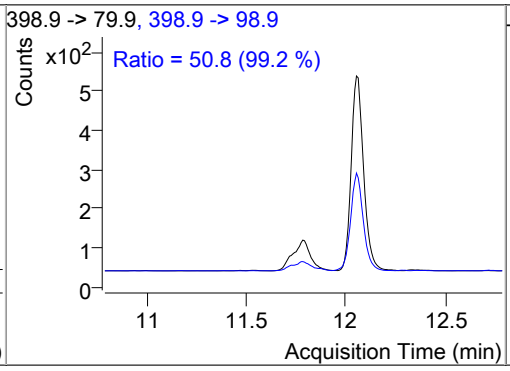


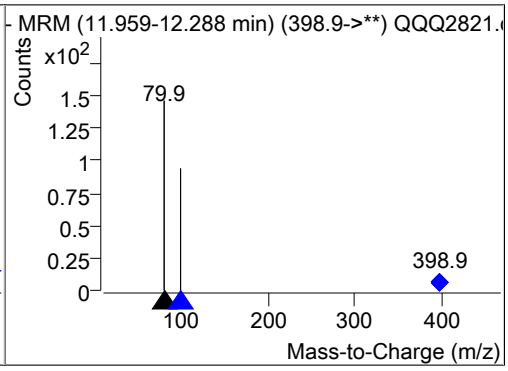




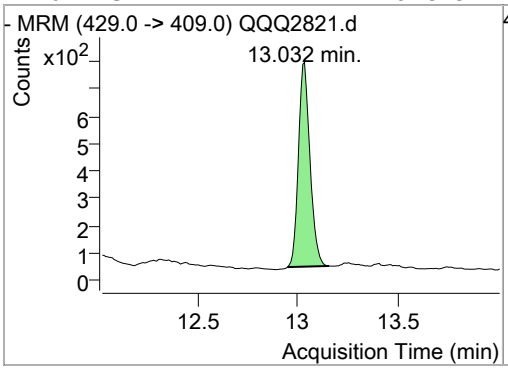
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	0.3789	12.05	0.01	2162	398.9 -> 98.9	50.8	41.0	61.5

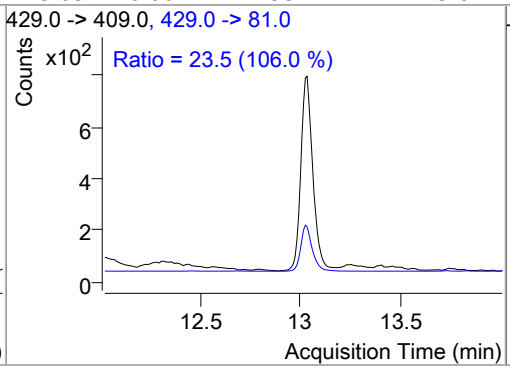


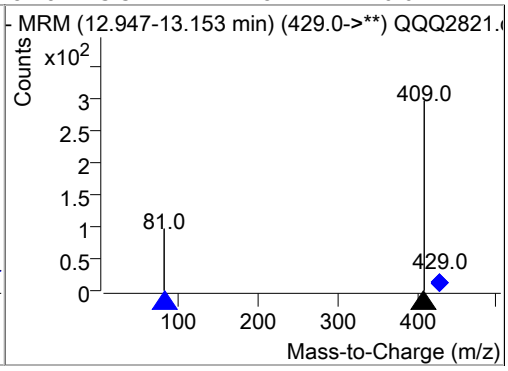




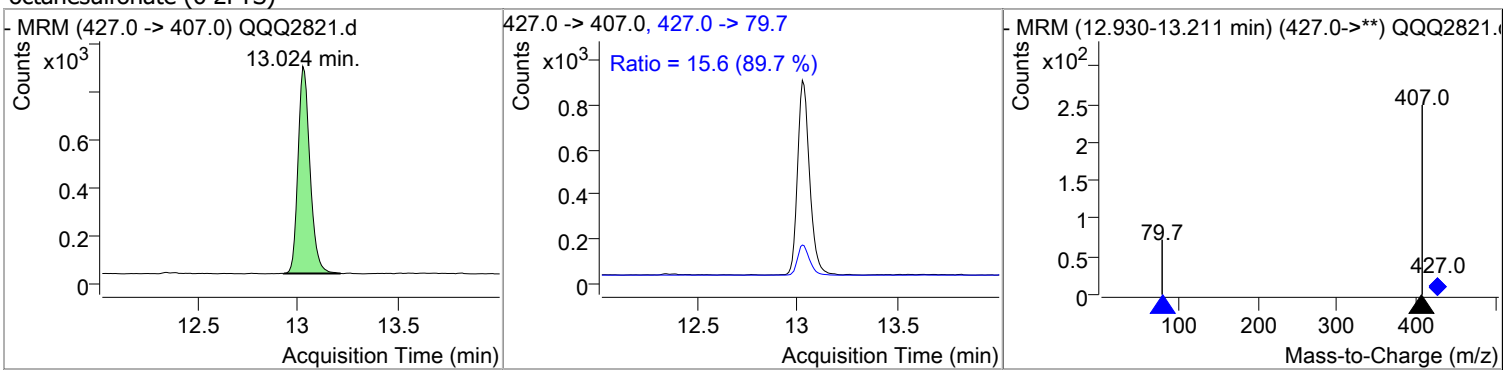
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	0.4973	13.03	0.06	2954	429.0 -> 81.0	23.5	17.8	26.6



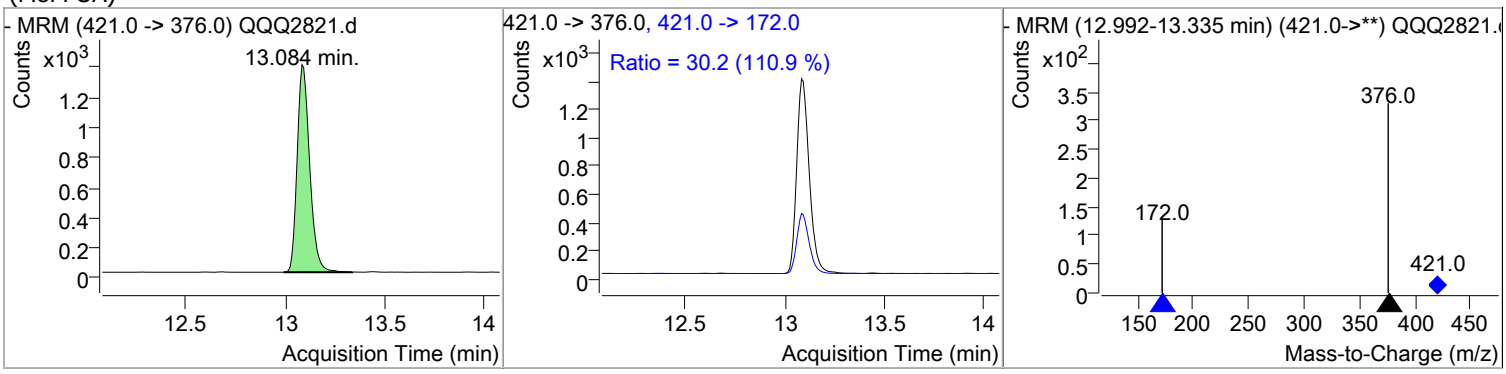




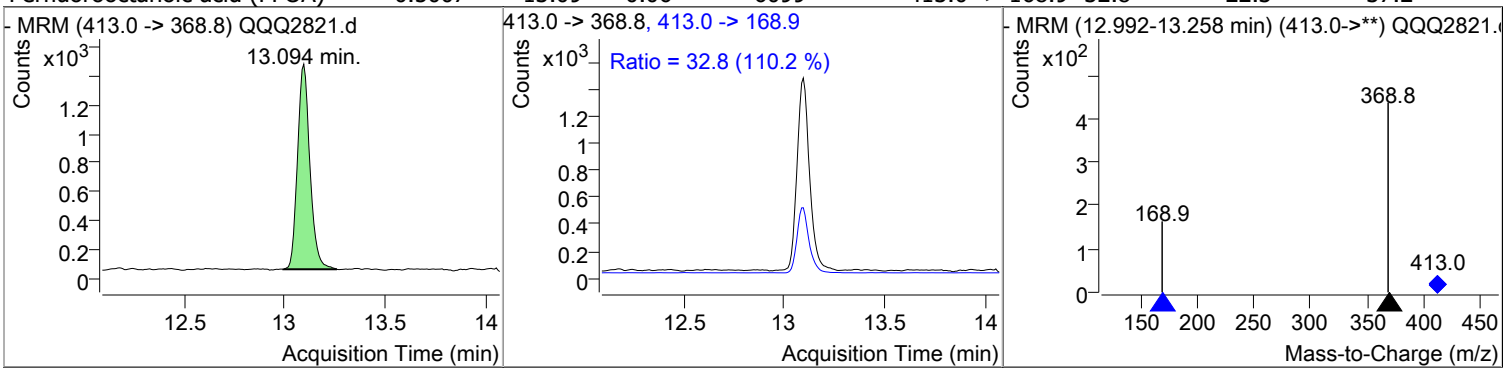
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	0.5705	13.02	0.05	3572	427.0 -> 79.7	15.6	13.9	20.8



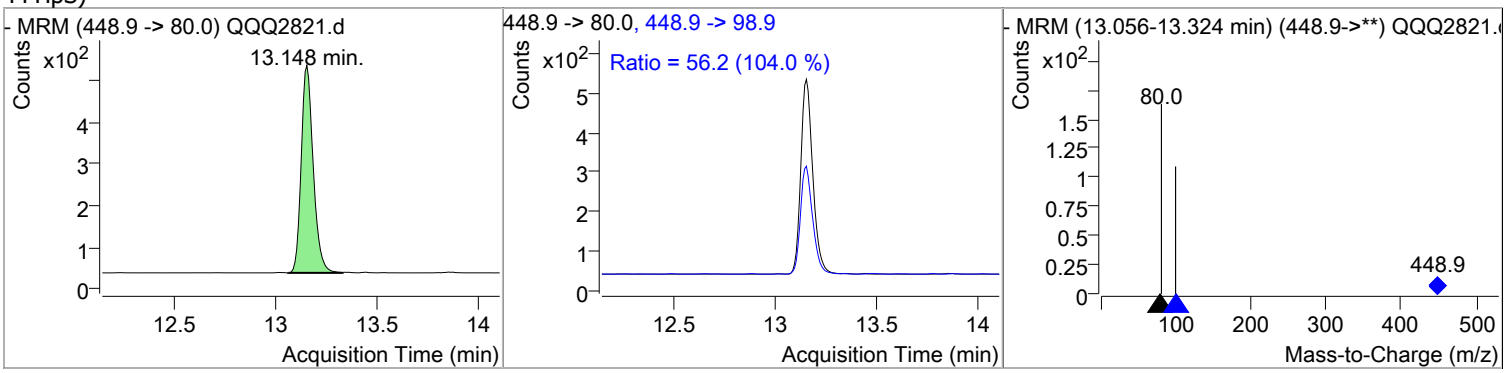
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	0.4739	13.08	0.06	6007	421.0 -> 172.0	30.2	21.7	32.6



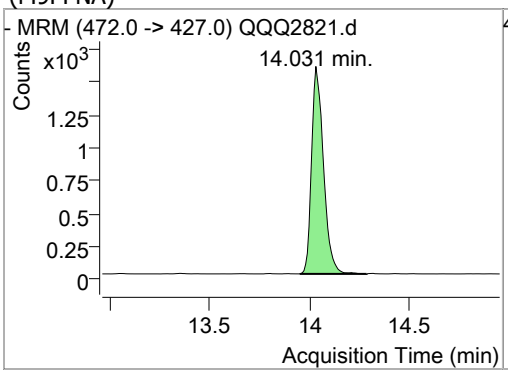
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	0.5007	13.09	0.06	6099	413.0 -> 168.9	32.8	22.3	37.2

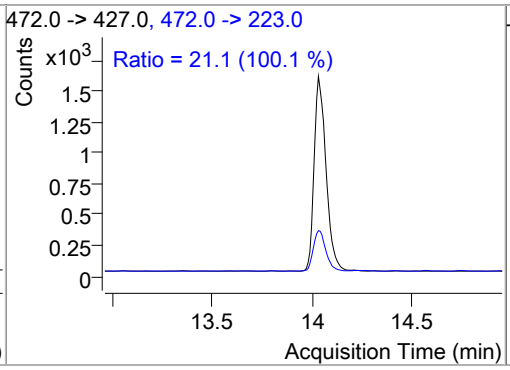


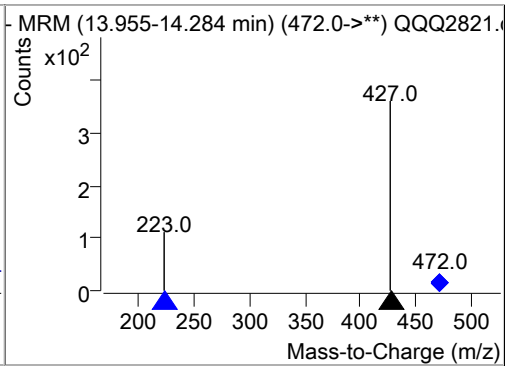
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	0.4971	13.15	0.07	2045	448.9 -> 98.9	56.2	43.3	64.9



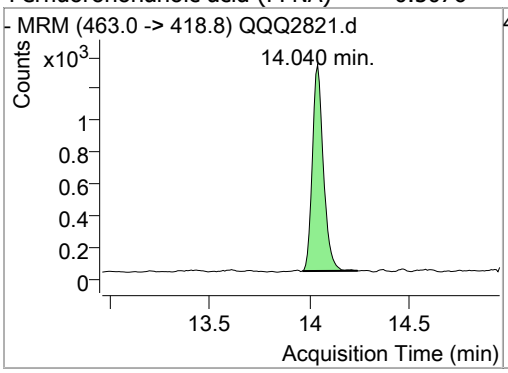
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	0.5045	14.03	0.13	6543	472.0 -> 223.0	21.1	16.9	25.4

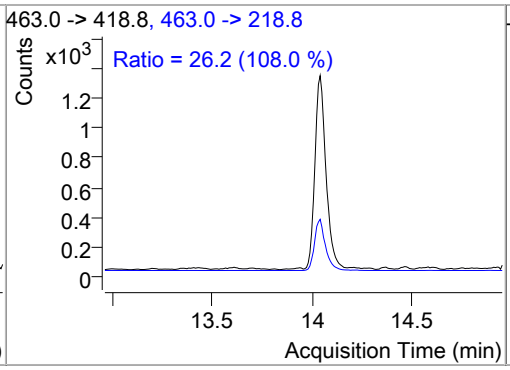


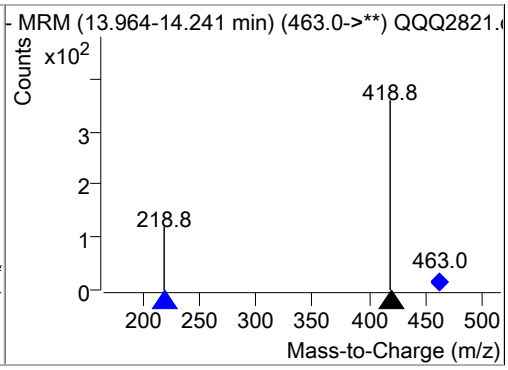




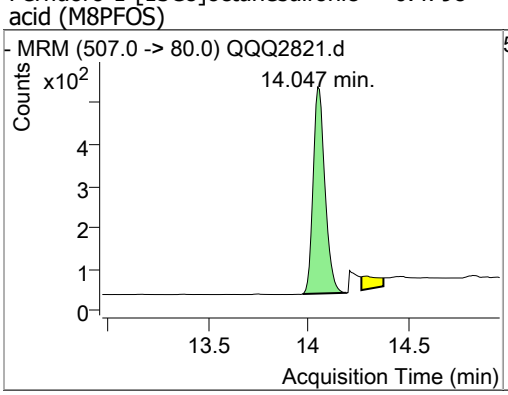
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	0.5076	14.04	0.14	4985	463.0 -> 218.8	26.2	19.4	29.1

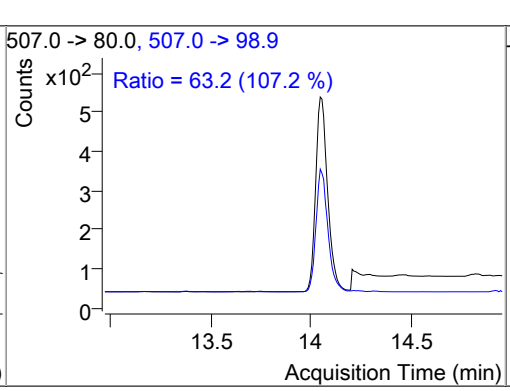


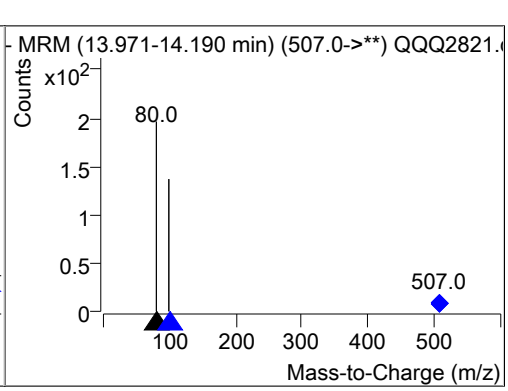




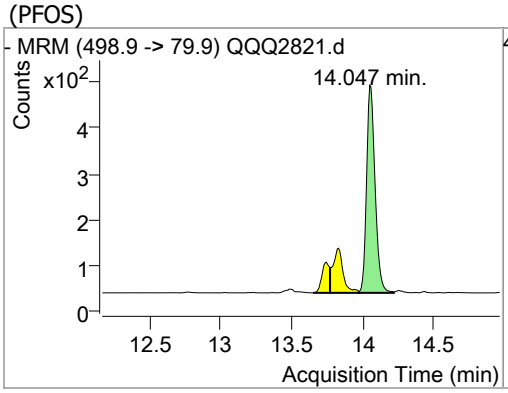
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	0.4798	14.05	0.14	2039	507.0 -> 98.9	63.2	47.2	70.8

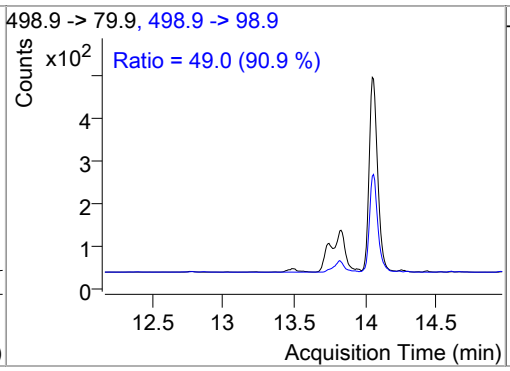


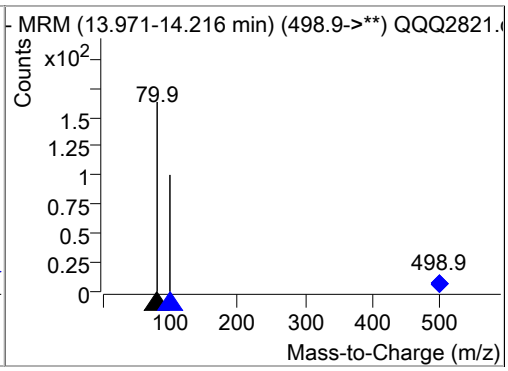




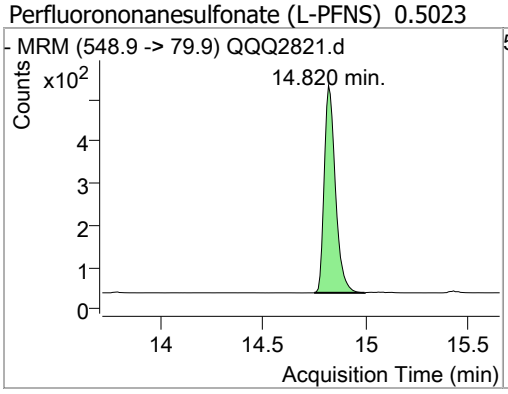
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	0.3716	14.05	0.14	1881	498.9 -> 98.9	49.0	43.1	64.6

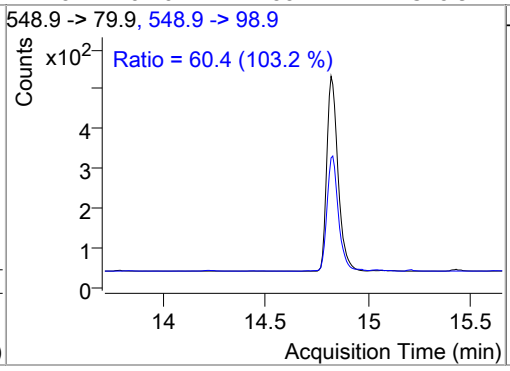


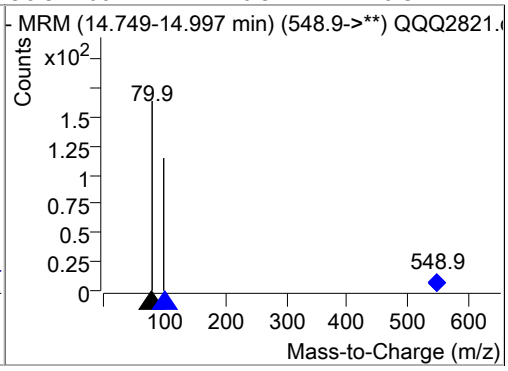




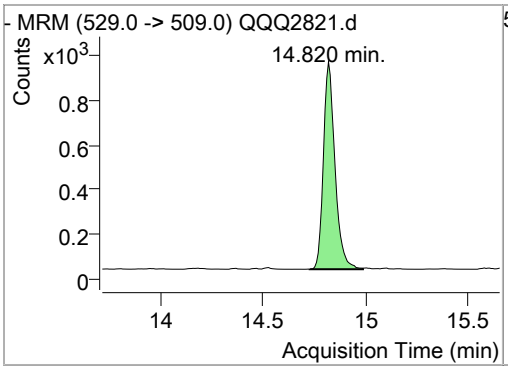
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	0.5023	14.82	0.20	1882	548.9 -> 98.9	60.4	46.9	70.3

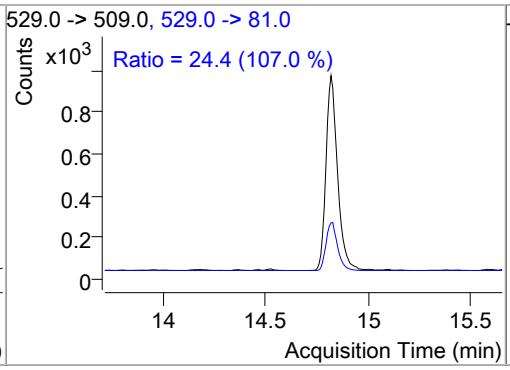


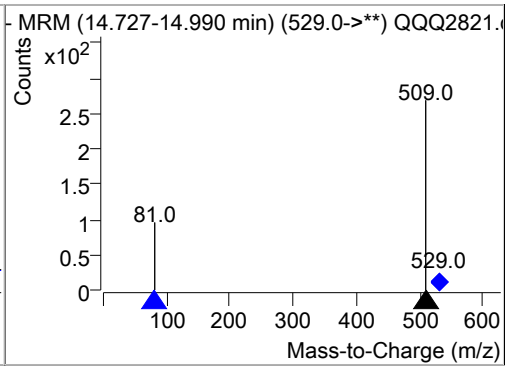




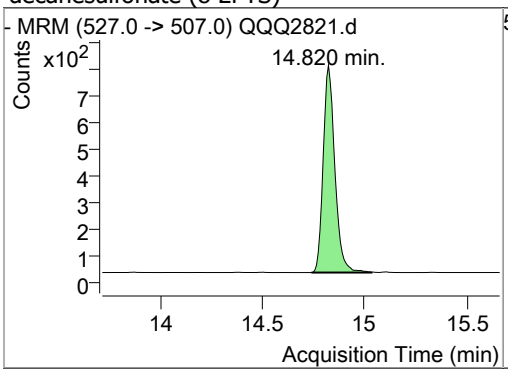
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	0.4231	14.82	0.20	3697	529.0 -> 81.0	24.4	18.3	27.4

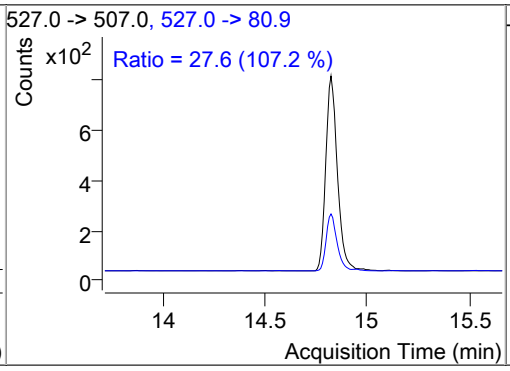


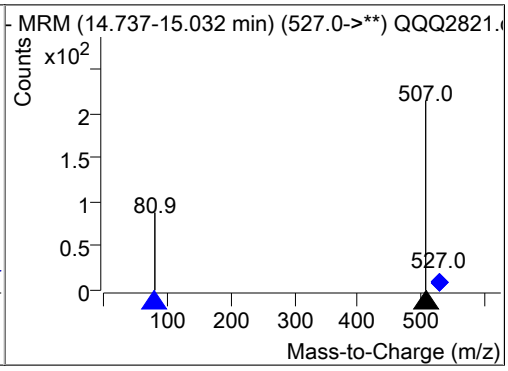




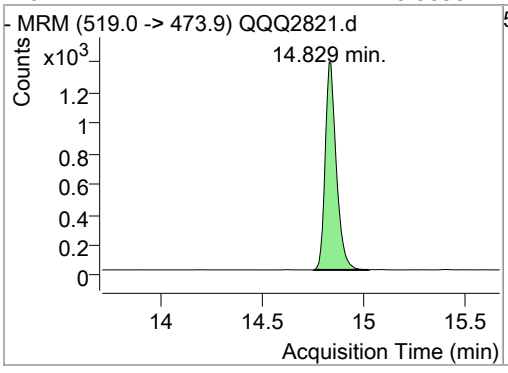
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	0.4307	14.82	0.20	3098	527.0 -> 80.9	27.6	20.6	30.9

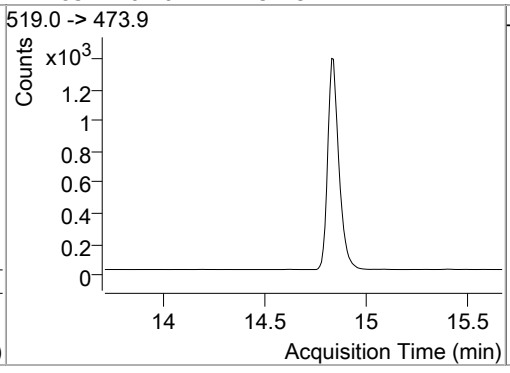


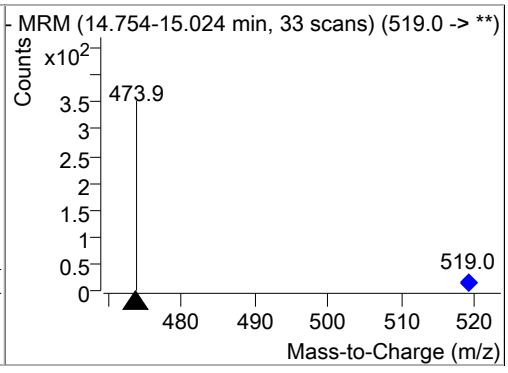




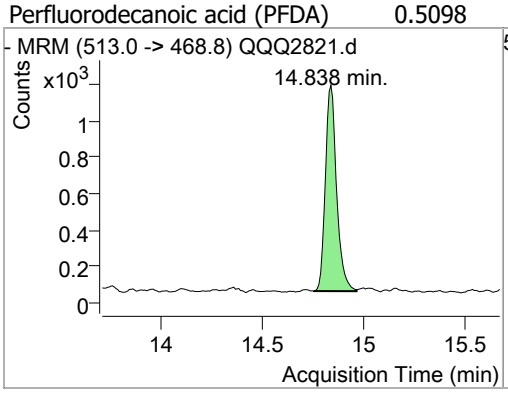
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	0.5050	14.83	0.20	5219				

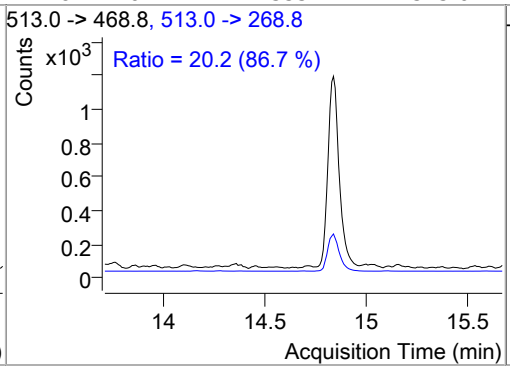


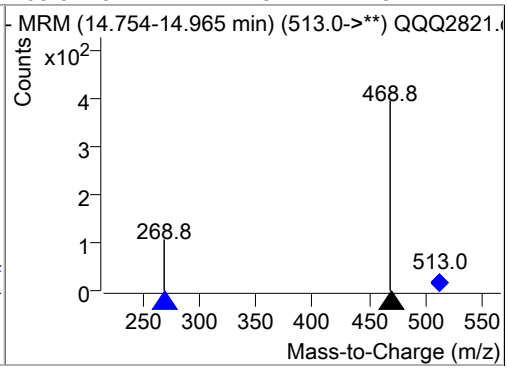




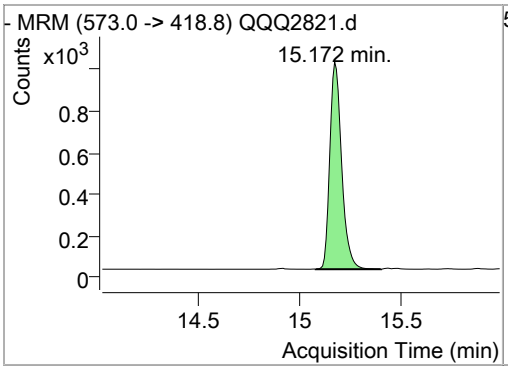
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	0.5098	14.84	0.21	4353	513.0 -> 268.8	20.2	17.5	29.1

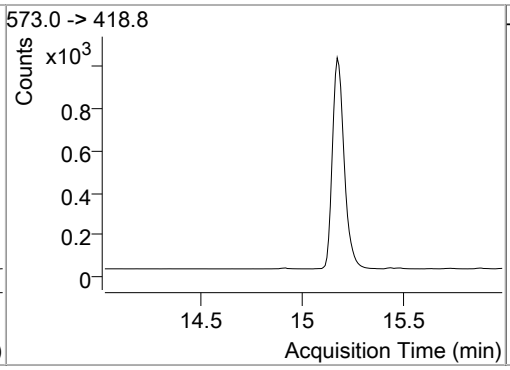


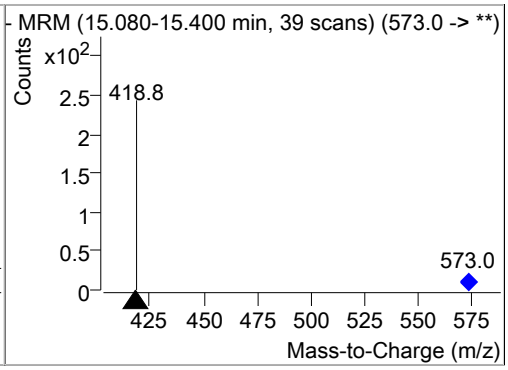




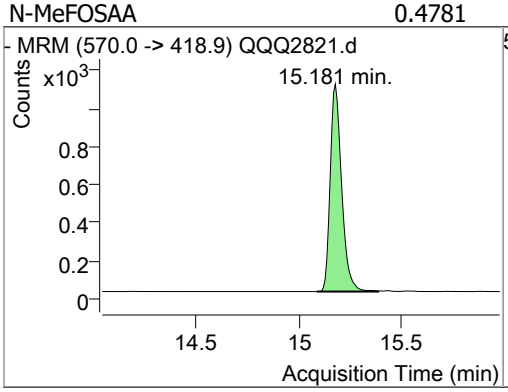
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	0.4831	15.17	0.24	4009				

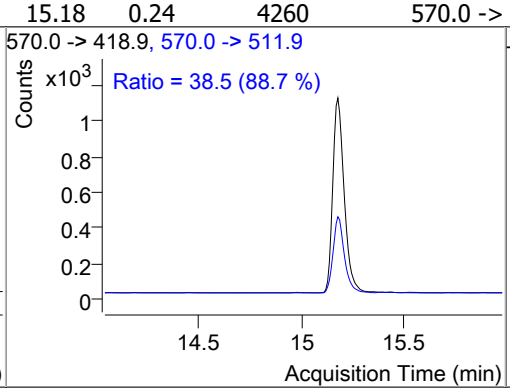


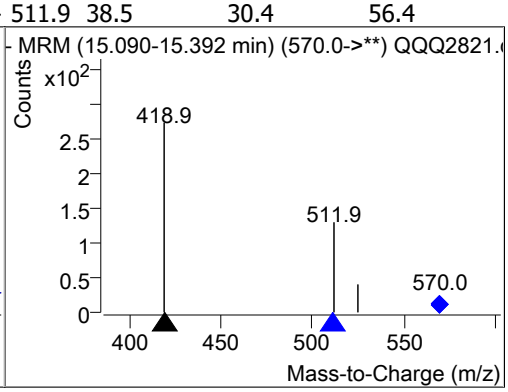




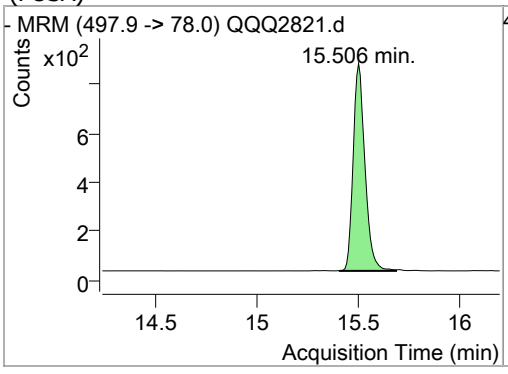
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	0.4781	15.18	0.24	4260	570.0 -> 511.9	38.5	30.4	56.4

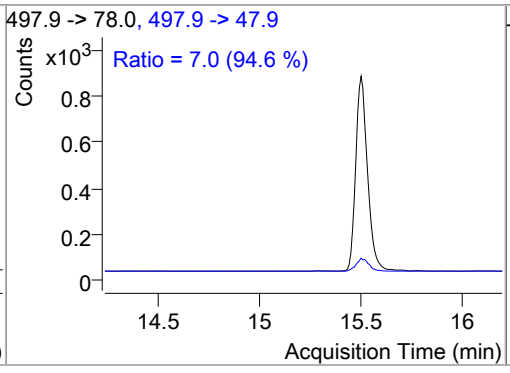


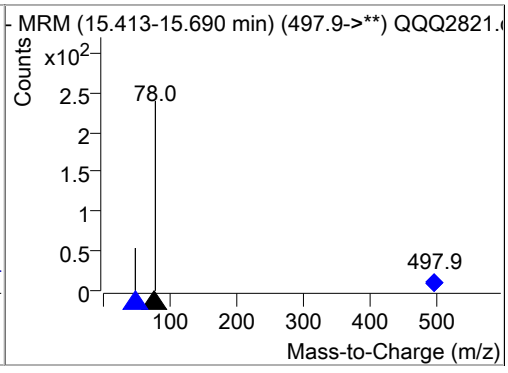




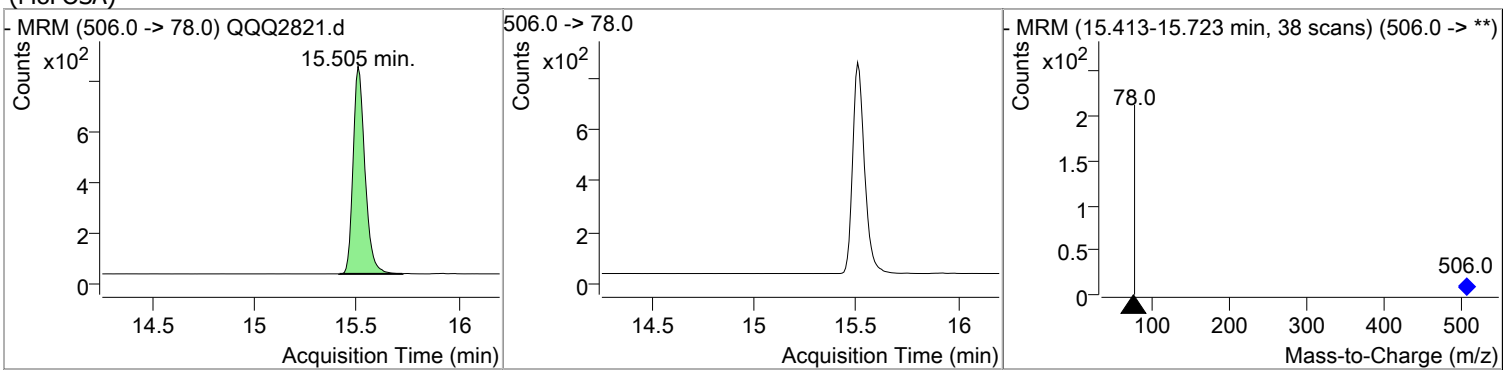
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	0.4964	15.51	0.32	3414	497.9 -> 47.9	7.0	5.9	8.8



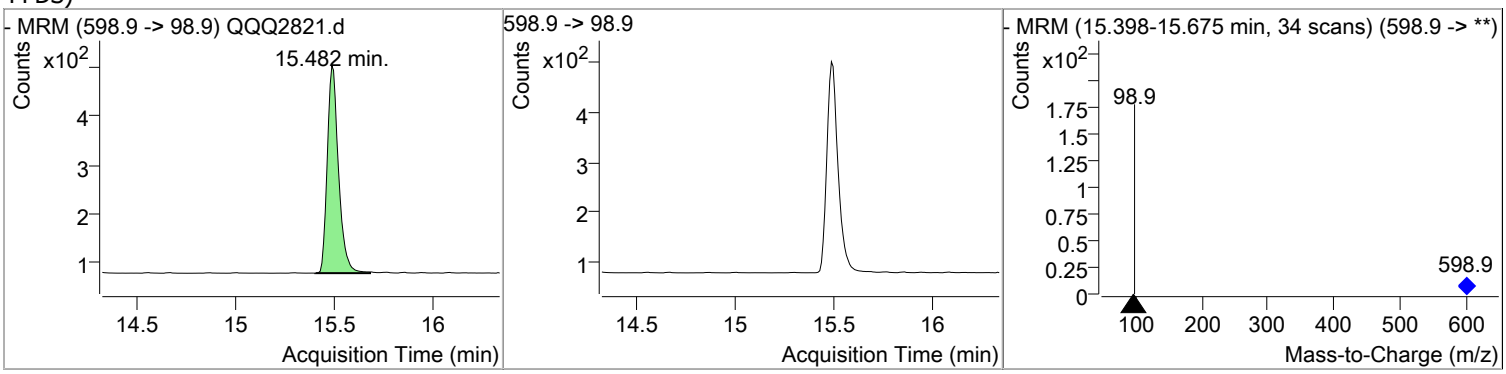




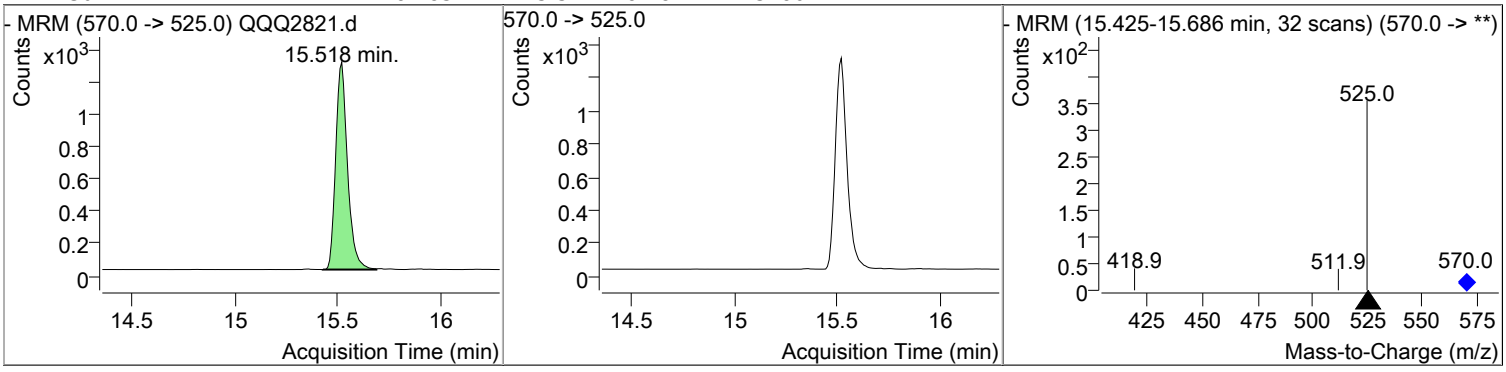
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	0.5004	15.51	0.31	3309				



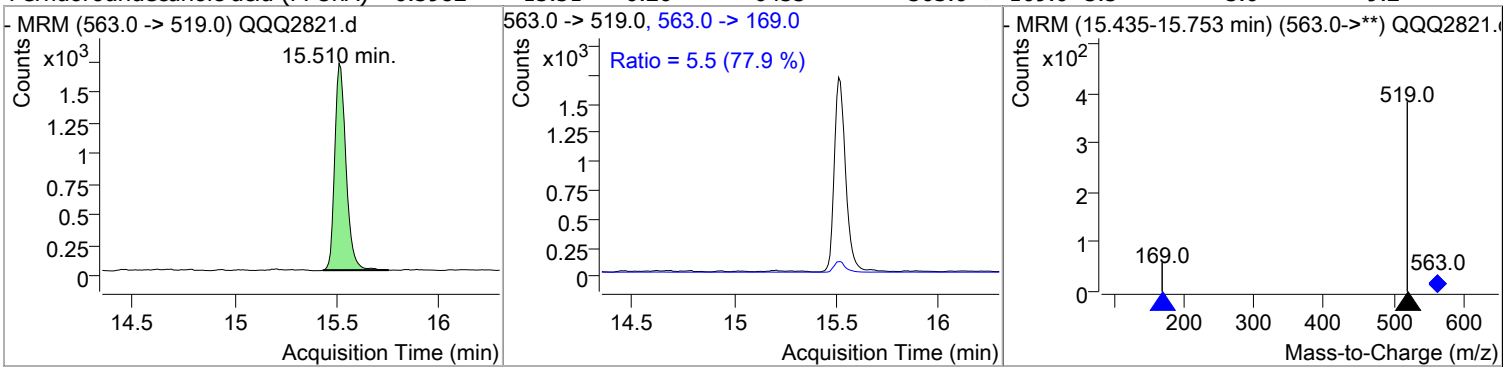
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	0.4857	15.48	0.27	1671				



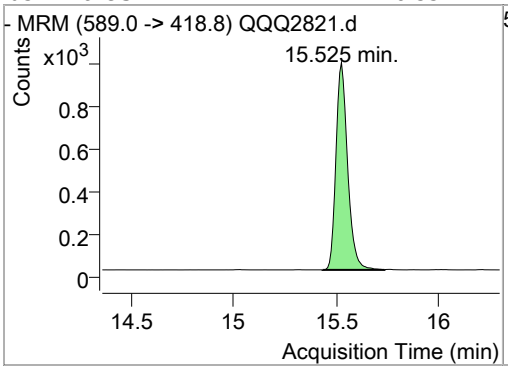
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	0.4837	15.52	0.28	5106				

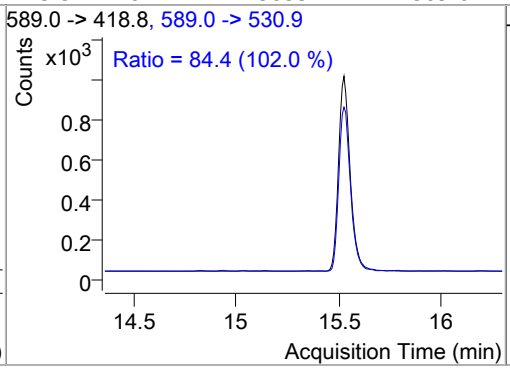


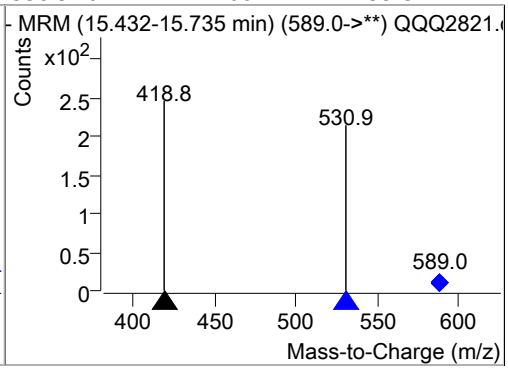
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	0.5982	15.51	0.26	6455	563.0 -> 169.0	5.5	5.0	9.2



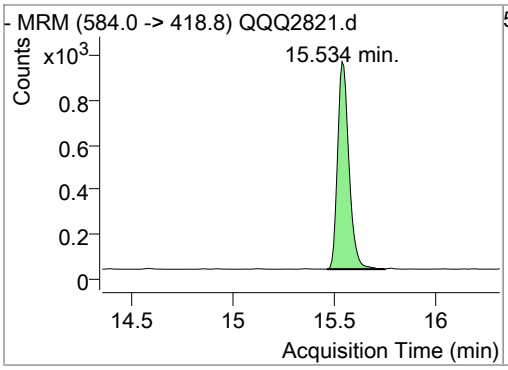
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	0.5322	15.52	0.27	3853	589.0 -> 530.9	84.4	66.2	99.3

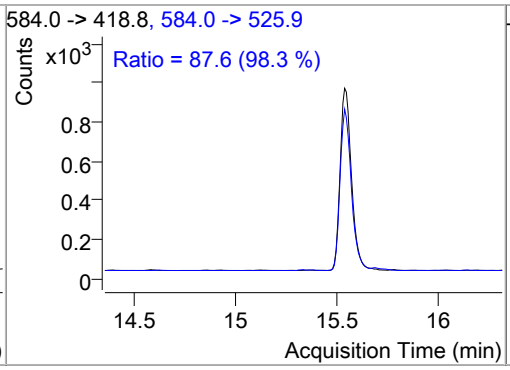


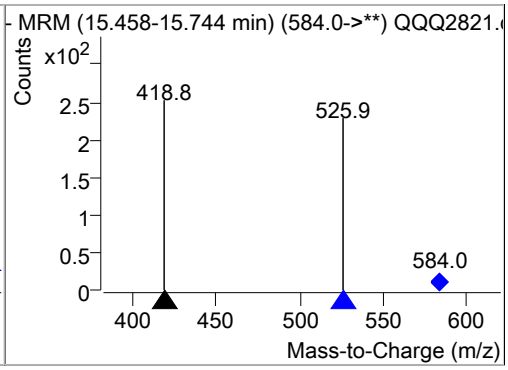




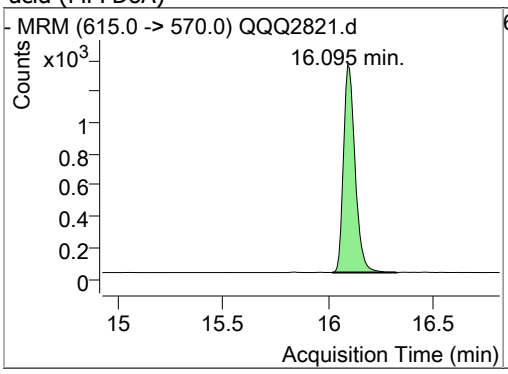
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	0.5208	15.53	0.27	3637	584.0 -> 525.9	87.6	71.3	107.0

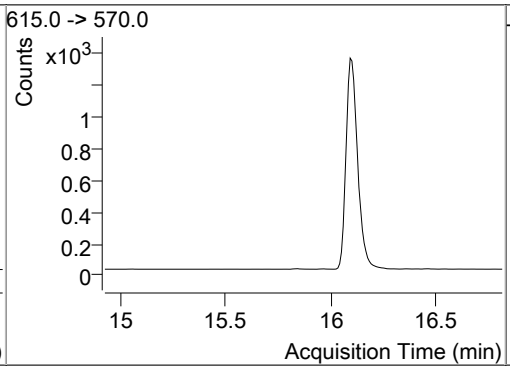


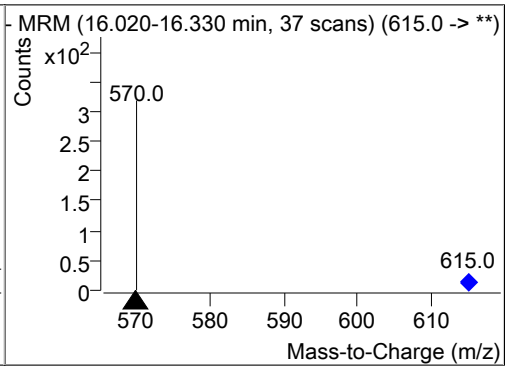




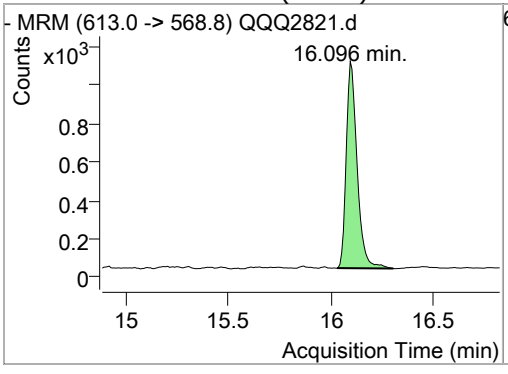
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.5009	16.10	0.32	5177				

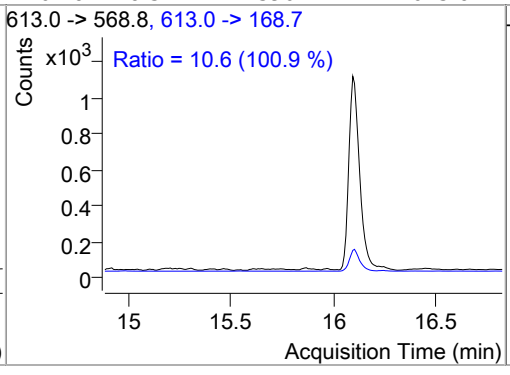


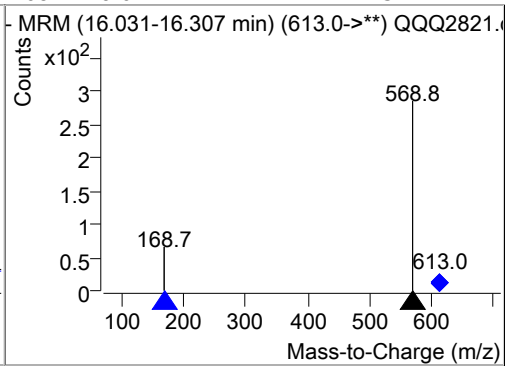




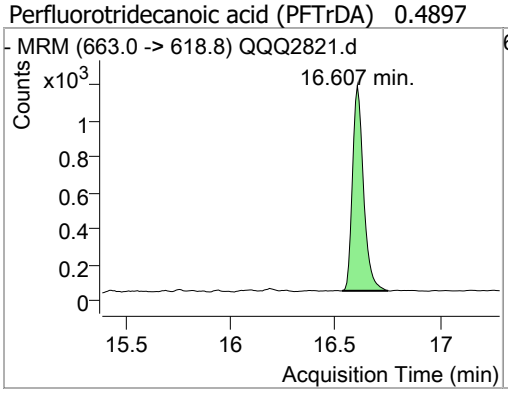
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	0.5171	16.10	0.32	3964	613.0 -> 168.7	10.6	7.4	13.7

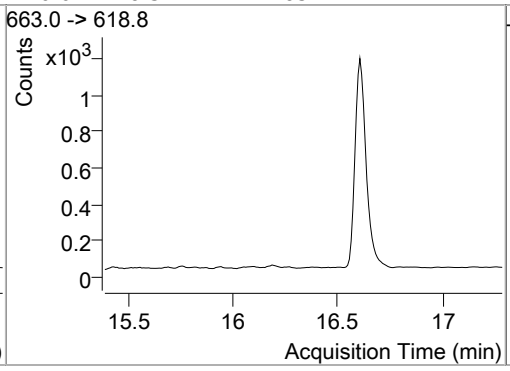


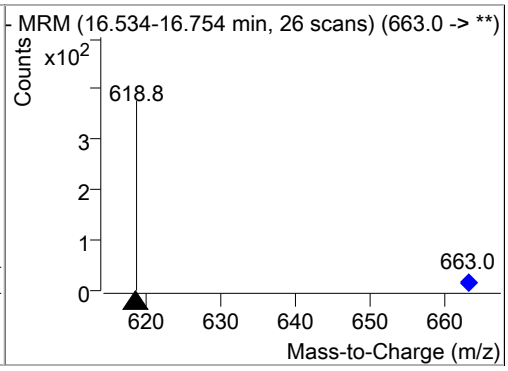




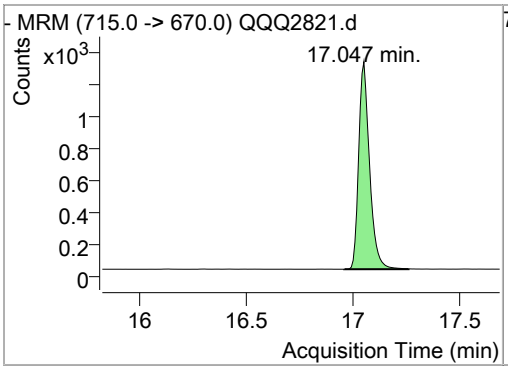
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	0.4897	16.61	0.37	4205				

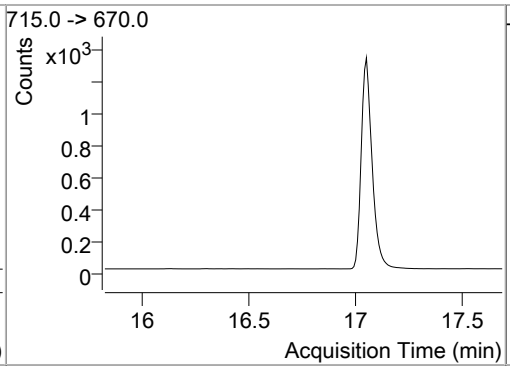


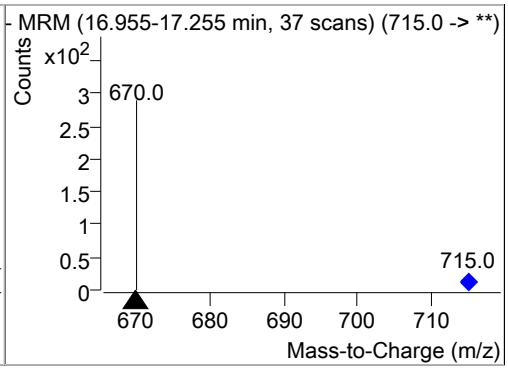




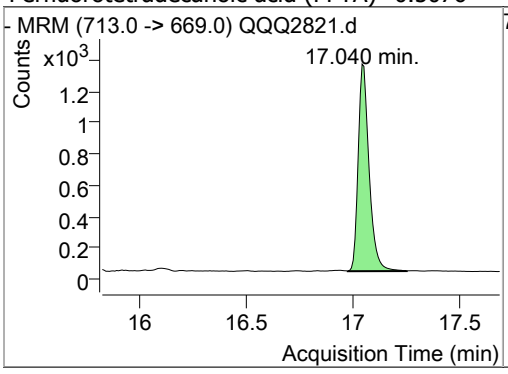
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	0.4792	17.05	0.41	4618				

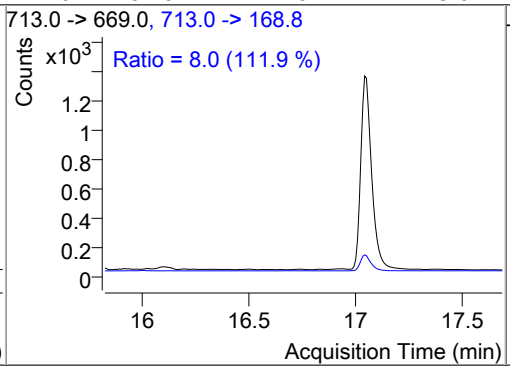


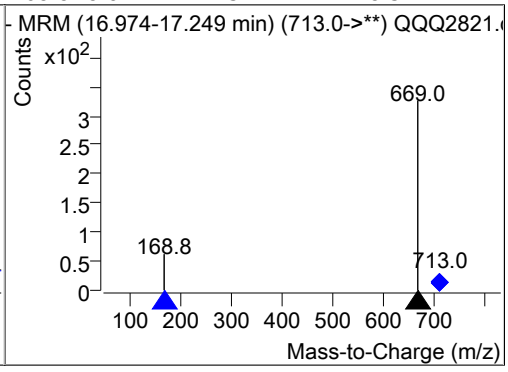




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	0.5076	17.04	0.40	4718	713.0 -> 168.8	8.0	5.7	8.5







Data File	QQQ2822.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/19/2019 8:08:41 PM
Sample Name	SEQ-CAL3	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	1.0 ng/mL
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
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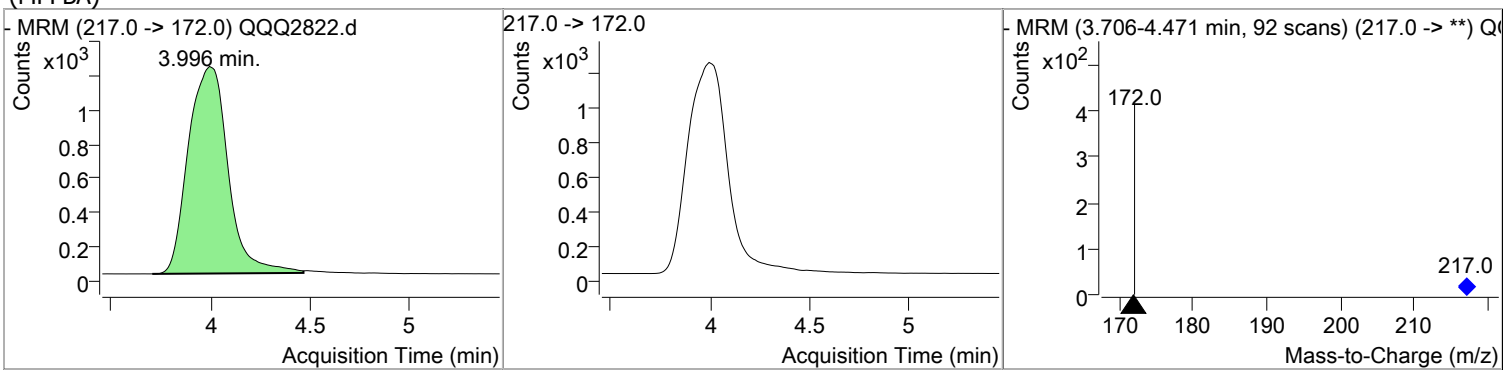
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
MPFOA	13.127	417.0 -> 372.0	231471	10.0000	ng/ml		0.093
System Monitoring Compounds							
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.996	217.0 -> 172.0	16998	0.9375	ng/ml		-0.192
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.38%		*	
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.031	268.0 -> 223.0	23699	0.9588	ng/ml		-0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.59%		*	
M3PFBS	8.768	302.0 -> 79.9	7123	0.9129	ng/ml		-0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.13%		*	
M2-4-2FTS	10.233	329.0 -> 309.0	8274	0.9173	ng/ml		-0.025
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.17%		*	
M5PFHxA	10.378	318.0 -> 273.0	21638	0.9292	ng/ml		-0.025
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.29%		*	
M4PFHpA	11.952	367.0 -> 322.0	5928	0.9208	ng/ml		0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.21%		*	
M3PFHxS	12.085	402.0 -> 80.0	5011	0.9350	ng/ml		0.042
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.35%		*	
M2-6-2FTS	13.065	429.0 -> 409.0	5649	0.9847	ng/ml		0.093
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.85%		*	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.126	421.0 -> 376.0	11221	0.9164	ng/ml		0.101
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.16%		*	
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.074	472.0 -> 427.0	12172	0.9716	ng/ml		0.170
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.72%		*	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.089	507.0 -> 80.0	3846	0.9372	ng/ml		0.178
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.37%		*	
M2-8-2FTS	14.862	529.0 -> 509.0	6128	0.9381	ng/ml		0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.38%		*	
M6PFDA	14.871	519.0 -> 473.9	9702	0.9719	ng/ml		0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.72%		*	
d3-N-MeFOSAA	15.206	573.0 -> 418.8	7731	0.9647	ng/ml		0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.65%		*	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	6340	0.9926	ng/ml		0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.93%		*	
M7PFUdA	15.543	570.0 -> 525.0	9442	0.9262	ng/ml		0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.26%		*	
d5-N-EtFOSAA	15.558	589.0 -> 418.8	6860	0.9811	ng/ml		0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.81%		*	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.129	615.0 -> 570.0	9469	0.9486	ng/ml		0.353
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.49%		*	
M2PFTeDA	17.063	715.0 -> 670.0	8807	0.9462	ng/ml		0.426
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 9.46%		*	

Target Compounds **QValue**

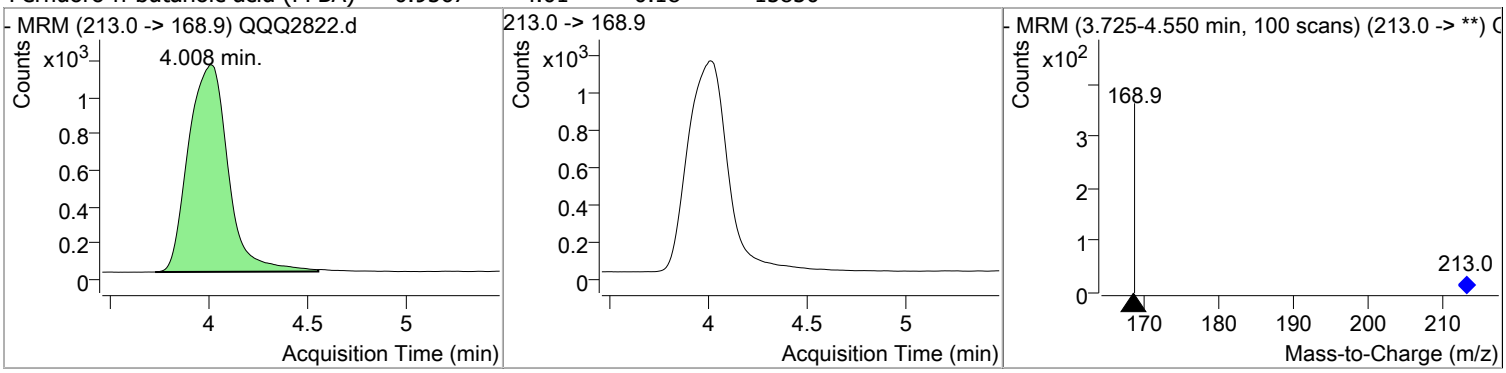
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.008	213.0 -> 168.9	15850	0.9567	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	8.032	263.0 -> 219.0	20692	0.9491	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.771	298.9 -> 79.9	6127	0.8599	ng/ml		99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.234	327.0 -> 307.0	7455	0.9114	ng/ml		98
Perfluorohexanoic acid (PFHxA)	10.380	313.0 -> 268.9	19043	0.9556	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.691	348.9 -> 79.9	5749	0.8978	ng/ml		99
Perfluoroheptanoic acid (PFHpA)	11.953	363.0 -> 318.8	14887	0.9828	ng/ml		98
Perfluorohexanesulfonic acid (PFHxS)	12.086	398.9 -> 79.9	4003	0.7264	ng/ml		98
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.066	427.0 -> 407.0	5668	0.9374	ng/ml		99
Perfluorooctanoic acid (PFOA)	13.127	413.0 -> 368.8	11006	0.9356	ng/ml		97
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.190	448.9 -> 80.0	3757	0.9454	ng/ml		95
Perfluorononanoic acid (PFNA)	14.083	463.0 -> 418.8	8348	0.8801	ng/ml	#	90
Perfluorooctanesulfonic acid (PFOS)	14.090	498.9 -> 79.9	3595	0.7353	ng/ml		89
Perfluorononanesulfonate (L-PFNS)	14.862	548.9 -> 79.9	3535	0.9765	ng/ml		99
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.863	527.0 -> 507.0	5037	0.9137	ng/ml		96
Perfluorodecanoic acid (PFDA)	14.872	513.0 -> 468.8	8196	0.9937	ng/ml		93
N-MeFOSAA	15.215	570.0 -> 418.9	8269	0.9609	ng/ml		98
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	6736	1.0141	ng/ml		99
Perfluoro-1-decanesulfonate (L-PFDS)	15.516	598.9 -> 98.9	3117	0.9382	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.544	563.0 -> 519.0	10883	1.0442	ng/ml		99
N-EtFOSAA	15.567	584.0 -> 418.8	6658	0.9871	ng/ml		98
Perfluorododecanoic acid (PFDoA)	16.129	613.0 -> 568.8	6810	0.9197	ng/ml		100
Perfluorotridecanoic acid (PFTrDA)	16.632	663.0 -> 618.8	7673	0.9251	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.065	713.0 -> 669.0	8569	0.9544	ng/ml		98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

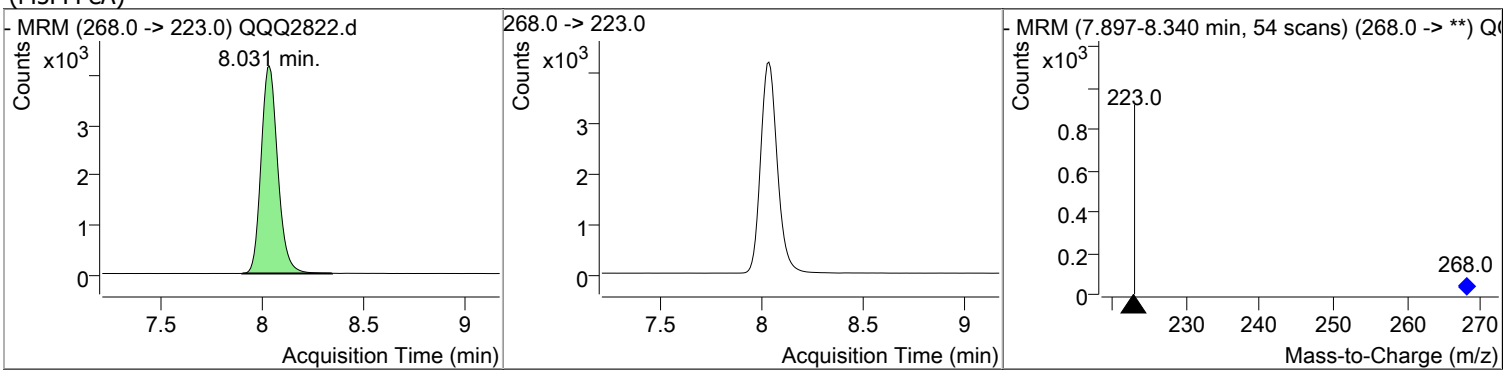
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.9375	4.00	-0.19	16998				



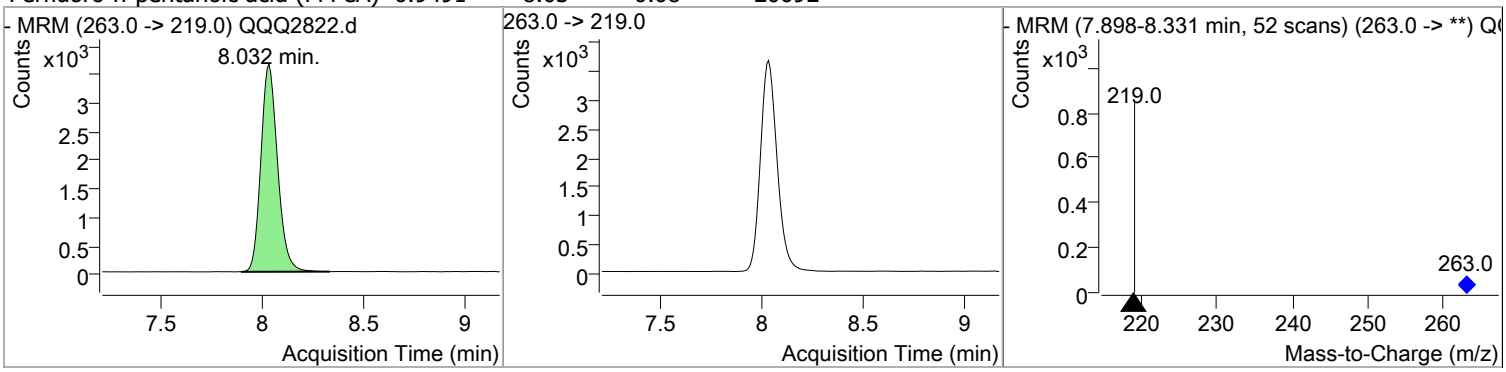
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	0.9567	4.01	-0.18	15850				



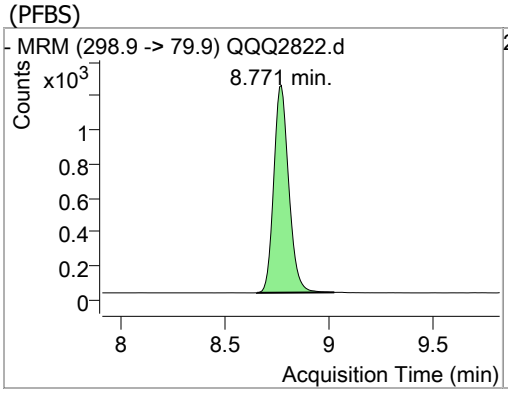
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	0.9588	8.03	-0.08	23699				

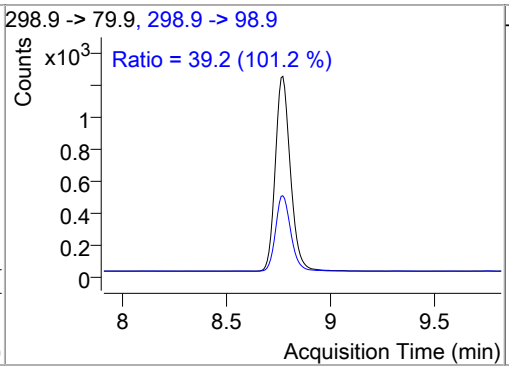


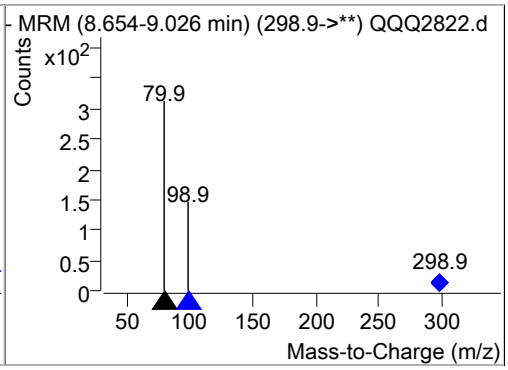
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	0.9491	8.03	-0.08	20692				



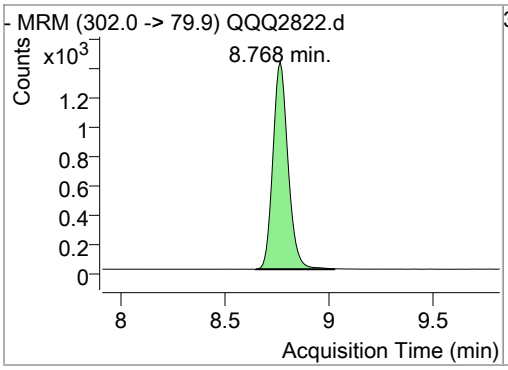
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	0.8599	8.77	-0.04	6127	298.9 -> 98.9	39.2	31.0	46.5

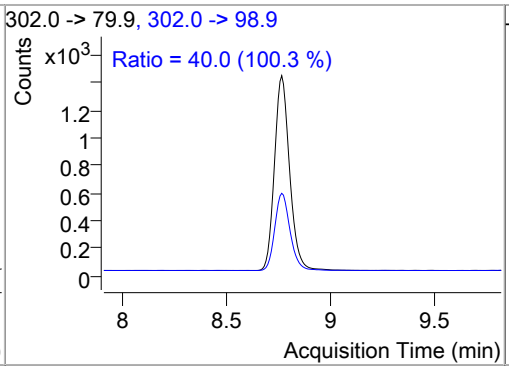


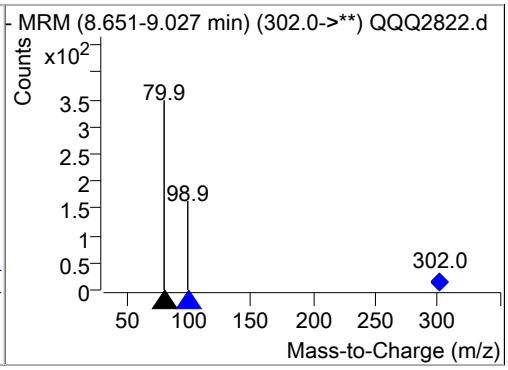




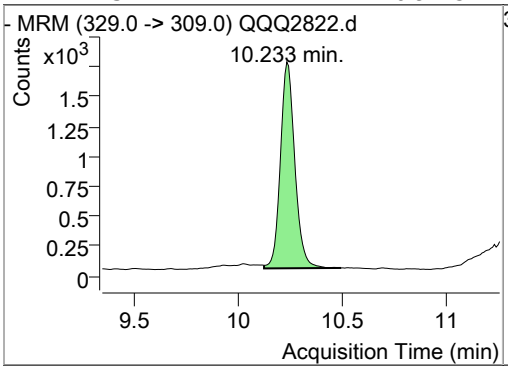
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	0.9129	8.77	-0.05	7123	302.0 -> 98.9	40.0	31.9	47.8

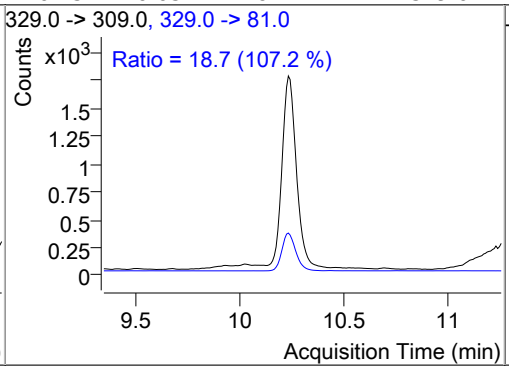


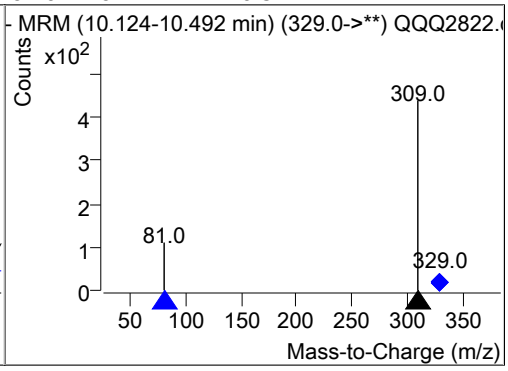




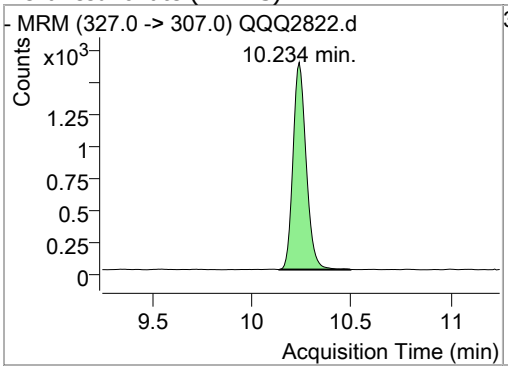
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	0.9173	10.23	-0.03	8274	329.0 -> 81.0	18.7	10.5	24.4

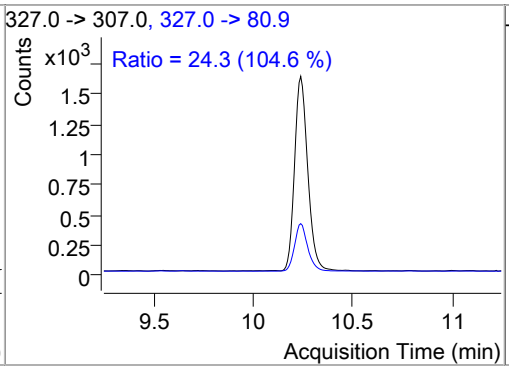


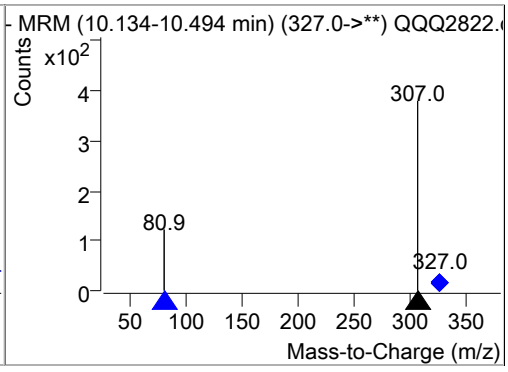




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	0.9114	10.23	-0.03	7455	327.0 -> 80.9	24.3	13.9	32.5

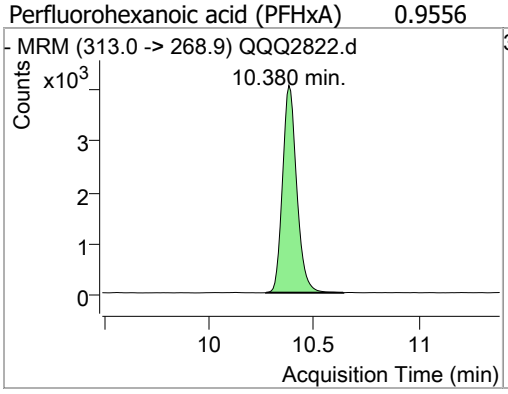


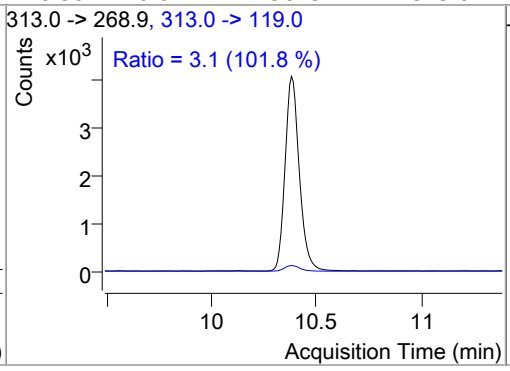


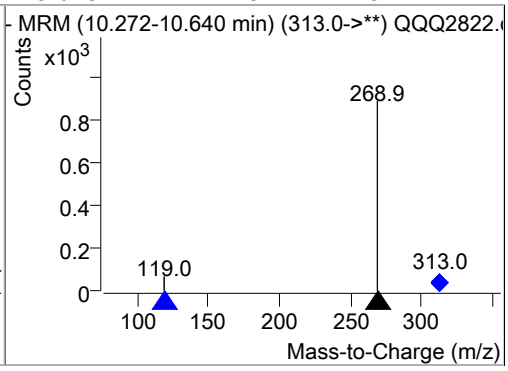


Quantitation Results Report (Not Reviewed)

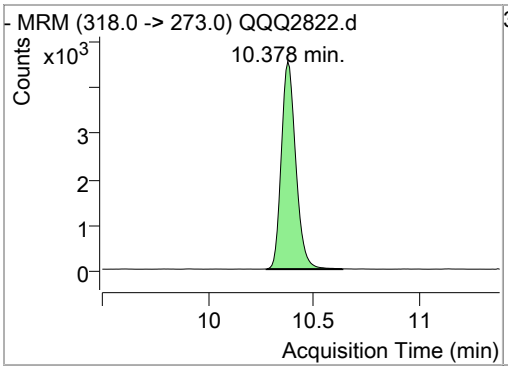
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	0.9556	10.38	-0.02	19043	313.0 -> 119.0	3.1	2.5	3.7

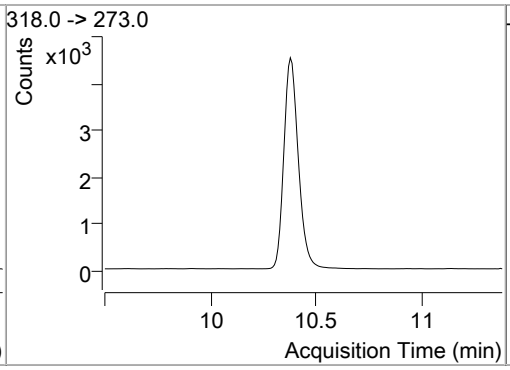


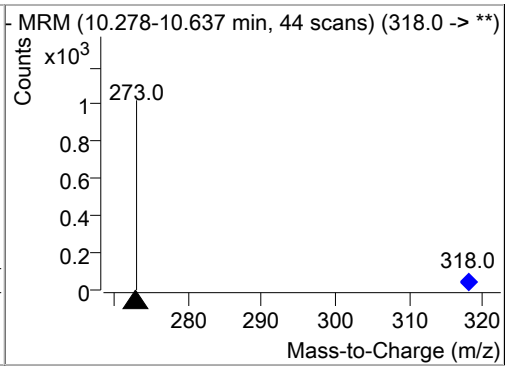




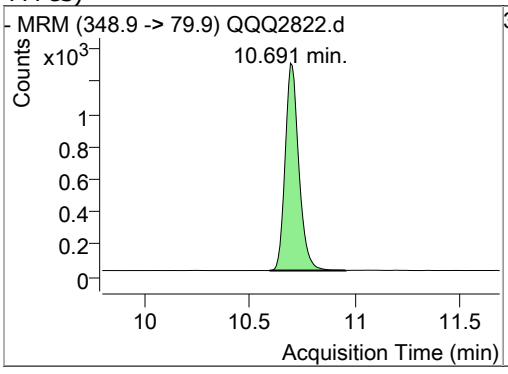
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	0.9292	10.38	-0.03	21638				

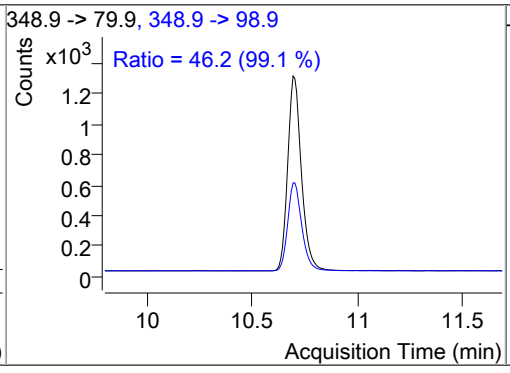


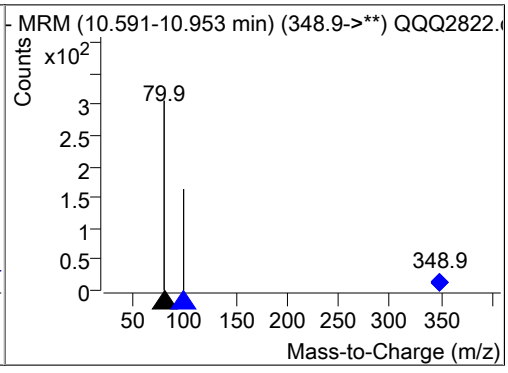




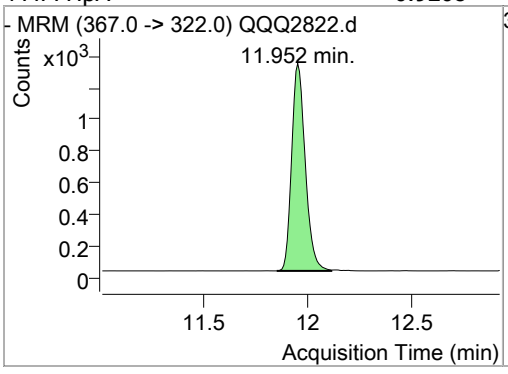
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	0.8978	10.69	-0.01	5749	348.9 -> 98.9	46.2	37.3	56.0

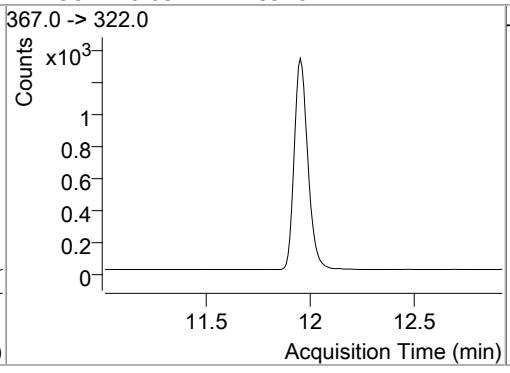


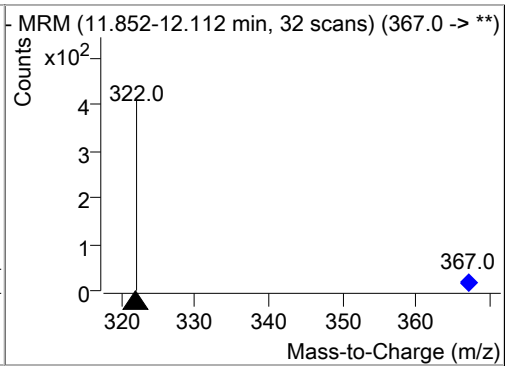




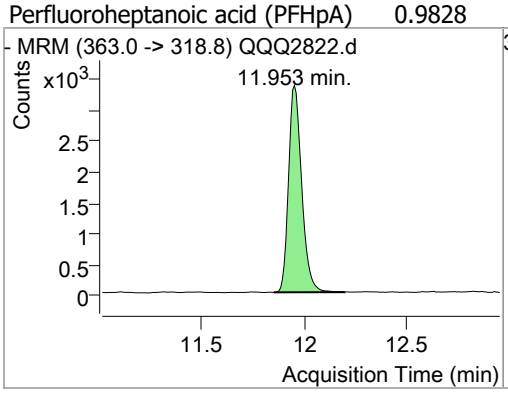
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	0.9208	11.95	0.03	5928				

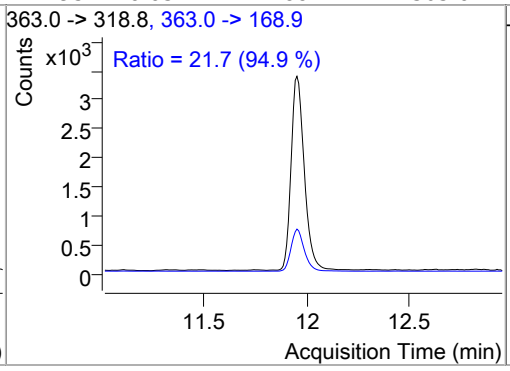


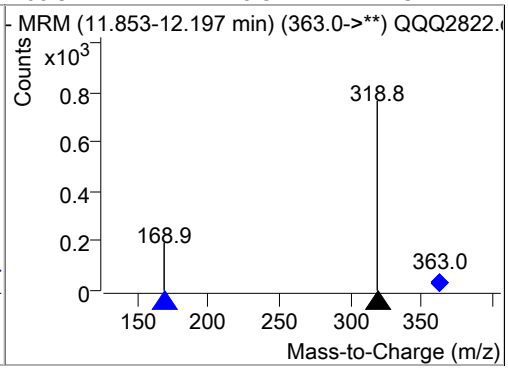




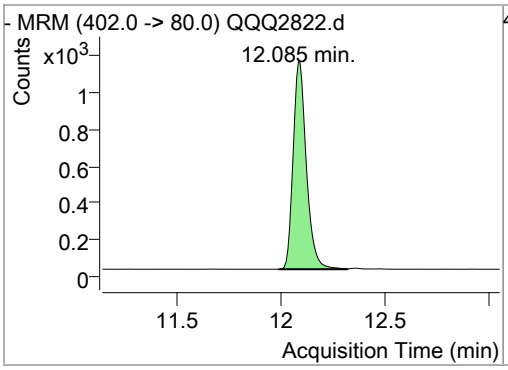
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	0.9828	11.95	0.03	14887	363.0 -> 168.9	21.7	18.3	27.5

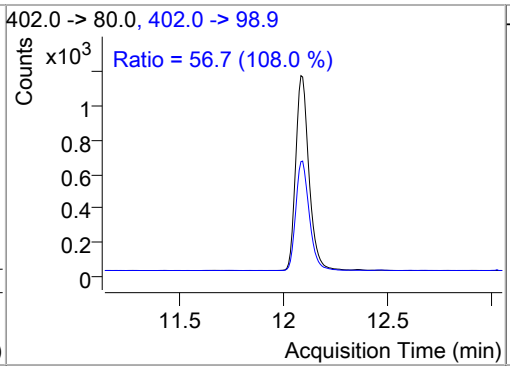


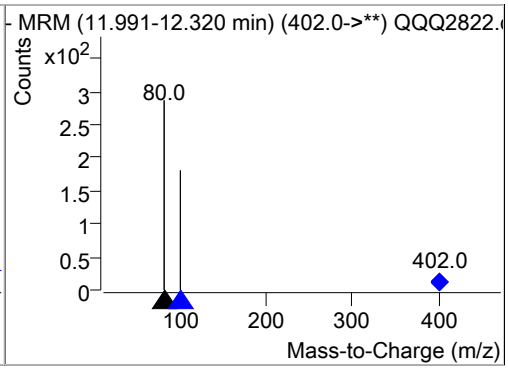




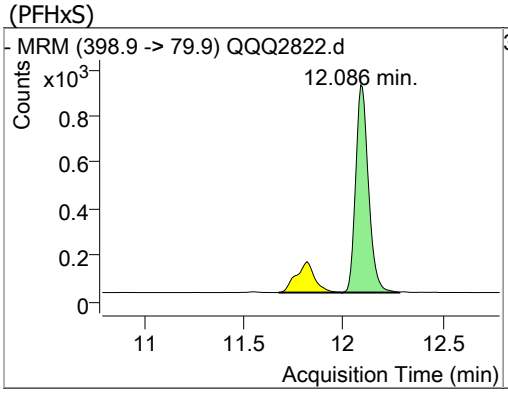
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	0.9350	12.09	0.04	5011	402.0 -> 98.9	56.7	42.0	62.9

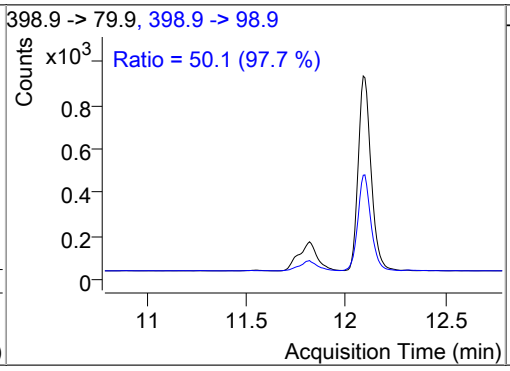


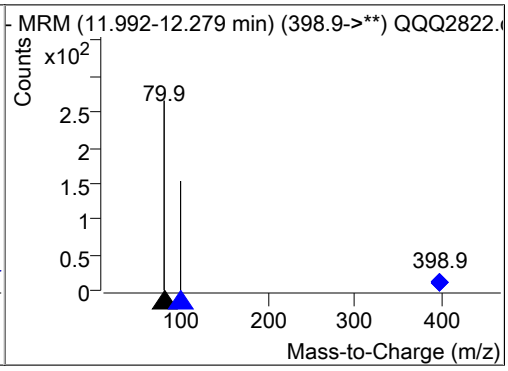




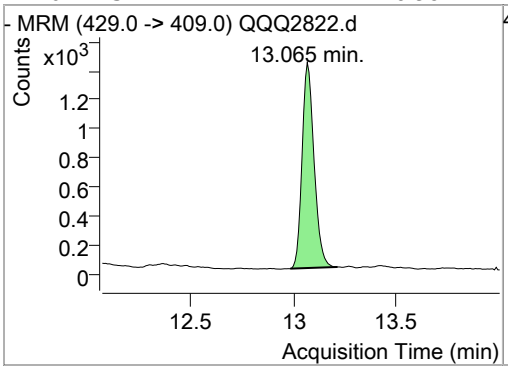
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	0.7264	12.09	0.04	4003	398.9 -> 98.9	50.1	41.0	61.5

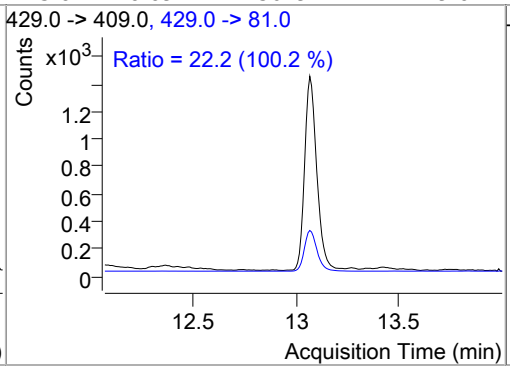


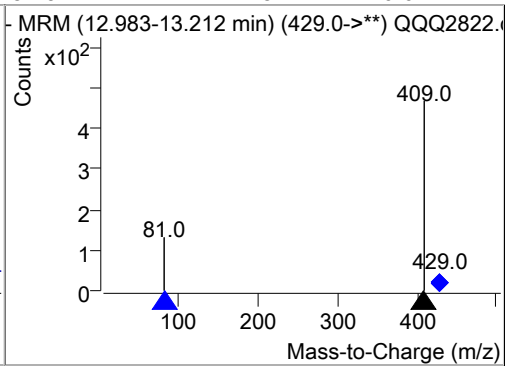




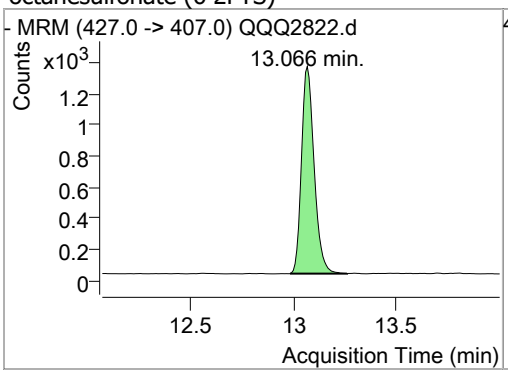
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	0.9847	13.07	0.09	5649	429.0 -> 81.0	22.2	17.8	26.6

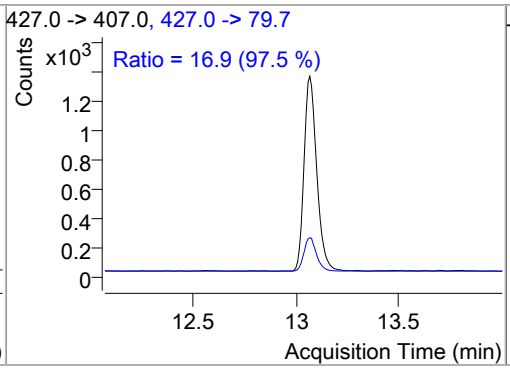


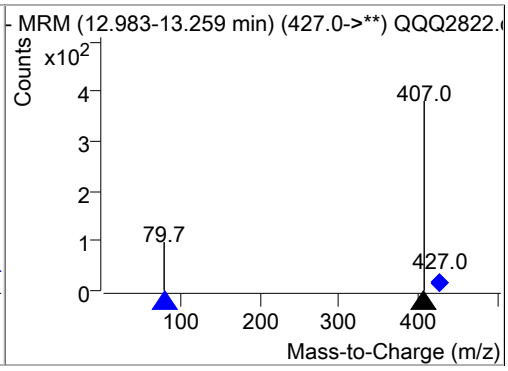




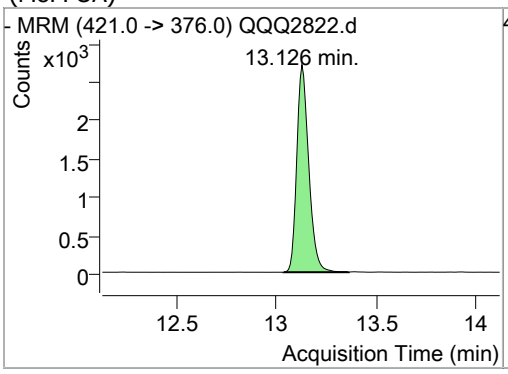
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	0.9374	13.07	0.09	5668	427.0 -> 79.7	16.9	13.9	20.8

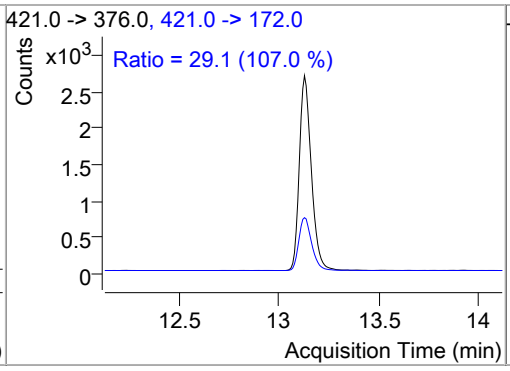


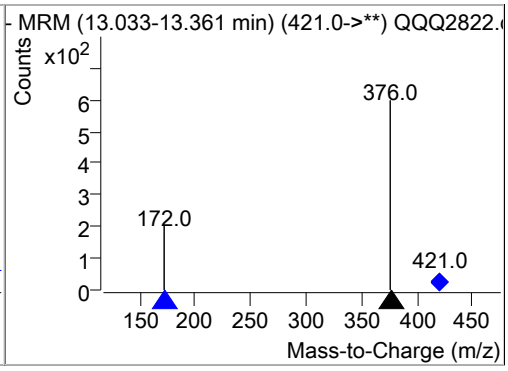




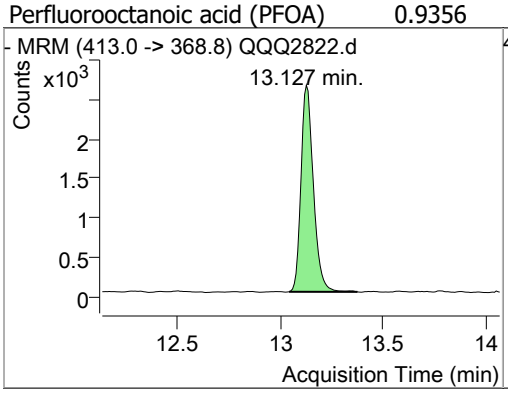
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	0.9164	13.13	0.10	11221	421.0 -> 172.0	29.1	21.7	32.6

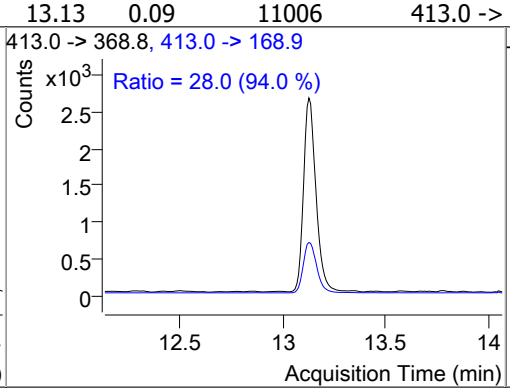


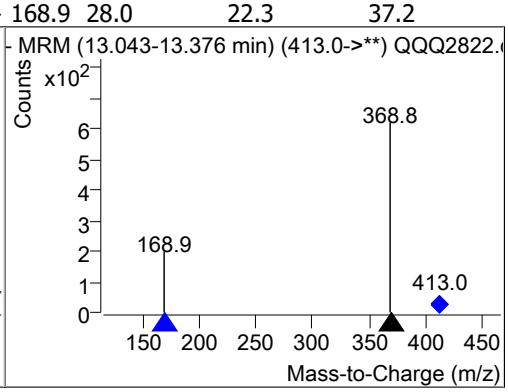




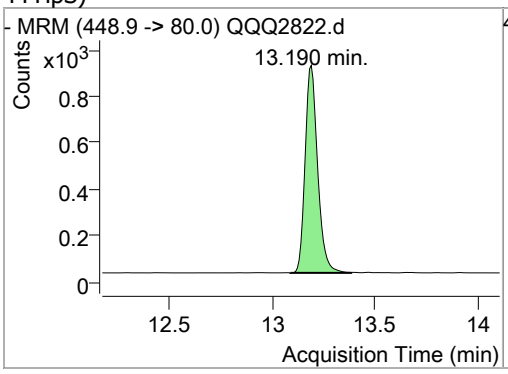
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	0.9356	13.13	0.09	11006	413.0 -> 168.9	28.0	22.3	37.2

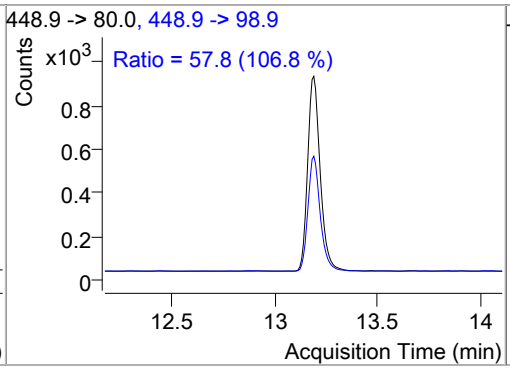


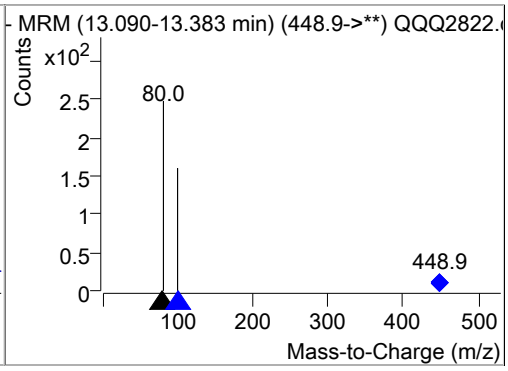




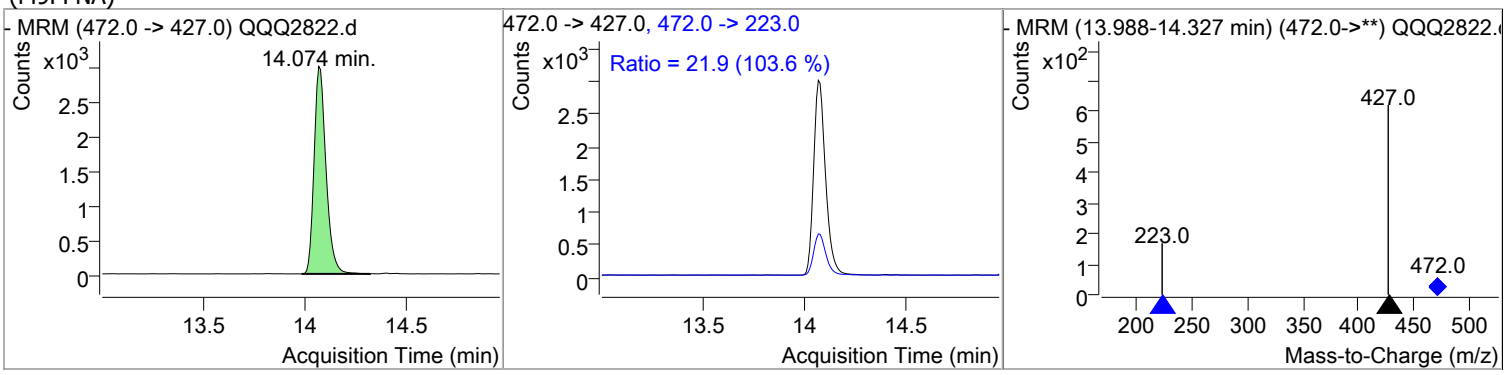
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	0.9454	13.19	0.11	3757	448.9 -> 98.9	57.8	43.3	64.9



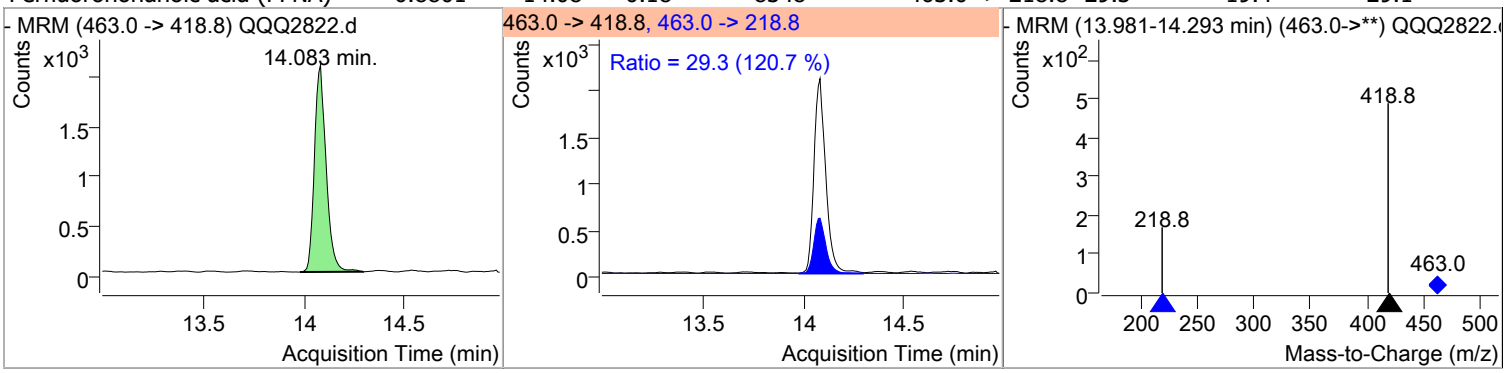




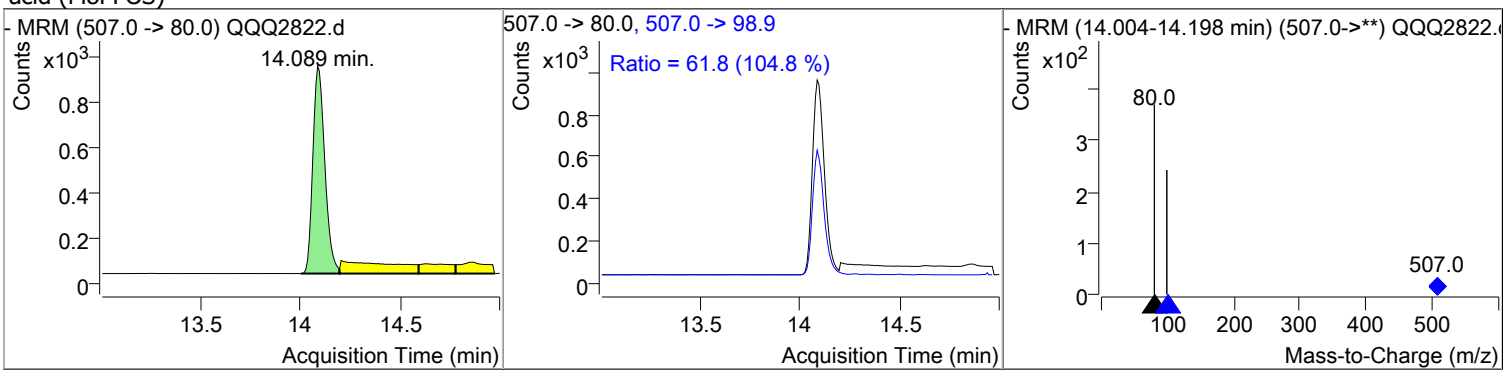
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	0.9716	14.07	0.17	12172	472.0 -> 223.0	21.9	16.9	25.4



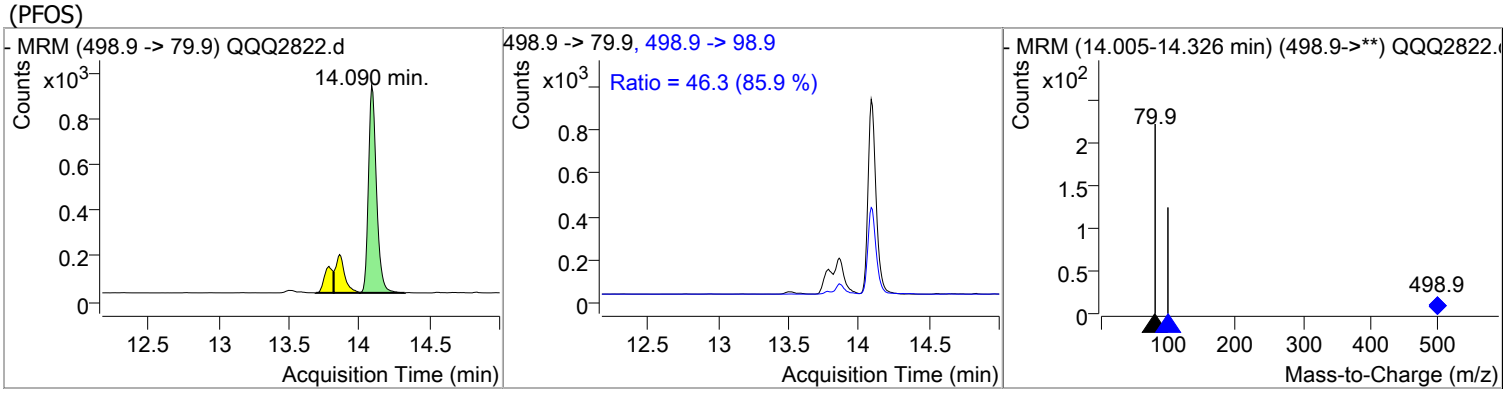
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	0.8801	14.08	0.18	8348	463.0 -> 218.8	29.3	19.4	29.1



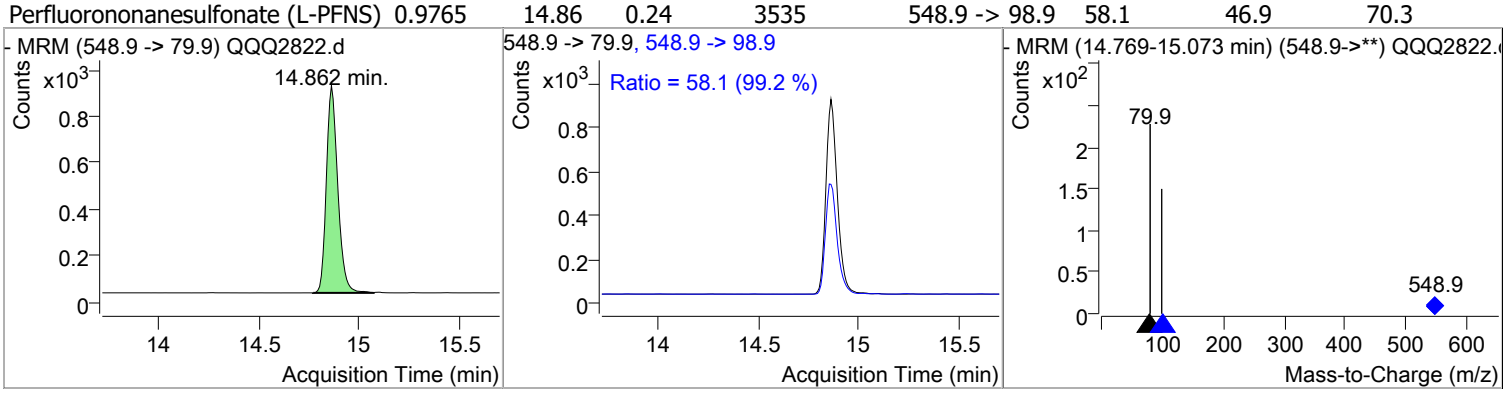
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	0.9372	14.09	0.18	3846	507.0 -> 98.9	61.8	47.2	70.8



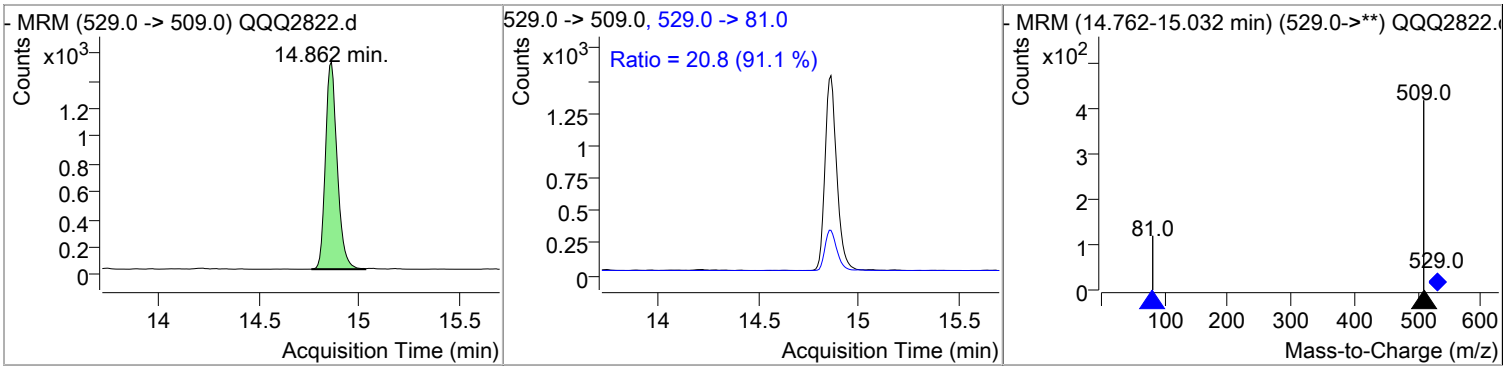
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	0.7353	14.09	0.18	3595	498.9 -> 98.9	46.3	43.1	64.6



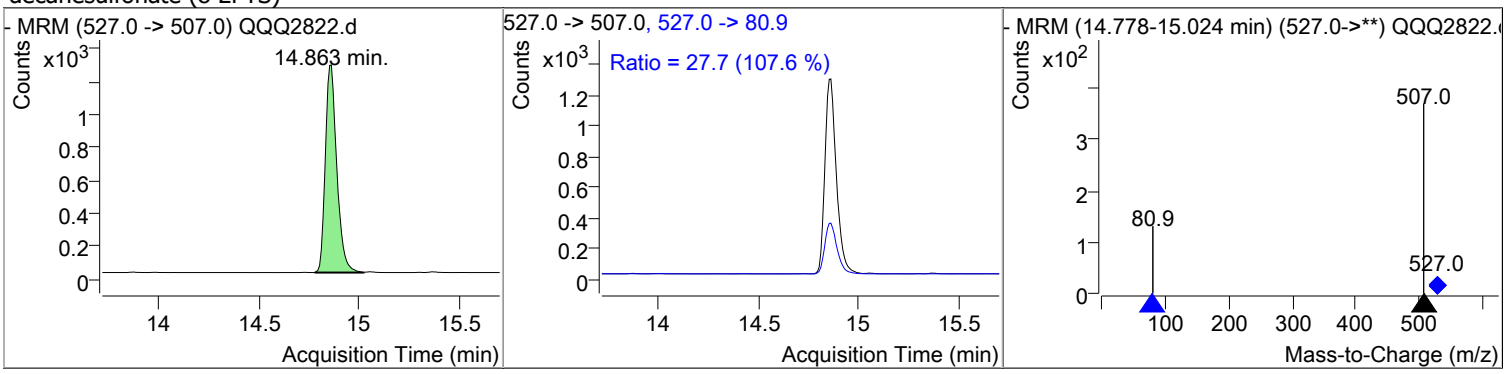
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	0.9765	14.86	0.24	3535	548.9 -> 98.9	58.1	46.9	70.3



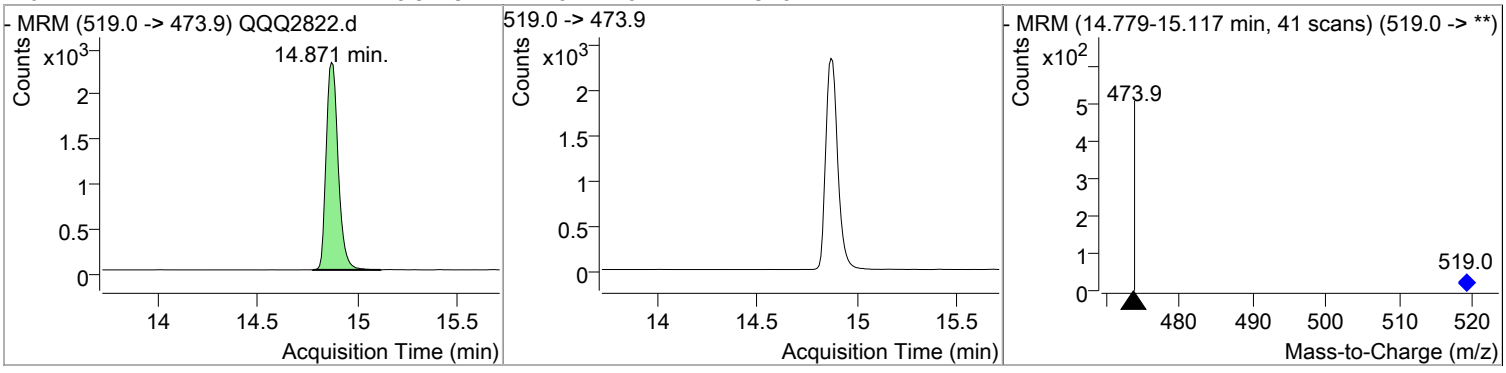
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	0.9381	14.86	0.24	6128	529.0 -> 81.0	20.8	18.3	27.4



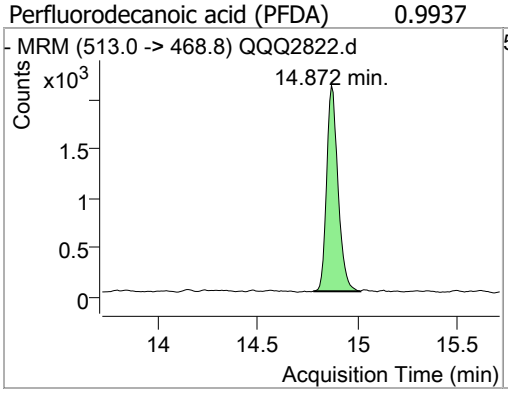
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	0.9137	14.86	0.24	5037	527.0 -> 80.9	27.7	20.6	30.9

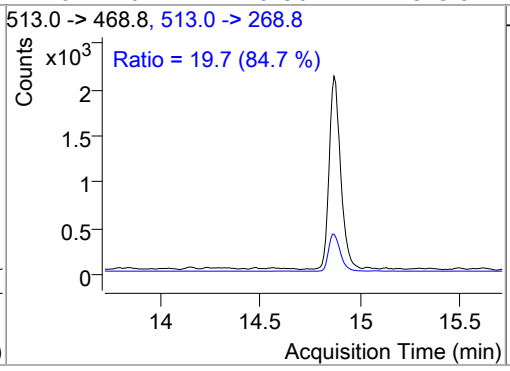


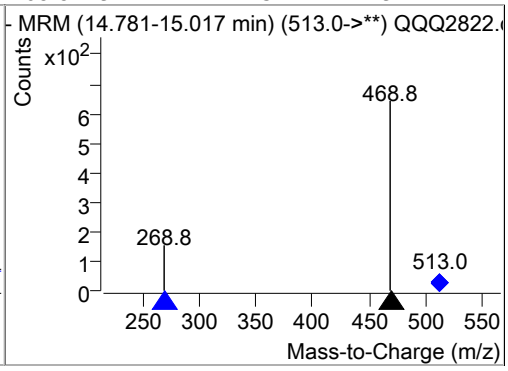
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	0.9719	14.87	0.24	9702				



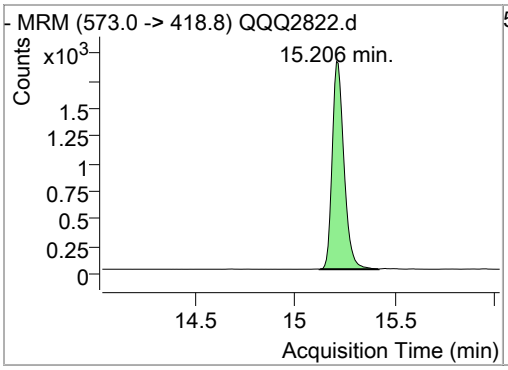
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	0.9937	14.87	0.24	8196	513.0 -> 268.8	19.7	17.5	29.1

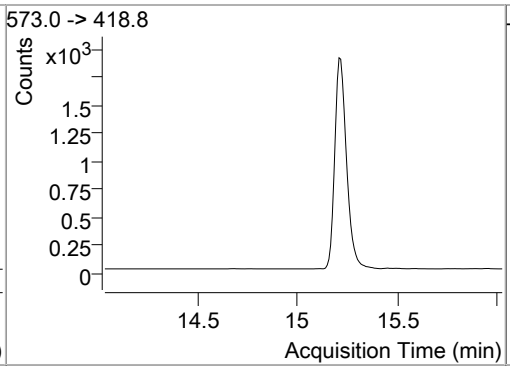


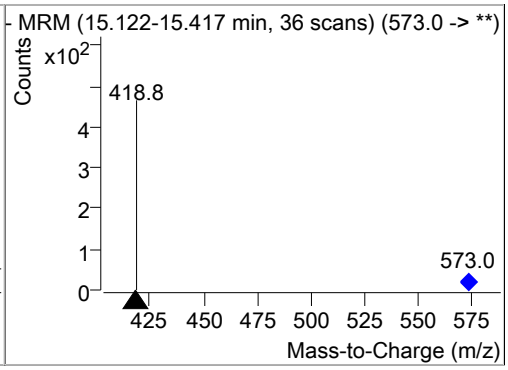




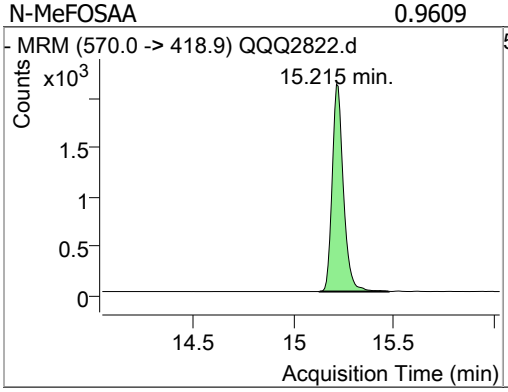
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	0.9647	15.21	0.27	7731				

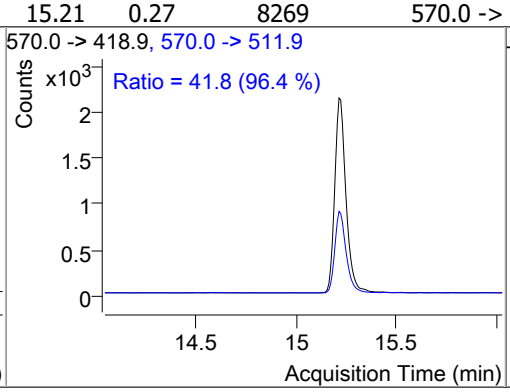


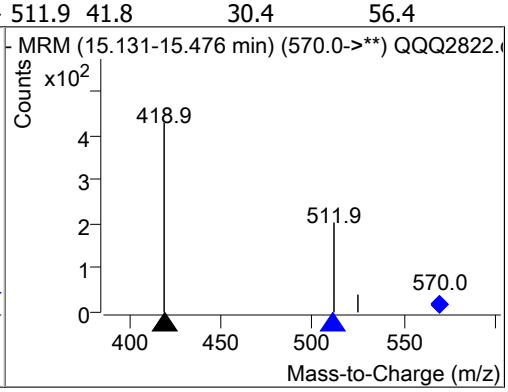




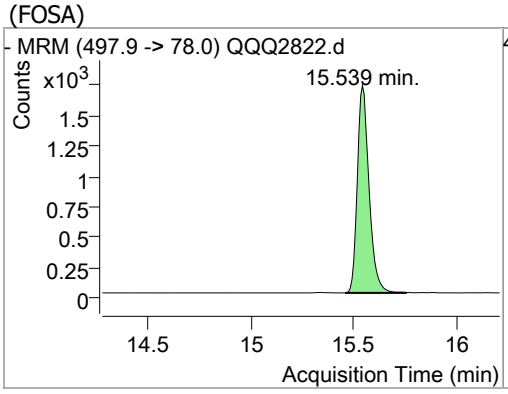
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	0.9609	15.21	0.27	8269	570.0 -> 511.9	41.8	30.4	56.4

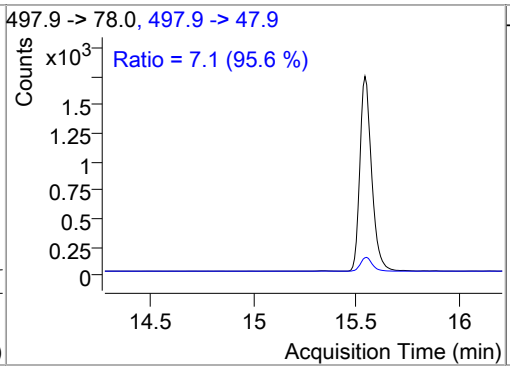


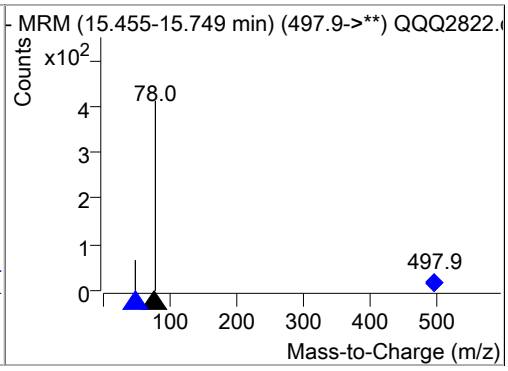




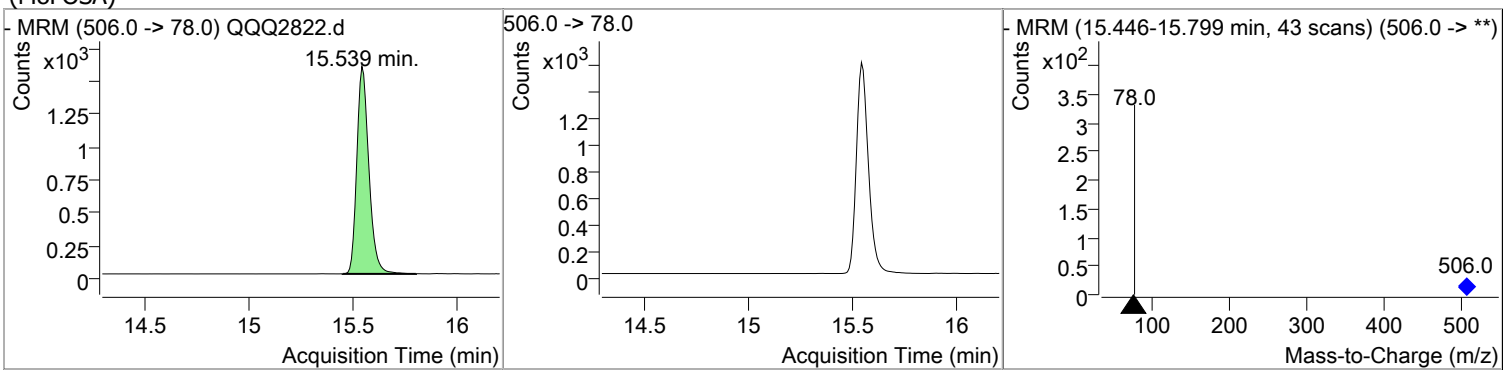
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	1.0141	15.54	0.35	6736	497.9 -> 47.9	7.1	5.9	8.8



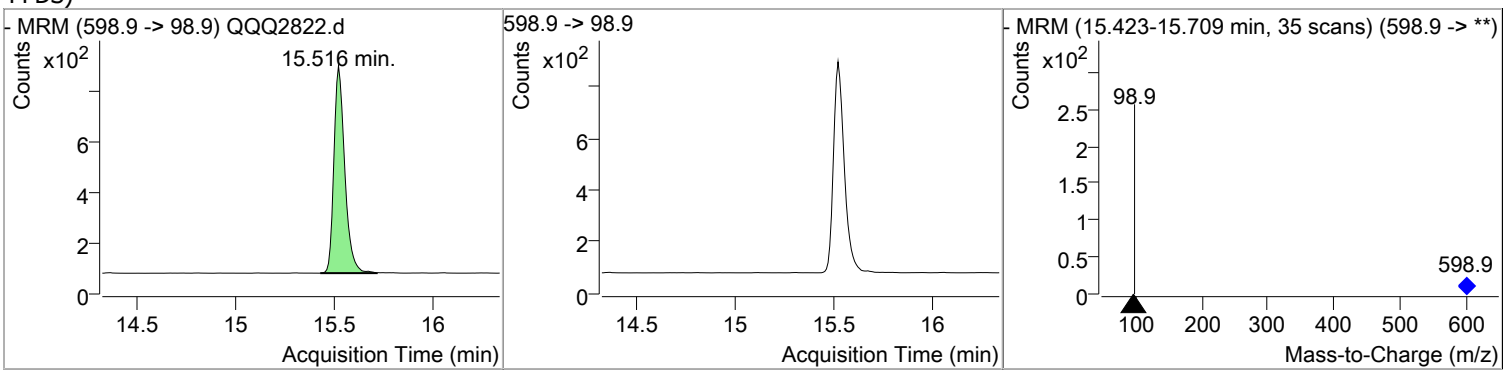




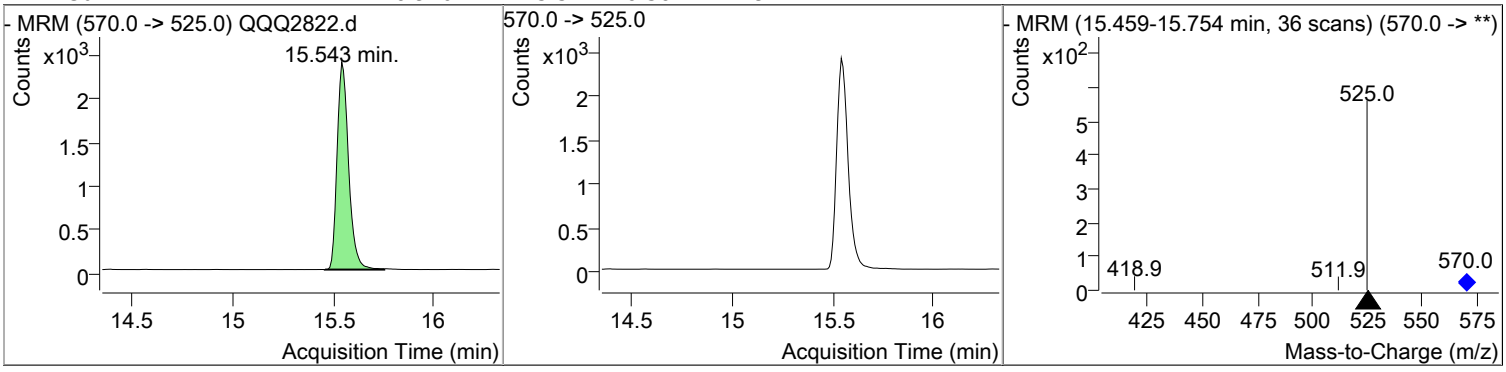
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	0.9926	15.54	0.34	6340				



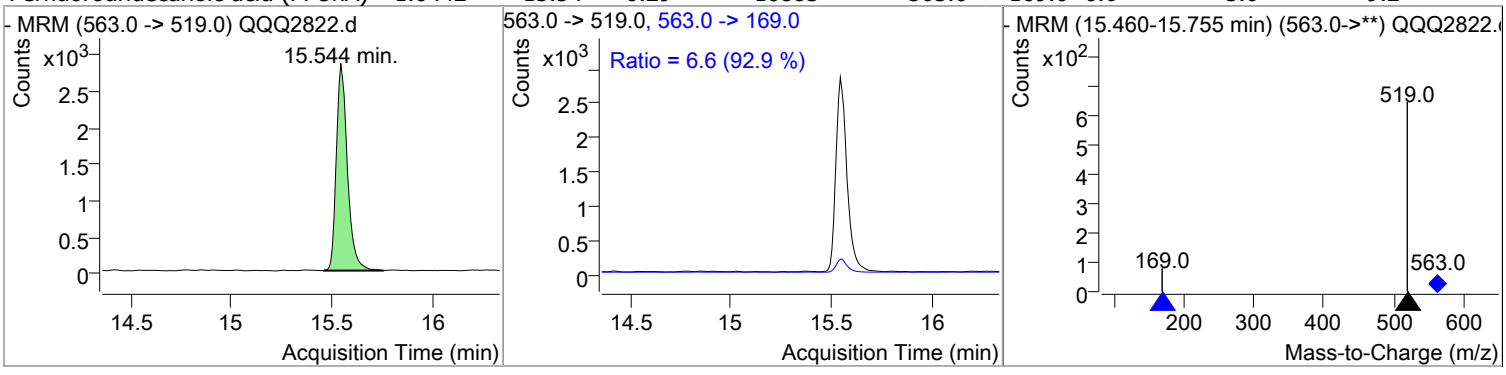
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	0.9382	15.52	0.30	3117				



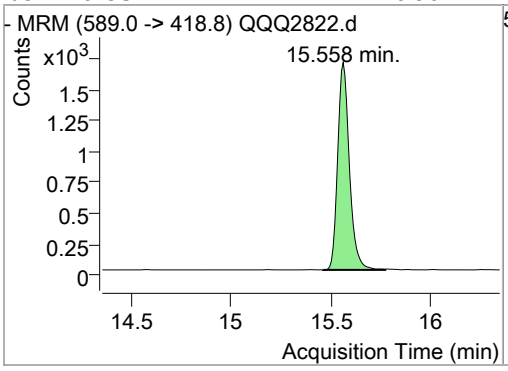
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	0.9262	15.54	0.30	9442				

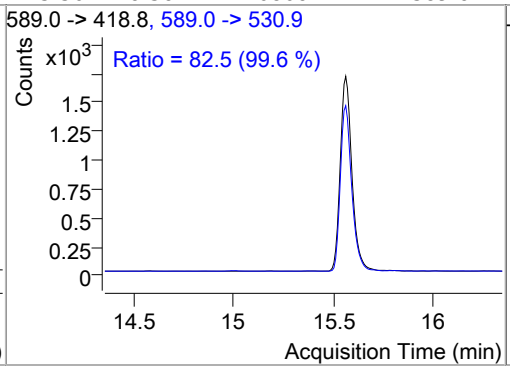


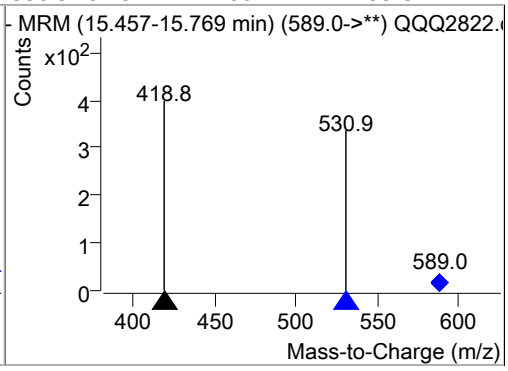
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	1.0442	15.54	0.29	10883	563.0 -> 169.0	6.6	5.0	9.2



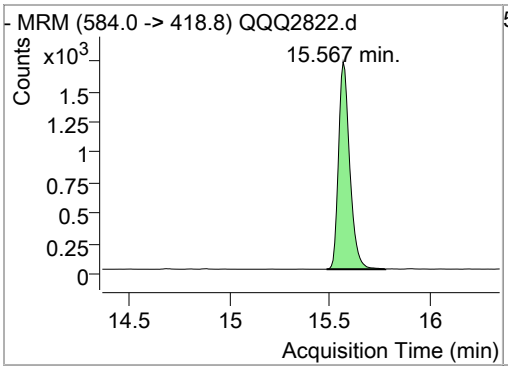
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	0.9811	15.56	0.30	6860	589.0 -> 530.9	82.5	66.2	99.3

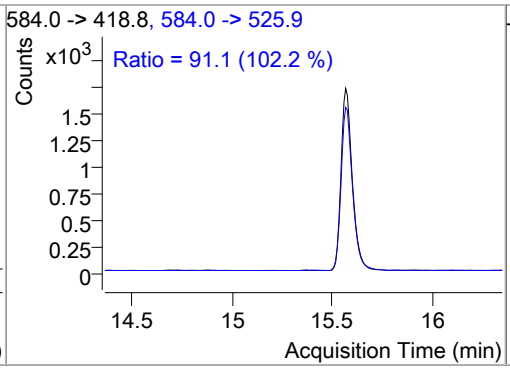


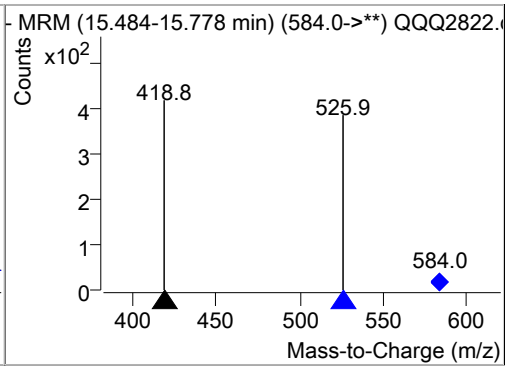




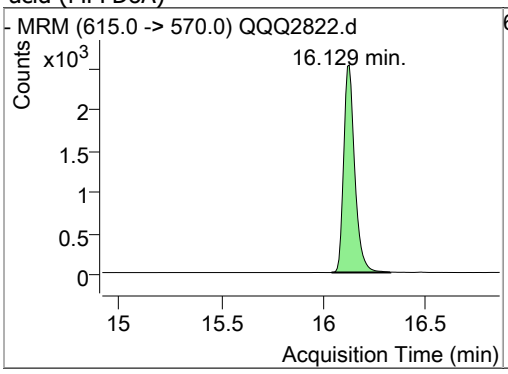
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	0.9871	15.57	0.30	6658	584.0 -> 525.9	91.1	71.3	107.0

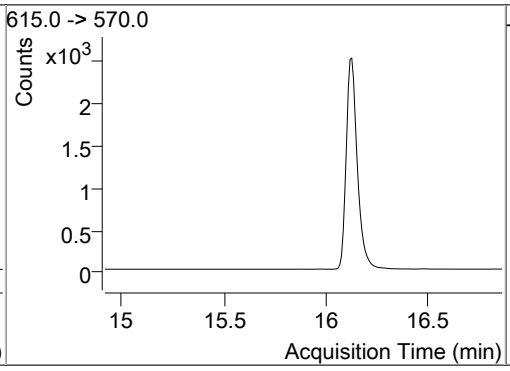


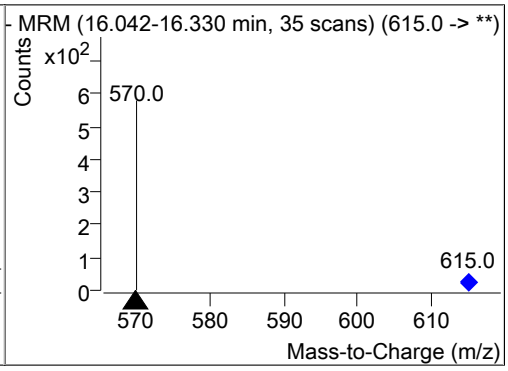




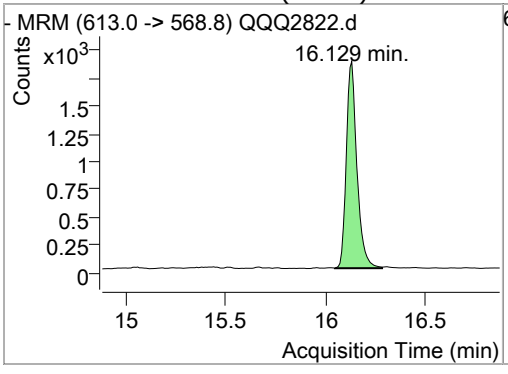
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.9486	16.13	0.35	9469				

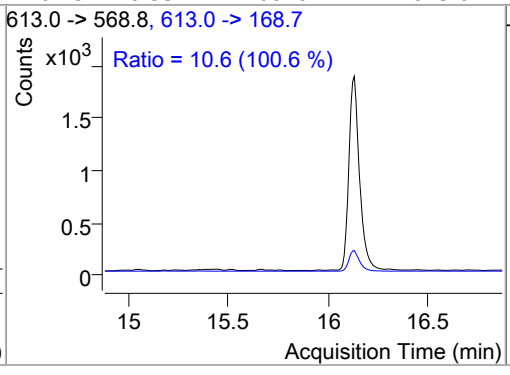


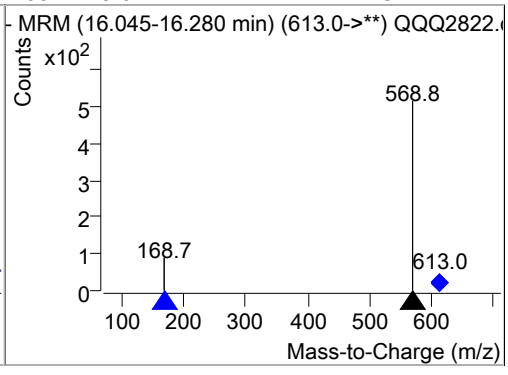




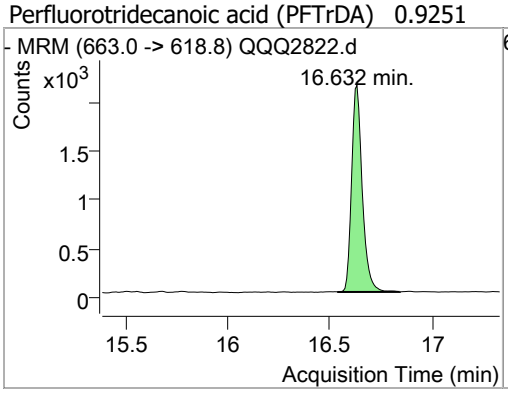
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	0.9197	16.13	0.35	6810	613.0 -> 168.7	10.6	7.4	13.7

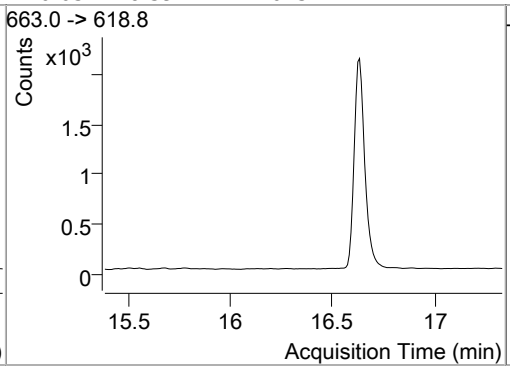


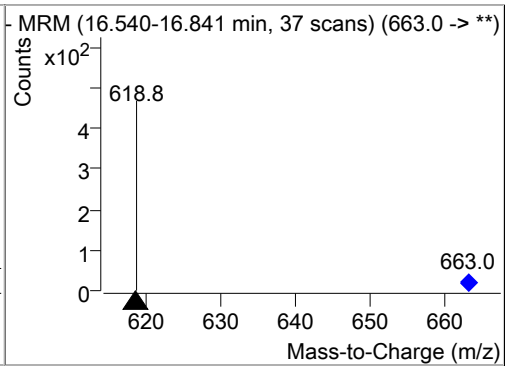




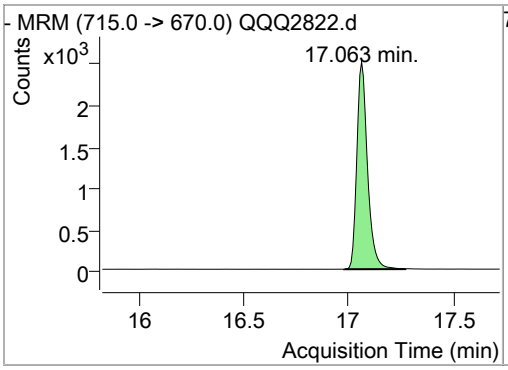
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	0.9251	16.63	0.39	7673				

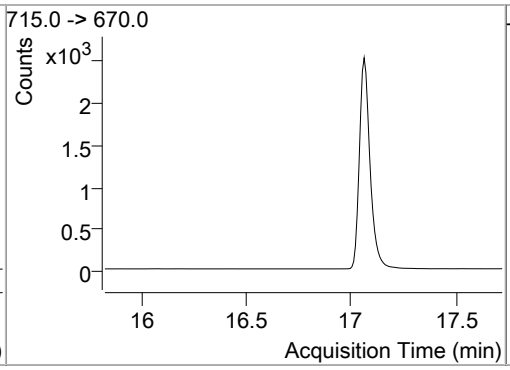


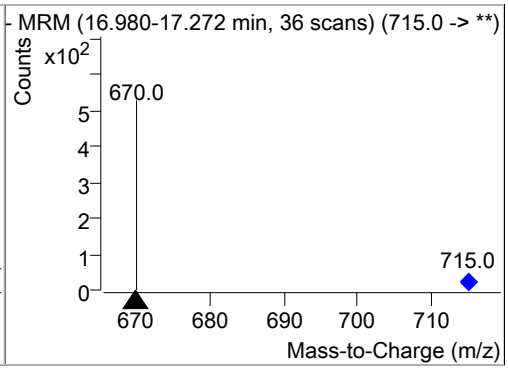




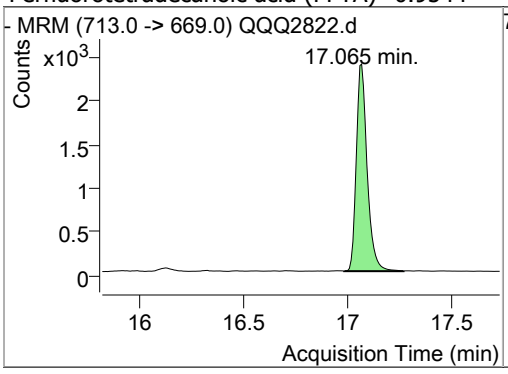
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	0.9462	17.06	0.43	8807				

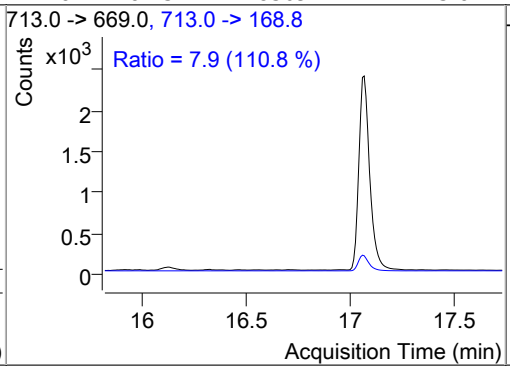


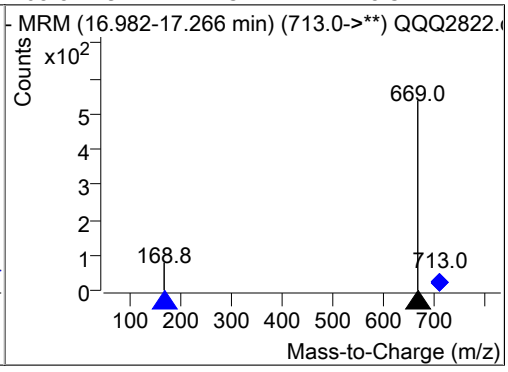




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	0.9544	17.07	0.43	8569	713.0 -> 168.8	7.9	5.7	8.5







Data File	QQQ2823.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/19/2019 8:35:36 PM
Sample Name	SEQ-CAL4	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	2.5 ng/mL
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

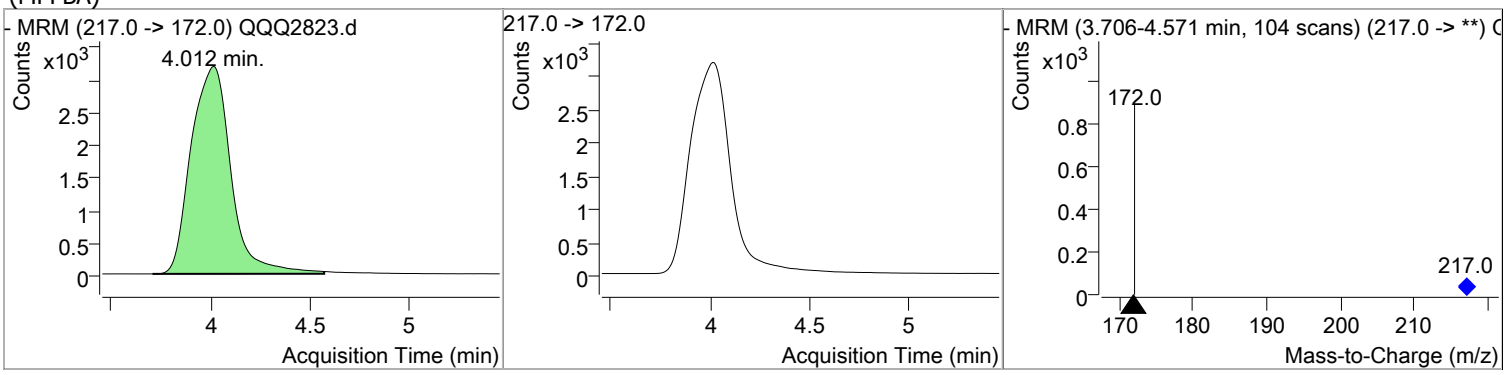
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
MPFOA	13.110	417.0 -> 372.0	225675	10.0000	ng/ml		0.076
System Monitoring Compounds							
Perfluoro-n-[13C4]butanoic acid (MPFBA)	4.012	217.0 -> 172.0	44338	2.5082	ng/ml		-0.175
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 25.08%			
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.031	268.0 -> 223.0	59742	2.4790	ng/ml		-0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 24.79%		*	
M3PFBS	8.768	302.0 -> 79.9	17686	2.3248	ng/ml		-0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 23.25%		*	
M2-4-2FTS	10.241	329.0 -> 309.0	18691	2.4888	ng/ml		-0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 24.89%		*	
M5PFHxA	10.378	318.0 -> 273.0	55935	2.4638	ng/ml		-0.025
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 24.64%		*	
M4PFHpA	11.944	367.0 -> 322.0	15715	2.5038	ng/ml		0.025
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 25.04%			
M3PFHxS	12.077	402.0 -> 80.0	12578	2.4070	ng/ml		0.034
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 24.07%		*	
M2-6-2FTS	13.048	429.0 -> 409.0	13291	2.3764	ng/ml		0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 23.76%		*	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.109	421.0 -> 376.0	30834	2.5829	ng/ml		0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 25.83%			
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.065	472.0 -> 427.0	28664	2.3467	ng/ml		0.161
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 23.47%		*	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.081	507.0 -> 80.0	9294	2.3228	ng/ml		0.169
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 23.23%		*	
M2-8-2FTS	14.854	529.0 -> 509.0	13271	2.4936	ng/ml		0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 24.94%		*	
M6PFDA	14.863	519.0 -> 473.9	21566	2.2160	ng/ml		0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 22.16%		*	
d3-N-MeFOSAA	15.206	573.0 -> 418.8	18401	2.3551	ng/ml		0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 23.55%		*	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.530	506.0 -> 78.0	15613	2.5073	ng/ml		0.336
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 25.07%			
M7PFUdA	15.534	570.0 -> 525.0	23752	2.3898	ng/ml		0.294
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 23.90%		*	
d5-N-EtFOSAA	15.550	589.0 -> 418.8	16561	2.4292	ng/ml		0.294
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 24.29%		*	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.120	615.0 -> 570.0	24661	2.5341	ng/ml		0.345
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 25.34%			
M2PFTeDA	17.063	715.0 -> 670.0	21792	2.4013	ng/ml		0.426
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 24.01%		*	

Target Compounds **QValue**

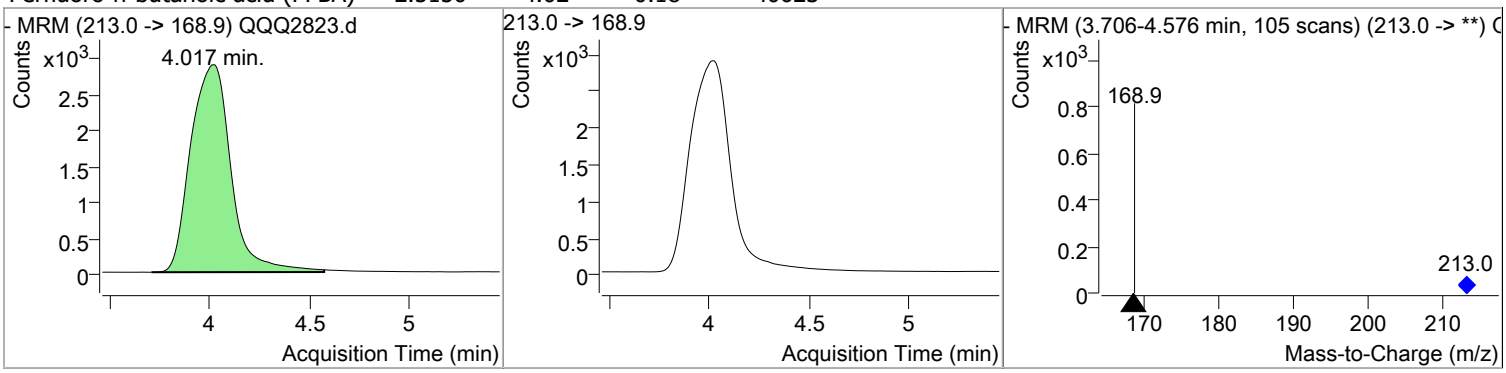
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.017	213.0 -> 168.9	40623	2.5150	ng/ml	100
Perfluoro-n-pentanoic acid (PFPeA)	8.032	263.0 -> 219.0	52399	2.4651	ng/ml	100
Perfluorobutanesulfonic acid (PFBS)	8.771	298.9 -> 79.9	15629	2.2496	ng/ml	99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.234	327.0 -> 307.0	17299	2.4689	ng/ml	99
Perfluorohexanoic acid (PFHxA)	10.380	313.0 -> 268.9	48658	2.5044	ng/ml	100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.700	348.9 -> 79.9	14479	2.3190	ng/ml	100
Perfluoroheptanoic acid (PFHpA)	11.945	363.0 -> 318.8	35719	2.4186	ng/ml	100
Perfluorohexanesulfonic acid (PFHxS)	12.078	398.9 -> 79.9	10056	1.8715	ng/ml	99
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.049	427.0 -> 407.0	13548	2.2979	ng/ml	99
Perfluorooctanoic acid (PFOA)	13.110	413.0 -> 368.8	26517	2.3120	ng/ml	96
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.165	448.9 -> 80.0	9805	2.5302	ng/ml	95
Perfluorononanoic acid (PFNA)	14.065	463.0 -> 418.8	21799	2.3574	ng/ml	94
Perfluorooctanesulfonic acid (PFOS)	14.081	498.9 -> 79.9	8740	1.8334	ng/ml	95
Perfluorononanesulfonate (L-PFNS)	14.853	548.9 -> 79.9	8219	2.3290	ng/ml	90
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.846	527.0 -> 507.0	11790	2.6309	ng/ml	94
Perfluorodecanoic acid (PFDA)	14.864	513.0 -> 468.8	18427	2.2915	ng/ml	97
N-MeFOSAA	15.206	570.0 -> 418.9	19926	2.3748	ng/ml	100
Perfluoro-1-octanesulfonamide (FOSA)	15.531	497.9 -> 78.0	16574	2.5593	ng/ml	100
Perfluoro-1-decanesulfonate (L-PFDS)	15.507	598.9 -> 98.9	7955	2.4555	ng/ml	100
Perfluoroundecanoic acid (PFUnA)	15.544	563.0 -> 519.0	21567	2.1225	ng/ml	97
N-EtFOSAA	15.567	584.0 -> 418.8	16136	2.4536	ng/ml	98
Perfluorododecanoic acid (PFDoA)	16.121	613.0 -> 568.8	16854	2.3348	ng/ml	95
Perfluorotridecanoic acid (PFTrDA)	16.623	663.0 -> 618.8	18759	2.3198	ng/ml	100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	20611	2.3545	ng/ml	97

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

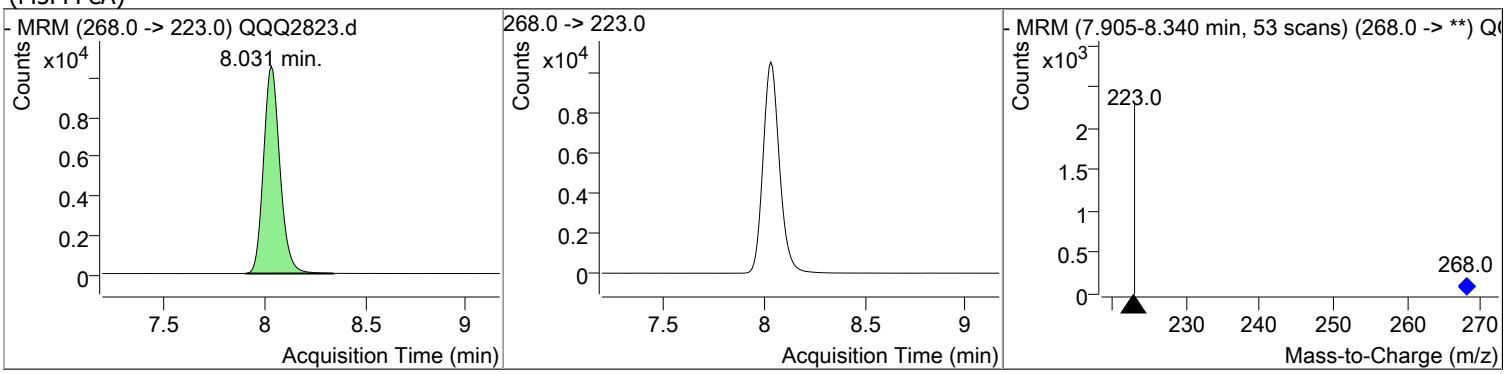
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	2.5082	4.01	-0.18	44338				



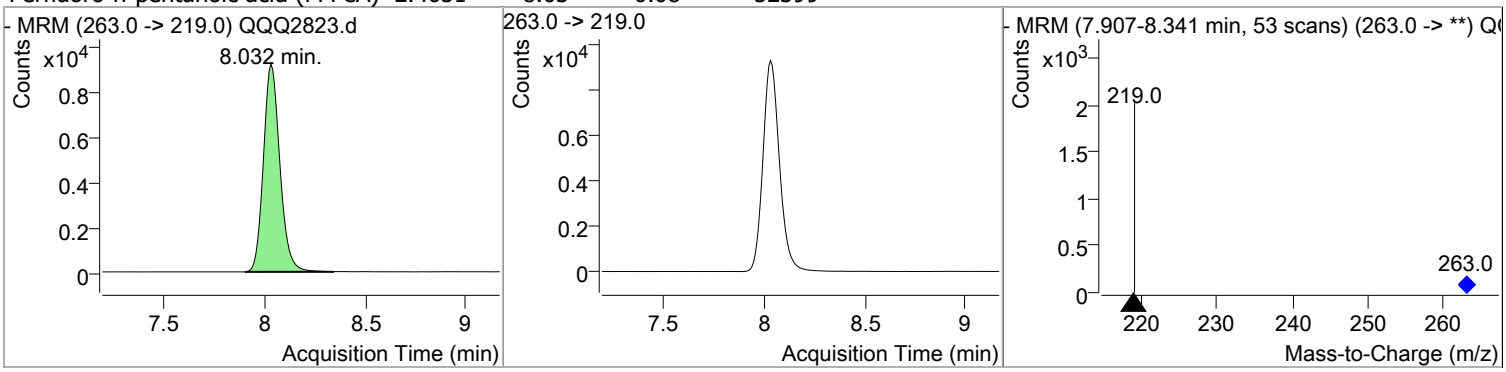
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	2.5150	4.02	-0.18	40623				



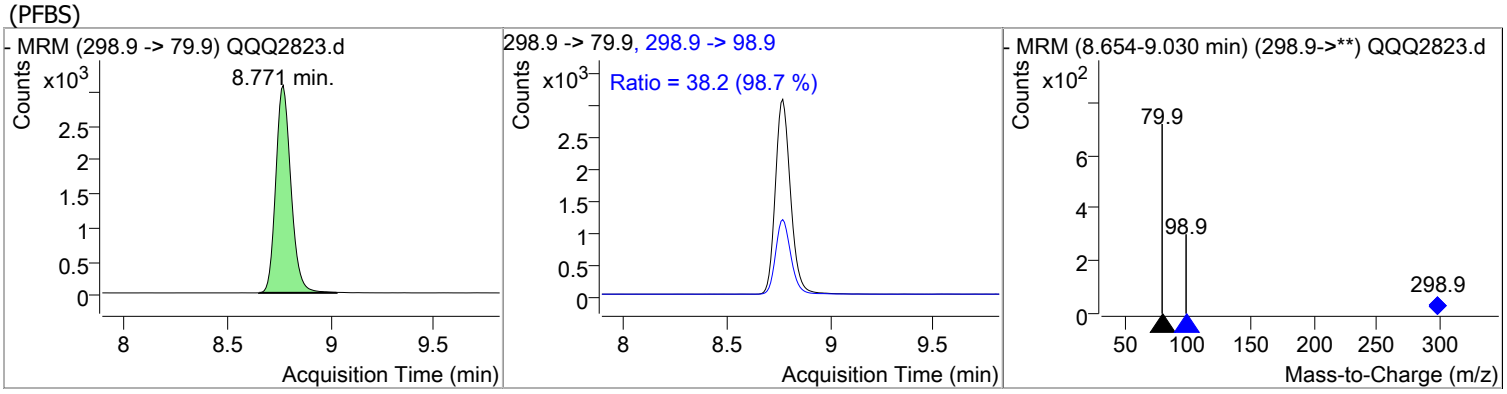
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	2.4790	8.03	-0.08	59742				



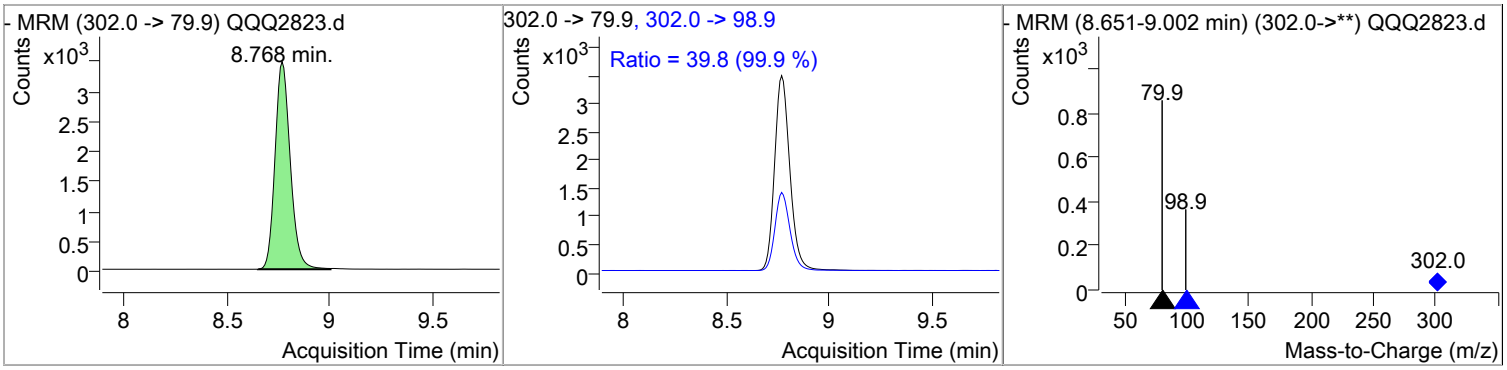
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	2.4651	8.03	-0.08	52399				



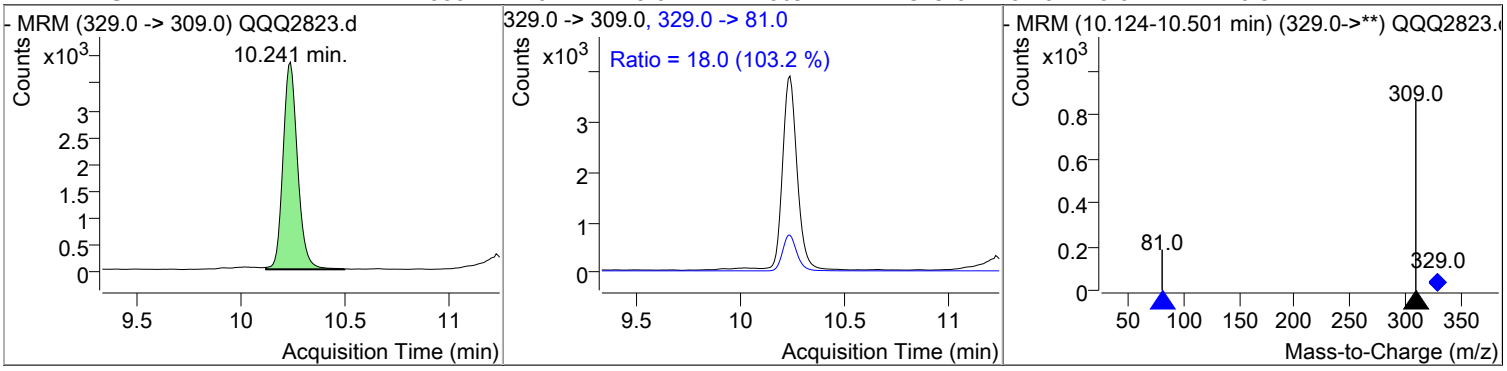
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	2.2496	8.77	-0.04	15629	298.9 -> 98.9	38.2	31.0	46.5



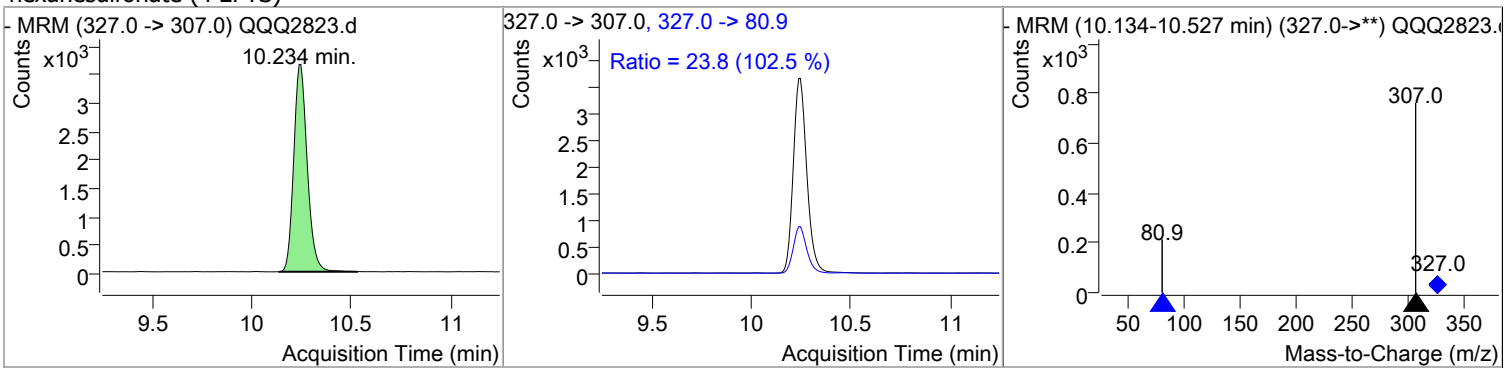
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	2.3248	8.77	-0.05	17686	302.0 -> 98.9	39.8	31.9	47.8



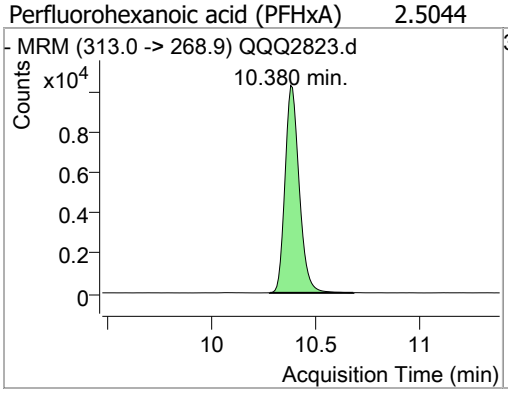
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	2.4888	10.24	-0.02	18691	329.0 -> 81.0	18.0	10.5	24.4

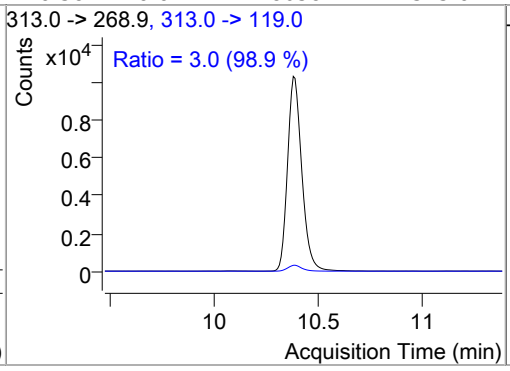


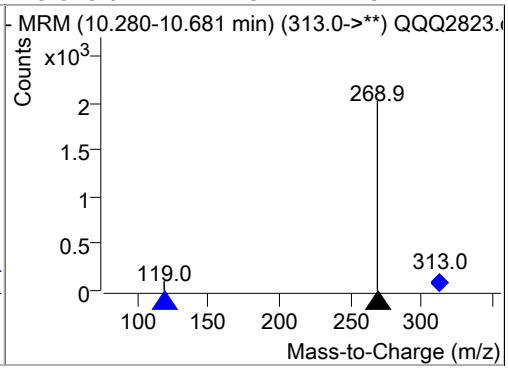
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	2.4689	10.23	-0.03	17299	327.0 -> 80.9	23.8	13.9	32.5



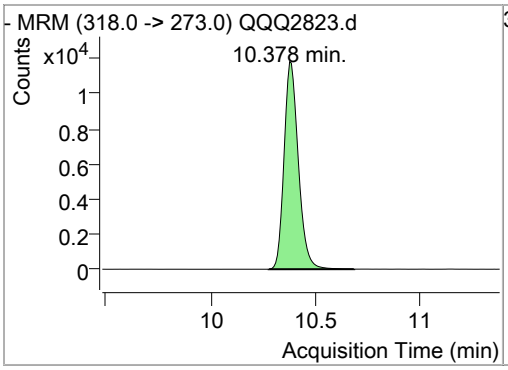
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	2.5044	10.38	-0.02	48658	313.0 -> 119.0	3.0	2.5	3.7

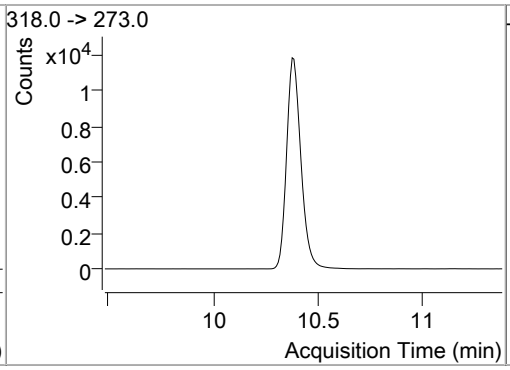


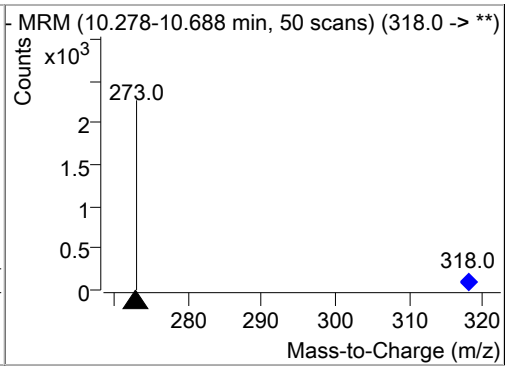




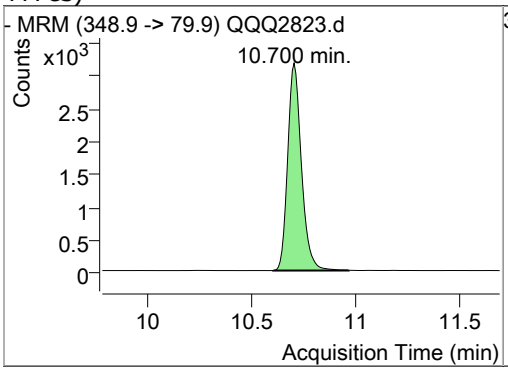
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	2.4638	10.38	-0.03	55935				

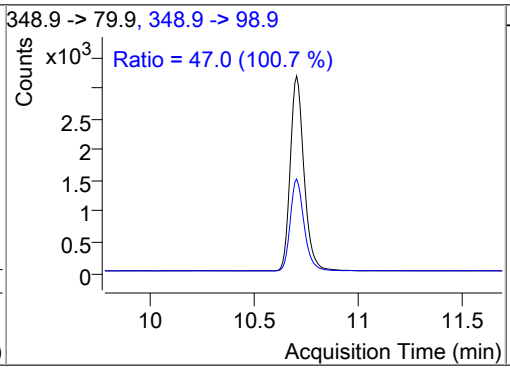


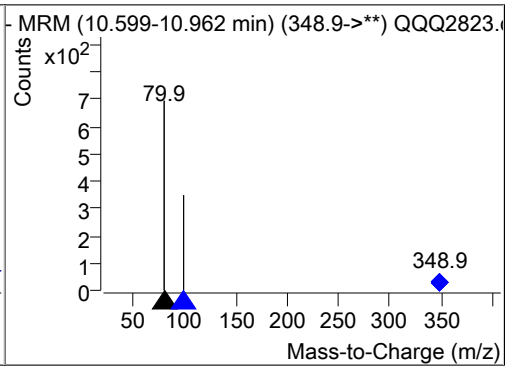




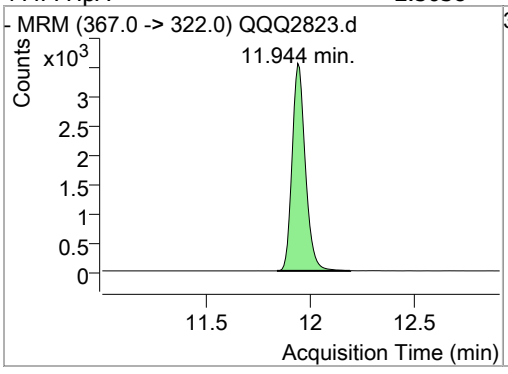
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	2.3190	10.70	0.00	14479	348.9 -> 98.9	47.0	37.3	56.0

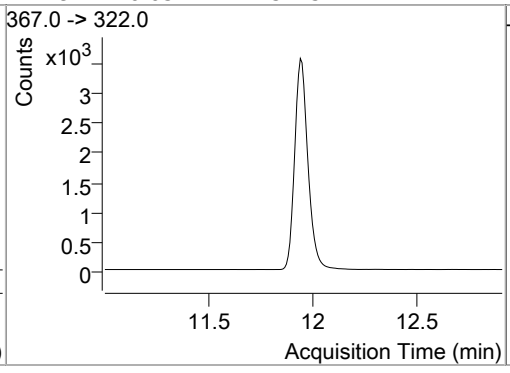


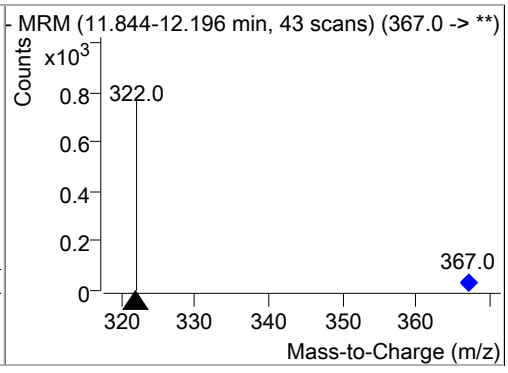




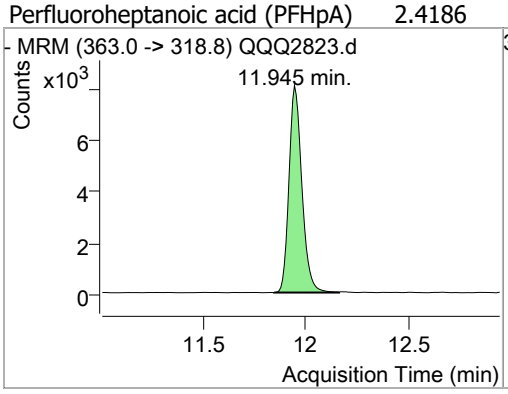
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	2.5038	11.94	0.03	15715				

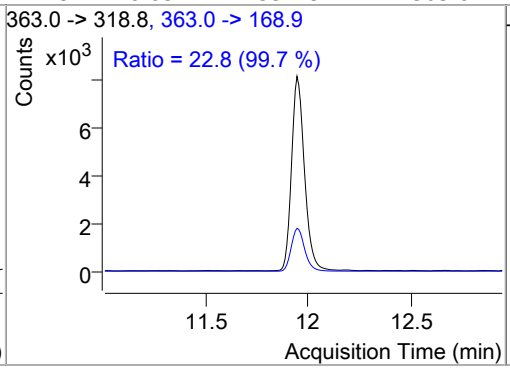


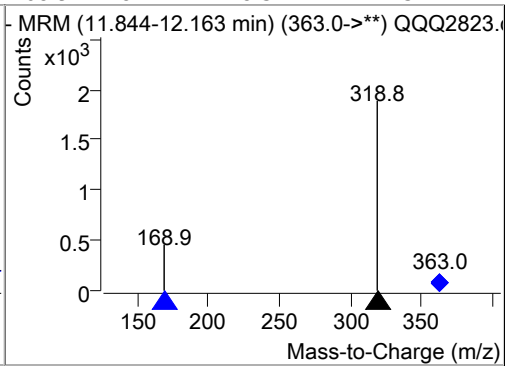




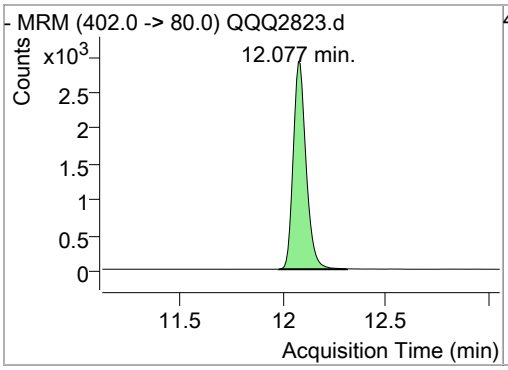
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	2.4186	11.94	0.03	35719	363.0 -> 168.9	22.8	18.3	27.5

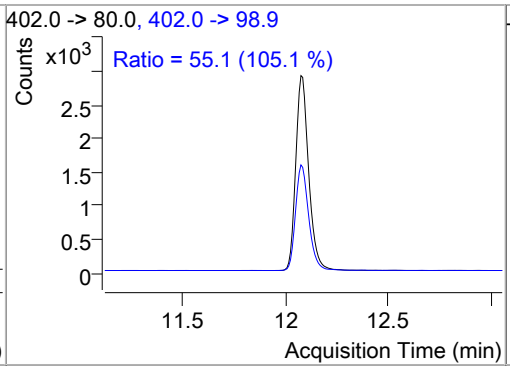


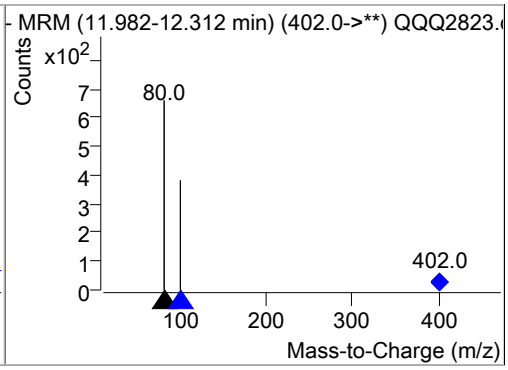




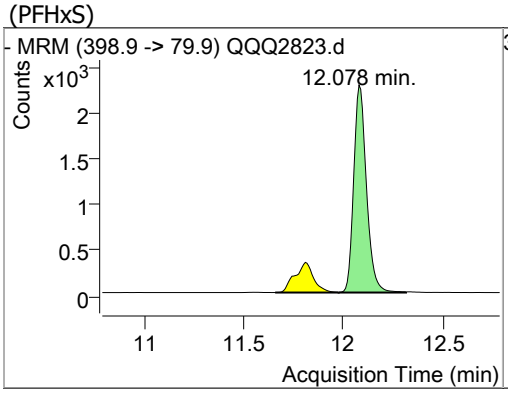
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	2.4070	12.08	0.03	12578	402.0 -> 98.9	55.1	42.0	62.9

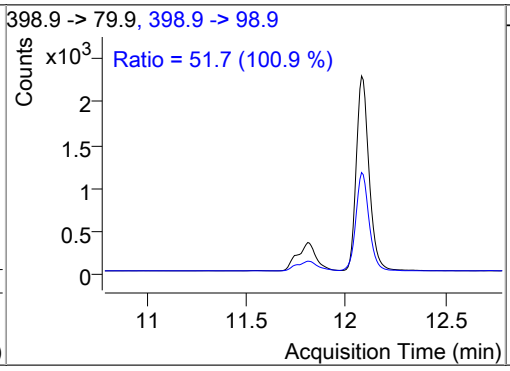


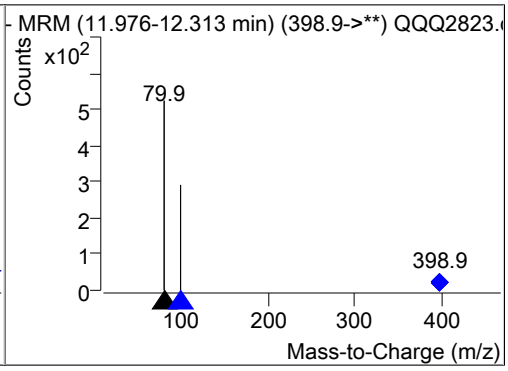




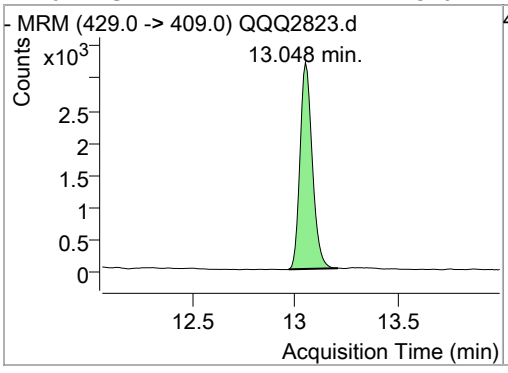
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	1.8715	12.08	0.03	10056	398.9 -> 98.9	51.7	41.0	61.5

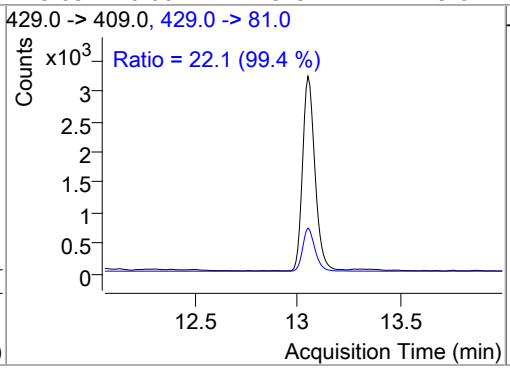


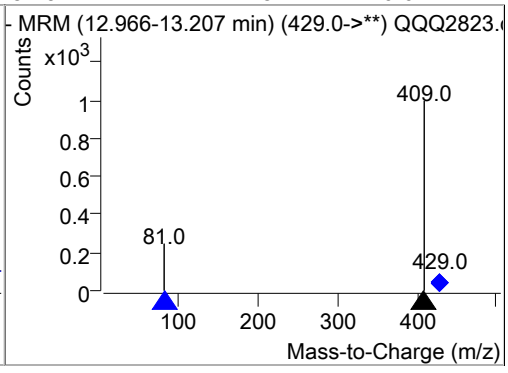




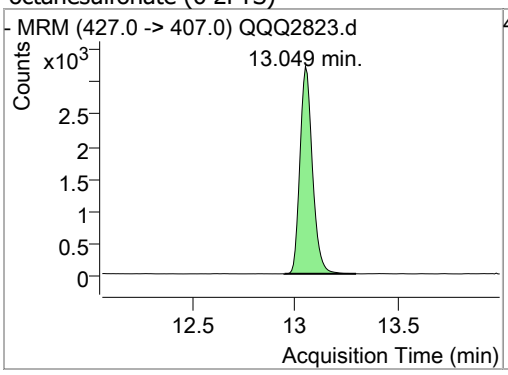
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	2.3764	13.05	0.08	13291	429.0 -> 81.0	22.1	17.8	26.6

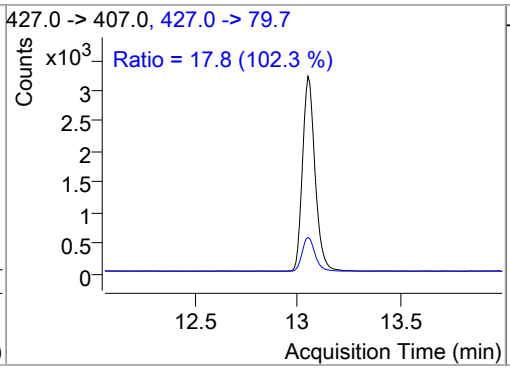


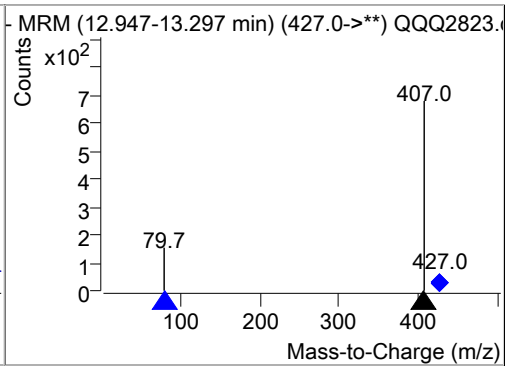




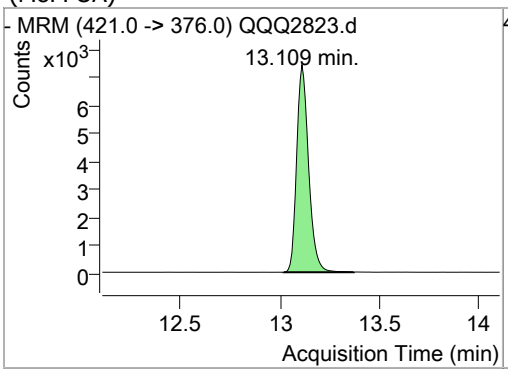
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	2.2979	13.05	0.08	13548	427.0 -> 79.7	17.8	13.9	20.8

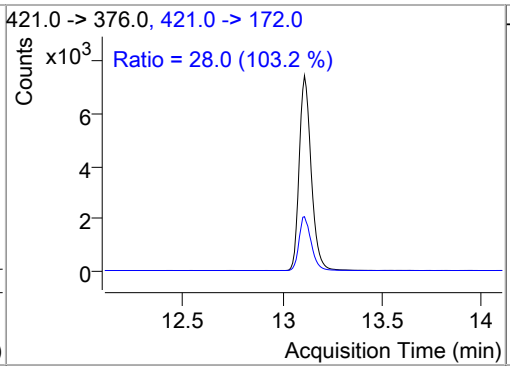


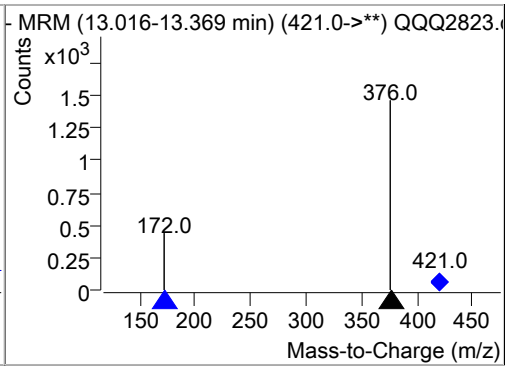




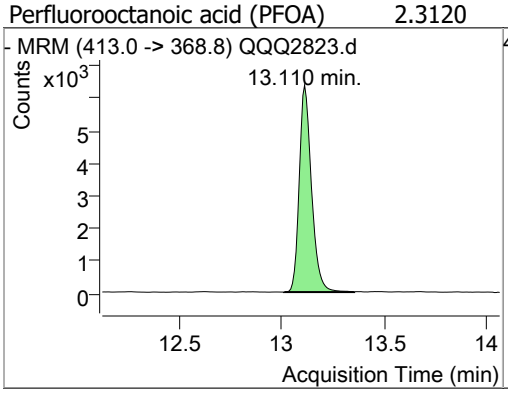
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	2.5829	13.11	0.08	30834	421.0 -> 172.0	28.0	21.7	32.6

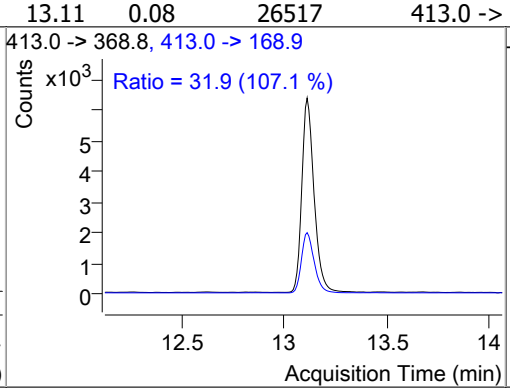


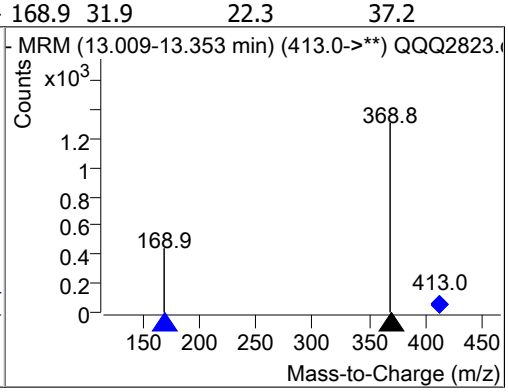




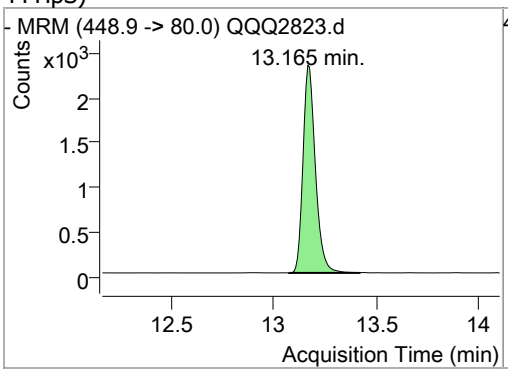
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	2.3120	13.11	0.08	26517	413.0 -> 168.9	31.9	22.3	37.2

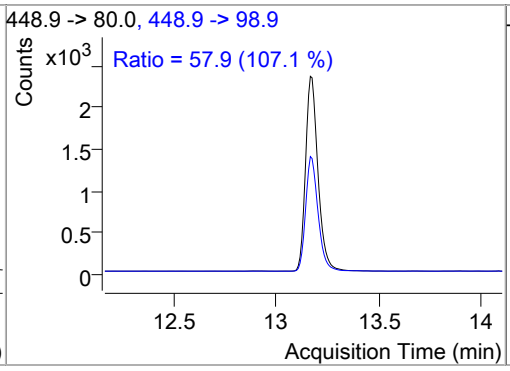


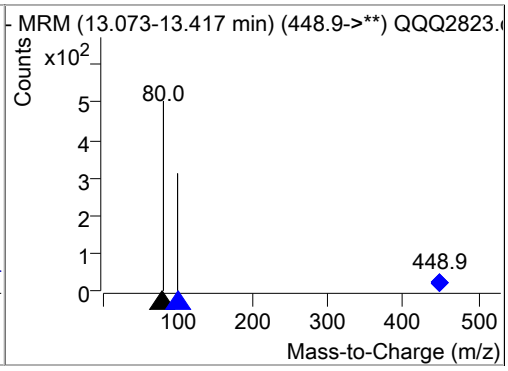




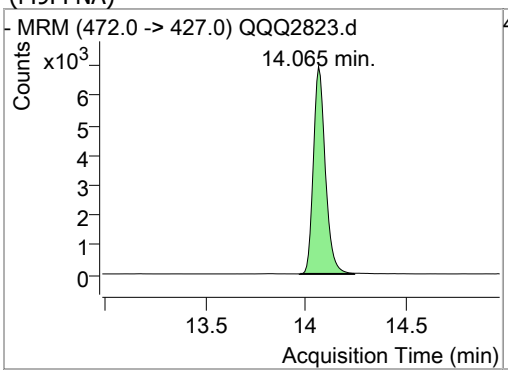
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	2.5302	13.17	0.08	9805	448.9 -> 98.9	57.9	43.3	64.9

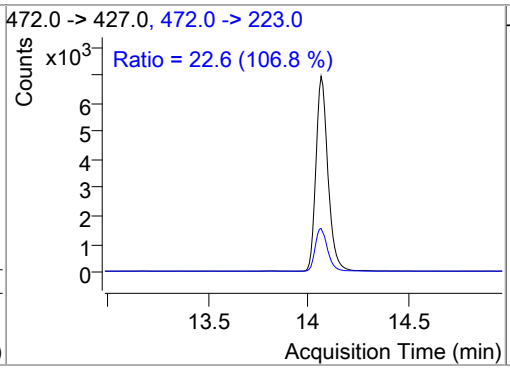


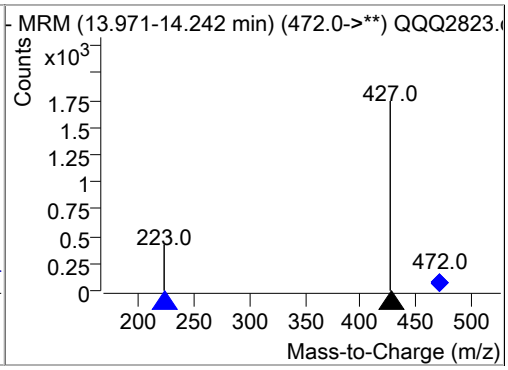




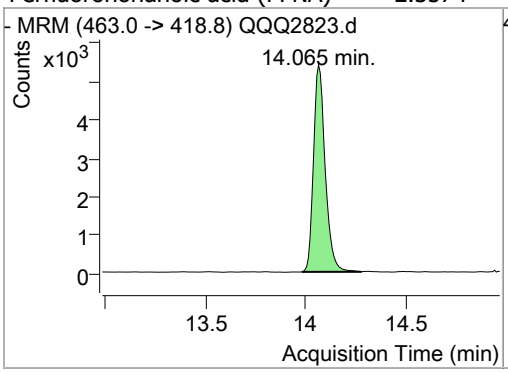
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	2.3467	14.06	0.16	28664	472.0 -> 223.0	22.6	16.9	25.4

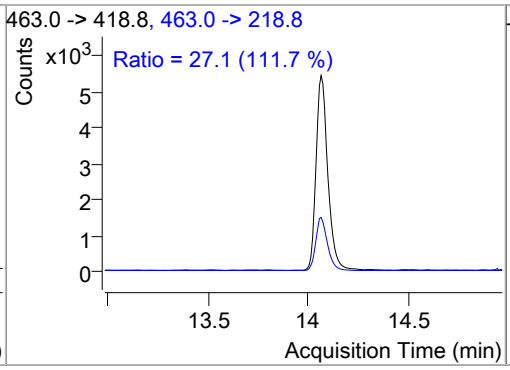


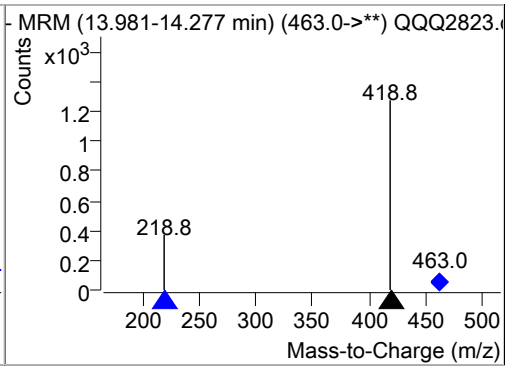




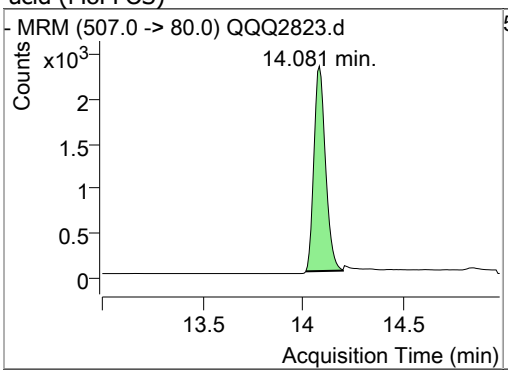
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	2.3574	14.07	0.16	21799	463.0 -> 218.8	27.1	19.4	29.1

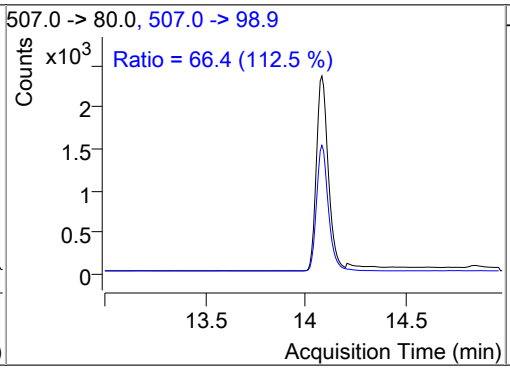


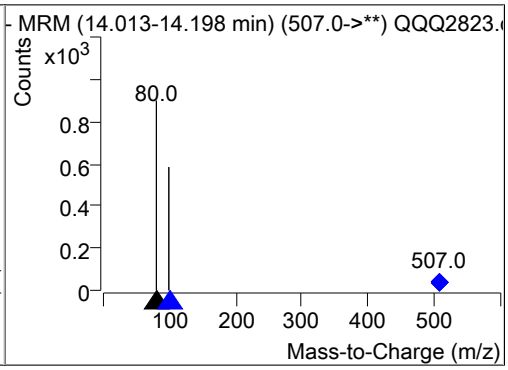




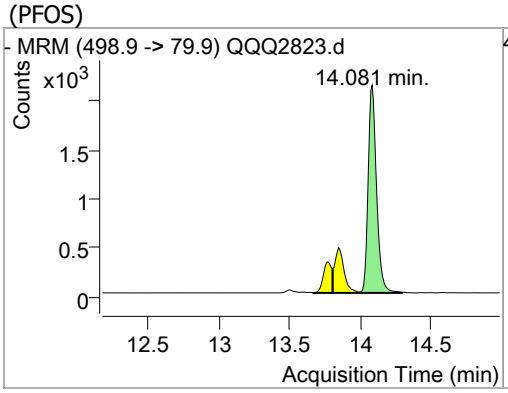
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	2.3228	14.08	0.17	9294	507.0 -> 98.9	66.4	47.2	70.8

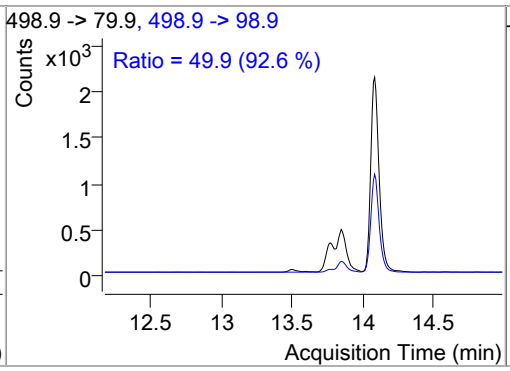


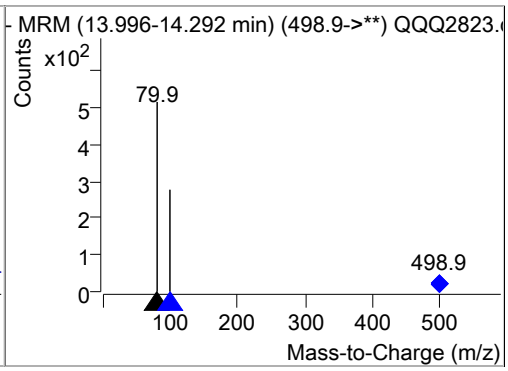




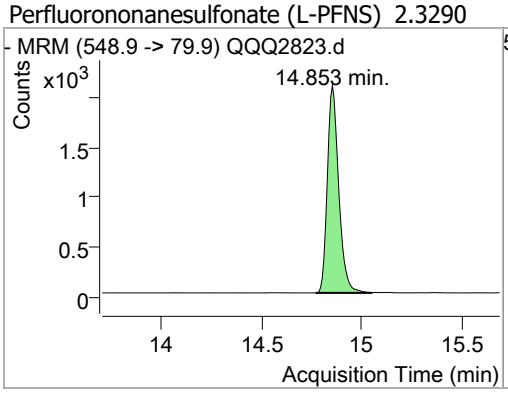
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	1.8334	14.08	0.17	8740	498.9 -> 98.9	49.9	43.1	64.6

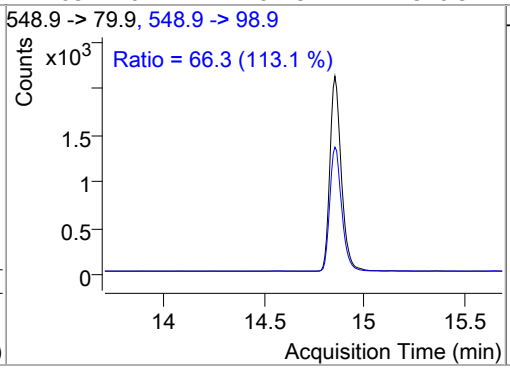


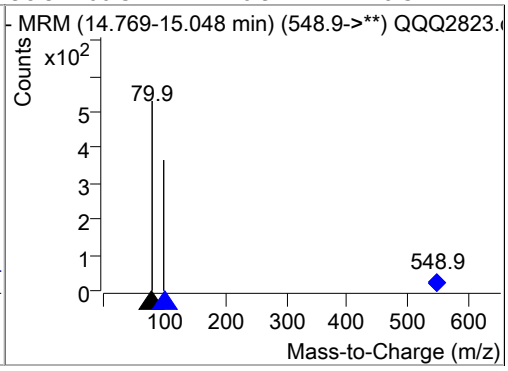




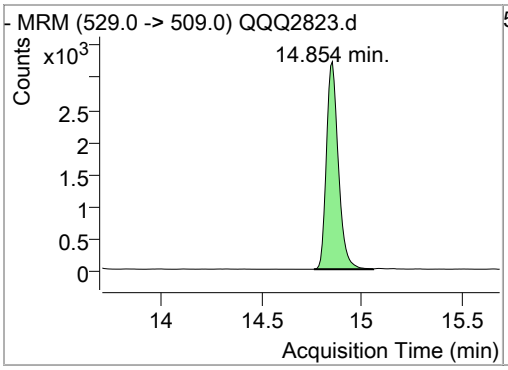
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	2.3290	14.85	0.24	8219	548.9 -> 98.9	66.3	46.9	70.3

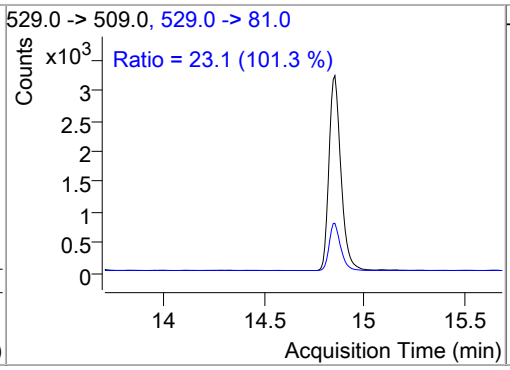


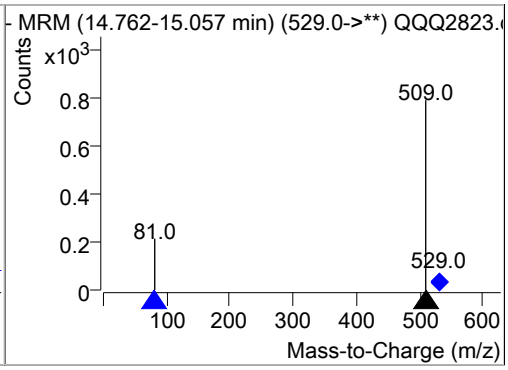




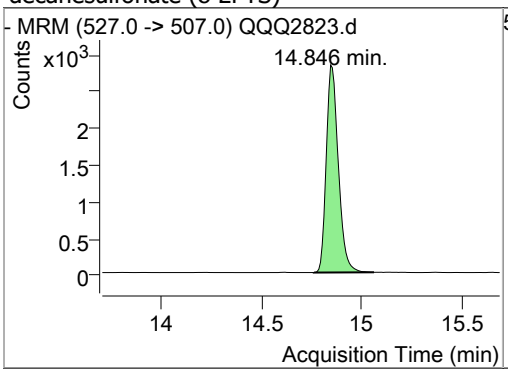
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	2.4936	14.85	0.24	13271	529.0 -> 81.0	23.1	18.3	27.4

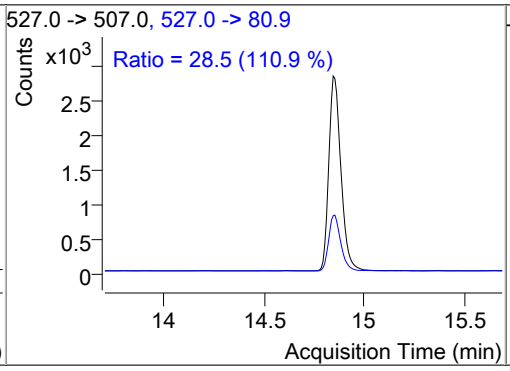


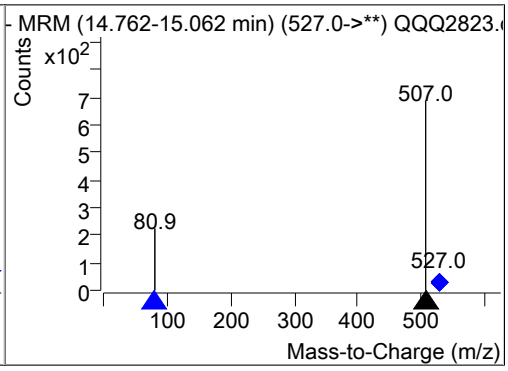




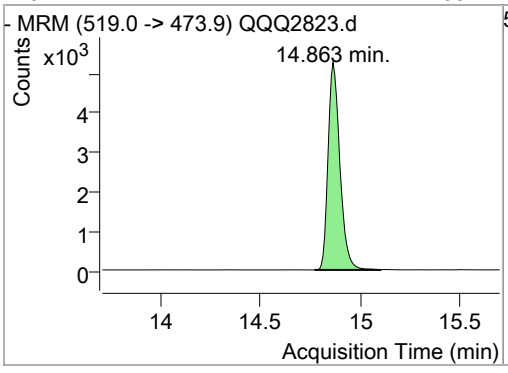
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	2.6309	14.85	0.23	11790	527.0 -> 80.9	28.5	20.6	30.9

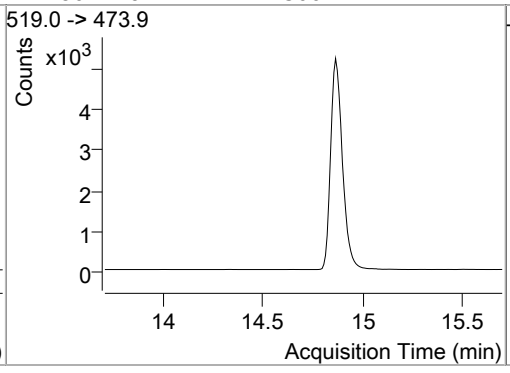


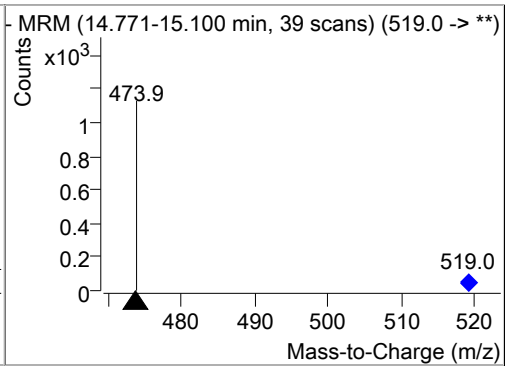




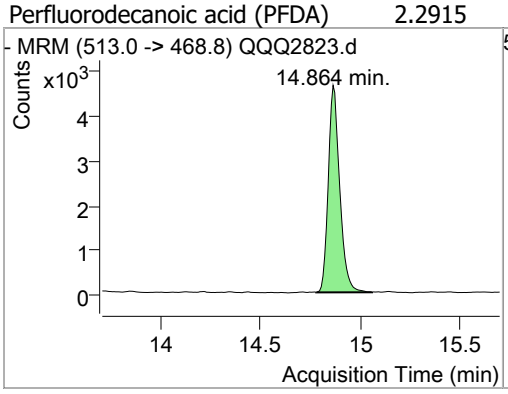
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	2.2160	14.86	0.24	21566				

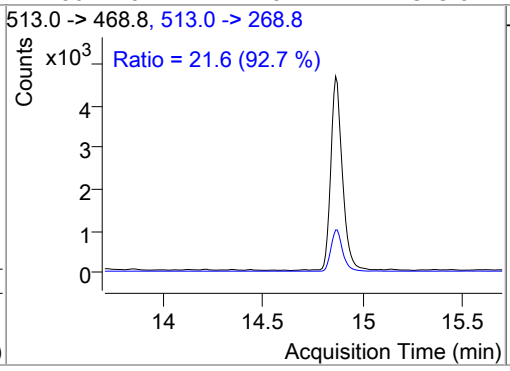


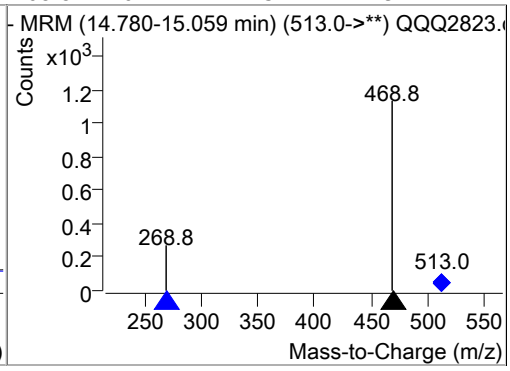




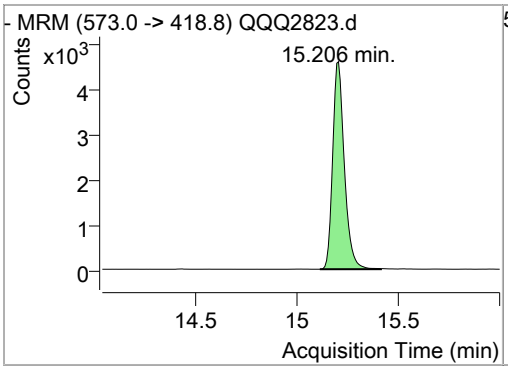
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	2.2915	14.86	0.24	18427	513.0 -> 268.8	21.6	17.5	29.1

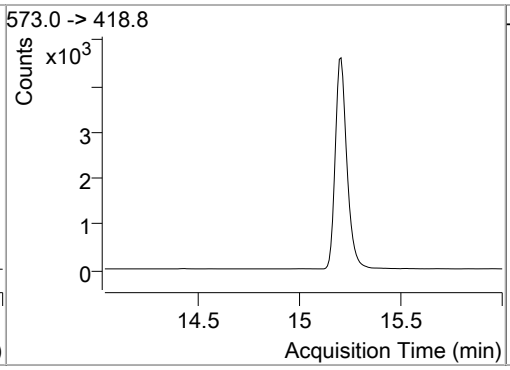


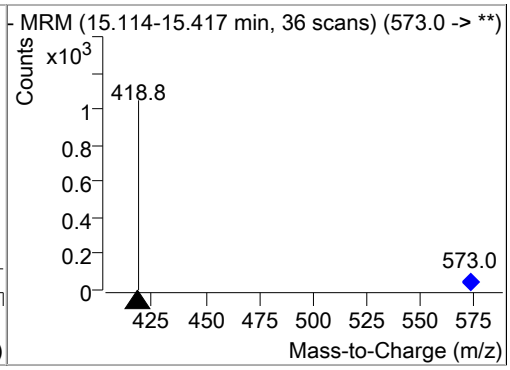




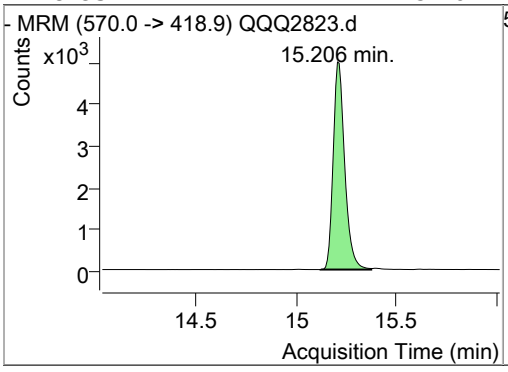
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	2.3551	15.21	0.27	18401				

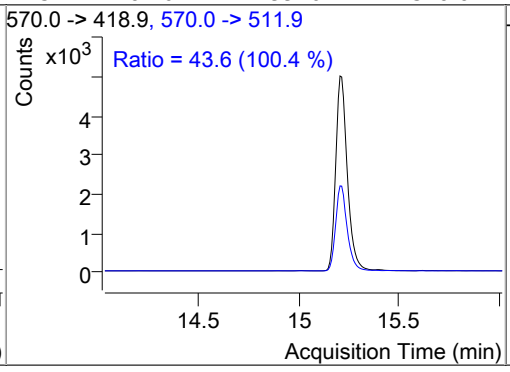


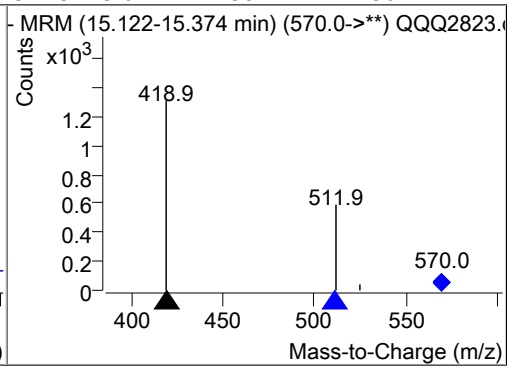




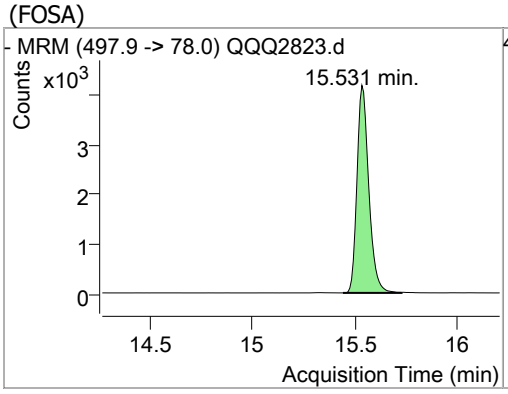
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	2.3748	15.21	0.26	19926	570.0 -> 511.9	43.6	30.4	56.4

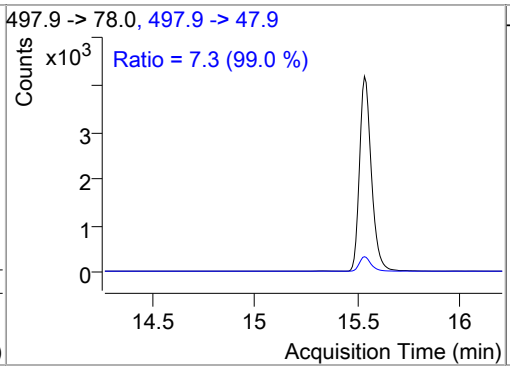


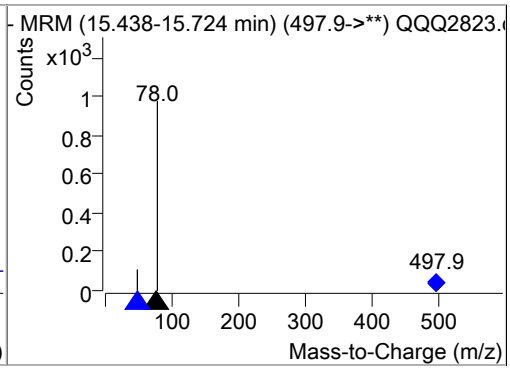




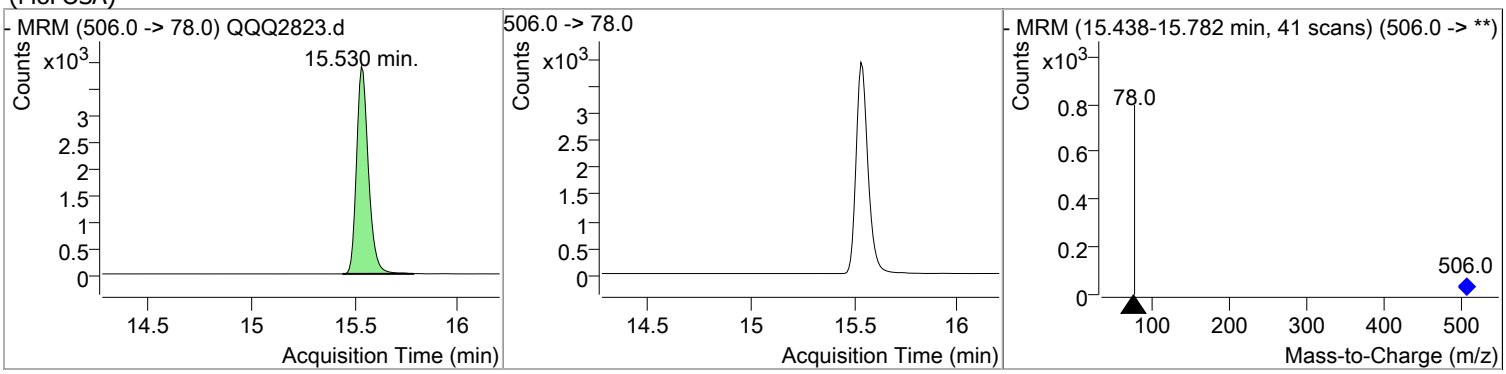
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	2.5593	15.53	0.34	16574	497.9 -> 47.9	7.3	5.9	8.8



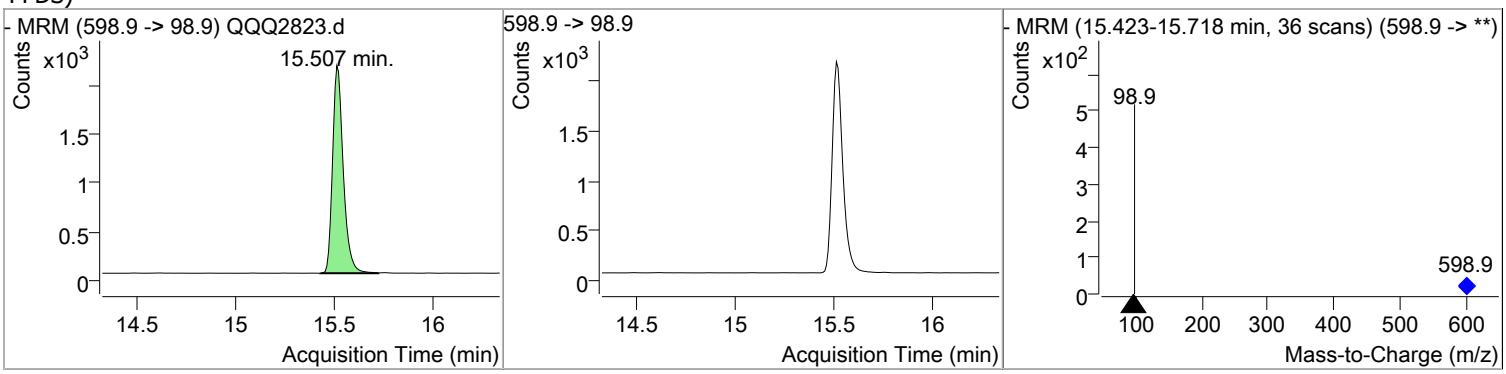




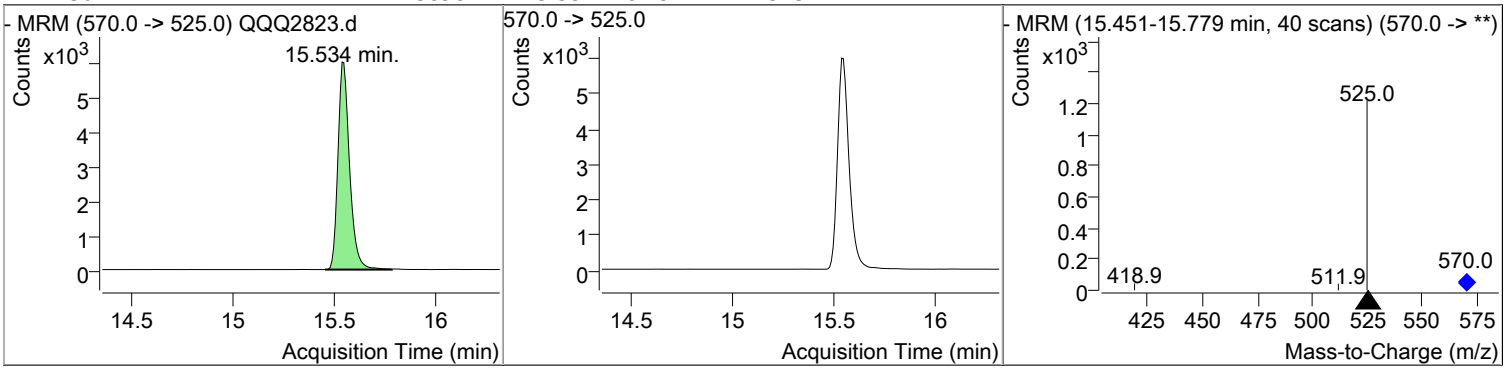
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	2.5073	15.53	0.34	15613				



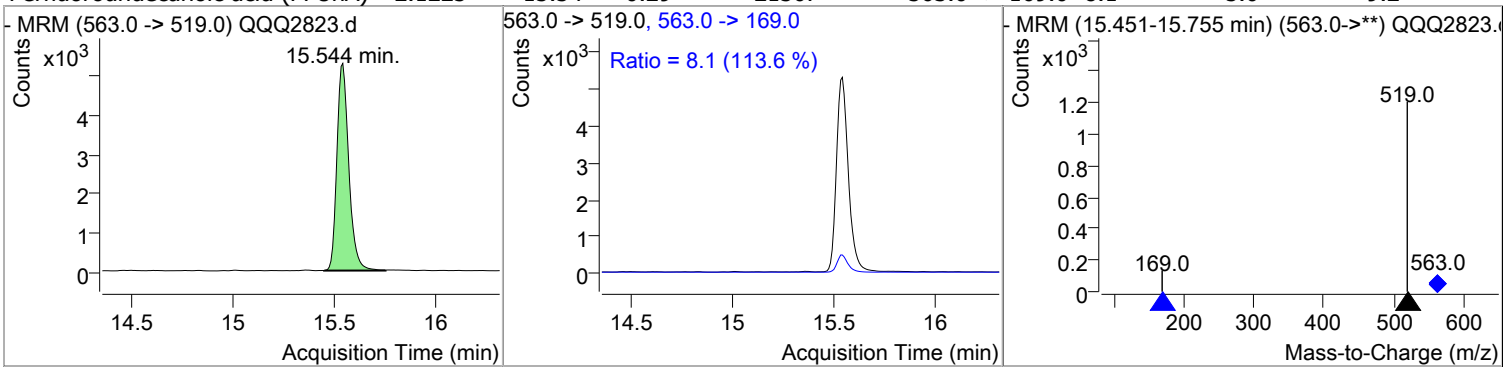
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	2.4555	15.51	0.29	7955				



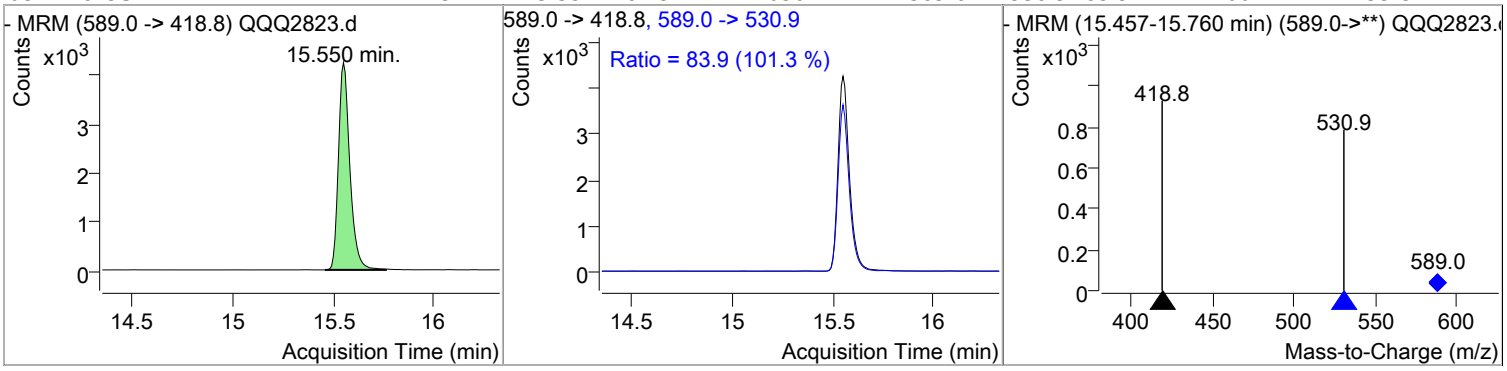
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	2.3898	15.53	0.29	23752				



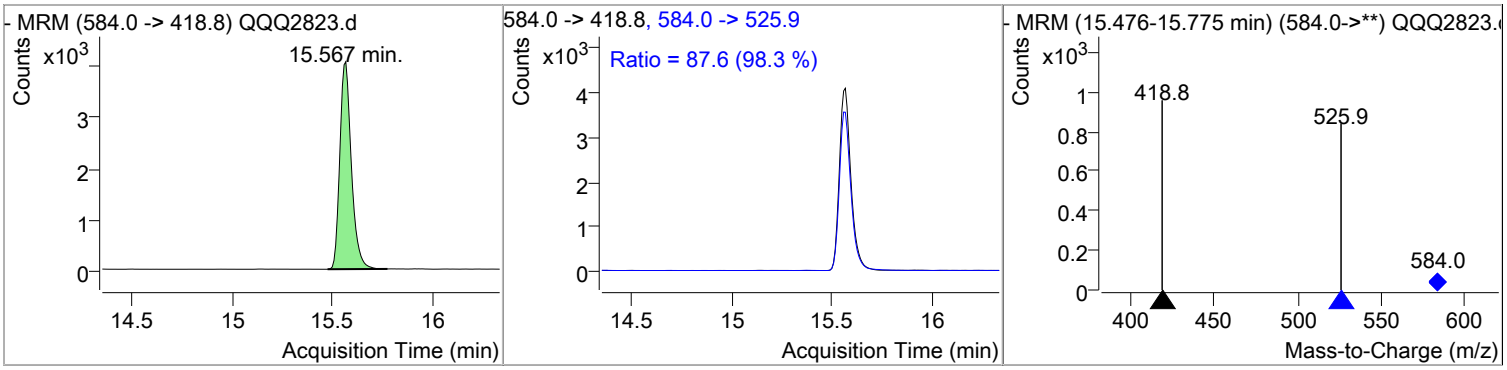
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	2.1225	15.54	0.29	21567	563.0 -> 169.0	8.1	5.0	9.2



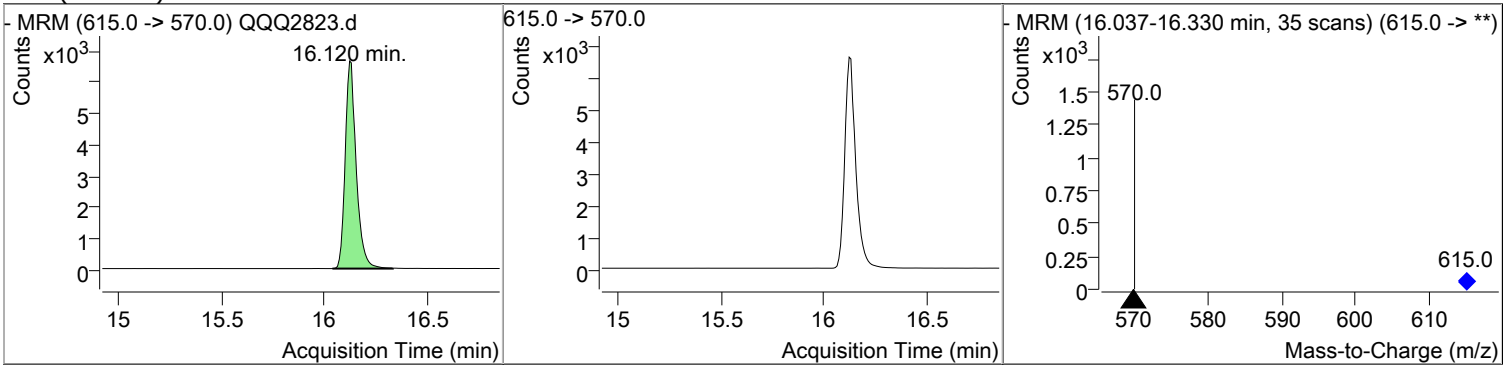
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	2.4292	15.55	0.29	16561	589.0 -> 530.9	83.9	66.2	99.3



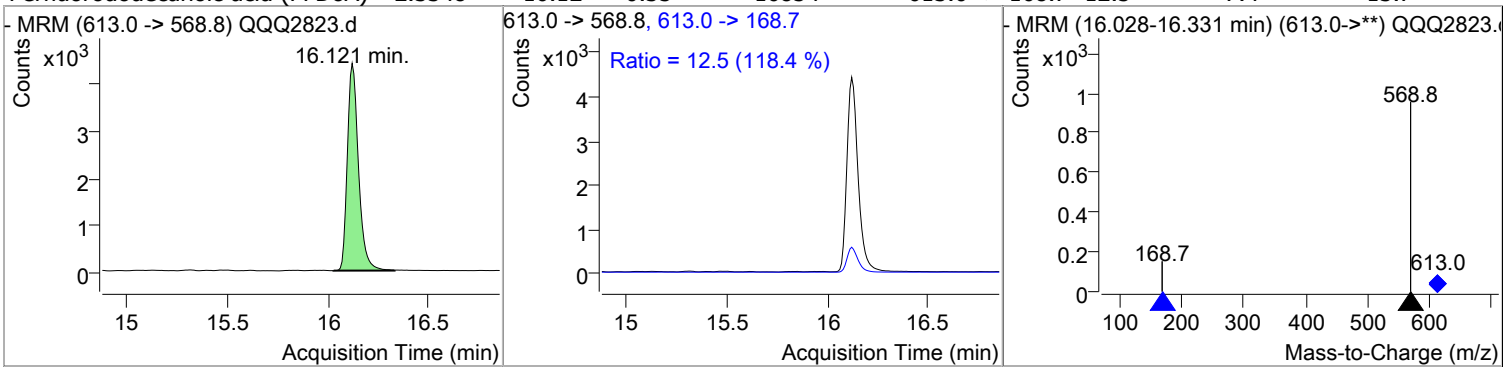
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	2.4536	15.57	0.30	16136	584.0 -> 525.9	87.6	71.3	107.0



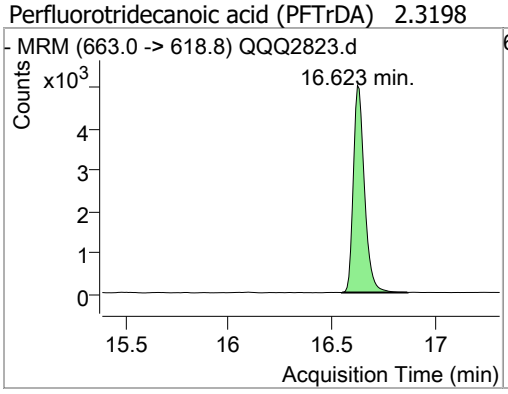
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	2.5341	16.12	0.35	24661				

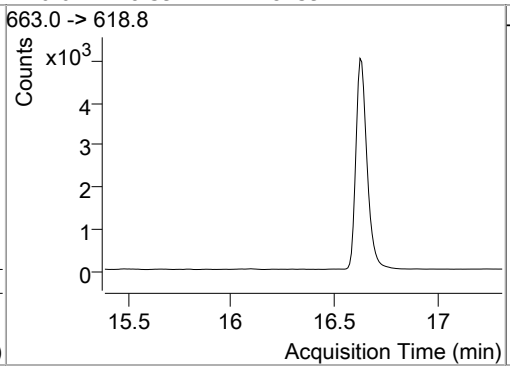


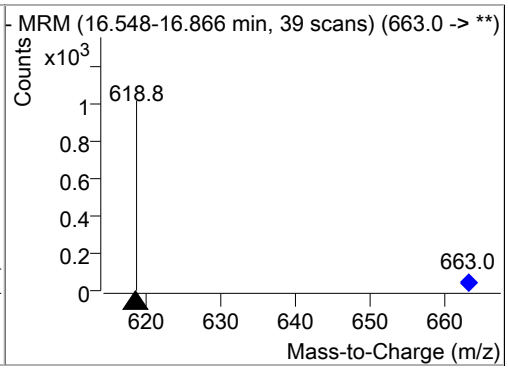
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	2.3348	16.12	0.35	16854	613.0 -> 168.7	12.5	7.4	13.7



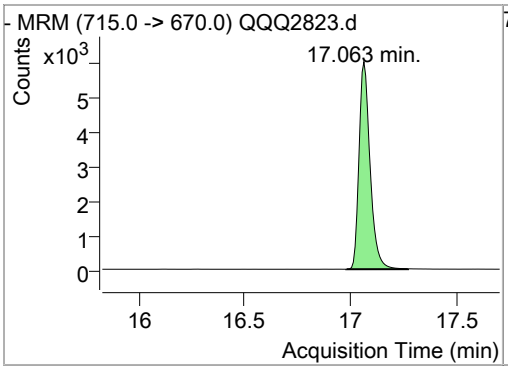
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	2.3198	16.62	0.39	18759				

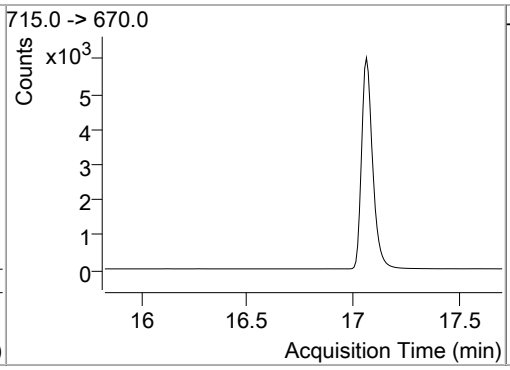


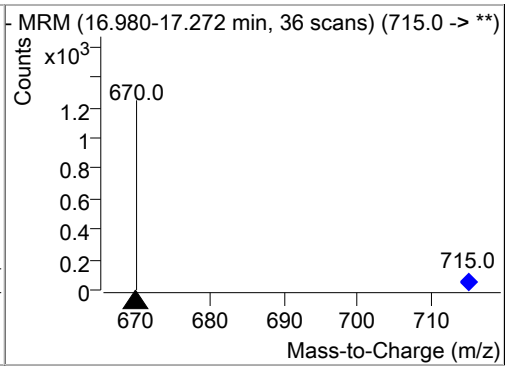




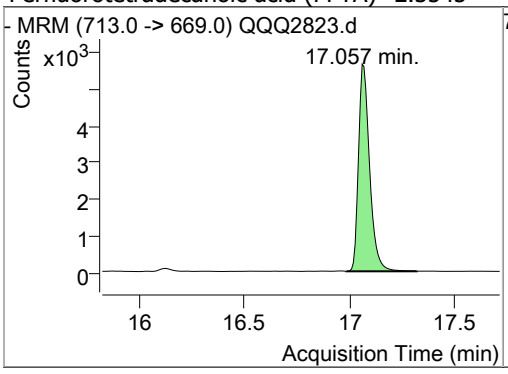
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	2.4013	17.06	0.43	21792				

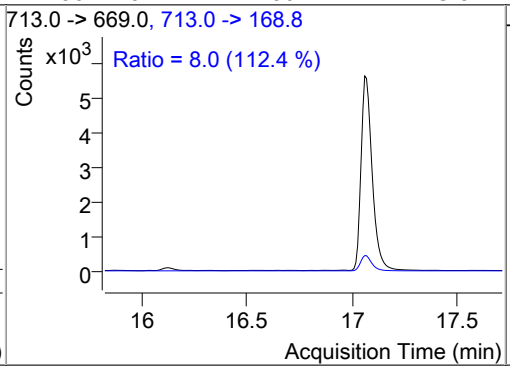


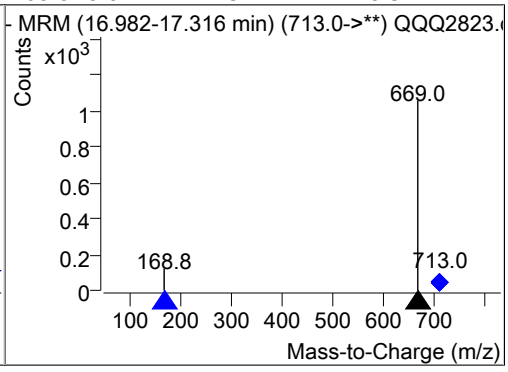




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	2.3545	17.06	0.42	20611	713.0 -> 168.8	8.0	5.7	8.5







Quantitation Results Report (Not Reviewed)

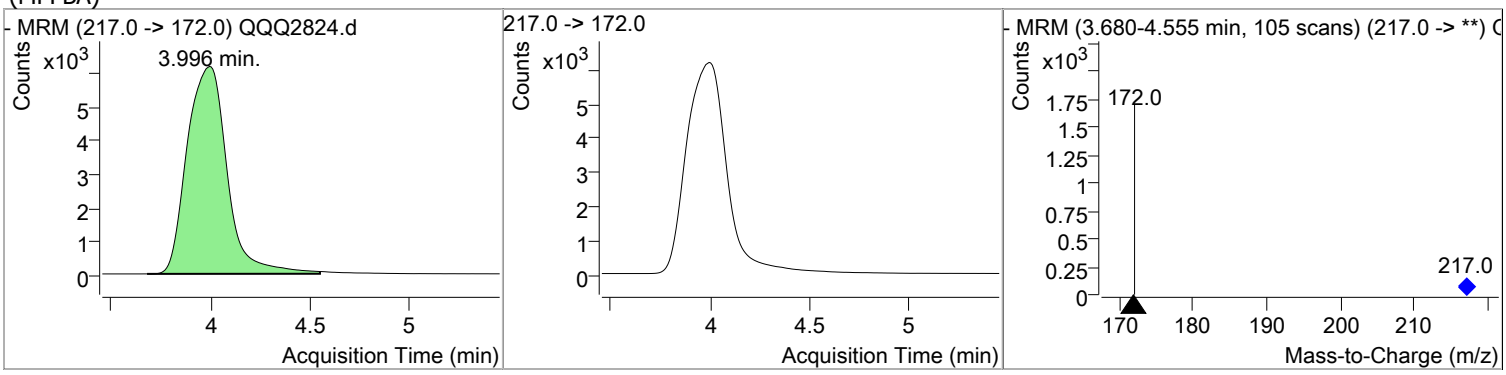
Data File	QQQ2824.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/19/2019 9:02:32 PM
Sample Name	SEQ-CAL5	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	5.0 ng/mL
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.143	417.0 -> 372.0	219915	10.0000	ng/ml	0.110
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.996	217.0 -> 172.0	87172	5.0606	ng/ml	-0.192
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.61%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.039	268.0 -> 223.0	117235	4.9921	ng/ml	-0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.92%		
M3PFBS	8.785	302.0 -> 79.9	33750	4.5526	ng/ml	-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 45.53%		
M2-4-2FTS	10.258	329.0 -> 309.0	32750	4.7043	ng/ml	0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.04%		
M5PFHxA	10.403	318.0 -> 273.0	113104	5.1125	ng/ml	0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.12%		
M4PFHpA	11.977	367.0 -> 322.0	31484	5.1476	ng/ml	0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.48%		
M3PFHxS	12.111	402.0 -> 80.0	23889	4.6910	ng/ml	0.068
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 46.91%		
M2-6-2FTS	13.082	429.0 -> 409.0	24456	4.4873	ng/ml	0.109
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 44.87%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.134	421.0 -> 376.0	59446	5.1101	ng/ml	0.110
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.10%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.082	472.0 -> 427.0	58131	4.8839	ng/ml	0.178
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.84%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.097	507.0 -> 80.0	18577	4.7647	ng/ml	0.186
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.65%		
M2-8-2FTS	14.862	529.0 -> 509.0	24478	5.1959	ng/ml	0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.96%		
M6PFDA	14.871	519.0 -> 473.9	46726	4.9269	ng/ml	0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.27%		
d3-N-MeFOSAA	15.215	573.0 -> 418.8	37456	4.9195	ng/ml	0.278
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.19%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	30876	5.0882	ng/ml	0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.88%		
M7PFUdA	15.543	570.0 -> 525.0	47692	4.9242	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.24%		
d5-N-EtFOSAA	15.558	589.0 -> 418.8	32456	4.8855	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.85%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.120	615.0 -> 570.0	48673	5.1325	ng/ml	0.345
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.32%		
M2PFTeDA	17.055	715.0 -> 670.0	45581	5.1542	ng/ml	0.418
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.54%		
Target Compounds						QValue

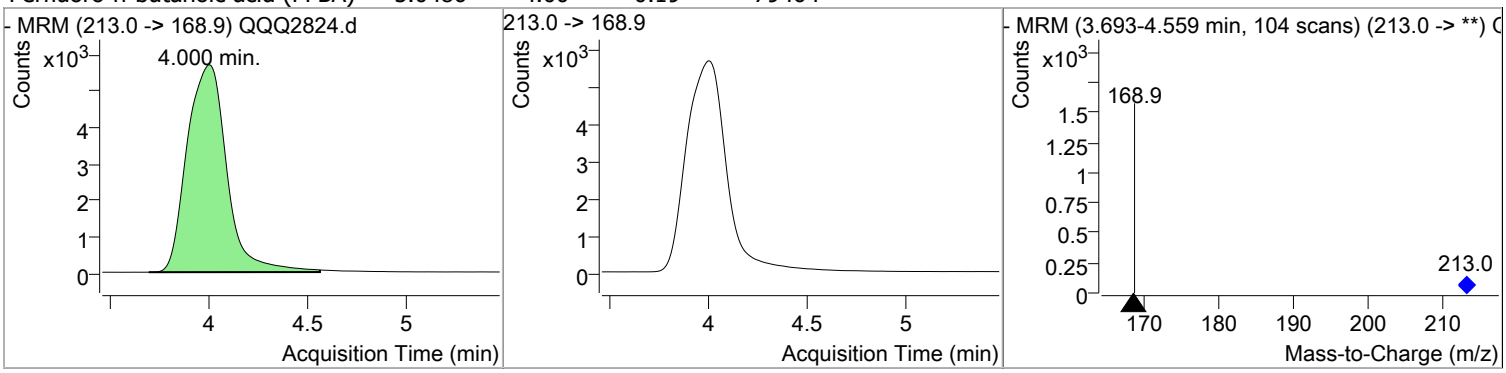
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.000	213.0 -> 168.9	79464	5.0486	ng/ml	100
Perfluoro-n-pentanoic acid (PFPeA)	8.040	263.0 -> 219.0	102308	4.9392	ng/ml	100
Perfluorobutanesulfonic acid (PFBS)	8.788	298.9 -> 79.9	29643	4.3786	ng/ml	100
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.260	327.0 -> 307.0	30889	4.7153	ng/ml	98
Perfluorohexanoic acid (PFHxA)	10.406	313.0 -> 268.9	95948	5.0677	ng/ml	100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.725	348.9 -> 79.9	28191	4.6334	ng/ml	99
Perfluoroheptanoic acid (PFHpA)	11.970	363.0 -> 318.8	73226	5.0882	ng/ml	98
Perfluorohexanesulfonic acid (PFHxS)	12.111	398.9 -> 79.9	18648	3.5616	ng/ml	99
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.083	427.0 -> 407.0	24385	4.2443	ng/ml	99
Perfluorooctanoic acid (PFOA)	13.135	413.0 -> 368.8	56946	5.0951	ng/ml	99
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.199	448.9 -> 80.0	18281	4.8414	ng/ml	94
Perfluorononanoic acid (PFNA)	14.083	463.0 -> 418.8	44937	4.9869	ng/ml	100
Perfluorooctanesulfonic acid (PFOS)	14.098	498.9 -> 79.9	16270	3.5023	ng/ml	95
Perfluorononanesulfonate (L-PFNS)	14.862	548.9 -> 79.9	16318	4.7451	ng/ml	97
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.863	527.0 -> 507.0	20304	5.0261	ng/ml	95
Perfluorodecanoic acid (PFDA)	14.872	513.0 -> 468.8	40411	5.1569	ng/ml	89
N-MeFOSAA	15.215	570.0 -> 418.9	40092	4.9036	ng/ml	96
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	31612	5.0093	ng/ml	100
Perfluoro-1-decanesulfonate (L-PFDS)	15.516	598.9 -> 98.9	15333	4.8571	ng/ml	100
Perfluoroundecanoic acid (PFUnA)	15.544	563.0 -> 519.0	45644	4.6097	ng/ml	99
N-EtFOSAA	15.567	584.0 -> 418.8	31632	4.9360	ng/ml	97
Perfluorododecanoic acid (PFDoA)	16.121	613.0 -> 568.8	33492	4.7613	ng/ml	100
Perfluorotridecanoic acid (PFTrDA)	16.623	663.0 -> 618.8	37762	4.7921	ng/ml	100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	42947	5.0347	ng/ml	98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

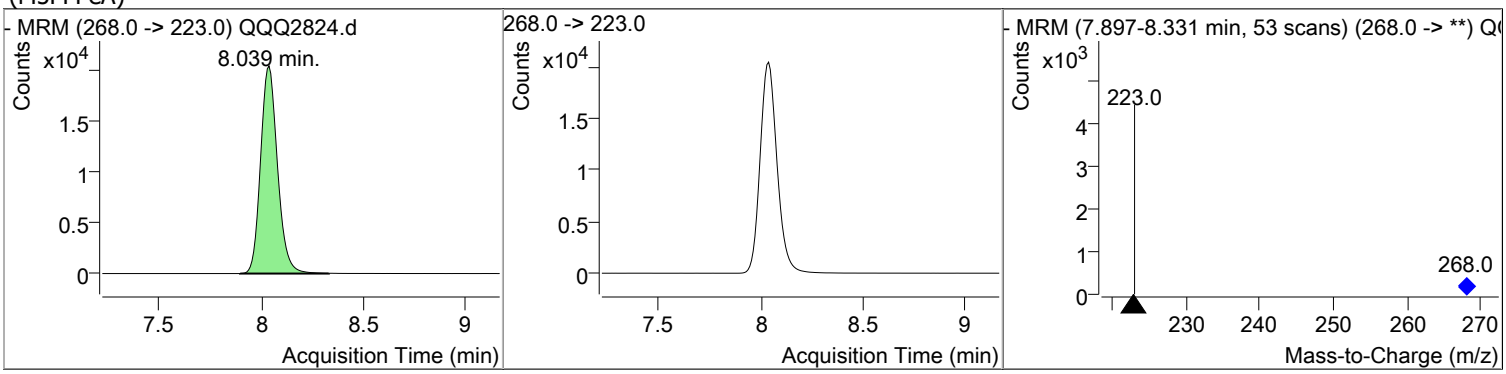
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.0606	4.00	-0.19	87172				



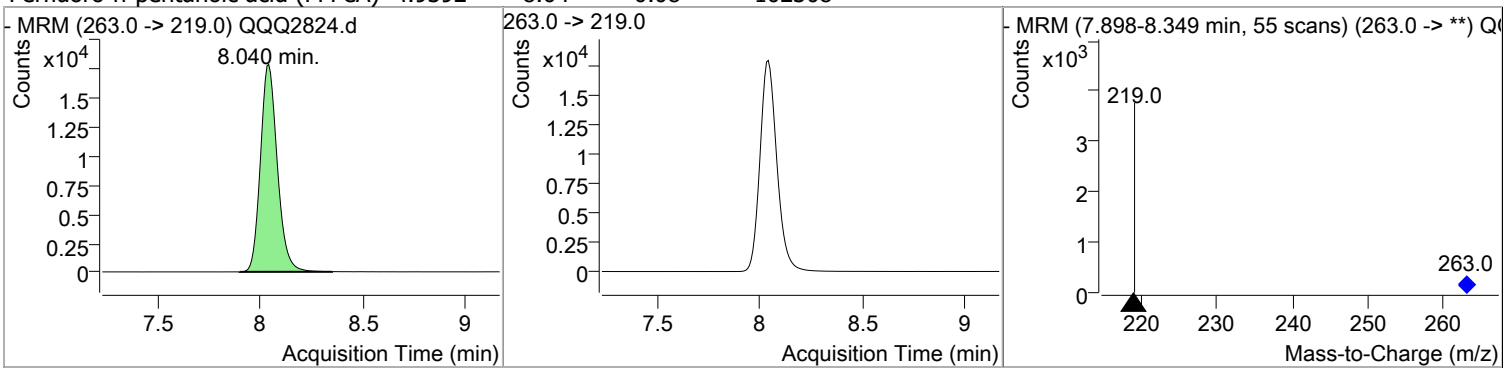
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	5.0486	4.00	-0.19	79464				



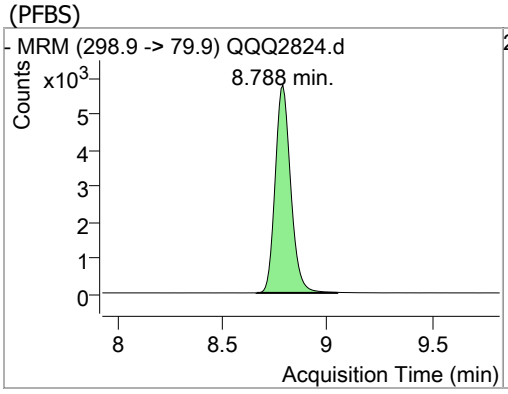
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	4.9921	8.04	-0.08	117235				

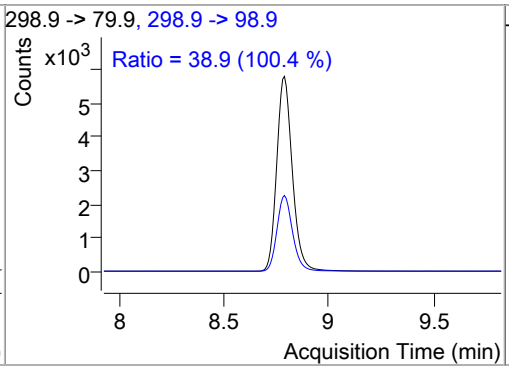


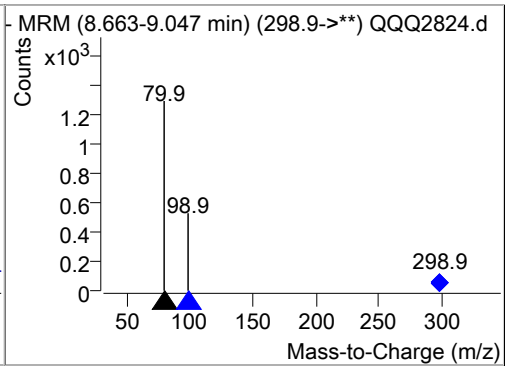
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	4.9392	8.04	-0.08	102308				



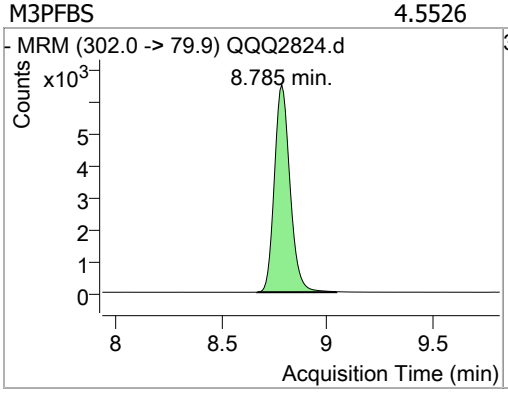
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	4.3786	8.79	-0.03	29643	298.9 -> 98.9	38.9	31.0	46.5

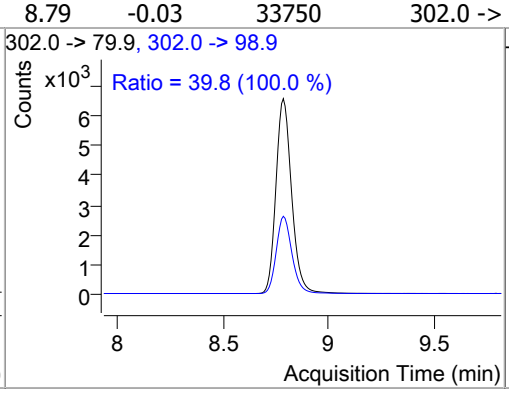


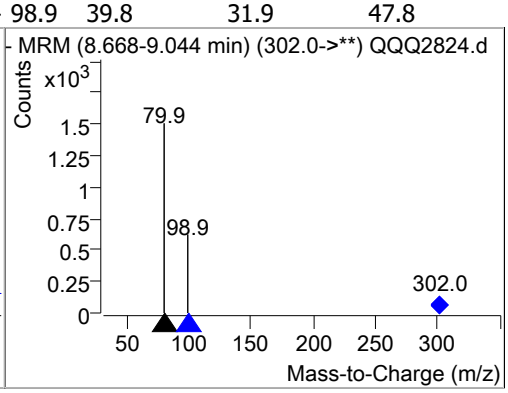




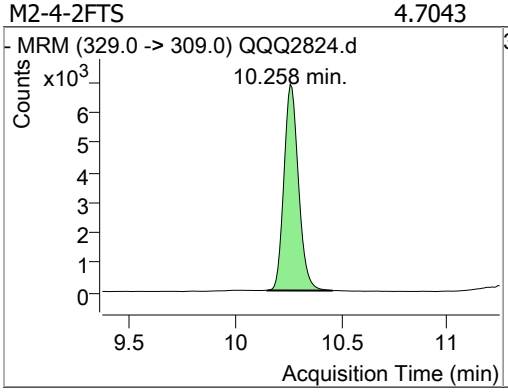
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	4.5526	8.79	-0.03	33750	302.0 -> 98.9	39.8	31.9	47.8

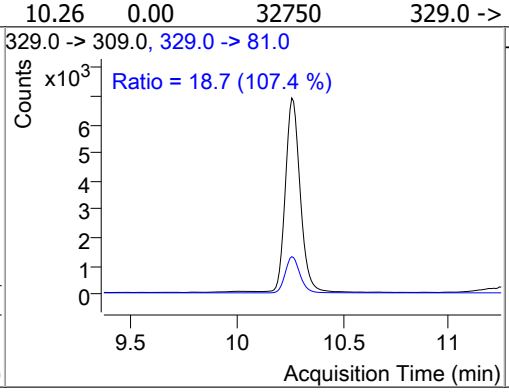


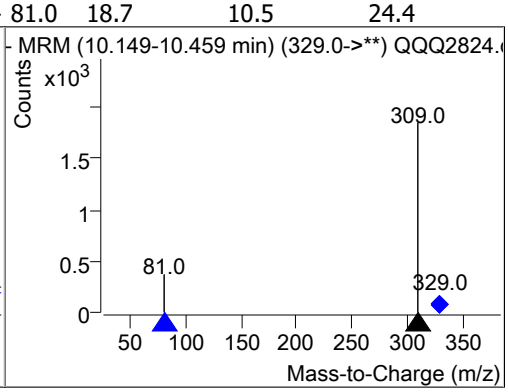




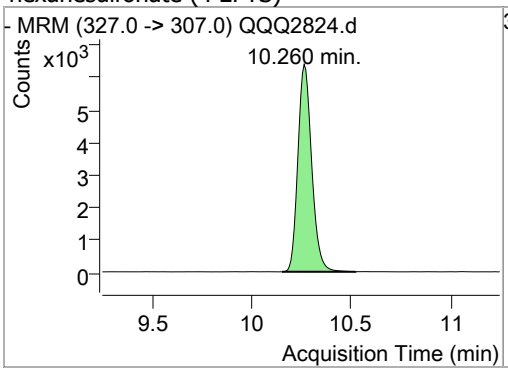
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	4.7043	10.26	0.00	32750	329.0 -> 81.0	18.7	10.5	24.4

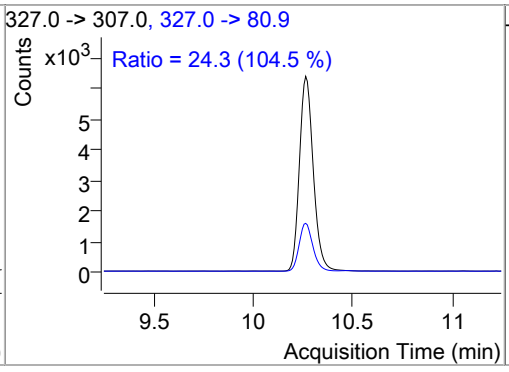


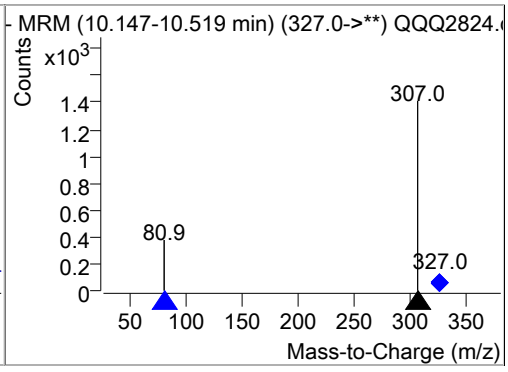




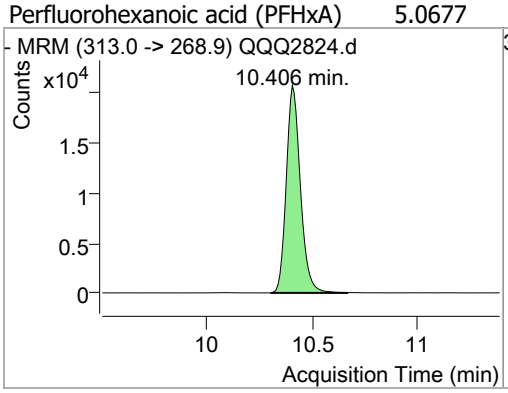
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	4.7153	10.26	0.00	30889	327.0 -> 80.9	24.3	13.9	32.5

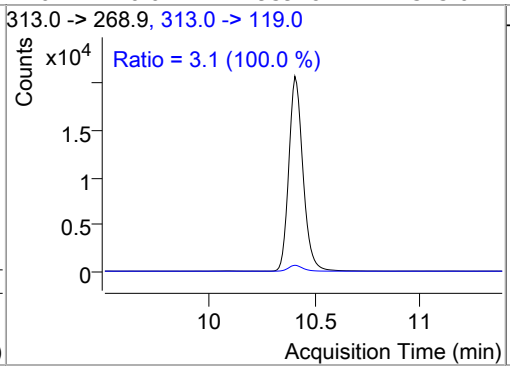


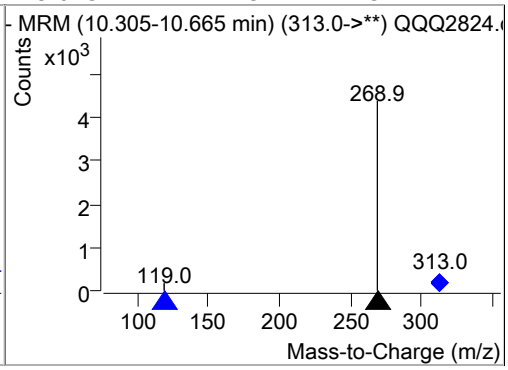




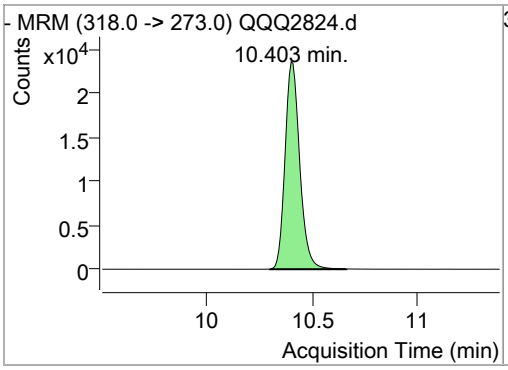
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	5.0677	10.41	0.01	95948	313.0 -> 119.0	3.1	2.5	3.7

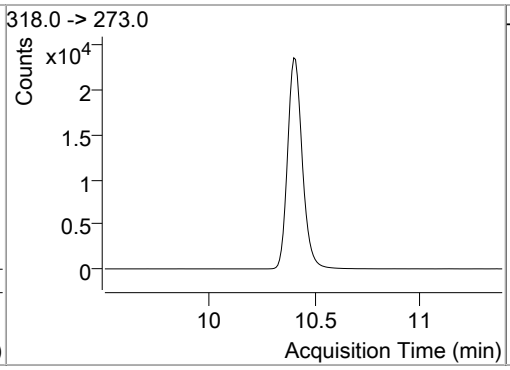


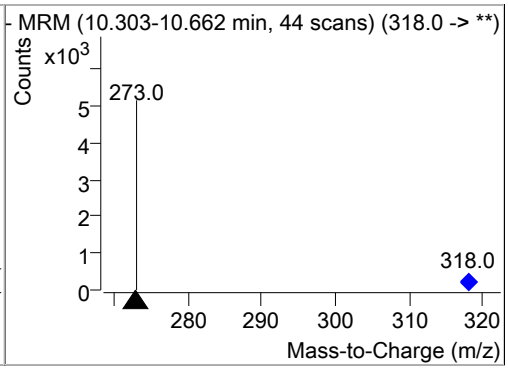




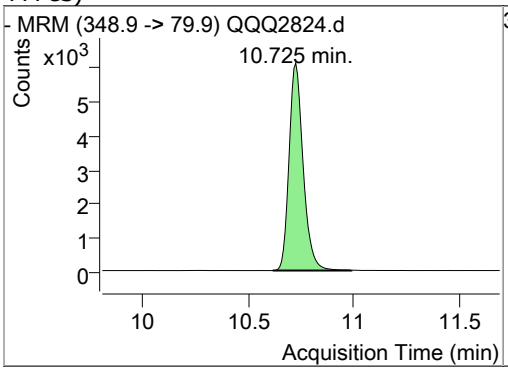
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	5.1125	10.40	0.00	113104				

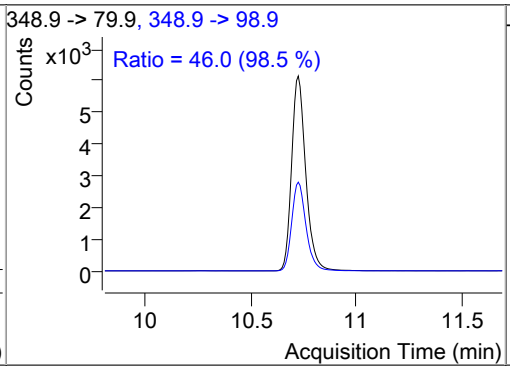


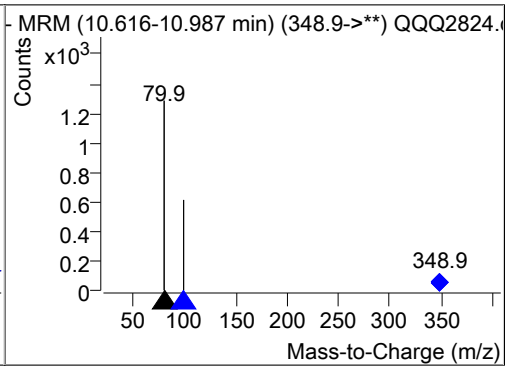




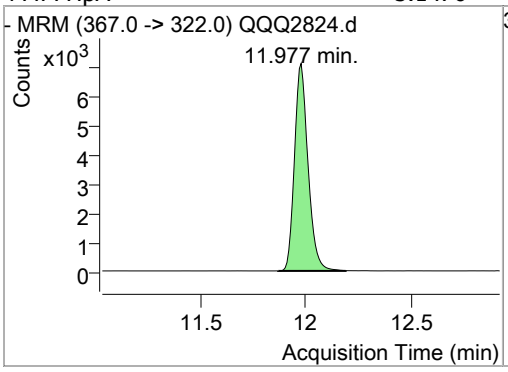
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	4.6334	10.72	0.03	28191	348.9 -> 98.9	46.0	37.3	56.0

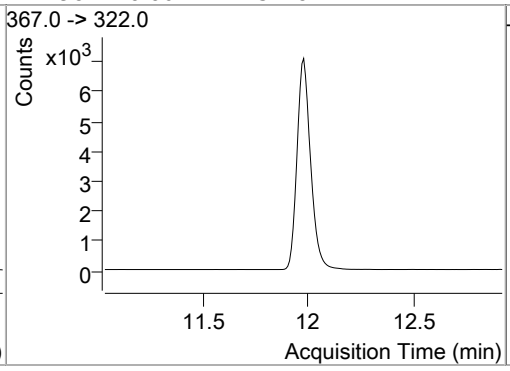


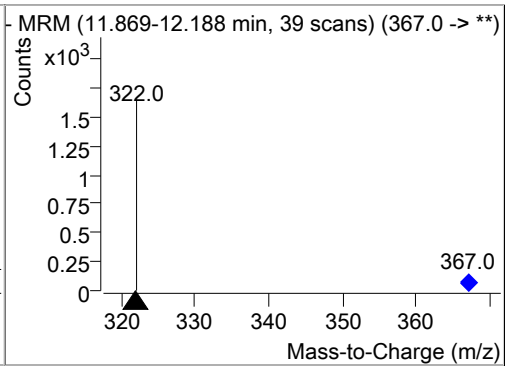




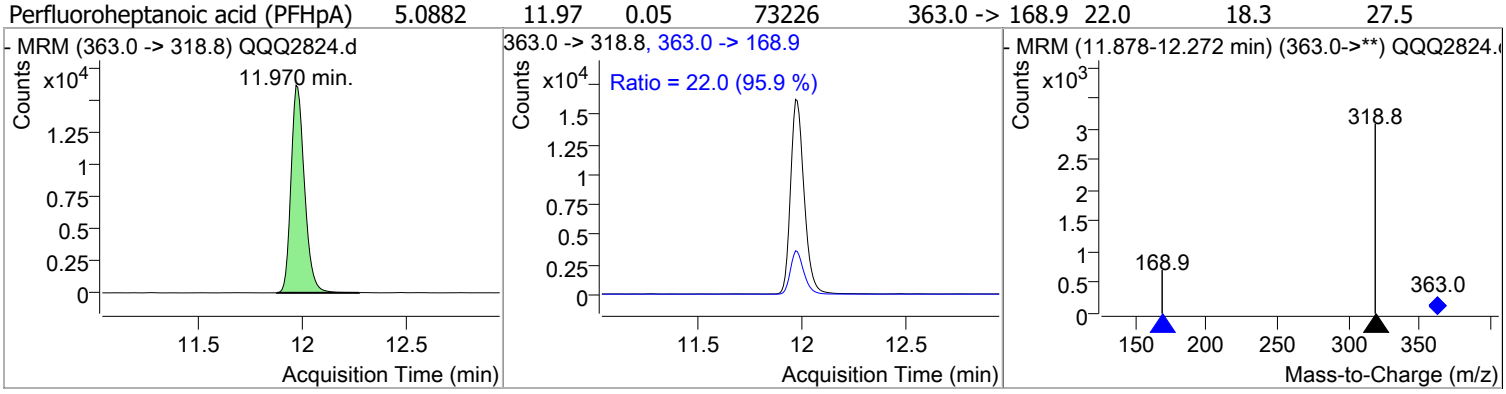
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	5.1476	11.98	0.06	31484				



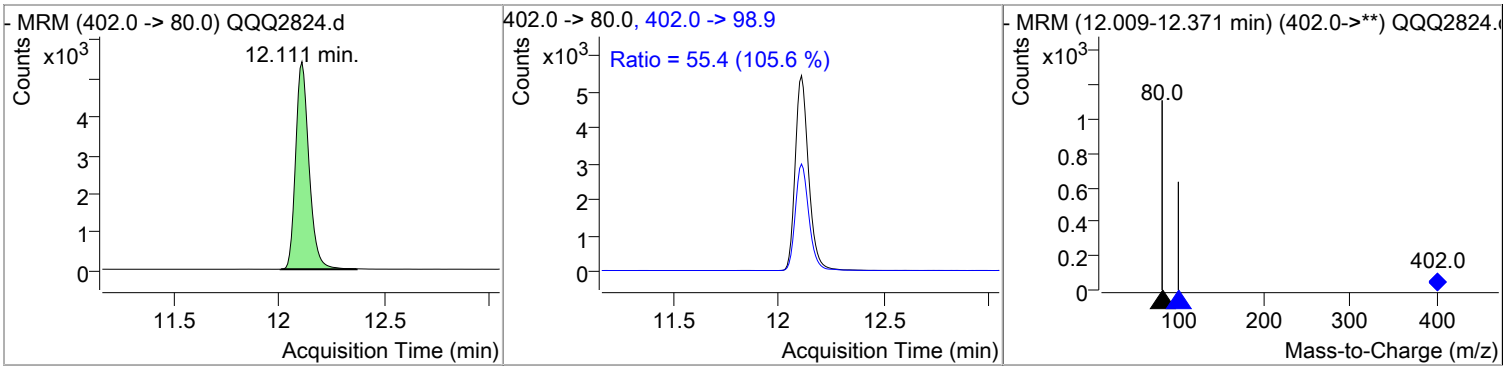




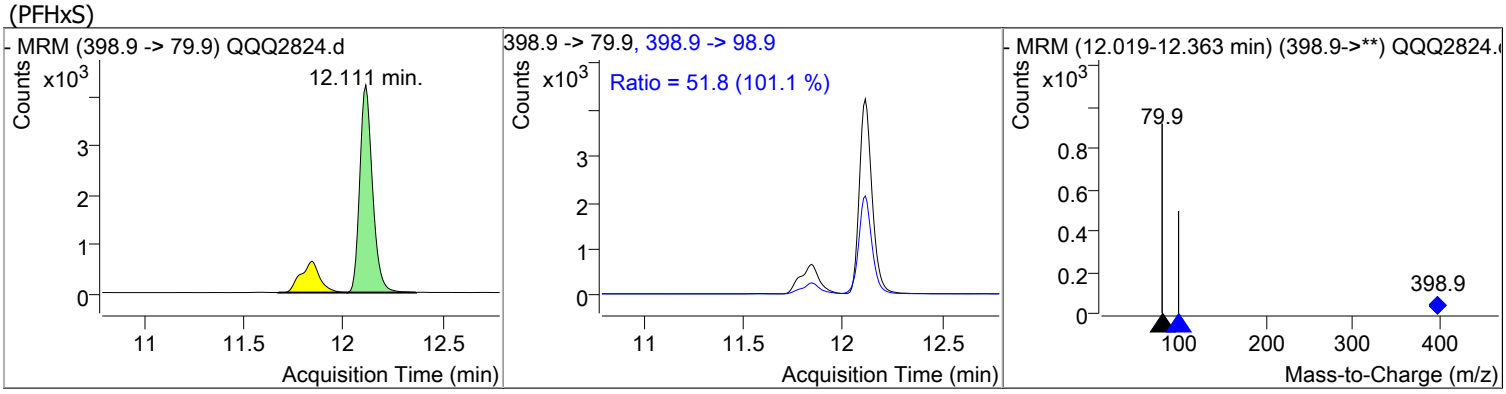
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	5.0882	11.97	0.05	73226	363.0 -> 168.9	22.0	18.3	27.5



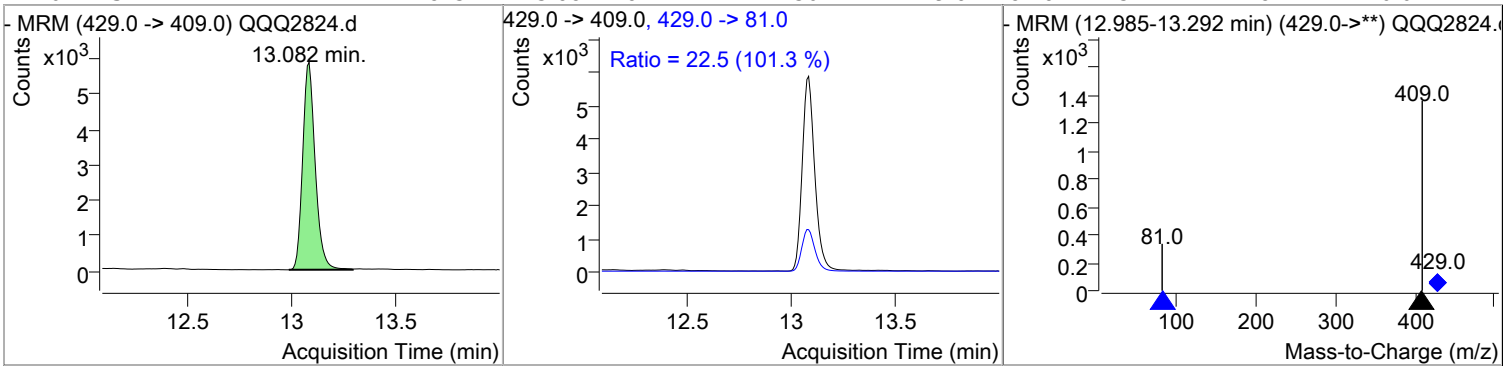
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	4.6910	12.11	0.07	23889	402.0 -> 98.9	55.4	42.0	62.9



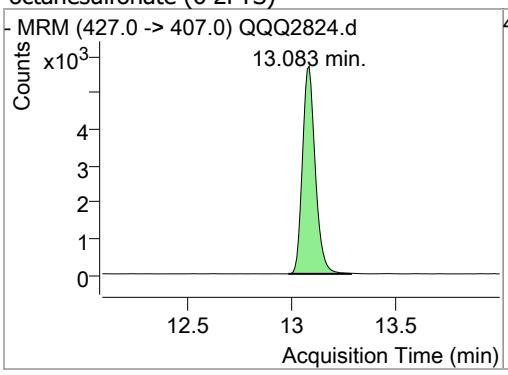
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	3.5616	12.11	0.07	18648	398.9 -> 98.9	51.8	41.0	61.5

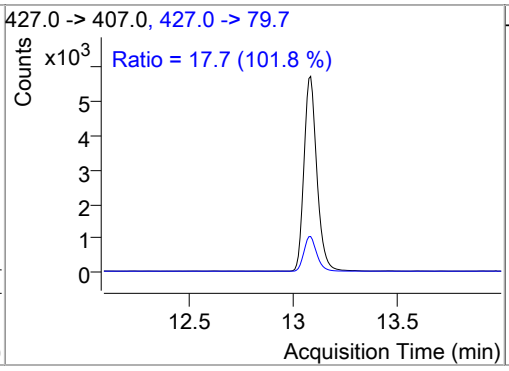


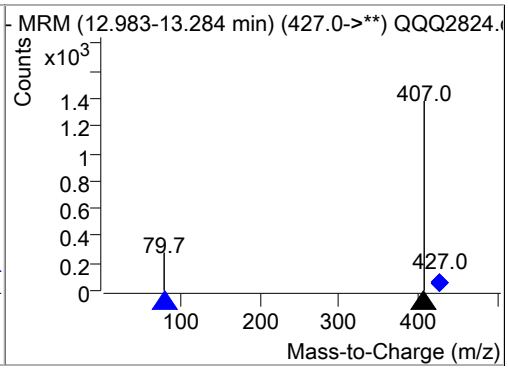
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	4.4873	13.08	0.11	24456	429.0 -> 81.0	22.5	17.8	26.6



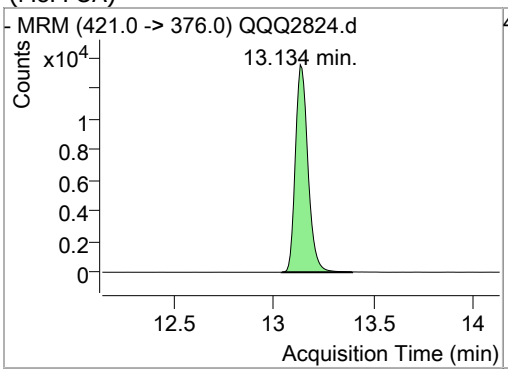
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	4.2443	13.08	0.11	24385	427.0 -> 79.7	17.7	13.9	20.8

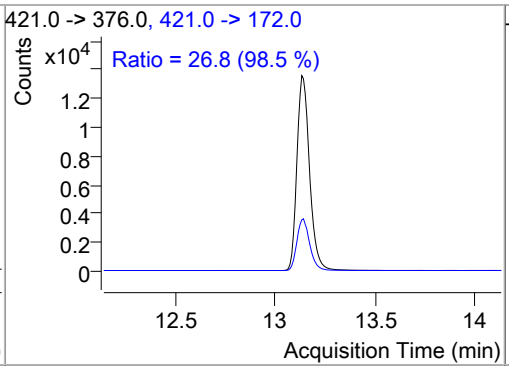


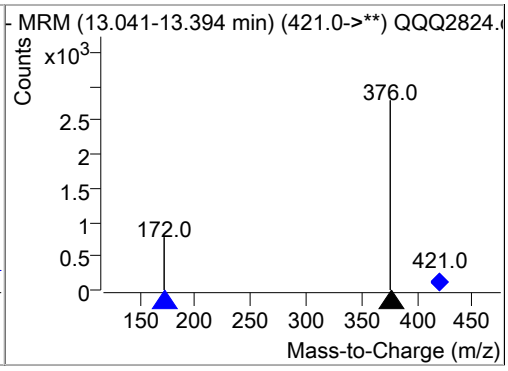




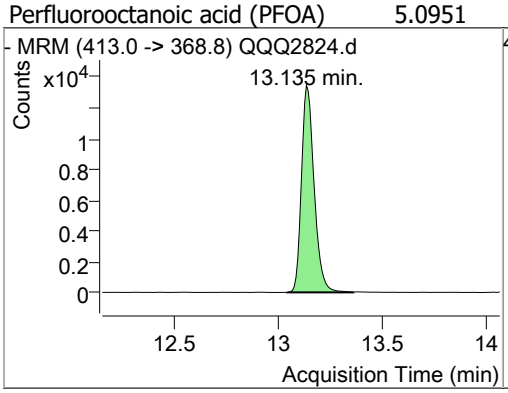
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.1101	13.13	0.11	59446	421.0 -> 172.0	26.8	21.7	32.6

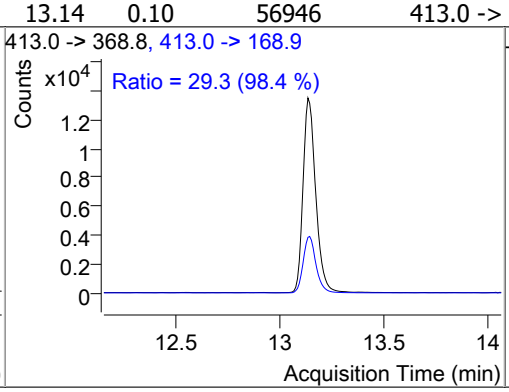


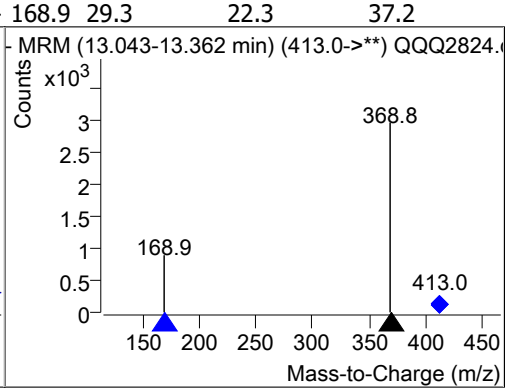




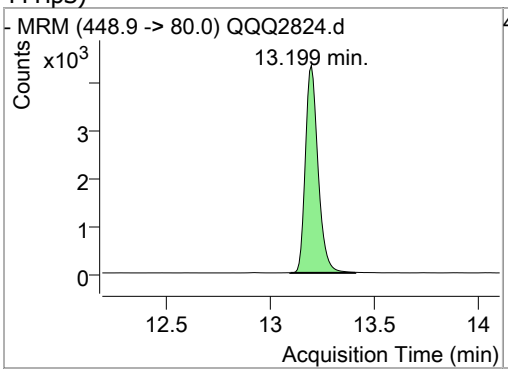
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	5.0951	13.14	0.10	56946	413.0 -> 168.9	29.3	22.3	37.2

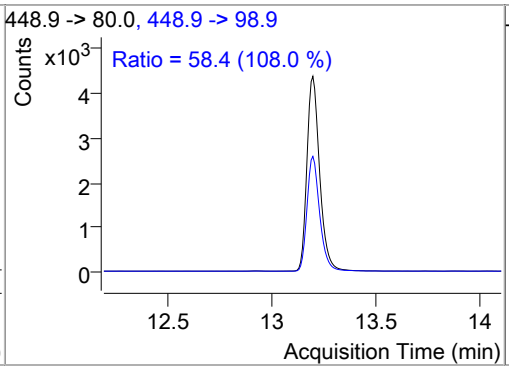


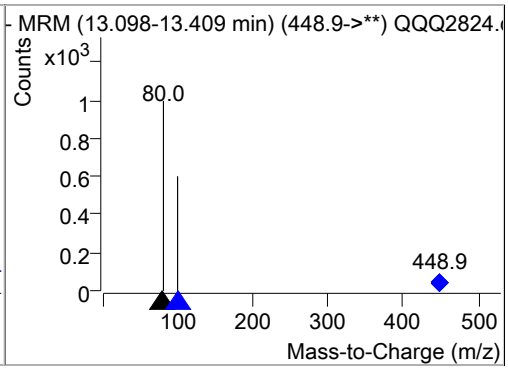




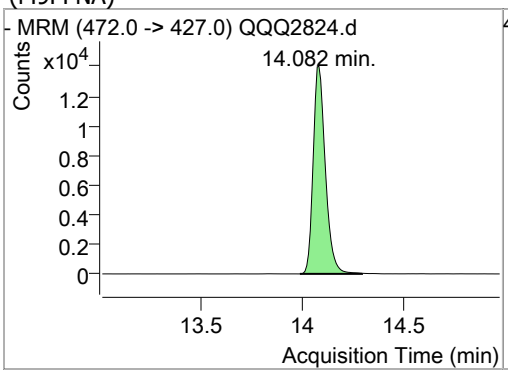
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	4.8414	13.20	0.12	18281	448.9 -> 98.9	58.4	43.3	64.9

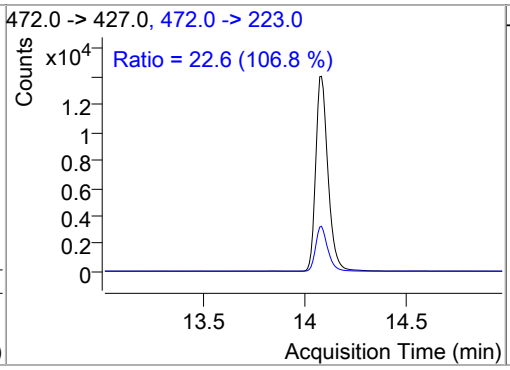


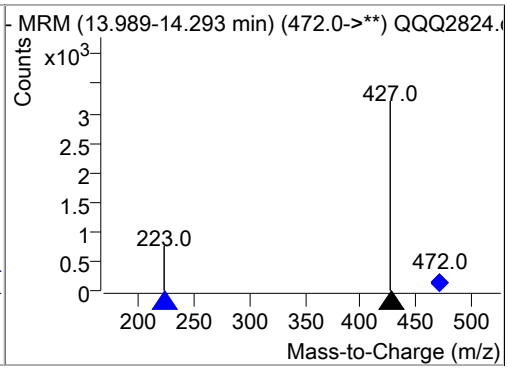




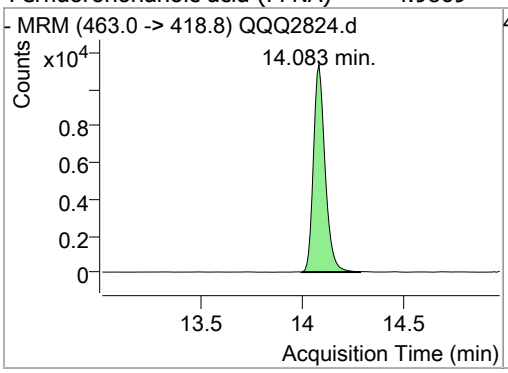
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	4.8839	14.08	0.18	58131	472.0 -> 223.0	22.6	16.9	25.4

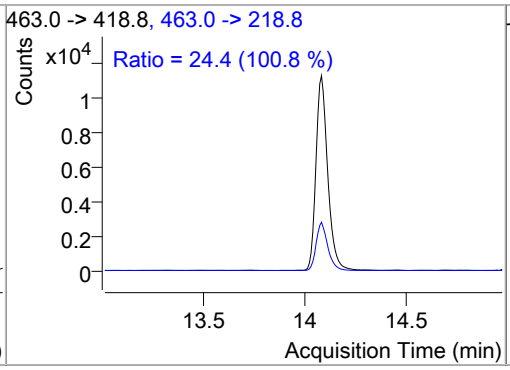


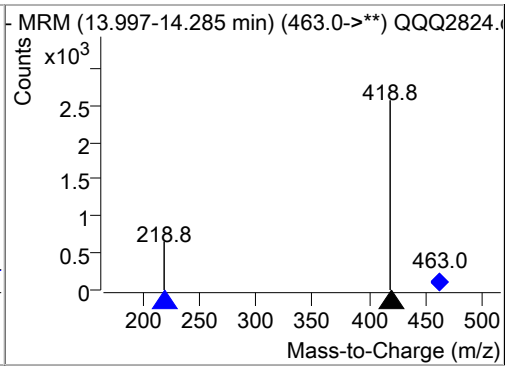




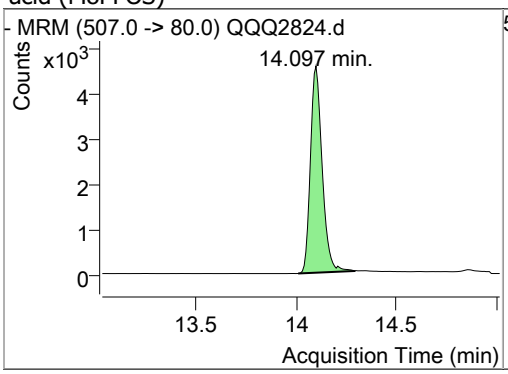
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	4.9869	14.08	0.18	44937	463.0 -> 218.8	24.4	19.4	29.1

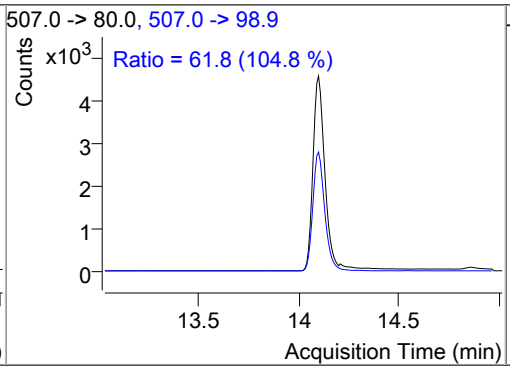


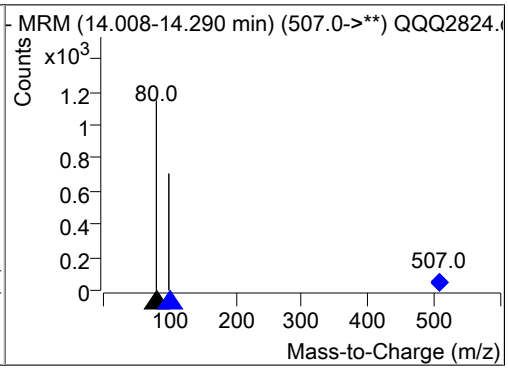




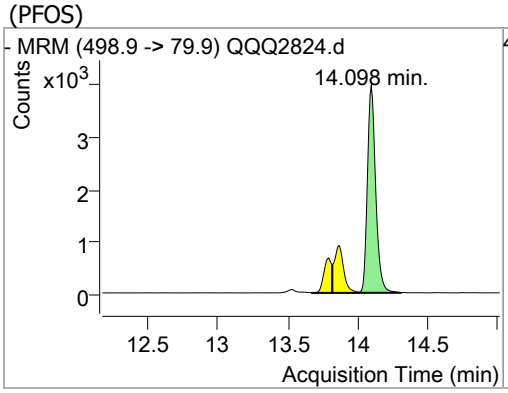
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.7647	14.10	0.19	18577	507.0 -> 98.9	61.8	47.2	70.8

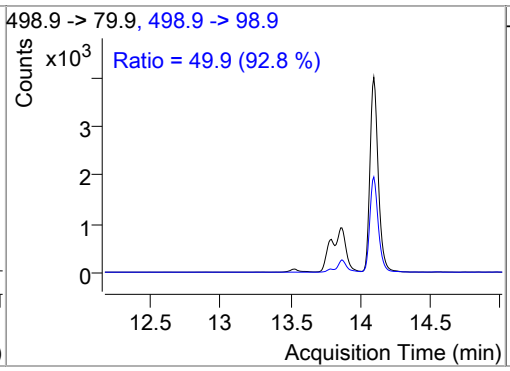


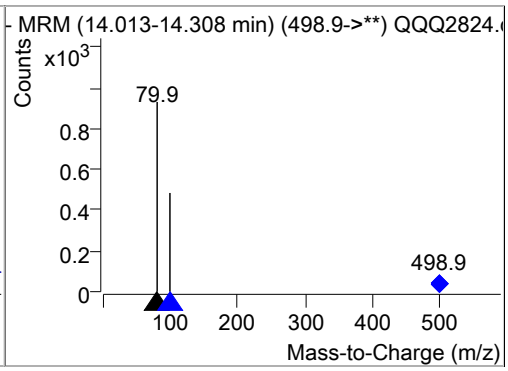




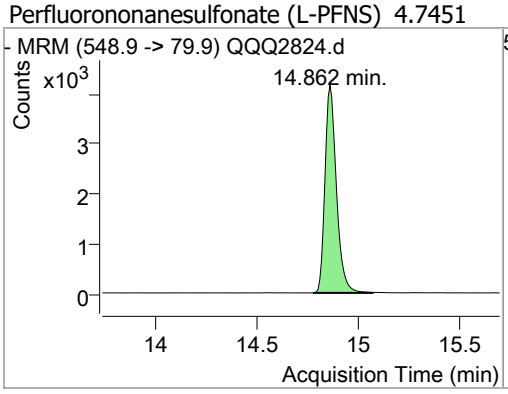
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	3.5023	14.10	0.19	16270	498.9 -> 98.9	49.9	43.1	64.6

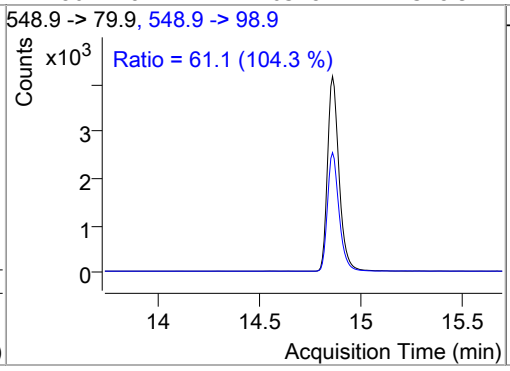


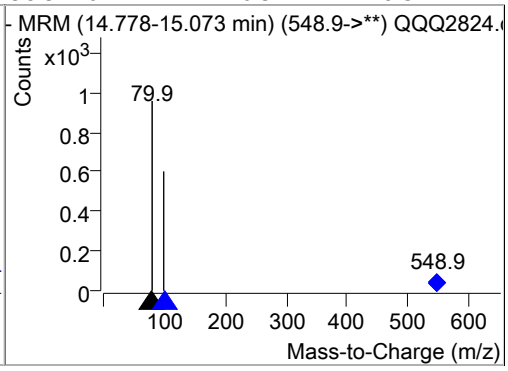




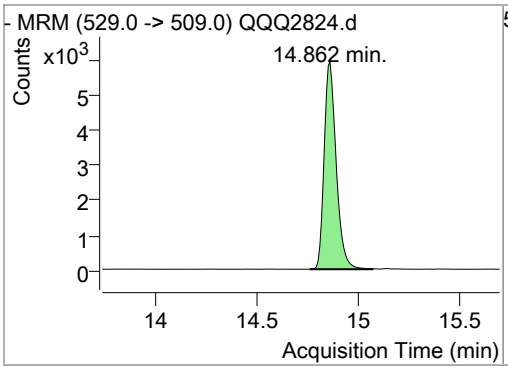
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	4.7451	14.86	0.24	16318	548.9 -> 98.9	61.1	46.9	70.3

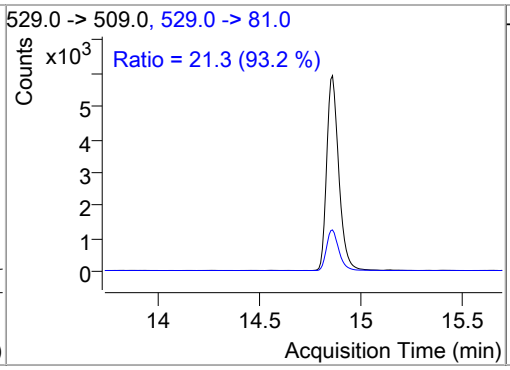


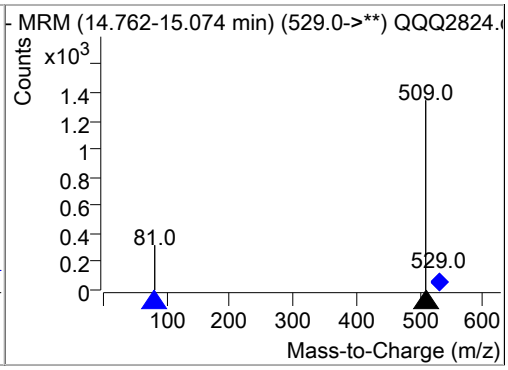




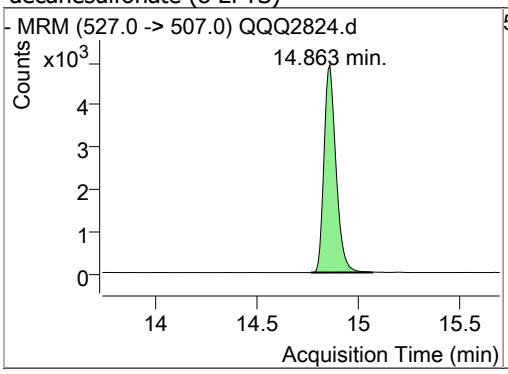
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	5.1959	14.86	0.24	24478	529.0 -> 81.0	21.3	18.3	27.4

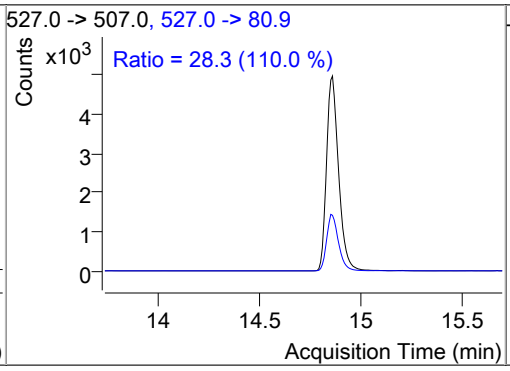


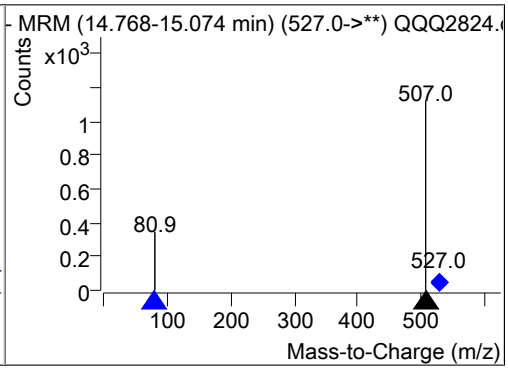




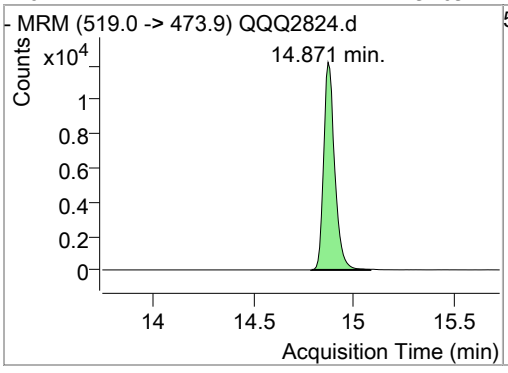
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	5.0261	14.86	0.24	20304	527.0 -> 80.9	28.3	20.6	30.9

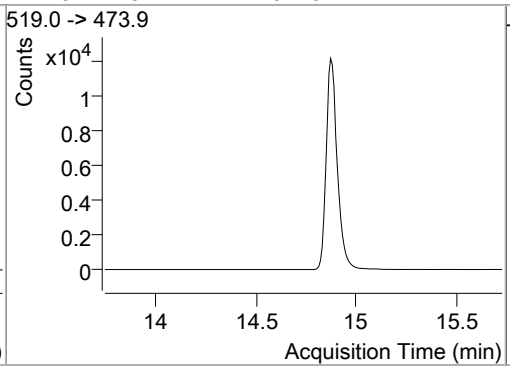


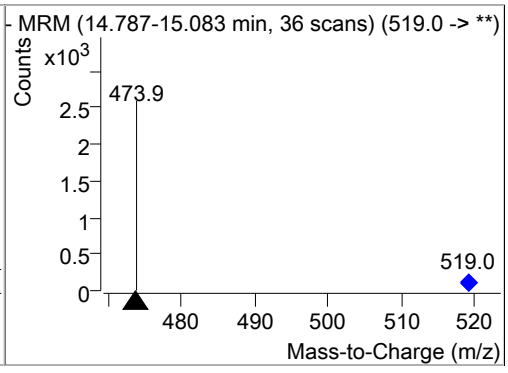




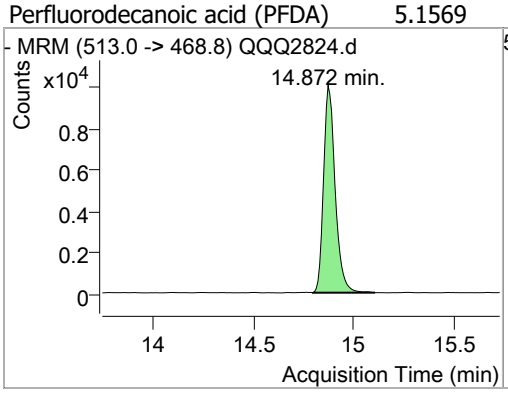
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	4.9269	14.87	0.24	46726				

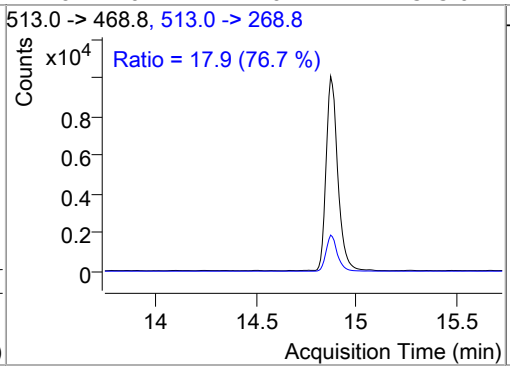


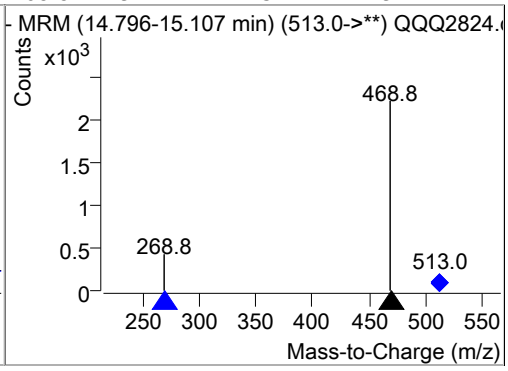




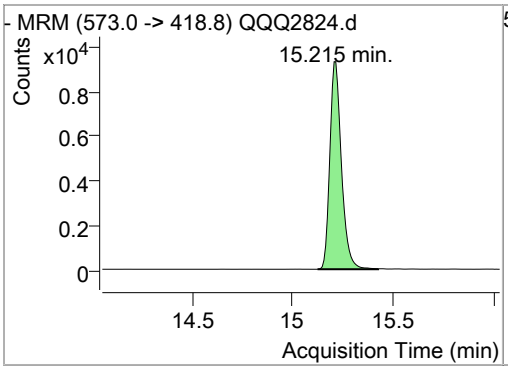
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	5.1569	14.87	0.24	40411	513.0 -> 268.8	17.9	17.5	29.1

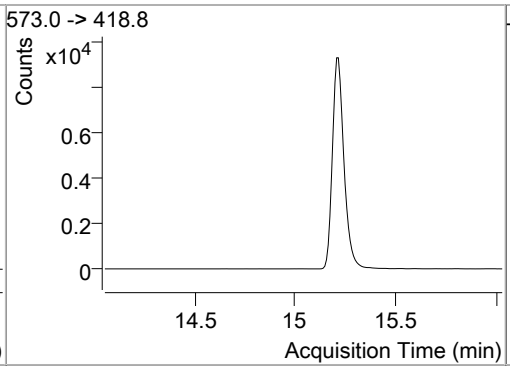


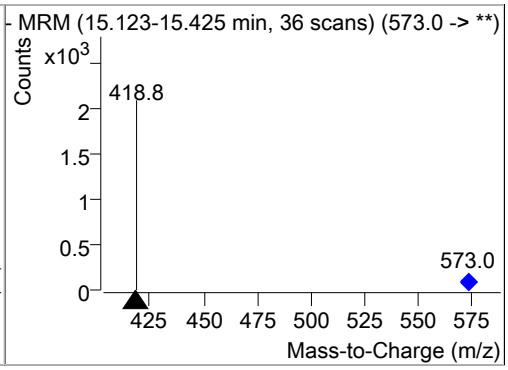




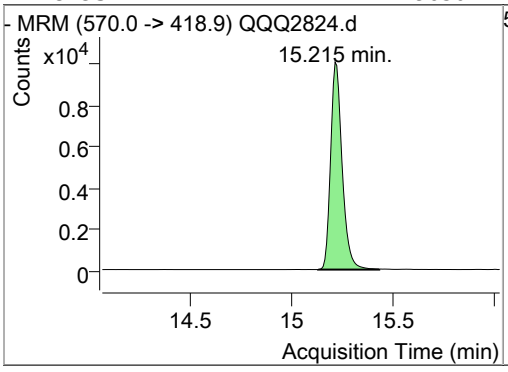
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	4.9195	15.21	0.28	37456				

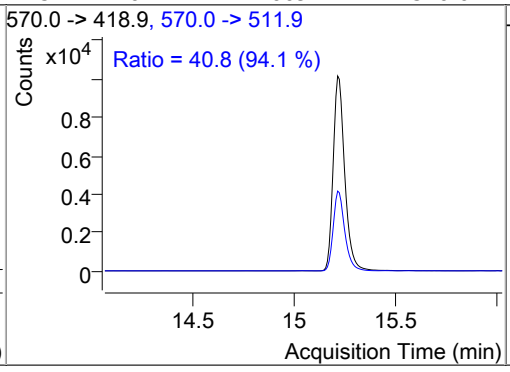


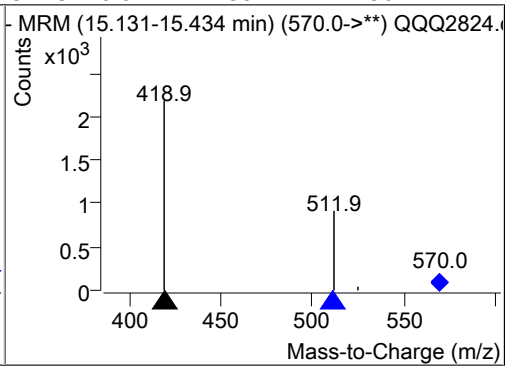




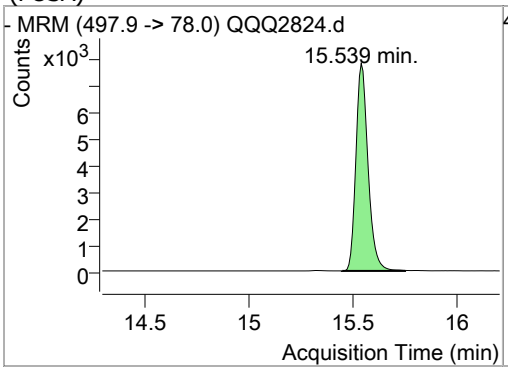
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	4.9036	15.21	0.27	40092	570.0 -> 511.9	40.8	30.4	56.4

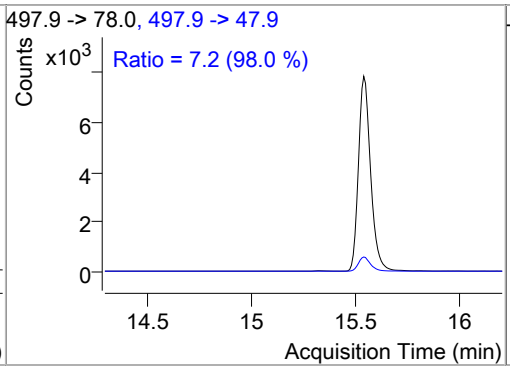


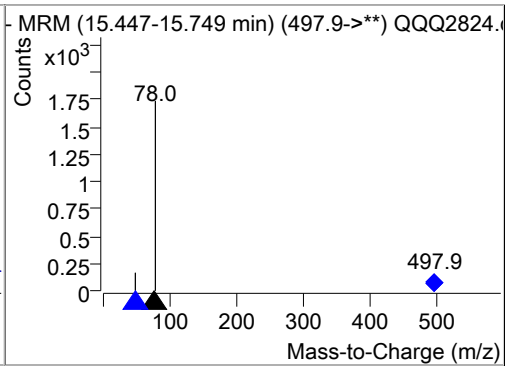




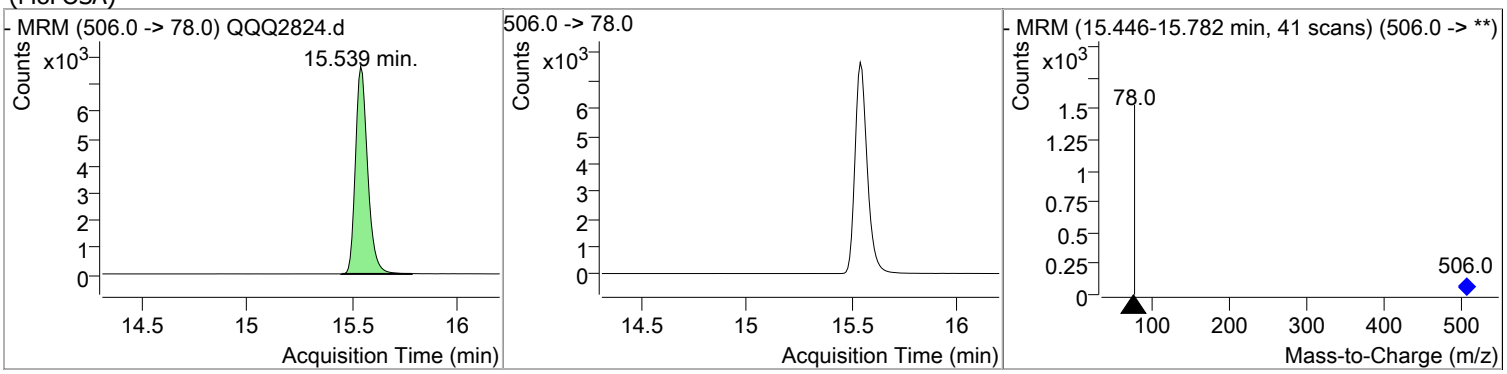
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	5.0093	15.54	0.35	31612	497.9 -> 47.9	7.2	5.9	8.8



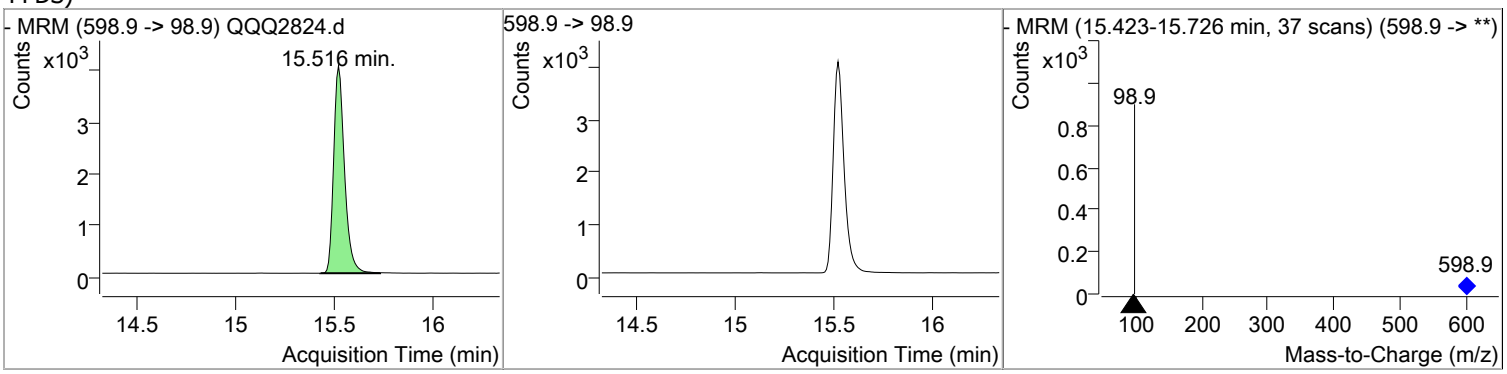




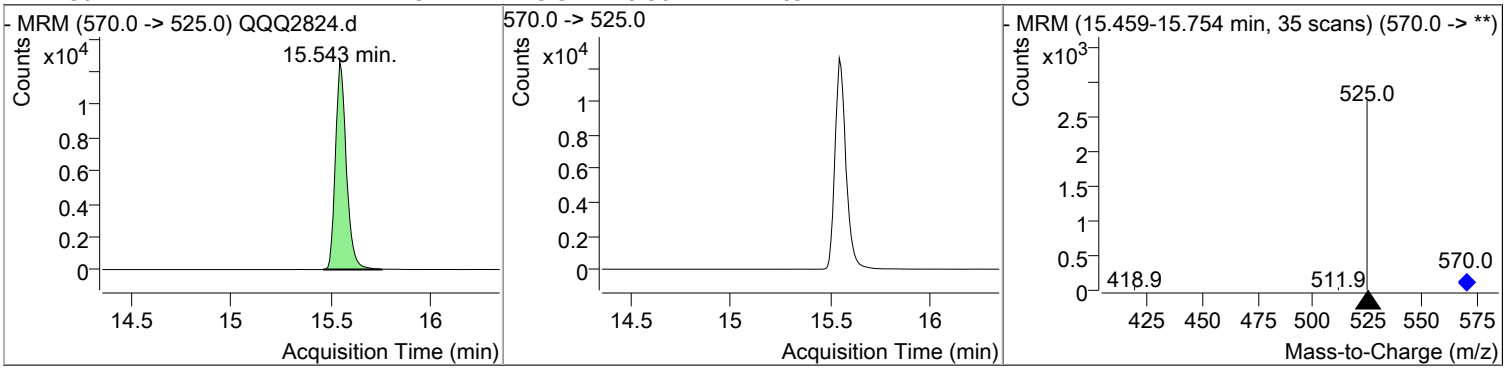
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.0882	15.54	0.34	30876				



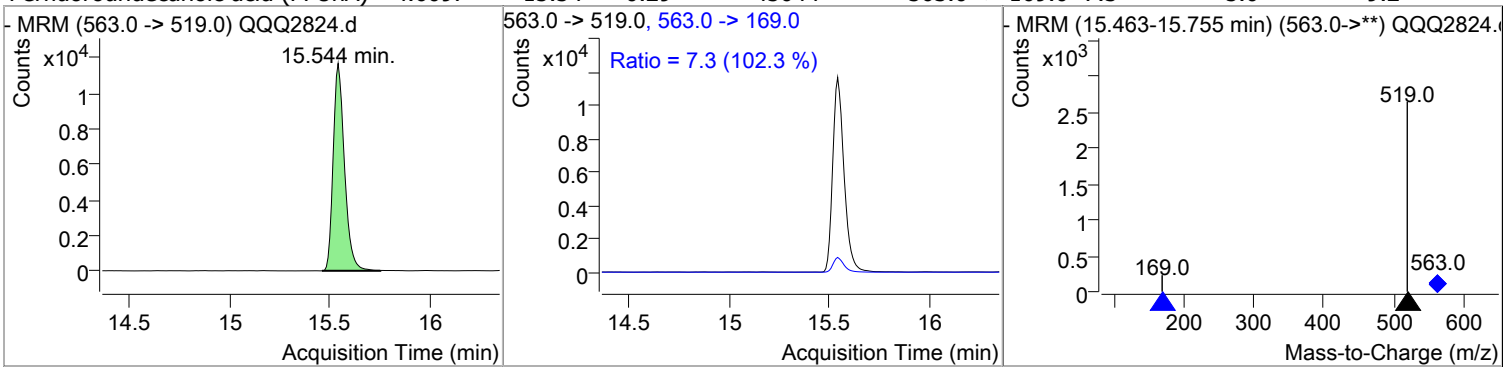
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	4.8571	15.52	0.30	15333				



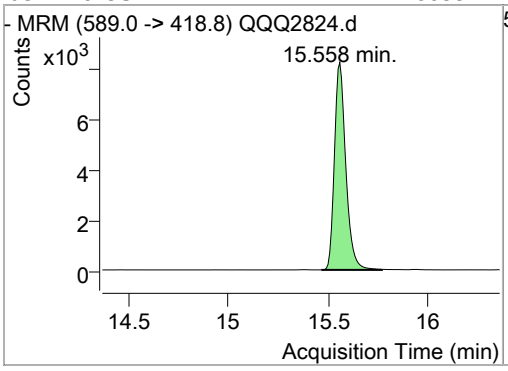
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	4.9242	15.54	0.30	47692				

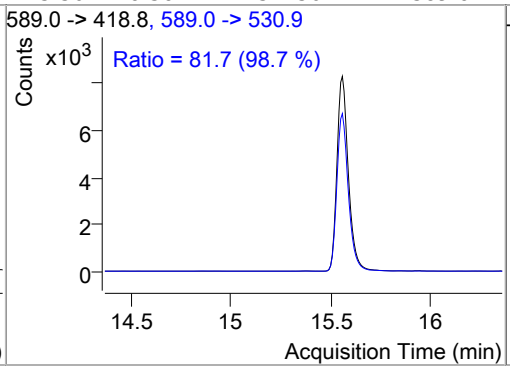


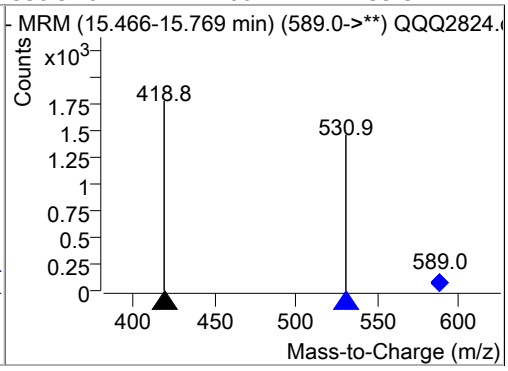
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	4.6097	15.54	0.29	45644	563.0 -> 169.0	7.3	5.0	9.2



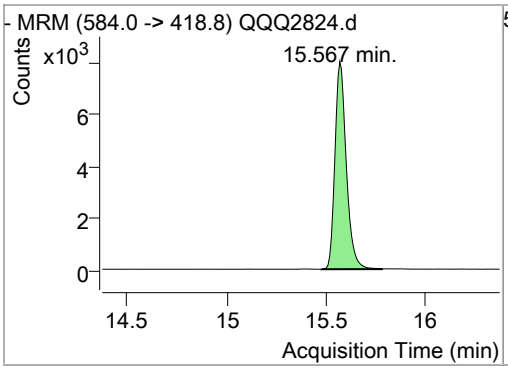
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	4.8855	15.56	0.30	32456	589.0 -> 530.9	81.7	66.2	99.3

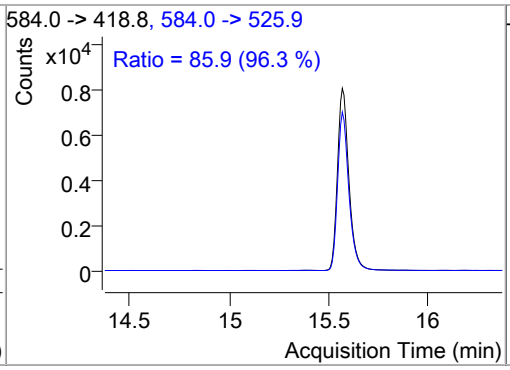


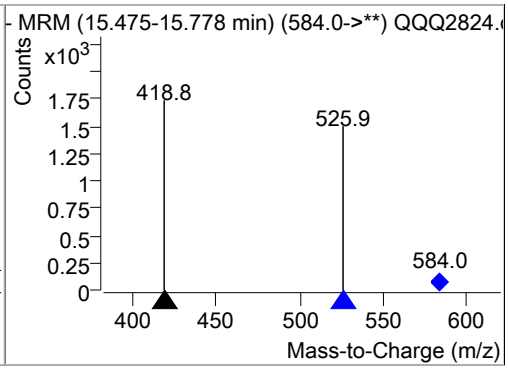




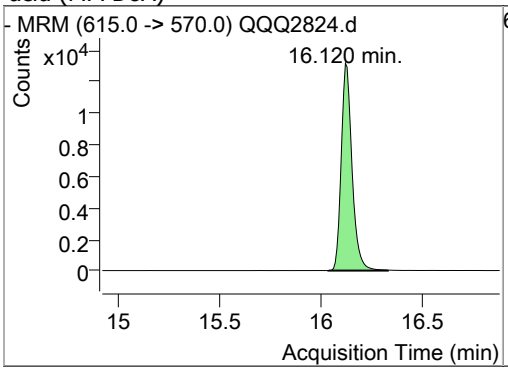
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	4.9360	15.57	0.30	31632	584.0 -> 525.9	85.9	71.3	107.0

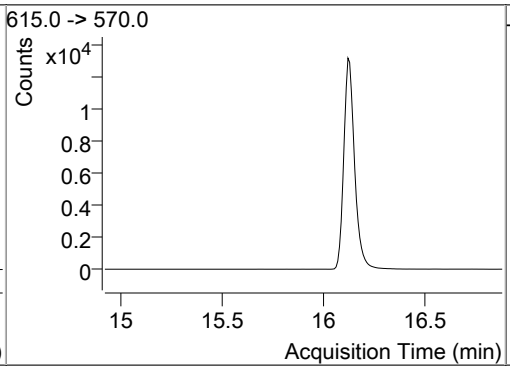


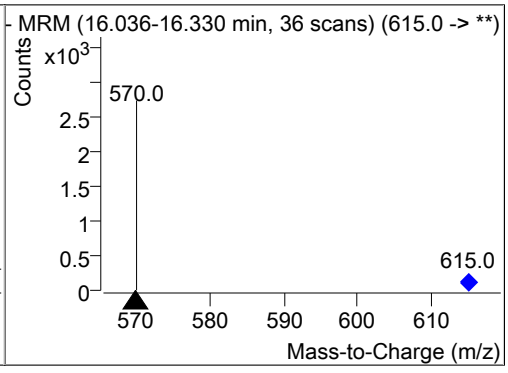




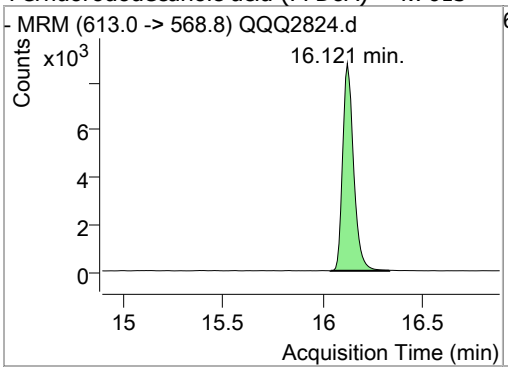
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.1325	16.12	0.35	48673				

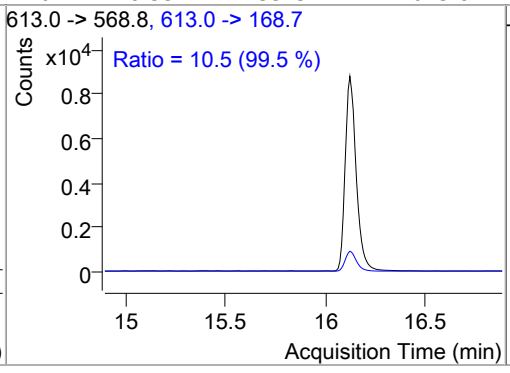


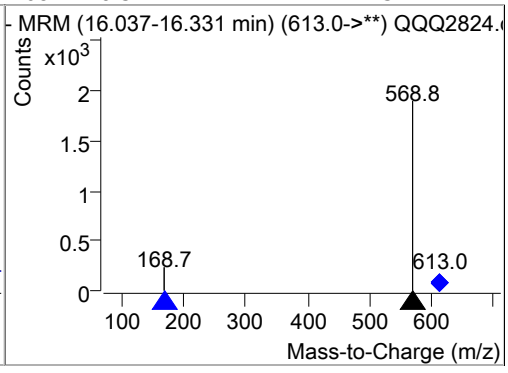




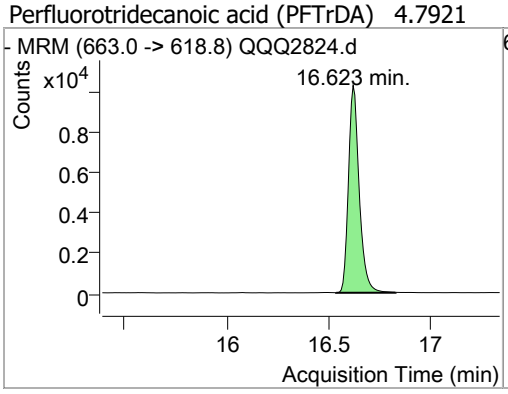
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	4.7613	16.12	0.35	33492	613.0 -> 168.7	10.5	7.4	13.7

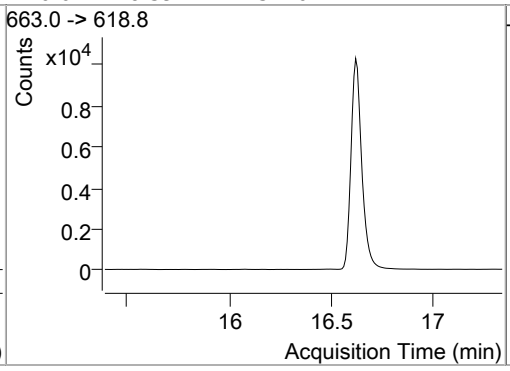


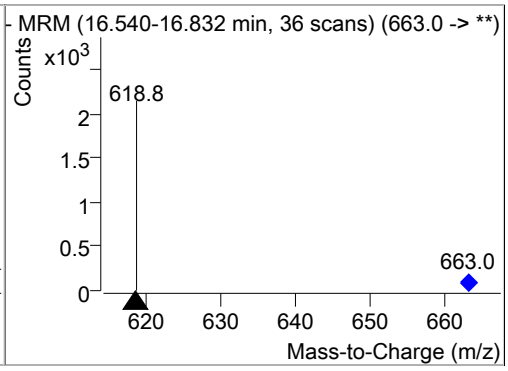




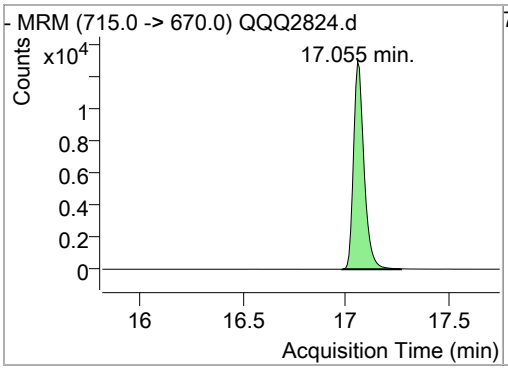
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	4.7921	16.62	0.39	37762				

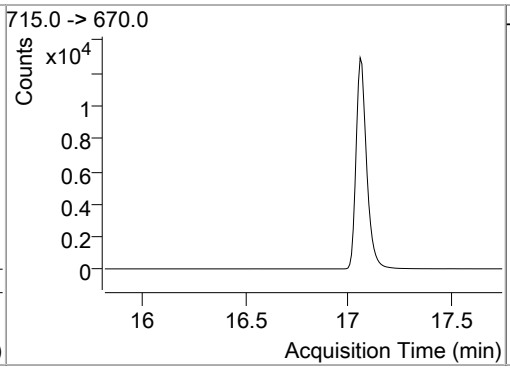


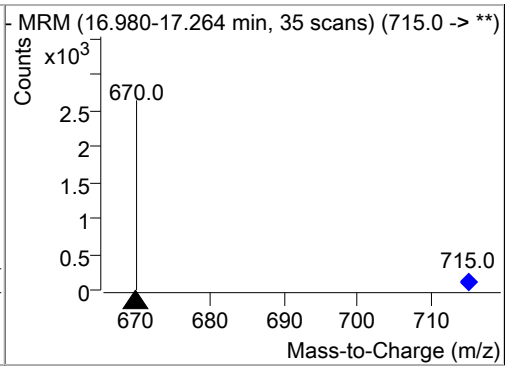




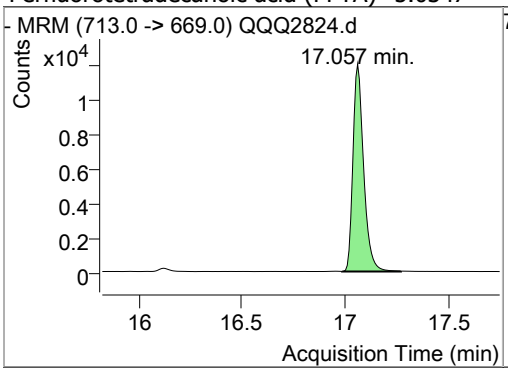
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	5.1542	17.05	0.42	45581				

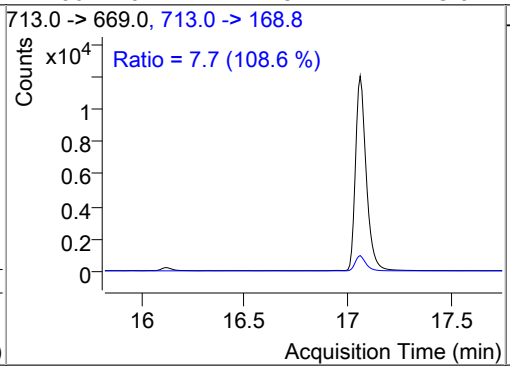


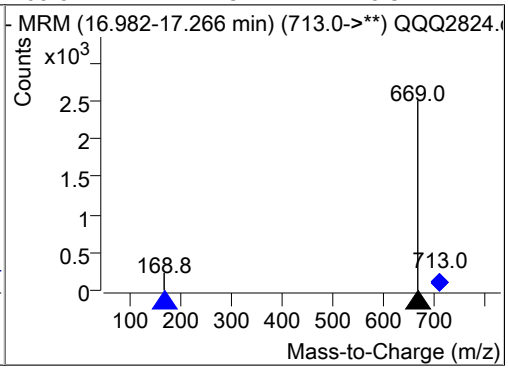




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	5.0347	17.06	0.42	42947	713.0 -> 168.8	7.7	5.7	8.5







Data File	QQQ2825.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/19/2019 9:29:28 PM
Sample Name	SEQ-CAL6	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	10.0 ng/mL
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

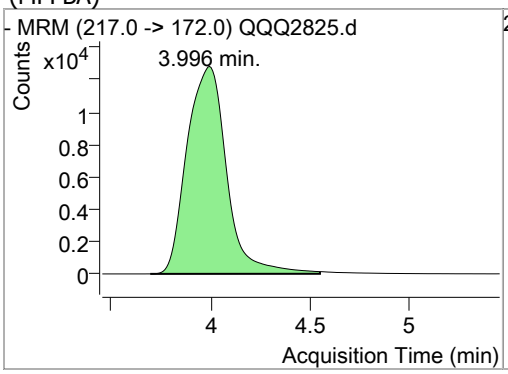
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.143	417.0 -> 372.0	222478	10.0000	ng/ml	0.110
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.996	217.0 -> 172.0	178515	10.2439	ng/ml	-0.192
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 102.44%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.039	268.0 -> 223.0	239123	10.0650	ng/ml	-0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 100.65%		
M3PFBS	8.785	302.0 -> 79.9	65994	8.7995	ng/ml	-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 87.99%		
M2-4-2FTS	10.258	329.0 -> 309.0	63316	9.2847	ng/ml	0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 92.85%		
M5PFHxA	10.403	318.0 -> 273.0	227290	10.1554	ng/ml	0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 101.55%		
M4PFHpA	11.969	367.0 -> 322.0	60654	9.8025	ng/ml	0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 98.02%		
M3PFHxS	12.111	402.0 -> 80.0	46409	9.0085	ng/ml	0.068
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 90.08%		
M2-6-2FTS	13.082	429.0 -> 409.0	45354	8.2257	ng/ml	0.109
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 82.26%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.143	421.0 -> 376.0	120263	10.2189	ng/ml	0.118
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 102.19%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.082	472.0 -> 427.0	116441	9.6701	ng/ml	0.178
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 96.70%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.097	507.0 -> 80.0	36361	9.2184	ng/ml	0.186
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 92.18%		
M2-8-2FTS	14.862	529.0 -> 509.0	40228	9.2190	ng/ml	0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 92.19%		
M6PFDA	14.871	519.0 -> 473.9	95441	9.9476	ng/ml	0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 99.48%		
d3-N-MeFOSAA	15.215	573.0 -> 418.8	75354	9.7829	ng/ml	0.278
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 97.83%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	59355	9.6688	ng/ml	0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 96.69%		
M7PFUdA	15.543	570.0 -> 525.0	93845	9.5778	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 95.78%		
d5-N-EtFOSAA	15.558	589.0 -> 418.8	60206	8.9581	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 89.58%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.129	615.0 -> 570.0	90277	9.4098	ng/ml	0.353
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 94.10%		
M2PFTeDA	17.055	715.0 -> 670.0	88562	9.8989	ng/ml	0.418
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 98.99%		

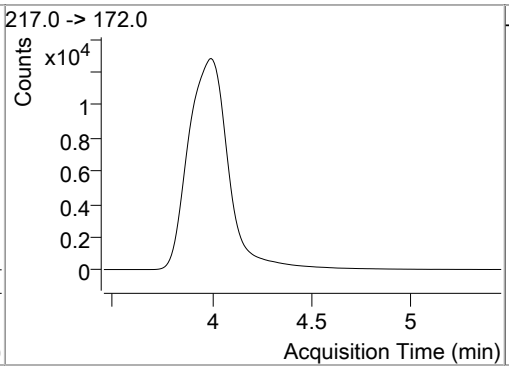
Target Compounds QValue

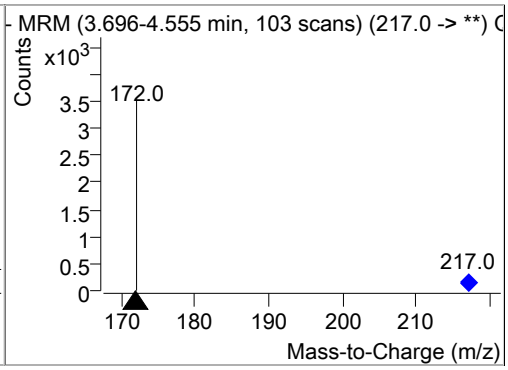
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.000	213.0 -> 168.9	162609	10.2120	ng/ml	100
Perfluoro-n-pentanoic acid (PFPeA)	8.040	263.0 -> 219.0	212217	10.1272	ng/ml	100
Perfluorobutanesulfonic acid (PFBS)	8.788	298.9 -> 79.9	57917	8.4564	ng/ml	99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.260	327.0 -> 307.0	59882	9.2857	ng/ml	98
Perfluorohexanoic acid (PFHxA)	10.406	313.0 -> 268.9	190021	9.9208	ng/ml	100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.716	348.9 -> 79.9	56598	9.1953	ng/ml	98
Perfluoroheptanoic acid (PFHpA)	11.978	363.0 -> 318.8	141538	9.7215	ng/ml	97
Perfluorohexanesulfonic acid (PFHxS)	12.112	398.9 -> 79.9	35831	6.7645	ng/ml	99
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.075	427.0 -> 407.0	45695	7.8617	ng/ml	98
Perfluorooctanoic acid (PFOA)	13.144	413.0 -> 368.8	105976	9.3728	ng/ml	97
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.199	448.9 -> 80.0	37327	9.7712	ng/ml	97
Perfluorononanoic acid (PFNA)	14.083	463.0 -> 418.8	80018	8.7778	ng/ml	99
Perfluorooctanesulfonic acid (PFOS)	14.098	498.9 -> 79.9	31238	6.6469	ng/ml	96
Perfluorononanesulfonate (L-PFNS)	14.862	548.9 -> 79.9	31460	9.0426	ng/ml	98
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.863	527.0 -> 507.0	34902	9.3042	ng/ml	97
Perfluorodecanoic acid (PFDA)	14.881	513.0 -> 468.8	75718	9.5514	ng/ml	93
N-MeFOSAA	15.215	570.0 -> 418.9	82424	9.9649	ng/ml	95
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	62211	9.7443	ng/ml	99
Perfluoro-1-decanesulfonate (L-PFDS)	15.516	598.9 -> 98.9	28819	9.0238	ng/ml	100
Perfluoroundecanoic acid (PFUnA)	15.552	563.0 -> 519.0	93953	9.3792	ng/ml	99
N-EtFOSAA	15.567	584.0 -> 418.8	59838	9.2298	ng/ml	99
Perfluorododecanoic acid (PFDoA)	16.121	613.0 -> 568.8	70540	9.9126	ng/ml	98
Perfluorotridecanoic acid (PFTrDA)	16.623	663.0 -> 618.8	74947	9.4014	ng/ml	100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	82953	9.6126	ng/ml	98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

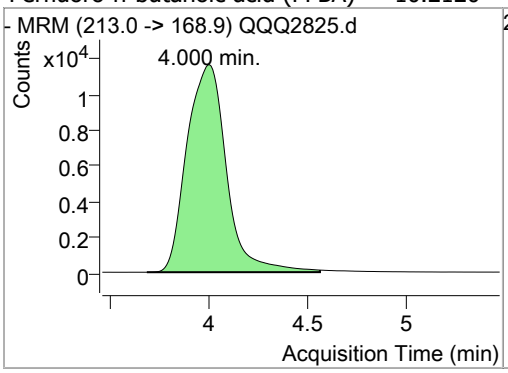
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	10.2439	4.00	-0.19	178515				

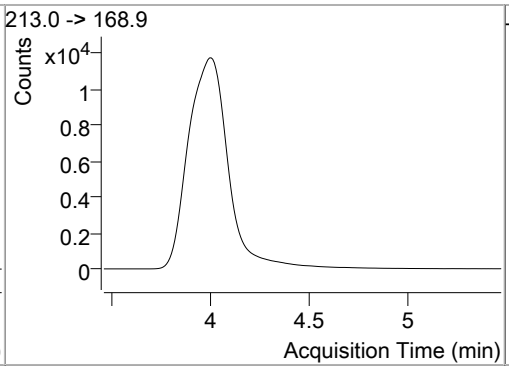


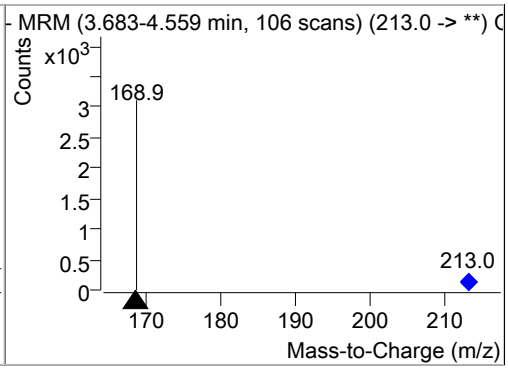




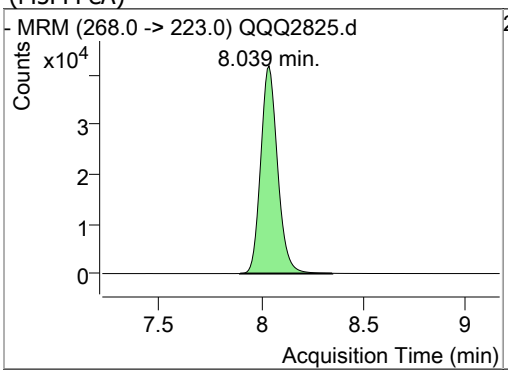
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	10.2120	4.00	-0.19	162609				

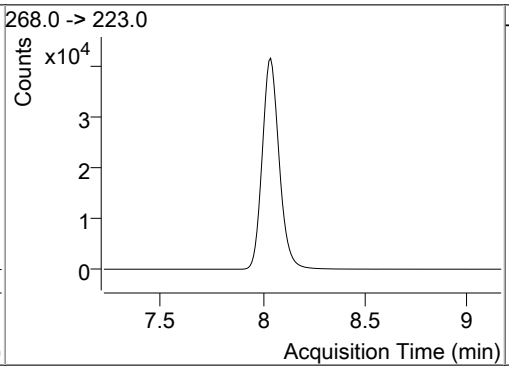


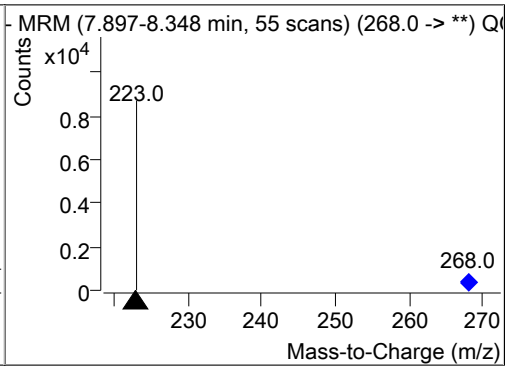




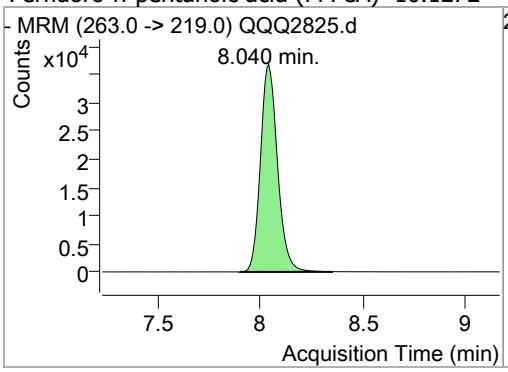
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	10.0650	8.04	-0.08	239123				

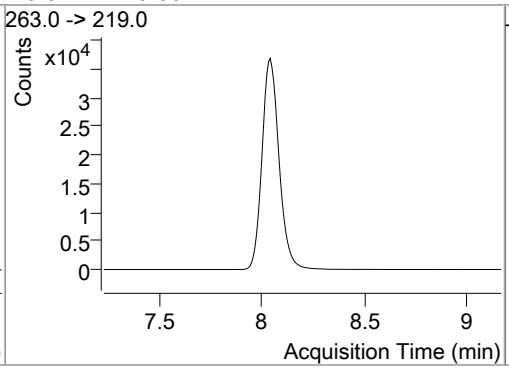


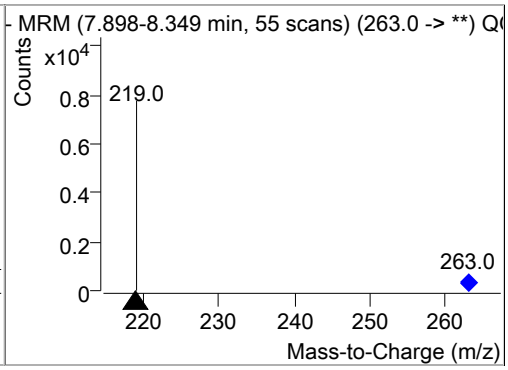




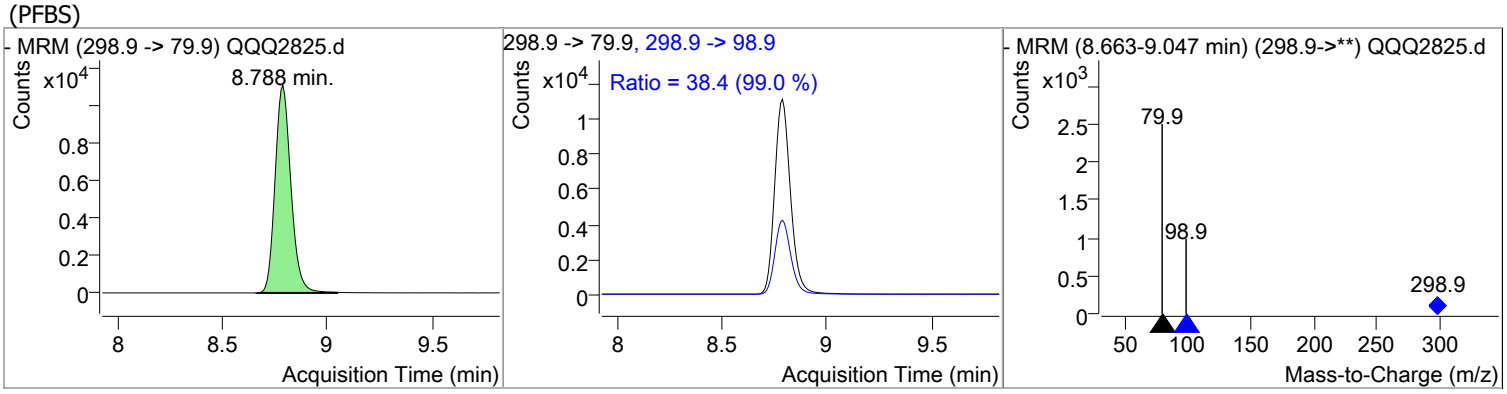
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	10.1272	8.04	-0.08	212217				



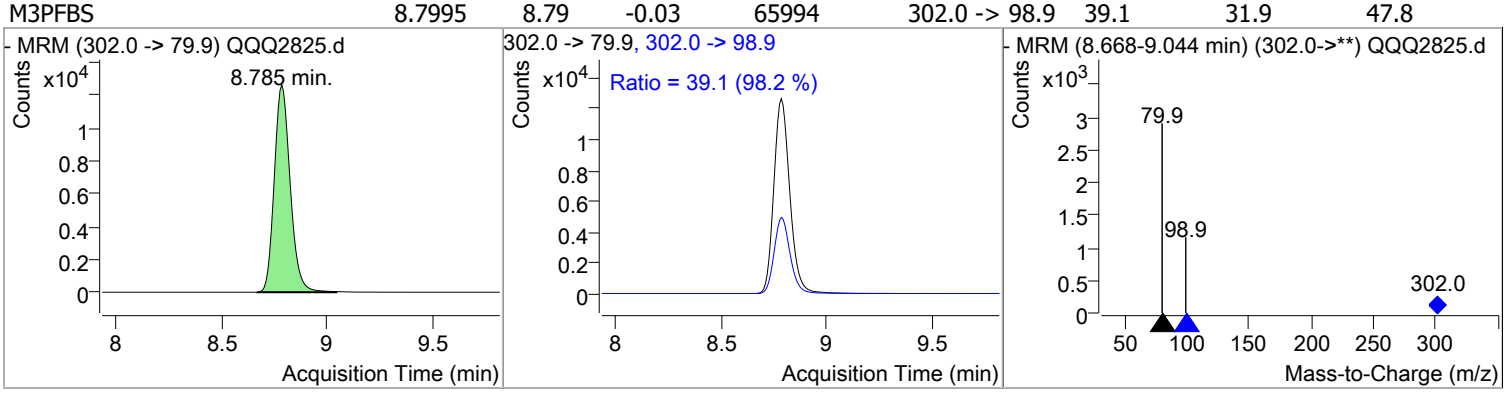




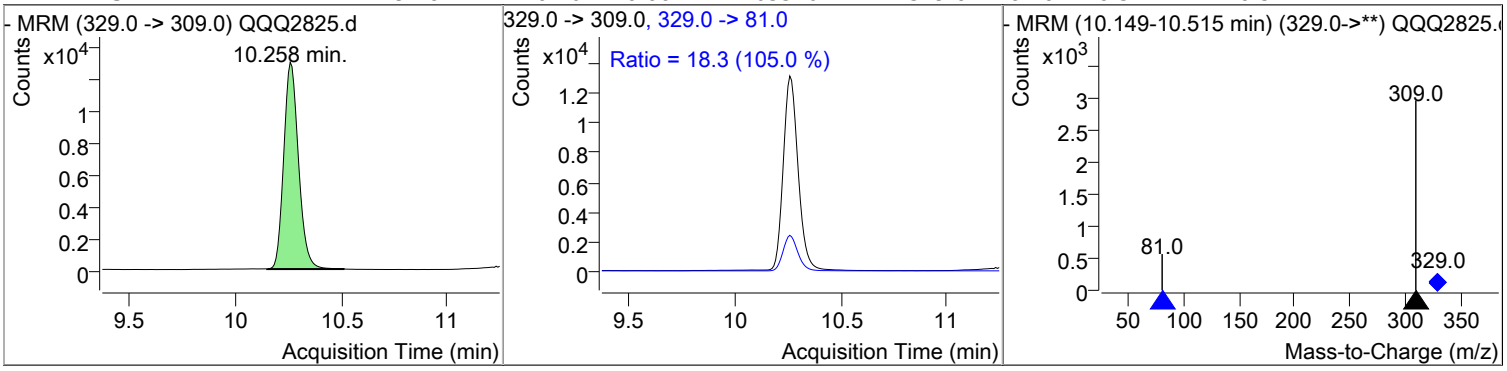
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	8.4564	8.79	-0.03	57917	298.9 -> 98.9	38.4	31.0	46.5



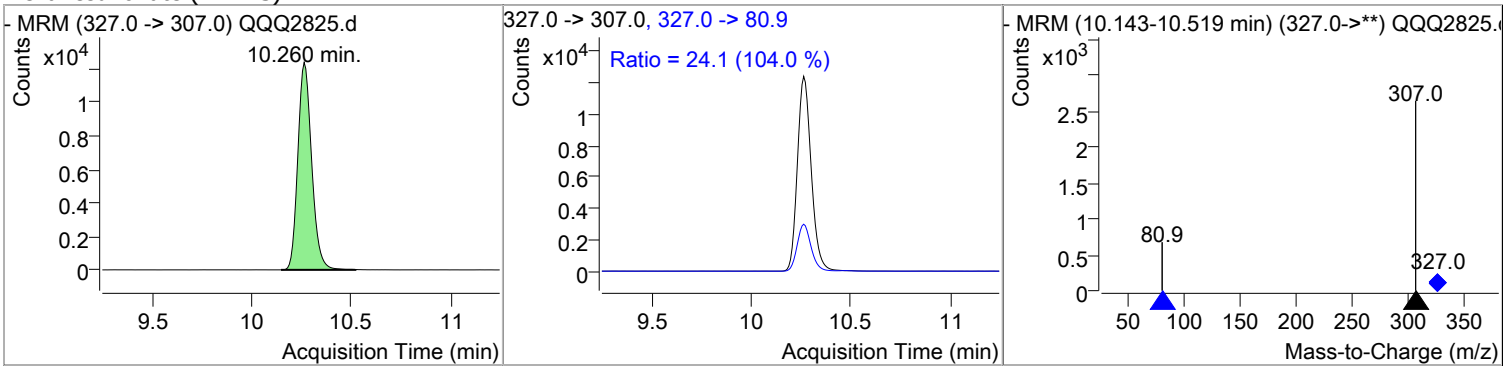
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	8.7995	8.79	-0.03	65994	302.0 -> 98.9	39.1	31.9	47.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	9.2847	10.26	0.00	63316	329.0 -> 81.0	18.3	10.5	24.4

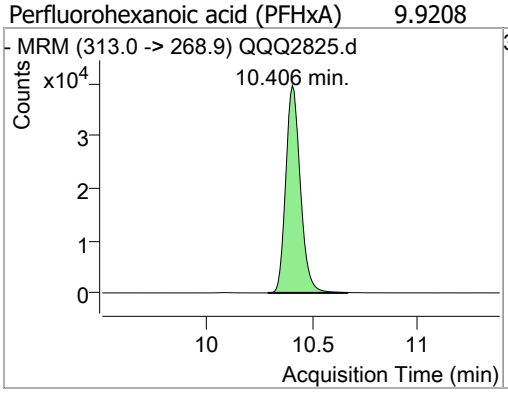


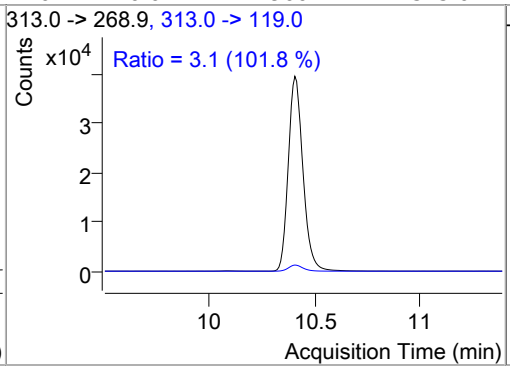
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	9.2857	10.26	0.00	59882	327.0 -> 80.9	24.1	13.9	32.5

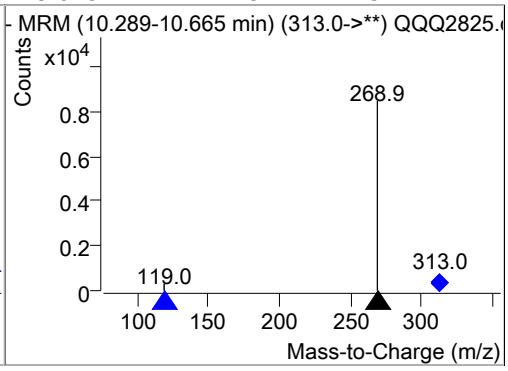


Quantitation Results Report (Not Reviewed)

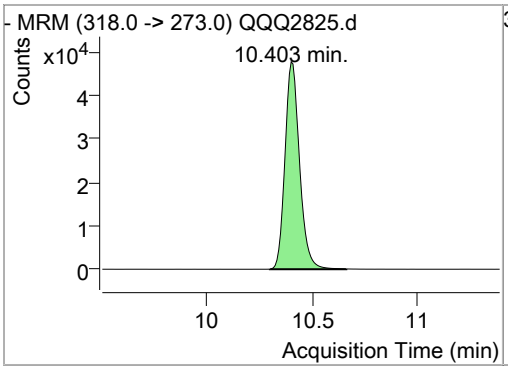
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	9.9208	10.41	0.01	190021	313.0 -> 119.0	3.1	2.5	3.7

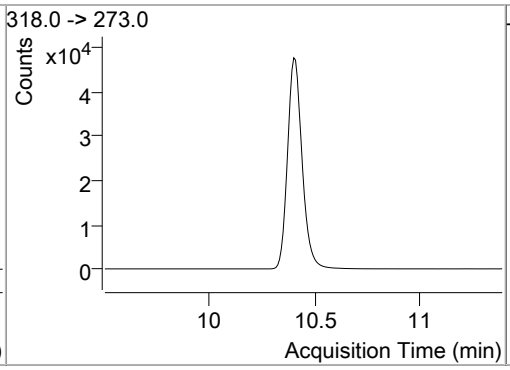


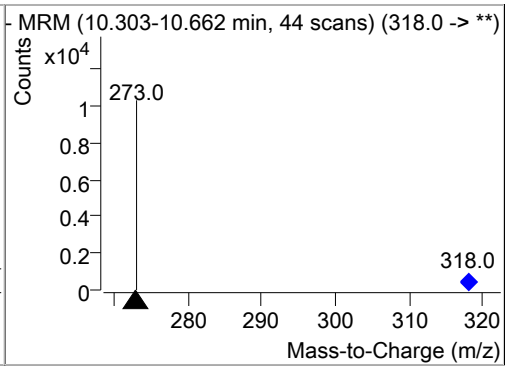




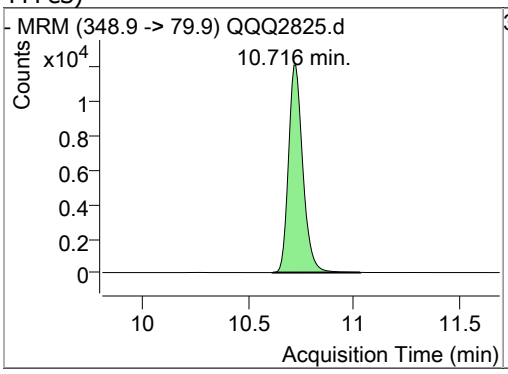
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	10.1554	10.40	0.00	227290				

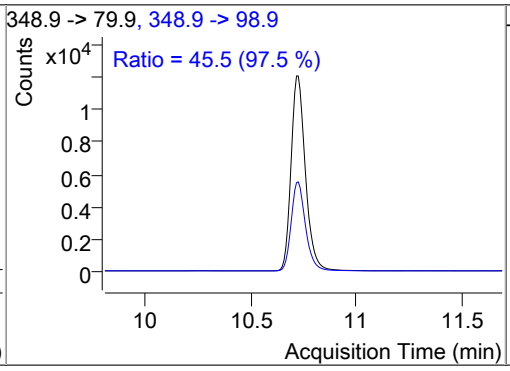


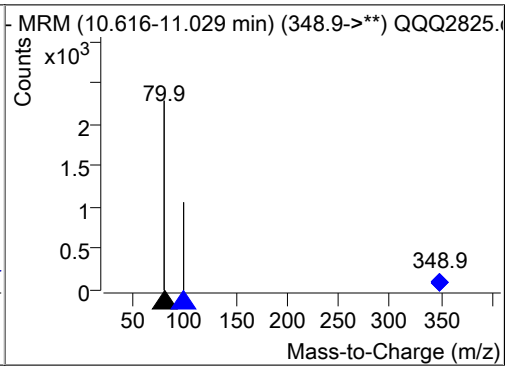




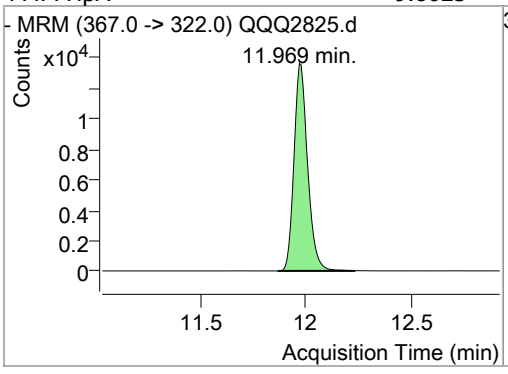
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	9.1953	10.72	0.02	56598	348.9 -> 98.9	45.5	37.3	56.0

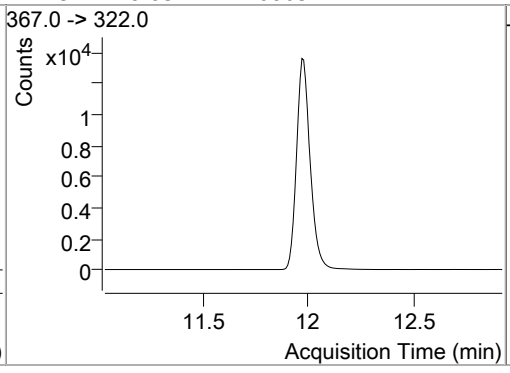


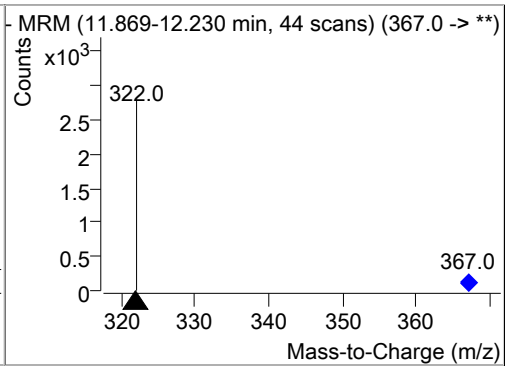




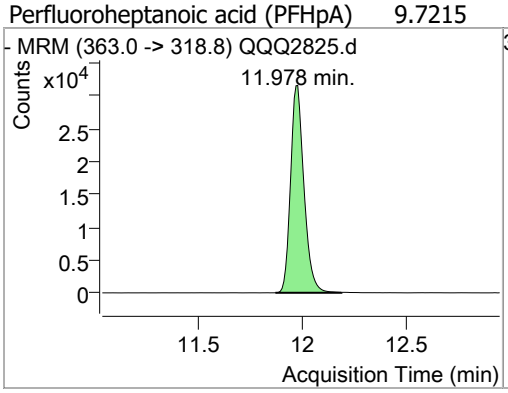
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	9.8025	11.97	0.05	60654				

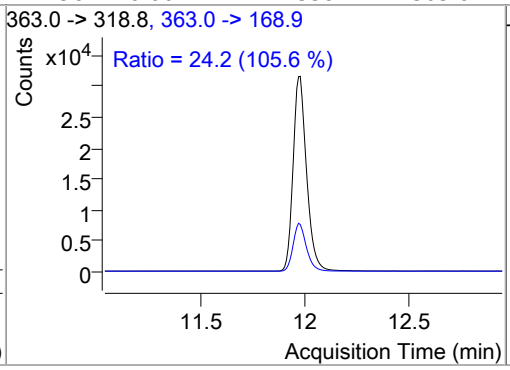


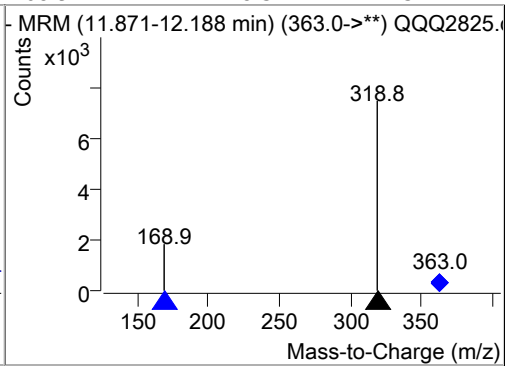




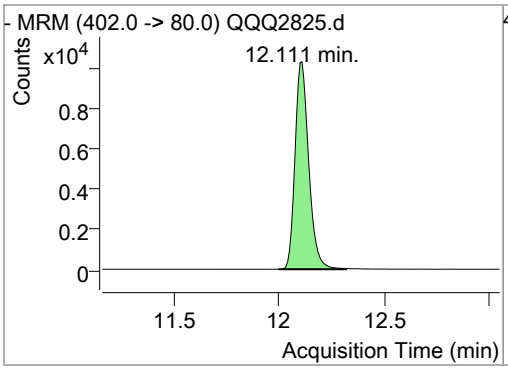
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	9.7215	11.98	0.06	141538	363.0 -> 168.9	24.2	18.3	27.5

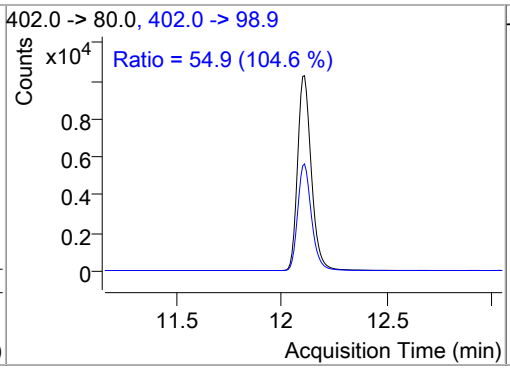


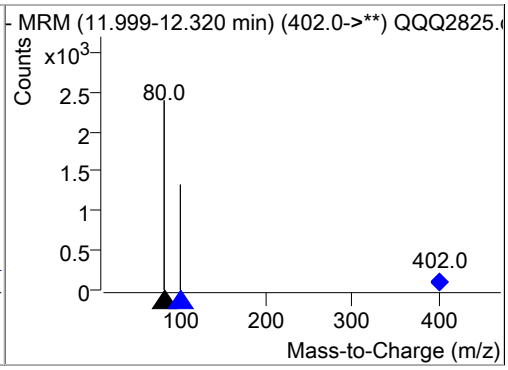




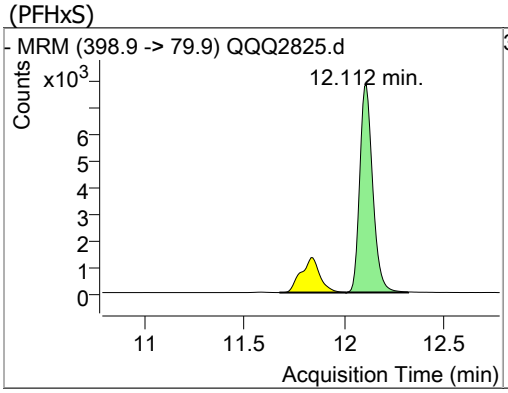
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	9.0085	12.11	0.07	46409	402.0 -> 98.9	54.9	42.0	62.9

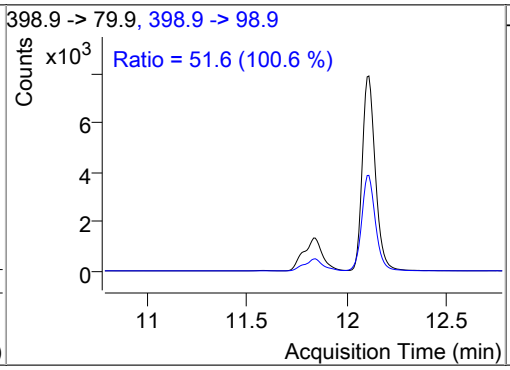


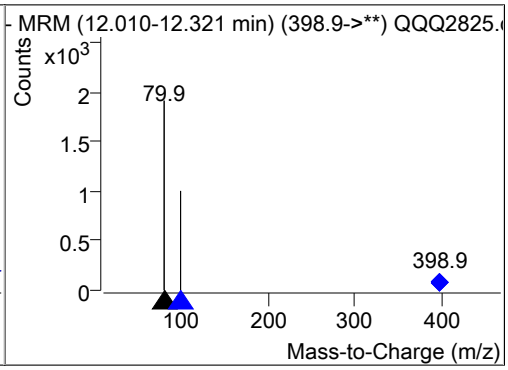




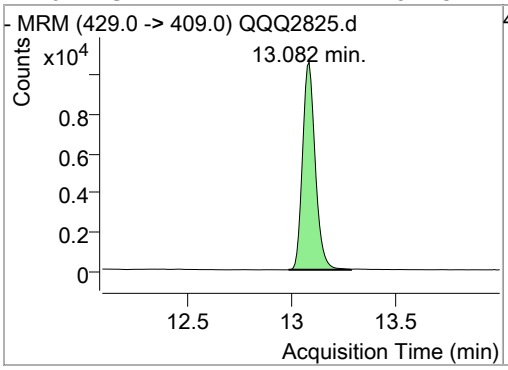
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	6.7645	12.11	0.07	35831	398.9 -> 98.9	51.6	41.0	61.5

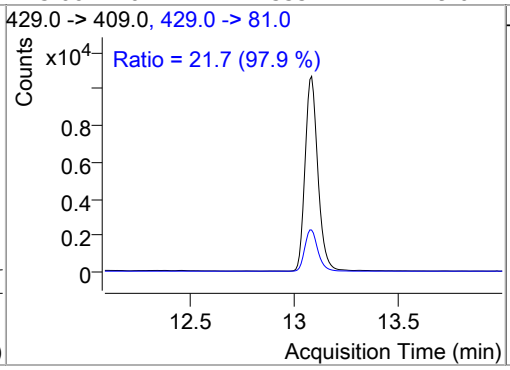


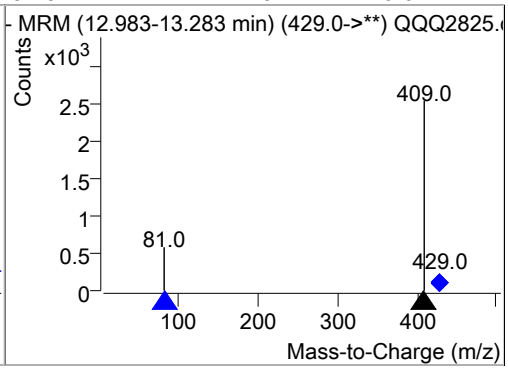




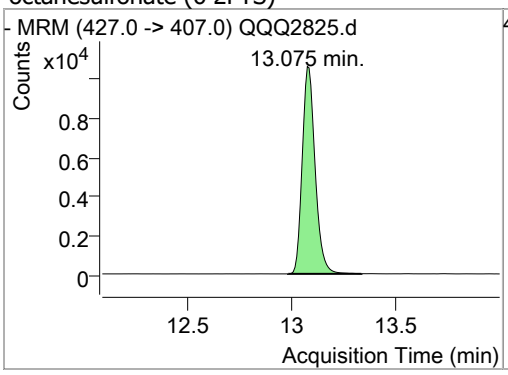
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	8.2257	13.08	0.11	45354	429.0 -> 81.0	21.7	17.8	26.6

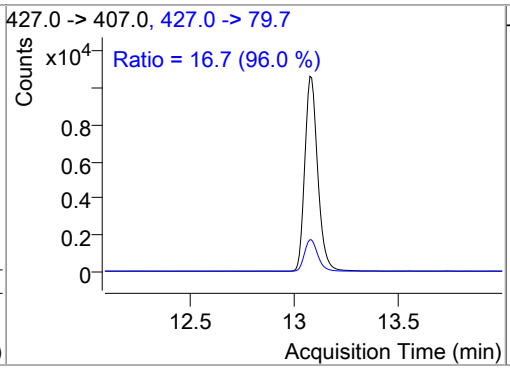


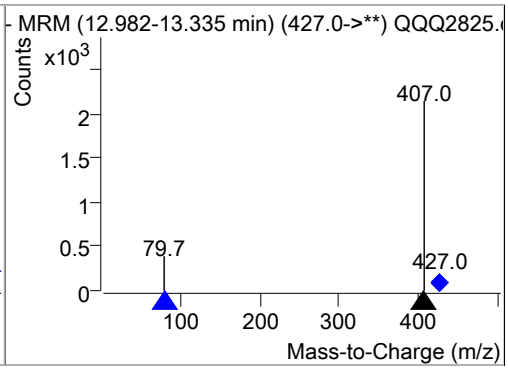




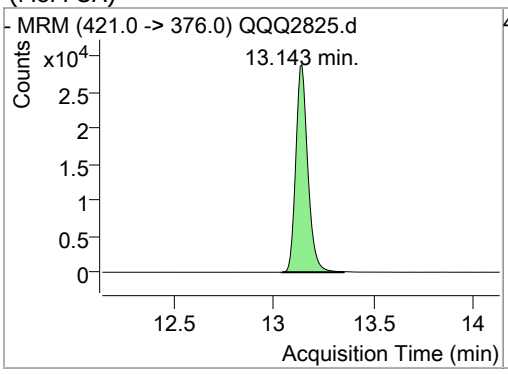
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	7.8617	13.07	0.10	45695	427.0 -> 79.7	16.7	13.9	20.8

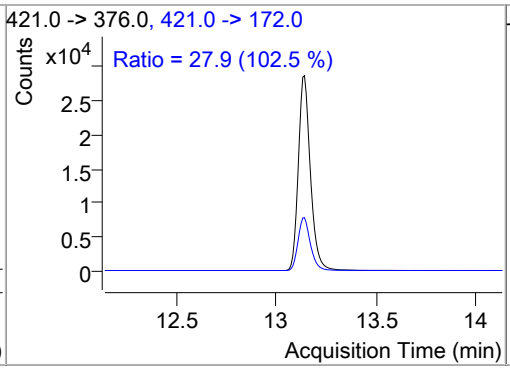


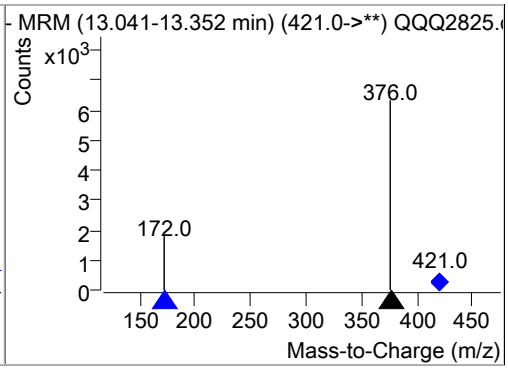




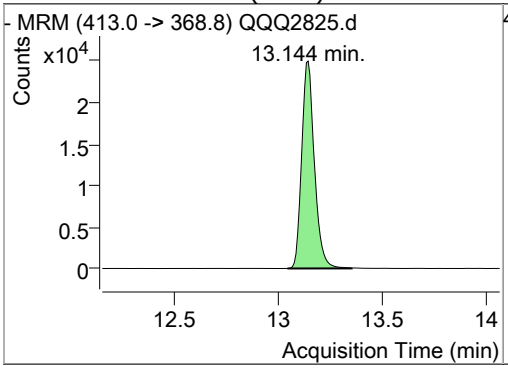
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	10.2189	13.14	0.12	120263	421.0 -> 172.0	27.9	21.7	32.6

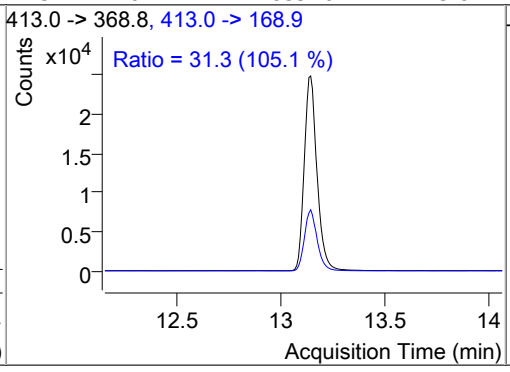


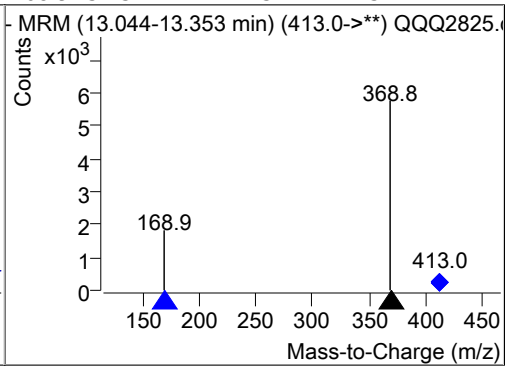




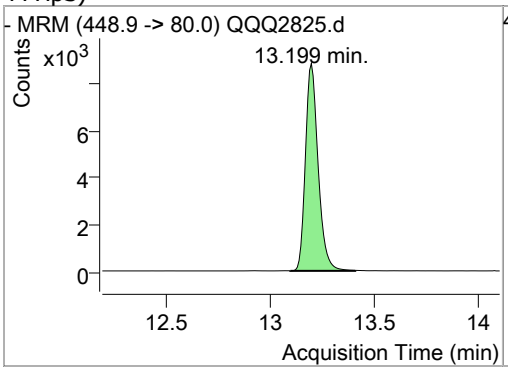
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	9.3728	13.14	0.11	105976	413.0 -> 168.9	31.3	22.3	37.2

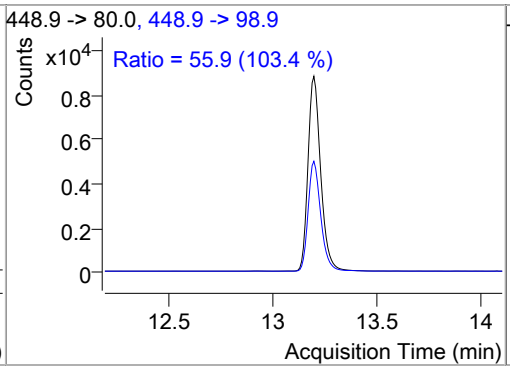


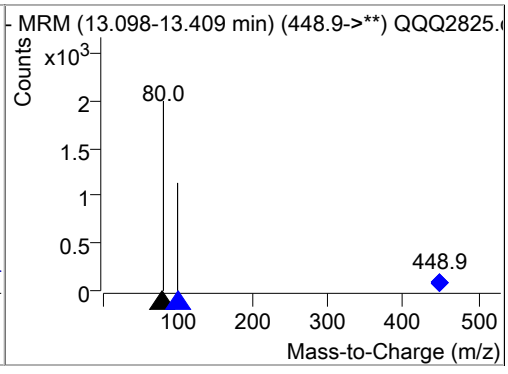




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	9.7712	13.20	0.12	37327	448.9 -> 98.9	55.9	43.3	64.9

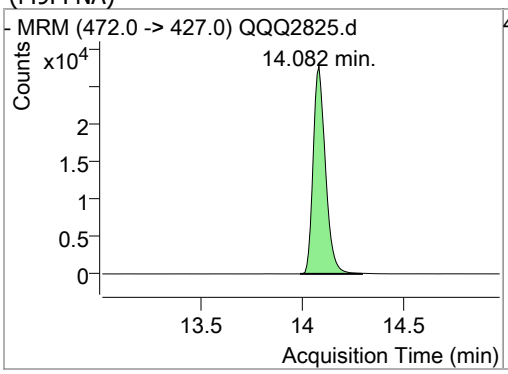


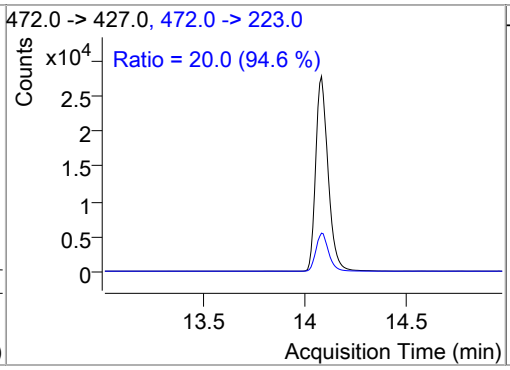


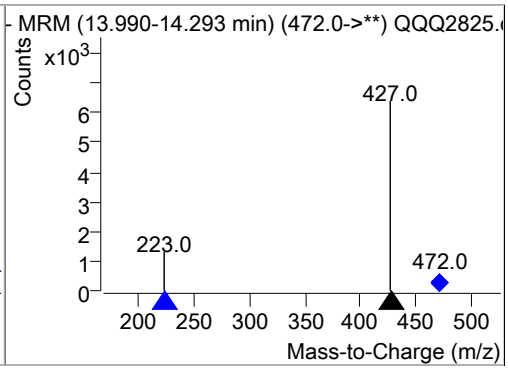


Quantitation Results Report (Not Reviewed)

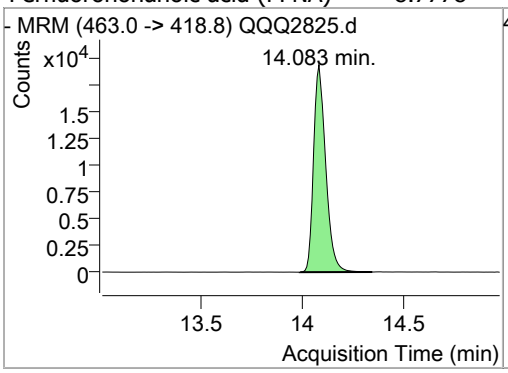
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	9.6701	14.08	0.18	116441	472.0 -> 223.0	20.0	16.9	25.4

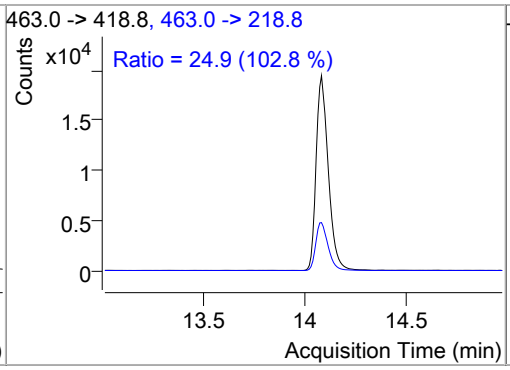


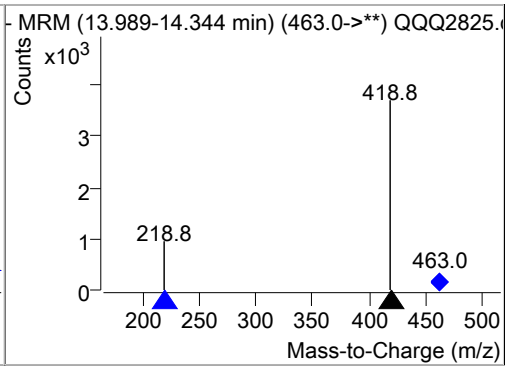




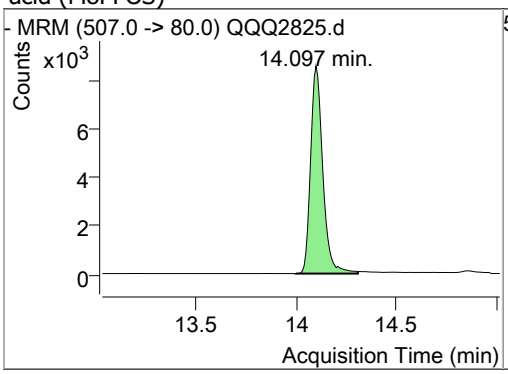
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	8.7778	14.08	0.18	80018	463.0 -> 218.8	24.9	19.4	29.1

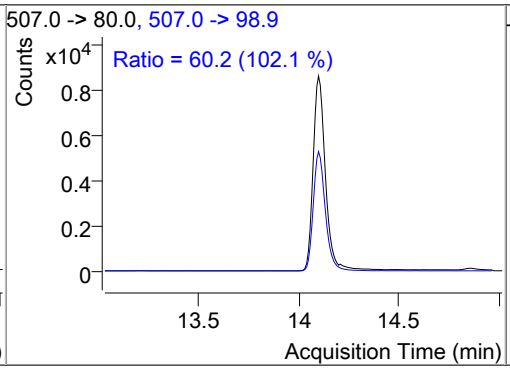


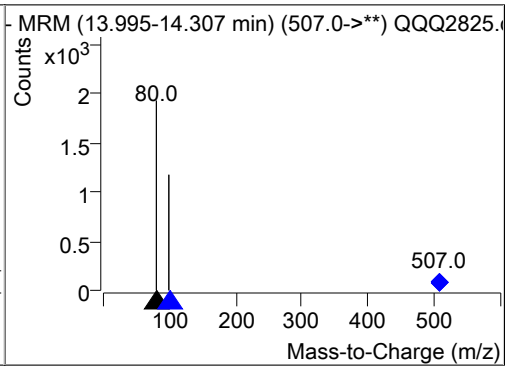




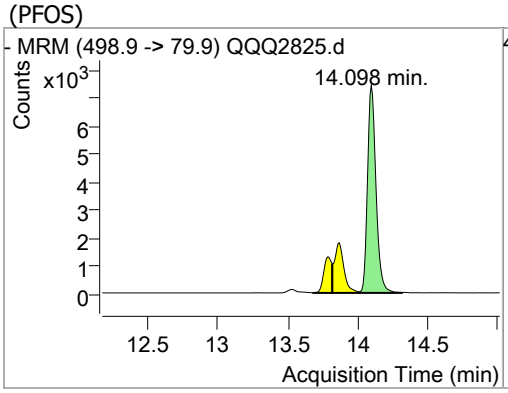
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	9.2184	14.10	0.19	36361	507.0 -> 98.9	60.2	47.2	70.8

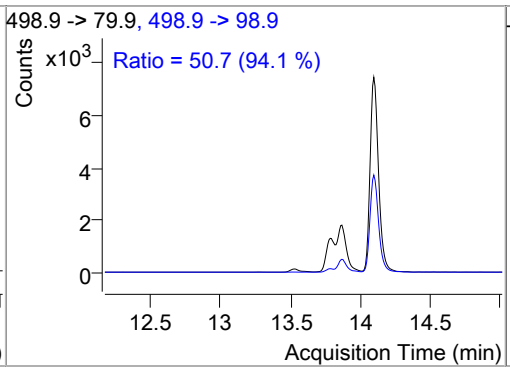


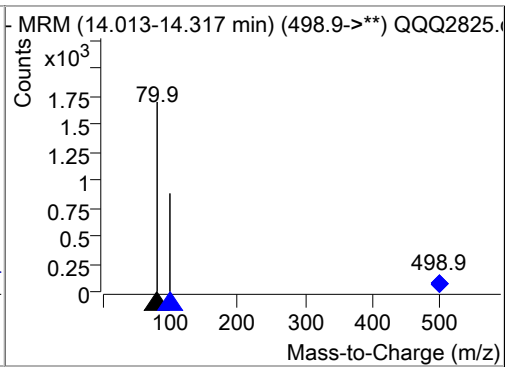




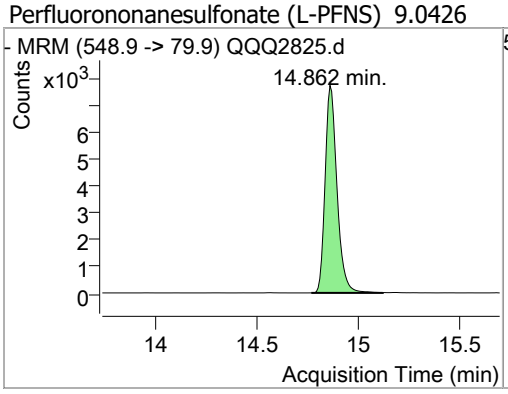
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	6.6469	14.10	0.19	31238	498.9 -> 98.9	50.7	43.1	64.6

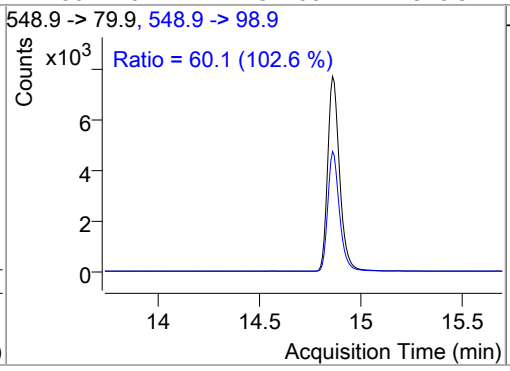


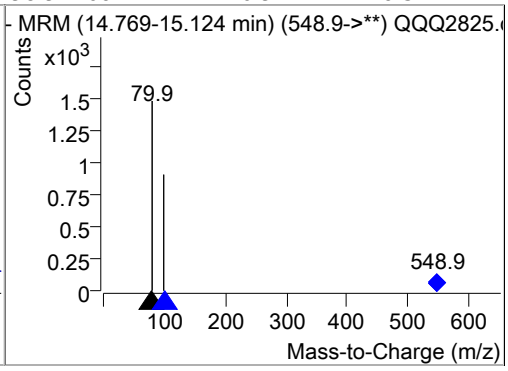




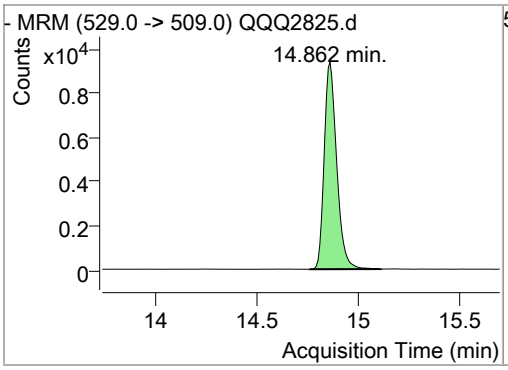
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	9.0426	14.86	0.24	31460	548.9 -> 98.9	60.1	46.9	70.3

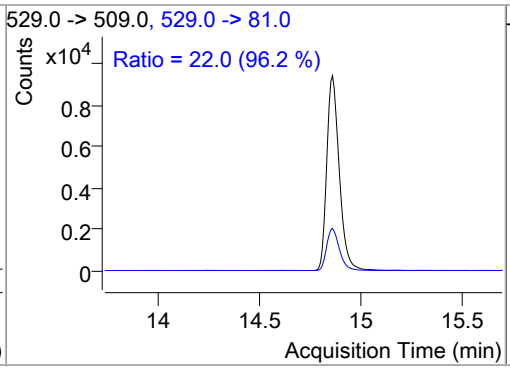


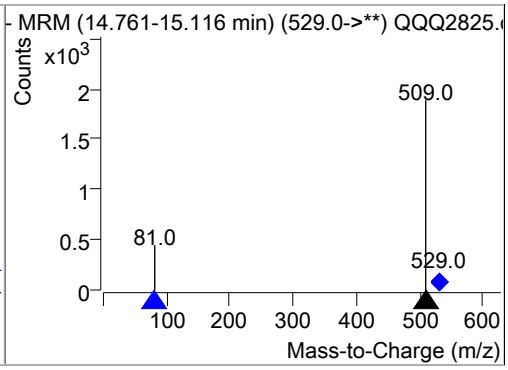




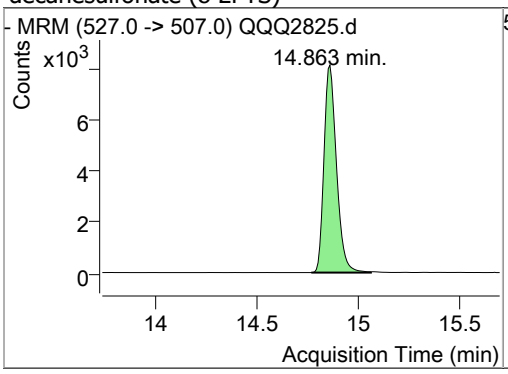
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	9.2190	14.86	0.24	40228	529.0 -> 81.0	22.0	18.3	27.4

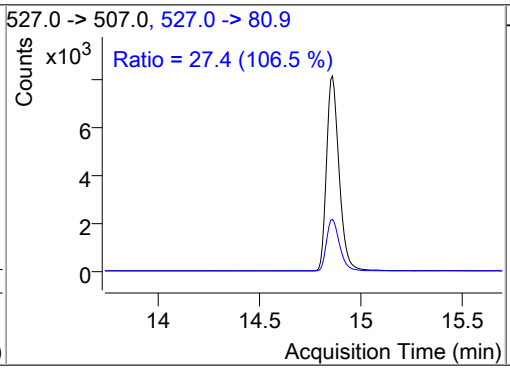


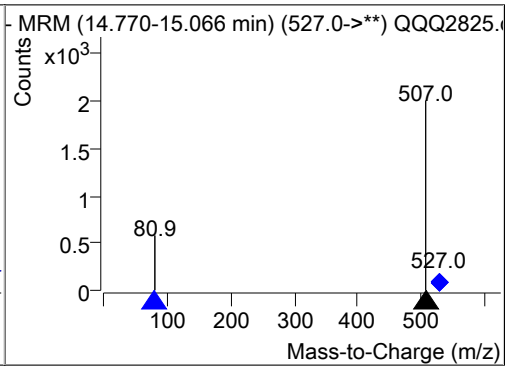




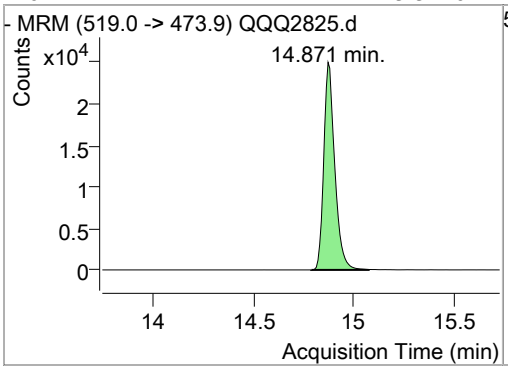
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	9.3042	14.86	0.24	34902	527.0 -> 80.9	27.4	20.6	30.9

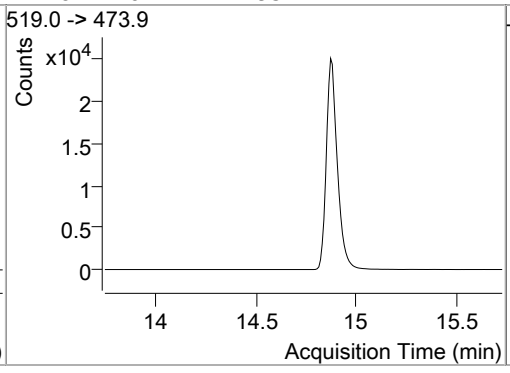


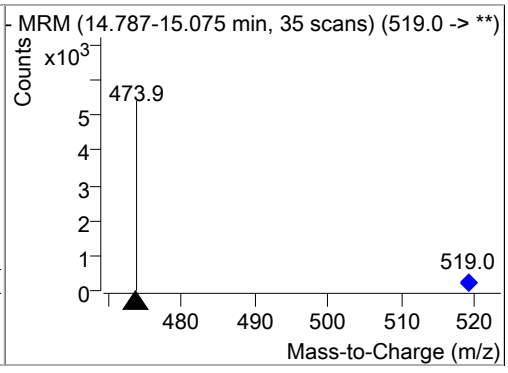




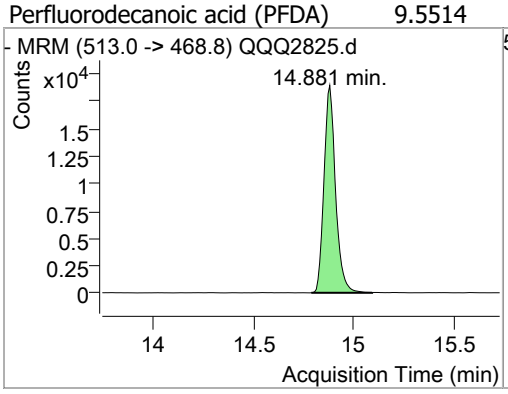
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	9.9476	14.87	0.24	95441				

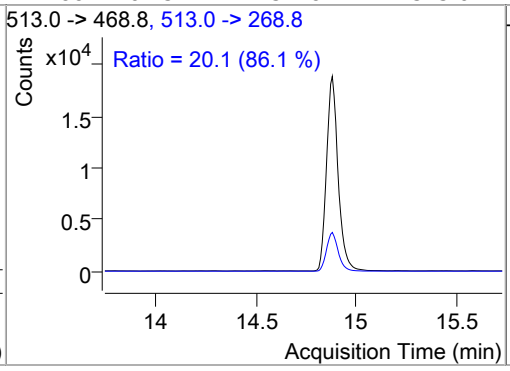


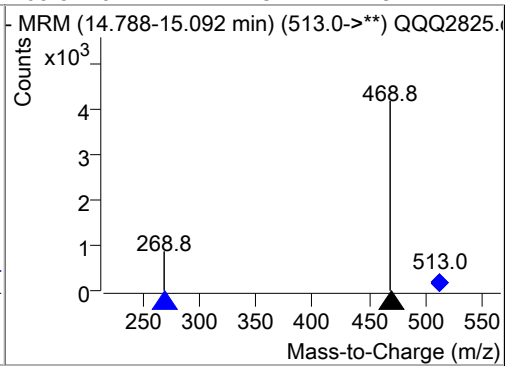




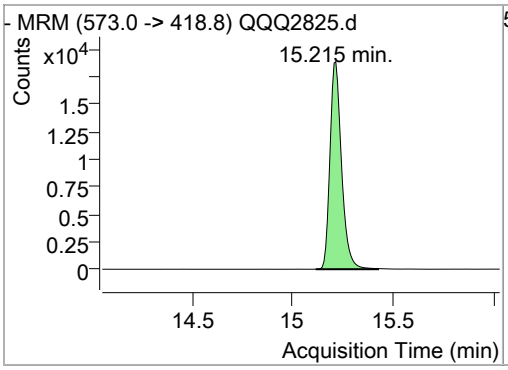
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	9.5514	14.88	0.25	75718	513.0 -> 268.8	20.1	17.5	29.1

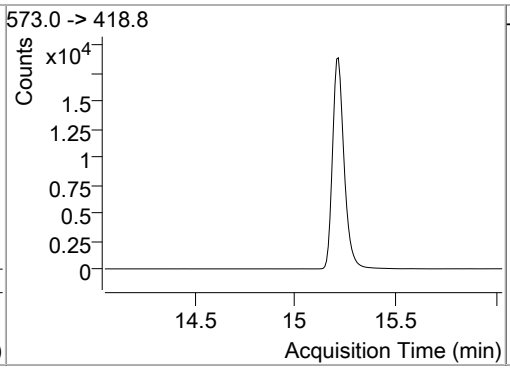


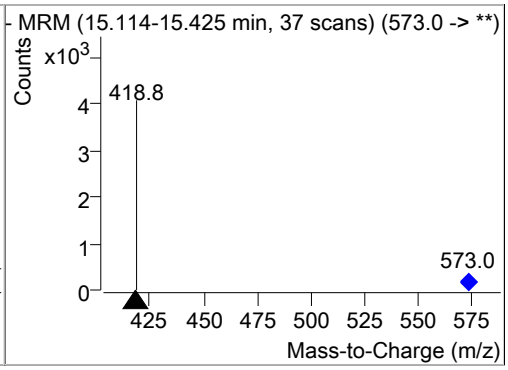




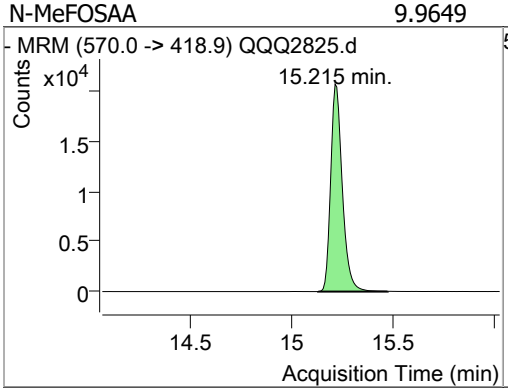
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	9.7829	15.21	0.28	75354				

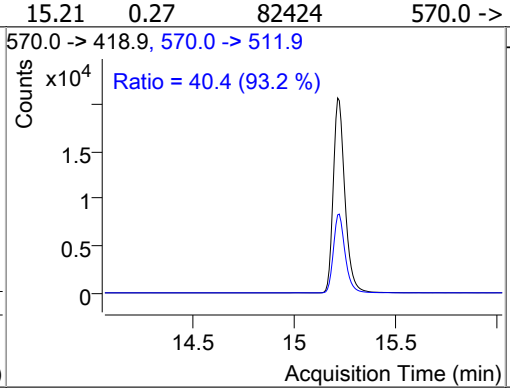


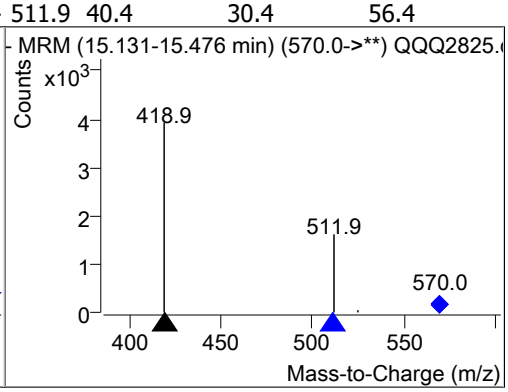




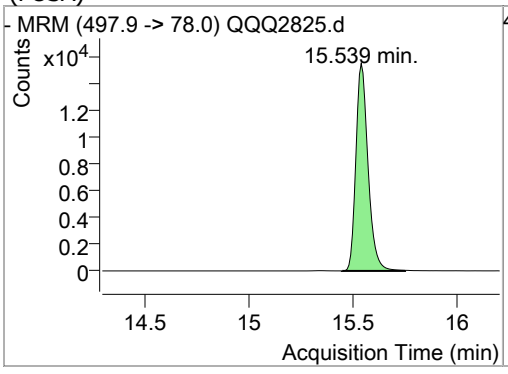
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	9.9649	15.21	0.27	82424	570.0 -> 511.9	40.4	30.4	56.4

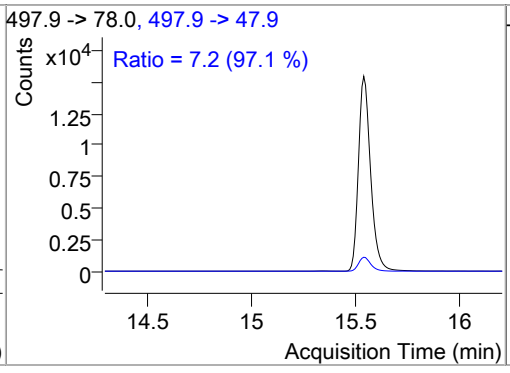


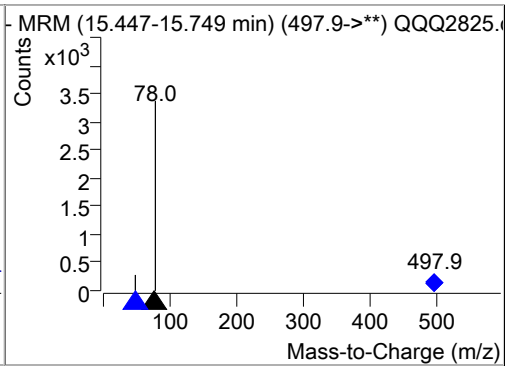




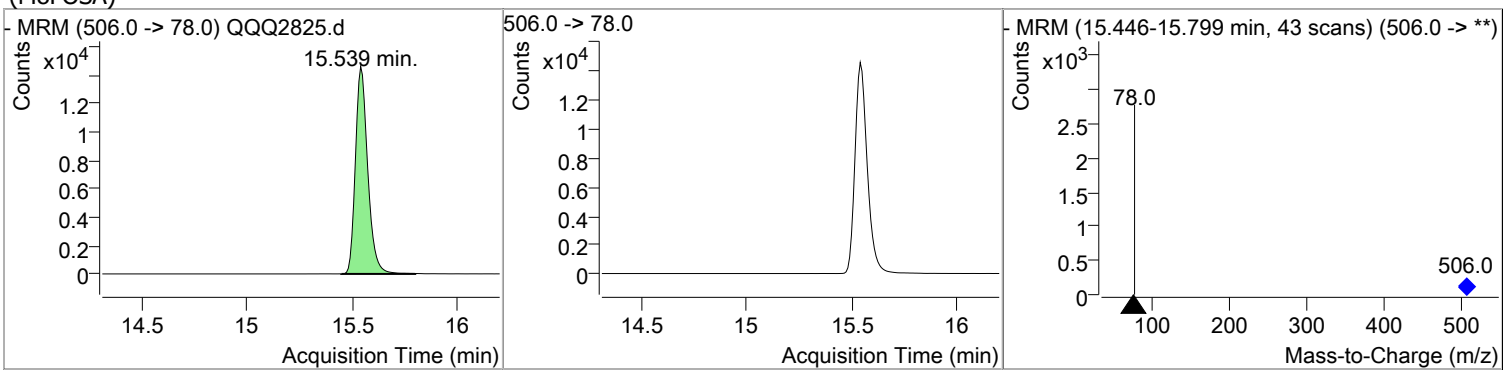
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	9.7443	15.54	0.35	62211	497.9 -> 47.9	7.2	5.9	8.8



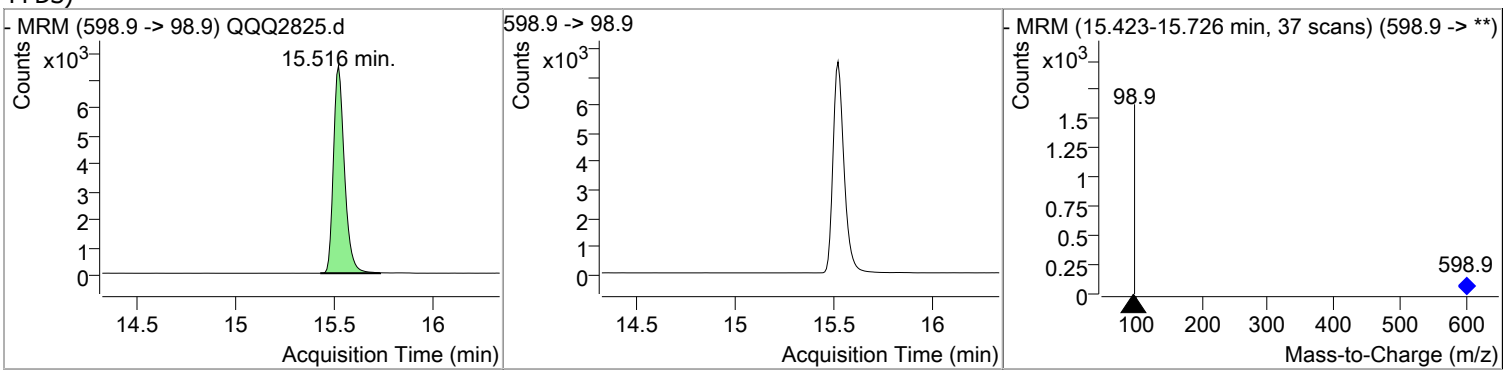




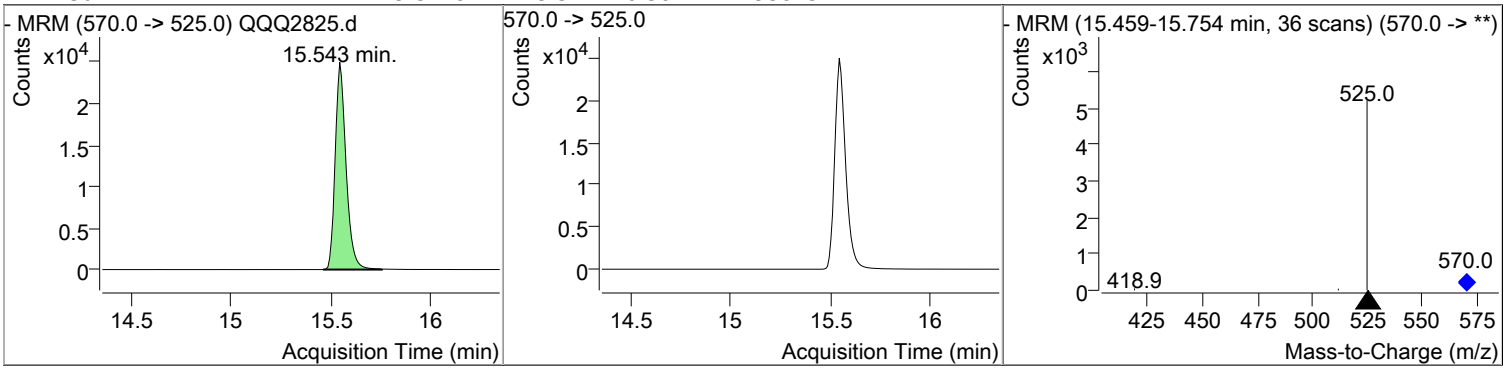
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	9.6688	15.54	0.34	59355				



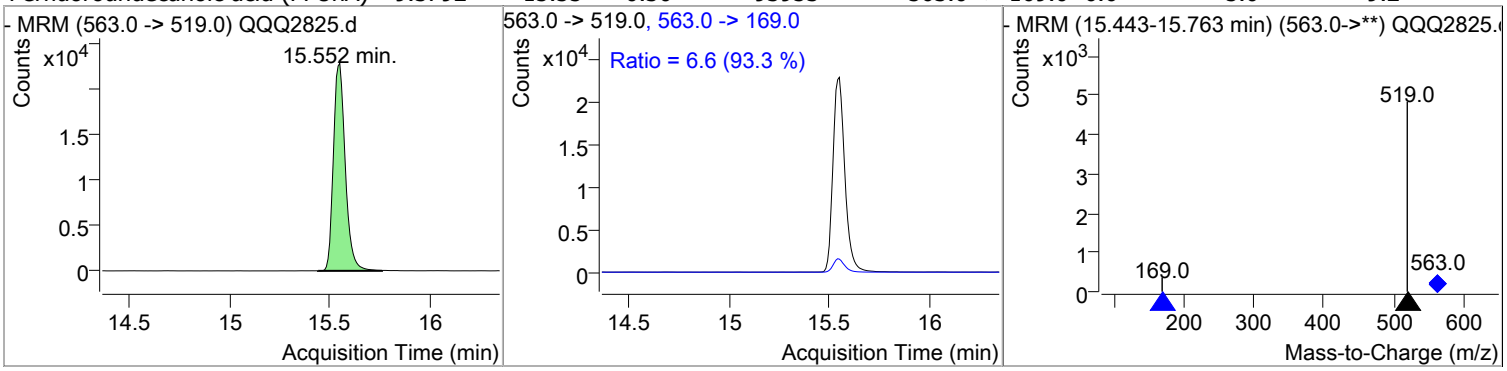
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	9.0238	15.52	0.30	28819				



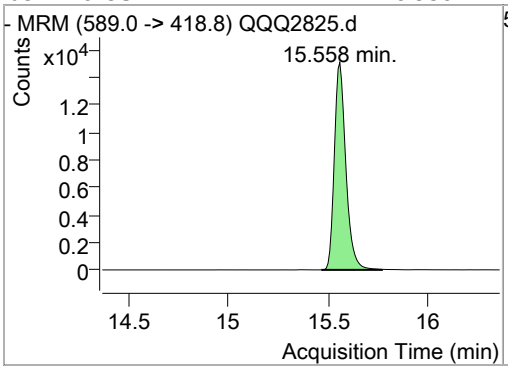
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	9.5778	15.54	0.30	93845				

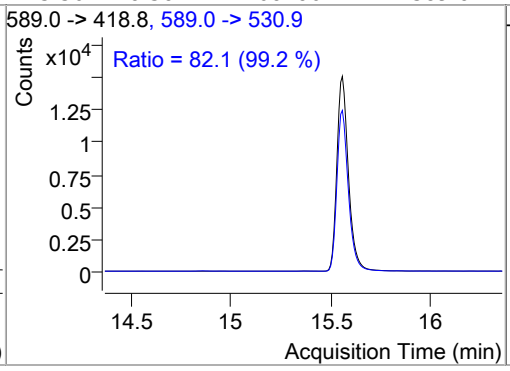


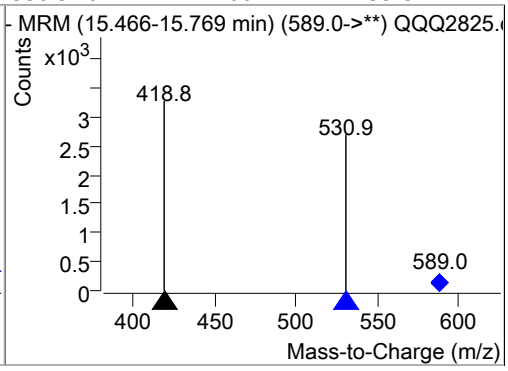
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	9.3792	15.55	0.30	93953	563.0 -> 169.0	6.6	5.0	9.2



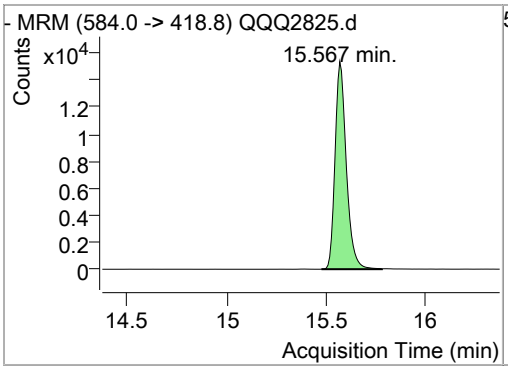
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	8.9581	15.56	0.30	60206	589.0 -> 530.9	82.1	66.2	99.3

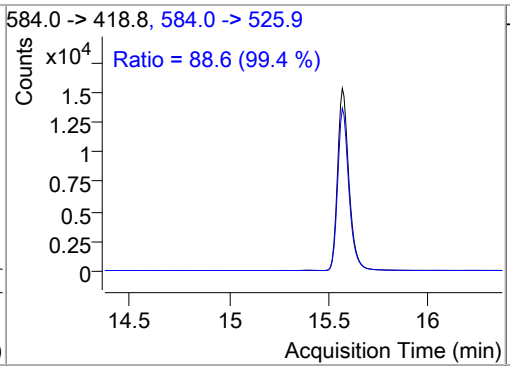


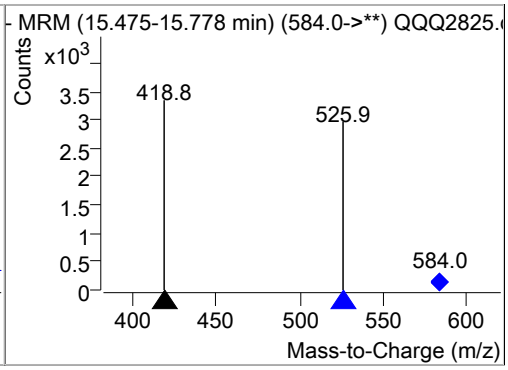




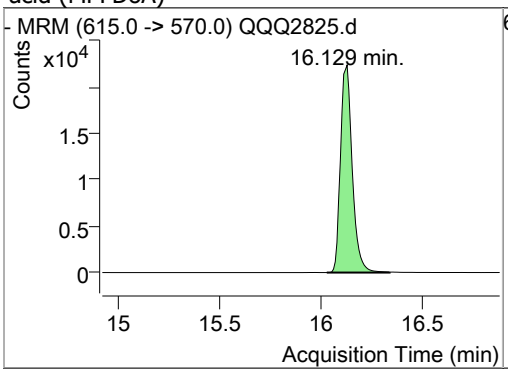
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	9.2298	15.57	0.30	59838	584.0 -> 525.9	88.6	71.3	107.0

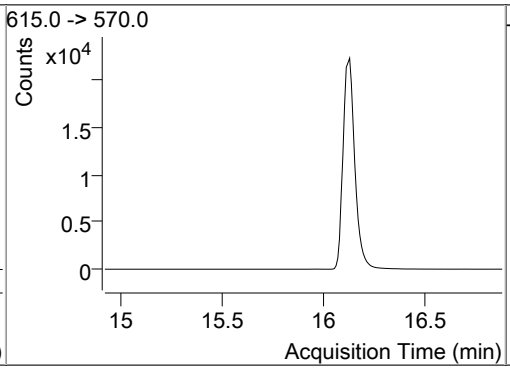


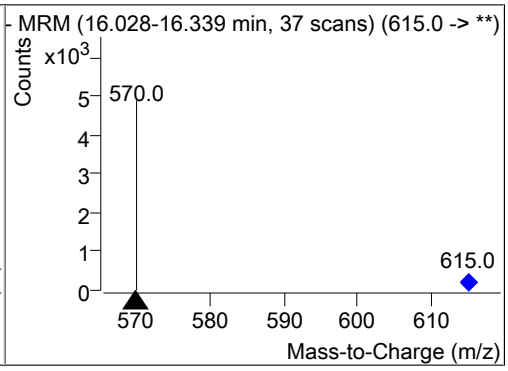




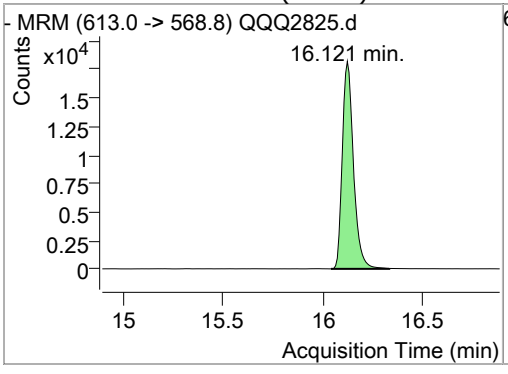
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	9.4098	16.13	0.35	90277				

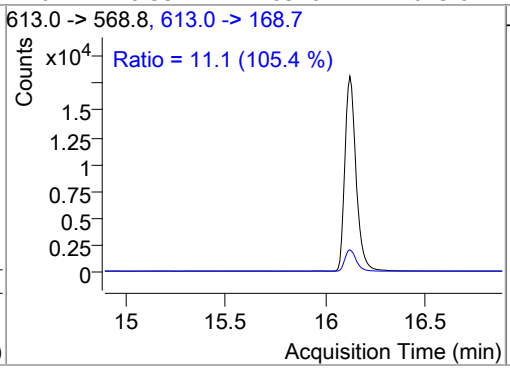


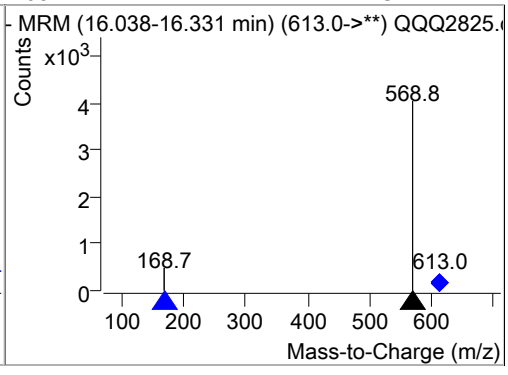




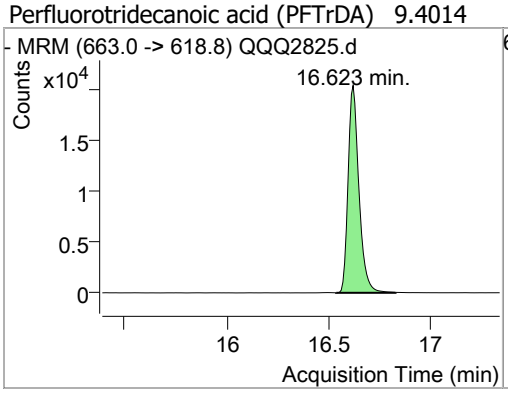
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	9.9126	16.12	0.35	70540	613.0 -> 168.7	11.1	7.4	13.7

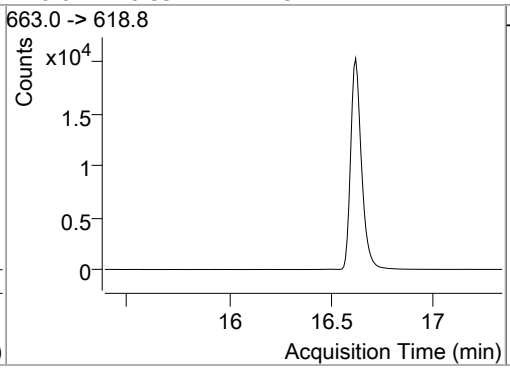


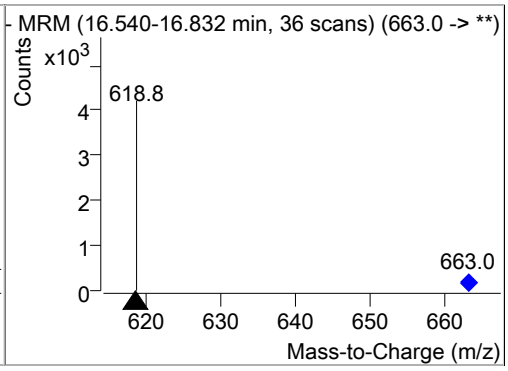




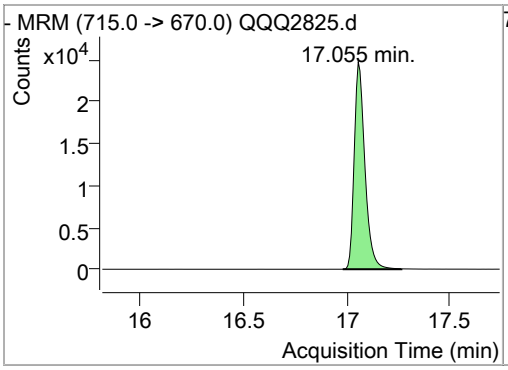
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	9.4014	16.62	0.39	74947				

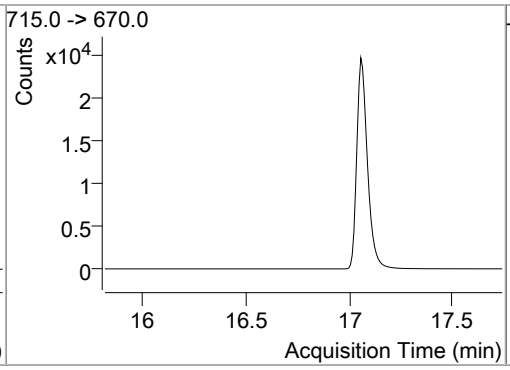


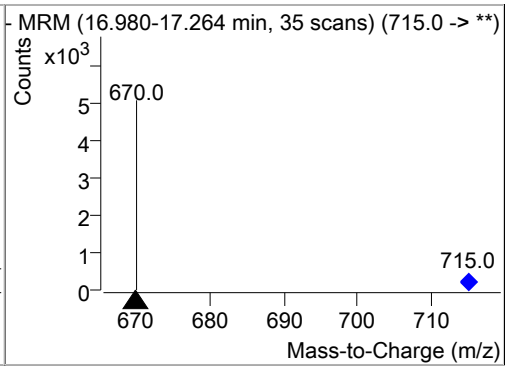




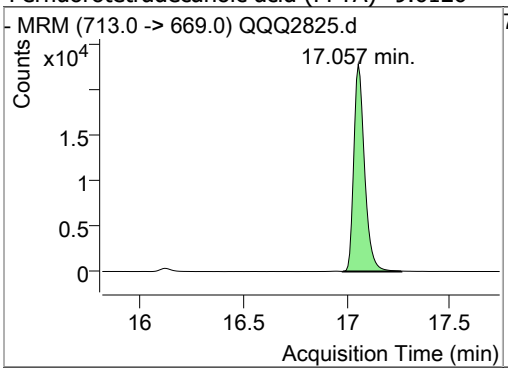
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	9.8989	17.05	0.42	88562				

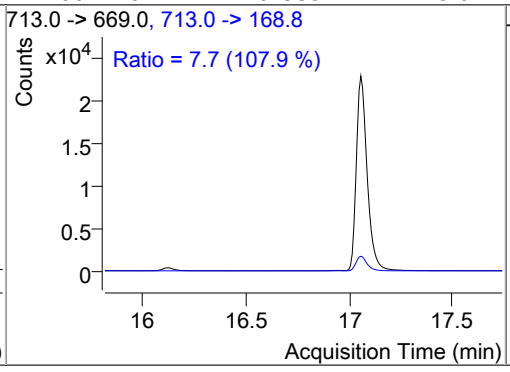


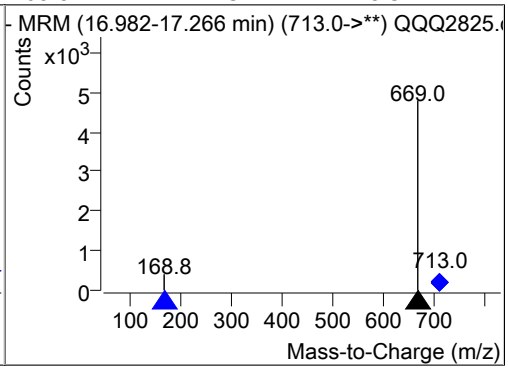




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	9.6126	17.06	0.42	82953	713.0 -> 168.8	7.7	5.7	8.5







Data File	QQQ2826.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/19/2019 9:56:22 PM
Sample Name	SEQ-CAL7	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	20.0 ng/mL
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

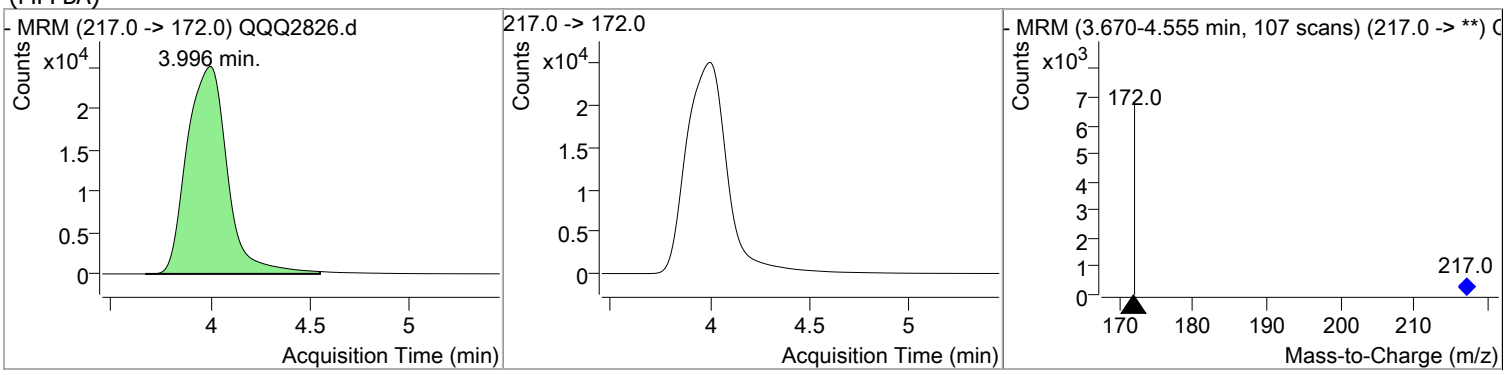
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
MPFOA	13.135	417.0 -> 372.0	205263	10.0000	ng/ml		0.101
System Monitoring Compounds							
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.996	217.0 -> 172.0	357828	22.2557	ng/ml		-0.192
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 222.56%		*	
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.039	268.0 -> 223.0	470824	21.4798	ng/ml		-0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 214.80%		*	
M3PFBS	8.785	302.0 -> 79.9	122372	17.6853	ng/ml		-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 176.85%		*	
M2-4-2FTS	10.258	329.0 -> 309.0	115013	18.7353	ng/ml		0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 187.35%		*	
M5PFHxA	10.403	318.0 -> 273.0	432254	20.9331	ng/ml		0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 209.33%		*	
M4PFHpA	11.969	367.0 -> 322.0	119875	20.9981	ng/ml		0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 209.98%		*	
M3PFHxS	12.102	402.0 -> 80.0	84810	17.8430	ng/ml		0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 178.43%		*	
M2-6-2FTS	13.074	429.0 -> 409.0	81449	16.0111	ng/ml		0.101
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 160.11%		*	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.134	421.0 -> 376.0	218830	20.1538	ng/ml		0.110
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 201.54%		*	
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.082	472.0 -> 427.0	211557	19.0428	ng/ml		0.178
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 190.43%		*	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.097	507.0 -> 80.0	62161	17.0810	ng/ml		0.186
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 170.81%		*	
M2-8-2FTS	14.854	529.0 -> 509.0	63560	19.3066	ng/ml		0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 193.07%		*	
M6PFDA	14.871	519.0 -> 473.9	173953	19.6515	ng/ml		0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 196.51%		*	
d3-N-MeFOSAA	15.206	573.0 -> 418.8	150270	21.1454	ng/ml		0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 211.45%		*	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	109531	19.3387	ng/ml		0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 193.39%		*	
M7PFUdA	15.551	570.0 -> 525.0	169905	18.7947	ng/ml		0.311
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 187.95%		*	
d5-N-EtFOSAA	15.558	589.0 -> 418.8	109452	17.6515	ng/ml		0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 176.52%		*	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.120	615.0 -> 570.0	157987	17.8485	ng/ml		0.345
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 178.48%		*	
M2PFTeDA	17.063	715.0 -> 670.0	172988	20.9571	ng/ml		0.426
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 209.57%		*	

Target Compounds **QValue**

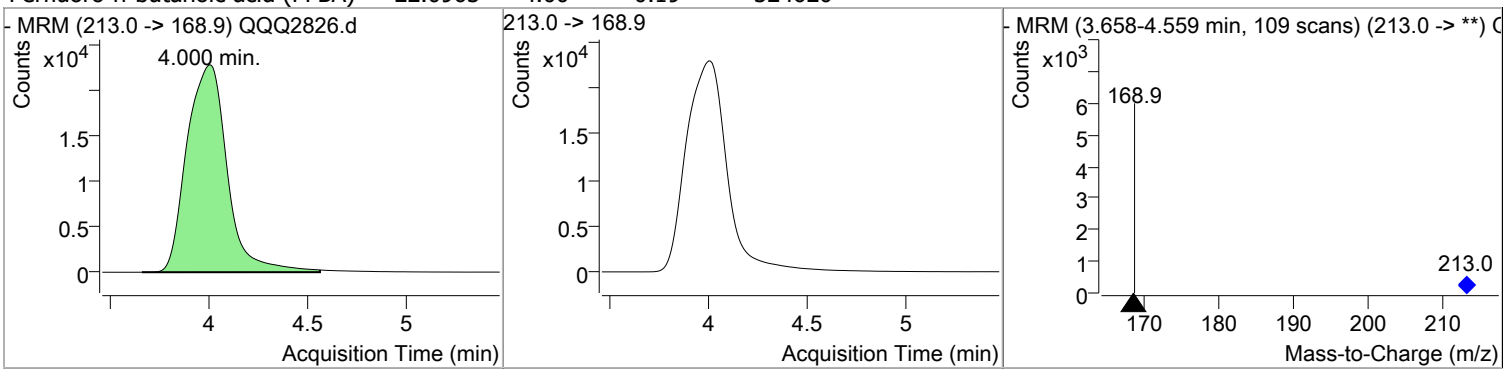
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.000	213.0 -> 168.9	324620	22.0963	ng/ml	100
Perfluoro-n-pentanoic acid (PFPeA)	8.040	263.0 -> 219.0	417553	21.5973	ng/ml	100
Perfluorobutanesulfonic acid (PFBS)	8.788	298.9 -> 79.9	106267	16.8172	ng/ml	100
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.260	327.0 -> 307.0	108900	18.7347	ng/ml	99
Perfluorohexanoic acid (PFHxA)	10.406	313.0 -> 268.9	366406	20.7341	ng/ml	100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.716	348.9 -> 79.9	108054	19.0275	ng/ml	98
Perfluoroheptanoic acid (PFHpA)	11.970	363.0 -> 318.8	281180	20.9326	ng/ml	98
Perfluorohexanesulfonic acid (PFHxS)	12.103	398.9 -> 79.9	66958	13.7009	ng/ml	99
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.075	427.0 -> 407.0	81320	15.1644	ng/ml	98
Perfluorooctanoic acid (PFOA)	13.135	413.0 -> 368.8	206124	19.7591	ng/ml	99
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.190	448.9 -> 80.0	71972	20.4205	ng/ml	97
Perfluorononanoic acid (PFNA)	14.083	463.0 -> 418.8	138240	16.4365	ng/ml	99
Perfluorooctanesulfonic acid (PFOS)	14.098	498.9 -> 79.9	53930	12.4378	ng/ml	95
Perfluorononanesulfonate (L-PFNS)	14.862	548.9 -> 79.9	57762	17.9951	ng/ml	100
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.854	527.0 -> 507.0	55896	19.2815	ng/ml	96
Perfluorodecanoic acid (PFDA)	14.881	513.0 -> 468.8	130905	17.8977	ng/ml	93
N-MeFOSAA	15.215	570.0 -> 418.9	160562	21.0397	ng/ml	97
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	115806	19.6605	ng/ml	99
Perfluoro-1-decanesulfonate (L-PFDS)	15.516	598.9 -> 98.9	53566	18.1793	ng/ml	100
Perfluoroundecanoic acid (PFUnA)	15.544	563.0 -> 519.0	176814	19.1316	ng/ml	98
N-EtFOSAA	15.567	584.0 -> 418.8	112608	18.8262	ng/ml	99
Perfluorododecanoic acid (PFDoA)	16.112	613.0 -> 568.8	119377	18.1824	ng/ml	98
Perfluorotridecanoic acid (PFTrDA)	16.623	663.0 -> 618.8	157584	21.4254	ng/ml	100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	163289	20.5088	ng/ml	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

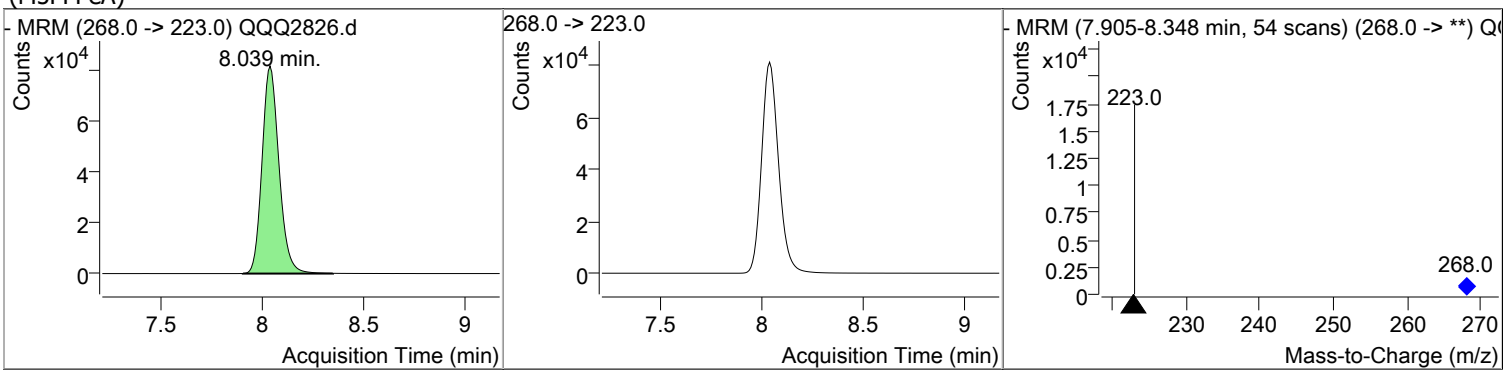
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	22.2557	4.00	-0.19	357828				



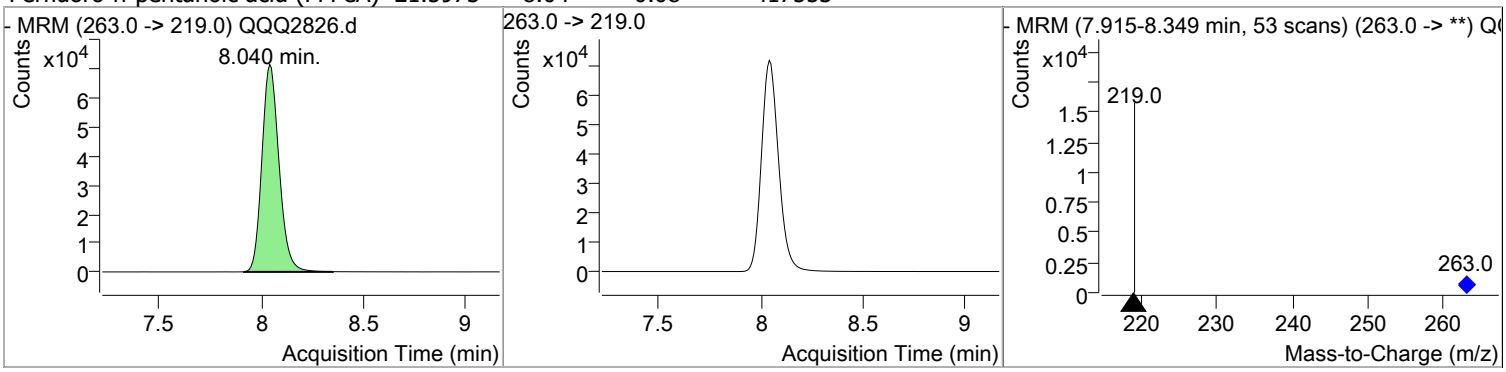
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	22.0963	4.00	-0.19	324620				



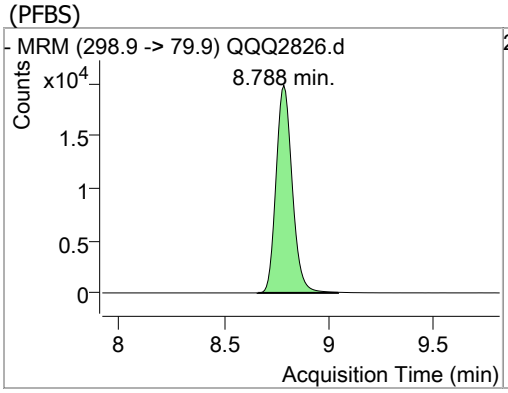
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	21.4798	8.04	-0.08	470824				

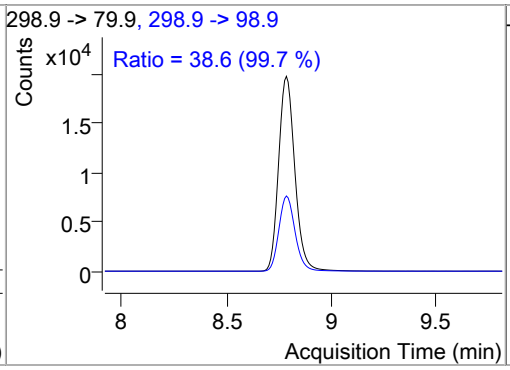


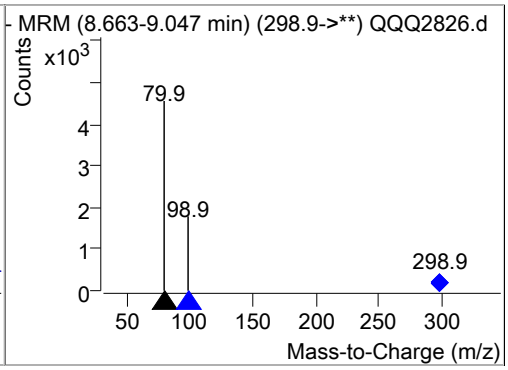
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	21.5973	8.04	-0.08	417553				



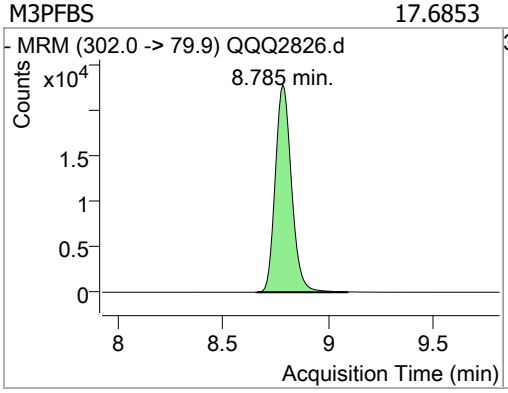
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	16.8172	8.79	-0.03	106267	298.9 -> 98.9	38.6	31.0	46.5

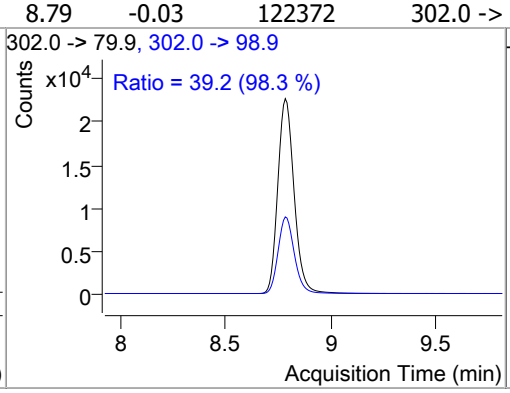


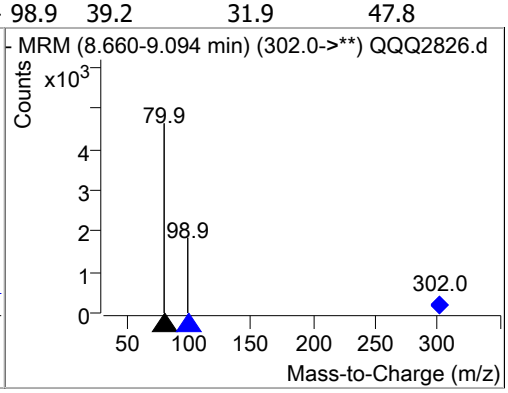




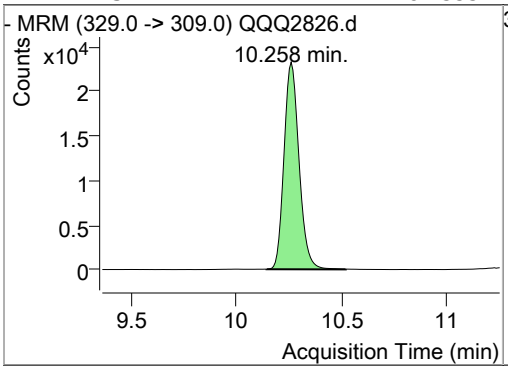
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	17.6853	8.79	-0.03	122372	302.0 -> 98.9	39.2	31.9	47.8

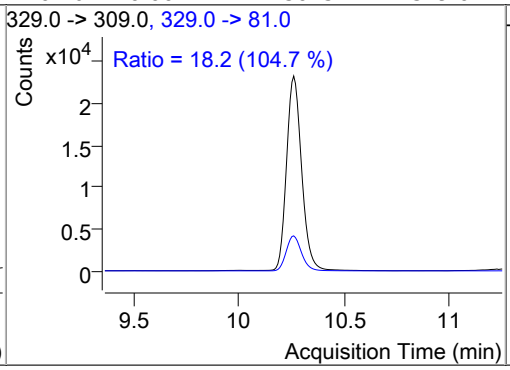


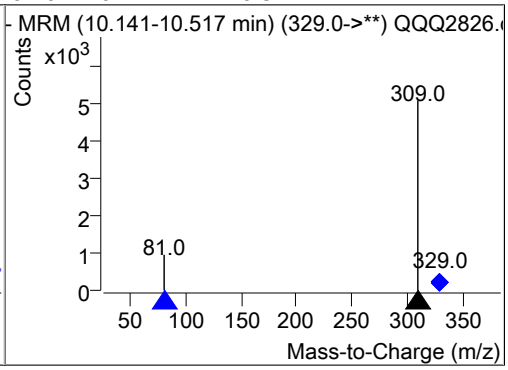




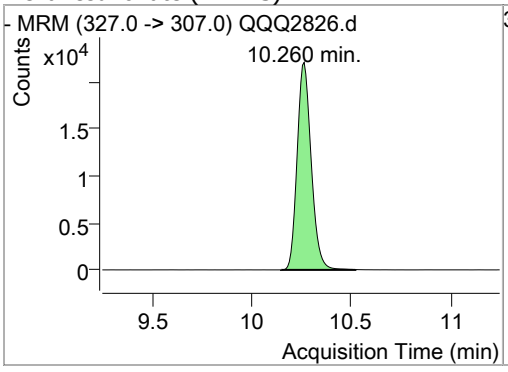
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	18.7353	10.26	0.00	115013	329.0 -> 81.0	18.2	10.5	24.4

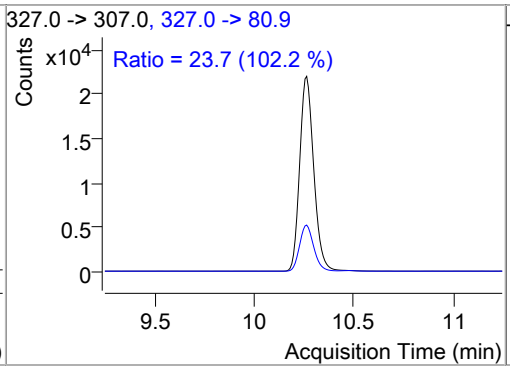


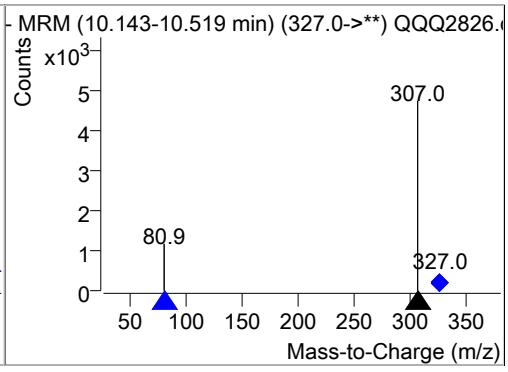




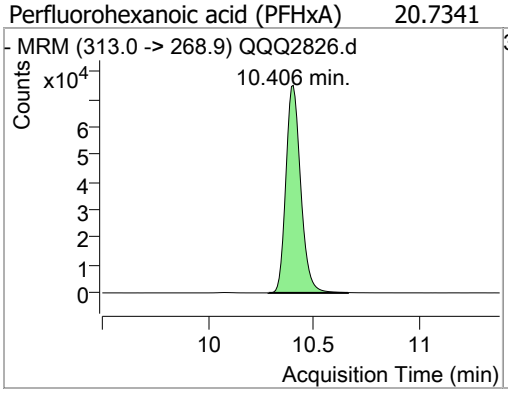
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	18.7347	10.26	0.00	108900	327.0 -> 80.9	23.7	13.9	32.5

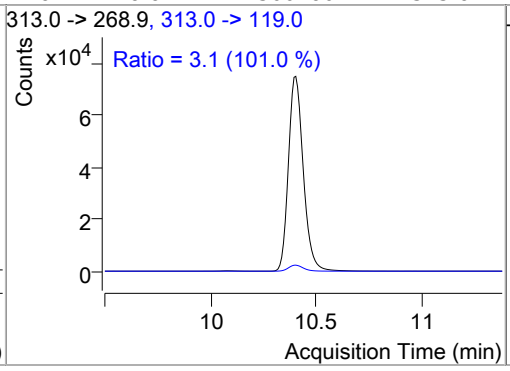


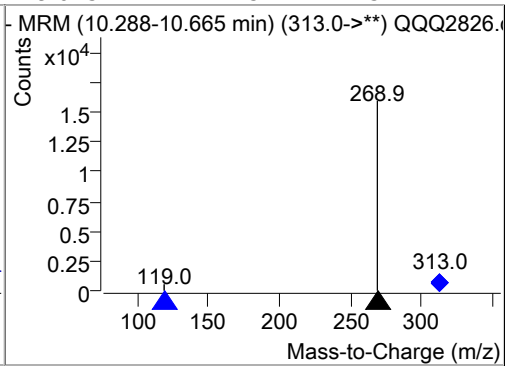




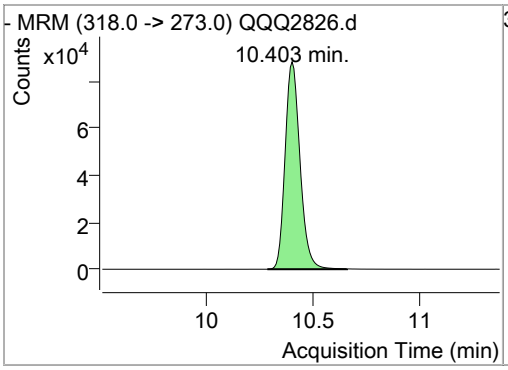
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	20.7341	10.41	0.01	366406	313.0 -> 119.0	3.1	2.5	3.7

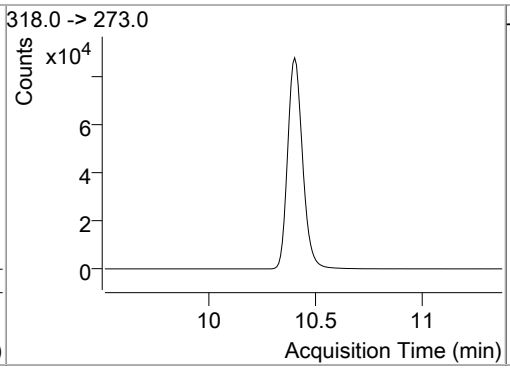


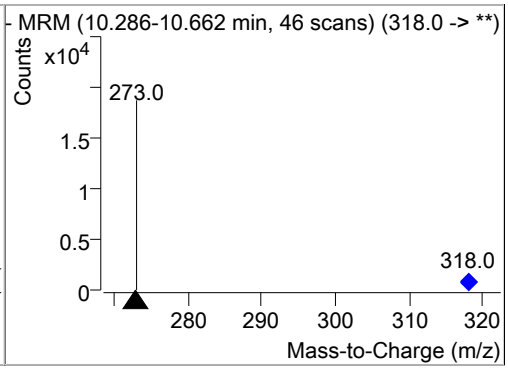




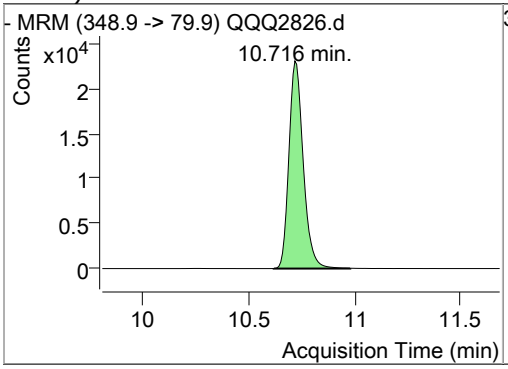
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	20.9331	10.40	0.00	432254				

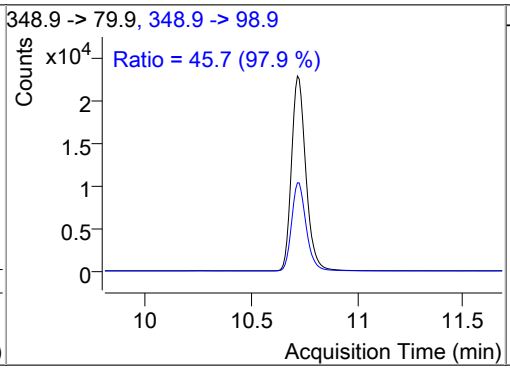


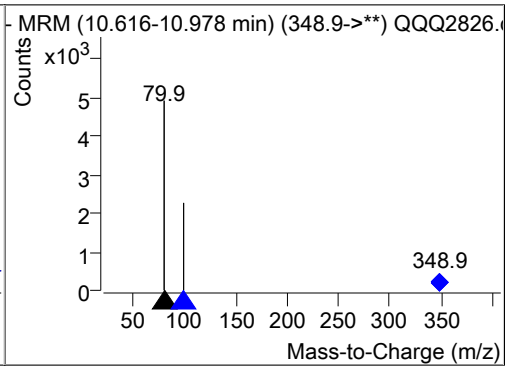




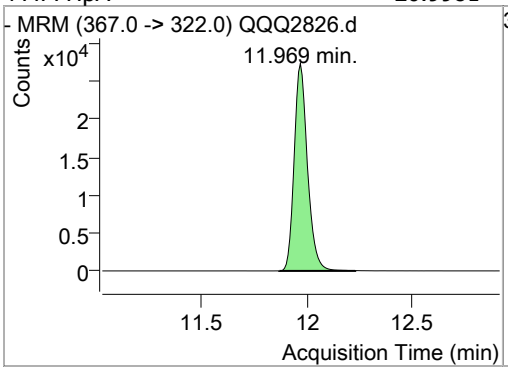
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	19.0275	10.72	0.02	108054	348.9 -> 98.9	45.7	37.3	56.0

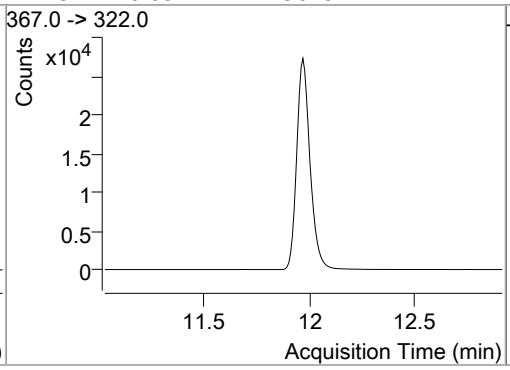


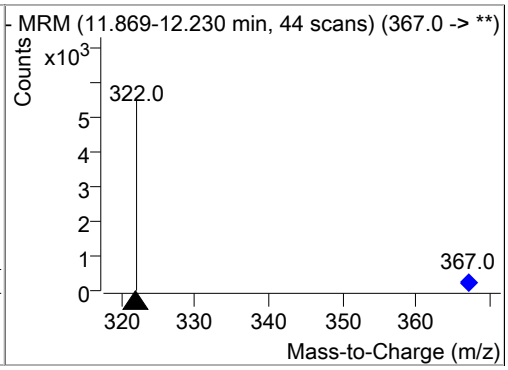




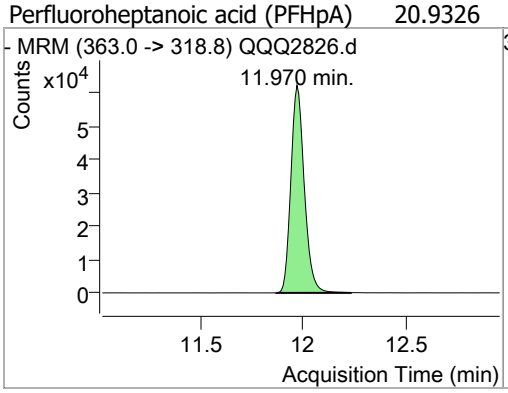
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	20.9981	11.97	0.05	119875				

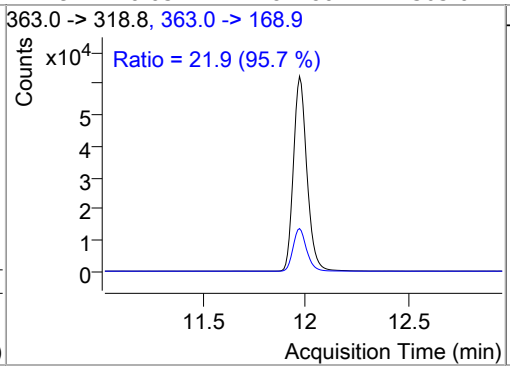


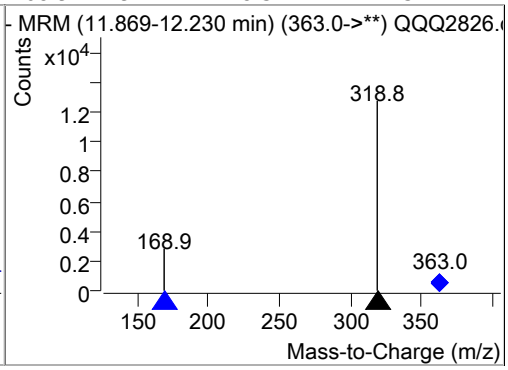




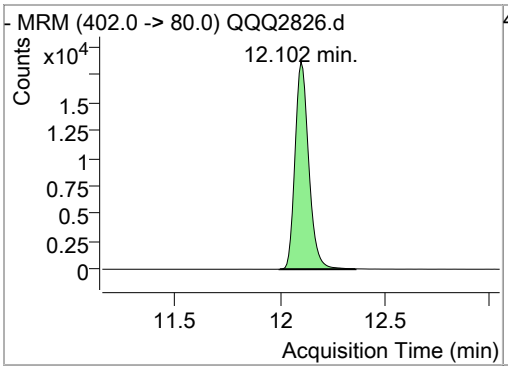
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	20.9326	11.97	0.05	281180	363.0 -> 168.9	21.9	18.3	27.5

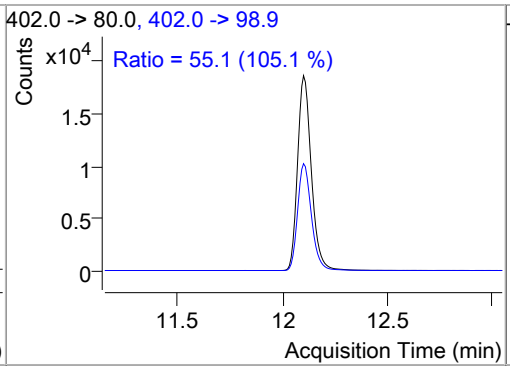


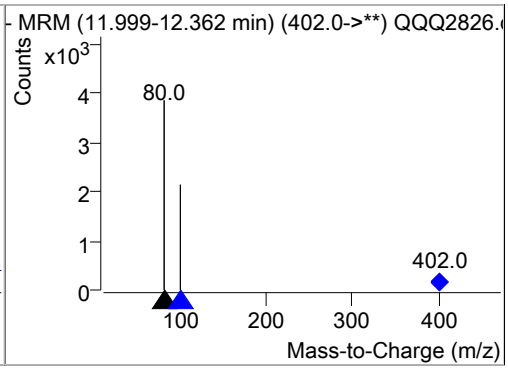




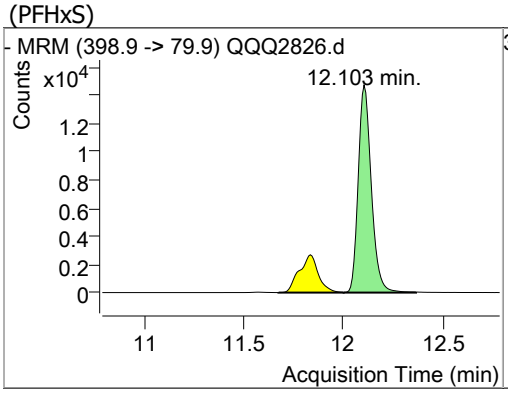
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	17.8430	12.10	0.06	84810	402.0 -> 98.9	55.1	42.0	62.9

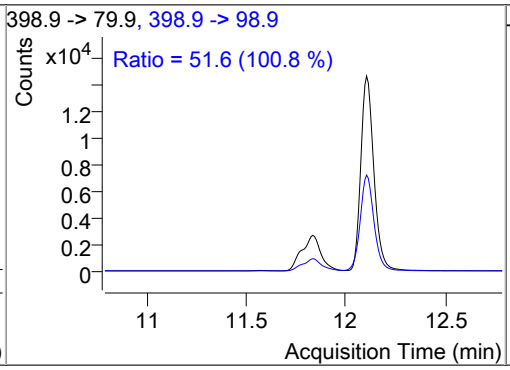


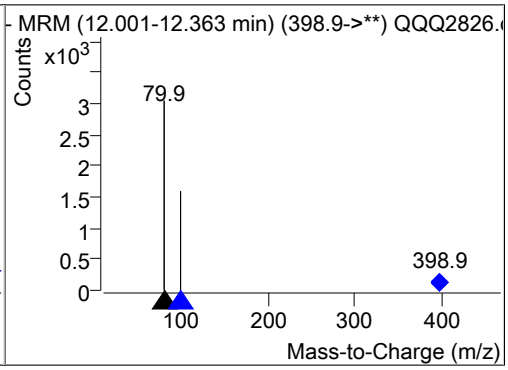




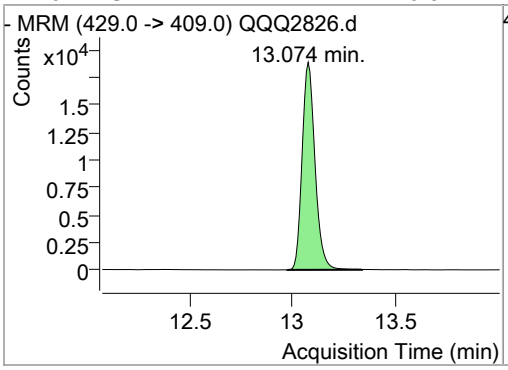
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	13.7009	12.10	0.06	66958	398.9 -> 98.9	51.6	41.0	61.5

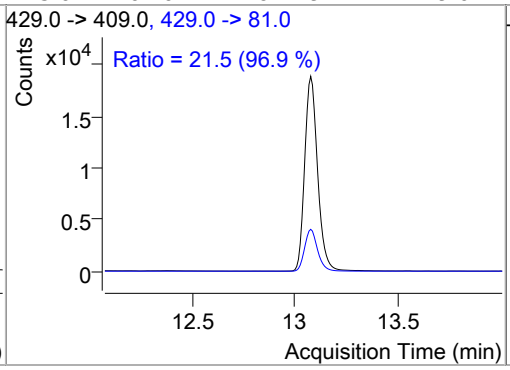


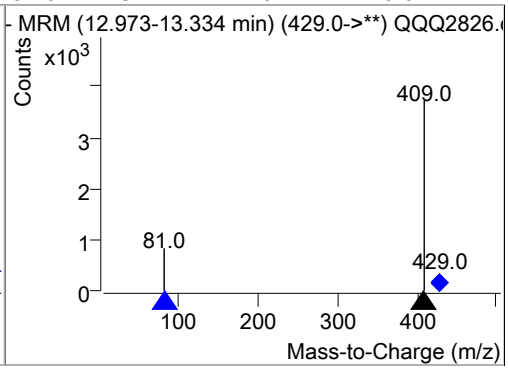




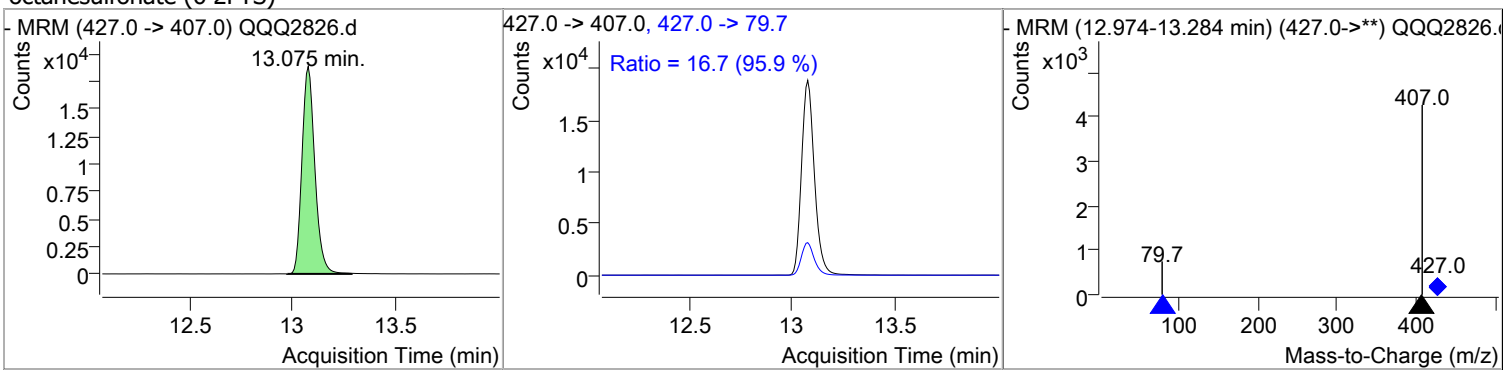
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	16.0111	13.07	0.10	81449	429.0 -> 81.0	21.5	17.8	26.6



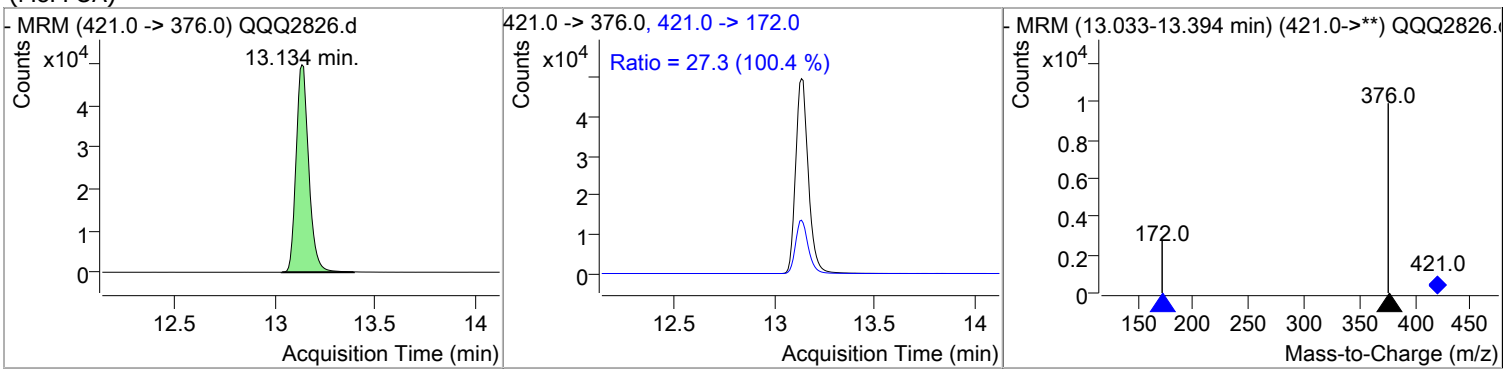




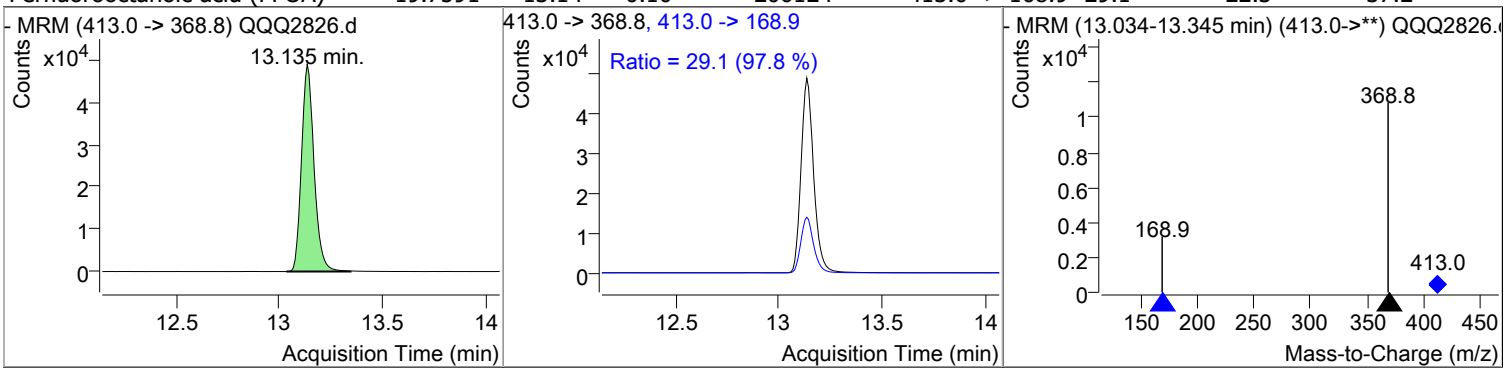
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	15.1644	13.07	0.10	81320	427.0 -> 79.7	16.7	13.9	20.8



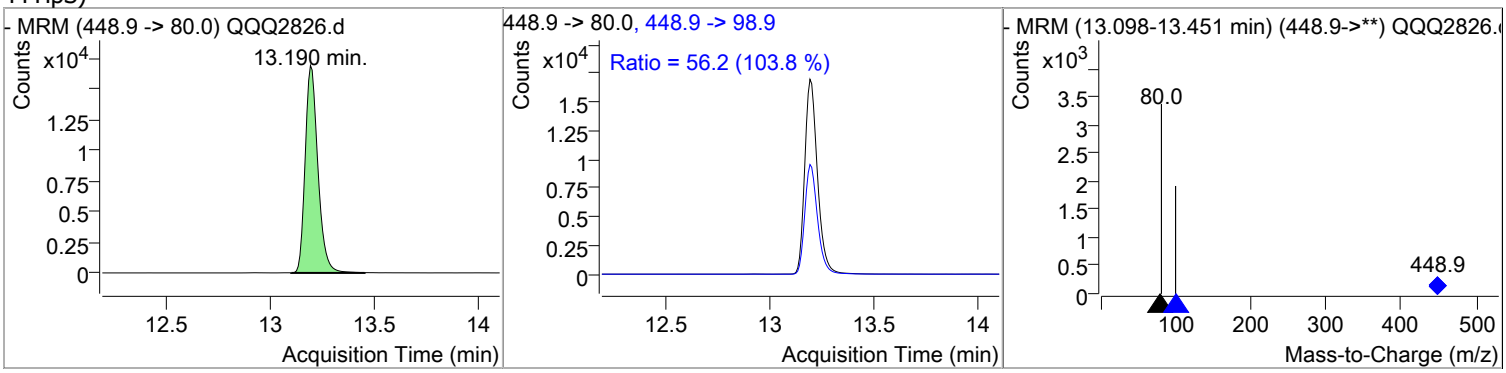
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	20.1538	13.13	0.11	218830	421.0 -> 172.0	27.3	21.7	32.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	19.7591	13.14	0.10	206124	413.0 -> 168.9	29.1	22.3	37.2

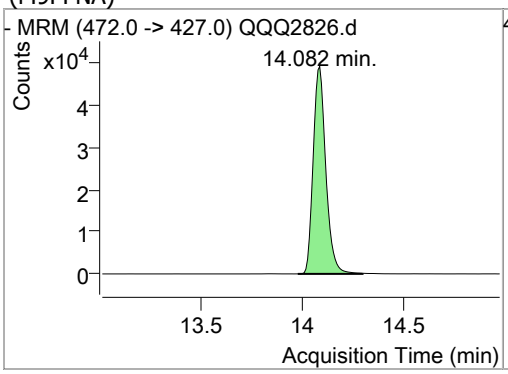


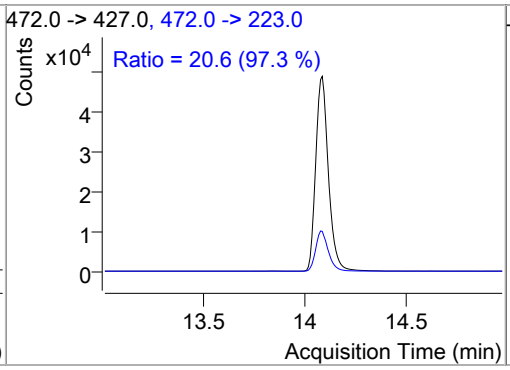
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	20.4205	13.19	0.11	71972	448.9 -> 98.9	56.2	43.3	64.9

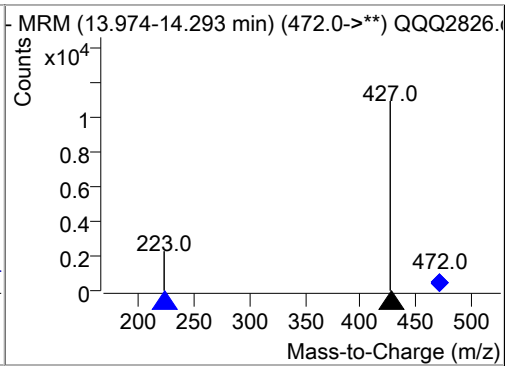


Quantitation Results Report (Not Reviewed)

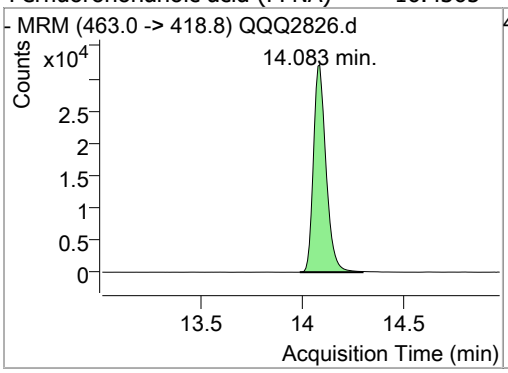
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	19.0428	14.08	0.18	211557	472.0 -> 223.0	20.6	16.9	25.4

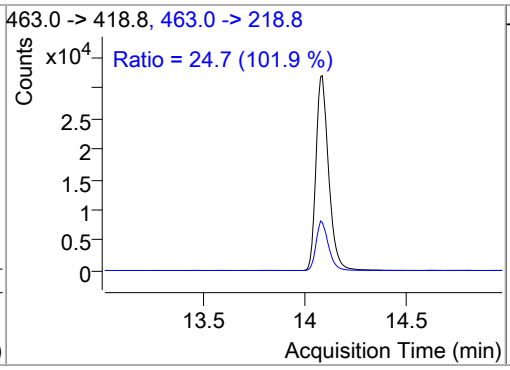


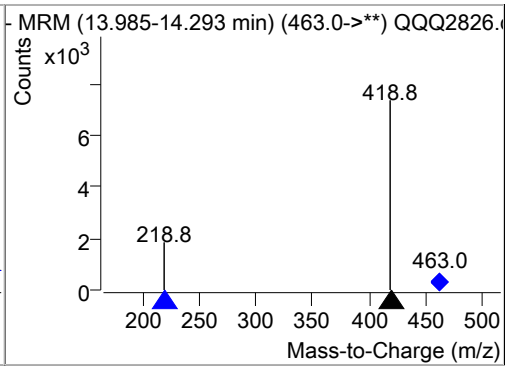




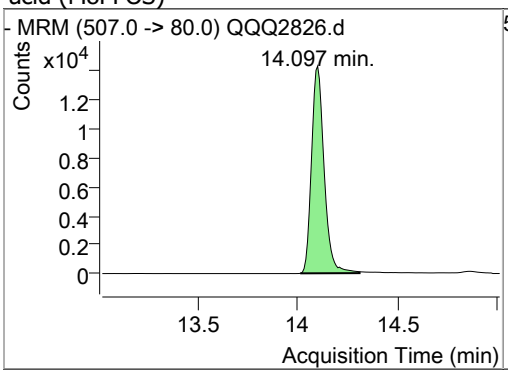
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	16.4365	14.08	0.18	138240	463.0 -> 218.8	24.7	19.4	29.1

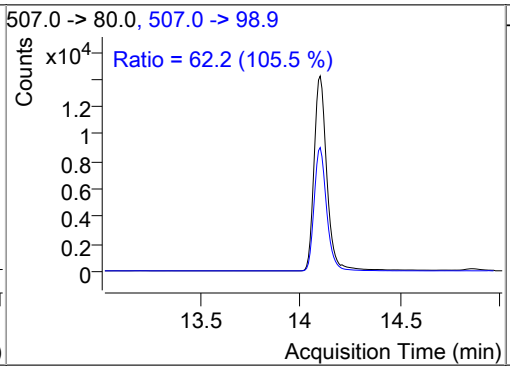


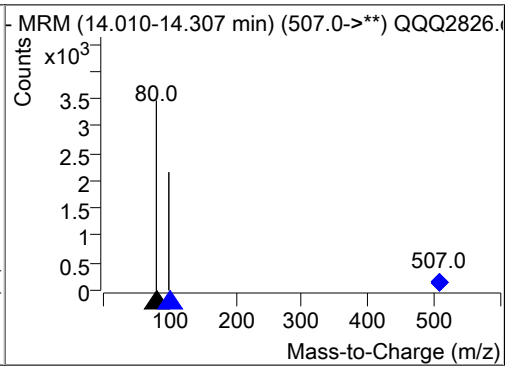




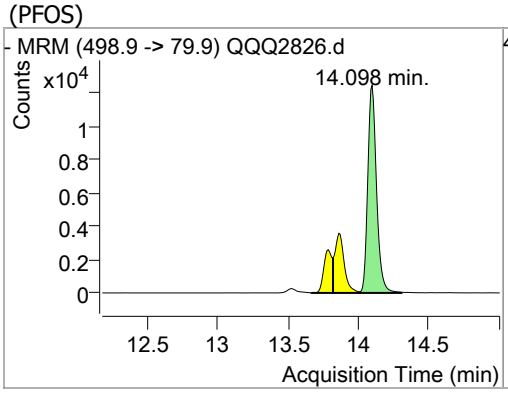
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	17.0810	14.10	0.19	62161	507.0 -> 98.9	62.2	47.2	70.8

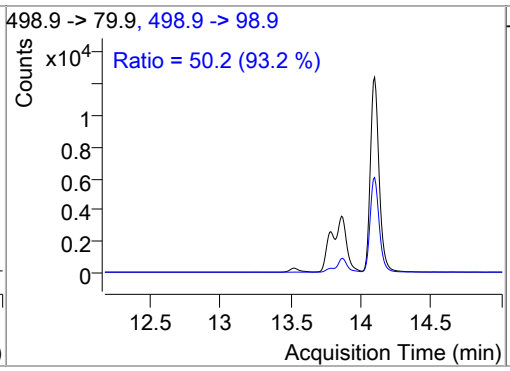


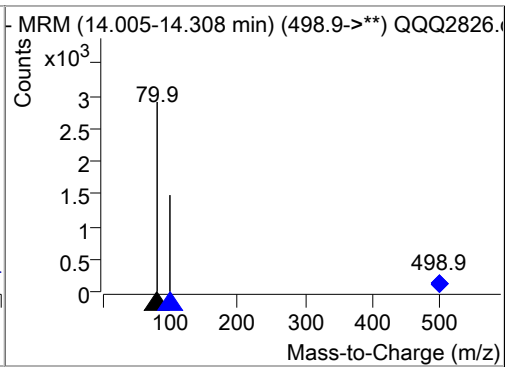




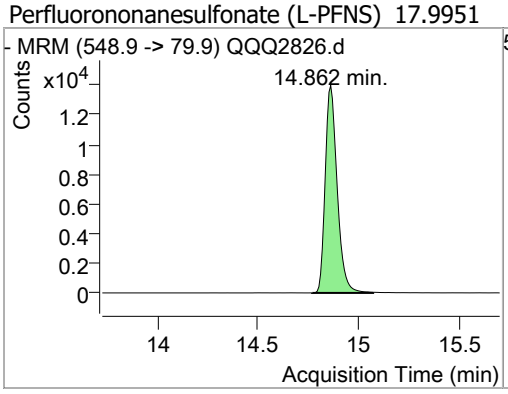
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	12.4378	14.10	0.19	53930	498.9 -> 98.9	50.2	43.1	64.6

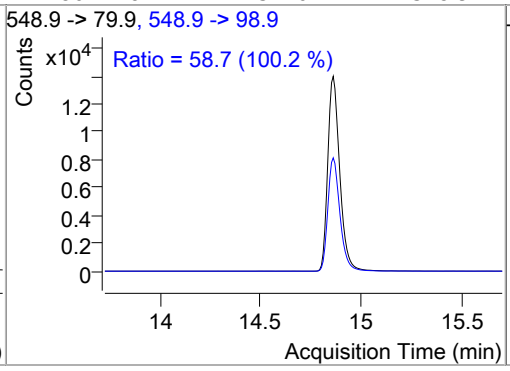


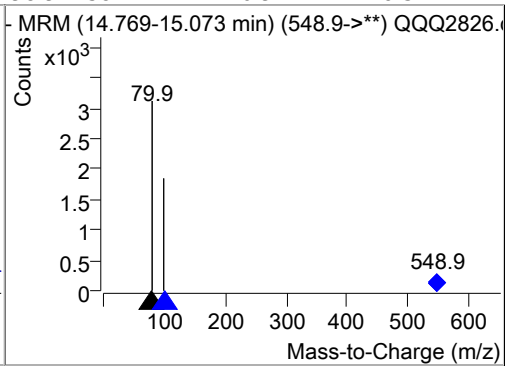




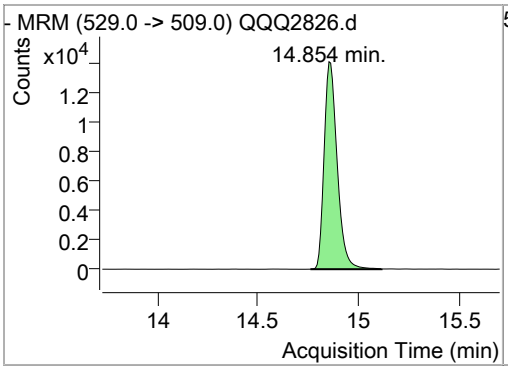
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	17.9951	14.86	0.24	57762	548.9 -> 98.9	58.7	46.9	70.3

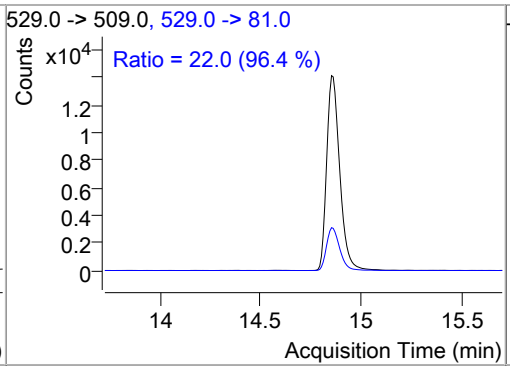


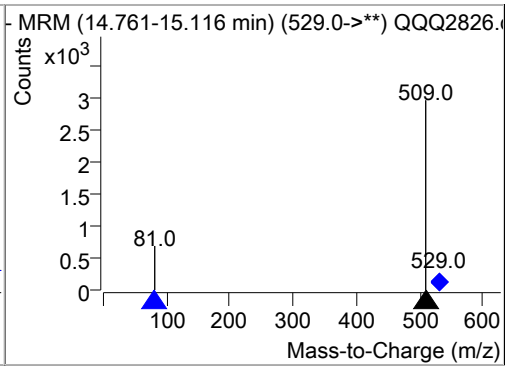




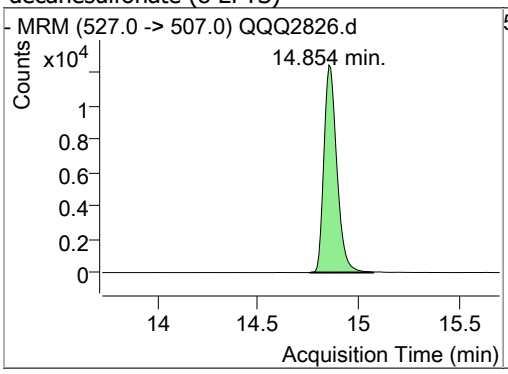
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	19.3066	14.85	0.24	63560	529.0 -> 81.0	22.0	18.3	27.4

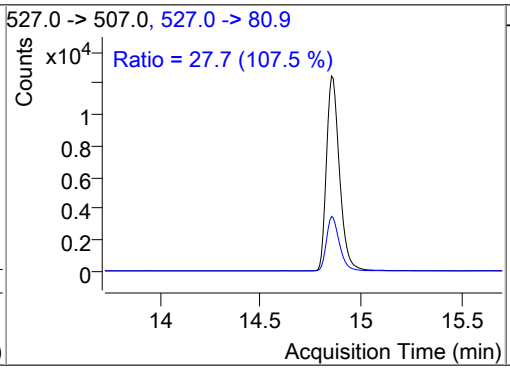


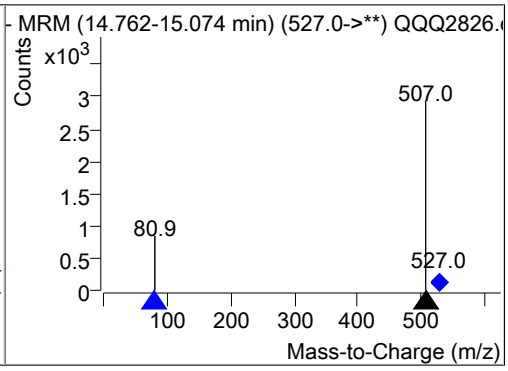




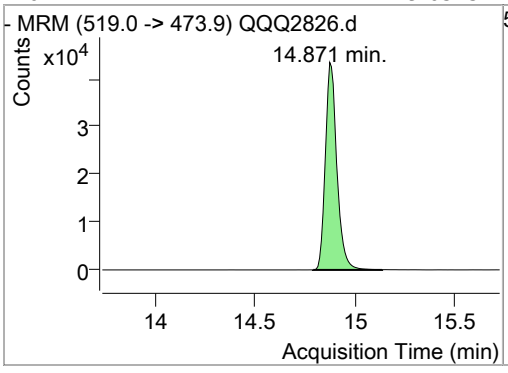
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	19.2815	14.85	0.24	55896	527.0 -> 80.9	27.7	20.6	30.9

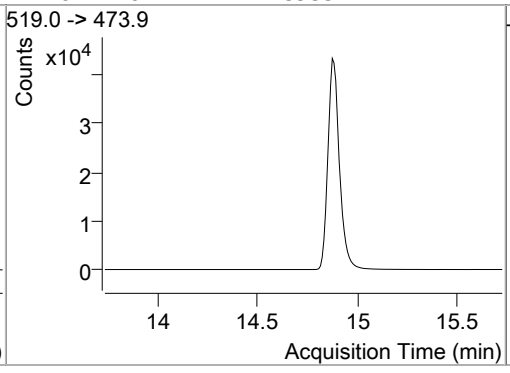


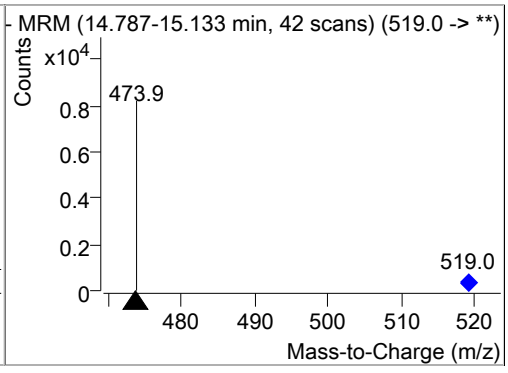




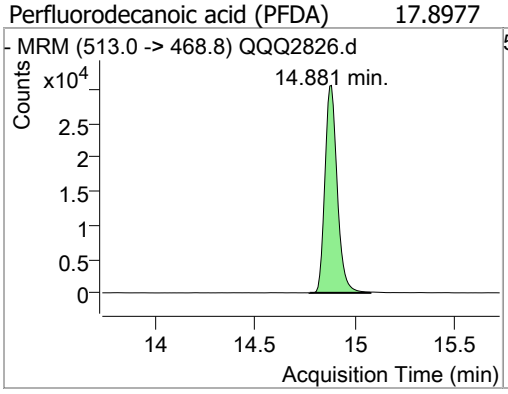
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	19.6515	14.87	0.24	173953				

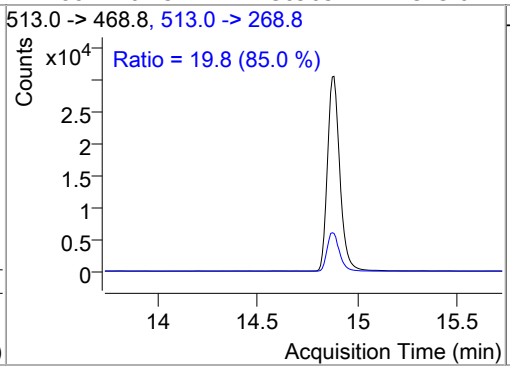


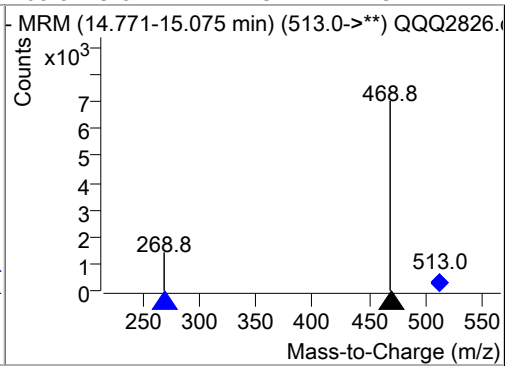




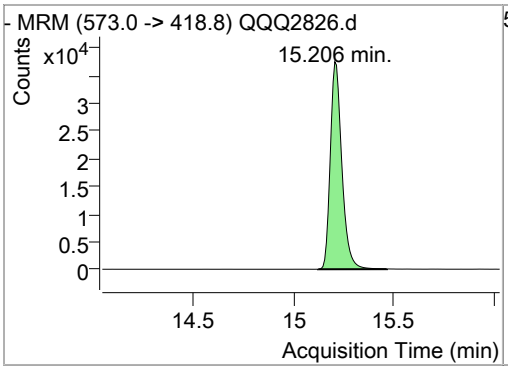
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	17.8977	14.88	0.25	130905	513.0 -> 268.8	19.8	17.5	29.1

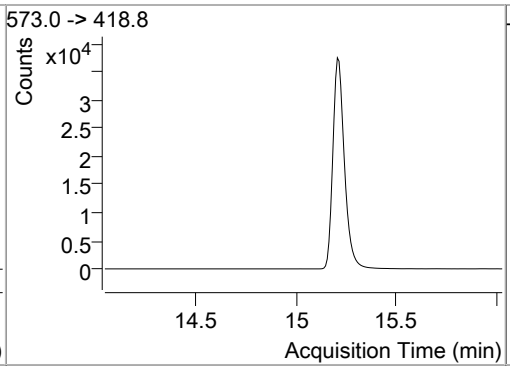


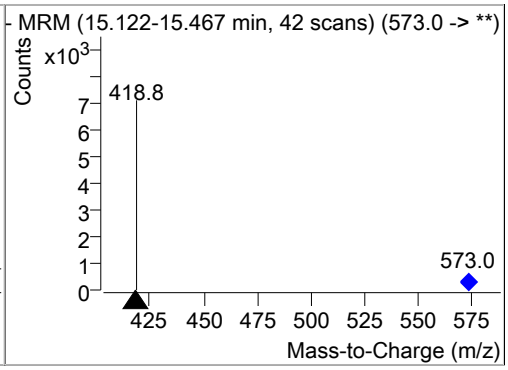




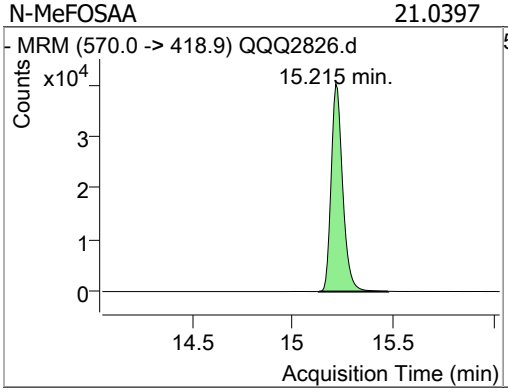
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	21.1454	15.21	0.27	150270				

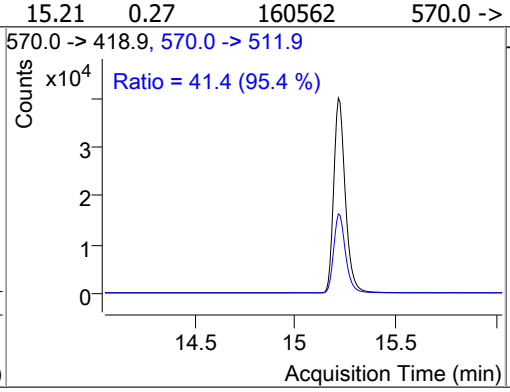


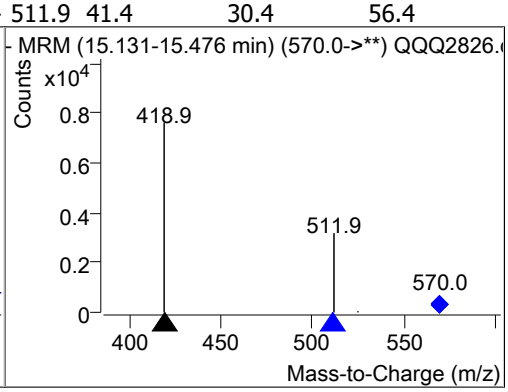




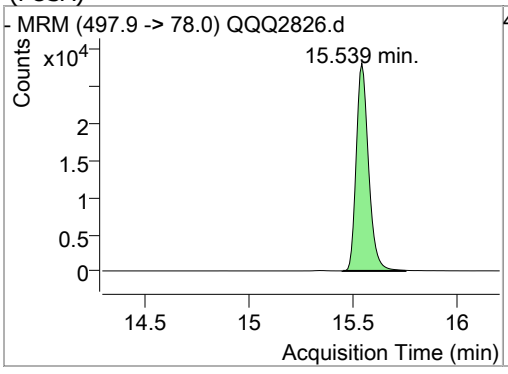
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	21.0397	15.21	0.27	160562	570.0 -> 511.9	41.4	30.4	56.4

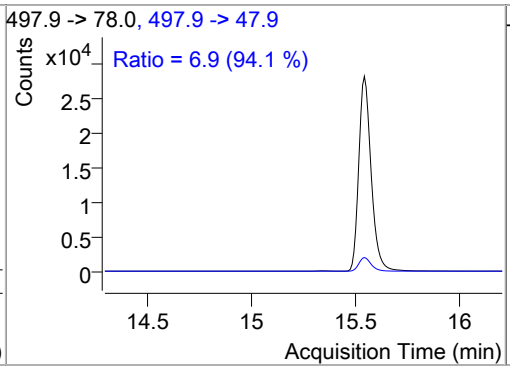


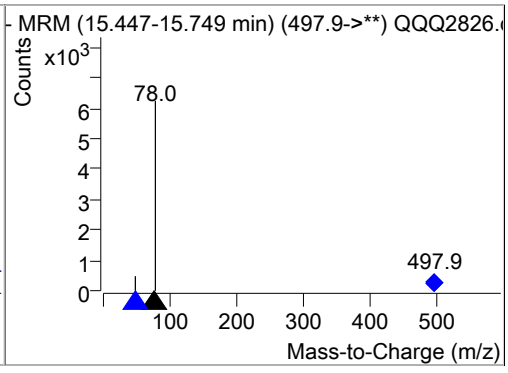




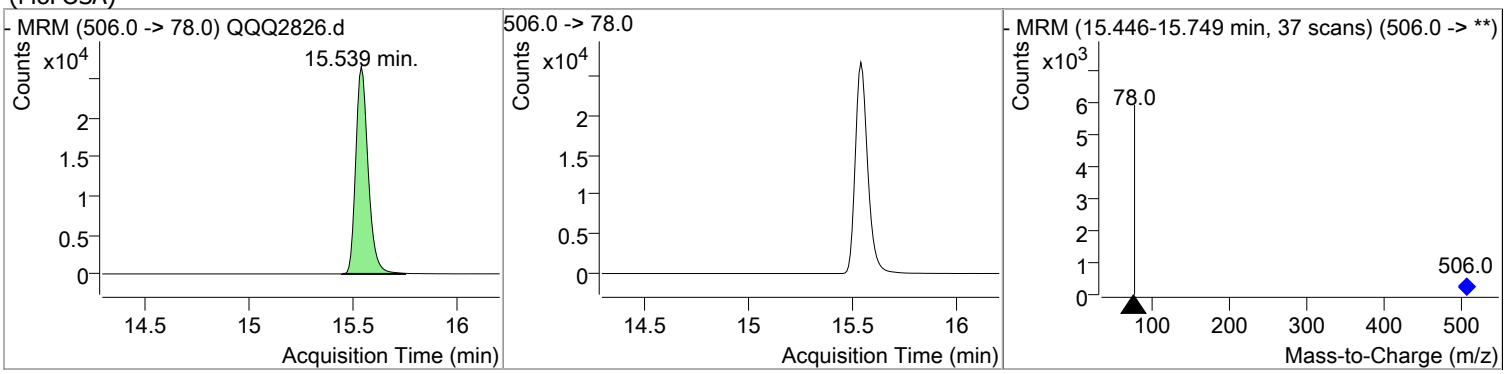
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	19.6605	15.54	0.35	115806	497.9 -> 47.9	6.9	5.9	8.8



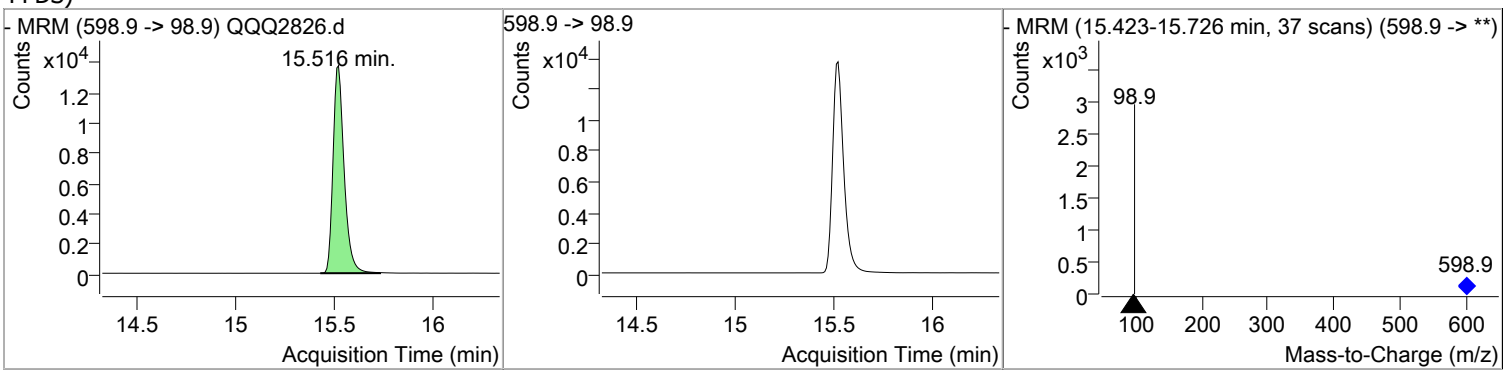




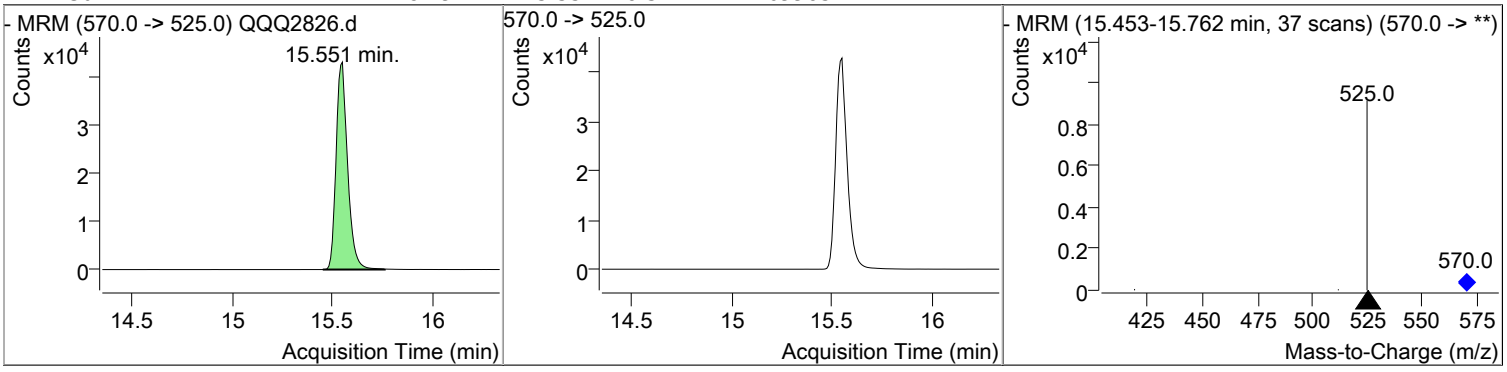
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	19.3387	15.54	0.34	109531				



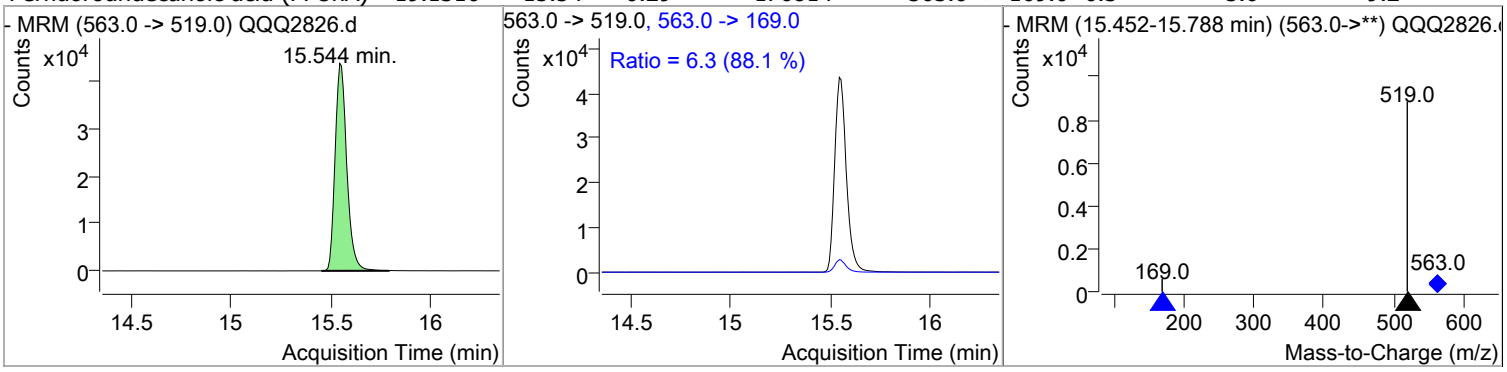
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	18.1793	15.52	0.30	53566				



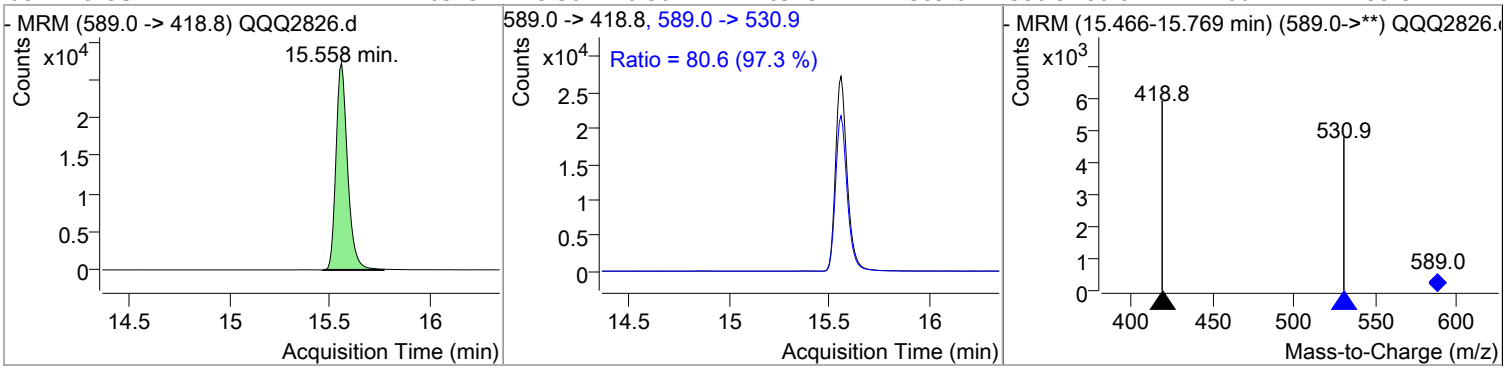
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	18.7947	15.55	0.31	169905				



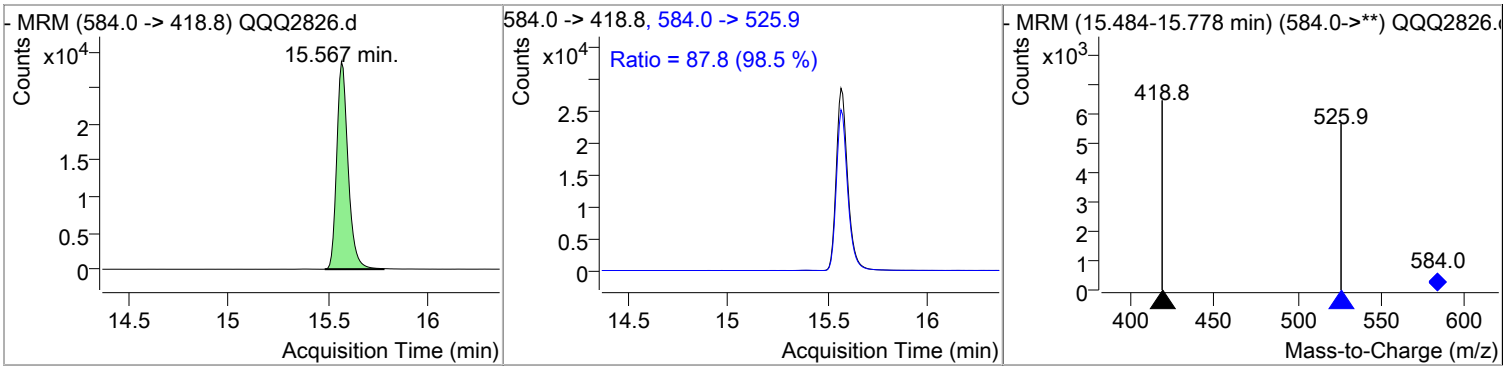
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	19.1316	15.54	0.29	176814	563.0 -> 169.0	6.3	5.0	9.2



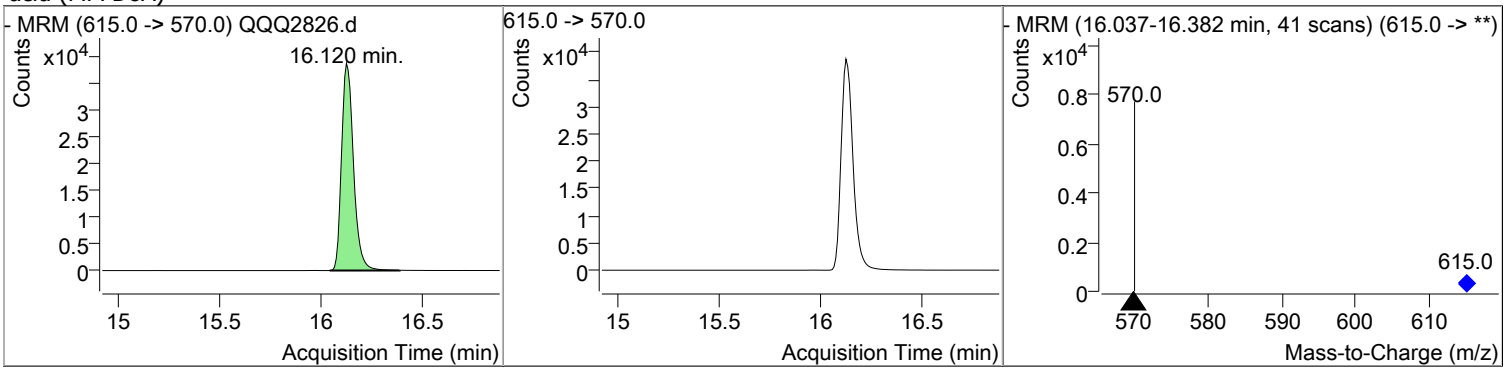
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	17.6515	15.56	0.30	109452	589.0 -> 530.9	80.6	66.2	99.3



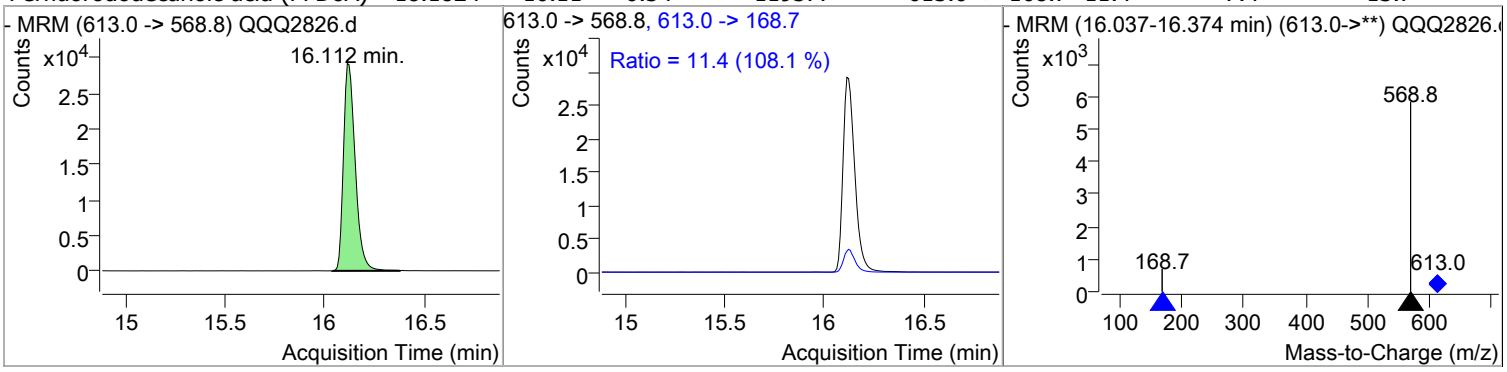
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	18.8262	15.57	0.30	112608	584.0 -> 525.9	87.8	71.3	107.0



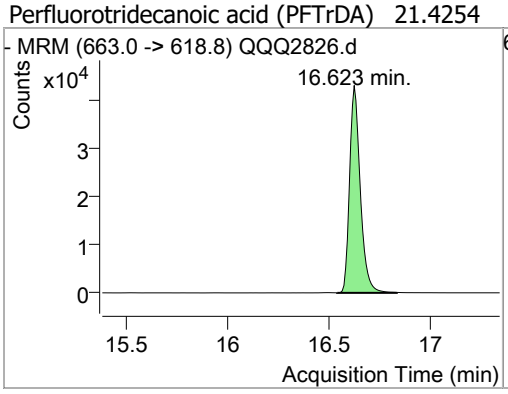
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	17.8485	16.12	0.35	157987				

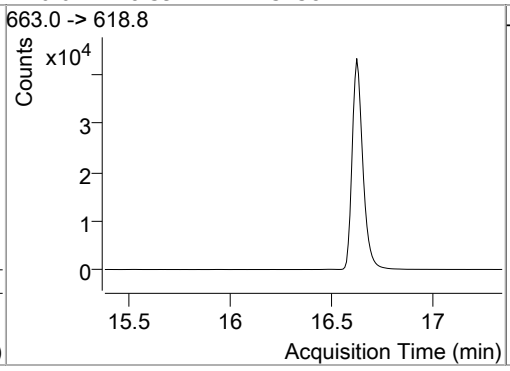


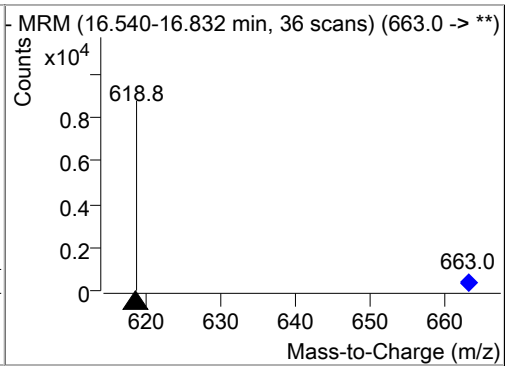
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	18.1824	16.11	0.34	119377	613.0 -> 168.7	11.4	7.4	13.7



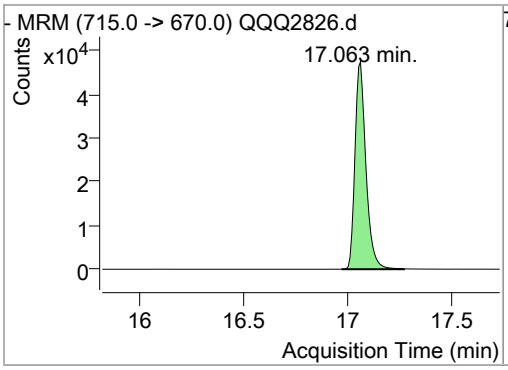
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	21.4254	16.62	0.39	157584				

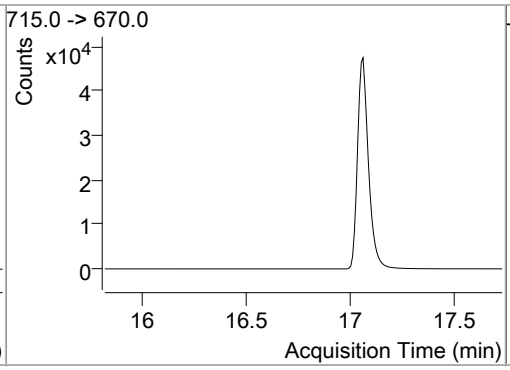


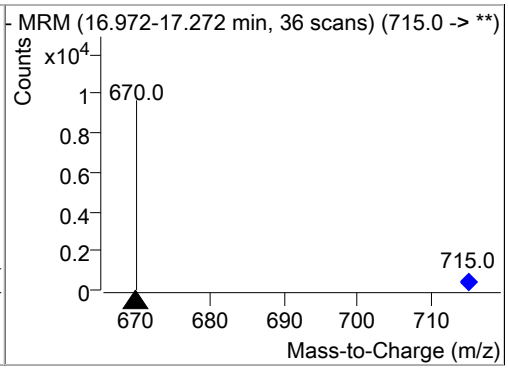




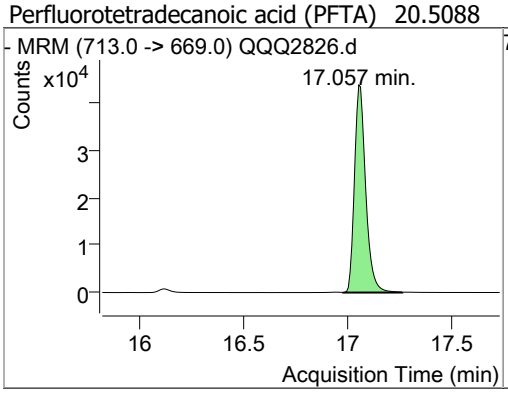
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	20.9571	17.06	0.43	172988				

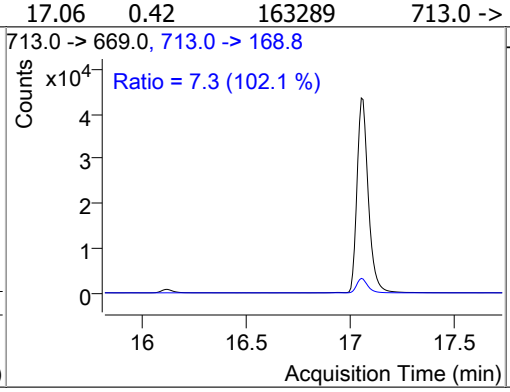


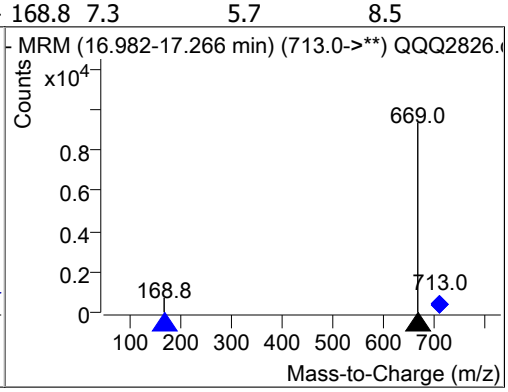




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	20.5088	17.06	0.42	163289	713.0 -> 168.8	7.3	5.7	8.5







SECOND-SOURCE CALIBRATION VERIFICATION

EPA 537m

Laboratory: York Analytical Laboratories, Inc. **SDG:** 19L0685

Client: Chazen Environmental Services (Poughkeepsie) **Project:** 41433.00 TASK 0600 Katonah Municipal W

Calibration: YL90023 **Laboratory ID:** Y9L1909-SCV1

Sequence: Y9L1909 **Standard ID:** Y19L297

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DIFF	QC LIMIT
Perfluorobutanesulfonic acid (PFBS)	4.42	4.45	0.6	30.00
Perfluorohexanoic acid (PFHxA)	5.00	5.08	1.7	30.00
Perfluoroheptanoic acid (PFHpA)	5.00	4.91	-1.7	30.00
Perfluorohexanesulfonic acid (PFHxS)	3.70	3.64	-1.6	30.00
Perfluorooctanoic acid (PFOA)	5.00	4.69	-6.3	30.00
Perfluorooctanesulfonic acid (PFOS)	3.65	3.56	-2.5	30.00
Perfluorononanoic acid (PFNA)	4.80	4.41	-8.1	30.00
Perfluorodecanoic acid (PFDA)	5.00	4.88	-2.4	30.00
Perfluoroundecanoic acid (PFUnA)	5.00	4.90	-2.0	30.00
Perfluorododecanoic acid (PFDoA)	5.00	5.50	10.0	30.00
Perfluorotridecanoic acid (PFTrDA)	5.00	5.16	3.3	30.00
Perfluorotetradecanoic acid (PFTA)	5.00	4.99	-0.3	30.00
N-MeFOSAA	5.00	5.10	2.0	30.00
N-EtFOSAA	5.00	5.24	4.9	30.00
Perfluoropentanoic acid (PFPeA)	5.00	5.04	0.9	30.00
Perfluoro-1-octanesulfonamide (FOSA)	5.00	5.20	4.0	30.00
Perfluoro-1-heptanesulfonic acid (PFHpS)	4.98	4.99	0.2	30.00
Perfluoro-1-decanesulfonic acid (PFDS)	4.82	4.85	0.6	30.00
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	4.75	4.49	-5.5	30.00
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	4.80	5.41	12.8	30.00
Perfluoro-n-butanoic acid (PFBA)	5.00	5.04	0.7	30.00
M3PFBS	4.64	4.67	0.7	30.00
M5PFHxA	5.00	5.21	4.2	30.00
M4PFHpA	5.00	4.94	-1.2	30.00
M3PFHxS	4.73	4.71	-0.5	30.00
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.00	5.00	-0.1	30.00
M6PFDA	5.00	5.03	0.7	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 537m

Laboratory: York Analytical Laboratories, Inc.
SDG: 19L0685
Client: Chazen Environmental Services (Poughkeepsie)
Project: 41433.00 TASK 0600 Katonah Municipal W
Calibration: YL90023
Laboratory ID: Y9L1909-SCV1
Sequence: Y9L1909
Standard ID: Y19L297

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DIFF	QC LIMIT
M7PFUdA	5.00	5.53	10.6	30.00
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.00	5.88	17.6	30.00
M2PFTeDA	5.00	4.95	-0.9	30.00
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.00	5.06	1.3	30.00
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.78	4.83	1.0	30.00
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.00	5.09	1.8	30.00
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.00	5.24	4.8	30.00
d3-N-MeFOSAA	5.00	4.95	-1.1	30.00
d5-N-EtFOSAA	5.00	5.37	7.4	30.00
M2-6:2 FTS	4.74	4.57	-3.6	30.00
M2-8:2 FTS	4.79	5.32	11.1	30.00
M9PFNA	5.00	5.00	0.06	30.00

* Values outside of QC limits

Quantitation Results Report (Not Reviewed)

Data File	QQQ2827.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/19/2019 10:23:24 PM
Sample Name	SEQ-SV1	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

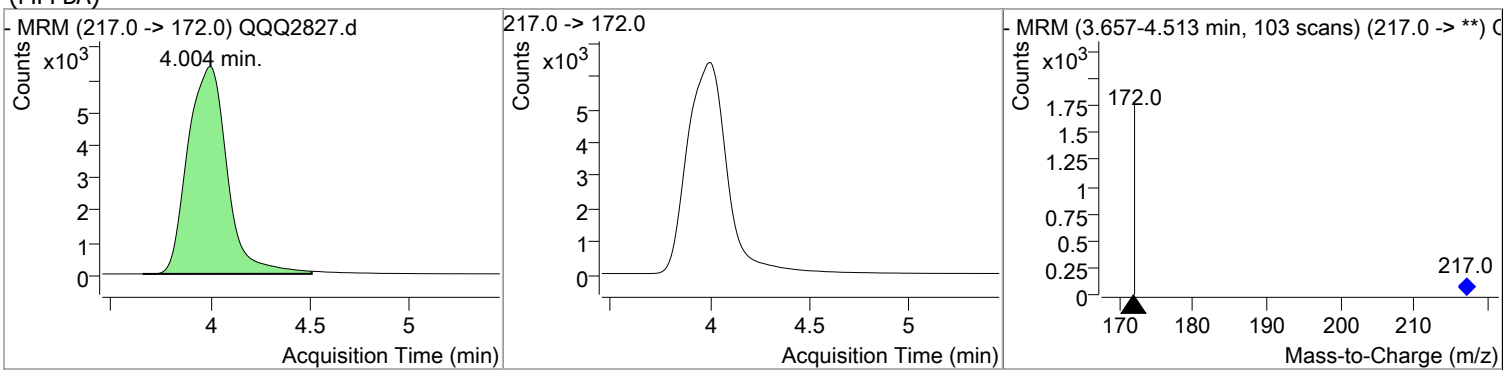
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.135	417.0 -> 372.0	223143	10.0000	ng/ml	0.101
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	4.004	217.0 -> 172.0	88486	5.0626	ng/ml	-0.184
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.63%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.039	268.0 -> 223.0	121240	5.0880	ng/ml	-0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.88%		
M3PFBS	8.785	302.0 -> 79.9	35159	4.6740	ng/ml	-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 46.74%		
M2-4-2FTS	10.258	329.0 -> 309.0	35472	5.0418	ng/ml	0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.42%		
M5PFHxA	10.403	318.0 -> 273.0	116976	5.2110	ng/ml	0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.11%		
M4PFHpA	11.969	367.0 -> 322.0	30645	4.9379	ng/ml	0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.38%		
M3PFHxS	12.102	402.0 -> 80.0	24322	4.7071	ng/ml	0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.07%		
M2-6-2FTS	13.074	429.0 -> 409.0	25257	4.5672	ng/ml	0.101
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 45.67%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.134	421.0 -> 376.0	58960	4.9950	ng/ml	0.110
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.95%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.074	472.0 -> 427.0	60422	5.0030	ng/ml	0.170
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.03%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.089	507.0 -> 80.0	19102	4.8283	ng/ml	0.178
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.28%		
M2-8-2FTS	14.854	529.0 -> 509.0	25361	5.3227	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 53.23%		
M6PFDA	14.871	519.0 -> 473.9	48430	5.0327	ng/ml	0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.33%		
d3-N-MeFOSAA	15.206	573.0 -> 418.8	38217	4.9468	ng/ml	0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.47%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	32261	5.2396	ng/ml	0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.40%		
M7PFUdA	15.534	570.0 -> 525.0	54326	5.5280	ng/ml	0.294
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 55.28%		
d5-N-EtFOSAA	15.550	589.0 -> 418.8	36189	5.3686	ng/ml	0.294
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 53.69%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.112	615.0 -> 570.0	56597	5.8817	ng/ml	0.337
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 58.82%		
M2PFTeDA	17.055	715.0 -> 670.0	44445	4.9530	ng/ml	0.418
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.53%		

Target Compounds	QValue

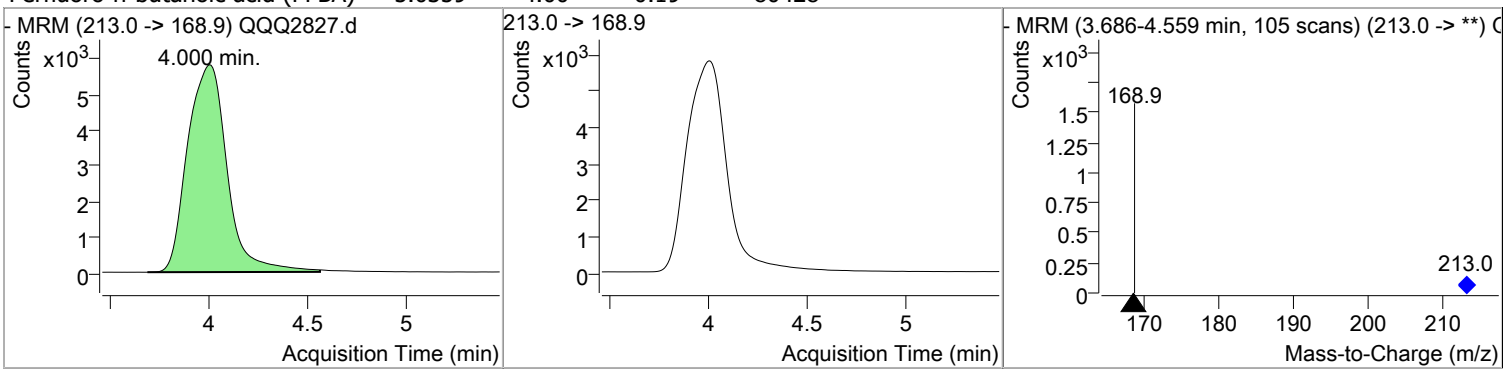
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.000	213.0 -> 168.9	80428	5.0359	ng/ml	100
Perfluoro-n-pentanoic acid (PFPeA)	8.040	263.0 -> 219.0	105985	5.0427	ng/ml	100
Perfluorobutanesulfonic acid (PFBS)	8.788	298.9 -> 79.9	30536	4.4453	ng/ml	100
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.260	327.0 -> 307.0	33845	5.1114	ng/ml	97
Perfluorohexanoic acid (PFHxA)	10.406	313.0 -> 268.9	97644	5.0827	ng/ml	100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.725	348.9 -> 79.9	28903	4.6818	ng/ml	100
Perfluoroheptanoic acid (PFHpA)	11.970	363.0 -> 318.8	71748	4.9133	ng/ml	99
Perfluorohexanesulfonic acid (PFHxS)	12.103	398.9 -> 79.9	19353	3.6426	ng/ml	100
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.075	427.0 -> 407.0	26173	4.4896	ng/ml	98
Perfluorooctanoic acid (PFOA)	13.135	413.0 -> 368.8	53145	4.6862	ng/ml	98
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.190	448.9 -> 80.0	19118	4.9898	ng/ml	96
Perfluorononanoic acid (PFNA)	14.074	463.0 -> 418.8	40352	4.4133	ng/ml	96
Perfluorooctanesulfonic acid (PFOS)	14.090	498.9 -> 79.9	16774	3.5586	ng/ml	96
Perfluorononanesulfonate (L-PFNS)	14.853	548.9 -> 79.9	16307	4.6732	ng/ml	96
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.854	527.0 -> 507.0	21989	5.4134	ng/ml	96
Perfluorodecanoic acid (PFDA)	14.872	513.0 -> 468.8	38811	4.8811	ng/ml	93
N-MeFOSAA	15.215	570.0 -> 418.9	42320	5.1012	ng/ml	95
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	33289	5.1987	ng/ml	99
Perfluoro-1-decanesulfonate (L-PFDS)	15.507	598.9 -> 98.9	15527	4.8474	ng/ml	100
Perfluoroundecanoic acid (PFUnA)	15.544	563.0 -> 519.0	49216	4.8986	ng/ml	99
N-EtFOSAA	15.567	584.0 -> 418.8	34100	5.2442	ng/ml	99
Perfluorododecanoic acid (PFDoA)	16.112	613.0 -> 568.8	39255	5.4998	ng/ml	99
Perfluorotridecanoic acid (PFTrDA)	16.615	663.0 -> 618.8	41283	5.1632	ng/ml	100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	43165	4.9870	ng/ml	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

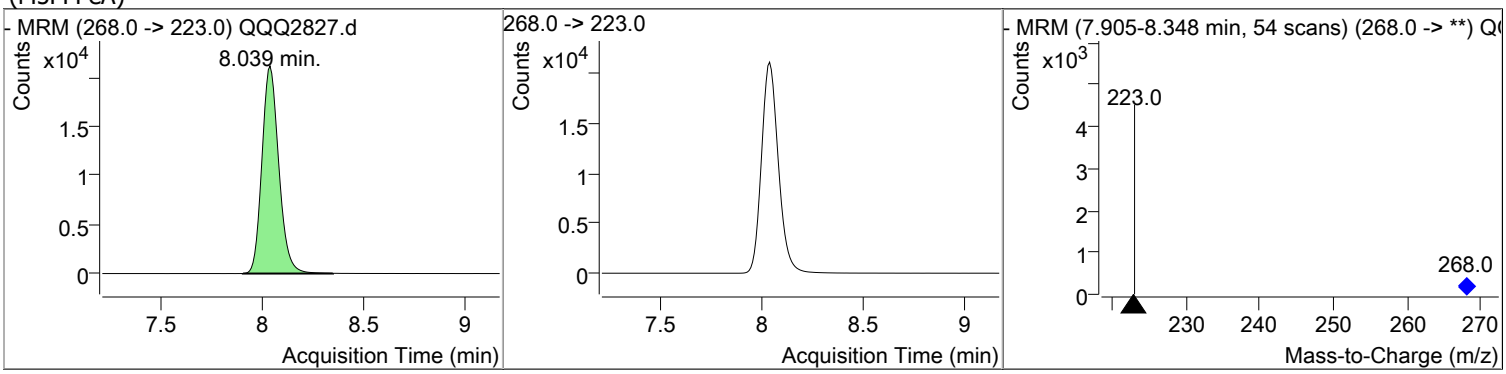
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.0626	4.00	-0.18	88486				



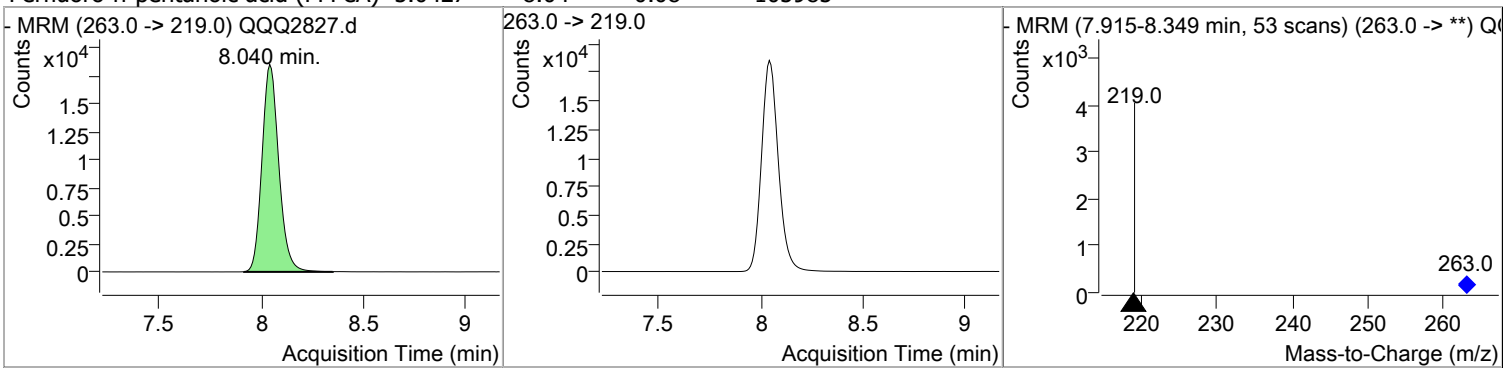
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	5.0359	4.00	-0.19	80428				



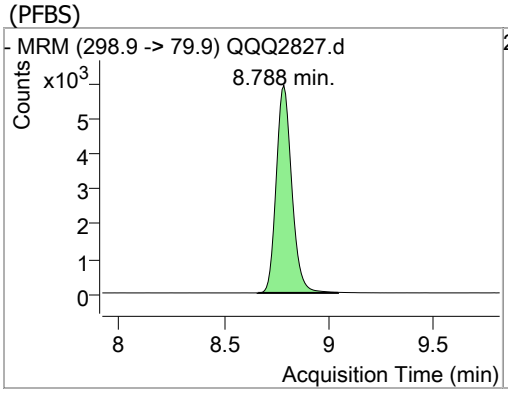
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	5.0880	8.04	-0.08	121240				

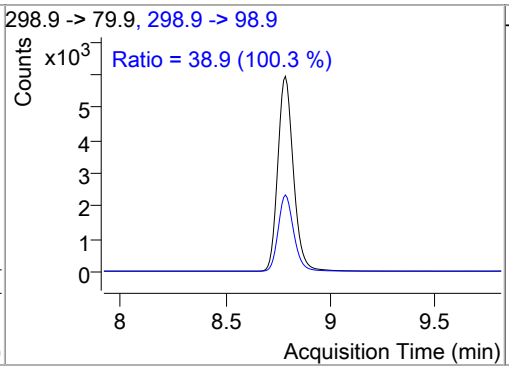


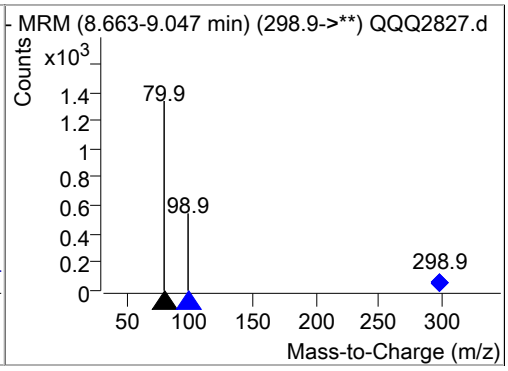
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	5.0427	8.04	-0.08	105985				



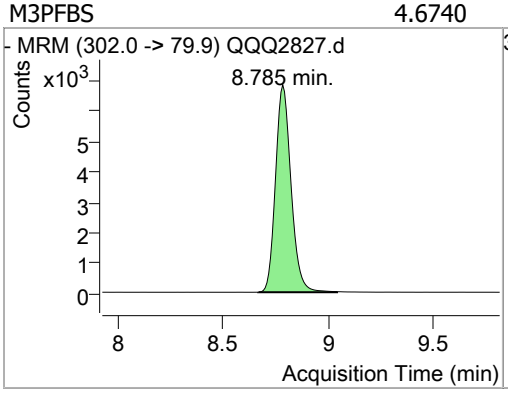
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	4.4453	8.79	-0.03	30536	298.9 -> 98.9	38.9	31.0	46.5

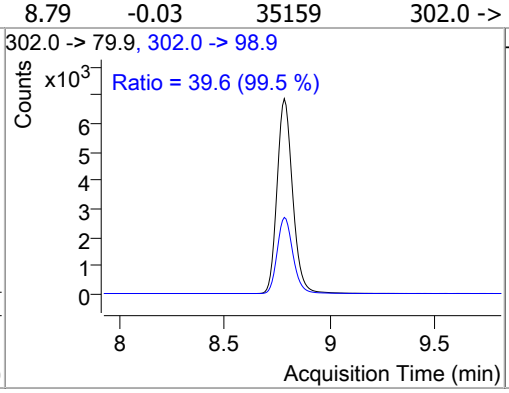


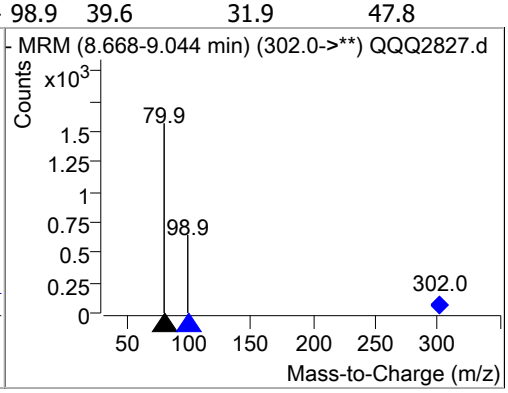




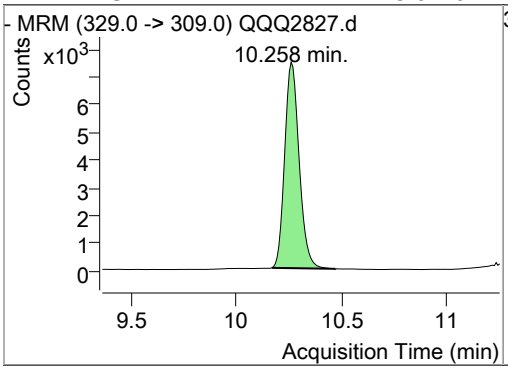
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	4.6740	8.79	-0.03	35159	302.0 -> 98.9	39.6	31.9	47.8

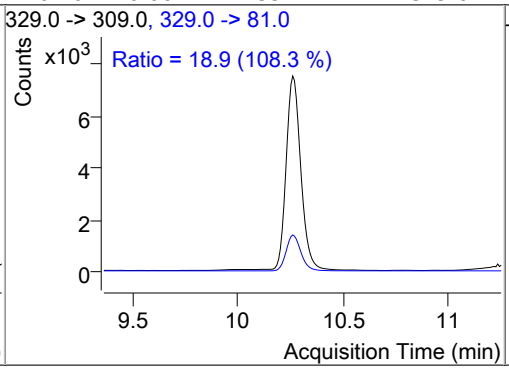


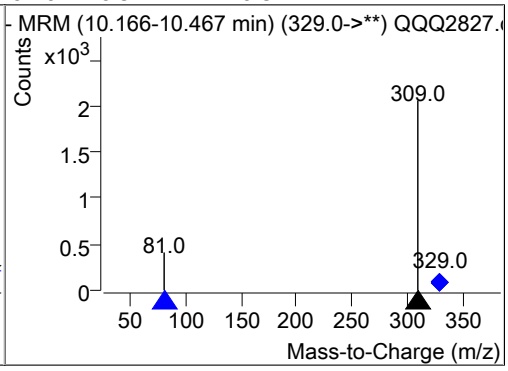




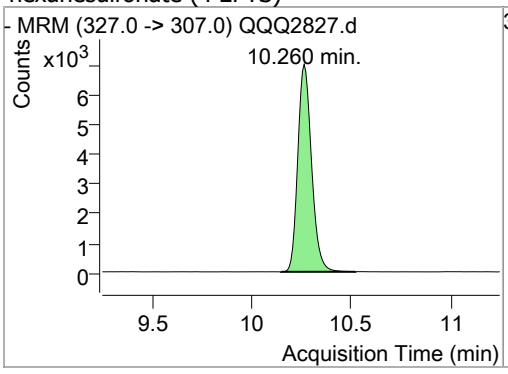
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	5.0418	10.26	0.00	35472	329.0 -> 81.0	18.9	10.5	24.4

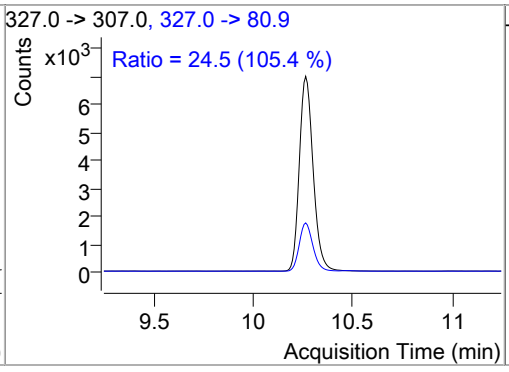


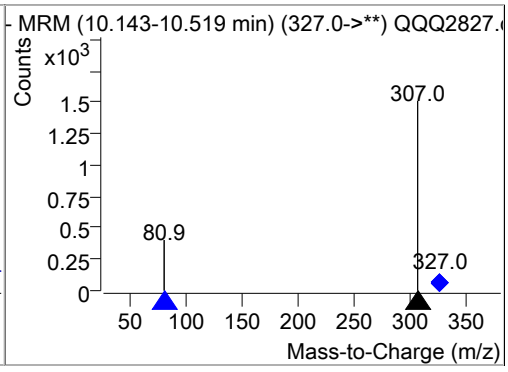




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	5.1114	10.26	0.00	33845	327.0 -> 80.9	24.5	13.9	32.5

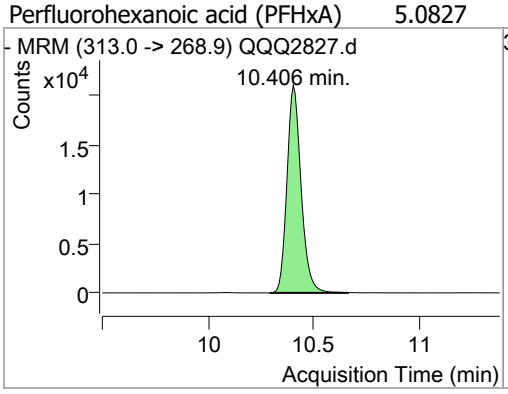


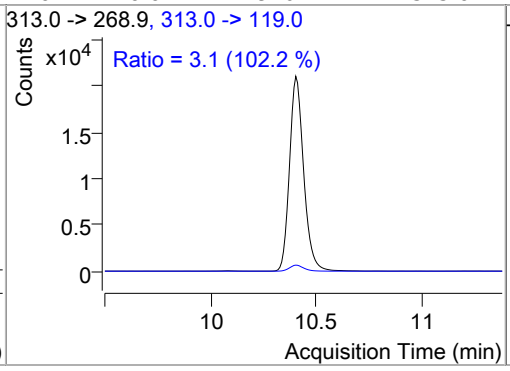


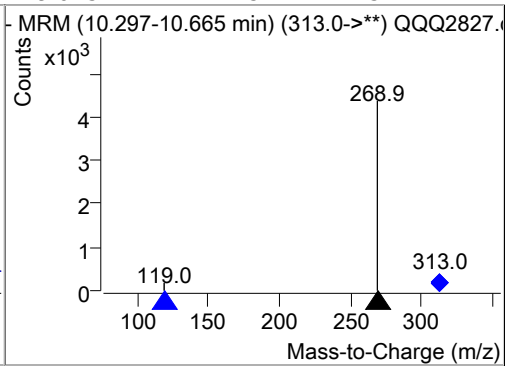


Quantitation Results Report (Not Reviewed)

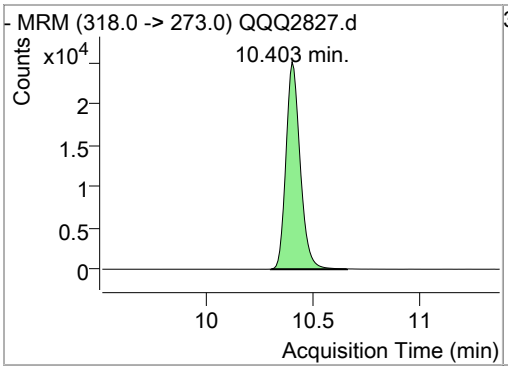
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	5.0827	10.41	0.01	97644	313.0 -> 119.0	3.1	2.5	3.7

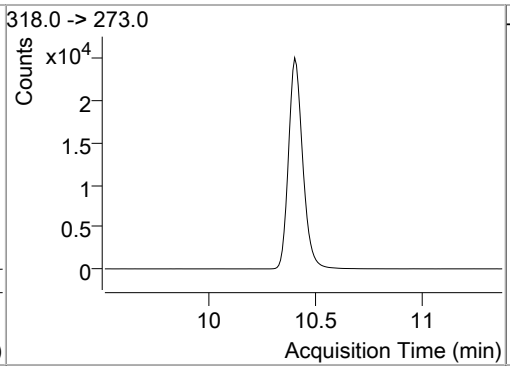


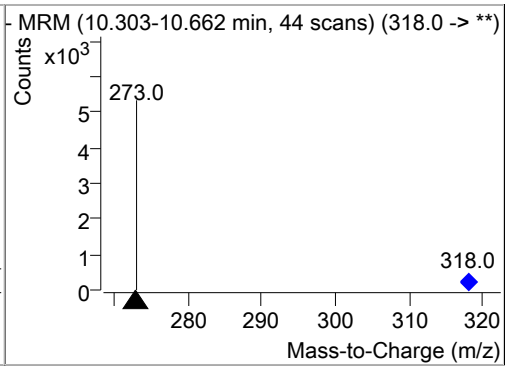




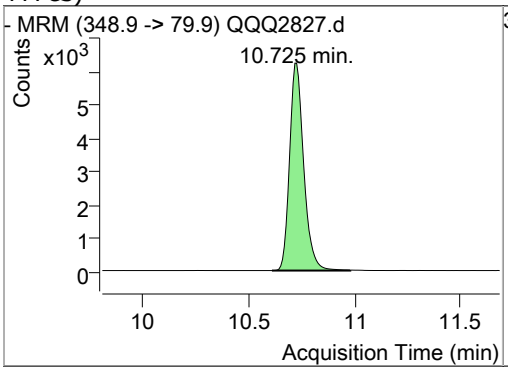
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	5.2110	10.40	0.00	116976				

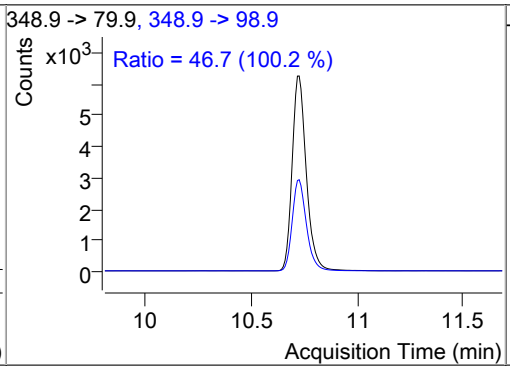


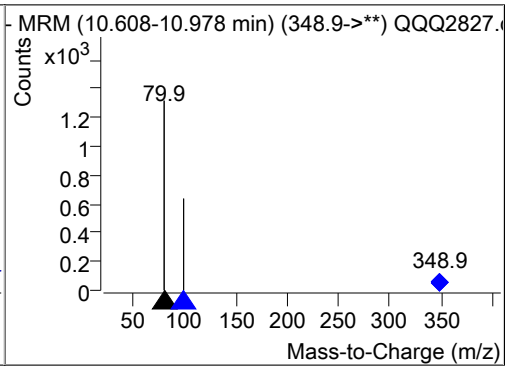




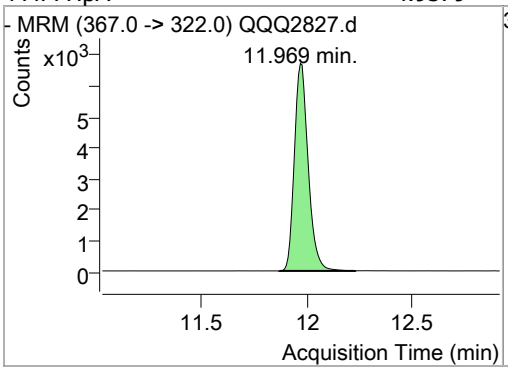
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	4.6818	10.72	0.03	28903	348.9 -> 98.9	46.7	37.3	56.0

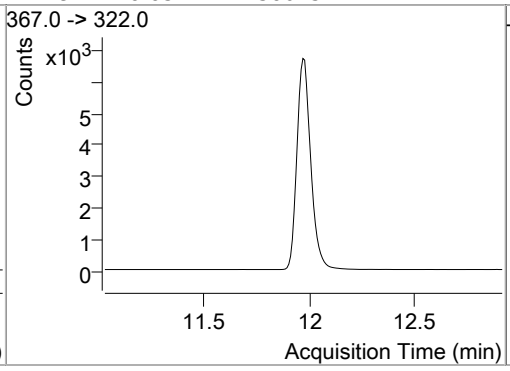


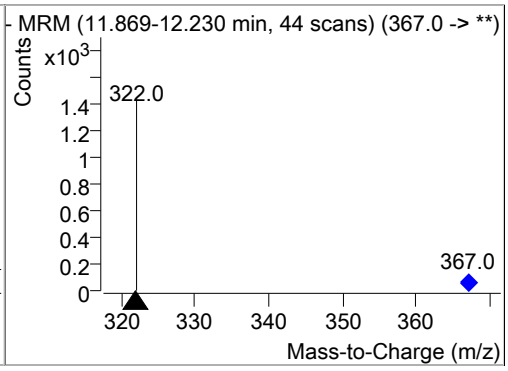




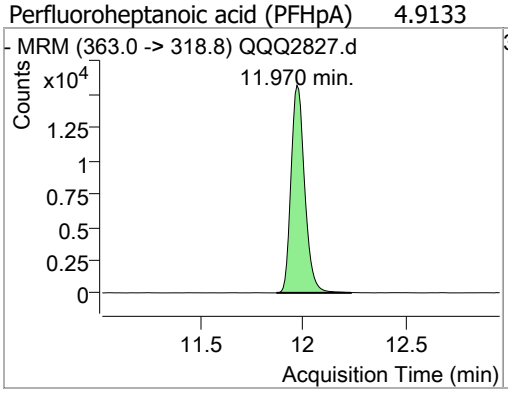
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	4.9379	11.97	0.05	30645				

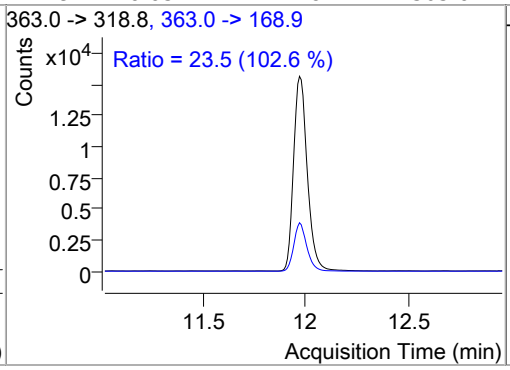


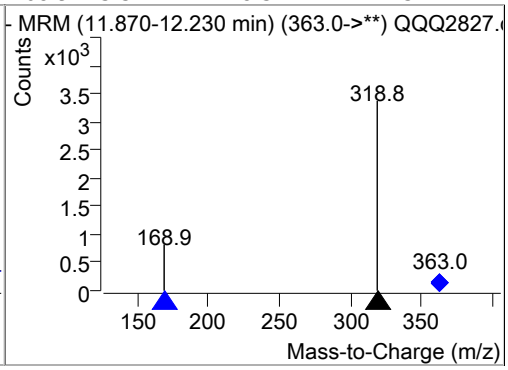




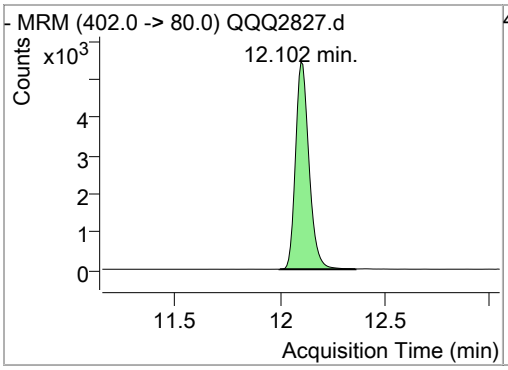
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	4.9133	11.97	0.05	71748	363.0 -> 168.9	23.5	18.3	27.5

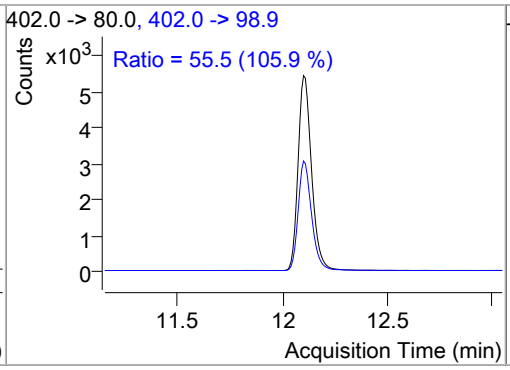


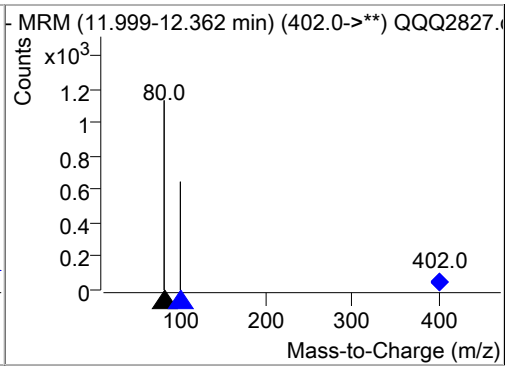




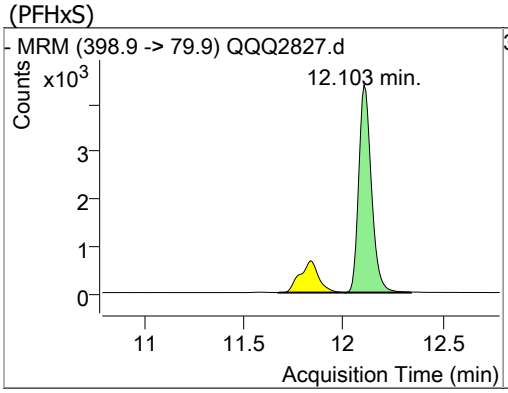
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	4.7071	12.10	0.06	24322	402.0 -> 98.9	55.5	42.0	62.9

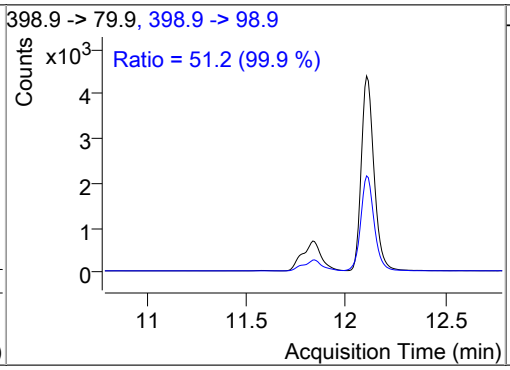


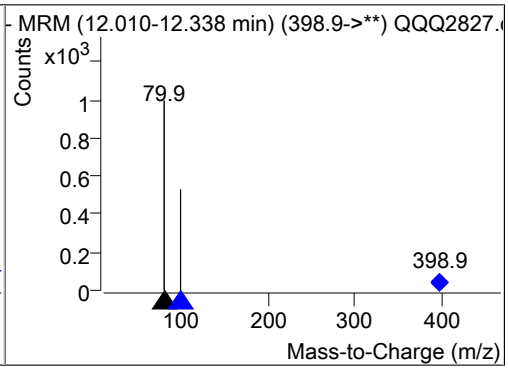




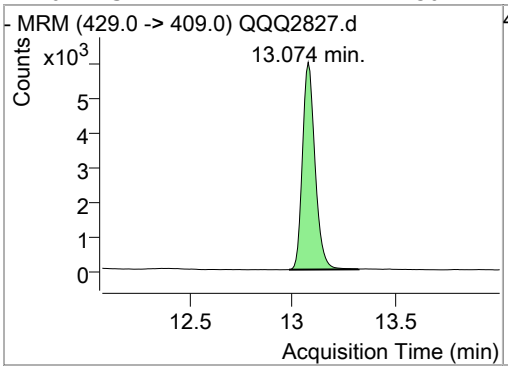
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	3.6426	12.10	0.06	19353	398.9 -> 98.9	51.2	41.0	61.5

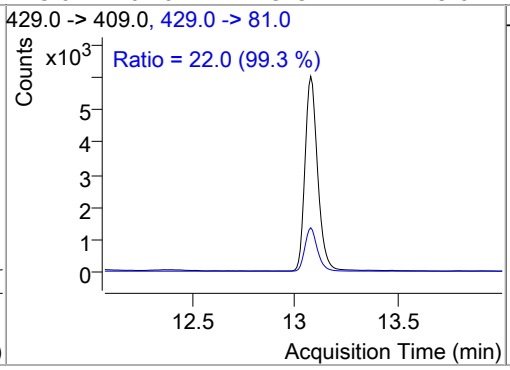


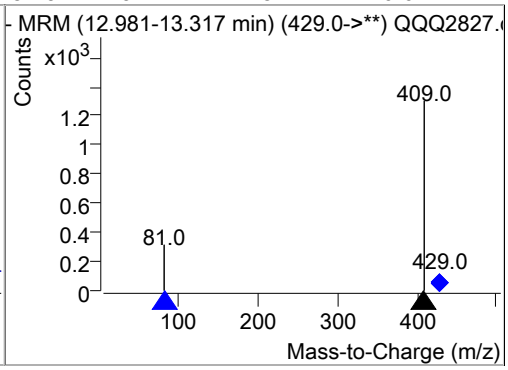




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	4.5672	13.07	0.10	25257	429.0 -> 81.0	22.0	17.8	26.6

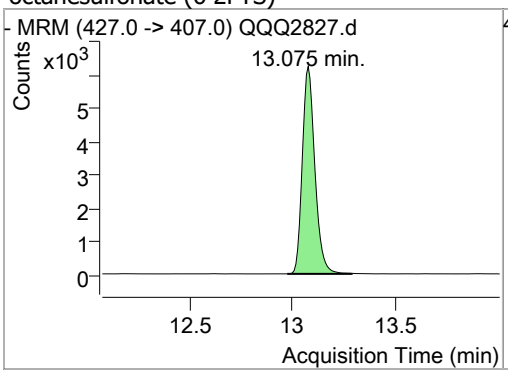


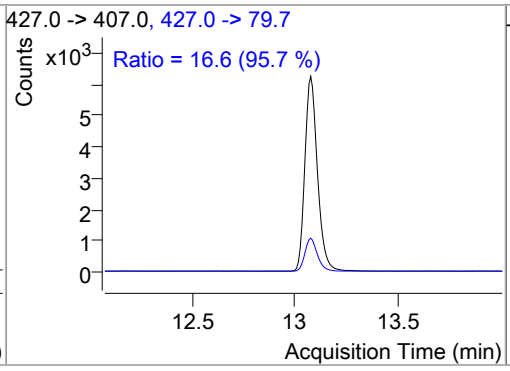


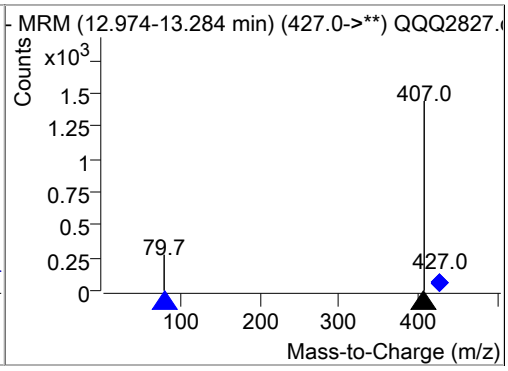


Quantitation Results Report (Not Reviewed)

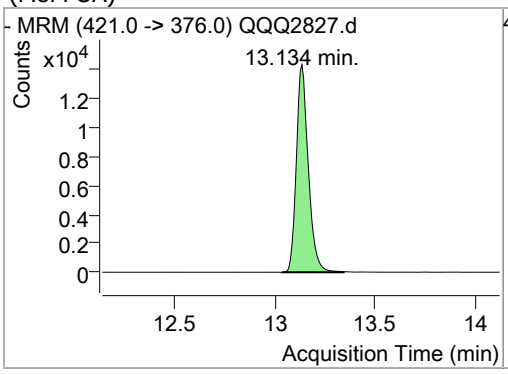
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	4.4896	13.07	0.10	26173	427.0 -> 79.7	16.6	13.9	20.8

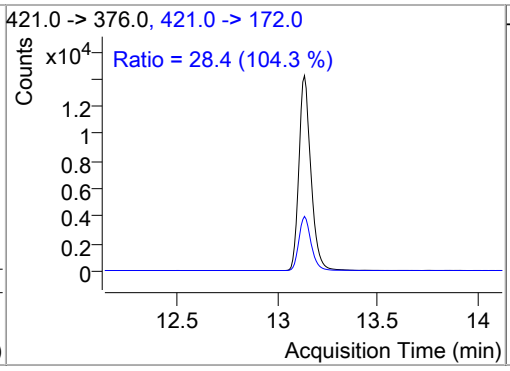


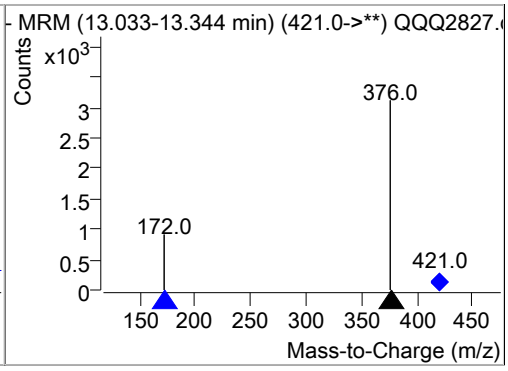




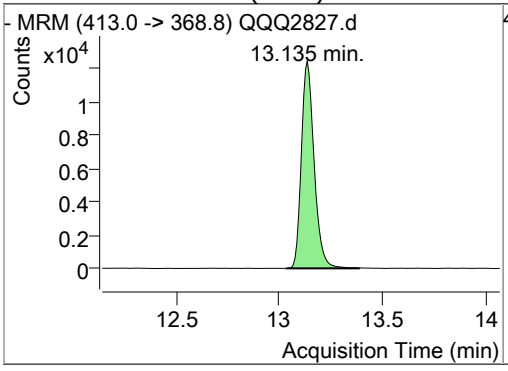
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	4.9950	13.13	0.11	58960	421.0 -> 172.0	28.4	21.7	32.6

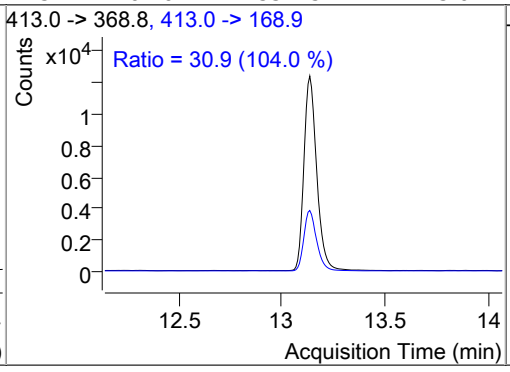


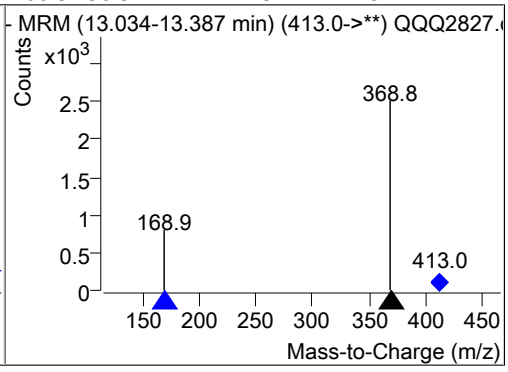




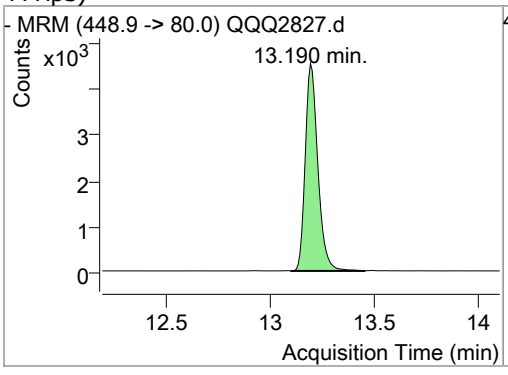
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	4.6862	13.14	0.10	53145	413.0 -> 168.9	30.9	22.3	37.2

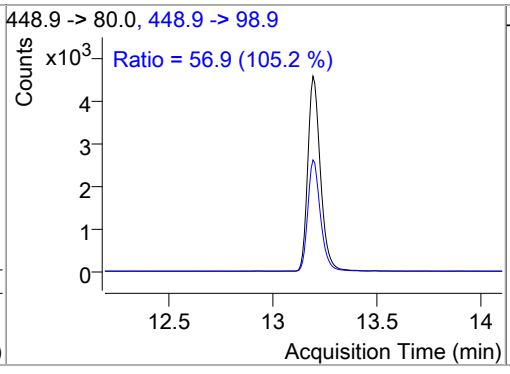


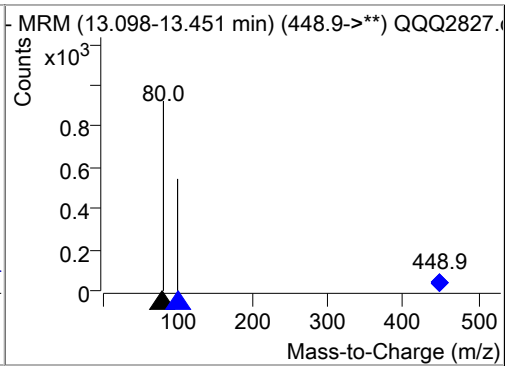




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	4.9898	13.19	0.11	19118	448.9 -> 98.9	56.9	43.3	64.9

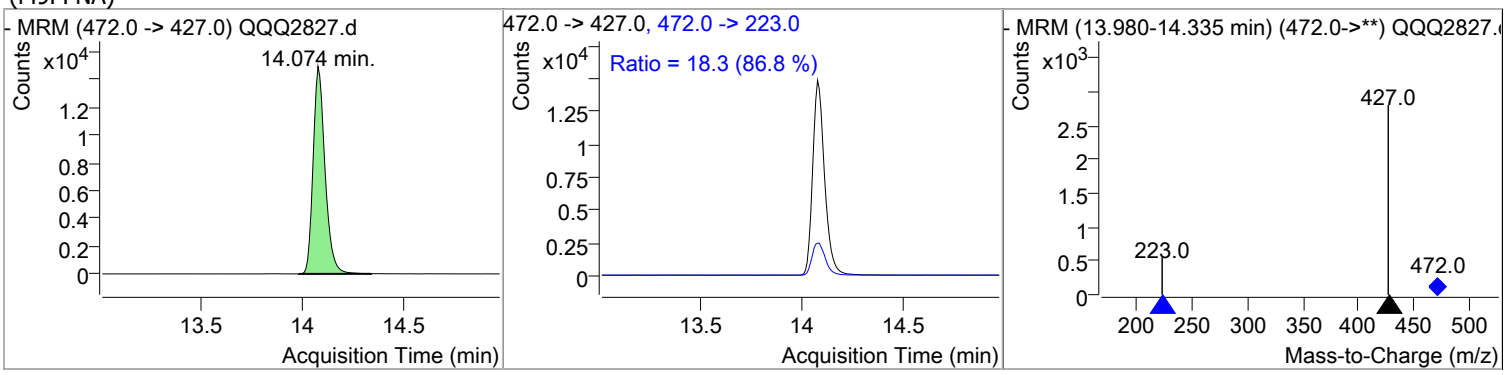




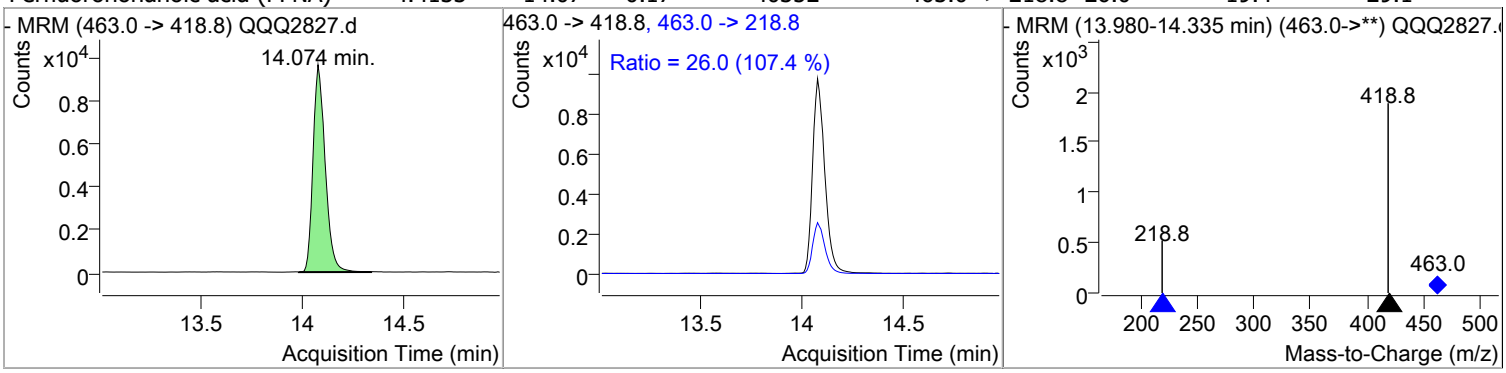


Quantitation Results Report (Not Reviewed)

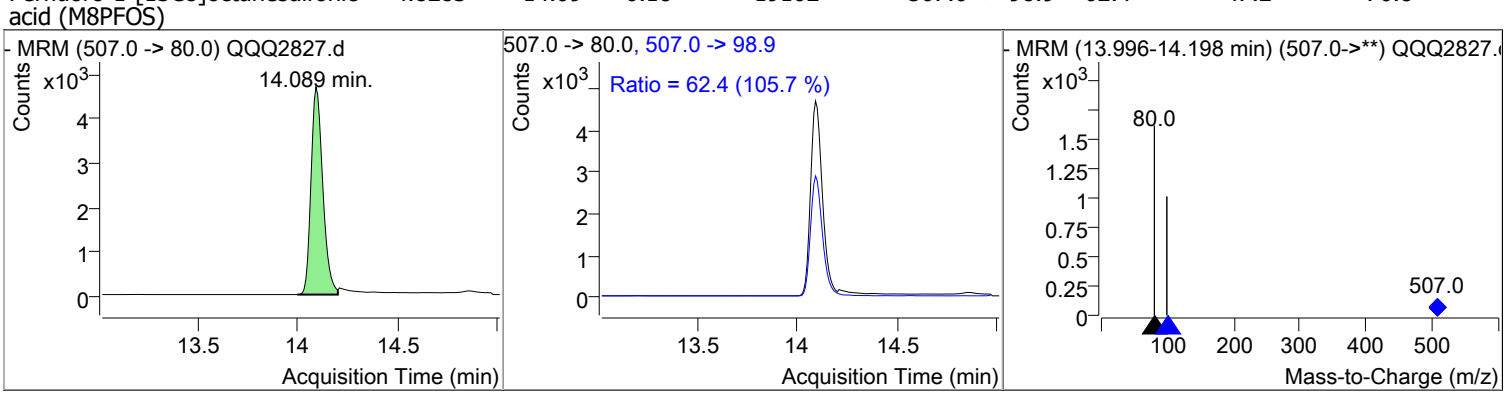
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	5.0030	14.07	0.17	60422	472.0 -> 223.0	18.3	16.9	25.4



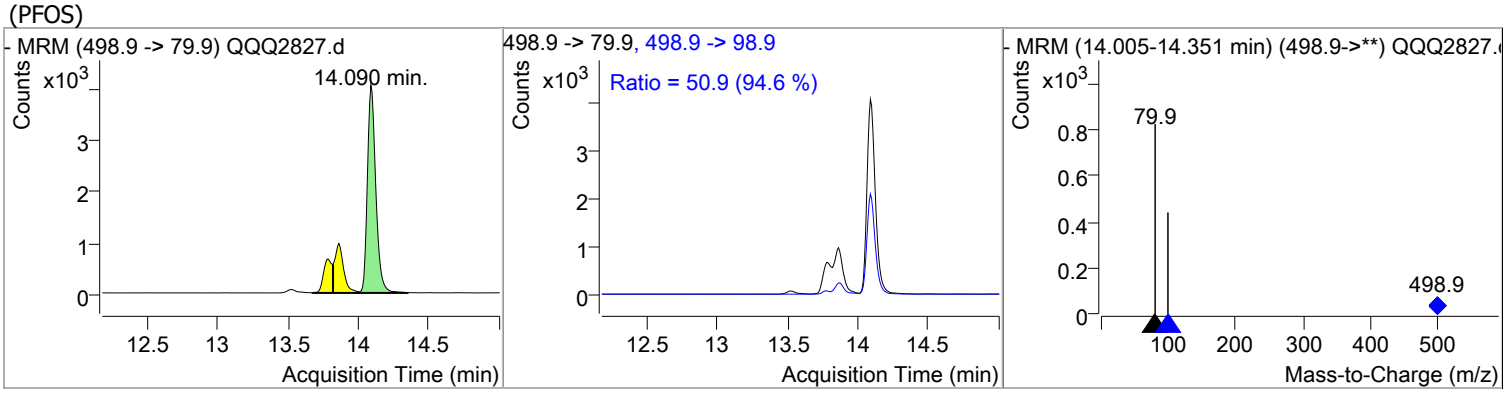
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	4.4133	14.07	0.17	40352	463.0 -> 218.8	26.0	19.4	29.1



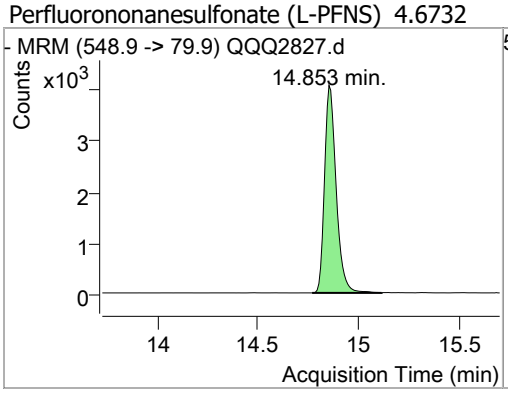
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.8283	14.09	0.18	19102	507.0 -> 98.9	62.4	47.2	70.8

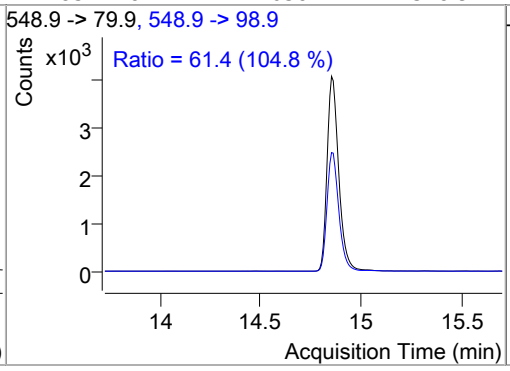


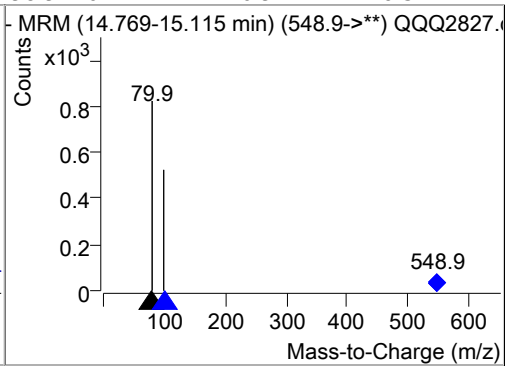
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	3.5586	14.09	0.18	16774	498.9 -> 98.9	50.9	43.1	64.6



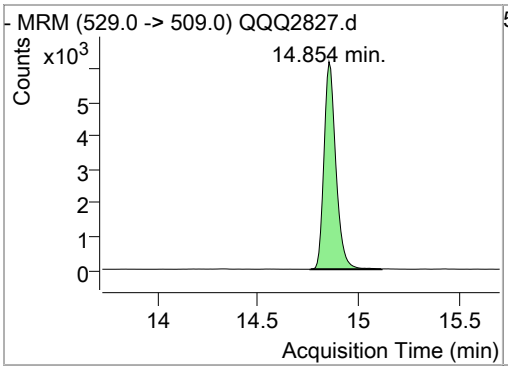
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	4.6732	14.85	0.24	16307	548.9 -> 98.9	61.4	46.9	70.3

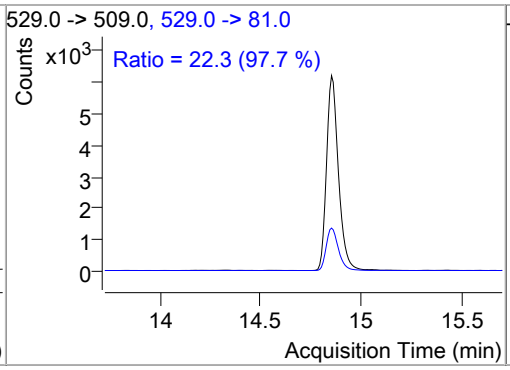


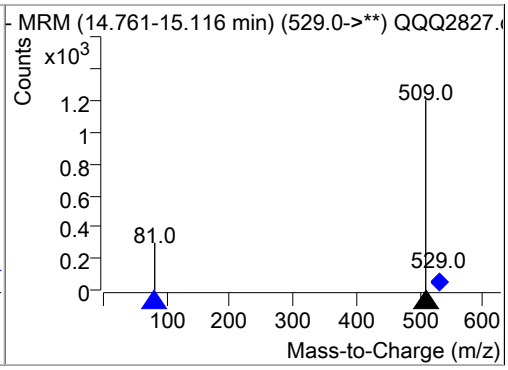




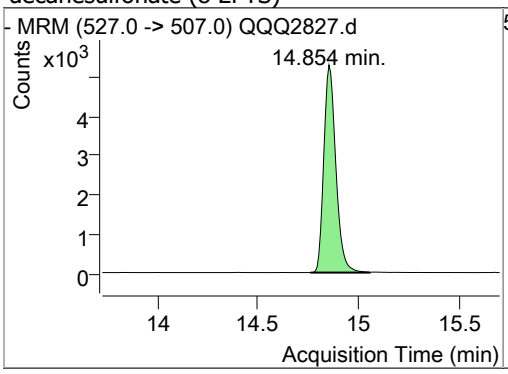
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	5.3227	14.85	0.24	25361	529.0 -> 81.0	22.3	18.3	27.4

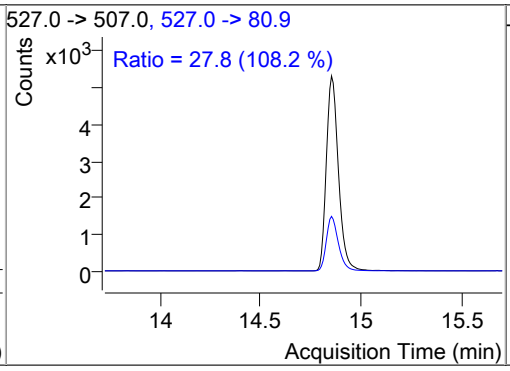


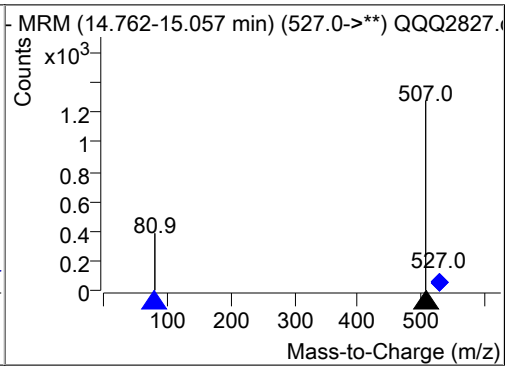




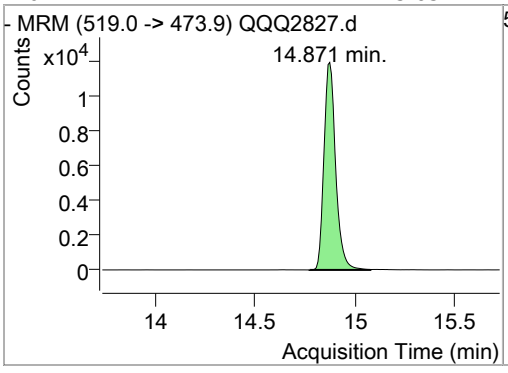
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	5.4134	14.85	0.24	21989	527.0 -> 80.9	27.8	20.6	30.9

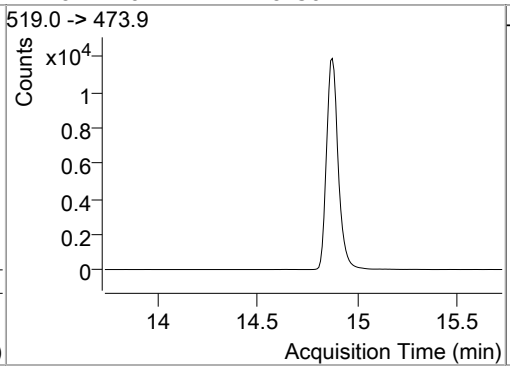


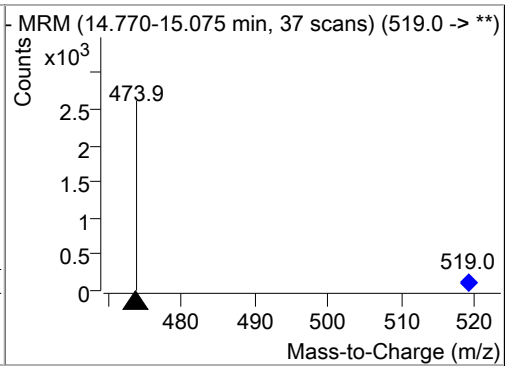




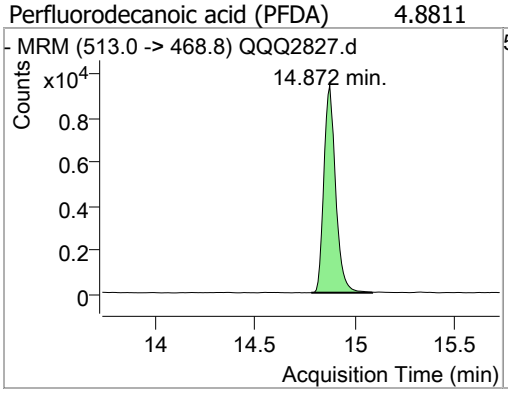
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	5.0327	14.87	0.24	48430				

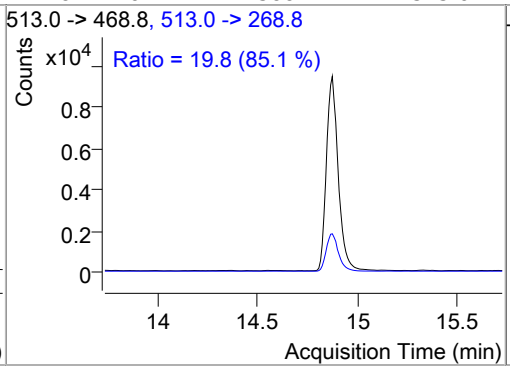


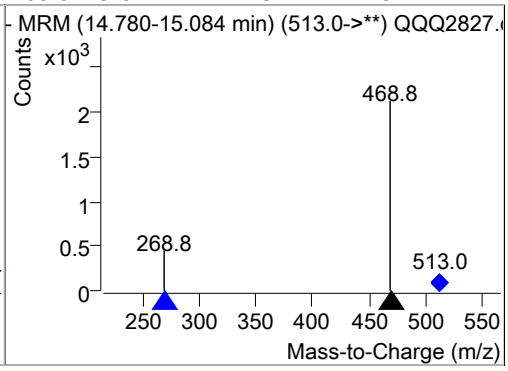




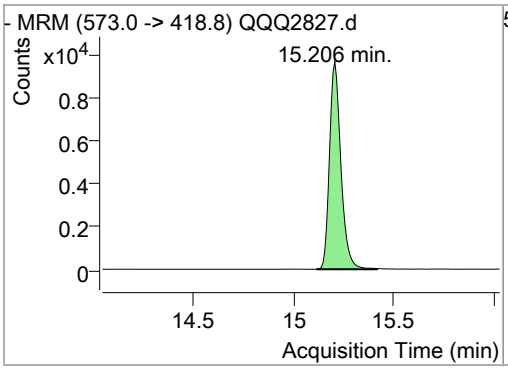
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	4.8811	14.87	0.24	38811	513.0 -> 268.8	19.8	17.5	29.1

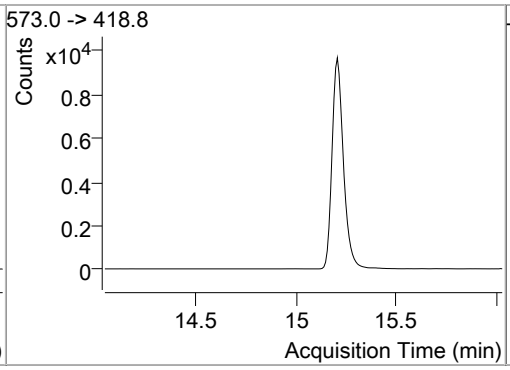


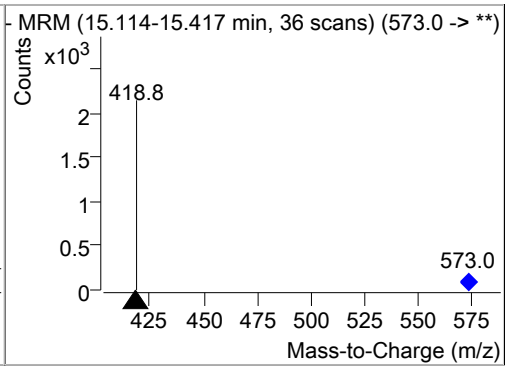




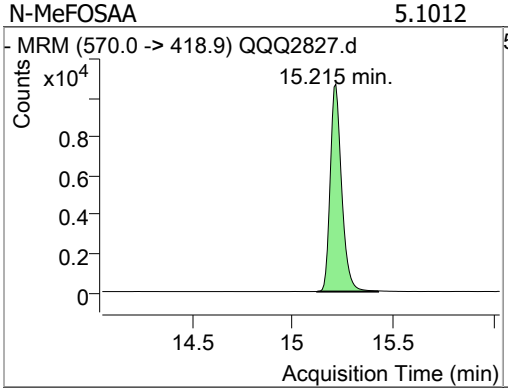
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	4.9468	15.21	0.27	38217				

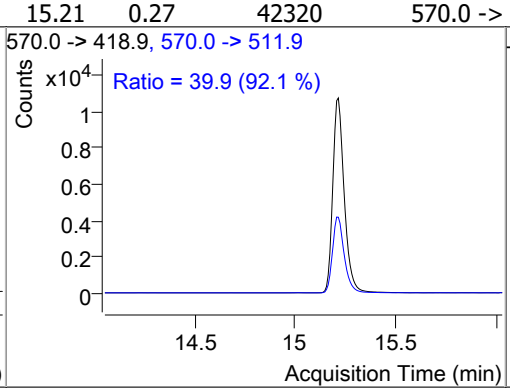


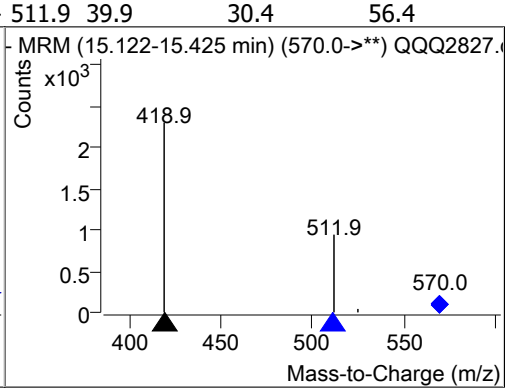




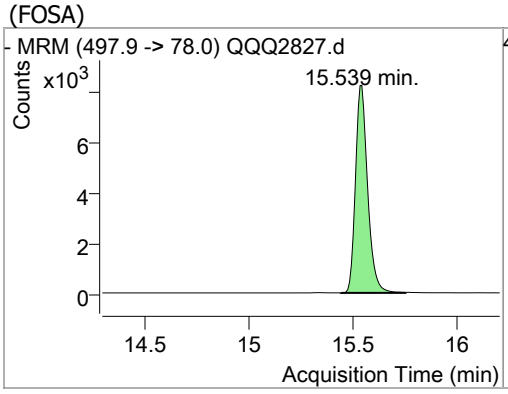
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	5.1012	15.21	0.27	42320	570.0 -> 511.9	39.9	30.4	56.4

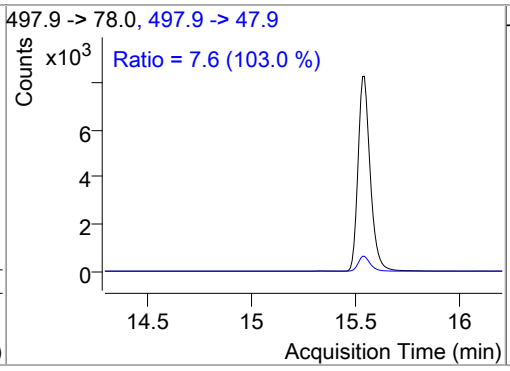


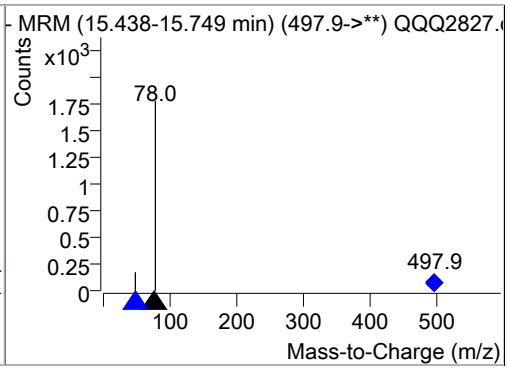




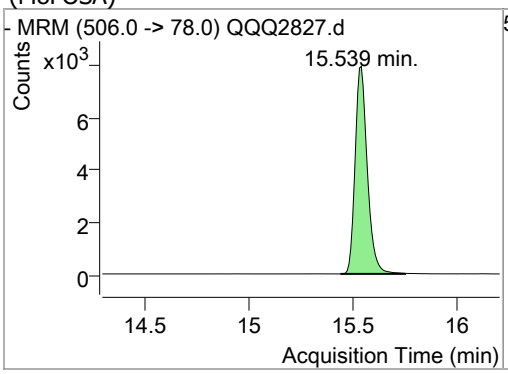
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	5.1987	15.54	0.35	33289	497.9 -> 47.9	7.6	5.9	8.8

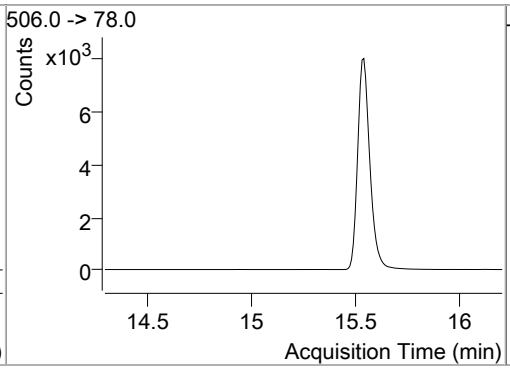


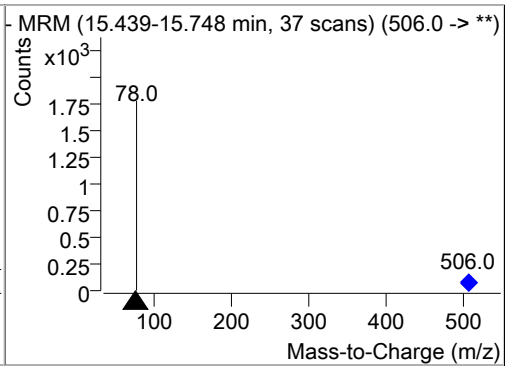




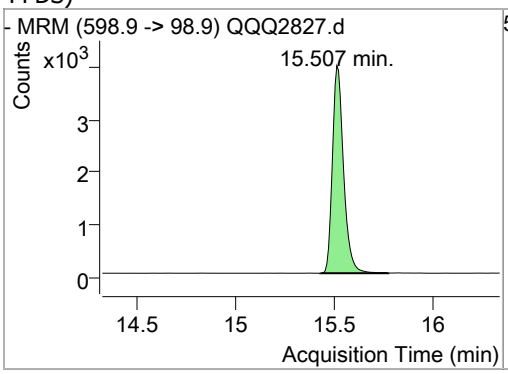
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.2396	15.54	0.34	32261				

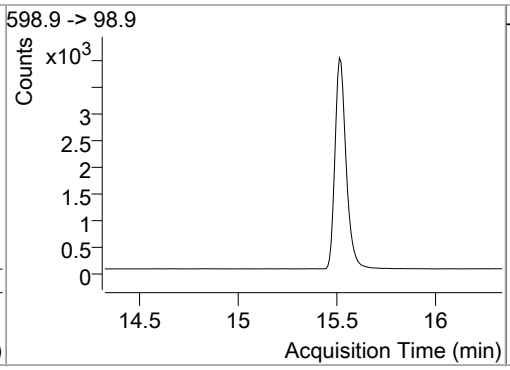


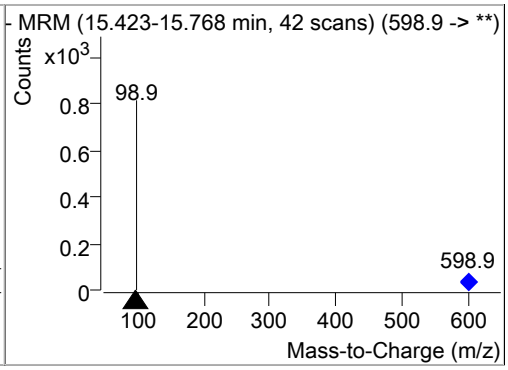




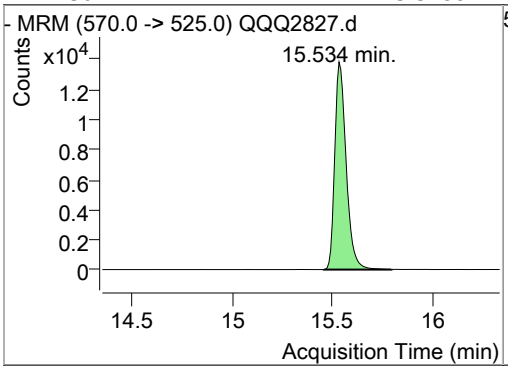
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	4.8474	15.51	0.29	15527				

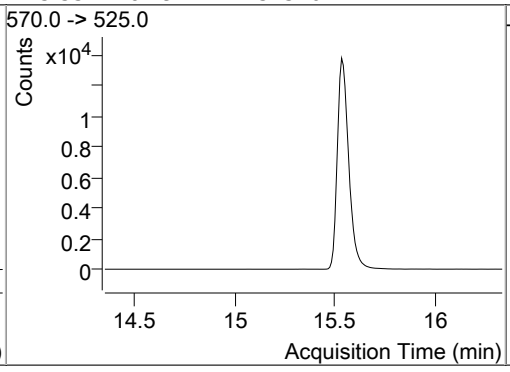


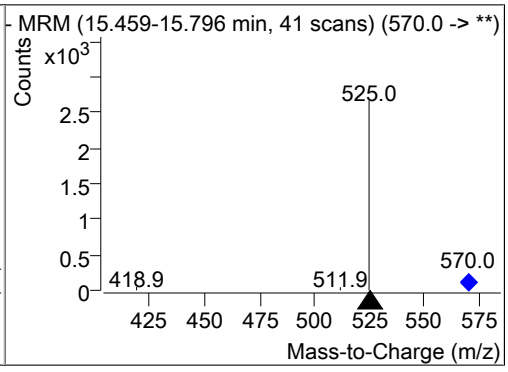




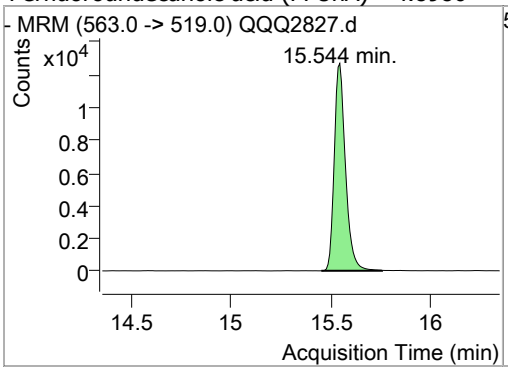
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	5.5280	15.53	0.29	54326				

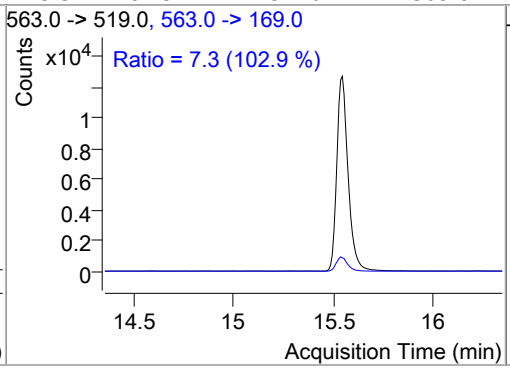


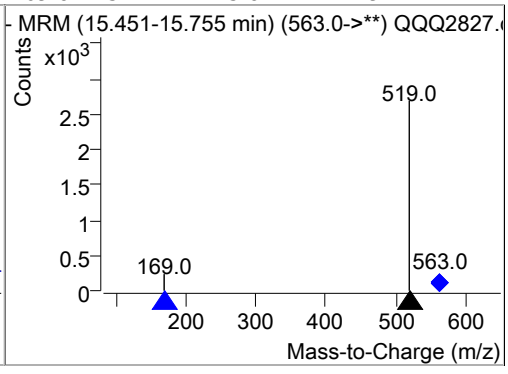




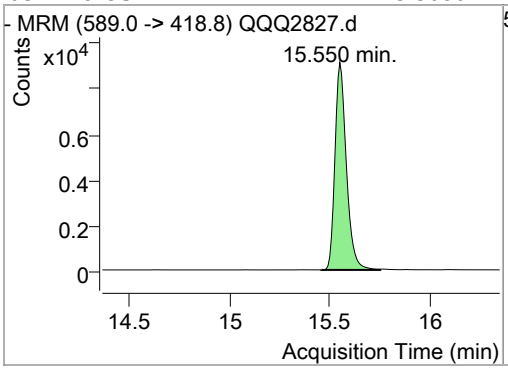
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	4.8986	15.54	0.29	49216	563.0 -> 169.0	7.3	5.0	9.2

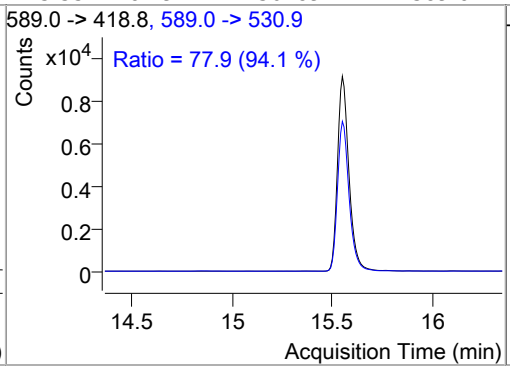


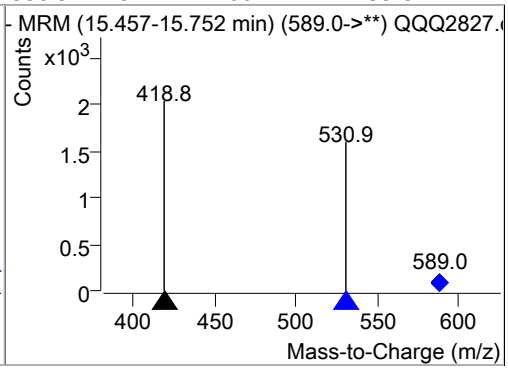




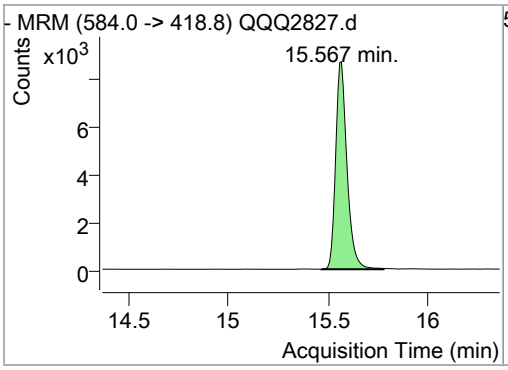
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	5.3686	15.55	0.29	36189	589.0 -> 530.9	77.9	66.2	99.3

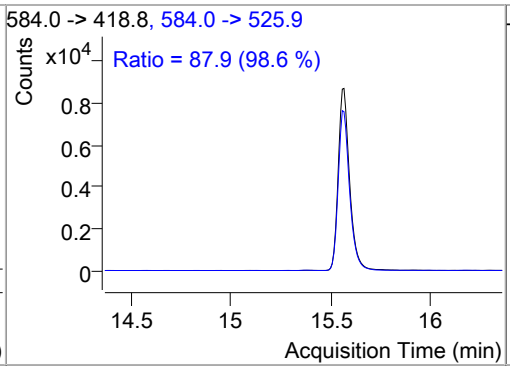


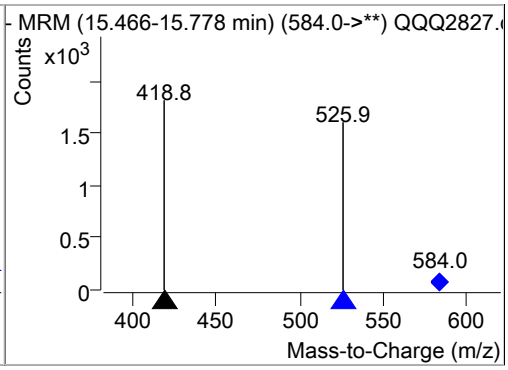




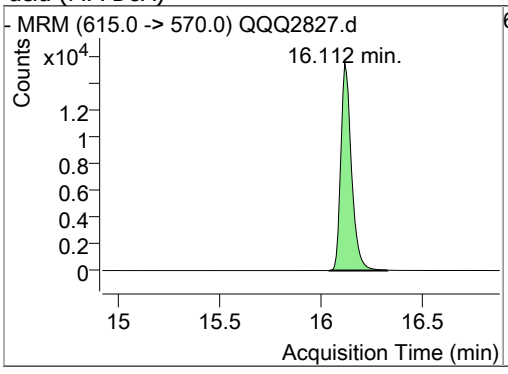
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	5.2442	15.57	0.30	34100	584.0 -> 525.9	87.9	71.3	107.0

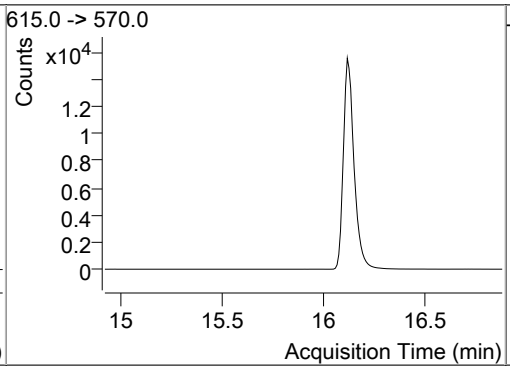


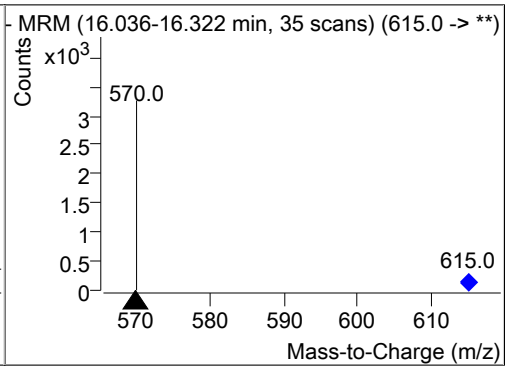




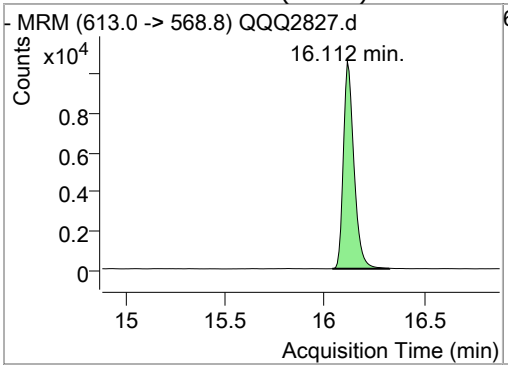
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.8817	16.11	0.34	56597				

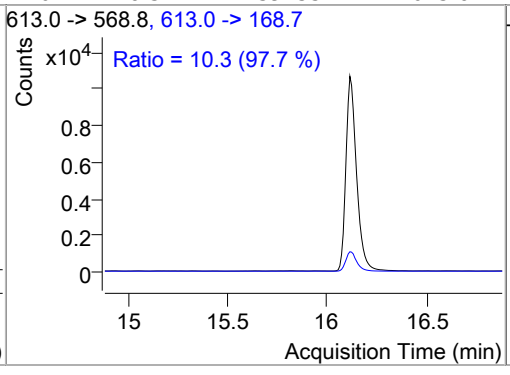


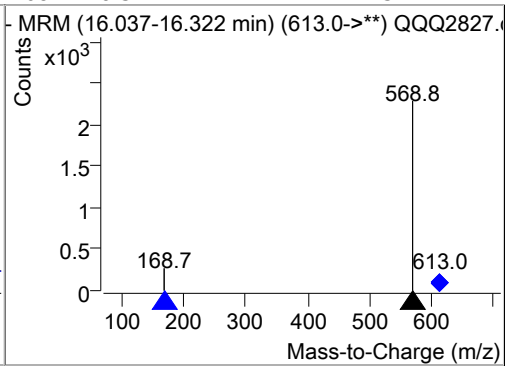




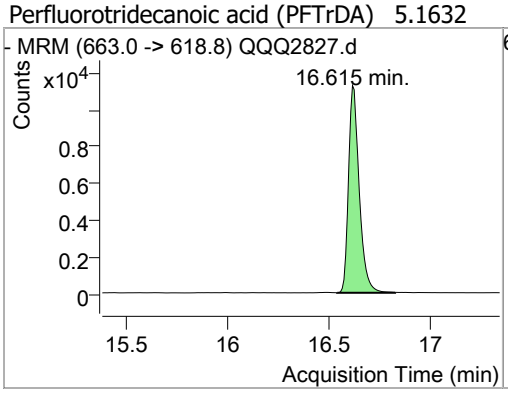
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	5.4998	16.11	0.34	39255	613.0 -> 168.7	10.3	7.4	13.7

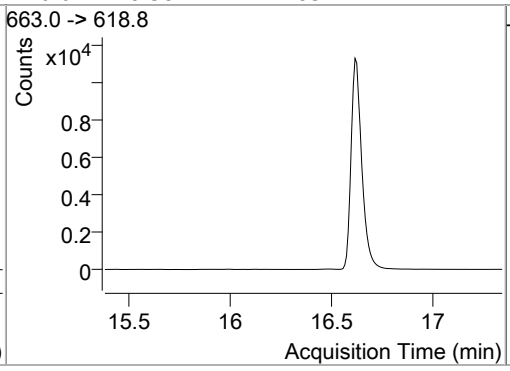


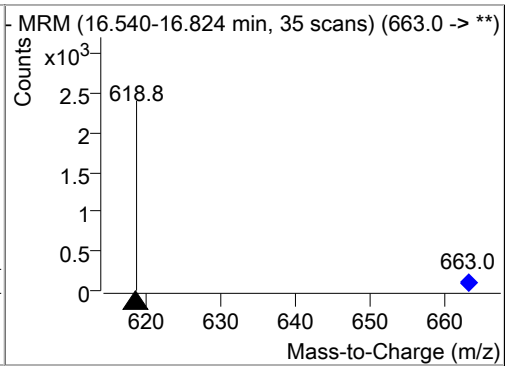




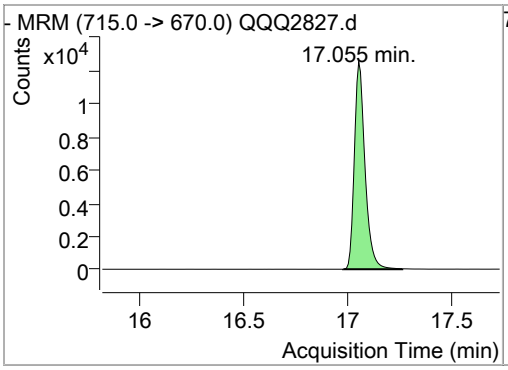
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	5.1632	16.61	0.38	41283				

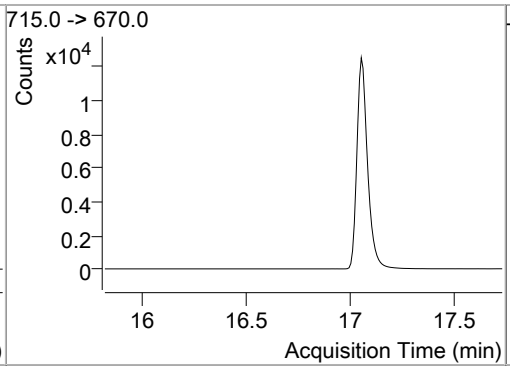


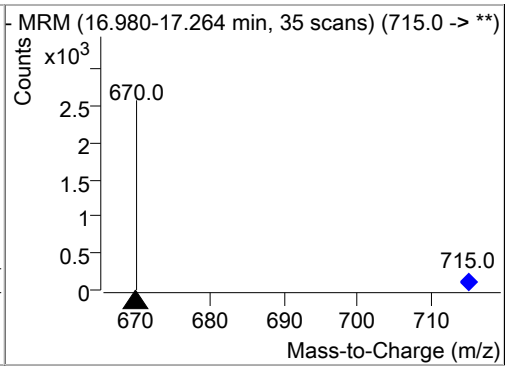




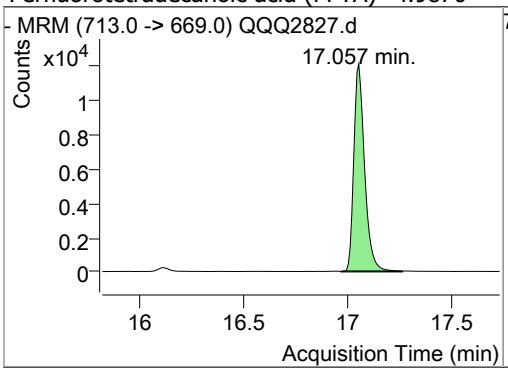
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	4.9530	17.05	0.42	44445				

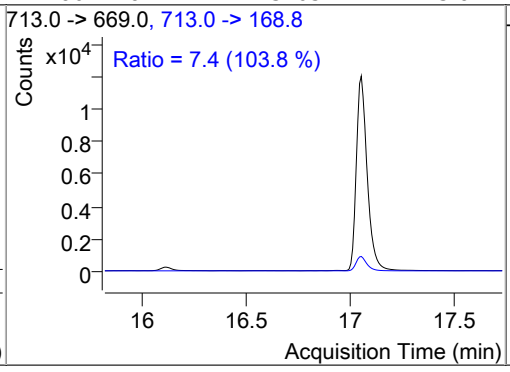


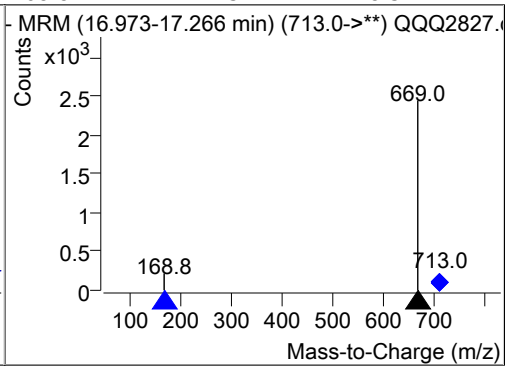




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	4.9870	17.06	0.42	43165	713.0 -> 168.8	7.4	5.7	8.5







FORM VII

CONTINUING CALIBRATION CHECK

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Instrument ID:	LCQQQ	Calibration:	YL90023
Lab File ID:	QQQ2829.d	Calibration Date:	12/23/19 13:19
Sequence:	Y9L1909	Injection Date:	12/19/19
Lab Sample ID:	Y9L1909-CCV1	Injection Time:	23:17

		CONC. (ng/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	Q	4.80	5.38	0.2138892	0.2040703		12.0	30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	A	4.75	4.74	0.2611759	0.260724		-0.2	30
N-EtFOSAA	A	5.00	5.00	0.2914041	0.2916443		0.08	30
N-MeFOSAA	A	5.00	5.05	0.3717862	0.3755282		1.0	30
Perfluoro-1-decanesulfonic acid (PFDS)	A	4.82	4.86	0.1434874	0.1447658		0.9	30
Perfluoro-1-heptanesulfonic acid (PFHpS)	A	4.98	5.26	0.17178	0.1815058		5.7	30
Perfluoro-1-octanesulfonamide (FOSA)	A	5.00	5.04	0.2869638	0.2891082		0.7	30
Perfluorobutanesulfonic acid (PFBS)	A	4.42	4.59	0.307702	0.3195403		3.8	30
Perfluorodecanoic acid (PFDA)	A	5.00	5.17	0.3563268	0.3686601		3.5	30
Perfluorododecanoic acid (PFDoA)	A	5.00	4.69	0.3198605	0.3000548		-6.2	30
Perfluoroheptanoic acid (PFHpA)	A	5.00	5.18	0.6544093	0.6782187		3.6	30
Perfluorohexanesulfonic acid (PFHxS)	A	3.70	3.76	0.2380903	0.2422574		1.8	30
Perfluorohexanoic acid (PFHxA)	A	5.00	5.19	0.8609303	0.8943743		3.9	30
Perfluoro-n-butanoic acid (PFBA)	A	5.00	5.12	0.7157248	0.7329048		2.4	30
Perfluorononanoic acid (PFNA)	A	4.80	4.66	0.4097471	0.3975566		-3.0	30
Perfluorooctanesulfonic acid (PFOS)	A	3.65	3.61	0.2104231	0.2089704		-0.7	30
Perfluorooctanoic acid (PFOA)	A	5.00	4.80	0.5082197	0.4882033		-3.9	30
Perfluoropentanoic acid (PFPeA)	A	5.00	5.13	0.9418955	0.9662248		2.6	30
Perfluorotetradecanoic acid (PFTA)	A	5.00	5.02	0.3878892	0.3893294		0.4	30
Perfluorotridecanoic acid (PFTrDA)	A	5.00	4.75	0.358323	0.3404675		-5.0	30
Perfluoroundecanoic acid (PFUnA)	A	5.00	4.81	0.4502513	0.4327466		-3.9	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Data File	QQQ2829.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/19/2019 11:17:15 PM
Sample Name	SEQ-CCV1	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

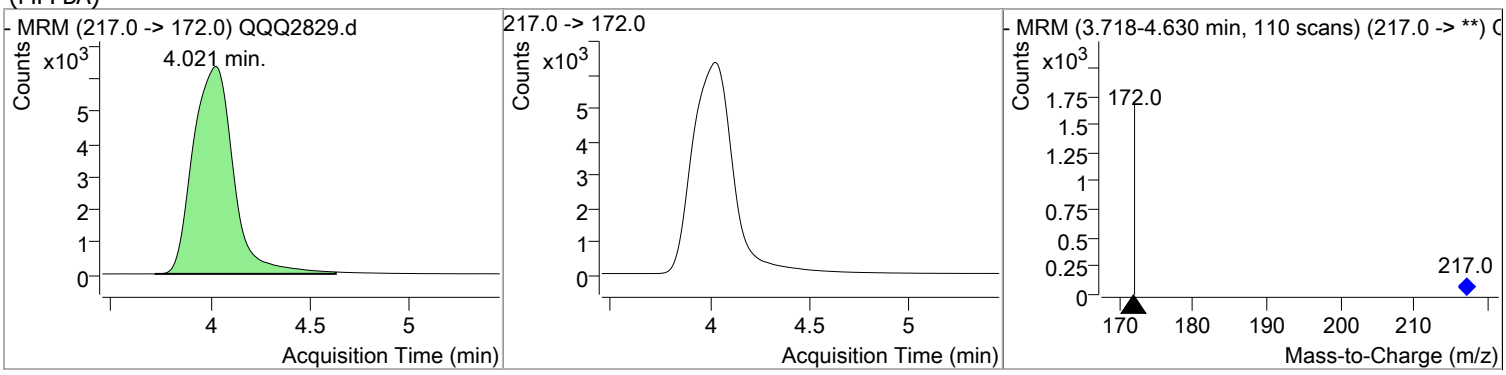
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.110	417.0 -> 372.0	222826	10.0000	ng/ml	0.076
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	4.021	217.0 -> 172.0	89793	5.1446	ng/ml	-0.167
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.45%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.031	268.0 -> 223.0	123392	5.1856	ng/ml	-0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.86%		
M3PFBS	8.768	302.0 -> 79.9	36141	4.8114	ng/ml	-0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.11%		
M2-4-2FTS	10.225	329.0 -> 309.0	39489	5.6559	ng/ml	-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 56.56%		
M5PFHxA	10.370	318.0 -> 273.0	116991	5.2191	ng/ml	-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.19%		
M4PFHpA	11.936	367.0 -> 322.0	30540	4.9279	ng/ml	0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.28%		
M3PFHxS	12.068	402.0 -> 80.0	25352	4.9134	ng/ml	0.026
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.13%		
M2-6-2FTS	13.040	429.0 -> 409.0	26888	4.8691	ng/ml	0.067
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.69%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.101	421.0 -> 376.0	62242	5.2806	ng/ml	0.076
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.81%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.048	472.0 -> 427.0	61118	5.0678	ng/ml	0.144
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.68%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.063	507.0 -> 80.0	19154	4.8484	ng/ml	0.152
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.48%		
M2-8-2FTS	14.828	529.0 -> 509.0	25495	5.3639	ng/ml	0.210
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 53.64%		
M6PFDA	14.846	519.0 -> 473.9	48471	5.0442	ng/ml	0.219
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.44%		
d3-N-MeFOSAA	15.181	573.0 -> 418.8	38994	5.0545	ng/ml	0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.55%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.514	506.0 -> 78.0	31307	5.0918	ng/ml	0.319
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.92%		
M7PFUdA	15.518	570.0 -> 525.0	50875	5.1842	ng/ml	0.278
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.84%		
d5-N-EtFOSAA	15.525	589.0 -> 418.8	33310	4.9486	ng/ml	0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.49%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.095	615.0 -> 570.0	46897	4.8805	ng/ml	0.320
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.81%		
M2PFTeDA	17.038	715.0 -> 670.0	44576	4.9747	ng/ml	0.401
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.75%		

Target Compounds QValue

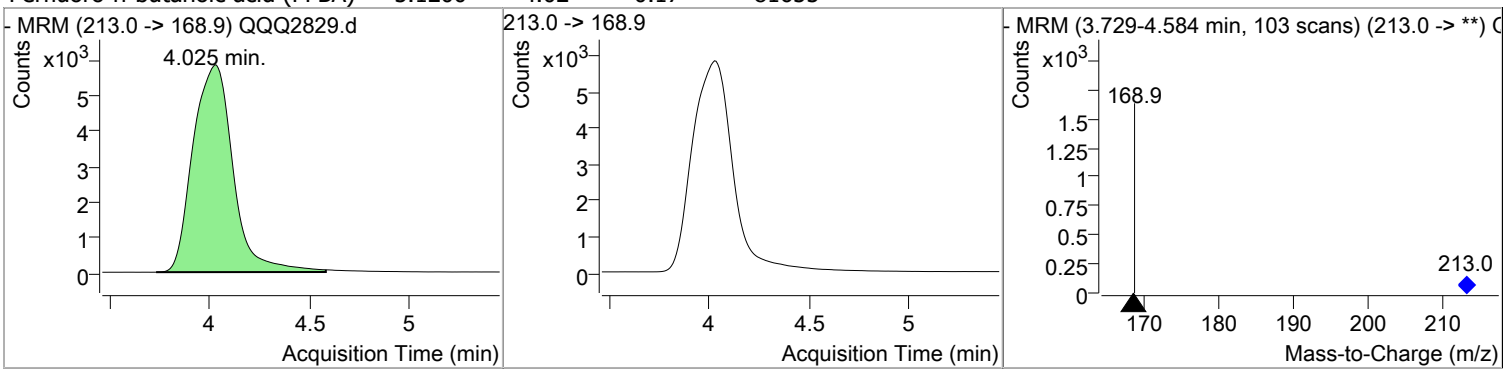
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.025	213.0 -> 168.9	81655	5.1200	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	8.032	263.0 -> 219.0	107650	5.1292	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.771	298.9 -> 79.9	31471	4.5879	ng/ml		99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.226	327.0 -> 307.0	37030	5.6247	ng/ml		99
Perfluorohexanoic acid (PFHxA)	10.372	313.0 -> 268.9	99645	5.1942	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.683	348.9 -> 79.9	29996	4.8657	ng/ml		99
Perfluoroheptanoic acid (PFHpA)	11.936	363.0 -> 318.8	75562	5.1819	ng/ml		99
Perfluorohexanesulfonic acid (PFHxS)	12.069	398.9 -> 79.9	19973	3.7648	ng/ml		99
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.041	427.0 -> 407.0	27596	4.7404	ng/ml		97
Perfluorooctanoic acid (PFOA)	13.110	413.0 -> 368.8	54392	4.8031	ng/ml		98
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.165	448.9 -> 80.0	20141	5.2642	ng/ml		98
Perfluorononanoic acid (PFNA)	14.049	463.0 -> 418.8	42521	4.6572	ng/ml		95
Perfluorooctanesulfonic acid (PFOS)	14.064	498.9 -> 79.9	16996	3.6108	ng/ml		94
Perfluorononanesulfonate (L-PFNS)	14.828	548.9 -> 79.9	16900	4.8500	ng/ml		97
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.829	527.0 -> 507.0	21827	5.3765	ng/ml		93
Perfluorodecanoic acid (PFDA)	14.847	513.0 -> 468.8	41074	5.1731	ng/ml	#	85
N-MeFOSAA	15.190	570.0 -> 418.9	41839	5.0503	ng/ml		96
Perfluoro-1-octanesulfonamide (FOSA)	15.514	497.9 -> 78.0	32210	5.0374	ng/ml		100
Perfluoro-1-decanesulfonate (L-PFDS)	15.482	598.9 -> 98.9	15548	4.8609	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.519	563.0 -> 519.0	48214	4.8056	ng/ml		100
N-EtFOSAA	15.542	584.0 -> 418.8	32493	5.0041	ng/ml		96
Perfluorododecanoic acid (PFDoA)	16.096	613.0 -> 568.8	33430	4.6904	ng/ml		99
Perfluorotridecanoic acid (PFTrDA)	16.598	663.0 -> 618.8	37933	4.7508	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.040	713.0 -> 669.0	43376	5.0186	ng/ml		98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

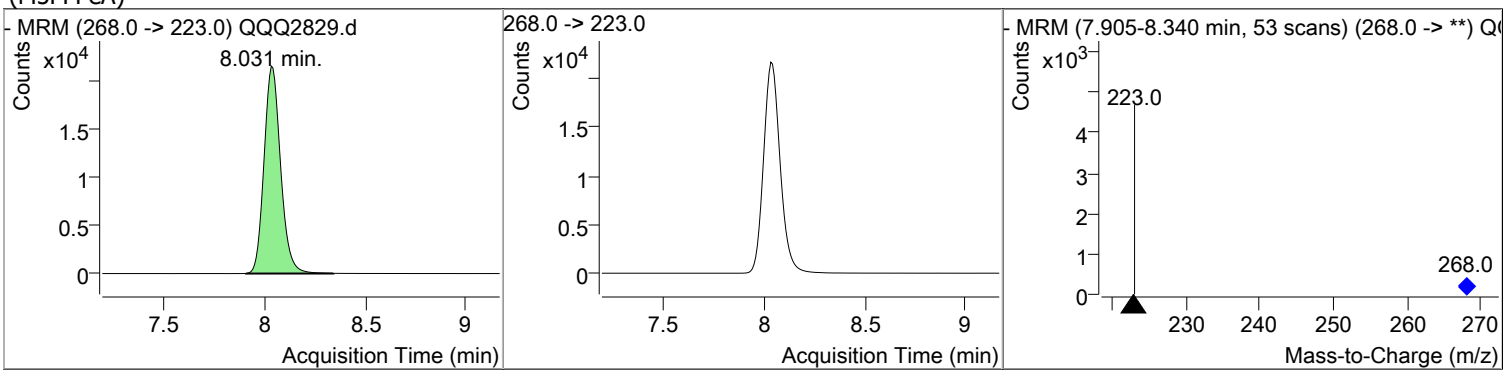
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.1446	4.02	-0.17	89793				



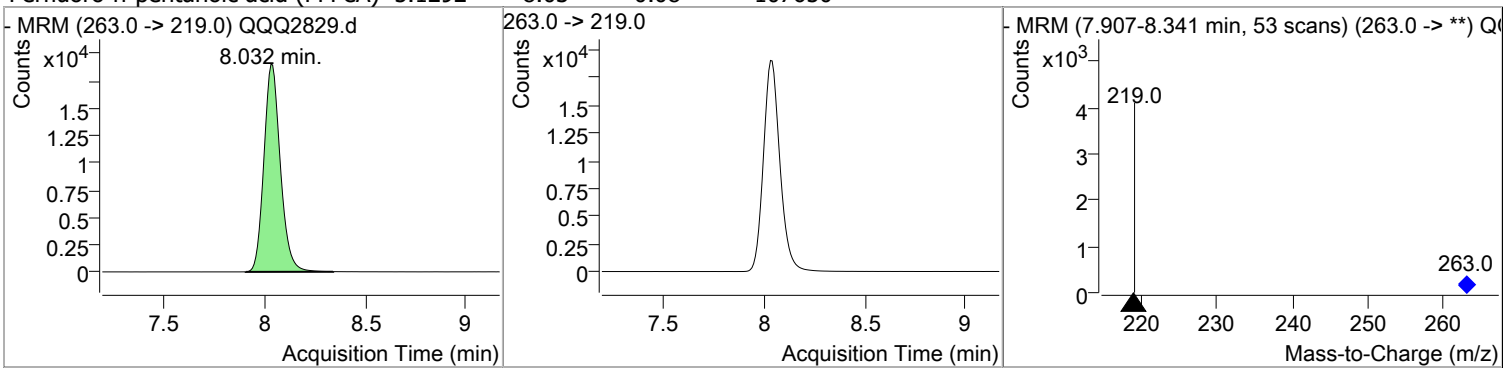
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	5.1200	4.02	-0.17	81655				



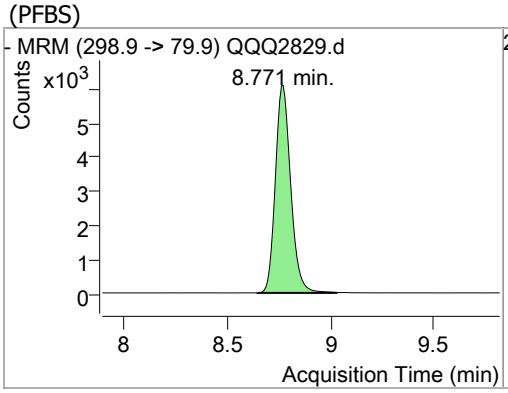
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	5.1856	8.03	-0.08	123392				

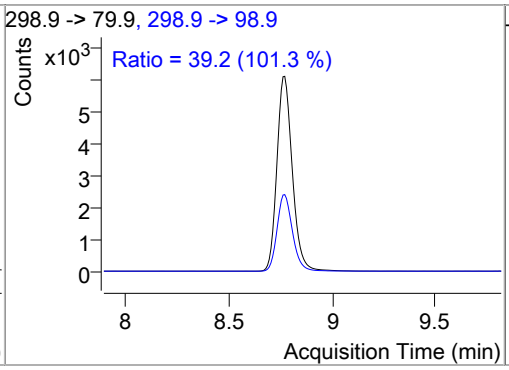


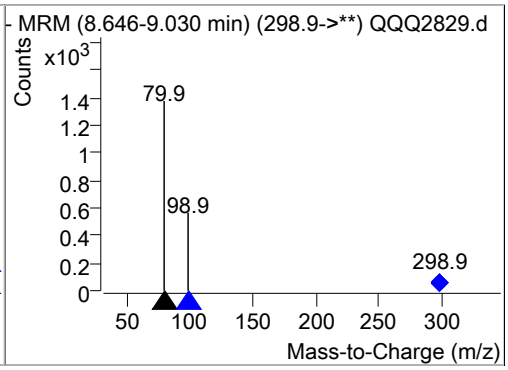
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	5.1292	8.03	-0.08	107650				



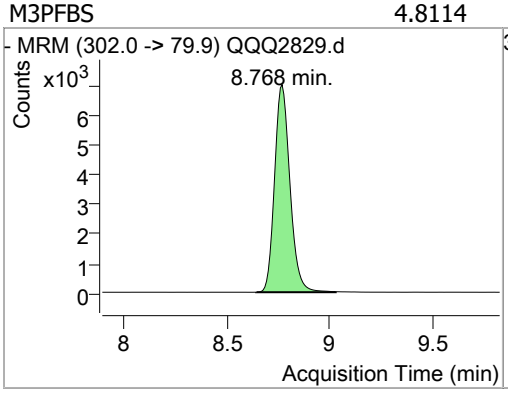
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	4.5879	8.77	-0.04	31471	298.9 -> 98.9	39.2	31.0	46.5

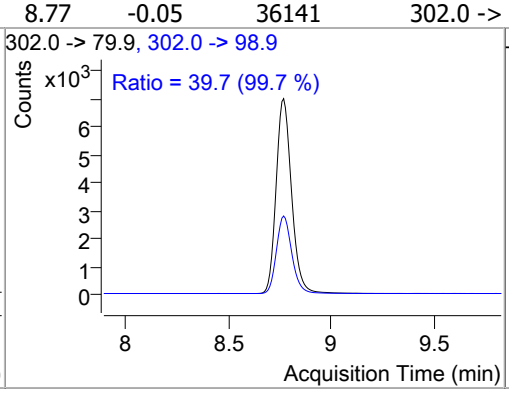


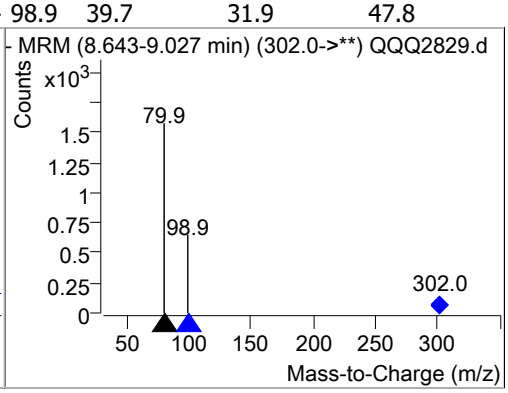




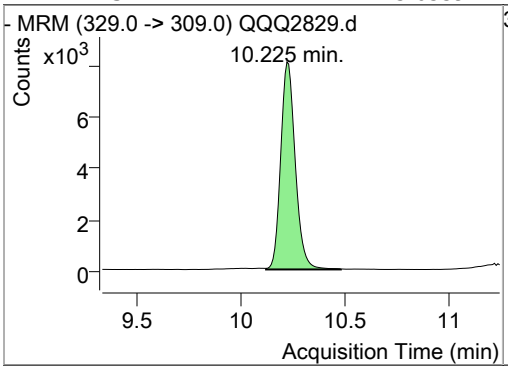
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	4.8114	8.77	-0.05	36141	302.0 -> 98.9	39.7	31.9	47.8

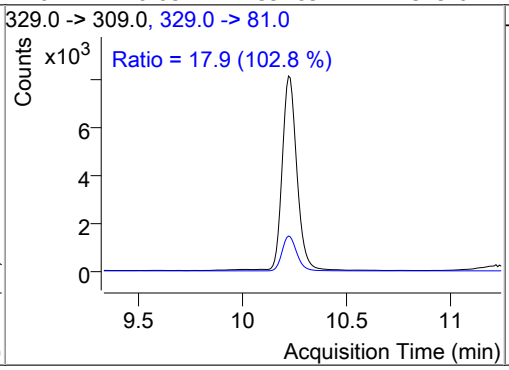


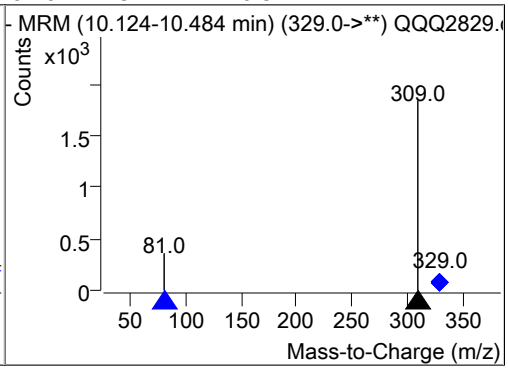




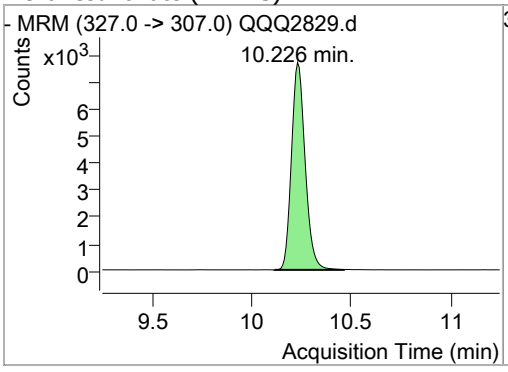
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	5.6559	10.22	-0.03	39489	329.0 -> 81.0	17.9	10.5	24.4

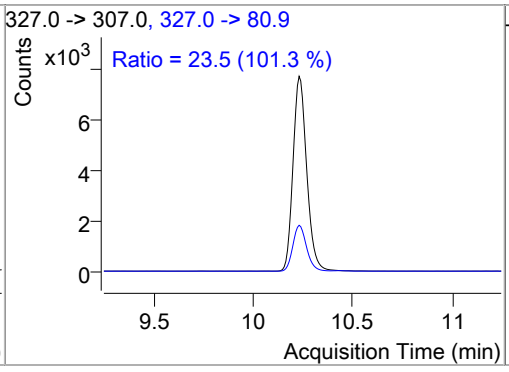


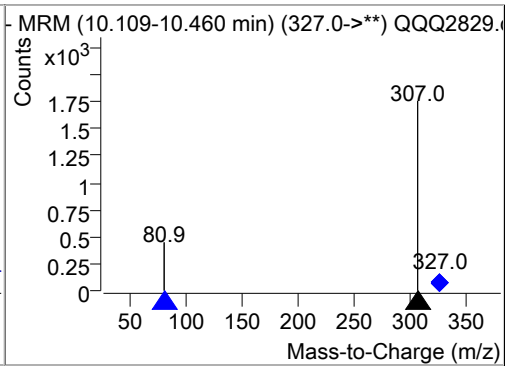




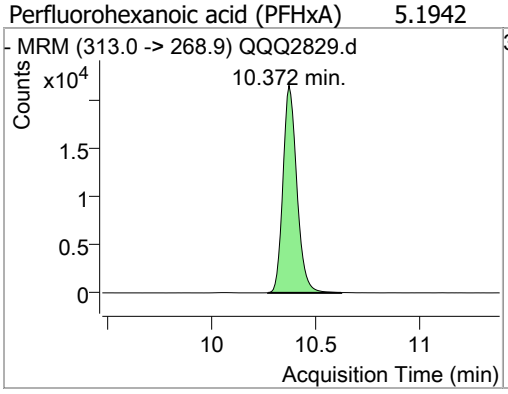
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	5.6247	10.23	-0.03	37030	327.0 -> 80.9	23.5	13.9	32.5

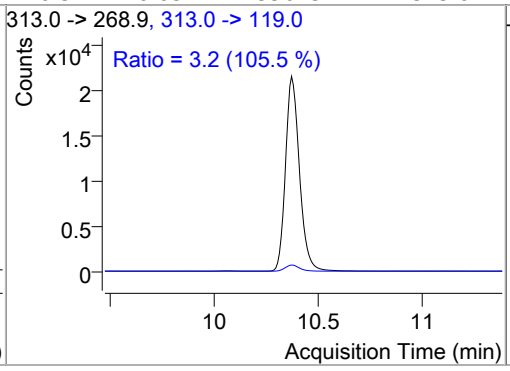


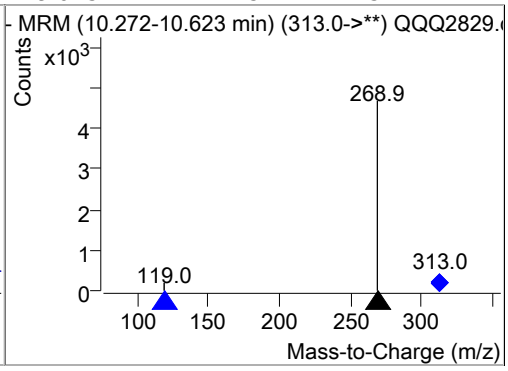




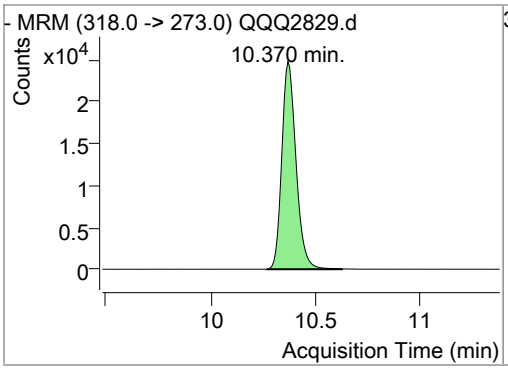
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	5.1942	10.37	-0.03	99645	313.0 -> 119.0	3.2	2.5	3.7

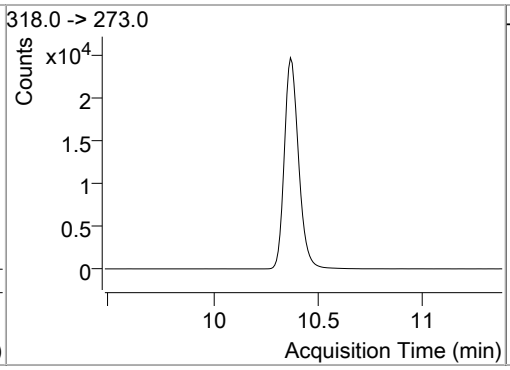


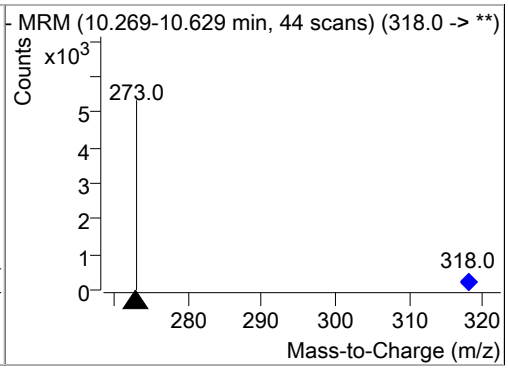




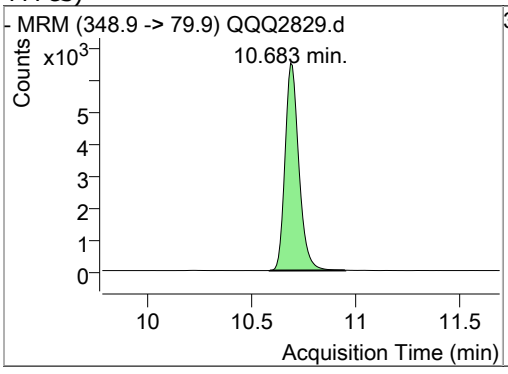
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	5.2191	10.37	-0.03	116991				

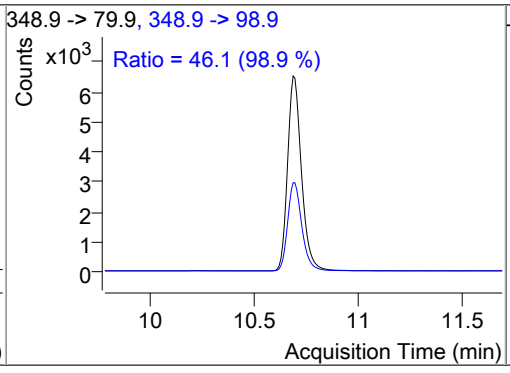


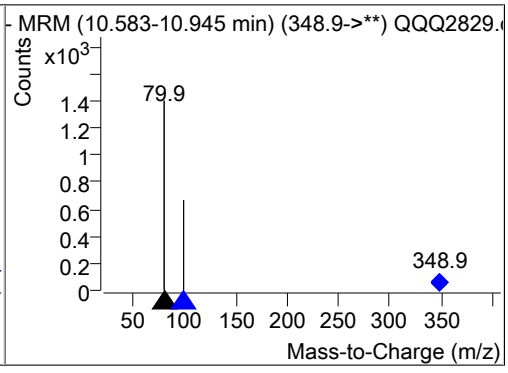




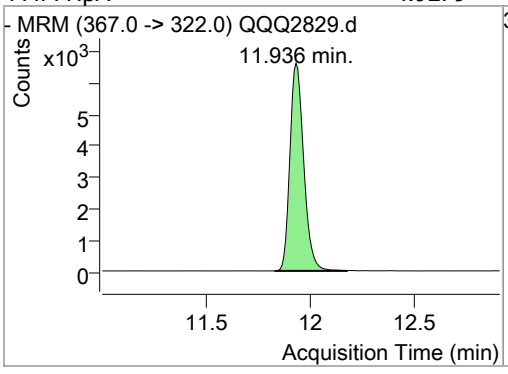
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	4.8657	10.68	-0.02	29996	348.9 -> 98.9	46.1	37.3	56.0

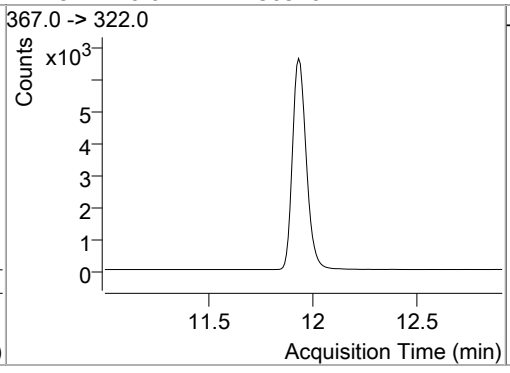


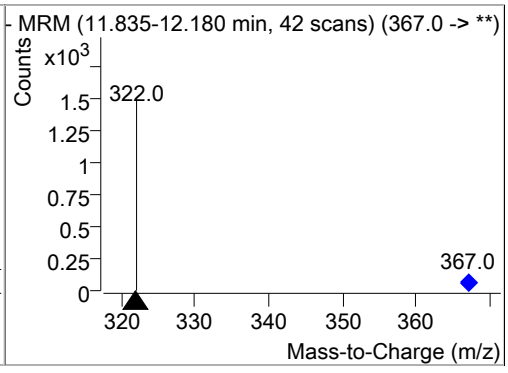




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	4.9279	11.94	0.02	30540				

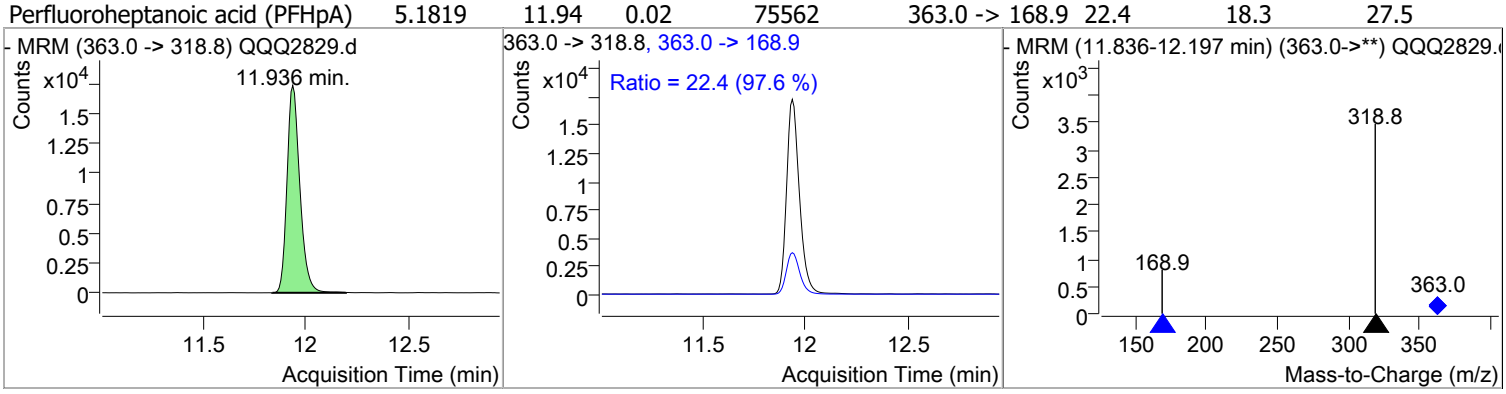




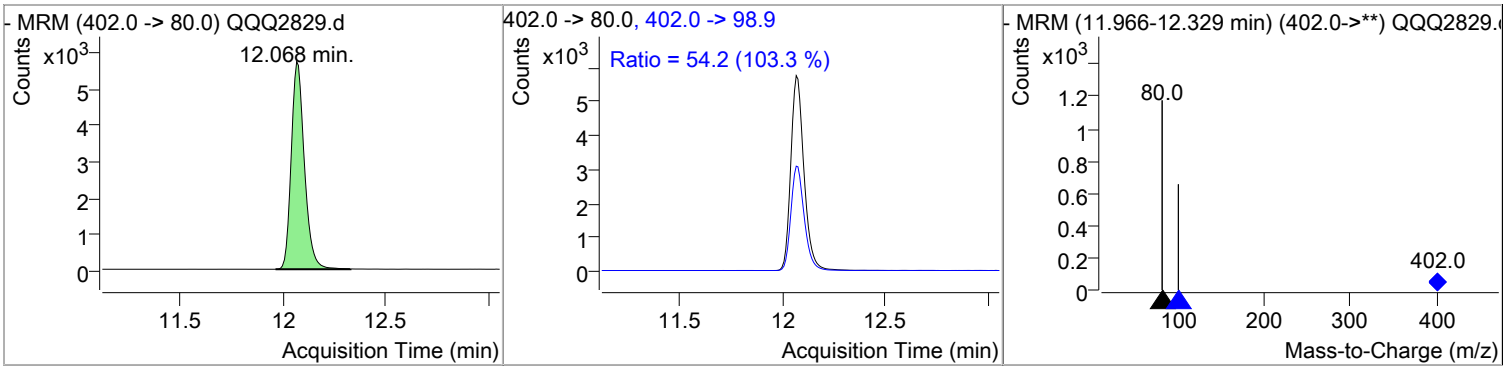


Quantitation Results Report (Not Reviewed)

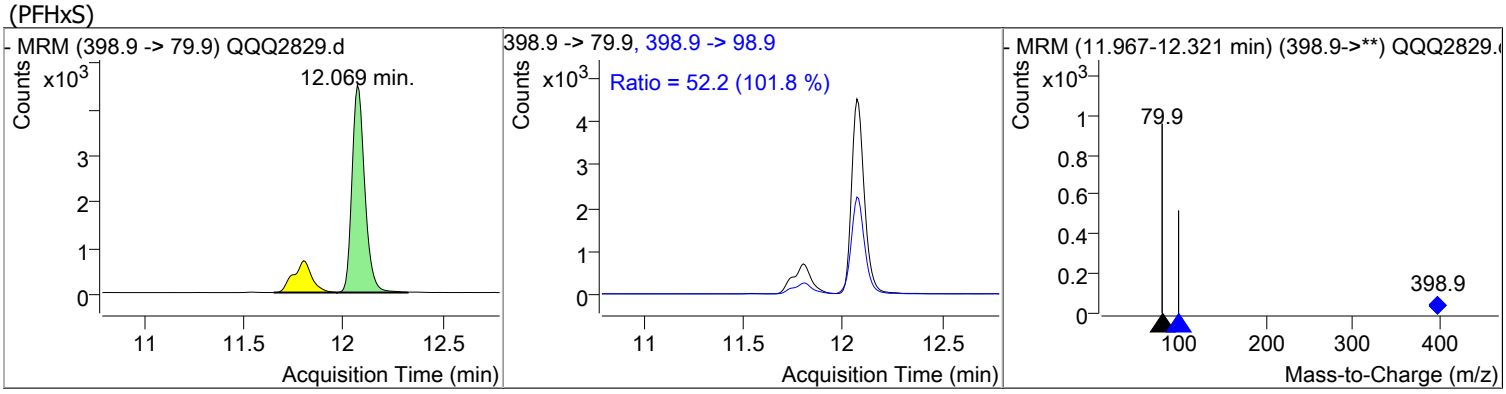
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	5.1819	11.94	0.02	75562	363.0 -> 168.9	22.4	18.3	27.5



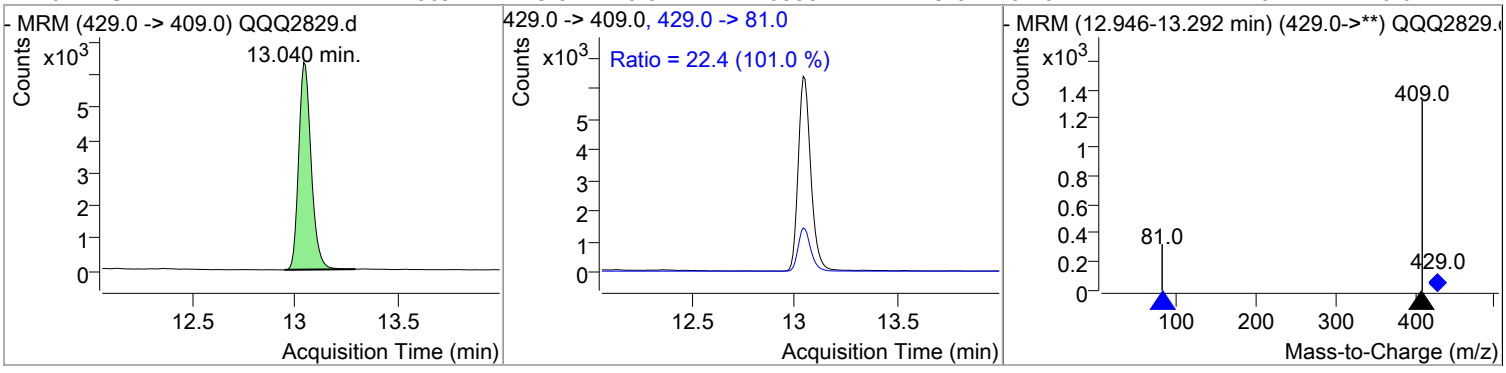
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	4.9134	12.07	0.03	25352	402.0 -> 98.9	54.2	42.0	62.9



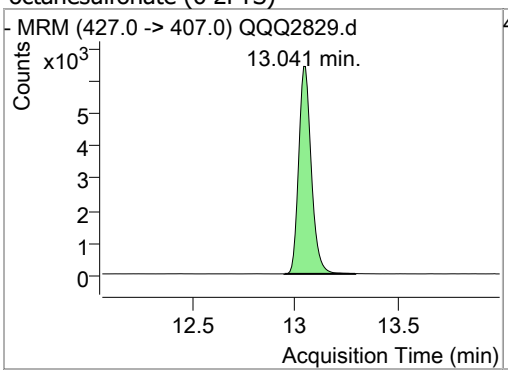
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	3.7648	12.07	0.03	19973	398.9 -> 98.9	52.2	41.0	61.5

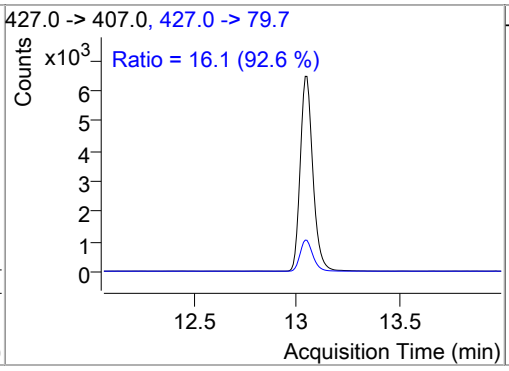


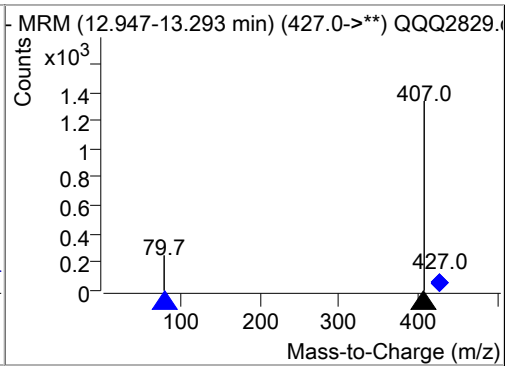
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	4.8691	13.04	0.07	26888	429.0 -> 81.0	22.4	17.8	26.6



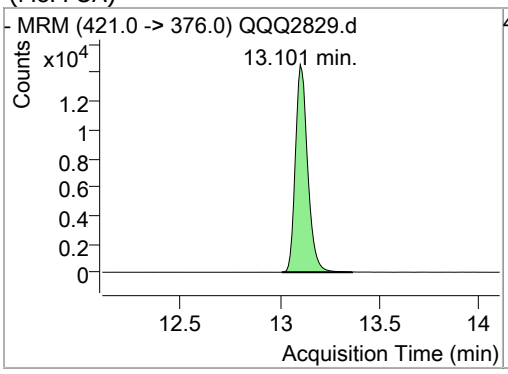
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	4.7404	13.04	0.07	27596	427.0 -> 79.7	16.1	13.9	20.8

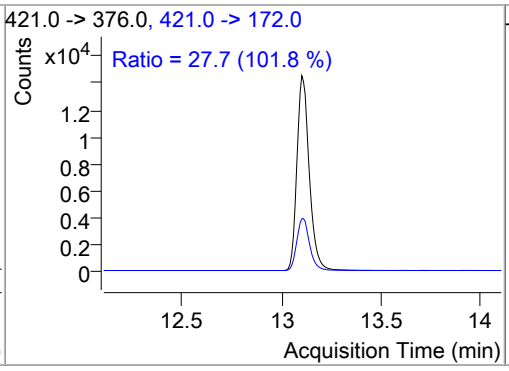


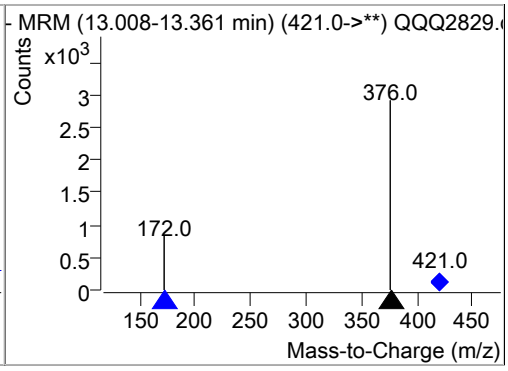




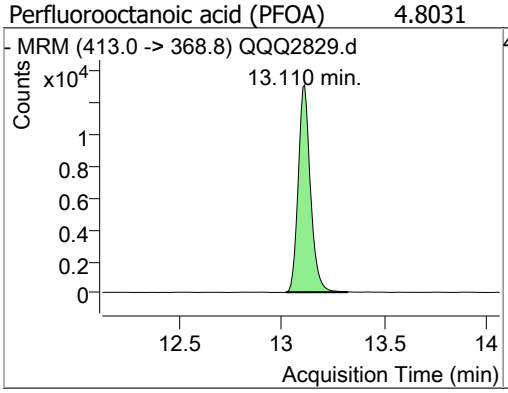
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.2806	13.10	0.08	62242	421.0 -> 172.0	27.7	21.7	32.6

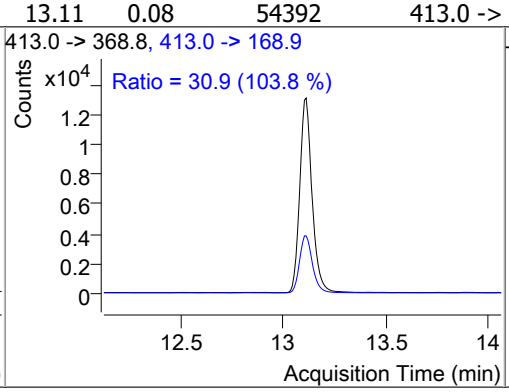


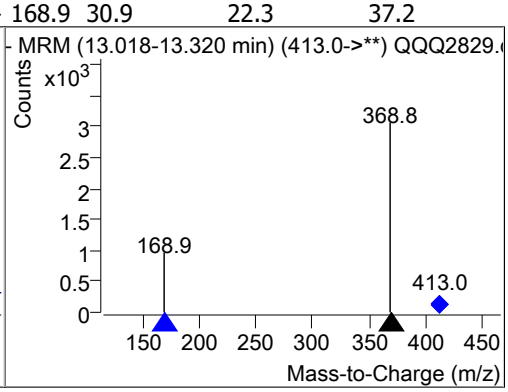




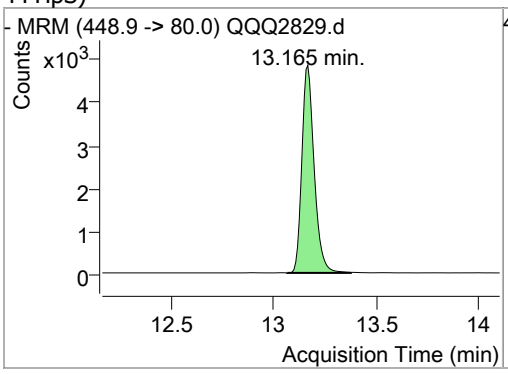
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	4.8031	13.11	0.08	54392	413.0 -> 168.9	30.9	22.3	37.2

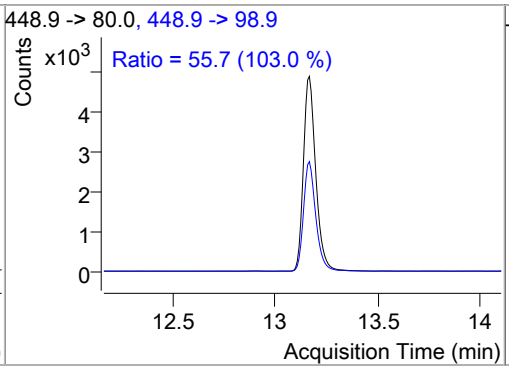


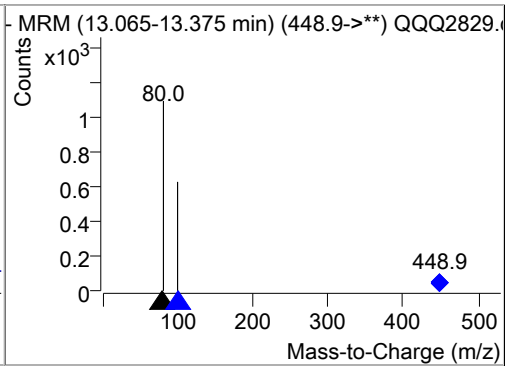




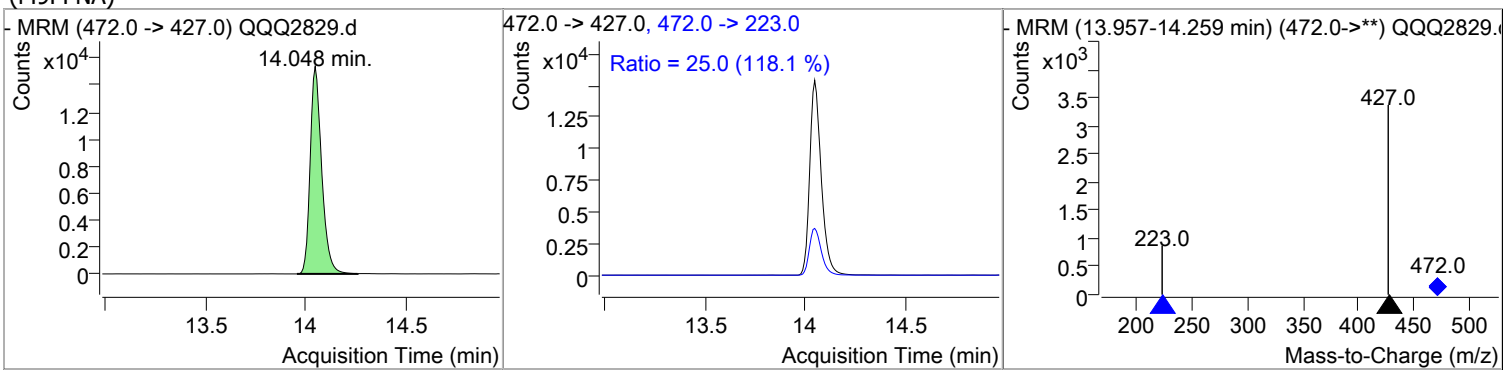
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	5.2642	13.17	0.08	20141	448.9 -> 98.9	55.7	43.3	64.9



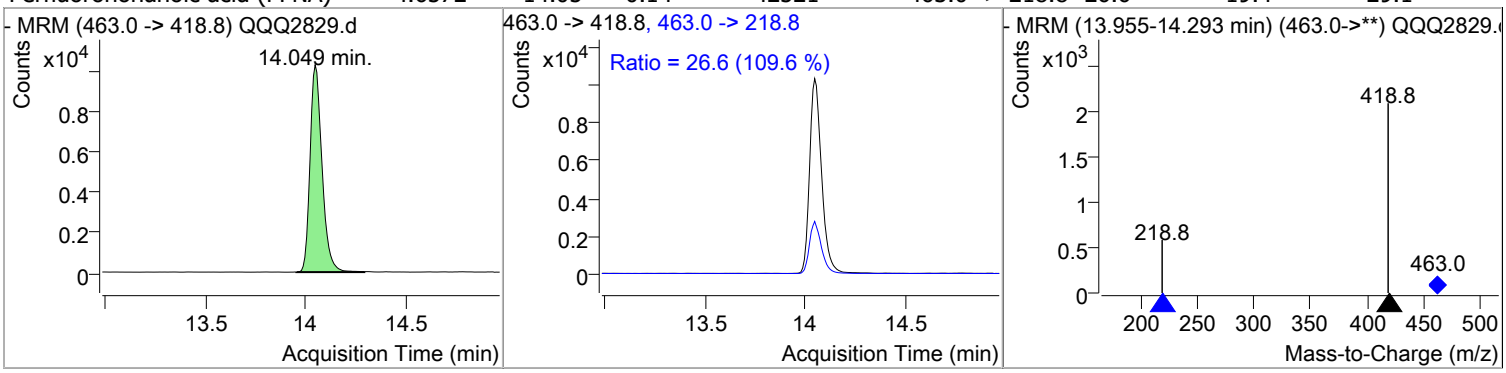




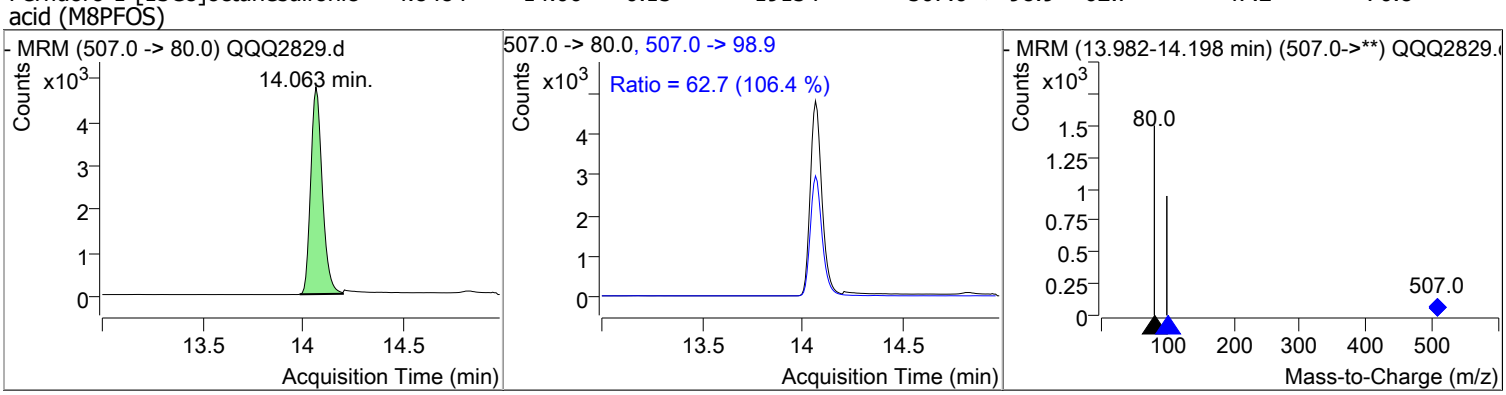
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	5.0678	14.05	0.14	61118	472.0 -> 223.0	25.0	16.9	25.4



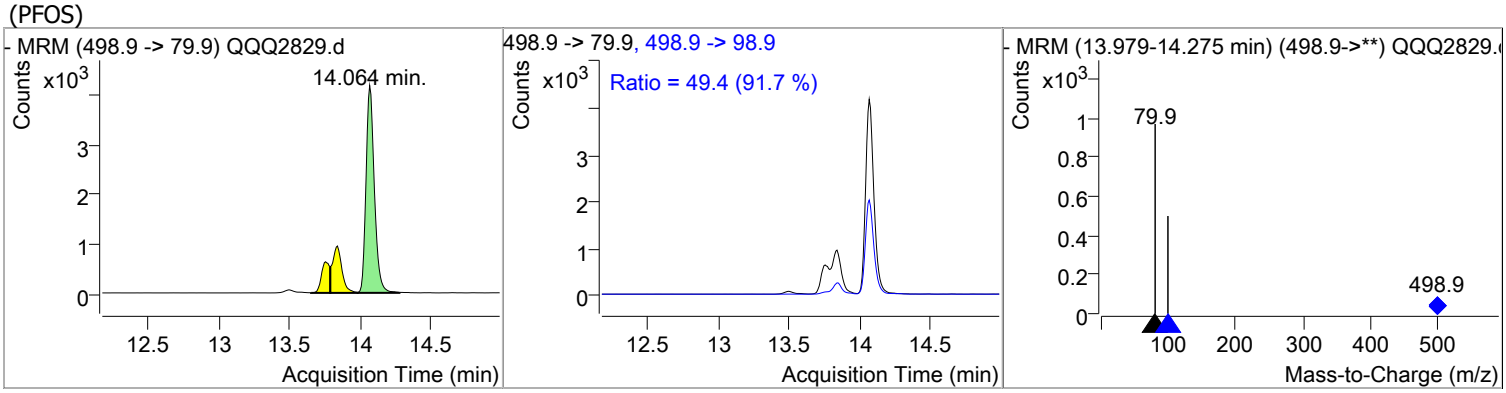
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	4.6572	14.05	0.14	42521	463.0 -> 218.8	26.6	19.4	29.1



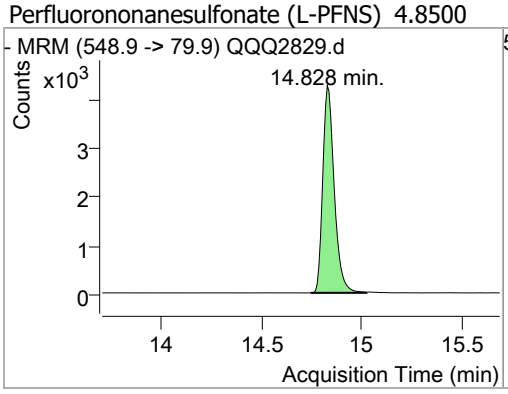
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.8484	14.06	0.15	19154	507.0 -> 98.9	62.7	47.2	70.8

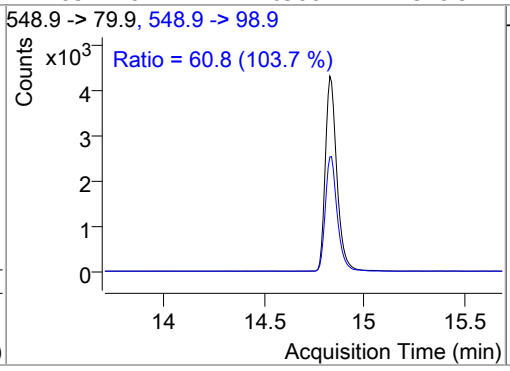


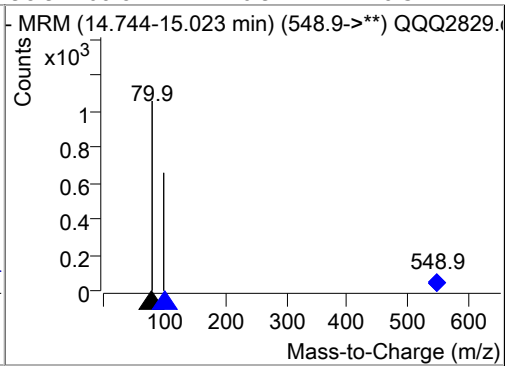
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	3.6108	14.06	0.15	16996	498.9 -> 98.9	49.4	43.1	64.6



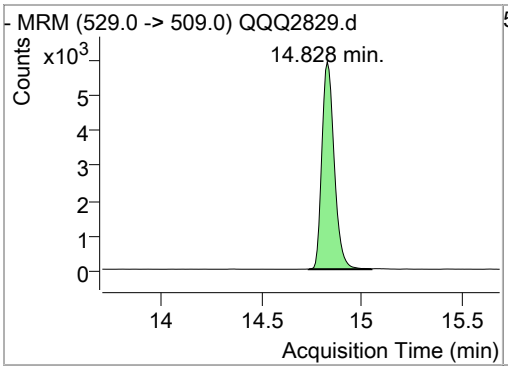
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	4.8500	14.83	0.21	16900	548.9 -> 98.9	60.8	46.9	70.3

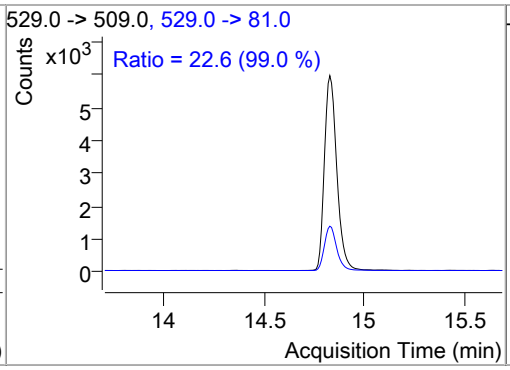


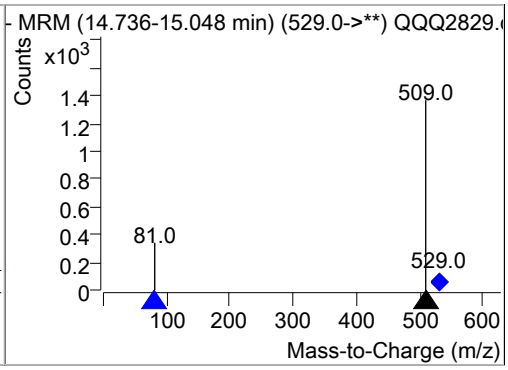




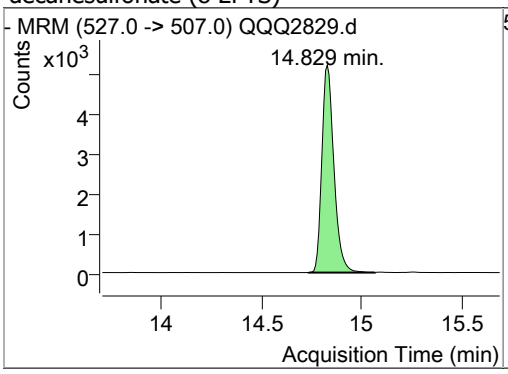
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	5.3639	14.83	0.21	25495	529.0 -> 81.0	22.6	18.3	27.4

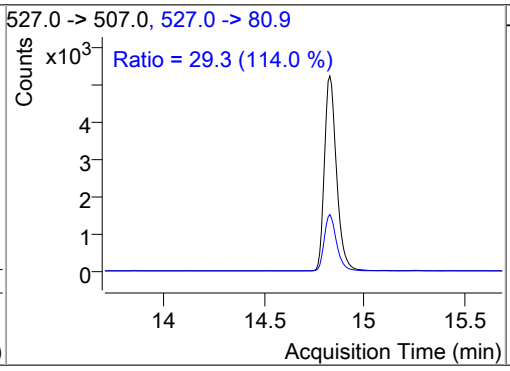


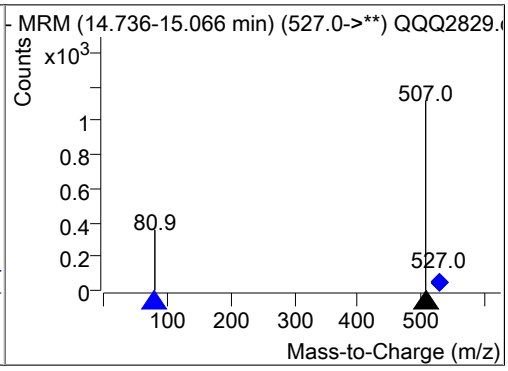




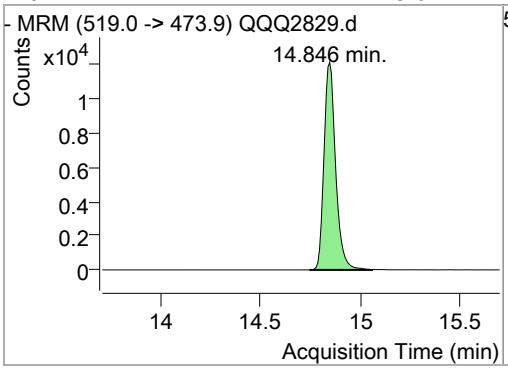
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	5.3765	14.83	0.21	21827	527.0 -> 80.9	29.3	20.6	30.9

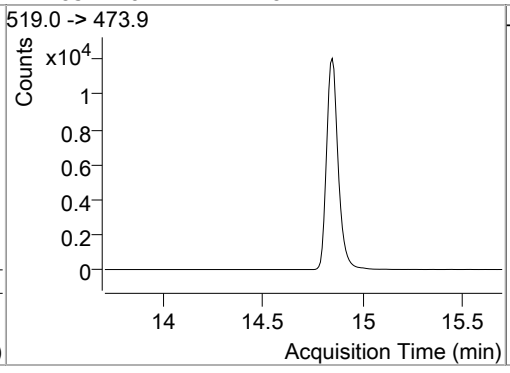


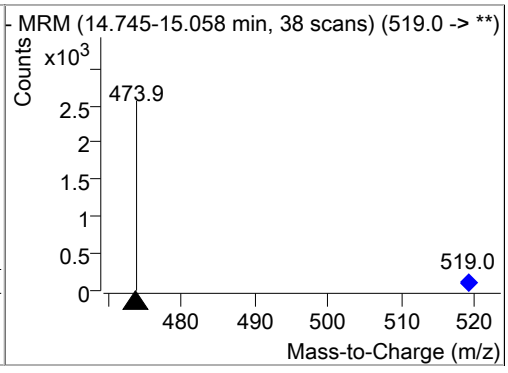




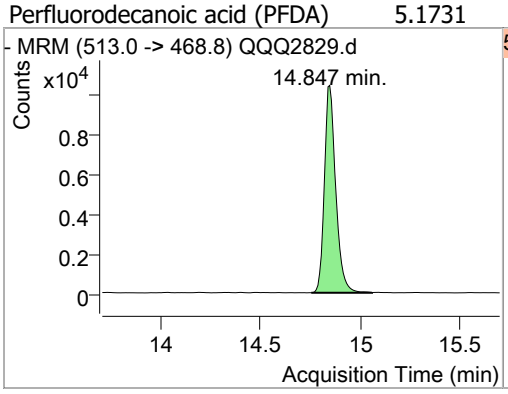
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	5.0442	14.85	0.22	48471				

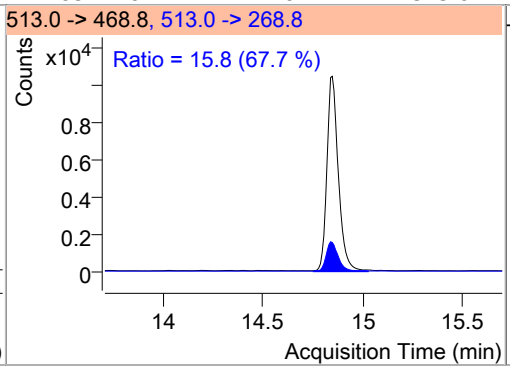


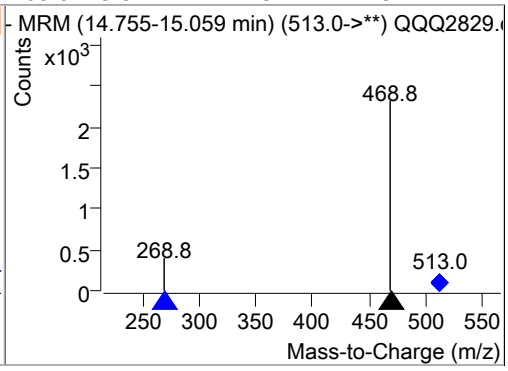




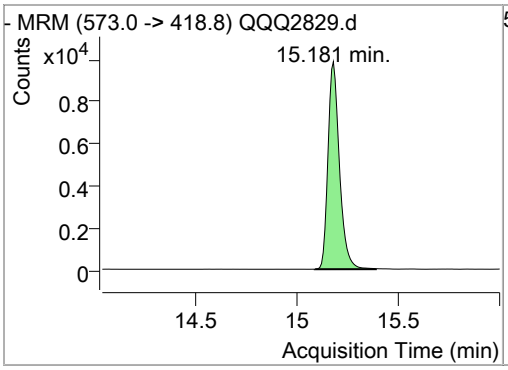
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	5.1731	14.85	0.22	41074	513.0 -> 268.8	15.8	17.5	29.1

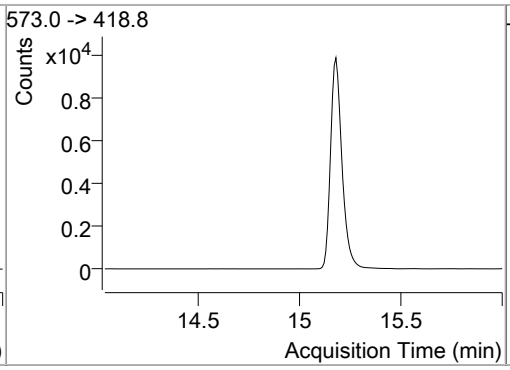


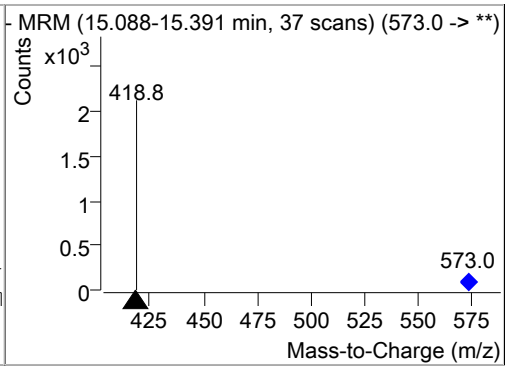




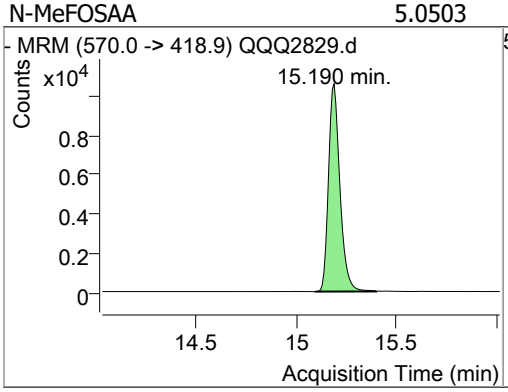
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	5.0545	15.18	0.24	38994				

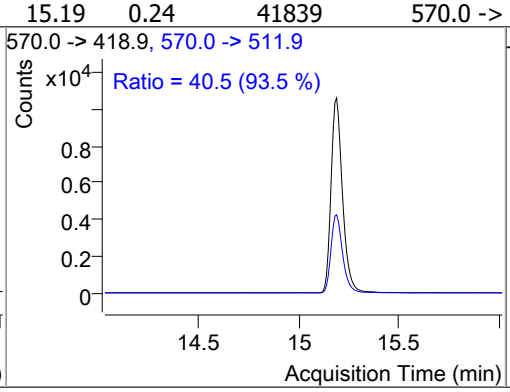


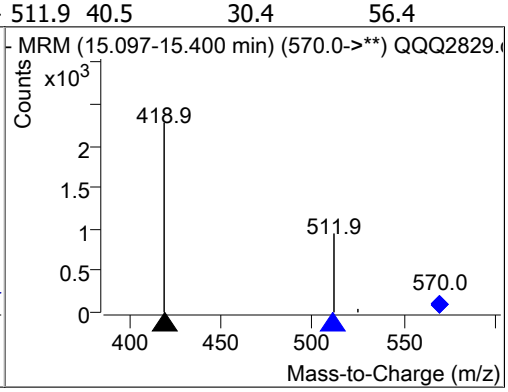




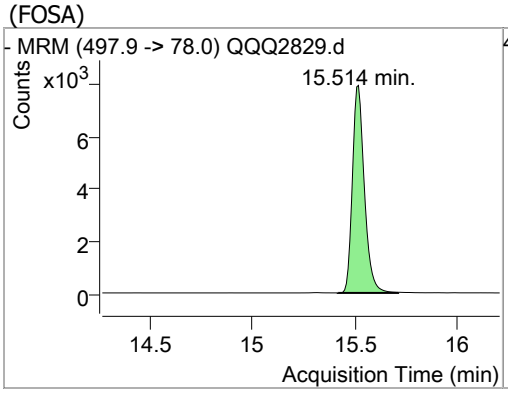
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	5.0503	15.19	0.24	41839	570.0 -> 511.9	40.5	30.4	56.4

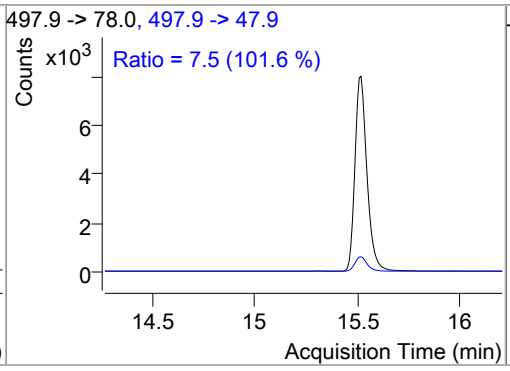


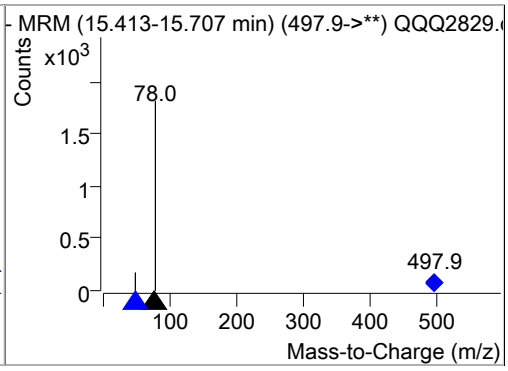




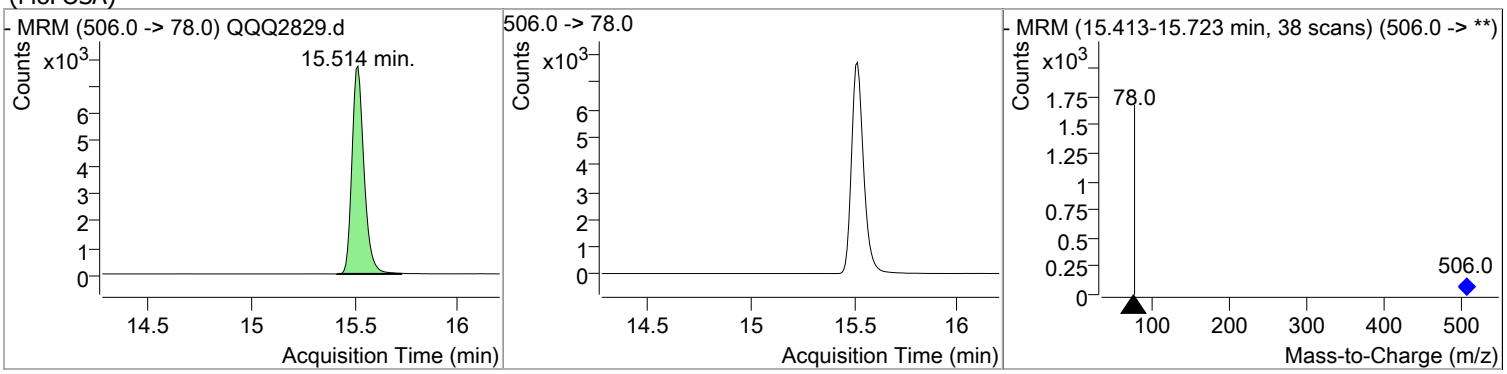
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	5.0374	15.51	0.33	32210	497.9 -> 47.9	7.5	5.9	8.8



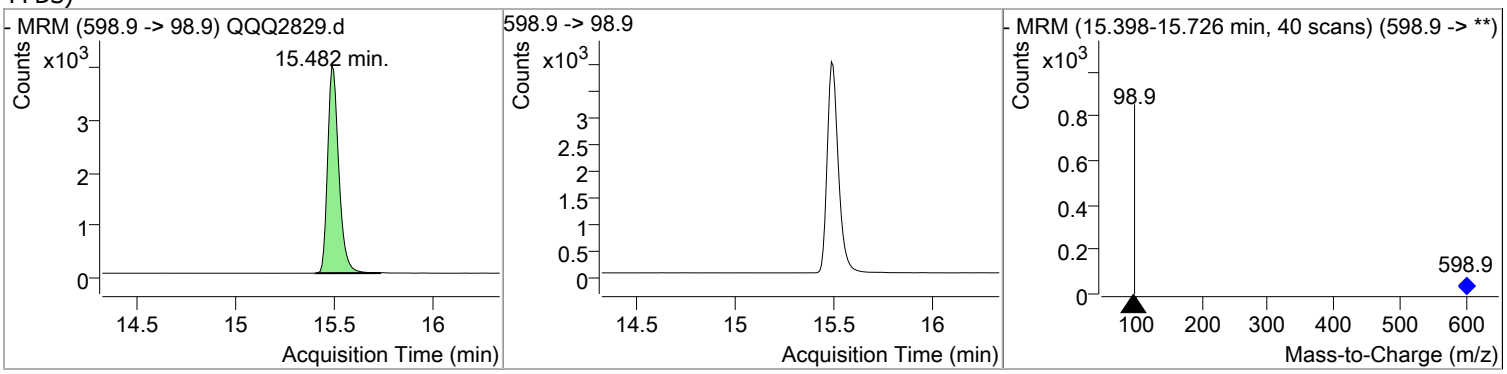




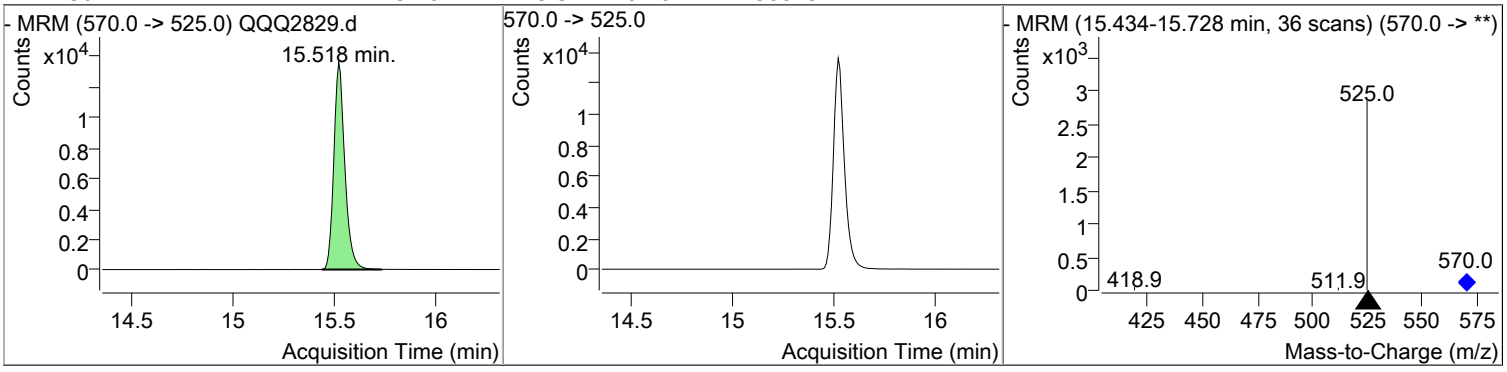
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.0918	15.51	0.32	31307				



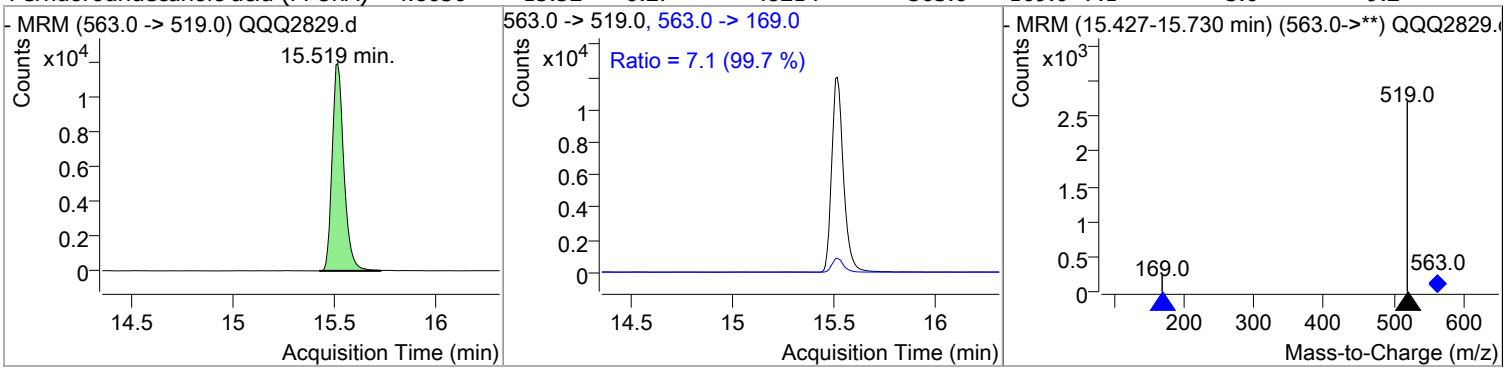
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	4.8609	15.48	0.27	15548				



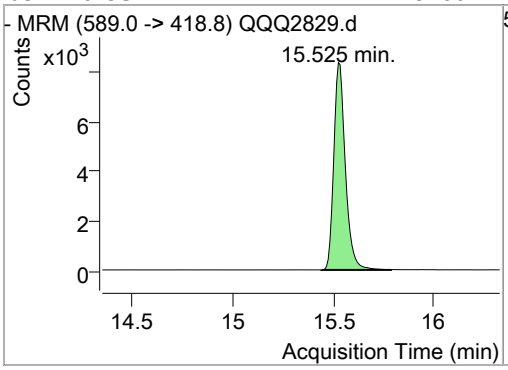
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	5.1842	15.52	0.28	50875				

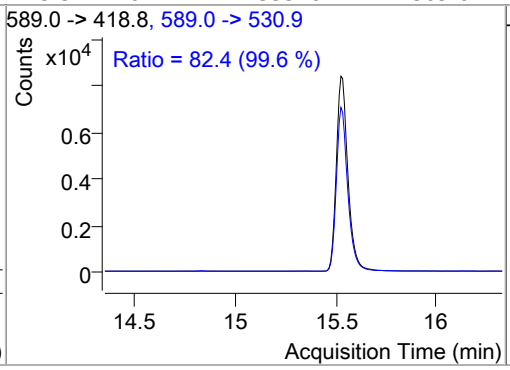


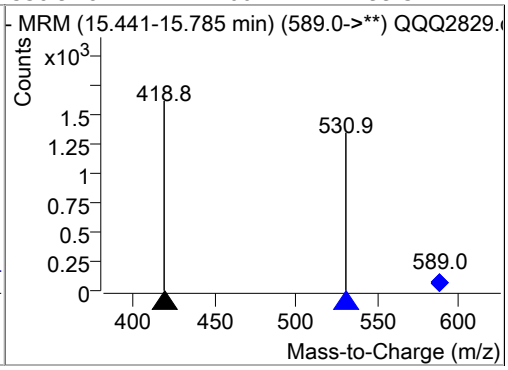
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	4.8056	15.52	0.27	48214	563.0 -> 169.0	7.1	5.0	9.2



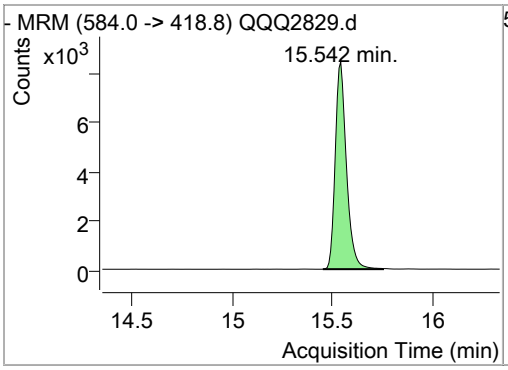
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	4.9486	15.52	0.27	33310	589.0 -> 530.9	82.4	66.2	99.3

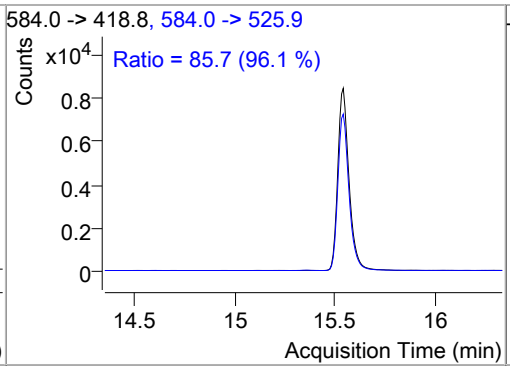


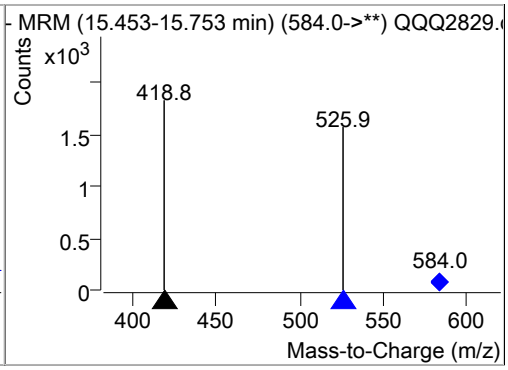




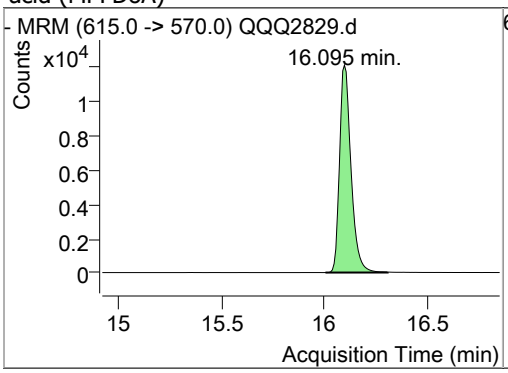
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	5.0041	15.54	0.28	32493	584.0 -> 525.9	85.7	71.3	107.0

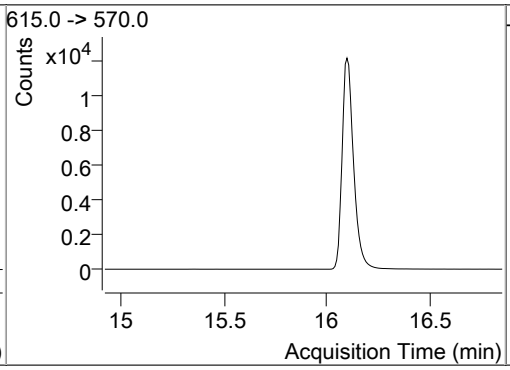


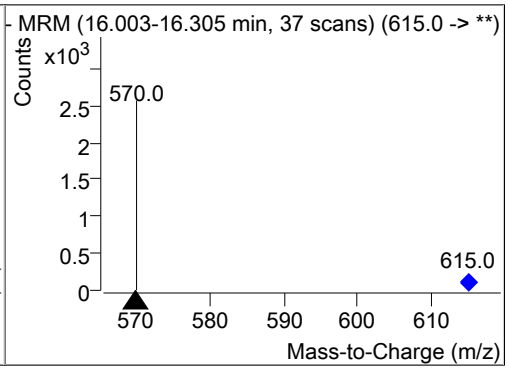




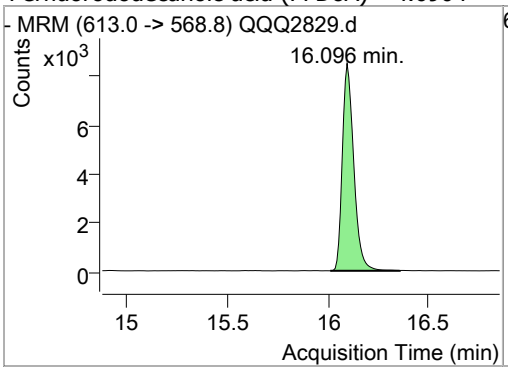
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	4.8805	16.10	0.32	46897				

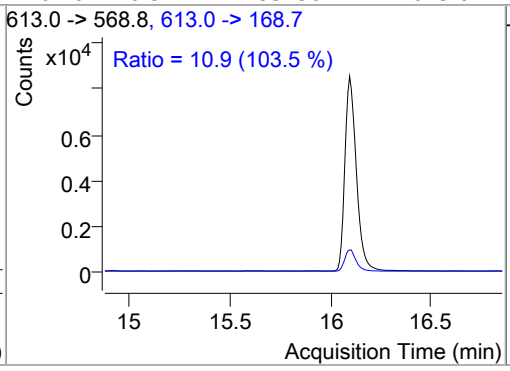


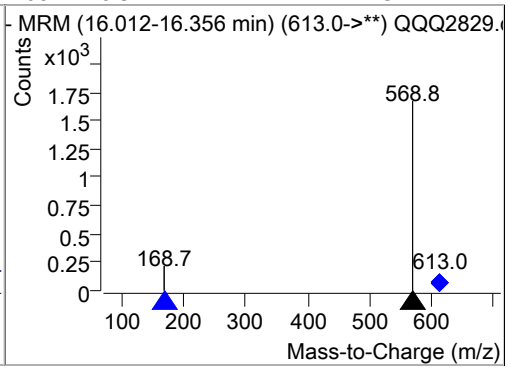




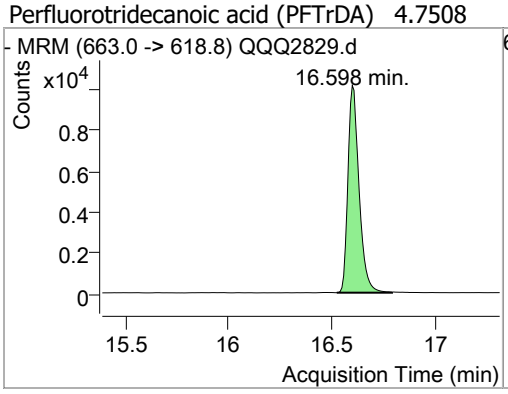
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	4.6904	16.10	0.32	33430	613.0 -> 168.7	10.9	7.4	13.7

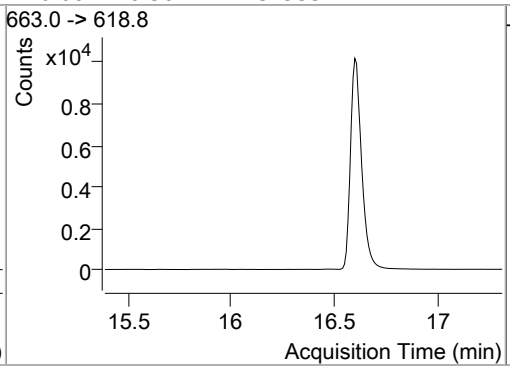


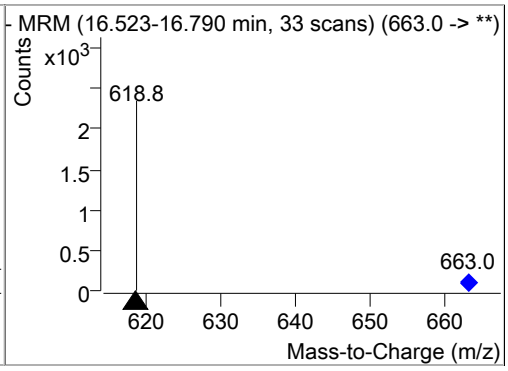




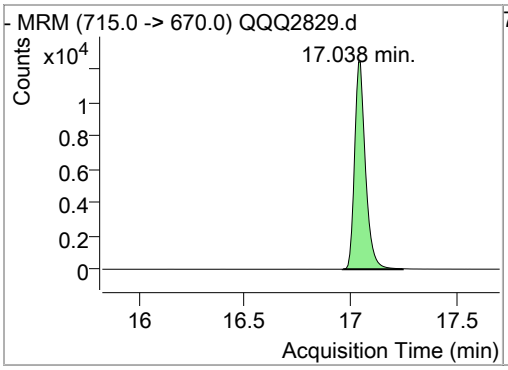
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	4.7508	16.60	0.36	37933				

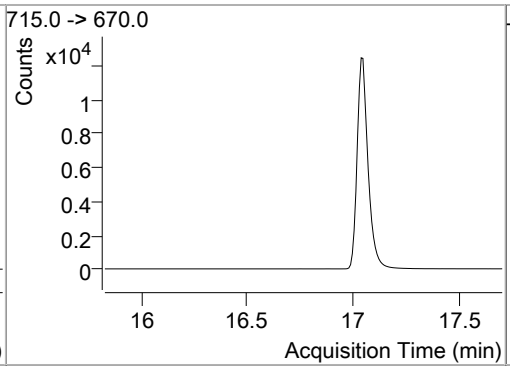


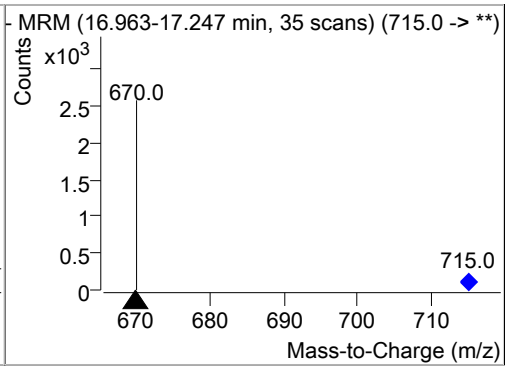




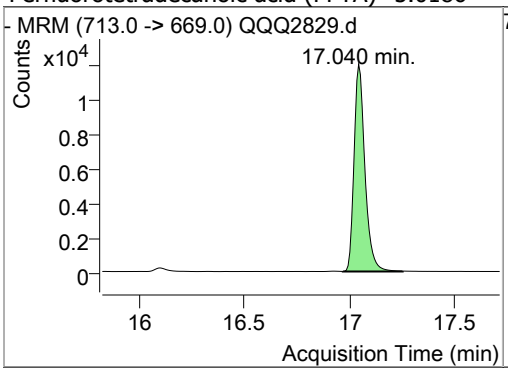
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	4.9747	17.04	0.40	44576				

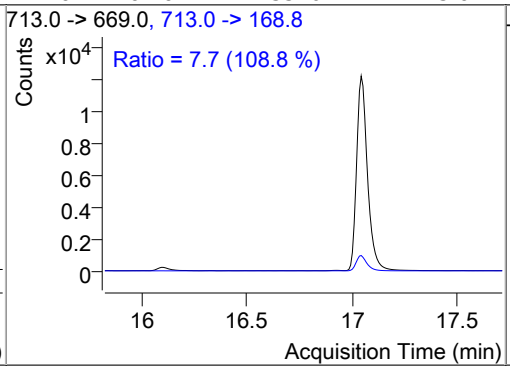


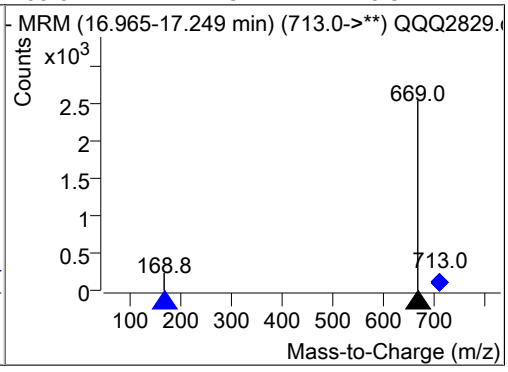




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	5.0186	17.04	0.40	43376	713.0 -> 168.8	7.7	5.7	8.5







FORM VII

CONTINUING CALIBRATION CHECK

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Instrument ID:	LCQQQ	Calibration:	YL90023
Lab File ID:	QQQ2840.d	Calibration Date:	12/23/19 13:19
Sequence:	Y9L1909	Injection Date:	12/20/19
Lab Sample ID:	Y9L1909-CCV2	Injection Time:	04:13

		CONC. (ng/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	Q	4.80	5.39	0.2138892	0.2043764		12.2	30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	A	4.75	4.64	0.2611759	0.2554396		-2.2	30
N-EtFOSAA	A	5.00	5.42	0.2914041	0.3159883		8.4	30
N-MeFOSAA	A	5.00	5.22	0.3717862	0.387831		4.3	30
Perfluoro-1-decanesulfonic acid (PFDS)	A	4.82	4.92	0.1434874	0.1464423		2.1	30
Perfluoro-1-heptanesulfonic acid (PFHpS)	A	4.98	5.19	0.17178	0.1789876		4.2	30
Perfluoro-1-octanesulfonamide (FOSA)	A	5.00	5.33	0.2869638	0.306093		6.7	30
Perfluorobutanesulfonic acid (PFBS)	A	4.42	4.68	0.307702	0.325876		5.9	30
Perfluorodecanoic acid (PFDA)	A	5.00	4.82	0.3563268	0.3437683		-3.5	30
Perfluorododecanoic acid (PFDoA)	A	5.00	6.02	0.3198605	0.3850688		20.4	30
Perfluoroheptanoic acid (PFHpA)	A	5.00	5.22	0.6544093	0.6828635		4.3	30
Perfluorohexanesulfonic acid (PFHxS)	A	3.70	3.74	0.2380903	0.2407516		1.1	30
Perfluorohexanoic acid (PFHxA)	A	5.00	5.33	0.8609303	0.9175773		6.6	30
Perfluoro-n-butanoic acid (PFBA)	A	5.00	5.16	0.7157248	0.7392625		3.3	30
Perfluorononanoic acid (PFNA)	A	4.80	5.07	0.4097471	0.4330341		5.7	30
Perfluorooctanesulfonic acid (PFOS)	A	3.65	3.82	0.2104231	0.2209437		5.0	30
Perfluorooctanoic acid (PFOA)	A	5.00	4.83	0.5082197	0.4912523		-3.3	30
Perfluoropentanoic acid (PFPeA)	A	5.00	5.12	0.9418955	0.9648664		2.4	30
Perfluorotetradecanoic acid (PFTA)	A	5.00	5.07	0.3878892	0.3936388		1.5	30
Perfluorotridecanoic acid (PFTrDA)	A	5.00	5.12	0.358323	0.3669686		2.4	30
Perfluoroundecanoic acid (PFUnA)	A	5.00	5.20	0.4502513	0.4684882		4.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

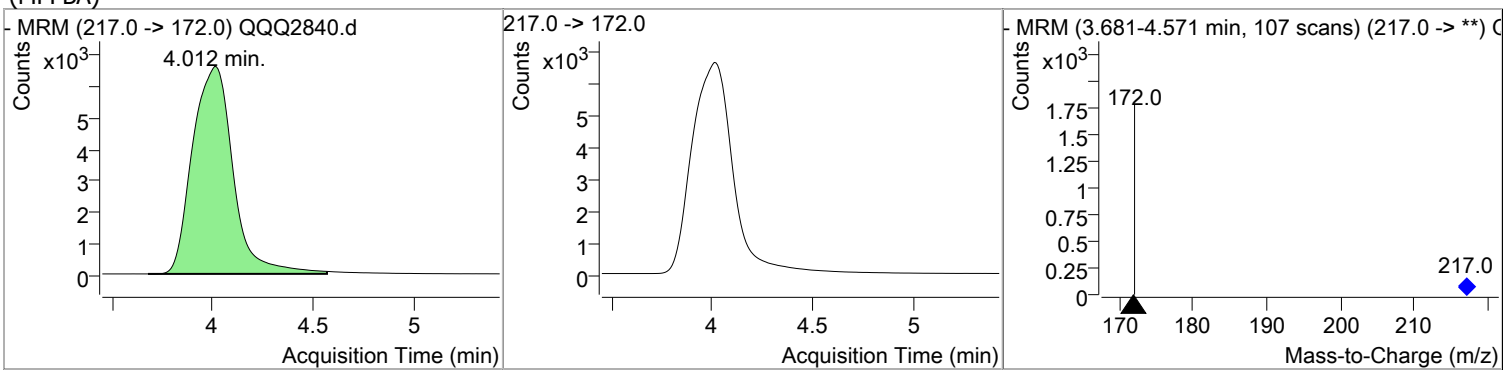
Data File	QQQ2840.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 4:13:34 AM
Sample Name	SEQ-CCV2	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.085	417.0 -> 372.0	229732	10.0000	ng/ml	0.051
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	4.012	217.0 -> 172.0	93172	5.1778	ng/ml	-0.175
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.78%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.014	268.0 -> 223.0	128174	5.2247	ng/ml	-0.100
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.25%		
M3PFBS	8.752	302.0 -> 79.9	37543	4.8479	ng/ml	-0.067
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.48%		
M2-4-2FTS	10.208	329.0 -> 309.0	38982	5.4024	ng/ml	-0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 54.02%		
M5PFHxA	10.353	318.0 -> 273.0	119452	5.1687	ng/ml	-0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.69%		
M4PFHpA	11.910	367.0 -> 322.0	33294	5.2109	ng/ml	-0.008
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.11%		
M3PFHxS	12.043	402.0 -> 80.0	26263	4.9369	ng/ml	0.000
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.37%		
M2-6-2FTS	13.023	429.0 -> 409.0	27377	4.8085	ng/ml	0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.08%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.084	421.0 -> 376.0	64647	5.3198	ng/ml	0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 53.20%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.031	472.0 -> 427.0	62869	5.0562	ng/ml	0.127
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.56%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.047	507.0 -> 80.0	21101	5.1806	ng/ml	0.135
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.81%		
M2-8-2FTS	14.812	529.0 -> 509.0	25856	5.2629	ng/ml	0.194
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.63%		
M6PFDA	14.829	519.0 -> 473.9	48719	4.9176	ng/ml	0.202
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.18%		
d3-N-MeFOSAA	15.172	573.0 -> 418.8	41285	5.1907	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.91%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.505	506.0 -> 78.0	33372	5.2646	ng/ml	0.311
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.65%		
M7PFUdA	15.509	570.0 -> 525.0	53792	5.3166	ng/ml	0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 53.17%		
d5-N-EtFOSAA	15.516	589.0 -> 418.8	35968	5.1828	ng/ml	0.261
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.83%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.087	615.0 -> 570.0	56760	5.7294	ng/ml	0.312
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 57.29%		
M2PFTeDA	17.038	715.0 -> 670.0	47532	5.1451	ng/ml	0.401
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.45%		
Target Compounds						QValue

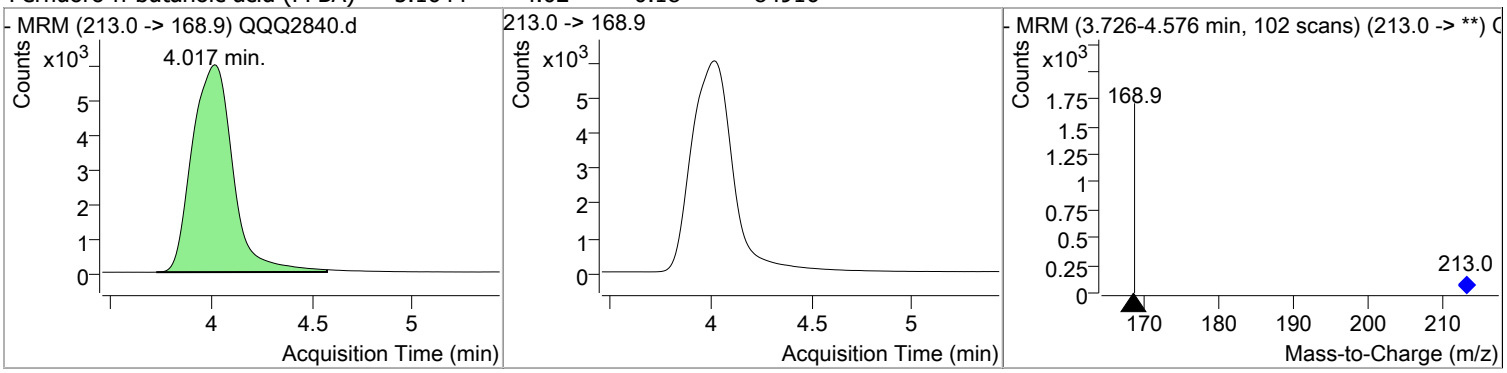
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.017	213.0 -> 168.9	84916	5.1644	ng/ml	100
Perfluoro-n-pentanoic acid (PFPeA)	8.015	263.0 -> 219.0	110830	5.1219	ng/ml	100
Perfluorobutanesulfonic acid (PFBS)	8.746	298.9 -> 79.9	33090	4.6789	ng/ml	100
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.209	327.0 -> 307.0	37554	5.5286	ng/ml	99
Perfluorohexanoic acid (PFHxA)	10.355	313.0 -> 268.9	105398	5.3290	ng/ml	100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.666	348.9 -> 79.9	31189	4.9071	ng/ml	99
Perfluoroheptanoic acid (PFHpA)	11.911	363.0 -> 318.8	78438	5.2174	ng/ml	98
Perfluorohexanesulfonic acid (PFHxS)	12.044	398.9 -> 79.9	20464	3.7414	ng/ml	100
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.024	427.0 -> 407.0	27874	4.6443	ng/ml	98
Perfluorooctanoic acid (PFOA)	13.085	413.0 -> 368.8	56428	4.8331	ng/ml	93
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.140	448.9 -> 80.0	20477	5.1912	ng/ml	96
Perfluorononanoic acid (PFNA)	14.031	463.0 -> 418.8	47751	5.0728	ng/ml	96
Perfluorooctanesulfonic acid (PFOS)	14.047	498.9 -> 79.9	18527	3.8177	ng/ml	94
Perfluorononanesulfonate (L-PFNS)	14.820	548.9 -> 79.9	17909	4.9850	ng/ml	95
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.812	527.0 -> 507.0	22537	5.3857	ng/ml	96
Perfluorodecanoic acid (PFDA)	14.838	513.0 -> 468.8	39487	4.8238	ng/ml	96
N-MeFOSAA	15.173	570.0 -> 418.9	44549	5.2158	ng/ml	97
Perfluoro-1-octanesulfonamide (FOSA)	15.506	497.9 -> 78.0	35160	5.3333	ng/ml	98
Perfluoro-1-decanesulfonate (L-PFDS)	15.474	598.9 -> 98.9	16216	4.9172	ng/ml	100
Perfluoroundecanoic acid (PFUnA)	15.510	563.0 -> 519.0	53813	5.2025	ng/ml	100
N-EtFOSAA	15.534	584.0 -> 418.8	36296	5.4218	ng/ml	96
Perfluorododecanoic acid (PFDoA)	16.087	613.0 -> 568.8	44231	6.0193	ng/ml	97
Perfluorotridecanoic acid (PFTrDA)	16.598	663.0 -> 618.8	42152	5.1206	ng/ml	100
Perfluorotetradecanoic acid (PFTA)	17.032	713.0 -> 669.0	45216	5.0741	ng/ml	98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

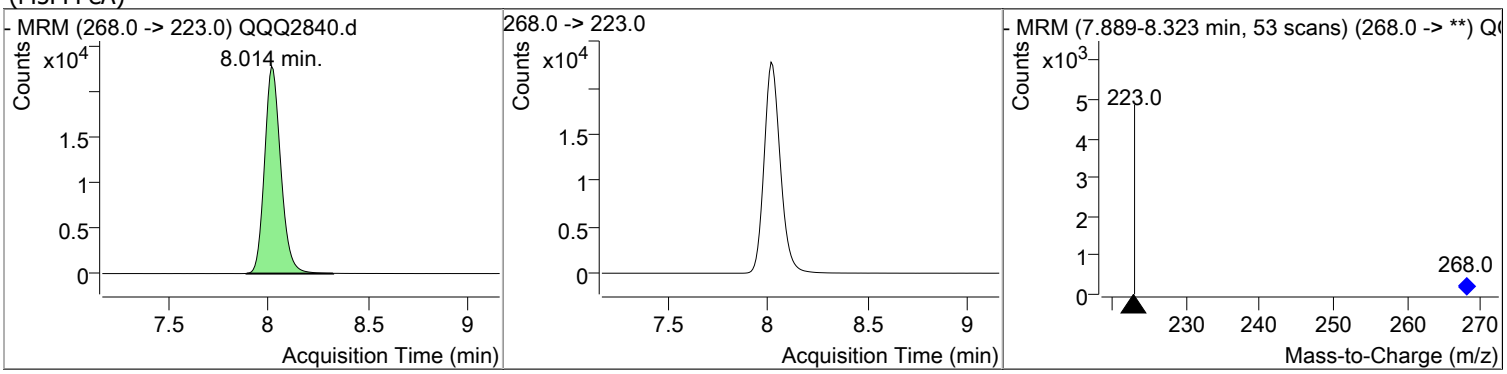
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.1778	4.01	-0.18	93172				



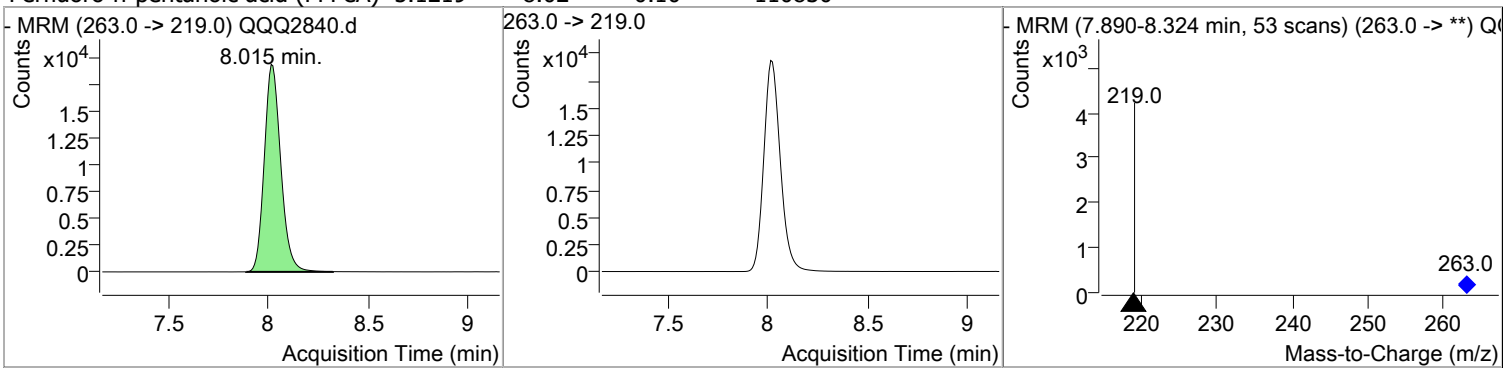
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	5.1644	4.02	-0.18	84916				



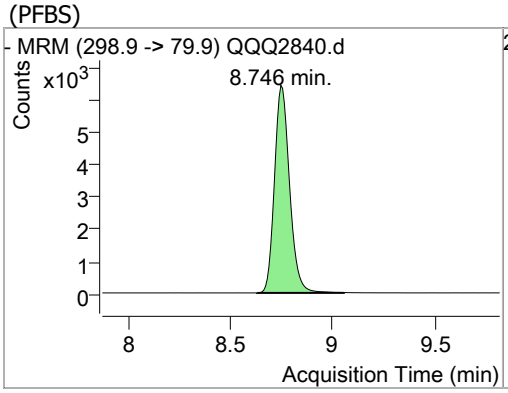
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	5.2247	8.01	-0.10	128174				

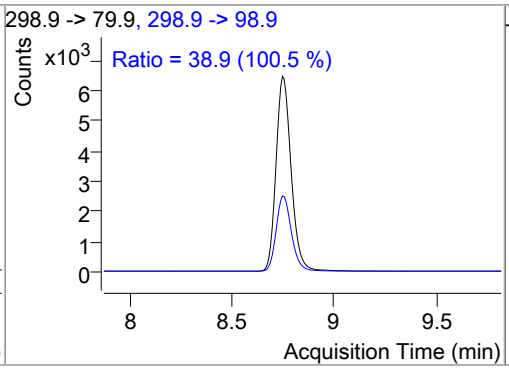


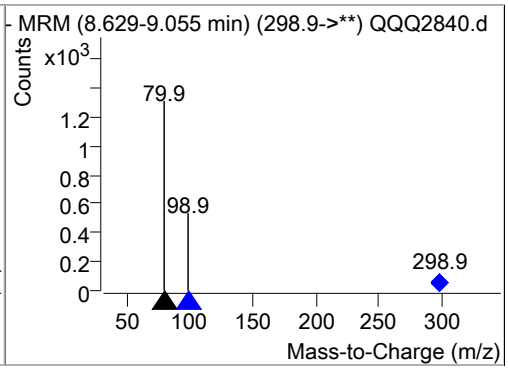
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	5.1219	8.02	-0.10	110830				



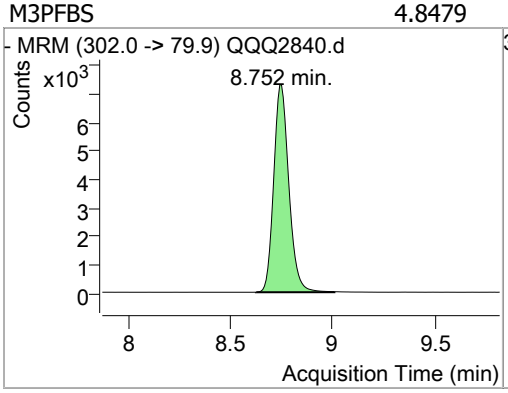
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	4.6789	8.75	-0.07	33090	298.9 -> 98.9	38.9	31.0	46.5

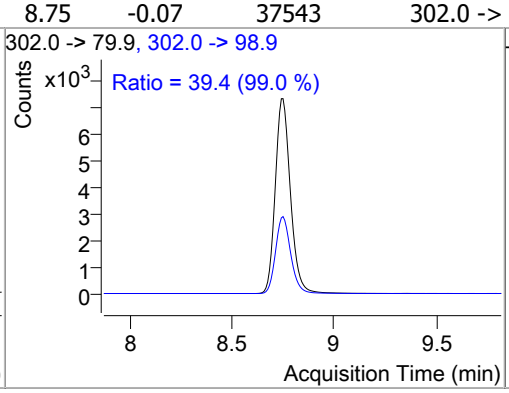


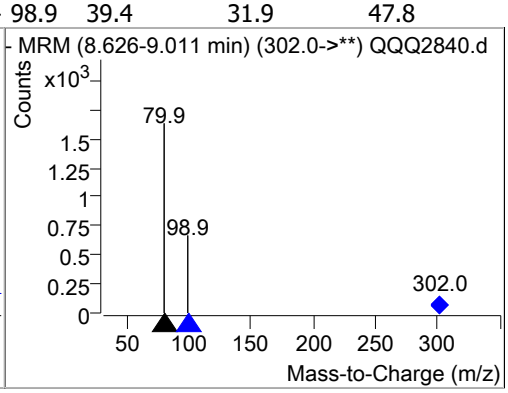




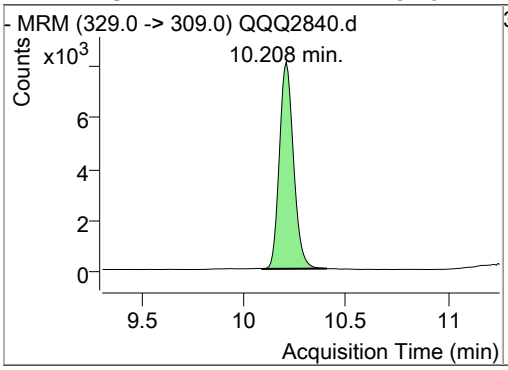
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	4.8479	8.75	-0.07	37543	302.0 -> 98.9	39.4	31.9	47.8

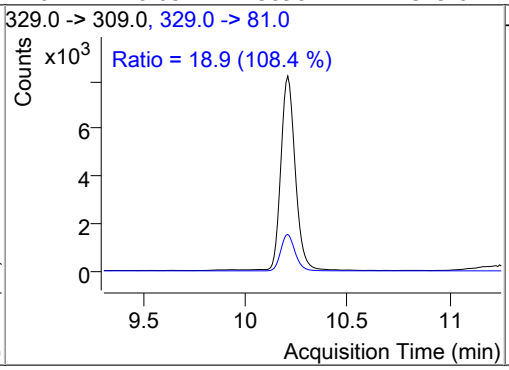


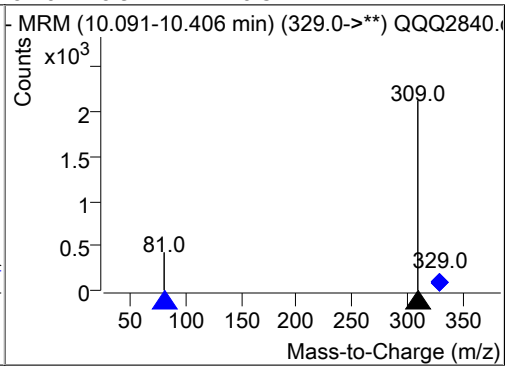




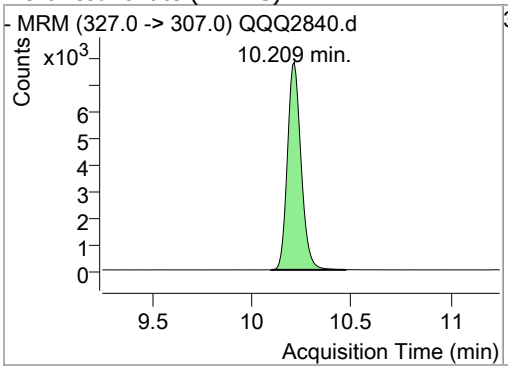
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	5.4024	10.21	-0.05	38982	329.0 -> 81.0	18.9	10.5	24.4

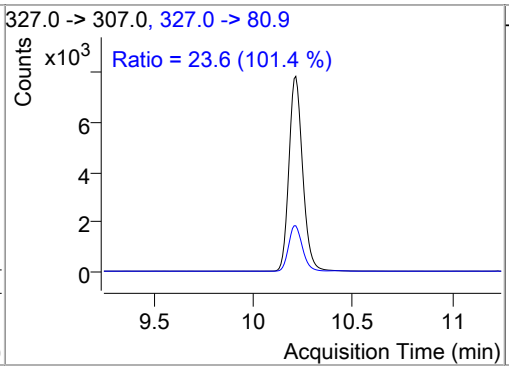


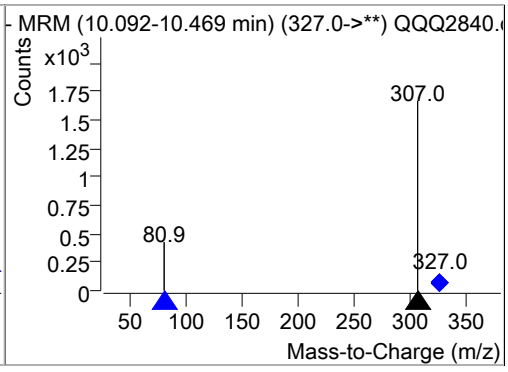




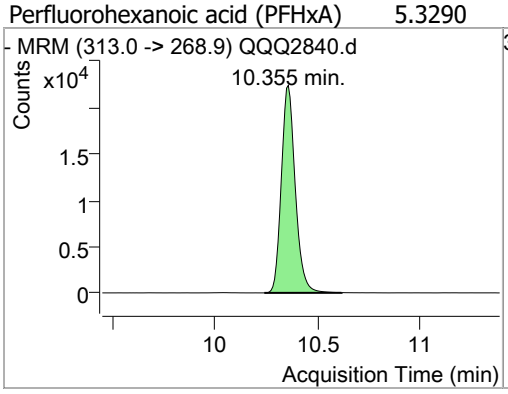
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	5.5286	10.21	-0.05	37554	327.0 -> 80.9	23.6	13.9	32.5

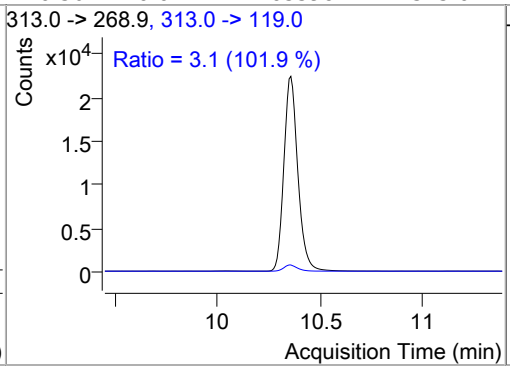


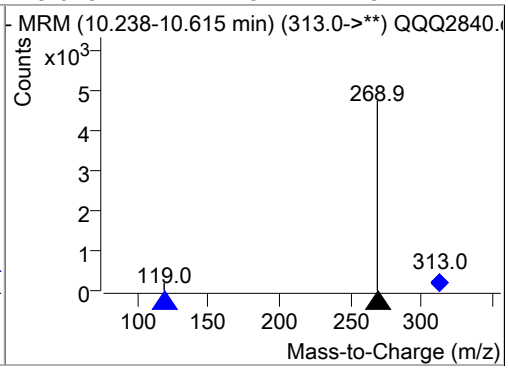




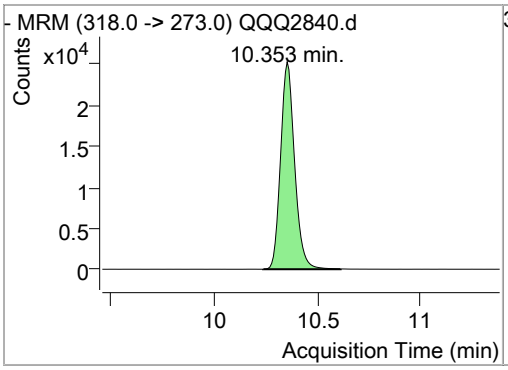
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	5.3290	10.36	-0.04	105398	313.0 -> 119.0	3.1	2.5	3.7

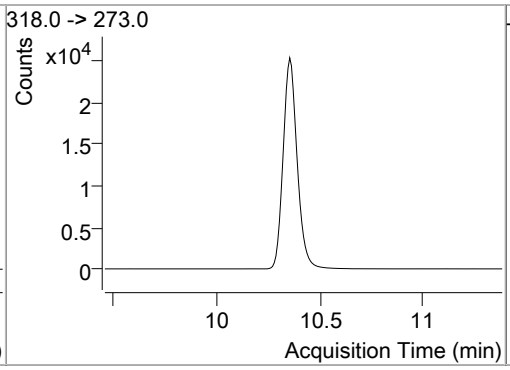


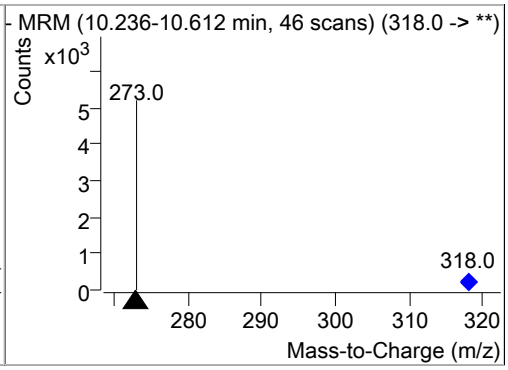




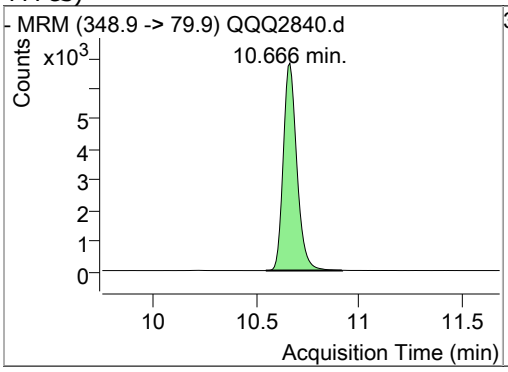
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	5.1687	10.35	-0.05	119452				

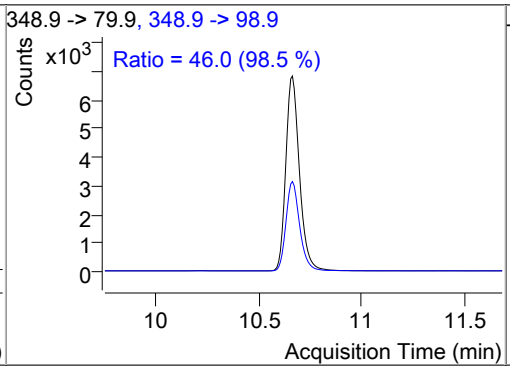


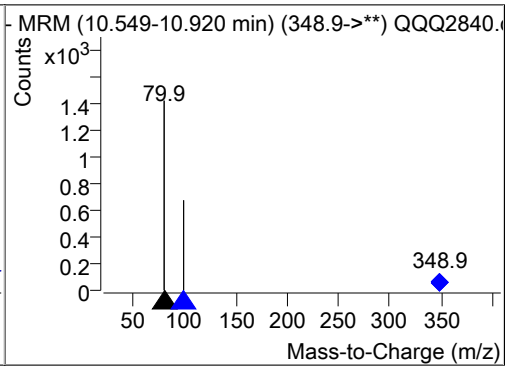




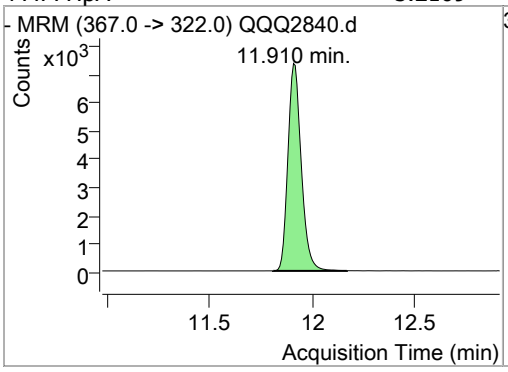
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	4.9071	10.67	-0.03	31189	348.9 -> 98.9	46.0	37.3	56.0

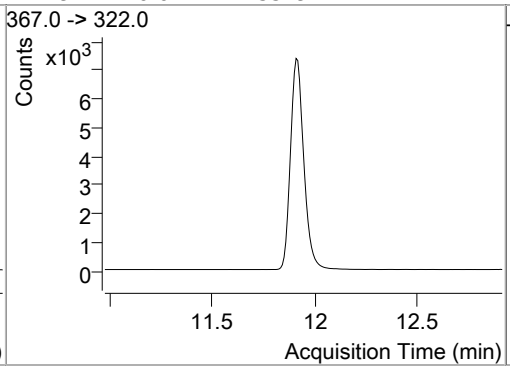


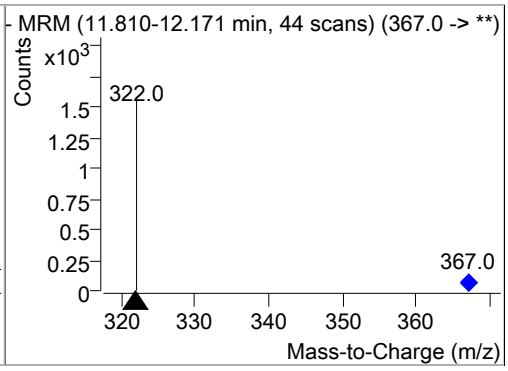




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	5.2109	11.91	-0.01	33294				

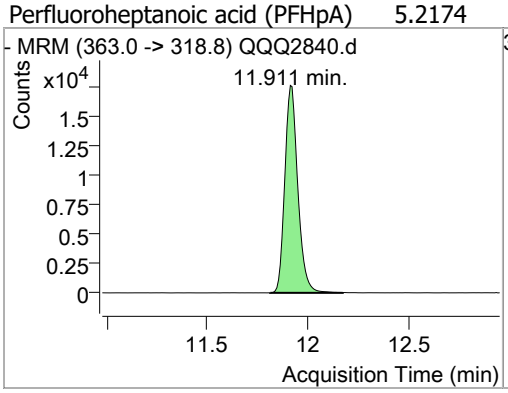


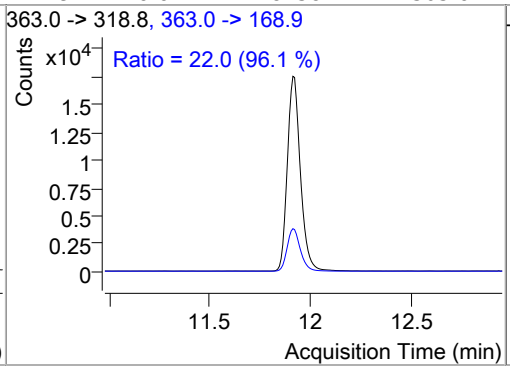


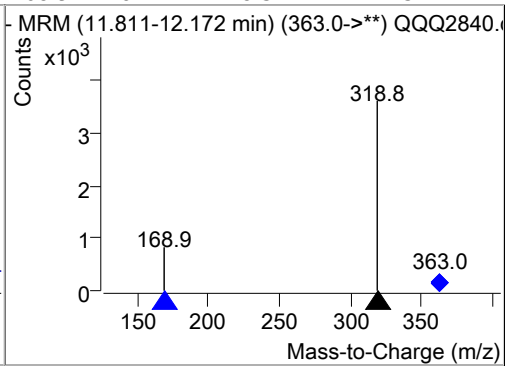


Quantitation Results Report (Not Reviewed)

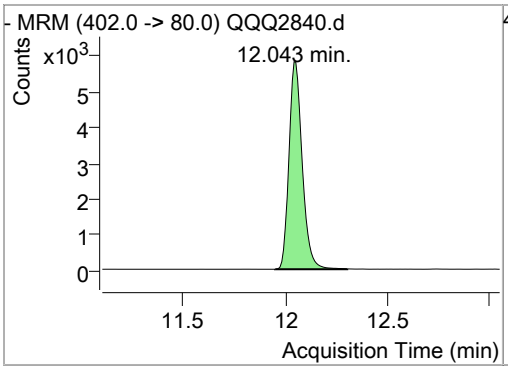
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	5.2174	11.91	-0.01	78438	363.0 -> 168.9	22.0	18.3	27.5

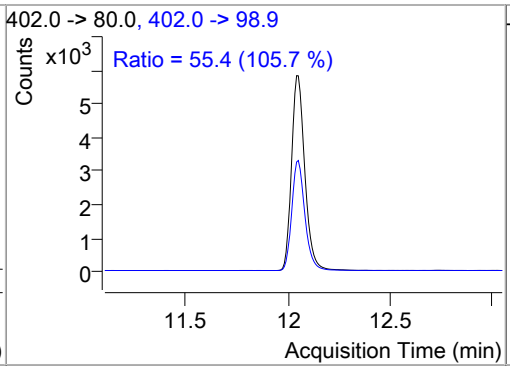


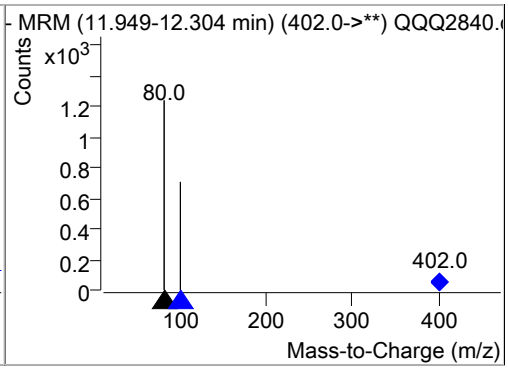




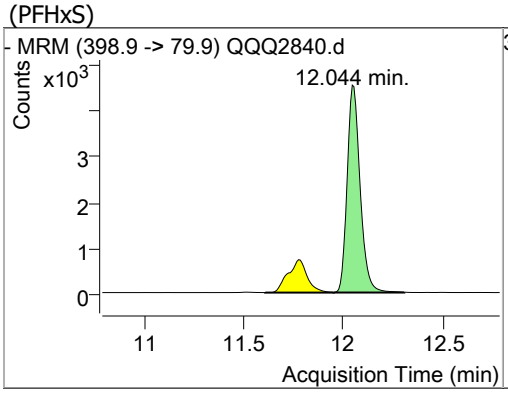
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	4.9369	12.04	0.00	26263	402.0 -> 98.9	55.4	42.0	62.9

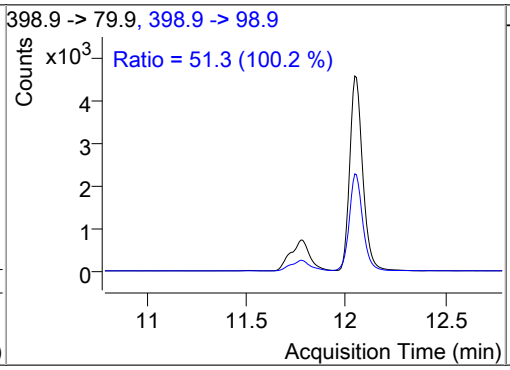


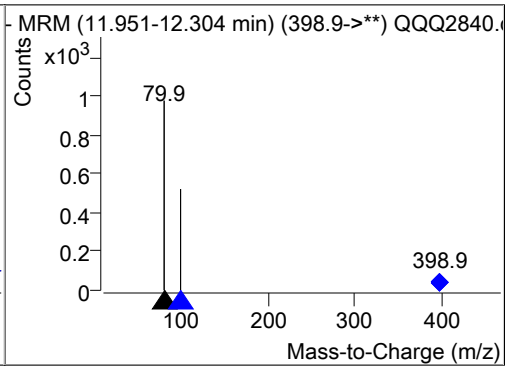




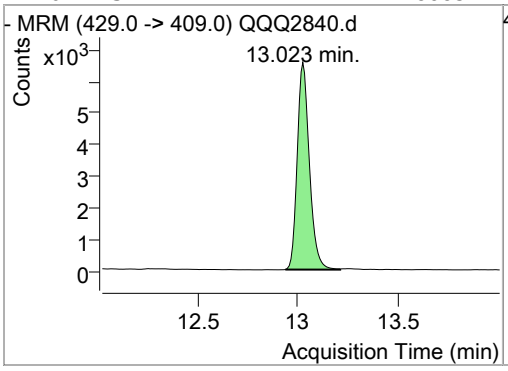
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	3.7414	12.04	0.00	20464	398.9 -> 98.9	51.3	41.0	61.5

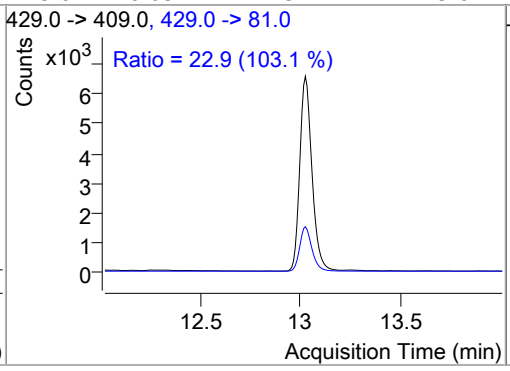


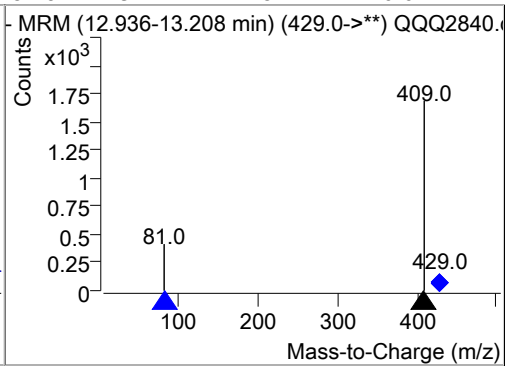




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	4.8085	13.02	0.05	27377	429.0 -> 81.0	22.9	17.8	26.6

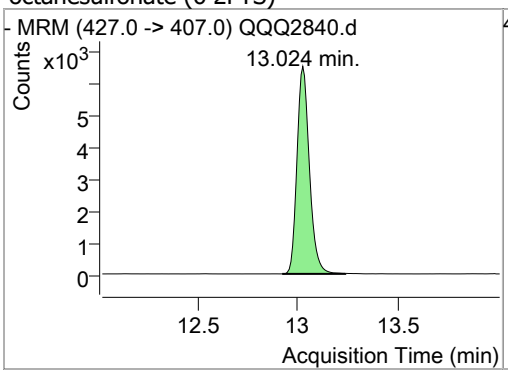


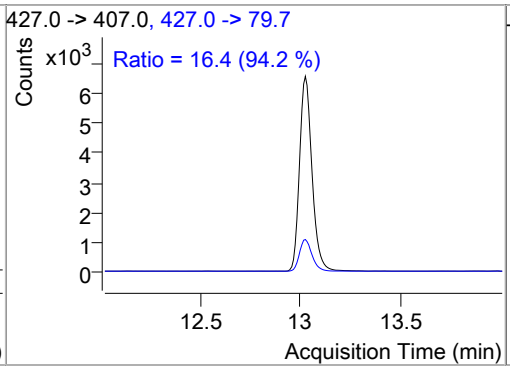


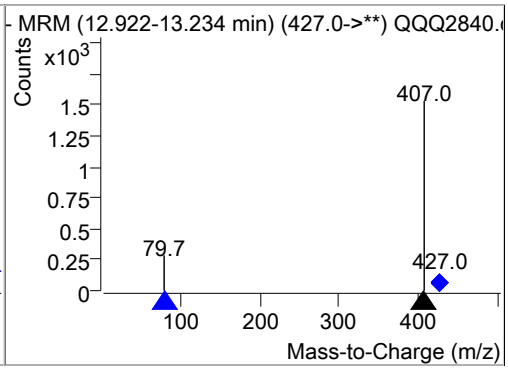


Quantitation Results Report (Not Reviewed)

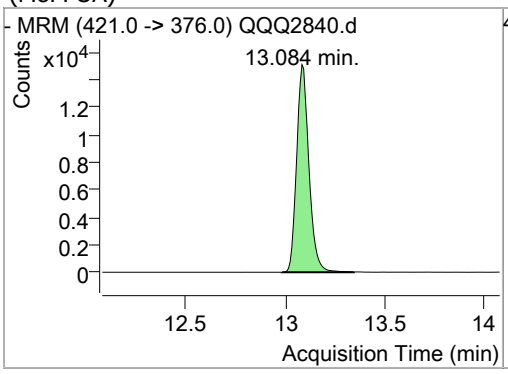
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	4.6443	13.02	0.05	27874	427.0 -> 79.7	16.4	13.9	20.8

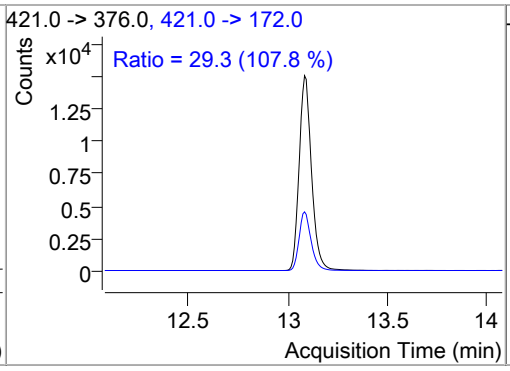


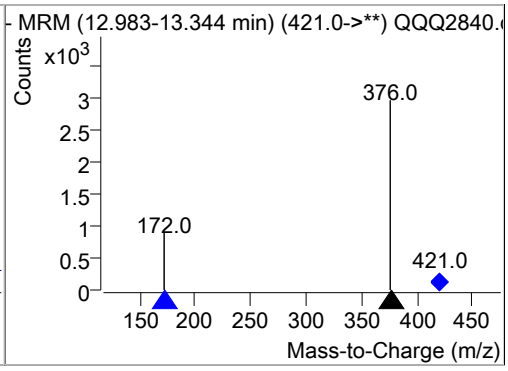




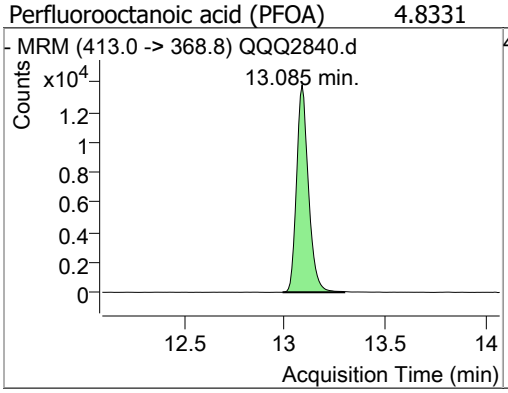
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.3198	13.08	0.06	64647	421.0 -> 172.0	29.3	21.7	32.6

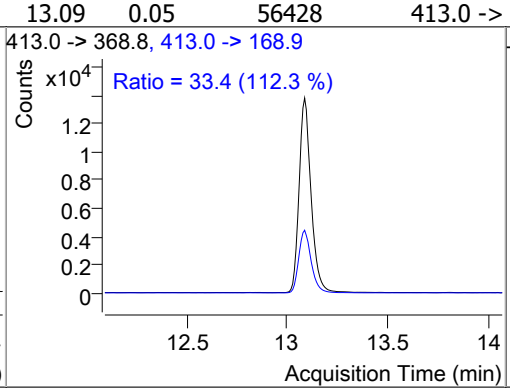


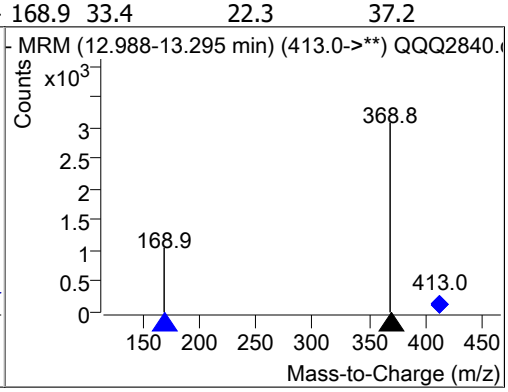




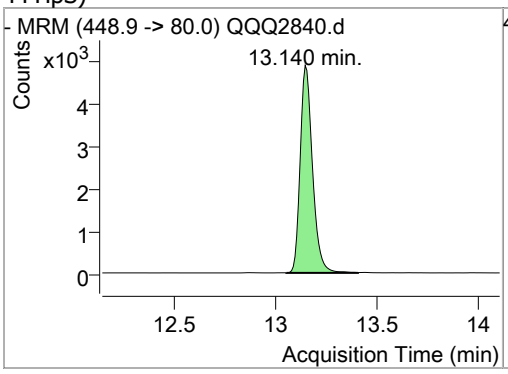
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	4.8331	13.09	0.05	56428	413.0 -> 168.9	33.4	22.3	37.2

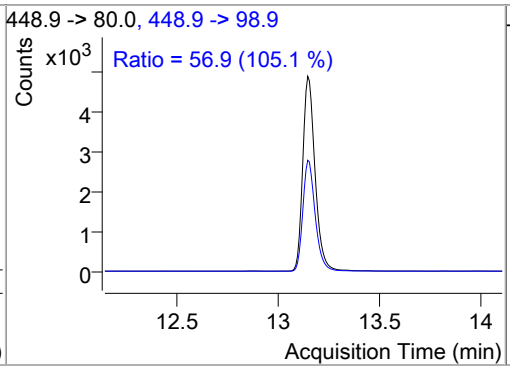


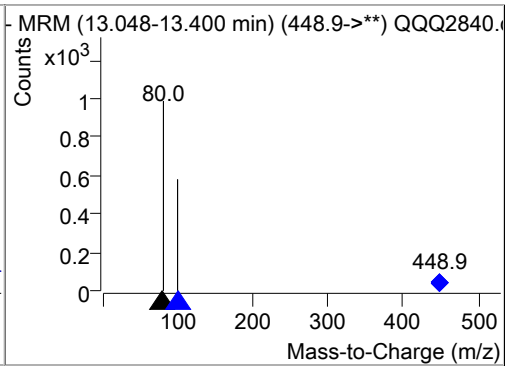




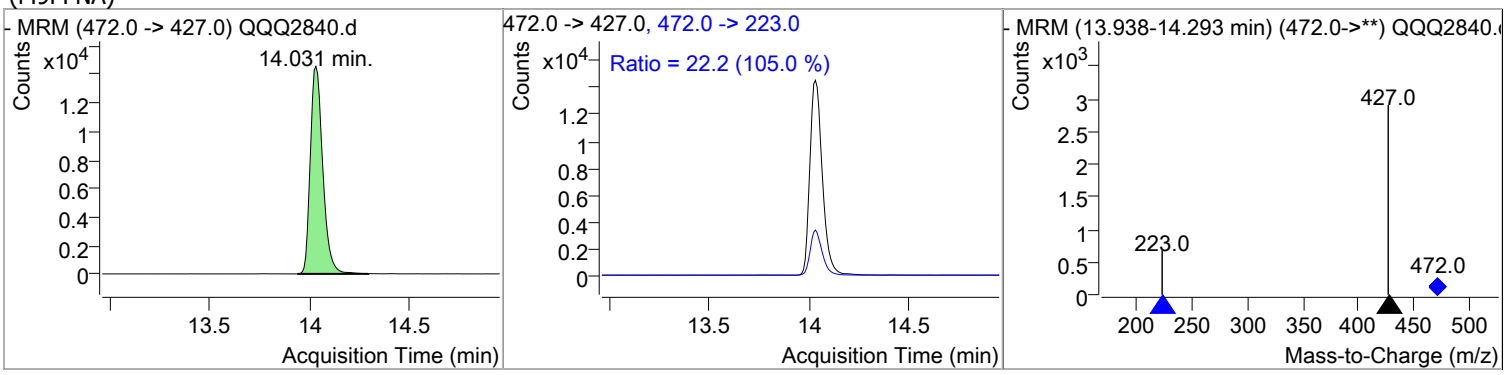
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	5.1912	13.14	0.06	20477	448.9 -> 98.9	56.9	43.3	64.9



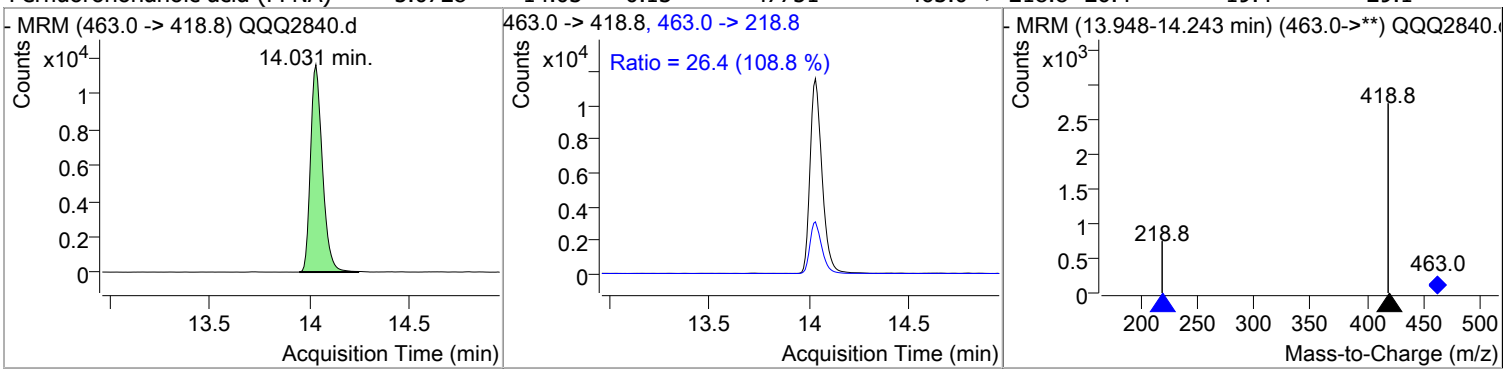




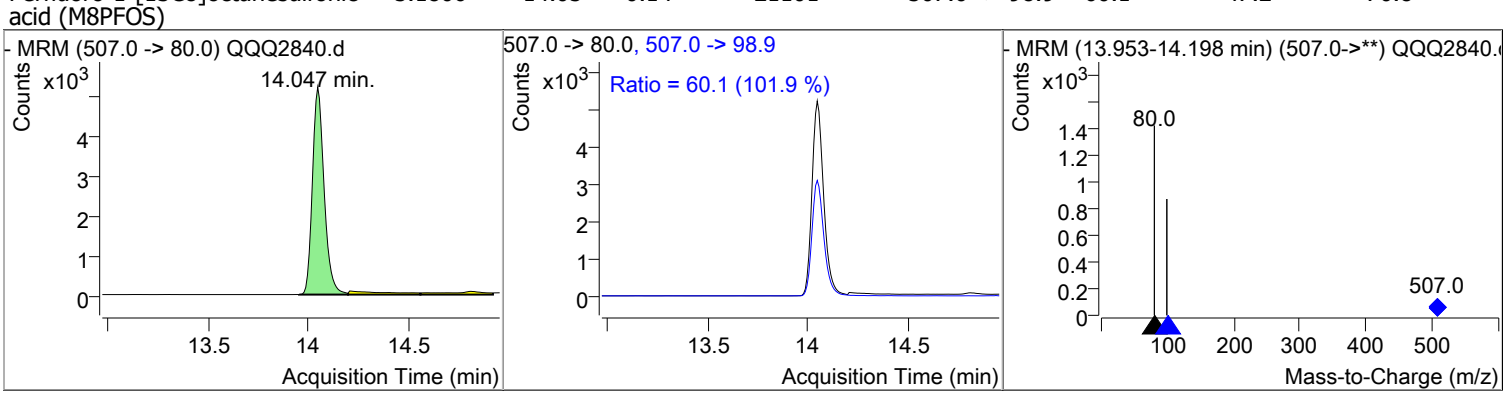
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	5.0562	14.03	0.13	62869	472.0 -> 223.0	22.2	16.9	25.4



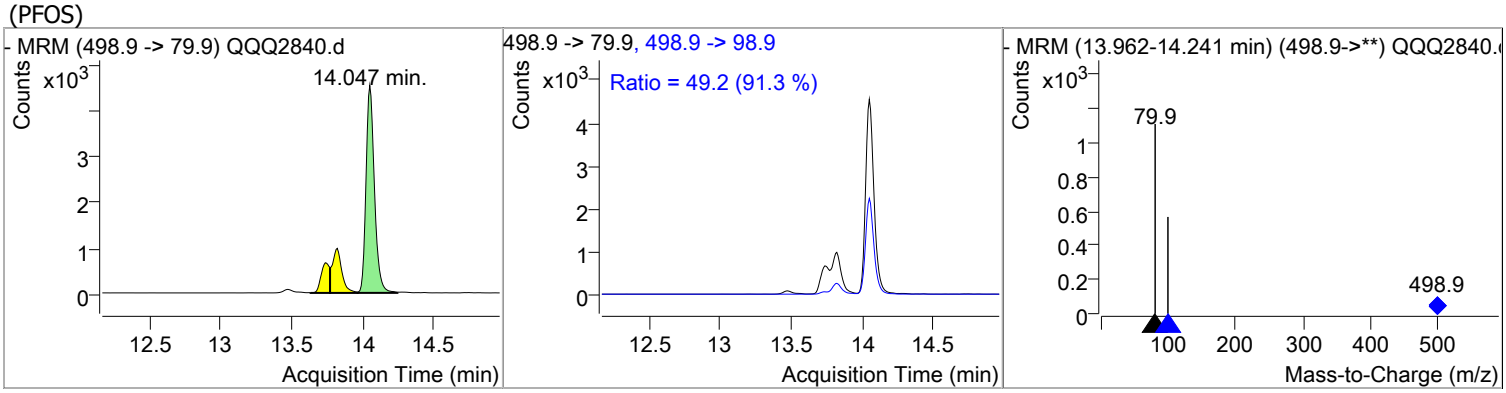
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	5.0728	14.03	0.13	47751	463.0 -> 218.8	26.4	19.4	29.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	5.1806	14.05	0.14	21101	507.0 -> 98.9	60.1	47.2	70.8

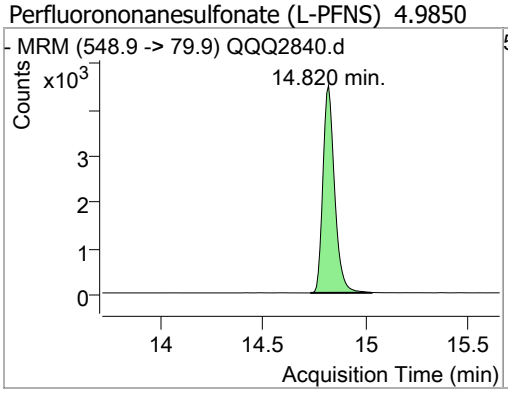


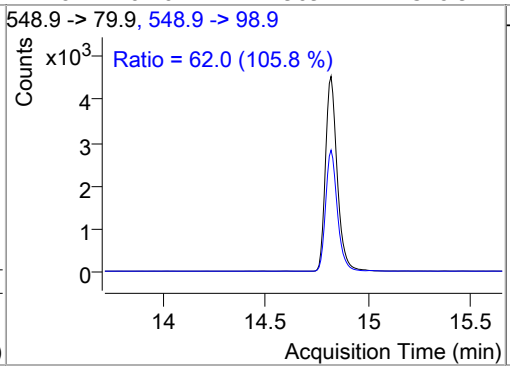
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	3.8177	14.05	0.14	18527	498.9 -> 98.9	49.2	43.1	64.6

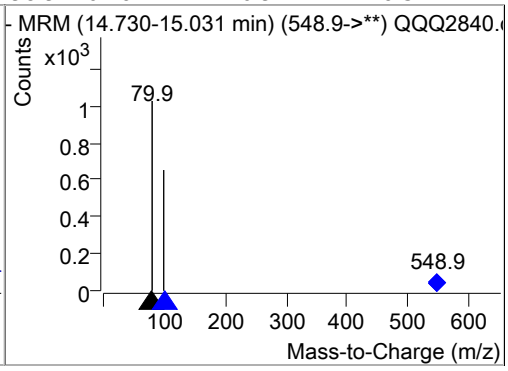


Quantitation Results Report (Not Reviewed)

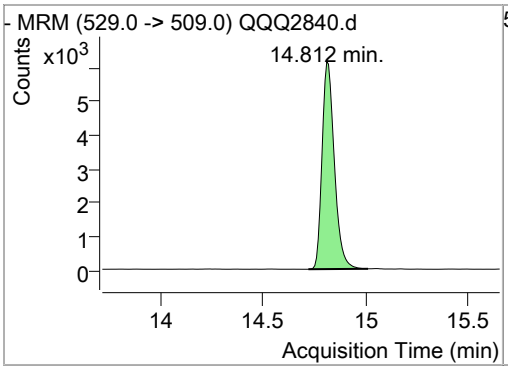
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	4.9850	14.82	0.20	17909	548.9 -> 98.9	62.0	46.9	70.3

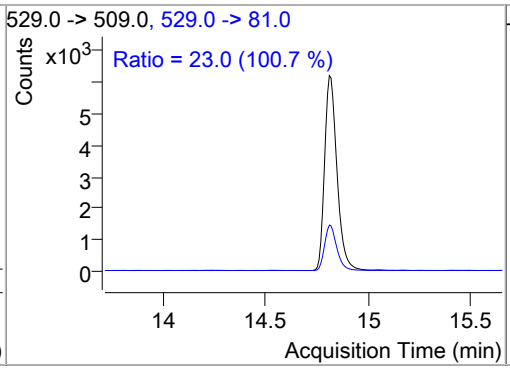


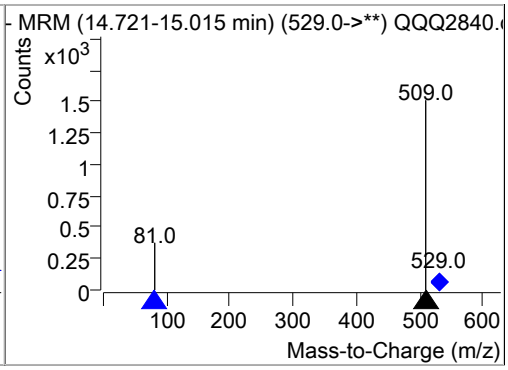




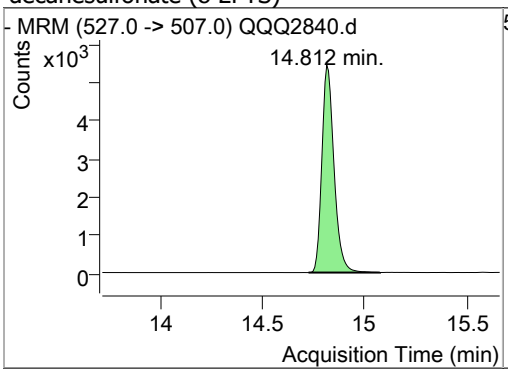
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	5.2629	14.81	0.19	25856	529.0 -> 81.0	23.0	18.3	27.4

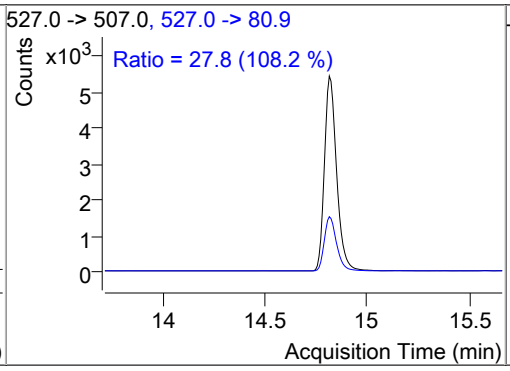


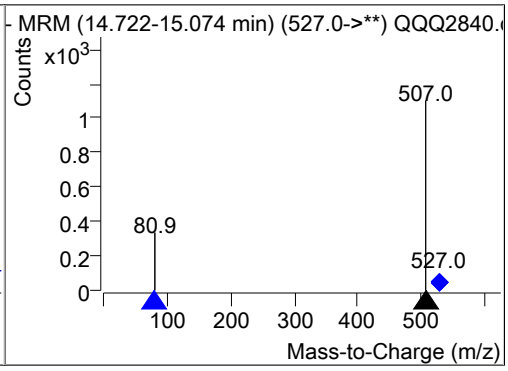




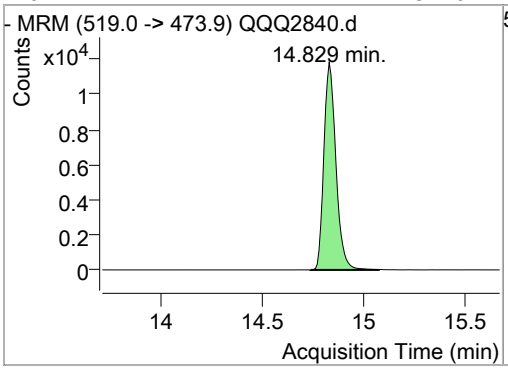
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	5.3857	14.81	0.19	22537	527.0 -> 80.9	27.8	20.6	30.9

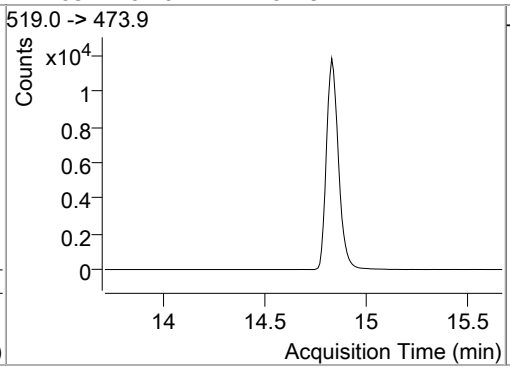


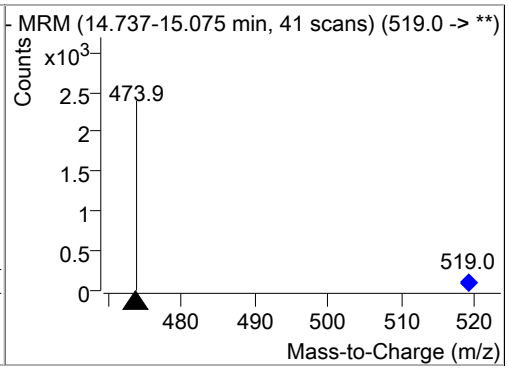




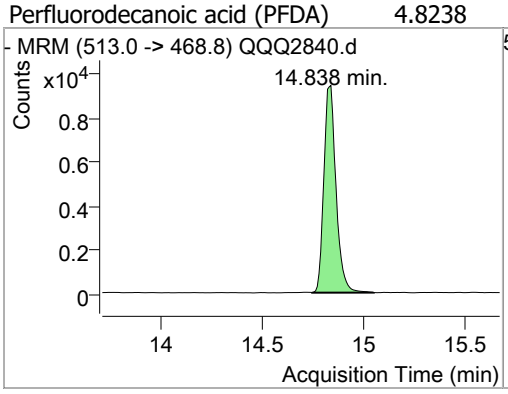
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	4.9176	14.83	0.20	48719				

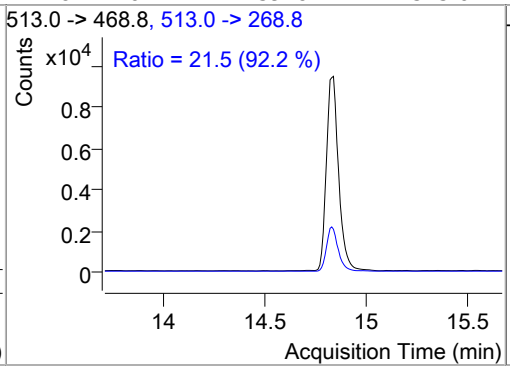


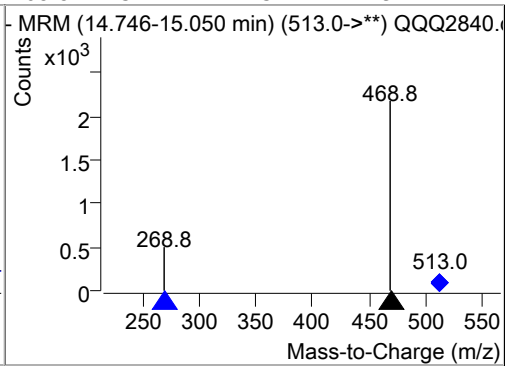




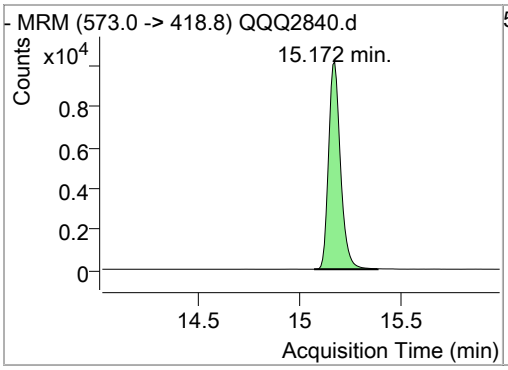
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	4.8238	14.84	0.21	39487	513.0 -> 268.8	21.5	17.5	29.1

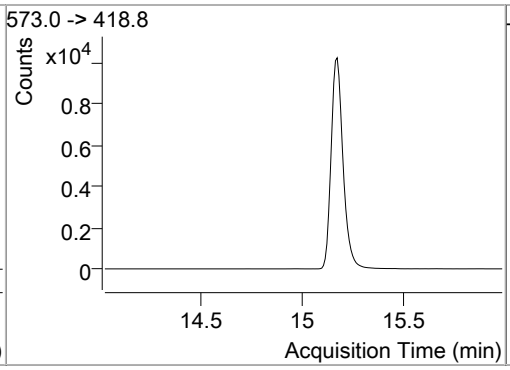


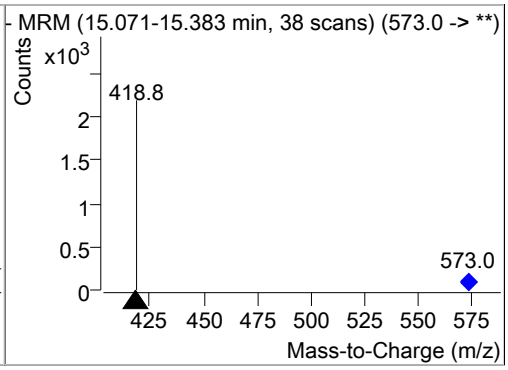




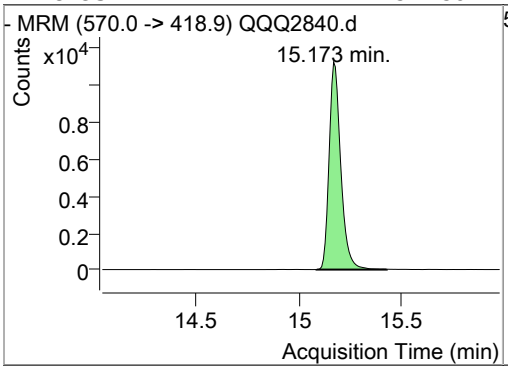
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	5.1907	15.17	0.24	41285				

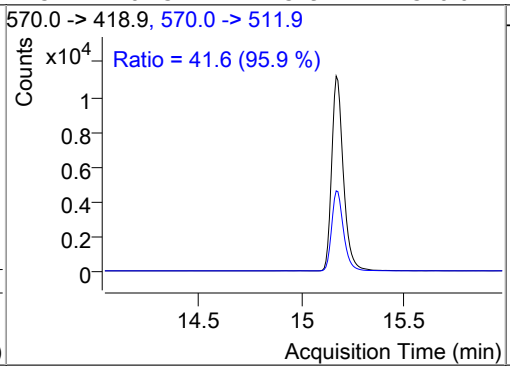


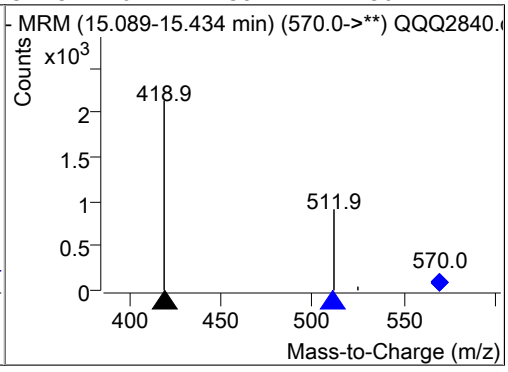




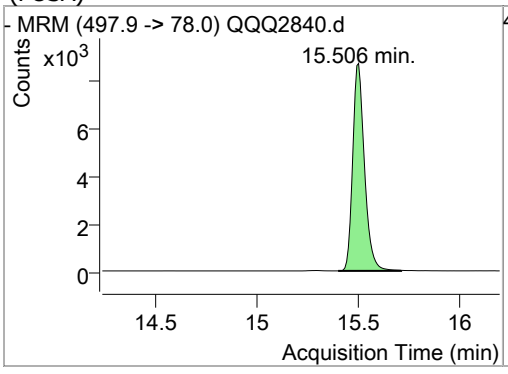
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	5.2158	15.17	0.23	44549	570.0 -> 511.9	41.6	30.4	56.4

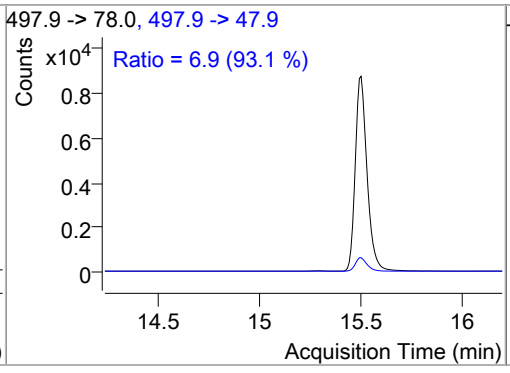


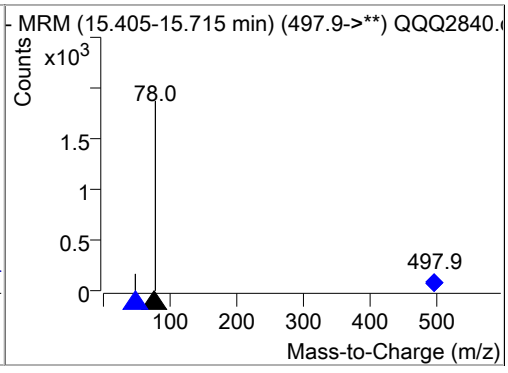




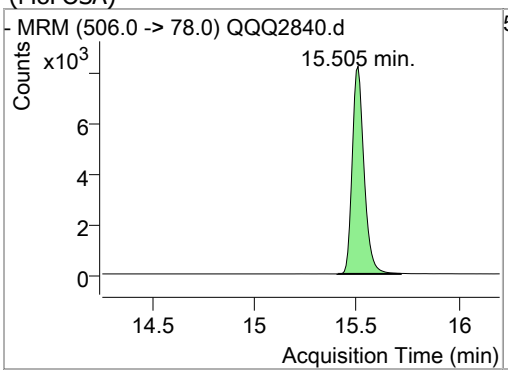
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	5.3333	15.51	0.32	35160	497.9 -> 47.9	6.9	5.9	8.8

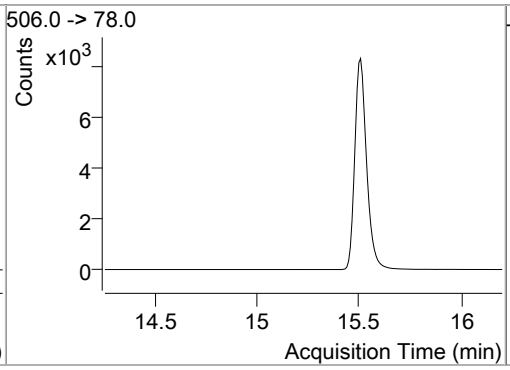


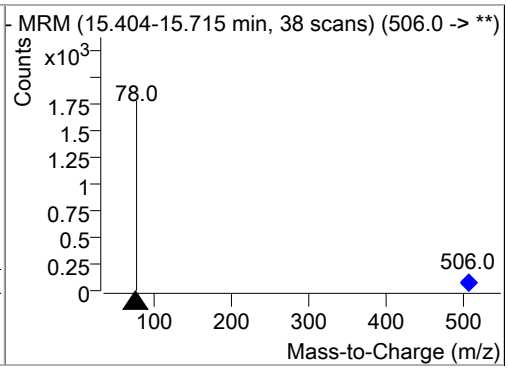




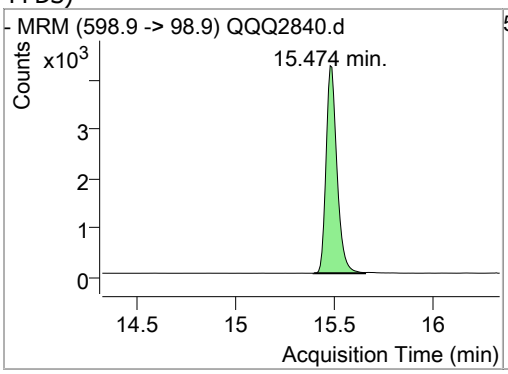
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.2646	15.51	0.31	33372				

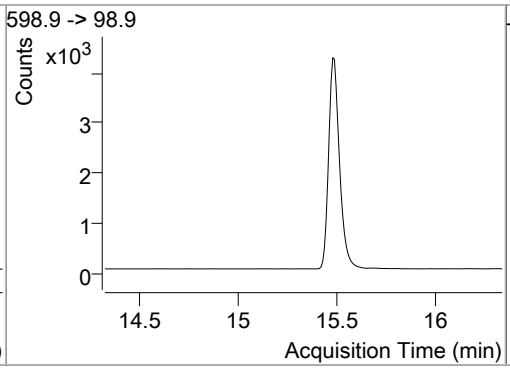


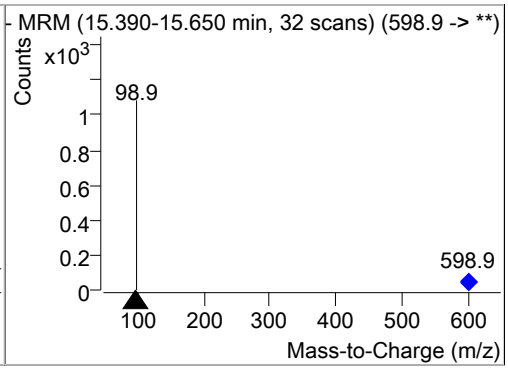




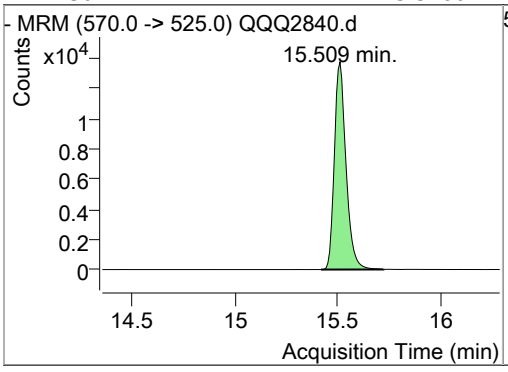
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	4.9172	15.47	0.26	16216				

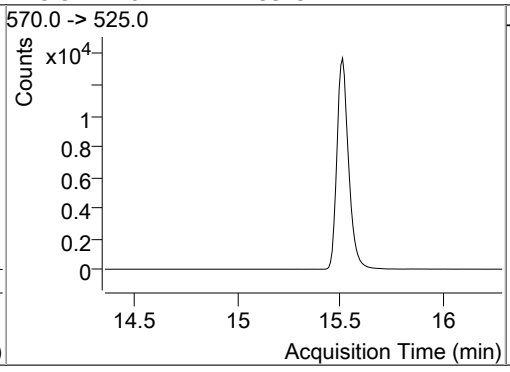


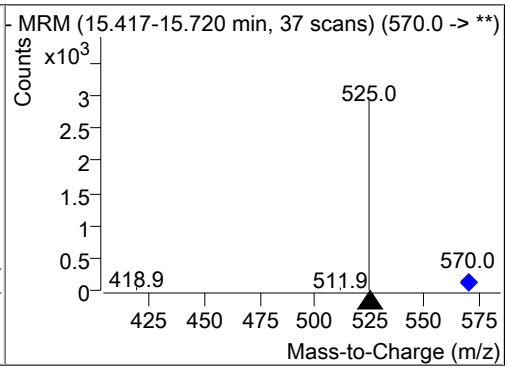




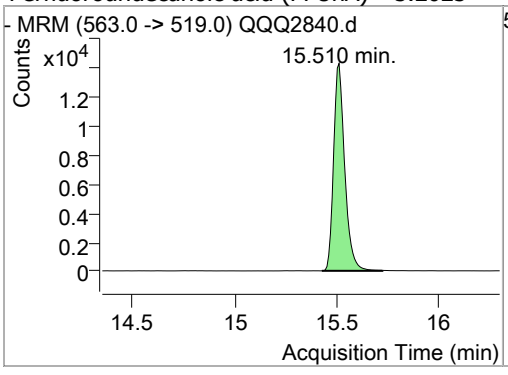
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	5.3166	15.51	0.27	53792				

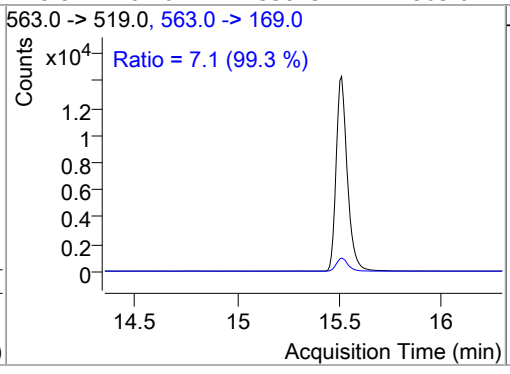


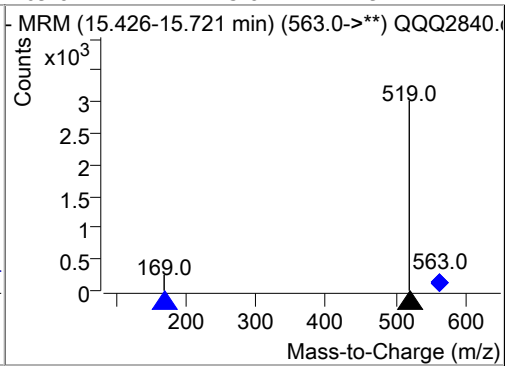




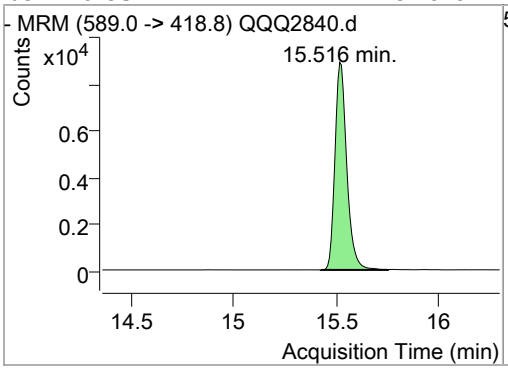
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	5.2025	15.51	0.26	53813	563.0 -> 169.0	7.1	5.0	9.2

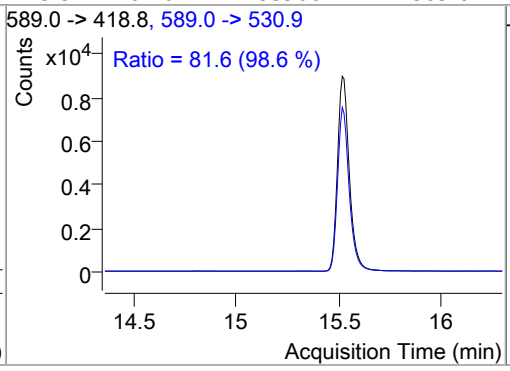


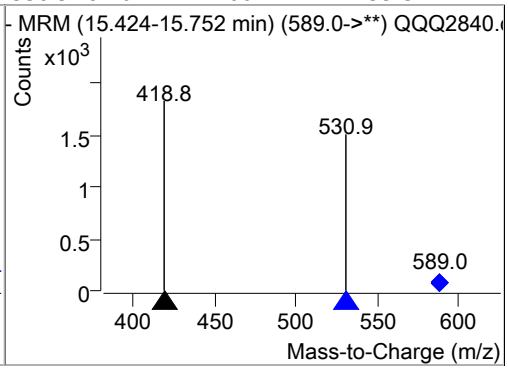




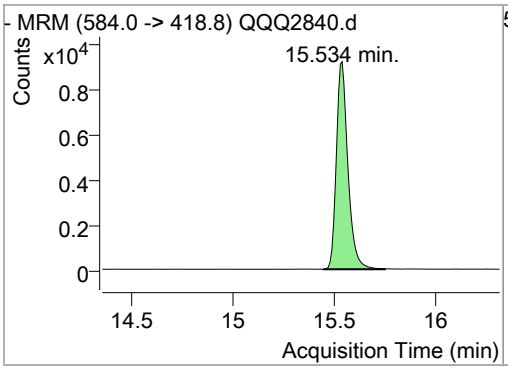
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	5.1828	15.52	0.26	35968	589.0 -> 530.9	81.6	66.2	99.3

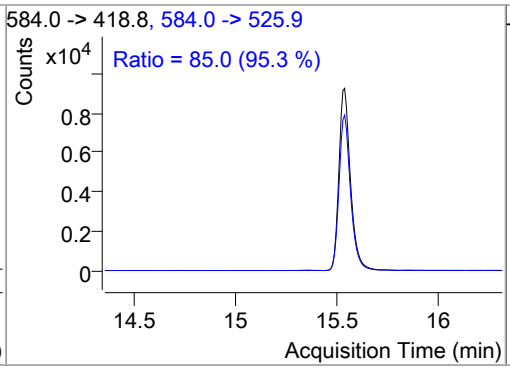


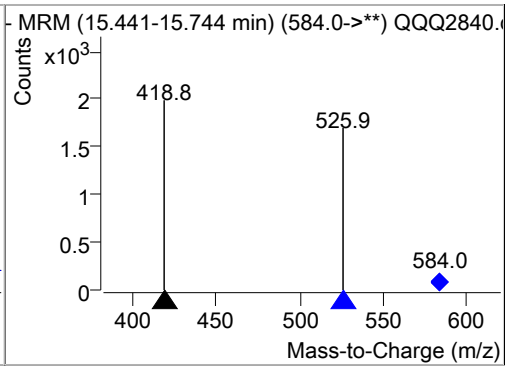




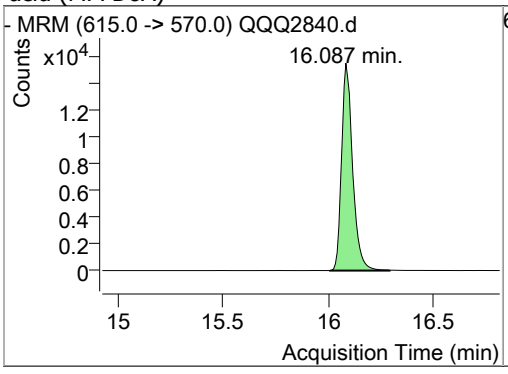
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	5.4218	15.53	0.27	36296	584.0 -> 525.9	85.0	71.3	107.0

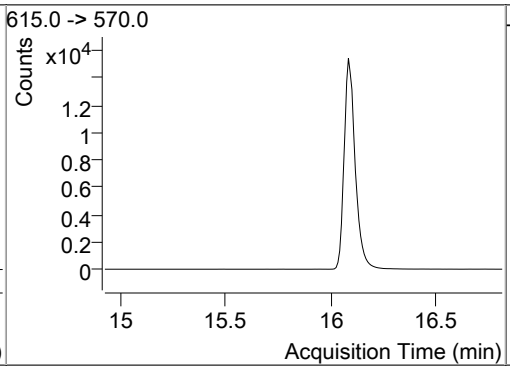


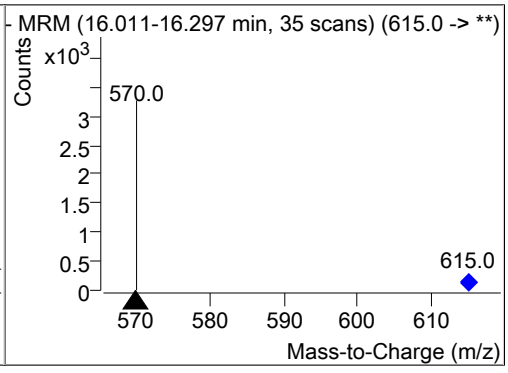




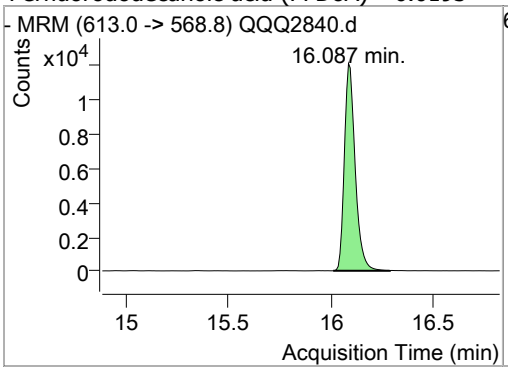
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.7294	16.09	0.31	56760				

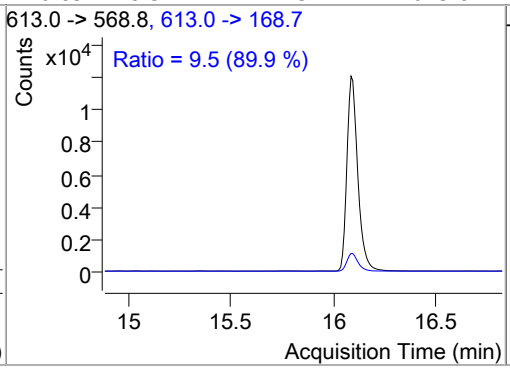


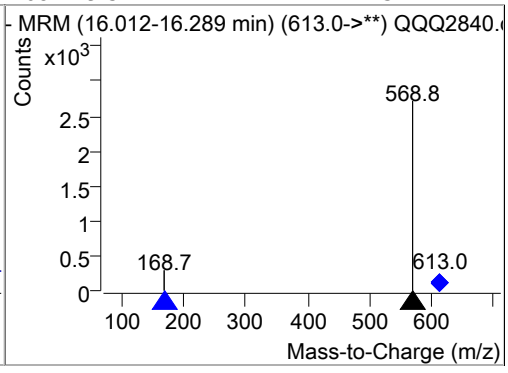




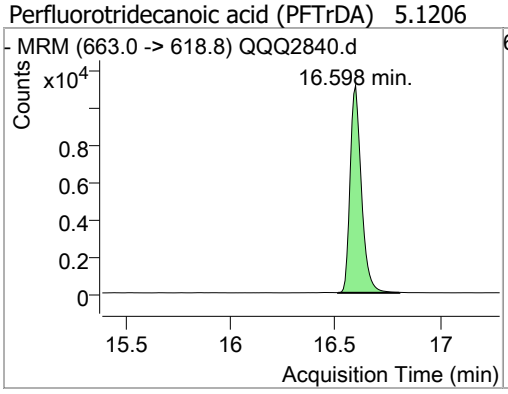
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	6.0193	16.09	0.31	44231	613.0 -> 168.7	9.5	7.4	13.7

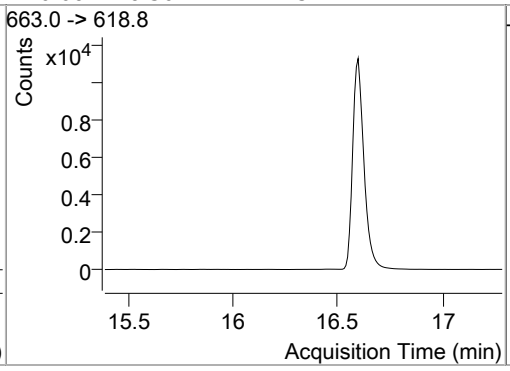


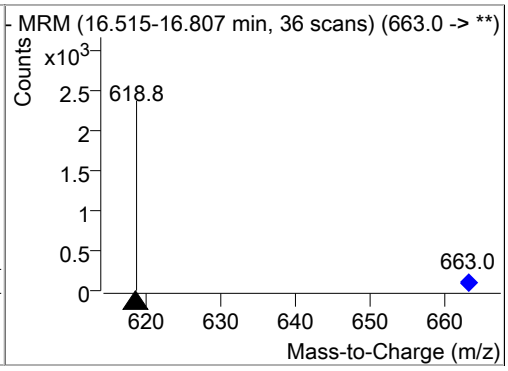




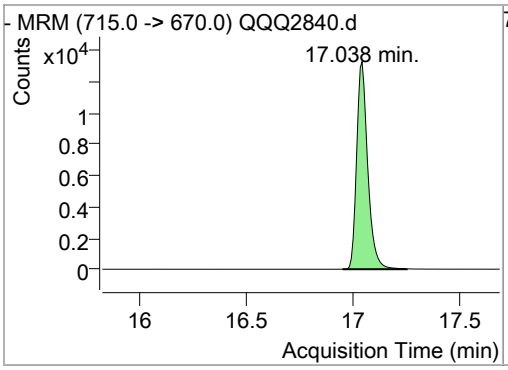
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	5.1206	16.60	0.36	42152				

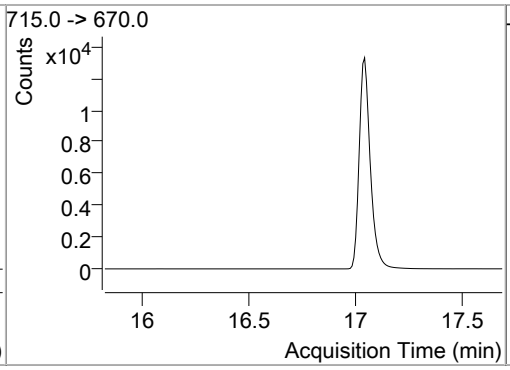


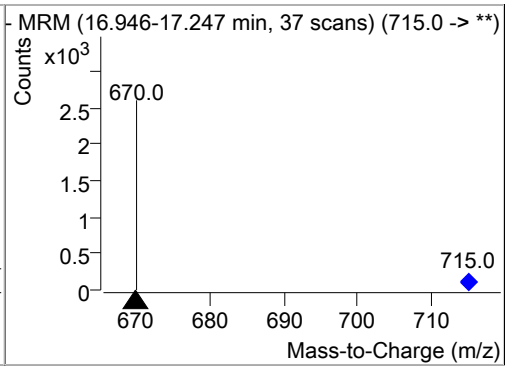




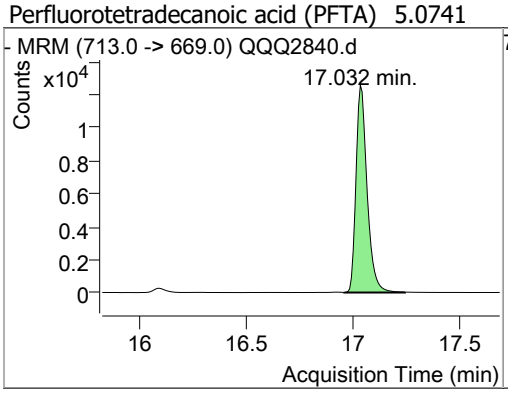
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	5.1451	17.04	0.40	47532				

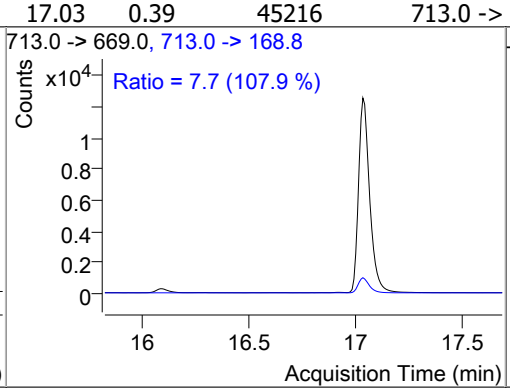


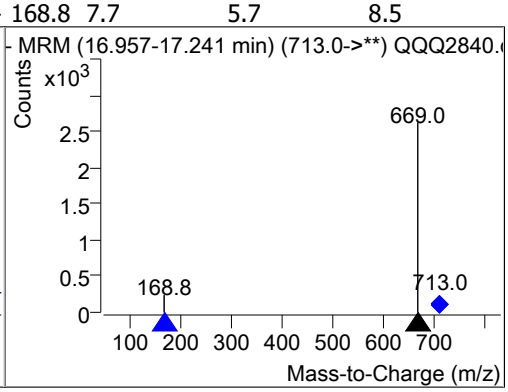




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	5.0741	17.03	0.39	45216	713.0 -> 168.8	7.7	5.7	8.5







FORM VII

CONTINUING CALIBRATION CHECK

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Instrument ID:	LCQQQ	Calibration:	YL90023
Lab File ID:	QQQ2851.d	Calibration Date:	12/23/19 13:19
Sequence:	Y9L1909	Injection Date:	12/20/19
Lab Sample ID:	Y9L1909-CCV3	Injection Time:	09:09

		CONC. (ng/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	Q	4.80	5.05	0.2138892	0.193081		5.2	30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	A	4.75	4.67	0.2611759	0.2566918		-1.7	30
N-EtFOSAA	A	5.00	5.17	0.2914041	0.3015589		3.5	30
N-MeFOSAA	A	5.00	5.18	0.3717862	0.3849082		3.5	30
Perfluoro-1-decanesulfonic acid (PFDS)	A	4.82	4.77	0.1434874	0.1420009		-1.0	30
Perfluoro-1-heptanesulfonic acid (PFHpS)	A	4.98	5.04	0.17178	0.1737692		1.2	30
Perfluoro-1-octanesulfonamide (FOSA)	A	5.00	5.01	0.2869638	0.2875799		0.2	30
Perfluorobutanesulfonic acid (PFBS)	A	4.42	4.53	0.307702	0.31516		2.4	30
Perfluorodecanoic acid (PFDA)	A	5.00	5.00	0.3563268	0.3565864		0.07	30
Perfluorododecanoic acid (PFDoA)	A	5.00	4.80	0.3198605	0.3071949		-4.0	30
Perfluoroheptanoic acid (PFHpA)	A	5.00	5.14	0.6544093	0.6729799		2.8	30
Perfluorohexanesulfonic acid (PFHxS)	A	3.70	3.66	0.2380903	0.2353478		-1.2	30
Perfluorohexanoic acid (PFHxA)	A	5.00	5.00	0.8609303	0.8609047		-0.003	30
Perfluoro-n-butanoic acid (PFBA)	A	5.00	4.92	0.7157248	0.7048406		-1.5	30
Perfluorononanoic acid (PFNA)	A	4.80	4.93	0.4097471	0.4212629		2.8	30
Perfluorooctanesulfonic acid (PFOS)	A	3.65	3.55	0.2104231	0.2053342		-2.4	30
Perfluorooctanoic acid (PFOA)	A	5.00	5.04	0.5082197	0.5123162		0.8	30
Perfluoropentanoic acid (PFPeA)	A	5.00	5.10	0.9418955	0.9599232		1.9	30
Perfluorotetradecanoic acid (PFTA)	A	5.00	5.91	0.3878892	0.4582851		18.1	30
Perfluorotridecanoic acid (PFTrDA)	A	5.00	6.12	0.358323	0.4388853		22.5	30
Perfluoroundecanoic acid (PFUnA)	A	5.00	4.60	0.4502513	0.4144725		-7.9	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Data File	QQQ2851.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 9:09:46 AM
Sample Name	SEQ-CCV3	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

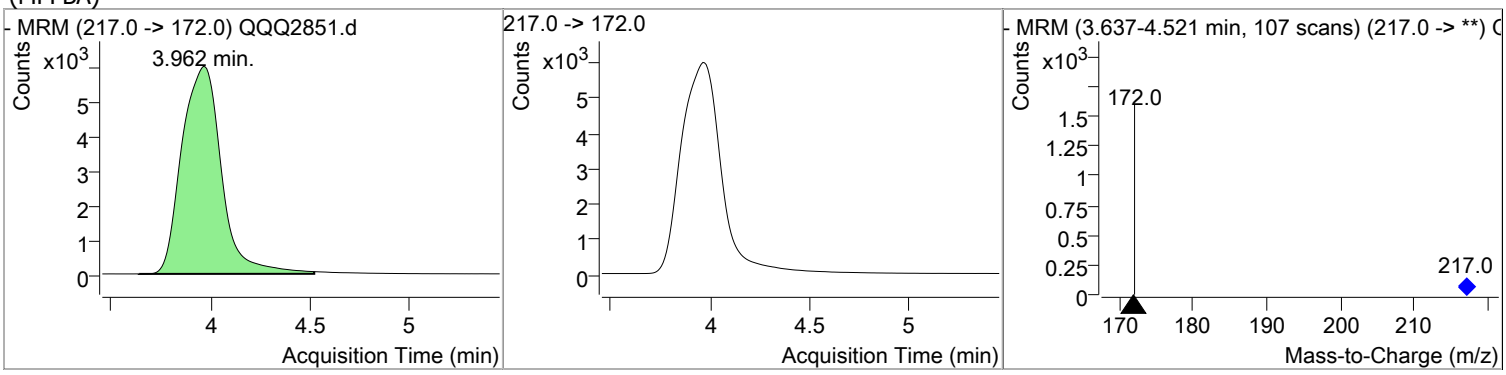
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.110	417.0 -> 372.0	214703	10.0000	ng/ml	0.076
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.962	217.0 -> 172.0	83134	4.9433	ng/ml	-0.225
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 49.43%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.014	268.0 -> 223.0	117262	5.1145	ng/ml	-0.100
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.14%		
M3PFBS	8.760	302.0 -> 79.9	34363	4.7478	ng/ml	-0.058
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.48%		
M2-4-2FTS	10.225	329.0 -> 309.0	40413	6.0267	ng/ml	-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.27%		
M5PFHxA	10.370	318.0 -> 273.0	114045	5.2801	ng/ml	-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.80%		
M4PFHpA	11.936	367.0 -> 322.0	30444	5.0984	ng/ml	0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.98%		
M3PFHxS	12.068	402.0 -> 80.0	23398	4.7063	ng/ml	0.026
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.06%		
M2-6-2FTS	13.048	429.0 -> 409.0	25224	4.7405	ng/ml	0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.41%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.117	421.0 -> 376.0	59862	5.2707	ng/ml	0.093
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 52.71%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.065	472.0 -> 427.0	60404	5.1980	ng/ml	0.161
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.98%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.081	507.0 -> 80.0	18284	4.8034	ng/ml	0.169
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.03%		
M2-8-2FTS	14.845	529.0 -> 509.0	23150	5.0090	ng/ml	0.227
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.09%		
M6PFDA	14.863	519.0 -> 473.9	44175	4.7710	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.71%		
d3-N-MeFOSAA	15.206	573.0 -> 418.8	37528	5.0486	ng/ml	0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.49%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	29624	5.0005	ng/ml	0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.01%		
M7PFUdA	15.543	570.0 -> 525.0	51490	5.4454	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 54.45%		
d5-N-EtFOSAA	15.550	589.0 -> 418.8	33246	5.1259	ng/ml	0.294
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.26%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.129	615.0 -> 570.0	49257	5.3201	ng/ml	0.353
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 53.20%		
M2PFTeDA	17.055	715.0 -> 670.0	54489	6.3109	ng/ml	0.418
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.11%		

Target Compounds	QValue

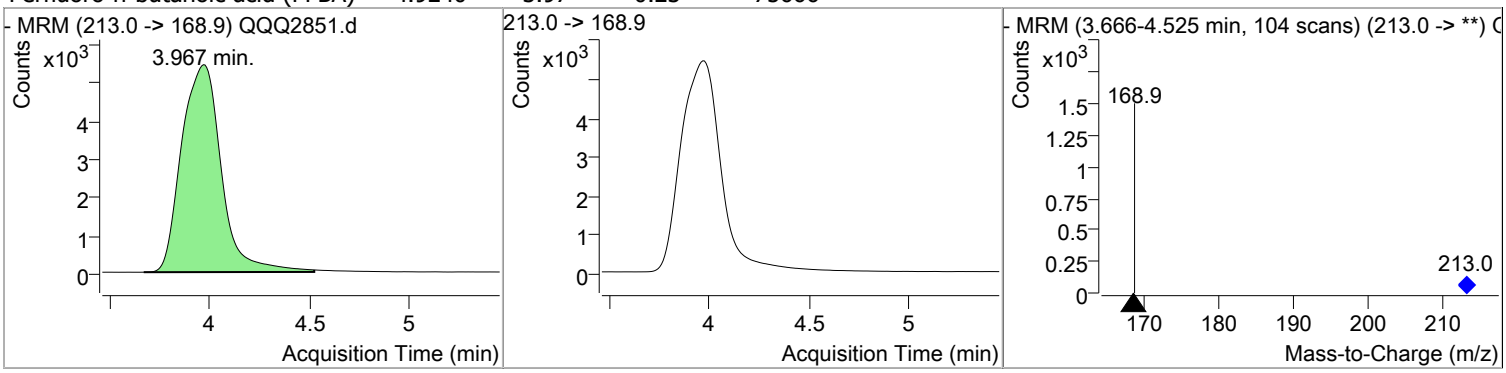
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	3.967	213.0 -> 168.9	75666	4.9240	ng/ml	100
Perfluoro-n-pentanoic acid (PFPeA)	8.015	263.0 -> 219.0	103049	5.0957	ng/ml	100
Perfluorobutanesulfonic acid (PFBS)	8.754	298.9 -> 79.9	29908	4.5250	ng/ml	99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.226	327.0 -> 307.0	37240	5.8818	ng/ml	99
Perfluorohexanoic acid (PFHxA)	10.380	313.0 -> 268.9	92419	4.9999	ng/ml	100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.691	348.9 -> 79.9	28189	4.7457	ng/ml	98
Perfluoroheptanoic acid (PFHpA)	11.936	363.0 -> 318.8	72245	5.1419	ng/ml	98
Perfluorohexanesulfonic acid (PFHxS)	12.069	398.9 -> 79.9	18696	3.6574	ng/ml	99
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.049	427.0 -> 407.0	26178	4.6671	ng/ml	99
Perfluorooctanoic acid (PFOA)	13.110	413.0 -> 368.8	54998	5.0403	ng/ml	95
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.174	448.9 -> 80.0	18580	5.0398	ng/ml	97
Perfluorononanoic acid (PFNA)	14.065	463.0 -> 418.8	43414	4.9349	ng/ml	100
Perfluorooctanesulfonic acid (PFOS)	14.081	498.9 -> 79.9	16091	3.5479	ng/ml	95
Perfluorononanesulfonate (L-PFNS)	14.853	548.9 -> 79.9	16185	4.8205	ng/ml	98
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.846	527.0 -> 507.0	19898	5.0479	ng/ml	96
Perfluorodecanoic acid (PFDA)	14.864	513.0 -> 468.8	38280	5.0036	ng/ml	94
N-MeFOSAA	15.206	570.0 -> 418.9	41320	5.1765	ng/ml	97
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	30872	5.0107	ng/ml	98
Perfluoro-1-decanesulfonate (L-PFDS)	15.516	598.9 -> 98.9	14695	4.7681	ng/ml	100
Perfluoroundecanoic acid (PFUnA)	15.544	563.0 -> 519.0	44494	4.6027	ng/ml	99
N-EtFOSAA	15.567	584.0 -> 418.8	32373	5.1742	ng/ml	98
Perfluorododecanoic acid (PFDoA)	16.129	613.0 -> 568.8	32978	4.8020	ng/ml	97
Perfluorotridecanoic acid (PFTrDA)	16.623	663.0 -> 618.8	47115	6.1242	ng/ml	100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	49198	5.9074	ng/ml	97

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

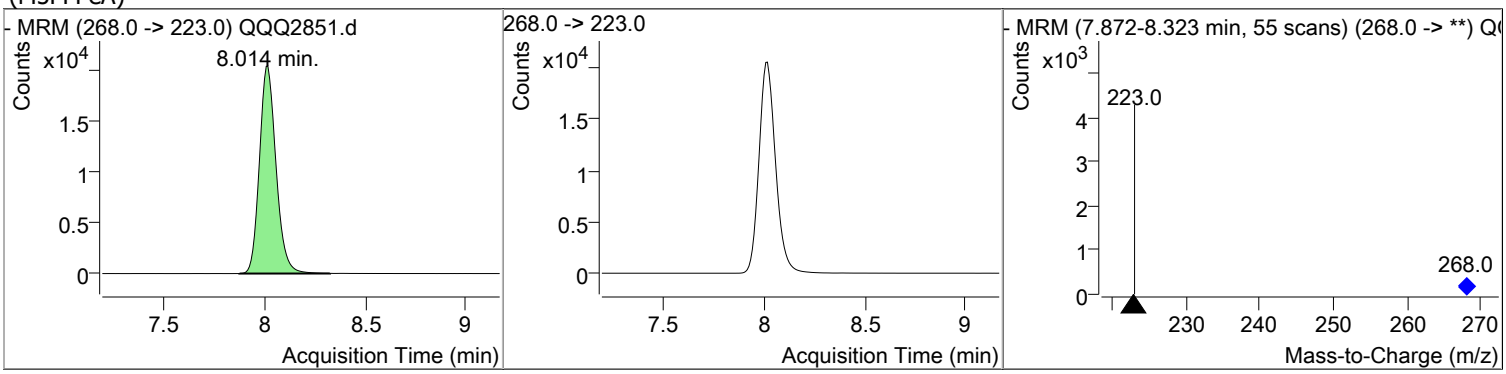
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	4.9433	3.96	-0.23	83134				



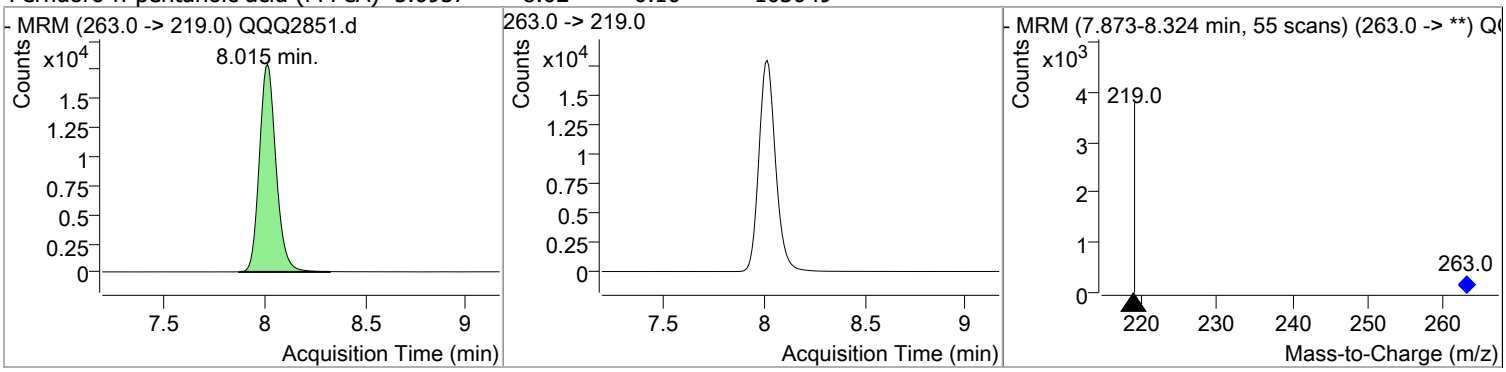
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	4.9240	3.97	-0.23	75666				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	5.1145	8.01	-0.10	117262				

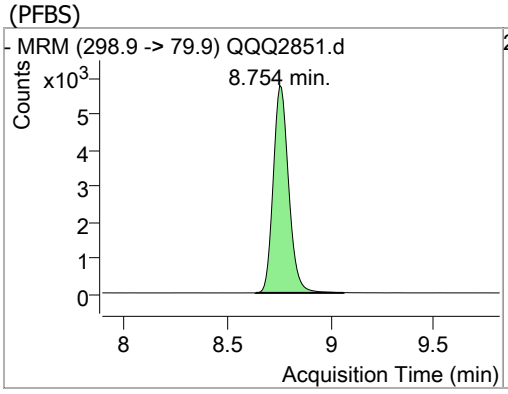


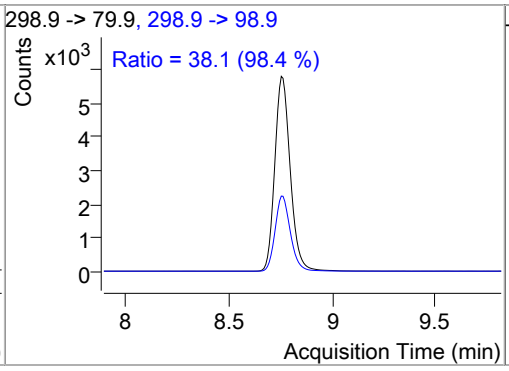
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	5.0957	8.02	-0.10	103049				

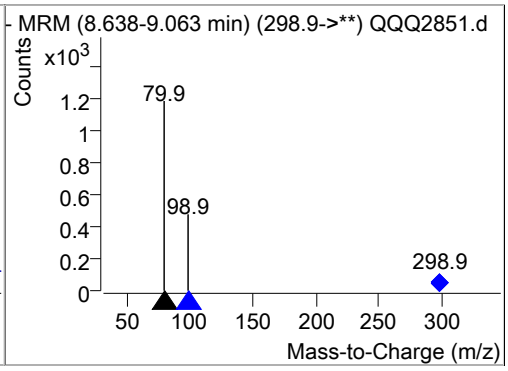


Quantitation Results Report (Not Reviewed)

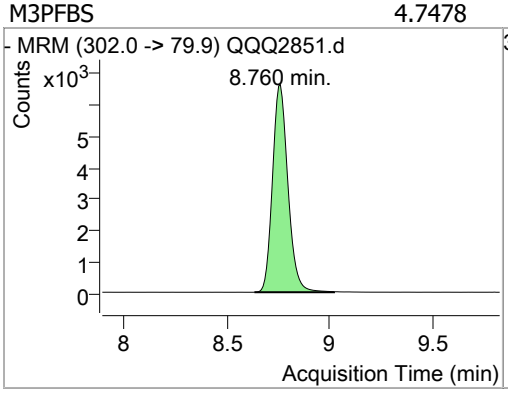
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	4.5250	8.75	-0.06	29908	298.9 -> 98.9	38.1	31.0	46.5

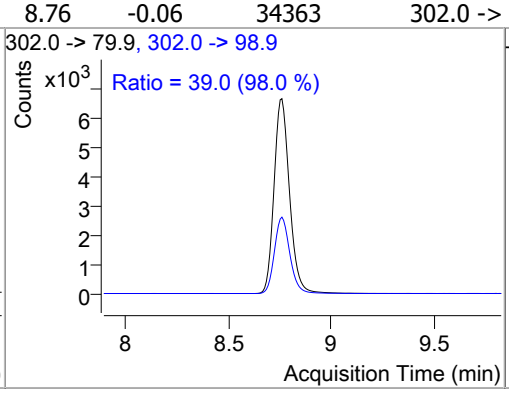


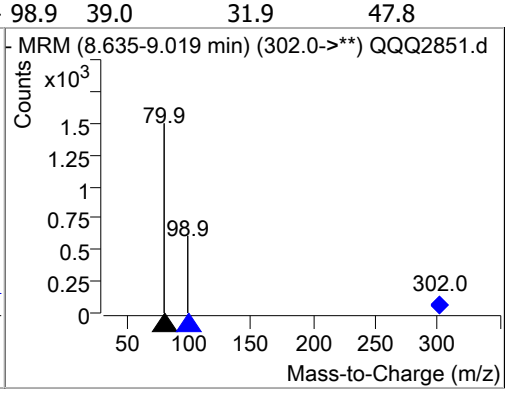




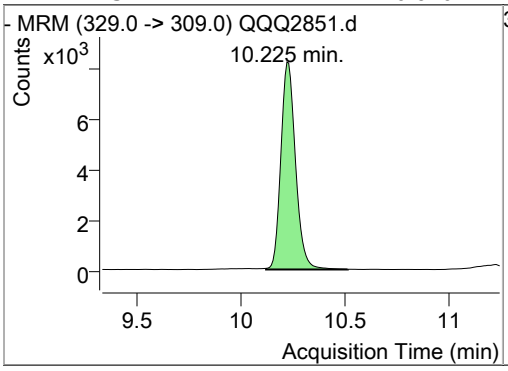
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	4.7478	8.76	-0.06	34363	302.0 -> 98.9	39.0	31.9	47.8

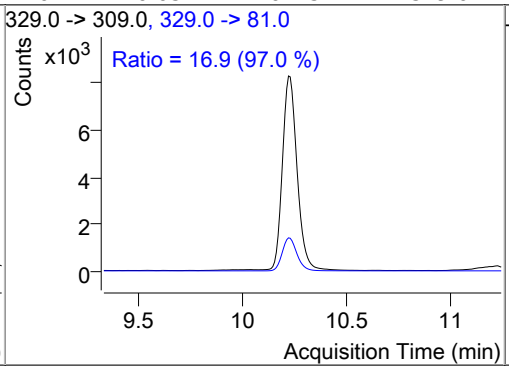


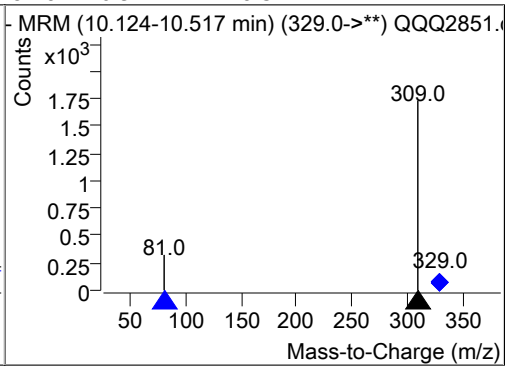




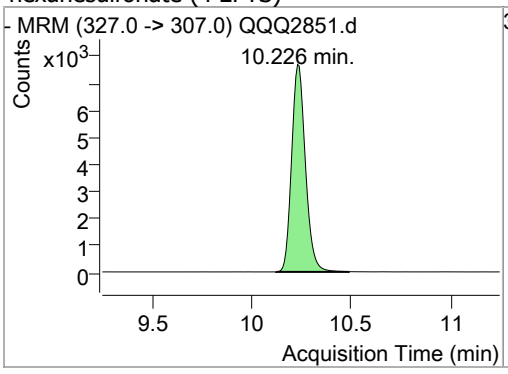
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	6.0267	10.22	-0.03	40413	329.0 -> 81.0	16.9	10.5	24.4

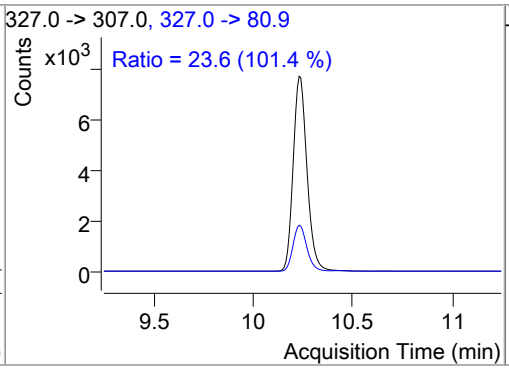


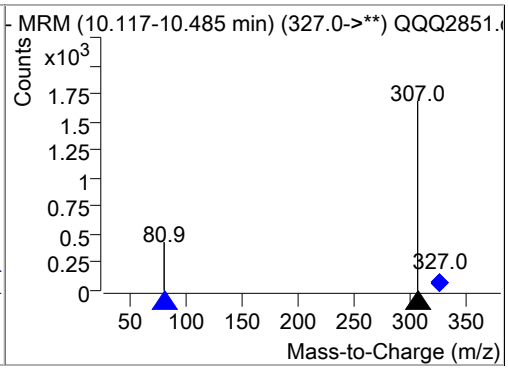




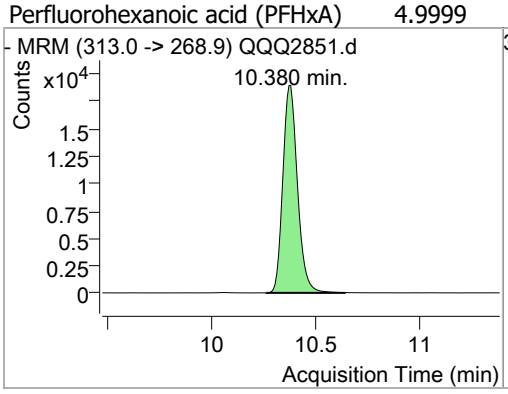
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	5.8818	10.23	-0.03	37240	327.0 -> 80.9	23.6	13.9	32.5

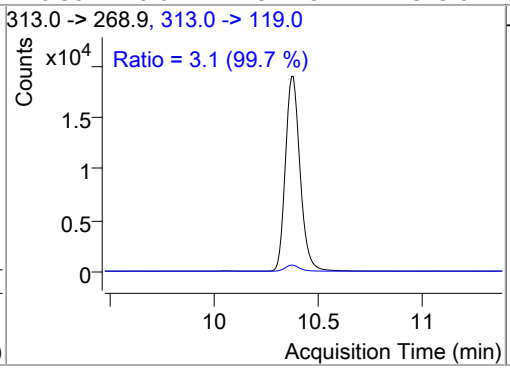


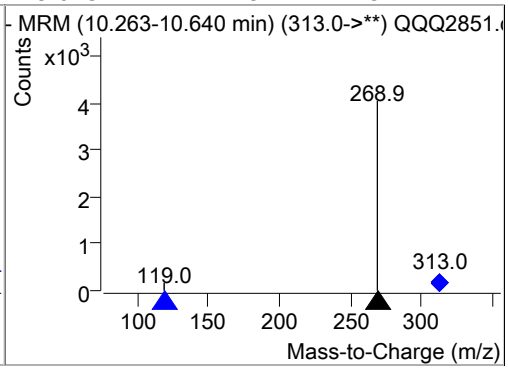




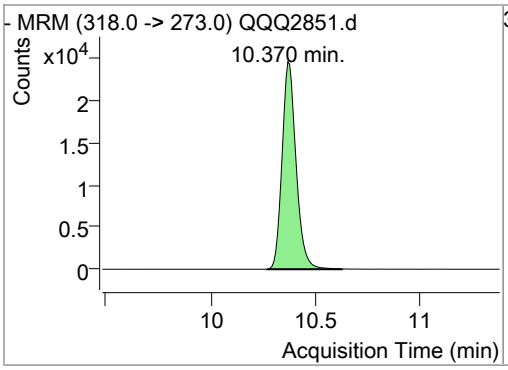
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	4.9999	10.38	-0.02	92419	313.0 -> 119.0	3.1	2.5	3.7

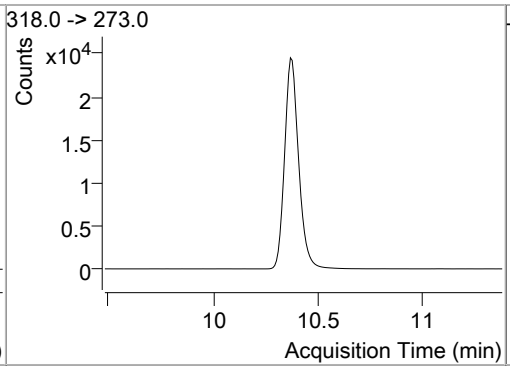


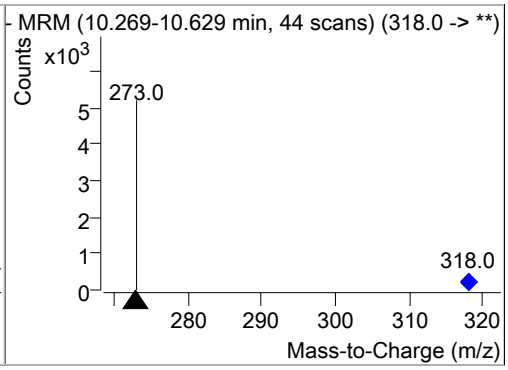




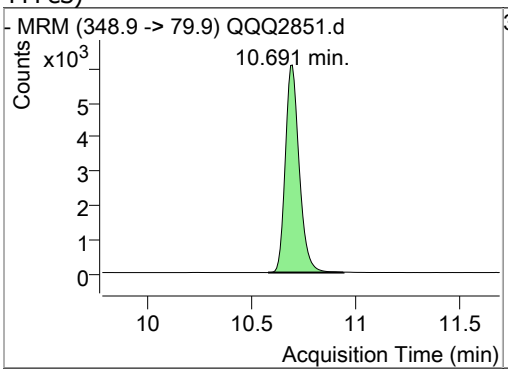
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	5.2801	10.37	-0.03	114045				

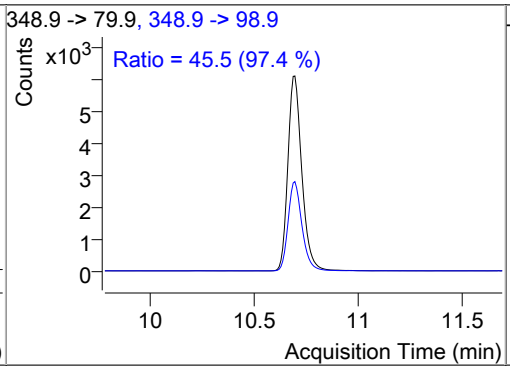


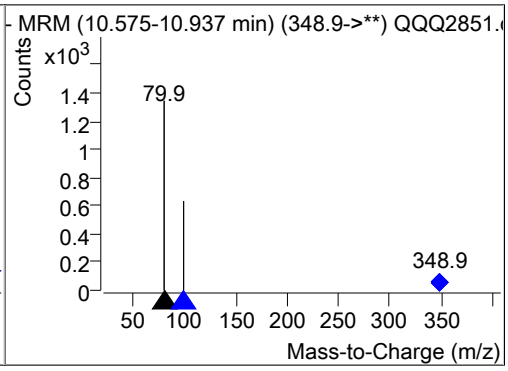




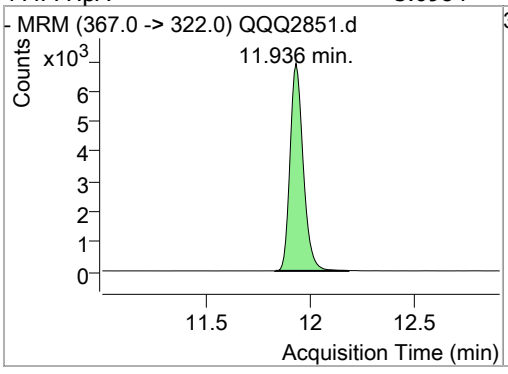
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	4.7457	10.69	-0.01	28189	348.9 -> 98.9	45.5	37.3	56.0

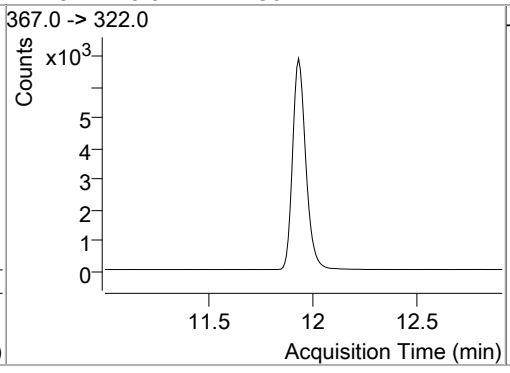


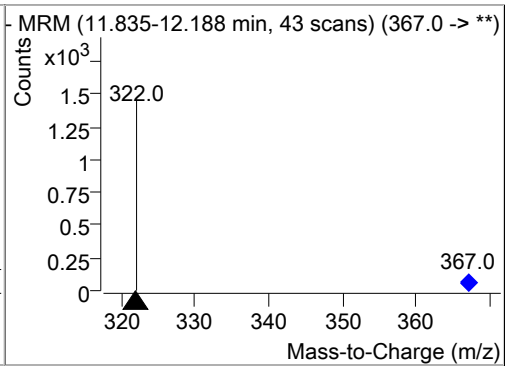




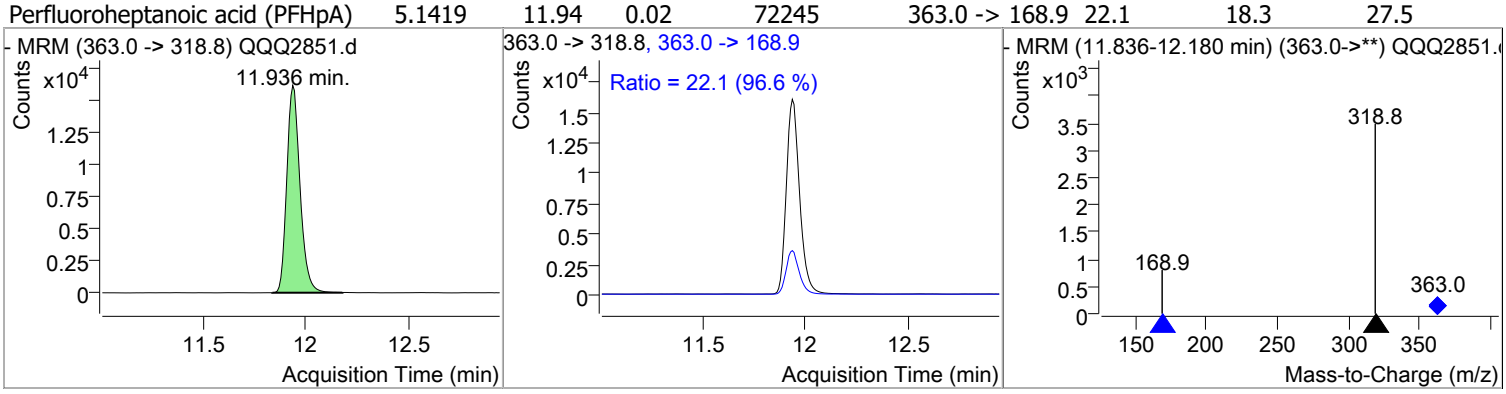
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	5.0984	11.94	0.02	30444				



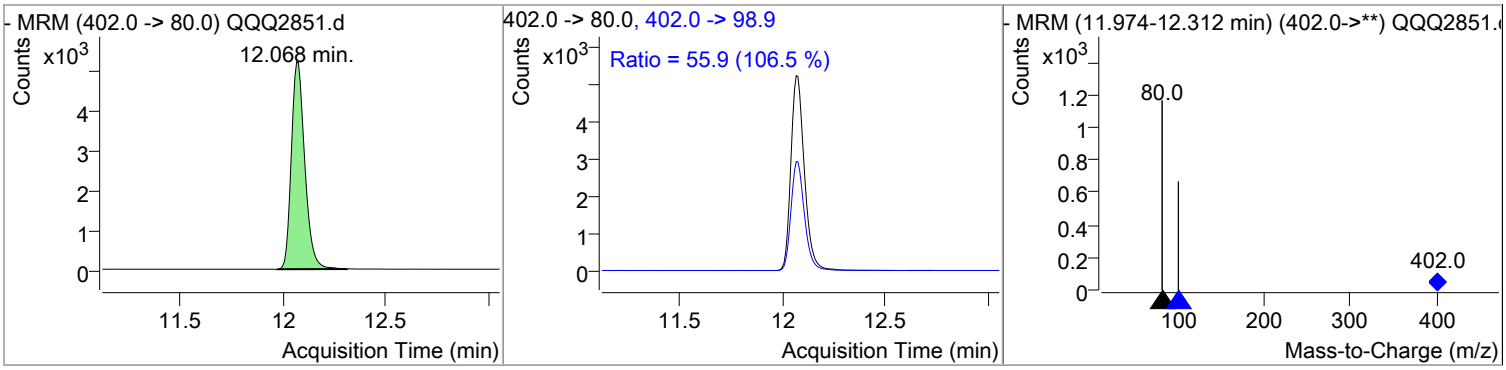




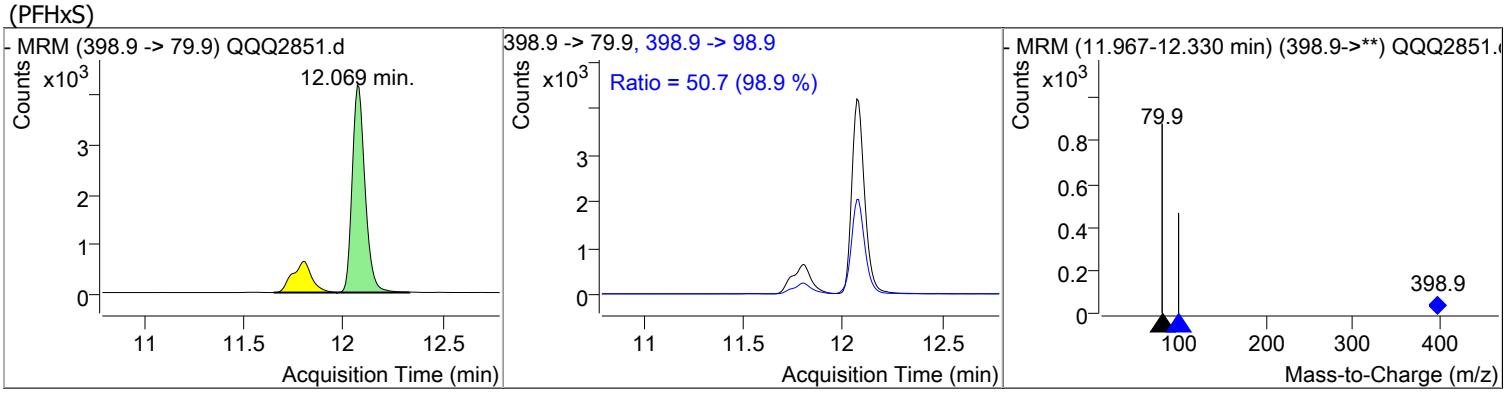
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	5.1419	11.94	0.02	72245	363.0 -> 168.9	22.1	18.3	27.5



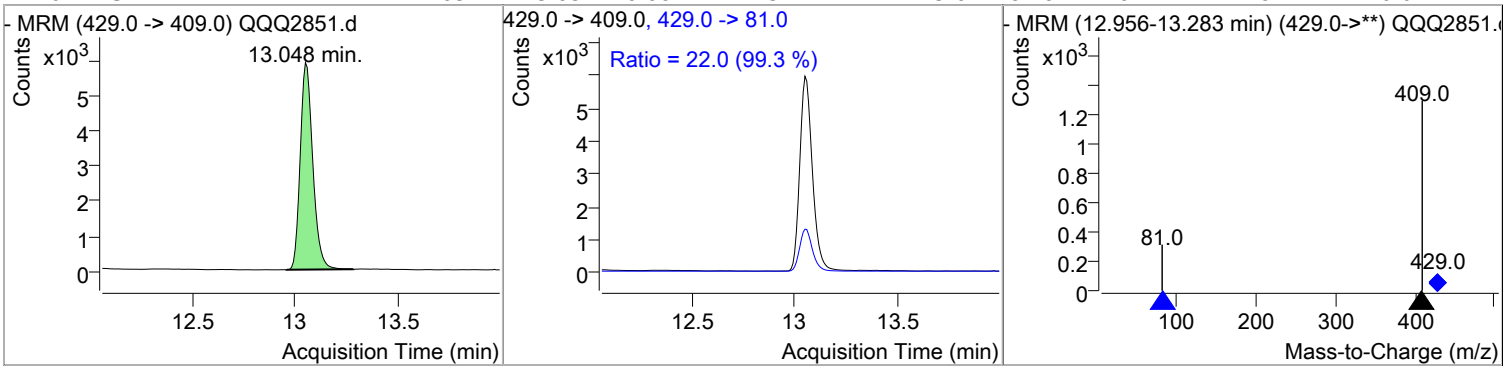
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	4.7063	12.07	0.03	23398	402.0 -> 98.9	55.9	42.0	62.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	3.6574	12.07	0.03	18696	398.9 -> 98.9	50.7	41.0	61.5

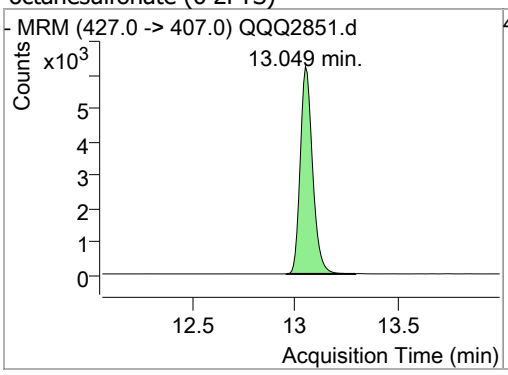


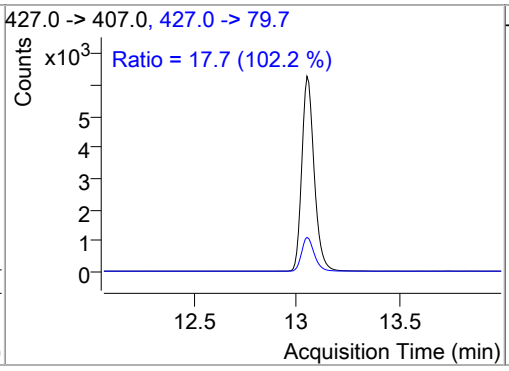
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	4.7405	13.05	0.08	25224	429.0 -> 81.0	22.0	17.8	26.6

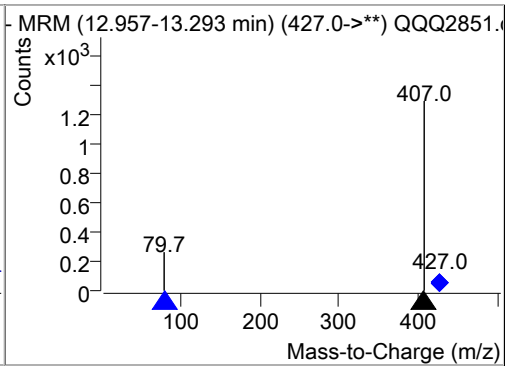


Quantitation Results Report (Not Reviewed)

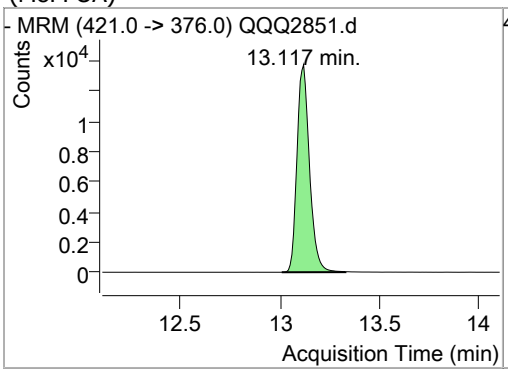
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	4.6671	13.05	0.08	26178	427.0 -> 79.7	17.7	13.9	20.8

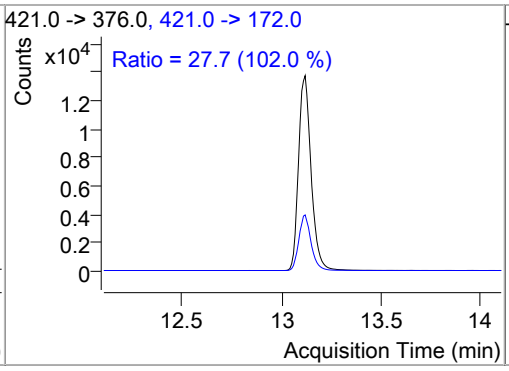


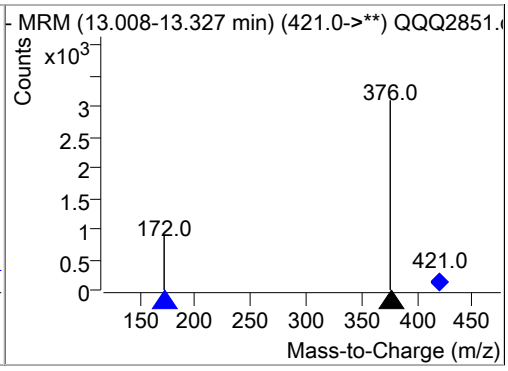




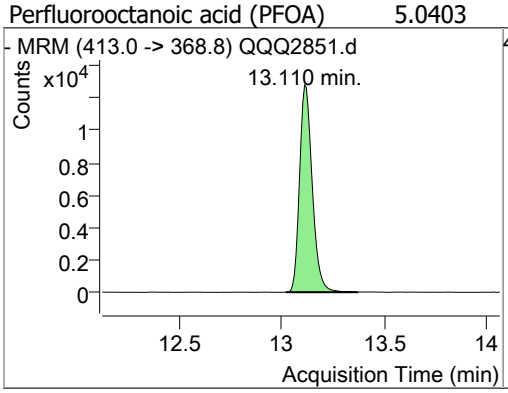
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	5.2707	13.12	0.09	59862	421.0 -> 172.0	27.7	21.7	32.6

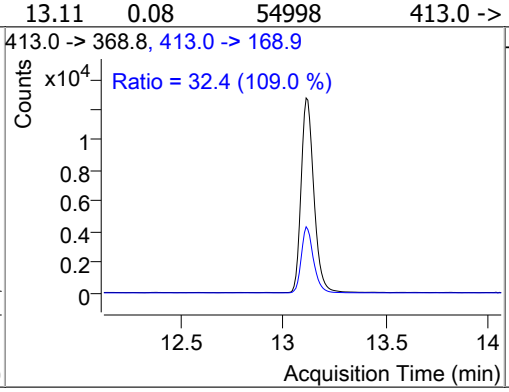


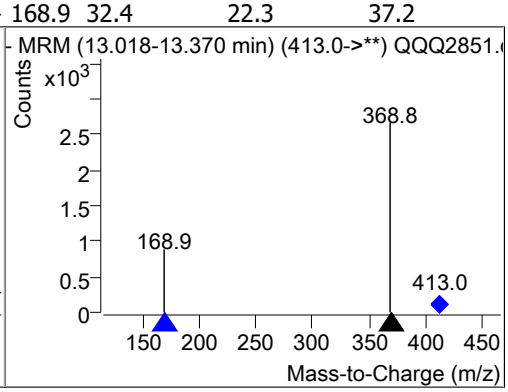




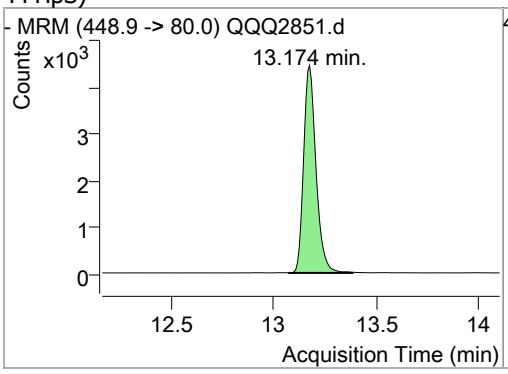
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	5.0403	13.11	0.08	54998	413.0 -> 168.9	32.4	22.3	37.2

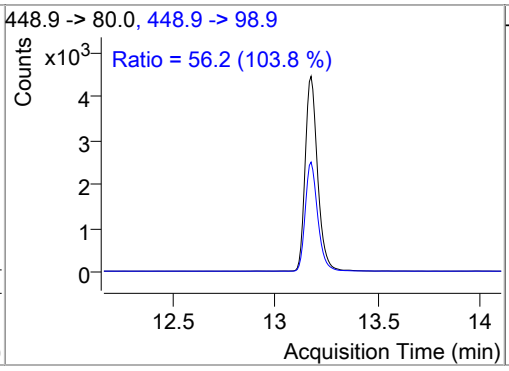


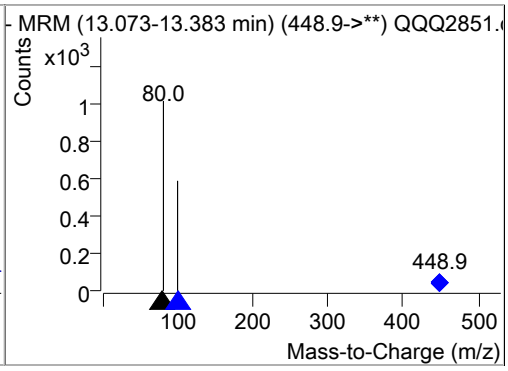




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	5.0398	13.17	0.09	18580	448.9 -> 98.9	56.2	43.3	64.9

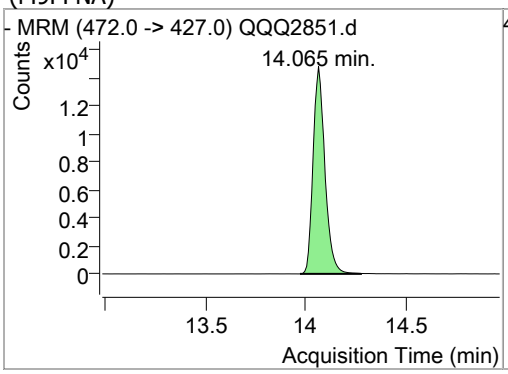


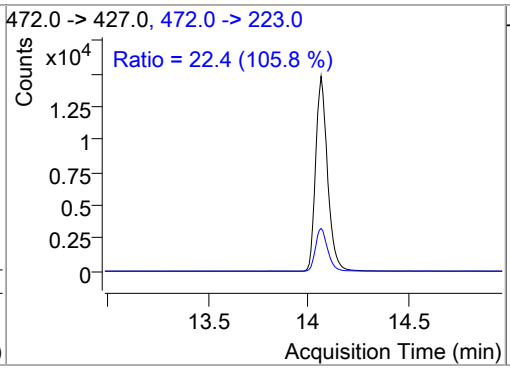


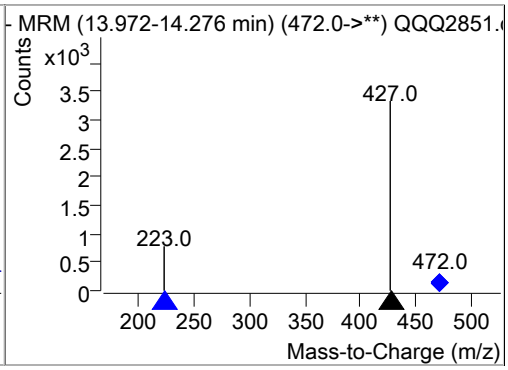


Quantitation Results Report (Not Reviewed)

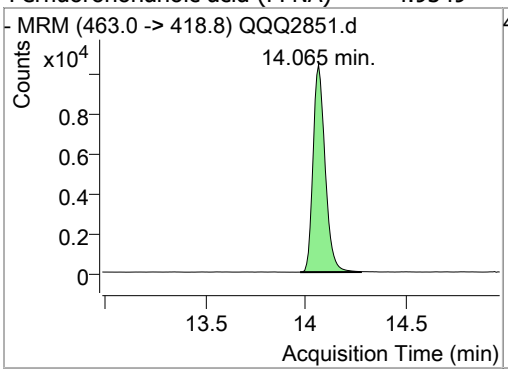
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	5.1980	14.06	0.16	60404	472.0 -> 223.0	22.4	16.9	25.4

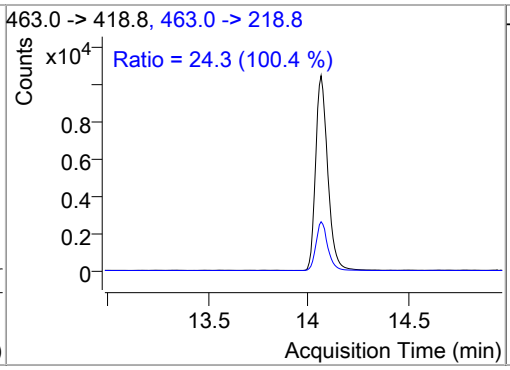


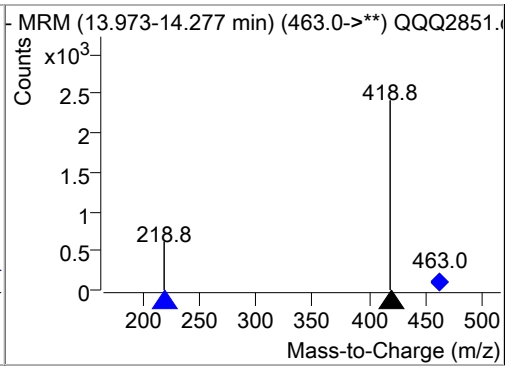




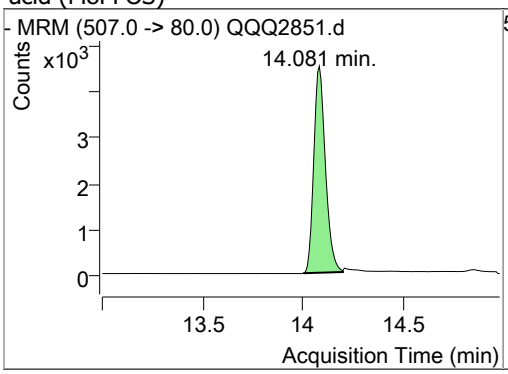
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	4.9349	14.07	0.16	43414	463.0 -> 218.8	24.3	19.4	29.1

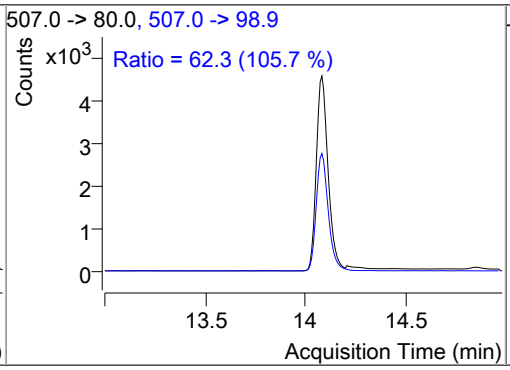


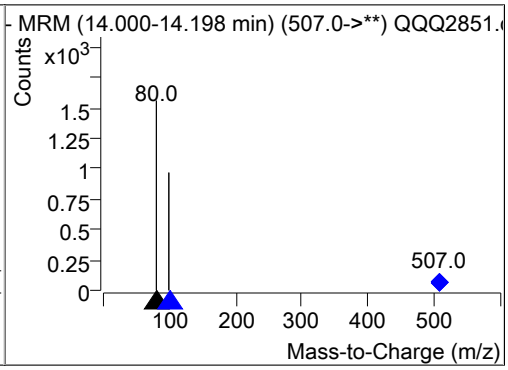




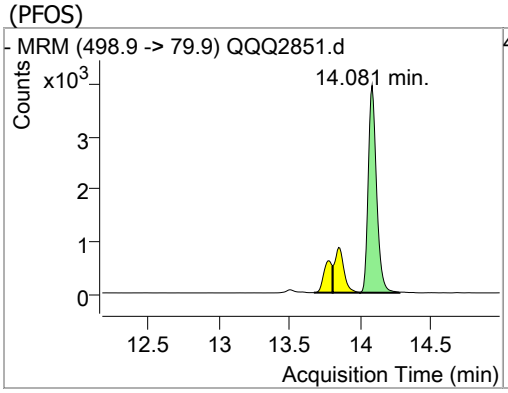
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.8034	14.08	0.17	18284	507.0 -> 98.9	62.3	47.2	70.8

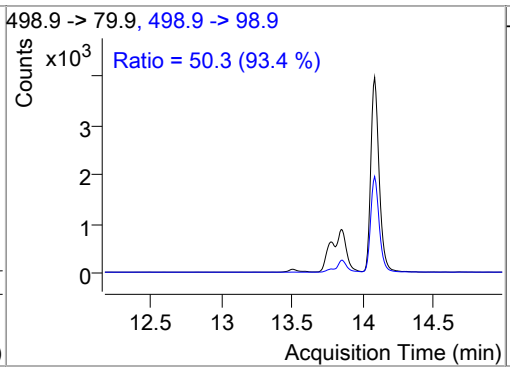


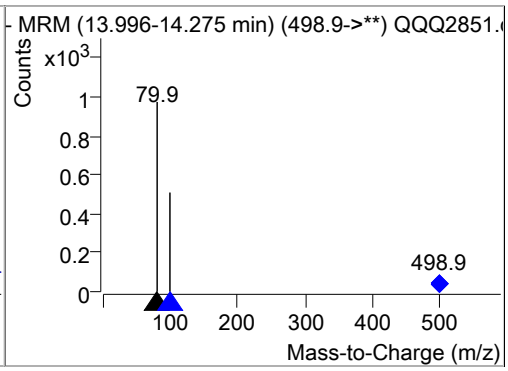




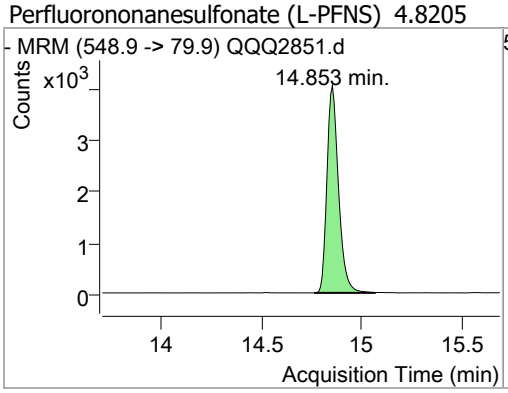
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	3.5479	14.08	0.17	16091	498.9 -> 98.9	50.3	43.1	64.6

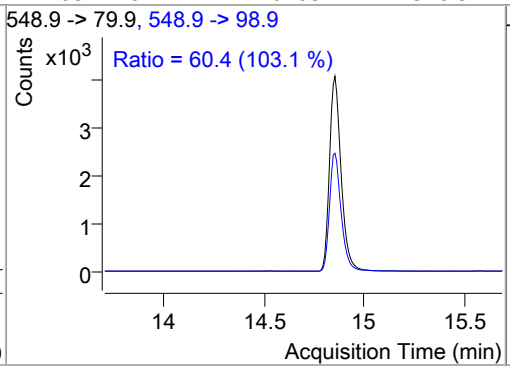


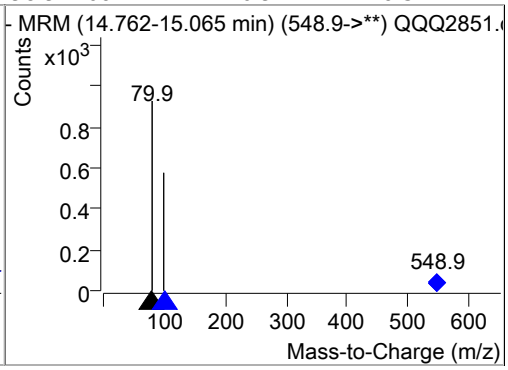




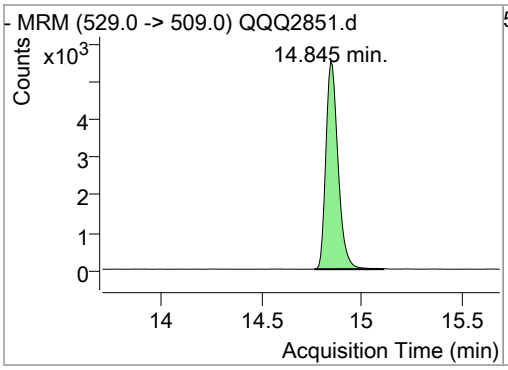
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	4.8205	14.85	0.24	16185	548.9 -> 98.9	60.4	46.9	70.3

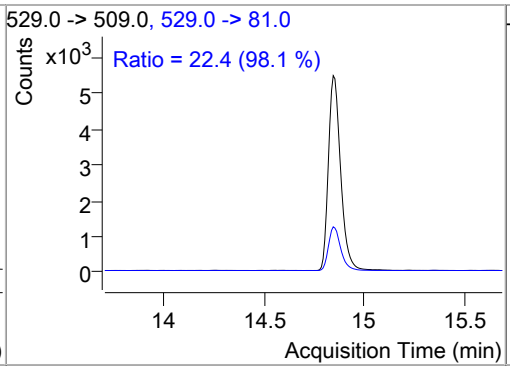


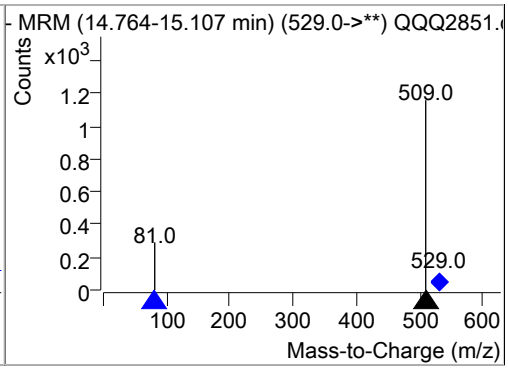




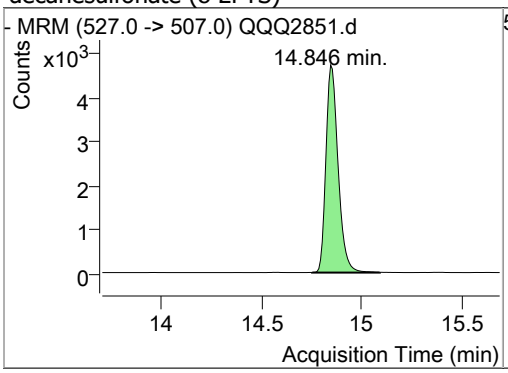
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	5.0090	14.85	0.23	23150	529.0 -> 81.0	22.4	18.3	27.4

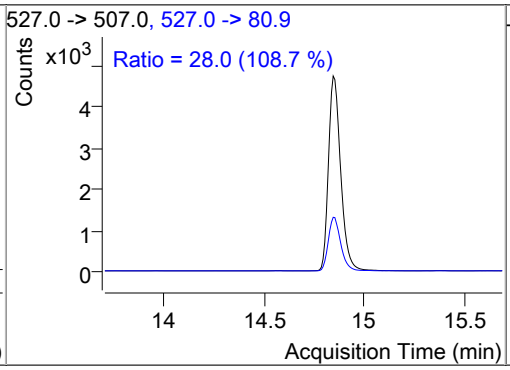


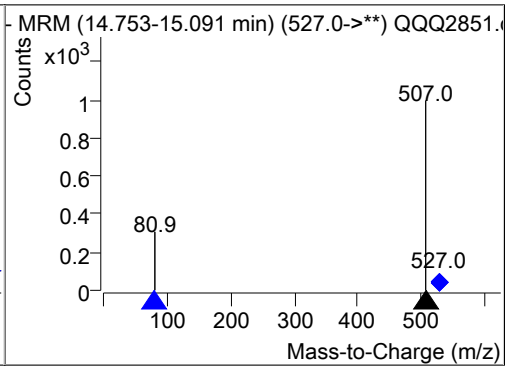




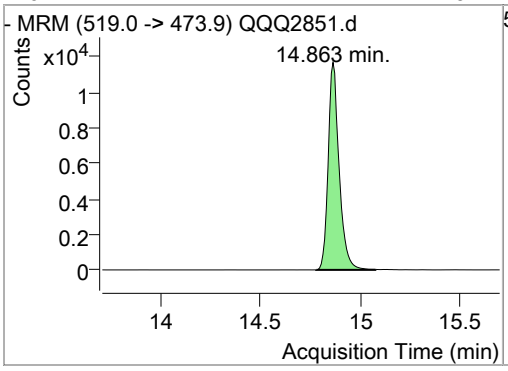
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	5.0479	14.85	0.23	19898	527.0 -> 80.9	28.0	20.6	30.9

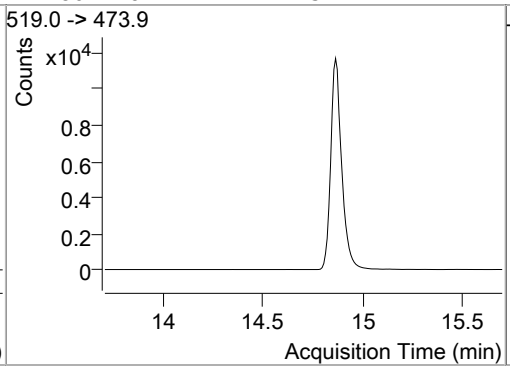


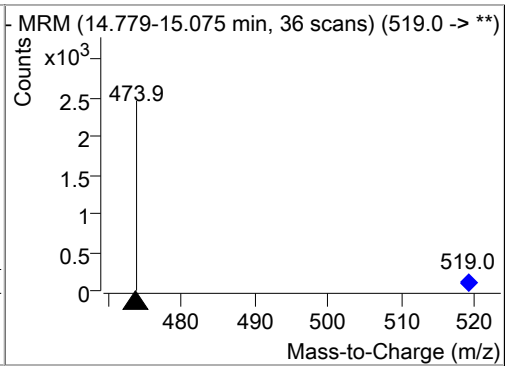




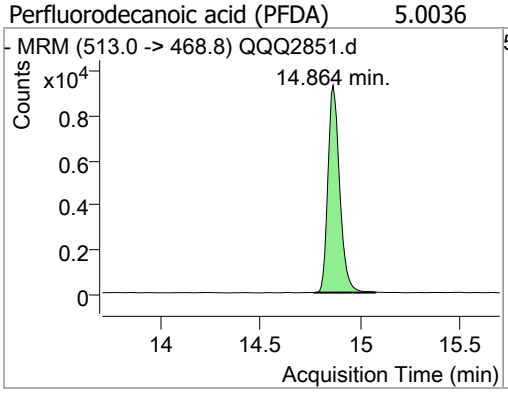
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	4.7710	14.86	0.24	44175				

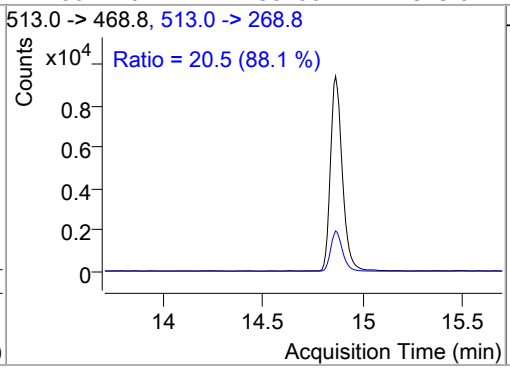


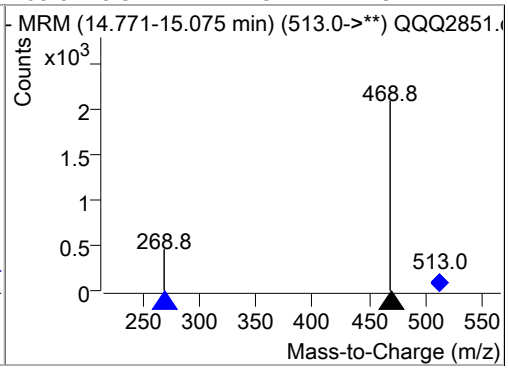




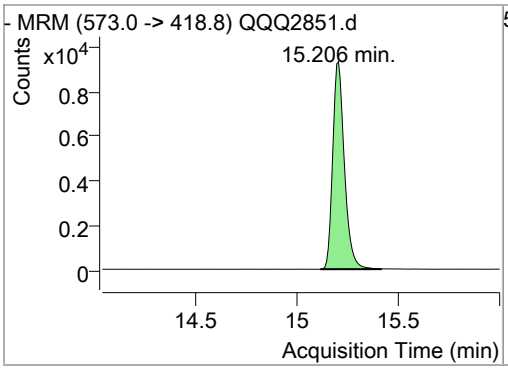
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	5.0036	14.86	0.24	38280	513.0 -> 268.8	20.5	17.5	29.1

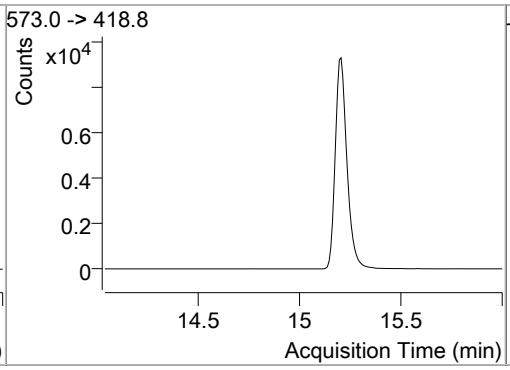


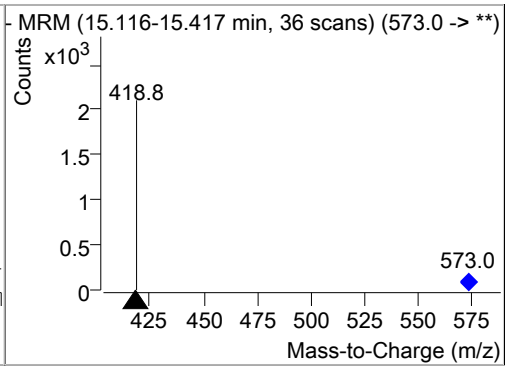




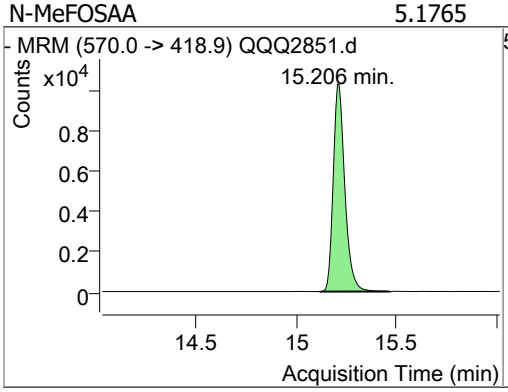
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	5.0486	15.21	0.27	37528				

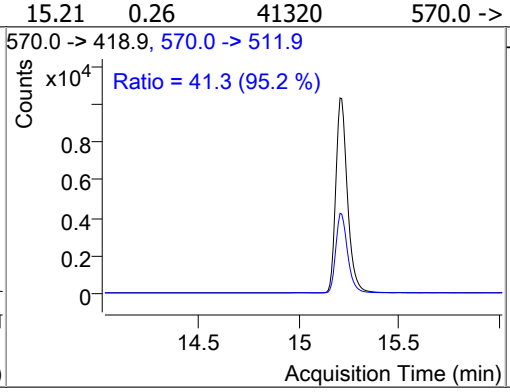


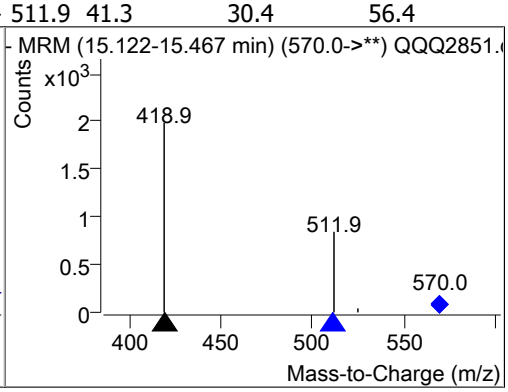




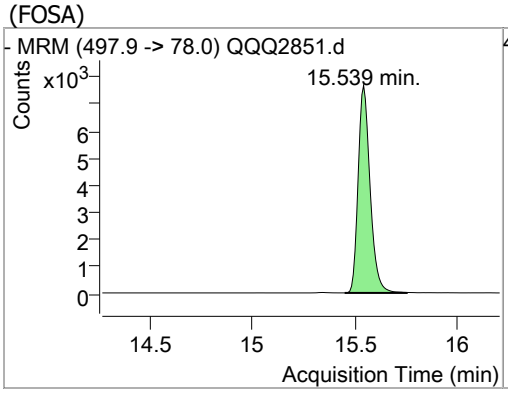
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	5.1765	15.21	0.26	41320	570.0 -> 511.9	41.3	30.4	56.4

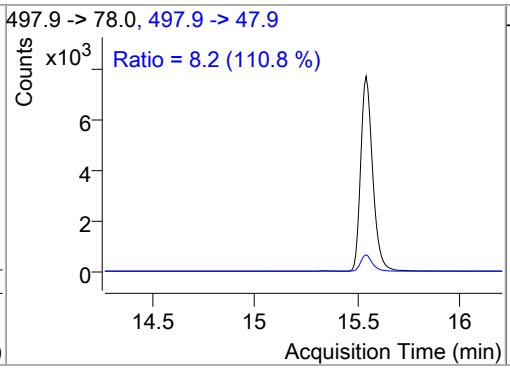


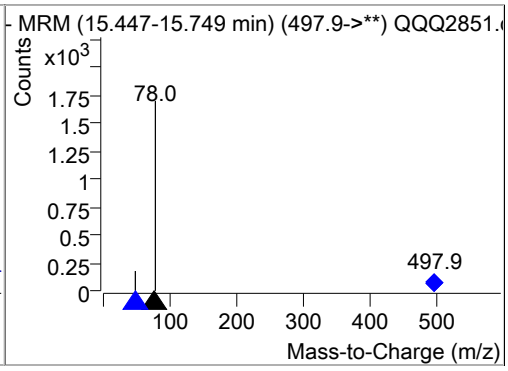




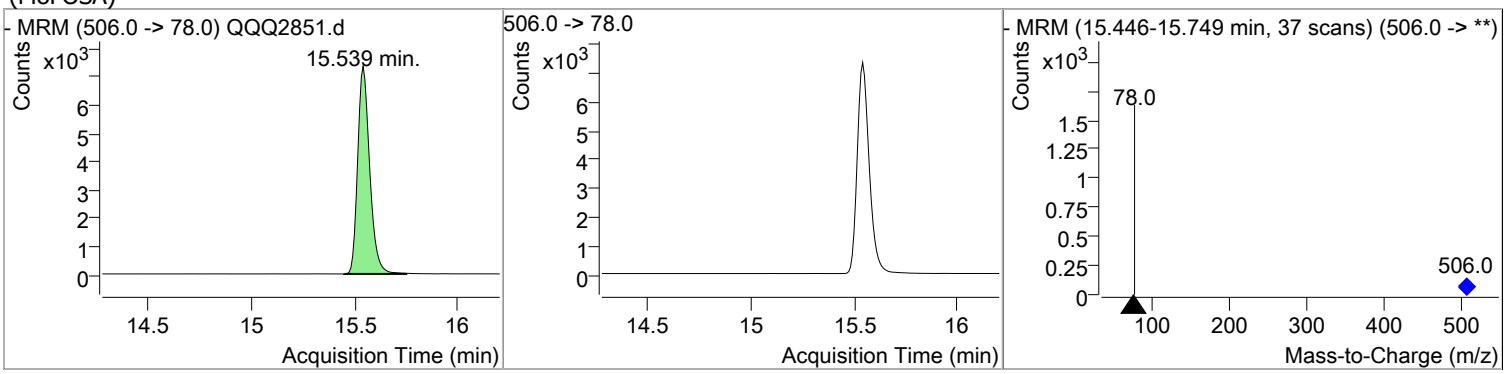
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	5.0107	15.54	0.35	30872	497.9 -> 47.9	8.2	5.9	8.8



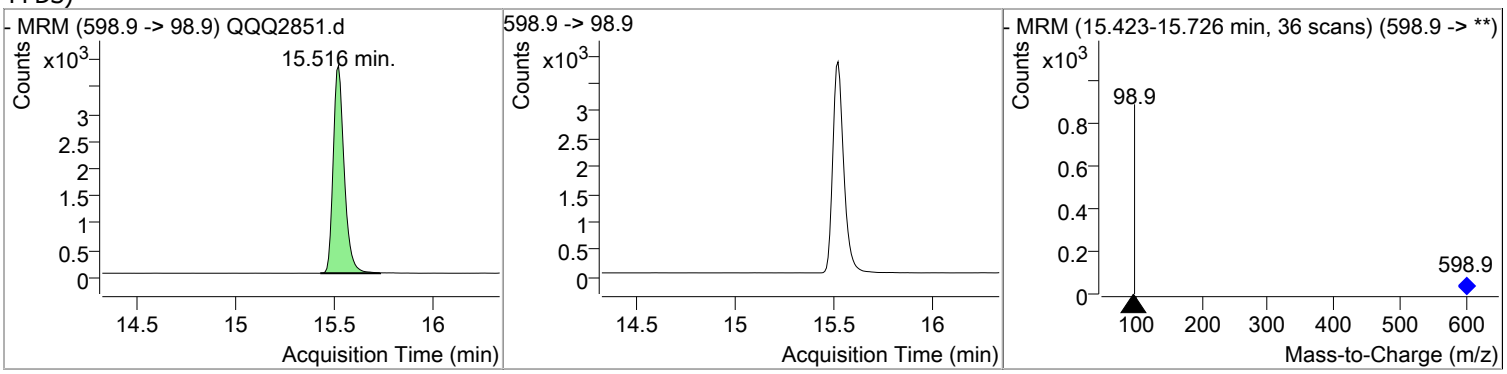




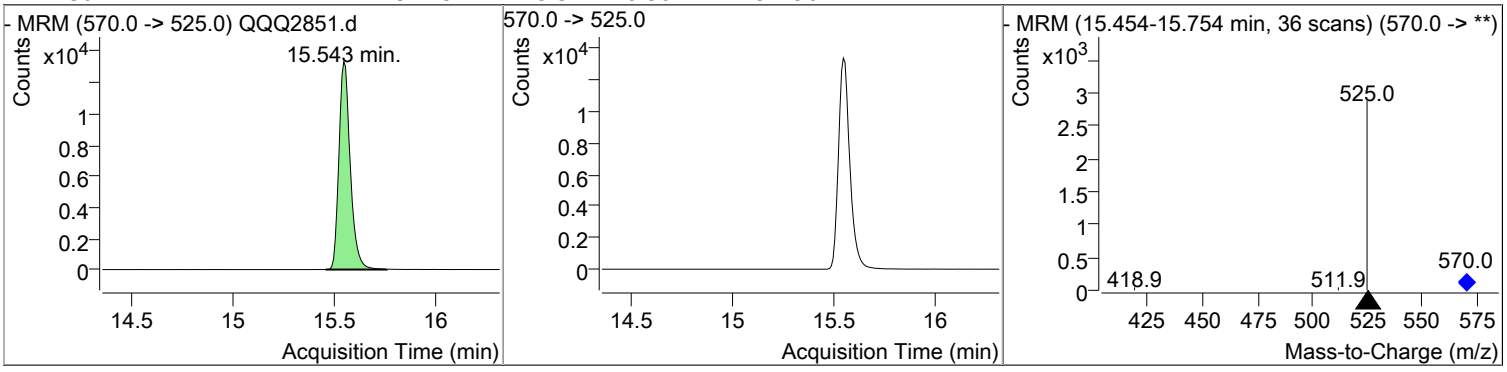
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.0005	15.54	0.34	29624				



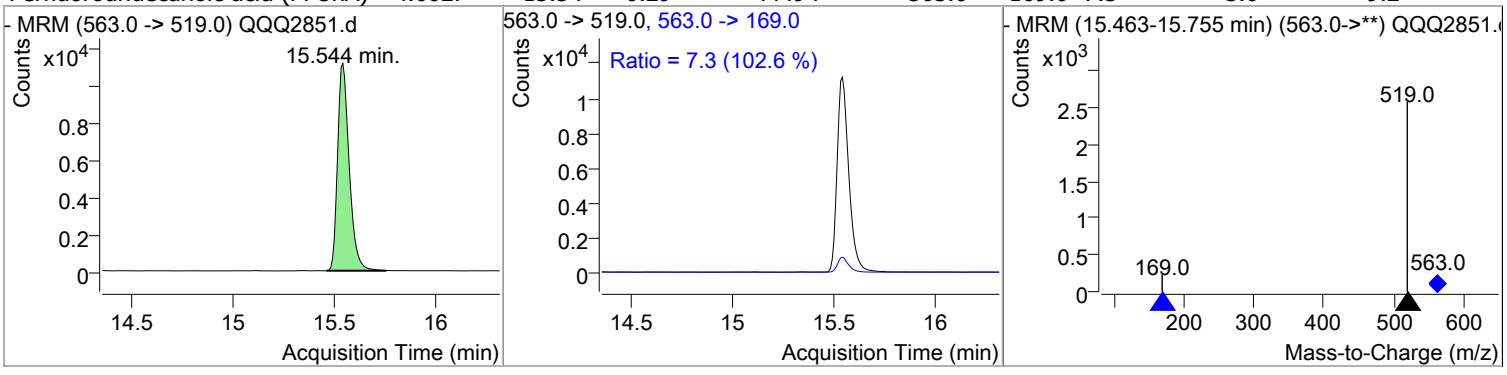
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	4.7681	15.52	0.30	14695				



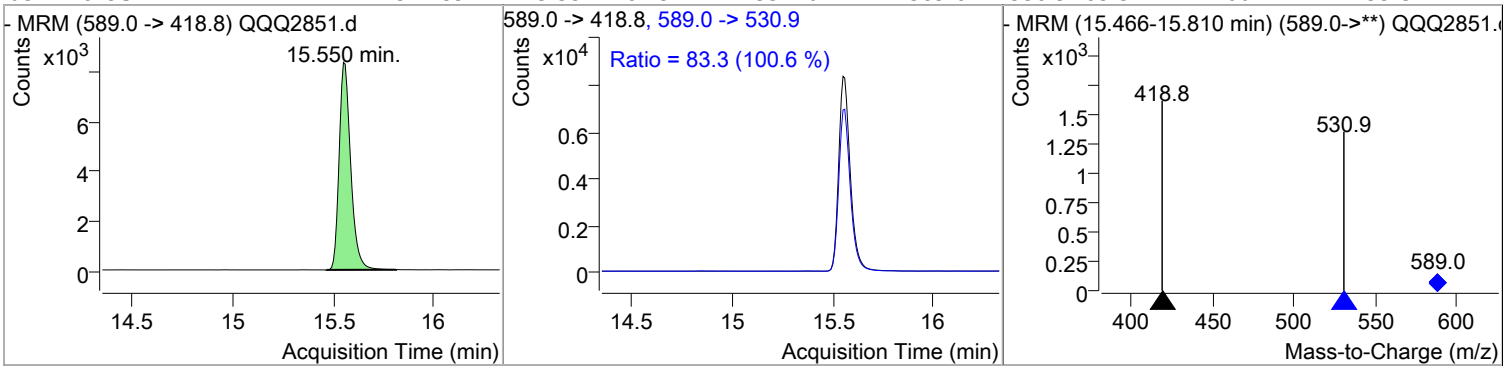
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	5.4454	15.54	0.30	51490				



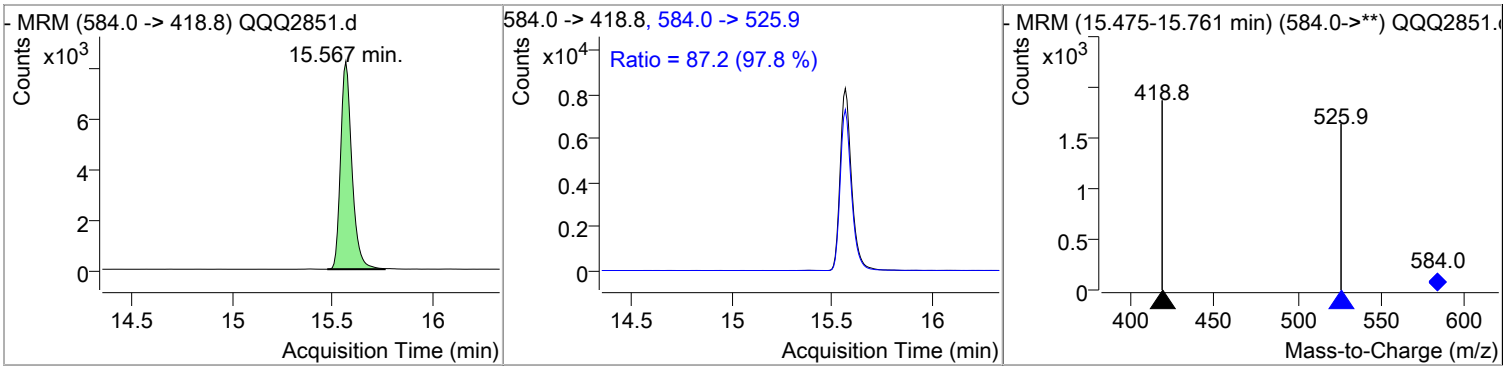
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	4.6027	15.54	0.29	44494	563.0 -> 169.0	7.3	5.0	9.2



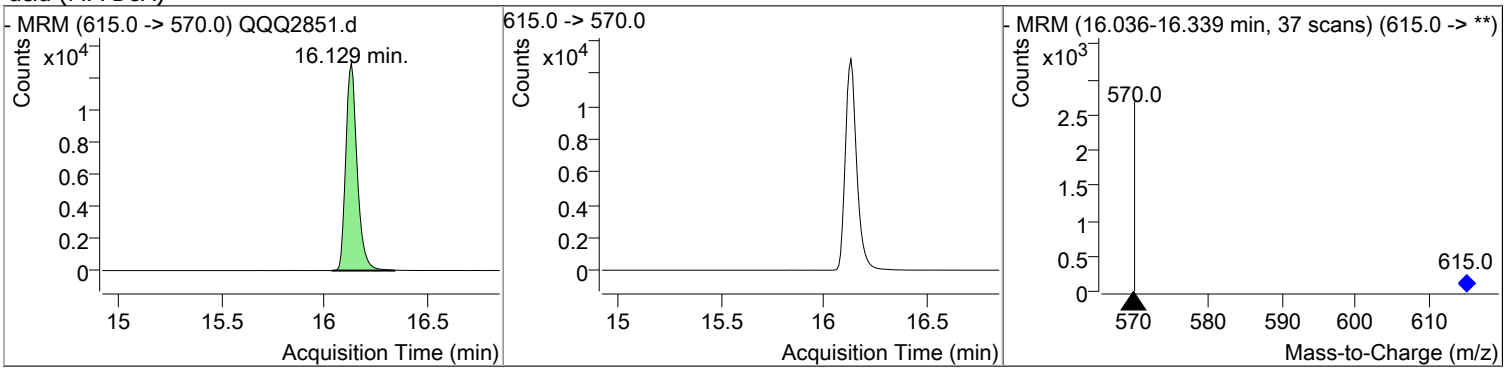
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	5.1259	15.55	0.29	33246	589.0 -> 530.9	83.3	66.2	99.3



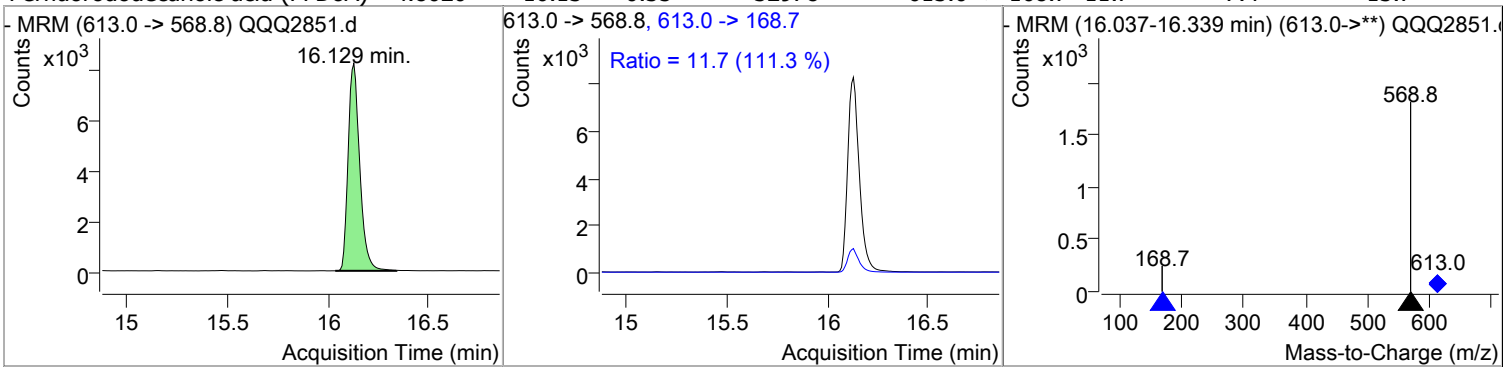
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	5.1742	15.57	0.30	32373	584.0 -> 525.9	87.2	71.3	107.0



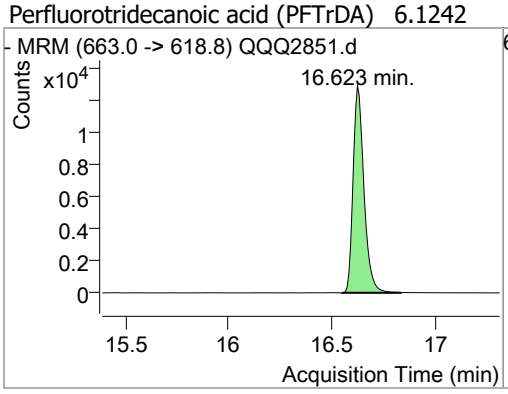
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.3201	16.13	0.35	49257				

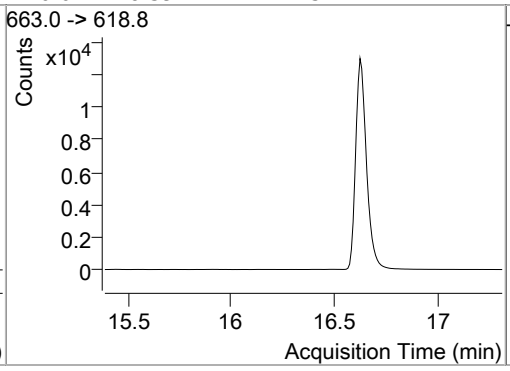


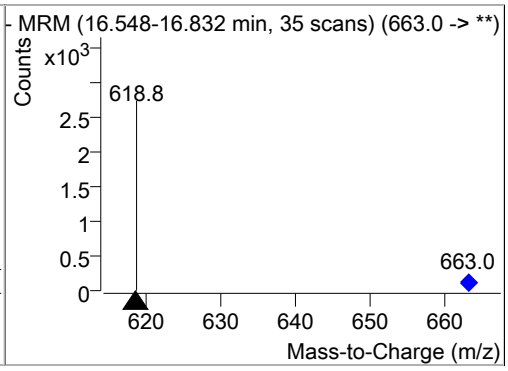
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	4.8020	16.13	0.35	32978	613.0 -> 168.7	11.7	7.4	13.7



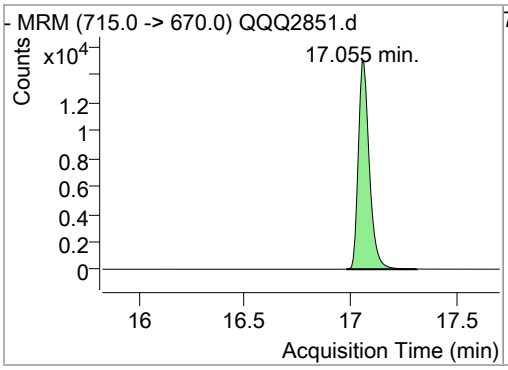
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	6.1242	16.62	0.39	47115				

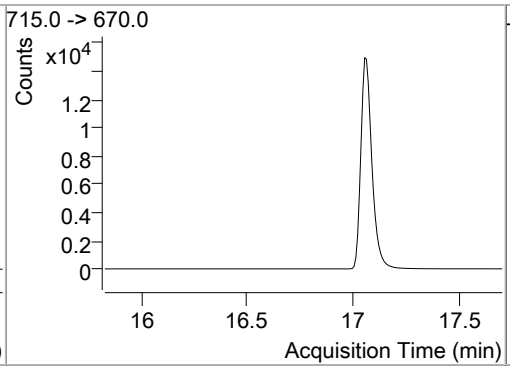


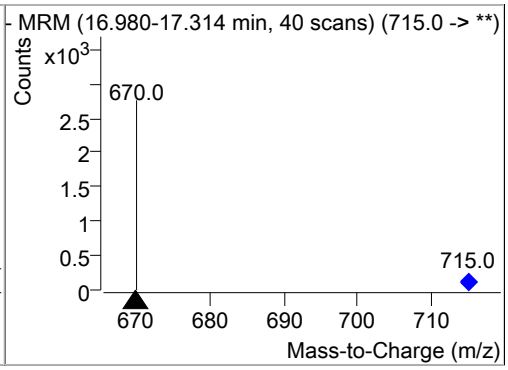




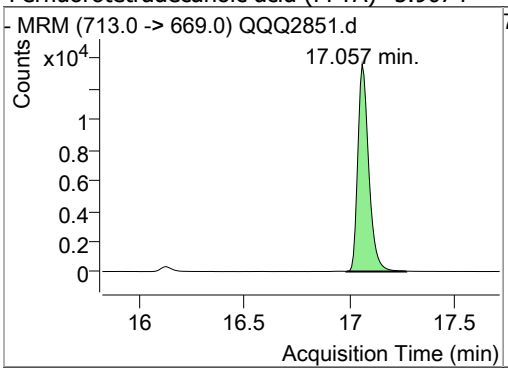
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	6.3109	17.05	0.42	54489				

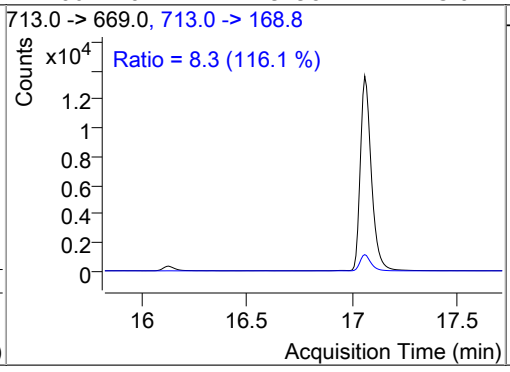


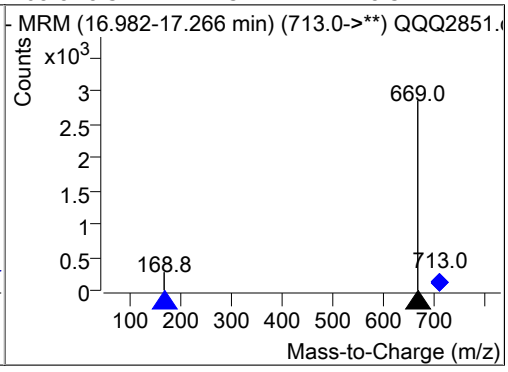




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	5.9074	17.06	0.42	49198	713.0 -> 168.8	8.3	5.7	8.5







FORM VII

CONTINUING CALIBRATION CHECK

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.	SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)	Project:	41433.00 TASK 0600 Katonah Municipal Well
Instrument ID:	LCQQQ	Calibration:	YL90023
Lab File ID:	QQQ2862.d	Calibration Date:	12/23/19 13:19
Sequence:	Y9L1909	Injection Date:	12/20/19
Lab Sample ID:	Y9L1909-CCV4	Injection Time:	14:06

		CONC. (ng/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	Q	4.80	4.52	0.2138892	0.1752475		-5.8	30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	A	4.75	4.55	0.2611759	0.2501969		-4.2	30
N-EtFOSAA	A	5.00	4.64	0.2914041	0.2704393		-7.2	30
N-MeFOSAA	A	5.00	4.59	0.3717862	0.3410251		-8.3	30
Perfluoro-1-decanesulfonic acid (PFDS)	A	4.82	4.24	0.1434874	0.1263729		-11.9	30
Perfluoro-1-heptanesulfonic acid (PFHpS)	A	4.98	4.71	0.17178	0.1623195		-5.5	30
Perfluoro-1-octanesulfonamide (FOSA)	A	5.00	4.67	0.2869638	0.2682774		-6.5	30
Perfluorobutanesulfonic acid (PFBS)	A	4.42	4.30	0.307702	0.2995361		-2.7	30
Perfluorodecanoic acid (PFDA)	A	5.00	4.70	0.3563268	0.3347816		-6.0	30
Perfluorododecanoic acid (PFDoA)	A	5.00	4.71	0.3198605	0.3013855		-5.8	30
Perfluoroheptanoic acid (PFHpA)	A	5.00	4.79	0.6544093	0.626906		-4.2	30
Perfluorohexanesulfonic acid (PFHxS)	A	3.70	3.43	0.2380903	0.2208834		-7.2	30
Perfluorohexanoic acid (PFHxA)	A	5.00	4.80	0.8609303	0.8257273		-4.1	30
Perfluoro-n-butanoic acid (PFBA)	A	5.00	4.62	0.7157248	0.6618533		-7.5	30
Perfluorononanoic acid (PFNA)	A	4.80	4.46	0.4097471	0.3805734		-7.1	30
Perfluorooctanesulfonic acid (PFOS)	A	3.65	3.41	0.2104231	0.1974748		-6.2	30
Perfluorooctanoic acid (PFOA)	A	5.00	4.61	0.5082197	0.4687282		-7.8	30
Perfluoropentanoic acid (PFPeA)	A	5.00	4.76	0.9418955	0.8962922		-4.8	30
Perfluorotetradecanoic acid (PFTA)	A	5.00	4.26	0.3878892	0.3303884		-14.8	30
Perfluorotridecanoic acid (PFTrDA)	A	5.00	4.10	0.358323	0.2937764		-18.0	30
Perfluoroundecanoic acid (PFUnA)	A	5.00	4.52	0.4502513	0.4068725		-9.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Data File	QQQ2862.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 2:06:09 PM
Sample Name	SEQ-CCV4	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

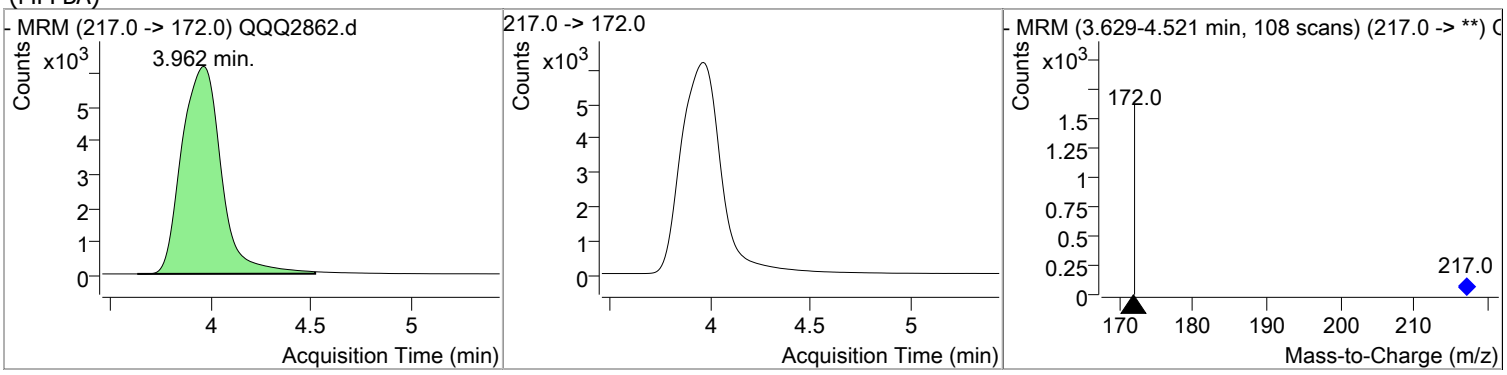
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.102	417.0 -> 372.0	231631	10.0000	ng/ml	0.068
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.962	217.0 -> 172.0	85368	4.7052	ng/ml	-0.225
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.05%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.006	268.0 -> 223.0	119618	4.8359	ng/ml	-0.109
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 48.36%		
M3PFBS	8.752	302.0 -> 79.9	34933	4.4738	ng/ml	-0.067
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 44.74%		
M2-4-2FTS	10.200	329.0 -> 309.0	43938	6.0759	ng/ml	-0.059
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.76%		
M5PFHxA	10.353	318.0 -> 273.0	110453	4.7401	ng/ml	-0.050
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.40%		
M4PFHpA	11.910	367.0 -> 322.0	32646	5.0675	ng/ml	-0.008
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 50.68%		
M3PFHxS	12.051	402.0 -> 80.0	23986	4.4719	ng/ml	0.008
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 44.72%		
M2-6-2FTS	13.040	429.0 -> 409.0	27188	4.7362	ng/ml	0.067
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.36%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.101	421.0 -> 376.0	57846	4.7211	ng/ml	0.076
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.21%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.056	472.0 -> 427.0	57475	4.5845	ng/ml	0.152
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 45.85%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.072	507.0 -> 80.0	17820	4.3393	ng/ml	0.161
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 43.39%		
M2-8-2FTS	14.845	529.0 -> 509.0	22714	4.4910	ng/ml	0.227
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 44.91%		
M6PFDA	14.863	519.0 -> 473.9	40990	4.1035	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 41.03%		
d3-N-MeFOSAA	15.206	573.0 -> 418.8	36625	4.5670	ng/ml	0.270
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 45.67%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	29510	4.6172	ng/ml	0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 46.17%		
M7PFUdA	15.543	570.0 -> 525.0	48819	4.7856	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 47.86%		
d5-N-EtFOSAA	15.558	589.0 -> 418.8	32855	4.6955	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 46.95%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.129	615.0 -> 570.0	43737	4.3786	ng/ml	0.353
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 43.79%		
M2PFTeDA	17.063	715.0 -> 670.0	37530	4.0291	ng/ml	0.426
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 40.29%		

Target Compounds	QValue

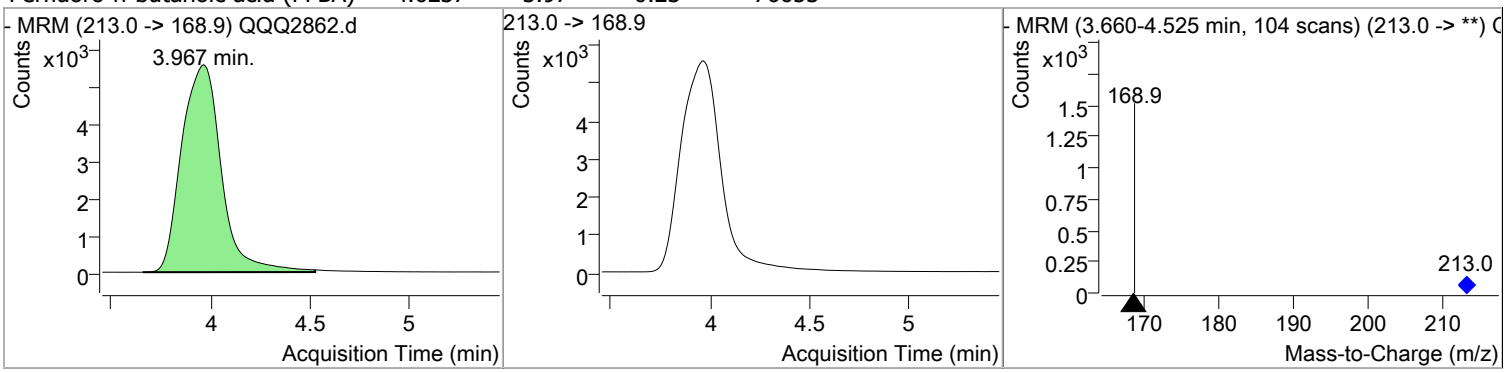
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	3.967	213.0 -> 168.9	76653	4.6237	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	8.007	263.0 -> 219.0	103804	4.7579	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.746	298.9 -> 79.9	30667	4.3007	ng/ml		99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.201	327.0 -> 307.0	40296	5.9002	ng/ml		98
Perfluorohexanoic acid (PFHxA)	10.347	313.0 -> 268.9	95632	4.7956	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.658	348.9 -> 79.9	28797	4.4937	ng/ml		98
Perfluoroheptanoic acid (PFHpA)	11.911	363.0 -> 318.8	72605	4.7899	ng/ml		100
Perfluorohexanesulfonic acid (PFHxS)	12.044	398.9 -> 79.9	18930	3.4326	ng/ml		100
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.041	427.0 -> 407.0	27528	4.5490	ng/ml		100
Perfluorooctanoic acid (PFOA)	13.102	413.0 -> 368.8	54286	4.6115	ng/ml		99
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.165	448.9 -> 80.0	18724	4.7077	ng/ml		98
Perfluorononanoic acid (PFNA)	14.057	463.0 -> 418.8	42313	4.4582	ng/ml		99
Perfluorooctanesulfonic acid (PFOS)	14.073	498.9 -> 79.9	16696	3.4121	ng/ml		91
Perfluorononanesulfonate (L-PFNS)	14.853	548.9 -> 79.9	16227	4.4797	ng/ml		99
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.846	527.0 -> 507.0	19484	4.5215	ng/ml		92
Perfluorodecanoic acid (PFDA)	14.864	513.0 -> 468.8	38773	4.6977	ng/ml	#	85
N-MeFOSAA	15.215	570.0 -> 418.9	39496	4.5863	ng/ml		98
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	31071	4.6744	ng/ml		99
Perfluoro-1-decanesulfonate (L-PFDS)	15.516	598.9 -> 98.9	14109	4.2433	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.544	563.0 -> 519.0	47122	4.5183	ng/ml		98
N-EtFOSAA	15.567	584.0 -> 418.8	31321	4.6403	ng/ml		98
Perfluorododecanoic acid (PFDoA)	16.129	613.0 -> 568.8	34905	4.7112	ng/ml		97
Perfluorotridecanoic acid (PFTrDA)	16.632	663.0 -> 618.8	34024	4.0993	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.065	713.0 -> 669.0	38264	4.2588	ng/ml		98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

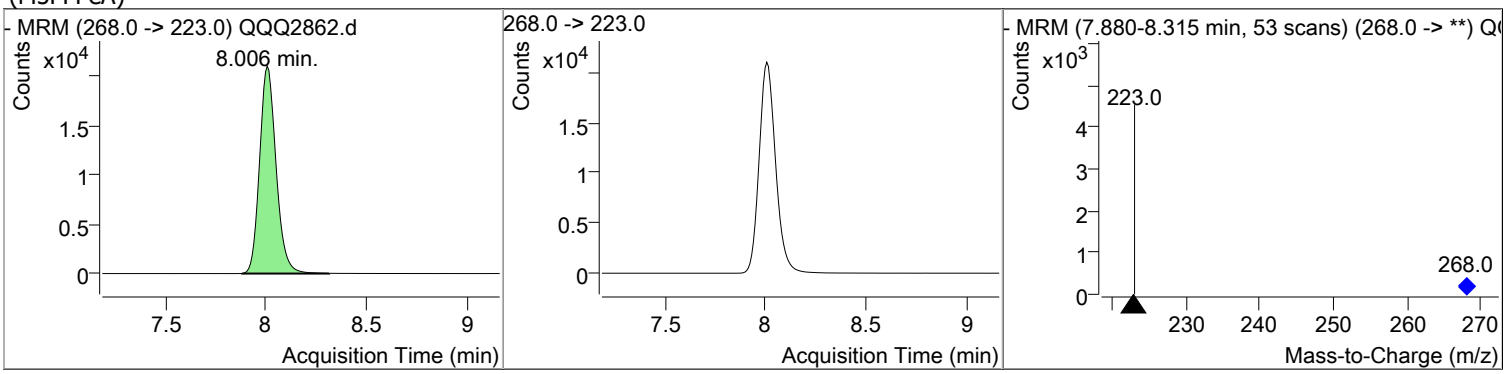
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	4.7052	3.96	-0.23	85368				



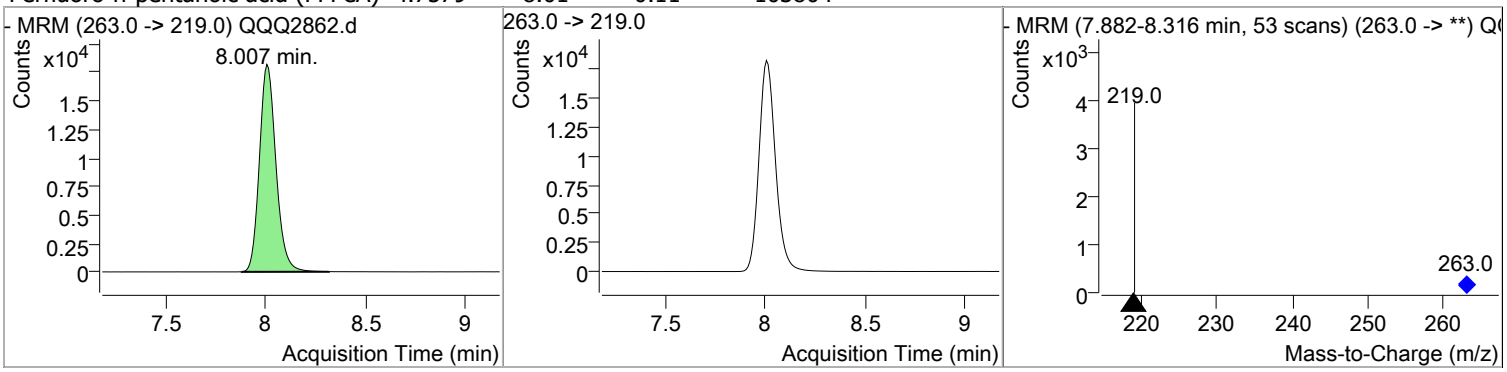
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	4.6237	3.97	-0.23	76653				



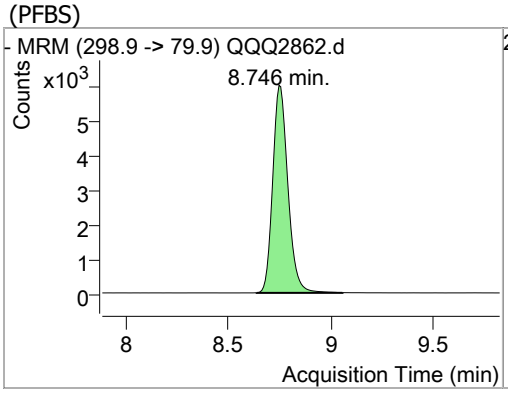
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	4.8359	8.01	-0.11	119618				

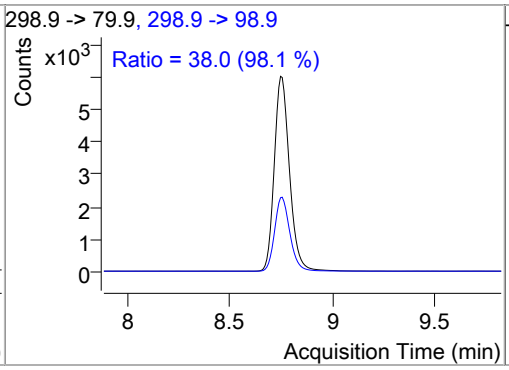


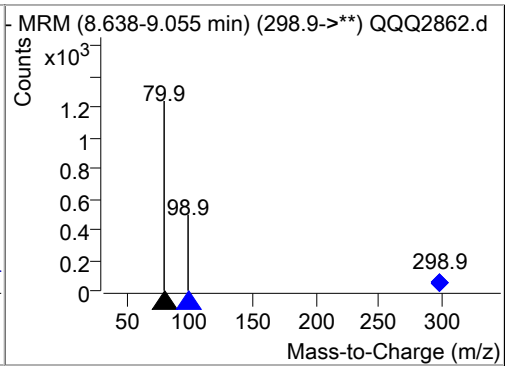
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	4.7579	8.01	-0.11	103804				



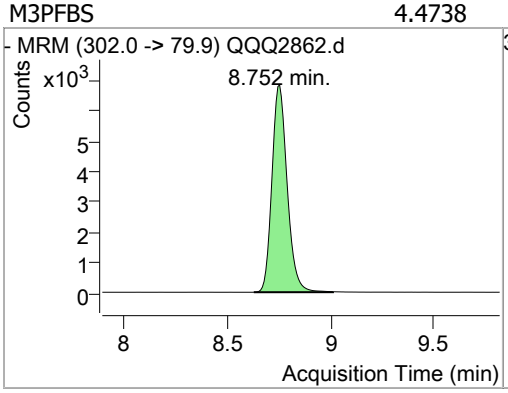
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	4.3007	8.75	-0.07	30667	298.9 -> 98.9	38.0	31.0	46.5

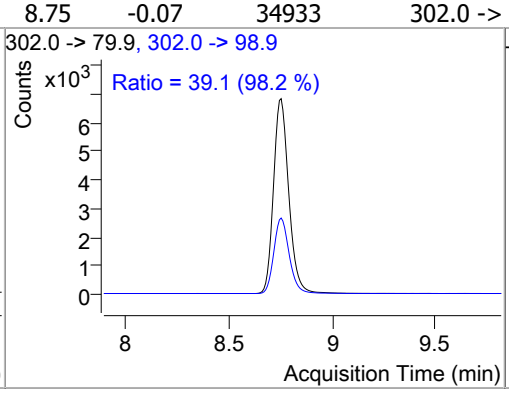


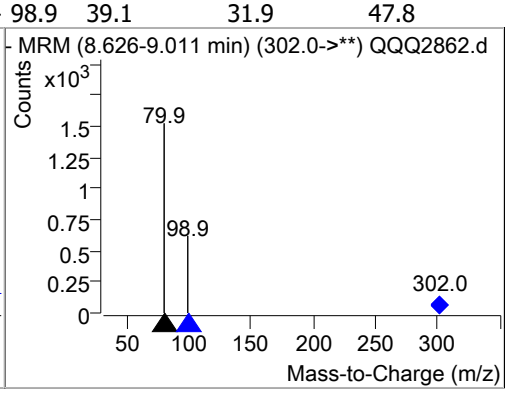




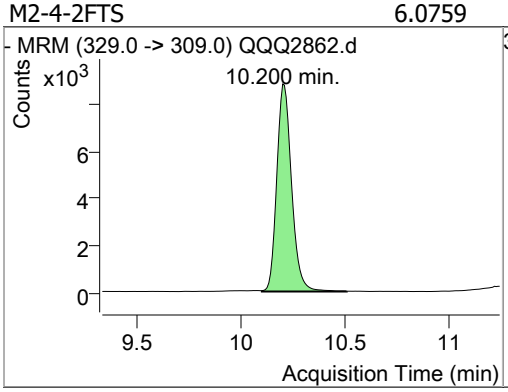
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	4.4738	8.75	-0.07	34933	302.0 -> 98.9	39.1	31.9	47.8

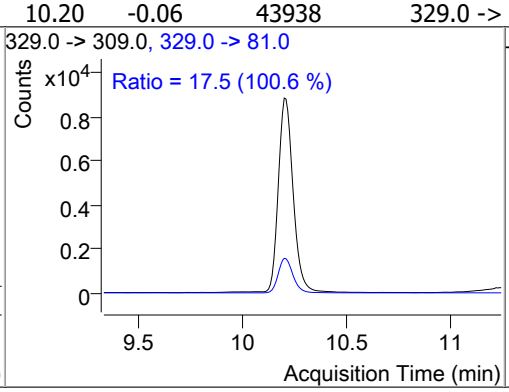


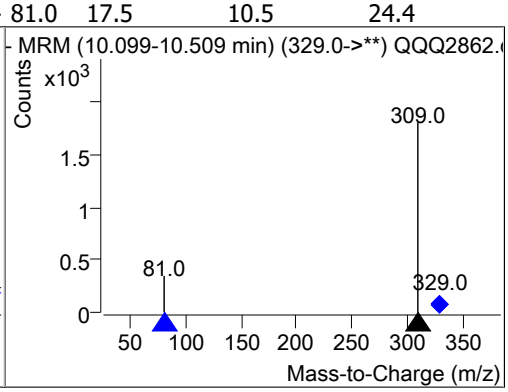




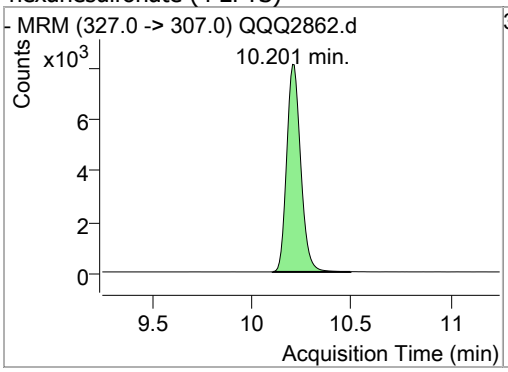
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	6.0759	10.20	-0.06	43938	329.0 -> 81.0	17.5	10.5	24.4

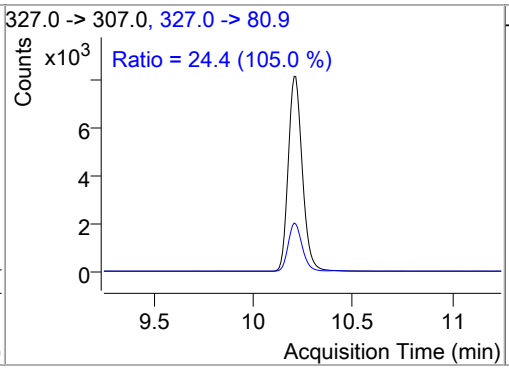


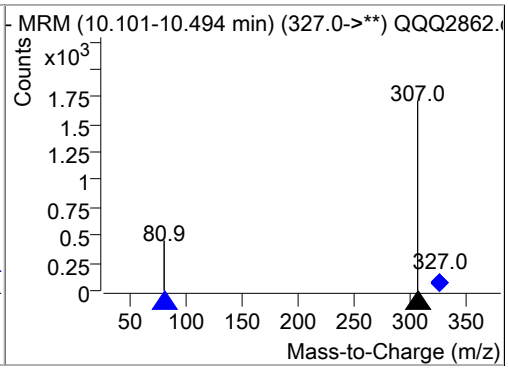




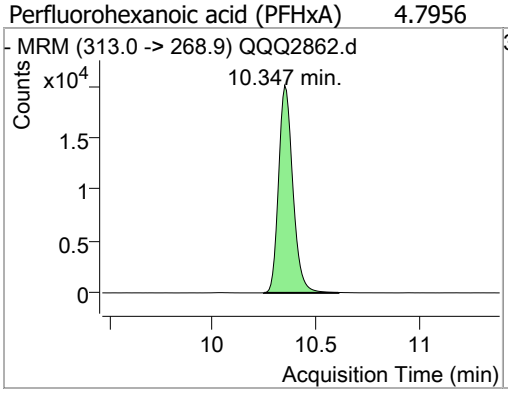
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	5.9002	10.20	-0.06	40296	327.0 -> 80.9	24.4	13.9	32.5

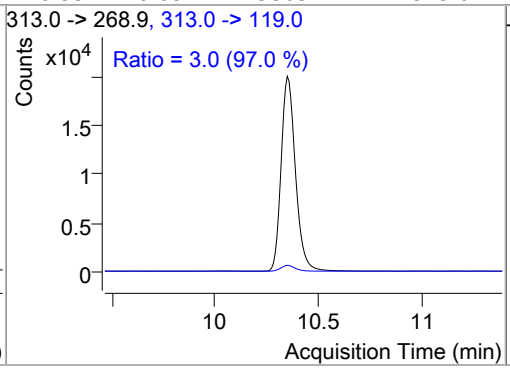


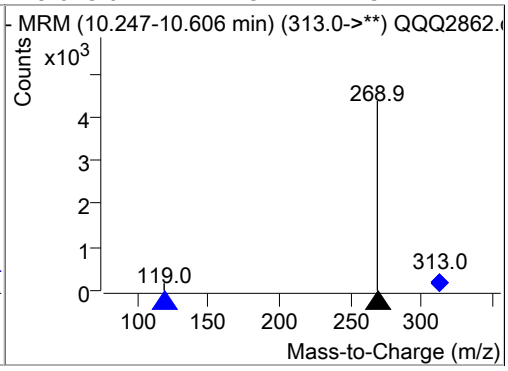




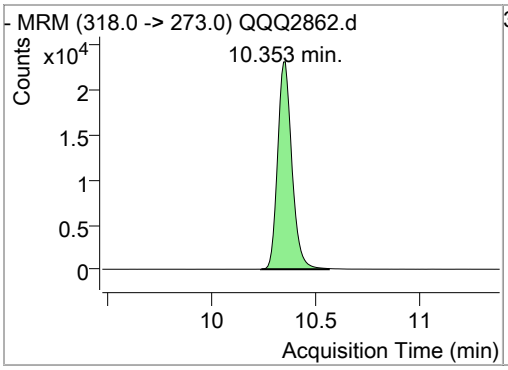
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	4.7956	10.35	-0.05	95632	313.0 -> 119.0	3.0	2.5	3.7

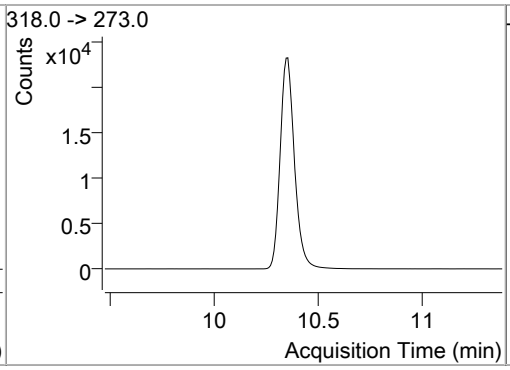


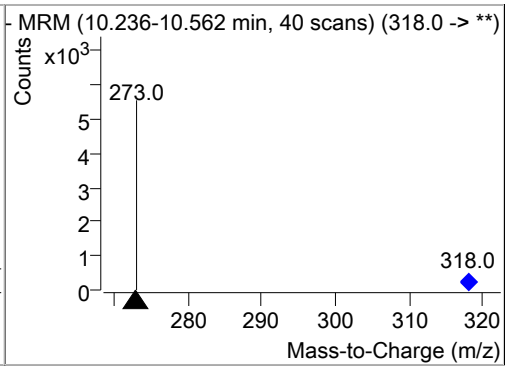




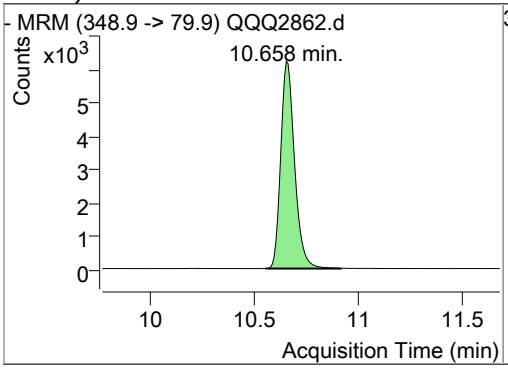
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	4.7401	10.35	-0.05	110453				

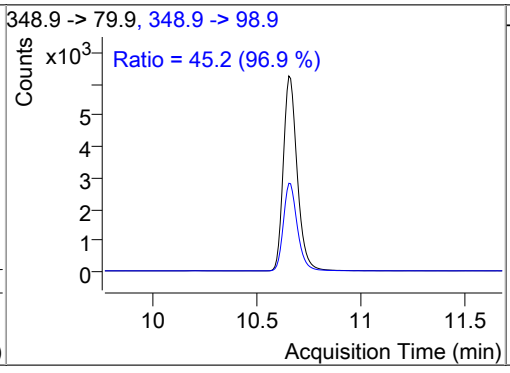


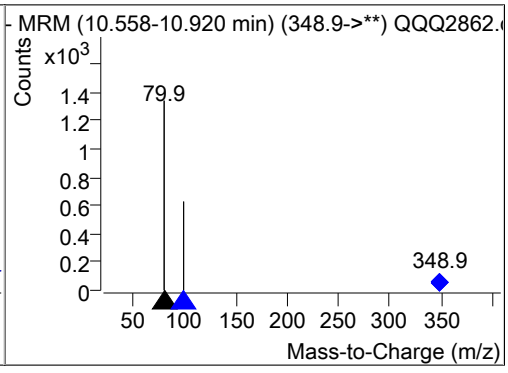




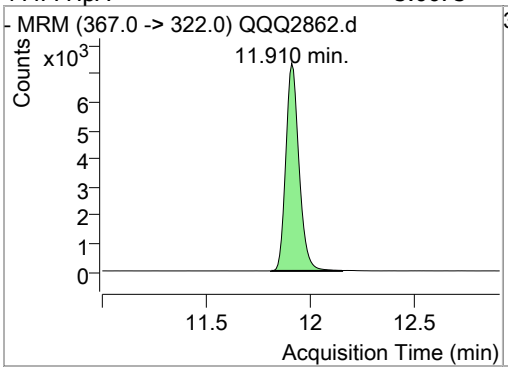
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	4.4937	10.66	-0.04	28797	348.9 -> 98.9	45.2	37.3	56.0

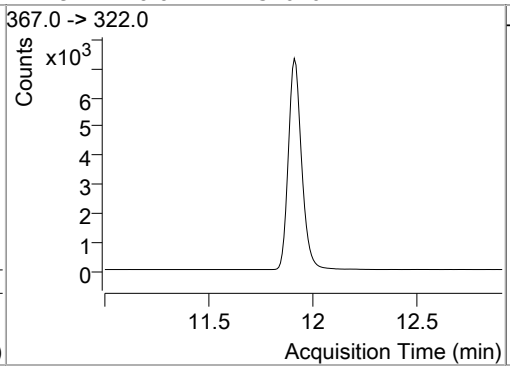


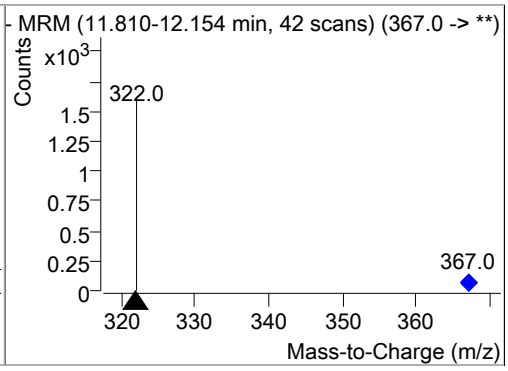




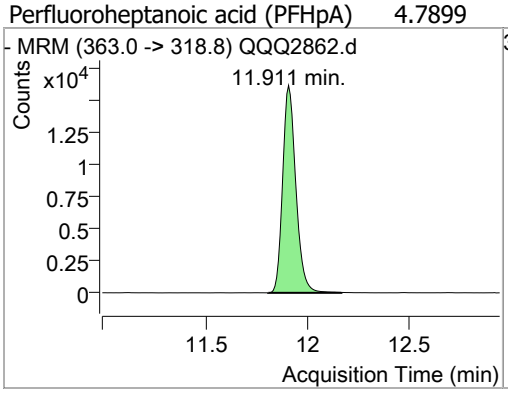
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	5.0675	11.91	-0.01	32646				

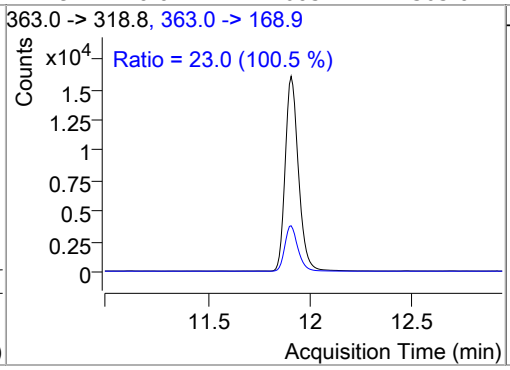


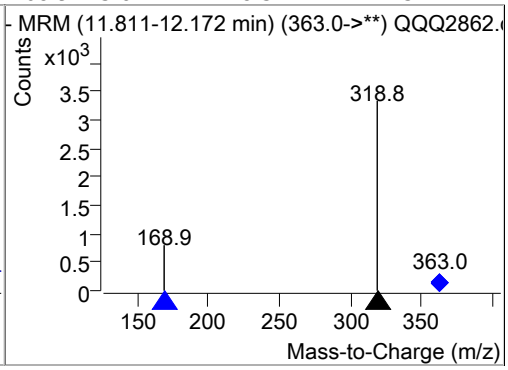




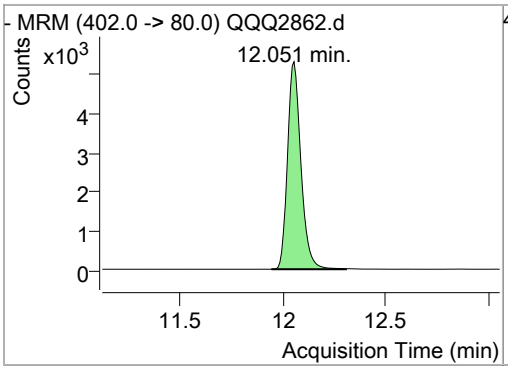
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	4.7899	11.91	-0.01	72605	363.0 -> 168.9	23.0	18.3	27.5

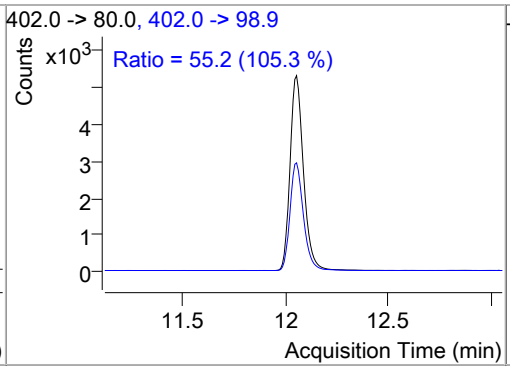


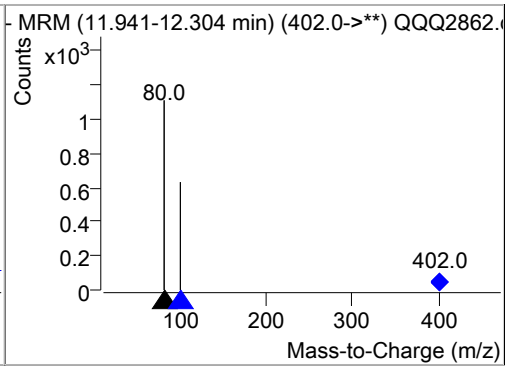




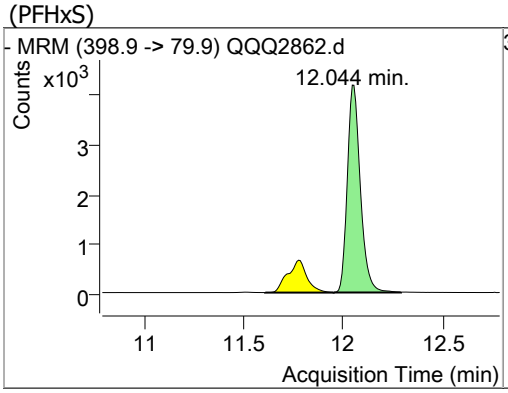
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	4.4719	12.05	0.01	23986	402.0 -> 98.9	55.2	42.0	62.9

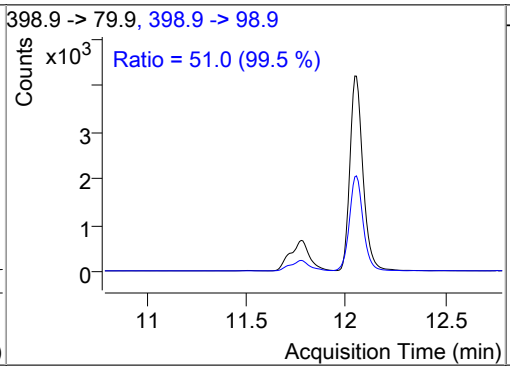


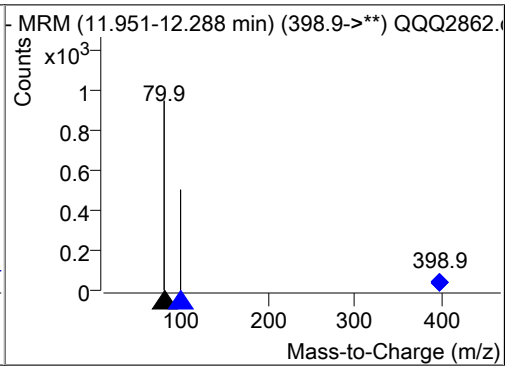




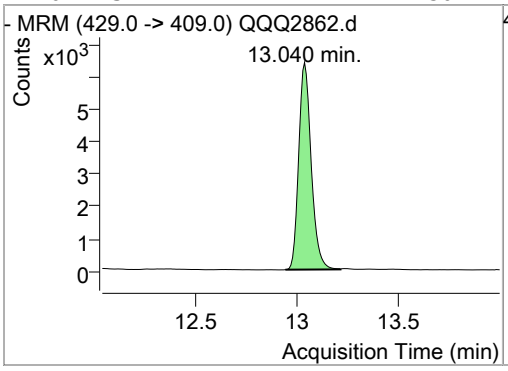
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	3.4326	12.04	0.00	18930	398.9 -> 98.9	51.0	41.0	61.5

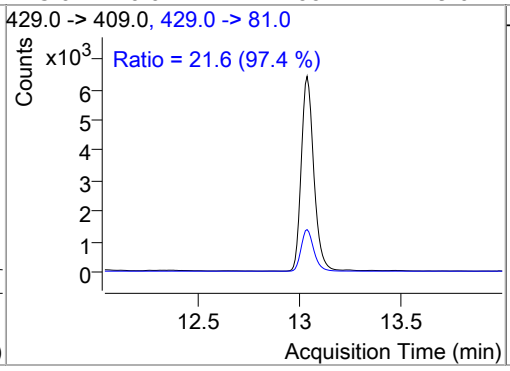


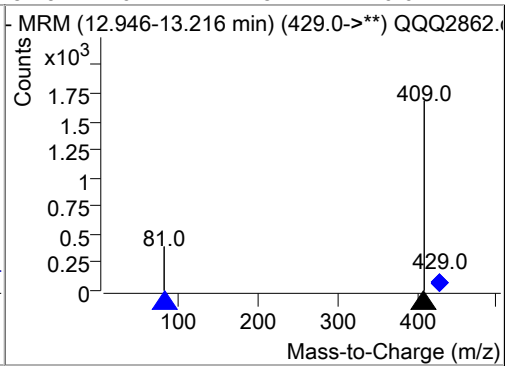




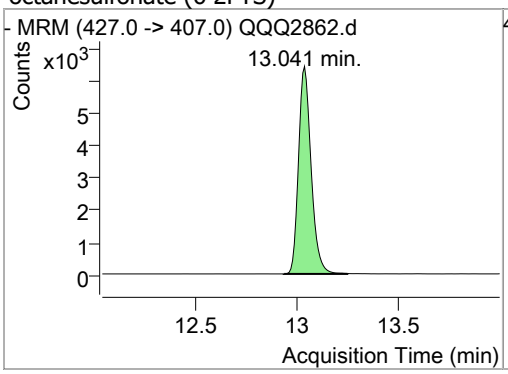
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	4.7362	13.04	0.07	27188	429.0 -> 81.0	21.6	17.8	26.6

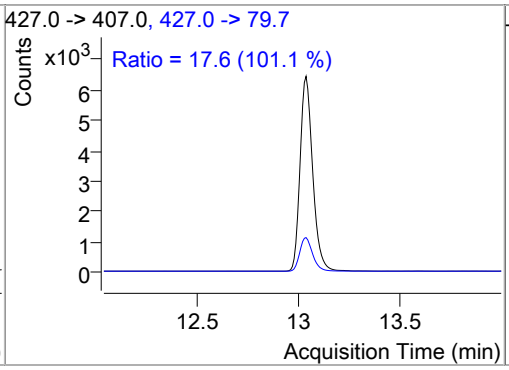


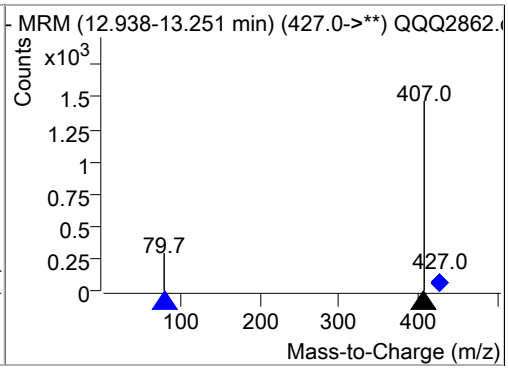




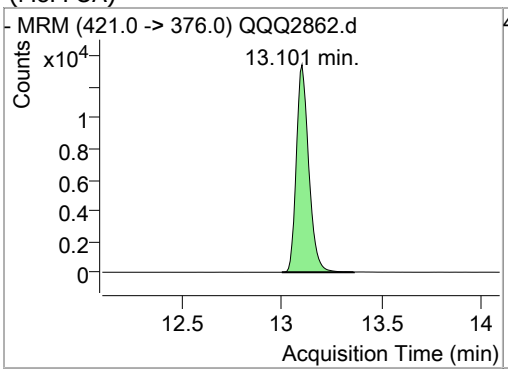
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	4.5490	13.04	0.07	27528	427.0 -> 79.7	17.6	13.9	20.8

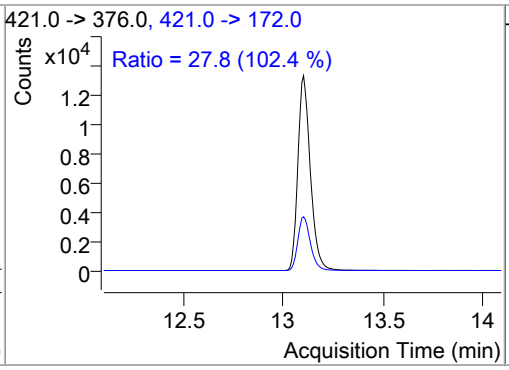


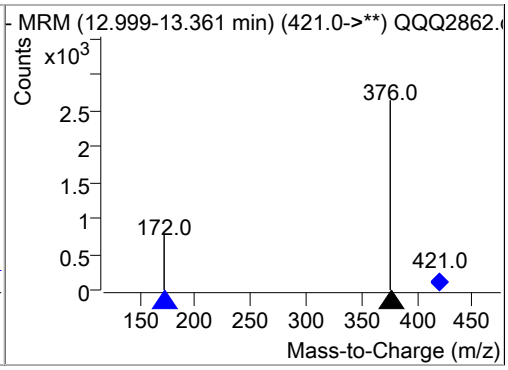




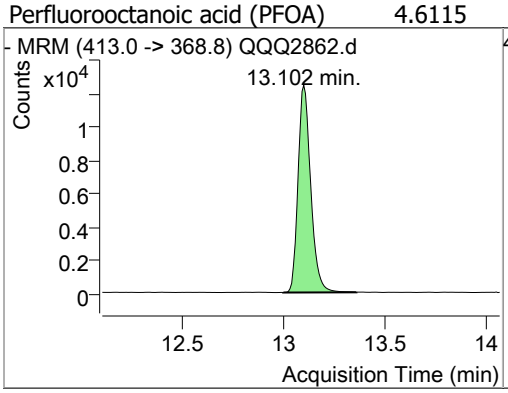
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	4.7211	13.10	0.08	57846	421.0 -> 172.0	27.8	21.7	32.6

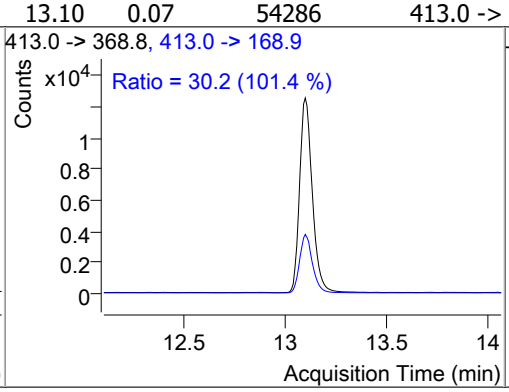


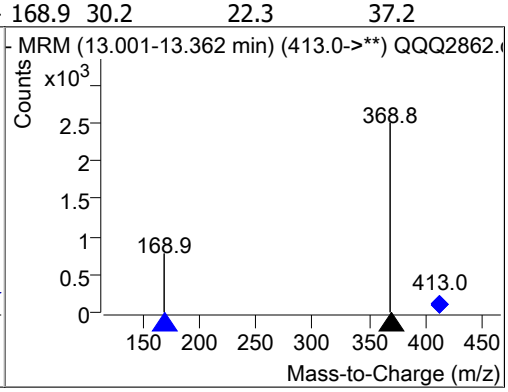




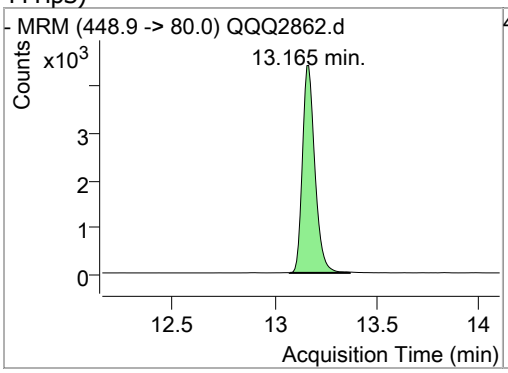
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	4.6115	13.10	0.07	54286	413.0 -> 168.9	30.2	22.3	37.2

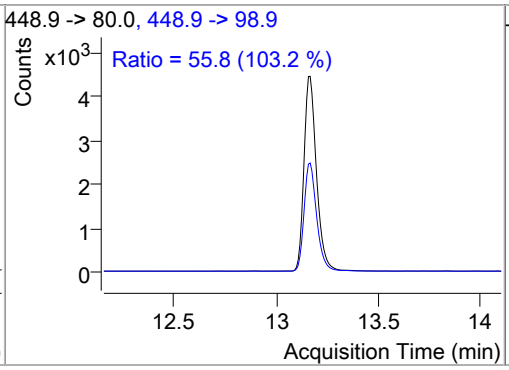


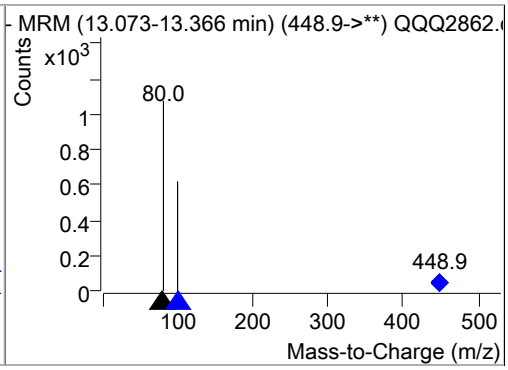




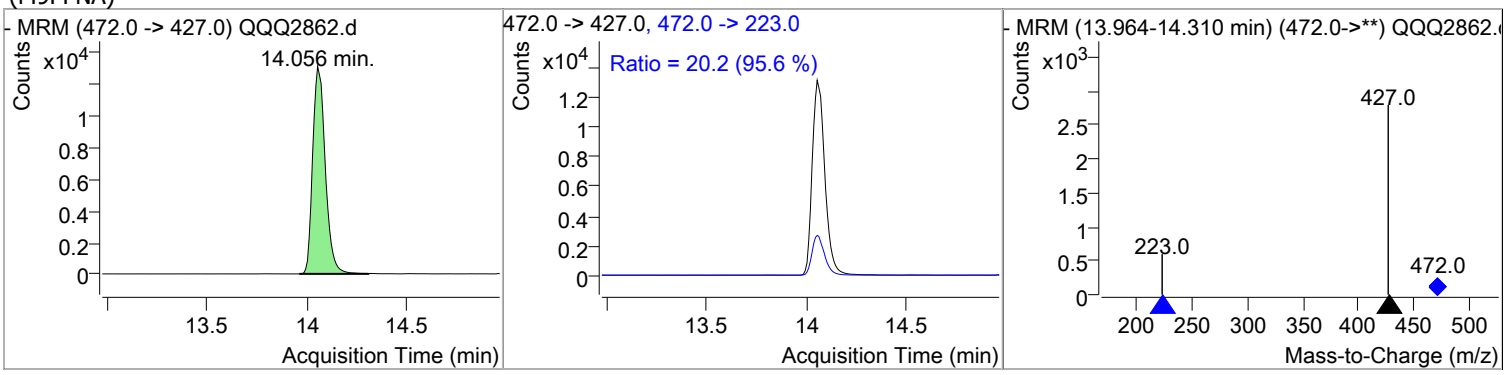
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	4.7077	13.17	0.08	18724	448.9 -> 98.9	55.8	43.3	64.9



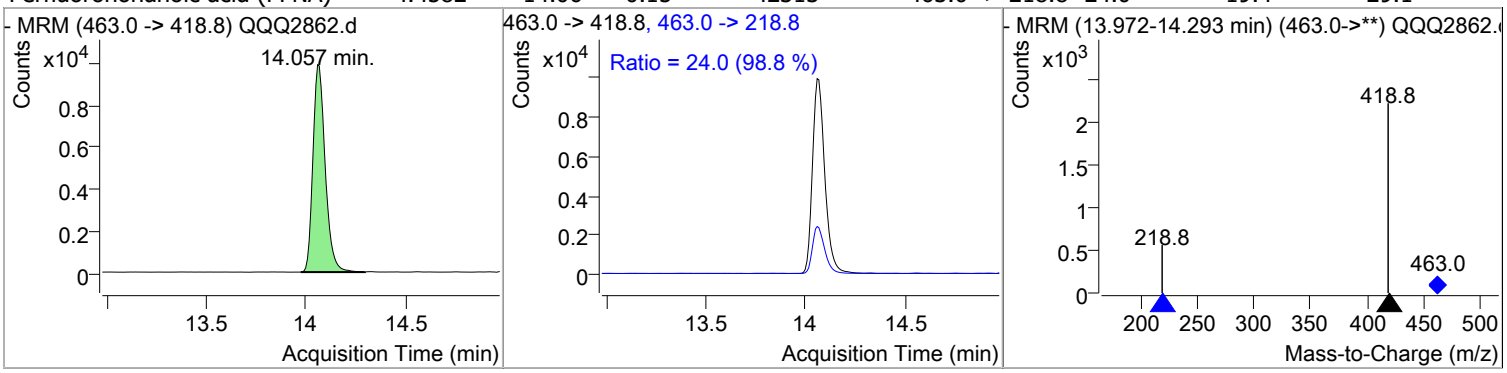




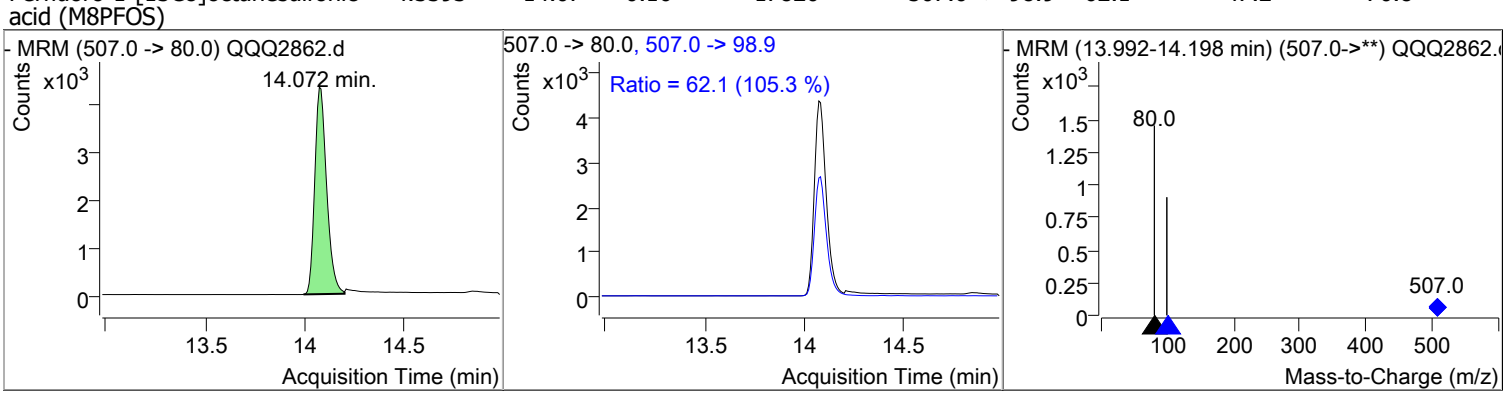
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	4.5845	14.06	0.15	57475	472.0 -> 223.0	20.2	16.9	25.4



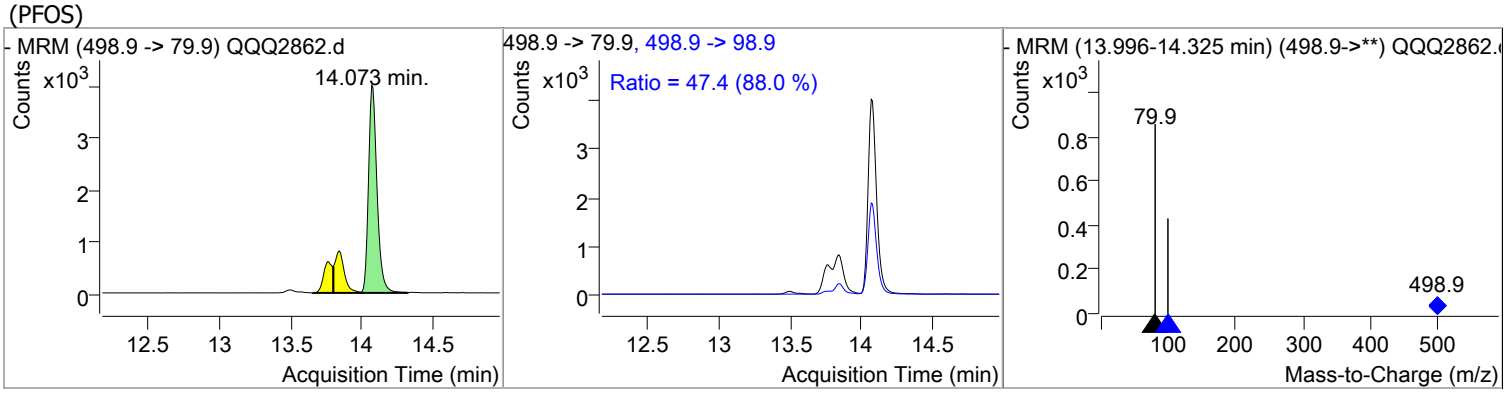
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	4.4582	14.06	0.15	42313	463.0 -> 218.8	24.0	19.4	29.1



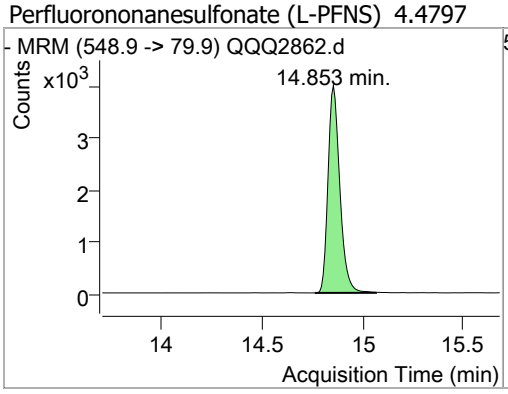
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	4.3393	14.07	0.16	17820	507.0 -> 98.9	62.1	47.2	70.8

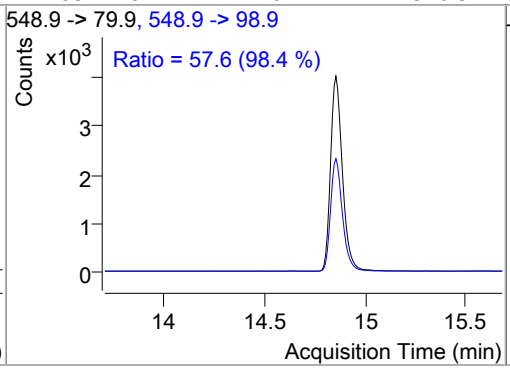


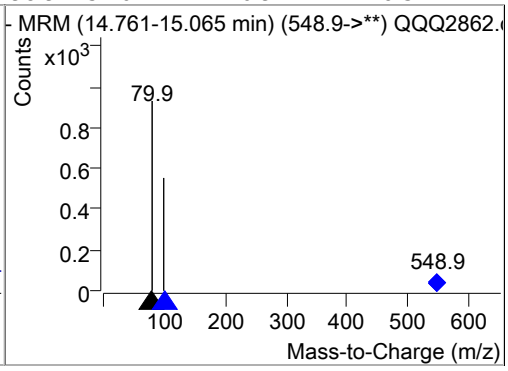
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	3.4121	14.07	0.16	16696	498.9 -> 98.9	47.4	43.1	64.6



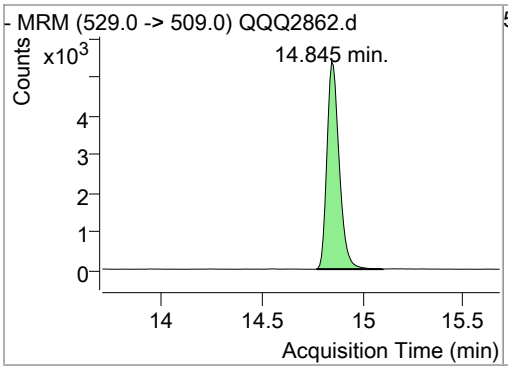
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	4.4797	14.85	0.24	16227	548.9 -> 98.9	57.6	46.9	70.3

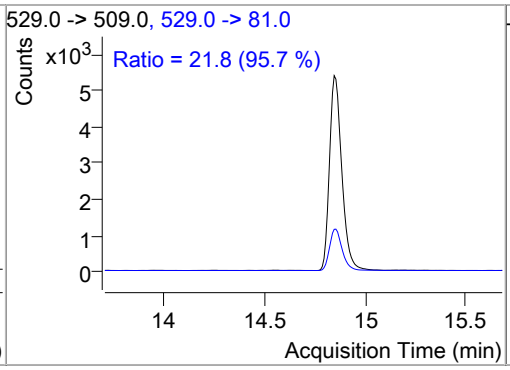


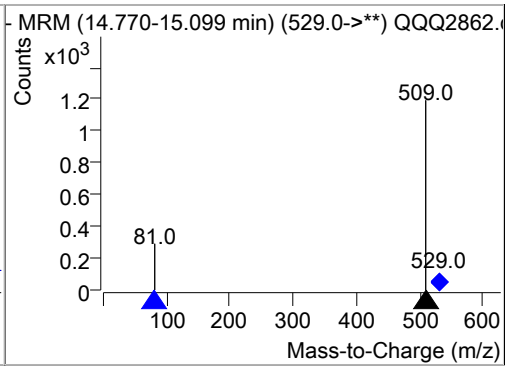




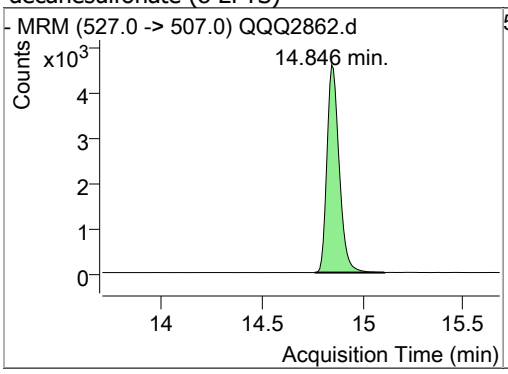
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	4.4910	14.85	0.23	22714	529.0 -> 81.0	21.8	18.3	27.4

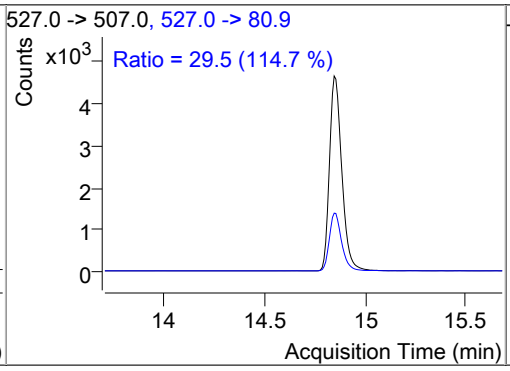


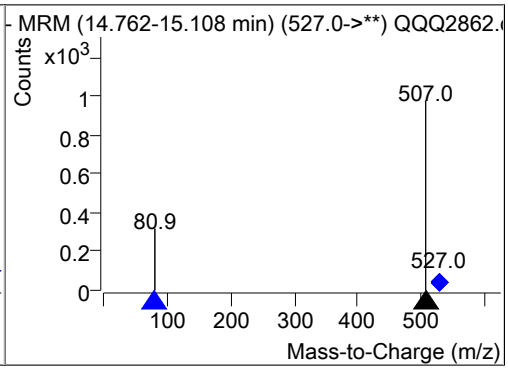




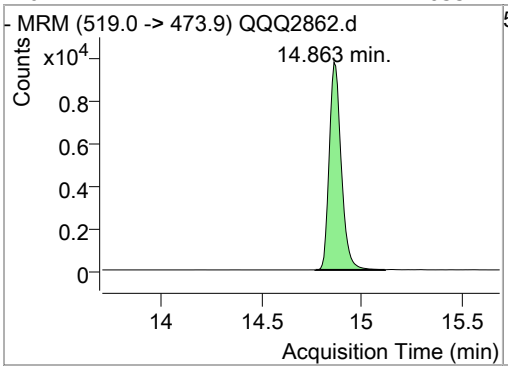
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	4.5215	14.85	0.23	19484	527.0 -> 80.9	29.5	20.6	30.9

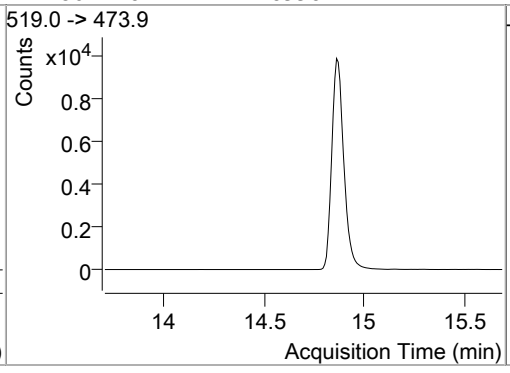


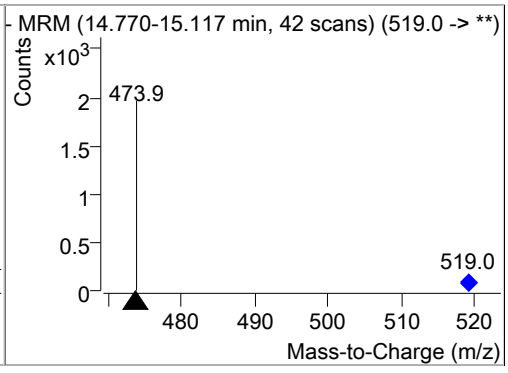




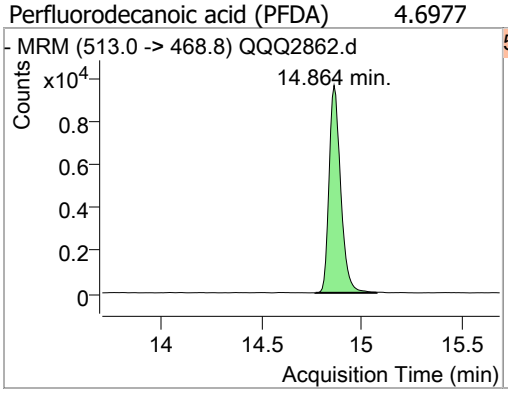
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	4.1035	14.86	0.24	40990				

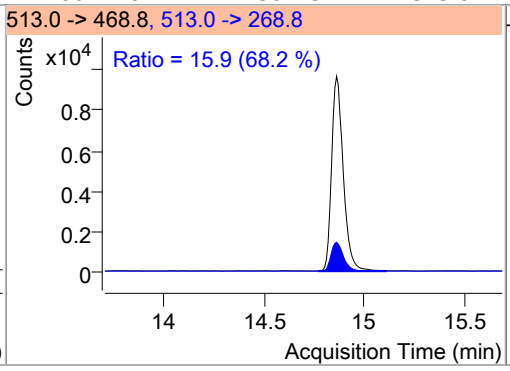


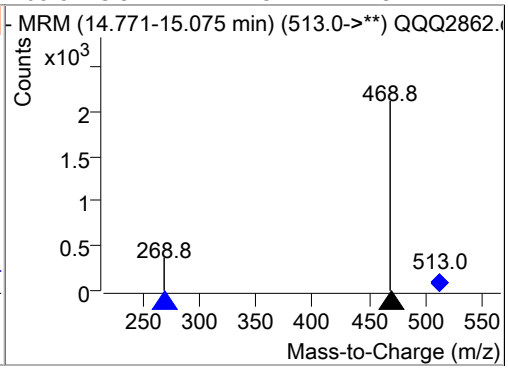




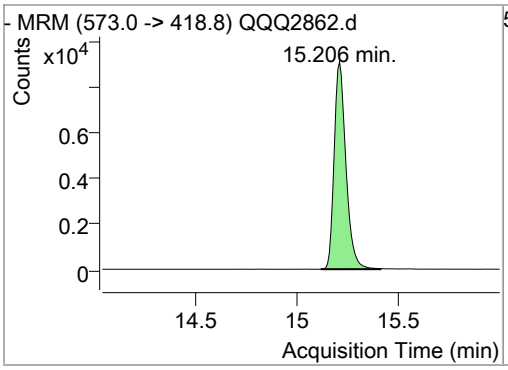
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	4.6977	14.86	0.24	38773	513.0 -> 268.8	15.9	17.5	29.1

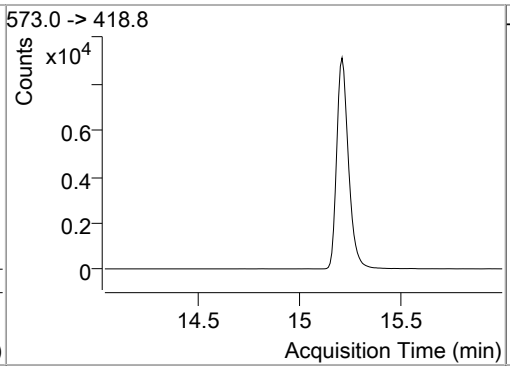


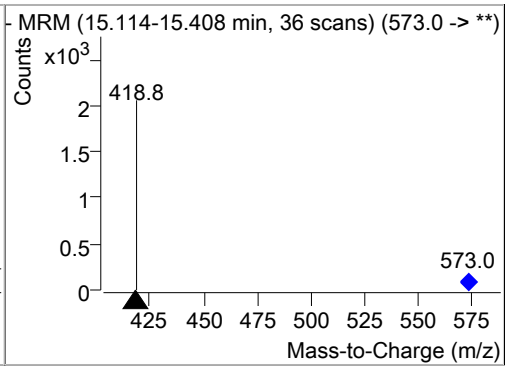




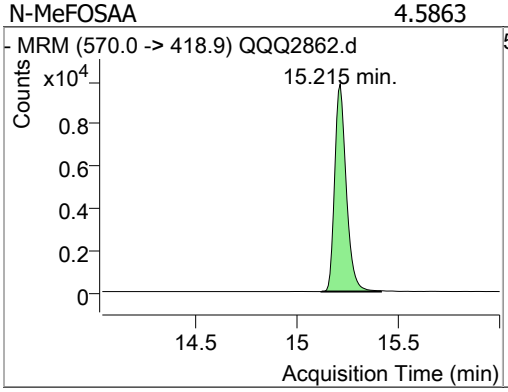
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	4.5670	15.21	0.27	36625				

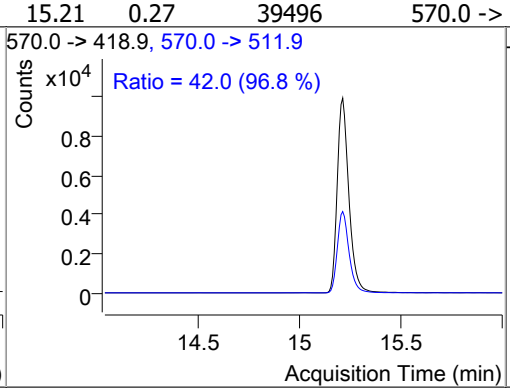


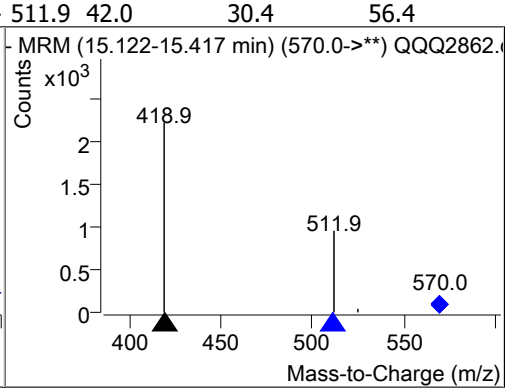




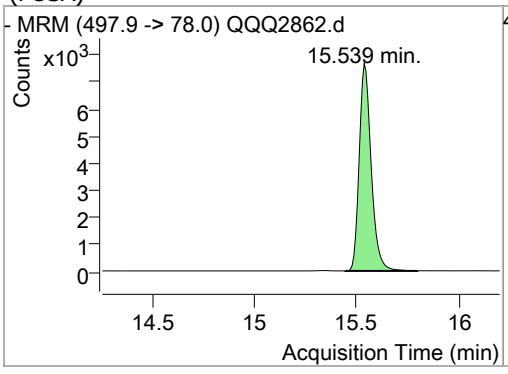
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	4.5863	15.21	0.27	39496	570.0 -> 511.9	42.0	30.4	56.4

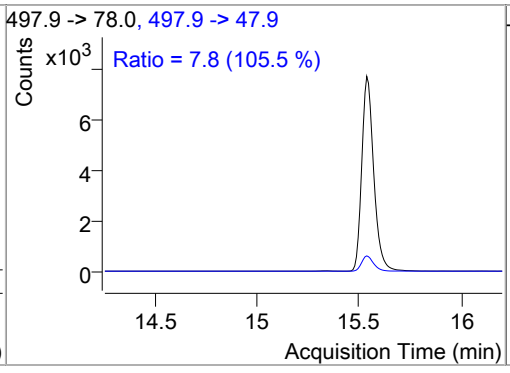


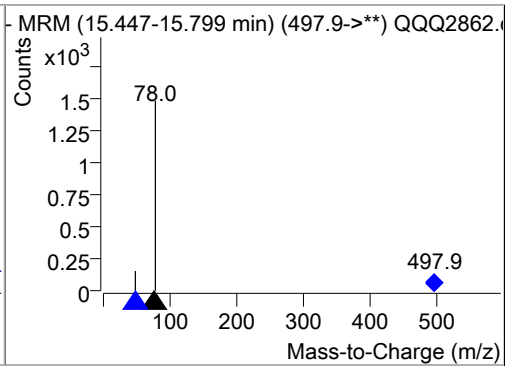




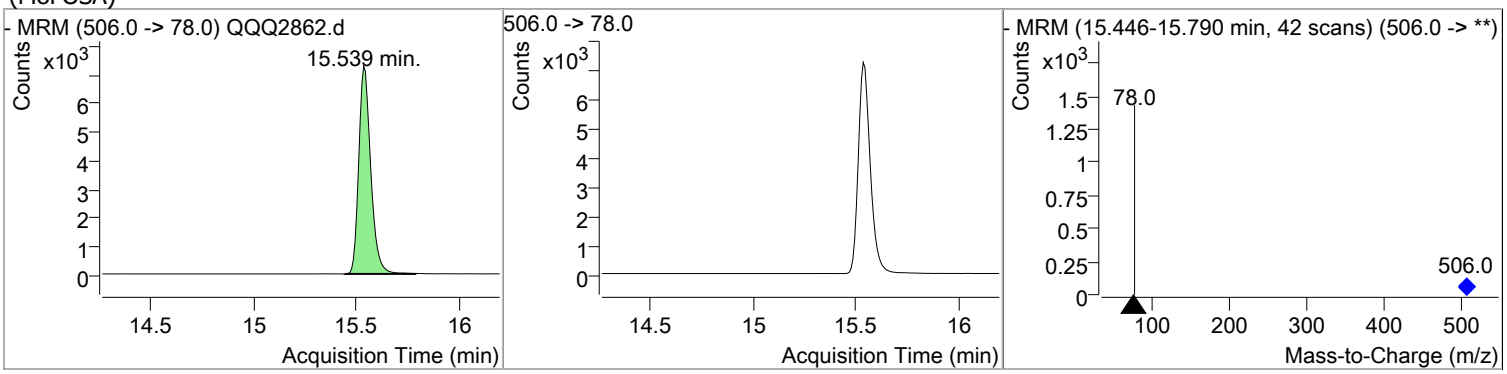
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	4.6744	15.54	0.35	31071	497.9 -> 47.9	7.8	5.9	8.8



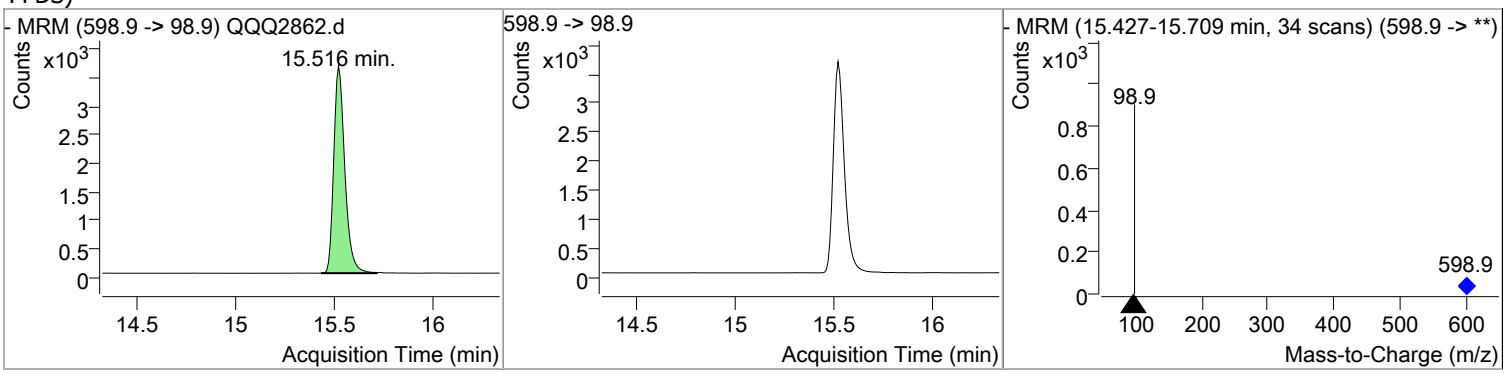




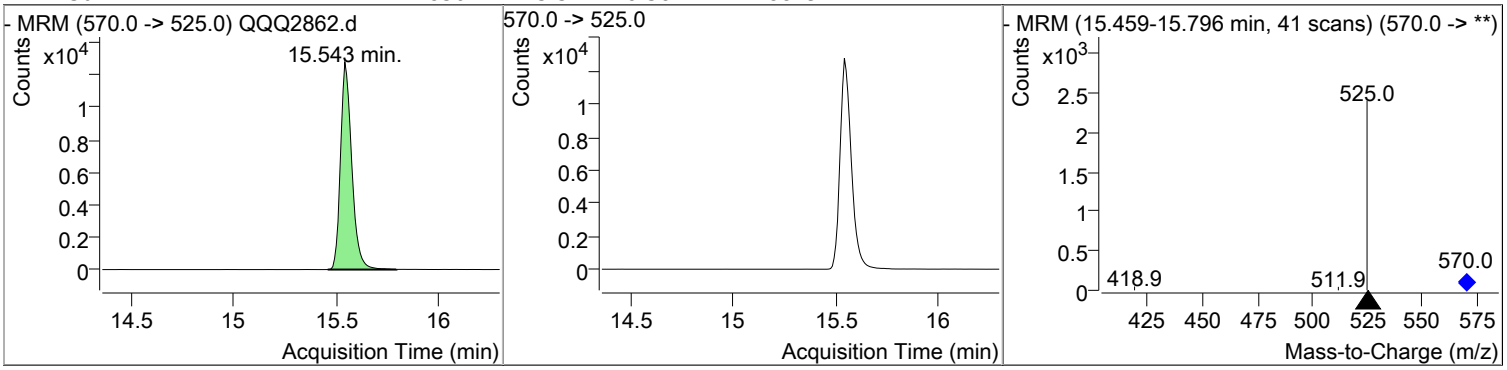
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	4.6172	15.54	0.34	29510				



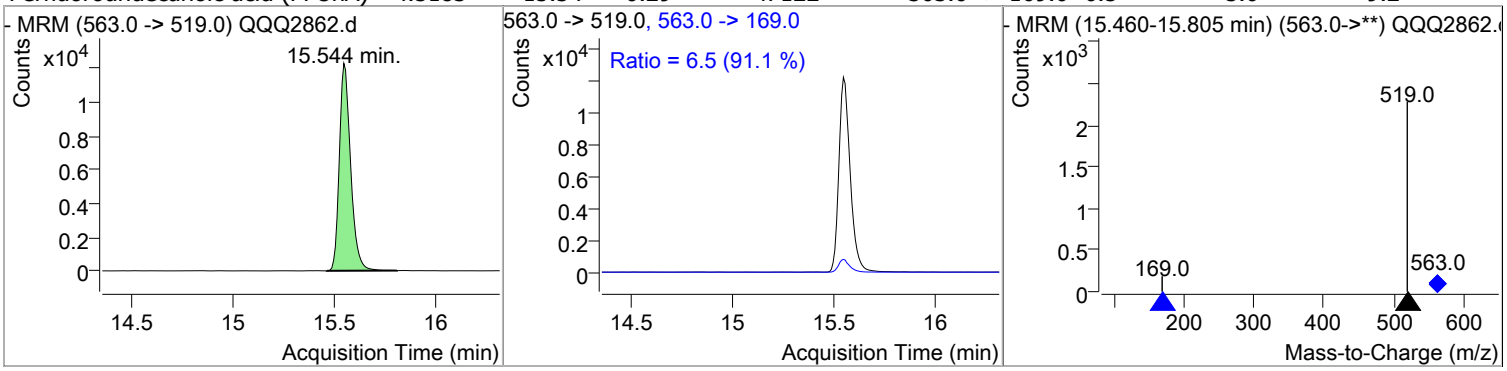
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	4.2433	15.52	0.30	14109				



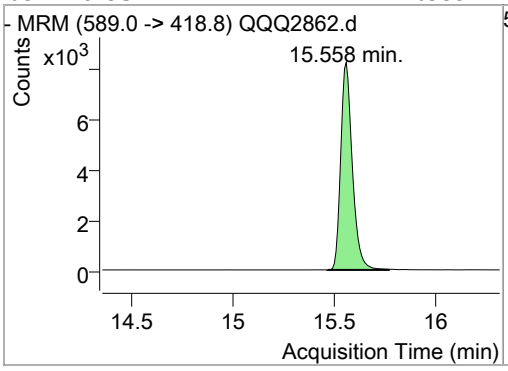
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	4.7856	15.54	0.30	48819				

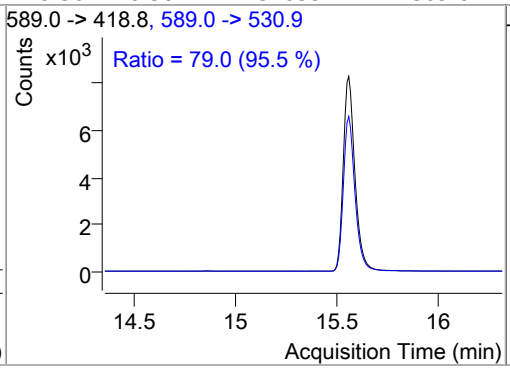


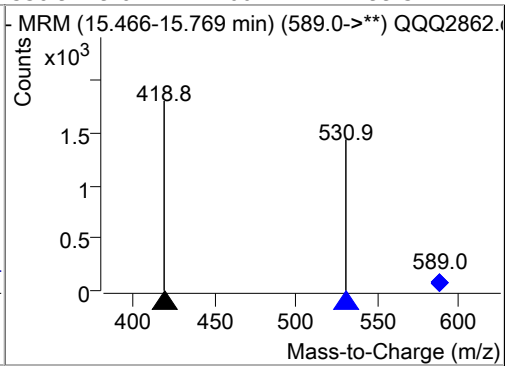
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	4.5183	15.54	0.29	47122	563.0 -> 169.0	6.5	5.0	9.2



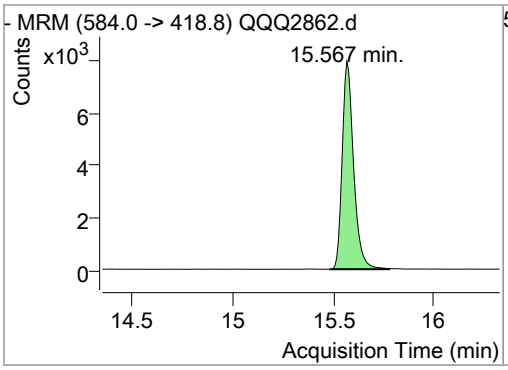
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	4.6955	15.56	0.30	32855	589.0 -> 530.9	79.0	66.2	99.3

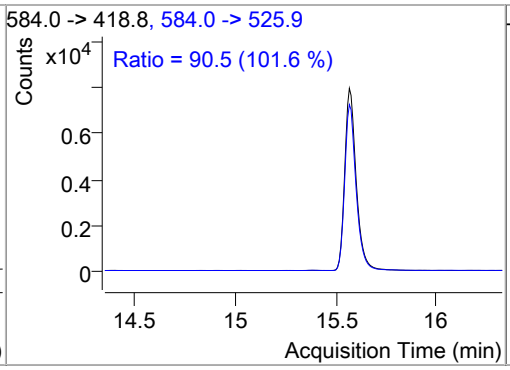


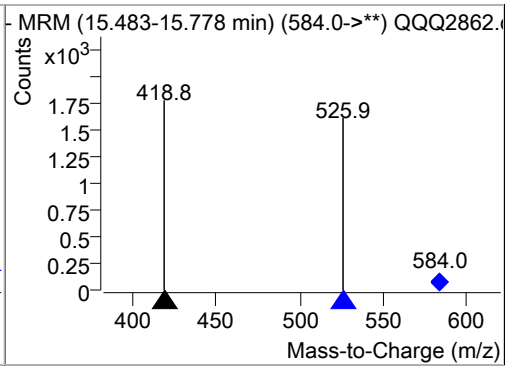




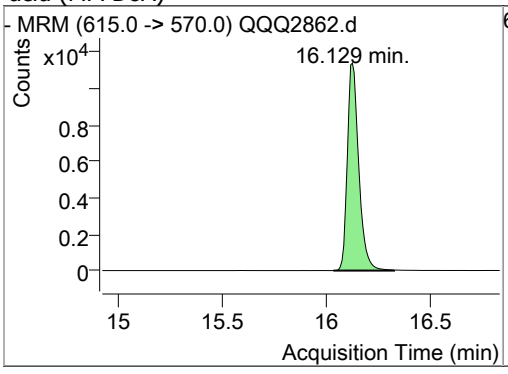
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	4.6403	15.57	0.30	31321	584.0 -> 525.9	90.5	71.3	107.0

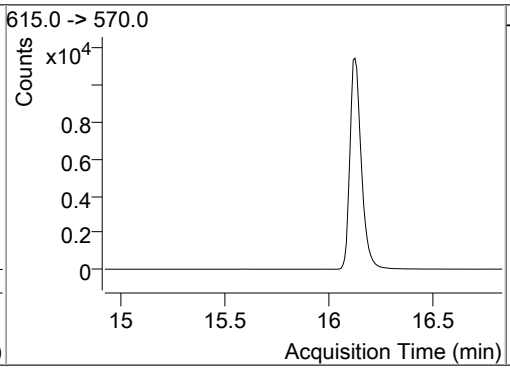


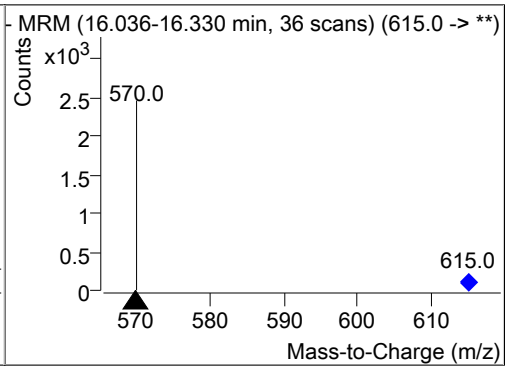




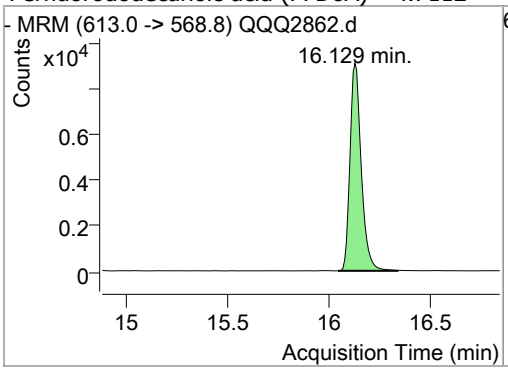
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	4.3786	16.13	0.35	43737				

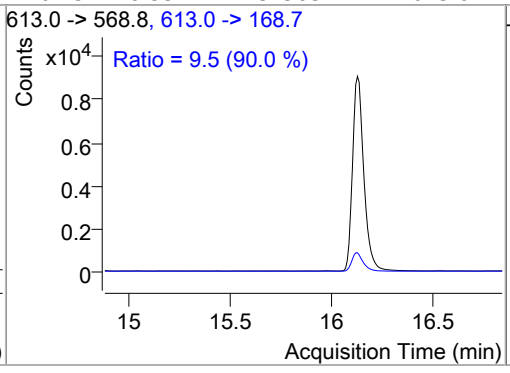


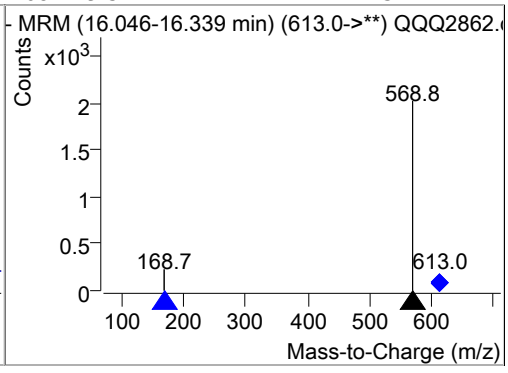




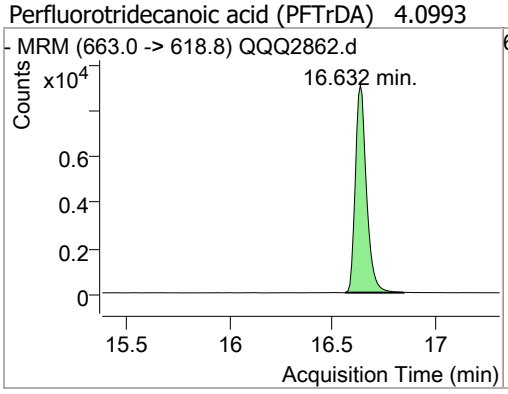
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	4.7112	16.13	0.35	34905	613.0 -> 168.7	9.5	7.4	13.7

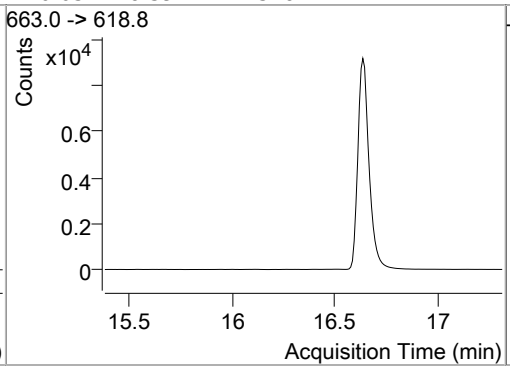


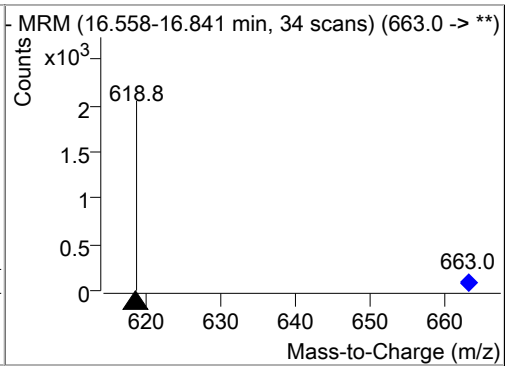




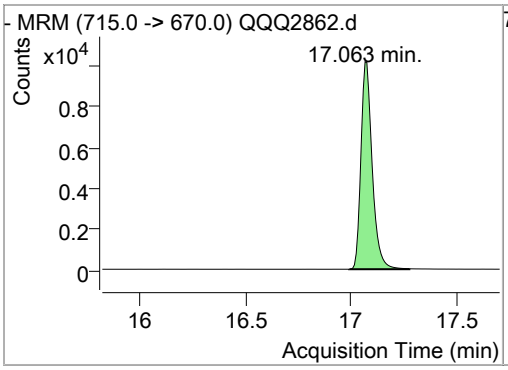
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	4.0993	16.63	0.39	34024				

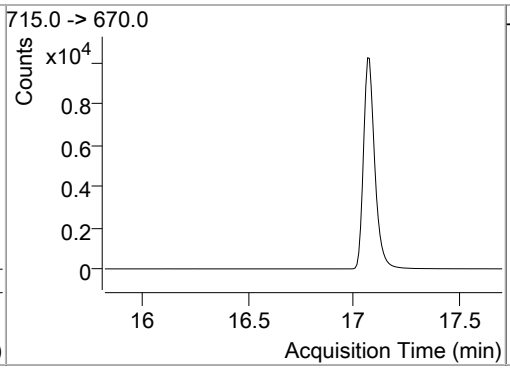


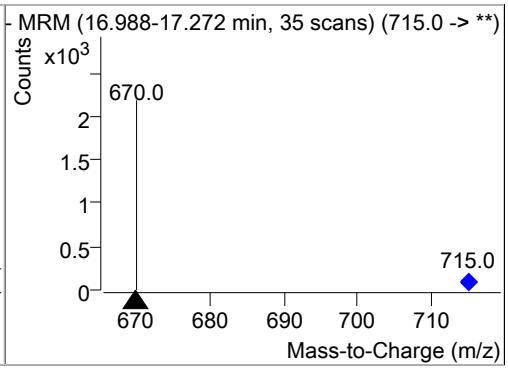




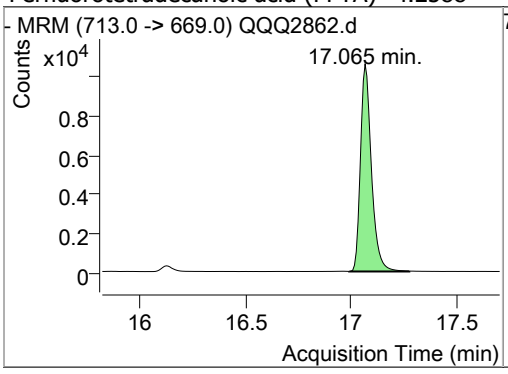
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	4.0291	17.06	0.43	37530				

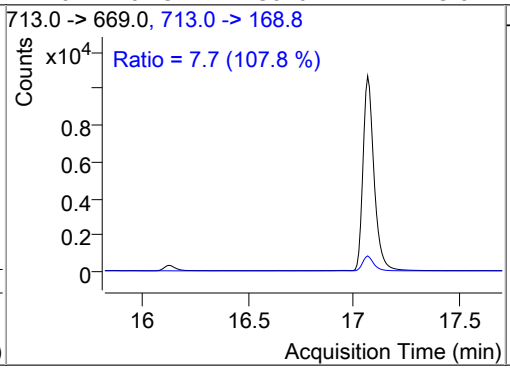


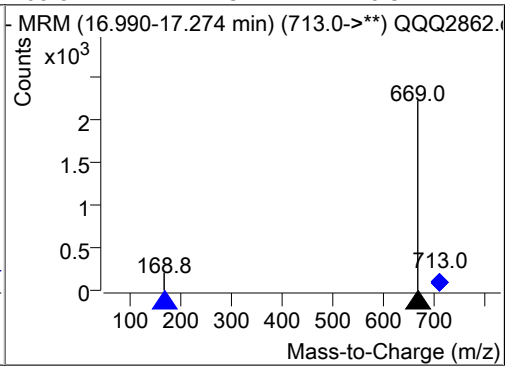




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	4.2588	17.07	0.43	38264	713.0 -> 168.8	7.7	5.7	8.5







METHOD BLANK RAW DATA

SDG: 19L0685
CLASS: PFAS
METHOD: EPA 537m

FORM I

METHOD BLANK DATA SHEET

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	BL91039-BLK1	File ID:	QQQ2843.d
Prepared:	12/18/19 16:57	Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Analyzed:	12/20/19 05:34	Instrument:	LCQQQ		
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023

CAS NO.	COMPOUND	CONC. (ng/L)	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00	U
307-24-4	Perfluorohexanoic acid (PFHxA)	2.00	U
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.00	U
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.00	U
335-67-1	Perfluorooctanoic acid (PFOA)	2.00	U
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00	U
375-95-1	Perfluorononanoic acid (PFNA)	2.00	U
335-76-2	Perfluorodecanoic acid (PFDA)	2.00	U
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.00	U
307-55-1	Perfluorododecanoic acid (PFDoA)	2.00	U
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	2.00	U
376-06-7	Perfluorotetradecanoic acid (PFTA)	2.00	U
2355-31-9	N-MeFOSAA	2.00	U
2991-50-6	N-EtFOSAA	2.00	U
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.00	U
754-91-6	Perfluoro-1-octanesulfonamide (FOSA)	2.00	U
375-92-8	Perfluoro-1-heptanesulfonic acid (PFHpS)	2.00	U
335-77-3	Perfluoro-1-decanesulfonic acid (PFDS)	2.00	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	5.00	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	2.00	U
375-22-4	Perfluoro-n-butanoic acid (PFBA)	2.00	U

SYSTEM MONITORING COMPOUND	ADDED (ng/L)	CONC (ng/L)	% REC	QC LIMITS	Q
M3PFBS	74.3	51.6	69.5	25 - 150	
M5PFHxA	80.0	54.0	67.5	25 - 150	
M4PFHpA	80.0	52.9	66.1	25 - 150	
M3PFHxS	75.7	51.3	67.8	25 - 150	
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.0	52.6	65.7	25 - 150	
M6PFDA	80.0	49.5	61.8	25 - 150	
M7PFUdA	80.0	58.1	72.7	25 - 150	
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	80.0	45.8	57.2	25 - 150	

FORM I

METHOD BLANK DATA SHEET

EPA 537m

Laboratory:	York Analytical Laboratories, Inc.			SDG:	19L0685
Client:	Chazen Environmental Services (Poughkeepsie)			Project:	41433.00 TASK 0600 Katonah Municipal Well
Matrix:	Water	Laboratory ID:	BL91039-BLK1	File ID:	QQQ2843.d
Prepared:	12/18/19 16:57	Preparation:	SPE Ext-PFAS-EPA 537.1M	Initial/Final:	125 mL / 1 mL
Analyzed:	12/20/19 05:34	Instrument:	LCQQQ		
Batch:	BL91039	Sequence:	Y9L1909	Calibration:	YL90023

SYSTEM MONITORING COMPOUND	ADDED (ng/L)	CONC (ng/L)	% REC	QC LIMITS	Q
M2PFTeDA	80.0	41.5	51.8	10 - 150	
Perfluoro-n-[13C4]butanoic acid (MPFBA)	80.0	55.4	69.2	25 - 150	
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	76.6	51.7	67.6	25 - 150	
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	80.0	57.3	71.7	25 - 150	
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.0	50.7	63.3	10 - 150	
d3-N-MeFOSAA	80.0	53.0	66.2	25 - 150	
d5-N-EtFOSAA	80.0	52.6	65.8	25 - 150	
M2-6:2 FTS	75.9	79.9	105	25 - 150	
M2-8:2 FTS	76.6	78.9	103	25 - 150	
M9PFNA	80.0	54.7	68.4	25 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
MPFOA	243614.1	13.12667	229731.7	13.08475	

Quantitation Results Report (Not Reviewed)

Data File	QQQ2843.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 5:34:30 AM
Sample Name	BL91039-BLK1	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

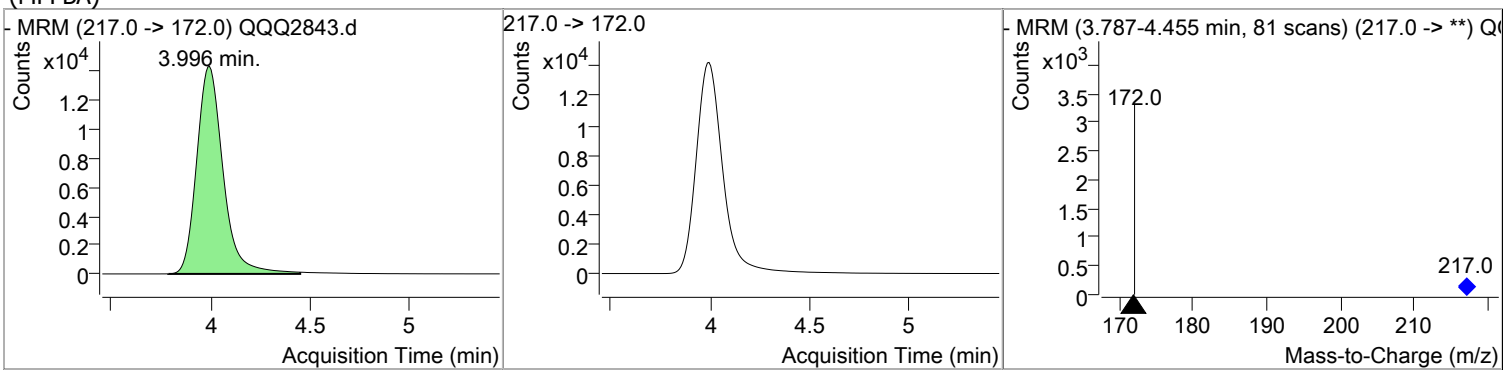
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.127	417.0 -> 372.0	243614	10.0000	ng/ml	0.093
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.996	217.0 -> 172.0	132035	6.9193	ng/ml	-0.192
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.19%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.031	268.0 -> 223.0	186413	7.1656	ng/ml	-0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 71.66%		
M3PFBS	8.777	302.0 -> 79.9	52993	6.4530	ng/ml	-0.042
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 64.53%		
M2-4-2FTS	10.241	329.0 -> 309.0	71696	9.6141	ng/ml	-0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 96.14%		
M5PFHxA	10.387	318.0 -> 273.0	165476	6.7521	ng/ml	-0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 67.52%		
M4PFHpA	11.952	367.0 -> 322.0	44777	6.6087	ng/ml	0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 66.09%		
M3PFHxS	12.085	402.0 -> 80.0	36181	6.4137	ng/ml	0.042
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 64.14%		
M2-6-2FTS	13.057	429.0 -> 409.0	60329	9.9925	ng/ml	0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 99.92%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.126	421.0 -> 376.0	84718	6.5741	ng/ml	0.101
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 65.74%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.074	472.0 -> 427.0	90214	6.8420	ng/ml	0.170
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 68.42%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.081	507.0 -> 80.0	27937	6.4682	ng/ml	0.169
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 64.68%		
M2-8-2FTS	14.854	529.0 -> 509.0	46547	9.8684	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 98.68%		
M6PFDA	14.863	519.0 -> 473.9	64941	6.1814	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 61.81%		
d3-N-MeFOSAA	15.206	573.0 -> 418.8	55876	6.6249	ng/ml	0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 66.25%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	42578	6.3341	ng/ml	0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.34%		
M7PFUdA	15.543	570.0 -> 525.0	77956	7.2659	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 72.66%		
d5-N-EtFOSAA	15.558	589.0 -> 418.8	48402	6.5771	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 65.77%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.120	615.0 -> 570.0	60140	5.7247	ng/ml	0.345
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 57.25%		
M2PFTeDA	17.055	715.0 -> 670.0	50792	5.1847	ng/ml	0.418
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 51.85%		

Target Compounds	QValue

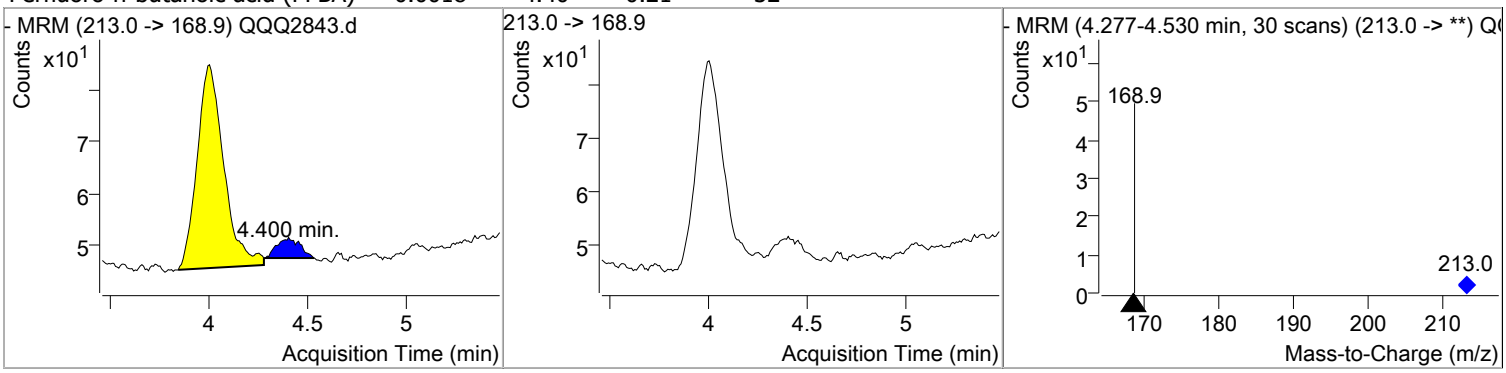
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.400	213.0 -> 168.9	32	0.0018	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	8.032	263.0 -> 219.0	408	0.0178	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.780	298.9 -> 79.9	58	0.0077	ng/ml	#	86
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.243	327.0 -> 307.0	46	0.0000	ng/ml		82
Perfluorohexanoic acid (PFHxA)	10.389	313.0 -> 268.9	222	0.0106	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.700	348.9 -> 79.9	36	0.0054	ng/ml	#	70
Perfluoroheptanoic acid (PFHpA)	11.953	363.0 -> 318.8	167	0.0105	ng/ml	#	89
Perfluorohexanesulfonic acid (PFHxS)	12.069	398.9 -> 79.9	35	0.0061	ng/ml	#	49
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.066	427.0 -> 407.0	214	0.0337	ng/ml		98
Perfluorooctanoic acid (PFOA)	13.127	413.0 -> 368.8	604	0.0488	ng/ml		98
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.190	448.9 -> 80.0	19	0.0045	ng/ml	#	64
Perfluorononanoic acid (PFNA)	14.099	463.0 -> 418.8	55	0.0055	ng/ml		99
Perfluorooctanesulfonic acid (PFOS)	14.090	498.9 -> 79.9	43	0.0083	ng/ml	#	61
Perfluorononanesulfonate (L-PFNS)	14.601	548.9 -> 79.9	3	0.0008	ng/ml		22
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.719	527.0 -> 507.0	3	0.0000	ng/ml	#	66
Perfluorodecanoic acid (PFDA)	14.712	513.0 -> 468.8	6	0.0007	ng/ml		52
N-MeFOSAA	15.206	570.0 -> 418.9	63	0.0070	ng/ml	#	70
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	32	0.0045	ng/ml	#	73
Perfluoro-1-decanesulfonate (L-PFDS)	15.314	598.9 -> 98.9	1	0.0004	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.173	563.0 -> 519.0	36	0.0033	ng/ml		79
N-EtFOSAA	15.239	584.0 -> 418.8	5	0.0007	ng/ml	#	50
Perfluorododecanoic acid (PFDoA)	16.020	613.0 -> 568.8	13	0.0016	ng/ml	#	91
Perfluorotridecanoic acid (PFTrDA)	16.363	663.0 -> 618.8	5	0.0006	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.065	713.0 -> 669.0	105	0.0111	ng/ml		99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

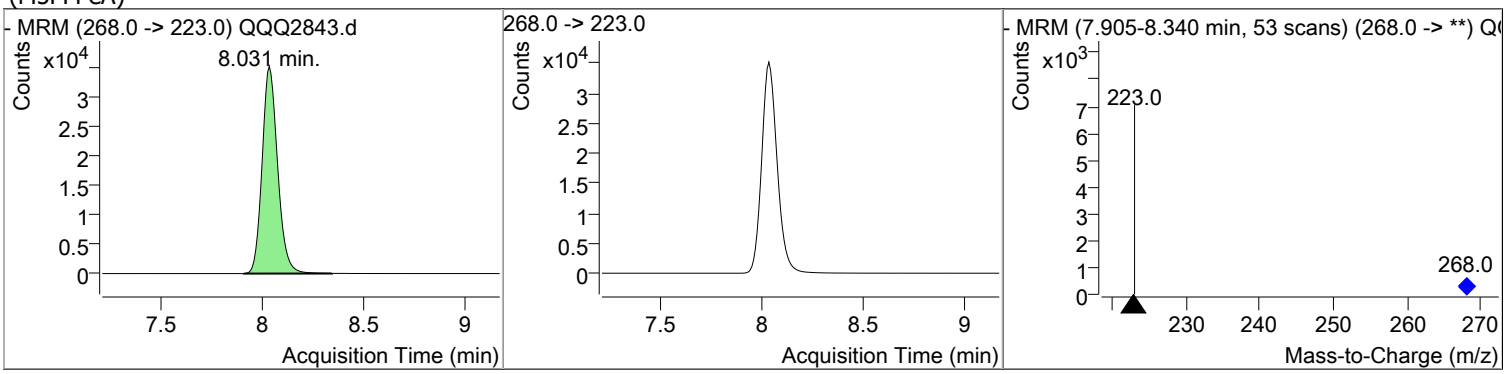
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	6.9193	4.00	-0.19	132035				



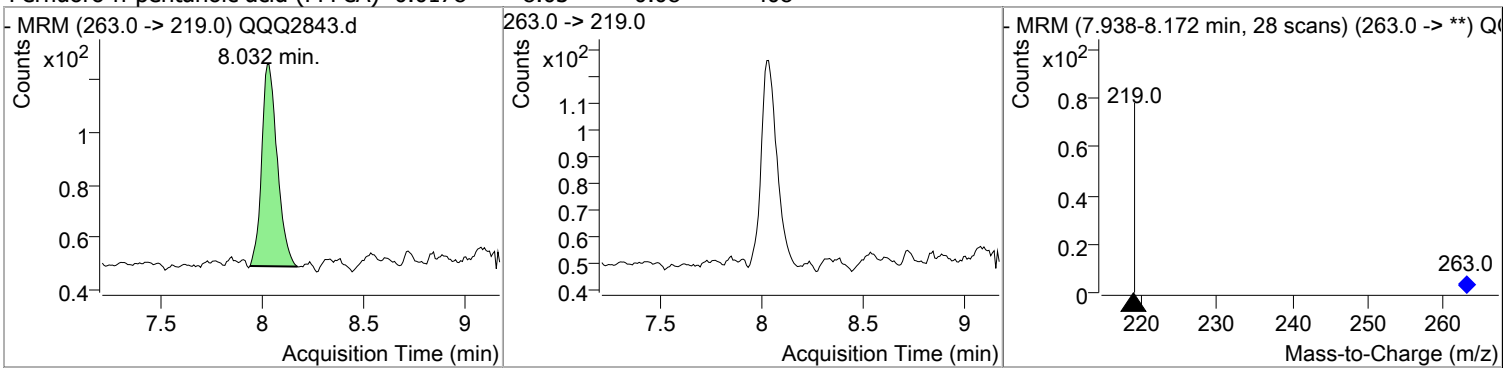
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	0.0018	4.40	0.21	32				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	7.1656	8.03	-0.08	186413				

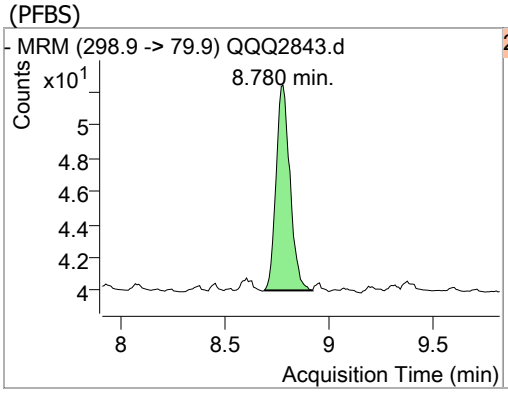


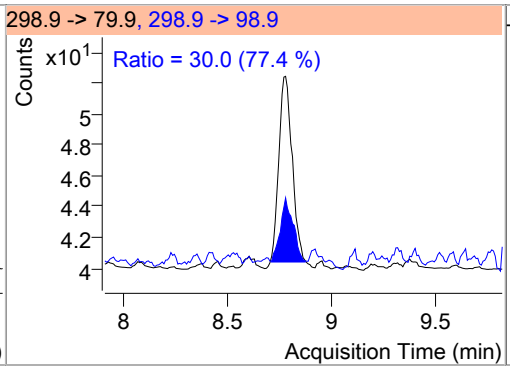
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	0.0178	8.03	-0.08	408				

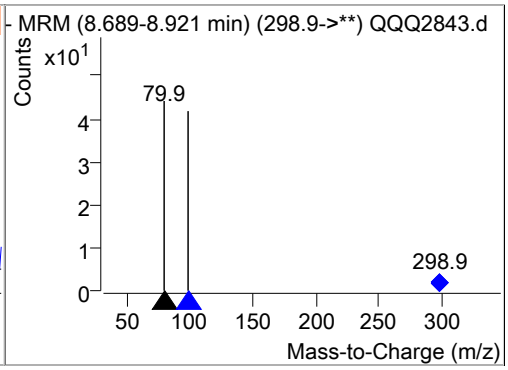


Quantitation Results Report (Not Reviewed)

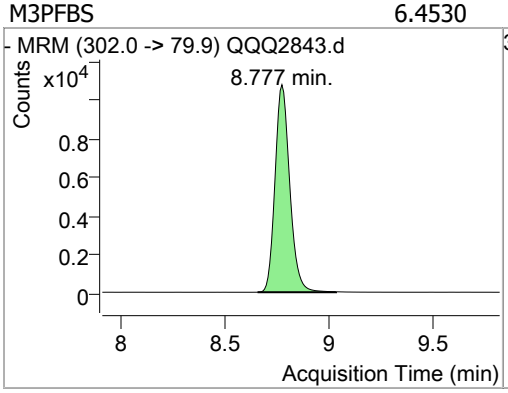
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	0.0077	8.78	-0.03	58	298.9 -> 98.9	30.0	31.0	46.5

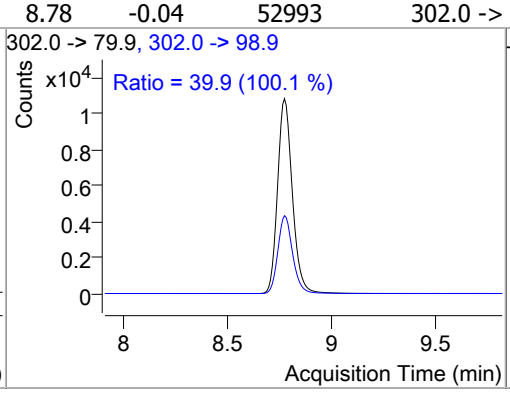


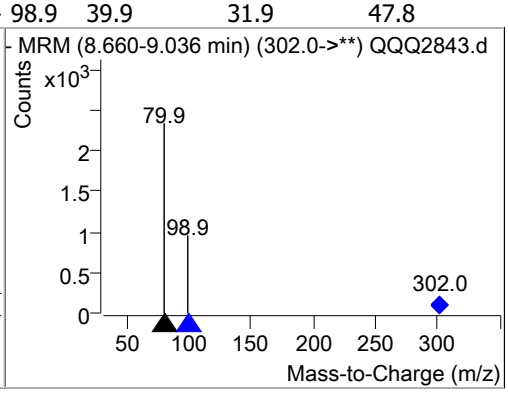




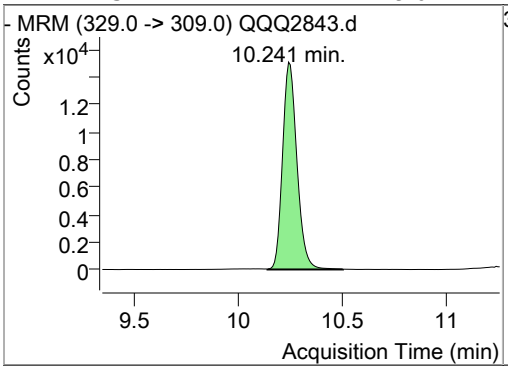
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	6.4530	8.78	-0.04	52993	302.0 -> 98.9	39.9	31.9	47.8

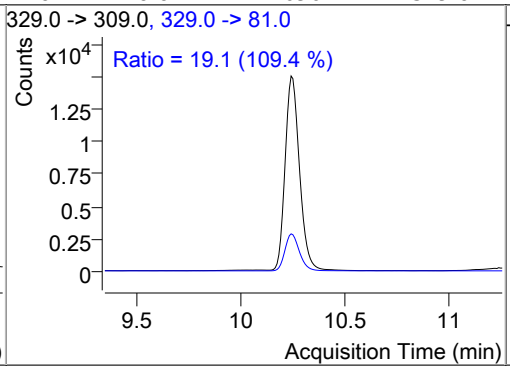


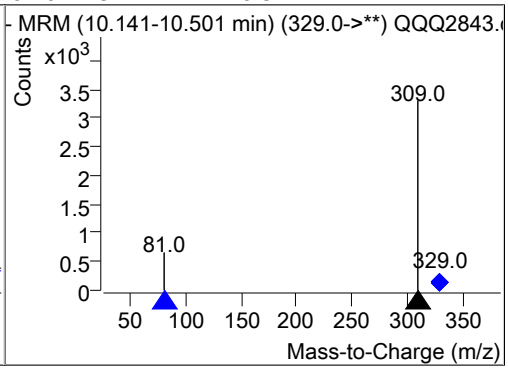




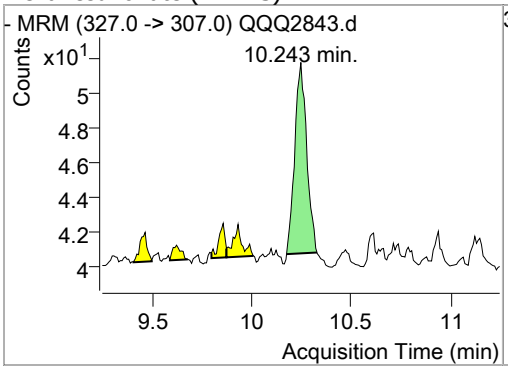
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	9.6141	10.24	-0.02	71696	329.0 -> 81.0	19.1	10.5	24.4

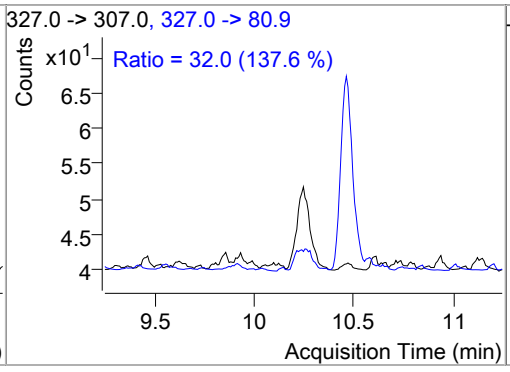


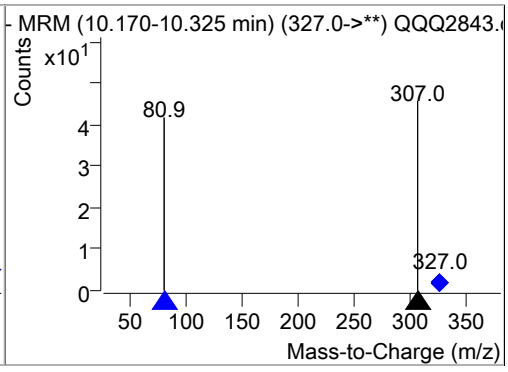




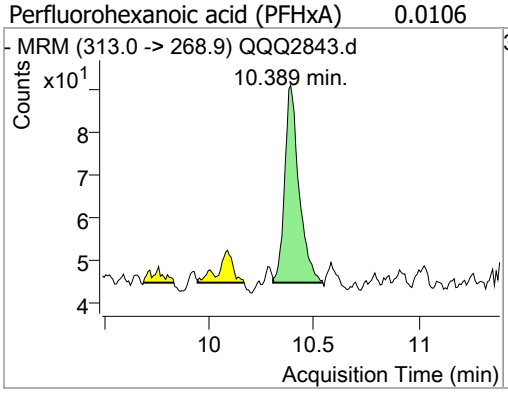
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	0.0000	10.24	-0.02	46	327.0 -> 80.9	32.0	13.9	32.5

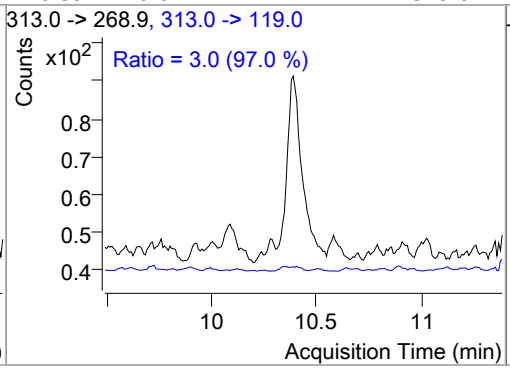


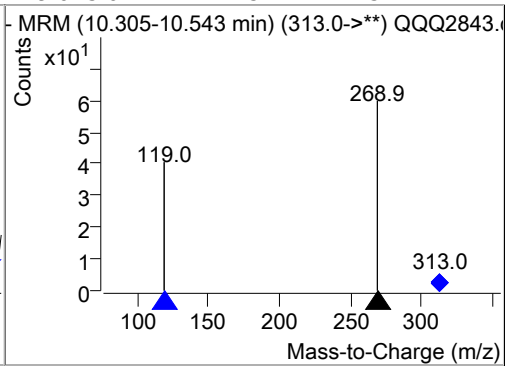




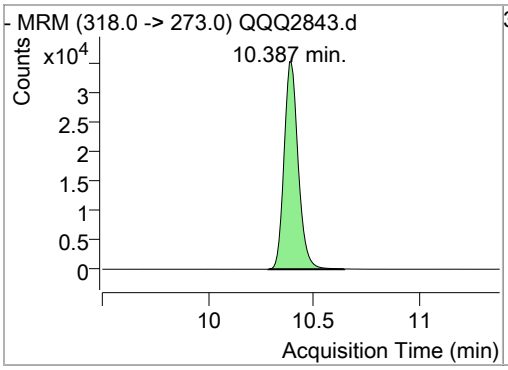
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	0.0106	10.39	-0.01	222	313.0 -> 119.0	3.0	2.5	3.7

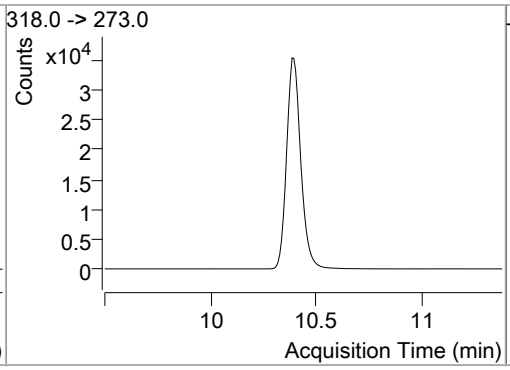


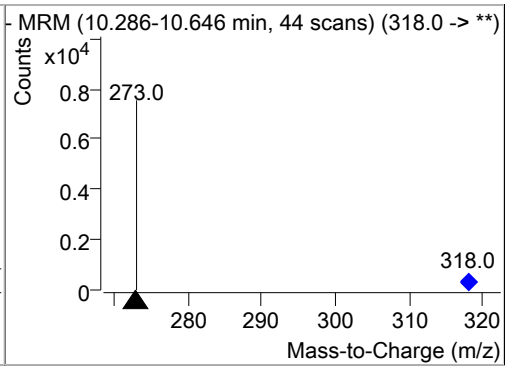




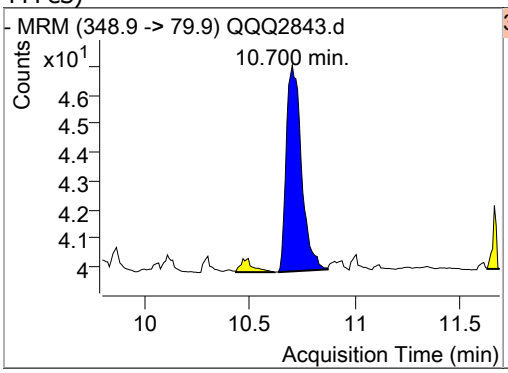
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	6.7521	10.39	-0.02	165476				

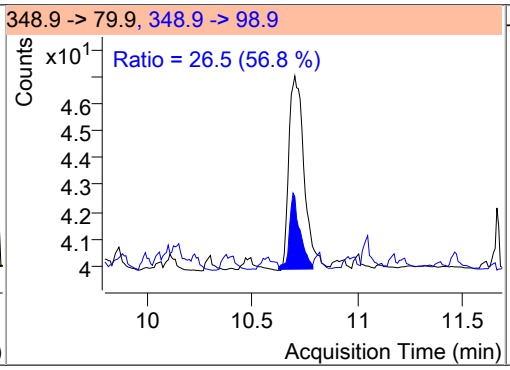


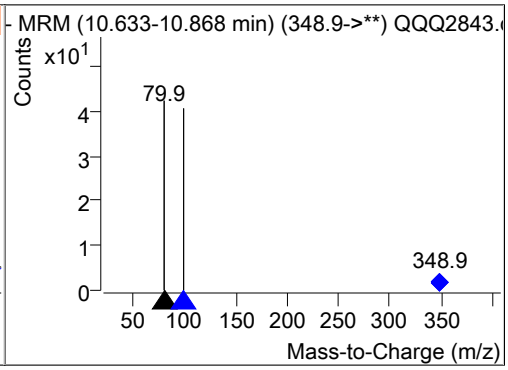




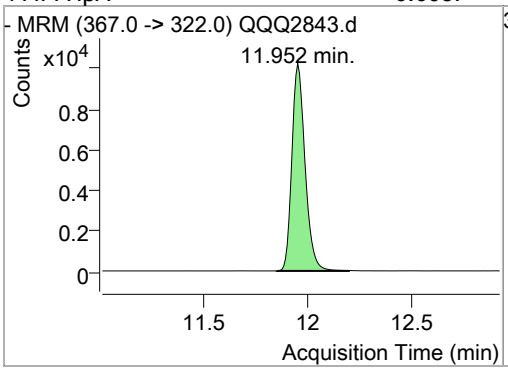
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	0.0054	10.70	0.00	36	348.9 -> 98.9	26.5	37.3	56.0

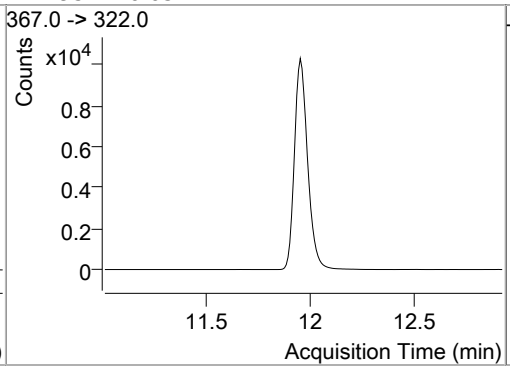


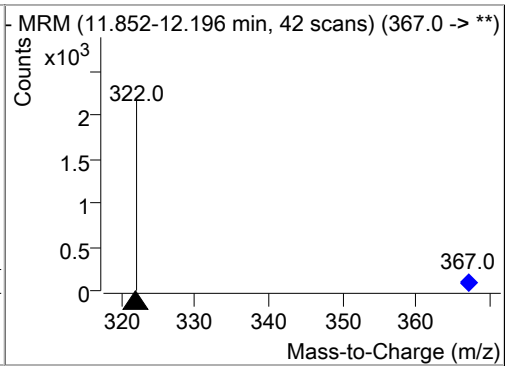




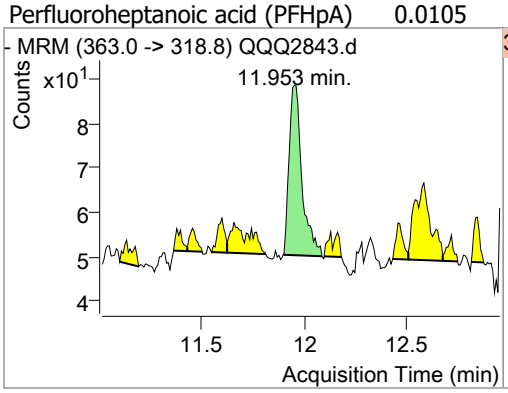
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	6.6087	11.95	0.03	44777				

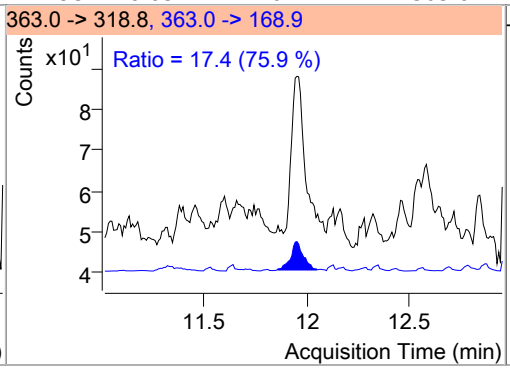


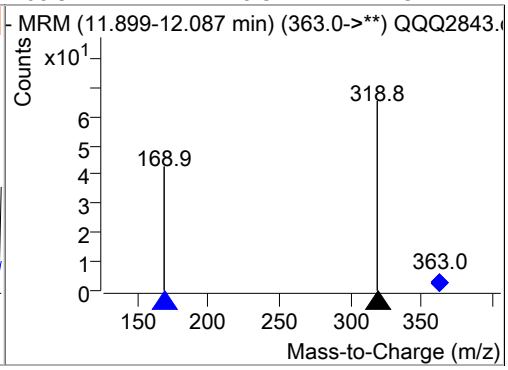




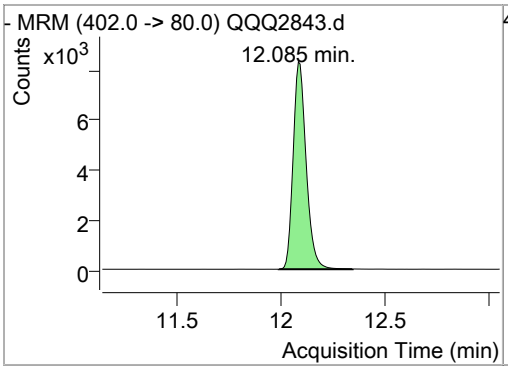
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	0.0105	11.95	0.03	167	363.0 -> 168.9	17.4	18.3	27.5

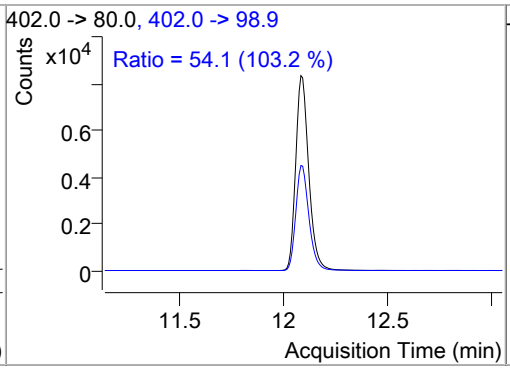


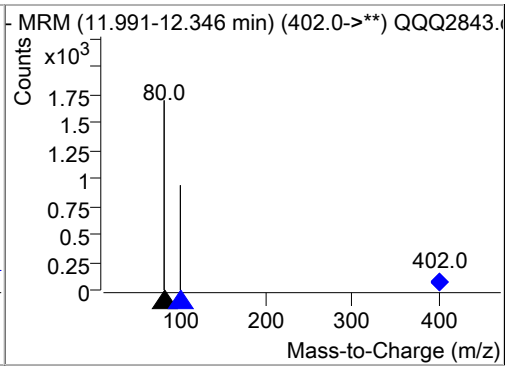




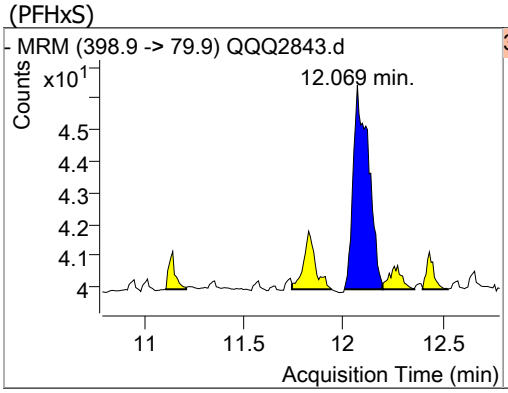
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	6.4137	12.08	0.04	36181	402.0 -> 98.9	54.1	42.0	62.9

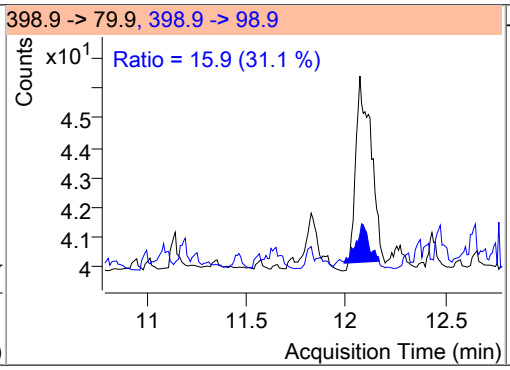


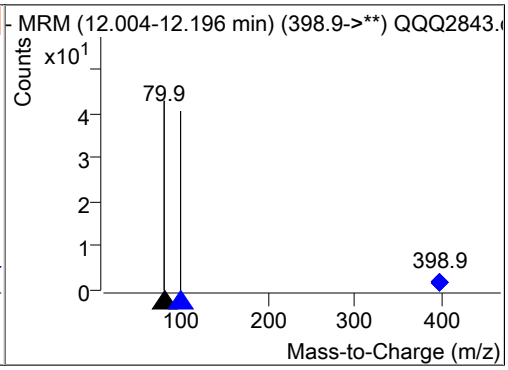




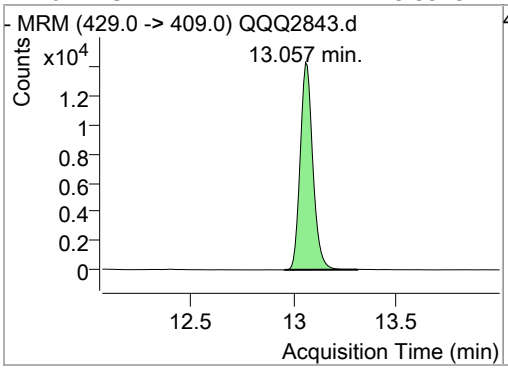
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	0.0061	12.07	0.03	35	398.9 -> 98.9	15.9	41.0	61.5

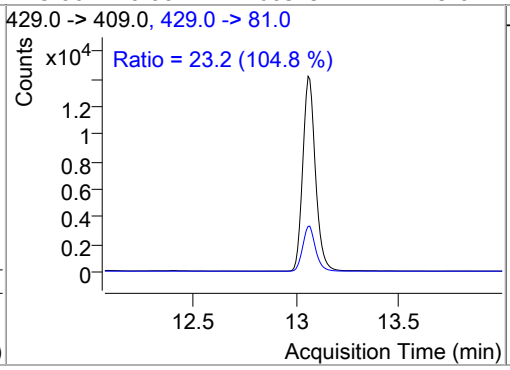


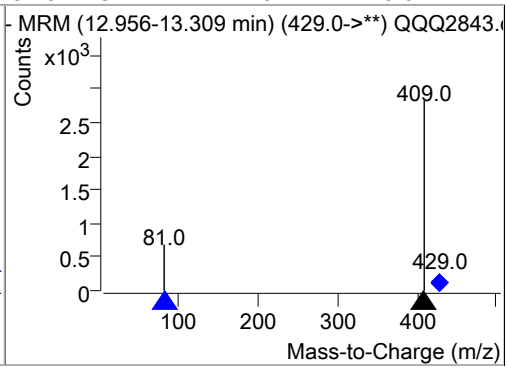




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	9.9925	13.06	0.08	60329	429.0 -> 81.0	23.2	17.8	26.6

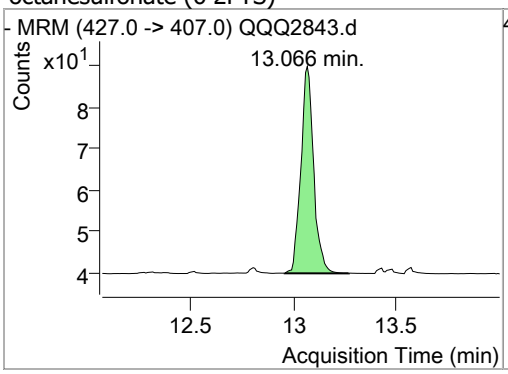


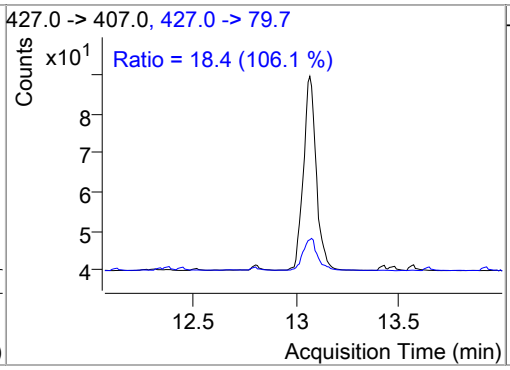


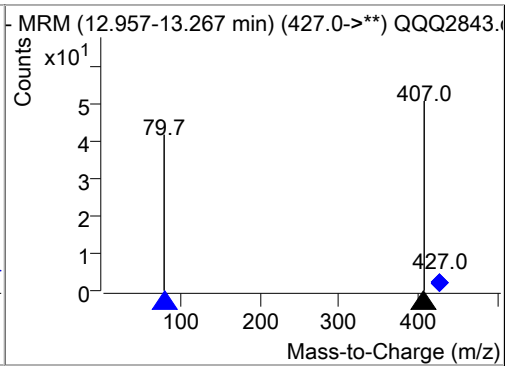


Quantitation Results Report (Not Reviewed)

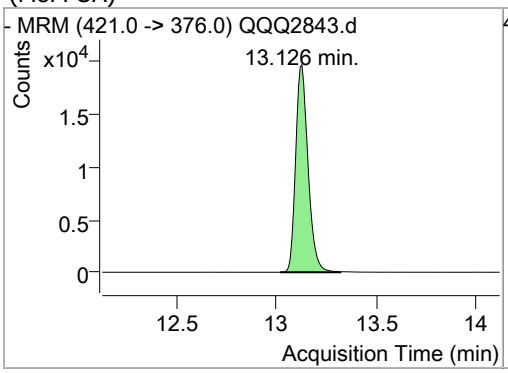
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	0.0337	13.07	0.09	214	427.0 -> 79.7	18.4	13.9	20.8

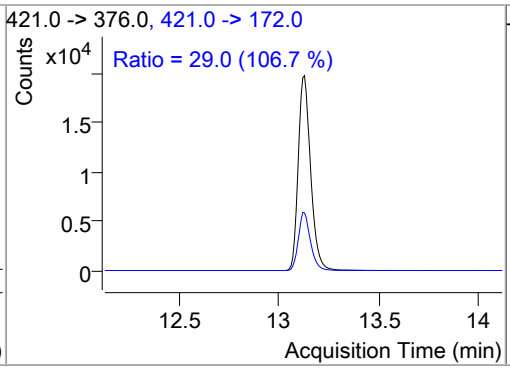


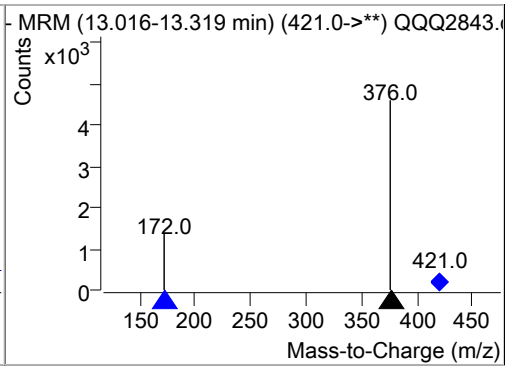




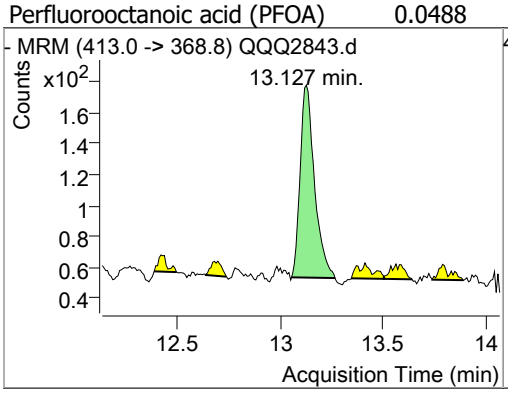
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	6.5741	13.13	0.10	84718	421.0 -> 172.0	29.0	21.7	32.6

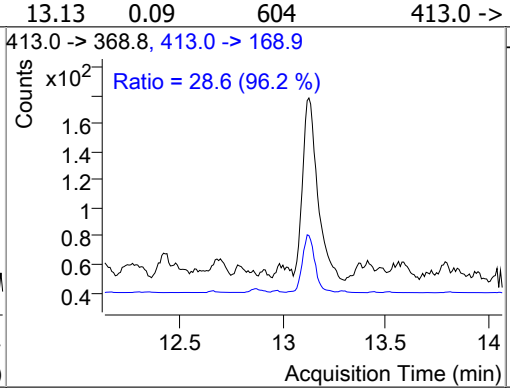


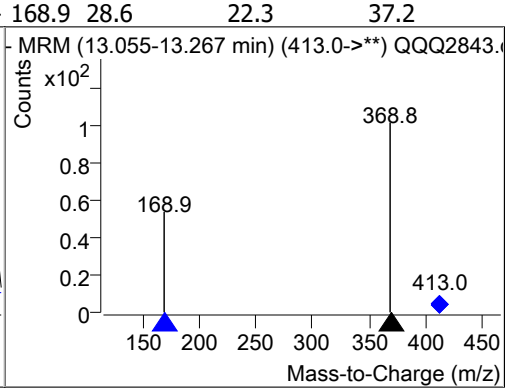




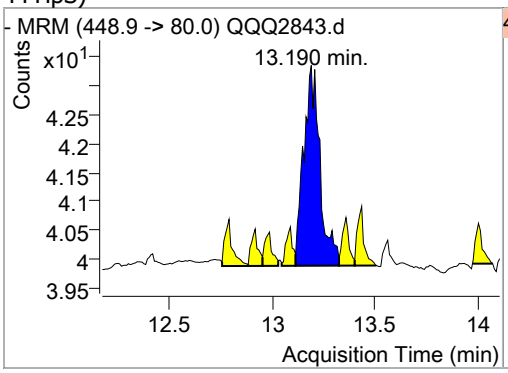
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	0.0488	13.13	0.09	604	413.0 -> 168.9	28.6	22.3	37.2

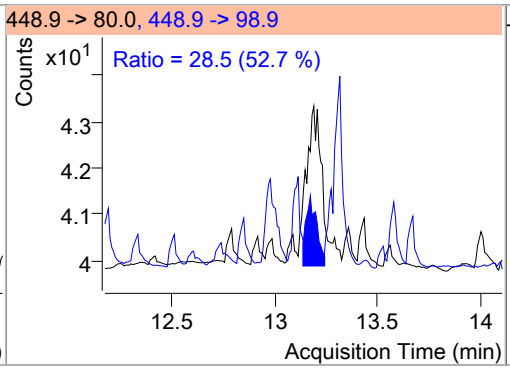


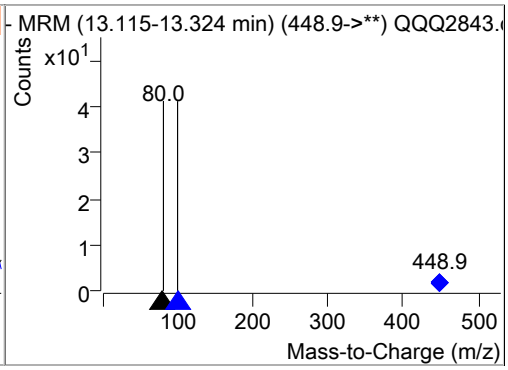




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	0.0045	13.19	0.11	19	448.9 -> 98.9	28.5	43.3	64.9

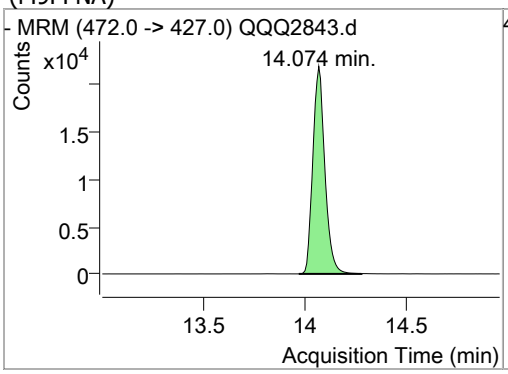


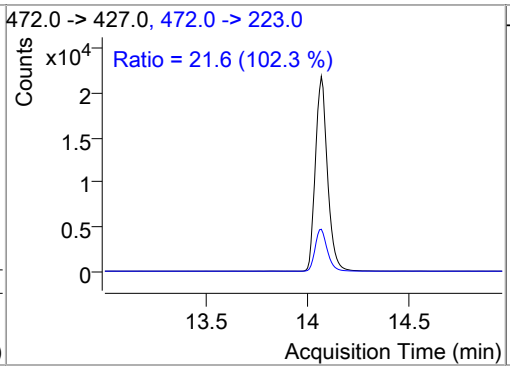


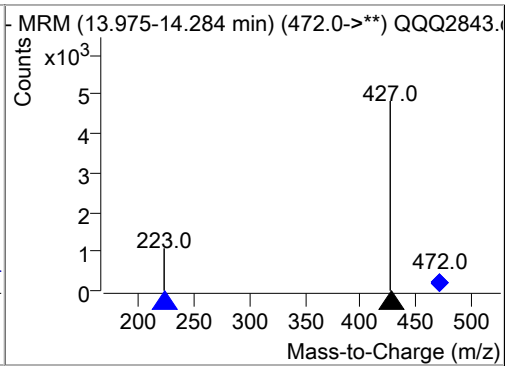


Quantitation Results Report (Not Reviewed)

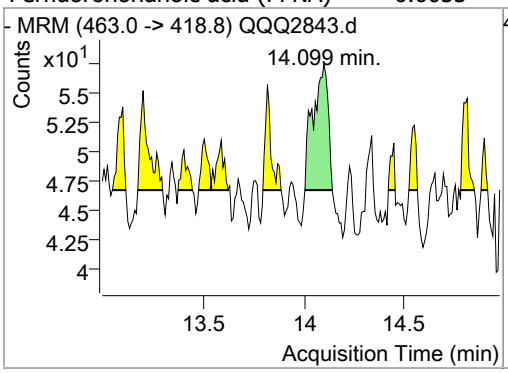
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	6.8420	14.07	0.17	90214	472.0 -> 223.0	21.6	16.9	25.4

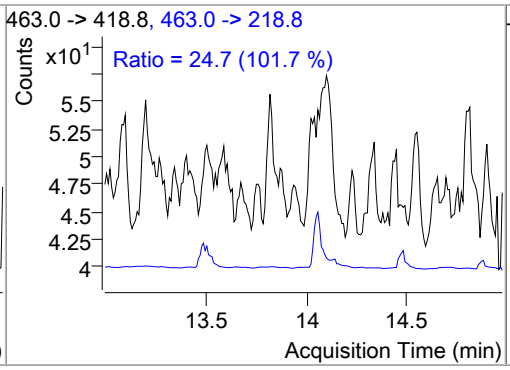


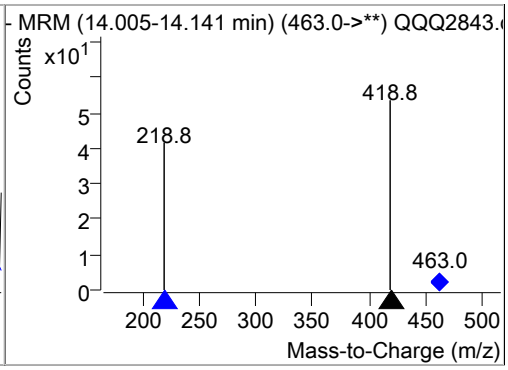




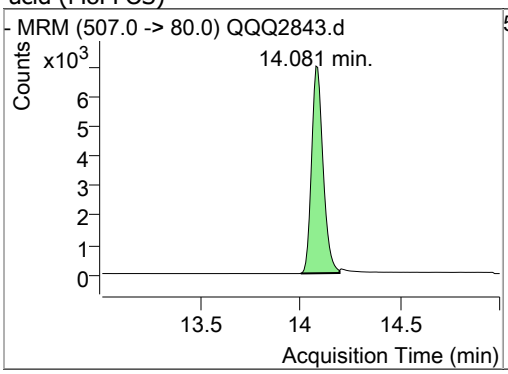
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	0.0055	14.10	0.19	55	463.0 -> 218.8	24.7	19.4	29.1

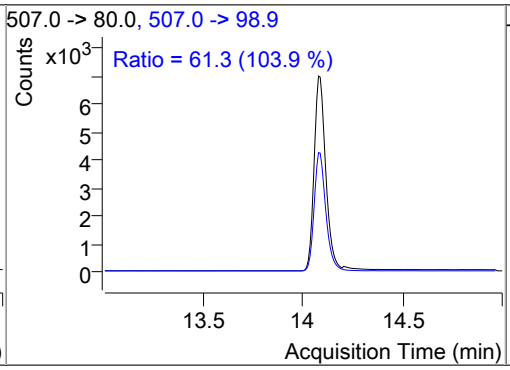


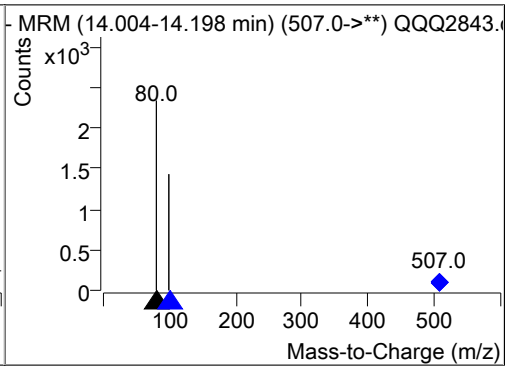




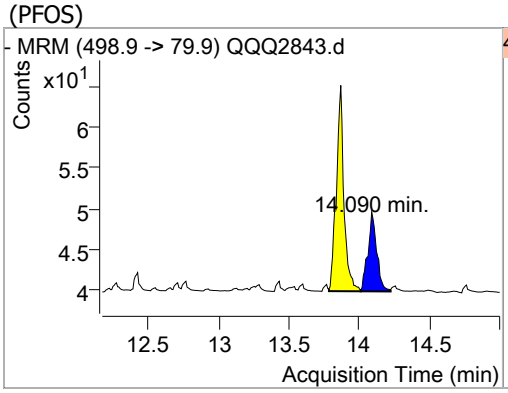
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	6.4682	14.08	0.17	27937	507.0 -> 98.9	61.3	47.2	70.8

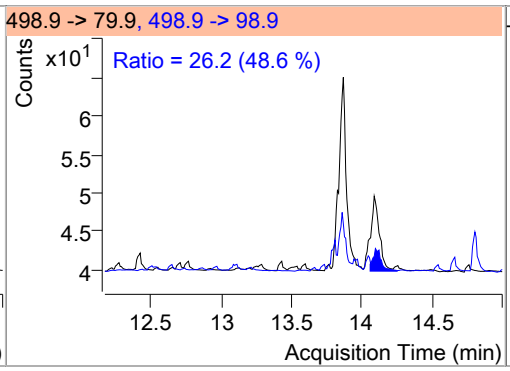


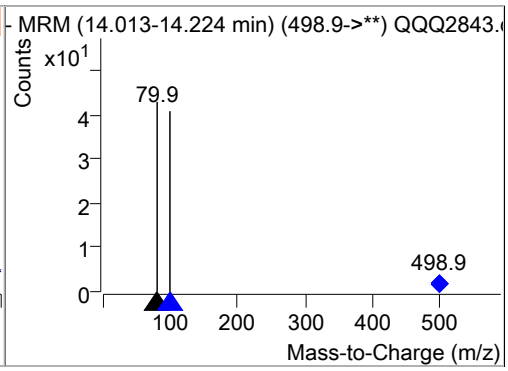




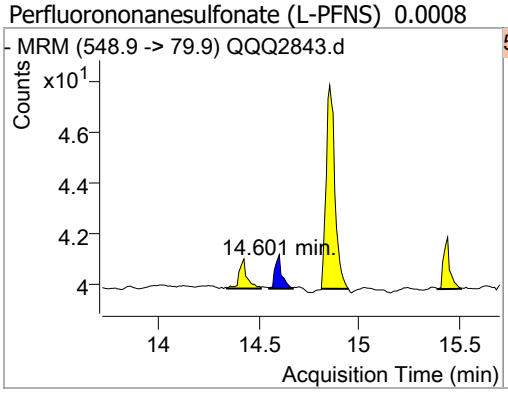
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	0.0083	14.09	0.18	43	498.9 -> 98.9	26.2	43.1	64.6

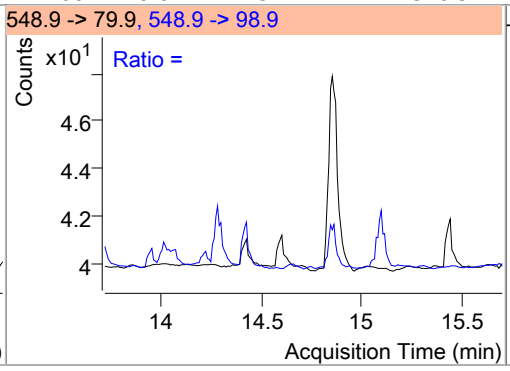


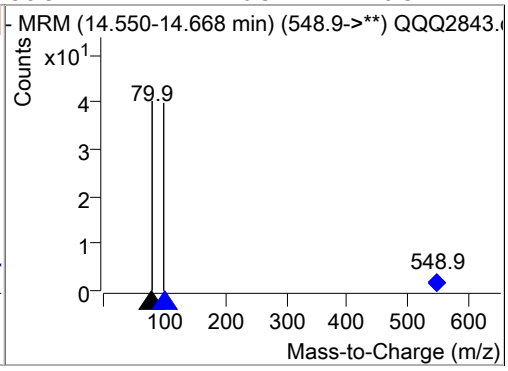




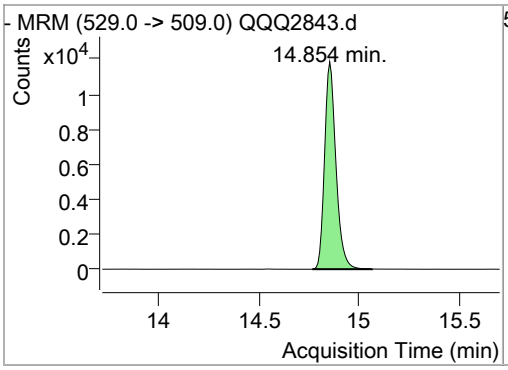
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	0.0008	14.60	-0.02	3	548.9 -> 98.9		46.9	70.3

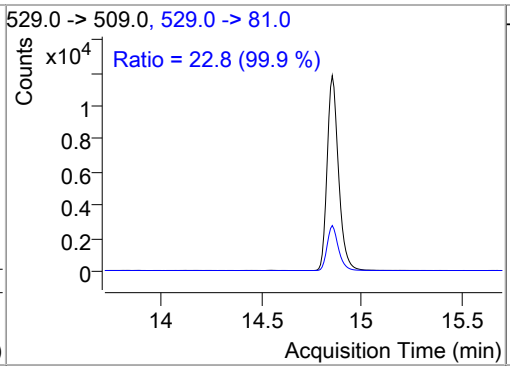


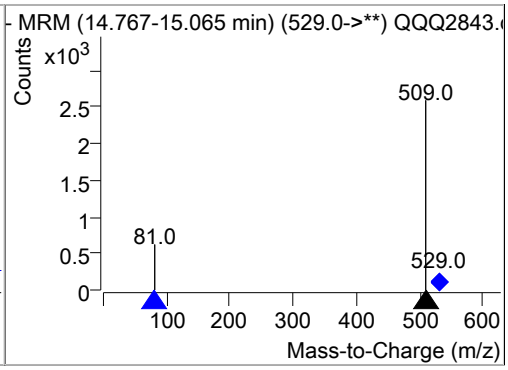




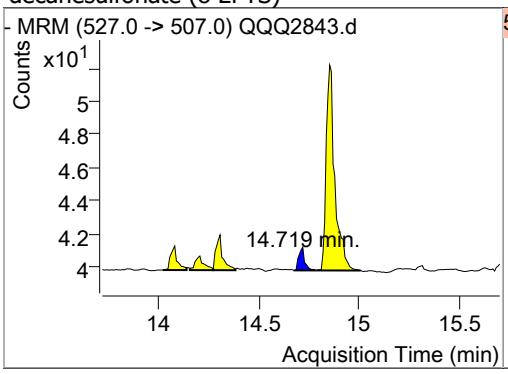
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	9.8684	14.85	0.24	46547	529.0 -> 81.0	22.8	18.3	27.4

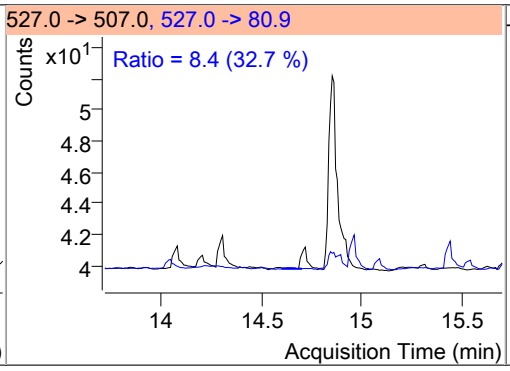


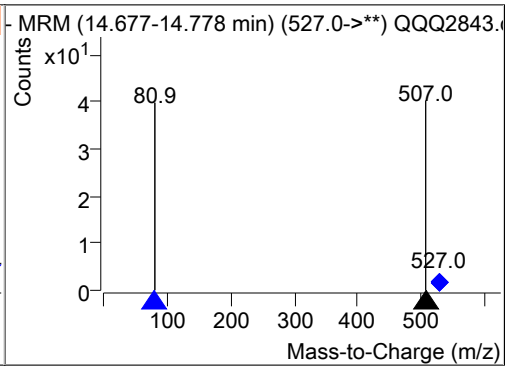




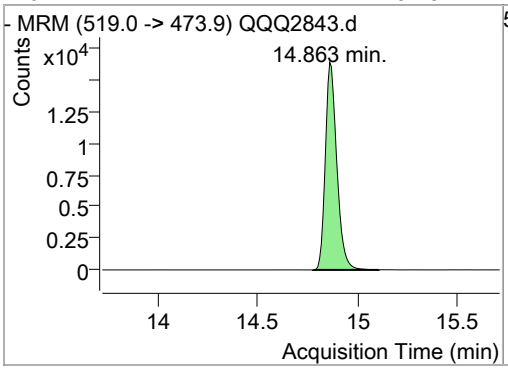
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	0.0000	14.72	0.10	3	527.0 -> 80.9	8.4	20.6	30.9

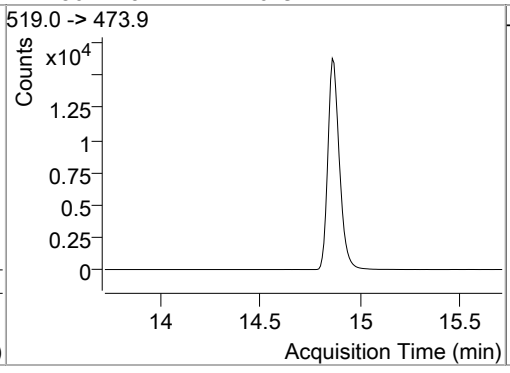


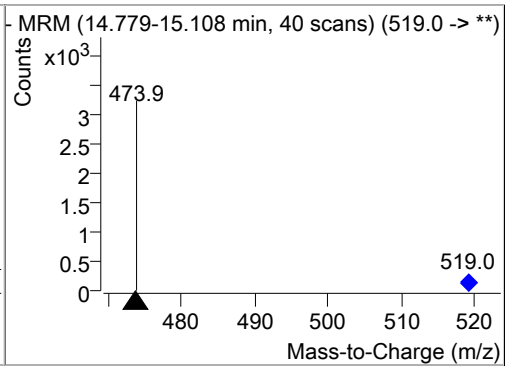




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	6.1814	14.86	0.24	64941				

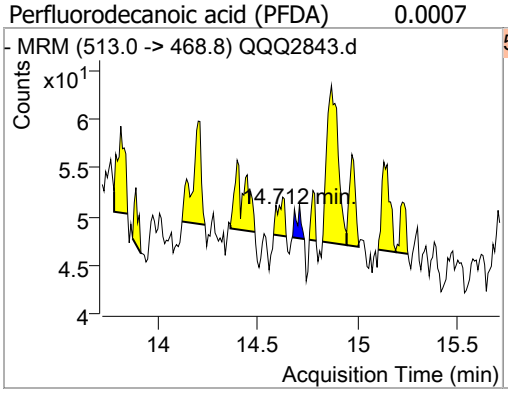


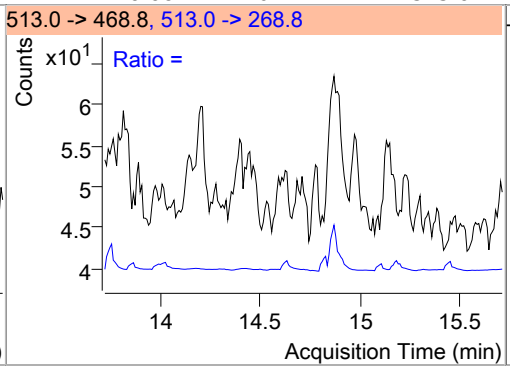


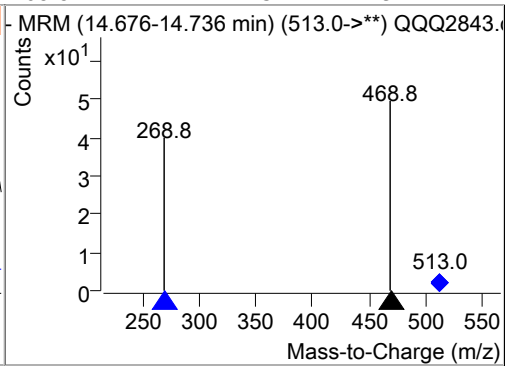


Quantitation Results Report (Not Reviewed)

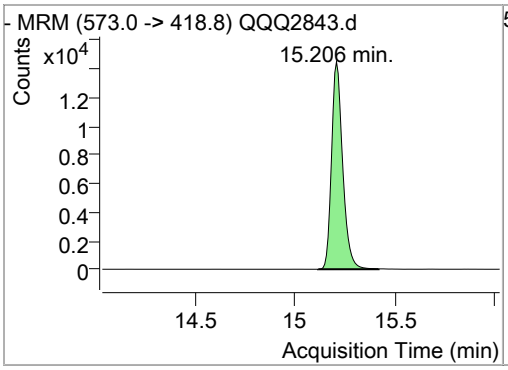
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	0.0007	14.71	0.08	6	513.0 -> 268.8		17.5	29.1

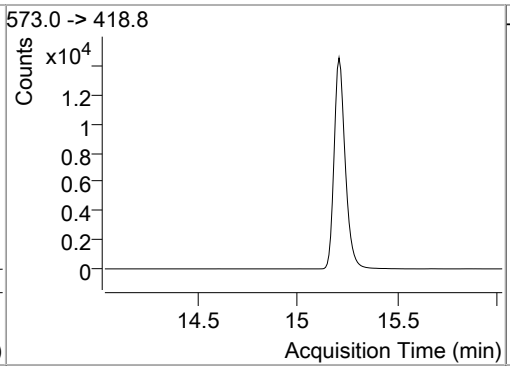


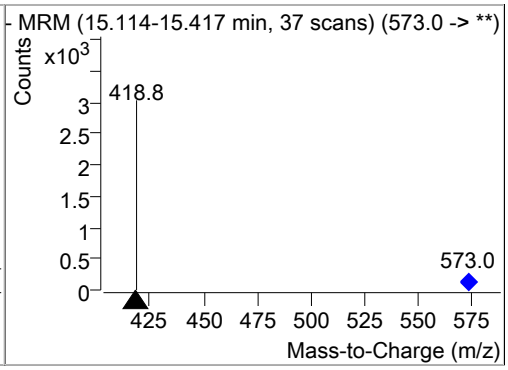




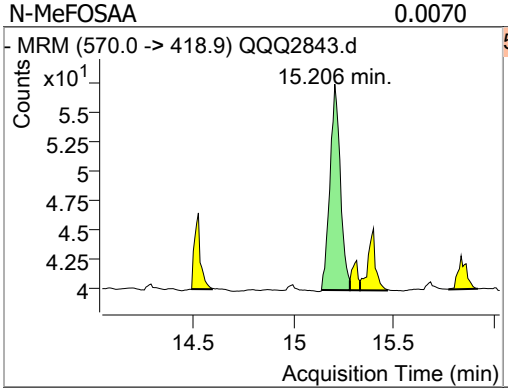
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	6.6249	15.21	0.27	55876				

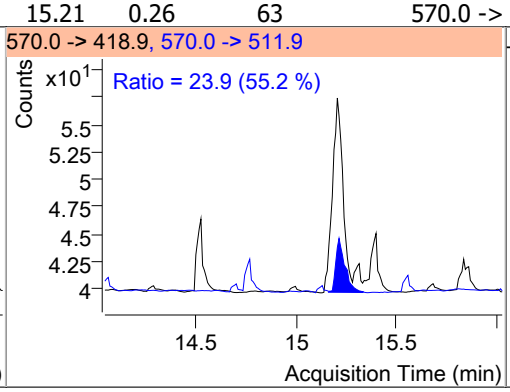


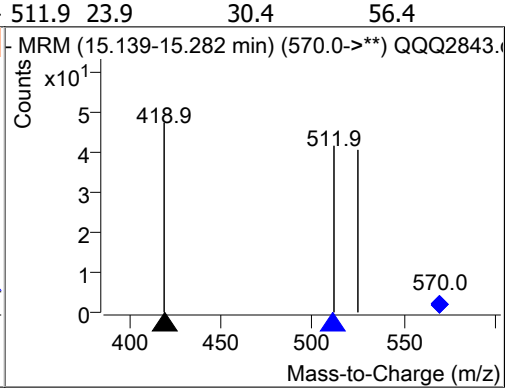




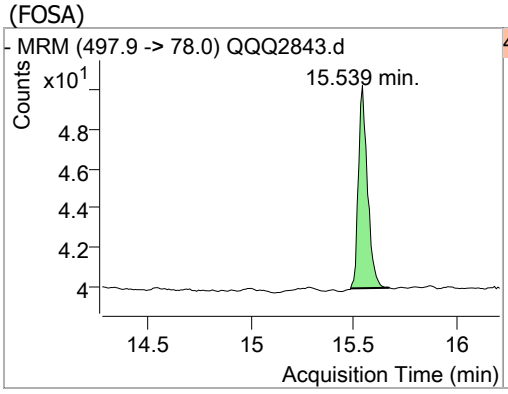
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	0.0070	15.21	0.26	63	570.0 -> 511.9	23.9	30.4	56.4

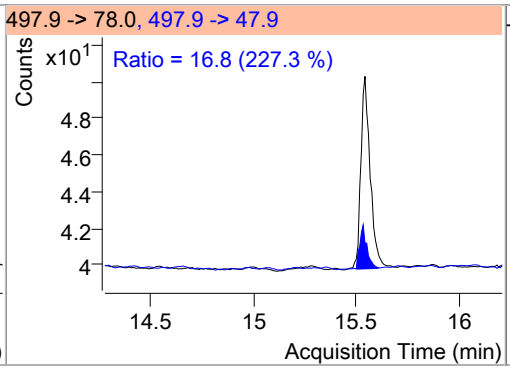


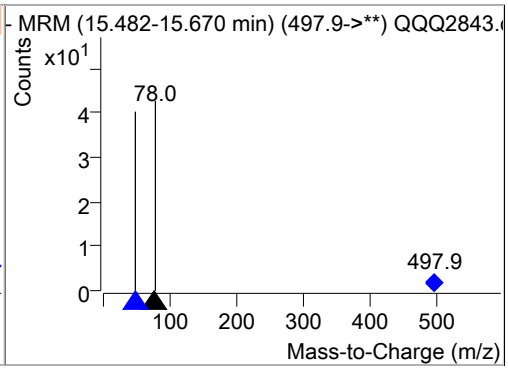




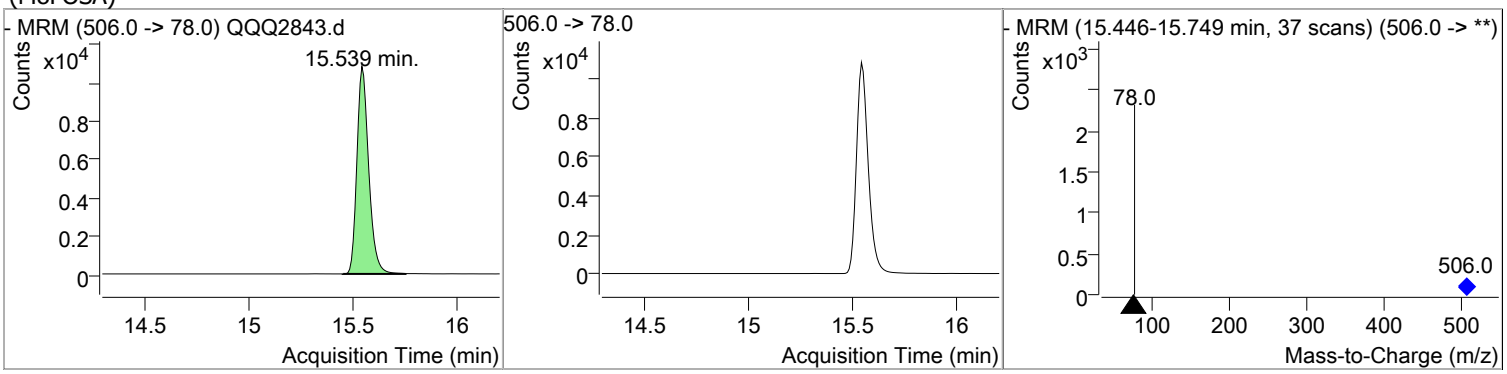
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	0.0045	15.54	0.35	32	497.9 -> 47.9	16.8	5.9	8.8



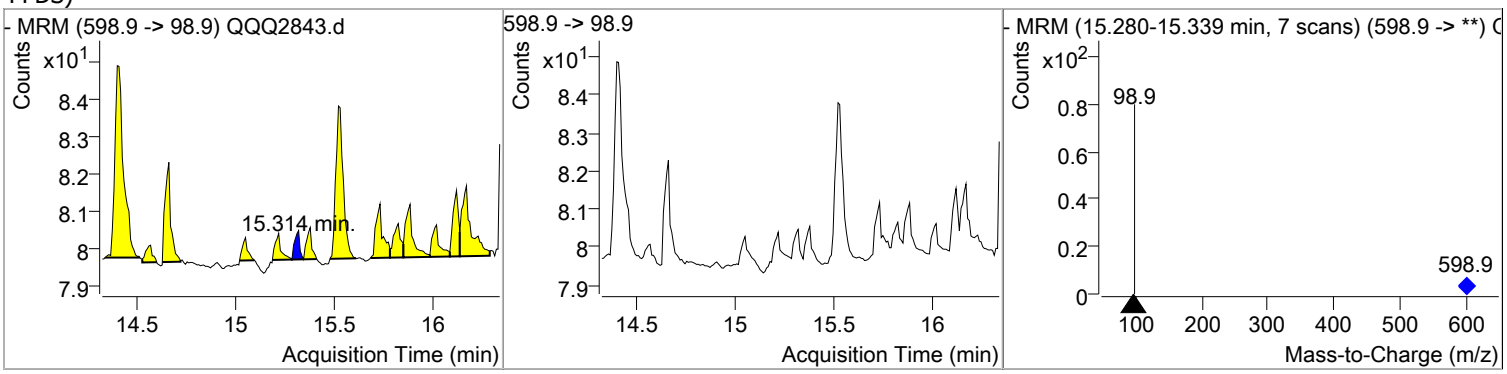




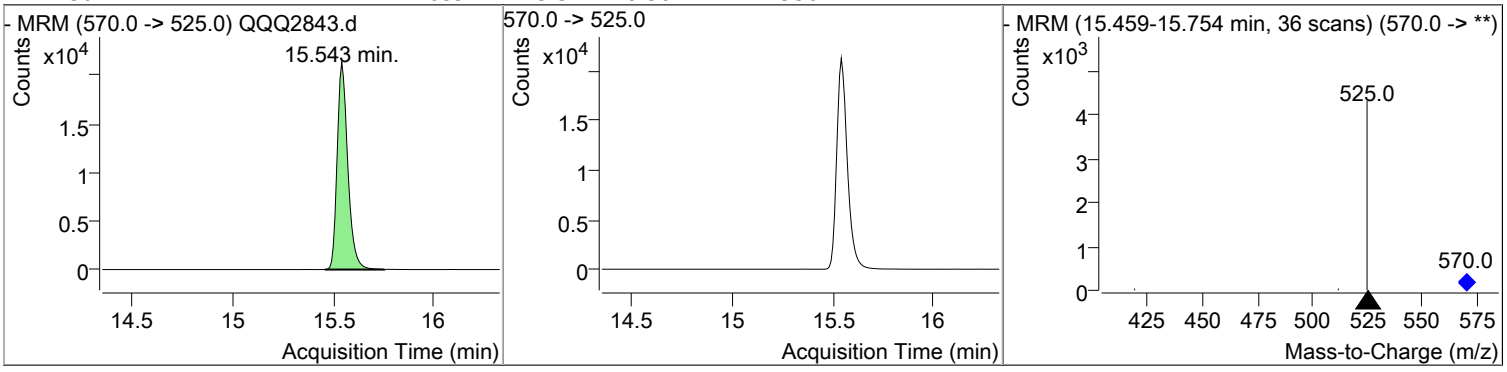
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	6.3341	15.54	0.34	42578				



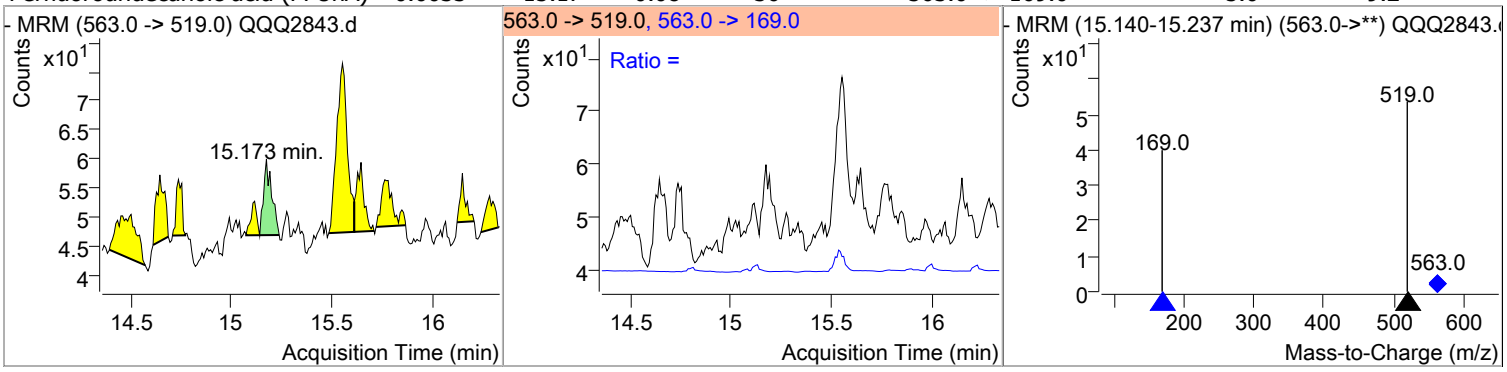
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	0.0004	15.31	0.10	1				



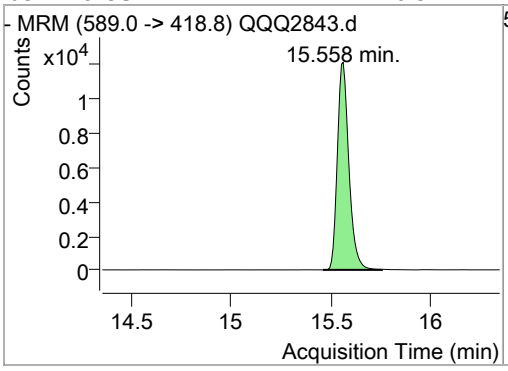
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	7.2659	15.54	0.30	77956				

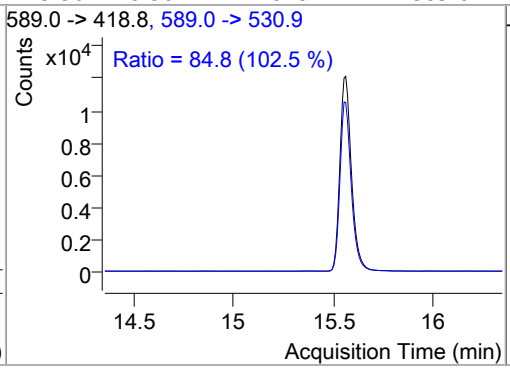


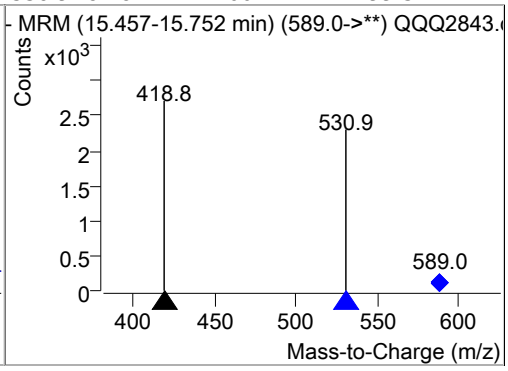
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	0.0033	15.17	-0.08	36	563.0 -> 169.0		5.0	9.2



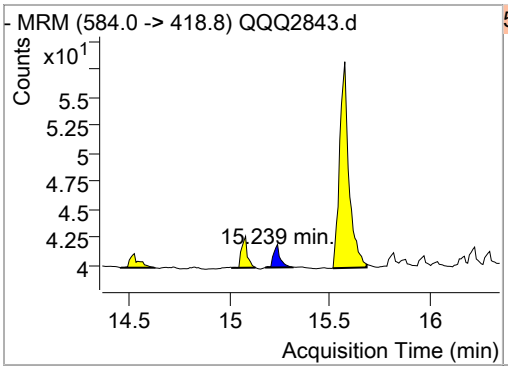
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	6.5771	15.56	0.30	48402	589.0 -> 530.9	84.8	66.2	99.3

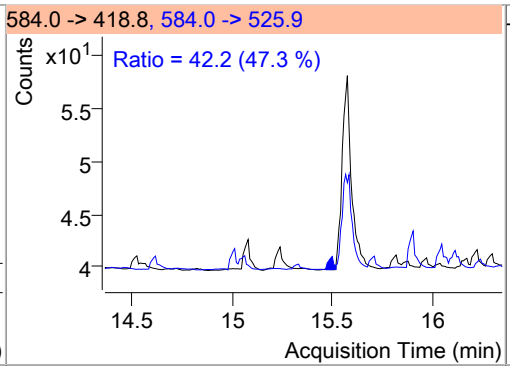


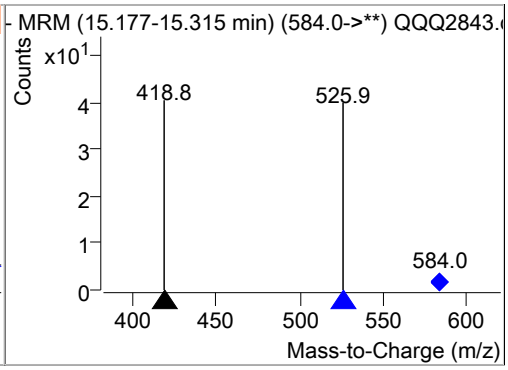




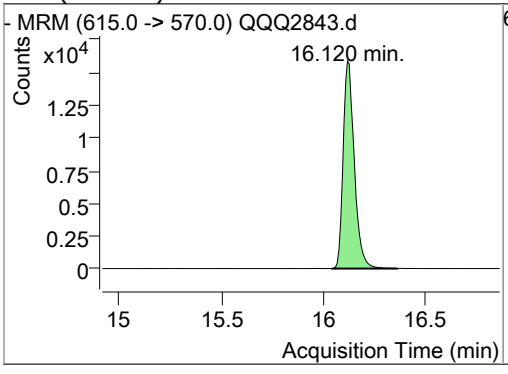
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	0.0007	15.24	-0.03	5	584.0 -> 525.9	42.2	71.3	107.0

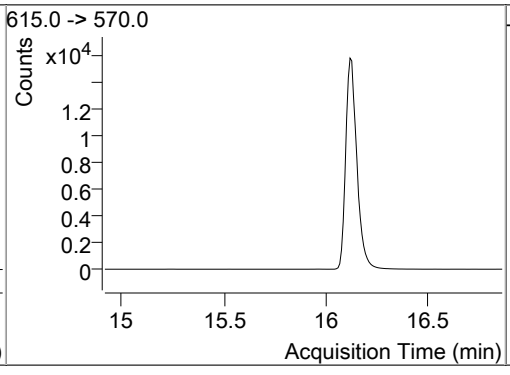


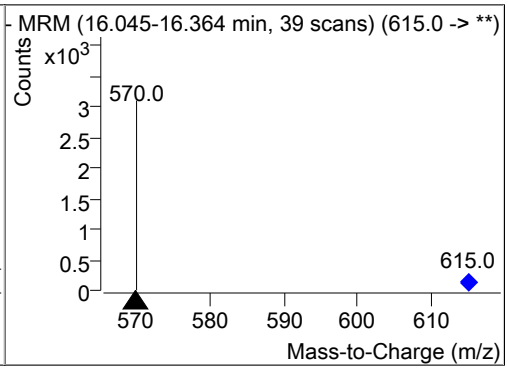




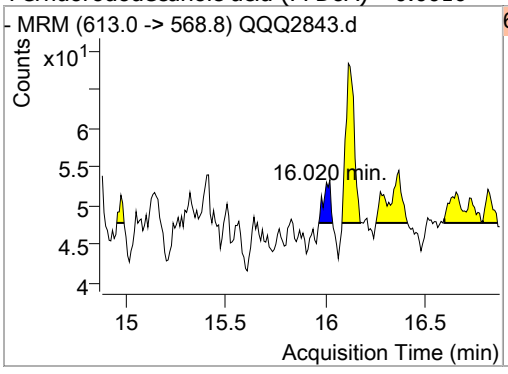
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.7247	16.12	0.35	60140				

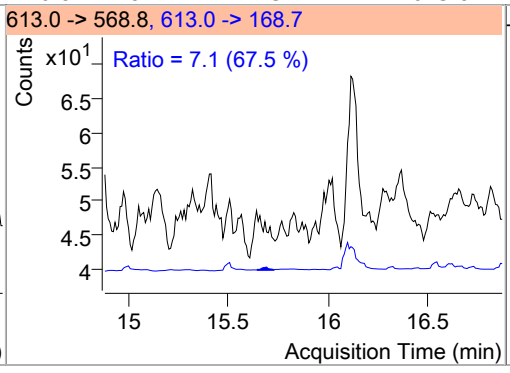


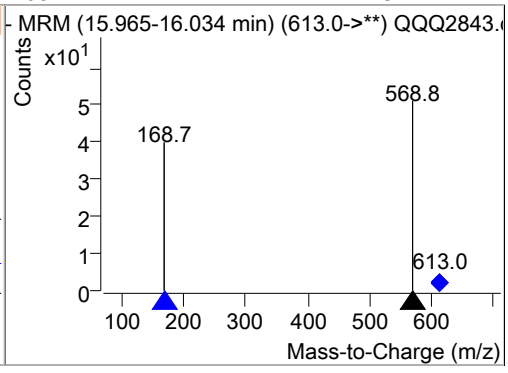




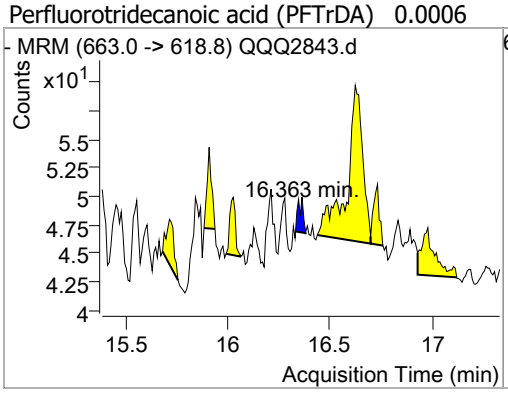
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	0.0016	16.02	0.24	13	613.0 -> 168.7	7.1	7.4	13.7

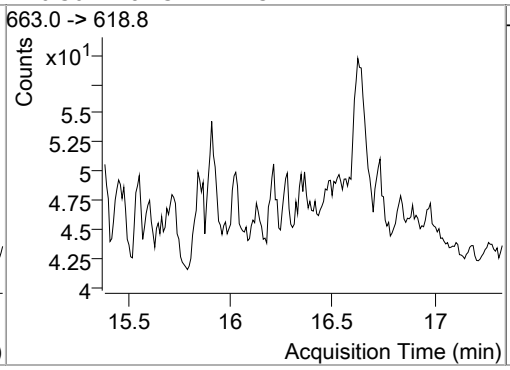


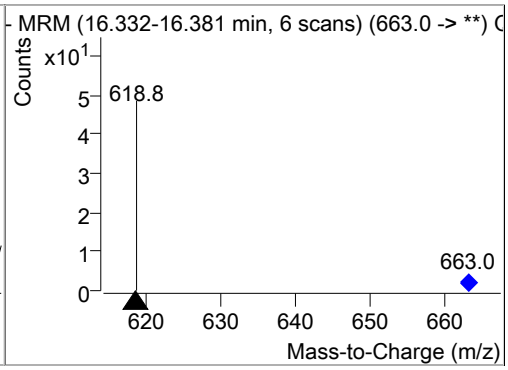




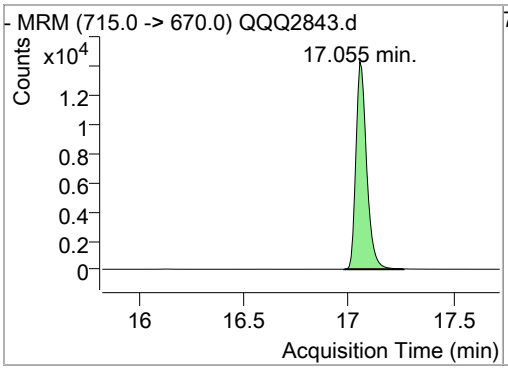
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	0.0006	16.36	0.13	5				

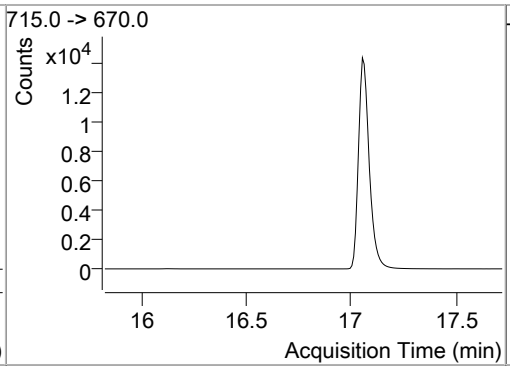


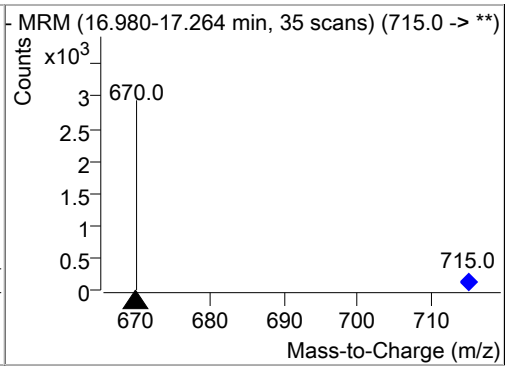




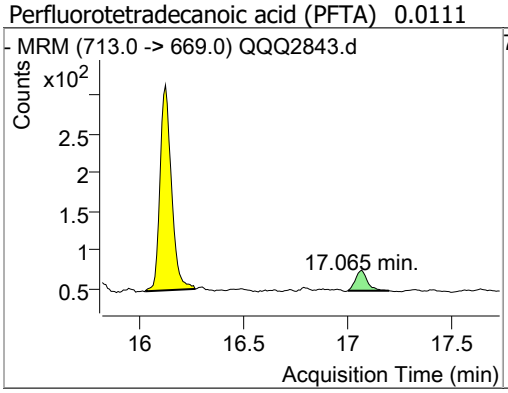
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	5.1847	17.05	0.42	50792				

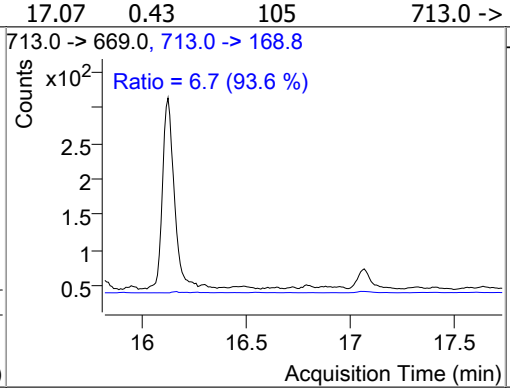


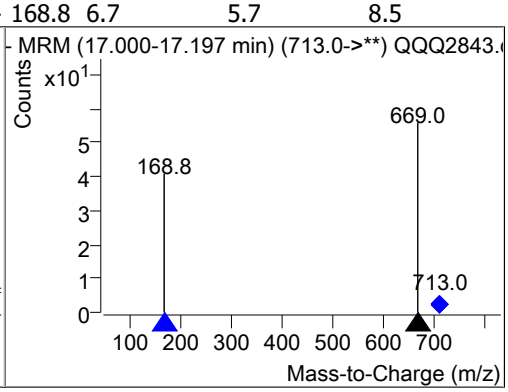




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	0.0111	17.07	0.43	105	713.0 -> 168.8	6.7	5.7	8.5







MATRIX SPIKE RAW DATA

SDG: 19L0685
CLASS: PFAS
METHOD: EPA 537m

Data File	QQQ2856.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 11:24:33 AM
Sample Name	BL91039-MS2	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

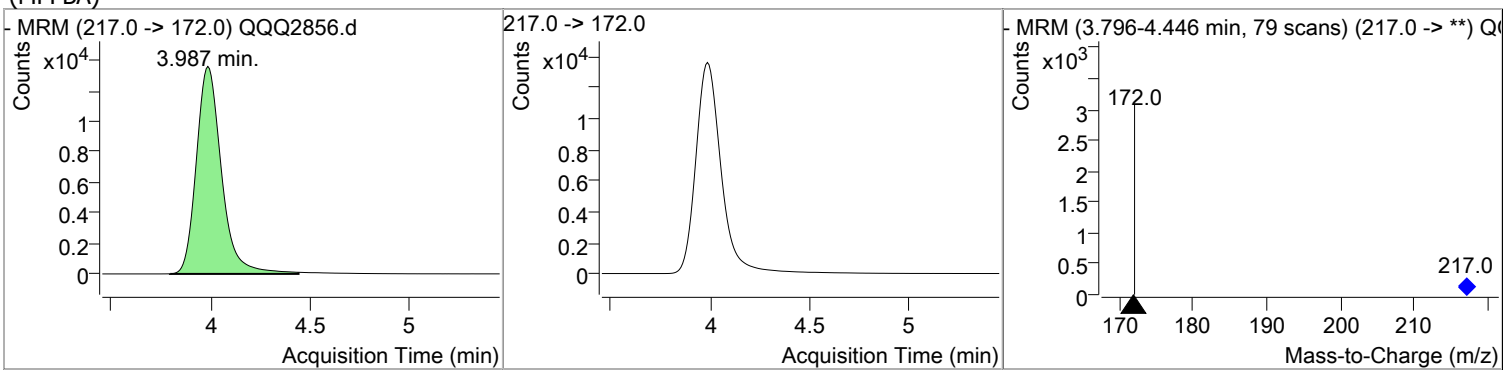
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.118	417.0 -> 372.0	219278	10.0000	ng/ml	0.085
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.987	217.0 -> 172.0	119898	6.9806	ng/ml	-0.200
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.81%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.006	268.0 -> 223.0	162193	6.9265	ng/ml	-0.109
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.27%		
M3PFBS	8.743	302.0 -> 79.9	49395	6.6823	ng/ml	-0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 66.82%		
M2-4-2FTS	10.216	329.0 -> 309.0	68741	10.2660	ng/ml	-0.042
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 102.66%		
M5PFHxA	10.361	318.0 -> 273.0	156010	7.0723	ng/ml	-0.042
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 70.72%		
M4PFHpA	11.936	367.0 -> 322.0	43999	7.2145	ng/ml	0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 72.15%		
M3PFHxS	12.068	402.0 -> 80.0	32627	6.4256	ng/ml	0.026
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 64.26%		
M2-6-2FTS	13.057	429.0 -> 409.0	60766	11.1819	ng/ml	0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 111.82%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.117	421.0 -> 376.0	84682	7.3005	ng/ml	0.093
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 73.01%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.074	472.0 -> 427.0	91922	7.7453	ng/ml	0.170
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 77.45%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.081	507.0 -> 80.0	24770	6.3714	ng/ml	0.169
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 63.71%		
M2-8-2FTS	14.854	529.0 -> 509.0	35121	7.9593	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 79.59%		
M6PFDA	14.871	519.0 -> 473.9	57491	6.0796	ng/ml	0.244
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.80%		
d3-N-MeFOSAA	15.215	573.0 -> 418.8	45821	6.0356	ng/ml	0.278
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.36%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.547	506.0 -> 78.0	36329	6.0043	ng/ml	0.353
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.04%		
M7PFUdA	15.551	570.0 -> 525.0	54457	5.6390	ng/ml	0.311
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 56.39%		
d5-N-EtFOSAA	15.567	589.0 -> 418.8	39753	6.0013	ng/ml	0.311
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.01%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.129	615.0 -> 570.0	55436	5.8625	ng/ml	0.353
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 58.63%		
M2PFTeDA	17.072	715.0 -> 670.0	36620	4.1529	ng/ml	0.434
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 41.53%		

Target Compounds	QValue

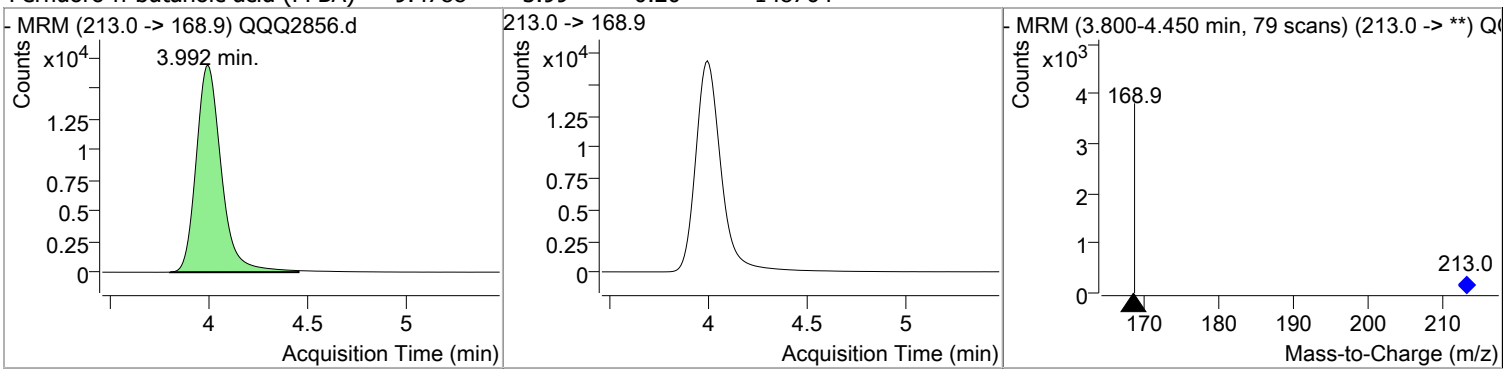
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	3.992	213.0 -> 168.9	148764	9.4788	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	8.007	263.0 -> 219.0	229117	11.0933	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.746	298.9 -> 79.9	58326	8.6404	ng/ml		99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.218	327.0 -> 307.0	74699	11.8477	ng/ml		99
Perfluorohexanoic acid (PFHxA)	10.364	313.0 -> 268.9	197080	10.4395	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.683	348.9 -> 79.9	52098	8.5877	ng/ml		97
Perfluoroheptanoic acid (PFHpA)	11.936	363.0 -> 318.8	134974	9.4060	ng/ml		95
Perfluorohexanesulfonic acid (PFHxS)	12.069	398.9 -> 79.9	48228	9.2376	ng/ml	m	95
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.049	427.0 -> 407.0	73173	12.7731	ng/ml		100
Perfluorooctanoic acid (PFOA)	13.119	413.0 -> 368.8	95967	8.6114	ng/ml		93
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.174	448.9 -> 80.0	31448	8.3523	ng/ml		97
Perfluorononanoic acid (PFNA)	14.074	463.0 -> 418.8	76134	8.4735	ng/ml		99
Perfluorooctanesulfonic acid (PFOS)	14.081	498.9 -> 79.9	42778	9.2352	ng/ml	#m	80
Perfluorononanesulfonate (L-PFNS)	14.862	548.9 -> 79.9	24926	7.2689	ng/ml		98
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.854	527.0 -> 507.0	36970	10.1524	ng/ml		98
Perfluorodecanoic acid (PFDA)	14.872	513.0 -> 468.8	61231	7.8365	ng/ml		93
N-MeFOSAA	15.223	570.0 -> 418.9	60296	7.3960	ng/ml		98
Perfluoro-1-octanesulfonamide (FOSA)	15.548	497.9 -> 78.0	45454	7.2236	ng/ml		99
Perfluoro-1-decanesulfonate (L-PFDS)	15.524	598.9 -> 98.9	20996	6.6702	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.552	563.0 -> 519.0	65402	6.6243	ng/ml		100
N-EtFOSAA	15.576	584.0 -> 418.8	46820	7.3272	ng/ml		94
Perfluorododecanoic acid (PFDoA)	16.129	613.0 -> 568.8	49084	6.9982	ng/ml		100
Perfluorotridecanoic acid (PFTrDA)	16.640	663.0 -> 618.8	45719	5.8187	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.074	713.0 -> 669.0	44617	5.2456	ng/ml		99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

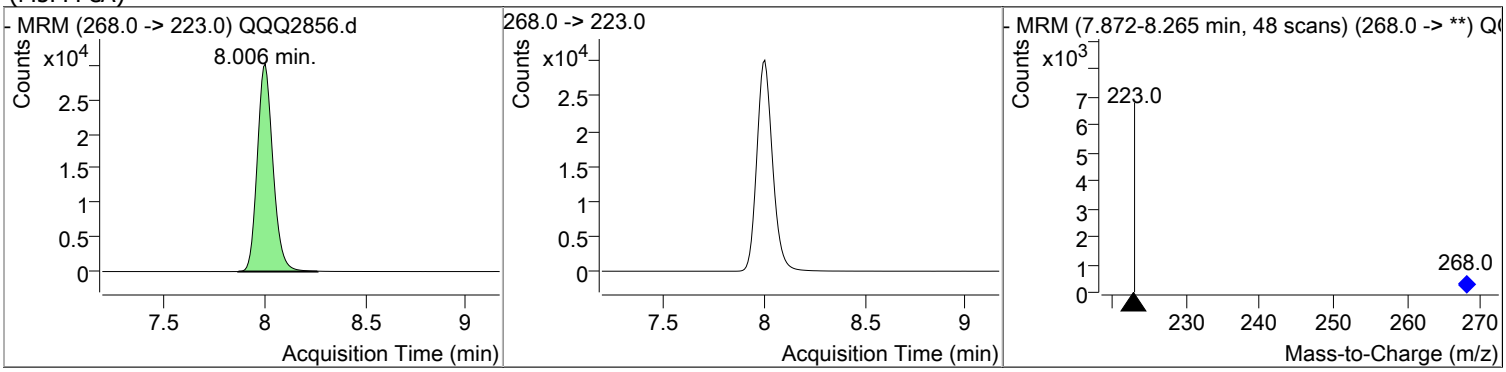
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	6.9806	3.99	-0.20	119898				



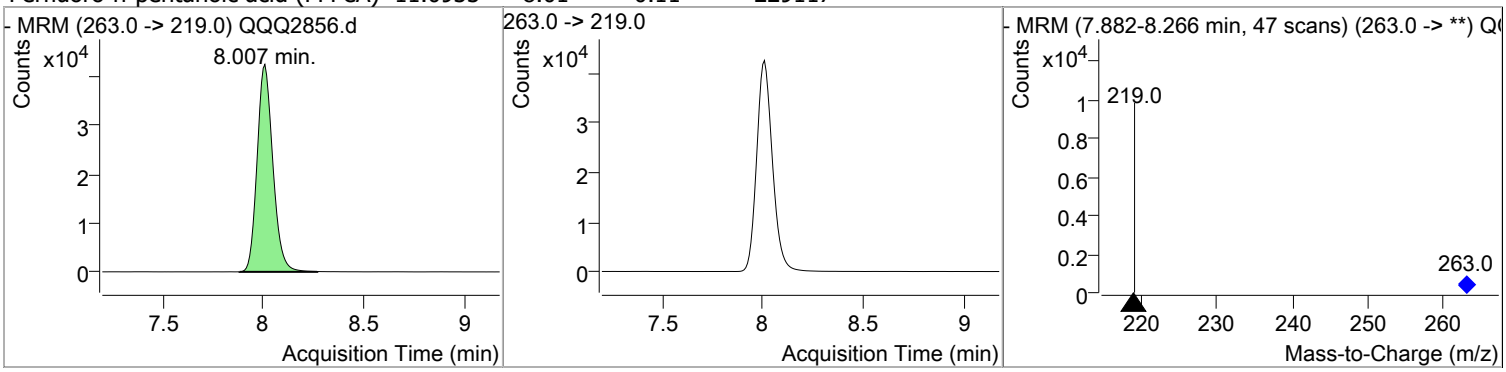
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	9.4788	3.99	-0.20	148764				



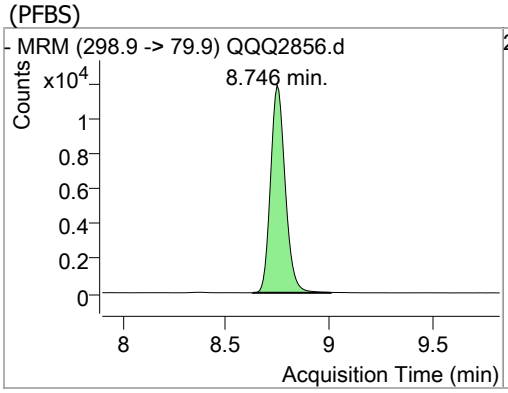
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	6.9265	8.01	-0.11	162193				

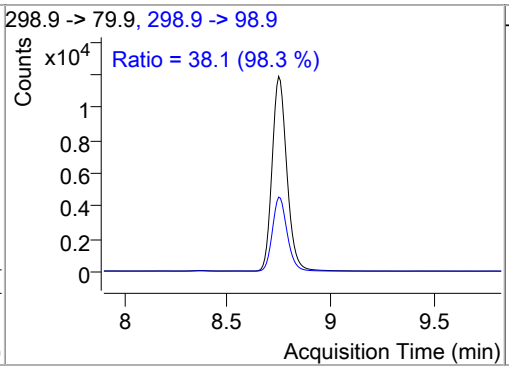


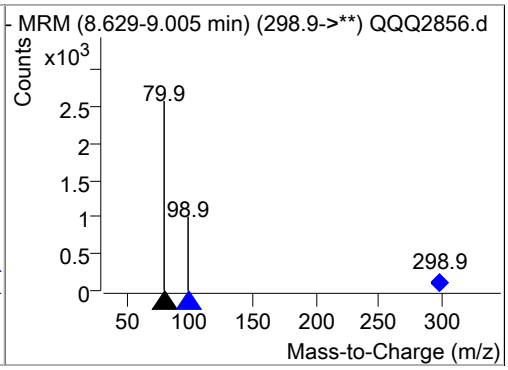
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	11.0933	8.01	-0.11	229117				



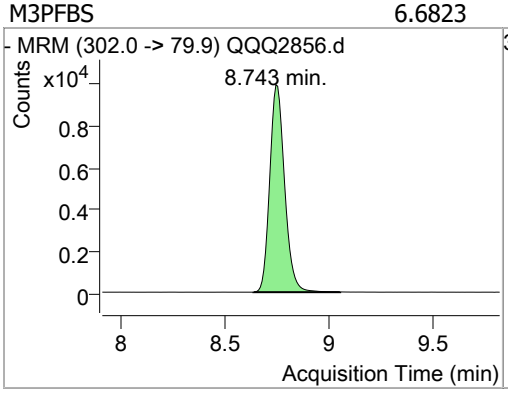
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	8.6404	8.75	-0.07	58326	298.9 -> 98.9	38.1	31.0	46.5

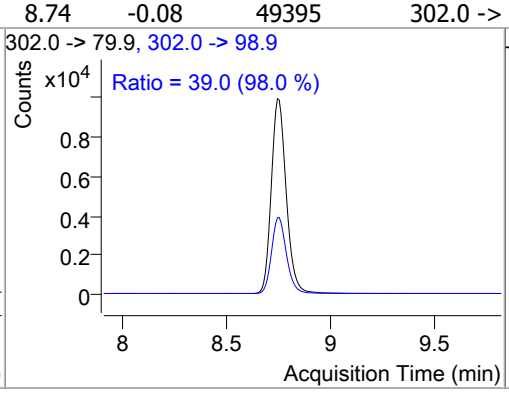


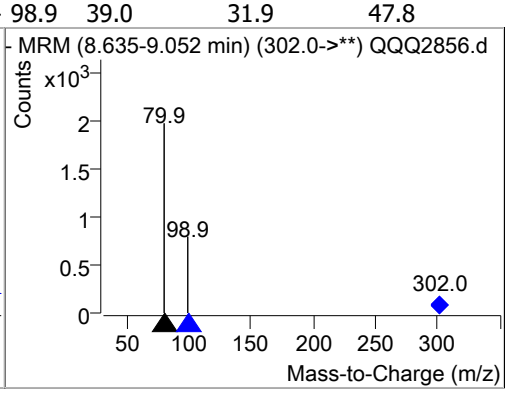




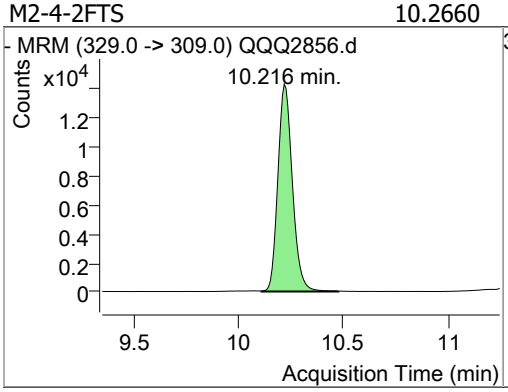
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	6.6823	8.74	-0.08	49395	302.0 -> 98.9	39.0	31.9	47.8

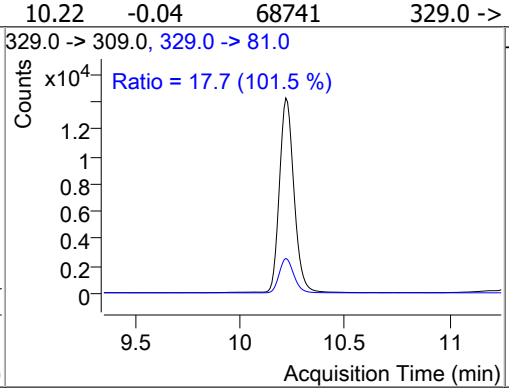


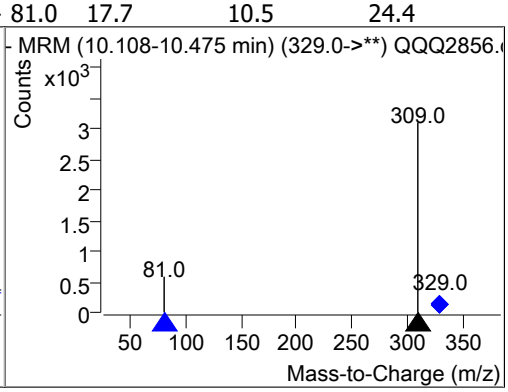




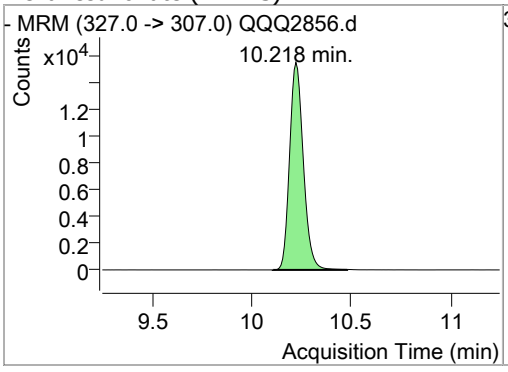
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	10.2660	10.22	-0.04	68741	329.0 -> 81.0	17.7	10.5	24.4

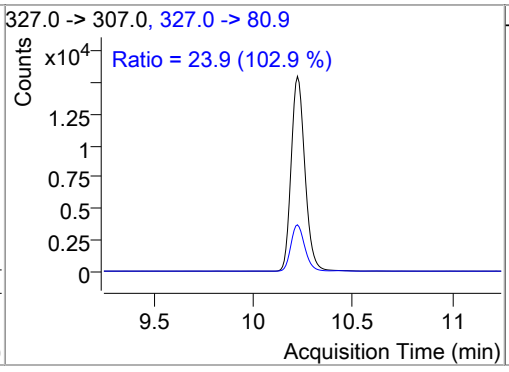


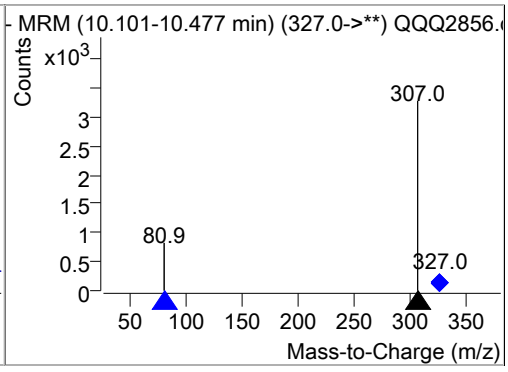




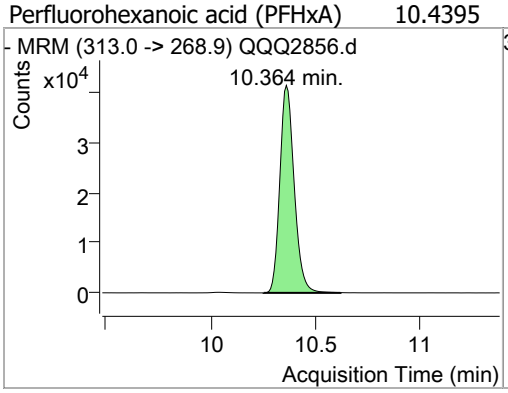
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	11.8477	10.22	-0.04	74699	327.0 -> 80.9	23.9	13.9	32.5

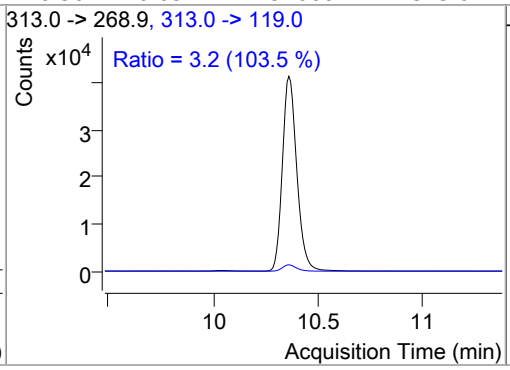


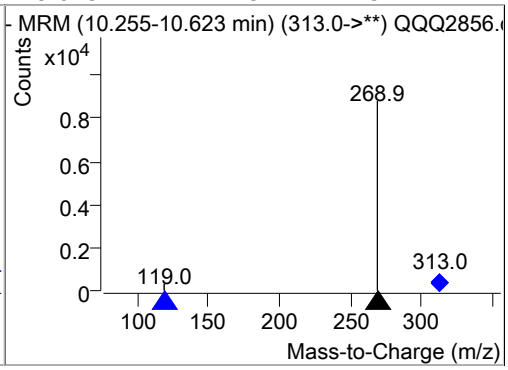




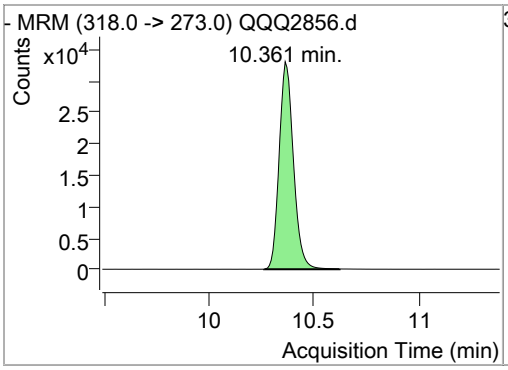
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	10.4395	10.36	-0.03	197080	313.0 -> 119.0	3.2	2.5	3.7

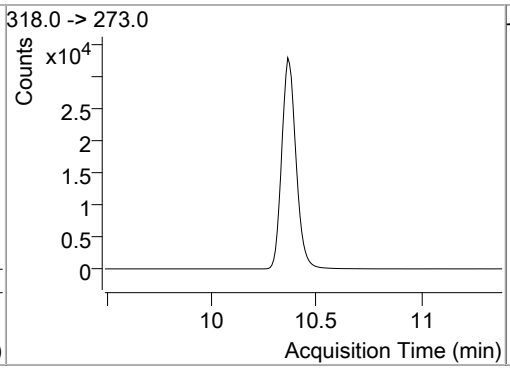


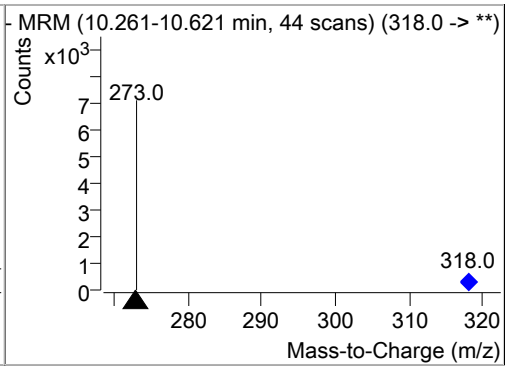




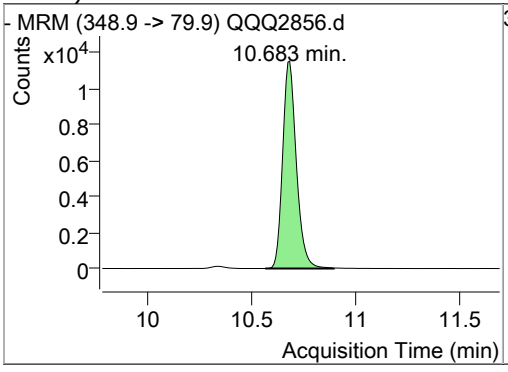
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	7.0723	10.36	-0.04	156010				

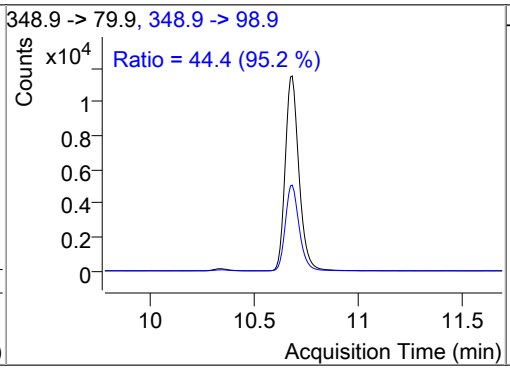


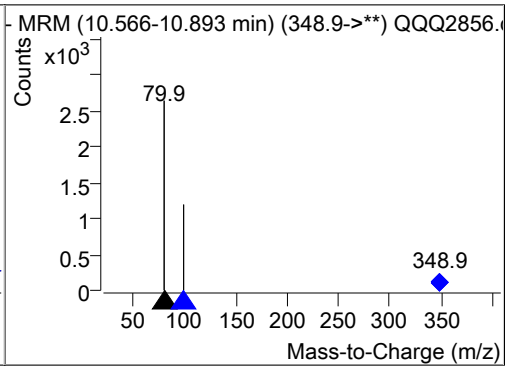




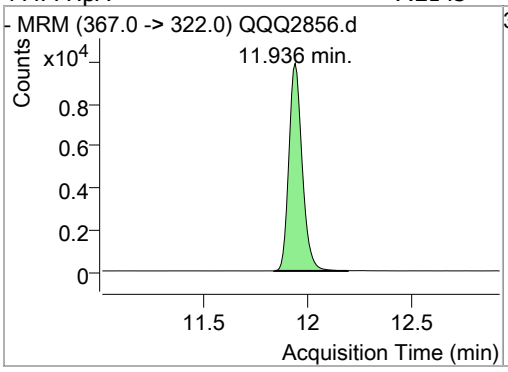
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	8.5877	10.68	-0.02	52098	348.9 -> 98.9	44.4	37.3	56.0

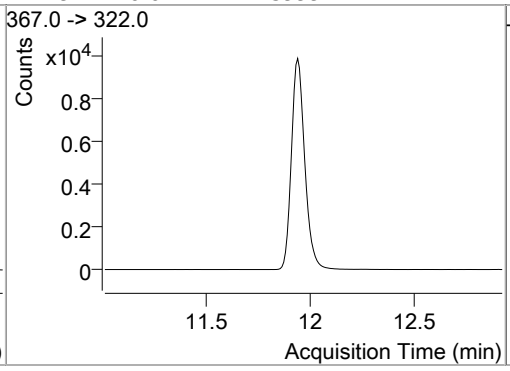


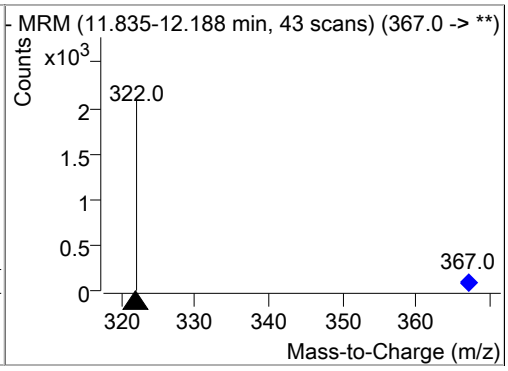




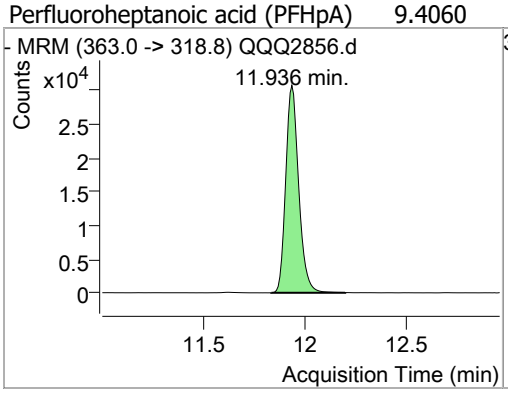
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	7.2145	11.94	0.02	43999				

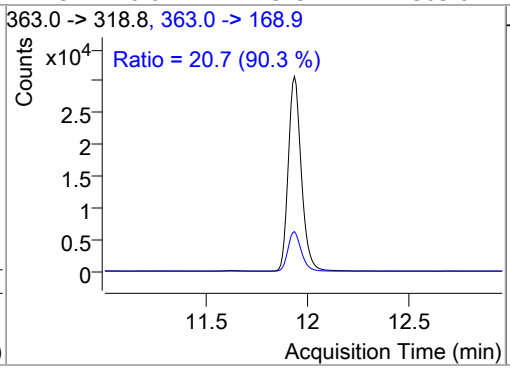


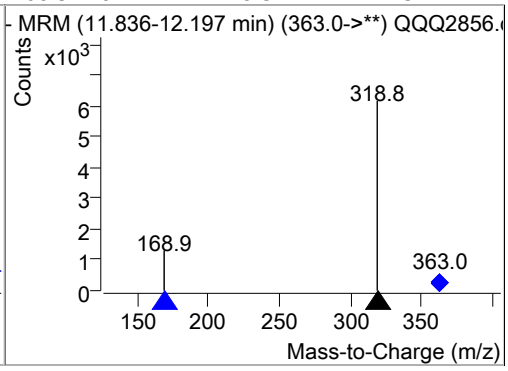




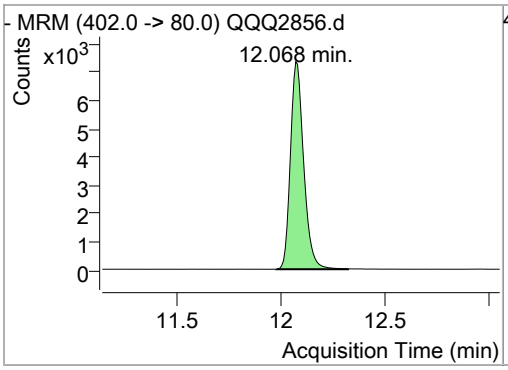
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	9.4060	11.94	0.02	134974	363.0 -> 168.9	20.7	18.3	27.5

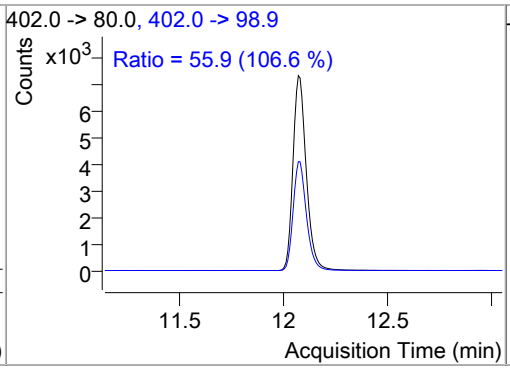


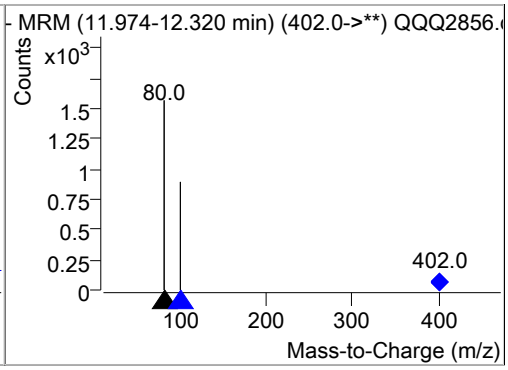




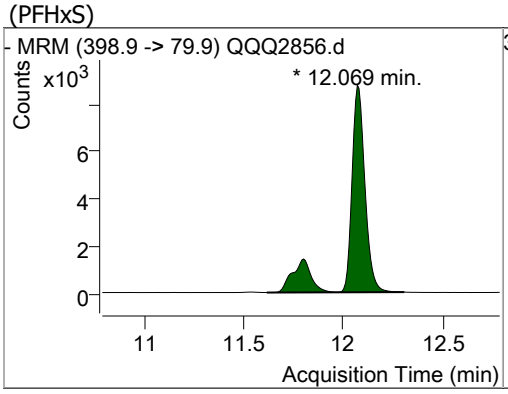
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	6.4256	12.07	0.03	32627	402.0 -> 98.9	55.9	42.0	62.9

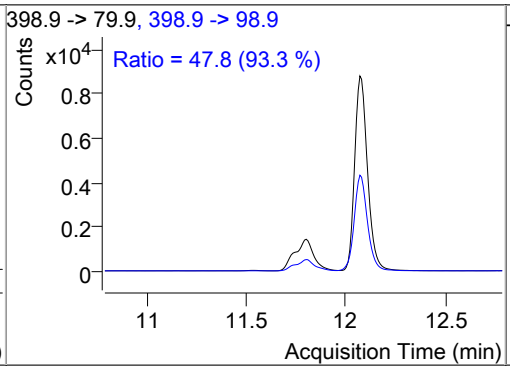


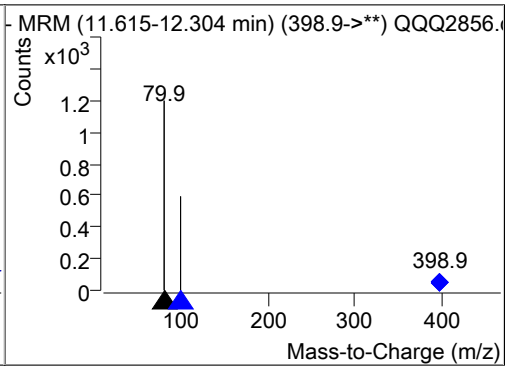




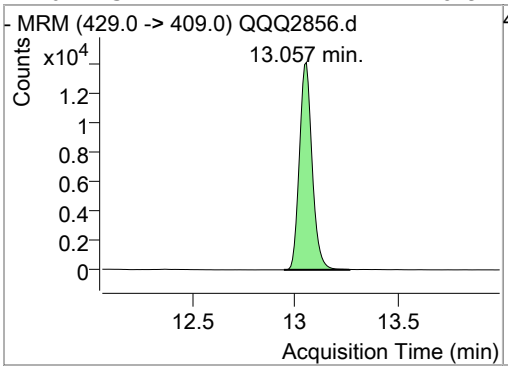
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	9.2376	12.07	0.03	48228 (m)	398.9 -> 98.9	47.8	41.0	61.5

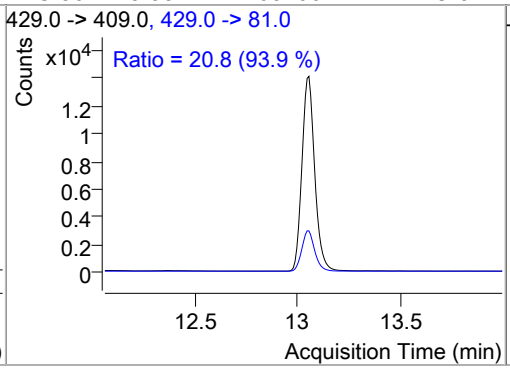


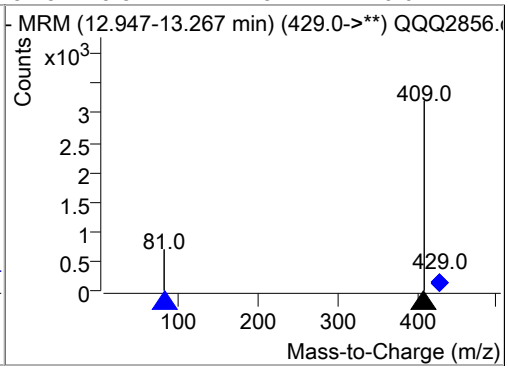




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	11.1819	13.06	0.08	60766	429.0 -> 81.0	20.8	17.8	26.6

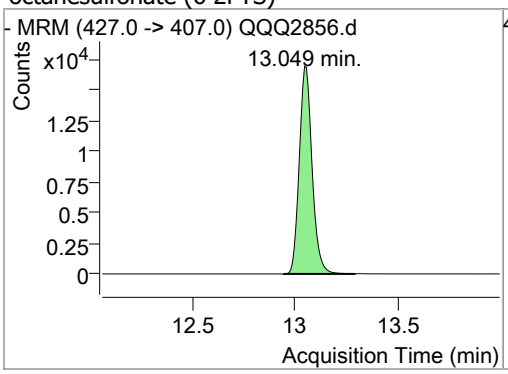


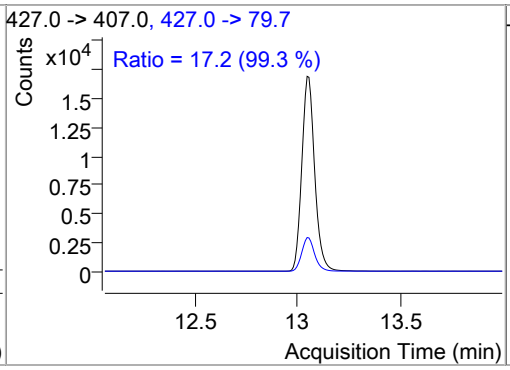


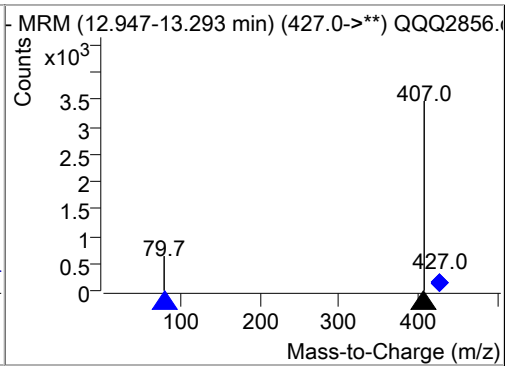


Quantitation Results Report (Not Reviewed)

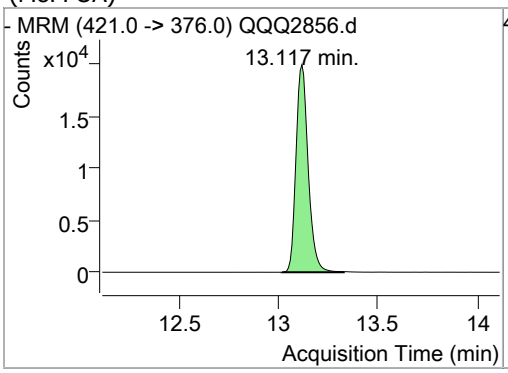
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	12.7731	13.05	0.08	73173	427.0 -> 79.7	17.2	13.9	20.8

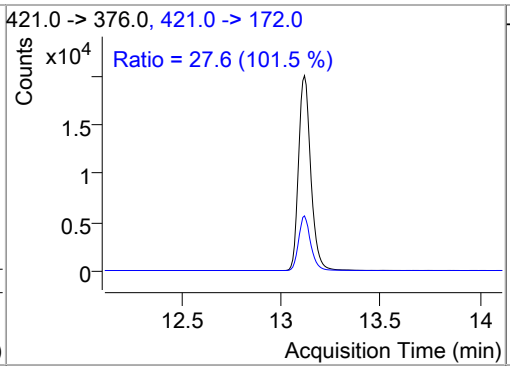


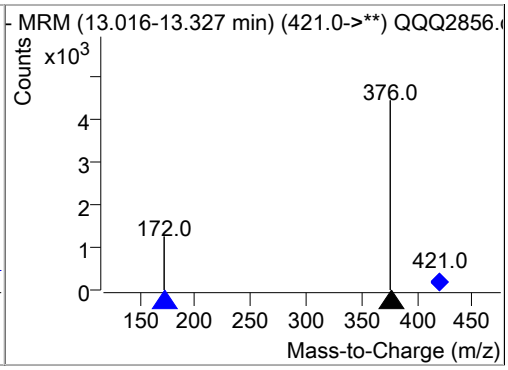




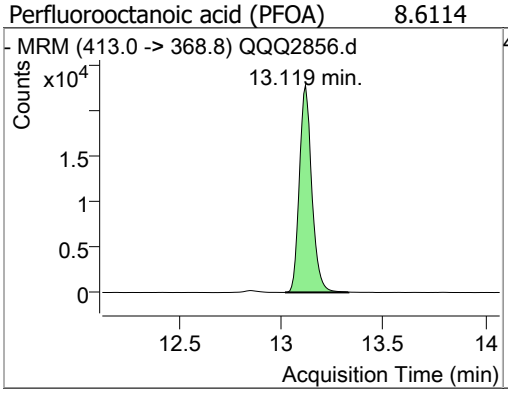
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	7.3005	13.12	0.09	84682	421.0 -> 172.0	27.6	21.7	32.6

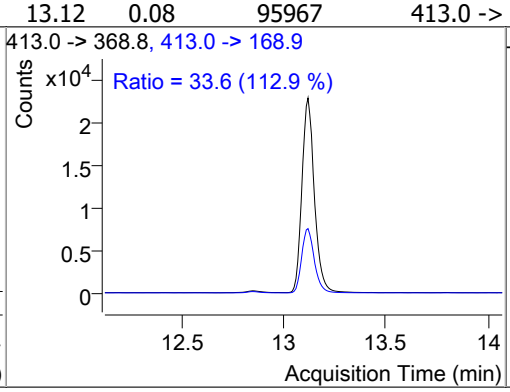


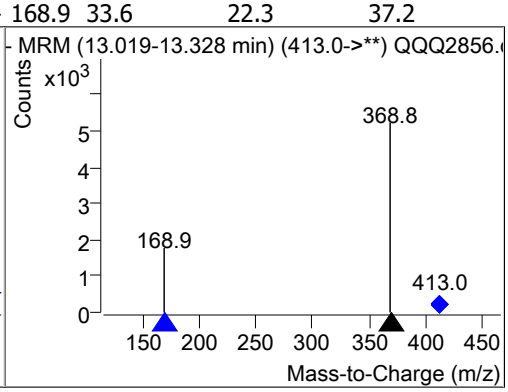




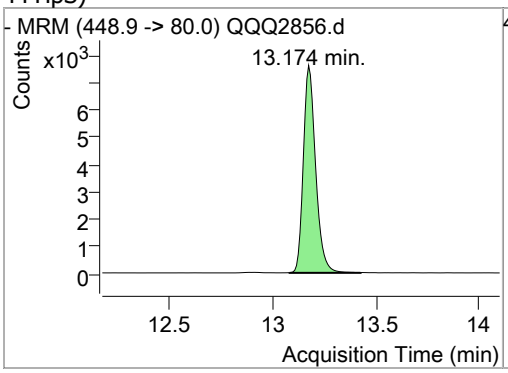
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	8.6114	13.12	0.08	95967	413.0 -> 168.9	33.6	22.3	37.2

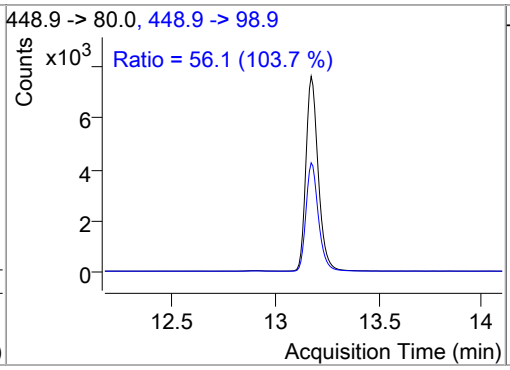


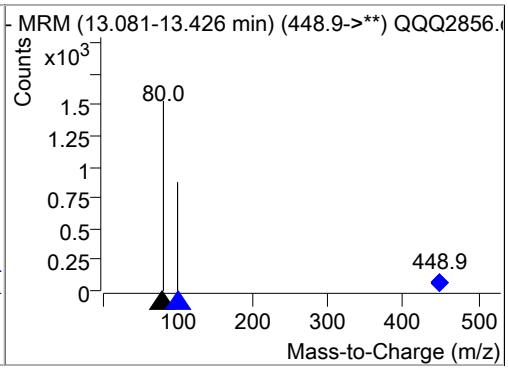




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	8.3523	13.17	0.09	31448	448.9 -> 98.9	56.1	43.3	64.9

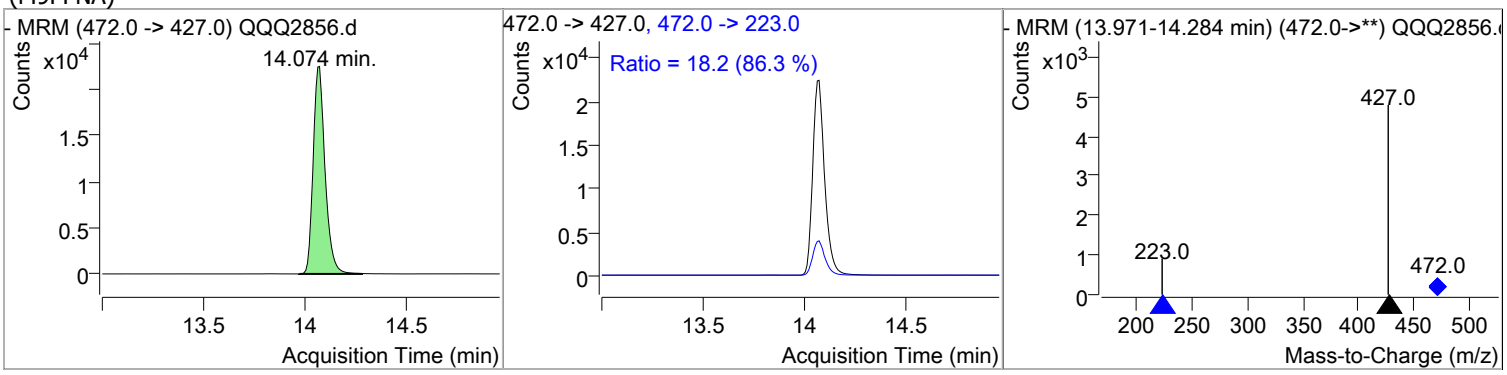




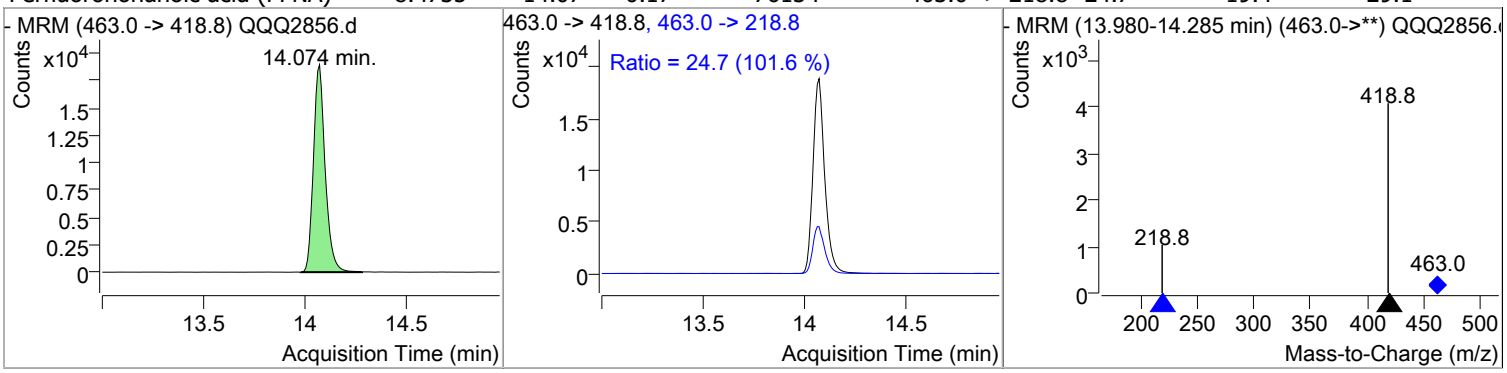


Quantitation Results Report (Not Reviewed)

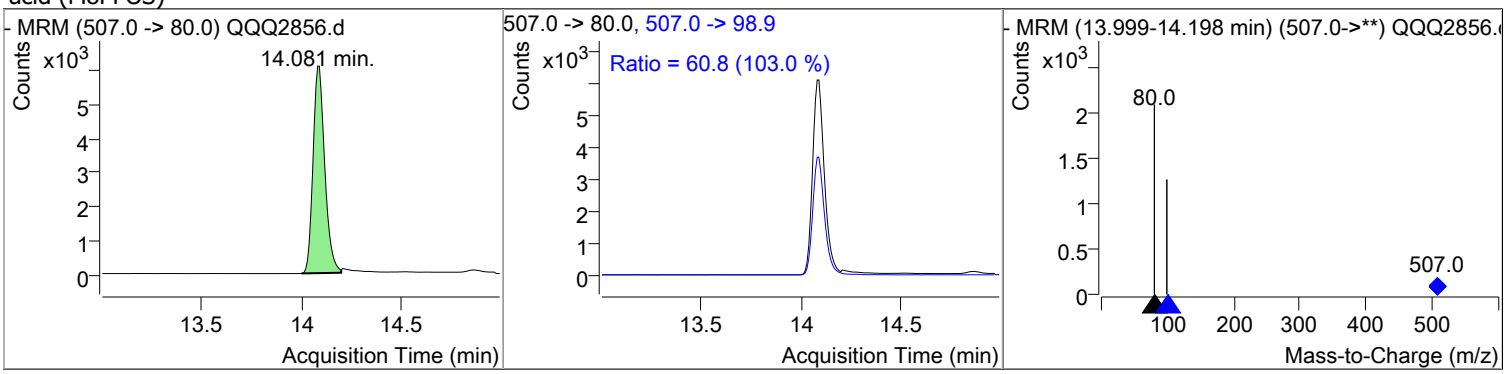
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	7.7453	14.07	0.17	91922	472.0 -> 223.0	18.2	16.9	25.4



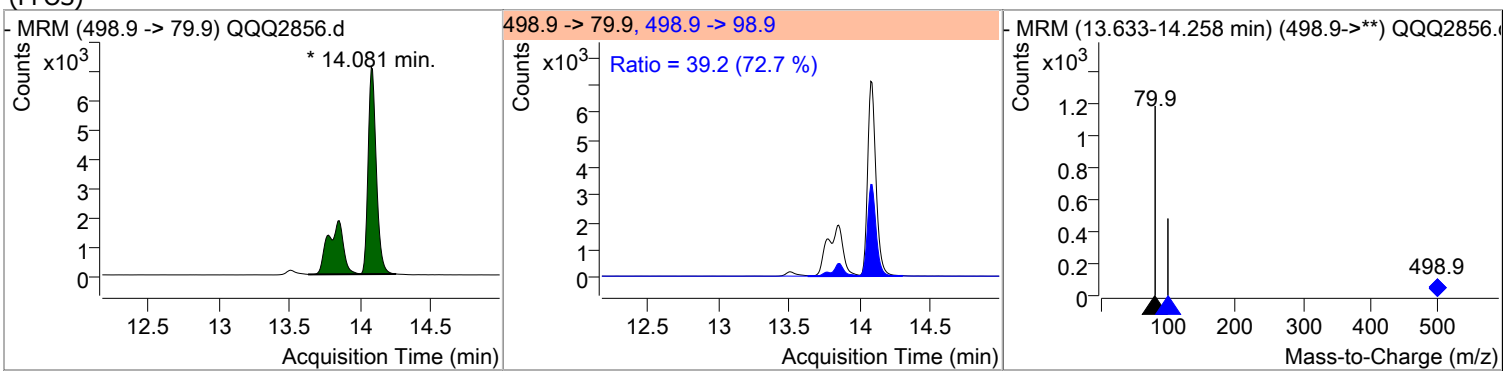
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	8.4735	14.07	0.17	76134	463.0 -> 218.8	24.7	19.4	29.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	6.3714	14.08	0.17	24770	507.0 -> 98.9	60.8	47.2	70.8

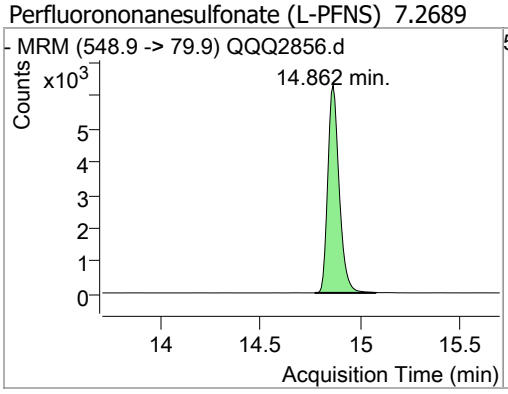


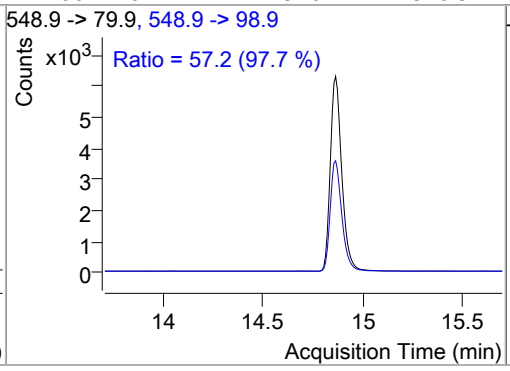
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	9.2352	14.08	0.17	42778 (m)	498.9 -> 98.9	39.2	43.1	64.6

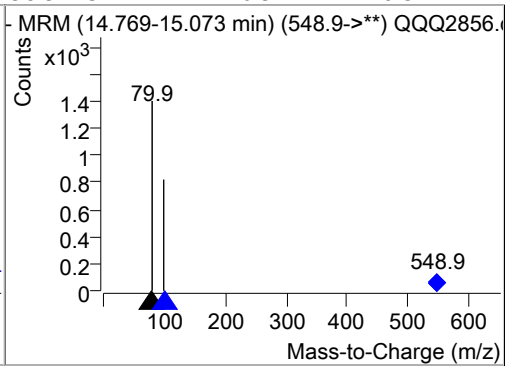


Quantitation Results Report (Not Reviewed)

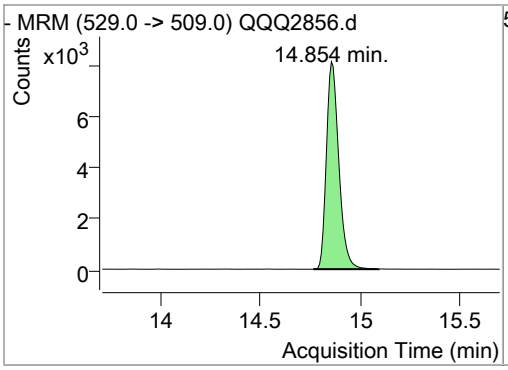
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	7.2689	14.86	0.24	24926	548.9 -> 98.9	57.2	46.9	70.3

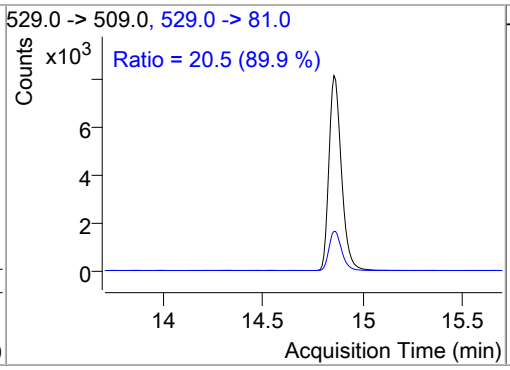


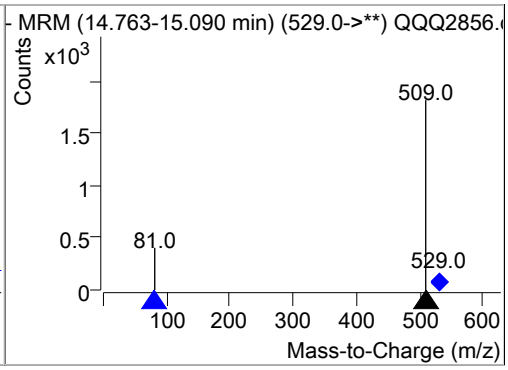




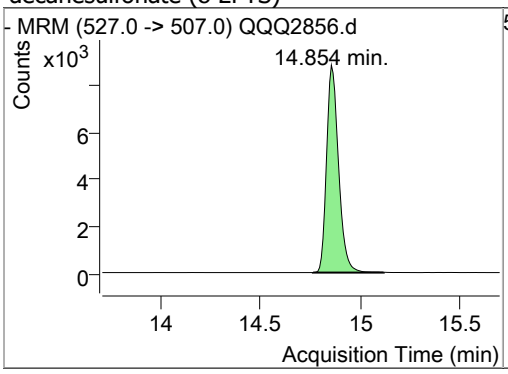
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	7.9593	14.85	0.24	35121	529.0 -> 81.0	20.5	18.3	27.4

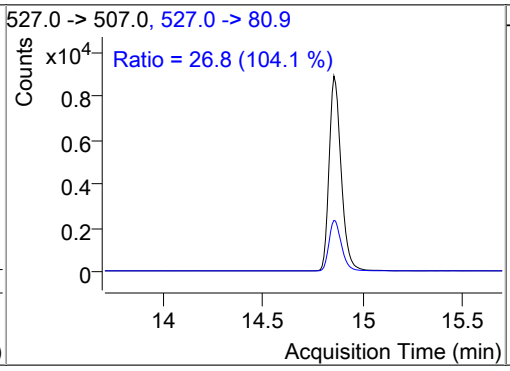


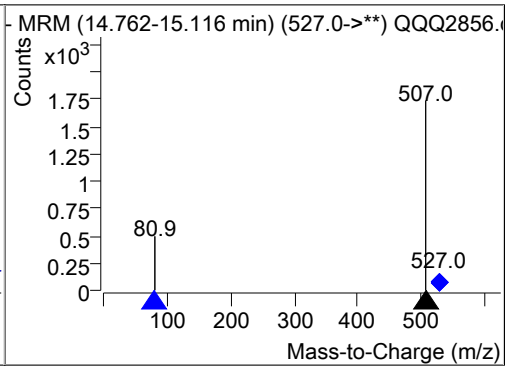




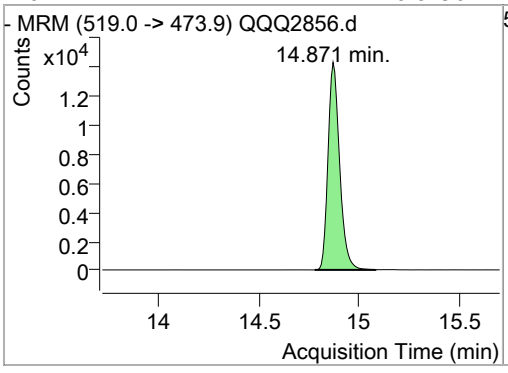
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	10.1524	14.85	0.24	36970	527.0 -> 80.9	26.8	20.6	30.9

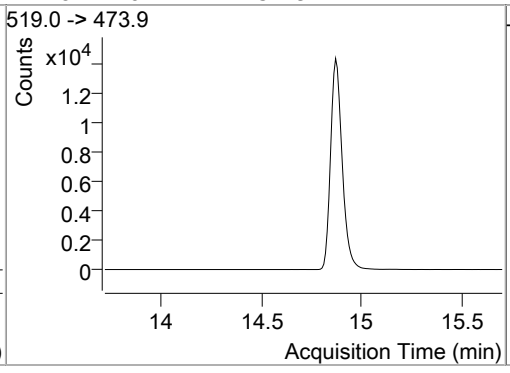


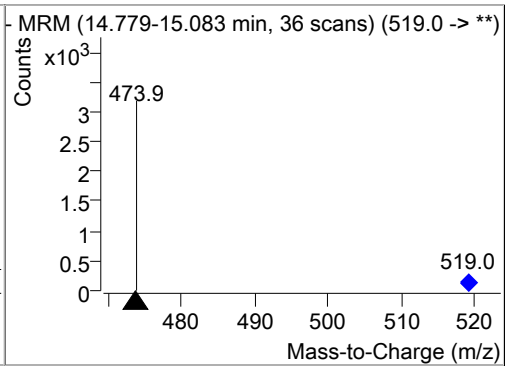




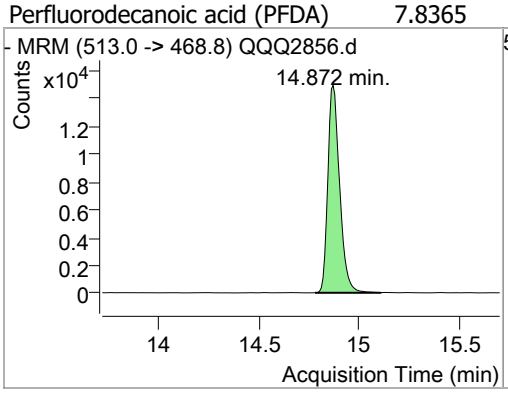
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	6.0796	14.87	0.24	57491				

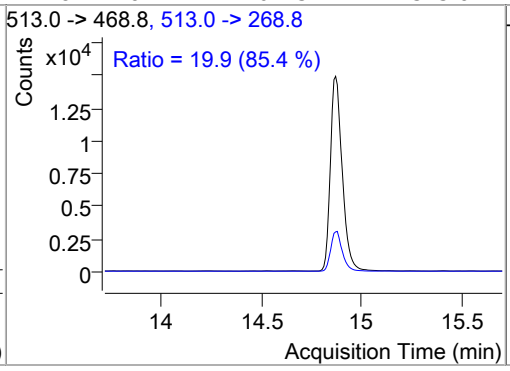


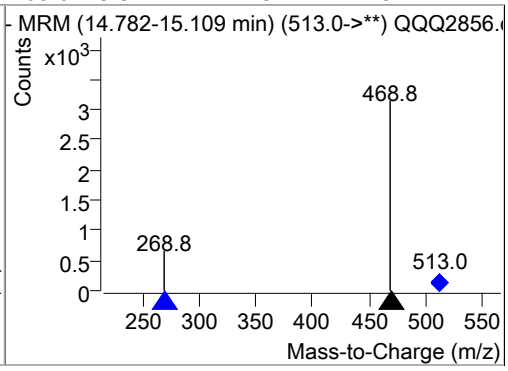




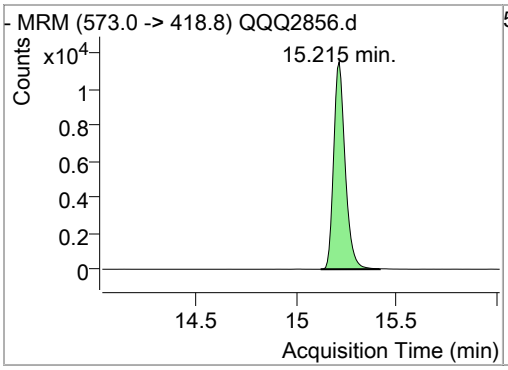
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	7.8365	14.87	0.24	61231	513.0 -> 268.8	19.9	17.5	29.1

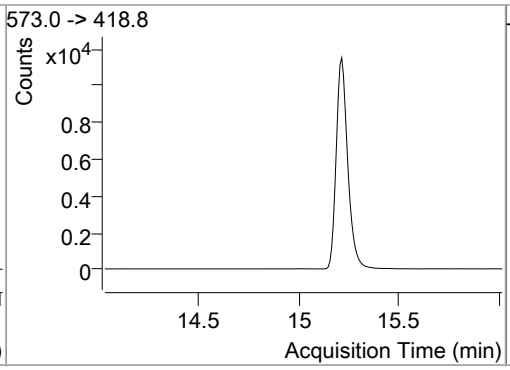


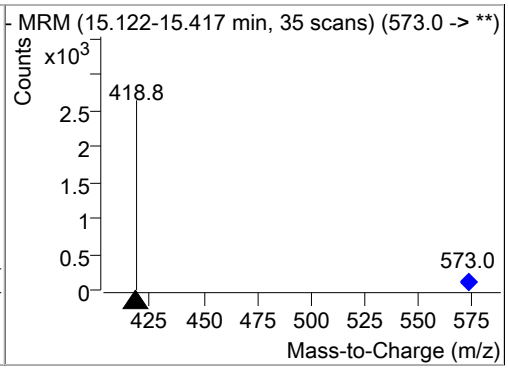




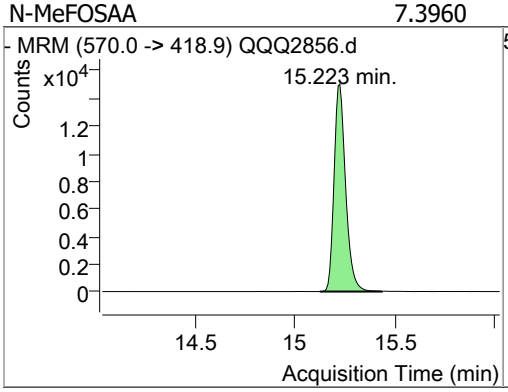
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	6.0356	15.21	0.28	45821				

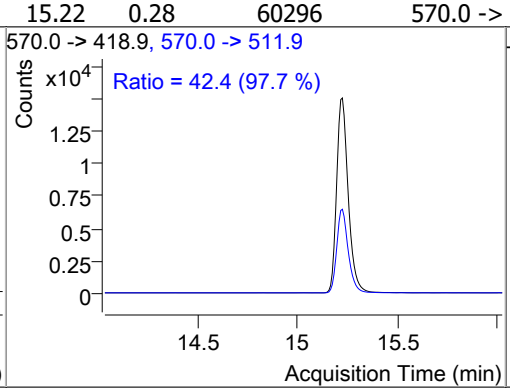


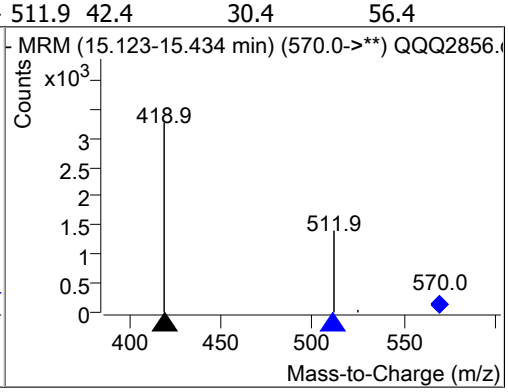




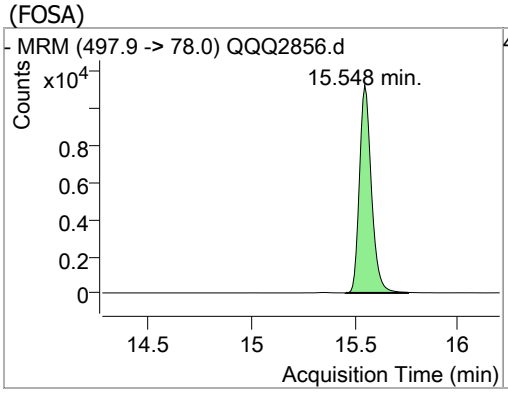
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	7.3960	15.22	0.28	60296	570.0 -> 511.9	42.4	30.4	56.4

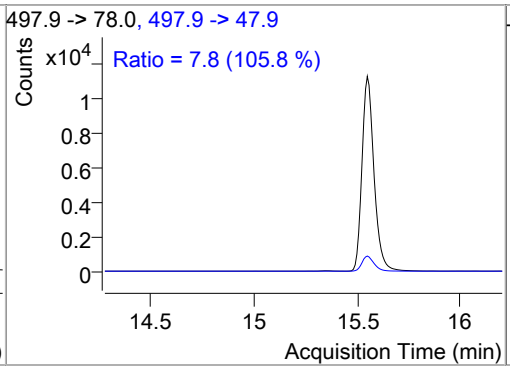


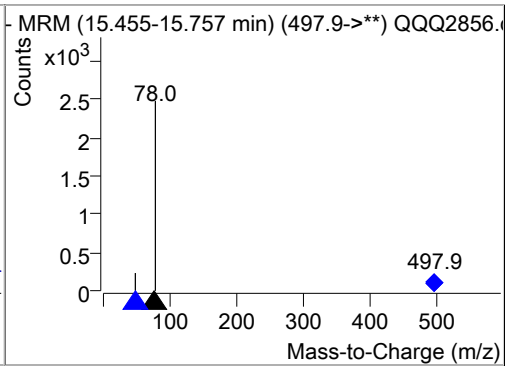




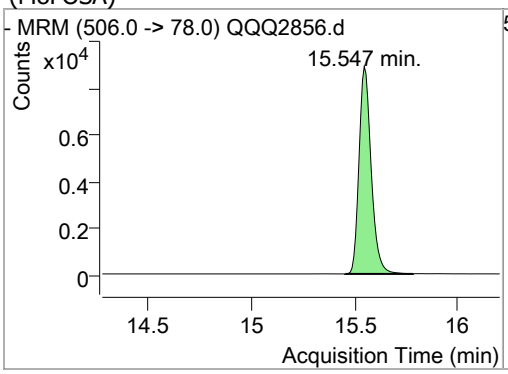
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	7.2236	15.55	0.36	45454	497.9 -> 47.9	7.8	5.9	8.8

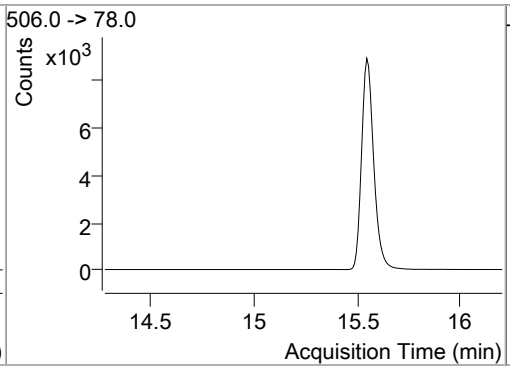


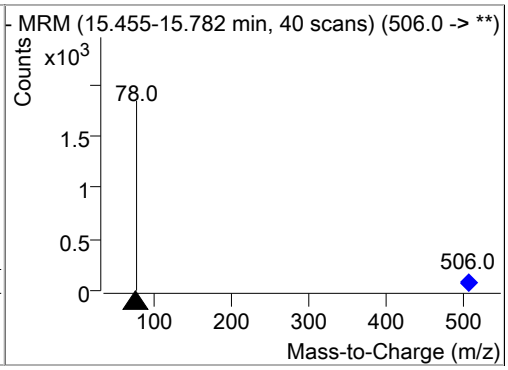




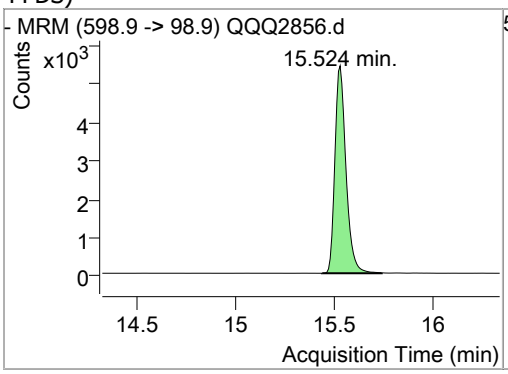
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	6.0043	15.55	0.35	36329				

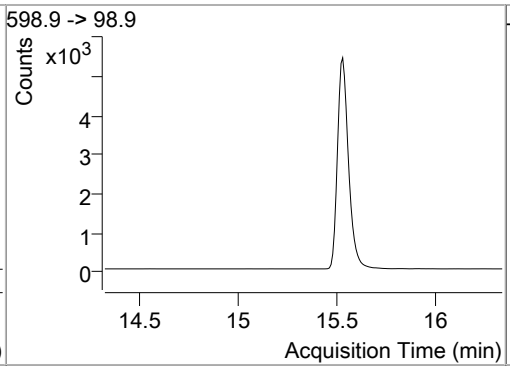


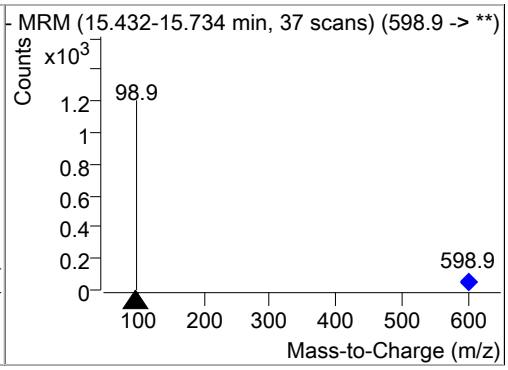




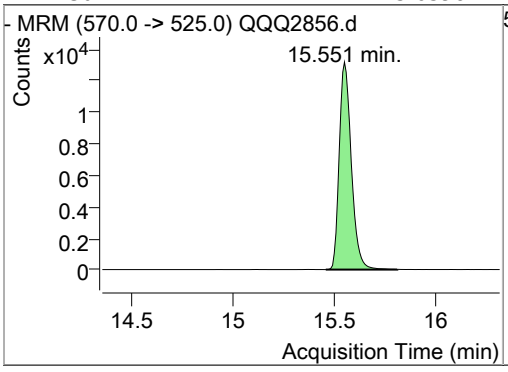
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	6.6702	15.52	0.31	20996				

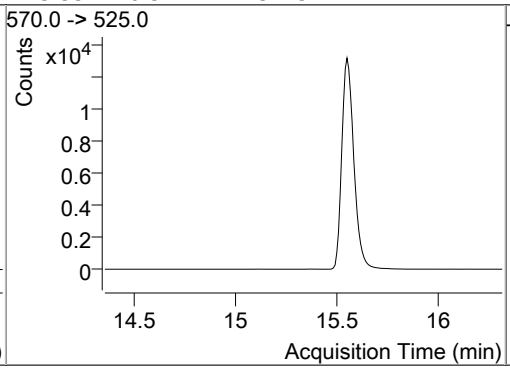


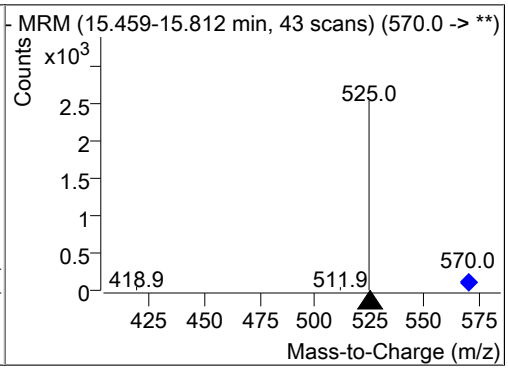




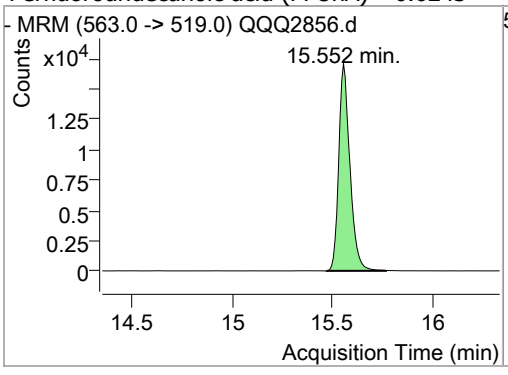
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	5.6390	15.55	0.31	54457				

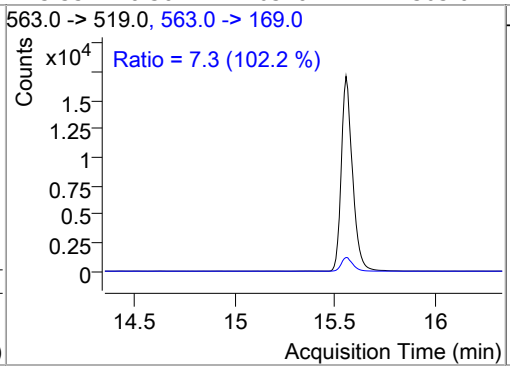


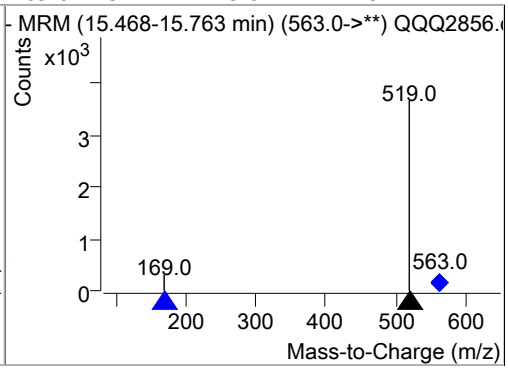




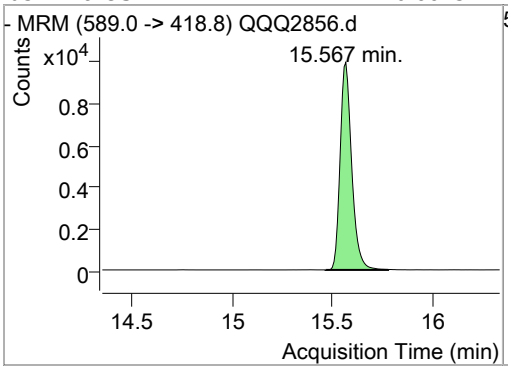
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	6.6243	15.55	0.30	65402	563.0 -> 169.0	7.3	5.0	9.2

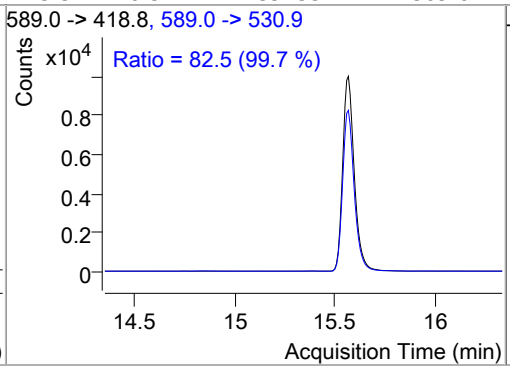


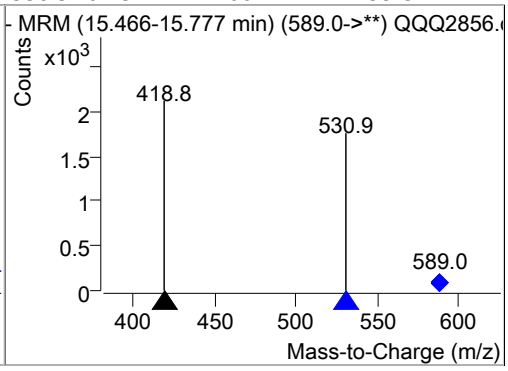




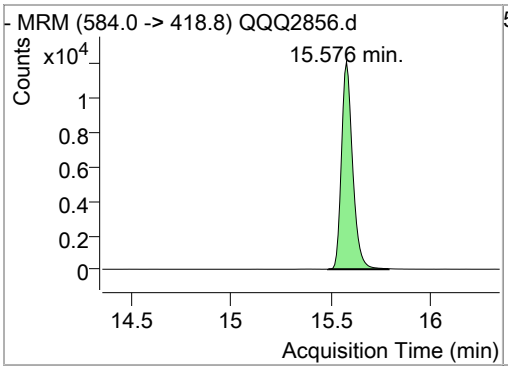
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	6.0013	15.57	0.31	39753	589.0 -> 530.9	82.5	66.2	99.3

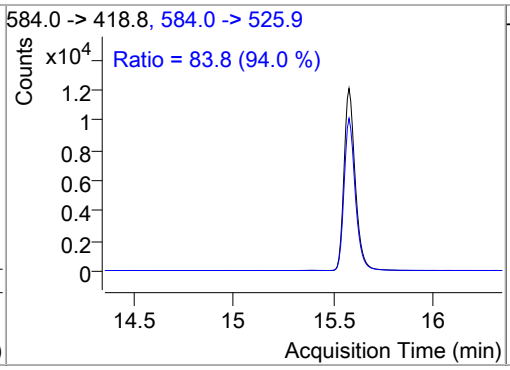


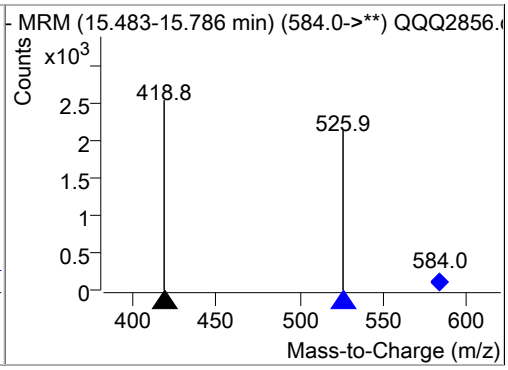




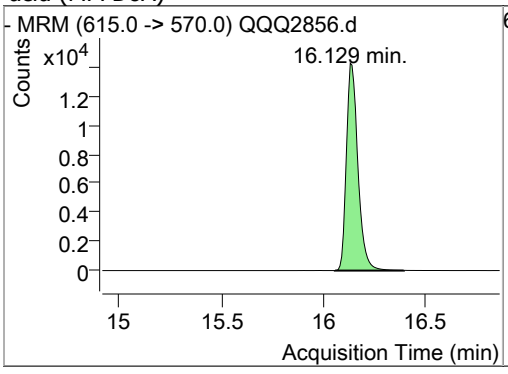
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	7.3272	15.58	0.31	46820	584.0 -> 525.9	83.8	71.3	107.0

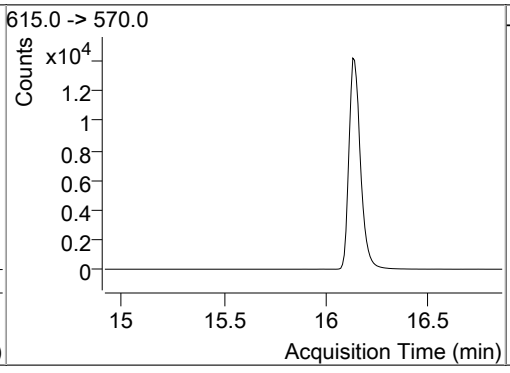


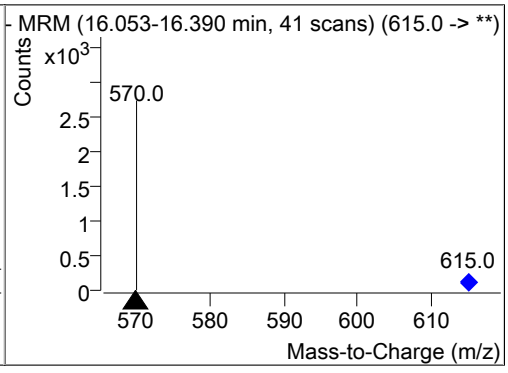




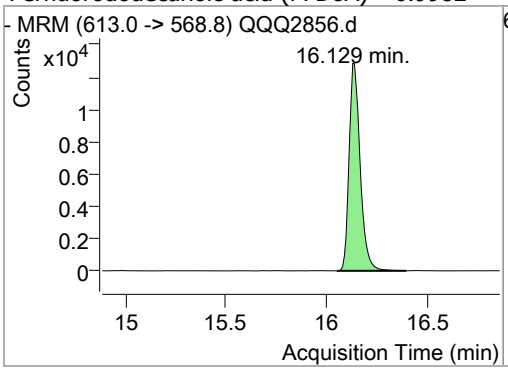
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.8625	16.13	0.35	55436				

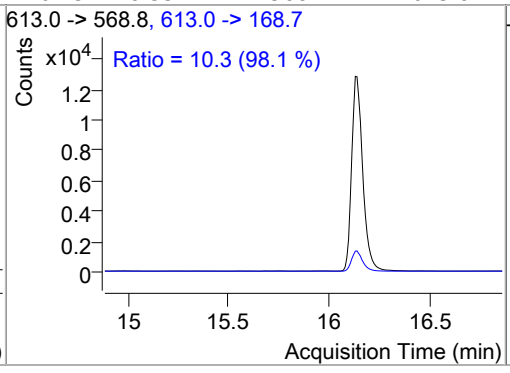


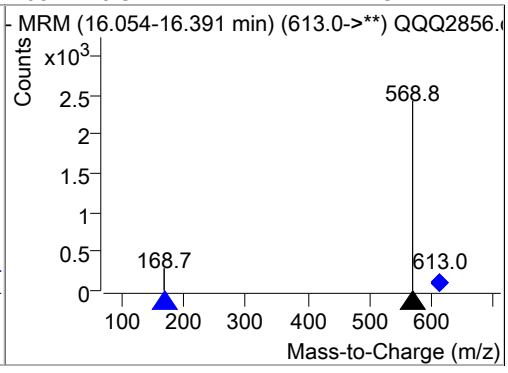




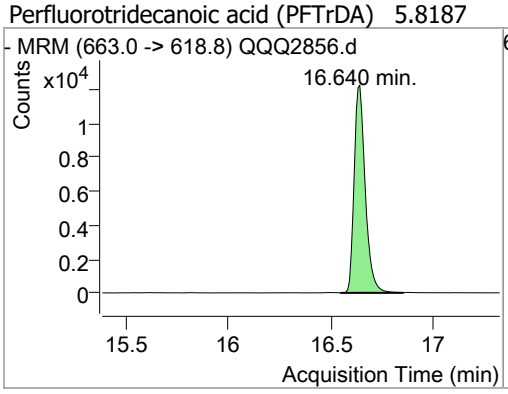
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	6.9982	16.13	0.35	49084	613.0 -> 168.7	10.3	7.4	13.7

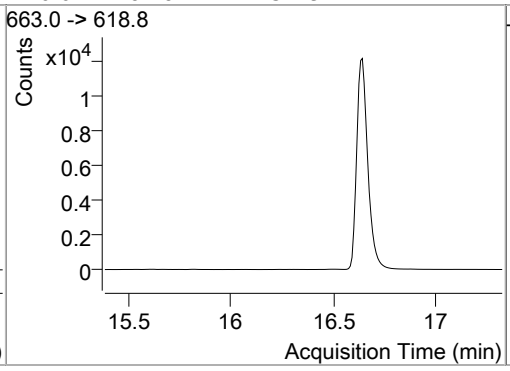


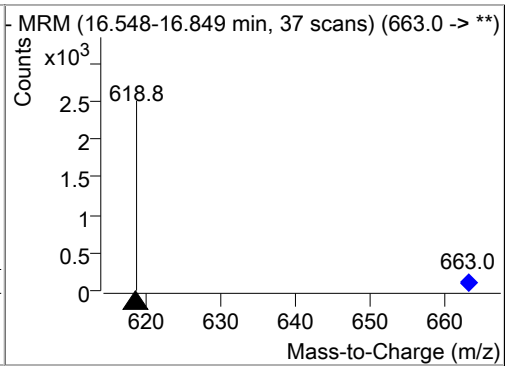




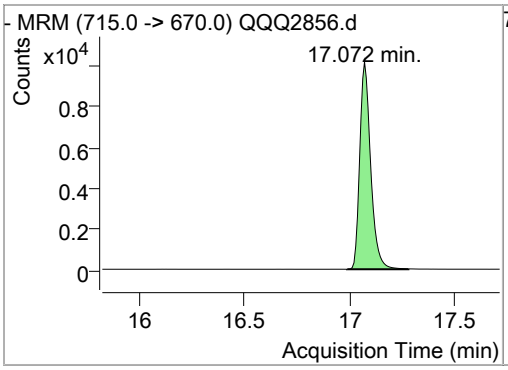
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	5.8187	16.64	0.40	45719				

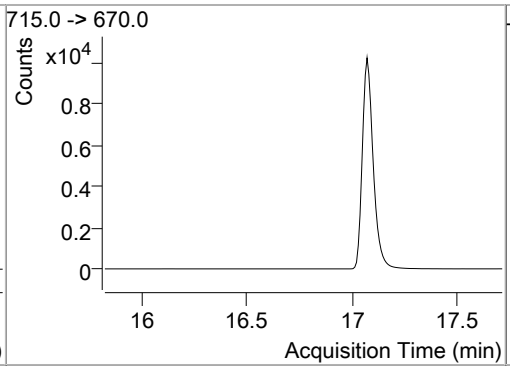


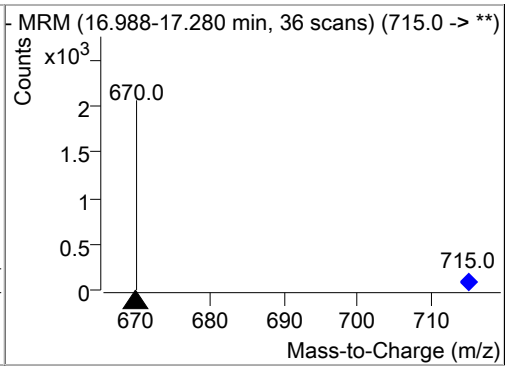




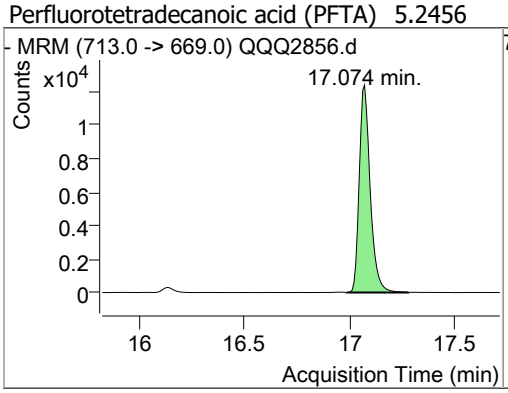
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	4.1529	17.07	0.43	36620				

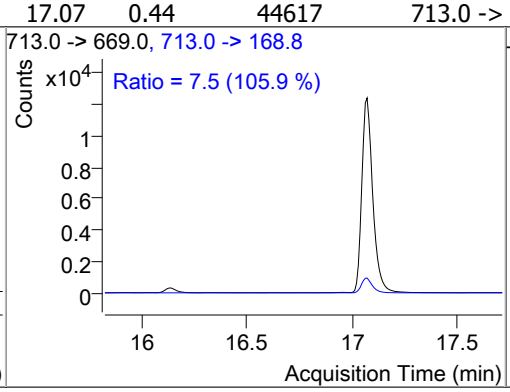


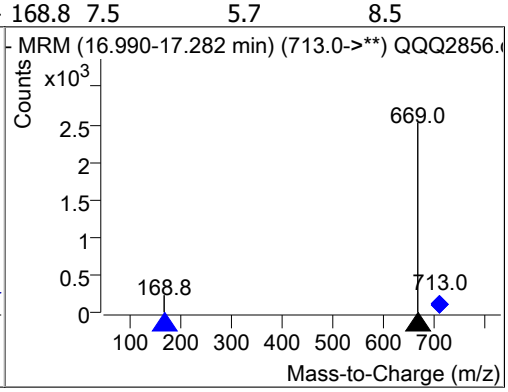




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	5.2456	17.07	0.44	44617	713.0 -> 168.8	7.5	5.7	8.5







Quantitation Results Report (Not Reviewed)

Data File	QQQ2857.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 11:51:35 AM
Sample Name	BL91039-MSD2	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

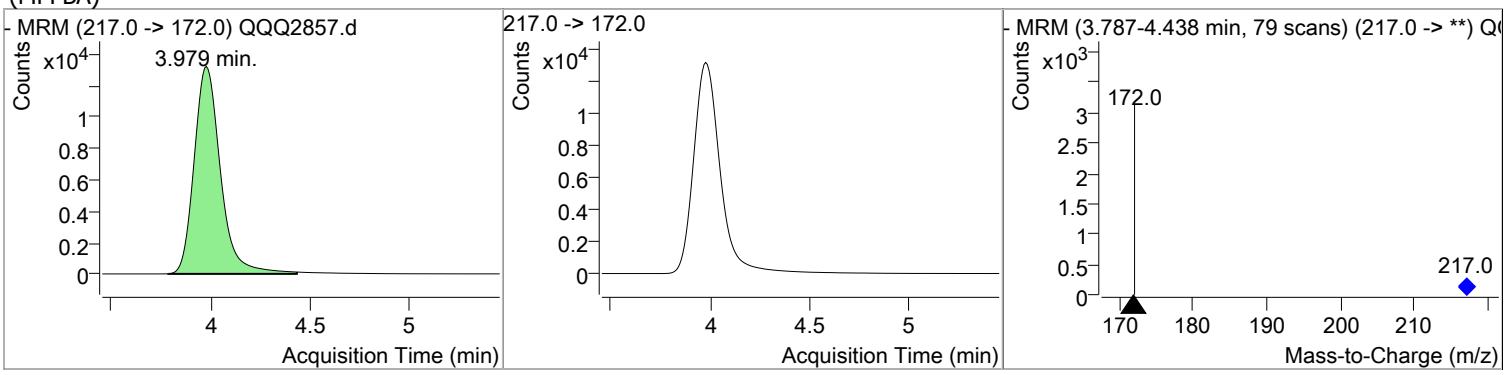
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.118	417.0 -> 372.0	227365	10.0000	ng/ml	0.085
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.979	217.0 -> 172.0	121989	6.8498	ng/ml	-0.209
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 68.50%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.014	268.0 -> 223.0	169364	6.9756	ng/ml	-0.100
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.76%		
M3PFBS	8.760	302.0 -> 79.9	49828	6.5012	ng/ml	-0.058
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 65.01%		
M2-4-2FTS	10.225	329.0 -> 309.0	68434	9.8412	ng/ml	-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 98.41%		
M5PFHxA	10.370	318.0 -> 273.0	158492	6.9293	ng/ml	-0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.29%		
M4PFHpA	11.927	367.0 -> 322.0	44374	7.0172	ng/ml	0.008
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 70.17%		
M3PFHxS	12.068	402.0 -> 80.0	33733	6.4071	ng/ml	0.026
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 64.07%		
M2-6-2FTS	13.048	429.0 -> 409.0	61326	10.8835	ng/ml	0.075
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 108.84%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.109	421.0 -> 376.0	81617	6.7861	ng/ml	0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 67.86%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.065	472.0 -> 427.0	86940	7.0650	ng/ml	0.161
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 70.65%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.081	507.0 -> 80.0	24846	6.1636	ng/ml	0.169
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 61.64%		
M2-8-2FTS	14.845	529.0 -> 509.0	35112	7.6200	ng/ml	0.227
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 76.20%		
M6PFDA	14.863	519.0 -> 473.9	59745	6.0933	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.93%		
d3-N-MeFOSAA	15.206	573.0 -> 418.8	49462	6.2835	ng/ml	0.270
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 62.83%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	35330	5.6314	ng/ml	0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 56.31%		
M7PFUdA	15.543	570.0 -> 525.0	56068	5.5993	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 55.99%		
d5-N-EtFOSAA	15.558	589.0 -> 418.8	41280	6.0101	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 60.10%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.120	615.0 -> 570.0	61269	6.2489	ng/ml	0.345
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 62.49%		
M2PFTeDA	17.063	715.0 -> 670.0	40127	4.3888	ng/ml	0.426
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 43.89%		

Target Compounds	QValue

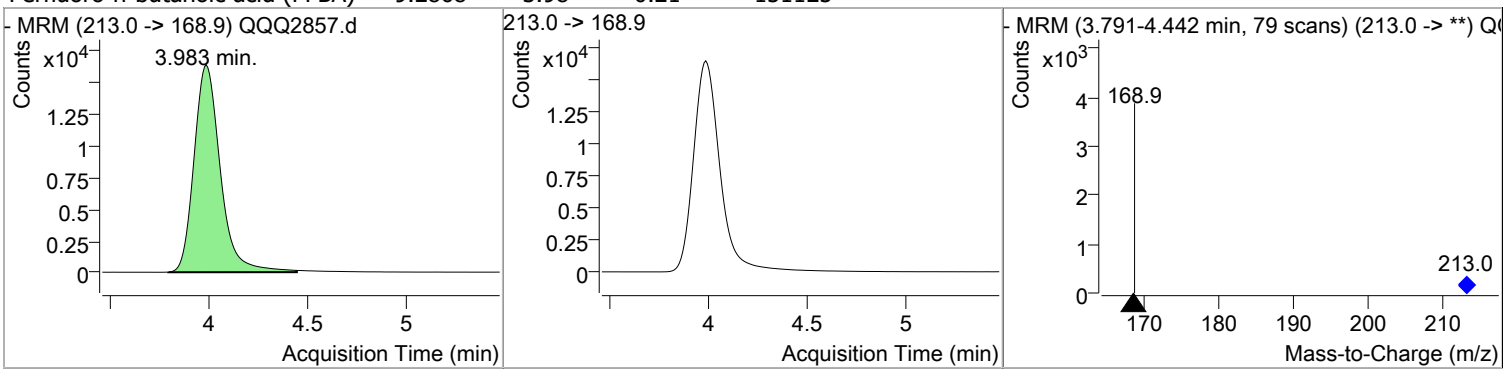
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	3.983	213.0 -> 168.9	151125	9.2868	ng/ml		100
Perfluoro-n-pentanoic acid (PFPeA)	8.015	263.0 -> 219.0	233040	10.8819	ng/ml		100
Perfluorobutanesulfonic acid (PFBS)	8.763	298.9 -> 79.9	59153	8.4512	ng/ml		99
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.226	327.0 -> 307.0	75035	11.4654	ng/ml		99
Perfluorohexanoic acid (PFHxA)	10.364	313.0 -> 268.9	201557	10.2969	ng/ml		100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.683	348.9 -> 79.9	52742	8.3847	ng/ml		97
Perfluoroheptanoic acid (PFHpA)	11.936	363.0 -> 318.8	131530	8.8400	ng/ml		99
Perfluorohexanesulfonic acid (PFHxS)	12.069	398.9 -> 79.9	49385	9.1229	ng/ml	m	94
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.049	427.0 -> 407.0	74405	12.5263	ng/ml		100
Perfluorooctanoic acid (PFOA)	13.119	413.0 -> 368.8	102968	8.9110	ng/ml		95
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.174	448.9 -> 80.0	32349	8.2861	ng/ml		98
Perfluorononanoic acid (PFNA)	14.065	463.0 -> 418.8	67922	7.2907	ng/ml		96
Perfluorooctanesulfonic acid (PFOS)	14.081	498.9 -> 79.9	44695	9.3060	ng/ml	#m	79
Perfluorononanesulfonate (L-PFNS)	14.853	548.9 -> 79.9	25564	7.1899	ng/ml		99
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.854	527.0 -> 507.0	36923	9.7004	ng/ml		97
Perfluorodecanoic acid (PFDA)	14.864	513.0 -> 468.8	70348	8.6833	ng/ml		89
N-MeFOSAA	15.215	570.0 -> 418.9	63717	7.5377	ng/ml		96
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	44275	6.7860	ng/ml		97
Perfluoro-1-decanesulfonate (L-PFDS)	15.516	598.9 -> 98.9	21729	6.6576	ng/ml		100
Perfluoroundecanoic acid (PFUnA)	15.544	563.0 -> 519.0	78023	7.6216	ng/ml		97
N-EtFOSAA	15.567	584.0 -> 418.8	48848	7.3727	ng/ml		93
Perfluorododecanoic acid (PFDoA)	16.129	613.0 -> 568.8	54762	7.5300	ng/ml		97
Perfluorotridecanoic acid (PFTrDA)	16.632	663.0 -> 618.8	49694	6.0996	ng/ml		100
Perfluorotetradecanoic acid (PFTA)	17.065	713.0 -> 669.0	55154	6.2538	ng/ml		100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

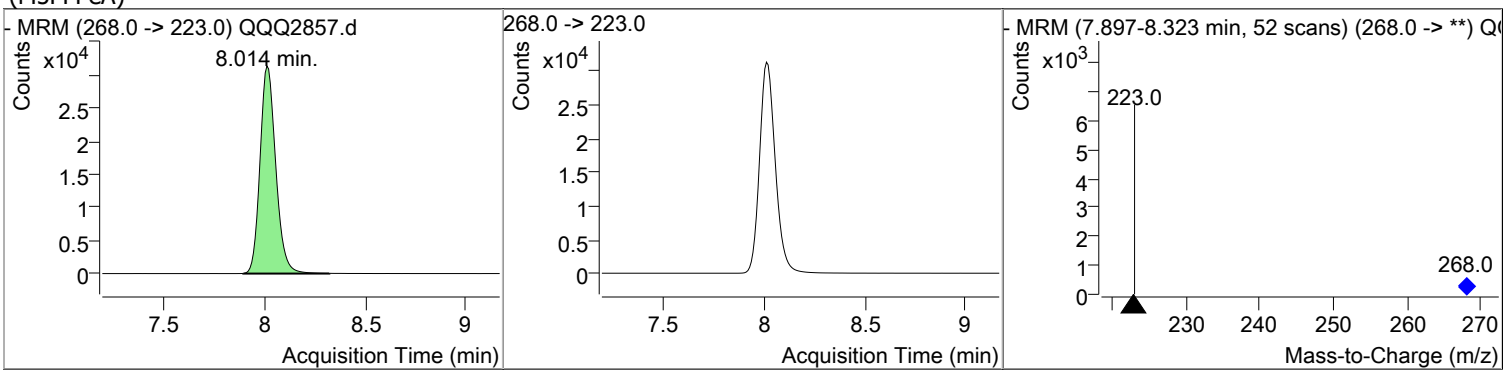
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	6.8498	3.98	-0.21	121989				



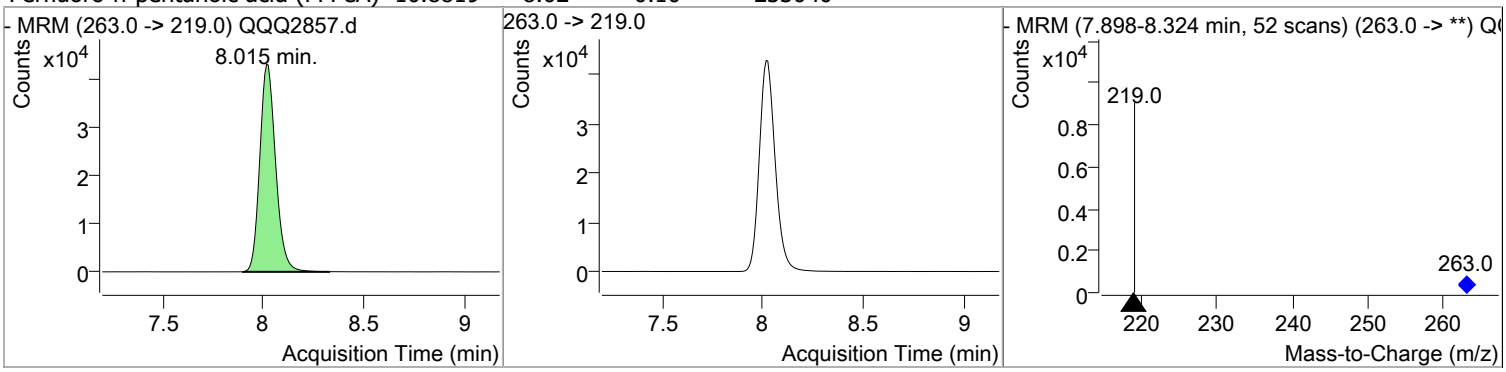
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	9.2868	3.98	-0.21	151125				



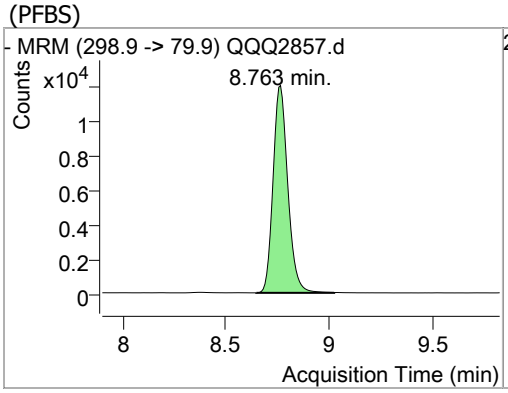
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	6.9756	8.01	-0.10	169364				

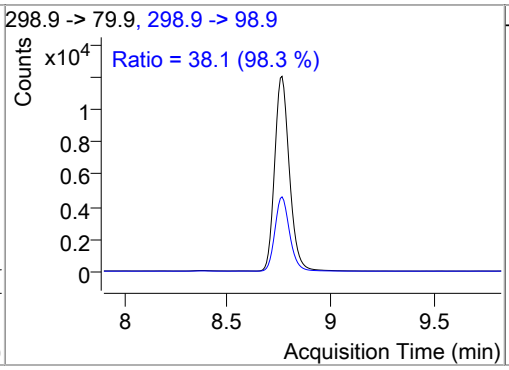


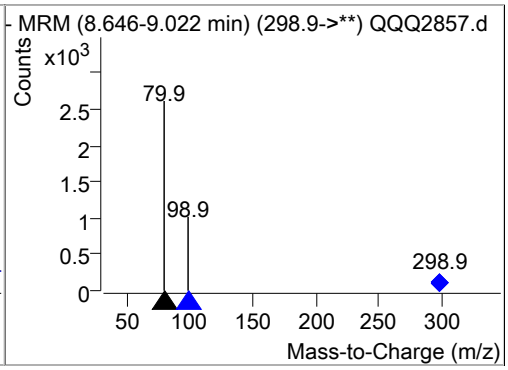
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	10.8819	8.02	-0.10	233040				



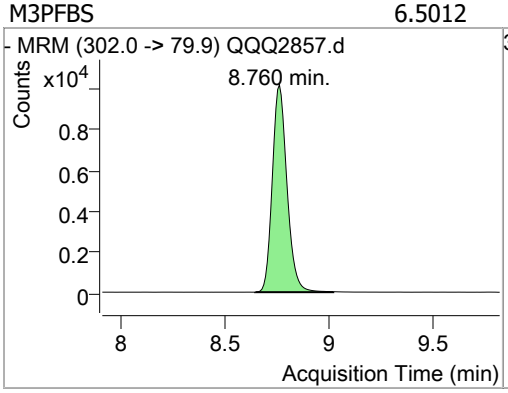
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	8.4512	8.76	-0.05	59153	298.9 -> 98.9	38.1	31.0	46.5

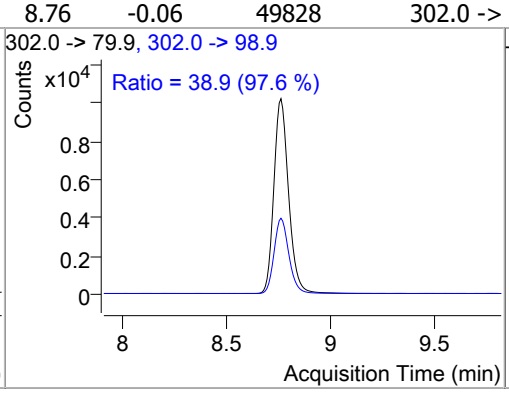


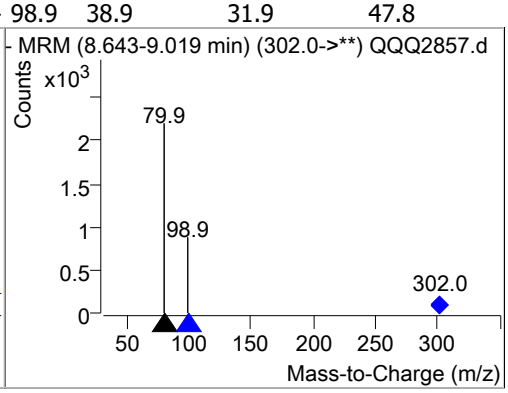




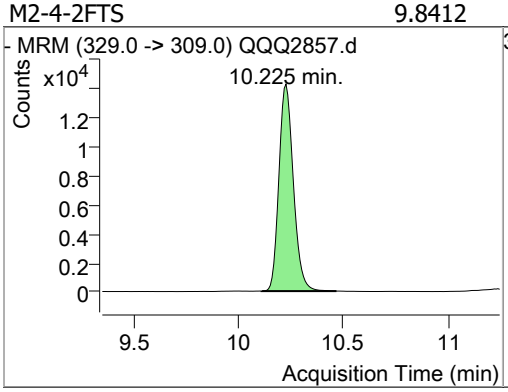
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	6.5012	8.76	-0.06	49828	302.0 -> 98.9	38.9	31.9	47.8

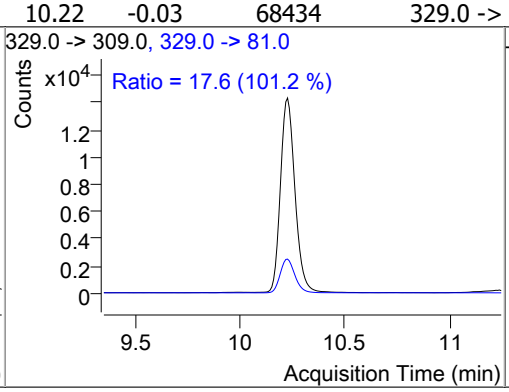


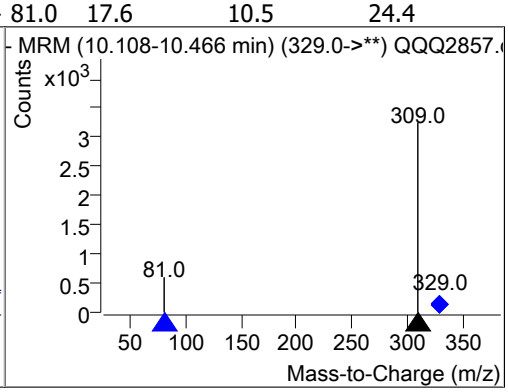




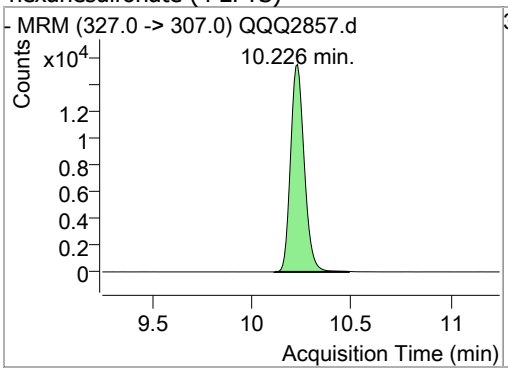
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	9.8412	10.22	-0.03	68434	329.0 -> 81.0	17.6	10.5	24.4

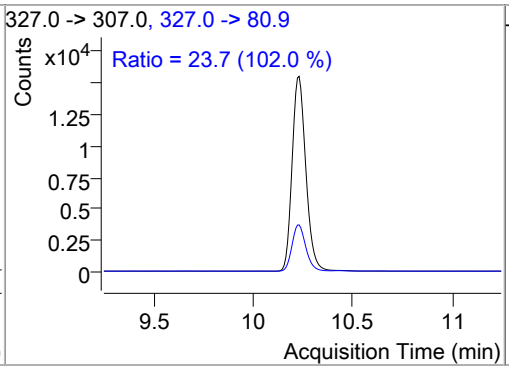


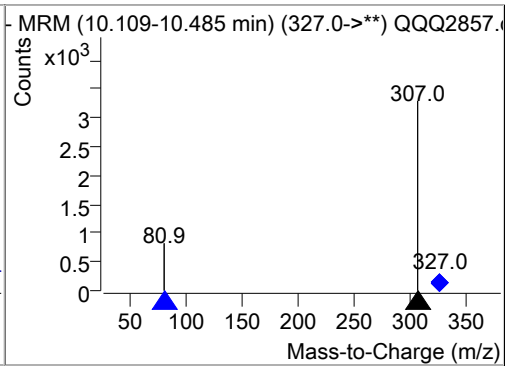




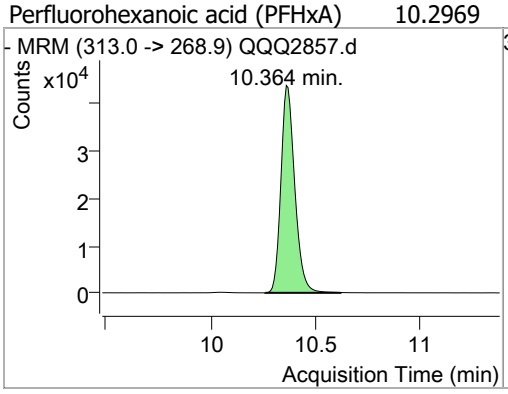
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	11.4654	10.23	-0.03	75035	327.0 -> 80.9	23.7	13.9	32.5

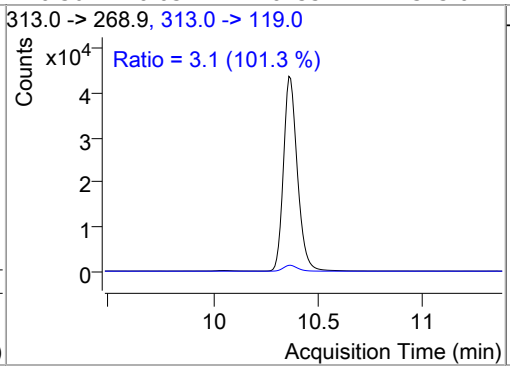


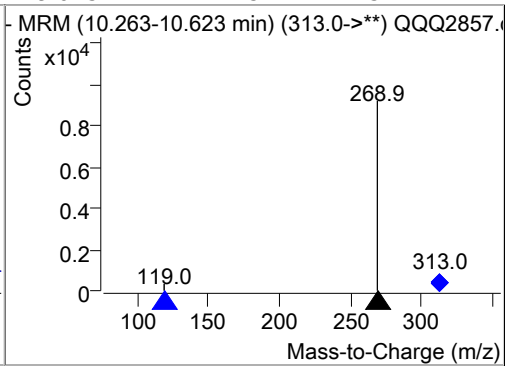




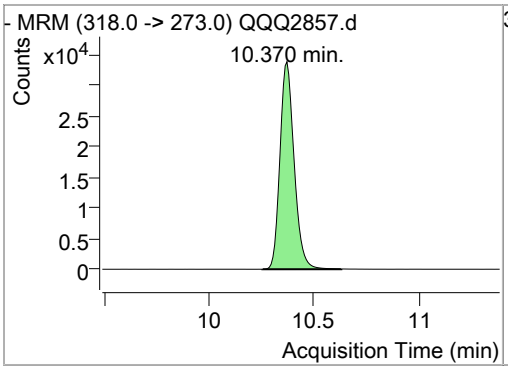
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	10.2969	10.36	-0.03	201557	313.0 -> 119.0	3.1	2.5	3.7

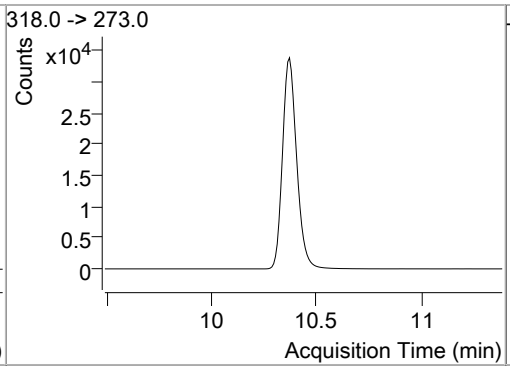


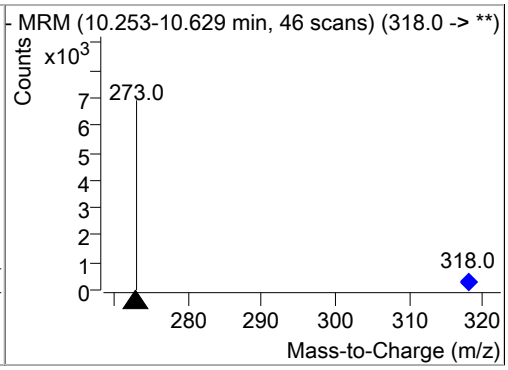




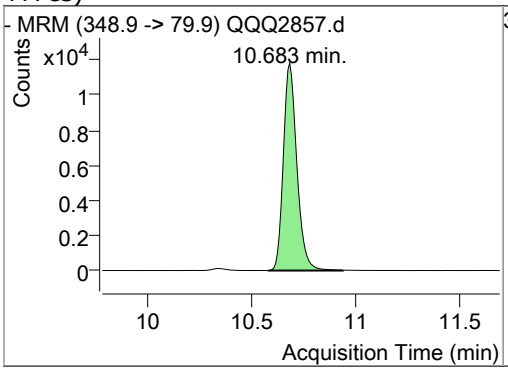
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	6.9293	10.37	-0.03	158492				

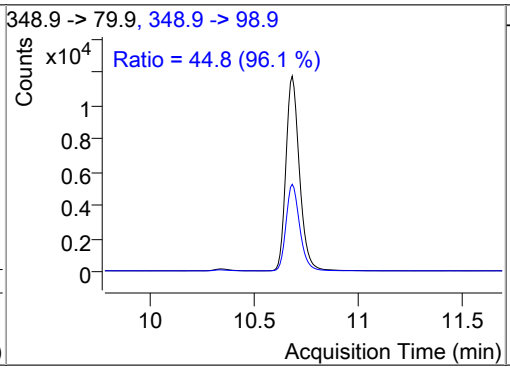


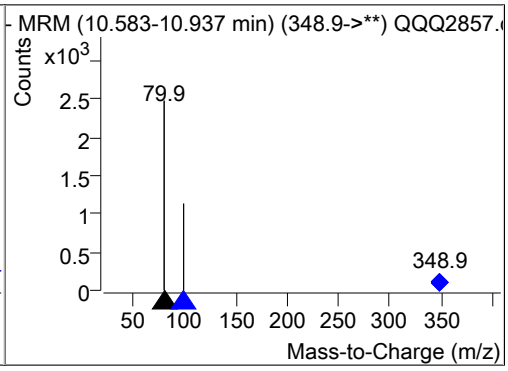




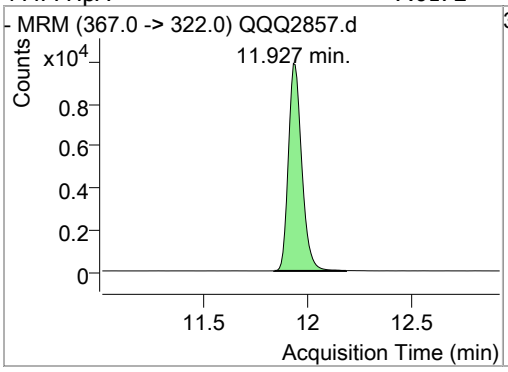
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	8.3847	10.68	-0.02	52742	348.9 -> 98.9	44.8	37.3	56.0

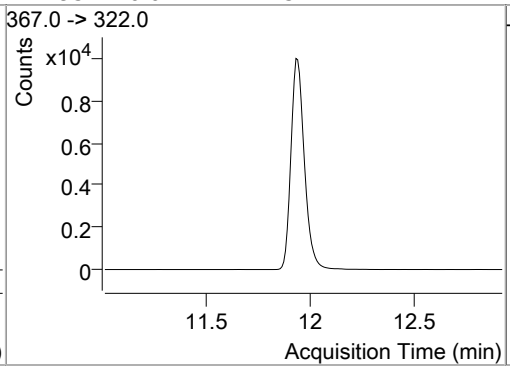


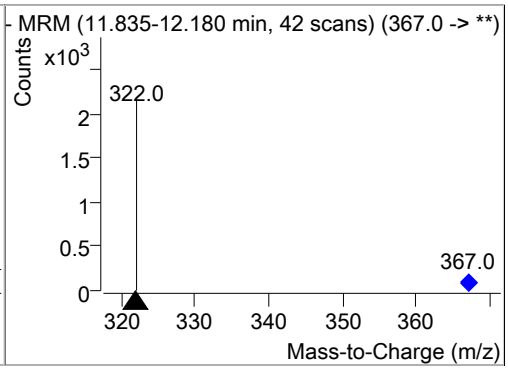




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	7.0172	11.93	0.01	44374				

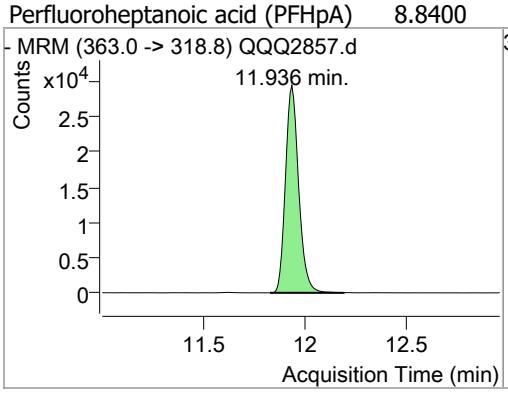


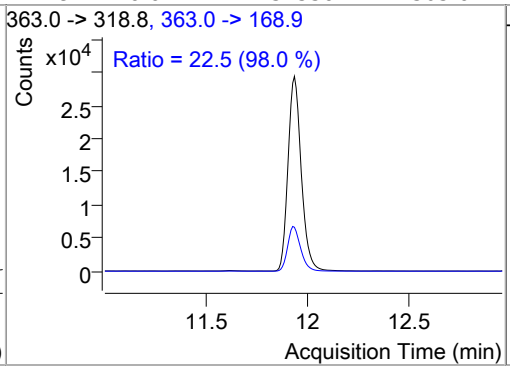


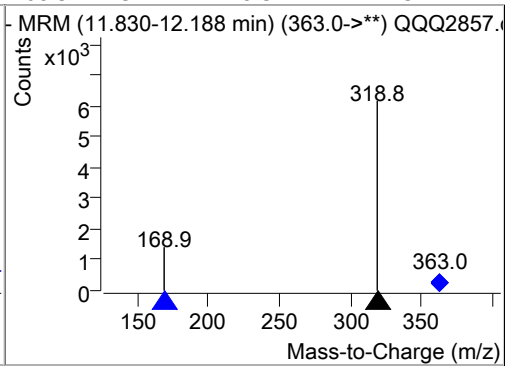


Quantitation Results Report (Not Reviewed)

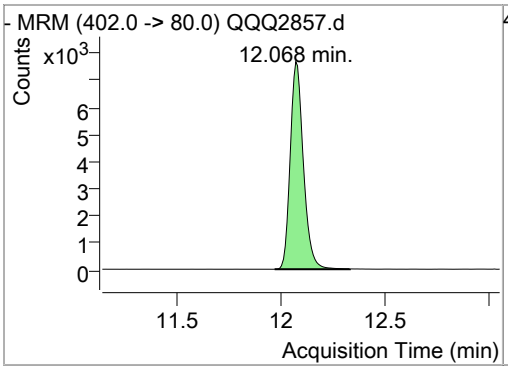
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	8.8400	11.94	0.02	131530	363.0 -> 168.9	22.5	18.3	27.5

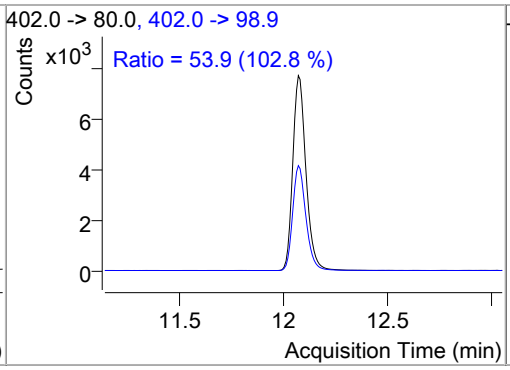


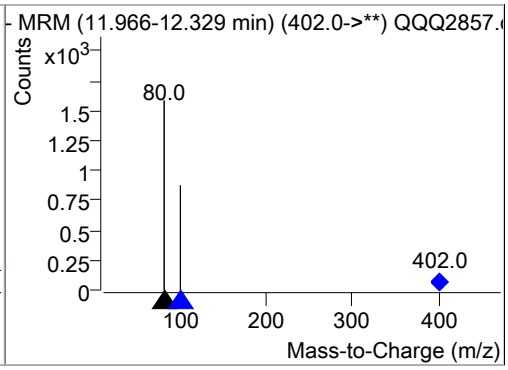




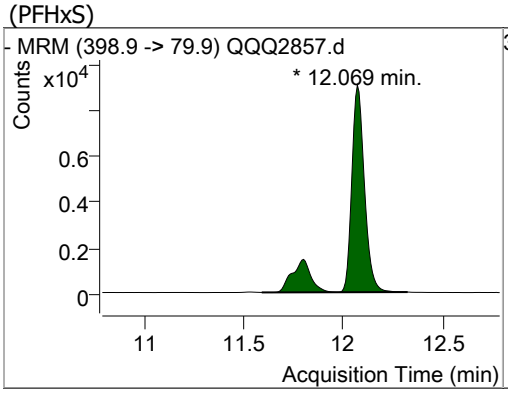
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	6.4071	12.07	0.03	33733	402.0 -> 98.9	53.9	42.0	62.9

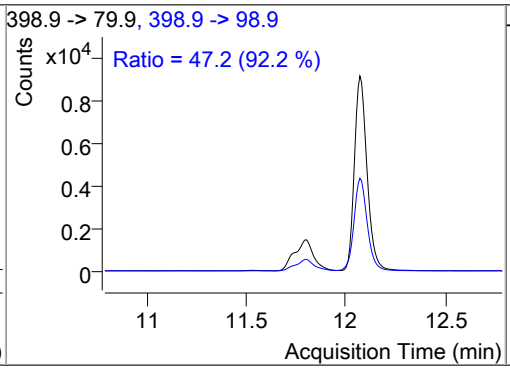


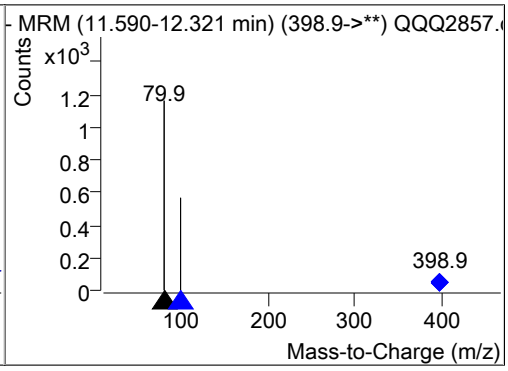




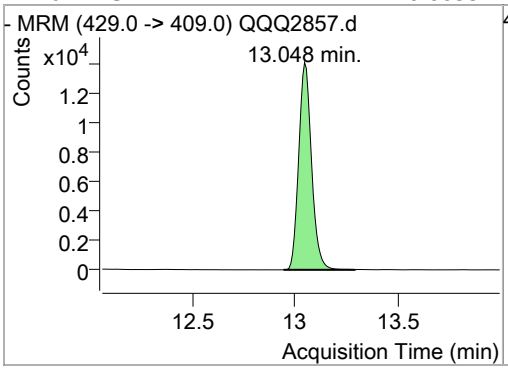
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	9.1229	12.07	0.03	49385 (m)	398.9 -> 98.9	47.2	41.0	61.5

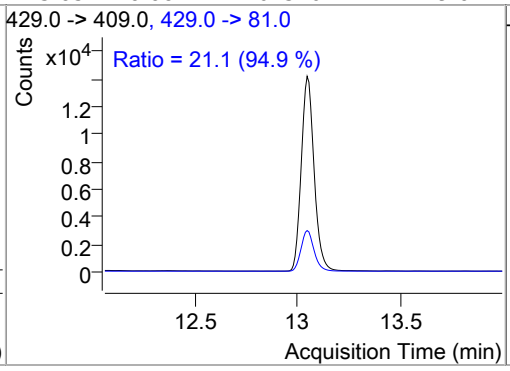


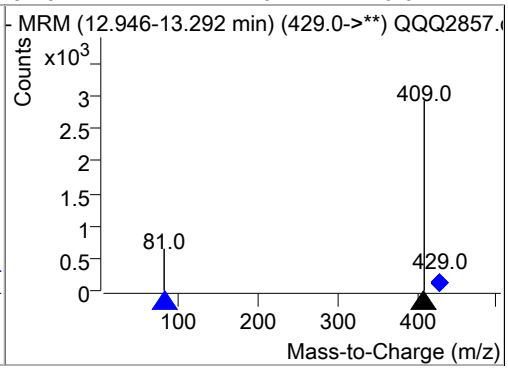




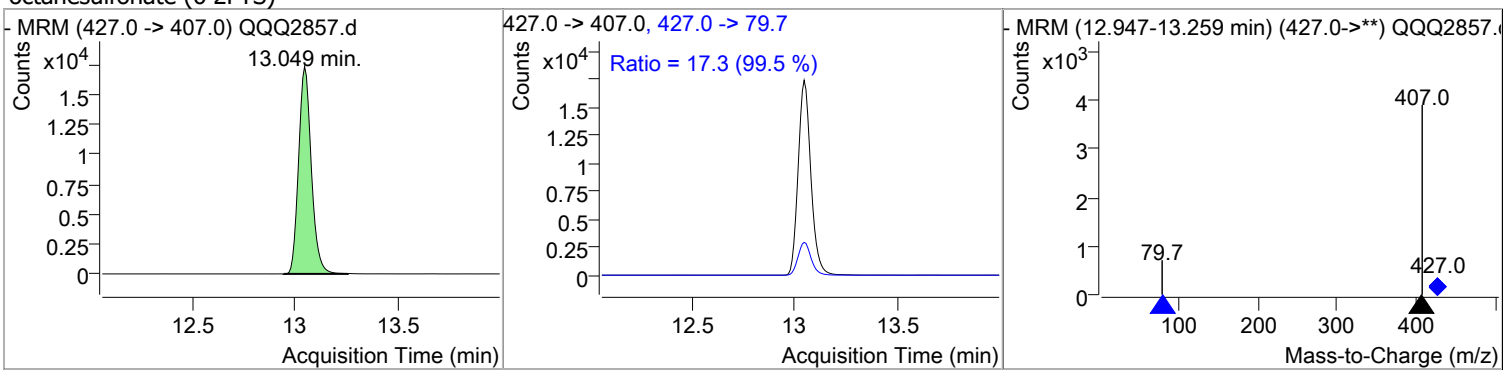
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	10.8835	13.05	0.08	61326	429.0 -> 81.0	21.1	17.8	26.6



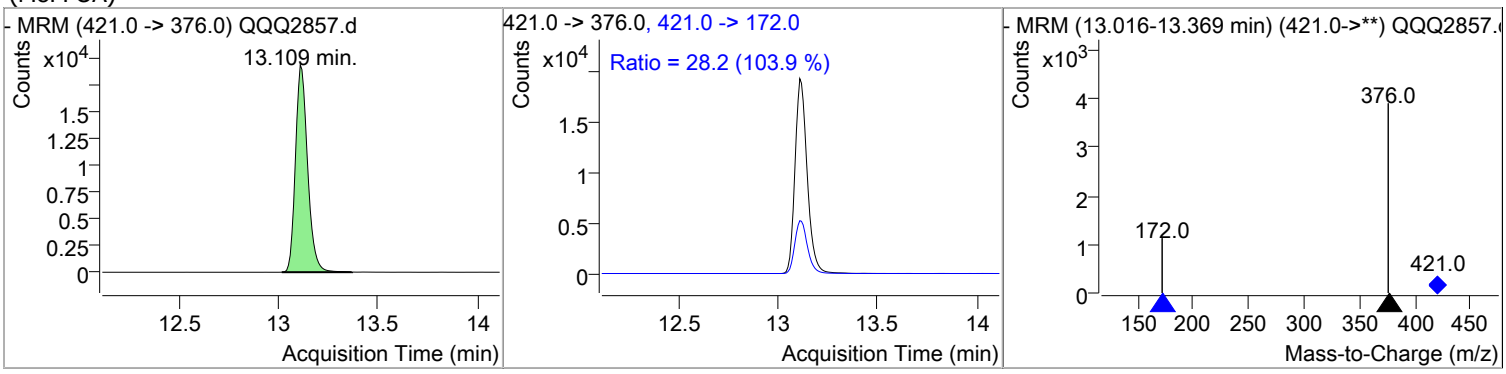




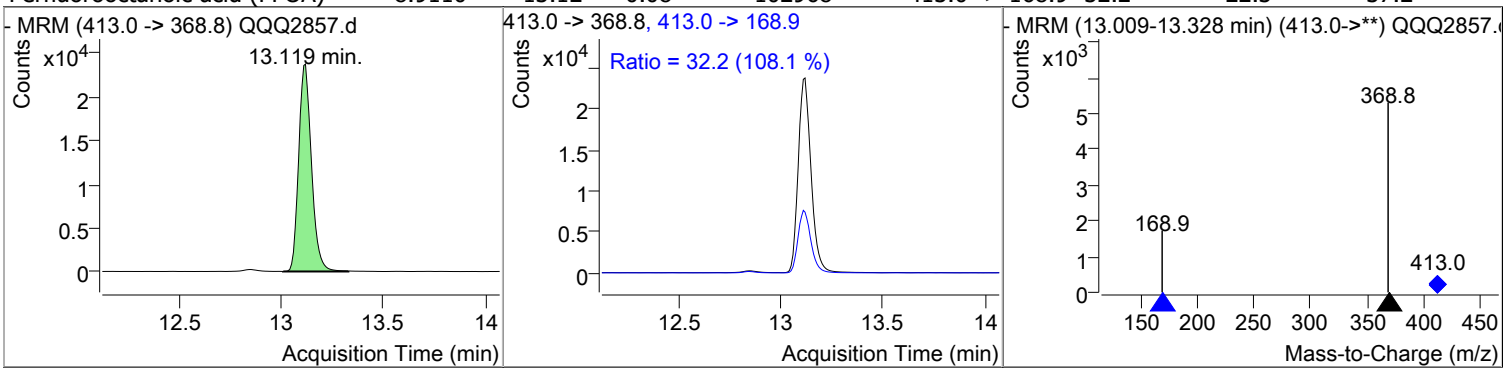
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	12.5263	13.05	0.08	74405	427.0 -> 79.7	17.3	13.9	20.8



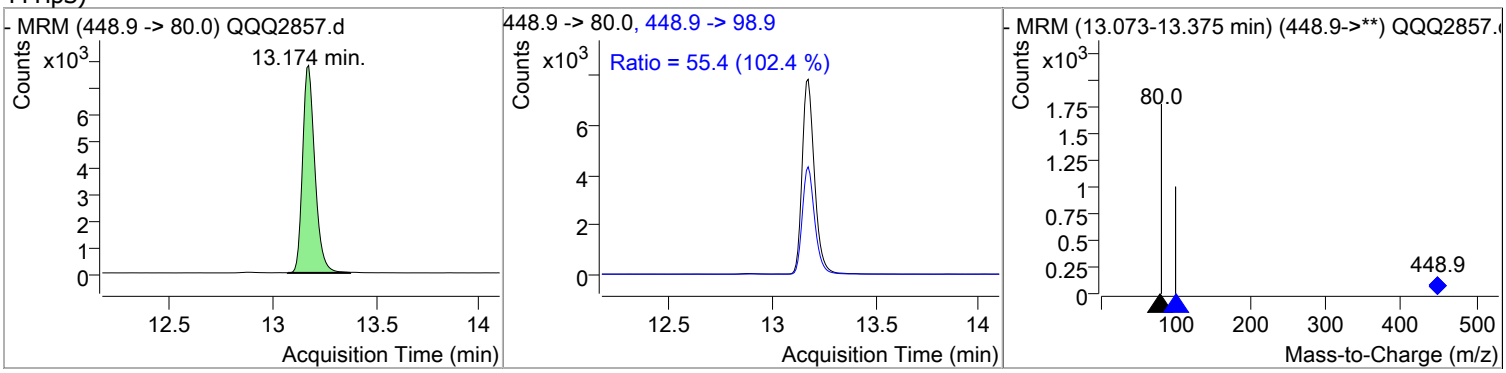
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	6.7861	13.11	0.08	81617	421.0 -> 172.0	28.2	21.7	32.6



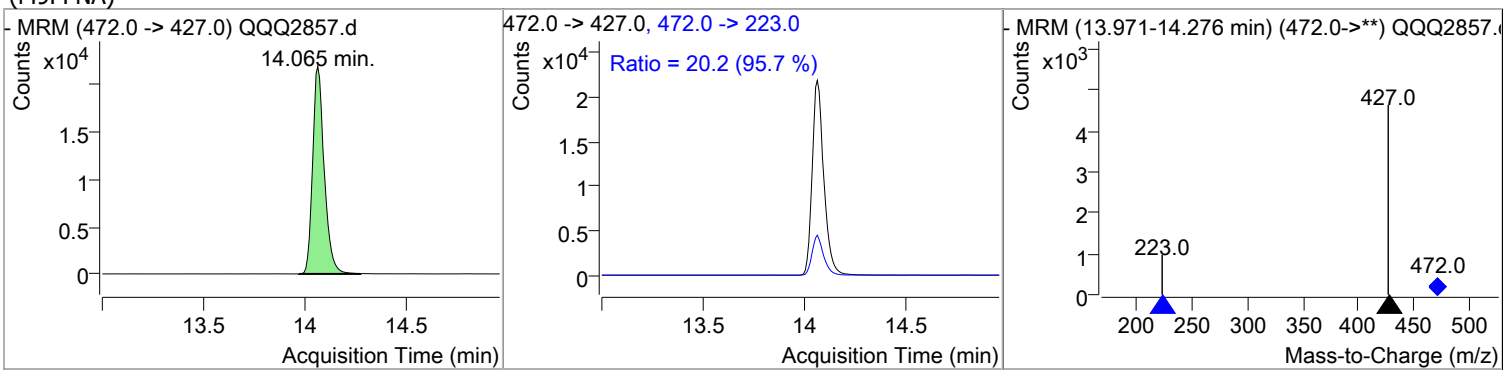
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	8.9110	13.12	0.08	102968	413.0 -> 168.9	32.2	22.3	37.2



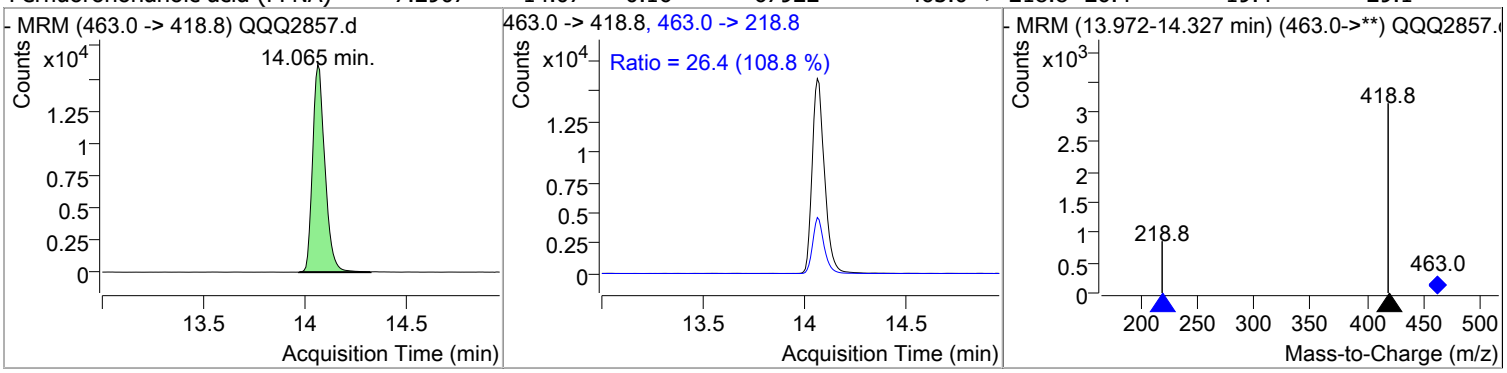
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	8.2861	13.17	0.09	32349	448.9 -> 98.9	55.4	43.3	64.9



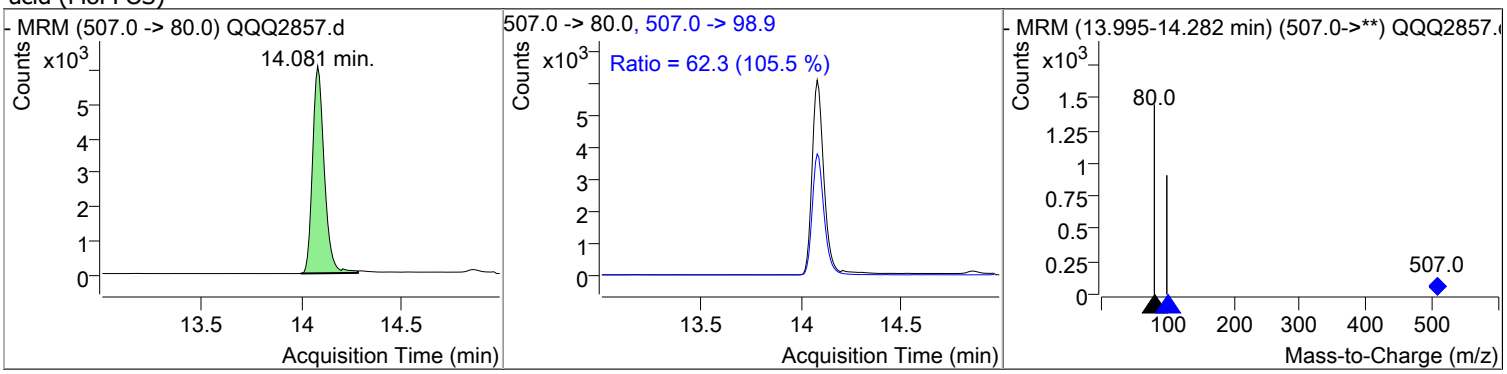
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	7.0650	14.06	0.16	86940	472.0 -> 223.0	20.2	16.9	25.4



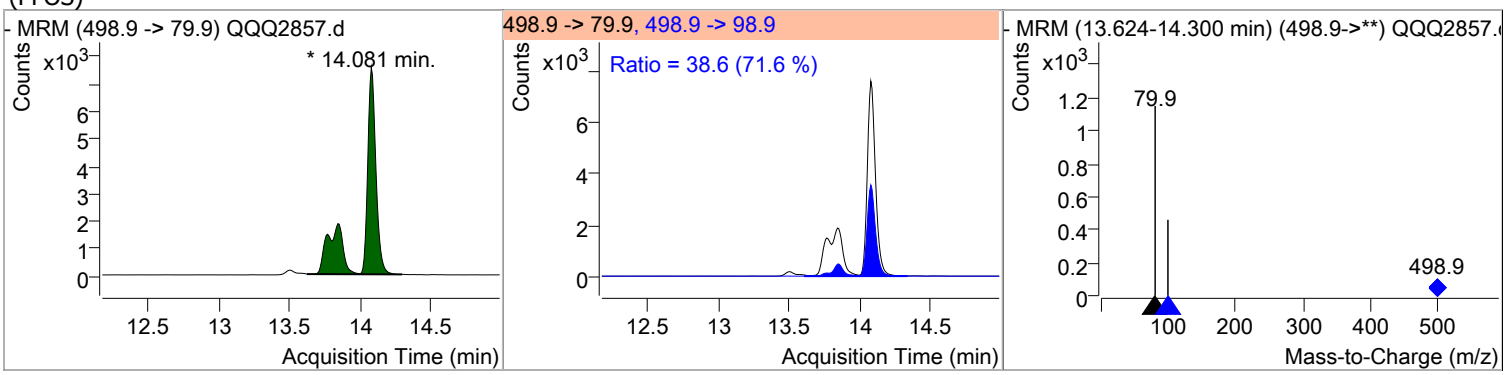
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	7.2907	14.07	0.16	67922	463.0 -> 218.8	26.4	19.4	29.1



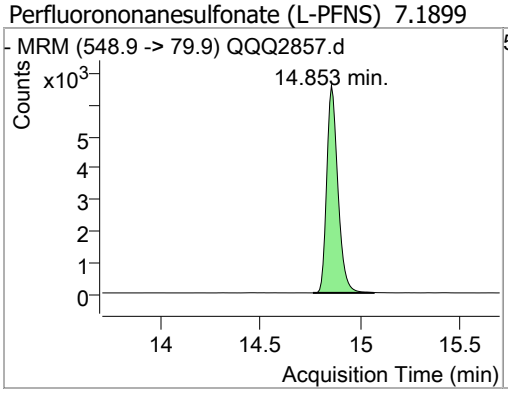
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	6.1636	14.08	0.17	24846	507.0 -> 98.9	62.3	47.2	70.8

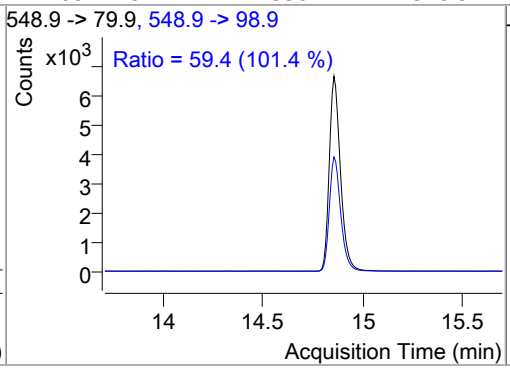


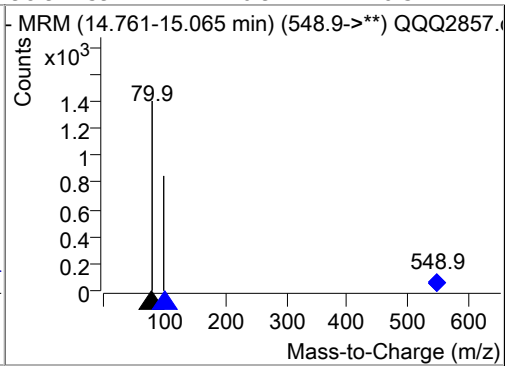
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	9.3060	14.08	0.17	44695 (m)	498.9 -> 98.9	38.6	43.1	64.6



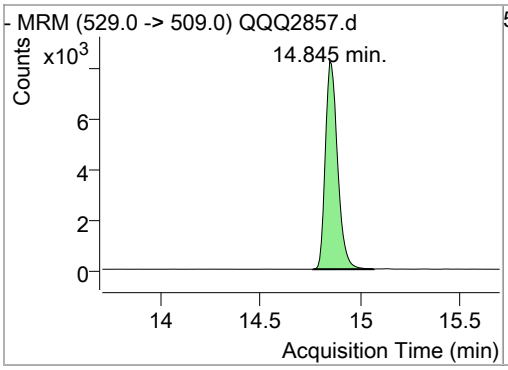
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	7.1899	14.85	0.24	25564	548.9 -> 98.9	59.4	46.9	70.3

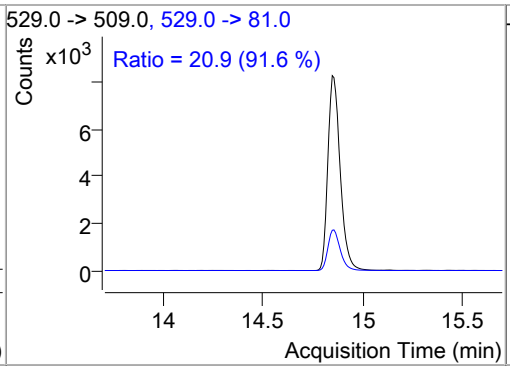


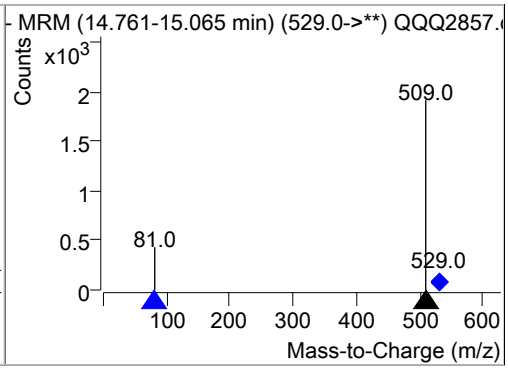




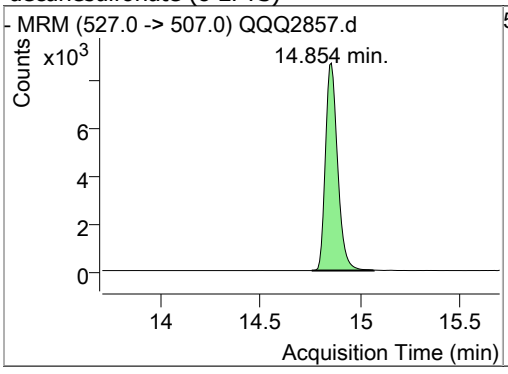
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	7.6200	14.85	0.23	35112	529.0 -> 81.0	20.9	18.3	27.4

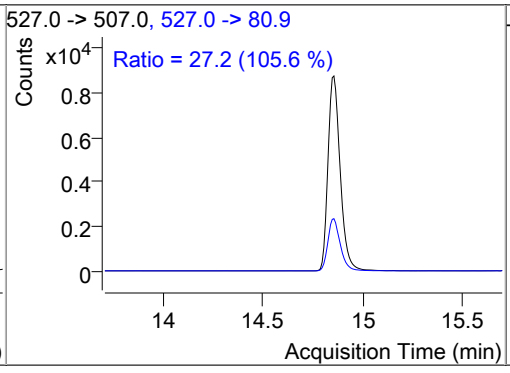


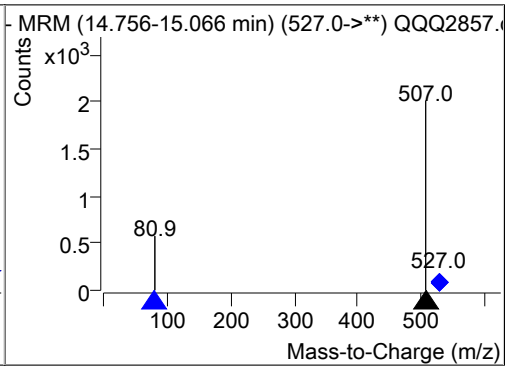




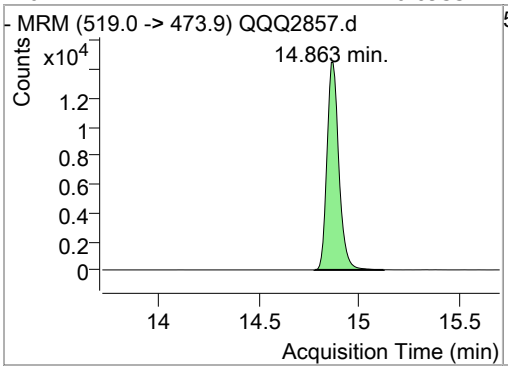
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	9.7004	14.85	0.24	36923	527.0 -> 80.9	27.2	20.6	30.9

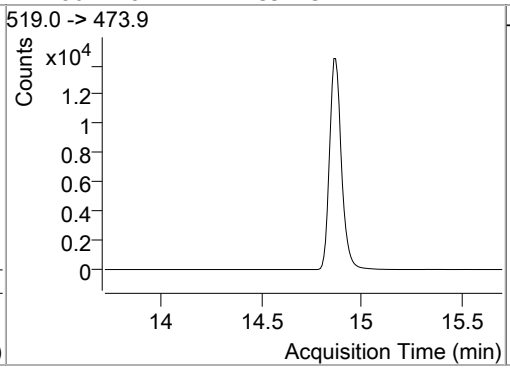


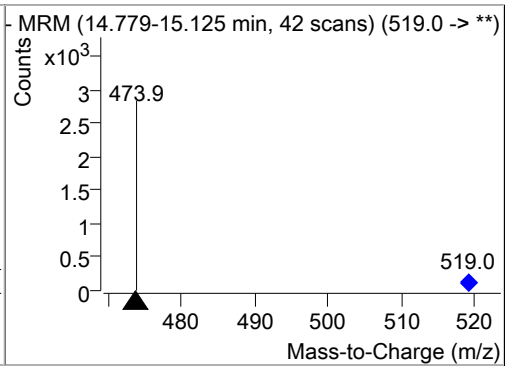




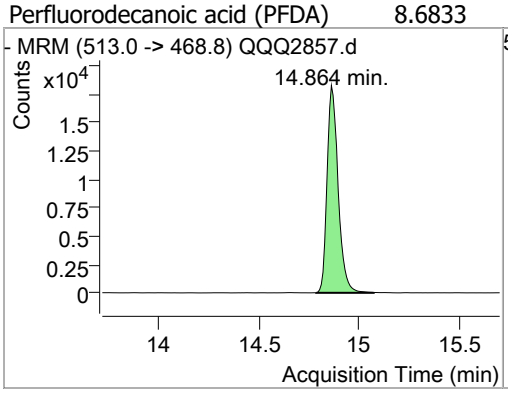
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	6.0933	14.86	0.24	59745				

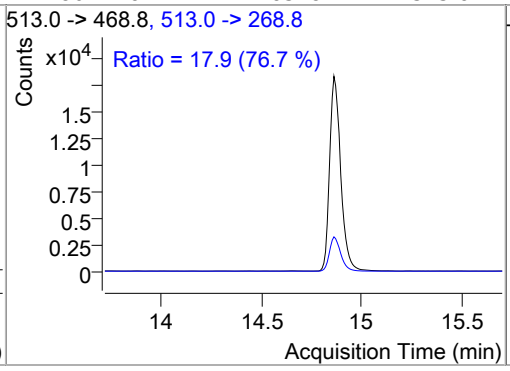


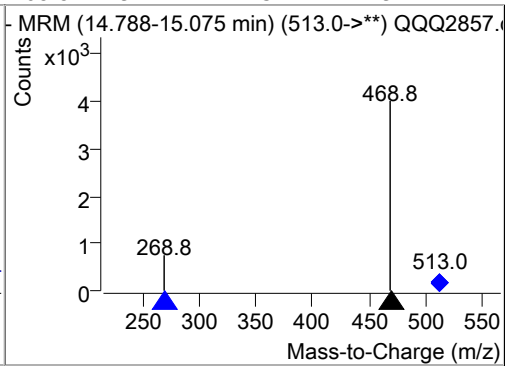




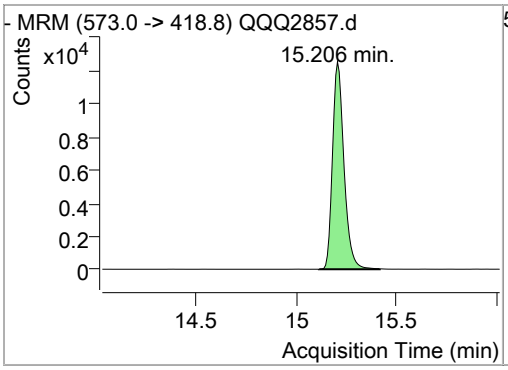
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	8.6833	14.86	0.24	70348	513.0 -> 268.8	17.9	17.5	29.1

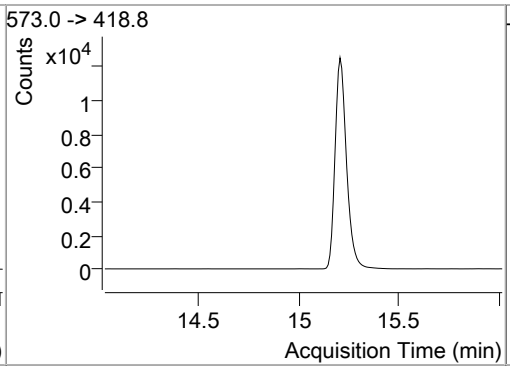


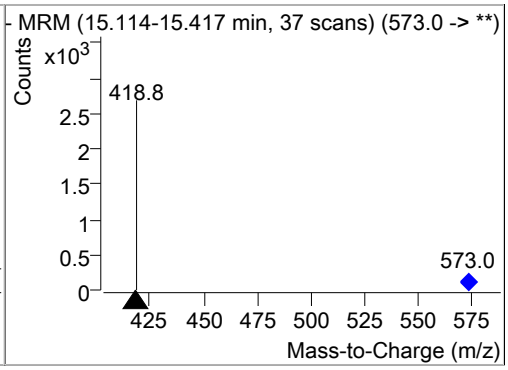




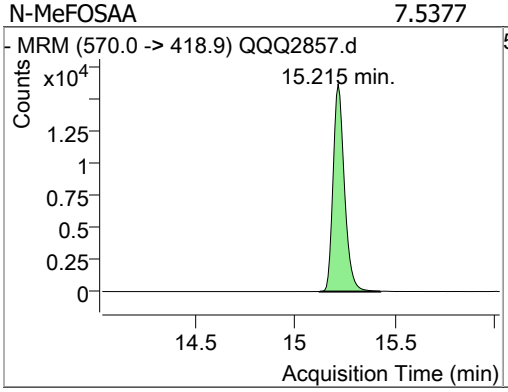
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	6.2835	15.21	0.27	49462				

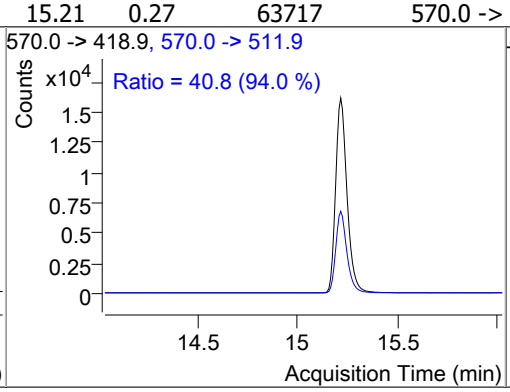


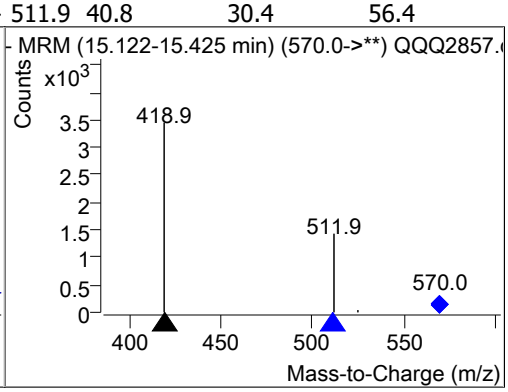




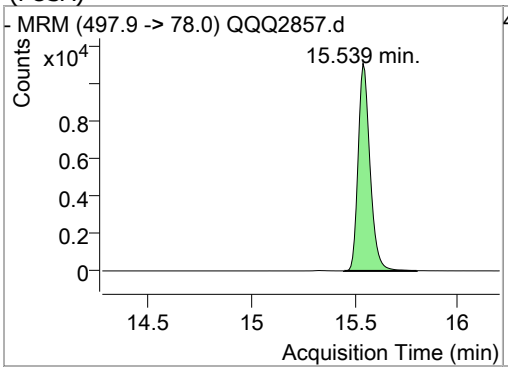
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	7.5377	15.21	0.27	63717	570.0 -> 511.9	40.8	30.4	56.4

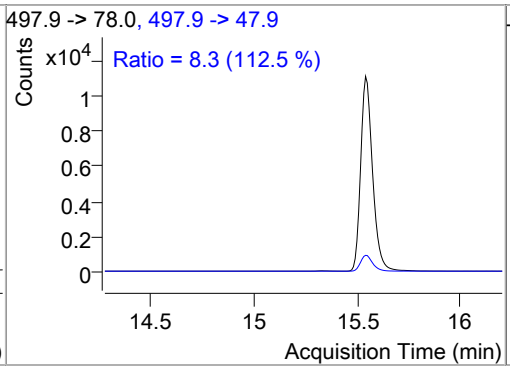


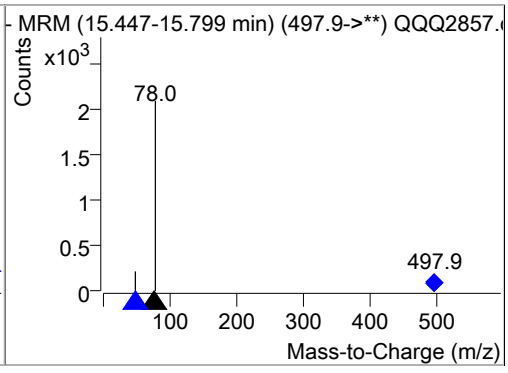




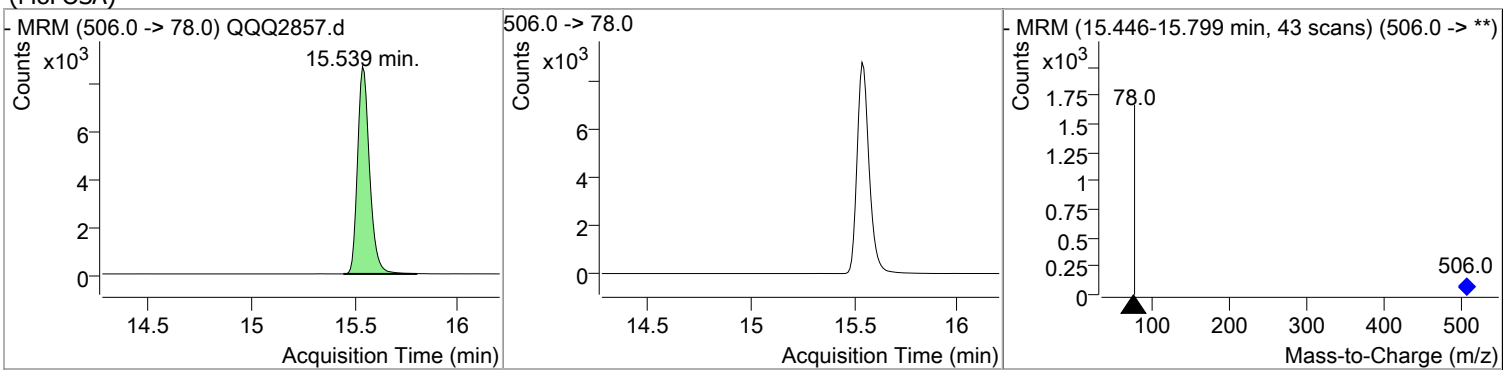
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	6.7860	15.54	0.35	44275	497.9 -> 47.9	8.3	5.9	8.8



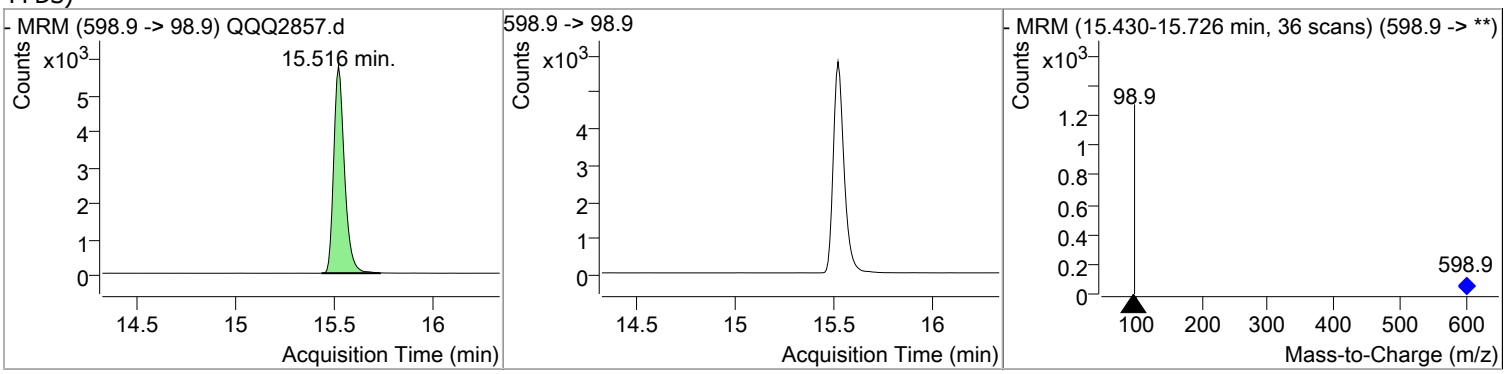




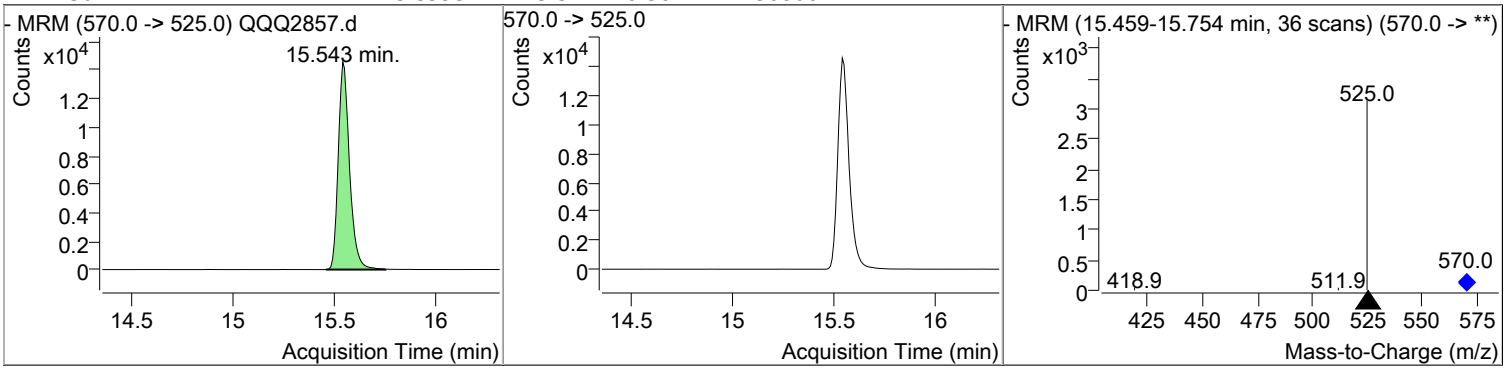
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	5.6314	15.54	0.34	35330				



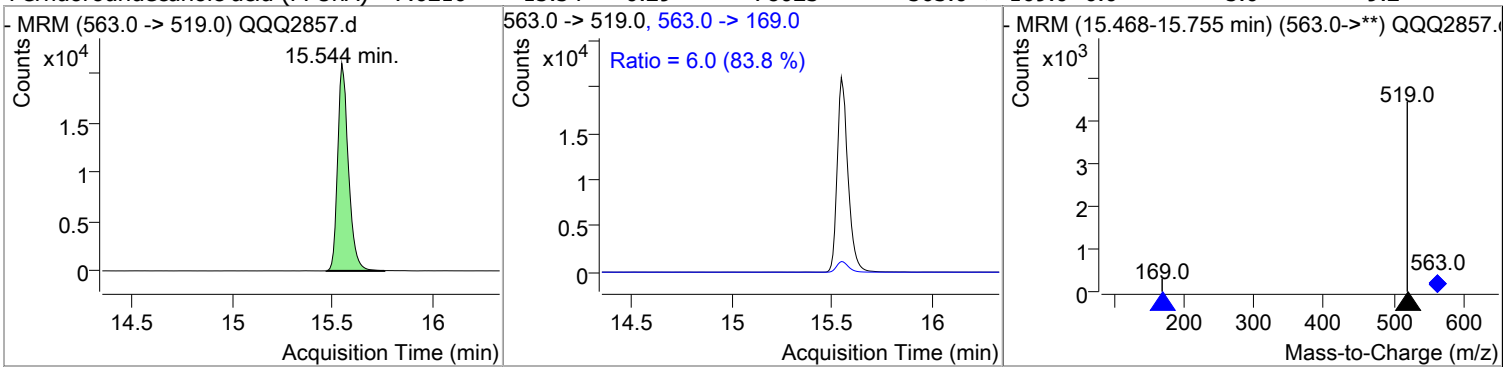
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	6.6576	15.52	0.30	21729				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	5.5993	15.54	0.30	56068				

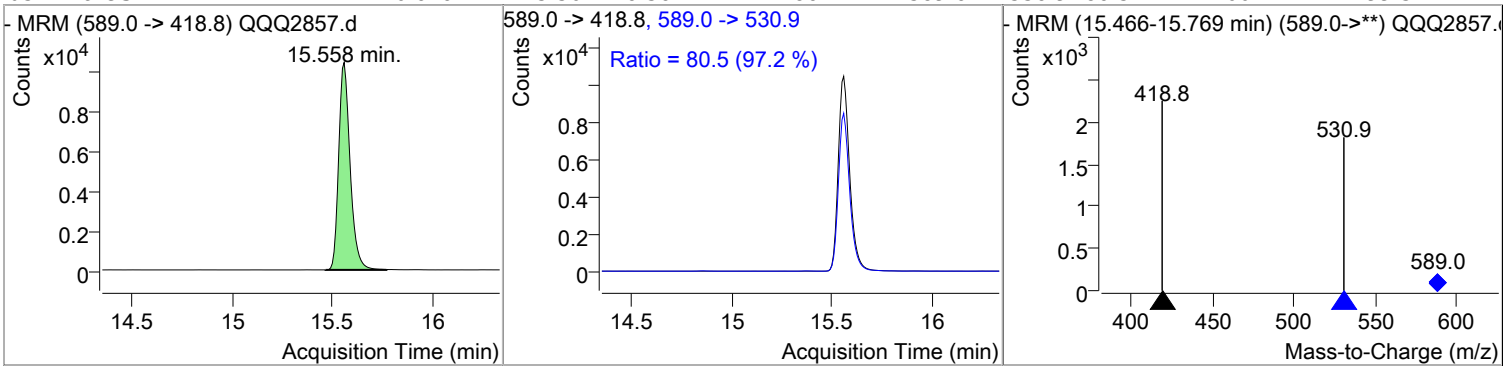


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	7.6216	15.54	0.29	78023	563.0 -> 169.0	6.0	5.0	9.2

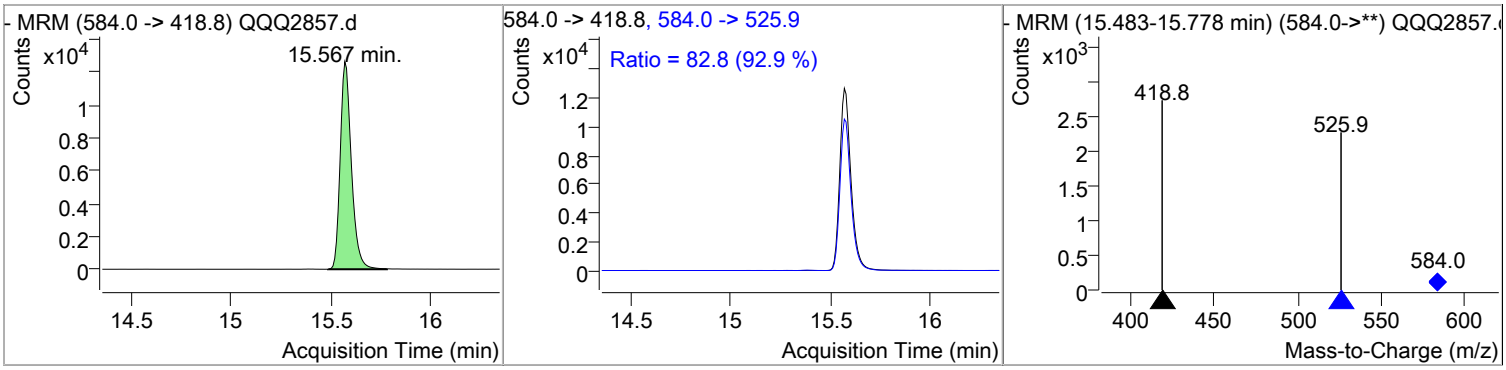


Quantitation Results Report (Not Reviewed)

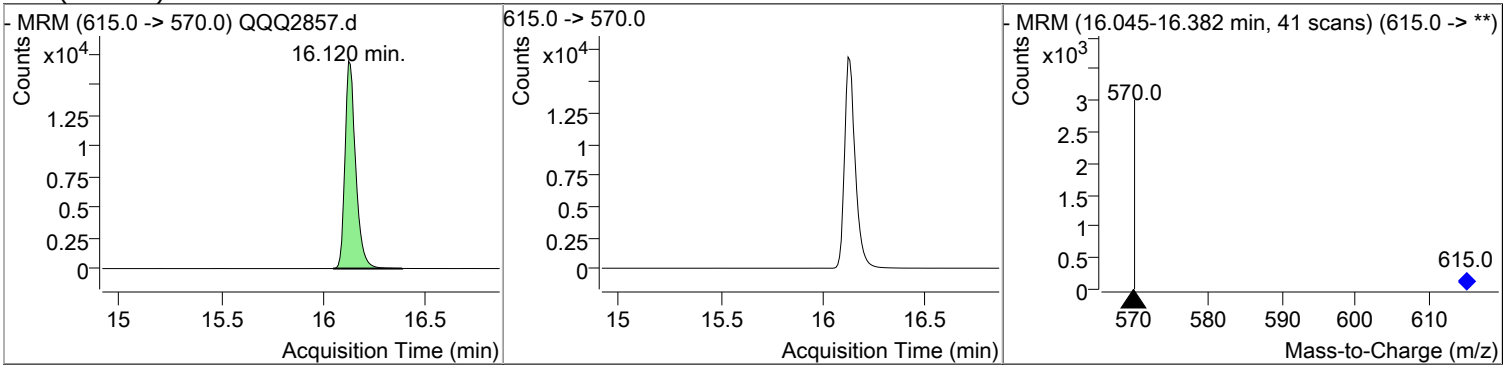
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	6.0101	15.56	0.30	41280	589.0 -> 530.9	80.5	66.2	99.3



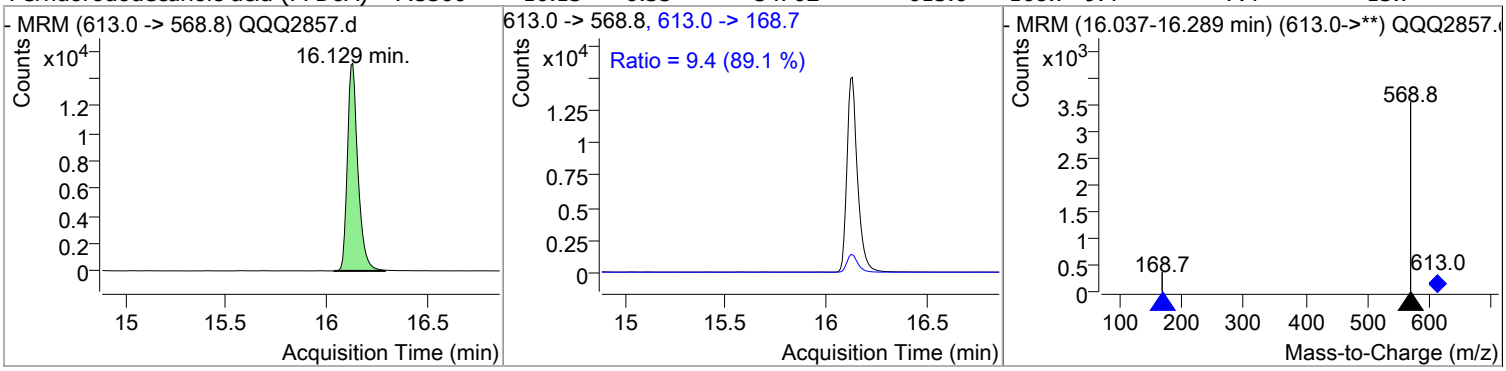
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	7.3727	15.57	0.30	48848	584.0 -> 525.9	82.8	71.3	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	6.2489	16.12	0.35	61269				

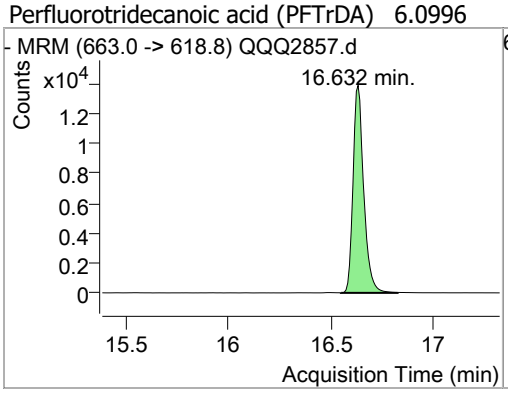


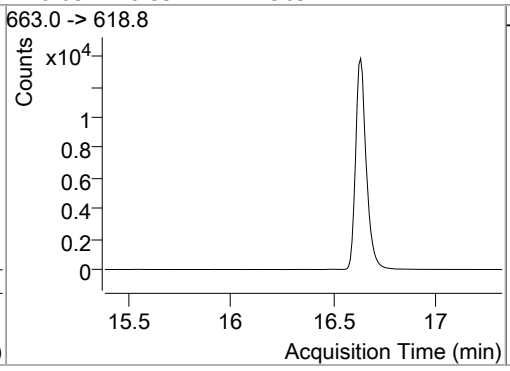
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	7.5300	16.13	0.35	54762	613.0 -> 168.7	9.4	7.4	13.7

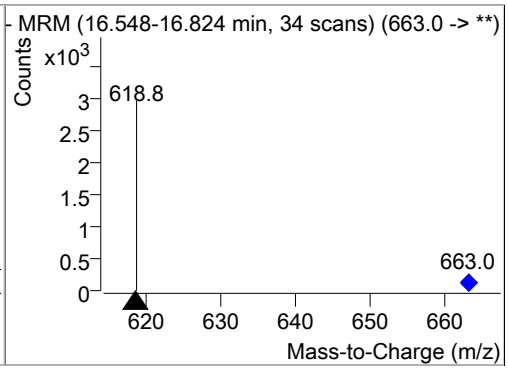


Quantitation Results Report (Not Reviewed)

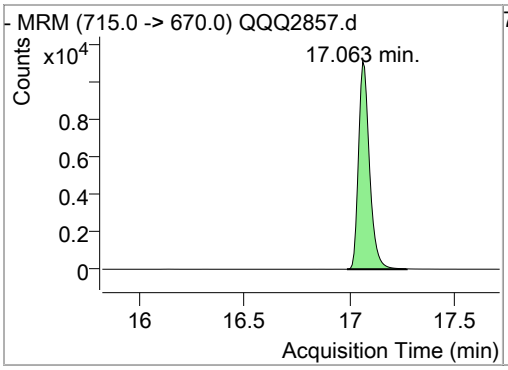
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	6.0996	16.63	0.39	49694				

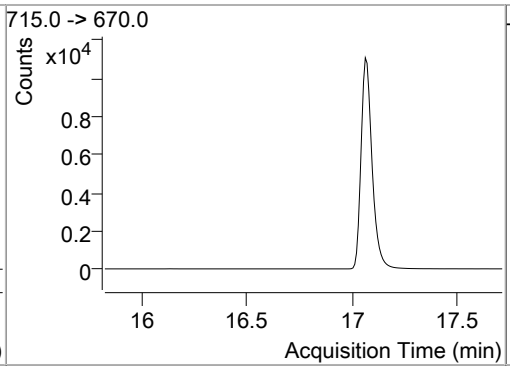


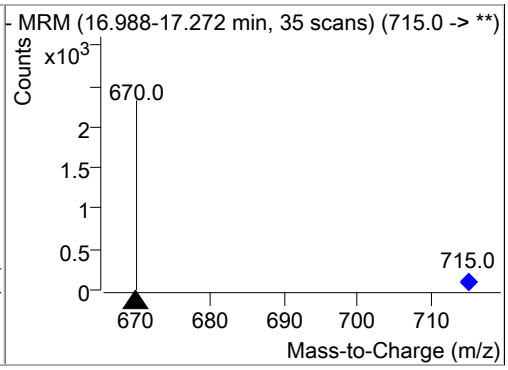




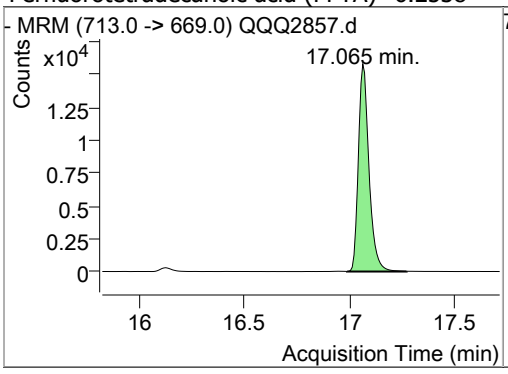
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	4.3888	17.06	0.43	40127				

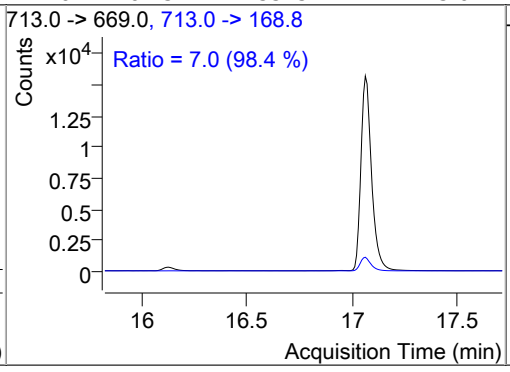


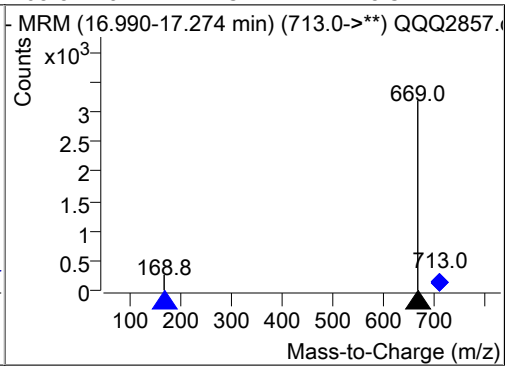




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	6.2538	17.07	0.43	55154	713.0 -> 168.8	7.0	5.7	8.5







LCS RAW DATA

SDG: 19L0685
CLASS: PFAS
METHOD: EPA 537m

Data File	QQQ2844.d	Operator	
Acq. Method	PFAS 24_IDA ACQ.m	Acq. Date-Time	12/20/2019 6:01:24 AM
Sample Name	BL91039-BS1	Instrument	LCQQQ
Vial		Multiplier	1.00
DA Method File	PFAS Quant_IDA_21_121919.m	Comment	
Tune File		Tune Date	
Batch Name	2019-12-19.batch.bin	Last Calib Update	12/23/2019 10:12:26 AM
Ref Library			

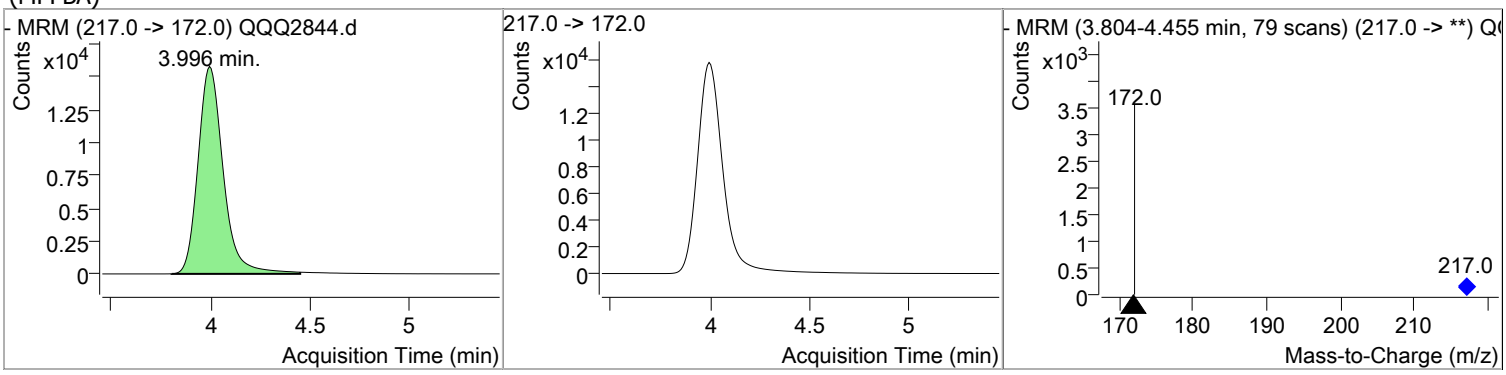
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
MPFOA	13.118	417.0 -> 372.0	232088	10.0000	ng/ml	0.085
System Monitoring Compounds						
Perfluoro-n-[13C4]butanoic acid (MPFBA)	3.996	217.0 -> 172.0	139221	7.6582	ng/ml	-0.192
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 76.58%		
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	8.031	268.0 -> 223.0	194098	7.8316	ng/ml	-0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 78.32%		
M3PFBS	8.777	302.0 -> 79.9	55196	7.0550	ng/ml	-0.042
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 70.55%		
M2-4-2FTS	10.241	329.0 -> 309.0	72419	10.2165	ng/ml	-0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 102.16%		
M5PFHxA	10.387	318.0 -> 273.0	181503	7.7738	ng/ml	-0.017
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 77.74%		
M4PFHpA	11.952	367.0 -> 322.0	49146	7.6137	ng/ml	0.033
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 76.14%		
M3PFHxS	12.085	402.0 -> 80.0	37052	6.8943	ng/ml	0.042
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 68.94%		
M2-6-2FTS	13.057	429.0 -> 409.0	54569	9.4872	ng/ml	0.084
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 94.87%		
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	13.117	421.0 -> 376.0	92685	7.5494	ng/ml	0.093
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 75.49%		
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	14.074	472.0 -> 427.0	90936	7.2393	ng/ml	0.170
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 72.39%		
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	14.089	507.0 -> 80.0	28429	6.9090	ng/ml	0.178
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.09%		
M2-8-2FTS	14.845	529.0 -> 509.0	39349	8.5238	ng/ml	0.227
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 85.24%		
M6PFDA	14.863	519.0 -> 473.9	74674	7.4609	ng/ml	0.236
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 74.61%		
d3-N-MeFOSAA	15.206	573.0 -> 418.8	59331	7.3838	ng/ml	0.269
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 73.84%		
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	15.539	506.0 -> 78.0	45736	7.1418	ng/ml	0.344
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 71.42%		
M7PFUdA	15.543	570.0 -> 525.0	68452	6.6969	ng/ml	0.303
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 66.97%		
d5-N-EtFOSAA	15.550	589.0 -> 418.8	48618	6.9344	ng/ml	0.294
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 69.34%		
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	16.120	615.0 -> 570.0	58292	5.8243	ng/ml	0.345
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 58.24%		
M2PFTeDA	17.055	715.0 -> 670.0	52869	5.6647	ng/ml	0.418
Spiked Amount: 10.000	Range: 25.0 - 140.0%			Recovery = 56.65%		

Target Compounds	QValue

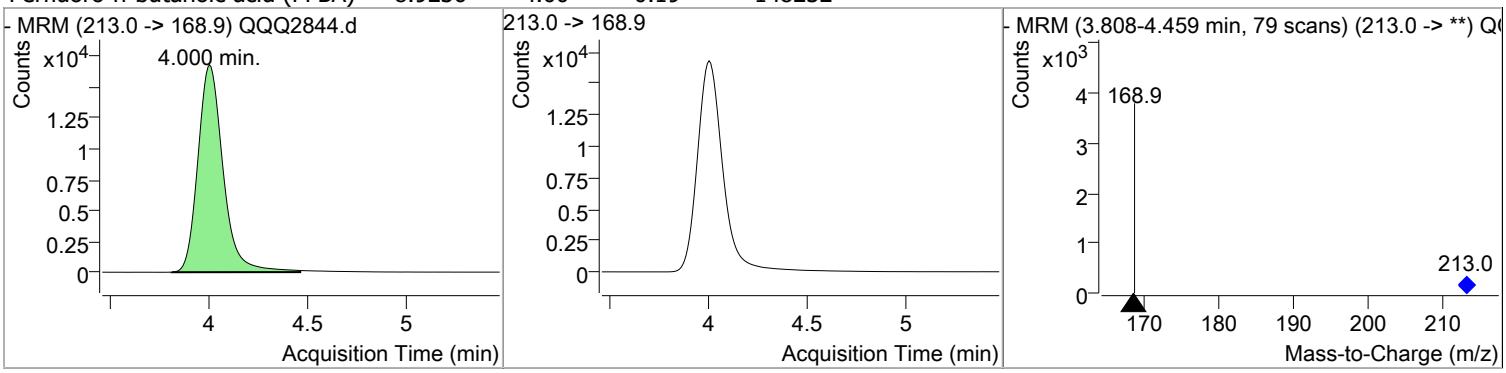
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Perfluoro-n-butanoic acid (PFBA)	4.000	213.0 -> 168.9	148232	8.9236	ng/ml	100
Perfluoro-n-pentanoic acid (PFPeA)	8.032	263.0 -> 219.0	197151	9.0187	ng/ml	100
Perfluorobutanesulfonic acid (PFBS)	8.780	298.9 -> 79.9	55605	7.7826	ng/ml	100
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	10.243	327.0 -> 307.0	75126	11.2384	ng/ml	98
Perfluorohexanoic acid (PFHxA)	10.389	313.0 -> 268.9	185522	9.2848	ng/ml	100
Perfluoro-1-pentanesulfonate (L-PFPeS)	10.700	348.9 -> 79.9	52946	8.2458	ng/ml	98
Perfluoroheptanoic acid (PFHpA)	11.953	363.0 -> 318.8	132734	8.7394	ng/ml	97
Perfluorohexanesulfonic acid (PFHxS)	12.086	398.9 -> 79.9	32336	5.8519	ng/ml	98
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	13.058	427.0 -> 407.0	63555	10.4819	ng/ml	98
Perfluorooctanoic acid (PFOA)	13.119	413.0 -> 368.8	91955	7.7960	ng/ml	93
Perfluoro-1-heptanesulfonate (L-PFHpS)	13.182	448.9 -> 80.0	32436	8.1392	ng/ml	98
Perfluorononanoic acid (PFNA)	14.074	463.0 -> 418.8	80319	8.4460	ng/ml	98
Perfluorooctanesulfonic acid (PFOS)	14.090	498.9 -> 79.9	28597	5.8329	ng/ml	96
Perfluorononanesulfonate (L-PFNS)	14.853	548.9 -> 79.9	27083	7.4621	ng/ml	96
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	14.846	527.0 -> 507.0	38309	9.8937	ng/ml	95
Perfluorodecanoic acid (PFDA)	14.864	513.0 -> 468.8	76433	9.2423	ng/ml	89
N-MeFOSAA	15.206	570.0 -> 418.9	72705	8.4259	ng/ml	96
Perfluoro-1-octanesulfonamide (FOSA)	15.539	497.9 -> 78.0	54671	8.2087	ng/ml	99
Perfluoro-1-decanesulfonate (L-PFDS)	15.507	598.9 -> 98.9	23043	6.9166	ng/ml	100
Perfluoroundecanoic acid (PFUnA)	15.544	563.0 -> 519.0	77403	7.4071	ng/ml	96
N-EtFOSAA	15.567	584.0 -> 418.8	55170	8.1575	ng/ml	95
Perfluorododecanoic acid (PFDoA)	16.121	613.0 -> 568.8	51509	6.9385	ng/ml	95
Perfluorotridecanoic acid (PFTrDA)	16.623	663.0 -> 618.8	51627	6.2079	ng/ml	100
Perfluorotetradecanoic acid (PFTA)	17.057	713.0 -> 669.0	57456	6.3823	ng/ml	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

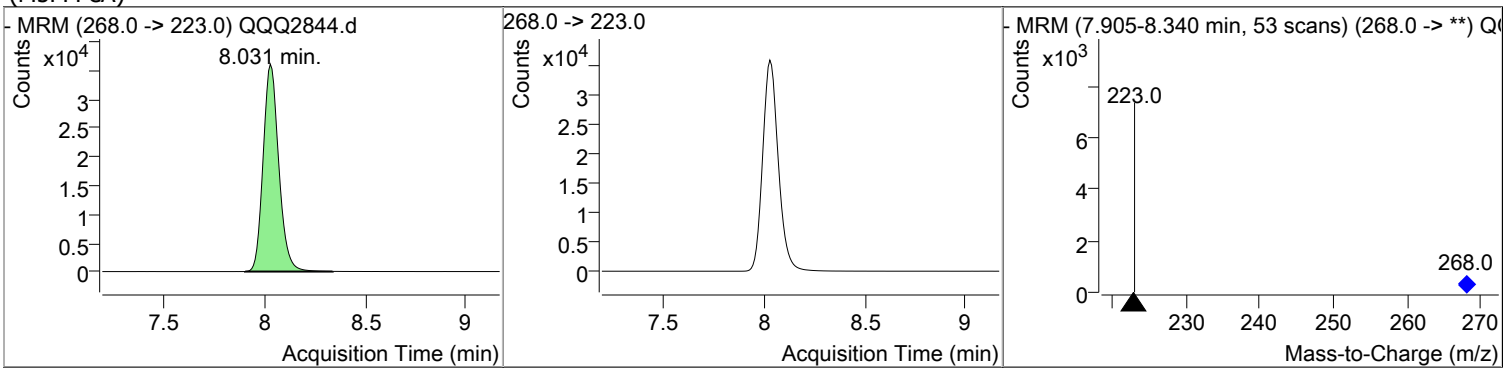
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C4]butanoic acid (MPFBA)	7.6582	4.00	-0.19	139221				



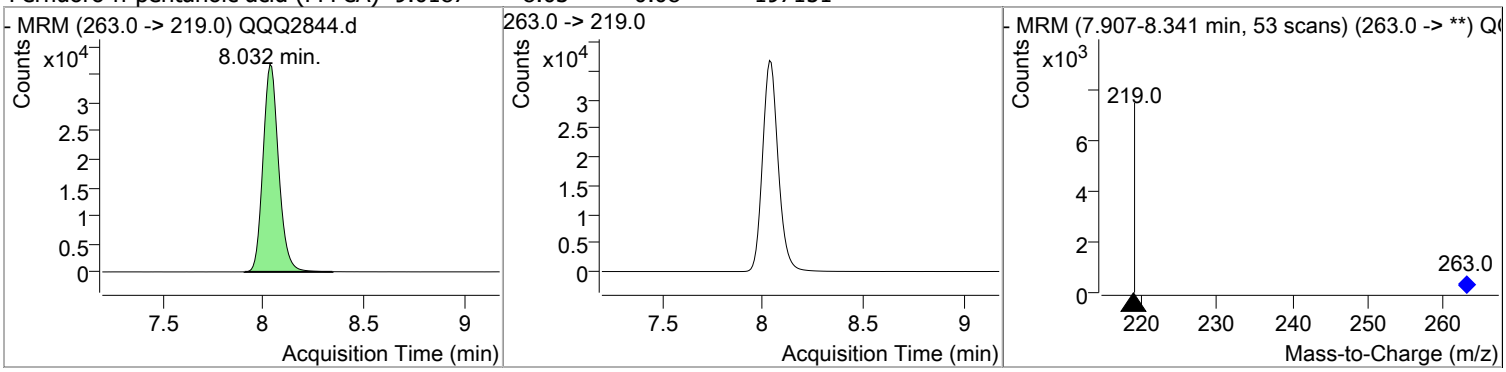
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-butanoic acid (PFBA)	8.9236	4.00	-0.19	148232				



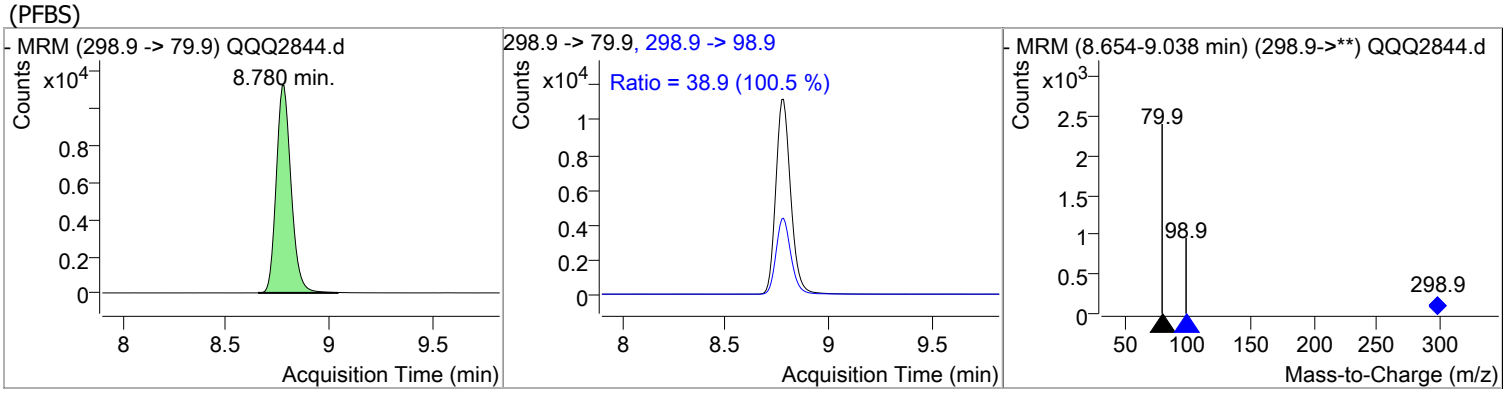
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)	7.8316	8.03	-0.08	194098				



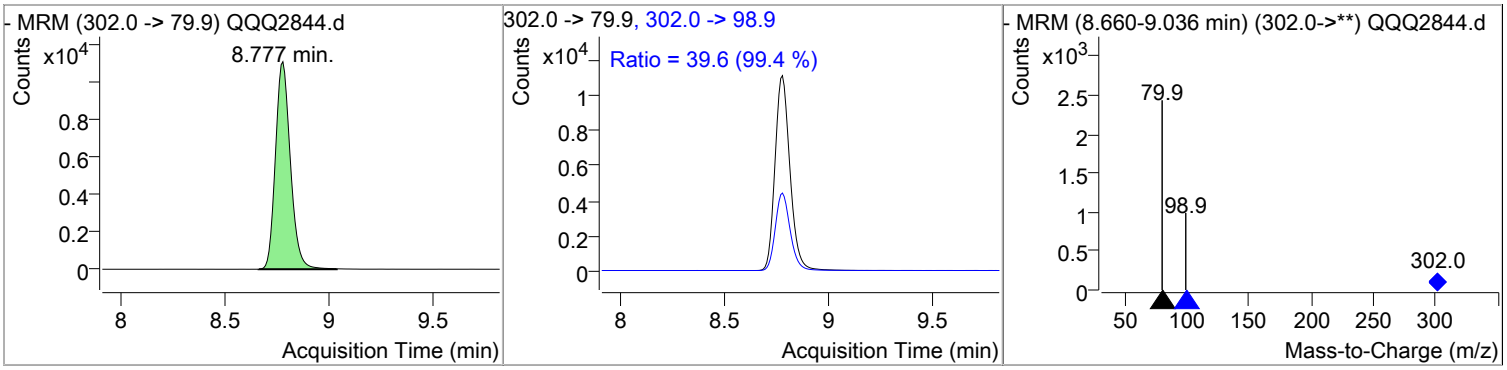
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-pentanoic acid (PFPeA)	9.0187	8.03	-0.08	197151				



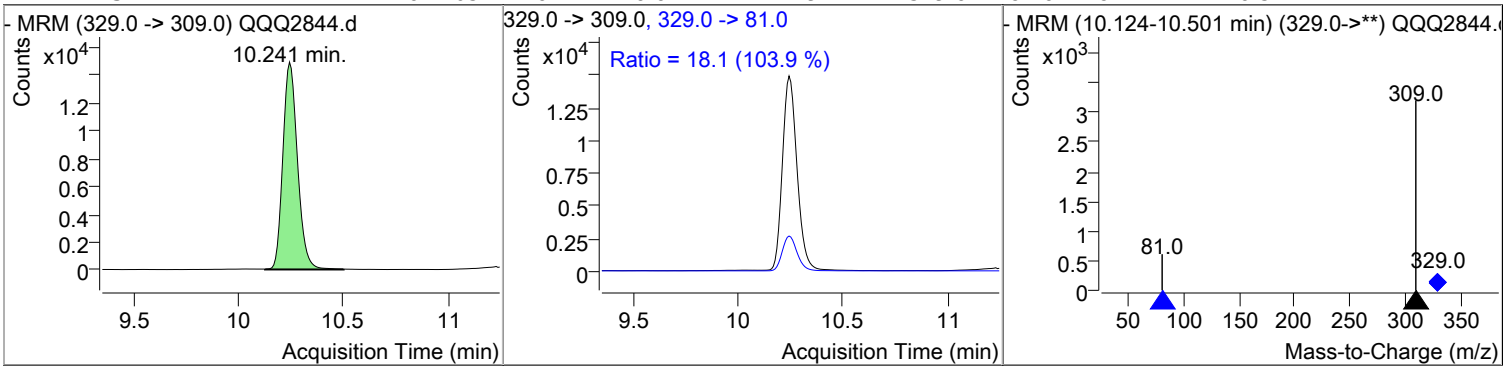
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorobutanesulfonic acid (PFBS)	7.7826	8.78	-0.03	55605	298.9 -> 98.9	38.9	31.0	46.5



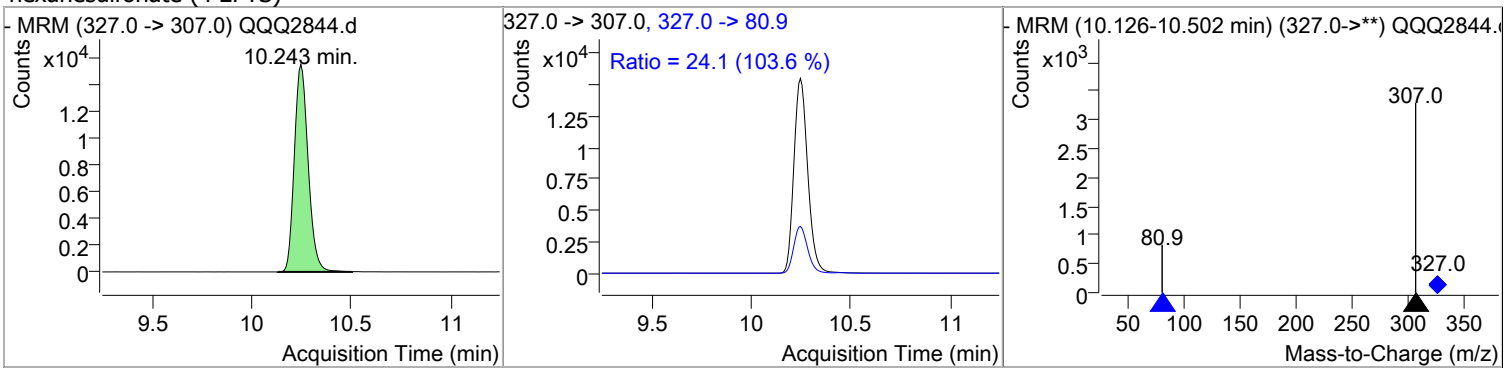
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFBS	7.0550	8.78	-0.04	55196	302.0 -> 98.9	39.6	31.9	47.8



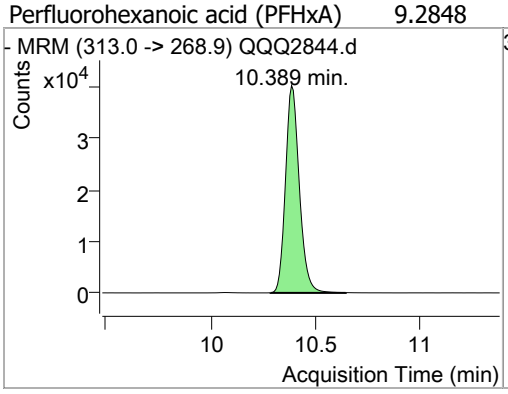
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-4-2FTS	10.2165	10.24	-0.02	72419	329.0 -> 81.0	18.1	10.5	24.4

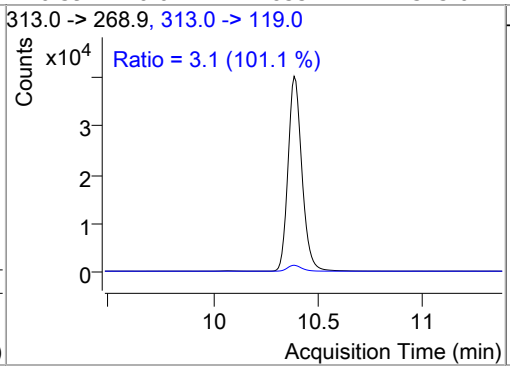


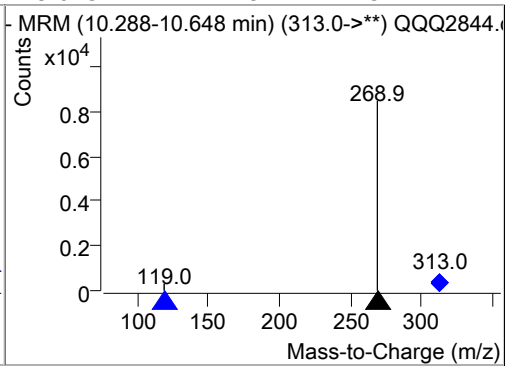
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	11.2384	10.24	-0.02	75126	327.0 -> 80.9	24.1	13.9	32.5



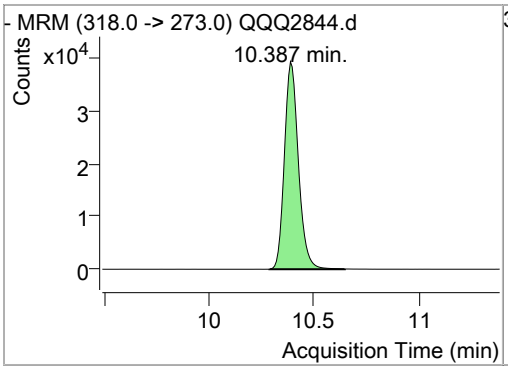
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanoic acid (PFHxA)	9.2848	10.39	-0.01	185522	313.0 -> 119.0	3.1	2.5	3.7

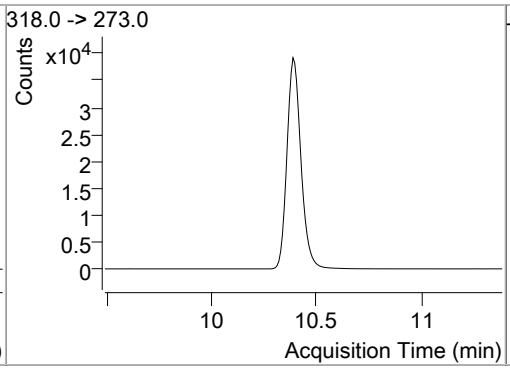


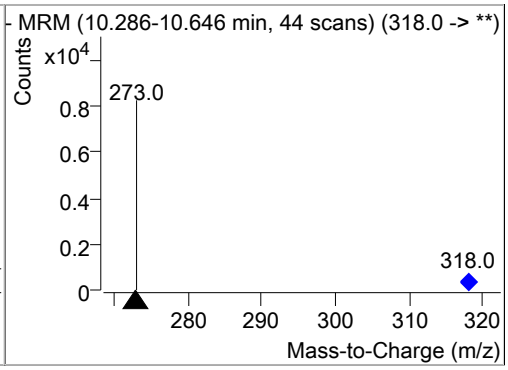




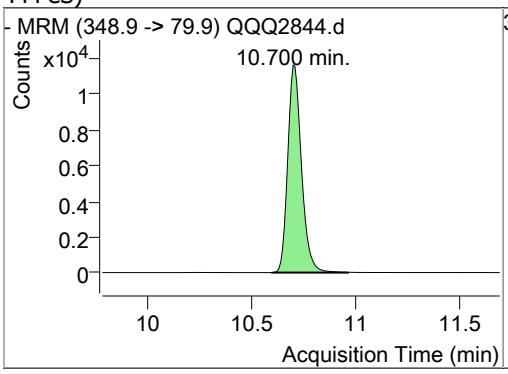
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M5PFHxA	7.7738	10.39	-0.02	181503				

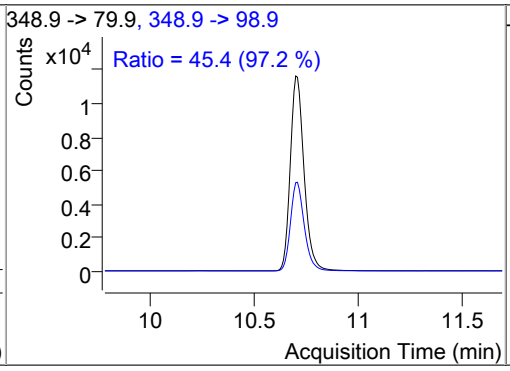


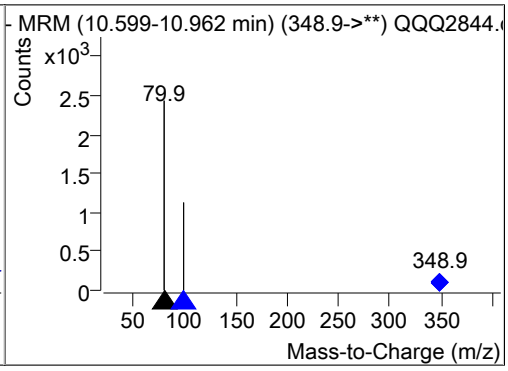




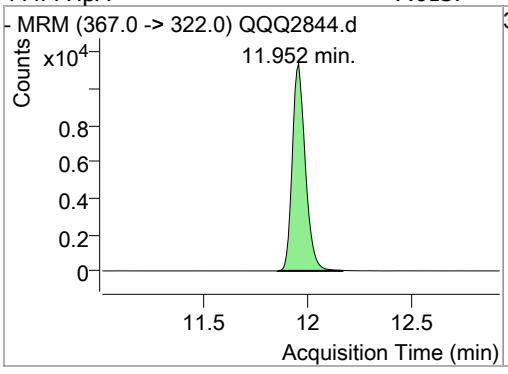
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-pentanesulfonate (L-PFPeS)	8.2458	10.70	0.00	52946	348.9 -> 98.9	45.4	37.3	56.0

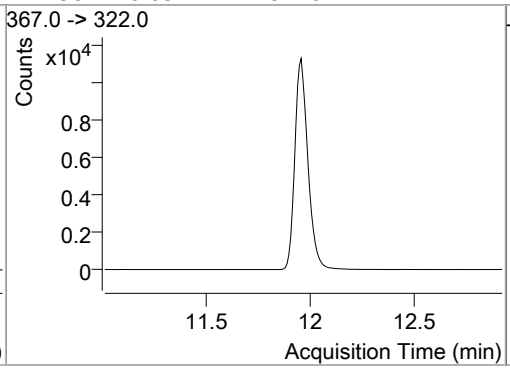


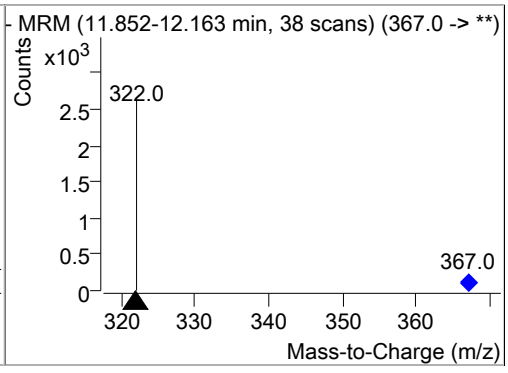




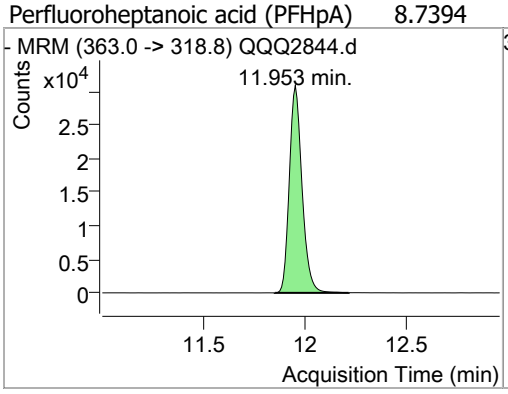
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M4PFHpA	7.6137	11.95	0.03	49146				

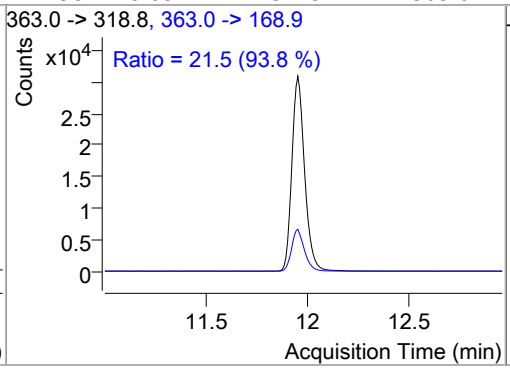


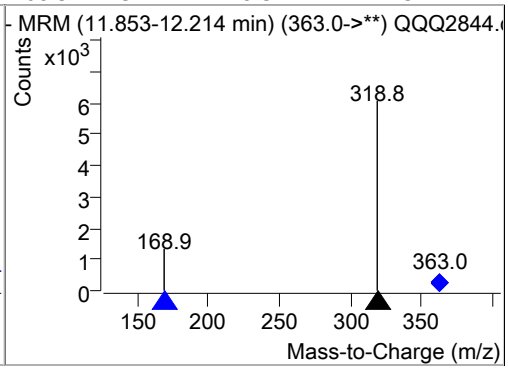




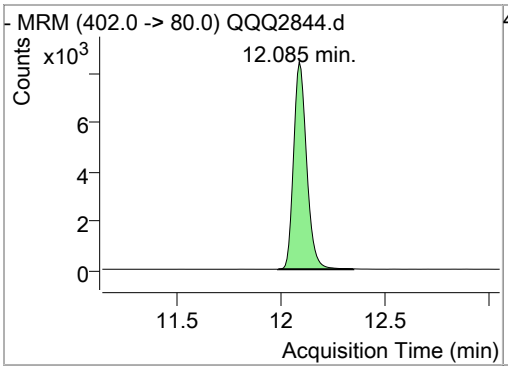
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroheptanoic acid (PFHpA)	8.7394	11.95	0.03	132734	363.0 -> 168.9	21.5	18.3	27.5

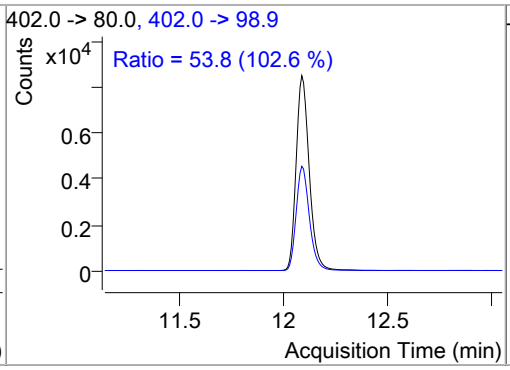


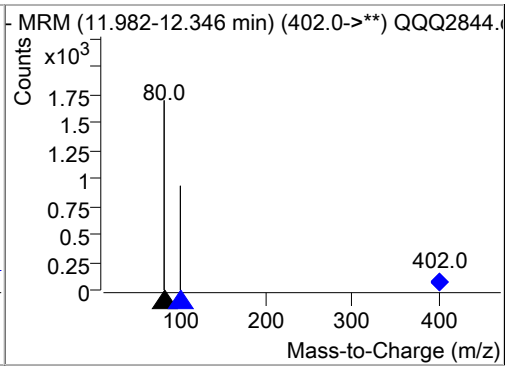




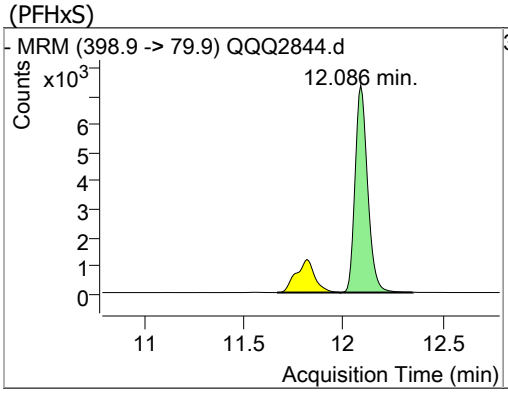
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M3PFHxS	6.8943	12.08	0.04	37052	402.0 -> 98.9	53.8	42.0	62.9

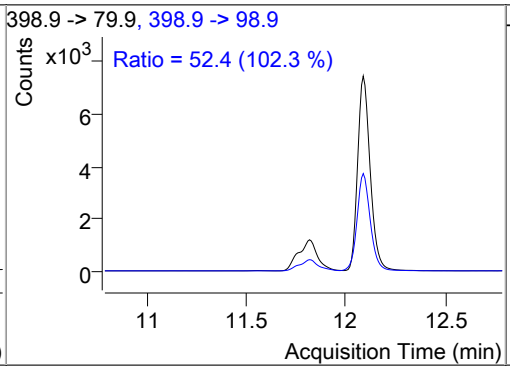


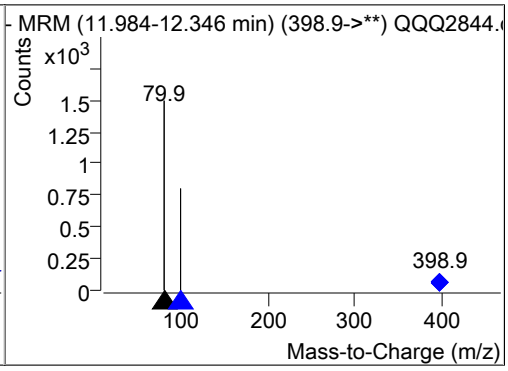




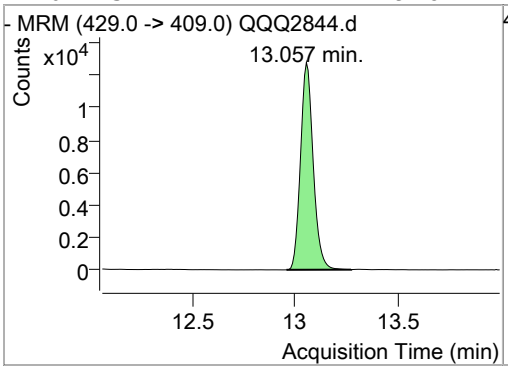
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorohexanesulfonic acid (PFHxS)	5.8519	12.09	0.04	32336	398.9 -> 98.9	52.4	41.0	61.5

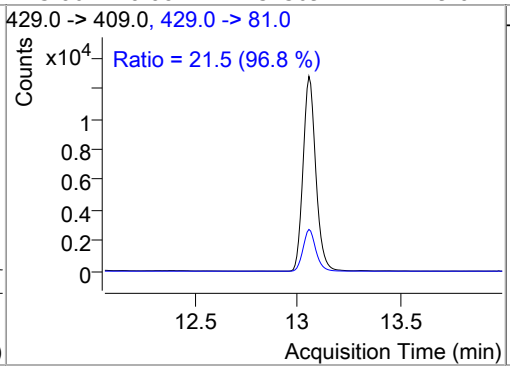


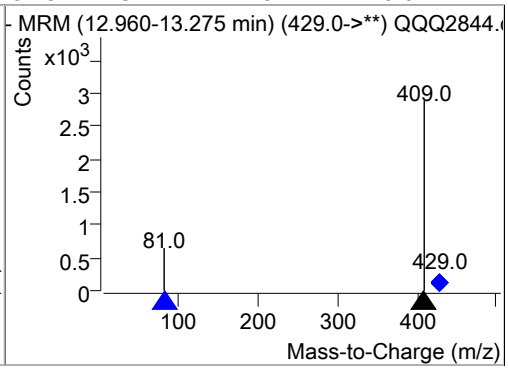




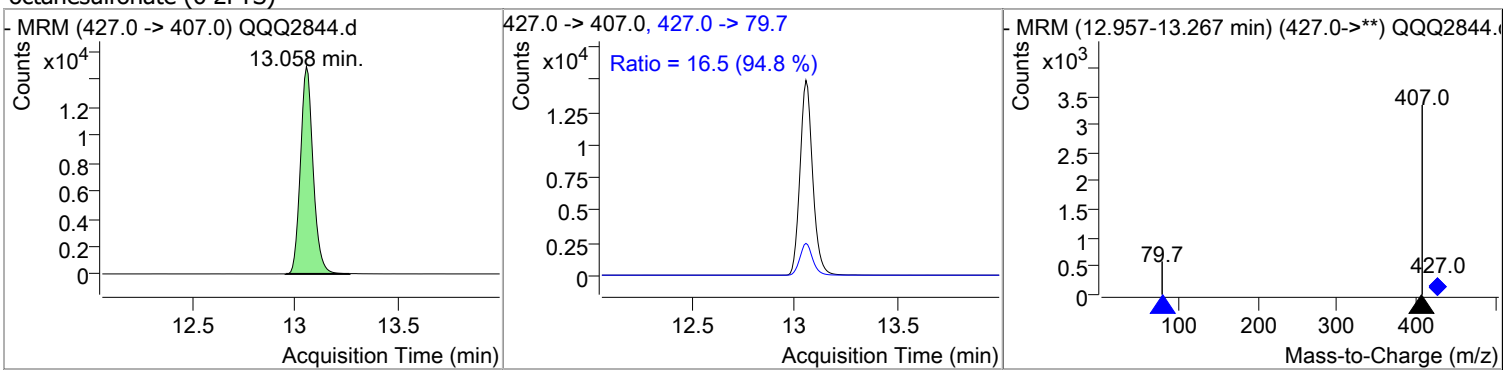
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-6-2FTS	9.4872	13.06	0.08	54569	429.0 -> 81.0	21.5	17.8	26.6



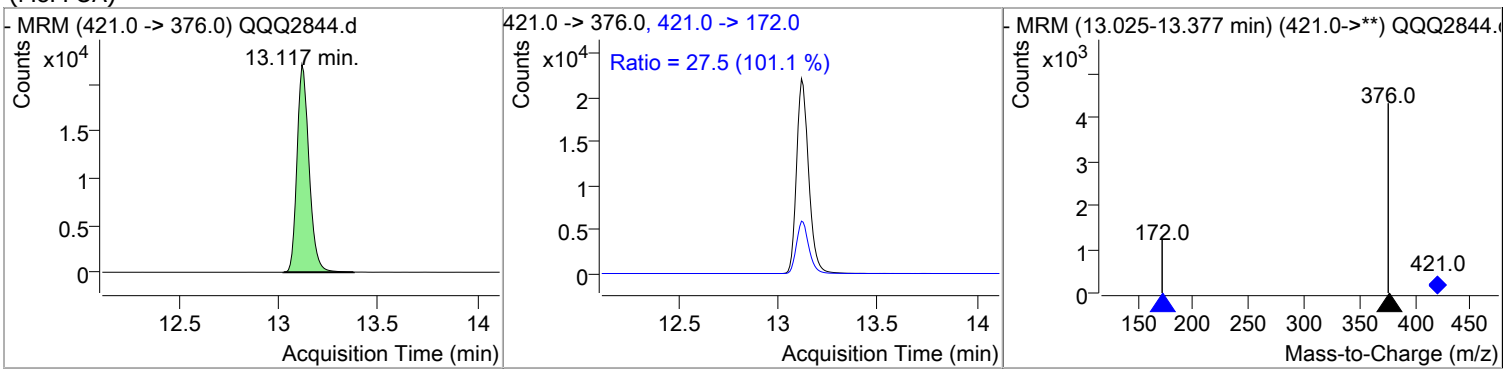




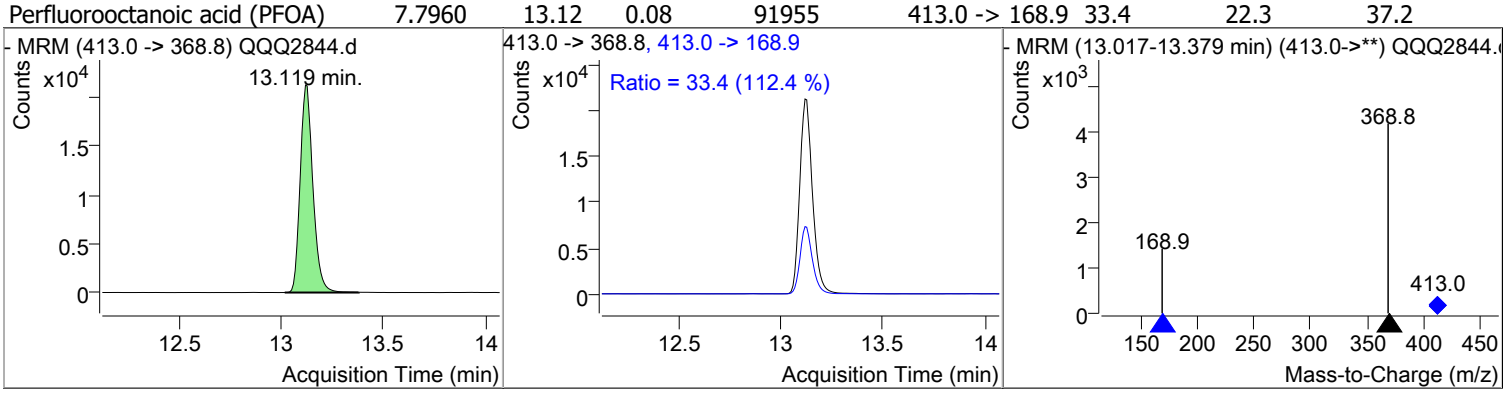
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	10.4819	13.06	0.08	63555	427.0 -> 79.7	16.5	13.9	20.8



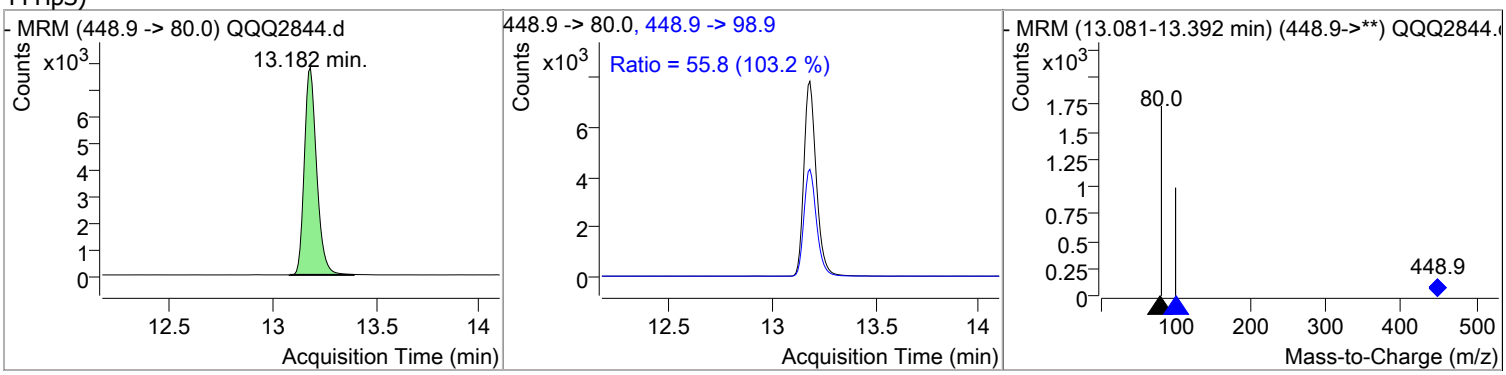
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	7.5494	13.12	0.09	92685	421.0 -> 172.0	27.5	21.7	32.6



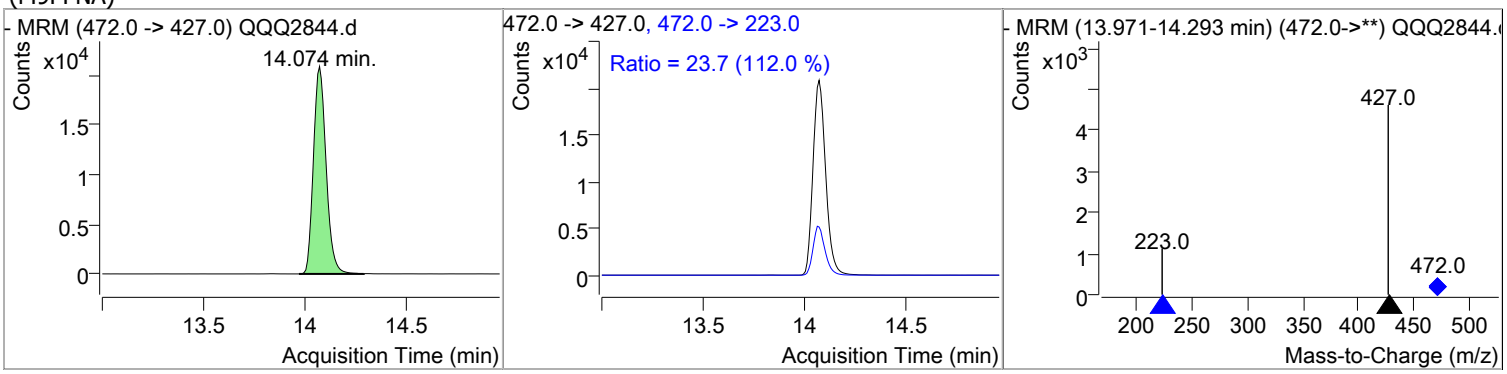
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanoic acid (PFOA)	7.7960	13.12	0.08	91955	413.0 -> 168.9	33.4	22.3	37.2



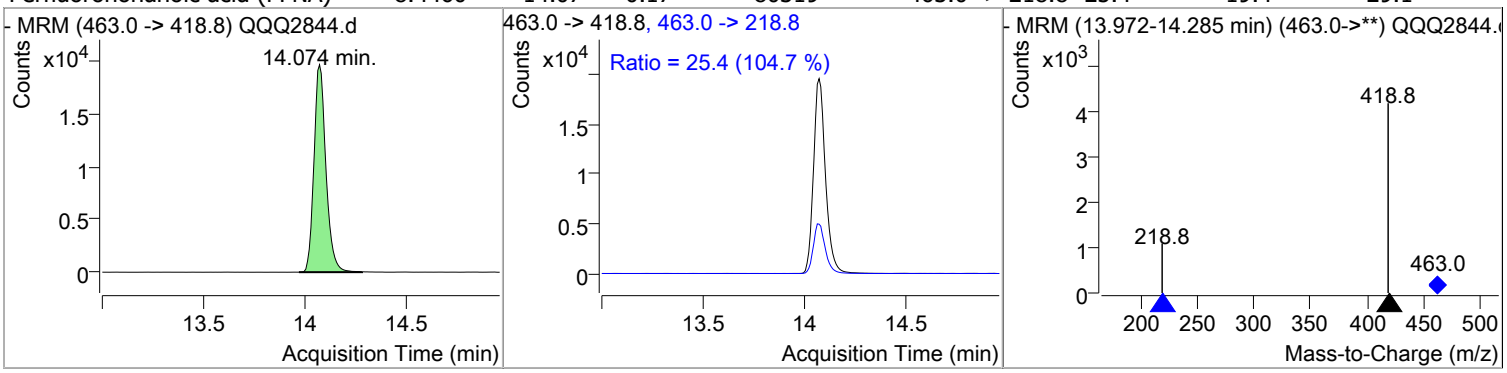
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-heptanesulfonate (L-PFHpS)	8.1392	13.18	0.10	32436	448.9 -> 98.9	55.8	43.3	64.9



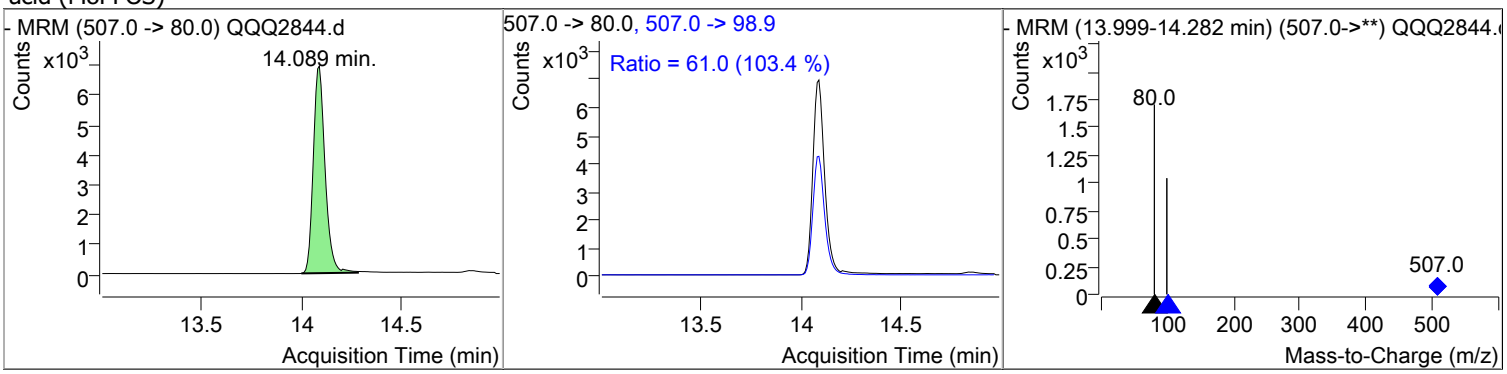
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	7.2393	14.07	0.17	90936	472.0 -> 223.0	23.7	16.9	25.4



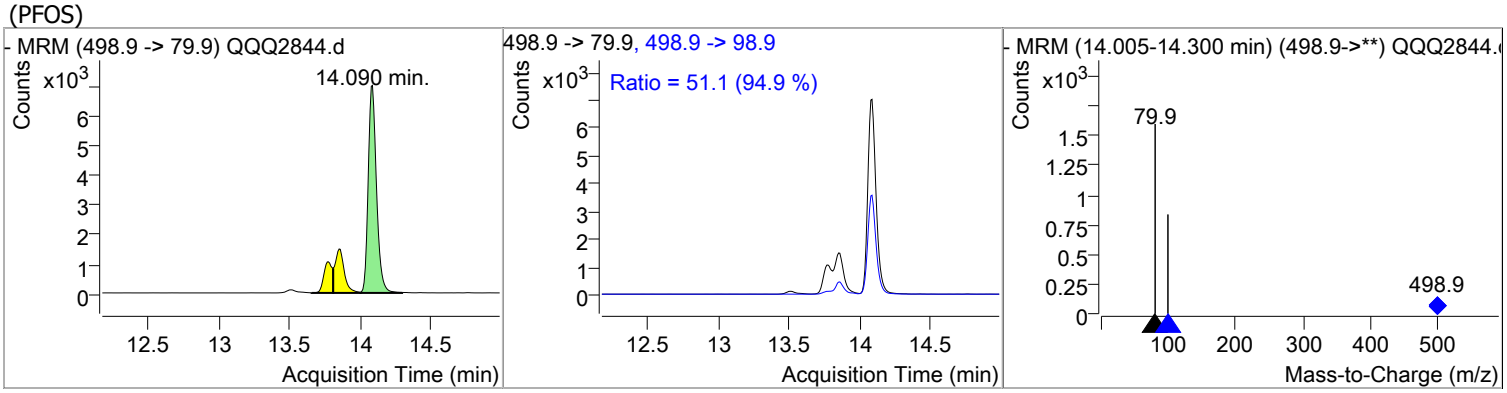
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanoic acid (PFNA)	8.4460	14.07	0.17	80319	463.0 -> 218.8	25.4	19.4	29.1



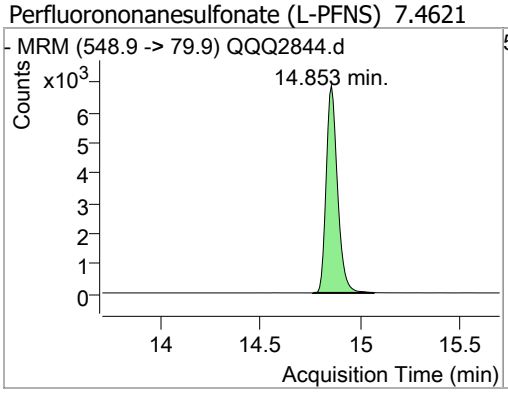
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	6.9090	14.09	0.18	28429	507.0 -> 98.9	61.0	47.2	70.8

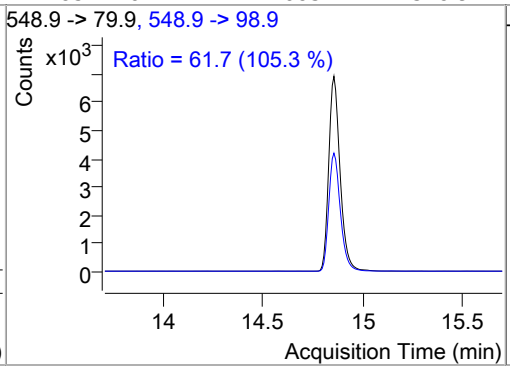


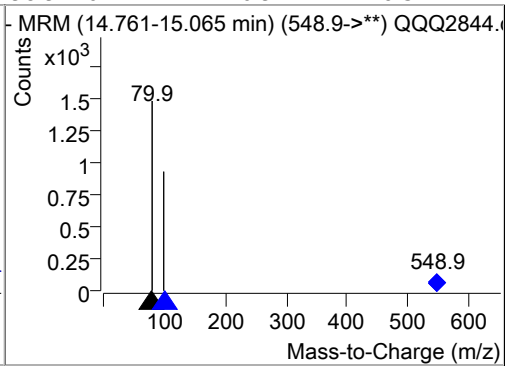
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorooctanesulfonic acid (PFOS)	5.8329	14.09	0.18	28597	498.9 -> 98.9	51.1	43.1	64.6



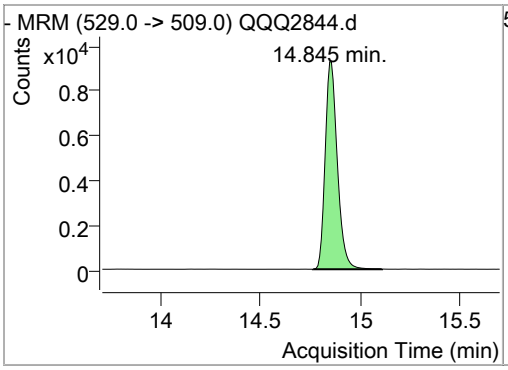
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorononanesulfonate (L-PFNS)	7.4621	14.85	0.24	27083	548.9 -> 98.9	61.7	46.9	70.3

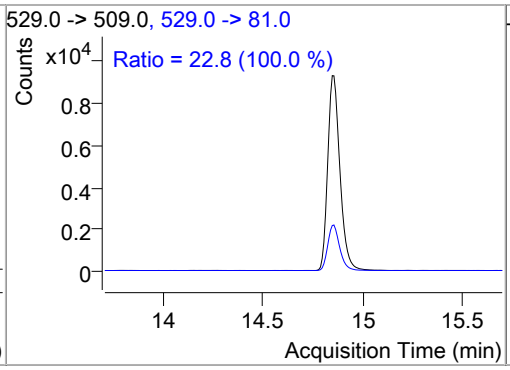


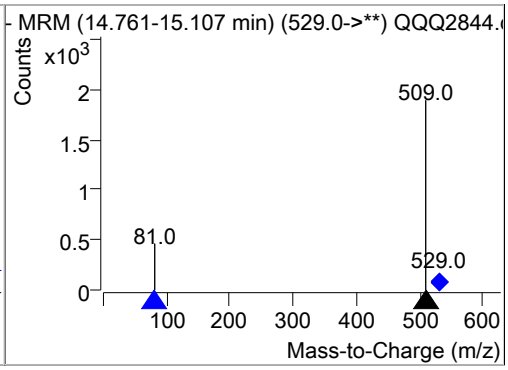




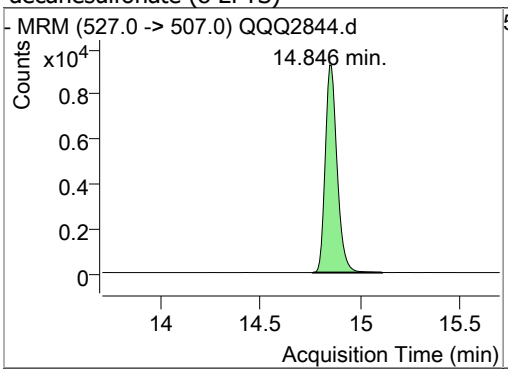
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2-8-2FTS	8.5238	14.85	0.23	39349	529.0 -> 81.0	22.8	18.3	27.4

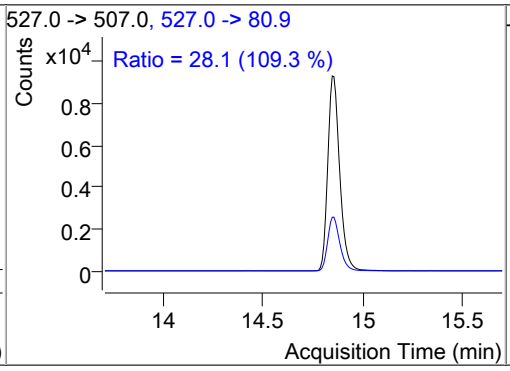


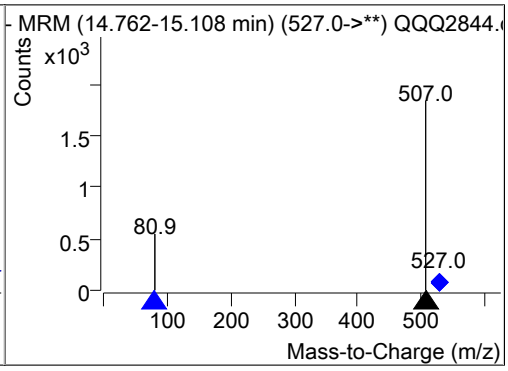




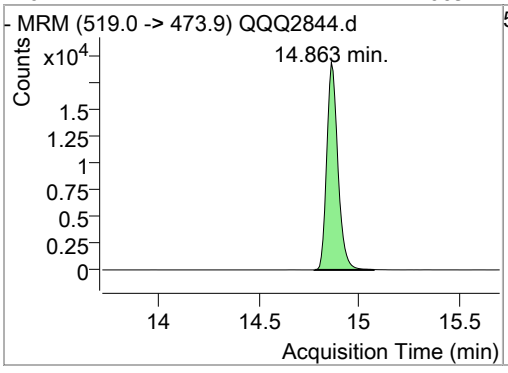
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	9.8937	14.85	0.23	38309	527.0 -> 80.9	28.1	20.6	30.9

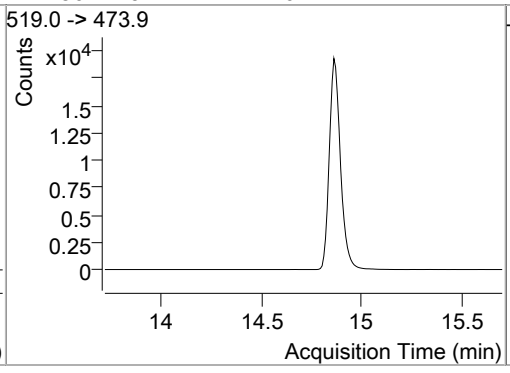


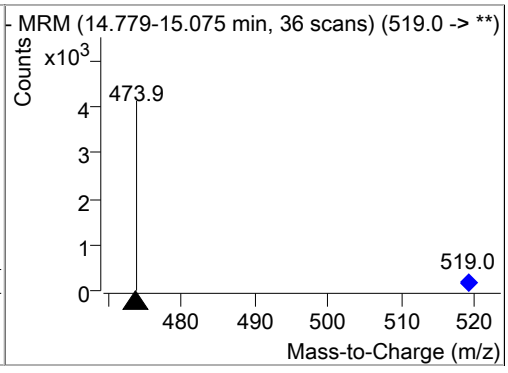




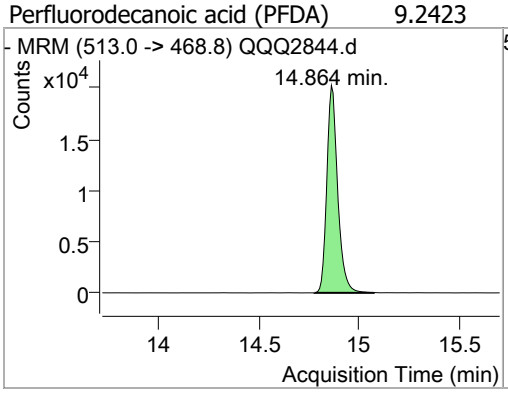
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M6PFDA	7.4609	14.86	0.24	74674				

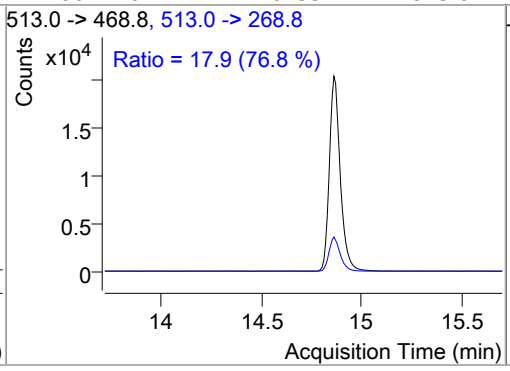


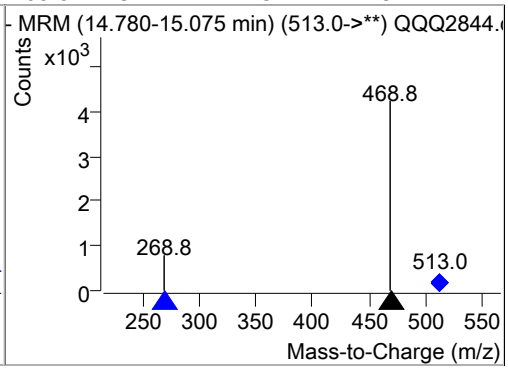




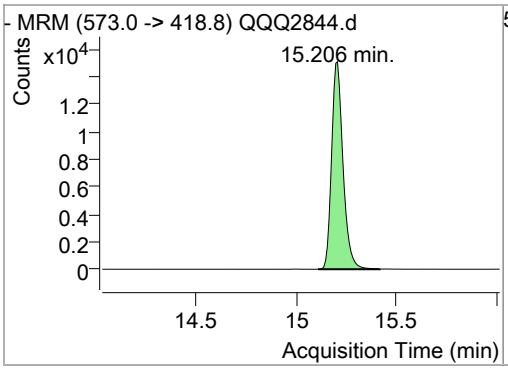
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorodecanoic acid (PFDA)	9.2423	14.86	0.24	76433	513.0 -> 268.8	17.9	17.5	29.1

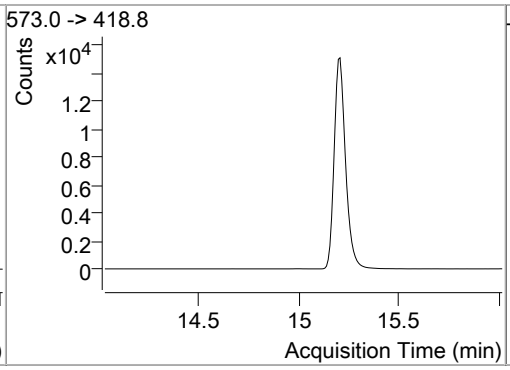


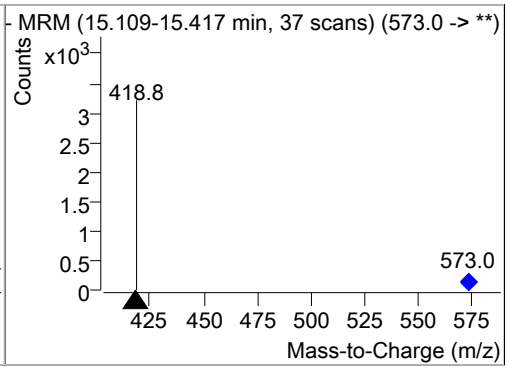




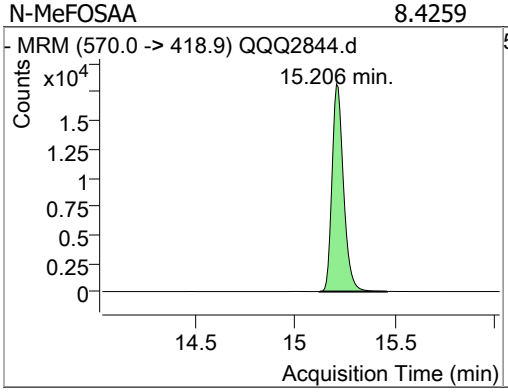
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d3-N-MeFOSAA	7.3838	15.21	0.27	59331				

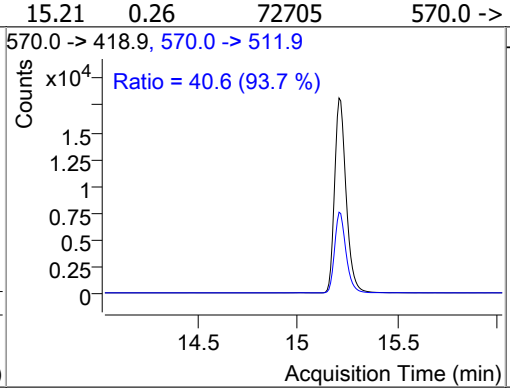


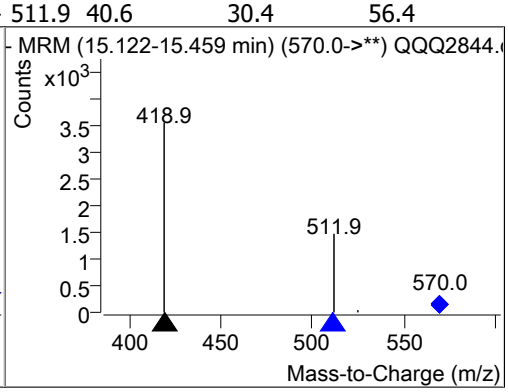




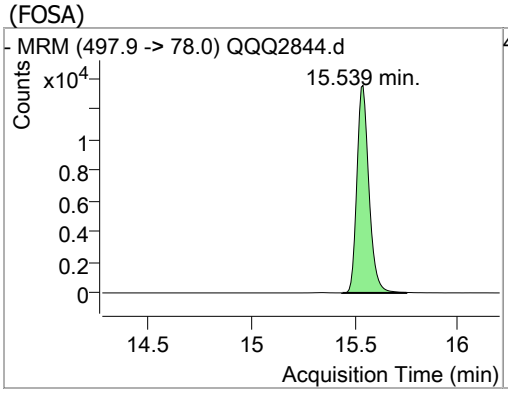
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-MeFOSAA	8.4259	15.21	0.26	72705	570.0 -> 511.9	40.6	30.4	56.4

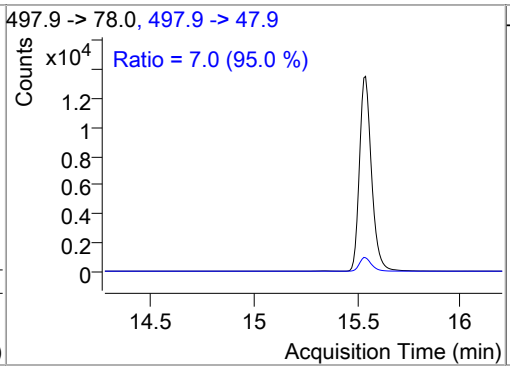


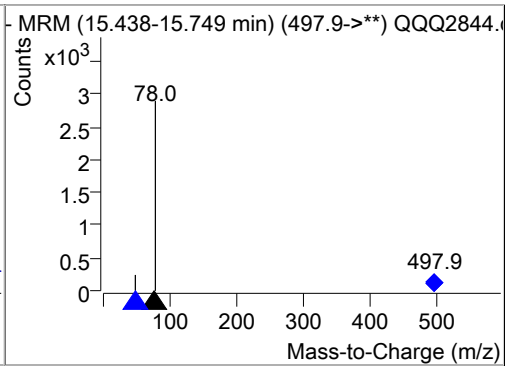




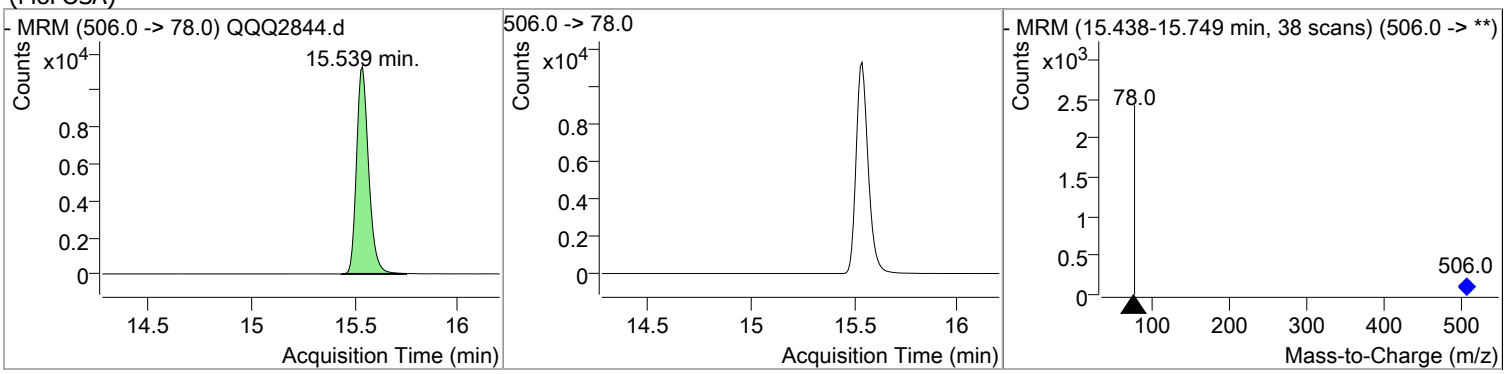
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-octanesulfonamide (FOSA)	8.2087	15.54	0.35	54671	497.9 -> 47.9	7.0	5.9	8.8



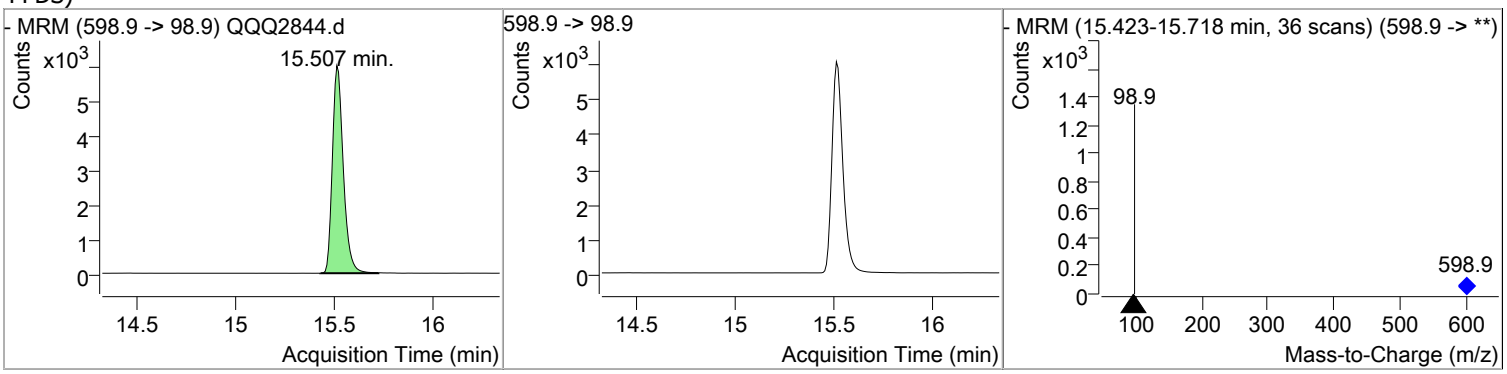




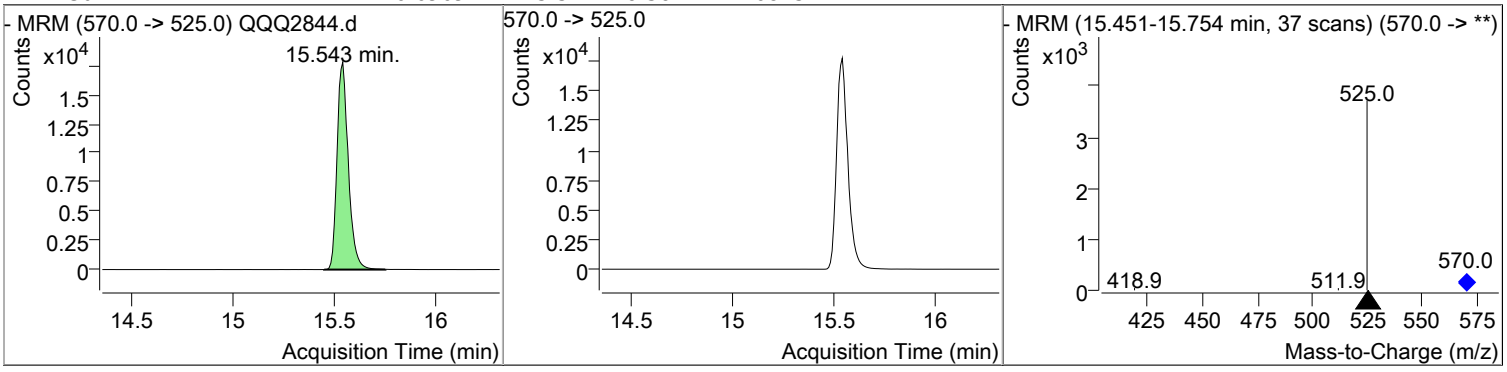
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	7.1418	15.54	0.34	45736				



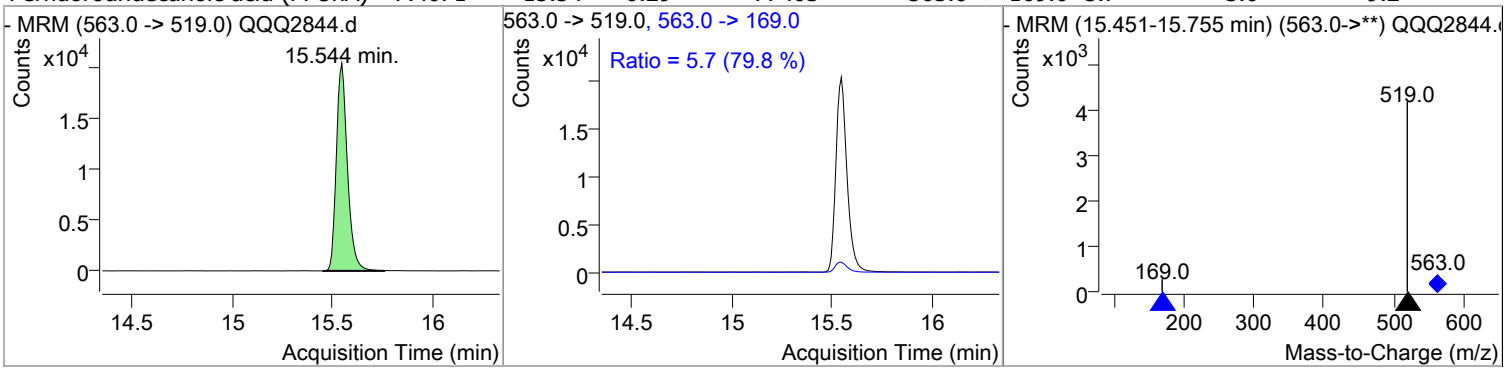
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-1-decanesulfonate (L-PFDS)	6.9166	15.51	0.29	23043				



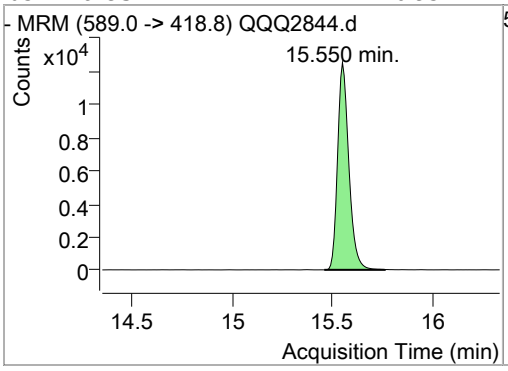
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M7PFUdA	6.6969	15.54	0.30	68452				

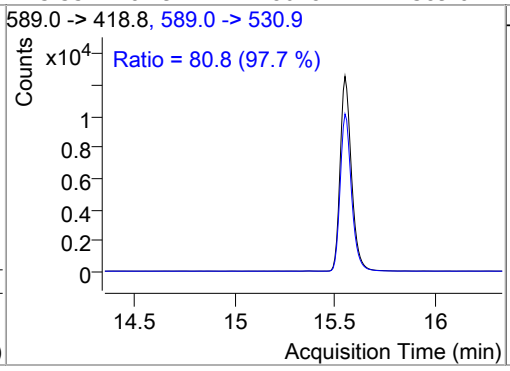


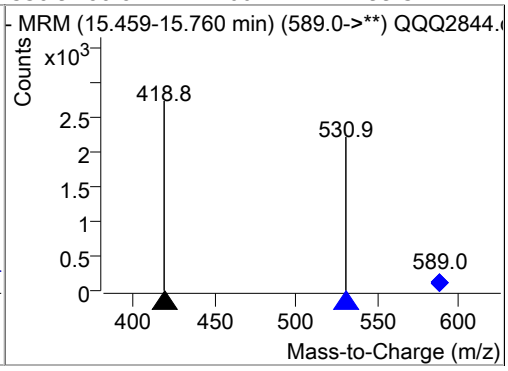
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoroundecanoic acid (PFUnA)	7.4071	15.54	0.29	77403	563.0 -> 169.0	5.7	5.0	9.2



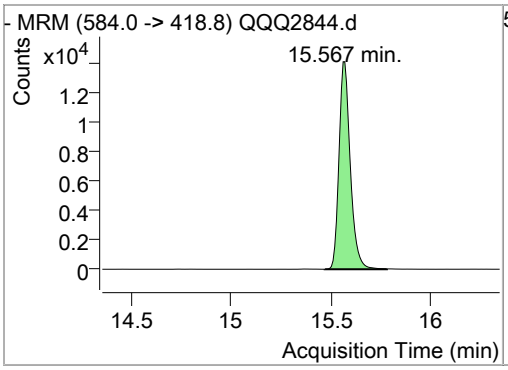
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
d5-N-EtFOSAA	6.9344	15.55	0.29	48618	589.0 -> 530.9	80.8	66.2	99.3

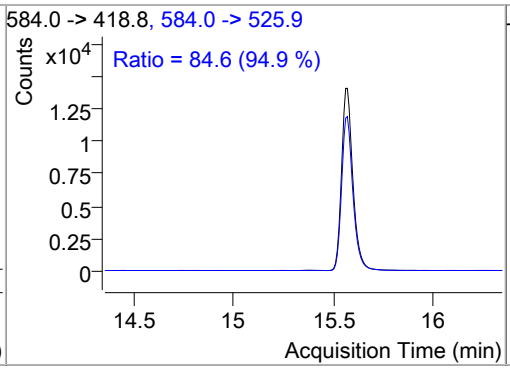


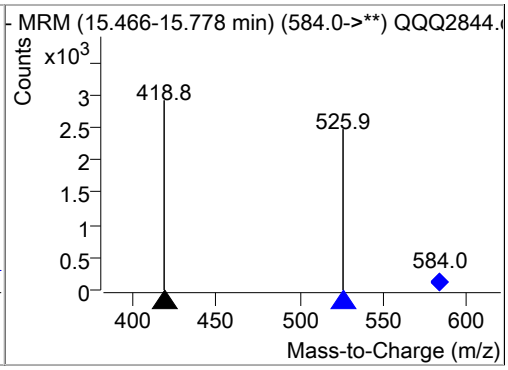




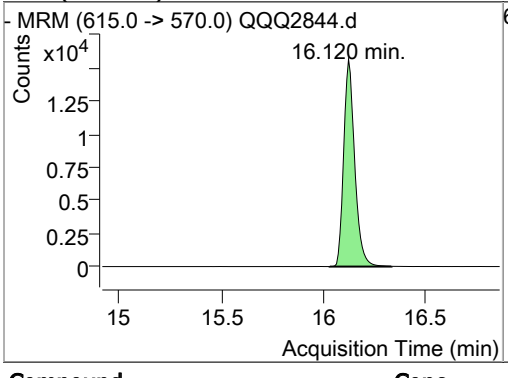
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
N-EtFOSAA	8.1575	15.57	0.30	55170	584.0 -> 525.9	84.6	71.3	107.0

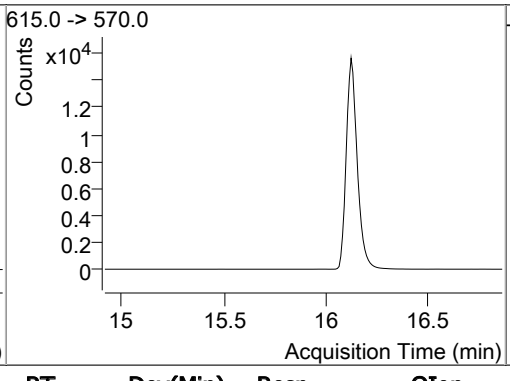


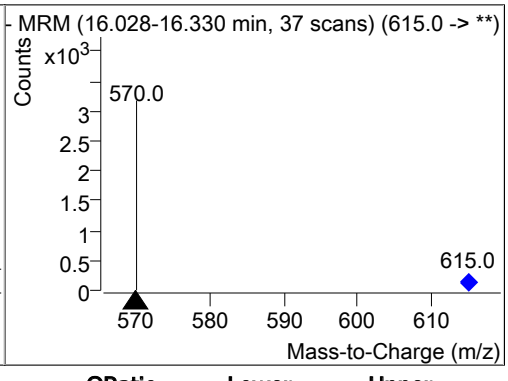




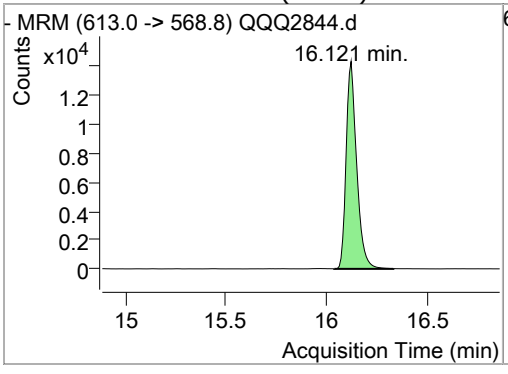
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	5.8243	16.12	0.35	58292				

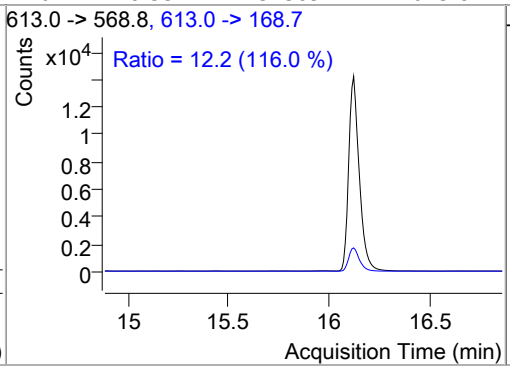


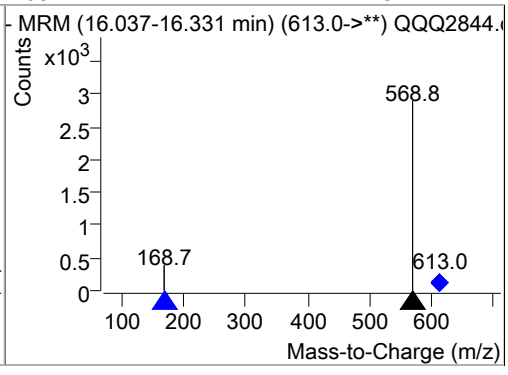




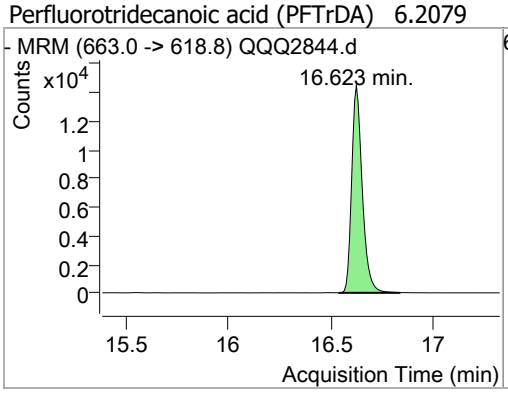
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorododecanoic acid (PFDoA)	6.9385	16.12	0.35	51509	613.0 -> 168.7	12.2	7.4	13.7

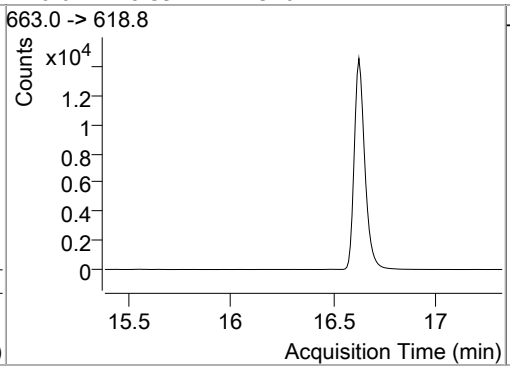


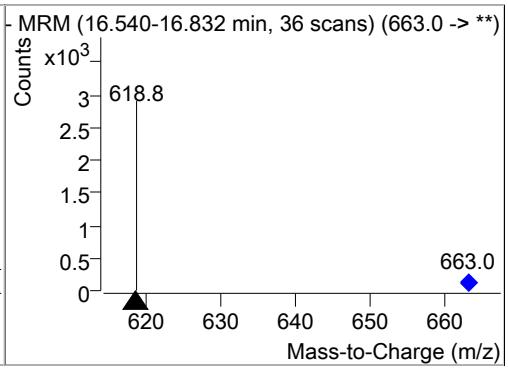




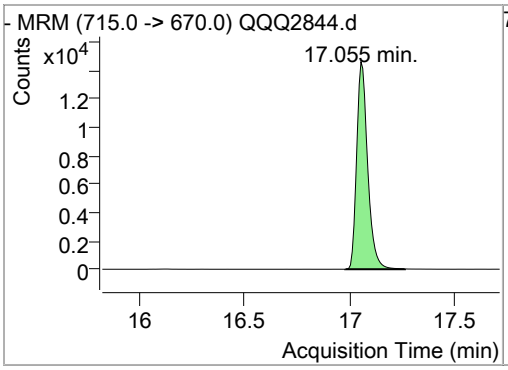
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotridecanoic acid (PFTrDA)	6.2079	16.62	0.39	51627				

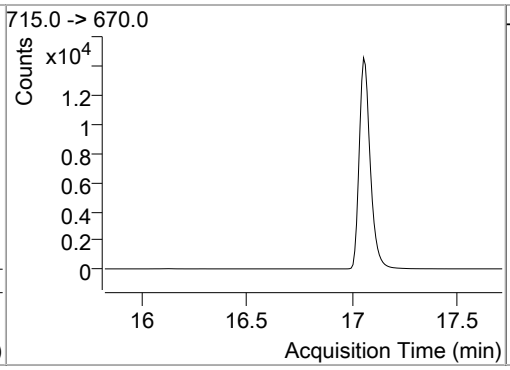


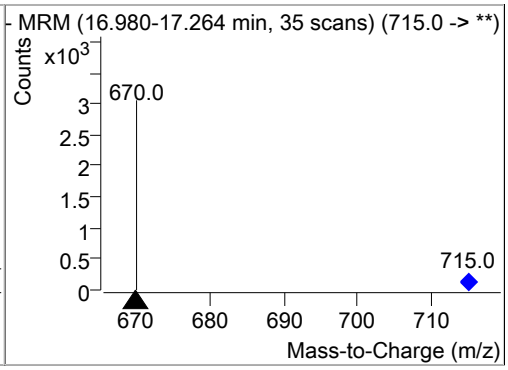




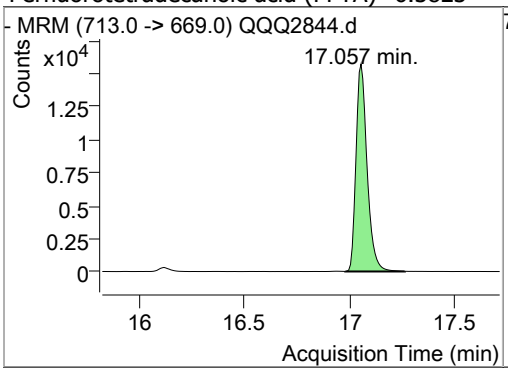
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
M2PFTeDA	5.6647	17.05	0.42	52869				

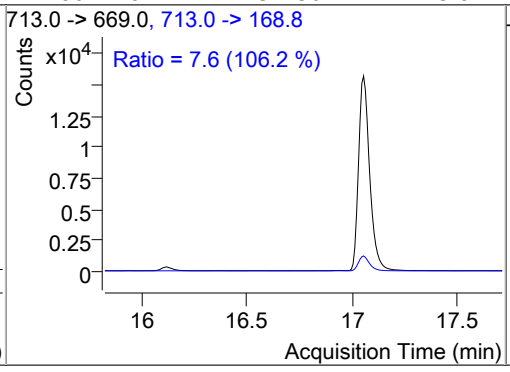


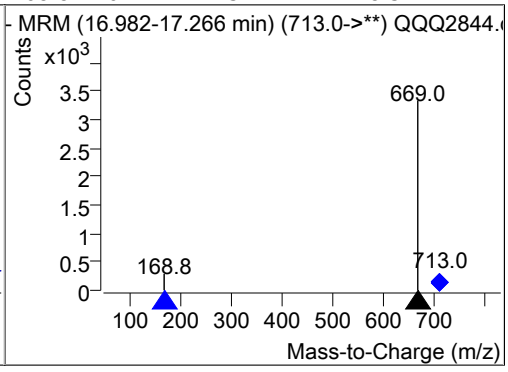




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Upper
Perfluorotetradecanoic acid (PFTA)	6.3823	17.06	0.42	57456	713.0 -> 168.8	7.6	5.7	8.5







BENCHSHEETS

SDG: 19L0685

CLASS: PFAS

METHOD: EPA 537m

PREPARATION BENCH SHEET-AQUEOUS: BL91039

Prepared: **12/18/2019 16:57**

York Analytical Laboratories, Inc.

Printed: 12/23/2019 1:15:12PM

Matrix: Water **Preparation SPE Ext-PFAS-EPA 537.1M** **Surrogate used: Y19I142** **100** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data			Decanted Y/N	Comments
									Initial	Acid	Basic		
19L0610-19 A	PFAS, NYSDEC T	125	1							NA			
19L0682-01 A	PFAS, NYSDEC T	125	1							NA			
19L0682-02 A	PFAS, NYSDEC T	125	1							NA			
19L0682-03 A	PFAS, NYSDEC T	125	1							NA			
19L0682-04 A	PFAS, NYSDEC T	125	1							NA			
19L0682-05 A	PFAS, NYSDEC T	125	1							NA			
19L0685-01 D	PFAS, NYSDEC T	125	1							NA			
19L0685-02 B	PFAS, NYSDEC T	125	1							NA			
19L0685-03 B	PFAS, NYSDEC T	125	1							NA			
19L0685-04 B	PFAS, NYSDEC T	125	1							NA			
BL91039-BLK1	QC	125	1							NA			
BL91039-BS1	QC	125	1	Y19I341	100					NA			
BL91039-MS1	QC	125	1	Y19I341	100			19L0682-02		NA			
BL91039-MS2	QC	125	1	Y19I341	100			19L0685-01		NA			
BL91039-MSD1	QC	125	1	Y19I341	100			19L0682-02		NA			
BL91039-MSD2	QC	125	1	Y19I341	100			19L0685-01		NA			

Reagents:

ID Number	Description	Lot Number	ID Number	Description	Lot Number
Y19I303	0.3% NH4OH/Methanol Soluiton	YorkPFAS-1	Y19J342	Strata XL-AW 100 um PWA 500mg	S322-0026_S19-005127
Y19K132	Water, HPLC Plus Grade	SHBL3552	Y19K140	Methanol, HPLC Plus Grade	SHBL1471

Preparation Performed by WL **Date:** 12/18/2019 16:57

PFAS Isotope Dilution Report - Targets

SampleName: BL91039-BLK1 **DataFileName:** QQQ2843.d **Operator:** KT **AcqTime** 2019-12-20T05:34:30.8836878-05:00

Matrix: Water WorkOrder: 0

CompoundName	Type	DF	UncorrConc	IsotopeCorrConc	Units	%IsoRec
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	T	1	0.000000	0.000000	ng/ml	98.68%
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	T	1	0.033693	0.033718	ng/ml	99.92%
N-EtFOSAA	T	1	0.000661	0.001004	ng/ml	65.77%
N-MeFOSAA	T	1	0.007005	0.010574	ng/ml	66.25%
Perfluoro-1-decanesulfonate (L-PFDS)	T	1	0.000389	0.000602	ng/ml	64.68%
Perfluoro-1-heptanesulfonate (L-PFHpS)	T	1	0.004491	0.006943	ng/ml	64.68%
Perfluoro-1-octanesulfonamide (FOSA)	T	1	0.004514	0.007126	ng/ml	63.34%
Perfluorobutanesulfonic acid (PFBS)	T	1	0.007724	0.011969	ng/ml	64.53%
Perfluorodecanoic acid (PFDA)	T	1	0.000667	0.001078	ng/ml	61.81%
Perfluorododecanoic acid (PFDoA)	T	1	0.001645	0.002873	ng/ml	57.25%
Perfluoroheptanoic acid (PFHpA)	T	1	0.010456	0.015822	ng/ml	66.09%
Perfluorohexanesulfonic acid (PFHxS)	T	1	0.006054	0.009439	ng/ml	64.14%
Perfluorohexanoic acid (PFHxA)	T	1	0.010565	0.015647	ng/ml	67.52%
Perfluoro-n-butanoic acid (PFBA)	T	1	0.001815	0.002623	ng/ml	69.19%
Perfluorononanoic acid (PFNA)	T	1	0.005479	0.008008	ng/ml	68.42%
Perfluoro-n-pentanoic acid (PFPeA)	T	1	0.017773	0.024803	ng/ml	71.66%
Perfluorooctanesulfonic acid (PFOS)	T	1	0.008276	0.012795	ng/ml	64.68%
Perfluorooctanoic acid (PFOA)	T	1	0.048800	0.074230	ng/ml	65.74%
Perfluorotetradecanoic acid (PFTA)	T	1	0.011079	0.021368	ng/ml	51.85%
Perfluorotridecanoic acid (PFTrDA)	T	1	0.000558	0.000975	ng/ml	57.25%
Perfluoroundecanoic acid (PFUnA)	T	1	0.003256	0.004481	ng/ml	72.66%

PFAS Isotope Dilution Report - Targets

SampleName: BL91039-BS1 **DataFileName:** QQQ2844.d **Operator:** KT **AcqTime** 2019-12-20T06:01:24.2337091-05:00

Matrix: Water WorkOrder: 0

CompoundName	Type	DF	UncorrConc	IsotopeCorrConc	Units	%IsoRec
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	T	1	9.893692	11.607171	ng/ml	85.24%
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	T	1	10.481881	11.048458	ng/ml	94.87%
N-EtFOSAA	T	1	8.157473	11.763769	ng/ml	69.34%
N-MeFOSAA	T	1	8.425867	11.411310	ng/ml	73.84%
Perfluoro-1-decanesulfonate (L-PFDS)	T	1	6.916568	10.010937	ng/ml	69.09%
Perfluoro-1-heptanesulfonate (L-PFHpS)	T	1	8.139164	11.780503	ng/ml	69.09%
Perfluoro-1-octanesulfonamide (FOSA)	T	1	8.208729	11.493871	ng/ml	71.42%
Perfluorobutanesulfonic acid (PFBS)	T	1	7.782625	11.031373	ng/ml	70.55%
Perfluorodecanoic acid (PFDA)	T	1	9.242288	12.387664	ng/ml	74.61%
Perfluorododecanoic acid (PFDoA)	T	1	6.938499	11.913077	ng/ml	58.24%
Perfluoroheptanoic acid (PFHpA)	T	1	8.739381	11.478420	ng/ml	76.14%
Perfluorohexanesulfonic acid (PFHxS)	T	1	5.851878	8.487964	ng/ml	68.94%
Perfluorohexanoic acid (PFHxA)	T	1	9.284850	11.943729	ng/ml	77.74%
Perfluoro-n-butanoic acid (PFBA)	T	1	8.923636	11.652334	ng/ml	76.58%
Perfluorononanoic acid (PFNA)	T	1	8.445965	11.666829	ng/ml	72.39%
Perfluoro-n-pentanoic acid (PFPeA)	T	1	9.018689	11.515786	ng/ml	78.32%
Perfluorooctanesulfonic acid (PFOS)	T	1	5.832917	8.442477	ng/ml	69.09%
Perfluorooctanoic acid (PFOA)	T	1	7.796007	10.326591	ng/ml	75.49%
Perfluorotetradecanoic acid (PFTA)	T	1	6.382274	11.266810	ng/ml	56.65%
Perfluorotridecanoic acid (PFTrDA)	T	1	6.207935	10.658733	ng/ml	58.24%
Perfluoroundecanoic acid (PFUnA)	T	1	7.407124	11.060579	ng/ml	66.97%

PFAS Isotope Dilution Report - Targets

SampleName: 19L0685-01 **DataFileName:** QQQ2855.d **Operator:** KT **AcqTime** 2019-12-20T10:57:37.8530269-05:00

Matrix: Water WorkOrder: 19L0685

CompoundName	Type	DF	UncorrConc	IsotopeCorrConc	Units	%IsoRec
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	T	1	0.000000	0.000000	ng/ml	114.76%
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	T	1	0.047458	0.035361	ng/ml	134.21%
N-EtFOSAA	T	1	0.010625	0.015561	ng/ml	68.28%
N-MeFOSAA	T	1	0.006382	0.009466	ng/ml	67.42%
Perfluoro-1-decanesulfonate (L-PFDS)	T	1	0.009305	0.012689	ng/ml	73.33%
Perfluoro-1-heptanesulfonate (L-PFHpS)	T	1	0.102999	0.140455	ng/ml	73.33%
Perfluoro-1-octanesulfonamide (FOSA)	T	1	0.000345	0.000528	ng/ml	65.26%
Perfluorobutanesulfonic acid (PFBS)	T	1	0.979197	1.349494	ng/ml	72.56%
Perfluorodecanoic acid (PFDA)	T	1	0.006028	0.007223	ng/ml	83.45%
Perfluorododecanoic acid (PFDoA)	T	1	0.001234	0.002064	ng/ml	59.77%
Perfluoroheptanoic acid (PFHpA)	T	1	0.726937	0.860570	ng/ml	84.47%
Perfluorohexanesulfonic acid (PFHxS)	T	1	2.034099	2.805099	ng/ml	72.51%
Perfluorohexanoic acid (PFHxA)	T	1	2.248134	2.819252	ng/ml	79.74%
Perfluoro-n-butanoic acid (PFBA)	T	1	1.104643	1.422581	ng/ml	77.65%
Perfluorononanoic acid (PFNA)	T	1	0.033032	0.039527	ng/ml	83.57%
Perfluoro-n-pentanoic acid (PFPeA)	T	1	2.829434	3.565081	ng/ml	79.37%
Perfluorooctanesulfonic acid (PFOS)	T	1	1.387675	1.892306	ng/ml	73.33%
Perfluorooctanoic acid (PFOA)	T	1	1.264978	1.561515	ng/ml	81.01%
Perfluorotetradecanoic acid (PFTA)	T	1	0.013426	0.041149	ng/ml	32.63%
Perfluorotridecanoic acid (PFTrDA)	T	1	0.002716	0.004544	ng/ml	59.77%
Perfluoroundecanoic acid (PFUnA)	T	1	0.001253	0.001927	ng/ml	65.02%

PFAS Isotope Dilution Report - Targets

SampleName: BL91039-MS2 **DataFileName:** QQQ2856.d **Operator:** KT **AcqTime** 2019-12-20T11:24:33.0103988-05:00

Matrix: Water WorkOrder: 19L0685-01

CompoundName	Type	DF	UncorrConc	IsotopeCorrConc	Units	%IsoRec
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	T	1	10.152384	12.755314	ng/ml	79.59%
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	T	1	12.773119	11.423037	ng/ml	111.82%
N-EtFOSAA	T	1	7.327171	12.209406	ng/ml	60.01%
N-MeFOSAA	T	1	7.396002	12.254036	ng/ml	60.36%
Perfluoro-1-decanesulfonate (L-PFDS)	T	1	6.670212	10.468941	ng/ml	63.71%
Perfluoro-1-heptanesulfonate (L-PFHpS)	T	1	8.352281	13.108961	ng/ml	63.71%
Perfluoro-1-octanesulfonamide (FOSA)	T	1	7.223553	12.030581	ng/ml	60.04%
Perfluorobutanesulfonic acid (PFBS)	T	1	8.640424	12.930312	ng/ml	66.82%
Perfluorodecanoic acid (PFDA)	T	1	7.836539	12.889808	ng/ml	60.80%
Perfluorododecanoic acid (PFDoA)	T	1	6.998162	11.937141	ng/ml	58.63%
Perfluoroheptanoic acid (PFHpA)	T	1	9.406001	13.037591	ng/ml	72.15%
Perfluorohexanesulfonic acid (PFHxS)	T	1	9.237647	14.376237	ng/ml	64.26%
Perfluorohexanoic acid (PFHxA)	T	1	10.439493	14.761097	ng/ml	70.72%
Perfluoro-n-butanoic acid (PFBA)	T	1	9.478849	13.578844	ng/ml	69.81%
Perfluorononanoic acid (PFNA)	T	1	8.473528	10.940244	ng/ml	77.45%
Perfluoro-n-pentanoic acid (PFPeA)	T	1	11.093258	16.015589	ng/ml	69.27%
Perfluorooctanesulfonic acid (PFOS)	T	1	9.235202	14.494711	ng/ml	63.71%
Perfluorooctanoic acid (PFOA)	T	1	8.611433	11.795606	ng/ml	73.01%
Perfluorotetradecanoic acid (PFTA)	T	1	5.245610	12.631162	ng/ml	41.53%
Perfluorotridecanoic acid (PFTrDA)	T	1	5.818693	9.925256	ng/ml	58.63%
Perfluoroundecanoic acid (PFUnA)	T	1	6.624344	11.747429	ng/ml	56.39%

PFAS Isotope Dilution Report - Targets

SampleName: BL91039-MSD2 **DataFileName:** QQQ2857.d **Operator:** KT **AcqTime** 2019-12-20T11:51:35.4926121-05:00

Matrix: Water WorkOrder: 19L0685-01

CompoundName	Type	DF	UncorrConc	IsotopeCorrConc	Units	%IsoRec
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	T	1	9.700366	12.730060	ng/ml	76.20%
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	T	1	12.526279	11.509400	ng/ml	108.84%
N-EtFOSAA	T	1	7.372654	12.267123	ng/ml	60.10%
N-MeFOSAA	T	1	7.537713	11.996069	ng/ml	62.83%
Perfluoro-1-decanesulfonate (L-PFDS)	T	1	6.657625	10.801445	ng/ml	61.64%
Perfluoro-1-heptanesulfonate (L-PFHpS)	T	1	8.286082	13.443481	ng/ml	61.64%
Perfluoro-1-octanesulfonamide (FOSA)	T	1	6.785988	12.050184	ng/ml	56.31%
Perfluorobutanesulfonic acid (PFBS)	T	1	8.451190	12.999499	ng/ml	65.01%
Perfluorodecanoic acid (PFDA)	T	1	8.683250	14.250410	ng/ml	60.93%
Perfluorododecanoic acid (PFDoA)	T	1	7.530035	12.050130	ng/ml	62.49%
Perfluoroheptanoic acid (PFHpA)	T	1	8.840003	12.597538	ng/ml	70.17%
Perfluorohexanesulfonic acid (PFHxS)	T	1	9.122883	14.238717	ng/ml	64.07%
Perfluorohexanoic acid (PFHxA)	T	1	10.296892	14.859921	ng/ml	69.29%
Perfluoro-n-butanoic acid (PFBA)	T	1	9.286824	13.557889	ng/ml	68.50%
Perfluorononanoic acid (PFNA)	T	1	7.290736	10.319563	ng/ml	70.65%
Perfluoro-n-pentanoic acid (PFPeA)	T	1	10.881887	15.599969	ng/ml	69.76%
Perfluorooctanesulfonic acid (PFOS)	T	1	9.305990	15.098196	ng/ml	61.64%
Perfluorooctanoic acid (PFOA)	T	1	8.911008	13.131272	ng/ml	67.86%
Perfluorotetradecanoic acid (PFTA)	T	1	6.253793	14.249535	ng/ml	43.89%
Perfluorotridecanoic acid (PFTrDA)	T	1	6.099625	9.761080	ng/ml	62.49%
Perfluoroundecanoic acid (PFUnA)	T	1	7.621614	13.611661	ng/ml	55.99%

PFAS Isotope Dilution Report - Targets

SampleName: 19L0685-02 **DataFileName:** QQQ2858.d **Operator:** KT **AcqTime** 2019-12-20T12:18:30.6583897-05:00

Matrix: Water WorkOrder: 19L0685

CompoundName	Type	DF	UncorrConc	IsotopeCorrConc	Units	%IsoRec
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	T	1	0.000000	0.000000	ng/ml	85.36%
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	T	1	0.053474	0.051439	ng/ml	103.95%
N-EtFOSAA	T	1	0.010709	0.019407	ng/ml	55.18%
N-MeFOSAA	T	1	0.010378	0.019352	ng/ml	53.63%
Perfluoro-1-decanesulfonate (L-PFDS)	T	1	0.001157	0.002026	ng/ml	57.12%
Perfluoro-1-heptanesulfonate (L-PFHpS)	T	1	0.083170	0.145614	ng/ml	57.12%
Perfluoro-1-octanesulfonamide (FOSA)	T	1	0.003739	0.006760	ng/ml	55.32%
Perfluorobutanesulfonic acid (PFBS)	T	1	1.076852	1.820508	ng/ml	59.15%
Perfluorodecanoic acid (PFDA)	T	1	0.007222	0.011994	ng/ml	60.22%
Perfluorododecanoic acid (PFDoA)	T	1	0.002104	0.004086	ng/ml	51.48%
Perfluoroheptanoic acid (PFHpA)	T	1	0.953189	1.407651	ng/ml	67.71%
Perfluorohexanesulfonic acid (PFHxS)	T	1	2.881636	4.913597	ng/ml	58.65%
Perfluorohexanoic acid (PFHxA)	T	1	2.929039	4.621154	ng/ml	63.38%
Perfluoro-n-butanoic acid (PFBA)	T	1	1.204187	1.973133	ng/ml	61.03%
Perfluorononanoic acid (PFNA)	T	1	0.054387	0.078438	ng/ml	69.34%
Perfluoro-n-pentanoic acid (PFPeA)	T	1	3.325094	5.293295	ng/ml	62.82%
Perfluorooctanesulfonic acid (PFOS)	T	1	1.354620	2.371655	ng/ml	57.12%
Perfluorooctanoic acid (PFOA)	T	1	1.207124	1.898689	ng/ml	63.58%
Perfluorotetradecanoic acid (PFTA)	T	1	0.015688	0.045106	ng/ml	34.78%
Perfluorotridecanoic acid (PFTrDA)	T	1	0.000735	0.001428	ng/ml	51.48%
Perfluoroundecanoic acid (PFUnA)	T	1	0.000921	0.001788	ng/ml	51.51%

PFAS Isotope Dilution Report - Targets

SampleName: 19L0685-03 **DataFileName:** QQQ2859.d **Operator:** KT **AcqTime** 2019-12-20T12:45:25.8689723-05:00

Matrix: Water WorkOrder: 19L0685

CompoundName	Type	DF	UncorrConc	IsotopeCorrConc	Units	%IsoRec
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	T	1	0.000000	0.000000	ng/ml	97.67%
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	T	1	0.040991	0.037030	ng/ml	110.70%
N-EtFOSAA	T	1	0.005672	0.009899	ng/ml	57.30%
N-MeFOSAA	T	1	0.000461	0.000771	ng/ml	59.86%
Perfluoro-1-decanesulfonate (L-PFDS)	T	1	0.000805	0.001302	ng/ml	61.83%
Perfluoro-1-heptanesulfonate (L-PFHpS)	T	1	0.094792	0.153321	ng/ml	61.83%
Perfluoro-1-octanesulfonamide (FOSA)	T	1	0.000215	0.000772	ng/ml	27.87%
Perfluorobutanesulfonic acid (PFBS)	T	1	0.889449	1.394757	ng/ml	63.77%
Perfluorodecanoic acid (PFDA)	T	1	0.001618	0.002427	ng/ml	66.65%
Perfluorododecanoic acid (PFDoA)	T	1	0.011862	0.023606	ng/ml	50.25%
Perfluoroheptanoic acid (PFHpA)	T	1	0.640068	0.860908	ng/ml	74.35%
Perfluorohexanesulfonic acid (PFHxS)	T	1	1.793633	2.791896	ng/ml	64.24%
Perfluorohexanoic acid (PFHxA)	T	1	1.949692	2.770369	ng/ml	70.38%
Perfluoro-n-butanoic acid (PFBA)	T	1	0.966324	1.430527	ng/ml	67.55%
Perfluorononanoic acid (PFNA)	T	1	0.046729	0.064325	ng/ml	72.65%
Perfluoro-n-pentanoic acid (PFPeA)	T	1	2.504044	3.621615	ng/ml	69.14%
Perfluorooctanesulfonic acid (PFOS)	T	1	1.275486	2.063033	ng/ml	61.83%
Perfluorooctanoic acid (PFOA)	T	1	1.074959	1.556291	ng/ml	69.07%
Perfluorotetradecanoic acid (PFTA)	T	1	0.011813	0.061983	ng/ml	19.06%
Perfluorotridecanoic acid (PFTrDA)	T	1	0.001159	0.002307	ng/ml	50.25%
Perfluoroundecanoic acid (PFUnA)	T	1	0.000738	0.001228	ng/ml	60.07%

PFAS Isotope Dilution Report - Targets

SampleName: 19L0685-04 **DataFileName:** QQQ2860.d **Operator:** KT **AcqTime** 2019-12-20T13:12:22.0261821-05:00

Matrix: Water WorkOrder: 19L0685

CompoundName	Type	DF	UncorrConc	IsotopeCorrConc	Units	%IsoRec
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	T	1	0.000000	0.000000	ng/ml	101.65%
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	T	1	0.037452	0.035563	ng/ml	105.31%
N-EtFOSAA	T	1	0.001148	0.001755	ng/ml	65.38%
N-MeFOSAA	T	1	0.005624	0.008520	ng/ml	66.01%
Perfluoro-1-decanesulfonate (L-PFDS)	T	1	0.000574	0.000861	ng/ml	66.68%
Perfluoro-1-heptanesulfonate (L-PFHpS)	T	1	0.003058	0.004587	ng/ml	66.68%
Perfluoro-1-octanesulfonamide (FOSA)	T	1	0.000353	0.000596	ng/ml	59.27%
Perfluorobutanesulfonic acid (PFBS)	T	1	0.008989	0.014268	ng/ml	63.00%
Perfluorodecanoic acid (PFDA)	T	1	0.003955	0.006185	ng/ml	63.93%
Perfluorododecanoic acid (PFDoA)	T	1	0.005099	0.008447	ng/ml	60.36%
Perfluoroheptanoic acid (PFHpA)	T	1	0.013046	0.018480	ng/ml	70.59%
Perfluorohexanesulfonic acid (PFHxS)	T	1	0.010677	0.016816	ng/ml	63.50%
Perfluorohexanoic acid (PFHxA)	T	1	0.000956	0.001393	ng/ml	68.68%
Perfluoro-n-butanoic acid (PFBA)	T	1	0.037861	0.057622	ng/ml	65.70%
Perfluorononanoic acid (PFNA)	T	1	0.009586	0.012512	ng/ml	76.62%
Perfluoro-n-pentanoic acid (PFPeA)	T	1	0.017523	0.025437	ng/ml	68.89%
Perfluorooctanesulfonic acid (PFOS)	T	1	0.112589	0.168856	ng/ml	66.68%
Perfluorooctanoic acid (PFOA)	T	1	0.050717	0.074612	ng/ml	67.97%
Perfluorotetradecanoic acid (PFTA)	T	1	0.008858	0.026520	ng/ml	33.40%
Perfluorotridecanoic acid (PFTrDA)	T	1	0.000956	0.001583	ng/ml	60.36%
Perfluoroundecanoic acid (PFUnA)	T	1	0.000530	0.000834	ng/ml	63.55%

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

The Chazen Companies
547 River Street
Troy, NY 12180
ATTN: Mr. Will Olsen
wolsen@chazencompanies.com

January 28, 2020

SUBJECT: Katonah Municipal, Data Usability Summary Report

Dear Mr. Olsen,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on January 7, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #46981:

SDG #	Fraction
19L0685	1,4-Dioxane, Perfluoroalkyl & Polyfluoroalkyl Substances

The data validation was performed under Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operatin g Procedure for Semivolatile Data Validation SW-846 Method 8270D, SOP HW-35A, Revision 0; June 2015
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review; EPA 540-R-2017-002; January 2017
- USEPA Data Review and Validation Guidelines for Perfluoroalkyl Substances Analyzed Using EPA Method 537; November 2018
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

489 pages-ADV

Attachment 1

Category B **EDD**

LDC#46981 (Chazen Companies, Poughkeepsie, NY / Katonah Municipal)

LDC	SDG#	DATE REC'D	(3) DATE DUE	1,4-Diox. (8270D SIM)		PFAs (537M)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	19L0685	01/07/20	01/28/20	4	0	4	0																																
Total	J/CR			4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8

Shaded cells indicate Category B validation (all other cells are Category A validation). These sample counts do not include MS/MSD, and DUPs

L:\Chazen\Katonah\46981ST.wpd

Site: Katonah Municipal
Laboratory: York Analytical Laboratories, Inc.
Report No.: 19L0685
Reviewer: Pei Geng and Christina Rink/Laboratory Data Consultants for Chazen Companies – Poughkeepsie, NY
Date: January 27, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
KMW-MW-4R	19L0685-01	1,4-Dioxane, PFAS
KMW-MW-11R	19L0685-02	1,4-Dioxane, PFAS
KMW-FD	19L0685-03	1,4-Dioxane, PFAS
KMW-EB	19L0685-04	1,4-Dioxane, PFAS
KMW-MW-4RMS	19L0685-01MS	1,4-Dioxane, PFAS
KMW-MW-4RMSD	19L0685-01MSD	1,4-Dioxane, PFAS

Associated QC Samples(s):
Field/Trip Blanks: KMW-EB
Field Duplicate pair: KMW-MW-4R and KMW-FD

The above-listed water samples were collected on December 16, 2019 and were analyzed for 1,4-dioxane by SW-846 method 8270D in selected ion monitoring (SIM) mode and perfluoroalkyl & polyfluoroalkyl substances by method 537 modified. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Semivolatile Data Validation SW-846 Method 8270D,* SOP HW-35A, Revision 0 (June 2015), the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), and the USEPA Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFAS) Analyzed Using EPA Method 537 (November 2018), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to sample matrix.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

1,4-Dioxane

All criteria were met.

LC/MS Tunes

PFAS

All criteria were met.

Initial and Continuing Calibrations

All criteria were met.

Blanks

Contamination was not detected in the method blanks.

No positive results were found in the equipment blank sample KMW-EB for 1,4-dioxane and PFAS analyses.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were performed on sample KMW-MW-4R for 1,4-dioxane and PFAS analyses.

1,4-Dioxane

All criteria were met.

PFAS

The following table lists the MS/MSD percent recoveries (%R) outside of control limits in the PFAS analysis and the resulting validation actions.

MS ID	Compound	MS %R (Limits)	MS/D %R (Limits)	Affected Sample	Validation Action
KMW-MW-4RMS/MSD	Perfluorohexanesulfonic acid	156 (25-150)	155 (25-150)	KMW-MW-4R	J detects
	Perfluorooctanesulfonic acid	173 (25-150)	181 (25-150)		J detects

- Within control limits

The perfluorohexanesulfonic acid and perfluorooctanesulfonic acid results may be biased high due to high MS/MSD percent recoveries. The results can be used for project objectives as estimated values (J) which may have a minor impact on the data usability.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

Samples KMW-MW-4R and KMW-FD were submitted as the field duplicate pair with this sample group. The following table summarizes the concentrations.

1,4-Dioxane

There were no detected results in the field duplicate pair for 1,4-dioxane.

PFAS

Compound	Concentration (ng/L)		RPD
	KMW-MW-4R	KMW-FD	
Perfluorobutanesulfonic acid	10.8	11.2	4
Perfluorohexanoic acid	22.6	22.2	2
Perfluoroheptanoic acid	6.88	6.89	0
Perfluorohexanesulfonic acid	22.4	22.3	0
Perfluorooctanoic acid	12.5	12.5	0
Perfluorooctanesulfonic acid	15.1	16.5	9
Perfluoropentanoic acid	28.5	29.0	2
Perfluorobutanoic acid	11.4	11.4	0

Quantitation Limits and Data Assessment

No results were reported below the RL and above the MDL in the 1,4-dioxane and PFAS analyses.

Dilutions were not required for 1,4-dioxane and PFAS analyses.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 46981A2b

SDG #: 19L0685

Laboratory: York Analytical Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

Category B

Date: 1/24/20

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A A	RSD≤20% ICV≤30%
IV.	Continuing calibration	A	CCV≤20%.
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FB=4
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	ND	D=1+3
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	KMW-MW-4R	19L0685-01	Water	12/16/19
2	KMW-MW-11R	19L0685-02	Water	12/16/19
3	KMW-FD	19L0685-03	Water	12/16/19
4	KMW-EB	19L0685-04	Water	12/16/19
5	KMW-MW-4RMS	19L0685-01MS	Water	12/16/19
6	KMW-MW-4RMSD	19L0685-01MSD	Water	12/16/19
7				
8				
9				

Notes:

	BL91138-BK1						

LDC #: 46978A26

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 9
2nd Reviewer: 0

Method: Semivolatiles (EPA SW 846 Method 8270C-SIM)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check (Not required)				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30% ~~20% or percent recoveries (%R) 80-120%~~?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) ≥ 0.05?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation findings worksheet.		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent differences (%R) within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any percent recoveries (%R) was less than 10 percent, was a reanalysis performed to confirm %R?			✓	

LDC #: 46981A26

VALIDATION FINDINGS CHECKLIST

Reviewer: 9
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?		✓		
XI. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	AA. 2-Chloronaphthalene	AAA. Butylbenzylphthalate	AAAA. Dibenzothiophene	A1.
B. Bis (2-chloroethyl) ether	BB. 2-Nitroaniline	BBB. 3,3'-Dichlorobenzidine	BBBB. Benzo(a)fluoranthene	B1.
C. 2-Chlorophenol	CC. Dimethylphthalate	CCC. Benzo(a)anthracene	CCCC. Benzo(b)fluorene	C1.
D. 1,3-Dichlorobenzene	DD. Acenaphthylene	DDD. Chrysene	DDDD. cis/trans-Decalin	D1.
E. 1,4-Dichlorobenzene	EE. 2,6-Dinitrotoluene	EEE. Bis(2-ethylhexyl)phthalate	EEEE. Biphenyl	E1.
F. 1,2-Dichlorobenzene	FF. 3-Nitroaniline	FFF. Di-n-octylphthalate	FFFF. Retene	F1.
G. 2-Methylphenol	GG. Acenaphthene	GGG. Benzo(b)fluoranthene	GGGG. C30-Hopane	G1.
H. 2,2'-Oxybis(1-chloropropane)	HH. 2,4-Dinitrophenol	HHH. Benzo(k)fluoranthene	HHHH. 1-Methylphenanthrene	H1.
I. 4-Methylphenol	II. 4-Nitrophenol	III. Benzo(a)pyrene	IIII. 1,4-Dioxane	I1.
J. N-Nitroso-di-n-propylamine	JJ. Dibenzofuran	JJJ. Indeno(1,2,3-cd)pyrene	JJJJ. Acetophenone	J1.
K. Hexachloroethane	KK. 2,4-Dinitrotoluene	KKK. Dibenz(a,h)anthracene	KKKK. Atrazine	K1.
L. Nitrobenzene	LL. Diethylphthalate	LLL. Benzo(g,h,i)perylene	LLLL. Benzaldehyde	L1.
M. Isophorone	MM. 4-Chlorophenyl-phenyl ether	MMM. Bis(2-Chloroisopropyl)ether	MMMM. Caprolactam	M1.
N. 2-Nitrophenol	NN. Fluorene	NNN. Aniline	NNNN. 2,6-Dichlorophenol	N1.
O. 2,4-Dimethylphenol	OO. 4-Nitroaniline	OOO. N-Nitrosodimethylamine	OOOO. 1,2-Diphenylhydrazine	O1.
P. Bis(2-chloroethoxy)methane	PP. 4,6-Dinitro-2-methylphenol	PPP. Benzoic Acid	PPPP. 3-Methylphenol	P1.
Q. 2,4-Dichlorophenol	QQ. N-Nitrosodiphenylamine	QQQ. Benzyl alcohol	QQQQ. 3&4-Methylphenol	Q1.
R. 1,2,4-Trichlorobenzene	RR. 4-Bromophenyl-phenylether	RRR. Pyridine	RRRR. 4-Dimethyldibenzothiophene (4MDT)	R1.
S. Naphthalene	SS. Hexachlorobenzene	SSS. Benzidine	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	S1.
T. 4-Chloroaniline	TT. Pentachlorophenol	TTT. 1-Methylnaphthalene	TTTT. 1-Methyldibenzothiophene (1MDT)	T1.
U. Hexachlorobutadiene	UU. Phenanthrene	UUU.Benzo(b)thiophene	UUUU.	U1.
V. 4-Chloro-3-methylphenol	VV. Anthracene	VVV.Benzonaphthothiophene	VVVV.	V1.
W. 2-Methylnaphthalene	WW. Carbazole	WWW.Benzo(e)pyrene	WWWW.	W1.
X. Hexachlorocyclopentadiene	XX. Di-n-butylphthalate	XXX. 2,6-Dimethylnaphthalene	XXXX.	X1.
Y. 2,4,6-Trichlorophenol	YY. Fluoranthene	YYY. 2,3,5-Trimethylnaphthalene	YYYY.	Y1.
Z. 2,4,5-Trichlorophenol	ZZ. Pyrene	ZZZ. Perylene	ZZZZ.	Z1.

LDC #: 10701A-2b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: 0

METHOD: GC/MS BNA (EPA SW 846 Method 8270C-SIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (0.5 std)	Recalculated RRF (0.5 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	10ICC	12/1/19	1111 (1st internal standard)	1.527038	1.527038	1.5854H	1.5866H	11.6448	11.0448
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Phenanthrene (4th internal standard)						
			Chrysene (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
2			(1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Phenanthrene (4th internal standard)						
			Chrysene (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
3			(1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Phenanthrene (4th internal standard)						
			Chrysene (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: ~~46981A-6~~

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: T
2nd Reviewer: C

METHOD: GC/MS BNA (EPA SW 846 Method 8270C-SIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	~~E8000799~~	~~12/26/19~~	1111 (1st internal standard)	1.585641	1.549983	1.549983	2.2	2.2
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Phenanthrene (4th internal standard)					
			Chrysene (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
2			(1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Phenanthrene (4th internal standard)					
			Chrysene (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
3			(1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Phenanthrene (4th internal standard)					
			Chrysene (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: ~~46981A-6~~

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: Q
2nd reviewer: Q

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C-SIM)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
~~Tetrahydrofuran-d8~~					
1,4-Dioxane-d8	5.0	3.2	64.0	64.0	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

LDC #: ~~46505K10~~

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: 9
2nd Reviewer: 9

METHOD: GC/MS (EPA SW 846 Method 8270C-SIM)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 5/6

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Acenaphthene											
Pyrene											
1,4-Dioxane	5.0	5.0	ND	3.60	3.40	72.0	72.0	68.0	68.0	5.71	5.71

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18700J-10

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: 1
2nd Reviewer: 2

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C-SIM)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA) Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: BL91138-BS1

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Acenaphthene										
Pyrene										
1-Bioxene	5.00	NA	3.40	NA	68.0	68.0				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #41981A>6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: 0

METHOD: GC/MS PAHs (EPA SW 846 Method 8270D-SIM)

(Y) N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. NB, 1,4-Dioxane
BL91138-BS1

Conc. = (16163)(0.5)(2)(1) / (3759)(1.58564)(1)(0.1)

= 3.31 ng/L

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration ( )	Qualification
	LCS	1,4-Dioxane	3.4		

LDC #: 46981A96 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/24/20
SDG #: 19L0685 Category B Page: 1 of 1
Laboratory: York Analytical Laboratories, Inc. Reviewer: 4
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A A	RSD ≤ 20%. ICV ≤ 30%
IV.	Continuing calibration	A	CCV ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 4
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 1+3
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	KMW-MW-4R	19L0685-01	Water	12/16/19
2	KMW-MW-11R	19L0685-02	Water	12/16/19
3	KMW-FD	19L0685-03	Water	12/16/19
4	KMW-EB	19L0685-04	Water	12/16/19
5	KMW-MW-4RMS	19L0685-01MS	Water	12/16/19
6	KMW-MW-4RMSD	19L0685-01MSD	Water	12/16/19
7				
8				
9				
10				

Notes:

LDC #: 46904A9D

VALIDATION FINDINGS CHECKLIST

Reviewer: 9
2nd Reviewer:

Method: LCMS (EPA Method 537 Modified)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990?			✓	
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard?			✓	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?			✓	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?			✓	
Were all percent differences (%D) of the Instrument Sensitivity Check ≤ 30%?			✓	
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			3
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			

LDC #: 46981A96

VALIDATION FINDINGS CHECKLIST

Reviewer: 9
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?	✓			
XI. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?	✓			surr - iL
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

LDC #: 46981A96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 2

METHOD: LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed for each matrix in this SDG?
Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?
Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?
Y N N/A Were all duplicate sample relative percent differences (RPD) or differences within QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		5/6	K	156 (25-150)	155 (25-150)	( )	1 (dets)	J dets/A
			M	173 (↓)	181 (↓)	( )		J
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC#: 46981A96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: C
2nd Reviewer: C

METHOD: LCMS PFAS (EPA Method 537M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ng/L)		RPD
	1	3	
J	10.8	11.2	4
A	22.6	22.2	2
B	6.88	6.89	0
K	22.4	22.3	0
C	12.5	12.5	0
M	15.1	16.5	9
Q	28.5	29.0	2
P	11.4	11.4	0

V:\FIELD DUPLICATES\Field Duplicates\FD_Organics\2020\46981A96 Chazen.wpd

LDC #: ~~41970A96~~

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: 9

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (/ std)	Recalculated RRF (/ std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	KEAZ	12/28/19	PFOA (1st internal standard)	0.475473	0.47548	0.508197	0.508196	9.29652	9.296
			(2nd internal standard)						
			(3rd internal standard)						
2			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: ~~46984A96~~

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 9

METHOD: LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	220-840	12/20/19	PFOA ~~($^{13}C_2$-PFOA)~~ (IS)	0.508-197	0.49125 33	0.491-506	3.3	3.3
			~~PFOS ($^{13}C_8$-PFOS)~~					
2	220-851	12/20/19	PFOA ~~($^{13}C_2$-PFOA)~~ (IS)	0.508-197	0.5-2316 2	0.5-2317	0.8	0.8
			~~PFOS ($^{13}C_8$-PFOS)~~					
3			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
4			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

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VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: 9
2nd reviewer: 2

METHOD: __ GC __✓ HPLC/MS

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
13C8-PFOA		80.0	64.81	81.0	81.0	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

LDC #: 12[illegible]7C

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: 9
2nd Reviewer: 0

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 5/0

Compound	Spike Added (ng/L)		Sample Concentration (ng/L)	Spiked Sample Concentration (ng/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
PFOA	80.0	80.0	12.5	94.4	105	102	102	116	116	10.7	10.6
PFOS	58.4	58.4	15.1	116	121	173	173	181	181	4.08	4.22

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: [illegible]

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: 9
2nd Reviewer: [illegible]

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: BL91039-BS1

Compound	Spike Added (NG/L)		Spike Concentration (NG/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	80.0	NA	82.6	NA	103	103				
PFOS	53.4	"	67.5	"	116	116				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

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LDC #: 46984A96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 6 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 1, PFOA:

Conc. = $\frac{(13615)(10.0)(1)}{(21782)(0.5082/197)(0.175)(0.81)}$

= 12.49 ng/L

#	Sample ID	Compound	Reported Concentration (ng/L)	Calculated Concentration ( )	Qualification
	1	PFOA	12.5		

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Katonah Municipal - LDC# 46981

SDG: 19L0685

Analytical Method E537

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
KMW-EB_20191216	19L0685-04	Perfluoroheptanoic acid (PFHpA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorotridecanoic Acid (PFTriA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorotetradecanoic acid (PFTA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluoroheptane Sulfonate (PFHPS)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorooctane Sulfonamide (FOSA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorobutanesulfonic acid (PFBS)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorobutanoic Acid	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorohexanesulfonic acid (PFHxS)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorodecane Sulfonic Acid	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorononanoic acid (PFNA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorodecanoic acid (PFDA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluoroundecanoic Acid (PFUnA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorooctanesulfonic acid (PFOS)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluoropentanoic Acid (PFPeA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/20/2019		Y	N	U		U	5	5	ng/l
KMW-EB_20191216	19L0685-04	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorohexanoic acid (PFHxA)	12/20/2019		Y	N	U		U	2	2	ng/l

SDG: 19L0685

Analytical Method E537

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
KMW-EB_20191216	19L0685-04	Perfluorododecanoic acid (PFDoA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-EB_20191216	19L0685-04	Perfluorooctanoic acid (PFOA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorooctanoic acid (PFOA)	12/20/2019	12.5	Y	Y				2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorododecanoic acid (PFDoA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorohexanoic acid (PFHxA)	12/20/2019	22.2	Y	Y				2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorodecanoic acid (PFDA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/20/2019		Y	N	U		U	5	5	ng/l
KMW-FD_20191216	19L0685-03	Perfluoropentanoic Acid (PFPeA)	12/20/2019	29.0	Y	Y				2	2	ng/l
KMW-FD_20191216	19L0685-03	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorooctanesulfonic acid (PFOS)	12/20/2019	16.5	Y	Y				2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorodecane Sulfonic Acid	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluoroundecanoic Acid (PFUnA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorooctane Sulfonamide (FOSA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorobutanoic Acid	12/20/2019	11.4	Y	Y				2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorobutanesulfonic acid (PFBS)	12/20/2019	11.2	Y	Y				2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluoroheptanoic acid (PFHpA)	12/20/2019	6.89	Y	Y				2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluoroheptane Sulfonate (PFHPS)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorononanoic acid (PFNA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorotetradecanoic acid (PFTA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/20/2019		Y	N	U		U	2	2	ng/l

SDG: 19L0685

Analytical Method E537

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
KMW-FD_20191216	19L0685-03	Perfluorotridecanoic Acid (PFTriA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-FD_20191216	19L0685-03	Perfluorohexanesulfonic acid (PFHxS)	12/20/2019	22.3	Y	Y				2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorodecane Sulfonic Acid	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorohexanesulfonic acid (PFHxS)	12/20/2019	39.3	Y	Y				2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorobutanoic Acid	12/20/2019	15.8	Y	Y				2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorobutanesulfonic acid (PFBS)	12/20/2019	14.6	Y	Y				2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluoroheptane Sulfonate (PFHPS)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorotetradecanoic acid (PFTA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorodecanoic acid (PFDA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorooctane Sulfonamide (FOSA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluoroheptanoic acid (PFHpA)	12/20/2019	11.3	Y	Y				2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorotridecanoic Acid (PFTriA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorooctanesulfonic acid (PFOS)	12/20/2019	19.0	Y	Y				2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorododecanoic acid (PFDoA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorohexanoic acid (PFHxA)	12/20/2019	37.0	Y	Y				2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/20/2019		Y	N	U		U	5	5	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluoropentanoic Acid (PFPeA)	12/20/2019	42.3	Y	Y				2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/20/2019		Y	N	U		U	2	2	ng/l

SDG: 19L0685

Analytical Method E537

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
KMW-MW-11R_20191216	19L0685-02	Perfluoroundecanoic Acid (PFUnA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorononanoic acid (PFNA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-11R_20191216	19L0685-02	Perfluorooctanoic acid (PFOA)	12/20/2019	15.2	Y	Y				2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluoroheptane Sulfonate (PFHPS)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorodecane Sulfonic Acid	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorodecanoic acid (PFDA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorododecanoic acid (PFDoA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/20/2019		Y	N	U		U	5	5	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorononanoic acid (PFNA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluoroundecanoic Acid (PFUnA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorohexanoic acid (PFHxA)	12/20/2019	22.6	Y	Y				2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorohexanesulfonic acid (PFHxS)	12/20/2019	22.4	Y	Y		J	J	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorooctanesulfonic acid (PFOS)	12/20/2019	15.1	Y	Y		J	J	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorotetradecanoic acid (PFTA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorotridecanoic Acid (PFTriA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorooctane Sulfonamide (FOSA)	12/20/2019		Y	N	U		U	2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluoropentanoic Acid (PFPeA)	12/20/2019	28.5	Y	Y				2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorooctanoic acid (PFOA)	12/20/2019	12.5	Y	Y				2	2	ng/l

SDG: 19L0685

Analytical Method E537

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
KMW-MW-4R_20191216	19L0685-01	Perfluorobutanoic Acid	12/20/2019	11.4	Y	Y				2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluorobutanesulfonic acid (PFBS)	12/20/2019	10.8	Y	Y				2	2	ng/l
KMW-MW-4R_20191216	19L0685-01	Perfluoroheptanoic acid (PFHpA)	12/20/2019	6.88	Y	Y				2	2	ng/l

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
KMW-EB_20191216	19L0685-04	1,4-Dioxane (P-Dioxane)	12/26/2019		Y	N	U		U	0.2	0.2	ug/l
KMW-FD_20191216	19L0685-03	1,4-Dioxane (P-Dioxane)	12/26/2019		Y	N	U		U	0.2	0.2	ug/l
KMW-MW-11R_20191216	19L0685-02	1,4-Dioxane (P-Dioxane)	12/26/2019		Y	N	U		U	0.2	0.2	ug/l
KMW-MW-4R_20191216	19L0685-01	1,4-Dioxane (P-Dioxane)	12/26/2019		Y	N	U		U	0.2	0.2	ug/l